USER MANUAL

DV-HXT-2 HDMI to CAT5e /6 EXTENDERS

LIT1374

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Unpacking

Each DV-HXT-2 Extender package includes the following items;
DV-HXT-2 Unit
5V Power Adapter
User manual

HDMI
HIGH DEFINITION MULTIMEDIA INTERFACE

> **Cautions:**
> 1. FSR logo is a trademark of FSR Inc.
> 2. HDMI is a trademark of HDMI licensing, LLC.
> 3. Specification may be changed without any notice in order to improve the function of the product.
> 4. The design and specification of the product may be changed without any prior notice.

Table of Contents

Description, General Specifications

- Extend HDMI signals using two CAT 5e/6 UTP cables (Unshielded Twisted Pair)
- With existing UTP cables the DV-HXT-2 extenders can easily be used for commercial and residential applications. You may not have to install new cables.

ITEM	DESCRIPTION
Model Name	DV-HXT-2
Input Signal	Digital RGB (HDMI)
Output Signal	Digital RGB (HDMI)
Resolution	200ft (60m) at 720p/1080i@CAT6 165ft (45m) at 1920x1080p@CAT6
Receptacle	DC Power Jack HDMI 19 Pin Female RJ-45
HDCP/DDC Support	Pass Thru
Power Consumption	5V Power Adapter(Included) Max 5W
Dimension	2.75" x 2.48" x 1.06" (70mm x 63mm x 27mm)
Weight	0.7 lbs. (0.30Kg)

Environmental and Reliability Specifications

Recommended environmental conditions for the operation are temperature range of 10°C~40°C, non-condensing humidity levels of 10%-80%, and altitude ceiling of 9,840 feet (3,000 meters).

Environmental limits for transportation are temperature range of -25°C~60°C, non-condensing humidity levels of 5%~95%, and altitude ceiling of 49,200 feet (15,000 meters).

Environmental limits for storage are established at temperature range of -20°C~45°C, non-condensing humidity levels of 5%~95%, and altitude ceiling of 9,840 feet (3,000 meters).

The DV-HXT-2 extender is expected to function for more than 50,000 hours of use at a 90% confidence level. The device is tested according to the identical standards for testing LCD monitors.

Main Features

High Quality Picture - No Signal Loss and Digital Noise Free
Our DV-HXT-2 is built to deliver the highest quality picture preserving the native resolutions of video sources without signal loss. At the same time, digital noise that may affect the picture quality will be eliminated. Due to the nature of the digital signals and passing through multiple connections, it is important to eliminate the digital noises and boost the signal strength to preserve/enhance the video signal quality.

Signal Amplification for signal reliability and long length signal transmission.
DV-HXT-2 gets internal or external DC 5V power to run an internal chipset, which was designed to transmit high quality visual signal to long distance.

HDCP (High-bandwidth Digital Content Protection)
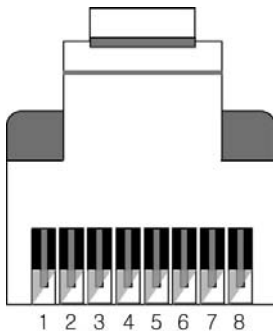- DV-HXT-2 fully supports HDCP

Set up and Video Connection

Step 1: Ensure the digital video/audio source and display is turned off

Step 2: Connect digital HDMI cable

Step 3: Connect a UTP cable to Digital RGB port of TX module and connect the other end of the cable to Digital RGB port of RX module

Step 4: Connect a second UTP cable to DDC port of TX module and connect the other end of the cable to DDC port of RX module

Step 5: Connect power adapter to transmitter (TX) module of DV-HXT-2

Step 6: Connect power cord to the power adapter and plug in to power outlet

Step 7: Power up the display

Step 8: Power up the source

Step 9: Set 1080p or highest resolution

Step 10: Set up rotary switch value referencing to EQ switch set up table according to UTP cable length

UTP Cable connection
DV-HXT-2 follows TIA/EIA-568-B specification.
Please refer to the picture and table for correct connection.
For the high resolution above 1080p or WUXGA, CAT6E 550MHz unshielded solid core by Liberty Wire & Cable is recommended.

Pin	TIA/EIA-568B Wire color	Signal Digital RGB	DDC
1	Orange/ White	TMDS Data2+	+5V
2	Orange	TMDS Data2-	HPD
3	Green/ White	TMDS Data1+	Ground
4	Blue	TMDS Data0+	CEC
5	Blue/ White	TMDS Data0-	Ground
6	Green	TMDS Data1-	DDC data
7	Brown/ White	TMDS Clock+	Ground
8	Brown	TMDS Clock-	DDC Clk

Connection of UTP Cable
No matter what the length is, cut two UPT cables to exactly the same length
Use two cables as a pair: different colors are useful
Caution: Do not connect with internet or earthnet devices

EQ SW set up table according to UPT cable length

Dip switch position "0" stands for the strongest HDMI signal level for the longest possible transmission length while "7" stands for the weakest HDMI signal level for the shortest transmission length.

