INSTRUCTION MANUAL

SB-4148LCM

4x8 VGA w/ Stereo Audio 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.

TABLE OF CONTENTS

VGA-Stereo Audio Matrix Switcher Series

Thank you for purchasing the SB-4148LCM 4x8 VGA-Audio 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 switcher.

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INTRODUCTION

Congratulations on your purchase of one of the most innovative 4x8 VGA-AUDIO matrix switching product on the market Today. The SB-4148LCM is a true 4x8 Matrix Routing Switcher for VGA-AUDIO signals. It is an (8) individual VGA inputs with (4) individual VGA-AUDIO outputs. Because it is a matrix router, any input may be routed to any output; or the same input may be routed to all outputs or any combination. It completely eliminates the need to constantly move around VGA input and output cables. The SB-4148LCM is useful for Matrix signals from VGA-AUDIO source devices (such as VGA base : Personal computer, Satellite Receivers, CAT5 Set Top Boxes, etc.) to VGA destination devices (such as VGA base: HDTV, LCD TVs, Plasma TV Sets, Video Projectors, etc.). Selection of inputs is made via the Front Panel push buttons or an Infrared Remote Control unit or RS-232 control by computer.

PACKAGE CONTENTS

Check that you have the following components;

- SB-4148LCM 4x8 Matrix Switcher
- IR Remote Control
- RS-232 Cable
- Rack Mounts
- IR extender SB-100 receiver (300M length)
- IR extender SB-100C receiver (2M length)
- Control Software (All Windows Operating Systems)
- Users Guide
- RS-232 operation manual (V2.0)
- AC/DC Adapter: 12VDC, 2A Universal Type 50/60Hz, 100~240 VAC

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

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Version 2.0 JUNE 2015

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FEATURES & SPECIFICATIONS

FEATURES

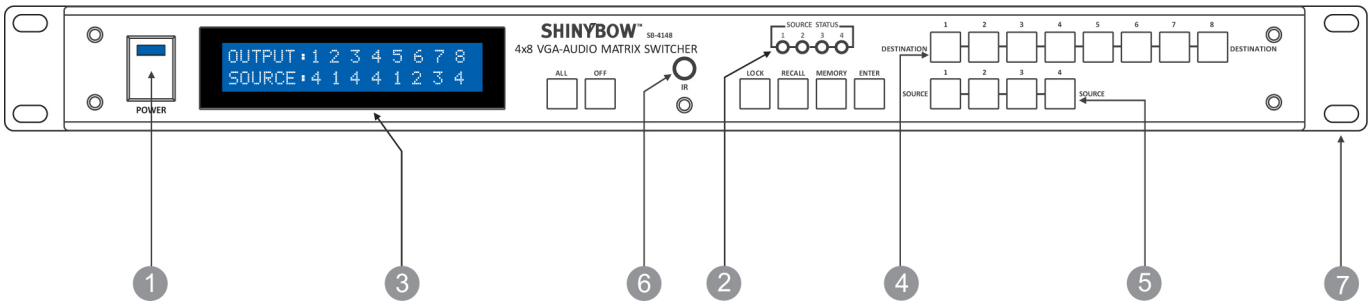
- Supports 4x inputs VGA-Audio to 8x VGA-Audio outputs Matrix Switcher.
- Input signals support 4x VGA-Stereo Audio sources.
- Output Signals support 8x VGA-Stereo Audio device of Monitor, plasma, LCD displays.
- Higher Video Bandwidth 450MB each path R,G,B signals.
- Supported HD high definition resolutions XGA, SXGA, UXGA, WSXGA, WUXGA
- RS-232 Serial interface via @ethernet control is optional
- Compatible with all VGA Video Monitor devices, Plasma display and Projectors
- Supported RS-232 serial interface protocol commands list
- Control PC RS-232 Drive compatible with win-95/98/2000/xp
- Various User Interface controls:
  - Attached Window based control software for Desktop or NB control by RS-232 port
  - Manual controlled by Front Panel button
  - IR remote control
  - IR Extension control
- Support desktop with Ear mount and 19 inch 1U Rack mountable type panel
- Power supply DC12 Volt, Universal Type Switch 100~230VAC, 50/60Hz

