

**MODEL : SB-3866**  
8x2 MultiVideo Switcher



## 8x2 HDMI & Analog Multi Video Format Scaler Routing Switcher

### *MultiVideo to VGA Switcher Series*

*Thank you for purchasing the SB-3866 MultiVideo To VGA 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 8x2 MultiVideo to VGA Switcher.*



## 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 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.

# TABLE OF CONTENTS

## CONTENTS

INTRODUCTION .....	1
FEATURES & SPECIFICATIONS .....	2
FRONT PANEL .....	3
REAR PANEL .....	4
REMOTE CONTROL .....	5
IR EXTENDER .....	6
RS-232 SERIAL INTERFACE .....	7
RS-232 PROTOCOL COMMANDS .....	7
OSD FUNCTION SETUP .....	8
LIMITED WARRANTY .....	11

## INTRODUCTION

The SB-3866 is a Multi-Video switcher featuring 8 inputs and 2 outputs (same signal on both outputs). The inputs are comprised of: 2x Composite Video with Audio, 2x S-Video with Audio, 2x Component video with Audio and 2x VGA with Audio. The outputs are 2x VGA with/Audio (as same signal). Formats supported are NTSC/PAL/SECAM video system. Supports High Definition Digital signal with data rates enabling 1080i formats or in PC resolution (1920x1200). It completely eliminates the need to constantly move around HD input and output cables. Control is provided via Front push buttons with LED readout or IR remote controller.

A RS-232 interface is provided for interfacing with third party control or use the provided software. Input cable equalizer enables use of long cable runs of more than 50 feet (15 meters) when using 24 AWG cable at 1080i. A windows-based control software package is included to provide complete control of the SB-3866 from a PC.

## PACKAGE CONTENTS

Check that you have the following components;

- SB-3866 8x2 Switcher
- IR Remote Control
- Rack Mounts
- RS-232 driver CD (All Windows Operating Systems)
- Users Guide
- AC/DC Adapter: 12VDC, 1000mA~3000mA  
AC/DC Adaptor Types : CE/UL/SAA/BS



## 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 A/V inputs to 2 VGA outputs Routing Switcher
- Support with Automatic format detection Input Signals NTSC (M.4.43), PAL(B,D,G,H,I,M,N,N-Com), PAL(60) and SECAM Video System
- Supports Composite Video, S-Video(Y/C) & Component 480i/p to SXGA
- Supports VGA output resolution VGA, SVGA, XGA and SXGA
- Signals switch including:
  1. Composite Video/Stereo Audio
  2. S-Video (Y/C)/Stereo Audio
  3. Component Video (YPbPr, YCbCr, RGB)/Audio
  4. VGA/ Stereo Audio (AR/AL)
- Suitable HDTV 480i/p Scaler up to a PC Resolution SXGA (1280x1024)
- Front push buttons with LED readout
- Support RS-232 interface control driver for 95/98/2000/xp A Windows-based control software Driver packaged
- RS-232 protocol list with manual attached
- Power consumed full load under 500 mA

## SPECIFICATIONS

**Type of Switcher:** 8 inputs to 2 outputs Multi-Video Routing Switcher

**Video Scaling Outputs:** 2x via HD-15 Female connectors, (Audio: 4x RCA & 2x 3.5mm connectors )

**Video Input Signals:**

- **TV standards:** NTSC-M 3.58, NTSC-J 4.43, PAL-B-D-I-G-H-K, PAL-M, PAL-N, PAL-N COMB-N, SECAM (Impedance:75 ohms)
- **Composite Video:** 2 x via RCA connectors
- **S-Video(Y/C):** 2 x via 4 pin Mini-DIN connectors
- **Component Video(YPbPR):** 6x via RCA connectors
- **PC-VGA(RGBHV):** 2x via HD-15 Female connectors

