INSTRUCTION MANUAL

SB-5688LCM-CT

8x8 HDMI & HDBaseT™ Over Single CAT5e/6/7 Matrix Routing Switcher



HDBT™

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.

TABLE OF CONTENTS

HDMI-HDBaseT™ MATRIX SWITCHER SERIES

Thank you for purchasing the SB-5688LCM-CT HDMI-HDBaseT™ 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 8x8 HDMI-HDBaseT™ Matrix switcher.

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INTRODUCTION

The SB-5688LCM-CT is high-performance 8x8 matrix routing switcher with (8) HDMI inputs and supports simultaneously (8) HDMI and (8) CATx outputs. The SB-5688LCM-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 CATx cable. With a signal bandwidth of 340Mhz, there is no signal degradation. High Definition Digital signals can be selected and distributed to any (16) outputs simultaneously (8x channels x2). The Switcher is certified as being fully HDMI and HDCP 2.2 compliant, HDMI V1.4a 3D formats, data rates up to 6.75Gbps. Supports UXGA/WUXGA/DVI 1920x1200 resolution to any HD displays. The SB-5688LCM-CT has one CAT6/CAT6a and HDMI connector for each output, effectively making this an 8x16 switcher (same signal on both outputs). (1) RJ-45 connection on each output extends the HDMI signal to remote location via HDBaseT™ CATx cable extend to HDBaseT™ Receiver. The EDID can be selected between (8) different modes. Control is provided via front panel push buttons, IR remote or via RS-232 or TCP/IP (not a web-browser). An RS-232 Windows GUI interface is provided for matrix routing.

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.

- 8x HDMI source devices matrix switched to 8x HDMI and 8x CAT 5e/6/7 Extender output devices
- Application HDBaseT Specification for IR, RS-232, Multi Audio Format and HD Video Signals over CATx
- HDMI digital Video w/ 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 or audio amplifiers
- Digital Video TMDS formats Resolution up to 1080p-60 with Deep color 36-bit
- Digital Audio Support: Dolby TrueHD, Dolby Digital, Dolby Digital Plug/ex, DTS, DTS-HD, DTS-HD Master, DTS-EX, PCM, PCM2, LPCM2
- Audio Input : Support HDMI digital audio
- Audio Output : Support HDMI digital Audio with Multi-Audio
- Various User Interface control:
  - Windows based GUI control via RS-232 port
  - Front Panel push button
  - IR wireless remote control
  - Ethernet Switcher control
  - Third party RS-232 controller (via simple ASCII)
- Support world wide control functions: ALL/OFF/RECALL/ENTER/MEMORY/EDID/LOCK
- Support EDID modes :
  - Embedded EDID modes : FSS/H24-3D/H24-3D-M/H36-3D/H36-3D-M/DVI-D 1280x1024-60Hz/DVI-D 1920x1200-60Hz/AUTO
  - External modes : Learning mode
- Automatic scanning input & output status via LED show on front panel
- Support IR Remote and IR Extender with distance up to ~ 1000ft (300M) Max
- EDID configuration via Internal modes

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

PACKAGE CONTENTS

Check that you have the following components;

- SB-5688LCM-CT Matrix Switcher
- RS-232 V2.0 / Ethernet V2.0 Protocol Instructions
- Master wireless IR Remote Control (SW-5688)
- (8) Individual wireless IR Control (SW-5688CT-IR01~IR08)
- 19 inch Ear mount bracket (Part # 2U-440L)
- SB-101 IR Extender distance ~984 ft (300M) Transmitter set
- SB-100 IR Extender distance ~984 feet (300M) Receiver set
- SB-101C IR Extender distance 6ft(2M) Transmitter Cable
- SB-100C IR Extender distance 6ft(2M) Receiver Cable
- CD Contents : This manual, Windows GUI, ISP V1.0
- Windows driver
- RS-232 Cable 6 feet (2M)
- ISO Screws
- Users Guide
- Worldwide Universal Power Supply 100~240 VAC, AC 50/60Hz













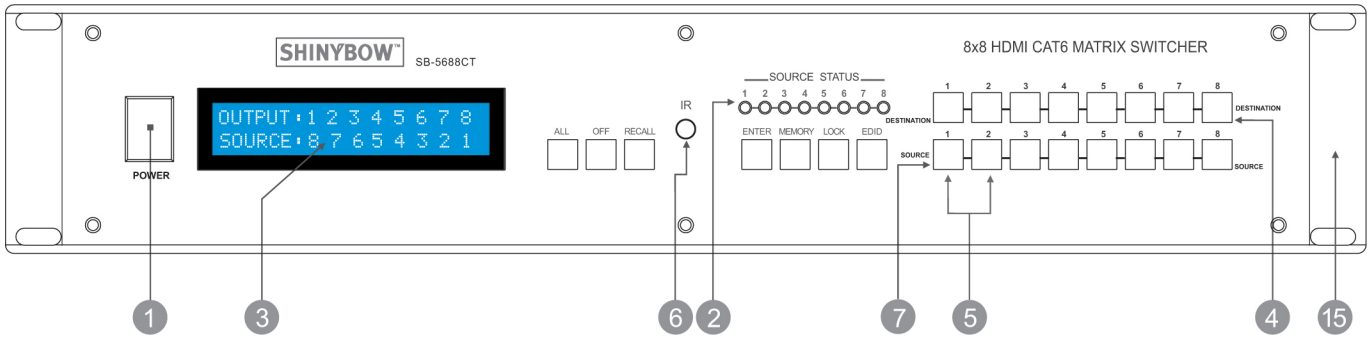
SPECIFICATIONS

SPECIFICATIONS

- **Type of HDMI Switcher:** 8x HDMI inputs To 8x HDMI + 8x HDBaseT™ Outputs Matrix Switcher
- **HDMI Support:** HD 1080p-@60Hz, H36-bit Deep color, 3D (1.4a) 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 8x HDMI Sources:**
  - 8x HDMI Sources
  - 8x IR in (IR signal To 8x Rooms each - Via HDBaseT™ CATx cable)
  - 1x ALL IR in (IR to Room - Via HDBaseT™ CATx cable)
  - 8x RS-232 (I/O To 8x Rooms - Via HDBaseT™ CATx cable)
  - 1x IR Ext. in (Switch control)
  - 1x RS-232 (Switch control)
  - 1x Ethernet (Switch control)
- **Outputs 8x HDMI Destinations:**
  - 8x HDMI Destinations
  - 8x CATx (HDBaseT™ Based via category 6/6a/7 cable)
  - 1x ALL IR out (IR signals from Room - Via HDBaseT™ CATx cable)
  - 8x IR out (IR signal from 8x Rooms each - Via HDBaseT™ CATx cable)
  - 8x RS-232 (I/O From 8x Rooms each - Via HDBaseT™ CATx cable)
- **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:**
  - 1x IR Remote Controller (remote switcher)
  - 8x IR Room Remote Controller
  - 1x Select & Function buttons on front panel
  - 1x IR External port (switch control)
  - 1x RS-232 series interface (switch control)
  - 1x Ethernet series interface (switch control)
- **Source Status:** Automatically Scan Sources Inputs via LED show out
- **Function Control Key:** ALL / OFF / RECALL / ENTER / MEMORY / LOCK / EDID
- **(8) EDID management:** Select Embedded EDID : Mode1: FSS, Mode2: H24-3D, Mode3: H24-3D-M, Mode4: H36-3D, Mode5: H36-3D-M, Mode6: DVI-D 1280x1024-60Hz, Mode7: DVI-D 1920x1200-60Hz, Mode8: AUTO
- **Infrared Frequency:** 38 Khz
- **IR External Distance:** ~1000 ft / 300M max
- **CAT5e/6 Extender Distance:** ~300 ft / 100M max
- **HDMI I/O Connector:** HDMI Type A - SMD 19pin Female Type
- **Temperature:** 32°F - 100°F Operation (0°C - 38°C)
- **Dimensions (LxWxH):** 19* x 9.85 x 3.5 in (*with rackmount bracket) (482x250x88 mm)
- **Rack Mount:** Rack Mount 2 RU High 19” Rack Mount (with rack mount)
- **Power Supply:** AC 100~240 VAC 50/60Hz (Power Consumption:10A Max)
- **Safety Approvals:** CE, FCC, RoHS, REACH
- **Product Weight:** 4.75 Kgs / 7.91 lb

