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IGNITE

LIVE PRODUCTION CONTROL SYSTEM

Installation Manual

Software Version 7.0

www.grassvalley.com

071874901
MAY 2013

CERTIFICATE

Certificate Number: 510040.001

The Quality System of:

Grass Valley USA, LLC and its Grass Valley Affiliates

Headquarters:

400 Providence Mine Road
Nevada City, CA 95945
United States

15655 SW Greystone Ct.
Beaverton, OR 97006
United States

Kapittelweg 10
4827 HG Breda
The Nederlands

2300 So. Decker Lake Blvd.
Salt Lake City, UT 84119
United States

Including its implementation, meets the requirements of the standard:

ISO 9001:2008

Scope:
The design, manufacture and support of video and audio hardware and software products and related systems.

This Certificate is valid until:	June 14, 2015
This Certificate is valid as of:	June 14, 2012
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4377 County Line Road
Chalfont, PA 18914
Ph: (215)997-4519
Fax: (215)997-3809
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Contacting Grass Valley

International Support Centers	**France 24 x 7**	+800 8080 2020 or +33 1 48 25 20 20	**United States/Canada 24 x 7**	+1 800 547 8949 or +1 530 478 4148
Local Support Centers (available during normal business hours)	**Asia**	**Hong Kong, Taiwan, Korea, Macau:** +852 2531 3058 **Indian Subcontinent:** +91 22 24933476 **Southeast Asia/Malaysia:** +603 7492 3303 **Southeast Asia/Singapore:** +65 6379 1313 **China:** +861 0660 159 450 **Japan:** +81 3 5484 6868		
	Australia and New Zealand: +61 1300 721 495			**Central/South America:** +55 11 5509 3443
	Middle East: +971 4 299 64 40 **Near East and Africa:** +800 8080 2020 or +33 1 48 25 20 20			
	Europe	**Belarus, Russia, Tadzikistan, Ukraine, Uzbekistan:** +7 095 2580924 225 **Switzerland:** +41 1 487 80 02 **S. Europe/Italy-Roma:** +39 06 87 20 35 28 **-Milan:** +39 02 48 41 46 58 **S. Europe/Spain:** +34 91 512 03 50 **Benelux/Belgium:** +32 (0) 2 334 90 30 **Benelux/Netherlands:** +31 (0) 35 62 38 42 1 **N. Europe:** +45 45 96 88 70 **Germany, Austria, Eastern Europe:** +49 6150 104 444 **UK, Ireland, Israel:** +44 118 923 0499		

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Grass Valley Web Site

The http://www.grassvalley.com/support web site offers the following:

Online User Documentation — Current versions of product catalogs, brochures, data sheets, ordering guides, planning guides, manuals, and release notes in .pdf format can be downloaded.

FAQ Database — Solutions to problems and troubleshooting efforts can be found by searching our Frequently Asked Questions (FAQ) database.

Software Downloads — Download software updates, drivers, and patches.

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END-OF-LIFE PRODUCT RECYCLING NOTICE

Grass Valley's innovation and excellence in product design also extends to the programs we've established to manage the recycling of our products. Grass Valley has developed a comprehensive end-of-life product take back program for recycle or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive, the United States Environmental Protection Agency, and U.S. state and local agencies.

Grass Valley's end-of-life product take back program assures proper disposal by use of Best Available Technology. This program accepts any Grass Valley branded equipment. Upon request, a Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent to the requester.

Grass Valley will be responsible for all costs associated with recycling and disposal, including freight. However, you are responsible for the removal of the equipment from your facility and packing the equipment to make it ready for pickup.

For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the U.S. and Canada please call 800-547-8949, and ask to be connected to the EH&S Department. Additional information concerning the program can be found at: www.grassvalley.com/about/environmental-policy

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Safety Summary

Read and follow the important safety information below, noting especially those instructions related to risk of fire, electric shock or injury to persons. Additional specific warnings not listed here may be found throughout the manual.

WARNING Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only. 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.

Safety Terms and Symbols

Terms in This Manual

Safety-related statements may appear in this manual in the following form:

WARNING Warning statements identify conditions or practices that may result in personal injury or loss of life.

CAUTION Caution statements identify conditions or practices that may result in damage to equipment or other property, or which may cause equipment crucial to your business environment to become temporarily non-operational.

Terms on the Product

The following terms may appear on the product:

DANGER — A personal injury hazard is immediately accessible as you read the marking.

WARNING — A personal injury hazard exists but is not immediately accessible as you read the marking.

CAUTION — A hazard to property, product, and other equipment is present.

Symbols on the Product

The following symbols may appear on the product:

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 user, operator or service technician should refer to product manual(s) for important operating, maintenance, or service instructions.

This is a prompt to note fuse rating when replacing fuse(s). 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.

Warnings

The following warning statements identify conditions or practices that can result in personal injury or loss of life:

Dangerous voltage or current may be present — Disconnect power and remove battery (if applicable) before removing protective panels, soldering, or replacing components.

Do not service alone — Do not internally service this product unless another person capable of rendering first aid and resuscitation is present.

Remove jewelry — Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.

Avoid exposed circuitry — Do not touch exposed connections, components or circuitry when power is present.

Use proper power cord — Use only the power cord supplied or specified for this product.

Ground product — Connect the grounding conductor of the power cord to earth ground.

Operate only with covers and enclosure panels in place — Do not operate this product when covers or enclosure panels are removed.

Use correct fuse — Use only the fuse type and rating specified for this product.

Use only in dry environment — Do not operate in wet or damp conditions.

Use only in non-explosive environment — Do not operate this product in an explosive atmosphere.

High leakage current may be present — Earth connection of product is essential before connecting power.

Dual power supplies may be present — Be certain to plug each power supply cord into a separate branch circuit employing a separate service ground. Disconnect both power supply cords prior to servicing.

Double pole neutral fusing — Disconnect mains power prior to servicing.

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.

Cautions

The following caution statements identify conditions or practices that can result in damage to equipment or other property:

Use correct power source — Do not operate this product from a power source that applies more than the voltage specified for the product.

Use correct voltage setting — If this product lacks auto-ranging power supplies, before applying power ensure that the each power supply is set to match the power source.

Provide proper ventilation — To prevent product overheating, provide equipment ventilation in accordance with installation instructions.

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

Do not operate with suspected equipment failure — If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.

Ensure mains disconnect — If mains switch is not provided, the power cord(s) of this equipment provide the means of disconnection. The socket outlet must be installed near the equipment and must be easily accessible. Verify that all mains power is disconnected before installing or removing power supplies and/or options.

Route cable properly — Route power cords and other cables so that they ar not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.

Use correct power supply cords — Power cords for this equipment, if provided, meet all North American electrical codes. Operation of this equipment at voltages exceeding 130 VAC requires power supply cords which comply with NEMA configurations. International power cords, if provided, have the approval of the country of use.

Use correct replacement battery — This product may contain batteries. To reduce the risk of explosion, check polarity and replace only with the same or equivalent type recommended by manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Troubleshoot only to board level — Circuit boards in this product are densely populated with surface mount technology (SMT) components and application specific integrated circuits (ASICS). As a result, circuit board repair at the component level is very difficult in the field, if not impossible. For warranty compliance, do not troubleshoot systems beyond the board level.

Sicherheit – Überblick

Lesen und befolgen Sie die wichtigen Sicherheitsinformationen dieses Abschnitts. Beachten Sie insbesondere die Anweisungen bezüglich Brand-, Stromschlag- und Verletzungsgefahren. Weitere spezifische, hier nicht aufgeführte Warnungen finden Sie im gesamten Handbuch.

WARNUNG **Alle Anweisungen in diesem Handbuch, die das Abnehmen der Geräteabdeckung oder des Gerätegehäuses erfordern, dürfen nur von qualifiziertem Servicepersonal ausgeführt werden. Um die Stromschlaggefahr zu verringern, führen Sie keine Wartungsarbeiten außer den in den Bedienungsanleitungen genannten Arbeiten aus, es sei denn, Sie besitzen die entsprechende Qualifikationen für diese Arbeiten.**

Sicherheit – Begriffe und Symbole

In diesem Handbuch verwendete Begriffe

Sicherheitsrelevante Hinweise können in diesem Handbuch in der folgenden Form auftauchen:

WARNUNG **Warnungen weisen auf Situationen oder Vorgehensweisen hin, die Verletzungs- oder Lebensgefahr bergen.**

VORSICHT Vorsichtshinweise weisen auf Situationen oder Vorgehensweisen hin, die zu Schäden an Ausrüstungskomponenten oder anderen Gegenständen oder zum zeitweisen Ausfall wichtiger Komponenten in der Arbeitsumgebung führen können.

Hinweise am Produkt

Die folgenden Hinweise können sich am Produkt befinden:

GEFAHR — Wenn Sie diesen Begriff lesen, besteht ein unmittelbares Verletzungsrisiko.

WARNUNG — Wenn Sie diesen Begriff lesen, besteht ein mittelbares Verletzungsrisiko.

VORSICHT — Es besteht ein Risiko für Objekte in der Umgebung, den Mixer selbst oder andere Ausrüstungskomponenten.

Symbole am Produkt

Die folgenden Symbole können sich am Produkt befinden:

Weist auf eine gefährliche Hochspannung im Gerätegehäuse hin, die stark genug sein kann, um eine Stromschlaggefahr darzustellen.

Weist darauf hin, dass der Benutzer, Bediener oder Servicetechniker wichtige Bedienungs-, Wartungs- oder Serviceanweisungen in den Produkthandbüchern lesen sollte.

Dies ist eine Aufforderung, beim Wechsel von Sicherungen auf deren Nennwert zu achten. Die im Text angegebene Sicherung muss durch eine Sicherung ersetzt werden, die die angegebenen Nennwerte besitzt.

Weist auf eine Schutzerdungsklemme hin, die mit dem Erdungskontakt verbunden werden muss, bevor weitere Ausrüstungskomponenten angeschlossen werden.

Weist auf eine externe Schutzerdungsklemme hin, die als Ergänzung zu einem internen Erdungskontakt an die Erde angeschlossen werden kann.

Weist darauf hin, dass es statisch empfindliche Komponenten gibt, die durch eine elektrostatische Entladung beschädigt werden können. Verwenden Sie antistatische Prozeduren, Ausrüstung und Oberflächen während der Wartung.

Warnungen

Die folgenden Warnungen weisen auf Bedingungen oder Vorgehensweisen hin, die Verletzungs- oder Lebensgefahr bergen:

Gefährliche Spannungen oder Ströme — Schalten Sie den Strom ab, und entfernen Sie ggf. die Batterie, bevor sie Schutzabdeckungen abnehmen, löten oder Komponenten austauschen.

Servicearbeiten nicht alleine ausführen — Führen Sie interne Servicearbeiten nur aus, wenn eine weitere Person anwesend ist, die erste Hilfe leisten und Wiederbelebungsmaßnahmen einleiten kann.

Schmuck abnehmen — Legen Sie vor Servicearbeiten Schmuck wie Ringe, Uhren und andere metallische Objekte ab.

Keine offen liegenden Leiter berühren — Berühren Sie bei eingeschalteter Stromzufuhr keine offen liegenden Leitungen, Komponenten oder Schaltungen.

Richtiges Netzkabel verwenden — Verwenden Sie nur das mitgelieferte Netzkabel oder ein Netzkabel, das den Spezifikationen für dieses Produkt entspricht.

Gerät erden — Schließen Sie den Erdleiter des Netzkabels an den Erdungskontakt an.

Gerät nur mit angebrachten Abdeckungen und Gehäuseseiten betreiben — Schalten Sie dieses Gerät nicht ein, wenn die Abdeckungen oder Gehäuseseiten entfernt wurden.

Richtige Sicherung verwenden — Verwenden Sie nur Sicherungen, deren Typ und Nennwert den Spezifikationen für dieses Produkt entsprechen.

Gerät nur in trockener Umgebung verwenden — Betreiben Sie das Gerät nicht in nassen oder feuchten Umgebungen.

Gerät nur verwenden, wenn keine Explosionsgefahr besteht — Verwenden Sie dieses Produkt nur in Umgebungen, in denen keinerlei Explosionsgefahr besteht.

Hohe Kriechströme — Das Gerät muss vor dem Einschalten unbedingt geerdet werden.

Doppelte Spannungsversorgung kann vorhanden sein — Schließen Sie die beiden Anschlußkabel an getrennte Stromkreise an. Vor Servicearbeiten sind beide Anschlußkabel vom Netz zu trennen.

Zweipolige, neutrale Sicherung — Schalten Sie den Netzstrom ab, bevor Sie mit den Servicearbeiten beginnen.

Fassen Sie das Gerät beim Transport richtig an — Halten Sie das Gerät beim Transport nicht an Türen oder anderen beweglichen Teilen fest.

Gefahr durch mechanische Teile — Warten Sie, bis der Lüfter vollständig zum Halt gekommen ist, bevor Sie mit den Servicearbeiten beginnen.

Vorsicht

Die folgenden Vorsichtshinweise weisen auf Bedingungen oder Vorgehensweisen hin, die zu Schäden an Ausrüstungskomponenten oder anderen Gegenständen führen können:

Gerät nicht öffnen — Durch das unbefugte Öffnen wird die Garantie ungültig.

Richtige Spannungsquelle verwenden — Betreiben Sie das Gerät nicht an einer Spannungsquelle, die eine höhere Spannung liefert als in den Spezifikationen für dieses Produkt angegeben.

Gerät ausreichend belüften — Um eine Überhitzung des Geräts zu vermeiden, müssen die Ausrüstungskomponenten entsprechend den Installationsan-

weisungen belüftet werden. Legen Sie kein Papier unter das Gerät. Es könnte die Belüftung behindern. Platzieren Sie das Gerät auf einer ebenen Oberfläche.

Antistatische Vorkehrungen treffen — Es gibt statisch empfindliche Komponenten, die durch eine elektrostatische Entladung beschädigt werden können. Verwenden Sie antistatische Prozeduren, Ausrüstung und Oberflächen während der Wartung.

CF-Karte nicht mit einem PC verwenden — Die CF-Karte ist speziell formatiert. Die auf der CF-Karte gespeicherte Software könnte gelöscht werden.

Gerät nicht bei eventuellem Ausrüstungsfehler betreiben — Wenn Sie einen Produktschaden oder Ausrüstungsfehler vermuten, lassen Sie die Komponente von einem qualifizierten Servicetechniker untersuchen.

Kabel richtig verlegen — Verlegen Sie Netzkabel und andere Kabel so, dass Sie nicht beschädigt werden. Stützen Sie schwere Kabelbündel ordnungsgemäß ab, damit die Anschlüsse nicht beschädigt werden.

Richtige Netzkabel verwenden — Wenn Netzkabel mitgeliefert wurden, erfüllen diese alle nationalen elektrischen Normen. Der Betrieb dieses Geräts mit Spannungen über 130 V AC erfordert Netzkabel, die NEMA-Konfigurationen entsprechen. Wenn internationale Netzkabel mitgeliefert wurden, sind diese für das Verwendungsland zugelassen.

Richtige Ersatzbatterie verwenden — Dieses Gerät enthält eine Batterie. Um die Explosionsgefahr zu verringern, prüfen Sie die Polarität und tauschen die Batterie nur gegen eine Batterie desselben Typs oder eines gleichwertigen, vom Hersteller empfohlenen Typs aus. Entsorgen Sie gebrauchte Batterien entsprechend den Anweisungen des Batterieherstellers.

Das Gerät enthält keine Teile, die vom Benutzer gewartet werden können. Wenden Sie sich bei Problemen bitte an den nächsten Händler.

Consignes de sécurité

Il est recommandé de lire, de bien comprendre et surtout de respecter les informations relatives à la sécurité qui sont exposées ci-après, notamment les consignes destinées à prévenir les risques d'incendie, les décharges électriques et les blessures aux personnes. Les avertissements complémentaires, qui ne sont pas nécessairement repris ci-dessous, mais présents dans toutes les sections du manuel, sont également à prendre en considération.

AVERTISSEMENT **Toutes les instructions présentes dans ce manuel qui concernent l'ouverture des capots ou des logements de cet équipement sont destinées exclusivement à des membres qualifiés du personnel de maintenance. Afin de diminuer les risques de décharges électriques, ne procédez à aucune intervention d'entretien autre que celles contenues dans le manuel de l'utilisateur, à moins que vous ne soyez habilité pour le faire.**

Consignes et symboles de sécurité

Termes utilisés dans ce manuel

Les consignes de sécurité présentées dans ce manuel peuvent apparaître sous les formes suivantes:

AVERTISSEMENT **Les avertissements signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire même fatales.**

ATTENTION Les mises en garde signalent des conditions ou des pratiques susceptibles d'occasionner un endommagement à l'équipement ou aux installations, ou de rendre l'équipement temporairement non opérationnel, ce qui peut porter préjudice à vos activités.

Signalétique apposée sur le produit

La signalétique suivante peut être apposée sur le produit:

DANGER — risque de danger imminent pour l'utilisateur.

AVERTISSEMENT — Risque de danger non imminent pour l'utilisateur.

MISE EN GARDE — Risque d'endommagement du produit, des installations ou des autres équipements.

Symboles apposés sur le produit

Les symboles suivants peut être apposés sur le produit:

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.

Signale que l'utilisateur, l'opérateur ou le technicien de maintenance doit faire référence au(x) manuel(s) pour prendre connaissance des instructions d'utilisation, de maintenance ou d'entretien.

Il s'agit d'une invite 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 protection de mise à la masse qui doit être raccordée correctement avant de procéder au raccordement des autres équipements.

Identifie une borne de protection de mise à la masse qui peut être connectée en tant que borne de mise à la masse 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.

Avertissements

Les avertissements suivants signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire même fatales:

Présence possible de tensions ou de courants dangereux — Mettez hors tension, débranchez et retirez la pile (le cas échéant) avant de déposer les couvercles de protection, de défaire une soudure ou de remplacer des composants.

Ne procédez pas seul à une intervention d'entretien — Ne réalisez pas une intervention d'entretien interne sur ce produit si une personne n'est pas présente pour fournir les premiers soins en cas d'accident.

Retirez tous vos bijoux — Avant de procéder à une intervention d'entretien, retirez tous vos bijoux, notamment les bagues, la montre ou tout autre objet métallique.

Évitez tout contact avec les circuits exposés — Évitez tout contact avec les connexions, les composants ou les circuits exposés s'ils sont sous tension.

Utilisez le cordon d'alimentation approprié — Utilisez exclusivement le cordon d'alimentation fourni avec ce produit ou spécifié pour ce produit.

Raccordez le produit à la masse — Raccordez le conducteur de masse du cordon d'alimentation à la borne de masse de la prise secteur.

Utilisez le produit lorsque les couvercles et les capots sont en place — N'utilisez pas ce produit si les couvercles et les capots sont déposés.

Utilisez le bon fusible — Utilisez exclusivement un fusible du type et du calibre spécifiés pour ce produit.

Utilisez ce produit exclusivement dans un environnement sec — N'utilisez pas ce produit dans un environnement humide.

Utilisez ce produit exclusivement dans un environnement non explosible — N'utilisez pas ce produit dans un environnement dont l'atmosphère est explosible.

Présence possible de courants de fuite — Un raccordement à la masse est indispensable avant la mise sous tension.

Deux alimentations peuvent être présentes dans l'équipement — Assurez vous que chaque cordon d'alimentation est raccordé à des circuits de terre séparés. Débranchez les deux cordons d'alimentation avant toute intervention.

Fusion neutre bipolaire — Débranchez l'alimentation principale avant de procéder à une intervention d'entretien.

Utilisez les points de levage appropriés — Ne pas utiliser les verrous de la porte pour lever ou déplacer l'équipement.

Évitez les dangers mécaniques — Laissez le ventilateur s'arrêter avant de procéder à une intervention d'entretien.

Mises en garde

Les mises en garde suivantes signalent les conditions et les pratiques susceptibles d'occasionner des endommagements à l'équipement et aux installations:

N'ouvrez pas l'appareil — Toute ouverture prohibée de l'appareil aura pour effet d'annuler la garantie.

Utilisez la source d'alimentation adéquate — Ne branchez pas ce produit à une source d'alimentation qui utilise une tension supérieure à la tension nominale spécifiée pour ce produit.

Assurez une ventilation adéquate — Pour éviter toute surchauffe du produit, assurez une ventilation de l'équipement conformément aux instructions d'installation. Ne déposez aucun document sous l'appareil — ils peuvent gêner la ventilation. Placez l'appareil sur une surface plane.

Utilisez des procédures antistatiques - Les composants sensibles à l'électricité statique présents dans l'équipement sont susceptibles d'être endommagés par une décharge électrostatique. Utilisez des procédures, des équipements et des surfaces antistatiques durant les interventions d'entretien.

N'utilisez pas la carte CF avec un PC — La carte CF a été spécialement formatée. Le logiciel enregistré sur la carte CF risque d'être effacé.

