

The HD HDMI Matrix

user's manual



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1 Note

Warm tips:

For the safety of your and the equipment, be sure to read the safety instructions carefully before using the device. If you have questions during use, read this instruction first. There is a detailed description of the equipment operation in the main text. If you still have questions, please contact us, and we will give you a satisfactory reply as soon as possible.

This instruction is subject to version changes without notice.

The Company reserves all rights to this product!

Note 1: This equipment is an information technology equipment, and its radio disturbance characteristics are in accordance with the requirements of Class A information technology equipment.

This is a Class A product. In the living environment, this product may cause radio interference. In this case, the user may be required to take practical measures against the interference.

2 Box list

Project	Name	Number	Unit
1	The HDMI Matrix host	1	QTY
2	DC12V Adapter	1	A
3	user's manual	1	This
4	DB9 needle to the RJ45 conversion head	1	A
5	Network cable (1.5m)	1	root

3 Product profile

The HD HDMI Matrix is a high-performance intelligent matrix switchgear specially designed for the switching of audio and video signals to synchronously switch various audio and video input signals to any channel in the audio and video output channel. Matrix equipment is mainly used in radio and television engineering, multimedia conference hall, large screen display engineering, television teaching, command and control center and other occasions. This product has power off field protection, LCD LCD display, audio and video synchronous switching functions, and RS232 communication interface, can be easily used with personal computer, remote control system or various remote control equipment and control system.

3.1 Product characteristics

- The product adopts pure hardware architecture, no operating system, no hard disk, no maintenance, avoid industrial control system, hardware conflict, blue screen and computer virus intrusion; can be frequently switch and off, start time is less than 1 second; stable and reliable, system data has been cured before the factory, accidental power failure will not cause equipment damage;
- Interface bandwidth of 6.75Gbps, supports maximum resolution: 1920x1200@60Hz;
- Support fast switching operation; support infrared remote control control;
- Supports basic matrix control instructions and basic matrix functions;

- With power loss memory function, with power off site protection function;
- Flexible control mode, with key panel and remote control operation, but also provides a 2-way standard RS-232 communication interface RJ45 port, compatible with various environments, convenient for users to use with various remote control equipment;
- All-metal chassis compatible with standard-inch cabinets.

3.2 Chassis appearance

Front
panel



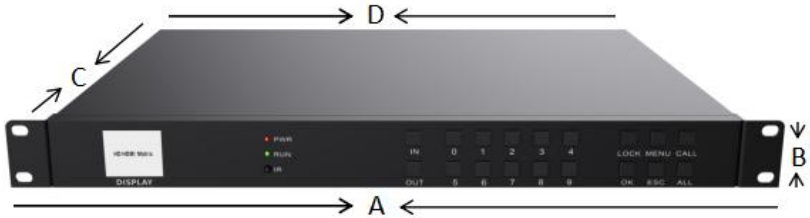
Interfa
ce
surface



Note: The quantity of equipment interfaces shall be subject to physical objects

3.3 Case size

The equipment dimensions are as follows:

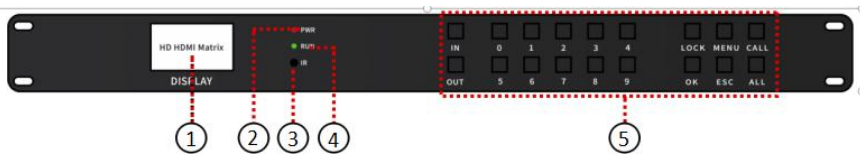


Matrix dimension Table:

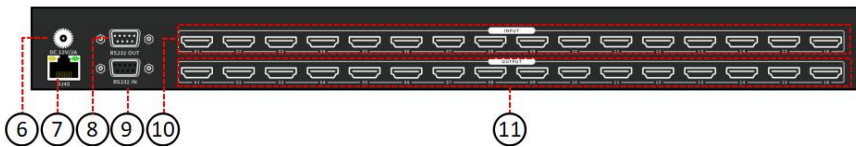
Model	Front panel length A (mm)	Case height of B (mm)	Case Depth C (mm)	Back Width D (mm)
1U	483	45	192	430
2U	483	89	265	440