**OSD Menu Selections & Adjustments**

- **Input Sources:** 1 & 2 AV, 3 & 4 S-Video, 5 & 6 Component Video, 7 & 8 VGA
- **Color:** Contrast, Brightness, Sharpness, Level and TINT
- **VGA Output Resolutions:** VGA, SVGA, XGA, SXGA, WXGA, WSXGA+, WUXGA

**Video Bandwidth:** 380MHz. (-3 dB)

**Audio Bandwidth:** 60MHz, (-3dB) (Audio-Right=60MHz, Audio-Lift=60MH)

**Audio Frequency Respond:** 20Hz~20KHz

**Channel Switching:** 15ns

**Gain Flatness:** 90 Mhz, (0.1 dB), Differential Gain Error 0.01%, 0.1 dB

**Differential Phase Error:** 0.02\*, 0.1 dB(RL=150%)

**Fast Settling Time:** 15ns To 0.1%

**All Hostile Crosstalk:** -84 db @ 5 MHz, -54 dB @ 50 MHz

**Channel Crosstalk:** -56db @ 100 Mhz

**Slew Rate:** 1000 V/as, G=+1,2V Step

**High OFF Isolation:** -100dB @ 10MHz

**Settling Time:** 50ns to 0.1%

**Capacitors:** 2.2uF or 10 uF

**Regulatory Approvals:** CE, FCC, RoHS (2002/95/EC)

**Enclosure Type:** Support 19 inch Ear & Rack mountable panel

**Dimensions (WxDxH):** 17.32" (440mm) x 7.80" (200mm) x 1.73" (44mm)

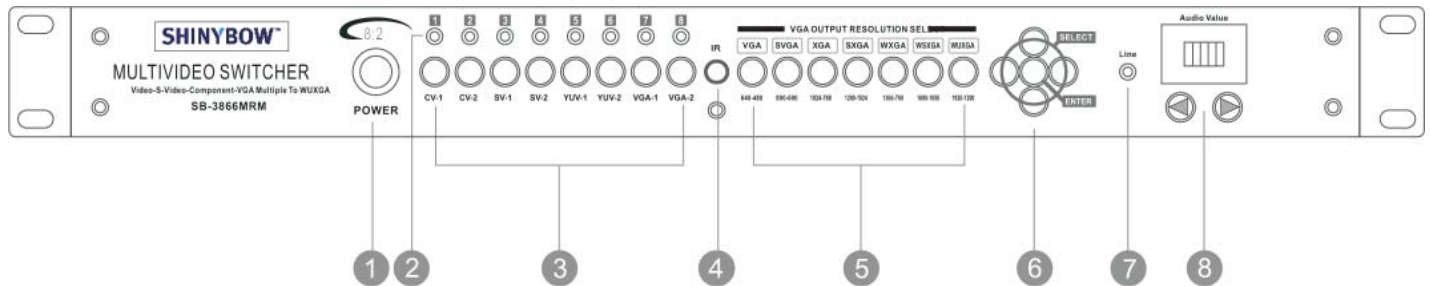
**Infrared:** IR remote control (38KHz)

**Power Voltage Input:** DC 12V @ 1000 mA or up to~3 accepted

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

### 2. INPUT SOURCES DISPLAY

Input sources 1 to 8 LED illuminates green to indicate that a video source is present on that input.

### 3. SOURCE SELECT BUTTONS

A separate output 1 and 2 source select buttons are provided for each destination.

- # Input 1 - Composite Video / Stereo Audio
- # Input 2 - Composite Video / Stereo Audio
- # Input 3 - S-Video / Stereo Audio
- # Input 4 - S-Video / Stereo Audio
- # Input 5 - Component Video (YPbPR) / Stereo Audio
- # Input 6 - Component Video (YPbPR) / Stereo Audio
- # Input 7 - VGA (RGBHV) / Stereo Audio
- # Input 8 - VGA (RGBHV) / Stereo Audio

### 4. IR SENSOR

The IR sensor receives IR commands from the supplied remote controller.

