

IQEDGE

3G/HD/SD-SDI MULTI-CHANNEL IP PROCESSING SYSTEM 25/ 40GBE

User Manual

www.grassvalley.com

FCC Compliance

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

Patent Information

This product may be protected by one or more patents.

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

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(See www.grassvalley.com.)

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Important Safety Information

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

Symbols and Their Meanings



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



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



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



Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.



Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.



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



Indicates that the equipment has more than one power supply cord, and that all power supply cords must be disconnected before servicing to avoid electric shock.



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



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



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 rated mains voltage.

- This product relies on the building's installation for short-circuit (over-current) protection. Ensure that a fuse or circuit breaker for the rated mains voltage is used on the phase conductors.
- Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only.
- Do not operate the equipment in wet or damp conditions.
- This equipment is grounded through the grounding conductor of the power cords. To avoid electrical shock, plug the power cords into a properly wired receptacle before connecting the equipment inputs or outputs.
- Route power cords and other cables so they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.
- Disconnect power before cleaning the equipment. Do not use liquid or aerosol cleaners; use only a damp cloth.
- Dangerous voltages may exist at several points in this equipment. To avoid injury, do not touch exposed connections and components while power is on.
- High leakage current may be present. Earth connection of product is essential before connecting power.
- Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.
- To avoid fire hazard, use only the fuse type and rating specified in the service instructions for this product, or on the equipment.
- To avoid explosion, do not operate this equipment in an explosive atmosphere.
- · Use proper lift points. Do not use door latches to lift or move equipment.
- Avoid mechanical hazards. Allow all rotating devices to come to a stop before servicing.
- Have qualified service personnel perform safety checks after any service.

Cautions



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

- This equipment is meant to be installed in a restricted access location.
- When installing this equipment, do not attach the power cord to building surfaces.
- Products that have no on/off switch, and use an external power supply must be installed in proximity to a main power outlet that is easily accessible.
- Use the correct voltage setting. If this product lacks auto-ranging power supplies, before applying power ensure that each power supply is set to match the power source.
- Provide proper ventilation. To prevent product overheating, provide equipment ventilation in accordance with the installation instructions.

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

Electrostatic Discharge (ESD) Protection



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

ESD-prevention procedures:

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

Battery Handling

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

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

Cautions for LCD and TFT Displays



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

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

Mesures de sécurité et avis importants

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

Signification des symboles utilisés



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



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



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



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



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 LISTED électrique en vigueur au Canada et aux États-Unis.



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

La marque C-UL-US certifie que l'appareil visé a été testé par Underwriters Laboratory (UL) et reconnu conforme aux exigences applicables en matière de

sécurité électrique en vigueur au Canada et aux États-Unis.

cULus



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

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



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

Avertissements



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

- Un cordon d'alimentation dûment homologué doit être utilisé pour connecter l'appareil à une tension de secteur de 120 V CA ou 240 V CA.
- La protection de ce produit contre les courts-circuits (surintensités) dépend de l'installation électrique du bâtiment. Assurez-vous qu'un fusible ou un disjoncteur pour 120 V CA ou 240 V CA est utilisé sur les conducteurs de phase.
- Dans le présent manuel, toutes les instructions qui nécessitent d'ouvrir le couvercle de l'équipement sont destinées exclusivement au personnel technique qualifié.
- N'utilisez pas cet appareil dans un environnement humide.
- Cet équipement est mis à la terre par le conducteur de mise à la terre des cordons d'alimentation. Pour éviter les chocs électriques, branchez les cordons d'alimentation sur une prise correctement câblée avant de brancher les entrées et sorties de l'équipement.
- Acheminez les cordons d'alimentation et autres câbles de façon à ce qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.
- Coupez l'alimentation avant de nettoyer l'équipement. Ne pas utiliser de nettoyants liquides ou en aérosol. Utilisez uniquement un chiffon humide.
- Des tensions dangereuses peuvent exister en plusieurs points dans cet équipement. Pour éviter toute blessure, ne touchez pas aux connexions ou aux composants exposés lorsque l'appareil est sous tension.
- Avant de procéder à toute opération d'entretien ou de dépannage, enlevez tous vos bijoux (notamment vos bagues, votre montre et autres objets métalliques).
- Pour éviter tout risque d'incendie, utilisez uniquement les fusibles du type et du calibre indiqués sur l'équipement ou dans la documentation qui l'accompagne.
- Ne pas utiliser cet appareil dans une atmosphère explosive.
- Présence possible de courants de fuite. Un raccordement à la masse est indispensable avant la mise sous tension.

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

Mises en garde



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

- · L'appareil est conçu pour être installé dans un endroit à accès restreint.
- Au moment d'installer l'équipement, ne fixez pas les cordons d'alimentation aux surfaces intérieures de l'édifice.
- Les produits qui n'ont pas d'interrupteur marche-arrêt et qui disposent d'une source d'alimentation externe doivent être installés à proximité d'une prise de courant facile d'accès.
- Si l'équipement n'est pas pourvu d'un modules d'alimentation auto-adaptables, vérifiez la configuration de chacun des modules d'alimentation avant de les mettre sous tension.
- Assurez une ventilation adéquate. Pour éviter toute surchauffe du produit, assurez une ventilation de l'équipement conformément aux instructions d'installation.
- N'utilisez pas l'équipement si vous suspectez un dysfonctionnement du produit. Faites-le inspecter par un technicien qualifié.
- Pour réduire le risque de choc électrique, n'effectuez pas de réparations autres que celles qui sont décrites dans le présent manuel, sauf si vous êtes qualifié pour le faire. Confiez les réparations à un technicien qualifié. La maintenance doit se réaliser dans un milieu libre d'électricité statique.
- L'appareil peut comporter plus d'un cordon d'alimentation. Afin de prévenir les chocs électriques, débrancher tous les cordons d'alimentation avant toute opération d'entretien.
- Veillez à toujours prendre les mesures de protection antistatique appropriées quand vous manipulez l'équipement.
- Pour réduire le risque de choc électrique, branchez chaque cordon d'alimentation dans des circuits de dérivation distincts utilisant des zones de service distinctes.

Protection contre les décharges électrostatiques (DES)

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

- Assurez-vous que le châssis est relié électriquement à la terre par le cordon d'alimentation ou tout autre moyen disponible.
- Portez un bracelet antistatique et assurez-vous qu'il est bien en contact avec la peau. Connectez la pince de masse à une *surface non peinte* du châssis pour détourner à la terre toute tension électrostatique indésirable. En l'absence de bracelet antistatique, déchargez l'électricité statique de votre corps en touchant une surface métallique *non peinte* du châssis.
- Pour plus de sécurité, vérifiez périodiquement la valeur de résistance du bracelet antistatique. Elle doit se situer entre 1 et 10 mégohms.
- Si vous devez mettre une carte de côté, assurez-vous de la ranger dans un sac protecteur antistatique.
- Les cartes qui sont reliées à un châssis ou boîtier métallique mis à la terre ne nécessitent pas de protection antistatique spéciale.

Manipulation de la pile

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

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

Précautions pour les écrans LCD et TFT



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

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

Environmental Information

European (CE) WEEE directive.



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

Visit www.grassvalley.com for recycling information.

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

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

Lithium Batteries

Battery Warning

CAUTION

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

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

Battery Disposal

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

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

WARNING

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

Laser Safety - Fiber Output SFP and QSFP Modules Warning



Mains Supply Voltage

Before connecting the equipment, observe the safety warnings section and ensure that the local mains supply is within the rating stated on the rear of the equipment.

Safety and EMC Standards

This equipment complies with the following standards:

Safety Standards

CE

Information Technology Equipment - Safety Part 1

EN60950-1:2006

Safety of Information Technology Equipment Including Electrical Business Equipment.

UL1419 (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 Ω 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

	FCC Compliance	ii
	Patent Information	ii
	Copyright and Trademark Notice	ii
	Lithium Batteries	xiii
	Battery Disposal	xiii
	Laser Safety - Fiber Output SFP and QSFP Modules Warning	xiv
	Mains Supply Voltage	XV
	Safety and EMC Standards	XV
	Safety Standards	XV
	EMC Standards	XV
		XVI
1	Introduction	21
	Description	21
	Feature Summary	21
	Application Notes	
	About Power Ratings	
	Power Ratings and Card Widths	22
	Block Diagrams.	22
	IQEDGE Processing Lanes	
	Order Codes	24
	Enclosure and IP Interface Options	24
	Processing Options.	24
	Rear Panel View	25
2	Technical Specification	27
3	Connections	29
	25G Ethernet SFP	29
	40G Ethernet QSFP	29
4	Card Edge LEDs	31
5	RollCall Control Panel	33
	Terminology	33
	Navigating Pages in the RollCall Template	33
	Template Pages	
	Setting Values	34
	Information Display	35
	Selecting the Information to Display	
	Configuration	36
	Setting Spigot Configuration	
	Eage Configuration	38

Time Sync Configuration	. 41
PTP Status Details	42
Sender TPG (Test Pattern Generator)	. 46
Receiver TPG (Test Pattern Generator)	. 47
Counters	. 48
FEC	. 49
NMOS	. 51
Overview	51
Ethernet Pages 1 and 2	. 53
The Ethernet Pane	53
Switch LLDP Info	53
The All Traffic/CPU Traffic Panes	54
Ethernet 1 and 2 RTP Sender	. 55
Ethernet 1 and 2 RTP Receiver	. 56
Ethernet RTP Receiver Video Stats	. 57
About Flow IDs	57
Ethernet RTP Receiver Audio Stats	. 58
About Flow IDs	58
Ethernet RTP Receiver Meta Stats	. 59
About Flow IDs	59
Link Control	. 60
UHD Links	60
TPG	60
HDR Control	. 61
Destination Timing	. 63
Audio V Fade	. 64
Audio Type Control	. 65
Input Loss Control	. 66
Spigot Pages	. 67
Input Spigots	. 67
Output Spigots	. 70
Spigot Pane	70
Flow Panes (Primary and Secondary)	71
Logging - SDI Info	. 73
Logging - System	. 74
Logging - Network	. 80
Logging - SFP	. 83
Logging - FPGA	. 86
Logging - Spigot n	. 87
Logging - NMOS	. 89
Logging - Card Diagnostics	. 90
RollTrack	. 91
Disable All	91
RollTrack Index	91
RollTrack Source	91
RollTrack Address	91
RollTrack Command	92
RollTrack Sending	92
RollTrack Status	92
Setup	. 93
Restart	94
Defaults.	94
Etnemet GD	. 94
	94
Ethernet Archet	. 95
Interop rage	. 96
SFP Configuration	. 98

Contact Us		99
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Table of Contents

Introduction

Description

The IQEDGE is a 3RU/4RU enclosure containing an IQMIX IP transceiver module and a customer-defined selection of audio/video processing modules; 3RU models are also equipped with a cooling fan. Signals are received over IP, converted into SDI, processed, then converted back to IP for onward transmission.

Fundamental to this is the IQEDGE rear connector panel, which is capable of accommodating up to four IQ modules. All communication between modules is performed by this unit; as a bonus, the enclosure's cabling requirement is also greatly simplified.

For more information on the 3RU and 4RU enclosures, see the IQH3B and IQH4B user manuals.

Feature Summary

- Up to 8 channels per IQEDGE rear panel of common video and audio processing tasks, in an IP networked environment.
- Channel branding and side-bar keying facilities.
- Dolby handling and loudness monitoring to ensure requirements are met.
- Simulcast format and frame rate conversion processing to provide high quality content across multiple regions and services.
- · Gain, offset and hue controls.
- Horizontal and vertical picture enhancement, delay, RGB gamut legalization, aspect ratio conversion with preset ARC maps, including selectable pan, tilt, aspect, size, and output crop adjustments.
- High quality up, down and cross conversion, including conversion aperture control.
- Noise reduction options (adaptive spatial and recursive), side-bar keying, logo insertion and frame rate conversion.
- Processing for 16 channels of embedded audio present on each video channel, with audio proc features including channel routing (shuffling), gain, invert, delay and mixing.
- Advanced audio options, including loudness processing for 4-channel or 5.1 surround sound, downmixing, upmixing and Dolby E/D encoding and decoding.
- Aspect ratio control (signaling reading and writing) using ETSI WSS and AFD Video Index signaling (RP186, SMPTE 2016), closed caption passing or processing for CEA608/708, and WST/OP42 and OP47 teletext captions, and VITC or SMPTE12M timecode translation.
- Built in test pattern and audio tone generators, along with 19-character scrolling caption generator for signal path testing or keep-alive applications.
- Full RollCall and SNMP compatibility allows easy integration with Grass Valley or third party network management systems.
- Dual 25GbE or 40GbE IP links with multiple transport types available, including:
 - Compressed IP transport using SMPTE-2042 (VC2) low latency high quality encoding profile;
 - Uncompressed video transport using either RFC 4175 RTP or SMPTE-2022-6 encapsulation;
 - PCM audio using RFC 3190 & AES67;

- SMPTE-291M metadata support via IETF standard RTP Payload for Ancillary Data.
- Timing and synchronization provided by IEEE-1588v2 (PTP), compliant with SMPTE-2059-2, or via the frame analog reference bus.
- Up to 4 dual-channel IQ modules per IQEDGE rear panel, giving up to 8 processing channels, dual PSUs, cooling fans and control card as standard, plus full chassis monitoring for PSUs, temperature, fans and signal status.

Application Notes

About Power Ratings

Grass Valley IQ modules are assigned a *Power Rating* (PR). This figure represents the relative power consumption of a module.

Grass Valley modular enclosures are also assigned PR values. This figure represents the maximum power available from the enclosure.

The combined total of all modules' PR values must not exceed the enclosure's PR value.

Note: If a module's PR value is not known, use the module's power consumption figure in watts as the PR value.

Power Ratings and Card Widths

Product	Width	PR
IQMIX25	3 (inc IQFAN00)	34.5
IQMIX40	3 (inc IQFAN00)	37.5
IQEAS00	1	8.5
IQMCC30	1	17.5
IQSYN33	2	18
IQUDC31	1	16
IQUDC30	1	13

Block Diagrams

IQEDGE Processing Lanes

In order to improve throughput, the IQEDGE provides two processing lanes. When used with dual-channel IQ modules, each module is able to process two jobs simultaneously.

The processing lanes are independent of one another, and map directly to the processing channels of suitable IQ processing modules; so, the IQEDGE lane 1 maps to the module's channel 1, and so on.

An IQEDGE processing lane is effectively an SDI daisy chain, connected in ascending slot number order. Processing jobs requiring the use of multiple modules are handed from one module to the next along that chain.

Note: Jobs may cross from one IQEDGE lane to another, but only via IP addressing. This facility is not available via SDI.



Daisy chains are constructed using the **Loop** function. See Loop Enable on page 39 for more information.

IQEDGE Processing Overview

Order Codes

Enclosure and IP Interface Options

The following product order codes are covered by this manual:

- IQEDGE-25-6BIQEDGE 7-Slot 3RU IP processing system with dual 25GbE IP connections.
Up to 4 card slots for processing available. Includes dual PSUs, dual fans,
Ethernet/SNMP compatible RollNet Gateway and reference distribution.
Processing cards compatible with IQEDGE are listed below. Also includes
an IQFAN00-RP unit for additional cooling.
- IQEDGE-25-12BIQEDGE 14-Slot 3RU IP processing system with quad 25GbE IP
connections. Up to 8 card slots for processing available. Includes dual
PSUs, dual fans, Ethernet/SNMP compatible RollNet Gateway and
reference distribution. Processing cards compatible with IQEDGE are listed
below. Also includes an IQFAN00-RP unit for additional cooling.
- IQEDGE-25-18BIQEDGE 18-Slot 4RU IP processing system with six 25GbE IP connections.
Up to 12 card slots for processing available. Includes dual PSUs, dual fans,
Ethernet/SNMP compatible RollNet Gateway and reference distribution.
Processing cards compatible with IQEDGE are listed below. Also includes
an IQFAN00-RP unit for additional cooling.
- IQEDGE-40-6BIQEDGE 7-Slot 3RU IP processing system with dual 40GbE IP connections.
Up to 4 card slots for processing available. Includes dual PSUs, dual fans,
Ethernet/SNMP compatible RollNet Gateway and reference distribution.
Processing cards compatible with IQEDGE are listed below. Also includes
an IQFAN00-RP unit for additional cooling.
- IQEDGE-40-12BIQEDGE 14-Slot 3RU IP processing system with quad 40GbE IP
connections. Up to 8 card slots for processing available. Includes dual
PSUs, dual fans, Ethernet/SNMP compatible RollNet Gateway and
reference distribution. Processing cards compatible with IQEDGE are listed
below. Also includes an IQFAN00-RP unit for additional cooling.
- IQEDGE-40-18BIQEDGE 18-Slot 4RU IP processing system with six 40GbE IP connections.
Up to 12 card slots for processing available. Includes dual PSUs, dual fans,
Ethernet/SNMP compatible RollNet Gateway and reference distribution.
Processing cards compatible with IQEDGE are listed below.