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

FRONT PANEL



1. POWER SWITCH: The power switch turns the unit on and off. The LED 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 8 LED 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 8 select buttons are provided for each destination assignment. Routing can be Source to Destination or one source to multiple destinations. ***Example :*** Press Destination 1,3,5 then press Source 2 will route Input 2 to Output 1,3,5 respectfully.

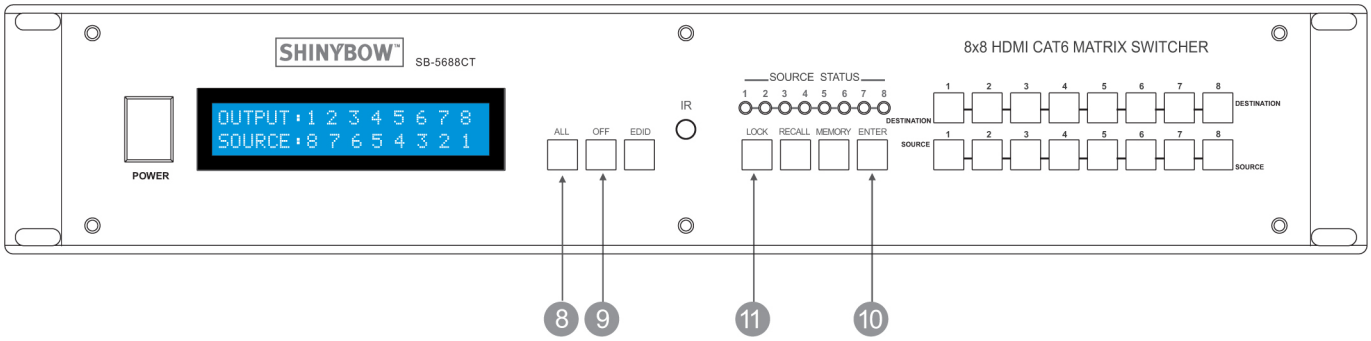
5. EDID MODE SELECT BUTTONS: Used to select EDID mode using Input buttons #1 and #2.

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 8 select buttons are provided each source selection.

15. 19 INCH EAR MOUNT PAIR: Converts desktop to 19 inch rack mount. Bracket (part # 2U-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 8. The display will show the Source selected.
- Press **ENTER** The pre-set source selection will be assigned all destinations.

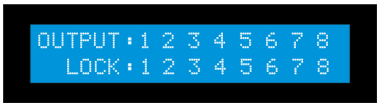
9. FUNCTION KEY - LOCK:



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

- Press **OFF** button followed by any Destination channel.
- Press 1 thru 8 output destination. The display will show " 0 " for the selected channel indicating no video selected.

10. FUNCTION KEY - RECALL:



The system will show previously stored presets, up to a total of 16.
Presets are stored in local memory using Source keys 1 thru 8 or Destination keys 1 thru 8 as the memory preset location.

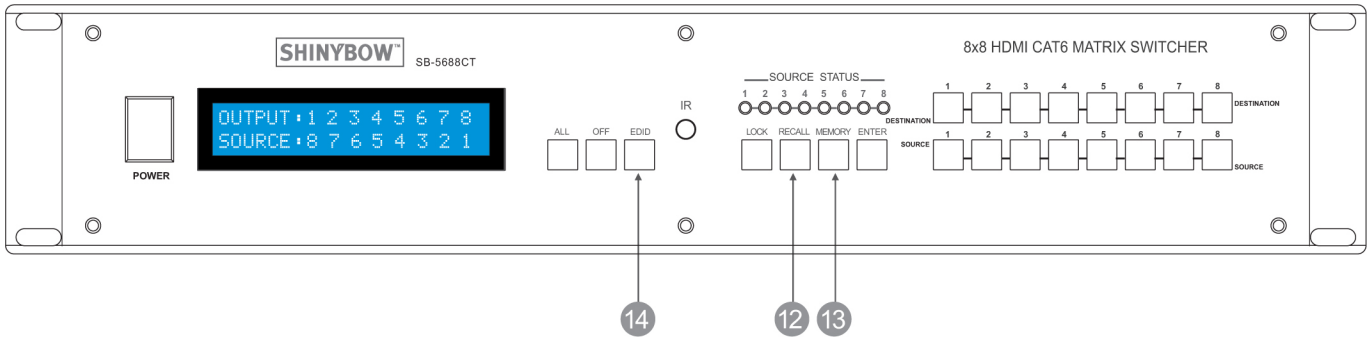
- Press **RECALL** button.
- Press 1 thru 8 on either Source or Destination row.
- Press **ENTER** The pre-set configuration will execute.

Operation completes.

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

11. FUNCTION KEY - ENTER: Press **ENTER** to confirm entries.

FRONT PANEL



12. FUNCTION KEY - RECALL:





The system will show previously stored presets, up to a total of 16.
Presets are stored in local memory using Source keys 1 thru 8 or Destination keys 1 thru 8 as the memory preset location.

- Press **RECALL** button.
- Press 1 thru 8 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 16.
Presets are stored in local memory using Source keys 1 thru 8 or Destination keys 1 thru 8 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.

