grass valley
A **BELDEN** BRAND

SIRIUS 830 ROUTER

288 X 288 3G-COMPLIANT ENTERPRISE ROUTER,
WITH UP TO 140 MULTIVIEWER OUTPUTS IN A 15U CHASSIS

Installation and Quick Start Manual

Issue 2 Revision 3

2019 March 15

www.grassvalley.com

FCC Compliance

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

Patent Information

This product may be protected by one or more patents.

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

Copyright and Trademark Notice

Terms and Conditions

Contents

1.   About this Manual

This manual describes the installation of the Sirius 830 Router.

Refer to the Sirius 800 User Manual and the Workbench Manual for details on configuring hardware and software.

Refer to the Workbench manual for details on configuring hardware and software panels.

If you have any questions regarding the installation and setup of your product, please refer to the Customer Service contact details (see section 1.1).

1.1   Contact Details

Customer Support

For details of our Regional Customer Support Offices please visit the Grass Valley web site and navigate to Support/Customer Support Contacts.

https://www.grassvalley.com/contact/support/

Customers with a support contract should call their personalized number, which can be found in their contract, and be ready to provide their contract number and details.

1.2   Copyright and Disclaimer

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Grass Valley, a Belden brand, operates a policy of continuous improvement and development. Grass Valley reserves the right to make changes and improvements to any of the products described in this document without prior notice.

2. Warnings and Precautions

Chapter contains:

Warnings and Precautions

Explanation of Safety Symbols (GB)

⚠ This symbol refers the user to important information contained in the accompanying literature. Refer to manual.

⚡ This symbol indicates that hazardous voltages are present inside. No user serviceable parts inside. This unit should only be serviced by trained personnel.

Safety Warnings

⚠ CAUTION ⚡
RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVERS
NO USER SERVICEABLE PARTS
REFER SERVICING TO QUALIFIED
PERSONNEL ONLY

Servicing instructions where given, are for use by qualified service personnel only. To reduce risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified personnel.

· **To reduce the risk of electric shock, do not expose this appliance to rain or moisture.**

· **Always ensure that the unit is properly earthed and power connections correctly made.**

· **This equipment must be supplied from a power system providing a PROTECTIVE EARTH ⏚ connection and having a neutral connection which can be reliably identified.**

· **The power outlet supplying power to the unit should be close to the unit and easily accessible**

Légende : (F)

⚠ Ce symbole indique qu'il faut prêter attention et se référer au manuel.

⚡ Ce symbole indique qu'il peut y avoir des tensions électriques à l'intérieur de l'appareil. Ne pas intervenir sans l'agrément du service qualifié.

Précaution d'emploi :

⚠ ATTENTION ⚡
RISQUE DE CHOC ELECTRIQUE
NE PAS RETIRER LE COUVERCLE
NE PAS INTERVENIR SANS
L'AGREMENT DU SERVICE
QUALIFIE

Les procédures de maintenance ne concernent que le service agréé. Afin de réduire le risque de choc électrique, il est recommandé de se limiter aux procédures d'utilisation, à moins d'en être qualifié. Pour toute maintenance, contacter le service compétent.

· **Pour réduire le risque de choc électrique, ne pas exposer l'appareil dans un milieu humide.**

· **Toujours s'assurer que l'unité est correctement alimentée, en particuliers à la liaison à la terre.**

· **La source électrique de cet équipement doit posséder une connexion à la terre ⏚, ainsi qu'une liaison « neutre » identifiable.**

· **La prise électrique qui alimente l'appareil doit être proche de celle-ci et accessible.**

Simboli di sicurezza: (I)

⚠ Questo simbolo indica l'informazione importante contenuta nei manuali appartenenti all'apparecchiatura. Consultare il manuale.

⚡ Questo simbolo indica che all'interno dell'apparato sono presenti tensioni pericolose. Non cercare di smontare l'unità. Per qualsiasi tipo di intervento rivolgersi al personale qualificato.

Attenzione:

⚠ ATTENZIONE ⚡
RISCHIO DI SHOCK ELETTRICO
NON CERCARE DI SMONTARE
L'UNITA PER QUALSIASI TIPO DI
INTERVENTO RIVOLGERSI AL
PERSONALE QUALIFICATO

Le istruzioni relative alla manutenzione sono ad uso esclusivo del personale qualificato. E' proibito all'utente eseguire qualsiasi operazione non esplicitamente consentita nelle istruzioni. Per qualsiasi informazione rivolgersi al personale qualificato.

· **Per prevenire il pericolo di scosse elettriche è necessario non esporre mai l'apparecchiatura alla pioggia o a qualsiasi tipo di umidità.**

· **Assicurarsi sempre, che l'unità sia propriamente messa a terra e che le connessioni elettriche siano eseguite correttamente.**

· **Questo dispositivo deve essere collegato ad un impianto elettrico dotato di un sistema di messa a terra efficace.**

· **La presa di corrente deve essere vicina all'apparecchio e facilmente accessibile.**

Erklärung der Sicherheitssymbole (D)

⚠ Dieses Symbol weist den Benutzer auf wichtige Informationen hin, die in der begleitenden Dokumentation enthalten sind.

⚡ Dieses Symbol zeigt an, dass gefährliche Spannung vorhanden ist. Es befinden sich keine vom Benutzer zu wartenden Teile im Geräteinneren. Dieses Gerät sollte nur von geschultem Personal gewartet werden

Sicherheits-Warnhinweise

⚠ ACHTUNG ⚡
Gefahr von Elektroschocks.
Abdeckungen nicht entfernen
Keine vom Benutzer zu wartende Teile
Wenden Sie sich ausschließlich
an qualifiziertes Personal

Die angeführten Service-/Reparatur-Anweisungen sind ausschließlich von qualifiziertem Service-Personal auszuführen. Um das Risiko eines lektroschocks zu reduzieren, führen Sie ausschließlich die im Benutzerhandbuch eschriebenen Anweisungen aus, es sei denn, Sie haben die entsprechende Qualifikation. Wenden Sie sich in allen Service-Fragen an qualifiziertes Personal.

· **Um das Risiko eines Elektroschocks zu reduzieren, setzen Sie das Gerät weder Regen noch Feuchtigkeit aus.**

· **Stellen Sie immer sicher, dass das Gerät ordnungsgemäß geerdet und verkabelt ist.**

· **Dieses Equipment muss an eine Netzsteckdose mit ⏚ Schutzleiter angeschlossen werden und einen zuverlässig identifizierbaren Nullleiter haben.**

· **Die Netzsteckdose sollte nahe beim Gerät und einfach zugänglich sein.**

Explicación de los Símbolos de Seguridad (ESP)

⚠ Éste símbolo refiere al usuario información importante contenida en la literatura incluida. Referirse al manual.

⚡ Éste símbolo indica que voltajes peligrosos están presentes en el interior. No hay elementos accesibles al usuario dentro. Esta unidad sólo debería ser tratada por personal cualificado.

Advertencias de Seguridad

⚠ ADVERTENCIA ⚡
RIESGO DE CHOQUE ELECTRICO
NO QUITAR LAS PROTECCIONNES
ELEMENTOS NO ACCESIBLES AL
USUARIO.
SERVICIO SOLAMENTE A PERSONAL
CUALIFICADO

Las instrucciones de servicio cuando sean dadas, son sólo para uso de personal cualificado. Para reducir el riesgo de choque eléctrico no llevar a cabo ninguna operación de servicio aparte de las contenidas en las instrucciones de operación, a menos que se esté cualificado para realizarlas. Referir todo el trabajo de servicio a personal cualificado.

· **Para reducir el riesgo de choque eléctrico, no exponer este equipo a la lluvia o humedad.**

· **Siempre asegurarse de que la unidad está propiamente conectada a tierra y que las conexiones de alimentación están hechas correctamente.**

· **Este equipo debe ser alimentado desde un sistema de alimentación con conexión a TIERRA ⏚ y teniendo una conexión neutra fácilmente identificable.**

· **La toma de alimentación para la unidad debe ser cercana y fácilmente accesible.**

Forklaring på sikkerhedssymboler (DK)

⚠ Dette symbol gør brugeren opmærksom på vigtig information i den medfølgende manual.

⚡ Dette symbol indikerer farlig spænding inden i apparatet. Ingen bruger servicerbare dele i apparatet på brugerniveau. Dette apparat må kun serviceres af faglærte personer..

Sikkerhedsadvarsler

⚠ FORSIGTIG ⚡
RISIKO FOR ELEKTRISK STØD
DÆKPLADER MÅ IKKE FJERNES
INGEN BRUGER SERVICERBARE
DELE SERVICE MÅ KUN UDFØRES
AF FAGLÆRTE PERSONER

Serviceinstruktioner er kun til brug for faglærte servicefolk. For at reducere risikoen for elektrisk stød må bruger kun udføre anvisninger i betjeningsmanualen. Al service skal udføres af faglærte personer.

· **For at reducere risikoen for elektrisk stød må apparatet ikke udsættes for regn eller fugt.**

· **Sørg altid for at apparatet er korrekt tilsluttet og jordet.**

· **Dette apparat skal forbindes til en nettilslutning, der yder BESKYTTENDE JORD ⏚ og 0 forbindelse skal være tydeligt markeret.**

· **Stikkontakten, som forsyner apparatet, skal være tæt på apparat og let tilgængelig.**

Förklaring av Säkerhetssymboler   (S)

⚠️ Denna symbol hänvisar användaren till viktig information som återfinns i litteraturen som medföljer. Se manualen.

⚡ Denna symbol indikerar att livsfarlig spänning finns på insidan. Det finns inga servicevänliga delar inne i apparaten. Denna apparat få endast repareras av utbildad personal.

Säkerhetsvarningar

⚠️ CAUTION
RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVERS
NO USER SERVICEABLE PARTS
REFER SERVICING TO QUALIFIED
PERSONNEL ONLY

Serviceinstruktioner som anges avser endast kvalificerad och utbildad servicepersonal. För att minska risken för elektrisk stöt, utför ingen annan service än den som återfinns i medföljande driftinstruktionerna, om du ej är behörig. Överlåt all service till kvalificerad personal.

· **För att reducera risken för elektrisk stöt, utsätt inte apparaten för regn eller fukt.**

· **Se alltid till att apparaten är ordentligt jordad samt att strömtillförseln är korrekt utförd.**

· **Denna apparat måste bli försörjd från ett strömsystem som är försedd med jordadanslutning ⏚ samt ha en neutral anslutning som lätt identifierbar.**

· **Vägguttaget som strömförsörjer apparaten bör finnas i närheten samt vara lätttillgänglig.**

Símbolos de Segurança   (P)

⚠️ O símbolo triangular adverte para a necessidade de consultar o manual antes de utilizar o equipamento ou efectuar qualquer ajuste.

⚡ Este símbolo indica a presença de voltagens perigosas no interior do equipamento. As peças ou partes existentes no interior do equipamento não necessitam de intervenção, manutenção ou manuseamento por parte do utilizador. Reparações ou outras intervenções devem ser efectuadas apenas por técnicos devidamente habilitados.

Avisos de Segurança

⚠️ PERIGO ⚡
RISCO DE CHOQUE ELÉCTRICO!
NÃO RETIRAR AS PROTECÇÕES
PARTES QUE NÃO REQUEREM
INTERVENÇÃO DO UTILIZADOR!
CONTACTAR UM TÉCNICO
DEVIDAMENTE HABILITADO!
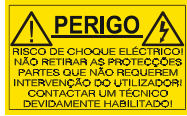
As instruções de manutenção fornecidas são para utilização de técnicos qualificados. Para reduzir o risco de choque eléctrico, não devem ser realizadas intervenções no equipamento não especificadas no manual de instalações a menos que seja efectuadas por técnicos habilitados.

· **Para reduzir o risco de choque eléctrico, não expor este equipamento à chuva ou humidade.**

· **Assegurar que a unidade está sempre devidamente ligada à terra e que as ligações à alimentação estão correctas.**

· **O sistema de alimentação do equipamento deve, por razões de segurança, possuir ligação a terra de protecção ⏚ e ligação ao NEUTRO devidamente identificada.**

· **A tomada de energia à qual a unidade está ligada deve situar-se na sua proximidade e facilmente acessível.**

Turvamerkkien selitys   (FI)

⚠️ Tämä merkki tarkoittaa, että laitteen mukana toimitettu kirjallinen materiaali sisältää tärkeitä tietoja. Lue käyttöohje.

⚡ Tämä merkki ilmoittaa, että laitteen sisällä on vaarallisen voimakas jännite. Sisäpuolella ei ole mitään osia, joita käyttäjä voisi itse huoltaa. Huollon saa suorittaa vain alan ammattilainen.

Turvaohjeita

⚠️ VAROITUS ⚡
SÄHKÖISKUN VAARA ÄLÄ AVAA
LAITTEEN KANSIA EI SISÄLLÄ
KÄYTTÄJÄLLE HUOLLETTAVIA
OSIA HUOLTO AINOASTAAN
AMMATTILAISEN SUORITTAMANA

Huolto-ohjeet on tarkoitettu ainoastaan alan ammattilaisille. Älä suorita laitteelle muita toimenpiteitä, kuin mitä käyttöohjeissa on neuvottu, ellet ole asiantuntija. Voit saada sähköiskun. Jätä kaikki huoltotoimet ammattilaiselle.

· **Sähköiskujen välttämiseksi suojaa laite sateelta ja kosteudelta.**

· **Varmistu, että laite on asianmukaisesti maadoitettu ja että sähkökytkennät on tehty oikein.**

· **Laitteelle tehoa syöttävässä järjestelmässä tulee olla SUOJAMAALIITÄNTÄ ⏚ ja nollaliitännän on oltava luotettavasti tunnistettavissa.**

· **Sähköpistorasian tulee olla laitteen lähellä ja helposti tavoitettavissa.**

Επεξήγηση των Συμβόλων Ασφαλείας

⚠️ Αυτό το σύμβολο παραπέμπει το χρήστη σε σημαντικές πληροφορίες που συμπεριλαμβάνονται στο συνοδευτικό εγχειρίδιο.

⚡ Αυτό το σύμβολο υποδεικνύει ότι στο εσωτερικό υφίστανται επικίνδυνες ηλεκτρικές τάσεις. Στο εσωτερικό δεν υπάρχουν επισκευάσιμα μέρη. Αυτή η μονάδα πρέπει να επισκευάζεται μόνο από ειδικά εκπαιδευμένο προσωπικό.

Προειδοποίηση Ασφαλείας

⚠️ CAUTION ⚡
RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVERS
NO USER SERVICEABLE PARTS
REFER SERVICING TO QUALIFIED
PERSONNEL ONLY

⚠️ Οδηγίες επισκευής, όπου παρέχονται, αναφέρονται αποκλειστικά και μόνο σε εξειδικευμένο προσωπικό. Για να μειωθεί ο κίνδυνος ηλεκτροπληξίας, μην εκτελείτε επισκευές παρά μόνο τις συμπεριλαμβανόμενες στο εγχειρίδιο των οδηγιών, εκτός και αν έχετε τα απαραίτητα προσόντα για να το κάνετε. Όλες οι επισκευές να εκτελούνται από ειδικά εκπαιδευμένο προσωπικό.

· Για να μειώσετε τον κίνδυνο ηλεκτροπληξίας μην εκθέτετε τη συσκευή σε βροχή ή υγρασία.

· Πάντα να εξασφαλίζετε τη σωστή γείωση της συσκευής και τη σωστή σύνδεση των συνδέσμων τροφοδοσίας.

· Ο εξοπλισμός πρέπει να τροφοδοτείται από ένα σύστημα τροφοδοσίας που να εξασφαλίζει ΠΡΟΣΤΑΤΕΥΤΙΚΗ ΓΕΙΩΣΗ ⏚ και να έχει καθορισμένες θέσεις ουδέτερου και φάσης.

· Ο εξοπλισμός που τροφοδοτεί τη συσκευή θα πρέπει να βρίσκεται κοντά στη συσκευή και να είναι εύκολα προσβάσιμος.

2.1 Explanation of Safety Symbols

This symbol refers the user to important information contained in the accompanying literature.

This symbol indicates that hazardous voltages are present inside. No user serviceable parts inside. This system should only be serviced by trained personnel.

2.2 Safety Warnings

CAUTION

RISK OF ELECTRIC SHOCK
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Servicing instructions, where given, are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any actions on this equipment other than contained in the operating instructions, unless you are qualified to do so. Refer all servicing to qualified personnel.

To reduce the risk of electric shock, do not expose this appliance to rain or moisture.

Always ensure that the unit is properly earthed and power connections correctly made.

This equipment must be supplied from a power system providing a PROTECTIVE EARTH connection and having a neutral connection which can be reliably identified.

The power circuit breakers or switches supplying power to the unit should be close to the unit and easily accessible.

2.3 Lithium Batteries

The Sirius 830 door PC and router control module(s) each contain a Lithium battery.

CAUTION

This equipment contains a lithium battery

There is a danger of explosion if this is replaced incorrectly
Replace only with the same type from the same manufacturer.
Dispose of used batteries in accordance with local
and national laws/regulations.
Batteries **should only** be replaced by trained service technicians

2.4 Fiber Output Modules Warning

LASER SAFETY

**CLASS 1
LASER PRODUCT**

The average optical output power does not exceed 0 dBm (1mW) under normal operating conditions. Unused optical outputs should be covered to prevent direct exposure to the laser beam.

Even though the power of these lasers is low, the beam should be treated with caution and common sense because it is intense and concentrated. Laser radiation can cause irreversible and permanent damage of eyesight. Please read the following guidelines carefully:

- Make sure that a fiber is connected to the board's fiber outputs before power is applied. If a fiber cable (e.g. patchcord) is already connected to an output, make sure that the cable's other end is connected, too, before powering up the board.

- **Do not** look in the end of a fiber to see if light is coming out. The laser wavelengths being used are totally invisible to the human eye and can cause permanent damage. Always use optical instrumentation, such as an optical power meter, to verify light output.

2.5 Cable Management

It is important that the cabling to and from the router is correctly labelled and routed. This will simplify the work required if the installation needs to be changed or added to at a future date.

- Cables connected to the router must be fitted with adequate vertical and horizontal strain relief to avoid twisting of the rear panels causing damage to the router connectors and loss of electrical/signal connection to the router.

- Cables connected to the router should be routed so they do not cover any of the frame fan exhausts as this can restrict airflow through the router.

2.6 Power Supplies

The power supply shelves are separate 2RU modules. Power supply shelves are rack mountable and can be placed above, below or remote from the Sirius frame.

- Ensure that the power supply shelves are correctly earthed see section 2.7 for details.

- The power supply units are sealed and do not contain any serviceable items

- Power supply shelves are heavy so it is advised that two people are needed to support the weight of the power supply shelves during installation.

- To prevent damage, power supply shelves should not be mounted using just the front ears, and should have support at the rear of the shelves.

The power supply alarm cable(s) and 48 V DC cables are supplied by Grass Valley and can be ordered as either 2.5 metre cables or 8 metre cables.

2.7   Earth Cables

Functional Earth Point, see section 2.7.2

48 Vdc power connectors

Protective Earth Point, see section 2.7.1

PowerCon AC Input Connectors x4

25-Way D Type Alarms Connector
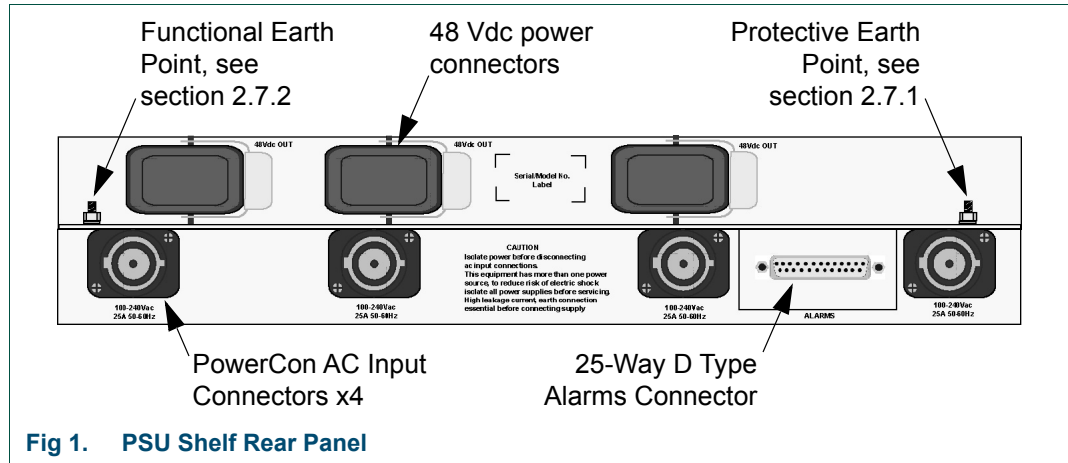
Fig 1.   PSU Shelf Rear Panel

2.7.1   Important Protective Earth Information

Due to the high leakage current, ensure that all of the power supply shelves are grounded to the protective earth. Earth studs are provided on the rear of each power supply shelf for this purpose. These studs have M6 size nuts, and are suitable to take an eyelet crimp.

Note:

- The Protective earth is indicated on the power supply shelf by this symbol: (located on the right side of the power supply shelf, see Fig 1.).

- Protective Earthing is a conductor in the building installation wiring, or in the power supply cord, connecting a main protective earthing terminal to an earth point in the building installation.

PROTECTIVE EARTH

- The building installation must provide a means for connection to the protective earth and the equipment must be connected to that means.

- A service person must check that the socket outlets that the equipment is to be powered from provide a connection to the protective earth. If not the service person must arrange for the installation of the protective earth wire in the building.

Warning

High leakage current; the Protective Earth connection is essential before connecting the supply.

2.7.2   Important Functional Earth Information

Up to two earth cables (636027) are supplied with the Sirius 830 depending on how many power supply shelves are fitted. One should be fitted from each power supply shelf to the Sirius 830 router frame, this is called a Functional Earth.

Note:

- The Functional Earth on the power supply shelf is indicated by this symbol: (located on the left side of the power supply shelf, see Fig 1.).

- Functional Earthing is the earthing of a point on the equipment or system, which is necessary for purposes other than safety.

Warning

The Functional Earth cable from the power supply shelf to the Sirius frame must be fitted.

2.8 Safety Standards

This equipment complies with the following standards:
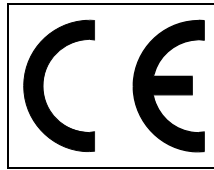
EN60950-1 2006
Safety of information Technology Equipment Including Electrical Business Equipment.

UL1419 (3rd Edition) - UL File E193966
Standard for Safety - Professional Video and Audio equipment

EMC Standards

This unit conforms to the following standards:

EN55103-1:1996 (Environment E4)
Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 1. Emission

EN55103-2:1996 (Environment E2)
Electromagnetic Compatibility, Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Part 2. Immunity

Federal Communications Commission Rules, 47 CFR: 2009, Part 15, Subpart B (Class A)

EMC Performance of Cables and Connectors

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

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

COAXIAL CABLES

Coaxial cables connections (particularly serial digital video connections) shall be made with high-quality double-screened coaxial cables such as Belden 1694A or Belden 1505A.

