



Control Your Video

VIDEO WALLS VIDEO PROCESSORS
VIDEO MATRIX SWITCHES
EXTENDERS SPLITTERS WIRELESS
CABLES & ACCESSORIES

HDMI Extender up to 20KM over Fiber Optic with IR Support



Model #: FO-HDM-IP4K-SET

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Product Application & Market Sectors



Corporate



House Of Worship



Military



Residential



Education



Industrial



Medical



Aviation



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I. 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.

I.1 SAFETY INSTRUCTIONS

The Avenview FO-HDM-IP4K-SET, HDMI Extender has been tested for conformity to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment's, the FO-HDM-IP4K-SET 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.



1.2 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.

Warning symbols	Description
	<p>ONLY USE THE PROVIDED POWER CABLE OR POWER ADAPTER SUPPLIED. DO NOT TAMPER WITH THE ELECTRICAL PARTS. THIS MAY RESULT IN ELECTRICAL SHOCK OR BURN.</p>
	<p>DO NOT TAMPER WITH THE UNIT. DOING SO WILL VOID THE WARRANTY AND CONTINUED USE OF THE PRODUCT.</p>
	<p>THE VIDEO BOARDS ARE VERY SENSITIVE TO STATIC. PLEASE ENSURE IF RACK MOUNTED OR INSTALLED ON A SURFACE, IT SHOULD BE IN A GROUNDED ENVIROMENT.</p>
	<p>LASER BEAM USED IN OPTICAL COMMUNICATIONS ARE INVISIBLE AND CAN SERIOUSLY DAMAGE THE EYES. VIEWING IT DIRECTLY DOES NOT CAUSE ANY PAIN TO THE EYE BUT SERIOUS DAMAGE CAN BE DONE TO THE RETINA OF THE EYE</p>
	<p>⚠ WARNING</p> <p>Read & understand user guide before using this device.</p> <p>Failure to follow the proper installation instructions could result in damage to the product and preventing expected results.</p>



2. INTRODUCTION

FO-HDM-IP4K-SET, HDMI extender set is designed to provide high quality video signal transmission over fiber optic cable or an existing fiber network. Avenview's FO-HDM-IP4K-SET delivers an amazing pixel to pixel transmission of 4K@30 or 1080p HDMI signal up to 20 kilometers. With this extender users overcome the length restrictions of standard HDMI cables or UTP Extenders. This unit can control your IR device from the monitors side with its supplied IR technology built in.

Bonus feature: The FiberTransmitter is also compatible with the HDM-C6IPX-R CAT5/6 Receiver, this simply means user can migrate from a Fiber network to to copper network by adding the compatible RX device.

FEATURES:

- The Sender and Receiver units can extend 20000 meters (20 km) over a Fiber Optic cable point to point;
- The Sender can be connected to a Fiber network switch to establish an IP address therefore sending 1080p/4K video signals to multiple Receivers connected to the Fiber network switch and the HDMI displays;
- Multiple Senders can be connected to a Managed Fiber switch with VLAN/IGMP support therefore sending 1080p/4K video signals to Receivers connected to the network switch to show different sources on multiple displays;*
- Extends HDMI signal up to 20 km over fiber optic;
- HDCP compliant;
- Supported resolutions: 480i@60Hz,480p@60Hz,576i@50Hz,576p@50Hz,720p@50/60Hz,1080i@50/60Hz,1080p@50/60Hz 4K@25/30Hz
- Supports point to point transmission function which can be expanded to the multi-point to point transmission function.
- Number of Senders and Receivers that can be used is dependent on bandwidth of the network switch.
- Single mode fiber optic transmission.
- Support IR pass back for easy control.
- Built-in electromagnetic interference prevention in environment for long distance transmission.
- Low signal loss, wide frequency band and strong anti-interference features;
- Wall-mountable design for convenient installation.
- High-end aluminum alloy enclosure design.



FIBER Network Switch with copper ports



COPPER Network Switch with Fiber ports

*Requires a managed Gigabit switch with VLAN/IGMP support to have a solution with multiple sources (Transmitters). Standard Gigabit switch can only support one transmitter.