### 5. SELECT VGA RESOLUTION BUTTONS

VGA output resolutions via selection buttons.

- # 1 - VGA Resolution : 640 x 480
- # 2 - SVGA Resolution : 800 x 600
- # 3 - XGA Resolution : 1024 x 768
- # 4 - SXGA Resolution : 1280 x 1024
- # 5 - WXGA Resolution : 1366 x 768
- # 6 - WSXGA Resolution : 1680 x 1050
- # 7 - WUXGA Resolution : 1920 x 1200

### 6. OSD CONTROL

Adjust OSD on display via display screen.

### 7. LINE DISPLAY

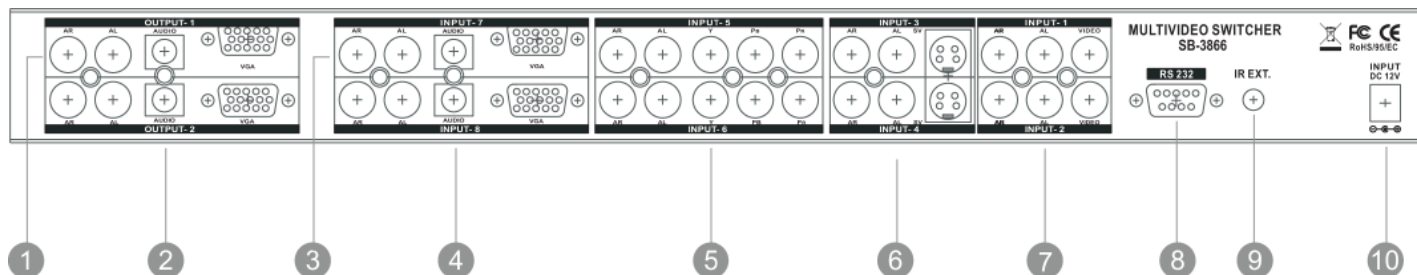
Optional function for unit line to another unit.


### 8. ADJUST AUDIO OUTPUT VOLUME

Adjust output Audio Volume via LED display.

# BACK PANEL

## BACK PANEL



- 1. 2x VGA + AUDIO OUTPUTS:** Two (2) VGA + Two (2) Audio outputs via RCA connector for audio and VGA output via DB-15p.
  - # Output 1 - VGA-RGBHV / Stereo Audio
  - # Output 2 - VGA-RGBHV / Stereo Audio
- 2. 2x 3.5mm AUDIO OUTPUTS:** Provided same Stereo Audio outputs.
- 3. INPUT 7 & 8 VGA-AUDIO INPUTS:** Support VGA(RGBHV) & Stereo Audio Inputs.
  - # Input 7 - VGA-RGBHV via 1x DB-15p connector
    - Stereo Audio via 2x RCA connectors
  - # Input 8 - VGA-RGBHV via 1x DB-15p connector
    - Stereo Audio via 2x RCA connectors
- 4. INPUT 7 & 8 AUDIO with 3.5mm Jack:** Supports 2x Stereo Audio via 3.5mm jack.
  - Input 7 is a stereo audio(AR/AL) via 3.5mm jack.
  - Input 8 is a stereo audio(AR/AL) via 3.5mm jack.
- 5. INPUT 5 & 6 COMPONENT-AUDIO INPUTS:** Component(YPbPR) and Stereo Audio.
  - # Input 5 - Component(YPbPR) via 3x RCA connectors
    - Stereo Audio via 2x RCA connectors
  - # Input 6 - Component(YPbPR) via 3x RCA connectors
    - Stereo Audio via 2x RCA connectors
- 6. INPUT- 3 & 4 S-VIDEO INPUTS:** Supports S-Video and Stereo Audio.
  - # Input 3 - S-Video (Y/C) via 1x Mini DIN-4 Female connector
    - Stereo Audio via 2x RCA connectors
  - # Input 4 - S-Video (Y/C) via 1x Mini DIN-4 Female connector
    - Stereo Audio via 2x RCA connectors
- 7. INPUT- 1 & 2 COMPOSITE-AUDIO INPUTS:** Supports Composite Video and Stereo Audio.
  - # Input 1 - Composite Video via 1x RCA connectors
    - Stereo Audio via 2x RCA connectors
  - # Input 2 - Composite Video via 1x RCA connectors
    - Stereo Audio via 2x RCA connectors
- 8. RS-232 CONTROL:** RS-232 control port to allow for interfacing to a PC.
- 9. IR EXTENDER CONTROL:** IR Extender for 300M extend distance.
- 10. DC POWER INLET:** The SB-3866 is fitted with a DC power plug-park input connector. Please ensure that the plug-park 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. 

