



USB3.0 For Active Optical Cable SPECIFICATIONS



PLUG, STD A USB 3.0

RECEPTACLE, STD A USB 3.0

MODEL No.	
COMOSS Part Number	Custom Part Number
USB3AOC-A/1-AF/1-(X)M-XXX	

X PRELIMINARY
OFFICIAL

Ver: 0.2
Release Date: 2017-09-28



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Electronic Links International, Inc.

Interconnecting Components and Systems.

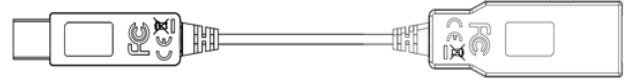
Data Sheet

0. History

Version	Date	Made By	Description Of Change
0.1	2015-03-24	Nick	Initial Release
0.2	2017-09-28	Nick	Change Power Source without adapter



USB3.0 for Active Optical Cable



1. Description

1. Basics: USB3.0 Active Optical Cable (AOC) speed up to 5 Gbps
2. Dimension of USB3.0 Type A male plug conforming requirements (Size: 56.1 x 8 x 16 mm) and the other side is USB3.0 Type A female (Size: 65 x 23 x 12 mm) .
3. It requires two cables to be connected into one adapter in order to operate well with USB 3.0 function.
4. There is no USB 2.0 function in this cable, thus it only support USB 3.0 function.
5. USB3.0 AOC can extend high speed transmission distance up to 100m (330ft) of optical cable.

