geratech®

EGE-UHD-HDB-2527RX

4K UHD HDMI over HDBaseT Receiver

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. Geratech assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.
Geratech assumes no responsibility for any inaccuracies that may be contained in this document. Geratech also makes no commitment to update or to keep current the information contained in this document.
Geratech reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.
Please keep the following in mind as you unpack and install this equipment:
• Always follow basic safety precautions to reduce the risk of re, electrical shock and injury to persons.
• To prevent re or shock hazard, do not expose the unit to rain, moisture or install this product near water.
• Never spill liquid of any kind on or into this product.
• Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
• Do not attach the power supply cabling to building surfaces.
• Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
• Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
• To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for suf cient space for air to circulate around the unit.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
VS1	19/01/18	Final technical review
VS2	22/01/18	Additional RS-232 commands

CONTENTS

1. INTRODUCTION

This receiver is a great solution for extending uncompressed HD audio and video as well as Ethernet and control via a single run of Cat.5e/6/7 cable over distances of up to 100 meters. Multiple data and control interfaces are provided, including Ethernet, IR and RS-232 connections. This Receiver complies with the advanced HDCP 2.2 and HDMI 2.0 standards, as well as supporting the legacy HDCP 1.x and HDMI 1.x standards. This Receiver (PSE) can provide 48V PoH (Power over HDBaseT) to compatible Transmitters allowing for greater exibility within different installation scenarios.

2. APPLICATIONS

- Household entertainment sharing and control
- Lecture room display and control
- Showroom display and control
- Meeting room presentation and control
- Classroom display and control

3. PACKAGE CONTENTS

- 1×HDMI/VGA over HDBaseT Transmitter (with LAN support) • 1×HDMI over HDBaseT Receiver (with LAN support)
- 1×48V/0.83A DC Power Adaptor
- 1×Power Cord
- 1×Operation Manual

4. SYSTEM REQUIREMENTS

- HDMI source equipment such as a media player, video game console or set-top box.
- HDMI receiving equipment such as an HDTV, monitor or audio ampli er.
- The use of industry standard Cat.6, Cat.6a or Cat.7 cable is highly recommended.
- The use of “Premium High Speed HDMI” cables is highly recommended.

5. FEATURES

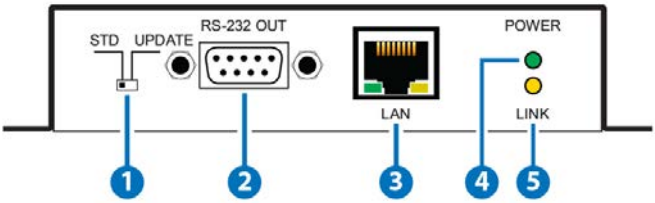
- HDMI 2.0 and DVI 1.0 compatible
- HDCP 2.2 and HDCP 1.x compliant
- Supports resolutions up to 4K@50/60Hz (YUV 4:2:0, 8-bit)
- Supports CEC bypass
- Simultaneous reception of uncompressed video, audio and data over a single 100m Cat.5e/6/7 cable at 1080p and 70m at 4K
- HDBaseT feature support: HD Video and Audio, 48V PoH, and Control (Ethernet, IR and RS-232 bypass)
- Supports standard 48V PoH from Receiver (PSE) to Transmitter (PD) (compatible Transmitters only**)**

Notes:

- *The 48V PoH function is designed to power compatible Transmitter units only. Non-PoH Transmitters will need their own power supply. Other Transmitter brands may not be compatible.*
- *The use of "Premium High Speed HDMI" cables is highly recommended for displaying 3D and 4K content. Compatible display equipment is also required.*

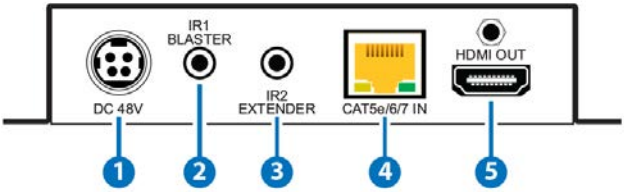
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



1. **STD/UPDATE:** This switch is reserved for factory use only.
2. **RS-232 OUT:** Connect to a PC, laptop or other serial control device to send control commands to a compatible Transmitter.
3. **LAN:** Connect to an Ethernet device or to your local network as appropriate.
4. **POWER LED:** This LED will illuminate to indicate the unit is on and receiving power.
5. **LINK LED: This LED** will illuminate solid when both Transmitter and Receiver are connected and communicating with each other properly.

6.2 Rear Panel



1. **DC 48V:** Plug the 48V DC power adapter into this port and connect it to an AC wall outlet for power.
2. **IR1 BLASTER:** Connect to the supplied IR Blaster cable for IR signal transmission. Place the IR Blaster in direct line-of-sight of the equipment to be controlled. (Requires compatible Transmitter.)
3. **IR2 EXTENDER:** Connect to the supplied IR Extender cable for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR Extender. (Requires compatible Transmitter.)
4. **CAT5e/6/7 IN:** Connect to a compatible HDBaseT Transmitter with a single Cat.5e/6/7 cable for transmission of all data signals.
5. **HDMI OUT:** Connect to an HDMI TV, monitor or ampli er for digital video and audio output.

