



HDMI VIDEO SYSTEM

USER'S MANUAL

v1.0

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VERSITRON, Inc.
83 Albe Drive / Suite C
Newark, DE 19702
www.versitron.com

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CAUTION!

The fiber optic transmitters contain 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.

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Table Of Contents

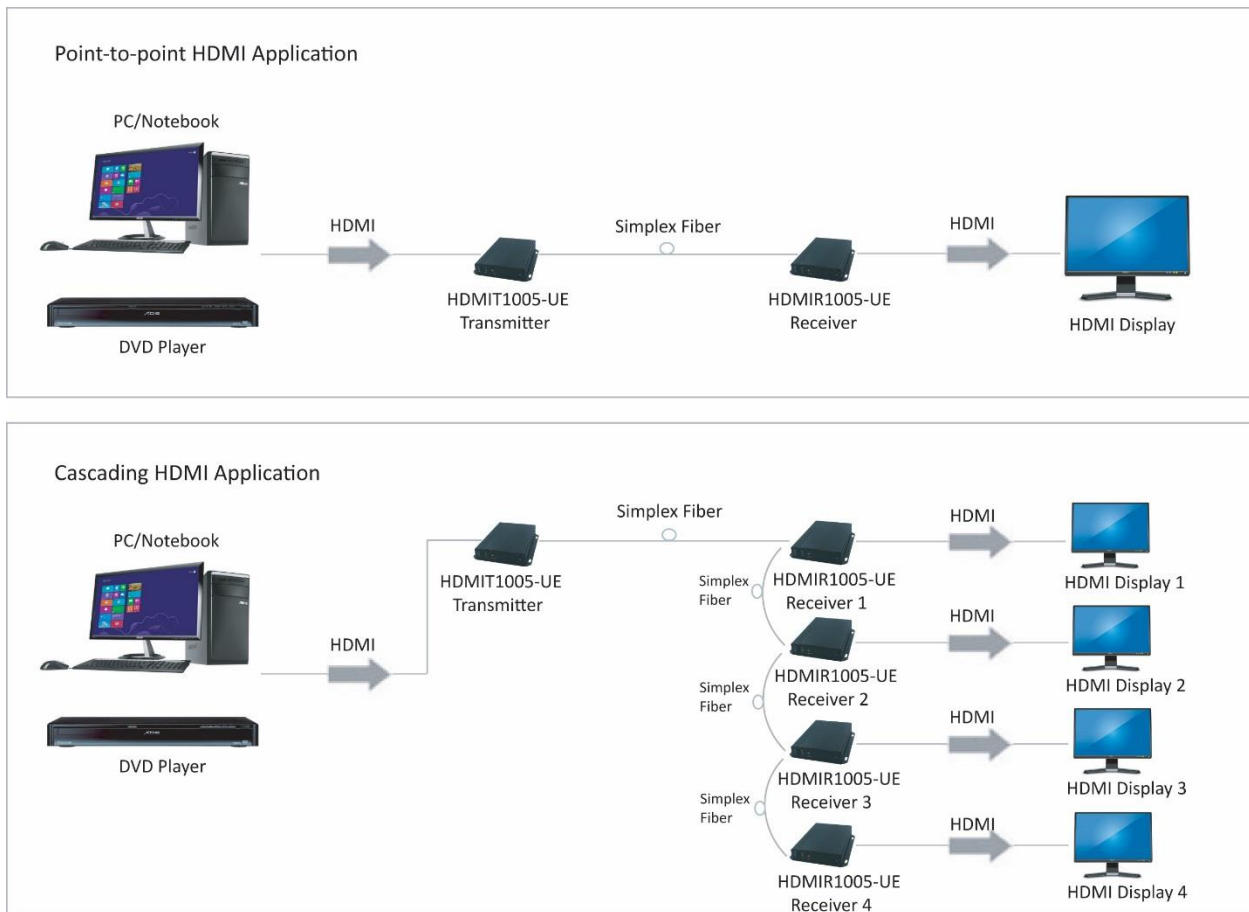
General Information.....	3
Introduction.....	3
Technical Specifications.....	4
Installation Instructions.....	6
Installation Procedure.....	7
Indicator LEDs.....	8
Configuring IP Address.....	9
Troubleshooting.....	13