Processing Options

Processing cards compatible with IQEDGE:

software options apply.

IQEAS00-NRIQEAS00 3G/HD/SD-SDI Single Channel Embedded Audio Shuffler and
Processor.
Includes Dolby E auto-alignment feature, 2 inputs, 2 outputs.IQMCC30-NRIQMCC30 3G/HD/SD-SDI Single Channel Motion Compensated Frame Rate
Converter.
2 SDI inputs, frame reference inputs, 2 SDI outputs.IQUDC31-NR-EIQUDC31 Dual channel Up, down and cross converter with video and
audio processing and linear frame rate conversion. Including logo
insertion, noise reduction and side-bar keying features. 1 SDI input per
channel, Frame reference inputs, 1 SDI output per channel. IQOPTM

IQUDC30-NR-E	IQUDC30 Single channel Up, down and cross converter with video and audio processing and linear frame rate conversion. Including logo insertion, noise reduction and side-bar keying features. 2 inputs, Frame reference inputs, 2 outputs. IQOPTM software options apply.
IQSYN33-NR-E	IQSYN33 3G/HD/SD-SDI Frame Synchronizer with advanced audio processing including loudness processing and upmixing. 1 input, 2 outputs, IQOPTA LOUD 5.1, CC and Dolby options apply.

Rear Panel View



The following rear panel types are available:





IQEDGE40-6B3

Introduction Rear Panel View

Technical Specification

Inputs/Outputs - EDGE backplane

Ethernet

Connector/Format	25GbE = SFP+ 40GbE = QSFP
Conforms to	RFC4175 RFC3190 SMPTE-291M/IETF <i>RTP Payload for Ancillary Data</i> VC-2 IEEE-1588v2/SMPTE-2059-2 VSF TR-03/TR-04 RTP (upgradeable to SMPTE 2110) or SMPTE 2022-6/7 AES67

Note: For information on IQH3B and IQH4B enclosures, IQMIX IP transceiver modules and IQEDGE processing modules, see the relevant user manuals.



This section describes the physical input and output connections provided by the IQMIX IP transceiver modules.

25G Ethernet SFP

SFP+ supporting 25G Ethernet.	

40G Ethernet QSFP

QSFP+ supporting 40G Ethernet.	40GbE-1	

Connections 40G Ethernet QSFP

Card Edge LEDs

Front Panel	Front Edge		Description	
IQE	STATUS	PB=IDENT	STATUS Green = PTP-LOCK OK. Off = PTP-LOCK Fail.	
EDGI	BOARD	😑 CPU	BOARD Green = CPU clock running. Off = CPU stopped.	
E40_	PTP	🛑 REF	REF Green flashing = Watchdog timer OK.	
6	8	9 16	1 - 16 - Spigot status.	
8 C	• 7	<mark> </mark> 15	Red = No input.	
HANN	6	1 4	Green = Video flow detected (SDI	
	5	1 3	Input for Sender spigot, output IP flow for Receiver spigot).	
PR	• 4	1 2	For UHD Quad-Link Modes:	
OCES	• 3	• 11	Banks of four adjacent LEDs (e.g. 1 - — 4.5 - 8. etc) will light simultaneously	
SOR	• 2	• 10	to denote the 4 x 3G streams being	
- 40GbE	• 1	9	is enabled, either sender or receiver, four adjacent LEDs will light yellow to denote the 4 x 3G linked internal flows.	
	SFP 2	😑 QSFP 2	SFP 1 - 2 = Status/lane. Bed = Fault (3V3 regulator failure)	
	SFP 1	OSFP 1	Blue = OK (25G SFP). If flashing, link is down. QSFP 1 - 2 = Status/lane. Red = Fault (3V3 regulator failure), Cyan = OK (40G QSFP). If flashing, link is down.	
		PB=RESET		

The LEDs on the edge of the module indicate its operating status.

Card Edge LEDs

RollCall Control Panel

This section contains information on using IQEDGE with RollCall.

For help with general use of the RollCall application, open the user manual by clicking the button on the main RollCall toolbar.

Terminology

The following terms are used in this document:

Term	Description
Essence	A general term used to describe an SDI component; Video, Audio and Data are all essences.
Spigot	Generic term for a Source or Destination.
Flow	Sequence of RTP packets of a single essence.
Source	Originator of one or more flows, ie. a set of one or more sender spigots.
Destination	Receiver of one or more flows, ie. a set of one or more receiver spigots.

Navigating Pages in the RollCall Template

The RollCall template has a number of pages, each of which can be selected from the list at the top left of the display area. Right-clicking anywhere on the pages will also open a page view list, allowing quick access to any of the pages.



Template Pages

Template Pages

The following pages are available:

- Configuration see page 36.
- Edge Configuration see page 38.

- Time Sync Configuration see page 41.
- Sender TPG (Test Pattern Generator) see page 46.
- Receiver TPG (Test Pattern Generator) see page 47.
- Counters see page 48.
- FEC see page 49.
- NMOS see page 51.
- Ethernet Pages 1 and 2 see page 53.
- Ethernet 1 and 2 RTP Sender see page 55.
- Ethernet 1 and 2 RTP Receiver see page 56.
- Ethernet RTP Receiver Video Stats see page 57.
- Ethernet RTP Receiver Audio Stats see page 58.
- Ethernet RTP Receiver Meta Stats see page 59.
- Link Control see page 60.
- HDR Control see page 61.
- **Destination Timing** see page 63.
- Audio V Fade see page 64.
- Audio Type Control see page 65.
- Input Loss Control see page 66.
- Spigot 1-n see page 67.
- Logging SDI Info see page 73.
- Logging System see page 74.
- Logging Network see page 80.
- Logging SFP see page 83.
- Logging FPGA see page 86.
- Logging Spigot 1-n see page 87.
- Logging NMOS see page 89.
- Logging Card Diagnostics see page 90.
- Rolltrack see page 91.
- Setup see page 93.
- Ethernet Gb see page 94.
- Ethernet Arcnet see page 95.
- Interop see page 96.
- SFP Configuration see page 98.

Setting Values

Many of the settings within the templates have values, either alpha or numeric.

When setting a value in a field, the value, whether text or a number, must be set by pressing the ENTER key, or clicking the S **Save Value** button.

Clicking an associated P Preset Value button returns the value to the factory default setting.

Information Display

The **Information** display pane appears at the top of each page, and shows basic information on the input, standard and status of the module. The information to be displayed is defined on the **SDI Selection** and **Information Select** panes to the right of the **Information** display.

Information	Video Selection	1	Information Select
TPG1:720/50p	SDI 1 / SDI 2	T	● Video Input Status ○ Video Output Status
TPG2:720/50p			 Network Status Spigot Link Status

Information and Selection Panes

Selecting the Information to Display

- Select the spigots to display data for from the **SDI Selection** drop-down list.
- Select Video Input Status, Video Output Status, Network Status or Spigot Link Status from the Information Select pane as required.

The selected information will be displayed on the Information display pane.

Configuration

The Configuration page allows basic	module parameters to be set.
--	------------------------------

Configuration Edge Configuration Time Sync Configuration Sender TPG Receiver TPG Counters	Information 1:172.19.164.218 2:172.19.164.248 Gb:10.10.10.10 NMOS:0ff	Video Selection SDI 1 / SDI 2	•	 Information Video I Video I Networ Spigot 	Select nput Status Dutput Status rk Status Link Status		
SDIIO	Genlock	GUID	GUID {13A71B5E-1DD2-11B2-8E4C-0023700036B6}				
8 in - 8 Out	Type Status	Domain	Current	NEW	Note:	Take Restarts o	ard
Location	O Network 625/25i		101	101	S	Take	
	O Chassis Reference A						
	◯ Chassis Reference B	Ethernet 1: Ethernet 2:	172.19.164	.218 .248			
	○ Freerun	Ethernet Gb:	10.10.10.1	0			
		Ethernet Arcnet:	Unknown				
Card Firmware							
8/8 FC: SD-3G (1xSDI, 1x2022-6, 1x	Build Set: 2	0200617		0014-	-8B28B990.tib		
* SD/HD/3G located on master sp Card must be restarted before cha Reset to defaults on restart			Res	tore	Restart		
Software Version							
CurrentEDGE25_6_V16.0.110_b0.28.71	Product IQEDGE25_6	25_6					
New							
EDGE25_6_V16.0.110_b0.28.71 EDGE25_6_V15.6.107_b0.24.73 EDGE25_6_V15.5.97_b0.23.136 EDGE25_6_V15.5.97_b0.23.128 EDGE25_6_V15.5.97_b0.23.97 EDGE25_6_V15.5.96_b0.23.73		r Product			ensed Option	Needed	
		20200617		N/	A		
Card must be restarted before changes to software will become active Delete Restore Restart							

Configuration Page

The following facilities are available from this page:

Option	Description			
SDI IO	Displays how input and output spigots are currently configured. See <i>Card Firmware/Software Version</i> , below, for information on how to change this.			
Where Am I	Causes the front-edge LEDs to flash, allowing the module to be easily identified.			
Genlock	Select Genlock type:			
	Network - click to select PTP.			
	 Chassis Reference A/B - click to select an on-chassis reference. 			
	Freerun - click to allow free running.			
GUID	Displays the absolute unique identifier associated with the module.			
Option	Description			
-----------------------------------	--	--		
Domain	RollCall+ uses domains to partition a network; only nodes the same domain can communicate with one another. A domain is uniquely identified with a number and a friend name/alias. Set an ID as required, then press Take to confirm the char			
Interface Configuration	Displays the IP address for each Ethernet interface.			
Card Firmware/Software Version	Each software version contains multiple firmware images. These allow different spigot input/output and flow standard combinations to be selected. See Setting Spigot Configuration, below, for more information.			

Setting Spigot Configuration

IMPORTANT!
Existing details must be cleared down before establishing a new configuration . Failure to do this may result in unexpected behavior
from the module.

To set a new spigot configuration, follow these steps:

- 1 Open the **Setup** page, and click **Default Settings**. See **Defaults** on page 94 for more information.
- 2 From the **Configuration** page, select the required software from the **Software Version** pane, then select the firmware which provides the required combination of inputs, outputs and flow standards from the list displayed on the **Firmware** pane.

Note that **Restore** and **Restart** buttons are displayed only when an item not currently installed is selected.

3 Click **Take** to restart the module and implement any changes made.

Edge Configuration

The **Edge Configuration** page allows the card slots controlled by the EDGE backplane to be monitored, and the modules to be used in a workflow specified.

Edge Configuration	Information 1:172.19.164.218 2:172.19.164.248 Gb:10.10.10.10 NHOS:0ff	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Slot Map		Loop V Enable	IP Output Spigot
Slot Map		Loop Ø Enable	IP Output Spigot3
Slot Map		Loop I Enable	IP Output Spigot5
Slot Map			IP Output Spigot7
Lane 2			
Slot Map		Loop V Enable	IP Output Spigot
Slot Map		Loop Z Enable	IP Output Spigot
Slot Map Slot 3.2 IP input Spigot 14		Loop Z Enable	IP Output Spigot
Slot Map Slot 4.2 IP Input Spigot 16			IP Output Spigot8

Edge Configuration Page

The page consists of two sections, one for **Lane 1** and one for **Lane 2**. These display slot maps, i.e. the input and output spigots associated with each of the card slots.

Loop Enable

Enables the Loop function for the applicable slot.

About the Loop Function

Loop Enable disables IP routing for a slot, and daisy chains it via SDI to the next higher slot number along. This has the effect of starting or continuing a daisy chain, and sending the signal along it to the next slot for further processing.

Each EDGE processing lane can support one or more daisy chains.

Example 1: Creating a Single, 3-slot Daisy Chain



• Select the Loop Enable check boxes for Slot 1 and Slot 2.

This will disable IP routing for slots 1 and 2, and cause daisy chains to be created from Slot 1 to Slot 2, and from Slot 2 to Slot 3.

As **Loop Enable** has not been selected for Slot 3, IP routing remains in place and so the signal will be routed onwards via IP.

Example 2: Creating Two 3-slot Daisy Chains on the same IQEDGE Lane



- Select the **Loop Enable** check boxes for Slot 1 and Slot 2; this will create the first chain, as shown in Example 1.
- Select the **Loop Enable** check boxes for Slot 4 and Slot 5; this will create the second chain. This will disable IP routing for slots 1 and 2, and cause daisy chains to be created from Slot 1 to Slot 2, and from Slot 2 to Slot 3.

As **Loop Enable** has not been selected for Slots 3 and 6, IP routing remains in place and so the signal will be routed onwards via IP.

Example 3: Creating Two 3-slot Daisy Chains on Separate IQEDGE Lanes

Lanes cannot be crossed with SDI looping, but can with IP addressing.

In this case, each chain is created as usual, but the link between the two must be created over IP.



- Create daisy chains as required, following the instructions in the examples above.
- Open the **Edge Configuration** page, and navigate to the appropriate **Slot Map** entry. In the diagram above, this would be Slot 3, Lane 1.

2.1	10		3
Slot Map	IP Input Spigot	Loop Enable	IP Output Spigot5
Slot Map			

Slot Map

We can see that the IP input for this slot is Spigot 17, and the output is Spigot 5. So, we need to ensure that the IP details for Spigot 5 point to the module occupying Slot 4, Lane 2.

- Open the Spigot page corresponding to the slot to link to over IP. In the diagram above, this would be Slot 4, Lane 2. Make a note of the IP details.
- Open the page for Spigot 5.
- Enter the IP details noted in the step above, and click **S** to save.

As **Loop Enable** has not been selected for Slots 3 and 6, IP routing remains in place and so the signal will be routed across lanes and onwards via IP.

Time Sync Configuration

The **Time Sync Configuration** page allows selection of the source to be used for synchronizing flows, and any properties associated with the relevant source to be configured.

Time Sync Configuration Sender TPG Receiver TPG Jounters VMOS Ethernet 1		 Informatio 1:172.1 2:172.1 Gb:172. NMOS:0f 	n 9.164.75 9.166.75 19.160.75 f	Video Selection SDI 1 / SDI 2	•	Information Select Video Input Status Video Output Status Network Status Spigot Link Status	
Time Sync Mode PTP Multicast PTP Unicast NTP Freerun			NTP Configuration NTP Server 1 NTP Server 2 NTP Server 3		Current	NEW	
PTP Network Interface Ø Ethernet 1 Ø Ethernet 2 Preference	None	v	PTP Configuration PTP Domain PTP Delay Request PTP Multicast Addre	Frequency SS	Current 0 1s 224.0.1.129	NEW 0 1s ~ 224.0.1.129	
PTP Status Ethernet 2 - LOCKED		🗌 Details	Save Settings				

Time Sync Configuration Page

The following facilities are available from this page:

Option	Description
Time Sync Mode	Click a radio button to select the required mode. PTP options require a grandmaster clock to be present in the system. Note : Mixing modes within a system is not advisable. For example, PTP uses atomic time (TAI), whereas NTP is UTC, which is leap-second corrected. So, the two systems will not give identical results. Options are: • PTP Multicast - this uses multicast for both sync and
	 follow-up messages. PTP Unicast - this uses multicast for the sync messages and unicast for the follow-up messages. NTP - uses NTP for local clock correction. NTP can usually maintain time to an accuracy of around 1-10ms, but this value could rise to something on the order of >100ms, depending on network congestion, asymmetry, etc. This potentially means that 1-5 frames of misalignment of the local device clocks may be seen across the network. Freerun - the local device clock is left to free run, that is it is not corrected with respect to the world clock. This will drift over time.
	Select as required.
NTP Configuration	To add an NTP server, enter the server's IP address in to the New field.
PTP Network Interface	Click check boxes to select the network interfaces to be used. If an interface fails, the next interface on the list will be switched to automatically. Select the interface to be used as a default from the Preference list; this will be used unless it has been disabled or has failed.

Option	Description
PTP Configuration	Select values from the PTP Domain and PTP Delay Request Frequency drop-down lists, as required. Type the appropriate IP number into the PTP Multicast address field.
PTP Status	Displays PTP status information. Enable the Details check box to display detailed interface status information, reset counters, show details for other PTP interfaces etc. See PTP Status Details below for more information.
Save Settings	Displayed only if settings on this page are changed. Clicking Restore will discard the changes, while clicking Restart will implement the changes and reboot the module.

