

# SB-5669K

16x16 UHD 4K2K@30Hz HDMI Matrix Routing Switcher w/  
Full EDID Management/Learning



### IMPORTANT WARRANTY INFORMATION.

*If you remove the HDMI screw posts, you must use the provided HDMI Locking Post replacement screws to keep the internal HDMI jack secure. Removing the HDMI screws without installing the HDMI Locking Post replacement screws will void your warranty.*



## 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

## HDMI Matrix Routing Switcher Series

Thank you for purchasing the SB-5669K 16x16 HDMI Matrix Routing 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 the 16x16 HDMI matrix routing switcher.

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### INTRODUCTION

The SB-5669K is professional 16x16 matrix routing switch. Supporting (16) HDMI Inputs and (16) HDMI outputs. The SB-5669K is based on the HDMI standard and supports full resolution HDMI video with embedded HDCP, RS-232 and bi-directional IR, all over a single HDMI cable. With a signal bandwidth of 340Mhz, there is no signal degradation. High definition digital signals can be selected and distributed to any of the (16) Inputs to the (16) Outputs. The SB-5669K is certified as being fully CEC and HDCP 1.3 compliant with HDMI 1.4a, HDMI 4K2K@30Hz, DVI 1.0 and 3D formats and a wide frequency range of 25MHz~340MHz. Supports UXGA/WUXGA/DVI 1920x1200 resolution to any HD display. EDID management can be selected between (7) different modes. Control is provided via front panel push buttons, IR remote, RS-232 or TCP/IP (not a web-browser). A RS-232 Windows GUI interface is provided for matrix routing control (Windows only).

The SB-5669K's front panel includes a large LCD display which shows the current routing cross points of all Inputs to Outputs and it allows for easy setup of EDID modes. Functional manual control is achieved through push buttons located on the front panel. External functional control is achieved through RS-232 Serial connection, IR Remote Control or IP. The RS-232/IP connection allows functions to be controlled by systems like Control4® (drivers included) or any computerized software/hardware control system. The IP (Ethernet) port supports commands from a device when using either our provided PC GUI software or thru 3rd party emulator to an IP address set in the SB-5669K. The IP port does not have a built in web-server.

When using the SB-5669K Matrix Routing Switch, one-to-many or many-to-one connections can be established. You can easily connect any input device to any output device. You can also establish a single input device to many output devices, eliminating the need to constantly re-route video input and output cables.

### 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 & CONTENTS

## FEATURES

- Enables switching of (16) HDMI digital source devices to (16) HDMI devices
- Supports HDMI 4K2K@30Hz and 1.4a 3D formats
- HDMI digital video w/ embedded audio, DVI format and is CEC/HDCP 1.3 compliant
- (7) function buttons for control and (7) worldwide EDID modes for full HDMI 4K2K@30Hz HD Video resolutions
- Link speeds of up to 6.75Gbps (link clock rate of 340MHz)
- Wide frequency range 25MHz ~ 340MHz
- Wide range of HD resolutions from PC XGA to WUXGA 1920x1200 and HDTV/DTV HDMI resolutions 480i/480p, 576i/576p, 720p, 1080i/p & 4K2K@30Hz
- Compatible with all HDMI source devices, PC monitors, plasma HD displays, HDTVs and audio receiver/amplifiers
- Digital video TMDS formats for resolutions up to 1080p-60 with deep color 36-bit
- Digital Audio Supports: Dolby TrueHD, Dolby Digital, Dolby Digital Plug/ex, DTS, DTS-HD, DTS-HD Master, DTS-EX, PCM, PCM2, LPCM2
- Various user interface controls:
  - Windows-based GUI control via RS-232 interface control drive for 2000/XP/WIN7-32/WIN7-64/WIN8
  - Front panel push buttons
  - IR wireless remote control
  - Third party RS-232 control (via simple ASCII)
  - ETHERNET series interface (via pc protocol commands)
- Supports (7) world wide control function keys:
  - Full function front panel controls: ALL / OFF / EDID / LOCK / RECALL / MEMORY / ENTER
- Support EDID Modes:
  - Embedded EDID Modes: FSS® (Fast Speed Start®) / H24-3D/ H24-3D-M/ H36-3D/ H36-3D-M/ 4K2K-3D / DVI-D 1920x1200-60Hz
  - Learning mode 1 & 2 (learning destination EDID link to source device)
- Automatic scanning of input & output status and display via LCM front panel
- Using the build-in booster, each HDMI Output port is capable of driving cable lengths for 1080p up to 98 ft (30M) & 4K2K up to 49 ft (15M)
- Supports IR remote and IR extender with a maximum distance of up to ~ 984 feet (300M)
- Universal power adaptor AC100V~AC240V, 50/60Hz

## PACKAGE CONTENTS

Check that you have the following components:

- SB-5669K Matrix Routing Switcher
- RS-232 V2.0 / Ethernet V1.0 Protocol Instructions
- IR Remote Control (SW-5669)
- 19 inch Ear mount bracket (Part # 2U-440L)
- SB-100 IR Extender Receiver Set
- CD Contents: This manual, Windows GUI, ISP V1.0 Windows driver
- RS-232 Cable 6.5 feet (2M)
- HDMI Locking Post Replacement Screws
- Users Guide
- Worldwide Universal Power Supply 100~240VAC, AC 50/60Hz, 10A
- *Optional: SB-100C IR Extender Receiver Cable (6.5ft (2M))*



## LOOK A PUPPY!! NOW READ THIS!! IMPORTANT WARRANTY INFORMATION.

*If you remove the HDMI screw posts, you must use the provided HDMI Locking Post replacement screws to keep the internal HDMI jack secure. Removing the HDMI screws without installing the HDMI Locking Post replacement screws will void your warranty.*

# SPECIFICATIONS

## SPECIFICATIONS

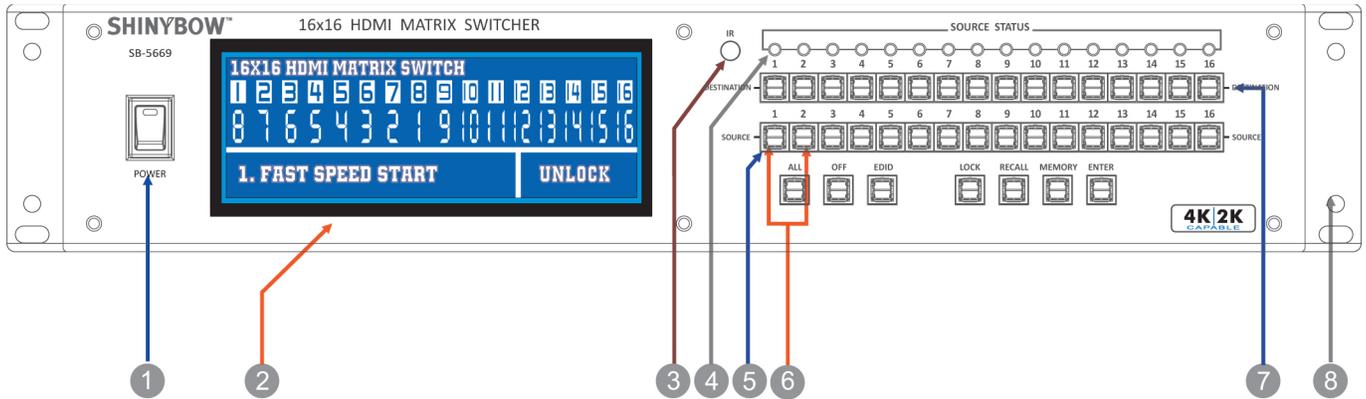
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- **Type of HDMI Switcher:** (16) HDMI Inputs to (16) HDMI Outputs matrix switcher
- **HDMI Support:** HD 1080p@60Hz, 4K2K@30Hz, H36-bit deep color, 3D (1.4a) formats
- **HDCP / CEC Support:** HDCP 1.3 & CEC Compliant
- **Video Bandwidth:** Double Data Rates: 340MHz, total 6.7Gbps bandwidth
- **Digital Video Support:** HD: 480i/ 480p/ 720p/ 1080i/p and 4K2K@30Hz up to 36bit deep color
- **Inputs (HDMI):** (16) HDMI (HDMI or DVI digital source)
- **Outputs (HDMI):** (16) HDMI (To Destination)
- **Digital Audio Support:** Multi Audio Formats 5.1 / 7.1, MAT(MLP), Dolby Digital, Dolby TrueHD, Dolby Digital Plus, DTS, DTS-ES 6.1, DTS-HD, DTS-HD-HRA, DTS-HD Master, (PCM-2CH)
- **Booster (Each HDMI Output Port):** \*1080p up to ~98 feet (30M) & 4K2K@30Hz up to ~49 feet (15M)
- **Switcher Controls:**
  - Select & Function buttons on front panel (Data status via LCM panel show out)
  - IR Remote Control (switch control) (SW-5669)
  - IR External port (switch control via 3.5mm OD Jack)
  - RS-232 series interface (switch control)
  - Ethernet series interface (switch control)
- **Source Status:** Input status LEDs indicates presence of a live signal
- **(39) Function Control Keys:** 1. ALL, 2. OFF, 3. RECALL, 4. ENTER, 5. MEMORY, 6. LOCK, 7. EDID, 8. Destination 1 thru 16, 9. Source 1 thru 16
- **(7) EDID Management Modes:**
  - Embedded EDID Modes: Mode1: Fast Speed Start<sup>®</sup>, Mode2: H24-3D, Mode3: H24-3D-M, Mode4: H36-3D, Mode5: H36-3D-M, Mode6: 4K2K-3D, PCM-2CH, Mode7: DVI-D 1920x1200
- **Learning Mode:**
  - 1. Select LEARNING Mode-1: Learning **Single** Destination EDID To Link Source
  - 2. Select LEARNING Mode-2: Learning **Multiple** Destination EDID To Link Source
- **Infrared Frequency:** 38Khz
- **IR Extend Distance:** SB-100 (~984 ft / 300M max), SB-100C (~6.5 ft/2M)
- **HDBaseT™ Extender Distance:** ~328 ft / 100M max
- **HDMI I/O Connector:** HDMI Type A - SMD 19pin female type
- **Temperature:** Operating Temperature 32°F - 100°F (0°C - 32°C)
- **Dimensions (LxWxH):** 17.5 x 12 x 3.5 in
- **Rack Mount:** 2RU High 19 in rack mount (with rack mount ears) #2U-440L
- **Power Supply:** AC 100~240VAC 50/60Hz (120V/1A/120W; 220V/0.54A/120W)
- **Unit material:** Metal (thin 1mm)
- **Safety Approvals:** CE, FCC, REACH
- **Weight:** 11.2 lb (Unit only) / 16.8 lb (Net)

