

MASTERPIECE

COVERING 12G-SDI AND IP MASTER CONTROL SWITCHERS

User Manual

Issue 3 Rev 4

2020-02-12

www.grassvalley.com

Related Products

This User Manual covers:

- Masterpiece IP Mainframe and System Menus
- Masterpiece 12G-SDI Mainframe and System Menus

FCC Compliance

In order to comply with FCC/CFR47: Part 15 regulations, it is necessary to use high-quality, triple-screened Media or Monitor cable assemblies with integrated ferrite suppression at both ends.

Patent Information

This product may be protected by one or more patents.

For further information, please visit: www.grassvalley.com/patents/

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Information in this document is subject to change without notice and does not represent a commitment on the part of Grass Valley.

Warranty information is available from the Legal Terms and Conditions section of Grass Valley's website (www.grassvalley.com).

TitleMasterpiece User ManualPart NumberIssue 3 Rev 4Revision2020-02-12, 08:06

Important Safety Information

This section provides important safety guidelines for operators and service personnel. Specific warnings and cautions appear throughout the manual where they apply. Please read and follow this important information, especially those instructions related to the risk of electric shock or injury to persons.

Symbols and Their Meanings



Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



Indicates that the user, operator or service technician should refer to the product manuals for important operating, maintenance, or service instructions.



This is a prompt to note the fuse rating when replacing fuses. The fuse referenced in the text must be replaced with one having the ratings indicated.



Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.



Indicates that static sensitive components are present, which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.



Indicates that the equipment has more than one power supply cord, and that all power supply cords must be disconnected before servicing to avoid electric shock.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Underwriters Laboratory (UL) regulations and recommendations for USA.



The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Canadian Standard Association (CSA) regulations and recommendations for USA/Canada.



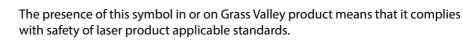
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The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Intertek Testing Services regulations and recommendations for USA/Canada.



The presence of this symbol in or on Grass Valley product means that it complies with all applicable European Union (CE) directives.



Warnings



A warning indicates a possible hazard to personnel, which may cause injury or death. Observe the following general warnings when using or working on this equipment:

•Appropriately listed/certified mains supply power cords must be used for the connection of the equipment to the rated mains voltage.

- This product relies on the building's installation for short-circuit (over-current) protection. Ensure that a fuse or circuit breaker for the rated mains voltage is used on the phase conductors.
- Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only.
- Do not operate the equipment in wet or damp conditions.
- This equipment is grounded through the grounding conductor of the power cords. To avoid electrical shock, plug the power cords into a properly wired receptacle before connecting the equipment inputs or outputs.
- Route power cords and other cables so they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.
- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.
- High leakage current may be present. Earth connection of product is essential before connecting power.
- Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.
- To avoid fire hazard, use only the fuse type and rating specified in the service instructions for this product, or on the equipment.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- Use proper lift points. Do not use door latches to lift or move equipment.
- Avoid mechanical hazards. Allow all rotating devices to come to a stop before servicing.
- Have qualified service personnel perform safety checks after any service.

Cautions



A caution indicates a possible hazard to equipment that could result in equipment damage. Observe the following cautions when operating or working on this equipment:

- This equipment is meant to be installed in a restricted access location.
- When installing this equipment, do not attach the power cord to building surfaces.
- Products that have no on/off switch, and use an external power supply must be installed in proximity to a main power outlet that is easily accessible.
- Use the correct voltage setting. If this product lacks auto-ranging power supplies, before applying power ensure that each power supply is set to match the power source.
- Provide proper ventilation. To prevent product overheating, provide equipment ventilation in accordance with the installation instructions.

- Do not operate with suspected equipment failure. If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.
- To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.
- This unit may have more than one power supply cord. Disconnect all power supply cords before servicing to avoid electric shock.
- Follow static precautions at all times when handling this equipment. Servicing should be done in a static-free environment.
- To reduce the risk of electric shock, plug each power supply cord into separate branch circuits employing separate service grounds.

Electrostatic Discharge (ESD) Protection

Electrostatic discharge occurs when electronic components are improperly handled and can result in intermittent failure or complete damage adversely affecting an electrical circuit. When you remove and replace any card from a frame always follow ESD-prevention procedures:

- Ensure that the frame is electrically connected to earth ground through the power cord or any other means if available.
- Wear an ESD wrist strap ensuring that it makes good skin contact. Connect the grounding clip to an *unpainted surface* of the chassis frame to safely ground unwanted ESD voltages. If no wrist strap is available, ground yourself by touching the *unpainted* metal part of the chassis.
- For safety, periodically check the resistance value of the antistatic strap, which should be between 1 and 10 megohms.
- When temporarily storing a card make sure it is placed in an ESD bag.
- Cards in an earth grounded metal frame or casing do not require any special ESD protection.

Battery Handling

This product may include a backup battery. There is a danger of explosion if the battery is replaced incorrectly. Replace the battery only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions. Before disposing of your Grass Valley equipment, please review the *Disposal and Recycling Information* at:

http://www.grassvalley.com/assets/media/5692/Take-Back_Instructions.pdf

Cautions for LCD and TFT Displays



Excessive usage may harm your vision. Rest for 10 minutes for every 30 minutes of usage.

If the LCD or TFT glass is broken, handle glass fragments with care when disposing of them. If any fluid leaks out of a damaged glass cell, be careful not to get the liquid crystal fluid in your mouth or skin. If the liquid crystal touches your skin or clothes, wash it off immediately using soap and water. Never swallow the fluid. The toxicity is extremely low but caution should be exercised at all times.

Mesures de sécurité et avis importants

La présente section fournit des consignes de sécurité importantes pour les opérateurs et le personnel de service. Des avertissements ou mises en garde spécifiques figurent dans le manuel, dans les sections où ils s'appliquent. Prenez le temps de bien lire les consignes et assurez-vous de les respecter, en particulier celles qui sont destinées à prévenir les décharges électriques ou les blessures.

Signification des symboles utilisés



Signale la présence d'une tension élevée et dangereuse dans le boîtier de l'équipement ; cette tension peut être suffisante pour constituer un risque de décharge électrique.



Avertit l'utilisateur, l'opérateur ou le technicien de maintenance que des instructions importantes relatives à l'utilisation et à l'entretien se trouvent dans la documentation accompagnant l'équipement.



Invite l'utilisateur, l'opérateur ou le technicien de maintenance à prendre note du calibre du fusible lors du remplacement de ce dernier. Le fusible auquel il est fait référence dans le texte doit être remplacé par un fusible du même calibre.



Identifie une borne de mise à la terre de protection. Il faut relier cette borne à la terre avant d'effectuer toute autre connexion à l'équipement.



ldentifie une borne de mise à la terre externe qui peut être connectée en tant que borne de mise à la terre supplémentaire.



Signale la présence de composants sensibles à l'électricité statique et qui sont susceptibles d'être endommagés par une décharge électrostatique. Utilisez des procédures, des équipements et des surfaces antistatiques durant les interventions d'entretien.



Le symbole ci-contre signifie que l'appareil comporte plus d'un cordon d'alimentation et qu'il faut débrancher tous les cordons d'alimentation avant toute opération d'entretien, afin de prévenir les chocs électriques.



La marque UL certifie que l'appareil visé a été testé par Underwriters Laboratory (UL) et reconnu conforme aux exigences applicables en matière de sécurité LISTED électrique en vigueur au Canada et aux États-Unis.



La marque C-CSA-US certifie que l'appareil visé a été testé par l'Association canadienne de normalisation (CSA) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.



La marque C-UL-US certifie que l'appareil visé a été testé par Underwriters Laboratory (UL) et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.



La marque ETL Listed d'Intertek pour le marché Nord-Américain certifie que l'appareil visé a été testé par Intertek et reconnu conforme aux exigences applicables en matière de sécurité électrique en vigueur au Canada et aux États-Unis.



Le marquage CE indique que l'appareil visé est conforme aux exigences essentielles des directives applicables de l'Union européenne en matière de sécurité électrique, de compatibilité électromagnétique et de conformité environnementale.



Le symbole ci-contre sur un appareil Grass Valley ou à l'intérieur de l'appareil indique qu'il est conforme aux normes applicables en matière de sécurité laser.

Avertissements



Les avertissements signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire fatales. Veuillez vous familiariser avec les avertissements d'ordre général ci-dessous :

- Un cordon d'alimentation dûment homologué doit être utilisé pour connecter l'appareil à une tension de secteur de 120 V CA ou 240 V CA.
- La protection de ce produit contre les courts-circuits (surintensités) dépend de l'installation électrique du bâtiment. Assurez-vous qu'un fusible ou un disjoncteur pour 120 V CA ou 240 V CA est utilisé sur les conducteurs de phase.
- Dans le présent manuel, toutes les instructions qui nécessitent d'ouvrir le couvercle de l'équipement sont destinées exclusivement au personnel technique qualifié.
- N'utilisez pas cet appareil dans un environnement humide.
- Cet équipement est mis à la terre par le conducteur de mise à la terre des cordons d'alimentation. Pour éviter les chocs électriques, branchez les cordons d'alimentation sur une prise correctement câblée avant de brancher les entrées et sorties de l'équipement.
- Acheminez les cordons d'alimentation et autres câbles de façon à ce qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.
- Coupez l'alimentation avant de nettoyer l'équipement. Ne pas utiliser de nettoyants liquides ou en aérosol. Utilisez uniquement un chiffon humide.
- Des tensions dangereuses peuvent exister en plusieurs points dans cet équipement. Pour éviter toute blessure, ne touchez pas aux connexions ou aux composants exposés lorsque l'appareil est sous tension.
- Avant de procéder à toute opération d'entretien ou de dépannage, enlevez tous vos bijoux (notamment vos bagues, votre montre et autres objets métalliques).
- Pour éviter tout risque d'incendie, utilisez uniquement les fusibles du type et du calibre indiqués sur l'équipement ou dans la documentation qui l'accompagne.
- Ne pas utiliser cet appareil dans une atmosphère explosive.
- Présence possible de courants de fuite. Un raccordement à la masse est indispensable avant la mise sous tension.
- Après tout travail d'entretien ou de réparation, faites effectuer des contrôles de sécurité par le personnel technique qualifié.

Mises en garde



Les mises en garde signalent des conditions ou des pratiques susceptibles d'endommager l'équipement. Veuillez vous familiariser avec les mises en garde cidessous :

- L'appareil est conçu pour être installé dans un endroit à accès restreint.
- Au moment d'installer l'équipement, ne fixez pas les cordons d'alimentation aux surfaces intérieures de l'édifice.

- Les produits qui n'ont pas d'interrupteur marche-arrêt et qui disposent d'une source d'alimentation externe doivent être installés à proximité d'une prise de courant facile d'accès.
- Si l'équipement n'est pas pourvu d'un modules d'alimentation auto-adaptables, vérifiez la configuration de chacun des modules d'alimentation avant de les mettre sous tension.
- Assurez une ventilation adéquate. Pour éviter toute surchauffe du produit, assurez une ventilation de l'équipement conformément aux instructions d'installation.
- N'utilisez pas l'équipement si vous suspectez un dysfonctionnement du produit. Faites-le inspecter par un technicien qualifié.
- Pour réduire le risque de choc électrique, n'effectuez pas de réparations autres que celles qui sont décrites dans le présent manuel, sauf si vous êtes qualifié pour le faire. Confiez les réparations à un technicien qualifié. La maintenance doit se réaliser dans un milieu libre d'électricité statique.
- L'appareil peut comporter plus d'un cordon d'alimentation. Afin de prévenir les chocs électriques, débrancher tous les cordons d'alimentation avant toute opération d'entretien.
- Veillez à toujours prendre les mesures de protection antistatique appropriées quand vous manipulez l'équipement.
- Pour réduire le risque de choc électrique, branchez chaque cordon d'alimentation dans des circuits de dérivation distincts utilisant des zones de service distinctes.

Protection contre les décharges électrostatiques (DES)

Une décharge électrostatique peut se produire lorsque des composants électroniques ne sont pas manipulés de manière adéquate, ce qui peut entraîner des défaillances intermittentes ou endommager irrémédiablement un circuit électrique. Au moment de remplacer une carte dans un châssis, prenez toujours les mesures de protection antistatique appropriées :

- Assurez-vous que le châssis est relié électriquement à la terre par le cordon d'alimentation ou tout autre moyen disponible.
- Portez un bracelet antistatique et assurez-vous qu'il est bien en contact avec la peau. Connectez la pince de masse à une *surface non peinte* du châssis pour détourner à la terre toute tension électrostatique indésirable. En l'absence de bracelet antistatique, déchargez l'électricité statique de votre corps en touchant une surface métallique *non peinte* du châssis.
- Pour plus de sécurité, vérifiez périodiquement la valeur de résistance du bracelet antistatique. Elle doit se situer entre 1 et 10 mégohms.
- Si vous devez mettre une carte de côté, assurez-vous de la ranger dans un sac protecteur antistatique.
- Les cartes qui sont reliées à un châssis ou boîtier métallique mis à la terre ne nécessitent pas de protection antistatique spéciale.

Manipulation de la pile

Ce produit peut inclure une pile de sauvegarde. Il y a un risque d'explosion si la pile est remplacée de manière incorrecte. Remplacez la pile uniquement par un modèle identique ou équivalent recommandé par le fabricant. Disposez des piles usagées conformément aux instructions du fabricant. Avant de vous séparer de votre équipement Grass Valley, veuillez consulter les *informations de mise au rebut et de recyclage* à:

http://www.grassvalley.com/assets/media/5692/Take-Back_Instructions.pdf

Précautions pour les écrans LCD et TFT



Regarder l'écran pendant une trop longue période de temps peut nuire à votre vision. Prenez une pause de 10 minutes, après 30 minutes d'utilisation.

Si l'écran LCD ou TFT est brisé, manipulez les fragments de verre avec précaution au moment de vous en débarrasser. veillez à ce que le cristal liquide n'entre pas en contact avec la peau ou la bouche. En cas de contact avec la peau ou les vêtements, laver immédiatement à l'eau savonneuse. Ne jamais ingérer le liquide. La toxicité est extrêmement faible, mais la prudence demeure de mise en tout temps.

Environmental Information

European (CE) WEEE directive.



This symbol on the product(s) means that at the end of life disposal it should not be mixed with general waste.

Visit www.grassvalley.com for recycling information.

Grass Valley believes this environmental information to be correct but cannot guarantee its completeness or accuracy since it is based on data received from sources outside our company. All specifications are subject to change without notice.

If you have questions about Grass Valley environmental and social involvement (WEEE, RoHS, REACH, etc.), please contact us at environment@grassvalley.com.

Lithium Batteries

Battery Warning

CAUTION

This equipment contains a lithium battery. There is a danger of explosion if this is replaced incorrectly. Replace only with the same or equivalent type. Dispose of used batteries according to the manufacturer's instructions. Batteries <u>shall only</u> be replaced by trained service technicians.

Your Grass Valley equipment usually comes with at least one button battery located on the main printed circuit board. The batteries are used for backup and should not need to be replaced during the lifetime of the equipment.

Battery Disposal

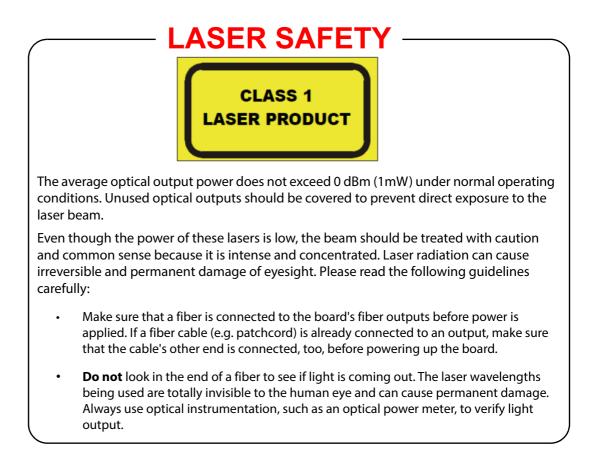
Before disposing of your Grass Valley equipment, please remove the battery as follows:

- 1 Make sure the AC adapter / power Cord is unplugged from the power outlet.
- 2 Remove the protective cover from your equipment.
- 3 Gently remove the battery from its holder using a blunt instrument for leverage such as a screwdriver if necessary. In some cases the battery will need to be desoldered from the PCB.
- 4 Dispose of the battery and equipment according to your local environmental laws and guidelines.

WARNING

- Be careful not to short-circuit the battery by adhering to the appropriate safe handling practices.
- Do not dispose of batteries in a fire as they may explode.
- Batteries may explode if damaged or overheated.
- Do not dismantle, open or shred batteries.
- In the event of a battery leak, do not allow battery liquid to come in contact with skin or eyes.
- Seek medical help immediately in case of ingestion, inhalation, skin or eye contact, or suspected exposure to the contents of an opened battery.

Laser Safety - Fiber Output SFP and QSFP Modules Warning



Mains Supply Voltage



Before connecting the equipment, observe the safety warnings section and ensure that the local mains supply is within the rating stated on the rear of the equipment.



Safety and EMC Standards

This equipment complies with the following standards:

Safety Standards

CE

Information Technology Equipment - Safety Part 1

EN60950-1:2006

Safety of Information Technology Equipment Including Electrical Business Equipment.

UL1419 (4th Edition)

Standard for Safety - Professional Video and Audio equipment (UL file number E193966)

EMC Standards

This unit conforms to the following standards:

EN55032:2015 (Class A)

Electromagnetic Compatibility of multimedia equipment - Emission requirements

EN61000-3-2:2014 (Class A)

Electromagnetic Compatibility - Limits for harmonic current emissions

EN61000-3-3:2013

Electromagnetic Compatibility - Limits of voltage changes, voltage fluctuations and flicker

EN55103-2:2009 (Environment E2)

Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2. Immunity

WARNING This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

FCC / CFR 47:Part 15 (Class A)

Federal Communications Commission Rules Part 15, Subpart B

Caution to the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EMC Performance of Cables and Connectors

Grass Valley products are designed to meet or exceed the requirements of the appropriate European EMC standards. In order to achieve this performance in real installations it is essential to use cables and connectors with good EMC characteristics.

All signal connections (including remote control connections) shall be made with screened cables terminated in connectors having a metal shell. The cable screen shall have a large-area contact with the metal shell.

SIGNAL/DATA PORTS

For unconnected signal/data ports on the unit, fit shielding covers. For example, fit EMI blanking covers to SFP+ type ports; and fit 75 Ω RF terminators to BNC type ports

COAXIAL CABLES

Coaxial cables connections (particularly serial digital video connections) shall be made with high-quality double-screened coaxial cables such as Belden 8281 or BBC type PSF1/2M and Belden 1694A (for 3Gbps).

D-TYPE CONNECTORS

D-type connectors shall have metal shells making good RF contact with the cable screen. Connectors having "dimples" which improve the contact between the plug and socket shells, are recommended. Notices

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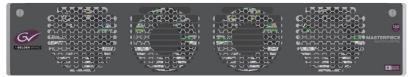
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Introduction

Product Overview

Thank you for purchasing your new Masterpiece Master Control Switcher. Whether you have purchased the IP system or the 12G-SDI system, this user instruction manual will guide you through each stage of setup and configuration of the system. Installation information and specifications information can be found in the Masterpiece Installation Manual.

Masterpiece 12G-SDI Mainframe



Masterpiece IP Mainframe

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Masterpiece Control Surface



If you have any questions regarding the installation of your product, please refer to the contact details listed at the rear of this manual.

Note: **Please note** that all diagrams are for illustration purposes only and may differ slightly from the purchased product. Grass Valley operates a policy of continuous improvement and development. Grass Valley reserves the right to make changes and improvements to any of the products described in this document without prior notice.

IP Master Control Switcher Overview

Building on our world firsts in deploying IP solutions technologies we are introducing Masterpiece IP, which is a new market-defining master control switcher for the IP environment. Whatever your channel genre, whether it's sports, news or live entertainment and whatever your distribution— a single over-the-air (OTA) channel, multichannel content distribution or real-time streaming, Masterpiece IP has the power and flexibility to provide you with dynamic and rock-solid master control.

Features include:

- 4K UHD/1080p/1080i/720p Master Control Switcher
- IP connectivity 50 GbE
- Duplex, signals supported over RTP streams via 2x SFP + 28 cages
- 10x 4K UHD inputs
- 40x 1080p/1080i/720p inputs
- 4K UHD PGM/PST and clean outputs
- 4x 4K UHD keyers
- 4 channels of DVE assignable to backgrounds and keyers
- Multichannel audio mixer
- 16-channel audio shuffling for every crosspoint and output
- Controlled via Grass Valley Morpheus Automation
- Keying for channel branding
- Format Fusion3 for multiformat workflows
- DVE functionality for squeeze back and on-air effects
- 16-channel AES mixing
- Voice overs with automatic level control

12G-SDI Master Control Switcher Overview

The Masterpiece Master Control Switcher is a new addition to the Grass Valley Family of live production products.

With an intuitive and compact control panel, Grass Valley's Masterpiece 12G-SDI offers unbeatable master control operation. This is essential in today's complex master control environments where decisions have to be made quickly by operators across multiple channels to ensure the quality of output that's required.

Features include:

- UHD processing
- A single link SDI connection
- Keying for channel branding
- A video mixer
- A DVE for functional squeeze backs and effects
- Audio embedding, de-embedding and shuffling
- An audio mixer for mixing voiceover and voice-under
- Automation and manual control
- A dedicated panel for easy operations
- FormatFusion3 for multi-format operations supporting HD, 1080p and UHD
- UHD supports quad link and 2SI
- 12G over SDI single link

Example of a Masterpiece System



Masterpiece Functionality

Masterpiece combined with Grass Valley's FormatFusion3 technology is unique in the master control environment, giving you more capacity to feed multi-format material into your channels. This means you don't have to create multiple versions of the same material to feed different channel outputs, and there is no need for external conversion equipment.

Seamless interfacing with Grass Valley's automation system Morpheus allows Masterpiece to deliver robust and resilient content distribution and flexible device management, making it the most efficient automation tool for your channel management.

Morpheus automation enables play-out schedules to run smoothly keeping your channel content working effortlessly. The Masterpiece control panel can also be operated manually, allowing for on-the-fly operations when needed.

Switching audio, breaking away audio from video, and triggering effects such as squeeze backs and loading clips on-the-fly are just some of the operations the Masterpiece 12G-SDI and Morpheus can achieve together for automated master control.

Audio Mixing

Masterpiece includes an 86 x 40 out audio mixer and can execute the following:

- Audio lead and log background transition
- Break away audio transitions
- Voice-overs and voice-unders

The benefit of pre-fading the audio before it goes live gives the operator confidence knowing that a channel's audio material and feeds are played out as scheduled. The audio mixer provides embedding and de-embedding audio processing. Any 16 embedded channels can be selected from any/all the incoming video sources. This is ideal for breaking out embedded audio to AES for processing then re-ingesting the resulting feeds back into the SDI domain. Audio channels can be shuffled for flexible alignment with in-house channel mapping.

System Integration

As a fully loaded master control system, Masterpiece offers a full solution to HD/1080p and UHD Master Control without needing any (optional) extras. Of course you can pair Masterpiece with Grass Valley's UHD-ready product range including routing, play-out, control and monitoring, servers and automation to ensure a seamless work-flow for your UHD productions. By combining Grass Valley systems, you get comprehensive master control facilities that satisfy even the most mission-critical live UHD production environments.

Masterpiece System Components

- 1. Masterpiece Mainframe: IP and 12G-SDI mainframes (2RU rack height).
- 2. Control Surface: Masterpiece Control Surface (19")
- 3. External Power Supplies: 2 x PSU for the Control Surface
- 4. Cables: For each system purchased, there are:
 - 1x RJ45 Network Cable, 5m ~ 19.6 inches length
 - 4x Power Cord 10A 2m ~ 78.7 inches (or 4x US Mains Lead IEC to 3 Blade 10A, 2.4m~ 94.4 inches.

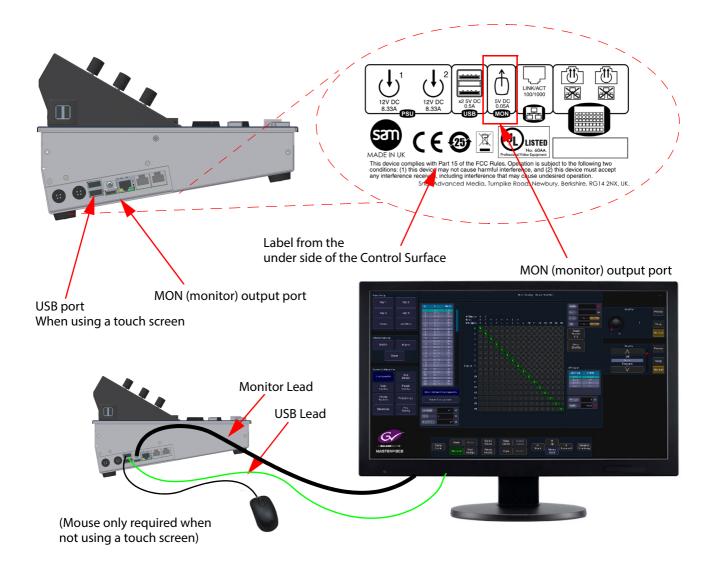
```
Note: Installation and User Manuals are supplied regardless of system components purchased.
```

Connecting the Touch Screen Monitor GUI

An external monitor has to be connected to the Masterpiece Control Surface to be used as an external touch screen GUI. The external monitor must have a 1920 x 1080 display resolution and can be either a touch screen or a non touch screen display.

For touch screen monitors, connect the USB lead from the monitor to a USB port on the Control Surface and the HDMI to DVI (for example) lead to the monitor port.

For non touch screen displays, the user can connect a USB mouse to a USB port on the Control Surface and the HDMI to DVI (for example) lead to the monitor port.



Touch screen monitor - once the external monitor is connected to the Masterpiece Control Surface, a USB control lead (shown above) is connected, allowing the touch screen functions to be used.

Non- touch screen monitor - once the external monitor is connected to the Masterpiece Control Surface, a USB mouse (shown above) is used to control the Masterpiece menus on the monitor screen.

Current Compatible Touch Screen Monitors

- iiyama T2250-MTS
- iiyama T2236-MSC B1 and B2
- iiyama T2252-MTS
- GeChic On-Lap 1502
- ELO_1002L_1502L
- ELO-2002L
- Planar PCT2265
- beetronics 15TS5M

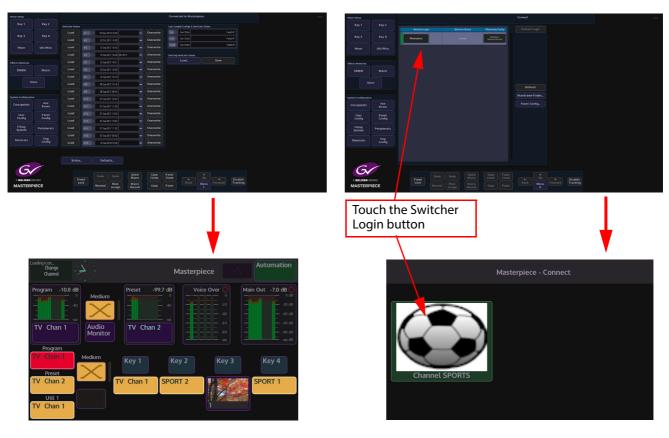
Initial Setup Menus

At Power-up

When the Masterpiece system is powered up, after the initial boot up sequence, the system will be in one of two states. These states will depend on the system being setup previously or not.

If the system has been correctly setup previously, the system will login and go straight to the "Connected to..." menu on both GUIs. If not previously setup, the "Connect" menu will be displayed, where you will have to touch the "Switcher Login" button on either one of the GUIs as shown below.

Connect Menus (not Logged In state)



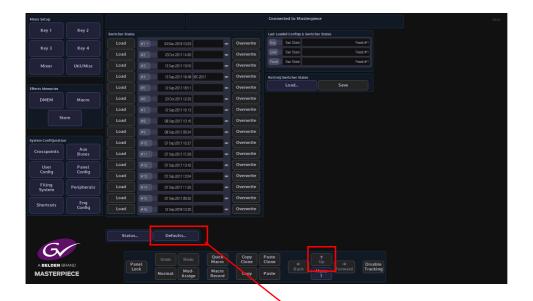
Connected to Masterpiece menus (Logged In State)

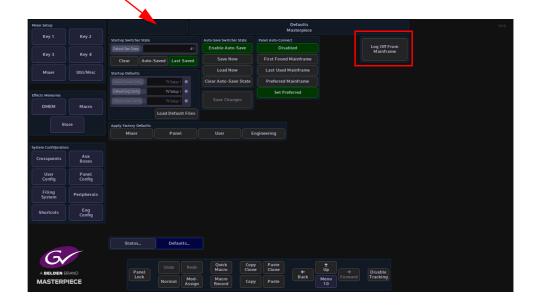
Once logged in, you can start configuring and setting up the system to your requirements.

Log Off - Mainframe Configuration

Keep touching the "Up" button until the "Connected to..." or "Top" menu is reached. Next, touch the "Defaults" button to get to the "Defaults Masterpiece" menu. Touching the {Log Off From Mainframe} button, a prompt message will then appear asking the user if they actually do wish to Log Off.

This is a safety mechanism designed to stop the user from accidentally logging off without saving their settings.

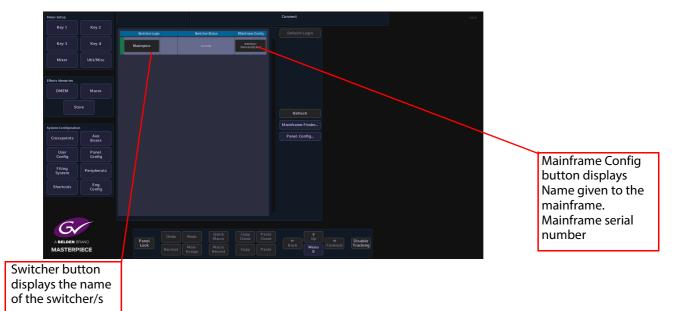




The other functions within this menu will be discussed later in this section. After log off, the "Connect" menu will appear.

The Connect Menu

The Switcher Login column will show the mainframe the user can log into. Switcher Status column will have the given name of the Switcher.



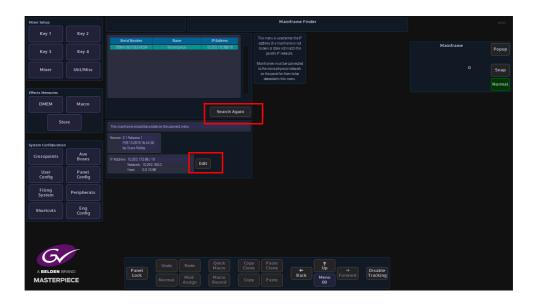
The *Default Login* button allows a panel to log in "Exclusively" and will prevent any other panel(s) logging into the Masterpiece mainframe. To log in exclusively, select the {*Default Login*} button, top right on the GUI Login.

If a panel is already logged into a switcher you cannot then log into it exclusively.

The *Refresh* button allows the user to refresh the display if other mainframes have been connected whilst the mainframe is being used. Press the {Refresh} button and the system will search for any other mainframes.

The *Mainframe Finder* menu, The "Mainframe Finder" menu is used to find mainframes when the IP addresses of the mainframes and the control surface do not match.

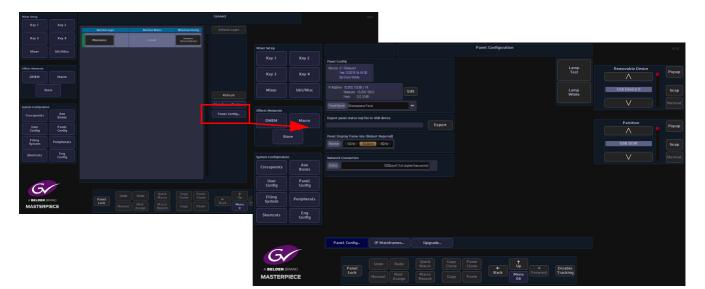
If you cannot see the mainframe in this menu, touch the {Edit} button and a dialog box will appear allowing you to type in the IP Address of the mainframe and touch the {Search Again} button.



Connect - Panel Config Menu

The **{Panel Config...}** button will enter the Panel Configuration menu, showing the current software version, IP Address and the given Panel name as shown below.

The software for the panel is usually upgraded when the mainframe software is upgraded in the Mainframe Configuration - Upgrade menu, but using the Panel Configuration - Upgrade menu, the user is also able to upgrade just the Panel software, so as an example, allowing the panel to be used with a mainframe that is running a different version of software that is on the same network.



The "Panel Display Frame Rate" parameter allows the user to set the frame rate to 50Hz, 59.94Hz and 60Hz. After setting the frame rate, a re-boot of the system is required. This may be required if connecting to a broadcast monitor or multiviewer.

IP Mainframes

The **{IP Mainframes...**} menu is used to connect to other mainframes on a network. If a mainframe is on a different VLAN or on a totally different network, the user has to know the "Outgoing Gateway" of the facility they are working in, the "IP address" of the mainframe they wish to connect to and the "Return Path Gateway". All these parameters have to be entered before being able to connect to the mainframe.



Panel Upgrade

Press the **{Upgrade...}** button to enter the Panel Upgrade From USB menu. This menu works in exactly the same way as the Mainframe & Panel Upgrade menu, where the user inserts a USB memory device into one of USB ports on the mainframe or control surface, then presses the {Select Device} button. All the information on the memory device will be displayed as a filing system top left of the menu. Multiple versions of software can be Stored on the memory device, so the user needs to select the required version using the *Selector* parameter control.



Next press the **{Get Info}** button and information related to the selected software from the file will be displayed in the information area. When happy that the correct software has been selected, press the **{Start Upgrade}** button.

The software will take a few minutes to upgrade the panel. When finished press the **{Reboot Panel Only}** button. The panel software upgrade is now complete.

Mainframe Configuration

Touch the "Mainframe Config" button to enter the Mainframe - Configuration menu. This menu displays the current version of software the mainframe is running, the current IP address.

										1100			
		Switcher Login	Switcher Status	Mainframe Centig									
Key 3		Masterpiece		Maslepice 7884198582804									
Mixer	Util/Misc												
Effects Memories	Macro												
					Refresh								
System Configuratio					Mainframe Finder								
Crosspoints	Aux Buses				Panel Config								
User	Panel		Mixer Setup						Mainframe Co	ofiguration			HDD
Config	Config		Key 1	Key 2						ingoration			HDD
Filing System	Peripherals				Mainframe Config Version 2.1Release1				Video Type HD	UHD		Removable Device	
Shortcuts	Eng Config			Key 4	Feb 13 2019 16:44:30 by Grass Valley		Color						Popup
			Mixer	Util/Misc	IP Address 10.250.170.88 / 15 Network: 10.250.	160.0	Edit					Usb Device 0	Snap
												V	Normal
G			Effects Memories		Mainframe Name Masterpi	000							
		Papel	Indo	Macro	SATA Drive Config		Up	grade				Partition	Popup
A BELDEN B		Panel Lock No	rmat A Sto	ore	Export status log files to s	elected device							, chob
	ł											USB DISK	Snap
			System Configuration					Export				V	Normal
			Crosspoints	Aux Buses	Panel Login Limit Panels 1 2	3 4	5 6						
			User	Panel									
			Config	Config									
			Filing System	Peripherals									
			Shortcuts	Eng Config									
				Config									
			Gr										
			A BELDEN B		Panel Lock			Clone	Clone		Disable Tracking		
			MASTERP	IECE		Normal Mod- Assigr	n Macro Record			Menu 02			

The user is also able to give the mainframe a unique name.

In this menu, the user can select if they want to set the Masterpiece mainframe to HD/1080p or UHD.

Setting the mainframe to run in UHD mode will allow the mainframe to be used in 12G-SDI single link UHD mode or UHD Quad Link and 2Si (for UHD setup, please read the Engineering Config section of this manual).

Mixer Setup				Mainframe Configuration			
Key 1	Key 2	Mainframe Config		Video Type			
Key 3	Key 4	Version 2:1 Refease1 Feb 13/2019 16:44:30 by Grass Valley	Color kon	HDUHD		Removable Device	Popup
Mixer	Util/Misc	IP Address 10.250.170.88/19 Network: 10.250.160.0 Host: 0.0.10.88	Edit Apply Changes			Usb Device 0	Snap
Effects Memories		Mainframe Name Masterpiece	-				
DMEM	Macro	SATA Drive Config	Upgrade			Partition	Popup
Sto	ore	Export status log files to selected device				USB DISK	
			Export			USB DISK	Snap
System Configuration							
Crosspoints	Aux Buses	Panel Login Limit Panels 1 2 3	1 5 6				
User Config	Panel Config						
Filing System	Peripherals						
Shortcuts	Eng Config						
A BELDEN B		Panel Lock	tedo Quick Copy Macro Cone fod- sign Record Copy	Clone + Up Back Marry	Disable Forward Tracking		

A new IP Address can be given to the mainframe (see below) by touching the {Edit} button and a popup menu will appear. Use the popup menu to enter the new address using the numeric keypad, then touch the "Apply) button. Finally press the {Apply Changes} button.

Mixer Setup			Mainframe Configuration					HDD
Key 1	Key 2	Mainframe Config		Video Type				
Key 3	Key 4	Version 2:1 Release1 Feb 13:2019 16:44:30 by Grass Valley	Color Icon		UHD		Removable Device	Popup
Mixer	Util/Misc	IP Address 10,250,170,867/19 Network: 10,250,160,0 Host: 0,0,10,86	Edit Apply Changes				Usb Device 0	Snap
		MainframeName Masterpiece					V	
Effects Memories DMEM	Macro	SATA Drive Config_	Upgrade				Partition	Рорир
Sto		Export status log files to selected device						
							USB DISK	Snap
System Configuration			Export				V	
Crosspoints	Aux Buses	Panel Login Limit Panels 1 2 3	4 5 5					
User Config	Panel Config							
Filing System	Peripherals							
Shortcuts	Eng Config							
A BELDEN BRAND MASTERPIECE		Panel Lock	Redo Quick Copy Madro Macro Copy ssign Macro Copy	Paste Clone Paste	t Dp Menu 02	Disable Tracking		

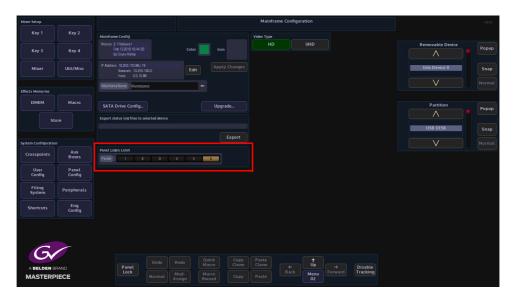
Exporting status log files, in the unlikely event that the system should fail in any way, this function allows critical data relating to a possible problem to be downloaded onto a USB memory device in the form of a (.txt) file. Touch the Export status log files attacher, then place the memory device into one of the USB ports on the mainframe, select the memory device using the *Removable Device* parameter.

Mixer Setup		Exporting MESSAGES.TXT Mainframe Configuration	
		Mainframe Config Video Type	
Key 3	Key 4	Version 1.1 Alpha197 by SMA	Removable Device Popup
Mixer	Util/Misc	PAddees 172.28.30.284 / 19 Neorot: 172.28.30 Host: 0.023.284 Edit Apply Changes	Usb Device 0
Effects Memories		Mainframe Name Masterpiece =	Normal
DMEM	Macro	SATA Drive Config Upgrade	Partition Popup
Sto		Export status log files to selected device	USB DISK Snap
System Configuration		Export	Normal
Crosspoints	Aux Buses	Parate Congression Parate 2 3 4 5 6	
User Config	Panel Config		
Filing System	Peripherals		
Shortcuts	Eng Config		
san			
Masterpie	ce	Undo Redo Copy Paste Clone + Dp	
maneipie			Forward

If the memory device is partitioned, select the partition that the log files are to be Stored in and finally press the **{Export}** button.

Panel Login Limit

This limits the number of Control Surfaces that can be connected and logged into the mainframe at any one time. The maximum number of control surfaces allowed to login is 6, but only 1 of the 6 control surface can be used at a time, or else there may be conflicts.



Mainframe Color and Icon

The Mainframe Color parameter allows the user to set an identifying color for each Masterpiece listed in the "Switcher Login" in the "Connect" menu.



Touch the color swatch and the "Mainframe Color" parameter popup will appear on the right. The user has 85 different colors to select from.

When a color is selected, touch the {Apply} button to apply the color to the switcher. As well as an identifying color, and "Icon" can also be applied for easy recognition of the mainframe. If Icons have been imported, the list of Icons can be scrolled though using the "Mainframe Icon" parameter.

SATA Drive Config

The SATA Drive config is used format the internal hard disk drive. Touch the {SATA Drive Config...} menu link button to enter the SATA Drive Configuration menu.

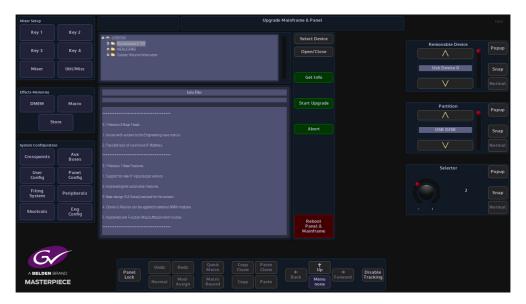
Note: WARNING! Caution is needed. This menu is used to format the internal disk drive!



To format the internal disk drive, touch the {Select} button and a button will appear allowing the user to format the system disk.

Upgrade (software upgrade)

This menu allows the user to upgrade the Mainframe and the Panel at the same time.



To upgrade the software insert a USB memory device into one of the USB ports on the mainframe or control surface, then press the {Select Device} button. All the information on the memory device will be displayed as a filing system top left of the menu. Multiple versions of software can be Stored on the memory device, so the user needs to select the required version using the *Selector* parameter control. Touching the "+" next to the software folder will expand out the folder and display the contents.

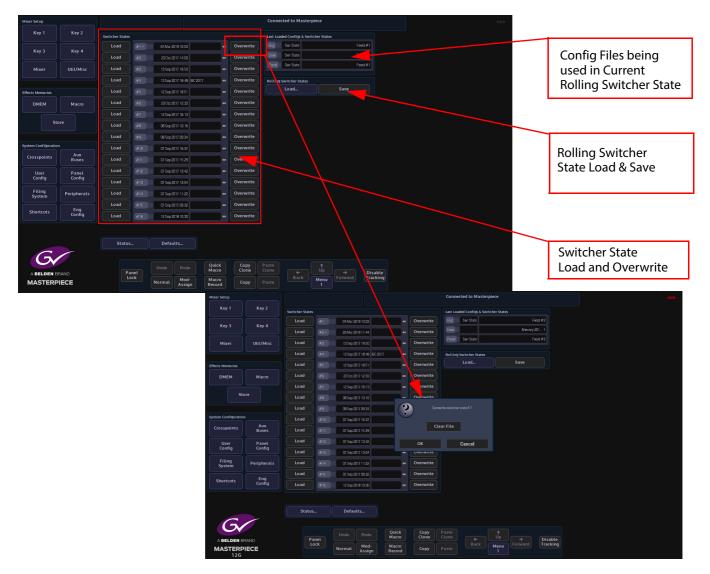
Next press the {Get Info} button and information related to the selected software will be displayed in the information area. When happy that the correct software has been selected, press the {Start Upgrade} button.

The software will take a few minutes to upgrade the system. When finished the user is prompted to Reboot Panel & Mainframe.

The system software upgrade is now complete.

Log into the System

Masterpiece is a "File" based system where the user sets up the User, Panel and Engineering Configuration files, and is then able to save the system setup to a switcher state. On logging into the Masterpiece system, the first menu to appear will be the Connected to..... menu. This menu allows the user to Load and Save Switcher States.



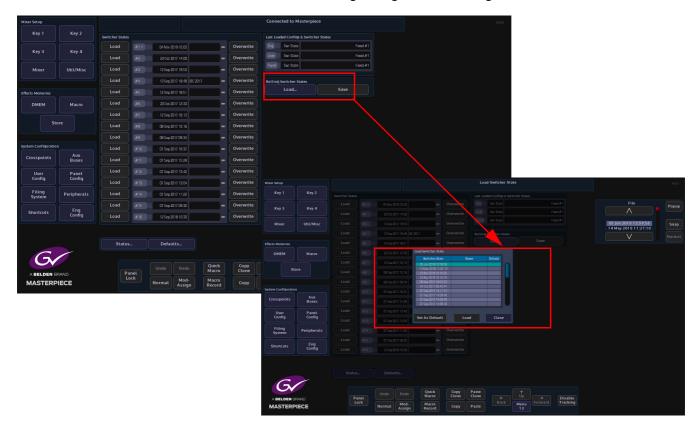
Switcher State - Overwrite and Load

In this menu, the user is able to Load or Overwrite 16 Switcher up to 8 times each as a one button press "Save Everything" function. Switcher State - Overwrite allows the user to save the current "Switcher State" at different points in time. This is very useful because the user may wish to keep the current original saved state, but may want to add newly created DMEMs or add Stores etc, which are saved in the Switcher State table.

This is done by pressing the {Overwrite} button. The date and time that the Switcher State was saved (overwritten) is displayed in the list. By touching the boxed area next to the time and date, a name can be given to the Switcher State. Touch {Load} button to load the Switcher State.

Rolling Switcher States

This allows the user to save up to 100 Switcher States in to a "Rolling List" of saved states. The "Rolling Switcher State" function is different to the Switcher State Overwrite mentioned above, because when the user touches the "Load" button, the menu will change to display a list of saved states. The user is able to scroll down the list to a saved state, then choose to select or deselect Stores, Panel, User and Eng Configs before loading the switcher state.



Status

In the Connected menu, press the {Status...} button to get to the Status menu.

Mixer Setup					Status					HDD		
Key 1	Key 2	Panel										
Key 3	Key 4		Feb 13 2019 1 by Grass Valid									
	Util/Misc		Name		Masterpiece Panel							
Mixer	Utit/Misc		IP Address		10.250.170.85 / 19							
Effects Memories		Mainframe Fab 132019 18:44:30 by Grass Valley										
DMEM	Macro		Name		Masterpiece							
Sto			Serial No.	7068	6160 53E2 8C94							
			P Address	1	0.250.170.88/19							
System Configuration			Clask	5th Ma	ar 2019 14:22:20							
Crosspoints	Aux Buses		Panel Login Limit		6 No							
User Config	Panel Config	Licence										
Filing System	Peripherals	Info										
Shortcuts	Eng Config											
		Statu	s D	efaults								
G												
A BELDEN BRAND		P	anet		O Quick Macro		e Paste Clone		(Up	Disable		
MASTERPIECE			.ock Norm	al Moo Assi	l- Macro gn Record	Cop	/ Paste	Back	Menu 12	Tracking		

This menu displays the current status of a Masterpiece system. The information includes, the GUI Panel and Mainframe software versions and IP address of the Panel and the Mainframe, the mainframe and panel names, the panels connected to the system and the time/day/date and also the mainframe serial number. It also displays information related to the software version.

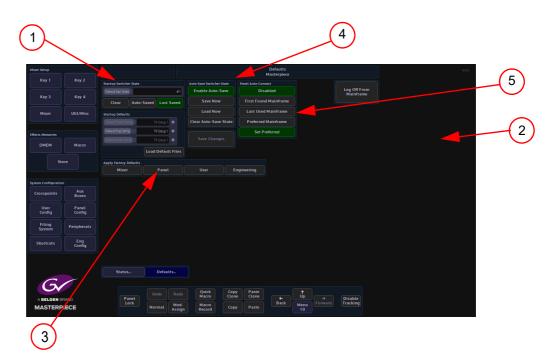
Panel	Version 2.1 Release Feb 13 201 by Grass V	9 16:44:30	Panel Software Version
	Name	Masterpiece Panel	Panel IP Address
		10.250.170.85 / 19	
Mainframe	Version 2.1 Release Feb 13 201 by Grass V	9 16:44:30	 Mainframe Software Version
		Masterpiece	Mainframe Serial Number
		7068-6160-53E2-BC94 10.250.170.88 / 19	Mainframe IP Address
		5th Mar 2019 14:22:20	Panel Login set Limit
	UHD Mode	No	UHD Mode indication
Licence			Software License Info
			Software release information

Press the {Info...} button and information relating to the specific software release.

Note: Press the [UP] button on the GUI to get back to the Connect menu.

Defaults

The Defaults menu is used to select either the Startup Switcher State or the User, Panel and Engineering Config files, to dictate the way the mainframe starts up after power-up and log-in. In this menu, the system can also be reset to a default configuration state.



The Default Startup State can be set in two ways:

- Using the Startup Switcher State where the last saved switcher state can be used as the default startup.
- Using the Engineering, Panel and User Config files as the default startup.

The top left hand side of the screen (1) is the Startup Switcher State, this can be used as the default startup if the {Auto-Saved} allows you to enable loading of the current auto-save state when the mainframe boots and when a panel logs in. If this is enabled, it will inhibit the normal loading of the "Default" or "Last-Saved" switcher state.

If the {Last Saved} button is selected, the system will start up in the last saved switcher state. This as indicated will use the last saved switcher state as the default startup.

Touch the Setup Defaults attacher then using the parameters on the right hand side of the menu (2), select the startup config files. After making changes to the startup default parameters, press the {Load Defaults} button to load the new startup settings, then press the {Save Changes} action button to save the new Startup Defaults.

Pressing one of the menu buttons in the Apply Factory Defaults box (3), will cause the system to be reset to a factory reset configuration.

Pressing one of the Apply Factory Defaults buttons will not erase the startup files Stored in mainframe hard drive, it will only step out of the default startup files that are currently loaded. The pre-saved startup Config files may be accessed at any time.

Auto-Save Switcher State (4), performs an auto-save of the systems state. auto-save state is effectively like an extra switcher state which is saved outside the normal file system area. There are two copies of this data to avoid complete loss, if the system is turned off part way through saving a new state. The auto-save state is made up of the logical switcher, plus another part for each control panel. When auto-save is enabled, the mainframe will save a new copy of its state thirty seconds after a significant change occurs (a parameter is modified, a file is loaded, a panel logs out etc). Similarly, a control panel will save a new copy of its state thirty seconds

after a significant panel change occurs (a delegate is changed, a button map is loaded/unloaded, a panel config file is loaded etc). The control surface also saves its state before logging out.

There are three different states indicated with the "HDD" symbol:

- **Red HDD** = the hard disk is being written to
- **Green HDD** = the hard disk is reading
- **Orange HDD** = the hard disk is mounting

Touch the {Save Now} button and a dialog box is displayed asking if you want to "Create Auto Save Switcher State".

Touch the {Load Now} button and a dialog box is displayed asking if you want to "Load Auto-Saved Switcher State. The dialog box also gives you the option to enable or disable Eng, User and Panel configs, DMEM and Stores.

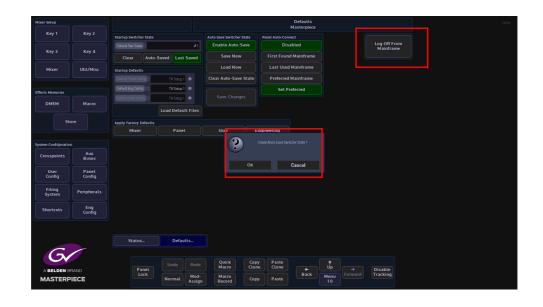
The {Clear Auto-Save State} button will clear the auto-save state buffer.

In the center of the screen is the Panel Auto-Connect box (5). From here the system can be set to automatically connect to a preferred mainframe each time the system is switched on and boots up. Press the {Preferred Mainframe} button. The next time the system is switched on, at boot up, the system will go straight to the Connected to menu. The {Last Mainframe} button sets the mainframe to start-up as the last mainframe that the system was being used as. Press the {Disabled} button to disable these functions.

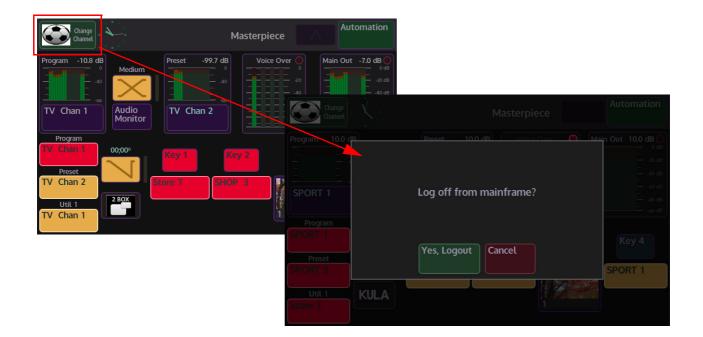
Log Off

To log out of the current mainframe, touch the {Log Off From Mainframe} button, a prompt message will then appear asking the user if they actually do wish to Log Off. This is a safety mechanism designed to stop the user from accidentally logging off without saving their settings.

After log off, the "Connect" menu will appear.

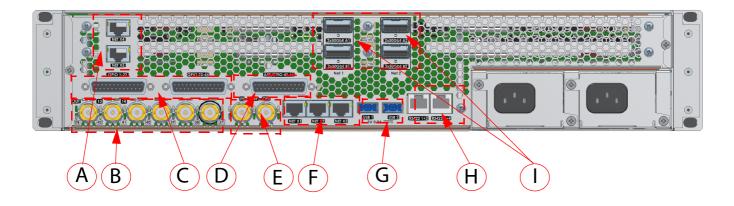


To log out of the system using the Masterpiece GUI, touch the {Change Channel} button, located in the top left of the menu. A dialog box is displayed asking if you want to log off.



Masterpiece Mainframe Rear Connectors

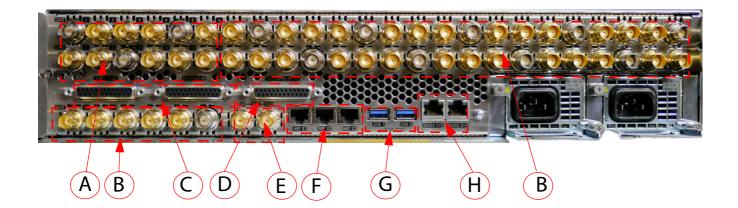
IP Mainframe Rear Connectors



IP Mainframe Connectors

Connectors	Description	Connector Information		
А	Network (NOT for connection to Control Surface or LAN/WAN networks)	NET X4 and NET X5 are used for direct connection from a laptop or PC for software updates to the IP Fins via RollCall.		
В	Input BNCs For inputs 37 to 42	6x HD/1080p (1.485Gbps / 2.97Gbps) Inputs. Serial digital interface As REC601/ SMPTE/292M / SMPTE424M via BNC connectors.		
с	GPIO	44x GPI Tally/GPO Outputs Assignable GPI / GPO Isolated contact closures via 2 x 25 way D Type. Assignable as GPI or GPO.		
D	AES/LTC	4 x AES inputs and 3 x AES outputs with 1 x LTC input. (AES formal name is AES3-2003). LTC is Linear (or Longitudinal) Timecode.		
E	Reference	1x Ref In and 1x Ref out		
F	Network	3x 10/100/1000 base T		
G	USB	2x USB3 - for external memory device or hard drives		
н	Serial	2X RJ45, 4 x RS422 serial ports		
I	IP Inputs and Outputs (secondary Inputs/Outputs are for redundancy)	 A1 (primary) 50GbE for Inputs 1 to 18 and Outputs 1 to 6 B1 (primary) 50GbE for Inputs 19 to 36 and Outputs 7 to 12 A2 (secondary) 50GbE for Inputs 1 to 18 and Outputs 1 to 6 B2 (secondary) 50GbE for Inputs 19 to 36 and Outputs 7 to 12 		

12G-SDI Mainframe Rear Connectors



12G-SDI Mainframe Connectors

Connectors	Description	Connector Information			
A	Output BNCs	12x HD/1080p (1.485Gbps / 2.97Gbps) Outputs. Serial digital interface As REC601/ SMPTE/292M / SMPTE424M via BNC connectors. Including 3 x 12G-SDI (11.88Gbps SMPTE 2082) single link BNC connectors (silver BNCs)			
B Input BNCs For inputs 37 to 42		6 x HD/1080p (1.485Gbps / 2.97Gbps) Inputs. Serial digital interface As REC601/ SMPTE/292M / SMPTE424M via BNC connectors. Including 10 x 12G-SDI (11.88Gbps SMPTE 2082) single link BNC connectors (silver BNCs).			
c GPIO		44x GPI Tally/GPO Outputs Assignable GPI / GPO Isolated contact closures via 2 x 25 way D Type. Assignable as GPI or GPO.			
D AES/LTC		4 x AES inputs and 3 x AES outputs with 1 x LTC input. (AES formal name is AES3-2003). LTC is Linear (or Longitudinal) Timecode.			
E	Reference	1x Ref In and 1x Ref out			
F	Network	3x 10/100/1000 base T			
G	USB	2x USB3 - for external memory device or hard drives			
H Serial		2X RJ45, 4 x RS422 serial ports			

Control Surface

Overview

Note: This section of the manual is an overview of the control surface, further details related to button interaction and functionality will be explained in detail.

The Control Surface

The layout of the Masterpiece Control Surfaces is best explained by breaking down the control surface into sections. Moving around the control surface counter clockwise in the diagram below, each numbered item will be explained in this section of the manual.



Source Selection Crosspoint Buttons and Colored Mnemonics

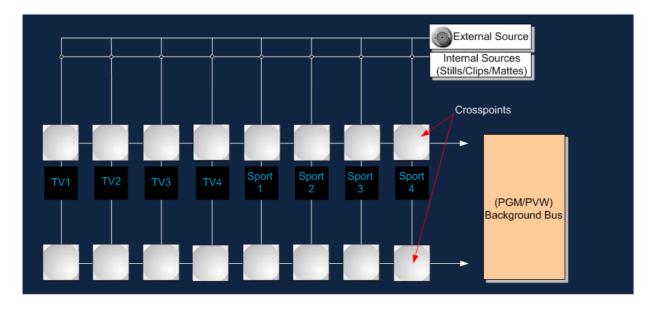
The Masterpiece Control Surfaces has two rows of source selection buttons, the top being the Program selection buttons and the lower being the Preview buttons (PGM/PVW).

A Bus button (crosspoint button) when pressed creates a matrix crosspoint, once setup correctly, the circuit tells the mainframe to route the source to an output. Masterpiece allows any physical input source, any Store or Matte to be mapped to any crosspoint button.

Program

Example of Program/Preview Source Selection Buttons

The source selection buttons for each function form a crosspoint bus which is fundamentally a switching matrix with the incoming signals forming the vertical parts of the matrix and the bus outputs the horizontal parts.



There is a row of Mnemonics between the key bus and program/preset (A/B) Bus buttons. This will display information relevant to the source allocated to each button. The mnemonics provide a display of 64 pixels wide by 48 pixels high for each column of buttons.

Mnemonics

Mnemonics on Masterpiece display the name or icon assigned to the source that is set for that crosspoint button. The mnemonics can be set to display either text or a basic image, this is done in the Crosspoint menu and will be explained in the Crosspoint section of this manual.



OLED User Function Buttons

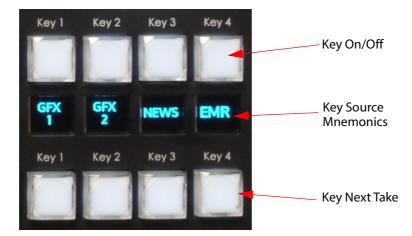
The OLED User Function Buttons can have Macros, DMEMs or Snapshots assigned to them. The OLED buttons can have either text or color images assigned to them to accompany the assigned function.



Key Layer On/Off and Key Next Take

The top row of buttons turn On/Off Key layers 1 to 4. When selected the button will light up, when live to air, the button will be red. The source mnemonics display the name of the source assigned to the Key.

Key Next Take when selected (lit up), when the **[Take Next]** button is pressed, it will enable the Key On/Off button above.



Take Next

The Take Next function will enable a Wipe, Mix, Matte Mix, Reverse or Flip Flop transition between video sources and the currently selected audio sources (audio sources selected on the OLED buttons below the audio faders).

Note: If under Automation control, the "Take Next" button drives the automation system.



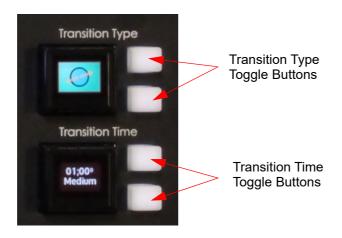
Transition Type and Transition Time

The Transition Type toggle buttons will toggle up and down through the available transition wipes. When the required transition type is reached, press the OLED button to confirm the selection.

Touching the OLED button a second time will display the "Macro" selection menu on the Masterpiece control surface GUI.

The Transition Time toggle buttons will toggle up and down through the Fast, Medium and Slow transition times. In their default state, "Fast" is an immediate transition (00.00) sec, "Medium" takes 1 second (01.00) to transition and "Slow" takes 2 seconds (02.00) to transition. Touch the OLED button to select the required transition time.

Touch the OLED button a second time and the Video Transition parameter menu will be displayed on the Masterpiece control surface GUI. Here you can set up a user defined transition time.



FTB/ATS

7

8

This is the Fade to Black/Audio to Silence (FTB/ATS) button. The button is protected with a flip up lid to stop anyone accidentally pressing the button. When pressed, the button will flash red and any video source going live to air will go black and any audio source going live to air will be silenced. The button will light up and activate the Fade to black and Audio to Silence transition.

Note: As detailed in the User Config - Mixer Outputs section.

Note: A second press of this button during the transition to black or back to a live picture will complete the transition.



PFL (Pre Fade Listen)



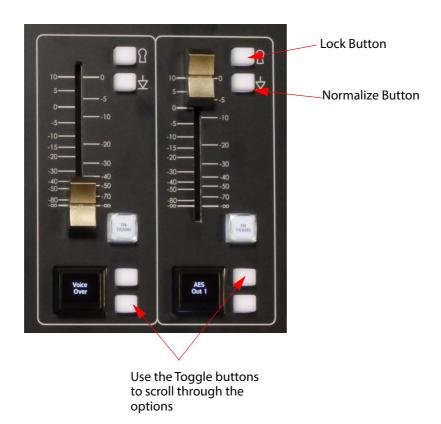
These buttons are for a future use.

Assignable Motorized Faders

The Audio Faders are assigned to an audio function using the toggle buttons and OLED buttons below the faders. Once assigned, the faders will directly work with the on-screen faders on the Masterpiece control surface GUI.

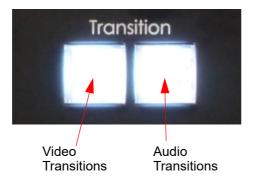
The "Normalize" button when pressed, will automatically move the slider back to the default setting. The "Lock" button will lock out the set position of the slider, so that if the slider is moved, it will automatically go back to its position where the lock was added.

Note: The Normalize value is the value last set value by the automation.



Break Away Video/Audio Transitions

This will enable/disable the ability to transition video or audio separately or both together. When the buttons are lit, you can transition, when they are not lit, a transition can not be done. You can transition video without audio, or audio without video.





9

Touch Screen Graphical User Interface (GUI)

11

The touch screen GUI allows you to setup audio levels, audio and video transitions, setup stores and Key Layers.

Setup and Configuration is done using the external GUI.



Masterpiece Menu Operation

The Graphical User Interface

Masterpiece is controlled using two different GUIs. The GUI on the masterpiece control surface is mainly used for monitoring and operational tasks, such as; Audio Controls, Audio and Video transitions, Key selection and control and Store selection.



The large Touch screen GUI (customer supplied option) is used for all setup and configuration functions.



Touch Screen Monitor Menu Overview

Configuration and setup of a Masterpiece system is driven using the intuitive menu system on the touch screen or mouse pointer driven Graphical User Interface (GUI). The type of GUI monitor used is a customer selected option, but the menu structures will be identical. The menu structures are clear and allow the user to quickly move from menu to menu when setting up or using a Masterpiece production switcher.

GUI Menu Layout Overview

Setup, Effects and System Configuration menu selection is done using the buttons down the left side of the menu. Parameter controllers are on the right side of the menu and consist of onscreen rotary controls and sliders (these can be attached to the physical rotary controls and joystick on the control surface). Navigation, Copy & Paste, Undo/Redo, Macro Record and Modulation Assign buttons are situated at the bottom.

All the menu functions, options and parameters are displayed in the center area of the menu.



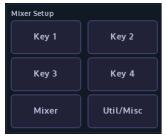
- 1 Menu Selection Buttons
- 2 Selected menu functions and options

- 3 On-screen Rotary and Slider Controls and Integer Buttons
- 4 Mainframe Identity so the operator can see which switcher they are connected to at a glance on every menu.
- 5 Menu Navigation and Control

Menu Selection Buttons

The information below highlights the function of each button.

Mixer Setup



Effects Memories



System Configuration

System Configuration					
Crosspoints	Aux Buses				
User Config	Panel Config				
Filing System	Peripherals				
Shortcuts	Eng Config				

Mixer Setup:

These buttons are used to setup the Key Control Actions for Keys 1 to 4 Full, Linear, Luma and DVE setup. Mixer Transitions and Bgnd/Mixer DVE and DVE allocation. Mixer Bus Crosspoint Source Setup (Keys 1 to 4 and Program/Preset Video/Audio sources).

Effects Memories:

The DMEM menu allows the user to quickly select and load effects memory files.

The Macro button enters the main macro setup menu. The Store button enters the main Store setup menu.

System Configuration:

As the name suggests, these are the main system configuration menus. Here the user is able to setup Crosspoints, Mixer Outputs, Aux setup, Button Maps, Control Surface and GUI Preferences, GPOs, Store Setup etc.

The Filing System button enters a menu where the filing system information for all DMEMs, Config files, Snapshots etc. are kept. It contains the Import/Export of files menu where Stills, Clips and individual files are imported and exported, the menu also contains the Backup, ReStore and Media Management menus.

The Shortcuts menus displays an on-screen number pad for saving and loading DMEMs.



Panel LockThe Panel Lock button as the name suggests, locks out all button functions on the Masterpiece
control surface and the large touch screen GUI. When enabled, the button will turn orange. If
you touch any button on the control surface or large touch screen panel, the {Panel Lock}
button will flash red for a few seconds.

The panel lock button can also be accessed by touching the "Star" button on the control surface GUI, and then touching the "Panel Lock" button.

Undo	Redo	Quick Macro	
Normal	Mod- Assign	Macro Record	

- **Normal** A press and release of this button normalizes all the adjustable values in the current selected menu.
- Mod Assign Assigns a modulation effect to a chosen parameter.
- **Macro Record** Will record any button press sequences in *"Real Time"* to the macro function, which can then be setup within the *Macro* menus.
- Quick Macro You can record a Quick Macro rather than using the normal 'Macro Record' button. The resultant macro is no different, but specifically does not 'Follow ME' and does not 'Use Delays'. More obviously, it facilitates the quick attachment of the macro onto a button without the need to manually save first.
- Undo & Redo Incrementally undo or redo.



- Copy Clone
Paste CloneThe Copy Clone and Paste Clone
buttons are used to copy button functions from either the
Masterpiece menus or from the control surface and allows the user to setup a system to their
own operational preference.
- **Copy & Paste** The **Copy & Paste** function enables the user to quickly and simply transfer values from one parameter to another. This function can be used to record and transfer one or two co-ordinates or even the detail of a whole Mixer.

(↑ Up	-
Back	Menu 8661	Forward

Menu Navigation The menu navigation buttons will step through menus in the direction selected. Back will go back to a previously visited menu or menus. Up will either come out of a menu structure to the "Connected" menu or go to the top menu in a menu structure.



Direct Menu Jump The direct menu jump facilitates direct access to almost any menu. The implementation is slightly different between the large touch screen GUI and the Masterpiece control surface GUI. At a basic level (on the Masterpiece control surface GUI), the only level), you can discover/learn the unique numeric menu code (like a phone number) of any menu by navigating to it in the normal way. Once there, the menu number can be seen in one of two places, depending on the GUI in use. For the large touch screen GUI, it is shown on the **{Menu Jump}** button under the 'UP' button. On the Masterpiece control surface GUI, it is shown on the numeric keypad, accessed by touching the "**Star**" pop-up button.

In order to direct-jump to a menu, all you need to do is to bring up the pop-up keypad, type the number and touch the **{Enter}** button. The details are slightly different, depending on the GUI:

 On the Masterpiece control surface GUI, touch the "Star" button to show the 'Star pop-up'. Use the "Direct Menu Jump" keypad to enter the menu number. The number is shown on the "Enter" button at the top of the keypad. Touch the green "enter" button to jump to the menu. This works for pop-up menus as well. Corrections can be made during number entry by using the "backspace" button.

If the entered number does not match any menu, no jump will occur, and the Star pop-up menu will stay open. The "**enter**" button (still showing the entered number) will go **red** to indicate the problem. This can be corrected by backspacing, or by just entering a new number afresh (this replaces the previous number).

• On the large touch screen GUI menu, Touch the '**menu number**' button (the one labeled "Menu Jump" or with "Menu" followed by a number - just below the 'UP' button). This shows the 'Direct Menu Jump' pop-up. From the keypad in the center of the pop-up you can type the number for the required menu, and press enter to do the jump. Error handling is very similar, except the enter button flashes just briefly red to indicate a problem.

Jumps will always occur on the GUI they are requested on. There is a strong correlation of menu numbers between the GUIs, though due to menu differences not all numbers are available on both.

The large touch screen GUI menu, has two additional features:

- A 'scrolling' history is shown on the left of the pop-up. Any of the previous ten menus can be jumped to by pressing one of the buttons on the left. Note that a jump to a menu in this recent history will move that entry back to the top of the list, rather than add another instance of it.
- Also available is a '**Favorites**' menu system. This works like the preset buttons on your car FM radio. To use once you're in a menu that you want to save as a '**Favorite**' open the 'Direct Menu Jump' pop-up and press and hold one of ten buttons on the right (underneath the 'Favorites' label). After about 2 seconds, the title of the menu will appear in that button. Use is the same as the history buttons. Overwriting favorites is possible. Currently it is not possible to remove favorites.

They are saved in the Panel Config file.



Disable Tracking Disable Tracking - This is a one button press to disable all the tracking elements set in the "Panel Config-Preferences - Tracking Preferences" menu. When selected, Menu Tracking, Store Tracking, Layout Tracking, Mixer & Bus Tracking, Xpt Button Tracking and Crosspoint Tracking are all disabled.

Using the GUI Menus



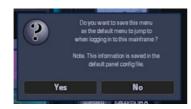
- 1. Title Bar
- 2. On-screen Rotary and Slider Controls and Integer Buttons
- 3. Attachers with Parameters

Title Bar

All menus have a title bar situated at the top of the menu, the title bar Shows the full title of the current menu. A second line in the title bar will indicate the mainframe the system is connected to, or that it is controlling a particular Background or Key.

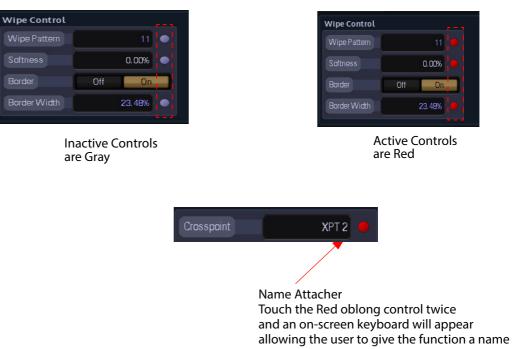
Note: Touching the Title Bar at the top of the page will allow the user to return to the menu page's original state, as would be the case if leaving the menu and then re-entered it. Adjustments to attacher parameters remain unchanged; it just acts as a shortcut to the original combination of attacher boxes.

Note: Touching and holding the title bar will display a dialog box asking if the user wishes to save the menu as the default logging in menu.



On Screen Control

On the right hand side of the menu are the rotary and slider controls, these are linked to parameters within a selected attacher. The parameters can be adjusted using the on-screen rotary/slider controls, the physical rotary controls on the control surface. When active the parameter indicators will turn RED as shown below.



Examples of Attachers

Other Menu Functions



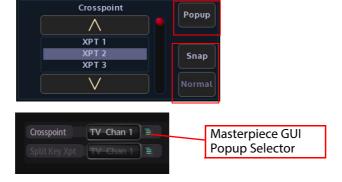
Menu Link buttons allow the user to enter a sub-menu, mainly shown at the bottom of menu's.



When pressed the Action buttons apply the selected action to a menu. The buttons go Green when active.

Action Buttons

Menu Link Buttons



Pop-up List Selector

Buttons

Popup - Touching this button will display an "options dialog box". This allows the user quick access to all options available in the selected parameter, without having to use the rotary control to scroll through all the options.

Snap & Normal - The **Snap** button when pressed will jump a parameter to an incremental **Snap & Normal** value.

The **Normal** button has two states, when it is illuminated Green this indicates that the currently selected parameter is in its default state. When the rotary control is turned, the button will turn Orange, denoting that the currently selected parameter's value has been changed, Press the button and the parameter will revert back to its original default state, the button will once again turn Green.



Time and Timecode Adjustments

It is worth mentioning that some menus described in this manual will have the option of adjusting the duration of **Hours**, **Minutes**, **Seconds** and **Hundredths**, as shown in the diagram the adjustment can be made using either the parameter controls or using the numeric keypad (by touching the popup button).

This Example: - Transition Time: 01:07

This Shows the duration as, 01(second):7 (frames)

On-Screen QWERTY Keyboard



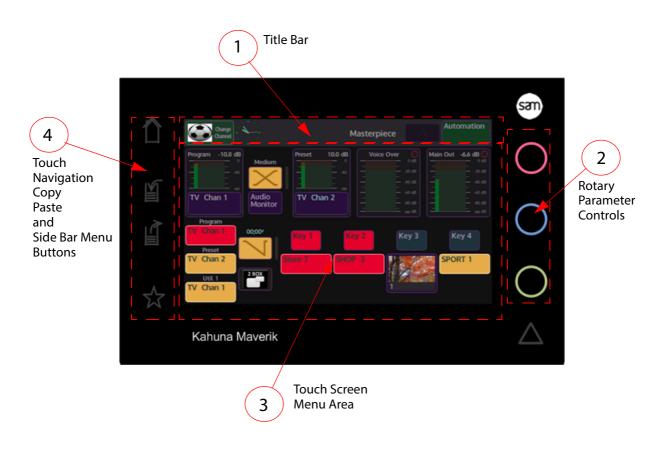
Some menus have name attachers, touching the red oblong twice will display an on-screen QWERTY keyboard that can be used to enter text.

