



Kayenne XL Package

KAYAK HD DIGITAL PRODUCTION SWITCHER

Installation and Service Manual
Software Version 7.0.3



Affiliate with the N.V. KEMA in The Netherlands



CERTIFICATE

Certificate Number: 510040.001

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Thomson Inc, and it's worldwide Grass Valley division affiliates DBA GRASS VALLEY

Headquarters
400 Providence Mine Rd
Nevada City, CA 95959
United States

15655 SW Greystone Ct.
Beaverton, OR 97006
United States

10 Presidential Way
Suite 300
Woburn, MA 01801
United States

Kapittelweg 10
4827 HG Breda
The Netherlands

7140 Baymeadows Way
Ste 101
Jacksonville, FL 32256
United States

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

Rue du Clos Courtel
CS 31719
35517 Cesson-Sevigné Cedex
France

1 rue de l'Hautil
Z.I. des Boutries BP 150
78702 Conflans-Sainte
Honorine Cedex
France

Technopole Brest-Iroise
Site de la Pointe du Diable
CS 73808
29238 Brest Cedex 3
France

40 Rue de Bray
2 Rue des Landelles
35510 Cesson Sevigné
France

Spinnereistrasse 5
CH-5300 Turgi
Switzerland

Brunnenweg 9
D-64331 Weiterstadt
Germany

Carl-Benz-Strasse 6-8
67105 Schifferstadt
Germany

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.

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H. Pierre Sallé
President
KEMA-Registered Quality

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KEMA-Registered Quality, Inc.
4377 County Line Road
Chalfont, PA 18914
Ph: (215)997-4519
Fax: (215)997-3809

Accredited By:
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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 7805 3884 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 www.grassvalley.com 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.



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 or 530-478-4148, and ask to be connected to the EH&S Department. Additional information concerning the program can be found at: www.thomsongrassvalley.com/environment



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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 are 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

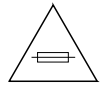
Die folgenden Symbole können sich am Produkt befinden:



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 Installationsanweisungen 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

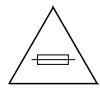
Les symboles suivants peut être apposés sur le produit:



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.

Introduction

General

Using Open Sources Software

This product contains free software code released under the GNU General Public License (GPL) Version 2 (available at <http://www.gnu.org/licenses/gpl.txt>) and free software released under the GNU Lesser General Public License (LGPL) Version 2.1 (available at <http://www.gnu.org/licenses/lgpl.txt>) and free software released under the GNU Lesser General Public License (LGPL) Version 3 (available at <http://www.gnu.org/licenses/lgpl.txt>). Anyone may obtain from us a copy of the source code for those free software packages. The full texts of the GPLv2, LGPLv2.1, LGPLv3 and GPLv3 are included on this documentation/CD-ROM. The source packages for these programs are available for download at <http://www.thomson.net/open-software>. Those individuals without Internet access may request that a CD-ROM or DVD containing the source code be sent to them by mail. To reimburse the expenses incurred by creation, handling and postage, we will charge a €12 fee. To request a CD ROM or DVD of the source code, send an e-mail to our Open Software Representative jean-pierre.fourche@thomson.net or mail the request, with payment, to Jean-Pierre Fourche, Open Software Representative, Thomson, 46 Quai Alphonse Le Gallo 92100 Boulogne-Billancourt, France.”

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Overview

The Grass Valley Kayak HD family of multi-format digital production switchers provides powerful, ground-breaking features designed to meet the widest range of requirements for live studio, mobile, and post-production applications. Available in configurations ranging from 1-ME to 4.5-MEs, Kayenne XL Packages combine features available in the Grass Valley XtenDD, Kalypso and Kayak HD switchers along with additional capabilities previously unavailable in any video production switcher by any manufacturer.

Kayenne XL Package

A wide variety of possible system configurations exist to meet different customer requirements.

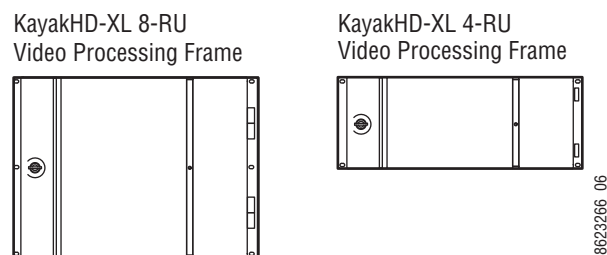
The package contains:

- Kayenne XL Control Panel
- Kayak HD Mainframe
- Software Licenses

Kayak HD Video Processor Frames

The Kayak HD Video Processor Frame comes in two sizes. The 8-RU full size frame supports up to 4.5 ME systems. The 4-RU compact frame supports 1-ME through 2.5-ME Kayak HD systems ([Figure 1](#)). The number of boards present in the Kayak HD frame determines the number of MEs available, as well as the number of video inputs, outputs, GPIs and Tally.

Figure 1. Kayak HD Video Processor Frames



Kayenne XL Control Surfaces

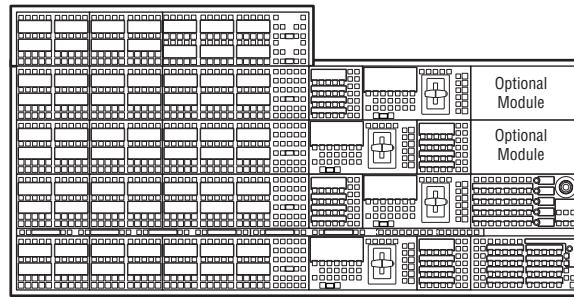
A Kayenne XL control surface consists of a Control Panel, a Menu Panel with an included articulated support arm, a Panel Control Unit frame, and optional Satellite panels. This control surface has an innovative modular

design, permitting customized operator control layouts. Representative Kayenne XL control surfaces are shown in the following illustrations.

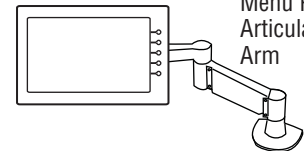
Control panel options are available that do not include the menu panel or the PCU for adding a panel using one PCU. Up to 8 stripes are supported on one PCU.

Figure 2. Kayenne XL 4-ME 35 Control Surface

4-ME 35 Control Panel



Menu Panel



Menu Panel
Articulated
Arm

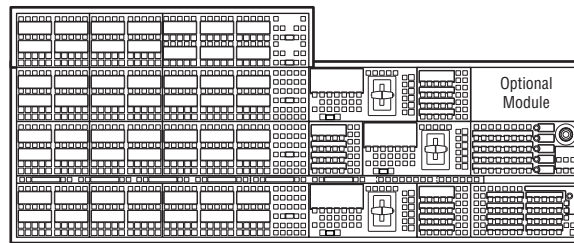
Panel Control Unit (PCU)



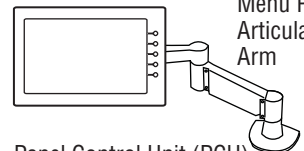
8623266_01

Figure 3. Kayenne XL 3-ME 35 Control Surface

3-ME 35 Control Panel



Menu Panel



Menu Panel
Articulated
Arm

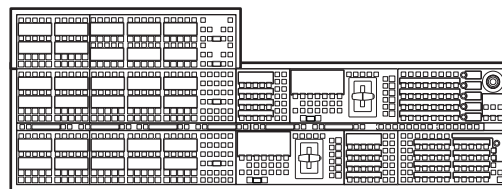
Panel Control Unit (PCU)



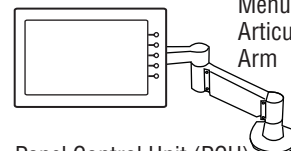
8623266_02

Figure 4. Kayenne XL 2-ME 25 Control Surface

2-ME 25 Control Panel

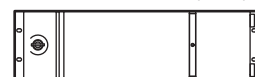


Menu Panel



Menu Panel
Articulated
Arm

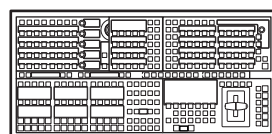
Panel Control Unit (PCU)



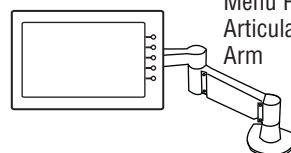
8623266_03

Figure 5. Kayenne XL 1-ME 15 Control Surface

1-ME 15 Control Panel

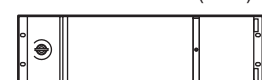


Menu Panel



Menu Panel
Articulated
Arm

Panel Control Unit (PCU)

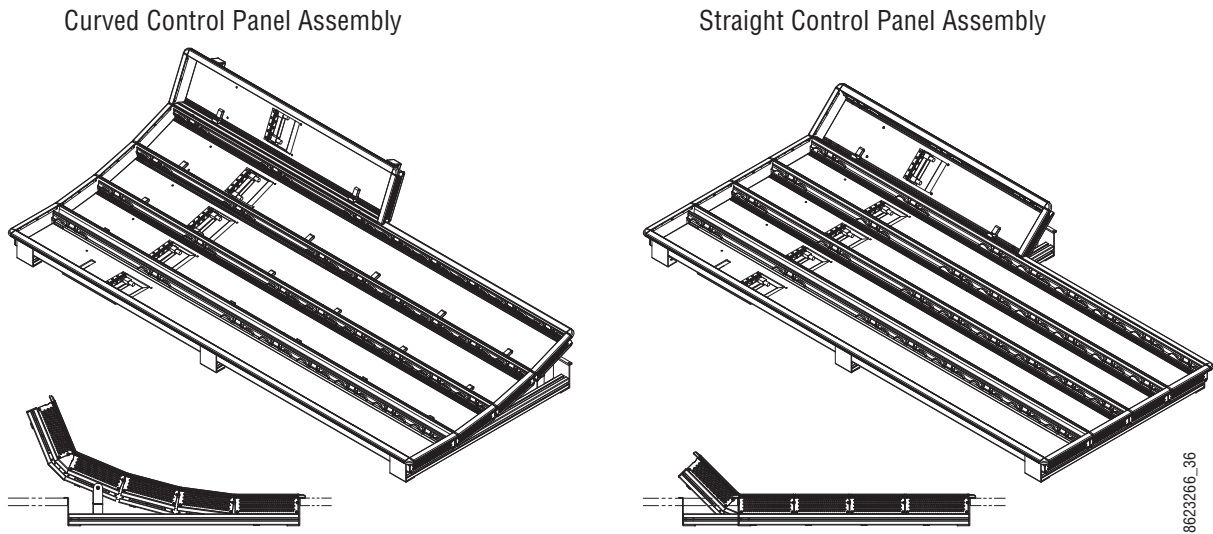


8623266_04

Flat or Curved Control Panel Orientation

The main Kayenne XL Control Panel supports different physical orientations. Besides a conventional flat surface, a special support design permits a curved working surface, where the MEs progressively tilt for improved ergonomics (Figure 6).

Figure 6. Flat and Curved Control Surface Installations



Control Panel Stripes

The main Kayenne XL Control Panel is organized into from two to five stripes. Each stripe consists of a tray that accepts drop-in modules. An ME stripe has a module for Source Selection, Transition, and individual EMEM control. Additional Master EMEM, Machine Control, Multi-Function, and Local Aux modules are dropped in to complete the control surface functionality.

Control Panel Modules

The following Kayenne XL Control Panel and Satellite modules are available:

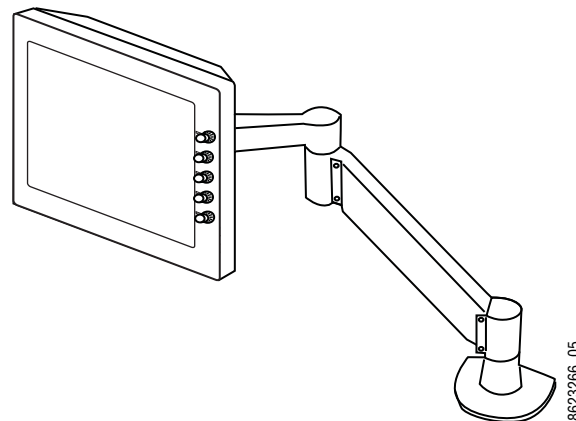
- KAYN-PNL-TRM - Transition Module, used to control ME transitions and keying.
- KAYN-PNL-LEM - Local EMEM Module, used to control EMEM effects on that ME stripe.
- KAYN-PNL-MEM - Master EMEM Module, used for delegated EMEM control of any or all system MEs.
- KAYN-PNL-MFM - Multi-Function Module, used for delegated control of various functions
- KAYN-PNL-DCM - Device Control Module, used for internal and external device control.

- KAYN-PNL-SRC-35, 25, 15 - Source Module, available in 35, 25, and 15 button widths, used for ME source selection.
- KAYN-PNL-BAR-35, 25, 15 - Panel Bar, available in three sizes to match various control panel widths, used for device control and macros.
- KAYN-PNL-AUX-35, 25, 15 - Local Aux Module, available in 35, 25, and 15 button widths, used for Aux Bus control.

Touch Screen Menu Panel and PC Menu Control

Each Kayenne XL control surface includes a Menu Panel that features a wide format touch screen display. An articulated arm is also included, offering a wide variety of installation options (Figure 7). The Menu panel is equipped with standard VESA-75 threads, compatible with this and many other mounting devices.

Figure 7. Menu Panel with Articulated Arm



An additional touch screen Kayenne XL Menu Panel is available as an option. It is also possible to run the Kayenne XL menu application on a standard PC, permitting mouse and keyboard control from a laptop, or remote control from any location on the network.

Panel Control Unit

The Kayenne XL Control Panel and Touch Screen Menu panel(s) are powered with a separate rack mount Panel Control Unit (PCU). Control surface processing and communications are handled by this unit, which permits the hot-swapping of individual control surface components, if necessary, while the rest of the system remains operational. This also allows for the elimination of cooling fans in the Control Panel and Touch Screen Menu Panel, making for quiet system operation.

Satellite Panels

Two satellite panel options are available for mounting control panel modules outside of the main control panel. One option supports one module and another options supports two modules. Each consumes one PCU port.

Redundant Power Supplies

Optional built-in redundant power supplies are available for the Kayak HD Frame 4-RU and 8-RU Frames. A second power supply is included, standard, in the Kayenne XL Panel Control Unit.

Supported Control Protocols

- VTRs (BVW-75)
- AMP (Advanced Media Protocol). For Profile PVS, XP, K2, M Series, and Turbo DDRs. Available for RS422 Serial or Ethernet.
- Servers (Louth VDCP, Odetics)
- Routers/Routing Control Systems (Trinix™, Venus™, Triton™, and third party routers; Jupiter™ and Encore™ router control systems)
- Control Systems (Grass Valley Andromeda™ and third-party systems)
- Grass Valley Under Monitor Displays (Serial tally for UMD. Requires Grass Valley Andromeda™ system or third-part tally box such as Tally Display Corp. or Image Video.)
- Grass Valley external Remote AUX Panels (CP-300 Series)
- ESAM II for audio-follow-video applications
- Edit controllers (native and Grass Valley Model 100 and 200)

Specifications

Kayenne XL Package

Table 1. Kayenne XL Mechanical Specifications

Component	Depth (Flat)	Width	Height (Flat)	Weight ^a	Rack Units
Control Panels					
4.5ME-35, w/o Aux Panel	84.3 mm (3.32 in.)	1533.7 mm (60.38 in.)	651.3 mm (25.6 in.)		n/a
3.5ME-35, w/o Aux Panel	84.3 mm (3.32 in.)	1533.7 mm (60.38 in.)			n/a
2.5ME-25, w/o Aux Panel	84.3 mm (3.32 in.)	1341.7 mm (52.82 in.)			n/a
1.5ME-15, w/o Aux Panel	84.3 mm (3.32 in.)				n/a
Local Aux Panel-35	84.3 mm (3.32 in.)	813.7 mm			n/a
Local Aux Panel-25	84.3 mm (3.32 in.)	621.7 mm			n/a
Menu Panel	91.7 mm (3.612 in.)	417.85 mm (16.45 in.)	270.10 mm (10.63 in.)		n/a
Panel Control Unit (PCU)	588.52 mm (23.17 in.)	482.60 mm (19 in.)	132.59 mm (5.22 in.)		3
Kayak HD 4-RU Frame	546.10 mm (21.5 in.)	482.60 mm (19 in.)	177.80 mm (7 in.)	17.69 kg (39 lbs)	4
Kayak HD 8-RU Frame	522.73 mm (20.58 in.)	482.60 mm (19 in.)	441.96 mm (17.4 in.)	30.39 kg (67 lbs)	8

^a All weights approximate.

Table 2. Environmental

Storage temperature	-20 to 70 deg C (-4 to 158 deg F)
Operating temperature	0 to 40 deg C (68 to 104 deg F)
Relative humidity	0-95% (non-condensing)
Electromagnetic environment	E2 (according to EN55103-1, -2)

Table 3. Network Connections

Type of connection	10/1000 Base T
Protocol	TCP(UDP)/IP, Auto speed detection. Auto crossover cable configuration.
Cable and connectors	CAT5 UTP, RJ45 connectors;
Max. Cable Length	100m / 300ft
1 Frame and up to 4 PCUs connect without of external hub/switch. Each Frame and PCU has internal Ethernet switch.	

Table 4. PCU Interconnects

Control Panel - PCU Connections	
Cable and connectors	Custom 7 Pin D style
Number of connections	1 for each Control Panel Stripe, Local Aux Panel, and Satellite Panel
Max. Interconnect Cable Length	15m / 50ft (7.5m / 25ft cable length also available)
Touch Screen Menu Panel - PCU Connection	
Cable and connectors	Custom 17 Pin D style
Number of connections	1 for each Touch Screen Menu Panel (2 maximum)
Max. Interconnect Cable Length	15m / 50ft (7.5m / 25ft cable length also available)

Table 5. Power

4-RU Frame	
Line voltage	100V-240V AC +/-10% autorange, power factor corrected. Automatic line-voltage sensing for 120V and 240V sources.
Line frequency	50/60Hz +/- 5%
Power consumption	max. 400W
Leakage current	< 2.5 mA
8-RU Frame	
Line voltage	100V-240V AC +/-10% autorange, power factor corrected. Automatic line-voltage sensing for 120V and 240V sources.
Line frequency	50/60Hz +/- 5%
Power consumption	max. 800W
Leakage current	< 2.5 mA
Panel Control Unit (required for Control Panel and Touch Screen Menu Panel Operation)	
Line voltage	100V-240V AC +/-10% autorange, power factor corrected. Automatic line-voltage sensing for 120V and 240V sources.
Line frequency	50/60Hz +/- 5%
Power consumption	max. 400W
Leakage current	< 2.5 mA

Table 6. Serial Digital Video Inputs

Format	ITU-R656, SMPTE 259M, 270Mbit/s. SMPTE 292M, 1.5Gbit/s
Number of Inputs	Frame w/ 1 ME Board: 24
	Frame w/ 2 ME Boards: 48
	Frame w/ 3 ME Boards: 72
	Frame w/ 4 ME Boards: 96
Return loss	> 15 db, 5 MHz to 1.5 GHz
Type of Connector	75 ohm BNC (SMPTE 259M)

Table 6. Serial Digital Video Inputs

Interface	HD Video Formats SMPTE 292M-1998
	SD Video Formats SMPTE 259M-1997
Nominal Amplitude	800mV peak-to-peak terminated
Autophasing range	TBD
Channel Coding	conforms to SMPTE 259M, SMPTE 292M
Ancillary Data	Blanked or passed (user selectable)
Embedded audio	Blanked or passed (user selectable)
EDH	Blanked
Input Impedance	75 ohm
Max cable length	HD Video 100 meters using Belden 1694A type cable
	SD Video 300 meters using Belden 1694A type cable

Table 7. Serial Digital Video Outputs

Format	ITU-R656, SMPTE 259M, 270Mbit/s. SMPTE 292M, 1.5Gbit/s
Number of Outputs	Frame w/ 1 ME Board: 12
	Frame w/ 2 ME Boards: 24
	Frame w/ 3 ME Boards: 36
	Frame w/ 4 ME Boards: 48
Return loss	> 15 db, 5 MHz to 1.5 GHz
Type of Connector	75 ohm BNC (SMPTE 259M)
Interface	HD Video Formats SMPTE 292M-1998
	SD Video Formats SMPTE 259M-1997
Nominal Amplitude	800 mv peak-to-peak across 75 ohm
Rise & Fall Times	400 to 1400picoseconds 75 ohm termination between 20% and 80% amplitude
Jitter	ITU R 601/656
Output Impedance	75 ohm
DC Offset	< 50mV with 75 ohm termination

Table 8. Analog Reference Input

Video Standard	For HD Video: Tri-level Sync, Analog equivalent to the standard being used
	For SD Video: Color Black, Analog equivalent to the standard being used
Return loss	> 40dB, up to 5 MHz
Connectors	2 each BNC loop through for both HD and SD inputs
Impedance	75 ohm external

Table 9. *Kayenne XL Video Standards*

HD Mode		SD Mode	
1080i 29.97/30	SMPTE 274M Table 1-4, 5	525i 59.94	SMPTE 259M
1080i 25	SMPTE 274M Table 1-6	625i 50	SMPTE 259M
1080p 24/23.976	SMPTE 274M Table 1-10, 11		
1080sF 24/23.976	SMPTE 211 Table 1-15, 16		

Control Surfaces

Introduction

A Kayenne XL Control Surface has a modular Control Panel, a Local Aux Panel, a Menu Panel, and a Panel Control Unit (PCU) frame. Additional Touch Screen Menu Panels and Satellite Panels are available as options.

A Control Panel consists of system operation modules, which mount into trays, which are in turn held in place by a control panel support structure. One Control Panel tray filled with modules is called a “stripe”. Various numbers and types of modules and trays can be combined to create a wide variety of control surface functionality.

The Control Panel and Touch Screen Menu Panel’s processing electronics are located in the Panel Control Unit. These devices cannot operate independently. Multi-pin cables carry power and communications to these units.

Kayenne XL Packages ship to the customer as boxed components which are assembled on site. You will need to know what control panel configuration(s) you intend to use at your facility in order to plan your installation effectively.

Control Panel Assembly

Seven basic Control Panel assemblies are considered standard: 4-ME 25 or 35 button, 3-ME 25 or 35, 2-ME 25 or 35, and 1-ME 15. Each assembly name identifies the number of MEs present and the number of source selector buttons in each ME. Kayak HD switchers include an additional half ME option that does not have separate dedicated hardware. The half ME functions are assigned to one of the existing Control Panel MEs.

Two Control Panel Assembly orientations are possible, flat and curved. The curved panel provides improved operator ergonomics, but raises the Control Panel height which could restrict the visibility of the lower portion of a monitor wall. An assembled Control Panel can be operated from a tabletop (the support structure includes rubber feet), or it can be installed into a cutout.

The Local Aux Panel can be connected to the Control Panel support structure at a 45 degree angle, or it can be mounted separately in its own back-splash cutout.

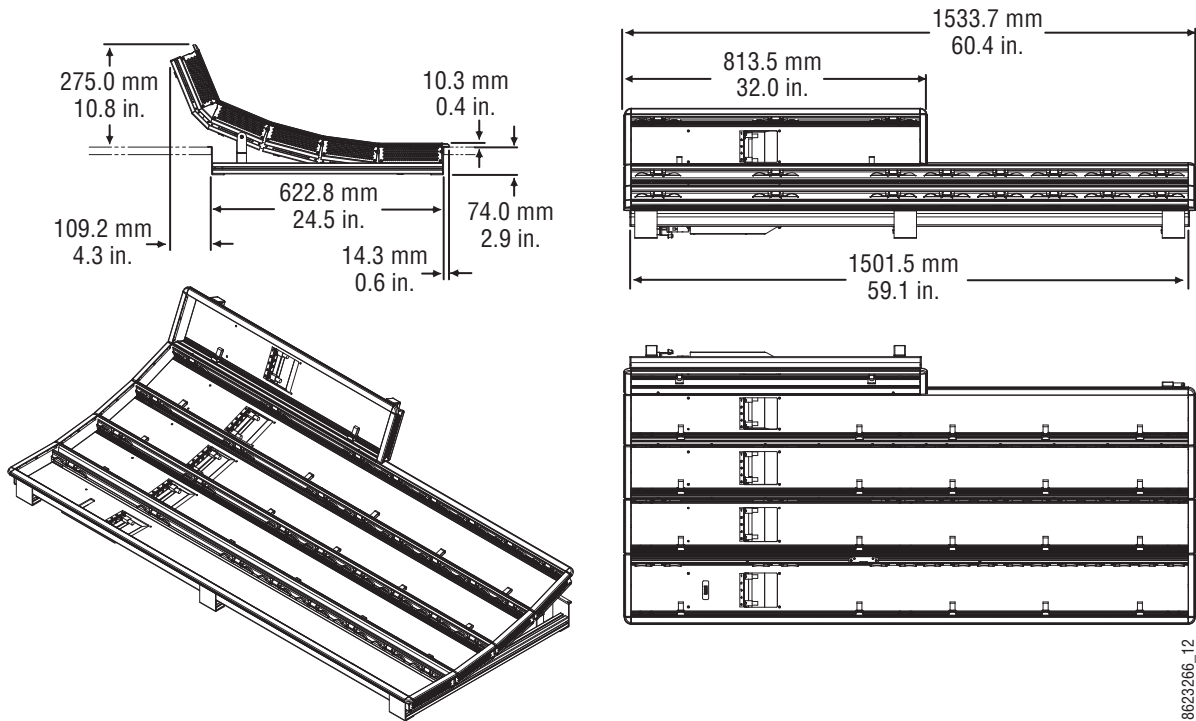
The following diagrams show some standard Control Panel assemblies. Specific information for non-standard configurations is not included in this document.

Control Panel Cooling

The Kayenne XL Control Panel is externally powered and does not have internal cooling fans. The electronics in the panel is convection cooled. If the panel is mounted in a counter-top, do not enclose the lower portion of the cutout. Leave the bottom open to to allow passive air movement.

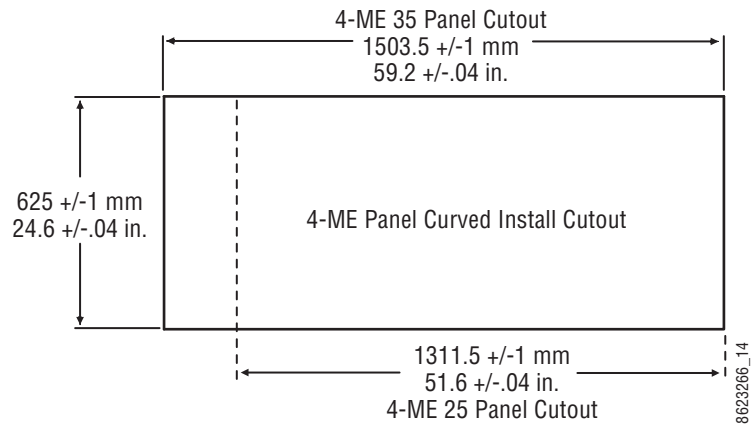
4-ME 35 Control Panel, Curved with Attached Aux

Figure 8. 4-ME 35 Control Panel Dimensions, Curved Installation



Control Panel Cut Out

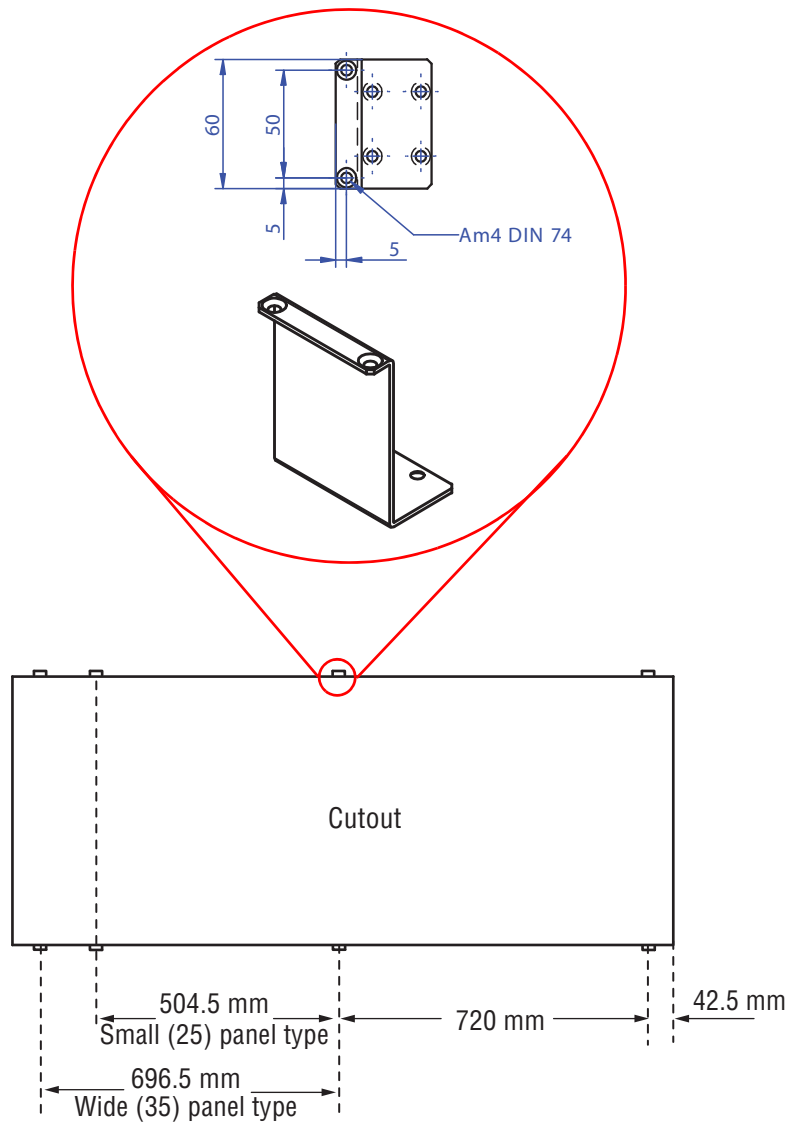
Figure 9. 4-ME Control Panel Cutout Dimensions, Curved Installation



Control Panel Mounting Points

For fastening the control panel in place, please use the six brackets as shown in [Figure 10 on page 36](#). Depending on the material of the available desk the control panel can be fastened with sheet metal screws 3.9 mm or crosshead screws 4 mm

Figure 10. Mounting Detail 4-ME Control Panel



4-ME 35 Control Panel, Flat with Attached Aux

Figure 12. 4-ME 35 Control Panel Dimensions, Flat Installation

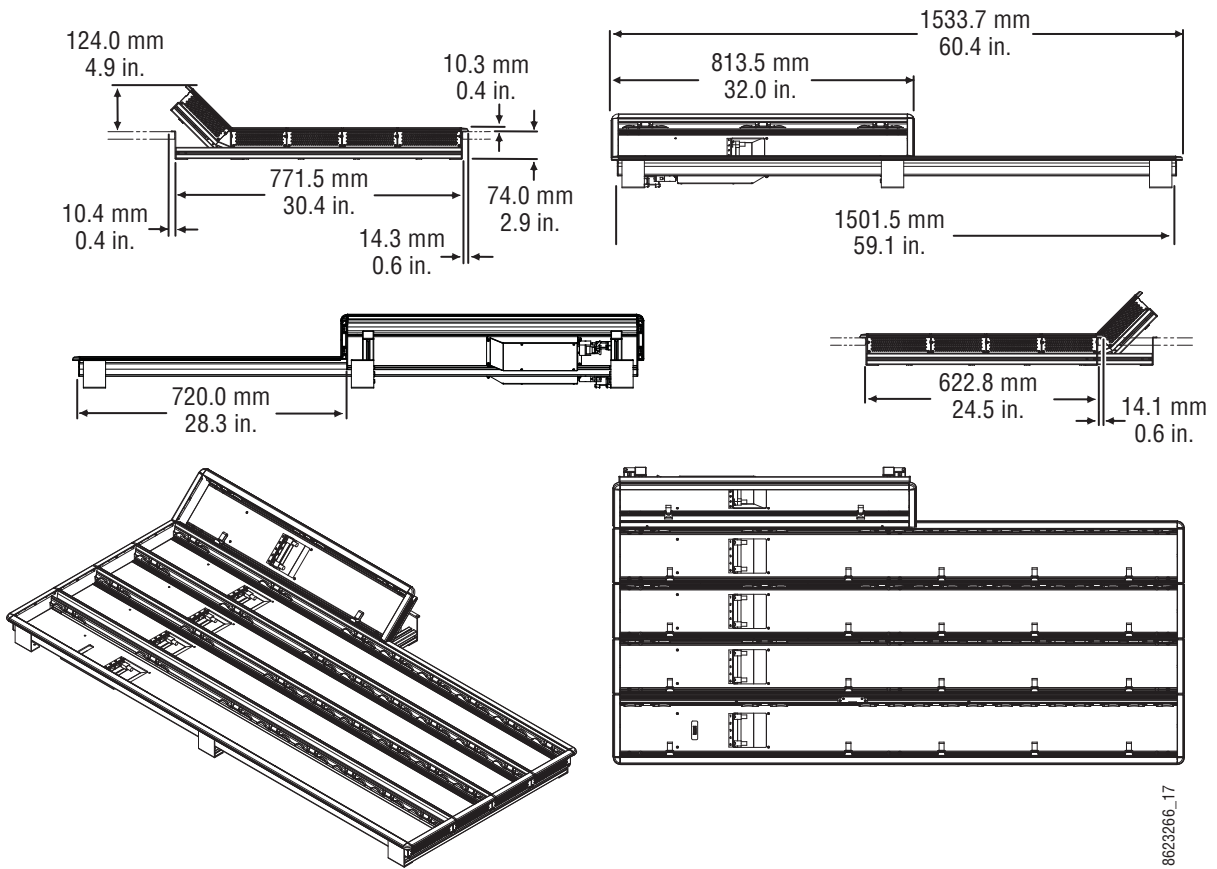


Figure 13. 4-ME Control Panel Cutout Dimensions, Flat Installation

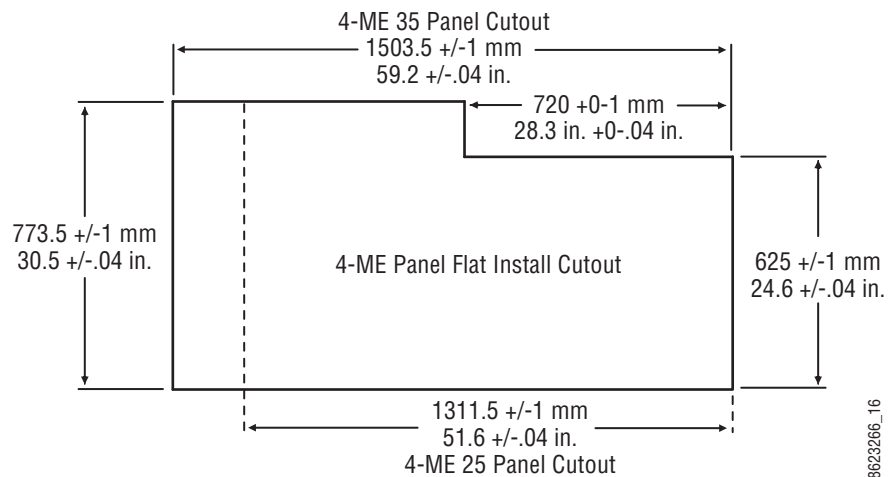
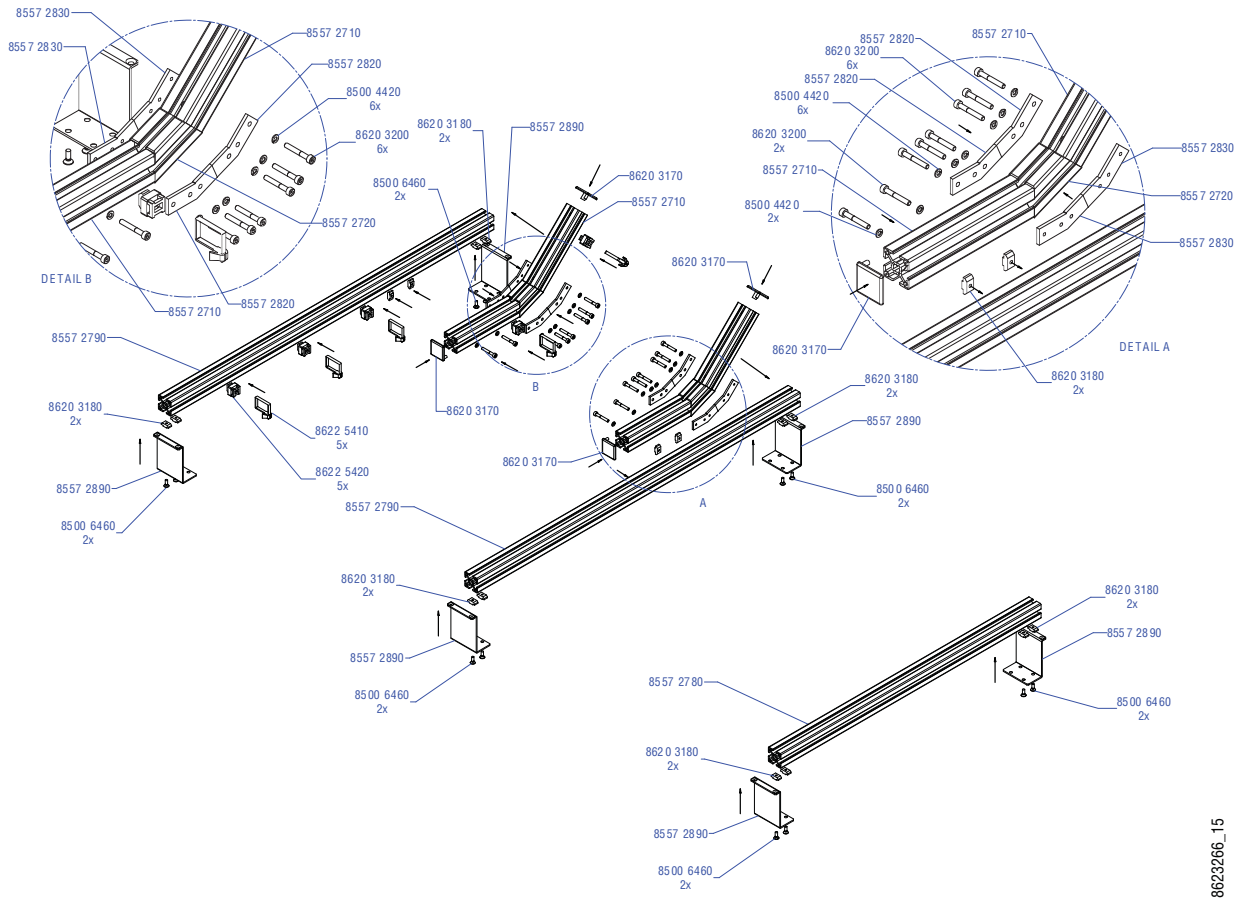


Figure 14. 4-ME Support Structure, Flat Installation

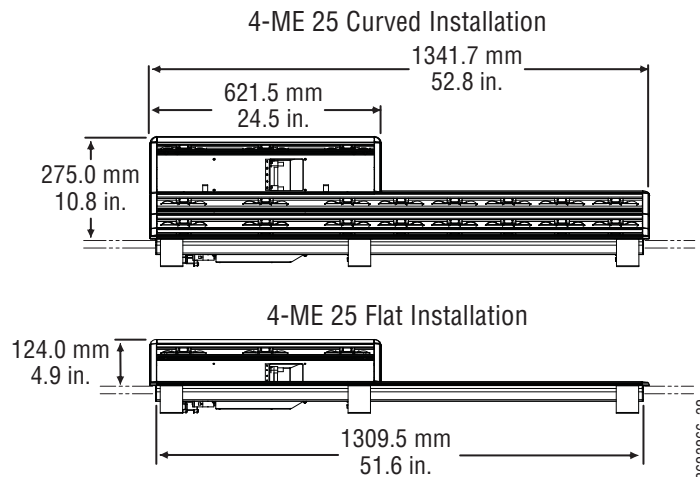


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4-ME 25 Control Panels

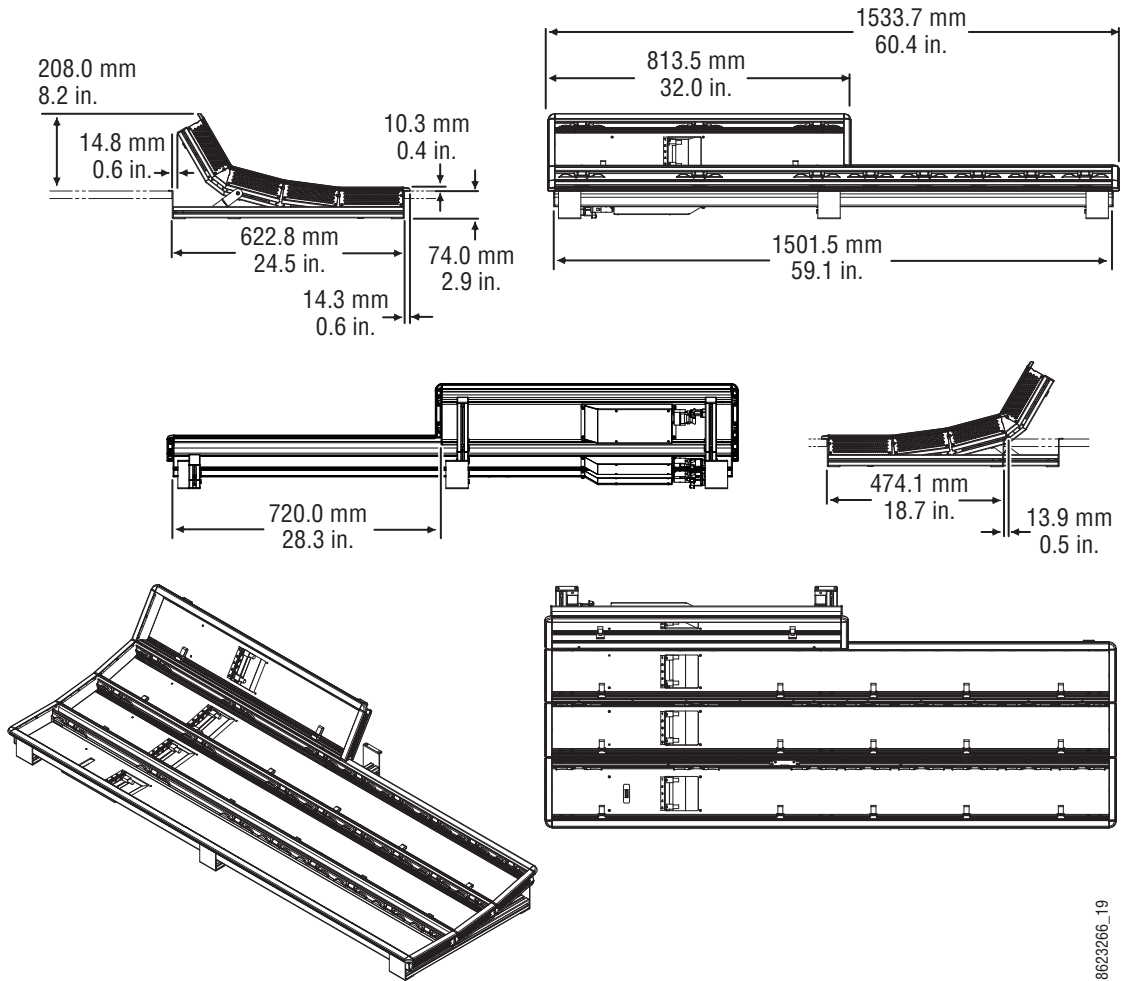
Control panels with 25 source selection buttons are narrower in width, but otherwise have the same dimensions as 35 source button models.