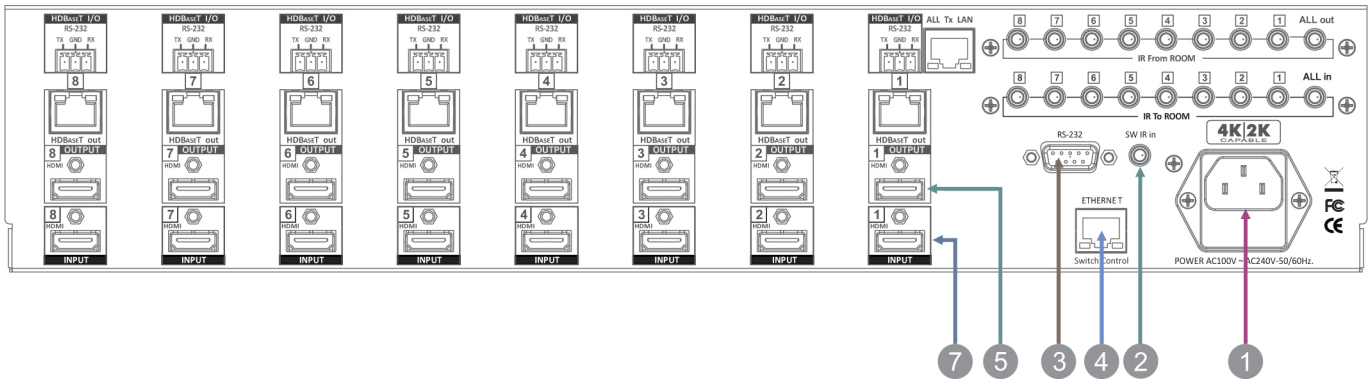
14. FUNCTION KEY - EDID:



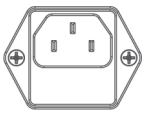


- Press EDID to select new EDID mode or select source row #1 or #2 for LINK source EDID again.
- Press DESTINATION again, press the same DESTINATION # to learn CATx EDID, The EDID for CATx has been learned.

BACK PANEL



1. DC POWER INLET: The Switcher is fitted with a AC power plug input connector. Ensure that the used is of an approved type and is of sufficient current carrying connector capacity with the correct voltage and connector polarity. 1100~240Volt AC, 50/60Hz power supply.



Power Plug:
Power input - AC100~240V,50/60Hz, 10A

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2. IR EXTENDER IN (EXT. IR TO CONTROL SWITCHER): Support one of IR Extender to control Switcher. Extend distance max. 300M / ~1000 ft. When you plug the External IR extender into the switcher, the front panel IR receiver remain active.



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

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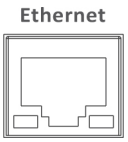
3. RS-232 CONNECTION (SWITCHER): RS-232 control port to allow for interfacing to a PC, Such as a computer or touch panel control, to the switcher via this DB-9pin Female connector for serial RS-232 control.



This port is also for firmware update.
Remote Port : DB-9pin Female connector

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4. ETHERNET CONNECTION: *ETHERNET control port to allow for TCP/IP interfacing to a PC Such as a computer or touch panel control (not a web-browser), to the switcher via this RJ-45 Female connector to control switcher.*



Remote Port : Control the switcher RJ-45 Female connector
Ethernet Port:*Note: the Ethernet port and RS-232 port cannot be used simultaneously. Any connection to the Ethernet port will disable serial commands send to the RS-232 port.*

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5. OUTPUTS- 1,2,3,4,5,6,7 & 8 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 8



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.

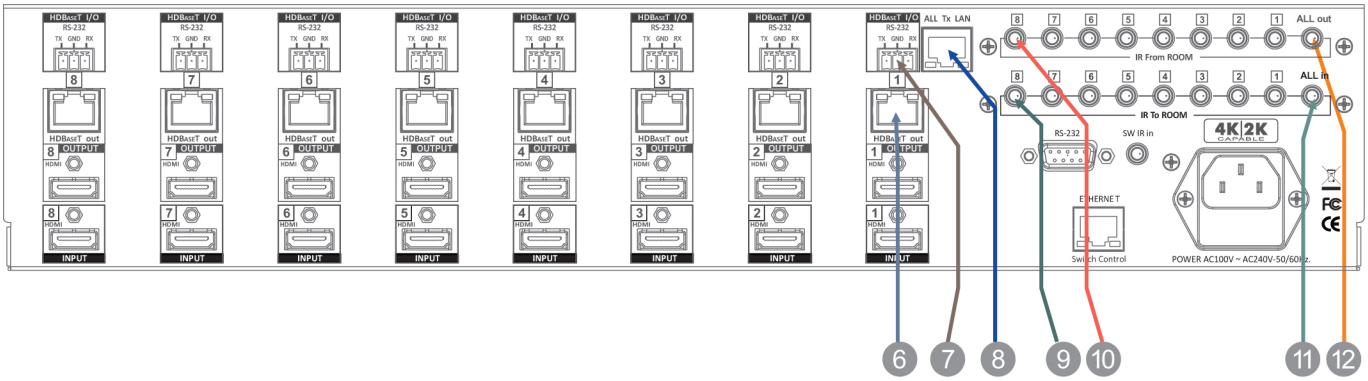
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6. INPUTS- 1,2,3,4,5,6,7, & 8 HDMI: Connect a signal link of HDMI direct digital video/audio to this Female
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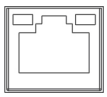


HDMI digital video/audio connector: HDMI Female connector.
Note: With the proper adapters, the switcher can be used with DVI digital video signals HDCP compliant.

BACK PANEL



6. OUTPUT - 1,2,3,4,5,6,7 & 8 HDBaseT™: CAT Transmitter extend a signal link of HDMI / RS-232 / IR Remote to this RJ-45 Female connector via CATX(6/6a) category cable. Connector with RJ-45 Output 1 ~ Output 8



HDBaseT™ Phone-Jack 8P8C Connector: RJ-45 Female connector.

7. HDBaseT™ RS-232 - 1,2,3,4,5,6,7 & 8 CONNECTION: (8)x RS-232 control port to allow for interfacing to a PC. Controls I/O via Switcher HDBaseT™ Transmitter (8) Rooms each via this Terminal Block-3pin Female socket for serial RS-232 control.



Remote Port: Terminal Block-3pin Female socket

8. HDBaseT™ LAN CONNECTION: All Tx LAN : Provides Ethernet (LAN) connection from the switcher to All HDBaseT™ Transmitter (ie. SB-6320T).



ALL HDBaseT™ Tx LAN Port Connector: HDBaseT™ Phone-Jack 8P8C, RJ-45 Female socket.
LAN Controls: ***Note: from switcher to HDBaseT Transmitter.***

9. IR REMOTE INPUT - 1,2,3,4,5,6,7 & 8 IR SIGNAL FROM ROOM: Supports (8) of IR Extender to receive signal from (8) rooms. Extend cable distance maximum 300M/ ~1000 ft. When you plug the CAT5e/6/7 IR extender into the external port, the room IR receiver remain active.



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

10. IR REMOTE OUTPUT - 1,2,3,4,5,6,7 & 8 IR SIGNAL FROM ROOM: Supports (8) of IR Extender to receive signal from (8) rooms. Extend cable distance maximum 300M/ ~1000 ft. When you plug the CAT5e/6/7 IR extender into the external port, the room IR receiver remain active.



