KVMSwitchTech.com

KVM-HD88K

8x8 HDMI Matrix Switch with Auxiliary Audio I/O

INSTRUCTION MANUAL

4K|2K CAPABLE

118 W. Streetsboro Street, Ste. 125 | Hudson, OH 44236 | Toll Free: (866) 865-7737

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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INTRODUCTION

The KVM-HD88K is professional 8x8 matrix routing switch. Supporting eight (8) HDMI Inputs and (8) Auxiliary Audio Inputs. Output supported (8) HDMI and (8) SPDIF audio. The KVM-HD88K is based on the HDMI standard and supports full resolution HDMI Video with embedded EDID, With a signal bandwidth of 340Mhz, there is no signal degradation. High Definition Digital signals can be selected and distributed to any (8) Inputs to (8) outputs. The Switcher is certified as being fully CEC , ARC and HDCP 2.0 compliant, full HD 4K2K HDMI V1.4a 3D formats, data rates up to 6.75 Gbps. Supports UXGA/WUXGA/DVI 1920x1200 resolution to any HD displays. The KVM-HD88K has 1x HDMI and Auxiliary Audio(analog stereo audio) connector for Input, effectively making this an (8) in x (8) out switcher. The EDID management can be selected between seven (7) different modes. Control is provided via Front panel push buttons, IR remote, RS-232 or TCP/IP (not a web-browser). An RS-232 Windows GUI interface is provided for matrix routing control (Windows only).

PACKAGE CONTENTS

Before attempting to use this unit, please check the packaging and make sure the following items are contained in the shipping carton:

- Main switch console unit
- Operating Instructions
- RS-232 V2.0 Protocol Instructions
- Ethernet V2.0 Protocol Instructions
- Master wireless IR Remote Control (SW-HD44)
- 19 inch Ear mount bracket (Part # 1U-440L)
- IR RX-100 IR Extender distance ~984 feet (300M) Receiver set
- IR RX-100C IR Extender distance 6ft(2M) Receiver Cable
- CD Contents : Windows GUI, ISP V1.0 Windows driver
- RS-232 Cable 6 ft (2M)
- ISO Screws
- Worldwide Universal Power Supply: DC12V, 5A, (Worldwide Universal 100~230 VAC, AC 50/60Hz.)

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.

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FEATURES

FEATURES

- (8)x HDMI with Auxiliary Audio (Analog Audio) source devices matrix switched to (8)x HDMI with S/PDIF output destinations.
- HDMI digital Video w/embedded HDCP, DVI format and CEC/HDCP 2.0 compliant
- Worldwide control EDID modes for HDMI full 4K2K (24/30 Hz) HD Video resolutions.
- Link speeds of up to 6.75 Gbps (link clock rate of 340MbHz), Support HDMI 4K2K, 1.4a 3D formats.
- Wide range of HD resolutions from PC XGA to WUXGA 1920x1200 and HDTV/DTV HDMI resolutions 480i/480p, 576i/576p, 720p, 1080i/p & 4K2K (24/30Hz).
- Compatible with all HDMI source devices, PC monitors, Plasma HD display, HDTV and audio receivers or audio amplifiers.
- Digital Video TMDS formats Resolution up to 4K2K with Deep color 36-bit.
- Digital Audio Support :
    - Dolby TrueHD, Dolby Digital, Dolby Digital Plug/ex, DTS, DTS-HD, DTS-HD Master, DTS-EX, PCM, PCM2, LPCM2
- Audio Input : Support Auxiliary Audio (Analog stereo audio).
- Audio Output : Support Digital audio ARC or Digital audio S/PDIF (from HDMI source or Auxiliary Audio)
- Various User Interface control:
    - Windows based GUI control via RS-232 port
    - Front Panel push button
    - IR wireless remote control
    - Ethernet Switch control
    - Third party RS-232 controller (via simple ASCII)
- Using the build-in booster, each HDMI Output port is capable of driving cable lengths 1080p up to 98 ft (30M) & 4k2k up to 66 ft (20M)
- The KVM-HD88K HDMI Outputs contain a booster enabling longer cable runs without using amplifier/repeaters. HDMI specification is 15M or 50 feet. The KVM-HD88K is capable of supporting 30M or 98 feet.
- Support world wide (10)x control function keys:
    - Full function front panel controls: ARC / AUX/ ALL / OFF / EDID / LOCK / RECALL / MEMORY / ENTER
- Support EDID modes :
    - Embedded EDID modes : FSS/ H24-3D/ H24-3D-M/ H36-3D/ H36-3D-M/ 4K2K-3D / DVI-D 1920x1200-60Hz
    - External modes : Learning mode. Automatic scanning input & output status via LED show on front panel
- Automatic scanning input & output status via LCM show on front panel.
- Support IR Remote and IR Extender with distance up to ~ 984 feet (300M) Maximum.
- Support Universal power adaptor AC90V~AC240V, 50/60Hz.

The Switcher will remember that last state during a power cycle. When power is removed and resorted, the last configuration will be invoked.