Figure 15. 4-ME 25 Control Panel Dimensions



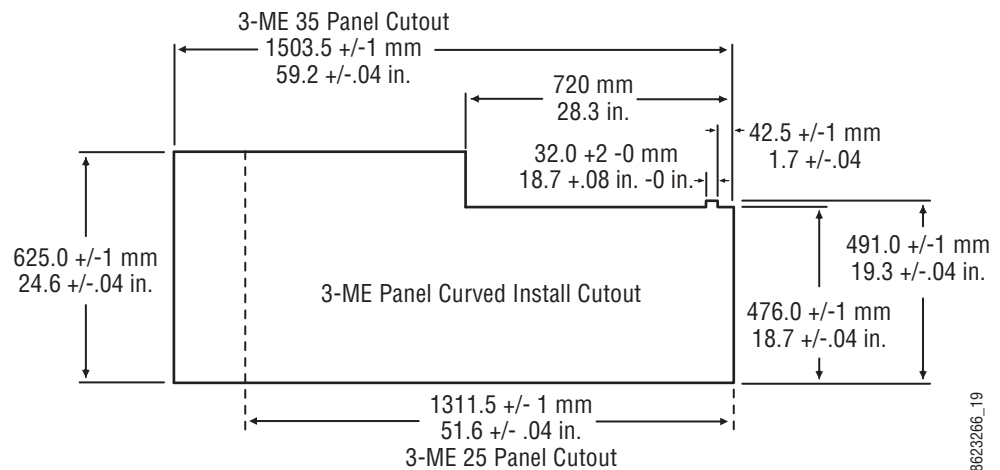
3-ME 35 Control Panel, Curved with Attached Aux

Figure 16. 3-ME 35 Control Panel Dimensions, Curved Installation



8623266_19

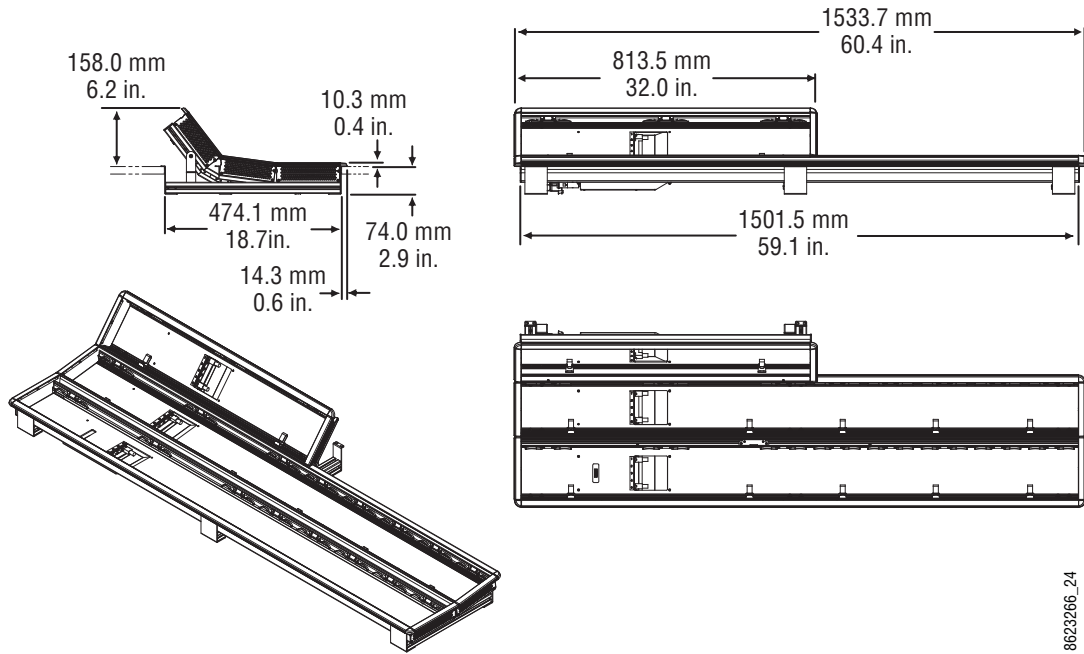
Figure 17. 3-ME Control Panel Cutout Dimensions, Curved Installation



8623266_19

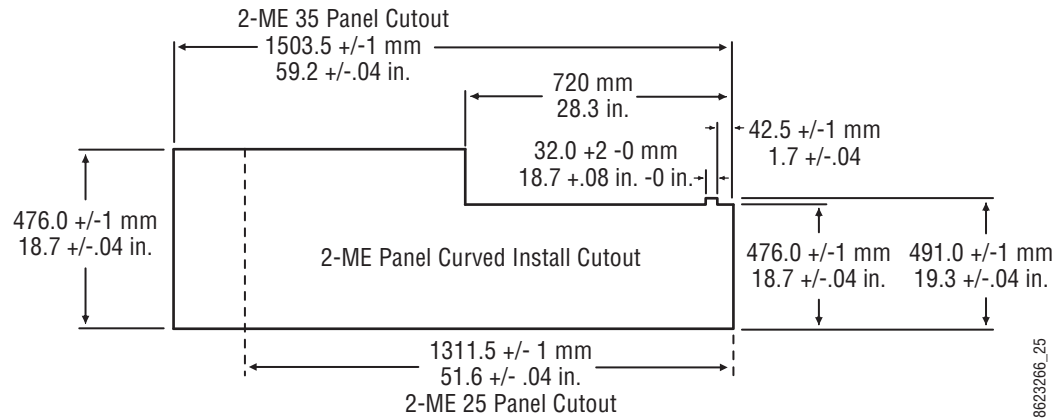
2-ME 35 Control Panel, Curved with Attached Aux

Figure 20. 2-ME 35 Control Panel Dimensions, Curved Installation



8623266_24

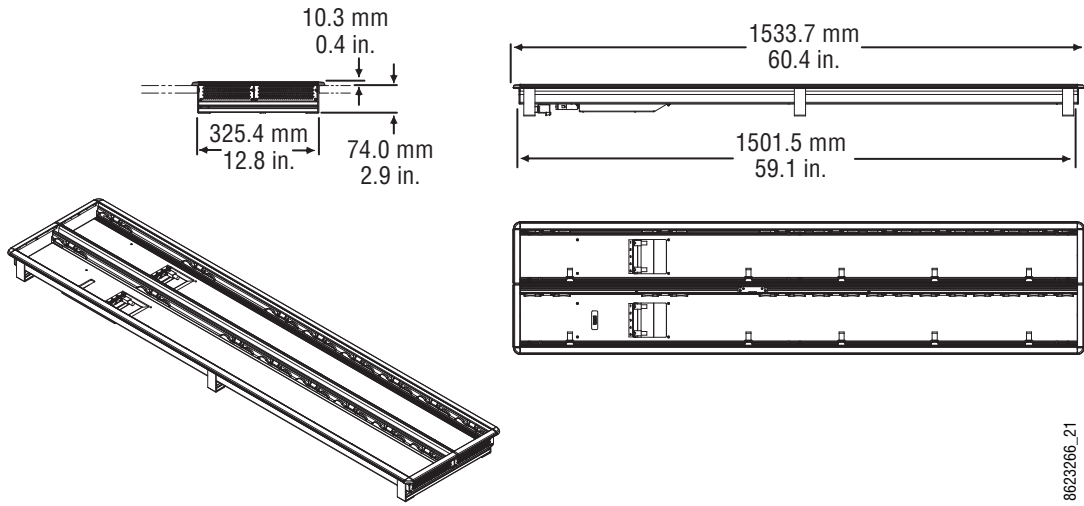
Figure 21. 2-ME Control Panel Cutout Dimensions, Curved Installation



8623266_25

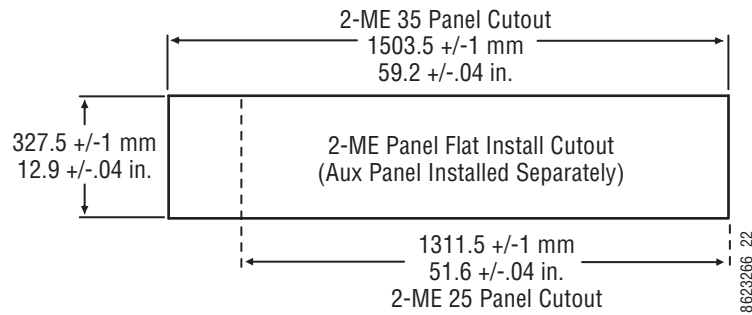
2-ME 35 Control Panel, Flat without Aux

Figure 24. 2-ME 35 Control Panel Dimensions, Flat Installation



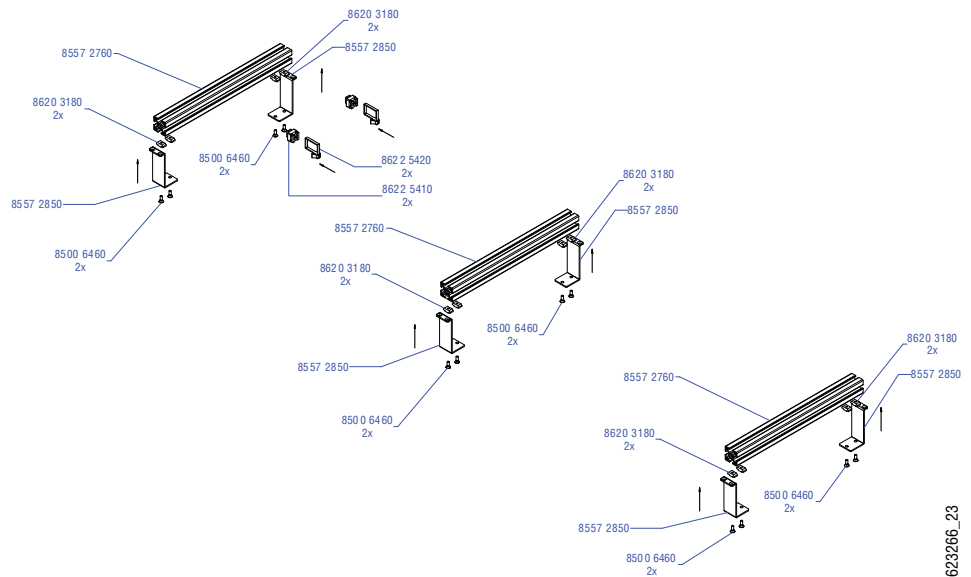
8623266_21

Figure 25. 2-ME Control Panel Cutout Dimensions, Flat Installation



8623266_22

Figure 26. 2-ME Support Structure, Flat Installation, w/o Aux Panel



8623266_23

1-ME 15 Control Panel without Local Aux

Figure 27. 2-ME 35 Control Panel Dimensions, Flat Installation

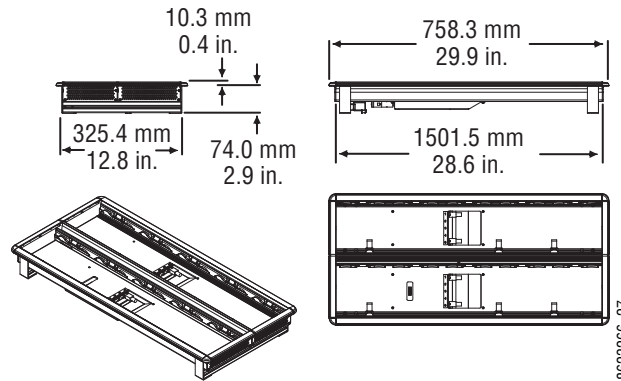


Figure 28. 2-ME Control Panel Cutout Dimensions, Flat Installation

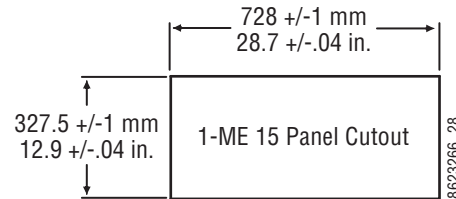
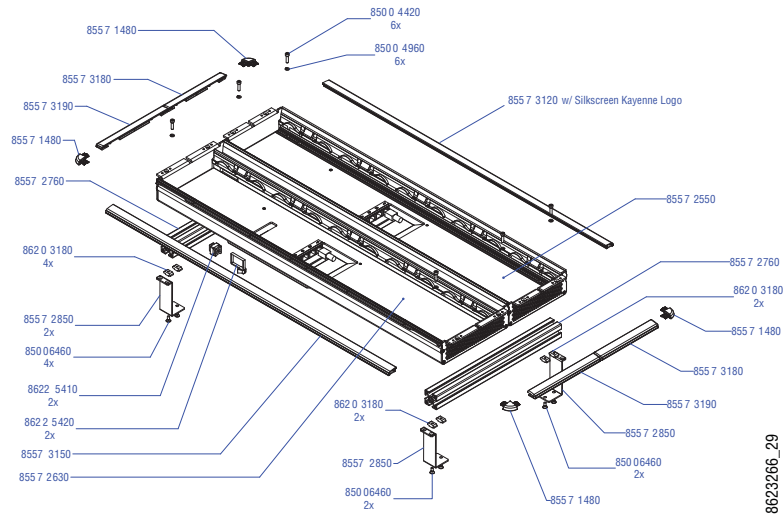


Figure 29. 2-ME Support Structure Flat Installation, w/o Aux Panel



Separately Mounted Local Aux Panel (35 & 25 Models)

Figure 30. Local Aux Panel Separate Installation Dimensions

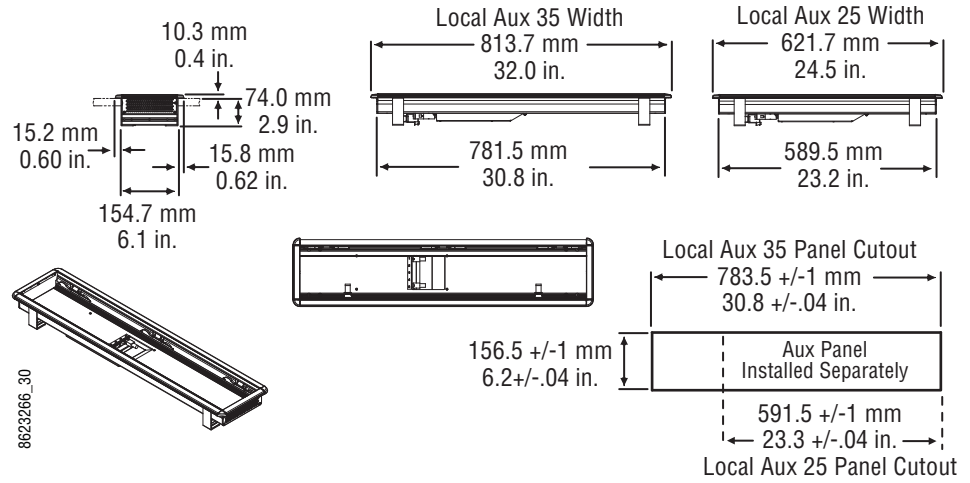
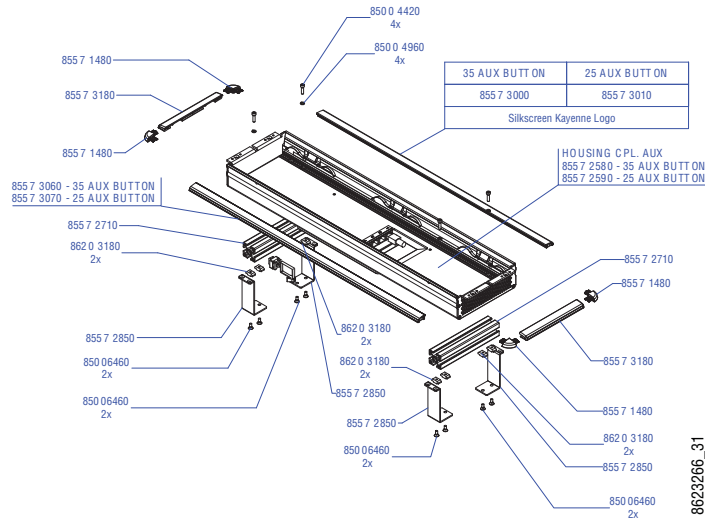


Figure 31. Local Aux Support Structure, Tray, and Trim



Control Panel Module Installation

Tray Internal Cabling

Each Kayenne XL Control Panel tray is equipped with a distribution board located at the bottom of the tray. Each Control Panel module connects to a module port on this distribution board inside the tray, using a CAT 6 (shielded) style cable. It is very important to understand this port is NOT used for Ethernet communications. These ports supply power as well as communications and control signals to the modules.

CAUTION Do not plug any Ethernet device into a Kayenne XL Control Panel Tray's internal module port. The Ethernet device will be damaged due to the power transmitted by that port.

When connecting these internal cables, be sure any excess cable is routed away from the upper edges of the tray, to prevent pinching the cables when the modules are inserted. Metal clips in the bottom of the tray are available for this purpose.

Note Kayenne XL Module cables inside the tray can be hot swapped safely. However, the multi-pin cables outside the tray that connect to the PCU cannot be connected or disconnected while the PCU is powered up.

Module Insertion and Removal

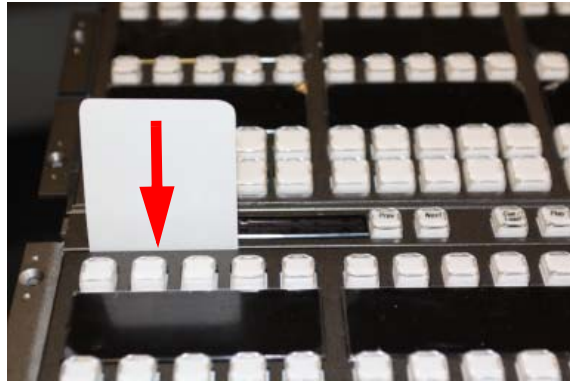
Kayenne XL Control Panel modules are held in place in the trays with spring metal. Once the internal cables are connected and routed properly, the module is inserted by angling the front of the module into place in the front of the tray, and then lowering the rear of the module and pushing until it clicks into place. See details below.

CAUTION Do not push on display menus or buttons to seat a module, as these items could crack. Instead, push on the top edge of the gray surface above the buttons or displays to seat the modules.

Modules are removed by inserting a plastic card into the top to unseat the springs. Smaller modules have two springs, larger modules have three or more. Notches in the modules identify where the springs are located.

Each module can be taken separately from the mixer.

- Insert a card and push down behind the module at the notch.



Underneath the notches are metal springs, which will be unlocked with the card. After unlocking all springs one after another, the module releases easily upwards.



- Lift the module and unplug the Cat 6 style cable at the bottom of the module before removing completely.

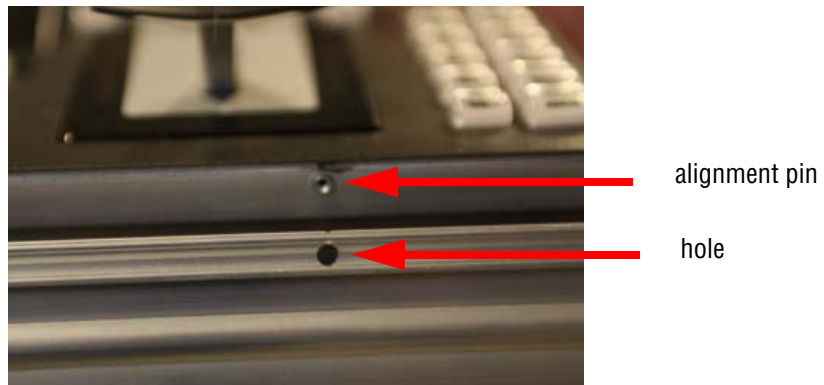


Insert Modules:

- Connect the Cat 6 style cable at the lower surface of the module before inserting the module. The cable should be looped in order to avoid damage.

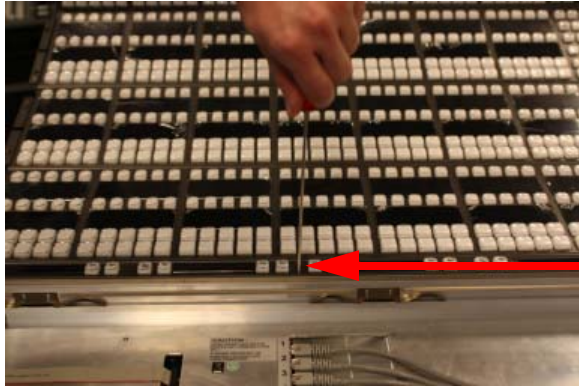
At the front edge of the module there are alignment pins, which must insert in respective holes in the module tray. If the pins are in the right place, the module can be tilted easily downwards. A click can be heard when properly engaged.

Note Do not push on display menus or buttons to seat a module, as these items could crack. Instead, push on the top edge of the gray surface above the buttons or displays to seat the modules.



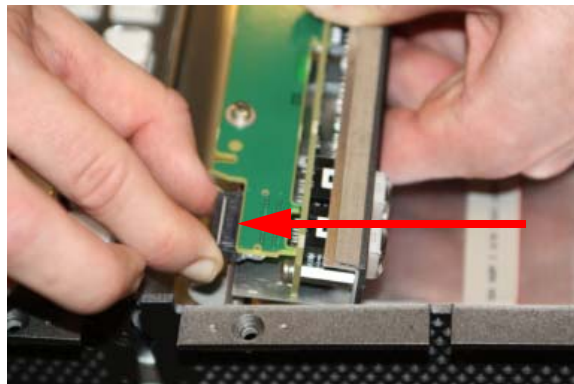
Removal of the System Bar:

The System Bars are part of the PP control panel stripe only. Each System Bar is fixed to the tray with one screw. For removal, a 2.5 mm hexagonal driver (Allen wrench) is required.



- Turn the screws counter clockwise. As the screw is turned the module rises and the connector is disconnected.

The **Extended System Bar** is mounted on the left. In addition to the instruction above, a flat cable located on the left has to be removed.



- Press the plug push clamps in order to connect or disconnect the plug. The dummy panel at the right side can be removed only after removing the module in front. For that, a cross-point screwdriver is required.

Insert the System Bars:

- For installing the Extended System Bar first connect the flat cable.
- Place the System bar into the appropriate position.
- Tighten it with the screw without pushing down. The module pulls itself into the plug while tightening the screw.
-

Changing the Display-Protecting Glasses

Next to the Displays are small grooves where you can pry off the Display with a small slot screwdriver.

Control Panel Tray-PCU Connections

Connectors on the outside bottom of the tray connect to the PCU, using a special multi-pin cable that carries both power and communications signals.

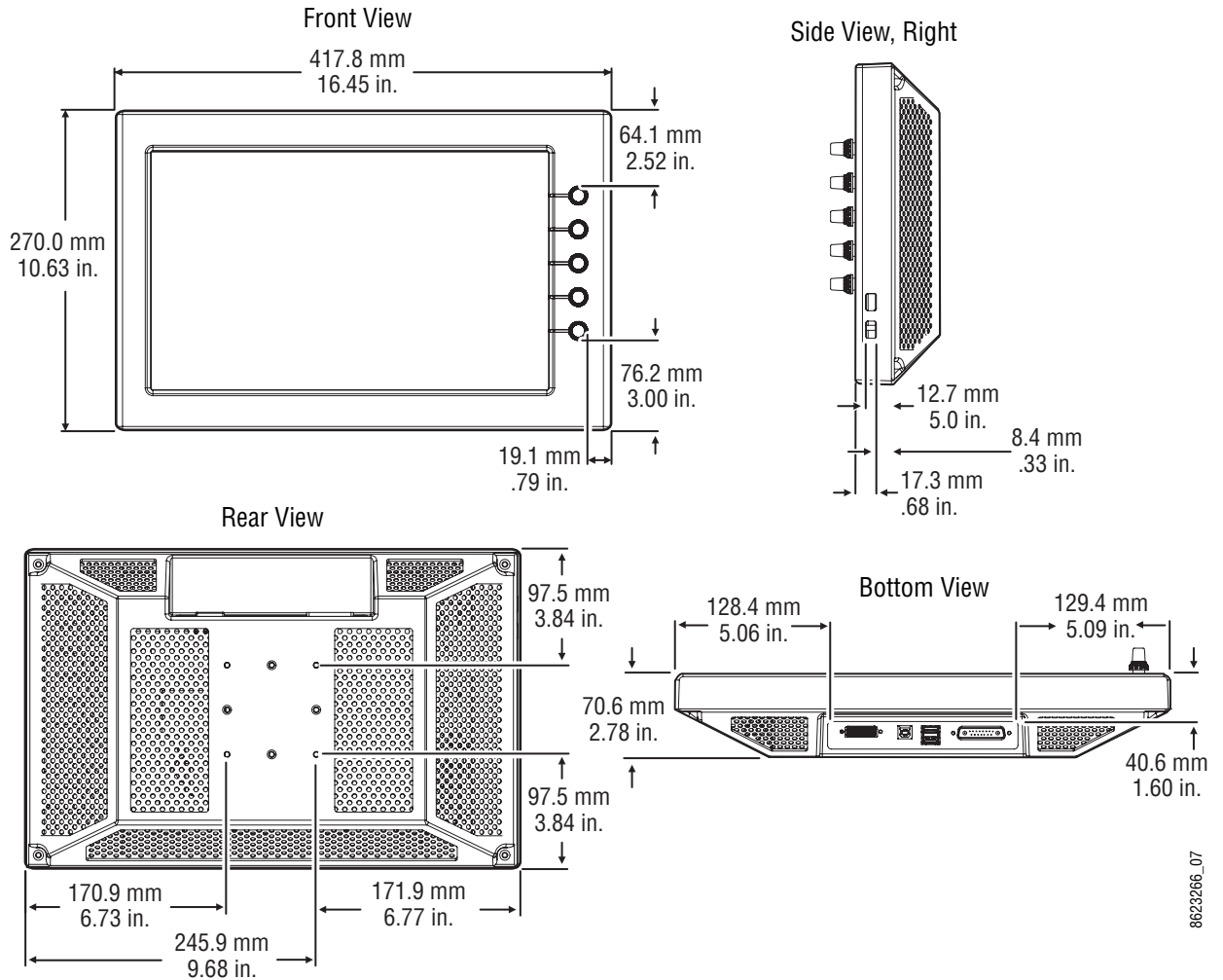
CAUTION Do not connect or disconnect the multi-pin cables linking a Kayenne XL Control Panel tray and PCU while the PCU is powered up. Damage to the equipment can result.

See [Section 4-System Cabling](#) for more information about Kayenne XL panel cable connections.

Touch Screen Menu Panel Installation

Menu Panel Dimensions

Figure 32. Menu Panel Dimensions



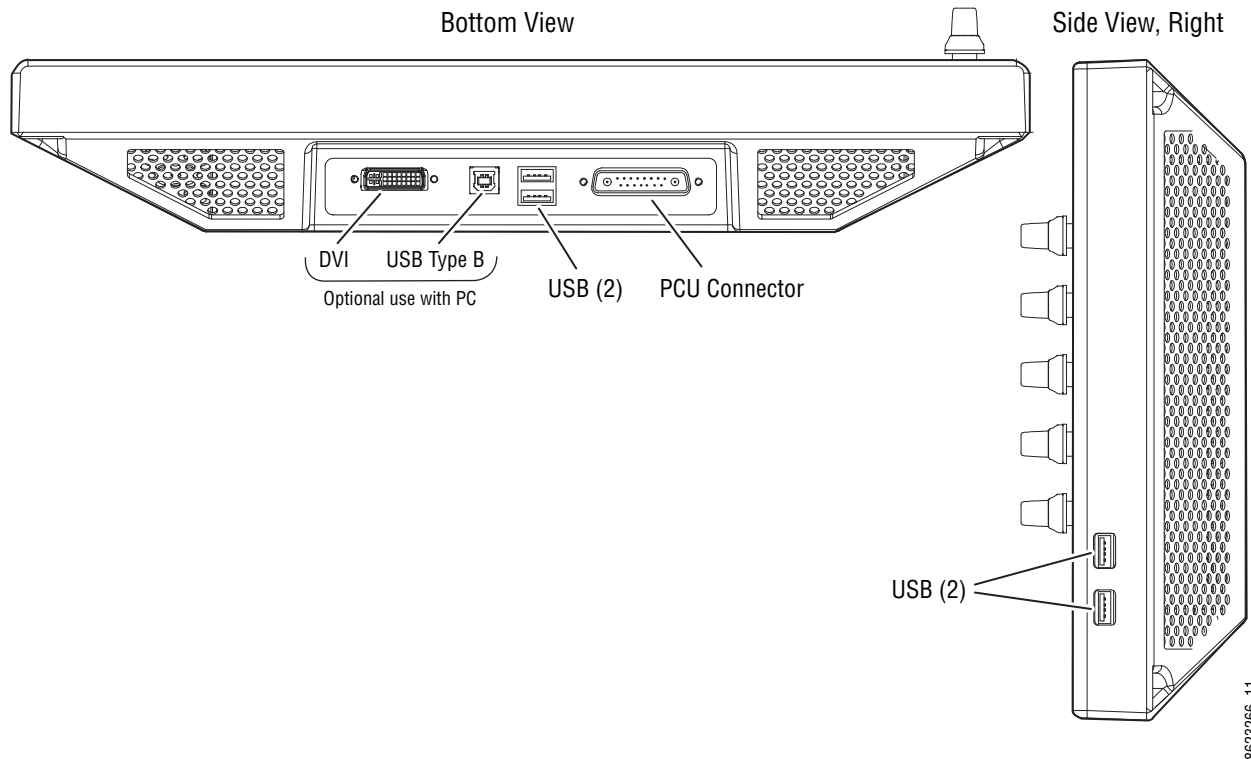
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Menu Panel Connectors

The Kayenne XL Touch Screen Menu Panel's processor is located in the PCU. The Menu panel connects to the PCU with a special multi-pin cable that carries both power and communications signals.

CAUTION Do not connect or disconnect the multi-pin cables linking a Kayenne XL Touch Screen Menu Panel tray and PCU while the PCU is powered up. Damage to the Kayenne XL panel equipment can result.

Figure 33. Menu Panel Connections



See [Section 4-System Cabling](#) for more information about Kayenne XL cable connections.

Additional Kayenne XL Menu Panels

An additional touch screen Kayenne XL Menu Panel is available as an option. An optional Menu Panel processor board is inserted into the PCU for this added panel, and another multi-pin power and signal cable is used for that panel.

It is also possible to run a Kayenne XL Touch Screen Menu Panel with a standard PC, independent from the PCU. An optional power supply is available to power the Menu Panel, and a DVI cable connects the PC to the Menu Panel.

The Kayenne XL menu application can also be run on a standard PC, permitting mouse and keyboard control from a laptop, or remote control from any location on the network.

If a PC is used for Kayenne XL Menu operation, the PC's IP address must be set to a compatible value to work with the rest of the Kayenne XL system.

Menu Panel Cooling

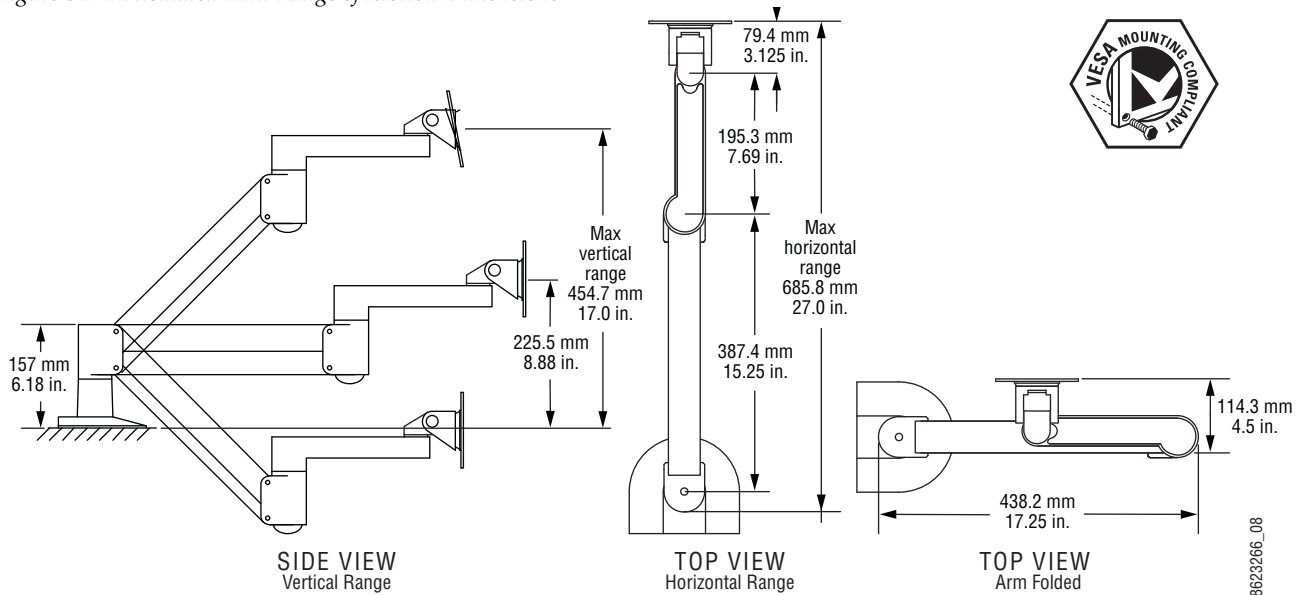
The Kayenne XL Touch Screen Menu Panel is externally powered and does not have internal cooling fans. The unit is convection cooled through perforations in the rear of the chassis. Mounting the panel in a free-standing manner with the articulated Arm allows maximum air movement, and is the preferred installation method. If an alternative method is used, ensure that all vents are unobstructed and adequate airflow is available. Do not install the Menu panel into an enclosed space.

CAUTION Do not install the Menu Panel into an enclosed space. Passive air movement is required for cooling.

Menu Panel Articulated Arm Installation

The Kayenne XL Touch Screen Menu Panel has VESA 75 threads on the back that can be used to mount the Menu Panel to the supplied articulated arm, or any VESA compliant mounting system.

Figure 34. Articulated Arm Range of Motion Dimensions



The supplied articulated arm is equipped with a flex-mount system, permitting a variety of mounting options (table-top, wall mount, etc.). See the documentation provided with the articulated arm for specific installation instructions.

Satellite Panels

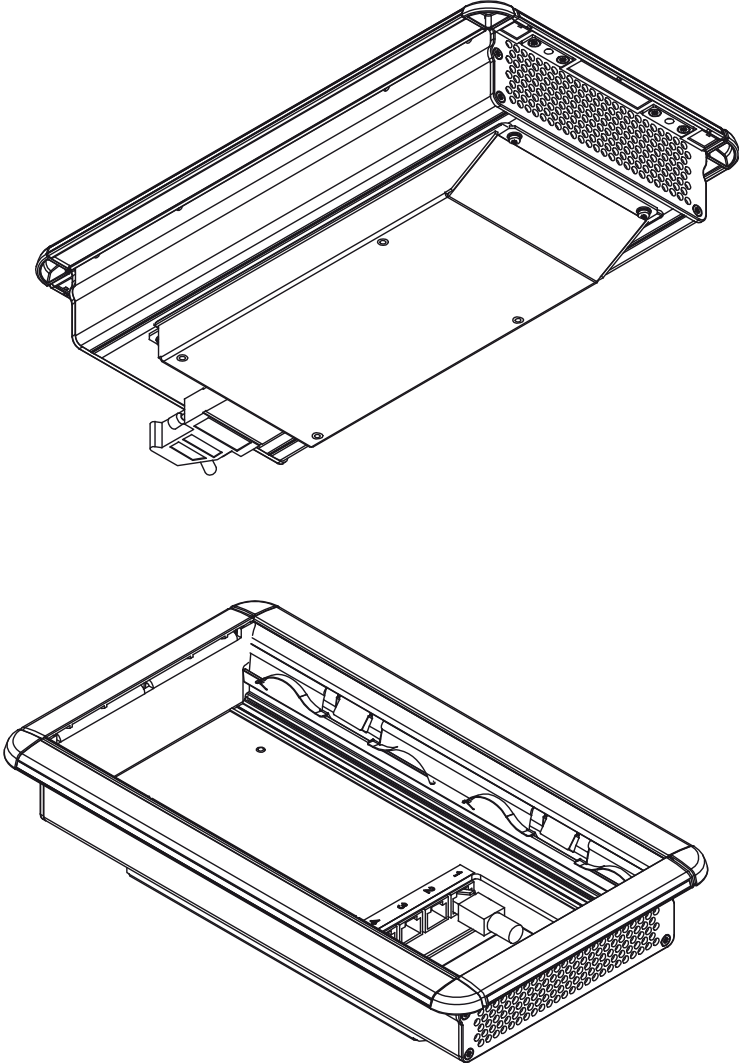
Two satellite panel options are available for mounting control panel modules outside of the main control panel. One option supports one module and another options supports two modules. Each satellite panel option consumes one PCU port.

For more details refer sections [Kayenne XL Cabling on page 83](#) and [Satellite Panel Mapping on page 86](#)

One Module Version

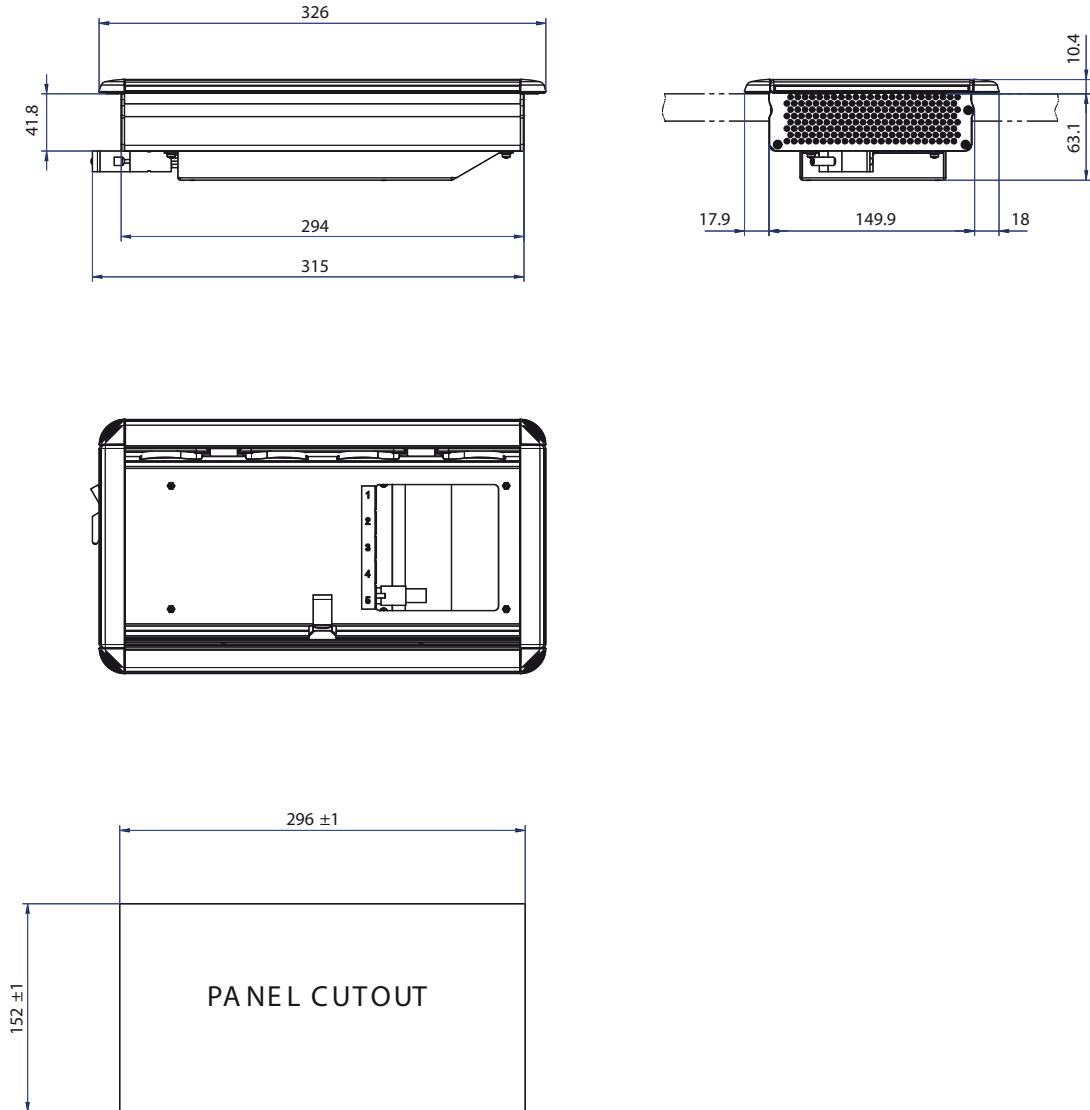
Overview

Figure 35. Satellite Panel - Overview One Module Version



Dimensions

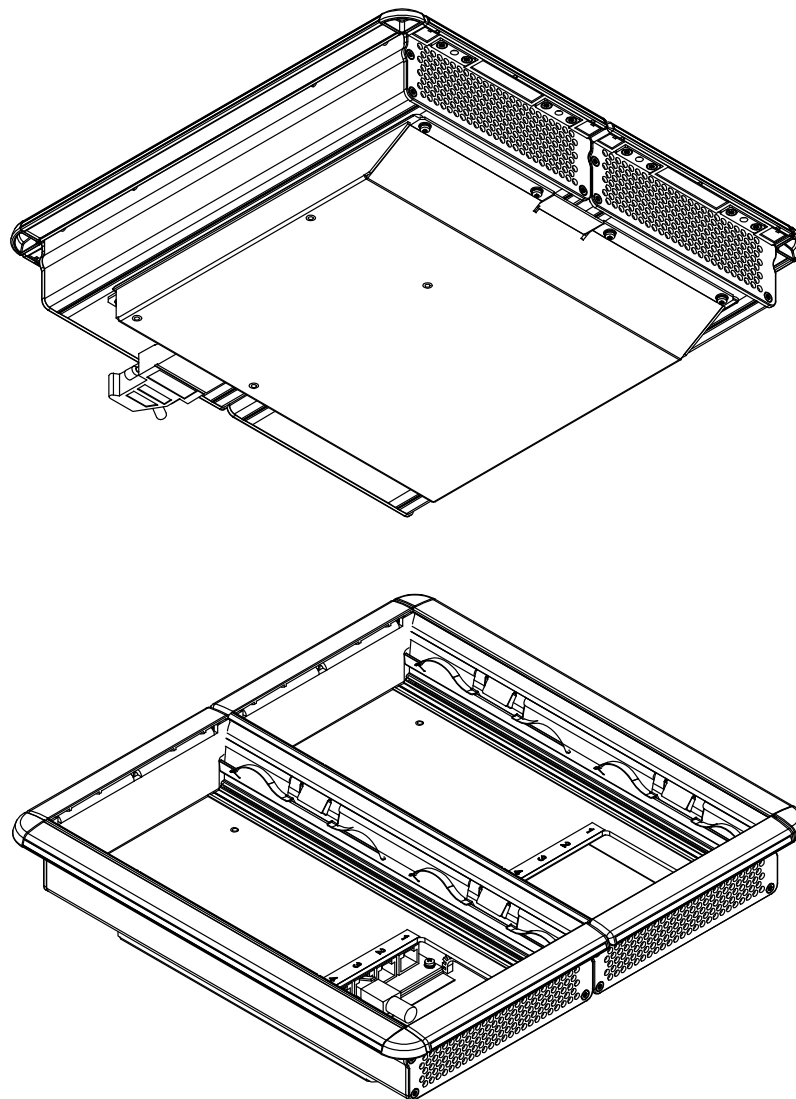
Figure 36. Satellite Panel - Dimensions One Module Version



Two Module Version

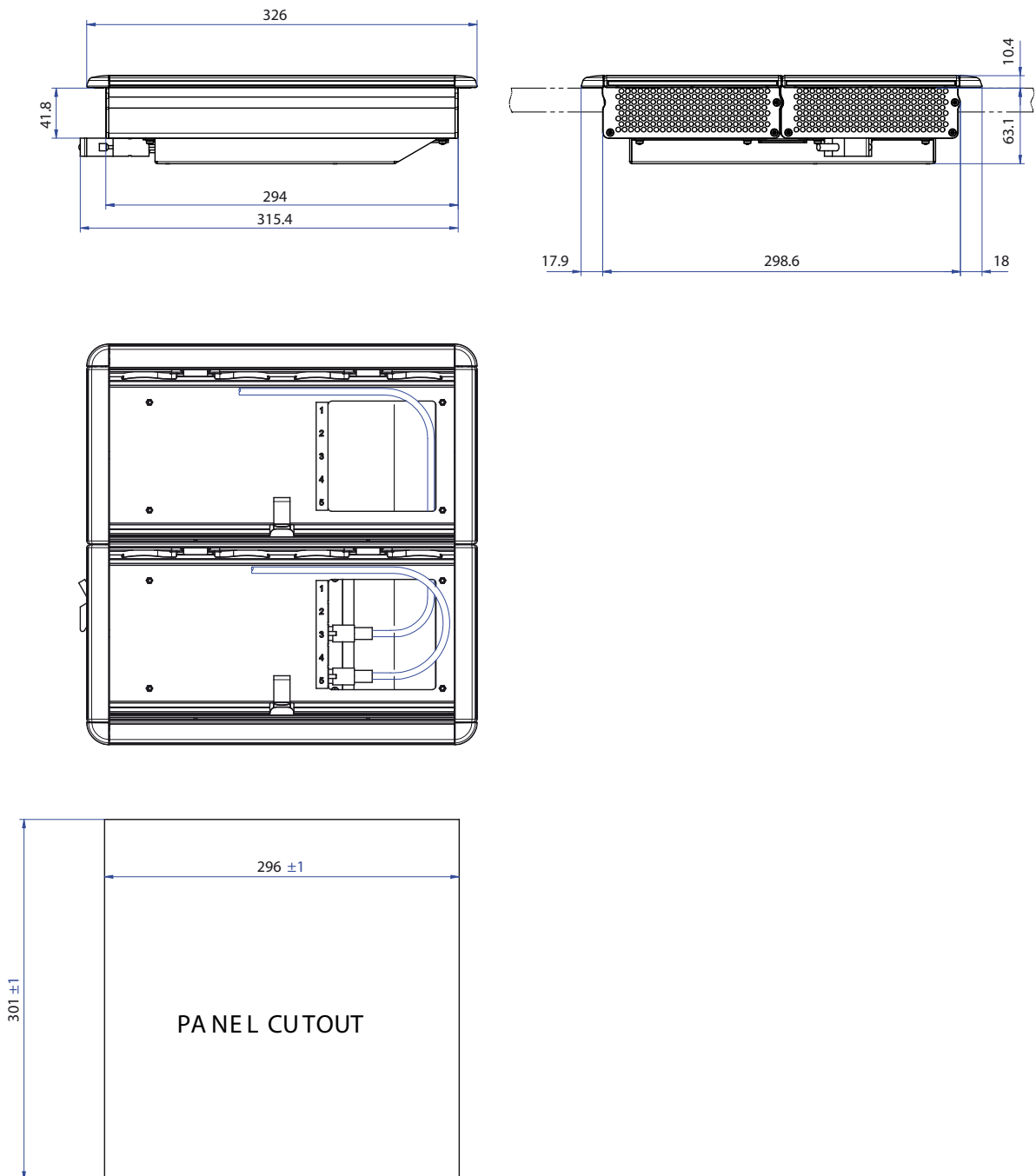
Overview

Figure 37. Satellite Panel - Overview Two Module Version



Cutout Dimensions

Figure 38. Satellite Panel - Dimensions Two Module Version



Kayak HD Frames

General Rack Mounting Instructions

Weight Distribution

Make sure that you mount the unit in the rack so that it is evenly balanced to prevent damage to the frame and to avoid creating a hazardous condition.