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

11. ALL IN : ALL HDBaseT™ IR REMOTE 1,2,3,4,5,6,7 & 8 (IR SIGNAL TO ROOM): Supports (8) of IR remote signals to control to (8) rooms via ALL IN port. Extend cable distance maximum 300M / ~1000 ft. When you plug the CAT5e/6/7 IR extender into the external port, the room IR receiver remain active.



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

12. ALL OUT : ALL HDBaseT™ IR REMOTE - 1,2,3,4,5,6,7 & 8 (IR SIGNAL FROM ROOM): Supports (8) of IR remote signals from (8) rooms via ALL OUT port. Extend cable distance maximum 300M / ~1000 ft. When you plug the CAT5e/6/7 IR extender into the external port, the room IR receiver remain active.



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

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

IR REMOTE CONTROL KEY :

IR REMOTE : SW-5688

1. / 2. SWITCH 1 POWER ON or OFF:

Controller with a separate power ON and OFF

3. DESTINATION : 1 thru 8 OUTPUT SELECTION:

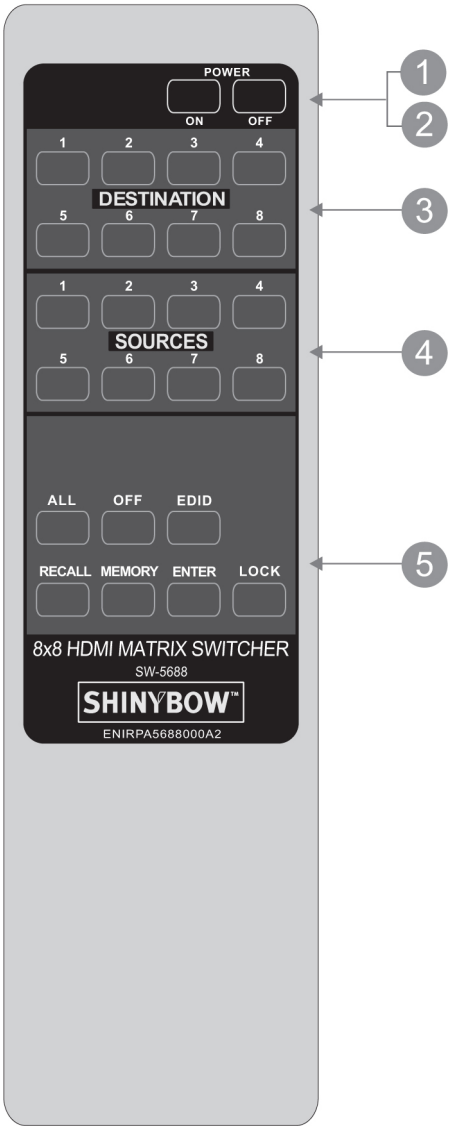
Press the destination button to select the output display channel.

4. SOURCE : 1 thru 8 INPUT SOURCE SELECTION:

Press input 1~8 sources with selection button

5. FUNCTION KEY:

ALL - function selection button
OFF - function selection button
EDID - function selection button
RECALL - function selection button
MEMORY - function selection button
ENTER - function selection button
LOCK - function selection button



REMOTE PROTOCOL COMMANDS

IR REMOTE CUSTOM AND DATA CODES (NEC Standard)

HOW TO SETUP IR CODES :

CUSTOM CODE : 09F6

POWER ON : 09F6 A15E
POWER OFF : 09F6 A25D

ALL : 09F6 B04F
OFF : 09F6 B14E
EDID : 09F6 B748
LOCK : 09F6 B54A
RECALL : 09F6 B24D
MEMORY : 09F6 B44B
ENTER : 09F6 B34C

PRESS DESTINATION - # then PRESS SOURCE - #

DESTINATION #1 : 09F6 10EF
DESTINATION #2 : 09F6 20DF
DESTINATION #3 : 09F6 30CF
DESTINATION #4 : 09F6 40BF
DESTINATION #5 : 09F6 50AF
DESTINATION #6 : 09F6 609F
DESTINATION #7 : 09F6 708F
DESTINATION #8 : 09F6 807F

SOURCE #1 : 09F6 01FE
SOURCE #2 : 09F6 02FD
SOURCE #3 : 09F6 03FC
SOURCE #4 : 09F6 04FB
SOURCE #5 : 09F6 05FA
SOURCE #6 : 09F6 06F9
SOURCE #7 : 09F6 07F8
SOURCE #8 : 09F6 08F7

For example;
Select Destination # 1 to show Source #1~8,

The IR Data Code list :

Destination # 1 , Source #1 09F6 10EF 09F6 01FE
Destination # 1 , Source #2 09F6 10EF 09F6 02FD
Destination # 1 , Source #3 09F6 10EF 09F6 03FC
Destination # 1 , Source #4 09F6 10EF 09F6 04FB
Destination # 1 , Source #5 09F6 10EF 09F6 05FA
Destination # 1 , Source #6 09F6 10EF 09F6 06F9
Destination # 1 , Source #7 09F6 10EF 09F6 07F8
Destination # 1 , Source #8 09F6 10EF 09F6 08F7

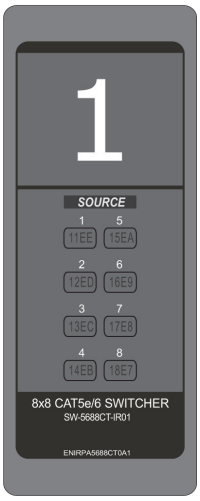
ROOM IR REMOTE CONTROL #01 ~ #08 CUSTOM CODE AND DATA CODES

IR CUSTOM AND DATA CODES (NEC Standard)

PRESS Number To Select SOURCE

CUSTOM CODE : 09F6

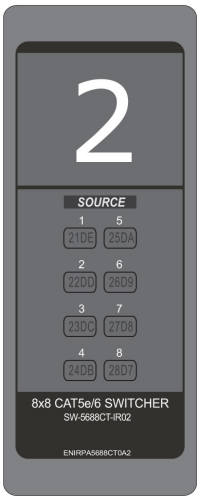
8x8 CAT5e/6 SWITCHER
SW-5688CT-IR01



IR-01 DATA CODE:

SOURCE #1 :	09F6	11EE
SOURCE #2 :	09F6	12ED
SOURCE #3 :	09F6	13EC
SOURCE #4 :	09F6	14EB
SOURCE #5 :	09F6	15EA
SOURCE #6 :	09F6	16E9
SOURCE #7 :	09F6	17E8
SOURCE #8 :	09F6	18E7

8x8 CAT5e/6 SWITCHER
SW-5688CT-IR02



IR-02 DATA CODE:

SOURCE #1 :	09F6	21DE
SOURCE #2 :	09F6	22DD
SOURCE #3 :	09F6	23DC
SOURCE #4 :	09F6	24DB
SOURCE #5 :	09F6	25DA
SOURCE #6 :	09F6	26D9
SOURCE #7 :	09F6	27D8
SOURCE #8 :	09F6	28D7

8x8 CAT5e/6 SWITCHER
SW-5688CT-IR03



IR-03 DATA CODE:

