IQH4B

HIGH POWER 4U MODULAR ENCLOSURE

User Manual

Issue 2 Revision 1

17/7/19

www.grassvalley.com

Patent Information

This product may be protected by one or more patents.

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

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Title	IQH4B User Manual
Part Number	Issue 2 Revision 1
Revision	17 July 2019 2:57 pm

Important Safety Information

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

Symbols and Their Meanings

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

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

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

Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.
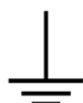
Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.

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

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

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

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

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

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

The presence of this symbol in or on Grass Valley product means that it complies with safety of laser product applicable standards.

Warnings

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

• Appropriately listed/certified mains supply power cords must be used for the connection of the equipment to the mains voltage at either 120 V AC or 240 V AC.

• This product relies on the building's installation for short-circuit (over-current) protection. Ensure that a fuse or circuit breaker for 120 V AC or 240 V AC is used on the phase conductors.

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

• Do not operate the equipment in wet or damp conditions.

• This equipment is grounded through the grounding conductor of the power cords. To avoid electrical shock, plug the power cords into a properly wired receptacle before connecting the equipment inputs or outputs.

• Route power cords and other cables so they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.

• Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.

• Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.

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

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

• To avoid fire hazard, use only the fuse type and rating specified in the service instructions for this product, or on the equipment.

• To avoid explosion, do not operate this equipment in an explosive atmosphere.

• Use proper lift points. Do not use door latches to lift or move equipment.

• Avoid mechanical hazards. Allow all rotating devices to come to a stop before servicing.

• Have qualified service personnel perform safety checks after any service.

Cautions

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

• This equipment is meant to be installed in a restricted access location.

• When installing this equipment, do not attach the power cord to building surfaces.

• Products that have no on/off switch, and use an external power supply must be installed in proximity to a main power outlet that is easily accessible.

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

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

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

Electrostatic Discharge (ESD) Protection

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

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

Battery Handling

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

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

Cautions for LCD and TFT Displays

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

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

Mesures de sécurité et avis importants

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

Signification des symboles utilisés

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

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

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

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

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

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

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

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

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

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

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

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

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

Avertissements

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

- Un cordon d'alimentation dûment homologué doit être utilisé pour connecter l'appareil à une tension de secteur de 120 V CA ou 240 V CA.

- La protection de ce produit contre les courts-circuits (surintensités) dépend de l'installation électrique du bâtiment. Assurez-vous qu'un fusible ou un disjoncteur pour 120 V CA ou 240 V CA est utilisé sur les conducteurs de phase.

- Dans le présent manuel, toutes les instructions qui nécessitent d'ouvrir le couvercle de l'équipement sont destinées exclusivement au personnel technique qualifié.

- N'utilisez pas cet appareil dans un environnement humide.

- Cet équipement est mis à la terre par le conducteur de mise à la terre des cordons d'alimentation. Pour éviter les chocs électriques, branchez les cordons d'alimentation sur une prise correctement câblée avant de brancher les entrées et sorties de l'équipement.

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

- Coupez l'alimentation avant de nettoyer l'équipement. Ne pas utiliser de nettoyants liquides ou en aérosol. Utilisez uniquement un chiffon humide.

- Des tensions dangereuses peuvent exister en plusieurs points dans cet équipement. Pour éviter toute blessure, ne touchez pas aux connexions ou aux composants exposés lorsque l'appareil est sous tension.

- Avant de procéder à toute opération d'entretien ou de dépannage, enlevez tous vos bijoux (notamment vos bagues, votre montre et autres objets métalliques).

- Pour éviter tout risque d'incendie, utilisez uniquement les fusibles du type et du calibre indiqués sur l'équipement ou dans la documentation qui l'accompagne.

- Ne pas utiliser cet appareil dans une atmosphère explosive.

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

- Après tout travail d'entretien ou de réparation, faites effectuer des contrôles de sécurité par le personnel technique qualifié.

Mises en garde

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

- L'appareil est conçu pour être installé dans un endroit à accès restreint.

- Au moment d'installer l'équipement, ne fixez pas les cordons d'alimentation aux surfaces intérieures de l'édifice.

- Les produits qui n'ont pas d'interrupteur marche-arrêt et qui disposent d'une source d'alimentation externe doivent être installés à proximité d'une prise de courant facile d'accès.

- Si l'équipement n'est pas pourvu d'un modules d'alimentation auto-adaptables, vérifiez la configuration de chacun des modules d'alimentation avant de les mettre sous tension.

- Assurez une ventilation adéquate. Pour éviter toute surchauffe du produit, assurez une ventilation de l'équipement conformément aux instructions d'installation.

- N'utilisez pas l'équipement si vous suspectez un dysfonctionnement du produit. Faites-le inspecter par un technicien qualifié.

- Pour réduire le risque de choc électrique, n'effectuez pas de réparations autres que celles qui sont décrites dans le présent manuel, sauf si vous êtes qualifié pour le faire. Confiez les réparations à un technicien qualifié. La maintenance doit se réaliser dans un milieu libre d'électricité statique.

- L'appareil peut comporter plus d'un cordon d'alimentation. Afin de prévenir les chocs électriques, débrancher tous les cordons d'alimentation avant toute opération d'entretien.

- Veillez à toujours prendre les mesures de protection antistatique appropriées quand vous manipulez l'équipement.

- Pour réduire le risque de choc électrique, branchez chaque cordon d'alimentation dans des circuits de dérivation distincts utilisant des zones de service distinctes.

Protection contre les décharges électrostatiques (DES)

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

- Assurez-vous que le châssis est relié électriquement à la terre par le cordon d'alimentation ou tout autre moyen disponible.

- Portez un bracelet antistatique et assurez-vous qu'il est bien en contact avec la peau. Connectez la pince de masse à une *surface non peinte* du châssis pour détourner à la terre toute tension électrostatique indésirable. En l'absence de bracelet antistatique, déchargez l'électricité statique de votre corps en touchant une surface métallique *non peinte* du châssis.

- Pour plus de sécurité, vérifiez périodiquement la valeur de résistance du bracelet antistatique. Elle doit se situer entre 1 et 10 mégohms.

- Si vous devez mettre une carte de côté, assurez-vous de la ranger dans un sac protecteur antistatique.

- Les cartes qui sont reliées à un châssis ou boîtier métallique mis à la terre ne nécessitent pas de protection antistatique spéciale.

Manipulation de la pile

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

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

Précautions pour les écrans LCD et TFT

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

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

Environmental Information

European (CE) WEEE directive.

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

Visit www.grassvalley.com for recycling information.

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

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

Lithium Batteries

Battery Warning

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

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

Battery Disposal

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

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

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

Laser Safety - Fiber Output SFP and QSFP Modules Warning

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.

Safety and EMC Standards

This equipment complies with the following standards:

Safety Standards

Information Technology Equipment - Safety Part 1

EN60950-1: 2006

Safety of Information Technology Equipment Including Electrical Business Equipment.

UL1419 (4th Edition)

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

EMC Standards

This unit conforms to the following standards:

EN55032:2015 (Class A)

Electromagnetic Compatibility of multimedia equipment - Emission requirements

EN61000-3-2:2014 (Class A)

Electromagnetic Compatibility - Limits for harmonic current emissions

EN61000-3-3:2013

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

EN55103-2:2009 (Environment E2)

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

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

FCC/CFR 47:Part 15 (Class A)

Federal Communications Commission Rules Part 15, Subpart B

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

> Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
> This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.
> Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EMC Performance of Cables and Connectors

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

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

SIGNAL/DATA PORTS

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

COAXIAL CABLES

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

D-TYPE CONNECTORS

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

Table of Contents

Introduction

Unit Description

IQH4B enclosures offer industry leading, high-density delivery of modular solutions. With up to 700W of module power available, this 4U rack unit enclosure accepts up to 20 modules, has dual redundant PSUs and in-service replaceable cooling fans. Analog reference signals can be distributed through the enclosures via 2 connections that can be independently selected by the installed modules. RollCall control and monitoring is included as standard using a Gateway control card that has it's own module style rear connector, thus providing a future proof upgrade path as communication standards evolve. Full SNMP control and monitoring functionality is also available over Ethernet.

Order Codes

The following product order codes are covered by this manual:

Enclosures

IQH4B-S-P	Enclosure with Dual Redundant PSU and Ethernet/SNMP Compatible RollCall Gateway Card. 20 module slots.

Accessories

IQH4B-PSU	Single PSU for use as a cold spare or replacement.
IQH4B-FAN	Dual Fan unit for use as a cold spare or replacement
IQH3B-E-GATEW	Ethernet/SNMP compatible RollCall Gateway card for IQH4B and IQH3B enclosures.

Front Panel View

The IQH4B enclosure front panel is shown below.
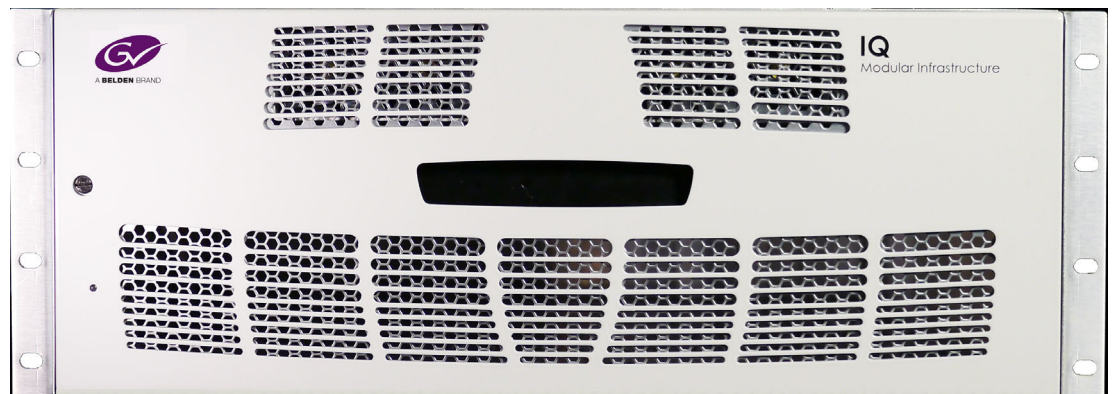
Rear Panel View

The IQH4B enclosure rear panel, without modules, is shown below.
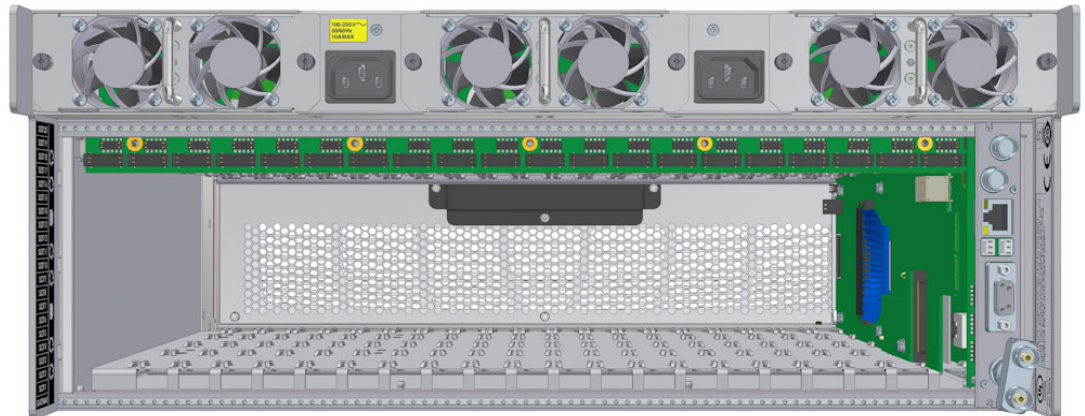
Features

The IQH4B modular enclosure provides the following features:

- 20 single or 10 double width modules (or any combination).
- Integrated web browser based RollCall configuration and control.
- SNMP Control and Monitoring of ALL RollCall enabled IQ modules as standard.
- Dual redundant network architecture over Ethernet and RollNet enables mission critical control applications to function even if a complete network failure occurs.
- Plug-in gateway communications card to enable RollCall via RollNet, RS232/485/422 and RollCall over TCP/IP control, with support for upgradable connectivity to handle future communication standards.
- 2 x analog reference signal distribution for dual standard (Bi-Level or Tri-Level), dual video standard (SD or HD), and reference redundancy applications.
- Hot-swappable redundant power supplies with PSU status reporting through GPIs on the Gateway control card rear panel.
- Optimum use of rack space – frames do not require any additional ventilation spacing.
- In-service replaceable fan units.
- Variable fan speed, dependent upon load and ambient temperature.
- Full chassis monitoring, including Inlet and Outlet temperature, fan condition and module status.
- Full CE and UL compliance.

Technical Specification

Inputs, Outputs and Controls	
Inputs/Outputs	
RollCall Remote Control	BNC connector
RS-422/485/232 Remote Control	9-pin, D-type connector
RollCall/SNMP over TCP/IP	10/100 baseT Ethernet
Video Reference	BNC connector x 2
PSU Status	Molex connector x2 (Molex Header part number: 22-27-2031)
Preset Controls	
Unit address code set switches	2 Hex switches 0 to F
Communications mode switch	Select RS-232, RS-485 or RS-422 interface
Additional Controls via RollCall Remote Control System	
Full Control via web browser-based Java RollCall control panel (available from chassis), any hardware RollCall control surface or standard RollCall Control Panel PC Application.	
Specifications	
Modules	
Module Complement	20 slots wide. Cards can be 1, 2, 3 or more wide
Module Card Dimensions	100 mm wide, 340 mm long
Module Rear Panel Dimensions	129 mm high (-A versions and -B versions), 40.4 mm (double width), 20 mm (single width) wide
Power	
Input Voltage Range	100-240 V 50/60 Hz
Input Connector	IEC320 C14
Power Consumption	1000 VA maximum
Modules Power Dissipation	IQH4B - 700 LU maximum Power is quoted in Load Units (LU) and is taken from the positive rail only
Output	+12 V and -7.5 V ± 5%
Note that all modules have built-in power supply fuses	
CE Performance Information	
Environment	Commercial and light industrial E2 immunity, controlled EMC E4 emissions
Peak Mains Inrush Current following a 5 second mains interruption	35A @ 230VAC
Reference	
Analog Reference	2 x Analog Reference inputs Black (HD tri-level and SD bi-level) and Black Burst (SD bi-level) SD bi-level – RS170A HD tri-level – SMPTE 240M, 274M and 296M

Connector/Format	BNC/75 Ohm panel jack on standard IQ connector panel
Analog Reference Return Loss	SD bi-level > 40 dB to 5.5 MHz HD tri-level > 30 dB to 30 MHz
Mechanical	
Temperature Range	0 to 40°C operating, -20 to +85°C storage. A temperature and load sensitive cooling fan is fitted
Humidity Range	10 to 85% (non condensing)
Case Type	4U rack mounting aluminum case
Dimensions	W: 483 mm (445 mm behind rack location bracket) D: 485 mm H: 180 mm
Weight	Approximately13kg without modules. Approximately 22kg fully populated.

Installation

Unpacking the Unit

The unit is supplied in a dedicated packing carton provided by the manufacturer and should not be accepted if delivered in inferior or unauthorized materials.

The contents of the carton are:

- 1 x IQH4B enclosure
- 1 x BNC Y-piece connector

Unpack the carton carefully and check for any shortages or damage. Report any shortages or damage to Grass Valley immediately.

