



ARCHITECTURAL AND ENGINEERING SPECIFICATION

PRODUCT: MX-4TPS2-4HDMI-OB-AP

FUNCTIONAL OVERVIEW

MX-4TPS2-4HDMI-OB-AP is an MX-FR series output board for Lightware modular matrix frames. It provides four TPS2 (HDBaseT-based) outputs and four HDMI outputs to distribute routed AV signals from the matrix to remote TPS endpoints and local HDMI displays. The “-AP” variant supports PoE-compatible remote powering on TPS2 ports (with the required external PSU) and supports matrix Audio Options functions that include audio embed/de-embed behavior using an external/auxiliary audio interface.

VIDEO OUTPUTS

- Outputs (per board):
 - 4 × TPS outputs (TPS output ports; HDBaseT-based operation)
 - 4 × HDMI outputs
- TPS-type output port settings (supported on this board; applies to the four TPS ports):
 - Signal mode: DVI / HDMI / Auto (Auto follows sink EDID and incoming HDCP encryption on output: Auto (encrypt only if input is encrypted) / Always (force encryption)
 - Test Pattern Generator (TPG): On/Off; outputs a solid-color test pattern (default described as solid red, 480p) and can be set to defined test resolutions
- HDMI-type output port settings (supported on this board; applies to the four HDMI ports):
 - Signal mode: DVI, HDMI (with deep color modes indicated such as 24/30/36-bit), or Auto (based on sink EDID and incoming signal)
 - Output 5V control (PWR5V mode): On / Off / Auto (Auto toggles 5V for 1 second when video timing changes to help certain sinks re-lock)

AUDIO CAPABILITIES

- 8x Phoenix® Combicon 5-pole connector for analog audio de-embedding
- Auxiliary analog audio interface usage:
 - Embed from auxiliary audio into the forwarded HDMI/TPS stream
 - De-embed to auxiliary audio from the HDMI stream



- HDMI audio passthrough and No audio modes are selectable
- HDMI + de-embed combined mode is available
- Analog audio processing controls (when aux audio is used):
 - For embed (aux defined as input): controls include volume, balance and additional input-related adjustments
 - For de-embed (aux defined as output): controls include volume, balance, bass, treble
- Analog audio limitation: conversion between HDMI and analog audio is available only with PCM stereo.

POWERING

- Powered by the MX-FR modular matrix frame when installed (board operating power is provided by the host frame).
- PoE-compatible remote powering (TPS ports):
 - Remote powering for a connected PoE-compatible TPS extender is available on TPS2 ports.
 - External PSU supplied with the board is required to use PoE-compatible remote powering.
 - If AWG26 cable is used together with remote powering, maximum distances are 20% shorter.
 - Warning: TPS-TX/RX90 and TPS-TX/RX95 devices are stated as not PoE-standard compliant and must not be powered this way.
 - If a connected TPS device needs PoE-compatible remote powering but the board is not PoE-compliant, a TPS-PI-1P1 power injector can be installed in the TPS chain.

GENERAL

- Compliance: CE, UKCA
- EMC (emission): EN 62368-1:2024
- EMC (immunity): EN 55035:2017+A11:2020
- RoHS: EN 63000:2018
- Electrical safety: EN 60065:2002 + A1:2006 + A11:2008 + A2:2010 + A12:2011
- Laser safety: EN 60825-1:2014+A11:2021
- Warranty period: 3 years.



DOCUMENT REVISION HISTORY

Document	Release Date	Changes	Checked by
v1	2026-08-25	Initial version	Tamas Forgacs