SPECIFICATIONS

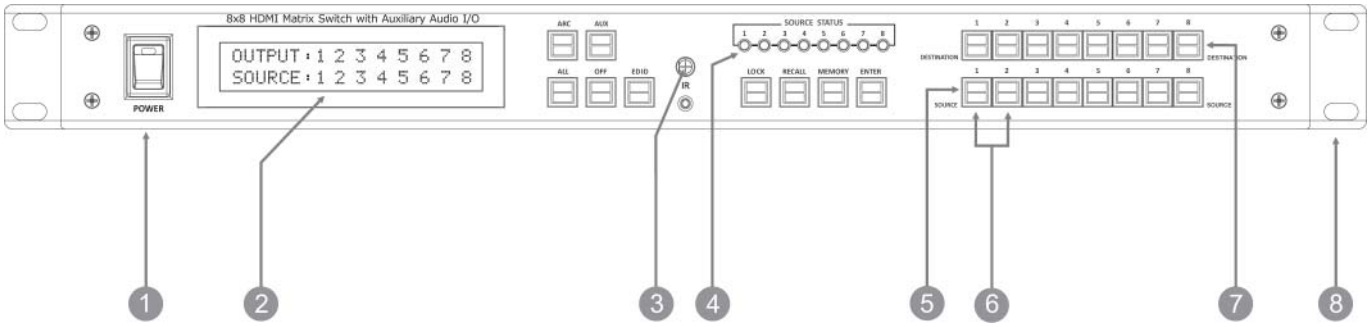
SPECIFICATIONS

- **Type of Switcher:** 8x inputs To 8x Outputs HDMI Matrix Switcher with Audio and Extension
- **HDMI Support:** HDMI 4K2K, 1080P-@60Hz, H36-bit Deep color, 3D of HDMI V1.4 formats.
- **HDCP / CEC Support:** HDCP 2.0 Compliant, CEC Compliant
- **Video Bandwidth:** Double Data Rates: 340Mhz, Total 6.75Gbps bandwidth.
- **Digital Video Support:** HD:480i/ 480p/ 720p/ 1080i/p and 4K2K up to 36bit deep color
- **Video Inputs:** 8x HDMI (HDMI or DVI digital source).
- **Audio Inputs:** 8x AUX Audio (Analog Stereo, AUX port. 3.5mm Jack).
- **Video Outputs: 8x HDMI (To Destination).**
- **Audio Outputs:**
    - 8x S/PDIF : Multi Audio Formats 5.1 from HDMI or LPCM-2CH from Auxiliary audio.
    - 8x ARC : TV Return Channel Audio.
    - 8x HDMI : Multi Audio Formats 5.1 / 7.1, MAT(MLP), Dolby Digital, Dolby TrueHD, Dolby Digital Plus, DTS, DTS-ES 6CH, DTS-HD, DTS-HD-HRA, DTS-HD Master, (PCM-2CH)
- **Switch Controls:**
    - 1x Select & Function buttons on front panel (Data status via LCM panel show out)
    - 1x IR Remote Controller (switch control)
    - 1x IR External port (switch control via 3.5mm OD Jack)
    - 1x RS-232 series interface (switch control)
    - 1x Ethernet series interface (switch control)
- **Source Status:** Input status LEDs indicates presence of a live signal
- **(25) Function Control Keys:** 1. ARC, 2. AUX, 3. ALL, 4. OFF, 5. RECALL, 6. ENTER, 7. MEMORY, 8. LOCK, 9. EDID, 10. Destination button 1 thru 8, 11. Source button 1 thru 8
- **(7) EDID Management:**
    - 1. Select Embedded EDID modes : Mode1: FSS, Mode2: H24-3D, Mode3: H24-3D-M, Mode4: H36-3D, Mode5: H36-3D-M, Mode6: 4K2K-3D, PCM-2CH, Mode7: DVI-D 1920x1200-60Hz
    - 2. Select LEARNING mode : Learning Destination EDID To Link Source
- **Infrared Frequency:** 38 Khz
- **Video Booster:** HDMI output 1080p lengths up to 98 feet (30M) / 4K2K up to 66 feet (20M).
- **IR External Distance:** ~984 ft / 300 m maximum
- **HDMI I/O Connector:** HDMI Type A - SMD 19pin Female Type
- **Temperature:** 32 °F - 100 °F Operation (0 °C - 32 °C)
- **Dimensions (LxWxH):** 19 x 9.85 x 1.75 in (482 x 250 x 44mm)
- **Rack Mount:** 1RU High 19 in (with rack mount)
- **Power Supply:** DC12V, 5A, Power Input : AC 100~240 VAC 50/60Hz (universal Type Supply)
- **Power Consumption:** 2150 mA Maximum
- **Safety Approvals:** CE, FCC, RoHS (2002/95/EC)
- **Product Weight:** 3.75 Kgs / 8.25 lb

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

FRONT PANEL

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. The Switcher will remember that last state during a power cycle.
When power is removed and resorted, the last configuration will be evoked.

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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 shows which input (source) is assigned.

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3 IR SENSOR

The IR sensor receives IR commands from the supplied remote controller or third party IR emitter.

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4 INPUT STATUS DISPLAY

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

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5 SOURCE SELECT BUTTONS

Separate inputs 1 thru 8 select buttons are provided each source selection.

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6 EDID MODE SELECT BUTTONS

Used to select EDID mode using Input buttons #1 and #2.

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7 DESTINATION SELECT BUTTONS

Separate outputs 1 thru 8 select buttons are provided for each destination assignment. Routing can be Source to Destination or one source to multiple destinations. Example : Press Destination 1,3,5 then press Source 2 will route Input 2 to Output 1,3,5 respectfully.

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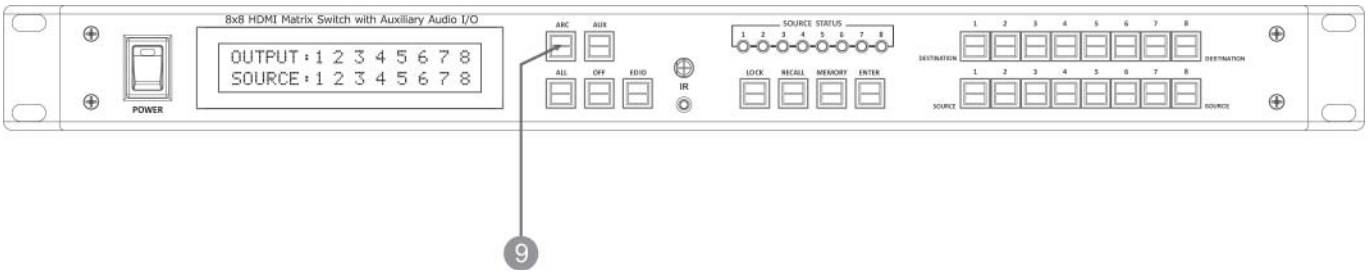
8 19 INCH EAR MOUNT PAIR

Converts desktop to 19 inch rack mount. Bracket (part # 1 U-440L) INCLUDED.
Image shows rack mount bracket attached.

FRONT PANEL

FRONT PANEL



9 FUNCTION KEY - ARC

Audio Return Channel (ARC) is a feature that sends audio from the TV back down the HDMI cable to its source device, in this case, the switcher, Not all displays support ARC; check your Users Guide for additional information. (Default = ARC Disabled)

The “Audio & ARC” port can support audio from either of three sources.
If the Input Video/Audio Source is HDMI, the audio can extracted from the embedded signal.
If the Input Audio Source is connected to the external Audio Input, this same audio will be present on the Audio & ARC jack.
If ARC is selected, the audio will be from the destination device (ex; TV).

To Enable the ARC option on a specific Output, perform the follow steps:

- Press the **ARC** button.
- On the **Destination** row, Press 1 thru 8 (the button will illuminate).
- Press **ENTER** button. The new configuration will be stored The front panel LCD display will now show an “ A “ under the Output port.
- Or press **ARC** again to cancel operation.

To Disable the ARC option on a specific Output, perform the follow steps:

- Press the **ARC** button
- On the **Destination** row, press 1 thru 8 (the button will illuminate).
- Press **ENTER** The pre-set configuration will execute. The front panel LCD display will be blank under the Output port
- Or press **ARC** again to cancel operation.