> Note: When the unit is supplied fitted with two power supplies, ensure that both power supplies are installed correctly and power up successfully.

Shipping Bar

In order to prevent power supplies and modules from being dislodged in transit, the IQH4B is shipped with a retaining bar in place:

Shipping bar

Shipping bar fitted for transit
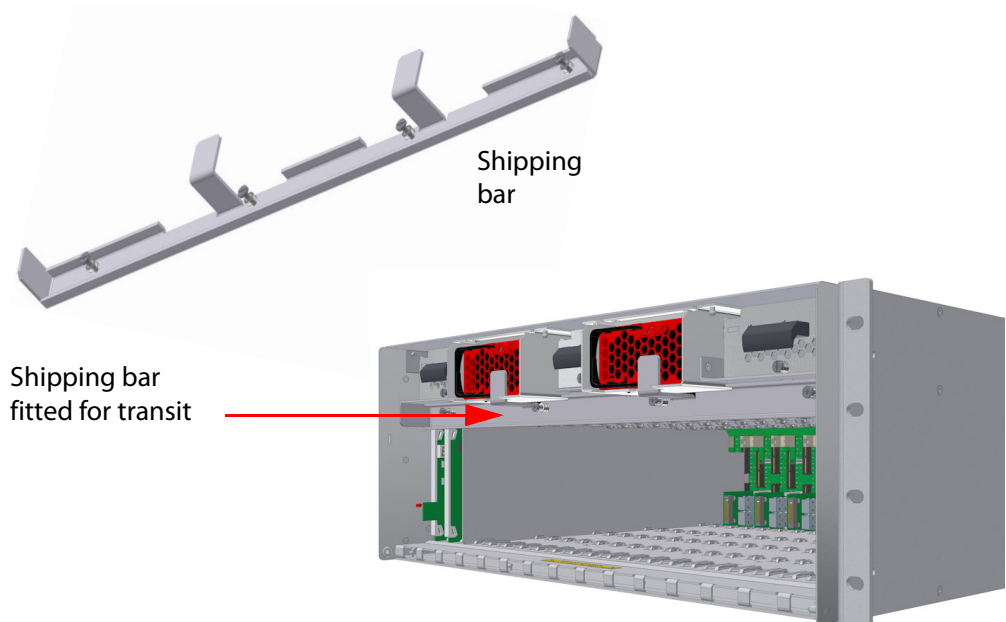
Ensure that this shipping bar is removed before the enclosure is powered up. Store the bar in a safe place for use if the enclosure needs to be transported in the future.

> Note: Leaving the shipping bar in place when the enclosure is running may cause overheating.
> **Damage of this nature is not covered by any warranty**.

Transporting the Enclosure

If the enclosure is to be transported, ensure that the shipping bar is refitted in order to prevent internal components from shifting and causing damage.

Environment

Although constructed to meet the normal environmental requirements, it is important that there is a free flow of air at the front and rear to dissipate the heat produced during operation. Installations should be designed to allow for this.

When rack mounting the equipment, support in addition to the rack mount ears must be provided.

Note: The ventilation holes of the fan housing must not be obstructed or damage to the fan and the equipment may result.

Power Connections

The enclosure provides two power supply inputs, one for each of the dual PSUs fitted.

Note: Before connecting power to the unit, please refer to the safety warnings at the front of this manual.

Mains Inputs
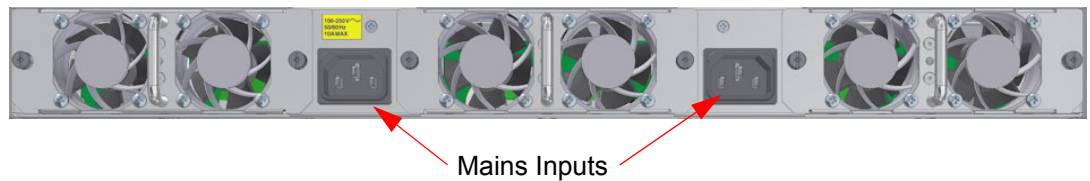
These are IEC320 mains power connectors suitable for standard IEC type power cables.

Supply Voltage

The unit automatically senses the nominal supply voltage and sets itself up accordingly. No voltage adjustment procedure is required.
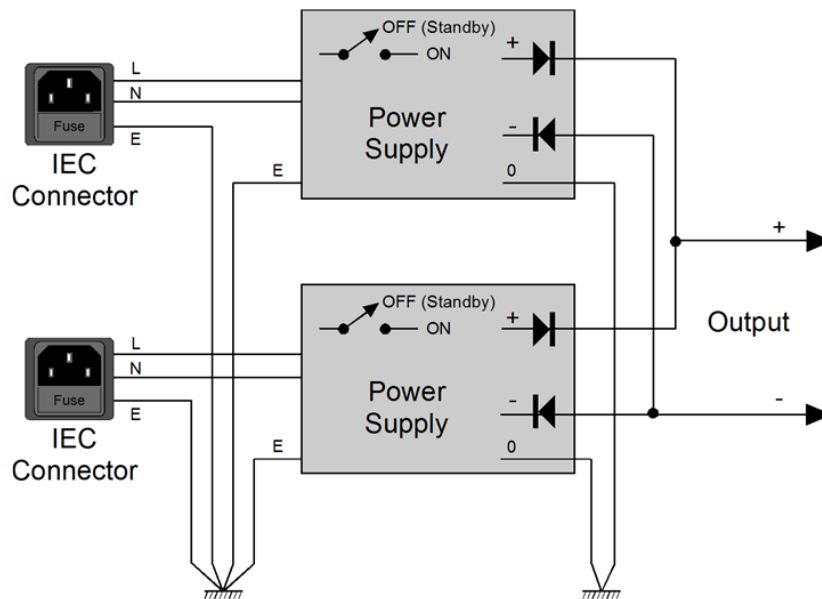
Each IEC connector supplies an independent feed of power to each of the two power supply modules as shown in the diagram above.

As a redundancy option, the IQH4B enclosure can each support two power supplies; however, only one PSU is required.

Front Panel Indicator

On the front panel, there is a bi-colored (red/green) LED that indicates the unit's status.
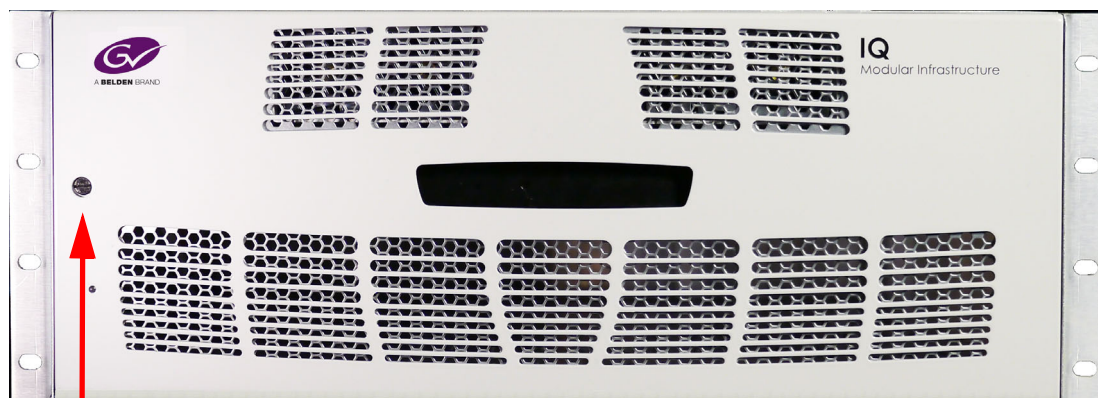
**LED
Indicator**

LED State	Meaning
Green	Power ON OK, no faults detected
Steady flashing Red/Green/Red/Green/…	*Where Am I?* function activated
Red Flashing	Faults detected: **PSU** - Voltage exceeding limits/out of range, PSU Missing/Power cable missing. **FAN** - Stopped, Short circuit, Running at maximum. **TEMP** - Sensor fault, Temperature beyond normal limits. **MOD COMMS** - Excessive Backplane errors.
Steady flashing Red/Off/Red/Off/…	Steady error condition such as PSU or fan failed
Intermittent flashing Red from Green	Momentary error such as network error caused by faulty cabling

More information about error conditions can be determined by checking via RollCall or SNMP.

Removing the Door

The IQH4B can be used without the door if required.

To remove the door:

1   On the left side of the unit, looking from the front, locate the spring-loaded door release pin:

Release Pin
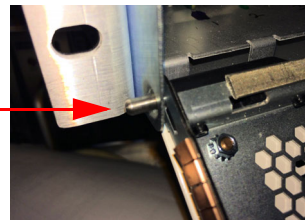
2   Push the pin in and disengage the door:

3   Move the door to the left to disengage the right-hand hinge, and remove the door. Store carefully to avoid damage.

Rear Panel (Gateway Card) Connections

Rear Panel connectors are provided by the
Gateway Card, fitted into a dedicated slot in
the IQH4B enclosure.

Reference 1

Reference 2

Ethernet

PSU Status

Remote

RollNet
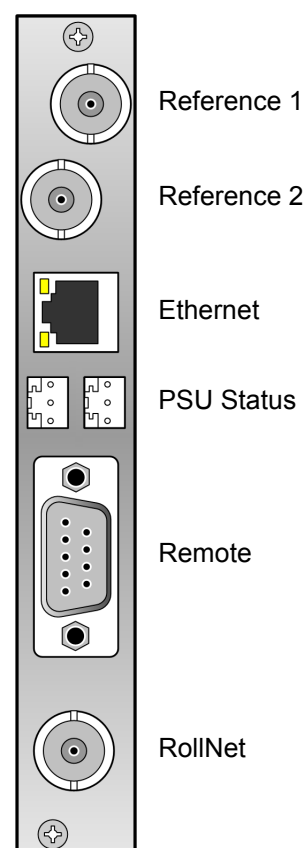
Reference 1 and Reference 2

These BNC connectors allow the unit to be
connected to two video reference sources.
The inputs are terminated in 75 Ohms.
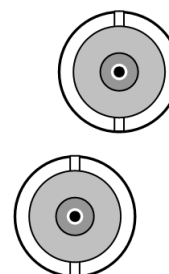
Ethernet

This RJ45 connector socket allows the unit to
be connected to a LAN.

Two integral yellow LEDs flash to indicate
transmit/receive activity and speed (10 Mb =
Off, 100 Mb = On).

Activity

Speed
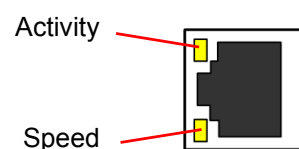
Note: This connector is not intended for direct connection to a network.

Remote

The 9-way, D-type connector on the rear panel allows the unit to be connected to the RollCall 485 network communications system.

This connector may also be used as RS-422 or RS-232 RollCall communication ports.
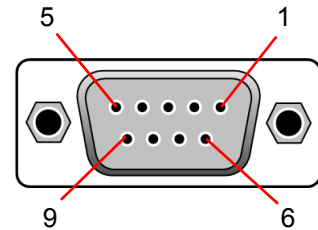
> Note: RS-485 interconnections should be pin-to-pin, and used only for Grass Valley RollNet applications.

9-Way D-Type Connections

Pin No.	Function RS-485	Function RS-422	Function RS-232
1	GND	GND	NC
2	Data A (+)	TX+	TX
3	NC*	RX+	RX
4	GND	GND	NC
5	GND	GND	GND
6	GND	GND	NC
7	Data B (-)	TX-	Short to pin 8
8	NC*	RX-	Short to pin 7
9	NC	NC	NC

* Pins are physically connected in hardware, but are not functional in this mode.

RollNet

The BNC connector enables the unit to be connected to the RollCall network communications system.

The RollCall system should be connected using a 75 Ohm "T" or "Y" piece, in a similar manner to an "Ethernet" system. Both extremities of the system must be terminated in 75 Ohms.
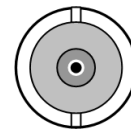
> Note: The coaxial link is bi-directional and therefore must not be passed through signal switching networks. Also, in order to allow hum and noise cancellation, the screen of the coaxial connection must not be earthed.

Opening and Closing the Front Panel

To open the front panel:

1 Turn the locking screw approximately half a turn to release the panel.

2 Pull the panel forward and downward using the handle in the center of the door.

Locking Screw   Handle
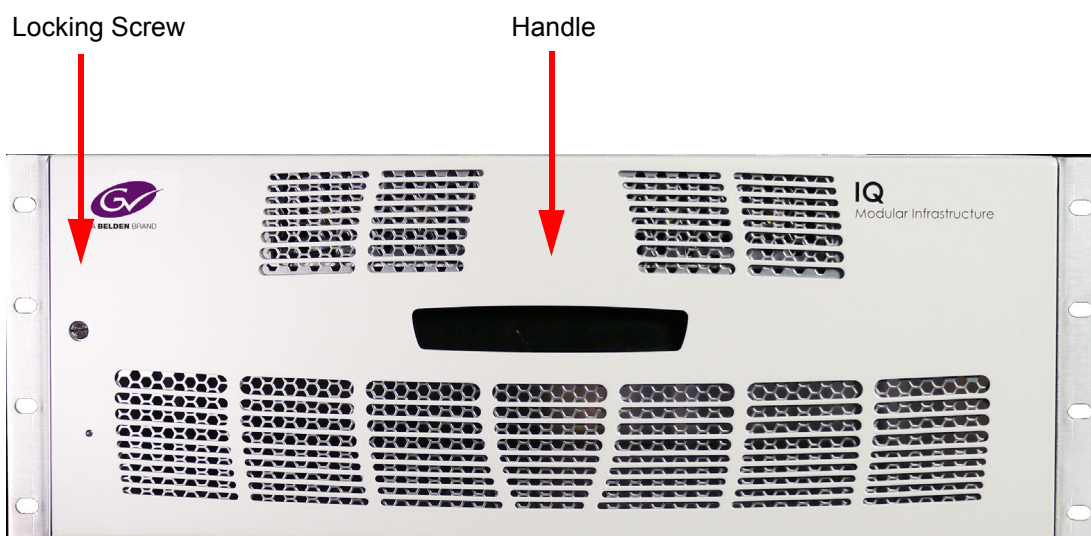
To close the front panel:

3 Pull the panel upward using the handle in the center.

4 Turn the locking screw approximately half a turn to secure the panel.

Front (Gateway Card) Controls and LEDs

Front Panel connectors, controls and LEDs are provided by the Gateway Card, fitted into a dedicated slot in the IQH4B enclosure.
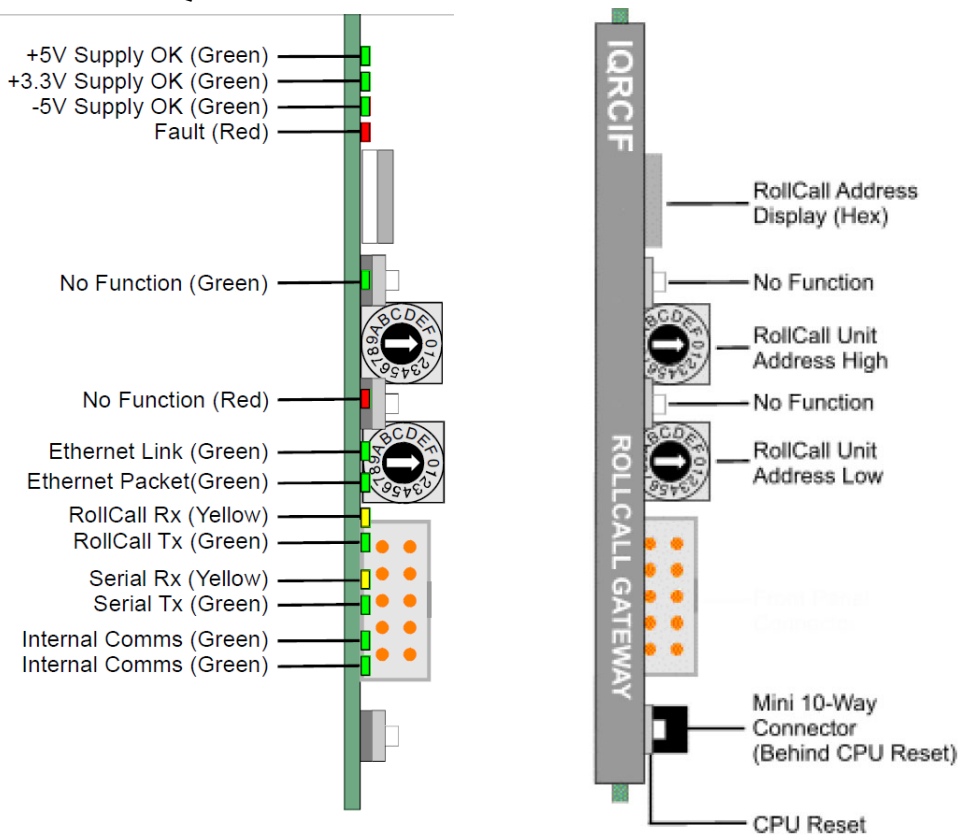
Front Panel Connector

This connector connects to the front panel and provides power to the LED on the front panel.