6.3 RS-232 Protocol

RX	
Pin	**Pinout**
1	
2	RxD
3	TxD
4	
5	GND
6	
7	
8	
9	

6.4 RS-232 Commands

COMMAND	DESCRIPTION AND PARAMETERS
SET OUT A ROUTE N1	Select the input source. Available values for N1: 1 [HDMI] 2 [VGA]
GET OUT A ROUTE	Show the current input source.
SET OUT AUTO MODE N1	Set the auto source select mode. Available values for N1: 0 [OFF] 1 [Auto Switch]
GET OUT AUTO MODE	Show the current auto source select mode.
GET OUT AUTO MODE LIST	List all available auto source modes.
GET IN N1 TIMING	Show the video timing of the source connected to input N1. Available values for N1: 1 [HDMI] 2 [VGA]
GET IN TYPE LIST	List all available input types.

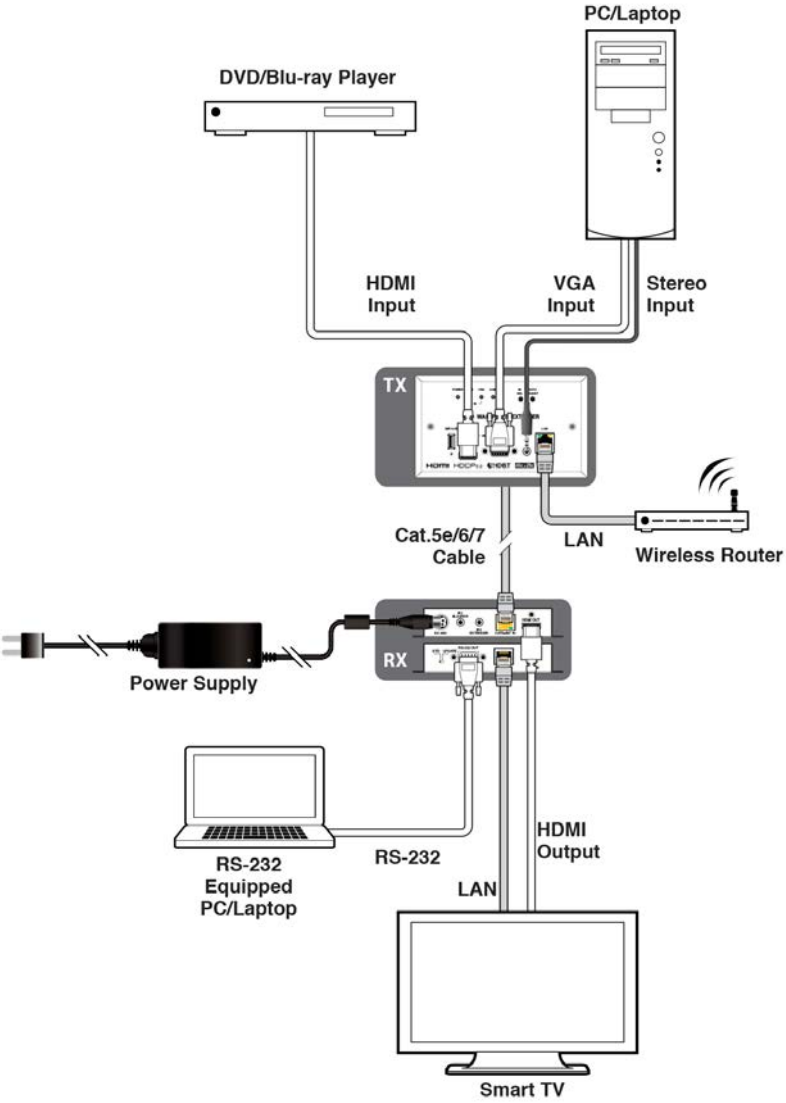
COMMAND	DESCRIPTION AND PARAMETERS
SET FIX TIMING MODE N1	Set the scaler's output mode. Available values for N1: 0 [Bypass] 1 [Auto] 2 [480P@60Hz] 3 [720P@50Hz] 4 [720P@60Hz] 5 [1080P@50Hz] 6 [1080P@60Hz] 7 [4K@24Hz] 8 [4K@25Hz] 9 [4K@30Hz]
GET FIX TIMING MODE	Show the scaler's current output mode.

SET FIX COLOR SPACE N1	Set the output color space. Available values for N1: 0 [RGB] 1 [YUV 4:4:4]
GET FIX COLOR SPACE	Show the current output color space.
GET OUT A TIMING	Show the video timing of the output.
SET AUDIO OUT A ROUTE N1	Select the audio source. Available values for N1: 1 [HDMI Audio] 2 [Analog Audio]
GET AUDIO OUT A ROUTE	Show the currently selected audio source.