D-TYPE CONNECTORS

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

3. Prerequisites

Prerequisites

This chapter describes the electrical and space requirements for the Sirius system.

3.1 Size Requirements

Make sure that sufficient space is available for the Sirius 830. For ventilation purposes, there must be an additional 50 mm (2 inch) gap on the left and right sides.

The full height of the Sirius 830 is 668 mm (26.3 inches). Allow an additional 200 mm (8 inches) behind the unit for power, control and signal cables.

3.1.1 Sirius 830 Dimensions

Dimensions are of full size system (without the power supply shelves)
Dimensions are in millimeters (inches).
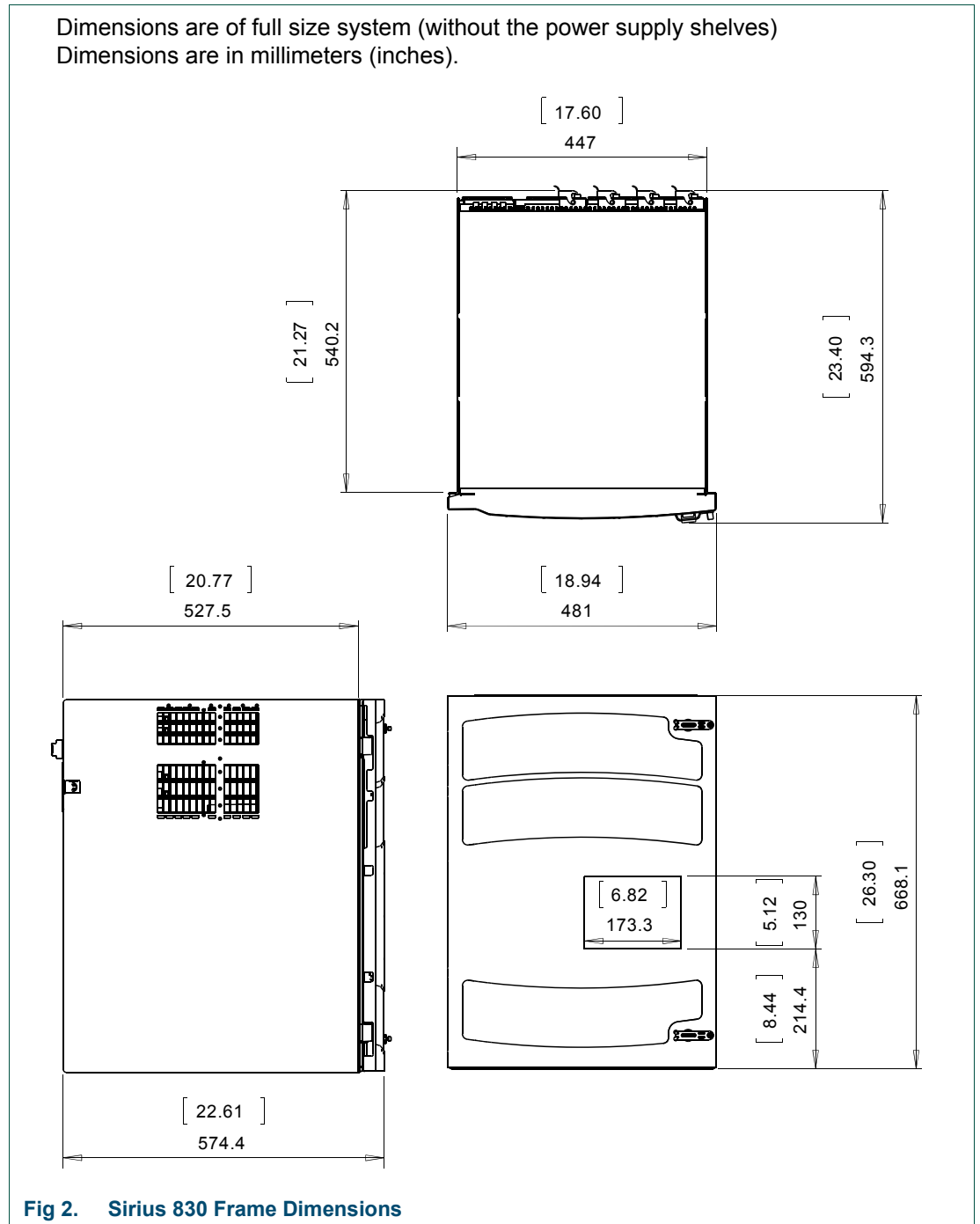
Fig 2.   Sirius 830 Frame Dimensions

3.1.2 Power Supply Shelf

The power supply shelf is a separate 2U assembly. Power Supply Shelves are rack mountable and can be placed above, below or remote from the Sirius Frame.

You must allow at least 250 mm (10 Inches) at the rear of the shelf for cables and connectors.

All dimensions are in millimeters (dimensions in brackets are in inches).

Fig 3.   Power Supply Shelf Dimensions
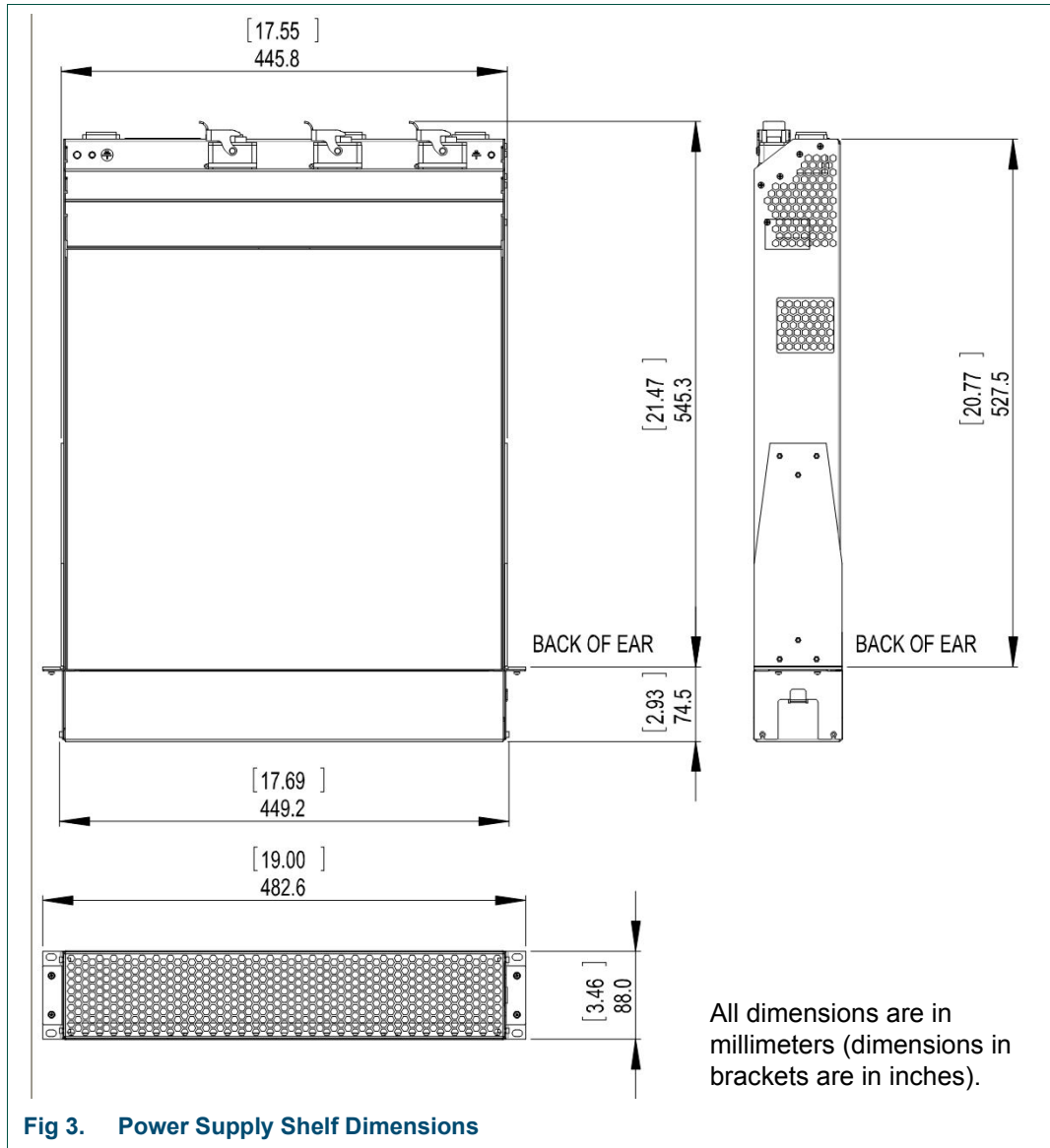
3.2 Weights

3.2.1 Packed Shipping Crate

Shipping Crate: between 153 kg (337 lbs) and 165 kg (364 lbs) when full (depending on modules fitted).

> ⚠️ The crate containing the Sirius 830 is extremely heavy. A fully populated 15RU size system with two power supply shelves and cabling weighs between 153 kg (337 lbs) and 165 kg (364 lbs). When lifting use the correct local Health and Safety lifting guidelines.

3.2.2 Sirius 830 Frame

Sirius 830: between 73 kg (161 lbs) and 85kg (187 lbs) typical full frame (without packaging and depending on modules fitted).

> ⚠️ The Sirius 830 is extremely heavy. A fully populated 15RU size system weighs between 73 kg (161 lbs) and 85kg (187 lbs). When lifting use the correct local Health and Safety lifting guidelines.

3.2.3 Power Supply Shelf

Power Supply Shelf: 24 kg (53 lbs) typical (without packaging).

> ⚠️ The power supply shelf weighs 24 kg (53lb). When lifting use the correct local Health and Safety lifting guidelines.

3.3 Ventilation

A fully populated Sirius 830 is ventilated by groups of fan modules mounted in the front and rear of the router. The vents in the front, sides and rear must not be obstructed and should be periodically cleaned and kept free from the build-up of dust. All the fan modules are monitored for failure.

Air is pulled in through the ventilation slots in the front door and circulated through the router, passing over the modules, and then expelled by the rear fans, air is also expelled out at points on each side of the frame, where the crosspoint modules are situated.

The power supply shelves have their own integral cooling system.

- Ensure the flow of air is not restricted through the vents and fan exhausts.

- Do not obstruct the air vents situated on both sides of the frame, and allow a minimum of 50 mm (2 inches) clearance to allow air flow. The air that is exhausted from the sides must be able to flow past the rear of the router frame without being obstructed. This also applies to the PSU shelves.

- The fan assemblies should be placed back into the closed position as soon as possible after opening, as this ensures correct ventilation of the frame. Failure to do this will result in failure.

- In practice the maximum time that a fan assembly can be left open will depend on a number of factors such as; ambient temperature, frame loading, crosspoint routings, etc. To ensure correct operation under all conditions the fan assemblies should be left open for no more than 4 minutes at a time.
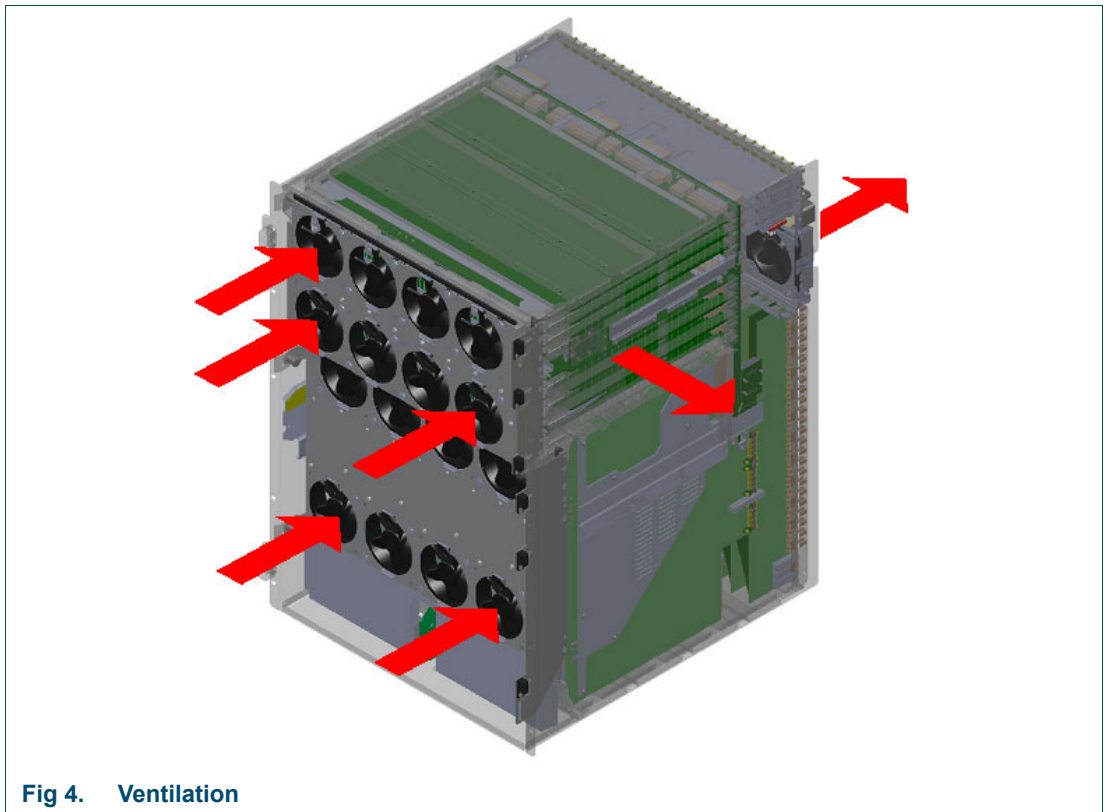
Fig 4.   Ventilation

3.4   Electrical Requirements

3.4.1   Important Protective Earth Information

See section 2.7.1 for full details of the Protective Earthing requirements.

PROTECTIVE EARTH

1.   The building installation must provide a means for connection to the protective earth. The equipment must be connected to that means.

2.   A service person must check that the socket outlets that the equipment is to be powered from provide a connection to the protective earth. If not the service person must arrange for the installation of the protective earth wire in the building.

3.4.2   Cable Management

See Section 2.5 for details on cable management.

3.4.3   Mains Power Cables

The maximum current drawn by each power supply unit is dependant on the local mains voltage, the configuration of the router and the number of power supply shelves installed.

Each AC feed must have an Isolating Switch or Circuit Breaker rated at 16 A type B to IEC 60898-1. The isolating switch/circuit breaker must be Type B (trips at 3 to 5 times full load current) so that it is capable of handling a maximum inrush current of 50 A. Installation must be in accordance with Local and National electrical codes.

Any mains cables used must be rated above the rating of the circuit breaker.

See section 7.3 for details on wiring the PowerCon connectors supplied with the Sirius 830 router.

- •   Installation must be in accordance with Local and National electrical codes. This product is pluggable type B (IEC 60309).

- •   Each AC feed must be capable of supplying a minimum of 16 A at the supply voltage in use (110 V AC or 220 V AC).

Important: Sirius 830 has up to six "PowerCon" AC power connectors for the power supply shelves (up to four per power supply shelf). It is the responsibility of the customer to connect these to the mains supply.

Note: Ensure all DC power cables are fitted before powering up the Sirius 830.

3.4.4   DC Power Cables

The 48 V DC cables are supplied by Grass Valley and can be ordered as either 2.5 metre cables or 8 metre cables.

Note: All of the 48V DC cables from the power supply shelves to the Sirius 830 router must be the same length to ensure that the voltage drop along each cable is the same at high currents.

3.4.5 Power Supply Redundancy

To ensure full dual redundancy, half of the power supplies should be powered from a separate power source to the other power supplies. Under normal operating conditions with dual power sources, each power supply unit runs at less than 50% loading.

The number of power supply shelves should be selected based on the mains supply operating voltage and router configuration, see Table 1. for information.

> ⚠️ To reduce the risk of electric shock, plug each power supply shelf into separate branch circuits employing separate service grounds.

Router Configuration	Mains Supply (V AC)	Number of Power Supply Shelves and Units Required for Redundancy
All router configurations	220 - 240 V AC Nominal	1 Shelf 4 Power Supply Units
Typical router configuration of less than 12 video AHP modules (5919/5949/5915/5925) fitted in the router	100 - 120 V AC Nominal	1 Shelf 4 Power Supply Units
If 12 or more video AHP modules (5919/5949/5915/5925) are fitted in the router	100 - 120 V AC Nominal	2 Shelves 6 Power Supply Units

Table 1.   Sirius 830 Power Supply Redundancy

Important:
- If the router is expanded from its initial configuration check Table 1. to see if extra power supply shelves are required.

- It is the responsibility of the Sirius 830 installer to ensure any AC power requirements are met.

4. Unpacking the Sirius 830

This chapter contains:

Unpacking the Sirius 830

4.1 Unpacking

⚠️

- The crate containing the Sirius 830 is extremely heavy. A fully populated 15RU size system with one power supply shelf and cabling weighs between 153 kg (337 lbs) and 165 kg (364 lbs). When lifting the crate use the correct local Health and Safety lifting guidelines.

- Each Power Supply Shelf weighs 24 kg (53lb). When lifting use the correct local Health and Safety lifting guidelines.

- This is only a guide to unpacking the Sirius 830, and procedures may need to change depending on the location of the Sirius 830.

The Sirius 830, power supply shelf/shelves and cables are supplied in a single wooden crate. The crate is delivered in the horizontal position with the crate lid facing upwards, see Fig 5.

1. With the crate in the horizontal position, remove the ten bolts and remove the lid, see Fig 5.
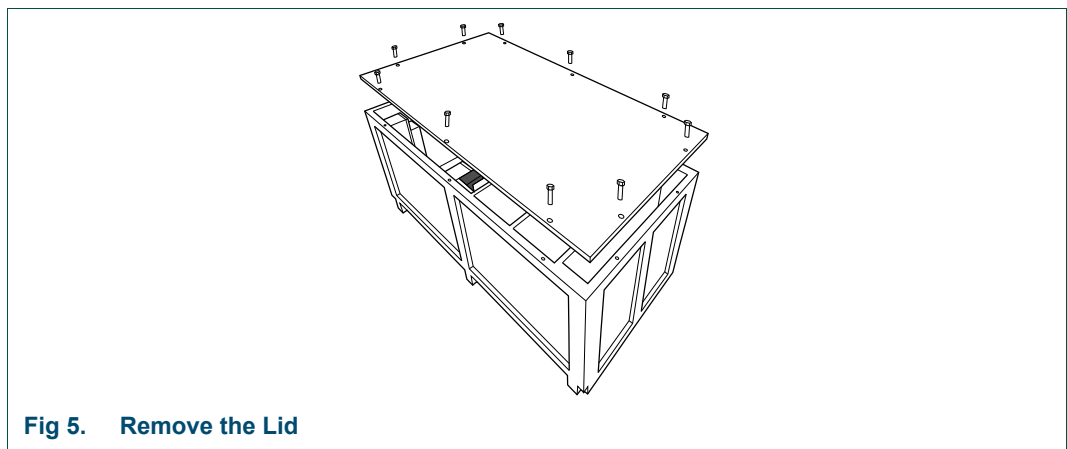
Fig 5.   Remove the Lid

2. Please check that the following items are included in the crate with the Sirius 830. If any items are missing please contact your Grass Valley representative immediately:

    - This Installation & Quick Start Manual (also found on the Product CD)

    - Sirius 830 router frame (6048) containing all configured modules

    - Power Supply Shelf: one or two power supply shelves, each containing four or three power supply units depending on customer specification

    - One or two Alarm cables 2.5 metres (98 inches) or 8 metres (315 inches) in length - depending on customer specifications (one cable supplied with each power supply shelf)

    - Four or six PowerCon connectors for the power supply shelves depending on customer specifications (four connectors supplied with a single power supply shelf or three connectors supplied with each power supply shelf if two power supply shelves are supplied)

    - Two or four DC Power cables 2.5 metres (98 inches) or 8 metres (315 inches) in length - depending on customer specification (two cables supplied with each power supply shelf)

    - One or two Earth Cables depending on customer specification. Functional Earth for connecting to the Sirius frame (one cable supplied with each power supply shelf)

    - Software DVD: Workbench

    - Software CD: PC Touch-screen Drivers

3. Carefully remove everything except the router from the crate and put them to one side for later use.

Power Supplies

Cables, DVD, CD and Manual
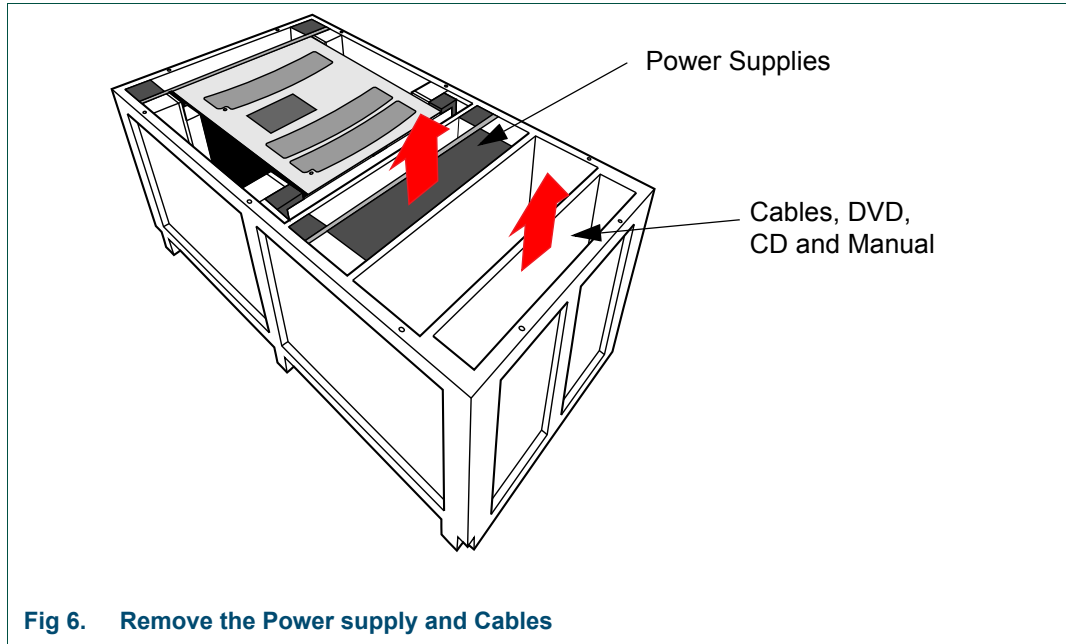
Fig 6.   Remove the Power supply and Cables

4. Carefully raise the crate from the top end so that is in the upright position, see Fig 7.

Note: The Sirius 830 sits on a shipping pallet: There are no straps or other methods of securing the Sirius 830 to the shipping pallet.
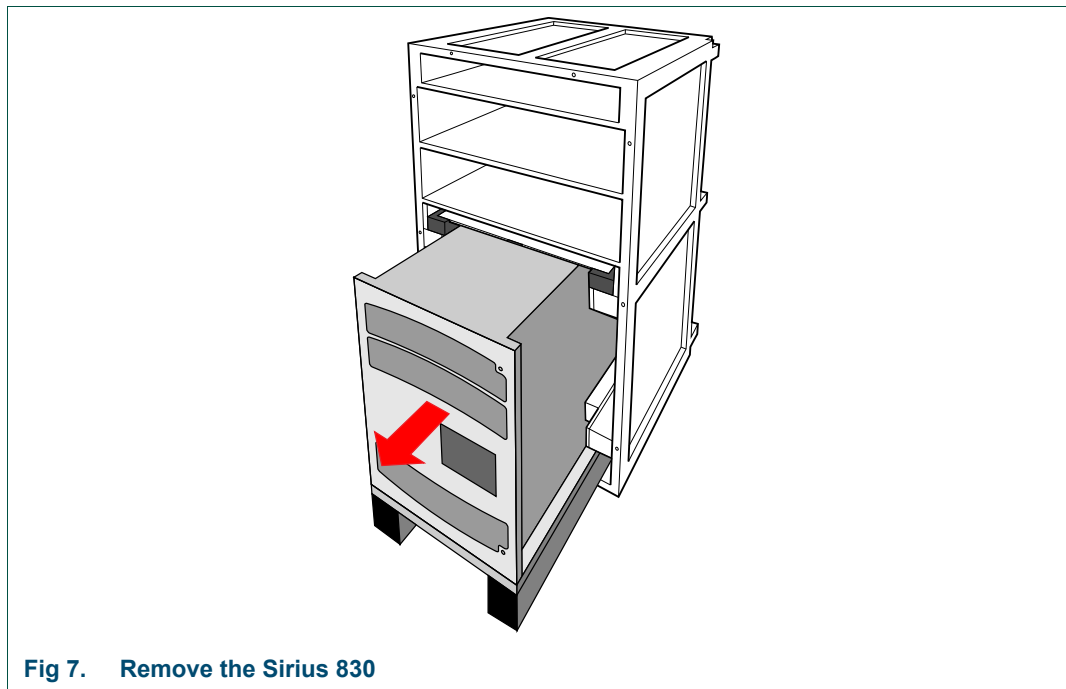
Fig 7.   Remove the Sirius 830

5. When the frame is out of the crate, move the Sirius 830 frame to the bay where it is going to be installed.

6. See section 5.1 for instructions on rack mounting the Sirius 830.

5. Installation

Chapter contains:

Installation

5.1   Installing into a 19" Rack

The Sirius 830 has rack mount ears, for mounting into a 19" rack. Place the frame on a suitably specified and installed rack shelf for extra stability.

