INSTRUCTION MANUAL

SB-5645LCM-CT

4x4 HDMI & HDBaseT™ Over Single CAT5e/6/7 Matrix Routing Switcher



SHINYBOW™USA

MULTIMEDIA AUDIO AND VISUAL

SAFETY INFORMATION

1. To ensure the best results from this product, please read this manual and all other documentation before operating your equipment. Retain all documentation for future reference.
2. Follow all instructions printed on unit chassis for proper operation.
3. To reduce the risk of fire, do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.
4. Make sure power outlets conform to the power requirements listed on the back of the unit. Keep unit protected from rain, water and excessive moisture.
5. Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Dust with a clean dry cloth.
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. Do not force switched or external connections in any way. They should all connect easily, without needing to be forced.
8. 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.
9. AC 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.
10. Turn power off and disconnect unit from AC current before making connections.
11. Never hold a power switch in the “ON” position.
12. This unit should be installed in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold. Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.
13. 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 dust and matter.
14. To reduce the risk of electric shock, do not remove the cover. There are no user serviceable parts inside. Refer all servicing to qualified service personnel. There are no user serviceable parts inside.
15. When moving the unit, disconnect input ports first, then remove the power cable; finally, disconnect the interconnecting cables to other devices.
16. Do not drive the inputs with a signal level greater than that required to drive equipment to full output.
17. The equipment power cord should be unplugged from the outlet when left unused for a long period of time.
18. 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.
19. 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.

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HDMI Over CAT6 Matrix Switcher Series

Thank you for purchasing the SB-5645LCM-CT 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 thoroughly before attempting to use this 4x4 HDMI Over CAT6 Matrix switcher.

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INTRODUCTION

The SB-5645LCM-CT is high-performance 4x4 matrix routing switcher with (4) HDMI inputs and supports simultaneously (4) HDMI and (4) HDBaseT™ Outputs. The SB-5645LCM-CT is based on HDBaseT™ 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 resolutions to any HD displays. The SB-5645LCM-CT has one CAT5e/6/7 and HDMI connector for each output, effectively making this an 4x8 switcher (same signal on both channel outputs). One RJ-45 connection on each output extends the HDMI signal to remote locations via HDBaseT™ Receiver SB-6335R. The EDID can be selected between (7) different modes. Control is provided via front panel push buttons, IR remote or via RS-232. An RS-232 Windows GUI interface is provided for matrix routing.

PACKAGE CONTENTS

Check that you have the following components;

- SB-5645LCM-CT Matrix Routing Switcher
- IR Remote Controller
- 19 inch Ear mount bracket (Part # 1U-440L)
- IR Extender receiver (SB-100)
- RS-232 driver CD (All Windows Operating Systems)
- RS-232 Cable
- Users Guide
- Power Supply 12VDC, 5A Universal Type 50/60Hz, 100~240 VAC

-- SB-6335R HDBaseT™ receivers sold separately. –



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.

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. We assume no responsibility for any infringements of patents or other rights of third parties which may result from its use.

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FEATURES

Based on HDBaseT™ bi-directional IR, RS-232, Multi format Audio, Ethernet and full resolution HD Video all, signals over CAT5e/6/7 cable.

- 4x HDMI source devices matrix switched to 4x HDMI and 4x CAT5e/6/7 Extender output devices.
- Application IR enabled by products designed using HDBaseT™ Specifications, RS-232, Multi Audio Format and HD Video Signals over CAT5 e/6/7 Cable
- HDMI digital Video with embedded Audio, DVI format and CEC/HDCP 2.0 compliant
- Worldwide control EDID modes for HD Video resolutions.
- Link speeds of up to 6.75 Gbps (link clock rate of 340MbHz), Support HDMI 1.4a 3D formats.
- Wide range of HD resolutions from PC XGA to WUXGA 1920x1200 and HDTV/DTV HDMI resolutions 480i/480p, 576i/576p, 720p, 1080i & 1080p
- Compatible with all HDMI source devices, PC monitors, Plasma HD display, HDTV and audio receivers/amplifiers.
- Digital Video TMDS format resolution up to 1080p-60 with Deep color 36-bit. Various User Interface control
- Digital Audio Support : Dolby TrueHD, Dolby Digital, Dolby Digital Plug/ex, DTS, DTS-HD, DTS-HD Master, DTS-EX PCM, PCM2, LPCM2
- Various User Interface control:
  - Windows based GUI control via RS-232 port
  - Front Panel push button
  - IR wireless remote control
  - Third party RS-232 controller (via simple ASCII)
- Support world wide control functions: ALL/OFF/RECALL/ENTER/MEMORY/EDID/LOCK
- 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.
- Automatic scanning input & output status via LED show on front panel.
- Support IR Remote and IR Extender with distance up to ~ 1000 feet (300M) Max
- EDID configuration via Internal modes.
- Consumer Electronic Control (CEC) switch all open or OFF

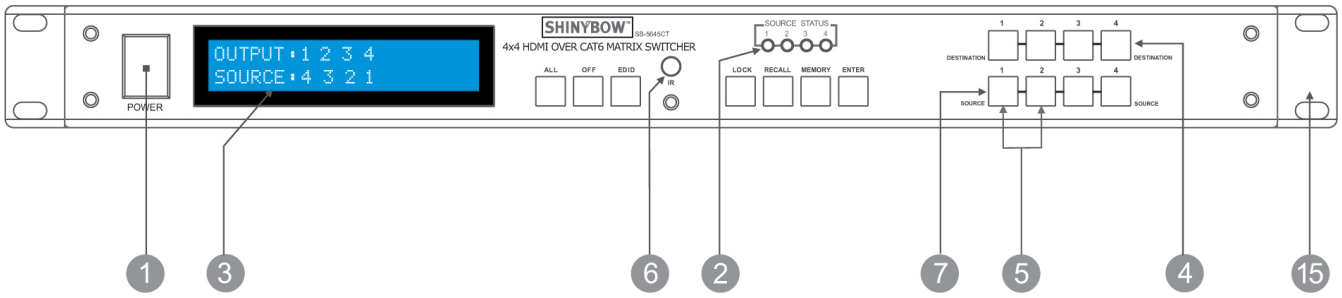
The Switcher will remember that last state during a power cycle. When power is removed and resorted, the last configuration will be invoked.