GENERAL INFORMATION

Introduction:

The HDMI transmitter and receiver system support the highest-quality transmission of 720P/1080P high definition HDMI signals over one strand of single-mode fiber. Fully compliant with all video resolutions from 640x480 to 1080P, the HDMI series ensures the highest performance for the most demanding HD CCTV applications. In addition, the HDMI series provides connectivity for remote Ethernet access and keyboard and mouse control. The hot-pluggable and adjustment-free design ensures convenient installation and operation. The modules are available in either standalone or rack-mount versions. Typical applications are shown below in Diagram 1.

Diagram 1:



Model Numbers:

Model Number	Function	Connector	Fiber Cable	Wavelength	Max Distance
HDMIT1005-UE	Transmitter	ST Simplex	SM	1310nm	30 km
HDMIR1005-UE	Receiver	ST Simplex	SM	1550nm	30 km

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

OPTICAL

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

CONNECTORS

Optical	ST
Video & Audio	HDMI
Ethernet	RJ-45
Keyboard & Mouse	USB

GENERAL

Power Supply	12VDC, 2A
Size	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

INDICATORS

FX1/FX2	Optical 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		
Single-mode	1310nm	HDMIT 1005-UE	-5 dBm	HDMIR 1005-UE	-30 dBm	25dB	30km

CAUTION!

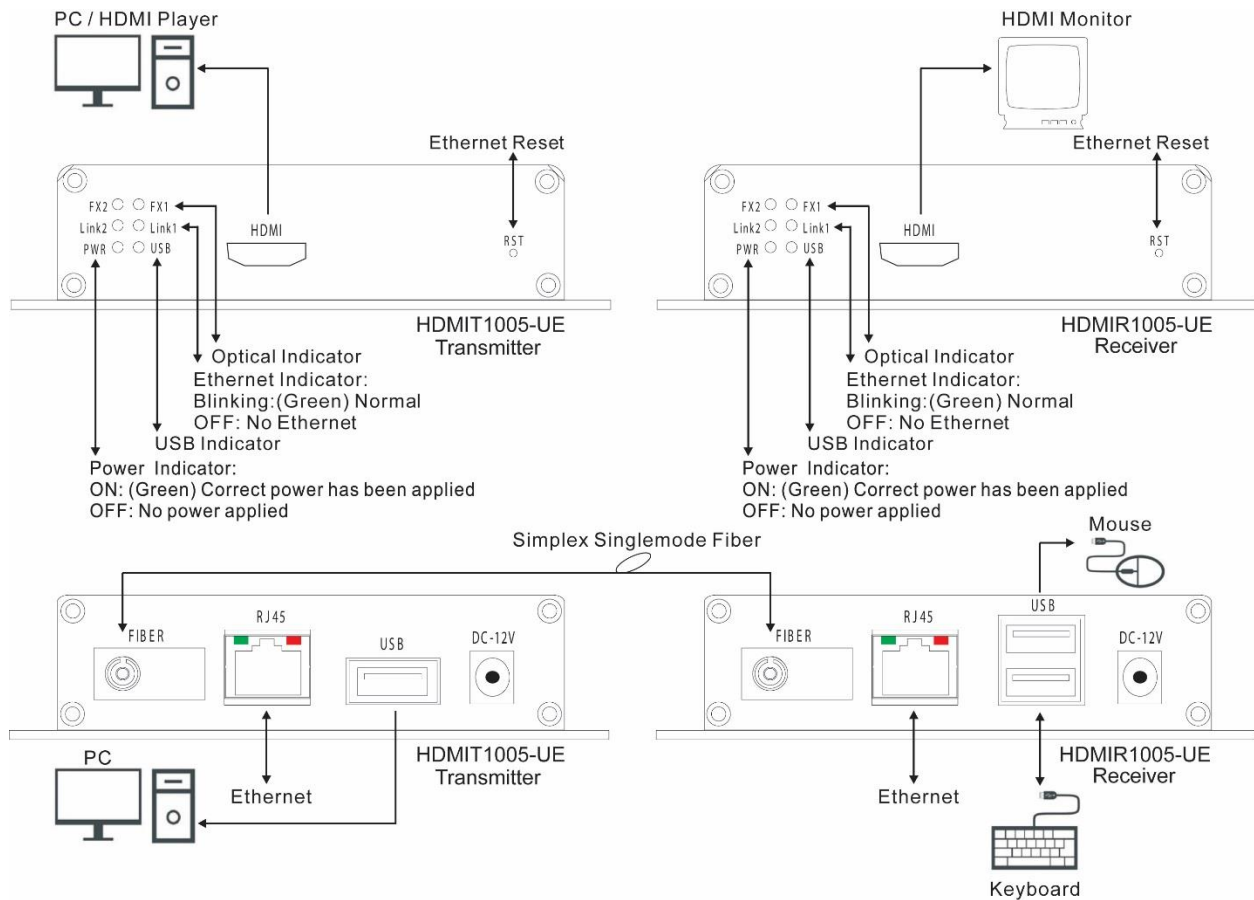
The fiber optic transmitters contain a laser-emitting diode located in the optical connector. This device emits invisible infrared electromagnetic radiation that can be harmful to human eyes. The radiation from this optical connector, if viewed closely without any protection, may cause instantaneous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

