INSTRUCTION MANUAL

SB-4144

4x4 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 Matrix Switcher Series

Thank you for purchasing the SB-4144 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.

CONTENTS

INTRODUCTION 1
FEATURES & SPECIFICATIONS 2
FRONT PANEL 3
REAR PANEL 4
REMOTE CONTROL 5
RS-232 SERIAL INTERFACE 6
TYPICAL APPLICATION 7
LIMITED WARRANTY 8

INTRODUCTION

Congratulations on your purchase of one of the most innovative VGA(RGBHV)/Stereo Audio(AR/AL) 4x4 matrix switching products on the market Today.

The SB-4144 is a true Matrix Routing Switcher for VGA(RGBHV)/ Stereo Audio(AR/AL) signals. It is an 4 individual VGA(RGBHV)/ Stereo Audio(AR/AL) inputs with 4 individual RGBHV/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 and video input cables and output category(RJ-45) cables.

The SB-4144 is useful for Matrix signals from VGA source devices (such as: Personal computer, Set Top Box, and Satellite Receivers, etc.) To VGA destination devices (Such as LCD Monitors, VGA Monitors, Plasma LCD TV, VGA Projectors, etc.). Selection of inputs is made via the front panel push buttons or an Infrared Remote Control unit or RS-232 control by a computer.

PACKAGE CONTENTS

Check that you have the following components;

- SB-4144 4x4 Matrix Switcher
- IR Remote Control
- Rack Mounts
- RS-232 driver CD (All Windows Operating Systems)
- Users Guide
- AC/DC Adapter: 12VDC, 100mA~230mA
  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.

DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. We assume no responsibility for any infringements of patents or other rights of third parties which may result from its use.

We assume no responsibility for any inaccuracies that may be contained in this document. We make no commitment to update or to keep current the information contained in this document.

We reserve the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or any of its part translated into any language or computer file, in any form or by any means — electronic, mechanical, magnetic, optical, chemical, manual, or otherwise — without express written permission and consent

© Copyright 2015. All Rights Reserved.

Version 2.0 JUNE 2015

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.

FEATURES & SPECIFICATIONS

FEATURES

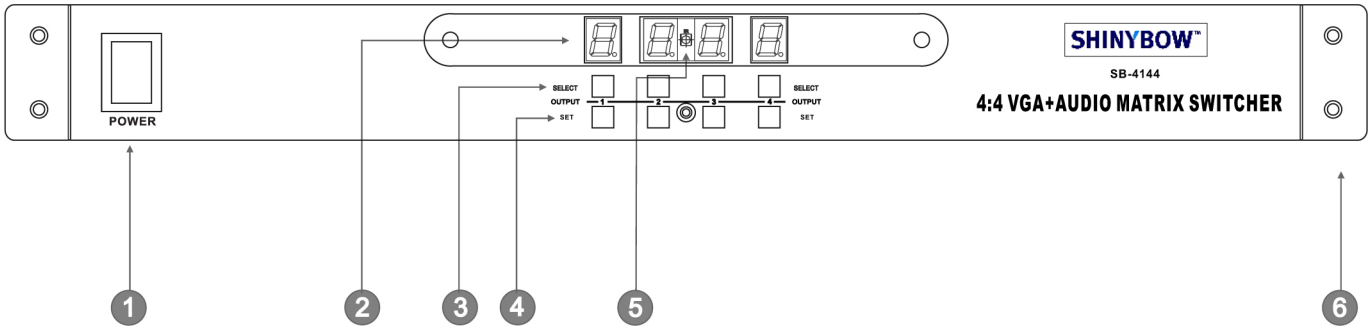
- Supports 4x inputs VGA+Audio to 4x VGA-Audio outputs Matrix Switcher
- Input signals support via VGA (RGBHV), Stereo Audio(AR/AL)
- Output Signals support VGA and Stereo Audio to VGA Monitor display
- Higher Video Bandwidth 325MB each path R,G,B signals.
- Supported HD high definition resolutions XGA, SXGA, UXGA, WSXGA, WUXGA
- RS-232 Serial interface
- 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
- Supports desktop with Ear mount and 19 inch Rack mountable type panel
- Power supply DC12Volt, Universal Type Switch 100~230VAC, 50/60Hz

