INSTRUCTION MANUAL

SB-5659

1x16 HDMI Distribution Amplifier



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.

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HDMI DISTRIBUTION AMPLIFIER Series

Thank you for purchasing the SB-5659 1x16 HDMI DISTRIBUTION AMPLIFIER. 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 distribution amplifier.

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INTRODUCTION

The SB-5659 is high quality HDMI distribution amplifier, HD high performance designed to distribution HDMI signal. Providing I/O as following:

- 1x input : 1x HDMI (Digital Video-TMDS and Audio)
- 16x outputs : 16x HDMI (Digital Video-TMDS and Audio)

Automatic input/output HD signals detection:

- PC monitor from VGA to UXGA
- HDMI 480i To 1080p
- DVI 480i To 1080p

The distributor support data rates up to 2.25 Gbps. And enable 1080p HDMI formats and UXGA DVI resolution (1600x1200) to LCD and Plasma display applications. Auto scan function software is built-in to extend HDMI signal for long distance. This product is certified as being fully HDMI and HDCP compliant. This product is also RoHS, CE, FCC compliant. Support high HDMI (HDCP) source to multiple HDMI (HDCP) displays, LCD monitors or HD projectors.

PACKAGE CONTENTS

Check that you have the following components;

- SB-5659 Distribution Amplifier
- IR Remote control
- 19 inch (1 RU) rack mount brackets
- RS-232 Software (All Windows Operating Systems)
- Users Guide
- AC Adaptor: 12VDC, Universal Type 50/60Hz, 100-230 VAC

Input: 1x HDMI
Output: 16x HDMI
Power Input: DC+12V, @3A

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

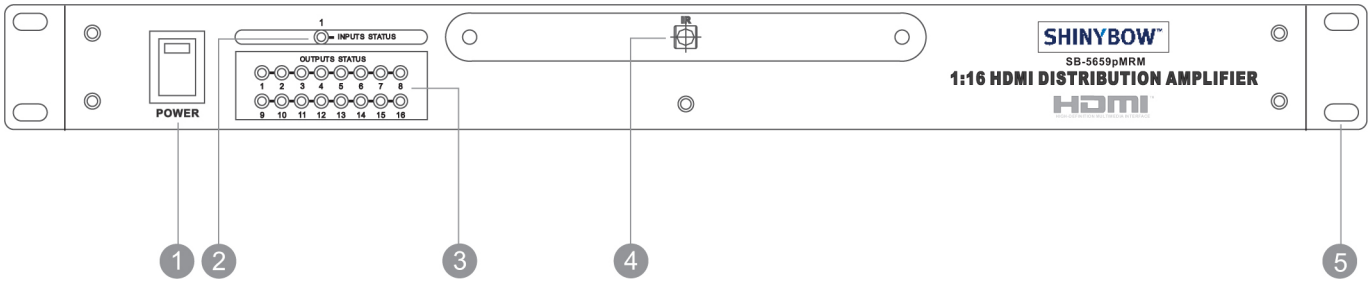
- Support 1x16 HDMI Distribution Amplifier
- I/O Signals : HDMI with HDCP Digital Video and Digital Audio (PCM)
- HDMI and HDCP compliant
- Support link speeds of up to 2.25 Gbps (link clock rate of 225 MHZ)
- Support wide range of PC resolutions from XGA to UXGA 1600x1200 and HDTV/DTV resolutions 480i/480p, 576i/576p, 720p, 1080i & 1080p
- Compatible with all HDMI devices, PC monitors, Plasma TV display and HDTV
- Support Digital Video TMDS formats in Deep Color 12bits
- Support colour depth of up to 36 bits and ensures robust transmission of high-quality uncompressed video content, along with state-of-the-art uncompressed and set top boxes.
- Bi-direction colour space conversion(SCS) between RGB and YCBCR color spaces with programmable coefficients.
- Auto-Scan input and outputs status via LED display on front panel
- Control by Selection buttons on front panel and use IR Remote Controller
- Support desktop with Ear mount and 19 inch Rack mountable type panel
- Power supply DC12Volt, Universal Type switch 100~230VAC, 50/60Hz

