Gefen tv.

1:8 Multi Format Video Distribution over Ethernet

GTV-MFDA-148
User Manual

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ASKING FOR ASSISTANCE

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INTRODUCTION

Congratulations on your purchase of the 1:8 Multi Format Video Distribution over Ethernet. Your complete satisfaction is very important to us.

GefenTV

GefenTV is a unique product line catering to the growing needs for innovative home theater solutions. We specialize in total integration for your home theater, while also focusing on going above and beyond customer expectations to ensure you get the most from your hardware. We invite you to explore our distinct product line and hope you find your solutions. Don't see what you are looking for here? Please call us so we can better assist you with your particular needs.

The GefenTV 1:8 Multi Format Video Distribution over Ethernet

This versatile product is useful for PCs, digital signage applications, and educational institutions. VGA, Component, S-Video, or Composite video data is broadcast from the Sender up to 330 ft over CAT-5 to the Receiver. The Receiver provides VGA or Component output and can be daisy-chained. Additional features of this product allow video and audio distribution over a Local Area Network (LAN).

How It Works

The GefenTV 1:8 Multi Format Video Distribution over Ethernet is a Sender/Receiver system allowing broadcast of analog video and audio over Ethernet cable to a maximum of eight (8) Receivers. Distribution of video and audio over LAN can also be achieved by connecting a single Ethernet cable from the Sender unit to a LAN connection. See page 9 for details.

OPERATION NOTES

READ THESE NOTES BEFORE INSTALLING OR OPERATING
THE 1:8 MULTI FORMAT VIDEO DISTRIBUTION OVER ETHERNET

- This product is Ethernet-based, not IP-based.

- It is recommended that a managed switch with multicast support be placed between the Sender Unit and Receiver Unit(s). The multicast function should be enabled on the switch.

- If a non-managed switch is used, VGA Sender multicast packets will be broadcast to all outputs of the switch. This unit uses about 80 Mbs to send audio and video.

- Once the Receiver Unit is connected to the same LAN, it will automatically link to the Sender Unit.

- Receivers Unit(s) cannot be placed outside of a LAN.

- Conforms to IEEE 802.3 standards.

Features

- Extend video and audio up to 330 ft (100 m) using CAT-5.

- Maximum Input Resolutions: 1080p@60Hz (Component), 1280x1024@60Hz (VGA), 480i@60Hz, 576i@50Hz (S-Video, Composite)

- Maximum Output Resolutions: 720p@60Hz (Component), 1280x1024@60Hz (VGA), 480i@60Hz, 576i@50Hz (S-Video, Composite)

- Switch between four audio/video sources from the Sender location

- Plug-and-Play installation (with no special hardware or software configuration required)

