

DENSITÉ 3+ XIP-3911-IO

Multichannel SDI/IP Gateway Application for XIP-3911 and XIP-3901



SDI/IP gateway application for the software-defined platforms Densité 3+ XIP-3911 and XIP-3901.

The XIP-3911-IO application from Grass Valley® is a high-performance, versatile gateway which can encapsulate or de-capsulate up to 16 SDI signals (depending on format) to/from uncompressed SMPTE ST 2110, with optional frame sync support. UHD support is provided for both SDI and SMPTE ST 2110, enabling a seamless transition from SDI<>IP for all system architectures. Single SMPTE ST 2110-30/31 audio flow per channel can be configured to support up to 16 channels of embedding/de-embedding to/from SDI. The high density allows 192 (96 SDI->IP and 96

IP->SDI) gateways per 4 RU Densité® 3+ FR4 frame, saving substantial rack space in high channel count environments. Its scalability through modularity is the ideal solution to address increasing content demands.

The dual 25 GbE SFP sockets allow fiber or electrical connectivity to redundant networks as per SMPTE ST 2022-7.

The XIP-3911 and XIP-3901 Agile Processing Platforms also provide 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 these platforms to new workflows with different software applications resulting in a truly virtualized hardware environment.

The XIP-3911-IO is configured, controlled and monitored by GV Orbit® from Grass Valley, taking advantage of many features and functions specifically crafted to make IP easy. It can also be configured using the on-board HTML5 web interface and documented Rest API, and controlled via NMOS IS-04/05.

Densité 3+ FR4



12 XIP-3911 = 192 3G Channels

Densité 3+ FR1

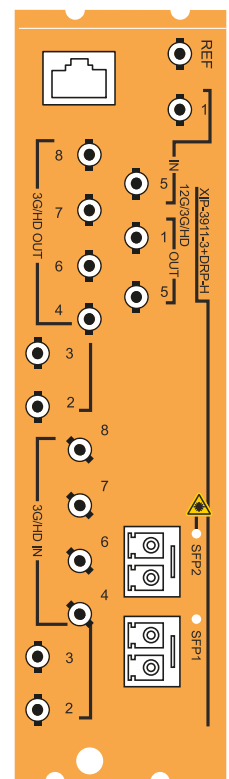
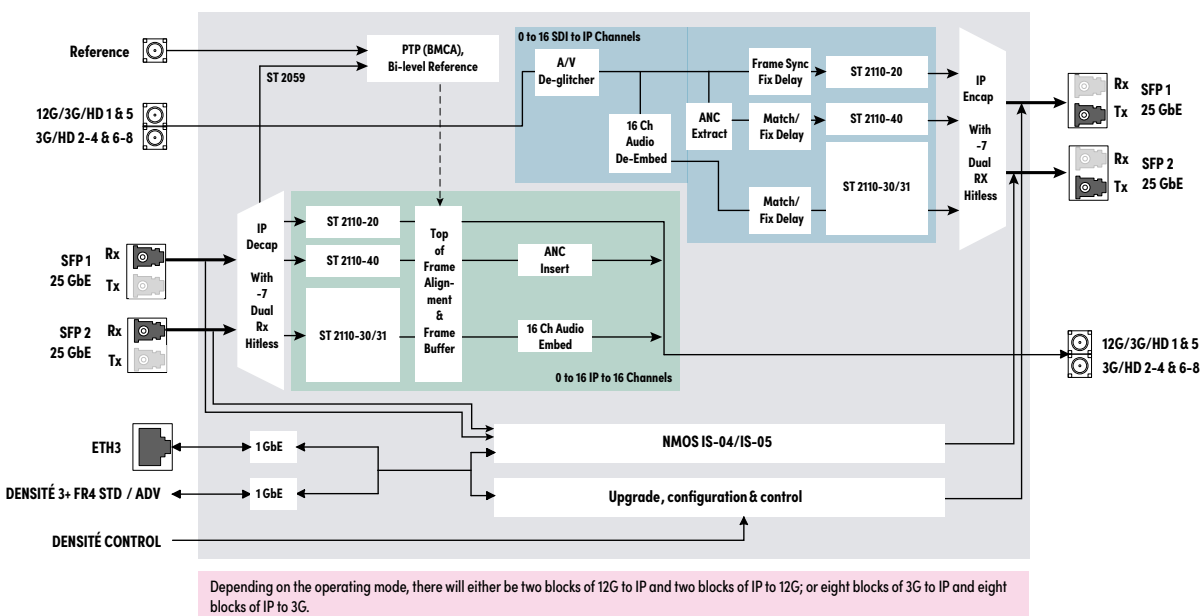