Mini 10-way Connector

This connector offers RollCall serial RS-232/422 connectivity, allowing easier configuration for IQH4B boxes where rear access is limited. Use part No. SAAN RCSCGW1X to connect to this.

HEX Switches

Both of these switches are used to define the Unit Address code for the equipment.

Position 0 on the upper switch will disable the RollCall function on the unit; all other positions on these switches may be used to set the Unit Address code in Hex. (Upper switch 1 to f, lower switch 0 to f). This code will be appear on the 2-digit, 7-segment display.

If a code is already in use the RollCall receive and transmit LEDs will flash alternately at a 1-second rate.

> Note: In a RollCall local network, all units must have different unit address codes.

The two-digit RollCall address display has a secondary mode of operation. Momentarily press either of the two **Address** buttons, and the IP address followed by the net mask address will be displayed one number at a time on the 7-segment LED display.

LEDs

LEDs are provided along the front edge of the Gateway Card, shown in the diagram above.

Power Supply and Module Slot Locations

PSUs

Gateway Card

Module Slots 1 to 20
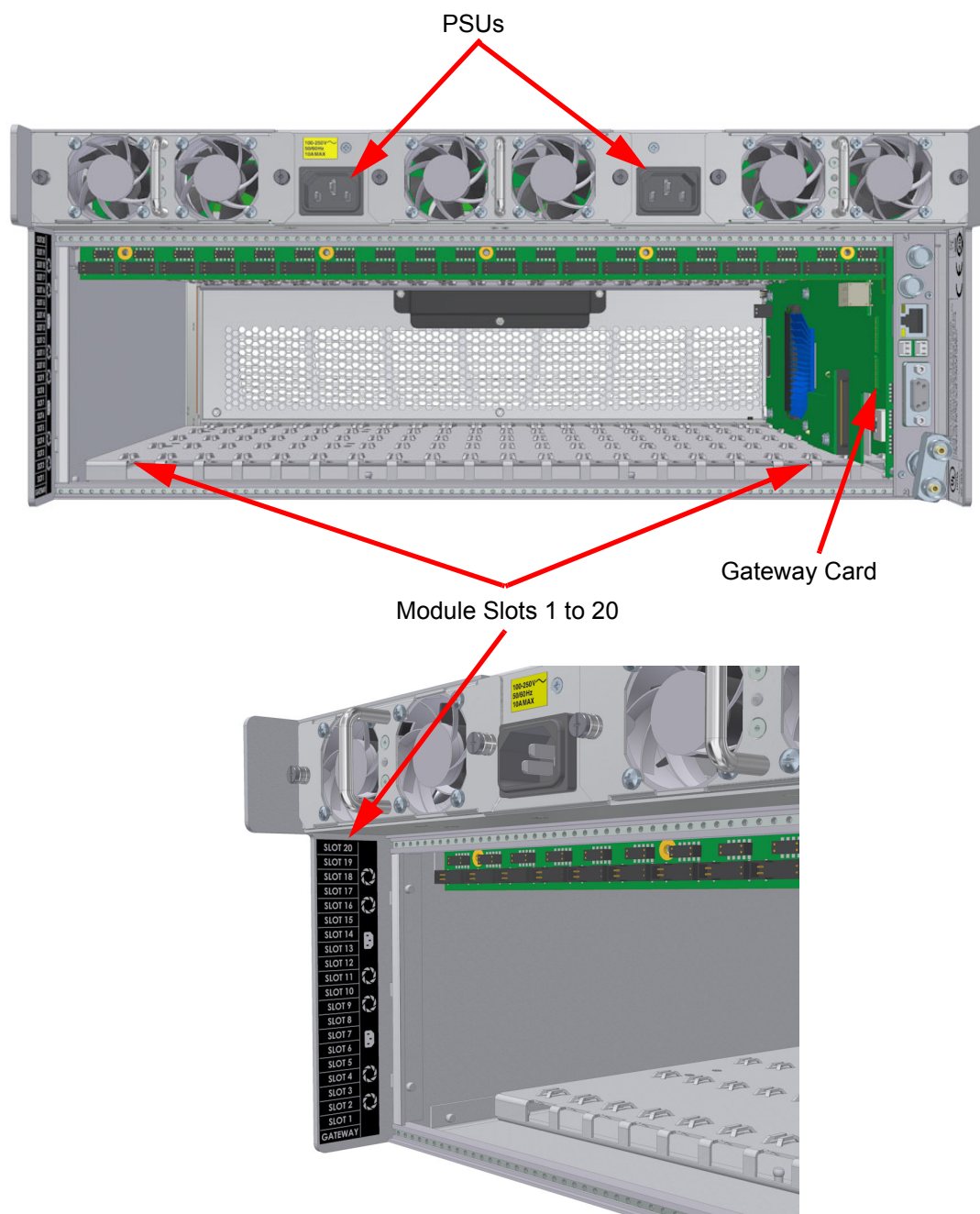
IQH4B enclosures are designed to accept one or two power supplies with independent IEC320 mains inlets.

Individually, each PSU module is capable of powering the frame containing any combination of IQ-1A/1B modules subject to the configuration rules described in section on page 33. When two units are installed the operation of the whole frame becomes protected against single-instance power failures. The manufacturer specifies a maximum of 50 mating cycles.

Monitoring circuitry built in to each PSU reports power or PSU fan failures via GPO contacts on the STATUS connectors on the Gateway rear panel, and the single bi-color LED on the front of each power supply.

The bi-color LED on the PSU front panel is green if the PSU is supplying power to the rack and the PSU fans are running. It turns red to indicate PSU fan failure, mains input under or over voltage range, internal DC regulator failure, or over temperature.

Within the power supplies, the positive and negative rails are independently regulated and have no minimum load current requirements.

The power supplies adjust the regulation so that the power supplies will attempt to share the load current requirements. The balance of current sharing between supplies is subject to variation of the basic regulation of the PSUs. With two PSUs the unit with the higher output voltage will contribute more current to the load.

Installing and Removing Power Supply Units

Note: Ensure that the mains power connection at the rear of the unit is removed before these operations are attempted.

The IQH4B enclosure is provided with two PSUs as standard to allow dual redundant operation.

Removing a Power Supply Unit

To remove a power supply unit:
1   Open the front door panel.
2   Lift the catches at the front of the PSU (shown below) and pull handle forward.

Lift catches and pull handle forward
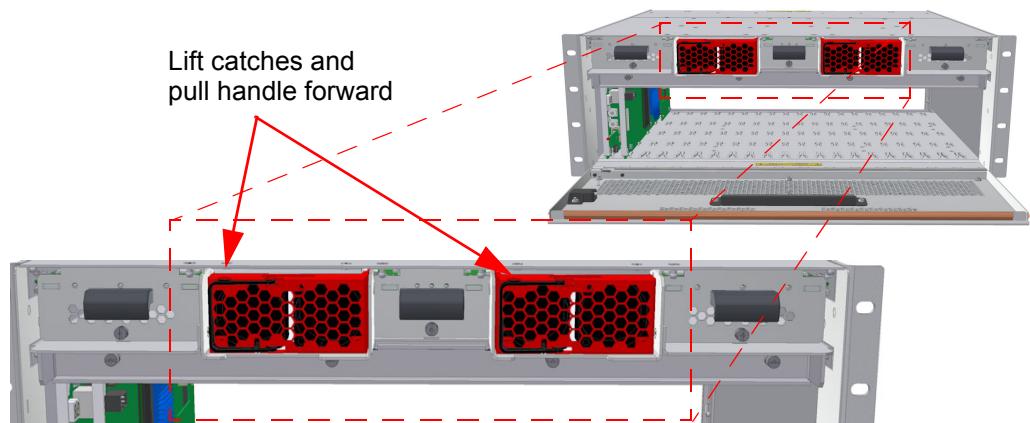
3   Pull handle firmly and carefully slide out the power supply.
4   Close the front panel.

Installing a Power Supply Unit

To install a power supply unit:
1   Open the front door panel.
2   Ensure the power supply's orientation is correct.
3   Slide power supply into the frame, push home firmly and place the handle back in the closed position.
4   Close the front panel.

Installing and Removing Modules

> Note: Before installing a new module into the enclosure, ensure that the configuration rules given below are followed.
> The rear of the enclosure must have a full compliment of rear panels. Any vacant slots must have a blank rear panel fitted.

Configuration Rules

These rules limit the total power dissipation of modules that can be installed in the box and use the module power ratings to calculate the total power dissipated in the enclosure.

Module Power Rating

The power rating for each module will be given in the associated operation manual for that module or in the product technical specification available on the Grass Valley Web site.

Available Power

The IQH4B Enclosure has 700 Power Rating units available. The Power Ratings of each module should be added together and the total should not exceed 700PR units for the IQH4B. Modules that do not specify a Power Rating should use the total power figure as a power rating value.

> Note: The sum of the module power ratings (calculated using the method above) in the enclosure must not exceed 700 units.

Power Rating Table

The following table can be used to calculate and check the available and used power units within the enclosure.

Slot Position	Module Name	Power Rating
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
	Total Power (units) **IQH4B - 700 Maximum**	

Installing a New Module

> Note: Ensure that the mains power connection at the rear of the unit is removed before these operations are performed.

Before installing a new module, consult the Power Rating Table on the previous page to ensure there is adequate power available.

To install a new module:

1 Open the front panel.
2 Remove the module retaining bar.
3 Choose an empty slot position for the module.
4 At the rear of the enclosure remove the screws securing the blanking plate associated with the chosen slot position. Store the blanking plate in a safe place for future use.
5 Ensuring correct orientation, fit the rear connecting panel (supplied with the new module) to the rear of the enclosure in the vacant aperture and secure with the fixing screws provided.
6 At the front of the enclosure, (ensuring correct orientation) carefully slide in the new module until it fully mates with the rear connector panel.
7 Refit the module retaining bar.
8 Close the front panel.
9 Update the Power Rating table on the previous page.

Removing a Module

> Note: Ensure that the mains power connection at the rear of the unit is removed before these operations are attempted

To remove a module:

1 Open the front panel.
2 Remove the module retaining bar.
3 Carefully slide out the desired module.

If a different type of module is to be installed in this position, proceed as in Installing a New Module.

If the slot is to be left vacant, proceed as follows:

4 Refit the module securing bar.
5 Close and secure the front panel.
6 At the rear of the enclosure, fit the blanking plate in the appropriate position using two screws.
7 Update the Power Rating table.

Replacing a Module in a Live Environment

Grass Valley recommends that the mains connections are removed before performing the operations described above. However, in a live environment this may not be possible, so the modules are designed to be removed and installed without switching the power off.

> Note: It cannot be guaranteed that there will be no disturbance to the operation of other modules in the enclosure if a module is replaced without first powering down the enclosure.

Replacement of the Cooling Fan Assembly

The cooling fan assembly is located on the rear panel of the IQH4B enclosure, and can easily be replaced without removing the rack from its mounting position or removing any cable connections.

To replace the fan assembly:

1 Cut power to the unit by removing the IEC power cables.

2 Loosen the two retaining screws (they are captive so will not come all the way out).

Retaining screws
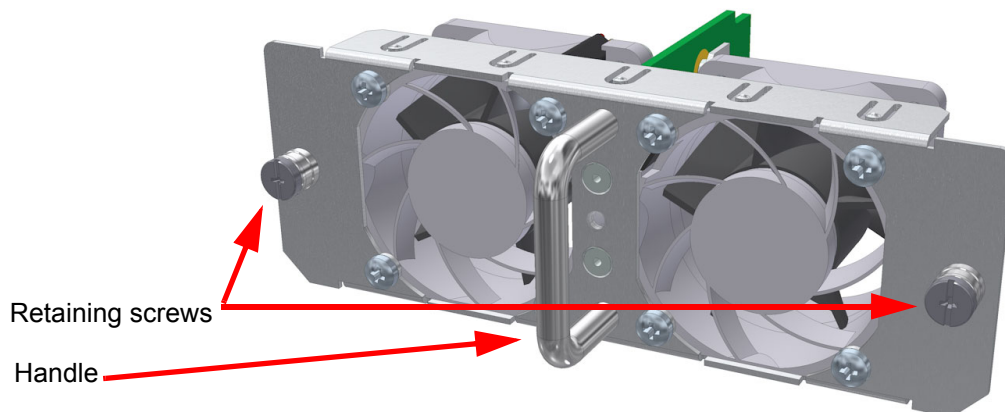
Handle

3 Holding the handle in the center of the fan assembly, carefully withdraw the fan assembly from the unit.

4 Slide the new fan assembly into the unit, ensuring that the power connector is mated securely.

5 Refit the retaining screws. It is recommended that the screws are not fully tightened initially. Instead, they should be alternately tightened in small increments so that the assembly goes in straight.

6 You can now refit the power cables to power up the enclosure.

Replacing a Fan Unit in a Live Environment

> Note: **This fan unit should only be serviced by trained personnel.**
> The fan unit can be replaced in a live environment by carefully following the steps below. **Caution is advised** - do not put hands or fingers inside the enclosure whilst replacing the fan unit.

1 Loosen the two retaining screws.

2 Carefully withdraw the fan unit assembly from the box.

3 Slide the new fan unit assembly into the box, ensuring that the power connector is mated securely.

4 Refit the retaining screws. It is recommended that the screws are not fully tightened initially. Instead, they should be alternately tightened in small increments so that the assembly goes in straight.

Control Panels

A mainframe and the modules that it contains may be controlled by the following methods:

- Control panels connected via the RollCall communications network.
- Computers connected via the RollCall communications network.
- SNMP managers connected via IP.
- Any combination of the above.

