

OptoHD™ 2.0 Cable



HDMI2.0 Ultra-high-definition Optical Link Cable

US Patent No. 8.948.197

APPLICATIONS

Sources

Computers
Blu-ray/DVD
Set-top Boxes
Phones/Tablets
Digital cameras

Displays

AV Receivers
TV Monitors
Digital Signage
Medical/Industrial

FEATURES

- High Speed Fiber Optics
- Up to 100 meters
- Ultra-High Definition 4K & 8K
- Deep Color (48-bit)
- Supports ARC/HEAC
- Supports 3D Displays
- EMI/RFI resistant
- No Power Cord



Cosemi OptoHD2.0™ cables support high definition (1080p) and ultra-high definition (4K & 8K) videos, Deep Color (48-bit), 3D and multi-channel digital audio on a single cable. Standard passive high speed HDMI cables cannot carry 4K video much further than 8 meters: utilizing fiber optics, these OptoHD2.0 cables provide full signal integrity over a 100m distance and offer future-proof bandwidth for the next generation of video displays. The OtoHD2.0 cable is stand-alone and does not require power; for the user the cable acts just like a passive plug-and-play HDMI cable.

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Table 1. Supported Features

Common Name	Resolution	Refresh Rate	Color Subsampling	Color Depth Per color
4K	3840x2160	30P	4:4:4	8-bit
4K	4096x2160	30P	4:2:0	16-bit
4K	4096x2160	30P	4:2:2	16-bit
4K	4096x2160	30P	4:4:4	8/12/16-bit
4K	4096x2160	60P	4:2:0	8/12/16-bit
4K	4096x2160	60P	4:2:2	8/12-bit
4K	4096x2160	60P	4:4:4	8-bit
4K	4096x2160	120P	4:2:0	8-bit
8k	7680x4320	30P	4:2:0	8-bit

Video formats below 4K 3840 x 2160/30P are all supported

Figure 1. Type-A Connector Pin Assignment

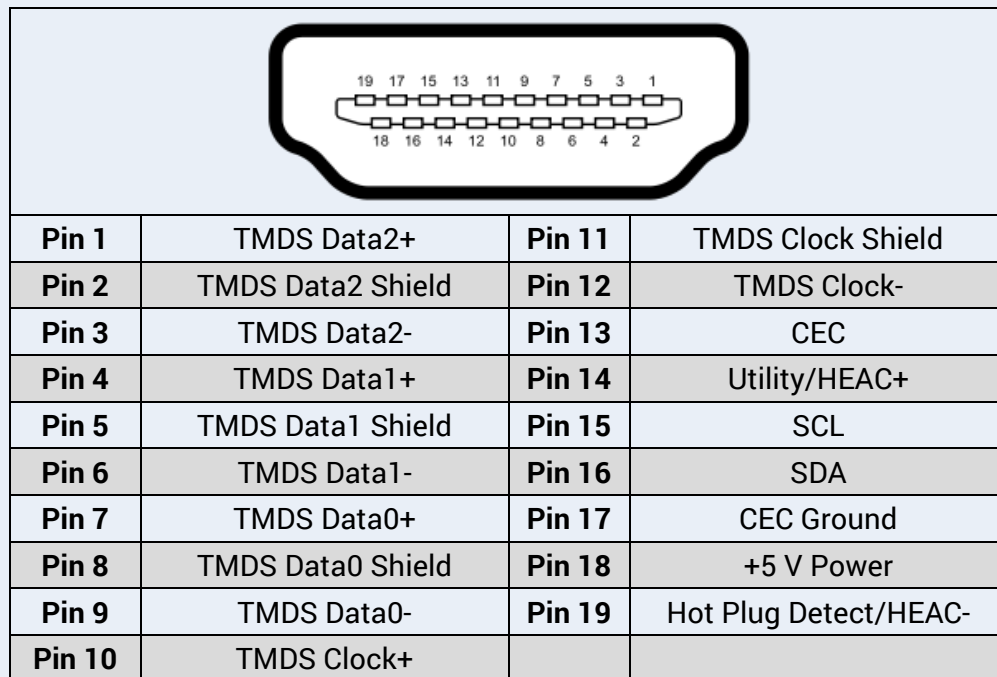

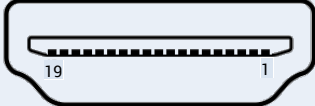


Figure 2. Type-D Connector Pin Assignment



Pin 1	Hot Plug Detect/HEAC-	Pin 11	TMDS Data0-
Pin 2	Utility/HEAC+	Pin 12	TMDS Clock+
Pin 3	TMDS Data2+	Pin 13	TMDS Clock Shield
Pin 4	TMDS Data2 Shield	Pin 14	TMDS Clock-
Pin 5	TMDS Data2-	Pin 15	CEC
Pin 6	TMDS Data1+	Pin 16	CEC Ground
Pin 7	TMDS Data1 Shield	Pin 17	SCL
Pin 8	TMDS Data1-	Pin 18	SDA
Pin 9	TMDS Data0+	Pin 19	+5 V Power
Pin 10	TMDS Data0 Shield		