SPECIFICATIONS

- **Type of 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: 225Mhz, Total 6.75Gbps bandwidth
- **Digital Video Support:** HD: 480i / 480p / 720p / 1080i / 1080p up to 36bit deep color
- **Digital Audio Support:**
    - Multi Audio Formats 5.1 / 7.1
    - MAT(MLP)
    - Dolby Digital
    - Dolby TrueHD
    - Dolby Digital Plus
    - DTS
    - DTS-ES 6.1
    - DTS-HD
    - DTS-HD-HRA
    - DTS-HD Master
    - (PCM-2CH)
- **Inputs:** 4x HDMI Sources
    - 1x IR Ext. in (IR To Switcher)
    - 4x IRs (To 4x Rooms)
    - 1x ALL IR in (IR to Room)
    - 1x RS-232 (Command Switcher)
    - 4x RS-232 (To 8x Rooms)
- **Outputs:** 4x HDMI Destinations
    - 4x CAT5e/6/7
    - 1x ALL IR out (IR from Room)
    - 4x IRs (From 4x Rooms)
    - 4x RS-232 (From 8x Rooms
- **Controls:**
    - IR Remote Controller
    - 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 scans source inputs via LED
- **Function Control Key:** ALL / OFF / RECALL / ENTER / MEMORY / LOCK / EDID
- **Infrared Frequency:** 38 Khz
- **CAT5e/6 Extender Distance:** ~300 feet / 100 meters maximum
- **HDBaseT Distance :** 100m/328ft CAT5e/6 cable with RJ-45 connectors
- **HDMI I/O Connector:** HDMI Type A - SMD 19pin Female Type
- **Temperature:** 32 °F - 100 °F Operation (0 °C - 32 °C)
- **Dimensions (LxWxH):** 19* x 9.85 x 1.75 in (*with rackmount bracket) (482 x 250 x 44 mm)
- **Rack Mount:** 1RU High 19in Rack Mount (with rack mount)
- **Power Supply:** DC12V / 5A, Universal world wide Type 50/60Hz, 100~240 VAC
- **Power Consumption:** 5A Maximum
- **Safety Approvals:** CE, FCC, RoHS (2002/95/EC)
- **Product Weight:** 9.5 lb

As product improvements are continuous, specifications are subject to change and without notice.

FRONT PANEL



1. 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.

2. 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.

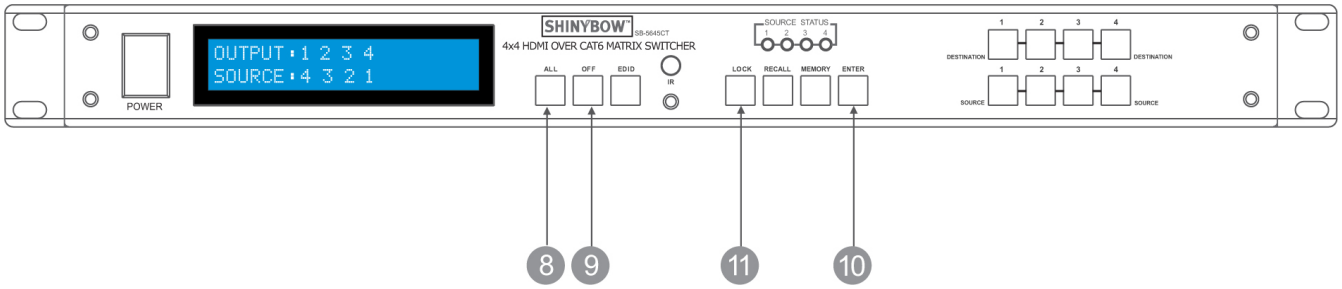
5. EDID MODE SELECT BUTTONS: Used to select EDID mode using Input buttons #1 and #2.

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

7. 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



8. FUNCTION KEY - ALL:



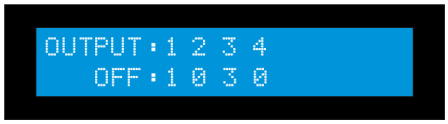
Disables (mute) video on all destinations OR Selects the same source to all destinations.
Option 1

- 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.

9. FUNCTION KEY - OFF:



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

- Press **OFF** button followed by any Destination channel.
- Press 1 thru 2 output destination. The display will show " 0 " for the selected channel indicating no video selected.

10. FUNCTION KEY - ENTER:

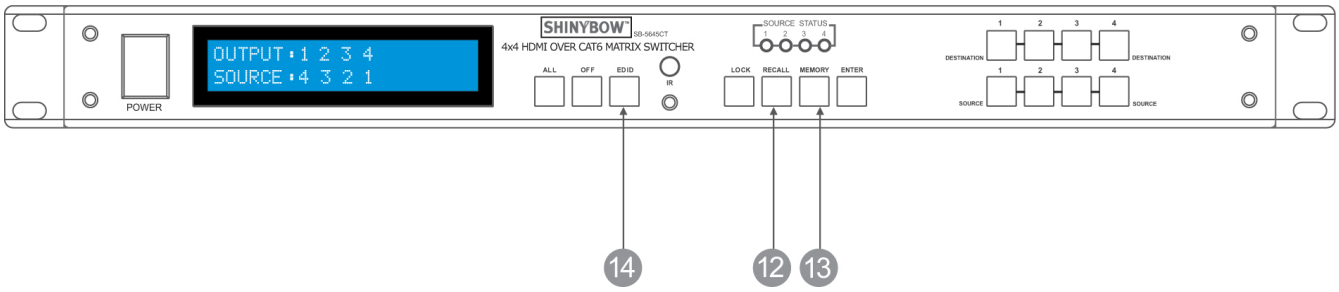
Press ENTER to confirm entries.

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



112. FUNCTION KEY - RECALL:





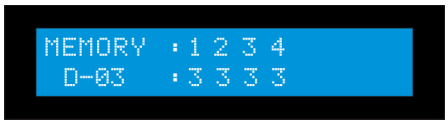
The system will show previously stored presets, up to a total of 8.
Presets are stored in local memory using Source keys 1 thru 4 or Destination keys 1 thru 4 as the memory preset location.

- Configure desired matrices..
- 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 pressed 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 **MEMORY** 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.

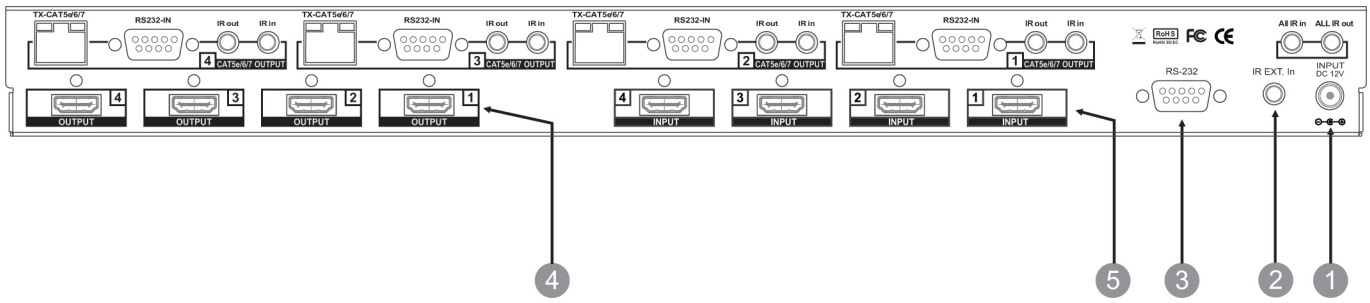
14. FUNCTION KEY - EDID:





- 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.