RollCall Communications System

RollCall remote control gives a uniquely powerful and flexible system that can be as simple as a single rack unit with control panel, or a powerful multi-master, multi-slave configuration with PC control and monitoring for full station automation.

The RollCall command protocol obtains control information from the IQ module being addressed. This unique feature ensures that module updates or additions will not require control system software upgrades - simply plug in and switch on.

When the unit (or module) is powered-up the module will normally assume the same set-up conditions that existed at the last power-down. This information is provided by non-volatile memory on the module. Some modules incorporate methods that allow other set-up conditions to exist on power-up; please consult the information specific to each module for details.

RollCall Network System Details

The IQ Modular system has a flexible and powerful remote control system. The units in the system are joined via a high-speed network. Each box enclosure is a node on the network. A single local area network can have a maximum of 255 nodes with any combination of control panels and modular rack boxes.

Network bridges can be used to connect each network to up to 15 others nested up to 4 levels, allowing tens of thousands of networks and millions of units to be joined together.

The IQH4B enclosure has various interface connections to the RollCall network:

- RollNet 75 Ohm coaxial BNC running at 2.5 Mbps. The IQH4B enclosure represents a 2-unit load.
- RollNet RS-485 9-way, D-type connector running at 2.5 Mbps.
- RS-422 or RS-232 port running at up to 115.2 kbps asynchronous.
- RJ45 Ethernet running at 10/100 Mbps.

The RS-422, RS-232 and RS-485 interfaces share the same D connector. Selection of the interface mode is made by two banks of DIP switches (SW1 and SW7) located at the rear of the Gateway card. SW1 is a bank of eight switches (SW1 1-8) and SW7 is a bank of four switches (SW7 1-4). The Gateway must be removed from the frame to alter the switch settings.

To select RS-232 mode, SW1 1-7 should be open (toggle up) and SW7 1-4 should be closed (toggle down). SW1 8 is irrelevant.

To select RS-422 mode, SW1 1-8 should be closed and SW7 1-4 should be open.

To select RS-485 mode, SW1 1-7 should be closed, and SW1 8 and SW7 1-4 should be open.

Mode	SW1 1-7	SW1 8	SW7 1-4
RS-232	OPEN	-----	CLOSED
RS-422	CLOSED	CLOSED	OPEN
RS-485	CLOSED	OPEN	OPEN

Gateways ship with a default setting of **RS-232**.

RollNet 75 Ohm Coaxial Interface

This interface allows connections of units to a single section of 75 Ohm video cable. Each unit is physically joined via a T or Y-piece connector. Each end of the section is terminated by a 75 Ohm resistor at each end of the cable. The data rate on this interface is 2.5 Mbps. Each section of cable can be up to 400 m.

Example configuration:
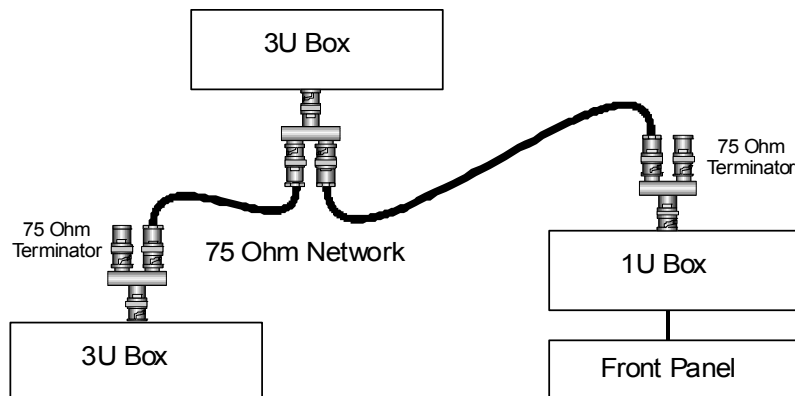
RollNet RS-485 Differential Interface

Sections of the coaxial network can be joined using the RS-485 bus. The RS-485 connections are limited to shorter distances but are multi-drop allowing a rich combination of network configurations. The combined total number of units across the coaxial network and the RS-485 bus is still 255 nodes and the total network length can be up to 1500m.
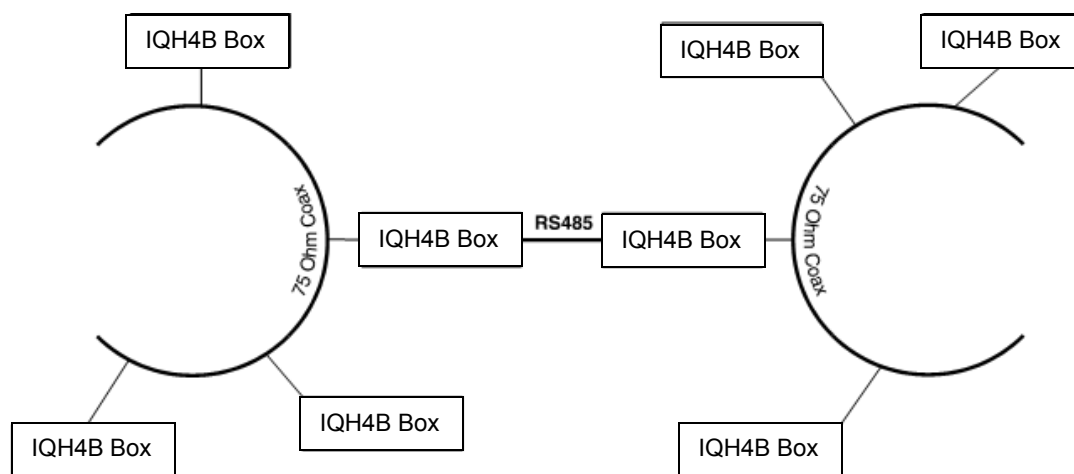
The maximum number of hub transitions between any number of nodes on a single local area network is 4.

RS-422 or RS-232 Asynchronous Interface

This interface allows a PC running RollCall control software to be connected to the RollCall network without a RollNet interface card. The PC is connected via an RS-232 or RS-422 serial port (often known as a COM port).

RS-422 allows longer cable runs and offers better immunity to electrical noise, but usually requires an RS-422 to RS-232 converter to connect to a PC (some specialist control PCs support RS-422 directly). RS-232 allows direct connection to a standard PC serial (COM port), but only supports shorter cable runs of up to 4 meters.

Example configuration:
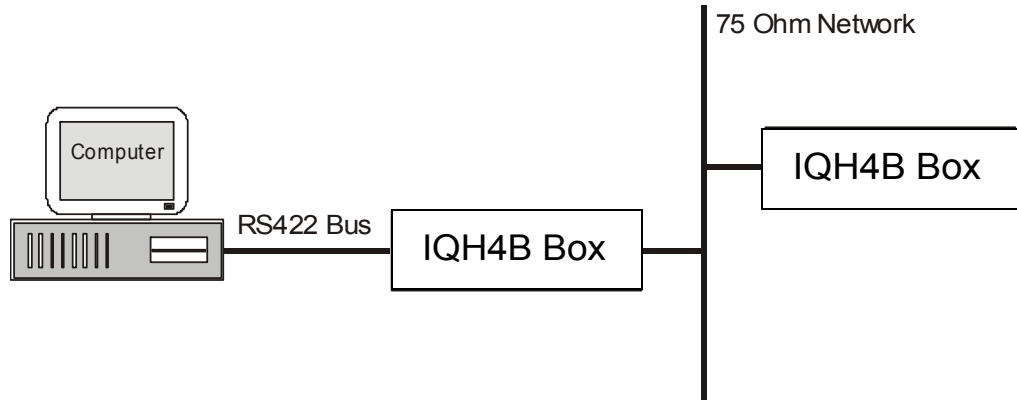
A serial device attached to a single IQ rack has access to all devices on the RollCall network.

The serial port can also be used for third party connections to the system. This allows PCs or any other serial device access to any of the units within the system. Please consult Grass Valley for details of the port binary protocol.

The serial port supports speeds up to 115.2 kbps. The RollCall PC software is limited to 57.6 kbps.

Ethernet Connection

This interface allows the IQH4B enclosure to be connected to a 10/100base T Ethernet network. PCs can then connect to the enclosure via TCP/IP.

An Ethernet device connected to a single IQ rack has access to all devices on the RollCall network. This interface can be used to connect a PC running the RollCall software.
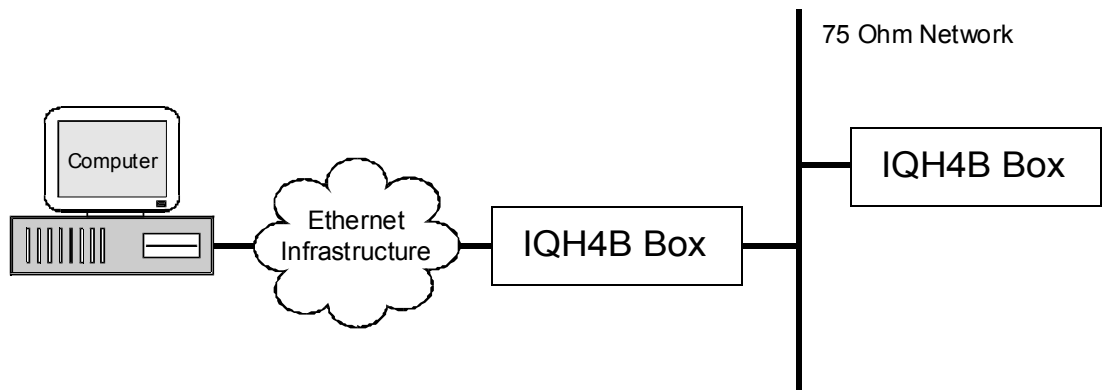
A PC can control multiple RollCall networks by connecting via RollProxy.
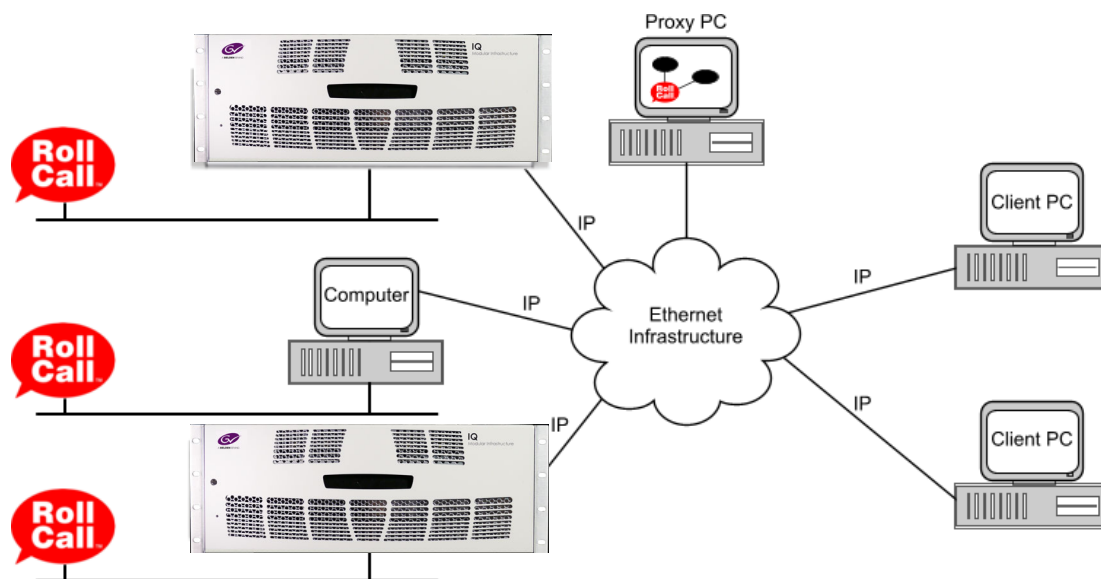
Configuring IP Parameters

You must configure the Gateways IP parameters before you can connect to the Gateway using IP over Ethernet. To do this you must establish a connection to the Gateway using a different communications interface.

In each case you need a PC with the RollCall control software installed. You can connect the PC to the Gateway in one of three ways:

- RollNet
- Serial
- IP Crossover Cable

RollNet
If the PC is connected to an existing RollNet network, you can set the Gateway to an unused unit address, add it to the RollNet network and connect to it via RollNet.

Serial
You can connect any PC with an RS-232 serial (COM) port to the Gateway. By default the Gateway ships configured for RS-232 at 38400 baud. Connect the PC COM to the 9-way D-type labeled "Remote" on the rear of the IQH4B enclosure. In the RollCall control window on the PC, go to the Ethernet setup page.

Select Serial Port, select the correct COM port and set the Baud rate to 38400. You should now be able to connect to the Gateway.

The following PC parameters must be configured:

- IP address
- Subnet mask
- Default IP Gateway

Consult your IT department for advice on how these should be set.

When these parameters have been set, go to the Ethernet setup page in the RollCall control window on the PC. Select IP Server and set the IP address to that specified by your IT department. You should now be able to connect to the Gateway.

Detailed Configuration Steps
1 On PC change the TCP/IP LAN Properties to 192.168.151.2 (.1 is the IP address of the gateway) Take note of default TCP/IP address to restore afterwards.
2 Set control panel connection **Build Network** to 192.168.151.1.
3 Open the RollCall control panel and template for Gateway, and go to the Ethernet page.

4 Set all Ethernet parameters (address, subnet/gateway), then click **Take IP Address Changes**.

5 Reconfigure the PC's TCP/IP LAN configuration to its original properties.

6 Connection to the gateway's IP may be tested only if PC and gateway have valid routing to allow this. If so, set the **Build Network** control panel to point to the gateway's new IP address.

Simple Network Management Protocol (SNMP)

The Gateway can run an SNMP agent which allows direct control of both its own controls and those of modules within the chassis. Unlike a RollCall IP connection, an SNMP connection is for this IQH4B box only. If you wish to control other enclosures, each must be connected via Ethernet and controlled by SNMP individually.

SNMP also provides logging information. Log messages, similar to those sent to a RollCall log server, can be sent to up to 8 separate destinations (SNMP trap destinations).

By default, the SNMP agent is disabled. A set of MIB modules have been created that map controls for each card type and provide other mappings. These are required in the SNMP manager operation.

At a minimum, to control the gateway, you need the following MIBs:

SNELL-WILCOX-SMI.MIB

SNELL-WILCOX-TC.MIB

SNELL-WILCOX-PRODUCT-REG.MIB (Id for each card type)

SNELL-WILCOX-UNIT.MIB

SNELL-WILCOX-GATEWAY-LOGGING.MIB (card and Gateway logging tables)

SNELL-IQH3A-CMD-MIB.MIB (Gateway controls)

SNELL-WILCOX-MODULAR-GATEWAY.MIB (required if legacy SNMP support is enabled).

This is a hierarchical MIB structure and must be compiled in order if your SNMP manager does not support conditional compilation.

To control modules within a chassis you would also need the MIB for that card type:

SNELL-cardIdName-CMD-MIB.MIB

where cardIdName could be IQCBRG for a Bridge card or IQDMSDA, or other card names etc.

MIBs are available from the Grass Valley website:

Legacy MIBs (required): ftp://ftp.snellwilcox.com/RollCall/SNMP_MIBs/ Legacy_IQ_Modular_MIBs/

Modular (as required): ftp://ftp.snellwilcox.com/RollCall/SNMP_MIBs/IQ_Modular_MIBs/

The SNMP logging solution provides a current log of all log headers and fields for all cards within a chassis, and a separate table for the Gateway logs. Details of the log header and field values are available at the bottom of each MIB for each individual card type.