- The managed switch must support port based IEEE 802.1Q VLAN, IGMP, and to allow duplicate IP addresses across the VLAN domains.

- Each VLAN acts as independent HDMI over IP Channel on the network.



2.1 PACKAGE CONTENTS

Before you start the installation of FO-HDM-IP4K, please check the package contents:

1	HDMI IPX TRANSMITTER	X 1	
2	HDMI IPX RECEIVER	X 1	
3	IR EXTENDER	X 1	
4	IR BLASTER	X 1	
5	POWER ADAPTER (5VDC2A)	X 2	
6	USER'S MANUAL	X 1	

2.2 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.



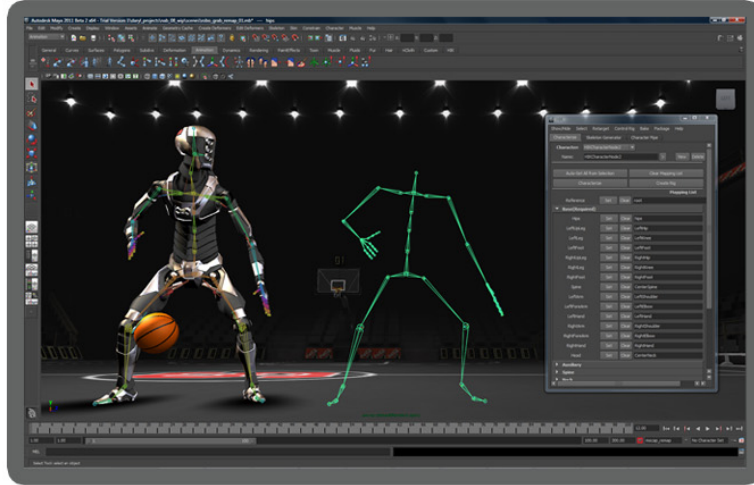
FO-HDM-IP4K-SET

1080p = 20Km (20000m) **OM2/3 SINGLE MODE**
 4K30p = 20Km (20000m) **OM2/3 SINGLE MODE**

Application Diagram 1
POINT TO POINT

CABLE INDEX

- INPUT/OUTPUT
- SC FIBER OM2/3
- IR CONTROL

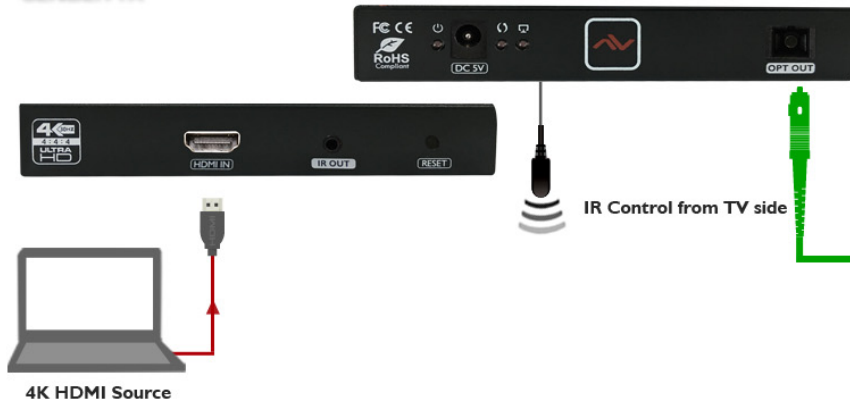


FO-HDM-IP4K-R RECEIVER-RX



RECEIVER LOCATION 20Km (20000m) AWAY

FO-HDM-IP4K-S SENDER-TX



SENDER LOCATION CONNECTED AT SOURCE



2.4 PANEL DESCRIPTION & LAYOUT

This product is dUWU[YX UjUgYhk \jW]bW XYga Transmitter and a Receiver.

