HD-88K

8x8 UHD 4K2K HDMI MATRIX SWITCH

4K|2K
CAPABLE

V1.1

A▸NEUVIDEO®
AUDIO / VIDEO MANUFACTURER

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.

THIS SAFETY INFORMATION IS OF A GENERAL NATURE AND MAY BE SUPERSEDED BY INSTRUCTIONS CONTAINED WITHIN THIS MANUAL

▶ CONTENTS

DEAR CUSTOMER

Thank you for purchasing this product. For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

PACKAGE CONTENTS

Before connecting the unit, it is necessary to unpack it from the shipping carton and inspect the unit for any damage. While the cards are hot-swappable, it is recommended to install the cards before connecting the unit. This will make the installation easier.

- HD-88K Matrix Switcher
- RS-232 V2.0 / Ethernet V2.0 Protocol Instructions
- Master wireless IR Remote Control (SW-HD88K)
- 19 inch ear mount bracket (Part # 1U-440L)
- HD-100 IR Extender Receiver set : Distance ~984 feet (300M)
- CD Contents : Manual, Windows GUI, ISP V1.0 Windows driver
- RS-232 Cable 6.50 feet (2M)
- ISO Screws
- Users Guide
- Power Supply Input : DC12V, 5A, (Worldwide Universal 100~240VAC, 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

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INTRODUCTION

The HD-88K is a professional 8x8 matrix routing switch. Supporting (8) HDMI Inputs and (8) HDMI Outputs. The HD-88K is based on HDMI standards and supports full resolution HDMI video with embedded HDCP and a signal bandwidth of 340Mhz, so there is no signal degradation. High definition digital signals can be selected and distributed to any of the (8) Inputs to (8) outputs. This switcher is certified as being fully CEC, ARC and HDCP 1.3 compliant, with full HD 4K2K HDMI V1.4a 3D formats and data rates up to 6.75 Gbps. Supports UXGA/WUXGA/DVI 1920x1200 resolutions to any HD display. The HD-88K has (1) HDMI connector per Input, effectively making this an (8) in x (8) out switcher. The 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/Ethernet Windows GUI software program is provided for matrix routing control (Windows only).

FEATURES

- (8) HDMI source devices matrix switched to (8) HDMI output destinations
- HDMI digital video w/ embedded HDCP, DVI formats and CEC/HDCP 1.3 compliant
- Worldwide control EDID modes for HDMI full 4K2K (24/30Hz) HD video resolutions
- Link speeds of up to 6.75 Gbps (link clock rate of 340MbHz), Supports 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 & 3860x2160p (24/30Hz)
- Compatible with all HDMI source devices, PC monitors, Plasma HD displays, HDTVs and audio receivers or audio amplifiers
- Digital video TMDS formats resolutions up to 4K2K with Deep color 36-bit
- 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 66 ft (20M)
- Digital Audio Support: Dolby TrueHD, Dolby Digital, Dolby Digital Plus/ex, DTS, DTS-HD, DTS-HD Master, DTS-EX, PCM, PCM2, LPCM2
- 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)
- Full function front panel controls: ALL / OFF / EDID / LOCK / RECALL / MEMORY / ENTER
- Supports EDID Modes :
    - Embedded EDID modes: FSS/ H24-3D/ H24-3D-M/ H36-3D/ H36-3D-M/ 4K2K-3D / DVI-D 1920x1200-60Hz
    - External modes: External modes : Learning mode-1 (Single Learning) & Learning mode-2 (Multiple Learning)
- Supports IR remotes and IR extenders for distances up to ~ 984 feet (300M) Maximum
- Supports Universal power adaptor AC100V~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

- **Type of Switcher:** (8) Inputs to (8) Outputs HDMI Matrix Switch
- **HDMI Support:** HDMI 4K2K, 1080p@60Hz, H36-bit Deep color, 3D of HDMI V1.4 formats
- **HDCP / CEC Support:** HDCP 1.3 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)
- **Video Outputs:** 8x HDMI with Booster output 1080p up to ~98 feet (30M) & 4K2K up to ~66 feet (20M)
- **Audio Support:** 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
- **Function Control Keys:** ALL, OFF, RECALL, ENTER, MEMORY, LOCK, EDID, Destination button 1 thru 8, 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:** 38Khz
- **Video Booster:** HDMI output for 1080p with lengths up to 98 feet (30M) / 4K2K up to 66 feet (20M)
- **IR External Distance:** ~984 ft/300M 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 (482x250x44mm)
- **Rack Mount:** 1RU High 19 in Rack Mount #1U-440L (with rack mount)
- **Power Supply:** DC12V, 5A, Power Input : AC 100~240VAC 50/60Hz (universal type supply)
- **Safety Approvals:** CE, FCC, RoHS, REACH
- **Product Weight:** 3.65 Kg/8.15 lb