> ⚠️ The Sirius 830 is extremely heavy, between 73 kg (161 lbs) and 85kg (187 lbs) for a full frame (without packaging and depending on modules fitted). When lifting the Sirius 830 into a 19" rack use the correct local Health and Safety lifting guidelines.

1.   Move the Sirius 830 so that the frame rear lines up with the front of the rack it will be mounted in.

2.   The Sirius 830 has a single door, that provides access to the rack mount mounting points. The door must be opened and removed to expose the rack mount ears (see section 5.1.1).

5.1.1   Opening the Door

The door is hinged on the left hand side so that you can access the inside of the frame.

Note: The two door latches have guards fitted which prevent them from turning. Remove the guards before attempting to open the door.

To remove a latch guard and open the door:

1.   Un-screw the captive screw on the right side of the guard, see Fig 8.

2.   Take hold of the guard by the captive screw and carefully swing open the guard to the left until the guard is at 90° to the door, the guard can then be pulled outwards and away from the door. When re-fitting the guards, take care when inserting the two prongs on the guard back into the location holes in the door.

3.   Turn the two door latches counter clockwise to release the door catches.

4.   Take hold of the door handle and open the door.
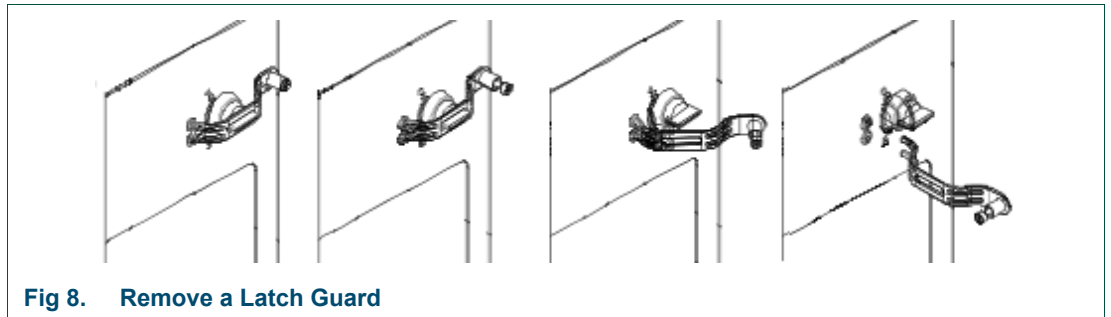
Fig 8.   Remove a Latch Guard

5.1.2   Removing the Door

1.   With the door open unplug all the cable connections from the door PC.

2.   Lift the door off its hinges and place it away from the rack.

5.1.3 Securing the Sirius 830 in a 19" Rack

1. The rack mounting ears will be exposed once the Sirius 830 door has been removed, see Fig 9.

2. To secure the frame to the rack, use the correct rack mount screws or bolts. For stability and rigidity, secure the frame using all the rack mounting-points.

To secure the frame to the rack, use the correct rack mount screws or bolts.

Fig 9.   Installing into a 19" Rack
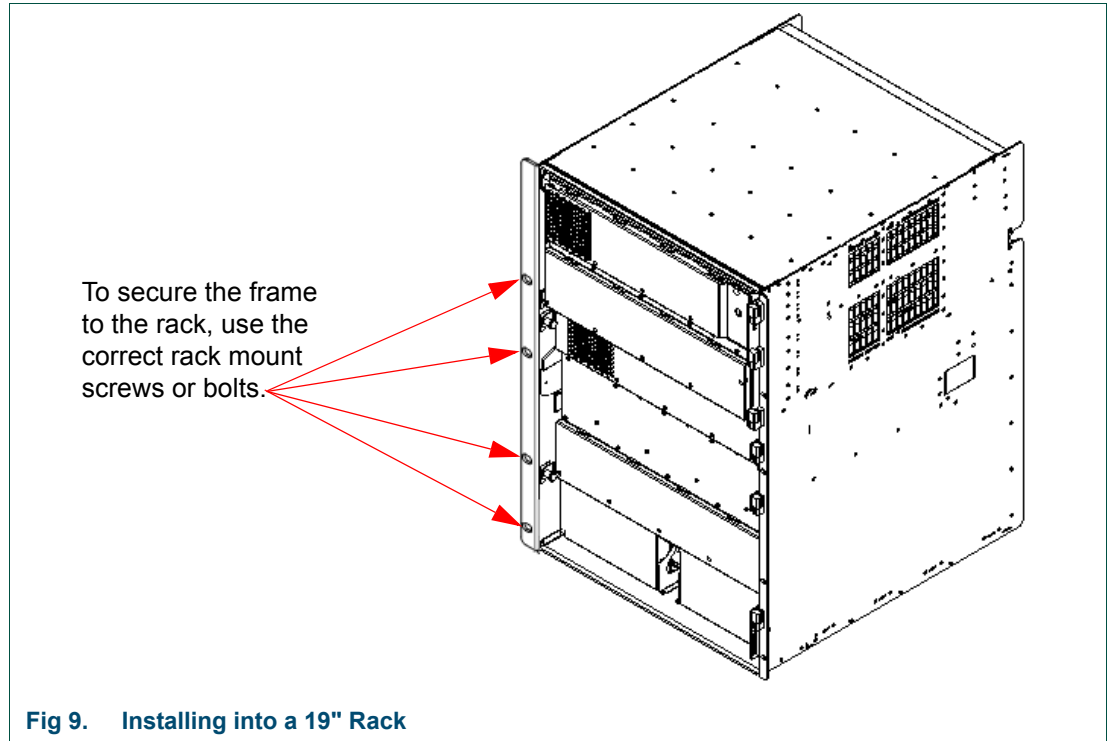
⚠ Air for ventilation is drawn through the front door and exhausted through the rear of the frame, and out of each side, this must be considered when mounting the unit into the rack. See section 3.3 for more details on ventilation.

3. Replace the door and reconnect the cables to the door PC.

If you experience any difficulties installing the Sirius frame, please contact Grass Valley Customer Support (see section 1.1 for contact details).

5.2 Mounting the Power Supply Shelf into a 19" Rack

The Power Supply Shelf can be placed above, below or remote from the Sirius Frame. The power supply shelf requires a 2RU space within a rack system.

- • The Power Supply Shelf weighs 24 kg (53lb). When lifting use the correct local Health and Safety lifting guidelines.

- • Do not obstruct the air vents situated on both sides of the power supply shelf, and allow a minimum of 50 mm (2 inches) clearance to allow air flow. The air that is exhausted from the sides must be able to flow past the rear of the rack without being obstructed.
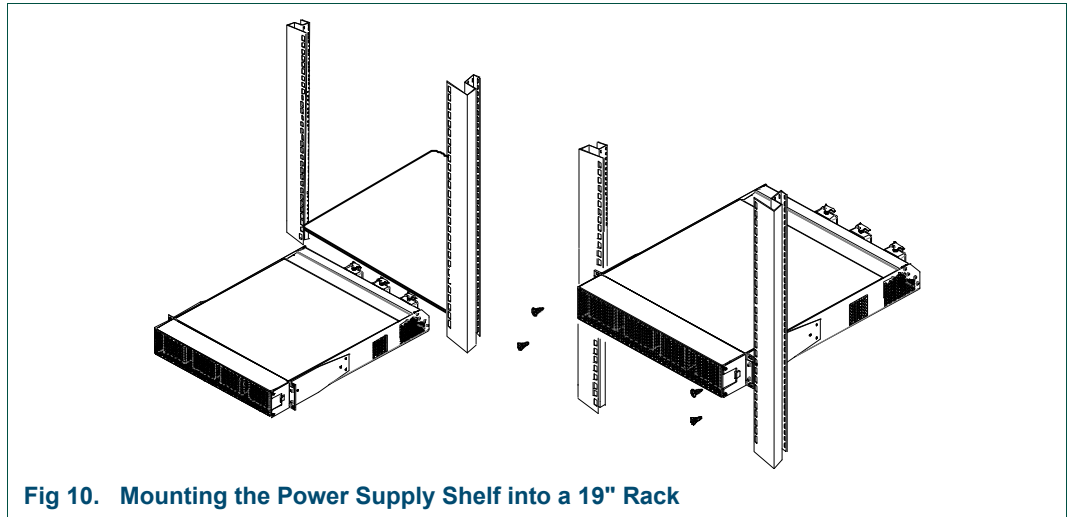
Fig 10. Mounting the Power Supply Shelf into a 19" Rack

1. Place the unit on a suitably specified and installed rack shelf.

2. Use the correct rack mount screws or bolts to secure the power supply shelf to the rack.

6. Rear Connectors

Chapter contains:

Rear Connectors

This section shows the rear connectors on the Sirius 830 router.

6.1 Rear of Sirius 830 Frame

Fig 11. shows a fully populated Sirius 830 frame with BNC Inputs and Outputs.
See Section 2.5 for details on cable management.

⚠️ Cables connected to the router must be fitted with adequate vertical and horizontal strain relief to avoid twisting of the rear panels causing damage to the router connectors and loss of electrical/signal connection to the router.
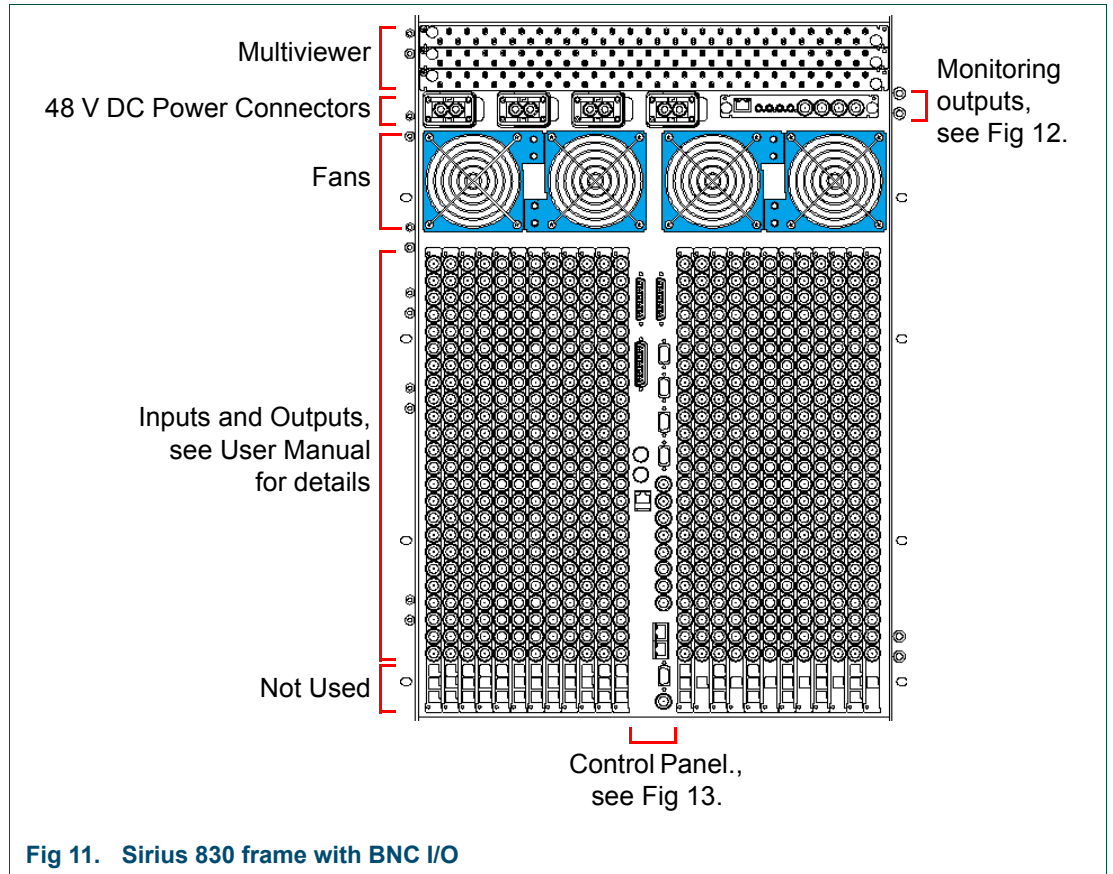
Fig 11. Sirius 830 frame with BNC I/O
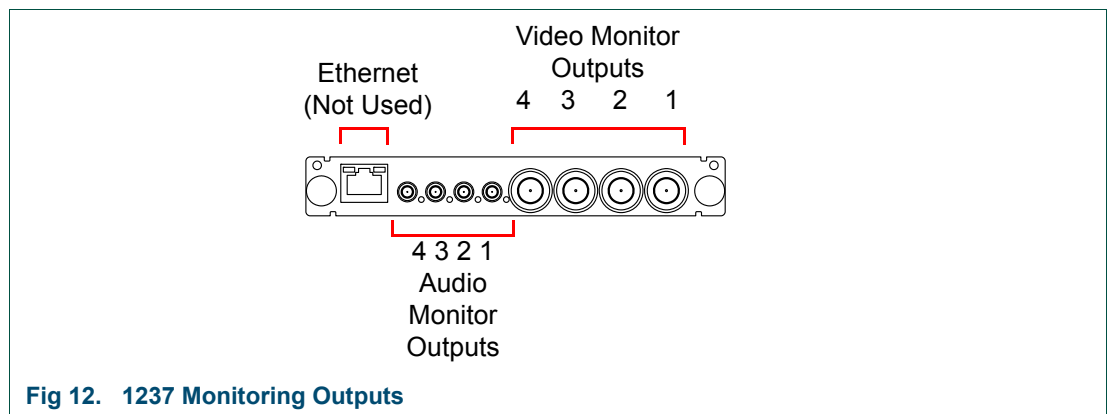
Fig 12. 1237 Monitoring Outputs

6.2 Control Rear Panel

Fig 13. shows the Control Rear Panel

Fig 13.   Sirius 830 Control Rear Panel

Connector	Function
PSU A PSU B	25 Way D-Type socket x 2 - PSU Alarm Inputs. Collects alarm signals from the PSU(s), using the supplied cable(s)
Alarms	25-Way D-Type socket - Alarm Outputs: Alarm outputs switch in the event of the following failures: Fan, Controller, PSU. For details on the output that switches for each failure see the Sirius 800 User Manual. For example the outputs can be used for warning lights in a panel or monitoring by an external control system.
Door Fuse & Spare Fuse	5 A Anti-Surge, Ceramic fuse (5 mm x 20 mm)

Table 2.   Sirius 830 Control Rear Panel

Connector	Function
Door Ethernet	RJ45 Ethernet - Used to connect the door PC to an external network
RS485 1 (COM 3) to 4 (COM 6)	9 Pin D-Type socket x 4 - Serial Control, these correspond to ports; COM 3 to COM 6 in Workbench
Video Ref	BNC x 8 - Video reference (4 pairs, each with passive loop through) B+B, and Tri-level **Note**: No internal termination.
Ethernet A, B	RJ45 x 2 - Ethernet for controller A and B. If two Nucleus controllers are fitted both the Ethernet A and Ethernet B ports must be connected to the network.
BAL + LTC	9 Pin D-Type socket - AES reference 110 Ω balanced termination and LTC input termination
Unbal	BNC - AES reference, 75 Ω termination
Note: Physically only one AES reference (balanced or unbalanced) should be connected. Connecting both will stop the audio router module(s) functioning correctly.	

Table 2.   Sirius 830 Control Rear Panel

7. Cabling

This chapter contains:

Cabling

7.1 Earthing

For full details on the earthing requirements please see section 2.7.

7.2 Cable Management

See Section 2.5 for details on cable management.

> Cables connected to the router must be fitted with adequate vertical and horizontal strain relief to avoid twisting of the rear panels causing damage to the router connectors and loss of electrical/signal connection to the router.

7.3 Mains Power Cables

For full details on the mains cable requirements please see section 3.4.3.

1. The following PowerCon connector wiring instructions **MUST** be followed.

2. The AC supply feed MUST be isolated before connecting or disconnecting the "PowerCon" connectors. This is required because the "PowerCon" connectors are not suitable for isolating current.

3. The mains conductor colors for Live, Neutral and Earth in Fig 14. are only examples and may not match the colors used in your geographical location.

PowerCon Wiring:

• Cable outside diameter: 17 mm (general range: 8.0 to 20.0 mm)

• Cable Connector: Screw-type terminals for stranded wires up to 6.0 mm^2 (AWG 10)

Fig 14.   Cable Connector Assembly instructions

Ⓓ 1. Push insert and chuck into housing.

Important: Align the chuck and insert by positioning the nose into keyway.

2. Tighten bushing using open wrench 27 mm, min. torque 3.5 Nm.

Assembled Connector
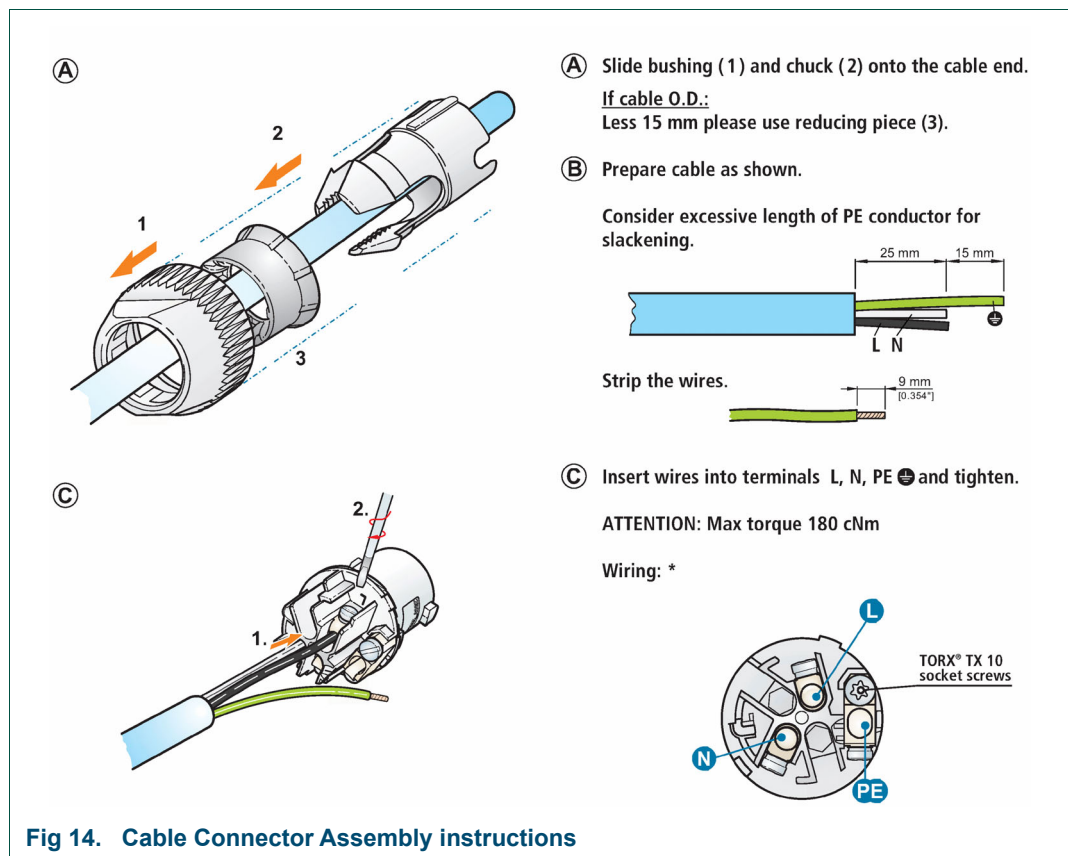
Fig 15. Cable Connector Assembly instructions (continued)
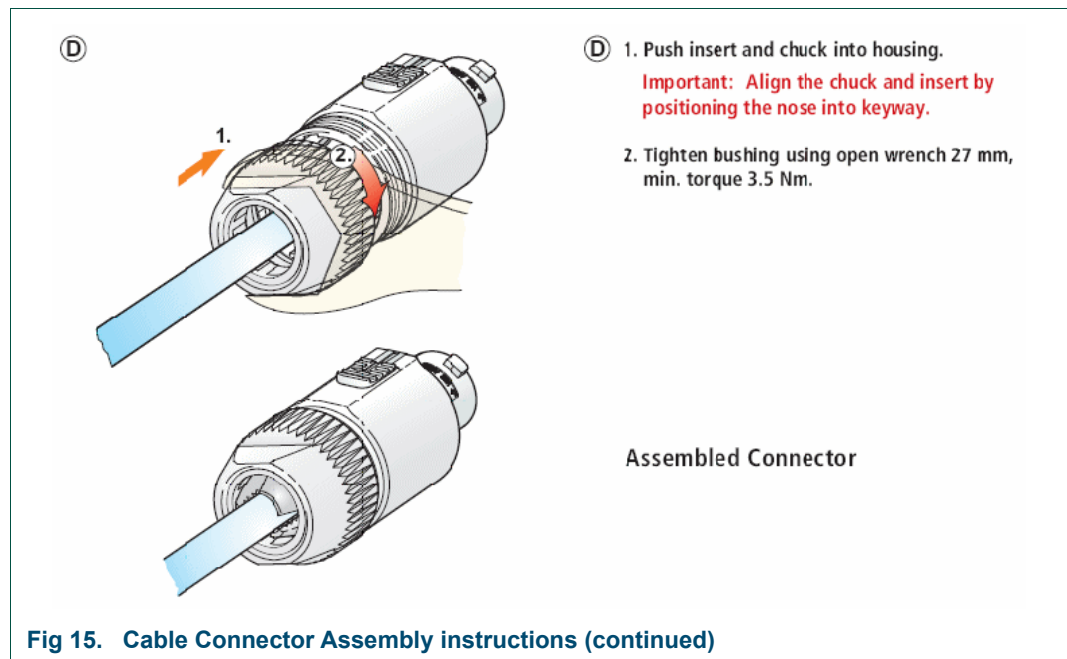
7.4   Ethernet Cabling (Optional)

The router can be connected to a local network so that it can be monitored and configured from one or more remote Workbench computers. Ethernet cables are used to connect the Door PC and the router controllers to the network.

