Gefen®

4x CAT6 Extender for HDMI®

EXT-HDMI1.3-CAT6-4X

User Manual

www.gefen.com

ASKING FOR ASSISTANCE

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Rev C4

CONTENTS

Congratulations on your purchase of the 4x CAT6 Extender for HDMI. Your complete satisfaction is very important to us.

Gefen

Gefen delivers innovative, progressive computer and electronics add-on solutions that harness integration, extension, distribution and conversion technologies. Gefen's reliable, plug-and-play products supplement cross-platform computer systems, professional audio/video environments and HDTV systems of all sizes with hard-working solutions that are easy to implement and simple to operate.

The Gefen 4x CAT6 Extender for HDMI

The Gefen 4x CAT6 Extender for HDMI sends four independent HDMI 1.3 signals, with Deep Color support, over a single CAT-6a cable to distances up to 200 feet (60 meters).

The Gefen 4x CAT6 Extender for HDMI supports HDMI 1.3 features such as 1080p Full HD and multichannel audio formats including Dolby TrueHD and DTS-HD Master Audio.

The Gefen 4x CAT6 Extender for HDMI digital transmission method insures 100% signal integrity over this single cable extension solution.

With IR Back Channel and RS-232 support, control of the 4x4 Matrix and Hi-Def sources, at any of the 4 individual zones, is at your fingertips. Each Receiver unit allows control for Matrix switching and sending IR commands back to the source located up to 200 feet (60 meters) away. The 4x CAT6 Extender for HDMI adds IP Control to the connected Gefen 4x4 Matrix for convenient access to switching and routing of the connected sources using a web browser.

How It Works

The Gefen 4x CAT6 Extender for HDMI can be connected in two ways :

1) Matrix Mode: As a Control and Extender system for any Gefen 4x4 Matrix unit. Extend up to 4 of the Gefen 4x4 Matrix outputs up to 200 feet (60 meters) away with IR, RS-232, or IP Control at any of the remote locations. Also supports the IR Back Channel for remote control of the extended Hi-Def sources.

2) Stand-alone Mode: As a stand-alone Extender system. Connect up to 4 Hi-Def sources to any of the available inputs. Simply extend the connected Hi-Def sources up to 200 feet (60 meters) with IR Back Channel.

READ THESE NOTES BEFORE INSTALLING OR
OPERATING THE 4X CAT6 EXTENDER FOR HDMI

• CAT-6a cables can be used up to 200 feet (60 meters).

• Shielded (STP) CAT-6a is recommended. However, unshielded (UTP) CAT-6a is acceptable.

   NOTE: Shielded cable has an advantage by providing immunity to Electromagnetic Interference (EMI), cell phones and A/C motors.

Supported HDMI 1.3 Features

- 225 MHz (up to 12 bit YUV 444 @ 1080p)
- Deep Color
- Dolby TrueHD and DTS-HD Master Audio
- Lip-Sync
- CEC Pass-Through

Features

- Extends HDMI 1.3 at 1080p up to 200 feet (60 m)

- Extends DVI at 1920x1200 up to 200 feet (60 m) when using a passive HDMI-to-DVI adapter.

- 3DTV Pass-Through

- Color Space Conversion

- IR Remote Control

- Built-in IR Extender and IR Back Channel

- RS-232 serial control

- IP Control (Sender unit feature)

- Audio and video are transmitted digitally for zero signal loss

- Supports multichannel digital audio formats including Dolby TrueHD and DTS-HD Master Audio

- Metal enclosure provides better RF shielding

- Compensation for cable skew

- Maintains settings on Power-On state

Package Includes

(1) 4x CAT6 Extender Sender Unit
(4) 4x CAT6 Extender Receiver Units
(4) 1 ft. HDMI Cables (M-M)
(1) RS-232 Serial Cable (M-F)
(1) 24V DC Power Supply
(4) 5V DC Locking Power Supplies
(1) Set of Rack Ears (Sender Unit Only)
(1) User Manual