SPECIFICATIONS

- **Type of Switcher:** (4) in to (4) out, VGA (RGBHV)-Audio Matrix Switcher
- **Input Ports: Group:**
  - 1x VGA (RGBHV) via HD-15p VGA connector
  - 1x Stereo Audio (AR/AL), Via 1x Ø3.5mm Ear Phone Jack
- **Output Ports: Group:**
  - 1x VGA (RGBHV) via HD-15p VGA connector
  - 1x Stereo Audio (AR/AL), Via 1x Ø3.5mm Ear Phone Jack
- **Video Bandwidth:** 325MHz (-3db), 200mVp-p
- **Video Supported:** Higher resolution formats HD 1920x1200 (WUXGA)
- **Audio Supported:** Stereo Audio
- **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
- **Settling Time:** 50ns to 0.1%
- **Chassis Material:** Metal
- **Dimensions (WxDxH):** 19 x 7.87 x 1.73 in (482x200x44mm)
- **Shipping Weight:** 2.25 Kgs / 3.75 lb
- **Safety Approvals:** CE, FCC, RoHS (2002/ 95 / EC)
- **Power Supply:** DC12V / 1A~2A (consumption 800mA 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

2. OUTPUT SOURCES STATUS LED DISPLAY: Output channel 1 to 4 show from LED display illuminates red to indicate that a video source is present on that input.

3. INPUT SOURCES SELECT BUTTONS: A separate output-1 To 4 source select buttons are provided for each destination. Select sources are 1-4 VGA-Audio channels

4. SOURCES SETUP BUTTONS: Setup the input sources 1 ~ 4 channels

5. IR SENSOR: The IR sensor receives IR commands from the supplied remote controller.

6. 19 INCH EAR MOUNT PAIR: 19 inch 1 RU {1 3/4”) rack mount brackets. Part number: 1U-440L

OPERATING THE UNIT

Once you have connected the switcher as described above, you must be certain that the input are being fed appropriate signals and are not suffering from signal loss due to cabling problems or problems with the source device.

If the input signals to the switcher are appropriate, switch the power switch to <ON> and you should see and hear the signals on the devices you have connected to the various output connectors of the switcher.

POWER AND CONNECTIONS

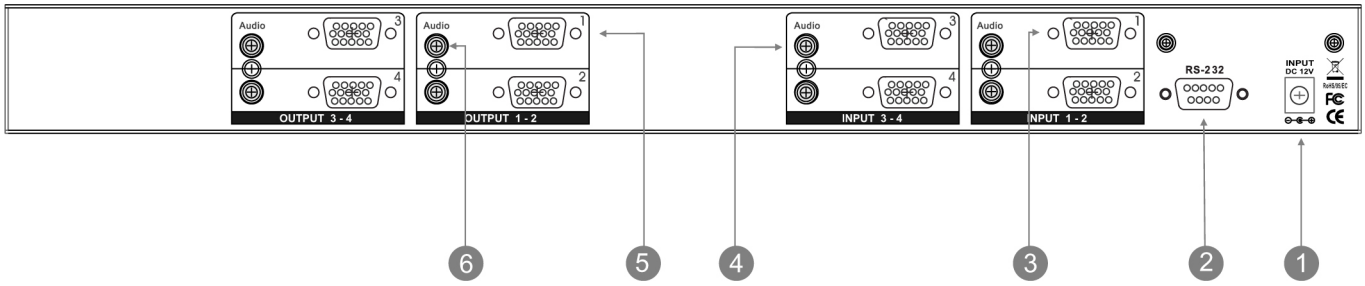
This unit is not disconnected from the AC power source as long as it is connected to the wall outlet. The off state for this unit is called standby mode. In standby mode the unit is designed to consume a reduced quantity of power compared to normal operating modes.

When it is not using the unit for a long period of time, insure that the AC power cord is disconnected from the wall outlet.

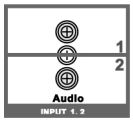
The AC wall outlet should be installed near to the unit and be easily accessible.

Do not plug in or attempt to operate an obviously damaged unit.

BACK PANEL



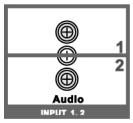
1. DC POWER INLET: The switcher is fitted with a DC power plug input connector. Please ensure that the plug used is of an approved type and is of sufficient current carrying capacity with the correct voltage and connector polarity. 12Volt DC power supply 1A-2A Max.



Power Jack:
DC Jack - Inner OD Ø 2.1 mm (+)
Outside OD Ø 5.5mm (GND)
Power input -12VDC, 1A-2A
Switcher power suppler use universal
Part number: TA007

---

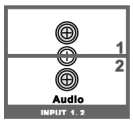
2. RS-232 CONNECTION: RS-232 control port to allow for interfacing to a PC, such as a computer or touch panel control, to the switcher via this DB-9pin Female connector for serial RS-232 control.