Enter the chosen name (text entry is displayed at the top of the keyboard dialog box), then press **"Enter"**. To return to the original menu screen if no changes are made to a parameter, press the **"Cancel**" button on the keyboard.

Text can also be typed into name attachers using a USB keyboard connected to the mainframe.

The Masterpiece GUI

The Masterpiece GUI is part of the physical control surface, it is mainly used for monitoring the status of the of Masterpiece; Key layers, Program/Preview outputs and Audio/Video transition setup



Information and Title Bar with a Swipe Function



The Title Bar displays the name of the current menu. Swiping a finger in the "Swipe Area" in a left to right action will go back through the previous menus. If the user wishes to go forward then swipe in a right to left motion.

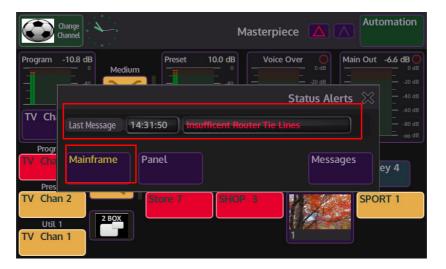
There is also an "Up" or Back button that will back to the previous menu.

Status Alert Triangle

An "Status Alert Triangle" may be displayed in the information bar, as shown below. This is to alert the user to a possible problem that may have occurred.



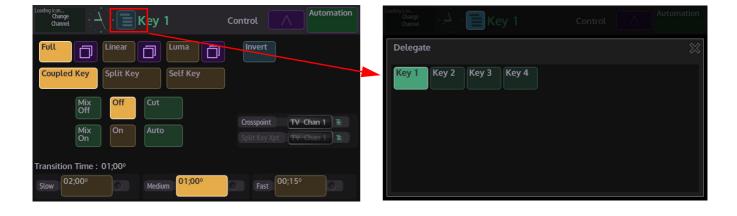
Touch the triangle and a "Status Alert" dialog box will appear. An alert message will be displayed in the center of the dialog box menu.



There are 3 menu link buttons in the menu, if the name text on the menu link buttons is a yellow color, it indicates that there is a problem within that menu. Touch the button to display the cause of the alert.

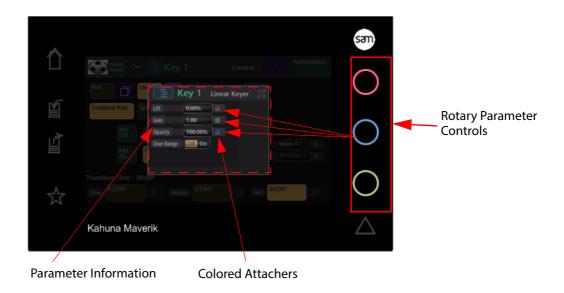
Delegates Menu Button

If the user touches the blue Delegate button at the top of a menu, then a **Delegates** menu will appear (in some menus) over the current menu. The Delegates menu gives the user selection options. In the example below, allowing you to select a different Key.



Rotary Parameter Controls

The rotary parameter controls adjust some parameters within menus. The colors are directly linked to the "Colored Attachers" displayed at the end of some parameters. Adjusting the rotary controls will adjust the parameter information.



Note: The Colored Attachers will be explained in full later in this section.

Touch Screen Menu Area

This is the menu selection area (marked in red in the menu below), where the user selects which menu they require, turns functions On/Off, adjusts parameter controls or steps through to sub menus.



Note: How the menus work will be described in full later in the section.

Touch Navigation Buttons



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Home Navigation Button

The **Home** button - the button is blank until touched, when touched it will turn blue. When in any other menu than the Home menu, touching the Home button will switch back to the home menu (shown below).





Copy Navigation Button

The **Copy** button - the button is blank as a default, when touched the button will turn a purple color and flash, indicating that it is ready to copy. As an example, this allows the user to copy one buttons functionality (Wipe, Auto, Cut etc.) ready to be pasted onto a User Function button. Notice that the copy button on the Soft GUI is also flashing. When finished, the button will return to its default blank state.



Paste Navigation Button

The **Paste** button - the button is blank as a default, when touched the button will turn a purple color and flash, indicating that it is ready to paste the copied function. It allows the user to paste the copied functionality (mentioned above) onto a User Function button. Notice that the copy button on the Soft GUI is also flashing. When finished, the button will return to its default blank state.



Star Navigation Button

The **Star** button - the button is blank as a default. Touch and hold the button, the button will turn purple and a side bar menu will appear in the current menu (as shown below) with options which include: Macro Record, Normalize Values and set a Favorite menu. Touch and hold the lit star button and the side bar menu will close and the star button will go back to the default setting.

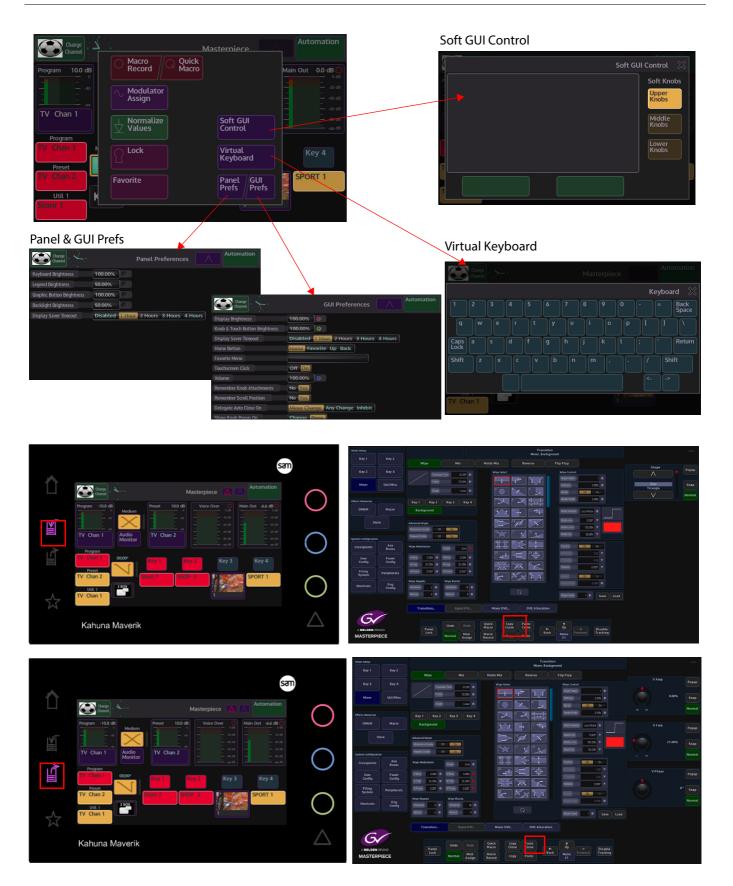
How to use Copy and Paste

There are several ways the user can copy and paste button functions, parameters etc. using the Masterpiece GUI or the Touch screen GUI.

The **"Copy Clone"** and **"Paste Clone"** function is used to copy button functions, almost any button function can be copied and cloned from the Masterpiece control surface. Button functions would normally be copied onto one of the OLED buttons, for example as quick access to a button function that may be in a menu away from the menu that was currently being used. Copying button function on Masterpiece is quick and easy and just takes a couple of seconds.

There are two ways to start the copy process, the user can either press the **"Copy"** button on the Masterpiece GUI (shown below left), or press the **{COPY CLONE}** button on the Touch screen GUI (shown below right).

The buttons will flash until the **"Paste"** button on the Masterpiece GUI is pressed or the **{PASTE CLONE}** button is pressed, once again the buttons will flash. A dialog box will be displayed on the Touch screen GUI with a selection of Lamp options. Finally press the button that will have the clone function attached. The selected button will now have the cloned function attached.



Masterpiece GUI Menu Controls and Buttons

Buttons and controls within the Masterpiece GUI menus have to be explained, so the user is immediately aware of the state of a menu at a glance.



The way the colored buttons and attachers behave are all very important in understanding how to control and adjust functionality of Masterpiece.

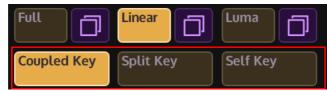
Menu Buttons, Controls and Gesture Controls

Menu Link/Menu Expander Buttons

Change hange Key 1	Control Auto	mation
Full Linear Luma Coupled Key Split Key Self		
Mix Off Cut Mix On Auto	C Change Change S Full	Key 1 Control Automation
Transition Time : 00;00° Slow 02;00° Medium 01	;00° Coupled Key Spl	
	Mix On	Over Range Off On Store 7
	Transition Time : 00;0 Stow	00° Medium 01;00° Fast 00;00°

Menu Link buttons are a blue color, touching a menu link button will open a sub menu with more parameter options. There is no set location in the menu for these buttons and may be placed anywhere within a menu.

Action Buttons



Action buttons are brown color. When and action button is touched (selected), the button will turn and orange/yellow color.

Toggle Buttons



Toggle buttons will toggle **On** then straight away go **Off** when touched. The border around the button will light up a bright green color, and stay lit until the users finger is taken off the button.

On/Off Buttons



When pressed, these buttons will switch the selected function On or Off.

Option List Select Button



Some parameters will have a green **Option List Select** button at the end of the parameter. Touching this button will open an options menu, allowing the user to quickly select one of a number of options available to them.

Colored Attachers



When a menu has parameters with colored attachers, it shows that a parameter can be adjusted using the rotary controls on the right side of the Masterpiece GUI. On entry to a menu, if the menu has only 1 colored attacher, it will be lit the same color as the top rotary control, if there are 3 or more colored attachers the top 3 will be lit the same color as the 3 rotary controls to show that they can be adjusted.

Any attachers that are not lit can be attached to the rotary controls by touching the first (top) unlit attacher and all 3 will light up the same color as the rotary controls.

Popup Menu Controls

The rotary controls also have a "Popup Menu" feature, where an overlay menu will appear from the right hand side of the Masterpiece GUI display.



Pressing down on any of the rotary controls, then releasing will activate the popup menu, the popup menu will display parameters linked to the rotary control that was just depressed. The popup menu will always have the same controls each time it appears; and contains the parameter value from the parameter attached to the rotary control (at the top).

Snap - when pressed, notice that the parameter has jumped to an incremental value, normally in steps of five or ten. The border of the button will turn red

Normal - when pressed, the parameter will revert back to its original default state, the border of the button will once again turn Green.

Previous - this will return the parameter back to a previous user defined state.

Numeric Keypad

Pressing the **{Numeric Keypad}** button in the popup menu, will display the on-screen numeric keypad.

Note: To empty the numeric keypad display, touch and hold the "return" button.

To exit the numeric keypad, touch the "X" button.

Change Channel		Key 1		Control		Auto	omation	ſ	Return B	utton
Full	Lin	Lift 15.21%	X							
Coupled Key	Sp L	Snap	15.00%	7	8	9	/			
Mix Off		Normal	0.00%	4	5	6	x			
Mix On		Previous	0.00%		2	3	·			
Transition Time : Slow 02;00°	01;00°	Numeric Keypad		0	+/-		+			

The numeric keypad allows the user to directly enter values for the attached parameter. It also has a second function as a calculator.



Scrolling Gesture Controls

Change Channel	GUI Preferences Automation
IOUCNSCREEN CUCK	
Volume	100.00%
Remember Knob Attachments	
Remember Scroll Position	No Yes
Delegate Auto Close On	Minor Change Any Change Inhibit
Show Knob Popup On	Change Press
Animation Level	Off Gray Out Some Most All 🖹
Fader Value Pop-ups	No Yes
Delegate Info Pop-ups	No Yes
Meter Mode	Peak
Prefade Voice Over Meter	Off On

Touch menu and with the same movement swipe upwards

Some menus are longer in length (have more parameters) than others, this means that the bottom of the menu will be below the viewing area of the Masterpiece GUI screen. Place a finger on a parameter and hold, whilst holding, scroll upwards, the menus can be "flicked" upwards or held and pushed upwards. Once the bottom of the menu is reached, the menu will "bounce" downwards slightly.

How to Save

Saving Files

Masterpiece is a very flexible system and gives you a number of options to Save. There are Switcher States, Rolling Switcher States, Effects Memory Recalls, individual Configuration Files and Snapshots. This sounds like a lot of options, but how they are applied will depend on what you want to do with the system.

Switcher States

The fastest way to save the current system setup state is done by using the "**Switcher States**" Overwrite option. Touch the "**Up**" button to get to the "**Connected to...**" menu and the Switcher States table is displayed in the center of the menu.

Mixer Setup								Conn	ected to Mast	erpiece				
		Switcher Stat	e					Last Lo	aded Configs & S	witcher State				
Key 3	Key 4	Load	#1+	04 Mar 20	019 10:03	-	Overwrite	Eng	Swr State			ixend #1		
Key 3	Key 4	Load	#2	23 0 ct. 20	017 14:00	-	Overwrite	User	Swr State			ixed #1		
Mixer	Util/Misc	Load	#3	13 Sep 20	017 19:50	-	Overwrite	Panel	Swr State			Fixed #1		
		Load	#4	13 Sep 20	017 18:48 100:2017	-	Overwrite	Rollin	g Switcher State					
Effects Memories		Load	#5	12 Sep 20	017 18:51	-	Overwrite		Load		Save			
DMEM	Macro	Load	#6	23 0 ct 20	017 12:33	-	Overwrite							
		Load	#1	12 Sep 20	017 16:13	-	Overwrite							
St		Load	#8	08 Sep 20	017 10:16	-	Overwrite							
		Load	#9	08 Sep 20	017 09:34	-	Overwrite							
System Configuratio		Load	#10	07 Sep 20	017 16:37	-	Overwrite							
Crosspoints	Aux Buses	Load	#11	07 Sep 20	017 15:29	-	Overwrite							
User	Panel	Load	#12	07 Sep 20	017 13:42	-	Overwrite							
Config	Config	Load	#12	07 Sep 20	017 12:04	-	Overwrite							
Filing System	Peripherals	Load	#14	07 Sep 20	017 11:22	-	Overwrite							
	Eng	Load	#15	07 Sep 20	017 08:32	-	Overwrite							
Shortcuts	Config	Load	#16	12 Sep 20	018 10:30	-	Overwrite							
		State		Defaul										
Gv			Panel			Quick Macro	Copy Clone	Paste Clone				Disable		
			Lock	Normal	Mod- Assign	Macro Record	Сору		Back	Menu	Forward	Tracking		

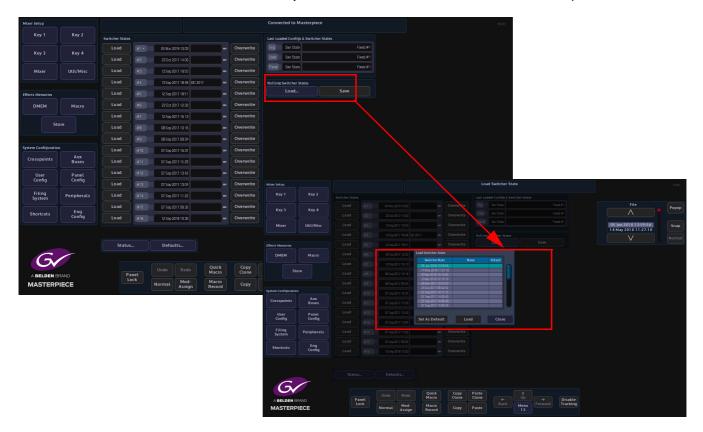
The table of 16 fixed Switcher States are used as a one button press **"Save and Load Everything"** function that can be written to an unlimited number of times. Switcher State -Overwrite allows the user to save the current **"Switcher State"** at different points in time. This is very useful as you may want to keep the current original saved state, but may also want to add a newly created DMEMs or add Stores etc, which can be saved in one of the Switcher State slots. This is done by pressing the **{Overwrite}** button. The date and time that the Switcher State was saved (overwritten) is displayed in the list. By touching the boxed area next to the time and date, a name can be given to the Switcher State using an on-screen keyboard. Touch **{Load}** button to load the saved Switcher State.



When overwriting an already saved switcher state, a dialog box will be displayed, touch "OK" to proceed. **Caution!** - If you press the **{Clear File}** button, the switcher state will be erased.

Rolling Switcher States

Rolling Switcher States is the method of quickly saving the overall state of the system. This allows the user to save up to 100 Switcher States in to a **"Rolling List"** of saved states, which will keep rolling over after 100 states have been saved. The **"Rolling Switcher State"** function is different to the Switcher State Overwrite mentioned above, because when the user touches the **"Load"** button, the menu will change to display a list of saved states and the option to enable/disable Stores, Panel, User and Eng Configs and DMEM functions when loading a saved state. You can also set any one of the switcher states as the default startup state.



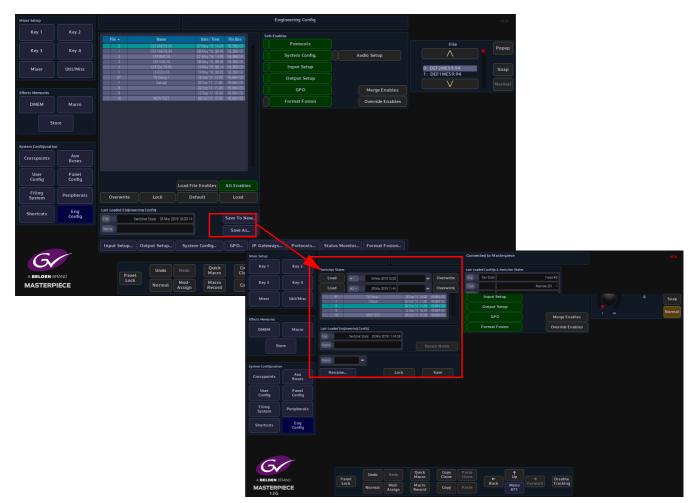
Each time the {Save} button is pressed a switcher state is saved into the rolling list.

Config Files - Saving and Loading

The User, Panel and Engineering Config files are very important when setting up a system and should be saved regularly so that your configuration state is not lost. User, Panel and Engineering Configs can have up to 1000 different config setup states each. When the config setups are saved, they are listed as files in a table in the menu, so that the user can easily see the time/date that a config was saved, allowing the file to be instantly loaded.

Note: This example will show how to save a Engineering Config file. Saving or Loading a User Config or Panel Config file is done in exactly the same way.

The Configuration files are used to determine the startup state of the system and it is important to know what state the "Sub-Enables" within the config file are in, i.e. what is enabled/disabled when saving the config files, when creating DMEMs and Macros. The "**Sub Enables**" list of buttons, to the right of the config files table, allows you to select or de-select functions that will be saved within a file. If the tab next to the enables button is green, this means that the enabled function is included in the original saved file. If the tab is gray, the function is not included. If the enabled function is selected (green) when the config is saved, the function will be included in the saved config.



Saving a Config File

To save a configuration file, touch the {**Save As...**} button and a new menu will appear. The "**Engineering Config - Save As**" menu allows you to select a new slot in the table and save an Eng Config file. Use the "**Name**" attacher box to give the config file a name, touch the red oblong at the end of the "**Name**" attacher and an on-screen keyboard will be displayed. Type a name for the file, then when finished touch the {**Save**} button. There are 1000 slots available to

save to.

If you touch the **{Save As...}** button when an existing saved config file is selected, a dialog will be displayed asking the you if you want to proceed to save the file.

Loading a Config File

To load a config file, simply select a file by touching it in the config file table and then touch the **{Load}** button.

You can choose to enable or disable any of the "**Sub-Enables**" before touching the Load button.

Mixer Setup						Engi	neering Config				HDD
Key 1	Key 2			Date / Time		Sub-Enable					
		File A	DEF2WE59.94	07 May 16 14:24	FILE SIZE		Protocols			File	
Key 3	Key 4	0	DEF1NE59.94	08 May 16 08:46							Popup
		2	DEF2ME 50	07 May 16 14:29			System Config.	Au	dio Setup		
Mixer	Util/Misc						Input Setup			0: DEF2ME59.94	Snap
										1: DEF1ME59.94	Shap
		6 ⁴	TV Setup 1	18 Sep '17 14:20	49.664 KB		Output Setup				
		8	Setup2	02 Det 17 11:26 02 Det 17 11:29	49.664 KB						
Effects Memories		9		12 Sep '17 16:34	49.664 KB		GPO		Merge Enables		
		10	MOR TEST	06 Oct 17 15:58							
DMEM	Macro						Format Fusion		Override Enables		
~	ore										
51	ore										
System Configuratio											
System Contrigoratio	"										
Crosspoints											
crossponits	Buses										
User	Panel										
Config	Config										
				oad File Enables							
Filing											
System	Peripherals	Overwrite	Lock	Default	Load						
		Last Loaded Engineerin	a Config								
Shortcuts	Eng Config										
	coming				Save To Ne	w					
		Name									
		Wallie			Save As.						
		Input Setup	Output Setup	System Config	GPO	IP Gateways	Protocols	Status Monitor	Format Fusion		
	/										
				Quick	Cop	Paste		†			
A BELDEN B		Panel	Undo R	Redo Macro	Clon		← L		Disable		
		Lock							Tracking		
MASTERF	PIECE			Mod- Macro ssign Record	Cop			Menu 87			
				And the cold							

Snapshots

Snapshots as the name suggests will take a snapshot save of the current system setup. They are applied to one of the OLED buttons on the control surface and once they are saved, they are an instant recall of the saved system setup.

Saving a Snapshot

Snapshots are very easy to use, just press an hold one of the OLED buttons until an audible "beep" is heard. The button will display "Snapshot" and the snapshot file number. Up to 1000 snapshots can be saved.



In the Filing System menu, touch the **{Snapshots...}** button to open the Snapshots filing system menu.

The menu displays a table with all the snapshots taken. to the right of the table, the enables associated to the snapshot are displayed.

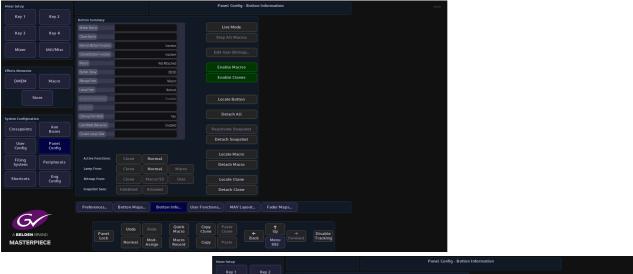
Mixer Setup								m - Snapsho ixer							
Key 1	Key 2					Bgn		Trans A		Util 1 A					
Key 3	Key 4		Start	27 Sep117 16 4 11 Mar119 16 1 30 Oct 17 15:2		PG	vî Xpt.	Modulatio		Crosspoint				File	Popup
Mixer	Util/Misc			11 0ct 17 14:0 16 0ct 17 13:4 10 0ct 17 14:2	8 21.504KB 5 21.504KB		T Xpt.	Transition					0: Star	t	Snap
		8		100ct 17 14:2 100ct 17 14:2 100ct 17 14:2	9 21.504 KB		IVE	Mix Wipe						V	
Effects Memories		10		30 0ct '17 15:2				Audio Tran						v	
DMEM	Macro					Key		Key 2 A		Key 3 A	IL Key 4				
						Mod	ulation	Modulatio		Modulation	1 Modul	lation			
St						Cros	spoint	Crosspoin	t (Crosspoint	t Cross	point			
							IVE	DVE		DVE	DV	/E			
System Configuratio						К	ayer	Keyer		Keyer	Key	rer			
Crosspoints	Aux Buses					Tran	isition	Transition		Transition	Trans	ition			
User Config	Panel Config														
Filing System	Peripherals	Name Start		Multiple	All Enabl	les									
	Eng			Dissolve	Contents	i Merc	e Enables								
Shortcuts	Eng Config	Export	Delete	Lock	Load	Overri	ide Enable:								
		Import/Export	DMEM	Still	5	Snapshots	Macr	05 Sv	witche	r States					
		Eng Config	User Config	Panel Co	onfig E	utton Maps	Icor								
Gr					Ouick	Copy Pas			•						
A BELDEN B	RAND	Panel	Undo		Macro	Clone Clo			↑ Up		Disable				
MASTERF 12G	IECE	Lock			Macro tecord	Copy			enu 807		Tracking				

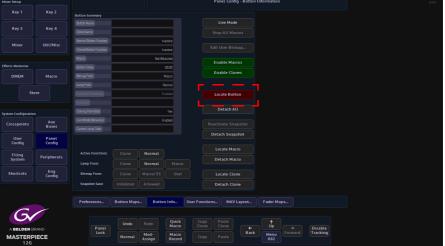
In this menu, Effects Dissolve can be added to an existing snapshot allowing you yo make creative effects.

Note: How **Effects Dissolve** works with Snapshots will be explained in another chapter in this manual.

Detaching Snapshots

Snapshots are attached to the OLED buttons when saved, you can detach a snapshot from an OLED button, so that a new snapshot can be saved. This is done in the "**Panel Config - Button Info**" menu.





To detach a snapshot touch the **{Detach Snapshot}** button and the button will turn red, then touch the snapshot button and it will be detached.

Detaching a snapshot does not delete the snapshot from the system memory, the snapshot can be re-loaded by selecting the snapshot in the table in the "**Filing System - Snapshots**" menu, then touching the **{Load}** button.

DMEM's

What is a DMEM

A DMEM or Dynamic Memory, saves set-up information related to a single system setup, which may contain information such as:

- Bus set-up (Crosspoints, Keyers, Wipes, Transitions)
- Macros
- DVE moves
- Effects Dissolve (Key Layers and Stores)
- Masks, Crops, Borders

DMEMs are saved using the number pad in the "Shortcuts" menu. From this menu, you are able to save up to 1000 DMEMs into the DMEM filing system.

DMEMs can be attached to the OLED user function buttons on the control surface allowing you to quickly recall setup states with effects.

Saving a DMEM

There are two ways to save a DMEM, both are in the {Shortcuts} menu.

- Load/Save Pad this menu allows you to save DMEMs and also save Stores and Engineering, User and Panel config files.
- Number Pad this allows you to save DMEMs.

Note: How **Effects Dissolve** works with DMEMs will be explained in the Effects Dissolve chapter in this manual.

Load/Save Pad

The Load/Save Pad allows you to quickly setup and save or load files such as DMEMs, Stores and config files. The menu also allows the user to setup Enables to enable/disable functionality within the selected file type.



To use the Load/Save Pad, to save a file. First, select the file type that you want to load or save, then use the number pad to enter the file number.

The next step is to select the required enables. You can do this by either touching each required enable option (it will turn green when selected) or you have the option to copy enables from the current file and save them to a new file or to overwrite the existing file using the **{Copy File Enables}** button.

Note: there are two basic types of "Save" operation within the Load/Save Pad menu:

- Saving a new file
- · Overwriting an existing file

When saving a new file, the user would usually manually select which enables and sub-enables they require. When overwriting a file, the user would probably want to reuse the existing enables from the file, so would use the "**Copy File Enables**" function before touching the {Save} button.











Panel

Last Loaded

Touch the {Last Loaded} button to display last loaded memories information.

Mixer Setup						Shortcuts - Last Lo	aded Memori	ies		
	Key 2									
Key 3	Key 4			Last Loaded N	temories		dulation			
				MEI		Memory	65 Insition			
Mixer	Util/Misc			Brg Config	Swr State	Fixed				
				User Corfig		Memory				
ffects Memories				Cr Parel Config	Swr State	Fixed	#2 lio Trans			
DMEM	Macro						2 ALL			
				D			dulation			
St							sspoint			
						Cancel				
System Configuratio										
Crosspoints	Aux Buses									
User	Panel	Effects Dissolve								
Config	Config									
Filing System	Peripherals									
	Eng Config									
Shortcuts	Canfin									

The popup menu displays the information from the last loaded memory file.

Number Pad

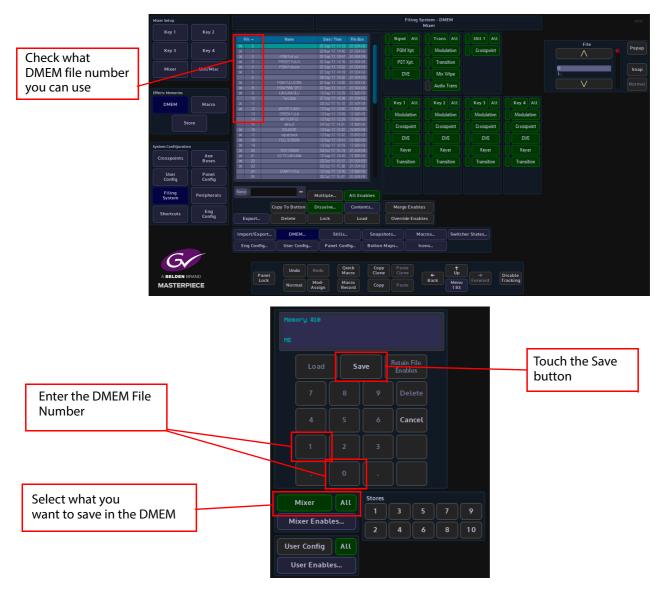
Touch the {Number Pad...} button to display the Number Pad menu. To save a DMEM using the "Number Pad" is a simple process used to enter the DMEM memory file number, then select the Mixer Enables, User Enables or Stores (you can only select one of them at a time) as part of the DMEM being saved.

Mixer Setup									Shortcuts						HDD
Key 1	Key 2						cts Dissolve				Merge Enables				
Key 3	Key 4						Paint Auto	Early Late	Enable		Override Enable		Duratio		Popup
Mixer	Util/Misc				Retain File Enables	St. Pro		Linear .						01;00	Snap
Effects Memories															Normal
DMEM	Macro				Cancel								Shape		
	tore														Рорир
	tore												Linear Cubic C		Snap
System Configurat	on			Stores											Normal
Crosspoints	Aux Buses	Mixer En													
User Config	Panel Config												Profile		Popup
Filing System	Peripherals	User Ena	ıbles											0.00%	Snap
Shortcuts	Eng Config														Normal
6		Load/Save I	Pad	lumber P	ad										
				Undo		Qui Mar	ck Copy ro Clone	Paste Clone		↑ Up					
MASTER 120	PIECE		.ock	Norma	Mod- Assign	Ma Rec	ro ord Copy	Paste	Back	Menu 141	Forward	Tracking			

When saving a new DMEM, look in the "Filing System - DMEM" menu, so that you can select a DMEM file number that is free.

Go back to the "**Shortcuts**" menu and enter the DMEM file number, then select what you want to save within the DMEM; Mixer, User Config or a Store.

If the information you have entered is valid, the **{Save}** button text will light up bright white. Touch the **{Save}** button to save the DMEM.



To update or add to an existing DMEM, again, if you are unsure of the DMEM file number, open the "**Filing System - DMEM**" menu and locate the DMEM file number. Make the change required to the system and then open the "**Shortcuts**" menu. Use the number pad to enter the DMEM file number and touch the {**Save**} button. A dialog box will be displayed asking you if you want yo continue. Touch "**Yes**" to continue and "**No**" to leave the menu.

Note: Pressing [CANCEL] at any point before saving will cancel the entire operation

When "**Recalling**" a DMEM, simply enter the DMEM number and then touch the {Load} button.

Enables

In the Shortcuts menu, you are able to select or de-select the enables functions within a DMEM.



Mixer Enables:

Override Enables - will override any enables that have been de-selected and turn the enable on.

Merge Enables - this function merges the enables currently set in the switcher with the enables saved in the file that is being loaded (a 'logical OR' of the enables).

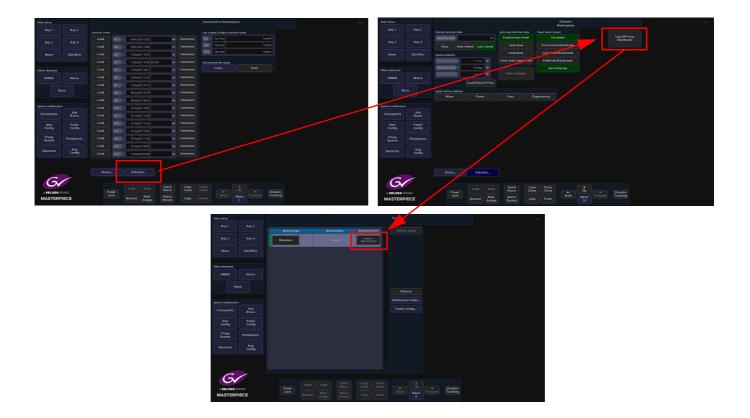
How to Save DMEM's

Video Setup

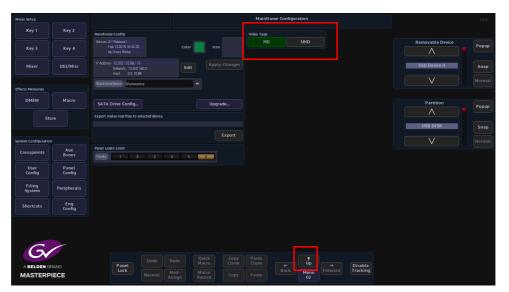
System Setup

This chapter is a guide to getting external and internal video sources through a Masterpiece mainframe quickly.

A good place to start is to decide what video format you want; either HD or UHD. In the "Connected To..." menu, touch the {Defaults} button, then in the "Defaults" menu, touch the {Log Off From Mainframe} button. Then finally, in the "Connect" menu, touch the {Mainframe Config} button.



In the "Mainframe Configuration" menu, you can select which "Video Type" you want to use; HD or UHD.



Touch the **{Up}** button to go back to the **"Connect**" menu then touch the **{Switcher login}** button to log back into the system.

The next section in this chapter will describe how to get a video signal through the system in HD. Using the system in UHD mode is a little more in depth because you have to decide whether you want to use 12G-SDI, Quad Link or 2Si formats and there are a few considerations to make when connecting up inputs and outputs (please read the 12G-SDI and UHD chapters in this manual).

System Config

In the **"Eng-Config"** menu, touch the **{System Config...}** menu link button to enter the "System Configuration" menu.

Using the "**New Standard**" parameter, scroll through the video standards and set the required System Standard, then touch the **{Apply**} button.

Mixer Setup						Engineering Con	lig - System C	onfigura	tion			HDD
Key 1	Key 2	System Standard			Ref	erence Status						
Key 3	Key 4	System Standard	1080 ₍₄ /59.94 A			nlocked No					New Standard	Popup
		New Standard	1080p/59.94 A 🔶			Present No					1080p/60 B	
Mixer	Util/Misc	UHJ Mode	Quadrant 25			Sync No					1080p/59.94 A 1080p/59.94 B	Snap
		Genlock				erlaced Yes					V	Normal
Effects Memories			OH On	Action On Next	Field	ame Rate 0.00						
DMEM	Macro	Genlock Phase	0.00 Lines	Action On Fie	Ld 1							
				Action On Fie	ld 2							
Sto		Background DVE										
			kground DVE									
System Configuration												
Crosspoints	Aux Buses											
User Config	Panel Config											
Filing System	Peripherals											
Shortcuts	Eng Config											
				Custom Confin	GPO	ID Cotorio				Format Fusior		
0		Input Setup	Output Setup	System Config	GPO	IP Gateways	Protocols	Stat	tus Monitor	Format Fusion		
- Gv												
		Panel	Undo	Redo Quici Macro	k Cop o Clor	ne Paste Clone	-	∱ Up		Disable		
MASTERP		Lock	Normal	Mod- Assign Recor				Menu 8731		Tracking		

Using the "Popup" selector will display a dialog box that gives you a visual set of video standard options to choose from.



Inputs and Naming

Signals to the system can be connected to one of the 40 available inputs on the mainframe. Touch the **{Eng Config}** button, then touch the **{Input Setup...}** menu link button.



Touch the "Name" attacher and give all the incoming sources a name for easy identification.

Outputs and Naming

In the "Eng Config" menu, touch the {Output Setup...} menu link button. In the "Output Setup" menu, use the "Name" attacher to name each output, then use the "Output Tally" parameter to set "Tally Now" to the output that is the "Program" output, and "Tally Next" to the preview output. This will add a red tally light to the "programme bus" and anything that is contributing to the program output e.g. Key layers etc.

Key 1 Key 3	Key 2						Output 1								
Key 2											SMPTE				
Key 2					No	w Next Iso1 Iso		Iso5 Is	soð Iso			HANC	VANC	BNC Output	
	Key 4												Yes		Popup
			AUX 0/P 2												
		C/P 3	AUX 0/P 3 AUX 0/P 4								Yes	Yes	Yes		
Mixer	Util/Misc	C/P 4 C/P 6	AUX 0/P 4 AUX 0/P 5								Yes	Yes	Yes Yes		Snap
		C/P 6	AUX 0/P 6								Yes	Yes	Yes		
		0/P 7	AUX 0/P 7								Yes	Yes	Yes		
		OVP 8	AUX 0/P 6								Yes	Yes	Yes		Normal
Effects Memories		OVP 9	AUX 0/P 9										Yes		
cifiects Memories		O/P 10	AUX 0/P 10								Yes	Yes	Yes		
			AUX 0/P 11										Yes		
DMEM	Macro		AUX 0/P 12											Now	
															Popup
														\wedge	
Stor															
														Off	
														On	Snap
														On	
System Configuration							-								Normal
							Output Ta	lly						V V	
Crosspoints	Aux								ISD 4			-			
	Buses		d Ersabled Inhibite				Now	011 🗕	SD 2	4 01	• •	12	011 💿		
		SMFTE 302 Fayloa	IU ENGLISH INTERN				Net	Off 😐	ISD 5	5 08	. 150		Off	Next	
User	Panel		Ott On				NOA.		130 0		•				Рорир
Config	Config		00 00						ISD 6	6 0#				\wedge	
			011 On					011 🔍							
							-								
Filing	Peripherals		No Yes					Off 🔍						Off	Snap
System							150.3	0#							
							190.9	01							
Shortcuts	Eng														Normal
Shortcuts	Eng Config														
		Input Setup.	Output Setup	System Config	GP O	IP Gateways	Proto	ols	State	us Monitor	Eo	rmat Fu	ision		
		and a percept			للقصار										
	/														
				Quick	Cop	/ Paste			†						
			Undo	Redo Macro	Clon	e Clone			Up						
A BELDEN BR/	AND	Par	net				+				D	isable			
MASTERPI	ECE	Lo	ck Normal	Mod- Macro		/ Paste	Back		lenu			acking			
MASTERPI	ECE		Normat	Assign Record	cop	raste		87	771						

Make sure that all the outputs have "HANC and VANC" turned On.

Aux Buses

Touch the **{Aux Buses}** menu link button. Aux Bus 1 to 14 are the same as Outputs 1 to 14 (HD video format only) at the rear of the mainframe. This menu is used to set the sources going to each output.

Mixer Setup					User	Config - Aux Bu Aux 1	ses				HDD
Key 1	Key 2						AuxBa	-			
		# Name			Panel	File Macro Pro	ALCEL	۱ <u> </u>	Aux 1 🟓	Aux Bus	
Key 3	Key 4	1 AUX 1	0/P1	XPT 161 - Mixer Op1			Crosspi				Popup
										\wedge	
		3 AUX 3					AuxNa	me AUX 1			
										Aux 1	
Mixer	Util/Misc	5 ALX 6								Aux 2	Snap
										AUX Z	
										V	
							Pane	el Lock	Lock All	V	
ffects Memories				XPT 1 - BNC 1							
DMEM	Macro						File	Lock	Lock All		_
										Crosspoint	Popup
										\wedge	ropor
							Maci	o Lock	Lock All		
St	ore	15 ALX 15	Internal	XPT 1 - BNC 1						BNC 38	
		16 ALX 16	Internal	XPT 1 - BNC 1						Mixer Op1	Snap
		17 AUX 17 18 AUX 18	Internal	XPT 1 - BNC 1 XPT 1 - BNC 1			Proto	tol Lock	Lock All	Mixer Op2	Jup
		18 AUX 18	internal Internal	XPT 1 - BNC 1							
stem Configuratio		20 AUX 19	Internal	XPT 1 - BNC 1						V	Norma
		20 AUX 20 21 AUX 21	Internal	XPT 1 - BNC 1							
Crosspoints	Aux	22 AUX 22	Internal	XPT 1-BNC 1					x Override		
	Buses	23 AUX 23	Internal	XPT 1-BNC 1				~	x Overniae		
		24 AUX 24	Internal	XPT 1-BNC 1							
User Config	Panel Config							Nar	ne '???' & Next		
Filing System	Peripherals										
Shortcuts	Eng Config										
Shortcuts	Config										
		Mixer Outputs	Store Setup	GPOs	Modulatio		Mattes	Audio			
G				Quick Co	py Paste						
A BELDEN B	RAND	Panet	Undo Redo	Macro Clo				Dis	able		
MASTERF 12G	PIECE	Lock	Normal Mod- Assign	Macro Record Co	py Paste	Back	Menu 8611		king		

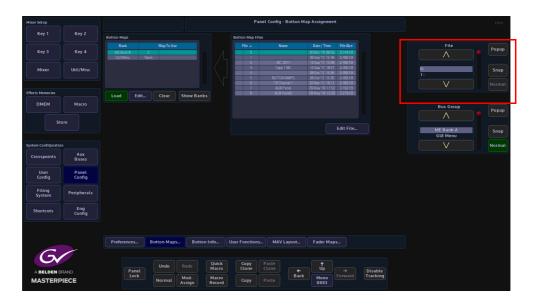
Use the "**Aux Bus**" and "**Crosspoint**"" parameters to set the PGM, PVW and CLN outputs, Normally, in HD format this would be O/P 1, 2 and 3 at the back of the mainframe.

Use the "**Name**" parameter to give the outputs a name i.e. 1 = Pgm, 2 = Pvw and 3 = ClnTouch the "Crosspoint" popup and in the popup window, touch the Mixer O/P button and then set "Output 1 as "**Mixer O/P 1**", Output 2 as Mixer O/P 2 and Output3 as Mixer O/P3.

You can now setup all other sources for the Outputs.

Button Maps

Touch the **{Panel Config}** button, then touch the **{Button Maps...}** menu link button. The "**Button Map Assignment**" menu will now be displayed. Button mapping allows you to map external and internal sources to the crosspoint buttons on the masterpiece control surface. Button maps are easy to setup and are the preferred way to setup crosspoints on a control surface.



To create a New Button Map, first, select a **File position** where the new button map is going to be saved.

While still in the main menu, press the **{New...}** button and the **Edit Button Map** menu will be displayed.

Use the "**Crosspoint**" parameter to alter the button map. When satisfied with the setup, press the **{Save to File...}** button to save the new button map.



The new button map will now be saved into the selected file position. Up to 1000 button maps can be saved.

Once the "Save to File" button has been touched, the menu will change back to the "Button Map Assignment" menu.

Mixer Setup					Pan	el Config - Butto	n Map Assignme	nt			HDD
	Key 2	Button Maps			Button Map Files						
	Key 4	Bank ME Bank A	Map To Use		File A	Name	Date/Time 20 Mar'19 08:5			File	Popup
Mixer	Util/Misc				2 3 4	IBC 2017 Copy 11BC	06 Sep '17 15:4 13 Sep '17 13:3 12 Sep '17 18:5 06 0 ct '17 15:2	8 2.492KB 7 2.492KB 6 2.492KB		0:	Snap
Effects Memories					5 6 7 8	BUTTON MAPS TV Channel 1 AUX Panel AUX Panel2	26 Oct 117 15:3 22 Nov 117 16 1 09 May 118 11:5 09 May 118 12:0	7 2.492KB 2 3.152KB			
DMEM	Macro	Load Edit	Clear SI	now Banks	•	AUX Panoz	U9 May 16 12 C	9 7519/0		Bus Group	Popup
St								Edit File		ME Bank A GUI Menu	Snap
System Configuratio											Normal
Crosspoints	Aux Buses										
User Config	Panel Config										
Filing System	Peripherals										
Shortcuts	Eng Config										
6		Preferences	Button Maps	Button Info	User Functions	MAV Layout	– Fader Ma	ps			
	RAND	Panel	UndoR	edo Quick Macro		Paste Clone	t Up		Disable		
MASTERP		Lock	Normal As	od- sign Record	Сору		Ack Menu 8883		Tracking		

The saved button map will be displayed in the table at the top of the menu, and also displayed as "**Mixer Bank A**" in the bottom menu.

Touch the {Load} button to load the button map onto the control surface.

User Config - Mixer Outputs

Masterpiece has a maximum of 3x Mixer outputs, all of which are programmable. This means that you are not restricted and can assign any one of the outputs to be an Mixer outputs. All Mixer outputs are programmable which means that the outputs can be configured and their states changed; in this menu, to suit the your needs.





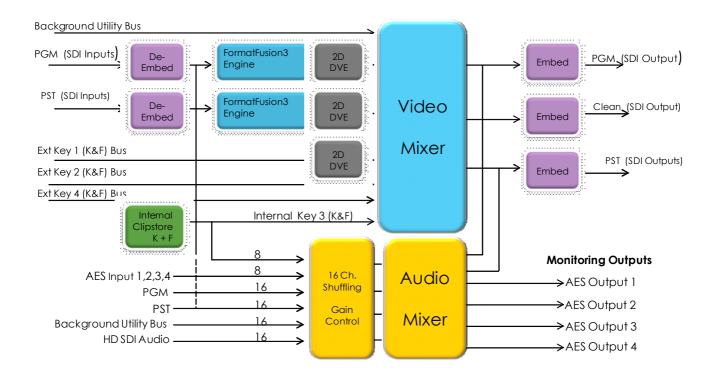
Audio Mixing Overview

Masterpiece includes an 80 x 56 out audio mixer and can execute the following:

- Audio lead and lag transition
- Break away audio transitions
- Voice-overs
- · Pre-fade listen audio selection
- Audio Shuffles

The benefit of pre-fade listening to the audio before it goes live gives the operator confidence knowing that a channel's audio material and feeds are played out as scheduled. The audio mixer provides embedding and de-embedding audio processing. Any 16 embedded channels can be selected from any/all the incoming video sources. Audio channels can be shuffled for flexible alignment with in-house channel mapping.

Below is a simple block diagram of the audio paths through masterpiece. The AES In channels 1 to 4 and AES Out channels 1 to 4 are input and output via the 25Way AES/LTC connector at the back of the Masterpiece mainframe.



Getting Audio Into Masterpiece

There are several ways to get audio into Masterpiece:

- 16 channels of Embeded audio via the 42 x HD/1080p SDI or 10x 12G-SDI inputs
- 8 channels of internal Audio via Clipstores
- Internal audio via the Util Bus
- 25 Way AES/LTC audio connector at the rear of the mainframe

In most cases audio will be input into Masterpiece via the SDI inputs in the form of 16 channel AES audio and mixed with audio from the Clipstore or voice over.

The basic example of an audio path going through Masterpiece is where a source containing AES audio is input via SDI into Masterpiece, the AES audio will be de-embedded, follow the video through the video mixer stages to an embedder on the output.

Once the system has been configured and sources are assigned to the crosspoint buttons on the Masterpiece control surface, if a source containing audio is selected on the "Program" Bus for example, the audio levels are displayed via the audio meters on the Masterpiece GUI screen. The Masterpiece GUI home menu will constantly display up to 16 channels of; Program Audio Levels, Preset Audio Levels, Main Out Audio Levels and 8 channels of Voice Over Audio Levels (as shown below).



Audio Shuffler

The Audio Shuffler matrix allows you to build up to 50 audio shuffle profiles using the 16 channel AES audio matrix map (shown in the menu below). The shuffle profiles can be assigned to Crosspoints (XPT) in the XPT main menu or the AES Inputs 1 to 4 in the Audio Shuffle menu.

With no audio shuffle a XPT selected on a Bus will pass the 16 channels of audio out the mixer in the same order they arrived. Applying a shuffle map on the XPT allows that order to be changed to whatever you want. This could be to move the 1st 8 channels to the last 8 channels, or indeed just to disable all the channels to create a mute

The basic setup for the audio shuffle menu is 16 channels of AES Audio In/Out on a 1 to 1 basis, i.e. channel 1 In to channel 1 Out, through to channel 16 In to channel 16 Out.

Audio shuffling is useful for example, when the incoming audio feed has multiple languages, with each language consisting of a channel pair (In 1 & 2). By mapping the channels, you ensure that the proper languages make it onto the Program live to air path, and that the other languages can be muted or removed from the live to air path.

There are 50 Audio shufflers available to configure, these can then be assigned to a crosspoint or an AES input. Each shuffler has 16 Output channels and 16 Input Channels

Note: AES Inputs 1 to 4 only have 2 Inputs channels each.

There are a number of default shufflers available:

- Program (default 1:1), but can be overridden by Morpheus automation
- Preset (default 1:1), but can be overridden by Morpheus automation
- AES to 1&2 input channels 1 & 2 are assigned to output channels 1 & 2
- AES to 3&4 input channels 1 & 2 are assigned to output channels 3 & 4
- AES to 5&6 input channels 1 & 2 are assigned to output channels 5 & 6
- AES to 7&8 input channels 1 & 2 are assigned to output channels 7 & 8

The yellow area is where you edit and create maps. The green area is where you assign a map you created in the yellow area to an actual XPT. Once you have created maps they are saved in the User Config, if you don't save them and you reboot, the maps and their XPT assignment will be lost!



How to Build a Shuffle Profile

To build a shuffle profile, turn "Enable" and "Allow Mix" On, (allowing mixing will give you the option to mix multiple inputs to the same output. It has the effect of summing the signals together). In its default state, all the green shuffle indicator squares are in a one to one state; Input 1 to Output 1 through to Input 16 to Output 16.

Notice that once enabled, the green shuffle squares now have a white "X" in them.



Using the "Audio Shuffle" parameter to select a Shuffle Profile number (1 to 50). Use the "Name" parameter to give the shuffle profile a name.



To make a new Shuffle Matrix, just touch the matrix square where you want the new input to output channels. The following menu diagram (on the next page) has had 12 inputs removed, so that only 4 channels or 2 stereo pairs are being shuffled.

The menu below displays an audio shuffle on input channels 1 & 2 and 3 & 4. Their default state was Inputs 1 & 2 to outputs 1 & 2 and Inputs 3 & 4 to Outputs 3 & 4.



Input audio channels 1 & 2 are now moved to be Output on channels 4 & 5 and Input channels 3 & 4 are moved to be output on channels 7 & 8. This is now Audio Shuffle 1 and named "SHUFFLE 1"

Note: The red dotted lines have been added to highlight the audio shuffle profile created. They are not part of the original menu.

The Shuffle Profile can now be assigned to a crosspoint. In the "Crosspoint Mapping" menu, select the required crosspoint, then touch the "Audio Shuffle" parameter, use the parameter control to select "SHUFFLE 1". The shuffle profile is now added to the audio source that is associated with the crosspoint.



The shuffle profile is saved when the User Config is saved and when the Switcher State is saved.

You can also assign Shuffle profiles to crosspoint sources on the Masterpiece GUI. In the home menu, below the Program and Preset audio level meters, the current crosspoint source is displayed (highlighted below). If you touch the crosspoint source menu link button, a "Crosspoint Shuffle" option menu is displayed.

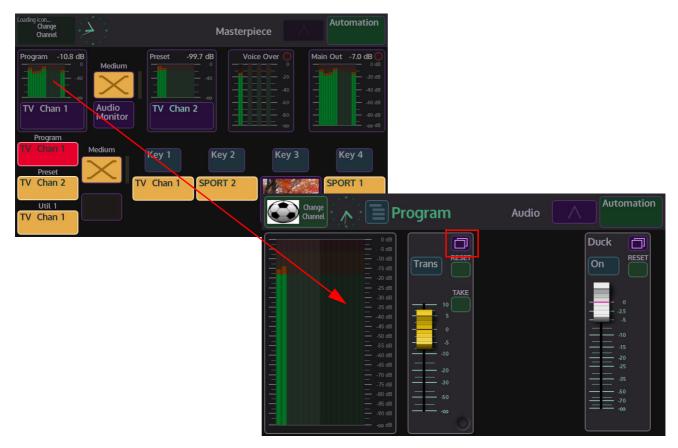


In the Crosspoint Shuffle menu, the 50 Shuffle profiles are displayed in a bar across the top of the menu. Touch and slide left/right to find the required profile and then touch the profile to select it.

The Shuffle profile is then displayed below the Shuffle profile bar. The selected profile is now assigned to the Program or Preview crosspoint. To confirm this, look at the "Crosspoint Mapping" men, you will see that the assigned Shuffle profile name is displayed in the "Audio Shuffle" column.

Understanding the Masterpiece GUI Audio Menus

As mentioned earlier, the Masterpiece GUI home menu displays the Program, Preset, Voice Over and Main Out audio metering. If for example you touch the "Program" audio meter, the "Program" audio menu will be displayed.



This menu displays a more detailed menu with "soft" audio faders that can be assigned to the physical faders on the Masterpiece control surface. You can see which soft fader controls are currently assigned to the control surface by using the toggle buttons to scroll through the assigned function list.

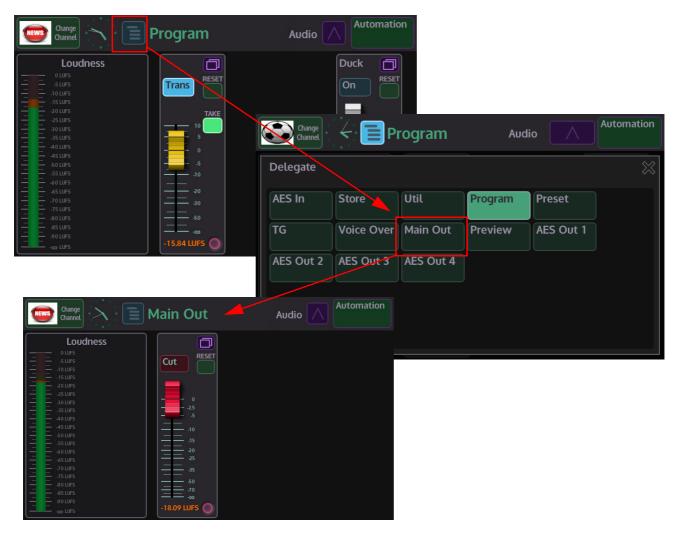
To assign a slider to the function list, touch the menu expander, then when the settings dialog box appears, touch the **{Assign}** button. The button will light up "light blue" (as shown below). The function will be displayed when scrolling through the function list. To enable the function touch the OLED button.



When the soft fader is moved up/down if the audio function is selected on the OLED button, the physical fader on the control surface will move in unison with the soft slider. As you move the fader on the control surface, notice that the fader level information is displayed in the menu.

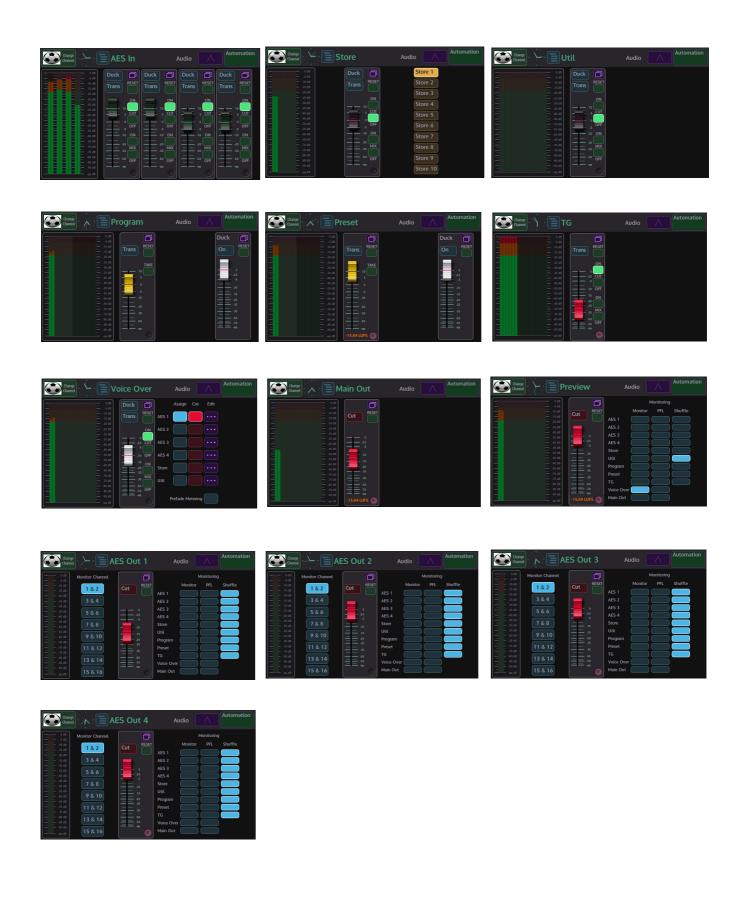


Touching the "Delegate" button in the "Audio" menu (shown below), will display a list of audio function controllers. Touching one of the buttons will display the relevant audio control menu. All of the audio function controllers in the "Delegate" menu can be assigned to the "Assigned Function" list and controlled using the physical audio faders on the control surface.



Masterpiece GUI Audio Menus

The diagram below displays all the available audio function menus.



Using Masterpiece GUI Audio Menus

Program, Preset and Main Out

The **Program Preset** and **Main Out** audio menus are the most critical to the to the output of Masterpiece as these control the audio that is going live to air and the audio that will be going live to air next. With a Button Maps created and the Crosspoints set up on the Masterpiece control surface, the audio menus on the Masterpiece GUI can now be used.

Program Audio

The **Program Audio** menu displays the level of audio for the currently selected source going live to air. The audio level indicators in the menu display the level of audio from the source, it is a visual display to confirm that there is audio present.



The soft fader control has no control over this level, the fader control adjusts the audio to the Main Out. The fader provides some gain +10dB and attenuation (0dB to -Inf).

Buttons:

Trans - selection will push the Program Audio into the main audio transition

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

Take - selection will push the Program Audio to transition when the [Take Next] button is pressed.

Touching the menu expander will open the settings dialog box. Touch the **{Assign}** button, the button will light up "light blue" (as shown below). The function will be displayed when scrolling through the function list. To enable the function touch the OLED button.

Change Channel					
Loudn	E Pro	gram	S	Settings 🔀	Duck
0 LUFS 	Trans Time	01;00			On
	Delay Time	00;00			
		Assignable	Loudness Reset		- 0 -2.5 -5 -10
	Slow	Medium	Fast		-15 -20 -25
	02;00	01;00	00;30		

Duck - selects whether a duck Level is applied to the "Program" when the Program goes to air. In ducking, the level of one audio signal is reduced by the presence of another signal. For example this can typically be achieved by lowering (ducking) the volume of a secondary audio source when the primary audio source starts, and lifting the volume again when the primary audio source is finished.

A typical use of this effect is for creating a voice-over: a foreign language original source is dubbed (and ducked) by someone reading the translation. Ducking becomes active as soon as the translation starts.

Preset Audio

Preset Audio, like Preset video is the audio that will go live to air when a transition or Take Next is made. Preset audio can be monitored so that you will know that the audio source is the correct one.

As with the Program menu, the audio meter is the level of audio for the selected Preset source. The audio level is not affected when using the fader control. The audio level can be monitored as an AES output and the level set using the fader control. When a transition is made or a Take Next is done and the Preset video/audio becomes the Program video/audio going live to air, the audio level is output at the level set by the fader. The fader provides some gain +10dB and attenuation (0dB to -Inf).

Buttons:

Trans - selection will push the Preset Audio into the main audio transition

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

Take - selection will push the Preset Audio to transition when the [Take Next] button is pressed.

Touching the menu expander will open the settings dialog box. Touch the **{Assign}** button, the button will light up "light blue". The function will be displayed when scrolling through the function list using the toggle buttons. To enable the function touch the OLED button.

Duck - selects whether a duck Level is applied to the "Program" when the Program goes to air. In ducking, the level of one audio signal is reduced by the presence of another signal. For example this can typically be achieved by lowering (ducking) the volume of a secondary audio source when the primary audio source starts, and lifting the volume again when the primary audio source is finished. A typical use of this effect is for creating a voice-over: a foreign language original source is dubbed (and ducked) by someone reading the translation. Ducking becomes active as soon as the translation starts.

Main Out Audio

Main Out, this is the main audio output from Masterpiece and controls the audio level for the program output. By default, the audio level is set to 0dB and any adjustments using the audio fader will reduce the audio output from Masterpiece.

Change Channel	Main Out	Audio Automatic	on
	0 dB -5 dB -5 dB -20 dB -20 dB -25 dB -35 dB -40 dB -40 dB -5 d		

As you adjust the audio fader down the audio meter level indicator will also fall with reduction in audio output.

Buttons:

Cut - this will cut the audio output On/Off

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

Stores (internal audio source)

Stores provide an internal audio source via the "Clipstore" function. Clipstores are preconfigures clips of either just audio or audio with a bug/video clip. There are 10 internal stores that can be used as a source to a crosspoint or provide a source for a squeeze back macro.



The audio fader controls the audio level for the selected store. Touch one of the "Store" buttons on the right to select the store that this menu will control. If the store is selected on a crosspoint for example, adjusting the audio in this menu will adjust the audio level to the Main Out only, the audio meter displays the audio level at the source and will not increase or reduce when adjusting the audio fader. The fader provides some gain +10dB and attenuation (0dB to - Inf).

Buttons:

Duck - selects whether a duck Level is applied to the selected Store.For the Store Audio channel to have an effect on the program output attenuation level, when the Store Audio goes to air, select the "Duck" assignment button.

Trans - selection will push the Preset Audio into the main audio transition

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

Cut On/Off - turn audio On/Off

Mix On/Off - mixes audio On/Off

Util Audio

This adjusts the audio for sources assigned to the Utility Bus. The audio is routed from one of the 16 AES stereo pairs from either the SDI inputs or the AES inputs from 25 Way AES/LTC connector.



The audio fader controls the audio level on the Util Audio channel. Adjusting the audio in this menu will adjust the audio level to the Main Out only, the audio meter displays the audio level at the source and will not increase or reduce when adjusting the audio fader. The fader provides some gain +10dB and attenuation (0dB to -Inf).

Buttons:

Duck - selects whether a duck Level is applied to the Util audio output. For the Util Audio channel to have an effect on the program output attenuation level, when the Util Audio goes to air, select the "Duck" assignment button.

Trans - selection will push the Preset Audio into the main audio transition

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

Cut On/Off - turn audio On/Off

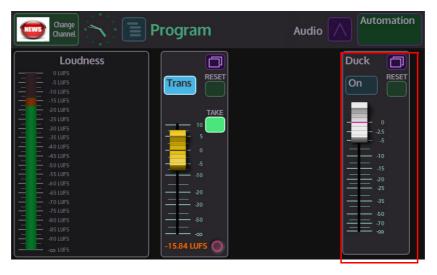
Mix On/Off - mixes audio On/Off

Voice Over Audio

The voice over channel is actually a group channel, where by a number of input channels can be assigned to the group (voice over). As shown below the Inputs available for assignment are AES 1, AES 2, AES 3, AES 4, STORE and UTIL.



For the voice over channel to have an effect on the program output attenuation level, when the voice over goes to air, select the "Duck" assignment button.



The Duck level is applied whenever the Voice Over is on air (if duck select button assigned), so does not necessarily need to be in the transition.

Another behavior of the Voice Over's Duck assign property is when the Duck level is being applied, the Duck attenuation is applied as a range to voice over fader level. So manually altering the Voice Over fader level will have an effect on the program attenuation. (i.e Voice Over level is at 0db, Duck attenuation range is applied between -inf and 0db, so at -inf no Duck level applied and 0db full Duck level applied).

Touching the **{Edit}** button takes you to each of the input channel menus where you can set the levels etc. for each channel you've assigned.

For example, if you assign AES 1 to the voice over. The attenuation level of the voice over is applied to AES 1 (providing the AES channel has been switched On).

Note: The **Cut** - **On** lamp behavior is determined from Panel Config - Preferences- Audio Mixer Lamp Mode.

The Voice Over "**Prefade Metering**" displays the voice over metering before the voice over attenuation level has been applied.

Trans - selection will push the Preset Audio into the main audio transition

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

Cut On/Off - turn audio On/Off

Mix On/Off - mixes audio On/Off

AES In Audio (1 to 4)

The four AES Input stereo pairs are routed from the 25 Way AES/LTC connector, they are inputs 1&2, 3&4, 5&6 and 7&8. Each fader controls an AES Input (channel pair 1 & 2) level providing some gain +10dB and attenuation (0dB to -Inf).



The audio level indicators in the menu display the level of audio from the source, it is a visual display to confirm that there is audio present. The soft fader control has no control over this level, the fader control adjusts the audio to the Main Out when applied to Program/Preset.

Buttons:

Trans - selection will push the AES into the main audio transition

Duck - selects whether a duck Level is applied to the Program/Preset when the AES goes to air

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

Cut On/Off - turn audio On/Off

Mix On/Off - mixes audio On/Off

Touching the menu expander will open the settings dialog box. Touch the **{Assign}** button, the button will light up "light blue". The function will be displayed when scrolling through the function list using the toggle buttons. To enable the function touch the OLED button.

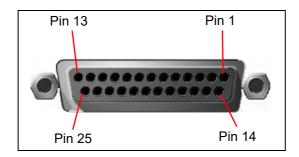


In the dialog box above, you are able to setup the audio on "AES In 1" to work with an audio transition without having to go into the main audio transition menu. With the {Trans} button selected in the AES In main menu, you can set how the transition behaves.

The default settings in the "Slow", "Medium" and "Fast" transition options can be adjusted using the "Trans Time" parameter. Touch the Slow, Medium or Fast option and it will turn yellow indicating that it is selected, then adjust the Trans Time parameter as required. The "Delay Time" parameter will place a delay on the audio if the sync is out with the video. Enabling the "Voice Over" is the same as enabling AES In 1 in the Voice Over Audio menu. The In/Outputs display the "Shuffle" for 16 channels of AES, the profile displayed is for AES In 1.

25 Way AES/LTC Connector In/Out Pin Configuration

The diagrams below display the single 25 Way D-type AES/LTC connector at the rear of the Masterpiece mainframe and the pin-out configuration with signal information for each pin.



AES/LTC Pin-outs

AES/	LTC 45 - 66
Pin	Signal
1	LTC (+)
2	GND
3	Out 5/6 (-)
4	Out 3/4 (+)
5	GND
6	Out 1/2 (-)
7	ln 7/8 (+)
8	GND
9	ln 5/6 (-)
10	ln 3/4 (+)
11	GND
12	ln 1/2 (-)
13	NC
14	LTC (-)
15	Out 5/6 (+)
16	GND
17	Out 3/4 (-)
18	Out 1/2 (+)
19	GND
20	ln 7/8 (-)
21	ln 5/6 (+)
22	GND
23	ln 3/4 (-)
24	ln 1/2 (+)
25	GND

Audio Monitoring

Preview Audio

Preview Audio allows you to listen to any of the audio input stages as well as the Main Out stage before the audio is used. You can select the audio that you want to preview by touching one of the "Monitor" channels, only one channels at a time can be monitored.

Change Change Pre	eview A	udio 🔨	Automation
		Monitorin	g
	RESET AES 1 0 AES 2 0 AES 3 0 AES 4 0 Util 0 Util 0 Program 0 Jo 0 TG 0 Voice Ove 0 Main Out	Monitor PFL	Shuffle Shuffle

The audio fader controls the audio "Preview" level for the selected monitor channel only, not the selected channel audio input level.

Pre Fade Listen or PFL is also a monitor function, PFL allows you to listen to the channel's audio at a point before the fader for that audio channel takes effect.

Shuffle will allow you to monitor the selected audio channel with any shuffle profiles that have been assigned to an audio input stage (see the Audio Shuffler section of this chapter).

Buttons:

Cut - this will cut the audio output On/Off

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

AES Audio Out 1 to 4

The AES Audio Out 1 to 4 menus are used to monitor any of the input stages including the Main output stage. Each menu does the same function for its AES output The Monitor Channel are used to select the 2 audio outputs, AES outputs are limited to 2 output channels and allows you to monitor any of the 16 channels into the audio mixer.



The **Monitor** column of buttons selects the where the audio to be monitored comes from. **Pre Fade Listen** or PFL is also a monitor function, PFL allows you to listen to the channel's audio at a point before the fader for that audio channel takes effect.

Shuffle will allow you to monitor the selected audio channel with any shuffle profiles that have been assigned to an audio input stage (see the Audio Shuffler section of this chapter).

Cut - this will cut the audio output On/Off

Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

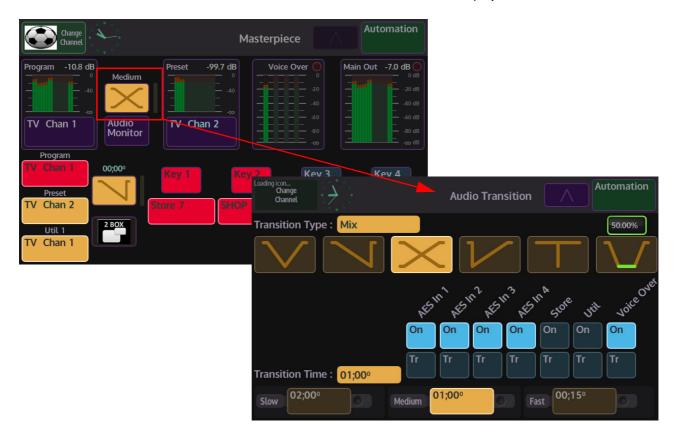
Audio Transitions

Audio transitions in normal use would transition with the accompanying video between Program and Preset sources. Masterpiece is also able to transition audio independently of video and allow other input audio sources to be transitioned with a Program/Preset transition.

Before starting to use the Transition menus, make sure that the **[AUDIO TRANS]** button is selected and illuminated light blue.



The main menu on the Masterpiece GUI is basically spit in half horizontally, the bottom half is deals video functionality and the top half is audio. Touch the yellow button above the **{Audio Monitor**} button and the **"Audio Transition**" menu is displayed.



Audio Transition Menu

In the Audio Transition menu you can setup the type of transition you want for the audio. Touch one of the Transition Type buttons (the button will turn yellow when selected) at the top of the menu to set the type of transition you require.



$$\bigtriangledown$$

V-Fade - this button will perform a V-Fade transition. When the "Take Now" button is pressed, this option will take the Program source to silent, then raise the audio up to the Preset source level.

Fade and Take - this button will "Fade" the audio from one source down to silent and then cut (the audio will instantly go back up to the full preset source level.

Mix - this performs a "Cross Fade". When the "Take Next" button is pressed the audio from one source will gradually fade out and at the same time the second source will gradually fade in.



Take and Fade - this button will perform a cut to silent, then fade from silent up to the next source level.

Cut - this button will perform a cut transition from one source immediately to the next.

50.00% - this will fade down to silent pause and then fade back up to the next source level.

The "Transition/On" buttons are used to select a second audio source that will contribute to a live to air transition.



Like the "Key Layer" buttons, when the "**On**" button is illuminated, the audio source of the selected function will contribute to the on air output. If the "**Tr**" button is illuminated and the "On" button is not illuminated, when the "Take Next" button is pressed, the source will transition on air with the Preset audio source going to Program on air.

There are 3 default quick select buttons in the "Transition Time" area of the Audio Transition menu.



As can be seen in the above menu, you have 3 options to select, by default "Slow" will take 2 seconds to transition, "Medium" will take 1 second and "Fast is an instantaneous cut. All three options can be adjusted by touching the rotary control attacher (it will turn red) and then adjusting the rotary control. As the transition time is adjusted, the selected time attacher will go brown and the time in the box will increase/decrease. Touch the time attacher (it will turn yellow) and the "Transition Time" will change to reflect. Audio transitions will now transition at the new set time.

If the "In Trans" Buttons; at the bottom of the audio faders on the Masterpiece control surface are selected, when a "Take Next" transition is made, the faders will move to reflect the selected Audio Transition Type.



If for example the "Voice Over" fader on the control surface is set to minimum and a "Fade and Take" transition is selected, when the "Take Next" button is pressed the fader on the control surface will move to maximum at the end of the transition.

Engineering, User & Panel Configuration

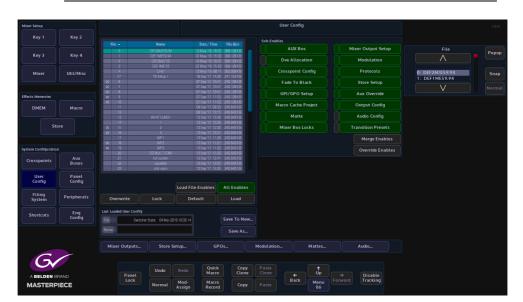
Saving Files

Before describing the Configuration menus, it is a good idea to explain how to save a config file.

Saving a Config File

The Engineering, User and Panel Config files are used to save up to 1000 different config setup files. They are very important and while setting up a system, should be saved regularly so that no configuration state is lost. When the config setups are saved, they are listed as files in a table (as shown in the menu below), so that the user can easily see the time/date that a config was saved, allowing the file to be instantly loaded.

Note: This example will show how to save a User Config file. Saving an Engineering Config or Panel Config file is done in exactly the same way.



Sub Enables

The "**Sub Enables**" list of buttons, to the right of the config files table, allows the user to select or de-select functions that can be saved with a file.

If the tab next to the enables button is green, this means that the function was included when the file was originally saved. If the tab is gray, the function is not included when the file was originally saved. If an enabled function is selected (green), when the config is saved, the function will be included in the saved config (shown below).



Enables and Sub Enables buttons are found in the in the Engineering, User and Panel Config menus as well as the Filing System menus.

Merge Enables - this merges enables currently set in the switcher with the enables saved in the file being loaded (a "logical OR" of the enables).

Override Enables - will override any enables that have been de-selected and turn the enable On.

How to save a Config

In the User Config main menu, press the **{Save As}** button and a new config file table will be displayed. In the table, select a slot where the file will be saved using the "**Destination**" parameter, or just touch the slot in the table, there are 1000 slots to choose from. When selected the row will be highlighted, then double touch the red oblong in the "**Name**" attacher and an on-screen keyboard will be displayed.



Type out a name for the config file and press {Enter}.

Finally, press the **{Save}** button and the new config file is saved into the table.