- 2-Channel Stereo Analog Audio supported

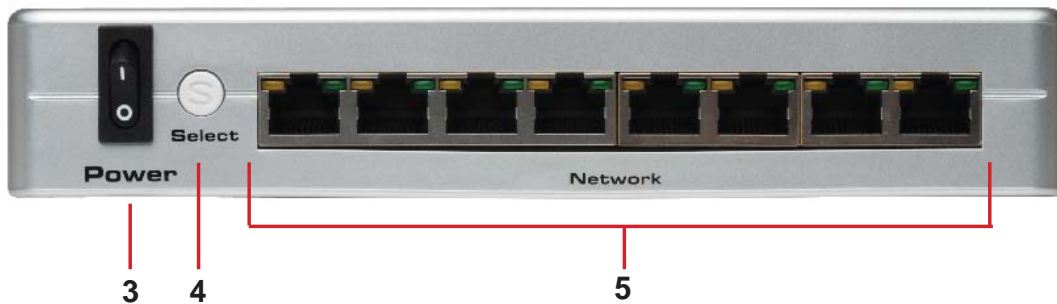- PCM Encoding is 48KHz 16-bit sampling

Package Includes

(1) GefenTV 1:8 Multi Format Video Distribution over Ethernet Sender Unit
(1) GefenTV 1:8 Multi Format Video Distribution over Ethernet Receiver Unit
(1) 6 ft VGA Cable (M-M)
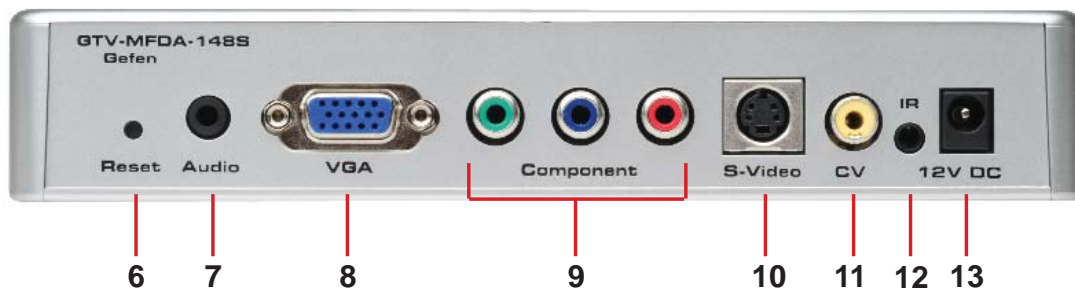(1) 12V DC Power Supplies
(1) User Manual

