

HDMI 2.1 Active Optical Cable (AOC)

Type A (Male) to Type A (Male) AOC

Model: VDC-HF21-XXXM



PRODUCT OVERVIEW

The **HDMI 2.1 Active Optical Cable (AOC)** is engineered to provide high-speed, long-distance transmission of uncompressed video and audio signals. Utilizing a hybrid construction of optical fibers and copper conductors, this cable delivers exceptional performance and signal integrity over extended distances, making it ideal for professional audio-visual installations, home theatres, gaming setups, and other demanding applications.

Our HDMI 2.1 Active Hybrid Cable is a leading solution for long-distance HDMI connections. Leveraging the capabilities of HDMI 2.1, it supports a maximum data rate of 48 Gbps, utilizing enhanced TMDS (Transition-Minimized Differential Signaling) channels. This allows for ultra-high-resolution video (up to 8K at 60Hz and 4K at 120Hz), enhanced audio quality, and support for a broader range of color spaces and dynamic HDR formats, including Dolby Vision and HDR10+. The cable is lightweight, flexible, and features an ultra-small long-term bending radius of 45mm, making it ideal for installations in tight spaces. With our advanced optical engine embedded, this HDMI 2.1 Active Optical Cables ensures full HDMI signal integrity over lengths of up to 100 meters. It is plug-and-play with no external power required, providing a hassle-free solution for your high-definition audio and video needs.

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KEY FEATURES

- **8K and HDR Support:** Delivers stunning 8K resolution at up to 60Hz with high dynamic range (HDR) for vivid, lifelike visuals
- **Maximum Length:** Up to 100 meters (Custom lengths available)
- **Data Transmission:** Supports up to 48 Gbps super speed bandwidth, ensuring seamless transmission of ultra-high-definition video and audio formats
- **Resolution and Audio Support:** Up to 8K@60Hz (color space 4:4:4), 4K@120Hz, and dynamic HDR formats like Dolby Vision and HDR10+. Supports multi-channel audio including Dolby Atmos and DTS for immersive sound
- **Plug and Play:** No need for external power supplies or software drivers, ensuring hassle-free setup and compatibility with HDMI-enabled devices
- **HDMI 2.1 Compatibility:** Supports Enhanced Audio Return Channel (eARC), Variable Refresh Rate (VRR), Quick Media Switching (QMS), and Quick Frame Transport (QFT) for enhanced gaming and media experiences
- **Easy Identification:** Connectors clearly marked with "Source" and "Display"
- **Hybrid Optical Construction:** Composed of 4 optical fibers and 7 copper wires
- **Signal Integrity:** Maintains pristine signal quality over long distances, delivering crystal-clear digital images and audio without signal loss or degradation
- **Durability:** Designed with high pulling strength and compression load capabilities, ensuring reliable performance in various installation environments
- **Interference Immunity:** Optical fiber construction provides immunity to electromagnetic interference (EMI) and radio frequency interference (RFI)
- **Lightweight and Flexible Design:** Facilitates easy installation and cable management, suitable for various routing scenarios in residential, commercial and industrial applications

APPLICATIONS

- **Professional AV Installations:** Ideal for conference rooms, auditoriums, and broadcast studios requiring high-quality long-distance signal transmission.
- **Digital Signage:** Suitable for retail displays, public information systems, and large-scale advertising boards.
- **Home Theatre Systems:** Enhances home entertainment setups with superior video and audio quality.
- **Gaming Setups:** Provides gamers with the highest quality graphics and sound with minimal latency.
- **Medical Imaging:** Ensures high-definition image transmission in medical environments.