Remote port: DB-9pin Female connector.

---

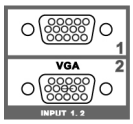
3. INPUT: 1~4 AUDIO PLAYER SOURCES: Connect a signal source of Stereo Audio devise output to 8x Stereo Audio devices.



Stereo Audio(AR/AL) Via 1x Ø3.5mm ear phone jack connector.
Note: With 1x female phone jack each channel.

---

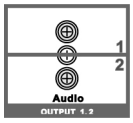
4. INPUT: 1~4 VGA SOURCE PORTS: Connect a signal source of VGA (RGBHV) devise via VGA cable output to 4x VGA Monitor displays.



VGA (RGBHV) Via 1x HD-15p connector.
Note: With 1x female D-Sub connector.

---

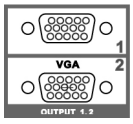
5. OUTPUT: 1~4 AUDIO PORTS: Connect a signal of Stereo Audio output to Audio devise from 4x Audio input source devices.



Stereo Audio(AR/AL) Via 1x O3.5mm ear phone jack connector
Note: With 1x female phone jack each channel

---

6. OUTPUTS: 1~4 VGA-RGBHV PORTS: Connect a signal of VGA via VGA cable output to VGA Monitor displays from 4x VGA input source devices.



VGA (RGBHV) Via 1x HD-15p connector
Note: With 1x female D-Sub connector

REMOTE CONTROL

Before making any connections to the SB-4144. 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

1. SWITCH POWER ON or OFF:

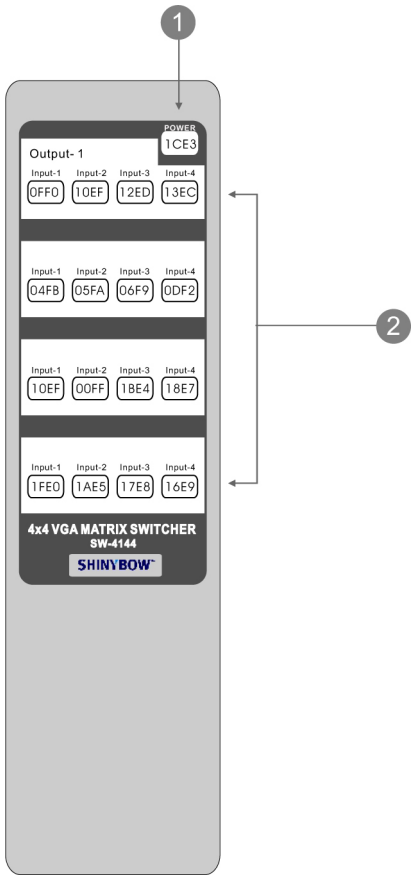
Controller with a power ON and OFF

2. OUTPUTS: 1 - 4 VGA DESTINATION:

Output - 1 : Switch 4x VGA sources to #1 Monitor Display
Output - 2 : Switch 4x VGA sources to #2 Monitor Display
Output - 3 : Switch 4x VGA sources to #3 Monitor Display
Output - 4 : Switch 4x VGA sources to #4 Monitor Display

INPUTS: 1 - 4 VGA DEVICE SOURCES

Input - Source 1: VGA Signal source device #1
Input - Source 2: VGA Signal source device #2
Input - Source 3: VGA Signal source device #3
Input - Source 4: VGA Signal source device #4



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 input is functioning properly in all respects. Verify that the video and audio signals are present and are being displayed properly on a suitable device.

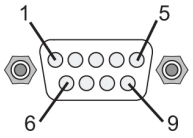
If all is well connect the appropriate cables between the output of the device you wish to distribute to output(s) of the switcher to the carious devices you wish to feed a signal to. Lastly, connect the AC to DC adaptor, connect the DC connector to the switcher first and then plug the adaptor into a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

RS-232 SERIAL INTERFACE

RS-232 SERIAL INTERFACE CONNECT a PC or CONTROL SYSTEM

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 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.