SOURCE #1 :	09F6	31CE
SOURCE #2 :	09F6	32CD
SOURCE #3 :	09F6	33CC
SOURCE #4 :	09F6	34CB
SOURCE #5 :	09F6	35CA
SOURCE #6 :	09F6	36C9
SOURCE #7 :	09F6	37C8
SOURCE #8 :	09F6	38C7

8x8 CAT5e/6 SWITCHER
SW-5688CT-IR04



IR-04 DATA CODE:

SOURCE #1 :	09F6	41BE
SOURCE #2 :	09F6	42BD
SOURCE #3 :	09F6	43BC
SOURCE #4 :	09F6	44BB
SOURCE #5 :	09F6	45BA
SOURCE #6 :	09F6	46B9
SOURCE #7 :	09F6	47B8
SOURCE #8 :	09F6	48B7

8x8 CAT5e/6 SWITCHER
SW-5688CT-IR05



IR-05 DATA CODE:

SOURCE #1 :	09F6	51AE
SOURCE #2 :	09F6	52AD
SOURCE #3 :	09F6	53AC
SOURCE #4 :	09F6	54AB
SOURCE #5 :	09F6	55AA
SOURCE #6 :	09F6	56A9
SOURCE #7 :	09F6	57A8
SOURCE #8 :	09F6	58A7

8x8 CAT5e/6 SWITCHER
SW-5688CT-IR06



IR-06 DATA CODE:

SOURCE #1 :	09F6	619E
SOURCE #2 :	09F6	629D
SOURCE #3 :	09F6	639C
SOURCE #4 :	09F6	649B
SOURCE #5 :	09F6	659A
SOURCE #6 :	09F6	6699
SOURCE #7 :	09F6	6798
SOURCE #8 :	09F6	6897

8x8 CAT5e/6 SWITCHER
SW-5688CT-IR07



IR-07 DATA CODE:

SOURCE #1 :	09F6	718E
SOURCE #2 :	09F6	728D
SOURCE #3 :	09F6	738C
SOURCE #4 :	09F6	748B
SOURCE #5 :	09F6	758A
SOURCE #6 :	09F6	7689
SOURCE #7 :	09F6	7788
SOURCE #8 :	09F6	7887

8x8 CAT5e/6 SWITCHER
SW-5688CT-IR08



IR-08 DATA CODE:

SOURCE #1 :	09F6	817E
SOURCE #2 :	09F6	827D
SOURCE #3 :	09F6	837C
SOURCE #4 :	09F6	847B
SOURCE #5 :	09F6	857A
SOURCE #6 :	09F6	8679
SOURCE #7 :	09F6	8778
SOURCE #8 :	09F6	8877

EDID FUNCTION

EDID FUNCTION FOR HDMI MATRIX SWITCHER

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.	
RESET	**EDID Return To Factory default**
How to RESET EDID mode Press **EDID > RECALL > ENTER** 	RESET To 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.
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. Select Embedded EDID : Mode 1 : **FSS** Mode 5 : **H36-3D-M** Mode 2 : **H24-3D** Mode 6 : **1280x1024-60Hz** Mode 3 : **H24-3D-M** Mode 7 : **1920x1200-60Hz** Mode 4 : **H36-3D** Mode 8 : **AUTO**
LEARNING EDID	**Learning EDID from Destination to Source**
Learning EDID Setup Press **EDID > DESTINATION > SOURCE > ENTER** 	Press **EDID > DESTINATION** Button: The LCM will be show LEARNING 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 > DESTINATION > SOURCE > ENTER** 	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
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

Learning EDID Single to Single	Example : Learn Destination #8 EDID To Source #5.
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 #8 button row	Copy the Destination #8 Display EDID.
Step 3. Press the Source #5 button row	Learning the Destination #8 EDID to Source # 5.
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 ~ 8 button row	Copy any 1~8 Destinations EDID.
Step 3. Press the Source #1, #6~#8 button row	Learning the Destination EDID link to Source #1, #6 ~ #8 .
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 8	Learning anyone 1~8 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 conform 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 8 > Press **Source** 1 thru 8 > 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 8 > Press the majority **Sources** 1 thru 8 > 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

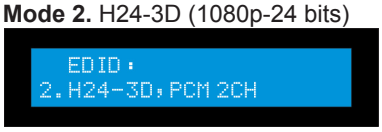
Switcher will find highest common Resolution and Audio from all destination EDID to link Source.

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.