SENDER PANEL LAYOUT

Top Panel

1 2

Front Panel

3 4 5

Back Panel
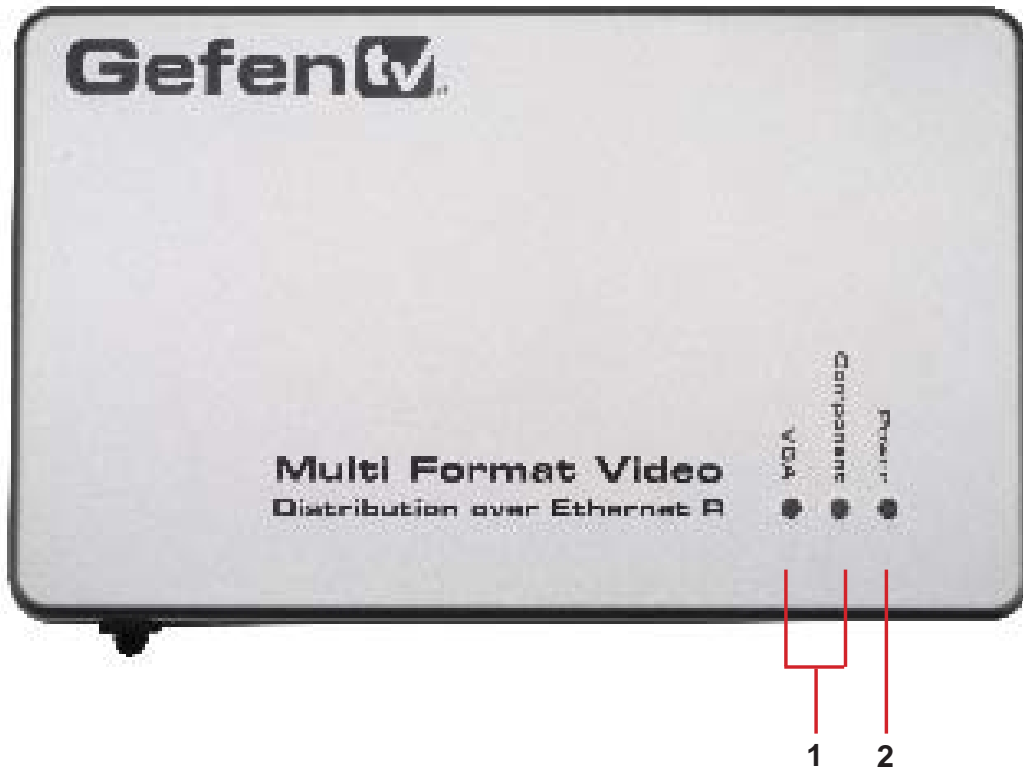

6 7 8 9 10 11 12 13
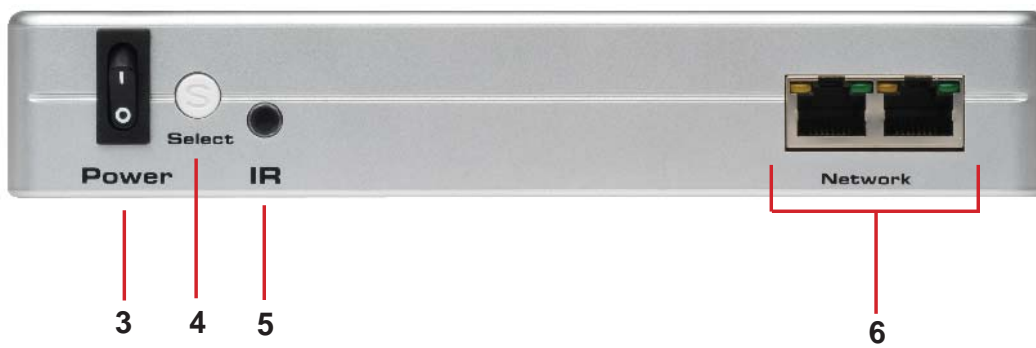
4
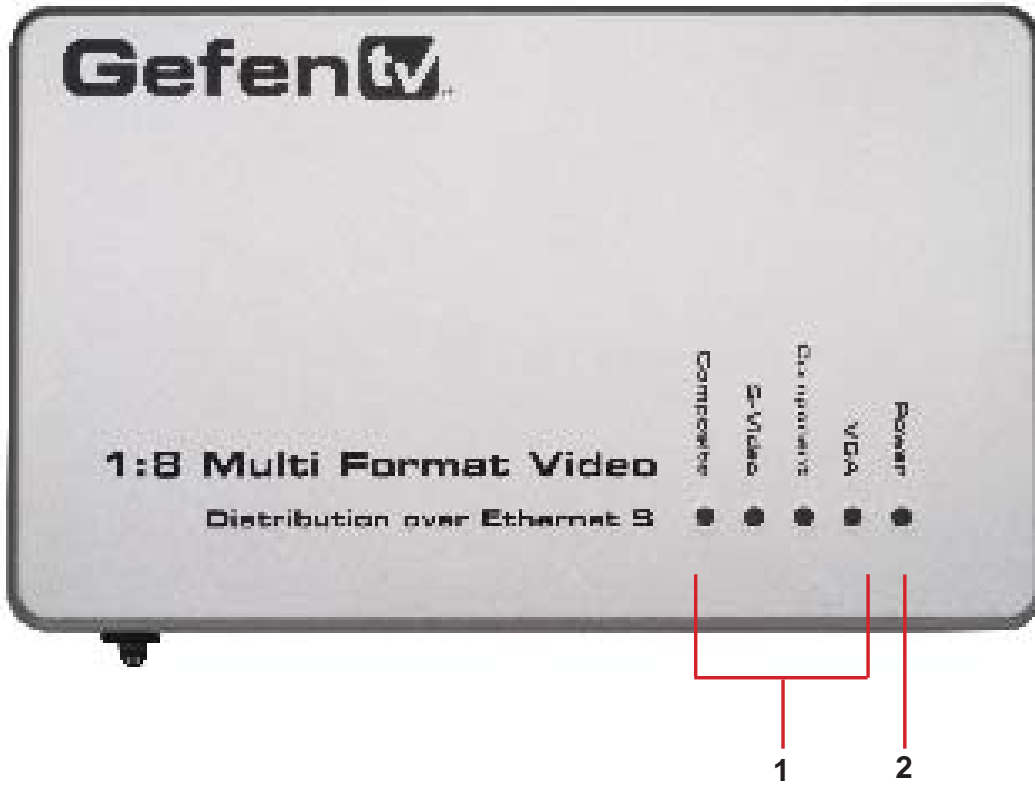
SENDER PANEL DESCRIPTIONS

1   ***Input Selection Indicators***
    Indicates the current input selection: Composite, S-Video, Component, or VGA

2   ***Power Indicator***
    This LED will glow blue when the power is on.