INSTALLATION INSTRUCTIONS

Installation Procedure:

The HDMI transmission system series are preset for immediate use. There are indicator LEDs on the units for monitoring the real-time status of power, optical connection, Ethernet, and USB connection. The following instructions describe the typical installation procedure and the function of the LED indicators located on each unit. Please refer to Diagram 2 below.

Diagram 2:



1. Connect the HDMI source (HDMI output of PC or HDMI player) to the HDMI interface on the **transmitter** unit using an HDMI cable.
2. Connect the HDMI interface on **receiver** unit to the HDMI monitor using an HDMI cable.
3. Connect the RJ-45 port on the **transmitter** to an RJ-45 port on a network/Internet connection using an Ethernet cable, and connect the RJ-45 port on the **receiver** to the RJ-45 port on the remote PC using an Ethernet cable.
4. **See Page 9 for instructions on configuring the IP address of the transmitter and receiver.**
5. Connect the USB port on the **transmitter** to the USB port on the PC using USB cable.
6. Connect one of the USB ports on the **receiver** to a keyboard, and the other to a mouse.
7. Connect the fiber optic cable between the transmitter and receiver.
8. Apply the power supply to both the transmitter and receiver.
9. When the power is applied, the red POWER LED will light, indicating the presence of operating power. The green FX1/FX2, Link1/Link2, and USB LEDs will give indications as stated in the following page.
10. The system should now be operational.

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

Indicator LEDs:

Each unit has integral LEDs that are used to monitor the state of the unit. Below are descriptions for each.

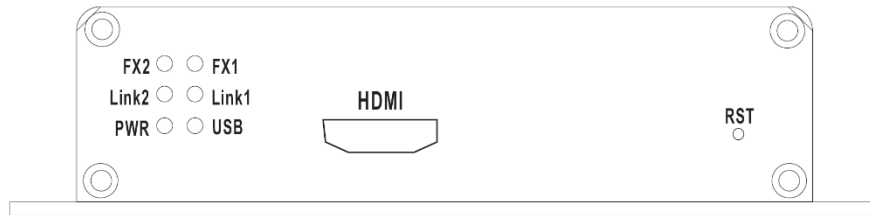
TRANSMITTER and RECEIVER:

Power: ON (Green): Indicates power has been applied.

FX1/FX2: OFF: Indicates no fiber connection established.
Blinking (Green): Indicates fiber connection not established.

Link1/Link2: OFF: Indicates no Ethernet connection.
Blinking (Green): Indicates Ethernet connection established.

USB: OFF: Indicates no USB connection.
Blinking (Green): Indicates USB connection established.