BACK PANEL



1. DC POWER INLET: The Switcher is fitted with a DC power plug input connector. Ensure that the outlet type is approved and sufficient to carry current connector capacity with the correct voltage and connector polarity. 12Volt DC power supply 5A Max (Center pin positive).



Power Jack:
DC Jack - Inner OD ⦰ 2.1mm (+)
Outside OD ⦰ 5.5mm (GND)
Power input - 12VDC, 3A

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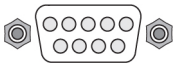
2. IR EXTERNAL IN (EXT. IR TO CONTROL SWITCHER): Supports one of IR Extender. Extend distance maximum 300 M / ~1000 ft. When you plug the External IR extender into the switcher, the front panel IR receiver remains active.



IR Extender Jack:
Female Jack - inner OD O 3.5 mm

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3. RS-232 CONNECTION: RS-232 control port allows for interfacing to a PC. Such as a computer or touch panel control, to the switcher via this DB-9pin female connector for serial RS-232 control.

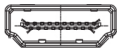


Remote port :
DB-9pin Female connector

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4. OUTPUTS- 1,2,3 & 4 HDMI: Connect a signal link of HDMI direct digital video/audio to this female HDMI connector. This connector supports HDMI digital video/audio and DVI digital video sources.

HDMI Digital Video/Audio, Connector with fix screw Output 1 ~ Output 4



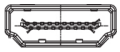
HDMI digital video/audio connector:
HDMI Female connector.

Note: With the proper adapters, the switcher can be used with DVI digital video signals HDCP compliant. DVI does not support audio.

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5. INPUTS- 1,2,3 & 4 HDMI: Connect a signal link of HDMI direct digital video/audio to this female HDMI connector. This connector supports HDMI digital video/audio and DVI digital video sources.

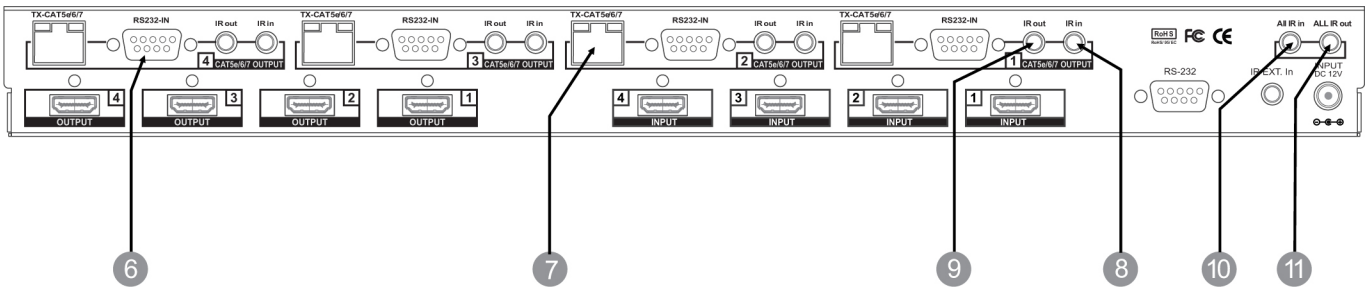
HDMI Digital Video/Audio, Connector with fix screw Input 1 ~ Input 4



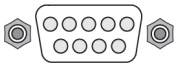
HDMI digital video/audio connector:
HDMI Female connector.

Note: With the proper adapters, the switcher can be used with DVI digital video signals HDCP compliant.

BACK PANEL



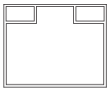
6. RS-232- 1,2,3 & 4 CONNECTION TO CONTROL ROOM: 4x RS-232 control port to allow for interfacing to a PC. Such as a computer or touch panel control, to the switcher via this DB-9pin female connector for serial RS-232 control.



Remote port :
DB-9pin Female connector

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7. OUTPUT - 1,2,3 & 4 CAT: CATx Transmitter extends a signal link of HDMI / RS-232 / IR Remote to this RJ-45 female connector via CAT5e/6 cable. Connector with RJ-45 Output 1 ~ Output 4



CAT connector:
RJ-45 Female connector.

---

8. IR REMOTE INPUT - 1,2,3 & 4 (IR SIGNAL TO ROOM): Supports 4 IR Extenders to control signal to 4 rooms. Extends cable distance a maximum 300 M / ~1000 ft. When you plug the CAT5e/6/7 IR extender into the external port, the room IR receiver remains active.



IR Extender Jack:
Female Jack - inner OD O 3.5 mm

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9. IR REMOTE OUTPUT - 1,2,3 & 4 (IR SIGNAL FROM ROOM): Supports 4 IR Extenders to receive signal from 4 rooms. Extends cable distance a maximum 300 M / ~1000 ft. When you plug the CAT5e/6/7 IR extender into the external port, the room IR receiver remains active.



IR Extender Jack:
Female Jack - inner OD O 3.5 mm

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10. ALL IN : ALL HDBaseT ™ IR REMOTE 1,2,3 & 4 (IR SIGNAL TO ROOM): Supports 4 IR remote signals to control to 4 rooms via ALL IN port. Extends cable distance a maximum 300 M / ~1000 ft. When you plug the CAT5e/6/7 IR extender into the external port, the room IR receiver remains active.



IR Extender Jack:
Female Jack - inner OD O 3.5 mm

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11. ALL OUT : ALL HDBaseT ™ IR REMOTE - 1,2,3 & 4 (IR SIGNAL FROM ROOM): Supports 4 IR remote signals to control to 4 rooms via ALL OUT port. Extends cable distance a maximum 300 M / ~1000 ft. When you plug the CAT5e/6/7 IR extender into the external port, the room IR receiver remains active.



IR Extender Jack:
Female Jack - inner OD O 3.5 mm

REMOTE CONTROL

Before making any connections 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

1. & 2. SWITCH POWER ON or OFF:

Controller with a power ON and OFF

3. DESTINATION : 1 THRU 4 OUTPUT SELECTION:

Press the destination button to select the output display channel.