3   ***Power On/Off Switch***
    Turn the power on or off using this button

4   ***Selector Button***
    Switches between Component Video, S-Video, Composite and VGA

5   ***Ethernet (RJ-45) Input Connectors***
    Use this jack point to connect another receiver into the system

6   ***Reset Button***
    Reset the sender unit

7   ***Analog Stereo Audio Input***
    Use this input to connect a 3.5mm analog stereo audio line-in jack

8   ***VGA Video Input***
    Use this input to connect a VGA video input from a computer source

9   ***Component Video Inputs***
    Use this input to connect an Analog RCA Component

10 ***S-Video Input***
    Use this input to connect S-Video sources

11 ***Composite Video Input***
    Use this input to connect Composite video

12 ***IR Back-Channel Port***
    Use this port to connect an IR blaster cable (Gefen Part No. EXT-2IREMIT, not included)

13 ***12V DC Power Receptacle***
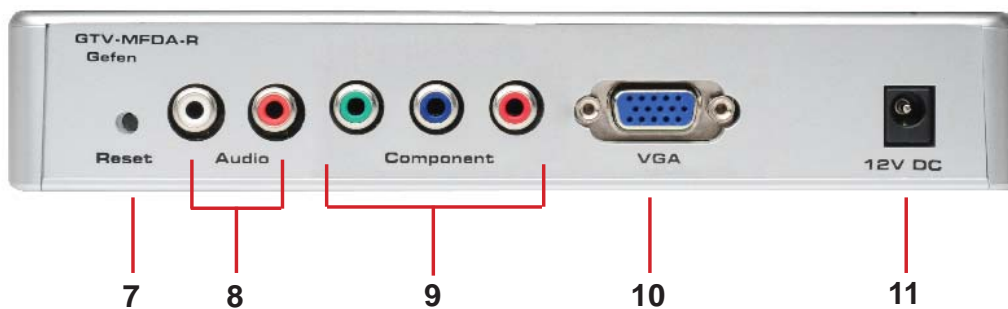   Used to connect the included 12V DC power supply

Top Panel

1   2

Front Panel

Power   IR   Network

3   4   5   6

Back Panel

GTV-MFDA-R
Gefen

Reset   Audio   Component   VGA   12V DC

7   8   9   10   11

RECEIVER PANEL DESCRIPTIONS

1   ***Output Selection Indicator***
    Indicates the current output selection: Component or VGA

2   ***Power Indicator***
    This LED will glow blue when the Receiver is powered on

3   ***Power On/Off Switch***
    Turn the power on or off using this button

4   ***Selector Button***
    Switches between Component or VGA output

5   ***IR Sensor***
    Infrared lens senses signals from remote control

6   ***Ethernet (RJ-45) Output Connectors***
    Use this input to connect Ethernet cables

7   ***Reset Button***
    Resets the receiver unit

8   ***Analog Stereo Audio Output***
    Connect a stereo RCA cable to these outputs.

9   ***Component Video Output***
    Use this input to connect component video

10   ***VGA Output Connector***
    Use this to connect analog VGA displays

11   ***12V DC Power Receptacle***
    Used to connect the included 12V DC power supply

CONNECTING AND OPERATING THE 1:8 MULTI FORMAT VIDEO DISTRIBUTION OVER ETHERNET

How to Connect the
GefenTV 1:8 Multi Format Video Distribution over Ethernet
(Direct Connection using Sender and Receiver)

1.   Connect the source(s) to the Sender unit using VGA, Component, Composite or S-Video cables. If audio is desired on the output, connect a 3.5mm mini stereo audio cable to the rear of the Sender unit. Connect the other end of the audio cable to the audio source.

2.   Connect the Receiver to the display using a VGA and/or a Component cable.

3.   Attach one end of an Ethernet cable from the Sender unit to each Receiver. The Ethernet cable(s) connecting the Sender to the Receiver should be no longer than 100 meters (330 feet) in length.

4.   Using one of the included 12V DC power supplies, connect it to the power receptacle at the rear of the Sender unit. Connect the power adapter to an available wall outlet.