SPECIFICATIONS

- **Type of Switcher:** 4 in To 8 out, VGA (RGBHV)-Stereo Audio Matrix Switcher
- **Input ports: Group:**
  - 1x VGA (RGBHV) via HD-15p VGA connector
  - 1x Stereo Audio via HD-15p VGA connector
- **Output ports: Group:**
  - 1x VGA (RGBHV) via RCA connector
  - 1x Stereo Audio via RCA connector
- **Video Bandwidth:** 450MHz (-3db), 200mVp-p
- **Video Supported:** Higher resolution formats HD 1920x1200 (WUXGA)
- **Low All Hostile Crosstalk:** -83 db@5MHz
- **Controls:** IR remote, Select buttons on the front panel & RS-232
- **PC RS-232 Control:** RS-232 interface serial via DRV on a PC
- **Gain Control:** 60MHz 0.1 db gain flatness
- **Chassis Material:** Metal
- **Dimensions (WxDxH):** 19 x 7.87 x 1.73 in (482x200x44mm)
- **Shipping Weight:** 2.75 Kgs / 5.94 lb
- **Safety Approvals:** CE, FCC, VCCI, Erp, WEEE
- **Power Supply:** DC12V / 2A (consumption 1.2A Max) Use Universal Switch Type 50/60Hz,100~230 VAC

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

FRONT PANEL



1. POWER ON 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 4 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.

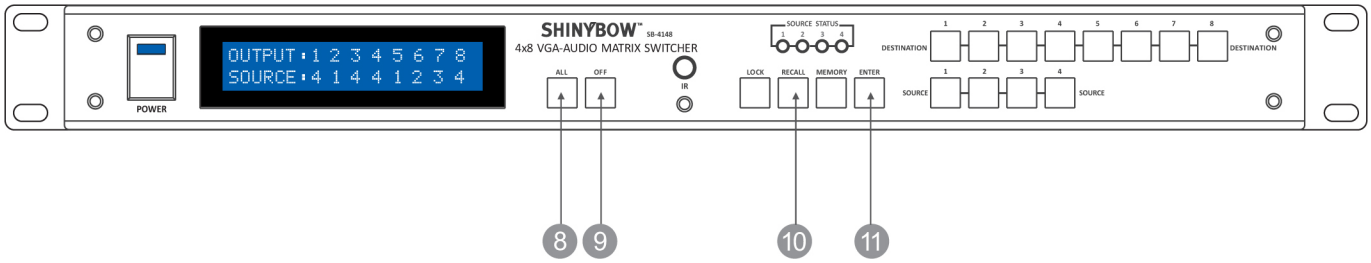
4. DESTINATION SELECT BUTTONS: Separate outputs 1 thru 8 select buttons are provided for each destination assignment. Routing can be Source to Destination or one source to multiple destinations. Example : Press Destination 1,3,8 then press Source 2 will route Input 2 to Output 1,3,8 respectfully

5. SOURCE SELECT BUTTONS: Separate inputs 1 thru 4 select buttons are provided each source selection.

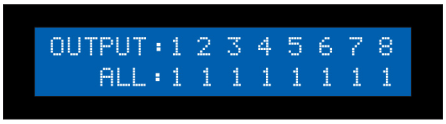
6. IR SENSOR: The IR sensor receives IR commands from the supplied remote controller or third party IR emitter.

7. 19 INCH EAR MOUNT PAIR: Converts desk-top 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.

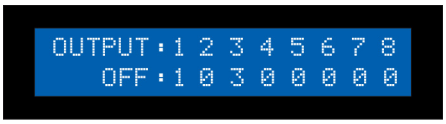
Option 1

- 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.

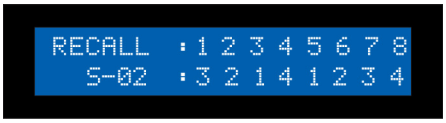
9. FUNCTION KEY - OFF



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

- Press **OFF** button followed by any Destination channel.
- Press 1 thru 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 12. Presets are stored in local memory using Source keys 1 thru 4 or Destination keys 1 thru 8 as the memory preset location.