Cooling Requirements

The maximum ambient temperature for this unit is 40-degrees C (104-degrees F). Installing the frame in a closed or multi-unit rack assembly together with other units could increase the maximum ambient temperature for this unit. If the unit is installed in a rack, no ventilation openings should be blocked or otherwise covered. Make sure you install the frame so that you allow for cooling airflow.

Power Connections

When connecting the unit to the supply circuit be sure that the supply circuit of the rack is not overloaded. The unit must be well-grounded using the ground connector on the rear. When connecting the unit in a closed or multi-unit rack assembly together with other units be sure that the sum of the touch (leakage) currents for all power supplies does not exceed 3.5 mA.

Kayak HD 8-RU Video Processor Frame Installation

8-RU Frame Dimensions

Figure 39. Kayak HD 8-RU Frame Dimensions 1 of 2

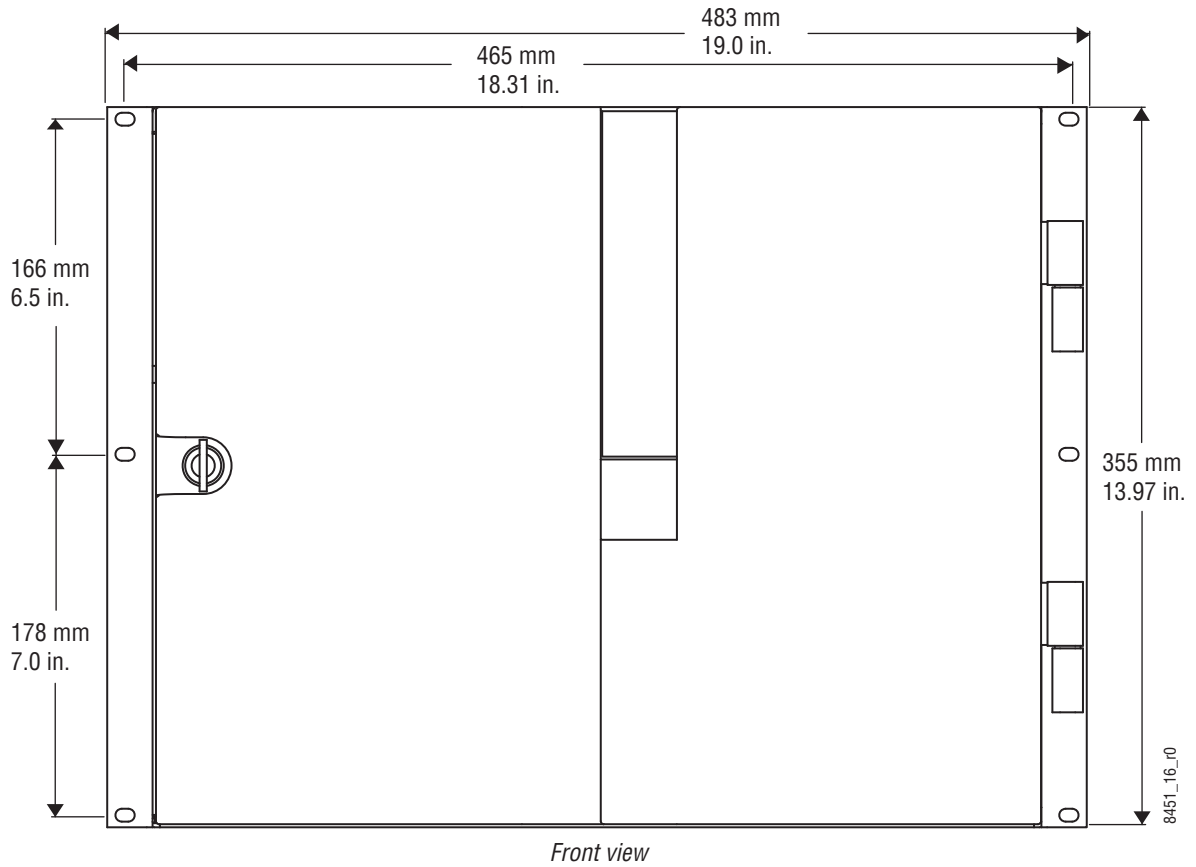
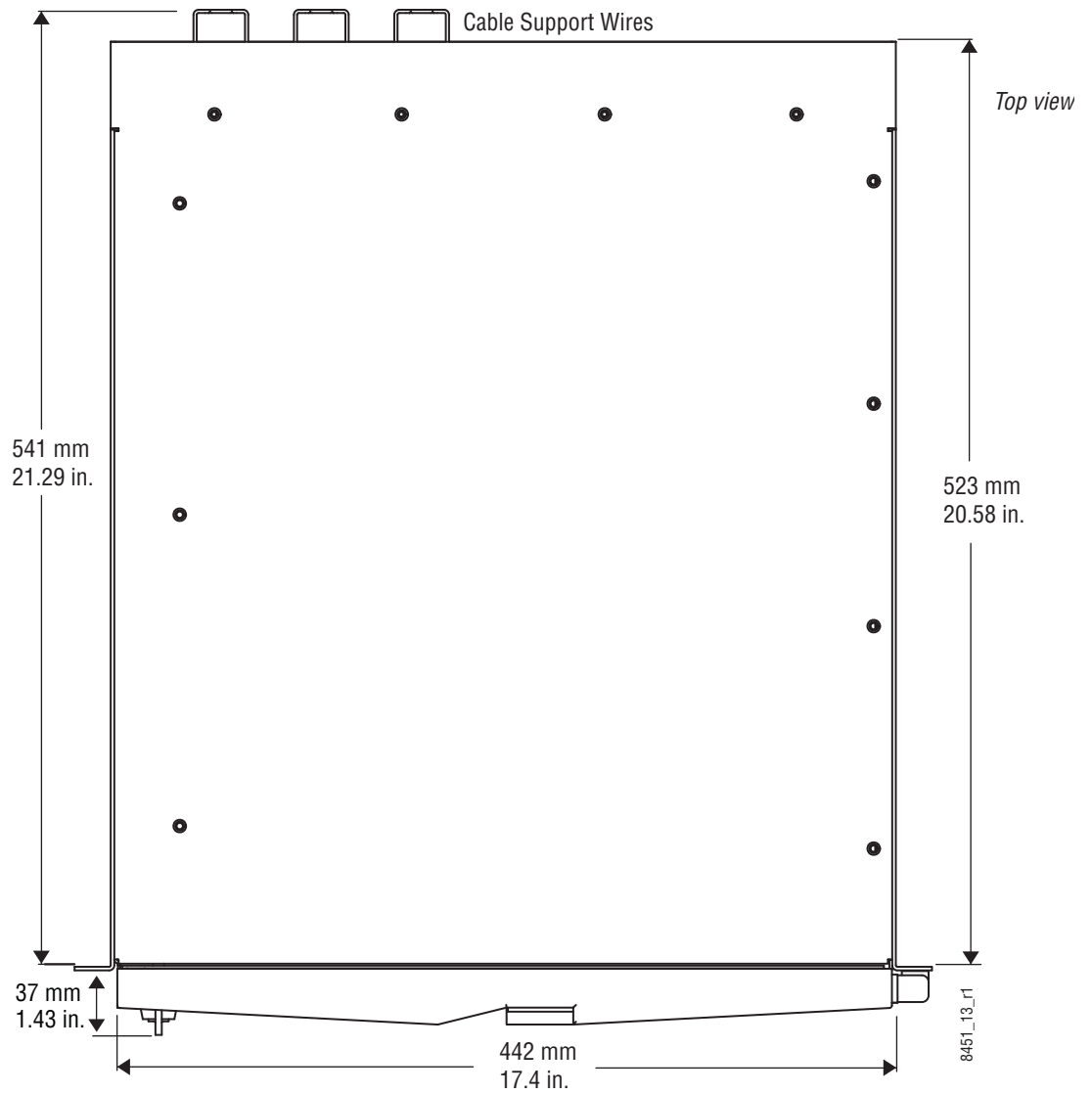
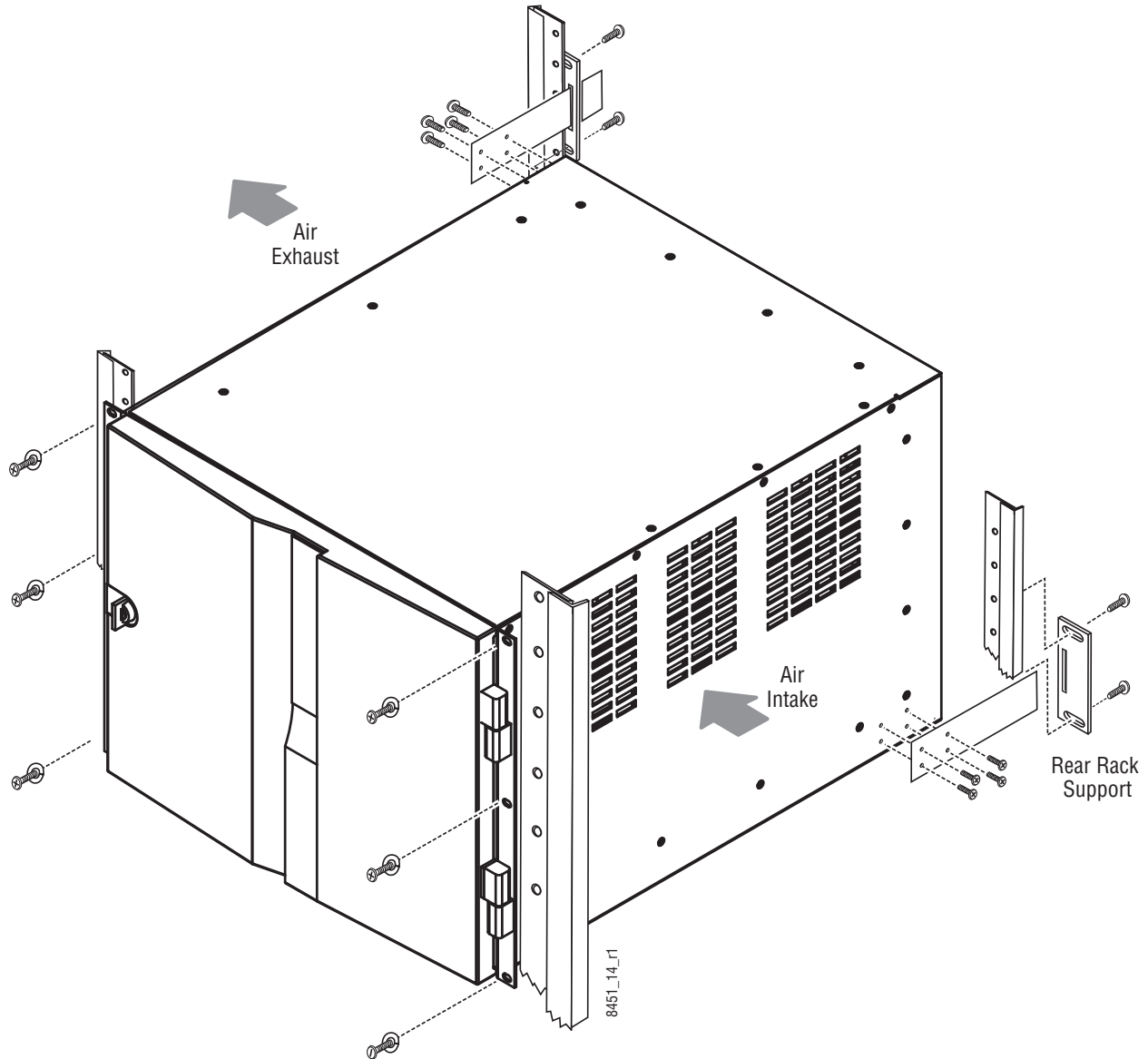


Figure 40. Kayak HD 8-RU Frame Dimensions 2 of 2



8-RU Frame Rack Mounting

Figure 41. Kayak HD 8-RU Frame Dimensions



CAUTION Mounting using only the front rack ears is sufficient for fixed installations. Additional support, like the rear rack support or slide rails, is required for mobile applications.

The Rear Rack support provides additional support and stability for the Kayak HD frame to ensure that it remains horizontal.

Make sure to provide adequate ventilation for the Kayak HD Frame. When installing the frame in the rack, take care that no ventilation holes are blocked. This can prevent cooling air from reaching the frame and cause it to overheat.

There are air intake holes on the right side of the frame (as you face the frame front) and air exhaust holes on the left.

CAUTION A minimum vertical clearance of 7.62 mm (0.3-in.) above the Kayak HD 8-RU frame door is required to remove the door. When installing the Kayak HD 8-RU frame in the rack, take care to leave room for removal of the front door. The front door lifts off vertically and must have sufficient clearance room in order to remove it. If you have equipment mounted too close to the Kayak HD 8-RU Frame, you may not be able to remove the door.

8-RU Frame Connectors

Figure 42. Kayak HD 8RU Frame, Front View with Door Removed

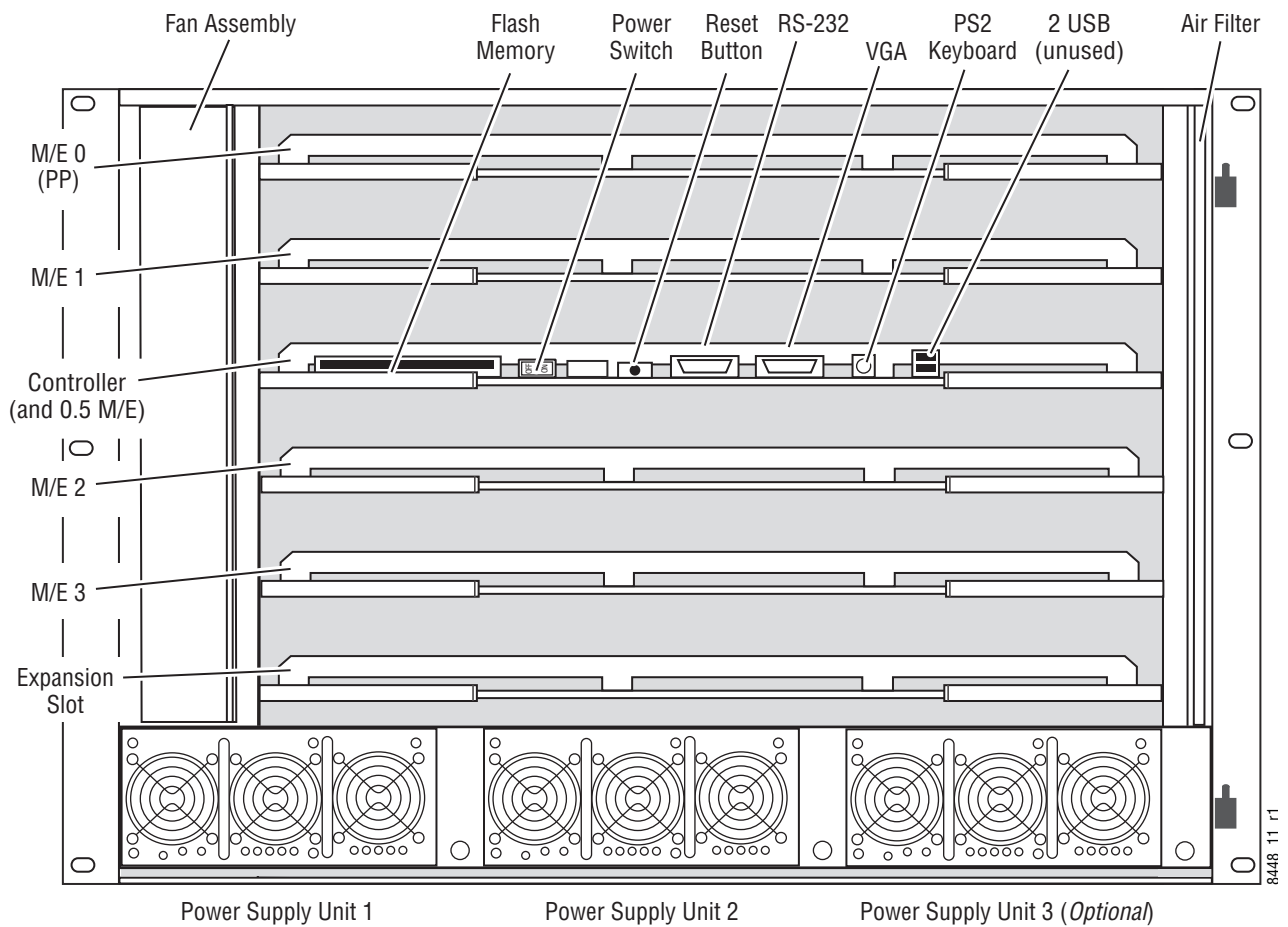
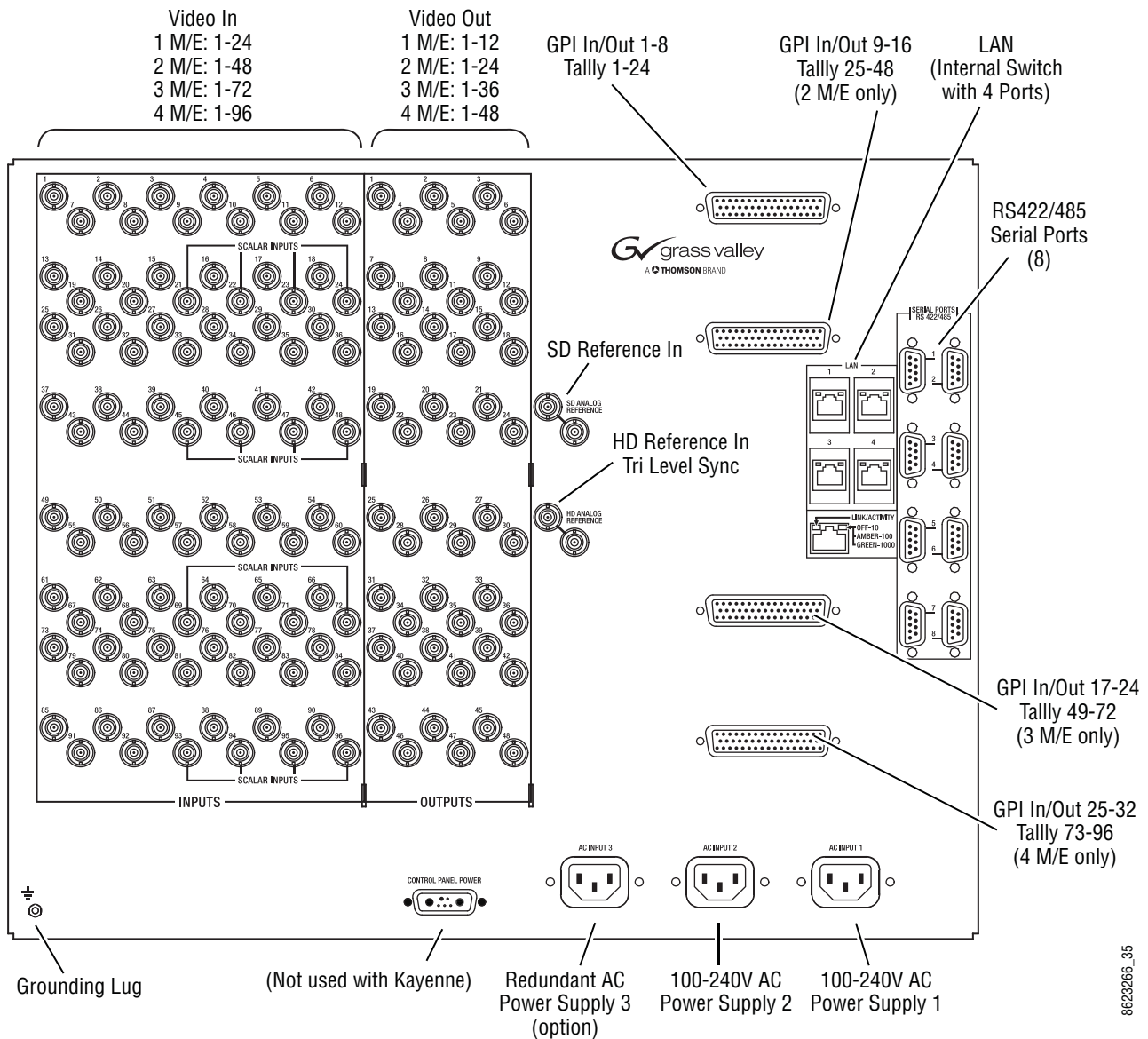


Figure 43. Kayak HD 8RU Frame, Backplane View



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Internal Redundant Power Supply Option

This option provides redundant power for the Kayak HD video processor. It slides into an extra power supply slot in the video processor chassis. On 8-RU systems two power supplies are required for the frame. One additional power supply can be used for redundancy.

Kayak HD 4-RU Video Processor Frame Installation

4-RU Frame Dimensions

Figure 44. Kayak HD 4-RU Frame Dimensions

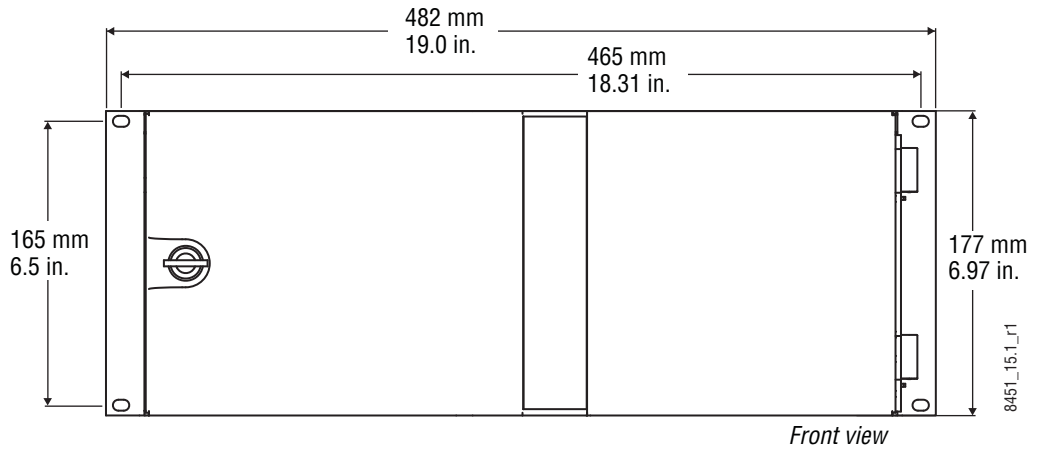
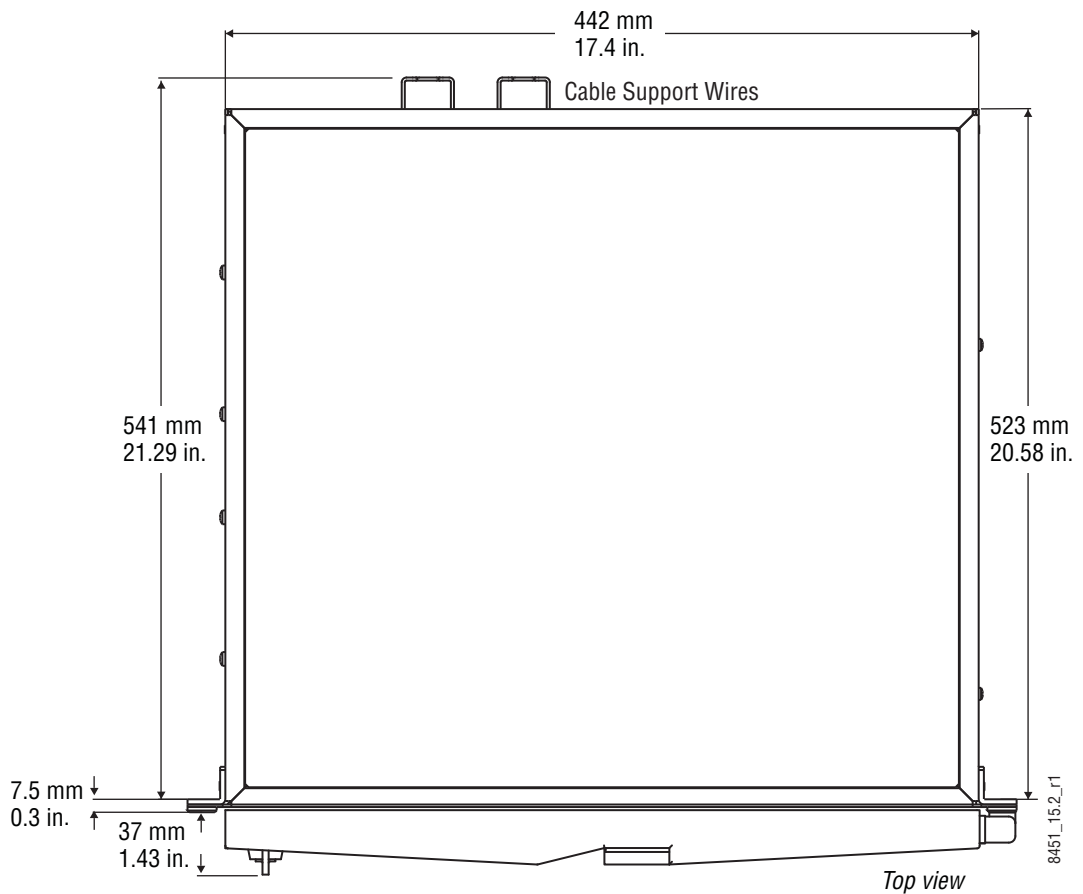
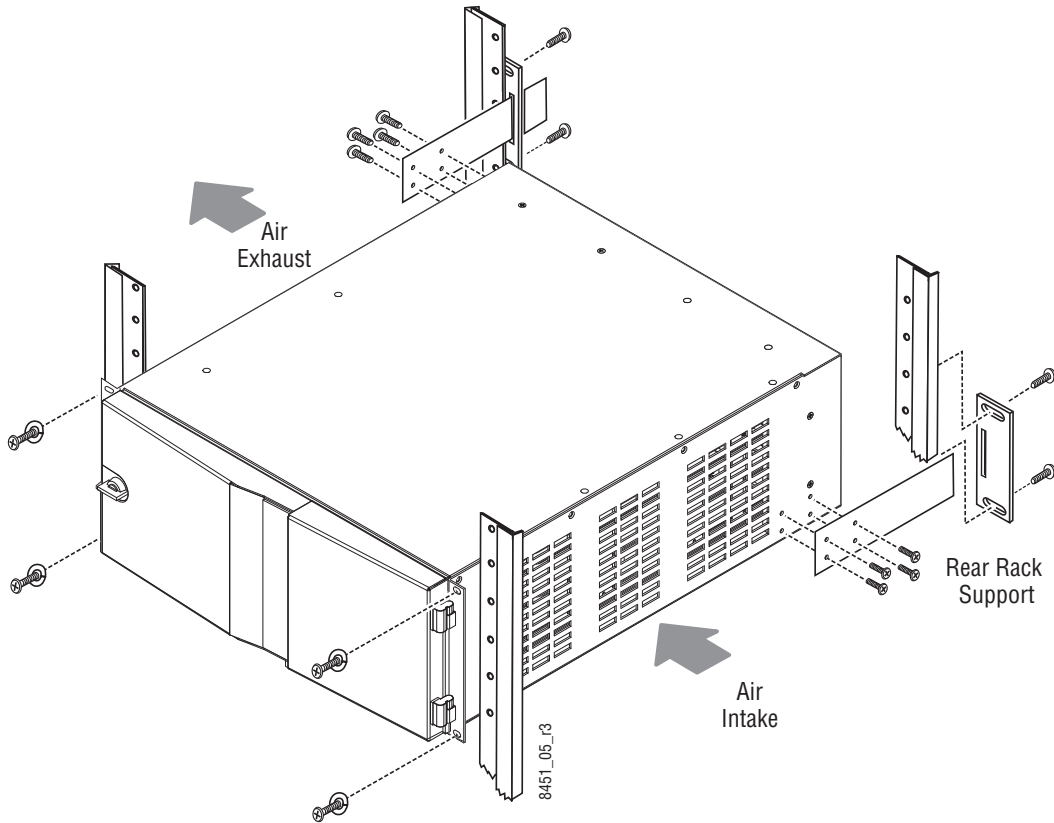


Figure 45. Kayak HD 4-RU Frame Dimensions



4-RU Frame Rack Mounting

Figure 46. Kayak HD 4-RU Frame Rack Installation and Cooling Airflow



Mounting using only the front rack ears is sufficient for fixed installations. Additional support, like the rear rack support or slide rails, is required for mobile applications.

The Rear Rack support provides additional support and stability for the Kayak HD frame to ensure that it remains horizontal.

Make sure to provide adequate ventilation for the Kayak HD Frame. When installing the frame in the rack, take care that no ventilation holes are blocked. This can prevent cooling air from reaching the frame and cause it to overheat.

There are air intake holes on the right side of the frame (as you face the frame front) and air exhaust holes on the left.

CAUTION A minimum vertical clearance of 7.62 mm (0.3-in.) above the Kayak HD 4-RU Compact frame door is required to remove the door. When installing the Kayak HD 4-RU Compact frame in the rack, take care to leave room for removal of the front door. The front door lifts off vertically and must have sufficient clearance room in order to remove it. If you have equipment mounted too close to the Kayak HD 4-RU Compact Frame, you may not be able to remove the door.

4-RU Frame Connectors

Figure 47. Kayak HD 4RU Frame, Front View with Door Removed

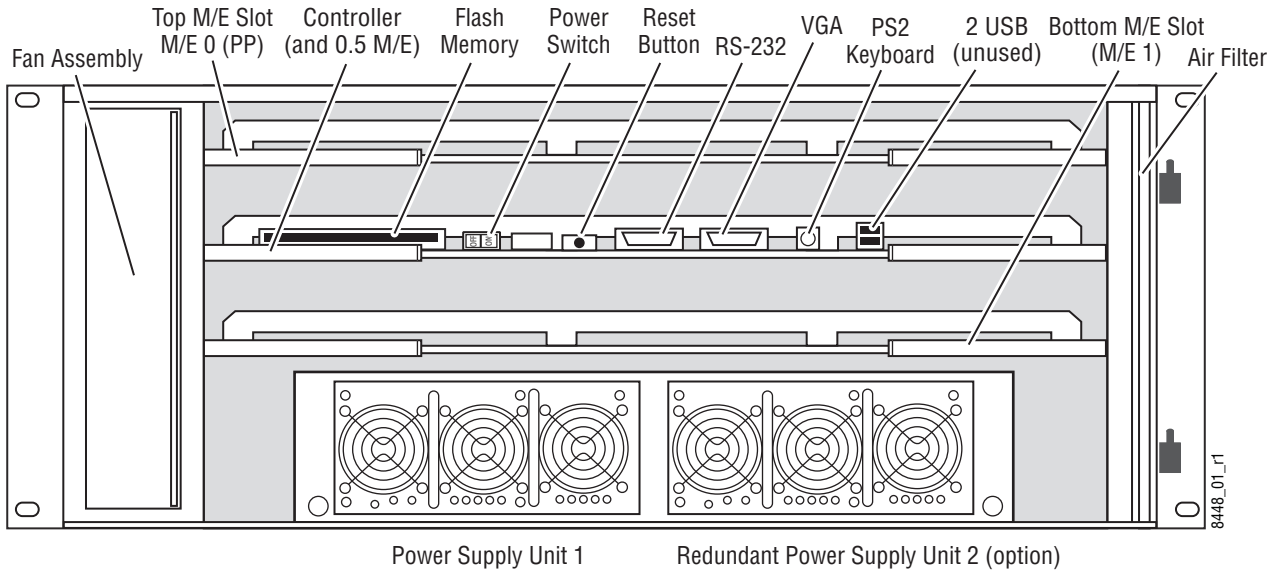
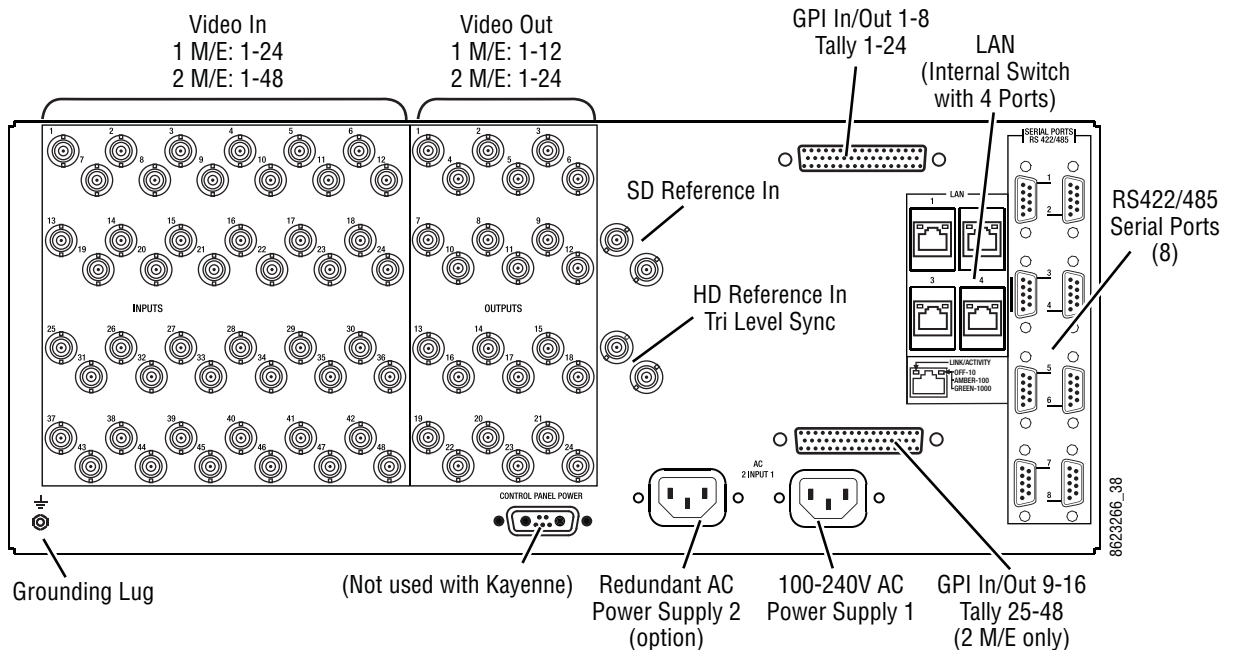


Figure 48. Kayak HD 4RU Frame, Backplane View



Internal Redundant Power Supply Option

This option provides redundant power for the Kayak HD video processor. It slides into an extra power supply slot in the video processor chassis. On 4-RU systems a single power supply is adequate for the frame. One additional power supply provides redundancy.

Panel Control Unit (PCU)

PCU Dimensions

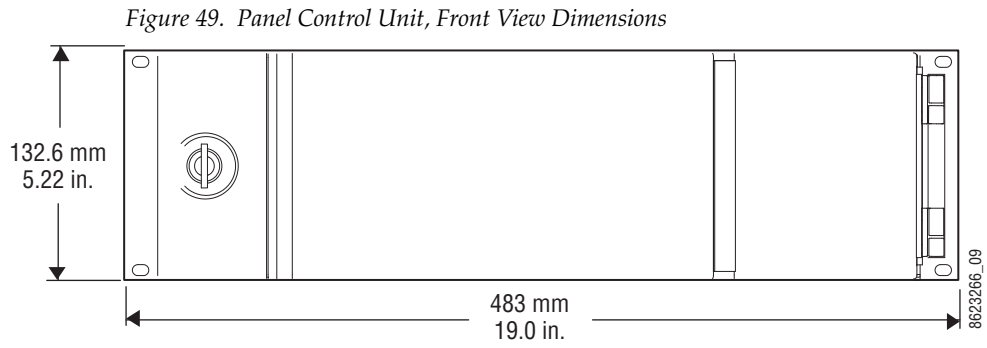
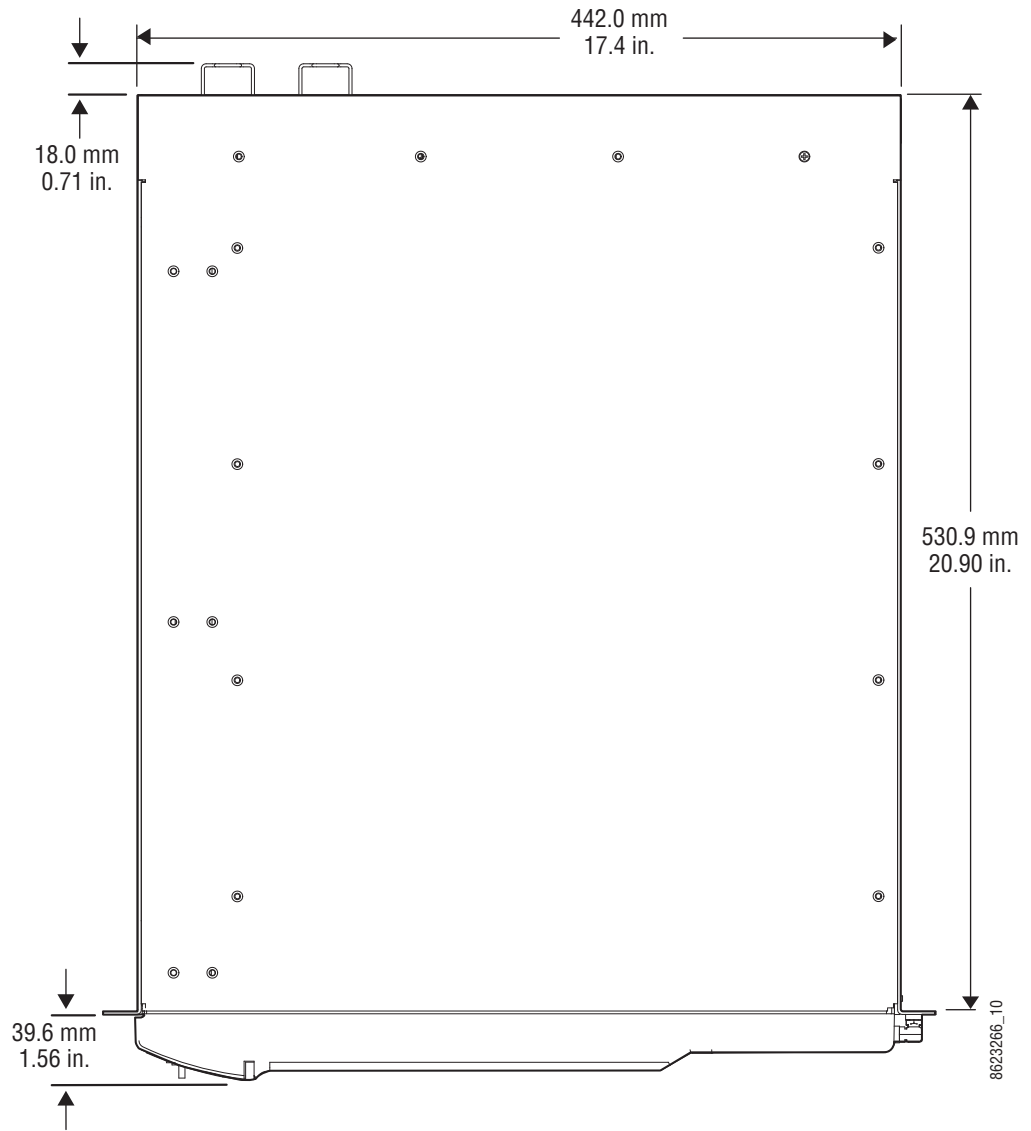
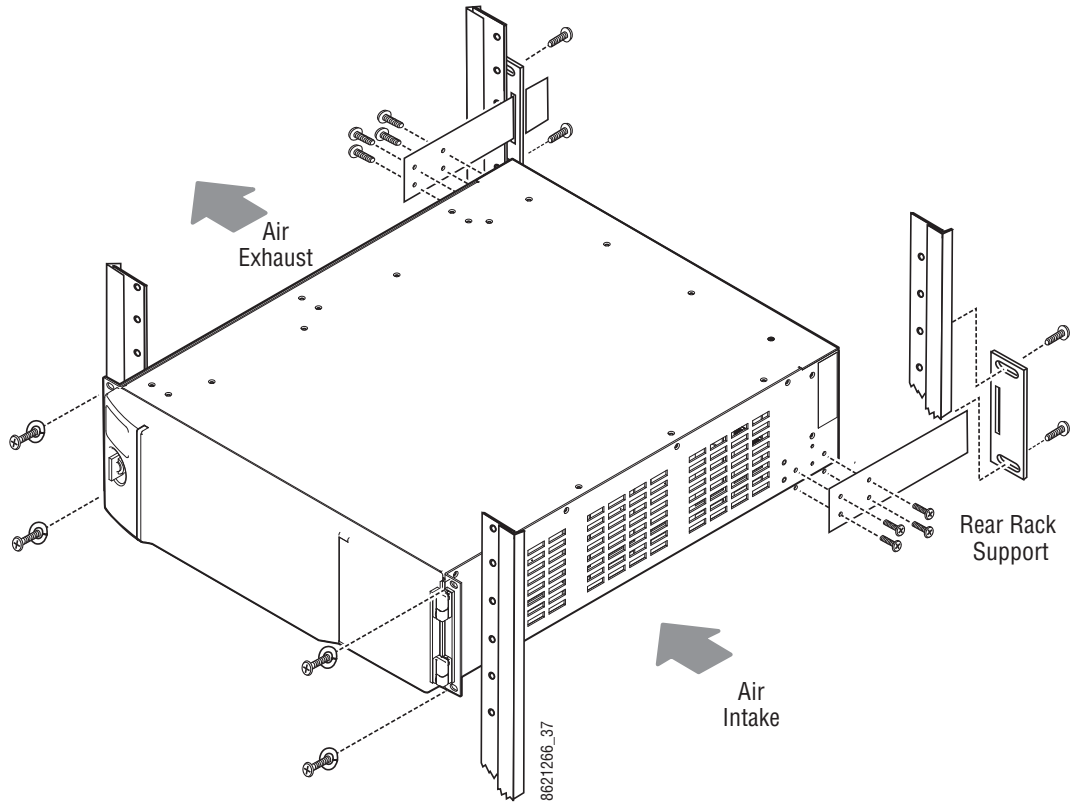


Figure 50. Panel Control Unit, Top View Dimensions



PCU Frame Rack Mounting

Figure 51. Panel Control Unit Rack Installation and Cooling Airflow



PCU Connectors

Figure 52. Panel Control Unit, Front View

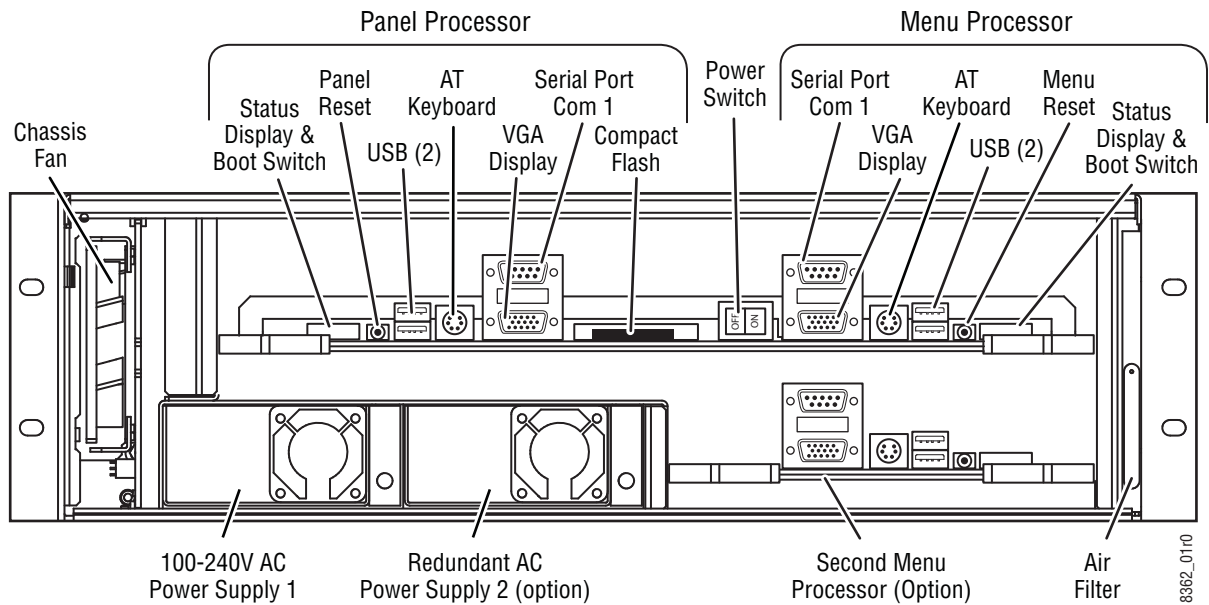
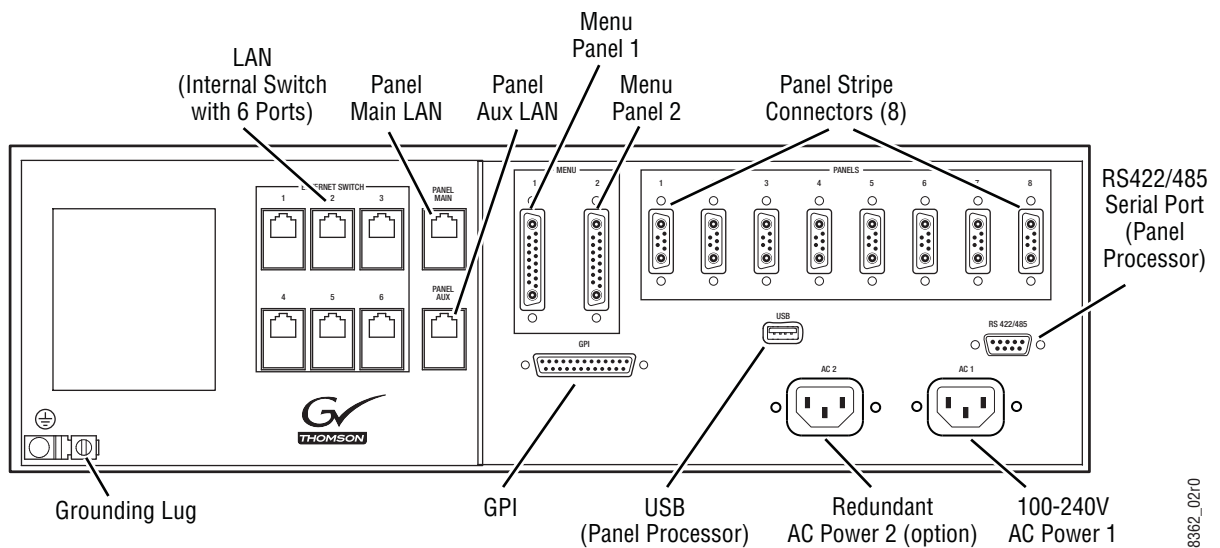


Figure 53. Panel Control Unit, Rear View



CAUTION Do not connect or disconnect the multi-pin cables linking a PCU to a Menu Panel or Control Panel Stripe while the PCU is powered up. Damage to the Kayenne XL equipment can result.