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

FRONT PANEL
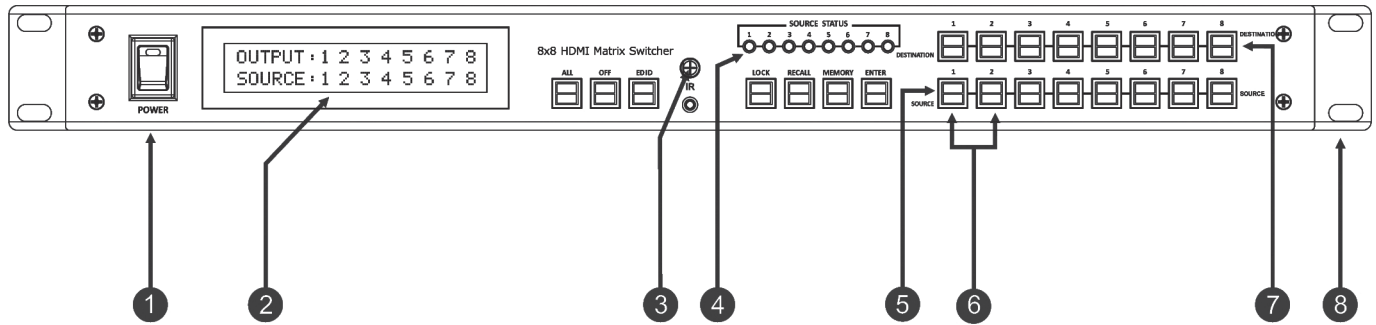
❶ **POWER SWITCH:** The power switch turns the unit on and off. The LED will illuminate red to indicate that the switcher is ON and is receiving power. The Switcher will remember that last state during a power cycle. When power is removed and resorted, the last configuration will be evoked.

❷ **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 and which input (source) is assigned.

❸ **IR SENSOR:** The IR sensor receives IR commands from the supplied remote controller or third party IR emitter.

❹ **INPUT STATUS DISPLAY:** Input sources 1 to 8 LED illuminates blue to indicate that a video source is present on that input.

❺ **SOURCE SELECT BUTTONS:** Separate inputs 1 thru 8 select buttons are provided each source selection.

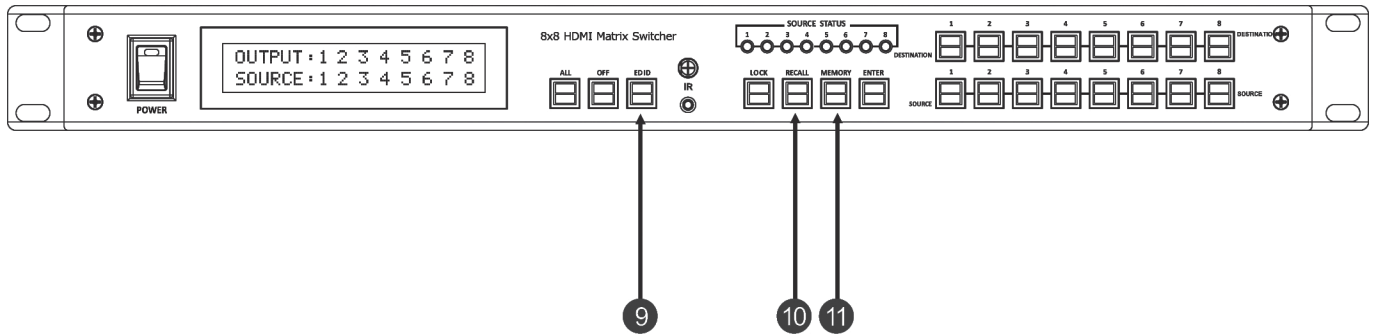❻ **EDID MODE SELECT BUTTONS:** Used to select EDID mode using Input buttons #1 and #2.

❼ **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.

❽ **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 - EDID, MEMORY & RECALL

9 FUNCTION KEY - EDID:

```
   EDID:
3.H24-3D,MULTI AUDIO
```

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.