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

# FRONT PANEL

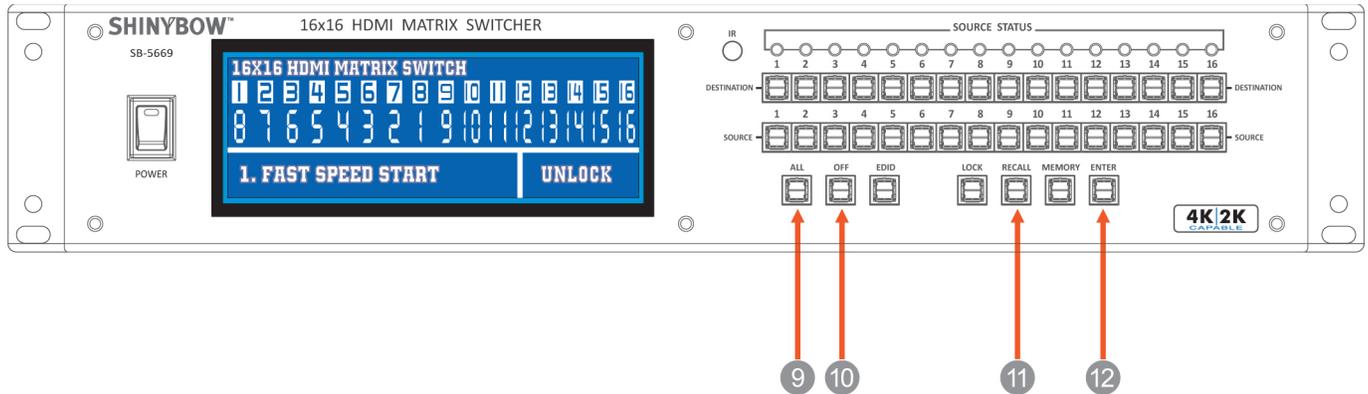
## FRONT PANEL



- 1. POWER ON SWITCH:** The power switch turns the unit on and off. The LCM will illuminate blue to indicate the switcher is ON and receiving power. The switcher will remember the last setting during a power cycle. When power is removed and resorted, the last configuration will be evoked.
- 2. STATUS DISPLAY:** Front panel status display shows current matrix routing configuration. This same display also shows particular configuration settings depending on your current function. In run mode (as shown above), the display shows each Output (destination) channel to which input (source) it is assigned.
- 3. IR SENSOR:** The IR sensor receives IR commands from the supplied remote control or third party IR emitter.
- 4. INPUT STATUS DISPLAY:** Input source 1 to 16 LED illuminate white to indicate a video source is present on that input.
- 5. SOURCE SELECT BUTTONS:** Separate inputs 1 thru 16 select buttons are provided for each source selection.
- 6. EDID MODE SELECT BUTTONS:** Used to select EDID modes using Source button #1 or #2.
- 7. DESTINATION SELECT BUTTONS:** Separate outputs 1 thru 16 select buttons are provided for each destination assignment. Routing can be source to destination or one source to multiple destinations.  
*Example:* Press Destination 1, 8, 12, then press Source 2. This will route Input 2 to Output 1, 8, 12 respectfully.
- 8. 19 INCH EAR MOUNT PAIR:** Converts desktop to 19 inch rack mount. Bracket (part # 2U-440L) INCLUDED. Image shows rack mount brackets attached.

# FRONT PANEL

## FRONT PANEL



### 9. FUNCTION KEY - ALL:



Disables (mutes) video on all destinations OR assign the same source to all destinations.

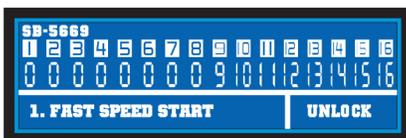
#### Operation 1

- Press **ALL** followed by **OFF** button. The display will show "0" to indicate none of the destinations are assigned a video source.

#### Operation 2

- Press **ALL** followed by Source **1 THRU 16**. The display will show the source selected.
- Press **ENTER**. The pre-set source selection will be assigned all destinations.

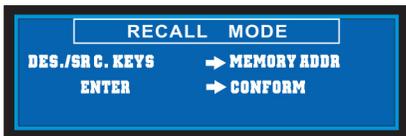
### 10. FUNCTION KEY - OFF:



Disables (mutes) video on the selected destinations.

- Press **OFF** button followed by any Destination channel.
- Press **1 THRU 16** output destination. The display will show "0" for the selected channel, indicating no video selected.
- Press **ENTER**. The pre-set configuration will execute.

### 11. FUNCTION KEY - RECALL:



The system will show previously stored presets, up to a total of (32). Presets are stored in the local memory using Source keys 1 thru 16 or Destination keys 1 thru 16 as the memory preset location.

- Press **RECALL** button.
- Press **1 THRU 16** on either Source or Destination row.
- Press **ENTER** The pre-set configuration will execute.
- Or press **RECALL** again to cancel the operation.

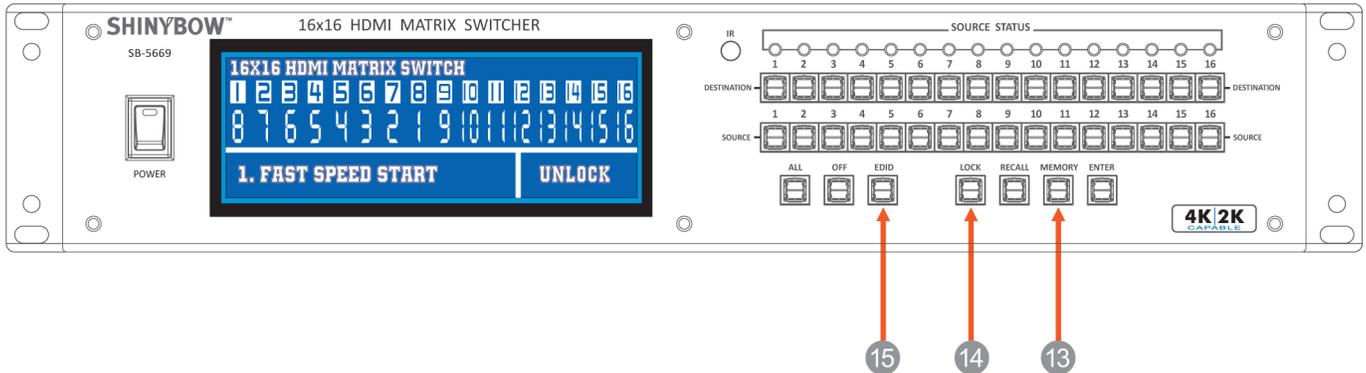
Operation completes.