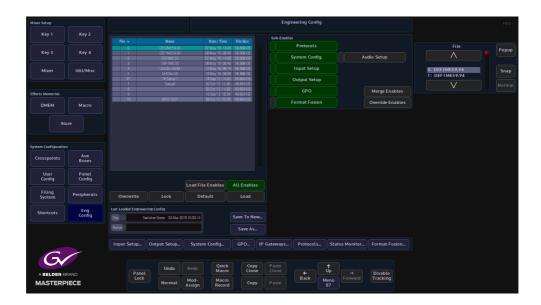
Mixer Setup										
Key 1	Key 2					Sub-Enables				
		File 72	Name Sport72	Date/ Time 18 Mar '19 18:27	File Size 242.176 KB		AUX Bus	Mixer Output Setup	Destination	Рори
Key 3	Key 4					D	ve Allocation	Modulation		Fopo
Mixer	Util/Misc					Cro	sspoint Config	Protocols	73	Sna
							ade To Black	Store Setup		
		79 80				GI	PI/GPO Setup	Aux Override		Norm
ffects Memories							ro Cache Project	Output Config		
DMEM	Macro	Last Loaded User Config) cher State: 04 Mar 2019 10:	19.14			Matte	Audio Config		
5	ore	Name					xer Bus Locks	Transition Presets		
	Jore						xer Bus Locks			
		Nama Sport72						Merge Enable:		
ystem Configuratio		Rename		Lock	Save			Override Enable		
Crosspoints	Aux Buses									
User	Panel									
Config	Config									
Filing System	Peripherals									
Shortcuts	Eng Config									
G										
	BRAND	Panel Lock	Undo	do Quick Macro	Copy Clone	Paste Clone	+ Back	→ Disable Forward Tracking		

Each file can be overwritten, locked so that they cannot be saved to, or deleted from the table.

Note: Remember: Any changes that need to be kept..... Save the Config File

Engineering Configuration

To get to the **{Eng Config}** button to open the **"Engineering Configuration**" menu. In this menu you can setup the Inputs, Outputs and System Standard which are the main setup.



Input Setup

The Input Setup menu has several main configuration functions integrated into one to allow the user to quickly configure an input to the mainframe. The user can give a name to the input source and apply a video standard.



The selected Input is displayed by a light blue bar in the table. The table columns display the setup state of each input to the mainframe, which includes the input number, BNC number or name if the input had been named, Router Overwrite and Tile Lines, the Video Standard, Audio On/Off and timing information.

The **BNC Input** parameter is used to select an input and will scroll down the table. You can also touch the "**Pop-up Selector**" which will show all the available inputs.

Parameter Controls

The **Name** attacher allows the user to give the selected input a name and a description; using the on-screen keyboard.

The **Router Overwrite** parameter when set to **{Yes}** will allow an externally connected router to rename a source.

Router Tie Line - allows the input to a Tile Line input which expands the number of sources coming into the mainframe using an external router

UHD Input - when UHD is selected in the "**Mainframe Configuration**" (in the Logged Off state), selecting UHD Input will tie Inputs 1 to 4 together. There will be 4x inputs for every UHD source input to the mainframe, which consist of Input 1 (top left), Input 2 (top right), Input 3 (bottom left) and Input 4 (bottom right). Select Input 1, then touch the "UHD Input" **{On}** button.

The **Use Default Std** parameter will force the input source to use the default mainframe video standard which is set in the **Eng Config - System Standard** menu. The Default Standard can be changed using the **New Standard** parameter. Use the Up/Down scroll buttons to select the required standard, then touch the **{Apply}** button.

If a new default standard is selected press the **{Apply Standard}** button for the new video standard to be set.

Auto Standard - with the User Default Standard set to "**No**", setting the "**Auto Standard**" to "**On**" The input will automatically be set to the incoming video standard if "**FormatFusion**" has been applied to the selected input.

New Standard parameter, use the Up/Down scroll buttons to select the required standard, then touch the **{Apply}** button.

The V Offset F1/F2 parameters are used to adjust to the point where active video reaches the

The **{Copy & Next}** button is a quick shortcut function forcing the switcher to take the name from the current Source, and then jumps on to the next Source in the list - this makes naming all of the sources much easier and quicker.



The "**Timing**" parameter indicates the Offset in Micro seconds (or Milli Seconds) between the Reference input and the selected source. To Clean switch or avoid a Line offset (e.g. a vertical shift) the Timing has to be within +/- half a line of the current standard. e.g. for 1920x1080i59.94 +/-14uS).

Note: All Sources have to be within this window. Any sources outside this window can be corrected by using FormatFusion.

To Adjust this timing window go to the "**Eng Config/System Standard**" menu and adjust the Genlock phase. NB adjustment of the Gen Lock Phase will also adjust the Video Outputs to have a Phase offset from the incoming reference. The Output Offset is +2 Lines from the Reference + Genlock Phase.

The **CRC** (Cyclic Redundancy Check) field shows the CRC for the current Frame. e.g. In general this will be a changing number for a moving picture and a static number for a still.

Output Setup

This menu is where each BNC output from the Masterpiece mainframe is setup, within these menus the user is able to:

- Setup 12G-SDI operation
- Name and give a Description to each BNC output
- Setup ISO Tally's for each BNC output

Note: The menu below displays features for a system setup in HD mode. This menu will have more options when the system is setup in UHD mode. (set in the logged out Mainframe Config menu)

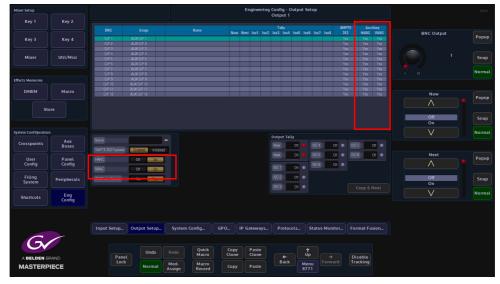
Mixer Setup							Engin	eering	Config - Output	Output 1	t Setup						HDD
Key 1	Key 2																
						New	Next Lee	1 1002	Tally Iso3 Iso	4 IroF	lest l	Port For	SMPTE 352		tillary VANC	BNC Output	
Key 3	Key 4	D/P 1	ALX 0/P 1			1000	TEAT 130	1 1302	180.2 180	4 1905	1800 1		Yes	Yes	Yes	BNC Output	Рорир
															Yes		
Mixer	Util/Misc																
mixer	Utit/Misc														Yes		Snap
		DVP 6	ALX D/P 5														
		DyP 7	AUX 0/P 7 AUX 0/P 8										Yes Yes	Yes	Yes		Normal
		DVP 8 DVP 9	ALX 0/P 8										Yes	Yes	Yes		
Effects Memories		DyP 10	ALX 0/P 10										Yes	Yes	Yes		
		D/P 11	ALX 0/P 11										Yes	Yes	Yes		
DMEM	Macro	D/F 12	AUX 0/P 12										Yes	Yes		Now	
		507.16	10011007110										194				Popup
																\wedge	
St	ore																
																Off	
																	Snap
																On	
System Configuratio																V	Normal
System comigoratio									Output T	ally							Honnac
Crosspoints																	
crosspontes	Buses										ISI		16 💿 🛛		0ff 💿		
			d Enabled Inhib	ited					Next	0#		-	21 • 12	08	011	Next	
User	Panel		Der Do						MOX	UII			1		nu o		Popup
Config	Config			_							15	18	n • 🗆				
			Off Do								• 19						
									-								
Filing	Peripherals		No Yes							011	•					Off	Snap
System									150.3	0#							
									199.9	011						V	
Shortcuts	Eng Config																Normal
Shortcots	Config																
		Input Setup.	Output Setup	System	n Config	GPO	9 Gates	Navs	Prot	cols	Sta	tus Moni	tor Fr	ormat Fi	ision		
6	-																
6																	
G					Ouick	Conv	Pas	ste			† -						
Gr			Undo		Quick Macro	Copy Clone	Pas				↑ Up						
	RAND	Par	nel		Macro	Copy Clone	Pas Clo		+					isable			
		Par	nel	Redo Mod- Assign		Copy Clone Copy		ne	← Bac	k 🔽	↑ Up Menu 8771			isable racking			

The default setting for all outputs is as an Aux output, this can be user-defined by the ability to change any of the outputs.

Parameter Controls

Name - A user-defined name can be given to each output for reference.

SMPTE 352 Payload - This parameter specifies a "payload packet" which can be included in a serial stream as ancillary data. This indicates such things as the video standard, picture rate, aspect ratio etc. of the video signal that stream carries. The button turns it on and off on each output.



HANC/VANC - Ancillary Data can be output from any BNC output on the mainframe. These buttons are used to either pass or block the ancillary data on each individual output.

The Masterpiece is able to receive Ancillary Data and pass the ancillary data out from any BNC outputs from the mainframe.

The ancillary data is part of the horizontal and vertical blanking portion of the video signal and is known as **HANC (Horizontal Ancillary Data)** and **VANC (Vertical Ancillary Data)**. The portion of the ancillary data we are interested in is **Embedded Audio**.

The embedded audio will usually be in the **HANC** portion of the video signal, and is the most likely way that embedded audio data is received. There can also be other forms of information embedded in the HANC data; such as, SMPTE 352 Payload identifier or SMPTE 2051 two-frame marker.

VANC is also able to carry embedded audio in the form of Dolby ETM, VANC also carries other ancillary data; such as video standard, aspect ratio, content name etc.

ANC From Source - when output is from a MIXER output:

- Yes: The ancillary data will just follow PGM or PST, with cuts at the end of transitions. NOTE: if the background DVE is enabled ANC is blanked!
- No: The Ancillary data (HANC & VANC) will come from the audio mixer, also adding DVE delay compensation when the background DVE is enabled.

When an output is directly from a source:

• ANC From Source has no effect and the ANC data will be directly from the source.

Note: The menu below displays a system setup in UHD mode.

Mixer Setup							Engir	neering	Config		ut Set	Up						HDD
Key 1	Key 2																	
						al and a	terral ter		Tally Iso3 Is			1		SMPTE 352		illary VANC		
Key 3	Key 4	0/P1234	AUX 0/P 1.2.3.4	JHD		now	iext Is	01 1502	1503 15	04 1505	1506	1507 1	500	Yes	Yes	Yes	BNC Output	Popup
Key 5	Key 4																	
				JHD JHD														
Mixer	Util/Misc	0/P 5	AUX O/P 5	JHU										Yes	Yes	Yes		Snap
		0/P 6	AUX 0/P 6											Yes	Yes	Yes		
			AUX 0/P 7															Normal
			AUX 0/P 8															Normat
Effects Memories		C/P 9	AUX O/P 9											Yes	Yes	Yes		
		0/P 10 0/P 11	AUX 0/P 10 AUX 0/P 11										_	Yes Yes	Yes	Yes		
DMEM	Macro	C/P 12	AUX 0/P 12											Yes	Yes	Yes	Now	
		GIT 12	HUK UJT TZ											145	145	143		Рорир
																	\wedge	
Sto																		
																	Off	
																	On	Snap
System Configuration																	\vee	Normal
	Aux				UHD Output	Off	Cn		Output	Tally								
Crosspoints	Buses												011	 IS0 		011		
			Enabled Ph	bited	12G/6G Output	No			_			\equiv						
		HANC						=						 IS0 		D11 🔍	Next	Popup
User Config	Panel Config		Dtt Dr		Payload UHD Chann	elid Dii	Cn						Off	·			\wedge	Popop
Coning	coning		Dil Di		·							150.6	un	•				
			011 01															
Filing	Peripherals		No Yes								•						Off	Snap
System										110							On	
																	V	Normal
Shortcuts	Eng Config																V	Normat
	Config																	
		Input Setup	Output Setu	o Sys	tem Config	GPO II	' Gate	ways	Prot	ocols	. S	itatus M	lonitor.	For	mat Fu	ision		
					Quick	Сору					Ť							
			Undo		Macro	Clone		one			Up							
A BELDEN BR	RAND	Pa							 Ba						sable icking			
MASTERP	IECE	LO	Norma	Mod		Сору			Ва		Men				icking			
MAG TERP				Assig	n Record						877							

UHD Output - Like the UHD Inputs, when UHD is selected in the "Mainframe Configuration" (in the Logged Off state), selecting UHD Output "**On**" will tie Outputs 1 to 4 together. There will be 4x Outputs for every UHD source input to the mainframe, which consist of Output 1 (top left), Output 2 (top right), Output 3 (bottom left) and Outputs 4 (bottom right). Select Output 1, then touch the "UHD Output" **{On}** button.

12G/6G Output - this parameter callows 12G-SDI (2160p 60) and 6G-SDI (2160p 30) when set to "**Yes**" sets the first 12G-SDI BNC output 1 (silver BNC). As the other outputs are setup as UHD outputs in the outputs table, the 12G Output parameter can be set to "Yes" for outputs 1, 5 and 9 (the silver BNCs).

Payload UHD Channel ID - this parameter when set to "Yes" adds "Channel ID data" in UHD mode. This provides data that allows downstream external equipment to identify the 4 UHD channels.

Output Tally

The GPO Tallies can be set to provide up to 8 further output Tallies ISO1 to ISO8. These can be used to Tally outputs that are being used as ISO (isolation) Feeds.

Key 1							Enginee	ring Confi Outp		ut Setup						
	Key 2				Name							SMPTE				
					Huite	Now 1	Vext Iso1	Iso2 Iso3	Iso4 Iso5	i Iso6 Iso	o7 Iso8	352		VANC	BNC Output	Popup
Key 3	Key 4	0/P1,23,4	AUX 0/P 12:34	UHD												, obob
				UHD												
				UHD												
Mixer	Util/Misc													Yes		Snap
														Yes		Norma
		D/P 8	ALIX 0/P 8													
fects Memories		D/P 9 D/P 10	AUX 0/P 9 AUX 0/P 10									Yes	Yes	Yes		
		DVP 10	AUX 0/P 10 AUX 0/P 11									Yes Yes	Yes Yes	Yes Yes		
DMEM	Macro	DVP 12	AUX 0/P 12									Yes	Yes	Yes	Now	
		uyr 12	MUX U/P 12									185	168	785		Рорир
															\wedge	
Stor	re															
															Off	Snap
stem Configuration								_								Norma
rstem configuration								Outpu	t Tally						V J	Norma
Crosspoints	Aux					Dff	Do									
crosspontes	Buses	COLUMN OF A D						Now				11 • ISI		011 💿		
			Erabled	nhibited		No	Yes	Next	01	00		721 • H	20		Next	
User	Panel		011	On		and Diff	On	(NBU	OH			III • II		off 💿		Popup
Config	Config		-	an l			- 41			150						
			0#	0n l				ISO 1		•						
									_							
Filing System	Peripherals		No					150.2	011						Off	Snap
System								150.3	OH							
								1000								
Shortcuts	Eng Config															Norma
Shortcots	Config															

Tally Now sets the tally for the on-air Sources (red). Set this for the PGM output. **Tally Next** - This sets the Tally for the next on-air source. Set this for the PVW Output.

In addition to the on-air source tally lights, you can set additional tally lights called ISO. ISO is the abbreviation for "isolated", and indicates that the video signal is isolated and recorded separately. The ISO Tally's can be used for example in a studio situation where studio cameras are recording live and/or live to disk or tape.

System Standard

The system standard menu; as the name suggests, is where the default video standard is set for the Masterpiece system.

Mixer Setup							Engineering Con	fig - System	Configura	ation			HDD
Key 1	Key 2	System Standard				Refe	erence Status						
Key 3	Key 4	System Standard	1080g/59.94 A				nlocked N					New Standard	Popup
		New Standard	A 46.63(p080)				Present N					1 080p/60 B	
Mixer	Util/Misc	UHU Mode	Cuedrant 281				Sync N					1080p/59.94 A 1080p/59.94 B	Snap
		Genlock Genlock			On Next Fie		erlaced Yor					V	Normal
Effects Memories		Genlock Phase	Off On On		on On Field i		me Rate D.Co	1					
DMEM	Macro				on On Field :								
Sto		Background DVE Enable Bac	kground DVE										
System Configuration													
Crosspoints	Aux Buses												
User Config	Panel Config												
Filing System	Peripherals												
Shortcuts	Eng Config												
		Input Setup	Output Setup	System	Config	GP O	IP Gateways	Protocols	Sta	itus Monitor	Format Fusion		
G													
	BAND	Panel			Quick Macro	Cop Clor	Paste Clone		¶ Up				
MASTERP			Normal	Mod- Assign	Macro Record	Cop		Back	Menu 8731		Tracking		

The system standard is set to a default, to change the standard use the "New Standard" parameter to scroll up/down through the list of video standards. When the required standard is reached, notice the **{Apply Standard}** button has turned orange, press the "Apply Standard" button and a new system standard is set.

Genlock - switch Genlock On, if the standard set for the selected Reference Input is not compatible with the system standard.

Genlock Phase sets the timing of the input router cut point relative to the genlock reference.

Reference Status - The information refers to the analogue Ref input.+

- **Genlocked** Yes = genlocked
- Tri Sync Yes = horizontal/vertical sync detected
- **Interlaced** Yes = interlaced, No = Progressive.
- Frame Rate = frame rate in Hz

The mainframe will not genlock if the standard of the reference is incompatible with the system standard. (Compatible means same 1/2 or 2x).

Action On Next Field: all actions on next TV field.

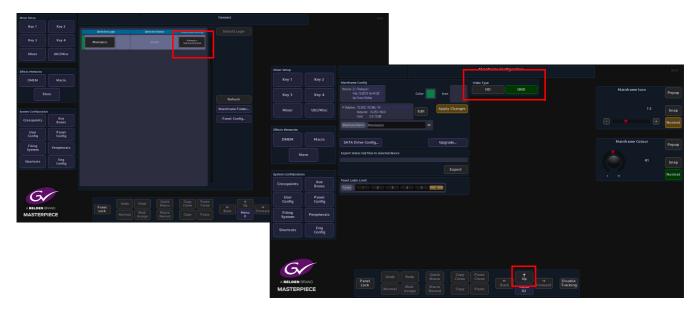
Action On Field 1: sources cut on field 1 only, all other actions on next field.

Action On Field 2: sources cut on field 2 only, all other actions on next field.

System Standard - UHD Mode

The first step in enabling UHD is in the "Mainframe Config" menu, in the logged out state in the connect menu.

Touching the **{Mainframe Config}** button will open the "Mainframe Configuration" menu.



Touch the **{UHD}** button to select UHD mode, then press the **{Up}** button to go back to the "Connect" menu, then touch the **{Switcher Login}** button to log back into the Masterpiece operational menus.

The System Standard menu can be set to "**UHD Mode - Quadrant**" or "**UHD Mode - 2SI**", however the user can choose between the UHD standards by touching the "**Popup**" button top right to reveal a "**New Standard**" dialog box. From the dialog box the user can select what type of UHD standard the system is set to, as shown below.

Mixer Setup							Engineering Co						
	Key 2	System Standard				Ref	ference Status						
		System Standard	1080p/59.94 A				erlocked	40				New Standard	Popup
Key 3	Key 4		1080p/59.94 A 🗧				el Present	40					
Mixer	Util/Misc	UHU MOOR	UU30/ant 201	j l			afLocked	40				1080p/60 B 1080p/59.94 A	Snap
		Genlock					i Sync D	40				1080p/59.94 B	
		Gorlock	Ott On	Action O	On Next Fie	eld	terfaced Y						Normal
Effects Memories		Genlock Phase	0.00 Lines 🔹	Action	On Field 1		ame Bate 0.1	20					
DMEM	Macro			Action	On Field 2								
St	ore						New Standard						
		Background DVE	ckground DVE			UHD	UHD sF	Slow UHD					
				-		60 Hz	59.94 Hz	50 Hz					
System Configuratio	Aux												
Crosspoints	Buses						vel A Lev						
User	Panel					U	HD-Q UHD	-28i					
Config	Config					Apply \$	Standard Car	icel					
Filing System	Peripherals						~			-			
Jyatem													
Shortcuts	Eng Config												
		Input Setup	Output Setup	System Co	onfig	GPO	IP Gateways	Protocols	Sta	tus Monitor	Format Fusion		
6													
			Undo		Quick Macro	Col	py Paste ne Clone		∱ Up				
A BELDEN B		Pane Lock		Mod- Assign	Macro Record	Col		← Back	Menu 8731		Disable Tracking		

GPO

This is a "source" based GPO setup menu, meaning that it is used to tally on sources coming into the Masterpiece mainframe.



GPI/O Select is used to scroll down the table through the individual GPI/O/Tally's, the **Name** parameter allows the user to re-name the tally if required. The default table is a one-to-one connection; Tally to Input.

Source - parameter is used to assign a tally to another input as required

GPO Enables:

Source Now - This sets the GPO to be a tally for On Air Sources.

Source Next - This sets the GPO to be a Tally for the next on air source. Source next is determined by which sources are just one transition away.

Source ISO/ISO8 - This sets the GPO to be an ISO (Isolated) tally for On Air Sources.

Red Indicator - If GPO 1 is set to look at a Source and its State is Closed the light for GPO 1 will be Red.

Note: The GPO Enables have to be set for each GPO for the parameter to be actually used.

Eng Enable and Eng/User Combine OR/AND - Performs a logical 'ANDing' or ORing' of the GPO Enables. This defines the combined event, which will trigger a GPO and GPI.

IP Gateways

The **Engineering Config - IP Gateway** menu allows the user to add a route to a destination network through a local IP Gateway.

Key 1					Ping Gateway						
Key 3	Key 4									Gateway	Popup
Mixer	Util/Misc										1 Snap
					Remove Gatewa	W					Normal
Effects Memories											
DMEM	Macro			Edit							
	ore	IP Address of Destination 0.1 No	atwark: 0.0.00								
st	ore				Add Gateway						
System Configuratio											
Crosspoints	Aux Buses										
User Config	Panel Config										
Filing System	Peripherals										
Shortcuts	Eng Config										
		Input Setup Ou	rtput Setup	System Config.	. GPO	IP Gateways	Protocols	Status Monitor.	. Format Fusion		
G											
A BELDEN B		Panel	Undo	Redo Qui Mar	ick Cop cro Clor	Paste Clone		↑ Up →	Disable		
MASTERF		Lock	Normal	Mod- Assign Rec	cro ord Cop		Back	Menu 8737	Tracking		

Touch the *IP Address of Gateway* attacher and set the four *New Gateway* parts of the address (A) (e.g. 172.28.1.6). Note. The network part of this address must exactly match the network part of the panel's IP address.

Next press the *IP address of Destination Network* attacher and set the four parts of the destination network address (e.g. 172.23.0.0) and set the number of bits of the Netmask for the destination network.

Finally, press **Add Gateway** to add the new gateway to the list at the top of the menu. This has now told the panel how to send a message onto network 2, but not where it should go when it gets there.

To check that the gateway is attached to the network and is responding, press the **{Ping Gateway**} action button. The box below the button should show the ping round-trip time for a few seconds followed by:

"Good" "Fair" may give occasional "Lumpy" controls

"Poor" may have excessive lumpy controls and cause a loss of comms, "Failed" no link at all.

Press **{Remove Gateway}** then make the required changes to the five parameters, then press **{Add Gateway}** to put the modified entry back into the list.

Pressing either of the {Edit} for the Gateway or destination IP addresses will display a number entry pad. Enter the required IP address and the touch the **{Apply}** button.

	IP Address		٦
0.	0.0	· 0	
7			
4			
1			
Next			
	Cancel		

Protocols

The Protocols menu is used to set parameters for bi-directional communication with external devices either by one of the RJ45 RS422 ports or selecting one of the IP protocol connections. Protocols have to be setup in this menu before the Peripherals functions can be used.

There are 8 Protocol Types to choose from; Tally & UMD, Router, Playout, Editor, Camera, Audio and Miscellaneous. Each protocol type has a number of available sub-protocols to choose from, that allows the users to connect to a large number of different types of external equipment.

Selecting and setting up a Protocol

Using the Loaded Protocol parameter, select a free row in the Loaded Protocols table, then use the **Protocol Type** parameter is used to scroll through the protocol sets.



Once the required Protocol Type has been selected, use the **Available Protocol** parameter to scroll to the required protocol and then touch the **{Load}** button.

Mixer Setup				Engineering	Config - Protocols		
	Key 2						
	Key 4	User Definable Protocol	User Definable Protocol Miscro Control IGDSK Keyer Control	Unload	Name Image: Control of Con	Loaded Protocol	Popup
Mixer	Util/Misc		Loopback Test RCS Interaction 4K Pan and Scan Rol Call Set Param	Configure Activate	Charnel 1 Connection Status Periding		Snap
Effects Memories					IP Address of Server 10.250.160.1/19		
DMEM Sta	Macro				Network: 10,250,1600 Hent: 0.001	Protocol Type Audio Miscellaneous	Popup
System Configuration						Master Control	
Crosspoints	Aux Buses						
User Config	Panel Config					Available Protocol	Popup
Filing System	Peripherals						Snap
Shortcuts	Eng Config						
C		Input Setup Output Setup	System Config GPO.	IP Gateways	Protocols Status Monitor Format Fusion		
A BELDEN B MASTERP 12G		Panet Lock Normal	Macro C	Copy Paste Clone Clone Copy Paste	t Back Menu 8736 Forward Tracking		

After the Load button was touched, the selected protocol is placed in the **Loaded Protocols** table, touch the **{Configure}** button to enter the **Protocol Config** menu.

Mixer Setup			Engineering Config - Protocol Config	DDH
Key 1	Key 2			
Key 3	Key 4		Sia Protoco	Transport Type
Mixer	Util/Misc	Transport Type	R5422 Part 😐	RS422 Port Snap
		Settings Default User		Normal
Effects Memories			Apply	
DMEM	Macro	Serial Port Configuration		
		Senial Port 1 Baud Pare 38400 Data Bita 8		
System Configuratio		Step Bits 2		
Crosspoints	Aux Buses	Party None •		
User Config	Panel Config	Port Type Sieve Mester		
Filing System	Peripherals			
Shortcuts	Eng Config			
A BELDEN B MASTERP 126		Panet Lock Normal	icdo Quick Cory Paste Cone Cone Core Sign Maccol Cory Paste Back Up → Diable Ment Forward Tracking	

The user is able to select the type of connection that is required "**Transport Type**" i.e Serial or IP, and also set user-defined parameters for the protocol.

The **Settings - Default** as the name suggests is the default setup to communicate with an external device (normally this would default to "RS422 Port"). If a specific setup is needed, press the **{User}** button in the **Settings** parameter, the user is now able to setup the protocol as required.

Mixer Setup						Engineerin	g Config - Prote	ocol Confi	g				HDD
Key 1	Key 2												
Key 3	Key 4	Slot Protocol	User Definable F	1 rotocol							Transport Ty	'pe	Popup
		Name		-							IP Client		
Mixer	Util/Misc	Transport Type Settings Default	PS422.0F	Cient)							RS422 (IP Clier RS422 (IP Serv		Snap
		averings Derate	USH										Normal
Effects Memories				Apply									
DMEM	Macro	IP Client Configuration											
Ste	ore			Edit									
System Configuration		IP Port Number Dn Server Channel Number	1024										
	Aux												
Crosspoints	Buses												
User Config	Panel Config												
Filing System	Peripherals												
Shortcuts	Eng Config												
G				Quick	Сору			1					
A BELDEN B MASTERP 12G		Panet Lock	Undo Red Normal Mod Assig	Macro Macro	Clone	Clone	← Back	Up Menu 87360		Disable Tracking			

When the parameters have been set correctly press the **{Apply**} button. The menu will now return to the main Protocols menu.

The **{Activate}** button will be yellow, if happy with the setup, touch the **{Activate}** button. The protocol setup information is displayed on the right side of the menu.



Status Monitor

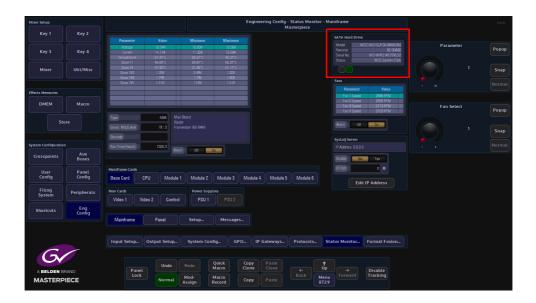
The Status Monitor function monitors the overall health of the mainframe allowing the user to easily see any problems in the unlikely event that the Masterpiece mainframe should have a fault.



The main status monitor menu displays all the internal cards in the mainframe, the power supplies, fans and Rear Cards.

The **Mainframe Cards** - **Base Card** menu displays the voltage and current on the card, the table displays the operating voltage and current at the present time, and the max/min. values that have been reached during the boards working life. The **Alarm** is set to On so that if the voltage or current goes over a value specified by the factory then the alarm will go off and the warning box at the top left of the menu will have a warning note.

The warning will be displayed in all menus while using the system until something is done to sort the problem out.



Top right of the menu, information related to the SATA hard drive is also displayed, and below, the fan speed of the 4 fans at the front of the mainframe.

Pressing the **{CPU}** button in the menu will display the current operating temperature of the CPU, the board temperature and all the voltages related to the CPU.

Mixer Setup								Eng	ineering Config - M	Status Mon asterpiece	itor - Mai	inframe				HDD
Key 1	Key 2											SATA Hard Driv				
Key 3	Key 4		Core Temp Roard Temp	63.88°C 31.00°C		56.00°C 20.00°C	71.88	C					NDC WD 10JFCX-68N6GN0 82.00A62 WD-WX01A575M.D2	Pai	rameter	Рорир
			V CPU Care IV Ser-Des	1.00V 0.99V		0.99V 0.99V	1.00					Serial No. Status	MCS System Disk			
Mixer	Util/Mis		1V2 FPGA 1V8 DOR V5 FPGA IO	1.20V 1.79V 2.49V		1.20V 1.78V 2.46V	1.20									Snap
			VS FPGAID V3 FPGAID	3.309		2.46V 3.30V	3.30					Fans Parameter				Normal
Effects Memorie							_					Fan 1 Speed	2586 RPM			
DMEM	Macro											Fan 2 Speed Fan 3 Speed Fan 4 Speed		Far	n Select	Popup
	Store	Туре		OPU								Alarm	0.			
		Issue: Barood	ModLevel	1Z:0 \$57083283								_				Snap
System Configu	ration		me (Hours)	7319.2			_					SysLog Server				Normal
Crosspoint	s Aux Buses				Alarm	Dff	<u>On</u>					Enable N	Yes			
User	Panel		ame Cards									IP Port	•			
Config	Config	Base	Card	CPU M	odule 1	Module 2	Module 3	3 Modu	ile 4 Module 5	Module 6		Ed	it IP Address			
Filing System	Periphera	Ls Rear Ca Vide		fideo 2 C	ontrol	Power Supp PSU 1	PSU:									
Shortcuts	Eng			ideo z	onuor											
	Config	Ma	iinframe	Panel		Setup	Messa	ges								
		Inpu	rt Setup	Output Ser		System Cor	nfig	GPO	IP Gateways	Protocols	Stat	tus Monitor	Format Fusion			
G																
ABELDE	N BRAND		Pane		R		Quick Macro	Copy Clone	Paste Clone		† Up		Disable			
MASTE	RPIECE		Lock	Norr			Macro Record	Сору			Menu 8729		Tracking			

The other monitor menus within status monitor all work in a similar way all giving similar information to the user.

Panel

The Status Monitor - Panel menu allows the user to monitor the CPU temperature in the control surface.

Mixer Setup								Engineering C	onfig - Statu Panel	is Monito	or			HDD
Key 1	Key 2										SysLog Server			
Key 3	Key 4	Parameter CPU Temp		falue 46°C	Minimum 18.85°C	Maxin 67.39							Parameter	Popup
											Bnable No	Yes		
Mixer	Util/Misc										PPot			Snap
											Edi	it IP Address		
Effects Memories														
DMEM	Macro													
Sto		Nam Off	Da											
System Configuration		Network Connect												
Crosspoints	Aux Buses	Status		1000ba	seT (Tull-duplex flow	rcontrol)								
User	Panel													
Config	Config													
Filing System	Peripherals													
System														
Shortcuts	Eng Config													
		Mainframe	Pa	inel	Setup	Messa	nges							
		Input Setup.	Outpu	t Setup	System Cor	nfig	GPO	IP Gateways	Protocols	Sta	itus Monitor	Format Fusion		
G														
Gv		Par		Undo		Quick Macro	Cop Clor	y Paste le Clone				Disable		
A BELDEN BE		Loi	ck 🔽			Macro Record	Сор	y Paste		Menu 8728		Tracking		

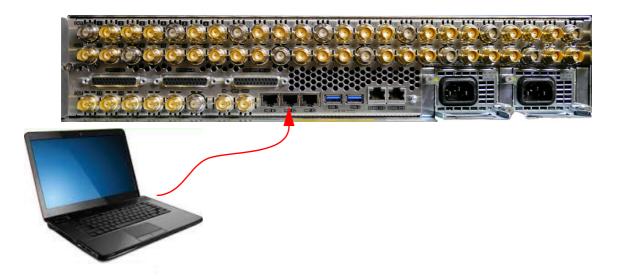
The user is also able to setup the SysLog Server IP address so that an external PC running SysLog Server software can monitor Masterpiece. (please read the next section of this manual).

Status Monitor Panel - SysLog Server

The Masterpiece mainframe and control panel is capable of using an external Syslog server to save its diagnostic output. In the unlikely event of there being a problem with a Masterpiece system, Syslog can be used to display error log files.

Connection

To use Syslog, a computer needs to be connected to the Masterpiece mainframe via one of the network ports (as shown below).



IP address

The next thing to find out is the IP address of the computer being used. If the IP address is not static, then open a Command Prompt. If using a WindowsTM operating system for example, in the command prompt window type:

If using a Windows^{IM} operating system for example, in the command prompt window type: >Ipconfig /all

In the message list look for:

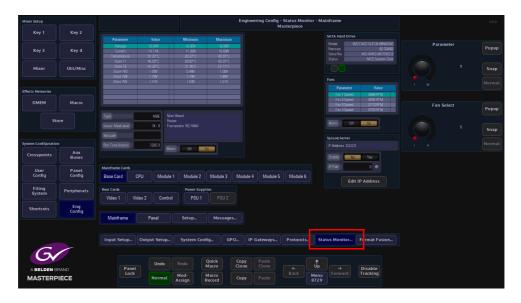
"Ethernet adapter Local Area Connection"

Then look for "IPv4 Address" It will show (for example) 192.28.7.7

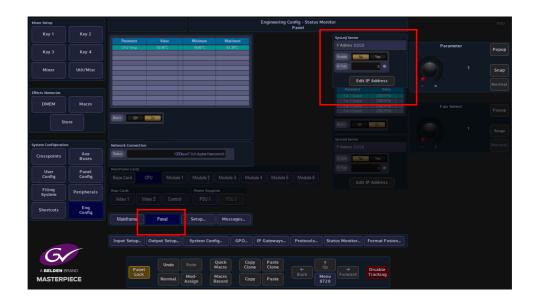
Make a note of this address.

Masterpiece Setup

The next, setup the connection between the computer and the Masterpiece mainframe. Touch the **{ENG CONFIG}** menu link button, then touch the **{Status Monitor...}** menu link button.



Then in the "**Status Monitor**" main menu touch **{Panel}** menu link button where the **SysLog Server** parameter controls are displayed.



Mixer Setup							Engineering (Config - Status Panel	Monitor			HDD
Key 1	Key 2								SysLog Serve			
Key 3	Key 4	OPU Temp	45.51°C	18.85°C	67.3						Parameter	Popup
									Enable IP Port	No Yes		
Mixer	Util/Misc											Snap
Effects Memories										Edit IP Address		
DMEM	Macro											
		Alarm Dff	Da									
St	ore											
System Configuratio		Network Connection										
Crosspoints	Aux Buses	Status		baseT (full-duplex fic	waantral)							
User	Panel											
Config	Config											
Filing System	Peripherals											
Shortcuts	Eng Config											
	Config	Mainframe	Panel	Setup	Mess	sages						
C		Input Setup	Output Setup	System Co	onfig	GPO	IP Gateways	Protocols	Status Monito	r Format Fusion		
Gv			Undo		Quick	Copy						
		Panet Lock		Mod-	Macro Macro	Clon		← Back	Menu	Disable Tracking		
MASTERF	IECE		Normal	Assign	Record	Copy						

Touch the {Edit IP Address}, then enter the IP address of the computer.

In the menu, use the "**IP Port**" parameter to set the port number. It is set to "**514**" as a default, but it can be changed to a user defined number. Set the "**Enable**" parameter to "**Yes**".

Syslog Application

There are many Syslog servers available on the Internet, they are suitable for a variety of platforms (Windows, Linux, OS etc).

This example uses a generic Syslog Server application. Once installed open the Syslog application.

		r 1.6.3				-					
Setup	Font	Processin		ighting C	*** Y	More View prev	View next	Clear	(?) About	Terminate	
Display	View file	(outloo				•					
	yiew nie			ages match		•					
			Al mess	ages match							
) messages		1		1	1	1				1
Time	в	P	Host	Facility	Priority	Tag	Message	 			
-	and the second second		a lines and	-		a design of the second s	a construction of the second				and the second second

Select setup.

Enable UDP Listener, then set the IP Address to be that of the computer. Set the port number to be 514 (or what ever it was set to on Masterpiece).

Note: Usually, Syslog servers will use UDP port #514, although they will offer the ability to change this port, allowing the same machine to run multiple Syslog servers simultaneously.

etup				X
Main Files E-mail				
UDP syslog server				
Enable UDP listener				
UDP listener interface and port	172.28.7.7	•	514	
TCP syslog server				
Enable TCP listener				
TCP listener interface and port	172.28.7.7	•	514	
I 3D fill				
Working				
Write all received messages to a Receive messages encoded in U	and the second second second second second	ourposes		
Receive messages encoded in t	11-8			
	ок	X Can	cel	

Click on {OK} and the Syslog software should now start receiving messages from Masterpiece.

View				•					
Message filter		All mess	ages match						
isplaying 7 mess 'ime	IP	Host	Facility Prio	rity Tag	Message				
eb 9 13:01:11	172.28.20.31	DUCK_	luser info	tUdpIn	THU FEB 09 13:01:11 201	17			
eb 913:01:11	172.28.20.31	DUCK_	Fuser debu	g tUdpIn	JdpInputTask: 172.19.39	.98 : Lost 1 pack	et [966 967]		
eb 9 13:01:11	172.28.20.31	DUCK_	Fuser debu	g tUdpOut	JdpOutputTask: Requesti	ng resend of me	ssage #966 fro	m 172.19.39.98	
eb 9 13:01:11	172.28.20.31	DUCK	fuser debu	g tUdpIn	JdpInputTask: 172.19.39	.80 : Lost 1 pack	et [964 965]		
eb 9 13:01:11	172.28.20.31	DUCK_	fuser debu	g tUdpOut	JdpOutputTask: Requesti	ng resend of me	ssage #964 fro	m 172.19.39.80	
eb 9 13:01:11	172.28.20.31	DUCK_	fuser debu	g tUdpIn	JdpInputTask: 172.19.39	.122 : Lost 1 pa	:ket [963 964]		
eb 9 13:01:11	172.28.20.31	DUCK_	Fuser debu	g tUdpOut	JdpOutputTask: Requesti	ng resend of me	ssage #963 fro	m 172.19.39.122	

The job of a Syslog server is to open up a network port and log all Syslog format messages that are received at the port; in this example from Masterpiece. Usually, messages are recorded continuously into a file or files on the disk.

The log file may be restricted to a maximum size and can either be used as a circular-buffer or a new file can be started when the maximum size is exceeded or when a time duration has passed (e.g. start new file each week or if the file exceeds 10Mbytes).

Logged messages can be color-coded by severity. They can also be filtered and sorted by who sent them, their severity, time stamp etc.

Setup Menu

The **Status Monitor - Setup** menu allows the user to set the maximum values for temperature, voltage and fan warnings before the alarm status is reached.



The default setting for all the alarms is set to 80% of the factory maximum limit. The warning message can be changed to what ever is needed; the temperature scale can be changed and the real time clock set.

Synchronize Real Time Clock

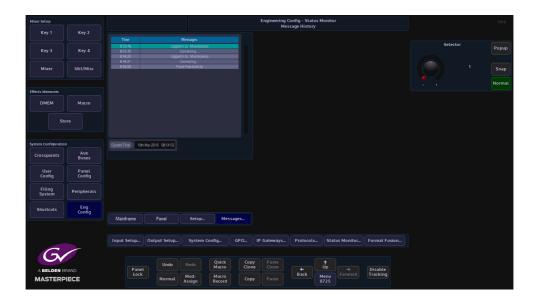
The **Precision Time Protocol** (PTP) is a protocol used to synchronize clocks throughout a computer network. On a local area network, it achieves clock accuracy in the sub-microsecond range, making it suitable for measurement and control systems.

Simple Network Time Protocol (SNTP) is a simplified, client-only version of NTP. SNTP can receive only the time from NTP servers; it cannot be used to provide time services to other systems. SNTP typically provides time within 100 milliseconds of the accurate time, but it does not provide the complex filtering and statistical mechanisms of NTP. In addition, SNTP does not authenticate traffic, although you can configure extended access lists to provide some protection.

Messages

The Status Monitor - Message History menu will display a history of any significant events or hardware warnings with the time and date against them.

In the unlikely event of a problem, this menu can be used as a high level review of any possible failures. For more detailed information please use the **Export Status Log Files** option in the **Mainframe Configuration** menu.



FormatFusion3TM

The FormatFusion3TM parameters allow the user to control or change the aspect of an input source, or crop an oversized source.

FormatFusion3 would mainly be used to convert a HD source to a UHD source.

Input FormatFusion3 Inputs and Channels

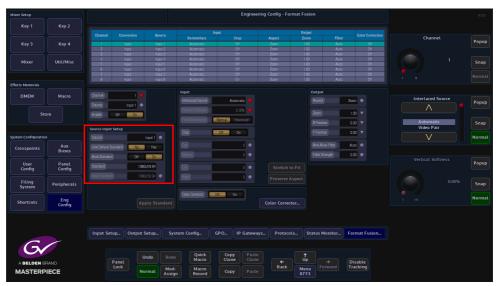
To use FormatFusion3, touch the **{Input Setup...}** button, then in the menu, select an input by touching an input row or use the "**BNC Input**" parameter. Once selected, set the "**User Default Standard**" parameter to "**No**" and set the "**Auto Standard**" parameter to "**On**". This must be done for each input that requires FormatFusion3.



In the Engineering Config menu, touch the **{FormatFusion3...}** button to open the menu. The table at the top of the menu displays the available channels of FormatFusion3.

Mixer Setup						Enginee	ring Config - Fo	rmat Fusion				HDD
	Key 2					nput		Output				
					De-Interlace	Crop	Aspect	Zoom	Filter		Channel	
Key 3	Key 4	1	Input	Input 1	Automatic	Dff	Zoom	1.00	Auto	OH		Popup
			Input	Input 2	Automatic		Zcom		Auto			
				Input 3	Automatic				Auto			
Mixer	Util/Misc											
mixer	OUL/MISC											Snap
Effects Memories		8	Input	liiput 8	Automatic	Dn	Zcon	1.00	Auto	011	1 8	
DMEM	Macro	Channel			Input			Outpu				
DMEM	Macro				Interlaced Source	Autometic 💿				toom 🔹	Source	Popup
	ore	ablice	npat I			1.0%				1.00 V		
St	ore	Enable	Off On		Field Dominance	Normal Reversed		XPas			Input 1	Snap
			Setup		Cop	OH On		YPosi		100 V	Input 2	зпар
System Configuratio				Input 1 😐	Cab.	un un					V	Normal
Crosspoints	Aux Buses		andard No	Yes		0			Jias Filter	Auto 💿		
	Buses	Auto Standard	CH	Dn						0.00	New Standard	
User	Panel	Standard	1080	1/59.94		•						
Config	Config	New Standard		6891 😐	Batel						1080i/60	
Filing	Peripherals					• •					1080i/59.94	Snap
System					Color Corrector	Ott On					1080i/50	
Shortcuts	Eng			ply Standard			Color Correc	tor				Normal
Shortcuts	Eng Config	Input Set		ply Standard Setup Sy	rstem Config	GPO IP Gatewa	Color Correc		Monitor F	ormat Fusion		
			Panel Lock	Indo Red	Macro	Copy Paste Clone Clone	+ Back			Disable Fracking		
MASTERF	TECE		NO	Assi	gn Record	Copy Paste						

Each of the channels of FormatFusion3 in the table are individually enabled by setting the "Enable" parameter to "On".



Source Input Setup

Source - This selects the BNC Input.

Use Default Standard - This parameter will force the input source to use the default mainframe video standard which is set in the **Eng Config - System Standard** menu. The Default Standard can be changed using the **New Standard** parameter, use the Up/Down scroll buttons to select the required standard, then touch the **{Apply}** button.

Auto Standard - The video standard for the incoming source can be set to the default mainframe video standard or changed to a new standard using the **{Auto Standard}** button which will allow the system to "auto detect" the incoming source video standard and will keep the original video standard of the incoming source.



Input

Interlaced Source - This has 4 parameter settings, these settings are listed below:

Automatic is the default setting for Interlaced Source it is the most suitable mode for live program making. When creating the current field/frame, the automatic setting will use the current input field and a percentage of both the previous and next input fields. Typically used when the output of a camera is fed to the switcher as a continuous stream of footage.

Video Pair is used when creating the current field/frame, will use the current input field and a percentage of either the previous or next field to maintain 1-2 or 2-1 pairing. This could be used for pre-prepared material with cuts on known field boundaries to prevent possible subtle

artifacts appearing at cut points.

Film Pair is used when creating the current field/frame, will directly combine the current input field and either the previous or next field. This mode should only be used if the fields are temporarily matched, e.g. PAL film based sources or some animation.

Single Field is used when creating the current field/frame, will only use the current input field. The **Field Dominance** control selects which field comes first. The **Normal** setting is the default field setting for the input standard, the **Reversed** setting should only be used to correct sources that have incorrect field order (swapped fields). Swapped fields will manifest as very jittery motion.

The **Vertical Softness** control, this feature allows the user to visually "soften" the source on the selected input. Generally, this control is not required and should be set to 0% for the best de-interlacing quality. it is de-activated in Automatic mode, the function will work in Video Pair, Film Pair and Single Field modes.

Note: Field Dominance and Vertical Softness can only be used with selected Interlaced Source settings.

The **Crop** adjustments allow the user to crop areas of the image that may need to be hidden from view. Adjustments can be made to the **Top**, **Bottom**, **Left** and **Right** of the image.

When the **Stretch To Fit** parameter is enabled the cropped picture content will stretched to fill the 16:9 area.

With the **Preserve Aspect** parameter is enabled, this will maintain the aspect ratio of the image e.g. If you crop left and right the image will zoom vertically to compensate. If a source has become very distorted or stretched, this function will adjust the source outwards from the center in all directions creating a 'zoom in' effect.

Note: This may cause a very small amount of the source material around the edge of the source to be lost.



Output

Aspect Mode has 3 settings: **Zoom**, **Full Width** and **Full Height**. The **Zoom** parameter allows the source to be zoomed out to fill the 16:9 aspect, when the source is zoomed to 16:9; it will appear slightly larger. The zoom function will not work if the aspect is set to Full Width or Full Height.

The Full Width parameter changes the aspect so that the full width of the 16:9 aspect is filled,

in this setting a letter box effect is seen where there are bars at the top and bottom of the image.

The **Full Height** parameter will change the aspect so that the full height of the 16:9 aspect ratio is filled, leaving bars either side of the image.

Zoom, X and Y Position - Will allow the source to be re-positioned within the 16:9 space.



Anti-Alias Filter - is used to vertically soften interlaced outputs. This will reduce line 'twitter' and 'jaggies', replicating the vertical filtering that would normally happen in an interlaced camera.

- **Off** will never apply the filter.
- **Auto** will apply the filter when the output is interlaced and not the same standard as the input.
- **On** will always apply the filter.

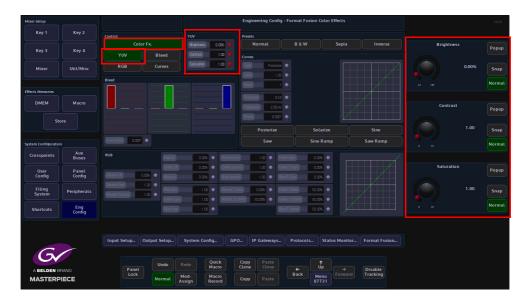
Filter Strength - 0.0 is the normal amount of filtering but the user can choose a bit more or a bit less than this if required.

Color Correction

Input FormatFusion3 color correction allows the user to color correct a selected Channel/Input. To use Color Correction, turn "**On**" the Color Correction parameter and touch the **{Color Correction...}** menu link button.



In the Color Effects menu, make sure that the "**Color Fx**" button is selected, from here the user can select the type of color correction required.



YUV

Touch the **{YUV}** button to enable the parameter controls. Touch the **YUV Control** attacher and by changing the parameters, the Brightness, Contrast and Saturation of the channel can be adjusted.

- Brightness default value is 0.00%, and the range is from -10% to 100%
- Contrast default value is 1.00%, and the range is from -0% to 16%
- Saturation default value is 1.00%, and the range is from -0% to 16%

As each of the above are adjusted notice that the percentage of adjustment is shown in the YUV attacher.



Bleed

Color bleed is a situation where a single color will over power the other colors in the RGB signal. By using the bleed function the stronger color can be softened to make the color output more natural, or adjusted to suit a specific need.

The initial menu has a default state where a single adjustment for each parameter menu is active; this will allow the adjustment of the main RGB bleed parameters:

- Red into Red
- Green into Green
- Blue into Blue

Touch one of the Bleed color blocks to enable all the options for that color. This will allow a detailed adjustment for each of the R, G and B bleed settings. The adjustments are measured on a -100% to a +100% scale. Each parameter menu will adjust a single color, i.e. red into red, green into red and blue into red. These changes are also reflected graphically in the RGB bar graphs above the parameter sets.

RGB

Touch the "RGB" button to enable the parameter controls. The initial menu is set to a default condition, which Shows the Master adjustment parameters. This will give an adjustment of Master Lift, Gain and Gamma. Each of these adjustments will alter all three elements of the RGB signal at the same time.



When one of the master parameters is altered, notice that the RGB curve profile changes in the graph situated center of the menu.

Touching one of the attachers allows a more accurate adjustment to the RGB components where the:

RGB Lift - parameters adjust the images Black Level, working on Black or shadow areas.

RGB Gamma - parameters adjust the levels between dark/shadow and the mid tones, where the mid tones become brighter or darker; depending on the adjustment made.

RGB Gain - parameters control the White level or highlights, where brighter colors become brighter or darker; depending on the adjustment made.

RGB S Gain and S Center - the parameters adjust the gain mid tone levels of the S curve and the center point levels of the s curve.

Presets

Presets allow the user to quickly select commonly used preset color options for the crosspoint source, or quickly revert back to the original input source color levels.

Mixer Setup		I	I	Engineering Config - Forma	t Fusion Color Effects			HDD
Key 1	Key 2							
		Control Color Fx.	YUV Bightness 0.00%	Presets Normal B	& W Sepia	Inverse	Master Lift	
Key 3	Key 4	YUV Bleed	Contrast 1.00				Master Ent	Popup
Mixer	Util/Misc	RGB Curves	Saturation LCO	Type Posterize Level 1.00			0.00%	Snap
		Bleed		Steps 1				Normal
Effects Memories DMEM	Macro			Threshold 0.50 • Frequency 2.00 Hz •			Master Gain	Popup
St	ore			Phase 0.000° •				
				Posterize	Solarize	Sine		Snap
System Configuratio		Hus Resate 0.000		Saw	Sine Ramp	Saw Ramp		Normal
Crosspoints	Aux Buses	RGB RedLit	10.00% Bed Gamm	na 1.00 💿 Red S-Gain	0.00%			
User Config	Panel Config	Green Lift Master Lift Blue Lift	2.00% • Green Gar		0.00%		Master Gamma	Popup
Filing System	Peripherals	Master Gain 1.00 + Red Gain Master Gamma 1.00 + Green Gai	1.00 • Master S- 1.00 • Master S-		50.00% •			Snap
Shortcuts	Eng Config	Bue Gain	1.00	Blue S-Center				Normal
A BELDEN B MASTERP		Panel Lock Normal	System Config	Co. IP Gateways Prot Copy Paste Cone Cane Bar Copy Paste		Disable		

Normal - Is the original color levels of the input source; without any color correction adjustments.

B & **W** - Sets the chroma saturation to zero removing the chroma content, making the signal black and white.

Sepia - Sets the chroma saturation to zero removing the chroma content, then adds positive portions of Red and Green and a negative portion of Blue to make-up a sepia appearance.

Inverse - Inverts the video signal making the picture a negative of its correct colors.

If the **Normal** preset option is selected, then all color correction controls are Grayed out preventing any adjustments. This is to make sure that the original crosspoint source can be recalled.

If B&W, Sepia and Inverse are selected, the preset levels can all be color corrected.

Curves

The Curves function is used to artistic type effect to the selected FormatFusion3 channel. The user can select preset effects such as Solarize and Posterize, and then adjust them to give a user-defined effect.



The user can select from 6 Preset Curve options by touching the button or use the **Type** parameter to select from a list of options.

Touch the top attacher, the **Level** parameter changes the level of effect on the selected channel, from a normal looking source to an extreme manipulation effect with full effect. The **Type** parameter as mentioned above selects the type of Curve effect. When the **Steps** parameter is adjusted, the more steps there are in an effect, the less extreme the effect will appear.

In the bottom attacher there are 3 parameters that can be used to modify a selected preset curve, not all of the parameters work with all of the preset curves.

Threshold is used to change the shadow and highlight values of the selected preset curve, **Frequency** determines the number repeated occurrences are applied to the effect. The final parameter is **Phase**, this adjusts the effect starting point within the Step cycle.

User Configuration

Mixer Outputs

Masterpiece has 3 fixed Outputs, Mixer Op1, Mixer Op2 and Mixer Op3. For ease of use, the outputs should be setup as follows:

- Mixer Op1 Program Out
- Mixer Op2 Preset Out
- Mixer Op3 Clean

Mixer Setup							User C	onfig - M Mix	ixer Output er Op1	Config				HDD
Key 1	Key 2									Name				
Key 3	Key 4	Output Mixer Op1 Mixer Op2	Name		1 Pgm Pgm	2 Pgm Pgm	3 Pgm Pgm	4 Pgm Pgm	PTENIEW	Provine Of		011 🔸	Mixer Output	Popup
Mixer	Util/Misc	Mixer Dp3			Pgm	Pgm	Pgm	Pçm		Key 1 Key 2	Off Pgm	On On	Mixer Op1 Mixer Op2	Snap
Effects Memories										Kay 3 Kay 4	Ott Egm Ott Egm	On On		
DMEM		Fade To Black												
DMEM	Macro	Level Profile	0.00%		Cut On								Preview Of	Popup
50		Shape	Linear •	Auto	Auto On								Off OP 1	Snap
System Configuration			0,00 V											Normal
Crosspoints	Aux Buses													
User Config	Panel Config													
Filing System	Peripherals													
Shortcuts	Eng Config													
L														
		Mixer Outputs	Store Setu	ıp	GPO	s	Modul	ation	м	attes	Audio			
6														
A BELDEN B		Panet			Quick Macro	Cop Clor	ne Past Clon		+ D1		→ Disable			
MASTERP	IECE	Lock		1od- ssign	Macro Record	Cop				Menu 8641	ward			

The Table:

Output - The number of Mixer outputs.

Name - This is the user assigned name for the Mixer output

Key1 to Key4 - These columns determine what Keys will appear on the Mixer output.

Off = This Key will NOT appear on this output

Program = The Key is available on this output as determined by the transition status on the main panel

On = The Key will always be present on this output. The main transition will NOT be able to remove it.

Preview Of- This sets this output to be a Preview for the Mixer output you select. Previews can be re-entered but there will be no tally. Once you have selected this option all options to the right of this will have no effect.

Fade To Black

The Fade To Black function is normally needed when a live broadcast has a problem, it would be used to take the program output to "Black".

To use fade to black, enable FTB by selecting Fade To Black - "Pgm".



The above parameter controls alter the FTB profile and transition timing.

Profile - The Profile parameter control will adjust the FTB transition curve profile. Changing the curve profile will make the transition accelerate or decelerate at a specific moment in the FTB transition period. The curve profile can only be used to change the Cubic S/Sin S and Cubic Curve/Sin Curve profiles, which are selected using the Shape parameter control. The Linear profile cannot be adjusted.

Shape - Selecting one of the Shape options will depict the type of profile curve, this will alter the acceleration rate for a FTB transition.

Linear - constant transition, no change in transition acceleration

Cubic C and Sin C - these profiles are similar to each other, the default transition will have a fast acceleration at the start and slowdown towards the end.

Cubic Curve and Sin Curve - these profiles are also similar to each other, the default transition will accelerate at the start slow down towards the mid point and accelerate again.

Time - this parameter alters the amount of time that it takes for the FTB to transition. The parameter adjusts the minutes/seconds, frames and fields. FTB works with the "Cut

Store Setup

The Store Setup menu allows the user to setup the way the Stores are coupled when using a clip. The allocation of time to each Store can also be setup in this menu and the Stores can also be given names.

Mixer Setup								User Config	- Store Coupli Store 7	ng & Linki	ng				
	Key 2														
		Store	Key	re Couping F	ill Link	ued To Store	Store I	Name	Audio in Revers	e			Store		Popup
Key 3	Key 4												\land		
Mixer	Util/Misc		Key Store 5										Store 6 Store 7		
Mixer	Utit/Misc			FillS	tore 4								KStore 8		Snap
			Key Store 8	FillS	tore 7								V		
Effects Memories															
DMEM	Macro												Coupled S	ore	
		Uncoup	ile All Ui				sme	-	Audio In Reve	rse					Popup
Sto													Store 6		
													Store 8 Store 9		Snap
System Configuration													V		Normal
	Aux												V		Normat
Crosspoints	Buses														
User	Panel												Linked To S	tore	Popup
Config	Config												\land		
Filing	Peripherals												Unlinked		Snap
System	Felipherats												Store 1		
Shortcuts	Eng Config												V		Normal
	Config														
		Mixer	Outputs	Store	Setup	GPO	s	Modulatio	>n	Mattes		Audio			
G															
				Undo		Quick Macro	Copy Clone	Paste Clone		(↑ Up					
A BELDEN B			Panel Lock		Mod-	Macro			← Back	Menu		Disable Tracking			
MASTERP	IECE			Normal	Assign	Record	Сору			8650					

Coupling & Linking

The **Coupling & Linking** menu allows the user to setup Stores which contain video clips or "Bugs", which are for example Keyed over a background where the Key source can be made to be transparent.

To do this the clip has to have a Key and Fill source coupled together over 2 Stores, this is done in the **Store Coupling & Linking** menu.

Store -	Store C	oupling	Linked To Store	Store Name	Audio in Reverse
ature	Кеу	Fill	LIIIKEUTU SIURE	ature maine	Autio III neverse
1					
3					
	Key Store 5				
9					

In the table above, Stores 1 - 10 can be seen.

Store Coupling - the Key column is the Key Store that is coupled to the Fill Store. The Fill column is the Fill Store that is coupled to the Key Store.

For example, in the table above, **Store 9** has a Key that is **Key Store 10** coupled to **Fill Store 9**. In the **Store Contents** menu it will look like this:



Store 9 is coupled to KStore 10, as can be seen in the minipics 9 and 10.

Linked To Store - this will display any Stores that are linked to each other.

Store Name - this is the user-defined name given to a Store, using the "Store Name" parameter.

Audio in Reverse - to select "**Audio In Reverse**", select a Store in the table and then touch the **{Audio In Reverse}** button. The selected row will display "**Yes**". This means that when a clip is played in reverse, if the clip has an audio file associated with it, the audio will still play when the clip is played in reverse, but the audio will not be played in reverse.

GPO Setup

This GPO Setup menu is used to tally Crosspoint based, Bus based and User BIT functions. The default setup state allows the user to tally GPO's 121 to 256 which are the physical and internal GPO's and are comprised of:

GPO 121 to GPO 132 and GPO 133 to GPO 144 are the physical Ref Fin GPO's, again at the rear of the mainframe. These GPO's are system setup dependant; GPO 121 to GPO 132 Ref Fin A, GPO 133 to GPO 144 Ref Fin B.

GPO 145 to GPO 256 are Internal GPO's (but the configuration could be GPO 133 to GPO 256 if only 1 Ref Fin is fitted).

The Internal GPO's are used to trigger internal function such as Macro's or any internal function that can be switched On or Off.

Mixer Setup					User Config - GPO Setup											HDD
Key 1	Key 2															
		1	Real	Tally 1			Input 1N	ow.	-					GPO Sele	ect	Popup
Key 3	Key 4															Fobob
			Real	Telly 4 Telly 5			input 4 No		1. 1.						GPO 1	
Mixer	Util/Misc	6	Real Pasi	Tally6	_		Input 5 Nr Input 6 Nr		· · ·	· ·					GPOT	Snap
		2	Real	Tally 7	_		Input 2 No									
			Real	Tally 8			Input 8N		4							Normal
							Input 9 Na									Normac
Effects Memories																
								Crosspoint								
DMEM	Macro			Xpt 140	Xpt 4180	Matte		Mixer O/P						Crosspoi	nt	Popup
														\wedge		
	ore	Crosspoint T		Stores	Cancel											
														BNC 1		Snap
				1 : BNC 1	2 : BNC 2		: BNC 3	4 : BNC 4		BNC 5	6:	BNC 6		BNC 2		
System Configuratio		Bus Tally		7 : BNC 7	8 : BNC 8		: BNC 9	10 : BNC 10		BNC 11		BNC 12		\vee		Normal
Crosspoints	Aux Buses			13 : BNC 13	14 : BNC 1-	¥ 15	: BNC 15	16 : BNC 16	17 :	BNC 17	18 :	BNC 18				
User	Panel	GPI/D Enabl		19 : BNC 19	20 : BNC 2	21	: BNC 21	22 : BNC 22	23 :	BNC 23	24	BNC 24		Erosspoint 1	Tally	Popup
Config	Config		Combination	25 : BNC 25	26 : BNC 2	5 27	: BNC 27	28 : BNC 28	29 :	BNC 29	30 :	BNC 30		\wedge		
Filing System	Peripherals			31 : BNC 31	32 : BNC 3	2 33	: BNC 33	34 : BNC 34	35 :	BNC 35	36	BNC 36		Fill Key		Snap
				37 : BNC 37	38 : BNC 3	3 39	: BNC 39	40 : BNC 40						V		Normal
Shortcuts	Eng Config															
		Mixer	Outputs	Store Se	tup	GPOs		Modulation		attes		Audio				
C	1															
	RAND		Panel	Undo		uick acro	Copy Clone	Paste Clone		¶ Up		Disable				
MASTERP	PIECE		Lock	Normal		acro cord	Сору			Menu B673		Tracking				

This menu allows the user to trigger a GPO or GPI when for example a crosspoint is setup to trigger a GPO, or an Aux is setup to trigger a Bus tally.

Touch the attacher below the GPO table and the parameters will change allowing the user to setup a GPO trigger.

For a crosspoint tally for example, use the **GPO Select** parameter to the required GPO, use the **Crosspoint** parameter to select the crosspoint that will trigger the GPO, and then select the **Crosspoint Tally**. In the **GPO Enables** button area of the menu, press the **{GPO}** button and each crosspoint trigger will only trigger a GPO, or touch the **{Xpt Now}** button, then when the selected crosspoint button (as shown in the menu above) is pressed the GPO will be triggered.

Note: Touch the popup selector (blue square) in the Crosspoint parameter and a greater selection of GPO trigger options will be displayed.

Crosspoint Options

When selecting the type of GPO or GPI trigger, as mentioned previously, press the popup attacher to easily access the other Crosspoint options.



Modulation

Overview

The modulation function enables the user to add modulation effects to transitions, wipes, borders and DVE. The type of modulation applied to a function is selectable and can be added to many different parameters, whether it is Global, Bus, I/O, DVE or User related.

The modulators are sorted into relevant Groups, determined by their subject matter: **Global Modulators** - are used to modulate multiple parameters in a fixed relationship. **Mixer Bus Group** - displays modulator parameters within a Bus function, such as Transition of a Keyer.

Mixer Trans Group - displays the modulates parameters within the Transition functions. **User Config Group** - displays modulated parameters within a User function, such as Mattes.

Global Modulators

Global modulators, as mentioned earlier are used to run modulators globally across the logical switcher.

Mixer Setup							Mod	ulators - Se	tup				HDD
Key 1	Key 2	Global Modulators											
			lame								Modulator		
Key 3	Key 4		Aad 1		Sing	Y		1.00	50.00	0.000			Popup
Mixer	Util/Misc		Aod 4 Aod 5		Sne Sne	n N		1.00	50.00 50.00	0.000	Mod 1		Snap
l			Acid 6		Sine	11 Yi		1.00	50.00	0.000	Mod 2		
			Aad 7		Sing	Y		1.00	50.00	0.000	V		
			And 8		Sing	Y		1.00	50.00	0:000			
Effects Memories			Aad 9						50.00	0:000			
		M	lod 10		Sine	Y	*	1.00	50.00	0:000			
DMEM	Macro										Туре		
		Name Mod 1	- 6		1.00 Hz 💿	Mod 1 Gain		50.00% 🔻					Popup
				_						ALL STOP	\wedge		
Sto			Sine 🗕 🧕		50.00%			50.00%			Spin		
		Transition Select ME	1 Key 1 😐 🖪		0.000"	Mod3Gan		50.00%		All Start	Sine		Snap
		The The	in real in the little		0.000		_	0110076			Sawtooth		Snap
										Run			
System Configuration													Normal
Crosspoints	Aux Buses												
													Popup
User Config	Panel Config										\land		Popop
Config	Config												
Filing											ME1 Key 1		
System	Peripherals										ME 1 Key 2	4	Snap
Shortcuts	Eng Config												Normal
		Global Modulators	Mixer Bus	Group	Mixer Trans Grou	p User (Config Gro	up					
		Mixer Outputs	Store S	etup	GPOs	Ma	dulation.		Mattes	Audio			
6													
	BAND	Panel	Undo		Quick Macro		Paste Clone			Disable			
MASTERP			Normal	Mod- Assign	Macro Record	Сору		Back	Menu 8629				

An example could be a DVE effect modulation that would affect all Keys globally.

Global Modulators - Parameter Controls

Name - there are 10 individual modulation setup options in this column, each one can be given a unique name, by selecting the required row using the Modulator parameter, then typing the name into the Name attacher.

Type - this is the modulation effect used, either Spin, Sine, Sawtooth, Triangle, Square, Shake, Linear Drift and Cubic Drift, Static, Bounce and Transition. Preset to start with a Sine wave modulation.

Run - allows the modulation to run.

Frequency - adjusts the frequency of the modulation, range from 0Hz to 30Hz. Preset to start at 1Hz

Gain - adjusts the gain of the modulation, range from -100% to +100%. Preset to start at +50%.

Phase - changes the phase of the modulation, range 360° plus complete turns, i.e. 5:180° this is 5 complete turns plus 180°.

Mixer Setup							Modulators - S	etup					
Key 1	Key 2	Global Modulators											
			lame					Gai		Phase		Modulator	
Key 3	Key 4		Acd 1		Sine	Yes	1.00	50.0		0.000		\wedge	Popup
												\sim	
Mixer	Util/Misc		/lod 4					50.0		0.000		Mod 1	Snap
			Aod 5 Aod 6		Sine	Yes Yes	1.00	50.0	.0	0.000		Mod 2	
			Acd 6 Acd 7		Sine	Yes	1.00	50.0		0.000		V	
			Acd B		Sine	Yes	1.00	500		0.000			
Effects Memories			And 9		Sine	Yes	1.00	500		0.000			
			lod 10										
DMEM	Macro											Туре	
		Name Mod 1			1.00Hz •		50.00%			ALL STOP			Popup
St			Sine 😑		50.00%		50.00%					Spin	
		Transition Select ME	1 Key 1 😑		0.007 •		50.00%			All Start		Sine	Snap
										Run	S	awtooth	
System Configuratio	n											V	Normal
Crosspoints	Aux Buses												
User Config	Panel Config											nsition Select	Popup
Filing System	Peripherals										M	1 Key 1	Snap
Shortcuts	Eng Config											V	Norma
		Global Modulators	Mixer B	us Group	Mixer Trans Grou	p User Confi	g Group						
		Mixer Outputs	Store	Setup	GPOs	Modul	ition	Mattes		Audio			
G													
	PAND	Panel	Undo		Quick Macro	Copy Clone Clon		Up _		Disable			
MASTERP		Lock	Normal	Mod- Assign	Macro Record	Copy Past	Back	Menu 8629		Tracking			
				Assign	Record			8029					

An individual modulator setup can be switched **On**, by selecting an individual modulation using the Modulator parameter. Next, touch one of the On/Off buttons in the **Frequency**, **Gain** or **Phase** parameter displays.

Notice that "Yes" has now appeared in the Run column of the table.

All the modulator setups in the table can be started by pressing the **{All Start}** action button, or stopped by pressing the **{ALL STOP}** button.

The **Transition Select** allows the use of the transition engines to control the level of other parameters. Using the Transition modulator type it is possible to use the AUTO and T Bar to control the level of a particular parameter.

Mixer Setup						fodulators - Set	nb			
Key 1	Key 2	Global Modulators								
			Name						Modulator	
Key 3	Key 4		Mad 1	Sing	Yes	1.00	50.00	0:000		Popup
Mixer	Util/Misc								Mod 1	Snap
			Mad 5 Mad 6	Sine	Yes	1.00 1.00	50.00 50.00	0.000	Mod 2	
			Mad 6 Mad 7	Sine	Yos Yos	1.00	50.00	0.000		
			Vido / Mad 8	Sing	Yes	1.00	50.00	0:000		
ffects Memories			Mad 9	Sine	Yes	1.00	50.00	0:000		
			Aod 10	Sine			50.00			
DMEM	Macro				-	_				
		Name Mod 1	- Frequ	itmpy 1.00 Hz	Mod 1 Gain	50.00% 🔻		ALL STOP	Type	Рори
St	ore		Sine 😑 Gain	50.00%		50.00% 🔻			Spin	
		Transition Select M	E 1 Key 1 🧶 Phase	e 0.000 •	Mod3Gain	50.00% 🔻		All Start	Sine	Snap
								Run	Sawtooth	
ystem Configuratio	n									Norm
Crosspoints	Aux Buses									
User Config	Panel Config								Transition Select	Popu
Filing System	Peripherals								ME 1 Key 1 ME 1 Key 2	Snaj
Shortcuts	Eng Config									Norm
		Global Modulators	Mixer Bus Gr	oup Mixer Trans Grou	p User Config	Group				
		Mixer Outputs	Store Setu	p GPOs	Modulat	ion	Mattes	Audio		
Gr				Quick	Copy Paste		^			
A BELDEN B	RAND	Panel	Undo R		Clone Clone			Disable		
MASTERP		Lock	Normal	lod- Macro	Copy Paste	Back	Menu	d Tracking		

If a Transition type Modulator is attached to a 'Store Pan H position' for example, the Store is then used as a Utility Wipe Border; when the Bgnd Transition takes place the transition moves the picture within the Store at the same time as the wipe edge.

By determining a Bgnd or Key Bus the modulation will only take effect when that Bgnd or Key bus is selected in the transition.

The modulator Gain can be used to adjust how much effect the transition engine has on the modulated parameter. Global Modulators as well as Bus and User Config group modulators can all use the Transition type modulator.

When using the transition modulator, the transition type needs to be selected (e.g. Mixer Key1, Mixer Background A etc.) this is the parameter that will be controlled by the modulator.

Bus Config Group

This is a modulation applied to a parameter that will affect a Bus e.g. transition wipe, Bus color and Keyer parameters, and is for example applied to a Key on the Mixer.

Touch the **{Bus Config Group}** menu link button to enter the **Modulators - Bus Config Group** menu.

Mixer Setup					Mod	ulators - Bus Co Mixer, Key				HDD
Key 1	Key 2		Local Type							
		Local	Sine	Yes 1.00	50.00	0.000	ME 1 Key 1 Key	a 🖉	Attachment	Mod-
Key 3	Key 4	Local Local	Sine	Yes 1.00 Yes 1.00	50.00 50.00	0.000	ME1Key1Key ME1Key1Key	er 👘		Assign
Mixer	Util/Misc	LULA	34116	16 1.00	5400	40.0	MC TKey TKey			
Effects Memories										
ОМЕМ	Macro								Gain	Mod- Assign
St	ore								50.00	% Snap
System Configuratio										
Crosspoints	Aux Buses	Parameter Details		Matte Hue	B GND A	BGND B	UTIL 1 UTIL 2			
User Config	Panel Config				KEY 1	KEY 2	KEY 3 KEY 4		Phase	Mod- Assign
Filing	Peripherals	Attachment	1 Decal Frequenc		Modulator	Local				
System	Peripherats	Gain	50.00% Local Type	Sine 🔍		ME1 Key 1	Find Nex	ct All Start		
Shortcuts	Eng Config		0.000*					Run		
		Global Modulators	Mixer Bus Group	Mixer Trans Group.	User Conf	ig Group				
		Mixer Outputs	Store Setup	GPOs	Modul	ation	Mattes	Audio		
G				Quick	opy Past					
	RAND	Panet	Undo Redo		lone Clor					
MASTERP		Lock	Normal Mod- Assign	Macro Record C	opy Past	e Back	Menu 8627	Tracking		

The table in this menu displays the modulation setup:

Modulator - this column will show if the modulation is Local to the Bus Config group or if it is attached to a **Global Modulators** setup (displayed as Mod 1 - 10 or named if setup in the **Global Modulators** menu).

Touch the **Modulator** attacher box (center of the menu), three parameters will appear. Use the Attachment parameter to scroll through and select a modulator setup in the table, then use the Modulator parameter to select if the modulation is "Local" to the Bus Group or attached to a **Global Modulators** setup. The **Transition Select** allows the use of the transition engines to control the level of other parameters.

Local Type - this is the type of modulation effect, notice that when the Modulator parameter is changed from Local to a Global Modulation the text in the Local Type, Run and Freq columns turns Gray and will not have any affect in the Local setup.