Connect the Nucleus router control module(s) and router Door PC to a network switch on the same network as the computer(s) that Workbench is being installed on. For Workbench installation details see section 11.

If the router control module(s) are shipped loaded with the sample/default database the default controller and Door PC IP addresses are as listed below.

If the IP addresses don't suit the host network the network switch and the computer running Workbench should form an isolated network until the IP addresses are changed to suit the host network. If the IP Addresses need to be changed see section 7.4.1.

Note:	•	If the router is shipped with a custom database the IP addresses may be different from those listed below. See section 7.4.1 for information on how to check or edit the IP addresses.
	•	By default the Nucleus2 2463 router control module will automatically negotiate its communication speed with the network switch. If the network switch is set to force a specific speed the controller must be set to match the network switch setting, see the Sirius 800 User manual for details on changing this setting 10Base-T or 100Base-T only (1000Base-T is not supported).

Sirius 830 Default IP Addresses:

- Controller A - 172.31.9.205

- Controller B - 172.31.9.206

- Door PC - 172.31.9.207
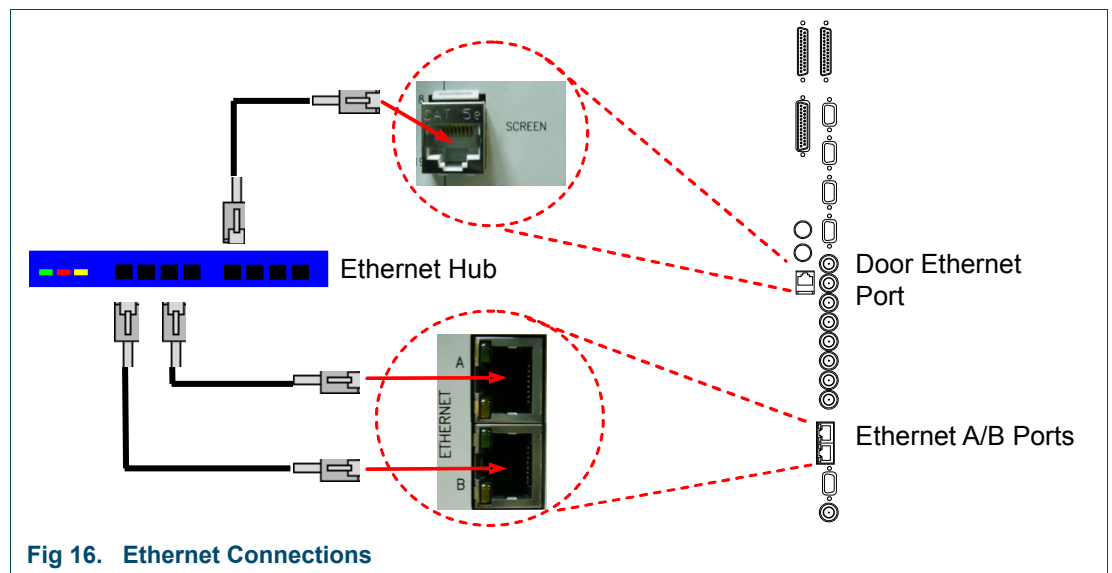
Fig 16.   Ethernet Connections

7.4.1   Changing IP Addresses

- If the controller IP addresses need to be changed, see the Sirius 800 User manual for details.

- The Door PC IP address is changed via Windows XP on the Door PC using Windows remote desktop or by connecting a USB mouse and Keyboard locally. See the Door PC Maintenance section of the Sirius 800 Maintenance & Upgrade manual for login and connection details.

7.5 External Panel Cabling (Optional)

Grass Valley external panels can be connected to the router by using RS485 cables and the Multidrop Communications protocol (SW-P-06).

The Sirius 830 is supplied with a default database. The default database configures the **RS485 3 (COM 5)** connector on the rear of the router to use the Multidrop Communications protocol (SW-P-06). RS485 3 (COM 5) supports a variety of BPX and XY control panels (see Table 8. on page 51 for details).

Fig 17. shows the RS485 connector pin-outs for Multi-drop cables. See section 7.5.2 for details on connecting an external panel to the router and section 10.6 for operating the panels.

7.5.1 RS485 Control Pin-outs
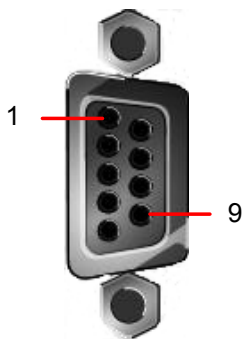
| | Multi-drop RS485 Pin to Pin Connections | | |
	Pins	Router RS485 Connector	External Panel RS485 Connector
	1	Chassis	Chassis
	2	Rx-	Tx-
	3	Tx+	Rx+
	4	0V	0V
	5	N/C	N/C
	6	0V	0V
	7	Rx+	Tx+
	8	Tx-	Rx-
	9	Chassis	Chassis

Fig 17.   RS485 Connector Pin-outs

7.5.2   Example Connecting a 6026776 2U Control Panel to the Router

This example assumes the following:

- The default router database is loaded

- A 6026776 (mimicking a 6276) control panel is available

- Only one control panel is connected to the router

- The control panel will be connected to RS485 3 (COM 5) of the router using an RS485 cable in accordance with the default database (see Fig 17. on page 31 for cable connections)

- The control panel will be set to address 1 so that any source and any destination can be dialed up in accordance with the default database (see Table 8.)

Other control panel types can be connected to the same router using either RS485 Multidrop or Ethernet connections. For details see the control panel user manuals.

1) Control Panel Mode
DIP Switch 6 = Down (Nucleus)

2) Communications Config
DIP Switch 10 = Up (RS485)

5) IEC Power
Socket

4) Control Panel Address (see Table 8.)
For this example set to Address 1
Rotary Hex Switch 1 = 1
Note: Must match database configuration.

3) Termination configuration if this is the final panel on an RS485 chain
DIP Switches 1 & 2 = Down (Terminated)

Fig 18.   6026776 2U Control Panel Rear

For details of control panel rear see Fig 18.

1. Configure the control panel to be connected to a Nucleus controller:
   DIP Switch 6 = Down

2. Select the communications type to RS485:
   DIP Switch 10 = Up

3. Connect the multidrop pin to pin RS485 cable to either one of the RS485 connectors on the rear of the control panel and to RS485 3 (COM 5) of the router.
   As this is the only control panel on the RS485 connection terminate the link:
   DIP Switches 1 & 2 = Down

4. Set the control panel address to 1:
   Rotary Hex Switch 1 = 1 (Must match database configuration)

5. Rotary Hex Switch 2 sets the brightness of the control panel keys:
   Rotary Hex Switch 2 = 0 (minimum brightness)
   Rotary Hex Switch 2 = 7 (maximum brightness)

7.5.2.1 6276 Control Panel Rear Panel

If you are connecting the router to an older 6276 control panel the procedure is similar to the 6026776. The 6276 rear panel is different to the 6026776 control panel (for the correct connections and configuration see Fig 19.)

For information on operating the 6276 control panel see section 10.6.1.1.

1) Control Panel Mode
DIP Switch 6 = Down (Nucleus)

2) Communications Config
DIP Switch 7 = Down (Multidrop)

5) IEC Power
Socket

4) Control Panel Address (see Table 8.)
For this example set to Address 1
DIP Switch 8 = Up
Rotary Hex Switch = 1
Note: Must match database configuration.

3) Connect RS485 to IN

Fig 19. 6276 2U Control Panel Rear
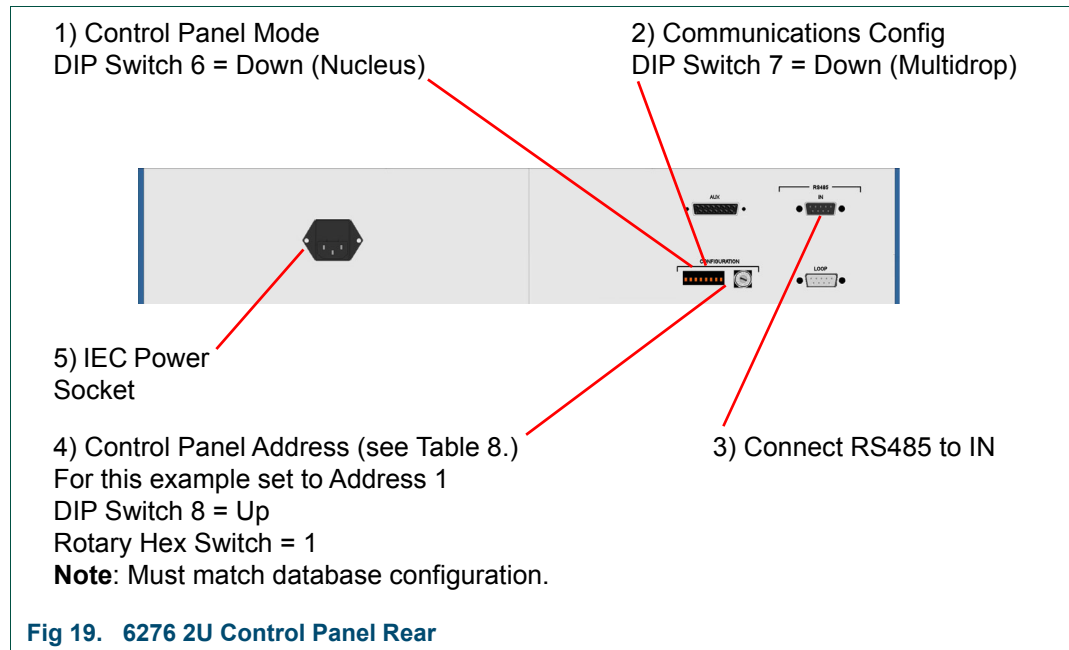
8. Power Supplies

Chapter contains:

Power Supplies

8.1 Power Supply Shelf

<table>
<tr><td></td><td>

Caution

- Ensure that the power supply shelves are correctly earthed see section 2.7 for details.

- The power supply units contain dangerous high voltages and are **NOT** user-serviceable.

- The DC leads connecting the power supply shelf to the router are capable of supplying very high electric current. Do not short circuit.

- The power supply shelf has a protective metal mesh cover over the front of the individual power supply units, this should only be removed by a qualified engineer. See the Sirius 800 Maintenance & Upgrade manual for details on replacing power supply units.

- There is one spare DC connector on each power supply shelf and up to two on the Sirius 830 router frame. Do not remove the covers of the unused connectors.

</td></tr>
</table>

A Sirius 800 Power Supply Shelf is a separate 2RU assembly which contains up to four sealed power supply units (PSU's), see Fig 20. The Power Supply Shelf is rack-mountable and can be placed above, below or remote from the Sirius frame. The PSU's are self-contained and do not contain any serviceable components.

Power Supply Shelf with protective Cover

Individual Power Supply Unit (with protective mesh cover removed)

Fig 20.   Front View of the Power Supply Shelf

Each PSU requires an individual AC power input connection, i.e. up to four power cables per 2RU shelf.
The current drawn by each PSU is dependent on the:

- Local mains supply voltage.

- Configuration of the router.

- Number of PSU's installed.

Each individual PSU has auto-sensing inputs.
Each individual PSU is rated:

- 100-240 V AC, 50-60 Hz, 25-15 A.

- Routers powered from 100-120 V AC nominal mains supply will draw 25 A maximum per PSU.

- Routers powered from 220-240 V AC nominal will draw 15 A maximum per PSU.

In all router configurations, a non-redundant Sirius 800 router uses one or more power supply shelves fitted with multiple PSU's. A failure of any one of these PSU's is considered a failure of the power feed to the router.

For example:

A Sirius 830 for 220-240 V AC mains supply operation is supplied with:

- One shelf containing two PSU's for power feed A.

- Plus two PSU's for power feed B.

A failure of either PSU connected to power feed A is considered a failure of power feed A. In this case, operation of the router on power feed A with one PSU is not guaranteed.

PSU's in a power supply shelf will actively power-share, equalizing the load on each PSU. If one or more PSU's in shelf A fail, each remaining PSU can draw up to 25 A from the AC supply.

At higher AC supply voltages (220-240 V AC), in the event of one PSU failure, the current drawn by the remaining PSU's may exceed the 15 A rated operating current. *This is outside normal operating conditions for this AC supply voltage.*
Depending on the installation, circuit breakers on the remaining PSU's may trip. In this case, power shelf B is required for redundant operation.

Installing the PSU's with 25 A rated breakers and cabling means that in the event of one PSU failing, other PSU's will not draw current beyond the breaker rating and will continue to operate. This can offer an additional level of PSU resilience beyond normal 1+1 redundancy.

Installation should take these factors into account. Installation should be done in accordance with local and national electrical codes. This product is pluggable type B (IEC 60309).

The power supply shelf outputs 48 V DC and the power supply units current-share on the output. Each power supply shelf has three 48 V DC connectors at the rear but only two are used (see Fig 21.). The power supply shelf can generate alarm signals to indicate presence and output status.

- Do not obstruct the air vents situated on both sides of the power supply shelf, and allow a minimum of 50 mm (2 inches) clearance to allow air flow. The air that is exhausted from the sides must be able to flow past the rear of the power supply shelf without being obstructed.

- The power supply unit is heavy weighing 24 Kg (53 lbs). When lifting use the correct local Health and Safety lifting guidelines.

Fig 21. Power Supply Shelf Rear Panel
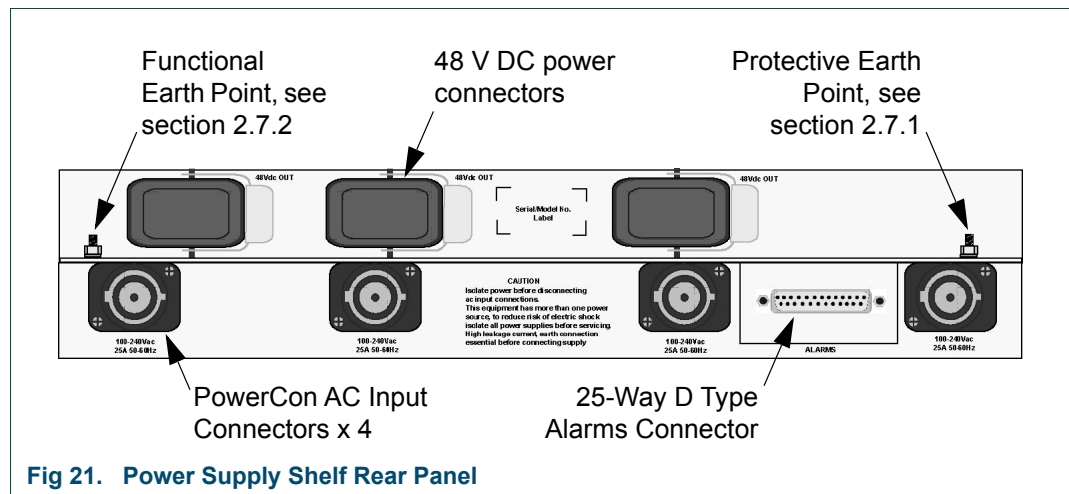
8.2 Power Distribution

The power supply shelves provide 48 V DC for distribution to the entire frame. All router modules (inside the frame) have on-board DC to DC converters to locally supply the required voltages. A single Green LED on the front edge of each module indicates that all is working correctly. This arrangement provides simple power distribution, as well as effective power de-coupling between modules.

Important: | The Fan Control modules provide power to all fan modules. At least one Fan Control module must be present or the fans will stop, which can cause the Sirius 830 to quickly overheat. To prevent the fans from stopping there are two Fan Control modules.

8.3 Power and Alarm Connections to the Sirius 830 Frame

The Sirius 830 is powered by up to two 2RU power supply Shelves depending on the router configuration and mains voltage (see section 3.4.5). The power supply shelves each have up to four PowerCon AC input connectors (see Fig 21.).

Each power supply shelf has three 48 V DC power connectors, only two connectors from each power supply shelf are used to power the Sirius 830. The cover on the unused 48 V DC socket must be left on the power shelf.

- The power supply shelves MUST be isolated from the AC supply by means of the external distribution switch/circuit breaker before connecting or disconnecting the 48 V DC power cables. This is required because the "PowerCon" connectors are not suitable for isolating current.

- This equipment has more than one power source, to reduce risk of electric shock isolate all power supplies before servicing.

- High leakage current, Protective Earth connection essential before connecting supply (see section 2.7.1).

Up to two power supply alarm cables (636028) are supplied with the Sirius 830 depending on the number of power supply shelves fitted. Connect each power supply shelf to the router alarm rear panel using the 25-Way connector. The alarm signals send a warning to the Door PC, and via external GPIs or an external Workbench system if there is a power supply failure.

The power supply alarm cables are supplied by Grass Valley and can be ordered as either 2.5 metre cables or 8 metre cables.

8.3.1 48 V DC Power Out Cables

See sections 8.3.2 to 8.3.4 (depending on the number of power supply shelves used) for the 48 V DC connection details. The 48 V DC cables are supplied by Grass Valley and can be ordered as either 2.5 metre cables or 8 metre cables.

Important:	•	All of the 48 V DC cables from the power supply shelves to the Sirius 830 router must be the same length to ensure that the voltage drop along each cable is the same at high currents.
	•	The power supply shelves MUST be isolated from the AC supply by means of the external distribution switch/circuit breaker before connecting or disconnecting the 48 V DC power cables.

8.3.2 Single Power Shelf Connections

This connection method is suitable for a single power shelf fitted with four power supply units.
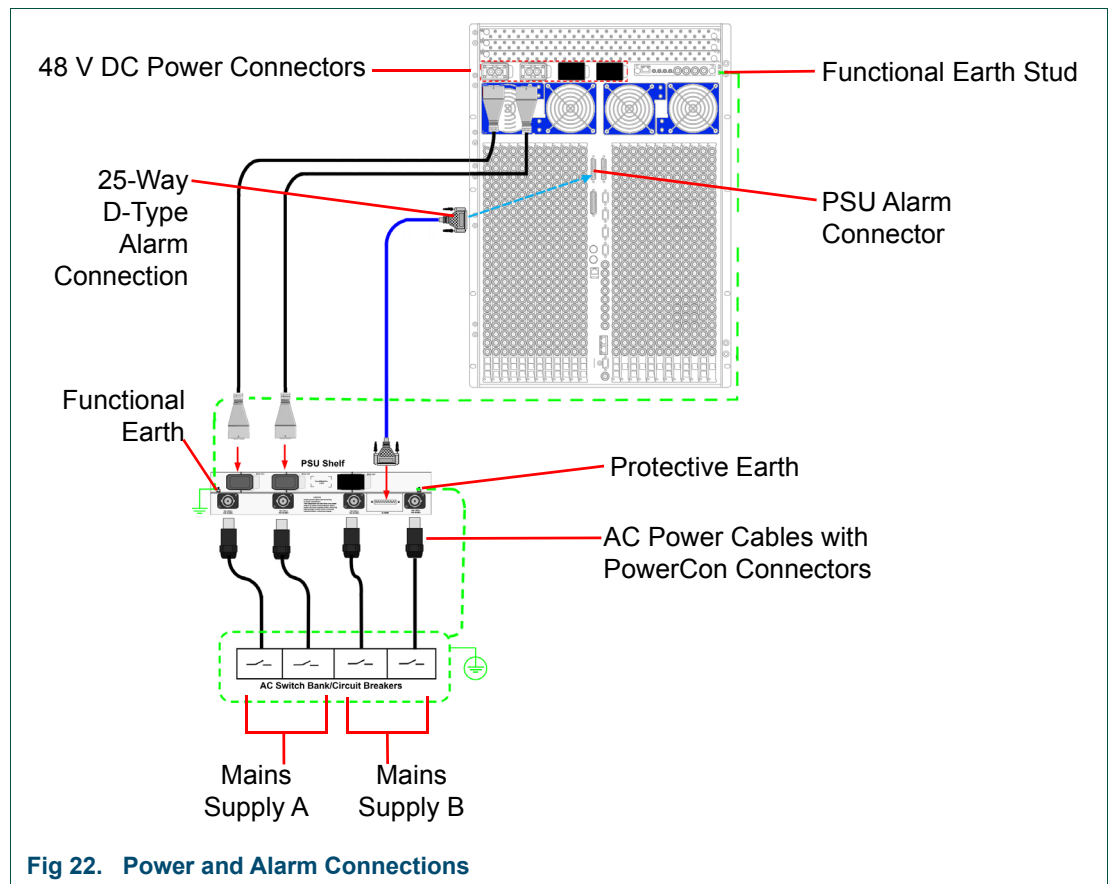
Fig 22.   Power and Alarm Connections

Two separate mains supplies should be used to maintain redundancy in the event of one supply failing.

> There is one spare 48 V DC connector on the power supply shelf and two on the Sirius 830 router frame. Do not remove the covers of the unused connectors.

Note:	•	The three 48 V DC power connectors on the power supply shelf are common. Any two of the three sockets on the power supply shelf can be used to power the router.
	•	The four 48 V DC power sockets on the router frame are common. Any two of the four sockets on the rear of the router frame can be used to power the router.

8.3.3 Dual Power Shelf Connections

This connection method is suitable for systems with two power shelves and allows an individual power supply shelf to be isolated if required (see the Sirius 800 Maintenance & Upgrade Manual for details).

Fig 23. Power and Alarm Connections

Two separate mains supplies should be used to maintain redundancy in the event of one supply failing.

There is one spare 48 V DC connector on each power supply shelf. Do not remove the covers of the unused connectors.

Note: The three 48 V DC power connectors on each power supply shelf are common. Any two of the three sockets on each power supply shelf can be used to power the router.

8.3.4   Alternative Dual Power Shelf Connections

This connection method is suitable for systems with two power shelves and is often used when a system is expanded from one power supply shelf to two power supply shelves.