# REMOTE CONTROL

## Before making any connections to the SB-3866. 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 select buttons. The supplied IR remote control. Or through the RS-232 serial communications port.

Upon power up the switcher will return to its last used setting before Powered down.

## REMOTE CONTROL

### 1. SWITCH POWER ON or OFF:

Controller with a power ON and OFF

### 2. INPUT 1 To 8 SOURCES SELECT:

The Input 1 to 8 Audio and Video source selections.

- Input- # 1 Composite Video / Stereo Audio
- Input- # 2 Composite Video / Stereo Audio
- Input- # 3 S-Video / Stereo Audio
- Input- # 4 S-Video / Stereo Audio
- Input- # 5 Component Video (YPbPR) / Stereo Audio
- Input- # 6 Component Video (YPbPR) / Stereo Audio
- Input- # 7 VGA-RGBHV / Stereo Audio
- Input- # 8 VGA-RGBHV / Stereo Audio

### 3. SELECT VGA OUTPUT RESOLUTIONS:

Select VGA output resolutions as following :

- SXGA 1280 x 1024
- WXGA 1366 x 768
- WSXGA+1680 x 1050
- WUXGA 1920 x 1200

### 4. MENU - OSD:

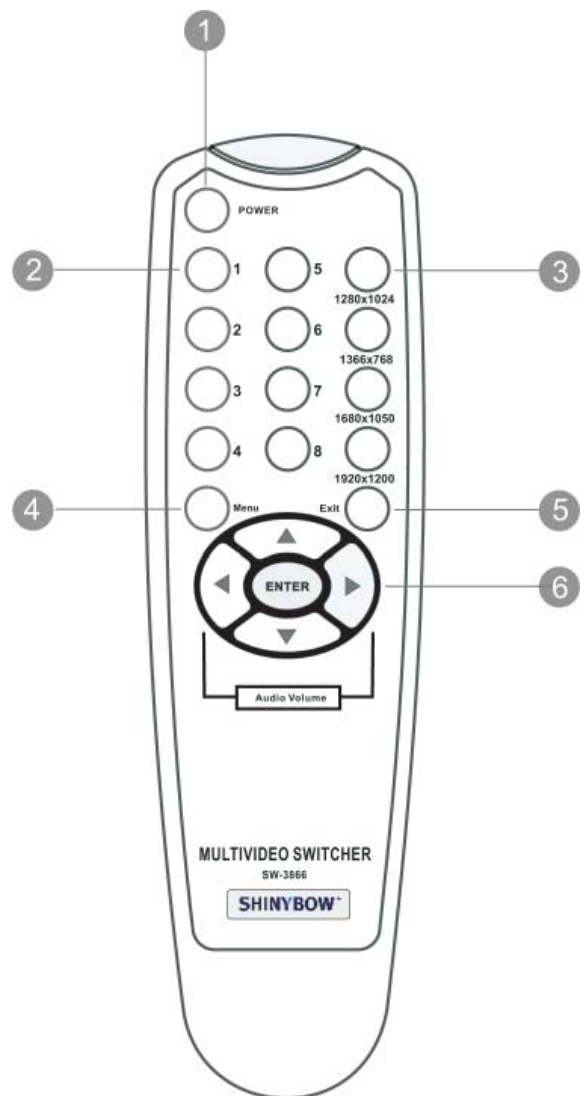
OSD to setup or Adjust output resolutions and color.

