

SPECIFICATIONS



TA-MC40 Series HDMI 2.1 8K A-A AOC

Descriptions

The TA-MC40 Series HDMI 2.1 Active Optical Cable (AOC) is a high-performance long-distance HDMI interconnection solution designed for professional AV, digital signage, broadcast, and high-resolution home entertainment applications.

Engineered with advanced hybrid optical technology, this cable delivers the full 48Gbps bandwidth (12Gbps × 4 channels) required for HDMI 2.1, ensuring uncompromised signal integrity over extended distances of up to 100 meters. The lightweight, ultra-flexible construction with a small bending radius (45mm) makes it ideal for complex installations where traditional copper cables fall short.

With an embedded optical engine, the TA-MC40 Series supports ultra-high resolutions up to 8K@60Hz and 4K@120Hz, while remaining fully backward compatible with HDMI 2.0 and HDMI 1.4 devices. It operates on a plug-and-play basis with no external power required, making installation simple and reliable.

Key Features

- ◆ Up to 100m Maximum Length.(Custom Length Available)
- ◆ Plug and Play
- ◆ Compatible with HDMI 2.1 standard.
- ◆ Backward compatible with HDMI2.0/HDMI1.4
- ◆ Support HDCP2.3/Dynamic HDR/VRR/QMS/QFT/ALLM/DSC
- ◆ Support 48GbpsBandwidth with 4Kp50/60/100/120 and 8Kp50/60
- ◆ Self-detecting function for EDID information
- ◆ Support eARC up to 20m
- ◆ No loss of signal – delivering crystal clear digital images instantly.
- ◆ Dynamic HDR formats is supported.
- ◆ Hybrid optical cable with 4XOM3fiber and 7X OFC copper wire

Applications

- ◆ Digital Signage & LED Video Walls
- ◆ Conference Room AV Systems
- ◆ TV Broadcast Stations
- ◆ Airplane On-board Video System
- ◆ Home Theater & Gaming
- ◆ Blue-ray, 3D video, Projector, Set-up box, DVR, Game Consoles and Computer
- ◆ Medical Imaging Systems
- ◆ Security & Surveillance Systems

Absolute Maximum Rating

Parameter	Symbol	Min	Max	Unit
Power Supply Voltage	VCC	4.5	5.5	V
Operating Temperature	Top	0	50	°C
Storage Temperature	Ts	-40	70	°C
Relative Humidity	Hs	10	80	%RH

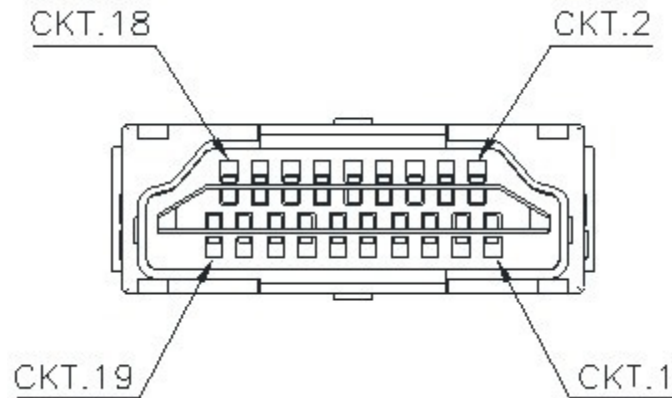
Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Power Supply Voltage	VCC	4.75	5.0	5.25	V
Operating Temperature	Top	0		50	°C

Specifications

Item	Description	
Units	Transmitter (Source)	Receiver (Display)
HDCP & DDC	HDCP 2.3 Fully Support bi-directional EDID and HDCP communication	
Video Bandwidth	12Gbps x 4Channel	
Supported Resolution & Distance	4Kp50/60/100/120 and 8Kp50/60 up to 100m	
O/E Converter	4 channel 850 nm VCSEL array	4 CH GaAs PD array
Connector Type	HDMI type A	
Cable Type	Hybrid type with OM3 fiber and copper wire	
Cable Length	5m 10m 15m 20m 30m 50m 70m 100m	
Cable Outer Diameter	4.5mm±0.2	
Jacket Outer Material	PVC/CL2/CL3/CMP/LSZH/TPU(Custom)	
Cable Weight TBD	Cable Weight TBD	
Cable Color TBD	Matte Black	
Differential Input	100 ohm (typ)	
Power Consumption	250mW (max)	
Power Supply	Non external power required	
flammability	UL, VW-1	
Compliance	CE, RoHS	