Front Panel

1 2 3

Back Panel

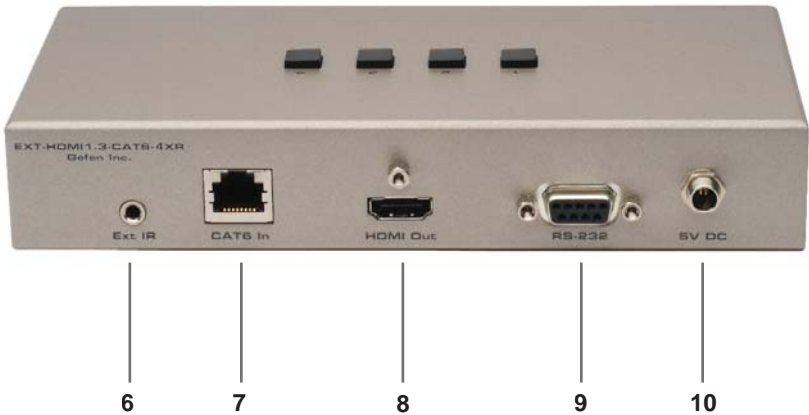4   5   6 7 8   9   10

1 **Standby Button**
Sets the 4x CAT6 Extender for HDMI into Standby Mode.

2 **IR Sensor**
Receives signals from the IR Remote Control.

3 **Power Indicator**
This LED will turn bright red once the locking power supply has been properly connected.

4 **IR Blaster (4)**
Used to connect the IR Blaster to the Source device.

5 **CAT6 Output Jack (4)**
Connects the Sender unit to the Receiver unit using CAT-6.

6 **RS-232 Serial Port (Input)**
The 4x4 Matrix may be switched remotely using serial communications with any office computer or a control automation device by connecting to this port. Please see page 20 for details.

7 **Locking HDMI Port (4)**
Connect a HI-Def source to this HDMI port.

8 **IP Control**
Connect to this port to control the 4x CAT6 Extender for HDMI using IP Control. See page 25 for more information.

9 **RS-232 Serial Port (Output)**
Connects to the RS-232 control device. The 4x4 may be switched remotely using this port. See page 20 for details.

10 **24V DC Power Connector**
Connects the included 24V DC power supply to this receptacle.

Front Panel

1

Gefen

4x CAT6 Extender for HDMI

| IR | EQ | In 1 | In 2 | In 3 | In 4 | Power |

2 **3** **4** **5**

Back Panel

EXT-HDMI1.3-CAT6-4XR
Gefen Inc.

| Ext IR | CAT6 In | HDMI Out | RS-232 | 5V DC |

6 **7** **8** **9** **10**

1   ***Control Buttons***
When connected to any 4x4 Matrix for HDMI, these remote buttons on the
Receiver unit can switch between the 4 Hi-Def inputs connected to the 4x4
Matrix for HDMI.

2   ***IR Sensor***
Control the Receiver unit by pointing the IR Remote Control to the IR Sensor.

3   ***EQ Trimpot***
Used to equalize the signal to compensate for distance and skew variations
found in various brands of CAT-6 cable.

4   ***Input Indicators (HDMI In 1 - HDMI In 4)***
An LED will Displays the current input of the 4x4 Matrix.

5   ***Power Indicator***
This LED will turn bright red once the power supply has been properly
connected.

6   ***IR Extender Port***
Used to extend the IR Sensor range of the Receiver unit.

7   ***CAT6 In Connector***
Connect the CAT-6 cable from the Sender unit to the RJ-45 connector.

8   ***HDMI Out***
Connect the HDMI cable from the HDTV display to the HDMI Out.

9   ***RS-232 Input***
Connects a controlling device to this port.

10 ***5V DC Locking Power Connector***
Connects the included 5V DC Locking Power Supply to this receptacle.

RMT-4-IR Remote (Optional)

1   *Activity Indicator*
This LED will be activated momentarily each time a button is pressed.

2   *Input Source Selection Buttons (1 - 4)*
These buttons are used to select which input source is routed to the
HDTV display.

Installing the RMT-4-IR Battery

To use the RMT-4-IR Remote, remove the battery cover on the back of the remote to reveal the battery compartment. Insert the included battery into the open battery slot. The positive (+) side should be facing up. Ensure that both DIP switches are set to the OFF position. Replace the battery cover and the IR Remote is ready for action.

The IR Remote ships with 2 batteries. One battery is required for operation and the other battery is a spare.

