Grass Valley®

DATASHEET

XCU Camera Base Station

SDI or SDI + IP base station for LDX cameras, including 4K UHD and high-speed applications.

Grass Valley® base stations offer a future-ready transmission system that supports the large bandwidth required by its LDX® camera range — including high-speed and 4K-capable cameras — without any compromises. The XCU Xpress UXF hardware is capable of supporting full SDI video (including 3X/6X speed and 4K) as standard and is now available with two different cradles. The 12G SDI cradle supports all baseband functionality up to 3G and has 4x additional 12G SDI outputs available. The IP cradle also supports up to 3G, but has 4x 10G IP connectivity. When your production requires IP it can be activated with a simple IP option license. No new equipment or additional IP cards are required. The IP functionality is available as a perpetual licensed option. An option for DirectIP(+) is also available.

The rack-mounted cradle means the XCU is easily removable to transfer camera systems between different productions or add cameras to a production in just minutes. All settings are stored in the cradle, so when a different XCU slides in, it is automatically configured with all the setting from the cradle. This XCU concept has wide market acceptance and is a proven solution for its quality and flexibility.

Compatible with the LDX 80, LDX 90 and LDX 100 camera series.

Key Features (for both XCUs with cradles)

- Unique dockable cradle concept
- Built-in memory in XCU cradle for production-set storage
- Universe XF transmission supports the high bandwidth required by high-speed and 4K cameras
- Full support for all speeds and HD formats:
  - 1X to 6X speed (dependent on camera and format)
  - 720p/1080i/1080p/1080PsF/3840x2160p (4K)
- Video outputs:
  - 2x4K* (2SI or SQD) and 2x1.5G or 3G video outputs (in 4K mode)
  - 6x 3G* and 2x 1.5G or 8x 1.5G* video outputs (in 1X speed)
  - 6x 3G BNCs supporting 3X/6X speed; 720p, 1080i, 1080p
- Extensive (analog/digital) audio connectivity
- Embedded audio
- 3x selectable return inputs:
  - 3G, HD or SD
- 1 Gb IP trunk
- Universal 3G power supply
- Compact (2 RU), robust base station
- Supports high speed operation
- Supports up to 3.000m of SMPTE hybrid fiber cable with power, maximum cable length depends on system configuration

XCU UXFs with 4x SFP+ connections

- SFP slots available for:
  - Redundant 10 GbE IP connections
  - 2x HD BNC for 12G SDI outputs (optional with extra 12G SDI module)
- IP connections:
  - SMPTE ST 2022-6 compliant
  - SMPTE ST 2110 compliant
  - NMOS compliant

XCU UXFs with 4x 12G SDI connections

- BNCs available for:
  - 4x 1.5G – 12G SDI output additionally available (all same content)

* During HDR operation, some of the signals will be with SDR mapping and some of the signals will be with HDR mapping

Specifications

Video (specific format support depends on the camera model)

720p: 50/59.94/150/179.82/300/359.64 Hz

1080i: 50/59.94/150/179.82/300/359.64 Hz

1080p: 50/59.94/150/179.82/300/359.64 Hz

4K UHD: 3840x2160p50/59.94

General (incl. cradle) for XCU Xpress UXF

Dimensions XCU + cradle (HxWxL, approx.): 448 x 86.5 x 533 mm (19-inch rack, 2 RU) (17.6 x 3.4 x 21.0 in.)

Operating temperature: 0 to +45°C (+32 to +113°F)

Storage temperature: -20 to +70°C (-4 to +158°F)

Operation humidity: Max. 90% (noncondensing)

Shock resistance: Max. 10G (transport), max. 2G (operating)

Altitude: Max. 15,420m (50,000 ft.)

Weight XCU + cradle: 12.5 kg (27.6 lbs.)

Weight XCU: 7.8 kg (17.2 lbs.)

Power requirement: AC 100V/240V, 47 to 63 Hz

Power connector: IEC type, 3-pin male

Power consumption: Total power (Camera + XCU) 450W max.

Baseband connectivity

Connectors (4K mode)

Teleprompter in: BNC 1x (loop-through output), (C) VBS, 1.0 Vp-p, 75Ω

Reference in: 1x (loop-through output), 1.0 Vp-p, 75Ω HD tri-level sync or SD blackburst

4K UHD: 3G HD-SDI: 4x, BNC 0.8 Vp-p, 75Ω Quad or 2SI, Level-A

HD-SDI out: BNC 1x 0.8 Vp-p, 75Ω, SMPTE ST 292, 1080i/720p at 50/59.94 Hz or SMPTE ST 425-A, 425-B, 1080p at 50/59.94 Hz

Signaling in/out: D-sub 15-pin – male, preview, green tally (call–dry contact), yellow tally (iso– dry contact), red tally (on air – dry contact), remote audio level control (22-64 dB), DC

