



EL-5500-HBT

**8 x 4 HDBaseT™ / HDMI / VGA Presentation Switch
(With switchable digital bypass output)**

OPERATION MANUAL

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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 fire, electrical shock and injury to persons.
- To prevent fire 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 sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE	SUMMARY OF CHANGE
v1.00	24/09/14	First release

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1. INTRODUCTION

The EL-5500-HBT is an advanced rack mountable HDBaseT™, HDMI, VGA, Composite, and Component presentation switcher. This device can scale and switch eight input sources to its two HDMI outputs and a single HDBaseT output, with their associated audio signals to the native resolutions supported by the connected display. This presentation switch also features a switchable digital bypass output allowing any HDMI or HDBaseT input to be directly bypassed via the HDMI bypass output.

Control is via the IR remote, RS-232, IP, or via manual selection buttons. Both digital and analogue stereo audio is supported via a built-in DAC (Digital to Analogue Converter) and ADC (Analogue to Digital Converter) providing flexible audio signal integration. The EL-5500-HBT is the perfect solution for any educational or commercial environment requiring integration of multiple sources and signal formats to two HDMI displays.

2. APPLICATIONS

- /// Home Theater/Entertainment
- /// Lecture Room/Hall Presentation
- /// Show Room/Demo Room
- /// Public Commercial Display
- /// Information Board

3. PACKAGE CONTENTS

- /// 1 × 8 by 4 Presentation Scaler
- /// 1 × IR Extender Cable
- /// 1 × IR Receiver Cable
- /// 1 × Remote Control with Battery
- /// 1 × 24V/ 2.7A DC Power Adaptor
- /// 1 × Power Cord
- /// Operation Manual

4. SYSTEM REQUIREMENTS

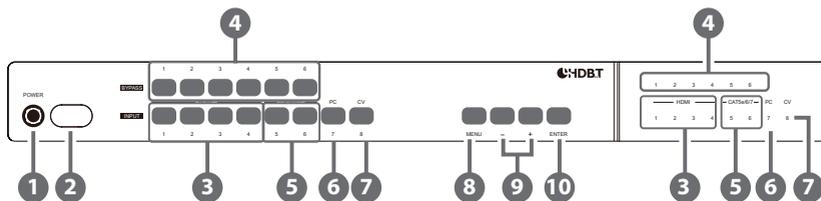
Input source equipment such as Blu-ray/DVD/PS3 player or Set-Top-Box and output HDMI TV/Display and or audio amplifier with connection cables.

5. FEATURES

- /// HDMI, HDCP, and DVI compliant
- /// Digital to Analogue & Analogue to Digital Audio conversion (DAC/ADC)
- /// Supported Resolutions: HDTV: 480i to 1080p PC: VGA to WUXGA
- /// Aspect Ratio Adjustment
- /// Motion Adaptive De-interlace (3D)
- /// Video Noise Reduction
- /// Underscan / Overscan Selection
- /// Picture Adjustment Settings
- /// HDBaseT Input/Outputs support PoE (Power over Ethernet) through to compatible connected receiver
- /// Independent HDMI bypass output (switching digital inputs only)
- /// Supports HDBaseT LAN Serving function
- /// Supports IR/RS-232/IP and front panel button control

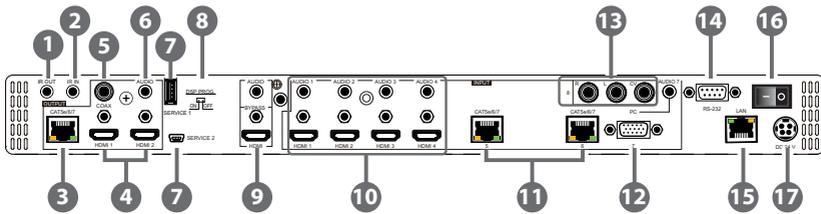
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



