



# **UCP-3901**

# **IQUCP25 / IQUCP50**

VERSION 17.0

## **Release Notes**

13-03084-030-M00 AD

2021-04-23

[www.grassvalley.com](http://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/](http://www.grassvalley.com/patents/)

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Title                    UCP-3901 / IQUCP25 / IQUCP50 Release Notes

Part Number 13-03084-030-M00 AD

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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.



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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.

## Mesures de sécurité et avis importants

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

### Signification des symboles utilisés



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



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



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



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



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



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



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



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



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



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



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



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



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

## Avertissements



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

- Un cordon d'alimentation dûment homologué doit être utilisé pour connecter l'appareil à une tension de secteur de 120 V CA ou 240 V CA.
- La protection de ce produit contre les courts-circuits (surintensités) dépend de l'installation électrique du bâtiment. Assurez-vous qu'un fusible ou un disjoncteur pour 120 V CA ou 240 V CA est utilisé sur les conducteurs de phase.
- Dans le présent manuel, toutes les instructions qui nécessitent d'ouvrir le couvercle de l'équipement sont destinées exclusivement au personnel technique qualifié.
- N'utilisez pas cet appareil dans un environnement humide.
- Cet équipement est mis à la terre par le conducteur de mise à la terre des cordons d'alimentation. Pour éviter les chocs électriques, branchez les cordons d'alimentation sur une prise correctement câblée avant de brancher les entrées et sorties de l'équipement.
- Acheminez les cordons d'alimentation et autres câbles de façon à ce qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.
- Coupez l'alimentation avant de nettoyer l'équipement. Ne pas utiliser de nettoyeurs liquides ou en aérosol. Utilisez uniquement un chiffon humide.
- Des tensions dangereuses peuvent exister en plusieurs points dans cet équipement. Pour éviter toute blessure, ne touchez pas aux connexions ou aux composants exposés lorsque l'appareil est sous tension.

- Avant de procéder à toute opération d'entretien ou de dépannage, enlevez tous vos bijoux (notamment vos bagues, votre montre et autres objets métalliques).
- Pour éviter tout risque d'incendie, utilisez uniquement les fusibles du type et du calibre indiqués sur l'équipement ou dans la documentation qui l'accompagne.
- Ne pas utiliser cet appareil dans une atmosphère explosive.
- Présence possible de courants de fuite. Un raccordement à la masse est indispensable avant la mise sous tension.
- Après tout travail d'entretien ou de réparation, faites effectuer des contrôles de sécurité par le personnel technique qualifié.

## Mises en garde



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

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

## Protection contre les décharges électrostatiques (DES)



Une décharge électrostatique peut se produire lorsque des composants électroniques ne sont pas manipulés de manière adéquate, ce qui peut entraîner des défaillances intermittentes ou endommager irrémédiablement un circuit



électrique. Au moment de remplacer une carte dans un châssis, prenez toujours les mesures de protection antistatique appropriées :

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

## 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](http://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](mailto:environment@grassvalley.com).

## Laser Safety - Fiber Output SFP and QSFP Modules Warning

### LASER SAFETY



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

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

- Make sure that a fiber is connected to the board's fiber outputs before power is applied. If a fiber cable (e.g. patchcord) is already connected to an output, make sure that the cable's other end is connected, too, before powering up the board.
- **Do not** look in the end of a fiber to see if light is coming out. The laser wavelengths being used are totally invisible to the human eye and can cause permanent damage. Always use optical instrumentation, such as an optical power meter, to verify light output.

## Safety and EMC Standards

This equipment complies with the following standards:

### Safety Standards



#### Information Technology Equipment - Safety Part 1

**EN60950-1: 2006**

Safety of Information Technology Equipment Including Electrical Business Equipment.

**UL1419 (4<sup>th</sup> 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

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**WARNING**

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

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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.

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**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.

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## 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  $\Omega$  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, Belden 1694A (for 3Gbps), and Belden 4794A (for 12Gbps).