5.   Connect the other 12V DC power supply to the Recevier unit then plug the adapter into an available wall outlet.

6.   Use the SELECT button on the Sender unit (page 4) to select the desired input video source. Pressing the SELECT button on the Sender will cycle through each input on the Sender. The LED next to the selected output will be displayed on the Input Selection Indicator (page 4).

7.   Use the SELECT button on the Receiver unit (page 6) to select between VGA or Component output. The LED next to the selected output will be displayed on the Output Selection Indicator (page 6).

8.   Once the correct video input and output selections are made, video will appear on the connected display. If audio is used on the Sender and Receiver, audio should be heard clearly through the display.

Note: The maximum supported input and output resolution for VGA is 1280x1024 @ 60Hz. YPbPr (Component) output supports a maximum of 720p @ 60Hz.

CONNECTING AND OPERATING THE 1:8 MULTI FORMAT
VIDEO DISTRIBUTION OVER ETHERNET

**Configuring the GefenTV 1:8 Multi Format Distribution Over Ethernet
for Video / Audio over LAN**

In addition to extending video and audio over Ethernet, the GefenTV 1:8 Multi Format Distribution Over Ethernet can be used to distribute Video and Audio over a Local Area Network (LAN).

1. Connect the source(s) to the Sender unit using VGA, Component, Composite or S-Video cables. If audio is desired on the output, connect a 3.5mm mini stereo audio cable to the rear of the Sender unit (page 4). Connect the other end of the audio cable to the audio source.

2. Connect an Ethernet cable from the Local Area Network to one of the Ethernet jacks on the front of the Sender.

3. Connect the Receiver to a display using VGA and/or Component cables.

4. Connect an Ethernet cable from the Local Area Network to one of the Ethernet jacks on the front of the Receiver.

5. Using one of the included 12V DC power supplies, connect it to the power receptacle at the rear of the Sender unit. Connect the power adapter to an available wall outlet.

6. Connect the other 12V DC power supply to the Recevier unit then plug the adapter into an available wall outlet.

7. Use the SELECT button on the Sender unit (page 4) to select the desired input video source. Pressing the SELECT button on the Sender will cycle through each input on the Sender. The LED next to the selected output will be displayed on the Input Selection Indicator (page 4).

8. Use the SELECT button on the Receiver unit (page 6) to select between VGA or Component output. The LED next to the selected output will be displayed on the Output Selection Indicator (page 6).

9. Once the correct video input and output selections are made, video should appear on the connected display. If audio is used on the Sender and Receiver, audio should be heard clearly through the display speakers.

CONNECTING AND OPERATING THE 1:8 MULTI FORMAT
VIDEO DISTRIBUTION OVER ETHERNET

Connecting additional computers using the
### GefenTV 1:8 Multi Format Video Distribution over Ethernet

In addition to distribution video and audio over LAN, computers can also be connected within the network.

1. Follow the steps on page 9 for *Configuring the GefenTV 1:8 Multi Format Distribution Over Ethernet for Video / Audio over LAN*.

2. Using an Ethernet cable, connect each computer to either the Sender or Receiver unit. The Sender functions as a switch and it is possible to connect multiple computers or Receiver units.

3. The computers connected to the Sender or Receiver should now be able to access the LAN without any additional configuration. It should be noted that connecting computers to the Sender will minimize the number or Receivers that can be used with the Sender.

NOTE: The GefenTV 1:8 Multi Format Video Distribution over Ethernet can operate independently of an Ethernet switch. However, when configuring for video / audio and computers over LAN, it is suggested that an IGMP switch be used to manage the video / audio data and computer data. This will ensure the correct data is sent to the proper port and maintain optimal bandwidth.