Battery Slot

I/R Code DIP Switches
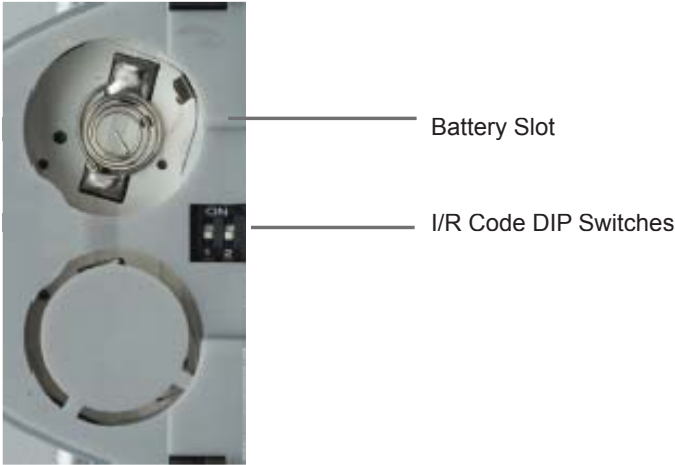
RMT-4-IR REMOTE CONFIGURATION

Setting the IR Remote Channel on the RMT-4-IR

In the event that IR commands from other remote controls conflict with the supplied RMT-4-IR Remote, changing the remote IR channel will fix this issue. The RMT-4-IR Remote has a bank of DIP switches for setting the Remote IR channel.

The DIP Switch bank on the RMT-4-IR is located underneath the battery cover.

Remote Channel 1: Default
1 2

Remote Channel 2:
1 2

Remote Channel 3:
1 2
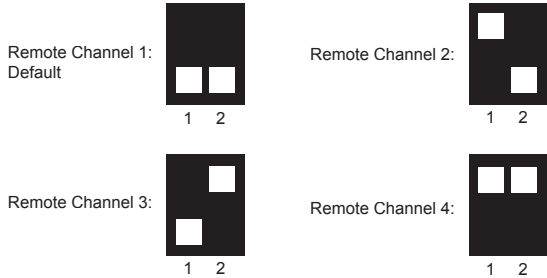
Remote Channel 4:
1 2

Left: Picture of the opened rear battery compartment of the RMT-4-IR remote showing the exposed DIP Switch bank between the battery chambers.

The IR channel selected on the RMT-4-IR Remote must match the IR channel assigned to the 4x CAT6 Extender for HDMI. For example, if you set both DIP switches on the remote to the down position (IR channel 1), you must set the 4x CAT6 Extender for HDMI to use IR channel 1.

Please refer to page 19 on how to change the IR channel on the 4x CAT6 Extender for HDMI.

How to Connect the 4x CAT6 Extender for HDMI
(Matrix Mode)

1. Using any 4x4 Matrix for HDMI as a source, connect an HDMI cable from HDMI Out 1 on the 4x4 Matrix to HDMI In 1 on the 4x CAT6 Extender for HDMI Sender unit. To ensure correct operation of the 4x CAT6 Extender with the 4x4 Matrix, make sure all connections are made: Connect HDMI Out 2 on the 4x4 Matrix to HDMI In 2 on the Extender, and so on.

2. Connect the HDMI Out on the 4x CAT6 Extender Receiver unit to the display with a user-supplied HDMI cable.

3. Using one CAT-6 cable, connect CAT6 Out 1 on the Sender unit to CAT6 In on the Receiver unit.

4. Connect additional Receiver units as described above.

5. Connect the 5V DC locking power supplies to each Receiver unit. Do not overtighten the locking connectors. Plug the power cord into an available wall outlet.