PTP Status Details

When the **PTP Status Details** check box is enabled, the following information is displayed:

Interface Status

Displays which port is being used for local clock correction. Click Next Interface to move between available PTP Network interfaces.

Ethernet 2 (BACKUP) Free-Running NO LOCK	Av Delay Av Error	+0.0uS	Std Dev +0.0uS
Free-Running NO LOCK	Av Delay Av Error	+0.0uS	Std Dev +0.0uS
Free-Running NO LOCK	Av Delay Av Error	+0.0uS	Std Dev +0.0uS
Free-Running NO LOCK	Av Delay Av Error	+0.0uS	+0.0uS
NO LOCK	Av Error	+0.0.0	
		+0.005	+0.0uS
	Sync Interval	1s	
	Request Interval	1s	
0	Clock Loaded	0	
0	Synchronisations	0	
0	Time taken to lock		
0	Message Timeouts	0	
0	Clock Back Steps	0	
0	Clock Blips	0	
0	Delay Blips	0	
0	Correction Blips	0	
0	FollowUp OoS Errs	0	
0	FollowUp Id Errs	0	
0	Response OoS Errs	0	
0	Response Id Errs	0	
0			
0	Reset Counters	Next In	terface
		Request Interval 0 Clock Loaded 0 Synchronisations 0 Time taken to lock 0 Message Timeouts 0 Clock Back Steps 0 Clock Blips 0 Clock Blips 0 Clock Blips 0 Correction Blips 0 FollowUp OoS Errs 0 Response OoS Errs 0 Response Id Errs 0 Reset Counters	Request Interval 1s 0 Clock Loaded 0 0 Synchronisations 0 0 Time taken to lock 0 0 Message Timeouts 0 0 Clock Back Steps 0 0 Clock Bilps 0 0 Clock Bilps 0 0 Delay Bilps 0 0 Correction Bilps 0 0 FollowUp OoS Errs 0 0 Response OoS Errs 0 0 Response Id Errs 0 0 Response Id Errs 0

Interface Status pane

Interface Status Details

ltem	Description
Last Lock	Time when PTP last locked.
Lost Lock	Time when PTP last lost lock.
1 Step syncs	Increments on reception of Sync message that has the twoStepFlag=false.
2 Step Syncs	Increments on reception of Sync message that has the twoStepFlag=true.
Follow Ups	Increments on reception of every follow_up message.
Delay Requests	Increments on reception of every delay_req message.
Delay Responses	Increments on reception of every delay_resp message.
Announcement Messages	Increments on reception of every announce message.
Signaling	Increments on reception of each PTP Signaling message.
Management	Increments on reception of each PTP Management message.
Version Errs	The IQUCP25/50 supports PTPv2 only.
	If a PTPv1 message is received, it is discarded, and this counter incremented. This would be an indication that the grandmaster clock is not configured correctly.
Unknown Msgs	If the product receives messages on the PTP multicast address port 319 or 320 that are not messages defined as PTP ones this counter is incremented.
Length Errs	PTP messages with an invalid length cause this counter to increment.
Unexpected 2 Steps	Increments on the reception of a follow_up message but the sync message is indicating 1 step.
RX Timestamp Errs	Increments for every PTP message where the sequence number is as expected but its timestamp is not valid.
TX Timestamp Errs	Increments for every delay_resp message where its sequence number is as expected but its timestamp is not valid.
Av Delay	This is the average network delay time from the grandmaster to the UCP. This should be stable and in the order of 10-20µs.
Av Error	The average error is the difference between the grandmaster and the UCP local clock. If locked, this number will be small.
Sync Interval	From IEEE1588 7.7.2.1: "For each of the message types Announce, Sync, Delay_Req and Pdelay_Req, the mean time interval between successive messages shall be represented as the logarithm to the base 2 of this time interval measured in seconds on the local clock of the device sending the message. The values of these logarithmic attributes shall be selected from integers in the range ?128 to 127 subject to further limits established in an applicable PTP profile. The interpretation of the logMessageInterval depends on the message type; see 13.3.2.11. Except for Delay_Req messages (see 9.5.11.2), a node shall, with 90% confidence, issue messages with intervals within ±30% of the stated value of this attribute."

Item	Description
Request Interval	Return actual minimum interval between delay request messages. This is as set in the PTP Delay Request Frequency control. See Configuration on page 36.
	Values are, {256/s, 128/s, 64/s, 32/s, 16/s, 8/s, 4/s, 2/s, 1s, 2s, 4s, 8s, 16s}.
Clock Loaded	Increments if the interface was live and the PTP was forced to update (crash lock).
Synchronizations	Increments every time a PTP lock is achieved.
Time Taken to Lock	Length of time it has taken to lock the interface.
Message Timeouts	Increments if none of the following are received within any 2- second period:
	 follow_up
	• delay_resp
	• sync
	• announce
Clock Steps Back	If the IQUCP25/50 receives a time earlier than the last, this counter is incremented. This could be because of a fault with the grandmaster, or because there are multiple grandmasters in the system.
Clock Blips	This increments if the local clock offset is >300ns, <-300ns.
Delay Blips	This increments if the network delay is >120%, or <80% of the previous value.
Correction Blips	Uses the correctionField in the header of delay_resp message from the grandmaster.
	From IEEE1588 13.3.2.7: "The correctionField is the value of the correction measured in nanoseconds and multiplied by 65536. For example, 2.5 ns is represented as 0x28000.
	<pre>Increments if the correctionField is > 40000 (0.61ns).</pre>
FollowUp OoS Errs	Increments for every follow_up message that is out of sequence.
FollowUp ID Errs	Increments for every follow_up message that is not from the expected clock.
Response OoS Errs	Increments for every delay_response message that is out of sequence.
Response ID Errs	See Histogram, below.

Histogram

The Histogram provides a graphical representation of the distribution of differences between the card's clock and the PTP grandmaster clock. Every time the clock difference is recalculated, the relevant bar is incremented. A correctly functioning system will show a distinct peak around the 0ns level.

Histogram		
-500ns		
-250ns	 * ***	
Ons	******* ******* ****** **** ***	
250ns		
500ns	I	
Bin = 50nS Total №	lumber of Counts = 5898	Zoom In Zoom Out

Histogram pane

Visible Clocks

Displays the GrandMaster clocks present on the network.

Clock	Domain	Priority1	Quality	Priority2	Steps
00:00:00-00:00:00:00:00	00	00	00-00-0000	00	00

Visible Clocks pane

Sender TPG (Test Pattern Generator)

The **Sender TPG** page allows test patterns to be applied to senders on a spigot-by-spigot basis.

Sender TPG Receiver TPG Counters FEC NMOS Ethernet 1	Sender TPG Receiver TPG Counters FEC VMOS Ethernet 1		Information 1:172.19.164.218 2:172.19.164.248 Gb:10.10.10.10 NMOS:0ff			Video Selection SDI 1 / SDI 2		Information S Video Inp Video Ou Network 3 Spigot Lii	elect ut Status tput Status Status nk Status	
Spigot 1				Spigot 2				Spigot 3		
TPG		Audio Freq		TPG		Audio Freq		TPG		Audio Freq
None	~	None	~	None	~	None	~	None	~	None
Caption		Audio dB		Caption		Audio dB		Caption		Audio dB
EDGE25_1.1		-6dBFs	*	EDGE25_1.2		-6dBFs	~	EDGE25_1.3		-6dBFs
Show Caption		Audio Mute		Show Caption		Audio Mute		Show Caption		Audio Mute



The following options are available for each spigot:

Option	Operation
TPG	Select the test pattern to apply to the spigot from the drop-down list.
Audio Freq	Select the audio frequency to apply to the spigot from the drop-down list.
Caption	Type a caption (max 19 characters) to optionally be displayed with the test pattern.
Audio dB	Select the dB level to apply to the spigot from the drop- down list.
Show Caption	Enable the checkbox to display the caption with the test pattern.
Audio Mute	Enable the checkbox to mute the audio tone.

If a test pattern is applied, either a pattern or a tone, the spigot cannot be used for streaming any other essence.

Click **Show Caption** to overlay a caption on the video essence.

Receiver TPG (Test Pattern Generator)

The **Receiver TPG** page allows test patterns to be applied to receivers on a spigot-by-spigot basis.

Receiver TPG Counters FEC NMOS Ethernet 1 Ethernet 1 RTP Sender	▲ Information ■ 1:172.15 2:172.15 Gb:10.10 NHOS:0ff	164.218 164.248 10.10	Video Selection SDI 1 / SDI 2	×	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Spigot 9 TPG Enable Caption EDGE25_1.9 Show Caption	Spigot 10 TPG Enable Caption EDGE25_1.10 Show Caption	Spigot 11 TPG Enable Caption EDGE25_1.11 Show Caption	Spigot 12 TPG Enable Caption EDGE25_1.12 Show Caption		

Receiver TPG page

The following options are available for each spigot:

Option	Operation
TPG Enable	Click to enable TPG on this spigot.
Caption	Enter a caption for the spigot (optional).
Show Caption	Click to overlay the caption on the video essence.

If a test pattern is applied, either a pattern or a tone, the spigot cannot be used for streaming any other essence.

Counters

The Counters	page allows the va	arious counters	provided to be	cleared down.

Counters FEC NMOS Ethernet 1 Ethernet 1 RTP Sender Ethernet 1 RTP Receiver	 Information 1:172.19.164.218 2:172.19.164.248 6b:10.10.10.10 NMOS: Off 	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Image: Status Image: Spigot Link Status
Global Counters Clear All Sender Dropped Pkts Clear Clear	Clear All CRC Counts Clear		
Clear All RTP Counts	Clear All MAC Error Counts Clear		
	Clear		
Clear All Global C	counts Clear		

Counters Page

Click **Clear** buttons as required.

FEC

The **FEC** page allows control of FEC functionality. The variety of FEC to be used is selected via the **Card Firmware/Software Version** options on the **Configuration** page; see Configuration on page 36 for more information.

FEC NMOS Ethernet 1 Ethernet 1 RTP Sender Ethernet 2 FC-FEC Control Off © On	Information Video SDI	Selection 3/SDI10	×	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
RS-FEC Control Orf Orf On EEE Clause 108 256 Ethernet Consortium Schedule 3 FEC Stats FEC Stats SFP 1 (Ethernet 1) Corrected Unknown Uncorrected Unknown SFP 2 (Ethernet 2) Corrected Unknown	Status SFP 1 Unknown SFP 2 Unknown			
FEC Logging SFP 1 SFP 1 Fec 1 Corrected Errors Fec 1 Uncorrected Errors	FEC_1_CORRECTED_ERRORS=		0 0	
 ✓ Fec 2 Corrected Errors ✓ Fec 2 Uncorrected Errors 	FEC_2_CORRECTED_ERRORS= FEC_2_UNCORRECTED_ERRORS=	-	0	

FEC page

The following facilities are available from this page:

Option	Description
FC-FEC (displayed only if a relevant configuration is in use. See Configuration on page 36 for more information).	 Allows low-latency FC-FEC error correction to be used. Options are: On Off Status - Displays lock status for each SFP.

Option	Description
RS-FEC (displayed only if a relevant configuration is	Allows longer-range RS-FEC error correction to be used. Options are:
in use. See Configuration	• On
information).	• Off
,	IEEE Clause 108
	25G Consortium Schedule 3
	Status - Displays lock status for each SFP.
FEC Stats	Displays the number of corrected and uncorrected errors received via the SFPs. Click Enable Stats to activate, and Clear Count to zero the counters.
FEC Logging	Information on several parameters can be made available to a logging device connected to the RollCall network. Enable check boxes to activate log fields as required. Available log fields are shown in the table below.
	~

Log Field	Description
FEC_N_CORRECTED_ ERRORS=	Number of corrected errors for FEC <i>N</i> .
FEC_ <i>N</i> _UNCORRECTED_ ERRORS=	Number of uncorrected errors for FEC <i>N</i> .

Where N is the SFP number.

NMOS

The **NMOS** page allows NMOS functionality to be configured.

NMOS Ethernet 1 Ethernet 1 Ethernet 2 Ethernet 2 Time 1 Ethernet 2 Mode OFF	RTP Sender RTP Receiver RTP Sender		Infor 1:1 2:1 Gb: NMC	mation .72.19.164.75 .72.19.166.75 172.19.160.75 !S: Off	Vi.	leo Selection DI 1 / SDI 2	,	Information Select Video Input Status Video Output Status O Video Output Status Shework Status Spigot Link Status
IS-04	Otatua							
	Bogisto Modo	Off						
	Interface	Ethernet 1	Ŧ					
	Label					s		
		Idami/To_Id						
Auto —		Current		NEW				
	DNS IP					s		
	Search Domain							
	Current							
	NEW					S		
				Restart	ndes			

NMOS page

Overview

Networked Media Open Specifications, collectively known as *NMOS*, have been developed to provide interoperability between a wide range of products from various manufacturers. NMOS effectively provides a control and management layer in addition to the transport layer provided by SMPTE ST2110. See www.amwa.tv/nmos for further information.

The following facilities are available from this page:

Option	Description
Mode	Allows Discovery and Connection Management to be disabled. This can be useful if troubleshooting an issue. Options are:
	• Off - IS-04 and IS-05 are both disabled.
	• IS-04 - IS-05 is disabled.
	 IS-04 and IS-05 - IS-04 and IS-05 are both active.

Option	Description
IS-04	Controls how the module is to find and use network resources. Set as required.
	 Status - displays registration status of the module. Valid values are:
	Not Registered
	Registering
	Registered
	Registry Mode - options are:
	 Auto - the module will discover the network and set the IP address of the NMOS registry automatically.
	 Static - allows IP address details for the NMOS registry to be set manually.
	 Interface - select the Ethernet interface to be used for NMOS control.
	• Label - specify a label for the module, and click S to save. This is the identifier by which the module will be known in the NMOS registry.
Auto	Displayed if Registry Mode (see above) is set to Auto .
	• DNS IP - displays the current DNS IP address, and allows a new one to be defined. If required, enter a new address in the NEW field, and click S to save.
	• Search Domain - displays the current search domain, and allows a new one to be defined. If required, enter a new domain in the NEW field, and click S to save.
Static	Displayed if Registry Mode (see above) is set to Static .
	 IP Address - displays the current NMOS registry IP address, and allows a new one to be defined. If required, enter a new address in the NEW field, and click S to save.
	 Registration Port - displays the port currently used for Registration traffic, and allows a new one to be defined. If required, enter a new port number in the NEW field, and click S to save or P to return to the previous value.
	 Query Port - displays the port currently used for Query traffic, and allows a new one to be defined. If required, enter a new port number in the NEW field, and click S to save or P to return to the previous value.
Restart	Click to restart the module and apply changes. Initial registration of the module may take a few minutes. Note that restarting the module will result in the loss of any signals currently being processed.

Ethernet Pages 1 and 2

Note: **Ethernet** pages 1 & 2 refer to the rear-panel Ethernet connectors only. See Ethernet Gb on page 94 for information on managing the on-module Ethernet connector.

The **Ethernet** pages show details and status for each network interface. The IQEDGE defaults to use of DHCP, but this can be overridden and a static IP address defined if required.

Ethernet 1 Ethernet 1 RTP Sender Ethernet 1 RTP Receiver Ethernet 2 RTP Sender Ethernet 2 RTP Receiver		Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMOS:0ff	Video Selection SDI 1 / SDI 2	1	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Rear-SFP 1 IP Address Default Gateway Subnet Mask MAC Address Mode Link Status SFP Status SFP Fitted	Current 172.19.164.75 172.19.164.1 265.255.254.0 00:23.70:00:22:6B STATIC UP FALERX PWR OK	New Static 172.19.164.75 172.19.164.1 255.255.254.0 Location	S S S	New Mode DHCP Static NOTE: DHCP / stati Clear Link CP Link Change Time Link Change Count	Restart c takes effect on restart nange Count 2020-06-26T20:54:15 51
Switch LLDP Info	I	ID 00:1C:73:D6:18:26	Port ID	Ethernet3/8/3	Port VLAN 164
All Traffic Capacity Sender Receiver	Gb/s 10 10	Actual (Mb/s) Unknown Unknown	Used % Unknown Unknown	Free % Unknown Unknown	Enable Stats
CPU Traffic Total Unicast Packets Total Broadcast Packets Total Multicast Packets Total Bytes		Sent Unknown Unknown Unknown Unknown	Total Unicast Pa Total Broadcast Total Multicast P Total Bytes	ckets Packets ackets	Received Unknown Unknown Unknown Unknown
Bytes / sec		Unknown	Bytes / sec		Unknown

Ethernet 1 page

The Ethernet Pane

The **Ethernet** pane displays details of the currently selected network interface, and allows a static IP address to be defined. Enter information as required, then click **S** to save. New settings are applied when **Restart** is clicked.

