

# Instruction Manual



# MODEL : SB-5645CT 4x4 HDMI OVER CAT6 MATRIX SWITCHER

HDMI Over CAT6 Matrix Switcher Series

Version No.: 5645CT-20130205-001

Thank you for purchasing the SB-5645CT 4x4 HDMI Over CAT6 Matrix Switcher. You will find this unit easy to install and highly reliable but it is essential that you read this manual throughly before attempting to use 4x4 HDMI Over CAT6 Matrix switcher.

Part No.: ENCL005645CT0A0



## SAFETY INFORMATION



- 1. Save the carton and packing material even if the equipment has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.
- 2. Read all documentation before operating your equipment. Retain all documentation for future reference.
- 3. Follow all instructions printed on unit chassis for proper operation.
- 4. Do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.
- 5. Make sure power outlets conform to the power requirements listed on the back of the unit.
- 6. Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.
- 7. Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.
- 8. Mains voltage must be correct and the same as that printed on the rear of the unit. Damage caused by connection to improper AC voltage is not covered by any warranty.
- 9. Power down & disconnect unit from mains voltage before making connections.
- 10. Never hold a power switch in the " ON " position.
- 11. Do not use the unit near stoves, heat registers, radiators, or other heat Producing devices.
- 12. Do not block fan intake or exhaust ports. Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, carpet, or completely enclosed rack. If the unit is used in an extremely dusty or smoky environment, the unit should be Periodically " blown free " of foreign matter.
- 13. Do not remove the cover. Removing the cover will expose you to potentially dangerous voltages. There are no user serviceable parts inside.
- 14. Do not drive the inputs with a signal level greater than that required to drive equipment to full output.
- 15. Non-use periods. The power cord of equipment should be unplugged from the outlet when left unused for a long period of time.
- 16. Service Information Equipment should be serviced by qualifier service personnel when:
  - A. The power supply cord or the plug has been damaged.
  - B. Objects have fallen, or liquid has been spilled into the equipment.
  - C. The equipment has been exposed to rain
  - D. The equipment does not appear to operate normally, or exhibits a marked change in performance
  - E. The equipment has been dropped, or the enclosure damaged.

#### IMPORTANT SAFETY INSTRUCTIONS

To insure the best from this product, please read this manual carefully. Keep it in a safe place for future reference.

To reduce the risk of electric shock, do not remove the cover from the unit. No user serviceable parts inside. Refer servicing to qualified personnel.

To reduce the risk of fire, do not expose the unit to rain, water or excessive moisture.

Do not force switched or external connections.

When moving the unit disconnect the serial port connections first then the power cable and finally the interconnecting cables to other devices.

Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Use a clean dry cloth.

Installation of this unit should be in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold.

THIS SAFETY INFORMATION IS OF A GENERAL NATURE AND MAY BE SUPERSEDED BY INSTRUCTIONS CONTAINED WITHIN THIS MANUAL

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# INTRODUCTION AND PACKAGE CONTENTS

## INTRODUCTION

The SB-5645CT is high-performance 4x4 matrix routing switcher with eight (4) HDMI inputs and supports simultaneously four (4) HDMI and four (4) CAT5e/6/7 outputs. The SB-5645CT is based on HDBastT technology and that supports full resolution HDMI Video with embedded audio, RS-232, and IR bi-directional all over a single CAT5e/6/7 cable. With a signal bandwidth of 340Mhz, there is no signal degradation. High Definition Digital signals can be selected and distributed to any 8 outputs simultaneously (4x channels x2). The Switcher is certified as being fully CEC and HDCP 2.0 compliant, HDMI V1.4a 3D formats, data rates up to 6.75 Gbps. Supports UXGA/WUXGA/DVI 1920x1200 resolution to any HD displays. The SB-5645CT has one CAT5e/CAT6 and HDMI connector for each output, effectively making this an 4x8 switcher (same signal on both outputs). 1 RJ-45 connection on each output extends the HDMI signal to remote location via HDBaseT CAT5e/6 HDMI Receiver SB-6335R. The EDID can be selected between seven (8) different modes. Control is provided via Front panel push buttons, IR remote or via RS-232. An RS232 Windows GUI interface is provided for matrix routing.