> Note: An individual power supply shelf cannot be isolated when connected in this configuration. If you need to be able to isolate an individual power supply shelf the mains supplies should be connected as described in section 8.3.3.
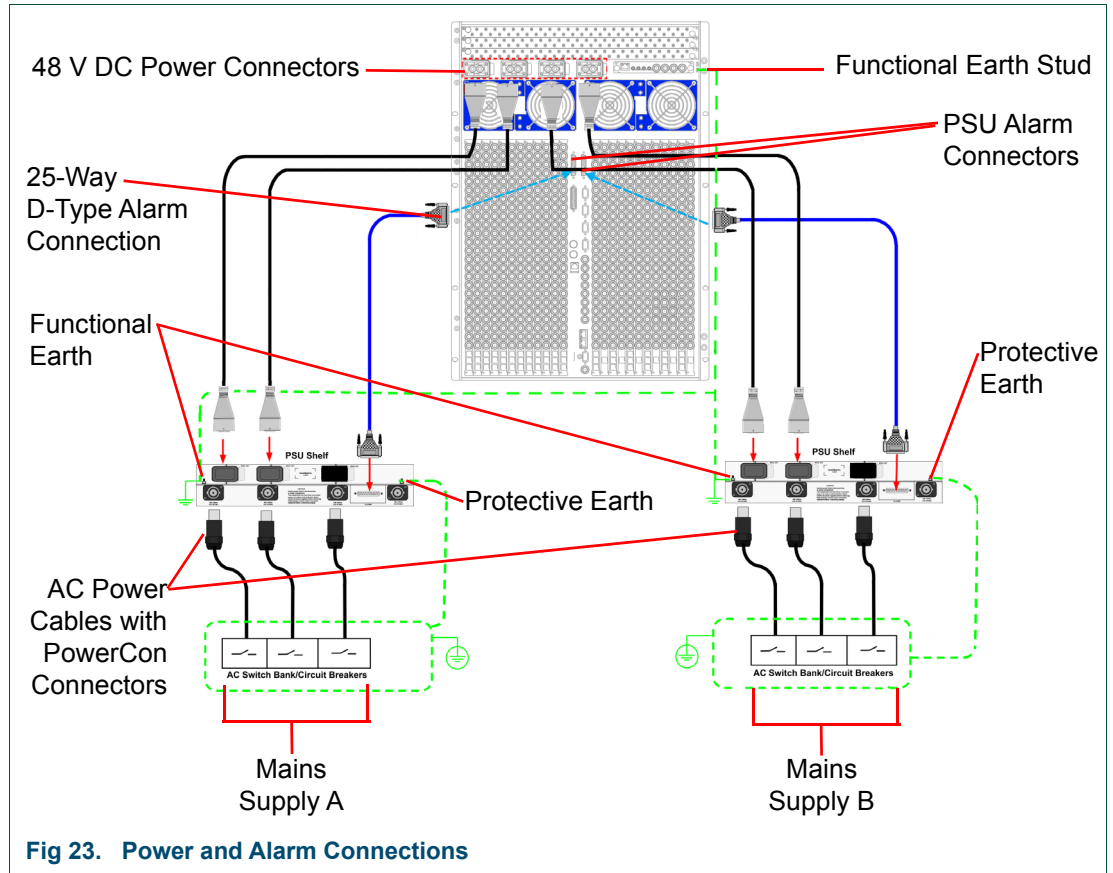

Fig 24. Power and Alarm Connections

Two separate mains supplies should be used to maintain redundancy in the event of one supply failing.

> ⚡ There is one spare 48 V DC connector on each power supply shelf. Do not remove the covers of the unused connectors.
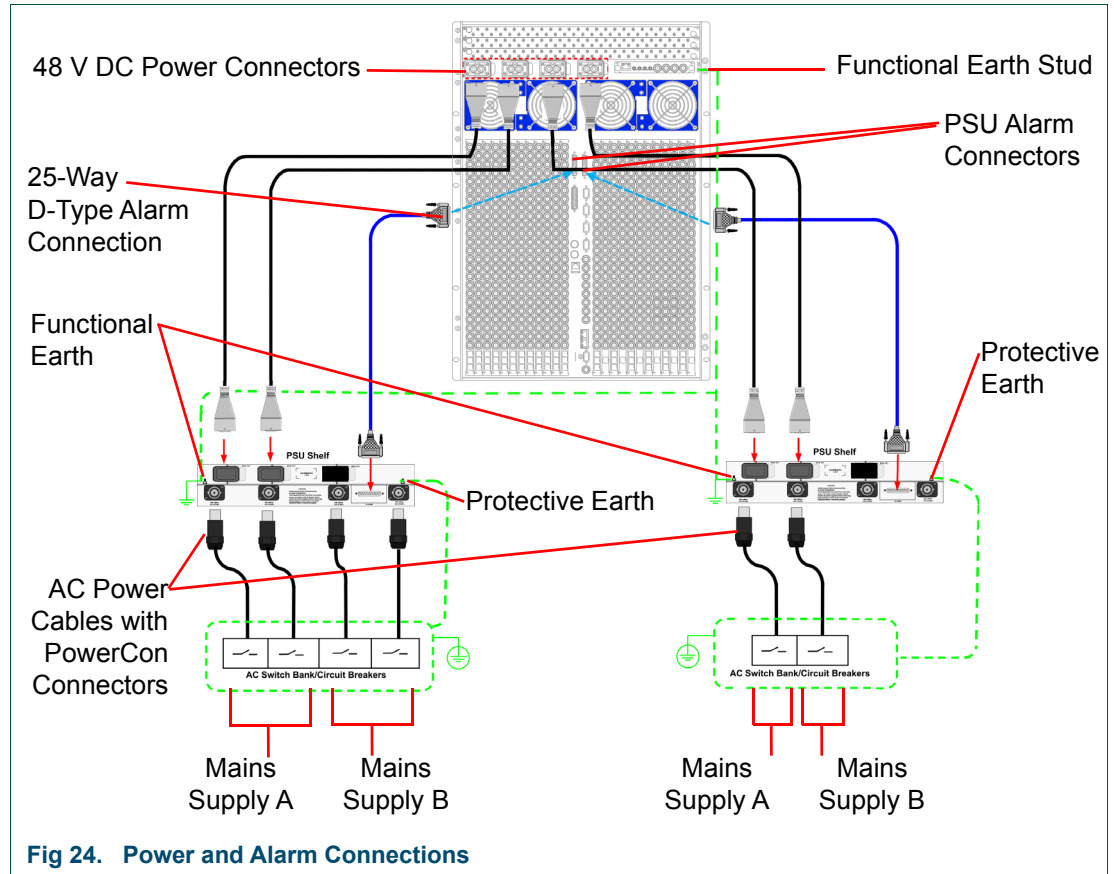
> Note: The three 48 V DC power connectors on each power supply shelf are common. Any two of the three sockets on each power supply shelf can be used to power the router.

9. Powering the Sirius 830

Chapter contains:

Powering the Sirius 830

If you have installed the Sirius 830 as described in the preceding sections, you can apply power to the Sirius 830.

9.1 Powering Up the Sirius 830

When power is connected to the Sirius 830, the controllers and fans switch on immediately. The main signal modules within the Sirius 830 start to power up one second after the 48 V DC supply has been switched on.

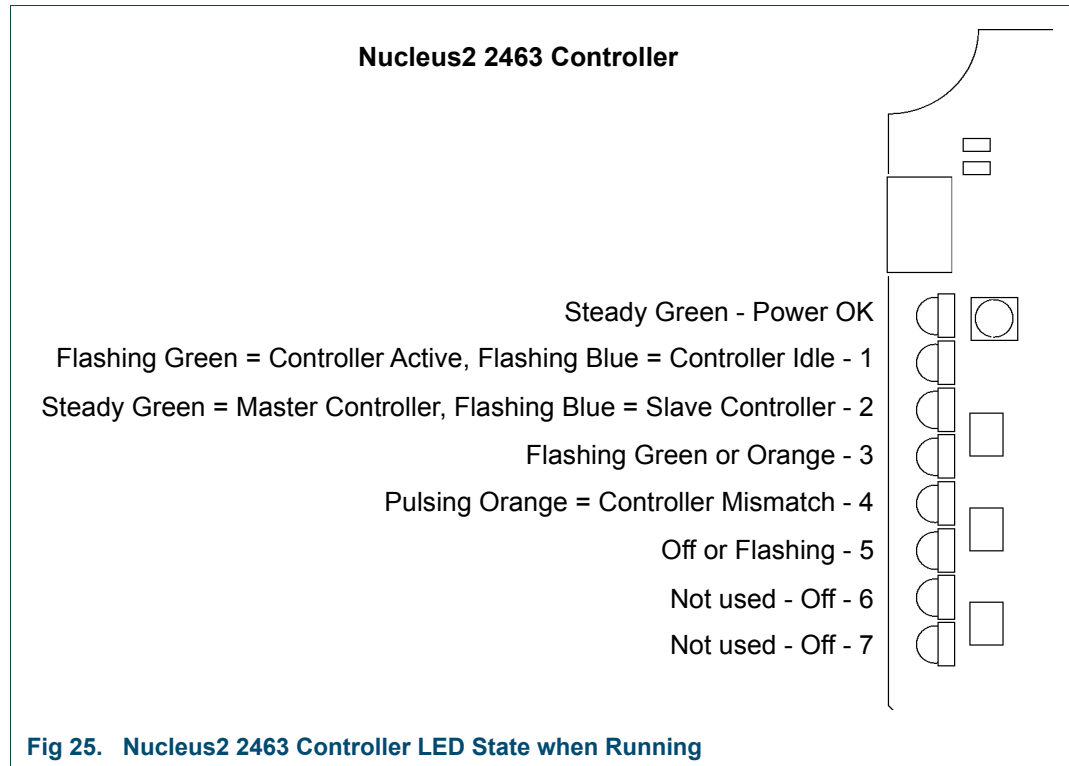| Important:	To avoid overloading the individual external power supply units, make sure that you power them all up as quickly as possible and at least half of the power supply units within one second of each other.

9.1.1 Power Sequencing

To reduce the inrush current when the whole unit is powered up, router modules power up over a period of six seconds, starting with controllers/fans, and ending with audio crosspoints.

Note:	When hot-plugging a Sirius 830 module, there is a delay before the module powers up.

9.1.2 Power Up and Initialization

Once the controller has booted (see Fig 25. for LED states when the controller is running), it is ready to setup. Router Configuration is carried out using Workbench. If the system has already been configured, it returns to the state it was in (all signal routing and monitor settings) when it was last powered.

Nucleus2 2463 Controller

Steady Green - Power OK

Flashing Green = Controller Active, Flashing Blue = Controller Idle - 1

Steady Green = Master Controller, Flashing Blue = Slave Controller - 2

Flashing Green or Orange - 3

Pulsing Orange = Controller Mismatch - 4

Off or Flashing - 5

Not used - Off - 6

Not used - Off - 7

Fig 25.   Nucleus2 2463 Controller LED State when Running

Note:	For full details of the Controller LED colors, see the Sirius 800 User Manual.

9.1.2.1 Configuration Errors

The router controller generates an error if one or more of the configured modules in the router fails to power up. Errors are displayed on the Door screen and the router controller LEDs (see Table 3. for LED color and Fig 25. for LED location).

| Router Controller	LED	LED Color
Nucleus2 2463	4	Pulsing Orange

Table 3.   Controller Mismatch Notification

If the Door screen and router controller indicate that the configuration is not as expected (i.e. modules added or missing) then this can be resolved using Workbench. For details of how to add modules to the router see the Sirius 800 Maintenance & Upgrade manual.

9.1.3 Starting the Door PC Manually

The Door PC starts automatically when the Sirius 830 is powered up. If the Door PC has been shut down and needs starting manually the following procedure should be used.

1. With the Sirius 830 running open the frame door.

2. Inside the back of the door is the power switch for the Door PC (see Fig 26.).

3. Switch the Door PC on by pressing and releasing the Door PC power switch (it will not latch in place). Wait until the computer is fully booted up before proceeding further.

Fig 26.   Door PC
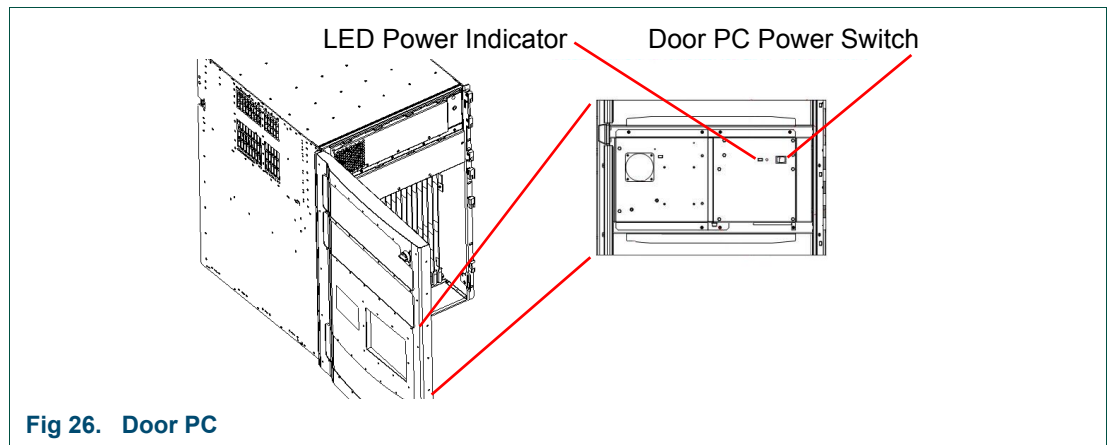
9.2 Powering Down the Sirius 830

Before powering down the Sirius 830 router switch the Door PC off using one of the following methods:

Method 1

1. Navigate to the Door PC main menu and touch the *Exit* button on the screen.

2. A new screen will be displayed with a *Shutdown* button.

3. Touch the *Shutdown* button and the Door PC will shutdown.

4. Wait until Windows closes and the screen goes black, then power down the Sirius 830. Make sure that all the external power supply shelves are switched off as quickly as possible.

Method 2

1. Alternatively open the door and press and release the Door PC power switch (see Fig 26.). The power switch does not latch in place.

2. This causes Live Runner to close and Windows to shut down.

3. Wait until Windows closes and the screen goes black, then power down the Sirius 830. Make sure that all the external power supply shelves are switched off as quickly as possible.

Important:	To avoid overloading the individual external power supply units, make sure that all the external power supply shelves are switched off as quickly as possible.

10. Testing the Sirius 830

This chapter contains:

Testing the Sirius 830

This chapter describes how to test the router to ensure that it can route signals. You will need at least one video source and a video analyzer to check that the video signal is being passed correctly.

10.1 Alarms Displayed on the Router Door PC

The Alarms block on the right side of the main menu screen displays the status of the fans, the power supply shelves and the redundant crosspoint. Live Runner should run automatically and display a screen similar to Fig 27.

- •   If a different Live Runner screen is displayed touch the **Menu** button in the bottom left corner of the screen to display the main menu screen.

- •   If Live Runner is not running double tap the **Live Runner** shortcut on the Microsoft Windows screen to start it up.
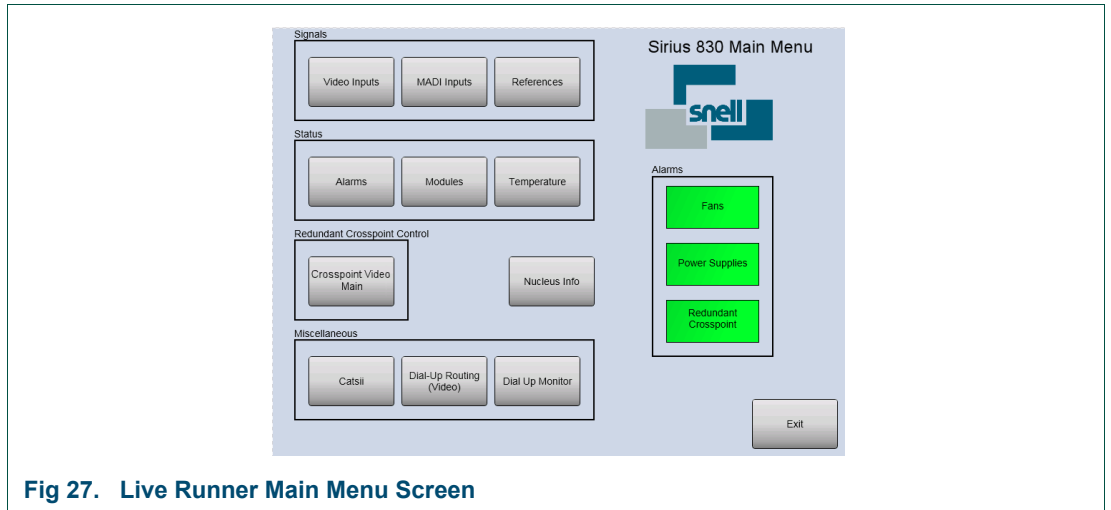

Fig 27.   Live Runner Main Menu Screen

4.   Touch the **Alarms** button on the main menu screen to view the Alarms screen. The alarms screen displays the router status in more detail (see Fig 28.)
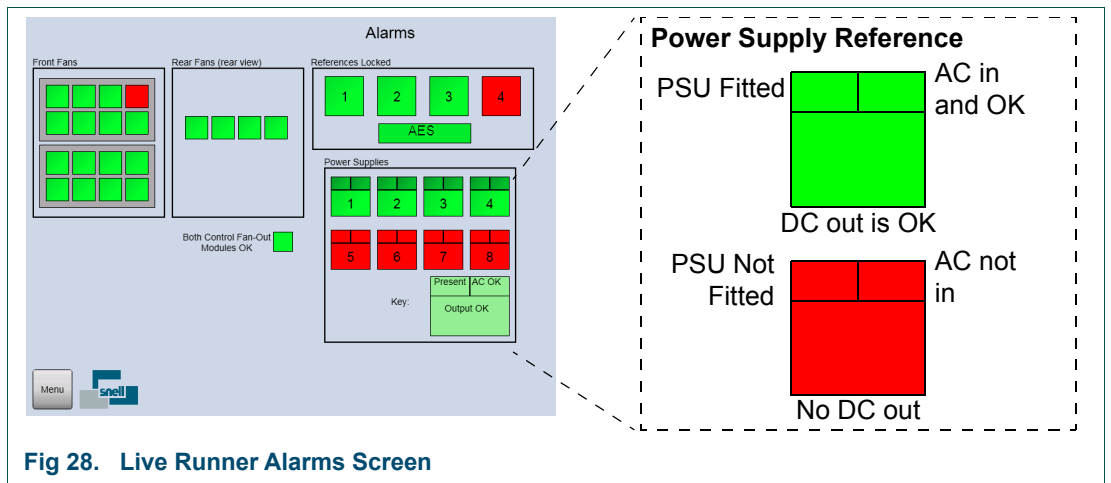
Fig 28.   Live Runner Alarms Screen

- •   In the Power Supplies area of the screen, when a PSU shelf is Red, it does not necessarily mean that the power supply units are faulty. It may just mean that the PSUs or the alarm cable are not fitted.

- •   The References Locked block displays the status of the four video reference inputs and one AES reference that come in on the control rear panel (see Fig 13. on page 25) video reference connectors.

10.2 Setting a Route Using the Router Door PC

This example uses Video input 1 routed to Video output 2. If you have different input and output numbers simply substitute the correct numbers when working through the example.

1. Live Runner should run automatically and display a screen similar to Fig 29.

- If a different Live Runner screen is displayed touch the **Menu** button in the bottom left corner of the screen to display the main menu screen.

- If Live Runner is not running double tap the shortcut on the Microsoft Windows screen to start it up.
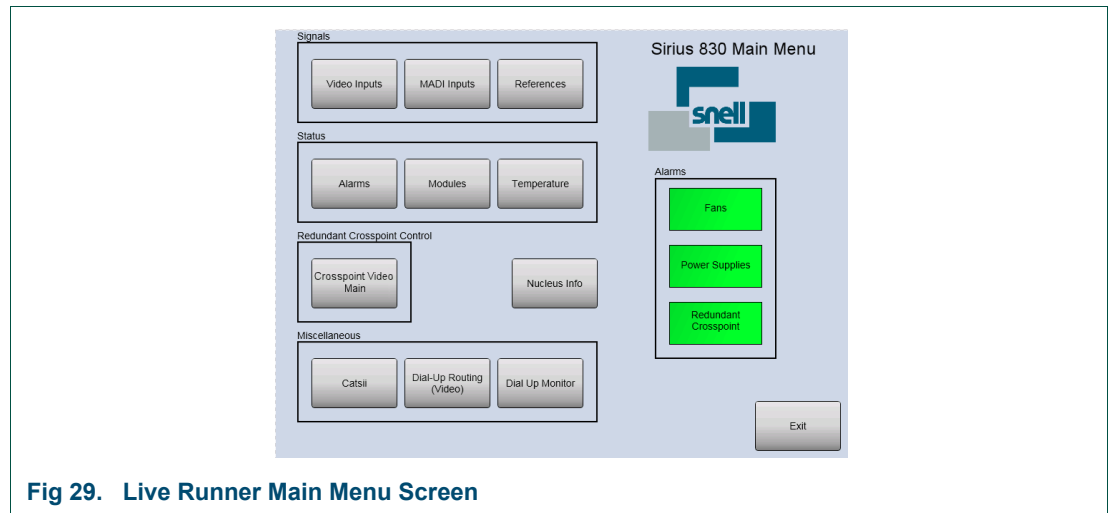

Fig 29. Live Runner Main Menu Screen

2. Open the Catsii Control screen on the Door PC (see Fig 30.) by touching the **Catsii** button on the Main Menu screen.

3. Ensure the Catsii LEDs are enabled by touching the Global Catsii **On** button. Set the Catsii LEDs to signal status mode by touching both of the **Normal** buttons.
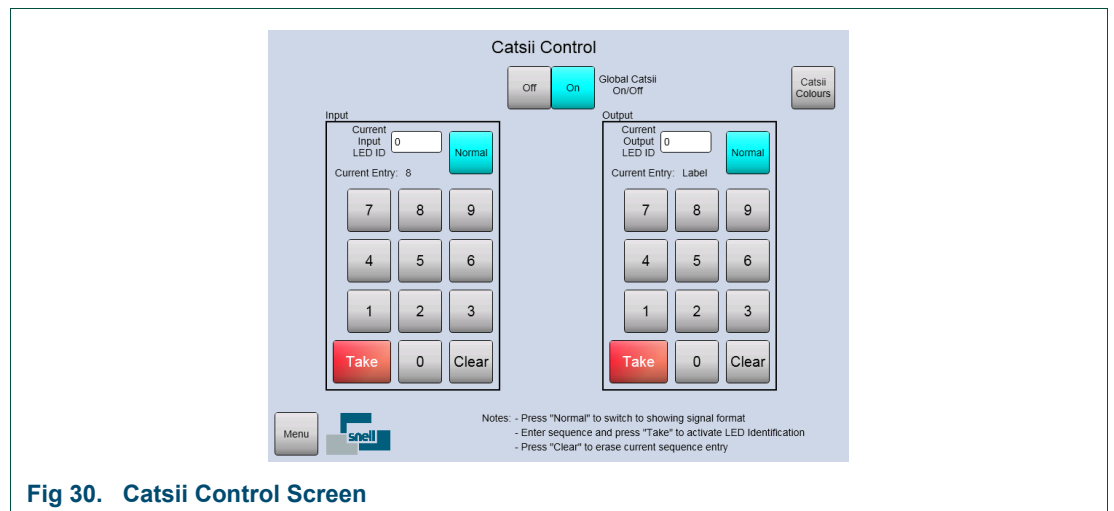
Fig 30. Catsii Control Screen

4. Return to the main menu screen by touching the **Menu** button in the bottom left of the screen.

5. Connect a valid signal source to input 1 on the rear of the router.

6. Check the Catsii LED on input 1 on the rear of the router changes from red to another color depending on signal standard (see section 10.3).

