Avenview

USER GUIDE

DisplayPort Extender over Fiber Optic Cable

Model #: FO-DP-XX-MM

CERTIFIED DP™

WQXGA
2560x1600

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Section 1: Getting Started

1.1 Important Safeguards

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
    - Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
    - Repair or attempted repair by anyone not authorized by us.
    - Any damage of the product due to shipment.
    - Removal or installation of the product.
    - Causes external to the product, such as electric power fluctuation or failure.
    - Use of supplies or parts not meeting our specifications.
    - Normal wear and tear.
    - Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

1.2 Safety Instructions

The Avenview FO-DP-XX-MM, DisplayPort Extender System over Fiber Optic, has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment's, the FO-DP-XX-MM should be used with care. Read the following safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Do not dismantle the housing or modify the module.
- Dismantling the housing or modifying the module may result in electrical shock or burn.
- Refer all servicing to qualified service personnel.
- Do not attempt to service this product yourself as opening or removing housing may expose you to dangerous voltage or other hazards
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Have the module checked by a qualified service engineer before using it again.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

1.3 Regulatory Notices Federal Communications Commission (FCC)

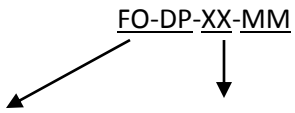
This equipment has been tested and found to comply with Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

1.4 Introduction

Avenview FO-DP-XX-MM Series with fiber optic cable system lets you extend DisplayPort digital signal up to 65 meters (210 feet) at WQXGA (2560x1600) resolution.

- High Speed and long distance transmission by Optical fiber
- Compatible with DisplayPort standard v1.1a
- HBR(High Bit Rate) Cable Assembly (up to 2.7Gbs Data Rate)
- Use Extender Power
- Supports up to WQXGA (2560 x 1600) resolution
- AUX and Hot-Plug channels are transmitted by copper line
- DPCP & HDCP compliant(DPCP & HDCP are not part of the DisplayPort standard)

1.5 Model Description



Model Name Length in Meters (5 = 5 meters, 10 = 10 meters)

1.6 Package Contents

Before you start the installation of the converter, please check the package contents.

- DisplayPort Extender Cable with Transmitter and Receiver x 1
- 5V 2A Power Adapter x 1
- User's Manual x 1

1.7 Before Installation

- Put the product in an even and stable location. If the product falls down or drops, it may cause an injury or malfunction.
- Don’t place the product in too high temperature (over 50°C), too low temperature (under 0°C) or high humidity.
- Use the DC power adapter with correct specifications. If inappropriate power supply is used then it may cause a fire.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.

1.8 Installation

Avenview FO-DP-XX-MM is composed of a Transmitter converting the graphic signal of a computer to optical and Optical Fiber propagating the optical signal and Receiver supplying electrical signal to monitor converted from the optical signal to electrical signal. The Transmitter should be connected to computer/media player DisplayPort connector and the Receiver should be connected to a monitor/TV with DisplayPort connector.

Avenview FO-DP-xx-MM is designed to self-detect the resolution of the monitor and change the resolution accordingly. Follow these steps for connecting to a device:

1. Power on your display
2. Connect Transmitter to the PC and Receiver to the Display.
3. Connect the optical fiber between Transmitter and Receiver.
4. Restart the computer or media player.

Use the provided 5V 2Amp Power Adapter or you may not get any signal on Monitor/TV.
Do not twist or pull by force the both ends of the optical cable. It may cause malfunction

Section 2: Specifications

Item	Description	
Units	FO-DP-XX-MM (Transmitter)	FO-DP-XX-MM (Receiver)
Unit Description	DisplayPort Fiber Optic Transmitter	DisplayPort Fiber Optic Receiver
Video Bandwidth	10bit Deep Color / 60Hz	
Supported Resolution & Distance	Up to WQXGA 2560 x 1600 @ 65 meters (210 feet)	
Optical Converter	4 ch 850 nm Multi-Mode VCSEL	4 ch GaAs PIN photo Diode
Connector Type	20 pin DisplayPort Plug (Male)	20 pin DisplayPort Plug (Female)
Fiber Type	50/125 µm Multi-mode glass fiber	