### PACKAGE CONTENTS

- 1. Main console unit
- 2. Operating Instructions
- 3. IR Remote Controller (SW-5645E)
- 4. 19 inch Ear mount bracket (Part # 1U-440L)
- 5. IR Extender receiver (SB-100)
- 6. CD Contents: This manual, Windows GUI
- 7. RS232 Cable
- 8. Power Supply 12VDC, 3A UniversalType 50/60Hz, 100~230 VAC
  - -- SB-6335R HDBaseT receivers sold separately. -

FEATURES

Based on HDBaseT; bi-directional IR, RS-232, Multi format Audio, Ethernet and full resolution HD Video all, signals over CXAT5e/6/7 cable.

## FEATURES

- 1. 4x HDMI source devices matrix switched to 4x HDMI and 4x CAT5e/6/7 Extender output devices.
- 2. Application HDBaseT IR, RS-232, Multi Audio Foramt and HD Video Signals over CAT5e/6/7 Cable.
- 3. HDMI digital Video w/embedded Audio, DVI format and CEC/HDCP 2.0 compliant
- 4. Worldwide control EDID modes for HD Video resolutions.
- 5. Link speeds of up to 6.75 Gbps (link clock rate of 340MbHz), Support HDMI 1.4a 3D formats.
- 6. Wide range of HD resolutions from PC XGA to WUXGA 1920x1200 and HDTV/DTV HDMI resolutions 480i/480p, 576i/576p, 720p, 1080i & 1080p
- 7. Compatible with all HDMI source devices, PC monitors, Plasma HD display, HDTV and audio receivers/amplifiers.
- 8. Digital Video TMDS formats Resolution up to 1080P-60 with Deep color 36-bit.
- 9. Digital Audio Support : Dolby TrueHD,
  - Dolby Digital,
  - Dolby Digital Plug/ex,
  - DTS,
  - DTS-HD,
  - DTS-HD Master,
  - DTS-EX
  - PCM, PCM2, LPCM2..
- 10. Various User Interface control:
  - Windows based GUI control via RS232 port
  - Front Panel push button
  - IR wireless remote control
  - Third party RS232 controller (via simple ASCII)
- 11. Support world wide control functions: ALL/OFF/RECALL/ENTER/MEMORY/EDID/LOCK
- 12. Support EDID modes : Internal modes : AUTO/1080P-2CH/1080P-5.1/1080P-7.1/1080i-2CH/720P-2CH
  - External modes : Passing mode with learning function.
- 13. Automatic scanning input & output status via LED show on front panel.
- 14. Support IR Remote and IR Extender with distance up to  $\sim$  1000' (300M) Maximum.
- 15. EDID configuration via Internal modes.
- 16. Consumer Electronic Control (CEC) switch all open or OFF

The Switcher will remember that last state during a power cycle.

When power is removed and resorted, the last configuration will be invoked.