EDID FUNCTION

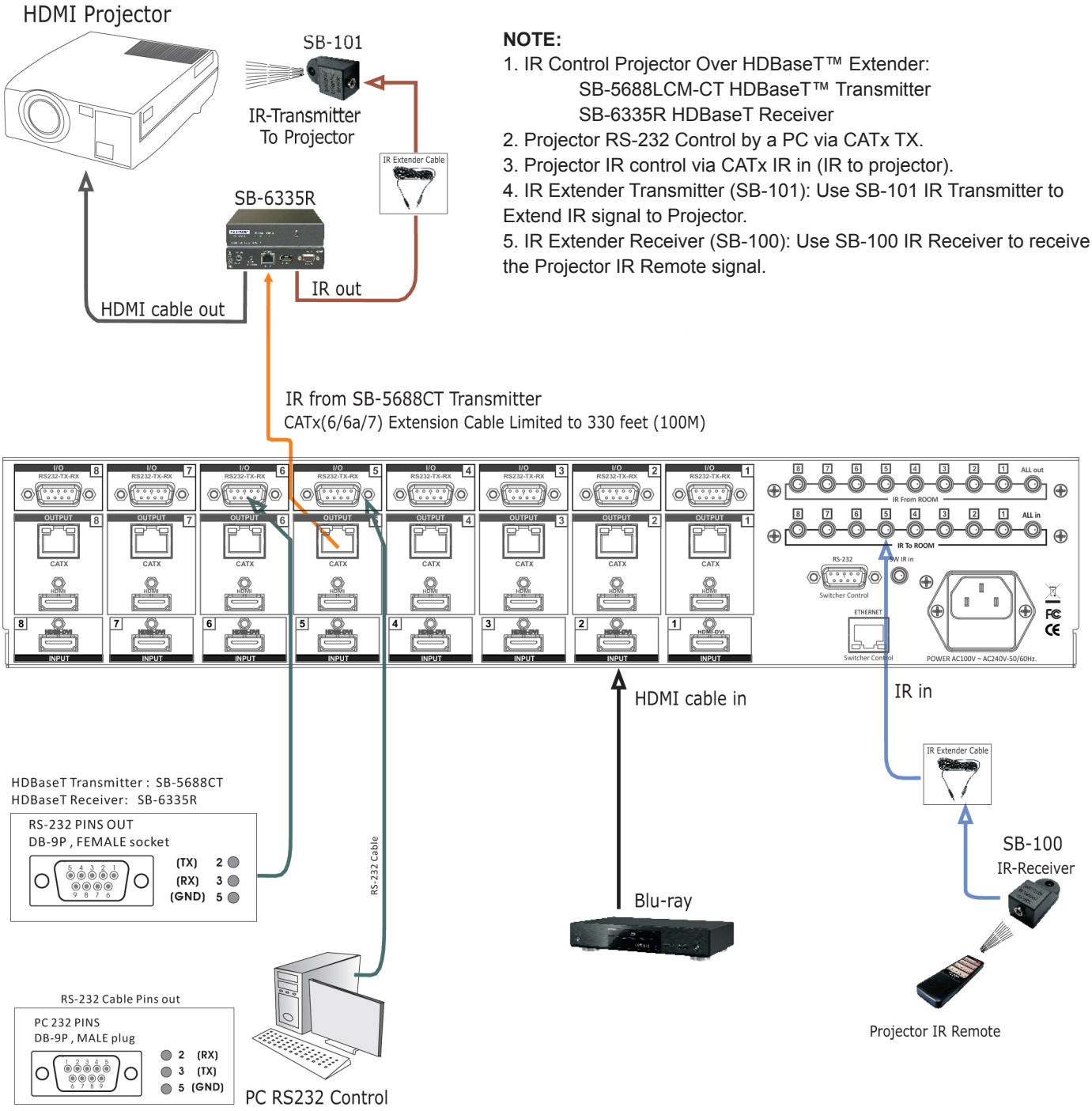
EDID FUNCTION FOR HDMI MATRIX SWITCHER

EDID function : 8x Embedded EDID Modes	
Mode 1. FSS (Fast Speed Start) 	Fast Speed Start mode shortens the startup time of the switcher. Selecting this mode does not force the EDID setup to be cancelled. Users may first select one EDID mode from mode 2 to 3, and then select mode 1 for fast speed start.
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. H36-3D (1080p-36 bits) 	Audio Support : PCM 2CH
Mode 5. H36-3D-M (1080p-36 bits) 	Video Support : All resolutions up to and including 1080p. 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-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.

TYPICAL APPLICATION

INSTALLING DIAGRAM

Sample connection using IR Transmitters (SB-101) and IR Receiver (SB-100) with SB-6335R & SB-5688LCM-CT to control a projector.



NOTE:

1. IR Control Projector Over HDBaseT™ Extender:
   SB-5688LCM-CT HDBaseT™ Transmitter
   SB-6335R HDBaseT Receiver
2. Projector RS-232 Control by a PC via CATx TX.
3. Projector IR control via CATx IR in (IR to projector).
4. IR Extender Transmitter (SB-101): Use SB-101 IR Transmitter to Extend IR signal to Projector.
5. IR Extender Receiver (SB-100): Use SB-100 IR Receiver to receive the Projector IR Remote signal.

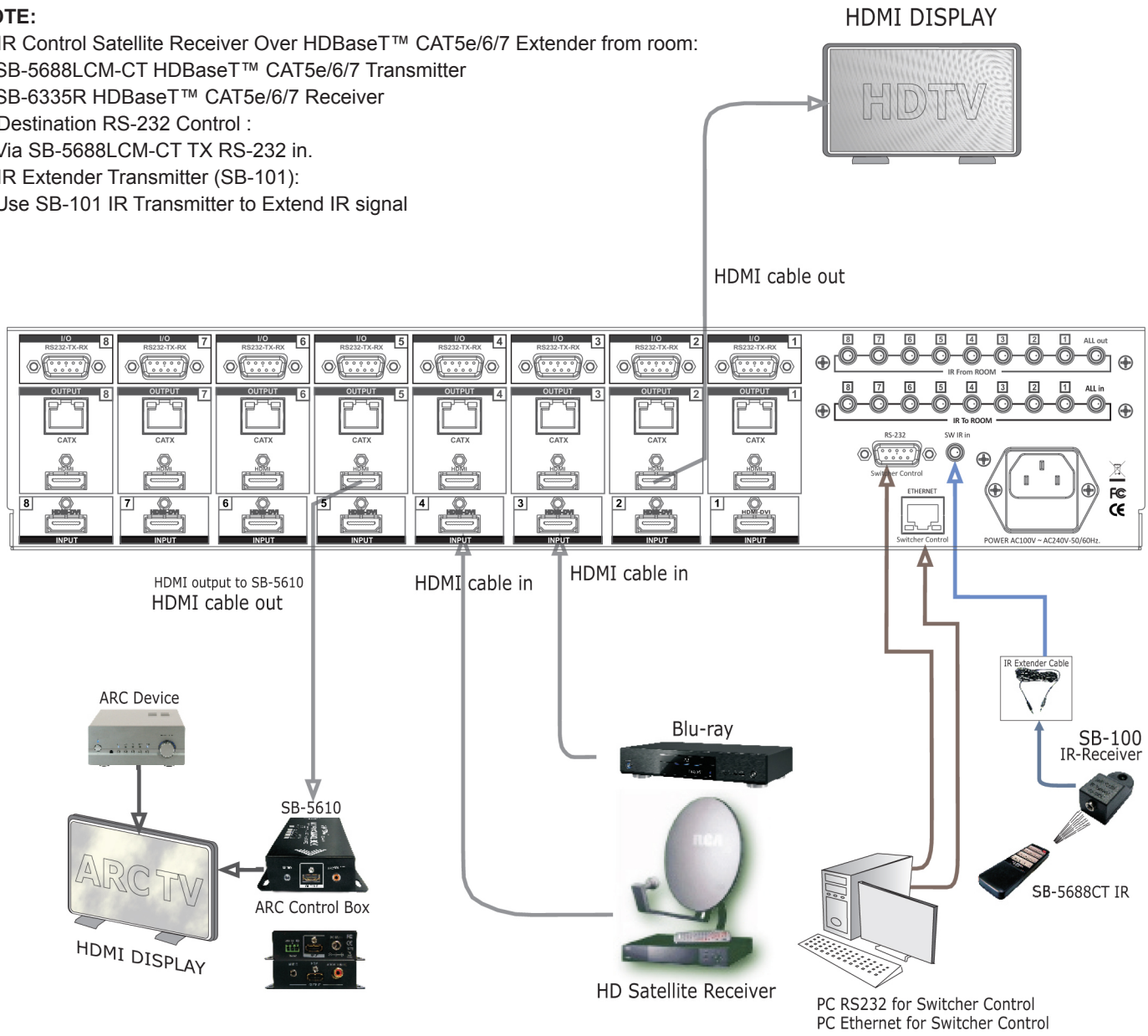
TYPICAL APPLICATION

INSTALLING DIAGRAM

Sample connection using IR Transmitters (SB-101) with SB-5688LCM-CT and SB-6335R to control a IR signal from Satellite Receiver.