Please adjust the signal level from "7" to "0" and stop turning the rotary switch whenever the audio/video is playing normally at receiver box first.

Tip: If you see blinking image or no image on the display, please adjust the rotary control switch to a larger number.
If you see pixel noise on the image on the display, please adjust the rotary control switch to a smaller number.

If the rotary switch adjustments above do not provide a satisfactory image, please set up transmitter and receiver rotary control switches as shown below.

NOTE: Rotary Switch settings "8" and "9" are not used.

Reference adjust TMDS signals

CABLE LENGTH: 33ft (10M) @1080p																
TRANSMITTER									RECEIVER							
SWITCH SETTING	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
REC	X	X	X	X	X	X	X	IDEAL						X	X	IDEAL
NR									X	X	X	X	X			

REC=Recommended   NR=Not Recommended

CABLE LENGTH : Up to 150ft(45M)@1080p																
TRANSMITTER									RECEIVER							
SWITCH SETTING	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7
REC		X	X	X	IDEAL	X			IDEAL	X	X					
NR							X	X				X	X	X	X	X

REC=Recommended   NR=Not Recommended

Caution:
* EQ switch set up value is made up based on CAT-5E UTP cable/1080p and therefore the value may be different when you use CAT6 cable or pass patch panels
* Minimum CAT cable length should be longer than 25ft (depending on cable quality)

Do not use with network hubs or routers, it will damage the units.

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Troubleshooting

The DV-HXT-2 Extender is designed for years of trouble free service, please reference the troubleshooting chart below if experiencing issues with the device.

Problem	Solution
No picture (or signal)	1. Ensure the power LED is illuminated. 2. Check if TX or RX module is properly connected to sources or displays. 3. Check if UTP cable is properly connected for RGB & DDC 4. Check if EQ switch is correctly set up (rotary control switch set to correct number) 5. Re-boot source device after the connection of UTP cables. 6. Check for proper termination of the CAT 5e/6 cables. (Refer to the Technical specs).
Poor picture or noise	1. Restart the system 2. Turn off DC power adapter, disconnect UTP cable, reconnect the cables and power on. 3. Check for proper electrical grounding for HDMI Devices 4. Check if EQ switch is correctly set up (rotary control switch set to correct number) 5. Set the resolution 720p/1080i at source manually

Technical Specification

Data transmission speed:	1.65 Gbps (Single Link)
Digital Video Bandwidth:	25~165 MHz
Resolution:	Up to 1080p @ 60hz, UXGA (1920x1200)
Input/output signal standard:	Digital RGB, TMDS
Maximum length:	1920 x 1080i -> 200 ft (60m)@ Cat6
	1920 x 1080p -> 165 ft (45m)@ Cat6
Compatible UTP cable:	CAT-5e/6
Input connector type:	HDMI Female 19P / RJ-45
Output connector type:	HDMI Female 19P / RJ-45
Power consumption:	Maximum 5 watts
Power supply:	DC 5V, 2A
Dimension:	2.75" x 2.48" x 1.06"
	(70mm x 63mm x 27mm)

Functioning part

HDMI In:	HDMI Input port
HDMI Out:	HDMI Output port
DDC:	UTP port for DDC/HDCP communication/HPD and +5v power
Digital RGB:	UTP port for TMDS signal transmission
EQ SW:	Strength control switch for transmission signal

Display part

POWER LED:	Power on/off
STATUS LED:	The status of appropriate operation

Limited Warranty

The DV-HXT-2 is warranted against failures due to defective parts or faulty workmanship for a period of three years after delivery to the original owner. During this period, FSR will make any necessary repairs or replace the unit without charge for parts or labor. Shipping charges to the factory or repair station must be prepaid by the owner, return-shipping charges (via UPS Ground) will be paid by FSR.

This warranty applies only to the original owner and is not transferable. In addition, it does not apply to repairs done by other than the FSR factory or Authorized Repair Stations.

This warranty shall be cancelable by FSR at its sole discretion if the unit has been subjected to physical abuse or has been modified in any way without written authorization from FSR. FSR's liability under this warranty is limited to repair or replacement of the defective unit.

FSR will not be responsible for incidental or consequential damages resulting from the use or misuse of its products. Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Warranty claims should be accompanied by a copy of the original purchase invoice showing the purchase date (if a Warranty Registration Card was mailed in at the time of purchase, this is not necessary). Before returning any equipment for repair, please read the important information on service below.

SERVICE

Before returning any equipment for repair, please be sure that it is adequately packed and cushioned against damage in shipment, and that it is insured. We suggest that you save the original packaging and use it to ship the product for servicing. Also, please enclose a note giving your name, address, phone number and a description of the problem.

NOTE: all equipment being returned for repair must have a Return authorization (RMA) Number. To get a RMA Number, please call the FSR Service Department (1-800-332-FSR1). Please display your RMA Number prominently on the front of all packages.

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