# SPECIFICATIONS

### SPECIFICATIONS

Type of HDMI Switcher	4x HDMI inputs To 4x HDMI and 8x CAT5e/6/7 Outputs Matrix Switcher
HDMI Support	HD 1080P-@60Hz, H36-bit Deep color, 3D of HDMI V1.4a formats
HDCP / CEC Support	HDCP 2.0 Compliant, CEC Compliant.
Video Bandwidth	Double Data Rates: 340Mhz, Total 6.75Gbps bandwidth.
Digital Video Support	HD:480i/ 480p/ 720p/ 1080i/ 1080p up to 36bit deep color
Inputs	4x HDMI Sources 1x IR Ext. in ( IR To Switcher) 4x IRs (To 4x Rooms - Via HDBaseT) 1x ALL IR in (IR to Room - Via HDBaseT) 1x RS-232 (Command Switcher) 4x RS-232 (To 8x Rooms - Via HDBaseT)
Outputs	4x HDMI Destinations 4x CAT5e/6/7 (Via HDBaseT) 1x ALL IR out (IR from Room - via HDBaseT) 4x IRs (From 4x Rooms - Via HDBaseT) 4x RS-232 (From 8x Rooms - Via HDBaseT)
Digital Audio Support	Multi Audio Formats 5.1 / 7.1, MAT(MLP) Dolby Digital, Dolby TrueHD, Dolby Digital Plus, DTS, DTS-ES 6CH, DTS-HD, DTS-HD-HRA, DTS-HD Master, (PCM-2CH)
Controls	IR Remote Controller (remote switcher) 4x IR Room Remote Controller IR External port x 1 (OD 3.5mm Ear phone Jack) Select & Function buttons on front panel RS 232 series interface
Source Status	Automatically Scan Sources Inputs via LED show out
Function Control Key	ALL / OFF / RECALL / ENTER / MEMORY / LOCK / EDID
Infrared Frequency	38 Khz
IR External Distance	~1000 feet / 300 meters maximum.
CAT5e/6 Extender Distance	~300 feet / 100 meters maximum.
HDMI I/O Connector	HDMI Type A - SMD 19pin Female Type
Temperature	Operating Temperature 32°F - 100°F (0°C - 32°C)
Dimensions	LxWxH=19" x 9.85" x 1.75" (482mmx250mmx44mm)
Rack Mount	1RU High 19 " Rack Mount #1U-440L (with rack mount)
Power Supply	DC 5A, POWER VAC 100V~240V, 50/60Hz
Power Consumption	5A Maximum
Safety Approvals	CE, FCC, RoHS (2002/95/EC).
Product Weight	3.75 Kgs/6.25 lb

As product improvement is continuous, specifications are subject to change and without notice or liability.

# FRONT PANEL

### FRONT PANEL



### POWER SWITCH

The power switch turns the unit on and off. The LCM will illuminate red to indicate that the switcher is ON and is receiving power.

The Switcher will remember that last state during a power cycle.

When power is removed and resorted, the last configuration will be evoked.

### INPUT STATUS DISPLAY

Input sources 1 to 4 LCM illuminates blue to indicate that a video source is present on that input.

### 3 OUTPUT STATUS DISPLAY

Each Output (destination ) Channel shows which input (source) is assigned.

## 4 DESTINATION SELECT BUTTONS

Separate outputs 1 thru 4 select buttons are provided for each destination assignment. Routing can be Source to Destination or one source to multiple destinations. Example : Press Destination 1,3,4 then press Source 2 will route Input 2 to Output 1,3,4 respectfully.



### EDID MODE SELECT BUTTONS

Used to select EDID mode using buttons #1 thru #2

### IR SENSOR

The IR sensor receives IR commands from the supplied remote controller or third party IR emitter.

### SOURCE SELECT BUTTONS

Separate inputs 1 thru 4 select buttons are provided each source selection.

15 19 INCH EAR MOUNT PAIR

Converts desktop to 19 inch rack mount. Bracket (part # 1U-440L) INCLUDED. Image shows rack mount bracket attached.

# FRONT PANEL

### FRONT PANEL







Disables (mute) video on all destinations OR Selects the same source to all destinations. Option 1

- Press ALL followed by OFF button. The display will show "0" indicating all destinations have no video selected.

Option 2

- Press ALL followed by Source 1 thru 4. The display will show the Source selected.
- Press ENTER The pre-set source selection will be assigned all destinations.

FUNCTION KEY - OFF



Disables (mute) video to selected channels. Either destinations.

- Press OFF button followed by any Destination channel.
- Press 1 thru 4 output destination. The display will show "0" for the selected channel indicating no video selected.



Press ENTER to confirm entries.



11 FUNCTION KEY - LOCK



- Press and hold **LOCK** button for two seconds lockout the front panel.
- Press and hold **LOCK** button for two seconds to enable the front panel.

# FRONT PANEL

### FRONT PANEL







•1234 •2222 RECALL S-02

The system will show previously stored presets, up to a total of 8.