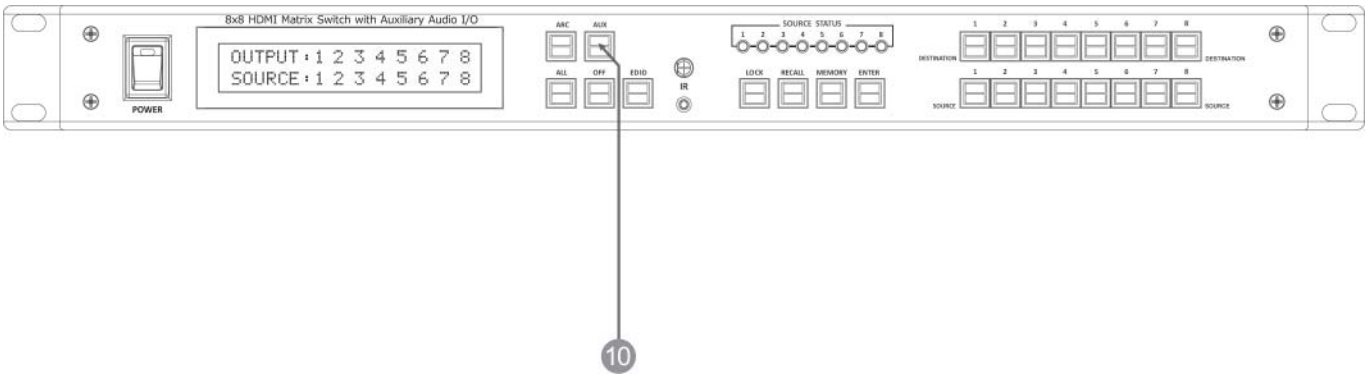
Note :

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

2. The AUX Audio input only function when a valid HDMI / DVI video signal is present. Without a video, the AUX audio will not operate.

FRONT PANEL

FRONT PANEL



10 FUNCTION KEY - AUX (The audio additional on the " Audio / ARC" port)

The AUX FUNCTION feature allows you to replace the embedded HDMI audio signal with an audio signal that is connected to the switchers Audio AUX Input. Using the AUX function replaces the audio and does not mix the audio. (Default = AUX Disabled)

To Enable the AUX option on a specific Output, perform the follow steps:

- Press the **AUX** button.
- On the **SOURCE** row, press 1 thru 8 (the button will illuminate).
- Press **ENTER** The new configuration will be stored. The front panel LCD display will show an "X" under the Source port
- Or **AUX** press again to cancel operation.

To Disable the AUX option on a specific Output, perform the follow steps:

- Press the **AUX** button
- On the **SOURCE** row, press 1 thru 8 (the button will illuminate).
- Press **ENTER** The pre-set configuration will execute. The front panel LCD display will be blank under the Output port indicating audio source is that which is embedded on the HDMI cable.
- Or press **AUX** again to cancel operation.

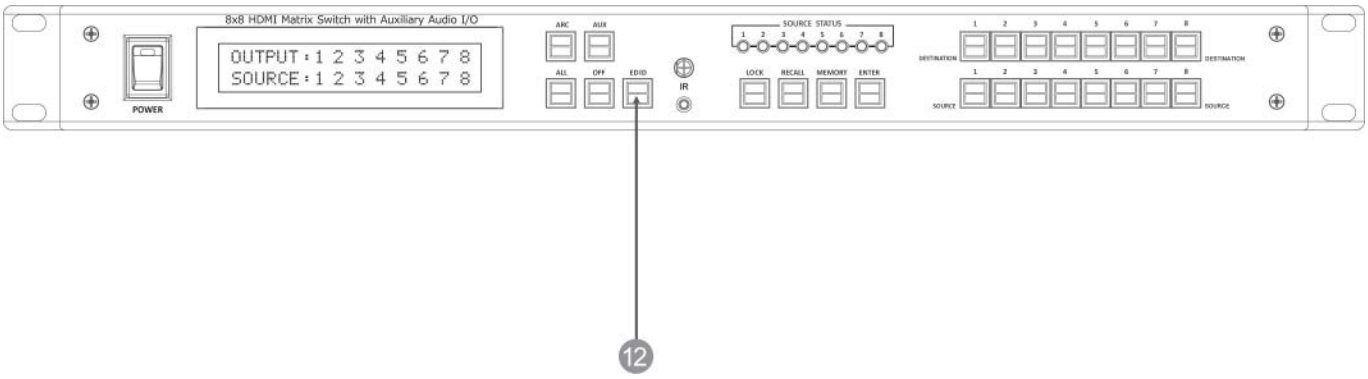
Note :

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

2. The AUX Audio input only function when a valid HDMI / DVI video signal is present. Without a video, the AUX audio will not operate.

FRONT PANEL

FRONT PANEL



12 FUNCTION KEY - EDID

Used to display change current EDID mode.

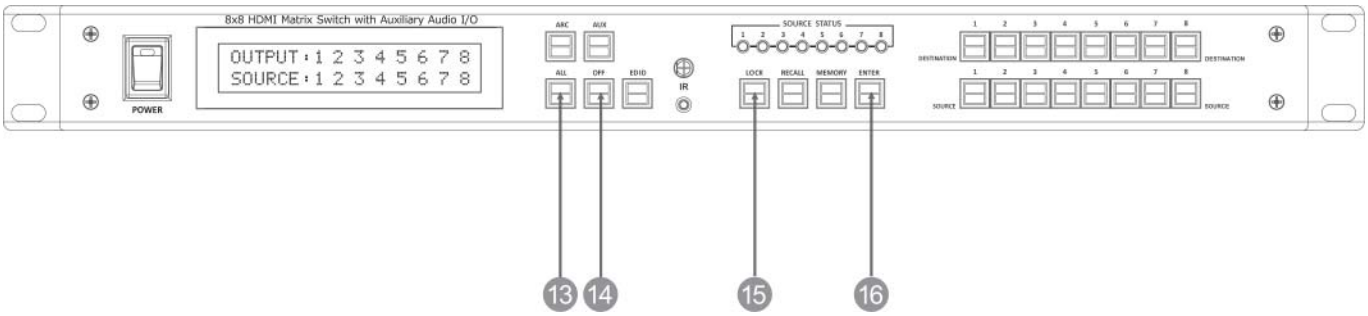
- Press **EDID** to select new EDID mode or select
- Press **SOURCE** row #1 or #2 Select EDID modes.
- Press **ENTER** to ready memory location.
- Or press **EDID** again to cancel operation.

Operation completes.

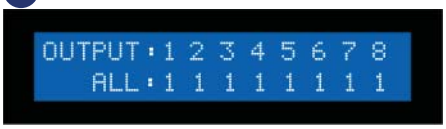
Note : ***Operation will abort if no keys are pressed within 5 seconds.***

FRONT PANEL

FRONT PANEL



13 FUNCTION KEY - ALL



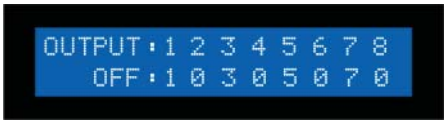
Disables (mute) video on all destinations OR Selects the same source to all destinations.

Option 1
- Press **ALL** followed by **OFF** button. The display will show " 0 " indicating all destinations have no video selected.

Option 2
- Press **ALL** followed by Source 1 thru 8. The display will show the Source selected.
- Press **ENTER** The pre-set source selection will be assigned all destinations.