4. SOURCE : 1 THRU 4 INPUT SOURCE SELECTION:

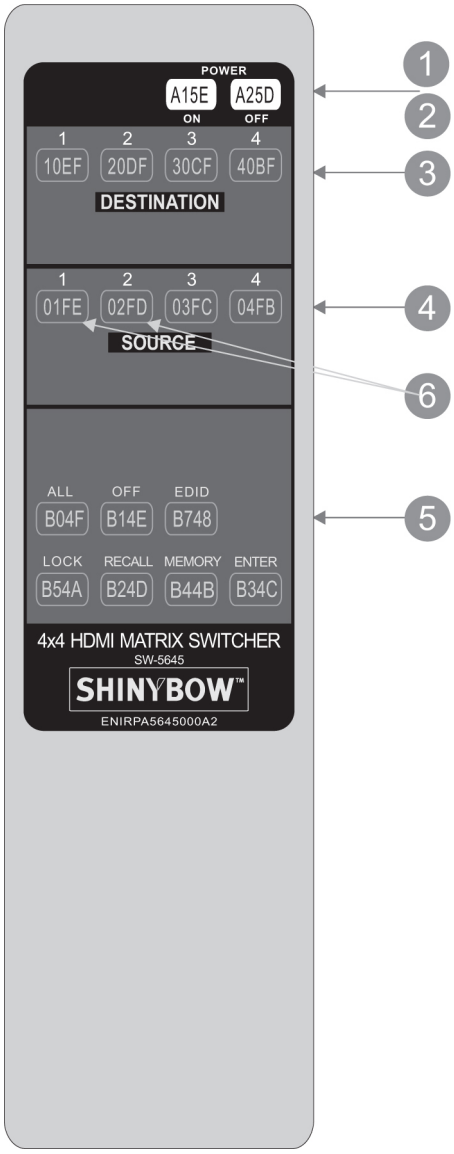
Press input 1~4 sources with selection button

5. FUNCTION KEY:

ALL - function selection button
DEMO or ENTER - function selection button
EDID - function selection button
LOCK - function selection button

6. SELECT EDID MODES : PRESS SOURCE BUTTON 1 THRU 2

1. Mode 1 : FSS (Fast Speed Start)
2. Mode 2 : H24-3D
3. Mode 3 : H24M-3D
4. Mode 4 : H36
5. Mode 5 : H36M
6. Mode 6 : H36-3D
7. Mode 7 : H36M-3D
8. Mode 8 : AUTO



REMOTE PROTOCOL COMMANDS

IR REMOTE CUSTOM AND DATA CODES (NEC Standard)

HOW TO SETUP IR CODES : **CUSTOM CODE : 1CE3**

DATA CODE :

POWER ON : 1CE3 A15E
POWER OFF : 1CE3 A25D
ALL : 1CE3 B04F
OFF : 1CE3 B14E
EDID : 1CE3 B748
LOCK : 1CE3 B54A
RECALL : 1CE3 B24D
MEMORY : 1CE3 B44B
ENTER : 1CE3 B34C

PRESS TV DESTINATION - # then PRES AV SOURCE - #

DESTINATION #1 : 1CE3 10EF
DESTINATION #2 : 1CE3 20DF
DESTINATION #1 : 1CE3 30EF
DESTINATION #2 : 1CE3 40DF

SOURCE #1 : 1CE3 01FE
SOURCE #2 : 1CE3 02FD
SOURCE #3 : 1CE3 03FC
SOURCE #4 : 1CE3 04FB

For example: Select Destination # 1 to show Source #1~4

The IR Data Code list :
Destination # 1, Source #1 1CE3 10EF 1CE3 01FE
Destination # 1, Source #2 1CE3 10EF 1CE3 02FD
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

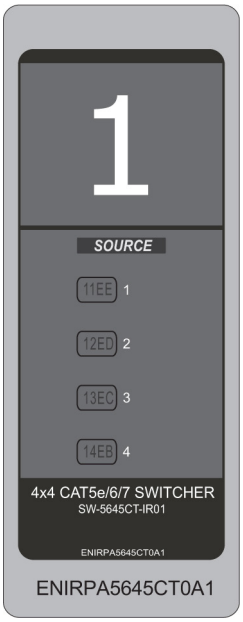
ROOM REMOTE CONTROL #1 ~ #4 CUSTOM CODE AND DATA CODES

IR CUSTOM AND DATA CODES (NEC Standard)

