

MODEL: SB-8804LCM

8x8 DIGITAL-AUDIO MATRIX SWITCHER



8x8 DIGITAL-AUDIO MATRIX SWITCHER

# Digital - Audio Matrix Switcher Series



# SAFETY INFORMATION



- 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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## INTRODUCTION

Congratulations on your purchase of one of the most innovative 8x8 Digital & Stereo Audio matrix switching product on the market Today. The SB-8804LCM is a true Matrix Routing Switcher for Digital Audio (compatible Composite Video signal) and Stereo Audio. Support Composite Video on digital port input and output. It is a 8 individual Digital Audio and Stereo Audio inputs with 8 individual Digital audio and Stereo 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 audio input and output cables. The SB-8804LCM is useful for Matrix signals from Digital Audio and stereo audio source devices (such as: VCRs, Camcorders, Video Game Consoles, Video CDs, DVDs, Satellite Receivers, CAT5 Set Top Boxes, etc.) To Composite Video/Audio destination devices (such as: LCD TV, HDTV, Plasma displays, Projectors, etc.). Selection of inputs is made via the Front Panel push buttons or an Infrared Remote Control unit or PC RS-232.

## **PACKAGE CONTENTS**

Check that you have the following components;

- SB-8804LCM 8x8 Matrix Switcher
- RS-232 V2.0 Protocol Instructions
- Master wireless IR Remote Control (SW-8804)
- 19 inch Ear mount bracket (Part # 1U-440L)
- SB-100 IR Extender distance 984 feet (300M) Receiver pack.
- SB-100C IR Extender distance 6 feet (2M) Receiver Cable
- · CD Contents: Manual, Windows GUI, ISP V1.0 Windows driver
- RS-232 Cable 6 feet (2M)
- Users Guide
- AC/DC Adapter: 12VDC, 2A Universal Type 50/60Hz, 100~230 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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# FEATURES & SPECIFICATIONS

# **FEATURES**

- Supports 8x inputs to 8x outputs Digital (SPDIF) & Stereo Audio Matrix Switcher
- Input / Out put signals via Digital(SPDIF) or Composite Video & Stereo Audio(AR/AL)
- Higher Video Bandwidth 300MB each path signals.
- Supported selection buttons direct channel on front panel
- Support Audio Volume control via Push Button select Audio Value from unit front panel (Stereo audio only)
- · Compatible with all Digital(SPDIF) and Stereo Audio devices, Digital port supports: Composite Video AR/AL port supported
- 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

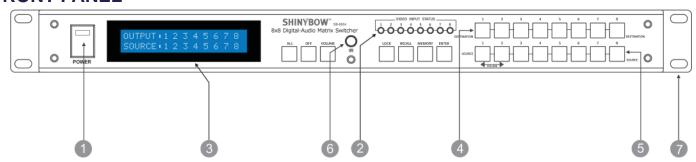
# **SPECIFICATIONS**

- Type of Switcher: 8 in To 8 out, Digital (SPDIF) / Stereo Audio Matrix Switcher
- I/O Signals:
  - Digital : Digital or Composite Video 0.5~1.0Vpp, 75 Ohms, RCA(Orange)
  - Analog: Stereo Audio (AR/AL), Via 2x RCA connector(Red/white)
- Video Bandwidth: 300MHz (-3db), 200mVp-p
- Digital Supported: Digital Audio SPDIF, Composite Video and Component Video (Y)
- Audio Supported: Stereo Audio(AR/AL), Adjust Audio volume on each destination.
- 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
- **Dimensions (WxDxH):** 19 x 7.87 x 1.73 in (482x200x44mm)
- Shipping Weight: 2.85 Kgs / 4.75 lb
- Safety Approvals: CE, FCC, RoHS(2002/95/EC).
- Power Supply: DC12V / 2A (consumption 1250mA Max) Use Universal Switch Type 50/60Hz,100~230 VAC

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

# FRONT PANEL

# **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 8 LED illuminates blue to indicate that a Composite 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. SOURCE SELECT BUTTONS

Separate inputs 1 thru 8 select buttons are provided each source selection.

#### 6. IR SENSOR

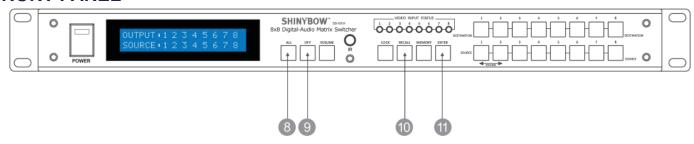
The IR sensor receives IR commands from the supplied remote controller or third party IR emitter.

