

HDMI Optical Transceiver



FEATURES

- HDMI 1.x and HDMI 2.x signals
- HDCP 1.4 and HDCP 2.2 content protection
- All communication, including Video Transport, HDCP and maintenance operation one optical fiber
- Supports open fiber detection with high speed laser shutdown
- HDMI™ UHD 4K60, 8 bit with 4:4:4 Color Depth
- Uncompressed w/zero loss / latency
- 3 x 6 Gb/s = 18 Gb Aggregate Video Bandwidth
- Supports up to 300m Transmission Distance with OM4 multimode fiber
- Standard HDMI Connector
- Integrated USB Connector for Power
- 5V DC power over a micro-USB Connector
- Hot-Pluggable
- EMI/RFI Resistant
- 850nm VCSEL and PIN Photo detector
- Uses Reliable SC Optical Connector
- Operating Case Temperature: 0~50°C

DESCRIPTION

The Meridian **NT/NR-1DM-0** HDMI optical transmitter and receiver is designed to send 1 channel of 2.0 compliant HDMI Video with embedded audio over one multimode optical fiber. HDCP is automatically supported for the transmission of content-protected video.

The 4K HDMI optical transceiver supports transmission of an uncompressed lossless HDMI 2.0 signal over multimode optical fiber at 850nm, for distances up to 300 meters, at a resolution of 4Kx2K.

Transmitter converts an HDMI signal to an uncompressed 18Gb/s serial data stream and return HDCP & EDID signal over one optical fiber.

Receiver converts the serial data back to an HDMI signal. This product is ideal for large-screen displays, conferencing systems and home entertainment.

This fiber link meets all of the standards of interference immunity, to ensure the stability of the signal.

The transceivers are RoHS compliant and lead-free. These micro modules utilize one multimode fiber with a standard locking SC optical connector.

Operating on 5V DC power over a standard micro-USB connector, these modules are ready for easy installation and operation.

CONFIGURATIONS

The NT/NR-1DM-0 micro modules easily mounted on the camera (Tx unit) and monitor (Rx unit) via HDMI connector.

MARKETS

- ✓ Digital Signage
- ✓ Video distribution systems
- ✓ Educational
- ✓ Video walls
- ✓ Home theater
- ✓ Entertainment centers

SPECIFICATIONS:

Video

HDMI compliance	1.x and 2.x
HDCP compliance	1.4 and 2.2
Max resolution	Up to 4Kx2K
Refresh Rate	Up to 120 Hz
Depth	Up to 48-bit
Bit-Error Rate	10 ⁻¹²
Support 3D	Yes

Optical

Optical Fiber	multimode fiber
Wavelength	850 nm
Data Rate (per lane)	6Gb/s
Laser Output Power	IEC 60825-1 Class 1M
Operating distance	Up to 300m
Loss budget	12dB

Indicator (Single Status LED)

Transmitter Module

Off	Module has no Power
Red	Module detects open fiber connection
Yellow	Fiber detected but link initialization failed
Green Flash	Good Link with no HDCP Video
Green	Good HDCP 1.X Link
Blue	Good HDCP 2.X Link

Receiver Module

Off	Module has no Power
Red Flash	Module detects open fiber connection
Yellow	Fiber detected but link initialization failed
Green Flash	Good Link with no HDCP Video
Green	Good HDCP 1.X Video Link
Blue	Good HDCP 2.X Video Link
Pink or Flashing Pink	Bootloader connected

Connectors

Power	4 Pins micro-USB Standard B
Video	19 Pins HDMI A Type Port
Optical	SC

Power

TX	5VDC @ 250mA
RX	5VDC @ 250mA

Physical

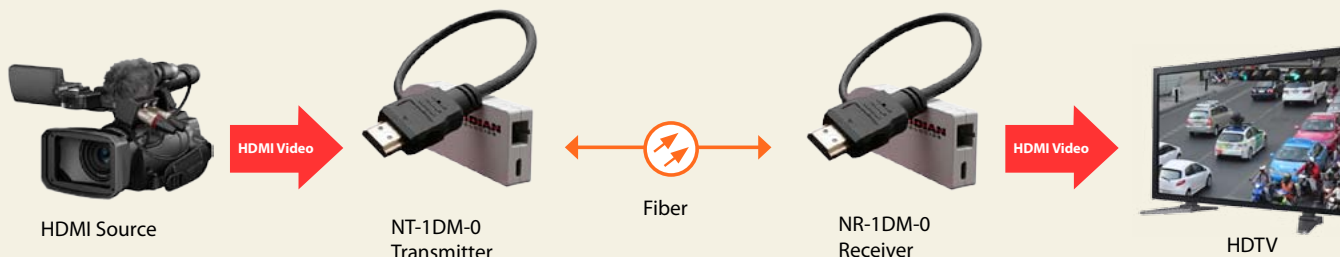
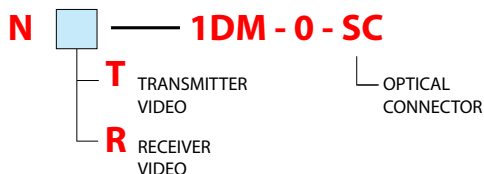
Dimensions	0.45"x 1.19" x 3.47"
	11.5 x 30.3 x 88.2mm
Weight (unit)	50 gms (0.11 lb.)

Enviromental

Operating Temperature	0°C to +50°C
Storage Temperature	-40°C to +85°C
Relative Humidity	10 to 90% Non-condensing

Quality

MTBF	>170,000 hours @ Ground Fix 35°C per MIL217F
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OPTICAL:

Meridian Fiber Code	Fiber Type/Size (um)	Optical Output (dBm)	Receiver Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical Connector	Optical Dynamic Range (dB)	Fiber Standard	Estimated Maximum Transmission Distance (meters)
0	Multimode (VCSEL)	-3	-15	12	850	SC	12	OM4 OM3 VSDN	300m 150m 30m