PRESS Number To Select SOURCE

CUSTOM CODE : 1CE3

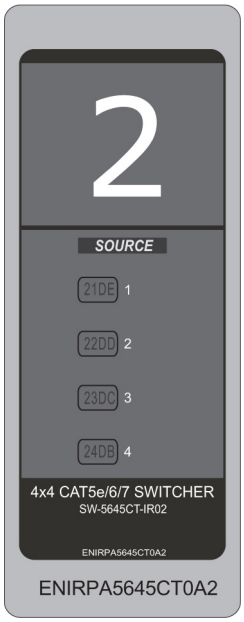
4x4 CAT5e/6 SWITCHER
SW-5645CT-IR01



ENIRPA5645CT0A1

IR-01 DATA CODE:
SOURCE #1 : 1CE3 11EE
SOURCE #2 : 1CE3 12ED
SOURCE #3 : 1CE3 13EC
SOURCE #4 : 1CE3 14EB

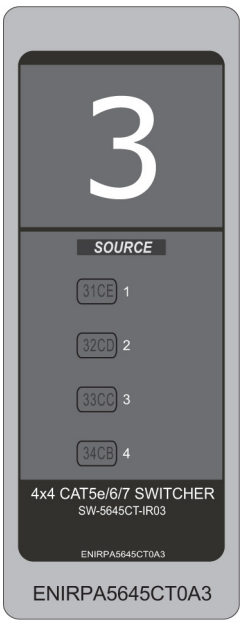
4x4 CAT5e/6 SWITCHER
SW-5645CT-IR02



ENIRPA5645CT0A2

IR-02 DATA CODE:
SOURCE #1 : 1CE3 21DE
SOURCE #2 : 1CE3 22DD
SOURCE #3 : 1CE3 23DC
SOURCE #4 : 1CE3 24DB

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



ENIRPA5645CT0A3

IR-03 DATA CODE:
SOURCE #1 : 1CE3 31CE
SOURCE #2 : 1CE3 32CD
SOURCE #3 : 1CE3 33CC
SOURCE #4 : 1CE3 34CB

4x4 CAT5e/6 SWITCHER
SW-5645CT-IR04



ENIRPA5645CT0A4

IR-04 DATA CODE:
SOURCE #1 : 1CE3 41BE
SOURCE #2 : 1CE3 42BD
SOURCE #3 : 1CE3 43BC
SOURCE #4 : 1CE3 44BB

EDID FUNCTION

EDID FUNCTION SETUP

EDID Setup	To change the EDID 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 Embedded EDID Status.
Step 3 . Press the ENTER button	To set EDID mode. The switcher will return to operation mode.
Operation will abort if no keys are pressed within 5 seconds.	
Embedded EDID modes	**Total 8 EDID Modes**
Embedded EDID setup Press **EDID > SOURCE > ENTER** SOURCE #1 or SOURCE #2 	To select Embedded EDID mode or LEARNING mode. Press EDID button : The LCM will show the current EDID status. Repeatedly depressing the source 1 button will cycle up thru the options. Repeatedly depressing the source 2 button will cycle down thru the options. Embedded EDID : Mode 1 : FSS Mode 2 : H24-3D Mode 3 : H24M-3D Mode 4 : H36-3D Mode 5 : H36M-3D Mode 6 : DVI 1280x1024-60Hz Mode 7 : DVI 1920x1200-60Hz Mode 8 : AUTO

EDID FUNCTION FOR HDMI MATRIX SWITCHER

RESET	EDID Return To Factory default
How to RESET EDID mode Press **EDID > SOURCE > ENTER**  	To RESET the FACTORY DEFAULT (1080p-2CH). Press EDID button : The LCM will show the current EDID status. Press RECALL button : The LCM will show the RESET EDID. Press ENTER to confirm entries. The EDID will return to FSS mode and resolution 1080p-2CH.
LEARNING EDID	**Learning EDID from Destination to Source**
Learning EDID setup Press **EDID > DESTINATION > SOURCE > ENTER**  Press **EDID > DESTINATION > DESTINATION > SOURCE > ENTER** 	Press : EDID > Switcher will **LEARN** destination HDMI EDID and 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 #1 > Switcher will **LEARN** destination CATx EDID 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

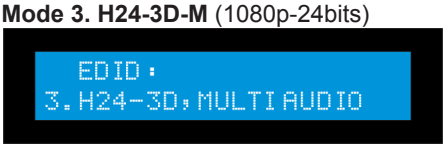
EDID FUNCTION

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 EPRPM.

EDID FUNCTION : 8X EMBEDDED EDID MODES

EDID function : 8x Embedded EDID Modes	
Mode 1. FSS (Fast Speed Start) 	Automatic capture of the most suitable EDID from Destination to Source.
Mode 2. H24-3D (1080p-24 bits) 	Audio Support : PCM 2CH
Mode 3. H24-3D-M (1080p-24bits) 	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) 	Audio Support : PCM 2CH
Mode 5. H36-M (1080p-36 bits) 	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) 	DVI Support : DVI-D 1280x1024 60Hz
Mode 7. 1920x1200-60Hz (DVI-D) 	DVI Support : DVI-D 1920 x 1200 60Hz
Mode 8. AUTO <Default> 	All Outputs will be set to the highest common resolution of all connected display devices.

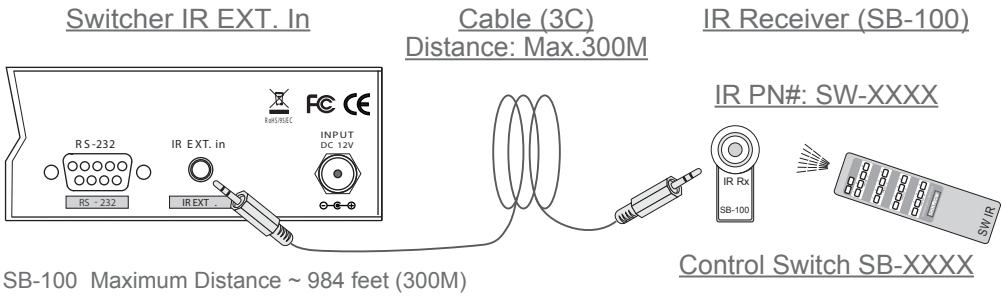
EDID FUNCTION

EDID FUNCTION FOR HDMI MATRIX SWITCHER	
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 **Embedded** EDID Status.
Step 2 . Press the Destination #4 button row	Copy the Destination #8 Display EDID.
Step 3 . Press the Source #2 button row	Learning the Destination #4 EDID To Source # 2.
Step 4 . Press **ENTER** button	To confirm entries.
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 **Embedded** EDID Status.
Step 2 . Press the Destinations #1~4 button row	Copy any 1~4 Destinations EDID.
Step 3 . Press the Source #1, #3, ~#4 button row	Learning the Destination EDID link to source #1, #3,~ #4
Step 4 . Press **ENTER** button	To confirm entries.
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 **Embedded** EDID Status.
Step 2 . Press destination button 1 thru 4	Learning anyone 1~4 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 status	**To view the current EDID status.**
Step 1 . Press **EDID** button	The button will flash blue and the display will show the current **Embedded EDID** Status.
Step 2 . Press **EDID** button	To exit.
How to setup FSS® Function	**Fast Speed Start®**
Step 1 . 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 **Embedded** EDID mode.
Step 3 . Press **ENTER** button	To confirm entries.
Step 4 . Press **EDID** button	To select the EDID **FSS®** mode.
Step 5 . Press **ENTER** button	To confirm entries.
LEARNING EDID definition	**Learning EDID from Destination to Source**
1. Switcher will LEARN destination EDID and pass the selected source.	
2. 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.	
3. 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.	
Auto mode definition	**Common Resolution and Audio**
Switcher will find highest common Resolution and Audio from all destination EDID to link Source. **Example for single source:** Destination > press #1 and then Source > press #1 Destination device #1 will set to the highest common resolution and Audio of source #1 **Example for multiple sources:** Destination device #1, #2, #3 will be set to the highest common resolution and Audio available and source device #1 will output this same resolution.	

IR EXTENDER

1. SB-100 IR 300M Receiver



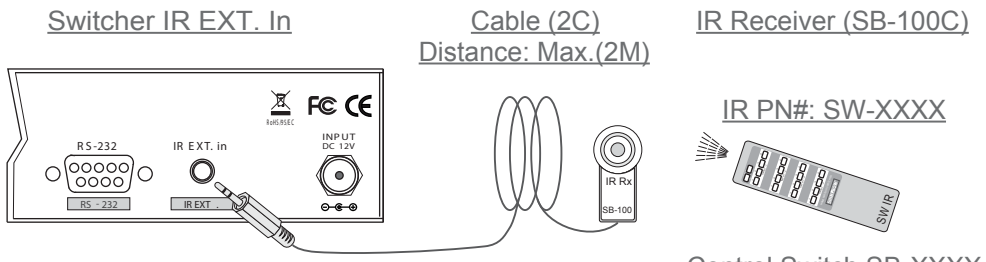


SB-100 Maximum Distance ~ 984 feet (300M)

The SB-100 IR Receiver is required when using the port “ALL in” Jack.