3.4 Structure description

- Schematic representation of the 7100HD-1616 front panel



- Schematic representation of the 7100HD-1616 rear panel



① LCD display

②power supply indicator lamp

③IR infrared reception window

④Running lights

⑤Front Panel Keys

⑥DC12V power supply interface

⑦RJ45 serial port control input port

⑧RS-232 serial port control output

port

⑨RS-232 serial port control input port ⑩HDMI Input interface area

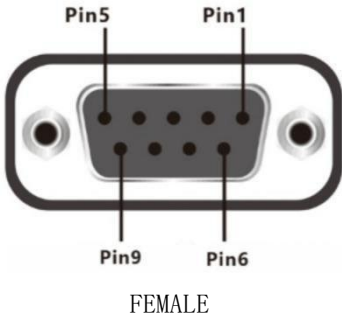
⑪HDMI Output interface area

3.5 Control interface description

- Description of the RS232 control interface

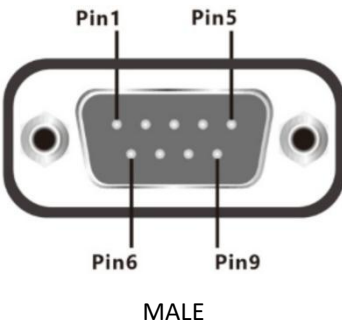
The matrix Switcher provides a 2-way RS-232 serial interface (a DB9 female connector, a DB9 male connector) by which the matrix can be controlled.

Pin description for the RS-232 IN port DB9 master connector:



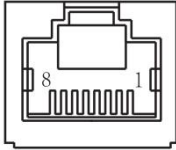
Foot position	Definition	Description
1	-	-
2	TX	The RS-232 protocol is used to send the data
3	RX	The RS-232 protocol is used to receive the data
4	-	-
5	GND	Signal ground
6-9	-	-

Pin description for the RS-232 OUT port DB9 male connector:



Foot position	Definition	Description
1	-	-
2	TX	The RS-232 protocol is used to send the data
3	RX	The RS-232 protocol is used to receive the data
4	-	-
5	GND	Signal ground
6-9	-	-

- **RJ45 serial input pin description:**



Foot position	Definition	Description
1	TX	The RS-232 protocol is used to send the data
2	RX	The RS-232 protocol is used to receive the data
5	GND	Signal ground
Other	-	-

4 Equipment installation

4.1 Installation environment

When installing the equipment, try to avoid strong backlight and backlight scenes. Please keep the ambient light bright and shine well.

4.2 Signal connection

The interface of HD matrix series is divided into signal input and output interface, INPUT part is the input terminal of signal, and OUTPUT part is the signal output terminal. Please use the corresponding cable to connect the input and output equipment of the signal source (e. g. DVD machine, computer, etc.) device to the matrix input terminal (INPUT), and connect the matrix output (OUTPUT) to the input interface of the signal use device (such as LCD screen, projector, television, etc.).

4.3 RS232 communication interface connection

The rear panel of the HD matrix series provides 2 standard RS232 communication interfaces. One RS232 interface of RS232 OUT, multiple matrix can be connected in series, and multiple matrix can be controlled and set using the RS232 interface of only one computer; connect the serial communication port of the computer to the RS-232 communication port of the HDMI matrix host with the RS-232 connection line. After the control software is installed, the matrix can be controlled by the computer. Users can use the software attached to the matrix as computer control software or write the control software, details can refer to the relevant instructions of the user manual control command.

Note: When the Matrix RS-232 ports are connected to a computer or central control, note the line order of TXD and RXD, considering the pin definition of the other party's device.

4.4 Power connection

A standard 220V power supply cable is standard in the matrix package, with the AC220V50/60HZ connector on the back of the bus end and the male end is connected to the 220V 50/60HZ AC power supply. To ensure the safety and normal operation of the equipment, note that single-phase three-line AC power with protected ground must be used.

5 Serial communication protocols

5.1 Control parameters

When using serial port control, set the port rate to 9600, 8-bit data bit, 1-bit stop bit, no check bit.

5.2 Communication Control Protocol

The following protocols support all models including 04, 08 and 16:

Functions	The ASCII instruction	Description
Enter [X] Switch to all of the outputs	[X]All.	Enter the channel number, All." For example, switching Route 2 input to all outputs with the code " 2All."
Enter output Channel one to one	All#.	Set to correspond one-to-one output for all channels.
The Input x1 switches to the output x2, x3, x4...	[x1]V[x2, x3, x4...].	The first [x1] Road is input to the [x2, x3, x4, ...] Road output.
Query all input and output status	Status.	Query the status of all the input and outputs.
Save the situation	Save[x].	Save the current channel status to the [x] data group. [x]=1-32. For example, save the current status as situation number 1 with the code "Save1."
Call the situation	Recall[x].	Restore the [x] data group channel status to the current state. For example, switching the current state to a saved state. The Code is: Recall1.
Query version number	%Version;	Query the device version number

6 Operating instructions

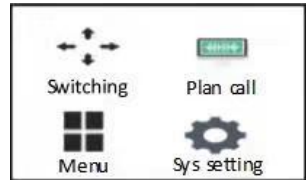
6.1 Key of front panel

- **standby picture**

Press any state "ESC" in the front panel to return to the previous level interface (different model, slightly difference).

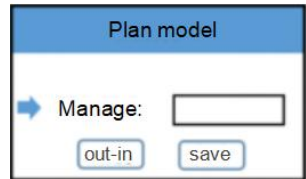
- **The MENU dish menu key**

Press the front panel button in the standby state. "MENU" can enter the main menu page, under which you can choose signal switch, plan call, common functions, and system settings.