Figure 3. Type-C Connector Pin Assignment



Pin 1	TMDS Data2 Shield	Pin 11	TMDS Clock+
Pin 2	TMDS Data2+	Pin 12	TMDS Clock-
Pin 3	TMDS Data2-	Pin 13	CEC Ground
Pin 4	TMDS Data1 Shield	Pin 14	CEC
Pin 5	TMDS Data1+	Pin 15	SCL
Pin 6	TMDS Data1-	Pin 16	SDA
Pin 7	TMDS Data0 Shield	Pin 17	Utility/HEAC+
Pin 8	TMDS Data0+	Pin 18	+5 V Power
Pin 9	TMDS Data0-	Pin 19	Hot Plug Detect/HEAC-
Pin 10	TMDS Clock Shield		

Table 2. Mechanical

Cable Color	Black
Cable Diameter	3.8mm or 3.2mm ^[4]
Bulkhead Dimensions	Type-A: 40 mm x 20 mm x 10 mm Type-D: 28mm x 11.5mm x 8.2mm Type-C: TBD
Operational Bend Radius	10 mm
Length	10, 20, 30, 50, or 100 m
Cable Weight	19.7g/m or 14.2g/m
Cable Horizontal Tensile Strength	800N (180 lbs)
Connector Contact Material	Nickel or Gold-plated Phosphorous Bronze
Bulkhead Pulling Force	200N (45 lbs)

Table 3. Environmental

Storage Temperature	-5 to 85C
Operating Case Temperature	0 to 70C
Humidity	0 to 85% RH

Notes:

1. Compliant to HDMI 2.0
2. Support from HDMI source to HDMI sink compliant to HDMI2.0. Connectivity between other types of ports using HDMI adapters is not guaranteed.
3. Power booster may be required to ensure connectivity from HDMI source to HDMI sink compliant to HDMI2.0, which will be attached to the order for optional use. Connectivity between other types of ports using HDMI adapters is not guaranteed.
4. Cables with standard diameter will support up to 100m, and cables with slim version will support up to 60m
5. Option available for supporting ARC/HEAC up to 30m

Handling and Care

- When removing the OptoHD2.0 connector from a socket, do not pull on the cable itself. Pull the connector by its housing from the socket.
- Do not remove the connector housing or cut into the cable.
- Discard cables with mechanically damaged housings or jackets properly.

Eye Safety

- Optical energy is contained within cable and the end-housings: there are no optical emissions exposed to the user.

CAUTION: Do not cut optical cable. Viewing the cut fiber ends, especially with certain optical instruments (for example, eye loupes, magnifiers, and microscopes) may pose an eye hazard.

- This product is classified as a Class 1M Laser product in accordance with IEC 60825-1:1993+A1+A2 and complies with 21CFR 1040.10 and 1040.11 except for deviations pursuant to laser notice N0. 50, dated 24-Jun-2007. Use or modification of this device other than those specified herein may result in hazardous radiation. To meet laser safety requirements the cable shall be used within environmental specifications. Tampering with or modifying the device will result in voiding of the product warranty.

**INVISIBLE LASER RADIATION
DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS “(MAGNIFIERS)”
CLASS 1M LASER PRODUCT
840-850nm, 700uW**

Table 4. Laser Emission Data

Wavelength	850 nm
Accessible Emission Limit (as defined by IEC: 7 mm aperture at 70 mm distance)	0
Beam Divergence (full angle)	N/A

**CLASS 1 LASER PRODUCT
A TOTALLY ENCLOSED LASER SYSTEM
CONTAINING A CLASS 1M LASER**

OptoHD™ 2.0 Cable



Certifications/Compliance

- HDMI certification
- HDCP compliance
- RoHS compliant



Ordering Info

Part No.: OPTOHD2.0-X-Y-DDD-Z-Y

- X=Source Connector
 - A – Standard
 - C – Mini
 - D – Micro
- Y=Display Connector
 - A – Standard
 - C – Mini
 - D – Micro
- DDD=Length
 - Available Length: 010, 015, 020, 030, 050, 100 meters
- Z=Fire Resist Rating
 - R - Optical Fiber Conductive Riser
 - P - Optical Fiber Conductive Plenum
- Y=Diameter of Cable
 - N – Regular size of 3.8mm black cable
 - S – Slim size of 3.2mm black cable

Example: OPTOHD2.0-A-A-030-R-N = 30m HDMI 2.0 cable with type-A source connector and type-A display connector and regular riser rated conductive cable

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