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

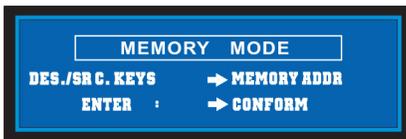
**12. FUNCTION KEY - ENTER:** Press **ENTER** to confirm entries.

# FRONT PANEL

## FRONT PANEL



### 13. FUNCTION KEY - MEMORY:



The system will show stored presets, up to a total of (32). Presets are stored in local memory using Source keys 1 thru 16 or Destination keys 1 thru 16 as the memory preset location.

- Configure desired matrices.
- Press **MEMORY** button.
- Press **1 THRU 16** 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.

### 14. FUNCTION KEY - LOCK:



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

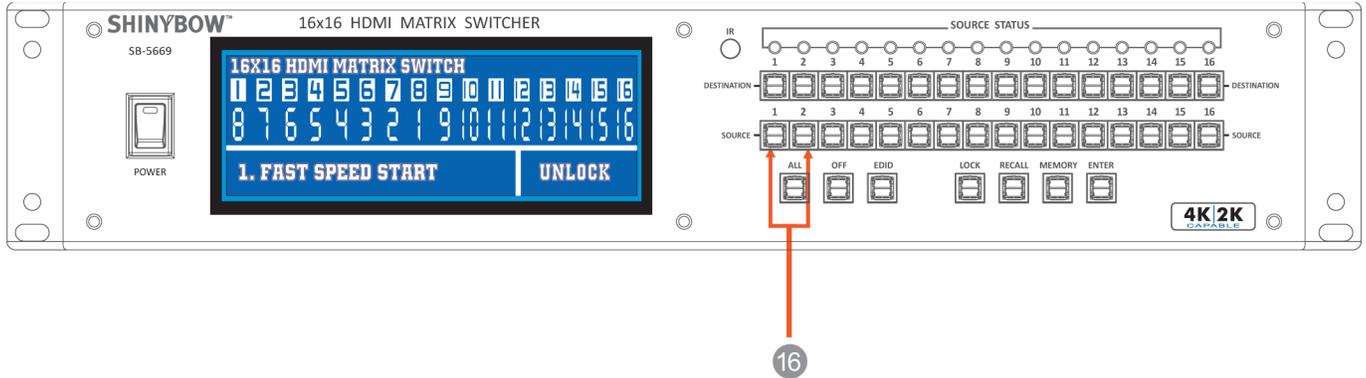
### 15. FUNCTION KEY - EDID:



- Press **EDID** to begin setting up your EDID mode. Use source row buttons #1 and #2 to cycle thru the options. (See EDID setup instructions)

# FRONT PANEL - FUNCTION KEYS - 7 EMBEDDED & LEARNING EDID MODES

## FRONT PANEL



### 16. SELECT (7) EMBEDDED EDID MODES:



Select & change current EDID mode via (7) Embedded EDID modes. Used to display and change current EDID mode.

- Press **EDID** to select new EDID mode.
- Press **SOURCE** row #1 or #2 to select (7) Embedded EDID modes.
- Press **ENTER** to ready memory location.
- Or press **EDID** again to cancel the operation.

Operation completes.

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

### Select Learning Mode-#1:



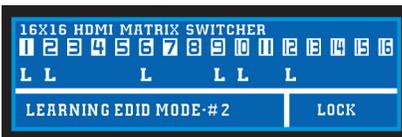
Select & change to single Learning mode. Select external LEARNING EDID mode-#1 (Single mode).

- Press **DESTINATION** again, press the same Destination **1 THRU 16** to learn the HDBaseT™ out port EDID. The EDID for HDBaseT™ (CATx) has been learned.
- Press **SOURCE**. Press Source row **1 THRU 16**. The switcher will learn the destination HDMI or HDBaseT™ EDID and pass to the selected sources.
- Press **ENTER** to ready memory location.
- Or press **EDID** again to cancel the operation.

Operation completes.

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

### Select Learning Mode-#2:



Select & change to multiple Learning mode. Select external LEARNING EDID mode-#2 (Multiple mode)

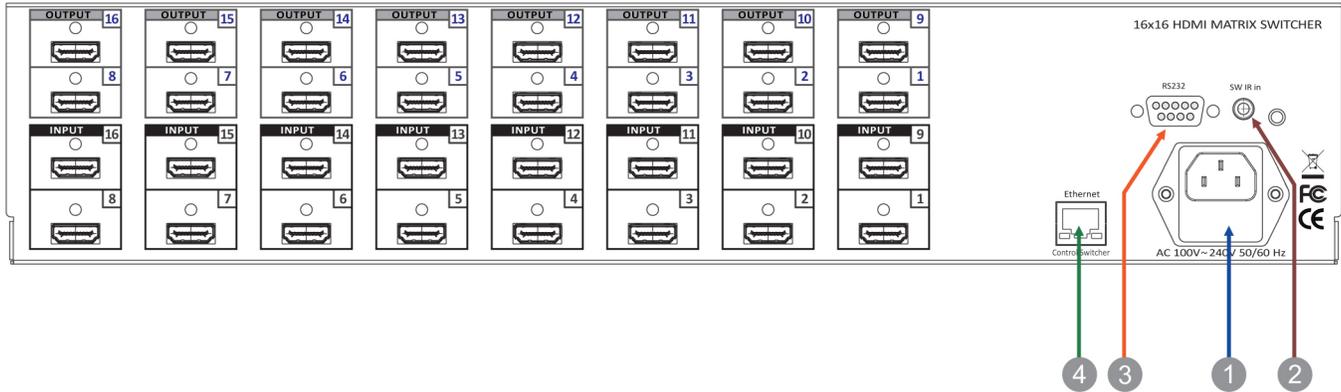
- Press **EDID** to select new Learning EDID mode-#2.
- Press **OFF**. The LCM will show Learning mode#2 status.
- Press Destination button **1 THRU 16** to setup learning mode-#2. The LCM will show "L". The destination EDID for HDMI or HDBaseT™ (CATx) has been learned.
- Press **ENTER** to ready memory location.
- Or press **EDID** again to cancel the operation.

Operation completes.

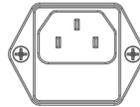
**Note: Operation will abort if no keys are pressed within 5 seconds.**

# BACK PANEL-SWITCH CONTROLS

## BACK PANEL



**1. POWER INLET:** The switcher is fitted with a DC power plug input connector. Ensure that the plug is of an approved type and is of sufficient current carrying connector capacity with the correct voltage and connector polarity. Power supply 100V~240VAC, 50/60Hz.



### POWER SOCKET:

Connector Type: IEC 60320 C13

**2. IR EXTENDER CONTROL:** Supports one IR extender. Extends a maximum distance of up to ~984 feet/300M. When you plug the external IR extender into the switcher, the front panel IR receiver remains active.

SW IR in

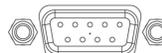


Switch Control

**IR EXTENDER JACK:** Female jack - inner OD Ø 3.5mm

**3. RS-232 CONNECTION:** RS-232 control port allows 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.

RS232

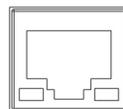


Switch Control

**REMOTE PORT:** DB-9pin female connector  
This port is also for firmware updates

**4. ETHERNET CONNECTION:** ETHERNET control port allows for TCP/IP interfacing to a PC, such as a computer or touch panel control (not a web-browser), to the switcher via the RJ-45 female connector to the control switcher.

