

# Hybrid IP/SDI, 4K/UHD, HDR/WCG Rasterizer

## 10/25GbE / 12G-SDI



### Feature-rich 25G IP ST 2110 Rasterizer

The QxL is 10G-IP enabled as standard. For realtime IP workflows the QxL supports simultaneous Generation and Analysis of SD/HD/3G/UHD/EUHD 2110 payloads on generic SFP28/25 GbE interfaces, with ST 2022-7 Seamless IP Protection Switching (SIPS) and independent PTP followers on both media ports for fully-redundant media network operation – all with AMWA NMOS IS-04, IS-05 and PTP Discovery via IS-09.

Picture view, waveform monitor, vectorscope, extensive audio metering, audio channel-status, detection of common Dolby formats, ANC status and payload; on-screen display of closed captions and Ancillary Time Code (ATC); Loudness monitoring; advanced control and logging with human readable event logs; browser-based remote operator GUI access over noVNC and a full REST API are provided as standard.

### Optional in-field license upgrades

The flexible architecture of the QxL offers in-field license upgrades for 25G IP, SDI-UHD/4K, UHD 2110 Extended Mode formats (YCbCr/RGB 444, 8-/10-/12-bit; 48 to 60 Hz), PCAP, Dolby E Decode, HDR, AV test signal generation as well as engineering grade data view and ANC packet inspection tools, allowing you to tailor your system to your current needs while retaining full flexibility for the future.

### Flexible architecture for advanced Physical Layer Analysis

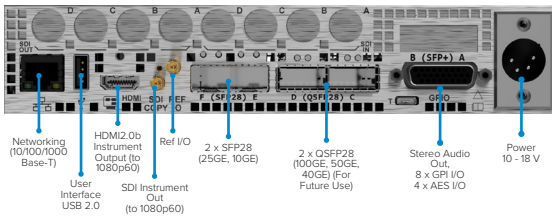
Factory-fitted options provide SDI interfaces and RTE™ real-time SDI eye/jitter analysis, with an engineering grade data view and an optional, advanced SDI-STRESS toolset.

Whether working in SD, HD, UHD, SDR, HDR, SDI or IP, conventional or remote production, the QxL combines the user-configurability and advanced tools required for full operational flexibility when transitioning to next generation workflows.

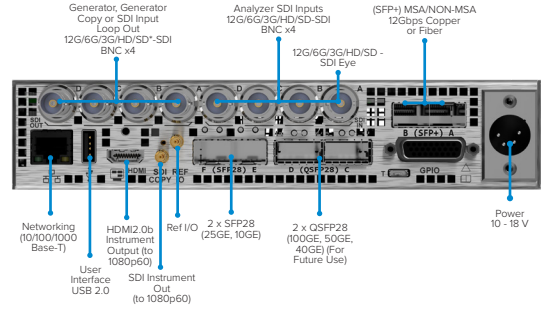
### Key Features

- Innovative app style interface - with presets - QxL puts you in control
- Display up to 16 instruments on a single 1920 x 1080 screen
- Class-leading Waveforms
- Available in: IP only, IP & SDI, IP & SDI Eye & Jitter
- SFP28 IP media interfaces fitted as standard, with SDI option for Hybrid SDI/IP
- Options for UHD/4K, IP-MEAS, Dolby E, HDR, PCAP, EUHD, AV-ANC Gen and SDI-STRESS
- ST 2110-20 payloads up to 4K60P 444 12-bit over 25G IP networks with 2022-7 and dual PTP
- IP-MEAS test suite provides a comprehensive set of tools for SMPTE 2110 and 2059 (PTP) compliance verification and commissioning
- AMWA NMOS IS-04, IS-05 and PTP system resource detection via IS-09
- Fully-featured SDI toolset: audio, Dolby-detect, Data view, ANC status and ANC Inspector included as standard
- 128 SDI audio channels, ST 2110-30 Class C, 32 channel metering, 5.1/2.0 Loudness measurement
- 12G Real-Time Eye (RTE) for testing SMPTE compliance with indication of DC offset
- SDI-STRESS option for stress testing and R&D evaluations of SDI interfaces up to 12G
- Simultaneous generation of both Test Signal and User Interface (GUI) video and audio flows
- Remote access and control with remote browser access using noVNC