10 FUNCTION KEY - RECALL:

```
RECALL :1 2 3 4 5 6 7 8
  S-02 :2 2 2 5 5 5 6 6
```

```
RECALL :1 2 3 4 5 6 7 8
  D-02 :8 8 8 8 8 8 8 8
```

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.

Note : Operation will abort if no keys are pressed with 5 seconds.
- Or press **RECALL** again to cancel operation.

11 FUNCTION KEY - MEMORY:

```
MEMORY :1 2 3 4 5 6 7 8
  D-05   2 6 8 1 2 5 1 1
```

```
MEMORY :1 2 3 4 5 6 7 8
  S-05 :1 2 5 5 8 8 1 5
```

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.

FRONT PANEL - ALL, OFF, LOCK & ENTER

⑫ FUNCTION KEY - ALL:

```
OUTPUT:1 2 3 4 5 6 7 8
   ALL:1 1 1 1 1 1 1 1
```
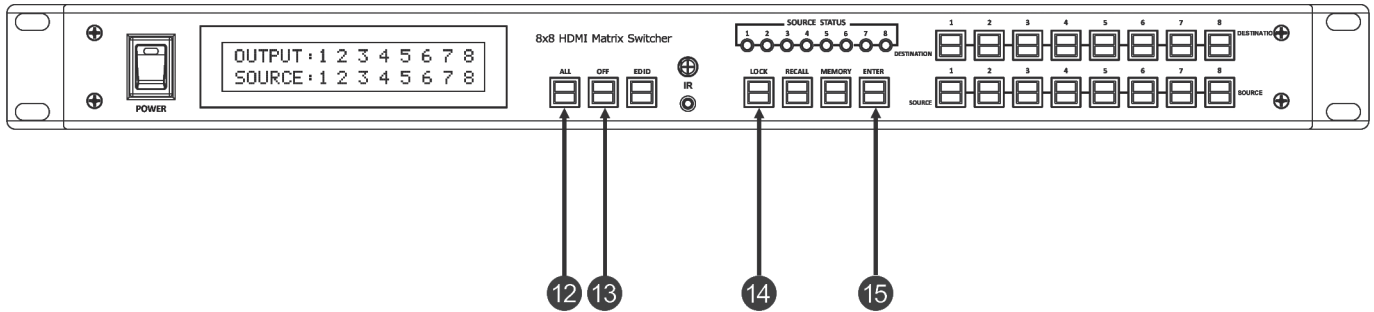
Disables (mutes) video on all destinations OR Selects the same source to all destinations.
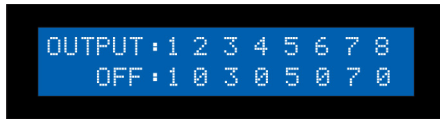***Option 1***
  - Press **ALL** followed by **OFF** button. The display will show " 0 " indicating all destinations have no video selected.
Option 2
  - Press **ALL** followed by Source **1 THRU 8**. The display will show the Source selected.
  - Press **ENTER.** The pre-set source selection will be assigned all destinations.

⑬ FUNCTION KEY - OFF:

```
OUTPUT:1 2 3 4 5 6 7 8
   OFF:1 0 3 0 5 0 7 0
```

Disables (mutes) 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.

⑭ FUNCTION KEY - LOCK:

```
OUTPUT:1 2 3 4 5 6 7 8
  LOCK:1 2 3 4 5 6 7 8
```

  - 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.

⑮ FUNCTION KEY - ENTER: Press **ENTER** to confirm entries.

REAR PANEL
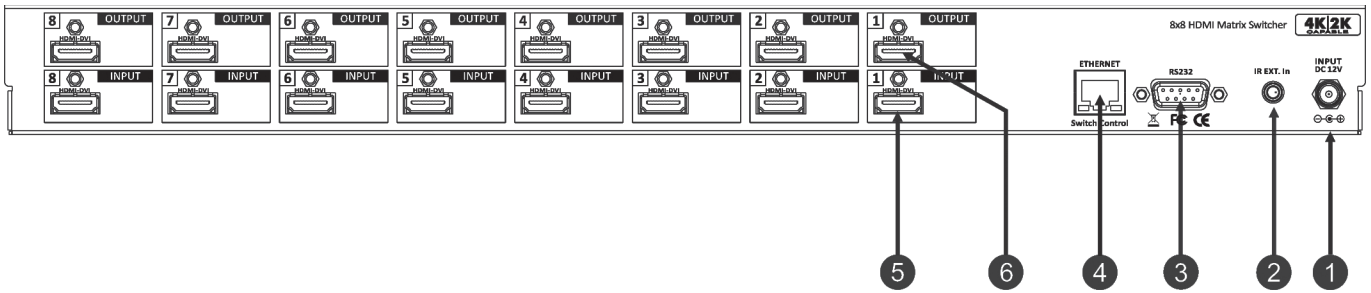
① DC POWER INLET: The switcher is fitted with a DC power plug input connector. Ensure that the plug used is of an approved type and is of sufficient current carrying connector capacity with the correct voltage and connector polarity. 12Volt DC power supply 5A Max (Center pin positive).
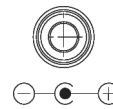
POWER JACK:
DC Jack - Inner OD Ø 2.1mm (+)
Outside OD Ø 5.5mm (GND)
Power input - 12VDC, 5A