Run, Freq, Gain and Phase - these parameters have the same affect on a modulation setup as described on the previous page.

Local Frequency and Local Type parameters will only affect a modulation setup in the Bus Config Group.

Parameter - this column displays the Bus that the modulation effect is attached to.

Parameter Details - this named box displays the actual function that the modulation is attached to for the selected Bus modulation in the table.

All Start/ALL STOP - as described on the previous page, this function will set all the modulation setups in the table to run or stop.

Detach - this will delete a selected modulation setup in the table.

Mixer Trans Group

These are modulators set to work with function in the Mixer Transition menu. As can be seen below, modulators have been assigned to the "Wipe Modulation" H Amp, H Freq and H Phase attachers.

Modulators within this group can also be assigned to work within the Bgnd DVE and Mixer DVE functions.



User Config Group

The menu below works in exactly the same way as the Bus Config Group. They all have a "Local" type modulation setup or can be attached to a Global Modulations setup.

The User Config Group modulators are attached to parameters within the User Config menus; such as "Profile" in the User Config - Mixer Output Config - Fade to Black menu and the "Attachment, Gain and Phase" within the Modulator - User Config Group menu.



Basic How to Use Modulators

How to Use the Modulator Function The setup sequence will follow these easy steps:

- 1. Turn On Mod-Assign
- 2. Select the function the modulation is going to be attached to
- 3. Select the parameter that the modulation will be attached to
- 4. Attach the modulator.
 - 2. Select the Function



1. Turn On Mod Assign

Select the function the modulation will affect, then select the parameter the modulation will be attached to.

Touch and hold the [Mod Assign] button on the GUI, the button will turn red. Select the parameter that the modulation will affect and touch the green [Mod Assign] button in the parameter. Notice that the selected parameter display now has a blue sinewave symbol below the Mod-Assign button.





Also notice that the attacher that displays the parameter settings has turned green as shown below.

Wipe Modulation										
H Amp	0.00%									
H Freq	25.00% 🔴									
H Phase	0:000° 🔴									

Once the **[MOD ASSIGN]** and **[SNAP NORM]** buttons are released the GUI display will jump to the assigned modulator menu and highlight the attached parameter function in the table and Parameter Function display box.

The specific modulator setup can now be adjusted.



If a parameter is selected and a modulator cannot be attached to, the **{Mod-Assign**} button will not function and the blue sinewave symbol will not appear.

Mattes

This menus allows you to adjust the color of the internal Mattes. The mattes can be used as internal sources for crosspoints, Transition Matte Mixes, Key Matte Fill and DVE Border Fill.



The Matte colors in the above menu, represent the default matte colors.

To adjust a matte, touch one of the matte colors and a set of parameters will be displayed. Use the parameters to adjust the selected matte color.

Audio

This menu allows you to select the type of metering you want to have on the Masterpiece control panel. Select the Loudness thresholds, and set the 6 ton generators

Mixer Setup						User Co	nfig - Audio	Setup				HDD
Key 1		Metering						Tone Ge	nerator			
Key 3	Key 4	Meter Type No Normal Meter Style	Mal Loudness AES/Digital 😑					Channel Channel	1 Frequency 1 Phase	400 Hz •	Normal Meter Style	Mod- Assign
Mixer	Util/Misc	Prelade Metering	H On					Channel	2 Frequency 2 Phase	800 Hz •	AES/Digital VU Meter	
Effects Memories DMEM Sto	Масто		1001UFS • 1001UFS • 2005 •					Charnel	4 Frequency	1000 Hz • 0.0907 • 2000 Hz •		
Sta	ore							Charnel	4 Phase 5 Frequency	0:090° • 4000 Hz •		
System Configuration										0.090"		
Crosspoints	Aux Buses								6Frequency	8000 Hz		
User Config	Panel Config									0.090"		
Filing System	Peripherals											
Shortcuts	Eng Config											
		Mixer Outputs	Store Setu	p GP	Ds	Modulation.		Mattes		Audio		
G	1											
	BAND	Panel	Undo	edo Quick Macro	Copy Clone	Paste Clone		t Up		Disable		
MASTERP		Lock	Normal	od- sign Record	Сору		Back	Menu 8697		Tracking		

Meter Type - select between AES/Digital (or what ever is set by the "Normal Meter Style" parameter) or Loudness for the metering on each meter visual display on the control surface.

Normal Meter Style - this sets the "Normal" metering style. Select from:

- AES/Digital
- VU Meter
- EBU TECH 3205-E
- DIN/Nordic
- Peak

Prefade Metering - this sets the metering On/Off

Loudness - threshold levels for Loudness warning and panic lamp indicators with an integration window setting.

Tone Generator - a 6 channel tone generator where each frequency and phase can be setup

Panel Config

Preferences

Preferences menu allows the user to enable/disable functions on the GUI and Control Surface.

Note: Panel and GUI Preferences can also be accessed on the Masterpiece GUI (information at the end of GUI and Panel Preferences in this section).

GUI Preferences

GUI Preferences are a set of options that are designed to help the user access or control functions within the GUI more quickly and efficiently.

Mixer Setup			Panel Config - Pi	references		HDD
Key 1	Key 2					
		GUI Preferences Menu Select Button Top Last	Panel Preferences Preset Bus Double Hit Shift Off Off On	Snapshot Remove On Hold No Yes	Keyboard Brightness	
Key 3	Key 4	Timecode Mode Field Frame	Crosspoint Hold Return Off On	Overwrite Off On	Keybourd Brighthess	Popup
		Store Load On Press No Yes	Shifted Crosspoint Buttons Unlit Lit	Sound On Write Off On		
Mixer	Util/Misc	Sub-Clip Activate On Press No Yes	Lockable Crosspoint Shift Off On		1 00.00%	Snap
		Touchscreen Click Off On	Buttons Show Tally Next Off On	Screen Coordinate System		Normal
Effects Memories		Mouse Wheel Sensitivity 0	Enable Macros No Yes	DVE in 16:9 Mode 1 x 9/16		
DMEM	Macro	USB Keyboard Type en US 101	Enable Clones No Yes	Wipe in 16:9 Mode 1 x 9/16 Crop in 16:9 Mode Percent	Lanuard Defeatures	
			Keyboard Brightness 100.00%	Crophin recentione Percent	Legend Brightness	Popup
Sto	ore	Tracking Preferences Menu Tracking No Yes	Legend Brightness 50.00%	DVE in 4:3 Mode 1 x 9/16		
		Store Tracking Off On	Graphic Button Brightness 100.00%	Wipe in 4:3 Mode 1 x 9/16	50.00%	Snap
System Configuration		Layout Tracking Off On	Display Saver Timeout 2 Hours	Crop in 4:3 Made Percent		Normal
	Aux	Mixer & Bus Tracking Off On	Delegate Confirmation No Yes	Audio Module Control		Normat
Crosspoints	Buses	Xpt Button Tracking Off On	Panel Knob Reattachment Classic Safe	Audio Mixer Lamp Mode Cut On		
User	Panel	Crosspoint Tracking Off On	Name Dn Macro Buttons No Yes		Graphic Button Brightness	Popup
Config	Config					
Filing System	Peripherals				1 00.00%	Snap
						Normal
Shortcuts	Eng Config					Normal
		Preferences Button Maps But	ton Info User Functions MAV Layout	Fader Maps Panel Colors		
G						
Sv.			Quick Copy Paste	↑		
A BELDEN B	RAND	Panel	Macro Clone Clone + Back	Up → Disable Forward Tracking		
MASTERP	IECE	LOCK Normal Mod- Assign	Macro Record Copy Paste	Menu 8895		

Menu Select Button - This menu allows the user the choice of two styles of menu navigation.

- **Top** is used when traveling between different menus using the GUI panel buttons the system enters via the 'Top' menu, or front page of that 'menu tree'.
- *Last* is used when the GUI records the last menu the user was in before leaving that menu tree.

Timecode Mode - this sets timecode increments to be set to the nearest Frame or Field.

Store Load On Press - this gives the option to load a still when pressing a minipic in the Store menu, or by selecting "No", allows the user to select a still but not actually load until the **{Load}**} button is pressed. This allows the user to clone the still selection by "Copy, Copy" pressing a minipic and "Paste, Paste" the action onto a User Function button. The still will not load into the selected Store until the User Function is pressed. The selected Still can also be loaded into the selected Store by pressing {Load Selected Still} in the Shortcuts menu.

Sub-Clip Active On Press - this will load a sub-clip into a Store when touched in the Store - Sub-clips menu.

Touchscreen Click - when set to "On", an audible click can he heard when touching the soft MLC GUI.

Mouse Wheel Sensitivity - allows fine adjustment for the mouse wheel.

USB Keyboard Type - the user can now select between 22 different types of USB keyboard preferences, US, UK, French, German, Spanish and Latin American etc. Use the parameter control to scroll through the keyboard type options. This option is saved in the EEPROM of the Panel and not in the Panel Config.

Tracking Preferences:

Menu Tracking - when the user selects a function on the control surface i.e. **[KEY 1]** and presses the button twice, with **Menu Tracking** turned **On**, the GUI screen will switch to the Key 1 menu. So as the function suggests, the GUI menus will track a function selected on the control surface.

Store Tracking - When a Store is selected on the control surface, the Store menu will follow the selected Store.

Layout Tracking - this allows button press actions on one Mixer on the control surface to be tracked on all other Mixer

Mixer & Bus Tracking - any Key or Mixer delegates selected on the control surface, **Mixer & Bus Tracking** causes the GUI Delegate buttons to follow.

Xpt Button Tracking - this allows Xpt button tracking in the GUI menus.

Crosspoint Tracking - causes the menus that are crosspoint oriented to update their crosspoint selector to track any crosspoint selections on the control surface.

Panel Preferences

Panel Preferences are a set of options that are designed to help the user access or control functions on the Control Surface more quickly and efficiently.



Preset Bus Double Hit Shift - when turned On, if a Preset Bus button is pressed twice quickly, the Preview monitor and mnemonic will display the source and name of the "shifted" crosspoint. The panel will reflect this by either lighting the SHIFT ARROW and the XPT button or just the SHIFT ARROW. This is determined by the user preference Shifted Crosspoint Lit/Unlit.

Crosspoint Hold Return On/Off - this allows the user to hold down crosspoint button 'A' and then additionally press button crosspoint button 'B'. Pressing 'B' will select that crosspoint until 'B' is released, at which point the crosspoint selection returns to that for 'A'

Shifted Crosspoint Buttons - This function when set to LIT, will light both the crosspoint button and the **{Shift}** button of a shifted source. When set to UNLIT, the actual crosspoint button for the shifted source will not be lit until the **{Shift}** button is pressed.

Lockable Crosspoint Shift - this will allow the locking of the shift function to display the shifted Xpts continuously.

Buttons Show Tally Next - this is used in conjunction with the **User Config - GPO Setup** and allows the tally function to show what is being tallied on.

Enable Macros -

Enable Clones -

Keyboard Brightness - this adjusts the brightness of all the buttons on the Masterpiece control surface.

Legend Brightness - this adjusts the brightness of the mnemonic displays on the Masterpiece control surface.

Graphic Button Brightness - this adjusts the brightness of the OLED user function buttons.

Display Server Timeout - This causes the touch screen GUI to go into sleep mode after a designated amount of time. Default is 2 hours, maximum On time is 4 hours, can also be disabled so the GUI is on constantly.

Delegate Confirmation - Not applicable to this product.

Panel Knob Reattachment - this function has 2 modes:

- **Classic** the Key Control functions that work in conjunction with the Assignable Controls will behave in the normal way.
- **Safe** when using the Key Control functions in conjunction with the Assignable Controls for Resize, Border, Mask and Bus Color, pressing the function button in the Key Control area will make the button go Green, and the Assignable Controls will reflect and adjust the selected function.

If a different function is selected, the previous function button used in the Key Control area will remain Green, this allows the user to step back and forth between the selected functions.

To switch the function off, press and hold the button, and the Green light will go off.

Name On Macro Buttons -

Snapshot

Remove On Hold - Touch and hold a "Macro" OLED button to create a snapshot. With the "Remove On Hold" parameter set to "Yes", touch and hold the OLED button again and the snapshot is removed.

Note: If you hold and remove the snapshot from the button, it also deleted the snapshot from the Filing System.

Overwrite - when a snapshot has been attached to a button, with this parameter set to "On" you can press an hold the button and the original snapshot will be overwritten.

Sound On Write - when holding a OLED button down, the control surface will "bleep" to indicate that a snapshot has been written.

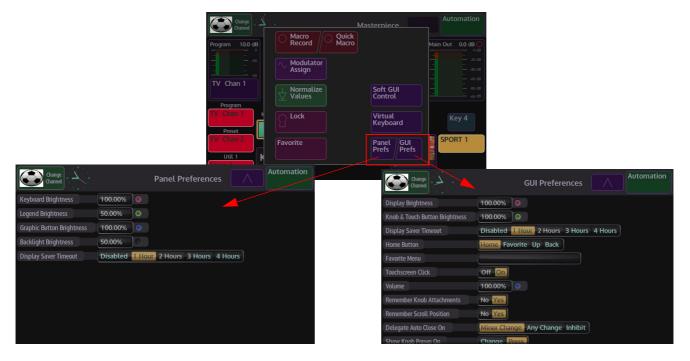
Screen Coordinate System

The Screen Co-ordinate System is a tool by which the user can adjust the display of coordinates on the GUI screen; co-ordinates that relate to the Resize engine, Mask areas and Wipe positions.

Crop: The ability to set the crop positions into Screen Grid mode (as per Wipe/masks) to allow the copying of Positions and Crops. To copy parameters "press and hold" the **{Copy}** button on the GUI and select the parameter using the **{Normal}** button associated with that parameter. Multiple parameters can be copied while copy button is held down, next go to the parameters you want to paste these values too, hold down **{Paste}** and press the **{Normal}** button associated with that parameter. The default mode for the Crop grid is percent.

Panel and GUI Preferences on the Masterpiece GUI

To get to the Panel and GUI Preferences touch the "Star" navigation button on the Masterpiece GUI and a sub menu will be displayed.



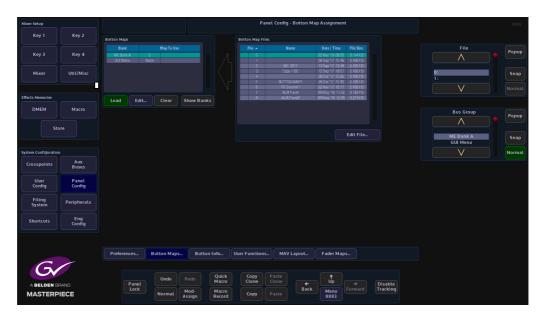
Touch the Panel or GUI Prefs buttons to access the menus as shown above.

Button Maps

Buttons on the Crosspoint Bus can have any source assigned to them using a Button Map. This can be done by saving and loading Button Map Files, or by creating Custom maps.

Button Maps Main Menu

The main menu allows you to load a button map file from the "**Button Maps Files**" table, directly into the Mixer.



To load an existing Button Map onto the Mixer, firstly select the required file in the Button Map Files table. That file is then loaded into the Mixer by touching the **{Load}** button. The **{Load}** button turns green and the file is displayed in the "Map To Use" column (as shown below).

Mixer Setup					Pane	l Config - Button N	1ap Assignment			HDD
Key 1	Key 2	Button Maps			Button Map Files					
		Peek					Date/ Time File Size		File	
Key 3	Key 4	ME Bank A	Man In Hea		File 🔺	Name	Date / Time File Size 20 Mar 119 08:56 3,144 KB			Popup
Key 5	itey 4		News		1		06 Sep 17 15:46 2.492 KB		\wedge	
						IBC 2017	13 Sep 17 13:38 2:492 KB			il —
Mixer	Util/Misc								0:	Snap
					4	BUTTON MAPS	06 0 ct '17 15:26 2:492 KB 26 0 ct '17 15:30 2:492 KB		1:	
					6	TV Channel 1	22 Nov 17 16:17 2:492 KB		V	í
					ž	AUX Panel	09 May '18 11:52 3.162 KB			Normal
Effects Memories		Load Edit	Clear Show Bank				09May 18 12:09 3:219KB			
		Load	Ctear Show Bank	<u>ه</u>						
DMEM	Macro								Bus Group	
										Popup
									\wedge	
Ste	ore									
							Edit File		ME Bank A	Snap
									GUI Menu	Sindb
System Configuration									V	Normal
System coningoration									V	Normat
Crosspoints	Aux									
	Buses									
User	Panel									
Config	Config									
Filing	Peripherals									
System										
Shortcuts	Eng Config									
	Config									
		Preferences	Button Maps Buttor	Info	User Functions	MAV Layout	Fader Maps			
			Undo Redo	Quick Macro		Paste Clone				
A BELDEN B	RAND	Panel		Macro	Ctone			Disable		
MASTERP	IECE	Lock	Normal Mod-	Macro	Сору	Paste		Tracking		
MASTERP	IECE		Normat Assign	Record	сору		8883			

Editing a Button Map

Touch one of the **{Edit}** buttons to get to the "**Panel Config - Edit Button Maps**" menu. When the menu opens you can see that there are two tables, "**Button**" and "**Source**", any changes made on this page will happen in real time on the Mixer buttons.



The "**Button**" table is split into two columns, on the left are the "**Primary**" (unshifted) button functions and on the right are the "**Shifted**" button functions.

The "Source" table is where the sources for the crosspoints are selected. The parameter controls on the right are used to scroll through the buttons and to select the Primary and Shifted crosspoints.

Button Number - this scrolls down the button numbers in the Button table.

Crosspoint - this scrolls through the **User Defined** and **Fixed Crosspoints** as displayed in the Crosspoint Mapping menu. Touch the "Popup" button to quickly select a crosspoint option (as shown below).

Key 1 Key 2 Intert Source Built of Source		
Key 3 Key 4 Part medu Part		
2 377 20x2 377 20x2 377 20x2 30x2 30x2<		
Mixer Util/Mixer 3 MC 3		
Muser Util/Mice 4 MT4 680-6 APT 19 980-719 980-21 202 Step2 Step3 <thstep3< th=""> <thstep3< th=""> <thstep3< <="" td=""><td></td><td></td></thstep3<></thstep3<></thstep3<>		
Mixel Ottomic Store Mixel &		
Notice Store Store <t< td=""><td></td><td></td></t<>		
According According <t< td=""><td></td><td></td></t<>		
B MYT 80/CB MYT 80		
Cit Manuality Operating and an operating an operating an operating an operating an operating an operat		
Macro B Off Application Consepont Consepont Consepont Store XPI Application		
DMEM Macro 1 2 Xpt1.40 Xpt1.40 Mette Mitue Mitu		
Store 02 277 Xp1.40 Apt 41.80 More DP Store 300 300 Store Cancel Attack		
Store Apr 130 Apr 130 Name	spoint	
Store H XVIII B Stores Cancel Hem Configuration 1:BNC1 2:BNC2 3:BNC3 4:BNC4 5:BNC5 6:BNC6 Matte 6 Matte 7 But 7:BNC7 8:BNC8 9:BNC9 10:BNC10 11:BNC110 12:BNC12 XMatte 6 But 7:BNC7 8:BNC8 9:BNC9 10:BNC10 11:BNC111 12:BNC12 XMatte 7 But 22 13:BNC13 14:BNC14 15:BNC15 16:BNC16 17:BNC17 18:BNC13 Button Type 28 29:BNC25 26:BNC26 27:BNC27 28:BNC28 29:BNC29 30:BNC30 A:BNC4 Matte 6 Filling Peripherals 31:BNC31 32:BNC32 34:BNC33 35:BNC35 36:BNC35 36:BNC36 Memat		
Store R Store Castelli Castelli Matte 6 11 1:80:01 2:90:02 3:80:03 4:80:04 5:80:05 6:80:05 6:80:05 Matte 6 stmc Configuration 7:80:07 8:80:08 9:80:02 0:90:01:0 11:80:01 1:80:00 1:80:00 1:80:01 </td <td>\setminus</td> <td></td>	\setminus	
Matter 2 1:BNC1 2:BNC2 3:BNC3 4:BNC4 5:BNC5 6:BNC6 Matter 2 sem: Curliquinton 7:BNC7 8:BNC8 9:BNC9 10:BNC10 11:BNC11 12:BNC12 V 2/2 2/2 13:BNC13 14:BNC14 15:BNC15 16:BNC16 17:BNC17 18:BNC18 V User 2/2 19:BNC19 20:BNC20 21:BNC21 22:BNC23 24:BNC23 24:BNC24 Butten Type 2/3 2/5:BNC25 2/6:BNC26 27:BNC27 28:BNC23 24:BNC23 24:BNC24 Annet Filling Peripherals 31:BNC31 32:BNC32 33:BNC33 34:BNC34 35:BNC35 36:BNC36 Shift Button	to A	
Ave: sem Cardinguadaria Ave: 2/2 1:BHC1 2:BHC2 3:BHC3 4:BHC4 5:BHC5 6:BHC6 Mane: 6 2/2 7:BHC7 8:BHC8 9:BHC9 10:BHC10 11:BHC1 12:BHC12 V 2/2 13:BHC19 11:BHC14 15:BHC16 16:BHC16 11:BHC11 12:BHC12 V 2/2 13:BHC19 20:BHC20 22:BHC23 23:BHC23 24:BHC24 34:BHC34 35:BHC36 36:BHC36 A Filling Peripherats 31:BHC31 12:BHC32 33:BHC33 34:BHC34 35:BHC36 </td <td></td> <td></td>		
Anne Panel		
Accord Accord<	te 8	
Axx Crosspoints 2/2 12:80C13 14:B0C14 15:B0C15 16:B0C16 17:B0C17 18:B0C18 Button Type User Comp Panet Comp Panet State 20:80C25 21:80C26 21:80C26 21:80C27 23:80C23 24:80C24 Button Type Filling Filling Peripherals 31:80C31 32:80C32 23:80C33 34:80C34 35:80C35 36:80C36 36:80C36 Momant Momant	/ –	
Cossponds Buses ze 13 - BNC 13 14 - BIC 14 15 - BIC 15 16 - BIC 16 17 - BIC 17 18 - BNC 18 User Panet ze 13 - BNC 19 20 - BIC 20 21 - BIC 21 22 - BIC 23 23 - BIC 23 24 - BIC 24 Buten Type User ze ze 26 - BIC 25 26 - BIC 26 27 - BIC 27 28 - BIC 23 29 - BIC 29 30 - BIC 30 Alermat Filling Peripherals 31 - BIC 31 32 - BIC 32 33 - BIC 33 34 - BIC 34 35 - BIC 35 36 - BIC 36 Mermat		
User Config 24 2 19:80/C19 20:80/C20 21:80/C21 22:80/C22 23:80/C23 24:80/C24 Button Type Filing System Peripherals 31:80/C21 22:80/C26 27:80/C27 28:80/C28 29:80/C29 30:80/C30 A		
User Config Panet 26 25 BIC 25 26 BIC 26 27 BIC 27 28 BIC 28 29 BIC 29 20 BIC 30 Mormat Shift Buton	on Type	
Filing System Perpherals 31 : BHC 31 32 : BHC 32 33 : BHC 33 34 : BHC 34 35 : BHC 35 36 : BHC 36 Normal	\	
System Perpirerats a bit of a		
System Perpirerats a bit of a		
	Button	
Eng 37:BNC 37 38:BNC 38 39:BNC 39 40:BNC 40 5	/	
Shortcuts Config		
Button Tracking Delete Save To File Mattes All		

The **Button Type** parameter is used to select the overall function of the Bus button and has 3 options:

• **Normal** - the button selects the assigned primary and secondary sources.

- **Shift** The button is now used to select between shift and un-shift for the whole bus of buttons. Traditionally this is placed at the far right of the bus.
- **Bus Lock** pushing this locks the operation of the entire bus. Pushing a second time cancels this.

To assign a source to a particular button/crosspoint, touch a Primary or Shifted crosspoint and it will highlight in blue, then select a source from the source table. The source crosspoints are broken down into separate groups which are selectable using the set of buttons below this table.

Having selected both the button and the source crosspoint, touch the **{Assign to Button}** button to complete the action. At this point both the button table and source table automatically advance one entry. This enables you to assign consecutive sources quickly. Pushing the **{All}** button selects one complete scrollable list of all the available crosspoints.

None - assigns no source to the selected button.

Direct Assign - when this is selected the assignment is made as soon as the source is selected in that table without you needing to push the {Assign to Button} button. This mode cancels as soon as you navigate away from that menu.

Clear to End - this clears all buttons beyond the selected button. Note, this will not clear shift or lock buttons.

Insert Before - inserts a blank button and moves all subsequent buttons on one position. Note, shift and lock buttons will not move.

Delete - removes the selected source and moves all subsequent buttons back one position. Note, shift and lock buttons will not move.

Save to File - the edited button map can be saved to a file.

Saving a Button Map

When the **{Save to File}** button is pressed, the "Save Button Map" menu is displayed. The menu displays all the saved button map files. Select a free slot in the table and then touch the "Name" attacher red button twice to display the on-screen keyboard. Give the button map a name and then press the {Save} button to save the button map to the file list.



Button Information

The **Panel Config** - **Button Information** main menu displays information about Clone button functions and Macro buttons. The Button Summary table displays all the information related to a selected button.

Mixer Setup				Panel Config - Button Information									HDD	
Key 1	Key 2	Button Summary												
							Live M	ode						
Key 3	Key 4	CoreName												
Mixer	Util/Misc			Inact	ive									
	outomise			Inact	ive									
				Not Attack	nad		Enable M	acros						
Effects Memories				00	:00									
DMEM	Macro			Ma	010		Enable C	lones						
				Narr	nal									
St	ore			Enab	red		Locate B	utton						
System Configuratio	'n			۱	res .		Detach							
Crosspoints	Aux			Enab	fed		Reactivate S							
Crosspoints	Buses													
User	Panel						Detach Sn	apshot						
Config	Config						Locate N	lacro						
Filing System	Peripherals	Active Functions:		Normal			Detach N	facto						
		Lamp From:		Normal										
Shortcuts	Eng Config	Bitmap From:					Locate C	lone						
		Snapshot Save:					Detach (lone						
		Preferences	Button Maps	Button I	nfo	Jser Funct	tions M#	V Layout	Fader Ma	aps				
G														
			Undo		Quick Macro	Copy	Paste Clone		¶ Up					
		Panel Lock	Normal		Macro	Сору		← Back	Menu		Disable Tracking			
MASTERPIECE				Assign	Record	Copy	Paste							

Button Summary

Button Name - the normal button function.

Clone Name - the clone function attached to a button.

Normal Button Function - displays if the normal button function is active.

Cloned Button Function - displays if the cloned button function is active.

Macro - displays if a macro is attached to the button

Button Delay - this displays the delays attached to a macro function

Bitmap From - display where a bitmap is derived from, when cloned to a User Function button

Lamp From - displays lamp from cloned function or from the normal function

Snapshot Recording - inhibits the user function buttons ability to record a snapshot.

Cloning Permitted - if a function can be cloned, this parameter will display Yes

Live Mode Behavior - Shows "Enabled" if Live Mode can be set on this function.

Current Lamp Color - this displays the default or any user-defined lamp color that has been applied to a button.

Button Functions

These buttons are used to locate and disable Clones or Macros associated to a button.

Live Mode - will turn Live Mode On or Off

Stop All Macros - will stop all macros running

Locate Button - this will allow the current function of any button to be summarized in the table. Buttons with Clones and/or Macros attached will light Green when the Locate Button is Active. To locate a button Press the "Locate Button", it will go Red and the panel will only light up Normal Button (e.g. Clones, Macros attachments and Button that have had their Normal Functionality Disabled), the Table will then Display the current Information about that button. The Locate button will then return to Gray.

Detach Snapshot - this will detach a Snapshot from the selected button

Locate Macro - works in the same way as Locate Clone, and locates a Macro function button

Detach Macro - detaches a macro function from a button

Locate Clone - locates the clone button by turning off all the lamps on all the buttons on the control panel and GUI except the clone button which will turn Red.

Detach Clone - detaches the clone function from a button.

Mixer Setup						P	anel Confi	g - Button In	formation			
	Key 2	Button Summary										
		Button Name					Live Mode					
		Clone Name										
		Normal Button Function		Ina	ctive							
Mixer	Util/Misc	Cloned Button Function			stive							
		Macro		Not Atta	ched							
Effects Memories		Button Delay			10:00		nable Mac	ros				
DMEM	Macro	Bitmap From		1.	lacro		nable Clo	nes				
		Lamp From		N	amal							
St	ore	Snapshot Recording			abled		ocate Butt	on				
		Snapshot										
iystem Configuratio		Cloring Permitted			Yes		Detach Al					
	Aux	Live Made Behaviour		En	abled							
Crosspoints	Buses	Current Lamp Color										
User Config	Panel Config					De	tach Snap	shot				
coning	coming						ocate Mad					
Filing System	Peripherals	Active Functions:		Normal			etach Ma	ro				
		Lamp From:		Normal								
Shortcuts	Eng Config	Bitmap From:					.ocate Clo	ne				
		Snapshot Save:					Detach Clo	ne				
		Preferences	Button Maps	Button	Info	User Functions.	. MAV	Layout	Fader Mag			
G												
Gv			Undo		Quick Macro		Paste Clone		† Up			
A BELDEN E		Panel Lock		Mod-	Macro			← Back	Menu	Disable Tracking		
MASTERF	PIECE			ssign	Record	Сору			882			

When a button is selected, this menu can be used to enable/disable functions listed below.

Active Functions

Clone - switches the clone function On/Off

Normal - switches the normal function of a button On/Off.

These can be selected together so that both functions are active.

Lamp From:

Clone - will set the button lamp to light up the same as the cloned function, i.e. if live to air the button will turn Red.

Normal - switches the lamp between its normal Green color and the Red cloned color

Macro - this will allow a lamp to be lit from a macro assignment

Bitmap From

Clone - displays a bitmap from the cloned function

Macro/SS - by default, a User Function Button would be blank normally, however the button can also have a bitmap from a macro or snap shot.

User - displays a bitmap from the User Function, Edit Button Bitmap menu.

Snapshot Save

Inhibited - inhibits the user function buttons ability to record a snapshot.

Allowed - allows a user function button to save a snapshot

MAV Layout

The MAV Layout menu displays the control surface individual components connected together to make up the Masterpiece control surface. These are fixed and should not be altered or the control surfaces may not work correctly.

Note: When the system has booted up, if the control surface doesn't light up as expected, touch the **{Masterpiece Auto Config}** button to make sure that the Masterpiece control surfaces are configured properly.



If an extra MAV Modules such as the MAV-AUX module have been added to the system and the you need to configure the MAV module to work with the control surface, touch the **{Auto Config}** button and the control surface will be configured correctly.

Use the MAV Selector parameter to scroll to the MAV module. Use the ME Group parameter to set the MAV Module into the correct ME group. Finally touch the "**{Apply Changes}**" button.

Fader Maps

The Fader Map menu allows you to setup how the two faders work on the Masterpiece control surface. The menu can also be used to setup any external MAV-FADER modules connected to the control surface.

Mixer Setup						Panel Config - Fad	er Map			HDD
Key 1	Key 2	Fader Map						vliker Bank A 😐		
Key 3	Key 4	Fader Fader 1 Fader 2	Button Chan Trans Off Trans Off	Unassigned	Cut Level Out Anf d8 Out Anf d8		Module Fader	1-8 • Fader 1 •	Fader Group	Popup
Mixer	Util/Misc						Bitten	Trans	Mixer Bank A	Snap
Effects Memories								OH •		Normal
DMEM	Macro								Module	Popup
									1-8 9-16	Snap
System Configuratio										Normal
Crosspoints	Aux Buses									
User Config	Panel Config								Fader	Popup
Filing System	Peripherals								Fader 1 Fader 2	Snap
Shortcuts	Eng Config									Normal
		Preferences	Button Maps	Button Info	User Functions	MAV Layout	Fader Maps			
	RAND	Panel	Undo	Redo Quick Macro		aste lone ←	Ůp →	Disable		
MASTERP		Lock	Normal	Mod- Assign Record	Сору Р	aste	Menu Number	Tracking		

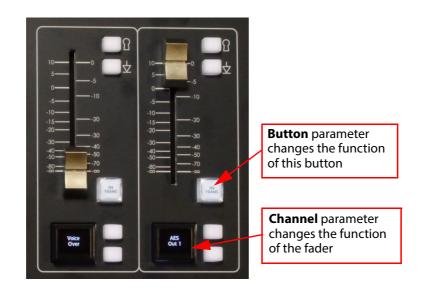
Fader Group - this is used to select any external fader module bank groups

Module - selects the button groups for the external fader modules

Fader - this selects the Faders 1 or 2 on the control surface or faders on external Fader Modules.

Button - changes the function of the button at the bottom of the fader.

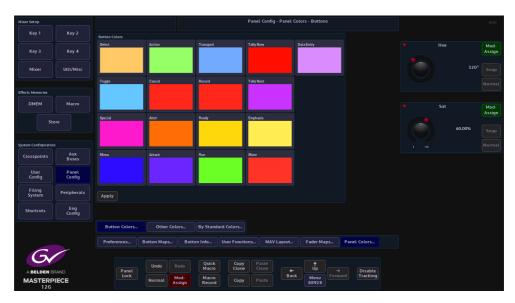
Channel - this sets the function of the fader i.e. Program, Preset, Voice Over, Main Out etc. Select the fader using the "Fader" parameter, then as you step through the "Channel" functions, the functions will change on the OLED button like using the toggle buttons.



Panel Colors

Button Colors

This menu allows the user to set user defines color schemes to specific buttons on the control surface and changes color schemes for actions and alerts.

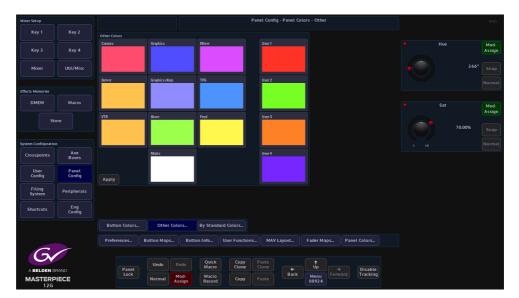


All of the buttons on the control surface can have their default color schemes changed in this menu. The diagram above Shows an example of the Tally Now adjustment menu. touch one of the items in the main menu and an adjustment menu will appear.

The default color can be changed by adjusting the Hue and Saturation parameters.

Other Colors

The Other Colors menu allows the user to change the preset color scheme of the Masterpiece color crosspoint buttons.

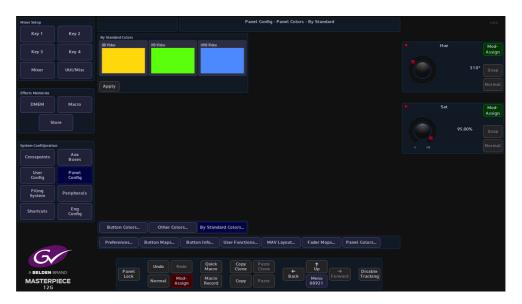


In the **Crosspoint Mapping** menu on the **GUI**, the user can select crosspoint in the table and then use the **Xpt Lamp Color** parameter to set a preset color scheme for the selected crosspoint.

The Other Colors menu allows the user to select and change the preset colors in the Color list. Touch one of the colors and then use the Hue and Saturation parameters to adjust to the desired color, then press the **{Apply}** button.

By Standard Colors

This menu allows the you to set crosspoint button color for the video standard for the source assigned to that crosspoint. So that the crosspoint buttons will display different color schemes for video standards on the control surface.



You can keep the default color scheme for the video standards or touch one of the colors to select it and then use the Hue and Sat parameters to alter the color.

When done, touch the **{Crosspoints}** button and then touch and select a crosspoint in the table that you want to set a video standard color to.



Then set the "**Color By Std**" parameter (shown above) to "Yes". An asterisk "*" is displayed next to the lamp color name in the "**Xpt Lamp Color**" column.

12G-SDI Setup and Operation

Overview

Masterpiece 12G-SDI is engineered with a single link 12G-SDI infrastructure. Masterpiece 12G-SDI offers 12G-SDI BNCs for UHD connectivity, as well as 3G BNCs for Quad link signals; HD sources are also available. Whilst using the Masterpiece mainframe in UHD mode, the user is now able to have a single link UHD input or output using the 12Gbps BNC connectors, the system does not have to have Quad link signals anymore.

The Masterpiece 12G-SDI mainframe has:

- 40x Inputs, 10x of those inputs are 12G-SDI BNC connectors (silver in color).
- 14 outputs (UHD mode), 3x of those outputs are 12G SDI Connectors (silver in color).



A = Outputs **B** = In UHD mode these can also be used as outputs. **C** = Inputs

Masterpiece 12G-SDI features include:

- UHD processing
- A single link SDI connection
- Keying for channel branding
- A video mixer
- Includes Grass Valley's FormatFusion3 for multi-format work flows
- A DVE for functional squeeze backs and effects
- Audio embedding, de-embedding and shuffling
- An audio mixer for mixing voiceover and voice-under
- Automation and manual control
- A dedicated panel for easy operations

- FormatFusion3 for multi-format operations supporting HD, 1080p and UHD
- UHD supports Quad Link and 2SI
- Internal Stores
- 12G over SDI single link.

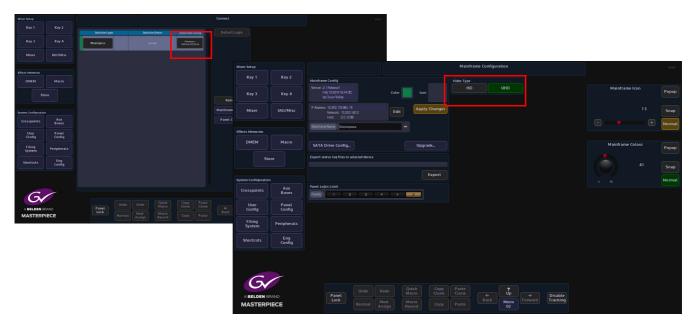
Note: The "silver" BNCs on the Masterpiece Mainframe shown on the previous page, these are the 12G-SDI Inputs and Outputs.

Set the System up in UHD Mode

As mentioned earlier, to use the 12G-SDI BNCs as UHD inputs and outputs, the mainframe has to be placed into UHD mode.

The first step in enabling UHD mode is to put the GUI into the logged out state in the "Connect" menu.

Touching the {Mainframe Config} button will open the "Mainframe Configuration" menu. In



the "**Mainframe Configuration**" menu, touch the **{UHD}** button to select UHD mode, then press the **{Up}** button to go back to the "**Connect**" menu.

Finally, touch the **{Switcher Login}** button to log back into the Masterpiece operational menus.

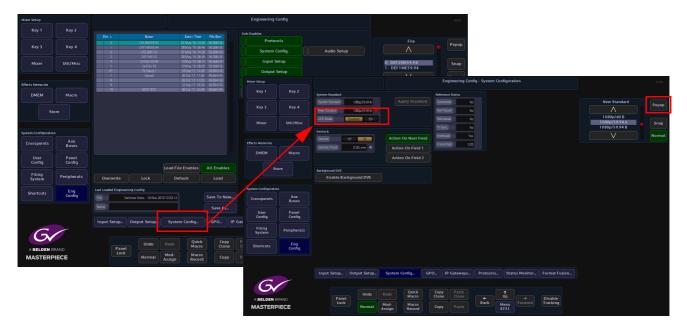
Note: Notice that when a touch screen GUI is connected to a Masterpiece 12G-SDI mainframe, the logo in the bottom left corner of the menu has "12G" under the Masterpiece name.

Once back in the "Connected to Masterpiece Mainframe" menu, the user has two choices when setting up UHD, either touch one of the preset UHD Shows at the top of the menu and UHD will be setup ready to use or the user can manually setup UHD by following the information through this section.

Touch the **{Engineering Config...}** button.

UHD Engineering Config Setup

In the **Engineering Config** main menu, touch the **{System Standard...}** button to enter the System Standard menu.



The System Standard menu can be set to "**UHD Mode - Quadrant**" or "**UHD Mode - 2SI**", however the user can choose between the UHD standards by touching the "Popup" button top right to reveal a "**New Standard**" dialog box. From the dialog box the user can select what type of UHD standard the system is set to, as shown below.

Mixer Setup					Engineering Confi	g - System Con	figuration			
Key 1	Key 2	System Standard		Refe	erence Status					
Key 3	Key 4	System Standard 1060,59.94 New Standard 1060,59.94			rlocked No Present No				New Standard	Popup
Mixer	Util/Misc	UHD Mode Quadrant 281 Genlock			Locked No Sync No				1 080i/60 1 080i/59.94 1 080i/50	Snap
Effects Memories		Genlack Dff Dn	Action On Next Fi	eld	ariaced Yes me Rate 0.00					Normal
DMEM	Macro	Genlock Phase 0.00 Lincs	Action On Field							
St	ore	Background DVE Enable Background DVE		UHD	New Standard UHD sF	Slow UHD				
System Configuratio				60 Hz	59.94 Hz	50 Hz				
Crosspoints	Aux Buses			Lev						
User Config	Panel Config			UH Apply S						
Filing System	Peripherals									
Shortcuts	Eng Config									
		Input Setup Output Setup	System Config	GP O	IP Gateways	Protocols	Status Monitor	Format Fusion		
sar)		Undo Redo		Copy Paste Clone Clone					
Masterpie	ce		lormal Mod- Maci Assign Reco		Copy Paste	← Back				

Select between UHD-Q or UHD-2SI, the frequency and the type of UHD required - UHD Segmented Frame or UHD Slow, then press the **{Apply Standard}** button. The next thing to do is to setup the Inputs and Outputs.

12G SDI Input Setup

Touch the **{Input Setup...}** button, in this menu the user will setup all the UHD inputs to the mainframe.



As stated at the start of this chapter, in UHD mode, there will be 4x inputs for every UHD source input to the mainframe, which consist of Input 1 (top left), Input 2 (top right), Input 3 (bottom left) and Input 4 (bottom right). Select Input 1, then touch the "**UHD Input**" **{Yes}** button. Notice that Inputs 1 to 4 are now ganged together as Input 1 (shown below).



The next input to select is Input 5, then touch the "**UHD Input**" **{Yes}** button, then inputs 5 to 8 are ganged together. This can be repeated up to another 8 times, allowing ten UHD sources input to the mainframe.

Note: Please note that there are no parameter adjustments in the Input Setup menu for setting up 12G-SDI, it is automatically set once the inputs are set to "UHD Input".

As each UHD input is selected in the inputs table, 12G-SDI sources to the mainframe can now be connected to the following BNC inputs as required: 1, 5, 9, 13, 17, 21, 25, 29, 33 and 40 (the silver color BNCs).

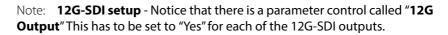
12G-SDI Output Setup

Setting up the UHD outputs on Masterpiece is very similar to setting up the inputs, where the outputs are grouped in fours.

Touch the **{Output Setup...}** button and the menu will look like the one below.

Mixer Setup					Enginee	ing Config - Output Setup Output 1				HDD
Key 1	Key 2			Name			SMPTE			
Key 3	Key 4	0/P 1234	ALX 0/P 1.2.3.4 UHD		Now Next Iso1	so2 Iso3 Iso4 Iso5 Iso6 Iso7 Iso8		IANC VANC Yos Yos	BNC Output	Popup
Mixer	Util/Misc	0,P 3 0,P 4 0,P 5 0,P 5	AUX O/P 3 UHD AUX O/P 4 UHD AUX O/P 5 AUX O/P 5					Yes Yes Yes Yes		Snap
Effects Memories		0/P 7 0/P 8 0/P 9	AUX C/P 7 AUX C/P 8 AUX C/P 9				Yes Yes Yes	Yes Yes Yes Yes Yes Yes		Normal
DMEM	Macro	0,/P10 0,/P11 0,/P12	AUX 0/P 10 AUX 0/P 11 AUX 0/P 12					Yes Yes Yes Yes Yes Yes	Now	Popup
St	pre								Off	Snap
System Configuratio						Output Tally			On V	Normal
Crosspoints	Aux Buses	Name SMPTE 352 Payload		UHD Dutput	0H 0n 40 165	Nov Ott • ISO 4	011 • 1507	011		
User Config	Panel Config	HANC	Ott On		malid Ott On			011	Next	Popup
Filing System	Peripherals	ANC From Source	No Yes			ISO 2 OH •			Off On	Snap
Shortcuts	Eng Config									Normal
G		Input Setup	Output Setup	System Config	GPO IP Gateway	s Protocols Status Moni	itor Forma	at Fusion		
	RAND	Pane		Redo Quick Macro	Copy Paste Clone Clone		Disat			
MASTERP	IECE	Lock	Normal	Mod- Assign Record	Copy Paste	Back Menu 8771	ard Track	ing		

Touch the OP1 row to select it, then set the "**UHD Input**" to **{Yes}**, the first 4 outputs are now ganged together (see below), in the same way as the inputs, so now Outputs 1 to 4 make up the first UHD-quad output.



Mixer Setup							Er	ngineerii	ng Con Out	ig - Οι put 5	utput Se	tup					HDD
Key 1	Key 2																
		BNC				Nov	v Next		12 Iso3	Iso4	Iso5 Iso6	i Iso7 I			IC VAN :	BNC Output	
Key 3	Key 4	0/P 1, 2, 3, 4	AUX D/P 1,2,3,4	UHD									Y	os Yes	s Ye		Popup
				UHD UHD													
Mixer	Util/Misc	0/8.4	AUX 0/P 4	UHD													Snap
		DVP 5	AUX 0/P 6														
				UHD													Normal
Effects Memories			AUX 0/P 9														
		0/P 10 0/P 11	AUX 0/P 10 AUX 0/P 11										Y	as Yes es Yes			
DMEM	Macro	0/P 12	AUX 0/P 12										Ý			Now	Popup
																\wedge	Popop
Sto																	
																Off	Snap
																On	
System Configuration									Out	ot Tally						V	Normal
Crosspoints					UHD Output	Off		Dn	Nov				-	ISD 7	Off		
	Buses		ad Enabled In	hibted	12G/6G Output	No		(85					Cff •				
User	Panel	HANC	011	la l	Payload UHD Char	inal Id Dff		Dn	Nor		Dit 😑	ISD 5	Ctt 💿	ISD 8	011 🔵	Next	Popup
Config	Config							u .	ISO	a (or •		Dff 🔵			\wedge	
		VANC	011	Dn													
Filing System	Peripherals		No	85					ISD		Gff •					Off	Snap
											0ff 🔍						
Shortcuts	Eng Config																Normal
	Config																
		Input Setup	Output Set	Jp Sy	stem Config	GPO	IP G	ateways	P	rotoco	ls 9	Status M	donitor	Format	Fusion		
C																	
			Und		Quick Macro	Copy Clon		Paste Clone			t						
A BELDEN BE	RAND	Pa				Cton				← Back	Up			Disable Trackin	2		
MASTERP	IECE		Norm	at Assid		Copy				Dack	Men 877			THACKIN			

Set the "**12G Output"** parameter to "**Yes**" and the first 12G-SDI BNC can be connected to output 1 (silver BNC). As the other outputs are setup as UHD outputs in the outputs table, the 12G Output parameter can be set to "Yes" for outputs 1, 5 and 9 (the silver BNCs).

IP Connectivity and Operation

Overview

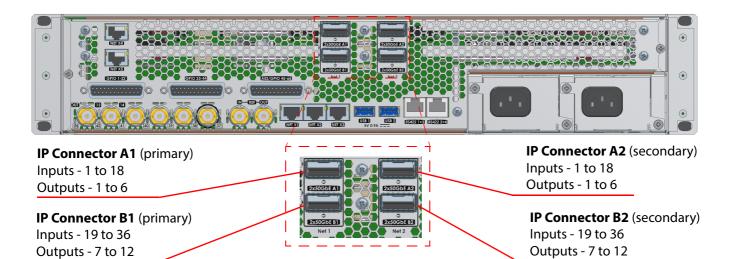
Many broadcasters and media organizations have taken the step forward and embraced new IP infrastructures into their production work flows. More are looking to work with real-time audio and video transport over a 50GbE IP network. Several real-time protocols such as uncompressed SMPTE ST 2022-6, SMPTE ST 2022-7 and VSF TR03/SMPTE ST 2110 now exists to stream and enable intra operability between equipment supporting the master control and playout operations.

Grass Valley, a Belden Brand, has a rich history in helping media organizations deliver content on time, on budget and to the right audience across whatever distribution mechanisms are appropriate. Building on our world firsts in deploying IP solutions technologies we are introducing Masterpiece IP, which is a new market-defining master control switcher for the IP environment.

Whatever your channel genre, whether it's sports, news or live entertainment and whatever your distribution — a single over-the-air (OTA) channel, multichannel content distribution or real-time streaming.

IP Connectivity

Duplex, signals supported over RTP streams via 2x QSFP 28 (Transceivers QSPF28) SMPTE ST 2022-6, SMPTE ST 2022-7, VSFTR-03, VSFTR-04, SMPTE 2110 Up to 10 inputs – 1.485 Gb/s format sources Up to 10 inputs – 2.970 Gb/s format sources Up to 12 outputs –1.485 Gb/s format sources Up to 12 outputs – 2.970 Gb/s format sources

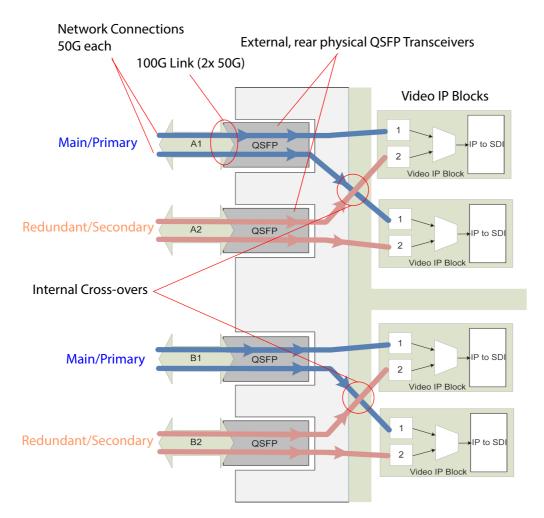


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IP Architecture

The physical media network link uses QSFP cages on the rear of the unit ('Link A1'... 'Link B2') and are 100G Ethernet links that are each configured for 2x 50G operation. When fitted, QSFP transceivers are internally connected to the Video IP blocks via a hard-wired network 'cross-over' arrangement (which can remove the need for external break-out cables in some cases.

Example of Video IP Blocks



Thus, one rear physical rear media network 'link' feeds two Video IP blocks.

Video input IP streams for inputs 1 to 18 can be carried either in network link 'Link A1', or in 'Link A2', or in both links for redundancy.

The second Video IP card is similarly connected but via 'Link B1' and Link B2', which carry the video IP streams for video inputs 19 to 36.

IP Input Menus

To get to the IP input menus, in the Input Setup menu, touch the **{IP Setup...}** menu link button.



Ethernet Menu (above)

At the top of the menu are the IPL Fin selection buttons. These buttons correspond to the IP inputs at the rear of the mainframe.

The **Ethernet** menu is used to setup the IP addresses for the following:

- 1G Control this is the IP address for the RJ45 network port on the IP Fin
- Primary this is the QSFP cage number A1/B1
- Secondary this is QSFP cage number A2/B2

The IP addresses have to be setup for each Ethernet Interface set (1G Control, Primary and Secondary) for each IP Video Rear. Once the IP address has been set for the (as shown above) 1G Control, touch the **{Copy to Primary & Secondary**} will copy the IP information to the Primary and Secondary sets. After using copy, it is necessary to modify the Primary and Secondary IP addresses to make sure that they are different. Typically, these are incremented by 1.

If an existing IP address exists, the user can touch the **{Copy to New}** button and the IP address info will be copied across to the "New" IP address box.

Once the IP addresses are set, touch the **{Apply All Interfaces & Restart Fin}**, this has to be done to restart the IP Fin.

Flow Menu

The Flow menu allows you to setup each individual "Spigot" IP address, Source IP address. Each Flow needs to have a Multicast IP address and Port as well as the IP address and Port of the source.



The number of Spigots that are available as inputs are restricted to the type of "**Flow Type**" that is selected. This will display the number of inputs available to the selected Fin.

- Flow 1 This is used for Video
- Flow 2 This is used for Audio

touching the {Apply Spigot} button.

• Flow 3 - This is Metadata

The "Links" "Primary" and "Secondary" buttons allow separate data to be added for the Primary and Secondary Links.

The IP addresses, Port numbers and Flow Types can be entered manually, but there is a template tool which can be used to speed up the setup process. Once the information is entered into the "**New**" data field, these settings are set as "**Current**" by

The IP input Flow Template, allows the user to set the Multicast IP address (this is user specific). The Source IP is the IP address of the incoming source.



When the information is input into the IP Input Flow Template, set the "Multicast Increment" to increment by "1", the Template tool allows an address or port number to be incremented each time the **{Paste from Template}** button is touched.

For example enter the Multicast IP address - 120.14.10.01, then setting the increment to 1, then when the **{Paste from Template}** button is pressed, the Multicast IP address will increment by 1 automatically. This is handy and less time consuming if the user is setting up a lot of spigots.

This has to be done for each Flow for each Spigot.

These have to be setup for each spigot.

It is recommended "**Video Standard**" parameter is set to "**Auto**", which as suggested will automatically select the video standard for the selected spigot.

The "Link Status" window displays the incoming video standard.

Spigot Menu

In the Spigot menu, the user is able to set the video standard for individual Spigots (inputs) using the "**Format**" parameter. By touching one of the Spigots, setting this parameter will allow more or less spigots to be used, depending on the type of format that is selected for the spigot.

Mixer Setup													Er	nginee	ring C	onfig -	- IP Inp	out Setup				
	Key 2	Input																	RollCall			
Key 3	Key 4								8 9 26 2										Fin Spigot	Rear Video 1(a) 4	Audio delay ms	Popup
Mixer	Util/Misc		ı dəlay n	в (ke / Break lake befo		ak												Snap
Effects Memories		Strea Form		1	Dual :D/HD/93			reak befo	ore Ma	ke												Normal
DMEM	Macro	Input Statu			OK			itination T ames Delay Elfact		•											Streaming	Popup
Ste	ore							Diffset		•											Dual Single	Snap
System Configuratio											٨	pply									V	Normal
Crosspoints	Aux Buses																					
User Config	Panel Config																				Format	Popup
Filing System	Peripherals																				SD/HD SD/HD/3G	Snap
Shortcuts	Eng Config																					Normal
			Flow.		s	pigot		Cont	fig		therne											
		Inp	ut Sel		Out	put Se		Syst	em Cor	nfig	G	°0	IP G	iatewa	ys	Prot	tocols	Stat	tus Monitor	Format Fusion		
	RAND			Pane						Quicl Macro	< >	Cop Clon	/ e	Paste Clone		•		↑ Up		Disable		
				Lock		Norr	nal	Mod- Assign		Macro Recor		Copy				Ba		Menu Number		Tracking		

The "**Streaming**" parameter will set whether there are "Dual" or "Single" QSFP cages being used on the selected IP Fin.

The "Audio Delay" parameter can be adjusted, if for instance the "Lip Sync" is out between audio and video signals.

Make before Break - this sets up the new flow before breaking the old one. It should be noted that this will use extra bandwidth as the new flow is established.

Break before Make - this simply breaks the old flow before setting up the new one. This will not result in a clean cut but will not use anymore bandwidth.

Config Menu

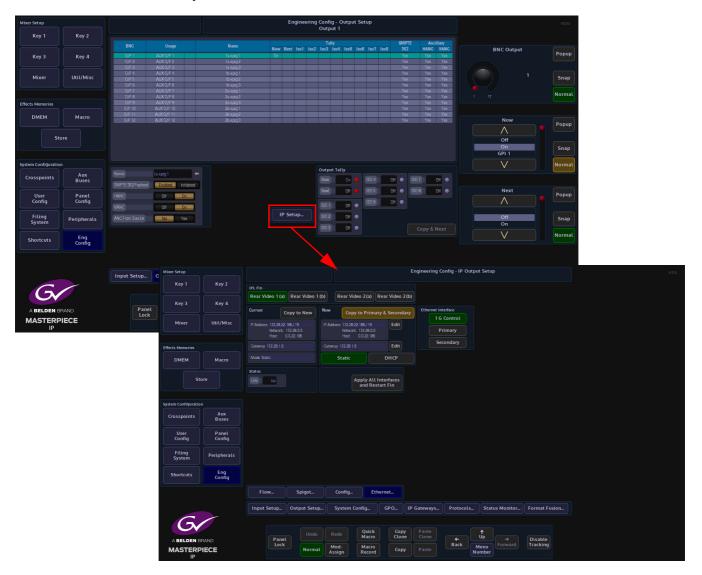
The Config menu only allows the user to change the current "DDS Domain ID".

Note: The software on the IP Input Fin has to be updated through RollCall directly to the IP Input FIN via the RJ45 Network port.



IP Output Menus

To get to the IP Setup menus, go to the "**Eng Config - Output Setup**" menu and then touch the **{IP Setup...}** menu link button.



Ethernet Menu (above)

At the top of the menu are the IPL Fin selection buttons. These buttons correspond to the IP QSFP cages at the rear of the mainframe.

The Ethernet menu is used to setup the IP addresses for the following:

- 1G Control this is the IP address for the RJ45 network port on the IP Fin
- Primary this is the QSFP cage number A1/B1
- Secondary this is QSFP cage number A2/B2

The IP addresses have to be setup for each Ethernet Interface set (1G Control, Primary and Secondary) for each IP Video Rear. Once the IP address has been set for the (as shown above) 1G Control, touch the **{Copy to Primary & Secondary**} will copy the IP information to the Primary and Secondary sets. After using copy, it is necessary to modify the Primary and Secondary IP addresses to make sure that they are different. Typically, these are incremented by 1.

If an existing IP address exists, the user can touch the **{Copy to New}** button and the IP address info will be copied across to the "New" IP address box.

If an existing IP address exists, the user can touch the **{Copy to New}** button and the IP address info will be copied across to the "New" IP address box.

Once the IP addresses for the IP Output Fin are set, touch the **{Apply All Interfaces & Restart}**, this has to has to be done to restart the IP Output Fin.

Flow Menu

The Flow menu allows the user to setup each individual "**Spigot**" IP address, Source IP address. Each Flow needs to have a Multicast IP address and Port as well as the IP address and Port of the source.



The number of Spigots that are available as outputs are restricted to the type of "**Flow Type**" that is selected. When selecting a Flow Type settings, refer to the number of channels listed in the "**Number of IP Outputs**" tables, as listed earlier in this section.

The "Links" "Primary" and "Secondary" buttons allow separate data to be added for the Primary and Secondary Links. The IP addresses, Port numbers and Flow Types can be entered manually, but there is a template tool which can be used to speed up the setup process. Once the information is entered into the "New" data field, these settings are set as "Current" by touching the {Apply Spigot} button. This has to be done for each Flow for each Spigot The IP Output Flow Template allows the user to set the Multicast IP address (this is user specific). The Source IP is the IP address of the incoming source.

Mixer Setup									Engineering G	onfig - IP Ou	put Setup				HDD
Key 1	Key 2	Output										RollCall	Info		
Key 3	Key 4											Fin Spiget	Rear Video 1(a)	Flow Type	Popup
Mixer	Util/Misc	Current	Cop		nplate	New	Paste fi	om Template	Flow Flow 1	Links Primary				None SMPTE2022-6	Snap
				239.20.1.20	19	Mubicast IP	239.20.1.20	Edit	Flow 2	Secondary				V	Normal
Effects Memories					10										
DMEM	Macro			172 28 21.15	a	Source IP	172 28 21.15	Edit	Flow 3						
				5010	0	Source Port	5010		Flow 4						
Sto				Nor	•		Nan	•	Flow 5						
		Output				Edit Templat		pply Spigot							
System Configuration		Status		0K		Luit remptat	e	ppry spigor							
Crosspoints	Aux Buses														
User Config	Panel Config														
Filing System	Peripherals														
Shortcuts	Eng Config														
		Flov	v	Spi	got	Config	Ethe	ernet							
		Input S	etup	Outpu	t Setup	System Co	nfig	GPO If	Gateways	Protocols.	Status	Monitor	Format Fusi		
6															
	BAND		Pane				Quick Macro	Copy Clone	Paste Clone		↑ Up		Disable		
MASTERP			Lock		Normal	Mod- Assign	Macro Record	Сору		Back	Menu Number		Tracking		

When the information is input into the IP Output Flow Template, set the "Multicast Increment" to increment by "1", the Template tool allows an address or port number to be incremented each time the **{Paste from Template}** button is touched.

For example enter the Multicast IP address - 120.14.10.01, then setting the increment to 1, then when the **{Paste from Template}** button is pressed, the Multicast IP address will increment by 1 automatically. This is handy and less time consuming if the user is setting up a lot of spigots.

This has to be done for each Flow for each Spigot.

Note: The configuration of the Spigot dictates the type of signal carried on each of the Flows.

The "Spigot Status" window displays the incoming video standard.

The "Current" and "New" allow the user to copy the Multicast IP address etc. to the "Edit Template" menu from the "Current" area and paste from the "Edit Template" menu to the "New" area.

- Flow 1 this is SMPTE 2022-6
- Flow 2 this is RFC 4175
- Flow 3 this is Audio
- Flow 4 This is Metadata

Spigot Menu

In the Spigot menu, the user is able to set the video standard for individual Spigots using the "**Format**" parameter. Setting this parameter will allow more or less spigots to be used, depending on the type of format that is selected for the spigot.

Mixer Setup								Engineering Co	onfig - IP Ou	rtput Setu	p			HDD
Key 1	Key 2	Output									RollCal	l Info		
Key 3	Key 4				4						Fin Spiget	Rear Video 1(a)	Audio Channels	Popup
Mixer	Util/Misc				Test Pattern									Snap
		Audio Chennels			Video Caption	Wren 1								
		Streaming	Dual				011 •							Normal
Effects Memories			SD/HD/3G		Audio Frequency		01 •							
DMEM	Macro	Output					668 •						Streaming	Popup
		Status	0K		Show Captio		Audio Mute						\land	Popop
Sto	pre				Show Captio		Apply						Dual	Snap
													Single	
System Configuration														Normal
Crosspoints	Aux Buses													
User	Panel												Format	Popup
Config	Config												\land	
Filing System	Peripherals												SD/HD SD/HD/3G	Snap
Shortcuts	Eng Config												V	Normal
	Config													
		Flow	Sp	igot	Config	Ethe	ernet							
		Input Setu	Jp Outpu	ut Setup	System Co	nfig	GP O	IP Gateways	Protocols	Stat	us Monitor	Format Fusion		
G														
	RAND	F	Panel			Quick Macro	Copy Clon	y Paste Re Clone	+	t Up		Disable		
MASTERP			Lock	Normal	Mod- Assign	Macro Record	Cop		Back	Menu Number		Tracking		

The "**Streaming**" parameter will set whether there are Dual or Single QSFP cages being used on the selected IP Fin.

The "Audio Delay" parameter can be adjusted, if for instance the "Lip Sync" is out between audio and video signals.

The **Test Pattern** attacher is able to output a Color Bar signal test pattern on the selected Spigot.

Video Caption - allows the user to place text onto the test pattern.

Video Standard - allows the user to set the video standard of the test pattern.

Audio Frequency - sets the audio frequency of the test signal.

Config Menu

The Config menu only allows the user to change the current "DDS Domain ID".

Note: The software on the IP Output Fin has to be updated through RollCall directly to the IP Output FIN via the RJ45 Network port.



UHD Setup and Operation

UHD Quad and UHD 2SI

Working in UHD with Masterpiece is as simple as working in any other video format, the user can select between UHD-Quadrant mode or UHD-2SI mode. The setup menu structure is easy and intuitive and will allow the user setup UHD with just a few button presses. UHD demonstrates the power and flexibility of Masterpiece, where the 2x UHD Key Layers and 1x DSK are available, transitions are easy, a UHD Keyed source such as Clip transitions or UHD graphics can be keyed over the full UHD screen.

Connecting UHD to the Inputs and Outputs

The first step to understand when using UHD with Masterpiece is how to correctly connect a UHD source to the inputs and outputs of the mainframe.

Inputs to the Switcher Mainframe

There are 42 inputs on the mainframe, this will give the user 10x - UHD inputs (10 groups of 4 BNC inputs). The 4 quadrants of the UHD source have to be connected to consecutive BNCs so that the **Input Setup** menu can be setup correctly (this will be explained in the following sections).

The 4x UHD quadrants have to be connected in the following order, for example; Input 1 (top left), Input 2 (top right), Input 3 (bottom left) and Input 4 (bottom right), then the next source Inputs 5, 6, 7 and 8 following the same quadrant order. So, the first quadrant of each UHD source is connected to Inputs 1, input 5 and the next Input 9 etc.

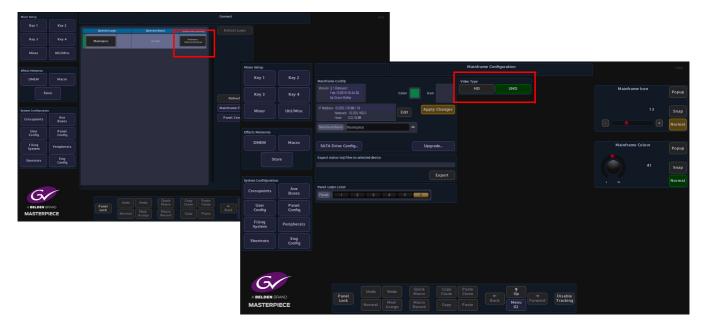
Outputs from the Switcher Mainframe

There are 12 outputs from the mainframe, this will allow the user to have 3x - UHD outputs, PGM (program), PVW (preview) and Clean. Once again, the 4 quadrants of the UHD source have to connected to consecutive BNCs so that the **Output Setup** menu can be setup correctly. As with the input setup, the UHD quadrants have to be connected in the following order, for example; Output 1 (top left), Output 2 (top right), Output 3 (bottom left) and Output 4 (bottom right), then the next source Output 5, Output 6, Output 7 and Output 8. So, the first quadrant of each UHD source is connected to Output 1, Output 5, Output 9. The first quadrant **cannot** start at Output 2 or Output 6.

UHD Initial Setup

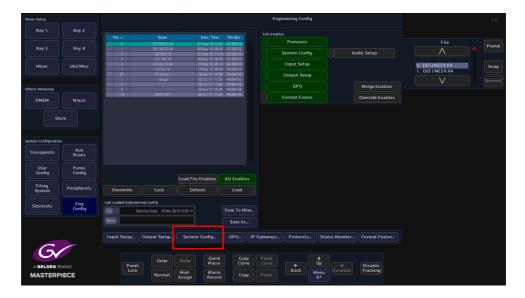
The first step in enabling UHD is in the "Mainframe Config" menu, in the logged out state in the connect menu.

Touching the **{Mainframe Config}** button will open the "Mainframe Configuration" menu.



Touch the **{UHD}** button to select UHD mode, then press the **{Up}** button to go back to the "Connect" menu, then touch the **{Switcher Login}** button to log back into the Masterpiece operational menus.

Once back in the **"Connected to Masterpiece Mainframe**" menu, touch the **{Engineering Config...}** button.



The Engineering Config menu is where the user will enable UHD mode and setup all the UHD inputs and outputs.

UHD Engineering Config Setup

In the Engineering Config main menu, touch the **{System Standard...}** button to enter the System Standard menu.



The System Standard menu can be set to "UHD Mode - Quadrant" or "UHD Mode - 2SI", however the user can choose between the UHD standards by touching the "Popup" button top right to reveal a "New Standard" dialog box. From the dialog box the user can select what type of UHD standard the system is set to, as shown below.



Select between UHD-Q or UHD-2SI, the frequency and the type of UHD required - UHD Segmented Frame or UHD Slow, then press the **{Apply Standard}** button. The next thing to do is to setup the Inputs and Outputs.

UHD Input Setup

Touch the **{Input Setup...}** button, in this menu the user will setup all the UHD inputs to the mainframe.



As stated at the start of this chapter, in UHD mode, there will be 4x inputs for every UHD source input to the mainframe, which consist of Input 1 (top left), Input 2 (top right), Input 3 (bottom left) and Input 4 (bottom right). Select Input 1, then touch the "UHD Input" **{Yes}** button. Notice that Inputs 1 to 4 are now ganged together as Input 1 (shown below).



The next input to select is Input 5, then touch the "UHD Input" **{Yes}** button, then inputs 5 to 8 are ganged together. This can be repeated up to another 8 times, allowing ten UHD sources input to the mainframe.

UHD Output Setup

Setting up the UHD outputs on Masterpiece is very similar to setting up the inputs, where the outputs are grouped in fours.

Touch the **{Output Setup...}** button and the menu will look like the one below.



Touch the OP1 row to select it, then set the "UHD Input" to {**Yes**}, the first 4 outputs are now ganged together (see below), in the same way as the inputs, so now Outputs 1 to 4 make up the first UHD-quad output.

Mixer Setup							Engi	neering	Config Outpu	- Outpu t 5	rt Setup							
Key 1	Key 2																	
		BNC				Nov	v Next Is	n1 Isn2	I any	sof Iso5	Iso B Iso	07 Iso8	352	HANC	VAN :	BNC Output		
Key 3	Key 4	0/P 1.2.3.4	AUX D/P 1234 UHD			1104	T HEAT 18	01 1801	103 1	104 1803	12050 110	01 1300	Yes	Yes		BNC Output		Popup
		0/2.3	AUX 0/P 3 UHD AUX 0/P 4 UHD															
Mixer	Util/Misc	U/* 5.67.6	AUX WESSALS UND	_	_	_		_		_		_	785	166	785			Snap
		0/2.7	AUX 0/P 1 UHD AUX 0/P 8 UHD														N	
fects Memories		0/P 9											Yes	Yes				
DMEM	Macro	0/P 11 D/P 12	AUX 0/P 11 AUX 0/P 12										Yes	Yes	Yes Yes	Now		
		0/P12	AMA UJE 12										res	166	185			Popup
																\wedge		
Sto																		
																Off		Snap
system Configuration																V		Normal
							Da		Output									
Crosspoints	Aux Buses			- Ur	101000001	ur	10			Off		14 CH	• IS	07	011			
	- ooses		Enabled Inhibited	d 12			Yes											
User	Panel		011 04			nelid itt	- Do			01	O2I 0	D CH	e I S	08	011 💿	Next		Popup
Config	Config						- Un				021	6 .00				\wedge		
			011 On							DI	•							
Filing	Peripherals		No Yes							Dff						ho		Snap
System	renpherats		10						ISD 3							On		Shap
										Off						V	n (Normal
Shortcuts	Eng Config																J U [Normal
	Config																	
		Input Setup	Output Setup	System	Config	GPO	IP Gate	ways	Pro	tocols	Stat	us Monito	or Fo	rmat Fu	sion			
	~																	
			Undo		Quick	Сору					t							
		Pane	Unao		Macro	Clone								isable				
	on no	Lock												racking				
MASTERP			Normal	Mod-	Macro	Сору			Ba	ICK	Menu			acking				

As can be seen above, the first UHD-quad output has been named PGM, now select Output 5, and turn on "UHD Output" and once again outputs 5 to 8 will be ganged, use the "Name" parameter to call the second UHD-quad output PVW.

Payload UHD Channel Id - Adds the Channel ID data when in UHD such that downstream equipment can identify the 4 channels.

UHD Stores

There are two UHD Stores and two 1080p Stores available to use in the Store menu in UHD mode. With the system set to UHD mode, touch the **{Store}** button to open the "**Store - Load**" menu.



As can be seen in the menu above, there are 4 Stores available to use, Stores 1 & 2 are the UHD Stores, Stores 3 & 4 are the 1080p Stores. To load a UHD still into a Store, select **Store 1** for example and then touch the **{Load}** button. The video standard, aspect ratio, video clip duration and audio clip duration is displayed in the "Fill" area in the center of the menu.



If a UHD Store has Key and Fill layers, then the two layers will need to be coupled. Touch the **{Store Setup...}** button, then select Store 1 in the table and then touch the "Coupled Store" parameter, the Key and Fill between Store 1 & 2 is now coupled and ready to key over a background image.

UHD Transitions and Wipes

Transitions and Wipes in UHD mode, works exactly the same way as using Masterpiece in any other video format. All of the wipe patterns, wipe controls, border fill and border position all work in exactly the same way.



Note: For further information about setup and using the Transition function, see the "Operator Information" chapter in this manual.

Keying and DVE Operation

Keying

Keying Theory

Keying is the process of inserting a specific part of one video signal (Key signal) into another video signal (background) to create a third signal. The Key signal has two jobs and may be one signal or two. It has to cut a hole into the background and Fill that hole with a picture, or a matte.

Where two signals are used one, the Key Cut, cuts the hole in the background and the other, the Key Fill, Fills that hole. The Fill has to be shaped to match the hole.

Where one signal is used it both cuts and Fills the hole. This process of Keying with a single signal is known as a self Key or video Key.

There are two types of Keying available with Masterpiece; they are Luma Keying and Linear Keying.

Linear Keying

Linear Keying is used where the Key signal is already Keyed, i.e., the area outside the required video is at black level. It is also used where there are separate Key Cut and Key Fill signals. The Key signal(s), (Cut and Fill) are usually anti-aliased (soft edged) shaped signals created by a character generator or graphics system.

Luma Keying

Luma Keying is a Keying system that is typically used on sources that are not pre-Keyed, such as those from a camera. The Key Cut signal is generated from the video signal using lift and gain controls. The portions of the signal that is lower in luminance than the lift level cut the hole in the Key Layer.

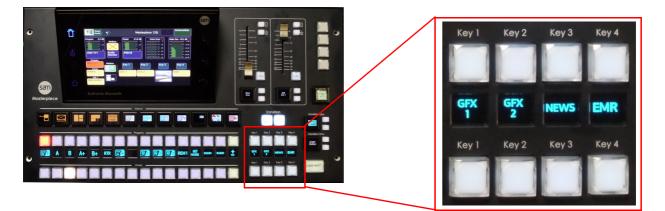
The Key lift and gain levels are user adjustable.

The Fill may be the same source as the Cut or from a different source, or matte generator. When only one source is used for both Key Fill and Key Cut the Key is called a Self Key or a Video Key.

