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ARCHITECTURAL AND ENGINEERING SPECIFICATION
PRODUCT: HDMI-TPX-RX109AU2K

FUNCTIONAL OVERVIEW

The HDMI-TPX-RX109AU2K is an SDVoE-based TPX receiver extender for point-to-point extension of HDMI 2.0 video, audio, and control over a 10GBase-T TPX link. It outputs HDMI up to 4K60 4:4:4 with ultra-low latency (under 8 ms) and supports HDCP 2.3 and EDID functionality. The unit provides a 1GbE user Ethernet channel, RS-232 transport, analog audio de-embedding, and USB 2.0 extension capability (Icron) for connecting USB devices at the receiver side.

VIDEO INPUT AND OUTPUT

- Video input (TPX / SDVoE)
  - Connector: RJ45 female (TPX input)
  - Data rate: 10GBase-T
  - Compliance: SDVoE
  - HDCP compliance: HDCP 2.3
  - Color space: RGB, YCbCr
  - Video latency: 0 frame (five lines / under 8 ms)
  - Compression ratio: 1.4 : 1 (applied only if AV signal exceeds HDMI 1.4 bandwidth)
  - Supported resolutions at 8 bits/color: up to 4096x2160@60Hz (4:4:4) or up to 3840x2160@60Hz (4:4:4)
  - Transferred signals: Video, Audio, RS-232, Infrared, Ethernet, CEC
- Video output (HDMI)
  - Connector: 19-pole HDMI Type A receptacle
  - Standard: DVI 1.0, HDMI 1.4, HDMI 2.0
  - Supported resolutions at 8 bits/color: up to 4096x2160@60Hz (4:4:4) or up to 3840x2160@60Hz (4:4:4)
  - CEC support: Transparent

AUDIO CAPABILITIES

- HDMI embedded audio is received over TPX and output embedded on HDMI
- Analog audio de-embedding output:
  - Connector: 5-pole Phoenix® (analog audio output)
  - Audio formats: 2-channel PCM
  - Signal transmission: balanced
  - Sampling frequency: 48 kHz

POWERING

- Local power via 48V DC input (2-pole Phoenix® connector)
- Remote power over TPX via PoE+ PD+PSE (IEEE802.3at) (device can receive or send power to the connected remote device)

CONTROL

- Ethernet control interface (1GBase-T, RJ45) for local control functions
- BlueRiver AV Manager (SDVoE Control Server-based configuration and monitoring)
- TCI API control via TCP/IP terminal connection to the endpoint
- REST API control via SDVoE Control Server
- RS-232 via 3-pole Phoenix® connector (bi-directional serial communication)
- USB (Icron USB 2.0) configuration/pairing controllable via SDVoE protocol when Icron control is enabled in SDVoE settings

GENERAL

- Dimensions: 100.4 W x 151.8 D x 26 H (mm)
- Mounting options compatibility (Size 2 device)
  - 1U High Rack Shelf: supported (4x)
  - UD Mounting Kit: supported
  - UD Mounting Kit Double: supported (2x)
  - UD Mounting Plate F110: supported
  - UD Mounting Plate F120: supported (2x)
  - PRC-16-312 rackmount cage: not supported
- LVD / electrical safety: EN 62368-1:2024
- Warranty period: 3 years

- Cooling: Passive
- Supplied accessories (receiver package)
  - Safety and Warranty Info; Quick Start Guide
  - TPX / OPTX series extender (device)
  - 48V DC adaptor with interchangeable plugs
  - Phoenix® Combicon 3-pole connector
  - Phoenix® Combicon 5-pole connector
  - Infrared emitter
- Packaging: the product has full paper / green packaging

DOCUMENT REVISION HISTORY

Document	Release Date	Changes	Checked by
v1	2026-07-27	Initial version	Tamas Forgacs
v2	2026-08-06	Updated remote powering to PoE+ (IEEE 802.3at)	Tamas Forgacs