# Rear Panel QxL IP Only



# QxL with Factory-fitted SDI option



## Specifications

User Interface	
HDMI instrument output, 1920 x 1080, 4:4:4 RGB, Type A	HDMI 2.0a
3G-SDI instrument output, 1920 x 1080, 4:2:2 YCbCr	Micro BNC
User Interface Video/Audio	2110-20 / 2110-30/-31
Remote browser GUI access	noVNC
Ethernet IP Inputs / Outputs (Accepts Generic SFPs)	
2 x SFP28 10 / 25G cages	Standard
2 x QSFP28 cages	Reserved
Upgrade to 25GbE support	Software Option
Networking & Control	
10 / 100 / 1000 BASE-T	RJ45
8 x Bidirectional GPI Socket	26 pin HD D-Type
SDI Inputs / Outputs	
4 x SDI inputs, SD*/HD/3G, 75 ohm terminated BNC	Factory Option
2 x SFP+ MSA / Non-MSA cages (12 Gbps copper or fiber SDI interfaces)	Factory Option
4 x SDI outputs, SD* / HD / 3G, 75 ohm BNC	Factory Option
SDI I/O to 6G/12G (Requires Factory SDI Option)	Software Option
RTE™ Real-Time Eye input (12G/6G/3G/HD/SD-SDI) x 1 (SDI input A) BNC	Factory Option
Formats Supported	
ST 2110-20/-30/-31/-40 / 2022-7 / 2022-6 Analysis over 10G Ethernet	Standard
ST 2110-20/-30/-31/-40 / 2022-7 / 2022-6 Analysis over 25G Ethernet	Software Option
ST 2110-20/-30/-31/-40 / 2022-7 / 2022-6 Generation	Software Option
ST 2110-30/-31	Class C
ST 2110 UHD / 4K Formats	Software Option
ST 2110 RGB UHD / 4K EUHD Formats	Software Option
Core SDI Formats: 3G / HD / SD	Factory Option
12G / 6G / 3G / 1.5G-SDI UHD 4K (Requires Core Formats)	Software Option
Audio Inputs / Outputs	
4 x 75 ohm AES selectable I/O (26 pin high-density D-Type socket)	26 pin HD D-Type
1 x Stereo analog audio output (26 pin high-density D-Type socket)	26 pin HD D-Type
8 channel 48 kHz PCM audio	HDMI & SDI Instrument Out
Reference	
Reference input, Tri-level or B&B with cross-lock	75 ohm Micro-BNC
Form Factor	
Size (Width x Height x Depth - excluding projections)	211 x 44 x 253 mm
Weight	1.9 kg
Electrical	
4 pin XLR DC power connector	10-18V, 70W typical, 100W max
External power supply	90-264 VAC, 70 W typical, 120 W max

## Ordering Information

### QxL Chassis Options

<b>PHQXL</b>	QxL 1U SDI/HD/2K 10GbE IP Rasterizer, Analyser only
<b>PHQXL01-3G</b>	QxL 1U SDI/HD/2K 10GbE IP/SDI Rasterizer, Analyser only
<b>PHQXL01E-3G</b>	QxL 1U SDI/HD/2K 10GbE IP/SDI Rasterizer, Eye/Jitter, Analyser only

### QxL Chassis Upgrades (Return to Factory)

<b>PHQXLM-01</b>	QxL SDI I/O return to factory upgrade (requires PHQXL)
<b>PHQXLM-01E</b>	QxL SDI Eye/Jitter return to factory upgrade (requires PHQXL01-3G)

### QxL IP Options

<b>PHQXLO-IP-25G</b>	25GbE media network (requires 2x PHSFP-25G-SR or PHSFP-25G-LR)
<b>PHQXLO-EUHD</b>	Adds RGB, 12b, 444, 48-60Hz formats to ST2110 (requires PHQXLO-UHD)
<b>PHQXLO-IP-MEAS</b>	IP Measurement 2110-21, PIT histograms, Timing
<b>PHQXLO-IP-PCAP</b>	PCAP 2x25Gbps line rate capture tool 4GB max.
<b>PHQXLO-IP-NGT</b>	2022-6 IP Network Traffic Generator Tool (requires PHQXLO-GEN)
<b>PHSFP-10GE-SR</b>	SFP+ 10GBASE-SR Ethernet MM 850nm 300m
<b>PHSFP-10GE-LR</b>	SFP+ 10GBASE-LR Ethernet SM 1310nm 10km
<b>PHSFP-25GE-SR</b>	SFP28 25GBASE-SR Ethernet MM 850nm 100m
<b>PHSFP-25G-LR</b>	SFP28 25GBASE-LR Ethernet SM 1310nm 10km

### QxL SDI/IP Software Options

<b>PHQXLO-DOLBY</b>	Dolby E Decoder, Metadata Analyser, LtRt/LoRo downmix, metering
<b>PHQXLO-GEN</b>	SDI/IP AV Test Signal Generator (SDI requires PHQXL01-3G or PHQXL01E-3G)
<b>PHQXLO-UHD</b>	2K Extended + UHD/4K IP/SDI (ST 2110 requires PHQXLO-IP-25G) (SDI requires PHQXL01-3G or PHQXL01E-3G)
<b>PHQXLO-HDR</b>	HDR/WCG support, CIE1931, HDR Heat map (PQ, HLG, S-Log3, SR Live)

### QxL SDI Options

<b>PHQXLO-SDI-STRESS</b>	12G-SDI Stress Test Toolset (requires PHQXL01E-3G, PHQXLO-UHD, PHQXLO-GEN)
<b>PHSFP-RT12-1310</b>	SFP+ SM(10km) LC Non-MSA, Tx 1310nm, Rx 1260-1620nm SD/HD/3G/6G/12G-SDI

### QxL Fitting Kits / Cables

<b>PHQXC-1</b>	12G-SDI Eye Measurement Test Cable 1m
<b>PHQXK1</b>	19 inch rackmount kit (1x Qx/QxL chassis)
<b>PHQXK2</b>	19 inch rackmount kit (2x Qx/QxL chassis)
<b>PHQXK3</b>	9.5 inch rackmount kit (1x Qx/QxL chassis)

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Please see the PHABRIX website for more information.

\* Future software release.

E&O - As our policy is one of continuous improvement, we reserve the right to vary details without prior notice.