---

14 FUNCTION KEY - OFF



Disables (mute) video to selected channels. Either destinations.
- Press **OFF** button followed by any Destination channel.
- Press 1 thru 8 output destination. The display will show " 0 " for the selected channel indicating no video selected.

---

15 FUNCTION KEY - LOCK

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

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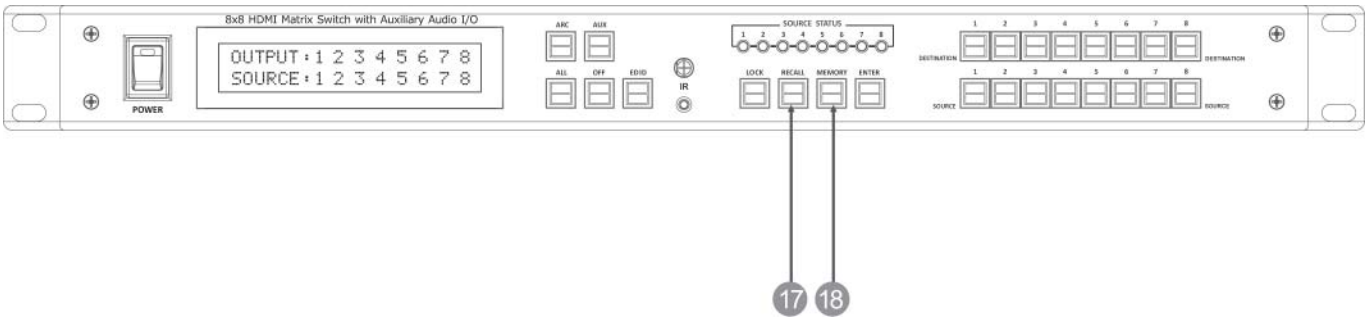
16 FUNCTION KEY - ENTER

Press **ENTER** to confirm entries.

FRONT PANEL

FRONT PANEL



17 FUNCTION KEY - RECALL

The system will show previously stored presets, up to a total of 16. Presets are stored in local memory using Source keys 1 thru 8 or Destination keys 1 thru 8 as the memory preset location.

- Press **RECALL** button.
- Press 1 thru 8 on either Source or Destination row.
- Press **ENTER** The pre-set configuration will execute.

Operation completes.

Operation will abort if no keys are pressed with 5 seconds.

- Or press **RECALL** again to cancel operation.

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18 FUNCTION KEY - MEMORY

The system will show store presets, up to a total of 16. Presets are stored in local memory using Source keys 1 thru 8 or Destination keys 1 thru 8 as the memory preset location.

- Configure desired matrices..
- Press **MEMORY** button.
- Press 1 thru 8 on either Source or Destination row.
- Press **ENTER** to ready memory location.
- Or press **MEMORY** again to cancel operation.

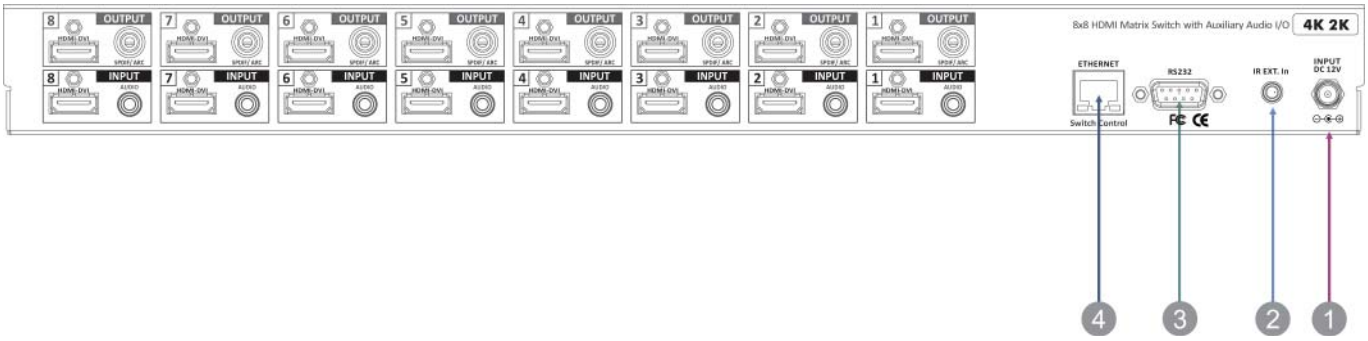
Operation completes.

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

- Or press **MEMORY** again to cancel operation.

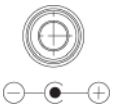
REAR PANEL

REAR PANEL



1 DC POWER INLET

The Switcher is fitted with a DC power plug input connector. Ensure that the used is of an approved type and is of sufficient current carrying connector capacity with the correct voltage and connector polarity. 12Volt DC power supply 5A Max (Center pin positive).



Power Jack:
DC Jack - Inner OD ⦰ 2.1mm (+)
Outside OD ⦰ 5.5mm (GND)
Power input - 12VDC, 5A

2 IR EXTENDER CONTROL

Support one of IR Extender. Extend distance maximum 300 Meters / ~984 feet. When you plug the External IR extender into the switcher, the front panel IR receiver remain active.

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

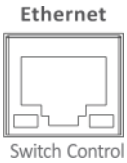
3 RS-232 CONNECTION

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

Remote port :
D-SUB-9pin Female connector

4 ETHERNET CONNECTION

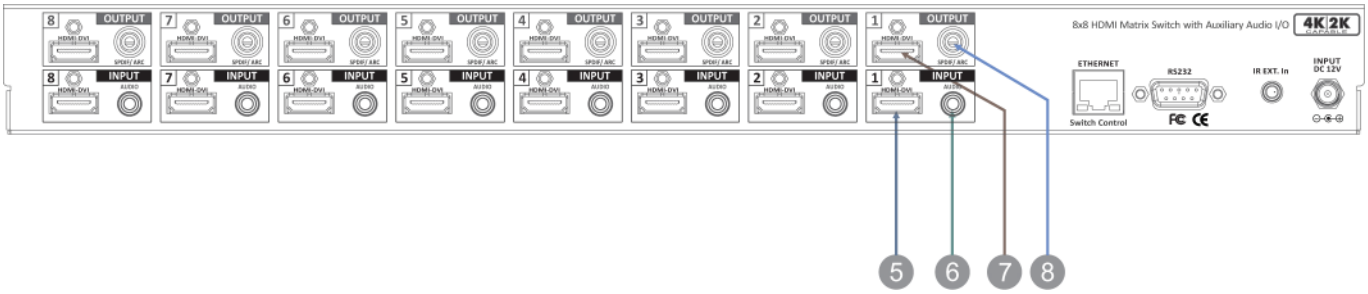
ETHERNET control port to allow for TCP/IP interfacing to a PC such as a computer or touch panel control (not a web-browser), to the switcher via this RJ-45 Female connector to control switcher.



