



# Densité 3+ XIP-3901-GB-IP

## Dual-channel 4K UHD Gearbox IP Application for XIP-3901

Gearbox IP application for the reprogrammable software-defined platform Densité 3+ XIP-3901.

Introducing the XIP-3901-GB-IP application from Grass Valley for the Densité 3+ XIP-3901 reprogrammable software-defined platform. The XIP-3901-GB-IP is a dual-channel 4K UHD gearbox application for conversion between Quad-stream 1080p Two Sample Interleave or Square Division and Single-stream 4K UHD supporting IP with dual 25 GbE I/O. Based on open standards, this IP edge gearbox processing application is compliant to the SMPTE ST 2110 suite of standards and JT-NM TR-1001 technical recommendation for easy integration in a broadcast IP network production environment.

The XIP-3901-GB-IP solves 4K UHD production problems with early IP devices implementing Quad-stream 1080p and SMPTE ST 2110-20 recommendations for Single-stream 2160p, which can be a gap when building a complete end to end 4K UHD solution (see diagram on page 2).

The XIP-3901-GB-IP also supports four streams of SMPTE ST 2110-30/31 audio conforming to Level A and Level C, as well as one stream of SMPTE ST 2110-40 metadata per channel of IP gearbox.

The XIP-3901-GB-IP is configured, controlled and monitored by GV Orbit, taking advantage of its many features and functions specifically crafted to make IP easy. It can also be configured and controlled from iControl systems.

Based on the proven Densité modular framework with over 80 card types, the flexible, space-efficient XIP-3901 agile processing platform can accommodate a gradual adoption of different production elements into 1080p and 4K UHD broadcasting workflows, all while protecting your investment in installed equipment. With flexibility to configure up to 12 XIP-3901 dual-channel processing applications per Densité 3+ FR4 frame, the Densité platform scales to a density of 24 4K UHD processors in a 4 RU frame. This means space and cost-efficient scaling today and tomorrow.

All the processing applications delivered on the XIP-3901 platform allow live productions, either from trucks, venues, stadiums or broadcast facilities to make the most of new UHD and HDR formats. Packing lots of audio/video processing power in a small form factor means considerable savings in terms of space, power and weight.

Densité 3+ FR4



12 XIP-3901 = 24 4K UHD Channels

Densité 3+ FR1



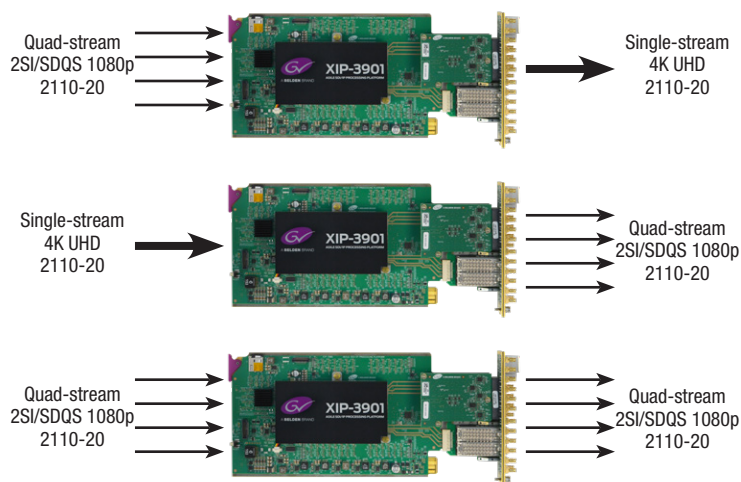
2 XIP-3901 = 4 4K UHD Channels

**KEY FEATURES**

- Independent dual-channel UHD gearbox IP video processor
- SMPTE ST 2110-20 video with UHD over single and quad 1080p stream
- Supports Two Sample Interleave and Square Division
- SMPTE ST 2110-21 Wide/Narrow profile receivers and Narrow senders
- SMPTE ST 2110-30 PCM audio
- SMPTE ST 2110-31 AES3 transparent transport
- SMPTE ST 2110-40 metadata associated with ST 2110-20 video stream
- SMPTE ST 2022-7 Class A & D seamless protection switching of IP streams
- SMPTE ST 2059-1 & -2 precision time protocol with best master clock algorithm
- NMOS IS-04 discovery and registration with group hints tag support
- NMOS IS-05 device connection management
- In-band or out-of-band control of NMOS
- Support of DHCP, LLDP and DNS-SD for easy IP configuration
- Four SMPTE ST 2110-30/31 Level A and C audio stream per processing channels
- Dual SFP28 flexible Ethernet for 25 GbE SFP+ cage:
  - SFP-25G-SR for short-range multimode optical connectors
  - SFP-25G-LR for long-range single-mode optical connectors
  - Active optical cables and optical transceiver
- Both FEC74 (CL74 Fire Code) and FEC108 (Reed Solomon IEEE) Forward Error Correction are supported
- GV Orbit for configuration, control and monitoring
- Individual XIP-3901 application licensed, purchased as needed
- Rapid switching between XIP-3901 applications