COMMAND	DESCRIPTION AND PARAMETERS
GET AUDIO IN TYPE LIST	List all available audio sources.
SET IN 1 HDCP MODE N1	Set the HDCP mode for the HDMI input. Available values for N1: 0 [Disable HDCP] 1 [Follow Source] 2 [Follow Display]
GET IN 1 HDCP MODE	Show the current HDCP mode for the HDMI input.
SET IN 1 EDID N1	Set the EDID to use with the HDMI input. Available values for N1: 1 [1080P, 2CH] 2 [4K (3G), 2CH] 3 [4K (6G), 2CH] 4 [Output's EDID]
GET IN 1 EDID	Show the currently selected EDID source for the HDMI inpu
GET IN EDID LIST	List all available EDID sources.

Note: Commands will not be executed unless followed by a carriage return. Commands are not case-sensitive.

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Technical Specifications

HDMI Bandwidth	600MHz/18Gbps
HDBaseT Bandwidth	340Hz/10.2Gbps
Input Port	1×Cat.5e/6/7
Output Port	1×HDMI
Pass-through Ports	1×IR Extender [3.5mm] 1×IR Blaster [3.5mm] 1×RS-232 [9-pin D-sub] 1×LAN [RJ-45]
IR Frequency	30 - 50kHz (30 - 60kHz under ideal conditions)
Baud Rate	Up to 115200bps
Power Supply	48V/0.83A DC (US/EU standards, CE/ FCC/UL certi ed)
ESD Protection	Human Body Model: ±8kV (Air Discharge) ±4kV (Contact Discharge)
Dimensions	128mm×25mm×108mm (W×H×D) [Case Only] 128mm×25mm×117m (W×H×D) [All Inclusive]
Weight	366g
Chassis Material	Metal
Silkscreen Color	Black
Operating Temperature	0˚C – 40˚C/32˚F – 104˚F
Storage Temperature	-20˚C – 60˚C/-4˚F – 140˚F
Relative Humidity	20 – 90% RH (Non-condensing)
Power Consumption	8.74W

8.2 Video Specifications

Supported PC Resolutions (Hz)		Input		Output
		HDMI	VGA	HDMI via HDBaseT
640×480	60, 72, 75, 85	√	√	√
720×400	85	√	√	√
800×600	56, 60, 72, 75, 85	√	√	√
1024×768	60, 70, 75, 85	√	√	√
1152×864	75	√	√	√
1280×768	60, 75, 85	√	√	√
1280×800	60 (RB), 60	√	√	√
1280×960	60	√	√	√
1280×1024	60	√	√	√
1360×768	60	√	√	√
1366×768	60 (RB), 60	√	√	60(RB)
1400×1050	60 (RB), 60	√	√	√
1440×900	60 (RB), 60	√	√	√
1600×1200	60	√	√	√
1680×1050	60 (RB), 60	√	√	√
1920×1200	60	√	√	√
1920×1440	60	√		√
2560×1600	60	√		√

Supported PC Resolutions (Hz)		Input		Output
		HDMI	VGA	HDMI via HDBaseT
720×480i	59.94, 60	√		
720×576i	50	√		
720×480p	59.94, 60	√	√	√
720×576p	50	√	√	√
1280×720p	50, 59.94, 60	√	√	√
1920×1080i	50, 59.94, 60	√		
1920×1080p	23.97, 24, 25, 29.97, 30	√	√	√
	50, 59.94, 60	√	√	√
3840×2160p (YUV 4:2:0)	50, 59.94, 60	√		
4096×2160p (YUV 4:2:0)	50, 59.94, 60	√		
3840×2160p	24, 25, 30	√		√
	50, 59.94, 60	√		
4096×2160p	24, 25, 30	√		√
	50, 59.94, 60	√		

8.3 Cable SpeciFİcations

HDMI Cable Length (meter)	1080p 8-bit	12-bit	4K 8-bit
Input	10	10	5
Output	10	10	5

HDMI Cable Length (meter)	1080p	4K
Cat.5e	100	70
Cat.6	100	70
Cat.7	100	70

- **Full HD Video (1080p)**
- Up to 1080p@60Hz, 12-bit color
- Data rates lower than 5.3Gbps or below 225MHz TMDS clock
- **Ultra HD Video (4K)**
- 4K@24/25/30Hz & 4K@50/60Hz (YUV 4:2:0), 8-bit color
- Data rates higher than 5.3Gbps or above 225MHz TMDS clock

9. ACRONYMS

ACRONYM	COMPLETE TERM
Cat.5e	Enhanced Category 5 cable
Cat.6A	Augmented Category 6 cable
Cat.7	Category 7 cable
CEC	Consumer Electronics Control
DVI	Digital Visual Interface
HD	High-Definition
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
IR	Infrared
LAN	Local Area Network
LPCM	Linear Pulse-Code Modulation
PD	Powered Device
PoH	Power over HDBaseT
PSE	Power Sourcing Equipment
UHD	Ultra-High-Definition
VGA	Video Graphics Array
WUXGA	Widescreen Ultra Extended Graphics Array (Reduced Blanking)

EGERATE

www.egerate.com www.geratech.eu