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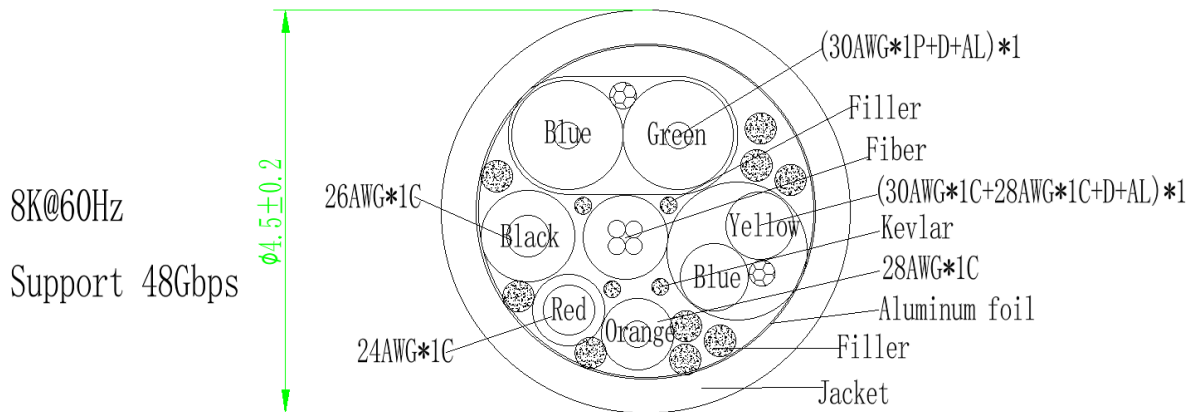
PRODUCT SPECIFICATIONS

Parameter	Descriptions
SKU Code	VDC-HF21-XXXM (XXX denotes length in meters)
Cable Lengths Available*	10m, 15m, 20m, 25m, 30m, 40m, 50m, 70m, 90m, 100m
Connector Type	HDMI Type A (Male to Male)
HDMI Version	HDMI 2.1, backward compatible with HDMI 2.0 and 1.4
Bandwidth	Up to 48Gbps
Resolution Support	Up to 4K 50/60/100/120 Hz and 8K 50/60 Hz
Color Depth	24-bit, 30-bit, 36-bit, 48-bit
HDR Support	HDR10, HLG
Audio Formats	Supports 8 channels PCM channels, DTS-HD Master, and Dolby Digital True HD Surround Sound
Compatibility	HDCP 2.3, EDID, CEC, HDR, VRR, QMS, QFT, ALLM, DSC, HEC, eARC
O/E Converter	Transmitter (Source): 4 Channel 850nm VCSEL array Receiver (Display): 4 CH GaAs PD array
Cable Type	Hybrid Type with OM3 fibers and OFC copper wires
Cable Shielding	Double layer aluminium foil
Cable Filling	DuPont Kevlar filling
Cable Outer Diameter	4.5mm
Cable Jacket Material	PVC
EMI/RFI Resistance	Yes
Operating Voltage	4.75V min, 5.0V typical, 5.25V max
Power Consumption	250mW (max)
Differential Input	100 ohm (typical)
Power Supply	External power not required
Operating Temperature	0°C to 50°C (32°F to 122°F)
Storage Temperature	-40°C to 70°C (-40°F to 158°F)
Relative Humidity	10 to 80% RH, noncondensing
Compliance	CE, FCC, RoHS, REACH
Warranty	2-Year Limited Warranty. Advance Replacement Warranty is available and optional.