Where am I? Check box

When enabled, the **Where Am I** function causes the SFP/QSFP LEDs for the relevant Ethernet connector to flash.

Clear Link Change Count

If the state of the Ethernet link changes, the Link Change Count and Link Change Time fields are updated. Click Clear Link Change Count to reset the Link Change Count to zero.

Switch LLDP Info

Displays LLDP information received from the switch that the IQEDGE is connected to.

The All Traffic/CPU Traffic Panes Click the **Enable Stats** check box to display information on traffic through the module.

Ethernet 1 and 2 RTP Sender

The **RTP Sender** page displays the amount of data transmitted, on a spigot-by-spigot basis. Units are megabits per second.

Click Enable Stats to display values.

Ethernet 1 RTP Sender Ethernet 1 RTP Receiver Ethernet 2 Ethernet 2 RTP Sender Ethernet 2 RTP Receiver Ethernet RTP Receiver Video Stat	E ts	Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMMOS:0ff	Video Selection SDI 1 / SDI 2	T	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
RTP Sender	Generated	Englals State			
Total Mbs	Unknown				
- Spigot 1	Mbs				
opigori	Unknown				
Spigot 2	Unknown				
Spigot 3	Unknown				
- Spigot 4	Unknown				

Ethernet 1 & 2 RTP Sender Page

Ethernet 1 and 2 RTP Receiver

The **RTP Receiver** pages display the amount of data received, plus details of packet loss, on a spigot-by-spigot basis. Units are megabits per second.

Click **Enable Stats** to display values; click **Clear RTP Count** or **Clear Error Count** to zero RTP Sequence Discontinuity or Error counters.

CUBILIELENTE RECEIVEL		Information	Video Selection	1	Information Select
Ethernet 2		1:172.19.164.75	SDI1/SDI2	v	Video Input Status
Ethernet 2 RTP Sender	=	2:172.19.166.75			◯ Video Output Status
Ethernet 2 RTP Receiver		Gb:172 19 160 75			
Ethernet RTP Receiver Video S	tats	1000-044			Network Status
Ethernet RTP Receiver Audio S	tats 👻	NHOS:OFF			Spigot Link Status
PTP Persiver					
Total Received RTP Rate (Mb	s)	Unknown	Enable Stats		
Total Received RTP Pkt Rate		Unknown			
RTP Sequence Discontinuity	Count	l la la sua	Clear RTP Count		
		Unknown			
Mac Error Count		Unknown	Clear Error Count	+	
Mac Error Count			olean Error obuin		
Unwanted Mulitcast Traffic					-1
Mullticast Drop Rate (Mbs)	Unknown	Mulliticast Drop	Pkt Rate Unkno	wn	
Muliticast Drop Rate (Mbs)	Unknown	Muliticast Drop	Pkt Rate Unkno	wn	
Mullticast Drop Rate (Mbs)	Unknown	Muliticast Drop	Pkt Rate Unkno	wn	
Muliticast Drop Rate (Mbs) Last Few Dropped Packets	Unknown	Muliticast Drop	Pkt Rate Unkno	wn	
Mullticast Drop Rate (Mbs) Last Few Dropped Packets Source IP	Unknown Source Port	Muliticast Drop Destination IP	Pkt Rate Unkno Destination Port	wn Packet Type	
Muliticast Drop Rate (Mbs) Last Few Dropped Packets Source IP	Unknown Source Port	Muliticast Drop Destination IP	Pkt Rate Unkno Destination Port	w n Packet Type	
Muliticast Drop Rate (Mbs) Last Few Dropped Packets Source IP Unknown	Unknown Source Port Unknown	Muliticast Drop Destination IP Unknown	Pkt Rate Unkno Destination Port Unknown	wn Packet Type Unknown	
Muliticast Drop Rate (Mbs) Last Few Dropped Packets Source IP Unknown Unknown	Unknown Source Port Unknown Unknown	Muliticast Drop Destination IP Unknown Unknown	Pkt Rate Unkno Destination Port Unknown Unknown	wn Packet Type Unknown Unknown	
Multicast Drop Rate (Mbs) Last Few Dropped Packets Source IP Unknown Unknown Unknown	Unknown Source Port Unknown Unknown Unknown	Muliticast Drop Destination IP Unknown Unknown Unknown	Pkt Rate Unkno Destination Port Unknown Unknown Unknown Unknown	wn Packet Type Unknown Unknown Unknown	
Multicast Drop Rate (Mbs) Last Few Dropped Packets Source IP Unknown Unknown Unknown Unknown	Unknown Source Port Unknown Unknown Unknown Unknown	Muliticast Drop Destination IP Unknown Unknown Unknown Unknown	Pkt Rate Unkno Destination Port Unknown Unknown Unknown Unknown	wn Packet Type Unknown Unknown Unknown Unknown	
Multicast Drop Rate (Mbs) Last Few Dropped Packets Source IP Unknown Unknown Unknown Unknown Unknown	Unknown Source Port Unknown Unknown Unknown Unknown Unknown	Muliticast Drop Destination IP Unknown Unknown Unknown Unknown Unknown	Pkt Rate Unkno Destination Port Unknown Unknown Unknown Unknown Unknown	wn Packet Type Unknown Unknown Unknown Unknown Unknown	
Multicast Drop Rate (Mbs) Last Few Dropped Packets Source IP Unknown Unknown Unknown Unknown Unknown Unknown	Unknown Source Port Unknown Unknown Unknown Unknown Unknown Unknown	Muliticast Drop Destination IP Unknown Unknown Unknown Unknown Unknown	Pkt Rate Unkno Destination Port Unknown Unknown Unknown Unknown Unknown Unknown	wm Packet Type Unknown Unknown Unknown Unknown Unknown Unknown	
Multicast Drop Rate (Mbs) Last Few Dropped Packets Source IP Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown	Unknown Source Port Unknown Unknown Unknown Unknown Unknown Unknown	Muliticast Drop Destination IP Unknown Unknown Unknown Unknown Unknown Unknown	Pkt Rate Unknow Destination Port Unknown Unknown Unknown Unknown Unknown Unknown Unknown	wm Packet Type Unknown Unknown Unknown Unknown Unknown Unknown Unknown	
Multicast Drop Rate (Mbs) Last Few Dropped Packets Source IP Unknown Unknown Unknown Unknown Unknown Unknown Unknown Unknown	Unknown Source Port Unknown Unknown Unknown Unknown Unknown Unknown Unknown	Multicast Drop Destination IP Unknown Unknown Unknown Unknown Unknown Unknown Unknown	Pkt Rate Unkno Destination Port Unknown Unknown Unknown Unknown Unknown Unknown Unknown	wm Packet Type Unknown Unknown Unknown Unknown Unknown Unknown Unknown	

Ethernet 1 & 2 RTP Receiver Page

Ethernet RTP Receiver Video Stats

The **Ethernet RTP Receiver Video Stats** page displays information on the data received via RTP on each Ethernet input. Units are megabits per second.

Click **Enable Stats** to display values; click **Clear All RTP Counts** to zero RTP Discontinuity counters for each Ethernet input.

Ethermet RTP Receiver Video Stats Ethermet RTP Receiver Audio Stats Ethermet RTP Receiver Meta Stats Link Control HORControl Destination Timing	Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NHOS:0££	Video Selection II SDI 1 / SDI 2	nformation Select Video Input Status Video Output Status Network Status Spigot Link Status
Video Stats			Enable Stats
Spigots Flow ID	Ethernet 1	Ethernet 2	
	Byte Rate (Mbs) RTP Discont	nuity Count Byte Rate (Mt	os) RTP Discontinuity Count
5 Unknown	Unknown Unknown	Unknown	Unknown
6 Unknown	Unknown Unknown	Unknown	Unknown
8 Unknown	Unknown Unknown	Unknown	Unknown
	Clear All RTP Cou	nts	Clear All RTP Counts

Ethernet RTP Receiver Video Stats page

About Flow IDs

In order to maximize media port bandwidth utilization, if spigot addresses match across multiple interfaces then they are allocated to the same Flow ID.

This means that if multiple spigots are assigned to the same Flow ID and the IP addresses are only partially complete, the module will use the shared flow. For example, if two spigots share the same flow, but one of the spigots is missing from the IP addresses for the secondary interface, the module will use all of the information available to it and populate information for the partially completed spigot as if it had a complete flow.

Ethernet RTP Receiver Audio Stats

The **Ethernet RTP Receiver Audio Stats** page displays information on the data received via RTP on each Ethernet input. Units are megabits per second.

Click **Enable Stats** to display values; click **Clear All RTP Counts** to zero RTP Discontinuity counters for each Ethernet input.

Ethernet RTP Receiver Audio Stats Ethernet RTP Receiver Meta Stats Link Control HDRControl Destination Timing Audio V Fade	 Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMOS:0ff 	Video Selection SDI 1 / SDI 2	Information Select O Video Input Status Video Output Status O Video Output Status O Network Status Spigot Link Status
Audio Stats			Enable Stats
Spigots	Ethernet 1	Ethernet :	2
Spigots Flow ID	Byte Rate (Mbs) RTP Disc	ontinuity Count Byte Rat	e (Mbs) RTP Discontinuity Count
5 Unknown	Unknown Unknown	Unknow	n Unknown
6 Unknown	Unknown Unknown	Unknow	n Unknown
7 Unknown	Unknown Unknown	Unknow	n Unknown
8 Unknown	Unknown Unknown Clear All RTP C	Unknow	n Unknown Clear All RTP Counts

Ethernet RTP Receiver Audio Stats page

About Flow IDs

In order to maximize media port bandwidth utilization, if spigot addresses match across multiple interfaces then they are allocated to the same Flow ID.

This means that if multiple spigots are assigned to the same Flow ID and the IP addresses are only partially complete, the module will use the shared flow. For example, if two spigots share the same flow, but one of the spigots is missing from the IP addresses for the secondary interface, the module will use all of the information available to it and populate information for the partially completed spigot as if it had a complete flow.

Ethernet RTP Receiver Meta Stats

The **Ethernet RTP Receiver Meta Stats** page displays information on the metadata received via RTP on each Ethernet input. Units are megabits per second.

Click **Enable Stats** to display values; click **Clear All RTP Counts** to zero RTP Discontinuity counters for each Ethernet input.

Emernet RTP Receiver Meta Stats	Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMMOS:0££	Video Selection SDI 1 / SDI 2	Information Select O Video Input Status Video Video Vitaus Network Status Spigot Link Status
Meta Stats			Enable Stats
- Spigots	Ethernet 1	Ethernet	2
Spigots Flow ID	Byte Rate (Mbs) RTP Disco	ntinuity Count Byte Ra	te (Mbs) RTP Discontinuity Count
5 Unknown	Unknown Unknown	Unknov	vn Unknown
6 Unknown	Unknown Unknown	Unknov	vn Unknown
7 Unknown	Unknown Unknown	Unknov	vn Unknown
8 Unknown	Unknown Unknown Clear All RTP Co	Unknov	vn Unknown Clear All RTP Counts

Ethernet RTP Receiver Meta Stats page

About Flow IDs

In order to maximize media port bandwidth utilization, if spigot addresses match across multiple interfaces then they are allocated to the same Flow ID.

This means that if multiple spigots are assigned to the same Flow ID and the IP addresses are only partially complete, the module will use the shared flow. For example, if two spigots share the same flow, but one of the spigots is missing from the IP addresses for the secondary interface, the module will use all of the information available to it and populate information for the partially completed spigot as if it had a complete flow.

Link Control

The **Link Control** page allows 4K spigots to be configured. Input/output can be via single or quad link. See Configuration on page 36 for information on selecting the required input/ output configuration.

Link Control Destination Timin Audio V Fade Audio Rate Adapi Input Loss Contr Spigot 1	ng tion rol		Information IP1:Loss IP2:Loss	Video Selection SDI 1 / SDI 2	Information Select Ø Video Input Status Video Output Status Network Status
UHD Links					
Snigots	Enable	Disable SDI	TPG		
opigoto	Endibility	Sync Bit	SDQS	UHD ST352 Insertion	
1 - 4	\checkmark			12G Single Link	Ŧ
5 - 8	\checkmark			12G Single Link	T
9 - 12	\checkmark			12G Single Link	T
13-16	$\overline{\mathbf{v}}$		□.	12G Single Link	v
			- UHD SMPTE352 Insertion	12G Single Link	

Link Control page

UHD Links

Enable the spigots to be used as required. Note that these controls are not available when using a single connector to carry 12G.

Disable SDI Sync Bit: some older SDI receiving equipment may not support sync bit insertion. When transmitting signals to these devices, sync bit insertion can be disabled by checking the boxes as required.

TPG

These controls are displayed only when using 12G output.

SDQS: If using Square Division signals, enable the **SDQS** check boxes as required. Otherwise, Two-sample Interleave will be used.

UHD ST352 Insertion: set the ST352 ancillary data type according to how the TPG data is to be output.

- For ST2082-10 output over a single link, select 12G Single Link from the drop-down list.
- For ST425 output over quad links, select 12G Quad Link from the drop-down list.

See SMPTE 2082: 12G-SDI Bit-Serial Interfaces, SMPTE 425: Bit-Serial Interfaces at 3 Gb/s and SMPTE 352: Payload Identification Codes For Serial Digital Interfaces for further information.

HDR Control

The **HDR Control** page allows outgoing SDI traffic to be modified to indicate that it contains HDR content.

HDRControl Destination Timing Audio V Fade Audio Type Control Input Loss Control Spigot 1		Inform 1:1 2:1 Gb: NMO:	nation 72.19.164.75 72.19.166.75 172.19.160.75 5:0ff		SDI 1	/ SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status			
HDR / Colorimetry ST352 II	nsertion									
- Spigot 1	Current					Spigot 2	Current			
Transfer Function	Unł	known				Transfer Function	Unknown			
Colorimetry	Unł	known				Colorimetry	Unknown			
Color Space	Unł	known				Color Space	Unknown			
Bit Depth	Uni	known				Bit Depth	Unknown			
Spigot 3	c Current					Spigot 4	- Current			
Transfer Function	Link	known				Transfer Function	Unknown			
Colorimetry	Uni	known				Colorimetry	Unknown			
Color Space	Link	known				Color Space	Linknown			
Bit Depth	Uni	known				Bit Depth	Unknown			
- Spigot 5						Spigot 6				
Transfer Eugetian	Current		New -	-		Transfor Function	Current	New .		
Calasies etc.	Uni	known	DTZOO			Calarinates	Unknown	DTTOO		
Colorimetry	Uni	known	81709	-	Take	Colonmeuy	Unknown	81709		Take
Color Space	Uni	known	YCbCr	· ·		Color Space	Unknown	YCbCr	•	
Bit Depth	Uni	known	10bit	Ŧ		Bit Depth	Unknown	10bit	Ŧ	
Spigot 7	- Current		r New			Spigot 8	r Current	n new		
Transfer Function	Uni	known	SDR	Ŧ		Transfer Function	Unknown	SDR	Ŧ	
Colorimetry	Uni	known	BT709	*	Take	Colorimetry	Unknown	BT709	-	Take
Color Space	Uni	known	YCbCr	Ŧ	Tuno	Color Space	Unknown	YCbCr	*	
Bit Depth	Uni	known	10bit	Ŧ		Bit Depth	Unknown	10bit	Ŧ	
Spigot 9						Spigot 10				
Transfor Eurotian	Current					Transfor Eupstion	Current			
Colorimotry	Uni	known				Colorimotor	Unknown			
Color Onese	Uni	known				Color Color	Unknown			
Color Space	Uni	known				Color Space	Unknown			
Bit Depth	Uni	known				Bit Depth	Unknown			
Spigot 11	Current					Spigot 12	Current			

HDR Control page

A **New** pane is displayed against output spigots. Select options from the drop-down menus for each spigot as required, then click **Take** to apply the changes.

Spigot 9	Current	New	
Transfer Function	Unknown	SDR	Ŧ
Colorimetry	Unknown	BT709	Take
Color Space	Unknown	YCbCr	T
Bit Depth	Unknown	10bit	Ŧ

The following options are available:

Option	Description
Transfer Function	Available values are:
	• SDR
	• HDR-HLG
	• HDR-PQ
	• Other
Colorimetry	Available values are:
	• BT709
	• BT2020
	• Other

Option	Description
Color Space	Available values are:
	• YCbCr
	• ICtCp
	Other
Bit Depth	Available values are:
	• 10bit
	• 10bit Full range

Destination Timing

The **Destination Timing** page allows genlock timing on each spigot to be adjusted, in order to synchronize the IP signal with the house reference.