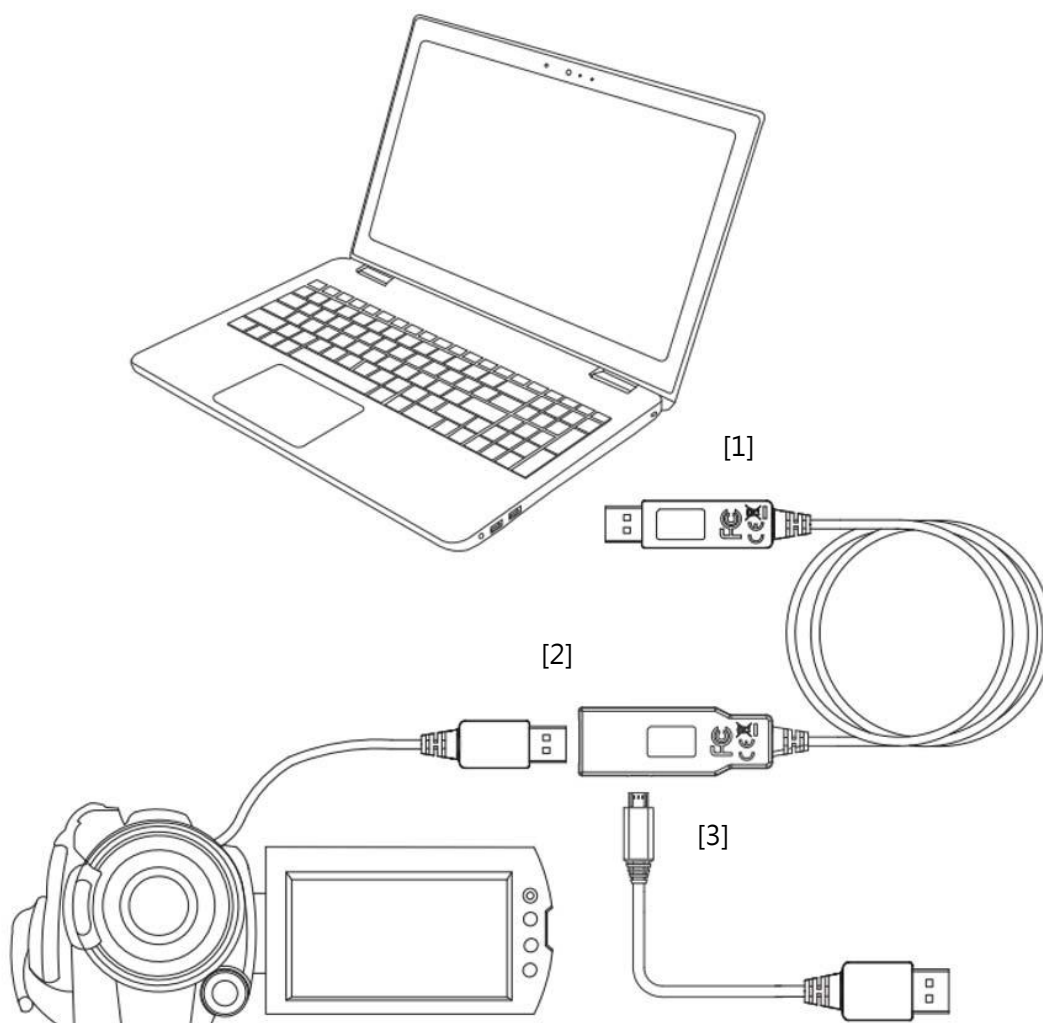
2. Features

- USB3.0 compliant, extend High speed USB3.0 to 100m (330ft)
- 850nm Laser Optical Transmission Technology
- 90 Ohm impedance, low RFI/EMI for sensitive environment
- Thin, light, all-in-one over mold dimension fits USB3.0 Type A male plug
- Plug and play, no software to be installed
- Supports OS
 - windows system 7, 8.1
 - Linux fedora 20
 - Scientific Linux 6.3
 - MAC OS 10.8.5 above



3. Applications

- File system to file system
- Long Distance Communication and outside application
- Conference Room System
- High Speed Data Transfer



PS:

1. Plug **USB3.0 AM** into USB 3.0 Host PC or NB.
2. Plug **USB3.0 AF** into **USB Device (3.0)** or **Camera**.
3. If insufficient power is involved, plug the **Micro USB Power Cable** in the port on **USB3.0 AF** and plug **USB3.0 AM** to a power adapter or unit to retrieve backup power.
4. fig [1]&fig[3] must be applied Power 5V/200mA to fig[2]USB 3.0 AOC AM Plug 2 side



4. Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Supply Voltage AM	V _{CC}	4.75	5.25	V
Supply Voltage AF	V _{CC}	4.75	5.25	V
Storage Temperature	T _{st}	-10	70	C
Operation Temperature	T _{op}	0	50	C
Relative Humidity	RH	0	80	%

5. Recommended Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Supply Voltage	V _{CC}	+4.75	+5.0	+5.25	V
Center Wavelength	Tx	λ	850	-	nm
	Rx	λ	850	-	
Data Rate	Tx	20M	5G	5G	bps
	Rx	20M	5G	5G	bps
Ambient Temperature	T _A	0	+25	+50	C

6. Electrical Power Supply Characteristics

AM Parameter	Symbol	Minimum	Typical	Maximum	Unit
AM Supply Voltage	V _{CC}	+4.75	+5.0	+5.25	V
AM Supply Current	I	40	50	60	mA
AM Power Dissipation	P	0.2	0.275	0.32	W
AM Impedance Differential	Tx	Z _{TX}	90		ohms
	Rx	Z _{RX}	90		ohms

AF Parameter	Symbol	Minimum	Typical	Maximum	Unit
AF Supply Voltage	V _{CC}	+4.75	+5.0	+5.25	V
AF Sleep mode Current	I-sleep	9	12	15	mA
AF Standby Current	I-stby	40	55	70	mA
AF Output Supply Current	I _{out}	-	-	>1100	mA
AF Power Dissipation	P-stby	0.2	0.275	0.38	W
AF Impedance Differential	Tx	Z _{TX}	90		ohms

* AF plug External power might be needed only if end devices cannot provide 5V 100mA.

*USB 3.0 AF output Must be applied at least 1300 mA for USB 3.0 Device used.



7. Fiber Cable Specifications

Parameter	Value
Cable Jacket material	LSZH
Color	Orange
Optical Fiber	50/125 Multimode Fiber
Output Diameter	3.0mm
Minimum Bending Radius	37.5mm
Maximum Tensile Load	0.7GN / m ²
Net Weight	8g/meter

8. USB AOC Plug Appearance

Parameter	Value
Connector material	Plastic
Color	Black
Connector dimension AM	56.1x8x16mm
Connector dimension AF	65x23x12mm

NOTES:

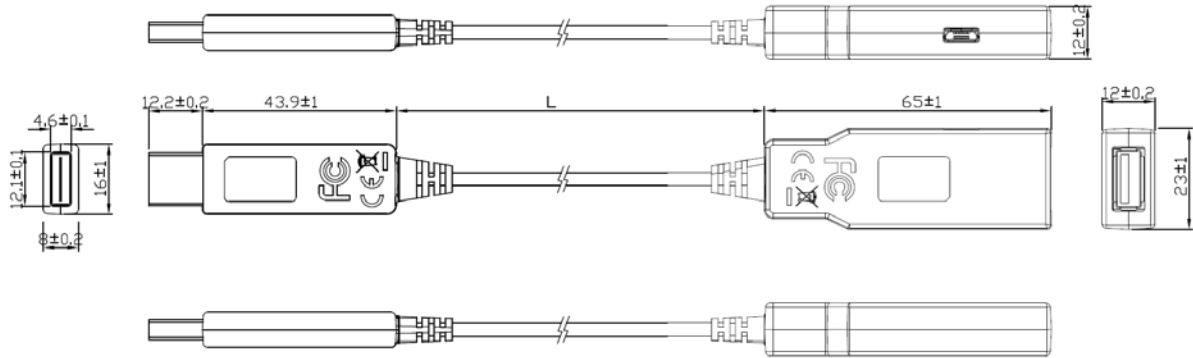
1. All dimensions in mm.
2. Tolerance (except cable length): XXXX =±5, XXX.x =±1, XX.x =±0.5

9. EMC Test

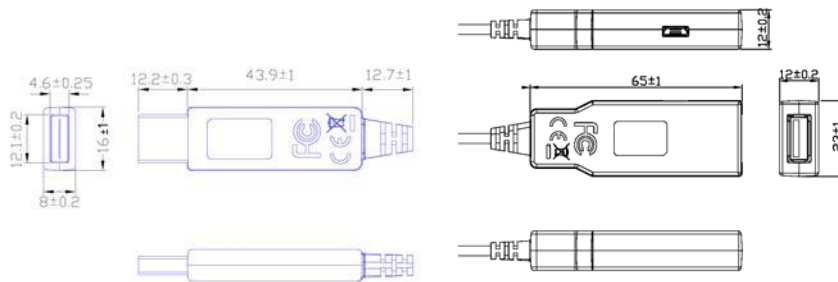
EMI: FCC CLASS B (ICES-003) and CE CLASS B		
Standards		Conditions
EN 55 022 (CISPR22) FCC; PART 15 SUBPART B	CE (Conducted Emission) RE (Radiated Emission)	Meet Class B
EN 61 000-3-2 (IEC 61000-3-2)	Harmonics	Meet Class B
EN 61 000-3-2 (IEC 61000-3-3)	Flickers	Meet Class B
EMS: CE STANDARDS (EN 55024) and CISPR24 EQUIVALENTS		
Standards		Conditions
EN 61 000-4-2: 2008	Electrostatic Discharge Immunity (Air: 8kV, Contact: 4kV)	Meet Class B
EN 61 000-4-3: 2010	Radiated RF E-Field (80–1000MHz) 3V/m (AM 80%, 1kHz)	Meet Class B
EN 61 000-4-4: 2012	Fast Transients (5kHz, 60sec)	Meet Class B
EN 61 000-4-5: 2005	Surge Transients	Meet Class B
EN 61 000-4-6: 2008	Conducted Susceptibility (CS) Radiated Susceptibility (RS)	Meet Class B
EN 61 000-4-8: 2009	Power Frequency Magnetic Field	Meet Class B
EN 61 000-4-11: 2004	Voltage Dips, Interruption & Variation	Meet Class B

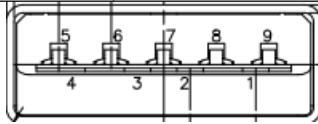
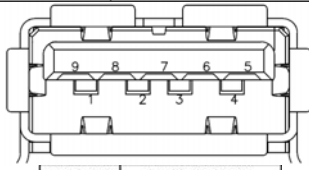


10. Drawing



Fiber print : Optical Cable OM3 50 /125 LSZH OFNR (UL) c(UL) 75°C E316737 (F.RoHS) MM/YY XXXXM