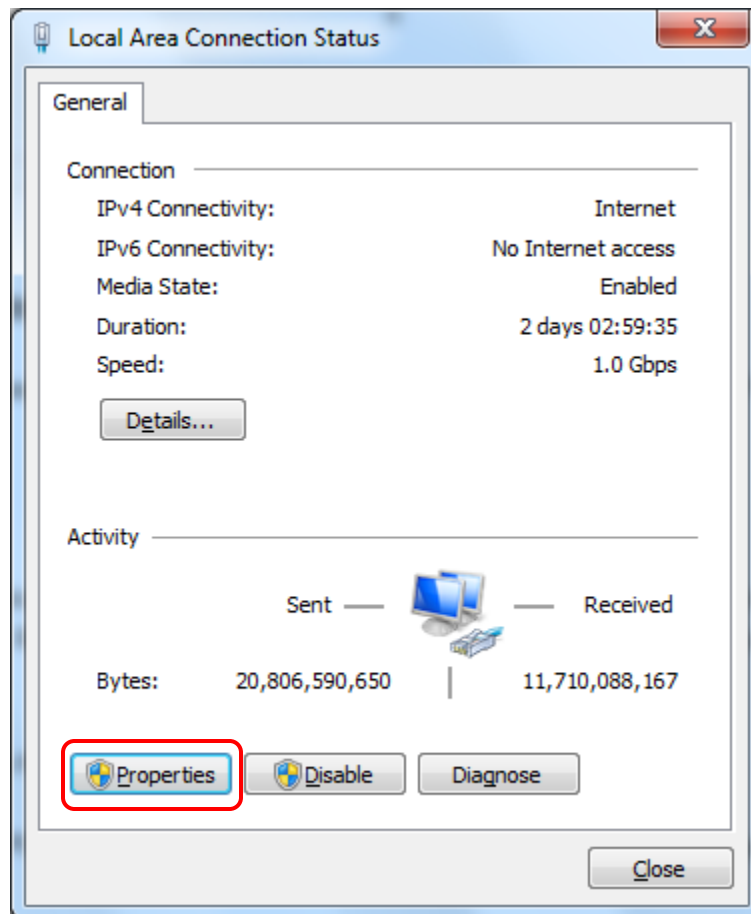
Configuring IP Addresses:

The HDMI series transmitter and receiver come pre-configured with the following IP addresses:

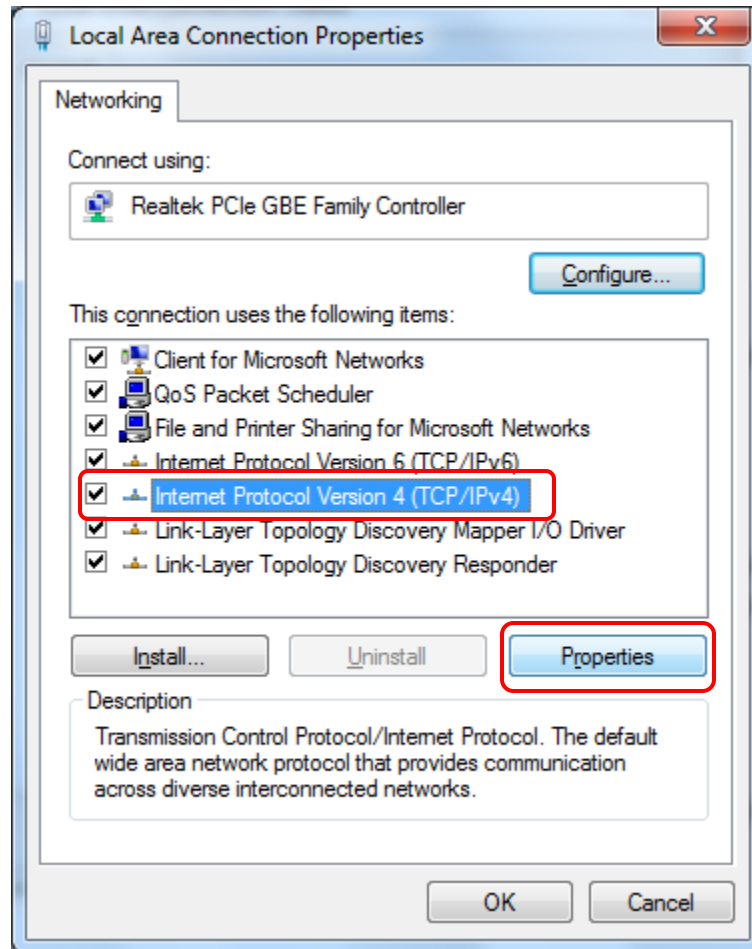
- **HDMI Transmitter:** **192.168.168.55**
- **HDMI Receiver:** **192.168.168.56**

For proper communication, these IP addresses must be changed to match the IP scheme of the customer's network. Refer to the instructions below to access the HDMI series units and set the IP addresses.

