

# MASTERPIECE

MASTER CONTROL SWITCHER

# **User Manual**

13-06515-010

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www.grassvalley.com

# 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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(See www.grassvalley.com.)

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# **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.



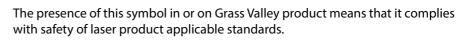
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The presence of this symbol in or on Grass Valley equipment means that it has been tested and certified as complying with applicable Intertek Testing Services regulations and recommendations for USA/Canada.



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**

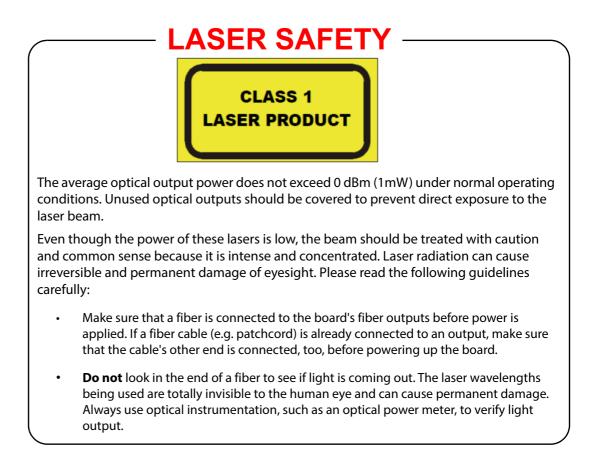
Before disposing of your Grass Valley equipment, please remove the battery as follows:

- 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 (4<sup>th</sup> 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  $\Omega$  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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Table of Contents

# 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: 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 Grass Valley 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.

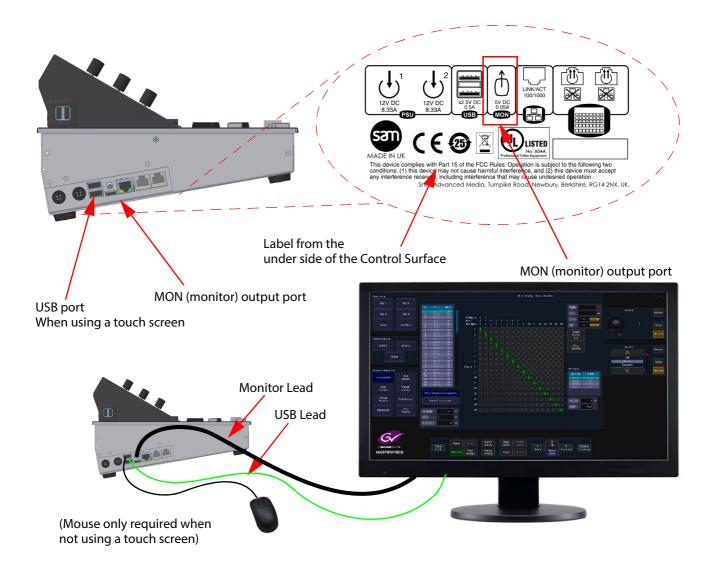
```
Note: Installation and User Manuals are supplied regardless of system components purchased.
```

# **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**

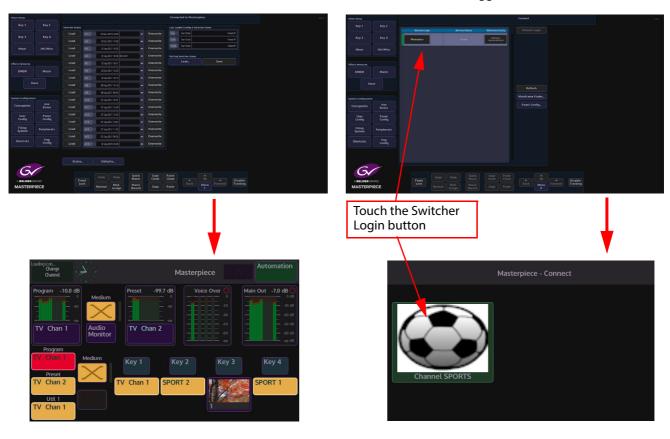
- iiyama T2250-MTS
- iiyama T2236-MSC B1 and B2
- iiyama T2252-MTS
- GeChic On-Lap 1502
- ELO\_1002L\_1502L
- ELO-2002L
- Planar PCT2265
- beetronics 15TS5M

# **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.



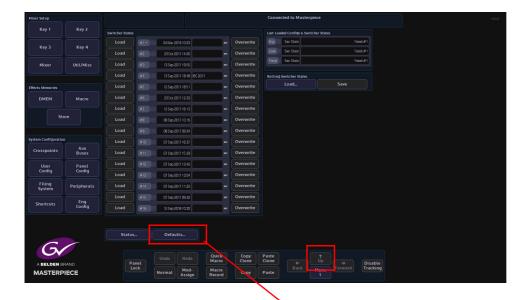
Connected to Masterpiece menus (Logged In State) Connect Menus (not Logged In state)

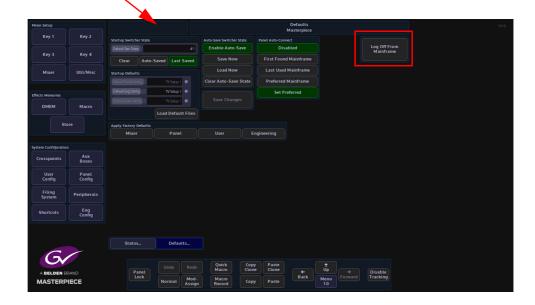
Once logged in, you can start configuring and setting up the system to your requirements.

# 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.

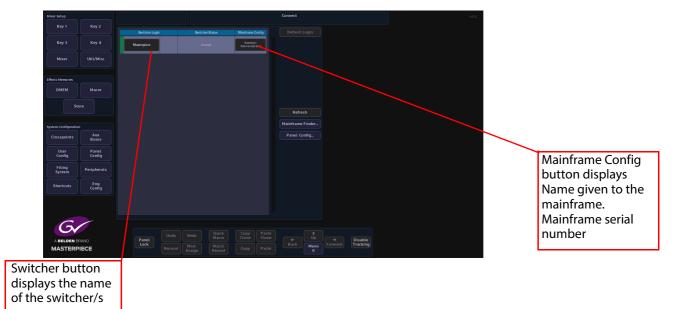




The other functions within this menu will be discussed later in this section. After log off, the "Connect" menu will appear.

#### **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.



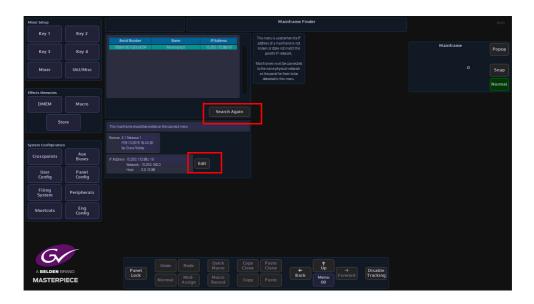
The *Default Login* button allows a panel to log in "Exclusively" and will prevent any other panel(s) logging into the Masterpiece mainframe. To log in exclusively, select the {*Default Login*} button, top right on the GUI Login.

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.

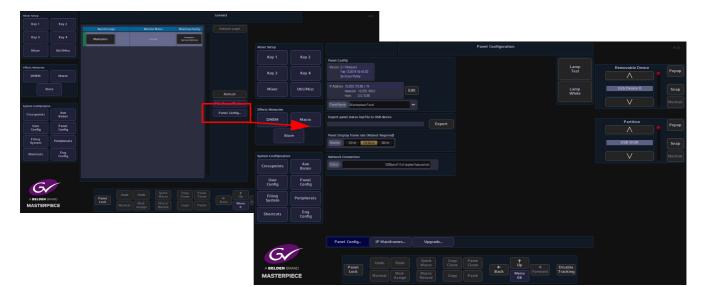
If you cannot see the mainframe in this menu, touch the {Edit} button and a dialog box will appear allowing you to type in the IP Address of the mainframe and touch the {Search Again} button.



#### **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 Grass Valleye 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 Grass Valleye 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**

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					Refresh							
					Mainframe Finder							
system Configurati					Mainframe Finder							
Crosspoints	Aux Buses				Panel Config							
User Config	Panel Config							Mainframe C 3G - Mas	onfiguration sterpiece			
Filing System	Peripherals				Mainframe Config			Video Type				
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					IP Address 10, 127, 15, 33 / 24 Network: 10, 127, 16, 0	Edit					22	Snap
						Edit						Normal
G,					Mainframe Name 33 - Masterpieco							
ABELDEN		Panet Lock Normal			SATA Drive Config Options		Upgrade				Mainframe Colour	Popup
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							Export					Normal
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			C									
			G									
							Locate Ci Button Cl	opy Paste Lone Clone				
			grass valley		Panel Lock Mod					Disable Tracking		
			MASTERPIEC	E	Lock Normal Mod- Assign	Fader Assign	Macro Record Ci		Back Men 02			

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.

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 SD-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).

		_	Mainframe Configuratio 3G - Masterpiece	n		
Ма	ainframe Config		Video Type			
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Ne	P Address 10.127.16.33/24 letwork: 10.127.16.0 lost: 0.0.0.33	Edit Apply Changes			22	Snap
De		Edit				Normal
M	Mainframe Name 3G - Masterpiece	-				
5	SATA Drive Config Options	Upgrade			Mainframe Colour	Popup
Ex	cport status log files to selected device					Snap
						Normal
		Export				Normat
P	anet Login Limit 2 anets 1 2 3 4 elnet (Remote diagnostic access) Enable Disable	5 6				
Gr						
grass valley MASTERPIECE		Button C	Copy Paste Clone Back Copy Paste	↑     Up       Wenu     Forward       02		

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.

					Mainfram 3G - N	e Configuration lasterpiece	1			
	Mainframe Config				Video Type					
	Version 3.7 Release1 Apr 28 2021 16:40.04 by Grass Valley		Color	lcon 😥	SD / HD	UHI			Mainframe Icon	Popup
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			Edit							Normal
	Mainframe Name 36 - Maste	rpiece	-							
	SATA Drive Config	Option		Upgrade					Mainframe Colour	Popup
	Export status log files to sel	ected device								Snap
				Export						Normal
	Panel Login Limit									
	Panels 1 2	3 4	6	6						
	Telnet ( Remote diagnostic a	access )								
	Enable	Disable								
G										
grass valley	Panel				Copy Clone Clone		<b>↑</b> Up			
MASTERPIECE		mal Mod- Assign	Fader Assign	Macro Record			Menu 02	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.

Exporting MESSAGES.TXT			Mainframe C 3G - Mas	onfiguration iterpiece			
Version 3.7 Release 1 Apr 28 2021 15 40.04 by Grass Valley	Color	kon 😣				Mainframe Icon	Popup
IP Address 10.127.16.33/24 Network: 10.127.16.0 Heat: 0.0.0.30						22	Snap
							Normal
MainframeName 33 - Masterpieca	-						
SATA Drive Config	Options	Upgrade				Mainframe Colour	Popup
Export status log files to selected device							Snap
							Sumb
		Export					Normal
Panel Login Limit Pends 1 2 3	4 5	6					
Telnet ( Remote diagnostic access ) Enable Di							
Panel		Locate Co Button Clo		t,			
				Back Mer 02	Forward Tracking		

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

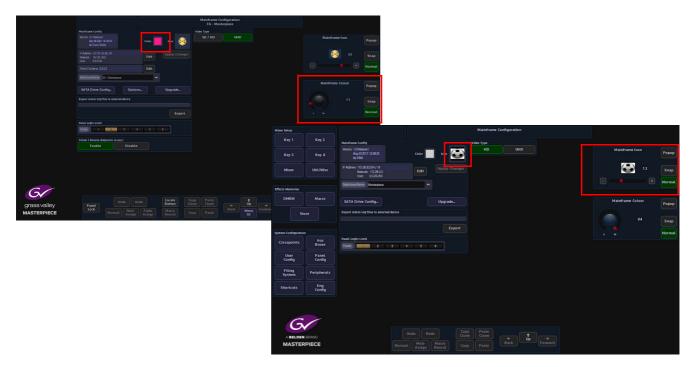
#### **Panel Login Limit**

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.

								Configuration sterpiece					
	Mainframe Config						/ideo Type						
	Version 3.7 Pelease1 Apr 28 2021 1 by Grass Valie	6:40:04 ¤y		Color	Icon	8	SD / HD	UHI				Mainframe Icor	Popup
	IP Address 10, 127, 16, Network: 10, 127, 16, Host: 0, 0, 0, 0, 33			Edit								8	Snap
													Normal
	Mainframe Name	G - Masterpiece											
	SATA Drive Cor	nfig	Options		Upgrade.							Mainframe Colo	Popup
	Export status log fil	les to selected	device										Snap
						port							Normal
	Panel Login Limit Panels 1 Telnet ( Remote dia		3 4	5	6								
	Enable		Disable										
6													
grass valley	Panel				Locate Button	Copy	Paste Clone		† Up		Disable		
MASTERPIECE	Lock		Mod- Assign	Fader Assign	Macro Record			Back	Menu 02	Forward	Disable Tracking		

#### **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.

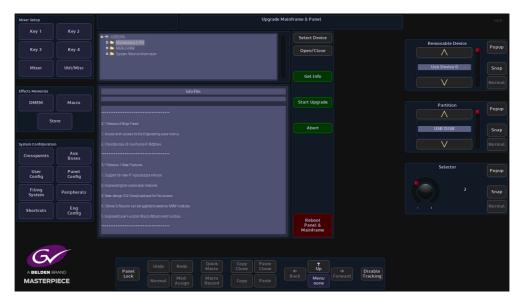
Note: WARNING! Caution is needed. This menu is used to format the internal disk drive!



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 Grass Valleye 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.

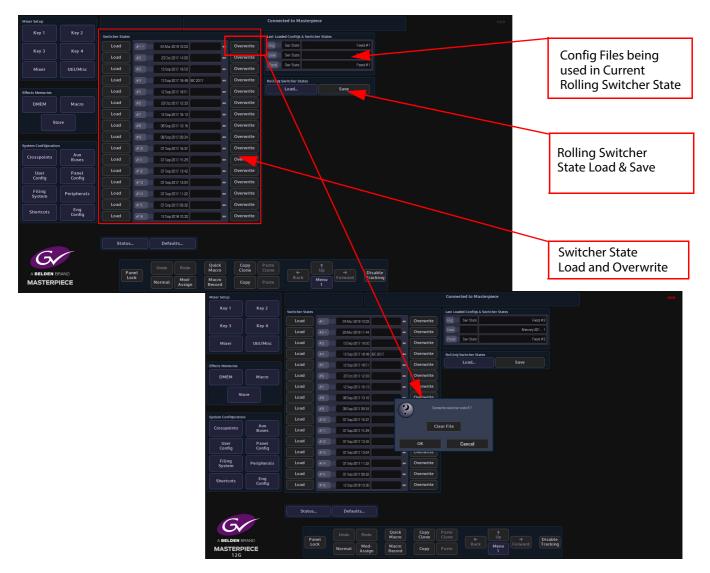
Next press the {Get Info} button and information related to the selected software will be displayed in the information area. When happy that the correct software has been selected, press the {Start Upgrade} button.

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.



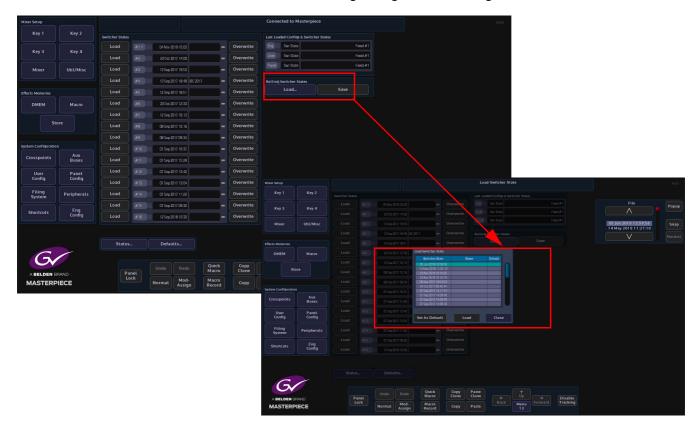
Switcher State - Overwrite and Load

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	Version 2.1 Release1								
Key 3	Key 4		Feb 13 2019 16:44:30 by Grass Valley								
			Name	Masterpiece Panel							
Mixer	Util/Misc		IP Address	10.250.170.85 / 19							
		Mainframe									
Effects Memories	Macro		Feb 13 2019 16:44:30 by Grass Valley								
			Name	Masterpiece							
St	ore			7068-6160-5362-8094							
			IP Address Clock St	10.250.170.88/19 Mar 2019 14:22:20							
System Configuration			Panel Login Limit	6							
Crosspoints	Aux Buses		UHD Mode	No							
User Config	Panel Config										
Filing		Licence Info									
System	Peripherals										
Shortcuts	Eng Config										
			Defaults.								
66		Statu	Defaults.								
				Redo Quick Macro	Copy Clone	Paste Clone	<b>+</b>	↑ Up		Disable	
A BELDEN BRAND MASTERPIECE		Ľ		Aod- ssign Record	Сору	Paste	Back	Menu 12	Forward	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.

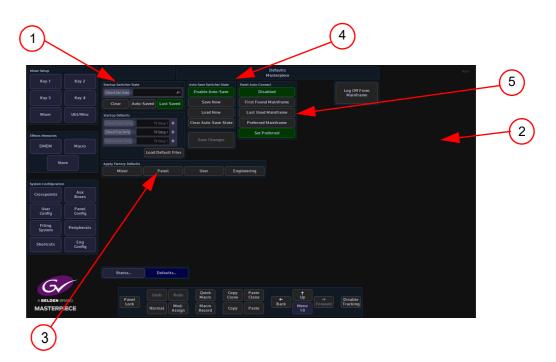
Panel	Version 2.1 Releas Feb 13 20 by Grass	19 16:44:30	Panel Software Version
	Name	Masterpiece Panel	Panel IP Address
		10.250.170.85 / 19	
Mainframe	Version 2.1 Releas Feb 13 20 by Grass 1	19 16:44:30	Mainframe Software Version
		Masterpiece	Mainframe Serial Number
		7068-6160-53E2-BC94 10.250.170.88 / 19	Mainframe IP Address
		5th Mar 2019 14:22:20	
		6	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.

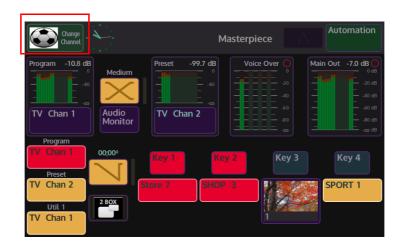
The {Clear Auto-Save State} button will clear the auto-save state buffer.

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

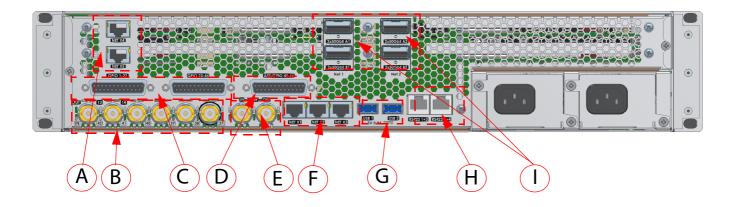
To log out of the current mainframe, touch the {Log Off From Mainframe} button. After log off, the "Connect" menu will appear.

To log out of the system using the Masterpiece GUI, touch the {Change Channel} button, located in the top left of the menu.



# **Masterpiece Mainframe Rear Connectors**

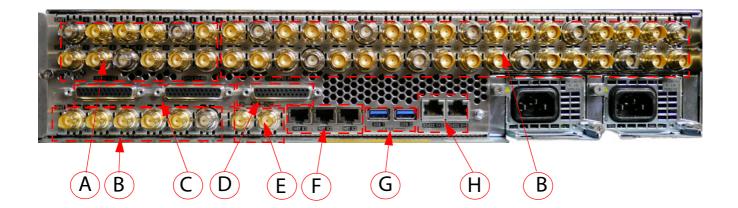
# **IP Mainframe Rear Connectors**



#### **IP Mainframe Connectors**

Connectors	Description	Connector Information	
А	Network ( <b>NOT</b> 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)	<ul> <li>A1 (primary) 50GbE for Inputs 1 to 18 and Outputs 1 to 6</li> <li>B1 (primary) 50GbE for Inputs 19 to 36 and Outputs 7 to 12</li> <li>A2 (secondary) 50GbE for Inputs 1 to 18 and Outputs 1 to 6</li> <li>B2 (secondary) 50GbE for Inputs 19 to 36 and Outputs 7 to 12</li> </ul>	

# **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			
н	Serial	2X RJ45, 4 x RS422 serial ports			

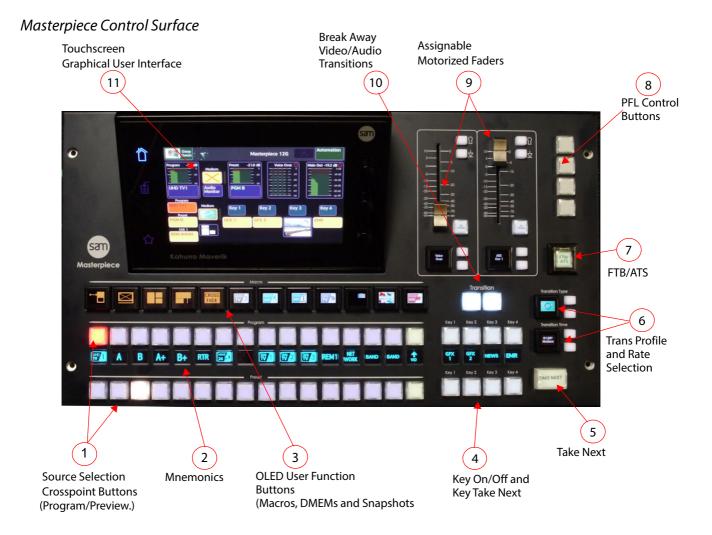
# **Control Surface**

# **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.



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# Source Selection Crosspoint Buttons and Colored Mnemonics

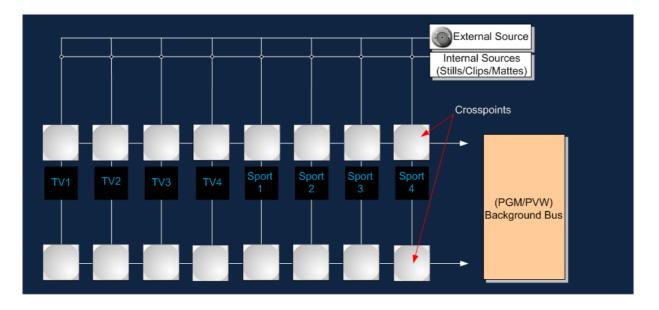
The Masterpiece Control Surfaces has two rows of source selection buttons, the top being the Program selection buttons and the lower being the Preview buttons (PGM/PVW).

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**

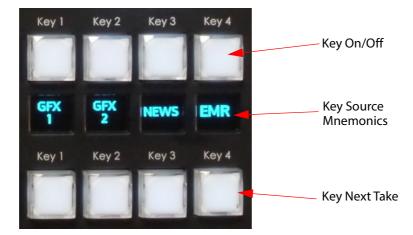
The OLED User Function Buttons can have Macros, DMEMs or Snapshots assigned to them. The OLED buttons can have either text or color images assigned to them to accompany the assigned function.



#### 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.



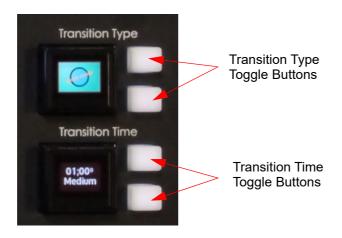
#### **Transition Type and Transition Time**

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.



6

#### 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)



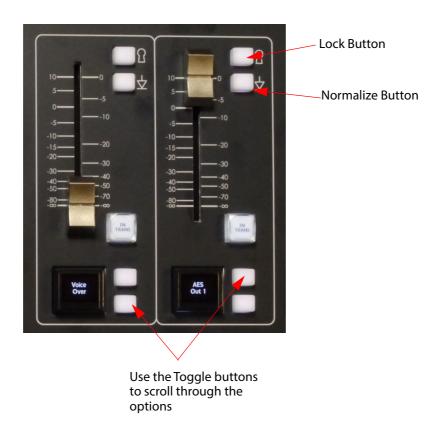
These buttons are for a future use.

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.

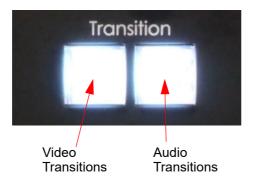
The "Normalize" button when pressed, will automatically move the slider back to the default setting. The "Lock" button will lock out the set position of the slider, so that if the slider is moved, it will automatically go back to its position where the lock was added.

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.





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### 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.



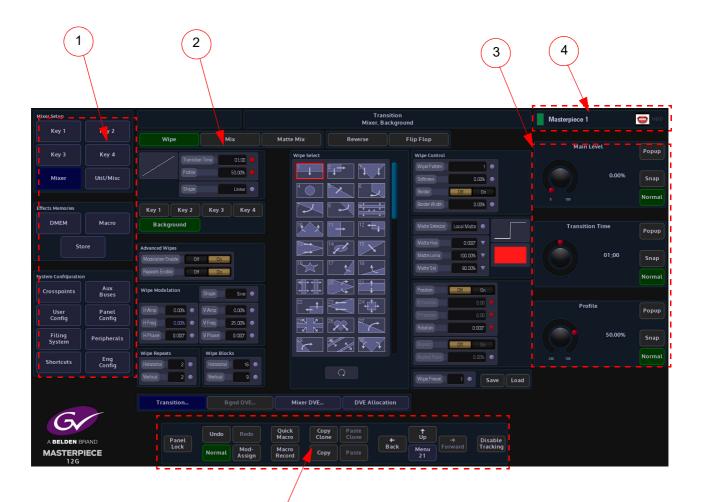
**Touch Screen Monitor Menu Overview** 

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

5

- 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.

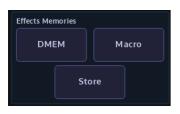
#### **Mixer Setup**



#### **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**



#### **System Configuration**

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

#### **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<br/>control surface and the large touch screen GUI. When enabled, the button will turn orange. If<br/>you touch any button on the control surface or large touch screen panel, the {Panel Lock}<br/>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<br/>Paste CloneThe Copy Clone and Paste Clone<br/>buttons are used to copy button functions from either the<br/>Masterpiece menus or from the control surface and allows the user to setup a system to their<br/>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.

<b>(</b>	<b>↑</b> 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 Grass Valleye 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.

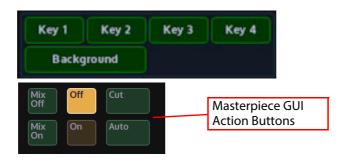


#### **Examples of Attachers**

#### **Other Menu Functions**



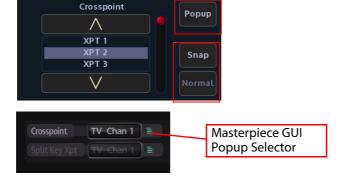
Menu Link buttons allow the user to enter a sub-menu, mainly shown at the bottom of menu's.



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**



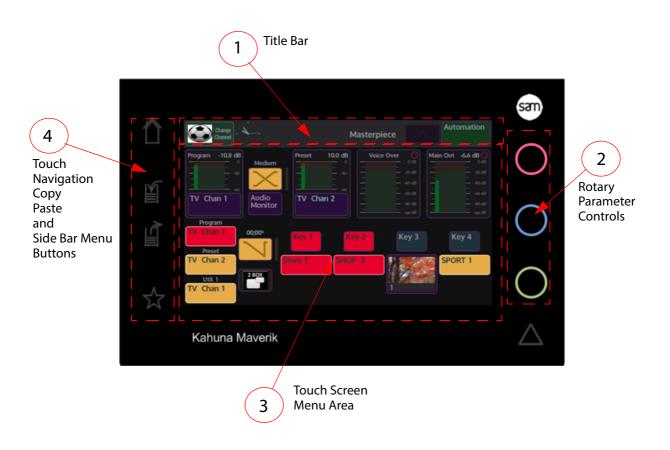
Some menus have name attachers, touching the red oblong twice will display an on-screen QWERTY keyboard that can be used to enter text.

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



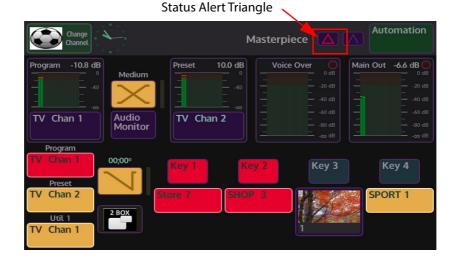
The Title Bar displays the name of the current menu. Swiping a finger in the "Swipe Area" in a left to right action will go back through the previous menus. If the user wishes to go forward then swipe in a right to left motion.

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

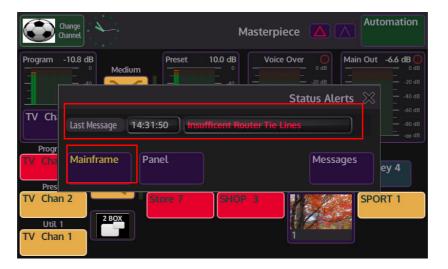
1

#### **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.



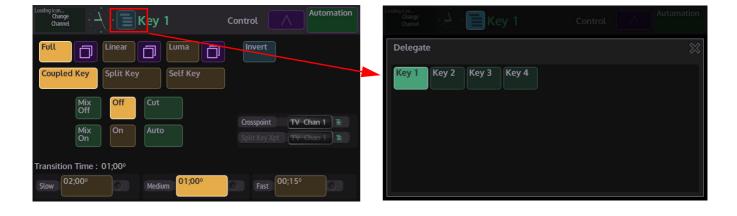
Touch the triangle and a "Status Alert" dialog box will appear. An alert message will be displayed in the center of the dialog box menu.



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).



4

3



#### **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.

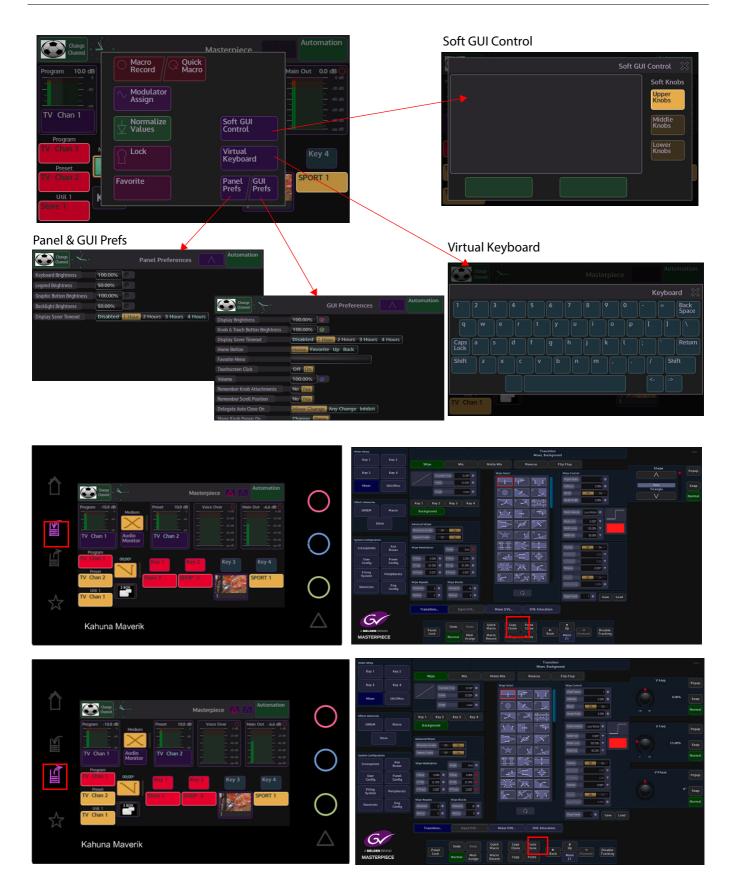
#### How to use Copy and Paste

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.

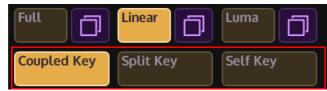
Menu Buttons, Controls and Gesture Controls

Menu Link/Menu Expander Buttons

Change 🔨 📄 Key 1	Control Automation
Full Linear Luma Coupled Key Split Key	Invert
Mix Off Off Cut Mix On Auto	Control Automation
O2;00°         Medium         01;00°	Coupled Key Sp Lift 0.00% Gain 1.00 Opacity 100.00% Over Range Off On Store 7
	O2;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**



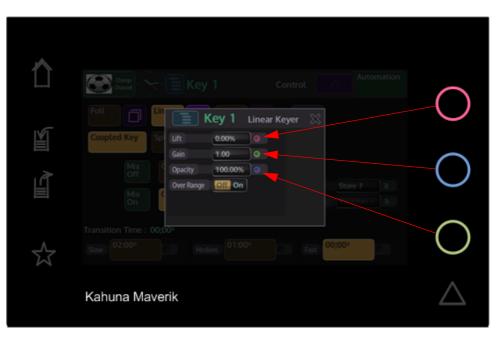
When pressed, these buttons will switch the selected function On or Off.

#### **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**

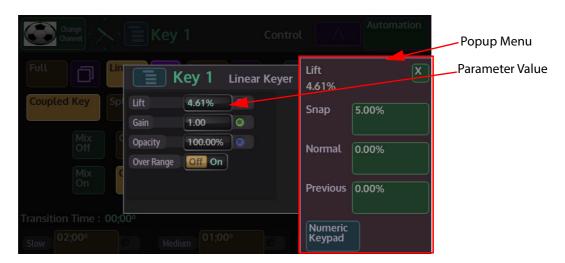


When a menu has parameters with colored attachers, it shows that a parameter can be adjusted using the rotary controls on the right side of the Masterpiece GUI. On entry to a menu, if the menu has only 1 colored attacher, it will be lit the Grass Valleye color as the top rotary control, if there are 3 or more colored attachers the top 3 will be lit the Grass Valleye 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 Grass Valleye 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 Grass Valleye 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		Aut	omation	Return Butt	on
Full	Lin	Lift 15.21%	X						
Coupled Key	SP L	Snap	15.00%	7	8	9			
Mix Off Mix		Normal	0.00%	4	5	6	×		
On		Previous	0.00%	1	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.



