CTION MANUAI

# **SB-8802LCM**

8x8 Component HDTV Video (w/o audio) Video Matrix Routing Switcher







## 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 qualified 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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### Component Video Matrix Switcher Series

Thank you for purchasing the SB-8802 Component Video 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 8x8 Component Video (YPBPR) matrix products on the market today. The SB-8802LCM is a true matrix routing switcher for Component Video YPBPR signals. Supports Higher Full HD resolutions 480p, 720p and 1080i/p. It has (8) individual Component Video inputs with (8) individual Component Video outputs. Because it is a matrix router, any input may be routed to any output; or the same input maybe routed to all outputs or any combination. It completely eliminates the need to constantly move around video YPBPR input and output cables. The SB-8802LCM is useful for matrix signals from Component Video YPBPR source devices (such as: VCRs, Camcorders, Video Game Consoles, Video CDs, DVDs, Satellite Receivers, CAT5 Set Top Boxes, etc.) to Component Video YPBPR 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 RS-232 control by computer.

## **PACKAGE CONTENTS**

Check that you have the following components:

- · SB-8802LCM Matrix Switcher
- IR Remote Control (SW-8802)
- 19 inch Ear mount bracket (Part # 1U-440L)
- SB-100 IR Extender Receiver Set
- · CD Contents: Manual, Windows GUI
- RS-232 Cable
- · Users Guide
- AC/DC Adapter: 12VDC, 2A Universal Type 50/60Hz, 100~230VAC







## **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.

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# FEATURES & SPECIFICATIONS

### **FEATURES**

- Supports (8) Inputs to (8) Outputs Component Video (YPBPR) Matrix Switcher
- Input/Output signals via Component Video (YPBPR)
- · Higher video bandwidth 325MB each signal path
- Supports HDTV high definition resolutions 480p, 576i/p, 720p, 1080i/1080p
- Supports IR extender remote control port for long distances up to ~984 ft/300M
- · Compatible with all Component video devices, plasma TV displays and HDTVs
- · Supports RS-232 serial interface protocol command list
- Control via PC RS-232 drive compatible with WIN95/98/2000/XP
- · Various User Interface Controls:
  - Attached Window based control software for Desktop or NB controlled by the RS-232 port
  - · Manual control via the front panel buttons
  - · IR remote control
- · Supports desktop or rack mountable and 19 inch ear mount 1U High Rack mountable type panel
- Power supply DC12Volt, Universal switch type 100~230VAC 50/60Hz

### **SPECIFICATIONS**

- Type of Switcher: (8) In to (8) Out, Component Video (YPBPR) Matrix Switcher
- I/O Signals: Component Video (YPBPR) 0.5~1.0Vpp, DDC 5Vpp
- Video Bandwidth: 325MHz (-3dB), 200mVpp
- Video Supported: Higher resolution formats 480i/p, 720p & 1080i/p
- Low All Hostile Crosstalk: -83dB@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
- IR Extend Distance: ~984 ft/300M IR line cable via IR remote control
- Gain Control: 60MHz 0.1dB gain flatness
- · Chassis Material: Metal
- Dimensions (WxDxH): 17.5 x 8 x 1.75 in
- Weight: 3.95 Kg / 6.58 lb
- Safety Approvals: CE, FCC, RoHS (2002/95/EC)
- Power Supply: DC12V / 2A (consumption 1.6A Max) Universal switch type 50/60Hz,100~230VAC

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

### CONNECTING THE HARDWARE

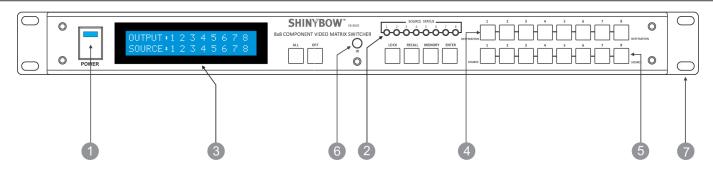
Please study the panel drawings below and become familiar with the signal input-output, power requirements plus any controls present.

Before using the switcher, please take the time to make certain that the device you wish to connect to, the inputs are 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, and the 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.

# FRONT PANEL

## **FRONT PANEL**



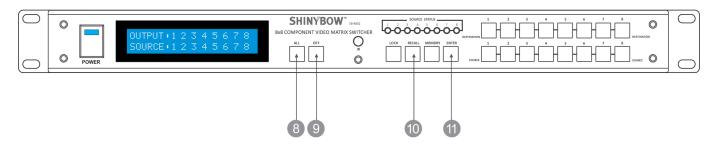
- **1. POWER ON SWITCH:** The power switch turns the unit on and off. The LED will illuminate red to indicate that the switcher is ON and is receiving power. The switcher will remember that last state during a power cycle. When power is removed and resorted, the last configuration will be evoked.
- 2. INPUT STATUS DISPLAY: Input sources 1 to 8 LED illuminates blue to indicate that a video source is present on that input.
- 3. OUTPUT STATUS DISPLAY: Each output (destination) channel shows which input (source) it is assigned.
- **4. DESTINATION SELECT BUTTONS:** Outputs 1 thru 8 select buttons are provided for each destination assignment. Routing can be one source to one destination, or one source to multiple destinations.