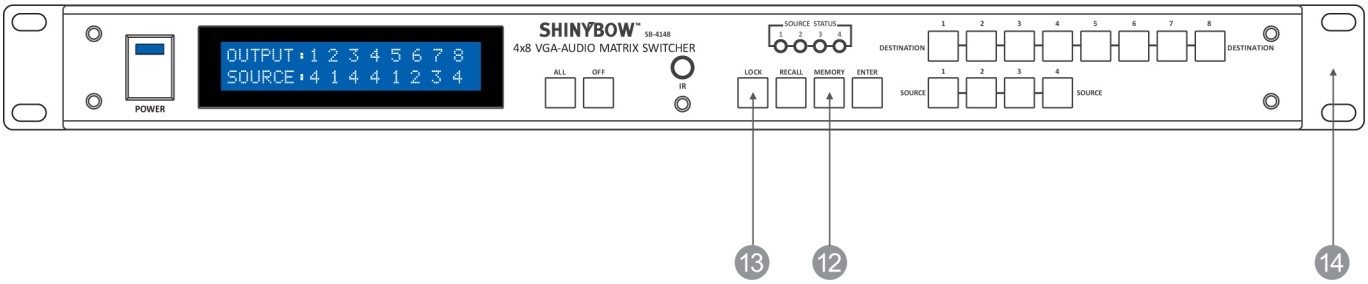
- Press **RECALL** button.
- Press 1 thru 4 on either Source or 1 thru 8 on Destination row.
- Press **ENTER** The pre-set configuration will execute.

Operation completes.

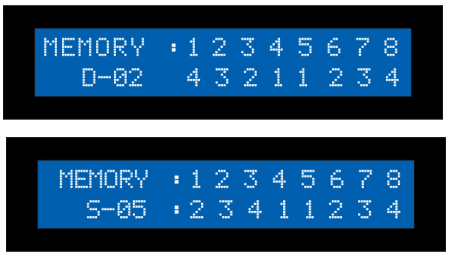
Note: *Operation will abort if no keys are dressed within 5 seconds.*

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

FRONT PANEL



12. FUNCTION KEY - MEMORY



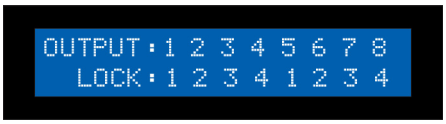
The system will show store presets, up to a total of 12. Presets are stored in local memory using Source keys 1 thru 4 or Destination keys 1 thru 8 as the memory preset location.

- Configure desired matrices .
- Press **MEMORY** button.
- Press 1 thru 4 on either Source or 1 thru 8 on 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 dressed within 5 seconds.*

13. FUNCTION KEY - LOCK

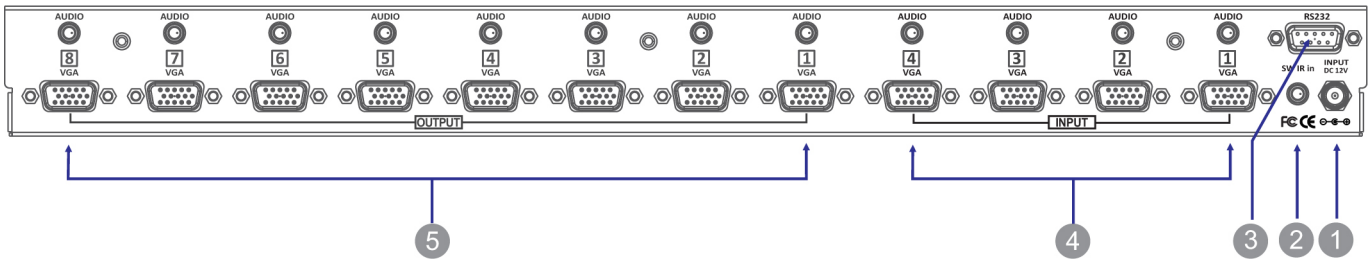


- Press and hold **LOCK** button for two seconds lockout the front panel.
- Press and hold **LOCK** button for two seconds to enable front panel.