Wiring Diagram for connecting directly using CAT-5:
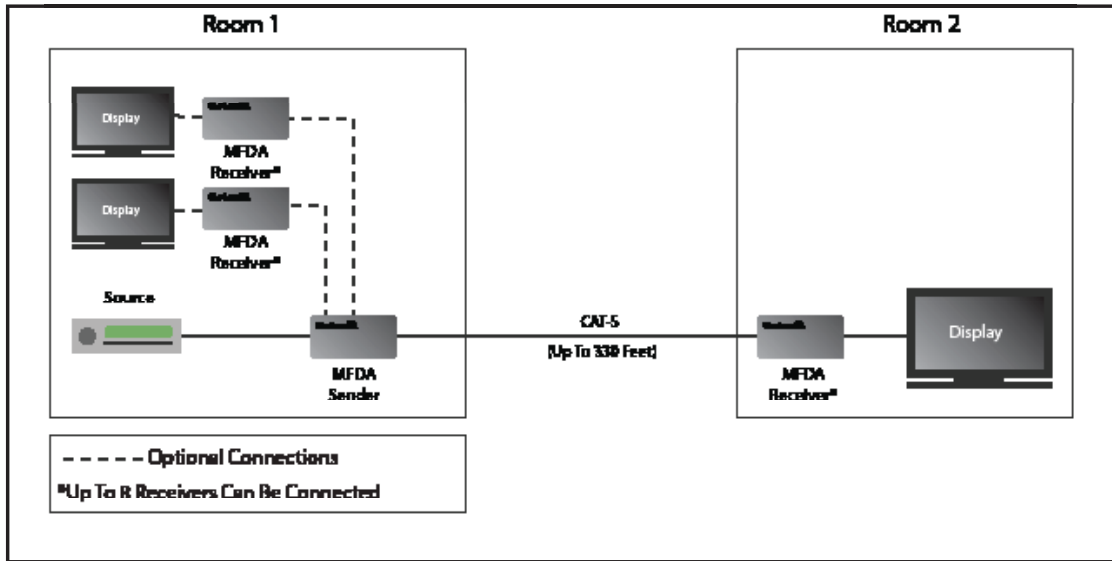
Wiring Diagram for connecting over LAN using CAT-5:
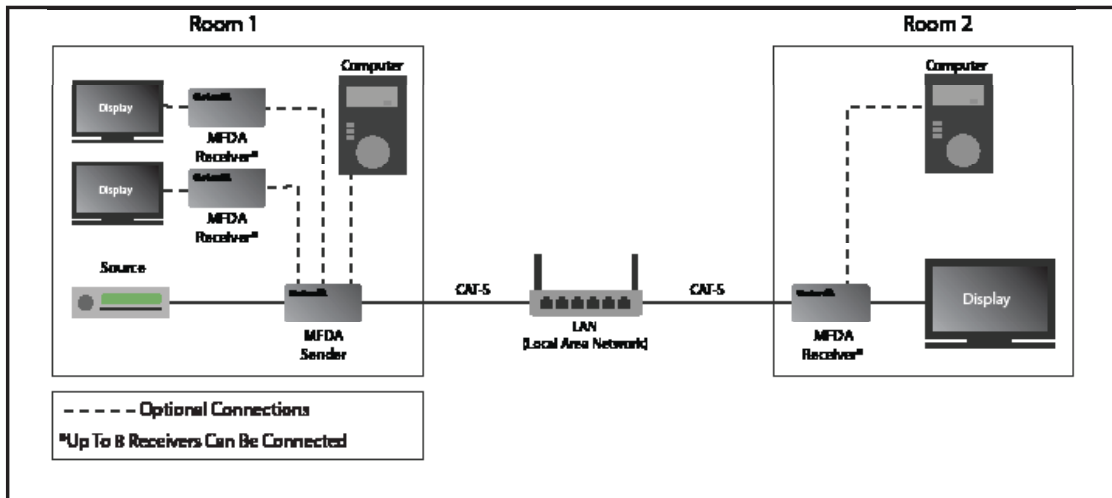
IR BACKCHANNEL CONFIGURATION

Controlling devices using the IR Backchannel

On the rear of the Sender unit is the IR backchannel port (see page 4, item 12). IR commands that are received through the IR receiver (see page 6, item 5) will be transmitted back to the source for output through the attached IR backchannel. The IR backchannel uses an infrared emitter referred to as an "IR Blaster" (Gefen Part No. EXT-2IREMIT, not included).