### 5. EXIT - OSD:

OSD to EXIT

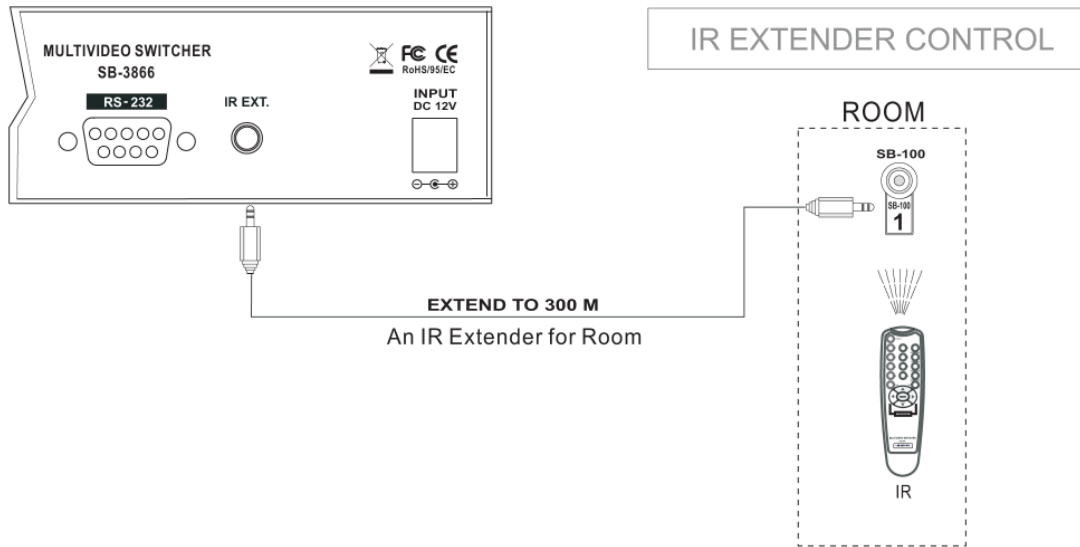
### 6. AUDIO VALUE ADJUSTMENT:

OSD to setup or Adjust Audio output Volume.