Presets are stored in local memory using Source keys 1 thru 4 or Destination keys 1 thru 4 as the memory preset location.

- press RECALL button.

- press 1 thru 4 on either Source or Destination row.

- press **ENTER** The pre-set configuration will execute.

Operation completes.

Note: Operation will abort if no keys are dressed within 5 seconds.

### 13 FUNCTION KEY - MEMORY





The system will show store presets, up to a total of 8.

Presets are stored in local memory using Source keys 1 thru 4 or Destination keys 1 thru 4 as the memory preset location.

Configure desired matrices..
 Press <u>MEMORY</u> button.

- Press 1 thru 4 on either Source or Destination row.
- Press ENTER to ready memory location.

- or press **MEMORY** again to cancel operation.

Operation completes.

Note : Operation will abort if no keys are pressed within 5 seconds.



### FUNCTION KEY - EDID



- press EDID to select new EDID mode or select source row #1 or #2 for LINK source EDID again.



- press DESTINATION again, press the same DESTINATION # to learn CATx EDID, The EDID for CATx has been learned.

# REAR PANEL

#### REAR PANEL



### REAR PANEL

TX-CAT5d6/7					IR in TX-CAT5d6/7			F© (€	
							000		0
0.	6						8		
			U				U		V
6	RS 232- 1,2,3 & 4 C	ONNECTION		FROL RO	OM				
	4x RS 232 control port to all Such as a computer or touch via this DB-9pin Female con	ow for interfacing to a panel control, to th nector for serial RS	a PC, le switcher -232 control.			Remote po DB-9pin Fo	ort : emale connec	ctor	
7	OUTPUT - 1,2,3 & 4 CAT Transmitter extend a sig to this RJ-45 Female connect Connector with RJ-45 Output	CAT gnal link of HDMI / F tor via CAT5e/6 cat 1 ~ Output 4	RS232 / IR Rem ble.	lote		CAT connecto RJ-45 Female	r: connector.		
8	IR REMOTE INPUT Support eight of IR Extender Extend cable distance maxir When you plug the CAT5e/6 the room IR receiver remain	- 1,2,3 & 4 ( to control signal to num 300Meters / ~1 77 IR extender into t active.	IR SIGNAL eight rooms 1000 feet he external por	. TO ROO t,	M)	IR Extende Female Ja	er Jack: ck - inner OD	Ø 3.5 m	m
9	IR REMOTE OUTP Support eight of IR Extender Extend cable distance maxir When you plug the CAT5e/6 the room IR receiver remain	UT - 1,2,3 & 4 to receive signal fr num 300Meters / ~1 /7 IR extender into t active.	(IR SIGN om eight rooms 1000 feet he external por	AL FROM	I ROOM)	IR Extende Female Ja	er Jack: ck - inner OD	Ø 3.5 m	m
10	ALL IN : ALL HDBa Support eight of IR remote s Extend cable distance maxir When you plug the CAT5e/6 the room IR receiver remain	seT IR REMC ignals to control to e num 300Meters / ~1 /7 IR extender into t active.	DTE 1,2,3 & eight rooms via 1000 feet he external por	& 4 (IR SI ALL IN port. t,	GNAL TC	ROOM) IR Extende Female Ja	er Jack: ck - inner OD	Ø 3.5 m	m
1	ALL OUT : ALL HDE Support eight of IR remote s Extend cable distance maxir When you plug the CAT5e/6	BaseT IR REM ignals from eight roo num 300Meters / ~1 /7 IR extender into t	IOTE - 1,2 oms via <b>ALL O</b> 1000 feet he external por	,3 & 4 (IF U <b>T</b> port. t,	R SIGNAL	FROM ROC	)M) er Jack: ck - inner OD	Ø 3 5 m	m
	the room IR receiver remain	active.						φ 5.5 Π	

# EDID FUNCTION

EDID setup	To change the <b>EDID</b> setup	
Step 1 . Press the EDID button	The display will show the currently selected EDID mode	
Step 2 . Press SOURCE #1 or #2 button row	The button will flash blue and the display will show the current <b>Embedded EDID</b> Status.	
Step 3 . Press the ENTER button	To set <b>EDID</b> mode. The switcher will return to operation mode.	
Operation will abort if no keys are pressed within 5 seconds.		