7. Route input 1 to output 2 using the Door PC Dial-up Routing Panel (Fig 31.) or other control mechanism.

8. Touch the **Dial-Up Routing (Video)** button from the Main Menu screen and then touch the **Continue** buttons as they are displayed. Finally touch the **Dial-Up** button when it is displayed to access the screen. This procedure avoids the dial-up panel being enabled accidentally in a live environment.
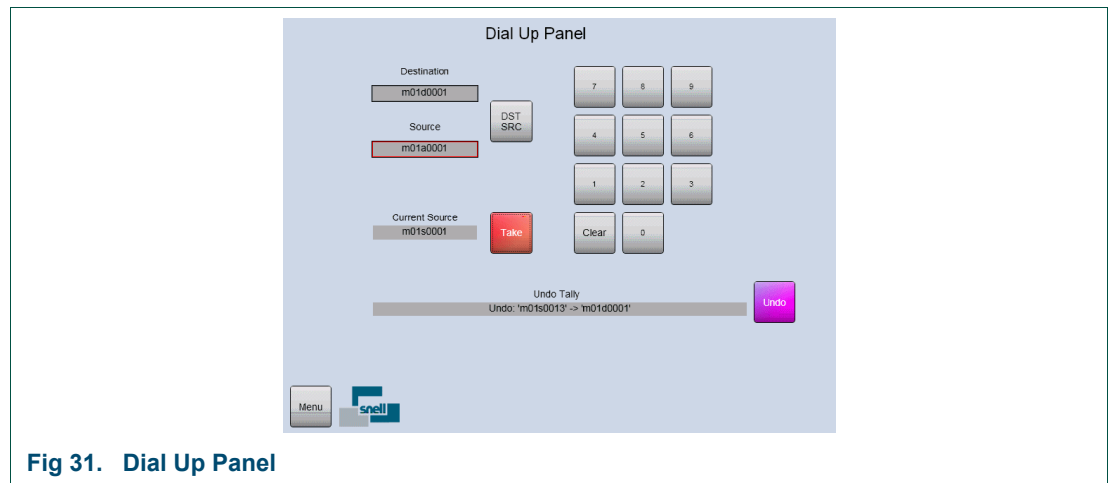
Fig 31.   Dial Up Panel

9. The **DST/SRC** button toggles between the Destination and Source input (highlighted with a Red box around the selected text box).

10. Select the **Destination** text box using the **DST/SCR** button and enter **2** using the numeric keypad and the configured destination name is displayed in the **Destination** text box.

Note: The source for the currently selected destination is displayed in the Current Source text box.

11. Select the **Source** text box using the **DST/SCR** button and enter **1** using the numeric keypad and the configured source name is displayed in the **Source** text box.

12. To set the route, touch the **Take** button.

13. Check the Catsii LED on output 2 on the rear of the router changes from red to the same color as input 1.

14. Connect output 2 to a signal analyzer and check the signal is correct.

10.3　Signal Status

Catsii LED signal status is driven directly from the input and output modules, and changes quickly when a Fiber or BNC cable is connected to the Sirius 830.

10.3.1　Video Signal Catsii Colors

Note:　Pulsed means 75% solid color, 25% pulsed color at ~ 1Hz.

Signal Condition - Video Input (5916/5917) & Output (5926/5937)	Default color [1]
No valid signal	Red
Valid SD signal	Yellow
DVB-ASI Signal	Yellow - pulsed off
Valid 1080i or 1080p (30 Hz or lower) signal	Green
Valid 720p signal	Green - pulsed off
Valid 3G signal	Blue

Table 4.　　Default Video Catsii Configuration

[1]　You can change these defaults through Workbench.

Signal Condition - Video Input (5919/5915) & Output (5949/5925)	Default color [1]
No valid signal	Red
Valid SD signal with no embedded audio	Yellow
Valid SD signal with embedded audio	Yellow - pulsed White
DVB-ASI Signal (signal cannot be passed)	Yellow - pulsed off
Valid 1080i or 1080p (30 Hz or lower) signal with no embedded audio	Green
Valid 1080i or 1080p (30 Hz or lower) signal with embedded audio	Green - pulsed White
Valid 720p signal with no embedded audio	Green - pulsed off
Valid 720p signal with embedded audio	Green - pulsed White
Valid 3G signal with no embedded audio	Blue
Valid 3G signal with embedded audio	Blue - pulsed White

Table 5.　　Default Video with Embedded Audio Catsii Configuration

[1]　You can change these defaults through Workbench.

10.3.2　MADI Audio Catsii Colors

Signal Condition - MADI Input (4915) & Output (4929/4925)	Default color [1]
No valid MADI signal	Red
56 Channel MADI @ 48 kHz	Yellow - pulsed Off
56 Channel MADI @ 44.1 kHz	Yellow - pulsed Blue
56 Channel MADI @ other sample rates	Yellow - pulsed Red
Valid 56 Channel MADI Redundant signal (input only)	Yellow
64 Channel MADI @ 48 kHz	Green - pulsed Off
64 Channel MADI @ 44.1 kHz	Green - pulsed Blue
64 Channel MADI @ other sample rates	Green - pulsed Red
Valid 64 Channel MADI Redundant signal (input only)	Green

Table 6.　　Default Audio Catsii Configurations

[1]　You can change these defaults through Workbench.

10.4 External Control Input and Output Port Mapping

The Sirius 830 routers are supplied with Workbench, LiveRunner and a sample/default database installed on the Door PC. The installed sample database is either video only or AHP depending on the input/output modules fitted.

Note:
- The information in this section is only correct when the Sirius 830 router control module(s) are loaded with the sample/default database. Databases can be modified including the mapping information.

- If the router is shipped with a custom database the mapping may vary but can be checked and edited using the Workbench software, see the Workbench User Manual for details.

Table 7. shows the Sirius 830 crosspoint address mapping:

	Input/Output Range	**Addresses**
Video Inputs	1 to 288	Source 0 to 287
Main Video Outputs	1 to 288	Destination 0 to 287
Multiviewer Outputs	1 to 140	Destination 1152 to 1291
Monitoring Outputs	1 to 4	Destination 16370 to 16373
Video Destinations 289 to 1152 are not used and do not respond to any control		
Audio Inputs (Nucleus2 only)	1 to 9216	Source 0 to 9215
Audio Outputs (Nucleus2 only)	1 to 9216	Destination 0 to 9215

Table 7.   Sirius 830 Input and Output Port Mapping

10.5 Default Serial Port Configuration

When the sample/default database is loaded on the router control module(s) the four RS485 serial communications ports on the rear of the router (see section 6.2) are configured as shown in Table 8.

If a custom database is loaded on the router control module(s) the ports may be configured differently. Port configuration can be checked and modified using the Workbench software, see the Workbench User Manual for details.

- **RS485 1 (COM 3)** = General Switcher In (SW-P-02) for external control systems

- **RS485 2 (COM 4)** = General Switcher In (SW-P-02) for external control systems

- **RS485 3 (COM 5)** = Panel Protocol for up to 15 controllers on addresses 1 to 16 as shown in the table below:

Address	Controller	Sources	Destinations
1	602676, X-Y	All	All
2	602677, 8 Bus	All	1 to 8
3	602677, 6 Bus	All	1 to 6
4	602677, 4 Bus	All	1 to 4
5	602677, 2 Bus	All	1 and 2
6	7028201, 16 x 1 BPX	1 to 16	1
7	7028100, 32 x 1 BPX	1 to 32	2
8	7028000, 48 x 1 BPX	1 to 48	3
9	7028400, Dual 16 x 1 BPX	1 to 16	1 and 2
10	7028201, 16 x 4 X-Y	1 to 16	1 to 4
11	7028100, 32 x 4 X-Y	1 to 32	1 to 4
12	7028000, 48 x 4 X-Y	1 to 48	1 to 4
13	7028000, 32 x 16 X-Y	1 to 32	1 to 16
14	7028400, 24 x 12 X-Y	1 to 24	1 to 12
15	Not Used		
16	7028400, 16 x 16 X-Y	1 to 16	1 to 16

Table 8.   Controllers and Addresses in the Default Database

- **RS485 4 (COM 6)** = General Switcher In (SW-P-02) for external control systems

"Auto" mode has been configured in the default database as the primary reference source for all inputs (see the Sirius 800 User Manual for information on video and audio reference inputs).

10.6   External Control Panels

The Sirius 830 is supplied with a sample/default database. The default database configures Port 3 to use the Multidrop Communications protocol (SW-P-06). Port 3 supports a variety of BPX and XY control panels (see Table 8. for details). See section 7.5 for panel connection information.

10.6.1   Powering Up the Panel

1. Connect the IEC power lead to the rear of the control panel (see section 7.5.2).

2. The control panel will power up and the buttons will go through a start-up sequence.

3. Once the start-up sequence has been completed the buttons will be lit as shown in Fig 32.

4. The control panel is ready to be used.

10.6.1.1   Example: 2RU XY Control Panel Operation

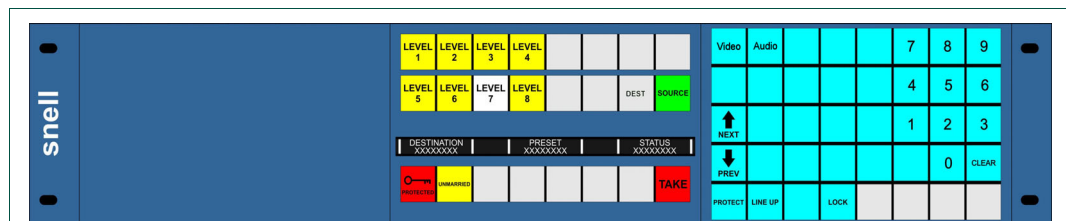Dial-up XY panel (6026776 mimicking a 6276 control panel).

Fig 32.   2RU XY Control Panel

The following is a brief description of routing a single video signal using an external XY control panel. A full description of control panel usage can be found in the control panel user manual

1. Press the **Destination** button so that it displays Cyan (light blue) to indicate that you are going to select a Destination.

2. Press the Video button then use the numeric keypad to enter the destination port number that the source is to be switched to.

3. The selected destination details will be displayed in the **Destination** display.

4. Press the **Source** button so that it displays Green to indicate that you are going to select a Source.

5. Press the Video button then use the numeric keypad to enter the source port number to be switched.

6. The selected source details will be displayed in the **Preset** display.

7. Press the **Take** key to route the selected source to the selected destination.

11. Workbench

This chapter contains:

Workbench

The Workbench software uses a database to store router and system configuration details. The Workbench database is written (pushed) to the router controllers to configure them. Once the router controllers have been configured in this way they store the database locally allowing the router to work independently after a power off even if the connection to the Workbench database PC/server is not available.

The database can be created from scratch, custom built by Grass Valley (chargeable) or based on one of the supplied sample/default databases. See the Workbench User manual for full details of Workbench operation and usage.

The following sections describe basic Workbench installation, connecting Workbench to the router and basic configuration including connecting Workbench to a database.

The router is supplied with Workbench, LiveRunner and a sample database installed on the Door PC. The installed sample database is either video only or AHP depending on the input/output modules fitted.

If one or more LiveRunner clients are to be installed on computers, other than the Door PC, the database shipped on the Door PC must be moved to a separate Workbench server or client/server, see section 11.2.3 for details. This does not apply to Workbench clients used for configuration or to RollCall clients connected to the controller(s).

Although Workbench configuration can be carried out using the Door PC (if a USB mouse and keyboard are connected) this is not recommend as the screen resolution on the door screen is relatively low. A Workbench installation DVD is supplied with the router and this can be used to install a Workbench client on a separate computer which can then be used to configure the router.

11.1 Installing Workbench

Once the router and the computer(s) are connected to a network Workbench can be installed on the computer(s).

> Note: During the installation, do not close the installation wizard or the Workbench Install Helper. Wait until the entire setup process is complete before exiting the install wizard and Workbench Install Helper.

The router is shipped with a Workbench DVD that contains a copy of the Workbench software. Full installation details, minimum computer specifications and troubleshooting can be found in the Workbench user manual. Workbench should be installed on a computer that has access to the router via a network.

1. Insert the Workbench DVD into a suitable computer that is connected to the router via a network.

2. The installation starts automatically. If it doesn't start browse to the installation DVD and double click on **Workbenchinstaller.exe**.

3. Follow the prompts to install Workbench.

> Note:
> • If a dialog is displayed that says "Install Checker has stopped working" administration rights may not have been granted on the computer.
>
>   Close the Install Checker dialog and browse to **Workbenchinstaller.exe** on the DVD. Right-click on **Workbenchinstaller.exe** and select **Run as administrator** from the menu.
>
> • If Workbench is being installed on a Windows 7 computer then the Windows User Account Control (UAC) screen will be displayed.
>
>   Click **Yes** and the installation will continue.
>
> • The Windows Installer screen may be displayed, this will depend on which version of Windows is installed.
>
>   Click **OK** and the installation will continue.

4. The Choose Components screen is displayed (Fig 33.)

   • The grayed out components are mandatory but other components can be selected or deselected as required.

   • The components chosen will depend on the type of installation being carried out, for details see Table 9.

   • Position the mouse cursor over each component to see a description of its purpose to the right of the list.

   • The installer checks to see whether the component is already installed and only installs it if the component is not found.
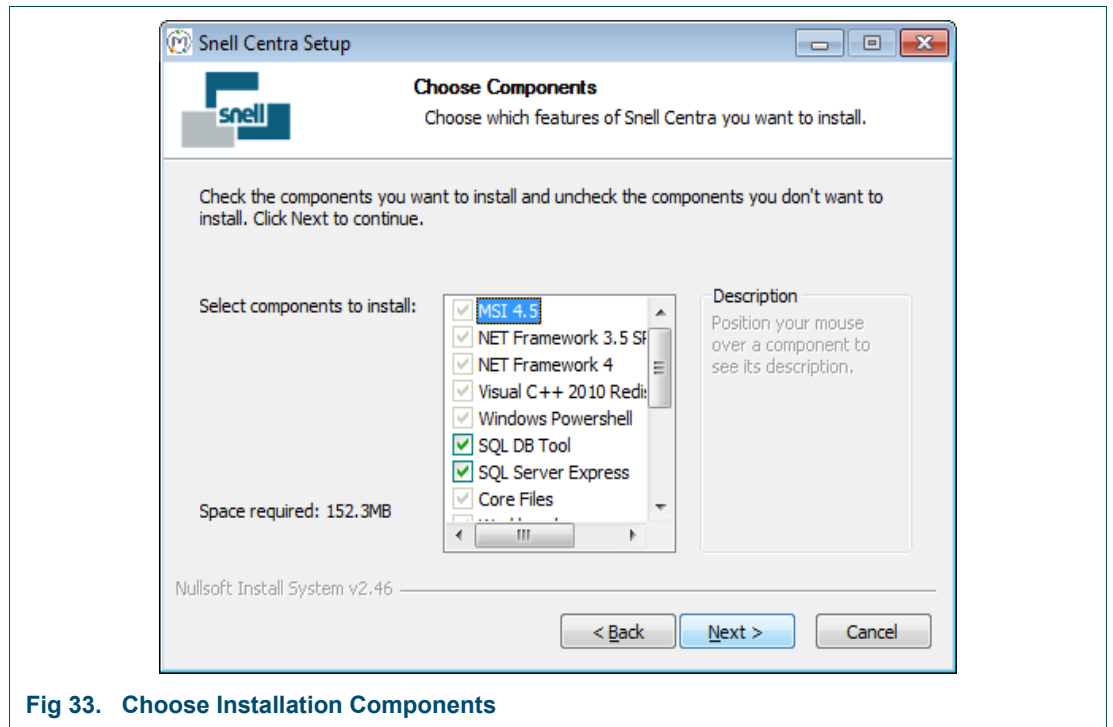
Fig 33.   Choose Installation Components

Note: The actual version numbers of components may differ from those shown.

Component	Description	Installation Type:		
		Client	Client/Server	Server
MSI 4.5	Microsoft Windows Installer 4.5	✓	✓	✓
NET Framework 3. 5 SP1	NET Framework 3 5 SP1	✓	✓	✓
NET Framework 4	NET Framework 4	✓	✓	✓
Visual C++ 2010	Visual C++ Re-distributable	✓	✓	✓
Windows Powershell	Microsoft's task automation framework that integrates with the .NET Framework	✓	✓	✓
SQLDBTool	Used to backup/restore/create Databases. *Only required if SQL Management Studio is not installed		✓*	✓*
SQL Server Express	Basic SQL Server software. **Only required if SQL Server is not installed		✓**	✓**
Core Files	Core Installation files	✓	✓	✓
Workbench	Design and configuration files	✓	✓	
Live Runner	Live control and monitoring	✓	✓	
Rules Server	Rules server application			
Logging Tools	Tools and utilities for viewing and gathering log messages			
Example Resources	Example screen files and sample/default databases			
Controllers	Windows and embedded controller executable files			

Table 9.   Installation Components

Component	Description	Installation Type:		
		Client	Client/ Server	Server
Pbak Deploy Tool	Used to upgrade software on router control modules			
Documentation	Workbench Manual and Getting Started guide in PDF format			

Table 9.   **Installation Components (Continued)**

5. Click **Next >** once the installation components have been selected.

6. Follow the prompts to continue with the installation.

7. When the installation is nearing completion the Configuration Helper will be displayed in a new window.
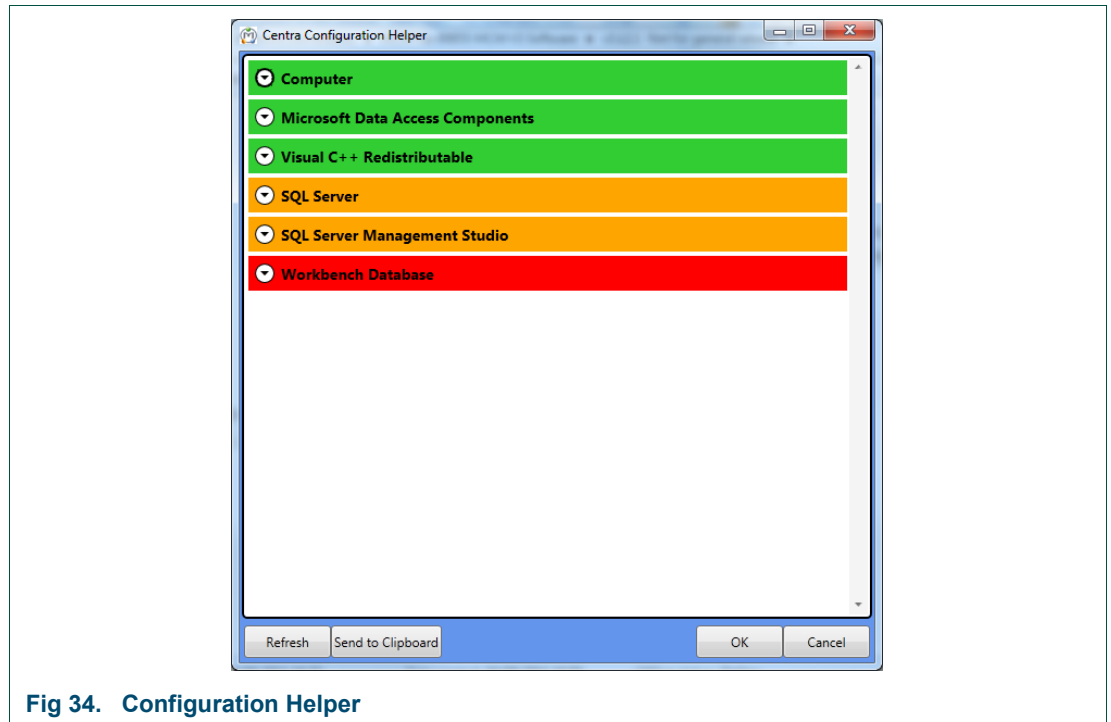
Fig 34.   Configuration Helper

The Configuration Helper indicates the status of each of the Workbench components. The components can be in one of three states:

- Green: The component installed correctly.

- Orange: Optional item that has not been installed.
  If the Computer component is Orange it indicates that the screen resolution is not high enough.

- Red (yellow during update): Required by Workbench but not yet installed.

Note: The Workbench Database component will display red until Workbench is associated with a Workbench Database.

8. The Workbench Database component will be red as Workbench has not yet been associated with a database, this is normal.

9. If the Configuration Helper indicates that all other components are installed correctly (green), click **OK**. The Configuration Helper screen closes, and the Completing installation screen displays.

If the Configuration Helper displays components that have not installed (red) these need to be manually installed before continuing. See the Workbench User manual for details.

Note: If Workbench is run while there are components marked as red, an error message is displayed.

10. The Installation will be completed and the following screen is displayed to indicate that the installation has finished.
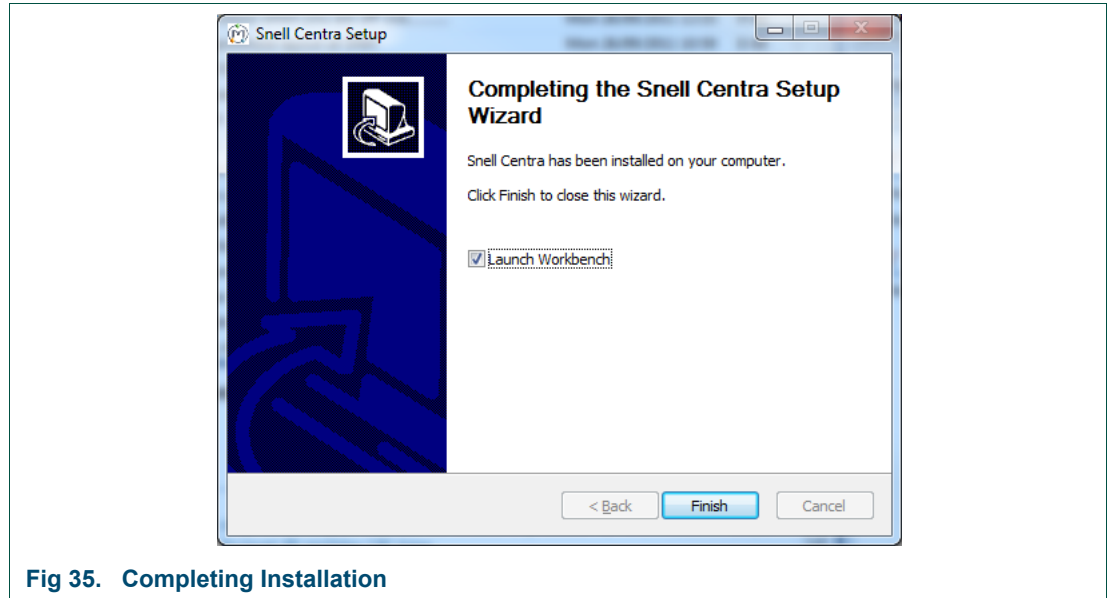
**Fig 35.   Completing Installation**

11. To stop Workbench starting immediately after installation, uncheck the Launch Workbench check box.

12. Click **Finish**.

13. Go to section 11.2 for details on associating Workbench with the Workbench database.

11.2   Associating Workbench with the Workbench Database

Important:	The Workbench database must be installed on the server. Therefore, unless already installed, install SQL Server Express and SQL Server Management Studio (or the optional SQLDBTool) on the server.