Destination Ti Audio V Fade Audio Type Co Input Loss Co Spigot 1 Spigot 2	iming ontrol ontrol		Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMIOS:Off	Video Selection SDI 1 / SDI 2	T	Information Select Video Input Status Video Output Status Video Output Status Network Status Spigot Link Status	
Spigot 1	Genlock Timing V Offset (lines)	0	H Offset (pixels)	0	Receiver P Fran	racket Buffer nes Delay (N to N+1)	0
Spigot 2	Genlock Timing V Offset (lines)	0	H Offset (pixels)	0	- Receiver P Fran	'acket Buffer	0
Spigot 3	- Genlock Timing V Offset (lines)	0	H Offset (pixels)	0	- Receiver P Fran	racket Buffer	0
Spigot 4	- Genlock Timing V Offset (lines)	0	H Offset (pixels)	0	- Receiver P Fran	*acket Buffer	0
Spigot 5	Genlock Timing V Offset (lines)	0	H Offset (pixels)	0	Receiver P Fran	tacket Buffer nes Delay (N to N+1)	0

Destination Timing page

The following parameters can be modified:

Option	Description
Genlock Timing V Offset	Vertical timing offset in lines.
Genlock Timing H Offset	Horizontal timing offset in pixels.
Receiver Packet Buffer Frames Delay	The receiver packet buffer provides additional buffering for a received IP flow. Typically this is required where the IP flow is bursty in nature. However, increasing buffering can affect the time required to switch between IP flows at a spigot, owing to increased switching latency. Adjust as required.

Audio V Fade

This page allows audio fading to be applied on a spigot-by-spigot basis, in order to minimize audio disruption. When applied, the audio will fade down on input loss and perform an audio V fade (down then up) during input switching.

Configure as required.

Audio V Fade		Information		Video Selection	1	Information Select
Audio Type C Input Loss C	ontrol	1:172.19.16	54.75 56.75	SDI 1 / SDI 2	Ŧ	O Video Output Status
Spigot 1 Spigot 2		- Gb:172.19.1	L60.75			Network Status
Spigot 3		NMOS:Off				◯ Spigot Link Status
Spigot 1	Audio V Fade Control		Spigot 2	Audio V Fade Control		1
	🔽 Enable			🗹 Enable		
Spigot 3	_ Audio V Fade Control		Spigot 4	Audio V Fade Control		_
	I Enable			☑ Enable		
Spigot 5	- Audio V Fade Control		Spigot 6	Audio V Fade Control		
	🕼 Enable			🕼 Enable		
Spigot 7			Spigot 8			
	Audio V Fade Control			Audio V Fade Control		
Spigot 9			Spigot 10			
opigoro	Audio V Fade Control		opigot to	Audio V Fade Control		
Spigot 11	Audio V Fade Control		Spigot 12	Audio V Fade Control		
	V Chable					
Spigot 13	Audio V Fade Control		Spigot 14	Audio V Fade Control		1
	✓ Enable			✓ Enable		
Spigot 15	Audio V Fade Control		Spigot 16	Audio V Fade Control		
	✓ Enable			✓ Enable		

Audio V Fade page

Audio Type Control

The **Audio Type Control** page allows audio pairs to be marked as carrying PCM or non-PCM. Only pairs on IP receiver spigots are displayed.

Audio Type Cr Input Loss Co Spigot 1 Spigot 2 Spigot 3 Spigot 4	ontrol Introl	Information 1:172.19.164 2:172.19.166 Gb:172.19.16 NHOS:Off	4.75 6.75 60.75	Video Selection SDI 1 / SDI 2	Y	Information Select Video Input Status Video Output Status O Video Output Status S Pigot Link Status
Spigot 5	Pairs 1-8		Pairs 9-16			
Spigot 6	Pairs 1-8		Pairs 9-16			J
Spigot 7	Pairs 1-8		Pairs 9-16			J
Spigot 8	Pairs 1-8		Pairs 9-16			
Spigot 9	Pairs 1-8		Pairs 9-16			
Spigot 10	Pairs 1-8		Pairs 9-16			

Audio Type Control page

Enable check boxes for pairs carrying PCM.

Input Loss Control

The **Input Loss Control** page allows control of the module's response to signal loss. Select as required.

Input Loss Control Spigot 1 Spigot 2 Spigot 3 Spigot 4 Spigot 5	 Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NNOS: Off 	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Output Spigots Input Loss Control On Input Loss	© TPG		

Input Loss Control page

Options upon signal loss are:

Option	Operation
Freeze	Picture will freeze.
Black	Picture will cut to black.
TPG	Picture will be replaced by TPG output, as set on the Sender TPG page. See page 46 for more information.

Spigot Pages

A separate page is provided for each of the active spigots. These pages are dynamically configured by the product, based on the capabilities of the software version/firmware selected.

Note: The pages shown here may differ from those seen on your particular system, depending on the model and configuration of your IQEDGE system.

Input Spigots

Input spigots are defined by selecting the appropriate firmware version on the **Configuration** page. See **Configuration** on page 36 for more information.

Spigot 1 Spigot 2 Spigot 3 Spigot 4 Spigot 5 Spigot 6 Spigot 5	E V	Information 1:172.19.164. 2:172.19.166. Gb:172.19.160 INMOS:0ff	75 75 .75	Video S SDI 1	election / SDI 2	×	Information Sel Video Input Video Outp Network St: Spigot Link	ect : Status ut Status atus : Status				
Direction RNC	Statue -		Sender		- Num Au	dio Chane	- Packet Time		- SDI Japut CRC Errore			
Input SDI 1	WARN:	TPG	On (Leg	acy) 👻	16	*	500us	Ŧ	Unknown	📃 Ena	ible	Clear
RCStart Stream	Form SD/H	at HD/3G 💌										
				Take	Take							
Video Multicast IP Multicast Port 0 Source IP Source Port 0 Filow Type None		NEW 0 0 None	P P P P	\$ \$ \$ \$		Video Multicast IP Multicast Port Source IP Source Port Flow Type	Current 0 0 None		NEW 0 0 None	P P P	S S S S	
Pa	icketizer Stats						Packeti	zer Stats				
bit/s Unknown	packet/s Unknown		packet drop c Unknown	ount		bit/s Unknown		packet/s Unknown		packet o	irop coun wn	t
Video						Video						
Current		NEW					Current		NEW			
Multicast IP			P	s		Multicast IP				Р	s	
Multicast Port 0		0	P	s		Multicast Port	0		0	P	s	
Source IP			P	S		Source IP				Р	S	
Source Port 0		0	P	S		Source Port	0		0	Р	S	
Flow Type None		None	Ŧ			Flow Type	None		None	*		
Pa	icketizer Stats						Packeti	zer Stats				
Unknown	Dacket/s Unknown		packet drop c Unknown	ount		Unknown		packet/s Unknown		Unkno	drop coun wn	t
Audio						Audio						
Current		NEW				Mallin	Current		NEW			
Multicast IP		0	P	8		Multicast IP	0		0	P	8	
Source IP		-	P	s		Source IP	5			P	s	
Source Port 0		0	P	s		Source Port	0		0	P	s	
Flow Type None		None	-			Flow Type	None		None	*		
Pa	icketizer Stats						Packeti	zer Stats				
r bit/s	packet/s		r packet drop c	ount		r bit/s		r packet/s		r packet o	irop coun	t
Unknown	Unknown		Unknown			Unknown		Unknown		Unkno	wn	

Typical Input Spigot page

The following facilities are available from this page:

Option	Operation							
Spigot Pane	Displays spigot direction, associated BNC connector, current module status, the last Take performed on the spigot and how it was made, e.g. via RollCall or an external agent such as VSM.							
	The following controls are also available:							
	 Streaming - set the redundancy options for this spigot. This will also determine the bandwidth to be used. Options are: 							
	• Dual - full redundancy, both Primary and Secondary available.							
	 Single - Primary only, but with all available bandwidth. 							
	• A - Primary only.							
	• B - Secondary only.							
	 Format - select the maximum expected bandwidth requirement for this spigot. 							
Sender Pane	 Ext Headers - Extended header operation can be adjusted for TR-03/TR-04 compatibility. 							
	Extended headers provide in-band metadata regarding the essence flow and its format, and are applicable to ST- 2110 only. If third-party equipment is unable to support this, the functionality can be disabled, or set to On (Legacy), which ensures that the packet format complies with ST2110 but has no video content.							
	Options are:							
	 Off - Extended headers are disabled. 							
	 On - Sends extended headers fully compliant with ST2110-20. 							
	 On (Legacy) - Sends extended headers that are compatible with releases earlier than V11.73D.76. 							
	 Num Audio Channels - select the number of audio channels present on this spigot. 							
	 Packet Time - select the amount of time required to complete the transmission of each packet. 							
	 SDI Input CRC Errors - enable the check box to display the number of CRC errors. Click Clear to reset the counter to zero. 							
	 Spigot Link - indicates the spigot link status for the selected spigot, as set on the Link Control page (see page 60). 							
	Control is displayed only if spigots are linked.							
Take	Click to apply changes.							

Option	Operation
Flow Panes (Primary, Secondary, Audio and Metadata)	Displays Video, Audio and Metadata status, and allows multicast IP and port details to be defined for the selected spigot.
	To set multicast details for the spigot:
	 Enter IP and Port details as required.
	 Enter the appropriate details in the Source IP and Source Port fields. Each spigot can support a variety of flows.
	 Select the required flow type from the Flow Type menu.
	 Click S to save the details for each item.
	 Click Packetizer Stats to view network statistics for the flow, if required.

Output Spigots

Output spigots are defined by selecting the appropriate firmware version on the **Configuration** page. See Configuration on page 36 for more information.

Snigot 5 A Spigot 6 Spigot 7 B Spigot 7 B Logging - SD Info T Spigot 9	Information Video Selection 1:172.19.164.75 SD11/SD12 2:172.19.166.75 Ob.172.19.160.75 NMOS:0E	2	Information Select O Video Input Status Video Output Status Network Status Spigot Link Status		
Direction BNC Status Output SDI 5 FAIL Last Spigot Take Dual V SD RCStart Dual V SD	nat NHD3G V Receiver Video Std Auto V	um Audio Chans Auto	Audio Delay	= P 0 ms	Nake / Break Mode Make before Break
Primany Status Video Audio Mac None None Loopback None None Video Current Muticast Port 50100 Source IP 172.19.164.147 Source Port 50100 Flow Type SMPTE2022	Meta T None None None None NEW 239 20 1.82 239 20 1.82 P S60100 P 172 19 164.147 P S60100 P SMPTE2022 ▼	ake Secondary Vid Mac No Loopback No Video Video Muticast Por Source Por Flow Type	eo Audio he None he None 239:21.1.78 50100 172:19:164.177 50100 SMPTE2022	Meta None None 239,211,78 50100 172,19,164,177 50100 SMPTE2022	P S P S P S P S V
Audio Current Muticast Port 5004 Source Pi 172:19:164.62 Source Port 5004 Flow Type None	NEW 239 255 6 10 P S 5004 P S 772 13 164 62 P S 5004 P S None V	 Audio Muticast I Muticast Por Source IP Source For Flow Type 	Current 239,255,611 5004 172,19,166,62 5004 None	NEW 239.255.6.11 5004 172.19.166.62 5004 None	PS PS PS
Metadata Current Multicast IP 239,255.6.84 Multicast Port 50102 Source IP 172.19.164.62 Source Port 50102 Flow Type None	NEW 239 255.6.84 P S 50102 P S 172 19 164.62 P S 50102 P S None V	Metadata Multicast IP Multicast Por Source Por Flow Type	Current 239,255,6,85 50102 172,19,166,62 50102 None	NEW 239.255.6.85 50102 172.19.16.62 50102 None	P P P S P S

Typical Output Spigot page

Spigot Pane

The **Spigot** pane provides basic monitoring for the selected Spigot. Click **Take** to apply any changes made.

Spigot											
Output	BNC SDI 9		Status OK								
Last Spigot Take	Streaming		Format		Receiver		- Num Audio Chane	- Audio Dolov		Maka / Brook Mada	
IPCtrl	Dual	*	SD/HD/3G	*	Auto	*	Auto	-O	P 0 ms	Make before Break	Ŧ

Output Spigot Pane

The **Spigot** pane details:

- Spigot direction;
- Associated BNC connector;
- Current status;
- The last Take performed on the spigot.

Streaming

Select the Ethernet connectors to use for this spigot. This will also determine the bandwidth to be used. Options are:

- Dual use both Ethernet connectors, and so all available bandwidth.
- **Single** use either Ethernet connector, and so half of the available bandwidth.
- A or B use one particular Ethernet connector, and so half of the available bandwidth.

Format

Select the format to be used on this spigot. This will ensure that the appropriate level of bandwidth is allocated.

Video Standard

Select the standard for the incoming video, or set to Auto to detect the standard automatically.

Num Audio Channels

If the number of audio channels is known, select the number present on this spigot. Otherwise, set to **Auto**.

Note:	It is important to use the Auto setting unless the actual number of
	audio channels in the stream is known definitively. Setting an
	inaccurate number of audio channels may result in unpredictable
	behavior.

Audio Delay

Move the slider to set an Audio Delay as required. Click P to return to the preset default value.

Make/Break Mode

Specifies how changes to an output's destination will be made. **Make before Break** causes the new destination to buffer data before connection to the previous destination is broken; this results in a smoother transition, but requires more bandwidth. **Break before Make** simply swaps the output's destination without buffering.

Select the required mode from the drop-down list.

Flow Panes (Primary and Secondary)

Displays Video, Audio and Metadata Status, and allows multicast IP and port details to be defined for the selected spigot.

Primary Status							
	Video		Audio		Meta		
Mac	1080	1080/25i		None			
Loopback	pback None		None	None			
Video							
		Current		NEW			
Multicast IP		239.30.1.141		239.30.1.141		Р	S
Multicast Port		50100		50100		Р	S
Source IP		172.19.164.62		172.19.164.62		Р	S
Source Port		50100		50100		Р	S
Flow Type		RFC4175		RFC4175 🔻		,	

Output Spigot Flow Pane

Setting Multicast Details

To set multicast details:

- Select the required video standard from the drop-down list.
- Enter multicast IP and port details as required.
- Enter the appropriate details in the **Source IP** and **Source Port** fields. Each spigot can support a variety of flows.
- Select the required flow type from the **Flow Type** menu.
- Click **S** to save the details, or **P** to return to the preset default value.
Logging - SDI Info

Information on various parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- Log Enable Select the check boxes that correspond to the parameters for which log information should be collected.
- Log Field Displays the name of the logging field.
- Log Value Displays the current log value.

The information below describes the various parameters available for logging.

Logging - SDI Info	<u> </u>	Information	Video Selection	1	Information Select
Logging - System		1:172.19.164.75	SDI 1 / SDI 2	v	Video Input Status Video Output Status
Logging - SFP	=	2:172.19.166.75			
Logging - Fpga	-	GD:1/2.19.160.75			Network Status
Logging - Spigot 1	v	MH05:011			Spigot Link Status
SDI Change time			1		
Input 1	INPUT_1_CHANGE_TIME=				
Input 2	INPUT_2_CHANGE_TIME=				
🕼 Input 3	INPUT_3_CHANGE_TIME=	0			
🗹 Input 4	INPUT_4_CHANGE_TIME=	2020-09-21T1	14:49:44		
SDI Change Counts			1		
obi onango ocanto					
🗵 Input 1	INPUT_1_SDI_CHANGE_CI	NT= 1			
V Input 2	INPUT_2_SDI_CHANGE_C	NT= 1			
🔽 Input 3	INPUT_3_SDI_CHANGE_C	NT= 0			
🕼 Input 4	INPUT_4_SDI_CHANGE_CI	NT= 3442			

Logging SDI Info page

The following facilities are available from this page:

Log Field	Description
INPUT_ <i>N</i> _CHANGE_TIME =	Logs time that the SDI input changed.
INPUT_ <i>N</i> _SDI_CHANGE_ CNT=	Logs number of times that the SDI input has changed.

Where N is the input number.

Logging - System

Information on several parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- Log Enable Select the check boxes that correspond to the parameters for which log information should be collected.
- Log Field Displays the name of the logging field.
- Log Value Displays the current log value.