14. 19 INCH EAR MOUNT PAIR

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

BACK PANEL



1. DC POWER INLET: The switcher is fitted with a DC power plug input connector. Please ensure that the plug used is of an approved type and is of sufficient current carrying capacity with the correct voltage and connector polarity. 12Volt DC power supply 2A Max.



Power Jack:
DC Jack - Inner OD Ø 2.1 mm (+)
Outside OD Ø 5.5mm (GND)
Power input -12VDC, 2A

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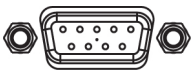
2. IR EXTENDER CONTROL: Support one of IR Extender (IR input) Extend distance maximum 984 ft. (300 m)
Note: DO NOT install or remove any connections while the power is ON.



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

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3. RS-232 CONNECTION: 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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4. INPUTS-1~4 VGA-AUDIO SOURCE PORTS: Connect 4x inputs of VGA-STEREO AUDIO signals from 4x VGA-Stereo Audio source devices switch to 8x VGA Monitor displays.



VGA-Audio Via 1x HD-15p connector, 1x 3.5mm P-Jack
Note: With 1x female D-Sub connector. Female Jack - inner OD Ø 3.5 mm

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5. OUTPUTS-1~8 VGA-AUDIO PORTS: Connect 8x VGA-Stereo Audio signal via 4x VGA & Stereo Audio cable output to VGA Monitor displays and Audio devices switch from 4x VGA-Audio input source devices.



VGA-Audio Via 1x HD-15p connector, 1x 3.5mm P-Jack
Note: With 1x female D-Sub connector. Female Jack - inner OD Ø 3.5 mm

CONNECTING THE HARDWARE

Please study the panel drawings below and become familiar with the signal input-output, Power requirements plus any controls present.

Before using the switcher, please take the time to make certain that the device you wish to connect to its inputs is functioning properly in all respects. Verify that the video and audio signals are present and are being displayed properly on a suitable device.

If all is well connect the appropriate cables between the output of the device you wish to distribute to output(s) of the switcher to the carious devices you wish to feed a signal to. Lastly, connect the AC to DC adaptor, connect the DC connector to the switcher first and then plug the adaptor into a functional AC outlet.

REMOTE CONTROL

Before making any connections to the SB-4148LCM. 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 1-4 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

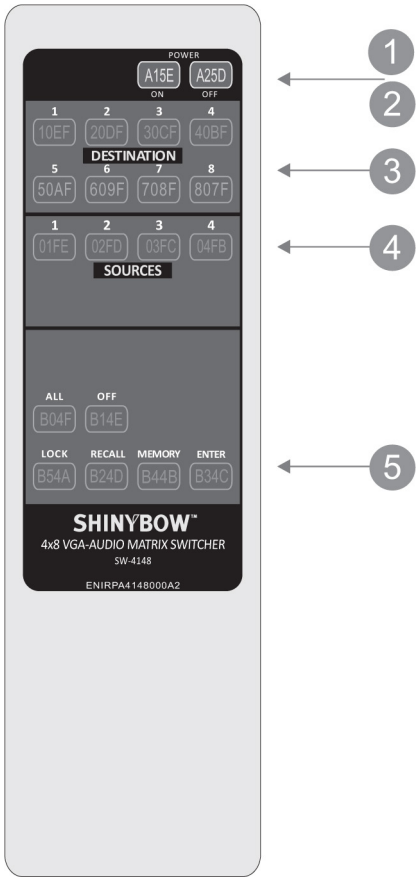
IR REMOTE CONTROL KEY :
IR PCB : **RA-02 Code: 3EC1**

1. & 2. SWITCH POWER ON or OFF:
Controller with a 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 4 INPUT SOURCE SELECTION:
Press input 1~4 sources with selection button

5. FUNCTION KEY:
ALL - function selection button
OFF - function selection button
RECALL - function selection button
DEMO or ENTER - function selection button
MEMORY - function selection button
LOCK - function selection button



REMOTE PROTOCOL COMMANDS

IR REMOTE CUSTOM AND DATA CODES (NEC Standard)

HOW TO SETUP IR CODES :