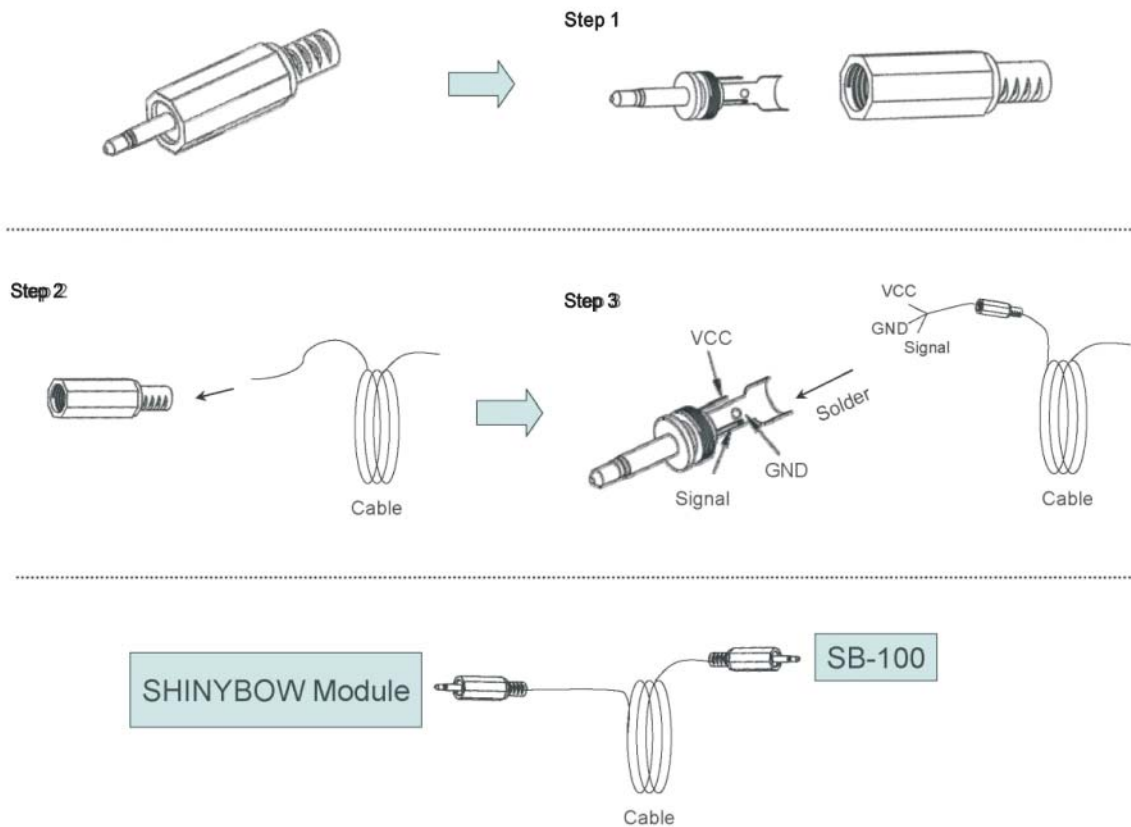
# IR EXTENDER

## REAR PANEL IR EXTENDER PORTS



## IR EXTENDER PACKAGE :

### HOW TO SETUP THE IR EXTENDER COMPONENTS





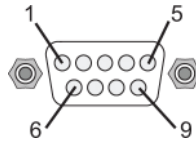
# RS-232 SERIAL INTERFACE

## RS-232

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.

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.



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 SERIAL INTERFACE CONNECT  
a PC or CONTROL SYSTEM

## COMMANDS

### To Switch Inputs to Outputs

**SBIOXO0Y** - Where X is Output Number (1-1) and Y is Input Number (1-8)

### Unit will respond with

**SBUD0XOY** - Where X is Output Number (1-1) and Y is Input Number (1-8)

**Example:** Send Input 6 to Output 1

**SBIO6O01** - Send

**SBUD06O1** - Rcvd

## MORE STUFF FOR SB-3866

**Note:** Turning the unit System Power Off over RS-232 will extinguish the LED channel display leaving only the Power switch LED on. The Video and Audio outputs will also mute. While the unit is turned off by RS-232 it will continue to accept and act upon switching commands. For example, if the unit is in the off mode (via RS-232) and you send a command to switch an input to an output, that route will complete and the video and audio will now appear on that channel only. The front panel LED channel display for that particular output will also show the input selected (for that single output channel only). The remaining LED's will remain off and video and audio outputs muted. The unit will still return status and change messages in response to commands sent while in Power Off state. A hard reset command (SBALLRST) will return the unit to normal operation and also unlock the front panel.

