

HDMI-48G-xxMC

HDMI 2.1 Hybrid Active Optical Cables

Features

- Extend HDMI up to 100m over fiber optics(MMF)
- Compliant to link with all HDMI A-type connector
- Compliant with HDMI2.1 version
- 850nm VCSEL Array transmitters, PIN Array photo-detector receivers
- Support 8K@60Hz/4K@120Hz/1080p/1080i/720p format
- Support DHCP/EDID/CEC/DDC/Audio
- Data rate:48Gbps(12Gbps per channel)
- Plug and play, no software to be installed
- Longer, thinner cable without EMI/RFI emissions
- Low power consumption
- All-metal housing for superior EMI performance
- RoHS compliant (lead free)
- Operating case temperature: 0 to 60°C

Applications

- Blue-ray, DVR, projector
- Video Games
- Computers and mobile to 8K@60 display

Description

The HDMI2.1 Cable is a kind of Active Optical Cable (AOC) used to extend the transmission distance between HDMI Source and Sink devices. The transmission distance can be up to 100m through a hybrid cable consisting of optical fibers and copper wires. The high-speed TMDS signals are transmitted through the optical multimode fibers, while the low frequency DDC and control signals are transmitted through the copper wires (see figure 1).

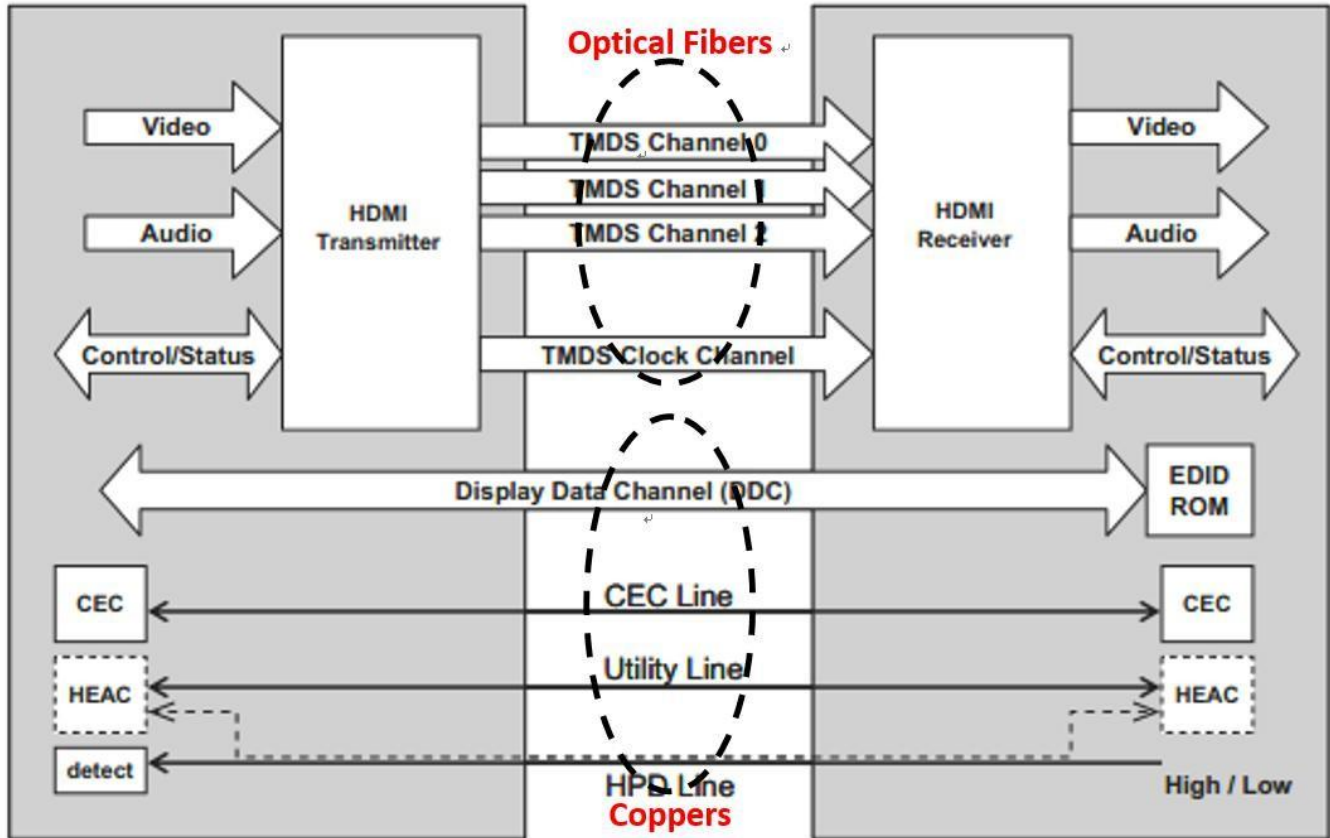


Figure 1. HDMI2.1 Block Diagram

At the ends of the hybrid cable are a transmitter with a type A plug connected to the source devices and a receiver with a type A plug connected to the sink devices. Inside the transmitter, the electrical TMD S signals are converted into optical signals by the VCSEL array; while in the receiver, the optical signals are converted back into electrical TMD S signals by the photodiode array.

The optical sub-assemblies inside the transmitter and the receiver are produced by hybrid integration technology. Semiconductor process and passive aligned optical coupling make the product cost effective. The resulting compact dimensions can meet the specifications of HDMI type A plug.

It is feasible to connect any HDMI devices such as Blue-ray, DVR, projector, video games, computers and mobile to enjoy the high quality display (see figure 2).