# toc

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# Installation and Network Requirements

This section details the requirements that must be met prior to installing or upgrading a system with the current version of RollCall for use with an UCP-3901 / IQUCP25 / IQUCP50. It also provides upgrading and configuration guidelines, as well as tips to improve performance.

## Hardware Requirements

### System Requirements for running the RollCall Client

The client platform must meet the following system specifications for optimal performance:

Operating system	Microsoft Windows 10, Windows 8.1, Windows 8, or Windows 7
Processor	Intel Core i3, the minimum required by the operating system, or better
Memory	8 GB RAM minimum, the minimum required by the operating system, or more
Disk Space	The minimum required by the operating system plus one GB, or more

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## Network Requirements

Users can access the UCP-3901 / IQUCP25 / IQUCP50 from a client PC using RollCall.

It is recommended that the UCP-3901 / IQUCP25 / IQUCP50 be installed on a dedicated LAN, using the existing security infrastructure. A qualified system administrator should verify that the setup follows the security standards of your organization. Refer to the *UCP-3901 / IQUCP25 / IQUCP50 Installation Guide* for RollCall software installation information.

To support FEC, ensure the network switch you plan to use supports CL91-RS-FEC. For example, for Cisco products, see

[https://www.cisco.com/c/en/us/td/docs/switches/datacenter/aci/apic/sw/kb/b\\_Cisco\\_ACI\\_and\\_Forward\\_Error\\_Correction.html](https://www.cisco.com/c/en/us/td/docs/switches/datacenter/aci/apic/sw/kb/b_Cisco_ACI_and_Forward_Error_Correction.html).

## TCP/UDP Port Usage

Certain ports must be open on the management network. This information can be found under **Port Usage** in the *RollCall V4 Suite & RollCall Lite Installation Guide*.

## Equipment Interoperability Incompatibility

While UCP-3901 / IQUCP25 / IQUCP50 can integrate with a wide range of equipment, this does not guarantee interoperability between equipment. Always consult product datasheets to ensure that common signal types are supported by both pieces of equipment for interoperability.

## Software Compatibility for Multiviewer SDC

*Table 1-1: Software Compatibility*

Software	Version
Orbit	v3.1 or later
RollCall Control Panel	4.17.1 or later

## Documentation

You can obtain the latest version of the Release Notes and all manuals from the Documentation Library section of Grass Valley's website.



# 2 Release Notes

The *UCP-3901 / IQUCP25 / IQUCP50 Release Notes* guide includes lists of new features and enhancements, bugs fixed, as well as known issues and limitations associated with the latest version of the RollCall software.

## Overview

UCP-3901 / IQUCP25 / IQUCP50 version 17.0 is a major release containing key features to meet the needs of our customers and bug fixes for improved stability. See [New Features, Enhancements, and Bugs Fixed](#), on page 19. See also [Known Issues and Limitations](#), on page 26.

## Terms Used

- GA = General Availability
- LA = Limited Availability

## Before Upgrading UCP-3901 / IQUCP25 / IQUCP50

Backup the UCP-3901 / IQUCP25 / IQUCP50 configuration to your local PC before you perform a UCP-3901 / IQUCP25 / IQUCP50 software upgrade so that you can return to the previous UCP-3901 / IQUCP25 / IQUCP50 software version if necessary. Refer to **Save** and **Restore** in the *RollCall Control Panel User Manual*, available for download from the Grass Valley website.

## Important Notes

### Best Practice

For releases prior V16.0 when changing the IO configuration of the product it is recommended to clear down the spigot IP addresses. Applying defaults is the quickest way of achieving this. Not doing this potentially introduces the risk of unpredictable behavior.

From V16.0 we have added, by default but user over-ridable, the setting of the card to defaults when the FPGA image changes. Eth1, Eth2 and the management port address, and FEC controls are unaffected by this meaning that the card shall remain connected and accessible.