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 3.5 mm

③ RS-232 CONNECTION: RS-232 control port allows for interfacing to a PC, such as a computer or touch panel control, to the switcher via this DB-9pin female connector for serial RS-232 control.

RS232
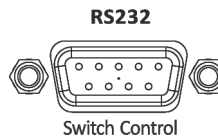
Switch Control

REMOTE PORT:
D-SUB-9pin female connector

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 this RJ-45 female connector to control switcher.

Ethernet
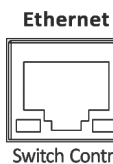
Switch Control

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 sent to the RS-232 port.*

⑤ INPUTS- 1, 2, 3, 4, 5, 6, 7, & 8 HDMI: 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 ISO screws to keep the internal HDMI jack secure. Removing the HDMI screws without installing the ISO screws will void your warranty.

HDMI in

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.

⑥ OUTPUTS- 1, 2, 3, 4, 5, 6, 7 & 8 HDMI: 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 ISO screws to keep the internal HDMI jack secure. Removing the HDMI screws without installing the ISO screws will void your warranty.

HDMI out

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.
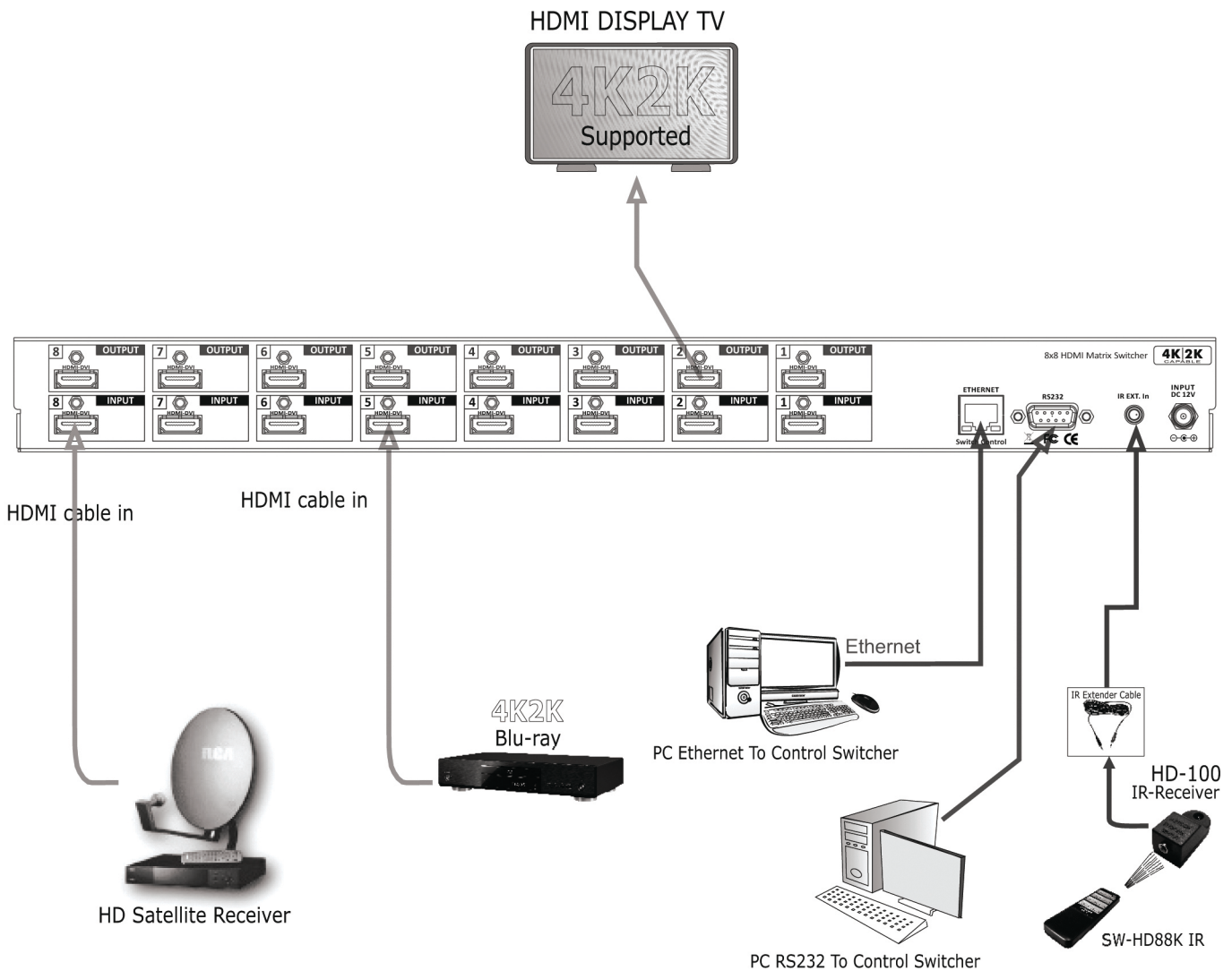
INSTALLING DIAGRAM