The Kayenne XL Package uses a Panel Control Unit (PCU). This 3RU rack-mount frame powers the Control Panel and Touch Screen Menu Panel(s), and houses the processors for these devices. The PCU has one processor for the Control Panel, and another processor for the standard Touch Screen Menu Panel. An additional Menu Panel processor is available as an option.

The PCU has an internal Ethernet switch, used for Menu Panel processor communications. Six Ethernet ports are available on the back. Two ports used internally for the Menu Panels. An additional Ethernet port is used for Control Panel processor communications.

See [Section 4-System Cabling](#) for more information about Kayenne XL cable connections.

Internal Redundant Power Supply Option

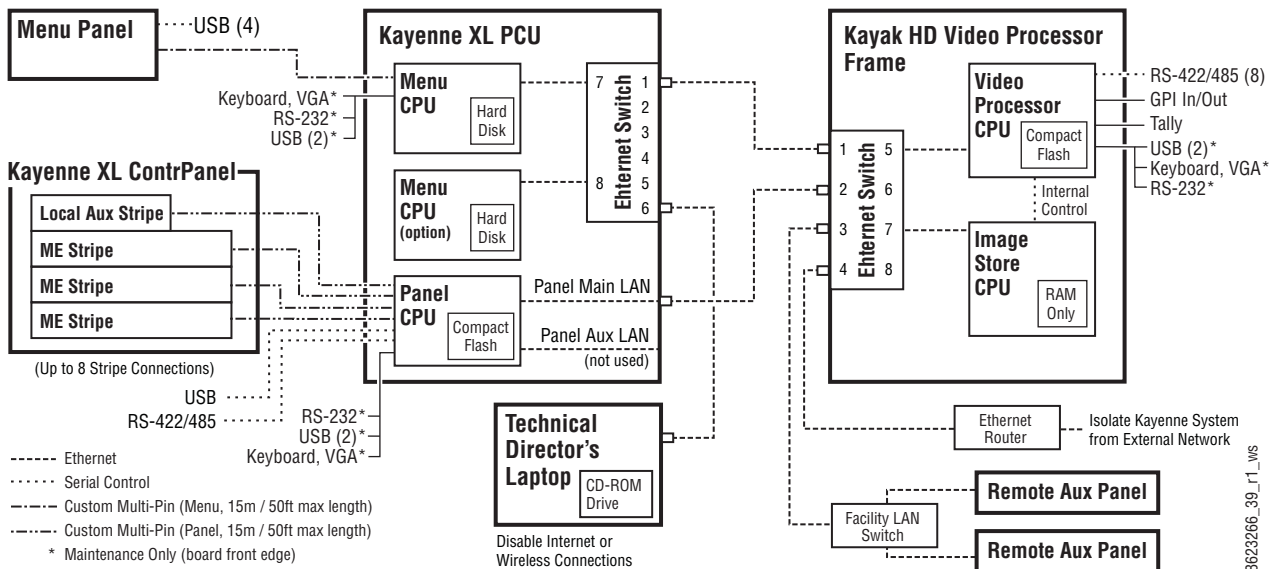
This option provides redundant power for the Kayenne XL PCU chassis. It slides into an extra power supply slot in the video processor chassis. A single power supply is adequate for the PCU frame. One additional power supply provides redundancy.

System Cabling

Overview

The Kayenne XL system uses Ethernet, serial, and USB connections. Custom multi-pin cabling is also used to connect the Kayenne XL Panel Control Unit (PCU) to Kayenne XL control surface and Menu Panel components. The Kayak HD Video Processor Frame and PCU each have built-in Ethernet switches. Tally outputs and GPI I/O (General Purpose Interface Input/Output) control is also available (Figure 54).

Figure 54. Kayenne XL System Communications Overview



CAUTION The facility network used for your Kayenne XL/Kayak HD system (and other video production equipment) should be kept separate from any external network, to prevent network traffic from adversely affecting Kayenne XL system operation.

Kayenne XL system power is provided by power supplies built into the Kayak HD Video Processor Frame and Kayenne XL PCU. Power is routed to control surface components and Menu Panels from the PCU through the custom multi-pin cabling. Additional Frame and PCU power supplies are available for redundancy.

Serial digital video and key input and output signals are connected to the Kayak HD Video Processor Frame. Specified MatchDef Input pair and SetDef Output pair connectors on the Frame can be used for internal format conversion (an optional feature). Separate Video Reference inputs are available for HD and SD formats.

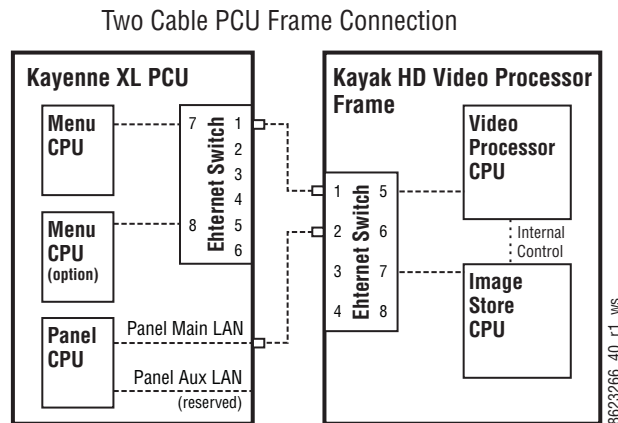
Network Cabling

Network connections are required between the Kayak HD Video Processor Frame and the PCU. The PCU routes network communications to and from the Control Panel Stripes and Menu Panels, using custom multi-pin cables.

The Ethernet switches built into the Kayak HD Frame and PCU auto-detect speed and polarity, and are 10/100/1000 Mbps capable. Either straight-through or crossover Ethernet cabling can be used. Available Ethernet connectors may be connected to the Facility LAN or other devices, as needed. However, should the Kayak HD Frame or PCU power down, the internal Ethernet switches will also power down, interrupting communication to devices connected to that Frame's or PCU's internal Ethernet switches. Only connect devices that are Kayenne XL/ Kayak HD system related.

The use of two Ethernet cables to connect the PCU to the Frame is recommended (Figure 55).

Figure 55. PCU to Frame Network Connection Methods



The PCU Ethernet switch to Frame Ethernet switch cable connection is used for Menu Panel communications. The second cable connects the Panel PCU directly to the Frame's Ethernet switch. Using two cables provides additional Ethernet communications throughput (to support Image Store file operations) and also offers redundancy. Because the Menu Panel and the Control Panel have independent cable connections, failure of one of these cables will not completely disable the Kayenne system. Either the Menu Panel or the Control Panel will remain operational after a single network cable failure.

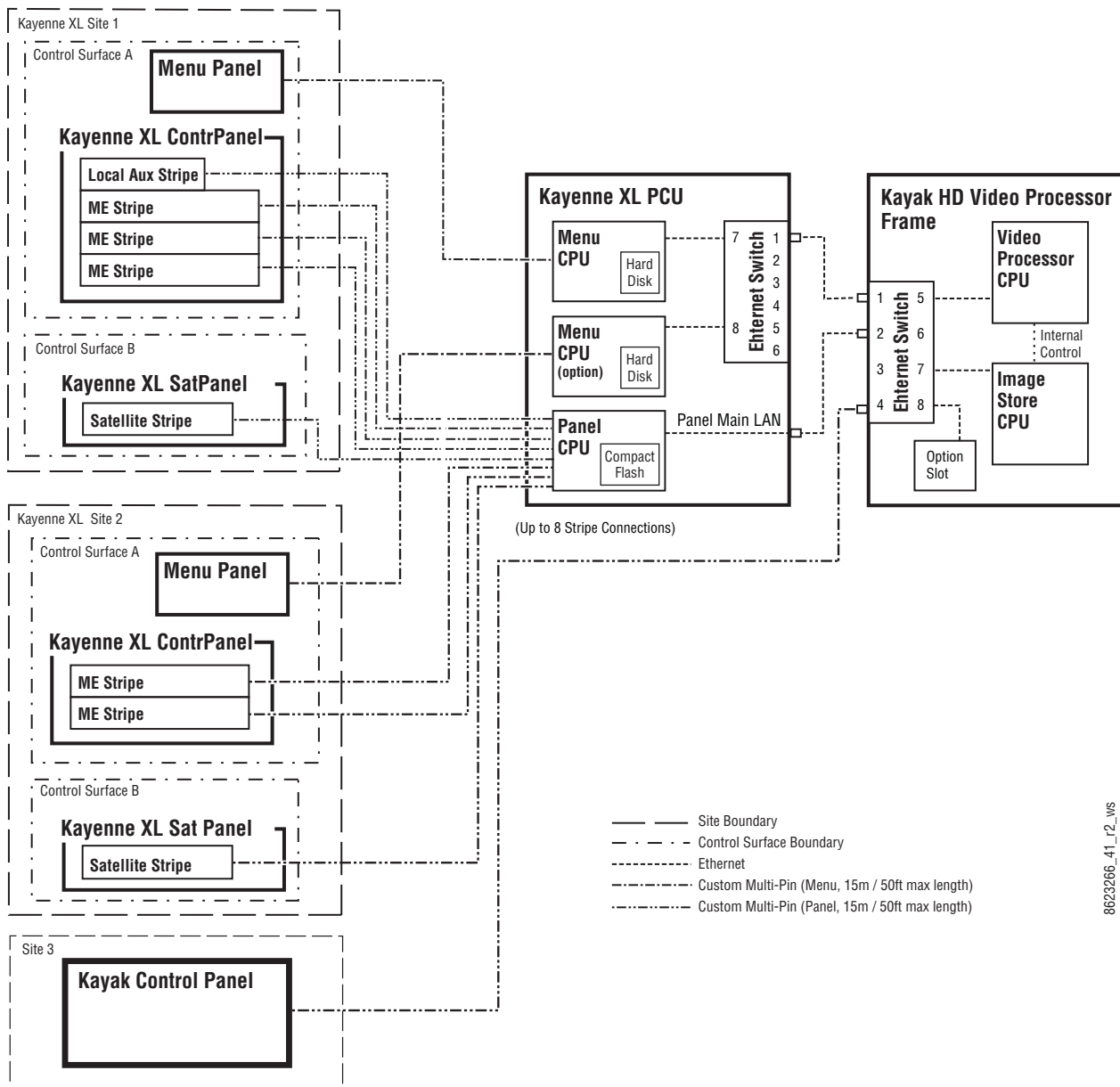
Multiple Kayenne XL Workplaces

A Kayenne XL / Kayak HD system can be divided into two or more workplaces. The system resources (MEs, eDPMs, external devices, etc.) can be assigned to each workplace, creating two or more switchers with one Kayenne XL / Kayak HD system.

The Kayenne XL Control Panel system flexibility permits locating these control surfaces in physically separate locations.

Custom multi-pin cable runs are limited to 15 meters (50 ft.) If this length is sufficient, a single PCU can be used for an entire multi-suite Kayenne system (Figure 56).

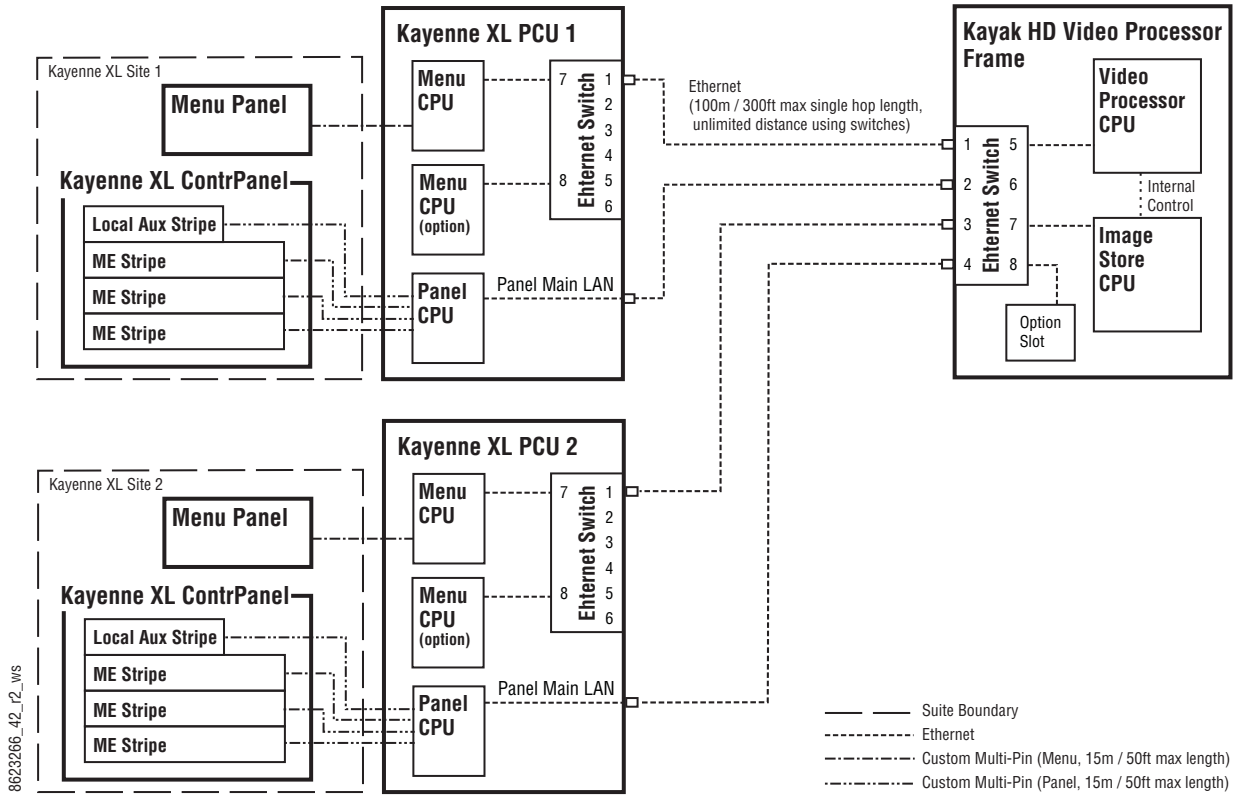
Figure 56. Workplace Example



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Using a second PCU, Kayenne XL Panels can be located anywhere on the network, permitting system control from different rooms, floors, or even different buildings (Figure 57).

Figure 57. Two Suites Using Two PCUs



Customer Supplied Ethernet Routers and Switches

Existing facility Ethernet switches can be used in conjunction with a Kayenne XL/Kayak HD system. If connecting to a network area outside that used by the Kayenne XL/Kayak HD system, use of an appropriately configured Ethernet Router is strongly advised. This reduces network traffic on the switcher network and keeps it isolated. Any Ethernet switches added specifically for use with the Kayenne XL/Kayak HD system should be 1000 Mbps capable for the most efficient operation (see [Table 10](#)).

Table 10. Ethernet Specifications

Cables	Type	10BaseT, 100BaseT, 1000BaseT compatible. Category 5 cable, 8 conductor twisted pair. The system will work at lower ratings with reduced performance. 1000BaseT components are highly recommended.
	Connectors	RJ-45 male connector at each end of cable.
	Length	100BaseT, 1000BaseT: 328 ft. (100 m) maximum. 10BaseT: 984 ft. (300 m) maximum. Use additional switches to exceed maximum cable runs.
Switch	Speed	10/100/1000 Mbps
	Ports	RJ-45 auto-negotiating 10/100/1000 Mbps; number of ports required is dependent upon system size. Frame and PCU ports are capable of 1000 Mbps. Using a 1000 Mbps Ethernet switch enhances Image Store transfer speeds.
	Unmanaged	Recommended. Configuration not required, but does not provide remote monitoring capability.
	Managed	May be used. Requires configuration, but offers remote monitoring capability.

Factory Default Network Settings

Table 11. Kayenne XL/Kayak HD System Default IP Addresses

Device	IP Address
Video Processor Frame CPU	192.168.0.170
Image Store CPU	192.168.0.171
Control Panel Surface 1A	192.168.0.173
Touch Screen Menu Panel 1	192.168.0.175
Touch Screen Menu Panel 2	192.168.0.176
All Subnet Masks)	255.255.255.0
All Gateways (except V1.6.5 software Remote Aux panel)	192.168.0.1

To integrate Kayenne XL/Kayak HD devices into an existing network, ask the local network administrator for that network's subnet mask. Before changing IP addresses always set the subnet masks of the devices to the mask of the local network.

Kayenne XL Cabling

Connectors on the outside bottom of the Control Panel tray connect to numbered ports on the PCU, using special multi-pin cables that carry both power and communications signals. Special cables are also used to connect the Menu Panels to the PCU.

CAUTION Do not connect or disconnect the multi-pin cables linking a Kayenne XL Control Panel tray or Menu Panel to the PCU while the PCU is powered up. Damage to the Kayenne XL equipment can result.

ME and Local Aux Stripe Connections

It is recommended that the PCU numbered ports be connected to Control Panel Stripes in ascending ME order, followed by the Local Aux Stripe. PCU port connections can be re-mapped, but this order matches the default configuration. The table below shows the connections for various Kayenne Control Panel models used in one workplace.

Table 12. PCU Port to Control Panel Stripe Connections

Control Panel Model	PCU Port	Panel Stripe
4-ME with Local Aux	1	ME 1 (top ME)
	2	ME 2 (second ME)
	3	ME 3 (third ME)
	4	ME 4 (bottom ME)
	5	Local Aux Stripe
3-ME with Local Aux	1	ME 1 (top ME)
	2	ME 2 (second ME)
	3	ME 3 (bottom ME)
	4	Local Aux Stripe
2-ME with Local Aux	1	ME 1 (top ME)
	2	ME 2 (bottom ME)
	3	Local Aux Stripe
1-ME (no Local Aux)	2	Master EMEM, MFM (top tray)
	1	ME (bottom tray)

Touch Screen Menu Panels (Used with PCU)

Connect a single or primary Menu Panel to the PUC **Menu 1** connector, using the supplied custom multi-pin cable. Connect an optional second Menu Panel to the **Menu 2** connector. Menu Panels are assigned to suites during Kayenne system configuration.

Figure 58. Example 4-ME Control Panel

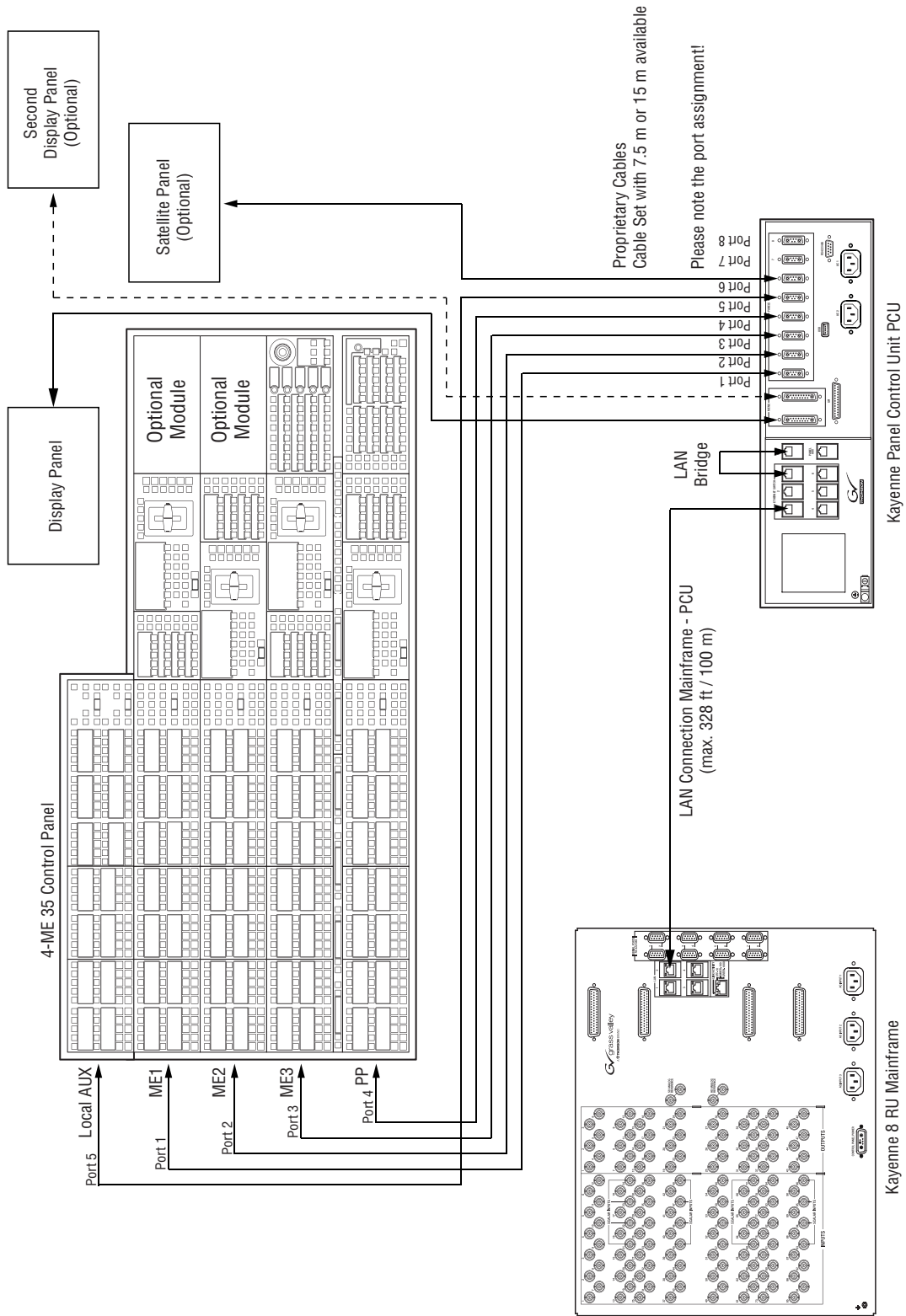
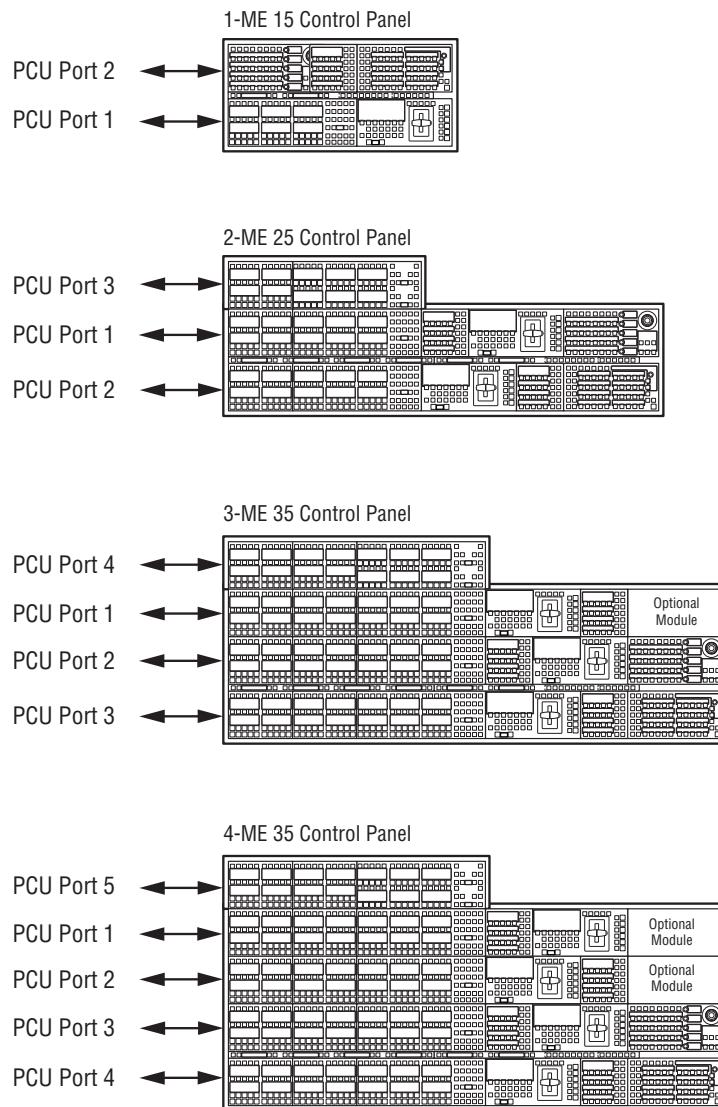


Figure 59. Assignment of the Panel Stripe Connectors



Satellite Panel Mapping

If you connect a Satellite Panel the right mapping to an existing M/M stripe has to be observed.

Rules

Please note the following simple rules.

- An M/E stripe is determined by the existence of a crossbar module (Roof: No crossbar module, no M/E stripe).
- Local EMEM and Transi Modules are M/E stripe extension modules.
- One Local EMEM within an M/E stripe is necessary to be able to assign M/Es.
- A Local EMEM (or Transi) Module which is in a stripe without a crossbar module are mapped to an M/E stripe in the neighbourhood to supply 1M/E panel layout .

Connection Example

The right mapping will be made by connecting the Satellite Panel to the proper PCU Port. If a Satellite Panel should be assigned to a special M/E stripe, identify the port number of this M/E first and use the next higher port number to connect the Satellite Panel.

Table 13. PCU Port to Control Panel Stripe Connections - Without Satellite Panel

Control Panel Model	PCU Port	Panel Stripe
4-ME with Local Aux	1	ME 1 (top ME)
	2	ME 2 (second ME)
	3	ME 3 (third ME)
	4	ME 4 (bottom ME)
	5	Local Aux Stripe

Table 14. PCU Port to Control Panel Stripe Connections - With Satellite Panel Mapped to ME2

Control Panel Model	PCU Port	Panel Stripe
4-ME with Local Aux and Satellite Panel mapped to ME 2	1	ME 1 (top ME)
	2	ME 2 (second ME)
	3	Satellite Panel
	4	ME 3 (third ME)
	5	ME 4 (bottom ME)
	6	Local Aux Stripe

Note Satellite Panels equipped with Aux, Master EMEM, Multi Function Control and Machine Control Modules no special port mapping is necessary!

Video Cabling for all Kayenne XL Switchers

All Kayenne XL system video inputs and outputs are configurable. For cabling configuration flexibility, each external primary input can be mapped to any Kayenne XL panel source select button, as can each internal video system source. Any Kayenne XL system video signal, such as M/E program, preview, clean feed, or PGM/PST, can be mapped to any output bus to be accessed on a specific connector, or an output bus can act as an auxiliary bus.

Inputs

Non-looping video inputs on the back of the Video Processor frame are numbered 1 through 24 and 25 through 48 on the 4-RU frame. Each accepts a 270 MHz serial digital video signal, or 1.485 Gb. The number of inputs that are active depends on the number of full mix/effects or I/O Expansion modules that are installed in the chassis. There are 24 inputs active for every mix/effects module and expansion module installed.

Outputs

The outputs on the back of the Video Processor frame are numbered 1 through 12 and 13 through 24 on the 4RU frame. 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 or I/O Expansion modules installed in the chassis. There are 12 outputs active for every mix/effects and expansion module installed.

Reference Input

There are two separate, looping reference input pairs. The upper pair accepts analog 525 or 625 composite video. Burst is not required, but typically facility reference color black is used. Kayenne XL can auto-sense whether the reference is 525 or 625 and can change the internal standard accordingly.

The lower looping reference input pair is for HD production and uses analog tri-level sync.

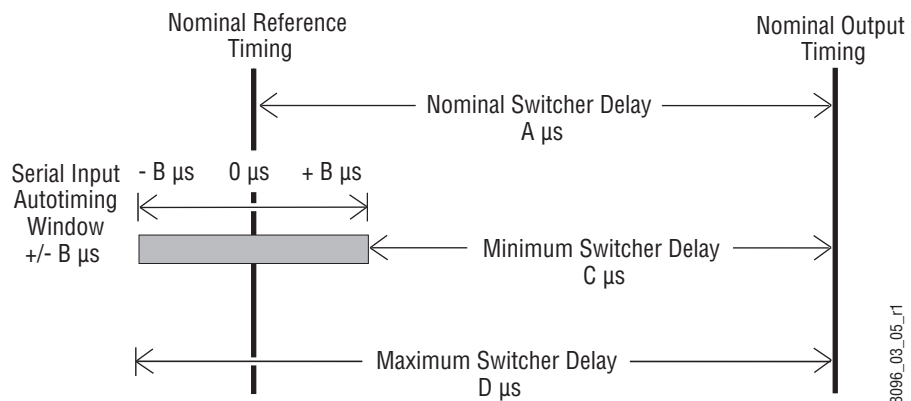
75-ohm termination of one of each of these looping inputs is required, either directly on the adjacent connector or at the end of a daisy chain looping to other equipment.

Any one of the SDI inputs can also be used as reference in the respective standard.

Video Timing and Delay

The total delay of a video input to the switcher output can vary according to the relationship of the input to the switcher reference. The switcher will automatically autotime inputs that fall within an autotiming window. Inputs must be within this range to be properly timed at the output. The calculation of the actual video delay of a specific input is the Nominal Switcher Delay minus the input time location within the autotiming window (the time location value can be zero, positive, or negative). A timing diagram of the input autotiming window and various switcher delay values is provided in [Figure 60](#).

Figure 60. Switcher Timing Diagram



- For inputs entering the switcher in zero time with the reference, the total delay through the switcher is the Nominal Switcher Delay ($A \mu\text{s}$).
- Inputs that reach the switcher at the latest point in the autotiming window ($+B \mu\text{s}$) will have a total delay that equals the time required for switcher processing. This value is the Minimum Switcher Delay ($C \mu\text{s}$).
- Inputs that reach the switcher at the earliest point in the autotiming window ($-B \mu\text{s}$) will have a total delay equal to the Nominal Switcher Delay ($A \mu\text{s}$) plus the autotiming window range. This value is the Maximum Switcher Delay value ($D \mu\text{s}$).

Note The maximum switcher delay is approximately one line of video.

On Kayak HD/Kayenne XL systems the autotiming window varies depending on the operating mode. The Timing Analyzer in the Video Settings Menu displays this autotiming information ([Figure 61 on page 90](#)). Also see [Table 15 on page 89](#) for more detailed information.

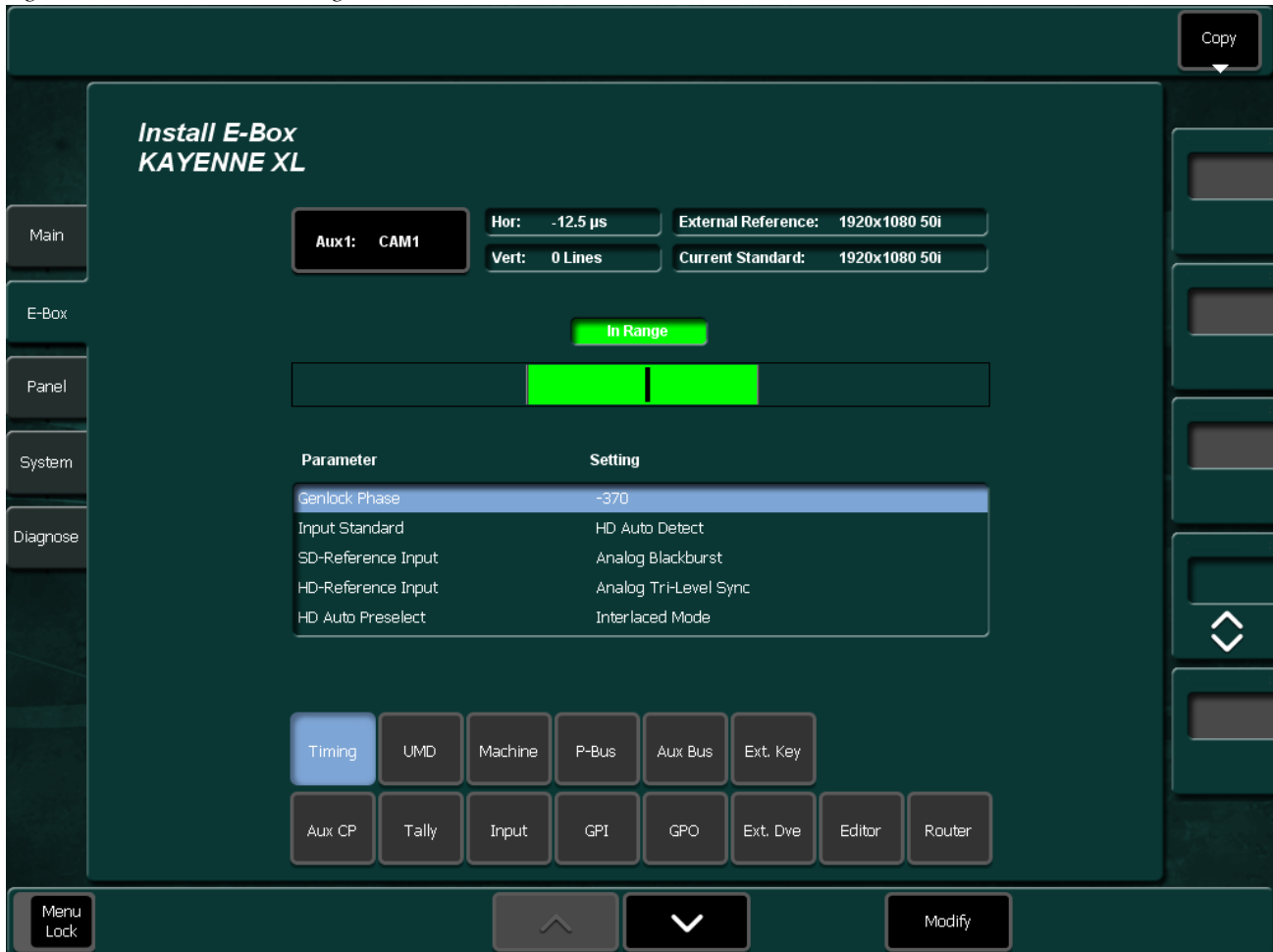
Table 15. Kayak HD System Timing, 4.5 ME System

System Timing	HD Mode					SD Mode	
	720p/ 50	720p/ 59.94/60	1080i & sf/ 25	1080i & sf/ 29.97/30	1080si/ 23.97/24	525i/ 29.97	625i/ 25
Nominal Switcher Delay	21.96 μ s	19.79 μ s	26.46 μ s	23.50 μ s	27.20 μ s	61.46 μ s	61.68 μ s
Serial Input Autotiming	+/- 4.71 μ s	+/- 2.45 μ s	+/- 9.12 μ s	+/- 6.16 μ s	+/- 9.86 μ s	+/- 2.10 μ s	+/- 2.32 μ s
Minimum Switcher Delay	17.34 μ s	17.34 μ s	17.34 μ s	17.34 μ s	17.34 μ s	59.36 μ s	59.36 μ s
~ Maximum Switcher Delay	26.67 μ s	22.24 μ s	35.56 μ s	29.66 μ s	37.04 μ s	63.56 μ s	64.00 μ s

Timing Analyzer

The **Timing** menu on switcher systems (accessed via **Install – E-Box – Timing**) has a Timing Analyzer pane, which can help when timing the system.

Figure 61. Install - E-Box - Timing Pane



This analyzer reports the timing position of a selected source relative to the Kayak HD internal sync generator. The source is selected with AUX Bus 1. The relative position of that source is reported in lines and μ s. Positive values indicate the source is later in time than the internal sync generator, and negative values indicate the source is earlier.

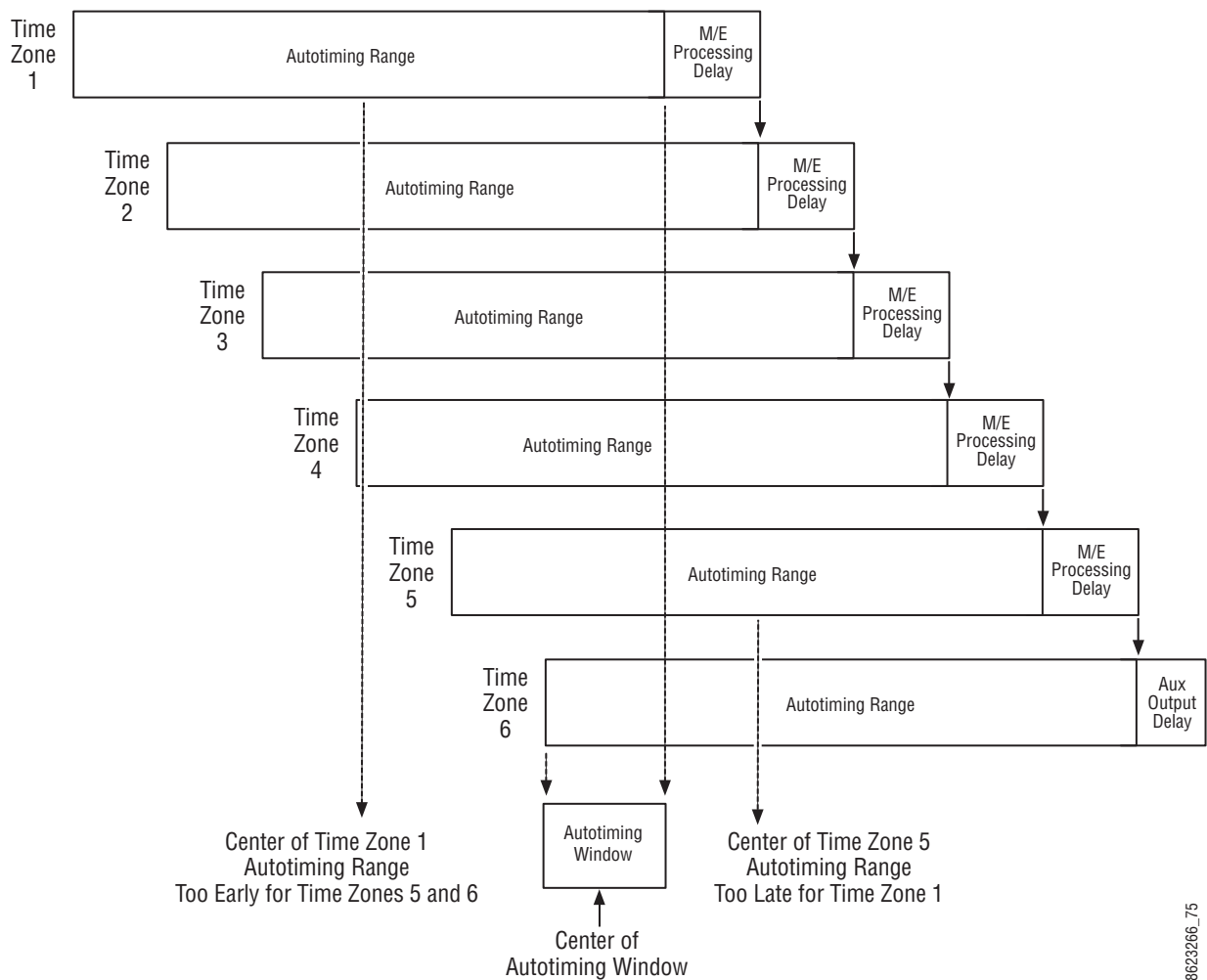
Kayak HD/Kayenne XL systems have an autotiming window. Sources that fall within that window will be properly timed throughout the system, even if the signal is cascaded through multiple MEs.