N'utilisez pas l'équipement si un dysfonctionnement est suspecté — Si vous suspectez un dysfonctionnement du produit, faites inspecter celui-ci par un membre qualifié du personnel d'entretien.

Acheminez les câbles correctement — Acheminez les câbles d'alimentation et les autres câbles de manière à ce qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.

Utilisez les cordons d'alimentation adéquats — Les cordons d'alimentation de cet équipement, s'ils sont fournis, satisfont aux exigences de toutes les réglementations régionales. L'utilisation de cet équipement à des tensions dépassant les 130 V en c.a. requiert des cordons d'alimentation qui satisfont aux exigences des configurations NEMA. Les cordons internationaux, s'ils sont fournis, ont reçu l'approbation du pays dans lequel l'équipement est utilisé.

Utilisez une pile de remplacement adéquate — Ce produit renferme une pile. Pour réduire le risque d'explosion, vérifiez la polarité et ne remplacez la pile que par une pile du même type, recommandée par le fabricant. Mettez les piles usagées au rebut conformément aux instructions du fabricant des piles.

Cette unité ne contient aucune partie qui peut faire l'objet d'un entretien par l'utilisateur. Si un problème survient, veuillez contacter votre distributeur local.

Regulatory Notices

Certifications and Compliances

FCC Emission Control

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. Changes or modifications not expressly approved by Grass Valley can affect emission compliance and could void the user's authority to operate this equipment.

Canadian EMC Notice of Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'emet pas de bruits radioélectriques dépassant les limites applicables aux appareils numeriques de la classe A préscrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

EN55022 Class A Warning

In a domestic environment, products that comply with Class A may cause radio interference in which case the user may be required to take adequate measures.

Canadian Certified Power Cords

Canadian approval includes the products and power cords appropriate for use in the North America power network. All other power cords supplied are approved for the country of use.

Canadian Certified AC Adapter

Canadian approval includes the AC adapters appropriate for use in the North America power network. All other AC adapters supplied are approved for the country of use.

Laser Compliance

Laser Safety Requirements

The device used in this product is a Class 1 certified laser product. Operating this product outside specifications or altering from its original design may result in hazardous radiation exposure, and may be considered an act of modifying or new manufacturing of a laser product under U.S. regulations contained in 21CFR Chapter 1, subchapter J or CENELEC regulations in HD 482 S1. People performing such an act are required by law to recertify and reidentify this product in accordance with provisions of 21CFR subchapter J for distribution within the U.S.A., and in accordance with CENELEC HD 482 S1 for distribution within countries using the IEC 825 standard.

Laser Safety

Laser safety in the United States is regulated by the Center for Devices and Radiological Health (CDRH). The laser safety regulations are published in the “Laser Product Performance Standard,” Code of Federal Regulation (CFR), Title 21, Subchapter J.

The International Electrotechnical Commission (IEC) Standard 825, “Radiation of Laser Products, Equipment Classification, Requirements and User’s Guide,” governs laser products outside the United States. Europe and member nations of the European Free Trade Association fall under the jurisdiction of the Comite European de Normalization Electrotechnique (CENELEC).

For the CDRH: The radiant power is detected through a 7 mm aperture at a distance of 200 mm from the source focused through a lens with a focal length of 100 mm.

For IEC compliance: The radiant power is detected through a 7 mm aperture at a distance of 100 mm from the source focused through a lens with a focal length of 100 mm.

FCC Emission Limits

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation. This device has been tested and found to comply with FCC Part 15 Class B limits for a digital device when tested with a representative laser-based fiber optical system that complies with ANSI X3T11 Fiber Channel Standard.

Certifications:

Category	Standard	Designed/tested for compliance with:
Safety	ANSI / UL60950	“Standard for Safety of Information Technology Equipment - Safety - Part 1: General Requirements”, (ANSI/UL 60950-1, First Edition, Dated April 1, 2003, with revision through and including November 26, 2003.)
	IEC 60950	“Standard for Safety for Information Technology Equipment - Safety - Part 1: General Requirements”, (IEC 60950-1, First Edition, 2001, Corrigendum 1:10-2002)
	CAN/CSA C22.2, No. 60950	“Standard for Safety of Information Technology Equipment - Safety - Part 1: General Requirements”, (CAN/CSA-C22.2 No. 60950-1-03. First Edition Dated April 1, 2003, with revisions through and including November 26, 2003)
	EN60950	Safety of Information Technology Equipment, including Electrical Business Equipment.
	2006/95/EC	Low Voltage Directive
EMI	EMC Directive 2004/108/EC via EN 55103-1 and 2	Audio, Video and Entertainment Lighting Control for the European Community.
	EN 55103-1 standards	Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 1 Emissions, Environment E1/E2 EN 55022: Class A Radiated and Conducted Emissions EN 61000-3-2: Power Line Harmonic Emissions, Radiated Magnetic Field Emissions, Peak Inrush Current
	EN55103-2 standards	Electromagnetic compatibility--Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2 Immunity, Environment E1/E2 EN 50082-1: Immunity EN 61000-4-2: Electrostatic Discharge “ESD” Immunity EN 61000-4-3: Radiated RF Electromagnetic Field Immunity EN 61000-4-4: Electrical Fast Transient/Burst “EFT” Immunity EN 61000-4-5: Surge Immunity EN 61000-4-6: Conducted RF Immunity EN 61000-4-11: Voltage Dips, Short Interruptions and Voltage Variations Annex A - Radiated Magnetic Field Immunity Note: This only applies to assemblies sensitive to magnetic fields
	US FCC Class A Canada FCC Industry Canada	CISPR Pub. 22 (1985)
	Australia & New Zealand:	AS/NZS CISPR 22

IMPORTANT NOTE TO WRITERS - SEE THE FOLLOWING PARAGRAPHS AND DELETE THIS TEXT BEFORE PUBLICATION.

THE INFORMATION IN THE CERTIFICATION TABLES ABOVE MUST BE REVIEWED TO CONFIRM THE PROPER COMPLIANCE NOTICES ARE INCLUDED. STANDARDS MAY HAVE CHANGED SINCE THIS BOILERPLATE INFORMATION WAS DRAFTED. REGULATORY COMPLIANCE IS ESTABLISHED WHEN THE PRODUCT IS RELEASED THE FIRST TIME. THAT COMPLIANCE LEVEL IS RETAINED UNLESS THE PRODUCT OR MARKET CHANGES IN SOME WAY THAT REQUIRES NEW COMPLIANCE TESTING. DO NOT BLINDLY REPLACE INFORMATION IN OLDER MANUALS WITH THIS BOILERPLATE INFORMATION. CHECK WITH THE PRODUCT MANAGER TO CONFIRM WHAT NOTICES ARE REQUIRED.

SOME OLDER PRODUCTS (KAYAK DD FOR EXAMPLE) MAY REQUIRE OLDER “UL1419” SAFETY INFORMATION. THE INFORMATION BELOW REPLACES THE “ANSI/UL60950” SAFETY INFORMATION LISTED AS THE FIRST ITEM IN THE TABLE ABOVE FOR THESE OLD PRODUCTS.

Category	Standard	Designed/tested for compliance with:
Safety	UL1419	Professional Video and Audio Equipment

Preface

About This Manual

This manual is a part of the Ignite/Ignite Konnect Live Production Control System documentation set (refer to *Standard Documentation*). As a part of the documentation set, the contents of this manual support a specific purpose in either planning, installation/service, configuration, or use/operation. In all cases, the user is presumed to be familiar with associated concepts and terminology and to have the skills and experience necessary for that purpose.

Standard Documentation

The standard Ignite/Ignite Konnect documentation set comprises:

- Release Notes—Describes any release-specific information. New features and corrected problems not included in the base manual set are included, as well as software installation procedures.
- Release Notes Addendum – When applicable, describes corrected problems in the current and previous releases as well as any known software problems.
- User Manual—Intended for an Ignite/Ignite Konnect system operator, this manual describes basic operational procedures and provides background information users should understand before they operate the system.
- Installation Manual—Intended for facility engineering staff, this manual describes how to install the product within the customer environment.
- XSWITCH Instruction Manual—Provides an overview,hardware installation. interconnection, and software setup information.

Other Documentation

This Ignite/Ignite Konnect Live Production Control System documentation provides information on the use of the peripheral components as they

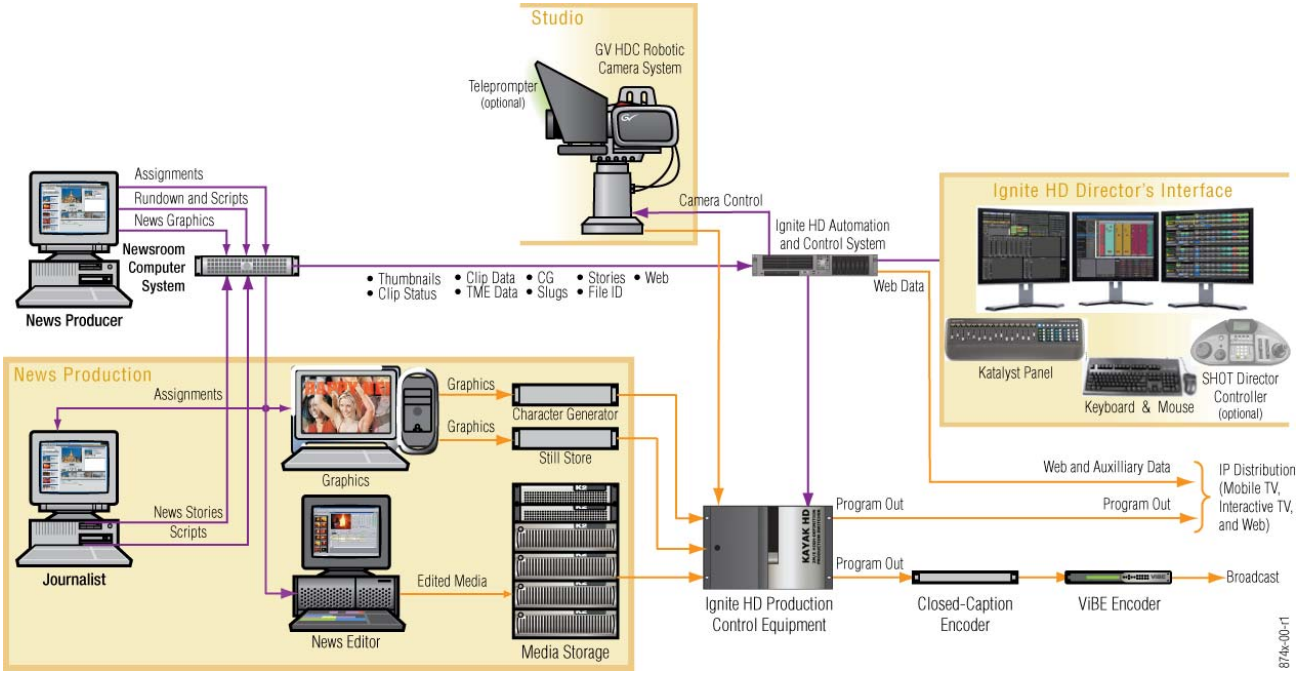
relate to the Ignite/Ignite Konnect system. For any other peripheral component information, refer to the respective support documentation.

Section 1

Functional Description

The Ignite™ Live Production Control System (Figure 1) is an integrated hardware and software workflow solution. The Ignite system accomplishes this by functioning as a single point-of-control for the devices used in live television production.

Figure 1. Ignite Live Production Control System



Ignite systems are fully scalable, enabling the video professional to choose the configuration that best fits both their capital budget and production needs.

The major functions of a typical Ignite system are:

- *Network Communication/Architecture* on page 30
- *Device Control* on page 31
- *Video Processing* on page 32
- *Audio Processing* on page 32

Network Communication/Architecture

A typical Ignite system network (Figure 2) is connected to the facility (house) LAN and optional customer-supplied XMOS Server via a firewall. The firewall provides intrusion prevention and reduces Ignite system network traffic by isolating it from the facility LAN. The firewall connects to a network switch, which provides connection for Ignite system TCP/IP components. Ignite system networked components typically include an Ignite CPU, video switcher, audio CPU and processor frame, serial control module, tally controller, Ignite Katalyst Automation Control Panel control panel, optional SHOT Director, and optional Grass Valley HDC robotic camera(s). The Ignite network interface to ENPS or iNEWS is shown in Figure 3.

Figure 2. Ignite Network Topology (Simplified)

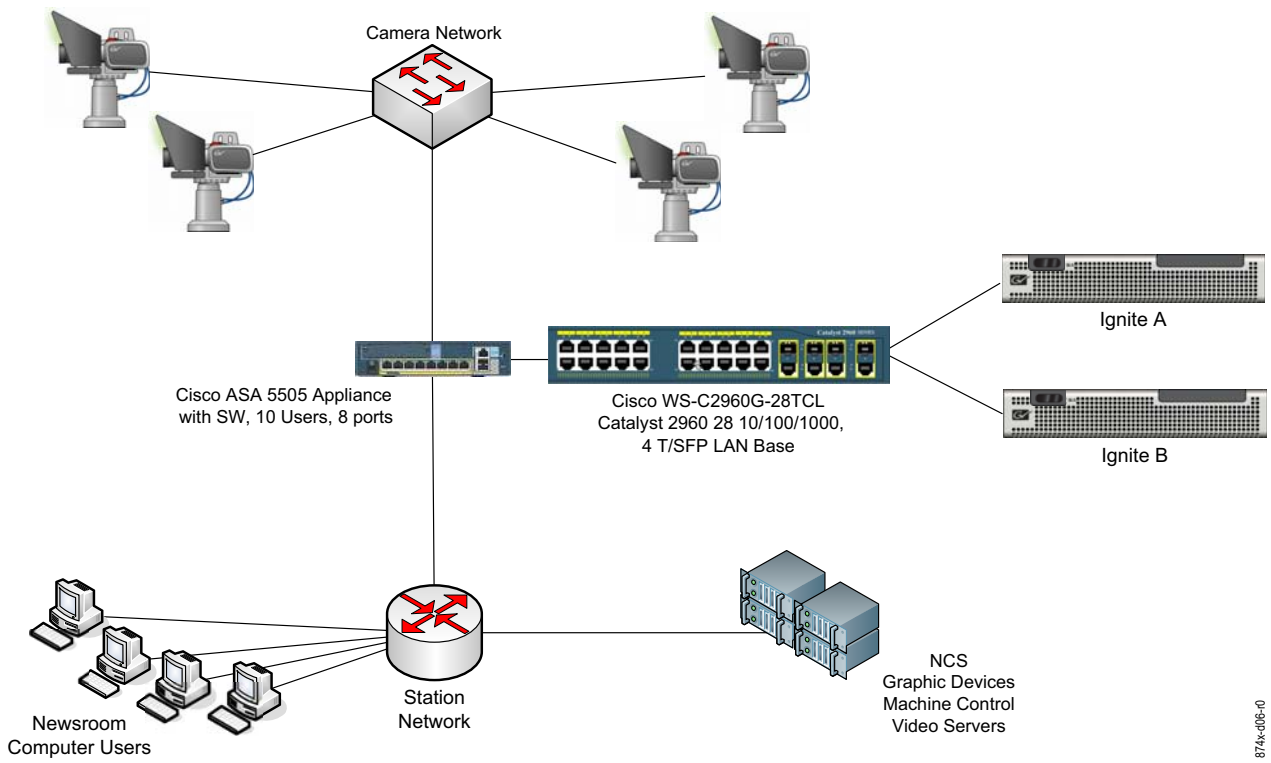
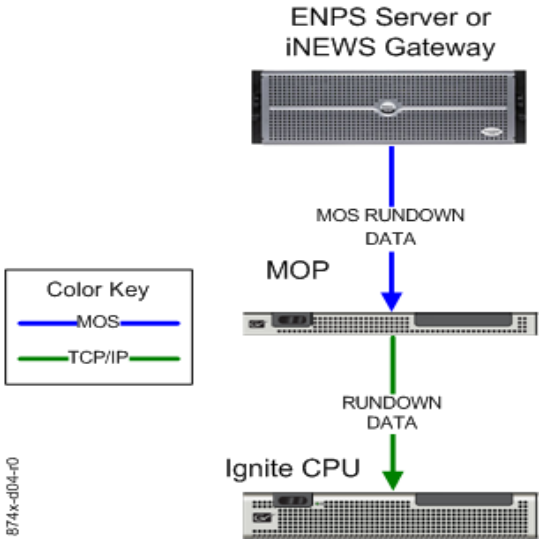


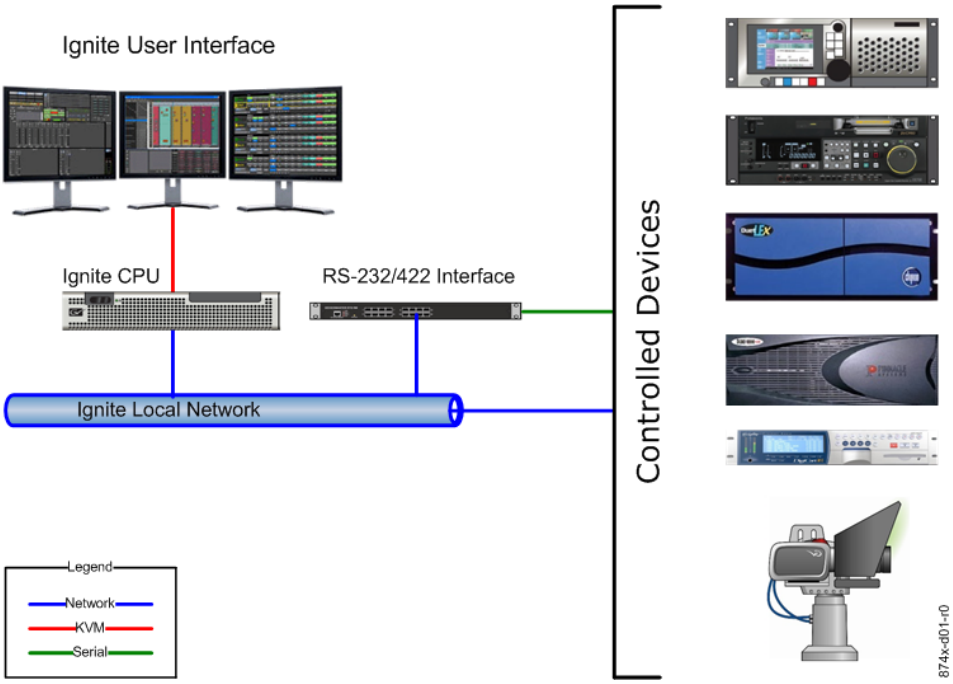
Figure 3. ENPS or iNEWS to Ignite Network Interface



Device Control

Ignite system controlled devices fall into two categories: IP or serial (Figure 4). IP controlled devices are connected to the Ignite network via TCP/IP. Serial controlled devices (RS-232/422) are connected to the supplied serial control module, which is connected to the Ignite network via TCP/IP.

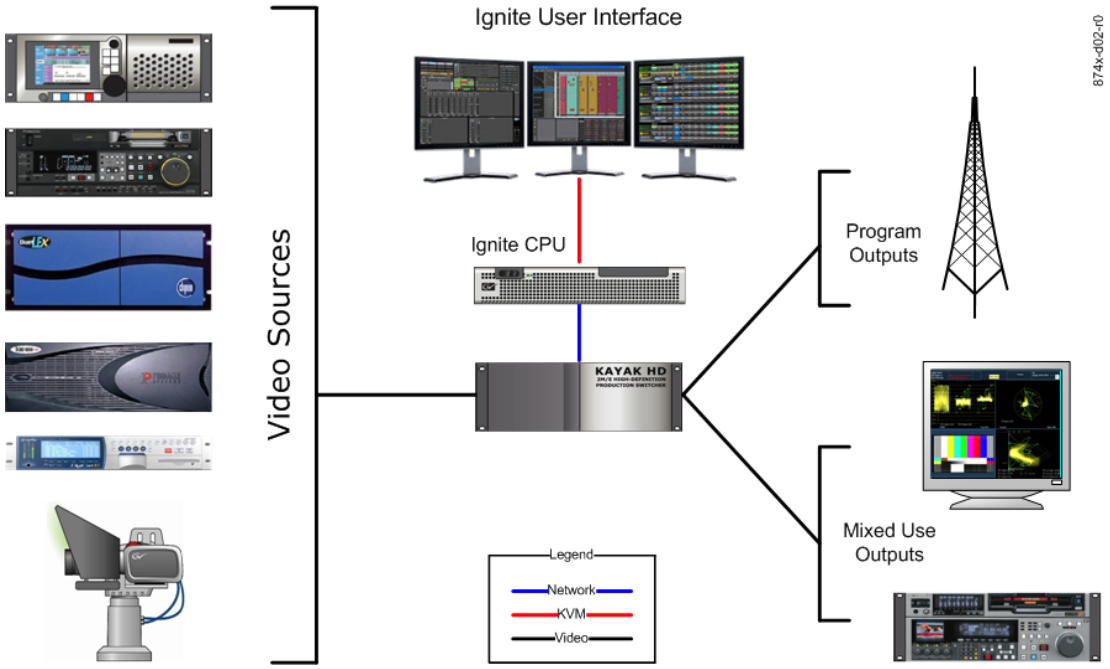
Figure 4. Control Overview



Video Processing

Video switching and effects are performed by the Kayak switcher, which is connected to the Ignite network via UDP. (Figure 5).