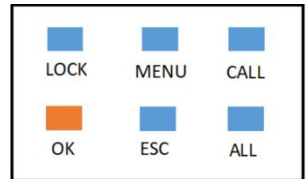
- **CALL function key**

Press the "CALL" key in the front panel to enter the plan management menu in which scenario save and call functions.



- **OK function key**

The most commonly used buttons, selection functions and determining changes are determined by pressing "OK".



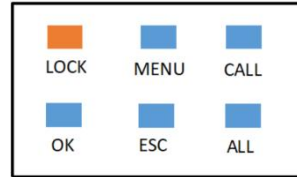
- **ALL function key**

Used to select all output channels when making signal switching.

Signal switching							
IN	01						
OUT	01	02	03	04	05	06	
	07	08					

- **LOCK function key**

In any interface, after “Lock” is pressed, the panel button is disabled, “Lock” is repeatedly pressed, unlock, “Lock” state button produces green light.



- **IN/OUT function key**

For “signal switch”, the input and output channel selection by clicking the IN/OUT button into the signal switch interface, or the “signal switch in the main menu selection” after the input and output channel. (Use with “0-9” digital keys)

Signal switching							
IN	01						
OUT	01	02	03	04	05	06	
	07	08					

7 Technical parameters

7.1 Host model and technical parameters

Model	7100HD-0404	7100HD-0808	7100HD-0816	7100HD-1616
Enter the number of interfaces	4	8	8	16
Number of output interfaces	4	8	16	16
Interface bandwidth	6.75Gbps			
Serial Control Interface	RS-232, 9-pin-D interface and 9-pin-type D interface; RJ45 interface			
Porter Rate and Agreement	Porter rate: 9600, data bit: 8 bits, stop bit: 1, no parity bit			
Serial control port structure	9. Mother D interface: 2=TX, 3=RX, 5=GND 9 Mele D interface: 2=TX, 3=RX, 5=GND			
System working power supply	100VAC~240VAC, 50/60 Hz, International Adaptive Power Supply			
Storage, operating temperature	-20° C ~ +60° C, 0°C-50°C			
Case size	1U			
Product weight	2.50kg			
Case size L*W*H	430x 192x 45mm			
Outsourcing dimension L*W*H	525x 270x 135			
Quality assurance	Free 1-year warranty, lifetime maintenance			

7.2 Input and output port parameters

Technical specifications	Enter the interface	Output interface
Agreement	HDMI1.3a's standard, the HDCP1.3 protocol, and the DVI1.0 protocol	
Interface bandwidth	6.75Gbps, Full Numbers	
Support for maximum resolution	HDPC:1920x1200@60;HDTV:1920x1080@60	
Interface	Route 4 / 8 / 16 HDMI-A interface	Route 4 / 8 / 16 HDMI-A interface
EDID	EDID Read Function	N/A

8 Common faults and maintenance

- When the image of the peripheral display device connected to the matrix overlaps, for example, the projector has an overlapped image, it may be that the projector is not adjusted properly or the quality of the cable is not up to standard. The corresponding button of the projector should be adjusted or the cable should be replaced.

- When there is color loss or no video signal output, it may be that the audio and video interfaces are poorly connected.

- When the remote control cannot control the matrix:

- (1) The battery may be dead, please replace the battery;
- (2) The remote control may be broken, please repair it.

- When the serial port cannot control the matrix, check whether the communication port set by the control software corresponds to the serial port of the connected device; check whether the communication port of the computer is good.

- No corresponding image output during matrix switching:

- (1) Check the corresponding input for a signal.(Oscilloscope or multimeter can be detected.) If there is no signal input, maybe the input line is broken or the connector is loose, and replace the wiring.

(2) checks for the signal at the corresponding output end.(Detection with oscilloscope or multimeter) If there is no signal output, maybe the output line is broken or the connector is loose, replace the wiring.

(3) Check whether the output port number is consistent with the controlled port number.

Do not belong to the above three situations, may be the host internal failure, please send to the professional for maintenance.

- If the POWER lamp is not on and the LCD is not displayed and the operation is not responsive, check the equipment power input for good contact.

- The output image is disturbed, and it is possible that the input and output equipment is not well grounded.

- When unplugging or plugging in the audio and video interface, if you feel obvious static electricity, it is possible that the ground wire of the power supply of the equipment is not well grounded. Please ground it according to the correct method, otherwise it is easy to damage the host and shorten the life of the host.

- LCD displays normal, the communication port has return code, but no image output or no audio output:

(1) Maybe the audio and video interface is loose, just replace it;

(2) The wiring may be broken, just replace it;

(3) The wiring may be broken, just replace it;

(4) If the matrix panel keys, communication port and remote control are not under control, the host interior may be damaged, please give them to professionals for maintenance.