> Note: Enabling SNMP makes certain older modules inaccessible at non-Supervisor levels, and thus prevents certain module-specific PC tools from working correctly. The work-around is to temporarily disable the SNMP agent whilst using these tools. Alternately switch off control of the individual module. This is available on the **SNMP** page of the control template.

IP Bridging

The Gateway supports RollCall bridging over IP. This allows two IQ Gateways to be connected via IP so they can pass RollCall messages between networks.

To establish a RollCall bridge:

- The Gateways must be visible to each other via IP.
- Both Gateways must be set to RollNet addresses in the range 0x01-0x0F.
- At least one Gateway must be configured via the **Bridge IP Addr** control to connect to the other's IP address.
- The bridge must be initiated by one Gateway via the **Connect** or **Auto Connect** controls.
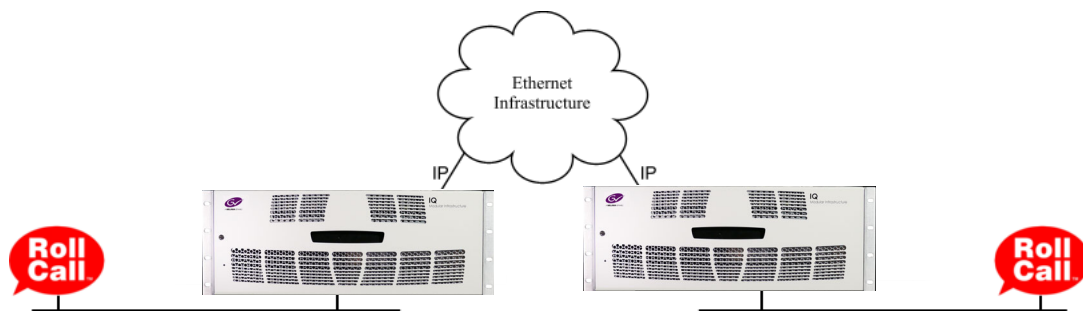
Configuring IP Bridging

An IP bridge requires two Gateways, both connected to the IP infrastructure and set to RollCall addresses in the range 0x01-0x0F. An example configuration might be:

Gateway 1	Gateway 2
Ethernet -> Unit IP Address	Ethernet -> Unit IP Address

It is recommended that **Only Accept This Address** is checked at both ends to prevent other Gateways from establishing bridge connections, and that **Connect Automatically** is also checked at both ends, so the bridge is re-connected if it should become disconnected for any reason.

Operation

This section of the manual assumes that the IQH4B Enclosure has been installed in accordance with the instructions given in Chapter 3. It describes operation of the unit by means of the RollCall Control Panel application.

To fully conform with EMC and Safety standards, modules must be correctly installed in the enclosure. Prior to connection of power, the user should check the following items:

- The rear of the enclosure must have a full complement of rear panels. Any vacant slots must have a blank rear panel fitted.
- All enclosure covers and rear panels must be fitted and screwed down using all available fixing holes.
- The enclosure front panel must be in the closed position, with the turnbuckles and screws fastened.

Unit Status

This area of the template displays abbreviated information about the current status of the unit.

```
Unit Status                          Unit Status Key Information
                                     TEMP: 1:Inlet Temperature
  PSU: L-OK    R-FAIL                TEMP: 2-3-4 :Outlet Fan Temperature
  TEMP:  30  28-29-32                FAN: 1-6 Outlet Fan Speed  7-10 PSU fan
   FAN: NNNNNN NN--                  FAN: N:Normal  W:Warn Max  S:Stopped
```

Line 1

This shows the status of the power supplies. Valid values are:

- **OK** - PSU present and working.
- **Fail** - PSU faulty or not fitted.

Line 2

This shows the inlet and exhaust temperatures of the enclosure in Celsius.

Normally this would show something like:

> TEMP: 30 28-29-32

Where the first value is the inlet temperature and the second, third and fourth are the exhaust temperatures of each exhaust fan unit.

Line 3

This line shows the status of both the 6 cooling fans located at the rear of the unit and the 4 cooling fans in the PSUs.

It displays the status and the programmed speed (set according to the current ambient temperature) and would normally show:

Message	Description
FAN: OK(NORMAL)	Fan is operating OK and cooling correctly.

Error conditions would be shown as below:

Message	Description
FAN: WARN(MAX)	Fan is running at maximum speed.
FAN: STOPPED	Fan has stopped or unit not fitted.

Setup

The **Setup** page enables various system functions to be configured.

Unit Name

This field allows the unit to be given a meaningful name. To enter/modify the name of the unit, type directly into the editable text field and click **S**. To return to the default name, click **P**.

Serial Number

Displays the serial number of the unit.

Hardware Version

Displays the version number of the hardware used in the Gateway module.

Enclosure

Displays the enclosure type that the Gateway is fitted to.

Software Version

Displays the software version installed.

Build Number

Displays the software build number of the unit.

Loader Version

Displays the version of the Gateway software loader. The loader operates at start-up only, validating all Gateway files before the main application runs.

Java Applet Version

Displays the presence and version of the Java Control Applet.

Menu Caches (Module)

The Gateway caches module menu sets locally to improve menu upload speeds. In rare circumstances this may cause problems. If problems with module menu uploads are encountered, the menu caches can be cleared or caching disabled.

- **Format Now!:** This deletes the existing module menu caches. The caches will be recreated when the next menu client connects.
- **Enable:** Select this box to enable the menu cache function.

Start Time

Displays the start time for the unit.

Misc Information 1/2

These information fields may be edited to specify any information desired. For example, these could be used to add further information on the Gateway Card (rack position/building/group). 2 fields are available, allowing a maximum of 2 * 19 characters displayed. If these fields have edited values then a corresponding log field is raised.

Log field: INFORMATION1= and INFORMATION2=.

HTTP Server

To enable increased security of control, either the http server may be disabled, to prevent access to the Java Applet control panel or Homepage, or the port number for http access may be changed.

A check mark in the **Enable Web Svr** box will enable the web server control function. By default, this option is enabled. Click to remove the check mark and disable this function. To enter/modify the port number, type a new number in the editable field and click **S**. To return to the default port number, click **P**.

After changing the port number, you must restart the web server by disabling then enabling the **Enable Web Svr** check box.

Module Upgrades

These controls temporarily suppress backplane logging and thumbnailing. They are only used by RollMechanic and the Control Panel, and do not need to be changed by the user.

- **Reset Timer:** Resets the timer. Used when upgrading a module.
- **Enable:** Check this box to enable the upgrade function.

Power Usage

This displays the maximum (**MAX:**) allowable power available for modules.

- **IQH4B**: 700 Load Units

For example, MAX: 700LU

This field also displays the current power usage (**USED:**); the current total of all fitted modules' power ratings. Values are preceded by **OK** if within the maximum, or **WARN** if the maximum is currently exceeded.

For example, USED: OK:71LU   or USED: WARN:705LU

Usage values per slot are available for viewing on the **Slots** pages (beginning on).

Setup

This group enables control of setup functions.

- **Net Show:** This function allows a unit to be hidden from the network system. When netshow is active, the unit broadcasts its presence.

  > Note: If the unit address is changed, Netshow will automatically be turned on.

- **Allow Blind Control:** If the Gateway is to be controlled by Blind Control, **Allow Blind Control** must be enabled. If Blind Control is not used then **Allow Blind Control** may be disabled, giving protection against incorrectly set-up RollTrack sources.

  > Note: If upgrading the Gateway software, Blind Control must be enabled.

- **Where Am I?:** This allows the enclosure to be physically located in a large system. When this function is selected, the LED indicator on the front panel of the enclosure will flash red and green.

Serial Port Setup

Speed

This group allows the serial port to be configured.

The baud rate can be set between 2400 and 115200 baud. The default speed for all RollCall serial connections is 38400 bps.

> Note: The RollCall PC software supports speeds up to 57600 baud only.

Pass WAN Packets

- **SP_IAM**: This controls whether the Gateway passes wide area I_AM packets from the serial port to the RollCall Network. Normally this is enabled to allow PCs attached to the serial port to be located by other units, but it may be disabled if you wish to control the flow of I_AM packets through a system.

- **SP_TIME:** This controls whether the Gateway passes wide area TIME packets from the serial port to the RollCall Network. Normally this is enabled to allow PCs attached to the serial port to be time servers, but it may be disabled if you wish to control the flow of TIME packets through a system.

> Note: The Gateway will always use the received time stamp, whether it passes it on or not (but see Only Accept Time from Log Server, on page 57).

Port Mode

Shows the current operating mode of the serial port (RS-422, RS-232 or RS-485).

Report if PSUs Missing

When these boxes are checked it will allow a missing PSU report to be displayed in the **Unit Status** area (see section) and logged.

If for some reason one of the power supplies is removed, a warning will be displayed, indicating which power supply is missing.

> Note: If a PSU is fitted but fails or is unplugged, a warning message will always be generated.

Fan Speed Override

In normal operation the cooling fan speed is controlled by reported temperature measurements from the installed modules. The module reporting the highest temperature reading will drive the fan speed to achieve the desired range of cooling selected by the fan working temperature range control. This can be overridden if required using the Low, Medium and High fixed fan speed controls. Options are:

- **Auto**: Uses the reported temperature from installed modules. If no temperature information is available, it will default to the min fan speed setting.
- **Low**: 5000 RPM
- **Medium**: 12000 RPM
- **High**:22000 RPM

FAN: Working Temp Range

- **Min:** 47C - 53C
- **Max:** 82C - 88C
- **Preset:** 67C - 73C

FAN: Minimum Fan Speed

Use the slider to set the lowest permissible fan speed.

- **Min:** 2000 RPM
- **Max:** 16000 RPM
- **Preset:** 5000 RPM

Long File Packets

Check box to allow long file packet transfer on gateway. File packets changed between 227 bytes and 408. Leave disabled (short) unless advised otherwise by Grass Valley tech support.

Board Information

Displays basic technical information for the enclosure. You may be asked for these details by Grass Valley tech support.

Restart Unit

Click to power cycle the enclosure.

Ethernet

The **Ethernet** page enables networking functions to be configured.
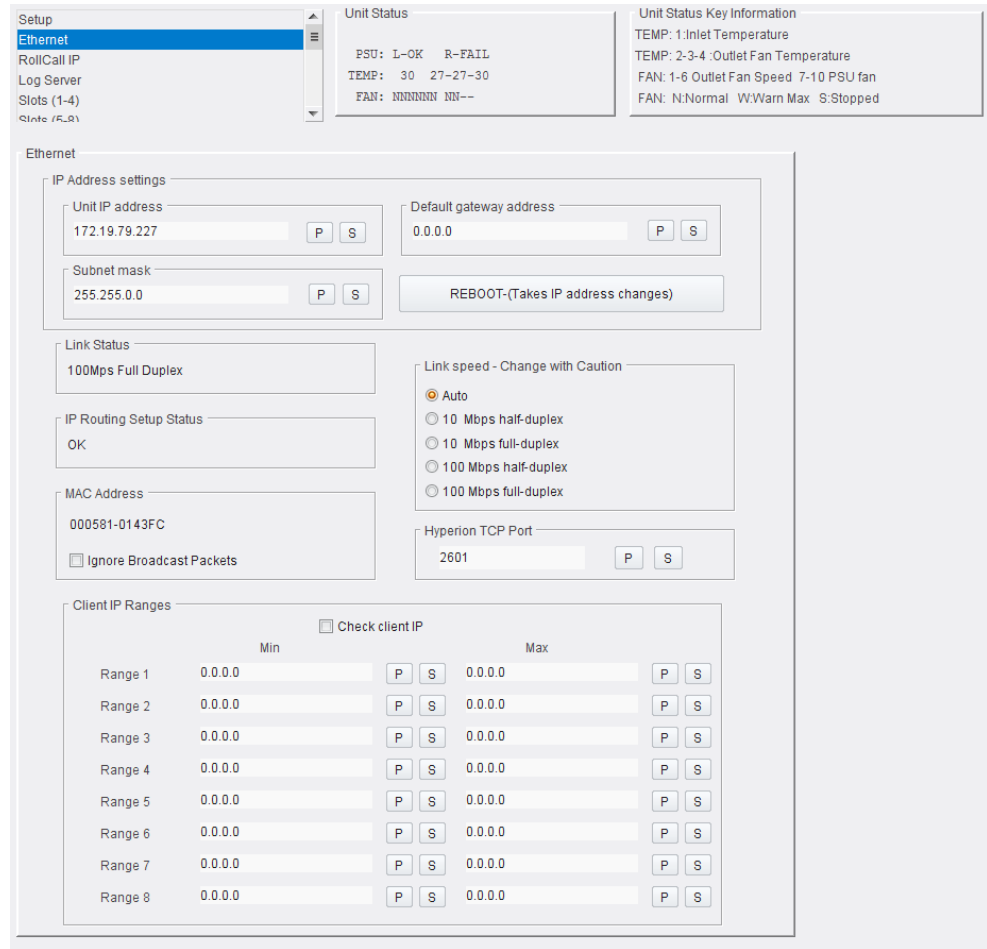
> Note: Altering any of these settings while connected to the Gateway via IP may result in the connection being lost. If the new values are incorrect, it may not be possible to reestablish the connection via IP, and a connection via RollNet or the serial port will have to be made to correct the settings.
>
> The network administrator should be able to give the correct settings for these controls.

Unit IP Address/Subnet mask/Default Gateway Address

The IQ Gateway ships with the following default settings:
- **IP address**: 192.168.151.1
- **Subnet mask**: 255.255.0.0
- **Default IP Gateway**: 0.0.0.0.

REBOOT-(Takes IP Address Changes)

After making changes to any of the **IP Address settings**, click **REBOOT** to apply the new values.

Link Status

This shows the current status of the Ethernet link. It will report either **No Link** or the current link speed.

IP Routing Setup Status

This will display the status of the IP routing. It could show:

- **FAIL:** IP Address, Subnet Mask and Default Gateway IP Address are not compatible with each other.
- **OK:** IP Address, Subnet Mask and Default gateway are compatible.

Link Speed

The link type and speed may be selected from these items. **Auto** is the default setting.

The alternative manual settings may be used if the switch does not support auto selection.

MAC Address

Displays the MAC address, a globally unique number identifying an Ethernet-equipped device.

> Note: 000581 is the Grass Valley OUI number.
> **Ignore Broadcast Packets** should only be checked if it is possible to resolve IP address to MAC addresses without using the ARP protocol. Refer to the *RollCall System Integrators Manual*.

Hyperion TCP Port

The Gateway will accept Hyperion Thumbnail connections on this port number. The default is **2601**.

Thumbnailing is a Hyperion monitoring feature, allowing the viewing of thumbnail image streams, sourced from modules within the enclosure, to a remote PC.

Check Client IP

When selected, only clients from any of the address ranges listed below will be allowed to control this unit.

Client IP Ranges

This item allows the permitted Client IP address to be entered.

The Gateway can be configured with one or more IP client ranges. Each range is specified by a minimum and maximum pair of IP addresses. If **Check Client IP** is enabled then only connections from clients with IP addresses in one of these ranges will be accepted. To specify a single IP address, set a minimum and maximum pair to the same address. Ranges where Min or Max are set to 0.0.0.0 are ignored.