Figure 5. Video Overview



Audio Processing

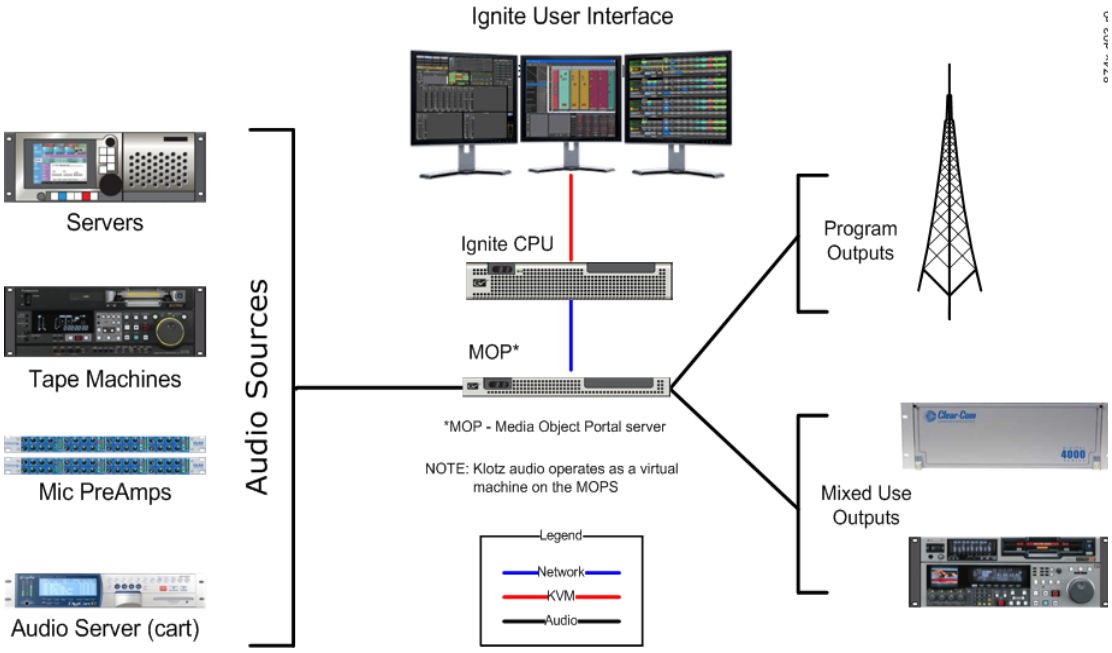
Note Not available with Ignite without audio option. If the Yamaha, Wheatstone, or Calrec audio control option is purchased, the Klotz audio hardware is omitted and replaced by a customer supplied Yamaha LS9 series (-16 or -32), Wheatstone, or Calrec xaudio mixer.

Audio mixing is performed by an audio frame, which is connected to the Ignite network via TCP/IP.

In Klotz audio systems, as shown in Figure 6, require a supplied audio CPU, which is connected to the Ignite network via TCP/IP. The Klotz audio frame is connected via IPX/SPX to a second network interface card (NIC) in the audio CPU.

In all other audio configurations an audio console is required. Connection type is either IPX/SPX or serial.

Figure 6. Audio Overview



Section 2

Hardware Description

Ignite™ Live Production Control System hardware is discussed in the following paragraphs:

- *Workstation Hardware* on page 36
  - *Tri-monitor Display Workstation* on page 36
  - *Ignite Katalyst Automation Control Panel (Optional)* on page 36
  - *JSC-2300 SHOT Director Robotics/Camera Controller (Optional)* on page 37
- *Rack-mounted Hardware* on page 38
  - *Firewall* on page 38
  - *Network Switch* on page 39
  - *Ignite Application Server* on page 39
  - *Video Switcher* on page 40
  - *Klotz Audio Processor* on page 40
  - *Serial Control Module* on page 41
  - *Tally Expander* on page 41
  - *XSWITCH Matrix Router* on page 41
- *Grass Valley HDC Robotic Cameras* on page 42

Workstation Hardware

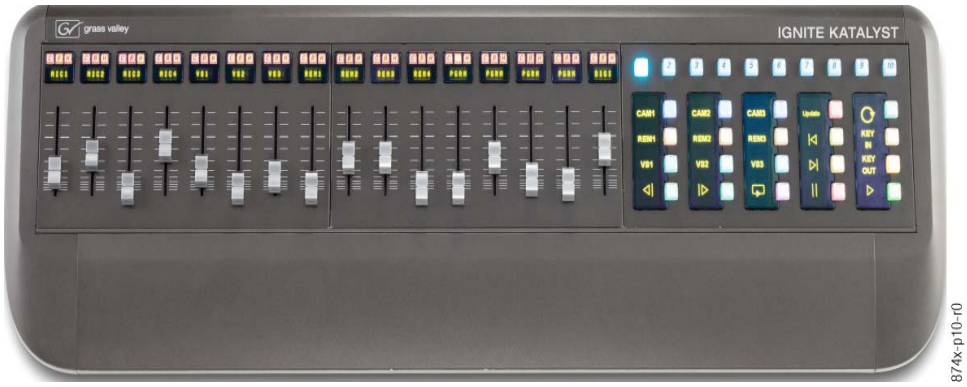
Tri-monitor Display Workstation

Figure 7. Tri-monitor Display Workstation

The tri-monitor display workstation (Figure 7) comprises 3 Ignite GUI 20” LCD monitors, a keyboard, optical mouse, and Ignite Katalyst Automation Contrtol Panel panel. Optional workstation equipment includes: a JSC-2300 SHOT Director™ controller, and a video control panel.

Ignite Katalyst Automation Control Panel (Optional)

Figure 8. Ignite Katalyst Automation Panel (Optional)



The Ignite Katalyst Automation Control Panel (Figure 8) works dynamically with Ignite/Ignite Konnect software to provide programmable buttons and audio controls that meet the workflow requirements of both individual stations and individual operators:

Note The **Ignite Katalyst** Automation Control Panel is not required for Ignite/Ignite Konnect Live Production Control system operation but rather provides an alternate, manual event-triggering capability

- Profiles are selected at runtime by the user
- Profiles are selected using the **Ignite Katalyst Profiles** dialog box, which is accessed from the **Event Timeline Setup** menu.
- Profiles are edited using the **Ignite Katalyst Profiles Editor**, which is accessed from the Windows **Start** button
- Buttons are configured using the **Ignite Katalyst Button Toolbox**.

Note In an Ignite/Ignite Konnect No-Audio configuration, the audio user interface area is blank and an Ignite Katalyst Automation Control Panel is not supported; therefore, this Ignite Katalyst Automation Control Panel information does not apply.

A modular and scalable peripheral Ignite Katalyst Automation Control Panel provides tactile control of Ignite system functions for:

- Events [up to 10 banks of 20 buttons per bank]
- Audio faders

Note Button programming is accomplished using the **Ignite Katalyst Button Toolbox**. The **Ignite Katalyst Button Toolbox** is accessed via the Windows **Start** button or from the Profile Editor, Button module, and Fader module **Tools** menus. Ignite Katalyst Profiles are configured/edited via the **Ignite Katalyst Profiles Editor**. The **Ignite Katalyst Profiles** Editor is accessed from the Windows **Start** button.

Programming includes the ability to store and recall both simple and complex functions such as:

- Manual Video Switching & Audio Mixing
- Event Timeline Next Event command
- Manual CG & Keyer Controls
- GPI Triggers
- ShowBuilder Key Insert & Take Commands
- Audio Talkback, Cue, Hold, & Group Commands

JSC-2300 SHOT Director Robotics/Camera Controller (Optional)

The SHOT Director™ robotics/camera controller (Figure 9) with joystick, knob, and keypad controls provides: focus, iris, pan/tilt control and pan/tilt speed control, zoom and zoom speed control, and location, motion, and

scene file preset set up for multiple cameras. The SHOT Director controller also:

- Includes IP connectivity between the SHOT Director controller and the Grass Valley HDC robotic cameras
- Provides the ability to set and recall up to 2 user-defined and 1 factory-default scene file presets per camera
- Stores and recalls up to 300 location presets for each of 16 cameras total via the supplied network switch
- Provides the ability to record and recall up to 10 motion presets per camera. Each preset stores up to 60-seconds of recorded camera motion.
- Has variable speed pan/tilt and zoom using two slider adjustments for precise, smooth camera control
- Adjusts individual camera CCU (camera control unit) settings on-the-fly without compromising the video
- Provides camera movement readouts

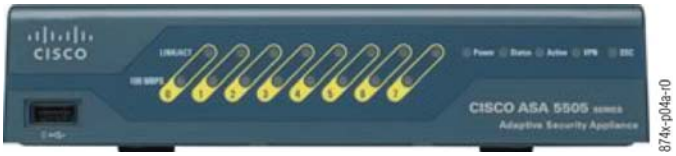
Figure 9. JSC-2300 SHOT Director™ Robotics/Camera Controller

Rack-mounted Hardware

Firewall

The firewall (Figure 10) provides intrusion prevention for the Ignite network. It reduces Ignite system network traffic by isolating it from the facility (house) LAN (with the exception of a connection to the facility provided XMOS server).

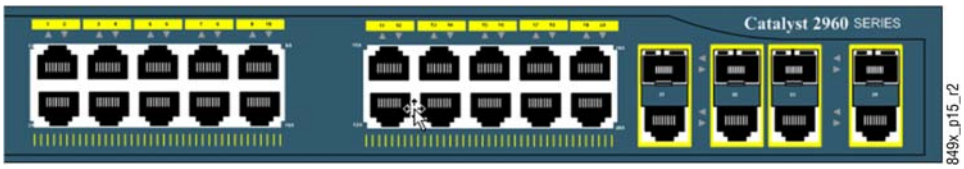
Figure 10. Firewall



Network Switch

A 28-port, 10/100/1000 Gigabit Ethernet switch (Figure 11) provides connection to all Ignite TCP/IP network devices. The RJ-45, auto-sensing ports detect and adjust their speed and duplex (half or full) to the connected device.

Figure 11. Network Switch



Ignite Application Server

The Ignite™ Application Server (Figure 12) is a dual-processor running Ignite application software in a Windows™ operating system environment. It is equipped with a quad graphics card and internal RAID array.

Figure 12. Ignite Main CPU

MOP Server (Media Object Portal Server)

The Ignite MOP™ Server (Figure 12) is a dual-processor running Ignite application software in a Windows™ operating system environment. It is equipped with an internal RAID array.

Figure 13. Media Object Portal Server

Video Switcher

Note For Kalypso and Kayenne video switchers, refer to the documentation included with the product.

The Kayak switcher is available in two frame sizes. The compact frame (Figure 14) supports 1- and 2-M/E systems with 24/12 and 48/24 I/O respectively. The large frame (Figure 15) supports 3- and 4-M/E systems with 72/36 and 96/48 I/O respectively.

Figure 14. Kayak HD™ Digital Production Video Switcher Compact (4RU) Frame

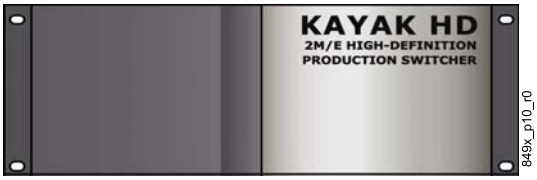


Figure 15. Kayak HD™ Digital Production Video Switcher Large (8RU) Frame

Klotz Audio Processor

Note Not available with Ignite without audio option. If the Yamaha audio control option is purchased, the Klotz audio hardware is omitted and replaced by customer supplied Yamaha LS9 (-16 or -32) series, Wheatstone D-10 , or Calrec audio mixer.

The base audio system runs on a virtual machine setup within the MOP server (refer to *MOP Server (Media Object Portal Server)* on page 39).

The processor is provided with 110 Ohm balanced XLR or 75 Ohm BNC I/O breakout panels (Figure 16). Each breakout panel ships with four 3-foot DB15 to DB15 cables. The breakout panels simplify the audio hardware installation process.

Figure 16. Audio Input/Output Breakout Panels (110 Ohm Balanced XLR Shown)

Serial Control Module

The serial control module (Figure 17) enables communications with serial controlled devices over an Ethernet network. A 16-port model is standard for all systems. Device ports are software configurable RS-422 or RS-232 connectors for controlling a wide range of devices.

Figure 17. Serial Control Device

Tally Expander

The tally expander (Figure 18) has 64 GPO relays for external device control. The relays can be operated through logic parameters or from commands placed on the Ignite event timeline. There are also 32 GPI connections for control of the Ignite event timeline. This device is controlled through a network connection using standard IP protocol.

Note Additional tally/GPO connections are available on the video switcher frame.

Figure 18. Tally Expander

XSWITCH Matrix Router

The XSWITCH™ matrix router and expansion unit are shown in Figure 19. The 6 RU matrix router contains 10 card slots and a CPU card that provides a user interface via the front panel mounted LCD and button field. A menu-driven setup programs up to five switching configuration(s). The XSWITCH matrix router can be expanded by adding up to 3 expansion units to any matrix router. The 4RU expansion units provide 10 additional card slots each. Expansion units communicate with each other and the matrix router via multi-pin small computer system interface (SCSI) type connection.

Figure 19. XSWITCH Matrix Router and Expansion Unit

Grass Valley HDC Robotic Cameras

Grass Valley™ HDC™ robotic cameras (Figure 20) are self-contained, fixed-position, robotic cameras that are controlled remotely from a SHOT Director robotics/camera controller (Figure 9 on page 38). Under automation, the Ignite application recalls camera presets to pre-position cameras. Preset information includes pan/tilt, zoom/focus, iris, gain, and pedestal. Grass Valley HDC cameras use an optional teleprompter.

Figure 20. Grass Valley HDC Robotic Cameras

Section 3

Installation Planning

General Considerations

Time and effort must be devoted to planning. Any of the following can impact the Ignite system installation and operation:

- Computer and Networking – The Ignite live production control system requires the same computer network considerations afforded to any other computer/computer-controlled system in a facility. Security measures, virus protection, a stable network connection, and regular data backups should be planned and implemented for the Ignite system.
- Network and NCS (Newsroom Computer System) – The Ignite system Main CPU communicates with the NCS over a TCP/IP network. In addition, the Ignite system communicates with Ignite IP devices via the network. Therefore the system requires several unique IP addresses and a logon account for the station network (refer to *Network Communication/Architecture* *on page 28*).
- VTRs – The Ignite system uses RS-422 protocol.
- Video Servers – The system controls video servers that use Louth VDCP or AMP protocol. This includes most, but not all manufacturers.

Note To verify the compatibility of an intended device, Contact either the Grass Valley Sales or Project Manager for the latest Ignite Supported Device List.

- Camera Robotics – Using the SHOT Director™ Robotics/Camera Controller, the Ignite system can control up to 16 Grass Valley HDC robotic cameras. The Ignite system also works with other manufacture's robotic systems.

Note To verify the compatibility of an intended device, Contact either the Grass Valley Sales or Project Manager for the latest Ignite Supported Device List.

- Control Ports – The Ignite system has 16 control ports for either RS-232 or RS-422 external devices such as: VTRs, Video Servers, CGs & Graphics Systems, and Audio Playback devices.

Note To verify the compatibility of an intended device, Contact either the Grass Valley Sales or Project Manager for the latest Ignite Supported Device List.

- Number of video sources – This varies by Ignite system (refer to Table 2 on page 32).

Note To verify the compatibility of an intended device, Contact either the Grass Valley Sales or Project Manager for the latest Ignite Supported Device List.

- System Source Timing – The Ignite HD system typically requires a tri-level sync generator, which is not provided with the Ignite system.
- Cabling – Use cables and connectors that are specifically designed for HD digital video.
- Audio Inputs/Outputs – Varies by Ignite configuration (refer to Table 2 on page 32 and Table 3 on page 32). Please specify the number of digital and/or analog audio I/O at the time of order placement.

Note Each Klotz digital and analog I/O audio card provides connection for eight similar (digital or analog) signals.

Note For Klotz audio systems, microphones need to be connected using line pre-amps or a mixer with line level outputs.

- Audio Delay – Due to signal processing within the video switcher, an audio lip-sync problem could develop. An audio delay compensation device should be planned to address this issue.
- GPI/GPO – The system provides 64 GPO relays to control external devices. The GPOs are either:
  - Fired by logic settings for camera tallies, on-air lights, speaker mutes, etc.
  - Fired from the timeline to trigger other devices not controlled via serial protocol
- Device Control – The Ignite system controls a variety of devices via RS-232, RS-422, or IP protocol.

Note To verify the compatibility of an intended device, Contact either the Grass Valley Sales or Project Manager for the latest Ignite Supported Device List.

- Operating space and ergonomics – The operator's console should have enough room to operate three computers, one of which has a triple monitor display. For specific concerns, contact the Grass Valley Project Manager.
- KVM (Keyboard, Mouse, Monitor) extensions – KVM cable runs in excess of 20 feet require the use of KVM extenders.

Workstation Considerations

Note Space requirements are determined by the specific site system configuration. Therefore, an Ignite system might not include all of the components shown in *Workstation Considerations* on page 45 and *Equipment Room Racking Considerations* on page 47.

Note The Control Room/Director's workstation furniture is customer supplied.

Note For either a partially redundant system with a prep station or a fully redundant system, two workstation desks are required.

Workstation space requirements are similar, regardless of system configuration. Table 1 provides the standard footprints for workstation peripherals. Except for component footprints, workstation layout consideration is more a function of individual station requirements, workflow, area, and ergonomics. Figure 21 on page 46 provides examples of workstation layouts.

Table 1. Workstation Component Footprints

Component	Function	Description	Dimensions (WxDxH)
	Automation Control	Tri-Monitor Display Assembly (3 19" LCD VGA monitors with tri-monitor stand), Keyboard, and Optical Mouse Kit	48 in x 24 in x 24 in (1219 mm x 609 mm x 609 mm)
		Enhanced Ignite Katalyst Automation Control Panel with 16-motorized audio faders NOTE: The audio fader panel is not available for Ignite without audio option.	27.125 in x 11.5 in x 3.25 in (688.975 mm x 292.1 mm x 82.55 mm)
	Camera Control	SHOT Director Robotics/ Camera Controller	18 in x 8.5 in x 5.5 in (457 mm x 216 mm x 140 mm)

Figure 21. Workstation Layout Examples

849x_40_r0

Illustration courtesy of Winsted Technical Interiors

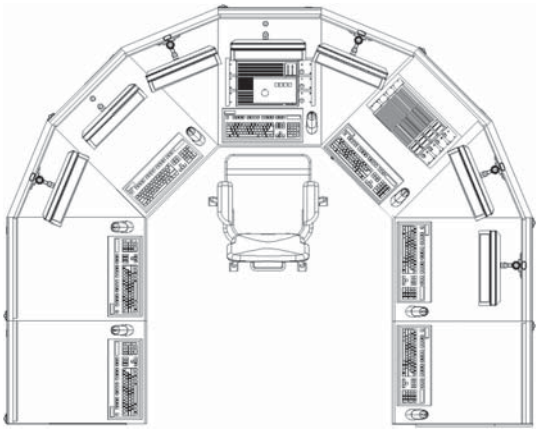


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Illustration courtesy of Winsted Technical Interiors

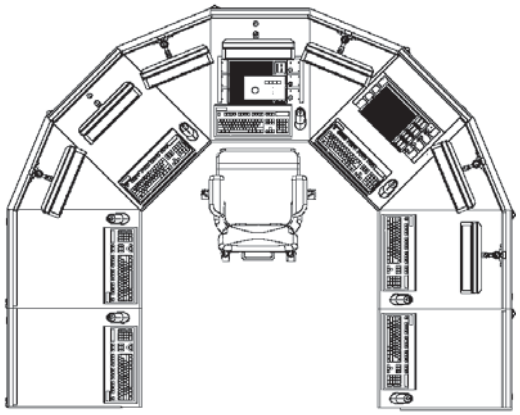

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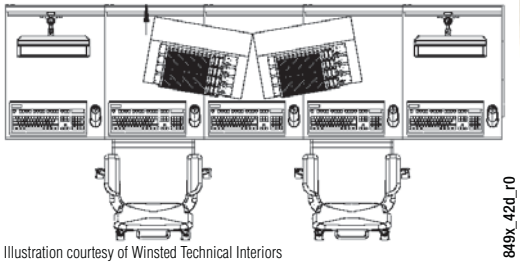
Illustration courtesy of Winsted Technical Interiors



849x_42d_r0

Illustration courtesy of Winsted Technical Interiors

Equipment Room Racking Considerations

CAUTION Use a rack enclosure that meets the specifications of American National Standards Institute (ANSI)/Electronic Industries Association (EIA) standard ANSI/EIA-310-D-92, International Electrotechnical Commission (IEC) 297, and Deutsche Industrie Norm (DIN) 41494. Improperly supported equipment could become damaged and/or cause personnel injury.