2.4.1 Front Panel (Transmitter, FO-HDM-IP4K-S)



1. POWER LED: LED lights red when device is powered on	2. DC 5V: Connect the 5 V DC power supply included.
3. DATA LED: When data is transmitting from the source the led will continuously flash YELLOW.	4. LINK LED: When connected to RX or network switch the LED will light GREEN .
5. OPTICAL OUT: Connect SC single mode fiber optic cable.	

2.4.2 Rear Panel (Transmitter, FO-HDM-IP4K-S)



1. HDMI IN: Connect to HDMI source via HDMI Cable.	2. IR OUT: Plug the IR Blaster cable for IR signal being transmitted. place IR Blaster within direct site of the device being controlled.
3. RESET: To reset the unit when no link is established.	

Important Please do not connect the FO-HDM-IP4K to a POE network switch this will damage and the units will be come non functional.



2.4.4 Front Panel (Receiver, FO-HDM-IP4K-R)



1. POWER LED: LED lights red when device is powered on	2. DC 5V: Connect the 5 V DC power supply included.
3. DATA LED: When data is transmitting from the source the led will continuously flash YELLOW .	4. LINK LED: When connected to RX or network switch the LED will light GREEN .
5. OPTICAL IN: Connect SC single mode fiber optic cable.	

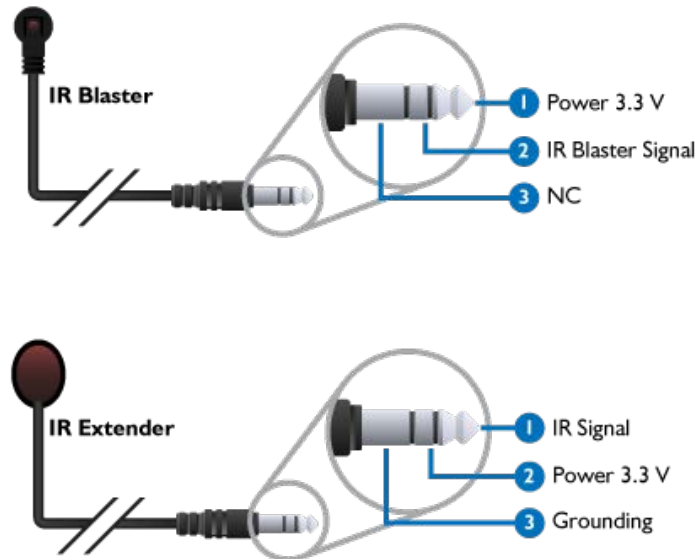
2.4.5 Rear Panel (Receiver, FO-HDM-IP4K-R)



1. HDMI OUT: Connect to HDMI Display via HDMI Cable.	2. IR IN: plug the IR Extender cable for IR signal being received. place IR Extender within direct line of site with the IR Remote.
3. RESET: To reset the unit when no link is established.	



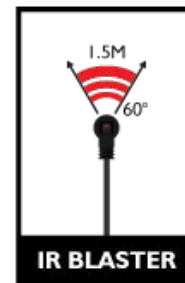
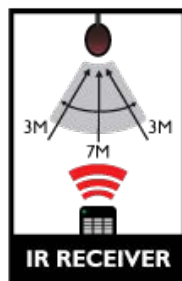
2.5 IR CABLE DESCRIPTION



IR Sockets

-- **IR OUT** -IR BLASTER: plug in the IR blaster to the HDMC6IPX-S to emit all IR command signals received from the IR Extender plugged into the Rx (Monitor Side) to control the devices corresponding to the IR signals. Example: Set Top Box or DVD player (**The Source**).

-- **IR IN** - IR EXTENDER: plug in the IR Extender into the (RX) Receiver (Monitor Side) to receive all IR command signals from the IR remote controls of the corresponding source. Example: Set Top Box or DVD player (**IR Remote Control**).



Important IR signals can be affected by very bright fluorescent light and also EMI Interference on the cables so be aware of when you place and position your IR cables. Please follow these instructions for best results.



3. INSTALLATION

Please ensure all the package contents are all received before proceeding.