Logging - System Logging - Network Logging - SFP Logging - Epga Logging - Spigot 1 Logging - Spigot 2	 Information 1:172.19.164.75 2:172.19.166.75 B Gb:172.19.160.75 NMOS:Off 	Information Select Video Input Status Video Output Status O Video Spigot Link Status
Logging System		
Log Enable	Log Field	Log value
Serial Number	SIN=	2000/00/200
V OS version	OS_VERSION=	QNA 5.0.0
W Build No.	BOILD_NOMBER=	0.24.73
V Hardware Ver.	HARDWARE_VERSION=	RMIIIC
V Hardware Mod.	HARDWARE_MOD=	0
V Hardware Build.	HARDWARE_BUILD=	0
Featureboard Ver.	FEATUREBOARD_VERSION=	MITDB1A
Featureboard Mod.	FEATUREBOARD_MOD=	0
Featureboard Build.	FEATUREBOARD_BUILD=	DB1
Firmware Version	FIRMWARE_VERSION=	56261AE6
🕼 Up Time	UPTIME=	138:04:59:00
🔽 RollCall Up Time	RC_UPTIME=	138:04:58:00
RollTracks	ROL_STATES=	Disabled
🖉 Rear ID	REAR_ID=	15
🗵 Rear Status	REAR_STATUS=	OK
Slot Width	SLOT_WIDTH=	2
🖉 Slot Start	SLOT_START=	9
Power Usage	POWER_USAGE=	26.5W/26.5LU
✓ Temperature	TEMP_1_CELSIUS=	42C
V Temperature Sensor	TEMP_1_NAME=	CPU
Reference Source	REFERENCE_1_SOURCE=	Frame Ref A
Reference State	REFERENCE_1_STATE=	OK:625/25i
📝 Time Sync Mode	TIMESYNC_1_MODE=	PTP Unicast
Time Sync Network Interface	TIMESYNC_1_NETWORK=	Ethernet 2
Time Sync Clock Identity	TIMESYNC_1_CLOCK_ID=	08:00:11-FF:FE:21:F6:B2
Time Sync Clock State	TIMESYNC_1_CLOCK_STATE=	0K:LOCKED
Time Sync Average Delay	TIMESYNC_1_AVG_DELAY=	+16.2uS
Time Sync Std Dev Delay	TIMESYNC_1_STDV_DELAY=	+0.0uS
Time Sync Average Error	TIMESYNC_1_AVG_ERROR=	+0.0uS
Time Sync Std Dev Error	TIMESYNC_1_STDV_ERROR=	+0.0uS
Time Sync Grandmaster	TIMESYNC_1_GRANDMASTER=	08:00:11-FF:FE:21:F6:B2 Steps 0
✓ Time Sync Last Lock	TIMESYNC_1_LAST_LOCK=	2020-09-14 16:44:15.513365291
Time Sync Synchronisations	TIMESYNC_1_SYNCHRONISATIONS=	5
✓ Time Sync State Ethernet 0	TIMESYNC_0_STATE=	ок
Time Sync State Ethernet 1	TIMESYNC 1 STATE=	ОK
Time Sync State Ethernet 2	TIMESYNC_2_STATE=	FAIL
V Time Sync Clock Address	TIMESYNC 1 CLOCK ADDRESS=	172.19.190.3
Time Sync Request Interval	TIMESYNC 1 REQUEST INTERVAL=	1s
		-

Logging - System page

Log Field	Description
SN=	Reports the module serial number, which consists of an S
	followed by eight digits.
OS_VERSION=	Reports the operating system name and version.
BUILD_NUMBER=	Reports the build number.
HARDWARE_VERSION=	Reports the hardware version number.
HARDWARE_MOD=	Reports the hardware modification number.
HARDWARE_BUILD=	Reports the hardware build number.
FEATUREBOARD_ VERSION=	Reports the rear module daughter board version number.
FEATUREBOARD_MOD=	Reports the rear module daughter board modification number.
FEATUREBOARD_BUILD=	 Reports the rear module daughter board build number. Valid values are: FB1 FB2
FIRMWARE_VERSION=	Reports the firmware version number.
UPTIME=	Reports the time since the last restart in the format <i>ddd:hh:mm:ss</i> .
RC_UPTIME=	Reports time RollCall has been up in the format <i>ddd:hh:mm:ss</i> .
ROL_STATES=	 Reports the RollCall status. Valid values are: OK FAIL:n where n is the RollTrack index or indexes which are failing Disabled
REAR_ID=	Reports the code number of the rear fitted.
REAR_STATUS=	Reports the status of the rear where it can be determined.
SLOT_WIDTH=	Reports the slot width. IQUCP25 modules are available in single and triple width.
SLOT_START=	Reports the slot in the rack where the module is located.
POWER_USAGE=	Reports the power usage in PR Units (for IQH4B-type frames). Note : this cannot be deselected.
TEMP_N_CELSIUS=	Reports the temperature status of the FPGA. Note : this cannot be deselected.
TEMP_N_NAME=	Temperature measurement name.
REFERENCE_N_SOURCE=	Reports time reference source.
REFERENCE_N_STATE=	Valid values are:
	OK:Locked
	• OK:Input
	WARN:Freerun WARN:CrossLock

The following logging options are available. Enable check boxes to activate log fields as required.

Log Field	Description
TIMESYNC_N_MODE=	Valid values are:
	 Free running: Module is using its own clock with no reference to any other source.
	 PTP Multicast: Card is synchronizing to a PTP grandmaster clock using multicast network messages.
	 PTP Unicast: As PTP Multicast but using the delay request. Reply messages are unicast to minimize network traffic.
	 NTP: Module clock is synchronized to an NTP clock. Generally less precise than PTP.
TIMESYNC_ <i>N</i> _NETWORK=	Network port currently being used for synchronization for IQEDGE modules, dependent on the choice of interfaces made on the Time Sync Configuration page. If PTP and multiple interfaces are enabled, the PTP synchronization will switch ports if it doesn't see regular sync messages on the port.
TIMESYNC_N_CLOCK_ID=	Identification number of PTP clock being used for synchronization. This is not necessarily the grandmaster clock identity, as there can be intermediate clocks between the grandmaster and the card, depending on network configuration.
TIMESYNC_N_CLOCK_	Valid values are:
STATE=	 Free running: Card is not being synchronized. No Lock: PTP being used but clocks haven't synchronized within +/- 1mS.
	 Locked: PTP being used and clocks are within the accepted range.
	NTP: Module using NTP to synchronize.
TIMESYNC_ <i>N</i> _AVG_ DELAY=	The current network delay time between the card and the clock sending the synchronization messages. This should be relatively constant and is dependent on network configuration.
TIMESYNC_ <i>N</i> _STDV_ DELAY=	The current standard deviation in the network delay time between the card and the clock sending the synchronization messages. Should be a low number as the network delay is expected to be constant.
TIMESYNC_N_AVG_ ERROR=	The current difference between the cards time and the grandmaster time. Should be close to zero once card has synchronized.
TIMESYNC_ <i>N</i> _STDV_ ERROR=	The standard deviation in the average error.
TIMESYNC_ <i>N</i> _ GRANDMASTER=	Identity of network clock acting as PTP grandmaster. This is the source of the PTP synchronization messages used by all PTP slave clocks on the network. If there are multiple grandmasters, they should negotiate between themselves to identify the most accurate and then silence the others.

Log Field	Description
TIMESYNC_ <i>N</i> _LAST_ LOCK=	Time when the module last changed from not locked to locked. Ideally this will be a few seconds after the module has powered up. This allows the user to confirm which clock the module has synchronized to.
TIMESYNC_ <i>N</i> _ SYNCHRONISATIONS=	Logs the number of times the card has synchronized since it was powered up. Ideally this will be a low number, as cards are expected to synchronize and stay synchronized. Large numbers indicate possible problems with the network or grandmaster clock.
TIMESYNC_N_STATE=	Logs whether PTP is locked. Valid values are: • OK:LOCKED
	FAIL:NO LOCK
TIMESYNC_ <i>N</i> _CLOCK_ ADDRESS=	Logs IP address of the currently-selected Grand Master.
TIMESYNC_ <i>N</i> _REQUEST_ INTERVAL=	Logs the PTP Delay Request Frequency setting, as set on the Time Sync Configuration page. See page 41.
TIMESYNC_ <i>N</i> _ PREFERENCE=	Logs the PTP Network Interface Preference setting, as set on the Time Sync Configuration page. See page 41.

Where N is the input number.

Information on several parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- Log Enable Select the check boxes that correspond to the parameters for which log information should be collected.
- Log Field Displays the name of the logging field.
- Log Value Displays the current log value.

Logging - Network Logging - SFP Logging - Fpga Logging - Spigot 1 Logging - Spigot 2 Logging - Spigot 3	 Information 1:172.19.164.75 2:172.19.166.75 ■ 6b:172.19.160.75 NH0S: off 	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status O Video Network Status Spigot Link Status
Logging Network			Lead the
Log Enable	Log Field		Log Value
Ethernet 1 Name	LAN_PORT_1_NAME=		Ethernet 1
Ethernet 1 Speed	LAN_PORT_1_SPEED=		1000/s
Ethernet 1 IP Address	LAN_PORT_1_IPADDRESS=		172.19.164.75
Ethernet 1 IP Gateway	LAN_PORT_1_GATEWAY=		172.19.164.1
V Ethernet 1 Subnet Mask	LAN_PORT_1_SUBNET_MASK	=	255.255.254.0
V Ethernet 1 MAC Address	LAN_PORT_1_MACADDRESS=	-	00:23:70:00:22:68
V Ethernet 1 State	LAN_PORT_1_STATE=		0.2 Mb/c
Sthemet 1 Traffic In	LAN_PORT_1_TRAFFIC_IN		0.0 Mb/s
Ethernet 1 CBU Traffia In State		OTATE-	OK MID/S
Ethernet 1 CPU Traffic Out State			or
Ethernet 1 BTB Discontinuity Bata	LAN PORT 1 PTR DIS PATE		0
Sthemet 1 Link Status	LAN PORT 1 LINK STATE-	:-	or
Ethernet 1 MAC Link Status		TC-	ok
Ethernet 1 Switch Name	LAN DORT 1 SWITCH NAME	-	Arista7504R
Sthornot 1 Switch Chassis ID		- ele ID-	00:10:73:D6:19:26
C Ethernet 1 Switch Part ID		. ID-	Ethernet3/8/3
Sthernet 1 Switch Port VI AN		_ID_	164
Sthemet 2 Name	LAN PORT 2 NAME-	_*_014=	Ethernet 2
Sthernet 2 Sneed	LAN PORT 2 SPEED-		10Gb/s
Ethernet 2 IP Address	LAN PORT 2 IPADDRESS=		172 19 166 75
Ethernet 2 IP Gateway	LAN PORT 2 GATEWAY=		172 19 166 1
Fthernet 2 Subnet Mask	LAN PORT 2 SUBNET MASK	=	255.255.254.0
Ethernet 2 MAC Address	LAN PORT 2 MACADDRESS	-	00:23:70:00:22:6C
Ethernet 2 State	LAN PORT 2 STATE=		WARNInactive
Ethernet 2 Traffic In	LAN PORT 2 TRAFFIC IN=		0.1 Mb/s
Ethernet 2 Traffic Out	LAN PORT 2 TRAFFIC OUT=	:	0.0 Mb/s
Ethernet 2 CPU Traffic In State	LAN PORT 2 CPU TRAF IN	STATE=	ок
Ethernet 2 CPU Traffic Out State	LAN_PORT_2_CPU_TRAF_OU	- IT_STATE=	ок
Ethernet 2 RTP Discontinuity Rate	LAN_PORT_2_RTP_DIS_RATE	=	0
Sethernet 2 Link Status	LAN_PORT_2_LINK_STATE=		ок
Ethernet 2 MAC Link Status	LAN_PORT_2_MAC_LINK_STA	VTE=	ок
I Ethernet 2 Switch Name	LAN_PORT_2_SWITCH_NAME	=	Juniper
Ethernet 2 Switch Chassis ID	LAN_PORT_2_SWITCH_CHAS	SIS_ID=	08:B2:58:38:33:07
Ethernet 2 Switch Port ID	LAN_PORT_2_SWITCH_PORT	_ID=	xe-0/0/28:2
Ethernet 2 Switch Port VLAN	LAN_PORT_2_SWITCH_PORT	_VLAN=	166

Logging - Network page

The following logging options are available. Enable check boxes to activate log fields as required.

Log Field	Description
LAN_PORT_N_NAME=	Logs the Ethernet port name.
LAN_PORT_ <i>N</i> _SPEED=	Logs the Ethernet connection speed. Valid values are: • 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 • 25 Gbit/s
LAN_PORI_N_IPADDRESS=	Logs the Ethernet port IP address.

Log Field	Description
LAN_PORT_ <i>N</i> _GATEWAY=	Logs the gateway address set for the management of media interfaces.
LAN_PORT_N_SUBNET_MASK=	Logs the subnet mask address set for the management of media interfaces.
LAN_PORT_N_MACADDRESS=	Logs the Ethernet port MAC address.
LAN_PORT_ <i>N</i> _STATE=	Logs the Ethernet connection state. Valid values are: • Active
	WARN:Inactive
LAN_PORT_ <i>N</i> _TRAFFIC_IN=	Logs speed of traffic received by the Ethernet port. Values are reported in kbps, Mbps or Gbps, as appropriate.
LAN_PORT_ <i>N</i> _TRAFFIC_OUT=	Logs speed of traffic transmitted by the Ethernet port. Values are reported in Kbps, Mbps or Gbps, as appropriate.
LAN_PORT_ <i>N</i> _CPU_TRAF_IN_ STATE=	Shows whether the flow of data into the CPU is satisfactory. Valid values are: • OK
	WARN:LOW DATAFAIL
LAN_PORT_ <i>N</i> _CPU_TRAF_OUT_ STATE=	Shows whether the flow of data out of the CPU is satisfactory. Valid values are: • OK
	 WARN:LOW DATA FAIL
LAN_PORT_N_RTP_DIS_RATE=	Logs RTP discontinuity rate for the Ethernet port.
LAN_PORT_ <i>N</i> _LINK_STATE=	Logs the Ethernet link state. Valid values are: OK WARN:DOWN
LAN_PORT_ <i>N</i> _MAC_LINK_ STATE=	Logs state of the module's FPGA Ethernet link. Valid values are: • UP
	• DOWN
LAN_PORT_ <i>N</i> _SWITCH_NAME=	Logs name of the network switch that the module is connected to.
LAN_PORT_ <i>N</i> _SWITCH_CHASSIS _ID=	Logs the MAC address of the switch port to which the module's media port is connected.
LAN_PORT_ <i>N</i> _SWITCH_PORT_ ID=	Logs Port ID of the network switch the module is connected to.
LAN_PORT_ <i>N</i> _SWITCH_PORT_ VLAN=	Logs name of the VLAN that the module is connected to.

Where N is the input number.

Logging - Network

Information on several parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- Log Enable Select the check boxes that correspond to the parameters for which log information should be collected.
- Log Field Displays the name of the logging field.
- Log Value Displays the current log value.