The **Genlock Phase** soft knobs adjust the timing of the switcher system relative to the incoming reference.

Time Zones and the Autotiming Window

Each ME has a fixed amount of delay from its input to output. To allow reentries to remain in time, ME timings are staggered such that the up stream ME outputs are in time (or earlier) than down stream ME inputs. A 4-1/2 ME production switcher has six time zones to accommodate reentry through all the MEs to any output (Figure 61). When all MEs are cascaded into each other, the most up stream ME is in the earliest time zone. Aux buses and other outputs are always in the latest time zone. The overlapping range of all the autotimers is the published autotiming window for the switcher.

Figure 62. Production Switcher Time Zones



Any source fed to the switcher must be within the autotiming range of all six time zones. If not, the source will be in time on some MEs but not on others. As illustrated in the figure, a source centered in one time zone's autotiming range can be too early or late for other switcher time zones.

Kayak HD/Kayenne XL Input Timing Range

Table 16.

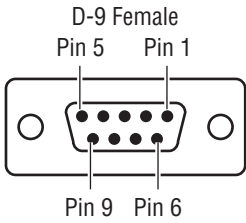
Kayak HD input timing range guide values (Software Verstion V703 with AUX-Transition)									
Video Standard	Pixel/Line	1 M/E input timing Range[Pix]	1.5 M/E input timing Range[Pix]	2 M/E input timing Range[Pix]	2.5 M/E input timing Range[Pix]	3 M/E input timing Range[Pix]	3.5 M/E input timing Range[Pix]	4 M/E input timing Range[Pix]	4.5 M/E input timing Range[Pix]
625/50	864	616	536	448	368	360	200	112	112
525/60	858	690	530	442	362	354	194	106	106
720p50	1980	1692	1532	1324	1244	1116	956	748	668
720p59	1650	1362	1202	994	914	786	626	418	338
720p60	1650	1362	1202	994	914	786	626	418	338
1080i50	2640	2352	2192	1984	1904	1776	1616	1408	1328
1080i59	2200	1912	1752	1544	1464	1336	1176	968	888
1080i60	2200	1912	1752	1544	1464	1336	1176	968	888
1080 23sF	2750	2462	2302	2094	2014	1886	1726	1518	1438
1080 24sF	2750	2462	2302	2094	2014	1886	1726	1518	1438
1080 25sF	2640	2352	2192	1984	1904	1776	1616	1408	1328
1080 29sF	2200	1912	1752	1544	1464	1336	1176	968	888
1080 30sF	2200	1912	1752	1544	1464	1336	1176	968	888

Note Please note, that Aux Transition is not available in 4.5 M/E configuration with SD video standards 625/50 and 525/60.

Pin Assignments

RS 422/485 Port (Rear Panel)

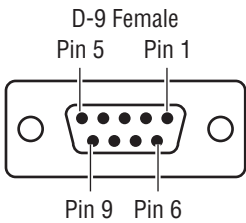
Table 17.

Socket	Pin	Bus Controller	Tributary
 <p>D-9 Female Pin 5 Pin 1 Pin 9 Pin 6</p>	1	Chassis Ground	Chassis Ground
	2	RxA (-)	TxA (-)
	3	TxB (+)	RxB (+)
	4	Signal Ground	Signal Ground
	5	Not used	Not used
	6	Signal Ground	Signal Ground
	7	RxB (+)	TxB (+)
	8	TxA (-)	RxA (-)
	9	Chassis Ground	Chassis Ground

The RS485 port that can be used for Machine Control of various devices, or for switcher control by an external controller.

RS 232 Port (Front Side PC Boards)

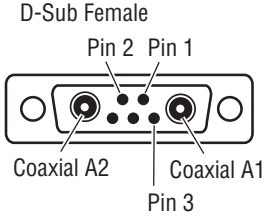
Table 18.

Socket	Pin	Signal
 <p>D-9 Female Pin 5 Pin 1 Pin 9 Pin 6</p>	1	Chassis Ground
	2	Transmit Data
	3	Receive Data
	4	Not used
	5	Signal Ground
	6	Not used
	7	Clear to Send
	8	Request to Send
	9	Not used

There is an RS232 serial port, xxx located on front of the Controller Board. There are in each case one on the Menu Processor, on the Panel Processor and on the optional second Menu Processor. These ports are used for diagnostics. If you need to use these ports to diagnose problems with the Kayenne XL switcher, please contact your Grass Valley Customer Service Representative.

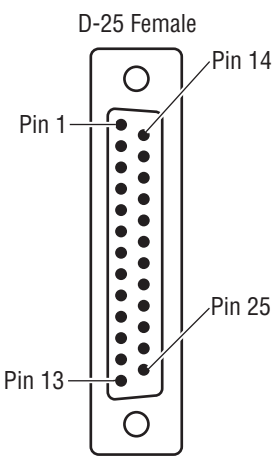
Panel Stripe Connector (8x Rear Panel)

Table 19.

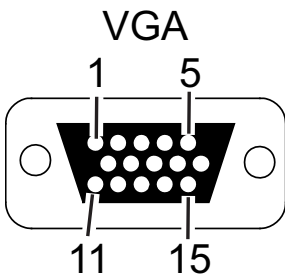
Socket	Pin	Signal
 <p>D-Sub Female Pin 2 Pin 1 Coaxial A2 Coaxial A1 Pin 3</p>	1	Ground 1
	2	48V POS
	3	Ground 1
	4	48V POS
	5	Ground 1
	A1	Data OUT
	A2	DATA IN

The panel Stripe Connector is used for connecting the Control Panel.

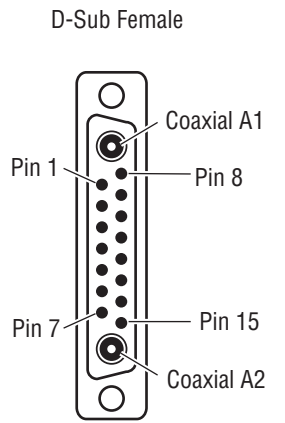
GPI Connector (Rear Panel)

Socket	Pin	Signal
 <p>D-25 Female Pin 14 Pin 1 Pin 13 Pin 25</p>	1	GPI Out 1
	2	GPI Out 2
	3	GPI Out 3
	4	GPI Out 4
	5	GPI Out 5
	6	GPI Out 6
	7	GPI Out 7
	8	GPI Out 8
	9	GPI Out 9
	10	GPI Out 10
	11	---
	12	Ground
	13	Ground
	14	GPI In 1
	15	GPI In 2
	16	GPI In 3
	17	GPI In 4
	18	GPI In 5
	19	GPI In 6
	20	GPI In 7
	21	GPI In 8
	22	---
	23	---
	24	Ground
	25	Ground

VGA (Front Side PC Boards)

Socket	Pin	Signal
	1	Red Video IN
	2	Green Video IN
	3	Blue Video IN
	4	---
	5	Ground
	6	Ground
	7	Ground
	8	Ground
	9	---
	10	Ground
	11	---
	12	---
	13	Horizontal Sync IN
	14	Vertical Sync IN
	15	---

Menu Panel (2x Rear Panel)

Socket	Pin	Signal
	1	Ground 1
	2	Ground 1
	3	Ground 1
	4	Ground 1
	5	Ground 1
	6	Ground 1
	7	Ground 1
	8	Ground 1
	9	DIFF OUT P
	10	DIFF OUT N
	11	48V POS
	12	Ground 1
	13	DIFF OUT P
	14	DIFF OUT N
	15	Ground 1
A1	DATA OUT	
A2	DATA IN	

This Connector is for connecting the Menu panel with the Display Panel. There is also a Connector for the additionally Display Panel, a Secondary Menu processor is required.

GPI / Tally Connections

The Kayenne XL GPI / Tally system has universal relays that interface source tally and GPI Output information to an external system through the Tally Port connectors. The channels can be assigned in the Setup menu.

Tallies are a source attribute and relays can be assigned to a source when source definitions are defined in the Setup menu during initial system configuration. The nominal rating specification for each relay is 1A, 60 V.

The GPI (General Purpose Interface) and Tally Interface provides a means to transfer commands to and from the switcher to external customer provided equipment. A “one wire per function” parallel hardware connection is used.

Connectors and pins are provided to create a mating connector.

Kayenne XL GPI and Tally Interface

The Kayenne XL is highly modular and configurable. This document describes various possibilities for tally interconnections.

There are two 50 pin female subminiature 'D' connectors on the rear of the 4-RU Kayak HD frame and four connectors on the rear of the 8-RU KayalHD-XL frame. Each connector is activated by the presence of a Mix/Effects module installed in the frame. A one M/E switcher (4-RU or 8-RU frame) activates only the first connector. Two M/Es activate two connectors, and so forth, up to four connectors activated by a four M/E system.

GPI inputs and outputs are assigned as follows:

- GPI in 1 - 8 and GPI/Tally out 1 - 32 routed to the first connector.
- GPI in 9 - 16 and GPI/Tally out 33 - 64 routed to the second connector.
- GPI in 17 - 24 and GPI/Tally out 65 - 96 routed to the third connector (8-RU frame only).
- GPI in 25 - 32 and GPI/Tally out 97 - 128 routed to the fourth connector (8-RU frame only).

For pinouts of these connectors refer to the listings in:

- 4 RU and 8RU Frame Tally (GPI In 1-8, GPI Out 1-32) on [page 102](#)
- 4 RU and 8RU Frame Tally (GPI In 9-16, GPI Out 33-64) on [page 103](#)
- 8 RU Frame Tally (GPI In 17-24, GPI Out 65-96) on [page 104](#)
- 8 RU Frame Tally (GPI In 25-32, GPI Out 97-128) on [page 105](#)

These four connectors do not share any signals in common other than ground reference and chassis ground. Because of this, some GPI / Tally interconnects may require external common connections between connectors, as explained below.

GPI Inputs

The purpose of the GPI In pins is to provide a stimulus from the customer's equipment to the switcher.

A simple connection to the two connectors (or four in the case of the 8-RU frame) activates the corresponding input. This kind of control is suitable for a connection to a relay contact or to an open-collector output.

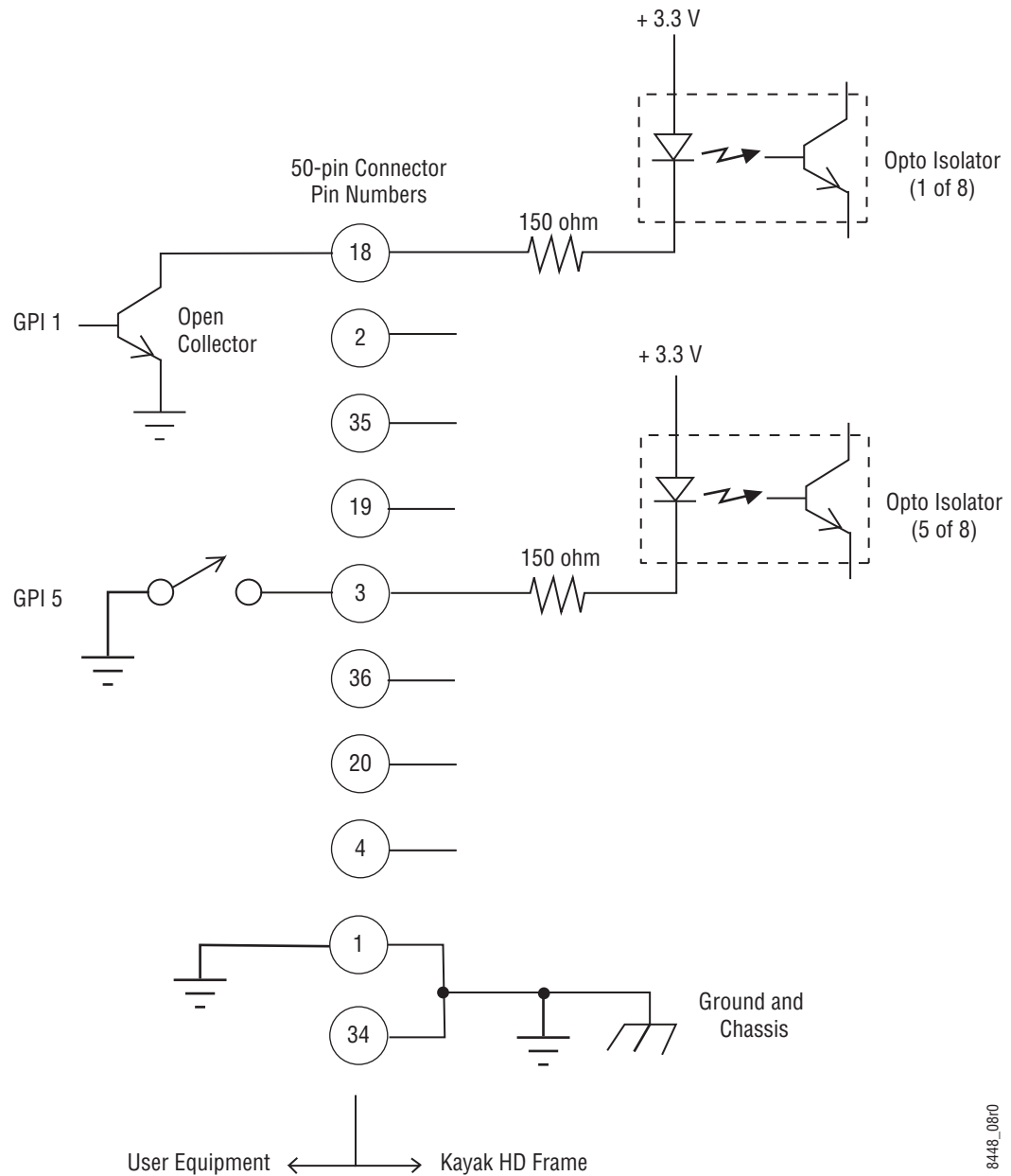
WARNING When connecting to an open-collector output, there is no ground potential isolation between the Video Processor frame and controlling devices.

Since the circuit ground is led out of the device, the cabling has to be shielded for this kind of control. Non-shielded cables may cause EMC and/or ESD problems.

To activate a GPI In you must provide switch closure between a particular GPI In pin and one of the two GPI In Com pins (Pins 1 and 34).

GPI Input Structure

Figure 63. GPI Input Connections (Typical 2 of 8 connections)



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Pins 1 and 34 of each of the two (four) connectors are connected to ground. For applications that span across more than one connector, only one ground (common) connection is required.

The function of each GPI input is user assignable. The activation of the function can be programmed to occur on the leading edge or the trailing edge of the closure, or both edges. The switch must be closed for at least one field.

Refer to the [Install Menus](#) section of the *Kayenne XL User Manual* for details on setting the input signal activating edge.

Refer to the [Configuration Menu](#) section of the *Kayenne XL User Manual* for details on setting the function of a GPI input.

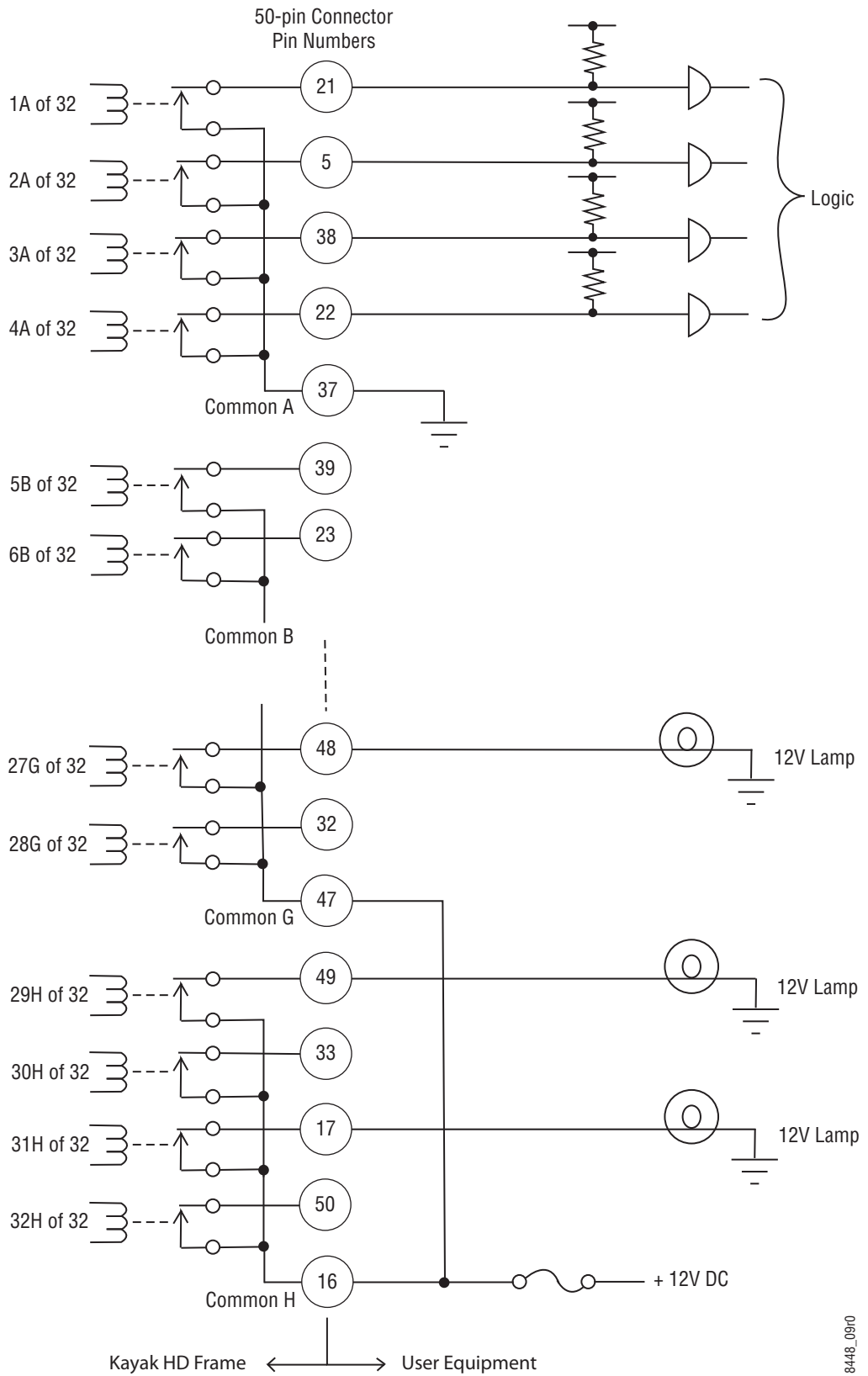
GPI / Tally Outputs

There is a great deal of flexibility in the hardware and programmability of the GPI / Tally outputs.

Outputs are arranged in groups of four. Each group has its own common connection. These are labeled GPI_OUT_COM_A through GPI_OUT_COM_H for the first connector (corresponding to GPI /Tally OUTs 1 - 32). These commons can all be tied together, forming one common bus for all 32 outputs. Alternatively, multiple smaller commons can be constructed to interface with systems that need isolated common connections. This common or isolated bus scheme can extend across multiple connectors. For example, a 4 M/E system could have all commons of all connectors tied together. All 128 relay closures will connect to one common bus. Another case may require two isolated common busses - half of the commons form the first common bus and the other half form the second common bus.

The example in [Figure 64 on page 100](#) shows two common busses. The first four outputs (COMMON A) have the common bus tied to ground. This drives a logic system. The last outputs (COMMON G & COMMON H) have the common bus tied to +12 volts. This drives a tally lamp system.

Figure 64. GPO Tally Connections



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Although the diagram above implies mechanical relays, the actual outputs are implemented with solid state relays.

Interface specifications are:

- Maximum current for any one output: 1 amp AC/DC
- Maximum current for any one common: 2 amp AC/DC.
- Maximum off (open circuit) voltage between output and common: 60 Volts peak.
- Maximum voltage between any point and ground (chassis): 60 Volts peak.

The solid state relays are bidirectional; either polarity voltage can be applied. If the switcher GPI / Tally outputs are used to drive downstream DC relays, be sure to install diodes across the relay coils to clamp inductive spikes. Shielded cable is recommended for the connection from the switcher to the user tally system.

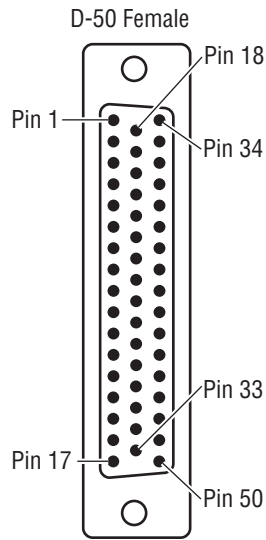
Each output can be programmed for function, steady state or pulse, output polarity, and pulse duration.

Refer to the [Install Menus](#) section of the *Kayenne XL User Manual* for details on setting the characteristics of the output signal (steady state, polarity, pulse duration, etc.).

Refer to the [Configuration Menu](#) section of the *Kayenne XL User Manual* for details on setting the function of a GPO / Tally output (tally, auto trans, recall register, and so forth).

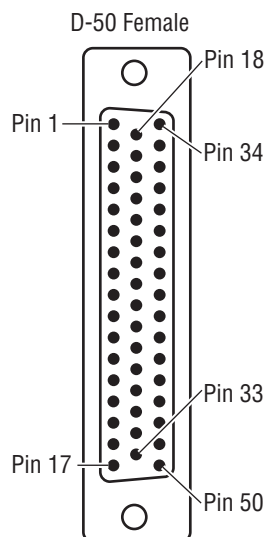
4 RU and 8RU Frame Tally (GPI In 1-8, GPI Out 1-32)

Socket	Ribbon Cable	50-Pin D-Sub	Signal	
	1		1	GPIInCom
	2	34		GPIInCom
	3		18	GPIIn1
	4		2	GPIIn2
	5	35		GPIIn3
	6		19	GPIIn4
	7		3	GPIIn5
	8	36		GPIIn6
	9		20	GPIIn7
	10		4	GPIIn8
	11	37		GPIOutComA
	12		21	GPIOut1A
	13		5	GPIOut2A
	14	38		GPIOut3A
	15		22	GPIOut4A
	16		6	GPIOutComB
	17	39		GPIOut5B
	18		23	GPIOut6B
	19		7	GPIOut7B
	20	40		GPIOut8B
	21		24	GPIOutComC
	22		8	GPIOut9C
	23	41		GPIOut10C
	24		25	GPIOut11C
	25		9	GPIOut12C
	26	42		GPIOutComD
	27		26	GPIOut13D
	28		10	GPIOut14D
	29	43		GPIOut15D
	30		27	GPIOut16D
	31		11	GPIOutComE
	32	44		GPIOut17E
	33		28	GPIOut18E
	34		12	GPIOut19E
	35	45		GPIOut20E
	36		29	GPIOutComF
	37		13	GPIOut21F
	38	46		GPIOut22F
	39		30	GPIOut23F
	40		14	GPIOut24F
	41	47		GPIOutComG
	42		31	GPIOut25G
	43		15	GPIOut26G
	44	48		GPIOut27G
	45		32	GPIOut28G
	46		16	GPIOutComH
	47	49		GPIOut29H
	48		33	GPIOut30H
	49		17	GPIOut31H
	50	50		GPIOut32H



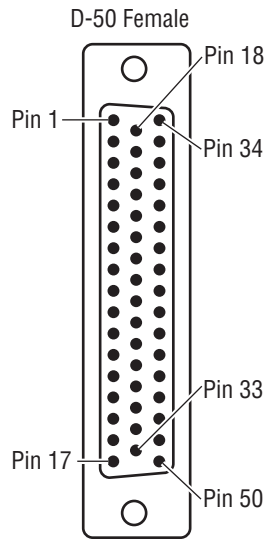
4 RU and 8RU Frame Tally (GPI In 9-16, GPI Out 33-64)

Socket	Ribbon Cable	50-Pin D-Sub	Signal
	1		1 GPIInCom
	2	34	GPIInCom
	3	18	GPIIn9
	4		2 GPIIn10
	5	35	GPIIn11
	6	19	GPIIn12
	7		3 GPIIn13
	8	36	GPIIn14
	9	20	GPIIn15
	10		4 GPIIn16
	11	37	GPIOutComJ
	12	21	GPIOut33J
	13		5 GPIOut34J
	14	38	GPIOut35J
	15	22	GPIOut36J
	16		6 GPIOutComK
	17	39	GPIOut37K
	18	23	GPIOut38K
	19		7 GPIOut39K
	20	40	GPIOut40K
	21	24	GPIOutComL
	22		8 GPIOut41L
	23	41	GPIOut42L
	24	25	GPIOut43L
	25		9 GPIOut44L
	26	42	GPIOutComM
	27	26	GPIOut45M
	28		10 GPIOut46M
	29	43	GPIOut47M
	30	27	GPIOut48M
	31		11 GPIOutComN
	32	44	GPIOut49N
	33	28	GPIOut50N
	34		12 GPIOut51N
	35	45	GPIOut52N
	36	29	GPIOutComP
	37		13 GPIOut53P
	38	46	GPIOut54P
	39	30	GPIOut55P
	40		14 GPIOut56P
	41	47	GPIOutComQ
	42	31	GPIOut57Q
	43		15 GPIOut58Q
	44	48	GPIOut59Q
	45	32	GPIOut60Q
	46		16 GPIOutComR
	47	49	GPIOut61R
	48	33	GPIOut62R
	49		17 GPIOut63R
	50	50	GPIOut64R



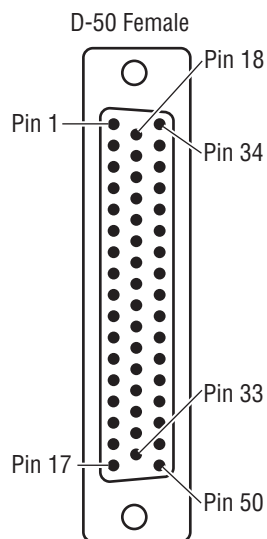
8RU Frame Tally (GPI In 17-24, GPI Out 65-96)

Socket	Ribbon Cable	50-Pin D-Sub	Signal
	1		1
	2	34	
	3		18
	4		2
	5	35	
	6		19
	7		3
	8	36	
	9		20
	10		4
	11	37	
	12		21
	13		5
	14	38	
	15		22
	16		6
	17	39	
	18		23
	19		7
	20	40	
	21		24
	22		8
	23	41	
	24		25
	25		9
	26	42	
	27		26
	28		10
	29	43	
	30		27
	31		11
	32	44	
	33		28
	34		12
	35	45	
	36		29
	37		13
	38	46	
	39		30
	40		14
	41	47	
	42		31
	43		15
	44	48	
	45		32
	46		16
	47	49	
	48		33
	49		17
	50	50	



8RU Frame Tally (GPI In 25-32, GPI Out 97-128)

Socket	Ribbon Cable	50-Pin D-Sub	Signal
	1		1 GPIInCom
	2	34	GPIInCom
	3	18	GPIIn25
	4		2 GPIIn26
	5	35	GPIIn27
	6	19	GPIIn28
	7		3 GPIIn29
	8	36	GPIIn30
	9	20	GPIIn31
	10		4 GPIIn32
	11	37	GPIOutComAA
	12	21	GPIOut97AA
	13		5 GPIOut98AA
	14	38	GPIOut99AA
	15	22	GPIOut100AA
	16		6 GPIOutComAB
	17	39	GPIOut101AB
	18	23	GPIOut102AB
	19		7 GPIOut103AB
	20	40	GPIOut104AB
	21	24	GPIOutComAC
	22		8 GPIOut105AC
	23	41	GPIOut106AC
	24	25	GPIOut107AC
	25		9 GPIOut108AC
	26	42	GPIOutComAD
	27	26	GPIOut109AD
	28		10 GPIOut110AD
	29	43	GPIOut111AD
	30	27	GPIOut112AD
	31		11 GPIOutComAE
	32	44	GPIOut113AE
	33	28	GPIOut114AE
	34		12 GPIOut115AE
	35	45	GPIOut116AE
	36	29	GPIOutComAF
	37		13 GPIOut117AF
	38	46	GPIOut118AF
	39	30	GPIOut119AF
	40		14 GPIOut120AF
	41	47	GPIOutComAG
	42	31	GPIOut121AG
	43		15 GPIOut122AG
	44	48	GPIOut123AG
	45	32	GPIOut124AG
	46		16 GPIOutComAH
	47	49	GPIOut125AH
	48	33	GPIOut126AH
	49		17 GPIOut127AH
	50	50	GPIOut128AH



Maintenance

Introduction

This section provides routine maintenance information for servicing the switcher. Refer to the latest **Kayenne XL Package Release Notes** for information specific to your current software version.

Servicing Precautions

Before performing any type of maintenance or troubleshooting of the switcher, read the complete **Safety Summary** at the front of this manual. The **Safety Summary** describes all of the pertinent safety issues and recommend precautions.

Grass Valley Web Site

The URL for the Grass Valley web site can be found on [page 4](#). Visit the website for documentation, software updates, online support (including FAQs), spare parts information, and a link to the File Transfer Protocol (FTP) site.

Grass Valley Customer Support FAQ Database

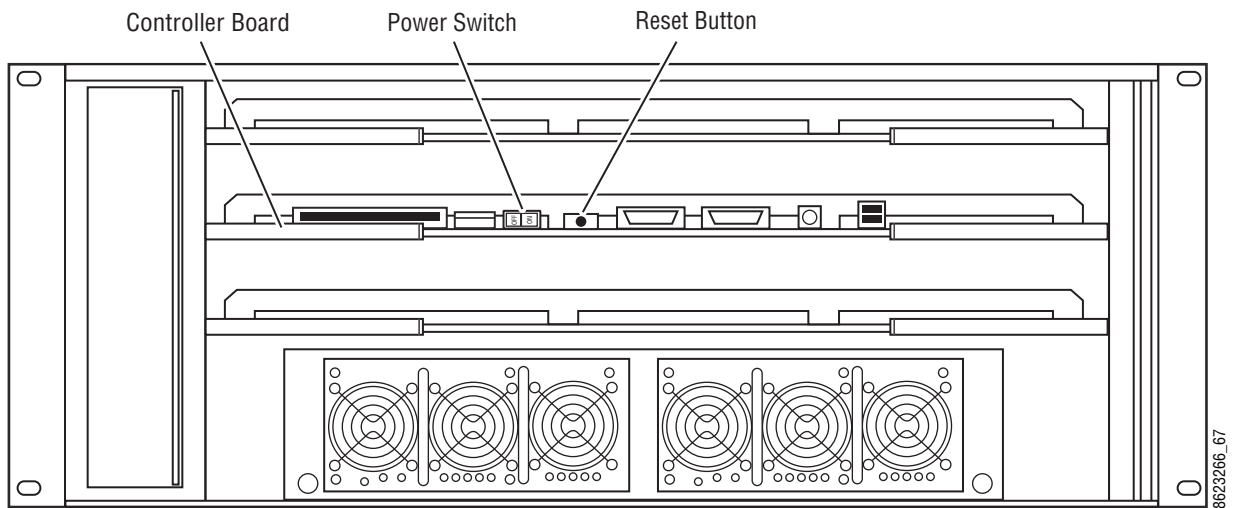
Answers to many common questions can be found by searching the Grass Valley Customer Support Frequently Asked Questions (FAQ) database, available on the Grass Valley web site.

Reset Procedures

Video Processor Frame

A Video Processor Frame reset button is located near the center of the front edge of the Controller Board, accessed by opening the front door of the Frame (Figure 65). The 8-RU and 4-RU Frames use the same type of Controller Board. Pressing this button will reset both the Video Processor CPU and the Image Store Processor CPU. Powering the unit off and back on also resets the Video Processor Frame.

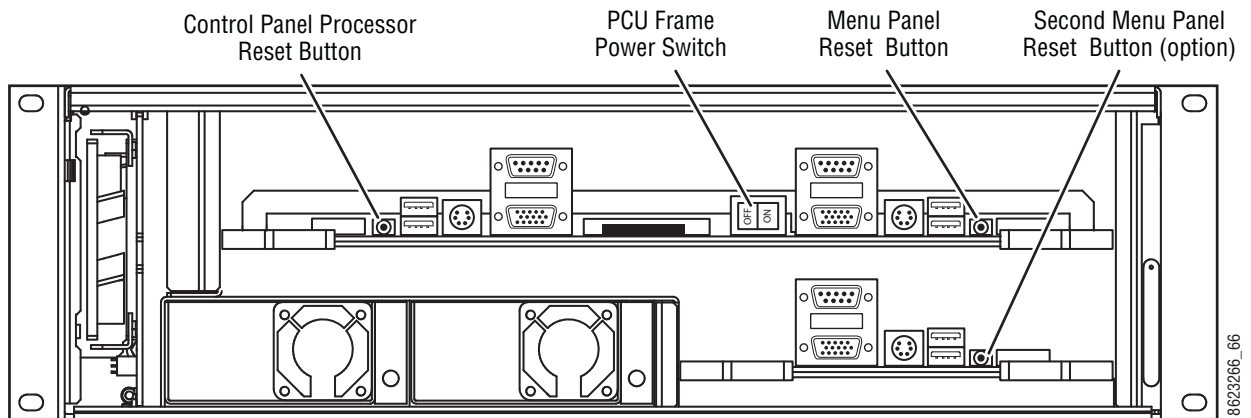
Figure 65. 4-RU Video Processor Frame Reset Button and Power Switch



Panel Control Unit (PCU)

The PCU has up to three reset buttons, one for the Control Panel Processor, one for the standard Menu Panel, and one for the optional second Menu Panel. These controls are accessible by opening the front door of the PCU Frame (Figure 66). Powering the unit off and back on also resets all installed components (Panel and Menus).

Figure 66. PCU Reset Buttons and Power Switch



Setting Up IP Addresses

The default factory setting for the IP address is

- 192.168.0.70 for the video processor frame
- 192.168.0.71 for the RAMRecorder
- 192.168.0.176 for Panel Processor PC
- 192.168.0.177 for Menu Processor PC

Setting IP Address at Panel and Mainframe

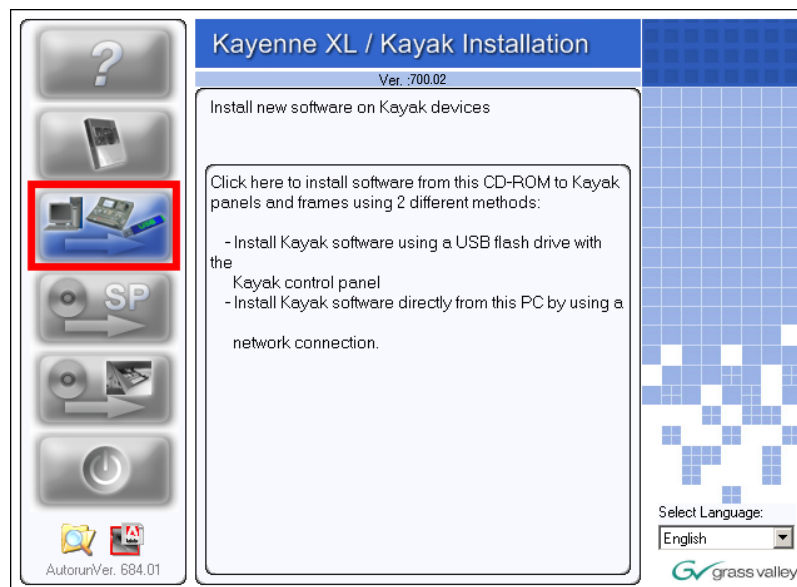
An IP address is a 32-bit number that uniquely identifies each device sending or receiving information in packets across the network. It is used that two devices can communicate with each other, as well as with other devices connected to the same network.

The **Kayenne XL / Kayak Installation Wizard** can be used to change the IP address of a Kayenne XL system.

From the **CD Installer Welcome** screen click on the **Install new software** button (third from the top on the left as shown in Figure below.):

Note If auto run is disabled on your CD Drive or the software is located on a USB device, do a double click on the **Autorun.exe** file located in the **Autorun** directory to start the Software Installation Wizard.

Figure 67. Install new Software on Kayak devices



- Click the **Kayenne XL / Kayak Network devices** button to start the Network based software installation Wizard

Figure 68. Select Network devices

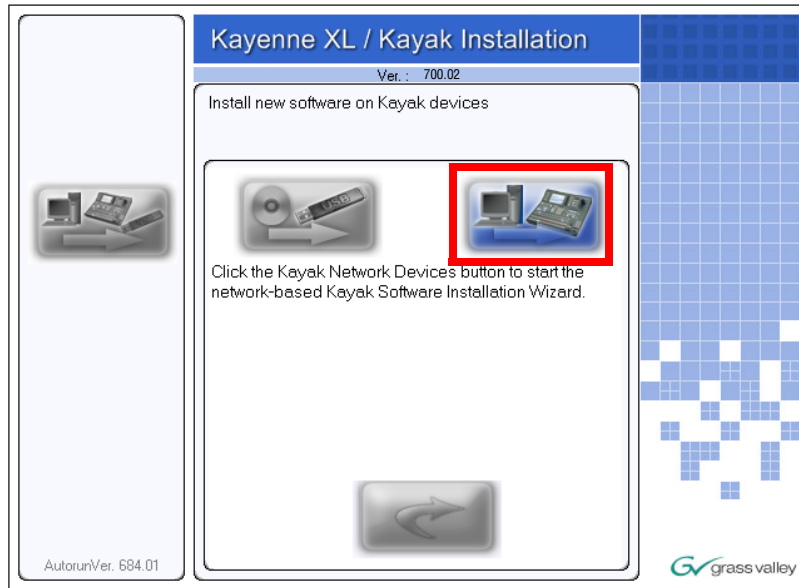
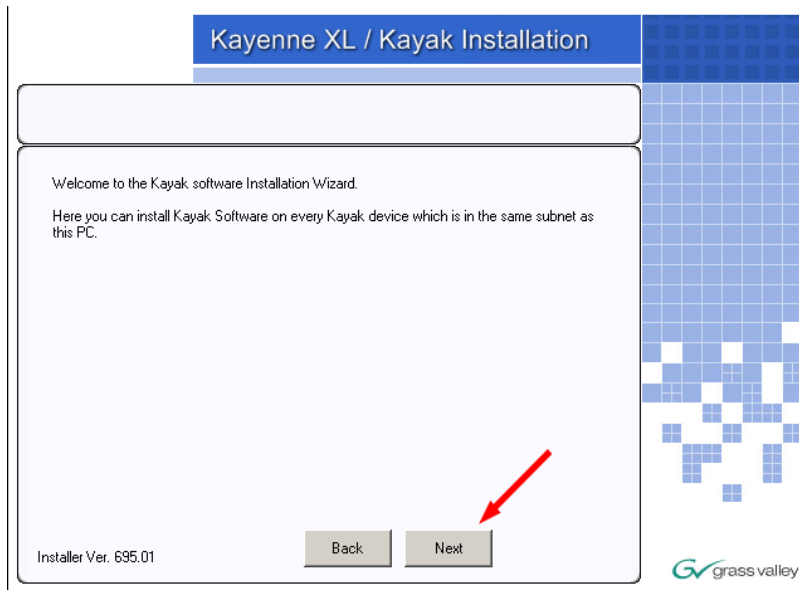
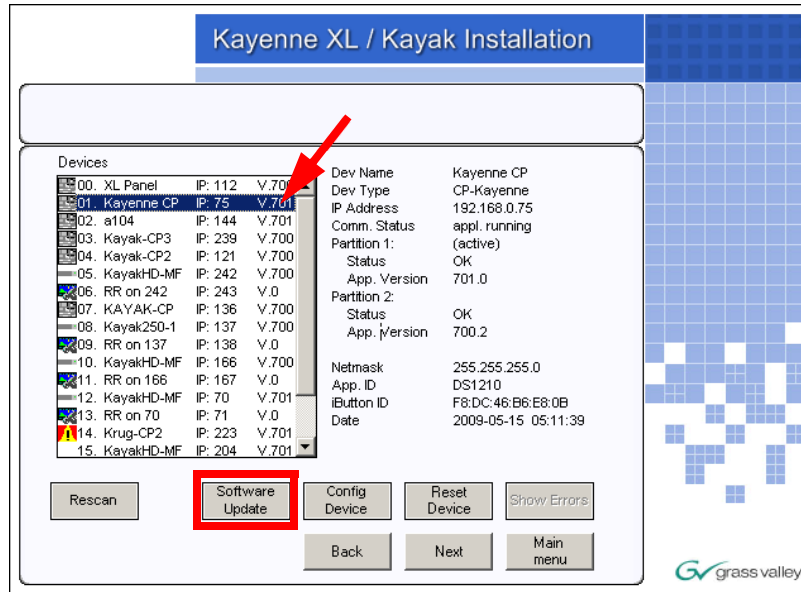


Figure 69. Software Installation Wizard



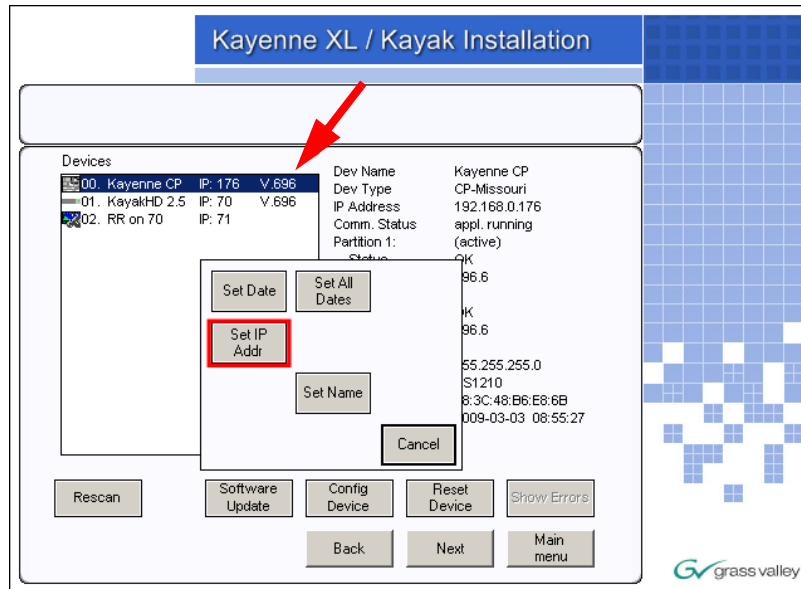
- Click **Next**. The Device Control menu displays every Kayenne XL or Kayak device connected to the Switcher Network.

Figure 70. Select a displayed device



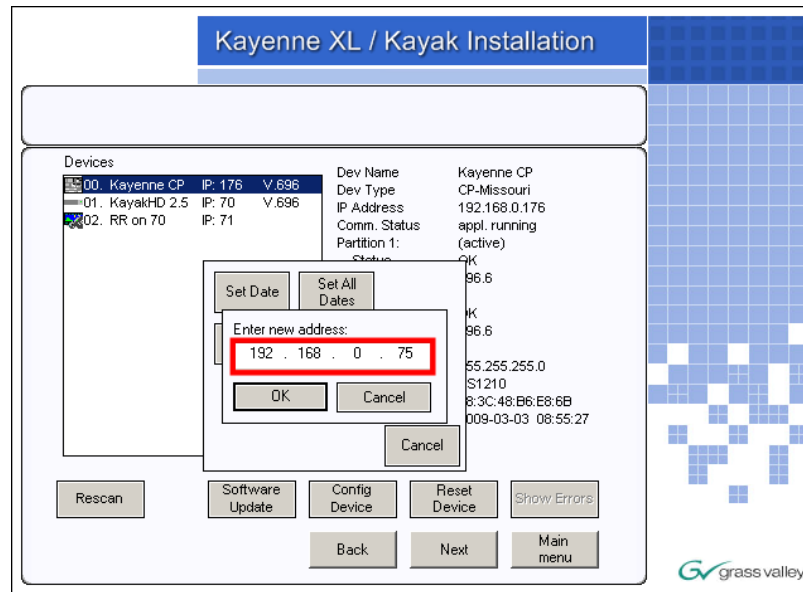
- Select the device whose IP address you want to configure from the device list by touching the name.
- Press the **Config Device** button at the bottom of the **Device** menu. The **Configure Device** menu appears.

