# HDTV1616HDMI

# 4K 60 Hz 16x16 HDMI Matrix Switch with R/L & SPDIF Audio & Atmos

## OPERATION MANUAL





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.

## SURGE PROTECTION DEVICE RECOMMENDED

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

# Catalogue

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## 1. Features

- 16 x HDMI 2.0 input & 16 x HDMI 2.0 output
- HDMI 2.0 version support 4K@60Hz YUV4:4:4, 18Gbps, Deep color 8bit
- HDCP 2.2/1.4 compliant (follow input)
- Supports Dolby Vision, HDR10, HLG
- Supports LPCM up to 7.1, Dolby Atmos and DTS-X Atmos, 192KHz
- Supports 16 x Analog & 16 x SPDIF Audio Matrix
- Supports Analog Audio Volume control from level 1 ~ 10
- Supports Panel Button with LCD, IR Remote control, RS232 Control, TCP/IP Control
- Supports 4K downscale to 1080p (Only for outputs)
- Supports smart EDID management
- Supports FW updating through RS-232 port

## 2. Package Contents

- 1). 1x Main Unit (HDMI Matrix)
- 2). 1x DC 24V/4A power adapter
- 3). 1x Remote control
- 4). 1x IR Receiver cable
- 5). User manual & Command list ( Download in WEB)
- 6). 1x 3Pin Phoenix terminal plug
- 7). 1.5U rack design metal case with 2 mounting ear
- 8). 1x USB2.0 to RS232 upgrade cable

## 3. Specifications

| Operating Temperature Range | -5 to +40°C(23 to +104 °F)                   |
|-----------------------------|--|
| Storage Temperature Range   | -10 to +60°C(-14 to +140 °F)                 |
| Operating Humidity Range    | 5 to 90 % RH (no condensation)               |
| Input Video Signal          | 0.5-1.0 volts p-p                            |
| Input DDC Signal            | 5 volts p-p (TTL)                            |
| Bandwidth                   | 18G  |
| Video Format Sunnantad      | 4K@60Hz,YUV4:4:4 8bit                        |
| Video Format Supported      | 4k@30Hz/1080P/1080i/720P/576P/480P/576i/480i |
| HDCP Compliant              | HDCP 2.2 and HDCP 1.4                        |
| Output Video                | HDMI 2.0 Version                             |
| Audio Format Supported      | LPCM up to 7.1, Dolby Atmos and DTS-X Atmos  |
| Power Consumption           | 80watts (Max.)                               |
| Dimensions                  | L438xW310xH66 mm                             |
| Mass (Main Unit)            | 5.38 KG                                      |

## VESA Resolution List

| Rate | Resolution | Supported | Mark |
|------|------------|-----------|------|
|      | 640×480    | √         |      |
|      | 800×600    | √         |      |
|      | 1024×768   | √         |      |
|      | 1280×768   | √         |      |
|      | 1280×1024  | √         |      |
|      | 1600×1200  | √         |      |
| 60Hz | 1400×1050  | √         |      |
|      | 1920×1080  | √         |      |
|      | 1280×720   | √         |      |
|      | 1360×768   | √         |      |
|      | 1920×1200  | √         |      |

## Testing Resolution List

| Rate             | I/P | Resolution                 | Supported    | Mark |
|------------------|-----|----------------------------|--------------|------|
|                  | I   | 576i                       | ×            |      |
|                  | Р   | 576P                       | $\checkmark$ |      |
| 50Hz             | Р   | 720P / 1080P / 4K2K        | $\checkmark$ |      |
| <u> </u>         | I   | 480i/1080i                 | $\checkmark$ |      |
| 60HZ<br>/59.94Hz | Р   | 480P / 720P / 1080P / 4K2K | $\checkmark$ |      |
| 30/29.97Hz       | Ρ   | 720P / 1080P / 4K2K        | $\checkmark$ |      |
| 24Hz             | Ρ   | 1080P / 4K2K               | $\checkmark$ |      |
| 25Hz             | Р   | 720P / 1080P / 4K2K        | $\checkmark$ |      |

## 4. Panel Descriptions



1) LCD: Showing Matrix information

2 Output button OUT1~16 & Input button IN1~16

(By using UP / DOWN Button to select Output or Input channel)

③ Function button: PRESET; MENU; UP; DOWN; LOCK; ENTER



- (1) Analog and Digital Coaxial Audio output ports x16 (supports Audio Matrix)
- 2 IR EXT
- 3 RS232 port & FW update port
- ④ TCP/IP port
- <sup>(5)</sup> Power On/Off
- <sup>(6)</sup> HDMI inputs x16 & outputs x16