> Note: If **Check Client IP** is enabled but no IP ranges are set, no IP connections will be accepted.

Altering these items affects new connections only; existing IP connections will not be disconnected. This is to prevent errors breaking the connection being used to make the changes.

RollCall IP

The **RollCall IP** page reports various statistics about IP share connections and allows configuration of the IP Bridge function.

Enable Stats

If the **Enable Stats** box is checked then the various packet counters will be constantly updated.

While Update Packet Stats is disabled these will display a dash (-).

Reset Counts

When the **Reset Counts** button is clicked, all of the packet counters are reset to zero.

IP Share Port

- **Full Network:** The Gateway will accept IP Share connections on this IP port number. The default is 2050. To enter/modify the full network port number, enter the new number in the editable field and click **S**. To restore the default value, click **P**.

- **Local Chassis:** This port offers a restricted MAP service, only showing itself. It is used primarily in complex RollProxy configurations. To enter/modify the local chassis port number, enter the new number in the editable field and click **S**. To restore the default value, click **P**.

Pass WAN Packets

- **SP_IAM:** If this check box is checked then the Gateway will pass wide area I AM messages received on IP share links to the RollNet network, and over the IP bridge (if connected).

    Note: Pass I_AM (Bridge) overrides both Pass I_AM (Serial) and Pass I_AM (IP). So if Pass I_AM (Bridge) is set I AM messages will be passed over the bridge, irrespective of how the other controls are set.

- **SP_TIME:** If this check box is checked then the Gateway will pass wide area TIME messages received on IP share links to the RollNet network, and over the IP bridge (if connected).

    Note: The Gateway will always use the received time stamp, whether it passes it on or not (but see Only Accept Time from Log Server, on page 57).

RollCall IP Connections

This displays information about IP connections to the Gateway from IP Share or IP Proxy. The information displayed refers to a single connection. The connection to display is selected with the **Show Connection** slider.

- **IP Address:** This shows the IP address of the remote unit on this IP connection.
- **TCP Port:** This shows the incoming TCP port number of the RollCall IP share connection.
- **Port Name:** This shows the name under which this IP connection appears.
- **Port Number:** This shows which RollCall port on the Gateway this IP connection corresponds to.
- **Start Time:** This shows the time at which this IP connection was started.
- **Sent Time?:** This shows if the remote unit on this IP connection has ever sent us a TIME packet.
- **Packets Received:** This shows how many packets have been received on this IP connection.
- **Packets Sent:** This shows how many packets have been transmitted on this IP connection.
- **Full Network:** This shows which IP port a connection has come in from. Yes indicates that the connection is on the Full Network port, no indicates that the connection is on the Local chassis port.
- **Show Connection:** Selects the IP connection that the Gateway should show statistics for.

RollCall IP History

The Gateway may reject IP connections if they do not match the client address set or if the limit on IP connections has been reached.

- **Last Rejected Client:** This shows the IP address of the last client that the Gateway rejected.
- **Reject Count:** This shows the number of attempted IP connections that this Gateway has rejected.
- **Last Closed Client:** IP address of the last client (bridge or other) to close their connection to gateway.
- **Closed Count:** This shows how many IP connections have been closed. The count includes connections that have been closed by the Gateway and by the remote client.

RollCall IP Bridging

This menu controls the IP half bridge function of the Gateway.

- **Primary Connection:** This controls the primary IP address of the remote half of the IP bridge. This is the address that the Gateway will connect to when it establishes a bridge. The Gateway will accept bridge connections from other IP addresses unless the **Only This Addr(s)** checkbox is set.

- **Secondary Connection**: This controls the secondary IP address of the remote half of the IP bridge. This is the address that the Gateway will connect to when it establishes a bridge. The Gateway will accept bridge connections from other IP addresses unless the **Only This Addr(s)** checkbox is set.

- **Priority Primary/None**: This control only available when **Alternate IP Enable** is selected. When **Priority Primary/None** is selected the primary connection address will have priority over the secondary address. This ensures that the primary address is used when it is available. If the primary connection is not available the secondary connection address will be used.

- **Alternate IP Enable**: Select to allow both the primary and secondary IP addresses to be used. When selected **Only Accept This Addr(s)** is also automatically selected.

- **Only Accept This Addr(s)**: This controls whether addresses other than the primary and secondary can be used. When selected the Gateway will only accept bridge connections from the primary and secondary connection addresses. Automatically selected if **Alternate IP Enable** is selected.

- **Hide network (Control only):** This control allows the remote network to be hidden from browsers. All other network traffic is allowed through the bridge.
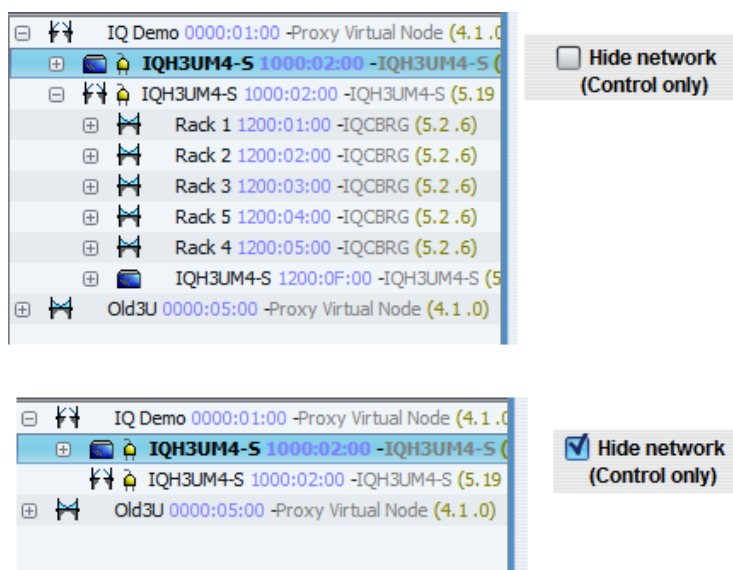
This feature is useful where 2 separate networks are linked with an IP Bridge (for control purposes, e.g. Rollpod), but the networks are connected to client PCs using IP Proxy.

- **Bridge IP Port:** This controls the IP port used for bridge connections. It controls both the port that the Gateway will accept connections on, and the port the Gateway will attempt to connect to if it tries to establish a bridge.

- **Pass WAN packets**: SP_IAM: If this check box is enabled, then the Gateway will pass wide area I AM messages received over the IP Bridge to the RollNet network.

> Note: Pass I_AM (Bridge) overrides both Pass I_AM (Serial) and Pass I_AM (IP). So if Pass I_AM (Bridge) is set I AM messages will be passed over the bridge, irrespective of how the other controls are set.

- **SP_TIME:** If this check box is checked then the Gateway will pass wide area TIME messages received over the IP bridge to the RollNet network.

> Note: The Gateway will always use the received time stamp, whether it passes it on or not.

- **Remote IP Address:** This shows the IP address of the remote end of the IP Bridge (when connected).
- **Started By:** This shows who initiated the bridge connection. If this unit established the connection it will show **Local**, and if the remote unit established the connection it will show **Remote**.
- **Start Time:** This shows the time at which the bridge connection was established.
- **Packets Received:** This shows the number of packets received over the IP Bridge.
- **Packets Sent:** This shows the number of packets transmitted over the IP Bridge.
- **Connect:** This will cause the Gateway to attempt to connect the IP Bridge using the IP address and port details specified.
- **Disconnect:** This will cause the Gateway to disconnect the IP Bridge. If either end of the IP Bridge is set to auto-connect (see below), then the bridge will be re-established immediately.
- **Connect Automatically:** When enabled, if the connection fails or is manually disconnected, this will cause the Gateway to automatically attempt to establish a bridge connection at system start-up.
- **Active Bridge Logging:** When enabled, this function changes the logging state of log field **IP_BRIDGE_STATUS** to **OK** or **FAIL** instead of **INFO**.

IP_BRIDGE_STATUS	Active Logging	Inactive Logging
Connected	OK:Active	INFO:Active
Disconnected	FAIL:Inactive	INFO:Inactive

Log Server

The **Log Server** page allows the logging server to be configured.

Log Server

The log server to be used can be named by editing the text string in the text window. To enter/modify the name of the log server, enter the new name in the text field and click **S**. To restore the default value, click **P**.

Logging Disabled

If this item is selected, the logging function will be disabled.

Named Log Server

If this item is selected, logging information will only be sent to the server named in the **Log Server** field.

Any Log Server

If this item is selected, logging information will be sent to any logger attached to the system.

If there is only one log server on the system, this option should be chosen.

Using

Displays the name and RollCall address of the current log server. If the Gateway does not have a log server, this will show **No Active Logger**.

Accept Log Server via RollNet

If this is selected, the Gateway will accept server packets via the RollNet port.

Accept Log Server via Serial

If this is selected, the Gateway will accept server packets via the serial port.

Accept Log Server via IP

If this is selected, the Gateway will accept server packets via the IP port.

Accept Log Server via Bridge

If this is selected, the Gateway will accept server packets via the bridge.

Last Time Source

Displays the address from which the last time packet was received. This can be useful when configuring complex networks.

Only Accept Time from Log Server

If this is selected, the Gateway will use time packets from the current log server only. This can be useful when configuring complex networks.

Slots 1-4, 5-8, 9-12, 13-16, 17-20

The **Slots** pages allow each slot to be named and interrogated.
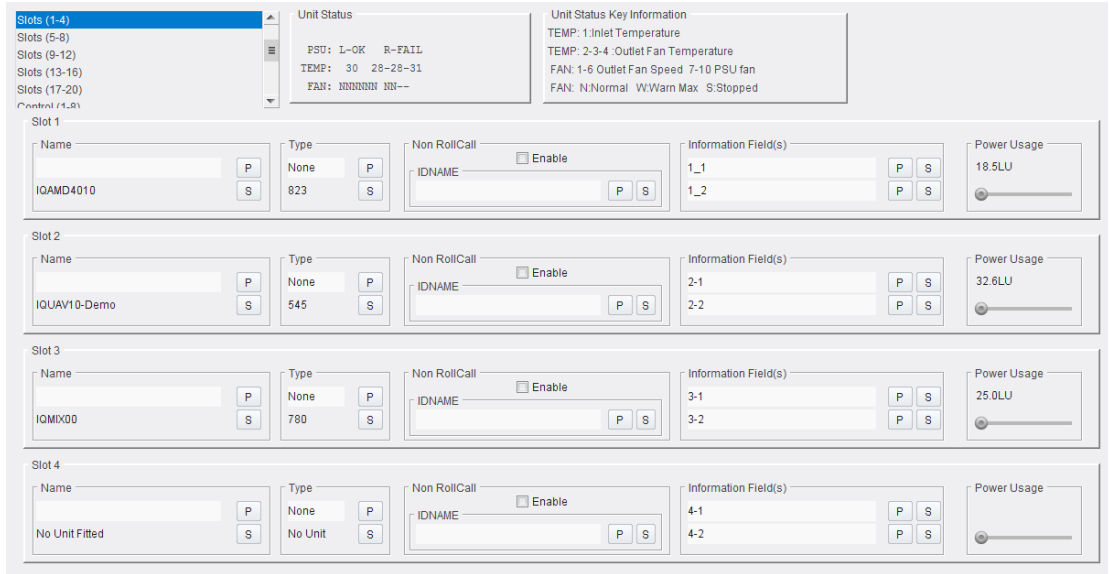
Name

The **Name** section displays the name and type of module fitted in the enclosure slot. See Examples of Slot Use on page 61 for more information.
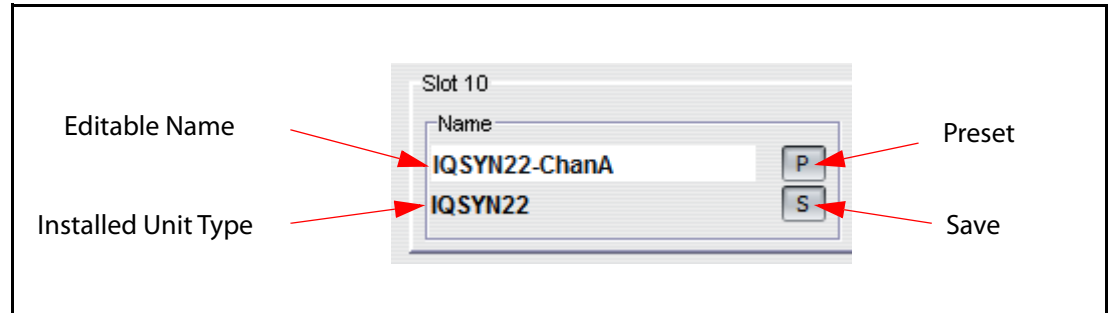
The following controls are provided:

- **Editable Name:** This enables a slot to be given a user name, e.g. **IQSYN22-ChanA**, and so long as the correct card stays in that slot this name will be used, as defined by matching **Installed Unit ID** and **Bound Type ID** (see section).

  However, if the card is replaced with an incorrect type, e.g. a serial interface, the card will appear by its type name, e.g. IQCSPI, although the values in this edit box will remain the same. When this entry is edited, the current **Installed Unit ID** is copied to the **Bound Type ID**.

  To enter/modify the unit name, type a new name in the editable field and click **S**. To return to the default name, click **P**.

- **Installed Unit Type:** This shows the type of the module fitted in the slot, e.g. **IQSYN22**. If no module is in the slot, **No Unit Fitted** is displayed. If an incompatible module is fitted into a slot, **NOT RollCall 3!** is displayed.

Type

This displays the unique identifier of the module fitted in the slot. See Examples of Slot Use on page 61 for more information.
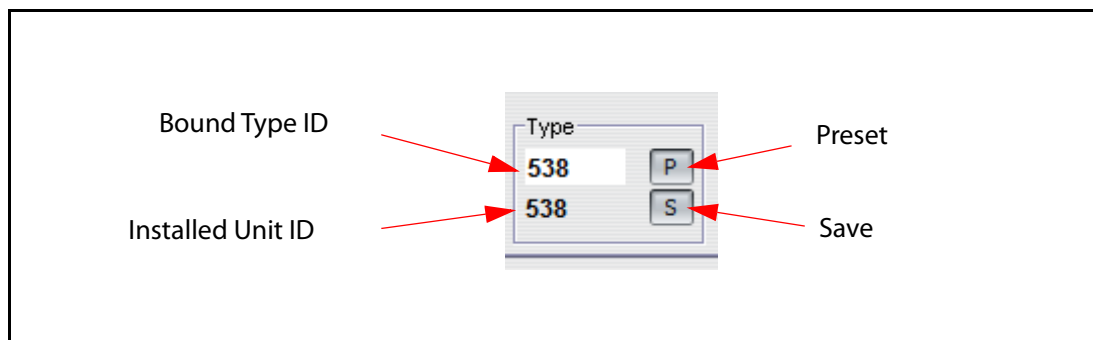
The following controls are provided:

- **Bound Type ID:** This allows the slot to be associated with a particular type of module (e.g. an encoder type 284). If a module matching this type ID is fitted, the Gateway will use the user-defined name. If an incorrect card type is installed in the slot, the RollCall ID will not be correct and the actual card type will be displayed in the module browser. The names and types may be set up before the installation of the modules. Edit the **Bound Type ID** after editing the **Editable Name**.

  To enter/modify the **Bound Type ID**, type a new number in the editable field and click **S**. To return to the default number, click **P**.