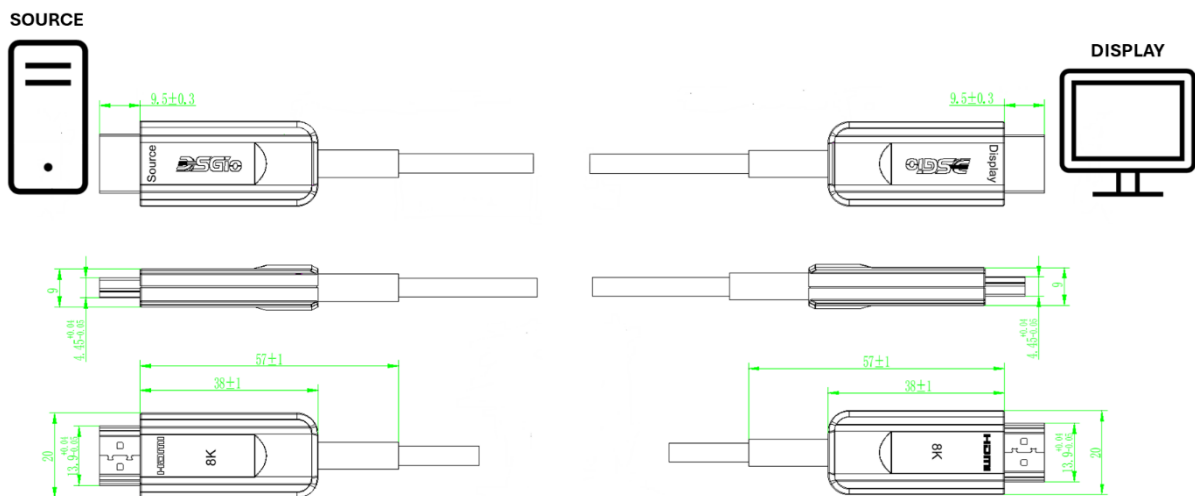
* Ready stock is based on default 15m and 30m. Other lengths and jacket types, such as CMP, LSZH, may require build on demand and subject to a minimum order of quantity e.g. 2 to 5 pieces.

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HYBRID CABLE PROFILE



CONNECTION DIAGRAM



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Handling and Installation

Proper installation and handling of HDMI active optical cables are crucial to ensure optimal performance and longevity. When installing the cable, make sure to handle it with care, avoiding any sharp bends or kinks that could damage the delicate optical fibers inside. Securely connect one end of the cable to the HDMI source device, ensuring a snug fit to prevent any signal loss. Similarly, connect the other end to the display device, ensuring a secure connection. Avoid placing excessive strain on the connectors by providing adequate support and avoiding unnecessary tension. When handling the cable, avoid pulling or twisting it excessively, and always disconnect devices by gripping the connectors rather than pulling on the cable itself. Following these guidelines will help maintain signal integrity and ensure reliable transmission of high-definition content.

Additional Notes:

- **Directional Use:** This cable can only be used in one direction. The connectors are marked with “Source” and “Display”. Each connector must be plugged into the correct port to avoid signal loss.
- **No Intermediate Adapters and Cables:** It is not recommended to use intermediate adapters or cables between the connections. This can attenuate signal transmission performance and may result in insufficient power being supplied to the HDMI connection, preventing the internal fiber optic module from functioning correctly.

PACKAGE CONTENTS

- 1 × HDMI 2.1 Active Optical Cable

WARRANTY

- 2-Year Limited Warranty
- Advance Replacement Warranty is available and optional

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ORDERING INFORMATION

Part Number	Descriptions	Length*
VDC-HF21-010M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 10m	10m
VDC-HF21-015M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 15m	15m
VDC-HF21-020M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 20m	20m
VDC-HF21-025M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 25m	25m
VDC-HF21-030M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 30m	30m
VDC-HF21-040M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 40m	40m
VDC-HF21-050M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 50m	50m
VDC-HF21-070M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 70m	70m
VDC-HF21-090M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 90m	90m
VDC-HF21-100M	HDMI 2.1 Type A (Male) to Type A (Male) AOC, 8K60, 48Gbps, PVC, 100m	100m

* Ready stock is based on default 15m and 30m. Other lengths and jacket types, such as CMP, LSZH, may require build on demand and subject to a minimum order of quantity e.g. 2 to 5 pieces.

CONTACT INFORMATION

For more information, please visit our website or contact our customer service team:

- **Website:** www.dsgio.com
- **Email:** sales.apac@dsgio.com

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