CAUTION Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.

CAUTION To avoid personal injury, use two people to lift components that weigh more than 50 lbs (22.68 kg). Use appropriate equipment to support the device until it is safely mounted in the rack.

CAUTION After installing components in a rack, never pull more than one component out of the rack on its slide assemblies at one time. The weight of more than one extended component could cause the rack to tip over and may result in serious injury

CAUTION It is the customer's responsibility to ensure that the final combination of system and rack complies with all applicable safety standards and local electric code requirements.

Note Equipment racks/cabinets are supplied by the customer.

Note Ensure that proper airflow is provided to components in the rack.

Note Space requirements are determined by the specific site system configuration. Therefore, an Ignite system might not include all of the components referenced in *Workstation Considerations* on page 45 and *Equipment Room Racking Considerations* on page 47.

Use the recommended, typical 1-/2-M/E partial redundant and 3-/4-M/E full redundant rack layouts shown in Figure 22 on page 48, the rack-mounted components information in Table 2 on page 49, and the recommendations listed below to develop a rack plan for your specific Ignite system configuration.

When possible:

- Locate redundant system (A and B) components together
- Locate audio, video, CPU, and network components together
- To minimize cabling to redundant system components, locate the XSWITCH matrix router in the middle of the rack
- Load the rack from the bottom up, and load the heaviest item in the rack first

Figure 22. Recommended System Racking

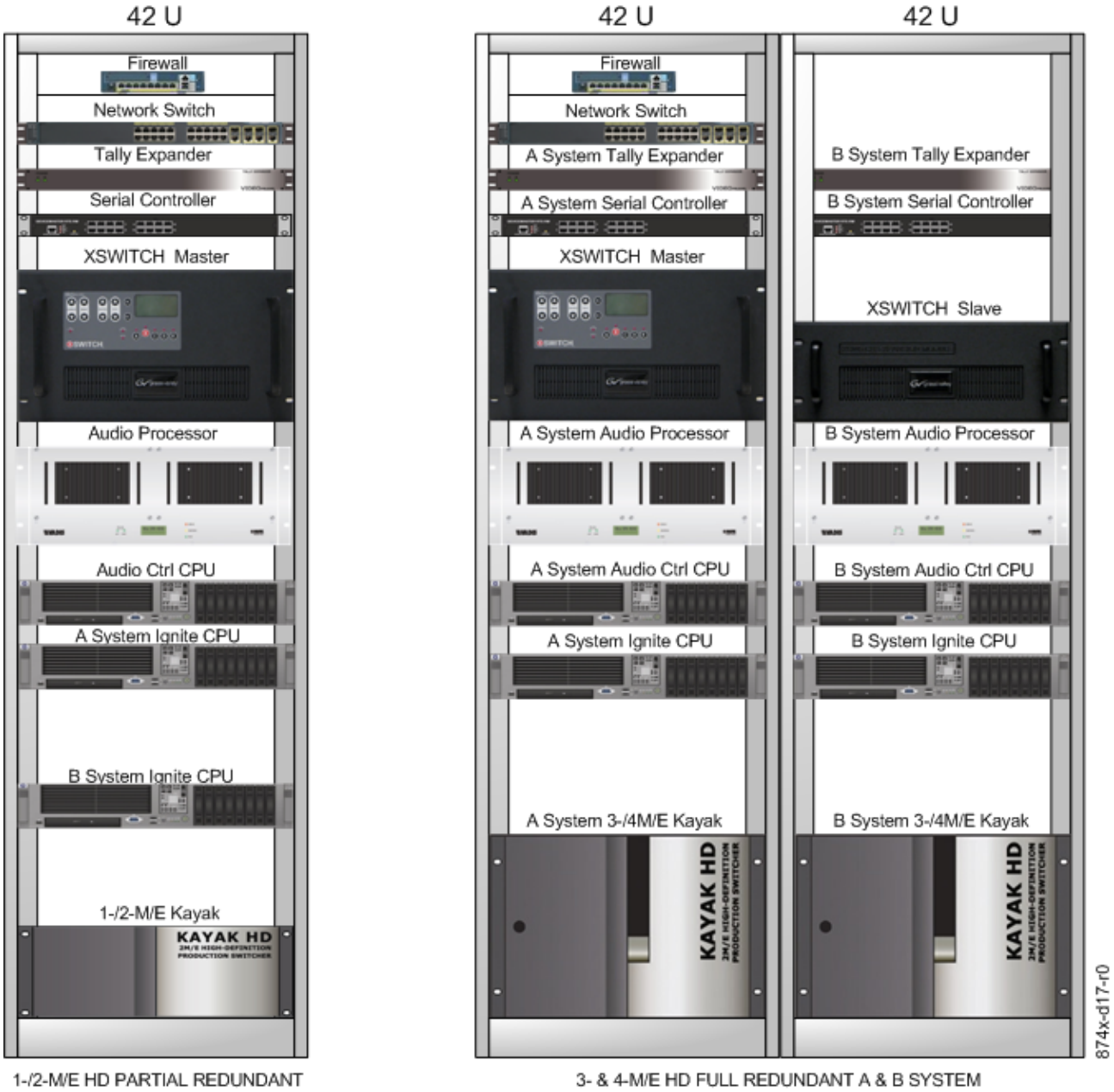
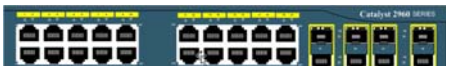


Table 2. Rack-mounted Components

Component	Description	Rack Units (RU)	Weight
	Video Switcher **Note** For Kalypso and Kayenne switchers, refer to the documentation provided with the product.	4RU (HD)	17.69 kg (39 lbs)
	Video Switcher **Note** For Kalypso and Kayenne switchers, refer to the documentation provided with the product.	8RU (HD)	30.39 kg (67 lbs)
	CPU	2RU	26.1 kg (57.5 lbs)
	Media Object Portal Server (MOPS)	2 RU	26.1 kg (57.5 lbs)
	Audio Processor **Note** Not available with Ignite without audio option.	4RU	24.95 kg (55 lbs)
		1RU Input and Output Breakout Panels	0.91 kg (2 lbs)
	XSWITCH	6RU Master	15.88 kg (35 lbs)
		4RU Slave	9.07 kg (20 lbs)

Table 2. Rack-mounted Components - (continued)

Component	Description	Rack Units (RU)	Weight
	Serial Controller	1RU	3.18 kg (7 lbs)
	Tally Expander	1RU	2.72 kg (6 lbs)
	Network Switch	1RU	4.5 kg (10 lbs)
	Firewall	1RU	1.8 kg (4 lbs)

Power

WARNING For all power and grounding installation requirements, refer to respective national, local, and/or site engineering standards.

CAUTION Do not overload the AC supply branch circuit that provides power to the rack. The total rack load should not exceed 80 percent of the branch circuit rating.

Note Due to the expansive configuration options, the single-system power requirements provided below are based on an approximate value for a fully configured system. Typically, on less populated systems, this also allows for future upgrades without the need to repower equipment. To determine site/system specific power requirements, refer to the detailed specifications in each component's respective documentation.

Table 3. Approximate Power Requirements

	Single 4 ME HD	Partially Redundant 4 ME HD	Fully Redundant 4 ME HD	Single 2 ME HD	Partially Redundant 2 ME HD	Fully Redundant 2 ME HD
Rack 1	3583 W	1410 W	2964 W	2775 W	4175 W	1220 W
Rack 2		3823 W	4750 W			4379 W
Rack 3			2865 W			
Workstation 1	497 W	210 W	303 W	510 W	510 W	303 W
Workstation 2		195 W	264 W		195 W	108 W
Cameras*	320 W	320 W	320 W	272 W	272 W	272 W

Note Generally:
For a 3 ME system, use the 4 ME system requirements.
For a 1 ME system, use the 2 ME system requirements

Environmental

General equipment room environmental conditions should be:

Storage temperature	-20 C to 70 C (-4 F to 158 F)
Operating temperature	5 C to 40 C (41 F to 104 F)
Relative humidity	0-95% non-condensing
Electromagnetic environment	E2 (according to EN55103-1, -2)

General production room environmental conditions should be:

Ambient temperature	0 C to 37.78 C (32 F to 100 F)
Relative humidity	0-95% non-condensing
Electromagnetic environment	E2 (according to EN55103-1, -2)

Interconnecting Cabling

Note Cabling requirements depend upon rack and workstation configurations. Refer to *Interconnection Diagrams* *on page 93* for typical interconnection information.

Due to varying site requirements, common interconnecting cables are customer provided. Unique cabling is provided with the system. Contact the Grass Valley Project Manger for cabling questions.

Section 4

Interconnections

- *Network Components* on page 53
- *Video Cabling* on page 54
- *Klotz Audio Cabling* on page 61
- *Device Control Cabling* on page 67
- *GPI/GPO Cabling* on page 73
- *Power* on page 74

Network Components

WARNING Ensure all devices are powered off prior to connecting cables or wiring.

CAUTION For proper operation, the Ignite system network must be configured as shown below. The use of any other network configuration and resulting problems become the sole responsibility of the customer.

Note Keep cabling away from sources of electrical noise, power lines, and fluorescent lighting fixtures.

Cisco ASA 5505 Firewall

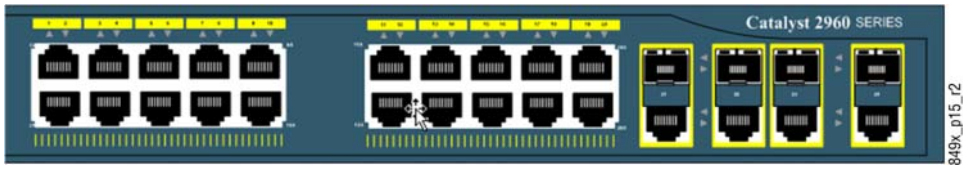
The Cisco ASA 5505 (Figure 23) features a flexible 8-port 10/100/1000 Fast Ethernet switch. IT provides intelligent threat defense that stops attacks before they penetrate the network perimeter, controls network and application activity, and delivers secure remote access and site-to-site connectivity. The Cisco ASA 5505's SSL VPN remote access enables remote access support.

Figure 23. Cisco ASA 5505 Firewall

Cisco Catalyst 2960 Network Switch

The Cisco® Catalyst® 2960 switch (Figure 24), with 28 Ethernet 10/100 ports and 2 fixed Ethernet 10/100/1000 uplink ports, is a stand-alone intelligent Ethernet device that provides Fast Ethernet and Gigabit Ethernet connectivity. The Cisco Catalyst 2960 has integrated security, including Network Admission Control (NAC), advanced quality of service (QoS), and resiliency to deliver intelligent services for the network edge.

Figure 24. Cisco Catalyst 2960 Network Switch



Video Cabling

Figure 25 and Figure 26 show a simplified Ignite system video signal flow.

Figure 25. Simplified Video Block Diagram - Single and Partial Redundant Ignite System

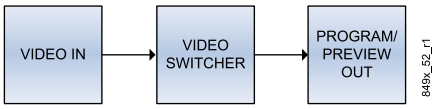
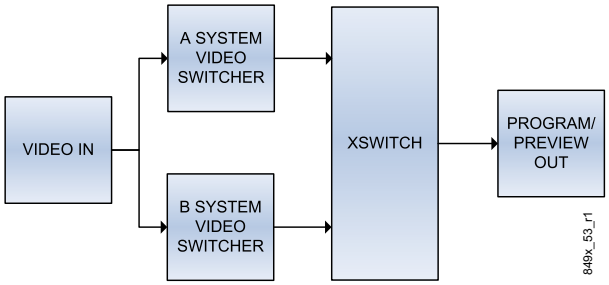


Figure 26. Simplified Video Block Diagram - Full Redundant Ignite System



1- or 2-M/E SD/HD

- Single/partial redundant systems (Figure 27)
- Full redundant systems (Figure 29)

3- or 4-M/E SD/HD

- Single/partial redundant systems (Figure 28)
- Full redundant systems (Figure 30)

Note Refer to *Video Switcher Cabling – Kayak* on page 58 and *XSWITCH Video Cabling* on page 60 for video cabling specifics.

WARNING Ensure all devices are powered off prior to connecting cables or wiring.

Figure 27. 1-/2-M/E (SD/HD) Single/Partial Redundant Systems Video Interconnect Diagram

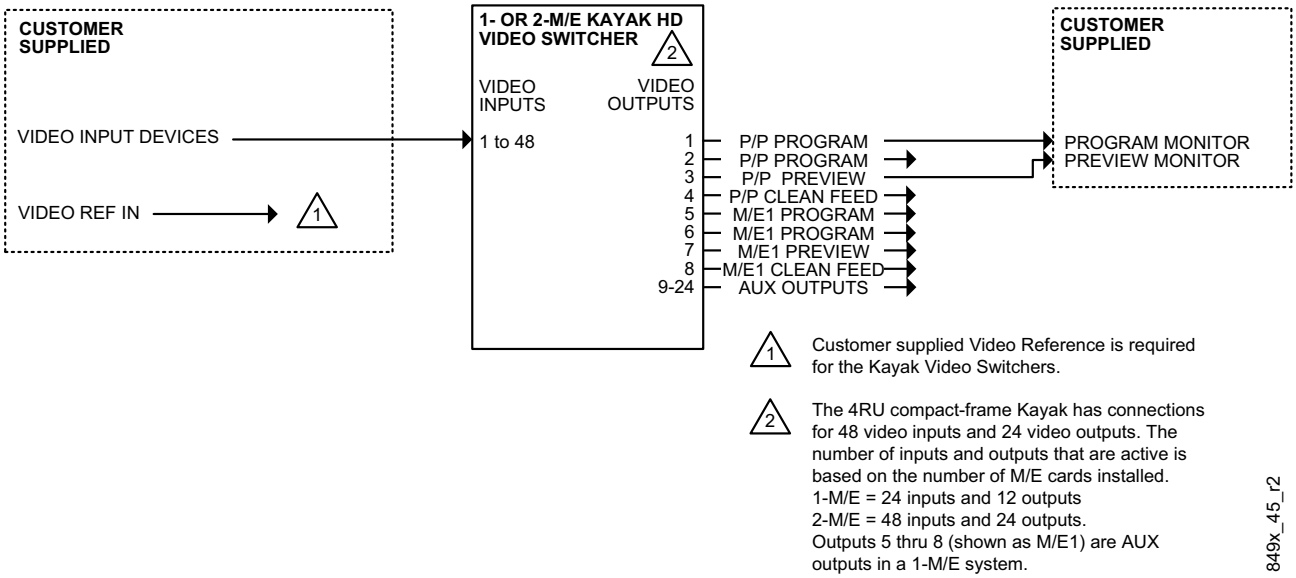


Figure 28. 3- / 4-M/E (SD/HD) Single/Partial Redundant Systems Video Interconnect Diagram

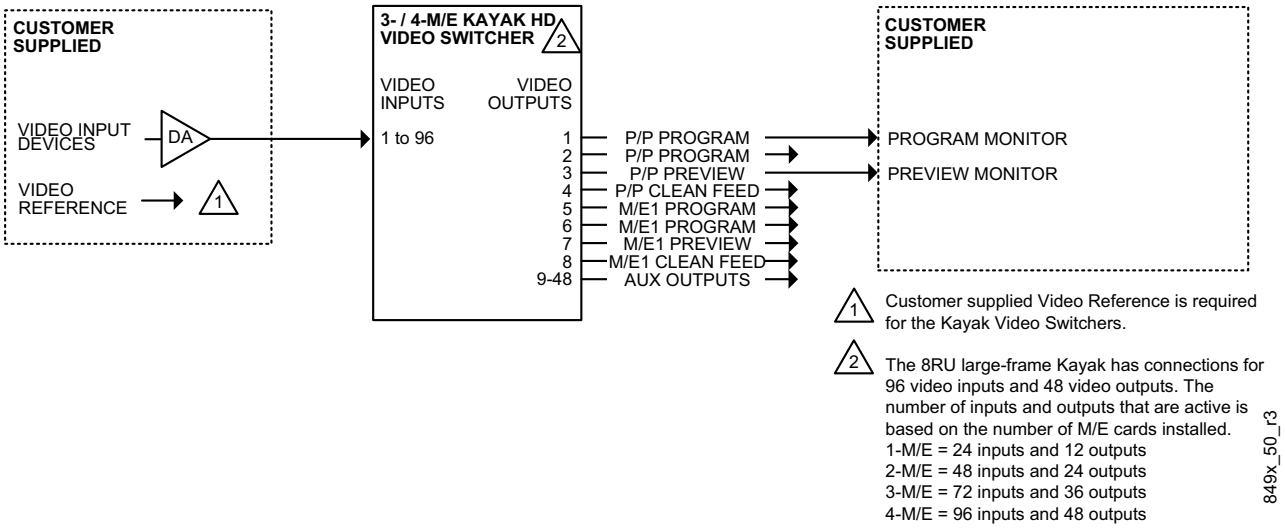


Figure 29. 1-/2-M/E (SD/HD) Full Redundant Systems Video Interconnect Diagram

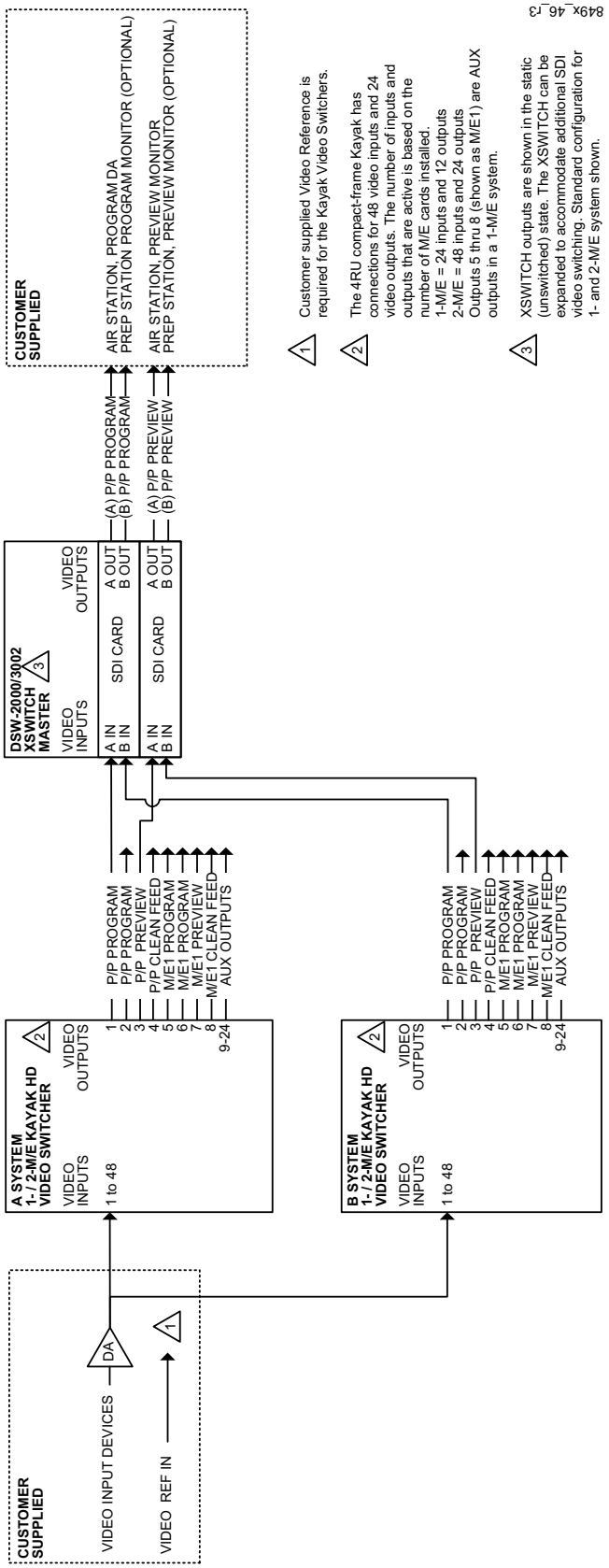
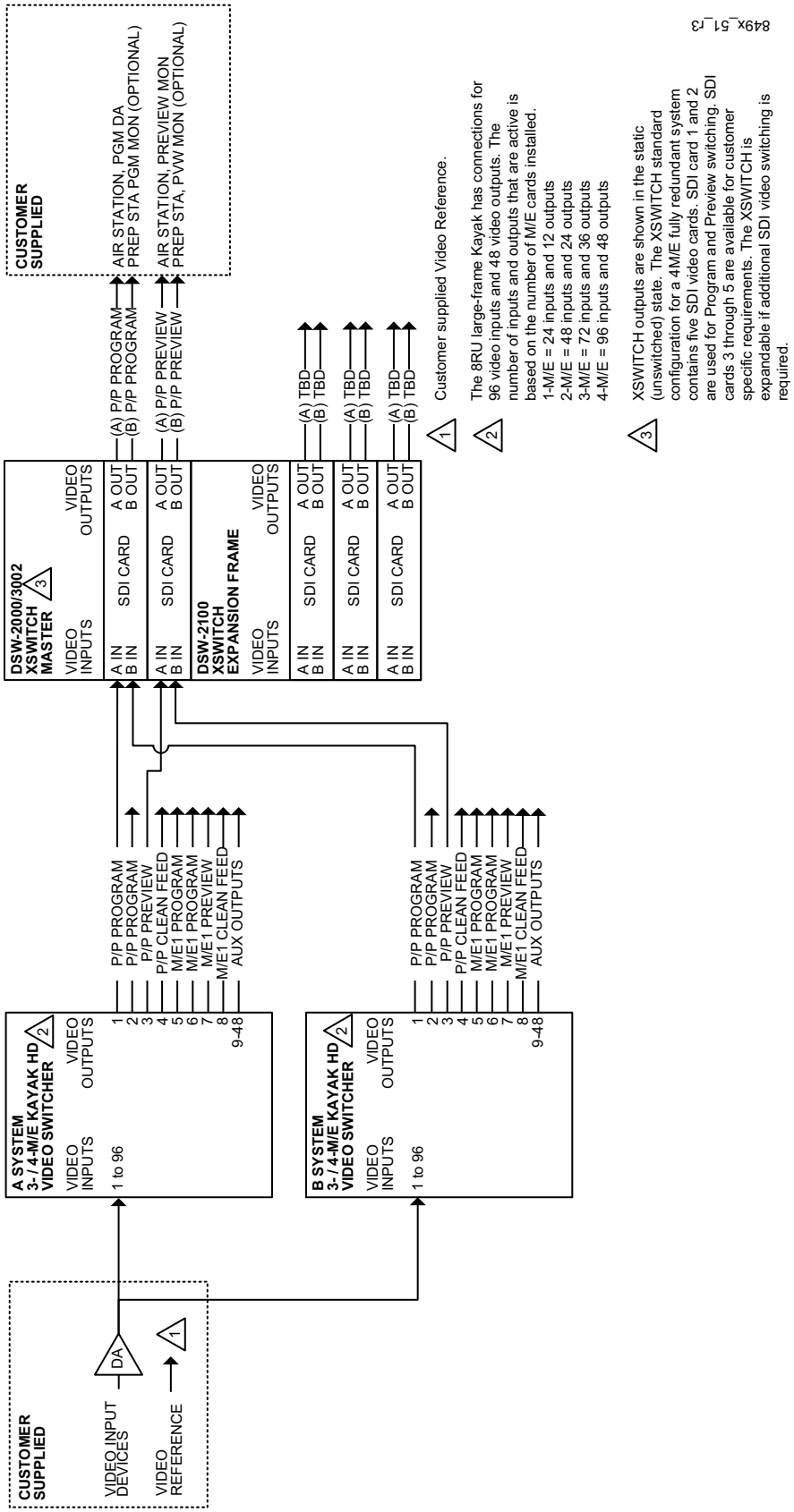