## 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

# **FRONT PANEL**



#### 8. FUNCTION KEY - ALL



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

#### Option 1

- Press  $\underline{\textbf{ALL}}$  followed by  $\underline{\textbf{OFF}}$  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 - OFF

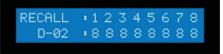


Disables (mute) video to selected channels. Either destinations.

- 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 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.

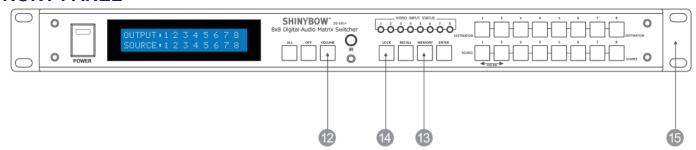
Note: Operation will abort if no keys are dressed within 5 seconds.

# 11. FUNCTION KEY - ENTER

Press **ENTER** to confirm entries.

# FRONT PANEL

# **FRONT PANEL**



### 12. FUNCTION KEY - VOLUME



Repeatedly depressing the source 1 button will cycle down thru the options.

Repeatedly depressing the source 2 button will cycle up thru the options.

The button will flash blue and the display will show the current Audio volume +0~100 Status.

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

- Press **VOLUME** button.
- Press 1 thru 8 on either Destination row.
- Press Source #1 or #2 button row for adjust the audio volume 0~100 level.
- Press **ENTER** The pre-set audio volume selection will be assigned all destinations.

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 8 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 dressed within 5 seconds.

### 14. FUNCTION KEY - LOCK



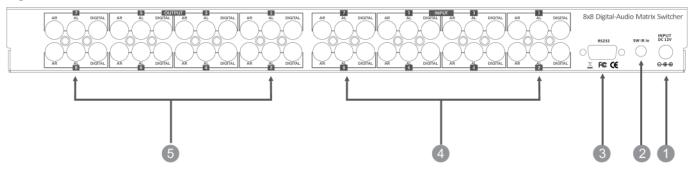
- Press and hold **LOCK** button for two seconds lockout the front panel.
- Press and hold **LOCK** button for two seconds to enable front panel.

#### 15. 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**

# **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

#### 2. IR EXTENDER CONTROL:

Support one of IR Extender (IR input) Extend distance maximum 984 ft. (300 m)



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

### 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

### 4. INPUTS-1~8 DIGITAL / AUDIO(AR/AL):

Connect a signal source of Digital audio or composite video and Stereo Audio (AR/AL) devise to 8x8 matrix switcher.

Input 1~8 port source signals : Digital audio or composite video/ Stereo Audio.



Digital Audio and Stereo Audio Via 3x RCA connectors

Note: With 3x RCA female connectors.

### 5. OUTPUTS-1~8 DIGITAL / AUDIO(AR/AL):

Connect a signal source of Digital audio or composite video and Stereo Audio (AR/AL) direct to Female RCA connector. This connector supports Digital audio or composite video and Stereo Audio display device.

Output 1~8 destination port signals : Digital audio or composite video and Stereo Audio.



Digital Audio and Stereo Audio Via 3x RCA connectors

Note: With 3x RCA female connectors.

### **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-8804LCM. 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:

#### 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 8 INPUT SOURCE SELECTION:

Press input 1~8 sources with selection button

### **5. AUDIO VOLUME KEY:**

Adjust Audio Volume from +0 ~ +100 levels.

### 6. 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

IR REMOTE : SW-8804 IR PCB : RA-02



# REMOTE PROTOCOL COMMANDS

# IR REMOTE CUSTOM AND DATA CODES (NEC STANDARD)

HOW TO SETUP IR CODES: CUSTOM CODE: 40BF

POWER ON: 40BF A15E VOLUME +: 40BF C33C POWER OFF: 40BF A25D VOLUME -: 40BF C43B ALL: 40BF B04F RECALL: 40BF B24D OFF: 40BF B14E ENTER: 40BF B34C LOCK: 40BF B54A MEMORY: 40BF B44B

### PRESS TV DESTINATION - # then PRESS SOURCE - #

SOURCE #1: 40BF 01FE DESTINATION #1: 40BF 01FE DESTINATION #2: 40BF 02FD **SOURCE #2: 40BF 02FD** DESTINATION #3: 40BF 03FC **SOURCE #3: 40BF 03FC** DESTINATION #4: 40BF 04FB SOURCE #4: 40BF 04FB DESTINATION #5: 40BF 50AF **SOURCE #5: 40BF 05FA** DESTINATION #6: 40BF 609F SOURCE #6: 40BF 06F9 DESTINATION #7: 40BF 078F SOURCE #7: 40BF 07F8 DESTINATION #8: 40BF 087F SOURCE #8: 40BF 08F7