Logging - Network Logging - SFP Logging - Spigot 1 Logging - Spigot 1 Logging - Spigot 2 Logging - Spigot 3	 Information 1:172.19.164.75 2:172.19.166.75 ≡ 6b:172.19.160.75 ■ MMOS: 0ff 	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status	
Logging Network				1
Log Enable	Log Field		Log Value	
🕼 Ethernet 1 Name	LAN_PORT_1_NAME=		Ethernet 1	
Ethernet 1 Speed	LAN_PORT_1_SPEED=		10Gb/s	
Ethernet 1 IP Address	LAN_PORT_1_IPADDRESS=		172.19.164.75	
Ethernet 1 IP Gateway	LAN_PORT_1_GATEWAY=		172.19.164.1	
🕼 Ethernet 1 Subnet Mask	LAN_PORT_1_SUBNET_MASK	(=	255.255.254.0	
Ethernet 1 MAC Address	LAN_PORT_1_MACADDRESS=	=	00:23:70:00:22:6B	
🕼 Ethernet 1 State	LAN_PORT_1_STATE=		WARN:Inactive	
🗹 Ethernet 1 Traffic In	LAN_PORT_1_TRAFFIC_IN=		0.3 Mb/s	
🗹 Ethernet 1 Traffic Out	LAN_PORT_1_TRAFFIC_OUT=	:	0.0 Mb/s	
Ethernet 1 CPU Traffic In State	LAN_PORT_1_CPU_TRAF_IN_	_STATE=	ок	
🕼 Ethernet 1 CPU Traffic Out State	LAN_PORT_1_CPU_TRAF_OU	IT_STATE=	ок	
Ethernet 1 RTP Discontinuity Rate	LAN_PORT_1_RTP_DIS_RATE	:=	0	
Ethernet 1 Link Status	LAN_PORT_1_LINK_STATE=		ок	
Ethernet 1 MAC Link Status	LAN_PORT_1_MAC_LINK_STA	TE=	ок	
🕼 Ethernet 1 Switch Name	LAN_PORT_1_SWITCH_NAME	=	Arista7504R	
🕼 Ethernet 1 Switch Chassis ID	LAN_PORT_1_SWITCH_CHAS	SIS_ID=	00:1C:73:D6:18:26	
Ethernet 1 Switch Port ID	LAN_PORT_1_SWITCH_PORT	_ID=	Ethernet3/8/3	
Ethernet 1 Switch Port VLAN	LAN_PORT_1_SWITCH_PORT	_VLAN=	164	
🕼 Ethernet 2 Name	LAN_PORT_2_NAME=		Ethernet 2	
🕼 Ethernet 2 Speed	LAN_PORT_2_SPEED=		10Gb/s	
Ethernet 2 IP Address	LAN_PORT_2_IPADDRESS=		172.19.166.75	
🕼 Ethernet 2 IP Gateway	LAN_PORT_2_GATEWAY=		172.19.166.1	
🕼 Ethernet 2 Subnet Mask	LAN_PORT_2_SUBNET_MASK	=	255.255.254.0	
🗹 Ethernet 2 MAC Address	LAN_PORT_2_MACADDRESS=	-	00:23:70:00:22:6C	
Ethernet 2 State	LAN_PORT_2_STATE=		WARN:Inactive	
🗹 Ethernet 2 Traffic In	LAN_PORT_2_TRAFFIC_IN=		0.1 Mb/s	
🕼 Ethernet 2 Traffic Out	LAN_PORT_2_TRAFFIC_OUT=		0.0 Mb/s	
Ethernet 2 CPU Traffic In State	LAN_PORT_2_CPU_TRAF_IN_	STATE=	ок	
Ethernet 2 CPU Traffic Out State	LAN_PORT_2_CPU_TRAF_OU	IT_STATE=	ок	
Ethernet 2 RTP Discontinuity Rate	LAN PORT 2 RTP DIS RATE	=	0	
Ethernet 2 Link Status	LAN PORT 2 LINK STATE=		ок	
Ethernet 2 MAC Link Status	LAN PORT 2 MAC LINK STA	TE=	ок	
Ethernet 2 Switch Name	LAN_PORT_2_SWITCH NAME	=	Juniper	
Ethernet 2 Switch Chassis ID	LAN_PORT 2 SWITCH CHAS	SIS_ID=	08:B2:58:38:33:07	
Ethernet 2 Switch Port ID	LAN PORT 2 SWITCH PORT	ID=	xe-0/0/28:2	
Ethernet 2 Switch Port VLAN	LAN PORT 2 SWITCH PORT	VLAN=	166	

Logging - Network page

Log Field	Description
LAN_PORT_ <i>N</i> _NAME=	Logs the Ethernet port name.
LAN_PORT_N_SPEED=	Logs the Ethernet connection speed. Valid values are:
	 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
	• 25 Gbit/s
	• No Link
LAN_PORT_ <i>N</i> _IPADDRESS=	Logs the Ethernet port IP address.
LAN_PORT_ <i>N</i> _GATEWAY=	Logs the gateway address set for the management of media interfaces.
LAN_PORT_ <i>N</i> _SUBNET_MASK=	Logs the subnet mask address set for the management of media interfaces.
LAN_PORT_N_MACADDRESS=	Logs the Ethernet port MAC address.
LAN_PORT_ <i>N</i> _STATE=	Logs the Ethernet connection state. Valid values are: • Active
	• WARN:Inactive
LAN_PORT_ <i>N</i> _TRAFFIC_IN=	Logs speed of traffic received by the Ethernet port. Values are reported in kbps, Mbps or Gbps, as appropriate.
LAN_PORT_ <i>N</i> _TRAFFIC_OUT=	Logs speed of traffic transmitted by the Ethernet port. Values are reported in Kbps, Mbps or Gbps, as appropriate.
LAN_PORT_N_CPU_TRAF_IN_ STATE=	Shows whether the flow of data into the CPU is
	• OK
	WARN:LOW DATA
	• FAIL
LAN_PORT_ <i>N</i> _CPU_TRAF_OUT_ STATE=	Shows whether the flow of data out of the CPU is satisfactory. Valid values are: • OK
	WARN:LOW DATA
	• FAIL
LAN_PORT_N_RTP_DIS_RATE=	Logs RTP discontinuity rate for the Ethernet port.
LAN_PORT_ <i>N</i> _LINK_STATE=	Logs the Ethernet link state. Valid values are:
I AN PORT N MAC LINK	Logs state of the module's EPGA Ethernet link Valid
STATE=	values are:
	• DOWN

The following logging options are available. Enable check boxes to activate log fields as required.

Log Field	Description
LAN_PORT_N_SWITCH_NAME=	Logs name of the network switch that the module is connected to.
LAN_PORT_N_SWITCH_CHASSIS _ID=	Logs the MAC address of the switch port to which the module's media port is connected.
LAN_PORT_N_SWITCH_PORT_ ID=	Logs Port ID of the network switch the module is connected to.
LAN_PORT_N_SWITCH_PORT_ VLAN=	Logs name of the VLAN that the module is connected to.

Where N is the input number.

Logging - SFP

Information on several parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- Log Enable Select the check boxes that correspond to the parameters for which log information should be collected.
- Log Field Displays the name of the logging field.
- Log Value Displays the current log value.

Logging - SFP Logging - Fpga Logging - Spigot 1 Logging - Spigot 2 Logging - Spigot 3 Logging - Spigot 4	Information 1:172.19.164.75 2:173.19.166.75 Gb:172.19.160.7 WMOS:0ff	S	Information Select Video Input Sta Video Output S Network Status Spigot Link Sta	tus tatus i tus	
Logging SFP					
SFP 1			SFP 2		
Log Enable	Log Field	Log Value	Log Enable	Log Field	Log Value
Fitted	SFP_1_FITTED=	ОK	Fitted	SFP_2_FITTED=	ОK
✓ Status	SFP_1_STATUS=	FAIL:RX PWR	Status	SFP_2_STATUS=	WARN:RX PWR
✓ Type	SFP_1_TYPE=	10G Base-SR, Short distance (S)	V Type	SFP_2_TYPE=	10G Base-SR, Short distance (S)
Manufacturer	SFP_1_VENDOR=	Gigalight	Manufacturer	SFP_2_VENDOR=	Gigalight
✓ Model	SFP_1_VENDOR_PN=	GPP-85192-SRC	✓ Model	SFP_2_VENDOR_PN=	GPP-85192-SRC
Serial Number	SFP_1_SERIAL_NR=	M1702275611	Serial Number	SFP_2_SERIAL_NR=	M1611011574
Revision	SFP_1_REVISION=	1.0	Revision	SFP_2_REVISION=	1.0
Connector	SFP_1_CONNECTOR=	Fibre LC	Connector	SFP_2_CONNECTOR=	Fibre LC
Temperature Sensor	TEMP_2_NAME=	SFP1	Temperature Sensor	TEMP_3_NAME=	SFP2
✓ Temperature	TEMP_2_CELSIUS=	46C	✓ Temperature	TEMP_3_CELSIUS=	43C
Temperature State	TEMP_2_STATE=	ок	Temperature State	TEMP_3_STATE=	ок
✓ Voltage Sensor	VOLTAGE_4_NAME=	SFP1	Voltage Sensor	VOLTAGE_5_NAME=	SFP2
✓ Voltage	VOLTAGE_4_VALUE=	3.26V	Voltage	VOLTAGE_5_VALUE=	3.25V
Voltage State	VOLTAGE_4_STATE=	ок	Voltage State	VOLTAGE_5_STATE=	ок
Tx Wavelength	SFP_1_WAVELENGTH=	850nm	Tx Wavelength	SFP_2_WAVELENGTH=	850nm
☑ Tx Bias 1	SFP_1_1_LASER_BIAS=	6.83mA	✓ Tx Bias 1	SFP_2_1_LASER_BIAS=	6.56mA
✓ Tx Bias 2	SFP_1_2_LASER_BIAS=		✓ Tx Bias 2	SFP_2_2_LASER_BIAS=	
▼ Tx Bias 3	SFP_1_3_LASER_BIAS=		Tx Bias 3	SFP_2_3_LASER_BIAS=	
👽 Tx Bias 4	SFP_1_4_LASER_BIAS=		Tx Bias 4	SFP_2_4_LASER_BIAS=	
Tx Power 1	SFP_1_1_TX_POWER=	-3.63dBm	Tx Power 1	SFP_2_1_TX_POWER=	-3.79dBm
✓ Tx Power 2	SFP_1_2_TX_POWER=		Tx Power 2	SFP_2_2_TX_POWER=	
☑ Tx Power 3	SFP_1_3_TX_POWER=		Tx Power 3	SFP_2_3_TX_POWER=	
☑ Tx Power 4	SFP_1_4_TX_POWER=		Tx Power 4	SFP_2_4_TX_POWER=	
Tx Power State 1	SFP_1_1_TX_POWER_STATE=	ок	Tx Power State 1	SFP_2_1_TX_POWER_STATE=	ок
Tx Power State 2	SFP_1_2_TX_POWER_STATE=		Tx Power State 2	SFP_2_2_TX_POWER_STATE=	
Tx Power State 3	SFP_1_3_TX_POWER_STATE=		Tx Power State 3	SFP_2_3_TX_POWER_STATE=	
Tx Power State 4	SFP_1_4_TX_POWER_STATE=		Tx Power State 4	SFP_2_4_TX_POWER_STATE=	
Rx Power 1	SFP_1_1_RX_POWER=	3.01 dBm	Rx Power 1	SFP_2_1_RX_POWER=	-0.25dBm
Rx Power 2	SFP_1_2_RX_POWER=		Rx Power 2	SFP_2_2_RX_POWER=	
Rx Power 3	SFP_1_3_RX_POWER=	-	Rx Power 3	SFP_2_3_RX_POWER=	-
Rx Power 4	SFP_1_4_RX_POWER=		Rx Power 4	SFP_2_4_RX_POWER=	
Rx Power State 1	SFP_1_1_RX_POWER_STATE=	FAIL:High	Rx Power State 1	SFP_2_1_RX_POWER_STATE=	WARN:High
Rx Power State 2	SFP_1_2_RX_POWER_STATE=	-	Rx Power State 2	SFP_2_2_RX_POWER_STATE=	
Rx Power State 3	SFP_1_3_RX_POWER_STATE=	-	Rx Power State 3	SFP_2_3_RX_POWER_STATE=	-
Rx Power State 4	SFP_1_4_RX_POWER_STATE=	-	Rx Power State 4	SFP_2_4_RX_POWER_STATE=	

Logging - SFP page

The following options are available. Enable check boxes to activate log fields as required.

Log Field	Description		
SFP_N_FITTED=	Logs presence of (Q)SFP. Valid values are:		
	• OK		
	• Missing		
SFP_N_STATUS=	Logs status reported by the (Q)SFP. Valid values are:		
	<u>SFPs</u>		
	• OK		
	WARN:Temp		
	• WARN:VCC		
	• WARN:TX BIAS		
	WARN:RX BIAS		
	WARN:Laser		
	• WARN:TEC Curr		
	FAIL:SFP Not Ready FAIL:DY LOC DY Failure		
	FAIL:RX LOS - RX Failure FAIL:RX LOS - RX Failure		
	FAIL:RA LOL - RA LOSS OF LOCK		
	OSEPs		
	• OK		
	WARN:Temp		
	• WARN:VCC		
	WARN:RX PWR LO		
	• WARN:RX PWR HI		
	WARN:TX PWR LO		
	• WARN:TX PWR HI		
	• FAIL:SFP Not Ready		
	• FAIL:RX LOS - RX Failure		
	• FAIL:TX LOS - TX Failure		
	FAIL:EQ Fault - EQ Failure		
	 FAIL:RX LOL - RX Loss of Lock 		
	 FAIL:TX LOL - TX Loss of Lock 		
	• FAIL:Temp		
	• FAIL:VCC		
	<u>QSFPs (cont)</u>		
	• FAIL:RX PWR LO		
	• FAIL:RX PWR HI		
	FAIL:TX BIAS LO		
	FAIL: I X BIAS HI		
	Logs (Q)SFP Identifier from device.		
SFP_N_VENDOR=	Logs (Q)SFP manufacturer from device.		
SFP_N_VENDOR_PN=	Logs (Q)SFP model number from device.		

Log Field	Description		
SFP_N_SERIAL_NR=	Logs the module serial number, which consists of an S followed by eight digits.		
SFP_N_REVISION=	Logs manufacturer revision number.		
SFP_N_CONNECTOR=	Logs connector type.		
TEMP_N_NAME=	Logs temperature sensor name.		
TEMP_N_CELSIUS=	Logs current temperature sensor reading.		
TEMP_N_STATE=	 Logs temperature sensor state. Valid values are: WARN:Disabled - Temperature sensor disabled. WARN:Low - Low, but in tolerance. WARN:High - High, but in tolerance. OK FAIL:Low - Low and out of tolerance. FAIL:Low - Ligh and out of tolerance. 		
VOITAGE N NAME=	Logs voltage sensor name		
VOLTAGE N VALUE=	Logs current voltage reading.		
VOLTAGE_N_STATE=	 Logs temperature sensor state. Valid values are: OK WARN:Low - Low, but in tolerance. WARN:High - High, but in tolerance. 		
SFP_N_WAVELENGTH=	Logs transmit wavelength in nm.		
SFP_N_X_LASER_BIAS=	Logs bias level in mA.		
SFP_N_X_TX_POWER=	Logs transmit power level in dBm.		
SFP_N_X_TX_POWER_ STATE=	 Logs transmit power level. Valid values are: OK WARN:Low - Low, but in tolerance. WARN:High - High, but in tolerance. FAIL:Low - Low and out of tolerance. FAIL:High - High and out of tolerance. 		
SFP_N_X_RX_POWER=	Logs receive power level in dBm.		
SFP_N_X_RX_POWER_ STATE=	 Logs receive power level. Valid values are: OK WARN:Low - Low, but in tolerance. WARN:High - High, but in tolerance. FAIL:Low - Low and out of tolerance. FAIL:High - High and out of tolerance. 		

Where N is the input/(Q)SFP number and X is the lane.

Logging - FPGA

Information on several parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- Log Enable Select the check boxes that correspond to the parameters for which log information should be collected.
- Log Field Displays the name of the logging field.
- Log Value Displays the current log value.

Logging - Fpga Logging - Spigot 1 Logging - Spigot 2 Logging - Spigot 3 Logging - Spigot 4 Logging - Spigot 5	Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMOS:Off	SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Logging Fpga			
Log Enable	Log Field	Lo	g Value
Temperature Sensor	TEMP_4_NAME=	FP	GA
☑ Temperature	TEMP_4_CELSIUS=	53	c
Temperature State	TEMP_4_STATE=	OF	c l
🕼 Voltage Name	VOLTAGE_1_NAME=	VC	CINT
Voltage Value	VOLTAGE_1_VALUE=	1.0	10V
🕼 Voltage Name	VOLTAGE_2_NAME=	VC	CAUX
Voltage Value	VOLTAGE_2_VALUE=	1.7	7V
🕼 Voltage Name	VOLTAGE_3_NAME=	VC	CBRAM
Voltage Value	VOLTAGE_3_VALUE=	1.0	0V

Logging - FPGA page

The following options are available. Enable check boxes to activate log fields as required.

Log Field	Description	
TEMP_N_NAME=	Reports temperature sensor name.	
TEMP_N_CELSIUS=	Reports current temperature sensor reading.	
TEMP_N_STATE=	Reports current temperature state. Valid values are:	
	• WARN:Low - temperature is low, but in tolerance.	
	 WARN: High - temperature is high, but in tolerance. 	
	• OK	
	• FAIL:Low - temperature is low and out of tolerance.	
	• FAIL:High - temperature is high and out of tolerance.	
	 WARN:Disabled - temperature sensor is disabled. 	
VOLTAGE_N_NAME=	Voltage sensor name.	
VOLTAGE_ <i>N</i> _VALUE=	Reports current voltage reading.	

Where N is the input number.

Logging - Spigot n

The **Logging - Spigot** pages are used to select the fields to be enabled for each available spigot. Depending on whether the spigot is an input or an output, the appropriate log fields are shown.