Figure 71. Config Device menu



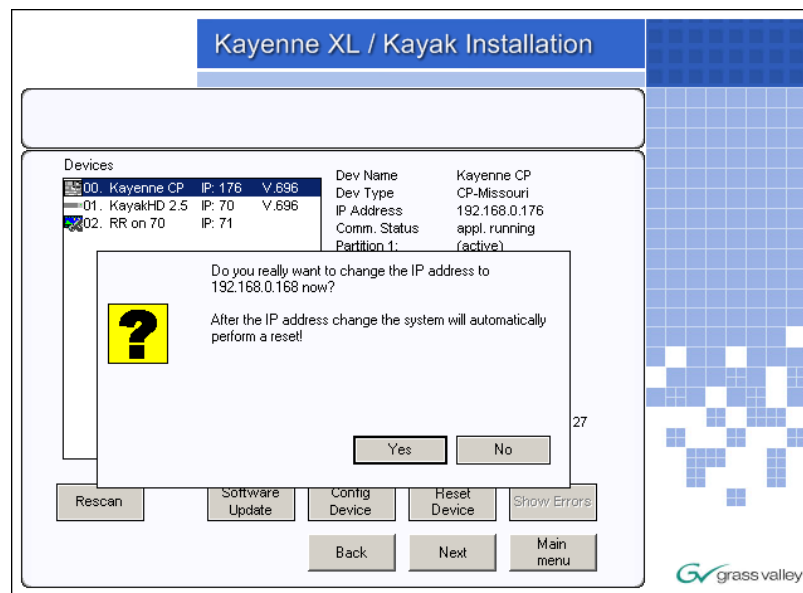
- Press the **Set IP Addr** button. A data pad appears to allow you to type in the IP address you want to use for the selected device.

Figure 72. Enter new IP Address



- Confirm **Do you really want to change the IP address** with **Yes**. A reboot of the system is required.

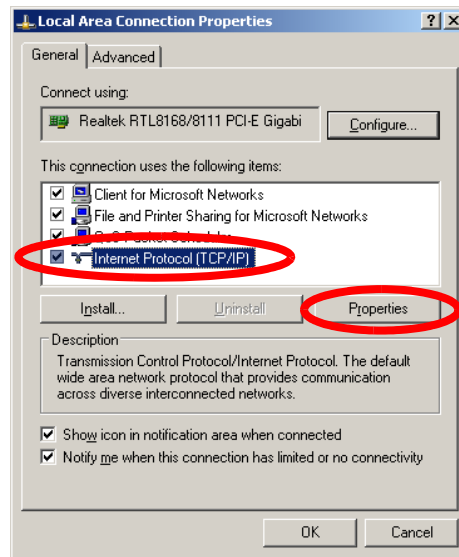
Figure 73. Confirm



Setting IP Address at Menu Panel PC

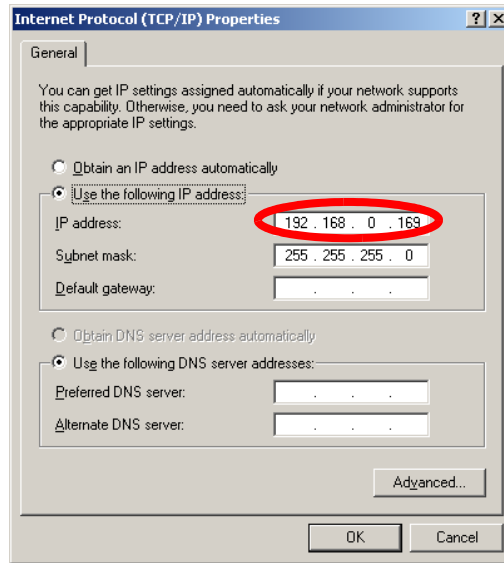
- Open the Windows **Start** menu and select **Settings / Control Panel / Network Connections** and choose **Local Area Connection**.
- Click on **Properties**. This opens the **Local Area Connection Properties** window.
- In the **General** tab, highlight the Internet Protocol (TCP/IP) item, and click **Properties**.

Figure 74. Internet Protocol properties



- Enter the static IP address you want to use for the Menu Panel PC.

Figure 75. IP Address



- Click **OK** to close each window.

Software Update

Note Before performing a software update be sure that your application data are saved. For details refer your User Manual, section **Save Application Data**.

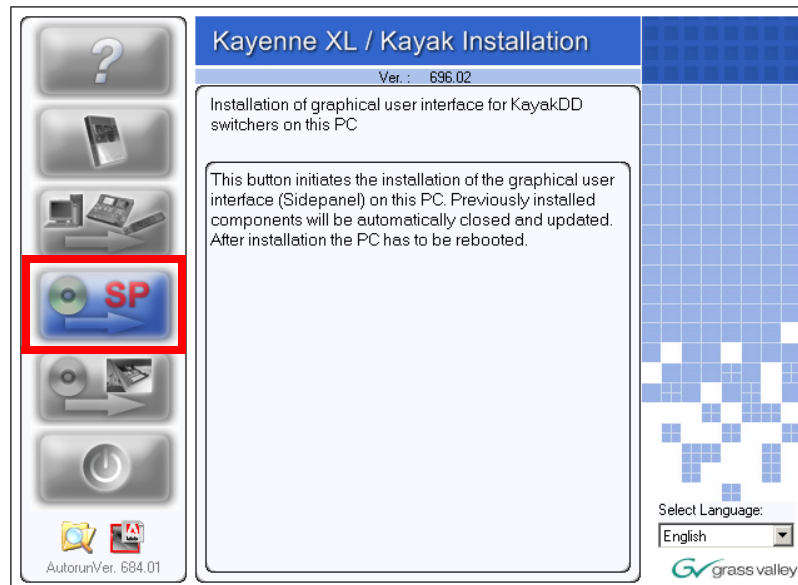
Installing the Sidepanel Software

- Insert the Kayenne XL Package Software CD into your computer's CD-ROM drive. Or download the software from www.grassvalley.com. Copy the software to a USB device (flash memory or hard disk).
- Connect the USB device at the right side of the Menu Panel.
- Kayenne XL Package Software uses an autorun application to help installing the software. Navigate to the following directory:

`\ds0206\Autorun\Autorun.exe`

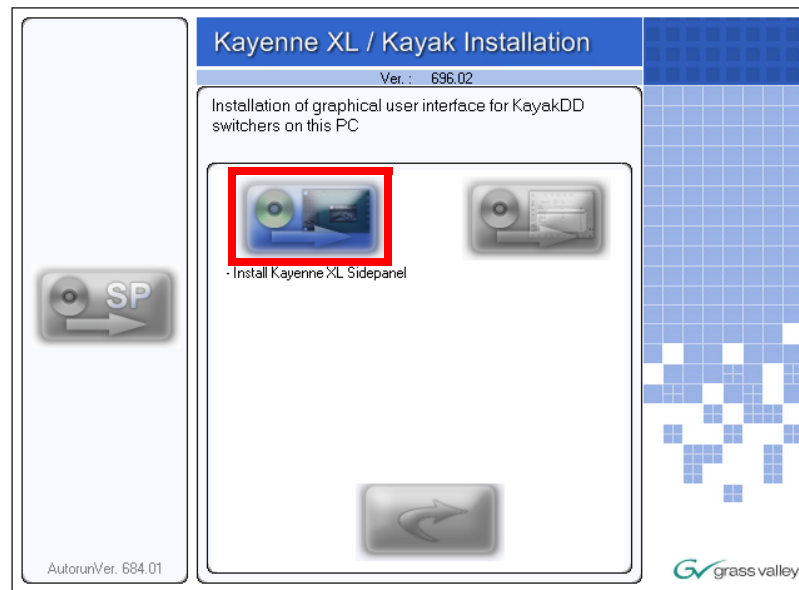
- Select '**Installation of graphical user interface**' at the Kayenne XL Package / Kayak Installation wizard:

Figure 76. Sidepanel Software Installation



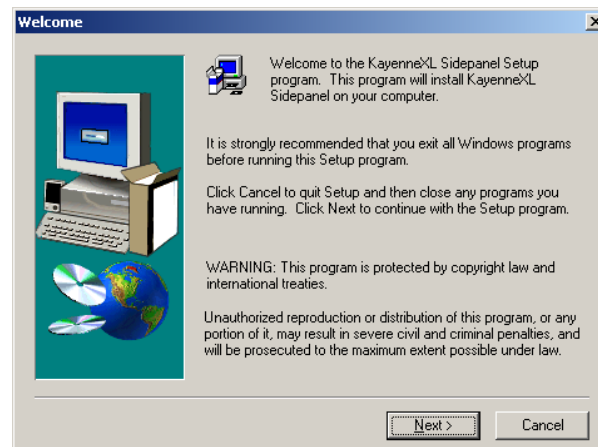
- Click on **Install Kayenne XL Sidepanel** to launch the installation.

Figure 77. Kayenne Sidepanel Installation



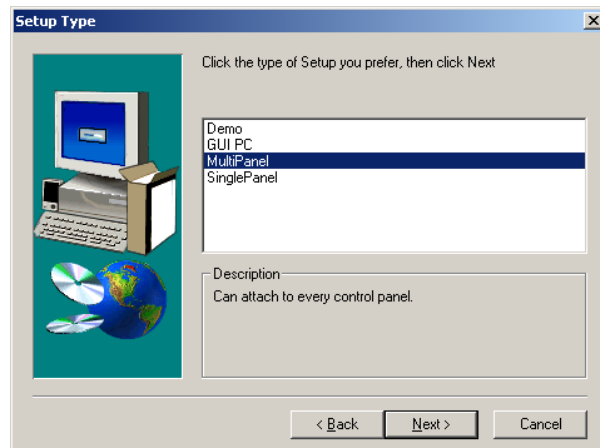
- The Sidepanel Software Installation Welcome screen displays. Click **Next**.

Figure 78. Confirm



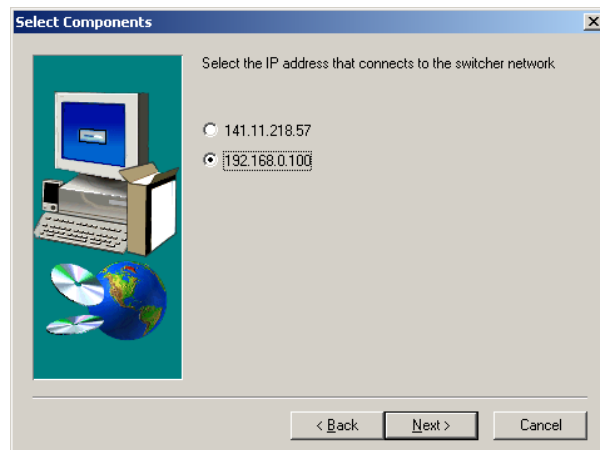
- Choose the type of installation you wish to perform:
 - **Demo:** Demo version, no connection to a panel or a frame.
 - **GUI PC:** Connection only to a frame, not to a panel.
 - **MultiPanel:** Connection to frame and panel.
 - **SinglePanel:** Connection to a specified panel during installation.

Figure 79. Installation type



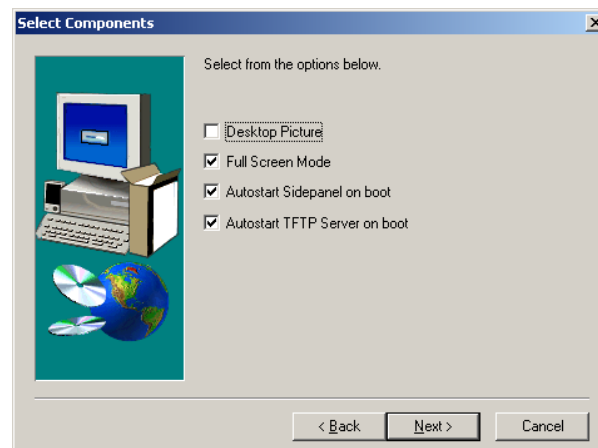
- Select the network which is used for the switcher network and click **Next:**

Figure 80. Select component



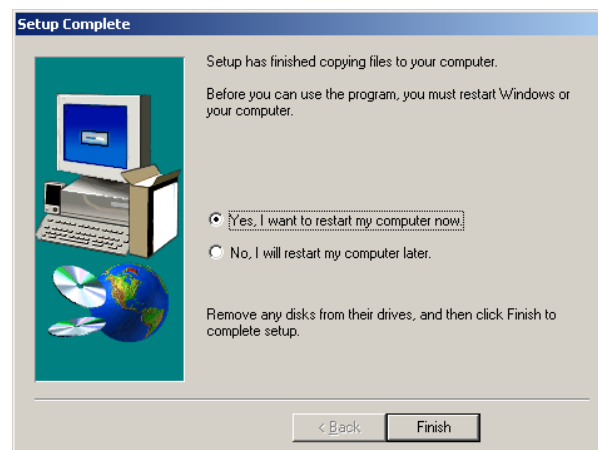
- Click to select or deselect the check box for **Desktop Picture, Full Screen Mode, Autostart Sidepanel on boot** and **Autostart TFTP Server on boot.**

Figure 81. Select options



- Click to select the check box for **Yes, I want to restart my computer now** and click **Finish**.

Figure 82. Confirm restart



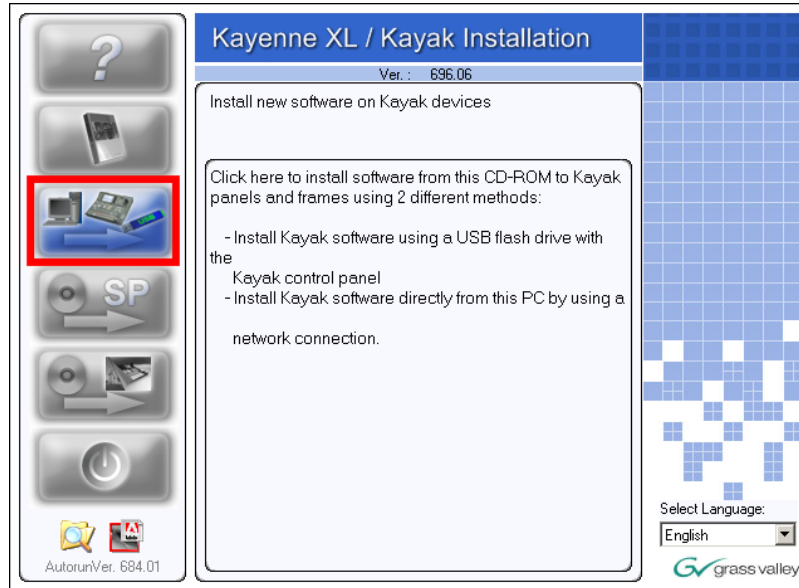
To complete the computer connection to the panel and frame after the computer has rebooted.

- Launch the Sidepanel software application.
- Click to select the box for **E-Box** at the top of the screen. A blue line displays in the bottom of the box to indicate that it has been selected.
- Click to select the box for **Panel** at the top of the screen.
- Click to select the name and IP address for the frame and the panel from the scrolling list at the bottom of the screen.
- Click the **Connect** button to connect the frame to the panel and to the computer Sidepanel software for this session.
- Click **Attach** to make the connection from the frame to the panel and to the computer Sidepanel software persistent so that it will remain after the computer reboots.

Installing Panel and Mainframe Software

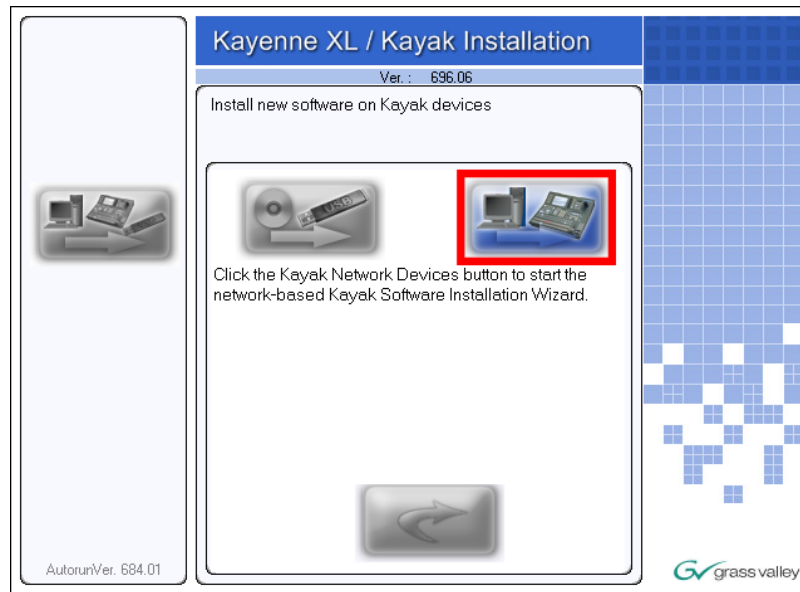
- From the **CD Installer Welcome screen** click on the **Install new software** button (third from the top on the left as shown in Figure below):

Figure 83. Software Installation



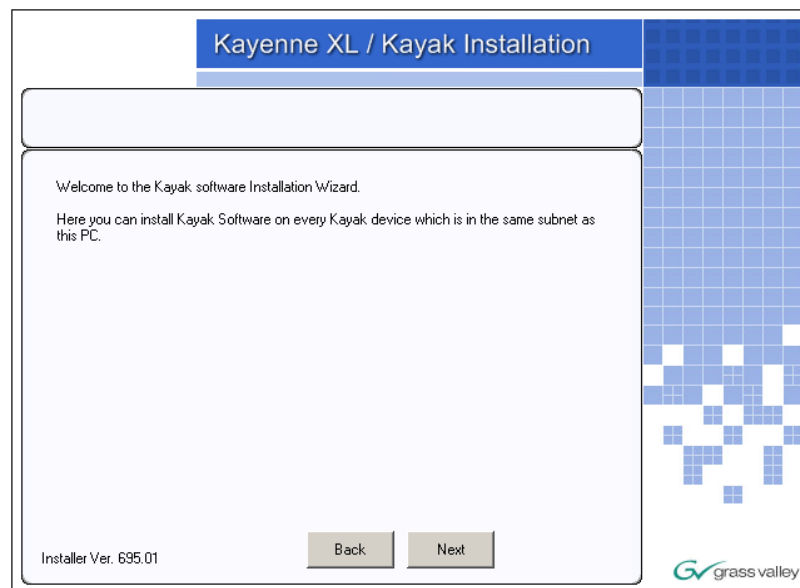
- The Install new software selection screen is displayed. Click on **Network Devices** button on the right to install software over the network.

Figure 84. Network Devices



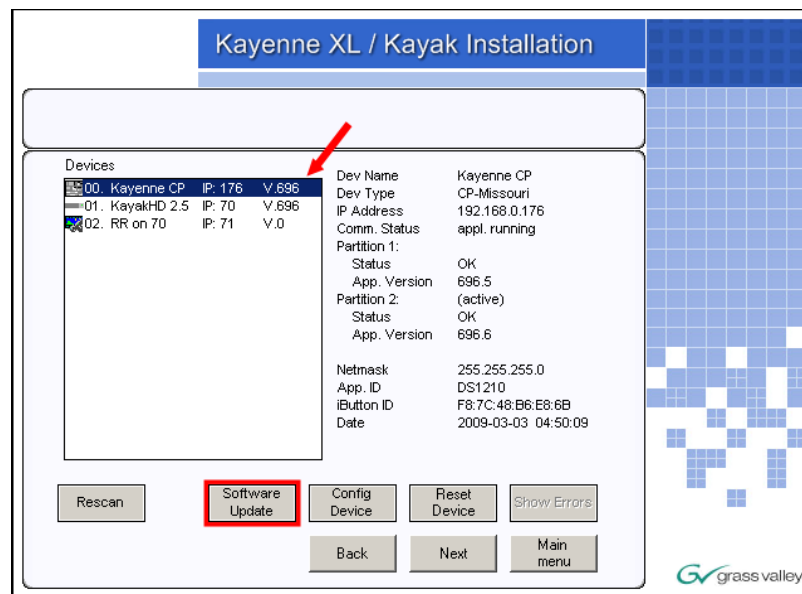
- In the **Device Selection** screen every Kayenne XL Package and Kayak devices connected to your computer's network are displayed here in the window. Click on a name in the list to select a device for installation.
- Click on **Next**.

Figure 85. Next Step



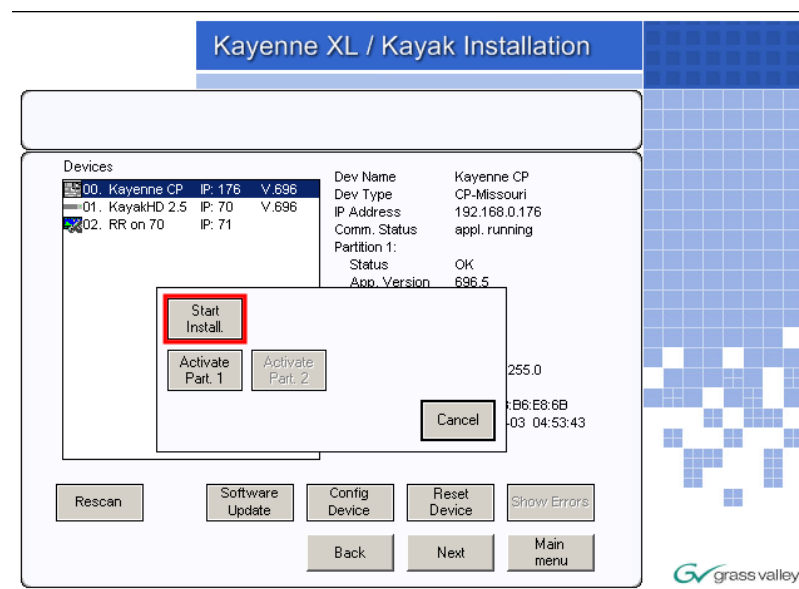
- Once you have selected the frame or the panel, click on **Software Update** below the device list to start the software installation.

Figure 86. Software Update



- Select **Start Install** to start the software installation on the selected device.

Figure 87. Start Installation



- Confirm with **Yes**. The installation progress will be shown at the top of the screen.
- Confirm the reboot with **Yes** to complete the software installation.

Figure 88. Confirm

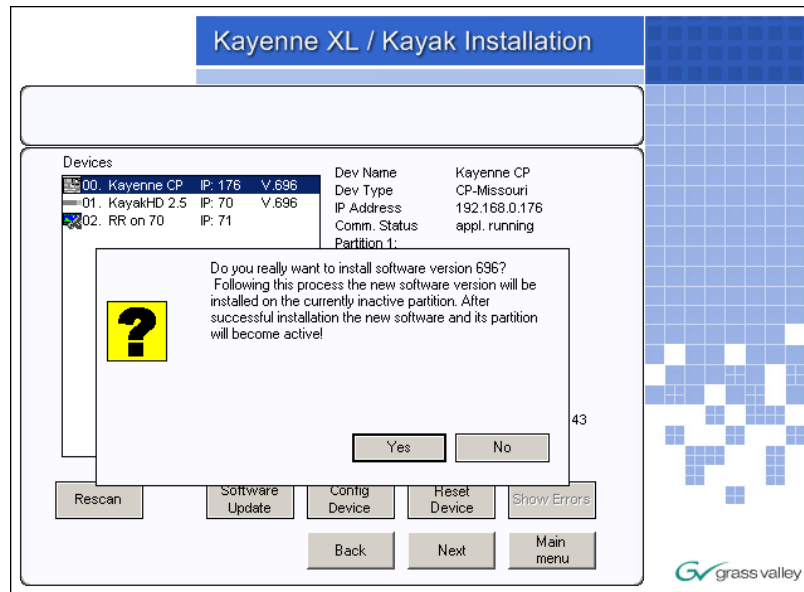


Figure 89. Progress Bar Software Update

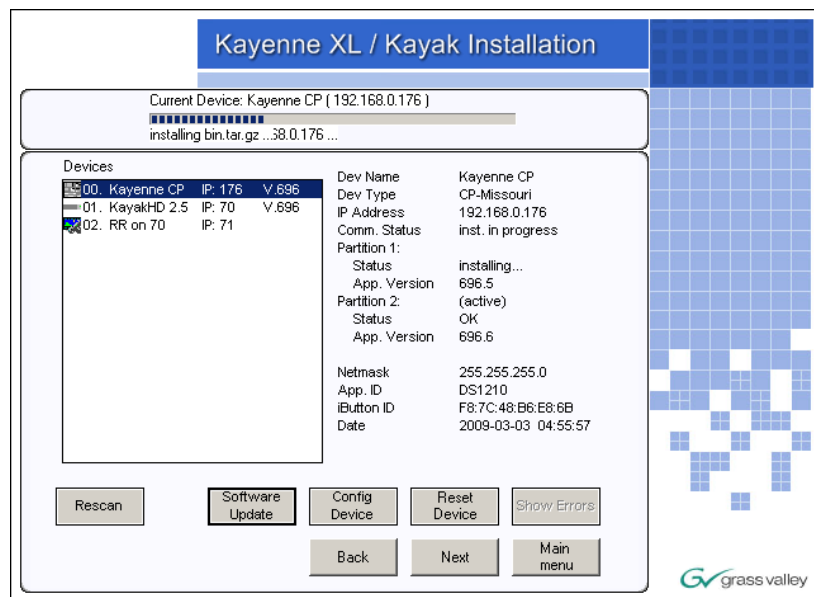
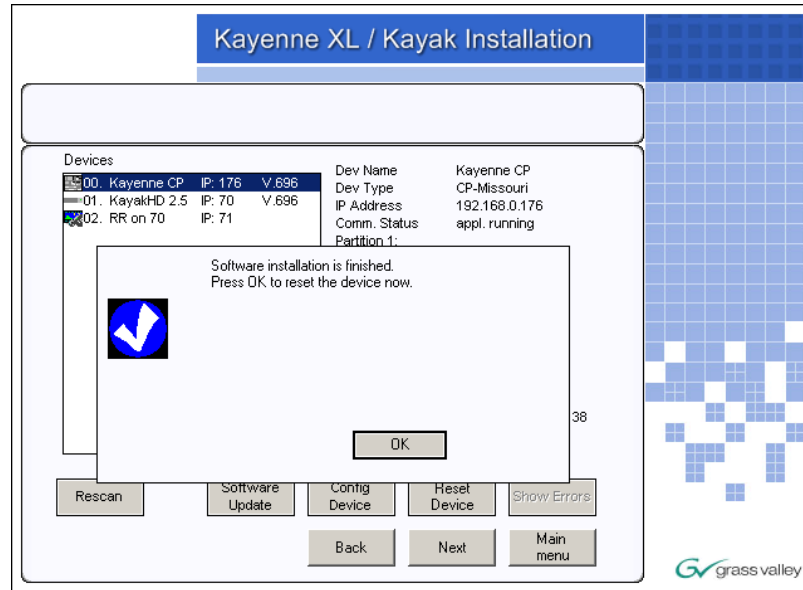


Figure 90. Reset Device



Install a KayenneXL Stand Alone GUI on a Notebook PC

This document describes installation process to attach a Kayenne XL GUI control panel to a PC (or Notebook).

Hardware Requirements

- Kayenne XL Stand-Alone GUI Module
- 48V power supply
- 48V power supply cable
- USB connection cable (USB-A / USB-B)
- DVI monitor cable

Windows Drivers

- Touch Screen Driver (Hampshire Rev. 6.20)
- USB Serial Driver

A self extracting version of the drivers you can get here

[\Kayak\KayenneXL Sidepanel Drivers\Kayenne XL PCU Version](#)

[\Kayak\KayenneXL Sidepanel Drivers\Stand Alone PC Version](#)

Installation

To install the Windows drivers the administration access right is required.

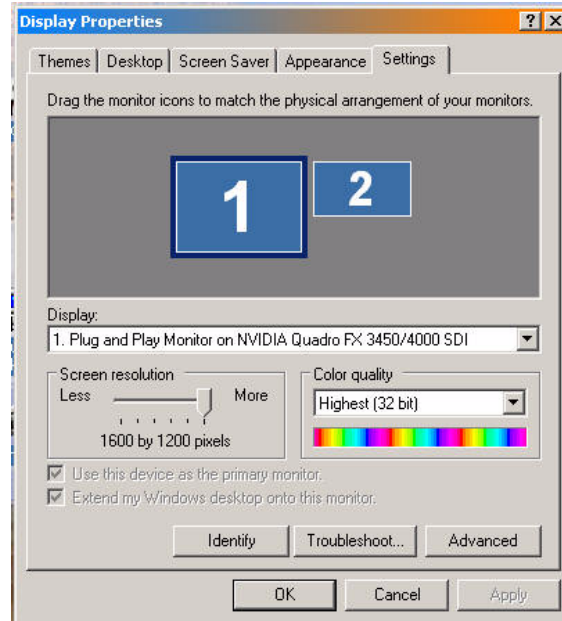
Cabling

Connect the cables mentioned above and switch on the power of the Stand-Alone GUI Power Supply and your PC.

Driver Installation

Enhance the graphic driver to support a second display

Figure 91. Display Properties



After activation of the second screen

- The second display shows the screen's background
- and the USB port detects a new hardware and asks for a new USB driver.

Install the USB to RS232 adapter

Note Be sure that the cabling is performed and the power supply of the GUI Panel is switched on before installing the driver!

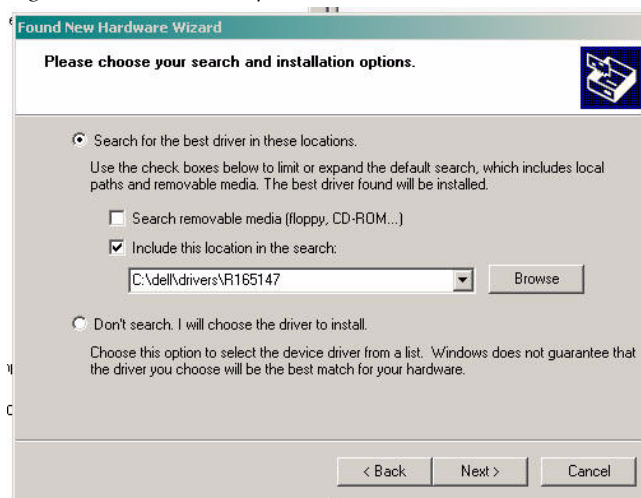
Follow the instructions of the installation wizard:

Figure 92. Hardware Wizard



Select **Install from a list of specific location (advanced)** and press the **Next** button.

Figure 93. Installation Options



Use the **Browse** button to select the driver directory as shown below.

Figure 94. Folder Selection



Press the **OK** button to finalize the installation.

Figure 95. Finish the Installation



After the installation process you probably are asked a second time to go through the USB installation wizard. This may happen in case of a second driver is requested!

Install the Touch Screen Driver

It is important to use version V6.20 since successor drivers (e.g. 6.3x) do not work properly!

Follow the instructions of the Installation Manual to install the Hampshire Touch Driver Rev. 6.20.

The pictures below show the related installation screens.

Figure 96. Install the Touch Screen Driver

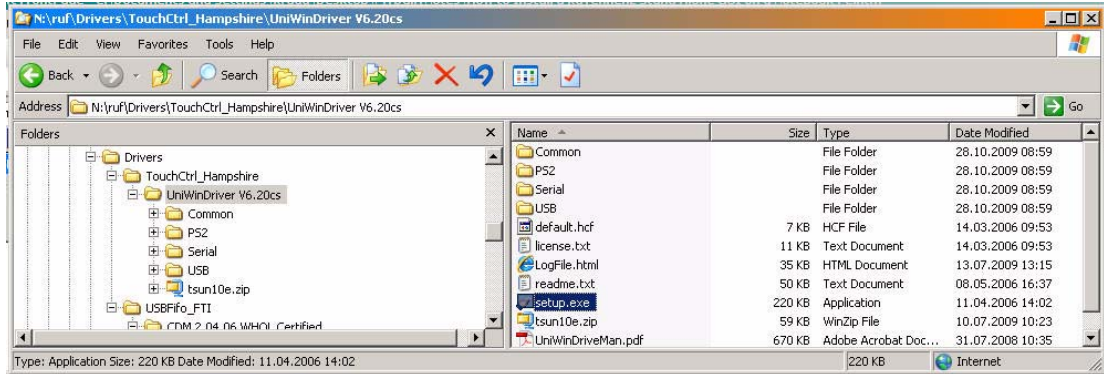


Figure 97. Welcome Screen

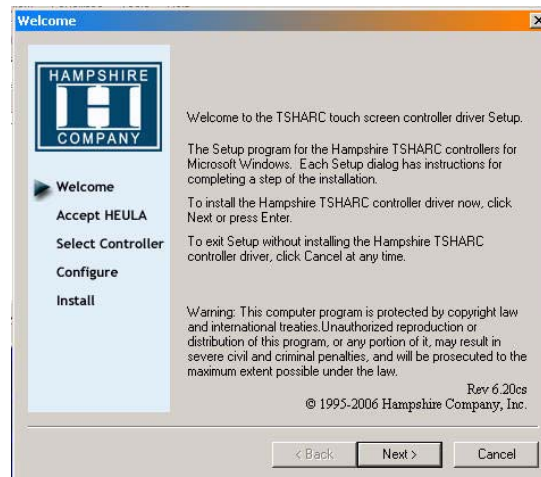


Figure 98. Accept License

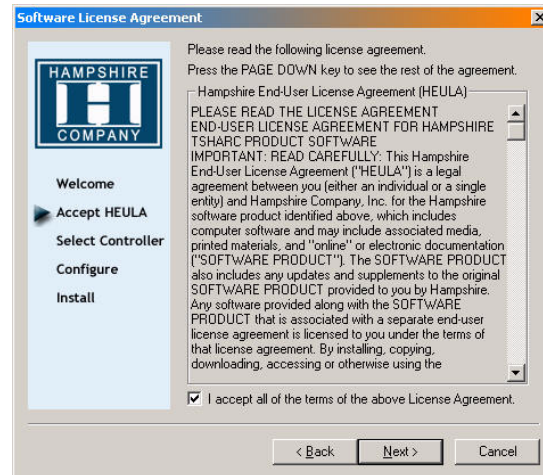


Figure 99. Select Controller



Figure 100. Install

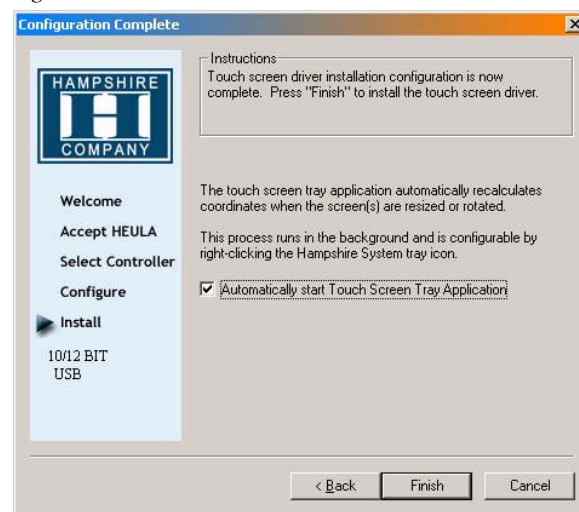


Figure 101. Installation Options

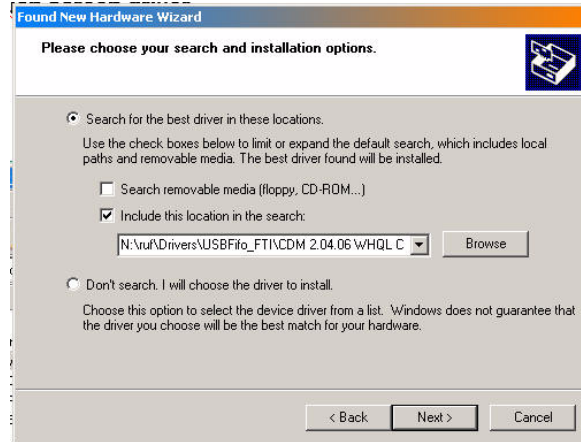


Figure 102. Finish the Installation



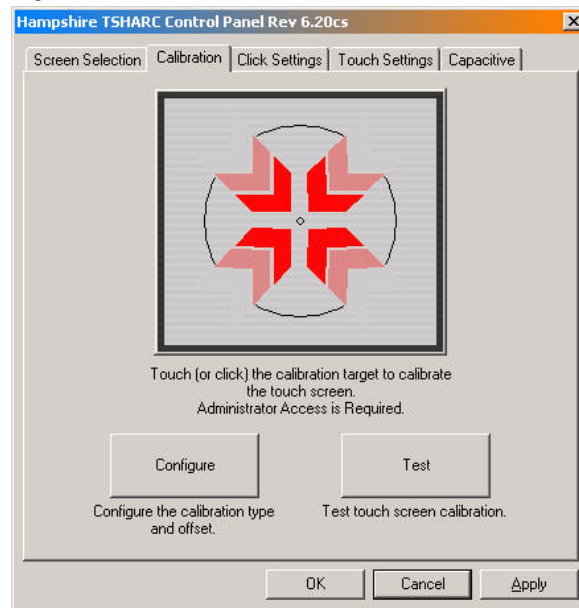
Figure 103. Completeness Message



Calibrate the Touch Screen

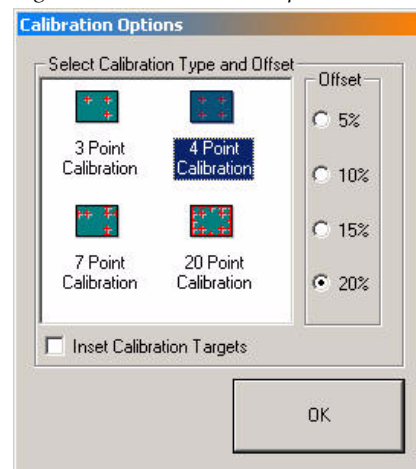
Select **Start/Programs/Hampshire TSHARC Control Panel** and select the calibration tab.

Figure 104. Select Calibration



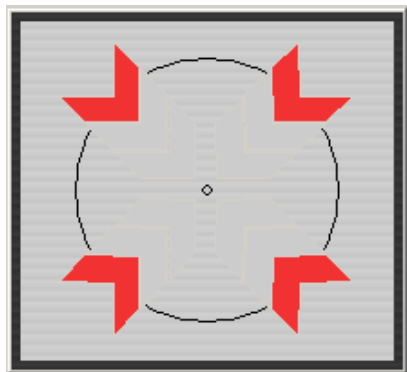
Select **Configure** and choose **4 Point calibration**

Figure 105. Calibration Properties



Press **OK** and push the **Calibration** start field...

Figure 106. Calibration Field

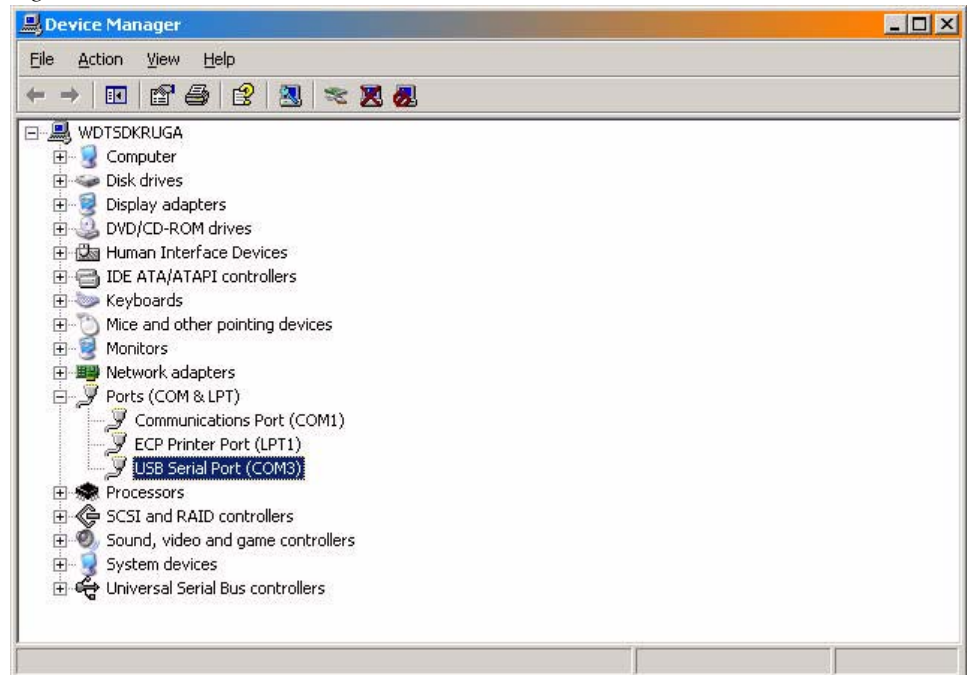


... and follow the instructions on the touch screen!

Sidepanel Registry Settings

Two registry entries have to be set.

Figure 107. Check the Serial Port Number

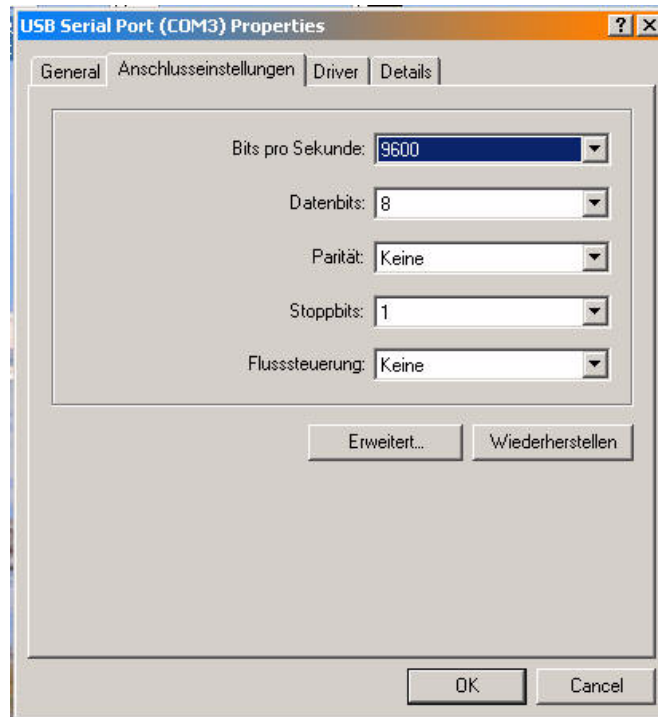


With a „right mouse“ click you can verify the port settings....

Notice the number of the currently used serial port.

In this example (see [Figure 107](#)) **COM3** is used.

Figure 108. Port Properties

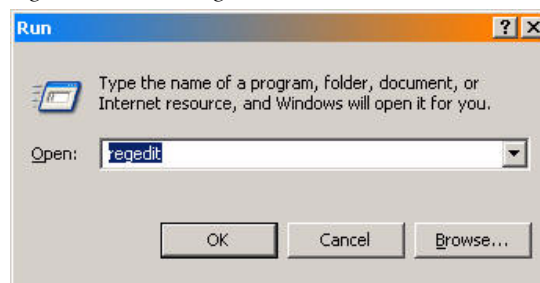


The default port settings as shown above are expected by the SP serial interface.

Now set the Sidepanel registry entry to the right port number (in our example it was **COM 3**).

Start **regedit**.