Workbench requires a working connection to the Workbench database. Until connected to the database, the Install Helper displays the connection as red (required by Workbench, but not yet installed).
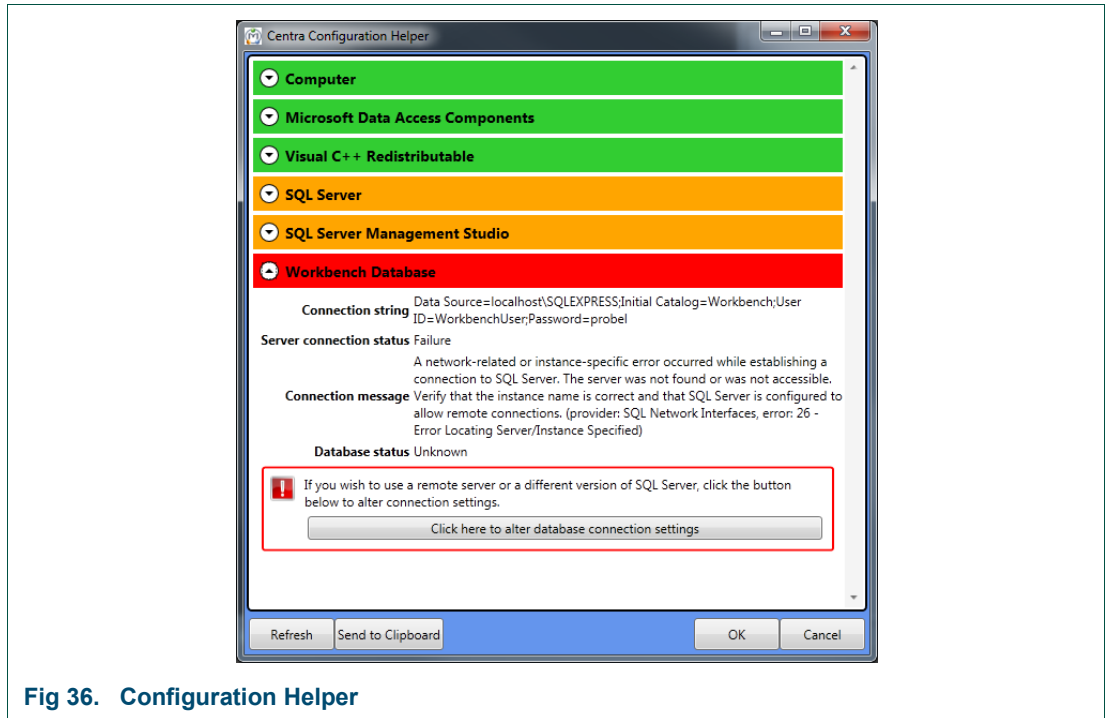
Fig 36.   Configuration Helper

Important:	• When the Workbench database is installed on the Door PC the Door PC can support one or more Workbench clients (configuration only) and/or RollCall clients.
	• If one or more LiveRunner client is to be connected to the Door PC the Workbench database must be hosted on a separate Workbench server or client/server. If the database is shipped on the Door PC it must be moved to a separate Workbench server or client/server.

There are three options for connecting to a Workbench database:

- Create a new blank database.

- Connect to the existing database on the Door PC (or other PC on the network if the database has already been installed elsewhere).

- Move the existing database from the router Door PC to a server or client/server and then connect Workbench to it.

11.2.1 Create a New Blank Workbench Database

To create a new Workbench Database:

1. Expand the Workbench Database section.

2. Click on the words:
    Click here to create databases and permissions.
    A command window displays briefly and connects to the database.

3. From the Install Helper, click the **Refresh** button.

   The Workbench Database displays green (installed correctly).

11.2.2 Connect to an Existing Workbench Database

If an existing Workbench database is available, provide the file path, and login credentials:

Note:	Remember all of the Workbench and LiveRunner clients on the system need to be associated with the database location and this includes Workbench and LiveRunner on the Door PC.

1. Expand the Workbench Database section. Click on the words:
    Click here to alter database connection settings.

    The Connection String Editor dialog box displays.
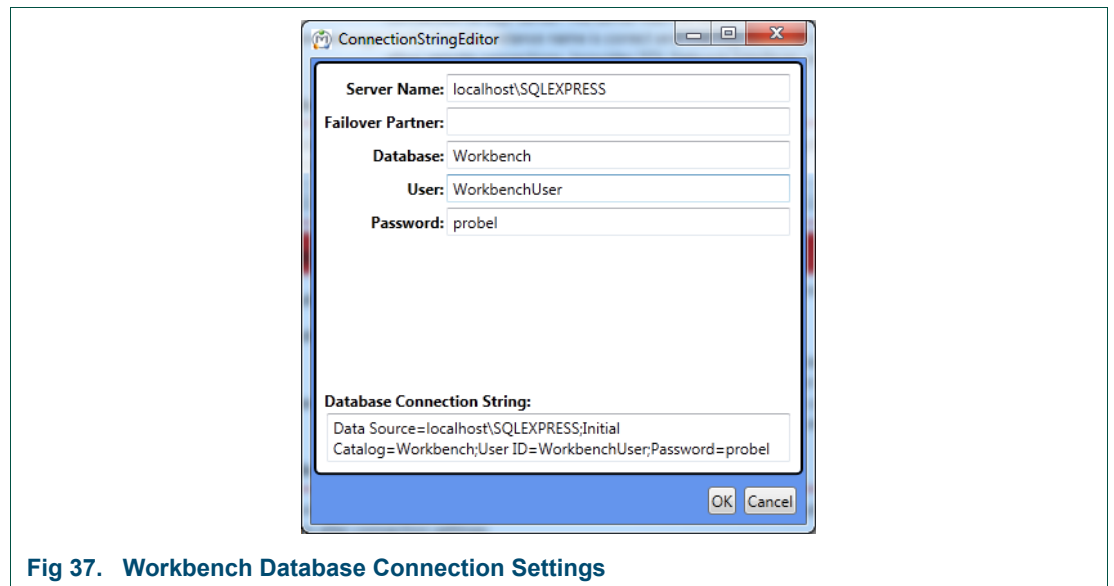
Fig 37.   Workbench Database Connection Settings

2. Either, type the server details, or edit the Database Connection String.

Note:	The Server Name can be an IP address or a name. When using SQL Express (the default for a standalone PC) the Server Name must also contain an SQL instance name at the end. For example, the default server name is typically "localhost\SQLEXPRESS"

3. If using a mirrored server, enter Failover Partner backup server details. These details may be added later. See the Workbench user manual for details.

4. Click **OK**.

5. From the Install Helper, click the **Refresh** button.

    The Workbench Database displays green (installed correctly).

11.2.3　Move the Existing Workbench Database from the Router Door PC

1. Ensure Workbench is installed on the server or client server computer that the Workbench database is to be hosted on, see section 11.1.

2. Backup the Door PC database as described in the Workbench User manual. The backup is carried out from the Workbench computer across the network.

3. Once the backup is complete the database must be restored to the Workbench server or client server computer. The Workbench database should be restored with the name "WorkBench". If the database is restored with a different name the program shortcuts for Workbench and LiveRunner will need to be updated, see the Workbench User manual for details on restoring the database and changing the program shortcut names.

4. Workbench now needs to be associated with the restored database, see section 11.2.2 for details.

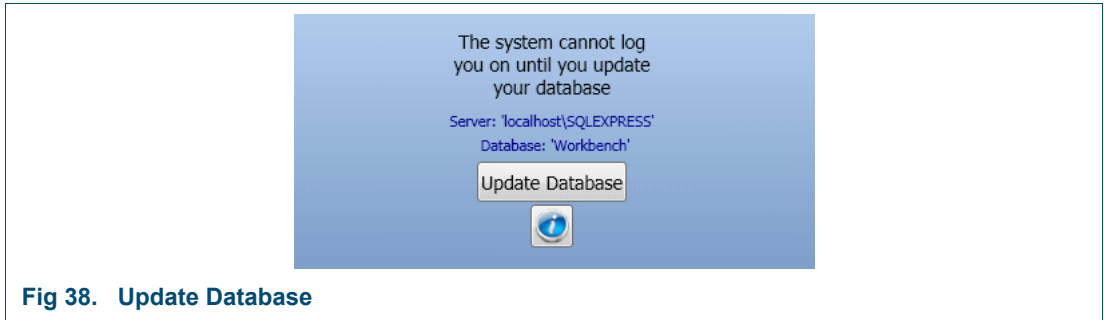| Note:	Remember all of the Workbench and LiveRunner clients on the system need to be associated with the new database location and this includes Workbench and LiveRunner on the Door PC.

11.3 Starting Workbench

Workbench should be associated with the database before it is started for the first time, see section 11.2.

1. Start Workbench from the Windows Start menu.

   Start | All Programs | Snell | MCM | Workbench

2. The first time that Workbench is started the database will need to be updated and the Database Update screen will be displayed (Fig 38.)

Note: | Workbench cannot start without updating the database.

The system cannot log
you on until you update
your database

Server: 'localhost\SQLEXPRESS'
Database: 'Workbench'

Update Database

Fig 38.   Update Database

3. Click on the **Update Database** button.

4. Click **OK**. The login screen displays, see Fig 39.

Username:
Password:

Login

Fig 39.   Login Screen

When Workbench is first installed, there is only are two users, see Table 10.

Username	Password
admin	admin
user	(none required)

Table 10.   Default Users

5. Type the username.
   As this is the first login the admin username is recommended as it allows configuration of both Workbench and the router.

6. Type the associated password, if required.

7. Click on the **Login** button, or press the **Return** key. The home screen will be displayed, see Fig 40.
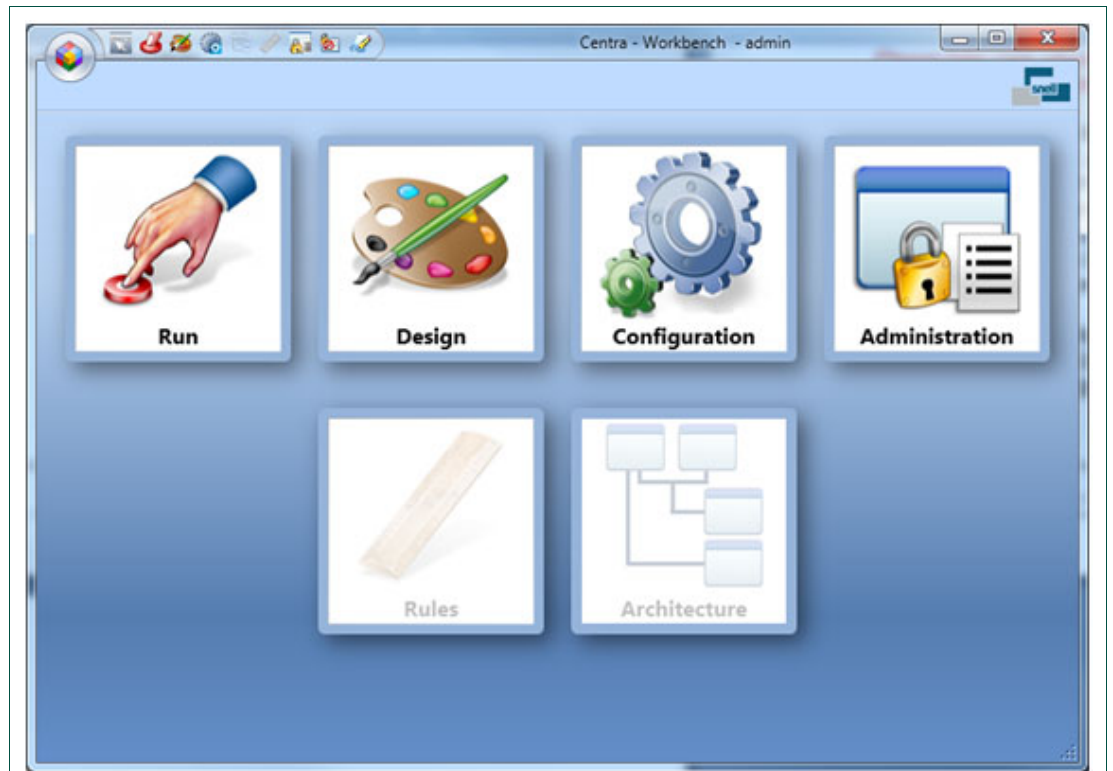
Fig 40.   Initial Workbench Administration Screen

11.4 Adding Router Control Module(s)

This step is only required if Workbench is associated with a Workbench database that doesn't contain details of the controllers such as when connecting to a new blank database, as created in section 11.2.1.

If Workbench is associated with a sample/default or custom database the router control module(s) will already be configured and will be displayed in the configuration screen, move on to section 11.5 for details on editing the controller configurations.

1. Click on the **Configuration** button and the Workbench Configuration screen will be displayed.
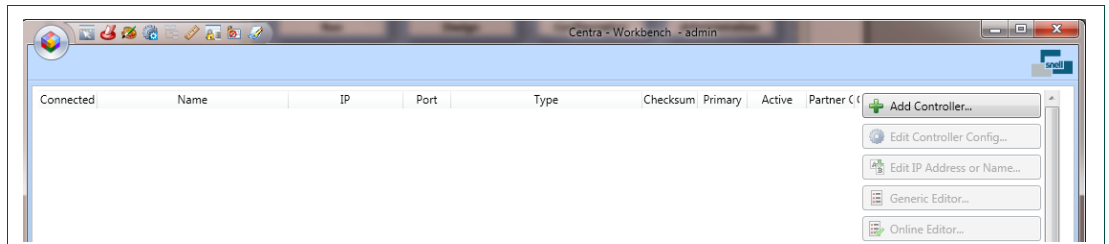

Fig 41. Workbench Configuration Screen

2. Click on the **+Add Controller...** button on the right of the Workbench Configuration screen (Fig 41.) and the Controller Wizard screen will start.
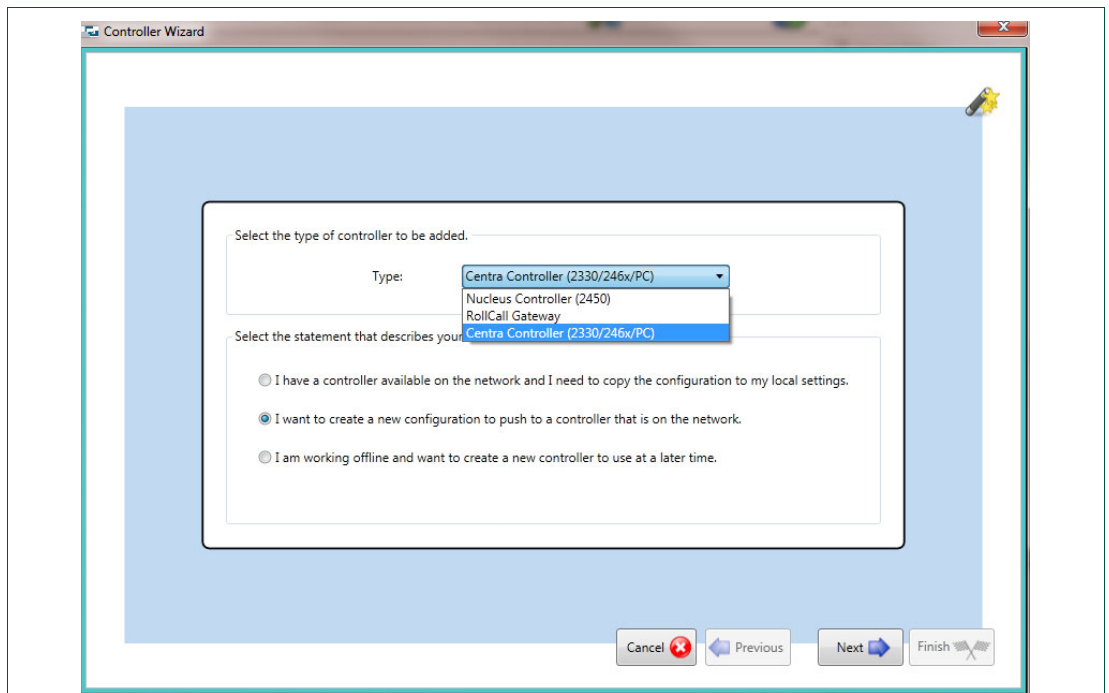

Fig 42. Controller Wizard Screen

3. Select the router control module type fitted to the router from the drop down menu.

Nucleus2 2463 - select **Centra Controller (2330/246x/PC)**
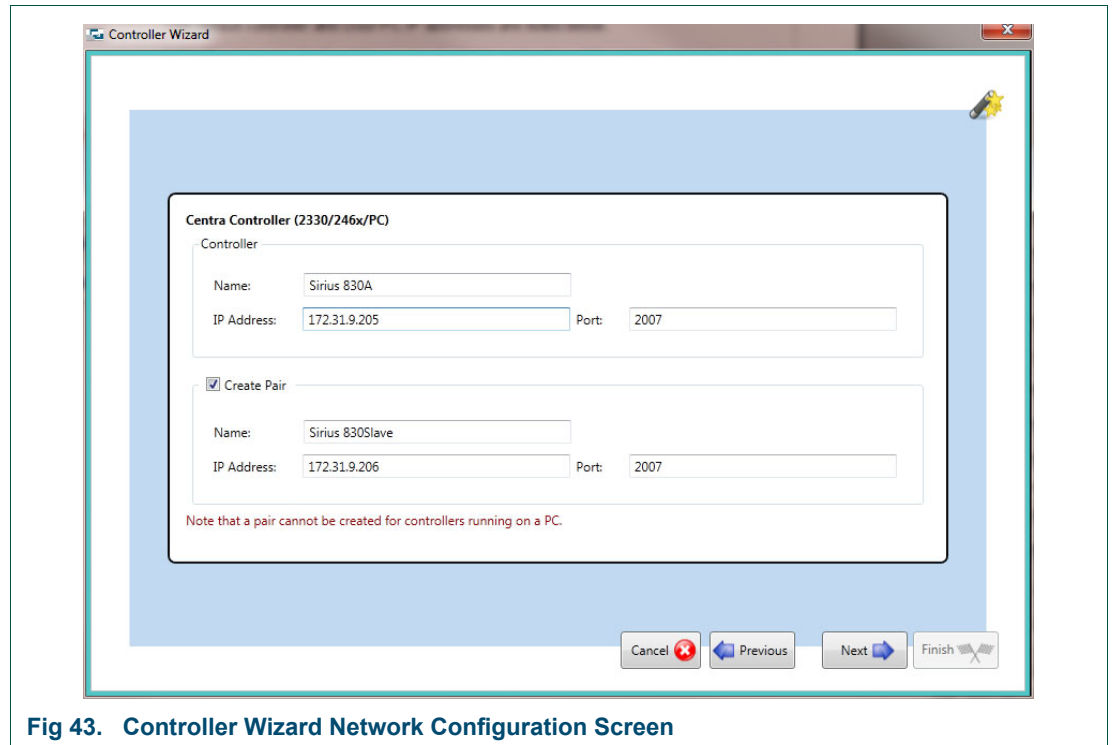
Nucleus 2450 - select **Nucleus Controller (2450)**

4. When starting with a new blank database select the radio button for:

I want to create a new configuration to push to a controller that is on the network

See the Workbench user manual for details of the other options.

5. When the controller type and setup type have been selected click the **Next** button.

Fig 43.   Controller Wizard Network Configuration Screen

6. Enter the Name, IP address and IP Port for the main controller and, if the router contains two router control modules, tick the Create Pair check box.

Name - Enter the controller name to be displayed by Workbench

**IP Address** - Edit the controller IP address to match the main router control module.

IP Port - Enter the controller IP port address, this is usually 2007

Create Pair - Tick the **Create Pair** check box to enter details of the second router control module if one is fitted.
Workbench automatically sets the IP address to be xxx.xxx.xxx.xx+1
where xxx.xxx.xxx.xxx = main controller IP address.

7.   Click the **Next** button.
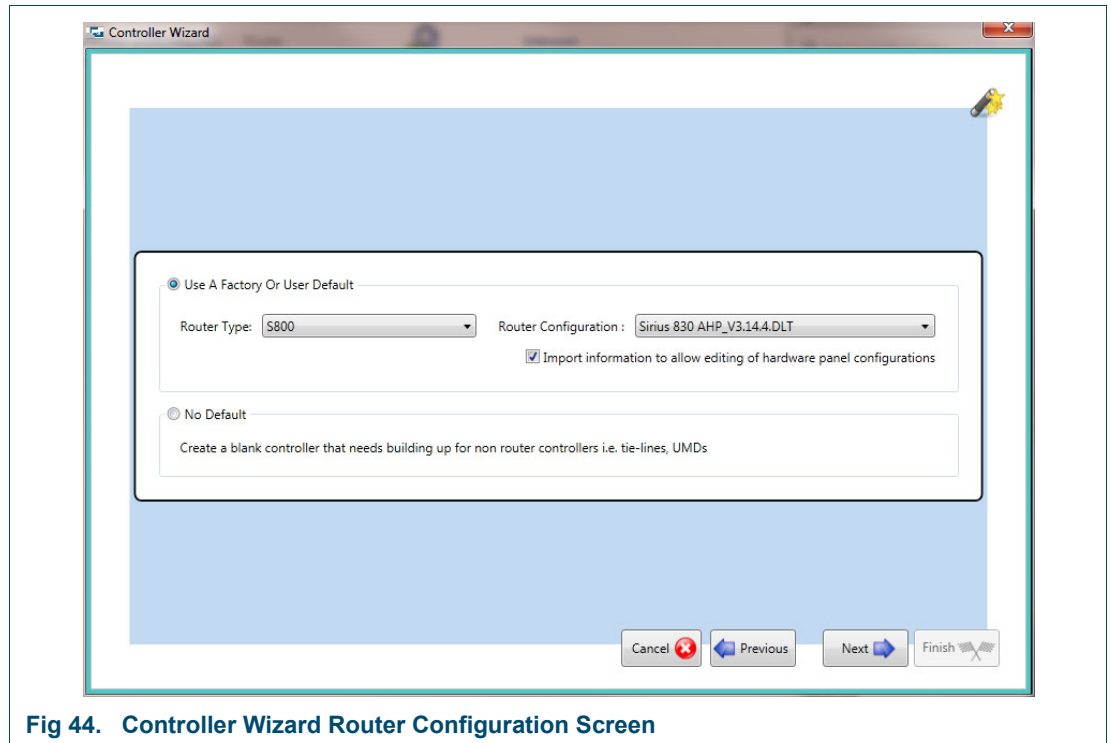
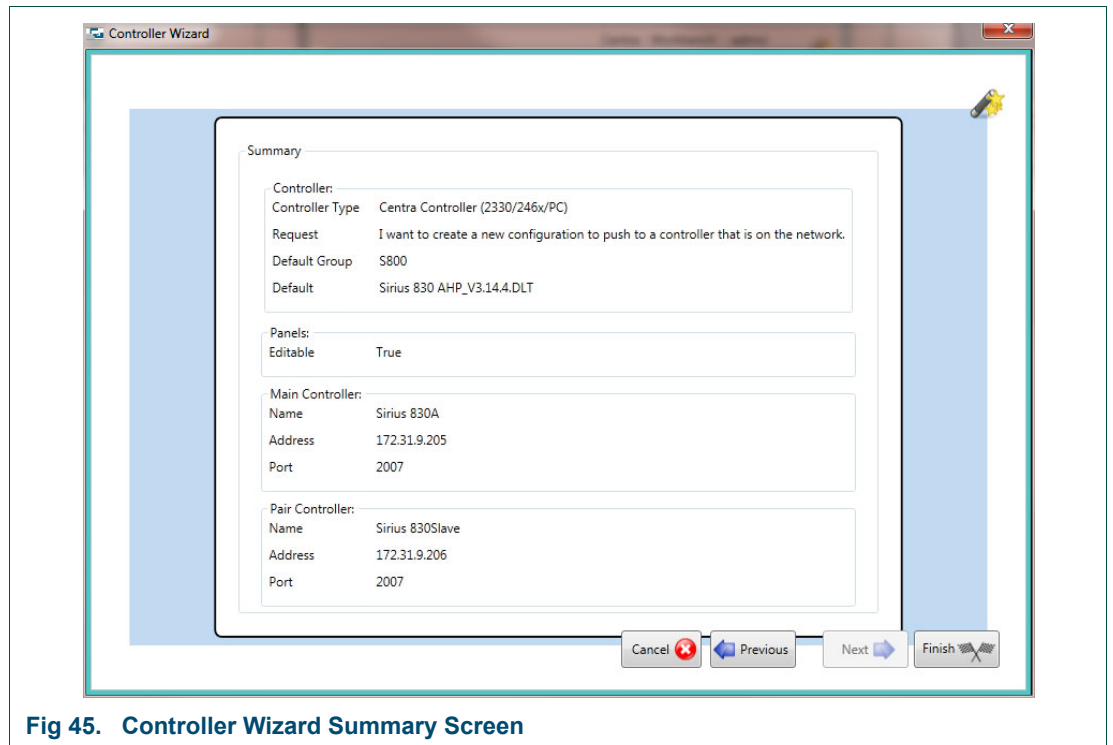**Fig 44.   Controller Wizard Router Configuration Screen**

8.   Select the **Use a Factory Or User Default** radio button.

Note: The **No Default** option is used when installing a new system similar to a previously installed one. The existing configuration is then copied as a basis for the configuration of the new controller.