Remote Port : Control the switcher RJ-45 Female connector
Ethernet Port:
Note: the Ethernet port and RS-232 port cannot be used simultaneously. Any connection to the Ethernet port will disable serial commands send to the RS-232 port.

REAR PANEL

REAR PANEL



5 INPUTS- 1,2,3,4,5,6,7, & 8 HDMI

Connect an 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 post, you must use the provided ISO screws to keep the internal HDMI jack secure. Removing the HDMI Screws without installing the ISO screws will void your warranty.

HDMI Connector: HDMI Type A SMD 19pin Female socket connector.

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

---

6 INPUTS- 1,2,3,4,5,6,7, & 8 AUDIO (Auxiliary Audio)

Connect a Auxiliary Audio signal link of AUDIO direct Stereo Audio to this 3.5mm OD Female Jack. This jack supports DVI audio or Auxiliary Analog Stereo Audio sources.

AUDIO Connector with Input 1 ~ Input 8
Audio: The auxiliary audio (Analog Stereo Audio).

AUDIO Connector: 3.5mm OD phone jack female socket connector.

Note: With the proper adapters, the switcher can be used with Auxiliary Audio signals and the DVI support Audio input.

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7 OUTPUTS- 1,2,3,4,5,6,7 & 8 HDMI

Connect an 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 post, you must use the provided ISO screws to keep the internal HDMI jack secure. Removing the HDMI Screws without installing the ISO screws will void your warranty.

HDMI Connector: HDMI Type A SMD 19pin Female socket connector.

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

---

8 OUTPUTS- 1,2,3,4,5,6,7 & 8 S/PDIF / ARC

Connect a Audio signal output link of the Auxiliary Audio, HDMI digital audio source or ARC TV return channel audio direct to this RCA jack audio connector. This port use ARC digital audio(TV return digital Audio) and S/PDIF digital audio from HDMI or Auxiliary Audio. Use RCA connector with Output 1 ~ Output 8

Audio Output signals :
- ARC Audio (HDTV ARC Turn On)
- S/PDIF (HDMI/DVI Source Audio or Auxiliary Audio LPCM-2CH)

ARC & SPDIF Audio Connector: RCA Female connector

Ethernet Port:

Note: With the proper adapters, The Audio can be used with HDMI Audio, DVI Audio and Auxiliary Audio signals outputs. The Auxiliary Audio use digital LPCM-2CH output.

TYPICAL APPLICATION

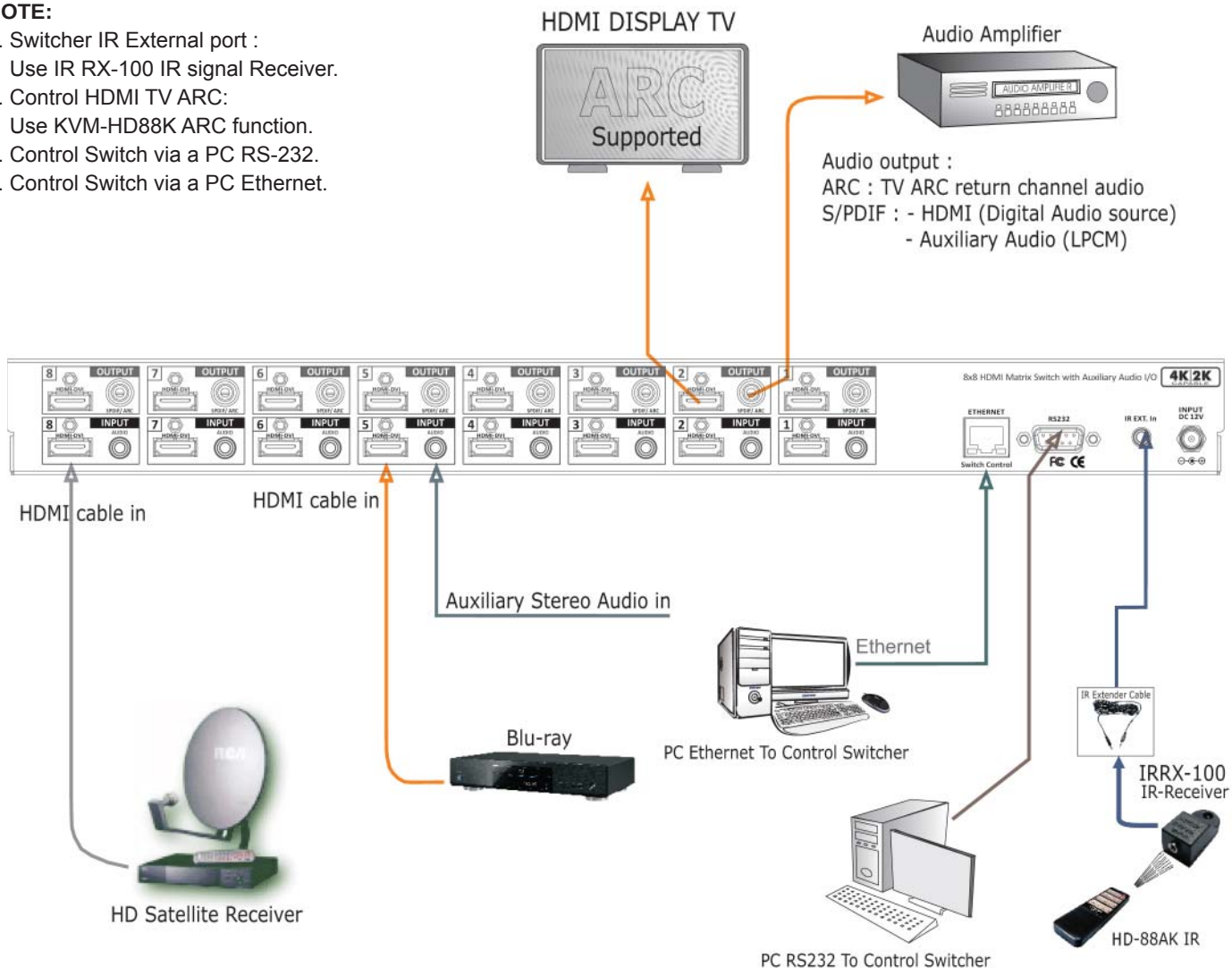
INSTALLING DIAGRAM

Samples connection :

1. Using IR External, RS-232 or Ethernet command to control Switcher KVM-HD88K via PC or IR RX-100 IR receiver transmit the KVM-HD88K's IR signal.
2. Audio output link ARC from TV return channel, HDMI audio source or mixing Auxiliary audio.

NOTE:

1. Switcher IR External port :
   Use IR RX-100 IR signal Receiver.
2. Control HDMI TV ARC:
   Use KVM-HD88K ARC function.
3. Control Switch via a PC RS-232.
4. Control Switch via a PC Ethernet.



Application RS-232, IR and Ethernet control the Switcher.