## General Notes

- 1 The UCP-3901-25-MV / UCP-3901-50-MV / IQUCP25 MV / IQUCP50 MV is a separate build to the rest of the IP core product range, albeit its version number is confusingly near that of the core.
- 2 The Tektronix Prism does not correctly process ST2110 compliant extended headers, and will report sequence number errors for ST2110-20 if extended headers are enabled.
- 3 Auto detection with between integer and non-integer frame rates that are close to one another, for example 59 and 60, favors the non-integer frame rate. To overcome this, the standard has to be selected manually.
- 4 We only support 16 channels of audio. For 12G-SDI these are first 16 channels in Link 1.
- 5 It is recommended that for 1080p59 the 8/8 builds are favored from a deployment perspective, as whilst the IP core does not impose any limitations on the end user as to what signals are sent / received from what spigot, there are three important limitations that otherwise need to be taken into account when deploying a system.
  - a Firstly, it is left to the user to ensure that the bandwidth of the Media interface is not exceeded. For example, if you were to use the 0/16 configuration of the UCP-3901-25-EP / IQUCP25 EP with 16 unique 1080p50 ST2110-20 ST2022-7 streams, this clearly exceeds the 25GbE data rate of the media interface and would subsequently fail.
  - b AND, if the card is in Make-Before-Break, then for every simultaneous change the stream count is 2, not 1, for duration of the change.
  - c AND, there is an **IP Receiver** hardware limitation on the UCP-3901-25-EP / UCP-3901-50-EP / UCP-3901-25-MV / UCP-3901-50-MV / IQUCP25 EP / IQUCP50 EP / IQUCP25 MV / IQUCP50 MV as to how many stream they can process concurrently. This is captured in the table below.

IP Format	Video Format	Max # streams
ST2110-20	1080p50	16
ST2110-20	1080p59	14
ST2022-6	1080p59	12
ST2110-20	2160p50	4
ST2110-20	2160p59 <sup>a</sup>	4

a. This is to confirm that 4x2160p59 streams can be handled simultaneously on the UCP-3901-50-EP / IQUCP50 EP, compared to the equivalent 14x1080p59 streams

- 6 The Multicast address **239.255.0.1** is reserved for Network management and must not be used for media streams.

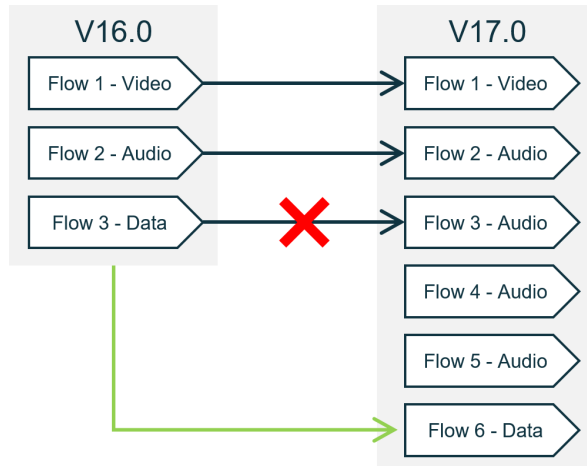
## New Features, Enhancements, and Bugs Fixed

The following is a list of UCP-3901 / IQUCP features and enhancements. The most recent items are marked with a star (★) symbol. See also [Known Issues and Limitations](#), on page 26.

### UCP-3901 / IQUCP25 / IQUCP50 Version 17.0 GA Best Practice

With the introduction of V17.0 and multiple audio flows, it is recommended that the system is cleared down of all spigot addresses, flows remapped, and where necessary GV Orbit reconfigured to account for the additional flows. Not doing this potentially introduces the risk of unpredictable behavior.

As shown below, when migrating from version 16.0 to 17.00, due to the addition of 3 new audio channels, the metadata flow has been moved from flow 3 to flow 6, so any existing metadata routing will be need to be reviewed.



For releases prior V16.0 when changing the IO configuration of the product it is recommended to clear down the spigot IP addresses. Applying defaults is the quickest way of achieving this. Not doing this potentially introduces the risk of unpredictable behavior. This was a subsequence of changing some of the flow capabilities.