6. Connect the 24V DC power supply to the 4x CAT6 Extender Sender unit and plug the power cord into an available wall outlet.
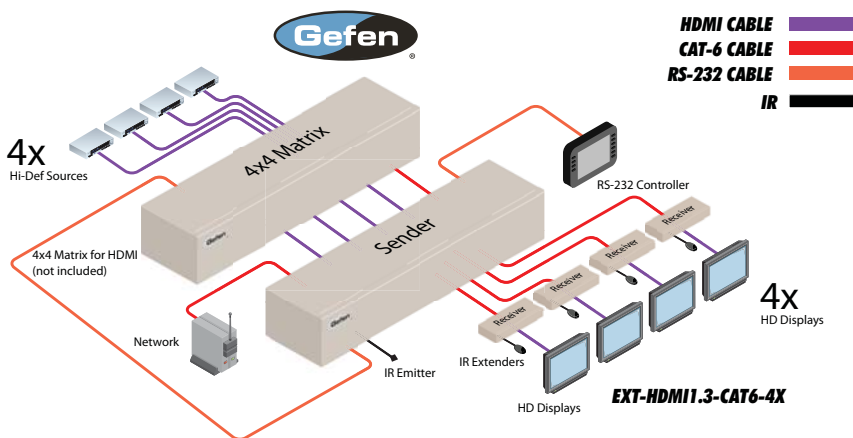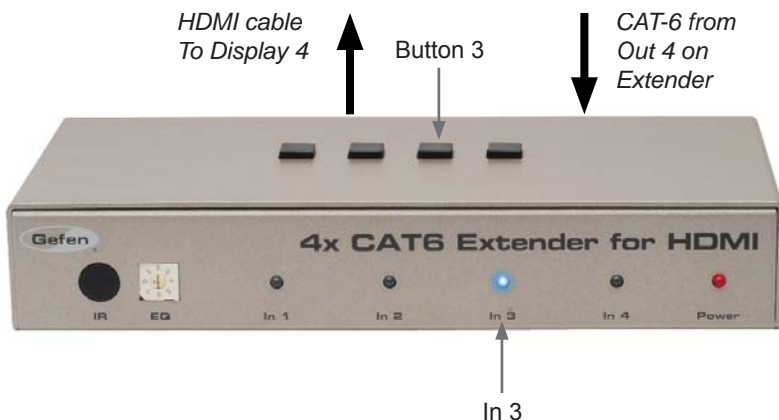
How to Operate the 4x CAT6 Extender for HDMI
(using an 4x4 Matrix)

The front panel of each Receiver unit for the 4x CAT6 Extender for HDMI contains a set of LED indicators which corresponds to an input (source) on the 4x4 Matrix device. A blue LED indicates which input has been routed from the 4x4 Matrix. On the top of each Receiver unit there are a set of 4 push-buttons which are used to control the switching of the 4x4 Matrix.

Example 1: Routing Input (source) 3 to Output (display) 4.

1. Connect an HDMI cable from HDMI Out 4 on the 4x4 Matrix to HDMI In 4 on the 4x CAT6 Extender for HDMI Sender unit.

2. Connect an 4x CAT6 Extender Receiver unit to Display 4.

3. Press button 3 on the top of the Receiver unit. Button 3 is shown below. The In 3 LED will turn bright blue, indicating that Input 3 on the 4x4 Matrix has been routed to Display 4 (Zone 4).

HDMI cable To Display 4   Button 3   *CAT-6 from Out 4 on Extender*

In 3

Example: HDMI input 3 is routed to HDMI Out 4 (a picture of the 4x4 Matrix display panel is shown below). The image shown on Display 4 will be the HDMI source (3) connected to the 4x4 Matrix.

Input 3

How to Connect the 4x CAT6 Extender for HDMI with RS-232 control to the 4x4 Matrix for HDMI and to the controlled device

1. Follow steps 1 - 6 on How to Connect the 4x CAT6 Extender for HDMI (see page 11).

2. Connect an RS-232 cable from the RS-232 serial port on the controlling device to the RS-232 In port on the rear of the 4x CAT6 Extender for HDMI Sender unit.

3. Connect another RS-232 serial cable from the RS-232 Out port on the rear of the 4x CAT Extender Sender unit to the RS-232 port on the rear of the 4x4 Matrix.

    NOTE: Please refer to page 20 for details on configuring RS-232 control.

Example 1: Routing Input (source) 3 to Output (display) 1 using the 4x4 Matrix.

Make sure a Receiver unit is connected to CAT6 Out 1 on the Sender unit. Use the controlling device to send the following command:

```
r 1 3
```

The LED for In 3 will turn bright blue and the source from the 4x4 Matrix (In 3) will be displayed on the HDTV display connected to this Receiver unit. See page 22 for details on routing using RS-232.

How to Connect the 4x CAT6 Extender for HDMI
(Stand-alone Mode)

The 4x CAT6 Extender for HDMI is dependent upon an external 4x4 Matrix to manage all the zone switching. When used as a stand-alone, without the 4x4 Matrix attached, the product functions as a one-to-one extender for each HDMI unit. Four parallel extenders are used.