REMOTE CONTROL

Before making any connections to the switcher. 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

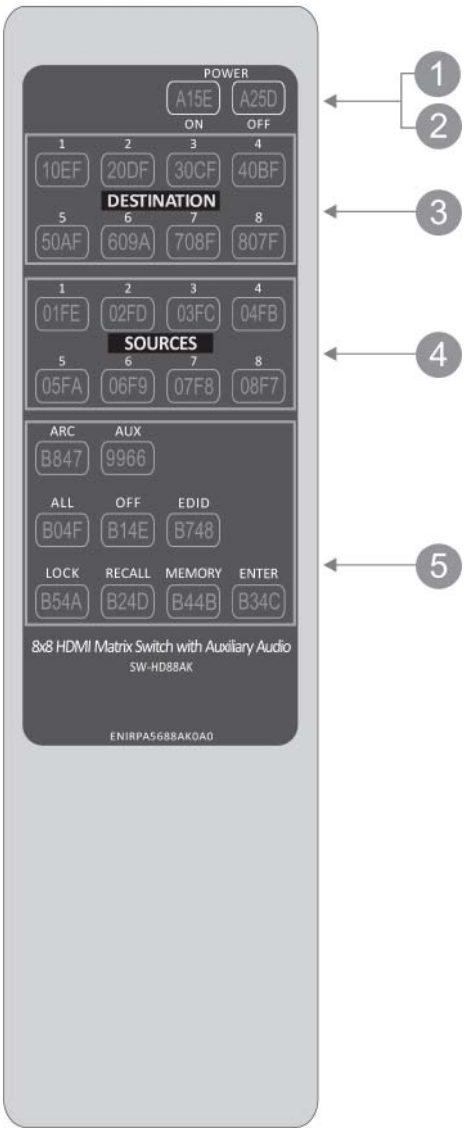
> Power up all source and destination audio-visual sources

> For each destination output select the appropriate input source by using the front panel input 1~8 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.

IR REMOTE CONTROL KEY

IR REMOTE : SW-HD88AK



1 2 SWITCH POWER ON or OFF

Controller with a separate power ON and OFF

3 DESTINATION : 1 thru 8 OUTPUT SELECTION

Press the destination button to select the output display channel.

4 SOURCE : 1 thru 8 INPUT SOURCE SELECTION

Press input 1~ 8 sources with selection button

5 FUNCTION KEY

ARC - function selection button
AUX - function selection button
ALL - function selection button
OFF - function selection button
EDID - function selection button
RECALL - function selection button
MEMORY - function selection button
ENTER - function selection button
LOCK - function selection button

REMOTE CONTROL

IR REMOTE CUSTOM AND DATA CODES (NEC STANDARD)

HOW TO SETUP IR CODES :

Model number : KVM-HD88K
CUSTOM CODE : 03FC

POWER ON : 03FC A15E
POWER OFF : 03FC A25D

ARC : 03FC B847
AUX : 03FC 9966
ALL : 03FC B04F
OFF : 03FC B14E
EDID : 03FC B748
LOCK : 03FC B54A
RECALL : 03FC B24D
MEMORY : 03FC B44B
ENTER : 03FC B34C

PRESS TV DESTINATION - # then PRESS AV SOURCE - #

DESTINATION #1 : 03FC 10EF
DESTINATION #2 : 03FC 20DF
DESTINATION #3 : 03FC 30CF
DESTINATION #4 : 03FC 40BF
DESTINATION #5 : 03FC 50AF
DESTINATION #6 : 03FC 609F
DESTINATION #7 : 03FC 708F
DESTINATION #8 : 03FC 807F

SOURCE #1 : 03FC 01FE
SOURCE #2 : 03FC 02FD
SOURCE #3 : 03FC 03FC
SOURCE #4 : 03FC 04FB
SOURCE #5 : 03FC 05FA
SOURCE #6 : 03FC 06F9
SOURCE #7 : 03FC 07F8
SOURCE #8 : 03FC 08F7

For example;
Select Destination # 1 to show Source #1~8,

The IR Data Code list :
Destination # 1 , Source #1 03FC 10EF 03FC 01FE
Destination # 1 , Source #2 03FC 10EF 03FC 02FD
Destination # 1 , Source #3 03FC 10EF 03FC 03FC
Destination # 1 , Source #4 03FC 10EF 03FC 04FB
Destination # 1 , Source #5 03FC 10EF 03FC 05FA
Destination # 1 , Source #6 03FC 10EF 03FC 06F9
Destination # 1 , Source #7 03FC 10EF 03FC 07F8
Destination # 1 , Source #8 03FC 10EF 03FC 08F7

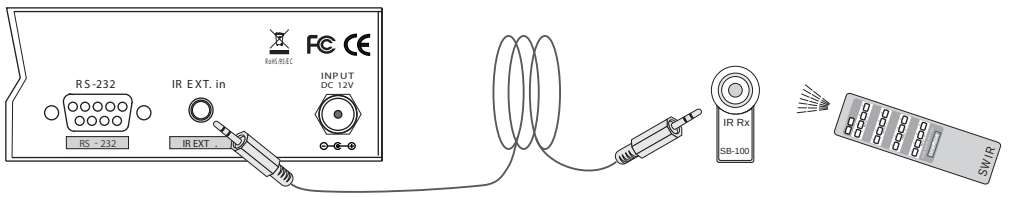
IR EXTENDER

IR RECEIVER:

1. SB-100 IR 300M Receiver

Device | Cable (3C) | IR Receiver (SB-100)

SB-100 IR Receiver Set



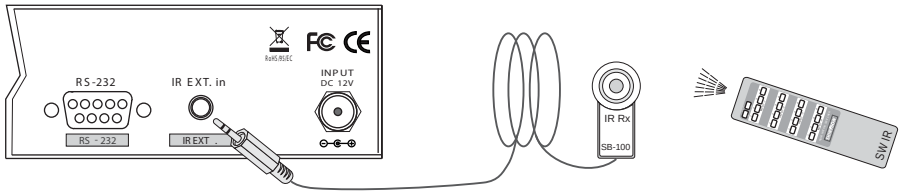
SB-100 Maximum Distance ~ 984 feet (300 meters)

2. SB-100C IR 2M Receiver

Device | Cable (3C) | IR Receiver (SB-100C)

IR Receiver cable 6ft (2M)

SB-100C IR Receiver Cable



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

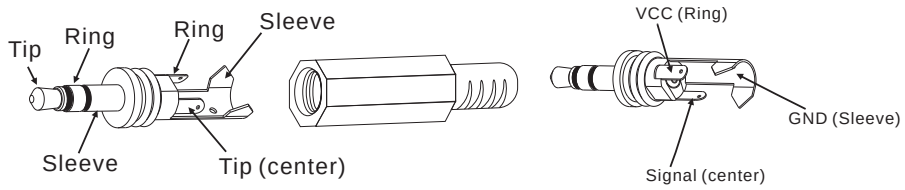
**** When you plug the External IR extender into the switcher, the front panel IR receiver remains active. ****

PIN CONFIGURATION:

SB-100 and SB-100C Receiver Pin configuration

SB-100 IR Receiver Set

Tip: Signal
Ring :VCC
Sleeve: GND

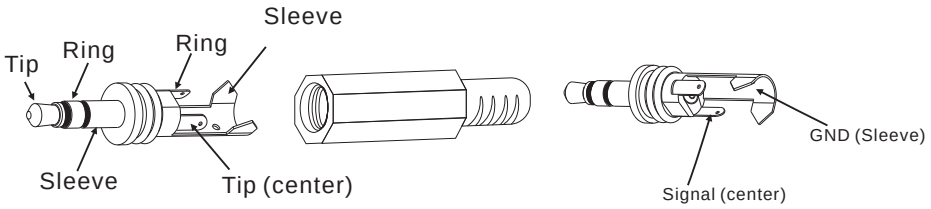


SB-100 Maximum Distance ~ 984 feet (300 meters)

IR Receiver cable 6ft (2M)

SB-100C IR Receiver Cable

Tip: Signal
Ring: NC
Sleeve: GND



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

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

IR EMITTER:

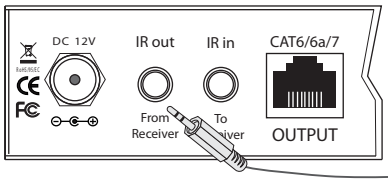
1. SB-101 IR 300M Transmitter

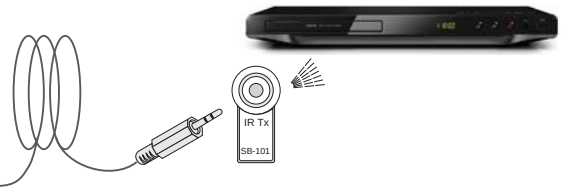
Device

Cable (3C)

IR Transmitter (SB-101)

SB-101 IR Transmitter Set





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

2. SB-101C IR 2M Transmitter

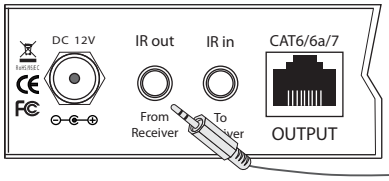
Device

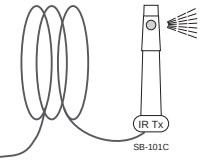
Cable (3C)

IR Transmitter (SB-101C)

IR Transmitter cable 6ft (2M)

SB-101C Transmitter Cable





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

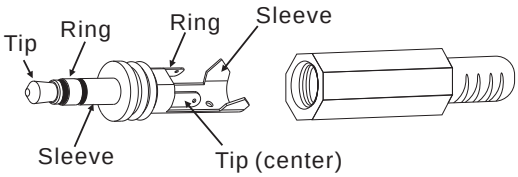
**** When you plug the External IR extender into the switcher, the front panel IR transmitter remains active. ****

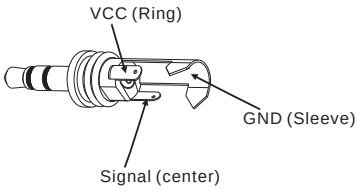
PIN CONFIGURATION:

SB-101 and SB-101C Transmitter Pin configuration

SB-101 IR Transmitter Set

Tip: Signal
Ring :VCC
Sleeve: GND



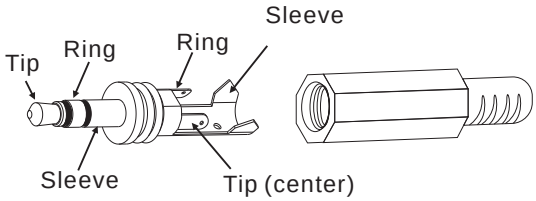


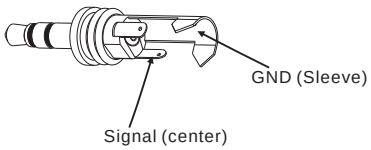
SB-101 Maximum Distance ~ 984 feet (300 meters)

IR Transmitter cable 6ft (2M)

SB-101C Transmitter Cable

Tip: Signal
Ring: NC
Sleeve: GND





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

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.*

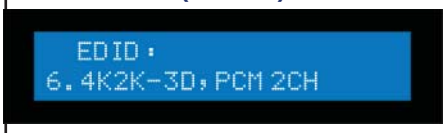
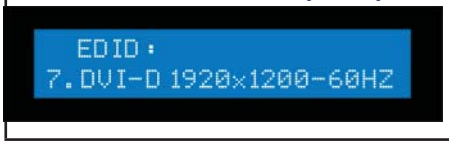
EDID FUNCTION

EDID FUNCTION SETUP

EDID setup	To change the EDID setup
Step 1. Press the **EDID** button	The display will show the currently selected EDID mode
Step 2. Press **SOURCE** #1 or #2 button row	The button will flash blue and the display will show the current **Embedded EDID** Status.
Step 3. Press the **ENTER** 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
Embedded EDID setup Press **EDID** > **SOURCE** > **ENTER** SOURCE #1 or SOURCE #2	To select **Embedded EDID** mode or **LEARNING** mode Press **EDID** button : The LCM will show the current EDID status.  Repeatedly depressing the **source 1** button will cycle **up** thru the options. Repeatedly depressing the **source 2** button will cycle **down** thru the options. Select **Embedded EDID** : Mode 1 : FSS Mode 2 : H24-3D Mode 3 : H24-3D-M Mode 4 : H36-3D Mode 5 : H36-3D-M Mode 6 : 4K2K Mode 7 : DVI-D 1920x1200-60Hz
RESET	**EDID Return To Factory default**
How to RESET EDID mode Press **EDID** > **RECALL** > **ENTER**	**RESET** To the **FACTORY DEFAULT** (1080p-2CH). Press **EDID** button : The LCM will show the current EDID status. Press **RECALL** button : The LCM will show the **RESET EDID**.  Press **ENTER** to confirm entries. The EDID will return to **FSS** mode and resolution 1080p-2CH. 

