## Introduction:

The HDTV**S**XEX22 HDMI Extender over IP extends the range of HDMI signals by using an active transmitter and receiver to send video and audio over a single Cat5e/6 cable. The HDMI Extender over IP supports IR signals using the included IR transmitter and receiver, allowing remote control use from one end of an installation to control a device such as a media player or DVD player at the opposite end of the installation. The HDTV**S**XEX22 supports One-to-One, One-to-Many, and Many-to-Many installation via VLAN, as well as a cascading installation, allowing the connection of multiple units for extended range.

## Table of Contents:



## Parts List:

| | | | |
|---|---|---|---|
| 1x Transmitter | 1x IR Transmitter | 2x Power adapters | 1x Manual |
| 1x Receiver | 1x IR Receiver | | |

## Specifications:

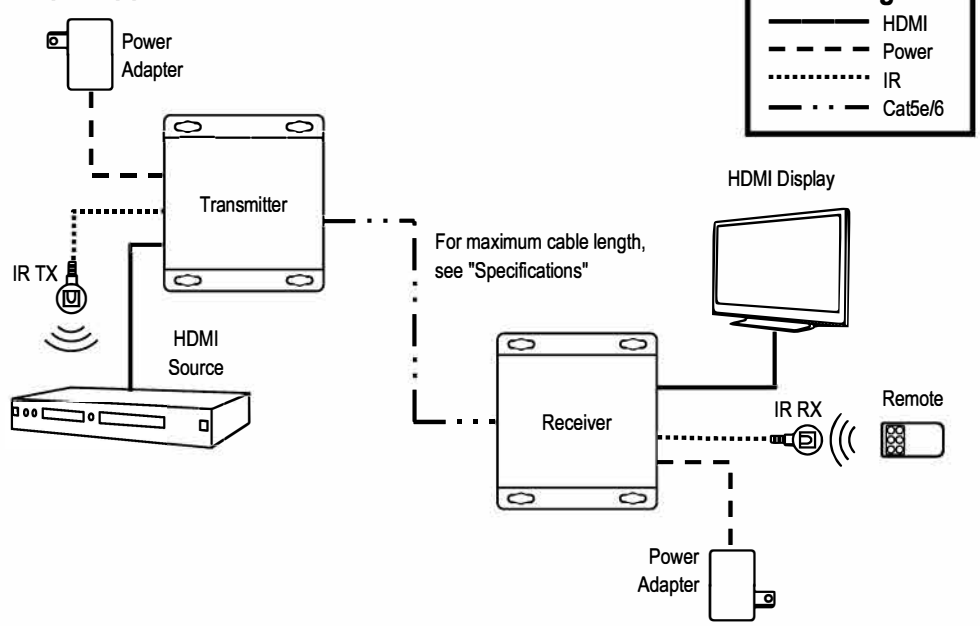
| Model | | Transmitter HDTV**S**XEX22-TX | Receiver HDTV**S**XEX22-RX |
|---|---|---|---|
| Maximum video resolution | | 1080p | |
| Deep color | | 24-bit | |
| Video formats supported | | DTV/HDTV: 480i, 576i, 480p, 576p, 720p, 1080i, 1080p | |
| Range – 1080p | Cat6 | 390ft (120m) | |
| | Cat5e | 360ft (110m) | |
| IP addressing | | Static | |
| Default IP address (static) | | 192.168.168.55 | 192.168.168.56 |
| Default MAC address | | 00:0b:78:00:60:01 | 00:0b:78:00:60:02 |
| IR frequency | | 38kHz~56kHz | |
| Operating voltage | | 5VDC | |
| Power supply | | 1A@5VDC (2 adapters) | |
| Power consumption | | 3W | |
| Operating temperature | | 23°~95° F (-5°~35° C) | |
| Dimensions | | $4^{1}/_{16}$"x$3^{11}/_{16}$"x1" (104x94x25mm) | |
| Weight | | 7.8-oz (221g) (each) | |

