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ARCHITECTURAL AND ENGINEERING SPECIFICATION

Taurus HDMI-UCX-TPX-RX107

Matrix Switcher Receiver with USB2.0 host switch, Ethernet, and room control/automation capability.

FUNCTIONAL OVERVIEW

The device shall be a compact HDMI receiver switcher designed for integration into BYOM environments. It shall receive seamless video, audio, USB2.0, and control signals over a single CAT6A cable, up to 100 meters using Lightware's TPX (SDVoE-based) technology. Configuration and monitoring shall be possible through the transmitter's Web GUI - the Lightware Device Controller (LDC)*, via the Lightware Advanced Room Automation (LARA) or with the Lightware Advanced Room Automation Wizard (LARA Wizard).

*(LDC is available built in, or in a desktop version)

VIDEO

The matrix receiver shall:

- support HDMI 2.0 signal formats.
- have one TPX extender receiver port (with 10G bandwidth) and one HDMI output port
- support video content and all standard resolutions and frequencies as specified under HDMI up to 1920x1200 50/60Hz, or 4096x2160 60Hz (UHD, 4K). 3840x2160 resolution is supported with default Lightware EDID.
- be compatible with a 120Hz 3D video signal.
- support HDCP 1.4 and 2.2 content protection standards and provide per-port HDCP authentication diagnostics via the Web GUI (LDC) or via the LW3 protocol.
- feature pixel accurate reclocking technology to restore signal integrity, by eliminating jitter and preserving original timing and color data.
- support EDID management for customizable EDID tables.

USB / HOST SWITCHING

The matrix receiver shall:

- allow flexible assignment of USB peripherals to the active host, with support for both automatic and manual switching modes. Host switching shall not interrupt USB data transmission, and the system shall ensure full compatibility with standard USB bulk transfer protocols.
- have four high-speed USB ports for connected devices (like USB camera, mic, speaker, keyboard, mouse, solid state drive) with output power of at least 1A each.

- switch these USB devices to any connected hosts on the transmitter side.

AUDIO

The matrix receiver shall:

- have a balanced analog audio output port for stereo audio de-embedding from any of the active video sources.
- support the following signal formats: 7.1 HDMI embedded audio, Dolby TrueHD, and DTS-HD Master Audio 7.1 formats.
- provide adjustable volume on the analog output port.

POWER

The matrix receiver shall:

- be powered via an external 12 V DC adapter or via PoE by a compatible TPX transmitter device

ETHERNET

The matrix receiver shall:

- have an integrated Gigabit Ethernet Switch.
- have at least two RJ45-type Ethernet connectors (up to 1 Gbps speed).

SECURITY

The matrix receiver shall:

- be able to support 802.1x authentication.
- allow VLAN tagging for logical network separation.
- be capable of network separation between corporate network and user network.
- support port-level Ethernet control, including enable/disable functions.
- be able to support different pre-defined VLAN presets.
- be able to receive firmware updates from its transmitter pair
- support HTTPS and secure WebSocket (WSS) protocols to enable encrypted web interface access and WebSocket-based control and monitoring.
- allow selective USB port 5V power control for security and reset functions.
- require a multi-step procedure for factory reset to avoid unauthorized erasure.

CONTROL

The matrix receiver shall:

- support to be controlled by Lightware Advanced Room Automation (LARA)

- include an integrated crosspoint routing engine, capable of independently switching video, audio, USB, and control signals between multiple inputs and outputs.
- be able to process occupancy sensor inputs through its OCS port.
- provide one bi-directional RS-232, Ethernet and USB ports for control.
- be able to send predefined TCP commands to attached compatible devices.
- be able to recognize predefined incoming RS232/TCP commands as a condition and execute switching, sending RS232/TCP or CEC command sequences on reception, and allow CEC commands to pass through.
- be able to recognize input video signal changes as a condition and execute switching, and send RS232/TCP or CEC command sequences on change.
- provide front panel LED indicators for power status / video signal presence / Ethernet link activity. Rear panel indicator shall include the TPX connection status.
- support Consumer Electronics Control (CEC) functionality over all HDMI outputs, including via the TPX extension link to connected receivers.
- support bulk device configuration and management through the LDC software. This capability shall enable managing multiple extender devices concurrently, ensuring consistent configuration across rooms, zones, or entire deployments.

GENERAL

The matrix receiver shall:

- have full paper / green packaging.
- be housed in a compact metal enclosure measuring 151.8 mm (W) x 104.9 mm (D) x 26 mm (H)
- be mountable under tables or inside furniture (the UD Mounting Plate kits are sold separately)
- be mountable in racks (1U rack shelves are sold separately)
- have passive, fanless and noiseless cooling.
- comply with CE, FCC Class A, UKCA, RoHS
- have a warranty of 3 years.
- be compatible with the following UCX-TPX transmitters:
    - UCX-2x1-TPX-TX20
    - UCX-4x3-TPX-TX20
    - UCX-4x3-TPX-TX30-R
- be compatible with the following TPX transmitters:
    - HDMI-TPX-TX106
    - HDMI-TPX-TX106A
    - HDMI-TPX-TX107

  - HDMI-TPX-TX107D
  - HDMI-TPX-TX209AK
  - HDMI-TPX-TX209AU2K
  - HDMI-TPX-TX209DU2K
- be packaged together with the following equipment:
  - 12V DC adaptor with interchangeable plugs
  - Phoenix® Combicon 3-pole flat Connector
  - Phoenix® Combicon 3-pole male Connectors
  - Phoenix® Combicon 5-pole Connector
  - Safety and Warranty Info, Quick Start Guide
  - 2 pcs. of M3x4 flat head screw

Document revision history

Document	Release Date	Changes	Checked by
Rev. 1.0	2 Dec 2024	Initial version	Tamás Takács
Rev 1.1	29 May 2025	Minor updates	Bence Varga
Rev.1.2	1 July 2025	Major update	Márk Hilóczki
Rev.1.3	2 March 2026	Minor updates	Bence Varga