Accessing Keys on the Control Surface.

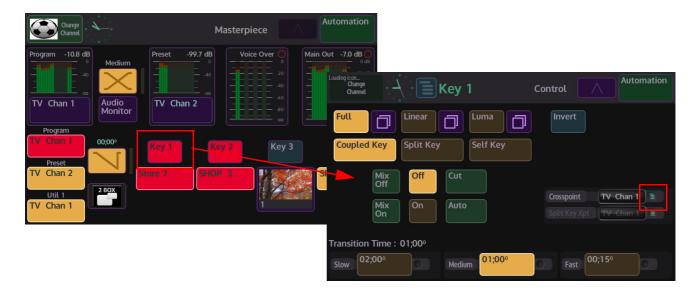
The Masterpiece has 4 Key buttons on the control surface. The top row of buttons (Key 1 to Key 4) cut the Key layer On and Off, the bottom row will place the selected Key onto the Preset background ready for when the next transition takes place.

A Key can also be used in "Dual Tile" mode when working in the Key DVE menu. This will create an extra Key layer tile from one Key, meaning that the original 4 Key Layer tiles are now 8 key layer tiles in Dual Tile mode (explained later in this section).



Placing a Key Layer onto a Background

The first step is to select a source for the Key. On the Masterpiece GUI, in the home menu, touch the Key (1 - 4) that you want to palace on the background. The Key Control sub menu will be displayed.

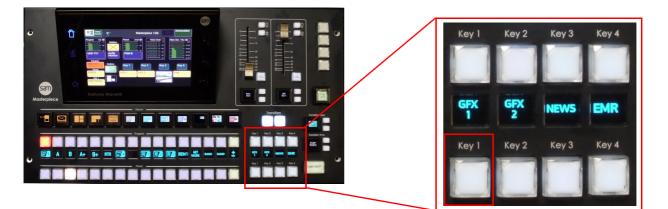


Use the "**Crosspoint**" parameter to select the source for the selected Key by touching the option list select button. This will open a lit of sources that can be assigned to the Key layer.

In the example below, the source for the Key layer is selected from the Stores list and "**Store 7**" is selected. You can select sources form Crosspoints (Xpts), Mattes, Stores etc.

Change Channel		Key 1			Contr	ol	Autom	ation
Xpt 140	Current C	rosspoin	nt BNC	1				\approx
Xpt 4180 Mixer Outputs Stores	Store 1 Store 8	Store 2 Store 9	Store 3 Store 10	Store 4	Store 5	Store 6	Store 7	
Mattes								

As mentioned earlier, touch the bottom Key selection button and the Key layer is displayed on the Preset monitor, by default, the Key layer is full size over the background.



To zoom the Key layer down, touch **{Key 1**} button, top left of the menu on the large touch screen monitor. This will open the "**Mixer, Keyer 1**" menu.



Then touch the **{DVE Allocation...}** button, which is towards the bottom of the menu. The **"Keyer DVE Allocation**" menu will open.



In this menu, you can select which Key has DVE functionality applied. As the example in the menu shows, DVE-1 has Key 1 selected. Touch **{Close}** and the DVE parameters are displayed.



Turn the DVE function "**On**" and then use the "**Zoom**" parameter to zoom the Key layer down. You can now see the background behind the Key layer. Zoom and X/Y position the layer as required.

The Key buttons toggle On/Off when pressed. With no Key Layer selected the buttons are unlit, when pressed the button will either light white/blue or tallied red. The Key Layer can now be seen on the monitor.

Note: White = off air, Red = tallied on air and contributing to the program output

Keyer Operation

To get to the Keyer menus, touch one of the "**Key**" buttons {**Key 1**} (in this example) button in the top left corner of the menu.The "**Mixer, Key 1**" menu is displayed as shown below:



Crosspoint - this parameter is used to select the source for the selected Key.

Split Key Xpt - this parameter is used to select the Key source when using "Split Key" mode.

Mix Time - sets the time where a Matte-mix source passes through the Matte color before reaching the selected signal.

Matte Select - (when "Matte Fill" is selected) selects between Local Matte or Mattes 1 to 16.

Matte - Hue, Luma Sat - (when "Matte Fill" is selected) adjusts the color of the Local Matte only. The Local Matte color adjustment is displayed as the color bar next to the parameter controls.

Using Keyer Control and Actions

The type of Keying required is selected using the buttons below.



Full - The Fill is a full layer over the background hiding it completely.

Linear - Selects a Linear Key (see the first section of this chapter).

Luma- Selects a Luma Key (see the first section of this chapter).

Invert - Inverts the Key signal so that the parts, which were Keyed off, become Keyed on and vice versa.

DVE - this will turn the DVE functionality "On/Off" if the Key is selected in the DVE Allocation menu.

Matt Fill - when this function is selected the Key layer is filled with a Matte. The color of the matte is determined by the Matte Select parameter.

Coupled key - (Latching) Uses the Fill and Key sources allocated to the crosspoint.

Split Key - (Momentary) Allows the Fill and Key sources to be split across two different crosspoints. The Fill is selected on the Key bus in the normal manner. The Key source is that allocated to the crosspoint selected on the Key bus with the Split Key button pressed and held down. When in Dual Tile Mode the Xpt selection for each tile can either be done using the Split key button.

Self Key - (Latching) In Coupled Key mode Self Key causes the Key, as well as the Fill, to be derived from the Fill source allocated to the crosspoint, also known as a Video Key. In Split Key mode Video Key causes the Key to be derived from the Fill source of the crosspoint used as the split away.

The "Actions" buttons determine the actions of a Key layer when using Key Transition.





Cut On Auto Off - this will immediately cut the Key layer On, then "Mix" the Key layer off depending on the time set by the "Mix Time" parameter.

Auto On Cut Off - this will "Mix" the Key layer On depending on the time set by the "Mix Time" parameter, then cut the Key layer Off.

Auto On/Auto Off - this will "Mix" the Key layer On/Off depending on the time set by the "Mix Time" parameter.

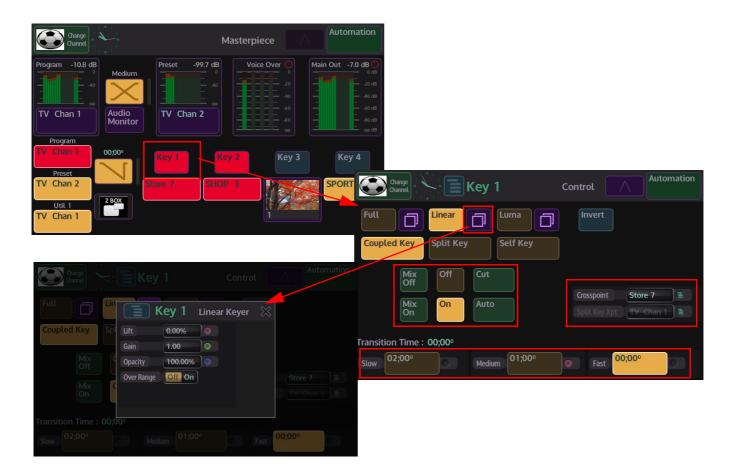
Cut - this will cut the Key layer On on the first touch, then Off on the second touch.

Auto - this will "Mix" the Key layer On on the first touch, then Off on the second touch depending on the time set by the "Mix Time" parameter.

On/Off - this will turn the Key layer On or Off. Like touching one of the top row of Key buttons on the control surface.

Keyer Functions on the Masterpiece GUI

You can setup a Key layer with many of the main parameters as explained in the previous section using the Keyer menus on the Masterpiece GUI



In the home menu, touch one of the Key menu link buttons and the "Key Control" menu will be displayed. When selecting the Full, Linear or Luma options, touch the menu expander button to further control options.

Auto Mix functions can also be setup with the Transition Time parameters. Sources for Key layers can also be selected.

Linear and Luma Keying

The Linear and Luma Keyer menus look similar. They each have independent sets of lift level, gain and opacity controls. The exception being the Shaping parameter in the Luma Keyer.

Mixer Setup							N	Keyer lixer, Key 1						HDD
Key 1	Key 2	Crosspaint XP1		Keyer Control					Linear Ke	zyer				
Key 3	Key 4		On Air		Linear	Luma	Invert	DVE	Uft Gan		0.00% • 1.00 •			Popup
Mixer	Util/Misc		x •	Matte Fill	Key	Split Key	Self Key		Opicity	1[0.00%		0.0	0% Snap
мілеі	Ottomise	Matte Select Local Mat						1		99 OH	On			Shap
Effects Memories				Cut On Auto Off	Auto On Cut Off	Auto On	Auto Off							Normal
DMEM	Macro	Matte Luma 100.0		Cut	Auto		Off							
DMEM	Macro	Matte Sat 90.00											Gain	Popup
Sti	ore													
													1.0	00 Snap
System Configuratio														Normal
Crosspoints	Aux Buses													
User Config	Panel Config												Opacity	Popup
Filing System	Peripherals												1 00.0	0% Snap
														Normal
Shortcuts	Eng Config													
		Keyer Setup	DV	′E	DVE ALL	ocation								
6														
A BELDEN B	RAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		↑ Up		Disable			
MASTERP		Lock			Macro Record	Сору		Back	Menu 301		Tracking			

Lift - sets the Linear level at which the Key operates.

Gain - affects the sharpness of the lift point.

Opacity - controls how transparent the Key is.

Over Range - Masterpiece expects a video range Key of 64 to 940, the video range Key is used internally throughout the system.

If an external CG Key generator is providing a "full range" external Key of 4 to 1019, this would be classed as technically illegal video.

In this situation, the Over Range parameter can be used to bring the full range of a Key back within the video range Key levels.

When using sources that are not pre-Keyed, such as those from a camera, the Key cut signal is generated from the video signal using lift and gain controls. The portions of the signal that are greater in luminance than the lift level cut the hole in the background.

The Key lift and gain levels are user adjustable. The Fill may be the same source as the Key or from a different source, or matte generator.

Note: When only one source is used for both Fill and Key, the Key is sometimes called a Self Key or a Video Key.

Key DVE Operation

The DVE parameters allow the user to position and size a Key Layer, add a Border around a Key Layer or Crop a Key Layer.

When enabled the DVE can be set to manipulate a Single or Dual Tile (which will be explained later in this section).

You can choose which source they wish to manipulate using the "Crosspoint" parameter. Touch the Popup button to select Xpt, Matte or Stores.

To use the DVE functions with key layers, you will first have to allocate Keys to the DVE channels. Touch the **{DVE Allocation...}** button, which is towards the bottom of the menu. The **"Keyer DVE Allocation**" menu will open.



In this menu, you can select which Key has DVE functionality applied. As the example in the menu shows, DVE-1 has Key 1 selected. Touch **{Close}** and the DVE parameters are displayed.

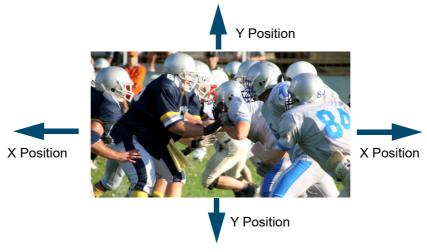
You can now start to use the DVE functions on Key layers.

Position & Size

Make sure that the DVE function "**On**". The **Position & Size** attacher area, allows the you to move a Key Layer around the screen and to zoom in/out.

Mixer Setup								DVE - Fill Mixer, Key 2						HDD
Key 1	Key 2	DWE Off On	1	Source		Cro			Bord	er				
Key 3	Key 4	Tiles Single Dud		Crosspoint Xpt Fill	XPT 1 BNC 1	• •	sping C	(f. Dn 0.00% •	Bord	ser Wicth	10.00%	X Position		Popup
Mixer	Util/Misc	Position & Size		XptKey	BNC 1			0.00%	Soft	ness	0.00%		0.00	Snap
		YPosition 0.00 9						0.006		te Solector	Local Matte			Normal
Effects Memories		Zoom 1.00 9						0.00%		te Luma	100.00%			
DMEM	Macro	X Size 1.00 V Y Size 1.00 V									0.00%	Y Position		Popup
St	ore													
													0.00	Snap
System Configuratio														Normal
Crosspoints	Aux Buses													
User Config	Panel Config											Zoom		Popup
Filing System	Peripherals													Snap
Shortcuts	Eng Config													Normal
		Keyer Setup	DV	E	DVE Allo	ocation								
6														
A BELDEN B	BAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		(¶ Up		Disable			
MASTERP		Lock	Normal	Mod- ssign F	Macro Record	Сору	Paste	Back	Menu 34	Forward	Tracking			

X/Y Position - Parameters are used to move the position of the Key Layer around the monitor screen as shown below.



Zoom - Parameter is used to zoom the Key Layer in and out.



Crop

The crop menu as it suggests allows the user to crop the Key Layer, and also allows the user to apply soft edges.

Mixer Setup								DVE - Fill Mixer, Key 2						HDD
Key 1	Key 2	DVAE 0H Dn	-			Cri	p .		Bordi					
Key 3	Key 4	Tiles Single Ousl		Crossp Xpt Fill			opping	H On 0.0%	Bord	er 📕	0ff On 10.00%		rosspoint	Popup
Mixer	Util/Misc	Position & Size X Position 0.00 V		XptKey	BNC 1	0	P)	0.00%	Safe	1855 Te Selector	0.00%		NC 1 NC 2	Snap
Effects Memories		YPosition 0.00 V Zoom 1.00 V					8	0.03%	Mat	te Hue	0.007		V	
DMEM	Macro	X Size 1.00 V				6	git	0.00%	Mat	to Luma	100.00% V 0.00% V			
System Configuratio	Aux													
User	Buses Panel													
Config	Config Peripherals													
System	Eng Config													
G		Keyer Setup		VE	DVE AU	location								
Gv	RAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		↑ Up		Disable			
A BELDEN B		Lock			Macro			Back			Tracking			

Cropping On/Off - Switches the crop facility On or Off,

Top, Bottom, Left and Right - Crops the Fill edges



Original Key Layer



Right Crop



Left Crop

Bottom Crop



Top Crop



Border

This function allows the user to apply a border and effects around a Key Layer.



Border On/Off - Switches the Border On or Off

Border Fill - Selects source for the border fill from a Matte selected using the Matte Selector parameters, Util 1 or Util 2

Border Width - Adjusts the overall width of the border **Softness** - Softens the outside edges of the border



Original Key Layer



Border Width Adjusted



Border Applied



Changed Border Fill

The **Matte Selector** and **Hue**, **Luma** and **Sat** parameters are used to adjust the color of the border around a Key Layer when the option is selected in the Border Fill parameter. The user is able to select one of 16 preset Mattes, or create a user-defined color for the border using the Hue, Luma and Sat parameters.

Matte Selector - Selects the preset Mattes 1 to 16 or a Local Matte that allows the user to create a their own border color.

Matte Hue, Luma and Sat - These parameters allow the user to adjusts the Hue, Luma and Saturation levels of the Local Matte. The user is able to create their own unique border color around a Key Layer.

Dual Tile

This function allows you to take an existing Key Layer and create 2 Tiles (Key Layers) that can be independently resized (Zoom), moved along the XY axis, and cropped.

The Dual Tile mode will now give:

• 4 Keys can now be used as 8 Tiles

The Dual Tile mode is easy to setup and easy to use. To use this function, bring a Key Layer onto a monitor and use **"Dual Tile"** On, then select "Tile 1" in the Key Control area of the control panel to Zoom down the Key Layer.

Note: When in Dual Tile Mode the Xpt selection for each tile can be done using the **{Split Key}** button.





Key 1 Over a background

Dual Tile Menu

With a Key Layer on the monitor, make sure that the "DVE" parameter is turned "On" and then select "Tiles" Dual. Notice that the menu is split in two "Tile One" and "Tile Two".

Note: At this point you will only be able to see one tile, the other is underneath.

Use the "Top Tile" parameter to swap around the tile priority, the bottom tile becomes the top. The parameter controls for Tiles 1 and 2 are exactly the same. The parameters for Tile 1 will be described in this section.

Use the "Crosspoint" attacher to select the source for Tile 1. This can be a Xpt source, Matte or Store.

Mixer Setup			DVE - Fill Mixer, Key 3										
Key 1	Key 2			Tile 1 Source		file 1 Crop			Border				
		DVE Ott On					Da	Bords		CT Do	Tile 1 O	nacity	
Key 3	Key 4	Tiles Single Dual		Source STO		Cropping						puercy	Popup
		Position & Size		20109 210		30 (1863)	0.00%		r Width	10.00%			
Mixer	Util/Misc	XPosition 0.00 V		Tile 1 Position & Siz		Top	0.00%	Soltri		0.00%		100.00%	Snap
		YPostion LOO V		X Position 0.00		Battam	0.00%		Selector	Local Matte			
		Zoom 1.00 V		YPosition 0.00		Let	0.00% 💿		a Hue	0.00° 🔻			Normal
Effects Memories		2001		Zoom 1.00		Right	0.00% 💿		Luma	100.00% 🔻			
DMEM	Macro	X Size 1.00 🔻		XSize 1.00					a Sot	0.00% 🔻	Tile 2 O	pacity	Popup
		YS28 1.00 V		Y Size 1.00									Popop
Sto				1.00									
		Top Tile	2									100.00%	Snap
System Configuration	n	Tile 1 Opacity 100.0	06 😐	Tile 2 Source		file 2 Crop	_		Border	_			Normal
	Aux	Trie 2 Opsorty 100.0	06 🔸				r On	Bords		Cif Do			
Crosspoints	Buses			Source STC	R 1	Spittless	0.00%	Bords	x Width	10.00%			
User	Panel			Tile 2 Position & Siz		Тор	0.00%			0.00%			
Config	Config			X Position 0.00		Battern	0.00%		r Selector	Local Matte			
Filing	Peripherals			YPosition 0.00			L 00% 💿			0.007° 🔻			
System	Perpherats			Zoom 1.00			0.00%			100.00%			
Shortcuts	Eng			X Size 1.00				Mattr	r Sat	0.00% 🔻			
Shortcots	Config												
				Y Size 1.00									
		Keyer Setup	DVE	. DVE	Allocation								
G													
Sv.			Undo Re		Сору			†					
A BELDEN B		Panel		Macro	Clone		+	¶ Up		Disable			
MASTERP	IECE	Lock	Normal Ass		Сору		Back	Menu 34		Tracking			

Tile 1 Position & Size

The **Position & Size** attacher area, allows the user to move a Key Layer around the screen and to zoom in/out.user-defined



X/Y Position - Parameters are used to move the position of the Key Layer around the monitor screen.

Zoom - Parameter is used to zoom the Key Layer in and out.

Tile 1 Crop

The crop menu as it suggests allows the user to crop the Key Layer, and also allows the user to apply soft edges.



Cropping On/Off - Switches the crop facility On or Off, press the On/Off buttons in the parameter control area of the menu.

Top, Bottom, Left and Right - Crops the Fill edges

Tile 1 Border

This function allows the user to apply a border and effects around a Key Layer.

Mixer Setup				DVE - Fill Mixer, Key 1			HDD
Key 1	Key 2	EVE 0# 0n	Tile 1 Source	Tile 1 Crop	Tile 1 Border		
Key 3	Key 4	This Single Dual	Crosspoint XPT 1 • Source ENC 1	Cropping Ott On Softness 0.00% •	Border Ott On Border Witth 10.00%	Border Width	Popup
Mixer	Util/Misc	Position & Size XPosition & LCO V YPosition & LCO V	Tile 1 Position & Size	Top 1.00% • Bottom 1.00% •	Satress 0.00% Mate Selector Local Matte	10.00%	Snap
Effects Memories		Zoom 1.00 V	Y Position 0.00 V Zoom 1.00 V	Let 0.00% • Rgit 0.00% •	Matte Hute 0.000* ▼		Normal
DMEM	Macro	XSize 1.00 V YSize 1.00 V	XS20 1.00 V		Matter Sat 0.00%	Softness	Рорир
Ste		Top Tile 1 2	YSime 1.00 V			0.00%	Snap
System Configuration		Tile 1 Opacity 100.00%	Tile 2 Source	Tile 2 Crop	Tile 2 Border Barder 011 01		Normal
Crosspoints	Aux Buses	Tile 2 Opacity 100.00%	Source BNC 1	Softness 0.00% •	Border Wridth 10.00%		
User Config	Panel Config		Tile 2 Position & Size	Top 0.00% • Bottom 0.00% •	Softress 0.00% Moto Streto Local Matte	Matte Selector	Popup
Filing System	Peripherals		YPosition 0.00 V Zoom 1.00 V	Left 1.0% • Roft 1.0% •	Matter Hue 0.007 V Matter Luma 100.007 V	Local Matte Black	Snap
Shortcuts	Eng Config		XSze 1.00 V YSze 1.00 V				Normal
		Keyer Setup D	/E DVE Allocatio				
	RAND	Panet	Redo Quick Cc Macro Clu	ppy Paste Clone ←	↓ Up → Disable		
MASTERP			Mod- Assign Record Co	Paste Back	Menu 34 Forward Tracking		

Border On/Off - Switches the Border On or Off

Border Fill - Selects source for the border fill from a Matte selected using the Matte Selector parameters, Util 1/Util 2.

Border Width - Adjusts the overall width of the border

Softness - Softens the outside edges of the border

The **Matte Selector** and **Hue**, **Luma** and **Sat** parameters are used to adjust the color of the border around a Key Layer when the option is selected in the Border Fill parameter. The user is able to select one of 16 preset Mattes, or create a user-defined color for the border using the Hue, Luma and Sat parameters.

Matte Selector - Selects the preset Mattes 1 to 16 or a Local Matte that allows the user to create a their own border color.

Matte Hue, Luma and Sat - These parameters allow the user to adjust the Hue, Luma and Saturation levels of the Local Matte, the user is able to create their own unique border color around a Key Layer.

Moving the two tiles so that both can be seen

The two tiles are controlled using the Tile Position & Size parameters. Using the XY parameters for Tile 1, the tile will move as expected and move away from Tile 2.



Tile One

Note: If you use the "Main" Position & Size; XY or Zoom parameters, both of the tiles will move together.

Mixer and Transitions

Types of Transition

The three main types of transition that will be described in this section of the manual. These are:

- Background Transitions
- Key Transitions
- Audio Transitions



Setting Basic Transitions

Independent transitions can be set for the Background, for each of the Key Layers.

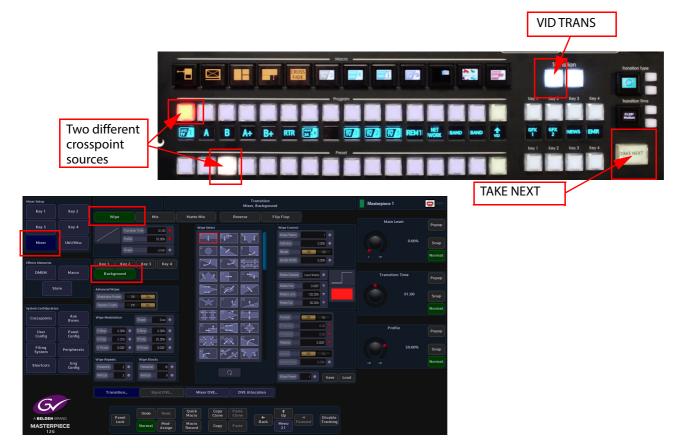
Basic Background Mix Transition

On the control surface select one source on the Program Bus and a different source on the Preset Bus and make sure that the [VID TRANS] button is selected. Touch the {Mixer} button, then in the Transition menu, touch the {Background} button to enable the background for transitioning, select "Mix" and then press the [TAKE NEXT] button. Notice that a transition is made between the selected crosspoint sources on the Background A/B.



Basic Background Transition with a Wipe

On the control surface select one source on the Program Bus and a different source on the Preset Bus and make sure that the [VID TRANS] button is selected. Touch the {Mixer} button, then in the Transition menu, touch the {Background} button to enable the background for transitioning, select "Wipe" touch one of the wipe patterns in the center of the menu and then press the [TAKE NEXT] button. Notice that a transition is made between the selected crosspoint sources on the Background A/B with a wipe pattern as the transition happens.



Basic Key Transitions



Select the Key or Keys in the Transition or in the menu, then in the Transition menu, touch the {Mix} button and then press the [TAKE NEXT] button. Notice that the Key Layer will now transition over the A/B background.



If a Wipe transition is required, touch the {Wipe} button in the Transition area of the control surface, or in the transition menu, The type of transition wipe required can be selected using the "Wipe Pattern" parameter, use the associated rotary control to scroll through the wipe patterns. Then press the [TAKE NEXT] button. Notice that the Key Layer will now transition with a wipe pattern over the A/B background.

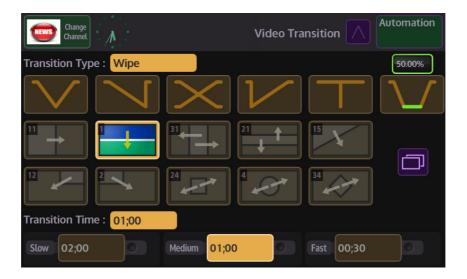
Transition Control Button Functions

The main menu on the Masterpiece GUI is basically spit in half horizontally, the bottom half is deals video functionality and the top half is audio. Touch the yellow (shown in the menus below) and the "Video Transition" menu is displayed.



Video Transition Menus on the Masterpiece GUI

In the Video Transition menu you can setup the type of transition you want. Touch one of the Transition Type buttons (the button will turn yellow when selected) at the top of the menu to set the type of transition you require.



Mix Parameters

 $\mathbf{\mathbf{\bigvee}}$

V-Fade - this button will perform a V-Fade transition. When the "Take Now" button is pressed, this option will take the Program source off, Preset source level.



Fade and Take - this button will "Fade" from one source off and then cut the next source instantly back on to the monitor.



Mix - this performs a "Cross Fade". When the "Take Next" button is pressed one source will gradually fade out and at the same time the second source will gradually fade in.

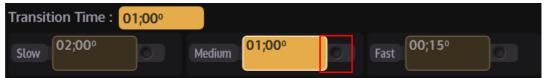
Take and Fade - this button will perform an instant source cut to Off, then gradually fade the next source back in.



Cut - this button will perform a cut transition from one source immediately to the next.

50.00% - this will fade down to black pause and then fade back up to the next source.

There are 3 default quick select buttons in the "Transition Time" area of the Video Transition menu.



As can be seen in the above menu, you have 3 options to select, by default "Slow" will take 2 seconds to transition, "Medium" will take 1 second and "Fast is an instantaneous cut. All three options can be adjusted by touching the rotary control attacher (it will turn red) and then adjusting the rotary control. As the transition time is adjusted, the selected time attacher will go brown and the time in the box will increase/decrease. Touch the time attacher (it will turn yellow) and the "Transition Time" will change to reflect. Video transitions will now transition at the new set time.

Wipe Parameter

In the Video Transition menu, there are 10 quick select wipe patterns touch one of the wipe patterns, then when the [TAKE NEXT] button is pressed the selected wipe pattern will wipe between Program and Preset backgrounds. Touch the menu link button to open the "Wipe Control" menu.

Change Channel	Video Transitior	Automation		
Transition Type : Wipe		50.00%		
$\mathbf{N}\mathbf{N}$	\mathcal{V}	$\Box \overline{\mathbf{n}}$		
Transition Time : 01;00				Wipe Control 🛛 🕅
Slow 02;00 Medium 01;00	Patter Softne		Border Border Width Border Fill	Off On 23.48%
	Positio			
	X Posi		Matte Select Hue	Local Matte
	Y Posi		Luma	100.00%
	Rotati		Saturation	90.00%
			Aspect	Off On
			Aspect Ratio	0.00%

This menu allows you to access the same parameter controls that are displayed in the "Mixer - Transition" menu on the touch screen GUI.

To scroll through the list of available wipe patterns, either touch the rotary control selector next to the wipe number and scroll through the list, or touch the "Option List" selection button and a full list of wipe patterns is displayed.

	Autom	
	Wipe Control	\otimes
Current Pattern		\approx
HANSK		
		5
		ř
	XX	N N
	64 72	

Wipe Control Parameters

Pattern - Adjust to select the required wipe pattern. There are a number of individual wipe patterns available. The number of available wipe patterns will vary depending on whether the background or Key is selected.

Softness - This parameter adjusts the softness of the leading edge or edges of the selected wipe pattern. 0% is the default setting which Shows a hard clean edge and 100% blends the edge into the background making it barely visible until the transition is complete.

Position - Touch any one of the On/Off buttons in the parameter controls. This will set all the buttons to the On position if they are currently off.

X Position Y Position - The wipe start position can be adjusted to start anywhere on-screen by changing the parameters in the X/Y Position attacher box. Touching any of the On/Off buttons will activate all three parameter boxes. Notice that the Red indicators in the parameter boxes are triangles denoting that the parameters can be adjusted using the rotary controls or by using the joystick on the control panel.

Rotation - This will rotate the wipe pattern clock-wise or counter clock-wise in increments.

Border - This turns the border function On/Off

Border Width - If a border has been selected for example on a square wipe which starts from the center of the screen, the width of the border in relation to the edge of the wipe can be adjusted.

Border Fill - Select the border Fill from either a Matte or one of the two Util Buses, as described in the Mix menu structure.

Matte Selector - Select the required Matte from the options or Local Matte. Hue, Luma and Saturation will only affect the Local Matte setting.

Hue - sets the actual Matte color. The rotary control operates a 360 degree color wheel where:

0 = Red 60 = Magenta 120 = Blue 180 = Cyan 240 = Green 300 = Yellow

Luma - The Luminance or brightness control affects the selected Matte Hue. The parameter adjusts from 0 to 100% where 0% is no luminance or Black and 100% is maximum brightness.

Sat - The saturation control affects the selected Matte Hue. The parameter adjusts from 0 to 100% where 0% is no saturation or no color i.e. only shades of Gray and 100% is fully saturated or maximum color.

Aspect Ratio - Touch the On/Off button to activate the aspect ration function. As the name suggests, this function changes the aspect ratio of a wipe pattern, 0 to -100% will change the vertical ratio and 0 to +100% will adjust the horizontal ratio.

Note: Aspect ratio will only adjust a limited number of the wipe patterns.

When scrolling through the wipe patterns, notice the wipe pattern adjustment indicator box at the bottom of the wipe menu. When a wipe is selected this box will display parameters that denote how the wipe can be adjusted. Touch this box and a set of adjustment parameters will appear on the right of the menu. These are X,Y Position, Rotation and Aspect Ratio, depending on the wipe selected.



Transition Parameters

When the {Transition} button is touched the initial default Transition menu appears with the main Transition Time and Profile parameters active, this will allow you to make basic adjustments to a background or Key transition.

Mixer Setup					Transiti Mixer, Backo		Masterpiece 1	😂 HDD
Key 1	Key 2	Wipe	Mix	Matte Mix	Reverse	Flip Flop		
Key 3	Key 4	Transitio	n Time 01:00 🔴	Wipe Select		Wipe Control	Main Level	Popup
Mixer	Util/Misc	Profile	50.00%	<u>'</u>		Wipe Pattern 1 Softness 0.00%	0.00%	Snap
		Shape	Linear •	4		Border Off On		Normal
Effects Memories		Key 1 Key 2	Key 3 Key 4			Border Width 0.00%		
DMEM	Macro	Background		14 ×		Matter Selector Local Matte	Transition Time	Popup
Ste	ore	Advanced Wipes				Mattelluma 101.00%	01;00	
		Modulation Enable Cff Reposits Enable Cff		16	17 🖌 18 🛌	Matte Sat 90.00%		Snap
System Configuratio	Aux			KI + + + +	20 - 21 - 1	Postion Off		Normal
Crosspoints	Buses	Wipe Modulation	Shape Sine •	22		X Position 0.00 Y	Profile	
User Config	Panel Config	H Amp 0.00% • H Freq 0.00% •	V Amp 0.00% • V Freq 25.00% •			Y Position 0.00 ¥	Fiolite	Popup
Filing System	Peripherals	H Phase D.CCC* •	V Phase CLCCC •			Rotation D.000° V	50.00%	Snap
Shortcuts	Eng	Wipe Repeats	Wipe Blocks			Aspect DII Cn Aspect Ratio 0.00%		Normal
Shortcots	Eng Config	Horizontal 2 • Vertical 2 •	Horizontal 16 • Vertical 9 •			WipePreset 1 • Save	Load	
							Load	
		Transition		Mixer DVE	. DVE Allocation			
Gv				Quick Co	Paste	(t		
A BELDEN B		Panel Lock	Undo Redo	Macro Clo	one Clone + Bac	Up → Disable		
MASTERP 12G	IECE		Normal Assign	Record	Paste	21		

Wipe Parameters

This will describe the initial default transition menu functions and parameters.

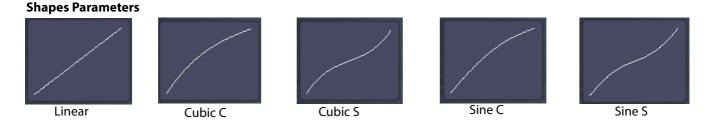
Note: Transition Time, Profile and Shape parameter are the same for Wipe, Mix and Matte Mix menus.

Transition Time - This sets the time that it takes for a transition to take place. The user can control the transition time by touching the {Popup} button in the Transition Time parameter and key in the time using the on-screen number pad. Once the transition time is set, press the [TAKE NEXT] button on the control surface and the transition will take place to the set time.

Profile - This parameter control will adjust the curve profile in the display box under the Main heading. Adjusting the curve profile will make the transition speed up or slowdown at a specific time in the transition period.

Shape - Selecting one of the Shape options will depict the type of profile curve; this will alter the acceleration rate for a transition.

- Linear constant transition, no change in transition acceleration
- **Cubic C and Sin C** these profiles are similar to each other, the default transition will have a fast acceleration at the start and slowdown towards the end.
- **Cubic S and Sin S** these profiles are also similar to each other, the default transition will accelerate at the start slow down towards the mid point and accelerate again.



Note: The following parameter are the same for Wipe, Mix and Matte Mix menus.

Mixer Setup					Transitio Mixer, Backg			HDD
Key 1	Key 2	Wipe		Matte Mix	Reverse	Flip Flop		
Key 3	Key 4	Transtit	an Time 01:00° •	Wipe Select		Wipe Control	Wipe Pattern	Popup
Mixer	Util/Misc	Profile	51.00% •			Wipe Pattern 1 9 Softness 0.00% 9 Barder 00 00		Snap
Effects Memories		Key 1 Key 2	Key 3 Key 4			Border Width 0.00%		Normal
DMEM	Macro	Background		1		Matte Selector Local Matte	Softness	Popup
Sto		Advanced Wipes Modulation Enable			14 26 15 2	MatteHue 0.000° V MatteLuma 100.006 V Matte Sat 90.006 V	0.00%	Snap
System Configuration		Repeats Enable CH	Dn					Normal
Crosspoints User Config	Aux Buses Panel Config	Wipe Modulation	Shape Sine • VAmp 0.00% • VFing 25.00% •			Position Diff Diff X Position 0.00 V Y Position 0.00 V	Border Width	Popup
Filing System	Peripherals	H Phase D COD [®] •	VPhase D007 •			Retation Ω COO [™] ▼ Aspecz Dff Dn	0.00%	Snap
Shortcuts	Eng Config	Wipe Repeats	Wipe Blocks			Aspect Rato		Normal
			Vertical 9 •			Wipe Preset 1 • Save	Load	
		Transition		Mixer DVE	DVE Allocation			
A BELDEN BE MASTERP		Panet Lock	Undo Redo Normal Mod- Assign	Quick Co Macro Clo Macro Record Co	ne Clone + Back	t Up Menu 21 Forward Disable Tracking		

Wipe Pattern - Adjust to select the required wipe pattern. There are a number of individual wipe patterns available. The number of available wipe patterns will vary depending on whether the background or Key is selected.

Softness - This parameter adjusts the softness of the leading edge or edges of the selected wipe pattern. 0% is the default setting which Shows a hard clean edge and 100% blends the edge into the background making it barely visible until the transition is complete.

Border - This turns the border function On/Off

Border Width - If a border has been selected for example on a square wipe which starts from the center of the screen, the width of the border in relation to the edge of the wipe can be adjusted.

Border Fill - Select the border Fill from either a Matte or one of the two Util Buses, as described in the Mix menu structure.

Mixer Setup					Trans Mixer, Bao				
Key 1	Key 2	Wipe		Matte Mix	Reverse	Flip Flop			
Key 3	Key 4		m Time 01:00 ⁹ (Wipe Select		Wipe Control Wipe Pattern		Matte Selector	Popup
Mixer	Util/Misc	Profile	S0.00%			Softness Border	L.CO% •	Local Matte Black	Snap
Effects Memories		Key 1 Key 2	Key 3 Key			Border Width	1.00% •		Norma
DMEM	Macro	Background		14 ×		Matte Selector Loca	i Matte		
s	tore	Advanced Wipes Modulation Enable	Cn			Matte Luma 1	0.00		
System Configuration		Repeats Enable 01	Cn			Matte Sat	90.00%		
Crosspoints	Aux Buses	Wipe Modulation	Shape Sine			Position Of	0n		
User Config	Panel Config	HAmp 0.00% • HFreq 25.00% •	V Amp 0.00% (V Freq 25.00% (25%		Y Position	a.co 🔻		
Filing System	Peripherals	HPhase 0.000 •	V Phase D CCCr (Aspect Ct	2.007 V		
Shortcuts	Eng Config	Wipe Repeats	Wipe Blocks Horizontal			Aspect Ratio	a.co% •		
		Vatical 2	Vatical 9			Wipe Preset	Save Load		
		Transition		Mixer DVE.	DVE Allocati				
G			Undo	Duick Cu Macro Cl	opy Paste one Clone				
		Panel Lock	Normal Mod Assic	H Macro		← Up ack Menu Forward	Disable Tracking		

Matte Selector - Select the required Matte from the options or Local Matte. Hue, Luma and Saturation will only affect the Local Matte setting.

Matte Hue - sets the actual Matte color. The rotary control operates a 360 degree color wheel where:

0 = Red 60 = Magenta 120 = Blue 180 = Cyan 240 = Green 300 = Yellow

Matte Luma - The Luminance or brightness control affects the selected Matte Hue. The parameter adjusts from 0 to 100% where 0% is no luminance or Black and 100% is maximum brightness.

Matte Sat - The saturation control affects the selected Matte Hue. The parameter adjusts from 0 to 100% where 0% is no saturation or no color i.e. only shades of Gray and 100% is fully saturated or maximum color.

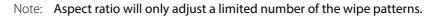
Position - Touch any one of the On/Off buttons in the parameter controls. This will set all the buttons to the On position if they are currently off.

X Position Y Position - The wipe start position can be adjusted to start anywhere on-screen by changing the parameters in the X/Y Position attacher box. Touching any of the On/Off buttons will activate all three parameter boxes. Notice that the Red indicators in the parameter boxes are triangles denoting that the parameters can be adjusted using the rotary controls or by using the joystick on the control panel.

Rotation - This will rotate the wipe pattern clock-wise or counter clock-wise in increments.



Aspect Ratio - Touch the On/Off button to activate the aspect ration function. As the name suggests, this function changes the aspect ratio of a wipe pattern, 0 to -100% will change the vertical ratio and 0 to +100% will adjust the horizontal ratio.



When scrolling through the wipe patterns, notice the wipe pattern adjustment indicator box at the bottom of the wipe menu. When a wipe is selected this box will display parameters that denote how the wipe can be adjusted. Touch this box and a set of adjustment parameters will appear on the right of the menu. These are X,Y Position, Rotation and Aspect Ratio, depending on the wipe selected.



Advanced Wipes

The Advanced Wipe parameters offer additional wipe patterns that are created by combining the main wipe patterns. For example if a straight edge primary wipe is combined with a secondary circle wipe, the resulting wipe edge will now have a bowed effect, as shown in the example below.





In the Advanced Wipes area of the menu, there are 2 parameters; "Modulation Enable" and "Repeats Enable". The first thing to describe is the Modulation Enable.

Modulation Parameters

With Modulation Enable turned On, the modulation function enables the user to add different modulation effects to the transition wipe effects.

Shape - selects the type of modulation effect

HAmp - controls the horizontal amplitude (peak to trough distance) of the modulation

HFreq - controls the horizontal frequency (number of peaks per centimeter) of the modulation

HPhase - controls the start point of the of the modulation and thus the relative position of the peaks and troughs to the horizontal edge of the wipe

VAmp - controls the vertical amplitude (peak to trough distance) of the modulation

VFreq - controls the vertical frequency (number of peaks per centimeter) of the modulation

VPhase - controls the start point of the of the modulation and thus the relative position of the peaks and troughs to the vertical edge of the wipe.



Example of Vertical Modulation

Repeats Enable

The Repeats menus will as the name suggests, this will repeat the wipe pattern a user-defined number of times.



Turn the Repeats Enable parameter On

Wipe Repeats - Horizontal/Vertical, this will determine the number of repeated wipe patterns horizontally or vertically.

Wipe Blocks - With some wipe patterns that use a block effect, such as wipe shapes 89, 90, 91 for example, adjusting these parameters will add extra horizontal an vertical blocks to the wipe effect.

Mix

This allows a Background or a Key source to mix during a transition.

Mixer Setup					Transi Mixer, Bac				HDD
Key 1	Key 2	Wipe		Matte Mix	Reverse	Flip Flop			
Key 3	Key 4	Trensitic	n Time 01;00 ⁴ 😐	Wipe Select		Wipe Control		Main Level	Popup
Mixer	Util/Misc	Profile	50.00%	t o		Wipe Pattern Softnees Border	11 • 0.00% •	0.00%	Snap
Effects Memories		Key 1 Key 2	Key 3 Key 4			Border Width	0.00%		Normal
DMEM	Macro	Background					ocal Matte	Transition Time	Popup
St	ore					Matte Hae Matte Luma Matte Sat		01;00°	Snap
System Configuratio									Normal
Crosspoints	Aux Buses			++++			Off On		
User Config	Panel Config					X Position		Profile	Popup
Filing System	Peripherals					Rotation	0:007 V	50.00%	Snap
Shortcuts	Eng Config					Aspect Patio	10%		Normal
						WipePreset	Save Load		
		Transition		Mixer DVE	DVE Allocatio				
G			Undo Redo	Quick Co					
A BELDEN B		Panel Lock	Normal Mod- Assign	Macro Clo Macro Co Record Co	ne Clone B	← Úp ack Menu 21			

Matte Mix

Matte Mix Profile - The Matte Mix Profile is where the output passes through the Matte mix color between the two transition sources. This will cause the transition to go from the first source through a selected matte color to the second source.



Fill Level - This is the amount of Matte added to the mix. 100% is the full amount of Matte added.

Bias - This adjust the point that the Matte is introduced into the transition i.e. more Matte at the start of the transition and less at the end of the transition, or the other way around.

Width - This will override the bias parameter and introduce a full Matt throughout the transition at 100%.

Fill - This function selects the type of source that will be used as a Matte. The options range from Matte, Util Bus 1 and 2. The Util Bus Fill is setup in the Util Bus menu. Touch the {Util/Misc} button on the GUI to see which crosspoint the Util Bus's are set to reference.

Matte Selector - Select the required Matte from the options Local Matte or MAT 1 to MAT 16. Hue, Luma and Saturation will only affect the Local Matte setting.

Matte Hue - sets the actual Matte color, the rotary control operates a 360 degree color wheel where:

0 = Red 60 = Magenta 120 = Blue 180 = Cyan 240 = Green 300 = Yellow

Matte Luma - The Luminance or brightness control affects the selected Matte Hue, the parameter adjusts from 0 to 100% where 0% is no luminance or Black and 100% is maximum brightness.

Matte Sat - The saturation control affects the selected Matte Hue, the parameter adjusts from 0 to 100% where 0% is no saturation or no color i.e. only shades of Gray and 100% is fully saturated or maximum color.

Effects Dissolve and Squeeze Effects

Effects Dissolve

Effects Dissolve gives you a means of creating a smooth transition from one memory state to another by interpolating any variable values (i.e. size, position, border width, etc.). Any state-change variables (e.g. button pushes) can be set to change at the start or end of the dissolve and provides a simple way of creating a two key-frame effect.

The Effects Dissolve function can be used on DMEMs and Snapshots.

An Effects Dissolve can be applied to an existing saved memory file, or to a memory file as it is saved with a new effect, using the "Shortcuts" menu. Editing an existing memory file in the Filing System (e.g. DMEM and Snapshots). The effects that can be made are only limited to the creativity of the user.



The menus above are in the "Shortcuts" menu You can use either to create a Dissolve effect



Filing System used when editing an existing file to create a Dissolve Effect

Saving an Effects Dissolve with a DMEM

This example explains how to save a Dissolve effect with a DMEM.



Create an effect; for example a one box key layer On then Off. In the "Shortcuts" menu, enter a DMEM memory number using the number pad and then touch the **{Mixer}** button. Touch the "Effects Dissolve" **{Enable}** button, you can now adjust the Effects Dissolve Duration, Shape and Profile by touching the Effects Dissolve attacher, then use the parameter controls on the right. Finally press the **{Save}** button to save the DMEM

When the DMEM is recalled, the dissolve effect will dissolve the Key layer on and off. The DMEM load sequence can then be recorded to a Macro and attached to one of the Macro buttons on the control surface.

As the Dissolve Effect runs, the top corner of the menu (marked in the menu above), will display a Dissolve "percentage". The percentage number from will run from 0% to 100% for each dissolve effect created. A **{Stop}** button next to the percentage number, cause the current running dissolve effect to stop.

Dissolve Effects Parameter Controls

Cut Point

- **Auto** the switcher determines the most useful point for state-change variables to be changed, i.e. at the start or end of the dissolve. States which are switching on will change at the start of the dissolve and those which are switching off will change at the end of the dissolve.
- Early Changes the state of all state-change variables at the start of the dissolve
- Late Changes the state of all state-change variables at the end of the dissolve

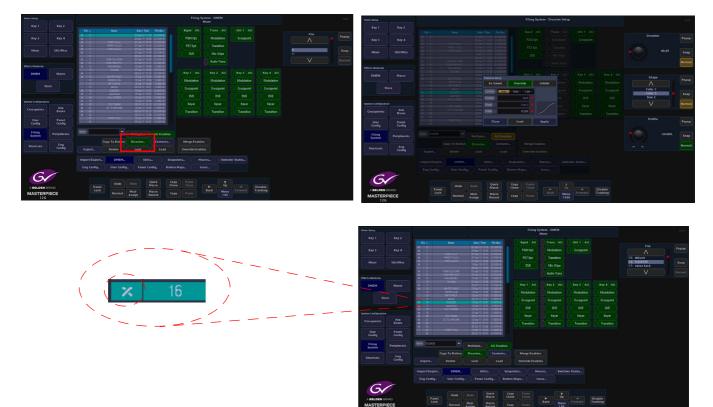
Duration - Sets the overall duration of the dissolve

Shape - Controls the shape of the chosen dissolve profile

Profile - Sets the profile of the dissolve path allowing a linear change or smooth acceleration / deceleration (among other options). A graphical illustration of the dissolve path is shown at the bottom of the pop-up and shows the selected shape and profile.

Applying a Dissolve Effect to an existing DMEM

If a dissolve is required on a memory which has not already been set as a dissolve, this can be achieved by switching on the Dissolve button.



Select an existing DMEM from the file list, then touch the **{Dissolve}** button. The Effects Dissolve dialog box will appear, so that the user can set the type of effect required. When finished, touch the **{Apply}** button.

Notice that the file now has an "X" next to the DMEM number to signify that it has a dissolve effect applied.

Bgnd DVE and Mixer DVE

In the "Mixer" menu there are two kinds of DVE; "Bgnd DVE" and "Mixer DVE".

The Mixer DVE resizes the OUTPUT of the background mixer over the Util Bus, so background wipes and mixes from Program to Preset (A to B) are all within the resized tile. Also the preview output will show the transition next state resized over the Util Bus. This would be typically used for Background transitions in a resized box.

The Bgnd DVE resizes Program (A Bus) and the Preset (B Bus) independently, typically Program over Preset over Util Bus. When using DVE in this function there are NO background mixes or wipes. Bgnd DVE would typically be used for squeeze type effects, squashing and/or moving program and sliding on resized preset in the corner etc.



If the "**Bgnd DVE**" and the "**Mixer DVE**" buttons are grayed out and you touch the {**DVE Allocation**} button, a dialog box will appear with the following message:



This tells you that the Background DVE is not enabled. You have to go to the **Eng Config** - **System Config** menu to enable the Background DVE.

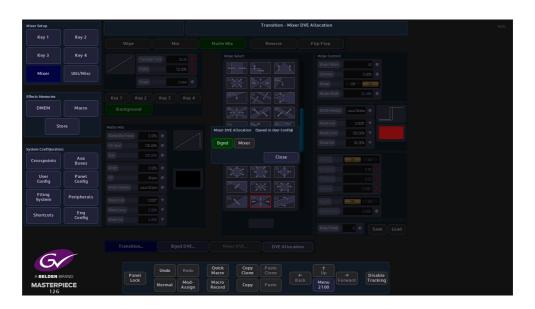
Touch the **{Eng Config}** button and then in the Eng Config main menu touch the **{System Config...}** menu link button.

Touch the **{Enable Background DVE}** button (it will turn green); you can now use the Bgnd DVE and Mixer DVE functions.

Mixer Setup				Engineering Confi	g - System Configuration	HDD
Key 1	Key 2	System Standard		Reference Status		
Key 3	Key 4	System Standard 1080p/59.94 A New Standard 1080p/59.94 A		Genlacked No Ref Present No		New Standard Popup
Mixer	Util/Misc	UHD Mode Gusdent 25		RefLocked No Tri Sync No		1080p/60 B 1080p/59.94 A 1080p/59.94 B Snap
Effects Memories	Macro	Gerlock OH On Gerlock Phase Q.00 Lines	Action On Next Field Action On Field 1 Action On Field 2	Frame Rate 0.00		Normat
Sto		Background DVE Enable Background DVE				
System Configuration						
Crosspoints	Aux Buses					
User Config	Panel Config					
Filing System	Peripherals					
Shortcuts	Eng Config					
		Panel Undo F Lock Named N	System Config GP tedo Quick Macro tod- sign Macro	C IP Gateways Copy Paste Clone Clone Copy Paste		mat Fedor

Bgnd DVE

Go back to the Mixer main menu and you are now able to select the Bgnd DVE. Touch the **{DVE Allocation**} button an a dialog box will be displayed allowing you to select Bgnd or Mixer.



When Bgnd is selected, you can now touch the **{Bgnd DVE...}** menu link button to open the **Trans - Background DVE** menu.

The default state of functions in this menu are Off, turn "On" the "Program DVE" and the "Preset DVE" and you will notice that you will still see the program output displayed full size on the monitor.



Touch the "Position & Size" parameter and "Zoom" down the Program tile and use the "X/Y Position" to position the tile, you will start to see the Preset tile being revealed. Do the same for the Preset position & size parameter and as you Zoom down the preset tile the Util Bus source is displayed as the background. The monitor output will look something like the diagram below:

Utility Bus Source



As mentioned earlier, the Bgnd DVE would typically be used for "Squeeze Backs" this would be done by using the "Position & Size parameters to size the Program and Preset Tiles and saving the setup as a DMEM as explained in the following section.

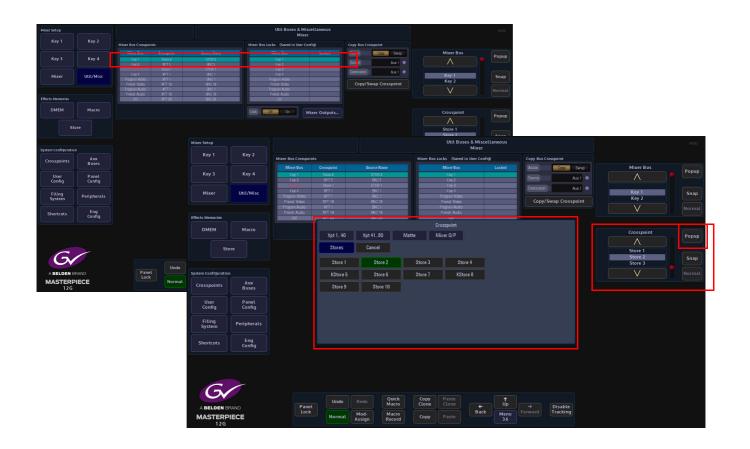
Note: The Utility Bus background cannot be zoomed or moved.

The Program tile by default is set on top or over the Preset tile. This can be changed using the "**Top Tile**" parameter, select Program or Preset to be the top tile.

Program D	VE	
DVE	Off	On
Top Tile	Program	Preset
Top Tie	Program	Preset

Setting the Utility Bus Background Source

The **Utility Bus** background source is set in the "**Util Buses and Miscellaneous**" menu. Select the Util Bus at the bottom of the Mixer Bus Crosspoints table, then use the "Crosspoint" parameter popup to select a source for the Util Bus (shown below).



Position & Size

Note: This example will go through the "Program DVE" parameters. The Preset parameters work in exactly the same way.

Make sure that the Program DVE function "**On**". The **Position & Size** attacher area, allows the you to move a Tile around the screen and to zoom in/out.



X/Y Position - Parameters are used to move the position of the Tile around the monitor screen as shown below.



Zoom - Parameter is used to zoom the Tile in and out.



Crop

The crop menu as it suggests allows the user to crop the Tile, and also allows the user to apply soft edges.

Mixer Setup				Transition - Backgrou Mixer, Backgroun			HDD
Key 1	Key 2	Program DVE	Position & Size	Crop	Border		
		DVE D* D	X Position & Size	Cropping Off Da	Border Dit Do	Softness	
Key 3	Key 4	Top Tile Program Preset	YPosition 0.00 V	Satress 0.00%	Barder Width 10.00%	Sorchess	Popup
		TOP THE PROFESSION PROSEC					
Mixer	Util/Misc		Zoom 0.65 V		Softness 0.00%	0.00%	Snap
			X Size 1.00 V	Bottom 0.00% 🔴	Matte Selector Local Matte		
			Y Size 1.00 V	Left 0.00% •	Mattellue B.COT V		Normal
Effects Memories				Right 0.00% •	Matteluma 100.00% 🔻		
DMEM	Macro				Matte Sat 0.00% 🔻		Popup
							Topop
Ste						0.00%	
		Preset DVE	Position & Size		Border		Snap
System Configuration		DVE Off Da	X Position 0.00 V	Cropping Ctt On	Border Dr. Dn		Normal
Crosspoints	Aux		YPosition 0.00 V	Satress 0.00% •	Bender Wichh 10.00%		
	Buses		Zcom 0.74 V	Top 0.00% •	Satmess 0.00%		
User	Panel			Bottom acos •	Matte Selector Local Matte	Bottom	Popup
Config	Config		X Size 1.00 V				
Filing System	Peripherals		Y Size 1.00 V		Matte Hue B COOT	0.00%	Snap
System				Right 0.00% •	Matte Luma 100.00%		
Shortcuts	Eng Config				Matte Sat 0.00% V		Normal
	coning						
		Transition Bgnd	DVE Mixer DVE.				
		I ransition Bgnd	DVE Mixer DVE.				
6							
		Undo	Redo Quick Cr Macro Cl	opy Paste one Clone			
A BELDEN B		Panel	Mode Macro	Back	Op → Disable Forward Tracking		
MASTERP 12G	IECE		ssign Record C	opy Paste	2101		

Cropping On/Off - Switches the crop facility On or Off,

Top, Bottom, Left and Right - Crops the Fill edges



Original Key Layer



Right Crop



Bottom Crop





Left Crop

Border

This function allows the user to apply a border and effects around a Tile.

Mixer Setup				Transition - Backgroun Mixer, Background			HDD
Key 1	Key 2	Program DVE	Position & Size		Border		
		DVE Off On	X Postion 0.14 V	Crosping Dff Dn	Barder Off On	Border Width	Popup
Key 3	Key 4	TopTile Program Preset	Y Position 0.01 V	Softress D.CO% •	Border Wridth 10.00% 😑		Topop
Mixer	Util/Misc		Zoom 0.52 V	Top 0.00% •	Sefmess 0.00% 👄		Snap
Mixer	OUT/MISC		X Sze 1.00 V	Bottom 0.00% •	Matte Selector Local Matte		Snap
			Y Size 1.00 V	Let acos •	Matte Hue 0.000° 🔻		Normal
Effects Memories				Right 0.00% •	Matte Luma 100.00% V		,
DMEM	Macro				Matte Sat	Softness	Popup
							Popop
Sto							Snap
		Preset DVE	Position & Size		Border		Snap
System Configuration		DVE Ott On	X Position 0.28 V	Cropping Ctt Dn	Border OH On		Normal
Crosspoints	Aux Buses		Y Position 0.05 V	Satress 0.00% •	Barder Widdi 10.00%		
			Zoom 0.46 🔻	Top 0.00% •	Sofmess 0.00% •		
User Config	Panel Config		X Size 1.00 V	Bottom 0.00% •	Matte Selector Local Matte		Popup
Filing			Y Size 1.00 V	Let LCO% •	Matte Huel 0.000" V		
System	Peripherals			Right 0.00%	Matteluma 100.00% V	Black	Snap
Shortcuts	Eng				Matto Sat	V	Normal
Shortcots	Config						
		Transition Bgnd D	WE Mixer DVE	DVE Allocation			
G							
		Panel Undo R	edo Quick Co Macro Clo	ppy Paste One Clone +	↑ Up → Disable		
A BELDEN B MASTERP 12G		Lock Normal M	lod- isign Record Co	py Paste Back	Menu 2101		

Border On/Off - Switches the Border On or Off

Border Fill - Selects source for the border fill from a Matte selected using the Matte Selector parameters, Util

Border Width - Adjusts the overall width of the border

Softness - Softens the outside edges of the border



Original Key Layer



Border Width Adjusted



Border Applied



Changed Border Fill

The **Matte Selector** and **Hue**, **Luma** and **Sat** parameters are used to adjust the color of the border around a Tile when the option is selected in the Border Fill parameter. The user is able to select one of 16 preset Mattes, or create a user-defined color for the border using the Hue, Luma and Sat parameters.

Matte Selector - Selects the preset Mattes 1 to 16 or a Local Matte that allows the user to create a their own border color.

Matte Hue, Luma and Sat - These parameters allow the user to adjusts the Hue, Luma and Saturation levels of the Local Matte. The user is able to create their own unique border color around a Tile.

Setting up a Squeeze Effect

With the "**Bgnd DVE**" enabled and the Program and Preset parameters turned On, You can now use the Position & Size to re-position the Program tile.



Position and zoom the program tile to the position required for the squeeze effect. The open the "**Shortcuts**" menu and save the move as a DMEM.



Program Tile



Program Tile

Preset Tile

Use the number pad to save the current state of the system as a DMEM, by entering a memory number and saving the memory file e.g. enter "100" as the memory file, then select the **{Mixer}** button below the number pad and then **{Save}**. You can use the **Effects Dissolve** at this point but in this example Effects Dissolve will setup in the DMEM menu to the saved file.

Mixer Setup									Load/Save Pad Aixer			Masterpiece 1	0
		File Type DMEM					Last Loaded	Bgnd All					
		Store						PGM Xpt.	Modulation	Crosspoint			
Mixer	Util/Misc	Engineering		Menory 100	- 10			PST Xpt.	Transition				
				100	He fa		Merge		Mix Wipe				
Yects Memories		Panel	7				Enables		Audio Trans				
DMEM			<u> </u>				Override Enables		Key 2 All	Key 3 All	Key 4 All		
						Delete		Modulation	Modulation	Modulation	Modulation		
St								Crosspoint	Crosspoint	Crosspoint	Crosspoint		
ystem Configuratio													
Crosspoints	Aux Buses		Save					Keyer	Keyer	Keyer	Keyer		
								Transition	Transition	Transition	Transition		
User Config	Panel Config	Cat Point Au	n Esty			nable							
Filing System	Peripherals	Duritor		01.00 Cinear		nhibit							
		Parlie		0.006									
Shortcuts	Eng Config												
		Load/Save Pa	d Nu	mber Pad									
6													
A BELDEN B	P.M.D	Pan	•			Q M	uick Copy acro Clone		t Up				
MASTERP		Loc		Normal	Mod- Assign	M	acro cord Copy		Back Menu 10		racking		

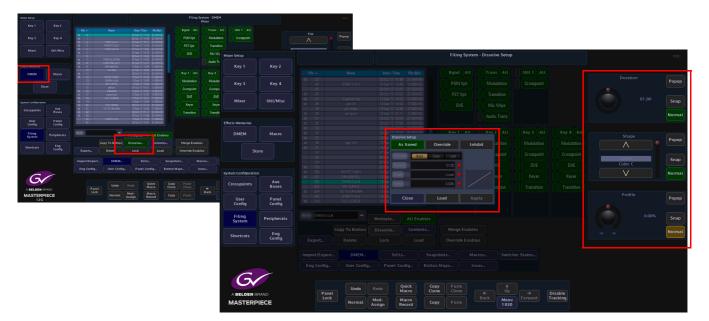
Next zoom and position the Preset tile to the required position this will also reveal the Util Bus background. Again, open the "Shortcuts" menu and save the action as a DMEM, e.g. enter "101" as the memory file, then select the **{Mixer}** button below the number pad and then **{Save}**.



Finally, turn Off the Program DVE and Preset DVE so that the Program source is displayed fully over the monitor and save that state as a DMEM, e.g. enter "102" as the memory file, then select the **{Mixer}** button below the number pad and then **{Save}**.

Touch the **{DMEM}** button then in the DMEM menu, select the first saved memory file (100) and then touch the **{Dissolve}** button. The "Dissolve Setup" sub menu will be displayed. Touch the **{Override}** button then set the Duration, Shape and Profile parameters as required, then touch the **{Apply}** button.

Notice that there is an "**X**" next to the file number in the table, this indicates that Effects Dissolve has been applied to the memory file.



Follow the same process for the second memory file saved (101).

The final part of this setup is to create macros for all three memory files. Touch the **{Macro Record}** button it will turn green ready to start recording. On the next button press the macro will start recording and the button will turn red.

Undo	Redo	Quick Macro
Normal	Mod- Assign	Macro Record

Undo	Redo	Quick Macro
Normal	Mod- Assign	Macro Record

Touch the first memory file created (100) in the DMEM menu and then touch the **{Load}** button (shown below). As the first DMEM loads, touch the next memory file (101) to select it ready for loading. When DMEM 100 finishes loading, touch the **{Load}** button again for DMEM 101. Then finally touch the **{Record Macro}** button again to stop the macro recording.



Touch the **{Macro}** button and the **"Macro Edit**" menu is displayed. The recorded DMEM load actions can be seen in the **"Macro Actions**" table. You test the recorded macro by touching the **{Test Macro}** button.

When satisfied with the macro, touch the **{Save...}** menu link button.



Select a free slot in the Macro Save table, give the macro a name using the "**Name**" attacher and on-screen keyboard and then touch the **{Save}** button. In the Macro Save menu, touch the **{Assign...}** menu link button.

In the **Macro Assign** menu, touch the saved macro file in the table and press the **{Attach}** button, this will make the macro ready to attach. Finally, touch one of the free OLED button the Masterpiece control surface and the macro is attached. If you touch the OLED button the macro with the "**Squeeze**" effect will run.



For memory file 102, that takes the system back to normal. Once again touch the DMEM memory file ready to touch the DMEM **{Load}** button, then touch the {Macro Record} button. Touch the **{Load}** button and when the DMEM has loaded, touch the {Macro Record} button to stop the macro from running.

In the **Macro Edit** menu, test the macro to make sure that it works as required, then save the macro and attach the macro to an OLED button as just described.

The two macros attached to the OLED buttons will now have the squeeze effect action on one button and the back to normal action on the other.

Mixer DVE

n the "Mixer" menu there are two kinds of DVE; "Bgnd DVE" and "Mixer DVE". The Mixer DVE resizes the OUTPUT of the background mixer over the Util Bus, so background wipes and mixes from Program to Preset (A to B) are all within the resized tile. Also the preview output will show the transition next state resized over the Util Bus. This would be typically used for Background transitions in a resized box.

Go back to the Mixer main menu and you are now able to select the Mixer DVE. Touch the **{DVE Allocation**} button an a dialog box will be displayed allowing you to select Bgnd or Mixer.



When Bgnd is selected, you can now touch the **{Mixer DVE...}** menu link button to open the **Trans - Mixer DVE** menu.

The default state of functions in this menu are Off, turn "On" the "Mixer DVE" and you will notice that you will still see the program output displayed full size on the monitor.



Touch the "Position & Size" parameter and "Zoom" down the Program tile and use the "X/Y Position" to position the tile, you will start to see the Util Bus source displayed as the background. The monitor output will look something like the diagram below:



Utility Bus

Source

Program Output Tile

As mentioned earlier, the Mixer DVE would be typically used for Background transitions in a resized box. This would be done by using the "Position & Size parameters to size the Program Tiles and using the **{Take Next}** button to Mix or Wipe between Program and Preset sources.

Note: The Utility Bus background cannot be zoomed or moved.

Position & Size

Make sure that the Mixer DVE function "**On**". The **Position & Size** attacher area, allows the you to move a Tile around the screen and to zoom in/out.

Mixer Setup							Tra N	insition - Mixer lixer, Backgrour	DVE 1d						HDD
Key 1	Key 2	Mixer DVE		Position	& Size	Cro			Bord						
Key 3	Key 4	DVE Ott On		X Positio		Crr.	sping	Cff Dn	Bara	ter Width	011 On 10.00% •		X Position		Popup
										er wirdun					
Mixer	Util/Misc			Zoom	1.00	Ba	2) tem)	0.00%	Mat	te Selector	0.00% Local Matte			0.00	Snap
				X Size Y Size	1.00 ▼			0.00%	Mat	teHuel	0.000" 🔻				Normal
Effects Memories							RI I	0.00%	Ma	teluma	100.00%				
DMEM	Macro							accor		te Szt	0.00%		Y Position		Popup
	ore														
	ore													0.00	Snap
System Configuratio															Normal
Crosspoints	Aux Buses														
User Config	Panel Config												Zoom		Popup
Filing System	Peripherals														Snap
Shortcuts	Eng Config														Normal
		Transition			Mixei	DVE	DVE	Allocation							
C	~														
Gv		Panet	Undo		Quick Macro	Copy Clone	Paste Clone		↑ Up		Disable				
		Lock	Normal	Mod- Assign	Macro Record	Сору	Paste	Back	Menu 2102						

X/Y Position - Parameters are used to move the position of the Tile around the monitor screen as shown below.



Zoom - Parameter is used to zoom the Tile in and out.



Crop

The crop menu as it suggests allows the user to crop the Tile, and also allows the user to apply soft edges.

Mixer Setup								nsition - Mixer lixer, Backgrou							HDD
Key 1	Key 2	Mixer DVE		Position			rop		Border						
Key 3	Key 4	DVE DH DA			m 0.00 1		Dropping	011 On	Border	0	Du		Softness		Popup
					2 0.00 V		Soltness	0.00%	BorderWi	ah 📃	10.00%				
Mixer	Util/Misc				1.00		τορ	0.00%	Softness		0.00%			0.00%	Snap
					1.00		Battorn	0.00%	Matte Se	ostor	Local Matte				
Effects Memories					1.00		et	0.00%	Matte Hu		0.007				Normal
DMEM							igit	0.00%	Matte Lur		100.00%				
DMEM	Macro								Matte Sat		0.00% 🔻		Тор		Popup
Ste	ore														
														0.00%	Snap
System Configuration															Normal
Crosspoints	Aux Buses														
User	Panel												Bottom		Popup
Config	Config														
Filing System	Peripherals													0.00%	Snap
															Normal
Shortcuts	Eng Config														
		Transition			Mix	er DVE	DVE	Allocation							
6															
A BELDEN B	PAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone				Disable				
MASTERP		Lock	Normal	Mod- Assign	Macro Record	Сору	Paste	Back	Menu 2102		Tracking				

Cropping On/Off - Switches the crop facility On or Off,

Top, Bottom, Left and Right - Crops the Fill edges



Original Key Layer



Right Crop





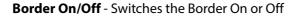
Bottom Crop

Left Crop

Border

This function allows the user to apply a border and effects around a Tile.





Border Fill - Selects source for the border fill from a Matte selected using the Matte Selector parameters, Util

Border Width - Adjusts the overall width of the border

Softness - Softens the outside edges of the border



Original Key Layer



Border Width Adjusted



Border Applied



Changed Border Fill

The **Matte Selector** and **Hue**, **Luma** and **Sat** parameters are used to adjust the color of the border around a Tile when the option is selected in the Border Fill parameter. The user is able to select one of 16 preset Mattes, or create a user-defined color for the border using the Hue, Luma and Sat parameters.

Matte Selector - Selects the preset Mattes 1 to 16 or a Local Matte that allows the user to create a their own border color.

Matte Hue, Luma and Sat - These parameters allow the user to adjusts the Hue, Luma and Saturation levels of the Local Matte. The user is able to create their own unique border color around a Tile.

Macros

Overview

Macros can be assigned to any button on the control surface. When macros are assigned to the Macro Buttons on the control surface they can have an associated "bitmap" added to the OLED button display.

Masterpiece macros are recorded in real time. This means that macros record functions behind buttons, rather than just the button press. This allows creation of simple multi-button operations to complex effects and transitions, which include; Pbus, GPOs and DMEM loading, clip playing and VDCP.

Setting Up Macros



Macros are saved within the **Filing System.** The buttons functions are assigned within the Panel Config. Although the macros themselves are run and activated in the mainframe the buttons are associated with the Panel Config.

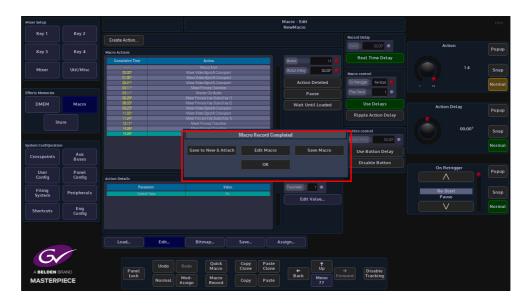
As mentioned earlier, macros are recorded as a sequence of button presses in real time, which in turn are translated into a sequence of actions. The delay between these functions (button presses) can be tested and edited once the recording is completed. Once a macro is running if it is run a second time halfway through the macro run sequence, it will instantly start from the beginning.

Note: A Menu Operation is not recorded as a macro but any direct action within menus will be (e.g. a Pbus trigger).

Macro Record



To start recording a macro press **{Macro Record}** button on the GUI panel. This button will now go Green indicating a macro is ready to start recording. The macro recording and button delays will only be activated after the first function (button press) has been entered. Once the macro recording has started the **{Macro Record}** button will go Red. While recording a macro different menus on the GUI can be entered to gain access to any menu-related functions. Once the macro is completed press the **{Macro Record}** button again and this will end the macro and the button to an unlit state.



When the Macro has stopped recording a dialog box will appear with options to:

- Save to New & Attach this will save the macro to the next available free slot in the saved macro table (this can be seen in the "Macro Save" menu.
 When this button is touched, the control surface goes dark (the same as using the "Attach" function in the "Macro Assign" menu), and allows you to attach the macro to one of the OLED buttons. The OLED button will display the macro file number, when attached, the Macro Save menu will open and the saved macro file is highlighted in the saved macro file table.
- Edit Macro this will allow you to edit the macro in the Macro Edit menu.
- Save Macro this saves the macro into the next available free slot in the saved macro table (this can be seen in the "Macro Save" menu. The Macro Save menu will open and the saved macro file is highlighted in the saved macro file table.
- **OK** this will also go to back to the Macro Edit menu where the macro can be edited before saving.

Mixer Setup							Macro - Edit NewMacro					HDD
Key 1	Key 2	Create Action					Newmacro		Recor	d Delay		
Key 3	Key 4	Macro Actions								0.00	Action	Popup
										Real Time Delay		
		Unay		Marro Start							14	
Mixer	Util/Misc	00.00		Mixer Video Bgnd A Crosspo	int					control	14	Snap
		01:05*		Mixer Video Band B Crossor								
							Actio	n Deleted		atriggar 🛛 Re-Start 😑		Normal
				Moor Primary Transition								
Effects Memories		00,009		Master Orl Audio						Count 1 🔍		
		02:171 01:049		Mover Primary Key State (Ker								
DMEM	Macro	01:209		Mixer Primary Key State [Ker Mixer Video Bond A Crosso			Wait U	ntil Loaded		Use Delays	Action Delay	
		01; 101		Mixer Video Band A Crasspo								Popup
		00,201		Motor Primary Key State [Ker	r 1)				К	ipple Action Delay		
Sto												
									Dutte	n control	00;00°	Snap
		00,009		Master Orl Audio								Shap
							Tes	t Macro		n Delay 🔰 🛛 🖸 🔍 🔵		
System Configuration												Normal
	Aux									Use Button Delay		
Crosspoints	Buses											
							Display Cu			Disable Button		
User	Panel						Display Cl	mocacive i			On Retrigger	Рорир
Config	Config	Action Details									\wedge	Lobob
		Action Details										
Filing System	Peripherals	Control 1	fake	(in .						Re-Start	Snap
Jystein							Edit	Value			Pause	
											V	Normal
Shortcuts	Eng Config										•	
	coning											
		Load	Edit	Bitmap	Save	٨	ssign					
	1											
			Undo	ledo Quick	Сору	Paste						
A BELDEN B	AND	Panel		Macro	Clone	Clone	+			Disable		
		Lock		fod- Macro			Back	Menu		Tracking		
MASTERP	IECE			sign Record	Сору	Paste		77				

Once a macro has been recorded, the button press sequence that was recorded is displayed in the Macro Actions table (shown above). Press the **{Test Macro}** button to test the macro just recorded.

Pausing a Macro Record Sequence

A Macro can be paused once a record sequence has started. Whilst a Macro is being recorded the **{Macro Record}** button is Red. Press and hold the **{Macro Record} button** and it will turn Orange indicating that it is Paused. At this point the Button Delay timer is also paused. Press the **{Macro Record}** button once. The button will turn Red and the record process will start once again.

Note: While a macro is paused, Masterpiece can still run multiple other macros at the same time

Appending more Macro Actions to a Macro Sequence

Additional macro actions can be added to a previously recorded macro sequence. In the **{Edit...}** menu, move the highlight bar to the position above where the action is going to be inserted, and then press and hold the **{Macro Record}** button. Again the button will turn Red and the record sequence will start. When finished press the **{Macro Record}** button again to stop recording, and the macro sequence will be added below the highlight bar.