Figure 30. 3- / 4-M/E (SD/HD) Full Redundant Systems Video Interconnect Diagram



Video Switcher Cabling – Kayak

Note For Kalypso and Kayenne switchers, refer to the documentation provided with the product.

All Kayak video switcher inputs and outputs are configurable. For cabling configuration flexibility, each external primary input can be mapped to any Ignite system or Kayak panel source select button, as can each internal video system source.

Inputs

Non-looping video signal inputs (BNC) on the back of the video processor frame are numbered 1 through 48 on the 4 RU Kayak HD frame (Figure 31), and 1 through 96 on the 8 RU Kayak HD frame (Figure 32).

Note The number of inputs that are active on the Kayak HD frames depends on the number of full mix/effects that are installed in the chassis. There are 24 inputs active for every mix/effects module installed.

Figure 31. 4 RU Kayak HD Video Processor Frame (Back)

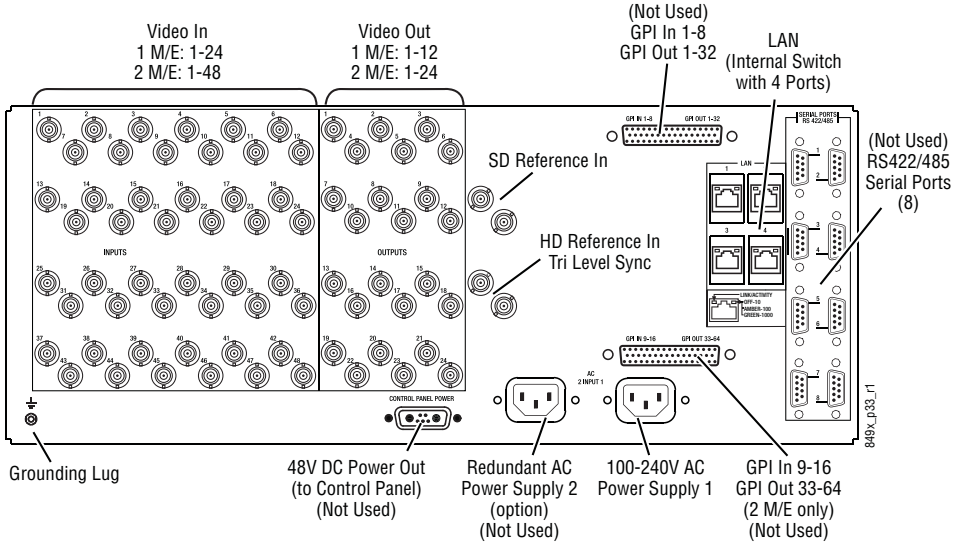
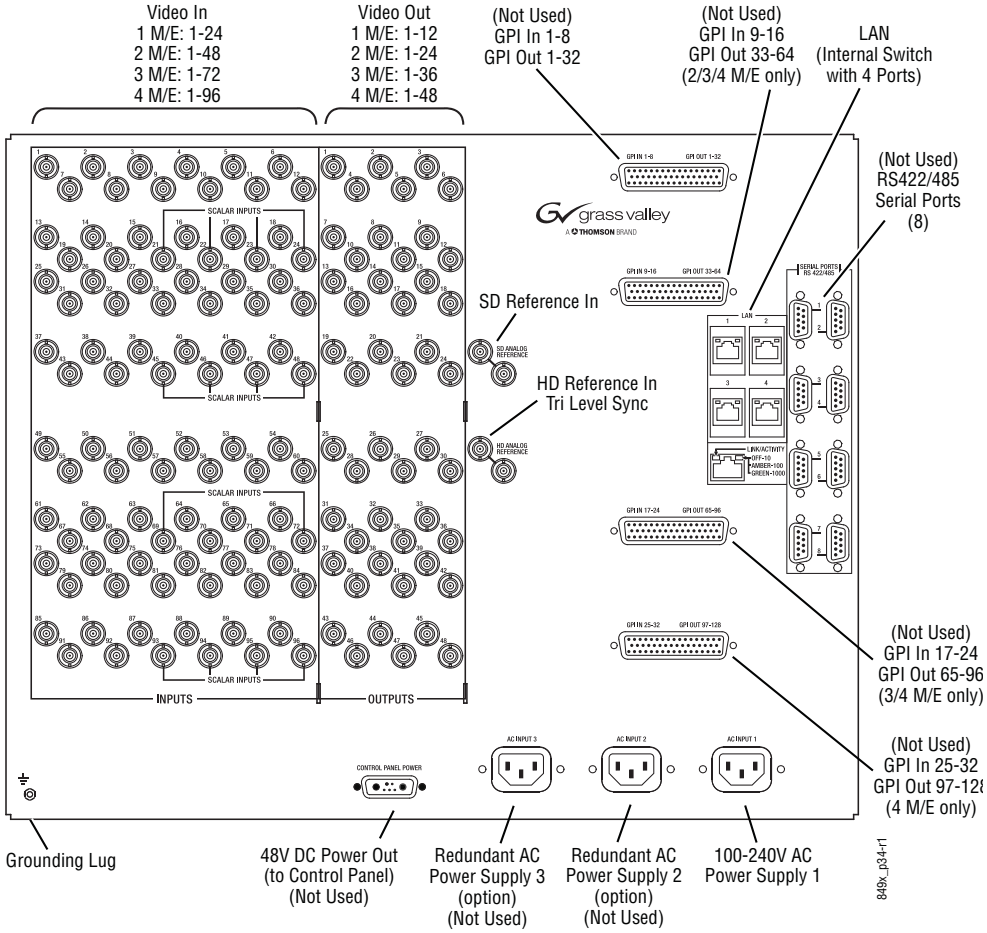


Figure 32. 8 RU Kayak HD Video Processor Frame (Back)



Outputs

Any Kayak HD system video signal, such as M/E Program (PGM), Preset (PST), clean feed (CLNFD), or Preview (PVW), can be mapped to any output bus to be accessed on a specific connector, or an output bus can act as an auxiliary bus. The outputs are numbered 1 through 24 on the back of the 4RU frame (Figure 31) and 1 through 48 on the back of the 8 RU frame (Figure 32). All of the outputs carry the same video format, as determined by standard selected and by the reference signals connected. The number of outputs that are active depends on the number of full mix/effects installed in the chassis. There are 12 outputs active for every mix/effects board installed.

Note For ease of operation and maintenance, there is a recommended output wiring scheme based on system size. Consult with the Grass Valley Project Manger for details.

Reference Input

There are two separate, looping reference input pairs on the Kayak HD video processors (Figure 31 and Figure 32).

Note A 75-ohm termination of one of each of the looping inputs is required, either directly on the adjacent connector or at the end of a daisy chain looping to other equipment.

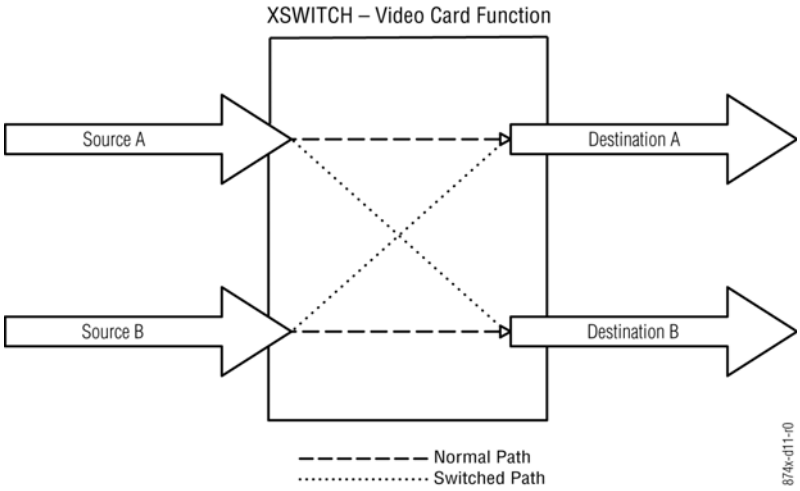
The upper pair, SD ANALOG REFERENCE, accepts analog 525 or 625 composite video. Burst is not required, but typically facility reference color black is used. Kayak HD can auto-sense whether the reference is 525 or 625 and can change the internal standard accordingly.

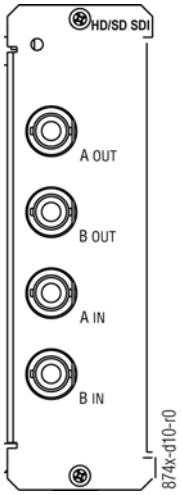
The lower looping input pair, HD ANALOG REFERENCE, is for HD production and uses analog tri-level sync. Any one of the SDI inputs can also be used as reference in the respective standard.

XSWITCH Video Cabling

The HD/SD SDI video switch card is an active re-clocking, cross-switching device (Figure 33) with standard BNC-type I/O connectors. Each video switch card can cross-switch two digital-video inputs between two digital-video outputs. For example, an video signal from system A is fed to the switch card and from there to digital monitor A. An SDI signal from system B is fed to the switch card and from there to digital monitor B. When switched, system A is connected to monitor B and system B is connected to monitor A. No signal paths are left without termination except during the actual switching event. The actual contact exchange, including settling time, is a maximum of 6 ms.

Figure 33. Video XSWITCH Card Connections





Klotz Audio Cabling

Figure 34 and Figure 35 illustrate the simplified audio signal flow of a Klotz audio system.

Figure 34. Simplified Klotz Audio Block Diagram - Single and Partial Redundant Ignite System

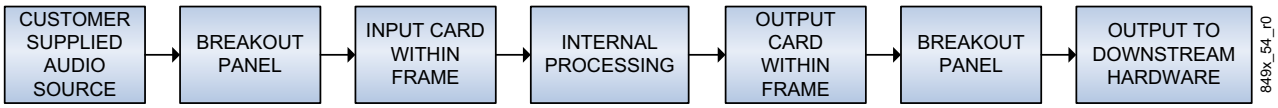
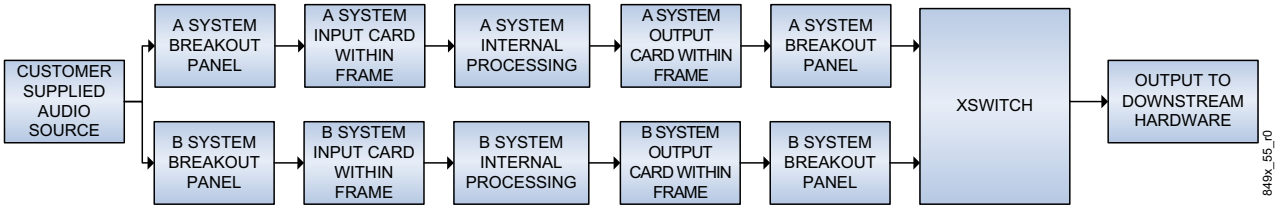


Figure 35. Simplified Klotz Audio Block Diagram - Full Redundant Ignite System



Use the Audio Sources Inputs and Outputs worksheets and the configuration specific audio interconnect drawings shown below, to aid in audio cabling. Refer to:

- Single/partial redundant systems (Figure 36)
- Full redundant systems (Figure 37)

Note The customer is responsible for providing audio cables and mic to line level preamps from house equipment to Ignite system input/output breakout panels.

Note Refer to *Klotz Audio Processor Frame Cabling* on page 64 and *XSWITCH/ Klotz Audio Cabling* on page 66 for audio cabling specifics.

WARNING Ensure all devices are powered off prior to connecting cables or wiring.

Figure 36. Single/Partial Redundant Systems Audio Interconnect Diagram

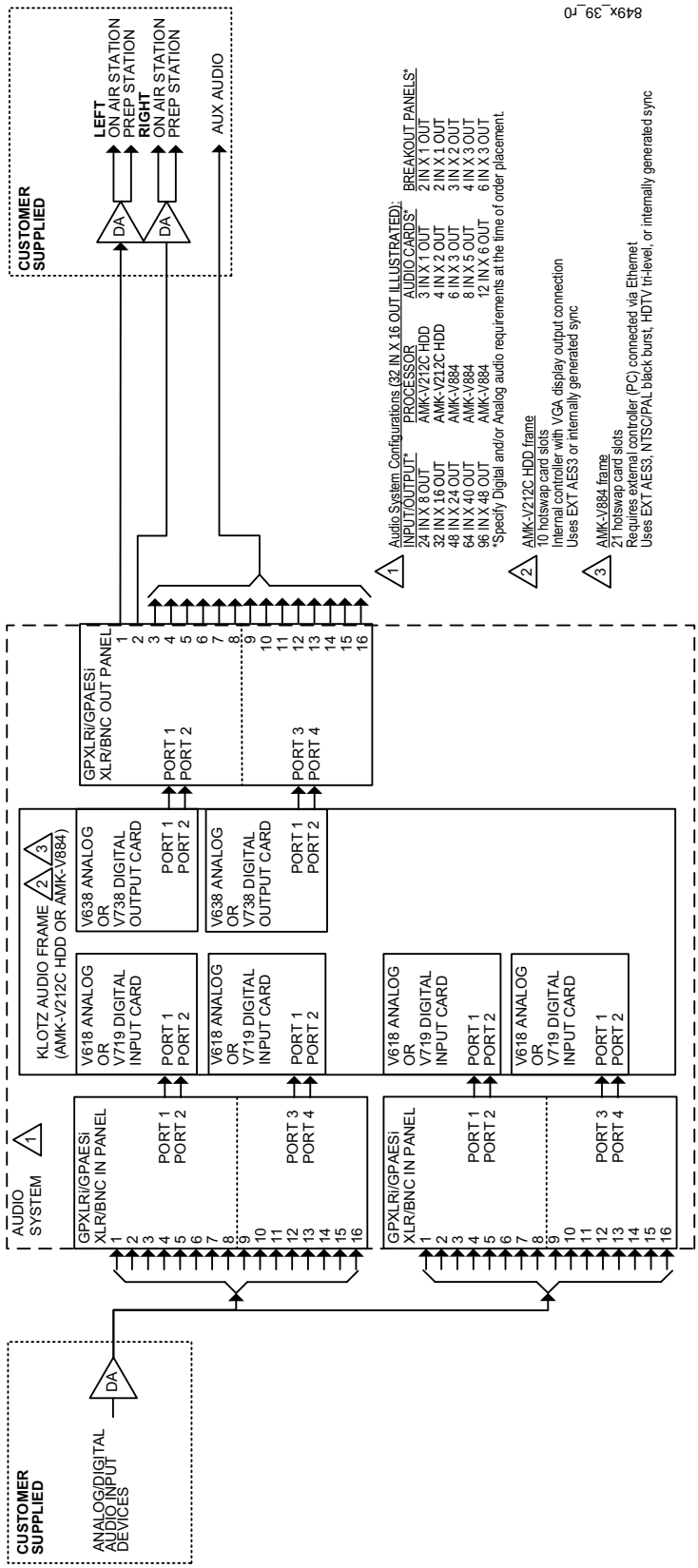
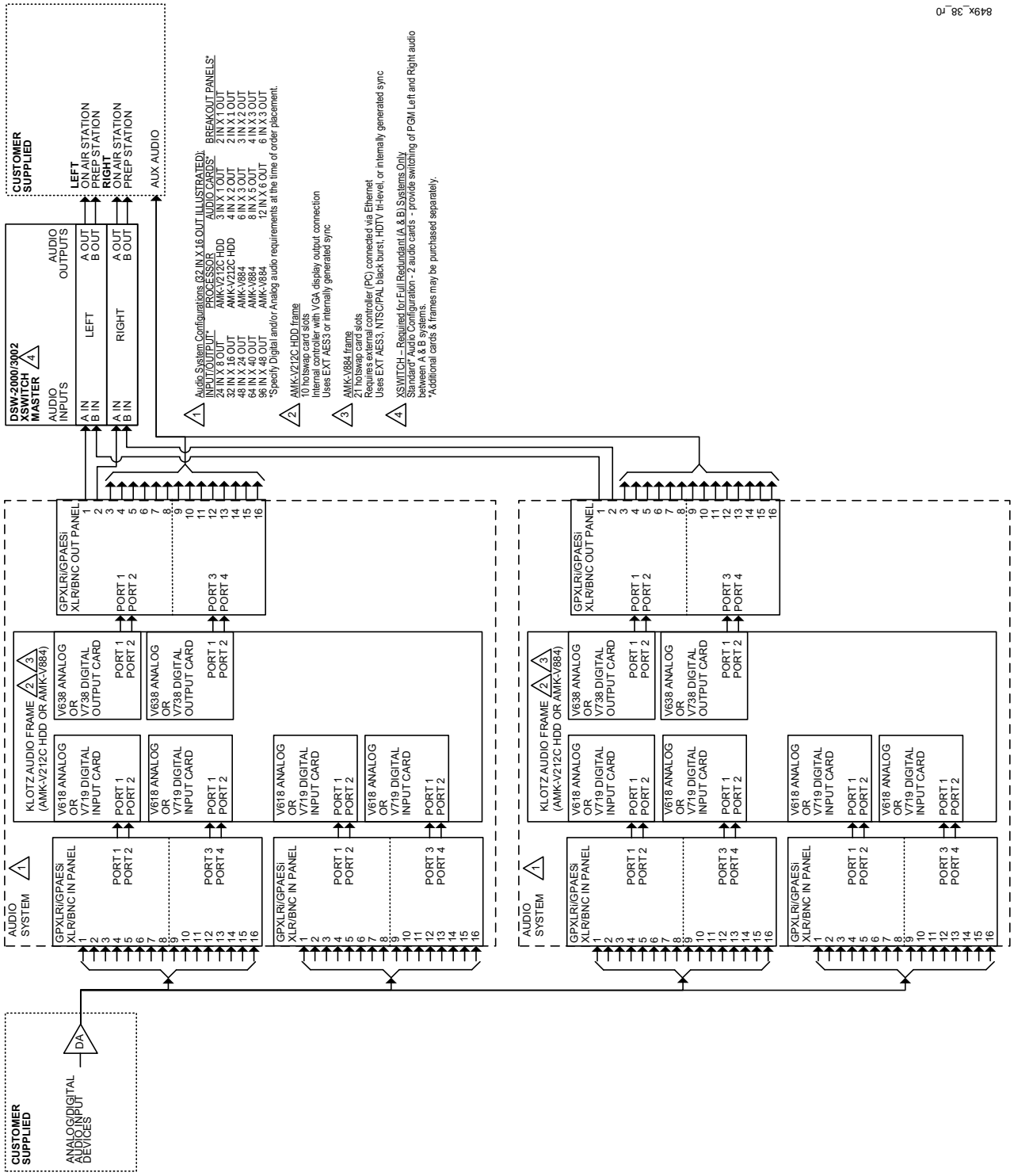


Figure 37. Full Redundant Systems Audio Interconnect Diagram



Klotz Audio Processor Frame Cabling

Figure 38 shows the back panel of a typical V888 Audio Processor frame.