HDMI Type A Pin Assignment

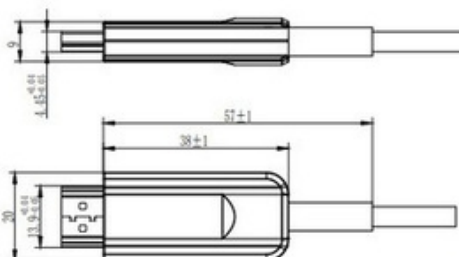


HDMI Type A Connector Pin Assignment

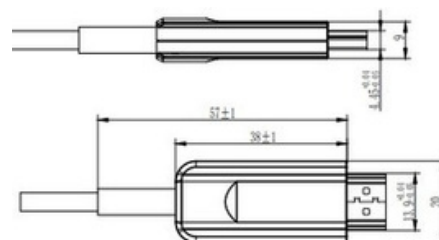
PIN	Function	PIN	Function
1	T.M.D.S. Data 2+	11	TMDS Clock Shield
2	T.M.D.S. Data 2 Shield	12	TMDS Clock-
3	T.M.D.S. Data 2-	13	CEC
4	T.M.D.S. Data 1+	14	Utility
5	T.M.D.S. Data 1 Shield	15	SCL
6	T.M.D.S. Data 1-	16	SDA
7	T.M.D.S. Data 0+	17	DDC/CEC Ground
8	T.M.D.S. Data 2 Shield	18	+5V Power
9	T.M.D.S. Data 0-	19	Hot PlugDetect
10	TMDS Clock+		

Installation

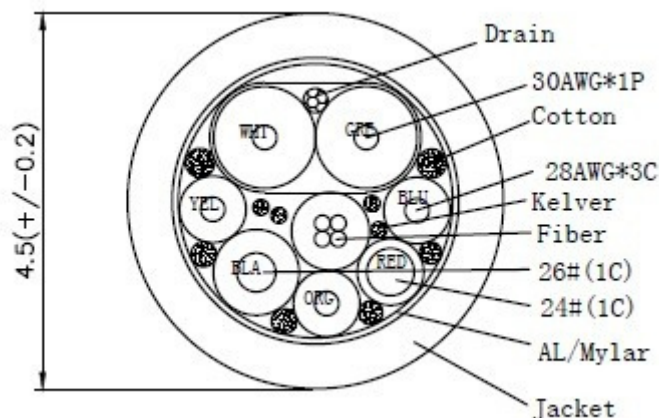
To Source, ex. DVD, PC



To Display, ex. TV



Hybrid Cable Profile



Ordering Information

Part Number	Description
TA-MC40-5m	HDMI AOC, V2.1, 8K@60Hz/4K@120Hz, Suport EDID/HDCP, Length 5m
TA-MC40-10m	HDMI AOC, V2.1, 8K@60Hz/4K@120Hz, Suport EDID/HDCP, Length 10m
TA-MC40-15m	HDMI AOC, V2.1, 8K@60Hz/4K@120Hz, Suport EDID/HDCP, Length 15m
TA-MC40-20m	HDMI AOC, V2.1, 8K@60Hz/4K@120Hz, Suport EDID/HDCP, Length 20m
TA-MC40-30m	HDMI AOC, V2.1, 8K@60Hz/4K@120Hz, Suport EDID/HDCP, Length 30m
TA-MC40-50m	HDMI AOC, V2.1, 8K@60Hz/4K@120Hz, Suport EDID/HDCP, Length 50m
TA-MC40-70m	HDMI AOC, V2.1, 8K@60Hz/4K@120Hz, Suport EDID/HDCP, Length 70m
TA-MC40-100m	HDMI AOC, V2.1, 8K@60Hz/4K@120Hz, Suport EDID/HDCP, Length 100m