Ethernet



Switch Control

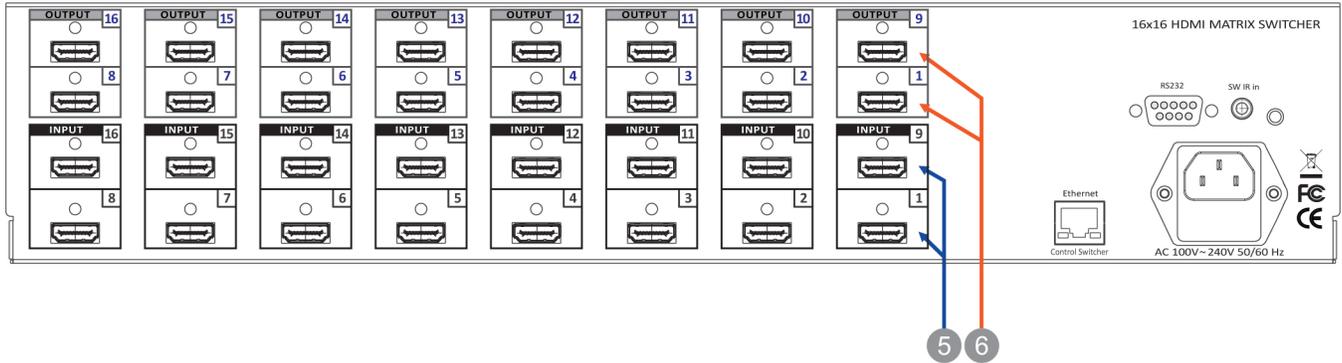
**REMOTE PORT:** Control the switcher with the RJ-45 female connector

### ETHERNET PORT:

**Note:** The Ethernet port and the RS-232 port cannot be used simultaneously. Any connection to the Ethernet port will disable serial commands sent to the RS-232 port.

# BACK PANEL-HDMI INPUT / OUTPUT

## BACK PANEL



**5. HDMI INPUTS 1~16:** Connects a HDMI signal source to this Input. This HDMI port supports HDMI with embedded audio and DVI with AUX audio sources. If you remove the HDMI screw posts, you must use the provided HDMI Locking Post replacement screws to keep the internal HDMI jack secure. Removing the HDMI screws without installing the HDMI Locking Post replacement screws will void your warranty.



**HDMI CONNECTOR:** HDMI female connector  
**Note:** *With proper adapters, the switcher can be used with DVI digital video signals, as it is HDCP compliant.*

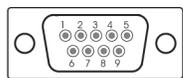
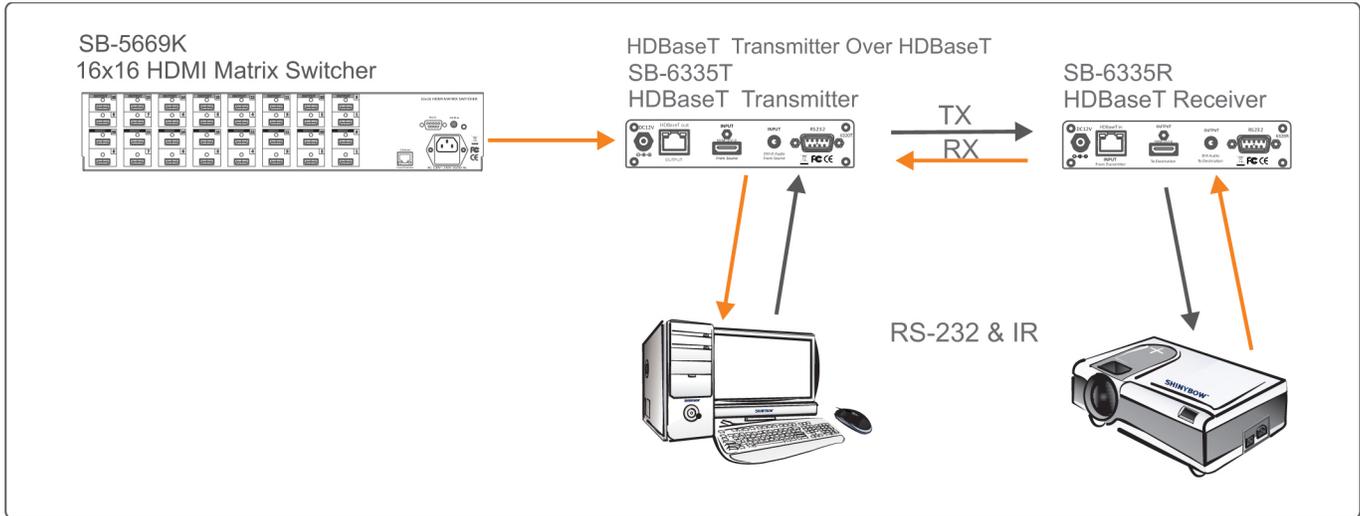
**6. HDMI OUTPUTS 1 ~ 16:** Connects a HDMI signal source to this Output. This HDMI port supports HDMI with embedded audio and DVI with AUX audio. If you remove the HDMI screw posts, you must use the provided HDMI Locking Post replacement screws to keep the internal HDMI jack secure. Removing the HDMI screws without installing the HDMI Locking Post replacement screws will void your warranty.



**HDMI CONNECTOR:** HDMI female connector  
**Note:** *With proper adapters, the switcher can be used with DVI digital video signals, as it is HDCP compliant.*

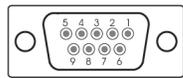
# HDBASET™ I/O TRANSMISSION & CABLE EXTENSION LENGTHS

## HDBASET™ I/O TRANSMISSION



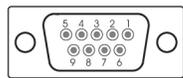
- 2 (RX)
- 3 (TX)
- 5 (GND)

RS-232 Cable Pins out  
PC 232 PINS  
DB-9P, MALE plug



- (TX) 2 ●
- (RX) 3 ●
- (GND) 5 ●

HDBaseT Transmitter SB-6335T  
RS-232 PINS OUT  
DB-9P, FEMALE socket



- (TX) 2 ●
- (RX) 3 ●
- (GND) 5 ●

HDBaseT Receiver SB-6335R  
RS-232 PINS OUT  
DB-9P, FEMALE socket

Category Cable Lengths via the Switcher and HDBaseT™ Receivers

CABLE TYPE RESOLUTION	PIXEL CLOCK RATE (MHZ)	CAT5e (70M)	CAT6 (100M)	CAT6 (100M)
1024x768@60Hz	65.00 MHZ	Yes	Yes	Yes
1280x720p@60Hz	73.84 MHZ	Yes	Yes	Yes
1920x1080i@60Hz	74.25 MHZ	NA	NA	NA
1280x1024@60Hz	108.00 MHZ	Yes	Yes	Yes
1920x1080p@60Hz	148.50 MHZ	Yes	Yes	Yes
1920x1200@60Hz	152.90 MHZ	Yes	Yes	Yes
1600x1200@60Hz	162.00 MHZ	Yes	Yes	Yes
Blu-Ray DVD player: 1080p	174.00 MHZ	Yes	NA	Yes

# REMOTE CONTROL

## Before making any connections 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 CONTROL KEY:

IR REMOTE: SW-5669

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

Power ON and OFF

#### 3. DESTINATION: 1 thru 16 OUTPUT SELECTION:

Destination buttons to select the output display channel

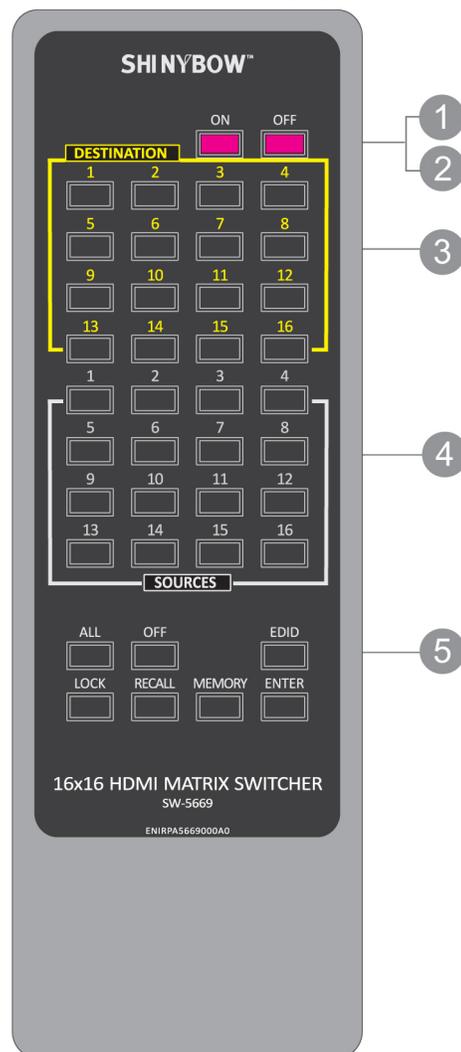
#### 4. SOURCE: 1 thru 16 INPUT SOURCE SELECTION:

Input 1~16 source selection buttons

#### 5. FUNCTION KEY: Function selection buttons

ALL	OFF	EDID	RECALL
ENTER	MEMORY	LOCK	

IR REMOTE : SW-5669



# REMOTE PROTOCOL COMMANDS

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

---

### HOW TO SETUP IR CODES:

POWER ON: 32CD A15E  
POWER OFF: 32CD A25D  
EDID: 32CD B748

### CUSTOM CODE: 32CD

ALL: 32CD B04F  
OFF: 32CD B14E  
LOCK: 32CD B54A

RECALL: 32CD B24D  
MEMORY: 32CD B44B  
ENTER: 32CD B34C

### **PRESS TV DESTINATION - # THEN PRESS SOURCE - #**

DESTINATION #1 : 32CD 10EF	SOURCE #1 : 32CD 20DF
DESTINATION #2 : 32CD 11EE	SOURCE #2 : 32CD 21DE
DESTINATION #3 : 32CD 12ED	SOURCE #3 : 32CD 22DD
DESTINATION #4 : 32CD 13EC	SOURCE #4 : 32CD 23DC
DESTINATION #5 : 32CD 14EB	SOURCE #5 : 32CD 24DB
DESTINATION #6 : 32CD 15EA	SOURCE #6 : 32CD 25DA
DESTINATION #7 : 32CD 16E9	SOURCE #7 : 32CD 26D9
DESTINATION #8 : 32CD 17E8	SOURCE #8 : 32CD 27D8
DESTINATION #9 : 32CD 18E7	SOURCE #9 : 32CD 28D7
DESTINATION #10 : 32CD 19E6	SOURCE #10 : 32CD 29D6
DESTINATION #11 : 32CD 1AE5	SOURCE #11 : 32CD 2AD5
DESTINATION #12 : 32CD 1BE4	SOURCE #12 : 32CD 2BD4
DESTINATION #13 : 32CD 1CE3	SOURCE #13 : 32CD 2CD3
DESTINATION #14 : 32CD 1DE2	SOURCE #14 : 32CD 2DD2
DESTINATION #15 : 32CD 1EE1	SOURCE #15 : 32CD 2ED1
DESTINATION #16 : 32CD 1FE0	SOURCE #16 : 32CD 2FD0

*For Example:*

### **SELECT DESTINATION # 1 TO SHOW SOURCE #1~4**

### **THE IR DATA CODE LIST WHEN PRESS DESTINATION # THEN PRESS SOURCE #**

Press Destination # 1 & Source #1 32CD 01FE 32CD 20DF  
Press Destination # 1 & Source #2 32CD 01FE 32CD 21DE  
Press Destination # 1 & Source #3 32CD 01FE 32CD 22DD  
Press Destination # 1 & Source #4 32CD 01FE 32CD 23DC

# EDID FUNCTION - SYSTEM RESET/FACTORY RESET

## SYSTEM RESET

SYSTEM RESET	RETURN SWITCH TO FACTORY DEFAULTS
<p>Press <b>RECALL &gt; OFF &gt; ENTER</b></p>   	<p><b>RESET to Factory Default</b></p> <ol style="list-style-type: none"> <li>1. Press <b>RECALL</b> button: The LCM will show the current stored presets status.</li> <li>2. Press <b>OFF</b> button: The LCM will show “<b>SYSTEM RESET</b>”</li> <li>3. Press <b>ENTER</b> button: To confirm entries. The switch will reset all customizable values back to factory defaults. You must <b>POWER CYCLE</b> the switch for the new values to take effect.</li> </ol>

**NOTE:** Factory Reset Defaults to:

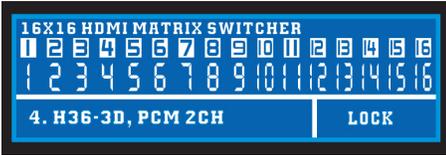
1. Source Destination will be set to 1-1, 2-2, 3-3, etc.
2. Switch matrices stored in memory will be cleared.
3. Lock function will return to Un-Locked.
4. AUX function will disable and return to UN-AUX (On Select Models).
5. ARC function will disable and return to SPDIF as the Output (On Select Models).
6. EDID will return to FSS® (1080p-2ch Mode).
7. Ethernet port will return to DHCP=ENABLED.

## RESET EDID

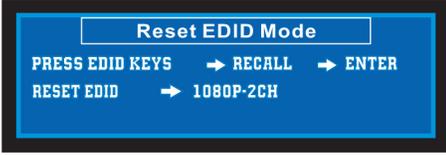
EDID RESET	PROCEDURE
<p><b>From the Front Panel:</b> Press <b>EDID &gt; RECALL &gt; OFF &gt; ENTER</b></p> 	<p><b>RESET EDID</b></p> <p>Press <b>EDID</b>.</p> <p>Press <b>RECALL</b>.</p> <p>Press <b>OFF</b>. The display should show Reset EDID.</p> <p>Press <b>ENTER</b>.</p>
LEARNING MODE 2	SETTING EDID TO LEARNING MODE 2
<p>Press <b>EDID &gt; OFF &gt; DESTINATIONS &gt; ENTER</b></p> <p>The EDID for HDMI has been passed from the Destination port to the Source port.</p>    	<ol style="list-style-type: none"> <li>1. Press <b>EDID</b> button: The LCM will show the current EDID status.</li> <li>2. Press <b>OFF</b> button: Does the OFF button stay illuminated? <ul style="list-style-type: none"> <li><b>*If Yes:</b> Press ALL the Destination buttons individually so they illuminate blue. The switcher will <b>LEARN</b> the destination HDMI EDID and pass to the selected source. The switcher will Enable or Disable HDMI EDID for the selected source.</li> </ul> </li> <li>3. Press <b>ENTER</b> to confirm changes. The LCM will return to the default screen showing selected matrix routing status. This puts you in Learning Mode 2. <ul style="list-style-type: none"> <li><b>*If No:</b> You might need a f/w update.</li> </ul> </li> </ol>

# EDID FUNCTION-SET UP

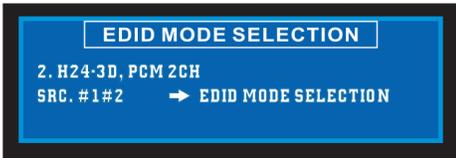
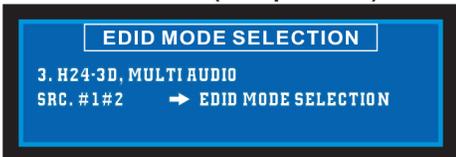
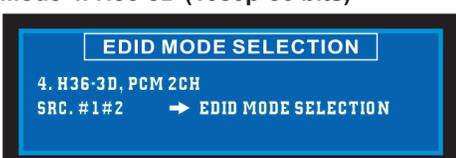
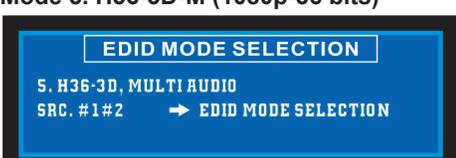
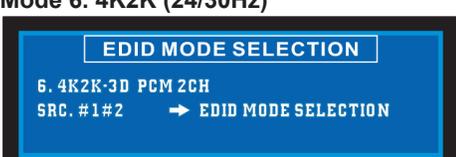
## EDID FUNCTION SETUP

EDID SETUP	To Change The EDID Setup
<b>Step 1.</b> Press the <b>EDID</b> button	The display will show the currently selected EDID mode.
<b>Step 2.</b> Press <b>SOURCE #1 OR #2</b> button row	The button will flash blue and the display will show the current <b>Embedded EDID</b> Status.
<b>Step 3.</b> Press the <b>ENTER</b> button	To set EDID mode. The switcher will return to operation mode.
Operation will abort if no keys are pressed within 5 seconds.	
EMBEDDED EDID MODES	Total 7 EDID Modes
<b>Embedded EDID Setup</b> Press <b>EDID &gt; SOURCE &gt; ENTER</b> SOURCE #1 or SOURCE #2 	To select Embedded EDID mode or LEARNING mode. Press <b>EDID</b> button: The LCM will show the current EDID status. Repeatedly pressing the <b>SOURCE 1</b> button will cycle up thru the options. Repeatedly pressing the <b>SOURCE 2</b> button will cycle down thru the options.  <b>Embedded EDID:</b> Mode 1 : FSS®                      Mode 5 : H36-3D-M Mode 2 : H24-3D                    Mode 6 : 4K2K-3D Mode 3 : H24M-3D-M              Mode 7 : 1920x1200-60Hz Mode 4 : H36-3D