Audio inputs and outputs are connected via the plug-in module connectors shown in Figure 39.

Note For microphones, use mic/line preamps or a mic mixer with line level outputs.

To simplify connection from input device to input module and from output module to output device, the audio processors are provided with 110 Ohm balanced XLR or 75 Ohm BNC input and each output breakout panel ships with four, 3-foot DB15 to DB15 cables.

Note Frames come from the factory pre-configured in the correct slots.

Figure 38. Typical V888 Audio Processor Frame (Back Panel)

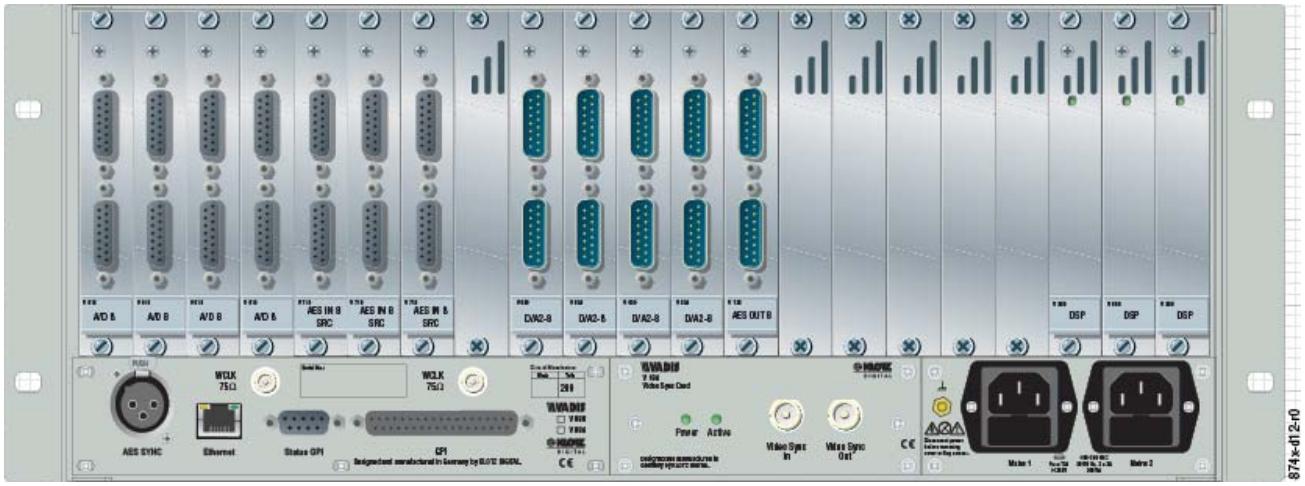


Figure 39. Typical Audio Input/Output Card Pinouts

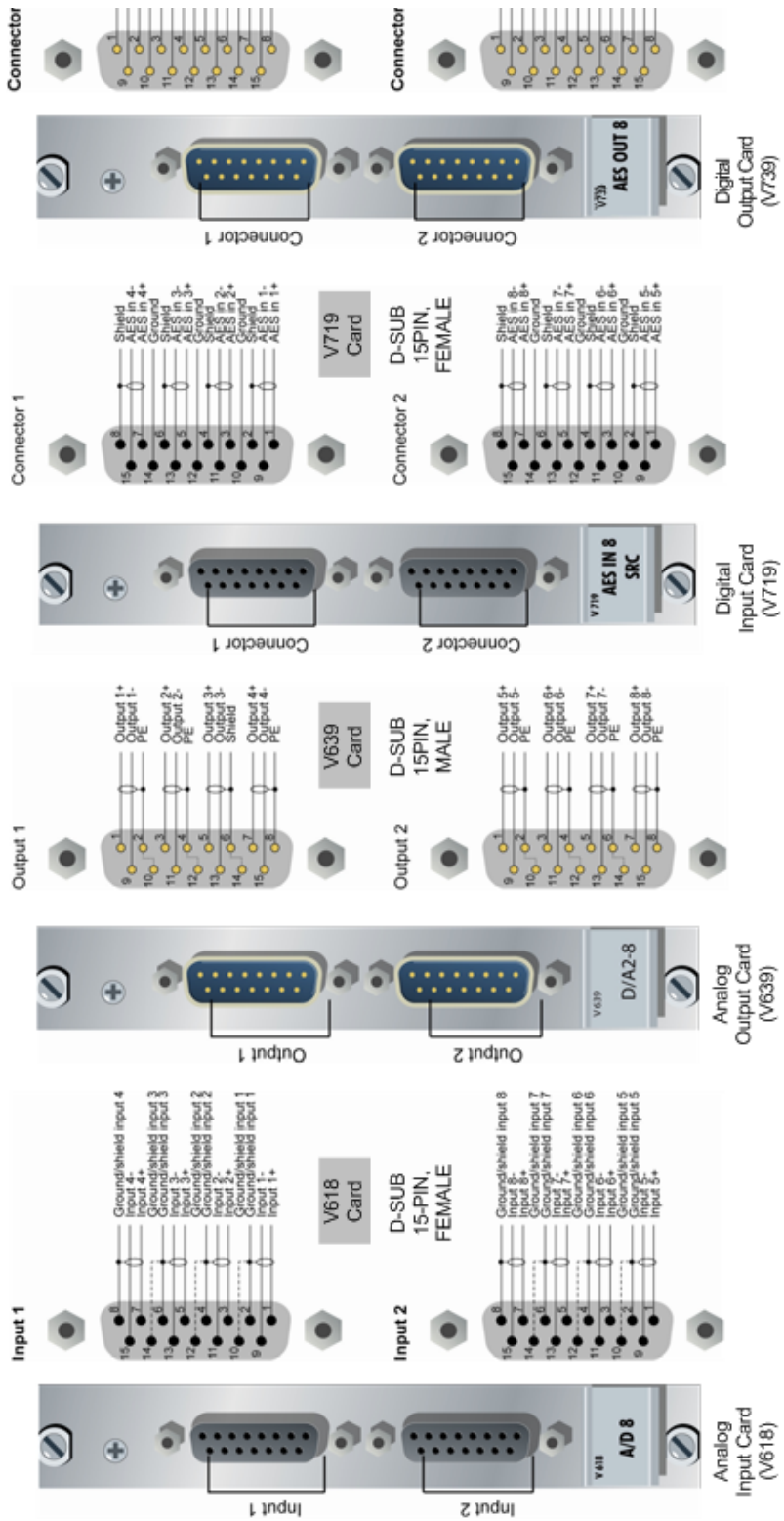
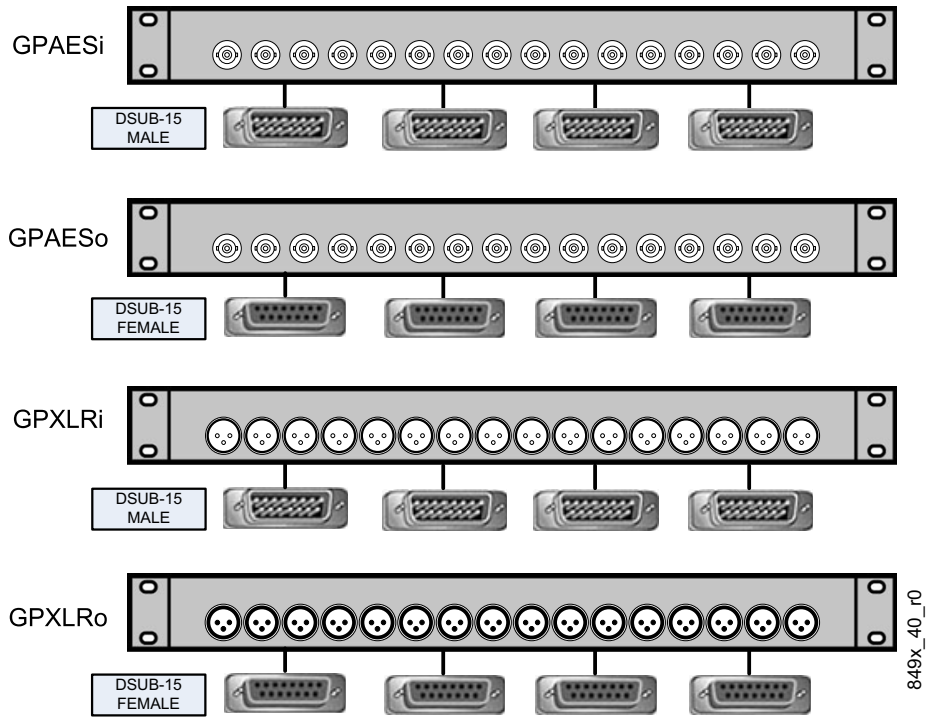


Figure 40. Typical Audio Input/Output Breakout Panels



XSWITCH/Klotz Audio Cabling

Audio Switch Card Connections

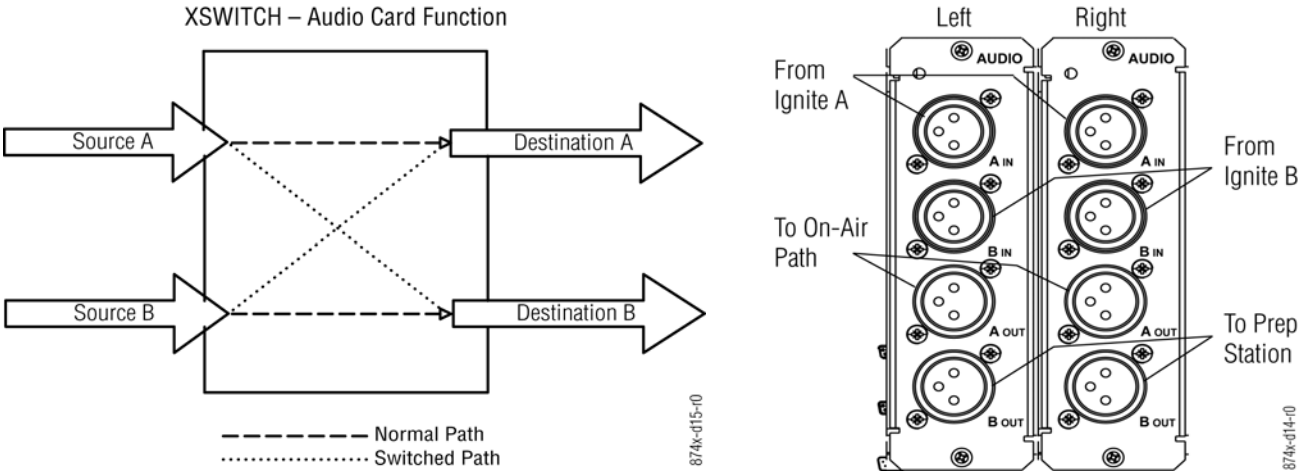
Note XSWITCH Audio Switch cards will NOT switch AES/EBU audio.

Instead, use XSWITCH Communication Switch cards (2-channels per card, XLR to DB-9 connector) to switch AES/EBU audio with GPXLRo audio output breakout panels.

Or, use XSWITCH SDI Video Switch cards (1-channel per card, BNC to BNC connector) to switch AES/EBU audio with GPAESo audio output breakout panels.

Each Audio Switch Card can cross-switch two analog audio outputs between two receiving devices (Figure 41). Both switching channels employ active balanced inputs and outputs with unity gain throughput and flat frequency response across the audio spectrum. In practice, the audio output from source A is connected to switch card input A. The input of an audio receiving device is connected to switch card output A. The output from a second audio source is connected to switch card input B. The input of a second audio receiving device is connected to switch card output B. When the card switches, source A is connected to receiving device B while source B is connected to receiving device A.

Figure 41. Audio Switch Card Connections – XSWITCH Audio Card



Connections are made using standard low impedance, balanced line, shielded cable terminated with three pin XLR connectors with pin 1 as ground. Because the audio switching circuitry in this card employs active electronics, power must be on in order to pass audio signals through the XSWITCH.

Audio Switch Card Grounding Switches

There are three small slide switches on the Audio Switch circuit board, labeled S1, S2 and S3. These switches allow various grounding schemes to be implemented and will ultimately be set according to empirically established requirements of a particular installation. S1 and S2 provide a means of isolating the shield ground at the XLR connection to the Audio Switch Card. When these switches are open, the coaxial shield is NOT connected to circuit ground. This allows for connection of the shield at one end of the cable only. When open, “S3” switches the cable connector housing of the outputs away from chassis ground. The requirement for the setting of these 3 switches may vary from one system to the next and is to be determined empirically. The card leaves the factory with all 3 switches in the closed position. To open any of the three switches, move the slider away from the connector panel.

Figure 42.

Device Control Cabling

Figure 43, Figure 44, and Figure 45 illustrate the simplified control signal flow of a standard, partial, and fully redundant Ignite system.

Figure 43. Simplified Control Block Diagram - Standard Ignite System

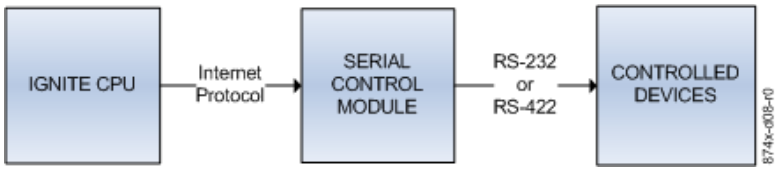


Figure 44. Simplified Control Block Diagram - Partial Redundant Ignite System

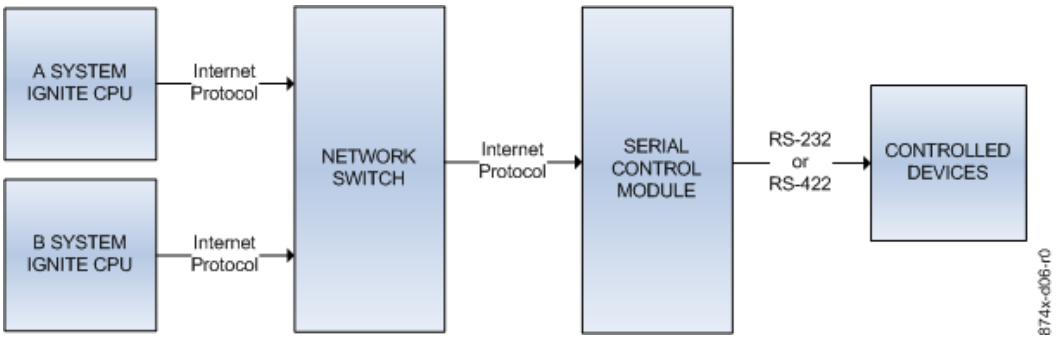
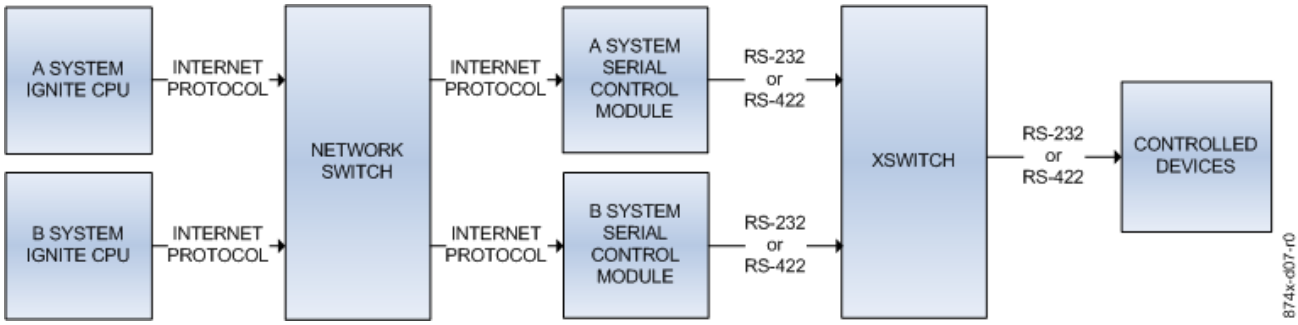


Figure 45. Simplified Control Block Diagram - Full Redundant Ignite System



Use the Control Devices worksheets and the configuration specific control interconnect drawings listed below, to complete all control connections.

WARNING Ensure all devices are powered off prior to connecting cables or wiring.

- Single and Partial Redundant system (Figure 46 on page 69)
- 1-2 M/E full redundant system (Figure 47 on page 69)
- 3-4 M/E full redundant system (Figure 48 on page 70)

Note Refer to *Serial Control Module Cabling* on page 71 and *XSWITCH Control Cabling* on page 72 for control cabling specifics.