To setup Avenview FO-HDM-IP4K-SET follow these steps for connection:

1. Connect your HDMI source (such as a Blu-ray Disc player) to Transmitter (FO-HDM-IP4K-S).
2. Connect your HDMI display (such as a LCD TV) to the receiving unit FO-HDM-IP4K-R.
3. Connect your SC Optic Fiber cord (Single Mode) between the transmitting and receiving units.
4. Make sure Optic Fiber cord (Single Mode) cable is tightly connected and not loose.
5. Plug in 5V DC power cord to the power jack of the transmitting unit FO-HDM-IP4K-S
6. Plug in 5V DC power cord to the power jack of the receiving unit FO-HDM-IP4K-R.

4. GENERAL TROUBLESHOOTING

PROBLEM	POSSIBLE SOLUTION
NO IMAGE	<ul style="list-style-type: none">• Check if connection to the source and the display are correct.• Ensure that display device supports 480p, 720p and 1080p/4K resolution
SCREEN DEFECTS APPEAR	<ul style="list-style-type: none">• Check the HDMI connection if loose or change to a premium HDMI cord
DATA TRANSMISSION LIGHT FLASHING SLOW	<ul style="list-style-type: none">• Check both units and make sure the TX and RX are not Reversed• Check the source device is powered ON
DATA TRANSMISSION LIGHT FLASHING FAST/NO IMAGE	<ul style="list-style-type: none">• Check Graphics card on PC/HD Player. This product supports up to 4K@30p (3840x2160) resolution.
NO LIGHT ON DATA TRANSMISSION	<ul style="list-style-type: none">• Check Network cable. only use TIA-568B Standard• Network cable run is out of range



5. SPECIFICATIONS

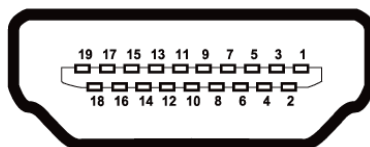
ITEM	DESCRIPTION	
UNITS	FO-HDM-IP4K-S	FO-HDM-IP4K-R
UNIT DESCRIPTION	HDMI Fiber Transmitter	HDMI Fiber Receiver
HDMI COMPLIANCE	Yes	
HDCP COMPLIANCE	Yes	
TMD5 BANDWIDTH	10.2Gpbs	
SUPPORTED RESOLUTIONS	480i@60Hz, 480p@60Hz, 576i@50Hz, 576p@50Hz, 720p@50/60Hz, 1080i@50/60Hz, 1080p@50/60Hz 4Kx2K@25/30Hz, 4Kx2K@25/30Hz	
DDC SIGNAL VOLTAGE	5Vp-p(TTL)	
AUDIO SUPPORT	Surround Sound (up to 7.1 Ch) or Stereo Digital Audio	
IR PASS-THRU	Supports 20~60KHz IR devices	
CENTRAL WAVELENGTH	1310nm	
LINK LOSS	≤ 14dB	
OUTPUT LIGHT POWER	≥ -11dBm	
RECEIVE SENSITIVITY	≤ -32dBm	
RETURN LOSS	15dB	
INPUT	1x HDMI	1x FO, 1x IR IN
OUTPUT	1x FO, 1x IR Out	1x HDMI
HDMI CONNECTOR	Type A (19 pin female)	
FIBER OPTIC CONNECTOR	SC Single Mode	
POWER ADAPTER	2 X DC 5V/2A	
POWER CONSUMPTION	4W Max (each)	
DIMENSION L X W X H	5.9" x 3.7" x 0.9"	
WEIGHT	0.8 lbs	

Environmental

OPERATING TEMPERATURE	32° ~ 140° F (0° to 60° C)
STORAGE TEMPERATURE	-4° ~ 140° F (-20° ~ 60° C)
RELATIVE HUMIDITY	20~90% RH.(no condensation)