## EDID FUNCTION FOR HDMI MATRIX SWITCHER

RESET	EDID Return To Factory Default
<b>How to RESET EDID mode</b> Press <b>EDID &gt; RECALL &gt; ENTER</b> 	To RESET to FACTORY DEFAULT (1080p-2CH). Press <b>EDID</b> button: The LCM will show the current EDID status. Press <b>RECALL</b> button: The LCM will show the <b>RESET EDID</b> . Press <b>ENTER</b> to confirm entries. The EDID will return to FSS® mode and resolution 1080p-2CH.
EDID STATUS	To View The Current EDID Status
<b>Step 1.</b> Press <b>EDID</b> button	The button will flash blue and the display will show the current Embedded EDID Status.
<b>Step 2.</b> Press <b>EDID</b> button	To exit.
HOW TO SETUP FSS® FUNCTION	Fast Speed Start®
<b>Step 1.</b> Press the <b>DESTINATION #1~16</b> button row Then Press the <b>SOURCE #1~16</b> button row	To setup and Install all devices.
<b>Step 2.</b> Press <b>EDID</b> button	Select a optimum status of Embedded EDID mode.
<b>Step 3.</b> Press <b>ENTER</b> button	To confirm entries.
<b>Step 4.</b> Press <b>EDID</b> button	To select the EDID FSS® mode.
<b>Step 5.</b> Press <b>ENTER</b> button	To confirm entries.

# EDID FUNCTION-7 EMBEDDED EDID MODES

EDID FUNCTION: (7) EMBEDDED EDID MODES	
<p><b>Mode 1. FSS® (Fast Speed Start®)</b></p> 	<p>Fast Speed Start® mode shortens the startup time of the switcher. Selecting this mode does not force the EDID setup to be cancelled. Users may first select one EDID mode from mode 2 to 7, and then select mode 1 for fast speed start®.</p>
<p><b>Mode 2. H24-3D (1080p-24 bits)</b></p> 	<p>Audio Support: PCM 2CH</p>
<p><b>Mode 3. H24-3D-M (1080p-24 bits)</b></p> 	<p>Audio Support: MAT(MLP) 7.1CH, PCM2CH, One Bit Audio 2CH, AC-3 5.1CH, DTS5.1CH, PCM7.1CH, Dolby Digital + 7.1CH, DTS-HD 7.1CH</p>
<p><b>Mode 4. H36-3D (1080p-36 bits)</b></p> 	<p>Audio Support: PCM 2CH</p>
<p><b>Mode 5. H36-3D-M (1080p-36 bits)</b></p> 	<p>Audio Support: MAT(MLP) 7.1CH, PCM2CH, One Bit Audio 2CH, AC-3 5.1CH, DTS5.1CH, PCM7.1CH, Dolby Digital + 7.1CH, DTS-HD 7.1CH</p>
<p><b>Mode 6. 4K2K (24/30Hz)</b></p> 	<p>HDMI Support: 4K2K-3D, PCM 2CH (3840x2160-24/30Hz)</p> <p>Audio Support: PCM 2CH</p>
<p><b>Mode 7. 1920x1200-60Hz (DVI-D)</b></p> 	<p>DVI Support: DVI-D 1920x1200 60Hz</p>

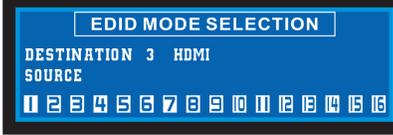
# EDID FUNCTION

## EDID FUNCTION FOR HDMI MATRIX SWITCHER

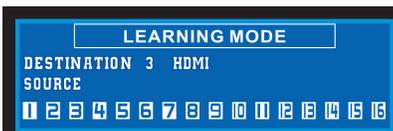
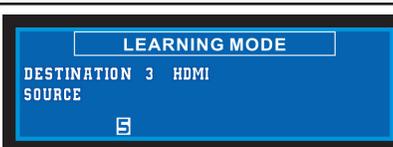
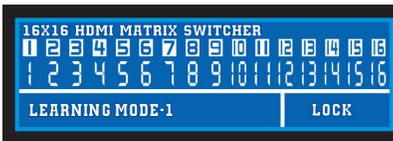
LEARNING EDID SINGLE TO SINGLE	Learning Destination #12 EDID To Source #5
<b>Step 1.</b> Press <b>EDID</b> button	The button will flash blue and the display will show the current <b>Embedded EDID</b> Status.
<b>Step 2.</b> Press the <b>DESTINATION #12</b> button row	Copy the Destination #12 Display EDID.
<b>Step 3.</b> Press the <b>SOURCE #5</b> button row	Learning the Destination #12 EDID To Source # 5.
<b>Step 4.</b> Press <b>ENTER</b> button	To confirm entries.
LEARNING EDID SINGLE TO MULTIPLE	Learning Destination EDID Link To The Majority Sources
<b>Step 1.</b> Press <b>EDID</b> button	The button will flash blue and the display will show the current Embedded EDID Status.
<b>Step 2.</b> Press the <b>DESTINATION #1~16</b> button row	Copy any #1~16 Destinations EDID.
<b>Step 3.</b> Press the <b>SOURCE #1~16</b> button row	Learning the Destination EDID link to source #1~16.
<b>Step 4.</b> Press <b>ENTER</b> button	To confirm entries.
LEARNING EDID SINGLE TO ALL	Learning Destination EDID Link To All Sources
<b>Step 1.</b> Press <b>EDID</b> button	The button will flash blue and the display will show the current Embedded EDID Status.
<b>Step 2.</b> Press destination button <b>1 THRU 16</b>	Learning anyone 1~16 Destination EDID to all sources.
<b>Step 3.</b> Press <b>ALL</b> button	Learning selected destination EDID to all sources.
<b>Step 4.</b> Press <b>ENTER</b> button	To confirm entries.
LEARNING EDID DEFINITION	Learning EDID From Destination To Source
<p>1. Switcher will <b>LEARN</b> destination EDID and pass the selected source.</p> <p>2. To set up learning between a single destination and single source: Press <b>EDID</b> button &gt; Press <b>DESTINATION 1 THRU 16</b> &gt; Press <b>SOURCE 1 THRU 16</b> &gt; Press <b>ENTER</b> to confirm. Switcher will learn destination EDID to source device.</p> <p>3. To set up learning between a single destination and Multiple sources: Press <b>EDID</b> button &gt; Press <b>DESTINATION 1 THRU 16</b> &gt; Press the majority <b>SOURCES 1 THRU 16</b> &gt; Press <b>ENTER</b>. Switcher will learn single destination EDID to many source devices.</p> <p>4. How to Learning single destinations with all sources. Press <b>EDID</b> button &gt; Press <b>ALL</b> button &gt; Press <b>ENTER</b> to confirm.</p>	

# EDID FUNCTION - LEARNING MODE 1

## LEARNING EDID MODE-1 FUNCTION FOR HDMI MATRIX SWITCH

LEARNING HDMI EDID	Learning HDMI From Destination To Source
Learning HDMI EDID Single HDMI-Destination to Multiple / All Sources	
Press <b>EDID &gt; DESTINATION &gt; SOURCE &gt; ENTER</b>	
	<p>Press <b>EDID &gt; DESTINATION</b> Button: The LCM will show LEARNING.</p> <p>The switcher will <b>LEARN</b> destination HDMI EDID and pass the selected source.</p> <p>Learning EDID setup for HDMI</p> <p>Key Sequence: <b>EDID &gt; DESTINATION (1) THRU (16) &gt; SOURCE (1) THRU (16) &gt; ENTER</b>. The EDID for HDMI has been learned.</p>

## EDID FUNCTION: LEARNING EDID MODE-1 - SINGLE TO SINGLE

Learning Mode-1 Single Destination to Single source	
Key Sequence: <b>EDID &gt; DESTINATION 1 THRU 16 &gt; DESTINATION 1 THRU 16 &gt; SOURCE 1 THRU 16 &gt; ENTER</b>	
The EDID for HDMI or HDBaseT™ has been learned from the Destination port to the Source port.	
	1. Press <b>EDID</b> button. The LCM will show the current EDID status.
	2. Press <b>DESTINATION (#1 ~ #16)</b> . The LCM will show LEARNING HDMI. The switcher will Learn destination (3) HDMI EDID.
	3. Press <b>SOURCE (#1 ~ #16)</b> . The LCM will show the selected sources. <b>Example:</b> Select Source (5). Switcher will learn destination (5) EDID HDMI or HDBaseT™ EDID and pass to the selected source.
	4. Press <b>ENTER</b> to confirm changes. The LCM will return to the default screen selected switch routing status.

