

# HDMI 2.0 AOC S1 Datasheet



## Document Revision History

Date	Revision	Changes
2020/12/18	V1.0	Document release

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# 1. Introduction

## 1.1 General Description

HDMI AOC generates high quality digital video signals for the connection between HDMI source and sink devices. It supports 4K60Hz with YCbCr 4:4:4.

The HDMI AOC is a compact hybrid cable comprising multi-mode glass fibers for the TMDS signals and copper wires for the low frequency signals. It is fully terminated with electro-optical and opto-electrical HDMI plug ends and is fully compliant with the HDMI specifications.

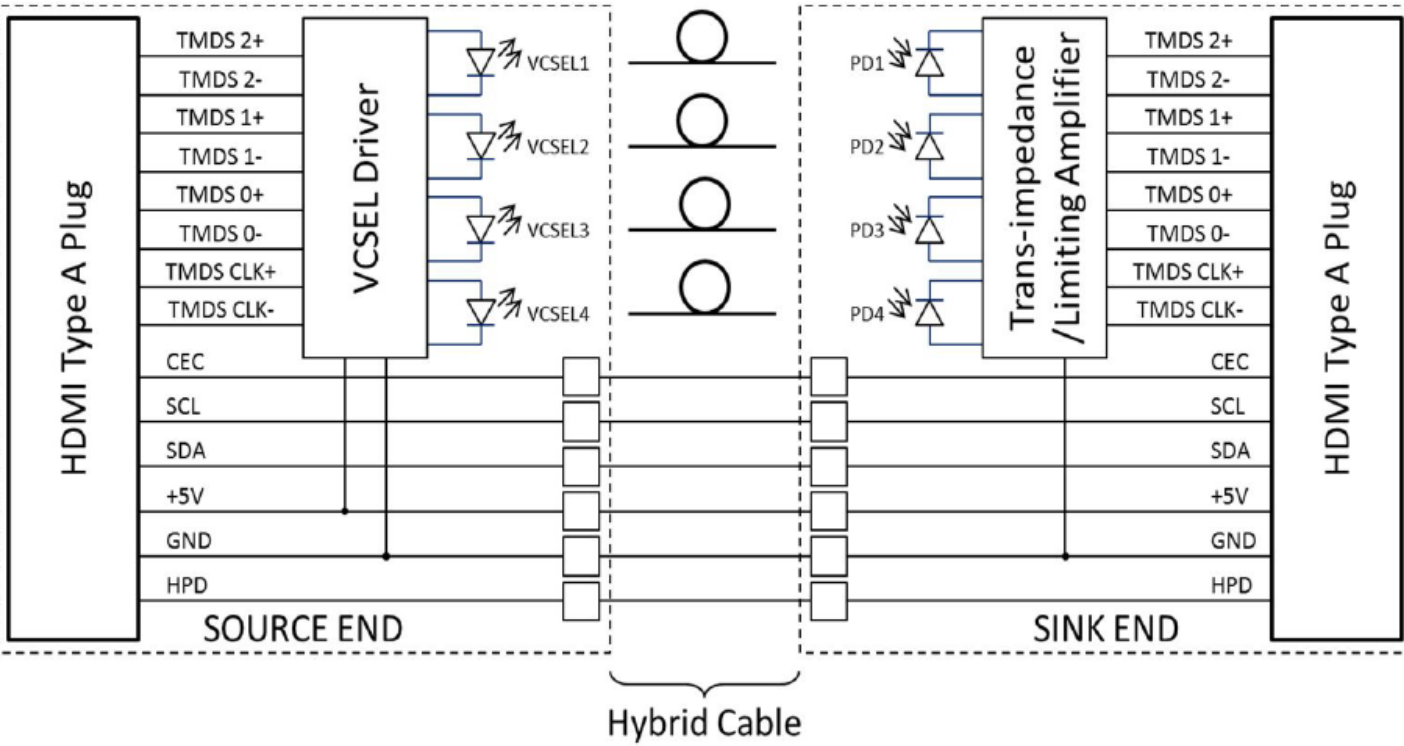
## 1.2 Key Features

- Four optical channels for HDMI high-speed signals
- Support the attachment of electrical wires for transport of HDMI low speed signals, power and ground
- Transport up to 6Gbps per optical channel, total maximum data rate is 18Gbps
- Support 4K60Hz@RGB, 8-bit YCbCr 444 and 12-bit YCbCr 422
- Support HDMI link length up to 50m
- Support ARC length up to 20m
- High ESD protection at TMDS input : 8KV (HBM)
- RoHS Compliant