6. PIN & WIRING STANDARD DEFINITION



TYPE A (RECEPTACLE) HDMI

Pin 1	TMDS Data2+	Pin 11	TMDS Clock Shield
Pin 2	TMDS Data2 Shield	Pin 12	TMDS Clock-
Pin 3	TMDS Data2-	Pin 13	CEC
Pin 4	TMDS Data1 +	Pin 14	Reserved (N.C. on device)
Pin 5	TMDS Data1 Shield	Pin 15	SCL
Pin 6	TMDS Data1-	Pin 16	SDA
Pin 7	TMDS Data0+	Pin 17	DDC/CEC Ground
Pin 8	TMDS Data0 Shield	Pin 18	+5V Power
Pin 9	TMDS Data0-	Pin 19	Hot Plug Detect
Pin 10	TMDS Clock+		

7. OPTICAL FIBER HAZARD



- Persons installing fiber optic products must take all necessary safety precautions, such as wearing protective clothing and goggles and observing warning signs.
- To ensure that the required personnel and equipment is properly installed, secure from unnecessary failure of the components or failure of the whole system, injury to one's self and in addition to legal responsibility; everyone is responsible for his own health
- Keep exposed optical fiber ends away from skin and eyes.
- The waste fragments should be treated with care and not picked up with bare hands, but rather with special gloves.
- Dispose of waste in a suitable container via an approved agency. Make sure that the quantity of optical fiber waste is minimized.
- Closures containing termination points for optical fiber cabling must be labeled with appropriate warning signs or clearly visible text.
- Make sure that the quantity of optical fiber waste is minimized. Closures containing termination points for optical fiber cabling must be labeled with appropriate warning signs or a clearly viewable text.
- There are four laser Classifications based on risk levels. Laser manufacturers are required to label their lasers accordingly.



Avenview Warranty Certificate

AVENVIEW CORP. ("Avenview") warrants Avenview-branded product(s) contained in the original packaging against defects in materials and workmanship when used normally in accordance with Avenview's enclosed manual guidelines for a period of THREE (3) YEARS from the date of original retail purchase - Warranty Period. Avenview's published guidelines include but are not limited to information contained in technical specifications, user manuals and service communications.

LABOR: During the Warranty Period of THREE (3) YEARS, Avenview will repair or replace the product(s) at no cost using new or used parts equivalent to novel performance and reliability if the product(s) is determined to have abide by Avenview's published guidelines. Cost of Labor applicable to product(s) after Warranty Period. For labor costs, please contact support@avenview.com.

PARTS: During the Warranty Period of THREE (3) YEARS, Avenview will supply new or rebuilt replacements in exchange for defective parts of the product(s) at no cost if the product(s) is determined to have abide by Avenview's published guidelines. Cost of Parts applicable to product(s) after Warranty Period. For part(s) costs, please contact support@avenview.com.

To obtain Warranty: (a) proof of purchase in the form of a bill of sale or receipted invoice reflecting that the registered product(s) is within warranty period must be presented to obtain warranty service; (b) product(s) must be registered at time of purchase. Failure to do so will result in applicable parts and labor charges. Returning product(s) must be shipped in Avenview's original packaging or in packaging pertaining equal degree of protection to Avenview's. Both Avenview and purchaser are responsible for freight charges and brokerages when shipping the product(s) to the receiver.

NOT COVERED BY THIS WARRANTY

This warranty does not apply to any non-Avenview branded product(s); non-registered Avenview product(s). This warranty does not apply: (a) to cosmetic damage, including but not limited to scratches, dents and broken cords; (b) to damage caused by use with another product; (c) to damage caused by accident, abuse, misuse, liquid contact, fire, earthquake or other external cause; (d) to damage caused by operating the Avenview product(s) outside Avenview's manuals or guidelines; (e) to damage caused by service performed by anyone who is not a representative of Avenview or an Avenview authorized personnel; (f) to defects caused by normal wear and tear or otherwise due to the normal aging of the Avenview product(s), or (g) if any serial number has been removed or defaced from the Avenview product(s).

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Some states do not allow the inclusion or limitation of incidental or consequential damages, or allow limitations on duration implements of the Warranty Period; therefore the above limitations or exclusions may not be applicable to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.



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