# Change Change

Touch menu and with the Grass Valleye movement swipe upwards

#### Scrolling Gesture Controls

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				
	Key 2	Switcher Stat	es					Last Lo	aded Configs & S	witcher State				
Key 3	Key 4	Load	#1+	04 Mar 20	19 10.03	-	Overwrite	Eng	Swr State			Fixed #1		
Key 3	Key 4	Load	#2	23 0 ct. 20	17 14:00	-	Overwrite	User	Swr State			Fixed #1		
Mixer	Util/Misc	Load	#3	13 Sep 20	12 19:50	-	Overwrite	Panel	Swr State			Fixed #1		
		Load	#4	13 Sep 20	17 18:48 BC 2017	-	Overwrite	Rolling	3 Switcher State					
Effects Memories		Load	#5	12 Sep 20	17 18:51	-	Overwrite		Load		Save			
DMEM	Macro	Load	#6	23 Oct 20	17 12:33	-	Overwrite							
		Load	#1	12 Sep 20	17 16:13	-	Overwrite							
St		Load	#8	08 Sep 20	17 10:16	-	Overwrite							
		Load	#9	08 Sep 20	17 09:34	-	Overwrite							
System Configuratio		Load	#10	07 Sep 20	17 16:37	-	Overwrite							
Crosspoints	Aux Buses	Load	#11	07 Sep 20	17 15:29	-	Overwrite							
User	Panel	Load	#12	07 Sop 20	17 13:42	-	Overwrite							
Config	Config	Load	#12	07 Sep 20	17 12:04	-	Overwrite							
Filing System	Peripherals	Load	#14	07 Sep 20	17 11:22	-	Overwrite							
	Eng	Load	#15	07 Sep 20	17 09:32	-	Overwrite							
Shortcuts	Config	Load	#16	12 Sep 20	18 10:30	-	Overwrite							
		State		Defaul	ts									
Gv					Redo Q	uick acro	Copy Clone	Paste Clone						
			Panel Lock	Normal	Mod- M	acro	Сору			Menu		Disable Tracking		

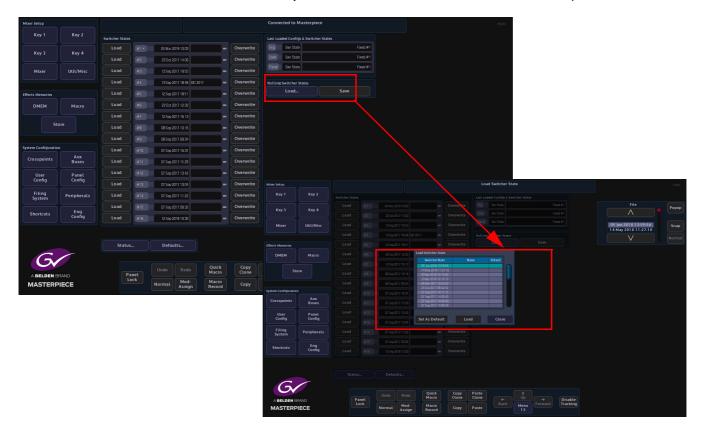
The table of 16 fixed Switcher States are used as a one button press **"Save and Load Everything"** function that can be written to an unlimited number of times. Switcher State -Overwrite allows the user to save the current **"Switcher State"** at different points in time. This is very useful as you 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.



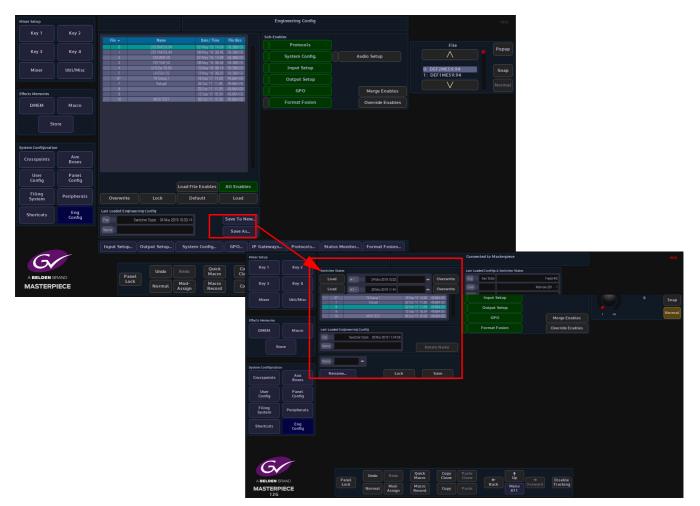
Each time the {Save} button is pressed a switcher state is saved into the rolling list.

#### **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 Grass Valleye 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					Sub-Enable					
		File 🔺	Name	Date / Time	File Size		Protocols			File	
	Key 4		DEF2WE59.94	07 May '16 14:24			11000000				Popup
Key 3	Key 4	2	DEF1ME59.94 DEF2ME 50	08 May '16 08:46 07 May '16 14:29			System Config.	A1	udio Setup		
		3	DEF 1ME 50	08 May 16 DB 46			system comig		and becop		
		4	UHD2si 59.94	13 May '16 08.14			Input Setup				
Mixer	Util/Misc	5	UHD2si 50	13 May 16 08:20			mpor serop			0: DEF2ME59.94	Snap
		6'	TV Setup 1	18 Sep 17 14:20			Output Setup			1: DEF1ME59.94	
			Setup2	02 Det 17 11:26			Output setup			V	
				02 Oct 17 11:29	49.664 KB		GPO		Merge Enables		
Effects Memories							GFO		Merge Enables		
DMEM	Macro	10	MOR TEST	06 Oct 117 15:58	49.664 KB		Format Fusion		Override Enables		
System Configuration	Aux Buses Panel										
Config	Config		Loa	id File Enables	All Enables						
Filing System	Peripherals	Overwrite	Lock	Default	Load						
		Last Loaded Engineer	ing Config								
Shortcuts	Eng Config		ritcher State: 04 Mar 2019 10.1	13:14	Save To New	v					
		Name			Save As						
		Input Setup	Output Setup 5	ystem Config	GPO	IP Gateways	Protocols	Status Monitor	Format Fusion		
Gv			Undo	do Quick	Сору	Paste		<u>†</u>			
A BELDEN B	RAND	Panel		do Macro	Clone			Ĵp 🔶 🔶	Disable		
MASTERF	PIECE	Lock	Normal Ass		Сору			enu 37	Tracking		

## **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.

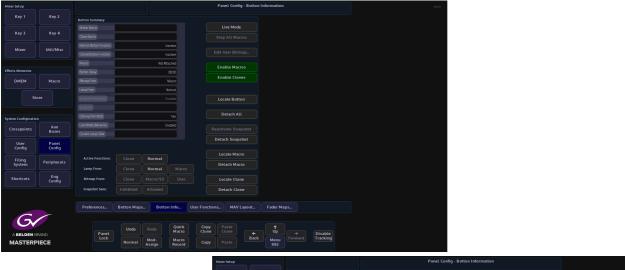
Mixer Setup								m - Snapshot ixer							
Key 1	Key 2					Bgn		Trans Al		Util 1 A					
Key 3	Key 4		Start	27 Sep117 164 11 Mar 19 16 30 Oct 17 15:2		PG	vî Xpt.	Modulation		Crosspoint				File	Popup
Mixer	Util/Misc			11 0st 17 14:0 16 0st 17 13:4 10 0st 17 13:4	18 21.504 KB 16 21.504 KB		T Xpt.	Transition					0: Star	t	Snap
							IVE	Mix Wipe						V	
Effects Memories		10		30 Oct 117 15:2				Audio Trans						v	
DMEM	Macro					Key		Key 2 Al		Key 3 A	IL Key 4				
						Mod	ulation	Modulation		Modulation	1 Modula	ation			
St						Cros	spoint	Crosspoint		Crosspoint	t Grossp	oint			
							IVE	DVE		DVE					
System Configuratio	Aux						ayer	Keyer		Keyer	Key	er			
Crosspoints	Buses					Trai	nsition	Transition		Transition	Transi	tion			
User Config	Panel Config														
Filing System	Peripherals	Name Start		Multiple	All Enab	les									
	Eng			Dissolve	Content	s Merç	e Enables								
Shortcuts	Eng Config	Export	Delete	Lock	Load	Overri	ide Enable:								
		Import/Export	DMEM	Still	s	Snapshots	Macr	os Sw	ritcher	r States					
		Eng Config	User Config	Panel G	onfig	Button Maps	Icor								
G					Ouick	Copy Pas			t						
A BELDEN B	RAND	Panel	Undo		Macro	Clone Clo		+ "	р		Disable				
MASTERF 12G	IECE	Lock			Macro Record	Copy Pas		Back Me 18	enu 107		Tracking				

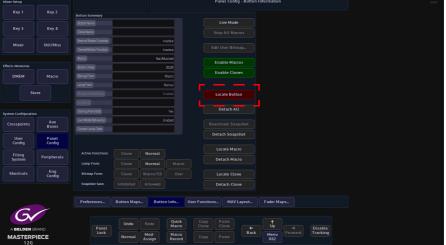
In this menu, Effects Dissolve can be added to an existing snapshot allowing you yo make creative effects.

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 - Las	t Loade	d Memories	i .		
	Key 2											
Key 3	Key 4				Last Loaded M							
					MET		M	mary 65				
Mixer	Util/Misc		55		Brg Cortig	Swr State		ored #2				
							M	mary 55				
Iffects Memories						Swr State		ixed #2				
DMEM	Macro											
					D							
Sto												
							Car	ncel				
System Configuration												
Crosspoints	Aux Buses											
User Config	Panel Config											
Filing System	Peripherals											
System												
Shortcuts	Eng Config											
	coming											
	RAND	Pan	Undo		Quick Macro	Copy Clone	Paste Clone				Disable	
MASTERP	IECE		Normal	Mod- Assign	n Macro Record	Сору			Menu none		Tracking	

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

#### **Number Pad**

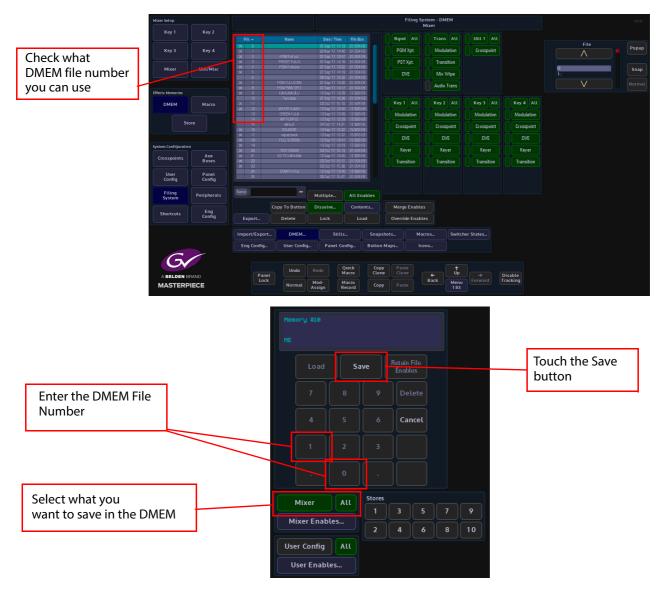
Touch the {Number Pad...} button to display the Number Pad menu. To save a DMEM using the "Number Pad" is a simple process used to enter the DMEM memory file number, then select the Mixer Enables, User Enables or Stores (you can only select one of them at a time) as part of the DMEM being saved.

Mixer Setup										Shortcuts							HDD
Key 1	Key 2						Effects Dis	solve				Merge Enable					
Key 3	Key 4						Out Paint Duration	Auto	arly Late D1:00	Enabl		Override Enab	les		Ouration		Popup
Mixer	Util/Misc				Retain File Enables		Shape Profile		Linear =							01;00	Snap
																	Normal
Effects Memories	Macro				Cancel												
Ste															Shape		Popup
Sta	ore														linear ubic C		Snap
System Configuration				Stores											$\vee$		Normal
Crosspoints	Aux Buses	Mixer Enabl															
User Config	Panel Config														Profile		Popup
Filing System	Peripherals	User Enable														0.00%	Snap
Shortcuts	Eng Config																Normal
6		Load/Save Pad	L N	umber P	ad												
	RAND	Pane		Undo			Quick Macro	Copy Clone	Paste Clone		(↑ Up						
MASTERP 12G		Lock		Normal	Mod- Assign	R	Macro tecord	Сору	Paste	Back	Menu 1 41	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).

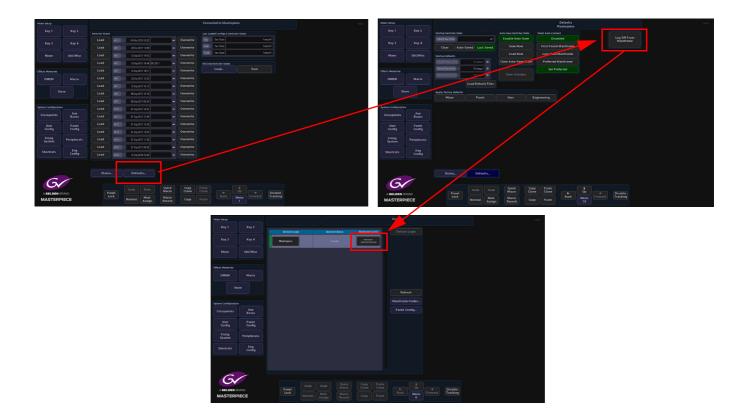
How to Save DMEM's

# 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.



					Configuration asterpiece				]		
Mainframe Config Varsion 3:7 Rollasse1 Varg 28 2021 1 by Otass Valk		Color	Icon 🚫	Video Type SD / HD	UHC				Mainframe I		Popup
P Address 10,127,16, Network: 10,127,16 Host: 0,0,0,33		Edit									Snap
		Edit									Normal
Mainframe Name 3	6 - Masterpiece	-									
SATA Drive Con	nfig Options		Upgrade						Mainframe Co	olour	Popup
Export status log fil	es to selected device										Snap
			Export								Normal
Panel Login Limit Panels 1	2 3 4	5	6								
Tetnet ( Remote dia Enable	gnostic access ) Disable										
Gr							1				
grass valley Panel			Locate Button	Copy Clone Clone		↑ Up	+	Disable			
	Normal Mod- Assign	Fader Assign	Macro Record			Menu 02		Tracking			

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

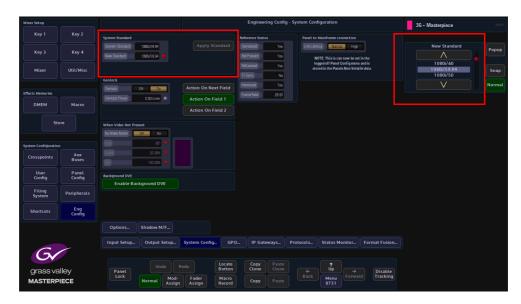
Touch the **{Up}** button to go back to the **"Connect**" menu then touch the **{Switcher login}** button to log back into the system.

The next section in this chapter will describe how to get a video signal through the system in SD / 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.



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.

Mixer Setup						Engineering	Config - Ou Output 1	tput Setup						
Key 1	Key 2								St	IPTE		ary		
					No	w Next Iso1 Iso2	Iso3 Iso4 I	so5 Iso8 Is			HANC		BNC Output	
Key 3	Key 4											Yes		Popup
		0/P 2	AUX 0/P 2											
		OVP 3	AUX 0/P 3 AUX 0/P 4								Yes	Yes		
Mixer	Util/Misc	CyP 4 CyP 6	AUX 0/P 4 AUX 0/P 5					_			Yes	Yes Yes		Snap
		0/26	AUX 0/P 6								Yes	Yes		
		0/P 7	AUX 0/P 7									Yes		
		OVP 8	AUX 0/P 6								Yes	Yes		Normal
Effects Memories		OVP 9	AUX 0/P 9									Yes		
chects Memories														
DMEM	Macro	0/P 11	AUX 0/P 11							'es		Yes		
DMEM	Macro												Now	
														Popup
Sto														
													Off	Snap
													On	Snap
System Configuration														Normal
							Output Tally							
Crosspoints	Aux						New	on e isc	04 01 0	1517				
	Buses		d Enabled Inhibite	a l			NOR .			190.1	U	•		
								off 😐 ist	DS 0H 0	608	0		Next	
User	Panel		0# Cn	1										Popup
Config	Config						Contraction of the local division of the loc	ISC	06 01 0					
			011 On				190 1	011 • 🛄						
Filing							150.2						off	
System	Peripherals		No Yes				1000							Snap
oy o com								011			py & N			
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Shortcuts	Eng Config													Hormut
	Config													
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				Quick	Cop	/ Paste		<b>↑</b>						
		Par	Undo	Redo Macro	Clon	e Clone	+	Úp		Disa	bla			
A BELDEN BR	IAND	r ai								Track	king			
		Loi	ck Normal	Mod- Assign Record		/ Paste	Back	Menu 8771		Track	king			

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 Grass Valleye 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.

							Us	er Confi A	g-Aux ux 1	Buses					
Key 2															
							Roped			Besteral	Aux Bus	Aux 1 😑	A uni Dura		
			- 0/	2.4	VOT 161 Missor De	a	Paliet	1110	NIGLIU	PTOTOCOL	Crossprint	Mixer Del			Popu
Key 4												-	$\wedge$		
		AUX 3			XPT 1 - ENC 1						Aux Name Aux				
Util/Misc															Sn
													Aux 2		
											Panel Lock	Lock All			
Macro											File Lock	Lock All			$\sim$
													Crosspoint		Po
	18												^		
	14										Macro Lock	Lock All			
ie -															
													Mixer Op1		Sr
											Protocol Lock	Lock All	Mixer Op2		
	20												V		Not
	20														
	22											Aux Override			
Buses	23											Aux overnue			
												Jame 1777 & Mout			
Panel Config												Name III G NEX			
Peripherals															
Eng															
Peripherals Eng Config															
		Outputs	Store	Setup	GP Os		Modula	tion		Mattes,	A	idio			
	Key 4 Util/Misc Macro e Buses Panelig Peripherals	Key 4 Key 4 Util/Misc 4 4 4 4 4 4 4 4 4 4 4 4 4	Aux           Key 4           Util/Misc           Macro           B           Macro           B           Aux           B           Aux           B           Config           Peripherals           Eng           Config	Kay 4         Aux         B           Unit/Misc         0         Aux         0           Statistics         0         Aux         0           Macro         0         Aux         0           Aux         0         0         Aux         0           Macro         0         Aux         0         0           Aux         0         0         Aux         0           Aux         0         0         0         0         0           Aux         0	Key 4         Jan         Jan           Util/Misc         AXX 2         OP1           Status         OP1         AXX 2         OP1           AXX 3         OP1         AXX 3         OP1           AXX 4         OP1         AXX 3         OP1           AXX 4         OP1         AXX 4         OP1           AXX 4         OP1	Aux         Dugs           Kry 4         AX         0.01         XV1 B1 Aux 6           UU1/Misc         AX         0.01         XV1 B1 Aux 6           AX         0.01         XV1 B1 Aux 6         0.01           AXX         0.02         XV1 B1 Aux 6         0.01           AXX         0.01         XV1 B1 Aux 6         0.01         XV1 B1 Aux 6           B         AXX         0.01         XV1 B1 Aux 6         XV1 B1 B1 Aux 6           B         AXX         0.01         XV1 B1 Aux 7         XV1 B1 Aux 7           B         AXX         0.01         XV1 B1 Aux 7         XV1 B1 Aux 7           B         AXX         0.01         XV1 B1 Aux 7         XV1 B1 Aux 7	Kry 4         Jan         User         User           UUL/Mixe         AXX 1         OP1         Mort Hit Abs 10           AXX 2         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP1         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         OP12         MT1 HS 10         Mort Hit Abs 10           AXX 4         Here Mit Hit Abs 10         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         Here Mit Hit Abs 10         Mort Hit Abs 10         Mort Hit Abs 10           AXX 4         Here Mit Hit Abs 10         Mort Hit Abs 10         <	Arx         Usep         Part           Key 4        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Patter       Marco     Arr 2     Part 1821     Arr 1       Arr 2     Arr 2     Part 1821     Arr 1       Arr 3     Option Part 1821     Arr 1     Arr 1       Arr 4     Option Part 1821     Arr 1       Arr 5     Option Part 1821     Arr 1       Arr 7     Arr 1     Option Part 1821     Arr 1       Arr 1     Arr 1     Option Part 1821     Arr 1       Arr 1     Arr 1     Option Part 1821     Arr 1       Arr 1     Arr 1     Option Part 1821     Arr 1       Arr 1     Arr 1     Option Part 1821     Arr 1       Arr 1     Arr 1     Option Part 1821     Arr 1       Arr 1     Arr 1     Option Part 1821     Arr 1       Arr 1     Arr 1     Option Part 1821     Arr 1       Arr 1     Arr 1     Option Part 1821     Arr 1</td> <td>Kry 2         Arr         Log         Polity         Arr         Arr         Arr         Bar           March         Arr         Ord         Polity         Feit         March         Arr         Arr</td>	Kry 2     Arr 1     Arr 1       Kry 4     Inti/Max     Option Mark bit     Pett Ref. 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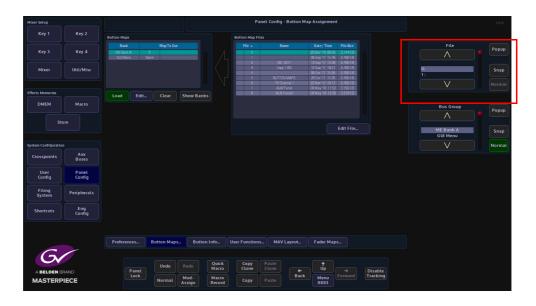
Use the "**Aux Bus**" and "**Crosspoint**"" parameters to set the PGM, PVW and CLN outputs, Normally, in HD format this would be O/P 1, 2 and 3 at the back of the mainframe.

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					Par	el Config - Butto	n Map Assignmen	t			HDD
	Key 2	Button Maps			Button Map File						
		Bank	Map To Use								
Key 3	Key 4	ME Bank A C	0		0		20 Mar '19 08:56	3.144KB		$\wedge$	Popup
		GHIMmu Ne									
						IBC 2017	13 Sep '17 13:39				
Mixer	Util/Misc									0:	Snap
							06.0 <i>ct</i> 17 15:26				
						BUTTON MAPS	26 0 ct 117 15:30				
					5	TV Channel 1 AUX Panel	22 Nov 117 16 17 09 May 16 11:52			$\sim$	
Effects Memories						AUX Panel2	09 May 18 12:09				
Effects Melhories		Load Edit	Clear Show B	anks	•	AUX Patricz		7519/19			
DMEM	Macro										
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St											
								Edit File		ME Bank A	Snap
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System Configuratio										$\vee$	Normal
Crosspoints	Aux Buses										
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Config	Config										
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System	Peripherals										
Shortcuts	Eng Config										
	coning										
		Preferences	Button Maps Bu	tton Info	User Functions.	MAV Layout		os			
0	/										
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			Undo Redo	Quick Macro	Copy Clone	Paste Clone	t tp				
A BELDEN B	RAND	Panel		macro	crone				Disable		
		Lock	Mod-	Macro			ack Menu		Tracking		
MASTERP	IECE		Normal Assign	Record	Сору		8883				

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.





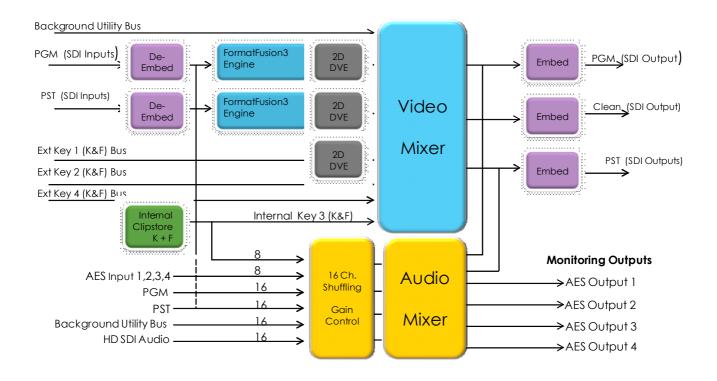
# **Audio Mixing Overview**

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 Grass Valleye 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 Grass Valleye 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"

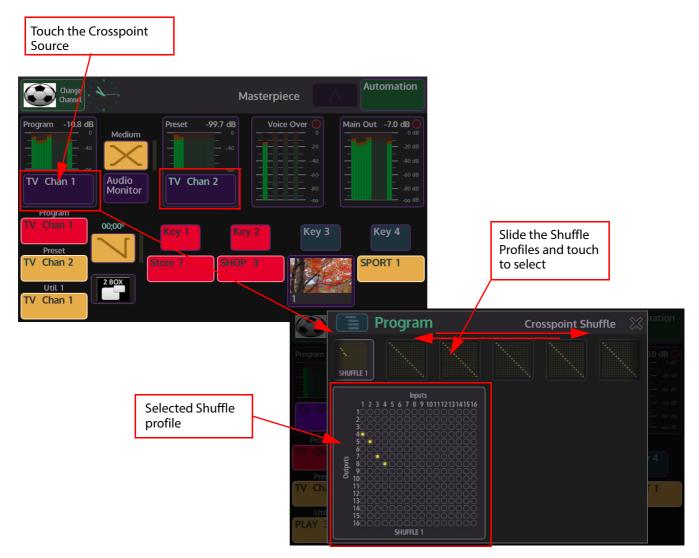
Note: The red dotted lines have been added to highlight the audio shuffle profile created. They are not part of the original menu.

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.

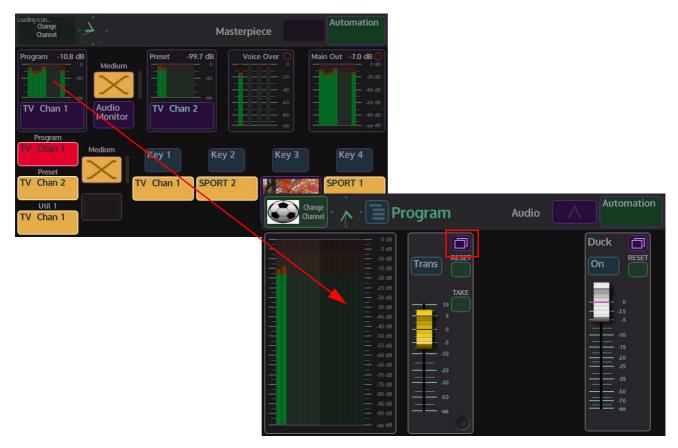


In the Crosspoint Shuffle menu, the 50 Shuffle profiles are displayed in a bar across the top of the menu. Touch and slide left/right to find the required profile and then touch the profile to select it.

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.

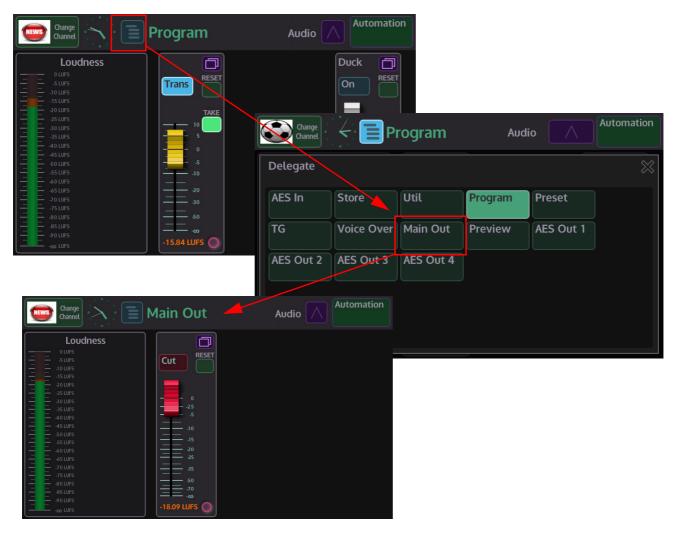
To assign a slider to the function list, touch the menu expander, then when the settings dialog box appears, touch the **{Assign}** button. The button will light up "light blue" (as shown below). The function will be displayed when scrolling through the function list. To enable the function touch the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

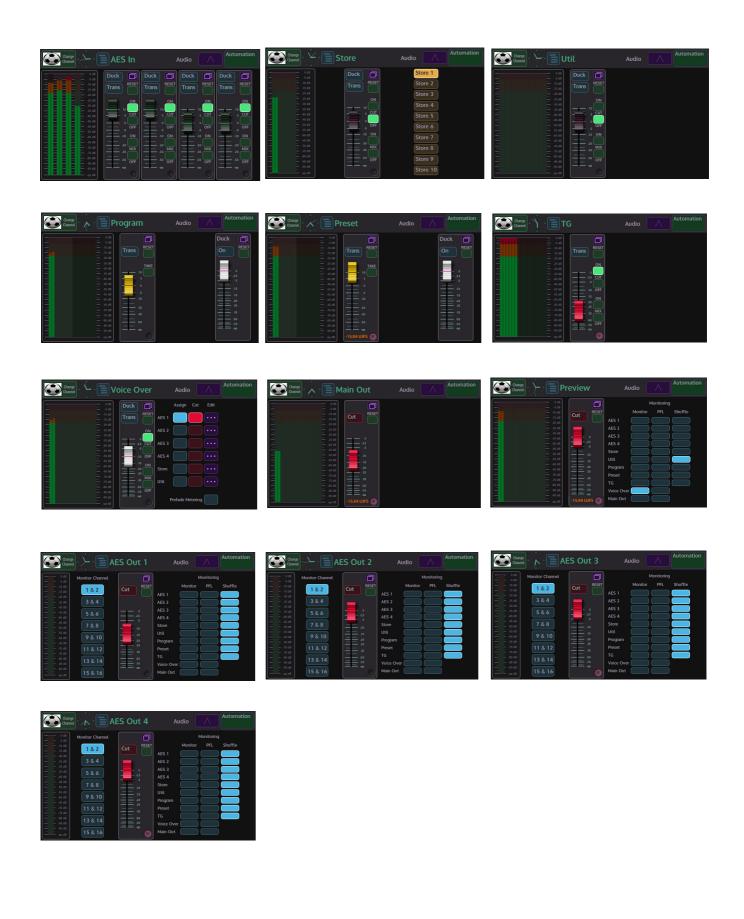


Touching the "Delegate" button in the "Audio" menu (shown below), will display a list of audio function controllers. Touching one of the buttons will display the relevant audio control menu. All of the audio function controllers in the "Delegate" menu can be assigned to the "Assigned Function" list and 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					
Loudr	Pro	gram	5	Settings 🔅	Duck
OLUPS 		1;00			On RESET
	Delay Time 0	0;00			
30 LUFS 35 LUFS 440 LUFS 45 LUFS 45 LUFS 50 LUFS		Assignable	Loudness Reset		- 0 25 -5 -10 -15
E 40 LUFS	Slow	Medium	Fast		
	02;00	01;00	00;30		35
		-15.01 LUFS			-70

**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.

Change 📈 📄 Preset	Audio Automation
0 dB 5 dB -10 dB -25 dB -25 dB -25 dB -30 dB -30 dB -35 dB -40 dB -55 -10 -15 -25 dB -35 dB -40 dB -55 -10 -10 -10 -15 -25 dB -35 dB -40 dB -55 -5 -5 -10 -10 -5 -5 -5 -5 -5 -5 -5 -5 -5 -5	Duck On - 0 - 2.5 2.5 2.5 

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
	0 dB 5 dB -10 dB -10 dB -5 dB -20 dB -25 dB -35 dB -40 dB -40 dB -56 dB -56 dB -57 dB -75	

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

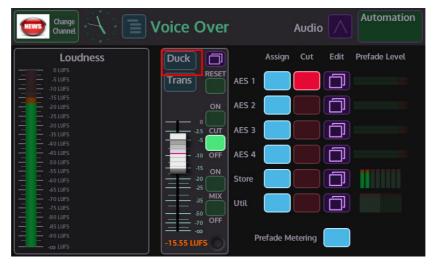
Reset - resets the fader to 0dB (can be overridden by Morpheus automation)

Cut On/Off - turn audio On/Off

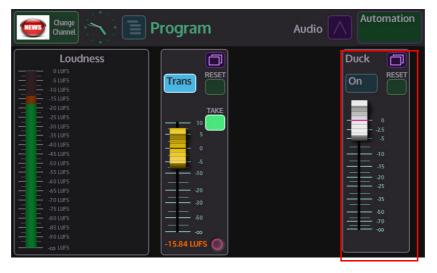
Mix On/Off - mixes audio On/Off

#### **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.



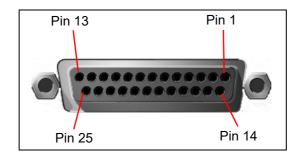
In the dialog box above, you are able to setup the audio on "AES In 1" to work with an audio transition without having to go into the main audio transition menu. With the {Trans} button selected in the AES In main menu, you can set how the transition behaves.

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 Grass Valleye 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 Channel	eview	Audio	$\land$	Automation
0 dB			Monitoring	
5.48 1.10 dB 1.15 dB 1.15 dB 1.15 dB 1.20 dB 1.20 dB 1.35 dB 1.45 d	Cut RESET 0 -2.5 -5 -10 -15 -15 -10 -25 -15 -10 -15 -17 -15 -10 -15 -17 -15 -17 -17 -17 -17 -17 -17 -17 -17	Monitor ES 1 () ES 2 () ES 3 () ES 4 () tore () til () rogram () reset ()		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:

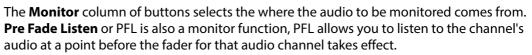
Cut - this will cut the audio output On/Off

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 Grass Valleye 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.





