



ARCHITECTURAL AND ENGINEERING SPECIFICATION

PRODUCT: MX2M-4HDMI20-OB

FUNCTIONAL OVERVIEW

MX2M-4HDMI20-OB is a hot-swappable 4-port HDMI output board for the MX2M modular matrix system. It provides HDMI 2.0 compliant video output switching up to 18 Gbit/s for 4K@60Hz 4:4:4 signals with HDCP 1.4 and 2.3 support. The board supports audio passthrough and embedding from the matrix Audio layer into the output HDMI stream. Output-side video processing includes optional sampling pattern conversion (4:4:4 to 4:2:2). Board status and signal conditions are monitored via the MX2M system interfaces.

VIDEO INPUT AND OUTPUT SPECIFICATIONS

- Signal direction: Output board (OB)
- Video outputs:
 - 4× HDMI output connectors, HDMI 2.0 support
- Connector type: 19-pole HDMI Type A receptacle
- A/V standards: DVI 1.0, HDMI 2.0
- Bandwidth / data rate: uncompressed video up to 18 Gbps (600 MHz pixel clock)
- Supported resolutions (8 bits/color):
 - Up to 4096×2160 @ 60Hz (4:4:4)
 - Up to 3840×2160 @ 60Hz (4:4:4)
 - Note in specs: all standard VESA/CEA/custom resolutions up to 600 MHz supported; if pixel clock is above 340 MHz, horizontal resolution cannot exceed 4096 pixels
- Color space support: RGB, YCbCr 4:4:4 / 4:2:2 / 4:2:0
- HDCP compliance: HDCP 1.4 and HDCP 2.3
- Video delay: 0 frame
- Reclocking: Pixel Accurate Reclocking
- 3D support: Yes
- Output-side processing:
 - Output sampling pattern conversion 4:4:4 → 4:2:2
 - Note: board accepts 8/10/12-bit input color depth, but sampling pattern conversion is always made in 8-bit

AUDIO CAPABILITIES

- Audio behavior (board features):
 - Audio signal passthrough and embedding from the Audio layer into HDMI output stream
- Audio formats:
 - 8 channel PCM
 - DTS, DTS-HD Master Audio 7.1, WMA Pro
 - Dolby Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, Dolby Vision
- Audio routing / embedding rules:
 - Output embedded audio source options: HDMI (original embedded), Audio layer, Off
 - Embedded audio can be 2-channel LPCM or compressed (non-HBR) audio
 - For LPCM embedding, user may select two channels when source contains more than two channels

POWERING

- Powered by the MX2M matrix frame when installed in an OB slot
- Board is hot-swappable; can be exchanged without powering off the matrix

CONTROL

- Controlled through the MX2M frame using:
 - Front panel controls (switching/presets/locks at the frame level)
 - Built-in web interface (browser-based control/configuration)
 - Lightware Device Controller (LDC) software via Ethernet/USB/RS-232 (frame provides these interfaces)
 - LW3 protocol (ASCII-based) via TCP port 6107 (frame's LW3 interface)
- Output-port related controllable settings (via LDC/built-in web and LW3, as documented):
 - Mute/unmute, lock/unlock
 - HDCP mode (Auto / Always)
 - 5V enable (On / Off / Auto) availability stated for MX2M-4HDMI20-OB
 - Signal type forcing (Auto / HDMI / DVI)
 - Color space conversion (Passthrough / YCbCr 4:2:2)
 - Audio source selection (HDMI / AudioLayer / Off)
 - CEC controller available on HDMI output ports (per CEC section)

GENERAL

- Mechanical / dimensions (board):
 - Dimensions: 194.5 W × 208.5 D × 35.5 H mm
 - Material: 1.5 mm steel
 - Weight: 276 g (0.6 lbs)
- Mounting / installation:
 - Installs into MX2M OB (output board) slots
 - Hot-swappable board design
 - HDMI output ports have flange mounting option
- Cooling: Passive
- Compliance / LVD-related safety:
 - Compliance: CE, UKCA
 - Electrical safety standard: EN 62368-1:2020
 - RoHS: EN 63000:2018
 - EMC: EN 55032:2015+A1:2020 (emission), EN 55035:2017+A11:2020 (immunity)
- Warranty period: 3 years

DOCUMENT REVISION HISTORY

Document	Release Date	Changes	Checked by
Rev. 1.0	2026-06-22	Initial version	Tamas Forgacs