SPECIFICATIONS

- **Type of Distributor:** 1x16 HDMI Distribution Amplifier
- **Signal Supports:** HDMI Standard, DVI and HDCP Compliant
- **Video Supported:** 1080p HDMI formats 1920x1200 and DVI UXGA HD resolutions
- **Audio Supported:** DTS-HD Master Audio, Dolby True -HD & Dolby Digital Plus
- **Type of Signal:** TMDS Digital Video PCM Digital Audio
- **Compliant with HDMI standard:** HDMI and HDCP
- **HDTV Support:** 1080p HDMI formats and UXGA 1600x1200 resolution
- **Controls:** IR Remote and IR Extender (Distance Maximum 1000 ft (300M))
- **Data Rates:** 250Mbps to 2.25 Gbps
- **Pixel clocks:** 250Mbps to 2.25 Gbps. Pixel clocks: 25M Hz to 225 MHz
- **HDMI Cable Distance:** 30 ft (10 M) at 2.25Gbps
- **Various video input interface supporting digital video standards such as:**
    - RGB/YCBCR : 24/30/36-bits
    - YCBCR : 8/10/12/16/20/24-bits
    - Double data rate interface for RGB/YCBCR : 12/15/18-bits
- **Infrared frequency:** 38KHz
- **Regulatory Approvals:** CE, FCC, RoHS (2002/95/EC)
- **Dimensions (WxDxH):** 19 x 7.87 x 1.75 in (482mm x 200mm x 44mm)
- **Net Weight (Unit Only):** 4.26 lbs / 2.56 Kgs
- **Power Supply:** DC12V/3A (Full load Consumption Maximum 1.92A)

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

FRONT PANEL



1. POWER 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 STATUS DISPLAY: Source 1 to LED illuminates blue to indicate that a video source is present on that input.

3. OUTPUT SOURCES STATUS DISPLAY: Channel 1-16 shown by LED display.

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

5. 19 INCH EAR MOUNT PAIR: 19 inch (1 RU) rack mount brackets

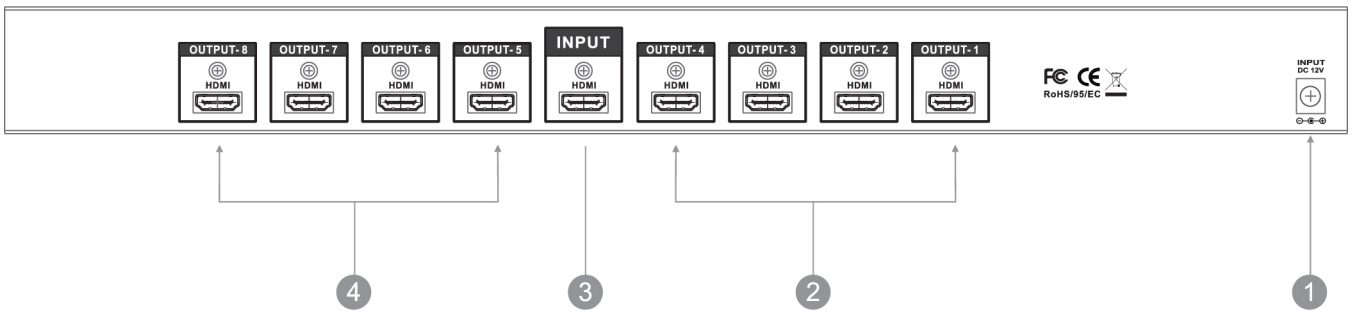
CONNECTING THE HARDWARE

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

Before using the distributor, please take the time to make certain that the device you wish to connect to its inputs is functioning properly in all respects. Verify that the video and audio signals are present and are being displayed properly on a suitable device.

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

BACK PANEL



1. DC POWER INLET: The distributor 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 3A Max.



Power Jack:
DC Jack - Inner OD ⦰ 2.1mm (+)
Outside OD ⦰ 5.5mm (GND)
Power input - 12VDC, 3A

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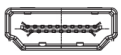
2. IR EXTENDER CONTROL: Support one of IR Extender. Extend distance maximum 1000 ft

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

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4. INPUT - 1X HDMI: Connect a signal link of HDMI direct digital video/audio to this Female HDMI connector. This connector supports HDMI digital video/audio and DVI digital video sources.

Input 1 - HDMI Digital Video/Audio, Connector with fix screw



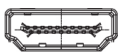
HDMI digital video/audio connector:
HDMI Female connector.

Note: With the proper adapters, the switcher can be used with DVI digital video signals HDCP compliant. DVI does not support audio.

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3. / 5. OUTPUTS - 1,2,3,4,5,6,7,8~16 HDMI: Connect a signal link of HDMI direct digital video/audio to this Female HDMI connector. This connector supports HDMI digital video/audio and DVI digital video sources.