Samples Connection:
Using external IR, RS-232 or Ethernet commands to control the HD-88K via PC or HD-100 IR receiver transmit the HD-88K's IR signal.

NOTE:
1. Switcher IR External port : Use HD-100 IR signal Receiver.
2. 4K2K Source: Use 4K2K Blu-ray HD Source.
3. Control Switch via a PC RS-232.
4. Control Switch via a PC Ethernet.

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

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

❶ ❷ SWITCH POWER ON or OFF:
Controller with a separate power ON and OFF
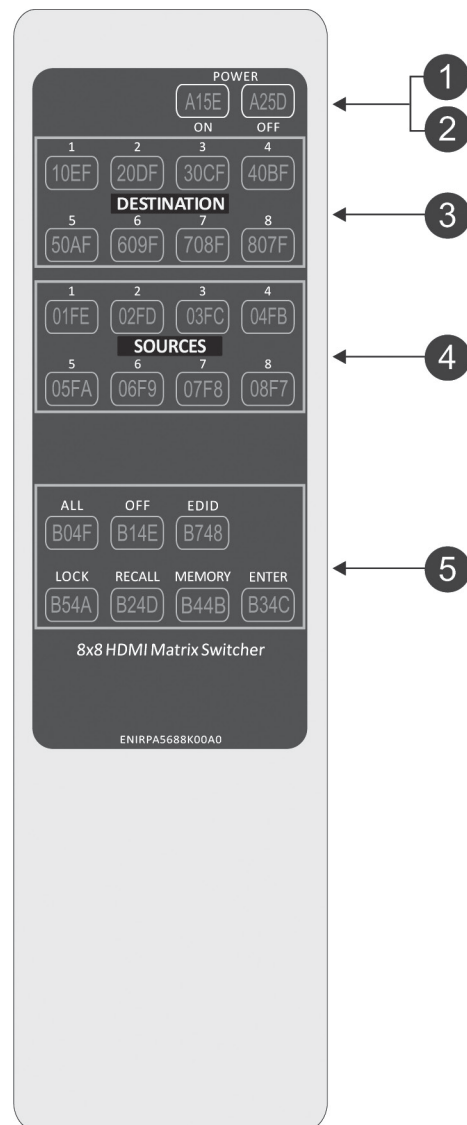
❸ DESTINATION : 1 thru 8 OUTPUT SELECTION:
Press the destination button to select the output display channel.

❹ SOURCE : 1 thru 8 INPUT SOURCE SELECTION:
Press input 1~ 8 sources with selection button

❺ FUNCTION KEY: Function selection buttons

ALL	OFF	EDID	RECALL
MEMORY	ENTER	LOCK	

IR REMOTE CUSTOM AND DATA CODES (NEC STANDARD)

HOW TO SETUP IR CODES :

Model number : HD-88K

CUSTOM CODE :	8A75		ALL:	8A75	B04F
POWER ON:	8A75	A15E	OFF:	8A75	B14E
POWER OFF:	8A75	A25D	EDID:	8A75	B748
			LOCK:	8A75	B54A
			RECALL:	8A75	B24D
			MEMORY:	8A75	B44B
			ENTER:	8A75	B34C