**XIP-3901-GB-IP – Dual-channel Gearbox IP Application**

Converts between Quad-stream 1080p 2SI/SDQS & Single-stream UHD



**XIP-3901-GB-IP Video formats supported**

| Input Format                           | Output Format                          | Support |
|--|--|---------|
| Single-stream 2160p50                  | Single-stream 2160p50                  | ●       |
| Single-stream 2160p59.94               | Single-stream 2160p59.94               | ●       |
| Quad-stream 1080p50 2SI                | Quad-stream 1080p50 2SI                | ●       |
| Quad-stream 1080p59.94 2SI             | Quad-stream 1080p59.94 2SI             | ●       |
| Quad-stream 1080p50 Square Division    | Quad-stream 1080p50 Square Division    | ●       |
| Quad-stream 1080p59.94 Square Division | Quad-stream 1080p59.94 Square Division | ●       |

**SPECIFICATIONS**

**SDI (Inputs/Outputs)**

Not used by this application

**Reference Input**

Not used by this application

**Ethernet Port for Media**

**Physical:** Two SFP28 sockets for active optical cable, short- and long-reach fiber

**Standard:** IEEE 802.3-2008 25 GbE

**Performance:** Up to 25 Gb of streaming per direction

**Ethernet Port for Control**

**Physical:** One electrical RJ45 port

**Standard:** IEEE 802.3 1000 Mb/s

**Video Processing Performance**

**Signal path:** 10 bits

**Electrical**

**Power:** 50W maximum

**ORDERING**

**Application Software**

**XIP-3901-GB-IP**

Dual-channel 4K UHD Gearbox IP application

**Densité 3+ Frame**

**XIP-3901**

Agile SDI/IP processing platform

**XIP-3901-3+DRP-H**

Double rear panel for Densité 3+ with HD-BNC

**SFP+ Options**

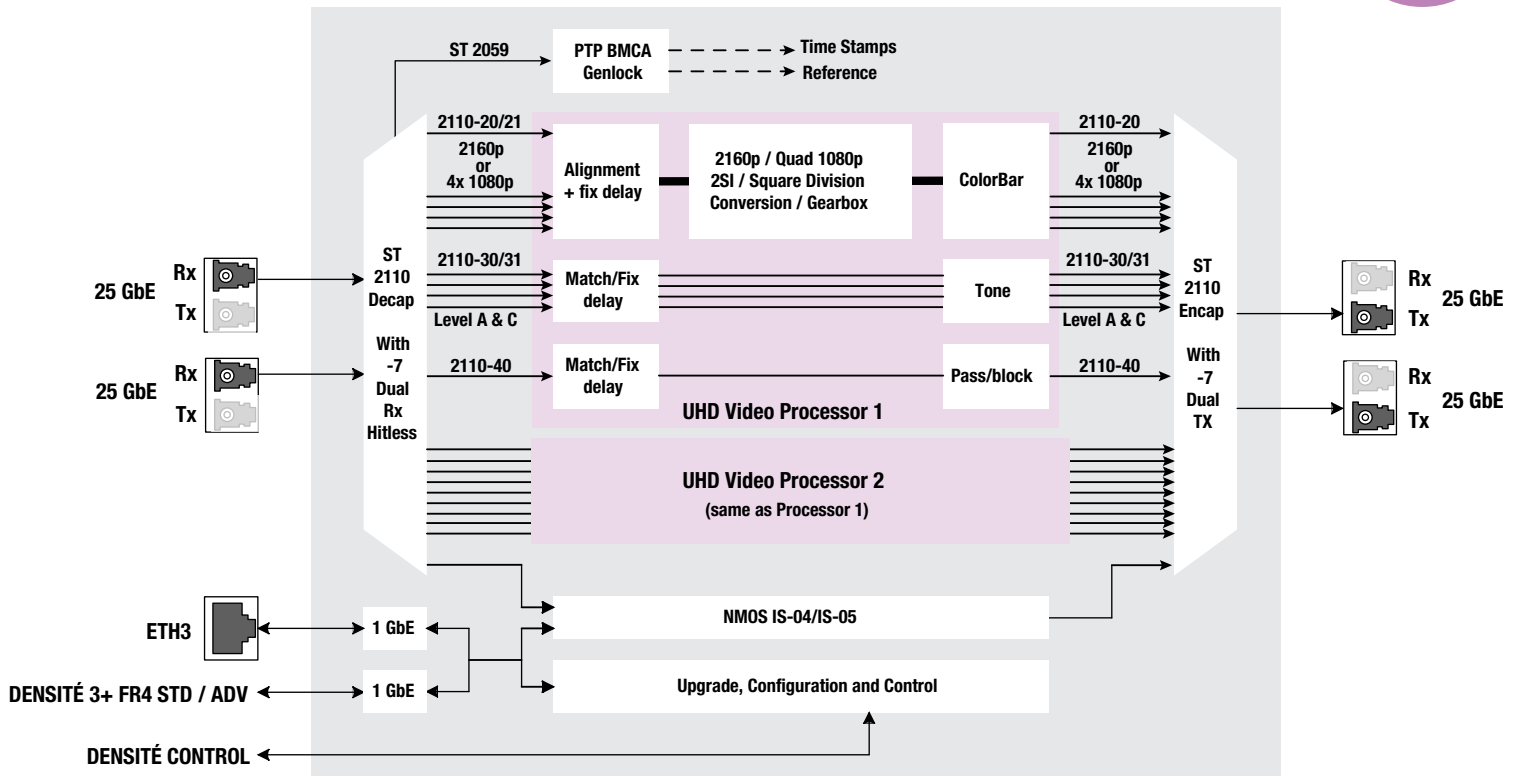
One or two SFP+ are needed to run this application