## POWER OFF MODE

**SBSYSMOF** - Put system into Standby (Soft Power Off)

**SBSYSMON** - Bring unit out of Standby (Soft Power On)

### Unit will respond with

**SBALOFAK** - Unit is in Standby

**SBALONAK** - Unit is no longer in Standby

**Example:** Put Unit in Standby (Soft Power)

**SBSYSMOF** - Send

**SBALOFAK** - Rcvd

## FRONT PANEL LOCK

**Note:** Hard resetting the unit will unlock the Front Panel controls.

**SBSYSMLK** - When front panel is locked, changes can only be made by RS-232

**SBSYSMUK** - Front Panel Unlock

### Unit will respond with

**SBSYSLOK** - Front Panel has been Locked

**SBSYSULK** - Front Panel has been Unlocked

**Example:** Lock Front Panel Buttons

**SBSYSMLK** -Send

**SBSYSLOK** -Rcvd

## UNIT RESET

**SBALLRST** - Reset every output to Input 1

### Unit will respond with

**SBRSTACK** - Unit has reset each Output to Input 1

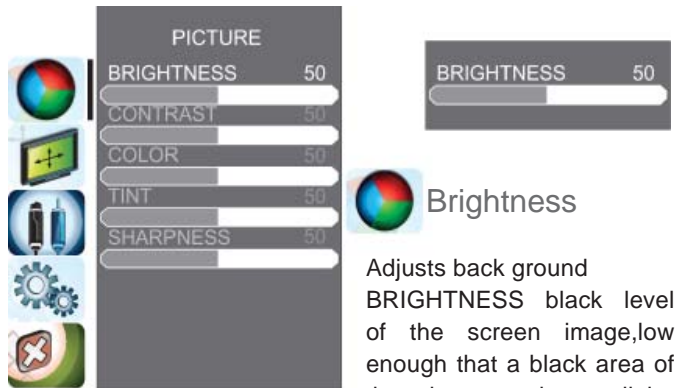
**Example:** Reset all outputs to Input 1

**SBALLRST** - Send

**SBRSTACK** - Rcvd

# OSD PICTURE ADJUSTMENT

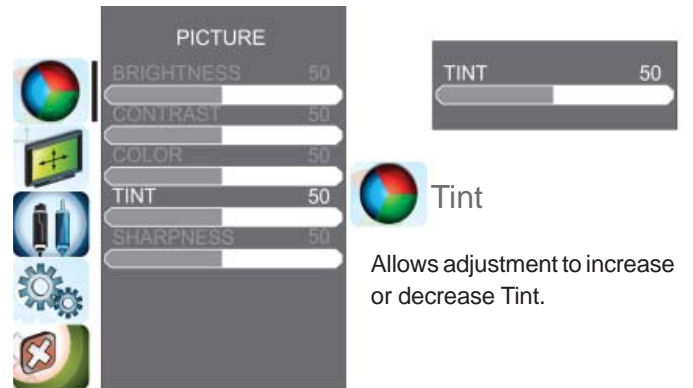
## CONTENT



The OSD menu shows 'PICTURE' settings with 'BRIGHTNESS' at 50. The slider is positioned at the 50 mark. A separate slider labeled 'BRIGHTNESS 50' is shown to the right.

### Brightness

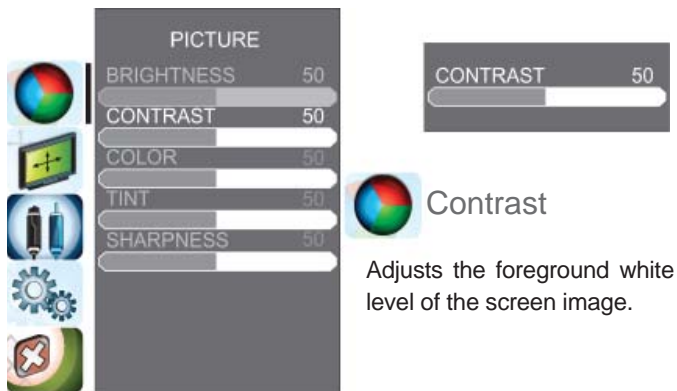
Adjusts back ground BRIGHTNESS black level of the screen image, low enough that a black area of the picture emits no light, but high enough that setting the control any higher would cause the area to become a dark gray.



The OSD menu shows 'PICTURE' settings with 'TINT' at 50. The slider is positioned at the 50 mark. A separate slider labeled 'TINT 50' is shown to the right.