#### For example;

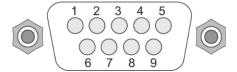
Select Destination # 1 to show Source #1~8,

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

Press Destination # 1 & Source #1 40BF 01FE 40BF 01FE Press Destination # 1 & Source #2 40BF 01FE 40BF 02FD Press Destination # 1 & Source #3 40BF 01FE 40BF 03FC Press Destination # 1 & Source #4 40BF 01FE 40BF 04FB Press Destination # 1 & Source #5 40BF 01FE 40BF 05FA Press Destination # 1 & Source #6 40BF 01FE 40BF 06F9 Press Destination # 1 & Source #7 40BF 01FE 40BF 07F8 Press Destination # 1 & Source #8 40BF 01FE 40BF 08F7

# **RS-232 SERIAL INTERFACE**

# **RS-232**



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

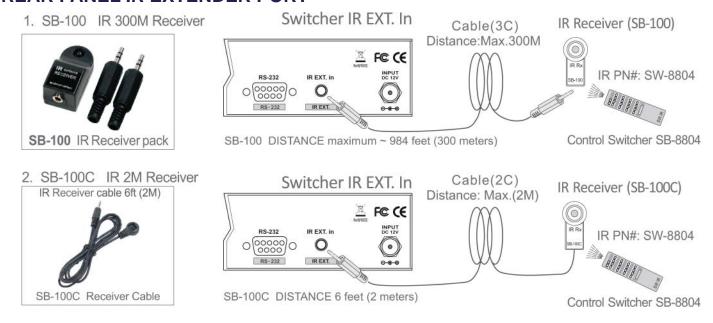
## RS-232 PROTOCOL COMMANDS (RS-232 Control driver V2.0.1)

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.

# IR EXTENDER

# REAR PANEL IR EXTENDER PORT

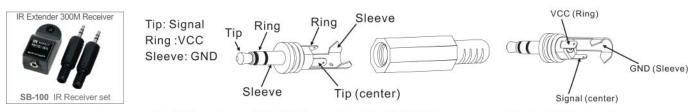


Note: When you plug the External IR extender into the switcher, the front panel IR receiver remains active.

# IR EXTENDER PACKAGE:

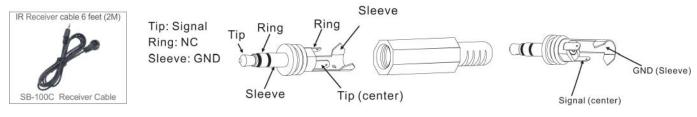
#### HOW TO SETUP THE IR EXTENDER COMPONENTS

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



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

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



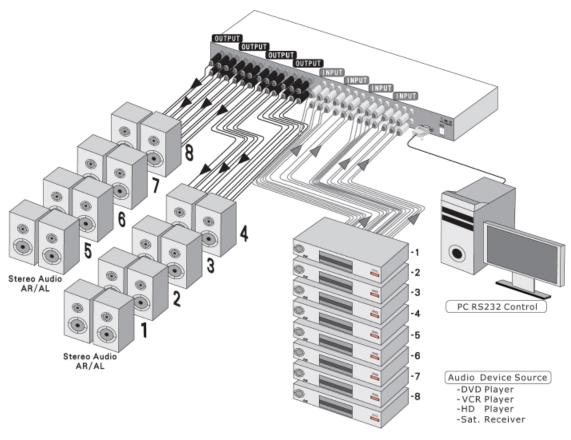
SB-100C Receiver Cable and SB-101C Transmitter Cable The DISTANCE maximum 6 feet (2 meters)

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.

# TYPICAL APPLICATION

# 8X DIGITAL/AUDIO SOURCES TO 8X DIGITAL/AUDIO OUTPUT MATRIX SWITCHER

SB-8804LCM



# **INSTALLING**

## **CONTROL PORTS:**

- 1. IR REMOTE IR Remote Controller
- 2. RS-232 Interface RS-232 interface system

### INPUTS 1 ~ 8 PORT DIGITAL / AUDIO SOURCE SIGNALS:

DIGITAL - Digital (SPDIF) or Composite Video, connector with RCA AUDIO - Stereo Audio (AR/AL), connector with RCA

## **OUTPUT 1 ~ 8 PORT AUDIO SIGNALS DEVICE:**

DIGITAL - Digital (SPDIF) or Composite Video, connector with RCA AUDIO - Stereo Audio (AR/AL), connector with RCA

# LIMITED WARRANTY

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