An additional field is provided for the user to optionally specify a name for the input/output.

Logging - Spigot 1 2 Logging - Spigot 2 2 Logging - Spigot 3 2 Logging - Spigot 4 2 Logging - Spigot 5 2	Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NHOS:0ff	Video Selection SDI 1 / SDI 2 Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Input Logging		
Input 1 Name		
INPUT_1_NAME	PS	
Log Enable - Video	Log Field	Log Value
🗸 Input Ident	INPUT_1_IDENT=	1
📝 Input Name	INPUT_1_NAME=	INPUT_1_NAME
🕼 Input State	INPUT_1_STATE=	WARN: TPG
🗸 Input Type	INPUT_1_TYPE=	HD / SD / 3G SDI
Input Standard	INPUT_1_STANDARD=	525/29i
☑ Input Stream	INPUT_1_STREAM=	DUAL

Input Spigot Logging page

Logging - Spigot 5 Logging - Spigot 6 Logging - Spigot 7 Logging - Spigot 8 Logging - NMOS Logging - Card Diagnostics	Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMOS:Off	video Selection SDI 1 / SDI 2 💌	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Output Logging			
OUTPUT_5_NAME	PS		
Log Enable	Log Field	Lo	g Value
- Video			
Output Ident	OUTPUT_5_IDENT=	5	
Output Name	OUTPUT_5_NAME=	TUO	PUT_5_NAME
Output State	OUTPUT_5_STATE=	FAIL	
🕼 Output Type	OUTPUT_5_TYPE=	HD	SD/3G SDI
🕼 Output Standard	OUTPUT_5_STANDARD=	Unk	nown
🖉 Output Make Break	OUTPUT_5_MAKE_BREAK=	MBE	3

Output Spigot Logging page

The following options are available. Enable check boxes to activate log fields as required.

Option	Description	
INPUT_N_IDENT=	System-defined identifier for the input, based on the rear ID.	
INPUT_N_NAME=	Name of the input, as defined on the Setup page. See page 93.	

Option	Description		
INPUT_N_STATE=	Valid values are:		
	OK: input signal good.		
	FAIL: input signal not detected.		
INPUT_N_TYPE=	HD/SD/3G SDI		
INPUT_N_STANDARD=	PAL/NTSC/625 Mono/525 Mono		
INPUT_N_STREAM=	Displays whether an IP sender uses SDI on Primary, Secondary or both. Valid values are:		
	Dual - both used.		
	• A - only Primary used.		
	• B - only Secondary used.		
OUTPUT_N_IDENT=	Name of the output as shown on the rear panel.		
OUTPUT_N_NAME=	Name of the output as defined by the user.		
OUTPUT_N_STATE=	Current state of the output. Valid values are:		
	OK: output signal good.		
	FAIL: output signal not detected.		
	• WARN:Freeze		
	WARN: Pattern		
	• WARN:Black		
OUTPUT_N_TYPE=	Type of output. Valid values are:		
	• SD SDI		
	• HD SDI		
	HD/SD/3G SDI		
OUTPUT_N_STANDARD=	Reports video standard on the output.		
	Format:		
	<lines>(<active>)/<rate><i p="" st=""></i></rate></active></lines>		
	Where:		
	• Lines = Total lines		
	Active = Active lines		
	• Rate = Frame rate		
	• I = Interlaced		
	• P = Progressive		
	• $\mathbf{Sr} = Segmented Frame$		
	For example: 1080/50p or 1125(1080)/251.		
OUTPUT_ <i>N</i> _MAKE_ BREAK=	Reports Make-before-Break or Break-before-Make setting for the spigot.		

Where N is the input/output number.

Logging - NMOS

Information on several NMOS parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- Log Enable Select the check boxes that correspond to the parameters for which log information should be collected.
- Log Field Displays the name of the logging field.
- Log Value Displays the current log value.

Logging - NMOS Logging - Card Diagnostics RollTrack Loopback Router Setup Ethernet Gb	Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMOS:0ff	Video Selection SDI 1 / SDI 2	Ŧ	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
VMOS Status	NMOS_STATUS=		OK:Off	
NMOS Registration	NMOS_REGISTRATION=		Auto	
☑ NMOS Registry IP	NMOS_REGISTRY_IPADDRES	SS=	-	
V NMOS Query Port	NMOS_QUERY_PORT=		-	
V NMOS Registration Port	NMOS_REGISTRATION_PORT	Γ=	-	

Logging - NMOS page

The following options are available. Enable check boxes to activate log fields as required.

Option	Description		
NMOS_STATUS=	Displays the current NMOS status. Valid values are:		
	 OK:Off - NMOS functionality is disabled. 		
	• OK:Registered - the module has been successfully added to the NMOS registry.		
	 WARN:Registering - the module is currently being registered. 		
	 FAIL:Unregistered - the registration process has failed. 		
NMOS_REGISTRATION=	Displays the method used to register the module. Valid values		
	are:		
	・ Auto		
	• Static		
	See NMOS on page 51 for information on these settings.		
NMOS_REGISTRY_IP_ ADDRESS=	Displays the IP address of the NMOS registry.		
NMOS_QUERY_PORT=	Displays the port currently used for NMOS query traffic.		
NMOS_REGISTRATION_ PORT=	Displays the port currently used for NMOS registration traffic.		

Where N is the input/output number.

Logging - Card Diagnostics

Information on several parameters can be made available to a logging device connected to the RollCall network. Each logging page comprises three columns:

- Log Enable Select the check boxes that correspond to the parameters for which log information should be collected.
- Log Field Displays the name of the logging field.
- Log Value Displays the current log value.

Logging - Card Diagnostics RollTrack Loopback Router Setup Ethernet Gb Ethernet Accnet	Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMOS:Off	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
NVRAM File System	NVRAM ES=		ONX6 PowerSafe FS
V Total Available Memory	TOTAL_AVAILABLE_MEMORY=		1024MB
🕼 Total Used Memory	TOTAL_USED_MEMORY=		387MB
V Num Core Dumps	NUM_CORE_DUMPS=		0
🕼 Last Core Dump Name	LAST_CORE_DUMP_NAME=		
🕼 Last Core Dump Time	LAST_CORE_DUMP_TIME=		
Powersafe Memory Restore	PWRSAFE_MEMORY_RESTORE	=	ок
PMIC Version	PMIC_VERSION=		PF0100A

Logging - Card Diagnostics page

The following options are available. Enable check boxes to activate log fields as required.

Option	Description
NVRAM_FS=	Logs whether the installed file system is QNX6 PowerSafe or FAT32.
Total_available_ Memory=	Logs total amount of CPU memory available to the module, in bytes.
TOTAL_USED_MEMORY=	Logs amount of CPU memory used by the module, in bytes.
NUM_CORE_DUMPS=	Logs number of times a core dump has been performed as a result of an application crash.
LAST_CORE_DUMP_ NAME=	Logs name of last application to crash.
LAST_CORE_DUMP_ TIME=	Logs time of last core dump performed as a result of an application crash.
PWRSAFE_MEMORY_ RESTORE=	Logs where system memory was restored from. Valid values are:
	• FAT32 - restored from FAT32.
	OK - restored from QNX6 PowerSafe.
	FAIL - memory restoration failed.
PMIC_VERSION=	Logs name of the on-board power management chip.

RollTrack

The **RollTrack** page allows information to be sent, via the RollCall network, to other compatible units connected on the same network.

The **Source** window lists the RollTrack sources:

RollTrack Loopback Router Setup Ethernet Gb Ethernet Arcnet Interop	▲ Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 ■ NMOS:OFF	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
RollTrack Output	Source Unused Input 1 OK Input 2 OK Input 2 CK Input 3 OK Input 3 OK Input 4 CST Input 4 LOST	Address 0000:00:00*0 P S Command 0:0 P S RollTrack Sending No RollTrack Status Unknown	Spigot Link Status

Source Pane

Disable All

When checked, all RollTrack items are disabled.

RollTrack Index

This slider allows up to 16 distinct RollTrack outputs to be set up. Dragging the slider selects the RollTrack Index number, displayed below the slider. Clicking **P** selects the default preset value.

RollTrack Source

The source of information that triggers transmission of data is selected with this control. Dragging the slider selects the RollTrack source, displayed below the slider. Clicking **P** selects the default preset value. When no source is selected, **Unused** is displayed.

RollTrack Source	Description
Unused	No RollTracks sent.
Input N OK	Input N is good.
Input N LOST	Input N is bad.

Where N is the input number.

RollTrack Address

This item enables the address of the selected destination unit to be set.

The address may be changed by typing the new destination into the text field, then clicking **S** to save the selection. Clicking **P** returns to the default preset destination.

The RollTrack address consists of four sets of numbers, for example, **0000:10:01*99**:

- The first set, 0000, is the network segment code number.
- The second set, **10**, is the number identifying the (enclosure/mainframe) unit.

- The third set, **01**, is the slot number in the unit.
- The fourth set, **99**, is a user-definable number that is a unique identifier for the destination unit in a multi-unit system. This ensures only the correct unit will respond to the command. If left at **00**, an incorrectly fitted unit may respond inappropriately.

RollTrack Command

This item enables a command to be sent to the selected destination unit.

The command may be changed by typing a code in to the text field, and then selecting **S** to save the selection. Clicking **P** returns to the default preset command.

A RollTrack command consists of two sets of numbers, for example: 84:156:

- The first number, 84, is the actual RollTrack command.
- The second number, **156**, is the value sent with the RollTrack command.

RollTrack Sending

A message is displayed here when the unit is actively sending a RollTrack command. Possible messages are:

Log Field	Description
No	The message is not being sent.
Yes	The message is being sent.

RollTrack Status

A message is displayed here to indicate the status of the currently selected RollTrack index. Possible RollTrack Status messages are:

Log Field	Description
ОК	RollTrack message was sent and received successfully.
Unknown	RollTrack message has been sent but transmission has not yet completed.
Timeout	RollTrack message has been sent but acknowledgment not received. This could be because the destination unit is not at the location specified.
Bad	RollTrack message has not been correctly acknowledged at the destination unit. This could be because the destination unit is not of the type specified.
Disabled	RollTrack sending is disabled.

Setup

The **Setup** page displays basic information about the module, such as the serial number and software version. Use the functions on the page to restart the module or to return all settings to their factory or default settings.

RollTrack Setup Ethernet Gb Ethernet Arcnet Interop SFP Configuration	<pre>Information 1:172.19.164.218 2:172.19.164.248 Gb:10.10.10.10</pre>	Video Selection SDI 1 / SDI 2	T	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Product Product IQEDGE25_6	Software Version	Firmware Version 8B28B990		
Serial No. S56070920	SW Build 0.28.71	OS QNX 6.6.0		
	Rear ID 4	Firmware Build Set20200617		
Main PCB RMIX251B	Main Mod Level	Main HW Build		
EDGEFB3	JGEFB3 0			
Restart Restart Warning: This will affect all Outputs	s I	Default Settings Factory Defaults		

Setup page

The **Product** pane displays technical information on the IQEDGE. You may be asked for these details by Grass Valley support if you need technical assistance.

ltem	Description
Product	Name of the module.
Software Version	Currently installed software version number.
Firmware Version	Currently installed firmware version number.
Serial No	Module serial number.
SW Build	Factory software build number. This number identifies all parameters of the module.
OS	Operating system version number.
Rear ID	Rear panel type.
Firmware Build Set	Firmware Build Set ID.
Main PCB	Printed Circuit Board version number.
Main Mod Level	Main PCB modification level.
Main HW Build	Factory main hardware build number.
Feature PCB	Feature board PCB revision number.

Item	Description
Feature Mod Level	Feature board PCB modification level.
Feature HW Build	Factory feature board hardware build number.

Restart

Power-cycles the module. This will produce disturbances on the output picture.

Note: Restarting the module will affect all outputs.

Defaults

Provides options to reset the module to its defaults.

Option	Description
Default Settings	All controls are reset to their default values, except for network configuration and IP addresses.
Factory Defaults	All controls are reset to their default values, including network configuration and IP addresses.

Ethernet Gb

The **Ethernet Gb** page shows details and status of the on-module Ethernet connector. The IQEDGE defaults to use of DHCP, but this can be overridden and a static IP address specified if required.

RollTrack Loopback Router Setup Ethernet Gb Ethernet Arcnet Interop		Information 1:172.19.164.75 2:172.19.166.75 Gb:172.19.160.75 NMOS:off	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
IP Address Default Gateway Subnet Mask MAC Address Mode Link Status	Current 172:19:160.75 Not Set 255:255:224.0 00:23:70:00:22:6A STATIC UP	New Static 172.19.160.75 172.16.160.1 255.255.224.0 DHCP / Static IP Change	S S New Mode O DHCP Static es take effect on restart	

Ethernet Gb page

The Ethernet Pane

The **Ethernet** pane displays details of the currently selected network interface, and allows a static IP address to be defined. Enter information as required, then click **S** to save. New settings are applied when **Restart** is clicked.

Ethernet Arcnet



Ethernet Arcnet Page

Interop Page

The **Interop** page allows certain parameters to be changed in order to improve interoperability with third-party equipment.

RollTrack Loopback Router Setup Ethernet Gb Ethernet Arcnet Interop	Inform 1:1' 2:1' Gb: NNO:	nation 12.19.164.75 12.19.166.75 172.19.160.75 5:0ff	Video Selection SDI 1 / SDI 2	Information Select Video Input Status Video Output Status Network Status Spigot Link Status
Stream Synchronisation Control	Is			
Audio		Meta Frame Delay		
Extended Headers	\checkmark			
RTP To PTP				
Nominal Delay	V			
r Meta		Spigot 5 💿	P 0	
Extended Headers	V	Spigot 6 💿	P 0	
RTP To PTP		Spigot 7 💿	P 0	
Nominal Delay		Spigot 8 💿	P 0	
Rtn				
RTP Payload Types				
Payload Selection		- Payload Format		
© Cat 1		SMPTE2022 98		
O Set 1		2110-20 96		
Set 2		VC-2 101		
		2110-30 97		
		2110-40 100)	
Video		1		
VC2 Compression 2:1	•			

Interop page

The following facilities are available from the **Interop** page:

Option	Description
Stream Synchronization Controls	Audio: • Extended Headers - Enable to use extended headers in
	 • RTP to PTP - Enable to synchronize RTP to PTP.
	 Nominal Delay - Enable to set nominal delay at the spigot.
	Meta:
	 Extended Headers - Enable to use extended headers in the RTP metadata stream.
	RTP to PTP - Enable to synchronize RTP to PTP.
	 Nominal Delay - Enable to set nominal delay at the spigot.
	 RTP - Enable to use RTP timestamps only to synchronize metadata to video.
Meta Frame Delay	Allows a frame delay for metadata received on the spigots shown to be set. Use the sliders to adjust as required. Click P to use the preset default value.
RTP Payload Types	Payload Selection:
	 Set 1/Set 2 - Select the appropriate set of standards to be used. The set contents are displayed on the Payload Format pane.
Video	VC2 Compression:
	 Select the compression ratio to be used from the drop- down list.

SFP Configuration

Loopback Router Setup Ethernet Gb Ethernet Arcnet Interop SFP Configuration		formation FPG1:720/50p FPG2:720/50p	Video Selection SDI 1 / SDI 2	nation Select /ideo Input Status /ideo Output Status Vetwork Status Spigot Link Status
SFP 1 Compatibility Control				
SFP Database List				
Default	Ŧ	Take	Currently Set Default	
SFP Custom Control				
Postcursor Control (He 0x0	x)	Take	Currently Set 0x4	
Precursor Control (Hex 0x0) S	Take	0x0	
Tx Diff Control (Hex) 0x0	S	Take	0x12	
Rx LPM Enable (Hex) 0x0	S	Take	0x1	
SFP 2 Compatibility Control				

The **SFP Configuration** page allows various SFP parameters to be adjusted, if required.

SFP Configuration page

The majority of SFPs will operate correctly with IQUCP modules without any need for adjustment. Some, however, may need to have module parameters set a little differently.

If difficulties are encountered with an SFP not working as expected, follow these instructions:

- 1 Select the appropriate SFP type from the **SFP Database List**, and click **Take**. Verify whether the SFP is now working correctly; if so, no further action is required.
- 2 If the SFP is still not working properly, select **Custom** from the **SFP Database List**. This allows all the parameters shown to be adjusted as required. Make changes and click **Take** to apply them.
- 3 When a working configuration is found, the parameter values can be saved by clicking **S** beside each field.



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 on-line form for e-mail contact is also available from the website.

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