**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)

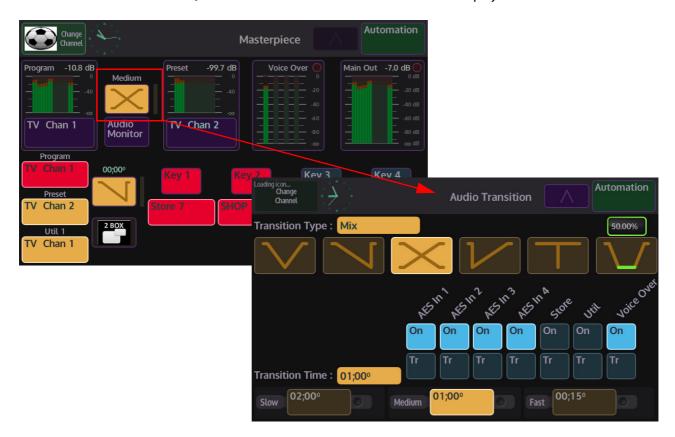
# **Audio Transitions**

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.





**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 Grass Valleye 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.



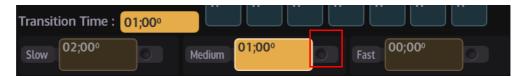
50.00% - this will fade down to silent pause and then fade back up to the next source level.

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



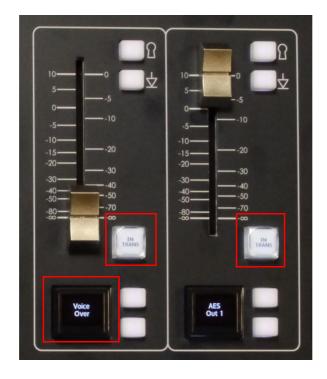
Like the "Key Layer" buttons, when the "**On**" button is illuminated, the audio source of the selected function will contribute to the on air output. If the "**Tr**" button is illuminated and the "On" button is not illuminated, when the "Take Next" button is pressed, the source will transition on air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

Audio Setup Audio Transitions

# **Engineering, User & Panel Configuration**

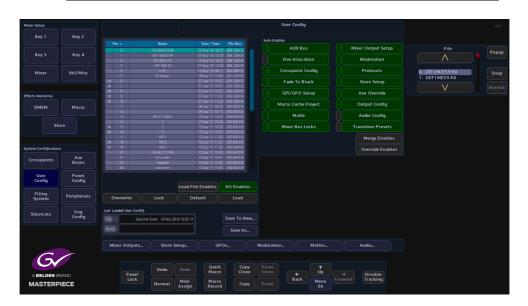
# **Saving Files**

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 Grass Valleye 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.

dixer Setup						User Config - S	ive As			
	Key 2					Sub-Enables				
		File 72	Name Sport22	Date / Time 18 Mar '19 18:27	File Size 242.176KB	AUX B		Mixer Output Setup	Destinati	Pop
Key 3	Key 4	73 74		-		Dve Alloc	ation	Modulation		Fop
Mixer	Util/Misc					Crosspoint	Config	Protocols		Sna
						Fade To E	lack	Store Setup		
fects Memories		79 80				GPI/GPO	Setup	Aux Override		Norn
		Last Loaded User Config				Macro Cache	Project	Output Config		
DMEM	Macro		her State: 04 Mar 2019 10:	13 14		Matt		Audio Config		
St	ore	Name				Mixer Bus		Transition Presets		
							Locato	Merge Enables		
rstem Configuratio		Name Sport72						Override Enables		
Crosspoints	Aux	Rename			Save			Override Enables		
crosspoints	Buses									
User Config	Panel Config									
Filing	Peripherals									
System										
System	Eng									
	Eng Config									
System	Eng Config									
System	Eng Config									
System	Eng Config									
System	Eng Config									
System		Panet	Undo Re	do Quick Macro	Copy Clone	Paste Clone Hack	↑ Up	→ 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)

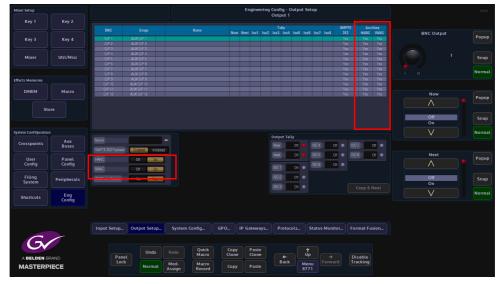
	Key 2					Enginee	ing Co Ou	nfig - Ou tput 1	tput Se	tup					
Key 3															
Key 3					Now No	xt Iso1		Tally 3 Iso4 I:	so5 Iso5	i Iso7 Iso	SMPTE 8 352	Anci HANC		BNC Output	
	Key 4	D/P 1	ALX 0/P 1								Yes	Yes	Yes		Popup
Mixer l	Util/Misc														Snap
			ALX D/P 7												Normal
ffects Memories		D/P 9	ALX 0/P 9									Yes			
		DyP 10	ALX 0/P 10								Yes				
DMEM	Macro	D/P 11	ALX 0/P 11								Yes	Yes	Yes		
		DVP 12	AUX 0/P 12								Yes	Yes	Yes	Now	Popup
															Lobob
Store															
Store															
														Off	Snap
														On	
ystem Configuration														V	Normal
	Aux						00	put Tally							
Crosspoints	Buses								0H 😐		01 0 15		66		
			d Enabled Inf	ibited								_			
											0" O 10		011 💿	Next	
User	Panel		Drf D	n											Popup
Config	Config		_					14	011 •		01 💿			$\wedge$	
			011 D	n											
Filing			No Ye						011 💿					no	
System	eripherals		No Ye	3										On	Snap
									011 •				lext		
															Normal
Shortcuts	Eng Config														Ronnac
	Config														

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.

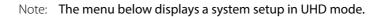
**VANC** is also able to carry embedded audio in the form of Dolby E<sup>TM</sup>, VANC also carries other ancillary data; such as video standard, aspect ratio, content name etc.

**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.



Mixer Setup							Engi	ineering	g Config Outpu	j-Outp rt1	ut Sel	tup							HDD
Key 1	Key 2																		
						New	Next I:	so1 Iso2	Tall Iso3	y Iso4 Iso8	5 1so6	Iso7	Iso8	SMPTE 352		illary VANC	BNCO	utput	
Key 3	Key 4	0/P 1,2,3,4		UHD										Yes	Yes	Yes	Dire o	rpor	Popup
				UHD															
				UHD															
Mixer	Util/Misc		AUX O/P 5																Snap
		0/P 6	AUX 0/P 6											Yes	Yes	Yes			
		0/P 7 0/P 8	AUX 0/P 7 AUX 0/P 8			_		_					_	Yes Yes	Yes	Yes Yes			Normal
Effects Memories		0/P 9	AUX 0/P 9											Yes	Yes	Yes			
Lifects Melliones																			
DMEM	Macro	0/P 11 0/P 12	AUX 0/P 11 AUX 0/P 12											Yes	Yes	Yes	No		
Į		U/P 12	AUX U/P 12											Yes	Yes	Yes		~	Popup
																	$\wedge$		
Sto	ore																		
																	Off		Snap
																	On		Shap
System Configuration									Output	Tally							$\sim$		Normal
Crosspoints	Aux				UHD Output	011	On												
crosspontes	Buses		ad Enabled M	ibted	12G/6G Output	No	Yes			011			011	<ul> <li>IS0</li> </ul>	2	011 🔍			
			au enabled P	indited	120/00 00000		189			Off			Off	<ul> <li>IS0</li> </ul>	8	011	Nex	ıt	
User	Panel		D11 0	n	Payload UHD Channel	110 011													Popup
Config	Config	VANC	DI							01							$\wedge$		
			UII																
Filing	Peripherals		No Ye														Off		Snap
System										011							On		
																	V		Normal
Shortcuts	Eng Config																v		Normac
	coning																		
		Input Setup	Output Setu	p S	ystem Config	GPO I	P Gate	eways	Pro	otocols		Status	Monito	r Foi	rmat Fi	usion			
					Quick	Сору					Ť								
			Undo		io Macro	Clone		one		F	Up								
A BELDEN BR	RAND	Pa	net ck							ack			orwarc		sable acking				
MASTERP	IECE		Norma	al Mo Assi		Сору					Men 877				actang				
					gii Kecolu														

**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.

Mixer Setup							Enginee	ring Config Outpr	g - Outpi nt 1	st Setup						HDD
Key 1	Key 2							Tal				SMPTE		illary		
						Now 1	lext Iso1	Iso2 Iso3	lso4 lso5	Iso6 Ise	o7 Iso8	352	HANC	VANC	BNC Output	Popup
Key 3	Key 4	0/P1,23,4	AUX D/P 1,2,3,4	UHD										Yes		Ророр
				UHD												
Mixer	Util/Misc															Snap
MIACI	OULTMISE	D/P 5 D/P 6	AUX 0/P 5 AUX 0/P 6									Yes Yes	Yes	Yes Yes		Shap
		D/P 5	AUX 0/P 5									Yes	Yes	Yes		
		DVP 8	ALIX O/P 8									Yes	Yes	Yes		Normal
Effects Memories		D/P 9	AUX 0/P 9	_			_					Yes	Yes	Yes		
Effects Memories		DVP 10	AUX 0/P 10									Yes	Yes	Yes		
		D/P 11	AUX 0/P 11											Yes		
DMEM	Macro														Now	
																Popup
	ore															
															Off	Snap
															On	Snap
System Configuratio																Normal
			_	- 1		DIL	Dn	Outpu	t Tally							
Crosspoints	Aux Buses						-00-	New	011			1 • IS	n 2	C11 •		
	BUSES		d Enabled	Inhibited		No	Yes	(interest of the second	0	• •			· ·			
						_		Net		60 100		H 🔹 🕅		Cff 💿	Next	
User	Panel		011	On		TId Dff										Popup
Config	Config							ISO 1	0#	160						
			011	On				ISU I	UII.							
Filing		ANC From Source						150.2	011						Off	
System	Peripherals		No	Yes											On	Snap
								150.3						Nevt	On	
																Normal
Shortcuts	Eng Config															
	Config															
		Input Setup	Output Se	tup 1	System Config	GPO IF	Gatewa		otocols	Stat	us Monit	or Fo	ormat Fu			
		Input Setup.	Output Se	tup s	System Config	GPO II	Gatewa		otocols	Stat	us Monit	or Fo				
G		Input Setup.	Output Se	tup S	System Config	GPO	9 Gatewa		otocols	Stat	us Monit	or Fo				
6		Input Setup.	Output Se	tup S					otocols	Stat	us Monit	or Fo				
G		Input Setup			Quick	Сору			otocols	+	us Monit	or Fo				
G			Un													
A BELDEN B		Pa	net	do Re	do Quick Macro	Сору			← [	† Up			isable			
			net	do Re	do Quick Macro	Сору				¢						

**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 Config	- System Configuration		3G - Masterpiece	HDD
Key 1	Key 2	System Standard		Reference Status	Panel to Mainframe connection			
Key 3	Key 4	System Standard 1080(59.94 New Standard 1080(59.94		Genlocked Yes Ref Present Yes	Link Latency Normal High		New Standard	opup
Mixer	Util/Misc			RefLocked Yes Tri Sync No	logged off Panel Config menu : stored in the Panels Non Volatil		1080i/60 1080i/59.94 1080i/50	nap
Effects Memories		Genlock CH Cn	Action On Next Field	Interlaced Yos				rmal
DMEM	Macro	Genlock Phase DCD Lines •	Action On Field 1	Frame Rate 29.97				
	Macio		Action On Field 2					
Sto		When Video Not Present						
System Configuration Crosspoints User Config Filing System	Aux Buses Panel Config Peripherals	Novachania de la composición d						
Shortcuts	Eng Config							
		Options Shadow M/F						
C		Input Setup Output Setup	System Config GPO	. IP Gateways	Protocols Status Monitor	Format Fusion		
Gr								
grass va	lley	Panel	Redo Locate Button	Copy Clone Clone		Disable		
MASTERP		Lock Normal Mod- Assign	Fader Macro Assign Record	Copy Paste	Back Menu 8731	I 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 Grass Valleye 1/2 or 2x).

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

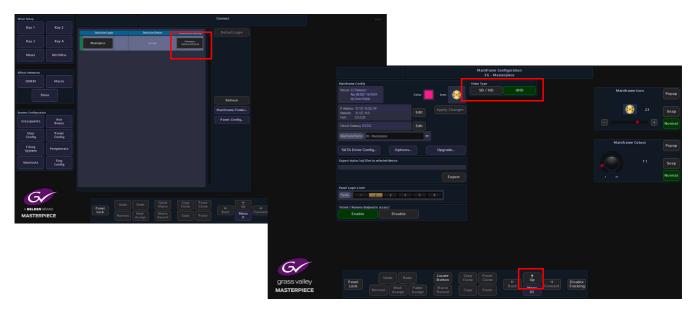
Action On Field 1: sources cut on field 1 only, all other actions on next field.

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.



# 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.

Mixe		Util/Misc										Snap
												Normal
Effects Mem						Remove Gatewa						
DME		Macro			Edit							
	Store			on 0.0.0.0/0 Network: 0.0.00 Host: 0.0.0.0		Add Gateway						
System Conf	iguration											
Crosspo	ints	Aux Buses										
User Confi	r g	Panel Config										
Filin Syste	g m	Peripherals										
Shorter		Eng Config										
			Input Setup	Output Setup	System Config.	GPO	IP Gateways	Protocols	Status Monitor	Format Fusion		
1	5/											
		ND	Panel	Undo	Redo Qu Ma	ick Copy cro Clon	Paste Clone		↑ Up →	Disable		
			Lock	Normal	Mod- Assign Rec	cro cord Copy		Back	fenu 737	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		
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.

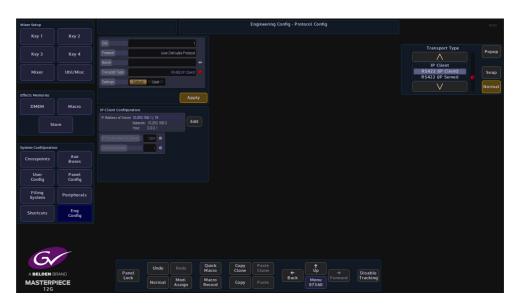
Mixer Setup							Engineerin	g Config - Pro	tocols					
	Key 2													
Key 3	Key 4	User Definable Prot	Perteculo		Available Protocol Jser Definable Proto Macro Control TODSK Keyer Contro		Load Unload	Name Transport Typ			R\$422 (IP Client) 1024	Loaded Protoco		Popup
Mixer	Util/Misc				Loopback Test RCS Interaction 4K Pan and Scan Roll Call Set Param		Configure Activate	Channel Connection S			1 Pending			Snap
Effects Memories														
DMEM	Macro									werk: 10.250.160.0 1: 0.0.0.1		Protocol Type Audio Miscellaneous		Popup
System Configuratio												Master Control		
Crosspoints	Aux											v		
	Buses											Available Protoc	ol	
User Config	Panel Config											Available Protoc		Popup
Filing System	Peripherals													Snap
Shortcuts	Eng Config													
		Input Setup	Output Setup	System	n Config	GPO	IP Gateways	Protocols	Stat	us Monitor	Format Fusion			
	PAND	Panel	Undo		Quick Macro	Cop Clor	y Paste Clone	<b>~</b>	↑ Up		Disable			
A BELDEN BRAND MASTERPIECE 12G		Lock		Mod- Assign	Macro Record	Сор		Back	Menu 8736		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	HDD
Key 1	Key 2			
Key 3	Key 4	Protocol User Deti	le Protocol	Transport Type Popup
		Name		
Mixer	Util/Misc	Transport Type	R5422 Pat 🧕	RS422 Port Snap
		Settings Default User		Normal
Effects Memories			Apply	
DMEM	Macro	Serial Port Configuration		
Sto	ore	Serial Port         1           Bind Rate         29400           Data Bits         8		
System Configuratio		Stop Bits 2		
Crosspoints	Aux Buses	Party None •		
User Config	Panel Config	Port Type Sisvo Mastar		
Filing System	Peripherals			
Shortcuts	Eng Config			
A BELDEN B MASTERP 126	RAND	Panel Lock Normal	edo Quick Copy Paste to Acco Copy Paste to Acco Come Back Menu Back Menu Back Menu Back Menu Back Convard	Disable 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.



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**

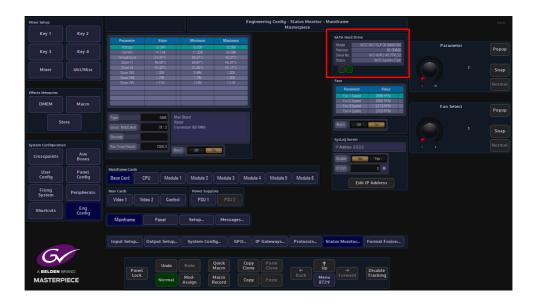
The Status Monitor function monitors the overall health of the mainframe allowing the user to easily see any problems in the unlikely event that the Masterpiece mainframe should have a fault.



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					Engineering Config - Status Monitor - Mainframe Masterpiece									HDD	
Key 1		Key 2										SATA Hard Driv			
			Parameter Core Temp	Value 63.88°C		Minimum 56.00°C		imum 68°C					WDC WD 10.FCX-88N6GN0	Parameter	
Key 3		Key 4	Board Temp	31.00°C		20.00°C		00°C							Popup
			1V CPU Care	1.00/		0.99V		DOV				Serial No.	W0-WX01A575MU22		
													MCS System Disk		
Mixer		Util/Misc													Snap
															Shup
			2VS FPGA ID	2.497		2.46V						Fans			
			3V3FPGAID				3.:	30V							Normal
Effects Memo	ries											Parameter	Value		
												Fan 1 Speed Fan 2 Speed			
DMEM		Macro										Fan 3 Speed		Fan Select	
												Fan 4 Speed		Fan Select	Popup
				( OPU											
	Stor											Alarm 01	0.		
												-			Snap
				\$57083283								SysLog Server			Shap
System Confi	guration			7319.2								IP Address 0.0.0			Normal
		Aux				Off	Dn								
Crosspoi	ints	Buses										Enable N	o Yes		
			Mainframe Cards									IP Port	0 .		
User		Panel													
Config		Config	Base Gard	CPU N	lodule 1	Module 2	Module	a 3 Modu	ile 4 Module 5	Module 6		Ed	it IP Address		
Filing		Peripherals	Rear Cards			Power Sup	plies								
Syster		renpilerats	Video 1	Video 2	Control	PSU 1									
			VIGEO I	VIGE0 2	sonuor	1001									
Shortcu	rts	Eng Config													
		Contig													
			Mainframe	Panel		Setup	Mess	sages							
			Input Setup.	Output Se	tup	System Cor	nfig	GPO	IP Gateways	Protocols	Sta	tus Monitor	Format Fusion		
	$\mathbf{N}$														
			Un	do		Quick Macro	Copy Clone			† Up					
A BELDEN BRAND		AND	Pa				maelo	Ctolle					Disable		
MASTERPIECE		Lo	ck Nor		Mod- Assign	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 - Stat Panel	us Monite	or			HDD
Key 1	Key 2										SysLog Server			
Key 3	Key 4	Parameter CPU Tomp	Va 43.45		Minimum 18.85°C	Maxir 67.35							Parameter	Popup
											Enable No	o Yes		
Mixer	Util/Misc										IP Pot	0		1 Snap
											Ed	it IP Address Value		
Effects Memories														
DMEM	Macro													
Sto		Alarm Dff	Da											
System Configuration		Network Connect	ion											
Crosspoints	Aux Buses	Status		1000bas	eT (full-duplex flow	rcontrol)								
User	Panel													
Config	Config													
Filing System	Peripherals													
System														
Shortcuts	Eng Config													
		Mainframe	Pan	el	Setup	Messa	nges							
		Input Setup	. Output	Setup	System Cor	ıfig	GPO	IP Gateways	Protocols	i Sta	atus Monitor	Format Fusion		
G	~													
Gv		Pan		Undo		Quick Macro	Copy	y Paste le Clone				Disable		
A BELDEN BE		Loc	k			Macro Record	Copy	y Paste		Menu 8728		Tracking		

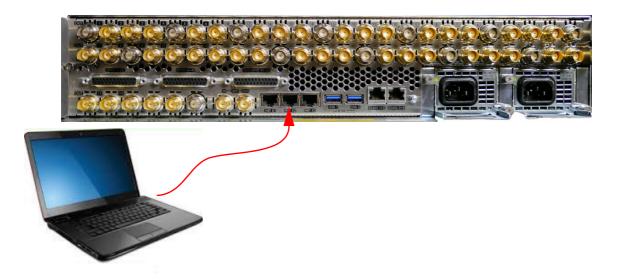
The user is also able to setup the SysLog Server IP address so that an external PC running SysLog Server software can monitor Masterpiece. (please read the next section of this manual).

**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 Windows<sup>TM</sup> operating system for example, in the command prompt window type:

If using a Windows<sup>IM</sup> 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

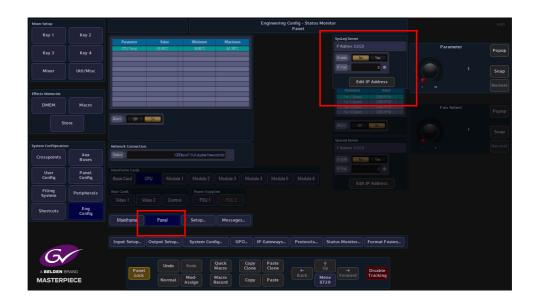
Make a note of this address.

## **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 C	onfig - Status Panel	Monitor			HDD
Key 1	Key 2								SysLog	Server		
Key 3	Key 4	OPU Temp	45.51°C	18.85°C	67.39				IP Addre	es 0.0.0	Parameter	Popup
Mixer	Util/Misc								IP Part			1 Snap
Effects Memories										Edit IP Address	1 20	
DMEM	Macro											
Ste		Alarm Dff	Dà									
System Configuratio		Network Connection										
Crosspoints	Aux Buses	Status	10008	aseT (full-duplex flow	vcontrol)							
User Config	Panel Config											
Filing System	Peripherals											
Shortcuts	Eng Config											
		Mainframe	Panel	Setup	Messa	ges						
G		Input Setup	Output Setup	System Cor	nfig	GPO	IP Gateways	Protocols	Status Mor	nitor Format Fusion.		
	PAND	Panet	Undo		Quick Macro	Copy Clone	Paste Clone	<b>_</b>	t Up	Disable		
MASTERP		Lock	Normal	Mod- Assign	Macro Record	Copy		Back	Menu 8728			

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.

Stop         Finit         Processing         Highlighting         Goto new         More         Were prev         Were file         Obar         About         Terminate           splay         were file														
Vev Re     gybg       Pessage Retring     All messages match       spbyrg 0 messages	Setup	Font	Processin			Goto new	More	View prev	Wew next	View file	dear 🤞	(?) About	Terminate	
Message filtering         All messages match           splaying 0 messages         Image: All messages match	Display		-											
splaying 0 messages ime IP Host Foolity Promby Tag Message			1782-51 M				•							
me P Hot Facility Priority Tag Message	Messa	ge filtering		Al mess	sages match									
	Displaying	0 messages												
	Time	IP	•	Host	Facility	Priority	Tag		Message					 
	P 172.28	7.7:514	TCP:	server d	lisabled									

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 Grass Valleye machine to run multiple Syslog servers simultaneously.

Setup	And the second second	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
Highlighting ✓ 3D fill		
Working Write all received messages to a I Receive messages encoded in UT		
•	DK X	Cancel

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

View				•	
Message filter		Al messag	ges match		
ime	IP	Host	Facility Priority	Tag	Message
eb 9 13:01:11	172.28.20.31	DUCK_1	user info	tUdpIn	THU FEB 09 13:01:11 2017
eb 913:01:11	172.28.20.31	DUCK_FL	user debug	tUdpIn	UdpInputTask: 172.19.39.98 : Lost 1 packet [966 967]
eb 9 13:01:11	172.28.20.31	DUCK_FL	user debug	tUdpOut	UdpOutputTask: Requesting resend of message #966 from 172.19.39.98
eb 9 13:01:11	172.28.20.31	DUCK_F	user debug	tUdpIn	UdpInputTask: 172.19.39.80 : Lost 1 packet [964 965]
eb 9 13:01:11	172.28.20.31	DUCK_F	user debug	tUdpOut	UdpOutputTask: Requesting resend of message #964 from 172.19.39.80
eb 9 13:01:11	172.28.20.31	DUCK_F	user debug	tUdpIn	UdpInputTask: 172.19.39.122 : Lost 1 packet [963 964]
eb 9 13:01:11	172.28.20.31	DUCK_F	user debug	tUdpOut	UdpOutputTask: Requesting resend of message #963 from 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

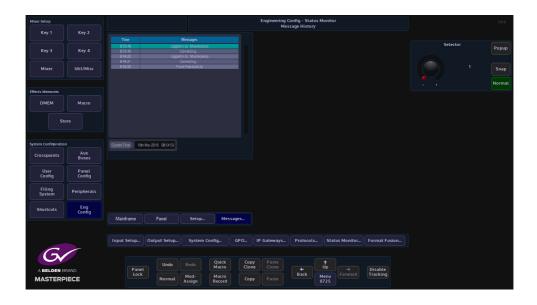
The **Precision Time Protocol** (PTP) is a protocol used to synchronize clocks throughout a computer network. On a local area network, it achieves clock accuracy in the sub-microsecond range, making it suitable for measurement and control systems.

**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.



# FormatFusion3<sup>TM</sup>

The FormatFusion3<sup>TM</sup> 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

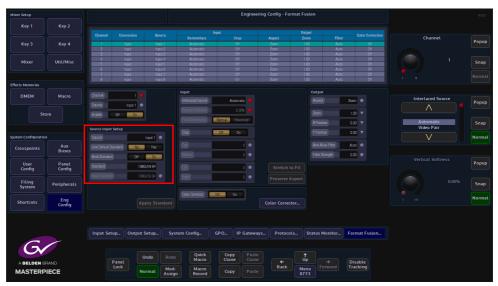
To use FormatFusion3, touch the **{Input Setup...}** button, then in the menu, select an input by touching an input row or use the "**BNC Input**" parameter. Once selected, set the "**User Default Standard**" parameter to "**No**" and set the "**Auto Standard**" parameter to "**On**". This must be done 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 1	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					
Mixer	Util/Misc											Snap
IMIACI	Outomise											Shap
				Input 6	Automatic		Zcam	1.00				
			Input	Input 7	Automatic	Dff Dn	Zcom	1.00	Auto	011		
Effects Memories		8	Input	lisput 8	Automatic	Un	Zcon	1.00	Auto	Uff		
DMEM	Macro	Channel			Input			Output				
	Macio	ablice			Interlaced Source	Automatic 💿			1	toom 💿	Source	Popup
	ore	Enable	Off On			LC0% 💿				1.00 🔻		
	sie	Dioue	Off Cn		Field Dominance	Normal Reversed		XPost		0.00 V	Input 1	Snap
		Source Input	Setup		Cap	OH On		Y Posit		1.00 V	Input 2	
System Configuratio				Input 1 😐		Car Can						Normal
Crosspoints	Aux Buses		endard No	Yes	Top	•			ias Filter	Aito 🔍		
	Buses		Off	Do	Bettom	0			trength	0.00	New Standard	
User Config	Panel Config	Standard	1080	1/59.94		•						
Coning	Connig	New Standard		15991 😐	Berel						1080i/60	
Filing System	Peripherals										1 0 801/5 9.94	Snap
System					Color Corrector	Ott On					1080i/50	
Shortcuts	Eng Config			ply Standard			Color Correc	tor				Normal
	Config	Input Set			stem Config	GPO IP Gatewa			Monitor	format Fusion		
G		impor ser	opOutput s	secop Sy						ormac rostori		
A BELDEN B	RAND		Panel	Indo Red	o Quick Macro	Copy Clone Clone				Disable		
MASTERF			Lock	rmal Mod Assig		Copy Paste	Back	Menu 8773		Fracking		

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

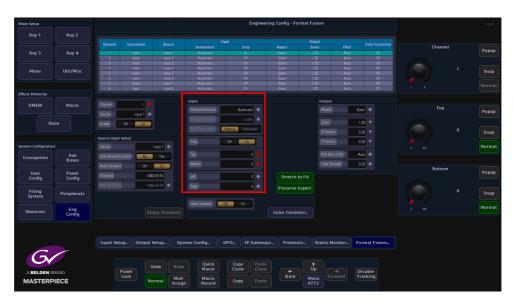


### Source Input Setup

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 Grass Valleye 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 Grass Valleye 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	Engineering Config - Forma	at Fusion Color Effects			HDD
Key 1	Key 2		YUV	Presets				
		Control Color Fx.	Brightness 0.00%		& W Sepia	Inverse	Master Lift	
Key 3	Key 4	YUV Bleed	Contrast 1.00	Curves				Popup
Mixer	Util/Misc	RGB Curves	Saturation 100	Type Posterize •			0.00%	Snap
		Bleed		Stees 1				Normal
Effects Memories								
DMEM	Macro			Threshold 0.50 •			Master Gain	
				Phase 0.007				Popup
St						Sine	1.00	
		Hue Ratate D.CCT		Posterize	Solarize			Snap
System Configuratio				Saw	Sine Ramp	Saw Ramp		Normal
Crosspoints	Aux Buses	RGB RedLift	10.00%   Red Gam	na 1.00 💿 Red S-Gain	0.00%			
User	Panel		t 2.00% • Green Gar	rma 1.00 💿 Green S-Gain	0.00%		Master Gamma	Popup
Config	Config	Master Litt 0.00% Blue Lift	-10.00% • Bue Gam	ma 1.00 • BueS-Gan	a.co% •			
Filing System	Peripherals	Master Gain 1.00 Red Gai	1.00 💿 Master S-	Gain 0.00%  Red S-Center	50.00%		1.00	Snap
System		Master Gamma 1.00 Breen G	ain 1.00 • Master S-	Center 50.00% • Green S-Cente	B 50.00% •			
Shortcuts	Eng Config		1.00		50.00% • 🏸			Normal
		Input Setup Output Setup	System Config GP	O IP Gateways Prot	ocols Status Monito	r Format Fusion		
6								
		Panel	Redo Quick Macro	Copy Paste Clone Clone +		Disable		
A BELDEN B		Lock Normal	Mod- Assign Record	Copy Paste Ba				

**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 Outpu er Op1	t Config				_		_	HDD
Key 1	Key 2									Namo			-				
Key 3	Key 4	Mxer Dp1 Mxer Dp2 Mxer Dp3	Name		1 Pam Pam Pam	2 Pom Pom Pom	3 Pgm Pgm Pgm	4 Pgm Pgm Pgm	Proview	Proview DI Key 1	CH	Off Forn On			Mixer Output		Popup
Mixer	Util/Misc				rgn	ryn	-91	rgii		Key 2	CH	Pgm On			Mixer Op1 Mixer Op2		Snap
Effects Memories										Kay 3 Kay 4		Pgm Oh Pgm On			V		
DMEM	Macro	Fade To Black															
Sto		Level	0.00% 50.00%		Cut On										Preview Of		Popup
		Shape	Linsar 🍨	Auto	Auto On										Off OP 1	-	Snap
System Configuration		Time	01;00												V		Normal
Crosspoints	Aux Buses																
User Config	Panel Config																
Filing System	Peripherals																
Shortcuts	Eng Config																
ч																	
		Mixer Outputs	Store Setu	ıp	GPOs		Modul	ation	м	lattes	Aut	fio					
G																	
A BELDEN B	RAND	Panet			Quick Macro	Cop Clor	ne Past Clon				→ . [	Disable					
MASTERP	IECE			Aod- ssign	Macro Record	Сор	py Past			Menu 8641		racking					

# 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 Couplin Store 7	ng & Linki	ng				
Key 1	Key 2														
		Store 1	Key	F	II Lini	ked To Store	Store	Name	Audio in Reverse	: 			Store		Popup
Key 3	Key 4												$\land$		
Mixer	Util/Misc		Key Stare 5										Store 6 Store 7		
Mixer	OULYMISC			Fil S	ore 4								K Store 8	_	Snap
			Key Store 8	Fils	ore 7								V		
Effects Memories		9 10													
DMEM	Macro						_						Coupled Sto	re	
		Uncou	ple All Ur				ema	- ^	udio In Reve	rse			$\wedge$		Popup
St	ore												Store 6		
													Store 8 Store 9		Snap
System Configuratio													V		Normal
	Aux												V		Normat
Crosspoints	Buses														
User	Panel												Linked To St	pre	Popup
Config	Config												∧		
Filing	Peripherals												Unlinked		Snap
System	Peripherats												Store 1		Shap
Shortcuts	Eng Config														Normal
	Config														
					-										
		Mixe	r Outputs	Store	Setup	GPO	s	Modulation		Mattes		Audio			
				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 Setu	р			HDD
Key 1	Key 2											
		1	Real	Tally 1		input 17	Now	•	-		GPO Select	Popup
Key 3	Key 4											Fobob
Mixer	Util/Misc		Peel Peel	Tally5 Tally6		input 5 i Input 6 i		· · ·			GPO 1	Snap
		6	Real	Talyo Taly?		input 0 r			4			
		8	Real	Tally 8		input 81			· · ·			
		9	Real	Tally 9		Input 91		4.				Normal
Effects Memories												
							Crosspoint					
DMEM	Macro										Crosspoint	
				Xpt 140	Xpt 4180	Matte	Mixer O/P					Popup
Ste	ore			Stores	Cancel							
											BNC 1	Snap
				1 : BNC 1	2 : BNC 2	3 : BNC 3	4 : BNC 4	5:E	BNC 5	6 : BNC 6	BNC 2	Suab
System Configuration				7 : BNC 7	8 : BNC 8	9 : BNC 9	10 : BNC 10	11:E	BNC 11	12 : BNC 12		Normal
	Aux											
Crosspoints	Buses			13 : BNC 13	14 : BNC 14	15 : BNC 15	5 16 : BNC 16	17 : E	BNC 17	18 : BNC 18		
											Crosspoint Tally	
User	Panel			19 : BNC 19	20 : BNC 20	21 : BNC 2	1 22 : BNC 22	23:E	BNC 23	24 : BNC 24		Popup
Config	Config										$\wedge$	
			Continuation	25 : BNC 25	26 : BNC 26	27 : BNC 23	7 28 : BNC 28	29 : E	BNC 29	30 : BNC 30		
Filing											Fill	
System	Peripherals			31 : BNC 31	32 : BNC 32	33 : BNC 3	3 34 : BNC 34	35 : E	BNC 35	36 : BNC 36	Key	Snap
	Enn			37 : BNC 37	38 : BNC 38	39 : BNC 3	9 40 : BNC 40				$\vee$	Normal
Shortcuts	Eng Config							J. UJU				
		Mixer	Outputs	Store Se	tup	GPOs	Modulation	Ma	ttes	Audio		
	1											
				Undo	Redo Qui				<u>.</u> †			
A BELDEN B	RAND		Panel		Ma	cro Clone		· · · ·		→ Disable		
			Lock		Mod- Ma	cro		Back N	lenu	Forward Tracking		
MASTERP	TECE			Normal	Assign Reo							

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.