From V16.0 we have added, by default but user over-ridable, the setting of the card to defaults when the FPGA image changes. Eth1, Eth2 and the management port address, and FEC controls are unaffected by this, meaning that the card remains connected and accessible.

### Products in Maintenance Phase as of V17.0 GA

The following products are now entering a maintenance phase and as such are not included in the V17.0 and subsequent releases. Only critical bug fixes will be provided for V16.X moving forward.

IQUCP25-EP		IQUCP50-EP		MV-820-IP-REAR	
IQUCP25-MV	X	IQUCP50-MV	X		

## Film Mode Support with V17.0 GA

The UHD capable FPGAs now support non-UHD standards, we have also added support for a number of film modes. These, along with the product capabilities, are detailed in the tables below.

	SD/HD/3G Mode of Operation			Capabilities
	SDI > IP	IP > SDI	Format	
UCP-3901-25-EP / UCP25	8	0	625i25, 525i29	1xSDI, 1x2022-6, 1x2110-20/30/40 + FS
	16	0	720p50/59/60 1080i25/29/30	1xSDI, 1x2022-6, 1x2110-20/30/40
	8	8	1080p23/24/25/29/30/50/59/60	
	4	12		
	0	16		
	8	0		1xSDI, 1xVC2, 1x2110-30/40
	4	4		
	0	8		
	12	4		RS-FEC 1xSDI, 1x2022-6, 1x2110-20(RX)/30/40 1xSDI, 1x2022-6(RX), 1x2110-20/30/40 FC-FEC 1xSDI, 1x2022-6, 1x2110-20/30/40
UCP-3901-50-EP / UCP50	8	0	625i25, 525i29	1xSDI, 1x2110-20/30/40 + FS
	16	0	720p50/59/60 1080i25/29/30	1xSDI, 1x2022-6, 1x2110-30/40 + FS
	12	4	1080p23/24/25/29/30/50/59/60	1xSDI, 1x2110-20/30/40 1xSDI, 1x2022-6, 1x2110-30/40
	8	8		1xSDI, 1x2022-6(RX), 1x2110-20/30/40 1xSDI, 1x2022-6, 1x2110-20(RX)/30/40(RX)
	4	12		1xSDI, 1x2022-6(RX), 1x2110-20/30/40 1xSDI, 1x2022-6(RX), 1x2110-20/30/40
	0	16		1xSDI, 1x2022-6, 1x2110-20/30/40
	8	0		1xSDI, 1xVC2, 1x2110-30/40
	4	4		
	0	8		

	UHD/12G Mode of Operation			Capabilities
	SDI > IP	IP > SDI	Format	
UCP2500	2	2	720p50/59/60 1080i25/29/30 1080p23/24/25/29/30/50/59/60	1xSDI, 1x2110-20/30/40
	2	2	2160p50/59/60	4xSDI (QL-3G), 1x2110-20/30/40
	2	2	2160p23/24/25/29/30	4xSDI (QL-HD), 1x2110-20/30/40

		UHD/12G Mode of Operation			
		SDI > IP	IP > SDI	Format	Capabilities
UCP2504	2	2	720p50/59/60 1080i25/29/30 1080p23/24/25/29/30/50/59/60	1xSDI, 1x2110-20/30/40	
	2	2	2160p50/59/60	4xSDI (QL-3G), 1x2110-20/30/40 1xSDI (12G), 1x2110-20/30/40	
	2	2	2160p23/24/25/29/30	4xSDI (QL-HD), 1x2110-20/30/40	
UCP50	4	0	720p50/59/60 1080i25/29/30 1080p23/24/25/29/30/50/59/60	1xSDI (SD/HD/3G), 1x2110-20/30/40	
	2	2			
	0	4			
	4	0	2160p50/59/60	4xSDI (QL-3G), 1x2110-20/30/40 1xSDI (12G), 1x2110-20/30/40	
	2	2			
	0	4			
	4	0	2160p23/24/25/29/30	4xSDI (QL-HD), 1x2110-20/30/40	
	2	2			
0	4				

## UCP-3901 / IQUCP25 / IQUCP50 Version 17.0 GA

**V17.0 General Availability:** This release sees the introduction of Multiple Audio Flows, PTP phase alignment to the Epoch allowing for PTP referenced only systems, and various PTP failover performance improvements.