PRESS DESTINATION then - # PRESS SOURCE - #

DESTINATION #1 : 8A75 10EF   SOURCE #1 : 8A75 01FE
DESTINATION #2 : 8A75 20DF   SOURCE #2 : 8A75 02FD
DESTINATION #3 : 8A75 30CF   SOURCE #3 : 8A75 03FC
DESTINATION #4 : 8A75 40BF   SOURCE #4 : 8A75 04FB
DESTINATION #5 : 8A75 50AF   SOURCE #5 : 8A75 05FA
DESTINATION #6 : 8A75 609F   SOURCE #6 : 8A75 06F9
DESTINATION #7 : 8A75 708F   SOURCE #7 : 8A75 07F8
DESTINATION #8 : 8A75 807F   SOURCE #8 : 8A75 08F7

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

The IR Data Code list :
Destination # 1 , Source #1 8A75 10EF 8A75 01FE
Destination # 1 , Source #2 8A75 10EF 8A75 02FD
Destination # 1 , Source #3 8A75 10EF 8A75 03FC
Destination # 1 , Source #4 8A75 10EF 8A75 04FB
Destination # 1 , Source #5 8A75 10EF 8A75 05FA
Destination # 1 , Source #6 8A75 10EF 8A75 06F9
Destination # 1 , Source #7 8A75 10EF 8A75 07F8
Destination # 1 , Source #8 8A75 10EF 8A75 08F7

EDID FUNCTION FOR HDMI MATRIX SWITCHER

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.	

RESET	EDID Return to Factory Default
How to RESET EDID mode Press **EDID > RECALL > ENTER** EDID : RESET EDID EDID : 1.FAST SPEED START	**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.

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. EDID : 2.H24-3D,PCM 2CH Repeatedly pressing the **SOURCE 1** button will cycle **up** thru the options. Repeatedly pressing 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

EDID function : 7x Embedded EDID Modes	
Mode 1. FSS® (Fast Speed Start) EDID: 1.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) EDID: 2.H24-3D,PCM 2CH	Audio Support : PCM 2CH
Mode 3. H24-3D-M (1080p-24bits) EDID: 3.H24-3D,MULTI AUDIO	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) EDID: 4.H36-3D,PCM 2CH	Audio Support : PCM 2CH
Mode 5. H36-3D-M (1080p-36 bits) EDID: 5.H36-3D,MULTI AUDIO	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) EDID: 6.4K2K-3D,PCM 2CH	HDMI Support : 4K2K-3D, PCM 2CH (3860x2160-24/30Hz) Audio Support : PCM 2CH
Mode 7. 1920x1200-60Hz (DVI-D) EDID: 7.DVI-D 1920x1200-60HZ	DVI Support : DVI-D 1920 x 1200 60Hz

EDID LEARNING MODE

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.
SINGLE LEARNING #1 definition	**Single 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 8** > 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.

MULTIPLE LEARNING #2 DEFINITION	Multiple Learning EDID from Destination to Source

1. Switcher will multiple LEARN destination EDID and pass the selected source.

2. To set up multiple learning between a single destination and single source: Press **EDID** button > Press **OFF** button > Press **DESTINATION 1 THRU 8** > Press **ENTER** to confirm. Switcher will learn destination EDID to source device.

3. When the Source has "Learned" the EDID data from a destination, it will save that EDID information into EPROM and the EDID data will not change. To change a saved HDMI EDID information, you have to select a new LEARNING destination to source or Disable the LEARNING.

EDID SINGLE LEARNING MODE 1

LEARNING EDID MODE-#1	Learning EDID from Destination to Source

Single Learning Mode#1 EDID setup
 	
Key Press Sequence:
**EDID > DESTINATION # >
SOURCE # > ENTER**
 	
The EDID for HDMI has been learned from the Destination port to the Source port.
	Press **EDID > DESTINATION > SOURCE > ENTER**
	
	1. Press **EDID** button
	
	`EDID:`
	`3.H24-3D,MULTI AUDIO`
	
	The LCM will show the current EDID status.
	
	2. Press **DESTINATION** button
	
	`EDID:1 2 3 4 5 6 7 8`
	`LEARNING HDMI`
	
	Press **DESTINATION** (#1 thru #8)
	The LCM will show the LEARNING HDMI.
	The switcher will **LEARN** destination HDMI EDID.
	