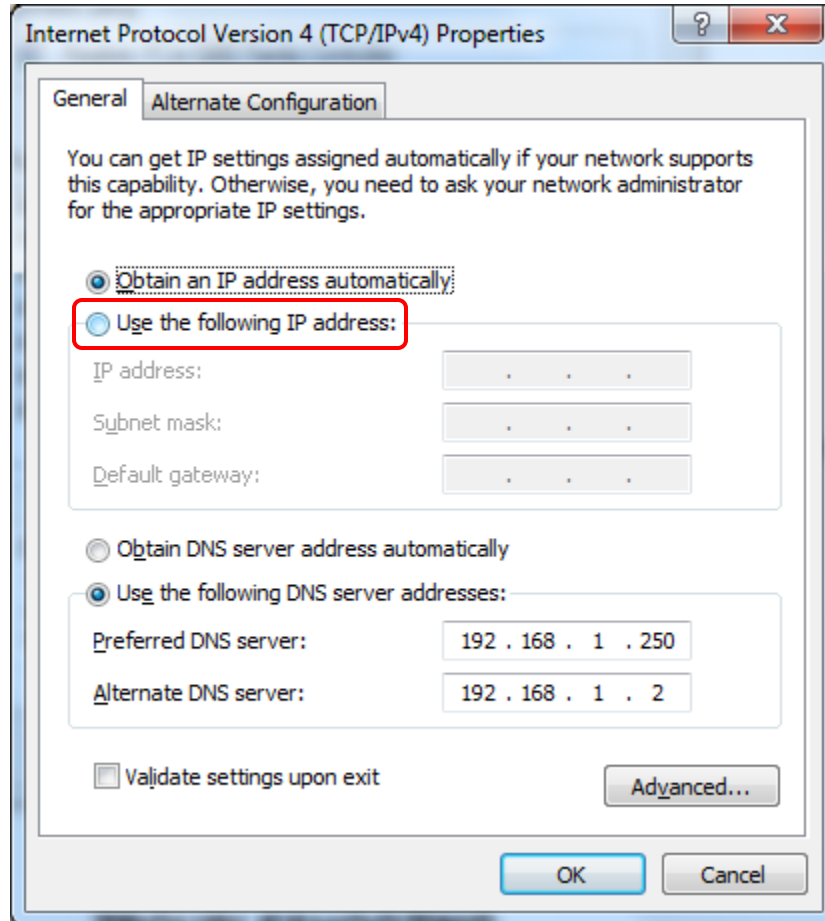
1. Connect the HDMI transmitter or receiver to a PC using an Ethernet cable.
2. Access the PC Local Area Connection settings and click on Properties:



3. Select Internet Protocol Version 4 (TCP/IP4) and click on Properties:



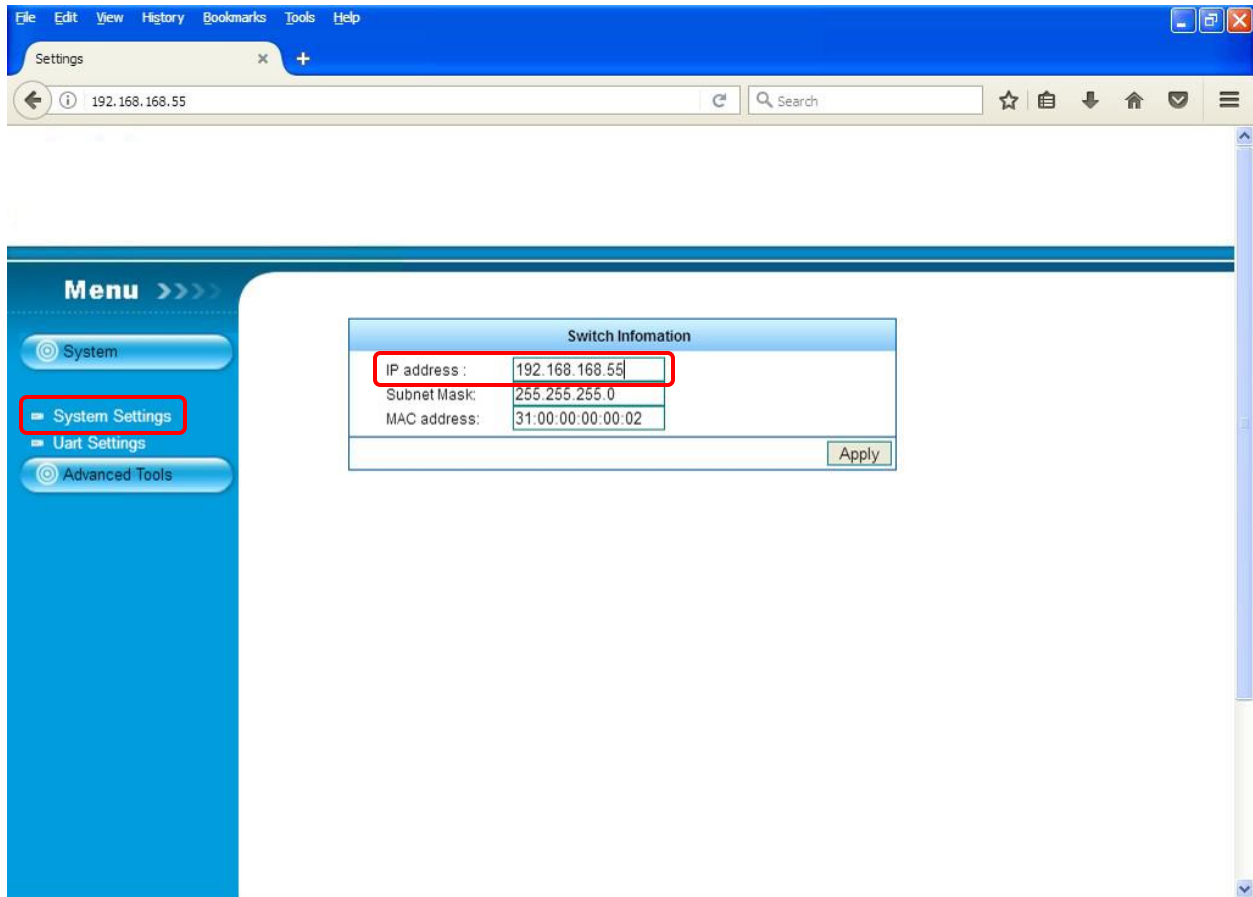
4. Select the Radio Button for Use the following IP address:



5. Change the IP address to 192.168.168.1 and Subnet mask to 255.255.255.0 and click OK.
6. Click OK on the Local Area Connections Properties window.
7. Click close on the Local Area Connections Status window.
8. Click OK on the Internet Protocol Version 4 (TCP/IPv4) Properties window.
9. Open a browser and enter the IP address for the HDMI transmitter or receiver as shown below:

HDMI Transmitter: 192.168.168.55
HDMI Receiver: 192.168.168.56

10. Click on System → System Settings from the left-hand menu:



11. Provide a unique IP address which matches the IP scheme of the customer's network.

12. Click Apply to save the settings.

13. Repeat this process for each HDMI transmitter and receiver.

14. Verify the settings by setting the PC IP address back to match the network IP scheme and log into each HDMI transmitter and receiver using the new IP addresses.

TROUBLESHOOTING

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

Optical Fiber

The HDMI Series is available for most applications using single-mode optical fiber.

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 that the fiber optic cable is connected properly if the screen of HDMI monitor shows "searching TX".

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

Ethernet

If the Ethernet link is not established, please make sure that IP addresses of the HDMI transmitter and receiver are set to match the customer's network IP scheme. Refer to the instructions on Page 9.

General

Any dirt or dust may easily pollute or block the fiber optic cable from accepting/transmitting light. Therefore, please try to keep the optical connector clear and always use the dust cap whenever the connector is exposed to air. It is suggested that the tip of the optical fiber 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.