### Product(s) Built

The following are the FPGA build versions for this release.

SDC	Version	SDC	Version
UCP-3901-25-EP	V17.0.119_b0.34.29	UCP-3901-25-MV	Not applicable
UCP-3901-50-EP	V17.0.119_b0.34.29	UCP-3901-50-MV	Not applicable
IQUCP25-EP	V17.0.119_b0.34.29	IQUCP25-MV	Not applicable
IQUCP50-EP	V17.0.119_b0.34.29	IQUCP50-MV	Not applicable
MV-820-IP-REAR	V17.0.119_b0.34.29		

### NMOS Client Version

- IS04 v1.2
- IS05 v1.0

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## New Features and Enhancements

- ★ Multiple audio flow support available as a general release. This feature will be supported in a future GV Orbit software release. The GV Orbit Release Notes will announce when this feature is supported by GV Orbit.  
Support has been added for up to 4 flows of audio per spigot with the following configurations:
  - 1 flow x 16 audio channels per flow
  - 2 flows x 8 audio channels per flow
  - 4 flows x 4 audio channels per flow
- ★ PTP Epoch phase alignment, and various PTP robustness improvements, available as a general release.
- ★ NMOS redundancy added.
- ★ Film mode support for a number of standards added.

## Bugs Fixed

- ★ [Ref. #IQIPEP-2159, 2166, 2330, 2417] 8/0 Frame sync configuration performance addressed.
- ★ [Ref. #IQIPEP-1911, 2091, 2040, IQIPEP-2150] SDI sporadically non-functional after a restart.
- ★ [Ref. #IQIPEP-2452] In V16.1 LA release, all but first audio flow have a checksum IPv4 header error.
- ★ [Ref. #IQIPEP-2466] Media interface network driver is blocking the NMOS mDNS address preventing discovery.
- ★ [Ref. #IQIPEP-2190, 2413] Unable to route a signal by NMOS due to an SDP Frame rate calculation error.
- ★ [Ref. #IQIPEP-2420] IPVU UHD shows "stitched" quadrants, output is not seamless.
- ★ [Ref. #IQIPEP-1913] Active CRC fails on some of the 12G spigots.
- ★ [Ref. #IQIPEP-2118] UCP-3901-25-EP / IQUCP2504 RollTracks for Input Ok / LOST with single stream firmware images show 8 Inputs.
- ★ [Ref. #IQIPEP-1537] VRX exceeds specification for Narrow sender.
- ★ [Ref. #IQIPEP-2107] VPID value is wrong for 12G-SDI generated from 4 x ST2022-6.
- ★ [Ref. #IQIPEP-2134] Some non-UHD formats do not work correctly in UHD-capable FPGAs.
- ★ [Ref. #IQIPEP-2242] Sender TPG pull-down doesn't show non-UHD formats in unlinked mode when using 12G/UHD-SS FPGA.
- ★ [Ref. #IQIPEP-1897] IP receiver TPG is ordered haphazardly.

## UCP-3901 Version 16.0 GA

The ST2110-20 12G-SDI builds support all the advertised SD/HD/3G/12G-SDI formats. However, presently only the 12G-SDI and have been formally qualified. Validation for the non-UHD formats will be added in a future release.

With the introduction of single flow ST2110-20 support of 4K UHD (12G-SDI and 4x3G-SDI), the FPGA images descriptions were changed to better reflect their functionality.

## UCP-3901 Version 16.0b.0 LA

**V16.0b.0 Limited Availability:** This Limited Availability release includes PTP enhancements such as Epoch alignment.

### Product(s) Built

The following are the FPGA build versions for this release.