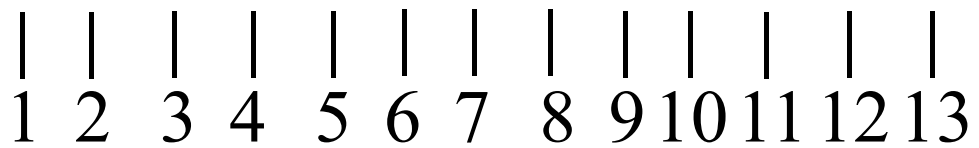
Item	AM	AF																																												
length	Length = L ^{±3%} _{±0%}																																													
dimension	(49.3*16*8)mm	(65*23*12) mm																																												
Connector define	 <table border="1" data-bbox="692 1552 938 1939"> <thead> <tr> <th>POSITION</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td>1</td><td>+5V Power</td></tr> <tr><td>2</td><td>D-(N.C is ok)</td></tr> <tr><td>3</td><td>D+(N.C is ok)</td></tr> <tr><td>4</td><td>GND</td></tr> <tr><td>5</td><td>StdA_SSRx-</td></tr> <tr><td>6</td><td>StdA_SSRx+</td></tr> <tr><td>7</td><td>GND_DRAIN</td></tr> <tr><td>8</td><td>StdA_SSTx-</td></tr> <tr><td>9</td><td>StdA_SSTx+</td></tr> <tr><td>Shell</td><td>Shield</td></tr> </tbody> </table>	POSITION	DESCRIPTION	1	+5V Power	2	D-(N.C is ok)	3	D+(N.C is ok)	4	GND	5	StdA_SSRx-	6	StdA_SSRx+	7	GND_DRAIN	8	StdA_SSTx-	9	StdA_SSTx+	Shell	Shield	 <table border="1" data-bbox="1107 1552 1353 1939"> <thead> <tr> <th>POSITION</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr><td>1</td><td>+5V Power</td></tr> <tr><td>2</td><td>D-(N.C is ok)</td></tr> <tr><td>3</td><td>D+(N.C is ok)</td></tr> <tr><td>4</td><td>GND</td></tr> <tr><td>5</td><td>StdA_SSRx-</td></tr> <tr><td>6</td><td>StdA_SSRx+</td></tr> <tr><td>7</td><td>GND_DRAIN</td></tr> <tr><td>8</td><td>StdA_SSTx-</td></tr> <tr><td>9</td><td>StdA_SSTx+</td></tr> <tr><td>Shell</td><td>Shield</td></tr> </tbody> </table>	POSITION	DESCRIPTION	1	+5V Power	2	D-(N.C is ok)	3	D+(N.C is ok)	4	GND	5	StdA_SSRx-	6	StdA_SSRx+	7	GND_DRAIN	8	StdA_SSTx-	9	StdA_SSTx+	Shell	Shield
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11. Label 1

USB3.0 Label :

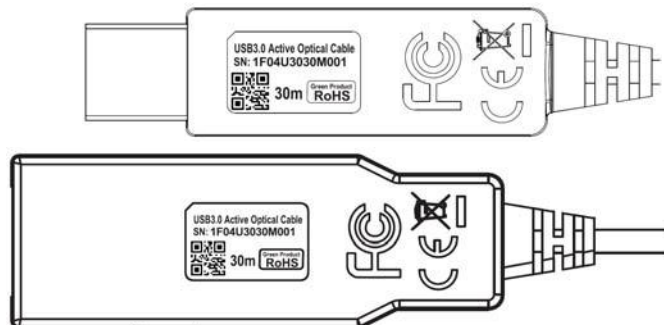
- Label size : 15.8mm * 9.8mm.
- Label define:
Use QR code display , and the code define are



code	Define function
1	1: (TAIWAN)
2	Year: (2000=0, 2001=1... 2010=A.. 2013=D, 2014=E, 2015=F, 2016=G, the year number needs to follow alphabetical order.)
3 , 4	Week (1~53 Week/year)
5 , 6	Product(U3:USB3.0)
7 ~ 9	Fiber length (020=20 fiber unit , 100=100 fiber unit)
10	Fiber Unit (M:Meter)
11 ~ 13	Series number (001~999 / Week)



- Real image :
- Label Paste locate place :





12. Package



Fiber Winding inside diameter $d=15.5\text{cm}\pm 0.5\text{cm}$ (sponge diameter $>15\text{cm}$)
Rubber cable ties *2 & Wire Tie *2



Carton size :470*340*300 mm