- 1 **POWER:** Press this button to turn ON the device and the LED will illuminate.
- 2 **IR Window:** This IR receiver receives only the remote control signal from the packaged included remote control.
- 3 **INPUT HDMI 1~4 & LED:** Press the IN buttons to select an input source signal from the 4 HDMI input sources to be display for output ports. The LED will illuminate according to the selection.
- 4 **BYPASS & LED:** Press these buttons to select an input source signal from the 6 input sources to be display for BYPASS output port. The LED will illuminate according to the selection.
- 5 **INPUT CAT5e/6/7 5~6 & LED:** Press the IN buttons to select an input source signal from the 2 CAT5e/6/7 input sources to be display for output ports. The LED will illuminate according to the selection.
- 6 **INPUT PC & LED:** Press this button to select PC input source signal to be display for PC output port. The LED will illuminate according to the selection.
- 7 **INPUT CV & LED:** Press this button to select CV input source signal to be display for CV output port. The LED will illuminate according to the selection.
- 8 **MENU:** Press this wheel to enter into the menu and press it again to confirm the selection.
- 9 **+/-:** Press these buttons to move up/down under menu selection or under volume control to adjust audio volume up/down.
- 10 **ENTER:** Press this button to confirm menu selection.

6.2 Rear Panel

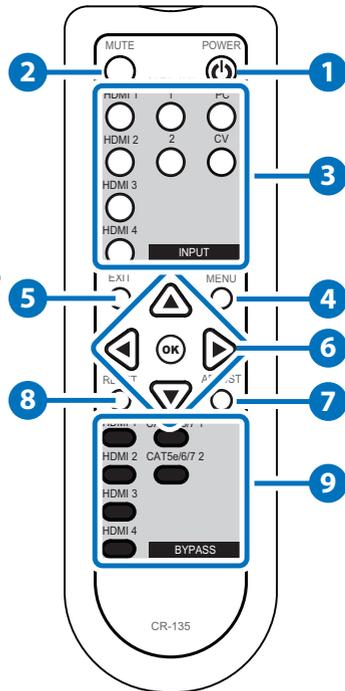


- 1 **IR OUT:** Connect to the supplied IR Blaster cable for IR signal transmission. Place the IR Blaster in direct line-of-sight of the equipment to be controlled.
- 2 **IR IN:** Connect to the supplied IR Extender cable for IR signal reception. Ensure that remote being used is within the direct line-of-sight of the IR Extender.
- 3 **OUTPUT CAT5e/6/7:** Connect to the Receiver unit with a Single CAT5e/6/7 cable for transmission of all data signals.
- 4 **OUTPUT HDMI:** Connect to a HDMI equipped TV/monitor for display of the HDMI input source signal.
- 5 **OUTPUT COAX:** Connect to audio sound equipment such as speaker or amplifier for audio sound output.
- 6 **OUTPUT AUDIO:** Connect to audio sound equipment such as speaker or amplifier for audio sound output.
- 7 **SERVICE 1 & 2:** These slots are reserved for firmware update use only.
- 8 **DSP PROG Switch:** This switch is reserved for firmware update use only.
- 9 **BYPASS:** Connect to a HDMI equipped TV/monitor or DVI equipped monitor with audio sound equipment such as speaker for both video and audio output display.
- 10 **INPUT HDMI 1~4 & AUDIO 1~4:** Connect to HDMI source equipment such as DVD or Blu-ray player along or to DVI source equipment along with audio source signal.
- 11 **INPUT CAT5e/6/7:** Connect this port to HDMI to CAT5e/6/7 Transmitter with CAT5e/6/7 cable to extend the signal up to 100m.

- 12 **INPUT PC & AUDIO:** Connect this port to PC/Laptop with audio signal for input signal selecting.
- 13 **INPUT CV:** Connect this port to source equipment such as video player or Set-Top-Box for input signal selecting.
- 14 **RS-232:** Connect from PC/Laptop for RS-232 command sending to control the device.
- 15 **LAN:** Connect from PC/Laptop with active internet service for Web GUI control with RJ-45 terminated cable.
- 16 **POWER Toggle:** Switch this toggle to turn ON and OFF the device's power.
- 17 **DC 24V:** Connect the adaptor with power cord included in the package and connect to AC wall outlet for power supply.

6.3 Remote Control

- 1 **POWER:**
Press this button to switch the device ON or to put the device into Standby mode.
- 2 **MUTE:**
Press this button to mute output audio sound.
- 3 **INPUT:**
Press these buttons one time each to select input source for outputs display.
- 4 **MENU:**
Press this button to enter into the On-Screen Menu.
- 5 **EXIT:**
Press this button to exit menu selection.
- 6 **▲ ▼ ◀ ▶ & OK:**
Press OK to confirm the selection or use the directional buttons to navigate the On-Screen-Menu.