Macro Test and Edit



Test Macro

Once the macro has been recorded, to test and edit the actions, press the **{Macro}** button to enter the **Macro - Edit** menu. If a macro has just been recorded, the functions/actions that have just been recorded are displayed in the **Macro Actions** table. To replay/test a macro, press the **{Test Macro}** button.

Pause Macro

A macro action sequence can be paused at any selected point, There are two ways to do this. Either use the Action parameter to select a specific point in the action sequence and press **{Pause}**, or press the **{Test Macro}** button to run the macro sequence and then press **{Pause}**, at the required point. The next time the **Test Macro** is run, the macro will pause when it reaches the chosen point.

Wait Until Loaded

Wait Until Loaded function will make the macro pause until the file operation is complete. 'Wait' can only be turned on for file operations. Waiting macros which get a re-trigger will behave exactly as if they were paused (i.e. they will stop waiting).

Ripple Action Delay

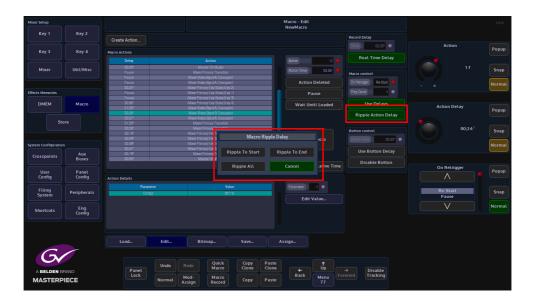
Allows an **Action Delay** that has been set, to be "Rippled" through all Actions in the table from that point onwards.

Pressing the {Ripple Delay} button will pop up a Macro Ripple Delay dialog box.

Ripple To Start button will ripple the current delay value to all previous Actions up as far as the first Action in the table

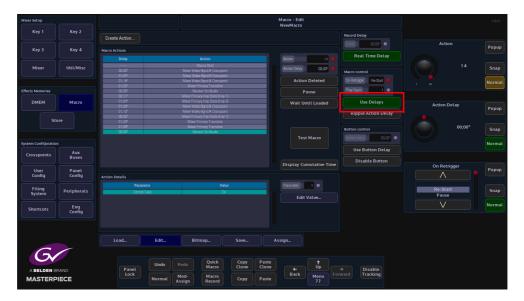
Ripple To End button will ripple a delay from current action to all Actions until the last action

Ripple All button will set all Actions to current delay, and Cancel will cancel the Ripple delay request.



Attacher and Parameter Controls

Use Delays - this function turns the real-time button press delays On or Off.



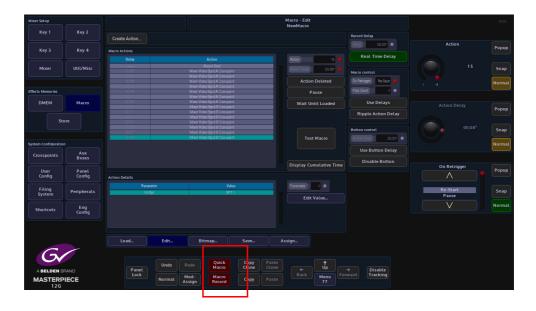
Action Deleted - this will delete a selected Macro Action.

Use Button Delay - this will allow a delay to be added to the Normal function of the button, so the macro will act and then the Normal function will take place.

Disable Button - this option will disable a button's original function and only allow the button to enable the macro that is assigned to it.

Quick Macro

You can record a Quick Macro rather than using the normal 'Macro Record' button. The resultant macro is no different, but specifically does not 'Follow ME' and does not 'Use Delays'. More obviously, it facilitates the quick attachment of the macro onto a button without the need to manually save first.



When the recording is complete, touch and hold the **{Quick Macro}** button. The 'touch' part will automatically save the macro into an unused slot in the current file, and clear the macro edit buffer. The 'hold' part will put the panel into Button Attach mode. This is now indicated by a pulsating effect (note this effect is now also used for other assign/attachment operations like clone attach and live mode). Prior to releasing the 'Quick Macro' button, the target button for the attachment should be pressed and released. This will record the attachment and cancel the Button Attach mode. The 'Quick Macro' button may now be released.

You can still pause during recording by holding down the normal **{Macro Record}** button until it changes color. Recording is resumed when either button (regular or 'Quick') is pressed again.

Additional attachments (of the same macro) can be made by pressing and holding the 'Quick Macro' button. This will trigger the attachment stage again.

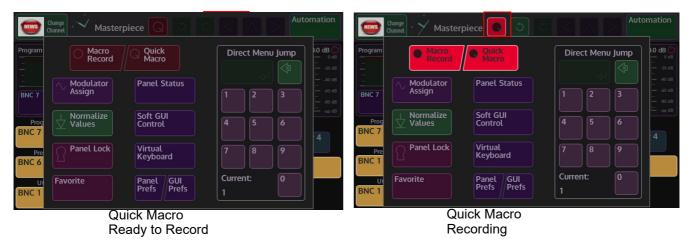
The Quick Macro button on the GUI can be cloned and copied onto a physical button which means you can create, save and attach a macro without resorting to a GUI at all.

Using Quick Macro on the Masterpiece GUI

The Quick Macro function can also be accesses on the masterpiece GUI. Using the navigation buttons down the left side of the Masterpiece GUI, touch the "Star" navigation button and a sub menu will be displayed.



The operation of Quick Macro works in exactly the same way as described on the previous page, where you touch the {Quick Macro} button to start the record process and the sub menu will close displaying the main menu with the red Quick Macro button displayed at the top of the menu. The Quick Macro button is bright red indicating it is ready to record, after the first button press of the macro record sequence, the Quick Macro button has a black circle in its center.



To stop the record process, touch the Quick Macro button once more and the button will turn dark red.

Quick Macro his saved in the same way as described on the previous page.

Offline Macro Editor

The offline macro editor is a clear, simple and quick way to create new macros or edit existing macros whilst the production switcher control surface is being used to produce a show. The offline macro editor has an intuitive menu structure with all the elements at hand to build the most complicated macros, without having to go though other menus or having to record button presses on the control surface, all within one menu.

Once a macro has been created, the delay between the macro actions, pauses and ripple delay can be edited then tested.

Offline Macro Edit Menu

As mentioned above, the Macro Edit menu is the only menu that the user needs to use to create new macros or edit existing menus offline (while the control surface is being used). The diagram below highlights the main offline macro editor functions in red. These buttons will be explained in detail while working through the Macro functions.



Creating a Macro "Offline"

The following example will go through the steps of making an "Offline" macro for a simple wipe transition.

Open the Macro Edit menu, then touch the "Create Action" drop down menu, the menu will go dark and 6 options will appear; Bus & Xpt, Store, Peripheral, Effects, Options and Miscellaneous. These will be the base for all offline macros.

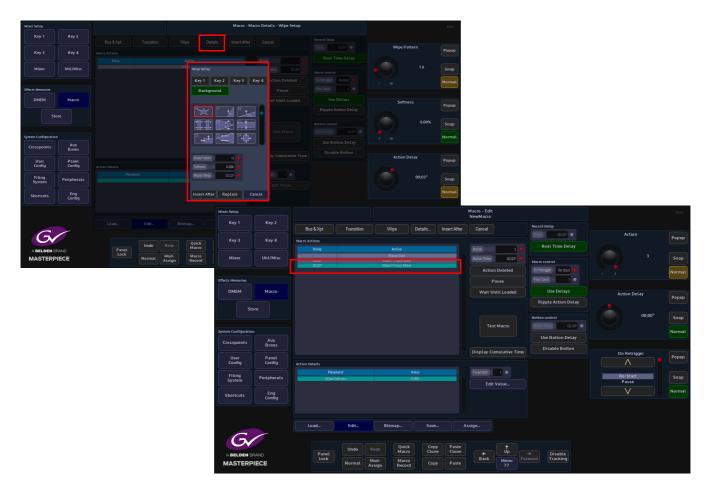


Touch the **{Create Action}** button to start creating a new macro.

Select Bus & Xpt - Transition - Wipe, the menu will return to the Macro Edit main menu.

Mixer Setup						Macro New!	- Edit Macro		HDD				
Key 1	Key 2	Bus & Xpt	Transition		Cancel			Record Delay	Action				
		Macro Actions		Do Trans				Real Time Delay	Рорир				
Mixer	Util/Misc	Delay		Next		Anto			, <u> </u>				
				Setup		Mixer Setup				Macro - Edit NewMacro			
Effects Memories				Wipe Time		Kay 1	Key 2	Bus & Xpt Transition	Wipe Details Insert Af	ter Cancel	Record Delay		
DMEM	Macro							Macro Actions				Action	Popup
Store								Delay	Action Macro Start	Action 3 •	Real Time Delay		
Stole						Mixer	Util/Misc	00'03,	Misser Primary Misser Misser Primary Misser	Action Delay CR 00*	Macro control		Snap
System Configuration						Effects Memories				Action Deleted	On Petrigger Pa-Statt		Normal
Crosspoints	Aux Buses					DMEM	Macro			Pause Wait Until Loaded	Use Delays		
	Panel										Ripple Action Delay	Action Delay	Popup
	Config	Action Details					tore					00;00°	
Filing Pe System Pe	eripherals	Para	meter		Value					Test Macro	Button Control Button Delay Ob 10°		Snap
Shortcuts	Eng Config					System Configurati	Aux				Use Button Delay		Normal
	Config					Crosspoints	Buses			Display Cumulative Time	Disable Button	On Retrigger	
						User Config	Panel Config	Action Details					Popup
C	-	Load	Edit	Bitmap	Save	Filing System	Peripherals	Perameter Wips Softmass	Value 0.00%	Parameter 1		Re-Start	
		Panel		Redo Quick	Clone	Shortcuts	Eng Config			Edit Value		Pause V	Normal
MASTERPIEC	E			dod- Macro ssign Recor									
								Load Edit	Bitmap Save	Assign			
						G							
								Panel Undo F	Redo Quick Copy Past Macro Clone Clor		→ Disable		
									Mod- Macro Copy Past	Back Manuel Fe	Disable Tracking		

Touch the **{Details}** button an a dialog box will open with "Wipe Setup" options (the dialog box options will depend on the type of macro action being inserted). Select if the transition will be a Key or Bgnd transition wipe, and then select the type of wipe from the wipe table. Finally touch **{Insert After}** to insert the action. The action can now be seen with the macro information in the **"Macro Action"** table below.



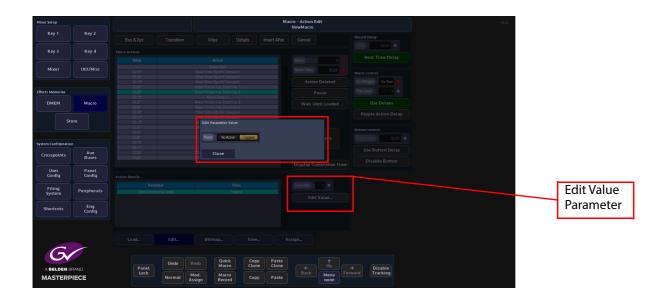
Remember to "Save" the macro when done.

Note: Actions can be inserted into an existing macro using the same method. Just by selecting where the new action is going to be inserted then using the "Create" offline macro editor to create a new action and insert it into the existing macro.

Edit an existing Macro using the Using Value and Details Parameters

There are two ways to edit a macro, the first is to change the value of a recorded action, this means that the user can select an action in the recorded macro list and use the **"Edit Value"** parameter to change the action of the macro.

For example, if a background crosspoint button was pressed as the macro action, the user can use the **"Edit Value"** parameter to change the action to a different background crosspoint.



The second way is to use the **Details** menus which will display a different set of options depending on the action selected; Do Trans, Next, Setup, Wipe and Time. These options allow you to select a completely different action, i.e. change from selecting a background crosspoint to selecting a Key within the selected action, time delays transitions, wipes etc.



The "Value" parameter and the "Delegate" options can be used to change actions within any previously save macros in any file. This is done by simply selecting the File and Macro and loading the macro within the "Macro **Load**" menu.

Bitmap

If a macro is going to be assigned to a macro button mnemonic display on the Masterpiece control surface, on a MAV-UFBPAD module or on a MAV-AUTO module, a bitmap can be generated that can be associated with the recorded macro and displayed in the mnemonic display above the macro button or on an OLED button.



In the macro main menu, touch the **{Bitmap...}** menu link button.

A bitmap can be derived from several places within the Macro Bitmap menu. The first areas are the **Preset Library** and the **User Library**.

The Preset Library has a range of pre-installed icons. Touch the "**Preset Library**" attacher and then use the "**Preset Library**" parameter to scroll through the icons.



As the user scrolls through the icons, when the required one is found, touch the **{Grab from Library}** button under the icon. The selected icon will now be displayed in the grid.

Once the icon has been selected, the user needs to save the icon with the already saved macro, so that it can be attached to the mnemonic display or OLED button.

Touch the **{Assign...}** menu link button and the selected icon is displayed just above the menu link buttons (see below left). Touch the icon and the "**Macro-Load**" menu is displayed. This is only for associating the icon with the macro.



Touch the **{Save...}** menu link button and the **Macro - Save** menu is displayed. Touch to select the required macro in the table and touch the **{Save}** button, a dialog box will appear asking the user if they wish to overwrite the saved macro, touch **{Yes, Overwrite}**. The icon is now displayed in the mnemonic display or OLED button.



The User Library is basically the same as the Preset Library in the way that it is used, the only difference is that the icon library will have been created by the user. The user can create their own icon using the "Pen" function or "Text" function.



Scroll through the list of icons in the User Library using the parameter control and then touch **{Grab from Library}**. The icon can be attached to a mnemonic display or OLED button in the same way as described above.

The "**Brush Size**" parameter is used to adjust the line thickness when creating an icon for the User Library. Touch the {**Pen**} button, then touch the grid area and the user can now start creating their own icons.



Touch the {Clear Edit} button to clear the grid and start again.

As displayed in the menu above, the two hand drawn names have different thickness brush sizes. By touching **{Save to Library}** will save the created icon to the User library.

To create an icon, select **Pen** from the **Draw Mode** parameter and the user can create their own icons by drawing in the large grid area. To delete any mistakes in the grid, select **Eraser** in the **Draw Mode** parameter and rub out the mistake in the grid.

When happy with the icon press the **{Save to Library}** button and the icon will be saved to the User Library.

The "**Text**" function allows the user to type letters into the grid area using the on-screen keyboard.

The "**Font**" parameter gives the user a selection of font choices when typing text using the onscreen keyboard. Touch the {Text} button and a cursor is displayed in the grid. The cursor can be moved to the required position in the grid by simply touching the cursor with a finger then sliding it around the grid.

Touch the **{Keyboard}** button to display the on-screen keyboard and type text into the grid. If the text is not in the correct position in the grid touch the **{Move}** button and use a finger to slide the text around the grid to the correct position.

The "**Store**" attacher is used to select an internal Store or a Sub-Clip. This allows the user to grab the image from the store and use it as an icon. In this attacher, the user can also select an Icon from the icon library



Use the "Store", "Sub-Clip" or "Icon" parameters to select an image and then touch the {Grab from} button to place the image into the grid.

If the grabbed image is going to be used in a mnemonic display, set the "**Full Color Bgnd**" to "**No**" because the mnemonics are mono color. Set to "**Yes**" if the image is going to be used for an OLED button.

The "**Colors**" attachers change the color and brightness of the macro buttons on the control surface.



The "**Ready**", "**Running**" and "**Pause**" parameters allows the user to change the default color of the buttons after they have been attached to a macro. The "**Brightness**" parameters are also used to change the brightness of the different states of the macro buttons. The "**Foreground**" Color and Brightness parameters are used to change the default state of an OLED button.

Quick Text

Entering text into the bitmap grid can take a little time to get the text into the correct position with the right font size. The "Quick Text" menu allows you to quickly place text into the gray bitmap square and whilst typing, the text automatically size itself within the boundaries of the bitmap grid.



Touch the **{Quick Text}** button and the "**Quick Text**" menu will be displayed. Turn the "**Auto Font Size**" parameter to "**On**" and then start typing the text with the on-screen keyboard. As more text characters are added the font will auto size itself the size of the quick text box grid. Text can also be aligned more accurately using the "Alignment" buttons. After finishing entering the text, touch the **{Apply**} button.

Saving a Macro

Once the macro has been setup, configured and a bitmap has been chosen, the next step is to "Save" the macro.

Press the **{Save...}** menu link button to enter the Macro - Save menu, then using the parameter controls, select a **Current File** and a **Destination** within the *Macro Save* table.



A Name and Description of the macro can also be added by touching the Red attacher button twice, and entering the required name and description using the on-screen or USB keyboard.

Finally, press **{Save}** and the macro will be saved to the Hard Disk along with any associated Bitmap, Store image or Icon image.

If the user then assigns the macro to a button, the bitmap image from the grid is also assigned to the button.

Note: Up to 1000 macros can be saved in a single File.

Assigning Macros to buttons

Press the **{Assign...}** menu link button. The Macro Assignment menu will then open. This menu has a table that displays a list of macro's that are saved within Files.



To attach a macro to a button on the control surface, first select a File using the Current File parameter and then select a macro within that File.

Press the Button Assignment **{Attach}** button and the button will go Red. All the control surface buttons will now go out ready for the user to select a button; buttons with macros already assigned will go Green. If the selected macro is already assigned to a button it will be lit Red.

Note: The same macro can be assigned to as many buttons as required.

Press the button on the control surface where the selected macro is going to be attached. The panel will return to the normal configuration and the macro will be attached to the button.

To detach a macro from a button on the control surface, press the **{Detach}** button. Once again the button will go Red. The control surface lights will go green for buttons with macros attached and any button which has the currently selected macro in the table will be lit Red. Press the button you want to detach the macro from. The control surface will now return to its normal configuration. The **{Detach}** button in the menu will go Gray and the macro will no longer be associated with that button.

Note: The macro is not deleted the from the File, just removed from the button it was attached to.

To find out which macros are attached to buttons, press the **{Locate}** button on the GUI. Any button on the panel with a macro associated with it will either be lit Green or Red as described above.

Pressing a button on the control surface which has a macro attached will highlight the macro in the table. This will work in reverse as well. To find the particular macro, touch on it in the macro table, then press the **{Locate}** button. Any button with that macro attached will light Green.

GPI Assignment

This function allows an external device to control a saved macro. The GPI parameter control selects the GPI pin that the external device is connected to. The selected GPI pin and attached macro are displayed in a table in the GPI Assignment area.



To attach a macro to a GPI pin, select the macro in the macro file table, and then use the GPI parameter to select the required GPI. Once the correct GPI pin has been selected, press the **{GPI Attach}** button to attach the external device to the macro. The table next to the Attach/Detach buttons displays the GPI pin and the attached macro.

To Detach a macro from a GPI, select the GPI/Macro in the table and then press the **{GPI Detach**} button. This will detach the GPI pin from the external device.

Macro Load

The macro load menu will load a Macro into the active buffer ready to use. The macro can then be attached to a button on the control surface.

Mixer Setup				Macro - Load Test Macro	HDD
Key 1	Key 2	Load for Editing			
Key 3	Key 4	ac Hecco 33 Hecco 3 32 33 Hecco 33 New/Mecro New/Mecro 1	140500 24 35 140500 35 140500		Macro Popup
Mixer	Util/Misc	NewMacro Vipe	Hucho 38 Hucho 39 Hucho 39 Hucho 39 Hucho		49: NewMacro 55: Test Macro 201: KAHUNA
		40 nucro 41 nucro 4	NACRO 43 NACRO 42		Norma
Effects Memories		NewMacro NewMacro	lewMacro NewMacro		
DMEM	Macro	44 NHC200 45 NHC200 4	144580 47 144580 46 47		
Sto	ore	NewMacro NewMacro	InerMacro NewMacro		
		48 Nucro 49 Nucro 5			
System Configuration		NewMacro NewMacro	est Miscro KAHUNA		
Crosspoints		Name Test Macro			
ciossponits	Buses		File List		
User Config	Panel Config	*			
Filing System	Peripherals		Att Macro Cache		
Shortcuts	Eng Config	Test Macro Resur	e All Macros Disable Enable		
		Load Edit	Bitmap Save	Assign	
6					
	RAND	Panel	Redo Quick Copy P Macro Clone Cl	aste Lone ← Up → Disable	
MASTERP		Lock Normal	Mod- Assign Record Copy P	aste Back Menu Forward Tracking	

There are two ways to view the saved macros:

- As a list of macros in a table
- As a list of Icons that have been attached to the macro.

Select a **File** using the File parameter control. Notice that if a File has any macros attached they are listed in the Load for Editing table.

Once a File has been selected, a macro can then be selected using the Macro parameter control. The File and the macro are also listed in the Name/Description information bars below the table.

{Load Macro} - will load the selected macro into a buffer ready to use once attached to a button the control surface.

{Test Macro} - will run the macro function.

{Stop All Macros} - will stop all running macros.

{Resume All Macros} - when a macro is running this button light Orange. If a macro has had a pause inserted, the macro will run until it reaches the pause and will stop. The Resume All Macros button will flash along with the **{Test Macro}** button. Press the Resume All Macros button to start the macro running once again.

If a macro has a bitmap associated with it, this will be displayed in the Gray bitmap display next to the Test Macro button.

Cache Used is an indicator to show how much memory is used.

Apply Cache Change - will apply any change to the Cache File number.

Note: If it is updated as the parameter is changed many files would load/unload as each File was passed!

Stores

Overview

Stores are one of the most important functions within a Masterpiece system. They are used as internal sources and are globally available throughout the system for Crosspoints, Keys, Util Bus and Auxes etc. Stores are comprised of **Still** images or **Clips** of video and **Audio** files called **ClipTraxTM**. The Stills, Clips and Audio that can be either imported into the mainframe via the Filing System menu, or "grabbed" into the internal memory from any source connected to the up to 36 inputs to the Masterpiece mainframe.

Stills and Clips and Audio are individual files that are saved into user-defined files. Up to 1000 stills and clip files can be saved.

Note: When loading video clips into Stores, Masterpiece will automatically allocate the correct amount of time (memory) to the Store to allow the clip to play once loaded, up to the maximum amount of memory in the mainframe. The amount of video storage available will also be affected by the type of video standard set by the user.

Before still images, video clips or audio can be imported into the Masterpiece mainframe, the files have to be processed through a software application called **K-Manager**; which converts the original file format into the Masterpiece native.sws format.

Note: K-Manager is a free software application that comes as an accessory with a new system, or can be downloaded from the **Grass Valley** website (see the contact details at the rear of this manual).

ClipTraxTM - overview

A unique feature to Masterpiece is that the Stores functionality is now capable of storing audio as well as video, the Audio Store function is known as "ClipTrax". The audio and video data in an individual Store are kept in separate areas of memory and can be manipulated independently of each other (described later in this section).

ClipTrax can be used for example as an Audio accompaniment on a general background, or as a voice over.

Audio can be output to any of the up to 12 outputs as "Embedded Audio" this is setup in the **Eng Config** - **Output Setup**, where the user turns the "HANC/VANC" function On for an output to pass audio.



Also make sure to enable the "**ANC From Source**" parameter, this will allow ancillary data to be passed through the system for the original source material.

The audio information is output as AES 8 channel audio with video, which is output as SDI. The ancillary audio can also be passed via the Store functionality, which is the ClipTrax option, the embedded ClipTrax audio can then be passed to the mainframe outputs.

The audio or audio and video can be grabbed from an imported Clip, and then placed in one of the available Stores. Here the audio and video can be manipulated separately to build a clip or the audio can be combined with video in another Store to build a clip.

Audio can be imported using the Filing System Import/Export option, from a memory device, and placing the imported audio.

If imported using a memory device, the file format must be a.WAV file with the following rules applied: 48kHz, 24 bit, that can contain up to 8 channels of audio.

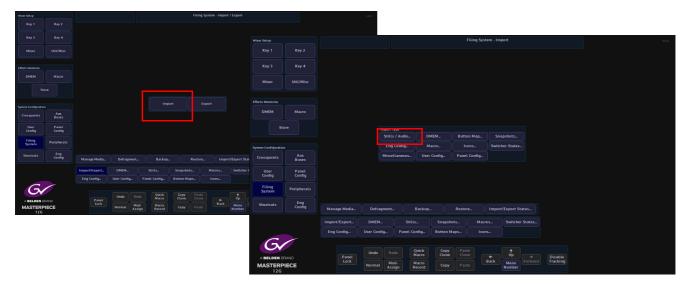
The files can be can loaded or saved maintaining the Audio or Video in a Clip.

Importing Stills and Clips

It is important to understand how to get Stills and Clips into the Masterpiece mainframe before using the Stores menus. As mentioned earlier, Stills and Clips can be imported into the mainframe via the **Filing Sys** menu; through one of the USB ports on the mainframe. To do this, connect the hard disk drive or memory device to the mainframe and then press the **{Filing System}** button on the GUI.



Press the **{Import/Export...}** button and then in the Import button area, press the **{Stills...}** button.



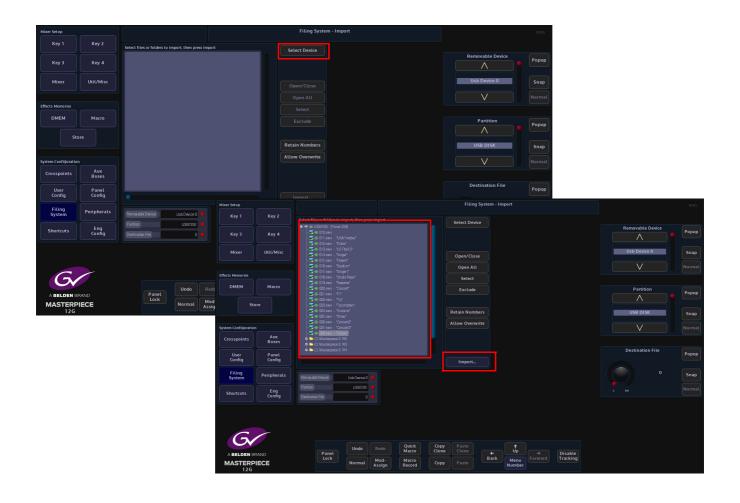
Use the **Removable Device** parameter to select the memory device containing the stills or clips and press the **{Select Device}** button. The contents of the memory device will be displayed in the gray area, left hand side of the menu. Use the **Destination File** parameters to select where the files will be imported to.

Using the **Selector** parameter and **{Open/Close}** button, navigate to the files that are going to be imported. Again use the **Selector** parameter and the **{Select}** button to select the required files and then press **{Import...}**.

The files will now be imported to the selected File destination ready to use.

Going back into the filing system main menu, the imported files can be found in the **{Stills...}** menu as shown below.

In this menu a new name and description can be given to a selected file using the on-screen keyboard.



Store Load Menu

The **Store Load** menu as the name suggests is where **Stills** and **Clips** are loaded into Stores. To get to the **Stores** menu, in the Home menu, press the **{Stores}** menu link button from the list of **Global** functions.

The first menu that will appear is the **Store - Load** menu.



Using Store Load

When the user imports Stills and Clips files into a Masterpiece mainframe, they are all imported into the "Stills" filing system in the Filing System menu. To find the stills and clip files, use the **File** parameter to scroll through the Files "mini pics" change to reflect what is in each File.

Note: Notice that there is a number in the bottom left corner of the minipic. This is the sws number given to the still or clip when converting it in the K-Manager software.



In the **Store Load** main menu, the Stills, Clips and Audio Clips are sequenced in numerical order. This number appears on the bottom left of the mini pic starting with 0 and ending at 999 depending on the number given to the still or clip in the K-Manager software.

The minipic is generated from a still or the center frame of a Clip. The bottom right hand corner will display "C" if the image is a Clip.



A "K" in the bottom right corner indicates that the Still or Clip has a Key saved with it. The Key will be loaded into the Coupled Store. A "CK" identifies the clip as having a Key associated, and would be used when keying over a background. A speaker in the top right corner signifies that the Store contains audio content.

The two minipics in the middle of the menu depict the currently selected Still, Clip, Audio file or Fill and Key portions of the file.



Notice in the diagram above that the Fill portion of the file is on the left and the Key portion is on the right. Below the minipics displays the details of the currently selected still or clip file.

Loading a Still or Clip into a Store

Touch the Store that the Still or Clip file is going to load into. Then press the **{Load}** button to load the image into the selected Store. If the **{Store Load on Press}** button is selected, touching a still will automatically load it into the store.

When loading a clip into a Store, the Load button will light up green and stay lit until the clip is loaded. The process may take a few seconds depending on the size of the clip, especially if the clip is in a 1080p video format and a few seconds long.



When selecting a clip, press {Load & Play} and the clip will load into the Store and play for the duration of the clip.

If the original Fill Store is an audio only file, and the user wants to keep the audio content as part of a new Still or Clip, by pressing the **{Keep Audio}** button the audio content will remain as part of the new Fill Store. This could be used for example in a Clip Transition.

This option is the same when an audio file is loaded and the "Keep Video" function is used.

Note: This function will only work when the **Load Mode** parameter is set to **Replace Sub-Clip** (as described below) the Keep Video and Keep Audio buttons will be grayed out if Load Mode is on any other setting.

Load Mode Parameter

New - Allows the user to load new stills and clips into a Store.

Note: Any stills or clips in the selected Store will be over written.

Add To Sub-Clip - This will send a still or clip to the Sub-Clip folder of a selected Store, each time a still or clip is selected by touching the miniclip or pressing **{Load}** the still or clip will be sent to selected Store as a sub-clip. In the Append To Sub-Clip mode, if a different still or clip is loaded into sub-clips, the original still/clip will be over written.

Replace Sub-Clip - This will replace a still/clip in the selected Store Sub-Clip.

Insert Before - If a number of stills/clips have been loaded into the **Sub-Clip** folder, using the **Store Sub-Clip** parameter to move to a defined point within the sub-clip line-up, a still/clip can be instead before the selected still/clip in the sub-clip line-up.

Insert At End - Allows the user to insert a still/clip at the end of the Sub-Clip lineup, to the point at where the sub-clip folder is full.

Sub-Clips

Sub-Clips is a function that allows up to 31 stills and clips to be loaded into a single Store. This allows quick and easy access to stills and clips without having to load each Store when it is needed.



Creating Sub-Clips

As mentioned earlier, Sub-Clips are multiple stills and clips that have been loaded into a single Store. Sub-Clips are created in the **Store Load** menu, using the **Load Mode** parameter.



Use the "File" parameter to select a still or clip.

Use "**Store**" parameter to delegate the Store that will contain the sub-clips, then use the menu expander in the **Load Mode** parameter set to "**Append To Sub-Clip**" to start entering stills/clips.

Touch a minipic and it will be added as the 1st sub-clip in the selected Store. Look at the **File Sub-Clip** parameter and it will have "1" highlighted. Set the **Load Mode** parameter to "Insert At End" and then each minipic that is touched will load a still/clip into the Store as a sub-clip.

Up to 31 stills/clips can be entered into sub-clips for each Store. In the Store Contents menu, the Store that contains the sub-clips will have the number of stills/clips loaded at the bottom right of the minipic (as shown above in the right hand side menu).

To see the Sub-Clips that were just loaded, enter the **Store - Contents** menu. The selected Store that contains the sub-clips should have a yellow box around the Store. Use the top rotary control to scroll through the loaded the sub-clips.



Next, enter the **Contents** menu, then using the "**Selected Sub-Clip**" parameter to scroll through the list of sub-clips. Information regarding the video standard, length of clip etc. is displayed in the left side of the menu.

The loaded sub-clips are displayed along the bottom of the menu. The user can use Sub-Clip parameter to scroll through them or use their finger to slide the list horizontally left/right to get to the desired sub-clip.

On the Masterpiece control surface, if the crosspoint that the Store containing the sub-clips is selected, then what ever sub-clip is selected will be displayed on a monitor.

Delete Sub-Clip - will delete the selected sub-clip still/clip out of the Store

Clear Store - will clear all sub-clips out of the selected Store.

Automatic Reload - when set to Yes this causes the still or clip to be automatically reloaded from the hard disk whenever the original file location is updated. If the Store contains something that was grabbed rather than loaded, then this has no affect.

Lock Store - will lock the Store down and not allow any sub-clips to be deleted from or any changes made to the selected Store.

Store Play/Edit

This menu allows the user to play or edit a selected clip.

Touch the **{Play/Edit}** menu link button to open the **Store Play/Edit** main menu (as shown below).



Transport Controls



1Play/Rev - plays a clip forwards and in reverse at standard speed

2Stop - stops a clip

3Steps to Start or End - steps to the end or the start of the clip

4Frame Step - steps a clip forward and backward by one frame

Loop - will make the file loop from start to finish indefinitely.

Ping- Pong - will make the file run from start to finish then finish back to the start again constantly.

Clip Advance - will automatically go to the next clip in the Store when the previous clip is finished playing.

Audio Mute - will mute any audio that a clip may contain when playing a clip

Parameter Controls

Mixer Setup														
	Key 2	Store 1	8	tore 2	Store 3	Store 4	Store 5	Store 6	Store 7	Store 8	Store 9	Store 10		
	Key 4			In Point CR.CO Edit Mode			Sub-Clip based Pa		in video files)	Store	Popup			
Mixer	Util/Misc		•		H	Dut Paint Video	-		Top	1.00%	•		Store 4 Store 5 Store 6	Snap
Effects Memories		Loo	p	Ping-Por	ıg	Audoln								
DMEM	Macro	Clip Ad	vance	Audio Mu	te		1-12-09		Right	0.00%		Active Sub-Clip Po		
Sto	Store Store Store Tares P			Audio Levels 1 2			Horizontal Pan Vertical Pan					Snap		
System Configuration		Position Play Rate End	able 🗖	07/01 🔸					Store based Pan/Cr	op (Stored in 1 0% 0n				Normal
Crosspoints	Aux Buses	Play Rate		1.00									Position	
User Config	Panel Config	Playback Mo Unked Store		Frame		Sto	re Contents		Battam	0.00%			Position	Popup
Filing System	Peripherals	Loop Court		Forever •			0		Right				07;01	Snap
Shortcuts	Eng Config	Audio Delay Trans Duratio	20	01:00 1:17;09			S 1/2 JWI with		Horizontal Pan Vertical Pan	0.00 0.00				Normal
C		Load.		Save	Play	y / Edit	Grab	Contents.	Store Setu	5 File S	ystem			
	2440		Panel	Undo			iick Cr icro Cl	opy Paste one Clone		1 Up		Disable		
MASTERP			Lock	Normal	Moo		icro cord	opy Paste	Back	Menu 57		Tracking		

Active Sub-Clips - this displays the number of sub-clips within the selected Store.

Position - displays the current run time of the selected clip

Play Rate - this can be used increase or decrease the play rate of a clip. It has to be "Enabled" for this function to work. The default is set to "1.00" which is normal speed.

Playback Mode - The user has the option to play back Clips in **Field** or **Frame** mode, or **Field 1 Only** or **Field 2 Only** using the **Playback Mode** parameter control.

This feature can be used if a Clip is made from a sequence of individual Stills. If each Still is a Frame in duration the user can Play/Position the Still and in the Stop state, both fields (Full resolution) will be displayed. If the material is Field-based then in Frame mode the user will risk seeing flickering images from two different fields.

Loop Count - this parameter selects how many times a clip is played back in a loop. When set to "0" the clip will pay until stopped. The parameter can be adjusted from 1 to 100 loop counts.

Audio Delay - if the audio needs to start later than the video, the Audio Delay parameter can be adjusted.

When set to 0% (default) the audio and video will start at the same time, +100% the audio will start after the video finishes. -100% the video starts after the audio has finished.

Trans Duration- this parameter displays the current Transition Duration time. The user is able to use this information when setting up an audio/video clip to be used in a clip transition.

Using Edit Mode



Press the **{Edit Mode}** button, then using the **Position** parameter control, the user can setup "in" and "out" points on the Audio/Video Clip.

Position the start point of the Clip as required and then press the **{Mark In Point}**. "In Point" button. A numeric keypad is displayed that allows the user to enter a time. It is the method for the **{Mark Out Point}**.

Press the **{Apply Edit}** button and the changes will be applied to the selected clip Come out of **Edit Mode** by pressing the **{Edit Mode}** button. When the **{Play}** button is pressed, the Clip will only Play, Loop or Ping-Pong, from the set In Point and set Out Point. This new Clip can now be saved.

Follows Fill - If editing a clip that has an associated Key signal, Key Follows Fill is will also mark the selected In and Out Points for the Key signal in the coupled Key Store.

Edit Audio - this allows the user to edit and audio clip in the same way as editing a video clip as described above.

Audio Levels

As mentioned earlier, clips can contain up to 8 channels of AES audio, so the audio information is output as AES 8 channel audio with video, which is output as SDI. The ancillary audio can also be passed via the Store functionality, which is the ClipTrax option, the embedded ClipTrax audio can then be passed to the mainframe outputs. The audio levels are displayed in the center of the Store Play/Edit menu (as shown above).

The audio or audio and video can be grabbed from an imported Clip, and then placed in one of the available Stores. Here the audio and video can be manipulated separately to build a clip or the audio can be combined with video in another Store to build a clip.

Audio can be imported using the Filing System Import/Export option, from a memory device, and placing the imported audio.

If imported using a memory device, the file format must be a.WAV file with the following rules applied: 48kHz, 24 bit, that can contain up to 8 channels of audio.

Store - Contents

The **Store - Contents** menu Shows a set of mini pics of stills and clips that are currently loaded into Stores.

Touch the **{Contents}** menu link button to open the **Contents** main menu (as shown below). The menu is only used to display the stills, clips, audio files and sub-clips which have been loaded into each Store.

If a Store has sub-clips loaded, the Selected Sub Clip rotary control can be used to scroll through the sub-clips.



Sub-Clips - If a Store contains Sub-Clips, the bottom right of a minipic will display the number of stills/clips contained within the Store and the Sub-Clips parameter will also display the number of stills/clips contained within the Store.

Standard - displays the video standard of the selected clip

Video - displays the length of the selected clip

Frames - displays the length of a Clip

Width & Height - displays the number of horizontal and vertical pixels (aspect ratio)

Audio - displays the length of the selected audio file

Name - is the short name given to the selected still, clip or audio file. The name is user definable and can be changed using a USB keyboard. Touch the keyboard symbol and a cursor will flash in the Name box, enter a name and press the return key on the keyboard.

Delete Sub-Clip - will delete a selected sub-clip from the selected Store

Lock Store - this will set a lock on the selected Store in the **Store Contents** menu. The Store will display a padlock symbol top right corner of the mini pic (shown above). If the user tries to change the Store once it is locked, a dialog box will appear with options.

Automatic Reload - when set to Yes this causes the still or clip to be automatically reloaded from the hard disk whenever the original file location is updated. If the Store contains something that was grabbed rather than loaded, then this has no affect.

Clear Store - will clear all contents for the selected Store including all sub-clips

Store - Grab

Another option to generate a Still or Clip is the **Store - Grab** option; this allows the user to grab images, video or audio clips from a Crosspoint, Mixer Output, Matte or from another Store. Touch the menu link button in the menu bar to display the list of **Store Menus**, then touch the **{Grab**} button to open the **Grab** main menu (as shown below).



Taking a Grab

This example is taking a grab using the most simple method. Using the **Grab Crosspoint** parameter (or pop-up selector), select the required still or video source that contains the images or video content, then using the **Grab To Store** parameter, select the Store into which the grabbed information will be placed and press the **{Grab Video}** button. If the information that is grabbed is coupled with another Store for a Key, the Grab function will grab the Key as defined in the crosspoint mapping into the coupled Store. The minipic at the bottom of the menu will display what is currently grabbed, which will be a still, or the center frame of a clip.

Grab Options

Single Frame - used to grab a single frame into the Store on press.

Latching Grab - this will latch the grab function and allow the grabbing of Clips. This option is best used with the Stop When Full to end the grabbing once the Store is full i.e. once all the available frames in the Store have been used.

Latching Grab is best used for grabbing Video or Audio files. Pressing the **{Grab Video}** button, which turns the button green, then pressing latching grab for the required grab time will grab video only. Pressing the **{Grab Audio}** button, which turns the button green, then pressing latching grab for the required grab time will grab will Audio only. With both buttons green, Video and Audio will be grabbed.

Note: This is part of the ClipTrax function. **Grab Mode** has to be set to "**Replace Sub-Clip**" for this function to work.

Grab - This will continue to grab while the button is pressed. This will also respect the Stop When Full.

Preview Grab - This will place a preview of the grabbed image or video into the minipic at the bottom of the screen.

Playback Transport Controls



1Play/Rev - plays a clip forwards and in reverse at standard speed

2Stop - stops a clip

3Steps to Start or End - steps to the end or the start of the clip

4Frame Step - steps a clip forward and backward by one frame

Grab Mode Parameter

Mixer Setup											
Key 1	Key 2	Store 1 S	tore 2 Sto	re 3 Store 4 K	Store 5	Store 6 Sto	re 7 KStore	8 Store 9	Store 10	Store	
Key 3	Key 4	Grab Single Latchin		Playback Rev Stop		Audio Levels		Store	Contents		Popup
Mixer	Util/Misc	Frame Grab	Giab	Rey Stop	PLay				۲	Store 2 Store 3 Store 4	Snap
		Grab Grab Video Audio	Preview Grab		M				JAM with Dr		
Effects Memories DMEM	Macro	Keep Video Audio	Stop When Full	Grab Mode							
		Grab To Store		Add To Sub-Clip							Popup
Store Fil Source ENC 1 Key Source ENC 1				Replace Sub-Clip							Snap
System Configuration	System Configuration D100			Insert Before							Normal
Crosspoints	Aux Buses	Audio Duration	1:12:18 0×0								
User Config	Panel Config	Free Space	00.00							Grab Crosspoint	Popup
Filing System	Peripherals									BNC 1 BNC 2	Snap
Shortcuts	Eng Config										
		Load	Save	Play / Edit Grat		ontents Stor	e Setup File	System			
Gv			Undo	Redo Quick Macro	Copy Clone	Paste Clone	¢ Up				
A BELDEN BI MASTERP 12G		Panel Lock	Normal	Mod- Assign Record	Сору		← Op ack Menu 55	Forward Dis	able cking		

New - Allows the user to grab new stills and clips into a Store.

Note: Any stills or clips in the selected Store will be over written.

Append To Sub-Clip - This will send a grabbed still or clip to the Sub-Clip folder of a selected Store, each time a still or clip is selected by touching the miniclip or pressing **{Load}** the still or clip will be sent to selected Store as a sub-clip. In the Append To Sub-Clip mode, if a different still or clip is loaded into sub-clips, the original still/clip will be over written.

Replace Sub-Clip - This will replace a still/clip grab in the selected Store Sub-Clip.

Insert Before - If a number of stills/clips have been grabbed into the **Sub-Clip** folder, using the **Store Sub-Clip** parameter to move to a defined point within the sub-clip line-up, a still/clip can be inserted before the selected still/clip in the sub-clip line-up.

Insert At End - Allows the user to insert a grabbed still/clip at the end of the Sub-Clip lineup, to the point at where the sub-clip folder is full.

Grab Parameters



Grab Store - the Store the video/audio grab will be saved in.

Grab Crosspoint - displays the source the Video/Audio is taken from.

Video Duration - length of the video clip

Audio Duration - length of the audio clip

Free Space - the amount of memory left in the system

Max Grab Time - use this parameter to set the maximum length of grab time for an audio or video clip.

Store - Save

As the menu suggests this is where stills and clips are saved into Files. Touch the **{Save}** menu button to open the **Save** main menu (as shown below).

Mixer Setup					HDD									
Key 1	Key 2	Store 1 S	tore 2 St	ore 3 Store	4 KSt	tore 5	Store 6	Store 7	KStore	8 Stor	re 9 Sto	ire 10		
Key 3	Key 4												Store	Popup
Mixer	Util/Misc	0 1 2 3	Skier Thailand Tulips Percuins	07 May 07 May	16 1459 16 1459	5.533 MB 5.533 MB 5.533 MB 5.533 MB							Store 2 Store 3 Store 4	Snap
Effects Memories			Skateboarde Kula UVE G KULA TRAN H Aqua SAMiai	07 May 07 May 07 May	16 1458 16 15:05 16 15:07	1.006 GB 2.002 GB 1.338 GB 4.435 GB							V	
DMEM	Macro	8 9 10	Sialom USA Footbal	16 May 16 May 16 May	16 16:03 16 15:40 16 15:42	5.530 MB 5.530 MB 5.530 MB								Popup
St	ore	11 12 13 14	Dubai US Fball 2 Singer Flower	16May 16May 16May	16 15:44 16 15:45 16 15:46	5.530 MB 5.530 MB 5.530 MB 5.530 MB								Snap
System Configuratio		15 16 17	Stadium Singer1 Studio Repo	17 May		5.530 MB 5.530 MB 5.530 MB								Normal
Crosspoints	Aux Buses													
User Config	Panel Config	Name UKM with Store	ith Dr 🚽 🗕			3	3						Store Sub-Clip	Popup
Filing System	Peripherals	File Stare Sub-Clip		Loop Ping-F	ong	WL	l with Dr							Snap
Shortcuts	Eng Config			Save With Auto-P		Save								
		Locate Original			ilip 🧲	Save and (lear							
6		Load	Save	Play / Edit			ontents	Store Setup		System				
G		Panel	Undo		uick acro	Copy Clone	Paste Clone	+	↑ Up		Disable			
A BELDEN B MASTERF 12G		Lock	Normat		acro cord	Сору		Back	Menu 51		Tracking			

This menu will show a mini pic of the Store that is about to be saved (as shown above right).

Use the "File" parameter to select the file number, this is where the still or clip will be saved. Determine if the file is going to be saved with **Save With Auto Play** - On or Off. A name can be given to the file. Once the selections have been made, press the Gray Save button to save the file.

Using the **Store Sub-Clip** parameter, the user is able to select stills and clips within selected Stores, as the **Sub-Clip** parameter is adjusted the individual stills and clips are displayed in the minipic.

Stores Store - Save

Crosspoints

Overview

The crosspoint mapping menu displays all the physical inputs to the mainframe and all the internal sources are mapped to the Crosspoints in the crosspoint mapping table. The crosspoint map has been setup in a factory default state from new.

In the User Defined Crosspoints map you can setup crosspoint functions like the Key and Fill ready for coupling Stores, and set up Mattes/Washes etc. Fixed Crosspoints cannot be changed. In the Crosspoint Mapping menu you can also setup Audio Shuffle profiles that are used to setup AES audio channels. If external or internal sources contain up to 16 channels of audio, they can be re-mapped "shuffled" between inputs and outputs in any order you require.

Note: The User Defined Crosspoints can be setup in any way you wishes. The Fixed Crosspoint cannot be changed.

Mixer Setup						User C	onfig - Crosspoir User Defined							HDD	
Key 1	Key 2					Split									
				Sourc	8	Name	Source	Name		Color	Status	Shuffle		Crosspoint	Popup
Key 3	Key 4		m m												Fobob
l J				Inputá		BNC 2	Input 2	BNC 2		Default	No	Off			
		3		input 3		BNC 3 BNC 4	Input 3 Input 4	BNC 3 BNC 4	R1 E1	Default	No No	Dff			
Mixer	Util/Misc	5				BNC 5	Input 4 Input 5	BNC 5	FI		No	Dff		XPT 1	Snap
		5 ??? input5 5 ??? input5			BNC 5	kput 5	BNC6	Fil	Default	No	Der		XPT 2		
		1	m	Input		BNC 7	Input 7	BNC7	Fil		No	Dff			
		8		Input		BNCB	Input 8	BNC8	Fil	Default	No	Dff		\vee	
		9		Input		BNC 9	Input 9	BNC 9	Fil	Orfault	No	Off			
Effects Memories		10	m	Input 1		BNC 10	input 10	BNC 10	Fil	Orfault	No	Dff			
		11		Input 1		BNC 11	input 11	BNC 11	Fil	Orfault	No	Dff			
DMEM	Macro	12		Input 1		BNC 12	Input 12	BNC 12	Fil	Default	No	Dff			
		13		Input 1		BNC 13	Input 13	BNC 13	Fil		No	Dff			
				Irout 1		BNC 14	input 14	BNC 14		Default					
St	ore														
				Input 1		ENC 17	input 17	BNC 17		Dafault					
				Input 1		BNC 19	Input 19	BNC 19		Default					
System Configuratio	n														
	Aux														
Crosspoints	Buses														
		24	m	Input 2	4	BINC 24	input 24	BNC 24	Fil	Dafsuit	No	Dff			
User Config	Panel Config				User Defin	ed Crosspoints		Fixed Cro	spoints	ints					
Filing System	Peripherals									77' & Next		ernal Rou			
		Grosspoint			Il Source	BNC 1	Audio Stuffie	0#	Name 7	17 GINEXU	EXI	ernat Rou	ter		
Shortcuts	Eng Config	Name	***		Cey Source	BNC 1		Bitmap	Show Cr	osspoints	Au	dio Shuffl	.er		
		Enable	No		(pt Lamp Color	Default O					Aut	omation)	<pt< td=""><td></td><td></td></pt<>		
			Fil	Key 🕻		No Yes									
			No	Yes		No Yes	Edi	t Bitmap							
C	~														
	RAND		Panel	Undo		Quick Macro	Copy Past Clone Clon		† Up			sable			
		Lock		Normal	Mod- Assign Record		Copy Past	Back	Menu 8661			Tracking			

User Defined Crosspoints - these allow you to set sources to crosspoints on the control surface. Using the "Fill Source" and "Key Source" parameter controls, you can map any of the physical input sources or internal sources, change the Key and Fill associations, setup the Xpt Lamp Colors which allows you to set up groups of colored Xpt buttons on the control surface and re-name the crosspoints.

Fixed Crosspoints - as the name suggests the crosspoints cannot be changed and are factory set. The sources on these crosspoints can still be mapped to any crosspoint but cannot be changed in any way.

Parameter Controls

Xpt - crosspoint 1 to 80 are **User Defined Crosspoints** and crosspoints 81 to 247 **Fixed Crosspoints**. Use this parameter to scroll down the list of crosspoints.

Name - This column is for a crosspoint name that the user can set using the on-screen keyboard. When giving a name to the crosspoint, up to 11 characters can be entered, the characters font will vary in size and height depending on how many characters are typed in, that means characters 11 maximum.

Enable - this function enables/disables the selected crosspoint. When disabled, the crosspoint "Name" will display as "Disabled" and the panel mnemonic is left blank.

Split To - this function is used when the user wants to use a Fill or a Key source to give you a key signal for the Key Layer. Split to Fill/Key means that the setting on the crosspoint the user has "Split", will determine a Key signal for the Key Layer. When Fill is selected, the Fill signal of the crosspoint is used for the Key signal of a Split Key. When Key is selected, the Key signal of the crosspoint is used for the Key signal of a Split Key.



Fill Source / Name - This column is used to set the Fill Source, which is the signal that provides the Fill when selected on a Key bus or provides the source for the background buses.

Key Source / Name - This column selects the Key Source which provides the Key (hole cut) signal when selected on a Key bus. It has no effect when selected on a background bus.

Xpt Lamp Color- This sets a color to the selected Xpt. There are a range of preset colors that can be selected for a Xpt, using the Xpt Lamp Color parameter.

Note: More Xpt color options can be selected in the **Panel Config - Panel Colors** menu

Color By Std - in the Panel Config - Panel By Colors menu, there is a "By Standard Colors" menu, allowing you to set up a crosspoint button color by source standard i.e. Xpts sources that have 1080p standard and be set as one color and Xpts that UHD sources can have a different color on a crosspoint by crosspoint basis.

Use Bitmap - using the "**Edit Bitmap**" function in this menu, you can set up text or an icon to be displayed on the mnemonic displays on a crosspoint by crosspoint basis. In the "**Crosspoint Mapping**" main menu, select a crosspoint row in the table and then touch

the **{Edit Bitmap...}** menu link button and the Crosspoint Bitmap menu is displayed.



A bitmap can be selected from a Preset shapes library, an icon library, User library from shapes or text created by the user, from a Store minipic or from text entered from an on-screen keyboard.

Which ever method you use, the gray grid area in the menu will display a monochrome image, which is previewed top right of the menu.

To use "**Grab from Store**", touch the bottom attacher where "**Store**" is the first parameter, then use the "**Store**" parameter to scroll through the Stores. As you scroll through the stores, a minipic is displayed above the "**Grab from Store**" button. When you reach the required store, touch the "**Grab from Store**" button. The store minipic is displayed in the bitmap grid. The above method is used for Icons, User and Preset Libraries. To apply the selected bitmap to a crosspoint mnemonic, touch the **{Apply Changes}** button.

Quick Text - Entering text into the bitmap grid can take a little time to get the text into the correct position with the right font size. The "Quick Text" menu allows you to quickly place text into the gray bitmap square and whilst typing, the text automatically size itself within the boundaries of the bitmap grid.

Touch the **{Quick Text}** button and the "**Quick Text**" menu will be displayed. Turn the "**Auto Font Size**" parameter to "**On**" and then start typing the text with the on-screen keyboard. As more text characters are added the font will auto size itself the size of the quick text box grid. Text can also be aligned more accurately using the "Alignment" buttons. After finishing entering the text, touch the **{Apply**} button.

{Name '???' & Next} - this button is a quick short cut. It puts '???' into the current Source Name and then jumps on to the next Source in the list, forcing the switcher to take the Name from the Source itself. This helps to make naming all sources quicker.

{Show Crosspoints} - this button when pressed will go Green. This will cause the mnemonic display on the control panel to change and show the crosspoints in their "unnamed" form, i.e. XPT1, XPT2, XPT3 etc. Press again to go back to the user specific crosspoint setup.

External Router

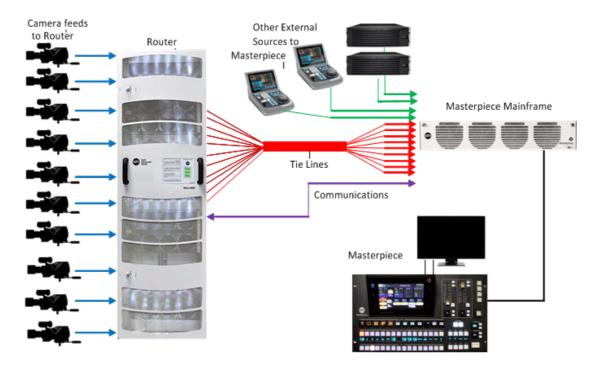
Masterpiece has the mechanism to expand the number of sources coming into the mainframe using an external router. This is primarily due to a system setup running in UHD. Using this new feature, the number of sources to be used with the Masterpiece, are expandable up to the size of the upstream router.

Masterpiece Intelligent Tie Line Concept

Masterpiece deploys an intelligent "Tie Line" approach, the desired external router outputs (destinations) are connected to Masterpiece inputs. These inputs on the Masterpiece and destinations from the Router are treated as "Tie Lines". Each Tie Line acts as a floating video bus between the router and Masterpiece, they are intelligently assigned and used as required.

Source selection on any Bus is transparent to the operator, regardless form where the Xpt is being made, i.e. in the external router, or in the Masterpiece itself.

The Masterpiece software knows what physical inputs / Tie Lines are allocated and what are not being used on a bus. Masterpiece then assigns the Physical input /Tie Line to the desired Bus upon a source selection. Masterpiece updates the upstream router's destination /Tie Line with the selected source.



Source selection on any Bus is transparent to the operator. Once setup, the operator sets the desired router source by selecting the appropriate router XPT on the required bus. The selection on the external router and the Tie Line path into the Masterpiece is automated.

How many Tie Lines?

How many Masterpiece inputs do you need to convert to Tie Lines? This is entirely dependent on a few external factors, such as:

How many inputs available on the Masterpiece (max number shown below):

- HD = 40 Tie Lines
- UHD = 10 Tie Lines
- How many router destinations are available.
- How many router sources need to be selected on Masterpiece at any one time.

For example:

If you want to select different external router sources on the A and B buses this would require 2 Tie Lines.

For HD this would require 2 router destinations and 2 Masterpiece inputs.

For UHD this would require 8 router destinations and 8 Masterpiece inputs.

If you require external router sources on the A and B bus plus Key 1 and Key 2, this would require 4 Tie Lines.

In summary: Each different external router source selected simultaneously requires a Tie Line. Each Tie Line requires one router destination and Masterpiece input in HD, or 4 router destinations and 4 Masterpiece inputs in UHD.

Note: If at all possible, it is recommended that the user creates more Tie Lines than are actually required. This gives some redundancy and reduces the risk of the system running out of available Tie Lines.

Note: External Router setup and configuration is in the Peripherals menu.

Audio Shuffler

The Audio Shuffler matrix allows you to build up to 50 audio shuffle profiles using the 16 channel AES audio matrix map (shown in the menu below). The shuffle profiles can be assigned to Crosspoints (XPT) in the XPT main menu or the AES Inputs 1 to 4 in the Audio Shuffle menu. With no audio shuffle a XPT selected on a Bus will pass the 16 channels of audio out the mixer in the same order they arrived. Applying a shuffle map on the XPT allows that order to be changed to whatever you want. This could be to move the 1st 8 channels to the last 8 channels, or indeed just to disable all the channels to create a mute The basic setup for the audio shuffle menu is 16 channels of AES Audio In/Out on a 1 to 1 basis, i.e. channel 1 In to channel 1 Out, through to channel 16 In to channel 16 Out.

Audio shuffling is useful for example, when the incoming audio feed has multiple languages, with each language consisting of a channel pair (In 1 & 2). By mapping the channels, you ensure that the proper languages make it onto the Program live to air path, and that the other languages can be muted or removed from the live to air path.

There are 50 Audio shufflers available to configure, these can then be assigned to a crosspoint or an AES input. Each shuffler has 16 Output channels and 16 Input Channels

Note: AES Inputs 1 to 4 only have 2 Inputs channels each.

There are a number of default shufflers available:

- Program (default 1:1), but can be overridden by Morpheus automation
- Preset (default 1:1), but can be overridden by Morpheus automation
- AES to 1&2 input channels 1 & 2 are assigned to output channels 1 & 2
- AES to 3&4 input channels 1 & 2 are assigned to output channels 3 & 4
- AES to 5&6 input channels 1 & 2 are assigned to output channels 5 & 6
- AES to 7&8 input channels 1 & 2 are assigned to output channels 7 & 8

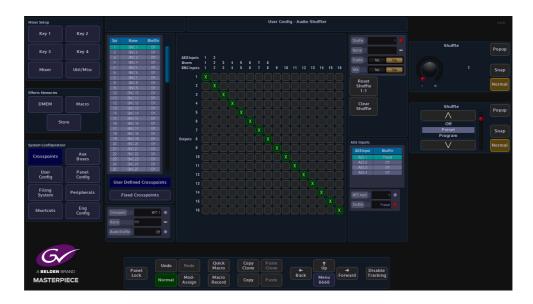
The yellow area is where you edit and create maps. The green area is where you assign a map you created in the yellow area to an actual XPT. Once you have created maps they are saved in the User Config, if you don't save them and you reboot, the maps and their XPT assignment will be lost!



How to Build a Shuffle Profile

To build a shuffle profile, turn "Enable" and "Allow Mix" On, (allowing mixing will give you the option to mix multiple inputs to the same output. It has the effect of summing the signals together). In its default state, all the green shuffle indicator squares are in a one to one state; Input 1 to Output 1 through to Input 16 to Output 16.

Notice that once enabled, the green shuffle squares now have a white "X" in them.



Using the "Audio Shuffle" parameter to select a Shuffle Profile number (1 to 50). Use the "Name" parameter to give the shuffle profile a name.



To make a new Shuffle Matrix, just touch the matrix square where you want the new input to output channels. The following menu diagram (on the next page) has had 12 inputs removed, so that only 4 channels or 2 stereo pairs are being shuffled.

The menu below displays an audio shuffle on input channels 1 & 2 and 3 & 4. Their default state was Inputs 1 & 2 to outputs 1 & 2 and Inputs 3 & 4 to Outputs 3 & 4.



Input audio channels 1 & 2 are now moved to be Output on channels 4 & 5 and Input channels 3 & 4 are moved to be output on channels 7 & 8. This is now Audio Shuffle 1 and named "SHUFFLE 1"

Note: The red dotted lines have been added to highlight the audio shuffle profile created. They are not part of the original menu.

The Shuffle Profile can now be assigned to a crosspoint. In the "Crosspoint Mapping" menu, select the required crosspoint, then touch the "Audio Shuffle" parameter, use the parameter control to select "SHUFFLE 1". The shuffle profile is now added to the audio source that is associated with the crosspoint.



The shuffle profile is saved when the User Config is saved and when the Switcher State is saved.

You can also assign Shuffle profiles to crosspoint sources on the Masterpiece GUI. In the home menu, below the Program and Preset audio level meters, the current crosspoint source is displayed (highlighted below). If you touch the crosspoint source menu link button, a "Crosspoint Shuffle" option menu is displayed.



In the Crosspoint Shuffle menu, the 50 Shuffle profiles are displayed in a bar across the top of the menu. Touch and slide left/right to find the required profile and then touch the profile to select it.

The Shuffle profile is then displayed below the Shuffle profile bar. The selected profile is now assigned to the Program or Preview crosspoint. To confirm this, look at the "Crosspoint Mapping" men, you will see that the assigned Shuffle profile name is displayed in the "Audio Shuffle" column.

Automation Xpt

In this menu you can assign crosspoints to each bus when Masterpiece is under automation control.



When the automation system sets a video/audio source on a Bus, Masterpiece will change the Fill source of the automation crosspoint for that Bus. If the bus uses sources from an external router, the user needs to go to the "External Router" menu to setup the router type, slot, matrix and level. And make sure "External" is on. If "External" is off, the bus will use internal sources. If the automation system sets a bad/incorrect source on a Bus, the user can manually override this crosspoint. Masterpiece will reassign the automation crosspoint to the bus for the next event. Each bus should have its own automation crosspoint.



Aux Bus Overview

In this menu, the exact setup for each individual Output and Aux Bus is setup. The center of the menu screen Shows a table, which contains each Aux Bus details. The attacher boxes at the bottom of the screen contain the individual parameters controls.

Mixer Setup					User Config Au:				HDD
Key 1	Key 2								
		Aux			Locks		Aux Bus Aux 1 👄		
		# Name			Panel File P	facro Protocol		Aux Bus	
Key 3	Key 4			XPT 161 - Mixer Op1					Popup
							Aux Name ALX 1 -		
Mixer	Util/Misc							Aux 1	Snap
MAG	outomac	5 ALIX 5	D/P 5	XPT 1 - BNC 1				Aux 2	Shap
		6 AUX 6 7 AUX 7	0/P 6 0/P 7	XPT 1 - BNC 1 XPT 1 - BNC 1					
		8 AUX 8	0/P 8	XPT1-BNC1 XPT1-BNC1			Panel Lock Lock All	\vee	Normal
		9 AUX 9	D/P 9	XPT1-BNC1			Pallet LOCK LOCK Att		
Effects Memories		10 AUX 10	D/P 10	XPT 1 - BNC 1					
[11 AUX 11	D/P 11	XPT 1 - BNC 1			File Lock Lock All		
DMEM	Macro	12 AUX 12	D/P 12	XPT 1 - BNC 1			THE LOCK LOCK ALL	Crosspoint	
		13 AUX 13	Internal						Popup
							Macro Lock Lock All	\wedge	
Ste	ore						Macio Lock Lock Att	BNC 38	
								Mixer Op1	
							Protocol Lock Lock All		Snap
							Protocol Lock Lock All	Mixer Op2	
System Configuration		19 AUX 19							Normal
System components									(Normac)
Crosspoints	Aux	21 AUX 21 22 AUX 22	Internal Internal	XPT1-BNC1 XPT1-BNC1					
crosspontes	Buses	22 AUX 22 23 AUX 23	Internal	XPT1-BNC1 XPT1-BNC1			Aux Override		
		23 MJX 23 24 AJJX 24	Internal	XPT1-BNC1					
User	Panel	24 BUX 24	Incernal	YELL-BACT			Name '???' & Next		
Config	Config								
Filing System	Peripherals								
Shortcuts	Eng								
Shortcuts	Eng Config								
		Mixer Outputs	Store Setup	GPOs	Modulation	Mattes	. Audio		
6									
A BELDEN B	A BELDEN BRAND		Undo Redo	Quick Cop Macro Clon		.+. Up	→ Disable		
MASTERPIECE 12G		Lock	Normal Mod- Assign	Macro Record Cop		Back Menu 8611	Forward Tracking		

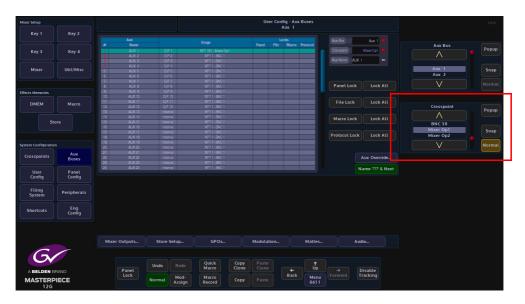
The Masterpiece mainframe has freely assignable outputs; which means that any output can be assigned to be either an Mixer Output or Aux Output.

The table in the center of the menu displays the setup of the Aux Buses and the sources that are assigned to them.

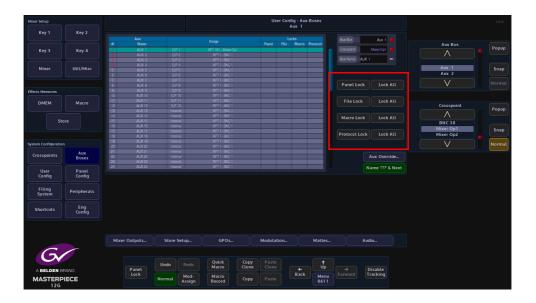
Sources for the Aux Buses can be Mixer output Xpts, Store Xpts or any of the sources from the User Defined crosspoints or Fixed Crosspoints.

Setup an Aux Bus

To setup an Aux Bus, use the **Aux Bus** parameter to select the required Aux and the **Crosspoint** parameter to select the source for the Aux Bus or use the pop-up list selector to quickly select the required source. This sets the source that goes on each of the available outputs 1 to 14. You can use the "Aux Name" parameter to give the output or Aux Bus a name.



The Lock parameters are used to lock out specific functions on an Aux panel.



The **Panel Lock**, lock out the selected crosspoint assigned to the Aux Panel so that when the button is pressed, the crosspoint does not operate.

File Lock stops the user from loading a file.

When a Macro is attached to a crosspoint, the **Macro Lock** parameter disables the crosspoint so that the attached macro cannot be triggered to run.

Aux Override

Aux Override is a mechanism that allows a GPI to override the crosspoint on an Aux Bus. When enabled, a GPI can override the Aux Bus crosspoint for the duration of the GPI being active, this for example allows a camera joystick or similar device to override the crosspoint on an Aux Bus. Once the GPI is released, the aux bus will return to its previously selected crosspoint.



The Aux Override menu allows you to set up override enable, GPI active state, Aux Bus and crosspoint for each available GPI on the Masterpiece system. Overrides can be set up for both external and internal GPIs.

The Aux GPI Override setting data is part of the User Config data, and may be saved to and loaded from the User Config file the saved file will be displayed in the User Config file Enables list called Aux Override.



The above menu displays a scrollable table of the override setting for each of the GPIs available. The controls allow the user to edit each of the following settings for any of the GPIs.

Aux Override - this displays the state of aux override, enabled for the specific GPI (enable On or Off)

GPI - this is the GPI that triggers the override

GPI State - the state of the GPI at which the override function will be active (High or Low)

Aux Bus - the aux bus that the GPI will override

Crosspoint - the crosspoint that the selected Aux Bus will be set to during the override.

If the Aux Override value is set to Off then the GPI State, Aux Bus and Crosspoint setting are greyed out. The state of Aux GPI overrides is indicated in a column to the right of the Crosspoint column, shown in the menu below. If aux override is enabled for the specific aux bus, then a Green square is displayed. If an override is active on the specific Aux Bus, then an Orange square is displayed.

Overview of Aux Override Active States

When an Aux GPI Override is activated by the external equipment controlling the GPI state, the crosspoint of the selected aux bus is changed to the "override crosspoint" state. When the GPI is deactivated the crosspoint of the selected Aux Bus returns to its original state.

If there is more than one override set to act on the same aux bus, and one of those overrides is activated whilst another is already active then, the previous override will be deactivated and the new override will take over. When the last override to be activated is released then the aux bus will revert to its previous crosspoint state.

If the Crosspoint setting is changed whilst an override is active, then the original override will drop out and the Aux Bus will go to the new crosspoint setting.

If the Override Crosspoint setting is changed whist the override is active, the crosspoint on the overridden Aux Bus will change to the new value. When the override is deactivated the aux bus will revert to its previous crosspoint setting.

If an Aux Bus has its crosspoint locked, an active override on that aux bus will change the crosspoint to the override setting. The aux bus will revert to its original setting when the override is deactivated. It is not possible to change the crosspoint setting whilst the locked crosspoint is overridden.

Aux Buses Aux Bus Overview

Filing System

Filing System Overview

The filing system is as it suggests a menu where all the Configs, DMEM, Stills, Macros etc. are Stored.

This menu also has an extensive Import/Export facility which also includes Media Management options.

To enter the Filing System menu press [FILING SYS] button on the GUI. The menu below will appear.



All the menus are straightforward, easy to use and are accessed, updated and deleted in a similar way.

Filing System - DMEM, Stills, Snapshots, Button Maps, Macros and Icons

The following explanation is an example of how to use the DMEM menu. As stated previously, the Stills, Snapshot, Button Maps, Icons and Switcher States menus basically all work in the same way, there is only a slight variation in options for Macros.

DMEM

The DMEM filing system menu displays all the saved DMEM files. The table displays the memory file number, the name given to a DMEM, the time and date the file was saved and the file size.



Export DMEM

The Export menu allows the user to export selected or all DMEM's to an external hard drive or memory device. Press the **{Export}** button.

Use the **Selector** parameter to scroll down to the required file and press **{Select}**. Selected files will have a small Green square next to the file number. Press **{Open/Close}** to expand and will now display the individual files.

Scroll down to the required file and press {Select}.

Mixer Setup							Filir	ng System - Ex	tport						HDD	
Key 1		Select a destination d						8.037 GB								
Key 3	Key 4	USB DISK [Panel USB DISK [Panel Missterpiece 3 Missterpiece 3 Missterpiece 3 Missterpiece 3					Free Space Space Required	7.300 GB					Destination Device		Popup	
Mixer	Util/Misc	 MENUGRAB System Volum Screengrabs 											Usb Device 0			
Effects Memories													V			
ОМЕМ	Macro												Partition		Popup	
Sto													USB DISK		Snap	
System Configuration													\vee			
Crosspoints	Aux Buses															
User Config	Panel Config															
Filing System	Peripherals	Select Device	New Fo	older	Rename											
Shortcuts	Eng Config	Open/Close	Open All	Delete	Start.											
A BELDEN BR MASTERP 126	RAND	Panel Lock	Undo Normat	Redo Mod- Assign	Quick Macro Macro Record	Copy Clone Copy	Paste Clone Paste	← Back	↑ Up Menu Number		Disable Tracking					

Mixer Setup		Filing System - Export	HDD
Key 1		Select a destination device and folder, then press Start Dravies See BC07/GB	
Key 3	Key 4		Destination Device Popup
Mixer	Util/Misc		Usb Device 0 Snap
Effects Memories			Normal
DMEM	Macro		Partition Popup USE DISK Snap
System Configuration			Normal
Crosspoints	Aux Buses		
User Config	Panel Config		
Filing System	Peripherals	Select Device New Folder Rename	
Shortcuts	Eng Config	Open/Close Open All Delete Start	
ABELDEN BI MASTERPP 126		Undo Redo Quick Macro Copy Clone Paste Clone Image: Clone Ima	

Use the **Destination Device** parameter to select the memory device and press **(Select Device)**. The menu will now display the contents of the device.

Select a folder where the DMEM file or files will be exported to, or press the **{New Folder}** and a **New Folder** will be created on the memory device. Press the **{Rename}** button and the on-screen keyboard will appear allowing the user to give the "New Folder" a name.

Finally, press {Start} and the selected information will be placed on the memory device.

Copy to Button - is a quick way to copy a DMEM to one of the OLED buttons

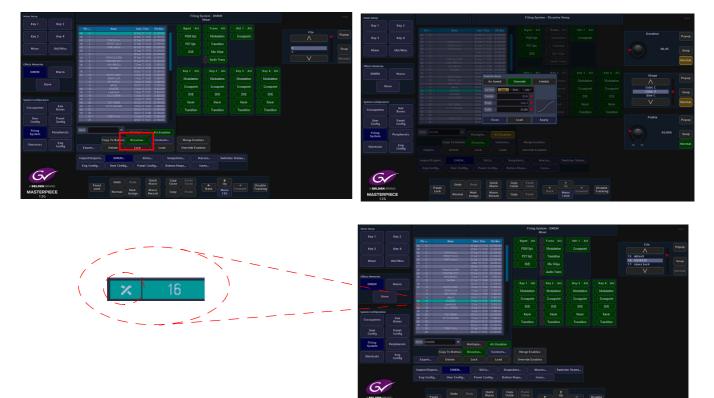
Delete - to delete a DMEM, use the **File** parameter to select the DMEM, then press **{Delete}**. A dialog box will appear asking if the user wishes to Continue or Cancel.

Lock - each DMEM can be locked to prevent them from being over-written or deleted. This is indicated by the Pad Lock symbol next to the DMEM.

Load - the {Load} button is used to load a selected DMEM.

Applying a Dissolve Effect to an existing DMEM

If a dissolve is required on a memory which has not already been set as a dissolve, this can be achieved by switching on the Dissolve button.



Select an existing DMEM from the file list, then touch the **{Dissolve}** button. The Effects Dissolve dialog box will appear, so that the user can set the type of effect required. When finished, touch the **{Apply}** button.

Notice that the file now has an "X" next to the DMEM number to signify that it has a dissolve effect applied.

Filing System - Config Filing System

The Eng Config, User Config and Panel Config menus all have exactly the same functionality, so for this example the Eng Config will be used.

