



ARCHITECTURAL AND ENGINEERING SPECIFICATION PRODUCT: HDMI20-OPTJ-TX90

FUNCTIONAL OVERVIEW

The HDMI20-OPTJ-TX90 is an HDMI 2.0 compatible fiber optical transmitter designed to extend **uncompressed HDMI video and embedded audio** over a **single multimode fiber** link to a compatible HDMI20-OPTJ-RX90 receiver. It supports resolutions up to 4K UHD@60Hz, 3D, Deep Color and HDR content transmission, and provides transparent EDID/CEC/HDCP handling with HDCP 1.4/2.2 compliance. The rugged metal enclosure provides passive cooling for reliable operation.

VIDEO INPUT AND OUTPUT SPECIFICATIONS

- **Video interface (TX side):** HDMI (19-pole HDMI Type A **plug**)
- **Supported standards:** DVI 1.0, HDMI 1.4, HDMI 2.0
- **Color spaces:** RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
- **Supported resolutions (8 bits/color):**
 - up to **4096×2160@60Hz (4:4:4)**, or
 - up to **3840×2160@60Hz (4:4:4)**
- **Optical link (to RX):** SC simplex multimode fiber optical connection (all AV + HDCP over one fiber)
- **Maximum multimode fiber distances (for all resolutions):**
 - OM1 (62.5/125): **150 m**
 - OM2 (50/125): **350 m**
 - OM3 (50/125): **800 m**
 - OM4 (50/125): **1100 m**
- **HDCP:** HDCP 1.4 and HDCP 2.2 (automatic selection based on source/sink)

AUDIO CAPABILITIES

- Embedded audio transported with HDMI over the optical link
- Audio formats supported:
 - **8 channel PCM**
 - **Dolby Digital, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos**
 - **DTS, DTS-HD Master Audio 7.1, WMA Pro**
- Supports HBR audio (e.g., Dolby TrueHD, DTS-HD Master Audio 7.1)



POWERING

- **External power adaptor** via USB-A power connector
 - Power adaptor: **100–240 V AC 50/60 Hz input, 5 V DC, 1 A output**
- **USB power** from a USB-compatible host port (USB 1.1 or higher); can be powered even from a “power only” USB port
- **HDMI power (TX only):** can be powered from the HDMI source **if the HDMI source provides 5V DC, 500mA** (no external power required)

MOUNTING OPTIONS

- The transmitter can be mounted to Lightware’s UD mounting plate F120 for under-desk usage (optional accessory)

CONTROL

- **Automatic operation** (module automatically selects HDMI 2.0 vs HDMI 1.x based on the connected source/sink)
- **Automatic HDCP selection** (HDCP 1.4 vs HDCP 2.2 based on connected source/sink)
- **Transparent signal/control pass-through: EDID, CEC, and HDCP transparent**
- **Status indication:** single **Status LED** indicates fiber link, HDMI presence/signal state, and HDCP state (1.4 / 2.2)

GENERAL

- **Dimensions:** **110.5 W × 35.5 D × 11.4 H mm** (4.35 × 1.40 × 0.44 inch)
- **Weight:** **145 g** (0.32 lbs)
- **Enclosure:** Aluminum; rugged solid metal casing (passive cooling support)
- **Cooling: Passive**
- **Mounting options:**
 - Mounting holes with inner threads on narrow sides; **hole distance 67.5 mm**
 - Mount to rack shelf / under-desk kits using **PZ flat head (M3×6mm)** screws (with compatible mounting accessories)
 - **Self-fastener mounting** using enclosure tie-down loops (safety wire recommended for truss installation)
 - Mountable into **OPTJ Power Tray (1RU)** housing up to **16 TX/RX** units (tray provides power to installed devices)
- **LVD compatibility (electrical safety): EN 62368-1:2024** (listed under “Electrical safety”)



- Supplied accessories (per box contents):
 - **12V DC power adaptor with interchangeable plugs**
 - **Safety & Warranty Info**
 - **Quick Start Guide**
- Warranty period: 3 years
- The product has full paper / green packaging

DOCUMENT REVISION HISTORY

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