
RC-V1TR-HDMI SERIES
1-CHANNEL HDMI FIBER OPTIC TRANSCEIVER

USER'S MANUAL

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GENERAL INFORMATION

Introduction:

RC-V1T/R-HDMI Series HDMI transmitter and receiver support highest-quality transmission of 720P/1080P high definition HDMI signal over one core single mode fiber. Fully compliant with all the video resolution from 640x480 to 1080P, the RC-V1T/R-HDMI series ensures the highest performance for most demanding HD CCTV applications. The hot-pluggable and adjustment-free design ensures the convenience of the installation and operation. The modules are available in either standalone or rack mount versions.

Model Number

Unit Type	Model Number
One-channel HDMI Transmitter	RC-V1T-HDMI
One-channel HDMI Receiver	RC-V1R-HDMI

Technical Specifications:

VIDEO

Signal Type	HDMI HDMI 1.2/1.3/1.4 & HDCP 1.1/1.2
Video Resolution	VES@CEA-861 640x480, 720x576, 800x600, 1024x600, 1024x768, 1152x864, 1280x600, 1280x720, 1280x768, 1280x800, 1280x960, 1280x1024, 1440x1050, 1440x900, 1600x900, 1660x1200, 1680x1050, 1920x1080
Protocol	TCP/IP

OPTICAL

Wavelength	1310/1550nm
Optical Emitter	Laser Diode
Optical Fiber	9/125u single mode
Number of Fibers	1

CONNECTORS

Optical	ST
Video&Audio	HDMI

GENERAL

Power Supply	DC12V 2A
Size	152 x130 x28.8mm / 5.98 x 5.12 x 1.13 inches
Construction:	Aluminum
Finish:	Paint
MTBF:	> 100,000 hours
Operating Temp:	-35° C to +65°C
Storage Temp:	-45° C to +85°C

INDICATOR

FX1/FX2	Optic Connection Present
Link1/Link2	Ethernet Connection Present
USB	USB Connection Present
PWR	Power On

OPTICAL POWER BUDGET

Optical transmission distance is limited to optical loss of the fiber and additional loss caused by connectors, splices, and patch panels.

Fiber	Wavelength	Transmitter		Receiver		Optical Power Budget	Max Distance
		Model	Output	Model	Sensitivity		
Singlemode	1310nm	RC-V1T-HDMI	-5 dBm	RC-V1R-HDMI	-30 dBm	25dB	30km

CAUTION!

The transmitter unit contains a laser-emitting diode located in the optical connector. This device emits invisible infrared electromagnetic radiation that can be harmful to human eyes. The radiation from this optical connector, if viewed closely without any protection, may cause instantaneous damage to the retina of the eye. Direct viewing of this LED should be avoided at all times.

INSTALLATION INSTRUCTIONS

Installation Procedure

The RC-V1TR-HDMI HDMI transmission system series are preset for immediate use. There are indicator LEDs on the units for monitoring the real-time status of power, optic, ethernet and USB connection. The following instructions describe the typical installation procedure and the function of the LED indicators located on each unit.

1. Connect the HDMI source (HDMI output of PC or HDMI player) to the HDMI interface on the transmitter unit using HDMI cable.
 2. Connect the HDMI interface on receiver unit to the HDMI monitor using HDMI cable.
 3. Connect the RJ45 port on the transmitter to the PC/Router/LAN/WAN to establish Ethernet or Internet Connection using network cable and Connect the RJ45 port on the receiver to the Router/LAN/WAN to establish Ethernet or Internet Connection using network cable.
 4. Connect the USD port on the transmitter to the USD port on the PC using USB cable.
 5. Connect one of the USB ports on the receiver to the keyboard and another to the mouse.
 6. Connect the fiber optic cable between the transmitter and receiver
 7. Apply the power supply to both the transmitter and receiver
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8. When the power is applied, the red POWER LED will light, indicating the presence of operating power. The green FX1/FX2, Link1/Link2, USB LEDs will give indications as stated in the following page.
 9. The system should now be operational.