1. Connect an HDMI cable from the source device to HDMI In 1 on the back of the Sender unit.

2. Connect the Display to the 4x CAT6 Extender Receiver unit with a user-supplied HDMI cable.

3. Using a single CAT-6 cable, connect CAT6 Out 1 on the Sender unit to the CAT6 In on the Receiver unit.

4. If additional Receiver units will be used, complete these connections at this time, as described above.

5. Connect the 5V DC locking power supplies to each Receiver unit. Do not overtighten the locking connectors. Plug the power cord into an available wall outlet.

6. Connect the 24V DC power supply to the 4x CAT6 Extender for HDMI and plug the power cord into an available wall outlet.

CONNECTING AND OPERATING THE
4X CAT6 EXTENDER FOR HDMI

Routing Sources using the Optional RMT-4-IR Remote Unit
(Matrix Mode)

There are a total of 4 buttons on the RMT-4-IR remote, which represent each of the 4 buttons on the Receiver unit.

Example 1: *Route the source connected to HDMI In 3 (from the 4x4 Matrix) on the Sender unit to the display connected to HDMI Out 2.*

Point the Remote at the Receiver unit connected to Display 2, then press button 3 on the RMT-4-IR.

Table of IR Remote Commands
for the Optional RMT-4-IR Remote Unit

RMT-4-IR Button	Source
1	1
2	2
3	3
4	4

The RMT-4-IR remote control unit will allow the selection of any input (source) on the 4x4 Matrix unit can be will be routed to any of four Receiver units. Use the information in the table above when routing the desired input to a display.

How to Operate the 4x CAT6 Extender for HDMI
(Stand-alone Mode)

When the 4x CAT6 Extender for HDMI is used without an 4x4 Matrix, it can only be used as an HDMI extender.

The LED on the front panel will show which HDMI is active on the Sender unit.

Example: Connect a CAT-6 cable to CAT6 Out 2 and CAT6 In, between the Sender unit and Receiver unit.

HDMI cable
To Display

CAT6 Out 2
from Extender

In 2

How to Equalize the 4x CAT6 Extender for HDMI
(Matrix Mode / Stand-alone Mode)

The 4x CAT6 Extender for HDMI Receiver unit has an equalization trimpot to compensate for variances that can be found in different CAT-6a cable brands. If there is no output video or if output video contains artifacts and/or video noise, use the steps below to adjust the EQ trimpot.

EQ trimpot

1. Insert a small flat-head screwdriver into the trimpot on the front panel of the Receiver unit.

2. The EQ trimpot can be set to one of eight different positions. Turn the trimpot clockwise until it clicks into the next position. Continue adjusting the trimpot until the signal shows best results.

DIP SWITCH CONFIGURATION

DIP Switch Location
(Matrix Mode / Stand-alone Mode)

On the bottom of each Receiver unit, there are four (4) DIP switches. Each DIP switch performs a different function.

Before modifying DIP switch settings, disconnect the power from the Receiver unit. After the DIP switches have been configured, reconnect the power.

Receiver Unit (bottom)

DIP Switch Bank

ON
OFF
1 2 3 4
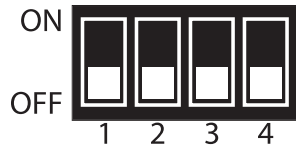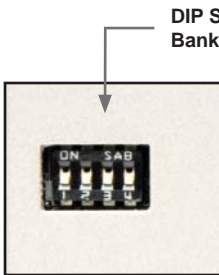
NOTE: By default, all DIP switches are set to the OFF position.

Default settings for DIP switches

DIP Switch	Position
1	OFF
2	OFF
3	OFF
4	OFF

DIP Switches
(Matrix Mode / Stand-alone Mode)

DIP 1 - EDID Management

• *OFF - Local EDID*

When Local EDID mode is used, the EDID will be assembled by copying all video and audio features of the connected device. Deep Color support will be manually controlled: If Deep Color is supported by the display(s), DIP 2 should be set to the ON position (see DIP 2 - Deep Color, below). By default, the unit is shipped with DIP 1 in the OFF position.

• *ON - Pass-through EDID*

Allows all video and audio features of the connected devices to be passed to the source device without control over Deep Color.

DIP 2 - Deep Color

• *OFF - Disables Deep Color support*

Disables Deep Color in the EDID. Deep Color management is only available when Local EDID is being used (DIP 1 = OFF).

• *ON - Enables Deep Color support*

Enables Deep Color support. In Pass-through EDID Mode, setting DIP 2 = ON has no effect since all EDID information is passed through.