1 RU

2 XIP-3911 = 32 3G Channels

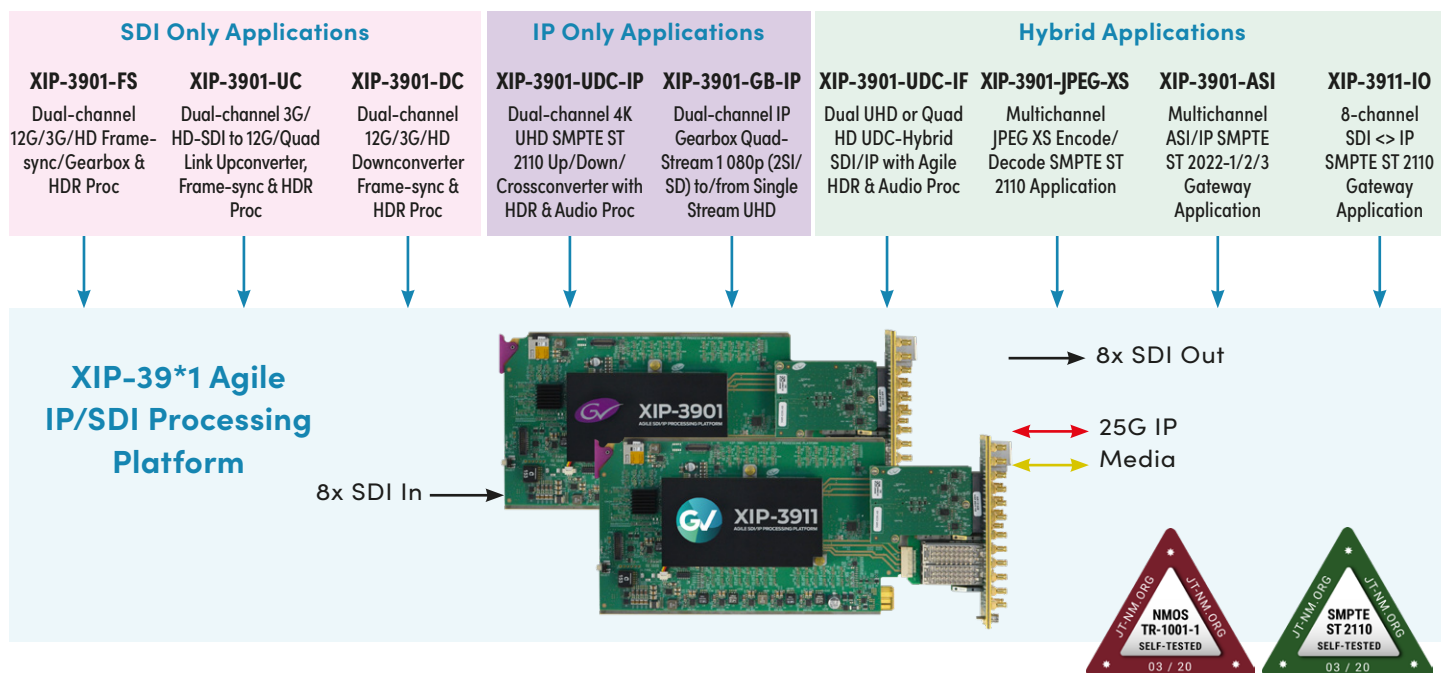
Key Features

- Very high density with 16 gateways per card/192 gateways per 4 RU Densité 3+ FR4 frame
- Supports up to 8 SDI inputs and 8 SDI outputs
- Fast, clean, and quiet switching via make-before-break (-1 Rx) or break-before-make modes
- Optional Frame Sync support for SDI inputs, referenced using external blackburst, internal URS, or Precision Time Protocol (PTP)
 - Each channel can run independently and lock to different reference signals, which enables operation at different frame rates
 - Up to four frames of video delay available for SDI input channels
 - All channels support a low-delay mode and independent H and V offset adjustments
- Multiple SDI standards & formats supported including UHD Single Stream SMPTE ST 2110 and 12G SDI I/O
- SDI embed/de-embed of up to one audio flow per channel
- Flexible IP connectivity through two distinct SFP ports for optical or electrical modules:
 - 25 GbE AOC and Optical SFP
 - Both FEC74 (CL74 Fire Code) and FEC108 (Reed Solomon IEEE) Forward Error Correction
 - SMPTE ST 2022-7 Class A & D seamless protection switching
- Supports IGMPv3 source-specific multicast, allowing transmission in multicast groups
- SMPTE ST 2059-1/-2 PTP with BMCA
- 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
- SMPTE ST 2110-20 video including UHD Singlestream
- 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 SMPTE ST 2110-20 video stream
- Seamless integration with GV Orbit Control, Configuration & Monitoring software including logging & reporting
- HTML5 web-based configuration interface
- Open configuration management & monitoring with the Rest API