COMMANDS

To Switch Inputs to Outputs
SBI0XO0Y - Where X is Output Number (1-4) and Y is Input Number (1-4)

Unit will respond with
SBUD0XOY - Where X is Output Number (1-4) and Y is Input Number (1-4)

Example: Send Input 4 to Output 2
SBI04O02 - Send
SBUD04O2 - Rcvd

MORE STUFF FOR SB-4144

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

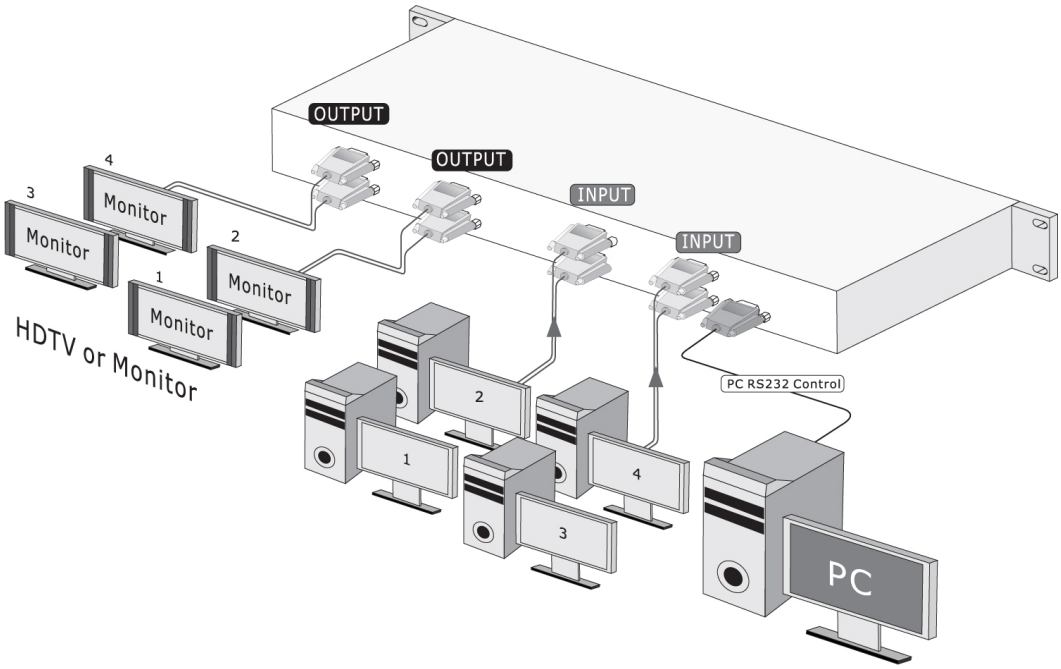
SBALLRST - Reset every output to Input 1

Unit will respond with
SBRSTACK - Unit has reset each Output to Input 1

Example: Reset all outputs to Input 1
SBALLRST - Send
SBRSTACK - Rcvd

TYPICAL APPLICATION

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



INSTALLING

CONTROL PORTS:

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

INPUTS 1 - 4 PORT VGA SOURCE DEVICE SIGNALS:

VIDEO - VGA (RGBHV), connector with HD-15p (D-Sub)
AUDIO - Stereo Audio (AR/AL), Connector via OD3.5mm Ear phone Jack

OUTPUT 1 - 4 PORT VGA CONNECT TO DISPLAY MONITOR SIGNALS:

VIDEO - VGA(RGBHV), connector with HD-15p (D-Sub)
AUDIO - Stereo Audio (AR/AL), Connector via OD3.5mm Ear phone Jack

SB-4144 SUPPORT VGA (4) INPUTS MATRIX TO (4) SWITCH OUTPUTS
SUPPORT CONTROL IR & RS-232 INTERFACE SYSTEM PORTS.

LIMITED WARRANTY

PLEASE READ THE FOLLOWING TERMS AND CONDITIONS CAREFULLY BEFORE USING THIS HARDWARE, COMPONENTS AND SOFTWARE PROVIDED BY, THROUGH OR UNDER SHINYBOWUSA, INC (COLLECTIVELY, THE "PRODUCT"). By using installing or using the Product, you unconditionally signify your agreement to these Terms and Conditions. If you do not agree to these Terms and Conditions, do not use the Product and return the Product to SHINYBOWUSA, Inc. at the return address set forth on the Product's packing label at your expense. SHINYBOWUSA, Inc. may modify these Terms and Conditions at anytime, without notice to you.

RESTRICTIONS ON USE OF THE PRODUCT

It is your responsibility to read and understand the installation and operation instructions, both verbal and in writing, provided to you with respect to the Product. You are authorized to use the Product solely in connection with such instructions. Any use of the Product not in accordance with such instructions shall void any warranty pertaining to the Product. Any and all damages that may occur in the use of the Product that is not strictly in accordance with such instructions shall be borne by you and you agree to indemnify and hold harmless SHINYBOWUSA, Inc. from and against any such damage.