POWER ON : 3EC1 A15E
POWER OFF : 3EC1 A25D
ALL : 3EC1 B04F
OFF : 3EC1 B14E

CUSTOM CODE : 3EC1

LOCK : 3EC1 B54A
RECALL : 3EC1 B24D
ENTER : 3EC1 B34C
MEMORY : 3EC1 B44B

PRESS TV DESTINATION - # then PRESS SOURCE - #

DESTINATION #1 : 3EC1 01FE
DESTINATION #2 : 3EC1 02FD
DESTINATION #3 : 3EC1 03FC
DESTINATION #4 : 3EC1 04FB
DESTINATION #5 : 3EC1 50AF
DESTINATION #6 : 3EC1 609F
DESTINATION #7 : 3EC1 078F
DESTINATION #8 : 3EC1 087F

SOURCE #1 : 3EC1 01FE
SOURCE #2 : 3EC1 02FD
SOURCE #3 : 3EC1 03FC
SOURCE #4 : 3EC1 04FB

For example;
Select Destination # 1 to show Source #1~4,

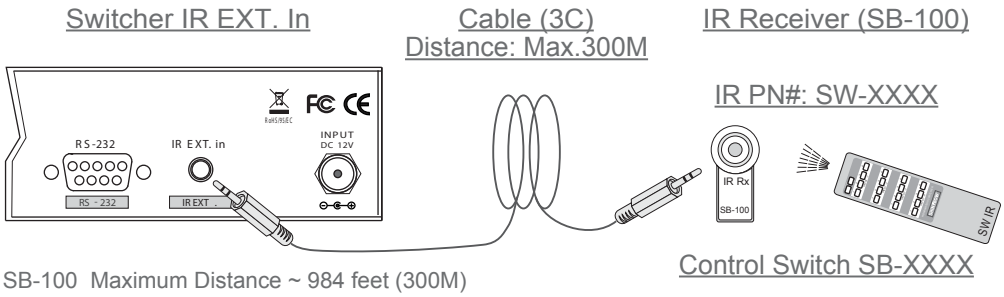
The IR Data Code list when press Destination # then press Source #

Press Destination # 1 & Source #1 3EC1 01FE 3EC1 01FE
Press Destination # 2 & Source #2 3EC1 20DF 3EC1 02FD
Press Destination # 3 & Source #3 3EC1 30CF 3EC1 03FC
Press Destination # 4 & Source #4 3EC1 40BF 3EC1 04FB
Press Destination # 5 & Source #1 3EC1 50AF 3EC1 01FE
Press Destination # 6 & Source #2 3EC1 609F 3EC1 02FD
Press Destination # 7 & Source #3 3EC1 708F 3EC1 03FC
Press Destination # 8 & Source #4 3EC1 807F 3EC1 04FB

IR EXTENDER

1. SB-100 IR 300M Receiver



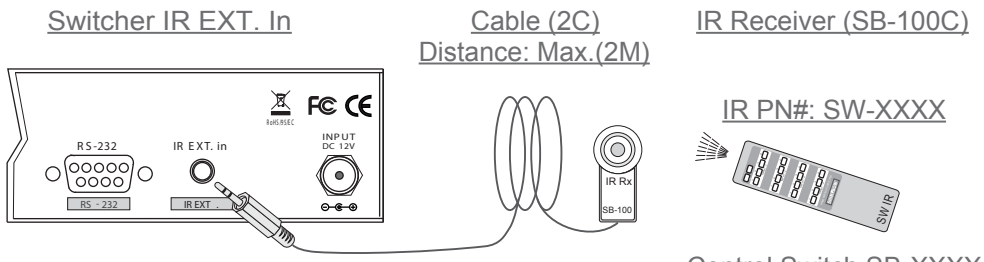


SB-100 Maximum Distance ~ 984 feet (300M)

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

2. SB-100C IR 2M Receiver





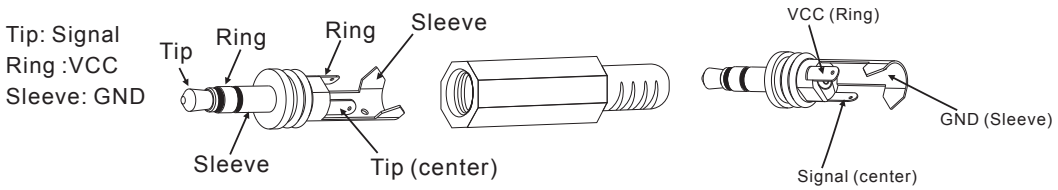
SB-100C Maximum Distance ~ 6 feet (2M)