Figure 109. Start Regedit

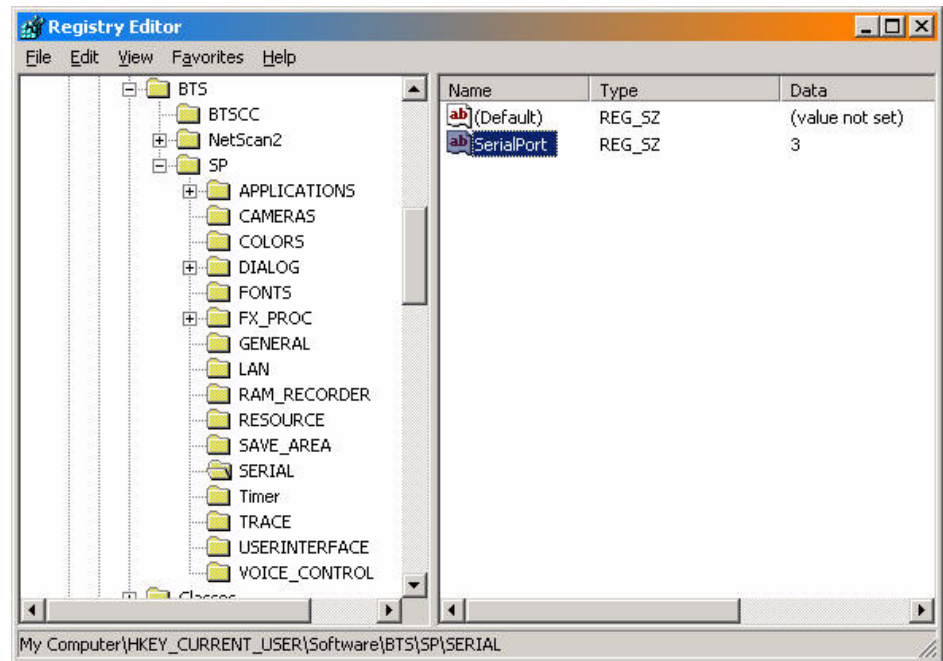


Enter the following registry path:

HKEY_CURRENT_USER/Software/BTS/SP/Serial

and enter a new **DWORD** value **SerialPort** as shown below.
In this example **'3'** --> means **COM3**.

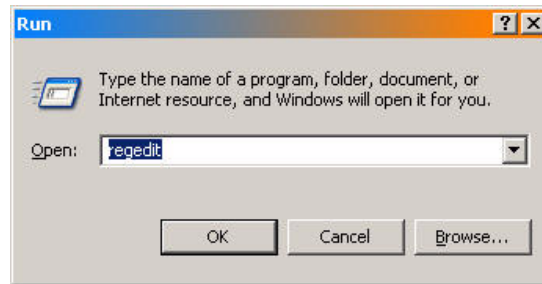
Figure 110. Enter New Registry Path



Configure the Sidepanel GUI Program to Appear on the Correct Screen

Run **regedit** with

Figure 111. Start Regedit

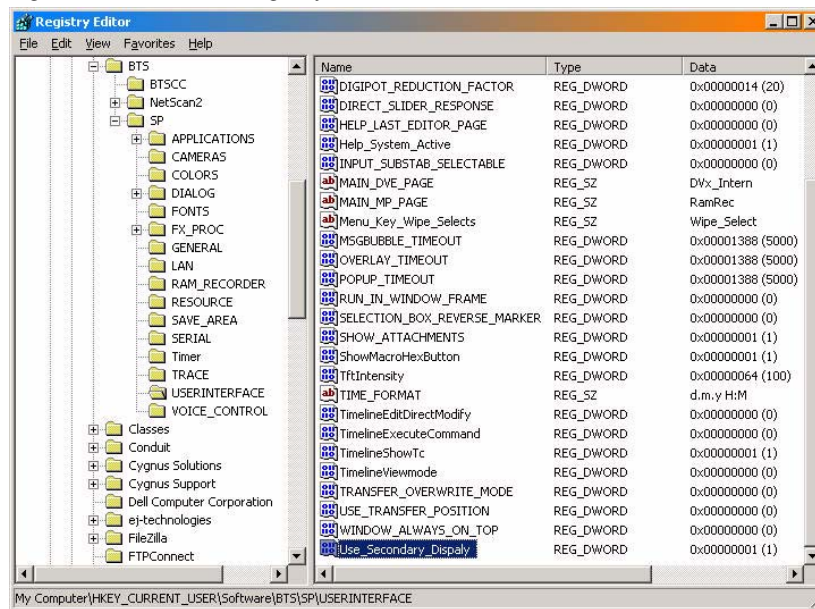


enter the registry path:

HKEY_CURRENT_USER/Software/BTS/USERINTERFACE

and enter a new **DWORD** value **Use_Secondary_Display** as shown below.

Figure 112. Enter New Registry Path



The value must be set to **'1'** to run the Sidepanel GUI on the second screen.

Verify the Kayenne XL GUI Working Properly

Install the Kayenne XL Sidepanel application from Kayenne XL/ Kayak HD Software CD and start the Sidepanel GUI application

Figure 113. Windows Start Menu



You can use menu number #9999 to check the DigiPots and operate the menu with touch screen.

Figure 114. DigiPot Test Screen



Main Panel Adjustments

Joystick Calibration

- In the **Multi Function Module** press the buttons shown in Figure below simultaneously.

Figure 115. Joystick Calibration - Step 1



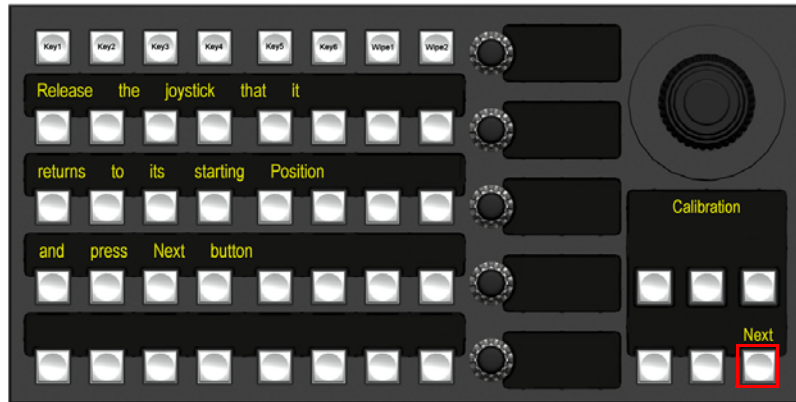
- Follow the displayed instructions **Move the Joystick to bottom right and rotate the Z-Axis to the right and press Next button.**

Figure 116. Joystick Calibration - Step 2



- Follow the displayed instructions **Release the joystick that it returns to its starting Position and press Next button.**

Figure 117. Joystick Calibration - Step 3



- Follow the displayed instructions **Move the Joystick to top left and rotate the Z-Axis to the left and press End button.**

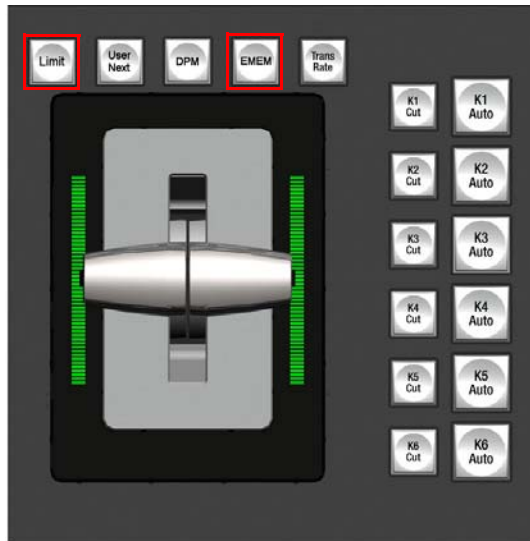
Figure 118. Joystick Calibration - Step 4



Fader Calibration

- In the Transition Module press **EMEM** and **Limit** simultaneously to start the fader calibration.

Figure 119. Fader Calibration - Step 1



- Follow the displayed instructions
Move the Fader to bottom and press Auto Button.

Figure 120. Joystick Calibration - Step 2



- Follow the displayed instructions
Move the Fader to top and press Auto Button.

Figure 121. Joystick Calibration - Step 3

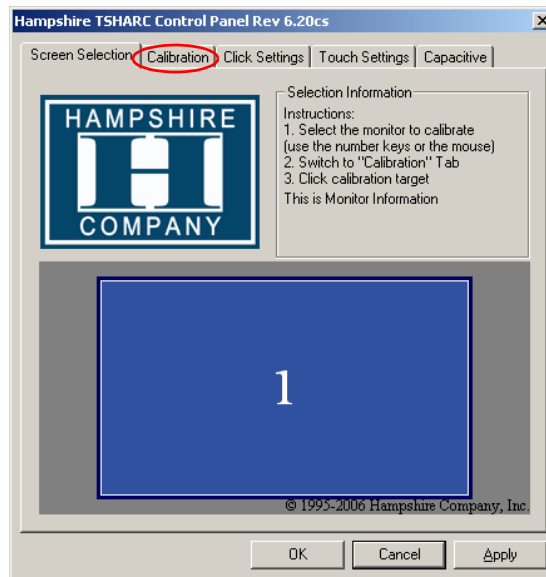


Note Every fader has to be calibrated separately

Touchscreen Calibration

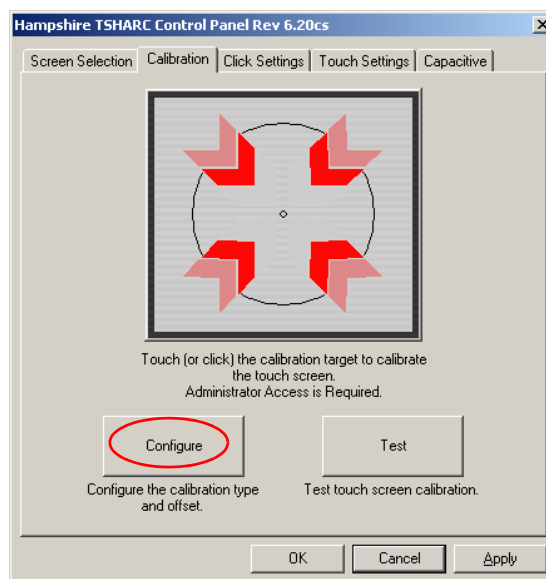
- Open the **Windows start menu** and open the touchscreen control, by a click on **Start / Programs / Hampshire TSHARC Control Panel**.
- Select the second tab **Calibration**

Figure 122. Touchscreen Calibration - Step 1



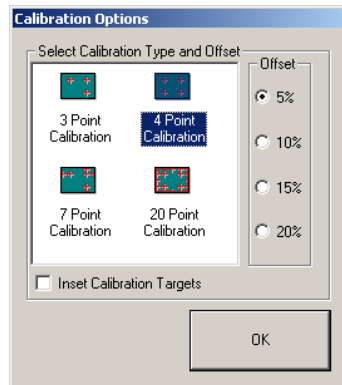
- Select **Configure** to configure the calibration type.

Figure 123. Touchscreen Calibration - Step 2



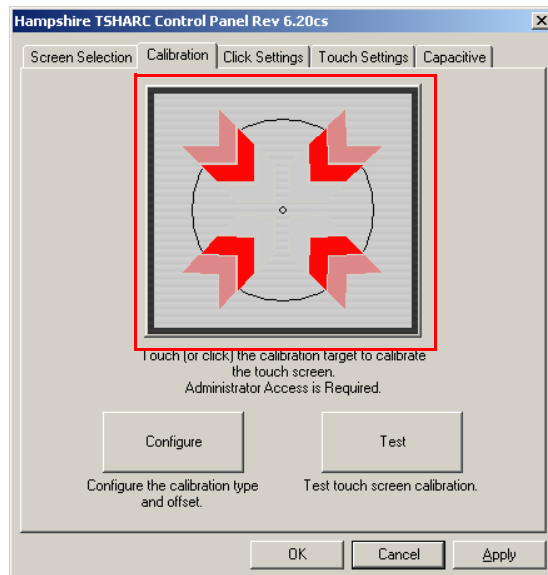
- Set the **calibration type** on **4 Point Calibration** and click on **OK**.

Figure 124. Touchscreen Calibration - Step 3



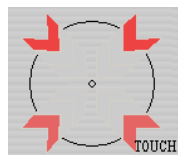
- Start the **calibration** by touching or clicking on the **calibration** target.

Figure 125. Touchscreen Calibration - Step 4



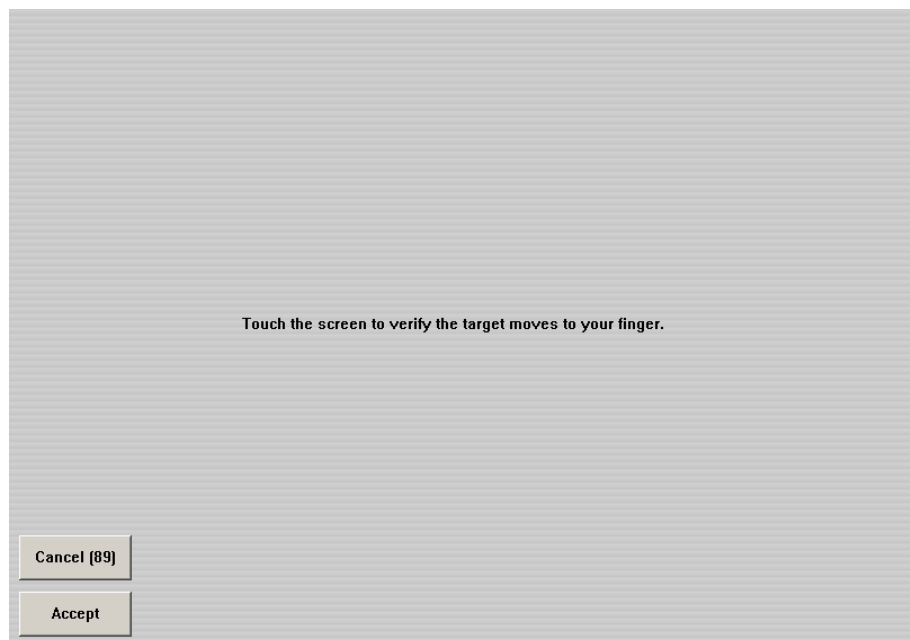
- Touch and hold the dot in the four corners of the menu screen so that the system can optimize the touch screen display.

Figure 126. Touchscreen Calibration - Step 5



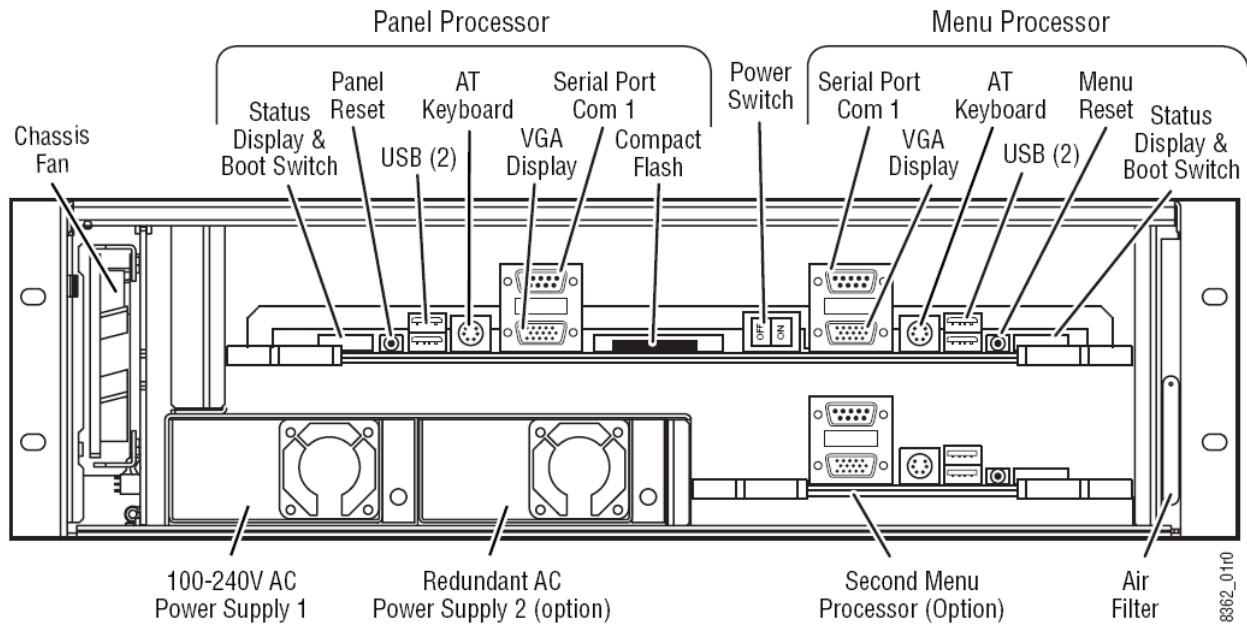
- Touch the screen to verify the calibration and press **Cancel** to discard or **Accept** to save the calibration.

Figure 127. Touchscreen Calibration - Step 6



Control Panel Unit (PCU) Bios Settings

Figure 128. Panel Control Unit



Panel Processor

- Connect a computer keyboard to the PS2 connector on the Panel Processor and a computer monitor VGA plug to the VGA socket.
- Press and hold **Del** key immediately while booting the switcher to display the **BIOS Menu**.
- Load the CMOS Default in the **Exit** menu.
- Select the **Main** menu and check / set the System Time and Date.
- Select the **Advanced** menu select **Graphics Configuration**
 - Set **Local Flat Panel Type** to **Customized EDID 1**
- Select the **Advanced** menu select **Chipset Configuration**
 - Set **POST Code Output** to **LPC**
- Select the **Advanced** menu select **I/O Interface Configuration**
 - Set **Onboard Audio Controller** to **Disabled**
 - Select **SIO Winbond W83627 Configuration**
 - Set **Serial Port 1 Configuration** to **2F8/IRQ04**
 - Set **Serial Port 2 Configuration** to **2F8/IRQ03**

- Select the **Advanced** menu select **IDE Configuration**
 - Set **Legacy IDE Channels** to **PATA Only**
- Select the **Advanced** menu select **USB Configuration**
 - Set **USB Mouse Legacy Support** to **Enabled**.
- Select the **Boot menu** and set
 - **1st Boot Device** to **Primary Master**
 - **2nd Boot Device** to **Secondary Master**
 - **3rd Boot Device** to **USB Harddisk**
 - **Quiet Boot** to **Enabled**
 - **Halt On Errors** to **Disabled**
- Press the **F10** Key and then press **Enter** to select **Yes** and save the new CMOS settings

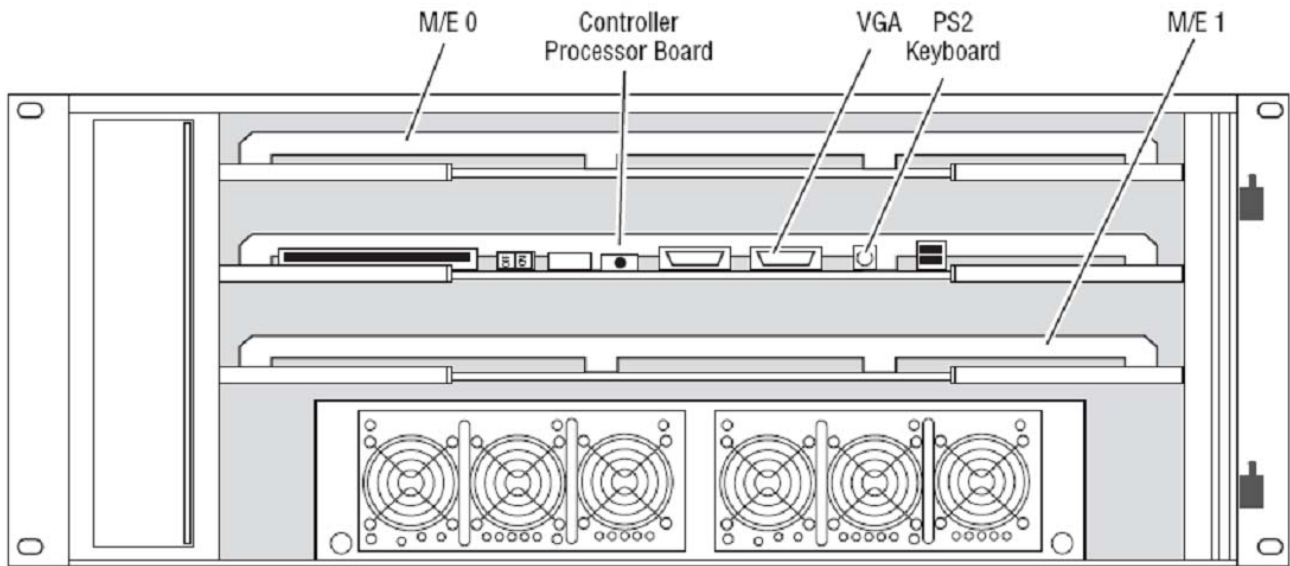
Menu Processor

- Connect a computer keyboard to the PS2 connector on the Menu Processor and a computer monitor VGA plug to the VGA socket.
- Press and hold **Del** key immediately while booting the switcher to display the **BIOS-menu**.
- Load the **CMOS Default** in the **Exit menu**.
- Select the **Main menu** and check / set the System Time and Date.
- Select the **Advanced** menu select **Graphics Configuration**
 - Set **Local Flat Panel Type** to **Customized EDID 1**
- Select the **Advanced** menu select **Chipset Configuration**
 - Set **POST Code Output** to **LPC**
- Select the **Advanced** menu select **I/O Interface Configuration**
 - Set **Onboard Audio Controller** to **Disabled**
 - Select **SIO Winbond W83627 Configuration**

- Set **Serial Port 1 Configuration** to **2F8/IRQ04**
 - Set **Serial Port 2 Configuration** to **2F8/IRQ03**
- Select the **Advanced** menu select **USB Configuration**
 - Set **USB Mouse Legacy Support** to **Enabled**.
- Select the **Boot** menu and set
 - **1st Boot Device** to **Primary Master**
 - **2nd Boot Device** to **Secondary Master**
 - **3rd Boot Device** to **USB Harddisk**
 - **Quiet Boot** to **Enabled**
 - **Halt On Errors** to **Disabled**
- Press the **F10** key and then press **Enter** to select **Yes** and save the new CMOS settings.

Mainframe BIOS Settings

Figure 129. Mainframe



- Connect a computer keyboard to the PS2 connector on the mainframe controller processor board and a computer monitor VGA plug to the VGA socket.
- Press and hold the **F2** key immediately while booting the switcher to display the BIOS-menu.
- Load the **BIOS Setup Default** with the key **F9** and confirm by clicking **Yes**.
- Select the **Advanced** menu.

- Select **PCI/PNP** Configuration and press **Enter**
- Set **PNP OS** Installed to **No**. Press **ESC** to return to the Advanced menu.
- In the **Advanced menu** select **I/O Device Configuration** and press **Enter**.
 - Set **Legacy USB Support** to **Disabled**.
 - Set **Serial Port A** to **Enabled**.
 - Set **Serial Port B** to **Enabled**. Press **ESC** to return to the **Advanced menu**.
- Select the **Power menu** at the top of the screen.
 - Set **Enable ACPI** to **No**.
- Select the **Boot menu** at the top of the screen.
 - Select **Sandisk** (or Removable Devices) and make sure it is the first priority in the **Boot menu**.
- Press the **F10** Key and then press **Enter** to select **Yes** and save the new **BIOS settings**.

Software Option License

The switcher has a software option licensing system. You can see the number and type of possible licenses for your system by going to the Licenses menu under **Install - System - SW Opt.**

The **License** menu is used to add licenses to a system. The licenses are stored in 2 EEPROMs (Electrically Erasable Programmable Read Only Memory chips) located in the backplane of the mainframe. License cannot be moved between different mainframes.

Figure 130. Software Option License



Available Options and Configuration Licenses

The following operation features are options or configurations available only if the corresponding license is activated.

- Number of Inputs
- Number of Outputs
- Chroma Key
- RGB Color Correction
- DPM Channels
- DPM Kurl
- DPM Spektra
- RAMRecorder
- eDPM
- Half M/E
- NetCentral
- MatchDef
- SetDef
- Kayenne XL Frame

Additional licenses for newly developed features may become available in the future.

A license is actually a line of text expressed in a format similar to this chroma key license key:

```
key="LIC_CHROMA_KEY1", "1", "0000:00:00", "9999:12:31",
"34567", "8-xyz", "2009:01:06",
"3489c00db5b1c548e9daf7fbe0ed67eb21"
```

The license key contains the:

- **License name** LIC_CHROMA_KEY1
- **License value** 1
- **Start date** 0000:00:00
- **End date** 9999:12:31
- **Serial no** 34567
- **wksID** 8-xyz
- **License creation date** 2009:01:06
- **License Key** 3489c00db5b1c548e9daf7fbe0ed67eb21

Installing Licenses

Switcher system licenses can be installed two different ways.

- The recommend installation method consists of copying the **sp_license.txt** file (which contains all your licenses) to **C:\Programme\DD35** or on an external device, and using the License menu to install them onto your system.
- An alternative installation method consists of manually entering the text string of each license using a keyboard available on the License menu.

With either method a system reboot is required to activate the licenses.

Automatically Installation of Licenses

- Copy the file **sp_license.txt** to the **C:\Programme\DD35** directory or on an external drive.
- Connect the Menu Panel PC to the frame.
- Check the path for hard disk respectively for the external drive in the Install - System - Drive menu.

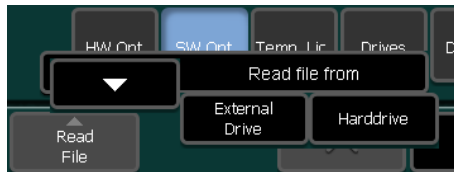
If necessary modify the path to **C:\Programme\DD35** or to the external drive.

Figure 131. Select the Path for Installation

Harddisk	c:\Programme\DD35\Appli	No	Yes
Floppy	a:\appli	Yes	Yes
Examples	c:\Programme\DD35\Examples\appli	No	Yes
		No	No
		No	No
External Transfer Dir. :	A:	Yes	Yes

- Enter the Install - System - SW Opt menu.
- Push the button **ReadFile** and select **External Drive** or **Hard drive** and follow the instructions. After installation you must reset the frame.

Figure 132. Read File



Manually Installation of Licenses

- Connect the Menu Panel PC to the frame.
- Go to the **Install - System - SW Opt** menu.
- Select the option for example **Chroma Key1** by selecting the field **Option** and pressing **Modify**.
- Select the field **Value** and press **Modify**, this starts a keyboard dialog. Enter the value for **Chroma Key1** and press **Enter**.
- Select the field **Start Date** and press **Modify**. Enter the Start Date and press **Enter**.
- Select the field **End Date** and press **Modify**. Enter the End Date and press **Enter**.
- Select the field **Board No.** and press **Modify**. Enter the Serial no and press **Enter**.
- Select the field **Workst ID** and press **Modify**. Enter the wksID and press **Enter**.
- Select the field **Creation Date** and press **Modify**. Enter the License creation date and press **Enter**.
- Select the field **License No** and press **Modify**. Enter the License Key and press **Enter**.
- Press the button **Register**. If all values are correct the license will be installed successfully and the information "**Registration of Chroma Key1 was successful!**" appears.
- Enter all the remaining licenses in the same way and reboot the frame afterwards.

Assign Sources

To assign a source to a button on the switcher:

- Press the **Config** on the **Menu Panel** menu.
- Select the **Panel - Assignment** menu.

Figure 133. Panel Assignment



The left-hand window pane displays the list of Bus Rows. Pre-selects the panel's bus rows for which the Input Assignment should be changed.

The middle window pane displays the list of Inputs. Shows a sorted list of all assignable inputs.

The right-hand window panel displays the list of buttons. Shows a sorted list of all assignable crosspoint buttons.

- Press the number of the button you want to assign or re-assign.
- Select the Input which you want to assign.
- At the bottom right of the Button pane press the Assign button to assign the Input you selected to the Button you selected.

Reset Button Crossbar

Reset the assignment to default by pressing one of the **Reset** button at the top:

Figure 134. Reset 35 Button Crossbar



Rename Sources

To rename a source that has already been assigned:

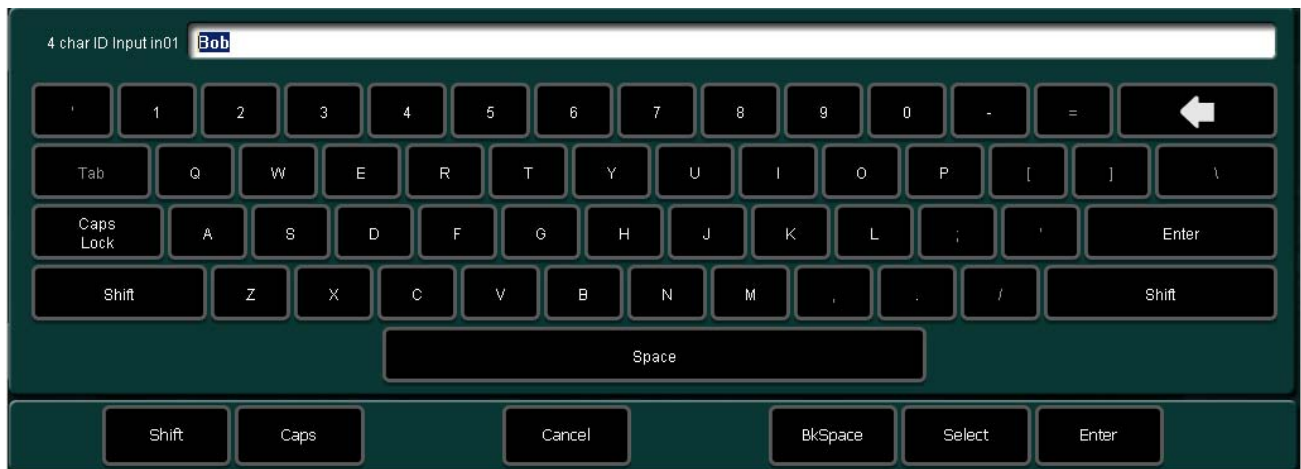
- Press **Install - Ebox - Input** on the menu panel or
- Press **Config - Ebox - Input** on the menu panel.
Refer User Manual for EBox configuration details.

Figure 135. Rename Sources



- Select the **4 char ID** for the short name or the **8 char ID** for the long name of a source.
- Press **Modify** to change the name of the selected source.
- Use the keys on the typing pad to type in the Name you want to use for your Source and press **Enter**.

Figure 136. Enter Name



Save and Load Mainframe Installation Data

All the settings (called environmental data) located in the **Install - E-Box** menu hierarchy are can be saved/loaded to/from the menu panel PC using the **Copy** button in the **Install - E-box** menu.

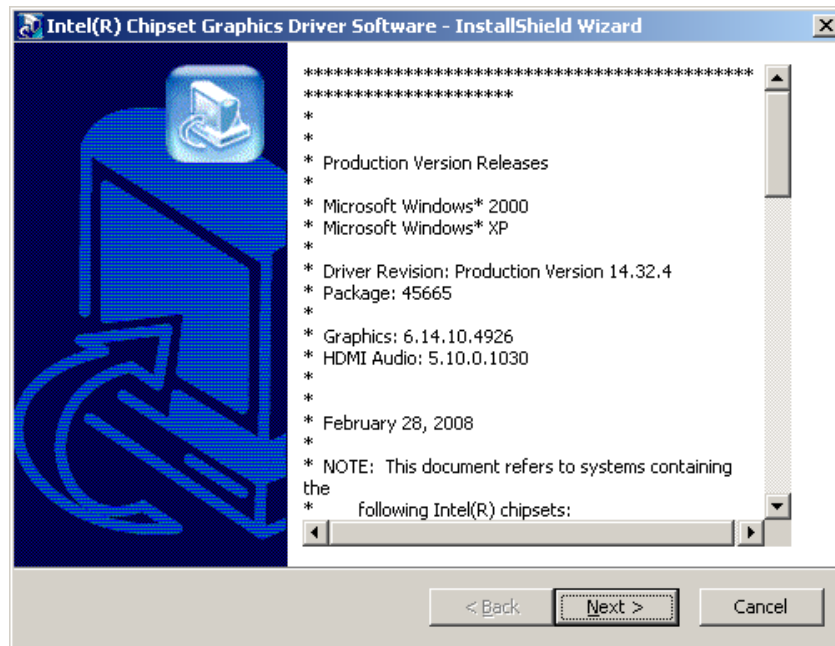
Driver Installation

Intel Chipset Graphics Driver

Note Connect a VGA monitor, a keyboard and a USB mouse to the Panel Processor PC if the Touchscreen isn't working.

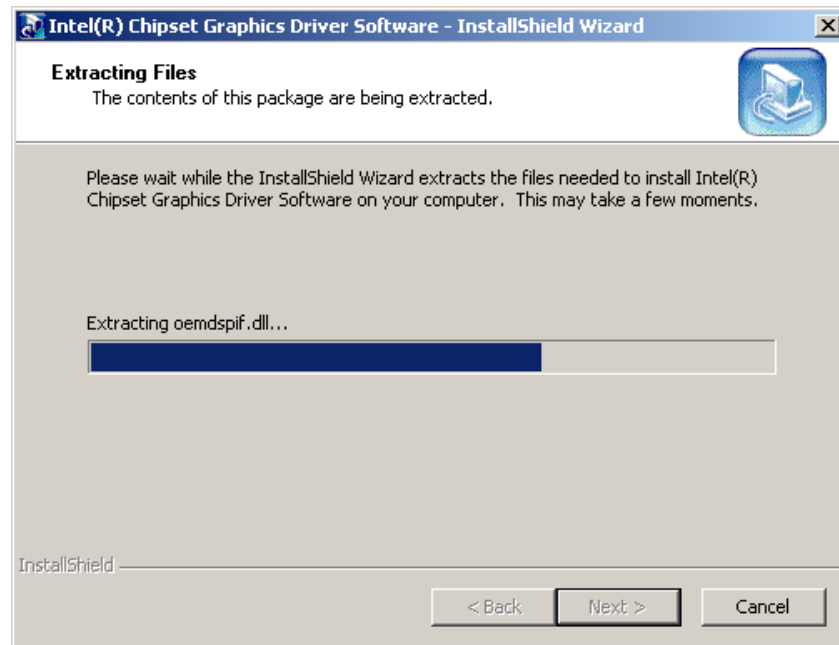
- Run **winxp_14324.exe** and click on **Next**.

Figure 137. Install winxp_14324.exe



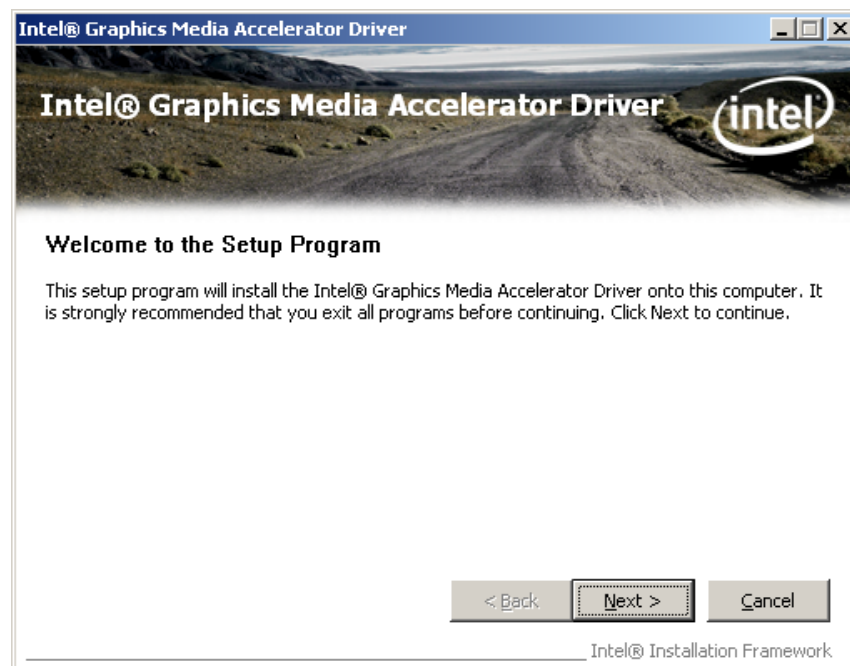
- Wait until the files are extracted.

Figure 138. Extracting Files



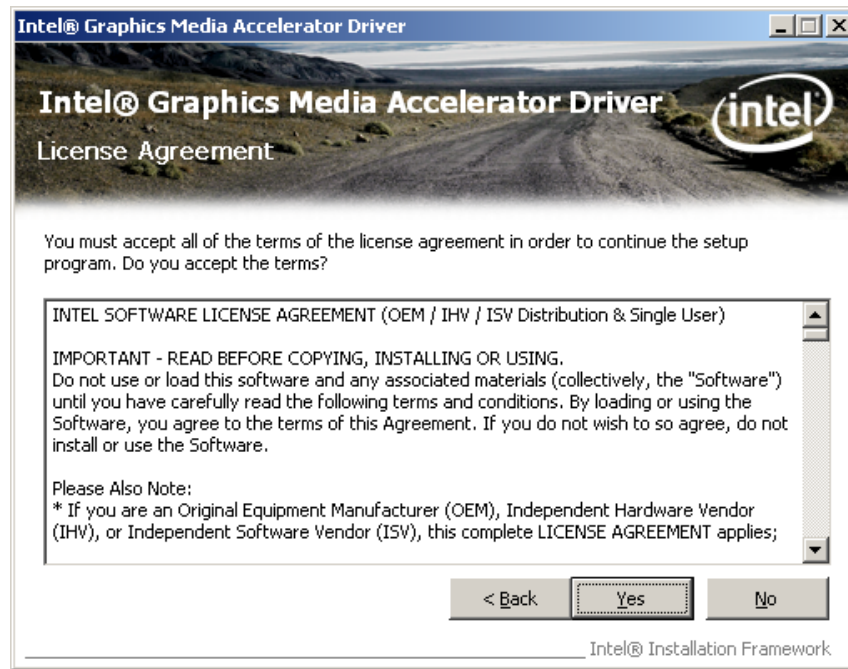
- Click on **Next**.

Figure 139. Welcome to the Setup Program



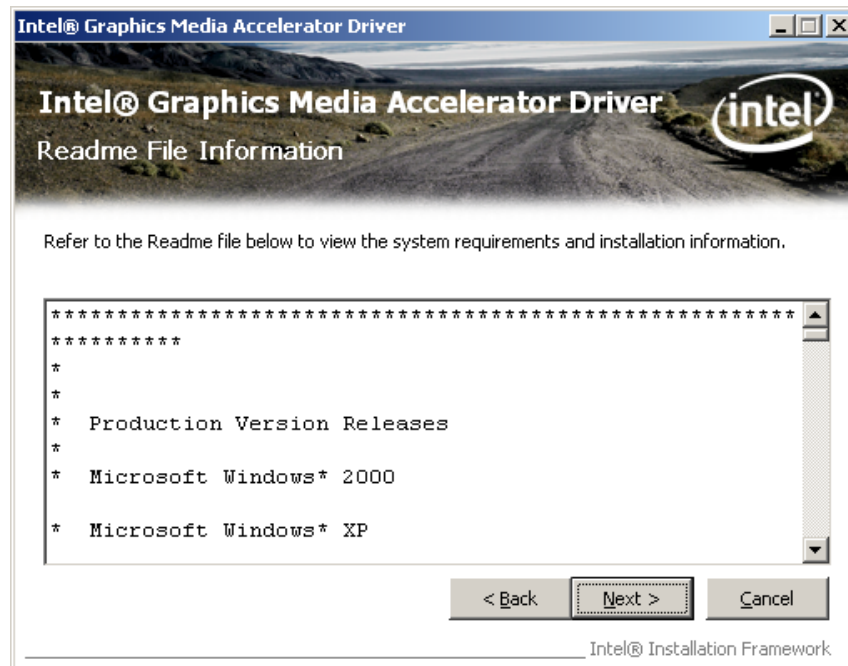
- Accept the terms with **Yes**

Figure 140. License Agreement



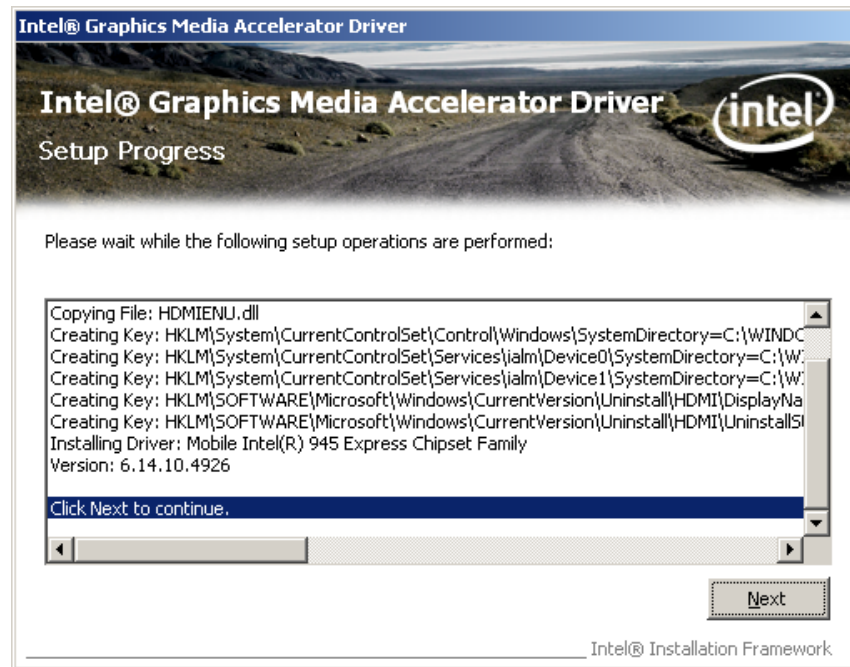
- Click on **Next**.

Figure 141. File Information



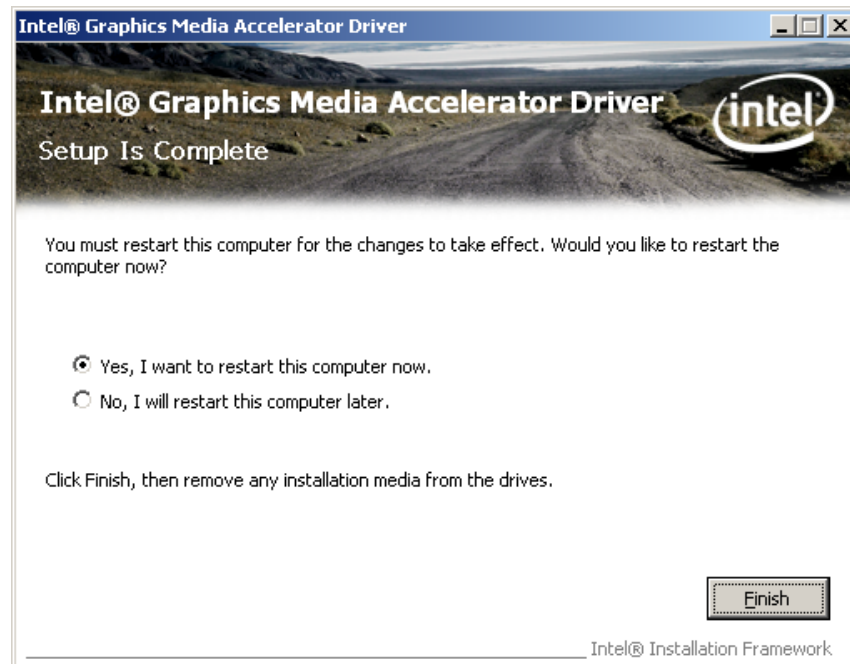
- Wait until the setup operations are performed and click on **Next**.

Figure 142. Setup Operation Performing



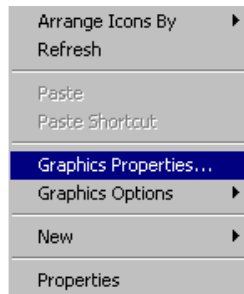
- Select **Yes, I want to restart this computer now** and click on **Finish**.