EDID FUNCTION

EDID function : 7x Embedded EDID Modes	
Mode 1. FSS® (Fast Speed Start) 	**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 3, and then select mode 1 for fast speed start.
Mode 2. H24-3D (1080p-24 bits) 	Audio Support : PCM 2CH
Mode 3. H24-3D-M (1080p-24bits) 	Audio Support : MAT(MLP) 7.1CH, PCM 2CH, One Bit Audio 2CH, AC-3 5.1CH, DTS 5.1CH, PCM 7.1CH, Dolby Digital + 7.1CH, DTS-HD 7.1CH
Mode 4. H36-3D (1080p-36 bits) 	Audio Support : PCM 2CH
Mode 5. H36-3D-M (1080p-36 bits) 	Audio Support : MAT(MLP) 7.1CH, PCM 2CH, One Bit Audio 2CH, AC-3 5.1CH, DTS 5.1CH, PCM 7.1CH, Dolby Digital + 7.1CH, DTS-HD 7.1CH
Mode 6. 4K2K (24/30Hz) 	HDMI Support : 4K2K-3D, PCM 2CH (3860x2160-24/30Hz) Audio Support : PCM 2CH
Mode 7. 1920x1200-60Hz (DVI-D) 	DVI Support : DVI-D 1920 x 1200 60Hz

EDID FUNCTION

EDID FUNCTION : LEARNING

Learning EDID Single to Single	Example : Learn Destination #8 EDID To Source #5.
Step 1. Press the **EDID** button	The button will flash blue and the display will show the current **Embedded EDID** Status.
Step 2. Press the Destination #8 button row	Copy the Destination #8 Display EDID.
Step 3. Press the Source #5 button row	Learning the Destination #8 EDID To Source # 5.
Step 4. Press **ENTER** button	To confirm entries.
Learning EDID Single to multiple	**Learning destination EDID link to the majority Sources**
Step 1. Press the **EDID** button	The button will flash blue and the display will show the current **Embedded EDID** Status.
Step 2. Press the Destinations #1~8 button row	Copy any 1~8 Destinations EDID.
Step 3. Press the Source #1, #6 ~ #8 button row	Learning the Destination EDID link to source #1, #6 ~ #8.
Step 4. Press **ENTER** button	To confirm entries.
Learning EDID Single to ALL	**Learning destination EDID link to All Sources**
Step 1. Press the **EDID** button	The button will flash blue and the display will show the current **Embedded EDID** Status.
Step 2. Press destination button 1 thru 8	Learning anyone 1~8 Destination EDID to all sources.
Step 3. Press **ALL** button	Learning selected destination EDID to all sources.
Step 4. Press **ENTER** button	To confirm entries.
EDID status	**To view the current EDID status.**
Step 1. Press the **EDID** button	The button will flash blue and the display will show the current **Embedded EDID** Status.
Step 2. Press the **EDID** button	To exit.
How to setup FSS® Function	**Fast speed start®**
Step 1. Press the Destination #1~8 button row Then Press the Source #1~8 button row	To setup and Install all devices.
Step 2. Press the **EDID** button	Select a optimum status of **Embedded EDID** mode.
Step 3. Press **ENTER** button	To conform entries.
Step 4. Press the **EDID** button	To select the EDID **FSS®** mode.
Step 5. Press **ENTER** button	To conform entries.

EDID FUNCTION

EDID FUNCTION FOR HDMI MATRIX SWITCHER

LEARNING EDID	Learning EDID from Destination to Source
Learning EDID setup Press **EDID** > **DESTINATION** > **SOURCE** > **ENTER** Learning EDID setup for HDMI Key Press Sequence: **EDID > DESTINATION # > SOURCE # > ENTER** The EDID for HDMI has been learned	Press **EDID** > **DESTINATION** Button: The LCM will be show LEARNING Switcher will **LEARN** destination HDMI EDID and pass the selected source. 

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.

LEARNING EDID definition	Learning EDID from Destination to Source

1. Switcher will **LEARN** destination EDID and pass the selected source.
2. To set up learning between a single destination and single source:

   Press **EDID** button > Press **Destination** 1 thru 8 > Press Source 1 thru 8 > Press **ENTER** to confirm.
   Switcher will learn destination EDID to source device.
3. To set up learning between a single destination and Multiple sources:

   Press **EDID** button > Press **Destination** 1 thru 8 > Press the majority Sources 1 thru 4 > Press **ENTER**.
   Switcher will learn single destination EDID to many source devices.
4. How to Learning single destinations with all sources. Press **EDID** button > Press **ALL** button > Press **ENTER** to confirm.

AUTO MODE definition	Common Resolution and Audio

Switcher will find highest common Resolution and Audio from all destination EDID

Example for single source
Destination > press #1 and then Source > press #1
Destination device #1 will set to the highest common resolution and Audio of source #1

Example for multiple sources
Destination device #1, #2, #3 will be set to the highest common resolution and Audio available and source device #1 will output this same resolution.

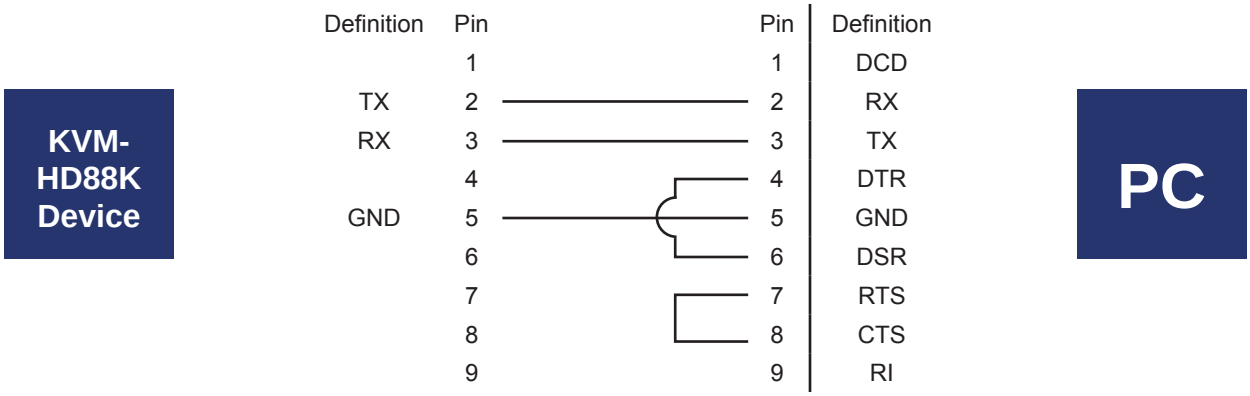
RS-232 SERIAL INTERFACE

RS-232 SERIAL INTERFACE CONNECT a PC or CONTROL SYSTEM. VERSION COMPATIBLE V1.0 & V1.5

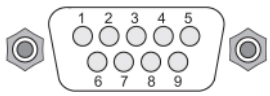
For a complete list of commands, please reference external document extended RS-232 Protocol Instruction Manual.

RS-232 Configuration

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



RS-232 Pin Diagram



RS-232 SERIAL INTERFACE PROTOCOL COMMANDS (Ethernet / RS-232 Control driver V2.0)

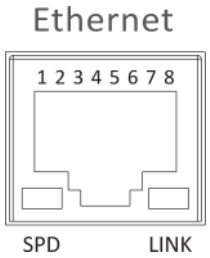
The KVM-HD88K switcher can be controlled via the RS-232 serial control port to allow for interfacing to a PC, or similar third party control system.

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.

ETHERNET 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.



Note :
Control the switcher
SPD : Speed
LINK : Ethernet link
RJ-45 Female 8P-8Cconnector

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 TCP/IP PROTOCOL COMMANDS (Ethernet / RS-232 Control driver V2.0)

**** When Ethernet is used, the switcher will not accept commands from the RS-232 port. ****

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