**SFP-25G-SR**

SFP28 25GBASE optical transceiver MMF

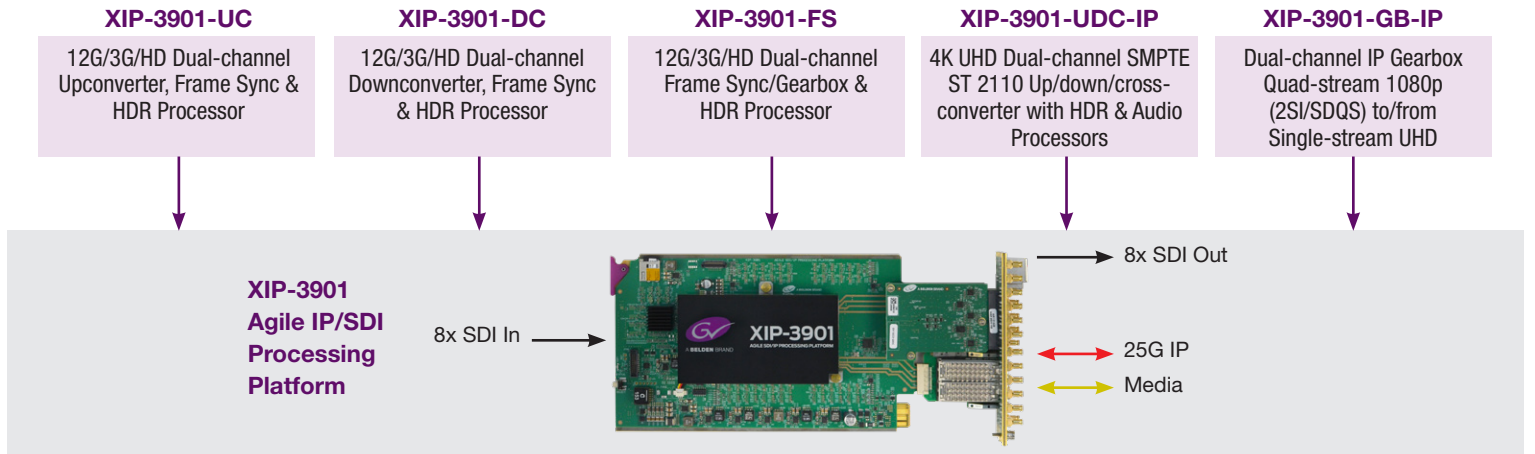
**SFP-25G-LR**

SFP28 25GBASE optical transceiver SMF



XIP-3901-GB-IP Dual-channel 4K UHD Gearbox IP Processing Application

XIP Application Agility Evolution



The XIP-3901 Agile Processing Platform also provides long-term value by protecting a customer’s CAPEX investment in current HD and UHD SDI and now IP infrastructure. The application-based licensing model adapts the XIP-3901 to new workflows with different software applications resulting in a truly virtualized hardware environment.



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