6.1 Embedded EDID modes	Total 8 EDID Modes
Embedded EDID setup	to select Embedded EDID mode or LEARNING mode.
Press EDID > SOURCE > ENTER source #1 or source #2	Press EDID button : The LCM will show the current EDID status. EDID : 2.H24-3D; PCM 2CH
	Repeatedly depressing the <b>source 1</b> button will cycle <b>up</b> thru the options. Repeatedly depressing the <b>source 2</b> button will cycle <b>down</b> thru the options. Select Embedded EDID : Mode 1 : <b>FSS</b> Mode 2 : <b>H24-3D</b> Mode 3 : <b>H24-3D-M</b> Mode 4 : <b>H36-3D</b> Mode 5 : <b>H36-3D-M</b> Mode 6 : <b>DVI-D 1280x1024</b> -60Hz Mode 7 : <b>DVI-D 1920x1200</b> -60Hz Mode 8 : <b>AUTO</b>

Mode 1 . FSS® (Fast Speed Start) ED ID • 1. FAST SPEED START	Automatic capture of the most suitable EDID from Destination to Source.
Mode 2 . H24-3D (1080p-24 bits) EDID: 2.H24-3D; PCM 2CH	Audio Support : PCM 2CH
Mode 3 . H24-3D-M (1080p-24bits) EDID: 3.H24-3D; MULTI AUDIO	Audio Support : MAT(MLP) 7.1CH, PCM 2CH, One Bit Audio 2CH, AC-3 5.1CH, DTS 5.1CH, PCM 7.1CH, Dolby Digital + 7.1CH, DTS-HD 7.1CH
Mode 4 . H36 (1080p-36 bits) EDID: 4.H36-3D; PCM2CH	Audio Support : PCM 2CH
Mode 5 . H36-M (1080p-36 bits) EDID: 5.H36-3D; MULTI AUDIO	Audio Support : MAT(MLP) 7.1CH, PCM 2CH, One Bit Audio 2CH, AC-3 5.1CH, DTS 5.1CH, PCM 7.1CH, Dolby Digital + 7.1CH, DTS-HD 7.1CH
Mode 6 . 1280x1024-60Hz (DVI-D) EDID: 6.1280x1024-60HZ DVI-D	DVI Support : DVI-D 1280x1024 60Hz
Mode 7 . 1920x1200-60Hz (DVI-D) EDID: 7.1920x1200-60HZ DVI-D	DVI Support : DVI-D 1920 x 1200 60Hz
Mode 8 . AUTO <default> ED ID : 8. AUTO MODE</default>	All Outputs will be set to the highest common resolution of all connected display devices.

# EDID FUNCTION

6.2 RESET	EDID Return To Factory default
How to RESET EDID mode	To RESET the FACTORY DEFAULT (1080p-2CH).
Press EDID > RECALL > ENTER	
EDID: RESET EDID	Press EDID button : The LCM will show the current EDID status. Press RECALL button : The LCM will show the RESET EDID.
EDID: 1. FAST SPEED START	Press ENTER to confirm entries. The EDID will return to FSS mode and resolution 1080p-2CH.

6.3 LEARNING EDID	Learning EDID from Destination to Source		
Learning EDID setup			
Press EDID > DESTINATION > SOURCE > ENTE	R		
Swi EDID: and LEARNING HDMI	tcher will <b>LEARN</b> destination HDMI EDID pass the selected source.		
Learning EDID setup for HDMI Key Press Sequence: EDID > DESTINATION # > SOURCE # > ENTER The EDID for HDMI has been learned			
Press EDID > DESTINATION > DESTINATION > SOURCE > ENTER			
EDID:       Switcher will LEARN destination CATx EDID         LEARNING CATX       and pass the selected source.			
Learning EDID setup for CATx Key Press Sequence: EDID > DESTINATION # > DESTINATION # > SOURCE # > ENTER Again, Press the same DESTINATION # to learn CATx EDID The EDID for CATx has been learned			
NOTE : The already learned EDID cannot be modified. You can only rebuild a new Learning EDID. For example; When the Source has "Learned" the EDID data from a destination, It will save that EDID information into EPROM and the EDID data cannot change. Please select new learning destination to sources or change to one of the embedded EDID modes when you want to remove the learning EDID memory from EPROM.			