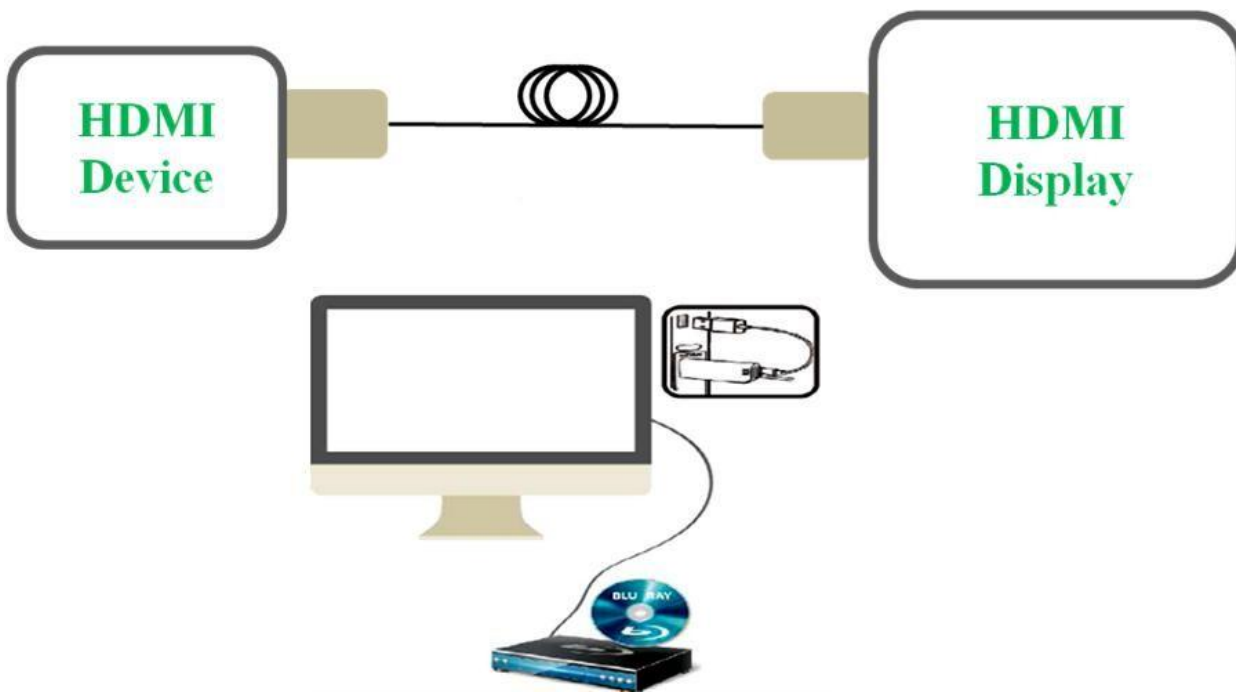


Figure 2. HDMI2.1 up to 8k@60 Block Diagram

HDMI2.1 AOC Specifications

Parameter	Description
Support HDMI ver.	HDMI 2.1
Data Rate	48Gbps(12GBbps per channel)
Video format	8K@60Hz/4K@120Hz/1080p/1080i/720p format
Support features	HDCP/EDID/CEC/DDC/Audio
Signal input & output connector	HDMI A-type(Plug)
Fiber length	Up to 100m
Operating Case Temperature	0 to + 60°C
Storage Temperature	-20 to + 85°C
Supply Voltage	5.0V
Supply current	Max. 100mA per end typical
Fiber Bend Radius	Min. 45mm

Pin Description

Pin	Signal Assignment	Name/Description
1	TMDS Data2+	Signal
2	TMDS Data2 Shield	GND
3	TMDS Data2-	Signal
4	TMDS Data1+	Signal