- Individual XIP-3911 and XIP-3901 applications licensed, purchased as needed
- Rapid switching between XIP-3911 applications



XIP-3911-3+DRP-H

XIP Application Agility Evolution



Specifications

SDI Only, IP Only or Hybrid (SDI/IP) (Inputs/Outputs)

Physical: 16 HD-BNC connectors configured as 8 inputs and 8 outputs

SDI Standards:

- SMPTE ST 292 (1.485, 1.485/1.001 Gb/s)
- SMPTE ST 424 (2.970, 2.970/1.001 Gb/s)
- SMPTE ST 2082-1:2015 (In-1, In-5, Out-1 & Out-5)

Supported input/output formats:

- HD: SMPTE ST 274: 1080i59.94, 1080i50
- HD: SMPTE ST 296: 720p59.94, 720p50
- 3G: SMPTE ST 425 level A (mapping 1): 1080p59.94, 1080p50
- 12G: SMPTE ST 2082-10: 2160p59.94, 2160p50

Cable length (Belden 1694A):

- HD: 165m (540 ft.) at 1.485 Gb/s
- 3G: 120m (390 ft.) at 2.970 Gb/s

Cable length (Belden 4794):

- 12G: 60m (195 ft.) at 11.88 Gb/s

Jitter:

- HD: <0.2 UI (alignment jitter)
- 3G: <0.3 UI (alignment jitter)
- 12G: <0.3 UI (alignment jitter)

Ethernet Ports for Media

Physical: Two SFP+ 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

Reference Input

Physical: HD-BNC/75Ω connector

Standard: SMPTE ST 170/SMPTE ST 318/ITU 624-4 blackburst

Ethernet Ports for Control

Physical: One electrical RJ45 port

Standard: IEEE 802.3 1000 Mb/s

Electrical

Power: 60W maximum

Ordering

Application Software

XIP-3911-IO

Multichannel SDI/IP Gateway application

XIP-3911-IO-OPT-FS

SDI inputs frame synchronization option

Densité 3+ Frame

XIP-3911

Agile SDI/IP processing platform

XIP-3911-3+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

This product may be protected by one or more patents. For further information, please visit: www.grassvalley.com/patents

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