6.3.1 Learning EDID Single to Single	Example : Learn Destination #4 EDID To Source #2.
Step 1 . Press EDID button	The button will flash blue and the display will show the current <b>Embedded</b> EDID Status.
<b>Step 2</b> . Press the Destination #4 button row	Copy the Destination #8 Display EDID.
<b>Step 3</b> . Press the Source #2 button row	Learning the Destination #4 EDID To Source # 2.
Step 4 . Press ENTER button	To confirm entries.

6.3.2 Learning EDID Single to multiple	Learning destination EDID link to the majority Sources
Step 1 . Press EDID button	The button will flash blue and the display will show the current <b>Embedded</b> EDID Status.
<b>Step 2</b> . Press the Destinations $#1 \sim 4$ button row	Copy any 1~4 Destinations EDID.
<b>Step 3</b> . Press the Source #1, #3,~#4 button row	Learning the Destination EDID link to source $\#1,\#3,\sim$ #4 .
Step 4 . Press ENTER button	To confirm entries.

6.3.3 Learning EDID Single to ALL	Learning destination EDID link to All Sources
Step 1 . Press EDID button	The button will flash blue and the display will show the current <b>Embedded</b> EDID Status.
<b>Step 2</b> . Press destination button 1 thru 4	Learning anyone $1 \sim 4$ Destination EDID to all sources.
Step 3 . Press ALL button	Learning selected destination EDID to all sources.
Step 4 . Press ENTER button	To confirm entries.

# EDID FUNCTION

### EDID function for HDMI Matrix Switcher

6.4 EDID status	To view the current <b>EDID</b> status.
Step 1 . Press EDID button	The button will flash blue and the display will show the current <b>Embedded EDID</b> Status.
Step 2 . Press EDID button	To exit.

6.5 How to setup FSS <sup>®</sup> Function	Fast speed start <sup>®</sup>
<b>Step 1</b> . Press the Destination #1~8 button row Then Press the Source #1~8 button row	To setup and Install all devices.
Step 2 . Press EDID button	Select a optimum status of <b>Embedded</b> EDID mode.
Step 3 . Press ENTER button	To conform entries.
Step 4 . Press EDID button	To select the EDID $\mathbf{FSS}^{\mathbb{8}}$ mode.
Step 5 . Press ENTER button	To conform entries.

# 6.6 LEARNING EDID definition Learning EDID from Destination to Source

- 1. Switcher will **LEARN** destination EDID and pass the selected source.
- To set up learning between a single destination and single source: Press EDID button > Press Destination 1 thru 4 > Press Source 1 thru 4 > Press ENTER to confirm. Switcher will learn destination EDID to source device.
- To set up learning between a single destination and Multiple sources: Press EDID button > Press Destination 1 thru 4 > Press the majority Sources 1 thru 4 > Press ENTER. Switcher will learn single destination EDID to many source devices.
- 4. How to Learning single destinations with all sources. Press **EDID** button > Press **ALL** button > Press **ENTER** to confirm.

6.7	Auto mode definition	Common Resolution and Audio		
	Switcher will find highest common Resolution and Audio from all destination EDID to link Source.			
	Destination > press #1 and then Source > press #1 Destination device #1 will set to the highest <u>common</u> resolution and Audio of source #1			
	Example for multiple sources			
	Destination device $#1$ , $#2$ , $#3$ will be set to the highest <u>common</u> resolution and Audio available and source device $#1$ will output this same resolution.			

### INSTALLING DIAGRAM

Sample connection using IR Transmitters (SB-101) and IR Receiver (SB-100) with SB-6335R & SB-5645CT to control a projector.