Output 1 - HDMI Digital Video/Audio, Connector with fix screw
Output 2 - HDMI Digital Video/Audio, Connector with fix screw
Output 3 - HDMI Digital Video/Audio, Connector with fix screw
Output 4 - HDMI Digital Video/Audio, Connector with fix screw
Output 5 - HDMI Digital Video/Audio, Connector with fix screw
Output 6 - HDMI Digital Video/Audio, Connector with fix screw
Output 7 - HDMI Digital Video/Audio, Connector with fix screw
Output 8 - HDMI Digital Video/Audio, Connector with fix screw
....
Output 16 - HDMI Digital Video/Audio, Connector with fix screw



HDMI digital video/audio connector:
HDMI Female connector.

Note: With the proper adapters, the switcher can be used with DVI digital video signals HDCP compliant.

REMOTE CONTROL

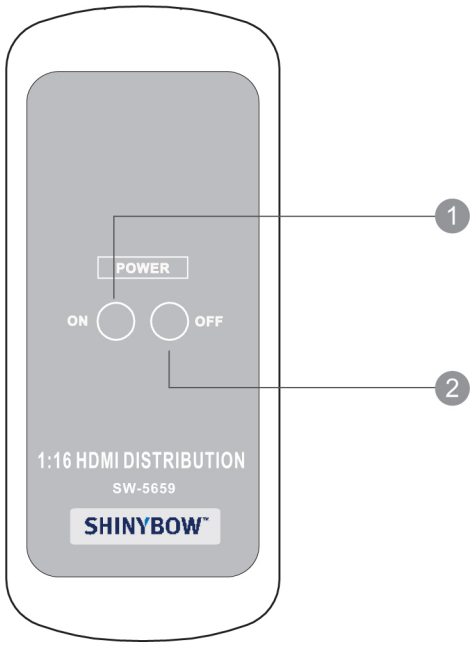
Before making any connections observe the following:

- 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 1-16 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. & 2. SWITCH POWER ON or OFF:

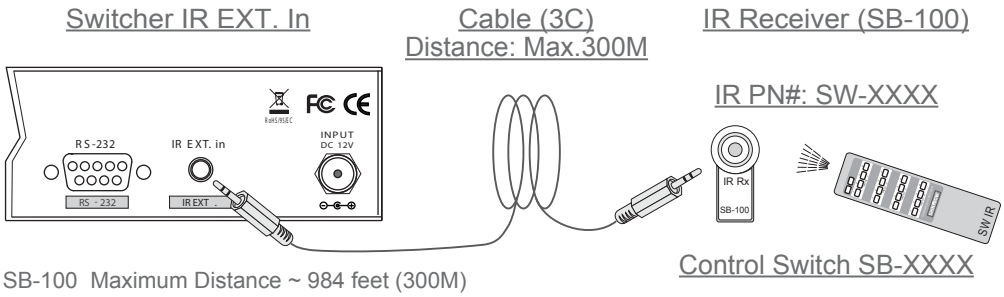
Controller with a power ON and OFF



IR EXTENDER

1. SB-100 IR 300M Receiver



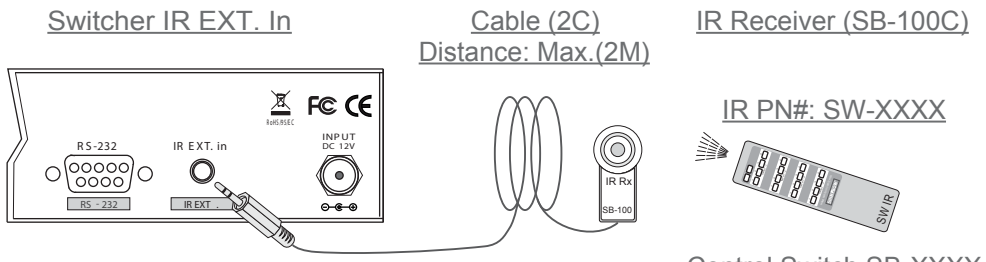


SB-100 Maximum Distance ~ 984 feet (300M)