<WARNING>: Hot plugging of the HDMI cable may damage the HDMI interface on the units.

Indicator LEDs

The stand-alone units have integral LEDs that are used to monitor the state of the unit. There are FX1, FX2, Link1, Link2, PWR, USD on each unit. The optical LED “FX1/FX2” will be off when no optical fiber is correctly connected. But when disconnected, the optical LEDs will blink. The Ethernet Link LED “Link1/Link2” will be off when no Ethernet normally connected. But it will blink when normal link is applied. The Power LED shows as “PWR” will light when correct power has been applied. USB LED links when USD signal is normally connected while it will be off when no USB devices are connected.

TRANSMITTER and RECEIVER:

PWR: ON: (Red) Indicates that correct power has been applied.

OFF: No power applied.

FX1/FX2: Blinking: (Green) Indicates that correct optical fiber has been applied.

OFF: No optical fiber correctly connected.

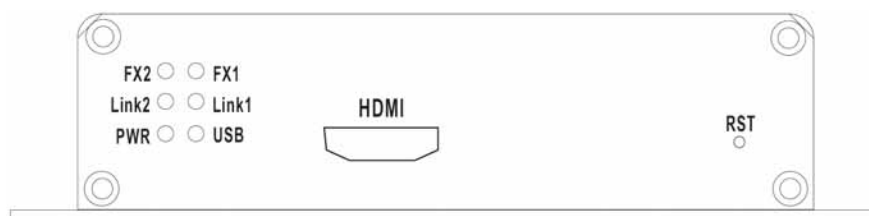
Link1/Link2: Blinking: (Green) Indicates that normal Ethernet link has been applied.

OFF: No Ethernet normally connected.

USB: Blinking: (Green) Indicates that normal USB link has been applied

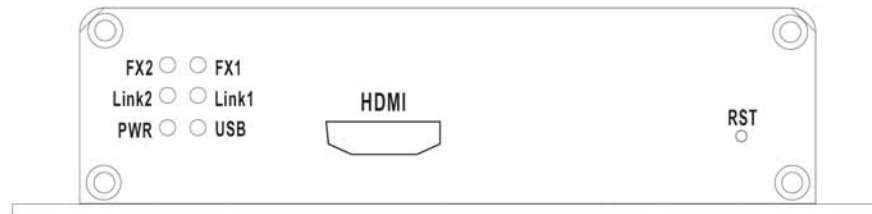
OFF: No USB link normally connected.

Transmitter:



*Front panel of RC-V1-HDMI

Receiver:



*Front panel of RC-V1R-HDMI

TROUBLESHOOTING

Optical Fiber

The RC-V1TR-HDMI Series is available with most applications using single mode optical fiber. Please be certain that the correct size and type of the fiber is being used for the particular mode transmitter/receiver combination.

Also be certain that the attenuation and bandwidth of the fiber optic cable being used is within the range of the system's loss budget specifications.

HDMI Connection

Please check if the fiber optic cable is correctly connected if the screen of HDMI monitor shows "searching TX".

please check if the HDMI source is normally connected to the transmitter if the screen of HDMI monitor shows "check TX's input signal".

Ethernet

If the Ethernet link is not normally applied, please make sure that PCs connected at TX and RX are in the same IP network segment of Transmitter (192.168.168.55) and Receiver (192.168.168.56).

General

Any dirt or dust may easily pollute or block the fiber from accepting or radiating light. Therefore, please try to keep the optical connector clear and always use the dust caps whenever the connector is exposed to air. It is suggested that the tip of the optical connected should be carefully cleaned with a lint-free cloth moistened with alcohol from time to time.

The status of any of the LEDs should provide the first clue as to the origin of any operational failure.

Please also make sure that the transmitter and the receiver are not used in opposite position.