SDC	Version	SDC	Version
UCP-3901-25-EP	V16.0b.116_b0.29.8	UCP-3901-25-MV	Not applicable
UCP-3901-50-EP	V16.0b.116_b0.29.8	UCP-3901-50-MV	Not applicable

### Applicability

This LA supports:

- The following formats only: 1080i50, 1080i59.94, 1080p50 and 1080p59.94.
- The following inputs / outputs combinations only:
  - For the UCP3901\_50\_EP:
    - 8/8 FC: SD-3G (1×SDI, 1×2022-6(RX), 1×2110-20/30/40)
    - 16/0 FC: SD-3G (1×SDI, 1×2110-20/30/40)
    - 0/16 FC: SD-3G (1×SDI, 1×2022-6, 1×2110-20/30/40)
  - For the UCP3901\_25\_EP:
    - 8/8 FC: SD-3G (1×SDI, 1×2022-6, 1×2110-20/30/40)
    - 16/0 FC: SD-3G (1×SDI, 1×2022-6, 1×2110-20/30/40)
    - 0/16 FC: SD-3G (1×SDI, 1×2022-6, 1×2110-20/30/40)

### NMOS Client Version

V1.2.16

### New Features and Enhancements

[Ref. #IQIPEP-2228] NMOS needs to be able to handle a single network in an SDP - both networks are currently expected

### Bugs Fixed

- ★ [Ref. #IQIPEP-1863] When SDI outputs are locked to PTP, SDI is not ST2059 Epoch aligned, for 23.97/29.97 standards, Video Delay for SDI outputs keep changing.
- ★ [Ref. #IQIPEP-1295] Reference locked to PTP when PTP grandmaster fails over the card has unstable audio and video on all spigots.
- ★ [Ref. #IQIPEP-2038] Video stream on multicast IP address 239.255.0.1 (DDS discovery address) kills card.
- ★ [Ref. #IQIPEP-2068] master\_enable behaviour changed as per IS04-140, NMOS client changed to make sure the staged data for senders is properly initialized to avoid these issues.

- ★ [Ref. #IQIPEP-1642] SMPTE ST 2022 with ST 2110-30 or ST 2110-2 with ST 2110-30 without extended headers leads to a fixed Audio/Video delay.  
In order to enable stream synchronization without extended headers the user must enable **RTP To PTP** stream synchronization on the **Interop** page.
- ★ [Ref. #IQIPEP-2205] NMOS transactions may time out.
- ★ [Ref. #IQIPEP-2204] NMOS RECEIVER\_STAGE\_SET command is responding with the wrong resource id.
- ★ [Ref. #IQIPEP-2187] NMOS “Auto” Source RTP Port Assignment does not meet RFC3550 specification.
- ★ [Ref. #IQIPEP-2239] NMOS SDP “o” attribute parser expects dash.
- ★ [Ref. #IQIPEP-2170] Product does not leave multicast address when it is used on multiple spigots.

## UCP-3901 Version 16.0.0 GA

The versioning of the UCP-3901 is now aligned to that of the underlying FPGA core used with it. This version has the full feature set of the Essence Processing (EP) and Multiviewer (MV) SDC version 16.0.0. This is why the version number has now jumped to version 16.0.0 from version 1.0.0.

**V16.0.0 General Availability:** This General Availability release sees the introduction of single stream 4K UHD ST2110-20.

A request to the Product Manager is required, on a case-by-case basis, to release externally.

There is an issue with 12G-SDI stability when power cycling the product and that there is a small possibility that the 12G-SDI interface will come up in a non-functional state. This only affects the 12G-SDI.

### Product(s) Built

The following are the FPGA build versions for this release.