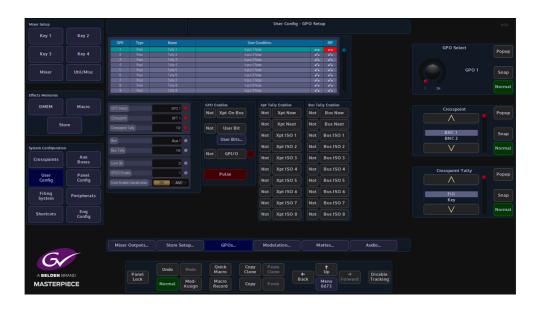
Touch the attacher below the GPO table and the parameters will change allowing the user to setup a GPO trigger.

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					м	odulators - Se	tup			HDD
Key 1	Key 2	Global Modulators								
		l l						Phase	Modulator	
Key 3	Key 4	N	ad 1	Sina	Yes	1.00	50.00	0:000		Popup
			lad 2							
Mixer	Util/Misc								Mod 1	Snap
							50.00		Mod 2	onup
			lad 6 lad 7	Sint	Yes	1.00	50.00	0.000		
			lad / lad 8	Sine	Yes	1.00	50.00	0:000		Normal
Effects Memories			lad 9	Sne	Yes	1.00	50.00	0.000		
			od 10	Sine	Yes	1.00	50.00	0.000		
DMEM	Macro									
DIVEN		Name Mod 1	- Frequency	1.00 Hz	Mod 1 Gain	50.00%			Туре	Popup
		Moo T	- Productivy	i.come	Muurgan	arone 🕇		ALL STOP		Topop
C 41	ore		Sine 😑 Gain	50.00%		50.00% 🔻		ALL STOP		
50	vie							All Start	Spin	
			1 Key 1 😑 🛛 Phase	0:000"		50.00% 🔻			Sine	Snap
								Run	Sawtooth	
System Configuration										Normal
Crosspoints	Aux Buses									
User	Panel									Popup
Config	Config									
Filing	Peripherals								ME 1 Key 1	Snap
System	Peripherats								ME 1 Key 2	Shup
Shortcuts	Eng Config									Normal
		Global Modulators	Mixer Bus Group	Mixer Trans Group	User Config	Group				
		Gtobat Modulators	Mixer Bos Group	Mixer trails Group	user coning i	G100p				
		Mixer Outputs	Store Setup	GPOs	Modulati	on	Mattes	Audio		
			Undo Redo	Quick Macro C	Copy Paste Clone Clone					
A BELDEN B	RAND	Panel			cione Cione			Disable		
MASTERP	IECE	Lock	Normal Mod- Assign	Macro Record	Copy Paste	Back	Menu 8629	Tracking		

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°.

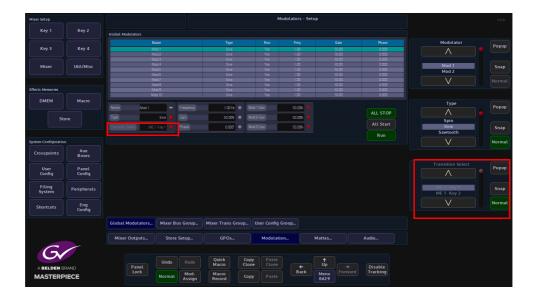
Mixer Setup							Modulators - Se	etup				HDD
Key 1	Key 2	Global Modulators										
		h							Phase	Modul	ator	
Key 3	Key 4		lod 1		Sine	Yes	1.00	50.00				Popup
Mixer	Util/Misc		lod 4 lod 5		Sine	Yes	1.00	50.00		Mod		Snap
			100 5 100 6		Sine	Yes Yes	1.00	50.00	0.000	Mod 2		
			100 0 100 7		Sine	Yes	1.00	50.00				
			lod 8		Sine	Yes	1.00	50.00		V I		
Effects Memories			lod 9		Sine	Yes	1.00	50.00				
			od 10					50.00				
DMEM	Macro											
		Name Mod 1	-		1.00Hz		50.00%			Тур	e	Popup
							00.007		ALL STOP			
St	ore		Sine 😑		50.00% 💿		50.00%					
									All Start	Spin		
					0.007 💿		50.00%			Sine		Snap
									Run	Sawtoo	th	
System Configuratio												Norma
yatem contrigonatio	"											Norma
Crosspoints												
clossponics	Buses											
User	Panel										rsetect	Popup
Config	Config									$\wedge$	1 *	
Filing System	Peripherals									ME 1 Ke	91	Snap
Jyatem										ME1 Ke		
										V		Normal
Shortcuts	Eng Config									v		Nonna
	Config											
		Global Modulators	Mixer B	us Group	Mixer Trans Group	User Config	Group					
		Mixer Outputs	Store	Setup	GPOs	Modulat	ion	Mattes	Audio			
					Quick	Copy Paste						
			Undo		Macro C	Clone Clone						
A BELDEN B	RAND	Panel				ctone			→ Disable			
		Lock					Back		rward Tracking			
MASTERP	IFOF		Normal	Mod- Assign	Macro Record	Copy Paste		Menu 8629	Inacking			

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.



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 Grass Valleye 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 C Mixer, Key				HDD
Key 1	Key 2		Local Type							
		Local	Sine	Yes 1.00	50.00	0.000	ME 1 Key 1	Kayar	Attachment	Mod-
Key 3	Key 4	Local	Sine	Yes 1.00 Yes 1.00	50.00 50.00	0.000	ME1Key1 ME1Key1	Keyer		Assign
Mixer	Util/Misc	LUUI	Sine	189 1.00	50.00		MC I Key I	r Al A		
Effects Memories										
ОМЕМ	Macro								Gain	Mod- Assign
	ore								50.0	0% Snap
System Configuratio										
Crosspoints	Aux Buses	Parameter Details		MattelHue	B GND A	B GND B	UTIL 1 UTIL 2			
User Config	Panel Config				KEY 1	KEY 2	KEY 3 KEY 4		Phase	Mod- Assign
Filing		Attachment	1 🔴 Local Frequen	3 1.00 Hz	Modulator	Loca	• Det	ach ALL STOP		0°
System	Peripherals		50.00% 😑 Local Type	Sine 🤇	Transition Soled		• Find	Next All Start		
Shortcuts	Eng Config	Phase	0.000" 😐					Run		
		Global Modulators	Mixer Bus Group	Mixer Trans Grou	ıp User Con	fig Group				
		Mixer Outputs	Store Setup	GPOs	Modu	lation	Mattes	Audio		
G				Quick	Copy Pas		<b>•</b>			
A BELDEN B	BAND	Panet	Undo Redo		Clone Clo					
MASTERP		Lock	Normal Mod- Assign	Macro Record	Copy Pas	te Bac	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 Grass Valleye 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 Grass Valleye 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° 🔴										
TTTTIdSe	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.

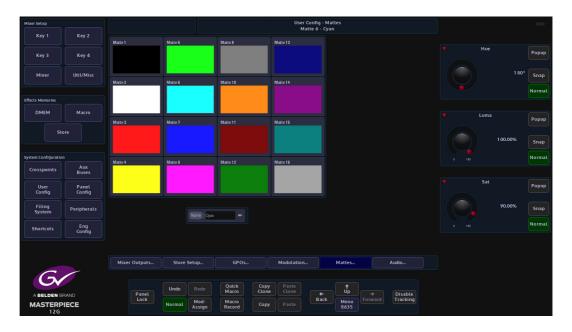
The specific modulator setup can now be adjusted.



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	enerator			
Key 3	Key 4	Meter Type	AES/Digital						I 1 Frequency	400 Hz •	Normal Meter Style	Mod- Assign
Mixer	Util/Misc	Prelade Metering	till On						12 Frequency	800 Hz •	AES/Digital VU Meter	
Effects Memories DMEM Sto	Macro		001LIFS • 001LIFS • 2.005 •					Channel Channel Channel	13Frequency 13Phase 14Frequency 14Phase 15Frequency	1000 Hz		
System Configuration									15 Phase	0.090*		
Crosspoints	Aux Buses								6 Frequency	8000 Hz		
User Config	Panel Config									0.090"		
Filing System	Peripherals											
Shortcuts	Eng Config											
		Mixer Outputs	Store Setup	GPOs		Modulation.		Mattes		Audio		
Gr		Panel	Undo Re	do Quick Macro	Copy Clone	Paste Clone		† Up		Disable		
A BELDEN BE MASTERP		Lock	Normal Ass	d- Macro Ign 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 - P	references		HDD
Key 1	Key 2	GUI Preferences	Panel Preferences	Snapshot		
		Menu Select Button Top Last	Preset Bus Double Hit Shift OH On	Remove On Hold No Yes	Keyboard Brightness	Popup
Key 3	Key 4	Timecode Mode Field Frame	Crosspoint Hold Return Off On	Overwrite Off On		
Mixer	Util/Misc	Store Load On Press No Yes	Shifted Crosspoint Buttons Unlit Lit	Sound On Write Off On	100.00%	Snap
		Sub-Clip Activate On Press No Yes	Lockable Crosspoint Shift Off On	Screen Coordinate System		
		Touchscreen Cick Off On	Buttons Show Tally Next Off On	DVE in 16:9 Mode 1 x 9/16		Normal
Effects Memories		Mouse Wheel Sensitivity 0	Enable Macros No Yes	Wipe in 18:9 Mode 1 x 9/16		
DMEM	Macro	USB Keyboard Type en_US_101	Enable Clones No Yes	Crop in 16:9 Mode Percent	Legend Brightness	Danun
		Tracking Preferences	Keyboard Brightness 100.00%	DVE in 4:3 Made 1 x 9/16		Popup
Sto	re	Menu Tracking No Yes	Legend Brightness 50.00% 🐤	Wipe in 4:3 Mode 1 x 9/16	50.00%	
		Store Tracking Oll On	Graphic Button Brightness 100.00%	Crop in 4:3 Mode Percent		Snap
System Configuration		Layout Tracking Off On	Display Saver Timeout 2 Hours			Normal
Crosspoints	Aux Buses	Mixer & Bus Tracking Off On	Delegate Confirmation No Yes	Audio Module Control		
	Doses	Xpt Button Tracking Off On	Panel Knob Reattachment Classic Safe	Auctio Mixer Lamp Mode Cut On	Graphic Button Brightness	
User Config	Panel Config	Crosspoint Tracking Off On	Name Dn Macro Buttons No Yes			Popup
Filing System	Peripherals				100.00%	Snap
System						
Shortcuts	Eng Config					Normal
		Preferences Button Maps But	ton Info User Functions MAV Layout	Fader Maps Panel Colors		
6						
A BELDEN B	RAND	Panel Undo Redo	Quick Copy Paste Clone Clone			
MASTERP	IECE	Lock Normal Mod- Assign	Macro Record Copy Paste Bac	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.

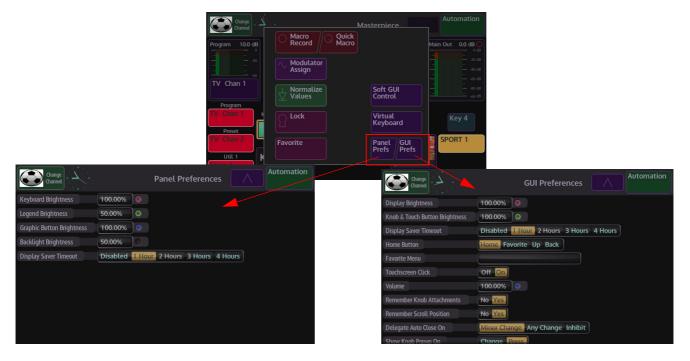
#### **Screen Coordinate System**

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.

Mixer Setup				Pane	l Config - Button Ma	p Assignment			HDD
Key 1	Key 2	Button Maps		Button Map Files					
Key 3	Key 4	Bank Map To Us ME Bank A D GUI Menu None		File 🔺		20 Mar '19 OB 56	File Size 3.144KB 2.492KB	File	Popup
Mixer	Util/Misc			2 3 4 5		12 Sep 17 18:57 06 Oct 17 15:26	2.492 KB 2.492 KB 2.492 KB 2.492 KB	0: 1 :	Snap
Effects Memories				5 6 7 8	TV Channel 1 AUX Panel	22 Nov '17 16:17	2.492 KB 3.162 KB	V	
DMEM	Macro	Load Edit Clear	Show Banks	•	HUA F SINC		32/318	Bus Group	Popup
Sto	ore						Edit File	ME Bank A GUI Menu	Snap
System Configuratio								V	Normal
Crosspoints User Config	Aux Buses Panel Config								
Filing System	Peripherals								
Shortcuts	Eng Config								
		Preferences Button Map	s Button Info	User Functions	MAV Layout	Fader Maps.			
	RAND	Panel	Redo Quick Macro		Paste Clone ←	† Up	→ Disable		
MASTERP		Lock Normal	Mod- Assign Record	Сору	Paste	Menu 8883	orward		

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	el Config - Button	Map Assignment			HDD
Key 1	Key 2	Button Maps			Button Map Files					
		Paula			File -		Date/ Time File Size		File	
Key 3	Key 4	ME Bank A			Pile A	Name	20 Mar 19 08:56 3.144 KB			Popup
icey 5	1003 4		Naco		1		06 Sep 17 15:46 2.492 KB			
							13 Sep 17 13:38 2.492 KB			
Mixer	Util/Misc				3	Copy 1 IBC	12Sep17 1857 2.492KB		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	Normal
					ī		09 May '18 11:52 3.162 KB		V	Normat
Effects Memories		Load Edit	Clear Show Bank		8	AUX Panel2	09May 18 12:09 3:219KB			
		Edad Edit	Silow Balik	•						
DMEM	Macro								Bus Group	
										Popup
									$\land$	
Sto										
							Edit File.		ME Bank A	Snap
									GUI Menu	
System Configuration									V	Normal
Crosspoints	Aux Buses									
User	Panel									
Config	Config									
Filing										
System	Peripherals									
Shortcuts	Eng									
Shortcots	Eng Config									
		Preferences	Button Maps Buttor	Info	User Functions	MAV Layout	Fader Maps			
		Preferences	Botton Maps Botton	11110	oser Fonctions	MAY Layout	rader maps			
6										
			Undo Redo	Quick						
A BELDEN B	RAND	Panel	L CINECO L KEEGO	Macro	Clone		Úp 🔶	Disable		
			Mod-	Macro		Bac	k Menu Forward	Tracking		
MASTERP	IECE		Normal 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).

						Panel Con	fig - Edit B File 0	utton Map File					
Key 1		Button											
		Button P	rimary Crosspoint	Shifted Crosspoi				Name		UHD		Button Number	
Key 3	Key 4	1	XPT 1 (BNC 1)	XPT 15 (BNC 16			162	Morer Do2	Mixer Op2				Pop
			XPT 2 (BNC 2)	XPT 17 (BNC 17			163	Moxer 0.p3	Mixer Op3				
			XPT 3 (BNC 3)	XPT 18 (BNC 18			209	Store 1	Store 1				
			XPT 4 (BNC 4)	XPT 19 (BNC 19			210	Store 2	Store 2				
Mixer	Util/Misc		XPT 5 (BNC 5)	XPT 20 (BNC 20				Store 3					Sr
			XPT7 (BNC7)	XPT 22 (BNC 22			213	Store 5	KStore 5				No
				XPT 23 (BNC 23									
cts Memories			XPT 209 ISTOR 11	XPT 24 (BNC 24			215	Store 7	Store 7				
			XPTS			Crosspoint							
DMEM Macro			XPTC									Crosspoint	
			XPT: Xpt 140	Xpt 4180	Matte	Mixer O/P							Po
			DITIES									$\wedge$	
Sto	ore		XPT Stores	Cancel								Matte 6	
			Shifty								_	Matte 8	
			1 : BNC 1	2 : BNC 2	3 : BNC 3		BNC 4	5 ; BNC 5	6 : BNC 6				
			I : BNC I	Z : BING Z	3 : BNC 3	4:6	SIVC 4	5 BNC 5	0:BNC 0			Matte 8	
tem Configuration		19 20	7 : BNC 7	8 : BNC 8	9 : BNC 9	10 : E	INC 10	11 : BNC 11	12 : BNC 12			$\vee$	No
Crosspoints	Aux	20											
Crosspoints	Buses	22	13 : BNC 13	14 : BNC 14	15 : BNC 1	5 16:6	BNC 16	17 : BNC 17	18 : BNC 18				
		24	19 : BNC 19	20 : BNC 20	21 : BNC 2	1 22 : 6	BNC 22	23 : BNC 23	24 : BNC 24			Button Type	Po
User	Panel											$\wedge$	10
Config	Config	26	25 : BNC 25	26 : BNC 26	27 : BNC 2	7 28 : 6	BNC 28	29 : BNC 29	30 : BNC 30			~ ~ ~	
Filing												Normal	
System	Peripherals		31 : BNC 31	32 : BNC 32	33 : BNC 3	13 34 : E	BNC 34	35 : BNC 35	36 : BNC 36			Shift Button	Sr
Shortcuts	Eng Config		37 : BNC 37	38 : BNC 38	39 : BNC 3	a 40:F	BNC 40					$\vee$	Not
	Config												
		Button Track	ing De	lete Sav	/e To File		Mat	ttes					

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 Cor	nfig - Button Ir	nformation	 	 	HDD
Key 1	Key 2	Button Summary									
						Live Mo	de				
Key 3	Key 4	Clone Name									
	Util/Misc			Inactive							
Mixer	Utit/Misc			Inactive							
				Not Attached		Enable M					
Effects Memories		Button Delay		02:00							
DMEM	Macro			Macro		Enable Cl	ones				
				Normal							
5	Store			Enabled		Locate Bu	rtton				
System Configurat	lon			Yes		Detach	ALL				
	Aux			Enabled							
Crosspoints	Buses										
User	Panel					Detach Sna	apshot				
Config	Config					Locate M	acro				
Filing	Peripherals		Clone	Normal							
System		Lamp From:	Clone	Normal Macro		Detach M	acro				
Shortcuts	Eng Config	Bitmap From:				Locate C					
		Snapshot Save:				Detach C	lone				
		Preferences	Button Maps	Button Info	User Functi	ons MA	V Layout	Fader Map			
G	-										
0			Undo	Redo Quick	Сору			.t			
ABELDEN		Panel Lock		Macro			← Back		Disable Tracking		
MASTER	PIECE			Mod- ssign Record				Menu 882			

#### **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 Grass Valleye 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							Panel G	onfig - Button	Information					
	Key 2	Button Summary												
		Button Name					Live N	ode						
Key 3	Key 4	Clone Name						Macros						
		Normal Button Function			Inactive									
Mixer	Util/Misc	Cloned Button Function			Inactive			Bitmap						
		Macro		Not A	Itached									
Effects Memories		Button Delay			00:00		Enable							
DMEM	Macro	Bitmap From			Macro		Enable	Clones						
		Lamp From			Normal									
					Enabled		Locate E	utton						
System Configuratio	n				Yes		Detac	1 A.U.						
Crosspoints					Enabled									
ciossponits	Buses							$ \longrightarrow $						
User Config	Panel Config						Detach Si	apsnot						
	coning						Locate	Macro						
Filing System	Peripherals	Active Functions:		Normal			Detach	Macro						
		Lamp From:		Normal										
Shortcuts	Eng Config	Bitmap From:					Locate	Clone						
		Snapshot Save:					Detach	Clone						
		Preferences	Button Maps	Butte	on Info	User Fun	tions M	AV Layout	Fader Ma	aps				
6														
			Undo		Quick Macro	Cop	y Paste Clone		† Up					
ABELDEN		Panel Lock		Mod-	Macro			→ Back	Menu		Disable Tracking			
MASTER	PIECE		Normal	Assign	Record	Cop			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 Grass Valleye 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					Fader Group Mixe	er Bark A 🐞		
Key 3	Key 4	Fader Fader 1 Fäder 2	Button Chann Trans Ott Trans Ott	Unassigned	Cut Level Ort 4rt d8 Ort 4rt d8		Module Fader	1.8 P	Fader Group	Popup
Mixer	Util/Misc						Button	Trans • OH •	Mixer Bank A	Snap
Effects Memories										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			
G.		Panel Lock		Redo Quick Macro	Ctone C	aste lone ← Back	↓ Up Menu	Disable Tracking		
MASTERP	IECE			Mod- ssign Record	Copy P		Number			

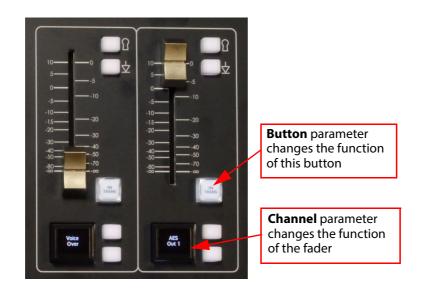
Fader Group - this is used to select any external fader module bank groups

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.

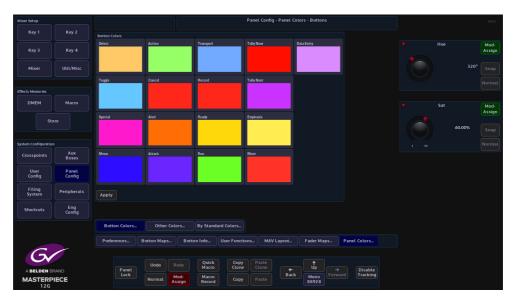
**Channel** - this sets the function of the fader i.e. Program, Preset, Voice Over, Main Out etc. Select the fader using the "Fader" parameter, then as you step through the "Channel" functions, the functions will change on the OLED button like using the toggle buttons.



# **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.

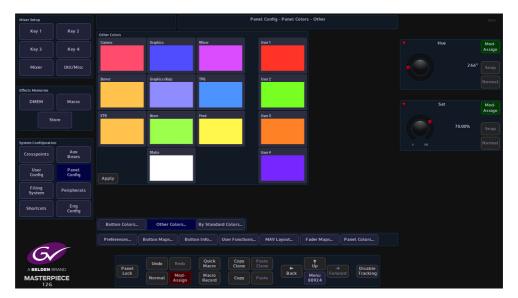


All of the buttons on the control surface can have their default color schemes changed in this menu. The diagram above Shows an example of the Tally Now adjustment menu. touch one of the items in the main menu and an adjustment menu will appear.

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**

Unlike Masterpiece SD/HD, 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.

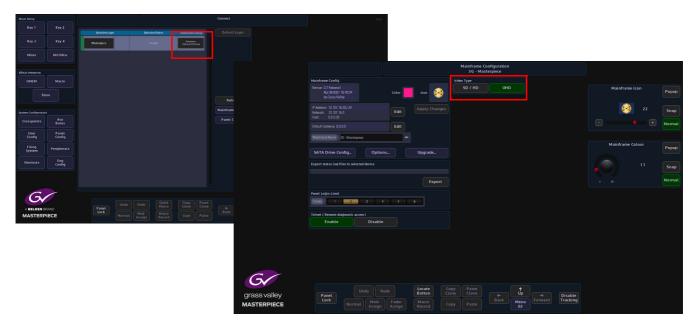
Note: The "silver" BNCs on the Masterpiece Mainframe shown on the previous page, these are the 12G-SDI Inputs and Outputs.

## 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					ngineering Confi	g - System Cor	nfiguration		
Key 1	Key 2	System Standard		Refere	ence Status				
Key 3	Key 4	System Standard 1080,/59.94 New Standard 1080,/59.94		ard Gorio Ref Pi				New Standard	Popup
Mixer	Util/Misc	UHD Mode Ozodrant 281 Genlock		RefLo Tri Sy	nd No			1080i/60 1080i/59.94 1080i/50	Snap Normal
Effects Memories		Genlack Dif Da	Action On Next F	Frame				V	Normac
DMEM	Macro	Genlock Phase 0.00 Lincs	Action On Field Action On Field						
St	ore	Background DVE			New Standard				
		Enable Background DVE		UHD	UHD sF	Slow UHD			
System Configuratio				60 Hz	59.94 Hz	50 Hz			
Crosspoints	Aux Buses			Level UHD-					
User Config	Panel Config			Apply Sta					
Filing System	Peripherals								
Shortcuts	Eng Config								
6		Input Setup Output Setup	System Config	GPO	IP Gateways	Protocols	Status Monitor		
Sv.									
grass va	lley		Undo Redo	Co	one Paste Clone				
MASTERP	IECE	No	mal Mod- Mac Assign Reco		ppy Paste	Back	Forward		

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).

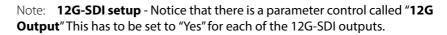
## **12G-SDI Output Setup**

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.



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 Grass Valleye way as the inputs, so now Outputs 1 to 4 make up the first UHD-quad output.



Mixer Setup								HDD							
Key 1	Key 2							Output							
		BNC			How	Next Is	ent len?	Iso3 Iso	L Iso E Is	snā isn7	Iso8 35		VAN :	BNC Output	
Key 3	Key 4	0/P 1,2,3,4	AUX O/P 1234 UH								Ye			BILCOOLDOL	Popup
			AUX 0/P 2 UH												
			AUX 0/P 3 UH AUX 0/P 4 UH												
Mixer	Util/Misc	017 00 0 0													Snap
			AUX 0/P.6 UH												
			AUX 0/2 B LH												Normal
Effects Memories															
		0/P 10	AUX 0/P 10								Ye				
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System Configuration							_							V	Normal
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			ad Enabled Inhibte	d 12G/6G Output	No	Yes		Next	Dff 🗧	ISD 5	Ott •	ISD 8	Ott	Next	
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INDIG FERT				Assign Record					8						

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**

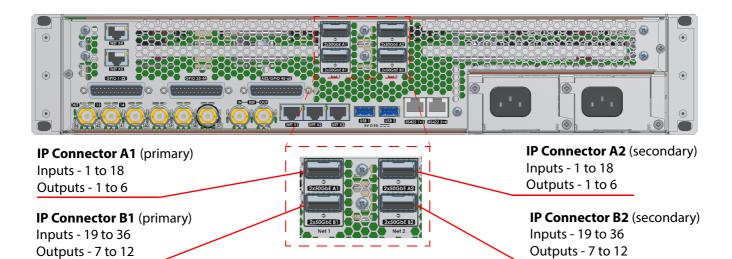
Many broadcasters and media organizations have taken the step forward and embraced new IP infrastructures into their production work flows. More are looking to work with real-time audio and video transport over a 50GbE IP network. Several real-time protocols such as uncompressed SMPTE ST 2022-6, SMPTE 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

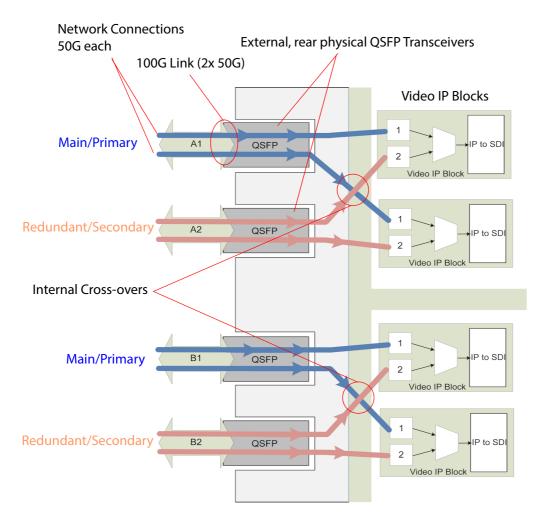


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# **IP Architecture**

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**



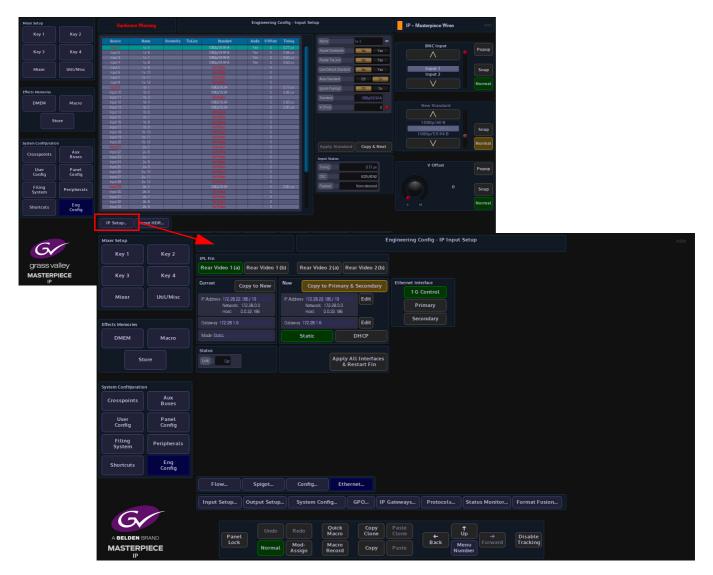
Thus, one rear physical rear media network 'link' feeds two Video IP blocks.

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
- 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 touching the **{Apply Spigot}** button.

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														En	ginee	ring C	onfig -	- IP Ing	put Setu	p				HDD
Key 1	Key 2	Input																		RollCal				
	Key 4					5 23														Fin Spigot	Rear Video 1(a) 4	Audio delay		Popup
Mixer	Util/Misc			ms		0		ake / Brea Make be																Snap
Effects Memories		Stree Form			Du SD/HD/S			Break be																Normal
ОМЕМ	Macro	Input Statu						estination rames Dela i Dffset		ng 0 ( 0 (												Streaming	•	Popup
	ore							Olfset		0												Dual Single		Snap
System Configuratio												Ap	ply									V		Normal
Crosspoints	Aux Buses																							
User Config	Panel Config																					Format		Popup
Filing System	Peripherals																					SD/HD SD/HD/3G		Snap
Shortcuts	Eng Config																					V		Normal
			Flow			Spiga	ot		nfig		Eth	ernet.												
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	BRAND			Pan							uick acro		Copy Clone		Paste Clone		<b>+</b> Ba		<b>↑</b> Up		Disable Tracking			
MASTERF	PIECE				ĸ	No	ormal	Mod- Assig		M Re	acro cord		Сору				Ва		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**

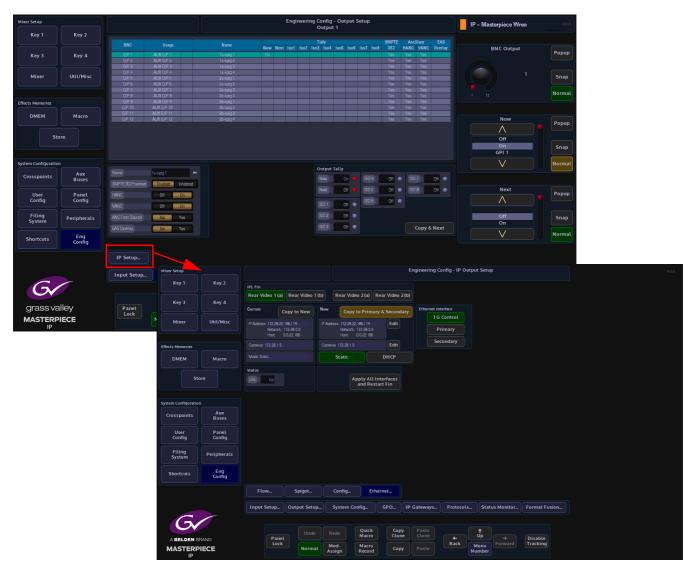
The Config menu only allows the user to change the current "DDS Domain ID".

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							I	Engineering G	onfig - IP Out	put Setup					HDD	
	Key 2	Output									RollCall	Info				
Key 3	Key 4										Fin Spiget	Rear Video 1(a)		Flow Type	Popup	]
Mixer	Util/Misc	Current	Copy to	Template	New	Paste f	rom Template	Flow Flow 1	Links Primary					None SMPTE2022-6	Snap	J
			239	80.1.209	Mubcast IP	239.20.1.20	9 Edit	Flow 2	Secondary					V	Normal	
Effects Memories			στ	50100	Multicast Port	5010	20	Flow 3								
DMEM	Macro		172.2	3 21. 157	Source IP	172,28,21,15	57 Edit									
				50100	Source Port	5010	20	Flow 4								
Sto				None	Flow Type	Nor		Flow 5								
		Output			Edit Templa	te	Apply Spigot									
System Configuration		Status		4												
Crosspoints	Aux Buses															
User Config	Panel Config															
Filing System	Peripherals															
Shortcuts	Eng Config															
		Flov		Spigot	Config	Eth	ernet									
		Input S	etup C	utput Setup	System C	onfig	GP O IP	Gateways	Protocols.	. Status	Monitor	Format Fusi	on			
6																
	BAND		Panel			Quick Macro	Copy Clone	Paste Clone		<b>↑</b> Up						
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	tput Setu	φ			HDD
Key 1	Key 2	Output									RollCall			
Key 3	Key 4										Fin Spiget	Rear Video 1(a)	Audio Channe	Popup
Mixer	Util/Misc	Audio Channels Streaming			Test Pattern Video Caption	Wren 1								Snap
Effects Memories		Format	Dual SD/HD/3G		Video Standard		01							Normal
DMEM	Macro	Output	0K		Audio Frequency Audio dB		0H 6dB						Streaming	Рорир
St	ore	310010	dk.		Show Caption	on J	Audio Mute Apply						Dual	Snap
System Configuratio														Normal
Crosspoints	Aux Buses													
User Config	Panel Config												Format	Popup
Filing System	Peripherals												SD/HD SD/HD/3G	Snap
Shortcuts	Eng Config												V	Normal
		Flow	sp	igot	Config	Ethe	ernet							
C		Input Setup	o Outp	ut Setup	. System Co	onfig	GP O	IP Gateways	Protocols	Stat	tus Monitor	Format Fusion		
	RAND					Quick Macro	Cop Clor	y Paste Clone		↑ Up		Disable		
MASTERP			ock 👔	Normal	Mod- Assign	Macro Record	Сор		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, including Masterpiece SD/HD, 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 Grass Valleye quadrant order. So, the first quadrant of each UHD source is connected to Inputs 1, input 5 and the next Input 9 etc.