9.   Select the correct router type from the **Router Type** drop down list, **S800** for the Sirius 830 router.

10.   Select the router configuration closest to the one required from the **Router Configuration** drop-down list.

11.   Tick the **Import information to allow editing of hardware panel configurations** check box.

12.   Click the **Next** button.

13. A summary screen is displayed (Fig 45.). If any of the parameters on this screen are incorrect, click the **Previous** button to return to the screen that requires amendment. edit the details, and continue through the Controller Wizard as before.

Fig 45.   Controller Wizard Summary Screen

14. Confirm all of the configuration details are correct and click on the **Finish** button.

15. The controllers are added to the Workbench Configuration screen.
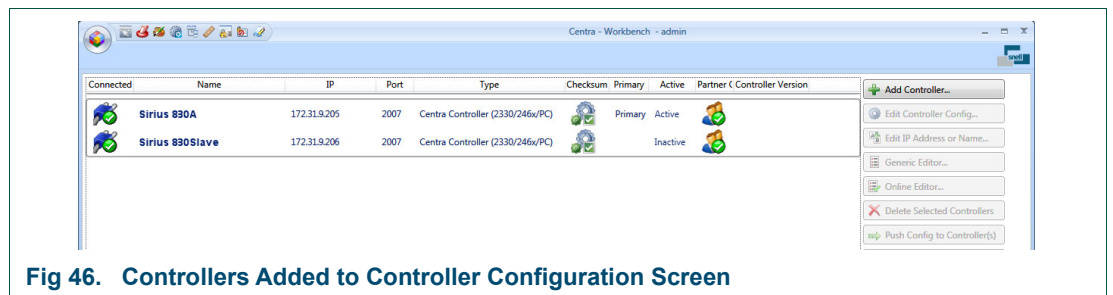
Fig 46.   Controllers Added to Controller Configuration Screen

Fig 46. shows an example screen for both controllers and Table 11. describes the status of the controllers in the example. For full details of the status displays see the Workbench User manual.

Column	Example Status	Description
Connected		Both controllers are present and connected correctly
Checksum		Configuration Match, both databases are identical.
Primary	Primary	The controller named Sirius830A is the primary (main) controller.
Active	Active	The controller named Sirius830A is **Active** (controlling the router).
	Inactive	The controller named Sirius 830 Slave is **Inactive** ready to take over from the active controller in the event of a problem.

**Table 11.   Controller Status Example**

11.5   Controller Configuration

There are three methods of configuring the router control module and an example of each is described in the following sections.

Note:
- If the router contains two router control modules the inactive controller should be configured first and once that process is complete the other controller is made inactive and the configuration changes can be copied to it.

- On a dual redundant controller system the router controllers can be configured while the router is on-air, if required.

- If the router only has a single controller then this can be configured while the router is on-air but all communication with the router controller will be lost during the database push of the configuration changes and subsequent reset. Because of this the crosspoints cannot be switched and tallies are not reported during this process. Video and audio processing is unaffected.

1. Select the inactive controller and click on the **Edit Controller Config...** button. The Controller Configuration window is displayed, see Fig 47.
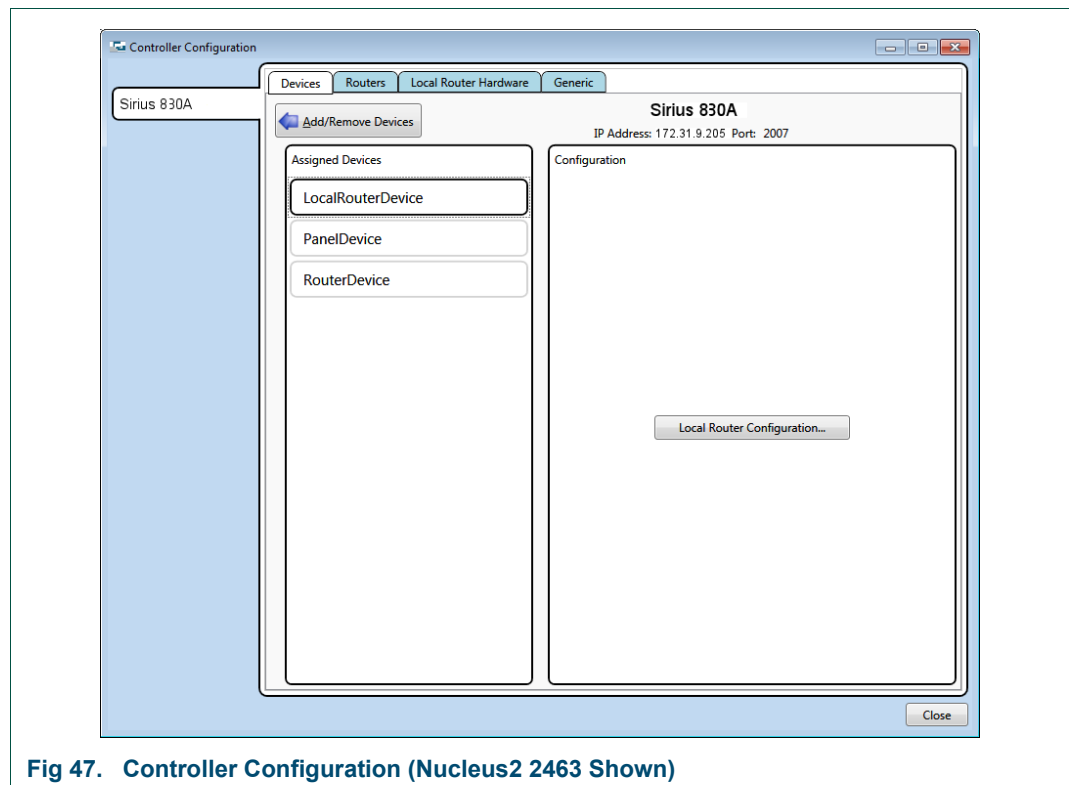
Fig 47.   Controller Configuration (Nucleus2 2463 Shown)

The Controller Configuration screen is displayed with the **Devices** tab open. The Tabs on this screen are shown below, see the Workbench User manual for full details:

- **Devices** - Nucleus router control modules have default devices already selected.

- **Routers** - Basic configuration of the router, see section 11.5.1 for an example.

- **Local Router Hardware** - Additional configuration required when configuring a Nucleus2 2463 router control module.

- **Generic** - The **Generic Editor** (see section 11.5.2) and **Generic Online Editor** (see section 11.5.3) tools are accessed from this tab. They allow advanced configuration changes to be made using a logical tree structure format.

11.5.1   Configuration Using the Workbench Configuration Screens

The Workbench configuration screens are used to view and edit the router control module configuration settings (see Fig 48.)

To configure the router control module from the Workbench configuration screens:

1. Click on the **Routers** tab from the Controller Configuration screen. The Routers tab shows the currently configured router matrices, buttons for basic configuration settings and a button to open the advanced configuration options.
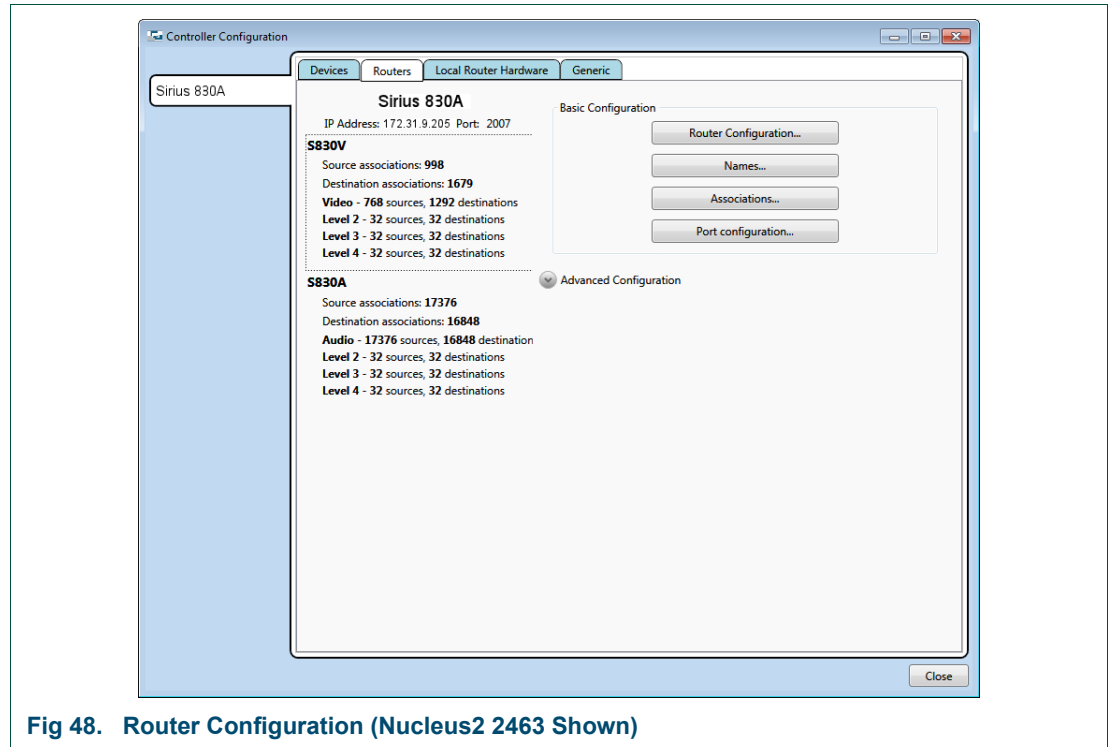

Fig 48.   Router Configuration (Nucleus2 2463 Shown)

Note: In the example shown in Fig 48. the router control module is configured with a video matrix (S830V) and an audio matrix (S830A).

2. Make any changes required using the menu buttons and click the **Close** button.

3. Any configuration changes must be pushed from the Workbench computer to the router control module. See section for 11.5.4 details.

Example Setting a Switch Point Reference for a Video Input

The following examples describe how to select the switch point reference for one or more of the video inputs in the matrix. For information on references and switch points see the Sirius 800 User Manual.

1. From the **Routers** tab click on the Advanced Configuration expand button and then click the **References...** button.

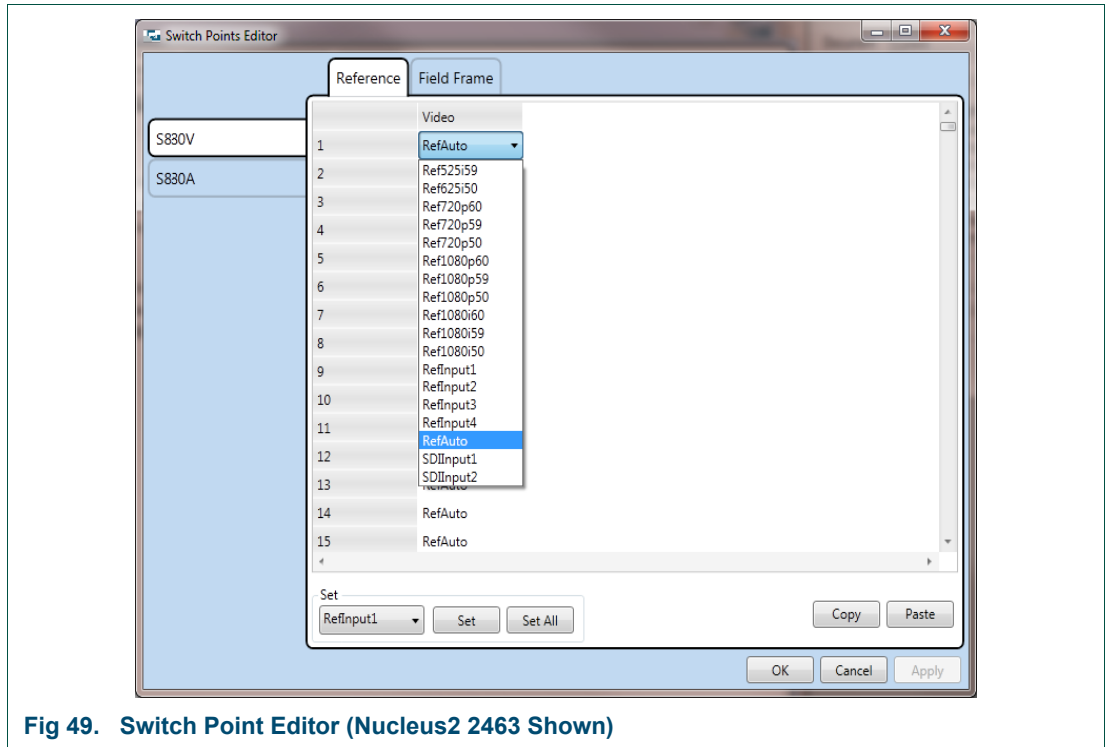2. The Switch Point Editor screen is displayed.

Fig 49. Switch Point Editor (Nucleus2 2463 Shown)

3. The switch points can be selected individually for each input or all of the inputs can be set to use the same switch point reference.

Setting an Individual Switch Point for a Video Input

1. Select the video input to be set by clicking on it. Once selected open the drop down list as shown in Fig 49.

2. Select the required Switch Point for the input from the drop down list.

3. Repeat as required for the other inputs and then click the **OK** button to finish.

4. Any configuration changes must be pushed from the Workbench computer to the router control module. See section for 11.5.4 details.

Setting a Common Switch Point for all Video Inputs

Note: This setting will overwrite any individual selections already made.

1. Select the switch point for all of the video inputs by opening the **Set** drop down list at the bottom of the Switch Point Editor screen.

2. Click the **Set All** button to assign the selected switch point to all of the video inputs in the matrix.

3. Any configuration changes must be pushed from the Workbench computer to the router control module. See section for 11.5.4 details.

11.5.2 Configuration Using the Generic Configuration Editor

The Generic Configuration Editor is used to edit a router control module in a logical tree structure format, see Fig 50. It can be used to edit or view the controller configuration. The Generic Configuration Editor is useful for grabbing DCCP elements for screen design.

To configure the router control module using the Generic Configuration Editor:

1. Click on the **Generic** tab from the Controller Configuration screen shown on page 67 in Fig 47.

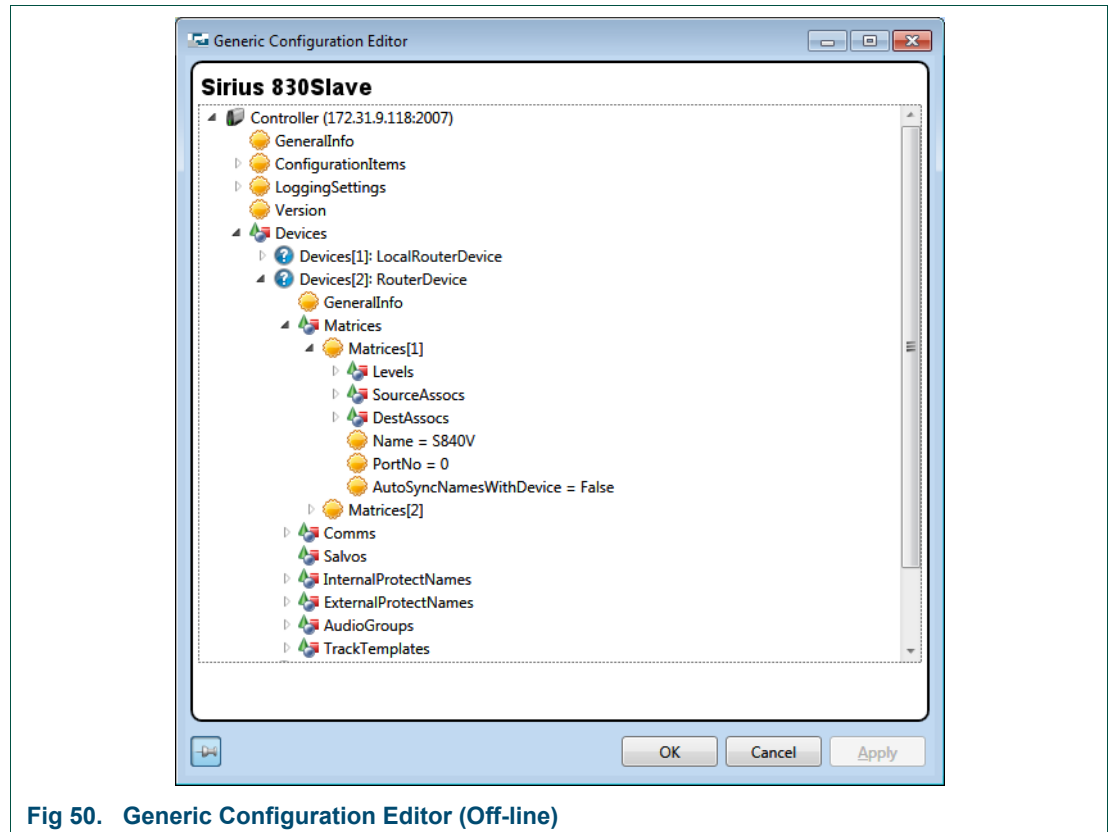2. Click on the **Edit Controller...** button to display the Generic Configuration Editor, Fig 50.

Fig 50.   Generic Configuration Editor (Off-line)

Important: Care should be taken when using the Generic Configuration Editor. It is very easy to change the configuration so that the router control module no longer functions correctly, and in a way that is difficult to fault-find. For example, changing the baud rate can stop the controller from communicating correctly, if a device has not had the same change in baud rate.

The controller's configuration parameters display in a tree.

• Click on a ▷ symbol to expand the node below it.

• Click on a ◢ symbol to collapse the node.

The nodes depend on the type of device.

Important: Removing an item from the middle of an array can 'break' the controller and links to soft panels.

3. Select the parameter to be configured and make the change(s) required.

There are three types of controls used to build the configuration. Depending on the selection, the appropriate control displays at the bottom of the screen, see Table 12. and Fig 50.

Control	Description
Plus/Minus symbols	These controls add or remove an element below the selected node.
Drop-down lists	If the selected configuration parameter is defined by a set group of choices, a drop-down list enables the value to be selected.
Text boxes	If the selected configuration parameter requires a name, a text box enables the name to be entered.

Table 12.   Generic Configuration Controls

4. Click on the **Apply** button to apply each change made to the configuration.

5. Once complete click on the **OK** button to close the window.

6. Any configuration changes must be pushed from the Workbench computer to the router control module. See section for 11.5.4 details.

11.5.3 Configuration Using the Generic Online Configuration Editor

The Generic Online Configuration Editor displays the current configuration status of the live system. It is mainly used for diagnostic purposes to identify failures. The display and editing of the Generic Online Configuration Editor is similar to that for the Generic Configuration Editor, see section 11.5.2.

Important: Any changes made to the configuration in the Online Editor occur in real-time on a live controller. It is generally recommended that configuration changes are made using the Generic Configuration Editor.

To configure the router control module using the Generic Editor:

1. Click on the **Generic** tab from the Controller Configuration screen shown in Fig 47.

2. Click on the **Edit Controller Online...** button to display the Generic Online Editor.

3. As changes are applied in real-time they do not need to be pushed to the router control module.

11.5.4 Pushing the Configuration to the Controller(s)

Any configuration changes must be pushed from the Workbench computer to the router control module(s) so that the controller(s) can use the new configuration.

The configuration changes are first pushed to the modified inactive controller and it is then made active. The changes are then copied to the unmodified inactive controller (was active) and pushed to it. This then means that both controllers contain the same configuration as the Workbench database.

In a frame with a single controller this is not possible and the database must be pushed to the single active controller. All communication with the router controller will be lost during the database push of the configuration changes and subsequent reset. Because of this the crosspoints cannot be switched and tallies are not reported during this process. Video and audio processing is unaffected.

1. With the modified controller selected click on the **Push to Controller(s)** button.

2. The Workbench controller Connected status icon will return to the connected state

    once the database push and reset have been completed.

Note:	In a router equipped with a single controller the configuration change is now complete.

3. The active unmodified controller must be must now be made inactive. Select the active controller and click on the **Reset** button on the right of the Workbench screen.

4. The active controller will become the inactive controller and the modified controller will become the active controller.

5. Select the active updated controller and click on the **Copy config to Partner** button. This will push the updated configuration to the inactive controller.

6. The Workbench controller Connected status icon will return to the connected state

    once the database push and reset have been completed.

7. Both controllers will now contain the same configuration as the Workbench database

   as indicated by the Checksum status icon

Grass Valley Technical Support

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Corporate Head Office

Grass Valley
3499 Douglas-B.-Floreani
St-Laurent, Quebec H4S 2C6
Canada
Telephone: +1 514 333 1772
Fax: +1 514 333 9828
www.grassvalley.com