Support HDBaseT Extender by SB-6335 Transmitter and SB-6335R Receiver via CAT5e/6/7 cable

# TYPICAL APPLICATION

### **INSTALLING DIAGRAM**

### 4x4 HDMI MATRIX SWITCHER

Sample connection using SB-5645CT HDBaseT IR Transmitters (SB-101) and SB-6335R HDBaseT IR Receiver to control a Satellite Receiver IR Remote.



Support HDBaseT Extender by SB-6335 Transmitter and SB-6335R Receiver via CAT5e/6/7 cable

# **TYPICAL APPLICATION**

### INSTALLING DIAGRAM

### 4x4 HDMI-CAT5e/6/7 MATRIX SWITCHER

Sample connection using Audio Extractor To Recode Audio (SB-5609) or to control ARC (SB-5610) and Extend the HDMI signal via HDBaseT Transmitter to IR Receivers (SB-6335R) with SB-5688CT to extend 100M distance between switcher and destination..



Application HDBaseT IR, RS-232, Multi format Audio and HD Video signals to pass over CXAT5e/6/7 cable.

# REMOTE CONTROL

Before making any connections to the switcher. Observe the following:

- > Ensure the mains voltage supply matches the label on the supplied plug-Pack (+/- 10%)
- > Ensure that the power switch is OFF
- > Ensure that all system grounds (earth) are connected to a common point.
- > Avoid powering equipment within a system from multiple power sources that may be separated by large distances
- > Connect all audio video sources and destination equipment
- > power up all source and destination audio-visual sources
- > For each destination output select the appropriate input source by using The front panel input 1~8 select buttons. The supplied IR remote control. Or through the RS 232 serial communications port.
- > Upon power up the switcher will return to its last used setting before Powered down.

#### REMOTE CONTROL



# REMOTE CONTROL

#### IR REMOTE CUSTOM AND DATA CODES (NEC Standard)

HOW TO SETUP IR CODES :

CUSTOM CODE: 1C E3	ALL	1	1CE3	B04F
	OFF	:	1CE3	B14E
<u>DATA CODE</u> :	EDID	:	1CE3	B748
POWER ON : 1CE3 A15E POWER OFF : 1CE3 A25D	LOCK	:	1CE3	B54A
	RECALL	:	1CE3	B24D
	MEMORY	:	1CE3	B44B
	ENTER		1CE3	R34C

### PRESS TV DESTINATION - # then PRES AV SOURCE - #

DESTINATION #1 : 1CE3 10EF DESTINATION #2 : 1CE3 20DF DESTINATION #3 : 1CE3 30CF DESTINATION #4 : 1CE3 40BF SOURCE #1 :1CE3 01FE SOURCE #2 :1CE3 02FD SOURCE #3 :1CE3 03FC SOURCE #4 :1CE3 04FB For example; Select Destination # 1 to show Source  $#1 \sim 4$ , The IR Data Code list : Destination # 1 , Source #1 1CE3 10EF 1CE3 01FE Destination # 1 , Source #2 1CE3 1CE3 02FD 10EF Destination # 1 , Source #3 1CE3 10EF 1CE3 03FC Destination # 1, Source #4 1CE3 10EF 1CE3 04FB Press EDID Mode key : Mode 1 : FSS : 1CE3 E01F Mode 2 : **H24-3D** : 1CE3 E11E Mode 3 : **H24M-3D** : 1CE3 E21D Mode 4 : **H36** : 1CE3 E31C Mode 5 : **H36M** : 1CE3 E41B Mode 6 : **H36-3D** : 1CE3 E51A Mode 7 : **H36M-3D** : 1CE3 E619 Mode 8 : AUTO : 1CE3 E718