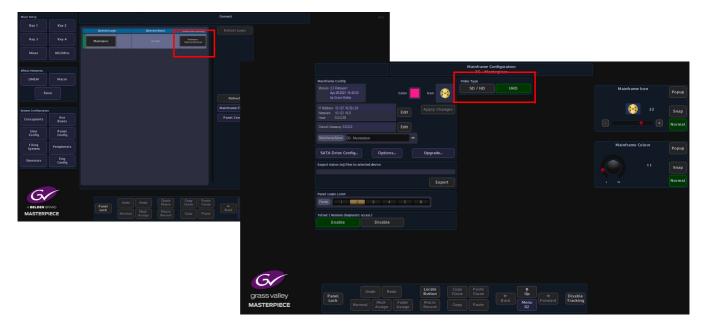
**Outputs from the Switcher Mainframe** 

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**

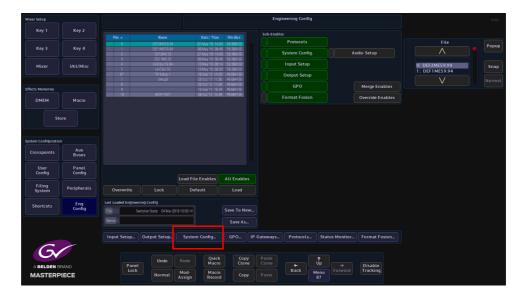
The first step in enabling UHD is in the "Mainframe Config" menu, in the logged out state in the connect menu.

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 Grass Valleye way as the inputs, so now Outputs 1 to 4 make up the first UHD-quad output.

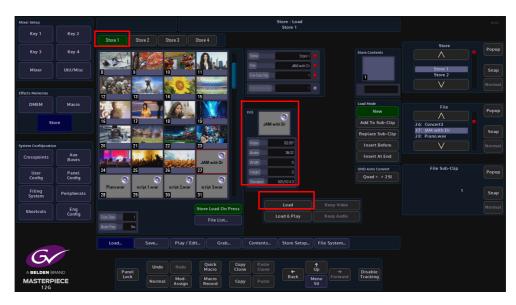


As can be seen above, the first UHD-quad output has been named PGM, now select Output 5, and turn on "UHD Output" and once again outputs 5 to 8 will be ganged, use the "Name" parameter to call the second UHD-quad output PVW.

**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 Grass Valleye 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 Grass Valleye 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.

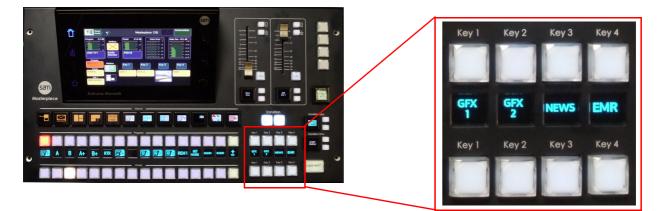
The Key lift and gain levels are user adjustable.

The Fill may be the Grass Valleye 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.

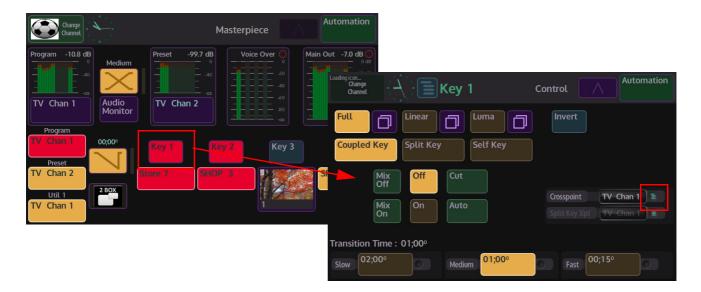
The Masterpiece has 4 Key buttons on the control surface. The top row of buttons (Key 1 to Key 4) cut the Key layer On and Off, the bottom row will place the selected Key onto the Preset background ready for when the next transition takes place.

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.

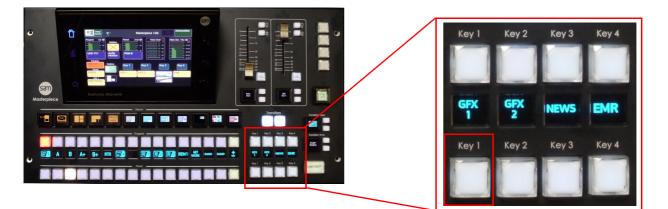


Use the "**Crosspoint**" parameter to select the source for the selected Key by touching the option list select button. This will open a lit of sources that can be assigned to the Key layer.

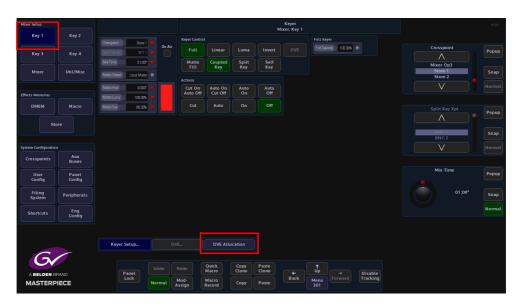
In the example below, the source for the Key layer is selected from the Stores list and "**Store 7**" is selected. You can select sources form Crosspoints (Xpts), Mattes, Stores etc.

Change Channel		Key 1			Cont	rol	Autom	nation
Xpt 140	Current	Crosspoii	nt BNC	1				$\approx$
Xpt 4180 Mixer Outputs	Store 1 Store 8	Store 2 Store 9	Store 3 Store 10	Store 4	Store 5	Store 6	Store 7	
Stores Mattes	8	9						
-								

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.

Keyer Contro				
Full	Linear	Luma	Invert	DVE
Matte Fill	Coupled Key	Split Key	Self Key	

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.

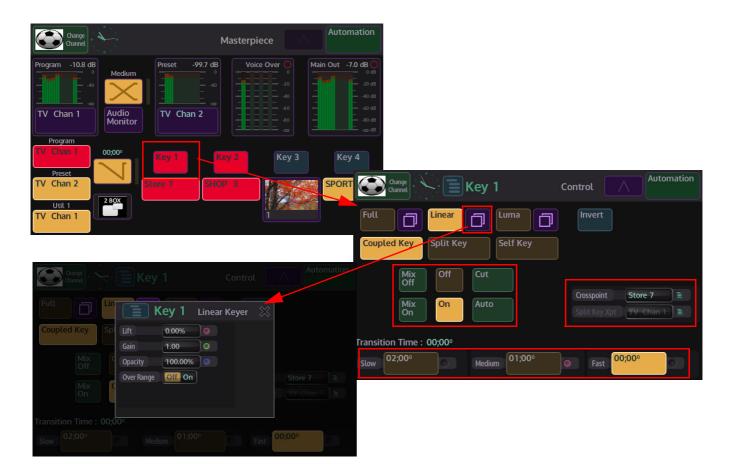
Cut - this will cut the Key layer On on the first touch, then Off on the second touch.

**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		XPT 1		Keyer Contr	ol				Linear K	eyer				
Key 3	Key 4	Spit Key Xpt	XPT 1	On A	ir Full	Linear	Luma	Invert	DVE	Lift Gan		0.00%		ft	Popup
Mixer	Util/Misc		01:00		Matte Fill	Key	Split Key	Self Key		Opacity		00.00%		0.00%	Snap
Mixer	Utit/Misc		Local Matte		Actions						19º 0tt	On			Snap
			0.000	•	Cut On Auto Off	Auto On Cut Off	Auto On	Auto							Normal
Effects Memories		Matteluma	100.00%	•											
DMEM	Macro		90.00%	•		Auto								in	Popup
Ste	are														
															Snap
System Configuration															Normal
Crosspoints	Aux Buses														
User Config	Panel Config												Opa	city	Popup
Filing System	Peripherals													1 00.00%	Snap
Shortcuts	Eng Config														Normal
		Keyer S	čatura.		DVE	DVE ALL									
6		Keyers	secop		DVE	DVE AU	cation								
Gv				Undo		Quick	Сору								
A BELDEN B			'anel Lock		Mod-	Macro Macro	Clone		← Back	Úp Menu		Disable Tracking			
MASTERP	IECE			Normal	Assign	Record	Сору			301					

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 Grass Valleye 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.

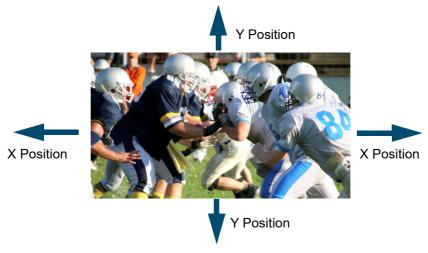
You can now start to use the DVE functions on Key layers.

#### **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	DVE Off On	1	Source					Bord						
Key 3	Key 4	Tiles Single Dud	i	Crosspain Xpt Fill	XPT 1 BNC 1	• •	acping	217 Dn 0.00% •	Bara	ter 📃 📕	01 0n 10.00%		X Position		Popup
Mixer	Util/Misc	Position & Size X Position 0.00		Хрі Кеу	BNC1		xion)	0.00% •		ness te Selector	Local Matte			0.00	Snap
Effects Memories		Y Position 0.00 • Zoom 1.00 •					8	0.00%		te Hue	0.000° 🔻	Π			Normal
DMEM	Macro	X Size 1.00 V Y Size 1.00 V						0.006		té Luma te Sat	100.00% V 0.00% V	$\Box$	Y Position		Popup
	ore														
														0.00	Snap
System Configuratio															Normal
Crosspoints	Aux Buses														
User Config	Panel Config												Zoom		Popup
Filing System	Peripherals														Snap
Shortcuts	Eng Config														Normal
C		Keyer Setup	DV	′E	DVE AU	location									
	RAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		↑ Up		Disable				
MASTERP	PIECE	Lock		Mod- Assign	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					C Mi	VE - Fill xer, Key 2				HDD
Key 1	Key 2			c	rop		Border			
Key 3	Key 4	FVE Off On Tiles Single Out	Crosspoir Xpt Fil	R XPT1 .	Cropping Off	0n 0.03%	Border Border Width	0ff 0n 10.00%	Crosspoint	Popup
Mixer	Util/Misc	Position & Size X Position 0.00 V		BNC1	Tap Bottom	0.00%	Setness Matte Selector	0.00%	BNC 1 BNC 2	Snap
Effects Memories		YPosition 0.00 V Zoom 1.00 V				0.026	Matte Hue	0.007 🔻	V	Normal
DMEM	Macro	X Size 1.00 V Y See 1.00 V			Fight	0.00%	Matte Luma Matte Sat	100.00% V 0.00% V		
Sto	ore									
System Configuratio										
Crosspoints	Aux Buses									
User Config	Panel Config									
Filing System	Peripherals									
Shortcuts	Eng Config									
		Keyer Setup	DVE	DVE Allocation						
G			ndo Redo	Quick Copy Macro Clone	Paste Clone					
		Panet Lock Nor	rmal Mod- Assign	Macro Record Copy	Paste	← Back	Menu 34	Disable 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 Grass Valleye. 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							Mixel, Key 5						
		BVE Off On		Tile 1 So			ile 1 Crop			1 Border				
Key 3	Key 4	Tiles Single Dual		Crasspoi			Cropping	(f Dn		der	Dff Dn	Tile 1 (	Opacity	Popup
			24		STOR 1		Softress	0.00%		der Width	10.00%			
Mixer	Util/Misc	Position & Size		Tile 1 Pr	sition & Size			0.00%			0.00% 💿		100.00%	Snap
PHIXEI	Ottomise	X Position 0.00 V		XPositio			Battom	0.00% 💿		tte Selector	Local Matte			Snap
		YPostion 🛛 🗖 🔍 🔻		Y Position							-			Normal
Effects Memories		Zoom 1.00 🔻						0.00%		te Hue	0.007			
DMEM	Macro	X Sas 1.00 V			1.00 🔻		Right	0.00%		tte Luma	100.00%			
DMEM	Macio				1.00 🔻					tte Sat	0.0%	Tile 2 (	Opacity	Popup
Sto		YS29 1.00 V			1.00 🔻									
50	ne	Top Tile											1 00.00%	Snap
				Tile 2 So			ile 2 Crop		THE	2 Border				Snap
System Configuration			100%	Crosscoil				tt 0n	Bon		Dff Dn			Normal
Crosspoints	Aux	Tile 2 Opsoty 10	100%	Sauce	STOR 1		0.000 mm	1.0%		der Witchi	10.00%			
	Buses				STOR 1									
User	Panel			Tile 2 Po	sition & Size		Top	0.00%	501	mess	0.00%			
Config	Config				0.00 🔻		Battom	0.00%		tte Selector	Local Matte			
Filing	Peripherals				0.00 🔻		let	L CO% 💿		tte Hite	0.007 🔻			
System	Peripherats				1.00 🔻		Right	0.00%			100.00%			
	Eng								Ma	tte Sat	0.00%			
Shortcuts	Config			X Size	1.00 🔻									
					1.00 🔻									
		Keyer Setup	DVE		DVE AU	ocation								
G	~													
$\Box$														
		Panel	Undo F		Quick Macro	Copy Clone	Paste Clone	•	( Up		Disable			
A BELDEN B		Lock		lod- ssign	Macro Record	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 OH On	Tile 1 Source	Tile 1 Crop	Tile 1 Border Border Ott	Border Width	
Key 3	Key 4	Tiles Single Dual	Source ENC 1	Settness 0.00%	Border Width 10.00%		Popup
Mixer	Util/Misc	XPosition 0.00 V	Tile 1 Position & Size	Top 0.00% • Bottom 0.00% •	Softness D.00%	10.00%	Snap
Effects Memories		Zoom 1.00 V	YPosition 0.00 V Zoom 1.00 V	Left 0.00% • Right 1.00% •	Matte Hue 0.000" V Matte Luma 100.00% V		Normal
DMEM	Macro	X Size 1.00 V Y Sza 1.00 V	XS20 1.00 V		Mette Set 0.00% V	Softness	Popup
St	ore	Top Tile 1 2	YSm 1.00 V			0.00%	Snap
System Configuratio		Tile 1 Opacity 100.00%  Tile 2 Opacity 100.00%	Tile 2 Source Drosspont XPT 1	Tile 2 Crop Cropping 011 On	Tile 2 Border Barder Off On		Normal
Crosspoints	Aux Buses		Source BNC 1	Softness 0.00%	Border Wridth		
User Config	Panel Config		Tile 2 Position & Size	Top         1.00%         •           Bottom         1.00%         •	Softmess 0.00%  Mutte Soloctor Local Matte	Matte Selector	Popup
Filing System	Peripherals		YPosition 0.00 V Zoom 1.00 V	Left 0.00% • Rott 0.00% •	Matte Hue 0.000" V Matte Luna 100.00% V	Local Matte Black	Snap
Shortcuts	Eng Config		X S20 1.00 V Y Scol 1.00 V		Matte Sat		Normal
6		Keyer Setup	DVE DVE Allocation				
A BELDEN B	RAND	Panet Lock	Macro Cli	ppy Paste Clone + Back	Up + Disable Many Forward Tracking		
MASTERF	PIECE	Normal	Mod- Assign Record Co	Paste Dack	Menu 34		

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.

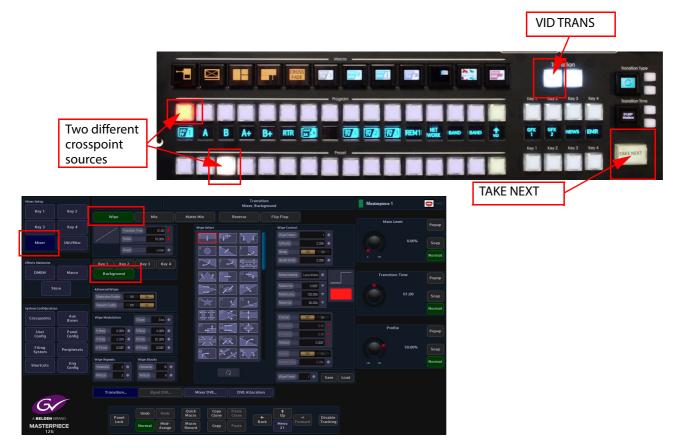
## **Basic Background Mix Transition**

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.

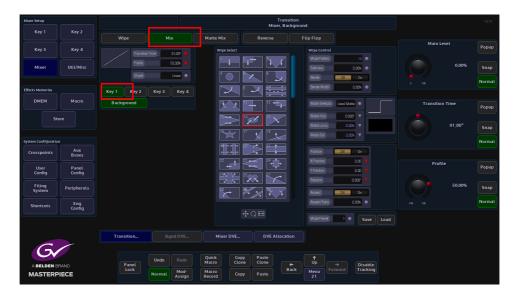


**Basic Background Transition with a Wipe** 

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.

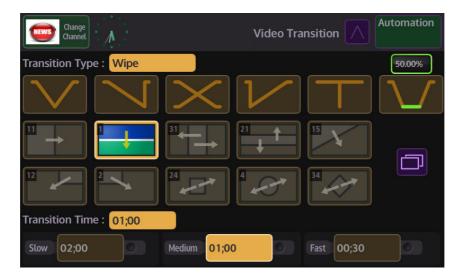
## **Transition Control Button Functions**

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**

 $\mathbf{\bigvee}$ 

**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 Grass Valleye time the second source will gradually fade in.

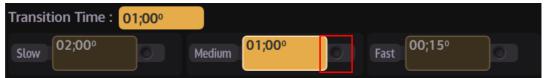
Take and Fade - this button will perform an instant source cut to Off, then gradually fade the next source back in.



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 Transition	
Transition Type : Wipe	50.00%	
	$\square$	
Transition Time : 01;00		Wipe Control 💥
Slow 02;00 Medium 01;00	Pattern 11	Border     Off On       Border Width     23.48%       Border Fill     Matte
	Position Off On	Matte Select Local Matte 🖹
	X Position 0.00	Hue 0:000°
	Y Position 0.00	Luma 100.00% Local
	Rotation 0:000°	Saturation 90.00%
		Aspect Off On
		Aspect Ratio 0.00%

This menu allows you to access the Grass Valleye 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	$\approx$
	Ř
	S

**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					Transit Mixer, Back		Masterpiece 1	🔤 нор
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	SEL DOX.			Wipe Pattern     1       Softness     0.00%       Border     0H	0.00%	Snap Normal
Effects Memories		Key 1 Key 2	Key 3 Key 4			Border Width 0.00%		
DMEM	Macro	Background				Matte Selector Local Matte	Transition Time	Popup
Ste	ore	Advanced Wipes Modulation Enable Off				Matte Hue         0.0007         V           Matte Luma         100.007         V           Matte Sizt         90.007         V	01;00	Snap
System Configuratio	n	Repeats Enable Cff	On					Normal
Crosspoints	Aux Buses	Wipe Modulation	Shape Sine •			Poston Oll On		
User Config	Panel Config	H Amp 0.00% • H Freq 0.00% •	V Amp 0.00% • V Freq 25.00% •			X Position 0.00 Y	Profile	Popup
Filing System	Peripherals	H Phase D.CCC* •	V Phase C CCCr •			Aspect Difference	50.00%	Snap
Shortcuts	Eng Config	Wipe Repeats Horizontal 2  Vertical 2	Wipe Blocks Horizontal 16			Aspect Rate 0.00% •	-100 100	Normal
		2 4 10.3	Vencal 9			Wipe Preset 1 Save	Load	
		Transition		Mixer DVE	DVE Allocatio			
	IBAND	Panel	Undo	Quick Co Macro Clo	one Clone 🔶			
MASTERP 12G		Lock	Normal Mod- Assign	Macro Record Co	py Paste Ba	Ck Menu 21 Forward Tracking		

## **Wipe Parameters**

This will describe the initial default transition menu functions and parameters.

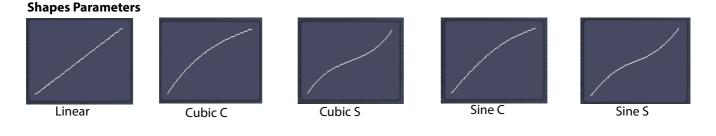
Note: Transition Time, Profile and Shape parameter are the Grass Valleye for Wipe, Mix and Matte Mix menus.

**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 Grass Valleye for Wipe, Mix and Matte Mix menus.

Mixer Setup			I		Transitic Mixer, Backg				HDD
Key 1	Key 2	Wipe	Mix	Matte Mix	Reverse	Flip Flop		Wipe Pattern	
Key 3	Key 4		0100° •	Wipe Select		Wipe Control Wipe Pattern		wipe Pattern	Popup
Mixer	Util/Misc	Profile	50.00%	<u> </u>		Scitness	Ω.00%		Snap
Effects Memories			Lineor •			Barder Dff Barder Width	0n 0.00% 🔸		Normal
DMEM	Macro	Key 1 Key 2 K Background	ey 3 Key 4			Matto Soloctor Local Ma		Softness	Popup
Sto		Advanced Wipes Modulation Enable	Dn			Matteluma 1000		0.00%	Snap
System Configuration		Repeats Enable Off	Dn			Wally Str. 901			Normal
Crosspoints	Aux Buses	Wipe Modulation Shap		+ + + + 22 +		Position Off	0n	Border Width	
User Config	Panel Config	H Amp 0.00% • V Am H Freq 25.00% • V Fre				Y Position Recation	1.00 V		Popup
Filing System	Peripherals	H Phase 0007 • VPh	169 B.007 •			Aspect Dff		0.00%	Snap
Shortcuts	Eng Config		pe Blocks xizortal 16			Aspect Patio	0.00% •		Normal
			rtical 9			Wipe Preset	Save Load		
		Transition		Mixer DVE	DVE Allocation				
		Panel Lock	Indo Redo	Quick Cop Macro Clo	ne Clone + Bacl	t Up Menu Forward	Disable Tracking		
MASTERP	ECE		rmal Assign	Record Cop	Paste	21			

**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.

lixer Setup					Trans Mixer, Bao		
Key 1	Key 2	Wipe	Mix	Matte Mix	Reverse	Flip Flop	Matte Selector
Key 3	Key 4		m Time 01:00°	Wipe Select		Wipe Control Wipe Pattern	Matte Selector Popu
Mixer	Util/Misc	Profile	50.00%			Saftness 0.00%	Local Matte Snar Black Snar
fects Memories		Key 1 Key 2	Key 3 Ke			Barder Off On Barder Width 100%	Norm
DMEM	Macro	Background				Mette Selector 🛛 Local Matte 💻	
St	ore	Advanced Wipes	Cn		* <b>Z</b>	Matte Hue 0.000° V Matte Luma 100.00% V	
stem Configuratio		Repeats Enable 01		16		Matte Sat 90.00% V	
Crosspoints	Aux Buses	Wipe Modulation	Shape Sine	•		Poston Ott On	
User Config	Panel Config	HAmp 0.00% •	V Amp 0.00%			Y Position 0.00 V	
Filing System	Peripherals	HPhase 0.000 •	V Phase D.000"			Botation 0.000° ▼	
Shortcuts	Eng Config	Wipe Repeats Horizontal 2	Wipe Blocks Horizontal			Aspect Ratio 0.00% •	
		Vatical 2 •	Vatical	•		Wipe Preset Save	e Load
		Transition		E Mixer DVE.	DVE Allocati		
Gv			Undo Res		opy Paste one Clone	← Up → Disab	
		Panel Lock	Normal Mo Assi	d- Macro		← Op → Disab ack Menu 21	

**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.

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.



## **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						HDD			
Key 1	Key 2	Wipe		Matte Mix	Reverse	Flip Flop			
Key 3	Key 4	Transition Time 01:001 😐		Wipe Select		Wipe Control	Ma	Main Level	
Mixer	Util/Misc	Prote	50.00% •			WipePattern 11 Softness 0.00% Border 0ff 0n		0.00%	Snap
Effects Memories		Key 1 Key 2	Key 3 Key 4			Border Width 0.00%	0 100		Normal
ОМЕМ	Macro	Background				Matte Selector Local Matte	Tran	sition Time	Popup
Store						Matte Luma 0.007 V Matte Luma 0.00% V Matte Sat 0.00% V		01;00°	Snap
System Configuration									Normal
Crosspoints	Aux Buses					Position Df On			
User Panel Config Config						X Position 0.00 Y Position 0.00 Y		Profile	
Filing System	Filing System Peripherals					Aspect OH On		50.00%	Snap
Shortcuts	Eng Config					Aspect Rates 0.00%			Normal
						WipePreset 1 • S	ave Load		
A BELDEN BRAND MASTERPIECE		Transition Bgnd DVE Mixe		Mixer DVE	DVE Allocatio	on			
		Panel	Undo Redo	Quick Copy Macro Clone	ne Clone 🔶	← Up → Dis	able		
		Lock	Normal Mod- Assign	Macro Record Co	py Paste B	Ack Menu Forward Trac	king		

## **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

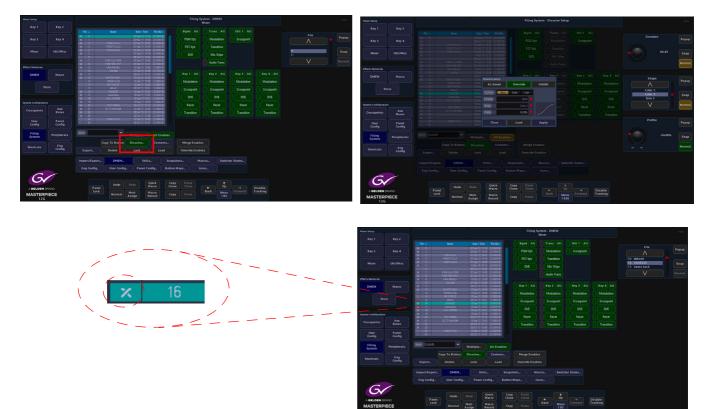
Duration - Sets the overall duration of the dissolve

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	Config - Syste	em Configuration			3G - Masterpiece	HDD
Key 1	Key 2	System Standard	Reference Status Panel to Mainframe connection							
Key 3	Key 4	System Standard 1080/59.94 New Standard 1080/59.94		Gerlacked Ref Present	Yes	Link Latency Normal			New Standard	Popup
Mixer	Util/Misc			RefLocked Tri Sync	Yes	logged off Panel Co stored in the Panels	infigmenu and is		1 080i/60 1 080i/59.94 1 080i/50	Snap
Effects Memories DMEM	Macro	Genlock Genlock Genlock DH On Genlock Phise 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Action On Next Field Action On Field 1 Action On Field 2	Interfaced Frame Rate	Yes 29.97				V	Normal
Store		When Video Not Present No Video Matter Ott On								
System Configuration Crosspoints	Aux Buses	Ham         67: 7           Luma         20.03%           Sat         100.00%								
User Config	Panel Config	Background DVE Enable Background DVE								
Filing System	Peripherals									
Shortcuts	Eng Config									
		Options Shadow M/F								
grass valley MASTERPIECE		Input Setup Output Setup	System Config GP C	D IP Gatewa	ys Proto	cols Status Mor	nitor For	mat Fusion		
		Panet	tedo Locate Button		Paste Clone	¢. Up	→ Disabl	Disable		
		Lock Normal Mod- Assign	Fader Macro Assign Record			Back Menu 8731		Tracking		

## **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 Grass Valleye 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:

<image><text>

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.

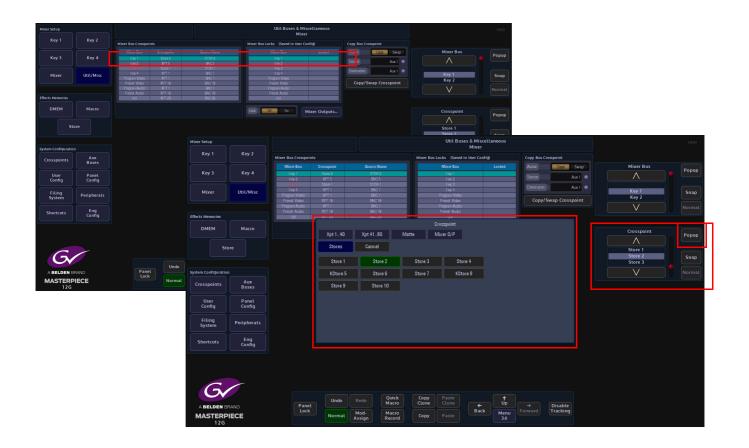
Note: The Utility Bus background cannot be zoomed or moved.

Utility Bus Source 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.

rogram D	V L	
DVE	Off	On
Top Tile	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 Grass Valleye 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 DY DA	XPosition -0.01 V	Cropping Off Da	Border D" Do	Softness	
Key 3	Key 4	Top Tile Program Preset	YPosition 0.00 V	Satress 0.00%	Border Width 10.00%		Popup
		Television and the second second	Zoom 0.65 V	Top 0.00%	Softness 1.00%		
Mixer	Util/Misc			Bottom 0.00%	Matte Selector Local Matte	0.00%	Snap
			X Size 1.00 🔻		LOCA MUITE		Normal
Effects Memories			Y Size 1.00 V	Let: 0.00% •	Matte Hue 0.007 V		Normat
				Right 0.00% •	Matteluma 100.00%		
DMEM	Macro				Matte Sat 0.00% 🔻	Тор	Popup
Sto	ore					0.00%	
		Preset DVE	Position & Size		Border		Snap
System Configuration		DVE Drf Dn	XPosition 0.00 V	Cropping Dff On	Border 0t 0t		Normal
Crosspoints	Aux Buses		Y Position 0.00 V	Satress 0.00% •	Barder Width 10.00%		
	Buses		Zoom 0.74 🔻	Top 0.00% •	Schness 0.00% •	Bottom	
User Config	Panel Config		X Size 1.00 V	Bottom 0.00%	Matte Selector Local Matte	bottom	Popup
	comig		Y Size 1.00 V		Mattellus 0.007 V		
Filing System	Peripherals				Matteluma 100.00%	0.00%	Snap
				Right 0.00% •			
Shortcuts	Eng Config				Matte Sat		Normal
		Transition Band	DVE Mixer DVE	DVE Allocation			
6		Bin Bin	MINELDVE				
		Panet	Redo Quick C Macro C	Copy Paste Lone Clone +	↑ Up → Disable		
A BELDEN B		Lock	Mod- Macro	Back	Menu Forward Tracking		
MASTERP 12G	TECE	Normal	Assign Record C	Copy Paste			

Cropping On/Off - Switches the crop facility On or Off,

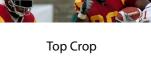
Top, Bottom, Left and Right - Crops the Fill edges



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 - Background Mixer, Background	I DVE		HDD
Key 1	Key 2	Program DVE	Position & Size		Border		
		DVE OII On	XPostion 0.14 V	Cropping Off Da	Barder Oll On	Border Width	Popup
Key 3	Key 4	TopTie Program Proset	YPosition 0.01 V	Satress D.CD% •	Border Wridth 10.00%		ropop
Mixer	Util/Misc		Zoom 0.52 V	Top 0.00% •	Saltress 0.00% 🜻		Snap
	Uturnise		X Sze 1.00 V	Battam 0.00% •	Matte Selector Local Matte		Shap
			Y Size 1.00 V	Left LCD% •	Matteriue 0:000" V		Normal
Effects Memories				Right 0.00% •	Matte Luma 100.00%		
DMEM	Macro				Motte Sat	Softness	Popup
							Popup
Sto							
		Preset DVE	Position & Size		Border		Snap
System Configuration		DVE OH On	X Position 0.28 V	Cropping Off On	Barder Ott On		Normal
Crosspoints	Aux Buses		Y Position 0.05 V	Satness 0.00% •	Barder Widh 10.00%		
			Zoom 0.45 V	Top 0.00% •	Satress 0.00% •	Matte Selector	
User Config	Panel Config		X Sza 1.00 V	Bottom 0.00%	Mette Selector Local Mette		Popup
			Y Size 1.00 V	Let: 0.00% •	Matte Hue 0.000" V		
Filing System	Peripherals			Right 0.00% •	Matteluma 103.00%	Local Matte Black	Snap
	Eng				Matte Sat	V	Normal
Shortcuts	Config						
		Transition Bgnd D	VE Mixer DVE	DVE Allocation			
G							
		Undo	edo Quick Co Macro Clo				
A BELDEN B			od- Macro	Back	Menu Forward Tracking		
MASTERP 12G	IECE	Normal As:	sign Record Co	py Paste			

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 lixer			Masterpiece 1	
		File Type DMEM						Bgnd All					
		Store			<b>.</b>			PGM Xpt.	Modulation	Crosspoint			
		Engineering		Menory			Enables	PST Xpt.	Transition				
Mixer	Util/Misc	User		10				DVE	Mix Wipe				
		Panel	7			Cancel	Merge Enables		Audio Trans				
ffects Memories	Macro		Ĺ				Override	Key 1 All	Key 2 All	Key 3 All	Key 4 All		
DMEM	Macio						Enables	Modulation	Modulation	Modulation	Modulation		
			5					Crosspoint	Crosspoint	Crosspoint	Crosspoint		
			<u> </u>										
System Configuratio								Keyer	Keyer	Keyer	Keyer		
Crosspoints	Aux Buses	Effects Dissolve						Transition	Transition	Transition	Transition		
User Config	Panel Config		n Eity	Laba		inable							
Filing		Distor		02:00									
System	Peripherals	5100											
Shortcuts	Eng Config				• /								
6		Load/Save Pa	dNu	imber Pa									
G							uick Copy						
A BELDEN B		Pan		Undo			acro Clone				visable racking		
MASTERP 12G	IECE			Normal	Mod- Assign	n Ri	acro cord Copy		Back Menu 10				

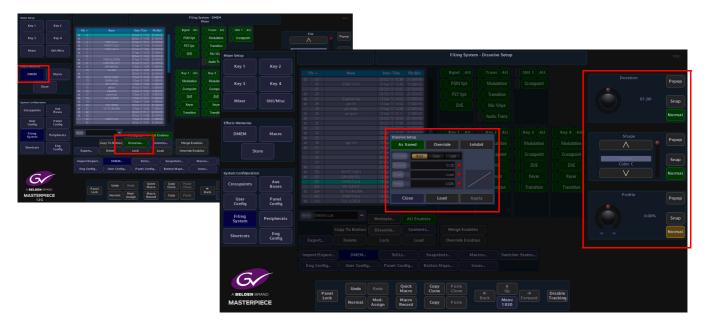
Next zoom and position the Preset tile to the required position this will also reveal the Util Bus background. Again, open the "Shortcuts" menu and save the action as a DMEM, e.g. enter "101" as the memory file, then select the **{Mixer}** button below the number pad and then **{Save}**.