	3. Press **SOURCE** button
	
	`EDID:1 2 3 4 5 6 7 8`
	`LEARNING HDMI`
	
	Press **SOURCE** (#1 thru #8)
	Switcher will Learn destination HDMI EDID and pass to the selected source.
	
	4. Press **ENTER** button
	
	`OUTPUT:1 2 3 4 5 6 7 8`
	`SOURCE :1 2 3 4 5 6 7 8`
	
	Press **ENTER** to confirm changes.
	The LCM will return to the default screen showing selected matrix 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 SINGLE LEARNING MODE 2

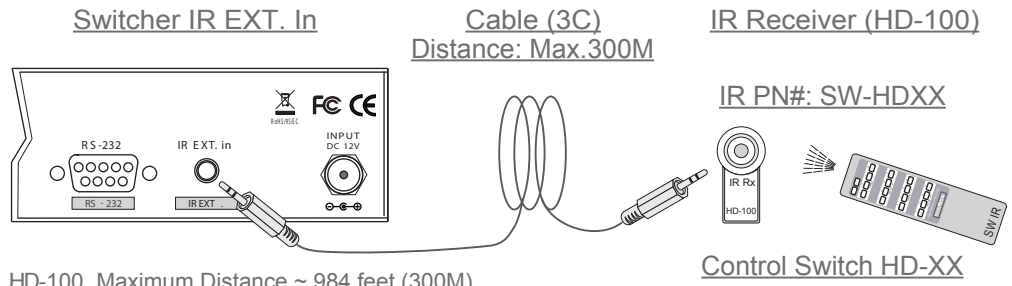| LEARNING EDID #2	Passing EDID from Destination to Source
Multiple Learning mode #2 EDID setup Key Press Sequence: **EDID > OFF >** **DESTINATION #1 thru #8 > ENTER** The EDID for HDMI has been Learned from the Destination port to the Source port.	1. Press **EDID** button EDID: 3.H24-3D,MULTI AUDIO The LCM will show the current EDID status. 2. Press **OFF** button EDID:1 2 3 4 5 6 7 8 LRN M2:L L L L The LCM will show the current EDID LEARN status. 3. Press **DESTINATION** button EDID:1 2 3 4 5 6 7 8 LRN M2:L L L L Press **DESTINATION** (#1 thru #8) The switcher will LEARN destination HDMI EDID and pass to the selected source. The witcher will Enable or Disable HDMI EDID for the selected source. 4. Press **ENTER** button OUTPUT:1 2 3 4 5 6 7 8 SOURCE:1 2 3 4 5 6 7 8 Press **ENTER** to confirm changes. The LCM will return to the default screen showing selected matrix routing status.

NOTE : When the Source has "Learned" the EDID data from a destination, it will save that EDID information into EPROM and the EDID data will not change. To change a saved HDMI EDID information, you have to select a new LEARNING destination to source or Disable the LEARNING.
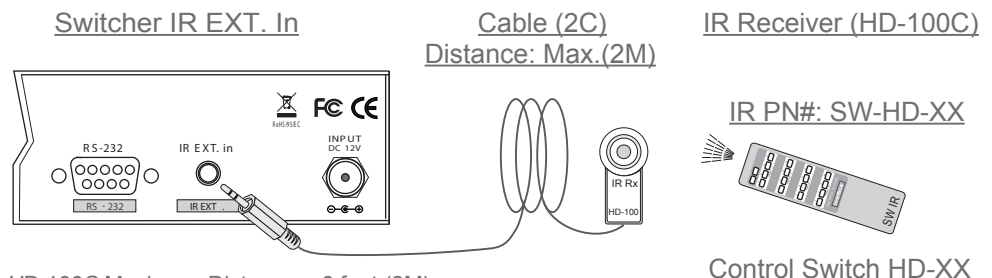
REAR PANEL IR EXTENDER PORT

1. HD-100 IR 300M Receiver

HD-100 IR Receiver Set

Switcher IR EXT. In

Cable (3C)
Distance: Max.300M

IR Receiver (HD-100)

IR PN#: SW-HDXX

Control Switch HD-XX

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

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

2. HD-100C IR 2M Receiver

IR Receiver cable 6ft (2M)

HD-100C IR Receiver Cable

Switcher IR EXT. In

Cable (2C)
Distance: Max.(2M)