NOTE:

1. IR Control Satellite Receiver Over HDBaseT™ CAT5e/6/7 Extender from room:
   SB-5688LCM-CT HDBaseT™ CAT5e/6/7 Transmitter
   SB-6335R HDBaseT™ CAT5e/6/7 Receiver
2. Destination RS-232 Control :
   Via SB-5688LCM-CT TX RS-232 in.
3. IR Extender Transmitter (SB-101):
   Use SB-101 IR Transmitter to Extend IR signal



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

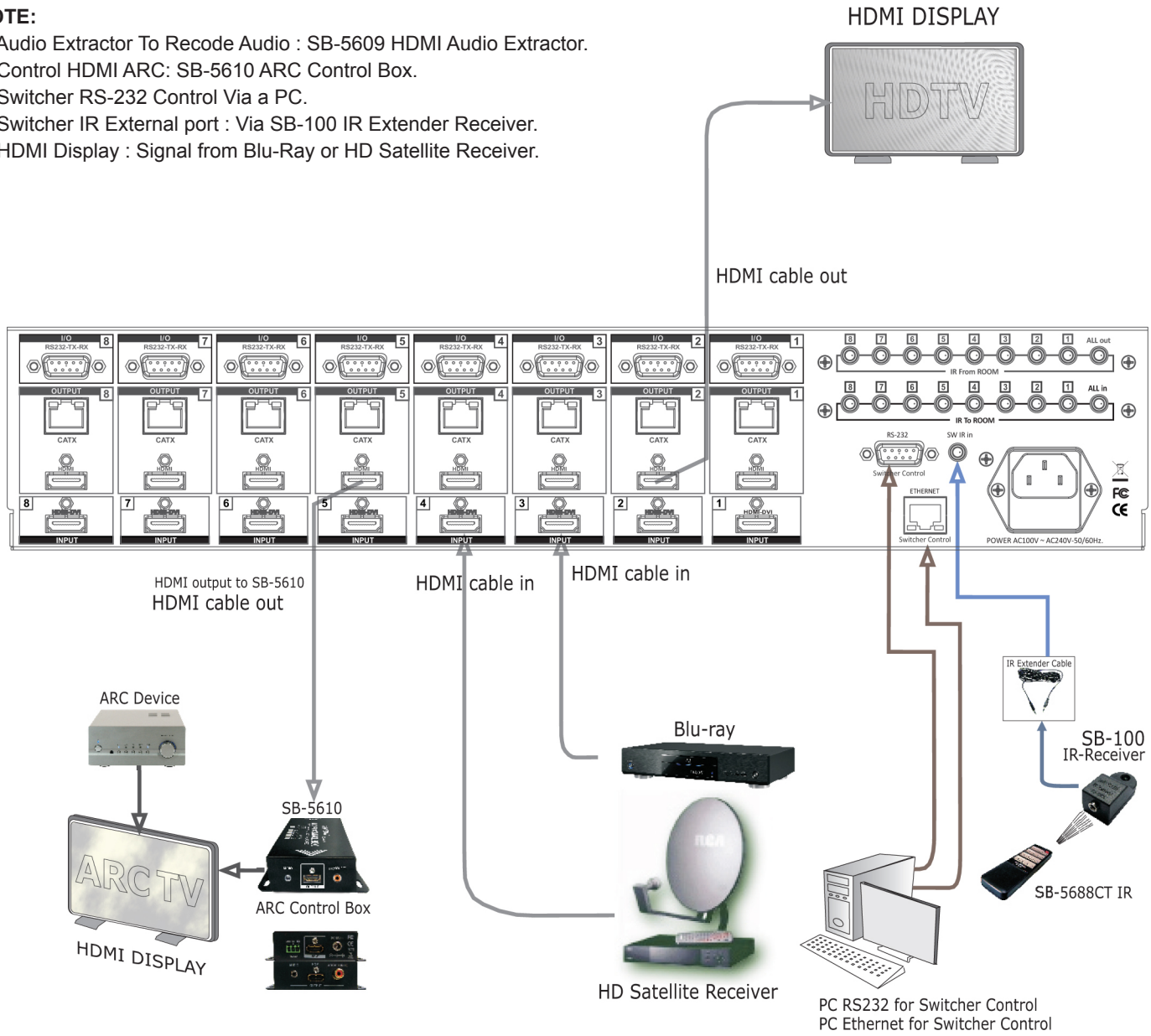
TYPICAL APPLICATION

INSTALLING DIAGRAM

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-5688LCM-CT to extend 100M distance between switcher and destination.

NOTE:

1. Audio Extractor To Recode Audio : SB-5609 HDMI Audio Extractor.
2. Control HDMI ARC: SB-5610 ARC Control Box.
3. Switcher 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.

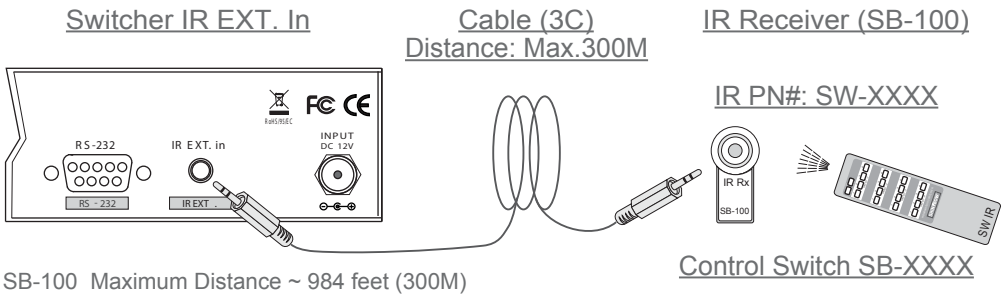


Application HDBaseT™ IR, RS-232, Multi format Audio and HD Video signals to pass over CAT5e/6/7 cable.

IR EXTENDER

1. SB-100 IR 300M Receiver



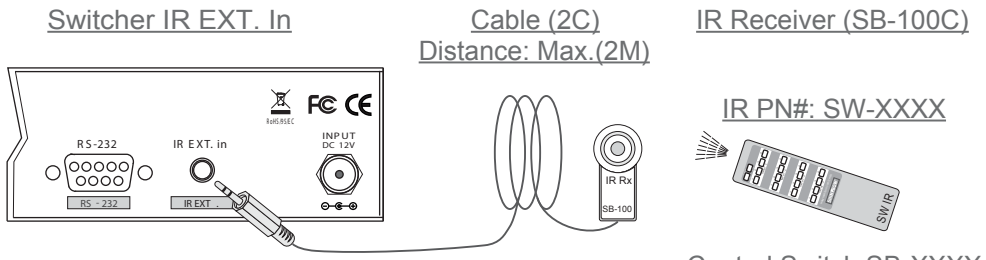


SB-100 Maximum Distance ~ 984 feet (300M)

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

2. SB-100C IR 2M Receiver





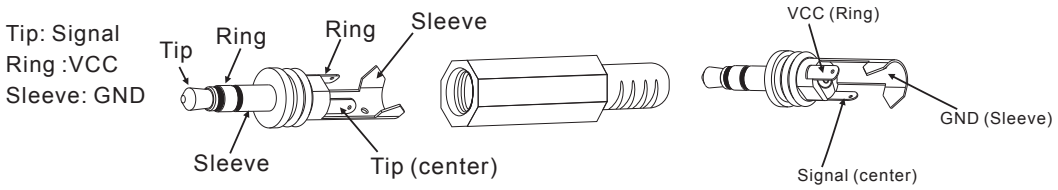
SB-100C Maximum Distance ~ 6 feet (2M)