2. SB-100C IR 2M Receiver





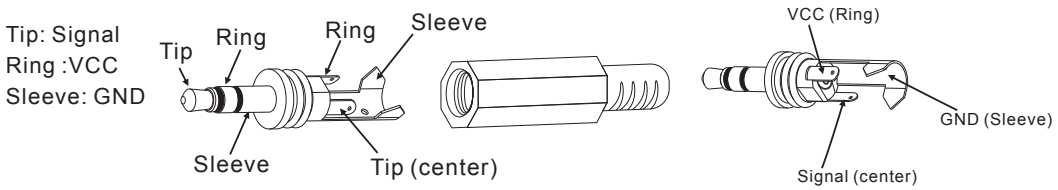
SB-100C Maximum Distance ~ 6 feet (2M)

The SB-100C IR Receiver will not function on the port “ALL in” Jack.

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

Pin configuration for IR 984 feet (300M) Extender Receiver such as SB-100 compatible

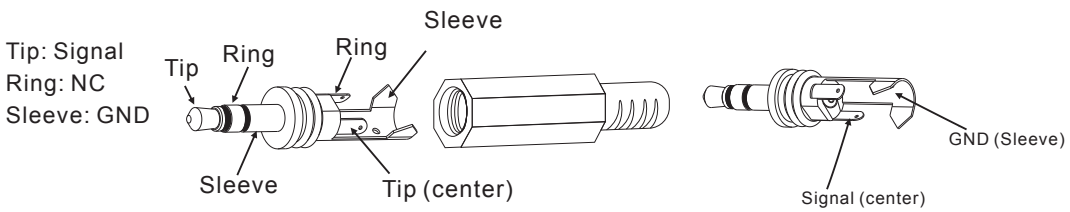




SB-100 Receiver and SB-101 Transmitter The DISTANCE maximum ~ 984 feet (300M)

Pin configuration for IR Receiver 6 feet (2M) cable such as SB-100C compatible





SB-100 Receiver and SB-101C Transmitter The DISTANCE maximum ~ 984 feet (300M)

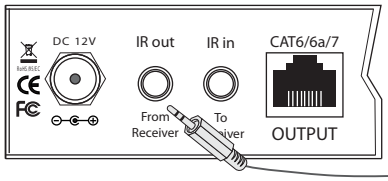
Note: *The External IR jack has voltage on the “Ring” portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

IR EXTENDER

1. SB-101 IR 300M Transmitter

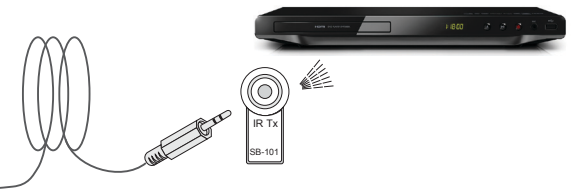


Device



Cable (3C)

IR Transmitter (SB-101)

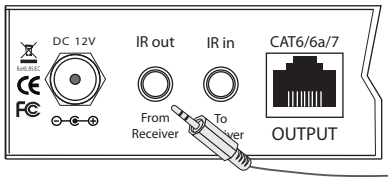


SB-101 Maximum Distance ~ 984 feet (300M)

2. SB-101C IR 2M Transmitter



Device



Cable (3C)

IR Transmitter (SB-101C)



SB-101C Maximum Distance ~ 6 feet (2M)

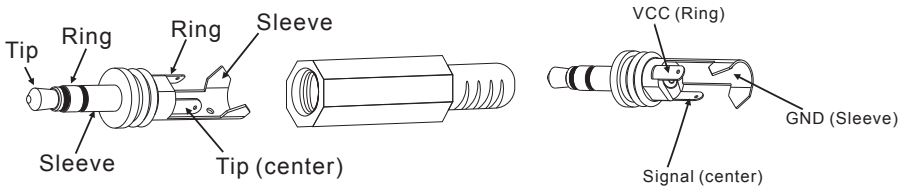
**** When you plug the External IR extender into the switcher, the front panel IR transmitter remains active. ****

PIN CONFIGURATION:

SB-101 and SB-101C Transmitter Pin configuration



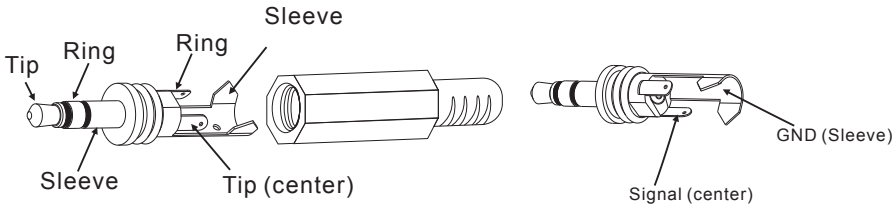
Tip: Signal
Ring :VCC
Sleeve: GND



SB-101 Maximum Distance ~ 984 feet (300M)



Tip: Signal
Ring: NC
Sleeve: GND



SB-101C Maximum Distance ~ 6 feet (2M)

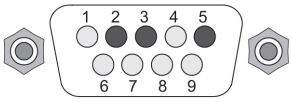
Note: *The External IR jack has voltage on the "Ring" portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

RS-232 SERIAL INTERFACE

RS-232 SERIAL INTERFACE CONNECT a PC or CONTROL SYSTEM. VERSION COMPATIBLE V2.0

RS-232 SERIAL CONNECT

Pin	RS-232	Definition
1	------	Not used
2	TX	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 (RS-232 Control driver V2.0)