Environmental

Operating Temperature	32˚ ~ 104˚F (0˚ to 40˚C)
Storage Temperature	-4˚ ~ 140˚F (-20˚ ~ 60˚C)
Relative Humidity	20~90% RH (no condensation)

2.1 Electrical & Optical Specifications

2.1.1 Transmitter (Source) Module

	Parameter	Symbol	Min	Type	Max	Units
Power	Supply Voltage	Vcc		+5.0		V
	Supply Current	Icc		250		mA
	Power Dissipation	Po		1.25		W
Signal	Diff. P-to-P Input Level 1	VTX-DIFF-PP1	0.34	0.4	0.46	V
	Diff. P-to-P Input Level 2	VTX-DIFF-PP2	0.51	0.6	0.68	V
	Diff. P-to-P Input Level 3	VTX-DIFF-PP3	0.69	0.8	0.92	V
	Diff. P-to-P Input Level 4	VTX-DIFF-PP4	1.02	1.2	1.38	V
	TX DC Common Mode	VTX-DC-CM	0		2.0	V
	TX AC Common Mode	VTX-AC-CM			20	mV

Transmitter (Source) module of Model DPM includes 4 channel VCSEL (Vertical Surface Emitting Laser Diode) with 850 nm invisible laser radiation.
Transmitter (Source) module of DPM is Class 1 Laser Product.

2.1.2 Receiver Module

	Parameter	Symbol	Min	Type	Max	Units
Power	Supply Voltage	Vcc		+5.0		V
	Supply Current	Icc		280		mA
	Power Dissipation	Po		1.4		W
Signal	Diff. P-to-P Output Level 1	VTX-DIFF-PP-H	120		0.46	mV
	Diff. P-to-P Output Level 2	VTX-DIFF-PPR	40		0.68	mV
	RXDAC Common Mode	VTX-DC-CM	0		20	V