## 1.3 Application

- Digital signage
  - Surveillance
  - Home theater
  - Game console
  - Projectors and displays for conference room, auditorium, medical imaging and stadium
-

### 1.4 Functional overview



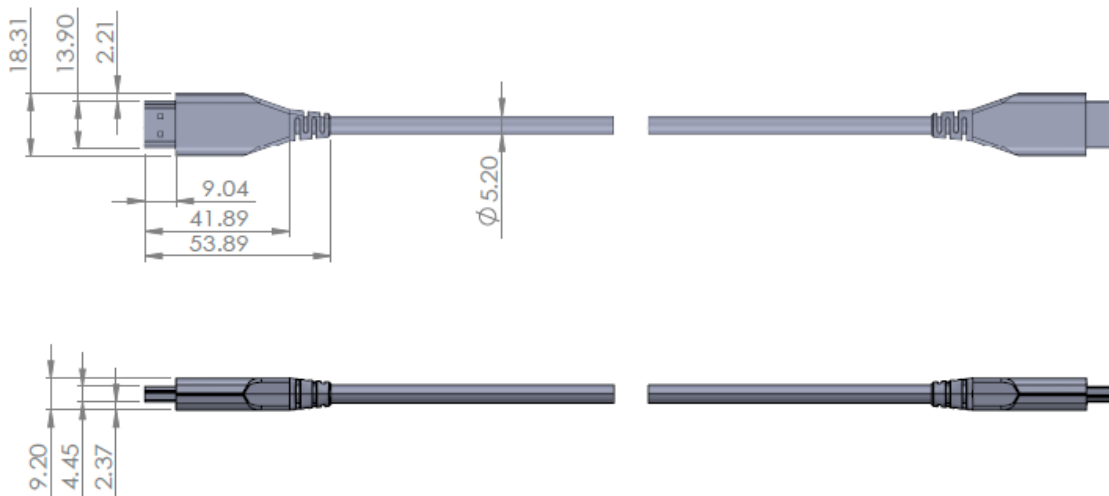
## 2. Mechanical Specification

### 2.1 Drawing

#### 2.1.1 Product Dimension

Below the mechanical dimensions of the product are shown.

All dimensions are in mm.



Standard Length	
1	10m
2	15m
3	20m
4	25m
5	30m
6	40m
7	50m

#### 2.1.2 Cable Dimension

Parameter	Specification	Notes
Minimum Cable Bending Radius	10mm	
Cable Diameter	5.2mm	± 0.2mm
Cable Jacket	PVC	CMP
Cable Color	Black	
Optical fiber	50/125um OM2	4 channels

### 2.1.2 Appearance





## 2.2 Pad Description

Table 1 shows the pad numbers and the signal names of Type-A connector for the input side of the module. A Type-A HDMI connector is connected to these pads. The pinning is compliant to the HDMI specification.

Pad Name	Description
1	TMDS Data2+
2	TMDS Data2 Shield
3	TMDS Data2-
4	TMDS Data1+
5	TMDS Data1 Shield
6	TMDS Data1-
7	TMDS Data0+
8	TMDS Data0 Shield
9	TMDS Data0-
10	TMDS Data Clock+
11	TMDS Data Clock Shield
12	TMDS Data Clock-
13	CEC
14	ARC
15	SCL
16	SDA
17	DDC/CEC Ground
18	+5V
19	HPD

**Table 1 : Pad Description for input side of module**

## 3. Parametric

### 3.1 Optical and Electrical Characteristics

Parameter	Min	Typ	Max	Unit
Optical wavelength		850		nm
Bit Rate (each channel)		6		Gbps
Inter-pair skew			0.2	ns
Intra-pair skew			30	ps
Differential input/output impedance	80		120	$\Omega$
Supply voltage	4.8	5	5.3	V
Supply current			112	mA
Ambient temperature	0	25	50	$^{\circ}\text{C}$

### 3.2 Absolute Maximum Ratings

Parameter	Min	Typ	Max	Unit
Storage temperature	-20		70	$^{\circ}\text{C}$
Storage relative humidity			65	%

### 3.3 Environment and Mechanical Test

Parameter	Min	Typ	Max	Unit
High Temperature Operation (96hrs)			75	$^{\circ}\text{C}$
Damp heat (96hrs)			85	RH % & $^{\circ}\text{C}$
Thermal Cycle (72hrs)	-40		85	$^{\circ}\text{C}$
Cable pull out force			20	kg

## 4. Contact Information

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