The Product is protected by certain intellectual property rights owned by or licensed to SHINYBOWUSA. Any intellectual property rights pertaining to the Product are licensed to you by SHINYBOWUSA, Inc. and/or its affiliates, including any manufacturers or distributors of the Product (collectively, "SHINYBOWUSA") for your personal use only, provided that you do not change or delete any proprietary notices that may be provided with respect to the Product.

The Product is sold to you and any use of any associated intellectual property is deemed to be licensed to you by SHINYBOWUSA for your personal use only. SHINYBOWUSA does not transfer either the title or the intellectual property rights to the Product and SHINYBOWUSA retains full and complete title to the intellectual property rights therein. All trademarks and logos are owned by SHINYBOWUSA or its licensors and providers of the Product, and you may not copy or use them in any manner without the prior written consent of SHINYBOWUSA, which consent may be withheld at the sole discretion of SHINYBOWUSA.

The functionality and usability of the Product is controlled by SHINYBOWUSA, Inc. from its offices within the State of Texas, United States of America. SHINYBOWUSA makes no representation that materials pertaining to the Product are appropriate or available for use in other locations other than the shipping address you provided with respect thereto. You are advised that the Product may be subject to U.S. export controls.
Disclaimers and Limitation of Liability

SHINYBOWUSA may change or modify the Product at any time, from time to time.

THE PRODUCT IS PROVIDED "AS IS" AND WITHOUT WARRANTIES OF ANY KIND EITHER EXPRESS OR IMPLIED. SHINYBOWUSA DOES NOT WARRANT OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE OF THE PRODUCT'S CORRECTNESS, ACCURACY, RELIABILITY, OR OTHERWISE.

SHINYBOWUSA has no duty or policy to update any information or statements pertaining to the Product and, therefore, such information or statements should not be relied upon as being current as of the date you use the Product. Moreover, any portion of the materials pertaining to the Product may include technical inaccuracies or typographical errors. Changes may be made from time to time without notice with respect to the Product.

TO THE FULLEST EXTENT PERMISSIBLE PURSUANT TO APPLICABLE LAW, SHINYBOWUSA DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NON-INFRINGEMENT. SHINYBOWUSA DOES NOT WARRANT THE ACCURACY, COMPLETENESS OR USEFULNESS OF ANY INFORMATION WITH RESPECT TO THE PRODUCT. SHINYBOWUSA DOES NOT WARRANT THAT THE FUNCTIONS PERTAINING TO THE PRODUCT WILL BE ERROR-FREE, THAT DEFECTS WITH RESPECT TO THE PRODUCT WILL BE CORRECTED, OR THAT THE MATERIALS PERTAINING THERETO ARE FREE OF DEFECTS OR OTHER HARMFUL COMPONENTS. SHINYBOWUSA WILL USE ITS REASONABLE EFFORTS TO CORRECT ANY DEFECTS IN THE PRODUCT UPON TIMELY WRITTEN NOTICE FROM YOU NOT TO EXCEED 10 BUSINESS DAYS AFTER RECEIPT BY YOU OF THE PRODUCT, BUT YOU (AND NOT SHINYBOWUSA) ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING, REPAIR AND CORRECTION THAT WAS CAUSED BY YOU UNLESS OTHERWISE AGREED TO IN A SEPARATE WRITING BY SHINYBOWUSA.

UNDER NO CIRCUMSTANCES, INCLUDING, BUT NOT LIMITED TO, NEGLIGENCE, SHALL SHINYBOWUSA BE LIABLE FOR ANY SPECIAL OR CONSEQUENTIAL DAMAGES THAT RESULT FROM THE USE OF, OR THE INABILITY TO USE THE PRODUCT IN ACCORDANCE WITH ITS SPECIFICATIONS, EVEN IF SHINYBOWUSA OR ITS REPRESENTATIVES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT SHALL SHINYBOWUSA'S TOTAL LIABILITY TO YOU FROM ALL DAMAGES, LOSSES, AND CAUSES OF ACTION (WHETHER IN CONTRACT, OR OTHERWISE) EXCEED THE AMOUNT YOU PAID TO SHINYBOWUSA, IF ANY, FOR THE PRODUCT.

END OF DOCUMENT

122 Rose Ln. Suite 303 | Frisco, Texas 75034

1-877-SHINY-USA
1-877-744-6987
1-972-377-2508

sales@shinybowusa.com

www.shinybowusa.com

SHINYBOW™ USA
MULTIMEDIA AUDIO AND VISUAL