*Example:* Press destination 1, 3, 5, then press source 2. It will route input 2 to output 1, 3, 5 respectively.

- **5. SOURCE SELECT BUTTONS:** Inputs 1 thru 8 select buttons are provided for each source selection.
- 6. IR SENSOR: The IR sensor receives IR commands from the supplied remote control or third party IR emitter.
- **7.19 INCH EAR MOUNT PAIR:** Converts the 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 (mutes) video on all destinations OR selects the same source to all destinations. **Option 1** 

- Press <u>ALL</u> followed by <u>OFF</u> 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 (mutes) video to selected channels for either destination.

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

#### **10. FUNCTION KEY - RECALL:**



RECALL :12345678 D-02 :88888888 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 <u>1 THRU 8</u> on either Source or Destination row.
- Press **ENTER**. The pre-set configuration will execute.

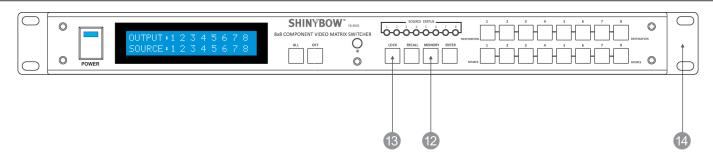
Operation completes.

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

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

# FRONT PANEL

## **FRONT PANEL**



### **12. FUNCTION KEY - MEMORY:**



The system will show 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.

- 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 the operation.

Operation completes.

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

#### **13. FUNCTION KEY - LOCK:**

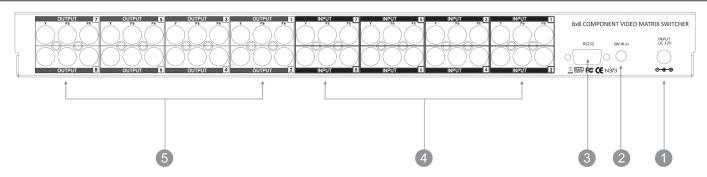


- Press and hold **LOCK** button for two seconds lockout the front panel.
- Press and hold **LOCK** button for two seconds to enable the front panel.

**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**

## **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 2.1mm (+)
Outside OD Ø 5.5mm (GND)
Power input -12VDC, 2A

**2. IR EXTENDER CONTROL:** Extends the IR extender a maximum distance of ~984 ft/300M.



**IR EXTENDER JACK:** Female jack - inner OD  $\emptyset$  3.5 mm

**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

**4. INPUTS-1~8 COMPONENT VIDEO (YPBPR):** Connects a Component Video (YPBPR) device to the 8x8 matrix switcher.



Component Video (YPBPR) via (3) RCAs Note: With (3) RCA female connectors

Input 1~8 port source signals:

- Component Video (YPBPR), (3) RCA Connectors

**5. OUTPUTS-1~8 COMPONENT VIDEO (YPBPR):** Connects a Component Video (YPBPR) signal direct to the female RCA connector. Connector supports Component Video (YPBPR) to a HDTV display devices.



Component Video (YPBPR) via (3) RCAs Note: With (3) RCA female connectors

Output 1~8 display port signals:

- Component Video(YPBPR), (3) RCA Connectors

# REMOTE CONTROL

### Before making any connections to the switcher, observe the following:

- Ensure the main 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 select buttons. The supplied IR remote control. Or through the RS-232 serial communications port.
- · Upon powering up the switcher, it will return to its last used setting before being powered down.

## **REMOTE CONTROL**

IR REMOTE: SW-8802 IR PCB: RA-02

#### 1. & 2. SWITCH POWER ON or OFF:

Control power ON and OFF

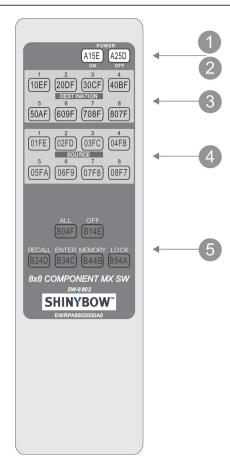
#### 3. DESTINATION: 1 thru 8 OUTPUT SELECTION:

Press the destination button to select the output display channel.

#### 4. SOURCE: 1 thru 8 INPUT SOURCE SELECTION:

Function selection buttons

ALL OFF RECALL ENTER MEMORY LOCK



# **REMOTE PROTOCOL COMMANDS**

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

| HOW TO SETUP IR CODES: CUSTOM CODE: 04 |
|--|
|--|

POWER ON: 04FB A15E POWER OFF: 04FB A25D B04F 04FB ALL: OFF: 04FB B14E LOCK: 04FB B54A RECALL: 04FB B24D MEMORY: 04FB **B44B** ENTER: 04FB B34C