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 Grass Valleye 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								nsition - Mixer lixer, Backgrour							HDD
Key 1	Key 2	Mixer DVE		Position	& Size	Cro	Р		Bord	ler					
Key 3	Key 4	DVE Off On		X Pasitia Y Positia		Crr Crr	aqeing	C(T Dn 0.00% •	Bar	der VAldhi	011 On 10.00% •		X Position		Popup
				Zoom	1.00	170		1.00%		nessi	0.02%				
Mixer	Util/Misc					l Ba	com	0.00%		to Selector	Local Matte			0.00	Snap
,,				X Size Y Size	1.00 ▼			1.0%		teHue	0.000" 🔻				Normal
Effects Memories				1 5109	1.00		9 70	1.00%	110	tetumal	100.00%				
DMEM	Macro								Mat	ta Sst	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
		Transition			Mixer	DVE	DVE	Allocation							
6															
A BELDEN B	IRAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		† Up		Disable				
MASTERP		Lock	Normal	Mod- Assign	Macro Record	Сору	Paste	Back	Menu 2102	Forward	Tracking				

**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						sition - Mixer I ker, Backgrour					HDD
Key 1	Key 2	Mixer DVE	Position		Crop		Border				
Key 3	Key 4	DVE 01 On		on 0.00 V	Cropping 01	1 On	Bordor	Off Dn	Softness		Popup
Key 3	Key 4			on 0.00 V	Softness	0.00%	Border Wicth	10.00%			
Mixer	Util/Misc			1.00 🔻	Тор	0.00%	Softness	0.006		0.00%	Snap
				1.00 🔻	Bottom	0.00%	Matte Selector	Local Matte			
Effects Memories				1.00 🔻	Left	0.00%	Матение	0.007	0 100		Normal
DMEM	Macro				Rgit	0.00%	(Matte Luma)	100.00%			
DMEM	масто						Matte Sat	0.006 🔻	Тор		Popup
	ore										
										0.00%	Snap
System Configuratio	10										Normal
Crosspoints	Aux										
	Buses								Bottom		
User Config	Panel Config								Bottom		Popup
										0.00%	
Filing System	Peripherals									0.00%	Snap
Shortcuts	Eng Config										Normal
Shortcots	Config										
		Transition		Mixer DVE.	DVE A	llocation					
6											
				Quick Co	py Paste		<b>†</b>				
A BELDEN B	BRAND	Panet	Undo Redo	Macro Cle	one Clone	<b>.</b>		Disable			
MASTERF	PIECE	Lock	Normal Mod- Assign	Macro Record Co	ppy Paste	Back	Menu 2102 Forward	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





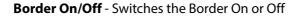
Bottom Crop

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 Grass Valley 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		Newmacio	Record Delay		616
Key 3	Key 4	Macro Actions			Delay 0107 •	Action	Popup
		Delay		Azim 14 😐	Real Time Delay		
· · · ·			Marro Start			14	
Mixer	Util/Misc		Mixer Video Bgnd A Crosspoint	Action Delay CQ.CO 🛑	Macro control		Snap
			Mixer Video Bgrid B Crosspoint				
				Action Deleted	Dn Retrigger 🛛 Re-Start 😐		Normal
		01;201	Moor Primary Transition		Play Count 1		
Effects Memories		0.00	Master Orl Audio	Pause	Paycount		
		C2.17* 01.04*	Mover Primary Key State [Key 1] Mover Primary Key State [Key 2]				
DMEM	Macro	01:00*	Model Primary Key State (Key 2) Mixer Video Bond A Crossport	Wait Until Loaded	Use Delays	Action Delay	
		01;20*	Nixer Video Band A. Crassport				Popup
		00'50'	Mixer Primary Key State [Key 1]		Ripple Action Delay		
Ste	ore	01;23*	Morer Primary Transition				
		01.09*	Motor Primary Transition			°00:00°	
		00,009	Master Ori Audio		Button control		Snap
				Test Macro			
System Configuration							Normal
					Use Button Delay		
Crosspoints	Aux Buses						
l J	Duses				Disable Button		
				Display Cumulative Time		On Retrigger	
User	Panel						Popup
Config	Config	Action Details					
		Parameter	Value	Paremeter 1			
Filing	Peripherals	Centrol Take	Gn			Re-Start	Snap
System		Carlota Falke	Git	Edit Value		Pause	
						V	Normat
Shortcuts	Eng Config						Normat
	Config						
		Load Edit	Bitmap Save	Assian			
		Load Edit	Bitmap Save	Assign			
	1						
			Quick Copy Past	e •			
		Undo	Redo Macro Clone Clone				
A BELDEN B	IRAND	Panel			Disable     Tracking		
MASTERP	PIECE		Mod- Macro Copy Past		inacking		
THE CONTENT			Assign Record Copy Past	e 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 Grass Valleye 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**

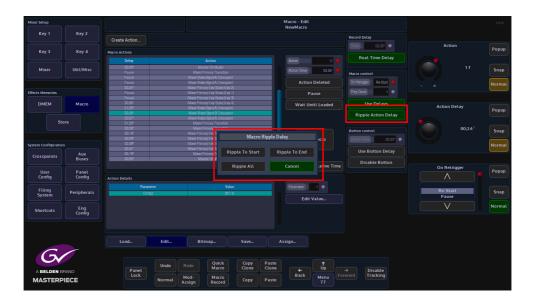
Allows an **Action Delay** that has been set, to be "Rippled" through all Actions in the table from that point onwards.

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

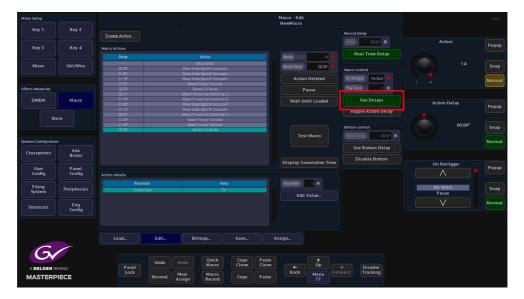
Ripple To End button will ripple a delay from current action to all Actions until the last action

**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.



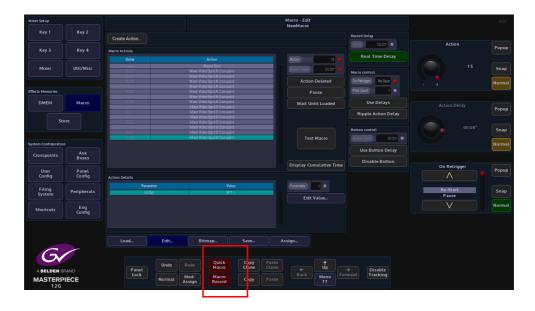
Action Deleted - this will delete a selected Macro Action.

**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 Grass Valleye macro) can be made by pressing and holding the 'Quick Macro' button. This will trigger the attachment stage again.

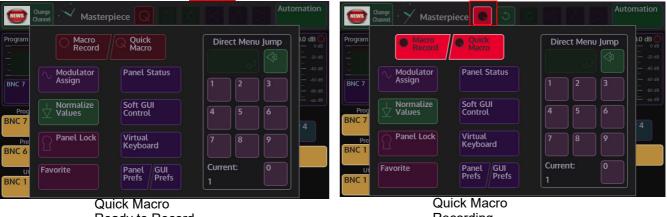
The Quick Macro button on the GUI can be cloned and copied onto a physical button which means you can create, save and attach a macro without resorting to a GUI at all.

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 Grass Valleye 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.



Ready to Record

Recording

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 Grass Valleye 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.

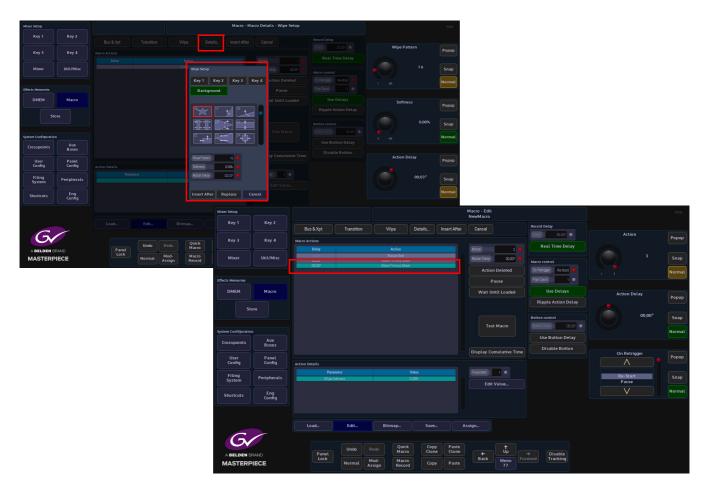


Touch the **{Create Action}** button to start creating a new macro.

Select Bus & Xpt - Transition - Wipe, the menu will return to the Macro Edit main menu.

Mixer Setup					Macro NewN	- Edit Aacro			HDD				
Key 1 Key 2	Bus & Xpt	Transition		Cancel			Record Delay	Action					
Key 3 Key 4	Macro Actions		Do Trans				Real Time Delay		Popup				
Mixer Util/Mis	Diday		Next		Artio								
			Setup		Mixer Setup					Macro - Edit NewMacro			
Effects Memories			Wipe Time			Key 2	Bus & Xpt Transition	Wipe Details.	. Insert After	Cancel	Record Delay		
DMEM Macro							Macro Actions				0:0° •	Action	Popup
Store							Delay	Action Mecro Start		Action 3	Real Time Delay		
store					Mixer	Util/Misc	00.03,	Moret Primary Moret Moret Primary Moret		Action Delay COLOD <sup>®</sup>	Macro control		Snap
System Configuration					Effects Memories					Action Deleted Pause	On Retrigger Re-Start		Normal
Crosspoints Aux Buses					DMEM	Macro				Wait Until Loaded	Use Delays	Action Delay	
User Panel											Ripple Action Delay		Popup
Config Config	Action Details					tore					Button control	00;00°	Snap
Filing System Peripher	ls 📃				System Configurate					Test Macro	Button Delay 02.00° •		Normal
Shortcuts Eng Config					Crosspoints	Aux Buses					Use Button Delay		
										Display Cumulative Time	Disable Button	On Retrigger	Popup
	Load	Edit			User Config	Panel Config	Action Details						ropop
6	Load	Ealt	Bitmap	Save	Filing System	Peripherals	Perameter Wiper Softness	Value 0.00%		Parameter 1		Re-Start Pause	Snap
		Undo	Redo Quick	k Copy O Clone	Shortcuts	Eng Config				Edit Value		V	Normal
A BELDEN BRAND MASTERPIECE	Pane Lock		Mod- Assign Recor			Config							
		Ľ	Recor										
							Load Edit	Bitmap Si	ave	ssign			
					G								
					ABELDEN	BRAND	Panel	Macro C	lone Paste Clone		→ Disable Tracking		
					MASTER	PIECE		Mod- Macro C ssign Record C	opy Paste	Back Menu 77	Theking		

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.



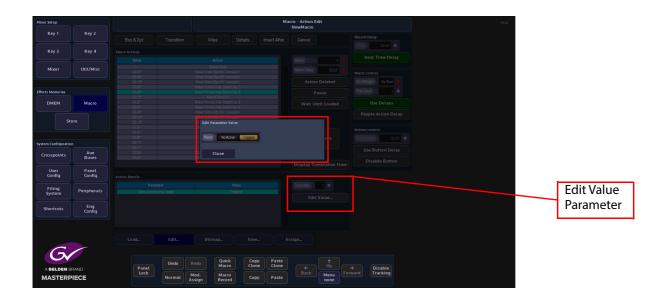
Remember to "Save" the macro when done.

Note: Actions can be inserted into an existing macro using the Grass Valleye 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 Grass Valleye 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 Grass Valleye 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 Grass Valleye 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	NewMecro		34	94680 35 041/13670							Macro	Popup
Mixer	Util/Misc	NewMacro	37	<b>*</b>	NACRO 39 EWM3CIO							49: NewMacro 55: Test Macro 201: KAHUNA	Snap
		40 (940) 41	1 nuceno 42	2 NACRO 43	NSCR0 42								
Effects Memories		NewMacro	NewMacro P	Vew/Macro N	ewMacro								
DMEM	Macro	44 194080 45 44	5 (MGSD) 46	5 micso 47	1946500 47								
St					cert/tero								
		48 naces 45	9 mono 55	' 🌞 <sup>201</sup>	<b>Kahuna</b> Maverik								
System Configuratio	n	NewMacro	New Macro T	fest Macro K	AHUNA								
Crosspoints	Aux Buses	Name Test Macri											
User Config	Panel Config	*											
Filing System	Peripherals	Load Macro Stop			Macro Cach Cathe Used								
Shortcuts	Eng Config	Test Macro			Disable	Enabl							
		Load	Edit	Bitmap		Save	/	\ssign					
- Gv					Quick	Сору	Paste						
	BRAND	Panel	Undo		Macro	Clone	Clone		∱ Up		Disable		
MASTER	PIECE	Lock	Normal		Macro Record	Сору	Paste	Back	Menu 701	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!

Macros Offline Macro Editor

# 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 **ClipTrax**<sup>TM</sup>. 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).

# ClipTrax<sup>TM</sup> - 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.

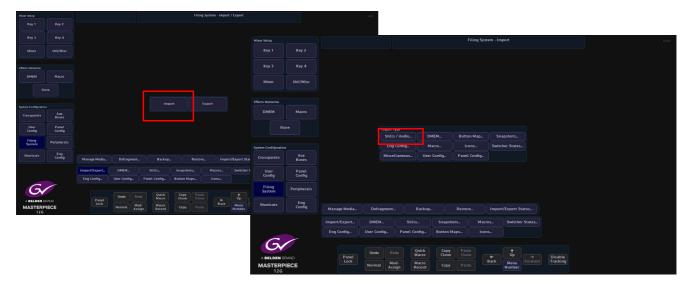
The files can be can loaded or saved maintaining the Audio or Video in a Clip.

# **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.



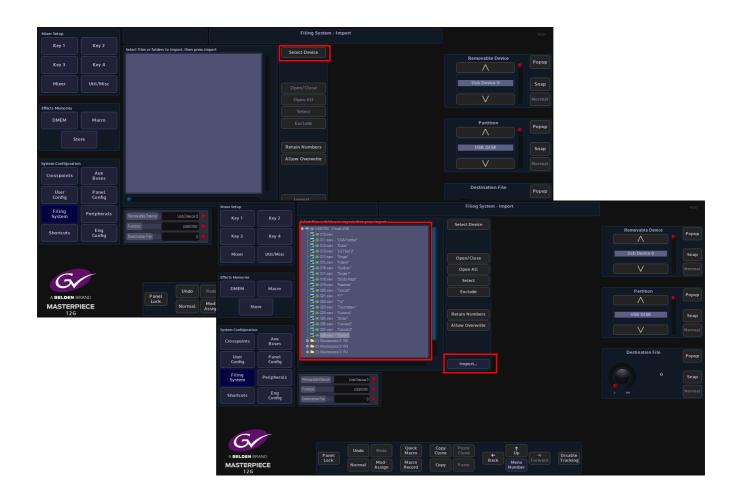
Use the **Removable Device** parameter to select the memory device containing the stills or clips and press the **{Select Device}** button. The contents of the memory device will be displayed in the gray area, left hand side of the menu. Use the **Destination File** parameters to select where the files 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 Grass Valleye 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**



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 Grass Valleye 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 Grass Valleye 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.

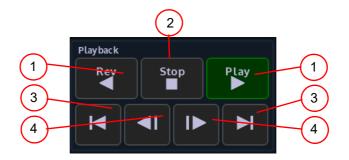
Latching Grab is best used for grabbing Video or Audio files. Pressing the **{Grab Video}** button, which turns the button green, then pressing latching grab for the required grab time will grab video only. Pressing the **{Grab Audio}** button, which turns the button green, then pressing latching grab 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							Store - Grab Store 3				
Key 1	Key 2	Store 1	Store 2 S	tore 3 Store 4	KStore 5	Store 6	Store 7	KStore 8 St	ore 9 Store 10	Store	
Key 3	Key 4	Grab		Playback		Audio Leve			Store Contents		Popup
Mixer	Util/Misc	Frame G	irab Grab Grab Preview Udio Grab	Rey Stop	P Play				3	Store 2 Store 3 Store 4	Snap Normal
Effects Memories	Macro		eep udio Full	Grab Mode New					JAM with Dr		
		Grab To Store		Add To Sub-Clip							Popup
St	ore	Fill Source Key Source	BNC1 BNC1	Replace Sub-Clip							Snap
System Configuratio		Video Duration	00:00								Normal
Crosspoints	Aux Buses	Audio Duration	1:17:18 0x:0	Insert At End							
User Config	Panel Config	Free Space	98.44%							Grab Crosspoint	Popup
Filing System	Peripherals									BNC 1 BNC 2	Snap
Shortcuts	Eng Config										
6		Load	Save	Play / Edit	Grab	Contents	Store Setup	File System			
	RAND	Par	Undo	Redo Quick Macro		Paste Clone	<b>–</b>	↑ Up →	Disable		
MASTERP 12G			ik Normal	Mod- Assign Record				Menu 55	Tracking		

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								Store - Save Store 3						HDD
Key 1	Key 2	Store 1	Store 2 St	ore 3 Stor	e 4	KStore 5	Store 6	Store 7	KStore	8 Stor	re 9 Stor	e 10		
Key 3	Key 4												Store	Popup
Mixer	Util/Misc	0 1 2 3	Skier Thailand Tulips Penguins	07 M	ay 16 1458 ay 16 1458 ay 16 1458 ay 16 1458 ay 16 1458	5.533 MB 5.533 MB 5.533 MB 5.533 MB							Store 2 Store 3 Store 4	Snap
Effects Memories		4 5 5 7	Skateboarde Kula UVE G KULA TRAN H Agua SAMisi	07 M	xy '16 1458 xy '16 15:05 xy '16 15:07 xy '16 15:06	1.006 G9 2.002 G8 1.338 G8 4.435 G8								
DMEM	Macro	8 9 10	Sialom LISA Footbel	16M 16M 16M	sy '16 16:03 sy '16 15:40 sy '16 15:42	5.530 MB 5.530 MB 5.530 MB								Popup
St	pre	11 12 13 14	Dubai US Fball 2 Singer Flower	16M 16M	ay '16 15:43 ay '16 15:44 ay '16 15:45 ay '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	16 M	ay '16 15:47 ay '16 09:33 ay '16 15:48	5.530 MB 5.530 MB 5.530 MB								Normal
Crosspoints	Aux Buses													
User Config	Panel Config	Nome JAM v Store	ith Or 🚽 🖛			3	0						Store Sub-Clip	Popup
Filing System	Peripherals	File Store Sub-Cip	4 •	Loop Ping	-Pong		W with Dr							Snap
Shortcuts	Eng Config			Save With Auto	-Play	Save								
		Locate Origina				Save and	Clear							
C		Load	Save	Play / Edit		ab	Contents	Store Setur		System				
Gv		Panel	Undo		Quick Macro	Copy Clone	Paste Clone	<b>+</b>	† Up		Disable			
A BELDEN B MASTERP 12G		Lock	Normal		Macro Record	Сору		Back	Menu 51	Forward	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 - Crosspoin User Defined	t Mapping						
Key 1	Key 2								Split						
				Sou		Name	Source	Name		Color	Status	Shuffle		Crosspoint	Popup
Key 3	Key 4													$\wedge$	Popup
		3 4				BNC 3	Input 3	BNC 3	Fil Fil	Default Default		Dff			
Mixer	Util/Misc	4	777 777	Inpu		BNC 4	Input 4	BNC 4			No			XPT 1	Snap
		5		inpu Inpu		BNC 5 BNC 5	Input 5 Input 5	BNC5 BNC5	Fil Fil	Default	No No	Dff		XPT 2	
				Inpu		BNC7	input 8	BNC7	Fil		No	Dff			
		8		inpu Inpu		BNC 8	Input 8	BNC 8	Fil	Default	No	Dff		$\vee$	
		9	m	inpu Inpu		BNC 9	Input 9	BNCS	Fil	Default	No	Dff			
Effects Memories		10	m	Input		BNC 10	input 10	BNC 10	Fil	Default	No	Dff			
		11	m	Input		BNC 11	input 11	BNC 11	Fil	Default	No	Dff			
DMEM	Macro	12	m	Input		BNC 12	Input 12	BNC 12	EI	Default	No	Dff			
		13		Input		BNC 13	input 13	BNC 13	Fil		No	Dff			
		14		Irou		BNC 14	input 14	BNC 14	Fil	Default	No	Drr			
St	ore			Irput		BNC 15	Input 15	BNC 15							
				Input											
				Input		BNC 17	ingut 17	BNC 17							
				Input			Input 18			Default					
				Input		BNC 19	Input 19	BNC 19		Default					
System Configuratio	n														
	Aux Buses			Irput		BNC 21		BNC 21		Default					
Crosspoints															
		24		Input	24	BNC 24	Input 24	BNC 24		Dafault	No	Dff			
User Config	Panel Config				User Defi	ned Crosspoints		Fixed Cros	spoints						
Filing System	Peripherals									) ??' & Next		ernal Rou			
		Crosspoint			Fill Source	BNC 1	Audio Stuffle	Off •	Name 7	// & Next	EXO	ernat Kou	rter		
Shortcuts	Eng Config	Name	m		Key Source	BNC 1		Bitmap	Show Cr	osspoints	Au	dio Shuffl	ler		
		Enable	No	Yes	Xpt Lamp Color	Default •					Aut	omation )	Kpt		
		SpltTo	Fil	Кау	Color By Std	No Yes									
			No	Yes		No Yes	Edi	t Bitmap							
G															
	RAND		Panel	Undo		Quick Macro	Copy Past Clone Clon		t Up			sable			
MASTERF			Lock	Normal	Mod- Assign	Macro Record	Copy Past	e Back	Menu 8661			acking			

**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**

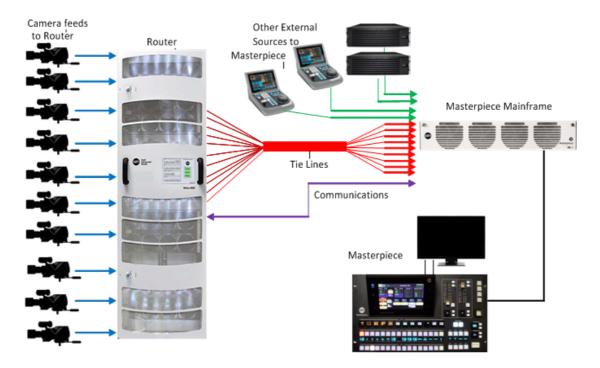
Masterpiece has the mechanism to expand the number of sources coming into the mainframe using an external router. This is primarily due to a system setup running in UHD. Using this new feature, the number of sources to be used with the Masterpiece, are expandable up to the size of the upstream router.

#### **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 Grass Valleye 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 channel 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 Grass Valleye 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					Use	er Config - Aux B Aux 1	uses					
Key 1	Key 2											
		Aux				Locks			Aux 1 😐			
					Panel	File Macro Pi	otocol			Aux Bus		Po
Key 3	Key 4									Δ.		FU
	Key 2         Anr         Unage         Licks         Anr.         <											
								Aux Name Aux				
Mixer	Util/Misc									Aux 1		s
		6 ALM								Aux 2	- 1	
		7 3434 7	0/F7					Panel Lock	Lock All			
ffects Memories		10 AUX 10										
		11 AUX 11						File Leek	Look All			
DMEM	Macro							FILE LOCK	LOCK ALL	Crosspoint		
												Po
Ste	ore	15 AUX 15						Macro Lock	LOCK ALL	0110.00		
											_ (	
								Protocol Lock	Lock All	Mixer Op2		
		19 AUX 19	Internal	XPT 1 - BNC 1								
ystem Configuration	n											No
	Auv											
Crosspoints	Buses								Aux Override			
									ame '???' & Next			
User Config												
Filing System	Peripherals											
Shortcuts	Eng											
Shortcuts	Config											
		Num Outputs	<b>5 1 1 1 1</b>	GPOs					41-			
G		Mixer Outputs	Store Setup	GPOs	Modulat	ion	Mattes	Au	dio			
	5400	Panet	Undo	do Quick G Macro Cl	opy Paste One Clone		↑ Up		Disable			
MASTERP 12G		Lock	Normal Mo		opy Paste	Back	Menu 8611		racking			

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.

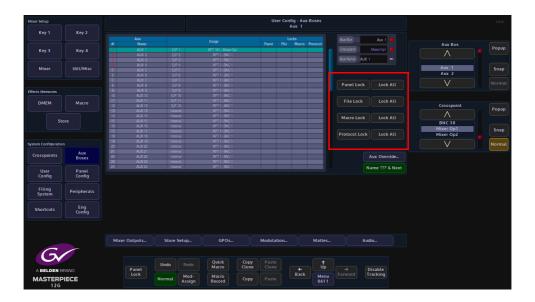
Sources for the Aux Buses can be Mixer output Xpts, Store Xpts or any of the sources from the User Defined crosspoints or Fixed Crosspoints.

#### **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.

Mixer Setup					HDD				
Key 1									
Key 3	Key 4	1 256	Eff	High	Aux 1 BNC 1		iew Dverride 1 😐	Override Number	Popup
Mixer	Util/Misc					0	ux Dverrido Ott On Pl 256 • Pl State Low High		Snap
Effects Memories							ax Bus Aux 1		Normal
Омем	Macro						rossparit XPT 1	New Override	Popup
Ste							New Override Delete Override		Snap
System Configuratio									Normal
Crosspoints	Aux Buses								
User Config	Panel Config								Popup
Filing System	Peripherals								Snap
Shortcuts	Eng Config								Normal
		Mixer Outputs	Store Setup	GPOs	Modulation	Mattes	. Audio		
Gr				Quick	Copy Paste				
A BELDEN B		Panel Lock	Undo Redo	Macro	Copy Clone Clone	← Back Monu	→ Disable Forward Tracking		
MASTERP 12G	IECE	LOCK	Normal Assig		Copy Paste	Back Menu 8610	(Tacking)		

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 Grass Valleye 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 Grass Valleye 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			Filing System - Export	DD
Key 1	Key 2	Select a destination device and folder, then	vers Start Device Scott 8.037.03	
Key 3	Key 4		Personal Constantian Device Pop	pup
Mixer	Util/Misc	o ≫-MENUGRAB o ≫-System Volume Information o ≫-screengrabs	Usb Device 0	ар
Effects Memories			V Norr	
DMEM	Macro		Partition	oup
Sto			US8 DISK Snr	
System Configuration			Norr	
Crosspoints	Aux Buses			
User Config	Panel Config			
Filing System	Peripherals	Select Device New Fol	Rename	
Shortcuts	Eng Config	Open/Close Open All	Delete Start_	
A BELDEN BR MASTERP 12G		Panel Lock Harmal	Redo Quick Copy Paste Macro Cone Cone to the total to	

Mixer Setup					Filing	System - Ex	cport			HDD
Key 1	Key 2		and folder, then press Start			8.027 GB				
Key 3	Key 4				Free Space	7.300 GB			Destination Device	opup
Mixer	Util/Misc									inap
Effects Memories										ormal
DMEM	Macro								Partition	opup
Sto										inap
System Configuration										ormal
Crosspoints	Aux Buses									
User Config	Panel Config									
Filing System	Peripherals	Select Device	New Folder	Rename						
Shortcuts	Eng Config	Open/Close 0	Dpen All Delete	Start						
Gv			Undo Redo	Quick Copy Macro Clone	Paste Clone					
A BELDEN BE MASTERP 12G		Panel Lock	Normal Mod- Assign	Macro Record Copy		<b>←</b> Back	Up Menu Number	Disable Tracking		

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

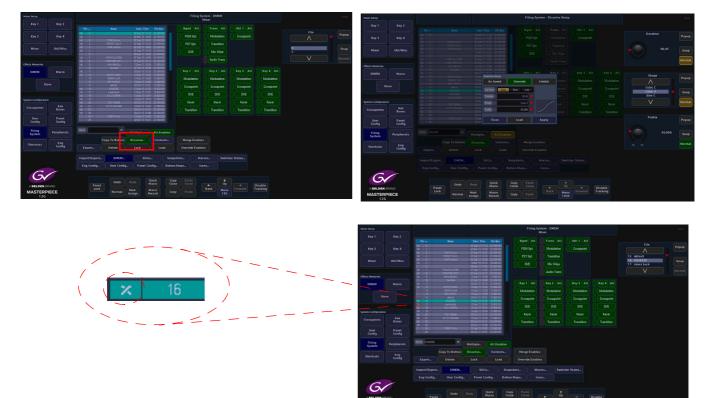
**Delete** - to delete a DMEM, use the **File** parameter to select the DMEM, then press **{Delete}**. A dialog box will appear asking if the user wishes to Continue or Cancel.

**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.



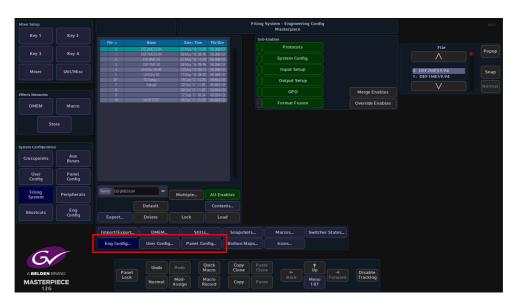
Select an existing DMEM from the file list, then touch the **{Dissolve}** button. The Effects Dissolve dialog box will appear, so that the user can set the type of effect required. When finished, touch the **{Apply}** button.

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 Grass Valleye 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.



## **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.

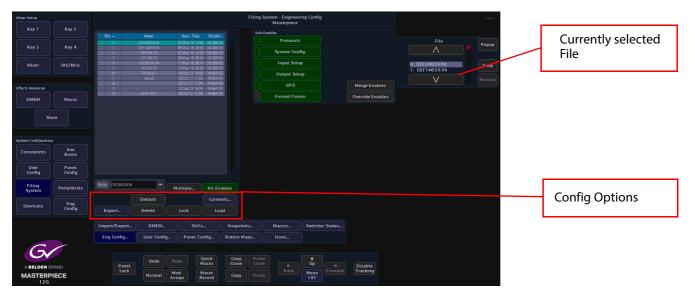
## Saving and Engineering Config File

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.

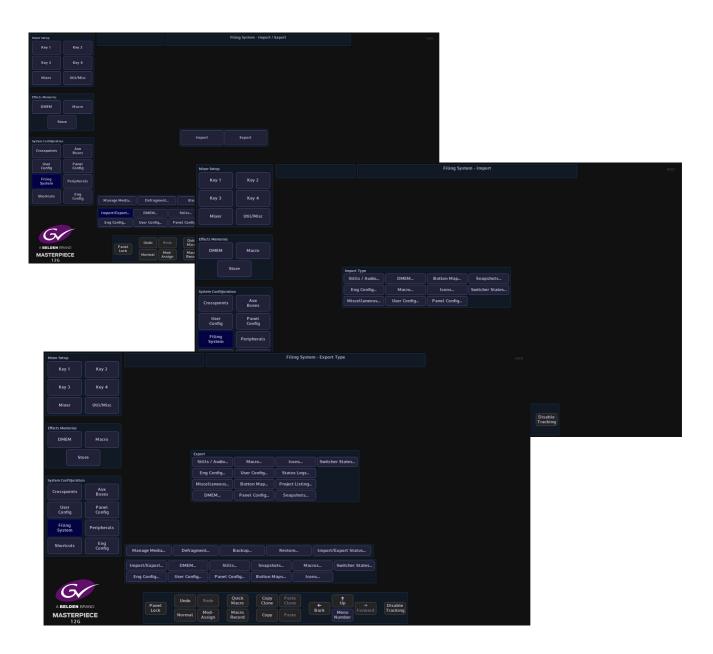
Use the Destination Device parameter to select the memory device and press **{Select Device}**. The menu will now display the contents of the device.