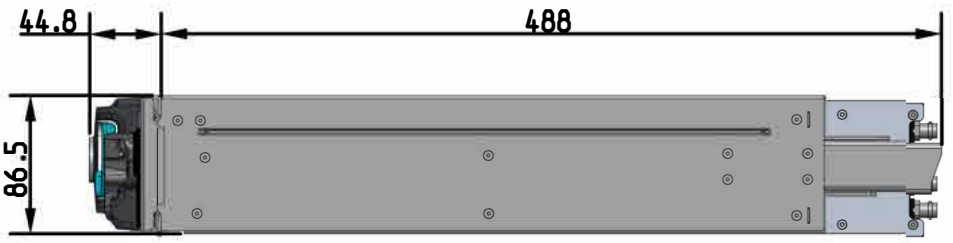
Auxiliary in/out: D-sub 9-pin – female, private data in/out – 100 kb TTL (RS-232) Control data: RJ-45 connector for C2IP (camera control)

Control data: RJ-45 connector for IP trunk up to 1 GbE

Hybrid fiber connector: LEMO hybrid acc. SMPTE ST 304 (other fiber connectors on request)

External video in: 3x HD-SDI (1.5 Gb/3.0 Gb) or SD-SDI 0.8 Vp-p, 75Ω. Input 1 (loop-through output) / Inputs 2 and 3 (no loop-through output)

Dimensions for XCU Xpress UXF models



XCU with Cradle (millimeters)

Connectors (HD/3G 1X/3X/6X modes)

Teleprompter in: BNC 1x (loop-through output), (C) VBS, 1.0 Vp-p, 75Ω

Reference in: 1x (loop-through output), 1.0 Vp-p, 75Ω HD tri-level sync or SD blackburst

HD-SDI out*: BNC 6x 0.8 Vp-p, 75Ω, SMPTE ST 292, 1080i/720p at 50/59.94 Hz

HD-SDI out (live/effect)*: BNC 2x 0.8 Vp-p, 75Ω, SMPTE ST 292, 1080i/720p at 50/59.94 Hz

HD-SDI monitoring out: BNC 1x 0.8 Vp-p, 75Ω, SMPTE ST 292, 1080i/720p at 50/59.94 Hz

SD-SDI out: BNC 2x 0.8 Vp-p, 75Ω, SMPTE ST 259 ITU-R, BT.601

SD-SDI monitoring out: BNC 1x 0.8 Vp-p, 75Ω, SMPTE ST 259 ITU-R, BT.601

Composite video monitoring output: BNC 1x 1.0 Vp-p, 75Ω (CVBS text with video, for viewing purposes)

Signaling in/out: D-sub 15-pin – male, preview, green tally (call – dry contact), yellow tally (iso – dry contact), red tally (on air – dry contact), remote audio level control (22-64 dB), DC

Auxiliary in/out: D-sub 9-pin – female, private data in/out – 100 kb TTL (RS-232)

Control data: RJ-45 connector for C2IP (camera control)

Control data: RJ-45 connector for IP trunk up to 1 GbE

Hybrid fiber connector: LEMO hybrid acc. SMPTE ST 304 (other fiber connectors on request)

External video in: 3x HD-SDI (1.5 Gb/3.0 Gb) or SD-SDI 0.8 Vp-p, 75Ω. Input 1 (loop-through output) / Inputs 2 and 3 (no loop-through output)

2-ch. audio: Audio out, 2x XLR-3 – 0/+6 dBu (±1.5 dB, max. 18 dBu, 600Ω, gain max. 70 dB)

Frequency response: 40 Hz to 15 Hz, (+1/-3 dB, 1 kHz, -10 dBu output level)

Distortion: Less than 0.5% (100 Hz/1 kHz, +6 dBu out, 600Ω)

Audio S/N ratio: 58 dB (unweighted RMS)

AES-EBU 1+2: BNC 75Ω, digital audio output Audio 1 and 2

AES-EBU 3+4: BNC 75Ω, digital audio output Audio 3 and 4

Intercom in/out (2/4-wire intercom): D-sub 15-pin, female – program in, production in/out, engineering in/out – in: 0 or 6 dBu, out: 0 or 6 dBu (±2 dB, max. 12 dBu)

Frequency response: 150 Hz to 6 kHz (1 kHz, -10 dBu output level)

Distortion: Less than 2% (1 kHz, +12 dBu level)

IP connectivity (IP cradle only)

IP communication meets JT-NM standards: SMPTE ST 2110, AMWA NMOS JT-NM TR-1001-1

12G SDI connectivity (12G SDI cradle only)

4x 1.5-12G SDI outputs

* Notes:

8x 1.5G video outputs (in 1X speed 720p, 1080i)