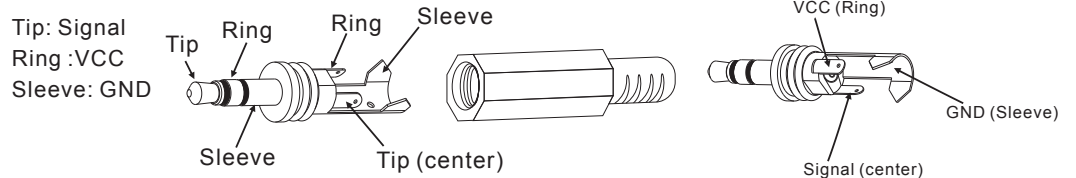IR Receiver (HD-100C)

IR PN#: SW-HD-XX

Control Switch HD-XX

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

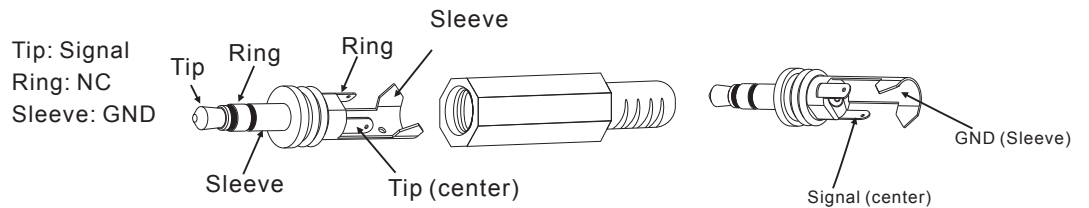The HD-100C IR Receiver will not function on the port "ALL in" Jack.

*** *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 HD-100 compatible

HD-100 IR Receiver Set

Tip: Signal
Ring :VCC
Sleeve: GND

Tip / Ring / Ring / Sleeve / Sleeve / Tip (center)

VCC (Ring) / GND (Sleeve) / Signal (center)

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

Pin configuration for IR Receiver 6 feet (2M) cable such as HD-100C compatible

IR Receiver cable 6ft (2M)

HD-100C IR Receiver Cable

Tip: Signal
Ring: NC
Sleeve: GND

Tip / Ring / Ring / Sleeve / Sleeve / Tip (center)

GND (Sleeve) / Signal (center)

HD-100 Receiver and HD-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.
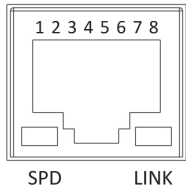
ETHERNET / RS-232 SERIAL INTERFACE CONNECTS A PC OR CONTROL SYSTEM
VERSION COMPATIBLE V2.0

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.etc)
COMMAND EXAMPLE	RESPONSE	DESCRIPTION
Source 001;	Source 001#ok;	Select source number 1

Ethernet

SPD   LINK

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

ETHERNET SERIAL INTERFACE

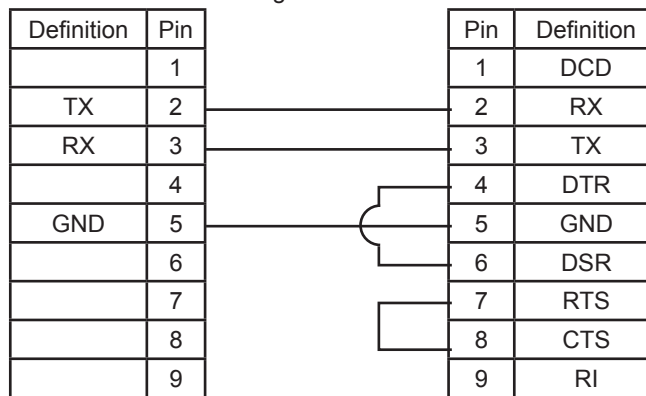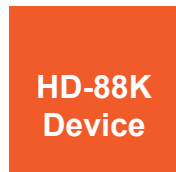| Pin	Ethernet	Reference
1	TXOP	TX +
2	TXON	TX -
3	RXIP	RX +
4	NC	
5	NC	
6	RXIN	RX -
7	NC	
8	GND	

TCP, Port 5000

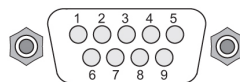## ETHERNET TCP/IP PROTOCOL COMMANDS (ETHERNET / RS-232 CONTROL DRIVER V2.0)

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

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

Definition	Pin		Pin	Definition
	1		1	DCD
TX	2		2	RX
RX	3		3	TX
	4		4	DTR
GND	5		5	GND
	6		6	DSR
	7		7	RTS
	8		8	CTS
	9		9	RI

HD-88K Device ... **PC**

RS-232 Pin Diagram

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

The HD-88K 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.

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