### PRESS DESTINATION - # THEN PRESS SOURCE - #

| DESTINATION #1:04FB  | 10EF | SOURCE : | #1:04FB   | 01FE |
|----------------------|------|----------|-----------|------|
| DESTINATION #2:04FB  | 20DF | SOURCE : | #2 : 04FB | 02FD |
| DESTINATION #3:04FB  | 30CF | SOURCE : | #3 : 04FB | 03FC |
| DESTINATION #4:04FB  | 40BF | SOURCE : | #4:04FB   | 04FB |
| DESTINATION #5: 04FB | 50AF | SOURCE : | #5 : 04FB | 05FA |
| DESTINATION #6:04FB  | 609F | SOURCE : | #6:04FB   | 06F9 |
| DESTINATION #7:04FB  | 708F | SOURCE : | #7 : 04FB | 07F8 |
| DESTINATION #8:04FB  | 807F | SOURCE : | #8:04FB   | 08F7 |

#### For Example:

### **SELECT DESTINATION #1 TO SHOW SOURCE #1~8**

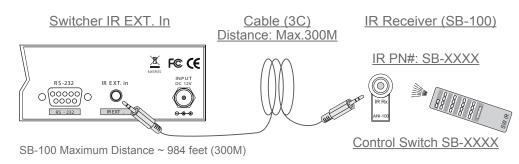
### **THE IR DATA CODE LIST:**

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

# IR EXTENDER

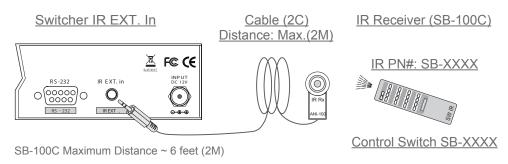
### 1. SB-100 IR 300M Receiver





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



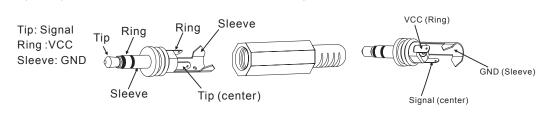


The SB-100C IR Receiver will not function on the port "ALL in" Jack.

\*\*\* 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

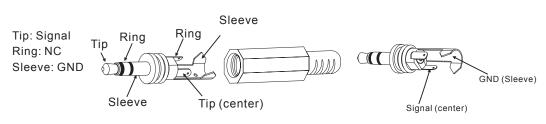




SB-100 Receiver and SB-101 Transmitter The DISTANCE maximum ~ 984 feet (300M)

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.

The frequency range of the IR emitter and receivers is 38khz.

# **RS-232 SERIAL INTERFACE**

## **RS-232**

8000d

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.

The unit does not send out a message when a value is changed from the front panel or by IR control. If the unit needs to be controlled via the front panel in addition to the RS-232 control, you should regularly poll the unit status to ensure the control system accurately reflects the current settings.

**RS-232 SERIAL CONNECT** 

| 110-202 OLIVIAL 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    |

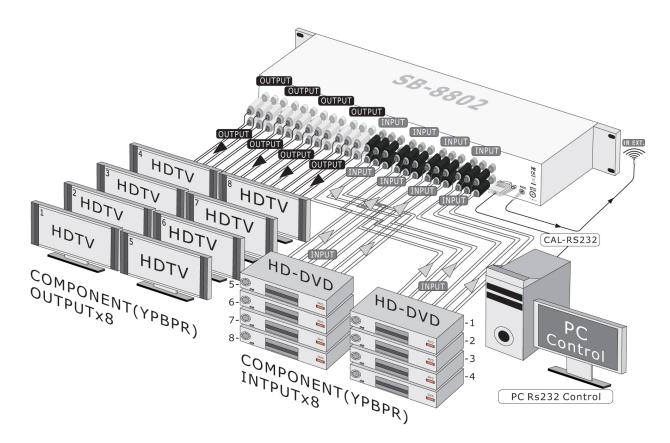
**RS-485 SERIAL INTERFACE** 

| Pin | RS-485 | Definition    |
|-----|--------|---------------|
| 1   |        | Not used      |
| 2   | А      | Non-inverting |
| 3   | В      | Inverting     |
| 4   |        | Not used      |
| 5   | GND    | Ground        |
| 6   |        | Not used      |
| 7   |        | Not used      |
| 8   |        | Not used      |
| 9   |        | Not used      |

# TYPICAL APPLICATION

## 8X COMPONENT VIDEO TO 8X COMPONENT VIDEO OUTPUT MATRIX SWITCHER

### SB-8802



#### **INSTALLING**

### **CONTROL PORTS:**

- 1. FRONT PANEL Function Key Buttons
- 2. IR REMOTE IR Remote Control
- 3. RS-232 Interface RS-232 interface system

#### INPUTS 1~8 PORT HD SOURCE SIGNALS:

COMPONENT VIDEO - Component Video (YPBPR), connector with RCA

### **OUTPUT 1~8 PORT HDTV DISPLAY SIGNALS:**

COMPONENT VIDEO - Component Video (YPBPR), connector with RCA

SB-8802 IS AN (8) INPUT TO (8) OUTPUT COMPONENT VIDEO MATRIX SWITCHER. SUPPORTS IR & RS-232 INTERFACE SYSTEM PORTS.

# LIMITED WARRANTY

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