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

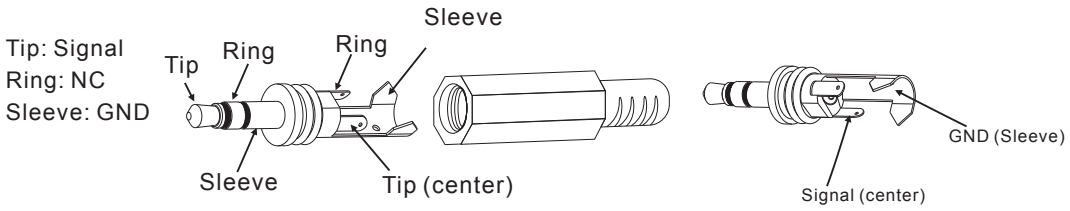




SB-100 Receiver and SB-101 Transmitter The DISTANCE maximum ~ 984 feet (300M)

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)

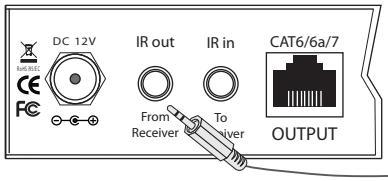
Note: *The External IR jack has voltage on the “Ring” portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

IR EXTENDER

1. SB-101 IR 300M Transmitter



Device



Cable (3C)

IR Transmitter (SB-101)

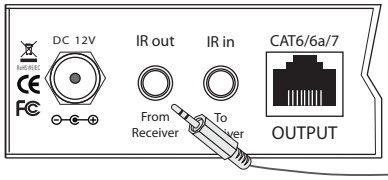


SB-101 Maximum Distance ~ 984 feet (300M)

2. SB-101C IR 2M Transmitter



Device



Cable (3C)

IR Transmitter (SB-101C)



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

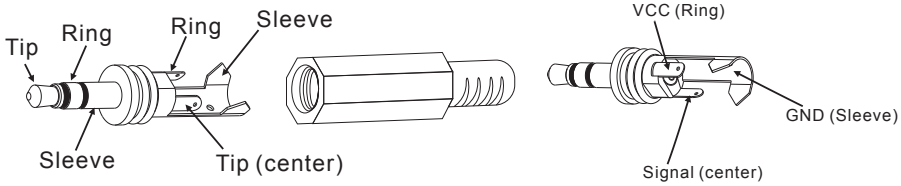
**** When you plug the External IR extender into the switcher, the front panel IR transmitter remains active. ****

PIN CONFIGURATION:

SB-101 and SB-101C Transmitter Pin configuration



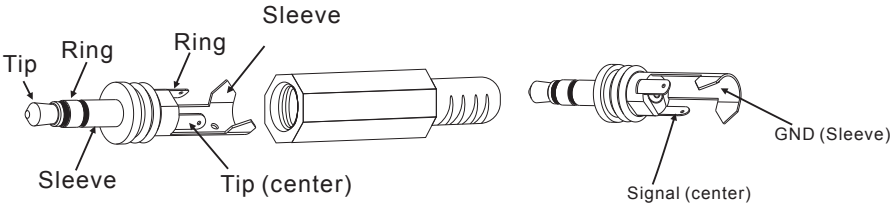
Tip: Signal
Ring :VCC
Sleeve: GND



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



Tip: Signal
Ring: NC
Sleeve: GND



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

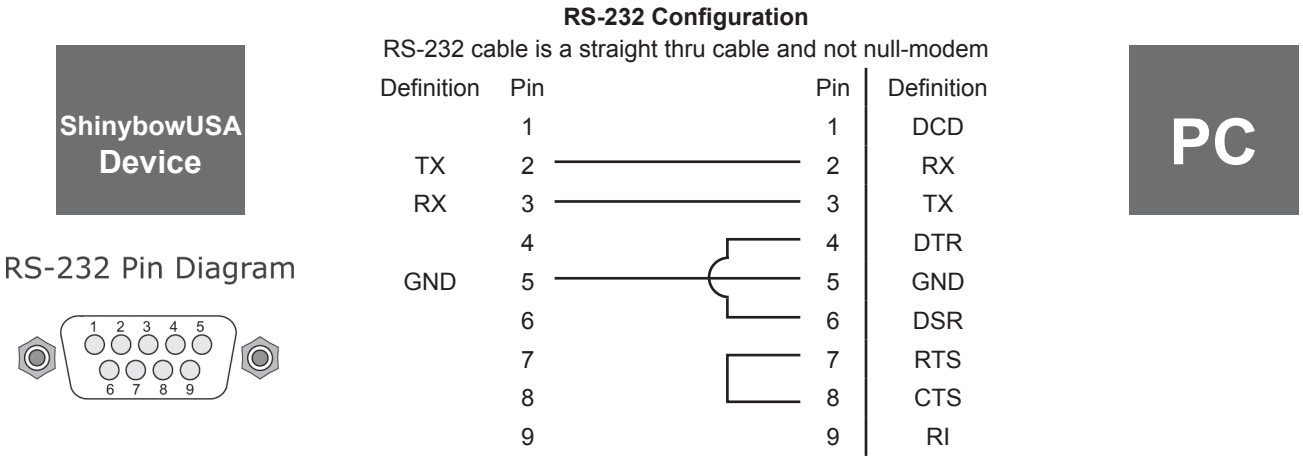
Note: *The External IR jack has voltage on the "Ring" portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

ETHERNET / RS-232 SERIAL INTERFACE

RS-232 SERIAL INTERFACE CONNECT A PC OR CONTROL SYSTEM. VERSION COMPATIBLE V1.0 & V1.5

For a complete list of commands, please reference external document extended RS-232 Protocol Instruction Manual.
Example of the commanded string to route Input 3 to Output 4

OUTPUT04 03;



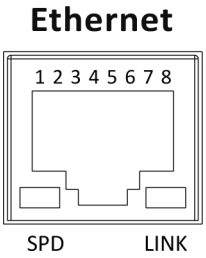
RS-232 SERIAL INTERFACE PROTOCOL COMMANDS (ETHERNET / RS-232 CONTROL DRIVER V2.0)

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 recognizes a complete command it will perform the requested action - there is no delimiter character required.

ETHERNET SERIAL INTERFACE CONNECT A PC OR CONTROL SYSTEM VERSION COMPATIBLE V2.0

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



Note :
Control the switcher
SPD : Speed
LINK : Ethernet link
RJ-45 Female 8P-8 Connector

ETHERNET SERIAL INTERFACE

Pin	Ethernet	Reference
1	TXOP	TX +
2	TXON	TX -
3	RXIP	RX +
4	NC	
5	NC	
6	RXIN	RX -
7	NC	
8	GND	

ETHERNET TCP/IP PROTOCOL COMMANDS (ETHERNET / RS-232 CONTROL DRIVER V2.0.1)

****** The Ethernet port and RS-232 port cannot be used simultaneously.***

Any connection to the Ethernet Control port will disable serial commands send to the RS-232 port.***

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