- 7 ADJUST:**
Auto PC adjust.
- 8 RESET:**
Resets the unit to factory default settings.
- 9 BYPASS:**
Selects the source for the Bypass output.

6.4 RS-232 Pin Assignment

EL-5500-HBT	
PIN	Assignment
1	NC
2	Tx
3	Rx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC



Remote Control	
PIN	Assignment
1	NC
2	Rx
3	Tx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Baud Rate: 19,200bps
 Data Bit: 8 bits
 Parity: None
 Flow Control: None
 Stop Bit: 1

6.5 RS-232/Telnet Commands

COMMAND	DESCRIPTION
S SOURCE 1~8	1=HDMI 1 2=HDMI 2 3=HDMI 3 4=HDMI 4 5=HDBT 1 6=HDBT 2 7=PC 8=VIDEO
R SOURCE	Reports the numerical equivalent for SOURCE setting (as above)
S OUTPUT 1~25	0=640×480 1=800×600 2=1024×768 3=1280×768 4=1360×768 5=1280×720 6=1280×800 7=1280×1024 8=1440×900 9=1400×1050 10=1680×1050 11=1600×1200 12=1920×1080 13=1920×1200 14=480p 15=720p@60 16=1080p@60 17=1080i@60 18=576p 19=720p@50 20=1080p@50 21=1080i@50
R OUTPUT	Reports the numerical equivalent for OUTPUT setting (as above)
S SIZE 0~6	0=OVERSCAN 1=FULL 2=BEST FIT 3=PAN SCAN 4=LETTER BOX 5=UNDER 2 6=UNDER 1
R SIZE	Reports the numerical equivalent for SIZE setting (as above)
S INPUTHDCP 0/1	HDMI support HDCP status (0=OFF, 1=ON)
R INPUTHDCP	Reports HDMI support HDCP status
S CONTRAST 0~60	Setups the numerical equivalent for CONTRAST setting (as left)
R CONTRAST	Reports the numerical equivalent for CONTRAST setting
S BRIGHTNESS 0~60	Setups the numerical equivalent for BRIGHTNESS setting (as left)

COMMAND	DESCRIPTION
R BRIGHTNESS	Reports the numerical equivalent for BRIGHTNESS setting
S HUE 0~60	Sets up the numerical equivalent for HUE setting (as left)
R HUE	Reports the numerical equivalent for HUE setting
S SATURATION 0~60	Sets up the numerical equivalent for SATURATION setting (as left)
R SATURATION	Reports the numerical equivalent for SATURATION setting
S SHARPNESS 0~30	Sets up the numerical equivalent for SHARPNESS setting (as left)
R SHARPNESS	Reports the numerical equivalent for SHARPNESS setting
S NR 0~3	0=OFF 1=LOW 2=MIDDLE 3=HIGH
R NR	Reports the numerical equivalent for the NOISE REDUCTION setting (as above)
S VOLUME 0~100	Volume Value
R VOLUME	Reports Volume value
S AUDIO DELAY 0~3	0=OFF 1=40ms 2=110ms 3=150ms
R AUDIO DELAY	Reports the numeric equivalent for AUDIO DELAY setting (as above)
S AUDIO MUTE 0/1	0=ON 1=MUTE
R AUDIO MUTE	Reports the numeric equivalent for AUDIO MUTE setting (as above)
S HDMIAUDIO 0/1	0=AUTO 1=EXT.
R HDMIAUDIO	Reports HDMI AUDIO Status
S KEY LOCK 0/1	0=ENABLE 1=DISABLE
R KEY LOCK	Reports the numeric equivalent for KEY LOCK setting (as above)
S FREERUNCOLOR 0/1	0=ENABLE 1=DISABLE
R FREERUNCOLOR	Reports the numeric equivalent for AUDIO SELECT setting (as above)

COMMAND	DESCRIPTION
S HDBTUART 0/1 R HDBTUART	0=ENABLE 1=DISABLE Reports the numeric equivalent for HDBTUART setting (as above)
S AUTOSCAN 0/1 R AUTOSCAN	0=ENABLE 1=DISABLE Reports the numeric equivalent for AUTOSCAN setting (as above)
S BYPASS 1-6 R BYPASS	1=HDMI / 2=HDMI2 / 3=HDMI3 / 4=HDMI4 / 5=HDBT1 / 6=HDBT2 Reports the numeric equivalent for BYPASS setting (as above)
S RESET 1	Sets up the numerical equivalent for RESET setting (as left)
S POWER 0/1 R POWER	0=OFF 1=ON Reports the numeric equivalent for POWER setting (as above)
PORT 0~8	0=HDMI 1=HDMI 2 3=HDMI 4=HDMI 4 5=HDBT 1 36=HDBT2 7=VIDEO 8=PC Last Memory
VOL + VOL -	Volume Value Volume Value
GETIP	Shows IP Address / MAC Address
ST	FW Version & Source