DIP 3 / DIP 4 - IR Remote Channel

The IR channel assigned to the IR Remote Control must match the IR channel assigned to the 4x CAT6 Extender for HDMI Receiver unit. The factory setting (default) for DIP 3 and DIP 4 are in the OFF position.

DIP 3	DIP 4	IR Channel
OFF	OFF	1
ON	OFF	2
OFF	ON	3
ON	ON	4

RS-232 SERIAL CONTROL INTERFACE

Only Pins 2 (RX), 3 (TX), and 5 (Ground) are used on the RS-232 serial interface

Binary Table

ASCII	Corresponding RMT-4-IR Button	Binary
1	1	0011 0001
2	2	0011 0010
3	3	0011 0011
4	4	0011 0100

RS-232 Settings

Bits per second 19200

Data bits 8

Parity .... None

Stop bits 1

Flow Control .... None

Routing Sources using RS-232 Receiver Unit
(Matrix Mode)

1. Prepare the Receiver unit by connecting an RS-232 cable from the computer or other controlling device to the RS-232 serial port on the back of the Receiver unit (see page 6 - 7).

2. Configure the controller using the RS-232 settings on page 20.

RS-232 cable (from control device)

HDMI cable (to Display 4)

CAT-6 cable (from Output 4 on Sender unit)

Gefen

4x CAT6 Extender for HDMI

IR   EQ   In 1   In 2   In 3   In 4   Power

In 3
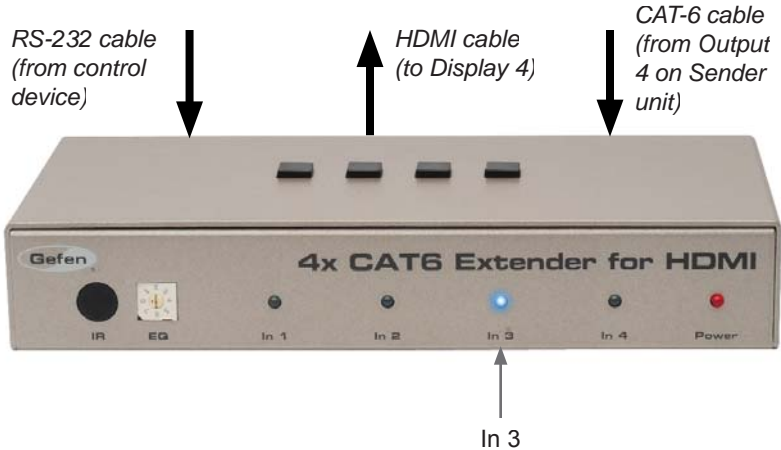
Example 1: *Route input 3 on the 4x4 Matrix to Output 4 on the 4x CAT6 Extender for HDMI.*

Use the RS-232 controller to send the following command:

```
r3
```

The LED for In 3 will turn bright blue and the source from Input 4 on the 4x4 Matrix will be displayed. See page 22 for details on routing using RS-232.

Functions Syntax

The syntax for each function is always the same:

#Character as the start flag → Function name → Space (_) as function name end flag → Parameter 1 → Space → Parameter n → Carriage Return (\r) →

Sample:

#FunctionName_param1_param2_param3_param4...\r

Syntax is NOT case sensitive.

Commands

Simplified syntax was used for command implementation for faster operation with the device. The commands are not case-sensitive.

Command	Description
R	Routing command
M	Routes a single input to all outputs
F	+5V for Fiber Optic Extender Status

R Command

The R command allows specific routing of inputs and outputs when controlling the 4x CAT6 for HDMI Sender unit.

Syntax:

```
r param1 param2
```

Parameters:

param1	HDMI Ouput	[1 - 4]
param2	HDMI Input	[1 - 4]

Notes:

When controlling the Receiver unit using RS-232, use the following syntax:
`r param`, where *param1* is the selected input.

Example: r2 routes Input 2 on the 4x4 Matrix to the selected Receiver unit.

M Command

The M command displays the current routing status of the matrix.

Syntax:

```
m
```

Parameters:

None

Fiber Optic Extender Status F0 Command

The F0 command returns the state of pin 18 on the HDMI inputs.

Syntax:

```
f
```

Parameters:
None

Notes:

"High" is returned if +5V is present on HDMI input. "Low" is returned if +0V is present on HDMI input. Setting *param1* to a value of 0 will return the state of pin 18 on all HDMI inputs.