1. Connect the 3.5mm jack of the IR Blaster cable to the rear of the Sender unit (see page 4).

2. Place the IR emitter over the IR sensor of the source.

To control the source, direct the source remote at the Receiver unit as shown in *Fig. 1.1*. The IR commands from the source remote are transmitted over the CAT-5 and relayed to the source. In a LAN application, devices in different rooms (or floors) can be controlled as long as the Sender and Receiver are connected to the same network. The IR Backchannel can greatly increase the flexibilty when controlling the source, particularly at great distances.

Fig. 1.1: Controlling the source remotely, using an IR Blaster
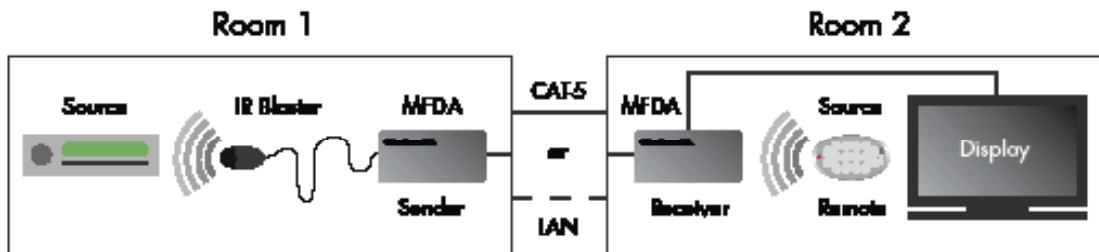
VIDEO CONVERSION TABLE

The following table lists the input and output formats for the GefenTV 1:8 Multi Format Video Distribution over Ethernet. Note that some output timings may differ from input timings. This is a limitation of the hardware. For example, a Component input of 1080p 60Hz (at the Sender) is limited to 720p 60Hz on the output (at the Receiver).

Input and Output Formats			
Input Frequency		**Output Frequency**	
		VGA	**YPbPr**
VGA	640x480 60Hz	640x480 60Hz	480p 60Hz
	800x600 60Hz	800x600 60Hz	480p 60Hz
	1024x768 60Hz	1024x768 60Hz	720p 60Hz
	1280x768 60Hz	1280x768 60Hz	720p 60Hz
	1280x1024 60Hz	1280x1024	720p 60Hz
Component	480i 60Hz	640x480 60Hz	480p 60Hz
	480p 60Hz	640x480 60Hz	480p 60Hz
	576i 50Hz	800x600 75Hz	576p 50 Hz
	576p 50Hz	800x600 75 Hz	576p 50Hz
	720p 60Hz	1280x720 60Hz	720p 60Hz
	720p 50Hz	1280x720 60Hz	720p 60Hz
	1080i 60Hz	1280x720 60Hz	720p 60Hz
	1080i 50Hz	1280x720 60Hz	720p 60Hz
	1080p 60Hz	1280x720 60Hz	720p 60Hz
	1080p 50Hz	1280x720 60Hz	720p 60Hz
S-Video	480i 60Hz	640x480 60Hz	480p 60Hz
	576i 50Hz	800x600 75Hz	576p 50Hz
Composite	480i 60Hz	640x480 60Hz	480p 60Hz
	576i 50Hz	800x600 75Hz	576p 50Hz

SPECIFICATIONS

PCM Encoding...2-channel 48KHz 16-bit sampling

Power Supply...2 x 12V @ 1A each

Audio Inputs/Outputs..3.5mm mini-stereo jacks

Video Inputs:
VGA..1280X1024@60Hz (max)
Component...1080p60Hz (max)
Composite & S-Video...480i@60Hz, 576i@50Hz (max)

Video Outputs:
VGA..1280X1024@60Hz (max)
Component...720p@60Hz (max)

Communication Protocol...Full Duplex

Ethernet Standard...IEEE 802.3

Network Bandwidth..40Mb/s ~ 100Mb/s

Operating Temperature...0-40 degrees C

Operating Humidity...90% maximum (non-condensing)

Dimensions.......................................4.5"W x 1.3"H x 7.25"D (Sender / Receiver)

WARRANTY

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.

2. Customers outside the US are responsible for shipping charges to and from Gefen.

3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.

MA-GTV-MFDA-148

This product uses UL listed power supplies.