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

2. SB-100C IR 2M Receiver





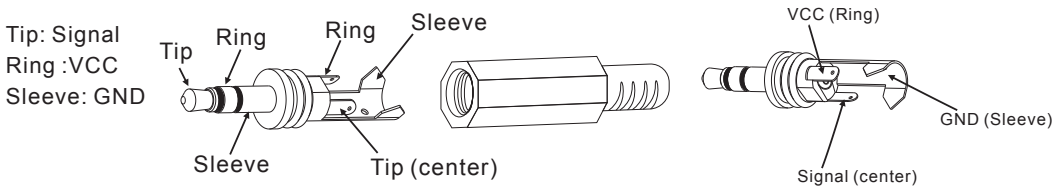
SB-100C Maximum Distance ~ 6 feet (2M)

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

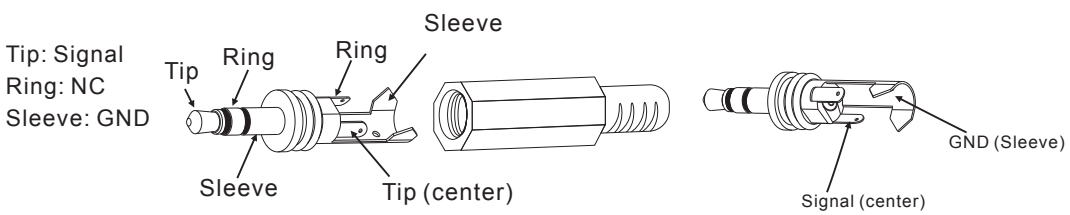




SB-100 Receiver and SB-101 Transmitter The DISTANCE maximum ~ 984 feet (300M)

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)

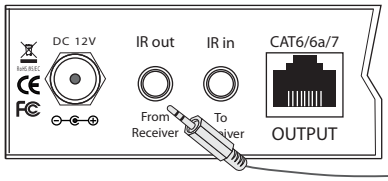
Note: *The External IR jack has voltage on the “Ring” portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

IR EXTENDER

1. SB-101 IR 300M Transmitter

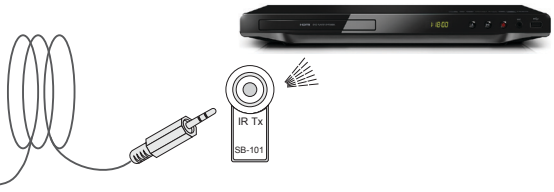


Device



Cable (3C)

IR Transmitter (SB-101)

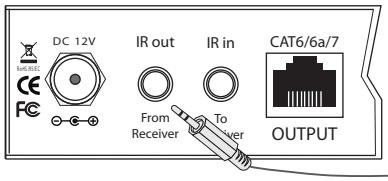


SB-101 Maximum Distance ~ 984 feet (300M)

2. SB-101C IR 2M Transmitter



Device



Cable (3C)

IR Transmitter (SB-101C)



SB-101C Maximum Distance ~ 6 feet (2M)

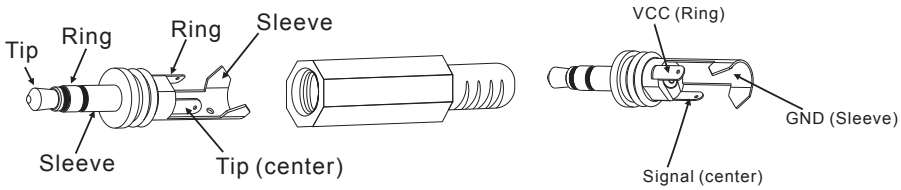
**** When you plug the External IR extender into the switcher, the front panel IR transmitter remains active. ****

PIN CONFIGURATION:

SB-101 and SB-101C Transmitter Pin configuration



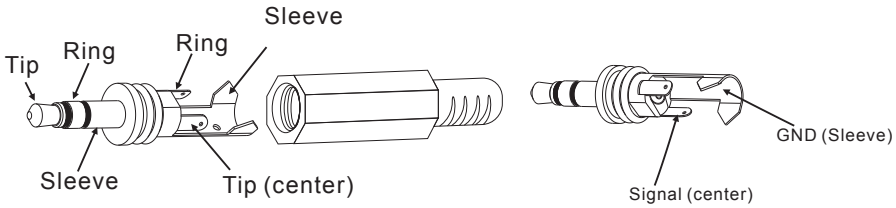
Tip: Signal
Ring :VCC
Sleeve: GND



SB-101 Maximum Distance ~ 984 feet (300M)