**NOTE:** The already learned EDID cannot be modified. You can only rebuild a new Learning EDID.

**For Example:** When the Source has “Learned” the EDID data from a destination, it will save that EDID information into EPROM and the EDID data cannot change. Please select new learning destination to sources or change to one of the embedded EDID modes when you want to remove the learning EDID memory from EPROM.

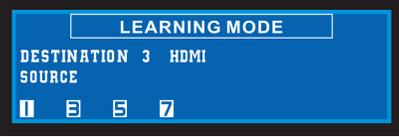
# EDID FUNCTION - LEARNING MODE 1

## EDID FUNCTION: LEARNING EDID MODE-1-SINGLE TO MULTIPLE

### Learning Mode-1 Single Destination To Multiple Or All Sources

**Key Sequence: EDID > DESTINATION 1 THRU 16 > DESTINATION 1 THRU 16 > SOURCE 1 THRU 16 > ENTER**

The EDID for HDMI or HDBaseT™ has been learned from the Destination port to the Source port.

-  1. Press **EDID** button. The LCM will show the current EDID status.
-  2. Press **DESTINATION (#1 ~ #16)**. The LCM will show the LEARNING HDMI. The switcher will Learn destination (3) HDMI EDID.
-  3. Press **SOURCE (#1 ~ #16)**. The LCM will show the selected sources.  
**Example:** Select Source 1, 3, 5 & 7. The Switcher will learn the destination EDID HDMI or HDBaseT™ EDID and pass to the selected source.
-  4. Press **ENTER** to confirm changes. The LCM will return to the default screen selected switch routing status.

## EDID FUNCTION: LEARNING EDID MODE-2-MULTIPLE TO MULTIPLE

### Learning Mode-2 Multiple Destinations To ALL Sources

**Key Sequence: EDID > OFF > DESTINATION 1 THRU 16 > ENTER**

The EDID for HDMI or HDBaseT™ has been learned from the Destination port to the Source port.

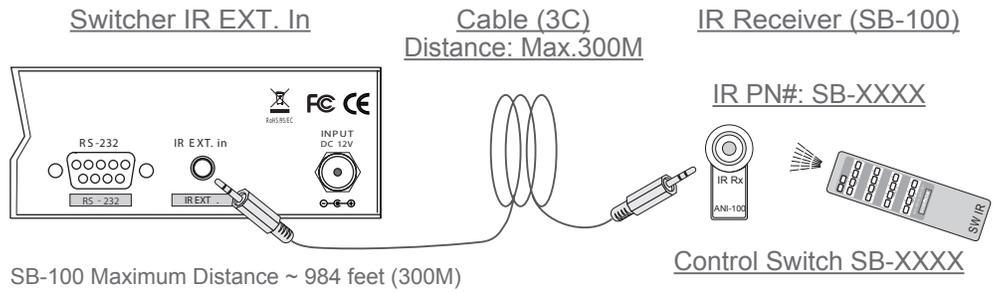
-  1. Press **EDID** button. The LCM will show the current EDID status.
-  2. Press **OFF** button. The LCM will show the current EDID LEARN status.
-  3. Press **DESTINATION 1 THRU 16**. The switcher will LEARN destination HDMI EDID and pass to the selected source. The switcher will Enable or Disable HDMI EDID for the selected source.
-  4. Press **ENTER** to confirm changes. The LCM will return to the default screen selected switch routing status.

**NOTE:** The already learned EDID cannot be modified. You can only rebuild a new Learning EDID.

**For Example:** When the Source has “Learned” the EDID data from a destination, it will save that EDID information into EPROM and the EDID data cannot change. Please select new learning destination to sources or change to one of the embedded EDID modes when you want to remove the learning EDID memory from EPROM.

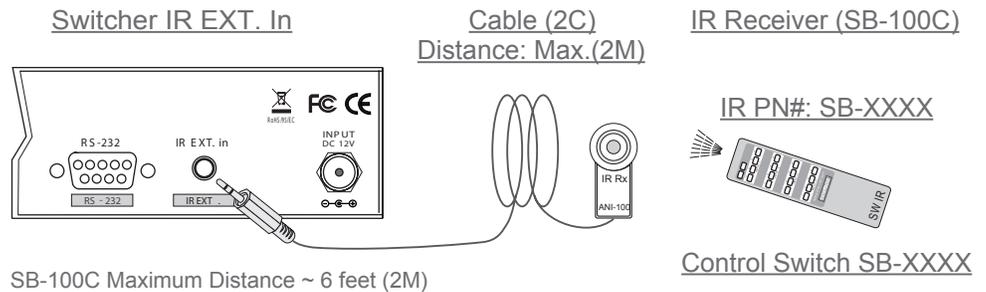
# IR EXTENDER

## 1. SB-100 IR 300M Receiver



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

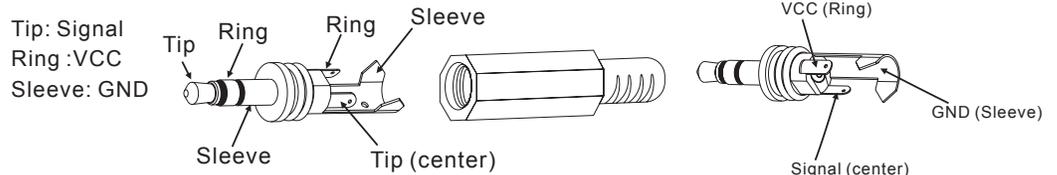
## 2. SB-100C IR 2M Receiver



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

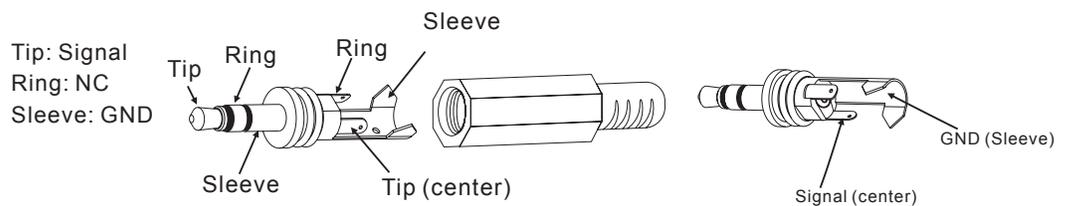
\*\*\* When you plug the External IR extender into the switcher, the front panel IR receiver remains active. \*\*\*

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.

# ETHERNET / RS-232 SERIAL INTERFACE

## ETHERNET SERIAL INTERFACE CONNECT A PC OR CONTROL SYSTEM VERSION COMPATIBLE V2.0

For a complete list of commands, please reference external document extended Ethernet Protocol Instruction Manual.

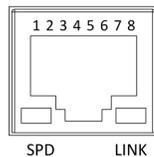
Example of the commanded string to select Inputs:

FUNCTION	COMMAND	VARIABLES
Select source	Source xxx;	xxx = Input Channel (001=Source1, 002=Source2)
COMMAND EXAMPLE	RESPONSE	DESCRIPTION
Source 001;	Source 001#ok;	Select source number 1

### ETHERNET SERIAL INTERFACE

PIN	ETHERNET	REFERENCE
1	TXOP	TX +
2	TXON	TX -
3	RXIP	RX +
4	NC	
5	NC	
6	RXIN	RX -
7	NC	
8	GND	

#### Ethernet



Note :

Control the switcher

SPD : Speed

LINK : Ethernet link

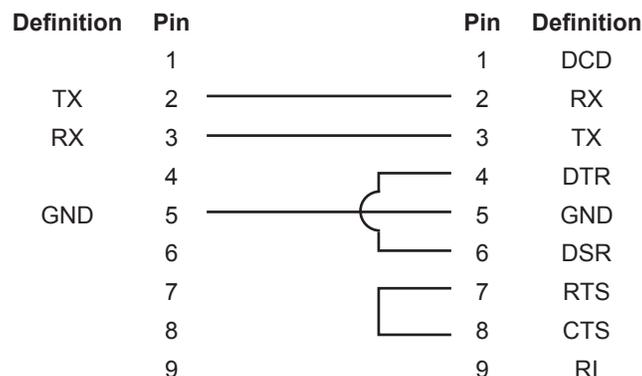
RJ-45 Female 8P-8 Connector

## RS-232 SERIAL INTERFACE CONNECT A PC OR CONTROL SYSTEM. VERSION COMPATIBLE V2.0

For a complete list of commands, please reference external document extended RS-232 Protocol Instruction Manual.