5	TMDS Data1 Shield	GND
6	TMDS Data1-	Signal
7	TMDS Data0+	Signal
8	TMDS Data0 Shield	GND
9	TMDS Data0-	Signal
10	TMDS Clock+	Clock
11	TMDS Clock Shield	GND
12	TMDS Clock-	Clock
13	CEC	Controller
14	Utility	User Defined
15	SCL	IIC
16	SDA	IIC
17	DDC/CEC GND	GND
18	+5V Power	Power
19	Hot Plug Detect	HPD

Mechanical Dimensions

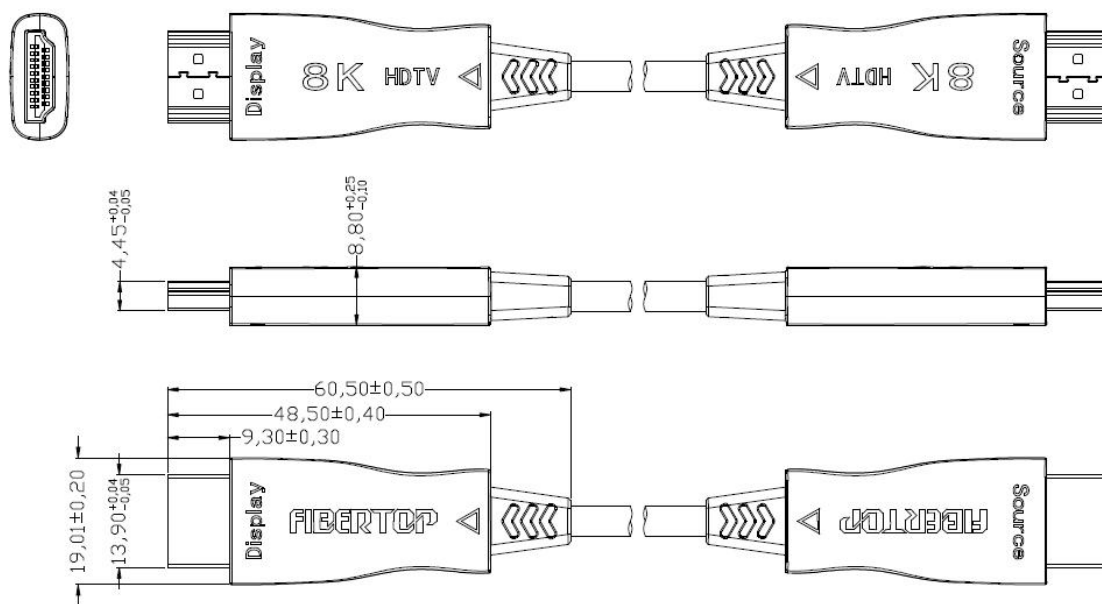


Figure 3. Mechanical Specifications

Ordering information

Part Number	Product Description
HDMI-48G-xxMC	HDMI2.1 Active Optical Cables
xx :1~50 Length in meters	

Note: You can be customized diameter and distance.

For More Information

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