# **ROOM REMOTE CONTROL**

#### ROOM REMOTE CONTROL #1 ~ #4 CUSTOM CODE AND DATA CODES

#### IR CUSTOM AND DATA CODES (NEC Standard)

### PRESS Number To Select SOURCE CUSTOM CODE : ICE3







IR-02 DAT	4 (	CODE	Ξ:
SOURCE #1	:	ICE3	21DE
SOURCE #2	:	ICE3	22DD
SOURCE #3	1	ICE3	23DC
SOURCE #4		ICE3	24DB

4x4 CAT5e/6 SWITCHER SW-5645CT-IR03



IR-04	DAT	A (		Ξ:
SOURC	E #1	:	ICE3	41BE
SOURC	E #2	1	ICE3	42BD
SOURC	E #3	:	ICE3	43BC
SOURC	E #4		ICE3	44BB



REAR PANEL IR EXTENDER PORT



\*\*\* When you plug the External IR extender into the switcher, the front panel IR receiver remains active. \*\*\*

## IR EXTENDER PACKAGE :

# HOW TO SETUP THE IR EXTENDER COMPONENTS



# CONSUMER ELECTRONICS CONTROL (CEC)

## CONSUMER ELECTRONIC CONTROL (CEC)

In brief, CEC allows HDMI devices to control each other when necessary and allows the user to operate multiple devices with one remote control handset.

## To Enable CEC

- Press EDID button

- Press <u>ALL</u> button
- Press **EDID** button The pre-set configuration will execute.

### To Disable CEC

- Press EDID button
- Press OFF button
- Press **EDID** button The pre-set configuration will execute.

Not all device support CEC. Check with your Users Guide for additional information and specifications.

To ensure stable operation, HDMI connections should only be made with switcher powered OFF.

# **RS-232 SERIAL INTERFACE**

#### RS-232 SERIAL INTERFACE CONNECT a PC or CONTROL SYSTEM. VERSION COMPATIBLE V2.0.1

For a complete list of commands, please reference external document extended RS-232 Protocol Instruction Manual.



#### **RS-232 SERIAL INTERFACE**

Pin	RS-232	Definition
1		Not used
2	ТΧ	Transmitter
3	RX	Receiver
4		Not used
5	GND	Ground
6		Not used
7		Not used
8		Not used
9		Not used

#### RS-232 PROTOCOL COMMANDS (RS232 Control driver V2.0.1)

The Shinybow switcher can be controlled via the RS-232 serial control port to allow for interfacing to a PC, or similar third party control system.

The serial communication parameters are 9600 baud, 8 bit, No Parity and 1 stop bit - this is often referred to as 9600 8N1. When the unit recognises a complete command it will perform the requested action - there is no delimiter character required.

# LIMITED WARRANTY

# LIMITED WARRANTY

### SHINYBOW WARRANTY

SHINYBOW Technology warrants this product against defects in materials and workmanship for a period of 1 year from the date of purchase.

Should this product, in SHINYBOW Technology's opinion, prove defective within this warranty period, SHINYBOW Technology, at its option, will repair this product without charge, to whatever extent it shall deem necessary to restore the product to proper operation condition. This does not extend the warranty period.

This warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, and abnormal operating condition or non-SHINYBOW Technology authorized modification to the product. If repairs are necessary under the warranty policy, the original purchaser must return the product to local distributor, freight prepaid.

After repairs are complete, the product will be returned.

### **REGULATORY COMPLIANCE**

The product complies with the relevant standards for CE, FCC and RoHS approval. The power Adaptor/Supply has been tested for compliance with UL.CSA and CE standards.

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## TROUBLESHOOTING

If you experience a <no signal> with this switcher or distributor outputs, first make certain that the signal being fed to its inputs is acceptable.

Disconnect the cables from the this switcher or distributor inputs and connect them directly to an appropriate monitoring device, if you do not see or hear a signal the problem may well be he signal source itself. Also check that the AC outlet you have used to power the switcher or distributor is actually providing power as a wall switch often controls an AC outlet.

The second most common problem with this switcher or distributor revolves around the cables, Inspect the cables for loose connectors or cable damage such as crushed cable or cables with cuts or nicks. Replace any cable exhibiting these problem.

You also must use the highest quality cables if you want to achieve the best results. Poor quality cables provide will poor quality signals.