### Tint

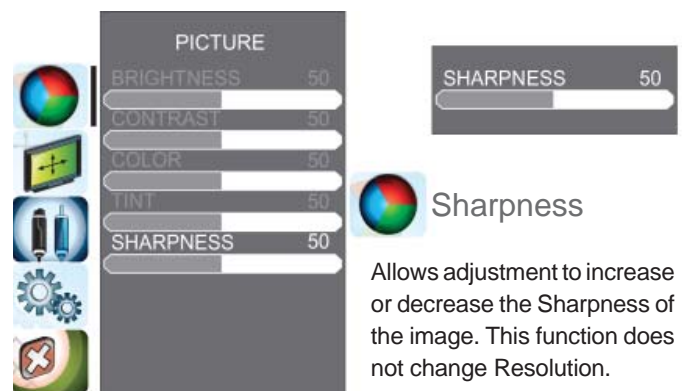
Allows adjustment to increase or decrease Tint.



The OSD menu shows 'PICTURE' settings with 'CONTRAST' at 50. The slider is positioned at the 50 mark. A separate slider labeled 'CONTRAST 50' is shown to the right.

### Contrast

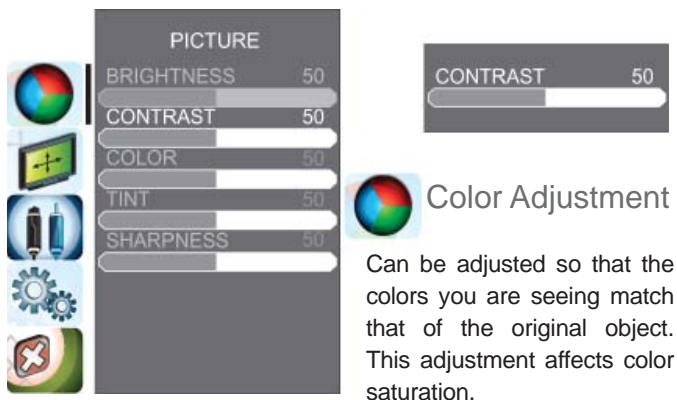
Adjusts the foreground white level of the screen image.



The OSD menu shows 'PICTURE' settings with 'SHARPNESS' at 50. The slider is positioned at the 50 mark. A separate slider labeled 'SHARPNESS 50' is shown to the right.

### Sharpness

Allows adjustment to increase or decrease the Sharpness of the image. This function does not change Resolution.



The OSD menu shows 'PICTURE' settings with 'COLOR' at 50. The slider is positioned at the 50 mark. A separate slider labeled 'COLOR 50' is shown to the right.

### Color Adjustment


Can be adjusted so that the colors you are seeing match that of the original object. This adjustment affects color saturation.

# OSD SETUP VGA OUTPUT RESOLUTIONS & VIDEO SOURCES SELECTIONS

## CONTENT



RESOLUTION
640x480
800x600
1024x768
1280x1024
1366x768
1680x1050
1920x1200




### Resolution Adjustment

Changes the output resolution to one of the pre-set values. Note that after you make this change, your display device might need to re-clock to the signal. You can do this by changing your source input and then back again to the SB-3866 input.

**For example:**

If you have the SB-3866 connected to the VGA input on your projector. After you change resolution, you need to set the projector to switch to video input and then change back to VGA.



INPUT SOURCE
CVBS1
CVBS2
S-VIDEO1
S-VIDEO2
YPBPR1
YPBPR2
VGA1
VGA2



### Input Source

Changes the Input Signal Source to one of pre-set values. The front panel LED will also display the Input Signal Source selected.

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

# OSD FUNCTION SETTING

## CONTENT



### Language

Option to choose languages English or Chinese.



### Sleep

The Sleep Timer will automatically shutdown the SB-3866 at a pre-determined amount of time. The preset values start at 10 minutes and goes to 120 minutes, in increments of 10 minutes ea.



### Visibility

Changing this value sets the transparency ration between the OSD and the background image.



### Reset

Selecting Reset will restore the unit to factory default conditions. The input will default to CVBS-1 at its lowest resolution.



### Information

Display the software version.



### Exit

When finished with any menu, selecting Exit will take you out of the On Screen Menu (OSD).

# LIMITED WARRANTY

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