Tip: Signal
Ring: NC
Sleeve: GND



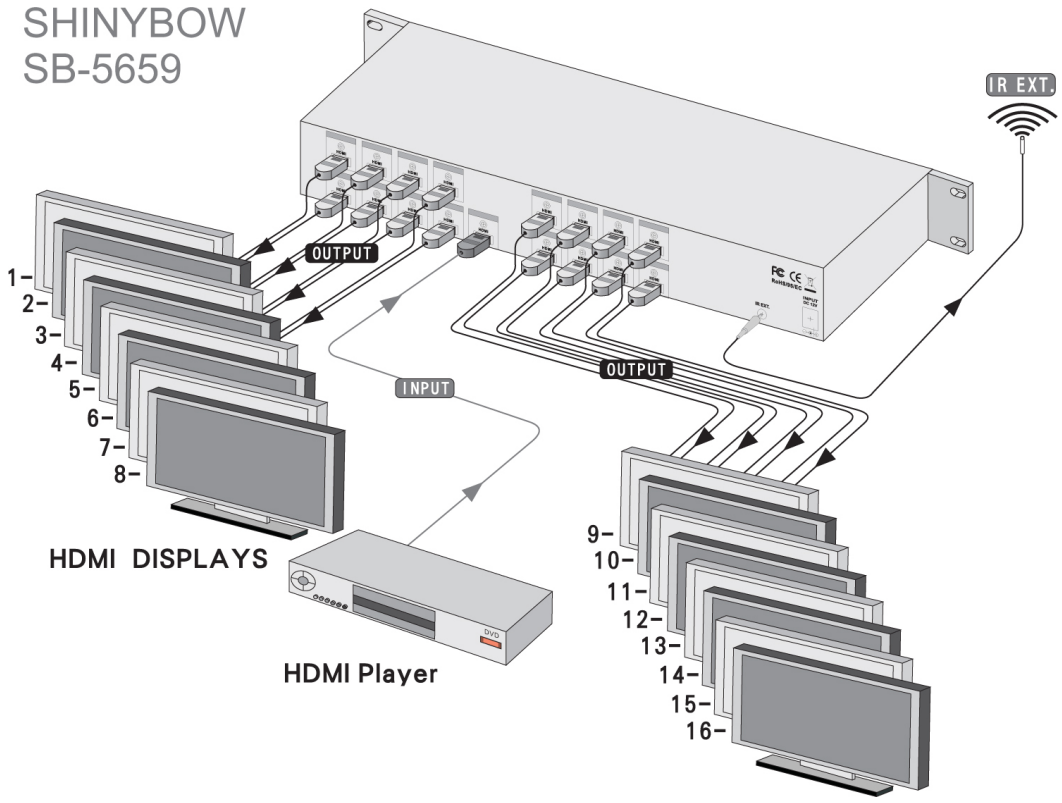
SB-101C Maximum Distance ~ 6 feet (2M)

Note: *The External IR jack has voltage on the "Ring" portion of a 3-conductor plug. You must use a 3-conductor plug (aka: stereo plug). Using a 2-conductor plug will short out the power supply. Always make connections with the switcher power off.*

TYPICAL APPLICATION

INSTALLING DIAGRAM

1x HDMI source to 16 x HDMI displays Distribution Amplifier



INSTALLING

CONTROL PORTS:

1. IR EXTENDER - IR Extend with distance 1000 ft (300M) Maximum

INPUT PORT SIGNAL :

1. HDMI - HDMI connector with fix screw

OUTPUTS PORT SIGNALS:

1. HDMI - HDMI connector with fix screw
2. HDMI - HDMI connector with fix screw
3. HDMI - HDMI connector with fix screw
4. HDMI - HDMI connector with fix screw
5. HDMI - HDMI connector with fix screw
6. HDMI - HDMI connector with fix screw
7. HDMI - HDMI connector with fix screw
8. HDMI - HDMI connector with fix screw
9. HDMI - HDMI connector with fix screw
10. HDMI - HDMI connector with fix screw
11. HDMI - HDMI connector with fix screw
12. HDMI - HDMI connector with fix screw
13. HDMI - HDMI connector with fix screw
14. HDMI - HDMI connector with fix screw
15. HDMI - HDMI connector with fix screw
16. HDMI - HDMI connector with fix screw

SB-5659 SUPPORTS (1) HDMI INPUT TO (16) HDMI DISTRIBUTOR OUTPUTS
SUPPORT IR & IR EXTENDER PORT

LIMITED WARRANTY

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