## Installation:

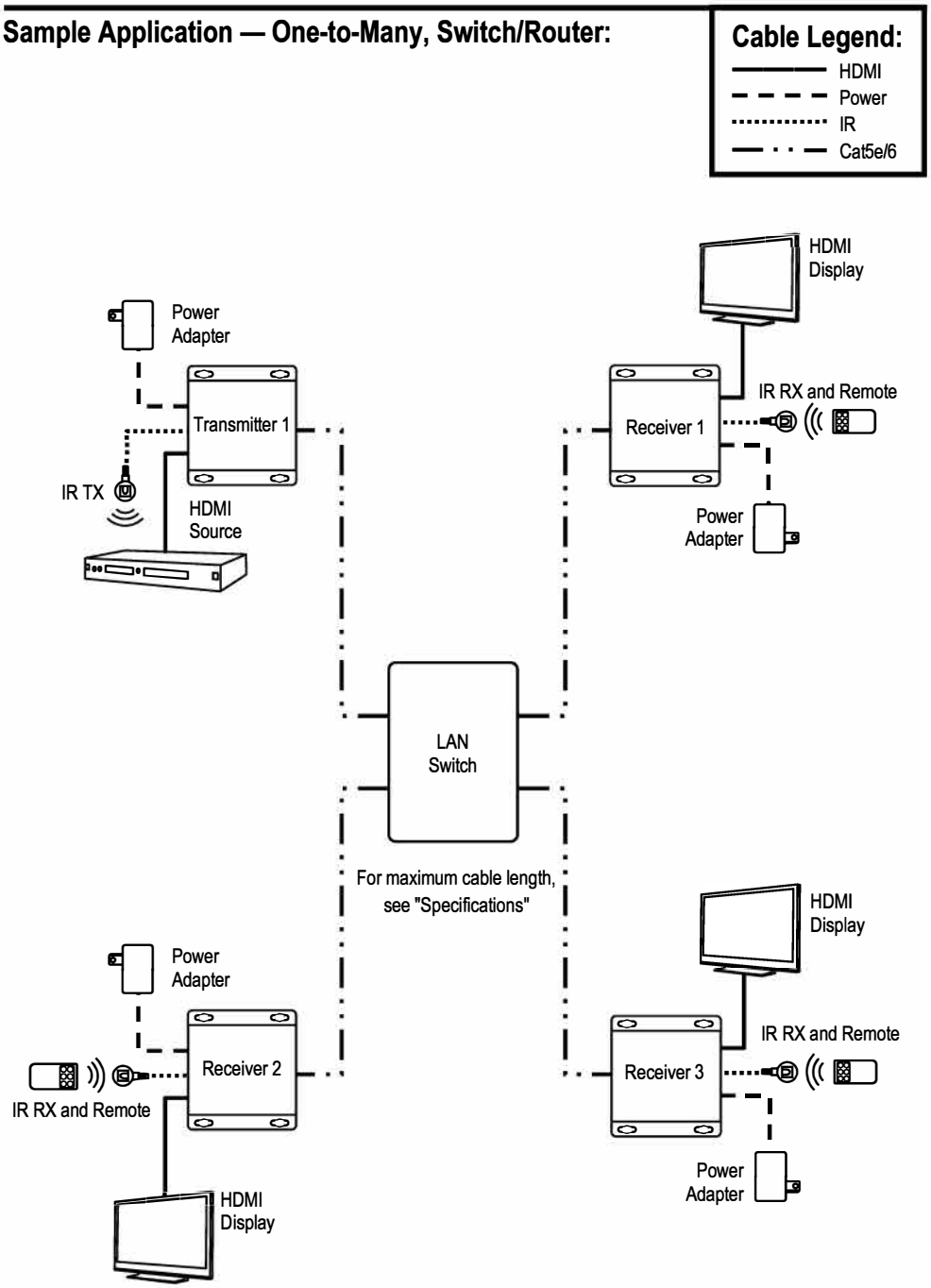
**NOTE:** For One-to-Many and Many-to-Many installations, each receiver/transmitter's IP and MAC addresses must be unique. See "Changing the IP and MAC Address" on pgs. 7-8 before installation.

1. Determine the location where the HDMI Extender over IP units will be installed as well as how much Cat5e/6 cable will be necessary.
2. Connect the transmitter to the HDMI output of the source device.
3. Connect the transmitter and receiver:
   a. If connecting One-to-One, connect one end of the Cat5e/6 cable to the transmitter and the other end directly to the receiver.
   b. If installing with a switch or router, connect one end of the Cat5e/6 cable to the transmitter and the other end to a switch or router. Then, with a second Cat5e/6 cable connect the receiver to the other end of the switch or router.
4. Connect the receiver to the HDMI input of the display or other device.
5. Connect one 5VDC adapter to the transmitter and the other to the receiver.
6. Determine which device, if any, will be controlled by remote control.
   a. Install the IR transmitter to the IR port near the device to be controlled, pointing the IR transmitter at its IR sensor.
   b. Install the IR receiver to the IR port of the other transmitter/receiver, pointing the IR receiver in a direct line of sight to where the remote control will be.
   c. Point the remote control at the IR receiver when in use.
7. Switch on the HDMI source and display to verify that the system is functioning properly. It may take up to a minute to sync up the video stream.