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 Grass Valleye 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 Syst	em - Import / Expo	n				HDD					
						Mixer Setup						F	iling System - I	mport		HDD
Effects Memories																
DMEM																
	tore					Mixer	Util/Misc									
System Configurate				Impor												
Crosspoints	Aux Buses					Effects Memories DMEM										
User Config	Panel Config						tore									
							tore			ort type tills / Audio	DMEM.					
Filing System						System Configuratio				Eng Config	Macro.	Ico	ns Swi	tcher States		
Shortcuts	Eng Config	Manage Media	Defragment				Aux Buses		M	iscellaneous	User Cont	fig Panel	Config			
		Import/Export	DMEM		Snapshots N	User Config	Panel Config									
C					Button Maps	Filing System	Peripherals									
G,			Undo Redo	Quick Macro	Copy Paste Clone Clone		Eng									
	PIECE	Panel Lock	Normal Mod-	Macro	Clone Clone Copy Paste	Shortcuts	Eng Config	Manage Media	Defragm	ent		Restore	Imp			
12G								Import/Export	DMEM	Still		Snapshots		Switcher States		
								Eng Config	User Config.	Panel C	onfig Bu	utton Maps	Icons			
						G										
						A BELDEN B	BRAND	Panel	Undo		Macro	Copy Clone Clone			Disable	
						MASTERF	PIECE		Normal	Mod-	Macro	Copy Paste	Back	Menu Number	dTracking	

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 - Im	iport			
Key 1		Select files or folders to import, then press in	Iport	Select Device				
Key 3	Key 4			Select Device			Removable Device	Popup
Mixer	Util/Misc			Open/Close			Usb Device 0	Snap
				Open All			V	
Effects Memories		🔤 🙃 018.sws - "Studio Repo"		Select				
DMEM	Macro			Exclude			Partition	Popup
Ste								Fobob
				Retain Numbers			USB DISK	Snap
System Configuration				Allow Overwrite			V	
Crosspoints	Aux Buses	- Ten 028 sws "Sidicm" ● De Masterpiece 3 182 ● De Masterpiece 3 183	•					
User Config	Panel Config	🛉 🖿 🗇 Masterpiece 3. 184		Import			Destination File	Popup
Filing System	Peripherals	Removable Device Usb Device 0						Snap
Shortcuts	Eng Config	Partition USBDISK   Destination File 0						
A BELDEN BI MASTERP 126		Panet Undo Lock Narmal I	tedo Quick Copy Macro Clone tod- Record Copy	Paste Clone Paste Back	tp ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	Disable Tracking		

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					Fili	ng System - Import /	Export Stat	us			HDD
	Key 2										
Key 3	Key 4	Import Sbil	Processing	18 secs						Selector	Popup
Mixer	Util/Misc										Snap
Effects Memories											
DMEM	Macro										
Sto	ore										
System Configuration		File Name		mnt1;/012.sws							
Crosspoints	Aux Buses	Purge Done	Advance	Cancel							
User Config	Panel Config										
Filing System	Peripherals										
Shortcuts	Eng Config										
	Config	Manage Media	Defragment	Backup.		estore Imp	ort/Export S	tatus			
		Import/Export	DMEM	Stills	Snapshots.	Macros	Switche	er States			
		Eng Config	User Config	Panel Config	Button Map	s Icons					
6											
			Undo	edo Quick Macro	Copy Clone	Paste Clone	<b>↑</b> Up				
A BELDEN BI MASTERP 12G		Panel Lock		lod- sign Record	Сору	Paste	Menu Number	Forward	Disable 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		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		
			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	ore		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	RAND	Panet Lock	Undo Redo Normal Mod- Assign	Quick Copy Macro Clone Macro Copy		tp 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** 

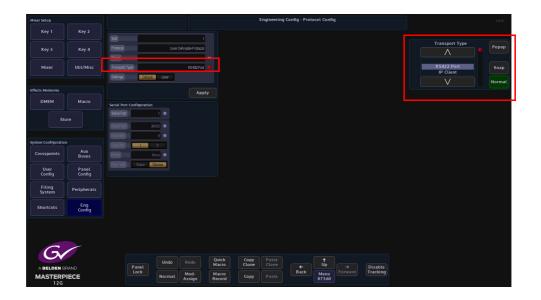
Using the Loaded Protocol parameter, select a free row in the Loaded Protocols table, then use the **Protocol Type** parameter is used to scroll through the protocol sets.

Mixer Setup					Engineerin	g Config - Prot	ocols			HDD
Key 1	Key 2				Load	1				
Key 3	Key 4	LITAH RCP-3	Pess CPU Link Pess CPU Link	P1 Router	Unload				Loaded Protocol	Popup
Mixer	Util/Misc		As SW-P-08F As SW-P-08R As SW-P-08R SW-P-08R SW-P-02F	outer (Xpt) outer (Src)						Snap
			As SW P.00 NVision NP000 Philips ES Swi	Router 3.02 Router Ich Router						Normat
Effects Memories DMEM	Macro		GWG 7000 Nati Duartz T01 Utah Scienti Harris (Pass-	Router IC RCP-1					Protocol Type	Рорир
Ste	ore		NP0016 NP0017-00 NP0017-000 GVG70	D Port Orvice DD					A Tally & UMD Router	Snap
System Configuratio									Playout	Normat
Crosspoints	Aux Buses									
User Config	Panel Config								Available Protocol	Popup
Filing System	Peripherals									Snap
Shortcuts	Eng Config									Normal
6		Input Setup Output Set	tup System Config	GPO	IP Gateways	Protocols	Status Monitor	Format Fusion		
	DINO	Panet	to Redo Qui		Paste Clone	<b>~</b>	↑ Up →	Disable		
MASTERP 12G		Lock	nal Mod- Assign Reco			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									Periphe	als - TSL UMD	Out Setup				HDD
Key 1	Key 2	UMD		Photo											
Key 3	Key 4	Addr		Name	Source (Fro	r DP1		Tally					Slot		Popup
Mixer	Util/Misc		1		1 Mae	r OP 1							3: TSL UMD (Ou	tput On	Snap
													V		
Effects Memories															
DMEM	Macro												UMD Add		Popup
Sto					1 Mixt										
				_											Snap
System Configuration				0.0	at hpit										
Crosspoints	Aux Buses	Displa	iy BNC N Dutput	lame N	o Yes										
User Config	Panel Config	ENCI			•		Backgroun						BNC Out	put	Popup
Filing System	Peripherals												1		Snap
Shortcuts	Eng Config												V		Normal
A BELDEN B MASTERP 126	RAND			Panel Lock	Undo Normal	Redo Mod- Assign	Quick Macro Record	Ca Cta Ca		} Back	t Up Menu 647	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				
Key 1		Input Names Overwrite										
Key 3	Key 4		Con Slot	nection Details UMD Matrix Level Dest						BNC Input		Popup
Mixer	Util/Misc											Snap
										V		
Effects Memories												
DMEM	Macro									Slot		Popup
St	ore									^		
		New Overwrite								2: TSL UMD (Input Onl	N.	Snap
System Configuratio		BNCInput Stat 2: TSL	JMD (Input Only) 😑							V		
Crosspoints	Aux Buses	UMD Address	30	Set								
User	Panel									UMD Address		Popup
Config	Config											
Filing System	Peripherals									30		Snap
Shortcuts	Eng Config											
6												
Gr				Quick				<b>†</b>				
A BELDEN B	RAND	Panel Lock		Macro	Clone		← Back		Disable Tracking			
MASTERP 12G	IECE		Normal A	Mod- ssign Record	Сору		Back	Menu 646	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

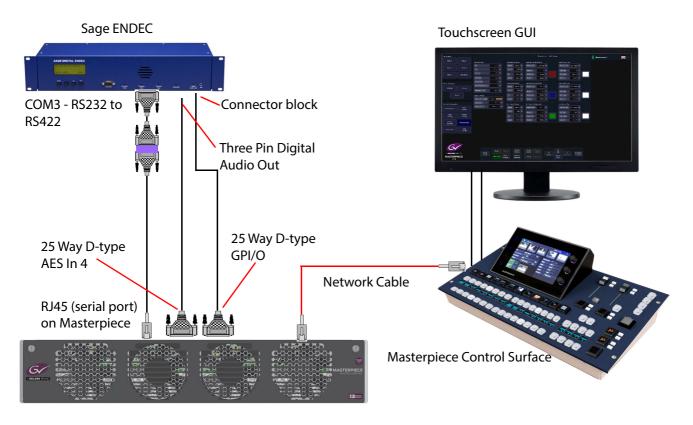
The Emergency Alert System (in this example for the United States of America) is a national public warning system that requires TV and radio broadcasters, cable television systems, wireless cable systems, satellite digital audio radio service providers, direct broadcast satellite service providers and 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.

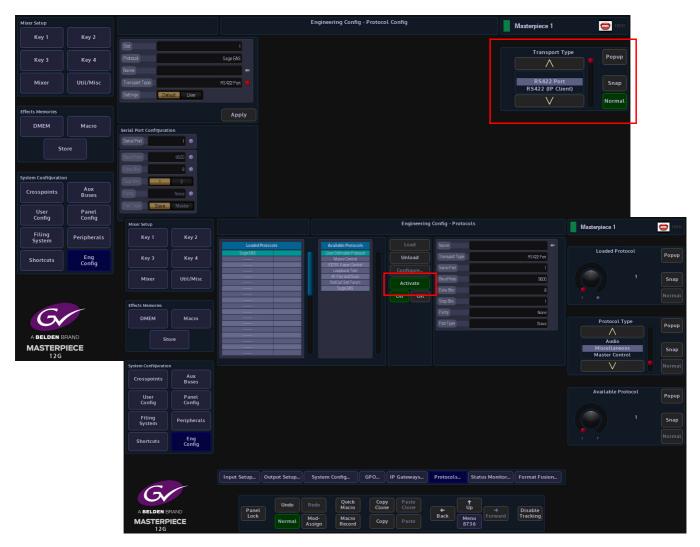


The Masterpiece system has to be running V3.2r1 software or greater.

#### **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.

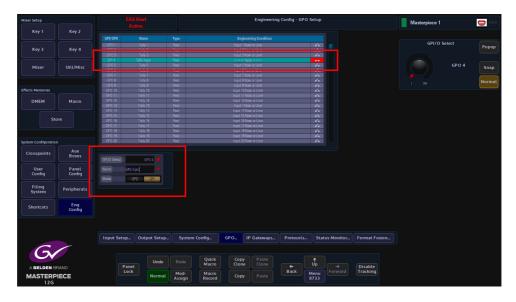


Touch the **{Configure...}** button and then in the "Protocol Config" menu, set the "Transport Type" as RS422 Port, the "Baud Rate" should automatically be 9600, the Sage ENDEC baud rate can also be set to 9600. Finally back in the Protocol menu, touch the **{Activate}** button.

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		Peripherals - EAS Setu	p	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 9 Font Cansal Bold 9	Dpocity B0.00% • Position _0.85 •	Matte Selector Local Matte	Matte Selector Local Matte	GPI	Popup
Mixer	Util/Misc	Fort size 5.13  Scrol Rate 4.00	Top 0.00% • Battom 0.00% •	Mattoluma 50.00% V MatteSat 90.00% V	Matteluma 100.03% V MatteSat 0.03% V	GPI 3 GPI 4 GPI 5	Snap
Effects Memories		Repeat Count 2	Less Severe Banner	Less Severe Background	Less Severe Text		Normal
DMEM	Macro	Minimum Repeat Count 1	Dpacity 80.00% •	Matte Selector Local Matte	Matte Selector Local Matte		
	Macro	Message Hold Dff 00,00	Position 185	Mattellue 120° V	MatteHue 120° V	Font	Popup
St		Audio Override	Top 0.00% •	Matteluma 50.00%	Matte Luma 100.00%	Consol Consol Bold	
		Override Main Output No Yes	Bottom 0.00% •	Matte Sat 90.00%	Matte Sat 0.00%	Fine	Snap
System Configuratio		Audo Source AES In 4	Not Severe Banner	Not Severe Background	Not Severe Text	V	Normal
Crosspoints	Aux Buses	Override Shuffle Automation 2	Dpscity 80.00% •	Mette Selector Local Mette	Matte Selector Local Matte		
User	Panel		Position -0.85	MatterHue 240° V	Matte Hue 240° V	Font size	Popup
Config	Config		Top 0.00% •	Matteluma 50.00%	Matteluma 100.00%		
Filing System	Peripherals		Battom 0.00% •	Matte Sat 90.00% V	Mitte Sat 0.00% V	5.13	Snap
Shortcuts	Eng Config						Normal
ABELDEN B MASTERP 12G		Panel Lock Normal	Redo Quick Macro Mod- ssign Record	Back Back	tup Jenur 655		

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
	Key 2	Main Settings	Most Severe Banner	Most Severe Background	Most Severe Text		
		GP1 GP14 •	Operaty 80.00% •	Matte Selector Local Matte	Mitte Selector Local Matte	Audio Source	Popup
Key 3	Key 4	Fort Consol Bold	Position -0.86 •	Matte Hue	Mattellue 0 V		
Mixer	Util/Misc	Fort size 5.13	Tep 0.00% •	Matta Luma 50.00% V	Matte Luma 100.00% V	AES In 3 AES In 4	Snap
		Statel Acci	Battom 0.00% •	Matte Sat 90.00% V	Matte Sat 0.00% 🔻	Util	
Effects Memories		Repeat Count 🧃 💿	Less Severe Banner	Less Severe Background	Less Severe Text		Normal
		Minimum Repeat Count 1	Cpacity 80.00% •	Matte Selector Local Matte	Matte Selector Local Matte		
DMEM	Macro	Message Hold Dff 00,00 •	Position 0.86	Matte Hue 120° V	MateHue 120° V	Override Shuffle	Popup
St	ore	Audio Override	Tao 0.07% •	Matte Luma 50.00%	Matteluma 100.00%	Automation 1	
		Dvenide Main Output No Yes	Bottom 0.00% •	Matte Sat 90.00% V	Matte Sat 0.00% V	Automation 2 AES to 182	Snap
System Configuratio		Audio Source AES in 4 😐	Not Severe Banner	Not Severe Background	Not Severe Text	AES to 162	Normal
Crosspoints		Dveride Shuffle Automation 2 😐	Opecty 80.07%	Matte Selector Local Matte	Matte Selector Local Matte		Honnar
crosspoints	Buses	<u> </u>	Position -0.86 •	Matte Hue 240° V	MateHue 242° V		
User Config	Panel Config		Tee 0.07% •	Matte Luma 50.006 V	Matteluma 100.00%		
			Battom 0.00%	Matter Sat 90.00%	Matte Sat 0.00% V		
Filing System	Peripherals						
	Eng						
Shortcuts	Eng Config						
G							
A BELDEN B	RAND	Panel	Redo Quick Macro	Copy Paste Clone Clone +	↑ Up → Disable		
MASTERP 12G			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.

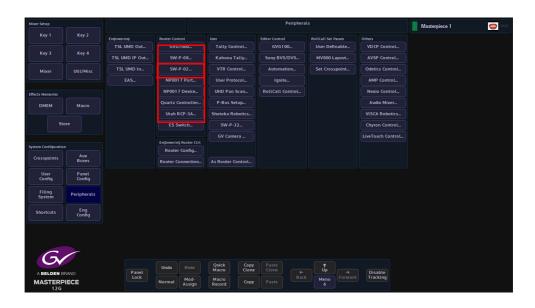
**Override Shuffle** - the default new EAS to LCR (Left, Centre, Right), which can be edited or alternate a shuffle, can be selected. This will place the Audio (e.g. AES) on the 1st three SDI audio output Channels (assumed to be Front left, Front Right and center). The user can edit the "Shuffle Map" 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	t Control			HDD
	Key 2	Destinatio											
Key 3	Key 4											Slot	Popup
Mixer	Util/Misc												Snap
		Source										V	
Effects Memories													
DMEM	Macro											Destination	Popup
	ore											$\land$	Topop
30	ole												Snap
System Configuratio												V	Normal
	Aux		Matrix	1									Normat
Crosspoints	Buses		Status										
User Config	Panel Config						Size					Source	Popup
			Take	Protect		Lock	Salvo						
Filing System	Peripherals												Snap
Shortcuts	Eng Config											V	Normal
6													
A BELDEN B	DAND		Panel	Undo		Quick Macro	Copy Clone	Paste Clone		t Up			
MASTERP 12G			Lock	Normal	Mod- Assign	Macro Record	Сору		Back	Menu 6170	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**

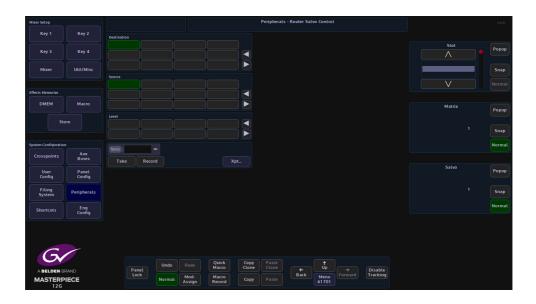
Take - Sets a crosspoint

Protect - protects a destination

**UnProtect** - removes the destination protection

## Salvo Control

This menu works in exactly the Grass Valley 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						Р	eripherals	- 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													
DMEM	Macro												
St	tore												
System Configuratio		Status											
Crosspoints	Aux Buses	Take Protec	t UnProtect		Statu								
User	Panel				State							BNC Input	Popup
Config	Config											A	
Filing System	Peripherals												Snap
Shortcuts	Eng Config											V	
6													
Gv			Undo		Quick	Сору							
A BELDEN B		Panel Lock		Mod-	Macro Macro	Clone		← Back	Up Menu		Disable Tracking		
MASTERF	PIECE		Normal	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	- Router Con	figuration				HDD
	Key 2	Router Settings											
Key 3	Key 4		1: UTAH RCP	3 👄							Slot		Popup
			No Yes								A		
Mixer	Util/Misc		No Yes								1: UTAH RCP-3		Snap
			No Yes								V		Normal
Effects Memories		Out Delay		0 😐									
DMEM	Macro	Ext. Rtr. Background	Norr	a] 🗕							Cut Delay		Popup
St													
													Snap
System Configuratio													Normal
Crosspoints	Aux Buses												
User	Panel										Ext.Rtr. Backgro	und	Popup
Config	Config										∧		
Filing System	Peripherals										Normal Read Only		Snap
Shortcuts	Eng Config										V		Normal
	Config												
6													
A BELDEN B	PAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		t Up	Disable			
MASTERP 12G		Lock	Normal	Mod- ssign	Macro Record	Сору		Back	Menu 618	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				Pe	ipherals - Router	Connections				
Key 1	Key 2									
		Inputs from Routers for Na	me Overwrite & Tieline							
		Source	Name	Slot	Connection Det				Matrix	Popup
Key 3	Key 4	hot 1		Stat 1: SW-P-08 Router	UMD	Matrix	Level	Dest		Popop
		Input 2		1: SW-P-08 Router						
		hp.t 3		1: SW-P-08 Router				2		
Mixer	Util/Misc	input 4		1: SW-P-08 Router						Snap
				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-OB Houter					Level	Popup
Sto	10	New Overwrite								
510		ENC Input								
		December								Snap
		Slot 1: SW	/-P-08 Router							
System Configuration										
System Configuration		Matrix								
Crosspoints	Aux	Malix	•							
crosspoints	Buses									
									Destination	
User	Panel								Destination	Popup
Config	Config									
coming										
Filing	Peripherals									Snap
System										
Shortcuts	Eng Config									
Shortcots	Config									
		Set								
	/									
				Quick Copy		<b>†</b>				
		Panel	Undo Re	do Macro Clone	Clone			Disable		
A BELDEN BR	AND	Lock			Ba		Forward	Tracking		
MASTERPI	ECE	LUCK	Normal Me		Paste			Tracking		
126			As:	ign 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

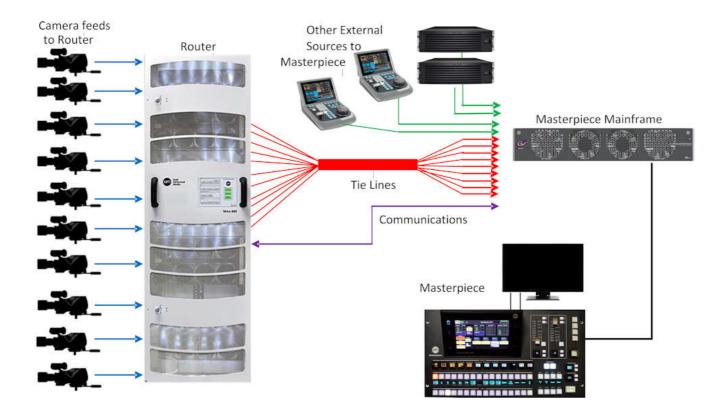
## **External Router Control - Practical Application**

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.

Mixer Setup						Engineering	Config - Pr	otocols					
	Key 2												
Key 3	Key 4	SW-P-08 Plouter		Pesa CPU Link P1 Ro	utor	Unload	Transport T			IP Client	Loaded Prote	col	Popup
Key 5	Key 4			Pesa CPU Link USP R SW-P-08 Router As SW-P-08 Router D		Configure	IP Pert Num			1024			
Mixer	Util/Misc			As SW-P-08 Router () SW-P-08 Router ()		Activate	Channel						Snap
				As SW-P-02 Route NVIsion NPC010-02 Ro	ater	On Off		Status		Pending			
Effects Memories				Philips ESswitch Ro. GVG 7000 Native Ro.	ner L			of Server 10.1	54.0.1/16 work: 10.54.0.0				
DMEM	Macro			Utah Scientific RCP Harris (Pass-Throug	1				£ 0.0.0.1		Protocol Ty	pe	
				NP0016-00 NP0017-000 Port							$\land$		Popup
St	ore			NP0017-000 Devic GVG7000	e 📕						Tally & UMI Router		Snap
											Playout		
System Configuratio	Aux												
Crosspoints	Buses										Available Pro		
User Config	Panel Config										Avaitable Pro	οςοι	Popup
Filing													
System	Peripherals												Snap
Shortcuts	Eng Config												
6		Input Setup C	utput Setup	System Config	GPO IP	Gateways	Protocols	Stat	tus Monitor	Format Fusion			
G				Quick	Сору			t					
A BELDEN B	BRAND	Panel		Macro	Clone	Clone	+ Paeli		+ Forward	Disable Tracking			
MASTERF 12G	PIECE	Lock		dod- Macro ssign Record	Сору		Back	Menu 8736	Forward	Tracking			

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		User Definable	VD CP 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	ore		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 Normat Mod- Assign	Quick Copy Macro Clone Macro Copy	Paste Clone + Paste	tup 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**"

Mixer Setup				Pe	ripherals - Route	r Connections				
	Key 2	Inputs from Routers for N	ame Overwrite & Tielines							
		Source			Connection D				Matrix	Popu
Key 3	Key 4			Slot	UMD	Matrix	Level	Dest		Popu
				1: SW-P-08 Router						
		Input 2		1: SW-P-08 Router 1: SW-P-08 Router						
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						
		Input 8		1: SW-P-08 Router				3		
fects Memories		Input 9	9	1: SW-P-08 Router				3		
		Input 10		1: SW-P-08 Router				3		
DMEM	Macro	Input 10		1: SW-P-08 Router				3	Level	
		100.11		1. 349 F 40 Hould						Pop
St	ore	New Overwrite								
		Credit por								Sn
		Sict 1: Si	V-P-CB Router							
stem Configuratio	a									
	Aux									
Crosspoints	Buses	Lovel								
	Busch	LOVO								
		Destination							Destination	
User	Panel	Destraut								Pop
Config	Config									
Filing										
System	Peripherals									Sn
System										
Shortcuts	Eng Config									
Shortcots	Config									
		Set								
		Set								
G										
G										
Gr			Undo Redo	Quick Copy						
	AND	Panel	Undo Redo	Quick Copy Macro Clone		← <sup>↑</sup>		Disable		
		Panet Lock		Macro Clone		← Up		Disable Tracking		
			Undo Redo Normal Mod- Assign	Quick Copy Macro Clone Macro Copy				Disable Tracking		

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 Yes
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				
4	SPORT 1	Store 2 - STOR 2	Store 2 - STOR 2	Fill	UHD Router					
5	SPORT 2	Store 3 - STOR 3	Store 3 - STOR 3	Fill		No Yes				
	SPORT 3	Store 4 - STOR 4	Store 4 - STOR 4	Fill		Crosspoint Router				
						Crusspont note				
	SHOP 2	Store 8 - STOR 8	Store 8 - STOR 8			1: SW-P-08 Router				
9	SHOP 3	Store 9 - STOR 9	Store 9 - STOR 9	Fill						
			Store 10 - STOR 10			1				
11	STOR 2	Matte 6 - Cyan	Matte 6 - Cyan	Fill						
		Matte 11 - Dark Red	Matte 11 - Dark Red							
13	PLAY 1	Matte 10 - Orange	Matte 10 - Orange	Fill		1				
	PLAY 2	Matte 13 - Dark Blue	Matte 13 - Dark Blue			1				
15	PLAY 3	Store 4 - STOR 4	Store 4 - STOR 4	Fill						
		Input 16 - BNC 16	Input 16 - BNC 16							
17	717	Input 17 - BNC 17	Input 17 - BNC 17	Fill						
		Input 18 - BNC 18	Input 18 - BNC 18							
	222									

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 Pro	otocol				
	Key 2											
				sble Off	On							
		1 BN								Slot		Popup
Key 3	Key 4	2 BN								$\wedge$		
			34									
Mixer	Util/Misc	5 EN								2: Tally		Snap
Mixer	OULYMISC										_	Snap
		7 BN										
		8 BN	28							V		
fects Memories		10 BNC	10									
		11 BNC										
DMEM	Macro									ID		
		13 BNC										Popup
		14 BNC 15 BNC										
Stor		16 BNC	16									
		17 BNC										Snap
		18 BNC										Junip
		19 BNC 20 BNC										
stem Configuration		20 BNC		C. D. C. L.	Source IDs							
Crosspoints	Aux Buses			Deraott	source ib's							
User Config	Panel Config									Source		Popup
Filing System	Peripherals									BNC 1 BNC 2		Snap
Shortcuts	Eng Config											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 - V	TR Control			HDD
Key 1	Key 2	Play Stop	Play	Record	VTR Gangi Enebled	ng OH On			Popup
Key 3	Key 4			accord Enable 0(1 0	GangNo	•			Ророр
Mixer	Util/Misc			ngEnable Off O				4: Sony BVW-75 VTR	Snap
Effects Memories DMEM	Macro	#         Cue Points           1         00.0000.00           2         00.0000.00           3         00.0000.00           4         00.0000.00           5         00.0000.00	Edit Mode VITC LTC NDF DF						Normal
Sto	ore	6 00:00:00:00 7 00:00:00 8 00:00:00							
System Configuration		Que Register	1 • Recall						
Crosspoints	Aux Buses	Ourrent Timecode 00.00.00							
User Config	Panel Config	Machine Status Unkno	20						
Filing System	Peripherals								
Shortcuts	Eng Config								
A BELDEN B		Panel	ndo Redo	Quick Copy Macro Clone	Paste Clone Ba		→ Forward		
MASTERP 12G	IECE		rmal Assign	Macro Record Copy	Paste	CK Menu 660	Tracking		

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 - S	hotoku Camera	Control					HDD
Key 1	Key 2												
Key 3	Key 4											Slot	Popup
Mixer	Util/Misc											7: Shotoku Robotics	Snap
	Gutinisc											V	Normal
Effects Memories													
DMEM	Macro												
		Camera Control		Camera Status		Camera Shots							
St	ore	Pan	0.000 🔻	0	Offine								
		TH	0:000 🔻	Selected	No	Shot 1 Shot 2		0	00.00	Swoop Swoop			
System Configuratio		Zoom	0.000 🔻	Controller	Note	Shot 3 Shot 4			00:00	Swatp Swatp			
Crosspoints	Aux Buses		0.000	Local	No	Shot 5 Shot 6		0	00.00 00.00	Swoop Swoop			
User	Panel	x	0.000 V	Move Type	Note	Shat 7 Shat 8 Shat 9		0	02.00 02.00	Swaap Swaap Swaap			
Config	Config		0.000 🔻	Time To Shot	00,00	Shot 10 Shot 11		0	02.00	Swoop Swoop Swoop			
Filing System	Peripherals	Height	0.000 🔻	Settings (Restart	to Apply)								
			Select 💿			Register Name S	hot 1						
Shortcuts	Eng Config	Delault Shot Time	03:00	Broadcast New ID	Limited	Time To Shot	nuti		00.00				
					Umted	Shot Type			Swoop	Store Sho	•		
				Restart Proto		Description				Recall Sh			
6				Restart Proto						Recatt Shi	<b>n</b>		
Gv			Undo	Redo	uick Copy			ţ.					
A BELDEN B		Panel Lock			facro Clone			Up enu		Disable Tracking			
MASTERP 12G	PIECE		Normal		ecord Copy			920					

# Shotoku Camera Control

The opening menu will display that the Shotoku Robotics protocol is active (as shown below).

Mixer Setup						Peripherals - St	iotoku Camera C	ontrol			н	DD
Key 1	Key 2											
Key 3	Key 4										- Stot Por	up
Mixer	Util/Misc											
Mixer	Utit/Misc											$\exists$
Effects Memories												
DMEM	Macro											
		Camera Control		Camera Status		Camera Shots						
Sto	ore	Pan	0.000 🔻	0	Offine							
		TR	0.000 🔻	Selected	No	Shot 1 Shot 2		0	00.00	Swoop Swoop		
System Configuration		Zoom	0.000 🔻	Controller	Nate	Shot 3 Shot 4			00:00	Swacp Swacp		
Crosspoints	Aux Buses		0.000	Local	No	Shot 5 Shot 6		0 0	00.00	Swoop Swoop		
					Nore	Shot 7 Shot 8			00,00	Swacp		
User Config	Panel Config	X	0.000 🔻	Time To Shot	00,00	Shot 9			00.00	Swoop Swoop		
			0.000 🔻			Shot 10 Shot 11		0	DQ: 00 DQ: 00	Swoop Swoop		
Filing System	Peripherals	Heght	0.000 🔻	Settings (Restart	to Apply)							
			Select •		2	Register						
Shortcuts	Eng Config	Default Shot Time	03:00		Limited	Name St	iot 1		-			
					2 🔹	Time To Shot			00.00			
				New Broadcast	Umited 💿	Shot Type			Swoop	Store Sho		
				Restart Proto	col	Description				Recall Sh	not	
G												
Gv		Panel	Undo	Redo N	uick Copy lacro Clone	Paste Clone				Disable		
A BELDEN B MASTERP 12G		Lock	Normal		lacro ecord Copy		Back Me 69			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 Grass Valleye 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,

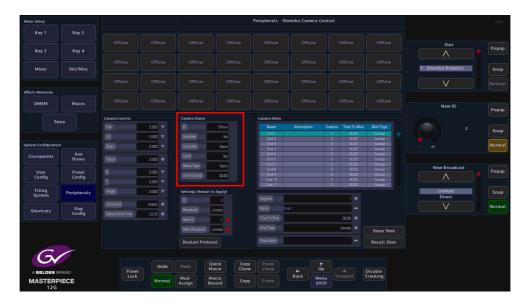
Selected - this displays if the Robotic Camera heads are selected and active

**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
Effects Memories	Macro											
DMEM	Macio	Camera Control		Camera Status		Camera Shots					New ID	Popup
St		Pan	0.000 🔻	ID ID		Name				Shot Type		
					Olline	Shot 1	Description	Gallera	00,00	Swoo		Snap
		Th	0.000 🔻	Selected	No							
System Configuration			0.000 🔻		None	Shot 3 Shot 4		0	00,00	Sweep Sweep		Normal
Crosspoints					No				00.00			
Crosspontes	Buses	Focus	0.000 💿			Shot 6 Shot 7		0	00.00	Swoop Swoop		
				Move Type	None	Shot 8		0	00,00	Swoop	New Broadcast	Popup
User Config	Panel Config	-	0.000 🔻		00:00				00.00	Swoop		Popop
			0:000 🔻			Shot 10 Shot 11		0	00,00	Swoop Swoop		
Filing System	Peripherals	Height	0.000 🔻	Settings (Restart	to Apply)						Limited	Snap
System											Direct	
Shortcuts	Eng	Command	Select 🔍	Breadcast	Limited	Name St	ot 1		-			Normal
	Config	Default Shot Time	03:00	New ID		Time To Shot			00,00			
				New Broadcast	Limited 😐	Shat Type			Swoop •	Store Shot		
				Restart Proto	col	Description			- 1	Recall Shot		
6												
	BRAND	Panel	Undo		Quick Copy facro Clone	Paste Clone		† Jp		Disable		
MASTERF 12G		Lock	Normal	Mod- Assign R	tacro ecord Copy			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.

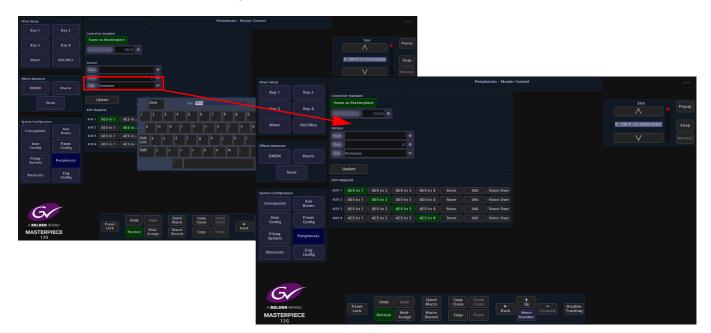
Snell SW-P-32

This protocol is used to identify and connect Masterpiece to the Grass Valley Morpheus Automation System.