Using parameters with the **F Command**

Permits disabling / enabling of +5V for Fiber Optic Extenders.

Syntax:

```
f param1 param2
```

Parameters:

param1	HDMI input	[1 - 4]
param2	State	[0 - 1]

Value	Meaning
0	Disable
1	Enable

General Functions

Simplified syntax was used for command implementation for faster operation with the device: # character – isn't needed, the command name is reduced to 1 letter. The commands are not case-sensitive.

Function	Description
#RMTIRADD	Routing command
#LOCKPOWER	Routes a single input to all outputs

#RMTIRADD Function

The #RMTIRADD function set the remote IR channel.

Syntax:

```
#RMTIRADD param1
```

Parameters:

param1   IR channel   [0 - 3]

Value	Meaning
0	IR channel 1
1	IR channel 2
2	IR channel 3
3	IR channel 4

#LOCKPOWER Function

The #LOCKPOWER enables/disables the power lock state. Enabling this feature will store the 5V status for each input prior to shutting the unit down.

Syntax:

```
#LOCKPOWER param1
```

Parameters:

param1   State   [0 - 1]

Value	Meaning
0	Disable Power Lock
1	Enable Power Lock

The Gefen 4x CAT6 Extender for HDMI supports IP-based control using an integrated Web interface. To access this feature, an IP address, subnet, gateway, and port number need to be set on the 4x CAT6 Extender for HDMI (**Default IP: 192.168.0.70 Subnet: 255.255.255.0 Gateway: 192.168.0.1 Port: 80**). Consult the network administrator to obtain the proper IP address and settings for this product to properly communicate on the network.

The IP control setting can be configured via the RS-232 control interface. Once this has been accomplished, access to the Web Interface is possible.

Simply type the IP address that was assigned to the product in a web browser to access the Web Interface. It should look like the image below.

VIEW MATRIX STATUS

The **VIEW MATRIX STATUS** page will display the current status and can also be used to create routes.

To create a new route, follow the steps below:

1.   Select which outputs will display the source by clicking on each check box.

2.   Select the radio button of the input that will be routed to each output.

3.   Click the **Switch** button to update the new routing configuration.

This page will automatically refresh every minute. However, at anytime the **Refresh** button can be pressed to refresh the status of the Matrix.

IP CONFIGURATION

The **IP CONFIGURATION** page is used to set the IP settings that will be used to access the Web interface. The following items can be configured from this menu.

- IP Address (Default: 192.168.0.70)

- Subnet (Default: 255.255.255.0)

- Gateway (192.168.0.1)

- Port (Default: 80)

To change these settings follow the steps below.

1. Enter the desired network information into the fields provided.

2. Press the "Save" button to initiate the change(s).

Note: After this command is complete the **VIEW MATRIX STATUS** page will be displayed. Settings made on this page will not take effect until the unit is restarted: Disconnect power from the unit and reconnect power for changes to take effect.

At anytime, the **Reset** button can be pressed to return the IP settings to their defaults.

BACKUP / RESTORE

The **Backup/Restore** page is used to backup and restore complete setup configurations.

Note: This feature will be implemented in a future release.

POWER MANAGEMENT

The **POWER MANAGEMENT** page is used to set optional +5V power on an input to power specific optional devices. The current status of this feature for each input can be viewed on this page. To set this feature for each input follow the steps below.

1.   Select the +5V option, either "On" or "Off" for each desired input.

2.   Click on the "Update" button to initiate the change(s).

Note: After this command is complete the **VIEW MATRIX STATUS** page will be displayed.

This page will automatically refresh every minute, however, at anytime the **Refresh** button can be pressed to refresh the status of the matrix.