Figure 46. Single and Partial Redundant Ignite System - Control Interconnect Diagram

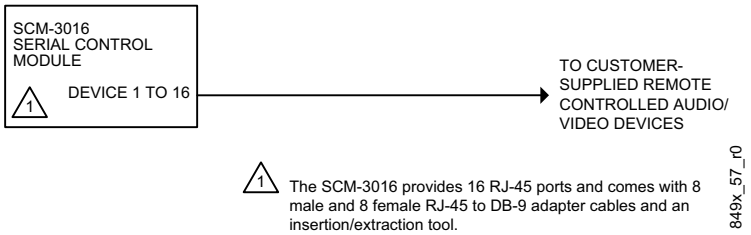


Figure 47. Full Redundant 1-2 M/E Ignite System - Control Interconnect Diagram

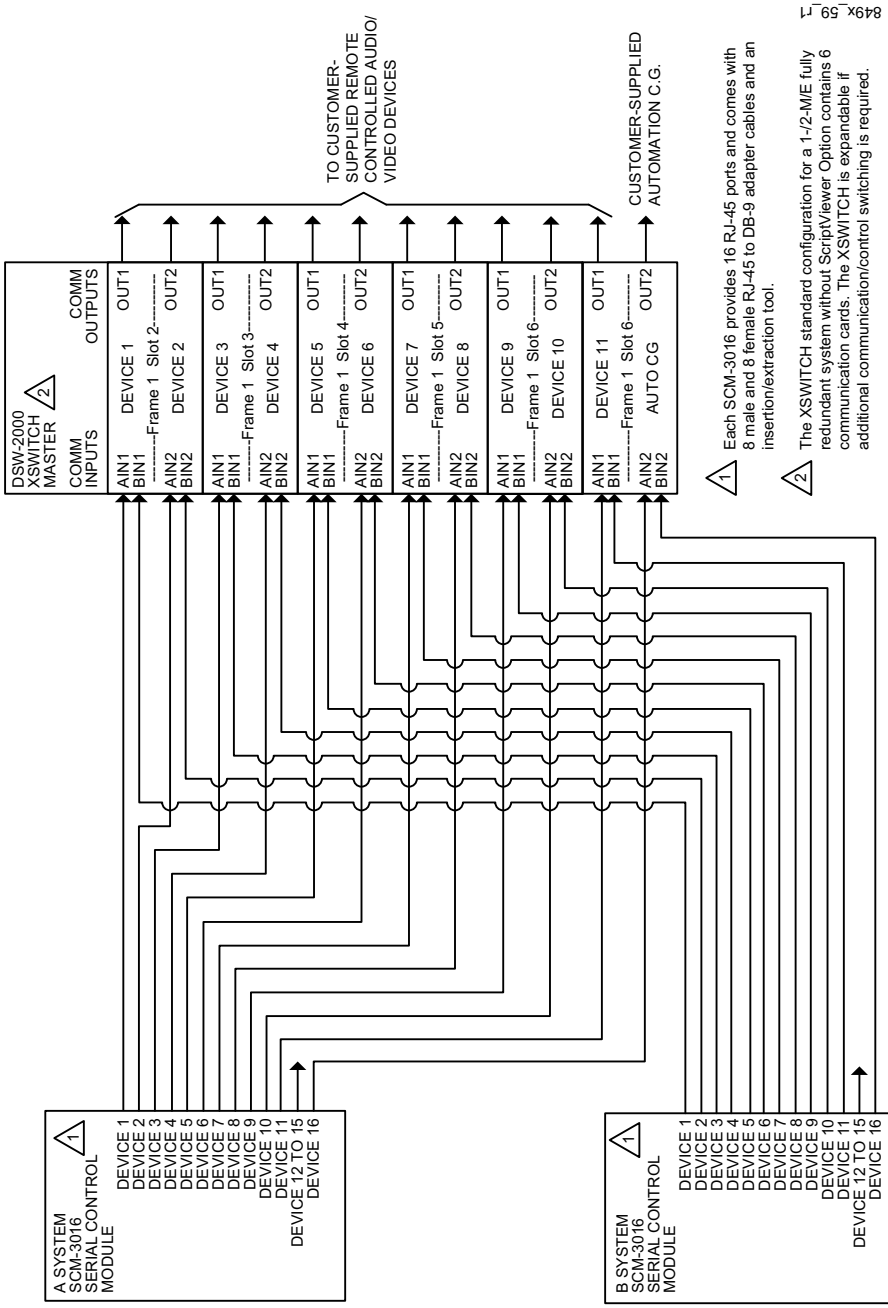
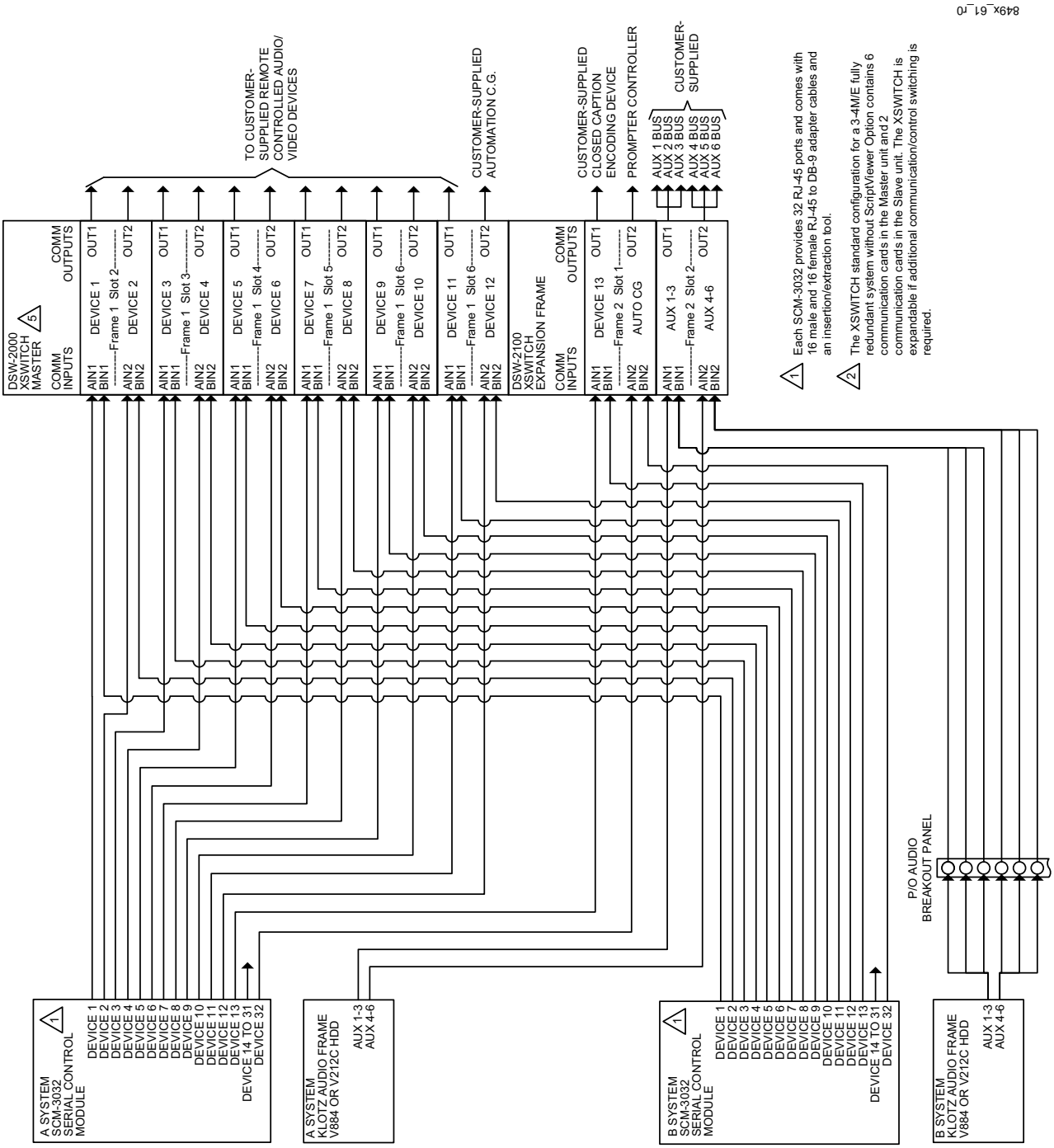


Figure 48. Full Redundant 3-4 M/E Ignite System - Control Interconnect Diagram



Serial Control Module Cabling

The SCM-3016 (Figure 49) has16 RJ45 serial control ports, and is supplied with 8 female and 8 male RJ45 to DB9 adapters. It is also supplied with an insertion/extraction tool to facilitate wiring to serial devices. Refer to Figure 50 for both standard and Digicart serial connector pinouts.

Figure 49. Serial Control Module - SCM-3016

Note Always use twisted-pair wiring for Tx and Rx signal lines.

Note For help with connector pinouts or cabling for a particular serial device, refer to the hardware manufacturer's installation documentation or contact your Grass Valley Service Engineer (refer to *Contacting Grass Valley on page 4*)

Figure 50. Standard RS-422 Pinout

XSWITCH Control Cabling

Each Communication Switch Card can switch two communication channels. Each channel output can be switched between two inputs. In a typical application, one communication port from Ignite A connects to the first input of the first switching channel. One communication port from Ignite B connects to the second input of the first switching channel. The output of the first switching channel connects to the communication port of any serial-controllable device, such as a VTR or character generator. The second switching channel connects in the same manner, to a second communication port from each of the two Ignite systems and to the communication port of a second peripheral device. These connections are all made using standard digital communication cables terminated with 9-pin, sub-D connectors. The Communication Switch Card input connectors are socket type; output connectors are pin type. These same directions should be followed for utilizing each of the six Communication Switch Cards in the Master Module. Refer to Table 4 on page 72 and Figure 51 on page 73 for more information.

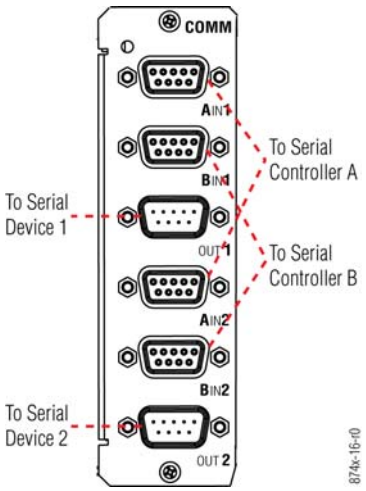
Note The actual signal switching mechanism employed is passive and can therefore accommodate all typical communication signaling methods, including RS232, RS485, RS422.

Note Verify that the communication switch card inputs are connected to the same control ports of each Ignite control module. For example, if the VTR is connected to control port 1 on Ignite system A, the same VTR should be connected to control port 1 on Ignite system B.

Table 4. Communication Connections

Connect to XSWITCH Comm Switch Card	Connect to Ignite System	Connect to Serial-controlled Device
A IN 1	Any Control Port (1-32) on Ignite system A	
B IN 1	Any Control Port (1-32) on Ignite system B	
OUT 1		Communication Port
A IN 2	Any Control Port (1-32) on Ignite system A	
B IN 2	Any Control Port (1-32) on Ignite system B	
OUT 2		Communication Port

Figure 51. Communication and Switch Card Connections



Note Ignite computer connections are USB. To eliminate the need for USB to PS2 converters, KVM extenders that go between the servers and the XSWITCH are recommended.

GPI/GPO Cabling

WARNING Ensure all devices are powered off prior to connecting cables or wiring.

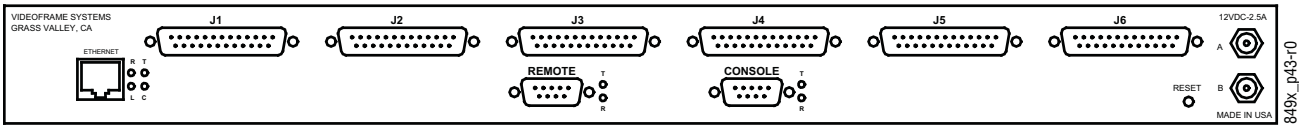
The Tally Expander provides 64 GPO relays to control external devices. The GPOs are fired by logic settings (for camera tallies, on-air lights, speaker mutes, etc.) or they can be fired from the timeline to trigger other devices not controlled via serial protocol. In addition, there are 32 GPI relays to control the timeline.

Talley Expander Rear Panel Connectors J1 - J6

The rear panel of the Tally Expander is shown in Figure 52. J1, J2, J4, and J5 are GPO connectors. J3 and J6 are GPI connectors.

Note REMOTE and CONSOLE connectors are not used in Ignite systems.

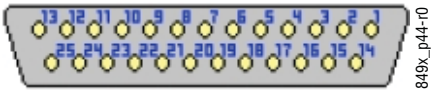
Figure 52. Tally Expander Rear Panel



GPI/GPO Pinouts

Connectors J1 through J6 are D-Sub 25-pin female connectors (Figure 53).

Figure 53. J1-J6 D-Sub 25-Pin Female Connector



GPI (Tally) and GPO pinouts for J1 through J6 are listed in Table 5.

Table 5. J1-J6 GPO/GPI Pinouts

J1		J2		J3		J4		J5		J6	
GPO		GPO		GPI		GPO		GPO		GPI	
Relay	Pin	Relay	Pin	GPI	Pin	Relay	Pin	Relay	Pin	GPI	Pin
Relay 1	13	Relay 17	13	GPI 1	25	Relay 33	13	Relay 49	13	GPI 17	25
Relay 2	25	Relay 18	25	GPI 2	12	Relay 34	25	Relay 50	25	GPI 18	12
Relay 3	12	Relay 19	12	GPI 3	24	Relay 35	12	Relay 51	12	GPI 19	24
Relay 4	24	Relay 20	24	GPI 4	11	Relay 36	24	Relay 52	24	GPI 20	11
Relay 5	11	Relay 21	11	GPI 5	23	Relay 37	11	Relay 53	11	GPI 21	23
Relay 6	23	Relay 22	23	GPI 6	10	Relay 38	23	Relay 54	23	GPI 22	10
Relay 7	10	Relay 23	10	GPI 7	22	Relay 39	10	Relay 55	10	GPI 23	22
Relay 8	22	Relay 24	22	GPI 8	9	Relay 40	22	Relay 56	22	GPI 24	9
Common Relay 1-8	8, 9, 20, 21	Common Relay 17-24	8, 9, 20, 21	Common GPI 1-8	7, 8, 20, 21	Common Relay 33-40	8, 9, 20, 21	Common Relay 49-56	8, 9, 20, 21	Common GPI 17-24	7, 8, 20, 21
Relay 9	7	Relay 25	7	GPI 9	19	Relay 41	7	Relay 57	7	GPI 25	19
Relay 10	19	Relay 26	19	GPI 10	6	Relay 42	19	Relay 58	19	GPI 26	6
Relay 11	6	Relay 27	6	GPI 11	18	Relay 43	6	Relay 59	6	GPI 27	18
Relay 12	18	Relay 28	18	GPI 12	5	Relay 44	18	Relay 60	18	GPI 28	5
Relay 13	5	Relay 29	5	GPI 13	17	Relay 45	5	Relay 61	5	GPI 29	17
Relay 14	17	Relay 30	17	GPI 14	4	Relay 46	17	Relay 62	17	GPI 30	4
Relay 15	4	Relay 31	4	GPI 15	16	Relay 47	4	Relay 63	4	GPI 31	16
Relay 16	16	Relay 32	16	GPI 16	3	Relay 48	16	Relay 64	16	GPI 32	3
Common Relay 9-16	2, 3, 14, 15	Common Relay 25-32	2, 3, 14, 15	Common GPI 9-16	1, 2, 14, 15	Common Relay 41-48	2, 3, 14, 15	Common Relay 57-64	2, 3, 14, 15	Common GPI 25-32	1, 2, 14, 15

Power

Use only the power supplies and cords provided with the respective equipment.

WARNING For safety, the installer must always provide for a readily accessible and rapid method of disconnecting all power sources.

WARNING All units must be well-grounded.

Appendix A

Standardization

Folders/Directories

Note For all file structures, use standard and consistent techniques and practices.

Organize TMEs very carefully when saving them so they can be found easily and quickly. To do so, it is necessary to:

- Use standard and consistent techniques and practices.
- Create a standardized file management structure (Figure 54).

Note With a standard, it is easy to maintain control of existing files and to enable better back-up procedures.

Figure 54. Sample File Structures.

1. Create a folder at the root level of the C: drive and name it with the station identifier; e.g., Figure 54.

2. Under the station identifier folder, create sub-folders (Figure 54) for Standard-Practices, Station-Macros, Station-TMEs, and the IQ option; e.g., C:\ABCD\Station-TMEs\Graphics.
   - The IQ sub-folder
     C:\(station identifier)\IQ
     should contain all IQTs and TMXs. This IQ folder should have separate sub-folders for each type; e.g.:
     - C:\(station identifier)\IQ\IQTs
     - C:\(station identifier)\IQ\TMXs
   - The Station-Macros sub-folder
     C:\(station identifier)\Station-Macros
     should contain all macros for all shows and directors.
   - The Station-TMEs sub-folder
     C:\(station call letters)\Station-TMEs
     should contain all TMEs. This TME folder should have separate sub-folders for each TME type; e.g.:
     - C:\(station identifier)\TMEs\Cameras
     - C:\(station identifier)\TMEs\Graphics
     - C:\(station identifier)\TMEs\Live-Elements
     - C:\(station identifier)\TMEs\Miscellaneous
     - C:\(station identifier)\TMEs\Taped-Elements
   - The Standard-Practices sub-folder
     C:\(station call letters)\Standard-Practices
     should contain all the standard naming, abbreviations, colors, and file structure techniques and practices used. This file should be kept current.

Note Typically, for ease of use and access, the Standards file(s) is a text file created and maintained with Microsoft® Notepad.

Abbreviations and Names

TME Standards

TME Abbreviations

Note For all abbreviations, use standard and consistent techniques and practices. For quick and easy reference, create and maintain a site specific list of standard abbreviations text file at C:\(station call letters)\Standard_Practices\TME-Abbreviations.txt.

The most commonly used Ignite TME abbreviations are listed in Table 6 on page 79 and Table 7 on page 80

Note The following list is not all inclusive but rather a starting point and guideline for establishing site relative abbreviations.

Table 6. TME Abbreviation Examples

Abbreviation	Definition
C	Camera
CG	Character Generator
CK	Chroma Key
DB	Double Box
FS REM RTR	FrameSync Remote Router
FUL	Full Screen
LP	Load Prompter
M	Mic
MON	Monitor
NR	Newsroom
OTS	Over The Shoulder
RAM	RAM Recorder
SOT	Any Video with sound full
SS	Still Store
SVO	SOT VO or NATS Pause
SX	Sports
T	Talent
TB	Triple Box
TZ	Teases
V	For Video sources (tapes or servers)
VO	Anything with NAT sound
WX	Weather

Using the standard abbreviations in Table 6 on page 79 and adding a sequential number to identify each instance of that item, the site abbreviations might resemble those in Table 7 on page 80.

Note This following list is not all inclusive but rather a starting point and guideline for establishing site relative abbreviations.:

Table 7. Site Specific TME Abbreviation Examples

Site Abbreviation	Definition
C1	Camera 1
C2	Camera 2
C3	Camera 3
CG1	Character Generator Channel 1
CG2	Character Generator 2
M1	Mic 1
M2	Mic 2
M3	Mic 3
T1	Talent 1
T2	Talent 2
T3	Talent 3
V1	Video Source 1
V2	Video Source 2
T4	Talent 4
T5	Talent 5
T6	Talent 6

Note For all names, use standard and consistent techniques and practices.

TME Names

Note For all names, use standard and consistent techniques and practices. For quick and easy reference, create and maintain a site specific list of standard TME names at C:\(station call letters)\Standard_Practices\TME-Names.txt.

Typically, the most common naming conventions use the standard abbreviations and answers to the four questions below.

Table 8. Common TME Naming Convention Examples

Question	Sample Answer
What is the transition?	Dissolve
What Video is involved?	Camera 1
What Audio is included?	Talent 1
What CG/SS elements that might be needed?	CG2 keyed

For example, based upon the standard site abbreviations and the answers above, the standard naming would be **DC1T1CG2**; i.e., Dissolve, Camera One, Talent One, With Character Generator Channel 2 keyed on top.

TME Effect Names

Note For quick and easy reference, create and maintain a site specific list of standard effects naming at C:\(station call letters)\Standard_Practices\TME-EffectNames.txt.

Typically, the most common effect naming uses the standard abbreviations and answers to the three questions below:

Question	Sample Answer
What is the effect type? (Cut, Wipe, Chroma Key, Double Box, etc.)	DB
What is the M/E? bank (ME1, ME2, ME3, ME4)	ME1
What is the keyer? (Key 1, Key 2, Key 3, Key 4))	K1K2

For example, based upon the standard site abbreviations and the answers above, the standard effect name would be **DBME1K1K2**; i.e., The effect is a **Chroma Key**, on **M/E 1**, and the keyer(s) is **Key 1** and **Key 2**.

IQT Standards

IQ Template Abbreviations

Note For all IQ Template abbreviations, use standard and consistent techniques and practices. For quick and easy reference, create and maintain a site specific list of standard abbreviations text file at C:\(station call letters)\Standard_Practices\IQ-TemplateAbbreviations.txt.

The most commonly used Ignite IQ Template abbreviations are listed in Table 9 on page 82. Guidelines for these abbreviations are:

- The number of characters should be limited to 3
- Per station, all IQ templates should have the same number of characters

Note The following list is not all inclusive but rather a starting point and guideline for establishing site relative abbreviations. Based on the guidelines provided in *IQ Template Abbreviations* on page 81, station sites can add/delete as necessary to meet their individual production needs.

Table 9. IQ Template Abbreviation Examples

Abbreviation	Definition
AUX	Auxiliary
BOX	Double Box, Triple Box, Quad Box, Split Screen, etc.
CAM	Camera
CKY	Chroma Key, Weather, etc.
DIG	DigiCart®
DPM	Wipe, Page Turn, Slab, etc.
GFX	Graphics Device (CG, SS)
MDK	Minidisk
MIC	Microphone
MON	Monitor
OTS	Camera with OTS, Camera with Key Graphic
RAM	RAM Recorder
REM	Remote or FrameSync
SVR	Video Server
TAL	Talent
VTR	Video Tape Recorder/Video Cassette

IQT Parameter Names

Note For all abbreviations and names, use standard and consistent techniques and practices. For quick and easy reference, create and maintain a site specific list of standard abbreviations text file at C:\(station call letters)\Standard_Practices\IQ-ParamNameAbbreviations.txt.

The most commonly used Ignite IQ Parameter Name abbreviations are listed in Table 10 on page 82. Guidelines for these abbreviations are:

- The number of characters should be limited to 1
- Per station, all IQ parameter names should have the same number of characters

Note The following list is not all inclusive but rather a starting point and guideline for establishing site relative abbreviations. Based on these guidelines, station sites can add/delete as necessary to meet their individual production needs.

Table 10. IQ Parameter Name Abbreviations

Abbreviation	Definition
C	Camera
E	Switcher and DPM effects

Table 10. IQ Parameter Name Abbreviations

Abbreviation	Definition
G	Graphics
M	Microphone
P	Camera Presets

IQT Value Abbreviations

Note For all abbreviations, use standard and consistent techniques and practices. For quick and easy reference, create and maintain a site specific list of standard abbreviations text file at C:\(station call letters)\Standard_Practices\IQ-ValueAbbreviations.txt.

The most commonly used Ignite IQ Value abbreviations are listed in Table 11 on page 83. Per station, all IQ value abbreviations should be consistent.

Note The following list is not all inclusive but rather a starting point and guideline for establishing site relative abbreviations.