Note:

1. *Audio Delay is only supported on Analog Stereo output.*
2. *When the HDMI input is encoded with HDCP, no image will be output from the PC/HD output.*
3. *Only LPCM 2 channel digital audio is supported, please ensure that the source audio is set to LPCM 2 channel audio in order to avoid unnecessary audio noise.*
4. *RS-232 commands will be not executed unless followed with a carriage return and LF. Commands are case-insensitive.*

6.6 OSD Menu

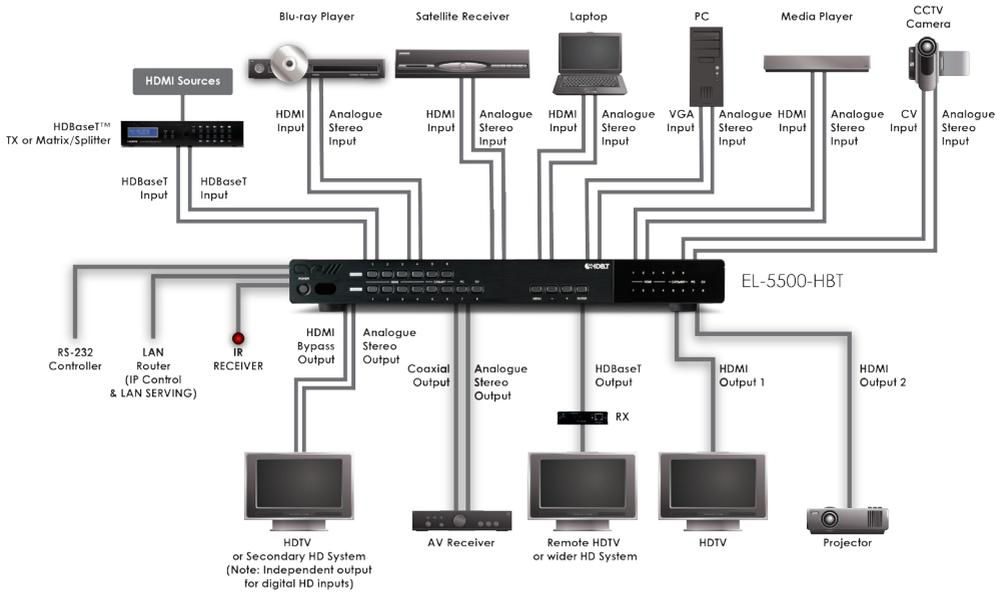
1 st Layer	2 nd Layer	3rd Layer	Remark
DISPLAY	OUTPUT	640X480 60	
		800x600 60	
		1024x768 60	
		1280x768 60	
		1360x768 60	
		1280x720 60	
		1280x800 60	
		1280x1024 60	
		1440x900 60	
		1400x1050 60	
		1680x1050 60	
		1600x1200 60	
		1920x1080 60	
		1920x1200 60	
		720X480P 60	
		1280X720P 60	
		1920X1080I 60	
		1920X1080P 60	
		720X576P 50	
		1280X720P 50	
1920X1080I 50			
1920X1080P 50			

1 st Layer	2 nd Layer	3rd Layer	Remark
DISPLAY	SIZE	OVER SCAN	
		FULL	
		FOLLOW INPUT	
		PAN SCAN	
		LETTER BOX	
		UNDER 2	
		UNDER 1	
	MODE INFO	OFF	
		INFO	
		ON	
	INPUT HDCP (HDMI mode only)	OFF	
		ON	
	PC (PC mode only)	AUTO SETUP	Yes/No(Default No)
		(PC mode only)	0~60
		V_POSITION	0~60
		PHASE	0~31
		CLOCK	
		WXGA/XGA	XGA/WXGA(Default XGA)
		RESET	Yes/No(Default No)