### RS-232 CONFIGURATION

RS-232 cable is a straight thru cable and not null-modem



### RS-232 SERIAL INTERFACE PROTOCOL COMMANDS ( ETHERNET / RS-232 CONTROL DRIVER V2.0 )

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.

# TYPICAL APPLICATION-SWITCH CONTROL

## INSTALLING DIAGRAM

### Samples Connection:

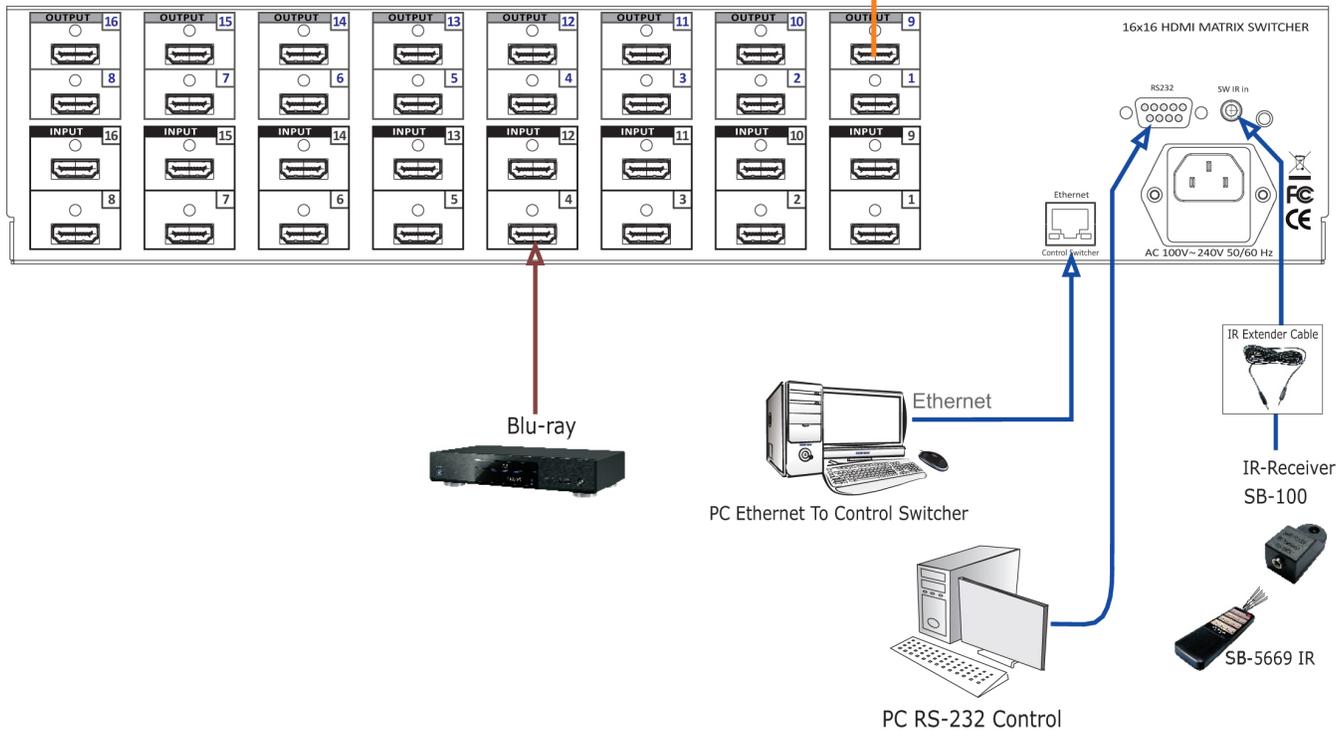
1. Using the external IR or RS-232 commands to control the SB-5669K via a PC or using the Receiver extender (SB-100) to transmit the SB-5669K's IR signal to control the switches I/O.
2. Switch control via bi-directional IR, RS-232 and Ethernet.

### NOTE:

1. Switcher IR in External Port: Use SB-100 IR signal Receiver to transmit IR signal to the control switcher.
2. Control Switcher via a PC RS-232.
3. Control Switcher via a PC Ethernet.



HDMI DISPLAY TV



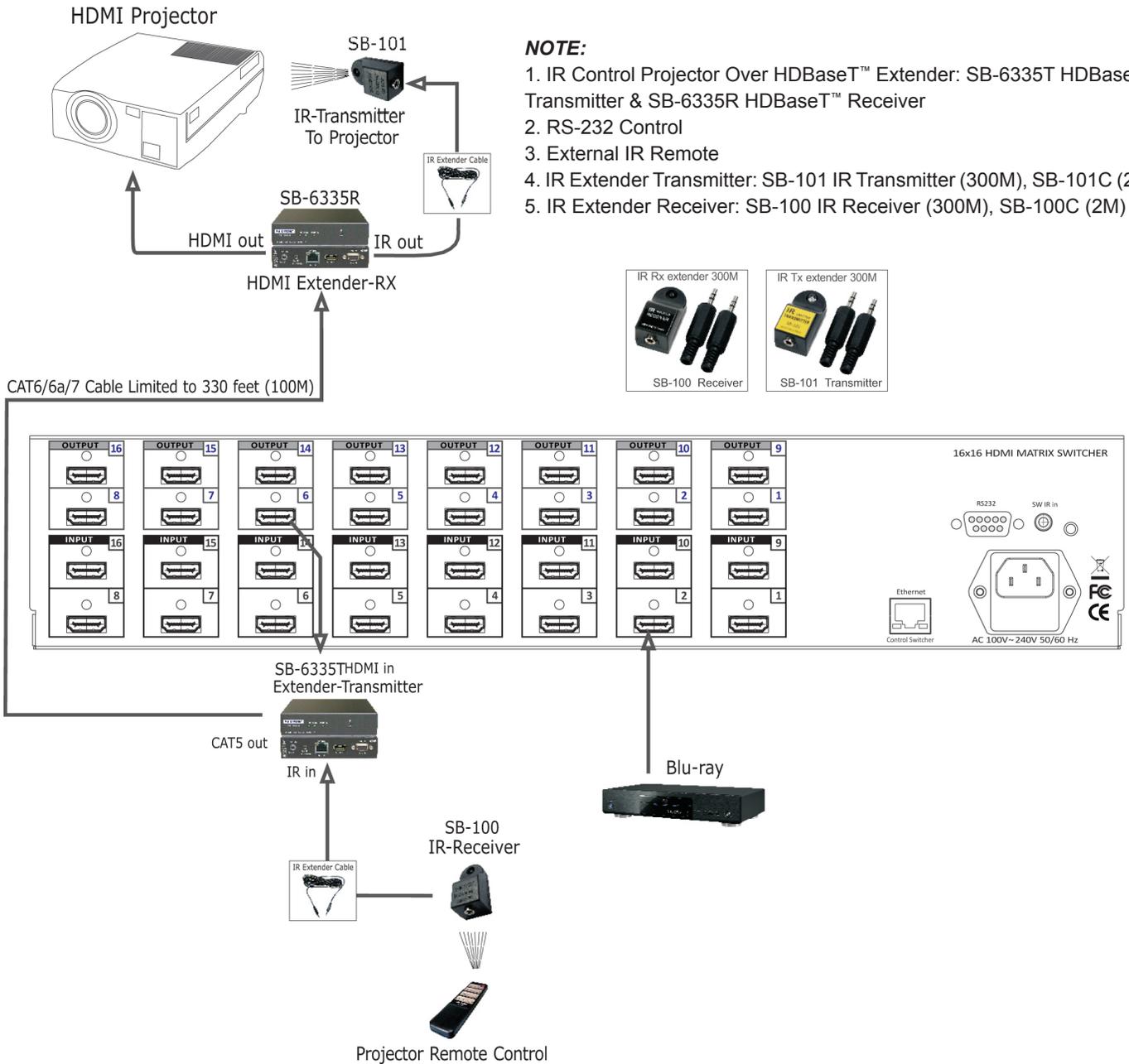
Application for IR, RS-232 and Ethernet to switch control.

# TYPICAL APPLICATION-HDBaseT™ APPLICATION

## INSTALLING DIAGRAM

### Sample Connection:

Using IR transmitters (SB-101) and IR receiver (SB-100) with the HDBaseT™ Transmitter SB-6335T & Receiver SB-6335R to control a projector.



(16) HDMI inputs to (16) HDMI outputs Matrix Switcher using IR transmitters (SB-101) and IR receiver (SB-100).

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# LIMITED WARRANTY

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## RESTRICTIONS ON USE OF THE PRODUCT

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