Table 11. IQ Value Abbreviations

Parameter Name	Value
C	1–16 (maximum value range)
E	C = Cut W = Wipe F = Fade CK1, CK2, CK3, CK4 = Cut Key 1–4 FK1, FK@, FK3, FK4 = Fade Key 1–4 WK1, WK@, WK3, WK4 = Wipe Key 1–4 etc.
G	1–4 (or more based on the number of graphic device channels)
M	1–99999999 (maximum value range
P	1–125 per camera

IQT Effect Names

Note For quick and easy reference, create and maintain a site specific list of standard effects naming at C:\(station call letters)\Standard_Practices\IQ-EffectNaming.txt.

Typically, the most common effect naming uses the standard abbreviations and answers to the three questions below:

Table 12.

Question	Sample Answer
What is the effect type? (Cut, Wipe, Chroma Key, Double Box, etc.)	DB

Table 12.

What is the M/E? bank (ME1, ME2, ME3, ME4)	ME1
What is the keyer? (Key 1, Key 2, Key 3, Key 4))	K1K2

For example, based upon the standard site abbreviations and the answers above, the standard effect name would be **DBME1K1K2**; i.e., The effect is a **Double Box**, on **M/E 1**, and the keyers are **Key 1** and **Key 2**.

Color Relationships

Note For all colors, use standard and consistent techniques and practices. For quick and easy reference, create and maintain a site specific list of standard abbreviations text file at C:\(station call letters)\Standard_Practices\Colors.txt.

The most commonly applied color relationships are:.

	SOT-VO
	Chroma Key
	SS/CG, Graphics Devices
	DPM Effects
	Teases
	Fade to Black
	Music-DigiCart, Minidisk
	Camera-C
	Aux
	VO
	Mics
	Camera-OTS
	Live-Remotes
	SOT
	Boxes
	RAM Recorder

Glossary

A

AES/EBU

The standard for digital audio as defined by the Audio Engineering Society and the European Broadcast Union. The standard specified for professional post production audio, a sample frequency of 48 kHz and a quantizing level of either 16 or 20 bits. Used by most forms of digital audio from CDs to D1—Sony 19mm cassette tape format—the first digital tape format, hence D1.

Aspect

The horizontal and vertical display dimension ratio of a picture; i.e., the width divided by the height (usually expressed as x:y). The aspect ratio of a traditional standard definition (SD) television screen is 4:3, or 1.33:1. High definition (HD) television uses an aspect of 16:9 (5 1/3 to 3), or about 1.78:1.

Auto Transition

A transition having a predefined duration generally initiated by pressing a control panel button.

Automation Section

Consists of a rundown list, event timeline, rundown converter, and LBN buttons.

B

Background Bus

A row of buttons on an M/E used to select background video signals. Typically labeled A and B, with A representing the current output and B representing the next output.

Background Transition

A transition between the background video signals selected on an M/E.

Background Video

Video that forms a background scene into which a key may be inserted.

Backing Color

The color in a chroma key scene that will be replaced with another video signal.

Bit Rate

The number of bits per second passed from one point to another.

Black

A black video signal generated within the switcher.

Box Wipe

A rectangular wipe pattern. For masking, the system provides a special box wipe pattern generator allowing independent control of the placement of each side of the box.

C

CCD (Charge-Coupled Device)

An image sensor used in digital photography.

CCFL (Cold-Cathode Fluorescent)

CCFL tubes are used for backlighting an LCD display.

CG (Character Generator)

Generates text and sometimes graphics for video titles.

Chroma

The depth or saturation of color. Chroma, hue, and luminance make up the three characteristics of television color.

Chroma Gain (chroma, color, saturation)

The gain of an amplifier as it pertains to the intensity of colors in the active picture.

Chroma Key

A video key effect in which one video signal (insert video) is inserted in place of areas of a particular color in another video signal. Blue and green are the chroma key colors most frequently used.

Clean Feed

A final output of the switcher that does not include downstream key effects or fade to black. Also refer to **Programmable Clean Feed**.

Clip

A threshold level adjustment to which the keying attribute (luminance, chrominance) is compared for generating the internal key control signal. Clip, in conjunction with gain, sets the switching point between the background and the key fill. Also refer to **Gain**.

Clip High, Clip Low

An alternative to Clip and gain keying, providing independent control of the points where the background video and the key fill video are each fully visible.

Complex Wipe Pattern Generator

A wipe pattern generator with additional capabilities (for example, matrix wipes).

Component Video

A video signal that keeps color and luminance information separate. RGB; Y, R Y, B Y; and Y, Cr, Cb are examples of component video.

Composite Video

An encoded video signal that combines color information with luminance information. NTSC, PAL, and D 2 are examples of composite video.

Compositing

Combining two or more video signals together into one output signal.

Control Signal

A signal used to perform an alteration or transition of video signals. For example, control signals are used for keying, masking, and wipe transitions.

Control Surface

The set of controls available to a single operator. These controls may reside on separate but related control panels.

Cross Fade

Refer to **Mix**.

Crosspoint

An electronic switch, usually controlled by a button on the panel, that allows video or audio to pass when the switch is closed.

Cut

An instantaneous switch from one picture to another. Switching circuitry allows cuts only during the vertical interval of the video signal to prevent disruption of the picture.

Cutaway

The act of momentarily "cutting away" (taking a shot of something else) from the main scene to hide jump cuts. This brief shot establishes continuity between two other shots, provides the necessary video pad when editing according to sound bites (portion of videotaped interview in which you see and hear the person talk), and helps to bridge jumps in time and/or location.

Cutback

The act of "cutting back" to the main scene to hide jump cuts. This brief shot establishes continuity between two other shots, provides the necessary video pad when editing according to sound bites (portion of videotaped interview in which you see and hear the person talk), and helps to bridge jumps in time and/or location.

D

DDR (Digital Data Recorder)

Refer to **DVR**.

DE

Digital Effects

Delegate

To assign panel controls to a particular operating function. Some panel controls (buttons, knobs, and joystick) can affect more than one function. The operator can choose an alternative function by delegating the panel controls to that function (typically by pressing or holding down a panel button).

Deserializer

A device that converts serial digital information to parallel.

Dissolve

Refer to **Mix**.

DPM® (Digital Picture Manipulator)

Grass Valley term for digital video effects equipment that performs digital effects such as: compression and transformations; e.g., change its size, shape, angle, flying a picture, turning a page, shattering an image. Also refer to **DVE**.

DPOP (Double Press Open)

Rapidly pressing a control panel button twice to open a related menu. On the system, buttons supporting DPOP are labeled with a graphical indicator.

DVE (Digital Video Effects)

Refers to video equipment that performs digital effects for production such as: compression and transformations; e.g., flying a picture, turning a page, shattering an image. (A registered trademark of Nippon Electric Company.) Also refer to **DPM**.

DVR (Digital Video Recorder)

[Also **DDR** (Digital Data Recorder), **VDR** (Video Disk Recorder)]

A video recorder/playback device that uses a hard disk drive or optical disk drive mechanism. Disk recorders offer nearly instantaneous access to recorded material.

E

Effect

A setup of panel controls specifying the sources involved and any processing applied to those sources. Effects can be learned (saved) and recalled by the E MEM effects memory system.

Effect Transition

Recalling an E MEM effect so that a transition is automatically performed at the start of the recall.

Effects Processor

The portion of a switcher that performs mixes, wipes, and cuts between background and/or effects key video signals.

E-MEM (Effects Memory)

A feature that permits control panel setups (effects) to be stored for later recall.

Engineering Setups

On the system, a collection of configuration settings that establishes an essential baseline for system operation and integrates the system into a facility.

ENPS

Electronic News Production System

Ethernet

A form of high speed data transport between devices on a network.

Event Timeline

A timeline that combines all production events in the form of TMEs that allow one person to direct a live show.

F

Fade To Black

A mix transition to black.

Field

One scan of an interlaced video image. In interlace systems, two fields are required to make a complete picture (video frame) because alternate lines are scanned. Also refer to **Frame**.

Fill Video

A video signal that fills a hole cut in background video by a key control signal.

Fixed Linear Key

A linear key that uses predetermined Clip and gain settings that are not adjustable.

Flip-Flop

A transition where the sources selected on the background buses (for example, preset and program) of an M/E are exchanged at the end of a transition. The original preset bus source becomes selected on the program bus and the original program bus source becomes selected on the preset bus.

FPGA

Field Programmable Gate Array.

Frame

One complete scan of a video image. For interlace video, alternate lines are scanned so a frame containing all the picture information consists of two fields. Also refer to **Field**.

Frame Rate

The number of frames presented per second. For interlace systems the frame rate is half the field presentation rate.

G

Gain

An amplification factor applied to a key control signal by a keyer that determines how much, if any, of the background and key fill video will be mixed together at the key edge areas. Low gain (1, or unity) generally results in a linear key.

GPI (General Purpose Input)
GPO (General Purpose Output)

A digital signal interface, used to activate a device or piece of equipment for limited remote control of a device's functions.

GUI (Graphical User Interface)

A Windows based user interface screen or series of screens allowing the user to point-and-click to select icons rather than typing commands

H

HD

High Definition

House Sync

Sync generated within a facility that is used as a reference for generating and/or timing other signals.

Hue

The location of a color on the color spectrum (i.e. red, yellow, green, blue). Chroma, hue, and luminance make up the three characteristics of television color.

I

iDPM™

Internal Digital Picture Manipulator. Also refer to **DPM**.

iNEWS

Avid Newsroom Computer System (formerly AvStar)

Interlace

A system of video scanning where the odd and even numbered lines of a picture are presented consecutively as two separate interleaved fields. The two fields required to make a complete picture are called a frame.

IP (Internet Protocol)

A data-oriented protocol used for communicating data across a packet-switched internetwork.

J

Jitter

An undesirable variation in the timing of transitions in a digital signal.

Joystick

A hardware positioner with control of multiple axes.

K

Key

An effect where a portion of a background scene is replaced by a new video. Key cut and key fill signals are involved, though in some cases the same signal may be used for both (self key).

Key Cut

In key effects, the key cut signal is used to specify where to cut a hole in the background that will be filled with the key fill video. The key cut signal determines the shape of the key effect.

Key Fill

In key effects, the video signal that fills the hole cut in the background video.

Key Frame (Keyframe)

A complete definition of an effect at a single point in time. Default key frame values can be set for a suite.

Key Invert

Reversing the polarity of a key, such that material formerly keyed out will be keyed in, and vice versa.

Key Mask

[Also **Mask**]

A key mode that allows use of a wipe pattern generator to prevent some undesirable portions of the key cut signal from cutting holes in the background video.

Key Memory

A feature where the last keying and video processing settings for a source are retained and re-imposed when that source is re-selected. Default source memory values can be set for each source on each bus.

Key Priority

The stacking order of multiple keys. The keyed signal with the highest priority appears in front of all the others. Keyed signals appear below higher priority keys and in front of lower priority keys, in a stack. A key priority transition changes the order of the keys without changing the background output.

Keyer

An electronic circuit that creates a control signal to control a video multiplier based on selective information contained in a video signal.

L

LBN (Late Breaking News) Hotkey

A quick way (hotkey) to insert a stored element onto the Event Timeline during a show. TMEs or sequences of multiple TMEs can be stored on a single LBN hotkey.

LCD

Liquid Crystal Display

Learn

To save a panel setup using E-MEM.

LED

Light-Emitting Diode

Linear Key

A key in which the keyer signal is faithfully reproduced in the final key effect. Linear keying preserves soft key edges, and generally has a gain of 1, or unity.

Look Ahead Preview

Video that shows the result of the currently setup next transition.

Looping, Loop-Through

An input that includes two connectors. One connector accepts the input signal, and the other connector is used as an output for connecting the input signal to another piece of equipment. Only the analog reference input is loop through.

Luminance

The brightness of the picture or area of the screen being considered. Chroma, hue, and luminance make up the three characteristics of television color.

The color video picture information contains two components: luminance (brightness and contrast) and chrominance (hue and saturation).

Luminance Key

A key effect in which the portions of the key cut signal that are greater in luminance than the clip level cuts the hole in the background scene. Generally used when the key cut and key fill signals originate from the same source. Luminance key clip and gain is adjustable.

Lux

A standardized model of human brightness perception, it is the SI unit of illuminance and luminous emittance, used as a measure of apparent light intensity hitting or passing through a surface.

M

M/E (Mix/Effects)

Pertaining to the video production circuitry and controls of a switcher involved in compositing video signals where a composite of two or more images can be created.

Mask

Refer to **Key Mask**.

Matte

Internally-generated color video that can be adjusted for luminance, hue, and chroma. Matte can be used to fill areas of keys and borders.

Matte Fill

Using matte video to fill the hole of a key effect.

Matte Generator

A video generator that produces matte signals.

Mix

[Also **Dissolve**, **Cross Fade**]

A transition between two video signals in which one signal fades out as the other signal fades in.

Multiplier

A control circuit in which a control signal is multiplied with one or more input video signals. The resulting video output level varies from full on to full off according to the state of the control signal.

N

NRCS

Newsroom Computer System

NTSC (National Television System Committee)

U.S. government and industry committee that defined the 525-line 60 (59.94) interlaced fields per second analog broadcast TV standard over 50 years ago. (This format is referred to as NTSC.) Of the 525 scan lines, 480 (give or take a few) contain the picture and the rest contain synchronizing information, hold the encoded closed caption text, and provide a time delay to move the electron beam back to the top of the screen. NTSC is used mainly in North America and Japan.

O

Object

An individual a functional area of a system, typically one of several having similar capabilities.

P

PAL (Phase Alternate Line)

A 625 line 50 interlaced fields per second analog broadcast standard used in many parts of the world, primarily Europe, but not the U.S.A. So named because the chroma subsignal phase is different on each successive scan line to reduce picture artifacts.

Pattern Border

A variable width border that occurs at the edges of a wipe pattern.

Pixel

A picture element. A pixel is a digital sample of the luminance and color values of a picture at a single point.

Point of Use

A location in the system where a resource is used. A resource is generally used at different locations at different times. However, with some resources it is possible to use the same resource at different locations at the same time.

Preference

Refer to **Suite Preference** and **User Preference**.

Preset Bus

[Also **B bus**]

A row of source buttons used to select the source that will be output by that M/E during the next background transition. .

Preset Pattern

A key effect in which a wipe pattern that has been preset to a desired size and location is used to cut the key hole. The characteristics of the pattern are set using pattern controls.

Preview

A video signal that is viewed before it is output by the switcher. Also refer to **Look Ahead Preview** and **Switched Preview**.

Production Switcher

Refer to **Switcher**.

Profile

Model name of a Grass Valley Video Disk Recorder.

Program Bus

[Also **A bus**]

A row of source buttons used to select the source for the current output of that M/E. It is the final output from a switcher that is broadcast or recorded. (.)

Programmable Clean Feed

A type of clean feed where different keys can be selected for inclusion or exclusion from the clean feed.

Q

R

RAM Recorder

A device that captures, saves, and outputs a still video image or in some cases motion video clips. On the Kayak system the RAM Recorder option can capture still images, motion video, and animation for playback. The RAM Recorder is also referred to as a Still Store.

Recall

To restore a previous panel setup that has been learned using E-MEM.

Reclocking

The process of clocking the data with a regenerated clock to remove jitter.

Register

A place to store an effect.

Resource

A capability of the system, typically consisting of a set of circuitry.

Rundown Converter

Converts a producer's rundown into a full script with graphics, cues, and prompter scripts.

Rundown List

Illustrates story, page and all events associated with that specific story. The Ignite replica of the show rundown.

S

Saturation

The degree of purity of a color. Adding white to a color reduces its degree of saturation.

SD

Standard Definition.

Self Key

A key effect in which a single video signal serves as both the key cut and key fill.

Sequence

On the system, a feature allowing a series of E MEMs to be recalled in a specific order with a single command.

Serial Digital Interface (SDI)

[Also **Serial Digital Video**]

A standard for digital video transmission over coaxial cable; i.e., passing video data bits in serial form (one bit after another), along a single wire. Standard Definition serial digital video (SMPTE 259M) operates at 270 Mbits/sec (2 x 13.5 MHz x 10 bits).

The SDI standard uses data words that are 8 or 10 bits in length. Signals are uncompressed and are self-synchronizing between the source (transmitter) and destination (receiver). A signal in SDI can contain up to four independent digital audio signals along with the video signal.

Serial Interface

An interface that allows the switcher to be controlled remotely by a computer editor or other serial controller. Data is passed serially between the editor and the switcher at selectable baud (transmission) rates.

Serializer

A device that converts parallel digital information to serial.

Snapshot

An E-MEM with only one keyframe.

S/N (Signal to Noise) Ratio

The ratio of a signal power to the noise power corrupting the signal. In less technical terms, signal-to-noise ratio compares the level of a desired signal to the level of background noise. The higher the ratio, the less obtrusive the background noise is.

Soft Border

A wipe pattern border that is mixed on the edges to give a soft effect.

Soft Edge

A pattern edge between two video signals in which the signals are mixed for a soft effect.

Source

1) An external device providing video. A source may provide only one video signal, or it may provide two signals (key fill and key cut).

2) The video signal(s) from a source, along with the source definition information associated with that source. Also refer to **Source Definition**.

Source Definition

A definition of the video signals making up a source, the device type and name of source, and the default processing and other parameters to be used for that source. The system is based on source selection, rather than choosing crosspoints.

Source Memory

A feature where the last keying and video processing settings for a source are retained and re-imposed when that source is re-selected. Default source memory values can be set for each source on each bus.

SPOP (Single Press Open)

Automatically opening a related menu when a control panel button is pressed. On the system, buttons supporting SPOP are labeled with a graphical indicator.

Stack

Refer to **Key Priority**.

Still Store

A device that captures, saves, and outputs individual video frames, either in analog or digital form, allowing extremely fast access time.

Suite

One or more control surfaces configured for use on the same project.

Suite Preference

A collection of settings used to configure a suite to create a consistent working environment for all involved.

Supers

Information from the show script that is sent to the character generator, and then output (superimposed/placing text over a video signal) to the lower third with the correct story.

Switched Preview

A special output of the system connected to a dedicated monitor. The operator can select and switch various system video signals to that output to preview them.

Switcher

A device that accepts inputs from a variety of video sources and allows the operator to select a particular source to be sent to the switcher's output(s). Also does transitions between sources and special effects (video mixing, wiping, keying, and such).

Sync

1) General term for a synchronizing signal or signal component. Digital systems generally employ an analog external timing reference signal (such as color black or tri-level sync) to synchronize different pieces of equipment. Within the digital signal itself, however, synchronizing information is carried by special digital codes inserted at the beginning and end of each active line.

2) In analog television systems, sync is the portion of the video signal that occurs during blanking and is used to synchronize the operation of cameras, monitors, and other equipment. Horizontal sync occurs within the blanking period in each horizontal scanning line, and vertical sync occurs within the vertical blanking period. A color black signal is often used for synchronizing different pieces of analog equipment.

T

Tally

A lighted indication that the associated video source is in use. Tally lights may be in front of a camera to show that it is the camera being used at that moment, or they may be used to light up the pushbuttons of video switchers.

Terminate, Termination

To complete a circuit by connecting a resistive load to it.

Timecode

Electronic guide track added to film, video or audio material to provide a time reference for editing, synchronization, etc.

TFT

Thin-film Transistor – often called “active matrix” display, this is the brightest, most viewable kind of LCD flat-panel display. It is also more expensive than “passive matrix” screens. In a TFT display, each pixel is actively controlled by one or more transistors.

TME

Refer to **Transition Macro Event**.

Transition

A change from one picture to another. Cut, mix, and wipe are transitions.

Transition Macro™ Event

A group of individual production tasks that are combined to create an automated video production event. A TME is created by dragging and dropping task icons on the timeline, defining the individual task properties, and then saving the resulting TME as an individual event macro.

TTL

Through-the-Lens – term used to describe a type of prompter. A TTL prompter mounts in front of the camera. A glass screen mounted 45° above the prompter reflects the script so that the announcer can read the text while looking at the camera behind the screen.

U

User Preference

A collection of user-available control configuration settings that enables working environment customization.

V

VDR (Video Disk Recorder)

Refer to **DVR**.

Vertical Interval

The portion of the video signal that occurs between the end of one field or frame and the beginning of the next.

Video Fill

A video signal used to fill the hole made by a key cut signal.

Video Mixer

Refer to **Switcher**.

Video Path

The path that video takes through the switcher.

Video Switcher

Refer to **Switcher**.

VTR (Video Tape Recorder)

A video recorder and playback device that records audio and video signals on magnetic tape.

W

Wash Matte

A type of matte that contains two elements rather than a single flat color. For example, a wash matte can have one color that mixes gradually across the screen to another color.

Wipe

A transition between two video signals that occurs in the shape of a selected pattern.

Wipe Pattern Generator

Circuitry that creates patterns that can be used to create wipe transitions, preset patterns, key masks, and matte washes.

Work Buffer

An active area of memory where the current effect parameters are stored, allowing the operator to use and modify the effect without changing the data stored E MEM.

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