NETWORK CABLE WIRING DIAGRAM
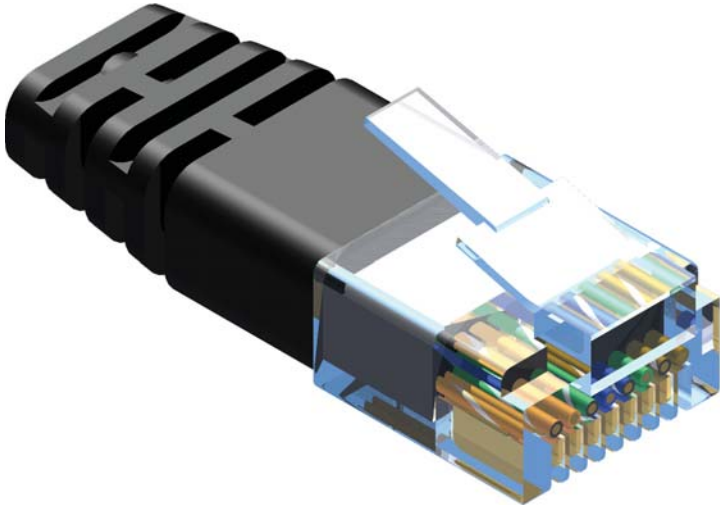
Gefen recommends the TIA/EIA-568-B wiring option. Please adhere to the table below when field-terminating the CAT-6 cable for use with Gefen products.

Pin	Color
1	Orange / White
2	Orange
3	Green / White
4	Blue
5	Blue / White
6	Green
7	Brown / White
8	Brown
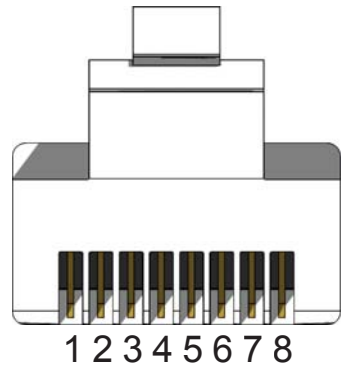
CAT-6 cabling comes in stranded and solid core types. Gefen recommends using solid core cabling.

It is recommended to use one continuous run from one end to the other. Connecting through a patch is not recommended.

Firmware Update Procedure

To begin the update procedure, the unit's Boot Loader must be activated. To activate the Boot Loader, follow the procedure outlined below:

1. Connect an RS-232 cable from the computer to the RS-232 port on the 4x CAT6 Extender for HDMI.

2. Run the terminal emulation program (e.g. Windows® Hyperterminal) and make sure the terminal settings are as follows:

    a. Baud rate = 19200
    b. Stop bits = 1
    c. Data bits = 8
    d. Flow control = None

3. Power the Sender unit.

4. Type the command: #ACTIVEBOLO\r

5. Re-type the command: #ACTIVEBOLO\r

6. Once the Boot Loader is activated, a message similar to the following should appear in the terminal program:

```
4x HDMI CAT-6 Extender Boot Loading

================= Main Menu ===========================
Download new program -------- 1
Cancel --------------------- 2

======================================================
```

Press [1] on the computer keyboard to begin downloading the program to temporary memory.

```
    Waiting for the file to be sent ... (press 'a' to abort)
```

8. Under Transfer, select "Send" and upload the firmware file (e.g. CHDMIDCAT6x4_e_x_x.bin).

9. Repeat steps 4 - 7.

10. Under Transfer, select "Send" and upload the firmware file (e.g. SHDMIDCAT6x4_e_x_x.bin).

11. Connect the RS-232 cable to the Receiver unit.

12. Repeat steps 4 - 7 and upload RHDMIDCAT6x4_e_x_x.bin.

13. Repeat step 11 - 13 for each Receiver unit.

SPECIFICATIONS

Video Amplifier Bandwidth .... 225 MHz

Input Video Signal...1.2 V p-p

Input DDC Signal...5V p-p (TTL)

Maximum Video Resolution..1080p / 1920 x 1200

HDMI Connector...Type A 19-pin

Link Connector..RJ-45 Shielded

Power Indicator (Sender / Receiver)...LED (red)

Source Indicators (Receiver)..LED (blue)

RS-232 Interface (Sender)..............................1x DB9 serial (F), 1x DB9 serial (M)

RS-232 Interface (Receiver)..1x DB9 serial (M)

Power Supply..24V DC (Sender), 5V DC (Receiver)

Power Consumption (Sender)..60 W (max.)

Power Consumption (Receiver)..10 W (max.)

Operating Temperature ....0 - 40 °C

Sender Dimensions.......................................17.0" W x 1.75" H x 4.5" D

Receiver Dimensions.......................................7.5" W x 1.3" H x 3.5" D

Shipping Weight...11.8 lbs

Certifications..UL (power supply), RoHS, CE

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.

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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.

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MA-HDMI1.3-CAT6-4X

This product uses UL or CE listed power supplies.