## 5. Wiring Diagram



## 5.1. HDMI Cable Testing:

#### 1080P60Hz YUV 4:4:4

| Input  |              |              |              |     |
|--------|--------------|--------------|--------------|-----|
| Output | 5m           | 8m           | 10m          | 15m |
| 5m     | $\checkmark$ | $\checkmark$ | $\checkmark$ | ×   |
| 8m     | $\checkmark$ | $\checkmark$ | $\checkmark$ | ×   |
| 10m    | $\checkmark$ | $\checkmark$ | $\checkmark$ | ×   |
| 15m    | ×            | ×            | ×            | ×   |

#### 4K30Hz YUV 4:4:4

| Input  |              |              |              |     |
|--------|--------------|--------------|--------------|-----|
| Output | 5m           | 8m           | 10m          | 15m |
| 5m     | $\checkmark$ | $\checkmark$ | $\checkmark$ | ×   |
| 8m     | $\checkmark$ | $\checkmark$ | $\checkmark$ | ×   |
| 10m    | $\checkmark$ | $\checkmark$ | $\checkmark$ | ×   |
| 15m    | ×            | ×            | ×            | ×   |

## 4K60Hz YUV 4:4:4

| Input  |              |              |              |     |
|--------|--------------|--------------|--------------|-----|
| Output | 5m           | 8m           | 10m          | 15m |
| 5m     | $\checkmark$ | $\checkmark$ | $\checkmark$ | ×   |
| 8m     | $\checkmark$ | ×            | ×            | ×   |
| 10m    | $\checkmark$ | ×            | ×            | ×   |
| 15m    | ×            | ×            | ×            | ×   |



## 6. Input / output channel key operation

| Channel                   | Button method   |
|---------------------------|---|
| Any Key                   | The first operation of the button can wake up the screen and do the command   |
| Output 1-16<br>Input 1-16 | <ul> <li>1: By using UP / DOWN Button to select Output or Input channel</li> <li>2: Directly press the number key, such as the output channel 5, press button "5" and press it again to cancel the selection;</li> <li>Long press output to select all channels, and long press again to cancel</li> <li>3: Directly press the number key, such as input channel 1, and select "1" to press (only when the output port is selected, the input channel number will be valid)</li> <li>Long press means all outputs select current input</li> </ul> |
| PRESET                    | Shortcut key for calling the preset   |
| MENU                      | Function Button; Short press to enter the function option or back to previous option  |
| ENTER                     | Confirm Button: enter function selection mode   |
| UP                        | Button for UP option  |
| DOWN                      | Button for NEXT option  |
| LOCK                      | Long press to LOCK(button blue light on), Long press again to UNLOCK (button blue light off)  |

## 7. Video switching operation

## 7.1. Video switch

The signal switch includes 16 free switching channels, which can be configured as input/output according to the requirements, forming a matrix of 1 x  $16 \sim 16 x 1$ , which can switch any input signal to 1 channel output or all channel output.

## The specific operation as follows:

| Output<br>Input | 1<br>1 | 2<br>2 | 3<br>3 | 4<br>4 | 5<br>5 | 6<br>6 | 7<br>7 | 8<br>8 |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Output          | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     |
| Input           | 9      | 10     | 11     | 12     | 13     | 14     | 15     | 16     |

Switch the input to the output

Operation format: "output channel" + "input channel"

For Example: Output port 1 switch to input 5

Operation: Press OUT number "1" + Button "DOWN" + IN number "5" to complete the switch

## 7.2. Video Control

The Main interface have five sub menu

1. Output Setting

Including 17 sub menu (Output1~16, All). Each sub menu with Video and Audio option Video supports switching the channels and turn on/off the video signals

| Main > | > |         |   |
|--------|---|---------|---|
| 1/5    |   | 1/17    |   |
| Output | > | Output1 | > |
| Input  | > | Output2 | > |
| Preset | > | Output3 | > |
| Config | > | Output4 | > |
| Info   | > | Output5 | > |
|        |   |         |   |

| Main > Output<br>1/17<br>Output1<br>Output2<br>Output3<br>Output4<br>Output5 | 1/2<br>> Video ><br>> Audio ><br>><br>>  |
|--|--|
| Main > Output  | <ul> <li>&gt; Output 1 &gt; Video &gt;</li> <li>1/16</li> <li>&gt; Input1 @</li> <li>&gt; Input2</li></ul> |
| 1/2  | Input3   |
| Source   | Input4   |
| Onoff  | Input5   |
| Main > Output  | > Output 1 > Video >   |
| 2/2  | 2/2  |
| Source   | > Off  |
| Onoff  | > On @   |