Mixer Setup								Peript	erals - Master	Control				HDD
	Key 2	Controlle	r Standard											
Key 3	Key 4	Same a	ns Masterpi Standard	iece 1080/80 😐								Slot		Popup
Mixer	Util/Misc	Version										8: SW-P-32 Automation		Snap
		Mejor			1 •							V		
Effects Memories		Minar			27 •							V		
DMEM	Macro	Туре	Aasterpiece		-							Controller Standard		
	Dre	Up	date											
30		AOV Mapp	ping									1 080i/60 1 080i/59.94		Snap
System Configuratio												V	ſ	Normal
Crosspoints	Aux Buses					AES In 4	Store		Voice Over					
						AES In 4	Store		Voice Over					
User Config	Panel Config					AES In 4	Store		Voice Over					
Filing System	Peripherals													
Shortcuts	Eng Config													
Gv				Undo		Quick	Сору			t				
A BELDEN B			Panel Lock			Macro	Clone		← Back	Up Menu	Disable Tracking			
MASTERP 12G	IECE			Normal	Mod- Assign	Macro Record	Сору			Number				

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														
		Matrix	Destination	Bus ME 1 Kov	Lo		ock						Mixer Mat	rix	
Key 3	Key 4						k All								Popup
			2	ME1Key ME1Key2S											
Mixer	Util/Misc			ME1Key ME1Key3S	(3) htticev	Unlo	ick All								Snap
				ME 1Key											
			8	ME1Key4S	oltkey										
Effects Memories			9												
DMEM	Macro				nd Kot								Destination	on	Popup
															Fobob
Sto			15	ME 1 Backgri	pickey and A										
			17	ME 1 Backgr ME 1 Backgr											Snap
				ME 1 Backgri											
System Configuration			20	ME 1 US	2										
Crosspoints															
	Buses														
User	Panel														
Config	Config														
Filing System	Peripherals														
System															
Shortcuts	Eng Config														
	Config														
6															
				Undo		Quick Macro	Copy Clone	Paste Clone		↑ Up					
A BELDEN B			Panel Lock				ctone		← Back		Disable Tracking				
MASTERP 12G	IECE			Normal	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	GMEM				ditor able				Slot	Popup
Mixer	Util/Misc	Constant Despert	Odus -								10: GVG100	Snap
		Inhibit Crosspoint K	ey Control								V	
Effects Memories		мар мс										
DMEM	Macro	01 M	cel ME locar locar								Crosspoint Offset	Popup
Sto	ore	04 M 05 M	bear bear bear									Snap
System Configuratio												Normal
Crosspoints	Aux Buses											
User Config	Panel Config										Snapshot Recall	Popup
Filing System	Peripherals										GMEM DMEM	Snap
Shortcuts	Eng Config											Normal
A BELDEN B MASTERP	RAND	Panel Lock	Undo Normal	Redo Mod- Assign	Quick Macro Record	Copy Clone Copy	Paste Clone Paste	<b>←</b> Back	1 Up Menu 670	Disable 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**

 Here Sees (Ky 1)
 Ky 2 (Ky 3)
 Construction (Construction) (Constru

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							Þ	Keyer Aixer, Key 1						HDD
Key 1	Key 2	Crosspaint S	tare 1 😐	Keyer Contro					Full Key					
Key 3	Key 4		On Air	Full	Linear	Luma	Invert			sity 100.00%		Crossp		Popup
Mixer	Util/Misc		1:00°	Matte Fill	Coupled Key	Split Key	Self Key					Mixer 0 Store	Op3	Snap
MIXEI	OUDMISC	Matte Select Local	Watte •	Actions								Store	2	Snap
		Matte Hue C	1000° 🔻 📕	Cut On Auto Off	Auto On Cut Off	Auto On	Auto Off							
Effects Memories		Matte Luma 10	100% 🔻	AUto Off	CUT OIT									
DMEM	Macro	Matte Sat 90	1.00% 🔻		Auto									Popup
	pre													Snap
System Configuratio												V		
Crosspoints	Aux Buses													
User Config	Panel Config											Mix 1	Time	Popup
Filing System	Peripherals												01 ;00°	Snap
Shortcuts	Eng Config													Normal
		Keyer Setup			DVE Allo	cation								
Gr					Quick	Сору	Paste		<b>†</b>					
A BELDEN B	RAND	Panel			Macro	Clone	Clone		Up Up		Disable			
MASTERP	IECE	Lock	Normal		Macro Record	Сору	Paste	Back	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						Periphera	ıls - GVG100	Control				
Key 1	Key 2											
Key 3	Key 4	Snapshot Recall	GNEM .			itor able					Stot	Popup
Mixer	Util/Misc	Snapshot Project	Default •								10: GVG100	Snap
		Inhibit Crosspoint Ke	y Control									
Effects Memories		Мар МЕ										
ОМЕМ	Macro	Effects Address Logical 01 Mix 02 Mix	ar ar								Crosspoint Offset	Popup
St	pre	03 Mix 04 Mix 05 Mix 05 Mix	er 👘									Snap
System Configuratio												Normal
Crosspoints	Aux Buses											
User Config	Panel Config										Snapshot Recall	Popup
Filing System	Peripherals										GMEM DMEM	Snap
Shortcuts	Eng Config											Normal
G			Undo	Redo Quick Macro	Copy Clone	Paste Clone		† Uр				
A BELDEN B MASTERP 12G		Panel Lock		Macro Macro Record	Copy	Paste	← Back	Up Menu 670	→ Forward	Disable 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							Peripher	als - RollCall	Control				HDD
Key 1	Key 2	RollCall Control Enables				Ec	litor						
Key 3	Key 4		Yes				able				/	Slot	Popup
Mixer	Util/Misc		Yes Yes								12: RollCal	l Control	Snap
Effects Memories											\ \	/	Normal
DMEM	Macro												
Ste	ore												
System Configuration													
Crosspoints	Aux Buses												
User Config	Panel Config												
Filing System	Peripherals												
Shortcuts	Eng Config												
L													
6													
			Undo	Redo	Quick Macro	Copy Clone	Paste Clone		↑ Up				
A BELDEN B MASTERP 12G		Panel Lock	Normal	Mod-	Macro Record	Сору		<b>←</b> Back	Menu 674	Disable 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.

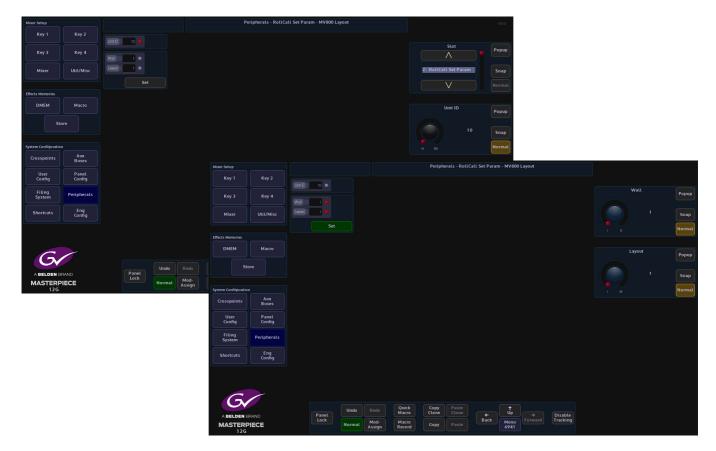


The RollCall Set Param menus are for sending a message to any unit on the RollCall network. The message can be a general purpose one, which consists of a command and a parameter. The parameter can be a value, a string or both.

# 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.

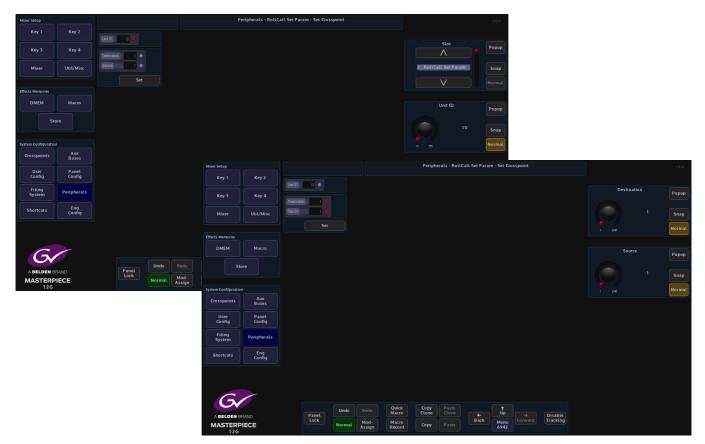


Wall - this selects video wall outputs 1 to 12

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				Peripherals - VI	CP Play Control			HDD
Key 1								
Key 3			Is Point         02:00:00:00         •           Out Point         02:00:00:00         •	Play Pate 0.00 Count Forever	NDF DF Mark Out		Slot	Рорир
Mixer					Mark In		3: VDCP	Snap
			Timecode 02020200		Load & Cue			Normal
Effects Memories	Macro	Clarnel	Play Slow	Stop Sto	w Play		Enabled	
		Na of Files 0					Enabled	Popup
St		Free Space 02.02.02.00	VDCP Ganging				Off On	Snap
System Configuratio		Length 020200	Enabled Of On					Normal
Crosspoints	Aux Buses	FileNameLength Food& Veridde	GargNo 1					,
User Config	Panel Config	Set Channel					Gang No.	Popup
Filing System	Peripherals	Refresh File List						Snap
Shortcuts	Eng Config							Normal
		Config Playout						
Gr				Copy Paste				
A BELDEN B		Panet	Macro C	tone Clone		Disable     Tracking		
MASTERP 12G	PIECE		Mod- Assign Record C	Copy Paste	Sack Menu 662			

## **Transport Control**

Play - will play a clip backwards and play forwards at standard speed

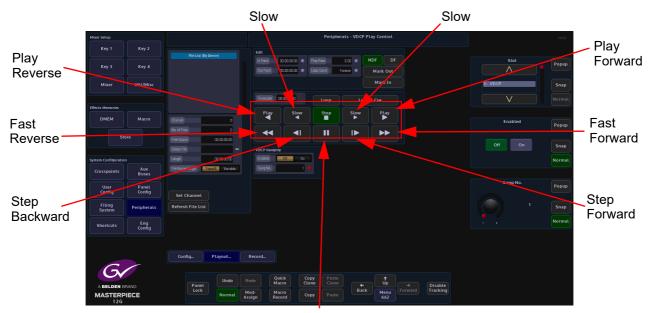
Slow - will play a clip backwards and forwards at slow motion speed

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				Peri	pherals - AVSP	Play			HDD
Key 1	Key 2								
Key 3	Key 4							Slot	Popup
			CipName		Save In	l/Out			
Mixer	Util/Misc		In Paint 00.00.00.0					4: EVS AVSP	Snap
			Out Point 00.00.000						Normal
Effects Memories									
DMEM	Macro	Refresh Server Data	Timecode 00.00.00.0		Mark			Standard	Popup
St	ore	Server Info			Mark	Out			
		Standard 1080,/59.94 😐	Loop	Re	Cue Load	d & Cue		1080i/59.94 1035i/59.94	Snap
System Configuratio		Free Size DD CD CD CD		low Stop	Slow	Play			Normal
Crosspoints	Aux Buses					••			
User Config	Panel Config	Clip Info	Multi		Court Farever			Name	Popup
	comig	Name	Channel		COUR FRANK				
Filing System	Peripherals	00.00.00.00 Gut 00:00:00							Snap
Shortcuts	Eng Config	Length 00:00:00:00							Normal
		Play Mod	Record						
Gr			Quick	Copy Paste					
A BELDEN B	RAND	Panet	Macro	Clone Clone	← Back		Disable Tracking		
MASTERP 12G	IECE		lod- sign Record	Copy Paste	Васк	Menu 664	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 <sup>1</sup>/<sub>2</sub> 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	File List (by server)	Edit OpName Save In/Out	Slot Popup
Mixer	Util/Misc		In Pare 0000000 •	4: EVS AVSP Snap
Effects Memories			0:: # Port 0:: 00:: 00:: 00:: 00:: 00:: 00:: 00:	Normal
DMEM	Macro	Refresh Server Data	Timecode         00.002/00.00         Mark In           Filey/Rate         0.00         V         Mark Out	Standard Popup
Ste		Server Info Stendard 1080/59.94	Transport Castral ReCue Load & Cue	1080i/59.94 Snap
System Configuratio		Clip Num 0 Free Size 00:00:00:00	Play Slow Stop Slow Play	V Normal
Crosspoints	Aux Buses			
User Config	Panel Config	Clip Info	Multi Channet	Name Popup
Filing System	Peripherals	In 00:00:00:00		Snap
Shortcuts	Eng Config	Length 00.00.00.00		Normal
6		Ptay Mod	Record	
A BELDEN B MASTERP 12G		Panel Lock	edo Quék Copy Paste to Clone Clone Clone Clone Clone Back Menu 6642 Disable 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 3	Key 4		Record Create Clip	Slot Popup
Mixer	Util/Misc		Dipin Perit acacaca  Delete Clip	4: EVS AVSP Snap
			Timecode 01.01.00.00	V Normal
Effects Memories			Start Time 00.00.00.00 •	
DMEM	Macro	Refresh Server Data	End Time 00.00.00 • Refresh List	Standard Popup
		Server Info	Transport Control	
Sto	ore	Standard 1080/59.94	Stop Rec	1080i/59.94 Snap 1035i/59.94
System Configuration		Free Size 03.03.03.00		Normal
Crosspoints	Aux Buses			
User Config	Panel Config	Clip Info	Mutti Channel	Name Popup
Filing System	Peripherals	In 00:00:00 00		Snap
Shortcuts	Eng Config	Length 03:03:00:00		V Normal
A BELDEN B		Ptay Mod	record_ do Quick Copy Paste ↓ ↓ Macto Clone ← Up → Disable	
		Lock Name	Macro Copy Paste Back Menu 6641 Forward Tracking	

Ensure the "Rec" channel(s) is selecting a video source that is running in the Grass Valleye 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 Fil	le List			HDD
Key 1	Key 2									
Key 3	Key 4	6 Folder Names							Slot	Popup
Mixer	Util/Misc								6: AMP Ip	Snap
Effects Memories										
DMEM	Macro								Folder Name	Popup
	tore									
		No. of Folders		Refresh						Snap
System Configuration	on	Na of Cips							V	
Crosspoints	Aux Buses	QipName		Load & Cue Clip						
User Config	Panel Config								Clip Name	Popup
Filing System	Peripherals									Snap
Shortcuts	Eng Config								V	
6		File Lists Play / Edi		Record						
G		Unc	o Redo Quic	k Copy To Clone			( t			
A BELDEN		Panet	Maci			+ Back	↑ Up Menu	Disable Tracking		
MASTERI 12G		Norm	al Assign Reco	rd Copy			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	Record			HDD
Key 1	Key 2								
Key 3	Key 4							Slot	Popup
		Record Clip		Channel Setting					
Mixer	Util/Misc				Tmer LTC WTC			6: AMP Ip	Snap
		Start Timecode	00.00.00.00		Cff On				Jush
		Dutation	00:00:00:00						Normal
Effects Memories		Timecode	00.00.00.00		Record Cue				
DMEM	Macro							Start Timecode	
									Popup
St									
								00:00:00:00	Snap
System Configuratio									Normal
Crosspoints	Aux Buses								
User	Panel							Duration	Popup
Config	Config								
Filing System	Peripherals							00:00:00	Snap
	Eng								Normal
Shortcuts	Eng Config								
		File Lists Play	/ / Edit	Record					
6									
		Panel	Undo Redo	Quick Co Macro Clo	ne Clone +	t Up →	Disable		
MASTERP 12G			Normal Mod- Assign	Macro Record Co	py Paste Back	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				Peripher	als - Nexio Play	HDD
Key 1	Key 2		Refresh List		Record	
Key 3	Key 4	THE EAST OF DETAILS	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 Point	00:00:00:00	Mark In	
DMEM	Macro		Dut Point Loaded File	0.00.00.00	Mark Out	Out Point Popup
Ste	ore		(DID-DFIN)			
		Control 1 2 3 4 5	6 7 8 Load &	Cue Eject Playout No	Yes	00:00:00:00 Snap
System Configuration		Sync 1 2 3 4 5	678 🖊		0.00.00.00	Normal
Crosspoints	Aux Buses	Play Slow	Stop Slow	Play Play Bate	LCO •	
User	Panel			Court Court	Forever O	
Config	Config					
Filing System	Peripherals					
Shortcuts	Eng Config					
G						
	RAND	Panet	Redo Quick Macro	Copy Clone Clone	← Up → Disat	
MASTERP 12G		Lock Normal	Mod- Assign Record	Copy Paste	Back Menu Forward Track	

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**

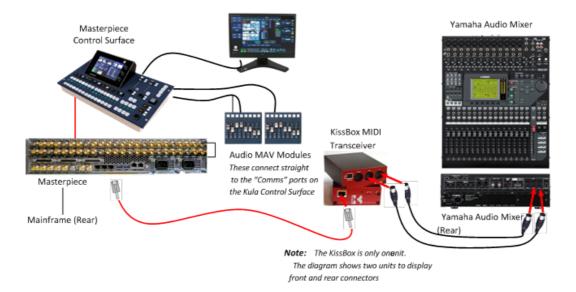
Masterpiece is able to control functionality on a Yamaha (01V96) Audio Mixing desk. Some of the functionality includes:

- 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 Grass Valleye 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)"

		_	_	_	
ou can get IP settings assigned a nis capability. Otherwise, you ner					
or the appropriate IP settings.					
Obtain an IP address automa	tically				
Use the following IP address:					
IP address:	172 .	28	7	. 18	5
Sybnet mask:	255 .	255	224	. 0	
Refault gateway:	172 .	28	1	. 6	
<ul> <li>Obtain DNS server address a</li> <li>Use the following DNS server</li> </ul>					
Preferred DNS server:		-		23	
Alternate DNS server:		_	-	-	
Aremare Diva server.	· · ·	_		<u>.</u>	
Vajidate settings upon exit			ſ	Adv	anced

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						
CM-MIDI @172.28.20.244	Box Properties					
MIDI IN/DUT 1 (Port 5004)     MIDI IN/DUT 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					
	Network configuration					
	KissBox address 172 28 20 244 TCP Port N/A					
	Subnet Mask 255 255 224 0 TCP Mirror Port N/A					
	Gateway address 172 28 1 6 UDP Port N/A					
	Poload      Restart Box     Q     Monitor      Clear log      Trying to connect to Kiss-Box 172.28.20.244      fiss-Box at 172.28.20.244 found					
Scan network						
From 132 168 0 0 To 132 168 0 254						
Add Kiss-Box manually						
Kiss-Box address 172 28 20 244						
Add Box						

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 C	ata 🛛 STI 1 STI 2 STI 3 STI 4 10 ISTI 488 🖉 🖓 🛡 🛡
MIDI/TO HOST SETUP:	
GENERAL	SPECIAL FUNCTIONS
R× PORT MIDI -	StudioManager ((-)(1)
TX PORT MIDI -	DAM ()()
MIDI THRU	REMOTE ProTools
(	CASCADE LINK []
MACHINE CONTROL	
MMC	
MIDI/HOST	A REMOTE A MACHINE A ►

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×	OMNT	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 8: Calrec		
Key 3	Key 4	Fader Fader 1 Fader 2	Button Oit Oit	1 Un	Type Cut assigned On assigned On	PFL Level On inf dE On inf dE	3			Module 1-8		Popup
Mixer	Util/Misc									Button Out .	1-8 9-16	Snap
Effects Memories										Source 2  Type Unassigned	V	Normal
DMEM	Macro									Cat Cat On PFL Off On	Pauer	Рорир
St	ore									Level -intel •	Fader 1 Fader 2	Snap
System Configuratio	0									Follow Video		Normal
Crosspoints	Aux Buses									Configure		
User Config	Panel Config									Fader Module Assign Group Protocol Stot	Button	Popup
Filing System	Peripherals									Mixer Bank A B: Calvec	Cut PFL	Snap
Shortcuts	Eng Config									Group Mixer Bank A		Normal
C			ļ				ļ		ļ	Protocol Stor R Calmo		
	BAND			Undo		Quick Macro	Copy Clone	Paste Clone		<b>↑</b> 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 2	Fader Map									
										Six I: Yamaha	Slot
Key 3	Key 4	Fader 1	C.t		Channel On					Module 18	Popul
		Fader 2 Fader 3	Cut Out		Channel On Channel On	011 -inf dB 011 -9.6 dB				Feder 8	
Mixer	Util/Misc	Fader 4	Out Out		Channel On	011 -9.6 dB					1: Yamaha
						011 4/1 dB				Button Out	1: Yamaha Snap
		Fader 6 Fader 7	Out Out		Channel On Channel On	011 -inf dB 011 -inf dB				Source 0	Norma
		Fader 8			Channel On	011 -in1 dB					Norma
ffects Memories										Type Channel •	
DMEM	Macro										Module
	ore									Invest Control	
		AFVO	AFVO	AFVO	AFVO	AFVO	AFVO	AFVO	AFVO	Follow Video	1-8 Snap 9-16
System Configuratio	an									Configure	Norma
Crosspoints	Aux Buses									Follow Video Off	
User Config	Panel Config									Fader Module Assign	Fader Popu
										Group Pretocol Stot Factor Bank B 1: Yamaha	Fader 7
Filing System	Peripherals									Texes parts of the texture	Fader 8 Snap
Shortcuts	Eng Config										V Norma
										Group Fader Bank B	
										Protocol Slot 1: Yamaha 💿	
										Assign	
										Assign Faders	
Gv				Undo		Quick	Сору				
A BELDEN B	RAND		Panel	- Onido		Macro	Clone			Up - Disable	
MASTERP			Lock	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							Peripl	nerals - Audio	Mixer		HDD
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Key 3	Key 4	Fader Butte Fader 1 Out Fader 2 Out	1 4	Type Cut Inassigned On Inassigned On	PFL Leve On -inf d On -inf d	3			Medule 1-8	Module	Popup
Mixer	Util/Misc								Button Dat	1-8 9-16	Snap Normal
Effects Memories									Type Unassigned		Normat
DMEM	Macro								Out Out On PFL Ott On	Fader	Popup
St	ore								Lovel	Fader 1 Fader 2	Snap
									Follow Video		
System Configuratio	Aux Buses								Configure		Normal
User Config	Panel Config								Fader Module Assign Group Protocol Stot	Button	Popup
Filing System	Peripherals								Mixer Bank A B. Calrec	Cut PFL	Snap
Shortcuts	Eng Config								Group Mixer Bank A		Normal
C					ļ	ļ			Protocot Sid: 8: Carec  Assign Faders		
	BAND	Panel	Undo		Quick Macro	Copy Clone	Paste Clone		t Up → Disable		
MASTERP 12G		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).

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|                            |   | Source   | Name   
   | Source  |   |   
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   |   |   |   
  | Popup  |
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   |   |   | 02.00   
  | 01:00  
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| 1100-1                     | Xpt 9                                     | Input 9  | BNC 9  
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   | -int dB   
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|                            | Xpt 10<br>Xpt 11                          | Input 10<br>Input 11   | ENC 10<br>ENC 11   
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  | Snap   |
|                            | Xpt 12                                    | Input 12   | BNC 12   
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Set the desired non muted level for each Crosspoint.

ixer Setup							Peripherals - Audio F	ollow Video				
Key 1	Key 2	Crosspoint to Pr	rotocol Source N	lap								
										Tran	ns Time	
Key 3	Key 4		Source	Name	Source		Trans Time	Delay Time	Non Mute Level			Pop
				BNC 9			02.00	02.00	-inf dB			
Mixer	Util/Misc	Xpt 10	Input 10	BNC 10		0.1	00.00	02.00	-inf dB		00;00	S
		Xpt 11 Xpt 12	Input 11 Input 12	BNC 11 BNC 12	11	Cut Cut	02:00	02.00	int dB			
		Xot 13	Input 12	BNC 12 BNC 13	12	Out .	00:00	00:00	-int dB			
		Xot 14	Input 14	BNC 14	14	Ort	00:00	02.00	-inf dB			No
		Xot 15	Input 14	BNC 15	14	O.r.	02.00	0200	-inf dB			
ts Memories		Xot 16	Input 16	BNC 16	16	On On	00.00	02.00	-inf dB			
		Xet 17	Input 17	BNC 17	Nate	On	0100	02.00	-inf dB			
DMEM	Macro	Xet 18	Input 18	ENC 18	Nane	Out	00.00	00.00	inf dB	Dela	ay Time	
		Xpt 19	Input 19	BNC 19	Nane	0.r	00:00	00:00	-inf dB			Po
		Xot 20	Input 20	BNC 20	Note		00:00	02:00	-inf dB			
St	ore											
								02.00	-inf dB		00;00	
em Configuratio												No
rosspoints	Aux Buses			XPT 16								
User	Panel			16 •						Non M	ute Level	Pe
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	PIECE		ock	ormat Moo	d- Macro	Сору	Paste	Menu				

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)

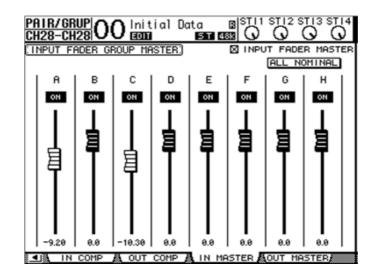
On the Yamaha Audio Mixer user interface, press the DISPLAY ACCESS [PAIR/GROUP] button and select IN FADER or OUT FADER Menu, to set Fader Input Master Group (A-H). For Input Channels 1-32 and Output Master Group (Q - T) for Auxes 1 -8 and Buses 1 - 8.

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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).

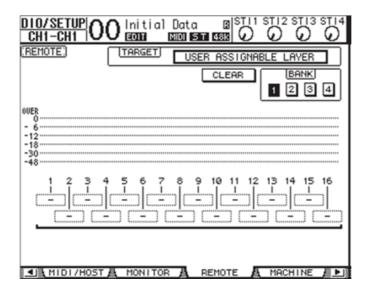
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The corresponding Protocol Sources for Masterpiece control of Fader Input Master Group(A-H) are {145 - 152} and Fader Output Master Group (Q - T) are {161 - 164}.



The Visual Fader can be mapped to a physical fader on the Yamaha desk by assigning to the remote layer.

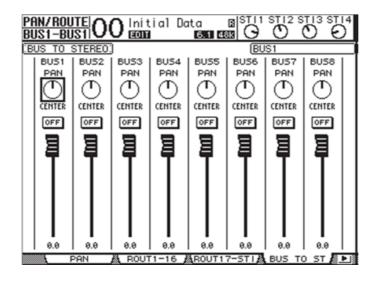
1. Select [REMOTE] Layer or DISPLAY ACCESS [DIO/SETUP] and set the Target to 'USER ASSIGNABLE LAYER' in Remote Menu.



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

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 1
114	AUX 2
:	:
120	AUX 8
120	, in the second s
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
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
	Bus out to otereo Bus map
177	BIR 1
177	BUS 1
178	BUS 2
178 :	BUS 2
178	BUS 2
178 :	BUS 2

STEREO OUT R

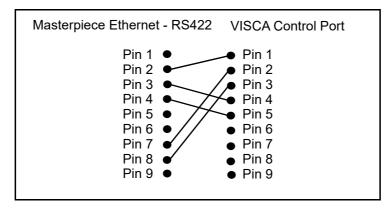
**VISCA Robotics Camera Control** 

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.

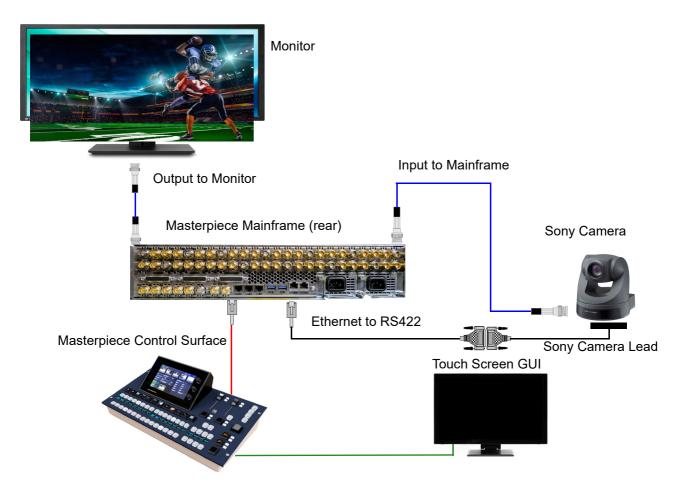
Masterpiece uses an RS422 (IP Client) port and VISCA protocol to communicate and control the device.

#### **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 Grass Valleye 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.

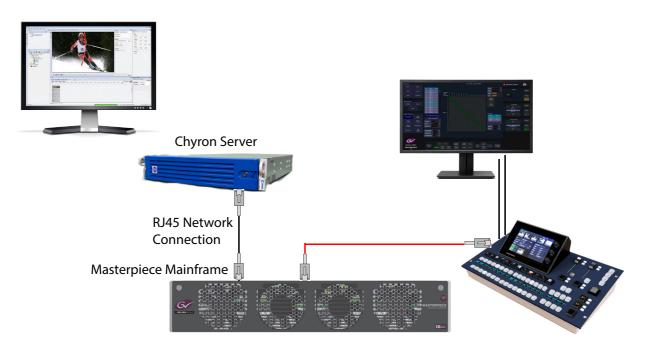


### **Chyron Control**

#### 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



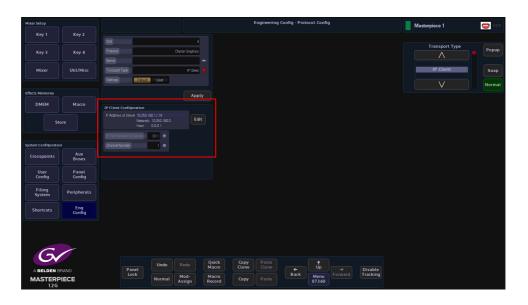
The Chyron server is connected to the Masterpiece mainframe.

#### **Masterpiece Setup**

In the "Eng Config" menu, touch the {**Protocols...**} menu link button.

Mixer Setup						Engineering	Config - Proto	cols		Masterpiece 1		😇 HDD
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Key 3	Key 4	Sige EAS LiveTouch	uns -	Sory BWA-75 V Katura As DW-75		Unload	Transport Type		IP Cient	Loaded Prote	ocol	Popup
		Distel Automation Chyron Graphics		EWW-75 Timecode R			IP Port Number		3811			
Mixer	Util/Misc			VDCP VDCP-Simple		Activate			1			Snap
				Odatics VDR Con Kahuna As VDCP Vid		On Off		us	Pending			
Effects Memories				EVS AVSP P-Bus NEXIO Notive				rvor 10.250.160.1 / 19 Network: 10.250.160.				
DMEM	Macro			Chyron Graphic LiveTouch						Protocol Ty	pe	Рорир
				LiveTouch Minip	ic							Popup
St										Router Playout		Snap
System Configuratio										Editor		
Crosspoints												
	Buses									Available Pro	tocol	
User Config	Panel Config											Popup
Filing System	Peripherals											Snap
Shortcuts	Eng Config											
		Input Setup O	utput Setup	System Config	GPO	IP Gateways	Protocols	Status Monitor	Format Fusion			
Gv			Undo	Redo Quick Macro	Copy Clone	Paste Clone		† Up				
		Panel Lock	Normal	Mod- Macro			Back	lenu Forward	Disable Tracking			
MASTERF 12G			Normal	Assign Record	Сору			736				

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 - Protocol	5	Chaffinch AV	HDD
Switcher Setup ME 1 Au	DSK	Losded Protocols	Available Postocols User Definition Proceed INDEX Keyer Commit Lopobock Text Arc Pari and Scen PoiCal Set Parism Sage EAS	Load Name Unload Transport Type Configure Activate Connections	1724 0	Loaded Protocol	Popup Snap Normal
Effects Memories DMEM Macro System Configuratio	GMEM Store					Protocol Type	Popup Snap Normal
Crosspoints User Config Filing System	Aux Buses Panel Config Peripherals					Available Protocol	Popup Snap Normal
A BELDEN B KULA A	RAND	Input Setup Output Setup Undo Rec Normat Mo	Ouick Copy Macro Clone	ateways Protocots Status Mor Paste Clone Paste Back Menu Fr Marse	et or a 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 -	mACROtEAST.pbx		
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Clip 🔛 Video Input		Connection	
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Action Played: PlayTrigger			

In the "Connection" area of the menu (above top right), enter the IP address of the Masterpiece mainframe and the Grass Valleye "Port Number" as was set when setting up the Masterpiece protocol menu. Then set the "Encoding" parameter to ASCII.

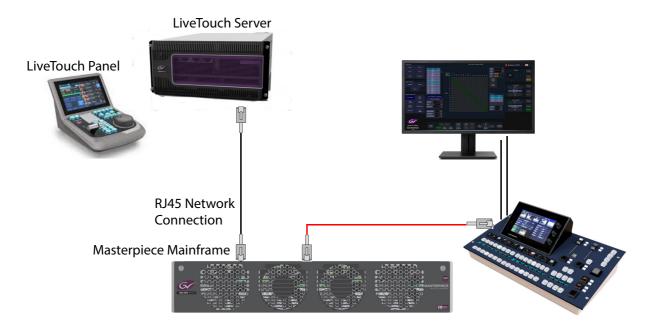
In the "Message" window, type "MTR01, (number of macro) i.e. 022. This will trigger macro 22 in the Masterpiece mainframe.

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						Engineering	Config - Proto	cols		Masterpiece 1	😅 нор
Key 1 Key 3	Key 2 Key 4	Loaded Protocols Soge EAS UneTouch		Available Protocols Sony BAN-35 VTR Kahuna As 64W-35 V		Load	Name Transport Type		IP Cient	Loaded Protocol	Popup
Mixer	Util/Misc			BWW-75 Timecode Reg. AV/P (p VDCP VDCP-Simple Ddetics VDR Control	Request e rirrol	Configure Activate On Off	Protituitor     Ormedia Statis     Ormedia Statis     Ormedia Statis     Ormedia Statis     PAsses of Server 10:20:01     Host: 00:173:120     Host: 00:173:120				Snap
Effects Memories DMEM	Macro			Kahunis As VOCP Video Disk EVS AVSP P-Bas NE00 Native Chyren Graphics LiveTauch						Protocol Type	Popup
st				LiveTouch Mripc						Router Playout Editor	Snap
System Configuratio										V	Normal
User Config	Buses Panel Config									Available Protocol	Popup
Filing System	Peripherals										snap
Shortcuts	Eng Config										Normal
6		Input Setup Output	Setup Sy	ystem Config		IP Gateways	Protocols	Status Monitor.			
A BELDEN B MASTERF 12G		Panel Lock	Undo Rec Iormal Assi	d- Macro	Copy Clone Copy			tup Menu 3736	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.

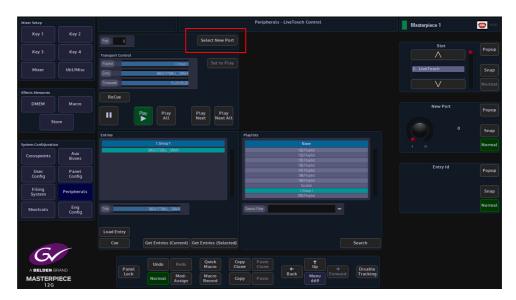
The menu will return to the "Protocols" menu, finally touch the **{Activate}** button. The "Connection Status" will show "Connected (Dual)"

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

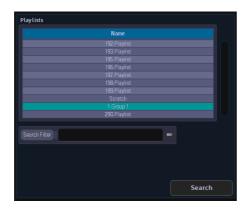
Play - Play current entry

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

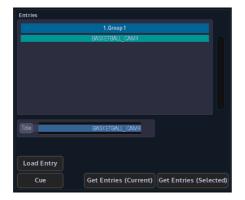
#### Playlists Panel:



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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