2.2 Connector Pin Assignment

2.2.1 Transmitter (Male)

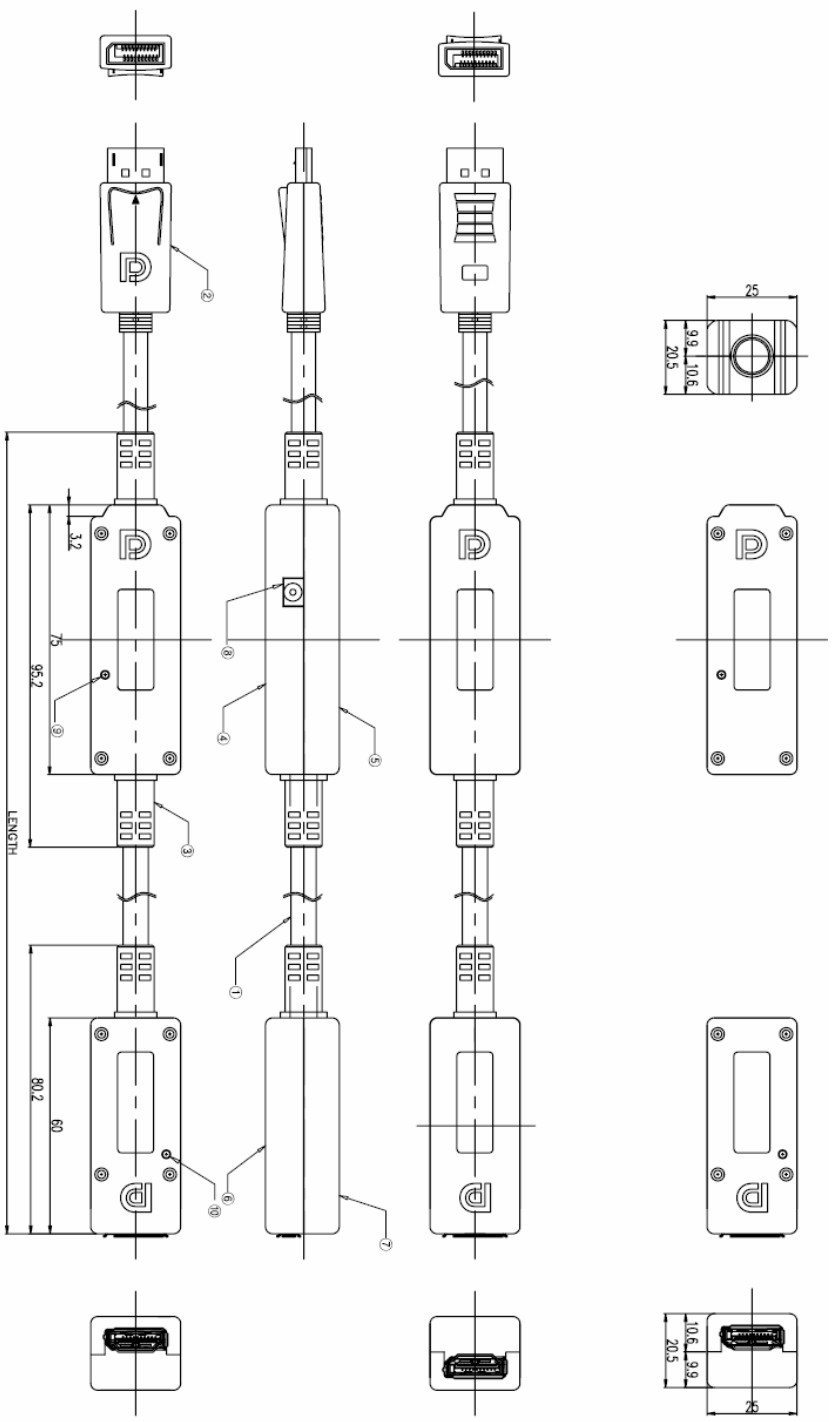
Pin	Pin Name	Pin	Pin Name
1	ML_Lane0(p)	2	GND
3	ML_Lane0(n)	4	ML_Lane1(p)
5	GND	6	ML-Lane1(n)
7	ML-Lane2(p)	8	GND
9	ML_Lane2(n)	10	ML_Lane3(p)
11	GND	12	ML_Lane3(n)
13	CONFIG1	14	CONFIG2
15	AUX_CH(p)	16	GND
17	AUX_CH(n)	18	Hot Plug Detect
19	Return	20	No Connect(DP_PWR)

2.2.2 Receiver (Female)

Pin	Pin Name	Pin	Pin Name
1	ML_Lane3(n)	2	GND
3	ML_Lane3(p)	4	ML_Lane2(n)
5	GND	6	ML-Lane2(p)
7	ML-Lane1(n)	8	GND
9	ML_Lane1(p)	10	ML_Lane0(n)
11	GND	12	ML_Lane0(p)
13	CONFIG1	14	CONFIG2
15	AUX_CH(p)	16	GND
17	AUX_CH(n)	18	Hot Plug Detect
19	Return	20	No Connect(DP_PWR)

2.3 Mechanical Specifications

2.3.1 Case Dimensions



2.3.2 Optical Cable Info

Dimensions of DisplayPort Cable		
Items	**Unit**	**Specifications**
DisplayPort Cable Make-up	-	Layer Stranding
Drain Wires (Size/Stranded)	mm(AWG)	-0.203/7 (24)
AL-Mylar Screen Shield	-	A helically
Cable Outer Diameter	Mm	7.40 ± 0.20
Jacket Color	-	Black

Fiber Cable Characteristics			
Item	**Spec**	**Unit**	**Condition**
Storage Temperature	-20 ~ 70	°C	Spooled
Operational Test	0 ~ 50	°C	-
Max. Tensile Load	245	N	
Min. Radius Bend	25	mm	
	40		
Crush Resistance	490	N/50mm	

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