Note: The Eng, User and Panel Configs are saved within their own menus. The Filing System menu is used to Export, Delete, Load, set Enables and make Default.

Mixer Setup						Filing	System - Engineeri	ing Config			HDD
Mixer secop							Masterpiece				
Key 1	Key 2										
			Name		File Size	Sub-	Enables				
		0	DEF2ME59.94	07 May '16 14:24	58.368 KB		Protocols				Popup
Key 3	Key 4										Popup
			DEF2ME 50				System Conf	lig.			
Mixer	Util/Misc						Input Setu			0: DEF2ME59.94	Snap
										1: DEF1ME59.94	
							Output Setu	h			
				02 Oct 17 11:26	49.664 KB						
Effects Memories		8		02 Dct '17 11:29 12 Sep '17 16 34	49.664 KB		GPO		Merge Enables		
Effects Mellipfies		10	MOR TEST	06 Dct 17 15:58							
DMEM	Macro	10	MUNTEST	06.002.17.15:59	49.0041.0		Format Fusi	on	Override Enables		
	Macio										
St											
System Configuratio											
	Aux										
Crosspoints	Buses										
User	Panel										
Config	Config										
coming	coming										
		Name DEF2ME59.94	_								
Filing	Peripherals	Name Devaviesersa		Multiple	All Enable	s					
System											
			Default		Contents						
Shortcuts	Eng Config										
Shortcots	Config	Export	Delete	Lock	Load						
		Import/Export	DMEM	Stills.	. s	napshots	Macros	Switcher States			
		Eng Config	User Config	. Panel Con	nfigBu	tton Maps					
		<u>15</u>	<u></u>	_^							
						Copy Past					
			Undo		uick acro	Copy Past Clone Clon					
A BELDEN E	BRAND	Panel		M	acto	ctone Cton			Disable		
		Lock		Mod- M	acro			Menu	Tracking		
MASTERF	PIECE		Normal		cord	Copy Past					
12G											

Overview

All Configs are saved as individual files within their own folder structures; meaning that if a specific Eng Config setup is created by a user before the file can be saved, the user has to go into the Eng Config main menu.

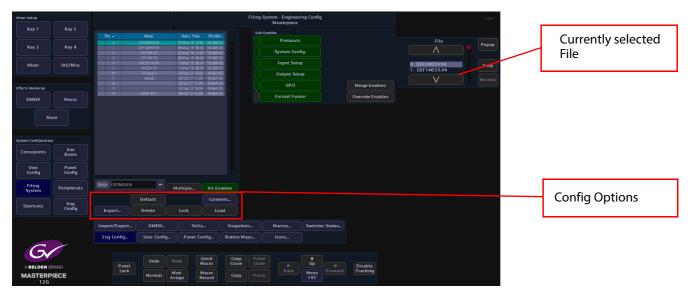
Saving and Engineering Config File

In the Eng Config main menu, touch the **{Save As...}** button. In the Eng Config - Save As menu, use the **Destination** parameter to create a new Eng Config file position, use the **"Name**" attacher and the on-screen keyboard to give the file a name and description and finally press the **{Save}** button.



The Eng Config Filing System

In the Filing System menu, you can make an Eng Config file the "Default" startup file, Load files, Delete and Lock file and Export files to external memory devices.



Default - select an Eng Config file in the table and touch the {Default} button, this will make the file a "user defined" default file startup file. When made default, an "*" asterisk symbol can be seen next to the file number in the table.

Lock - will lock the file out so that it cannot be changed or updated in any way.

Load - will load the selected Eng Config file.

Merge Enables - this merges enables currently set in the switcher with the enables saved in the file being loaded (a "logical OR" of the enables).

Override Enables - will override any enables that have been de-selected and turn the enable On.

Export

The Export menu allows you to export selected or all Eng Configs to an external hard drive or memory device. Press the **{Export}** button.

Use the Selector parameter to scroll down to the required file and touch **{Select}**. Selected Files will have a small Green square next to the File number. Press **{Open/Close}** to expand, select the ENGSETUP folder and press **{Open/Close}** again to expand the engineering setup folder which will now display the individual Eng Config files. Scroll down to the required file and press **{Select}**.

Pressing the **{Exclude}** button will exclude the selected file from being exported. The file number will have a small Red square next to the file number.

Pressing the **{Open/Close}** button will expand the contents of the selected file, allowing individual Eng Config files to be selected.

Press {Next} and a menu will open that allows the user to select a device to export the Eng Config file.

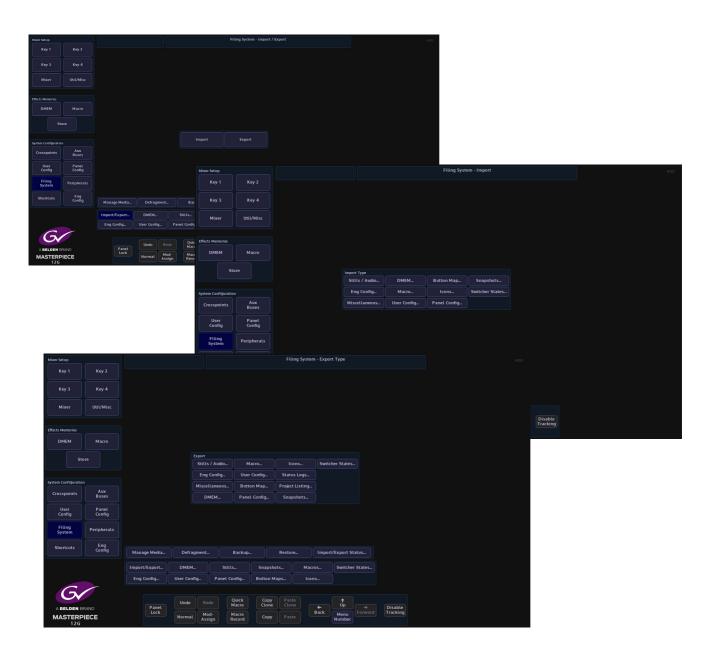
Use the Destination Device parameter to select the memory device and press **{Select Device}**. The menu will now display the contents of the device.

Select a folder where the Eng Config file/s will be exported to, or press the **{New Folder**} and a **New Folder** will be created on the memory device. Press the **{Rename}** button and the on-screen keyboard will appear allowing the user to give the "New Folder" a name.

Finally, press {Start} and the selected information will be placed on the memory device.

Import/Export

This menu is used to import/export Stills/Audio, DMEMs, Button Maps, Snapshots, Macros, Icons, Switcher States and User, Panel and Eng Config files to and from a USB memory device.



The Import and Export menus all work in the same way where the user will select a number of files or individual files to import or export. The menu displays a familiar folder structure which is easy to navigate and use.

Importing

Importing Files into the Masterpiece is a similar process to exporting as explained on the previous pages. The import process is done via one menu. The example below describes importing Stills.

Press the **{Import/Export...}** button and then in the Import button area, press the **{Stills/Audio...}** button.

Mixer Setup					Filing Sys	em - Import / Expo	n				HDD						
	Util/Misc					Mixer Setup							Filing System	n - Import			HDD
Effects Memories DMEM																	
	tore					Mixer											
				Impor													
System Configurati	Aux Buses					Effects Memories	Macro										
User	Panel																
Config	Config					SI				ort type tills / Audio	DMEM		Jutton Map	Snapshots			
Filing System						System Configuratio				Eng Config	Macro			Switcher States			
	Eng Config					Crosspoints	Aux			iscellaneous	User Cor		anel Config				
		Manage Media	Defragment	Backup			Buses										
		Import/Export	DMEM		Snapshots	User Config	Panel Config										
G		Eng Config	User Config	Panel Config	Button Maps	Filing System	Peripherals										
G				Quick Macro	Copy Paste Clone Clone		Eng										
		Panel Lock	Normal Mod- Assign	Macro	Copy Paste	Shortcuts	Eng Config	Manage Media	Defragn	ent	Backup			Import/Export Stat			
12G			Assign	KEOIG				Import/Export	DMEM			Snapshots	Macros	Switcher S	States		
								Eng Config	User Config	Panel C	ionfig E	Button Maps					
						6											
						ABELDEN	BRAND	Panel	Undo		Quick Macro	Copy Clone		+ Up			
						MASTER			Normal	Mod-	Macro			ack Menu		racking	

Use the **Removable Device** parameter to select the memory device containing the stills or clips and press the **{Select Device}** button. The contents of the memory device will be displayed in the gray area, left hand side of the menu. Use the **Destination File** parameters to select where the files will be imported to.

Mixer Setup			Filing System - Import		
Key 1		Select files or folders to import, then press Import	Select Device		
Key 3	Key 4	USBDISK [Panel USB]		Removable Device	opup
Mixer	Util/Misc		Open/Close		nap
			Open All	Nor	
Effects Memories		Studio Report	Select		
DMEM	Macro		Exclude	Partition	pup
Sto					
50	ore	- 5 - 60 023 sws - "Touchdown" - 5 - 60 024 sws - "Outrans" - 5 - 60 025 sws - "Show" - 5 - 60 026 sws - "Show"	Retain Numbers	USB DISK Sn	nap
System Configuration			Allow Overwrite	Nor	
Crosspoints	Aux Buses	e 🖮 🗆 Masterpiace 3. 192 e 🚞 🗆 Masterpiace 3. 193			
User Config	Panel Config	🛉 🖻 🗆 Masterpiece 3. 184	Import	Destination File Pop	opup
Filing System	Peripherals	Bemovable Device Usb Device 0			nap
Shortcuts	Eng Config	Partition USB DISK			
A BELDEN BI MASTERPP 126		Panel Lock Normal Mod-	uick Copy Paste acro Cone ↓ Up → Drable acro Copy Paste Back Nenne Porvard Tracking Nennet		

Using the **Selector** parameter and **{Open/Close}** button, navigate to the files that are going to be imported. Again use the **Selector** parameter and the **{Select}** button to select the required files and then press **{Import...}**.

The files will now be imported to the selected File destination ready to use.

Going back into the filing system main menu, the imported files can be found in the **{Stills...}** menu as shown below.

In this menu a new name can be given to a selected file using the on-screen keyboard.Use

Import / Export Status

This will as the menu suggests, allow the user to check up on the status of any files being imported or exported.

Mixer Setup					Filing	System - Import / E	Export Status			HDD
Key 1	Key 2									
Key 3	Key 4	Operation Import Stil	State Processing	Status Ti 18secs					Selector	Popup
Key 3	Key 4									
Mixer	Util/Misc									Snap
Effects Memories										
DMEM	Macro									
ste										
System Configuratio	Aux	FileName		mrt1;/012.sws						
Crosspoints	Buses	Purge Done	Advance	Cancel						
User Config	Panel Config									
Filing System	Peripherals									
Shortcuts	Eng Config									
	Comig	Manage Media	Defragmen	t Backup		ore Impo	rt/Export Status			
		Import/Export	DMEM	Stills	Snapshots	Macros	Switcher States			
		Eng Config	User Config	Panel Config	Button Maps	Icons				
G										
		Panel	Undo	edo Quick Macro	Copy Pa Clone Clo	ste one ←		Disable		
A BELDEN B MASTERP 12G		Lock		lod- isign Record	Сору Ра	ste	Menu Number	Tracking		

If a file is being imported/exported accidentally and it is not required, scroll to the file with the **Selector** parameter and press the **{Purge Done}** button. The file will be deleted from the list.

The **{Advance}** button will advance the import/export process to the next selected file to be imported/exported.



Peripherals Overview

The Peripherals menu is used to control various external equipment; such as VTRs, Video disks, Routers, Audio Mixing Desks, Automation etc.

Touch the {**Peripherals**} button on the GUI to enter the Peripherals main menu.

Mixer Setup					Periphera	ls		Masterpiece 1	😇 HDD
Key 1	Key 2	Engineering	Router Control		Editor Control	RollCall Set Param	Others		_
		TSL UMD Out	GVG7000	Tally Control	GVG100	User Definable	VDCP Control		
Key 3	Key 4	TSL UMD IP Out	SW-P-08	Kahuna Tally	Sony BVS/DVS	MV800 Layout	AVSP Control		
Mixer	Util/Misc	TSL UMD In	SW-P-02	VTR Control	Automation	Set Crosspoint	Odetics Control		
		EAS	NP0017 Port	User Protocol	Ignite		AMP Control		
Effects Memories			NP0017 Device	UHD Pan Scan	RollCall Control		Nexio Control		
DMEM	Macro		Quartz Controller	P-Bus Setup			Audio Mixer		
			Utah RCP-3A	Shotoku Robotics			VISCA Robotics		
St			ES Switch	SW-P-32			Chyron Control		
				GV Camera			LiveTouch Control		
System Configuratio			Engineering Router Ctrl Router Config						
Crosspoints	Aux Buses		Router Connection	As Router Control					
User Config	Panel Config								
Filing System	Peripherals								
Shortcuts	Eng Config								
A BELDEN B MASTERF 126		Panet Lock	Undo Redo Normal Mod- Assign	Quick Copy Macro Clone Macro Copy		t Dp Menu 6	Disable Tracking		

Note: Before using any of the Peripheral menus it is important to understand how the Protocols are setup and assigned. See the next page.

How to Setup Protocols

The Protocols menu is used to set parameters for bi-directional communication with external devices either by one of the RJ45 RS422 ports or selecting one of the IP protocol connections. Protocols have to be setup in this menu before the Peripherals functions can be used.

There are 8 Protocol Types to choose from; Tally & UMD, Router, Playout, Editor, Camera, Audio, Miscellaneous and Master Control. Each protocol type has a number of available sub-protocols to choose from, that allows the users to connect to a large number of different types of external equipment.

Selecting a Protocol

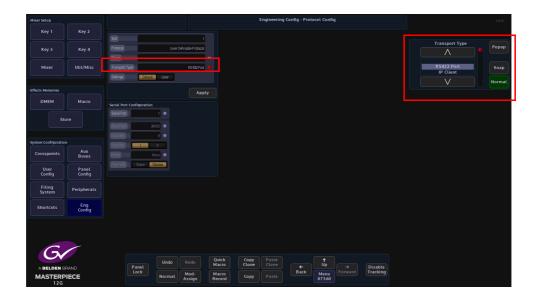
Using the Loaded Protocol parameter, select a free row in the Loaded Protocols table, then use the **Protocol Type** parameter is used to scroll through the protocol sets.

Mixer Setup						Engineerin	ig Config - Pro	tocols			HDD
Key 1	Key 2					Load	n l				
Key 3	Key 4	UTAH RCP-3		Pesa CPU Link P1Re Pesa CPU Link USP R	outer fouter					Loaded Protocol	Popup
Mixer	Util/Misc			SW-P-08 Router As SW-P-08 Router As SW-P-08 Router SW-P-09 Router	(Xpt) (Src)						Snap
				As SW P 02 Rout NVision NP0010 02 R Philps ES Switch Ro	louter outer						Normal
DMEM	Macro			GWG 7000 Native Ro Quartz T01 Route Utah Scientific RC Harris (Pass-Throu NP0016-00	к Р-1					Protocol Type	Рорир
Ste	ore			NP0015-000 Per NP0017-000 Devi GVG7000 UTAH RCP-3						Tally & UMD Router	Snap
System Configuration										Playout	Normal
Crosspoints	Aux Buses										
User Config	Panel Config									Available Protocol	Popup
Filing System	Peripherals										Snap
Shortcuts	Eng Config										Normal
6		Input Setup Ou	rtput Setup	System Config	GP O	IP Gateways	Protocols	Status Monitor	Format Fusion		
Gv		Panet	Undo	Redo Quick Macro	Copy Clone	e Paste Clone	(↑ Up →	Disable		
A BELDEN B MASTERP 12G		Lock	Normal	Mod- Assign Record	Сору		Back	Menu 8736	Tracking		

Once the required Protocol Type has been selected, use the **Available Protocol** parameter to scroll to the required protocol and then touch the **{Load}** button.

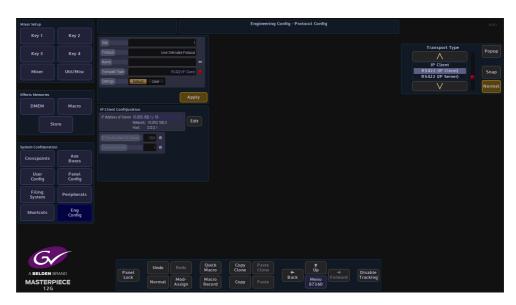


After the Load button was touched, the selected protocol is placed in the **Loaded Protocols** table, touch the **{Configure}** button to enter the **Protocol Config** menu.



The user is able to select the type of connection that is required "**Transport Type**" i.e Serial or IP, and also set user-defined parameters for the protocol.

The **Settings - Default** as the name suggests is the default setup to communicate with an external device (normally this would default to "RS422 Port"). If a specific setup is needed, press the **{User}** button in the **Settings** parameter, the user is now able to setup the protocol as required.



When the parameters have been set correctly press the **{Apply**} button. The menu will now return to the main Protocols menu.

The **{Activate}** button will be yellow, if happy with the setup, touch the **{Activate}** button. The protocol setup information is displayed on the right side of the menu.



Peripherals - Engineering

TSL UMD Output Only

This peripheral is used to control and send information displayed in the Under Monitor Displays used in galleries and Multiviewers.

Mixer Setup								Peripheral	s - TSL UMD	Out Setup				HDD
Key 1	Key 2	UMD	Physic			Physical Input								
Key 3	Key 4	Addr BNC	Name	Source (From Sv 1 Mixer OP 1 BNC 1									Slot	Popup
Mixer	Util/Misc	3 1		Mxer DP	1								3: TSL UMD (Output On	Snap
													V	
Effects Memories														
DMEM	Macro			I Mixer DP									UMD Address	Popup
Sto														
				MxeD?										Snap
System Configuration			Outp	t. hput										
Crosspoints	Aux Buses	Display BNCN BNC Dutput	ame No	Yes										
User Config	Panel Config	BNChput		1•		Background U Refresh							BNC Output	Popup
Filing System	Peripherals												2	Snap
Shortcuts	Eng Config													Normal
A BELDEN B MASTERP 126			Panel Lock		Redo Mod- Issign	Quick Macro Macro Record	Copy Clone Copy	Paste Clone Paste	← Back	t Up Menu 647	Forward	Disable Tracking		·

The protocol is connected to Masterpiece by one of the RS422 ports.

Select the UMD address, then select the BNC output from the Masterpiece mainframe, the user can then select if they wish to display the output name from the Masterpiece system to be displayed on the under monitor display.

A tally is also displayed if the source to the under monitor display is on air.

TSL UMD IP Output Setup

This is very similar to the TSL UMD Output, but is used on IP systems. The peripheral is used to control and send information displayed in the Under Monitor Displays used in galleries and Multiviewers.



The protocol is connected to Masterpiece over a network via IP Client or IP Server .

The menu has the ability to have Bus Tally as an Option for the A and B, Buses. thus allowing for the Automation XPT to always show the correct BNC name on Air (for example) when using the Automation XPT system.

This will also show the correct name when you override the Automaton from the panel by selecting XPT's manually.

Select the UMD address, then select the BNC output from the Masterpiece mainframe, the user can then select if they wish to display the output name from the Masterpiece system to be displayed on the under monitor display.

A tally is also displayed if the source to the under monitor display is on air.

TSL UMD In

This protocol allows Masterpiece to receive source names from external devices (for example a Router) **Eng Config - Input Setup** menu allows Masterpiece to use the source names.

Mixer Setup						Peripher	als - TSL UMD	In Setup			HDD
Key 1		Input Names Overwrite									
Key 3	Key 4		Cor Slot	nnection Details UMD Matrix Level De						BNC Input	Popup
Mixer	Util/Misc										Snap
										V	
Effects Memories											
DMEM	Macro									Slot	Popup
Sto	ore									^	
		New Overwrite								2: TSL UMD (Input Only	Snap
System Configuration			JMD (Input Orly) 兽							V	
Crosspoints	Aux Buses	UMD Address	30 🔶								
User Config	Panel Config									UMD Address	Popup
Filing System	Peripherals										Snap
Shortcuts	Eng Config										
Gr			Undo	Redo Quick Macro	Copy Clone	Paste Clone		↑ Up			
A BELDEN B MASTERP 12G		Panel Lock	Normal	Mod- Assign Record	Сору		← Back	Up Menu 646	Disable Tracking		

The protocol is setup in the **Eng Config - Protocols** menu, this will allow the Masterpiece mainframe to communicate with the external device. Masterpiece is able to receive source name information from the external device via the RS422/IP connection or the BNC, each source name is mapped to a UMD address.

From the menu above, assume a source called VTR87 is mapped to UMD address 87 and it is feeding Masterpiece input 3, the name "VTR87" will overwrite the default name "BNC3"



Using the **Router Overwrite** parameter in the **Eng Config - Input Setup** menu, Masterpiece is able to receive UMD information from any of the BNC inputs. This information will then be displayed in the input menu's and can also be used for the mnemonic displays on the control surface for selecting sources.

EAS (Emergency Alert System)

Overview

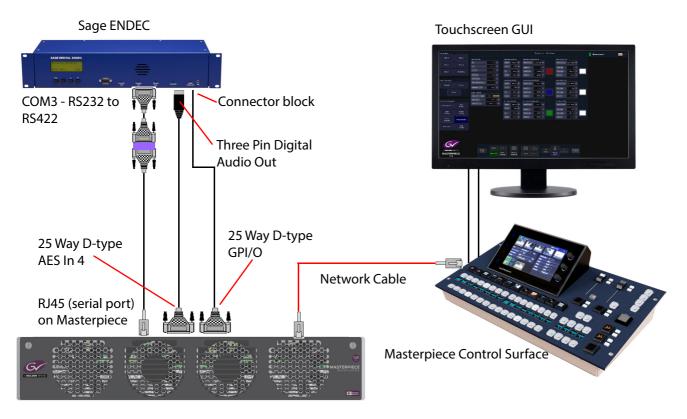
The Emergency Alert System (in this example for the United States of America) is a national public warning system that requires TV and radio broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service providers, direct broadcast satellite service providers and wireline video service providers to offer to the U.S. President the communications capability to address the American public during a national emergency. The system also may be used by state and local authorities to deliver important emergency information such as AMBER (missing children) alerts and emergency weather information targeted to a specific area.

The FCC works with the Federal Emergency Management Agency and the National Oceanic and Atmospheric Administration's National Weather Service to implement the EAS at the national level.

The EAS allows participating providers to send and receive emergency information quickly and automatically, even if their facilities are unattended. If one link in the system for spreading emergency alert information is broken, members of the public have multiple alternate sources of warning. EAS equipment also provides a method for automatic interruption of regular programming, and in certain instances is able to relay emergency messages in languages other than English.

Setup

The EAS system used was a Sage ENDEC connected to the Masterpiece mainframe via RS232/RS422 to RJ45.

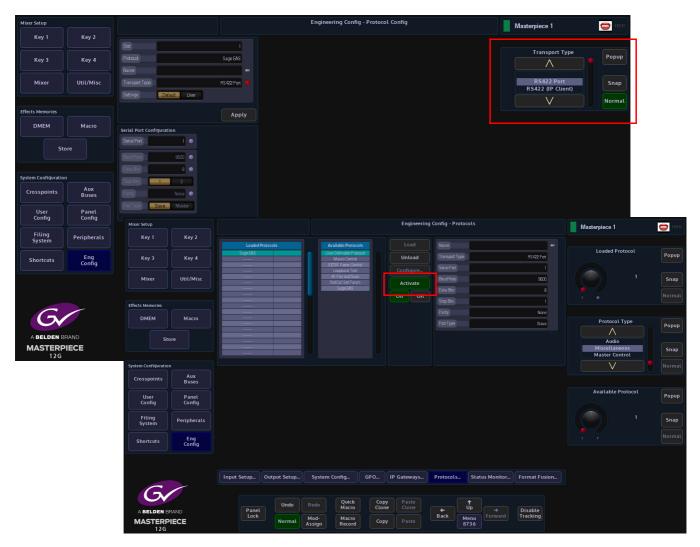


The Masterpiece system has to be running V3.2r1 software or greater.

Masterpiece Setup

In the Masterpiece "Eng Config - Protocols" menu select "Miscellaneous" in the "Protocol Type" parameter.

In the "Available Protocols" table, select "Sage EAS", select a clear row in the "Loaded Protocols" table and then touch the **{Load}** button.

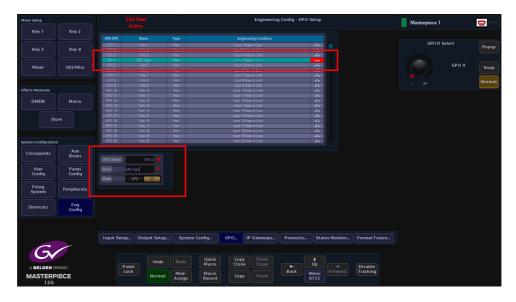


Touch the **{Configure...}** button and then in the "Protocol Config" menu, set the "Transport Type" as RS422 Port, the "Baud Rate" should automatically be 9600, the Sage ENDEC baud rate can also be set to 9600. Finally back in the Protocol menu, touch the **{Activate}** button.

Note: As the EAS triggering is received and defined by the Masterpiece as a "Warning State" internally, Masterpiece is able to send data to the SysLogServer (if set-up at the facility), the SysLogServer data will include: EAS Start Event + Timestamp, the EAS Characters, and then EAS End Event with Timestamp.

GPI and Output Setup

In the Eng Config menu, setup the GPI that will receive the EAS alert (as shown below). When the alert is received, the GPI switch will close enabling the EAS service.



In the "Eng Config - Output Setup" menu, the "Pgm Output" or the designated output has to have the "EAS Overlay" set to "Yes" (as shown below). This sets the emergency alert to be displayed on the program and selected outputs.



EAS Peripheral

Touch the **{Peripherals}** button, and in the "Engineering" column, you will see the **{EAS...}** menu link button.

Mixer Setup		EAS Alert Active		Peripherals - EAS Setu	qu	Masterpiece 1	😅 HDD
Key 1	Key 2	Main Settings	Most Severe Banner	Most Severe Background	Most Severe Text		
Key 3	Key 4	GPI GPI 4	Opacity 80.00% •	Matte Selector Local Matte	Matte Selector Local Mette	GPI	Popup
		Fort Cansal Bold Fant size 5.13	Position -1.85	Matte Hue D* V	MatteHue C* V	GPI 3	
Mixer	Util/Misc	Scroll Pate 4.00	Top 0.00% • Bottom 0.00% •	Matte Luma 50.00% V	Matte Luma 103.00% V	GPI 4 GPI 5	Snap
		Repeat Count 2				V	Normal
Effects Memories		Minimum Repeat Count 1	Less Severe Banner	Less Severe Background Matte Selector Local Matte	Less Severe Text Matte Selector Local Matte		
DMEM	Macro	MessageHold 0# 00:00	Position _185 •	Mattellue 120° V	Mattellus 122° V	Font	Popup
St	ore	Audio Override	Top 0.00% •	Mette Luma 50.00%	Matto Luma 100.00%	Consol	
		Override Main Cutput No Yos	Battom 0.00% •	Matte Sat 90.00% V	Matte Sat 0.00% V	Consol Bold Fine	Snap
System Configuratio		Audo Source AES In 4	Not Severe Banner	Not Severe Background	Not Severe Text	V	Normal
Crosspoints	Aux Buses	Overrido Shuffle Automation 2	Dpacity 80.00%	Metto Soloctor Local Mette	Matte Selector Local Matte		
User	Panel		Position -0.85 •	Matte Hue 240° V	Mattellue 240° V	Font size	Popup
Config	Config		Top 0.00%	Matte Luma 50.00%	Matteluma 100.00%		
Filing System	Peripherals		Battom 0.00%	Matte Sat 90.00%	Matte Sat 0.00%		Snap
Shortcuts	Eng Config						Normal
C	Conng						
	RAND	Panet	Redo Quick Macro	Copy Paste Clone +	↑ Up → Disable		
MASTERF 12G			Mod- Assign Record	Copy Paste Back	Menu 695		

This is where you will setup the visual appearance; background, text color etc. of the incoming EAS alert.

In the "Main Settings" parameter controls, select the "**GPI**" that receives the incoming EAS alert. The EAS system (e.g. Sage ENDEC) generates closed contact relay event when an EAS alert is received. This main GPI can be input into the Masterpiece system and can be used to define when an alert is in progress and to display the Character Generator, and the Audio. When the GPI is in the closed state a warning (EAS Alert Active) flashes in the top right corner of the Masterpiece MLC GUI. The alert will flash in every selected menu.

There are 3 levels of severity determined by the incoming information from the Sage ENDEC system, the incoming information into Masterpiece will override whatever is being broadcast on the selected output. The visual information being displayed by Masterpiece is setup in the EAS Setup menu. Visual information being the background color and the color and size of the text being displayed as a warning message.

Font and Font Size - determines the font used and size of the font to generate the EAS Character stream.

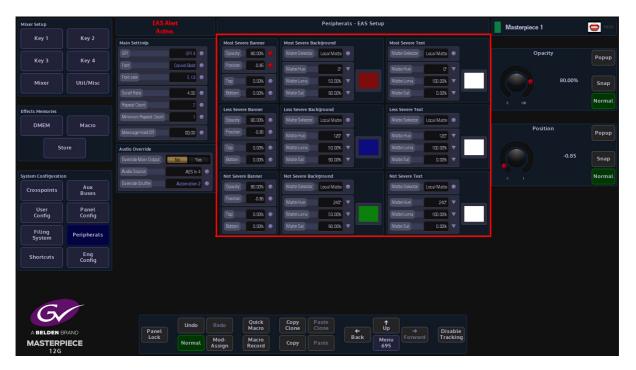
Scroll Rate and Repeat Count - determines the rate of the crawl and the number of times it should be repeated. If you have selected a GPI the crawl will be removed when the GPI clears. Please note that at least one complete crawl will be completed regardless of GPI and repeat count.

By law the Character crawl has to be displayed at least twice. This can be set by minimum repeat count 2.

Note: If the Repeat Count is set to "for Ever or greater than 2" the message will repeat until the repeat count has been reached or the main GPI associated with the EAS Alert is removed.

EAS Character set contains a severity level 1, 2 or 3 from the EAS decoder (e.g. Sage ENDEC). This severity level will be used to determine the color of the background of the crawl and/or the Text color.

The "Banner" which is the banner the text runs on, the "Background" which is the background behind the banner and text and the "Text" which is the text on the banner are all adjusted in the menu below. The user can set where the banner is positioned (top/bottom), and the colors for each severity level.



The EAS crawl is effectively the final Down Stream Key, this will automatically be displayed and cannot be adjusted (not available any other way on Masterpiece), and will be placed on top of the any program output video source.

Note: The outputs where EAS will appear are determined in the Eng Config - Output Setup menu, where the "EAS Overlay" is set to "Yes". This needs to be applied to any output that is being used, even set to overlay Fade to Black.

The crawl background width can be manually set (by default it will be oversized with respect to the font size), as such can cover the entire screen.

This is set per Severity. This is split into 2 parts above and below the text. The crawl Background "Opacity" and "Color", and "Text Color" is set per severity level.

Audio Override

Mixer Setup				Peripherals - EAS Se	tup	Masterpiece 1 😑	HDD
		Main Settings	Most Severe Banner	Most Severe Background	Most Severe Text		
		GP1 GP14 •	Opecity 80.00% •	Matte Selector Local Matte	Matte Selector Local Matte	Audio Source	qua
Key 3	Key 4	Fort. Consol Bold	Pastian -0.86	Matte Hue	Mattellue of V		pop
Mixer	Util/Misc	Fort sizo 5.13	Tea 0.07% •	Matte Luma 50.00%	Matteluma 100.00%	AES In 3 AES in 4	nap
		Starol Rate 4.00 •	Battom 0.00% •	Matter Sat 90.00% V	Matte Sat 0.00% V	Util 🛛 🖕	
		Repeat Count 7 •				No No	rmal
Effects Memories		Minimum Repeat Count	Cpacty S0.00%	Less Severe Background	Less Severe Text Mate Selector Local Matte		
DMEM	Macro	Message Hold Off	Postion -0.85			Override Shuffle	pup
				Matte Hue 120° V	Matte Hue 120° V		hob
St	ore	Audio Override	Tep 0.00% •	Matte Luma 50.00% V	Matte Luma 100.00% V	Automation 1	nap
		Dvarride Main Output No Yes	Battorn 0.00% •	Matte Sat 90.00%	Matte Sat	AES to 1&2	nap
System Configuratio		Auda Source AES h 4 Dvende Shuffle Automation 2	Not Severe Banner	Not Severe Background	Not Severe Text	No No	rmal
Crosspoints	Aux Buses	Dvertide Shuffle Automation 2 •	Opecty 81.00%	Matte Selector Local Matte	Mette Selector Local Matter		_
			Position -0.85	Matte Hue 240° V	Mattellus 240° V		
User Config	Panel Config		Tep 0.00% •	Matte Luma 50.00% V	Matte Luma 100.00% 🔻		
Filing			Battom 0.00% •	Matte Sat 90.00% V	Matte Sat 0.00% V		
System	Peripherals						
Shortcuts	Eng Config						
C							
		Panet	Redo Quick Macro	Copy Paste Clone Clone +	↑ Up → Disable		
MASTERP		Lock	Mod- Assign Record	Copy Paste Back	Menu 695		

Override Main Output - "Yes". This will enable the following parameters to be automatically applied in the event of an Alert determined by the GPI. This will act separately to any other audio Settings.

Audio Source - this allows the selection of the audio source. By default it will be "AES In 4".).

Note: The Sage ENDEC unit can supply an AES feed for the Alert Audio over AES.

In the even that all AES sources are in used, other SDI sources can be used. This requires the user to embed the required audio and make sure its available.

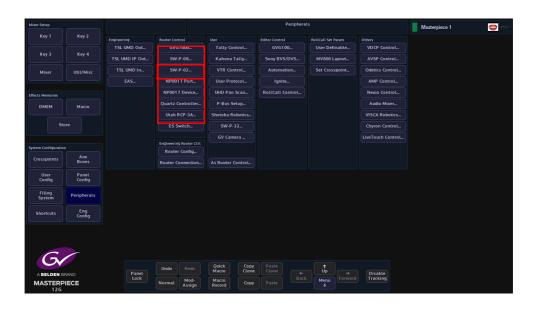
Override Shuffle - the default new EAS to LCR (Left, Centre, Right), which can be edited or alternate a shuffle, can be selected. This will place the Audio (e.g. AES) on the 1st three SDI audio output Channels (assumed to be Front left, Front Right and center). The user can edit the "Shuffle Map" in the "Crosspoints" menu as required, to place the AES as where needed, e.g. on All Channels (see Crosspoints - Shuffle menu), and note that the use of mix that will mix the potential stereo AES into Mono or 1:1 for a 16 Channel SDI input pre shuffled etc.

Override Main Output - "No". this will make the user responsible for setting up the Masterpiece such that it outputs the EAS alert audio (e.g via a Bus using a Macro to set the Masterpiece into a specific state, and another to return to a specific state), or take the "Output Audio" through the EAS Decoder or external switch.

Peripherals - Router Control

This function allows Masterpiece to control a third party router. The menus are similar in functionality for the GVG7000 and Utah RCP-3A, and the menus for the SW-P-08 through to the Quartz Controller are also similar in functionality to each other.

In the following section one example form each Router Control function will be explained.



For this example, we are going to look at the SW-P-08 Router Control Peripheral.

SW-P-08 - Xpt

Mixer Setup								Peripher	als - Router Xp	ot Control				HDD
		Destination												
Key 3	Key 4												Slot	Popup
Mixer	Util/Misc													Snap
		Source											V	
Effects Memories														
DMEM	Macro												Destination	Popup
Ste	ore	Level											∧	
														Snap
System Configuratio			Matrix										V	Normal
Crosspoints	Aux Buses													
User	Panel		Status										Source	Popup
Config	Config		Take	Protect		Lock	Salvo						∧	
Filing System	Peripherals													Snap
Shortcuts	Eng Config												V	Normal
C														
Gv			Panel	Undo		Quick Macro	Copy Clone	e Paste Clone		† Up		Disable		
A BELDEN B MASTERP 12G			Lock	Normal	Mod- Assign	Macro Record			₽ Back	Menu 6170	Forward	Tracking		

This menu enables the user to control the router Names.

When first connecting to a system controller, Masterpiece will request all the names for the Destinations, Sources and Levels.

The user can then assign names to the 12 destination buttons and 12 next source selection buttons, the level names will then also appear in the Level Mapping by Names menu.

Router Control Buttons

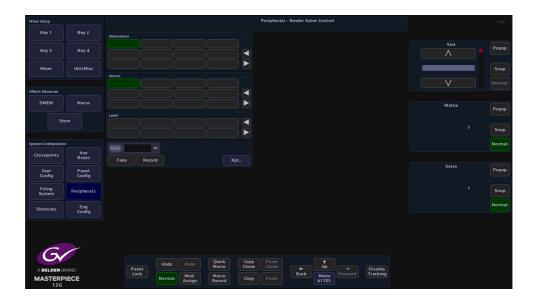
Take - Sets a crosspoint

Protect - protects a destination

UnProtect - removes the destination protection

Salvo Control

This menu works in exactly the same way as the previous menu.



The Xpt button reverts back to the Xpt Control menu.

Utah RCP-3A

Touch the **{Utah RCP-3A...}** button, which will open the RCP-3A Status & Control menu.



If the Router is connected the sources and destinations will be displayed as shown in the above menu.

To perform a take, select the **Source** and **Destinations** using the parameters, on the desired level and then touch **{Take}**. The Green selection indicates which level is active - which level the Takes and (un) Protects will be acted on. There can be multiple active levels selected at an time.

Alternatively, select the **{Quick Take...}** button at the bottom of the menu, which will take the user to the RCP-3A Quick Take menu as shown below.

Mixer Setup						P	Peripherals	- Utah RCP-3	A Quick Tai	ke			HDD
Key 1	Key 2	Destination											
Key 3	Key 4											Slot	Popup
Mixer	Util/Misc												Snap
		Source										V	
Effects Memories						Ĩ 🖪							
DMEM	Macro												
s	tore												
System Configuration													
Crosspoints	Aux Buses	Take Protect	t UnProtect		Statu								
User	Panel				Stati	JS						BNCInput	Popup
Config	Config											∧	
Filing System	Peripherals												Snap
Shortcuts	Eng Config											V	
G													
Gv			Undo		Quick	Сору							
A BELDEN		Panel Lock		Mod-	Macro Macro	Clone		← Back	Up Menu		Disable Tracking		
MASTER	PIECE		Normal	Mod- Assign	Record	Сору			61761				

To perform a take, select the **Source** and **Destination** on the desired level and then touch **{Take}**. To lock the assignment press **{Protect}**. To Unlock press **{UnProtect}**.

Peripherals - Engineering Router Control

The menus in this section of the Peripherals menu are used to setup Masterpiece to communicate with external routers. One of the features that can be used with these menus is Masterpiece's new Intelligent "Tile Line" concept (this will be described later in this section).

Router Config

This menu allows the user to make changes to the way routers work with Masterpiece.

Mixer Setup							Peripheral	s - Router Con	figuration				HDD
	Key 2	Router Settings											
Key 3	Key 4	Sat	1: UTAH RO	29-3 🔸							Slot		Popup
			No Yes										
Mixer	Util/Misc		No Yes								1: UTAH RCP-3		Snap
		Background Updates	No Yes										Normal
Effects Memories		Cut Delay		0 🔸									
DMEM	Macro		Nor	mal 🟓							Cut Delay		Popup
Ste	ore												
													Snap
System Configuratio													Normal
Crosspoints	Aux Buses												
User Config	Panel Config										Ext.Rtr. Backgro	und	Popup
Filing System	Peripherals										Normal Read Only		Snap
Shortcuts	Eng Config										V		Normal
6													
A BELDEN B	IRAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		t Up	Disable			
MASTERP 12G	PIECE	Lock	Normal	Mod- Assign	Macro Record	Сору		Back	Menu 61 8	Tracking			

If for example a source switch on the external router is changing later than, the timing can be adjusted. This will delay the cut on the to ensure the router switch is complete. Adjust the Cut Delay until clean switching is achieved.

For routers that use the Grass Valley SWP08 protocol the Fast Protocol selection can be enabled. This sends out multiple commands per video field. It will depend on the implementation of SWP08 whether this mode works.

Ext Rtr. Background:-

- Normal will send Xpt Take requests and Source Name requests.
- Read Only will stop Xpt Take requests but continue Source Name requests.
- Slow Read Only will stop Xpt Take requests but continue Source Name requests.
- V.Slow will send Xpt Take requests and Source Name requests at a very slow rate.
- **V.Slow Read Only** will stop Xpt Take requests but continue Source Name requests at a very slow rate.
- Off will stop both Xpt Take and Source Name requests.

Router Connections

Here the physical router outputs (Including Matrix and Levels) can be mapped to the physical Masterpiece inputs.

Each of the input sources has to be setup individually, as each one is setup, touch the **{Set}** button

Mixer Setup				Per	pherals - Router (Connections				
Key 1	Key 2									
		Inputs from Routers for Na	ime Overwrite & Tielines							
		Source	Name	Slot	Connection Deta				Matrix	Popup
Key 3	Key 4	hot 1		Slot 1: SW-P-08 Router	UMD	Matrix	Level	Dest		Popop
		Input 2		1: SW-P-08 Router						
		Input 3		1: SW-P-08 Router				2		
Mixer	Util/Misc	Input 4		1: SW-P-08 Router						Snap
		Input 5		1: SW-P-08 Router				1		
Effects Memories										
DMEM	Macro			1: SW-P-08 Router 1: SW-P-08 Router				3	Level	
		Input 11		1: SW-P-08 Router				3	Level	Popup
Sto	10	New Overwrite								
510		BNCIrput								
		Bacalibor								Snap
		Slot 1: SV	V-P-08 Router 💿							
System Configuration										
System Configuration		Matrix								
Crosspoints	Aux	Masix								
crosspoints	Buses									
									Destination	
User	Panel								Destination	Popup
Config	Config									
coning										
Filing	Peripherals									Snap
System										
Shortcuts	Eng Config									
Shortcots	Config									
		Set								
	/									
				Quick Copy		T T				
		Panel	Undo Redo	Macro Clone	Clone +			Disable		
A BELDEN BR	AND	Panel Lock			Bac		Forward	Tracking		
MASTERPI	ECE	LOCK	Normal Mod-	Macro Copy	Paste			Tracking		
126	LOL		Normat Assig	n Record Copy		6611				
126										

Matrix - this is the router connected to Masterpiece.

Level - this refers to the different levels within a router, video, audio and other.

Destination - this is the output from the router

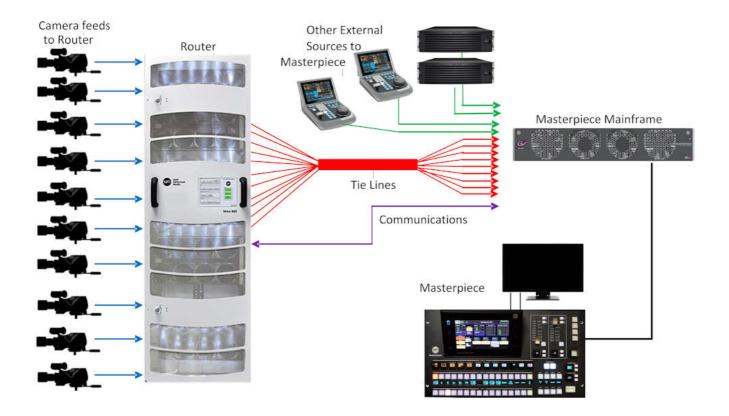
External Router Control - Practical Application

Masterpiece now has the mechanism to expand the number of sources coming into the mainframe using an external router. This is primarily due to a system setup running in UHD. Using this new feature, the number of sources to be used with the Masterpiece, are expandable up to the size of the upstream router.

Intelligent Tie Line Concept

Masterpiece deploys an intelligent "Tie **Line**" approach, the desired external router outputs (destinations) are connected to Masterpiece inputs. These inputs on the Masterpiece and destinations from the Router are treated as "Tie **Lines**". Each Tie Line acts as a floating video bus between the router and Masterpiece, they are intelligently assigned and used as required. Source selection on any Bus is transparent to the operator, regardless form where the Xpt is being made, i.e. in the external router, or in the Masterpiece itself.

The Masterpiece software knows what physical inputs / Tie Lines are allocated and what are not being used on a bus. Masterpiece then assigns the Physical input /Tie Line to the desired Bus upon a source selection. Masterpiece updates the upstream router's destination /Tie Line with the selected source.



Source selection on any Bus is transparent to the operator. Once setup, the operator sets the desired router source by selecting the appropriate router XPT on the required bus. The selection on the external router and the Tie Line path into the Masterpiece is automated.

How Many Tie Lines?

How many Masterpiece inputs do you need to convert to Tie Lines? This is entirely dependent on a few external factors, such as:

- How many inputs available on the Masterpiece (max number shown below):
- HD = 40 Tie Lines
- UHD = 12 Tie Lines
- How many router destinations are available.
- How many router sources need to be selected on Masterpiece at any one time.

For example:

If the user wants to select different external router sources on the A and B bus of ME2 this would require 2 Tie Lines.

For HD this would require 2 router destinations and 2 Masterpiece inputs.

For UHD this would require 8 router destinations and 8 Masterpiece inputs.

If the user requires external router sources on the A and B bus plus Key 1 and Key 2, this would require 4 Tie Lines.

In summary: Each different external router source selected simultaneously requires a Tie Line. Masterpiece

Each Tie Line requires one router destination and Masterpiece input in HD, or 4 router destinations and 4 Masterpiece inputs in UHD.

Note: If at all possible, it is recommended that the user creates more Tie Lines than are actually required. This gives some redundancy and reduces the risk of the system running out of available Tie Lines

Setup

Protocol Setup

To setup the protocol, the user will have to go to the **Eng Config - Protocols** menu. Use the "Protocol **Type**" parameter to select "Router", then, use the "Available **Protocol**" parameter to select the required protocol. For this example, "SW-P-08 **Router**" is selected. Touch the **{Load}** button to add the protocol to the "Loaded **Protocols**" table.



The user will now have to configure the protocol so that Masterpiece can communicate with the router. Touch the **{Configure...}** menu link button and the "Protocol **Config"** menu is displayed. Use the "Transport **Type"** parameter to select the communications transport type, then, setup the "IP **Client Configuration"** details.

Key 1 Key 2 Key 3 Key 4 Mixer UtUMix UtUMix Market filter filter DMEM Macro Store Market filter filter Utorg Asses diver filter OutStore Market filter Vorg Key 3 Key 3 Key 4 Mixer UtUMix Mixer Word Status Status Filter Status Market filter Vorg Parent Cossponits Kres Status Filter Status Cossponits Street Status More Status Status More Status Status Status Cossponits Status Cossponits Status Cossponits Status Costatus Verg Costatus Status Costatus Status Costatus Status Costatus Status Costatus Status Costatus					ocols	Config - Prot	Engineerin							Mixer Setup
Key 3 Key 4 Mixer Uill/Mixer Mixer Uill/Mixer DMLM Macro Store W2020MixeR/Marrow W2020MixeR/Marrow W2020MixeR/Marrow Store Aratable Protocol System Configure Col Protocols Status													Key 2	
My C	Рорь	Loaded Protocol							esa CPU Link P1 Ro		nucous			
Mixer Uul/Misc Mixer Uul/Misc DMEM Macro Store Universe Mixer Universe Mixer Universe DMEM Macro Store Universe Mixer Universe								uter					Key 4	Key 3
mixt UUUMixt With Revenues Iffects Menores With Revenues With Revenues DMEM Macro With Revenues With Revenues Store With Revenues With Revenues With Revenues Store Revenues Revenues Karaltable Protocol Store Eng Store Note Revenues Protocolse Status Monitor Format Fusion			1024											
Inclusion Impose Setup Output Output Output Pedraved Source Udd 10 / 16 Inclusion Store Impose Setup Output Impose Setup Output Pedraved Source Udd 10 / 16 Version Store Impose Setup Output Impose Setup Output Pedraved Source Udd 10 / 16 Version Store Impose Setup Output Impose Setup Impose Setup Impose Setup Impose Setup Impose Setup Impose Setup Store Impose Setup Impose Setup Impose Setup Impose Setup Impose Setup Impose Setup	Sna				-		Activate						OUT/MISC	Mixer
Marce server DMEM Marce DMEM Marce DMEM DMEM<			Penarg											
DHEM Maco Store Maco system Configuration Protocol Consponint Acr Store Participation User Config Store Participation User Config Store Protocol User Config Store Participation Store Participation Store Participation Store Participation System Petipherals Shortcorts Eng Input Setup. Config. GPO. IF Gateways. Potocols. Status Monitor. Farmat Fusion. Format Fusion.				work: 10.54.0.0	Netw			terii						Effects Memories
Store 1000 Store		Protocol Type						1					Macro	DMEM
Store ystem cardiguation Cossponts Cossponts Cossponts Config Panet Config Planet Plan		\wedge												
prismi Cardiguation Crosspoints Marke Config Filing Filing Filing Filing Filing Forther Shortcus Eng Config Input Setup. Dutpet Setup. System Config. GPO. IP Gateways. Protocols. Status Monitor. Format Fusion. Input Setup. Dutpet Setup. System Config. GPO. IP Gateways. Protocols. Status Monitor. Format Fusion.								9	NP0017-000 Devic					Sto
Crossponts Are User Config Filing Petipherals Shortcuts Config Timpet Setup. Dutput Setup. System Config. GPO. IP Gateways. Protocols. Status Monitor Format Fusion	Sna													
Cosspont Buss User Panel Config Config Filing Peripherals Shortcuts Eng Input Setup. Output Setup. System Option Undo Redo Queen Corport Undo Redo		V												System Configuration
User Config Filing Peripherals Shortcuts Eng Input Setup Output Setup System Config GPO IP Gateways Protocols Status Monitor Permat Fusion														Crosspoints
Filing System Peripherals Shortcuts Eng Input Setup. Output Setup. System Config. GPO IP Gateways Protocols Status Montor Format Fusion	Рорь	Available Protocol											Panel	
System Peripherals Shortcors Eng Input Setup. Output Setup. System Config. GPO IP Gateways Protocols Status Monitor Format Fusion													Connig	Conng
Input Setup. Output Setup. System Config. GPO. IP Gateways. Protocols. Status Monitor. Format Fusion.	Sna												Peripherals	
Input Setup. Dutput Setup. System Conlig. GPO. IP Gateways. Protocols. Status Monitor. Format Fusion.														
													Eng Config	Shortcuts
Undo Redo Marro Clone Lin			Format Fusion	us Monitor	Stat	Protocols	9 Gateways	GPO I	n Config	Syste	Output Setup	Input Setup C		
Undo Redo Marro Clope IIn														6
								Copy Clone			Undo			
MASTERPIECE Lock Normal Mod- Assign Record Copy Paste Back Menu Forward Tracking 8736					Menu	Back			Macro		Normal			

Once setup, touch the **{Apply}** button.

Then back in the Peripherals main menu, touch the {Activate} button to activate the protocol.

Peripherals Setup

Touch the **{PERIPH}** button to enter the "Peripherals" menu. Then touch the **{Router Connections...}** menu link button.

Mixer Setup					Periphera	ls		Masterpiece 1	🔤 HDD
Key 1	Key 2	Engineering	Router Control	User	Editor Control	RollCall Set Param	Others		
		TSL UMD Out	GVG7000	Tally Control	GVG100	User Definable	VDCP Control		
Key 3	Key 4	TSL UMD IP Out	SW-P-08	Kahuna Tally	Sony BVS/DVS	MV800 Layout	AVSP Control		
Mixer	Util/Misc	TSL UMD In	SW-P-02	VTR Control	Automation	Set Crosspoint	Odetics Control		
		EAS	NP0017 Port	User Protocol	Ignite		AMP Control		
Effects Memories			NP0017 Device	UHD Pan Scan	RollCall Control		Nexio Control		
DMEM	Macro		Quartz Controller	P-Bus Setup			Audio Mixer		
			Utah RCP-3A	Shotoku Robotics			VISCA Robotics		
St			ES Switch	SW-P-32			Chyron Control		
				GV Camera			LiveTouch Control		
System Configuratio			Engineering Router Ctrl Router Config						
Crosspoints	Aux Buses		Router Connection	As Router Control_					
User Config	Panel Config								
Filing System	Peripherals								
Shortcuts	Eng Config								
A BELDEN B MASTERP 12G		Panel Lock	Undo Redo Normal Mod- Assign	Quick Copy Macro Clone Macro Copy	Paste Clone Paste Back	Up Menu 6	I Disable Tracking		

Then select "Router **Connections"**. Here the physical router outputs (Including Matrix and Levels) need to be mapped to the physical Masterpiece inputs. These connections will form the "Tie **Lines**"

Key 1				Pe	ripherals - Router	Connections				
	Key 2	Inputs from Routers for N	ame Overwrite & Tielines							
					Connection De				Matrix	
Key 3	Key 4			Slot	UMD	Matrix	Level	Dest		Popup
		Input 1		1: SW-P-08 Router						
		Input 2		1: SW-P-08 Router				2		
Mixer	Util/Misc	Input 3 Input 4		1: SW-P-08 Router 1: SW-P-08 Router				2		Sna
		Input 5		1: SW-P-08 Router				2		
		Input 6	6	1: SW-P-08 Router						
		Input 7		1: SW-P-08 Router						
fects Memories		Input 8		1: SW-P-08 Router						
rects Memories		Input 9	9	1: SW-P-08 Router				3		
		Input 10		1: SW-P-08 Router				3		
DMEM	Macro	Input 11		1: SW-P-08 Router					Level	
										Pop
Sto	re	New Overwrite								
										Sn
		Slat 1: SV	W-P-08 Router							
stem Configuration		Matrix								
	Aux									
Crosspoints	Buses	Lovel								
		Level								
									Destination	Pop
User	Panel									Pot
Config	Config									
Filing										
System	Peripherals									Sn
Shortcuts	Eng									
	Config									

After each router connection row is set, touch the {Set} button.

Setting Up Names and Tie Lines

Next, go to the ENG Config - Input Setup menu.

In this menu, select the BNCs that where set to connect to the router destinations in the "Peripherals - **Router Connections**" menu and use the "**Router Tie Line**" parameter set the Tie Lines to "Yes". Do this for all the inputs that will become Tie Lines from the router.



Note: For inputs that are set as "Tie **Lines"**, it is recommended that the "Source Standard" parameter (in the **Eng Config - Inputs** menu) is set to "Auto **Standard"**.

It's recommended that sources which are off standard (and therefore requires format conversion) do not come via Tie Lines if hot cutting is required.

Make sure at this point to "Overwrite" or "Save" the **ENG Config** setup.

Setting up the User Config - Crosspoint Mapping - External Router configuration In the Crosspoint Mapping menu, touch the **{External Router...}** menu link button.



In the "**External Router**" menu, select free Xpts that are not being currently used, there are a total of 160 variable Xpts available. Each external router source required on the Masterpiece will need its own router Xpt.

Use the "Crosspoint" parameter to select the required "Xpt" and then touch the "Fill **Source**" attacher to enable the parameters and set the "External" parameter to "**On**"



Touch the attacher below the "Fill **Source**" attacher, then use the parameter controls to set the "**Matrix, Level and Source**" for the selected XPT (originally set in the "Peripherals - **Router Connections**" menu).

If the source is UHD set the "UHD" parameter to "Yes".

Note: When in UHD mode the 4 quadrants or streams from the router have to be consecutive.



If the router has its sources and destinations ganged as UHD then set "UHD **Router**" = **Yes**. This differentiates between the control protocol setting 4 router XPTs (un-ganged) or just the first router XPT (ganged).



"Name **From**" - Router means the name is fed into the Masterpiece from the external router (should the protocol allow this).

"Name From" - Crosspoint uses the internal XPT name as set in the User Config - Crosspoint - Name menu.



Repeat the above for the "Key **Source**" for the Xpt if required. Otherwise it's recommended to set the Key source to black or white for the external router XPT.

Key Source	
External	Off On
UHD	No
UHD Router	No Yes
Router	1: SW-P-08 Router 🔹 🌑
Matrix	1 •
Level	1 •
Source	1 •

Make sure at this point to "Overwrite" or "Save" the User Config.

Operation

The Router XPTs can be mapped to the buttons on the control panel as per normal using the Panel Config - Button Maps menu.

The operator just selects the router XPT as per any other source and its fed via the Tie Lines from the external router.

If too many router sources are selected for the Tie Lines available, the following red text warning is displayed above the table (top left):

			User Config - External Router										
Xpt	Name	Fill Source/Name	Key Source/Name	Split	Fill Source								
1	TV Chan 1	Store 6 - STOR 6	Store 6 - STOR 6	Fill		Off On							
2	TV Chan 2	Store 5 - STOR 5	Store 5 - STOR 5	Fill									
3	TV Chan 3	Store 1 - STOR 1	Store 1 - STOR 1	Fill		No Yes							
	SPORT 1	Store 2 - STOR 2	Store 2 - STOR 2	Fill	UHD Router	No.							
5	SPORT 2	Store 3 - STOR 3	Store 3 - STOR 3	Fill		No Yes							
	SPORT 3	Store 4 - STOR 4	Store 4 - STOR 4			Crosspoint Router							
7	SHOP 1	Store 7 - STOR 7	Store 7 - STOR 7	Fill		Closspoint House							
	SHOP 2	Store 8 - STOR 8	Store 8 - STOR 8			1: SW-P-08 Router							
			Matte 6 - Cyan										
		Matte 11 - Dark Red	Matte 11 - Dark Red										
13	PLAY 1	Matte 10 - Orange	Matte 10 - Orange	Fill									
	PLAY 2	Matte 13 - Dark Blue	Matte 13 - Dark Blue										
15	PLAY 3	Store 4 - STOR 4	Store 4 - STOR 4	Fill		1							
		Input 16 - BNC 16	Input 16 - BNC 16										
17	777	Input 17 - BNC 17	Input 17 - BNC 17	Fill									
		Input 18 - BNC 18	Input 18 - BNC 18										
	222	Input 19 - RMC 19	Input 19 - BMC 19	Eill									

In this instance either extra Tie Lines need to be added, or router XPTs deselected from buses if not required.

Timing

If the source switch on the external router is changing later than Masterpiece, the timing can be adjusted. This will delay the cut on the Masterpiece to ensure the router switch is complete.

Peripherals - Router Control - Router Config

Adjust the Cut Delay until clean switching is achieved.

For routers that use the "**Grass Valley SWP08**" protocol the Fast Protocol selection can be enabled. This sends out multiple commands per video field. It will depend on the implementation of SWP08 whether this mode works.



Peripherals - User

Tally Control

This menu allows the setup of a Tally serial port that is connected to an external devices. Tally protocol supports 128 Source IDs.

Key 1						Peripherals -	Tally Protoc	ol			
	Key 2										
		ID SI		ble Off	On						
			INC 1							Slot	Popur
	Key 4									\wedge	Fobot
			INC 3							/	
			INC 4								
Mixer	Util/Misc		INC 6							2: Tally	Snap
			INC 7								
										V	
			INC 9								
fects Memories		10 B	NC 10								
DUEN			NC11 NC12								
DMEM	Macro	13 8	NC 12								
											Popup
		15 8	NC 15								
Store		16 8	NC 16								
			NC 17 NC 18								Snap
		19 8	NC 18								
			NC 20								
stem Configuration			NC 21	Default S	annes IDa						
Crosspoints	Aux Buses									Source	
User Config	Panel Config										Popup
Filing System	Peripherals									BNC 1 BNC 2	Snap
Shortcuts	Eng Config									V	Norma

Slot - selects the protocol that is currently being used

Extension Enable - this enables the Grass Valley extension in the protocol

ID - 1-84 are for BNC inputs and 85-128 are fixed, therefore greyed out.

Source - is the 120 BNC inputs, 84 Source IDs are not enough. So the users have to "choose" which 84 out of the 120 BNCs they want to tally.

Any BNC that has not been assigned, an ID will not be tallied.

Default Source IDs button will reset the mapping table to be one to one mapped, i.e. ID 1 is BNC 1, ID 2 is BNC 2 etc.

VTR Control

This menu will allow control of VTR's connected via the RS422 ports.



Select the device using the "Slot" parameter. The status of the connection will be displayed in the "Machine Status" parameter. Use the standard controls to **Play, Fast Forward/Rewind, Cue** or **Record** the material on the device.

When in **Edit Mode** Cue points can be set up, which can be controlled directly from this menu or can be saved to a button on the panel as a macro.

When selecting **Edit Mode** the Edit Cue Point will stop and you can manually adjust the Timecode to reach a particular frame. Pressing Learn will record that as a Cue point and add it to the list. Turn off Edit Mode until you are ready to Recall this point.

To Recall a Cue point, select it in the list and press **Edit Mode** and press {Recall}. You will notice the VTR will now scroll to that Timecode and wait for further instruction.

Cue Register will scroll through your list of recorded Cue Points.

{VITC} - Vertical Interval Time Code

VITC assigns a specific time in hours, minutes, and seconds to each vertical blanking interval in a video recording, along with a frame number. The time code can be used to start a recording at a certain chronological time (such as 5:00:00 p.m.), or it can be used to keep a playback machine synchronized with a master time source. The former application might be used by a home television viewer, while the latter application would more likely be used by a broadcaster.

{LTC} - Longitudinal Time Code

LTC is recorded along the length of the tape in the form of a modulated audio signal. The signal may be recorded on a spare audio channel or, in the case of professional equipment, on an "address track" available for just this purpose.

{NDF} - Non-Drop-Frame Format

{DF} - Drop-Frame Format

The difference between the two is that with Drop-Frame format the frame address is periodically adjusted (once every minute) so that it exactly matches real time (at the 10 minute mark), while with Non-Drop-Frame format the frame address is never adjusted and gets progressively further away from real time.

Mixer Setup					Peripherals - VTR Control			HDD
Key 1	Key 2	Play Stop	PLay	Record	VTR Ganging Enabled 0# 0n		Slot	
Key 3	Key 4			iEnable Off On	GangNa 1 •			Popup
Mixer	Util/Misc	Stow S					4: Sony BVW-75 VTR	Snap
Effects Memories		# Cue Points 1 00:00:00:00	Edit Mode					Normal
DMEM	Macro	2 00.00.00.00 3 00.00.00.00 4 00.00.00.00 5 00.00.00.00	VITC LTC NDF DF					
Sto		6 00:00:00:00 7 00:00:00:00 8 00:00:00:00						
System Configuratio			1 • Recall					
Crosspoints	Aux Buses	Ourrent Timecode 00.00.00.0						
User Config	Panel Config	Choice and Choice						
Filing System	Peripherals							
Shortcuts	Eng Config							
6								
A BELDEN B	RAND	Panel	ndo Redo	Quick Copy Macro Clone	Paste Clone + Up	→ Disable		
MASTERP 12G	IECE	Lock		Macro Record Copy	Paste Back Menu 660	orward		

VTR Ganging - this allows the ability to "GANG" Roll up to 4 VTRs.

The Jog Enable function can be assigned to the Joystick on the control surface.

This can be permanently assigned to the joystick by pressing and holding of the **[MEM]** button, either on the Joystick. With the MEM enabled the Joystick will return to the VTR Jog Shuttle.

User Protocol

This function will allow the user to type in an ASCII or Hex command/message and send it out to a serial port.



Slot - selects the serial port that will be used to send the commands

Index - the index number in the table for the selected command

Input Mode - selects between ASCII or HEX as a command form.

Command - command code written by the user. When in ASCII mode, Masterpiece can be made to also send out two special characters.

To send a carriage return character type "<cr>" and "<lf>" for a line feed character

Length - command length

Name - name (function) given to the command data.

P-Bus Setup

This menu allows the control of Peripheral Bus Interface Boxes that can be connected to the serial ports on the Masterpiece mainframe. The P Bus boxes have various external devices connected to them such as VTRs, cameras etc. The P-Bus boxes when "daisy chained" allow more than one device to be controlled through one serial ports on the Masterpiece mainframe, this allows up to 24 P Bus boxes to be controlled.



Register - is a store for the setup and position of the P Bus device, 4096 registers are available. For example, the start point on a VTR tape can be set in a register by selecting a register number at a certain point relating to the time code then pressing the {Learn} button. {Recall} will wind the tape back to the start point again which relates to the register point.

Trigger Type - this is a selection of devices that are pre loaded on to the mainframe hard drive with the trigger functions setup ready to use, the trigger settings for each device are displayed in the Triggers matrix in the menu. Scroll through this parameter and observe that the triggers will change for each device selected.

Trigger - selects one of the 16 trigger options in the Triggers matrix

Button Controls

Device Selection - Touch one of the 24 (0 to 23) available Device Selection buttons to control up to 24.

Learn - will learn an action from an external device and set the action to a register point

Recall - will recall the "Learned" action to the selected register point

Trigger - the Trigger facility allows the switcher to be used to control various functions of the connected device such as Play, Stop, Slo-Mo or Reverse Play.

Shotoku Robotics

This function allows Masterpiece to communicate with and control a Shotoku robotic camera heads using an IP Server protocol.

Using the Shotoku Robotic Peripheral Controls

This function is used to control Shotoku Robotic Camera Heads. In the "Home" menu, touch the **{Peripherals}** menu link button, then in the Peripherals menu, touch the **{Shotoku Robotics}** menu link button.

Mixer Setup						Peripherals - Sh	otoku Camera (Control				HDD
Key 1	Key 2											
Key 3	Key 4										Slot	Popup
	Key 4											
Mixer	Util/Misc										7: Shotoku Robotics	Snap
Effects Memories												
DMEM	Macro											
	ore	Camera Control		Camera Status		Camera Shots						
St	ore	Pan	0.000 🔻	0	Cfline							
			0:000 🔻	Selected	No	Shot 1 Shot 2		0	00.00	Swoop Swoop		
System Configuratio		Zoom	0.000 🔻	Controller	None	Shot 3 Shot 4			00:00	Swoop Swoop		
Crosspoints	Aux Buses	Focus	0.000	Local	No	Shot 5 Shot 6			00.00	Swoop Swoop		
User	Panel	X	0:000 🔻	Move Type	Note	Shat 7 Shat 8		0	00:00 00:00	Swoop Swoop		
Config	Config		0.000 V	Time To Shot	00,00	Shot 9 Shot 10 Shot 11		0	02.00 02.00	Swoop Swoop Swoop		
Filing System	Peripherals	Heght	0.000 🔻	Settings (Restart	to Apply)							
	Eng	Command	Select 💿	ID Broadcast	2	Register Name St	at 1					
Shortcuts	Config	Default Shot Time	03:00	New ID	Limited 2	Time To Shat			00:00			
					Umted •	Shet Type			Swoop •	Store Sho		
				Restart Proto	col	Description				Recall Sho	ot	
6												
	PAND	Panel	Undo	Redo	Quick Copy Aacro Clon	Paste Clone	r (t Ip		Disable		
MASTERP 12G		Lock	Normal		Macro cecord Copy		Back	20 F		Tracking		

Shotoku Camera Control

The opening menu will display that the Shotoku Robotics protocol is active (as shown below).

Mixer Setup						Peripherals - SI	iotoku Camera C	ontrol				HDD
Key 1	Key 2											
Key 3	Key 4											Popup
Mixer	Util/Misc											Snap
												Normal
Effects Memories												
DMEM	Macro											
		Camera Control		Camera Status		Camera Shots						
Sto	ore	Pan	0.000 🔻		Offline							
			0.000 🔻		No	Shot 1 Shot 2		0	00.00	Swoop Swoop		
System Configuration		Zoom	0.000 🔻	Controller	None					Swaap		
Crosspoints	Aux			Local	No	Shot 4 Shot 5			00:00 00:00	Swoop Swoop		
Crosspontes	Buses	Focus	0.000	Move Type		Shot 6 Shot 7		0	00:00	Swoop Swoop		
User	Panel	X	0.000 🔻	Time To Shot	None	Shot 8 Shot 9		0	00:00	Swoop Swoop		
Config	Config		0.000 🔻	Time to shot	00,00	Shot 10						
Filing	Peripherals	Height	0.000 🔻	Settings (Restart	to Apply)					Swatp		
System	Felipherates					Register			1 🔹			
Shortcuts	Eng		Select O	Broadcast	Limited	Name St	iot 1					
Shortcots	Config	Default Shot Time	03.00	New D	2	Time To Shot			00:00			
						Shet Type			Swood 🔍 👔			
					Umted •					Store Sho	ot	
				Restart Proto		Description			- (Recall Sh	iot	
G												
Gv		Panel	Undo	Redo	Quick Copy Nacro Clone	Paste Clone		P		Disable		
A BELDEN B MASTERP 12G		Lock	Normal		facro ecord Copy		Back Me			Tracking		

The 32 buttons in the top half of the menu are control buttons, they display the current cameras that are on-line (when active, they will light up). They can be used along with the "Command" parameter to Select, Detach and Grab cameras.

The user can select a device by touching one of the Camera Control Buttons, making sure that the correct parameter controls is selected for the type of device, i.e. Pan, Tilt and Zoom.

Note: Each control button can have a number of commands and attachments, so the cloning of camera control buttons is recommended.

Pan, Tilt and Zoom - move the camera as described, as soon as the attachers is touched the selected parameters can now be attached to the control surface joystick (if available).

Height - adjusts the height of the camera pedestal

X, **Y** and Focus - work in the same way as the parameters above and are selected by touching the attachers, and selecting **X**, **Y** & Focus.

Command - makes the number button select that camera for controlling. *Detach* makes the number button deselect that camera.

Default Shot Time - The default time entered for camera shot storage control.



Camera Status Menu Link Button

The menu displays the camera head connection status, when connected to either the Masterpiece system or the Shotoku Robotic camera head control panel.

ID - this displays the number of Robotic Camera heads that are connected and can be controlled,

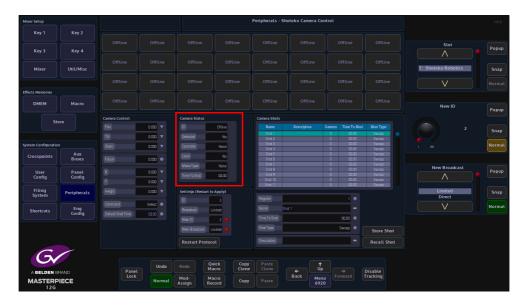
Selected - this displays if the Robotic Camera heads are selected and active

Controller - this displays a unique number for the controlling device, for example, the Shotoku Control panel could be Controller ID 1, and Masterpiece could be Controller ID 2 depending which Masterpiece ID value is entered by the user.

Local - this indicates if the camera head is currently under local control.

Move Type - this shows the 'shot type' of the current move. This will only display something during the shot recall.

Time To Shot - if a camera head has got a preset position setup in one of the Registers (shown later), this is the time that the camera head would take to move into that preset position.



Settings Menu Link Button

ID - A unique ID set as the controlling device, when online this field will be greyed out.

Mixer Setup						Peripherals - Sh	otoku Camera	Control				HDD
Key 1	Key 2											
Key 3	Key 4										Slot	Popup
Mixer	Util/Misc										7: Shotoku Robotics	Snap
											V	Normal
Effects Memories DMEM	Macro										New ID	Popup
		Camera Control		Camera Status		Camera Shots						Popop
SI			0.000 🔻		Offine							Snap
			0.000 🔻		No	Shot 1 Shot 2		0	00,00	Swoop Swoop		Jush
System Configuration		Zcom	0.000 🔻	Controller	None	Shot 3 Shot 4			00,00	Swoop Swoop		Normal
Crosspoints	Aux Buses		0.000	Local	No	Shot 5 Shot 6			00,00	Swoop Swoop		
User Config	Panel Config	×	0.000 V	Move Type Time To Shot	None 00:00	Shot 7 Shot 8 Shot 9 Shot 10		0 0 0	00,00 00,00 00,00	Swaap Swaap Swaap Swaap	New Broadcast	Popup
Filing System	Peripherals	Y Hegit	0.000 V	Settings (Restart)	to Apply)	Shat 11		0	00,00	Swaap	Limited	Snap
	Eng	Command	Select 🔹	ID Broadcast	2 Limited	Register Name St	ct 1				Direct	Normal
Shortcuts	Config	Default Shot Time	03:00	New ID	2	Time To Shot			00,00			
				New Broadcast	Limited 😐	Shat Type			Swoop •	Store Shot		
				Restart Proto	col	Description				Recall Shot		
		Panel	Undo		Quick Copy facro Clone	Paste Clone		† Up		Disable		
MASTERI 12G		Lock	Normal	Mod- Assign R	facro ecord Copy		Back	enu 920		Tracking		

The user can manually select which camera head they wish to use by touching one of the 32 available buttons.

Note: The camera head can only be selected if it is deselected on the Shotoku controller.

Camera - Shots Menu

This menu allows the user to store **{Store Shot}** up to 100 recorded robotic camera head positions into registers, and recall them **{Recall Shot}** at any time.



Using the Store Shot

To use this function, the user will have to go back to the Camera Control Menu and touch either the Pan, Tilt, Zoom or X, Y, Focus attacher (depending on the type of camera head used) then press and hold down one of the 4 **{MEM}** buttons located next to the joystick. This will allow the user to move the camera head using the joystick whilst in the Camera Shots menu. Go back into the Camera Shots menu, select a camera head by pressing one of the available buttons (in the top half of the menu), the button will turn Green when selected. Next use the joystick to position the camera head, select a register position in the table, and then press the **{Store Shot}** button.

The stored position can be recalled by scrolling to the required "Shot" and pressing the **{Recall Shot}** button.

Store Shot Table

The table displays the Name of the Shot (this can be altered using the Name attacher below the table), the Description (again, this can be given a name using the Description attacher below the table), Camera ID, this is the selected camera head when the Shot was saved and Time To Shot is the time that the camera head takes to move from its current position to its saved position in the selected register.

Touch the **Name** attacher twice and the on-screen Keyboard will appear, allowing the user to enter a new name for the stored shot.

Touch the **Description** attacher twice to enter a description for the stored shot.



Register - Scrolls through the table.

Name - the name of the Shot.

Camera - will select one of the available camera heads, use either the parameter control or press one of the buttons in the menu.

Time To Shot - this changes the time that the camera head moves from its current position to its saved Store Shot position.