SDC	Version	SDC	Version
UCP-3901-25-EP	V16.0.110_b0.29.24	UCP-3901-25-MV	V16.0.110_b0.28.27
UCP-3901-50-EP	V16.0.110_b0.29.24	UCP-3901-50-MV	V16.0.110_b0.28.27

### New Features and Enhancements

- **Densité LED control added new diagnostic states:** Fan Status, No Rear, and Live update status indication has been added to the cards’s Densité LED status indicator.
- Introduction of single flow 4K UHD SMPTE ST 2110-20.
- Add 4K UHD support over ST2110-20 for the UCP-3901 25G and 50G.
- **AMWA NMOS IS-04 and IS-05:** Essence Processing (EP) and Multiviewer (MV) SDCs now support Networked Media Open Specifications (NMOS) AMWA IS-04 for device discovery and registration and IS-05 for connection management. Furthermore, it supports AMWA BCP-002 recommendations for Grouping NMOS Resources. Support for VC2 and SMPTE ST 2022-6 is not offered.



- [Ref. #IIQIPEP-2104] Defaults are applied when product configuration is changed. Specifically this is to clear down the spigot addresses.

### Bugs Fixed

- **Management Port MAC Address change:** The default Management Port MAC address set to **00 01 E5 01 23 45** instead of **FF FF FF FF FF FF**.
- **Minor page layout changes:** in the Logging - System and Logging - SFP pages, there are slight changes in the appearance.
- [Ref. #IIQIPEP-1642] ST2022+ST2110-30 or ST2110-2+ST2110-30 without extended headers leads to a fixed A/V delay.
- [Ref. #IIQIPEP-1679] 1080i VPID is being set incorrectly.
- [Ref. #IIQIPEP-1767] When a TPG is selected its standard is not reflected in associated SDP file.
- [Ref. #IIQIPEP-2002] UCP-3901-50-EP / UCP-3901-50-MV: the SFP configuration changes after each software reboot.
- [Ref. #IIQIPEP-1719] IP sender Video and Audio RTP timestamp alignment at startup with SDI present when RTP-PTP mode selected.
- [Ref. #IIQIPEP-2079] RS-FEC correction mode was being bypassed when mode enabled. It should have been enabled. This could result in poor connectivity.
- [Ref. #IIQIPEP-1585] Unpredictable audio channel behavior when receiver does not match the number contained in the stream.  
The mode should be set 'Auto' unless you know exactly what the audio channel count is.

## UCP-3901 Version 1.0.0

This is the first release.

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## Known Issues and Limitations

The following is a list of known issues and limitations associated with UCP-3901 / IQUCP25 / IQUCP50. The star (★) symbol indicates a new issue in UCP-3901 version 17.0.

- **UCP-3901 is configured through RollCall or GV Orbit applications:** The UCP-3901 is visible from iControl Navigator. However, it does not have a service panel. Only the card's name and status will be visible from iControl. The UCP-3901 can only be configured through RollCall or GV Orbit applications.
- [Ref. #IQIPEP-1446] 12G FGPA receiver TPG doesn't work until a flow has been received.
- [Ref. #IQIPEP-1203] Audio tracking delay missing from frame synchronising inputs.
- ★ [Ref. #IQIPEP-1412] Intermittent picture stability issue with VC2 on ucp-3901-50 / IQUCP-50 for fast panning images.
- [Ref. #IQIPEP-1501] Auto detection with between integer and non-integer frame rates.  
*Workaround:* Select the standard manually.
- [Ref. #IQIPEP-1761] VC2 Flow type not supported by NMOS.
- [Ref. #IQIPEP-1295] Reference locked to PTP when PTP grandmaster fails over the card has unstable audio and video on all spigots.
- [Ref. #IQIPEP-2038] Video stream on multicast IP address 239.255.0.1 (DDS discovery address) kills card.
- [Ref. #IQIPEP-1863] When SDI outputs are locked to PTP, SDI is not ST2059 Epoch aligned, for 23.97/29.97 standards, Video Delay for SDI outputs keep changing
- [Ref. #IQIPEP-2068] master\_enable behavior changed as per IS04-140, NMOS client changed to make sure the staged data for senders is properly initialized to avoid these issues.
- ★ [Ref. #IQIPEP-2445] Media flows with a subnet of /31 are not supported.





## **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, consult the Contact Us section of Grass Valley's website ([www.grassvalley.com](http://www.grassvalley.com)).

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

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