- **Installed Unit ID:** This displays the identifier of the module fitted in the slot position.

Non-RollCall

This allows a non-RollCall card occupying a slot to be identified. See Examples of Slot Use on page 61 for more information.
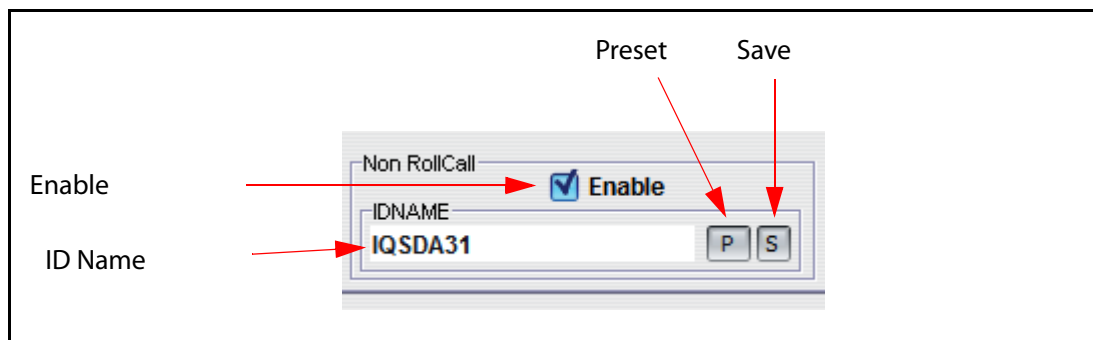
Passive units can be given a name, indicating to RollMap that a card exists.

- **Enable:** Select this option to indicate that a non-RollCall card is in the slot. When this option is selected, the installed unit type of the passive card appears as **NOT RollCall 3!**, and the installed unit ID appears as **65535**.

  Note: If there is a RollCall-responsive card in the slot, selecting this option has no effect.

- **IDNAME:** This field allows an IDNAME log field to be associated with logs from a non-RollCall card. To enter/modify the Non RollCall ID name, type a new name in the editable field and click **S**. To return to the default name, click **P**.

Information Field(s)

Information fields that may be edited by user to specify any information desired. See Examples of Slot Use on page 61 for more information.
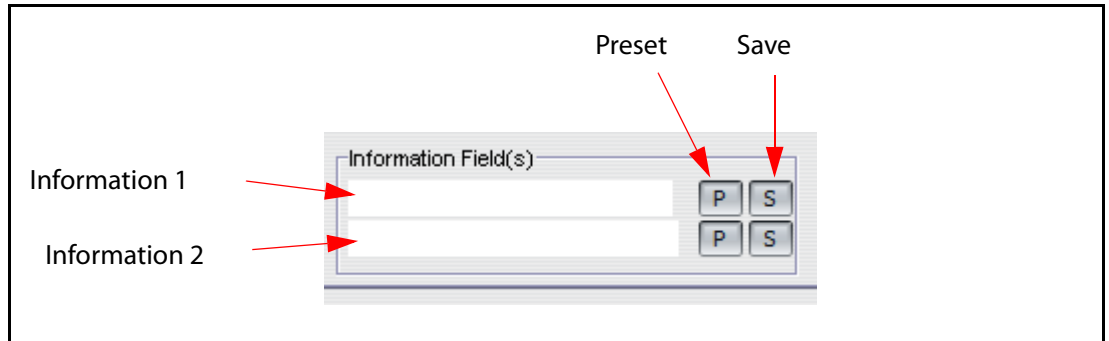
For example, these could be used to name signal paths associated per card. 2 fields are available allowing a maximum of 2 * 19 characters to be displayed.

If these fields have edited values then a corresponding log field is raised per slot.

Log field: INFORMATION1= and INFORMATION2=.

Power Usage

This displays the power usage of the unit fitted in the slot. See Examples of Slot Use on page 61 for more information.
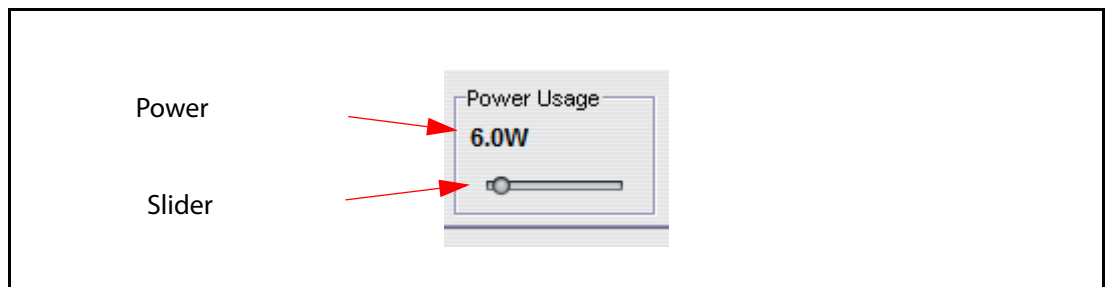
When a card powers up in a slot, its rated power is automatically displayed in the **Power Usage** section.

If a module's ID is not recognized, the power usage will indicate **??**. If this occurs, contact Grass Valley customer service to obtain the correct power usage value.

Some IQ Modular cards do not appear in the port listing (eg SDA31/33). In this case, the **Non-Rollcall Enable** check box should be enabled, and the type added in the **IDNAME** field.

The power usage reported may be updated if the unit logs to a **POWER_USAGE** log field.

Examples of Slot Use

Intentionally Empty Slot

If a slot is intentionally left empty, the **Installed Unit Name** field will show **No Unit Fitted** and the **Installed Unit ID** field will show **No Unit**.

The **Editable Name** field will be empty and the **Bound Type ID** window will display **None**.

In the absence of other modules, the Gateway does not log module status for this slot position.

Correct Module Fitted

If a module is fitted that matches the **Bound Type**, the **Editable Name** is used in the network browser.

In the absence of other modules, the Gateway will log module status as **OK**, and display **Module Status = OK** on the **Logging** page. The Gateway also logs **MSG=UNIT PRESENT** for the slot position.

Module Absent - Unit Bound

If a slot is intended to have a particular module fitted (as set by the **Bound Unit** function), but no module is installed, the **Installed Unit Name** field will display **No Unit Fitted** and the **Installed Unit ID** field will display **No Unit**. However, the **Editable Name** field will show the intended name and the **Bound Type ID** field will display the intended ID.

In the absence of other modules, the Gateway will log module status as **1 Module Missing**, and show **Module Status = 1 Module Missing** on the **Logging** page. The gateway also logs **MSG=UNIT LOST** for the slot position.

Module Fitted - No Bound Unit

If a module is fitted in a slot but no **Bound Type** is assigned to the slot, the generic type name for the module type will be displayed and the slot will appear in the network browser by its slot number and generic type.

In the absence of other modules, the Gateway will log module status as **1 Extra Module** and show **Module Status = 1 Extra Module** on the **Logging** page. The Gateway also logs **MSG=UNIT PRESENT** for the slot position.

Incorrect Module Fitted

If a module is fitted that does not match the **Bound Type**, the **Editable Name** will not be used and the generic type and slot number will appear in the network browser.

In the absence of other modules, the Gateway will log module status as **1 Wrong Module**, and show **Module Status = 1 Wrong Module** on the **Logging** page. The Gateway also logs **MSG=UNIT PRESENT** for the slot position.

Non-RollCall Module Fitted

If a card that is passive to RollCall is fitted in a slot, select the **Non-RollCall Enable** check box. The Gateway will simulate a RollCall compatible card in the relevant slot, and raise awareness to RollLog and RollMap. In the **IDNAME** field, enter a name for the unit so that it can be recognized.

For the module, the Gateway will log **MSG=NON ROLLCALLMODULE**, and **IDNAME=<user defined>**.

Control 1-8, 9-16, 17-20

The **Control** pages display information about the controllers for each slot.

Update Packet Stats

When the modules receive commands from control clients, the number of commands are counted. If the **Update Packet Stats** box is checked, the number of control packets from the currently-selected connected controller and from all connected controllers is shown to the right of the controller address. The number of blind control packets is shown to the right of the blind controller address.

If the **Update Packet Stats** box is unchecked, the packet counts will be replaced with dashes.

> Note: The packets are still counted while **Update Packet Stats** is disabled. When enabled, the Gateway will display current totals; they will not restart from zero.

Clear Packet Counts

When **Clear Packet Counts** is clicked, all packet counters will be reset to zero.

Slots 1 to 20

These sections display information about control clients.

Active Front Panels and RollCall PC programs use a RollCall connection to control a module.

RollTrack does not use a connection, it uses Blind Control. Blind Control is the ability to control a unit without a connection.

> Note: When SNMP is enabled, generally the first session displayed is the current SNMP session to that module.

- **Disconnect:** The **Disconnect** button will disconnect the currently displayed connected controller.
- **Name:** This shows the RollCall controller client name/per session. If SNMP is enabled, one of the session names corresponds to the name of the Gateway unit.
- **Connection:** This displays the address of the connected controllers. The **Show Session** control can be used to scroll through the connected controllers. If SNMP is enabled, then the Gateway itself will be shown as one of the controllers, usually the first controller. Packet counts from this controller, and from all connected controllers, are displayed to the right.
- **Blind:** This will display the address of last controller to send the module a blind control packet. Packet counts from blind controllers is shown to the right.
- **Allow Blind Control:** If the module is to be controlled by Blind Control (RollTrack and some third party remote control systems), the Allow Blind Control box must be checked. If Blind Control is not used, Allow Blind Control may be disabled, giving protection against incorrectly set-up RollTrack sources.
- **Single Session Only:** When this box is checked, only one connected controller is allowed to control the module at any one time.

Show Session

This controls which client is displayed by the other Control menu items. Click and drag the slider to increase or decrease the number of clients displayed.

Gateway Control

This **Gateway Control** page provides information about control clients connected to the gateway unit itself (not to modules inside the enclosure). Note if SNMP is enabled, one of the sessions is looped back to itself.

Control

- **Name:** This shows the RollCall controller client name/per session. Note if SNMP is enabled, one of the session names corresponds to the name of the gateway unit.
- **Address:** Remote address of Controller client.
- **Packet Count:** The number of control packets on session to remote client.
- **Connected Total:** The total number of control packets on all sessions. This includes previously closed client session counts. This value is cleared by clicking the **Clear Packet Count** button.
- **Show Session:** Drag the slider to browse different sessions. All sessions are indexed from 1, with no gaps in between. Click **P** to return to the default value.
- **Disconnect Session:** When this button is clicked, the current displayed session is disconnected.

Blind Control

Displays information on the last blind controller to the gateway.

- **Allow Blind Control:** If this box is enabled, blind control packets are accepted at the gateway.
- **Address:** Last known blind controller address. This value is cleared by clicking the **Clear Packet Count** button.
- **Packet Count:** The number of blind control packets since last cleared/reset.

Statistics Control

- **Update Packet Stats:** If ticked, packet counts updated each second on displayed session and blind controllers.
- **Clear Packet Counts:** Clears and resets connected and blind packet counts, resets last blind controller address.

SNMP (Simple Network Management Protocol)

The **SNMP** page enables configuration of the SNMP agent that operates within the Gateway card.

> Note: In order for the SNMP to operate, the Ethernet must have a physical connection available.

Enable SNMP

This enables or disables the Gateway SNMP functions.

> Note: Enabling SNMP makes certain older modules inaccessible at non-Supervisor levels, and thus prevents certain module-specific PC tools from working correctly. The workaround is to temporarily disable the SNMP agent whilst using these tools.

Enable Legacy SNMP

This enables the legacy SNMP function. This is provided for customers whose system relies on the SNMP implemented on earlier Gateway versions (V2.14.6). If you are an existing SNMP user, and want the Gateway to provide the same interface as previous versions, enable this check box.
Enabling this does not prevent operation of the full SNMP agent.

Read Community

Configures the SNMP read community value. Default value is "public".

MIB2 sysContact

Customer given name of person responsible for equipment.

MIB2 sysLocation

Customer given physical or logical location of system.

Write Community

Configures the SNMP write community value. Default value is "private".

MIB2 sysName

Name of system if applicable.

Read Write Port

TCP/IP port number (range:1-65535) used in all SET and GET SNMP operations.
Default is 161. The SNMP manager should match this value to operate correctly.

Note: Changing this value will restart the SNMP agent.

Resend All Traps

Resends all current traps/notifications for all occupied slots and Gateway card. If legacy operation is enabled, the associated traps are also sent.

Traps

The Gateway supports up to eight trap destinations. Each entry must be unique, unless IP trap address is set to 0.0.0.0. For each trap the user can configure:
 • **IP Address:** The IP address to which notifications (traps) are sent. This address should correspond to the IP address of the PC monitoring notifications.
 • **Port:** The connection port address used to send notifications. The target machine (IP address) should be configured to listen for notifications on this port. The SNMP default is 162, but other port numbers may be used.
 • **Community:** Trap Community string. This string is included within the SNMP trap message.
 • **Enable:** Enable this Trap destination. Trap dest 1 is always enabled when SNMP is enabled, so it has no enable control.

Slot Trap Enable

With SNMP enabled, these controls allow filtering of trap messages from individual slot positions, or even the Gateway. Trap sending is only available when control is enabled for the slot. See SNMP Control, below.

SNMP Control

These check boxes allow filtering of SNMP control to only the desired slots/gateway. If traps are required on a slot, control must also be enabled.

Logging 1

The **Logging 1** page shows the information made available via RollCall logging, and allows the user to specify which fields will be logged.

Each log field is shown on a separate line. Each has an enable check box, a descriptive name, the log field header and the current value.

The only exceptions are **Serial Number** and **Software Version**, which are always logged and therefore have no enable check box.

When the check box is checked, that field will be logged to the log server.