Shot Type - this controls the way the recorded shots are recalled by the system. Swoop, Cut and Fade.

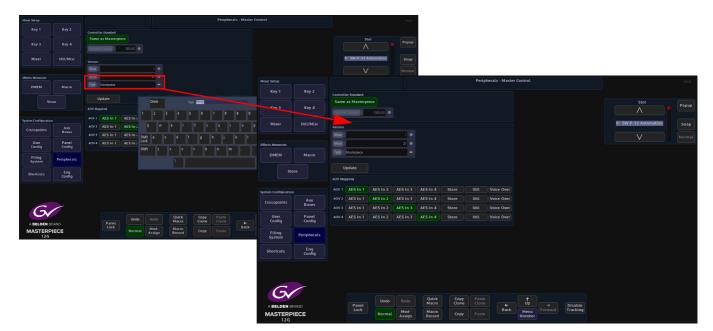
Snell SW-P-32

This protocol is used to identify and connect Masterpiece to the Grass Valley Morpheus Automation System.

Mixer Setup								Peript	erals - Master	Control			н
Key 1	Key 2	Controlle	er Standard										
Key 3	Key 4	Same : Controller	as Masterpi Standard	iece 1080/80 😐									Slot Por
Mixer	Util/Misc	Version											8: SW-P-32 Automation
		Major			1 🔹								Nor
Effects Memories					27 🔹								
DMEM	Macro		Masterpiece		- 1								Controller Standard
	ore	U	pdate										
st	ore	AOV Map	ping										1080i/60 Sr 1080i/59.94
System Configuratio													Nor
Crosspoints	Aux Buses					AES In 4	Store		Voice Over				
	Buses					AES In 4	Store		Voice Over				
User Config	Panel Config					AES In 4	Store		Voice Over				
Filing System	Peripherals												
Shortcuts	Eng Config												
6													
Gr				Undo		Quick Macro	Copy Clone	Paste Clone]	† Up		Disable	
A BELDEN B MASTERP 12G			Panel Lock	Normal	Mod- Assign	Macro Record	Сору		Back	Menu Number	Forward	Tracking	

For Morpheus software version 5.0.70 or above, you must set the "Major" version parameter to 1 and "Minor" version parameter to 27, and the type to "Masterpiece". Basically leave all as default. Masterpiece can be controlled by Morpheus via RS422 or IP Masterpiece is the server and Morpheus is the client.

For Morpheus software versions below 5.0.70, you must set "Major" version parameter to 1 and "Minor" version parameter to 27



Use the on-screen keyboard to change the "Type" parameter to "TX500". Make sure you press the **{Update}** button after the change.

Masterpiece can be controlled by Morpheus via RS422 only.

The protocol has only 4 AOV controls and Masterpiece has 7 AOV inputs. Hence Masterpiece needs to map the protocol control to one of our inputs.

As Router Control

This section details the protocol for controlling Masterpiece Switcher as routers. It covers the protocol used to Change the Source Destination

Mixer Setup								Periphera	ls - As Route	r Control				HDD
Key 1	Key 2					Lo								
		Matrix 1	Destination 0	Bus ME 1 Key 1	Lock		CK						Mixer Matri	Popup
Key 3	Key 4		1	ME1Key1Spl ME1Key2		Loci	(ALL							Fobob
			3	ME1Key2Spl ME1Key3		Unto	ck All							
Mixer	Util/Misc			ME1Key3Spl ME1Key3	tKey 1									Snap
			7	ME1Key4Spl										
Effects Memories			9											
DMEM	Macro		11		it Key									
			13		iit Key								Destination	Popup
Ste	ore		15	ME 1 eKey 4 Sp ME 1 Backgrou	id Key									
			17	ME 1 Backgrou ME 1 Backgrou ME 1 Backgrou										Snap
			18 19 20	ME 1 Backgrou ME 1 Backgrou ME 1 U6I 1										
System Configuration														
Crosspoints	Aux Buses													
User Config	Panel Config													
Filing System	Peripherals													
Shortcuts	Eng Config													
A BELDEN B			Panel Lock	Undo	Redo	Quick Macro	Copy Clone	Paste Clone	← Back	↑ Up Menu	Disable Tracking			
MASTERP 12G	IECE				Mod- Assign	Macro Record	Сору			Menu 611				

Matrix - Retrieve source names (Router Control systems can contain a multiple of Matrix configurations).

Destination - Physical outputs associated with currently selected router matrix.

Bus - selects the source on the currently selected ME Matrix

Lock - this button locks the currently selected bus

Lock All - will lock all the buses displayed in the table for the currently selected ME matrix only.

Peripherals - Editor Control

This function allows external equipment software to control some functionality on Masterpiece, such as the Crosspoint selection, DMEM's, Transition Control.

Mixer Setup						Periphe	rals - GVG100	Control			HDD
Key 1											
Key 3	Key 4	Snapshot Recall	GMBM •			Editor Enable				Slot	Popup
Mixer	Util/Misc	Conversion Designed	Catura C							10: GVG100	Snap
		Inhibit Crosspoint R	ley Control							V	
Effects Memories		мармс									
DMEM	Macro	01 N C2 N	cel ME licer licer							Crosspoint Offset	Popup
St	ore		focar focar focar								Snap
System Configuratio											Normal
Crosspoints	Aux Buses										
User Config	Panel Config									Snapshot Recall	Popup
Filing System	Peripherals									GMEM DMEM	Snap
Shortcuts	Eng Config									V	Normal
Ge A BELDEN B		Panel		Redo Qu Ma	cro Clo	py Clone		↑ Up	Disable		
MASTERF	PIECE		Normal	Mod- Assign Rec	cro ord Co	Paste	Back	Menu 670	Tracking		

Before using this protocol the required DMEM that are going to be used with the external equipment software should have been saved into the "Default" file on the Masterpiece mainframe. This will enable external equipment software to recall the required DMEM.

Note: This example the GVG 100 Control protocol will be used.

The **Snapshot Recal** parameter should be set to "Auto" allowing the external equipment software to recall DMEM, but the user can also set the parameter to only allow DMEMs to be selected.

Crosspoint Selection

 New Setup
 Rey 1
 Key 2
 Soft 0
 Soft 0

Note: GVG 100 Control protocol directly drives linked Mixer parameters for Bus Control and Transition Control.

The Map ME parameter allows the user to offset the Mixer with the Editor, so for example the "PP" (Program/Preview) can be set to the Mixer.

Crosspoints can be selected to the following buses for each Mixer in the User Config - Crosspoint Mapping menu.

- BKGD A
- BKGD B
- KEY 1 FILL
- KEY 1 KEY
- KEY 2 FILL
- KEY 2 KEY

Crosspoint selection for Auxes

Crosspoints can be selected to be used with the Aux buses.

Transition Control



The following can be included in a transition:

- Transition mode can include background, Key1, Key2, Key3 and Key4 in the transition
- Transition Types includes MIX, WIPE and MATTE MIX
- Auto Transition Start
- Transition rate
- Transition Preview
- Transition Key On/Off

Key Control

Mixer Setup									Keyer lixer, Key 1						HDD
Key 1	Key 2		Store 1		Keyer Contro					Full Key					
Key 3	Key 4	Split Key Xpt	XPT 1	On Air	Full	Linear	Luma	Invert			aty 100.00%		Crossp	oint	Popup
		MxTme	01:00*		Matte Fill	Coupled Key	Split Key	Self Key					Mixer 0		
Mixer	Util/Misc	Matte Select	Local Matte		Actions								Store Store		Snap
			0.000*		Cut On	Auto On	Auto	Auto					V		
Effects Memories		Matte Luma	100.00%		Auto Off	Cut Off									
DMEM	Macro	Matte Sat	90.00%			Auto							Split K	ey Xpt	Popup
Sto	pre													1	Snap
System Configuratio															
Crosspoints	Aux Buses														
User Config	Panel Config												Mix 1	ïme	Popup
Filing System	Peripherals													01;00°	Snap
Shortcuts	Eng Config														Normal
		Keyer Se	etup			DVE Alla	cation								
G						Quick	Сору	Paste							
A BELDEN B	RAND		nel ock			Macro	Clone	Clone	← Back			Disable Tracking			
MASTERP	IECE		N	lormal		Macro Record	Сору	Paste	Dack	Menu 301		Tracking			

The following can be selected to affect Key1, Key2, Key3 and Key 4

Matte Fill On/Off

- Key Source Select Auto (Coupled), Split and Self
- Mask Source Select
- Key Type Full, Linear, Luma
- Key Edge Modify Border
- Key Invert

Snapshot

Mixer Setup			Peripherals - GVG100 Control	HDD
Key 1	Key 2			
Key 3	Key 4	Crossport Diffset 0 Snapshot Rocal GMEM	Editor Enable	Slot Popup
Mixer	Util/Misc	Snapshot Project Default		10: GVG100 Snap
		Inhibit Crosspoint Key Control		Normal
Effects Memories		Map ME		
DMEM	Macro	Effects Address Logical ME 01 Mixer 02 Mixer 03 Mixer		Crosspoint Offset
St		04 Mixer 05 Mixer 05 Mixer 06 Mixer		0 Snap
System Configuratio				4 278 Normal
Crosspoints	Aux Buses			
User Config	Panel Config			Snapshot Recall Popup
Filing System	Peripherals			GMEM Snap DMEM
Shortcuts	Eng Config			Normal
G			Ouick Copy Paste	
A BELDEN B		Panet	tedo Macro Clone Clone + Up + Disable	
MASTERP 12G	IECE	Lock Normal	Aod- ssign Record Copy Paste Back Menu Forward Tracking	

Snapshot Recall - Loads a Masterpiece DMEM Snapshot.

RollCall Control

This function allows external equipment running RollCall control software to control certain function on Masterpiece.

Only one instance of the RollCall Control protocol can be loaded at any one time. This instance of the protocol is system wide, facilitating control of all the available switchers on the mainframe.

RollCall software will need to be installed onto a computer/laptop which is connected either directly to one of the network ports on the Masterpiece mainframe or to a network switch that is connected to the Masterpiece mainframe.

Mixer Setup					Periphe	rals - RollCall	Control				HDD
Key 1	Key 2	RollCall Control Enables			ditor						
Key 3	Key 4		Yes		nable					Slot	Popup
Mixer	Util/Misc	Mecro Run No Transitions No	Yes						12: RollCa	ll Control	Snap
Effects Memories										\checkmark	
DMEM	Macro										
St	pre										
System Configuratio											
Crosspoints	Aux Buses										
User Config	Panel Config										
Filing System	Peripherals										
Shortcuts	Eng Config										
6											
A BELDEN E		Panel	Undo	Redo Quick Macro	Paste Clone		↑ Up	Disable			
MASTERF 12G			Normal	Mod- Assign Record		Back	Menu 674	Tracking			

The "Yes/No" parameters allow the user to filter incoming RollCall messages to affect certain areas of Masterpiece.

Touch the **{Editor Enable}** button to enable the protocol, then select which RollCall message is enabled.

The RollCall software is able to control the functions listed above, but with the crosspoint control, the RollCall software is able to control both internal crosspoints in the Masterpiece mainframe and allow crosspoints to be controlled via an external control panel.

Peripherals - RollCall Set Param

The RollCall Set Param menus are to send a set parameter message over the RollCall network. Masterpiece is the RollCall Client. The parameter can be a value, a string or both. You can construct a general purpose message using the "User Definable" menu, or a specific message such as "MV800 Layout" or "Set Crosspoint" message.

User Definable

Set the Unit ID, you must specify the ID that you are trying to talk to. This is a unique ID which every unit has.



The RollCall Set Param menus are for sending a message to any unit on the RollCall network. The message can be a general purpose one, which consists of a command and a parameter. The parameter can be a value, a string or both.

MV 800 Layout

This parameter allows Masterpiece using RollCall set parameters to communication with the MV-800 integrated multiviewer fitted in the Grass Valley Sirius 800 range of Routers.

Set the unique **Unit ID** to communicate with the multiviewer.

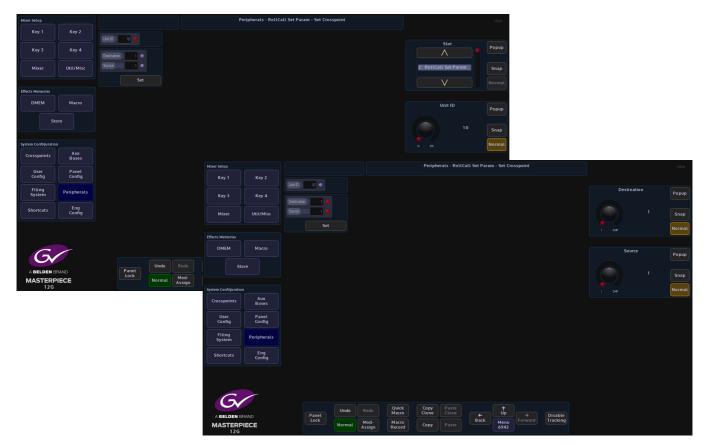


Wall - this selects video wall outputs 1 to 12

Layouts - this accesses the user defined video wall layouts (up to 64 individual layouts) saved.

Set Crosspoint

Set Crosspoint message is for switching a router source on a destination.



Set the unique ID for the unit that you are trying to communicate with.

Destination - the destination on the router

Source - the source that you are trying to switch on the router

Peripherals - Others

VDCP Control

VDCP is a common protocol for video servers. Note that only some commands (which means also functions) are mandatory; many are optional. If optional commands are not implemented in the disk server, VDCP Simple should be selected instead.

A video server is a system that has hard disk storage for video, and one or more audio/video channel connected to it. A channel on a server can play or record or both. The number of channels on the server, and what capabilities they have, are server dependent.

Playout

Press the **{VDCP Control...}** menu link button, this option is used to control video disk servers. Enter the Playout.



Parameter Controls

Slot - selects the slot that was setup in the Protocols menu

New Channel - selects a channel on the server

Select File - selects a clip by name

Edit

In Point - displays the play out start position of the selected clip

Out Point - displays play out end position of the selected clip

Play Rate - will allow the user to speed up or slow down a clip and change the direction of play

{Mark In Point} - used to set a play out start point within a clip

{Mark Out Point} - used to set a play out end point within a clip

{NDF} - Non-Drop-Frame format

{DF} - Drop-Frame format

The difference between the two is that with Drop-Frame format the frame address is periodically adjusted (once every minute) so that it exactly matches real time (at the 10 minute mark), while with Non-Drop-Frame format the frame address is never adjusted and gets progressively further away from real time.

File List Attacher Controls

Channel - displays the selected channel on the server.

No of Files - displays the number of files in the File List

Free Space - displays the Free Space left on the Video Servers Hard Disk

Select File - allows the user select a file and to also rename a file

Length - displays the duration of the selected clip

File Name Length - allows the user to input file names greater than 8 characters by selecting Variable

[Set Channel] - action button once the Channel has been selected. Note that if the channel selected is not available on the server, or the access has been denied (normally because some other device is currently using this channel), the Channel will be set to 0 after the button is pressed.

{Refresh File List} - refreshes the file list after clips have been deleted or added.

Using this menu

Select a clip and touch **{Play}** to start back-to-back play out. The attacher shows which clip is playing or about to play and its current timecode. While a clip is playing, Play Rate parameter can be used to change the play speed and direction.



Using the Port parameter select the port the Video Disk system is connected to. This will then be displayed in the Configure Channel attacher, then select the channel number on the server and press the **{Set Channel}** button. Any stored clips will then be displayed in the File List. Using the Select File parameter, select the required clip. The total length of the clip will be displayed below the File List table, here the clip can also be re-named or deleted. The user can choose to play a whole clip or just a part of it by setting a play out start or/and play out end position(s). The Current Clip box will display the name of the current clip being played or about to be played.

VDCP Ganged Commands

Ganged Commands - this allows for VDCP devices to be gang rolled or cued. Press the {Gang Commands} button, notice that a new option has appeared in the menu next to the Transport Control buttons, this option displays the available Gang VDCP Ports. There are 4 Gang Ports available.

Mixer Setup					Perip	herals - VDC	P Play Contr	ol		HDD
Key 1										
Key 3	Key 4	HIE USE (BY SERVER)		02020000	Play Bate	aco •			Slot	Popup
				02020000	Loop Count	Farever 🏼 🌑	Mark O			
Mixer	Util/Misc						Mark I		3: VDCP	Snap
			Scosmit	02020200					V	Normal
Effects Memories	Macro		Play	Slow	Stop	Stow	PLay			
		Channel 0 No. of Files 0							Enabled	Popup
Ste		Free Space 01 02 02 00			السا				Off On	
		Select File	VDCP Gangin							Snap
System Configuration	Aux	Length 00:00:00:00 FileNameLength Forest8 Verisbre	Enabled GangNo.	Oř On						Normal
Crosspoints	Buses									
User Config	Panel Config								Gang No.	Popup
Filing System	Peripherals	Set Channel Refresh File List								Snap
Shortcuts	Eng Config									Normal
		Config Playout	Record							
G										
		Undo		Jick Co Scro Cl	opy Pas one Clo		t Dp			
A BELDEN B MASTERP 12G			fod- Mi		opy Pas	Ва		Forward Tracking		

Transport Control

Play - will play a clip backwards and play forwards at standard speed

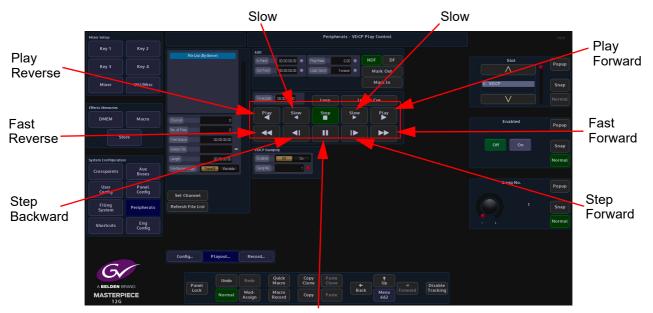
Slow - will play a clip backwards and forwards at slow motion speed

Stop - stops a clip

Fast Reverse and Fast Forward - like fast rewind and fast forward

Pause - pauses the current clip

Step Forward Step Backward - Steps a clip forward and backward by one frame



Pause

Record

This menu will allow video/audio material to be recorded to the video disk system. The user needs to give the new clip a name and record duration and then press the Record action button.

The new name can not duplicate any existing ones and all names are case sensitive.



Record Attacher

Capacity - displays the server hard disk capacity

Name - put in the name of the clip that is going to be recorded Variable in the File Name Length parameter allows names longer that 8 characters)

Duration - displays the record duration.

Start Position - sets the start position timecode, for the start of the record process

Timecode - displays time code as the clip is being recorded

Transport Control

Record - starts recording

Stop - stops the recording process

AVSP Control

Advanced Video Server Protocol, It allows the running, recording and editing of clips from up to 6 channels with either EVS XT or EVS XT2.

The protocol is connected via a Serial Port, one serial port will support the use of 6 channels of EVS, either in Playback or Record modes.

Play

The box in the top middle will display the number of configured EVS channels and their relevant details, these channels are displayed as "Rec" or "Play".

Mixer Setup				Per	ipherals - AVS	P Play			HDD
Key 1	Key 2								
Key 3	Key 4		Edit					Slot	Popup
			CipName		Save I	In/Out			
Mixer	Util/Misc		In Point 00.00.000	•				4: EVS AVSP	Snap
			Dut Point 00:00:00:0					V	Normal
Effects Memories			Lergth 00:00:00:0	2					
DMEM	Macro	Refresh Server Data	Timecode 00.00.00.0		Mar	rk In		Standard	Deserve
		Server Info	Play Rate 0.00		Mark	k Out			Popup
Ste	ore	Standard 1080,/59.94	Loop	Re		ad & Cue		1080i/59.94	Snap
		Cip Num 0	Play St	w Stop	Stow	PLay		1035i/59.94	
System Configuration	Aux	Free Size OCCCC CC CC							Normal
Crosspoints	Buses								
User Config	Panel Config	Clip Info	Multi		Court Fareve			Name	Popup
		Name	Channel		COURT PERMO	* •			
Filing System	Peripherals	0:0:00:00:00 Out 0:0:00:00							Snap
Shortcuts	Eng Config	Length 00:00:00							Normal
	coming								
		Play Mod	Record						
G									
			edo Quick Macro	Copy Paste Clone Clone]		→ Disable		
A BELDEN B MASTERP 12G			lod- sign Record	Copy Paste	Back	Menu 664	Forward Tracking		

Center Top Buttons - (Channel Selector Area) - which channel of EVS is being controlled.

Slot - this displays the serial port that is connected to the server.

Standard - this has to be set to the video standard being used by the server.

Name - the Clip Name

Server Info

Data regarding the server being used which includes:

Standard - the Video Standard of and number of Clips stored on the server

Clip Num - the number of the clip being played

Free Size - the remaining Free Storage Space,

Clip Info - data regarding the name of the chosen clip, total clip duration and In/Out points.

Transport Control - generic play controls affecting the selected clip includes PLAY Fwd, PLAY Rev, Play ¹/₂ speed fwd, rev, Pause.

Note: It is advisable to {Pause} when the clip is needed again because Stop will stop the clip from running, and has essentially emptied the contents of that channel, it is then necessary to Load and Cue the next clip. This will set the new clip to the marked In point.



Edit In / Out Points - the currently stored In and Out points for the currently loaded clip. Using the attachers and Snap/Normal buttons it is possible to scroll through the clip to re-assign a new In or Out point.

Note: Pressing and holding the Snap Normal button on the GUI brings up the internal popup number pad, for the inserting of Time Code

Length - total duration of the currently loaded clip

Timecode - current Timecode of loaded clip

Play Rate - controls the playback speed of the clip

Save In/Out - saving the In and Out points will save to the server. Editing a clip and re-saving will overwrite the original In/Out points. The action will be validated then Save - this ensures that a clip will always start on field 0 when using Interlaced standards, it is a requirement of the EVS that a clip begin on field 0 and end on field 1.

MOD

Mixer Setup				Peripherals - AVSP Play	HDD
	Key 2				
Key 3	Key 4		Edit	Save In/Out	Slot Popup
Mixer	Util/Misc		In Paint 00.00.00.00 •		4: EVS AVSP Snap
Effects Memories			Out Point 00:00:00:00 Length 00:00:00:00		V Normal
DMEM	Macro	Refresh Server Data	Timecode 00.00.00 00	Mark In Mark Out	Standard Popup
Sto	ore	Server Info Standard 1080/59.94	Transport Control	ReCue Load & Cue	1080i/59.94 Snap
System Configuration		Cip Num 0 Free Size 00:00:00:00	Play Slow Stop	Slow Play	1035i/59.94
Crosspoints	Aux Buses				
User Config	Panel Config	Clip Info	Multi Channel		Name Popup
Filing System	Peripherals	in 00.00.00.00			Snap
Shortcuts	Eng Config	Length 00.00.00.00			Normal
6		Play Mod	Record		
A BELDEN BI MASTERP 12G		Panel Lock	Macro Clone Cl	ste back Up Forward Tracking	

The Play Rate parameter in this menu means that it is possible to Modulate the play rate. Modulators can be attached to this parameters in the usual fashion.

RECORD

Recording will create a stream of footage within the selected server, additional recordings are appended onto the end of the stream.

Mixer Setup			Peripherals - AVSP Record	HDD
Key 1	Key 2			
	Key 4		Record Create Clip	Slot Popup
Mixer	Util/Misc		Cipin Port acacaca	4: EVS AVSP Snap
			Timesode 00.00.00	V Normal
Effects Memories			Stat Time 00.00.00 ●	
DMEM	Macro	Refresh Server Data	Refresh List	Standard Popup
Sto	ore	Server Info	Transport Control	
		Standard 1080/59.94	Stop	1080i/59.94 Snap
System Configuration		Free Size D3:03:03:00		Normal
Crosspoints	Aux Buses			
User Config	Panel Config	Clip info	Multi channel	Name Popup
Filing System	Peripherals	ln 02.02.02.00		Snap
Shortcuts	Eng Config	Out 00.00.00.00 Length 00.00.000		Normal
	Config			
		Play Mod	Record	
6				
A BELDEN B	RAND	Panet	rdo Quick Copy Paste ↓ Up → Disable	
MASTERP 12G			Macro Copy Paste Back Menu Forward Tracking 6641	

Ensure the "Rec" channel(s) is selecting a video source that is running in the same video standard as the server, it may be useful to route this source and the record channel to a monitor, to be certain that pictures are actually being recorded. The EVS can be set to record from ME Opt's or directly from external sources.

Start Recording

Select the correct "Rec" channel from the top section, then give the Clip a name (it is advisable to give the recorded clip a name as the EVS generates a random number that is not easily remembered), press the **{Rec}** button, record until satisfied, then Stop

Finally press {Create Clip} and the Clip will be saved to the server and appear in the Clip List

Now it is possible to go back to the Play menu and Edit the In and Out points of the newly recorded clip.

Delete Clip - will delete the recorded clip

Odetics Control

Odetics protocol is a serial based protocol, that will allow Masterpiece to control external equipment such as disk servers.

Using Odetics Control



Controls and Parameters

Slot - selects the serial port that is connected to the external equipment

Select File - selects a file by name

Loop Count - when a file is set to play, if the **{Loop}** button is touched, the **Loop Count** parameter can be set to play the file; Forever or from 1 time up to 100 times then stop.

Mark In / Out Points - the currently stored In and Out points for the currently loaded clip. Using the attachers and Snap/Normal buttons it is possible to scroll through the clip to reassign a new In or Out point.

{NDF} - Non-Drop-Frame format

{DF} - Drop-Frame format

The difference between the two is that with Drop-Frame format the frame address is periodically adjusted (once every minute) so that it exactly matches real time (at the 10 minute mark), while with Non-Drop-Frame format the frame address is never adjusted and gets progressively further away from real time

File List - this table displays all available files external tape or equipment

No of Files - total number of files in the File List

Free Space - displays the free space left on the external equipment disk

Select File - allows the user to select a file from the File List

Refresh File List - refreshes the file list after file had been deleted or added.

AMP Control

AMP protocol is an IP Based control structure, it will support 4 channels (VTR1, VTR2, VTR3, & VTR4) in a single device, and also supports multiple devices over different IP Addresses.

Note: Name the device as required e.g. Server1, this name will appear wherever the user needs to select it.

Note: If the server is not on a local network, an IP Gateway will be required

Using AMP Control

Masterpiece can manage Folder (Bin) selection; set In and Out points, as well as the Standard VTR type commands. It is recommended that Macros and/or Clones are used to assign these controls to the main control surface.

Mixer Setup						Perip	herals - AMP Fi	le List			HDD
Key 1	Key 2										
	Key 4	6 Folder Names								Slot	Popup
Mixer	Util/Misc									6: AMP Ip	Snap
										V	
Effects Memories											
DMEM	Macro									Folder Name	Popup
	tore									^	
		No. of Folders	0	Re	efresh						Snap
System Configuration	on	Na of Clips								V	
Crosspoints	Aux Buses	CipName		Load &	& Cue Clip						
User	Panel									Clip Name	Popup
Config	Config										
Filing System	Peripherals										Snap
Shortcuts	Eng Config									V	
6		File Lists Play / I	dit	Record							
G				Quick	Сору			^			
ABELDEN	BRAND	Panet Lock	ndo Redo	Macro	Copy Clone		+ Back	t Up	Disable Tracking		
MASTERI 12G			rmal Mod- Assign	Macro Record	Сору			Menu 6612			

The **Peripherals** - **AMP File List** menu allows the user to set the VTR that is being controlled (green button at the top of the menu) and setup the working Folder Name and Clip Name lists.

Note: Each VTR can be set to contain different Folders/Clips.

The **Clip Name** table displays all the clips in the current working folder on the server. **{Refresh}** button will refresh the Folder and Clip tables (e.g. if another controller adds a new Folder/Clip).

Note: Masterpiece uses the Folder Name and Clip Name for reference.

{Load & Cue Clip} button will load and cue the currently selected clip to the currently selected VTR.

AMP Play/Edit Clip

The **Play/Edit Clip** menu allows the user to set In/Out points for the currently selected VTR and clip, setting the In/Out points can be done either by using the VTR command buttons to position the clip then press the **{Mark In}** or **{Mark Out}** buttons, or by direct input using the In and Out parameter controls.



To assert the In/Out points, press the {Load & Cue Clip button}. To make a Macro that will Cue a clip and assert In and Out points, set the Clip as described above, once happy with the Clip, including its In/Out points, press [MACRO REC] button on the GUI.

Next, press **{Load & Cue Clip}** button, then press **[MACRO REC]** to stop recording the macro. The macro will now Load and Cue the selected Clip in the Macro main menu. View the macro and notice that it has stored the **Clip Name** and **In/Out Points**.

AMP Record

Masterpiece can also be used to set-up the Record VTR (Channel).

Mixer Setup					Peripherals - AMP R	tecord			HDD
Key 1	Key 2								
Key 3	Key 4							Slot	Popup
		Record Clip		Channel Settings					
Mixer	Util/Misc			Timecode Mede	Timer LTC MTC			6: AMP Ip	Snap
MIXEI	Outomise	Start Timecode	00.00.00.00	Orop Frame	Cff Cn				Shab
		Dutation	00:00:00:00						Normal
Effects Memories		Timecode	00:00:00:00		Record Cue				
DMEM	Macro							Start Timecode	
									Popup
St									
								00:00:00	Snap
System Configuratio									Normal
Crosspoints	Aux Buses								
User	Panel							Duration	Popup
Config	Config								
Filing System	Peripherals							00:00:00:00	Snap
	Eng								Normal
Shortcuts	Eng Config								
			dit	Record					
6									
		Panet		uick Copy acro Clone					
MASTERP 12G		Lock		acro cord Copy	Paste	Menu 6611	Tracking		

The record VTR/channel is set on the K2 server. To set the **Clip Name**, and **Timecode** press the **{Record Cue}** button.

Nexio Server - AMP Protocol

Nexio Server is an Ingest and playback server supporting HD and 1080p formats. Masterpiece is able to communicate with Nexio via the AMP protocol over RS422 or IP Client transport types.

Nexio Play Menu

The **Nexio Play** menu allows the user to select files in the playout File List, set In/Out points for the currently selected file, setting the In/Out points can be done either by using the VTR command buttons to position the clip then press the **{Mark In}** or **{Mark Out}** buttons, or by direct input using the In and Out parameter controls.

Once the protocol is activated, Masterpiece will automatically download the file list from the Nexio server. Touching the title bar of the **File List** will sort the files by Server, by Name, or by Date. (By Server means it is in the order that the Nexio server sends to Masterpiece).

Control Channel is the channel for the transport commands to the Nexio server (play, stop, pause etc.). The control channel will initially set to the highest channel number for the server (i.e if it is a 4 channel server, it will set to 4 at start). If the user needs to change the control channel, change it before pressing **{Load & Cue}**.

The **Sync Channel** is the channel that follows the control channel i.e. if Sync Channel 1 is the Fill channel and Sync Channel 2 is Key channel, the user can set Control Channel for the transport commands to 1 and Sync Channel to 1&2, so the Key channel will always follow the Fill. channel.

If there is no need to edit the In/Out points, Masterpiece will use the first/last frame of the clip as the In/Out points; if the user needs to trim the clip, set the In/Out points then press **{Load & Cue}**.



Note: It is recommended to setup the loop play parameters before doing a {Load & Cue}.

Select a file in the File List, press the {Load & Cue} button and the file will show in the "Loaded File" window. User the In Point and Out Point parameters to set the Mark In/Out points as required.

Select the transport command Control Channel, and then select the Sync and then press the Play button.



Touch the "Playout" attacher at the bottom of the menu, here the Play Rate parameter can be adjusted and the file set to "Loop" a set amount of times or forever if required.

Mixer Setup						Peripheral	ls - Nexio Play			HDD
	Key 2			Refresh Li	st		Record			
Key 3	Key 4			Name					In Point	Popup
				Stat		00:00:00:00				
Mixer	Util/Misc			Duration		00:00:00:00			00:00:00:00	Snap
				Rec Date		1900/00/00				Normal
Effects Memories				h Poirt		02:02:02:02	Mark In			
DMEM	Macro			Dut Point Loaded File		00:00:00:00	Mark Out		Out Point	Popup
St	ore			LaideoFile						
		Control Channel 1 2		7 8 Loa	d & Cue Eject	Playout No	Yes		00:00:00:00	Snap
System Configuratio		Sync 1 2		78			0.00.00			Normal
Crosspoints	Aux Buses	Play S	low Stop ◀ ■	Stow	PLay	Play Rate	LCO •			
User	Panel		II		►		Forever 🔹			
Config	Config		`							
Filing System	Peripherals									
Shortcuts	Eng Config									
G										
			Undo	edo Quic Maci	k Copy ro Clone	e Paste Clone				
A BELDEN B MASTERP 12G		Panel Lock		lod- isign Reco			Back Me	- Disable		

The **Playout Yes/No** indicates what the control channel is capable of doing, i.e. if you have selected a control channel that is a Record Only channel, it will have Playout No in the window, then none of the playout transports will work

To jump to a particular frame in a file, set the **Timecode** to the frame and press **{Play}**.

Nexio Record Menu



Select the correct **Control** and **Sync Channels**, then give the file a name for playout identification. Set the record **In Point** and **Out Point** and then press the **{Record Cue}** button.

Once happy with the settings press the **{Rec}** button and recording will commence.

Audio Mixer

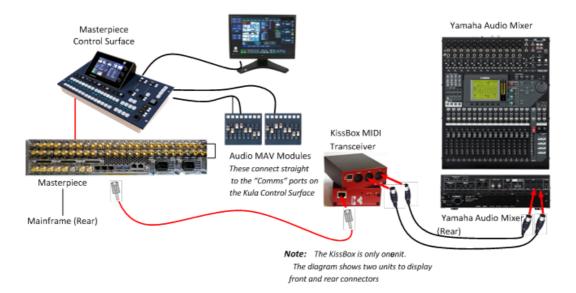
Masterpiece is able to control functionality on a Yamaha (01V96) Audio Mixing desk. Some of the functionality includes:

- Map MAV Audio Module faders to correspond with the Yamaha Mixer Faders.
- From MAV Audio Module:- Turn Audio On/Off per channel/Audio Fader off (unassigned).
- Channel Fader position set/modified from start point.
- Allow Yamaha panel override of Audio Faders separately from MAV Audio Module.
- Transition to Air Time & Delay.
- For Audio Follow Video, Audio Channel assigned to Mixer Input and set/learn levels on source selection.
- Audio Follow Video Override.

What is Required

- Masterpiece Control Surface.
- Masterpiece mainframe
- Touch screen monitor
- Yamaha Audio Mixer from list above (we tested the 01V96)
- KissBox CM-MIDI MIDI transceiver for RTP-MIDI networks (this is the one that we have tested. Other makes may be compatible).
- Ethernet cable from Masterpiece Mainframe to KissBox
- 2x MIDI to MIDI cables (from KissBox to audio mixing desk)
- Laptop/desktop computer (initial setup of KissBox IP address)

Connection Diagram



Note: Before connecting the hardware (as shown above), the KissBox IP address has to be set so that the Masterpiece mainframe can communicate with it. The following section will describe how this is done.

KissBox Setup

The KissBox editor software which comes with the product has to be installed on the laptop/PC being used to set the IP address. Install the "KissBox_Editor_Win_11_0_0". Unplug the laptop/PC from any network being used (this is to stop any network IP address conflicts).

Configure the laptop/PC so that it is on the same network as the KissBox, as shown below. Click on "OK". The network settings can be found in the "Control Panel\Network and Internet\Network and Sharing Center\Local Area Connection\Properties\Internet protocol Version 4(TCP/IPv4)"

		_		-		-		
u can get IP settings assigned a is capability. Otherwise, you nee								
r the appropriate IP settings.								
Obtain an IP address automa	tically							
Use the following IP address:								
IP address:	172	2.	28	•	7		18	
Sybnet mask:	255	5.	255	;	224		0	
Default gateway:	172	2.	28		1	•	6	
🕐 Obtain DNS server address a	utomatical	ŀν						_
Use the following DNS server		۰.						
Preferred DNS server:	1							
Alternate DNS server:				•		•		
Valjdate settings upon exit					6	4	d <u>v</u> an	ced
					-			

Start up the KissBox Editor software, then in the "Add KissBox manually" area of the KissBox Editor menu, type in the IP address of the KissBox and click on "Add Box". The menu will now look like the one below:

Network Upload firmware About	
DM-MIDI @172.28 20.244	Box Properties
MIDI IN/OUT 1 (Port 5004) MIDI IN/OUT 2 (Port 5006)	Application type: RTP-MIDI (Single/Dual) Firmware version: 1.1 Vendor ID: 1 (Kiss-Box) MAC Address: 00.E0.68.7E.FF.C1
	Vetwork configuration
	KissBox address 172 28 20 244 TCP Port N/A
	Subnet Mask 255 255 224 0 TCP Mirror Port N/A
	Bateway address 172 28 1 6 UDP Port N/A
	Deold Contract Contract Development
	🕐 Restart Box 🔍 Monitor 🥻 Clear log
	Trying to connect to Kiss-Box 172,28.20.244
	Kiss-Box at 172.28.20.244 found
Scan network	
🏤 Start scan 🛛 😗 Abort scan	
	1
From 192 168 0 0	
From 192 168 0 0	
From 192 168 0 0 To 192 168 0 254	
From 192 168 0 0 To 192 168 0 254	

Change the IP setting in the "Network Configuration area of the menu to match the required IP network and click on "Upload". Then re-start the KissBox.

Change the laptop/PC network configuration back to the required network. Type the new KissBox IP address into the "Add KissBox manually" area of the menu, then click on "Add Box". You will now see the updated network configuration.

Setup the Yamaha (this example 01V96i) Audio Mixer to communicate with the KissBox

From the MIDI connectors on the back of the back of the KissBox, connect a MIDI cable from the "MIDI IN" port on the KissBox from the "MIDI OUT" on the Yamaha mixer. Connect a MIDI cable from the "MIDI OUT" port on the KissBox from the "MIDI IN" on the Yamaha mixer, (as shown in the diagram on page 1).

Power up the Yamaha audio mixer, then using the LCD screen on the Yamaha mixer, navigate to the "DISPLAY ACCESS - DIO/SETUP - MIDI HOST" menu and select "MIDI" for both the "Rx Port" and the Tx PORT".

CH1-CH1 OO Initial Do	ata BISTI 1 STI 2 STI 3 STI 4 STI 1 STI 2 STI 3 STI 4
(MIDI/TO HOST SETUP)	
GENERAL	SPECIAL FUNCTIONS
R× PORT MIDI -	StudioManager
TX PORT MIDI -	DAN ()()
MIDI THRU	REMOTE ProTools
	CASCADE LINK []
MACHINE CONTROL	
MMC () (REQUEST
💵 MIDI/HOST 🗸 MONITOR	A REMOTE A MACHINE A ▶ 18

Next, go to the "DISPLAY ACCESS - MIDI - SETUP" and set: CHANNEL - Tx to 1 and Rx to 1 PARAMETER CHANGE - Tx to ON and Rx to ON Fader Resolution: HIGH All other options need to be set to OFF.

MI CHI MIDI		Initial D Econo D				
		Τ×	R×	OMNI	ECHO	_
	CHANNEL	1		-	-	-
	PROGRAM CHANGE	OFF	OFF	OFF	OFF	-
	CONTROL	OFF	OFF	-	OFF	-
	PARAMETER CHANGE	ON	OH	-	OFF	-
1	BULK	-	OFF	-	-	-
	OTHER COMMANDS	-	-	-	OFF	
•	Fader Re:	solution:	HIGH	LOH		-
	SETUP	PGM ASGN	A CTL	ASGN 👗	BULK	

Peripherals Setup

Touch the {Peripherals} menu button, then in the Peripherals main menu, touch the **{Audio mixer...}** menu link button.

In the "Audio Mixer" menu, use the "Fader Module Assign" parameters to assign the MAV-Fader modules to the "Protocol Slot" this will allow the MAV-Faders to work with the Yamaha Audio Mixer.



Use the protocol "Source" parameter to map the protocol sources to the Yamaha Inputs, Auxes, Buses, Groups etc.

See the "Protocol Source Mapping" tables at the rear of this document as a reference.

Mixer Setup								Periph	ierals - Audio	Mixer		HDD
Key 1	Key 2	Fader Map								Stat	Module	
Key 3	Key 4	Fader 1 Fader 2	Out Out Out	1 Un	Type Cut assigned On assigned On		3			Madule 1.8		Рорир
Mixer	Util/Misc									Bitter Oit •	1-8 9-16	Snap
Effects Memories										Source 2 Type Linessigned		Normal
DMEM	Macro									Out On PEL Off On	Pavier	Рорир
St	ore									Level int dB	Fader 1 Fader 2	Snap
System Configuratio	n									Follow Video		Normal
Crosspoints	Aux Buses									Configure		
User Config	Panel Config									Fader Module Assign Group Protocol Stat	Button	Popup
Filing System	Peripherals									Morer Bank A & Calvec	Cut PFL	Snap
Shortcuts	Eng Config									Group Mixer Bank A		Normal
C				-					-	Protocol Sict & Calmo • Assign Faders		
	IRAND			Undo		Quick Macro	Copy Clone	Paste Clone		↓ Up → Disable		
MASTERP 12G			ock	Normal	Mod- Assign	Macro Record	Сору	Paste	Back	Menu Number		

Assign a fader type in the menu (MAV-Audio Fader) for each fader to enable the Yamaha communication.

You should be able to slide faders via the Visual or Fader Module and see corresponding faders move on Yamaha Audio Mixer for communication test.

Mixer Setup								Periph	erals - Audio	Mixer	
Key 1	Key 2	Fader Map								Sizt t: Yamaha 🔒	
		Fader	Button	Source	Type Cut	PFL Level	Label				Slot
Key 3	Key 4	Fader 1	540 100		Channel On	011 -in1 dB 011 -in1 dB				Module 1-8	Popup
		Fader 2 Fader 3	Cut		Channel On Channel On					Fader 8 😐	
Mixer	Util/Misc	Fader 4 Fader 5	0.t		Channel On Channel On	011 -inf dB				Button Og 🗢	1: Yamaha Snap
		Fader 5 Fader 6	Out		Channel On	011 -int d9				Button Cut +	
						011 -inf dB					V Normal
Effects Memories		Fader 8			Channel On	Off 4nl dB				Type Channel	
Омем	Macro										Module Popup
St	ore									Level int da	1-8 Snap
		AFVO	AFVO	AFVO	AFVO	AFVO	AFVO	AFVO	AFVO	Follow Video	9-16
System Configuratio										Configure	Normal
Crosspoints	Aux Buses									Fallow Video 01	
User Config	Panel Config									Fader Module Assign Group Protocol Slot	Fader Popup
Filing System	Peripherals									Fader Bank 8 1: Yamaha	Fader 8 Snap
Shortcuts	Eng Config									Group Fader Bank, B	Normal
G		ļ								Protocol Six 1: Yamaha Assign Faders	
	PAND		Panel	Undo		Quick Macro	Copy Clone	Paste Clone		t Up → Disable	
MASTERP 12G				Normal	Mod- Assign	Macro Record	Сору		Back	Menu Number	

Parameters:

Slot - this relates to the protocol setup slot that the Yamaha protocol was assigned to in Eng Config - Protocols.

Module - this relates to the GIU on the Masterpiece control surface. The first being 1-8 which relates to the faders on the MAV-Audio Fader module.

Fader - relates to the Faders on the selected (Module) MAV-Audio Fader module.

Button - this selects one of the 4 types of buttons above the fader sliders in the menu. The buttons are:

- Cut this will cut the fader On or Off.
- PFL (Pre Fade Listen), this displays if the "PFL" function is set or available to use. PFL allows the user to listen to the channel's audio at a point before the fader takes effect.
- AVFO (Audio Follow Video Override), this is an audio sources that is associated with a video source which can be linked in the Fader Map.
- Learn this allows the button to copy a button function from the audio mixer.

Source - this is the Protocol Source that is mapped to the audio mixer's Inputs, Aux, Buses etc. (see the Protocol Source map table at the back of this document).

Type - this sets the type of audio fader control in the menu, see below (Unassigned means that no fader type is selected).

Type - Channel



Type - VCA Master



Type - Track



Type - Group



Type - VCA Main



Audio Mixer Parameters Continued:

Cut - On/Off. This displays if the "Cut" function is set or available to use.

PFL (Pre Fade Listen) - On/Off. This displays if the "PFL" function is set or available to use. PFL allows the user to listen to the channel's audio at a point before the fader takes effect.

Level - this is the fader audio level; the level is default at 0dB, with a range of - infinity to 10dB.

Follow Video - On/Off. Touch the {Configure...} menu link button at the top of the menu to go to the Audio Follow Video menu.

The Follow Video Menu Allows the user to map a Crosspoint to a Yamaha audio mixer Source. When the Tally Now is configured (Eng Config, Output Setup, Tally) Any Crosspoint that goes to air, the assigned protocol audio source will also go to air. If there is no transition time, the audio faders will use the quick crossfade cut buttons to follow, otherwise they will follow the transition time to air. The user can also set a transition delay, which delays the time for the audio source to go to air after the crosspoint has gone to air.

Audio Follow Video Configuration Test

In the Peripherals - Audio Mixer menu, touch the {Configure...} menu link button to open the "Audio Follow Video menu.

Mixer Setup							Peript	nerals - Audio	Mixer		HDD
Key 1	Key 2	Fader Map							Sict & Calvec		
Key 3	Key 4	Fader Butt Fader 1 Ou Fader 2 Ou	t 1 L	Type Cut Inassigned On Inassigned On	PFL Level On -inf di On -inf di	1			Madule 1-8		Popup
Mixer	Util/Misc								Button Du .	1-8 9-16	Snap Normal
Effects Memories									Type Unassigned •		
DMEM	Macro								Out On PFL Off On	Fader	Рорир
St	ore								Level irr dB •	Fader 1 Fader 2	Snap
									Follow Video		
System Configuratio	n Aux Buses								Configure		Normal
User Config	Panel Config								Fader Module Assign Group Protocol Slot	Button	Popup
Filing System	Peripherals								Mixer Bank A B. Calrec	Cut PFL	Snap
Shortcuts	Eng Config								Group Mixer Bank A		Normal
C					ļ	ļ	ļ	ļ	Precocct Site: & Cairec Assign Faders		
	RAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		↓ Up → Disable		
MASTERP 12G	PIECE	Lock	Normal	Mod- Assign	Macro Record	Сору	Paste	Back	Menu Number		

Again in this menu use the "Protocol Source" parameter to map a "Protocol Source" to the Masterpiece Crosspoint.

See the "Protocol Source Mapping" tables at the rear of this section as a reference.



To see a Fader Move set the "Trans Time" to video standard field rate and greater (less than field rate will act as a quick crossfade cut on/off).

	Key 2						Peripherals - Audio Fo	llow Video				
Key 3 Ke		Crosspoint to P	rotocol Source	Мар								
Key 3 Ka			Crosspoint				Protocol			Trans	Time	
	Key 4		Source	Name	Source		Trans Time	Delay Time	Non Mute Level			Popup
Mixer Util	il/Misc			BNC 10			00.00	02.00	⊰in1 dB		00;00	Snap
		Xpt 11 Xpt 12	Input 11 Input 12	BNC 11 BNC 12	11 12	Cut Cut	00:00	0200	inf dB inf dB			Shap
		Xpt 12 Xpt 13	Input 12	BNC 13	12	Úr.	00:00	0000	-int dB			
		Xpt 13 Xot 14	Input 13	BNC 14	13	Or Or	0000	0000	-m cB			Normal
		Xpt 15	Input 15	BNC 15	14	0,0 D.t	0200	0200	-inf dB			
fects Memories		Xot 15	Input 15	BNC 15	15	O/I O/I	0200	00.00	-ini dB			
		Xet 17	Input 10	BNC 10 BNC 17	Nate	Out	0200	00:00	-inf dB			
DMEM Mi	4acro	Xat 18	Input 18	BNC 17 BNC 18	None	Out	00.00	00.00	-inf cB	Delay	Time	
		Xat 19	Input 19	BNC 19	None	Ort .	00:00	0200	-inf dB	Detay		Popup
		Xat 20	Input 20	BNC 20	Note	O,t	02:00	02.00	-inf dB			
Store		Xot 21	Input 21	BNC 21	Note	Ort	0300	02.00	-inf dB			
5.010		Xot 22	Input 22	BNC 22	Note	O/I	02.00	00.00	√n1 dB		00.00	
		Xet 23	Input 23	BNC 23	None	Out	02.00	00.00	-ini dB		00;00	Snap
stem Configuration				B. Calroc 💿								Normal
	Aux			B Carlos								
	Buses			XPT 16								
User Pa	Panel			16 •						Non Mut	e Level	Popup
Config Co	Config			02:00								
Filing System	pherals			00:00 😐							-inf dB	Snap
system				-inf dB 😐								
Shortcuts E	Eng Ionfig		Dff 📃	Dn								Normal

Set the desired non muted level for each Crosspoint.

Key 1							Peripherals - Audio F	ollow Video				
	Key 2	Crosspoint to Pr	otocol Source	Мар								
										Tran	s Time	
Key 3	Key 4		Source	Name	Source		Trans Time	Delay Time	Non Mute Level			Pop
				BNC 9			00:00	02.00	-inf dB			
Mixer	Util/Misc	Xpt 10	Input 10	BNC 10	10	Cut	02.00	00.00	-inf dB		00;00	Sr
		Xpt 11 Xpt 12	Input 11	BNC 11 BNC 12	11	Out Out	00:00	0200	int dB			
		Xat 13	Input 12 Input 13	BNC 12 BNC 13	12	Uit Ort	00:00	00:00	-int dB			
		Xot 14	Input 14	BNC 14	14	O.t	02.00	02:00	-inf dB			No
		Xot 15	Input 15	BNC 15	15	Ort	02.00	0200	-inf dB			
ts Memories		Xot 15	Input 15	BNC 16	15	Dr.	02.00	00.00	-inf dB			
		Xet 17	Input 17	ENC 17	None	Out	02.00	00.00	inf dB			
DMEM	Macro	Xct 18	Input 18	ENC 18	None	Out	00.00	00.00	-inf dB	Dela	y Time	
		Xat 19	Input 19	BNC 19	Nate	Out .	00.00	00.00	-inf dB			Po
		Xat 20	Input 20	BNC 20	Note	0,t	02.00	02:00	-inf dB			
Ste	ore											
		X,01.22	Input 22	ENC 22			00.00				00;00	
											00,00	S
m Configuratio		Slat Crosspoint	_	B: Celroc								No
	Buses	Protocol Source		16						N 14	ute Level	
User Config	Panel Config		-							Non M	Jie Level	Po
Filing		Trans Time Delay Time	-	0200							-inf dB	
System	Peripherals	Nan Mute Level		-int dB							-III UB	
Shortcuts	Eng	Follow Video	Dff	Dn								No
Shortcuts	Eng Config		Dff									

On the Masterpiece GUI, touch the "arrow up" button to get to the "Top" menu. Touch the {Defaults...} menu link button. In the "Defaults" menu, touch the {Engineering Config...} menu link button.

The menu now displayed is the "Engineering - Config" menu. Touch the {Output Setup...} menu link button and in the menu, ensure 'Tally Now' is on for desired BNC O/P.

Cutting along the desired bus will trigger the fader to crossfade to non muted level as Crosspoint goes to air.

Additional Functionality using the Yamaha Audio Mixer menus

MIDI Protocol Control Features

- Inputs 1 to 32 Fader and Cut Button Control Split over 2 layers (Layer 1 and Layer 2) -Masterpiece Fader Protocol Source {1 - 32}
- Aux Outputs 1 to 8 Fader and Cut Button Control Master Layer Masterpiece Fader Protocol Source {113 - 120}
- Bus Outputs 1 to 8 Fader and Cut Button Control Master Layer Masterpiece Fader Protocol Source {129 - 136}
- Stereo Inputs 1 4 Visual Fader and Cut Button Control ST IN 1/3, ST IN 2/4 Masterpiece Fader Protocol Source {33,34} {35,36}, {37, 38}, {39, 40}
- Input and Output Master Fader Group Visual Fader and Cut Button Control (can be mapped to a physical remote fader layer as a user assignable layer)

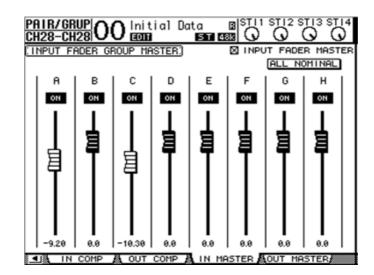
On the Yamaha Audio Mixer user interface, press the DISPLAY ACCESS [PAIR/GROUP] button and select IN FADER or OUT FADER Menu, to set Fader Input Master Group (A-H). For Input Channels 1-32 and Output Master Group (Q - T) for Auxes 1 -8 and Buses 1 - 8.

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IN	PL	JT	_	ADE	R I	GR	00	_							_		INPL	л	FAC	ER	MASTE
	1	2	3	4	5	6	7	8	.9	10	11	12	13	14	15	16	1	2	ENF	BLE	MASTE
A.																				Ĥ	ØdB
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~																			_	c	ØdB
č.																			_)mnnn
D					***					•••									_	D	ØdB
E	****		***	***	***	***	****			•••	***	****			***	***	***			Ε	ØdB
F										•••	••••									F	ØdB
G																				G	ØdB
н																				н	ØdB
			19	20	21	22	23	24	25	26	27	28	29	38	31	32	3	4	ENE		MASTE
A																				A	ØdB
в																			_	8	ØdB
~																			_		hinnen
5	•		•••	•••	•••					•••	•••				•••	•••	***	••••	_	c	ØdB
D	•==•		•••			••••				•••	•••				•••	•••	***	•		D	ØdB
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G																				G	ØdB
ň																			_	н	ØdB
										••••	••••				•••	•••		••••		n	(VOD

Ensure that INPUT FADER MASTER or OUTPUT FADER MASTER is checked and the Desired LAYER is selected. Then press the [SEL] button for the channel you wish to assign to the group (data entry controls maybe useful here).

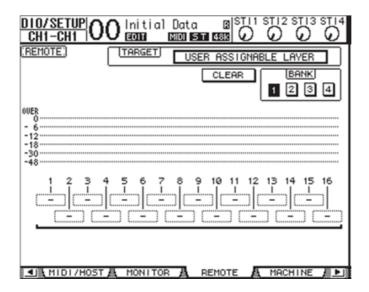
0	Ν				ADE																MASTER
_		1	ź	3	4	5	6	7	8	- 9	10	11	12	13	14	15	16	1	2	ENABLE	MASTER
F	а.				***															Ĥ	(ØdB)
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	2	۲	۲	۲	۲			۲	۲							۲	۲			C	(ØdB)
٦)	•••		••••			••••		•••						•••					D	(ØdB)
E	Ξ.	•••																		E	(ØdB)
F		•••																		F	ØdB)

The corresponding Protocol Sources for Masterpiece control of Fader Input Master Group(A-H) are {145 - 152} and Fader Output Master Group (Q - T) are {161 - 164}.



The Visual Fader can be mapped to a physical fader on the Yamaha desk by assigning to the remote layer.

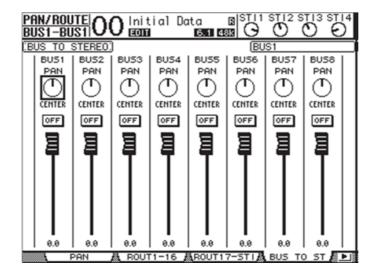
1. Select [REMOTE] Layer or DISPLAY ACCESS [DIO/SETUP] and set the Target to 'USER ASSIGNABLE LAYER' in Remote Menu.



2. Select the group channel you wish to assign to using the Parameter 1 - 16 boxes.

Bus Out (1 - 8) to Stereo Bus Visual Fader and Cut Button Control - Masterpiece Fader Protocol Source {177 - 184}.

Select DISPLAY ACCESS - PAN/ROUTING - BUS TO ST Menu or [MASTER] and DISPLAY ACCESS [VIEW] and [SEL] Bus for view.



Stereo Out - Fader and Cut Button Control - Masterpiece Fader Protocol Source {Main1, Main2}.

Masterpiece Protocol Source to Yamaha Input Map List

Input Map

Yamaha (01V96) Audio Mixer

Protocol Source

Main 2

Protocor Source	input wap
1	INPUT 1
2	INPUT 2
:	:
32	INPUT 32
33	ST IN 1L
34	ST IN 1R
35	ST IN 2L
36	ST IN 2R
37	ST IN 3L
38	ST IN 3R
39	ST IN 4L
40	ST IN 4R
Protocol Source	Aux Out Map
113	AUX 000 map
114	AUX 2
:	:
120	AUX 8
120	
Protocol Source	Bus Out Map
129	BUS 1
130	BUS 2
:	:
136	BUS 8
Protocol Source	Input Group Master Map
145	INPUT A
146	INPUT B
:	:
152	INPUT H
132	
Protocol Source	Output Group Master Map
161	OUTPUT Q
162	OUTPUT R
163	OUTPUT S
164	OUTPUT T
Protocol Source	Bus Out To Stereo Bus Map
177	BUS 1
178	BUS 2
:	
184	
	BUS 8

STEREO OUT R

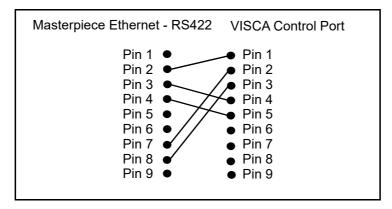
VISCA Robotics Camera Control

With the release of V1.3 software, Masterpiece can now use the VISCA protocol. Masterpiece is now able to control a range of robotic CCD cameras, with the ability of a remote pan/tilt/zoom operation.

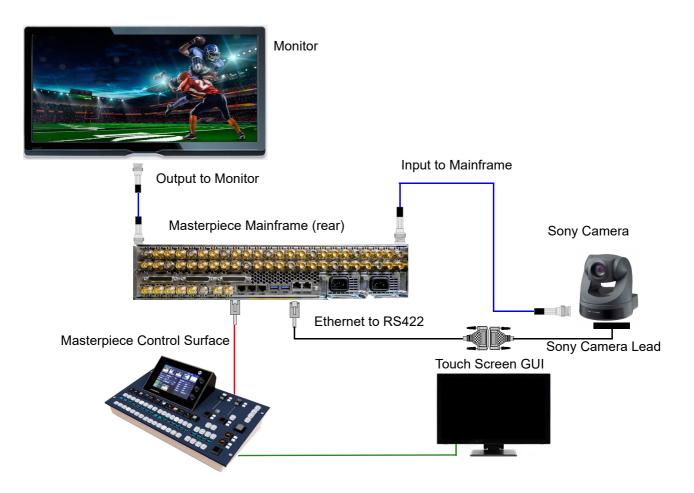
Masterpiece uses an RS422 (IP Client) port and VISCA protocol to communicate and control the device.

RS422 Cable Information

An Ethernet to RS422 cable with 9 Pin D-type connector at one end and a connector that suites the interface to the camera. (this example uses the Sony EVI-D70P camera) Use the following pin out information:



Connecting Masterpiece to the Sony Camera



Using the VISCA Protocol

Touch the **{Peripherals}** menu link button, then in the Peripherals menu touch the **{VISCA Robotics...**} menu link button.

Once in the VISCA Robotics menu, using the Port parameter select the RS422 port (named VISCA) that is connected to the camera, once connected, one of the camera control buttons will turn Blue with a number, up to 7 cameras can be connected.



Controlling the Camera

There are two ways to control the robotic camera:

Using the Pre-Defined Command parameter

Using the Masterpiece Control Surface joystick

Pre-Defined Camera Commands

The first method described here will be using the Pre-Defined camera commands in the Command parameter.



The pre-defined camera commands are selected by touching one of the commands and then pressing the Blue Camera button, the camera will then move and keep moving until a different command is selected.

Pre-defined Camera Commands

 Select Power On Power Off Pan Tilt Stop Tilt Up Tilt Down Pan Left Pan Right Tilt Up, Pan Left Tilt Up, Pan Right Tilt Down, Pan Left Tilt Down, Pan Right Pan Tilt Home Pan Tilt Reset Zoom Stop Zoom Tele (Standard) Zoom Wide (Standard) **Focus Stop** Focus Far (Standard) Focus Near (Standard) **Manual Focus** Auto Focus Auto/Manual Focus Shutter Reset Shutter Up Shutter Down Iris Reset Iris Up Iris Down Gain Reset Gain Up Gain Down **Brightness Reset Brightness Up Brightness Down Memory Reset**



Pan Speed and Tilt Speed parameters are only available when controlling the camera with predefined commands. When panning left or right, adjust the Pan Speed parameter using the GUI rotary control knob and the camera head will speed up or slow down. The same action is defined when using the Tilt Speed parameter.

Note: Pan, Tilt, Zoom and Focus can be used when using the pre-defined commands, but they will override the current Pan/Tilt/Zoom/Focus type commands

Saving Camera positions into the Camera Memory

The camera is able to store up to 16 different camera memory positions.

Move the camera to the required position, use the Memory parameter to select a memory position and then press Memory Set. If the memorized camera position is required in the future, select the memory location and then press Memory Recall and the camera will move to the memorized position.

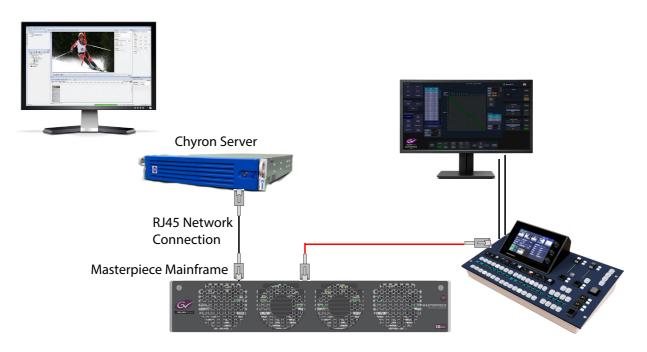


Chyron Control

Overview

Masterpiece is able to connect to Chyron graphics servers to load and play files. The Chyron system is also able to trigger a macro to run. Chyron has a dedicated protocol and control menu on Masterpiece.

Setup - Example of Masterpiece connecting to a Chyron System



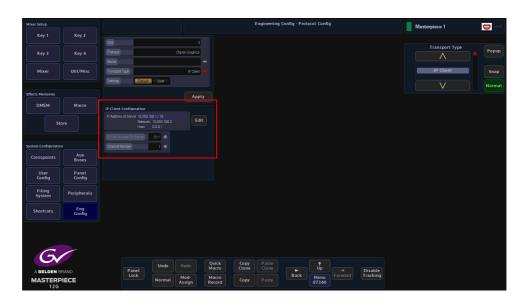
The Chyron server is connected to the Masterpiece mainframe.

Masterpiece Setup

In the "Eng Config" menu, touch the {**Protocols...**} menu link button.

Mixer Setup						Engineering	Config - Prote	ocols			Masterpiece 1		🝅 но
	Key 2												
Key 3	Key 4	Sage EAS LiveTouch	15	Sony ENVI-15 VTF Katura As EVVI-75 V		Unload	Transport Type			P Cient	Loaded Proto	col	Popu
		Diversouch Dixtel Automation Chyron Graphics		EWW-75 Timecode Res AMP Ip			IP Port Number			3811			
Mixer	Util/Misc			VDCP VDCP-Simple		Activate				1			Snap
				Odetics VDR Contro Kahuna As VDCP Video		On Off		tus		Pending			
fects Memories				EVS AVSP P-Bus NEXO Native				orver 10.250.160. Network: 11					
DMEM	Macro			Chyron Graphics LiveTouch							Protocol Ty		Рорг
	ore			LiveTouch Minipic									Fopu
30	ole										Router Playout		Sna
rstem Configuratio	in.										Editor		
Crosspoints	Aux Buses												
User	Panel										Available Prot	ocol	Рор
Config Filing System	Config Peripherals												Sna
Shortcuts	Eng Config												
		Input Setup Out	put Setup	System Config	GPO	IP Gateways	Protocols	Status Mo	nitor Format				
Gv		Panet	Undo	Redo Quick Macro	Copy Clone	Paste Clone	~	† Up	→ Disable				
A BELDEN B MASTERF 12G		Lock		Mod- Assign Record	Сору		Back		ward Trackin				

Select "Playout" in the "Protocol Type" parameter, then in the "Available Protocols" table, touch to select "Chyron Graphics" and then touch the {Load} button.



Touch the **{Configure...}** button to display the "Protocol Config" menu.

The "IP Client" transport type is default as "IP Client" and cannot be changed. Change the "Settings" parameter to "User" so that the "IP Client Configuration" parameters can be set, so that Masterpiece can communicate with the Chyron server. Enter the IP address of the server, and set the "IP Port Number on Server", then touch the **{Apply}** button. In the Protocols menu, touch the **{Activate}** button and the protocol is setup.

Macro Control

To allow Chyron to trigger a macro on Masterpiece, the "Macro Control" protocol has to be setup on Masterpiece.

			Engineering Config - Proto	cols Chaffinch AV HDD
Switcher Setup ME 1 Au	DSK	Loaded Protocols	Availate Presents Load Same Variable Presents Unit or additional state Same Variable Presents Configure_ Same Variable Presents Configure_ Same Variable Presents Configure_ Same Variable Presents Configure_ Same Variable Presents Activate	Ladded Protocol Popus 1224 0 2 5nap 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Effects Memories DMEM Macro	GMEM Store			Protocol Type Audo Miscellaneous Snap
System Configuratio	Aux Buses			Available Protocol
User Config Filing System	Panel Config Peripherals			Popup 1 Snap
A BELDEN B	RAND	Input Setup Undo Redd Normal Mod	Quick Copy Paste Macro Cone tup Macro Cone Back Menu	Monitor Format Fusion

In the "Protocol Type" parameter, select "Miscellaneous", and in the "Available Protocols" table select "Macro Control" and touch the **{load}** button.

Touch the **{Configure...}** menu link button and in the Configure menu, select "IP Server" and select the correct port number and touch the **{Apply**} button.

In the "Protocols" menu, touch the {Activate} button to activate the protocol.

Peripherals - Chyron Control

Touch the **{Peripherals}** menu button and then in the "Others" column, touch the **{Chyron Control...}** menu link button.



Once connected to the Chyron server, the "Scene List" will display the available clips/files that can be loaded and cued ready to play. Once the clip/file has played you can either select a different clip to load and cue ready to play or re-cue the last clip played. If there is embedded audio with the clip, the audio can be muted.

Chyron Triggering a Macro on Masterpiece

The Chyron User Interface can be set to trigger a Macro on Masterpiece.

ChyronHego Prime 3.1.3.82 Scene Designer -		CHYRONHE
File Edit View Window Tools C		the second se
Project WXXV2015	Canvas E Control Panel S Scripting	Program 2 (BNC) - Layout Default -
oolbox Scenes Transitions		🛞 World 📖 Auto Select Properties Events
Graphics	1240 1480 1720 1960 1 1200 1 1440 1	1680 1 1920 1 C Message 1
A Text 🔚 Image		
Clip 🔛 Video Input		Connection
Group Model		Туре
Rectangle 🗍 Cube		Address 172.28.20.30
Circle O Sphere		Port 1234
Pod Cylinder		
Polygon 💧 Cone		Encoding US-ASCI
§ Freehand Ø Tube		- Data
Effects Align Auto Follow		Header
Auto Spacing Blur		Terminator
Camera Character		
Crawl Crop		♦ Message
Grid Oran		MTR01,022
Inline Text V Light		
LUA Script Mask	Parameters / Expressions	×
Scene Tree		0
*abledax	X the Expressions Name Type Value	Bindings
Co Objects Effects		
MACROLEAST		
🔺 🖏 Scene Group 🛄		
(Empty) A Presources		
Message 1		
All Parameters		
Conditions		
Replaceables	Timeline	X Key rame
Control Panel Button 2	Default PlayTrigger 👒 Add Action	PlayTrigger
ab Button 1	Action 🦻 🙀 🍽 Triggered By (2) 🌔 📰 🚺 📢 🕪 🕅 Keyframe Zoom 🖌	P P ** Barne Keyframe 1 Frame 00:00:00.00 P
E Scripting	Animition 0.00 1:00 2:00 3:00 4:00 5:00	riggers
	4 Message 1	6:00 7:00 A roperties
	Triggers	Name Value In Out
12		Message Value In Out
La		
La		message
La		merraña.
La construction of the second s		uncraže

In the "Connection" area of the menu (above top right), enter the IP address of the Masterpiece mainframe and the same "Port Number" as was set when setting up the Masterpiece protocol menu. Then set the "Encoding" parameter to ASCII.

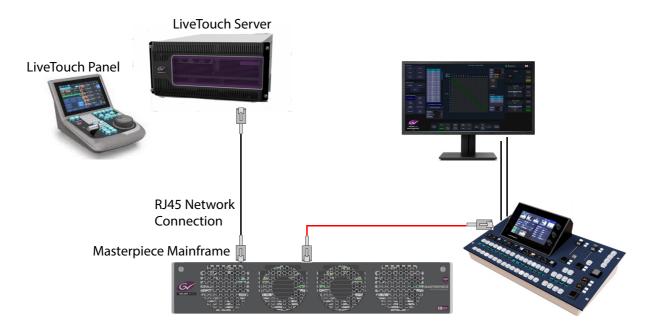
In the "Message" window, type "MTR01, (number of macro) i.e. 022. This will trigger macro 22 in the Masterpiece mainframe.

Note: Chyron will only Flash 1 or trigger the macro once on Masterpiece and then cut the connection.

LiveTouch

Masterpiece is able to connect to a LiveTouch server and load, cue and play files.

Setup - Example of Masterpiece connecting to a LiveTouch System



Protocol Setup

In the "Eng Config" menu touch the **{Protocols...}** menu link button. Scroll through the "Protocol Type" list until you get to "Playout".

Mixer Setup						Engineerin	g Config - Prot	ocols				Masterpiece 1		😇 HDD
Key 1 Key 3	Key 2 Key 4	Loaded Prot Sage EAS UveTouch	ocols	Available Protoco Sony BAN-35 VT Kishuna As BW/35 BW/35 Timepodens	R VTB	Load Unload	Name Transport Typ IP Port Numbe	_		IP Q	- ient 80	Loaded P	rotocol	Popup
Mixer	Util/Misc			AWP to WDCP VDCP-Simple Doktics VDR Cont Kehune As VDR Cont EVS AVSP		Configure Activate On Off	Channel Connection St	ióus 🛛		Connected (D	1			Snap Normal
	Macro			P.Bus NEBUD Native Chrysta Graphica Livel auch Livel auch Minip			IP Address of 1		0.170.123/16 ark: 10.250.0.0 0.0.170.123			Protocol A Route Playor Edito	er ut	Popup
System Configuratio	n Aux Buses											V		
User Config Filing System	Panel Config Peripherals											Available	Protocol 13	Popup Snap
Shortcuts	Eng Config													
G		Input Setup C	utput Setup	System Config_	GPO I	P Gateways	Protocols	Statu	s Monitor	Format Fus	iion			
A BELDEN B MASTERP 12G		Panel Lock	Undo	Redo Macro Mod- Assign Record	Clone			Up Menu 8736		Disable Tracking				

Touch "LiveTouch" in the "Available Protocols" list and then touch the **{Load}** button, to add it to the "Loaded Protocols" list.

Touch the **{Configure...}** button to display the "Protocol Config" menu. Touch the **{Edit...}** button and enter the IP address of the LiveTouch server and make sure that the "IP Port Number on Server" is set to 80, then touch the **{Apply}** button.

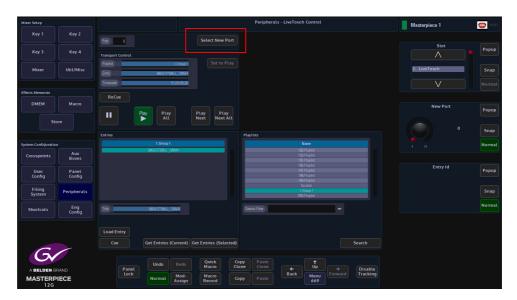
The menu will return to the "Protocols" menu, finally touch the **{Activate}** button. The "Connection Status" will show "Connected (Dual)"

Depending on hardware configurations, some LiveTouch systems can provide a thumbnail image for the "Playlist" entries.

To do this, you will have to assign an optional "LiveTouch Minipic" protocol, following the protocol setup process on the previous page.

Peripherals - LiveTouch Control

Touch the **{Peripherals}** button, then in the Peripherals menu touch the **{LiveTouch Control...}** menu link button.



To select a new port to control, touch the **{Select New Port}** button. In the "Transport Control" panel, if the "Port" is idle, touch the **{Set to Play}** button to change the port to playout mode. While in playout mode, it shows the current "Playlist", "Entry" and "Timecode".

Buttons:

Recue - Recue current entry

Pause - Pause current entry

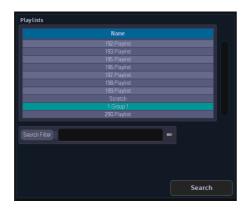
Play - Play current entry

Play All - Play from current entry till the end of the playlist

Play Next - Play the next entry

Play Next All - Play from next entry till the end of the playlist

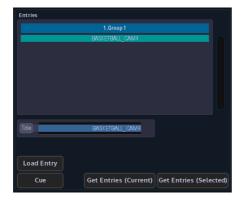
Playlists Panel:



To use the PlayLists search, type in a keyword in "Search Filter" and touch the **{Search}** button. This will find play lists for the current port, i.e. type in "Masterpiece" and the search will list all playlists contain the word "Masterpiece" in the title.

Leave "Search Filter" blank, and when the **{Search}** button is pressed, the search will list all play lists available for the current port.

Entries Panel:



Touch the **{Get Entries (Current)}** button to get the entries of the current playlist. The current playlist is displayed in the "Transport Control" panel above. The other way is to touch the **{Get Entries (Selected)}** button to get the entries of the selected playlist in the "Playlists" panel. The title of the playlist is displayed at the top of the list.

To play and entry, select an entry and touch the **{Load Entry}** button. This entry will not have any on air effect until the subsequence "Cue" or "Play Next" buttons press.

Peripherals Peripherals - Others



Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1 530 478 4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's website (www.grassvalley.com).

An online form for e-mail contact is also available from the website.

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