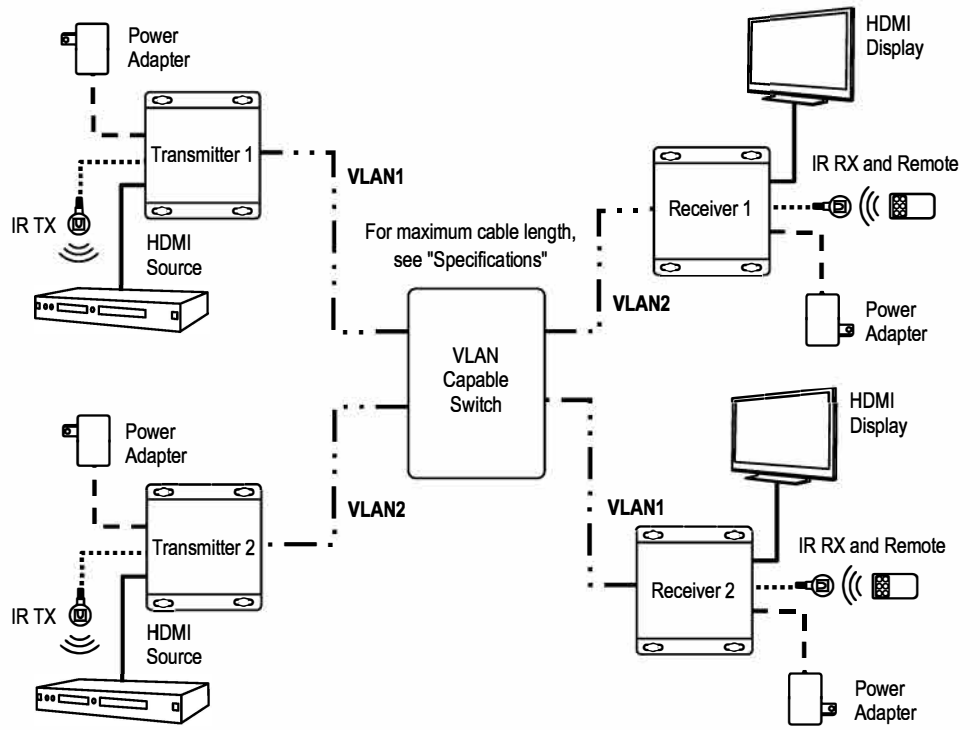
## Sample Application — One-to-One:



## Sample Application — One-to-Many, Switch/Router:



## Sample Application — Many-to-Many, VLAN Switch:




## VLAN Setup:

**NOTE:** When setting up a Many-to-Many configuration, it will be necessary to use a managed switch that supports VLANs. The following is a generic example as configuration varies by manufacturer.

### VLAN Setup Example

1. Login to the managed switch through its web interface.
2. In this example, an 8-port managed switch (P1-P8) is used to connect 2 transmitters as shown in "Sample Application — Many-to-Many, VLAN Switch".
3. Look for a menu option or tab labeled "VLAN" or "VLAN Management".
4. Check or click on the option to enable/create VLANs.

## VLAN Setup Continued:

5. By default VLAN1 will be configured and all ports on the switch will be assigned to it.
   a. Example default VLAN configuration:

| VLAN1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Interface** | **P1** | **P2** | **P3** | **P4** | **P5** | **P6** | **P7** | **P8** |
| **Member** | x | x | x | x | x | x | x | x |
| **Tagged** | | | | | | | | |
| **Untagged** | x | x | x | x | x | x | x | x |
| **PVID** | x | x | x | x | x | x | x | x |

   b. Make note of which ports the transmitters and receivers will be connected to.
   c. Update the ports that will be connected to Transmitter 1 and its associated receivers.
   d. For this example, the first 4 ports (P1-P4) will be connected to Transmitter 1 and its associated receivers by setting the "Member" values for P1-P4.

| VLAN1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Interface** | **P1** | **P2** | **P3** | **P4** | **P5** | **P6** | **P7** | **P8** |
| **Member** | x | x | x | x | | | | |
| **Tagged** | | | | | | | | |
| **Untagged** | x | x | x | x | x | x | x | x |
| **PVID** | | | | | | | | |

   e. Click "Apply" or "Save" to enable the changes.
6. Create a second VLAN for Transmitter 2 and name it VLAN2.
   a. Set the last 4 ports to be on VLAN2 by setting the "Member" values for P5-P8.

| VLAN2 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Interface** | **P1** | **P2** | **P3** | **P4** | **P5** | **P6** | **P7** | **P8** |
| **Member** | | | | | x | x | x | x |
| **Tagged** | | | | | | | | |
| **Untagged** | x | x | x | x | x | x | x | x |
| **PVID** | | | | | | | | |

   b. Click "Apply" or "Save" to enable the changes.
   c. Connect Transmitter 2 and its associated receivers to the last 4 ports (P5-P8).
   d. Confirm the source from Transmitter 1 is displaying on the receivers connected to P1-P4 and the source from Transmitter 2 is displaying on the receivers connected to P5-P8.
   e. If not, recheck the settings on VLAN1 and VLAN2 to make sure they are set correctly and that the configuration has been saved.

## Changing the IP and MAC Address:

1. When there is more than one pair of transmitters/receivers connected to a switch/router, the IP address and MAC addresses must be changed for the additional units.
2. Connect a powered transmitter/receiver (TX/RX) to a computer using an Ethernet cable (Note the computer may not have the same IP address as the transmitter/receiver). The power LED on the TX/RX should be red and the status LED should be green.
3. Open your web browser to the default link (TX: 192.168.168.55, RX: 192.168.168.56).

## Changing the IP and MAC Address Continued:

4. Select "System Settings" and change the last segment of the IP address shown to a unique number between 1 and 254.
5. Change the final digits of the MAC address from the default (TX: 00:0b:78:00:60:01, RX: 00:0b:78:00:60:02) to a unique hexadecimal number between 01 and FF.
6. Click "Apply" to enable the changes.
7. Repeat for each additional TX/RX and then install as described in "Installation" on pg. 4 and consult the diagrams on pgs. 5-6 as necessary.