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

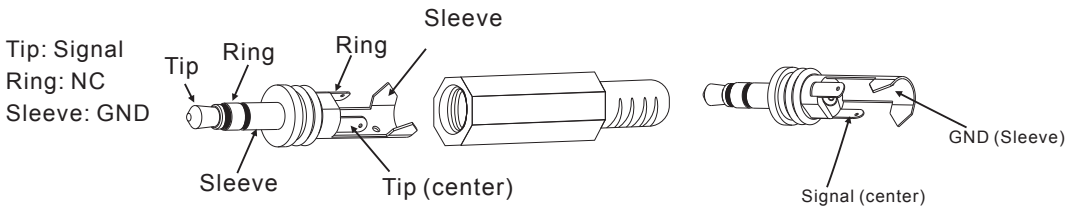




SB-100 Receiver and SB-101 Transmitter The DISTANCE maximum ~ 984 feet (300M)

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)

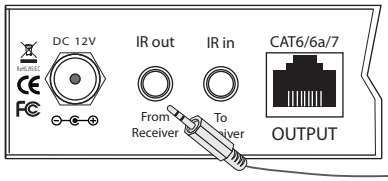
Note: *The External IR jack has voltage on the “Ring” portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

IR EXTENDER

1. SB-101 IR 300M Transmitter

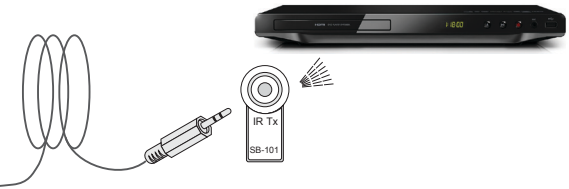


Device



Cable (3C)

IR Transmitter (SB-101)

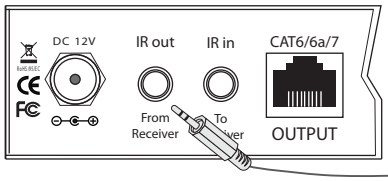


SB-101 Maximum Distance ~ 984 feet (300M)

2. SB-101C IR 2M Transmitter



Device



Cable (3C)

IR Transmitter (SB-101C)



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

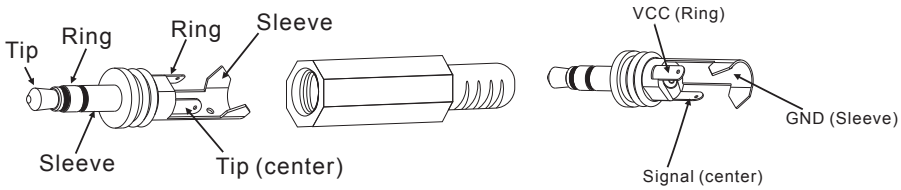
**** When you plug the External IR extender into the switcher, the front panel IR transmitter remains active. ****

PIN CONFIGURATION:

SB-101 and SB-101C Transmitter Pin configuration



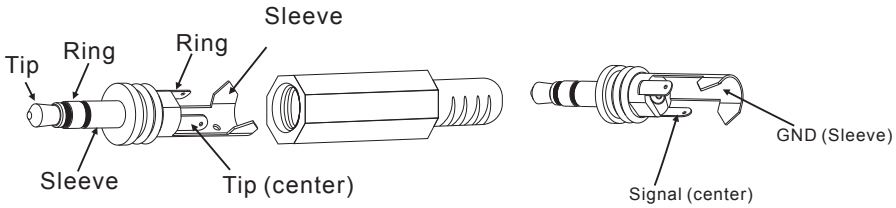
Tip: Signal
Ring :VCC
Sleeve: GND



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



Tip: Signal
Ring: NC
Sleeve: GND



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

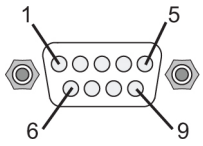
Note: *The External IR jack has voltage on the "Ring" portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