Gateway Control	Unit Status	Unit Status Key Information
SNMP		TEMP: 1:Inlet Temperature
Logging (1)	PSU: L-OK R-FAIL	TEMP: 2-3-4 :Outlet Fan Temperature
Logging (2)	TEMP: 30 28-28-31	FAN: 1-6 Outlet Fan Speed 7-10 PSU fan
Logging TEMP-FAN	FAN: NNNNNN NN--	FAN: N:Normal W:Warn Max S:Stopped
Statistics		

Logging Control(1)

	Description	Log Header	Current Value
	Serial Number	SN=	S55104703
	Software Version	VERSION=	5.34 .22
☐	Build Number	BUILD_NUMBER=	0228805540
☐	OS Version	OS_VERSION=	V115 Release
☐	Hardware Version	HARDWARE_VERSION=	RCIF3B2F
☐	Loader Version	LOADER_VERSION=	2.24 .9
☐	IP Address	IPADDRESS=	172.19.79.227
☐	Module Summary Status	MODULE_STATUS=	WARN:9 EXTRA MODULE
☐	No. Of Gateway Ctrl Sessions	SESSIONS=	1
☐	Gateway Last Modified	LAST_MODIFIED=	-
☐	Faults	FAULT=	OK:None
☐	PSU 1 Name	PSU_1_NAME=	Left PSU
☑	PSU 1 State	PSU_1_STATE=	OK
☐	PSU 2 Name	PSU_2_NAME=	Right PSU
☑	PSU 2 State	PSU_2_STATE=	FAIL
☐	Recon State	RECON_STATE=	OK
☐	Lan Port 1 Name	LAN_PORT_1_NAME=	FastEthernet0/1
☑	Lan Port 1 State	LAN_PORT_1_STATE=	Active
☐	Lan Port 1 Speed	LAN_PORT_1_SPEED=	100 Mbit/s Full Dup
☐	Lan Port 1 Last Change	LAN_PORT_1_LAST_CHANGE=	000:00:00:00
☐	Lan Port 1 Errors	LAN_PORT_1_ERRORS=	0 in total
☐	Lan Port 1 InTraffic	LAN_PORT_1_TRAFFIC_IN=	3.5 KBytes/sec
☐	Lan Port 1 OutTraffic	LAN_PORT_1_TRAFFIC_OUT=	0.3 KBytes/sec
☐	Ip Event	IP_EVENT=	172.19.77.117 CONNE
☑	Uptime	UPTIME=	000:03:55:00
☐	Restarted At	RESTARTED_AT=	2017-03-28T06:13:34

Field Name	Field Name Description	Valid Field Values	Usage Description
SN=	Serial Number	Serial Number	Format is standard S&W serial number consisting of character "S" followed by eight digits, e.g. "S12345678"
VERSION=	Software Version	Software Version Number	Eg. 5.18.18

Field Name	Field Name Description	Valid Field Values	Usage Description
BUILD_NUMBER=	Build Number	Text	For K_OS-based units, this is typically a ten-digit string, e.g. "0123456789". Future units may use a different format.
OS_VERSION=	OS Version	OS Name & Version	Format: "<OS String> <Version String>", e.g. "KOS V115"
HARDWARE_VERSION =	Hardware Version	Version Number	Format: "<PCB name>/<mod strike>", eg "RCIF3U2Y/2"
LOADER_VERSION=	Loader Version	Version Number	For example, 2.17 7.
IPADDRESS=	IP Address	WARN: None	No IP Address Specified
		WARN: Invalid Address	Invalid address, subnet or gateway value specified.
		Numeric IP Address	IP Address of unit in Ipv4 dotted decimal notation: xxx.xxx.xxx.xxx
MODULE_STATUS=	Module Status	OK	where 2 <= n <= 20
		1 EXTRA MODULE	Status of module type/per slot configuration matching or Modules mismatched/missing
		n EXTRA MODULES	
		1 MODULE MISSING	
		n MODULES MISSING	
		1 WRONG TYPE	
		n WRONG TYPES	
SESSIONS=	Control Sessions	Number	0….n – No. of connected CONTROL sessions
LAST_MODIFIED=	Last Modified	UTC Timestamp	The time a control was last modified on a unit. Format: as per ISO 8601 for Coordinated Universal Time (UTC), i.e. YYYY-MM-DDTHH:MM:SSZ, where the trailing "Z" indicates UTC rather than local time.

Field Name	Field Name Description	Valid Field Values	Usage Description
FAULT=	Internal fault status of unit	NONE FAIL: <fault description>	This field is used to report internal hardware or software faults detected by a unit (as distinct from external error conditions, e.g. loss of input).
PSU_1_NAME= PSU_2_NAME=	Name of PSU	Text	Function name such as Left PSU, Right PSU Top PSU, Bottom PSU PSU 1, PSU 2 etc. These are set by the product and are not user settable.
PSU_1_STATE= PSU_2_STATE=	PSU State	OK FAIL FAIL: Not Fitted Not Used	PSU is present and operating correctly PSU presence is detected but not operating PSU is not fitted and the RollCall control for the product has specified that the PSU is fitted PSU is not fitted and the RollCall control for the product has specified that the PSU is NOT fitted
RECON_STATE=		OK Warn Fail	0 RollNet reconnections in last 10 seconds 1 RollNet reconnection in last 10 seconds >1 RollNet reconnection in last 10 seconds

Field Name	Field Name Description	Valid Field Values	Usage Description
LAN_PORT_n_NAME=	Ethernet port name as defined by the OS	Typical example format is: FastEthernet0/24	Where FastEthernet is the port type, other reported types are GigabitEthernet
			0 is the interface binding and 24 is the physical port number
			On devices with only one physical 10/100 Ethernet connection the reported string would be: FastEthernet0/1
LAN_PORT_n_SPEED=	Ethernet connection speed	10 Mbit/s Full Duplex 10 Mbit/s Half Duplex 100 Mbit/s Full Duplex 100 Mbit/s Half Duplex 1 Gbit/s Full Duplex No Link	LAN speed in megabits per second, and duplex mode. Use No Link when Ethernet cable unconnected or not init.
LAN_PORT_n_LAST_CHANGE=	Time from start since last Port Change	Number DDD:HH:MM:SS	Time change when IP interface parameters altered (ie IP subnet)
			Uptime in specified format updated every minute, NOTE: field value is zero buffered 001:08:10:00 (is 1 day, 8 hours, 10 minutes, 0 seconds)
			Derived from MIB-II ifLastChange
LAN_PORT_n_ERRORS=	Total number errors	XXX in total	Summation of MIB-II values ifInDiscards+ifInErrors+ifInUnknownProtos+ifOutDiscards+ifOutErrors.
			Updated periodically (60 sec interval)
LAN_PORT_n_TRAFFIC_IN=	Traffic In/min	NNN.n Kbytes/sec	MIB-II ifInOctets. e.g. "LAN_PORT_5_TRAFFIC_IN=12.3 KBytes/sec"
			Format ("%0.1f")

Field Name	Field Name Description	Valid Field Values	Usage Description
LAN_PORT_n_ TRAFFIC_OUT=	Traffic Out/min	NNN.n Kbytes/sec	MIB-II ifOutOctets. e.g. "LAN_PORT_5_TRAFF IC_OUT=12.3 KBytes/ sec" Format ("%0.1f")
IP_EVENT=	Text	xxx.xxx.xxx.xxx CONNECT FROM xxx.xxx.xxx.xxx DISCONNECT FROM xxx.xxx.xxx.xxx BRIDGE CONNECT TO xxx.xxx.xxx.xxx BRIDGE CONNECT FROM	Free text for miscellaneous IP event messages such as xxx.xxx.xxx.xxx CONNECT FROM. Note IP address is not zero buffered. This column is informational and not to be used for defined error states
LAN_PORT_n_STATE=	Ethernet connection state	Active WARN: Inactive	Does the Ethernet have electrical connectivity
UPTIME=	Uptime in seconds	Number DDD:HH:MM:SS	Uptime in specified format updated every minute, NOTE: field value is zero buffered 001:08:10:00 (is 1 day, 8 hours, 10 minutes, 0 seconds)
RESTARTED_AT=	Last Restarted (UTC)	UTC Timestamp	UTC Time of last reboot, formatted as per ISO8601 as above.

Logging 2

The **Logging 2** page shows the information made available via RollCall logging, and allows the user to specify which fields will be logged.

Each log field is shown on a separate line. Each has an enable check box, a descriptive name, the log field header and the current value.

When the check box is enabled, the field will be logged to the log server.

Field Name	Field Name Description	Valid Field Values	Usage Description
ENCLOSURE=	Enclosure Name	IQH1A, IQH3A, IQH3B, IQH3BQ, IQH4B	Displays the name of the IQ modular enclosure.
MODULE_COMMS=	State of module comms bus	Number of bus errors per 20 seconds	Running average of bus errors, 0 would indicate good comms. For IQ Modules, this bus is I2c.
INFORMATION1=	1st Information field	Text	User definable text.
INFORMATION2=	2nd Information field	Text	User definable text.

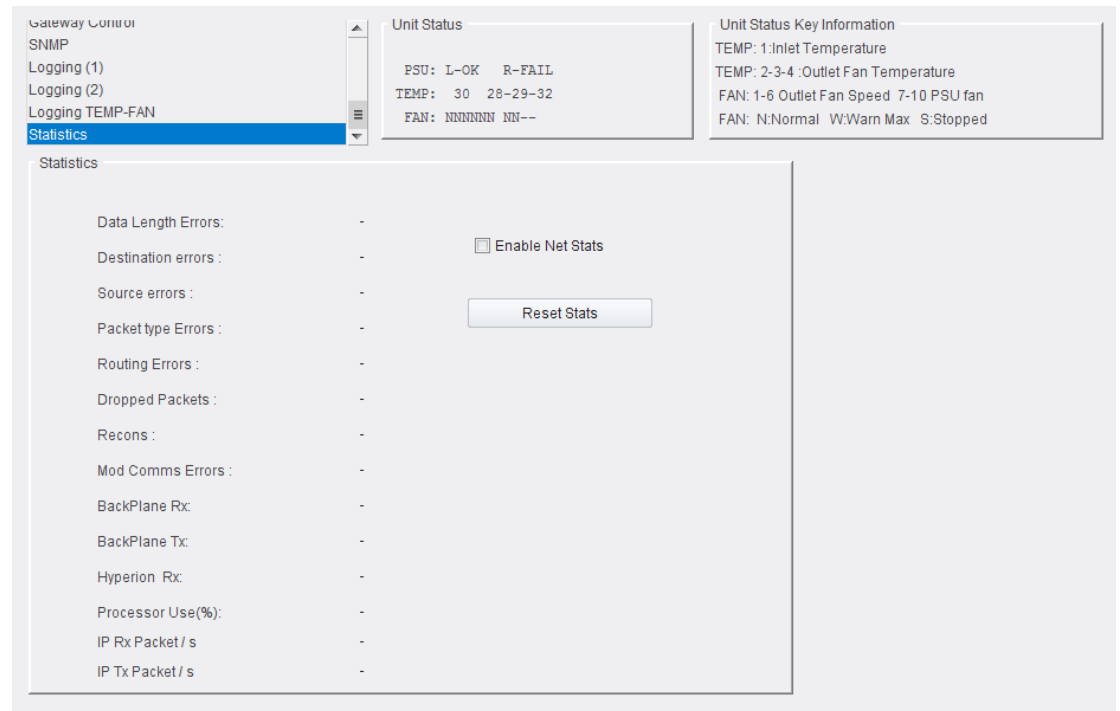| THUMB_IP_PORT=	Thumb IP Port value	NUMBER	Reports the IP Port number used for Hyperion Thumbnail monitoring. Ensure enabled if Hyperion monitoring uses the auto discovery feature.
SNMP_NAME=	SNMP Name	Text	Reports the SNMP system name as specified in the MIB2 sysName field on the SNMP page.
LOCATION=	Location	Text	Reports the SNMP physical or logical system location as specified in the MIB2 sysLocation field on the SNMP page.
SYSTEM_CONTACT=	System Contact	Text	Reports the SNMP system contact as specified in the MIB2 sysContact field on the SNMP page.
SYSTEM_ DESCRIPTION=	System Description	Text	Reports a description of the gateway type, for example IQH3UM4-S.
LOGGING_STATE=	Logging State	OK WARN:No Logserver WARN: Address Change FAIL:Name Change	This log field indicates whether logging is functioning properly. **Note**: When Gateways are set to log, there should only be one LogServer. It is not recommended to log to more than one LogServer. It is possible to see more than one LogServer over multiple network addresses, but again, this is not recommended.
POWER_MAX=	Max Power Available	141W - Power for IQH3A 63W - IQH1A 165 Load Units - IQH3B 700 Load Units - IQH4B	Maximum power according to enclosure type.

POWER_USAGE=	Power Usage	OK:nnnW or OK:mmmLU e.g. OK:74W /OK:72LU WARN:nnnW or WARN:mmmLU e.g. WARN:144W/ WARN:705LU	Current power usage of all cards fitted. This will indicate WARN if value exceeds POWER_MAX
POWER_CHECK=	Power Detail Check	OK WARN:REFER MANUAL	Reports if cards have a known power rating, or not. If any card is not recognized it will port WARN:REFER MANUAL, else OK.
IP_BRIDGE_STATUS=	IP Bridge Status	OK:Primary (Connected) OK:Secondary (Connected) FAIL:Inactive (Disconnected) INFO:Primary (Connected) INFO:Secondary (Connected) INFO:Inactive (Disconnected)	When enabled, changes logging state of log field IP_BRIDGE_STATUS to OK or FAIL instead of INFO. OK:Secondary and INFO:Secondary are only displayed if the secondary IP address is enabled and connected.
MONITOR_CARD=	Internal comms monitor	OK:Present FAIL:Not Present	Reports whether monitor card is fitted and working.
POWER_REGULATOR_1= POWER_REGULATOR_2=	Negative power regulator	OK:Present FAIL:Not Present	Reports whether negative rail regulator unit is fitted and working.
VOLTAGE_1_NAME= VOLTAGE_2_NAME=	Voltage rail name	Text	For IQ these are +7.5V & -7.5V rails.

VOLTAGE_1_STATE= VOLTAGE_2_STATE=	Is the voltage rail within spec?	OK FAIL: High FAIL: Low	Voltage rail is within spec
			Absolute value of voltage rail is above normal operating threshold
			Absolute value of voltage rail is below normal operating threshold
			This definition means that if the −7V rail is at −9V, it would be shown as FAIL:High
			Definition of out of spec is on a per product basis. The user manual for the product must reflect the out of spec ranges.
VOLTAGE_1_VALUE= VOLTAGE_2_VALUE=	The value of the voltage rail	Text	+nn.nnV -nn.nnV

Statistics

The **Statistics** page displays any errors that may occur within a system.

In the event of a problem, these error messages may be quoted to Grass Valley customer support to assist debugging.

Statistics

The following items are displayed:

- **Data Length Errors:** This counts packets that are an incorrect length.
- **Destination Errors:** This counts packets that have an incorrect destination identifier.
- **Source Errors:** This counts packets that have an incorrect source identifier.
- **Packet Type Errors:** This counts packets that have an incorrect packet type.
- **Routing Errors:** This counts packets that cannot be routed to the indicated destination.
- **Dropped Packets:** This counts packets that cannot be delivered.
- **Recons:** This counts network reconfigurations. Network reconfigurations are normal events when units join or leave the network. They may also occur occasionally due to electrical interference. Constant reconfigurations indicate a physical fault. Possible faults include:
    - Faulty T-piece or cable
    - Missing termination(s)
    - Incorrect value of termination(s)
    - Clash of a RollCall Address
    - Network cable length exceeded*
    - Number of unit loads per segment exceeded*
        *See the *RollCall System Integrators Manual* for more information.
- **Module Comms Errors:** This counts errors on the I2C bus.
- **BackPlane Rx:** This counts the bytes/second of RollCall traffic received down the Backplane. This count cannot be reset.
- **BackPlane Tx:** This counts the bytes/second of RollCall traffic transmitted down the Backplane. This count cannot be reset.

- **Hyperion Rx:** This counts the bytes/second of received Hyperion traffic (thumbnails). This count cannot be reset.
- **Processor Use(%):** This reports the processor use. The percentage is updated every second. This count cannot be reset.
- **IP Rx Packet/s:** This reports the number of IP packets received over the Ethernet port.
- **IP Tx Packet/s:** This reports the number of IP packets transmitted over the Ethernet port.
- **Enable Net Stats:** This box must be checked to enable the error counts to be updated. If this check box is not enabled all statistics will be displayed as '-'.
- **Reset Stats:** Click this button to reset all statistics to zero.

Contact Us

Grass Valley Technical Support

For technical assistance, contact our international support center, at 1-800-547-8949 (US and Canada) or +1 530 478 4148.

To obtain a local phone number for the support center nearest you, please consult the Contact Us section of Grass Valley's website, www.grassvalley.com.

An online form for e-mail contact is also available from the website.

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