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

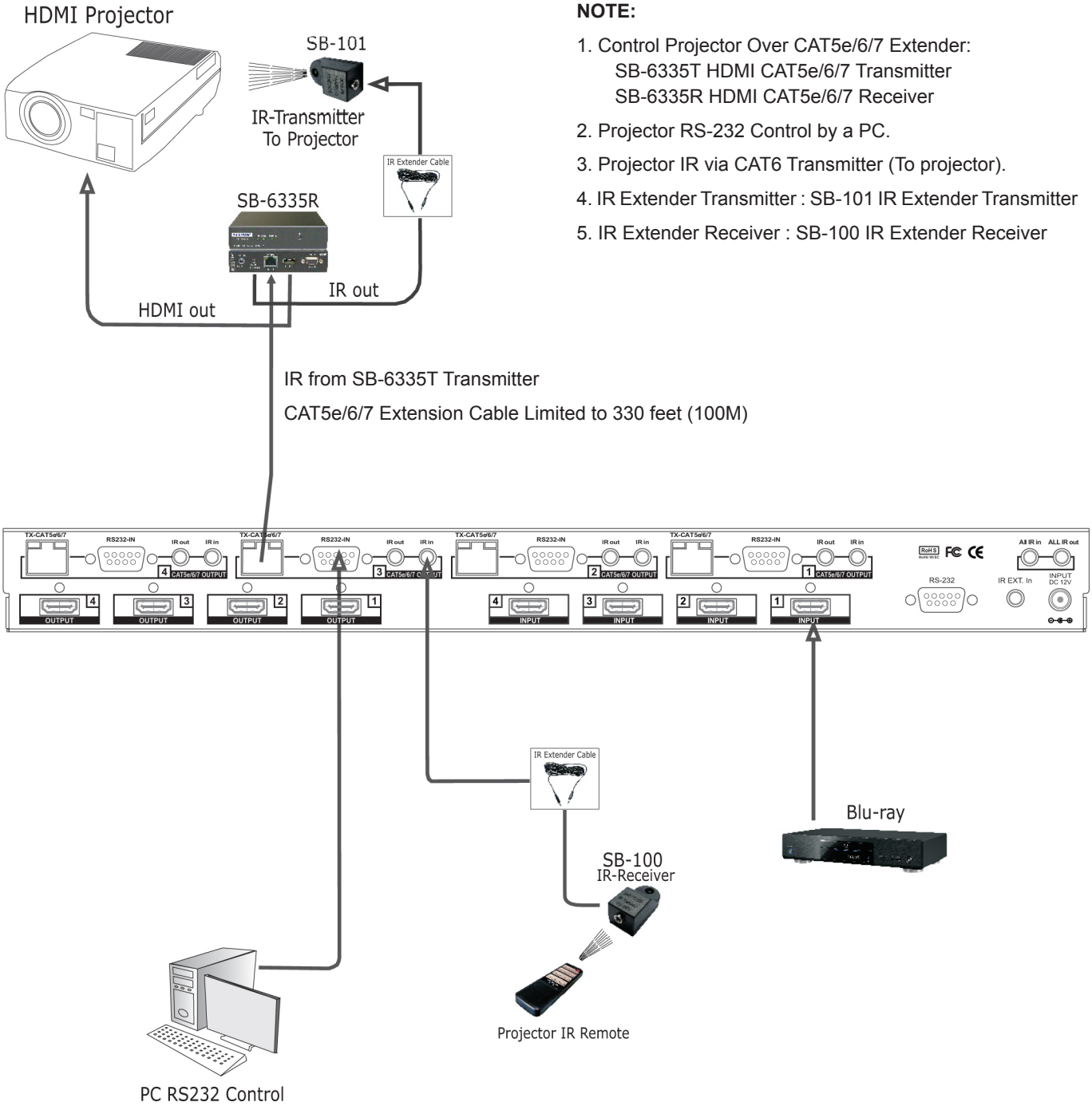
The serial communication parameters are 9600 baud, 8 bit, No Parity and 1 stop bit - this is often referred to as 9600 8N1. When the unit recognizes a complete command it will perform the requested action - there is no delimiter character required.

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

TYPICAL APPLICATION

INSTALLING DIAGRAM

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



NOTE:

1. Control Projector Over CAT5e/6/7 Extender:
   SB-6335T HDMI CAT5e/6/7 Transmitter
   SB-6335R HDMI CAT5e/6/7 Receiver
2. Projector RS-232 Control by a PC.
3. Projector IR via CAT6 Transmitter (To projector).
4. IR Extender Transmitter : SB-101 IR Extender Transmitter
5. IR Extender Receiver : SB-100 IR Extender Receiver