Figure 143. Setup Is Complete



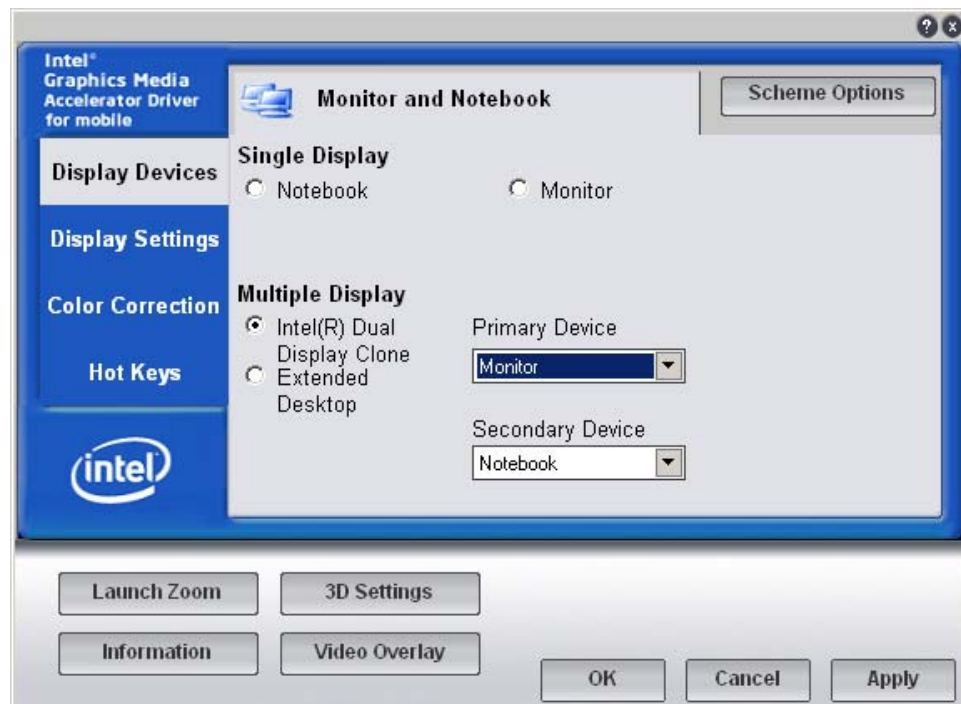
- After the restart do a right click on the Desktop and click on **Graphics Properties**.

Figure 144. Select Graphics Properties



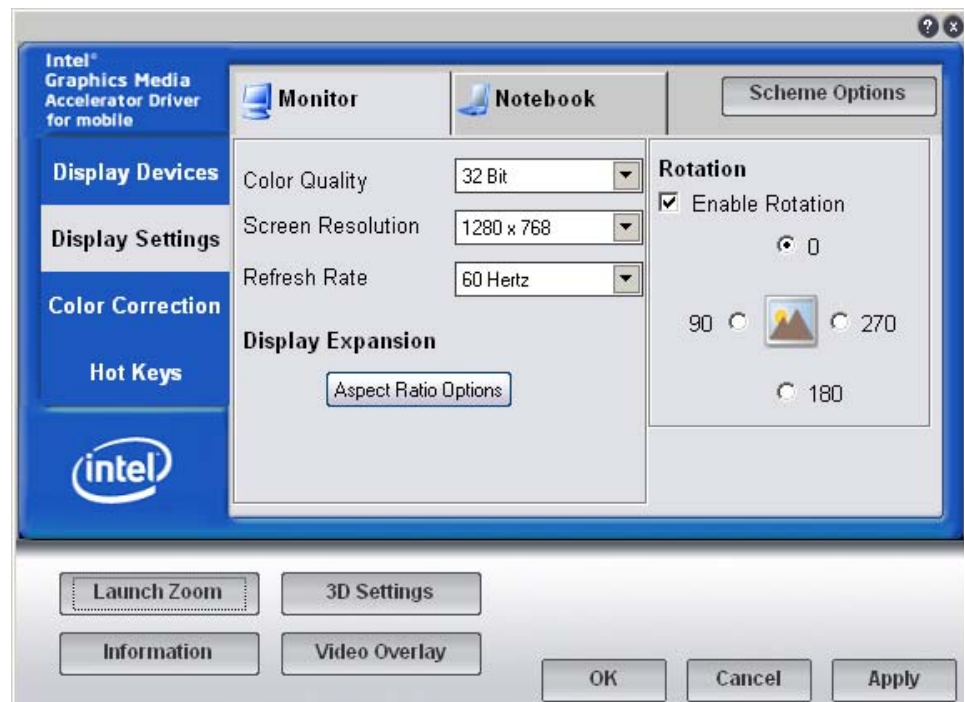
- In the menu **Display Devices** set **Multiple Display** to **Intel Dual Display Clone** and set
 - **Primary Device** to **Monitor**
 - **Secondary Device** to **Notebook**

Figure 145. Display Devices



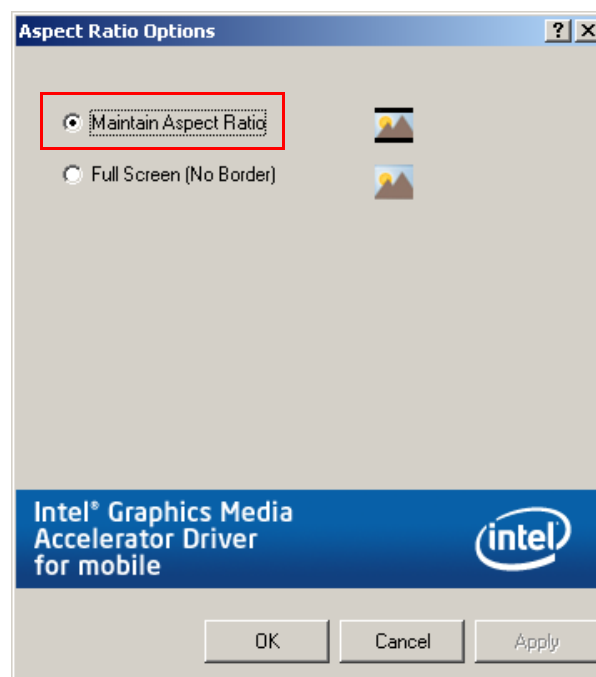
- In the menu **Display Settings** set
 - **Color Quality** to **32 Bit**
 - **Screen Resolution** to **1280 x 768**

Figure 146. Display Devices Monitor



- In the menu **Display Settings** select **Aspect Ratio Options** and set the option to **Maintain Aspect Ratio**.

Figure 147. Aspect Ratio Options

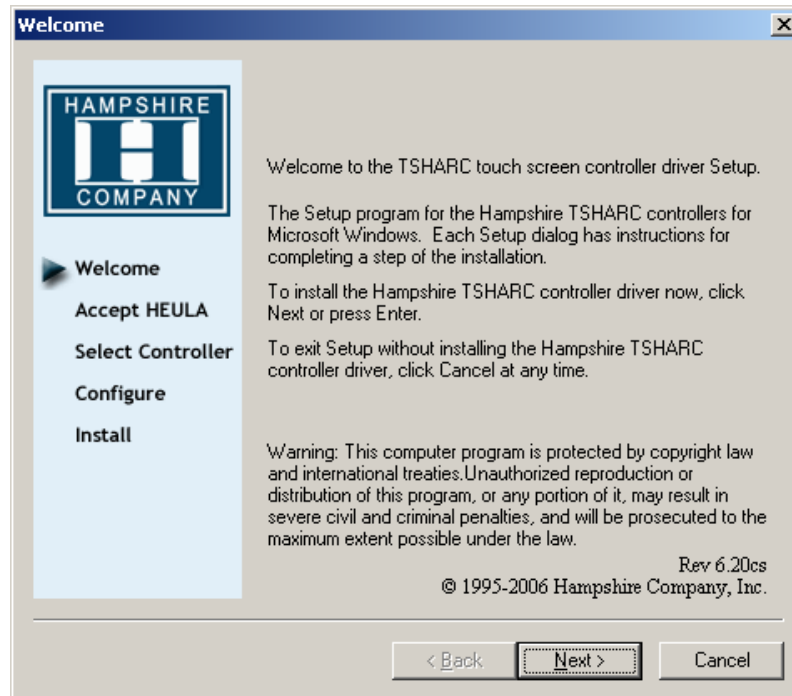


- Click on **OK** and **Apply** to save the display settings.

Touchscreen Hampshire Driver

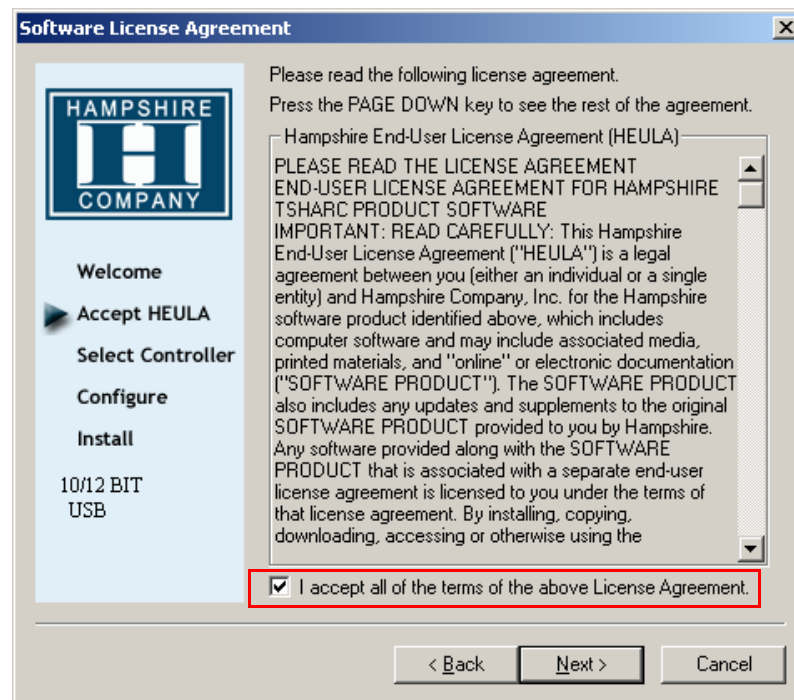
- Run **setup.exe** from **TouchCtrl_Hampshire** folder and click on **Next**.

Figure 148. Welcome Touchscreen



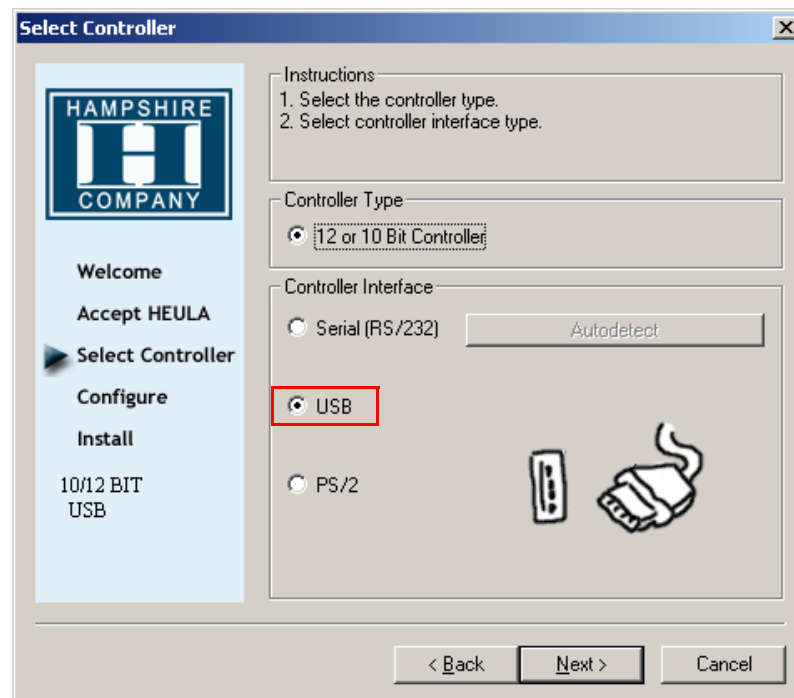
- Accept the terms and click on **Next**.

Figure 149. License Agreement



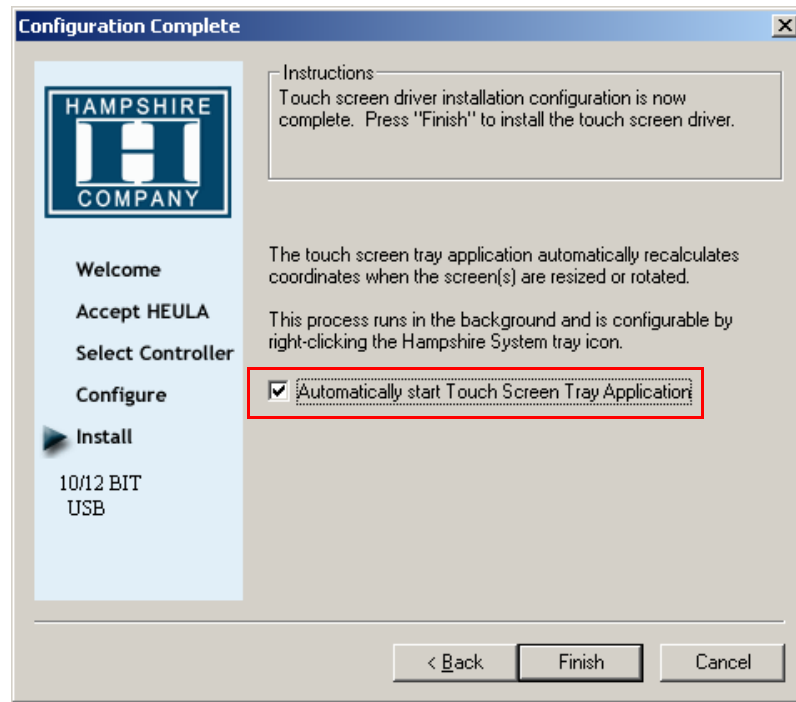
- Select **USB** for the **Controller Interface** and click on **Next**.

Figure 150. Select Controller



- Mark **Automatically start Touch Screen Tray Application** and click on **Finish**.

Figure 151. Install



- Wait until the Setup is complete and click on **OK**.

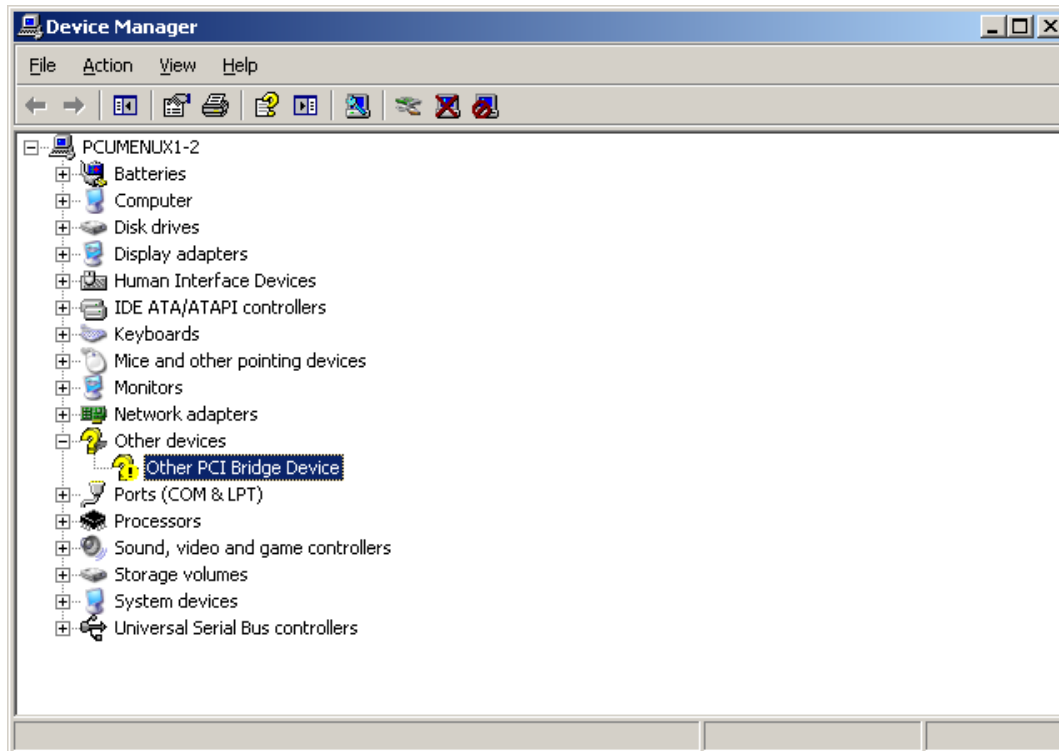
Figure 152. Setup Complete



PLX Driver

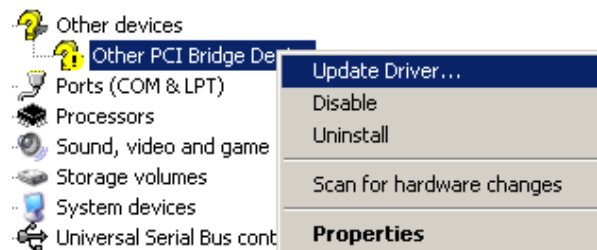
- Do a right click on **My Computer** and select **Properties**.
- Choose the Register **Hardware** and click on **Device Manager**.
- Open **Other Devices** and select **Other PCI Bridge Device**.

Figure 153. Device Manager



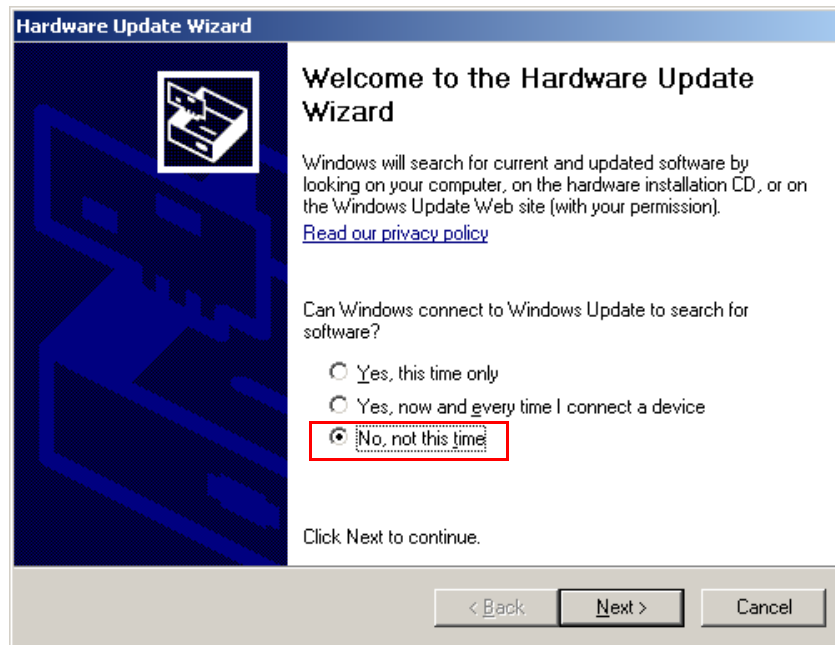
- Do a right click on **Other PCI Bridge Device** and select **Update Driver**.

Figure 154. Other PCI Bridge Device



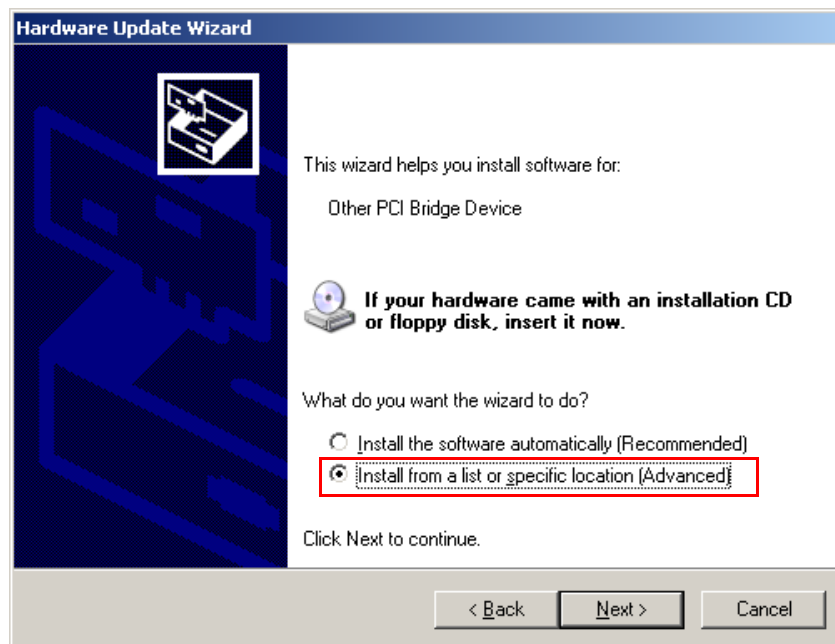
- Select **No, not this time** and click on **Next**.

Figure 155. Update Driver



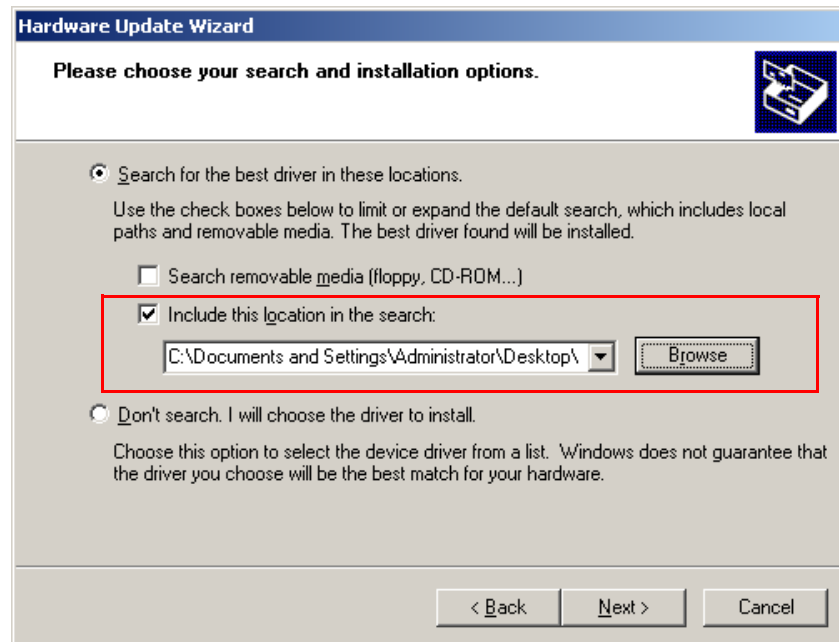
- Select **Install from a list or specific location (Advanced)** and click on **Next**

Figure 156. Select the Device



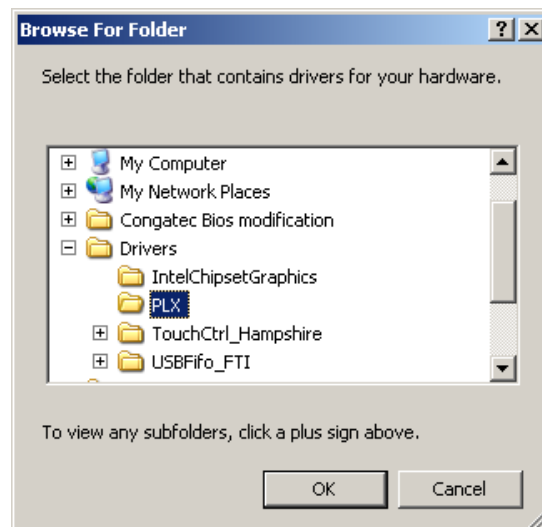
- Select **Include this location in the search** and click on **Browse**.

Figure 157. Select the Device



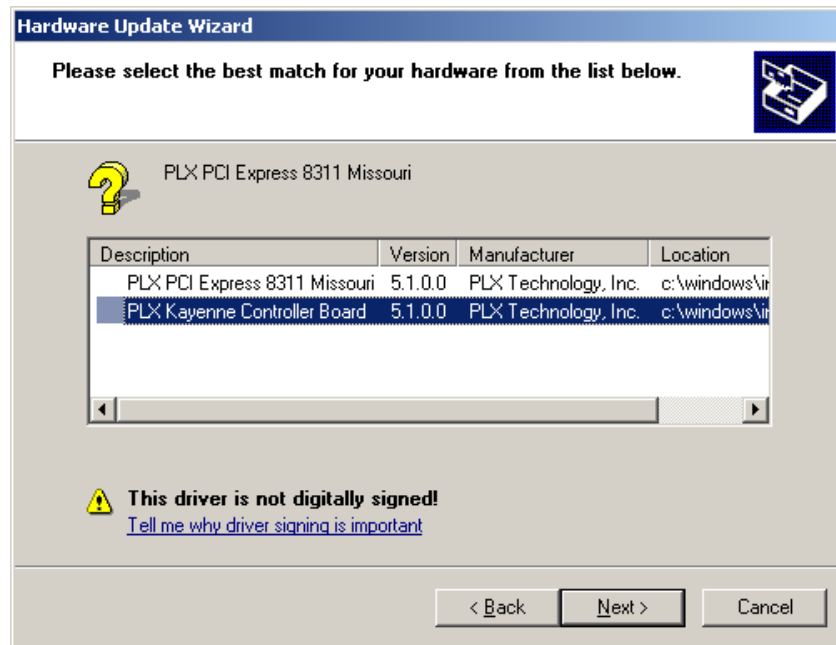
- Browse to the **Driver** folder and select the **PLX** folder.

Figure 158. Browse



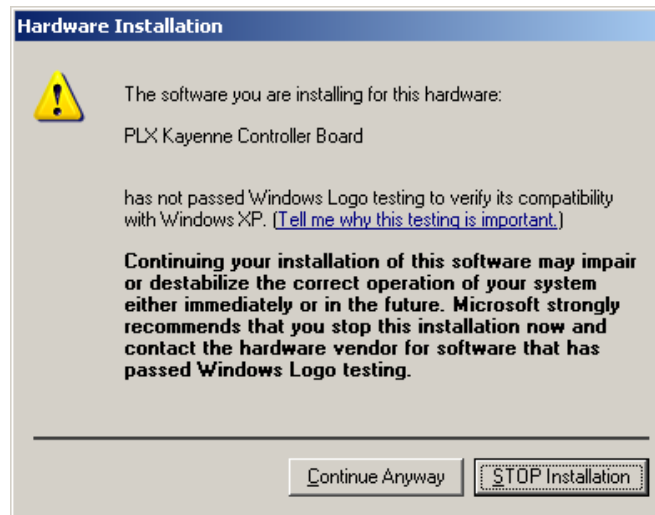
- Select **PLX Kayenne Controller Board** and click on **Next**.

Figure 159. Browse Driver



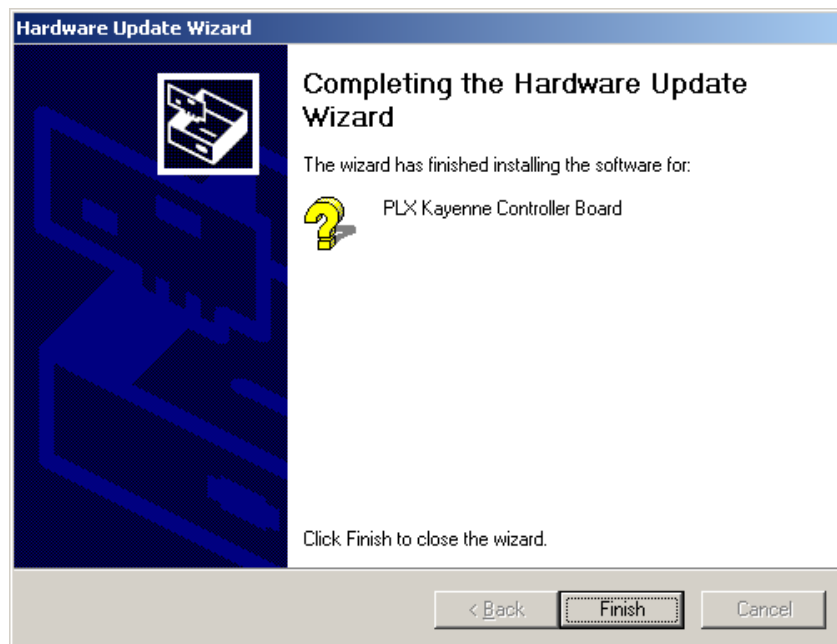
- Click on **Continue Anyway**

Figure 160. Continue



- Wait while the wizard installs the software and click on **Finish**.

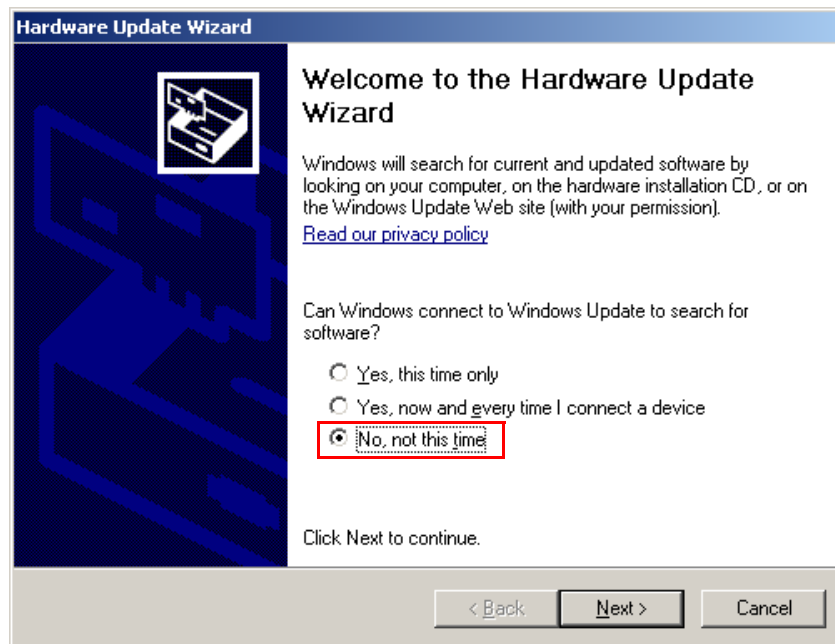
Figure 161. Complete the Hardware Update



USB Serial Driver

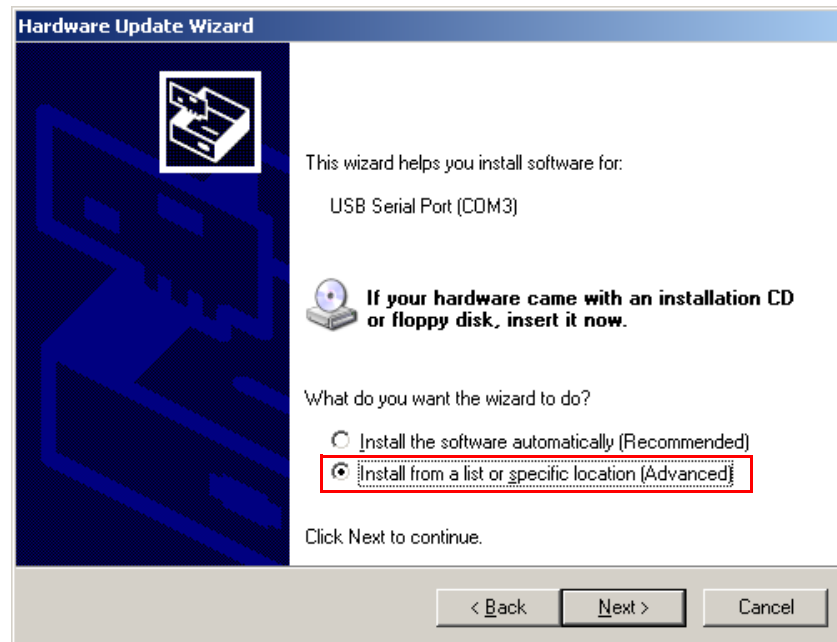
- Do a right click on **My Computer** and select **Properties**.
- Choose the Register **Hardware** and click on **Device Manager**.
- Open **Ports (COM & LPT)** and select **USB Serial Port**.
- Do a right click on **USB Serial Port** and select **Update Driver**.
- Select **No, not this time** and click on **Next**.

Figure 162. Welcome to the Hardware Update



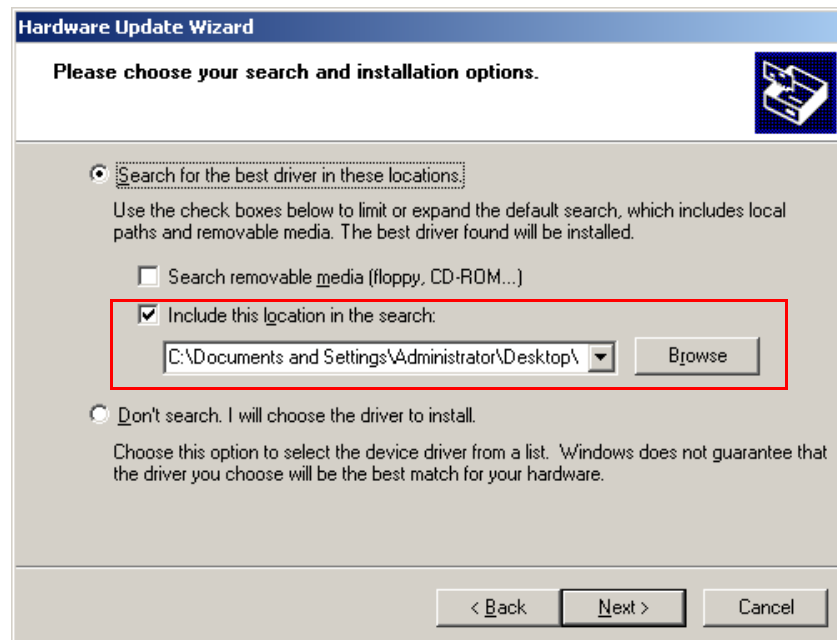
- Select **Install from a list or specific location (Advanced)** and click on **Next**.

Figure 163. Select Installation Options



- Select **Include this location in the search** and click on **Browse**.

Figure 164. Installation Options



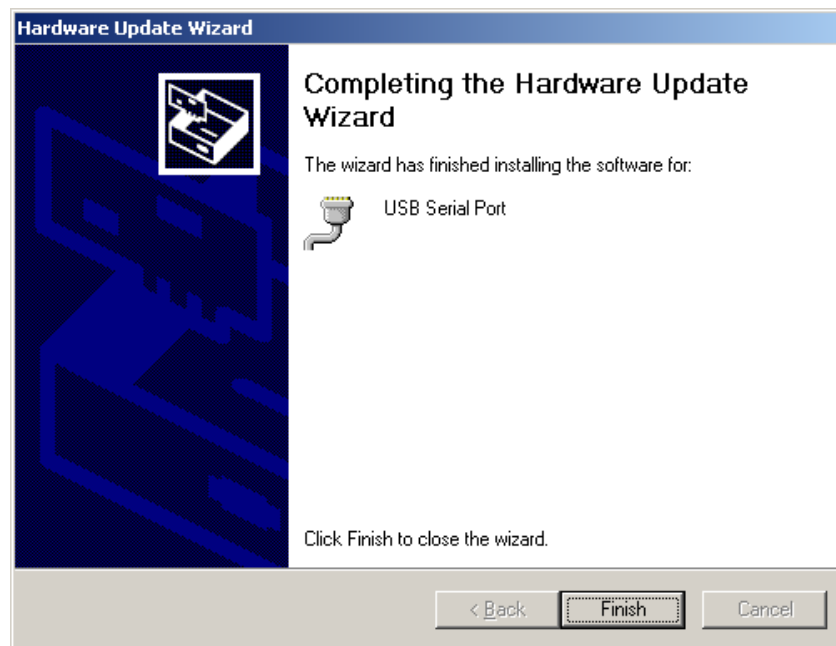
- Browse to the **Driver folder** and select the **CDM 2.04.06 WHQL Certified** folder in the **USBFifo_FT1** folder.

Figure 165. Browse



- Wait while the Wizard installs the software and click on **Finish**.

Figure 166. Finish Update

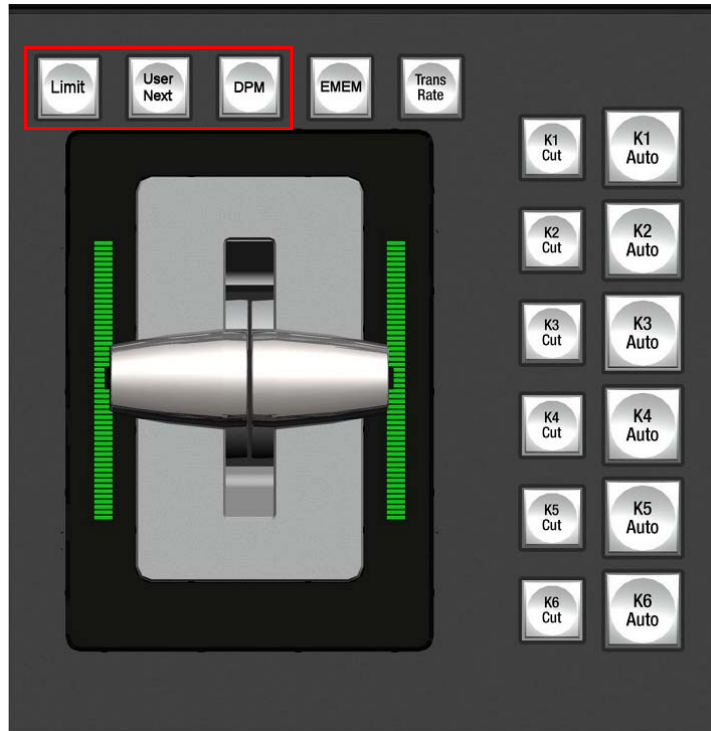


Assignment of Panel Stripe Connectors

The port order can also be edited at runtime via the Transition module. This will be necessary when the port order in the config file doesn't match the cabling between PCU and panel stripes.

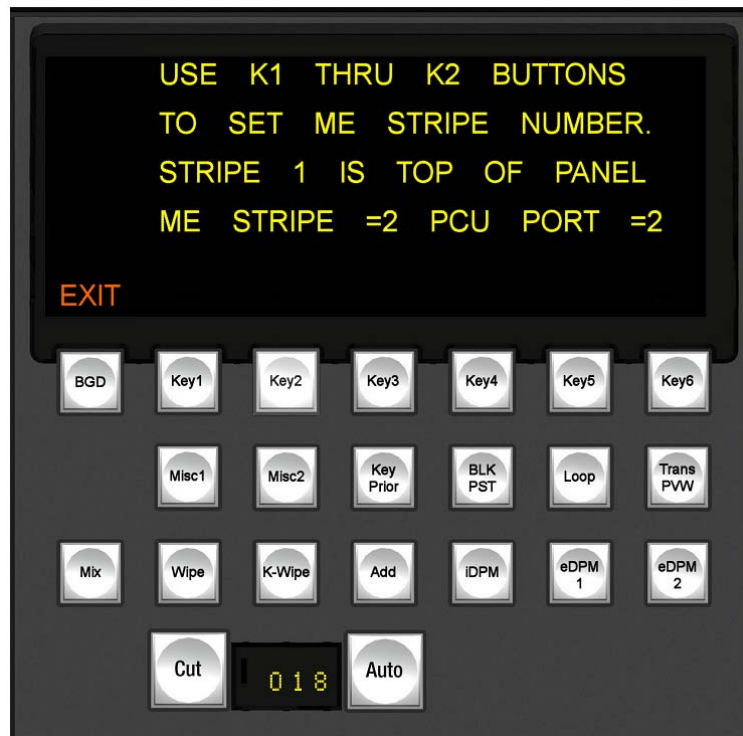
- Activate stripe assignment mode by pressing the rightness three buttons above the fader of any Transition module simultaneously.

Figure 167. Control Panel Fader



- Follow the displayed instructions **Use K1 thru K2 Buttons** to set **ME Stripe number. Stripe 1** is top of Panel. **Me Stripe =2 PCU Port =2'** Press **Key1** button in topmost stripe's transition module.

Figure 168. Display



- Press **Key2** in stripe below topmost stripe.
- Etc. until bottom stripe.
- Press **BGD** button to exit in any transition module.
- Reboot the panel to activate the changed assignment,

Diagnostics

This Information is intended for Grass Valley service personnel only!

Control Panel Module Diagnostics

Starting with Control Panel module FPGA version DS1281.037 a boot information/diagnostic will be shown on the first character display in every display chain (min. 1 up to max. 5).

This information (Table 20) is immediately visible after a power cycle and present until the application software writes the first data to the character displays on the module

Table 20. Control Panel Module Boot Display Codes

Digit				
3	2	1	0	Digit Zero shows the link and FPGA boot status
			*	1. Module interface link is working (normal/default). 2. FPGA was loaded over application area (normal/default).
			+	1. Module interface link is working (normal/default). 2. FPGA was loaded over factory area: application area damaged, reprogramming necessary.
				1. Module interface link is not working: link should come up after 1-3 seconds, if not there may be a hardware problem. 2. FPGA was loaded over application area (normal/default).
			!	1. Module interface link is not working: link should come up after 1-3 seconds, if not there may be a hardware problem. 2. FPGA was loaded over factory area: application area damaged, reprogramming necessary!.
				Digit 1 shows the lower number of the FPGA firmware version (DS1281.037).
				Digit 2 shows the middle number of the FGPA firmware version (DS1281.037).
				Digit 3 shows the upper number of the FPGA firmware version (DS1281.037) (X1 always shows "!" to see the difference to the released versions).

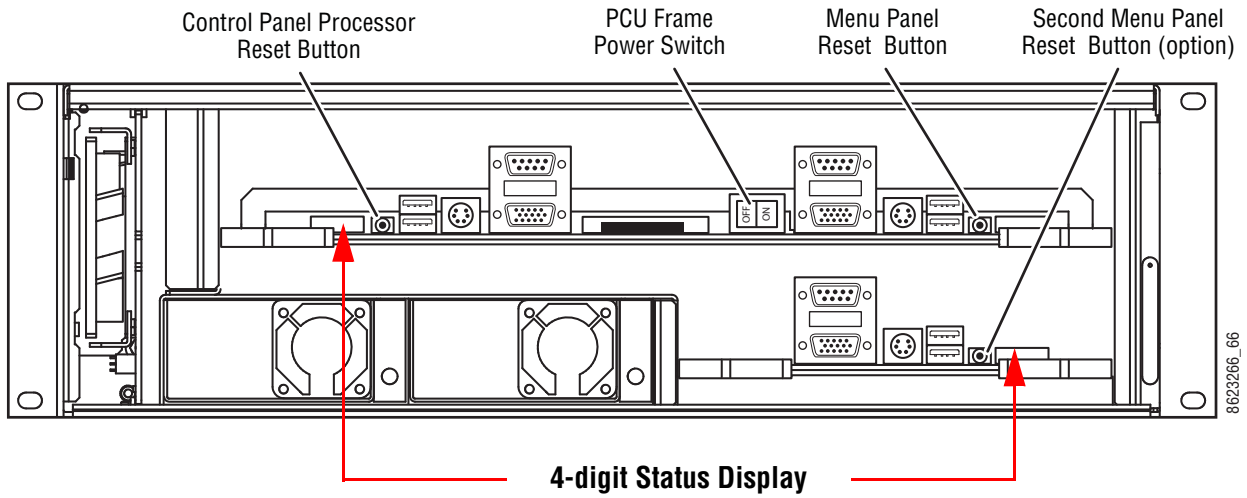
Example codes are shows in Table 21

Table 21. Control Panel Module Boot Display Codes Examples

Digit				
0	3	7	*	1. Module interface link is working (normal/default). 2. FPGA was loaded over application area (normal/default). 3. FPGA firmware version is 037 (DS1281.037).
0	3	7	+	1. Module interface link is working (normal/default). 2. FPGA was loaded over factory area: application area damaged, reprogramming necessary. 3. FPGA firmware version is 037 (DS1281.037).
0	3	7		1. Module interface link is not working: link should come up after 1-3 seconds, if not there may be a hardware problem. 2. FPGA was loaded over application area (normal/default). 3. FPGA firmware version is 037 (DS1281.037).
0	3	7	!	1. Module interface link is not working: link should come up after 1-3 seconds, if not there may be a hardware problem. 2. FPGA was loaded over factory area --> application area damaged, reprogramming necessary. 3. FPGA firmware version is 038 (DS1281.038).
!	3	5	*	1. Module interface link is working (normal/default). 2. FPGA was loaded over factory area because X1 doesn't have a application area (normal/default). 3. FPGA firmware version is X1 and 35 (DS5831.035).
!	3	5		1. Module interface link is not working: link should come up after 1-3 seconds, if not there may be a hardware problem. 2. FPGA was loaded over factory area because X1 doesn't have a application area (normal/default). 3. FPGA firmware version is X1 and 35 (DS5831.035).

PCU Diagnostics

Figure 169. PCU Status Display



During the BIOS pre-boot process the status displays will show the post code checkpoints.

Please note that checkpoints may differ between different platforms based on system configuration.

In case of error please note the checkpoints and contact your Grass Valley service personnel.

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