RS-232 SERIAL INTERFACE

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

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

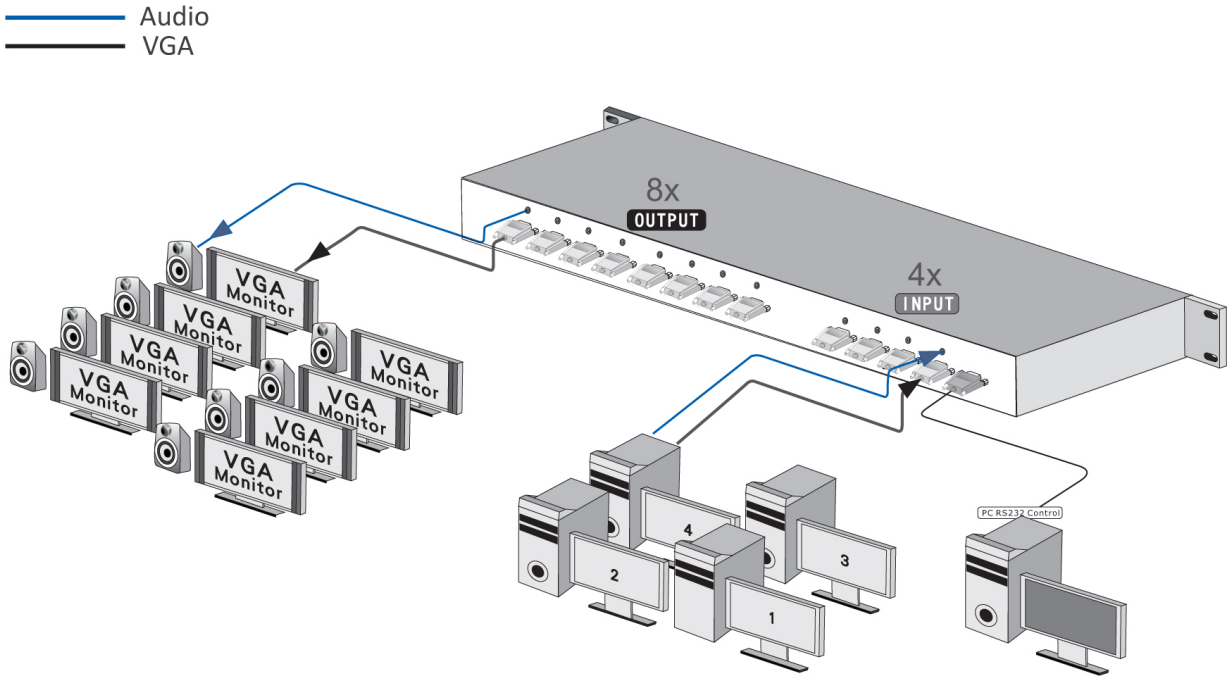


The ShinybowUSA switcher can be controlled via the RS-232 serial control port to allow for interfacing to a PC, or similar third party control system.

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.

TYPICAL APPLICATION

4X VGA-AUDIO SOURCE DEVICES TO 8X VGA-AUDIO DISPLAY MATRIX SWITCHER



INSTALLING

CONTROL PORTS:

1. FRONT PANEL - Control Key
2. IR REMOTE - IR Remote Controller
3. RS-232 Interface - RS-232 interface system
4. IR Extension port - Extension IR signal via IR receiver Cable.

INPUTS 1 ~ 4 PORT VGA SOURCE DEVICE SIGNALS:

VIDEO - VGA (RGBHV), connector with HD-15p (D-Sub)
AUDIO - STEREO AUDIO, connector with 3.5mm OD Jack

OUTPUT 1 ~ 8 PORT VGA CONNECT TO DISPLAY MONITOR SIGNALS:

VIDEO - VGA (RGBHV), connector with HD-15p (D-Sub)
AUDIO - STEREO AUDIO, connector with 3.5mm OD Jack.

SB-4148LCM SUPPORT COMPONENT (4) INPUTS MATRIX SWITCH TO (8) OUTPUTS
SUPPORT CONTROL IR & RS-232 INTERFACE SYSTEM PORTS.

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