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

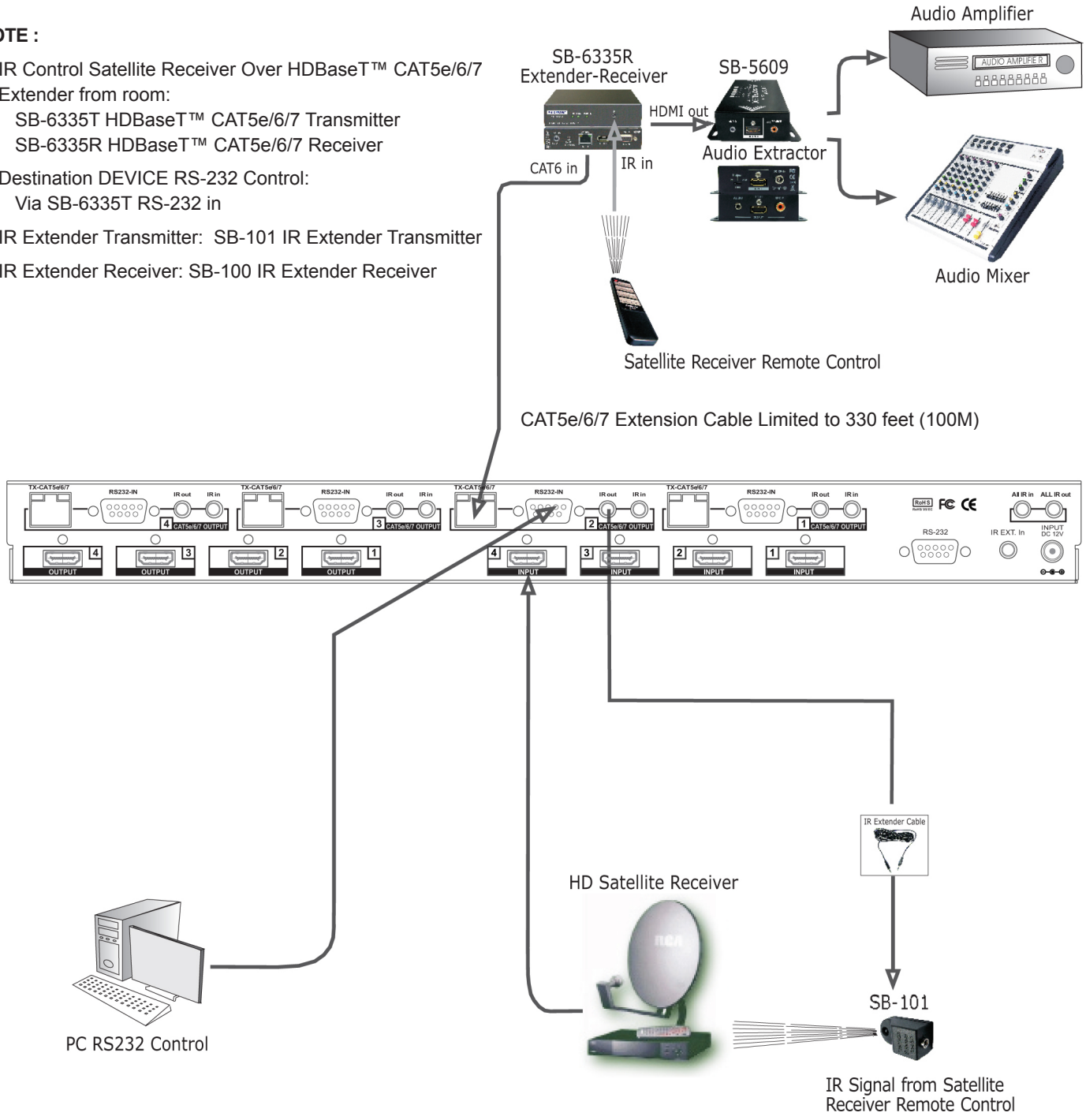
TYPICAL APPLICATION

INSTALLING DIAGRAM

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

NOTE :

1. IR Control Satellite Receiver Over HDBaseT™ CAT5e/6/7 Extender from room:
   SB-6335T HDBaseT™ CAT5e/6/7 Transmitter
   SB-6335R HDBaseT™ CAT5e/6/7 Receiver
2. Destination DEVICE RS-232 Control:
   Via SB-6335T RS-232 in
3. IR Extender Transmitter: SB-101 IR Extender Transmitter
4. IR Extender Receiver: SB-100 IR Extender Receiver



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

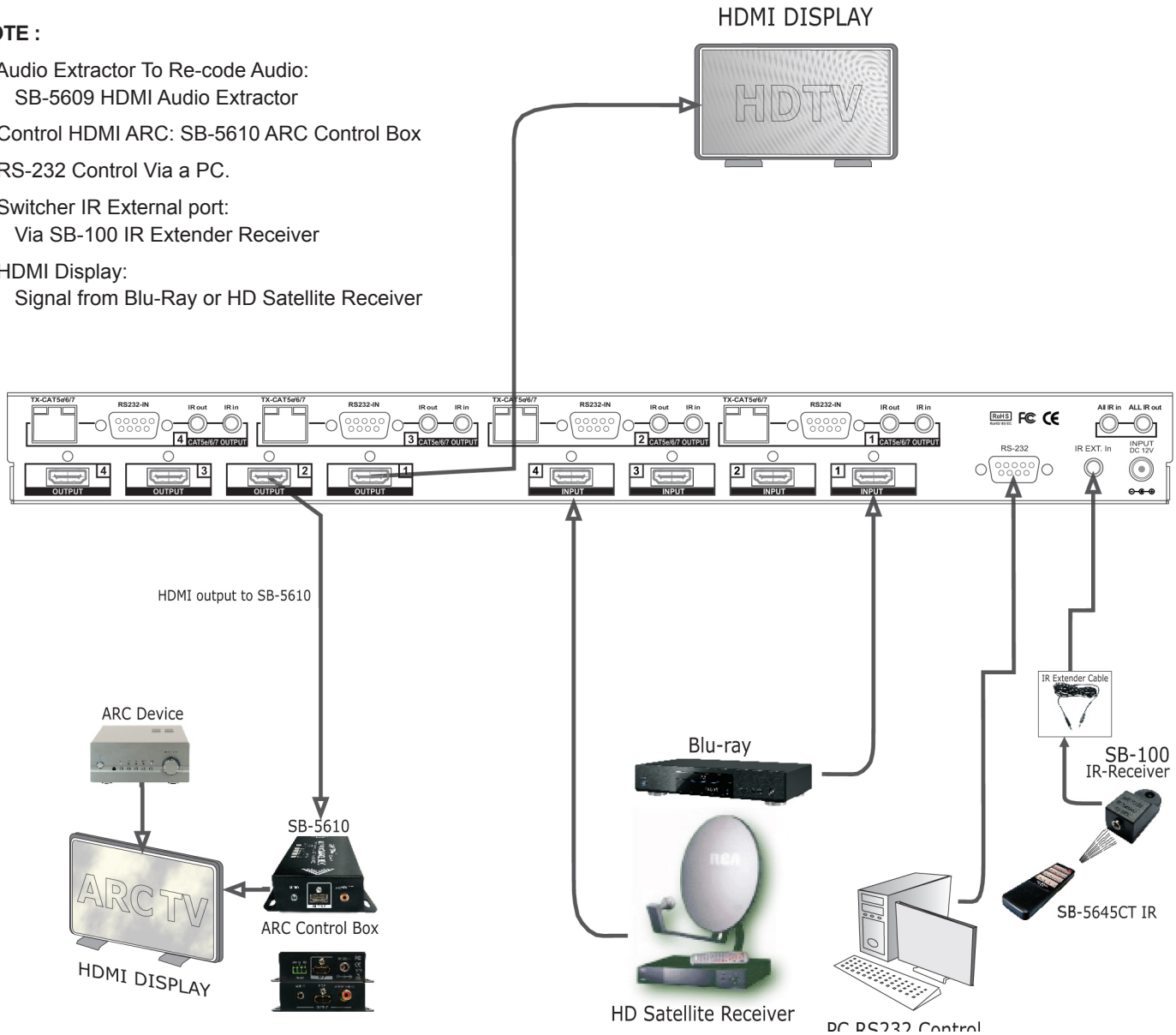
TYPICAL APPLICATION

INSTALLING DIAGRAM

Sample connection using Audio Extractor To Re-code Audio (SB-5609) or to control ARC (SB-5610) and Extend the HDMI signal via HDBaseT™ Transmitter to IR Receivers (SB-6335R) with SB-5645LCM-CT to extend 100M distance between switcher and destination.

NOTE :

1. Audio Extractor To Re-code Audio:
   SB-5609 HDMI Audio Extractor
2. Control HDMI ARC: SB-5610 ARC Control Box
3. RS-232 Control Via a PC.
4. Switcher IR External port:
   Via SB-100 IR Extender Receiver
5. HDMI Display:
   Signal from Blu-Ray or HD Satellite Receiver



Application HDBaseT™ IR, RS-232, Multi format Audio and HD Video signals to pass over CAT5e/6/7 cable.

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