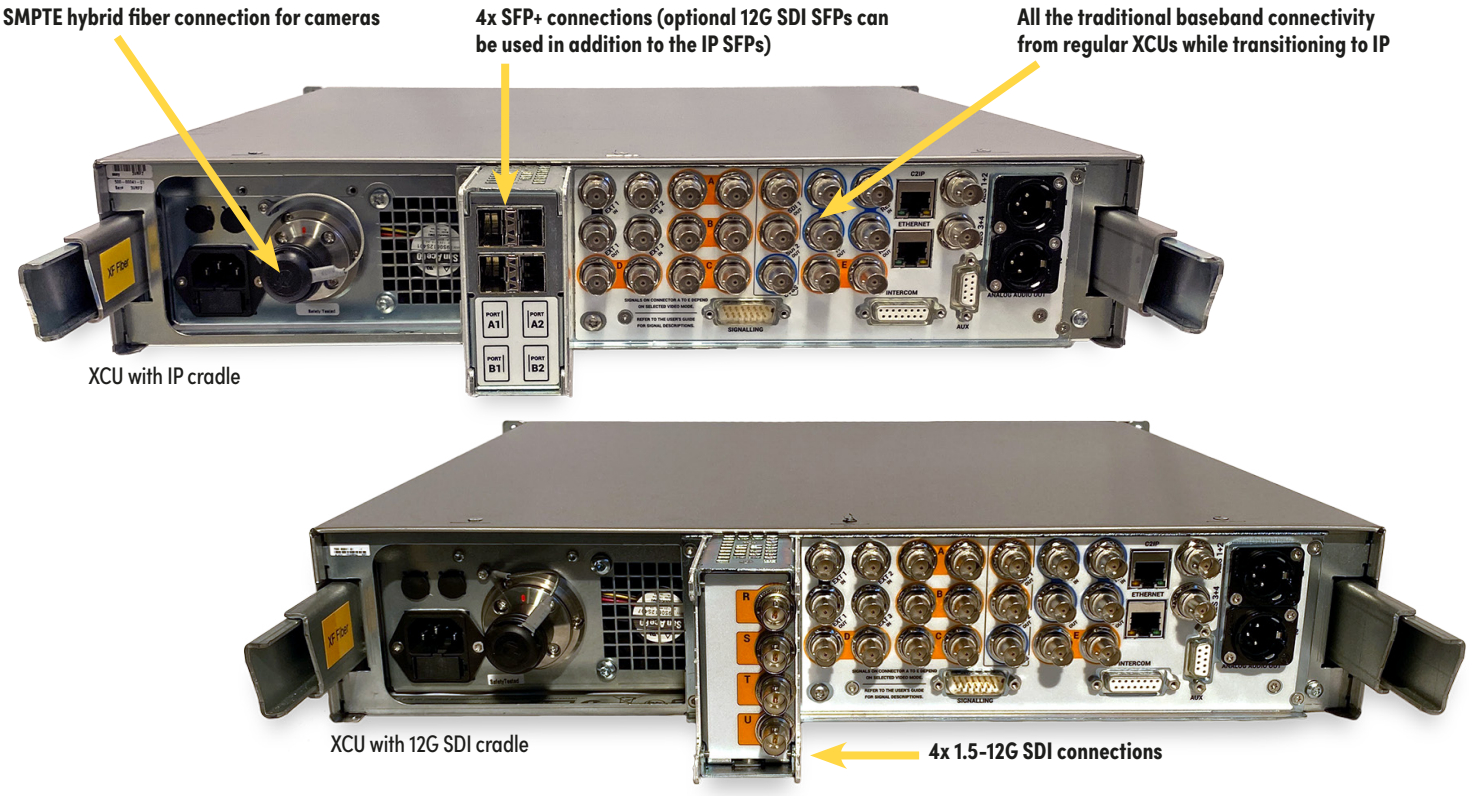
6x 3G and 2x 1.5G video outputs (in 1X speed 1080p)

6x 3G BNCs supporting 3X/6X speed; 720p, 1080i, 1080p

During single-speed HDR operation, some of the signals will be with SDR mapping and some of the signals will be with HDR mapping

		XCU Xpress UXF (12G SDI cradle)	XCU Xpress UXF (IP cradle)
Full Baseband connectivity		Y	Y
Full IP connectivity		N	Option
12G SDI support		Y + 4x additional BNCs	Optional (with 2x HD-BNC SFP module)
HD/3G/4K UHD support in single speed		Y	Y
High speed support	3X HD, 6X HD, 3X 3G	Y	Y
	6X 3G	Y	Y*
DirectIP(+) support		Y	Y
HDR support	in single speed	Y	Y
	in high speed	Y	Y
Simultaneous outputs in: 4K HDR, 3G/HD HDR, 3G/HD SDR		Y	Y
LDX 100 series support		Y	Y
		Delivered with UXF cradle with 4x 12G SDI	Delivered with UXF cradle with 4x SFP+ slots

* 6x 3G not supported over IP



Ordering

XCU Xpress UXF Fiber
Full baseband XCU with 4x SFP+ cages for IP support

XCU Xpress UXF 12G SDI
Full Baseband XCU with 4x 12G SDI for Native UHD support

UXF Cradle
UXF cradle with 4x SFP+ cages

UXF Cradle 12G SDI
UXF cradle, includes 4x 12G SDI support for Native UHD support

XCU Xpress IP option
IP option for IP suppport for XCU Xpress UXF Fiber

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

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