1 st Layer	2 nd Layer	3rd Layer	Remark
COLOR	CONTRAST		0~60(Default 30)
	BRIGHTNESS		0~60(Default 30)
	COLOR	R	0~1023(Default 512)
		G	0~1023(Default 512)
		B	0~1023(Default 512)
		R OFFSET	0~1023(Default 512)
		G OFFSET	0~1023(Default 512)
		B OFFSET	0~1023(Default 512)
	HUE		0~60(Default 30)
	SATURATION		0~60(Default 30)
	SHARPNESS		0~30(Default 0)
	NR.	OFF	
		LOW	
		MIDDLE	
HIGH			
AUDIO	VOLUME		0~100(Default 100)
	DELAY	OFF	
		40mS	
		110mS	
		150mS	
	SOUND	ON	
		MUTE	
	SOURCE (HDMI mode only)	AUTO	

1 st Layer	2 nd Layer	3rd Layer	Remark
SETUP	FACTORY RESET		OSD Setting back to factory default
	KEY LOCK	OFF	
		ON	
	POWER SAVE	OFF	
		ON	
	IP MODE	DHCP	
		STATIC	
	SET STATIC IP	IP ADDRESS	0.0.0.0~ 255.255.255.255 (Default 192.168.0.1)
		SUBNET MASK	0.0.0.0~ 255.255.255.255 (Default 255.255.255.0)
		Def. GATWAY	0.0.0.0~ 255.255.255.255 (Default 192.168.0.254)
	FREERUN COLOR	BLUE	
		BLOCK	
MISC.	HDBTOUT (UART1)	HDBT1~2(Default HDBT1)	
AUTOSCAN	OFF	(Default=OFF)	
	ON		
INFORMATION	INPUT:		
	OUTPUT:		
	REVISION:		
	IP ADDRESS:		

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

8.1 Input Resolution Support

Frequency bandwidth	Up to 10.2Gbps
Input Ports	4 x HDMI 4 x L/R 2 x CAT5e/6/7 1 x PC + L/R 1 x CV+L/R 2 x USB (Service only) 1 x LAN 1 x RS-232 1 x IR
Output ports	2 x HDMI 1 x HDMI Bypass 1 x CAT5e/6/7 1 x Coaxial 1 x L/R
Resolution	480i~1080p@50/60, 1080p@24,VGA~WUXGA(RB)
Audio Format	LPCM 2CH, Dolby Digital 2~5.1CH/ DTS 2~5.1CH (Pass through)
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Power Supply	24VDC/2.7A (US/EU standards, CE/FCC/UL certified)
Dimensions	438mm (W) x 269mm (D) x 44mm (H)/Jack Excluded 438mm (W) x 275mm (D) x 44mm (H)/Jack Included
Weight	3410g
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 (no condensation)
Power Consumption	

8.2 Input Resolution Support

INPUT RESOLUTION	COMP	PC	HDMI
480i/576i	✓	-	✓
480p/576p	✓	-	✓
720p@50/60 Hz	✓	-	✓
1080i@50/60 Hz	✓	-	✓
1080p@50/60 Hz	✓	-	✓
VGA@60/72/75 Hz	-	✓	✓
SVGA@56/60/72/75 Hz	-	✓	✓
XGA@60/70/75 Hz	-	✓	✓
SXGA@60/75 Hz	-	✓	✓
UXGA@60 Hz	-	✓	✓
1280×800@60 Hz	-	✓	✓
1680×1050RB@60 Hz	-	✓	✓
1920×1080@60 Hz	-	✓	✓
1920 x 1200@60RB		✓	✓
1080p@24/25/30 Hz			✓

8.3 Output Resolution Support

OUTPUT RESOLUTION	PC/HD	HDMI
480p/576p	HD	✓
720p@50/60 Hz	HD	✓
1080i@50/60 Hz	HD	✓
1080p@50/60 Hz	HD	✓
VGA@60 Hz	✓	✓
SVGA@60 Hz	✓	✓
XGA@60 Hz	✓	✓
SXGA@60 Hz	✓	✓
UXGA@60 Hz	✓	✓
1280×768@60 Hz	✓	✓
1280×800@60 Hz	✓	✓
1360×768@60 Hz	✓	✓
1400×1050@60 Hz	✓	✓
1440×900@60 Hz	✓	✓
1680×1050@60 Hz	✓	✓
1920×1200@60 Hz	✓	✓



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