Audio supports turn on/off HDMI / Analog / Digital, Supports switching and Volume Control

| I | Main  | > Output | > | Output 1 | > Audio | > |
|---|-------|----------|---|----------|---------|---|
|   | 1/3   |          |   | 1/33     |         |   |
|   | Sourc | e        | > | Auto     | @       |   |
| ( | Onoff |          | > | Input1   |         |   |
| ١ | Volum | ne       | > | Input2   |         |   |
|   |       |          |   | Input3   |         |   |
|   |       |          |   | Input4   |         |   |
|   |       |          |   | Input5   |         |   |



#### Analog Volume Control

Default analog volume is in level 5, only support in Analog ports. When input change to digital, will be mute.



#### 2. Input Setting

Including 17 sub menu (Output1~16, All). Each sub menu with Video and EDID option Video supports turning on/off the video signals, and won't effect the Audio extraction

| Main > | Input > |       |
|--------|---------|-------|
| 1/17   | 1/2     | 2     |
| Input1 | > Vic   | deo > |
| Input2 | > ED    | DID > |
| Input3 | >       |       |
| Input4 | >       |       |
| Input5 | >       |       |
|        |         |       |

EDID including 25 options: 5xDefault, 4xUser, 16x Copy Output

| Default-1 | 4096x2160P@60Hz 444 LPCM2.0 | Default-2 | 4096x2160P@60Hz 420 LPCM2.0  |
|-----------|-----------------------------|-----------|------------------------------|
| Default-3 | 4096x2160P@30Hz 444 LPCM2.0 | Default-4 | 1920x1080P@120Hz 444 LPCM2.0 |
| Default 5 | 1920x1200P@60 444 LPCM2.0   |           |                              |

| Main > Intput        | > Intput 1 >  |
|----------------------|---|
| 2/2<br>Video<br>EDID | 1/24<br>> Default1 @<br>> Default2<br>Default3<br>Default4<br>User1 |

## 3. Preset setting

Including Clear, Save, Call option. Total support 8 presets.

| Main > Pres                             | set >                    |         |
|---|--------------------------|---------|
| 1/3<br>Clear<br>Save<br>Call            | 1/1<br>> Scene<br>><br>> | >       |
| Main > Pres                             | set > Save >             | Scene > |
| 1/9<br>Preset 1<br>Preset 2<br>Preset 3 | @                        |         |

## 4. Config setting

Including Network, RS-232, User EDID, System

| Main > Config >   |   |  |
|---|---|--|
| 1/3<br>Network ><br>RS-232 ><br>System >                  | 1/6<br>DHCP<br>IP<br>MASK<br>Gateway<br>Port          | ><br>><br>><br>>   |
| Main > Config >   | • Network >   | DHCP >   |
| 1/2<br>Off @<br>On  | DHCP :<br>IP :<br>MASK :<br>GW :<br>MAC :             | Off<br>192.168.1.168<br>255.255.255.0<br>192.168.1.1<br>4658-4E94-B465 |
| >>Network > IP >  | Part 4 >  |  |
| 169/256<br>164<br>165<br>166<br>167<br><mark>168 (</mark> | DHCP : 0<br>IP : 1<br>MASK : 2<br>GW : 1<br>@ MAC : 4 | Off<br>92.168.1.168<br>255.255.255.0<br>92.168.1.1<br>9658-4E94-B465   |
| >>Network > Port  | >TCP >  |  |
| 8000/65534<br>7996<br>7997<br>7998<br>7999                | DHCP : 0<br>IP : 1<br>MASK : 2<br>GW : 1<br>MAC : 4   | Off<br>92.168.1.168<br>255.255.255.0<br>92.168.1.1<br>1658-4E94-B465   |

| Main > Config > RS-232 > Baud >                           |
|---|
| 6/6<br>9600<br>19200<br>38400<br>57600<br>115200 @        |
| Main > Config > System >                                  |
| 1/2 1/2<br>Reboot > No @<br>Factory > Yes                 |
|   |
| Main > Config > System >                                  |
| 2/2 1/2<br>Reboot > Keep user ><br>Factory > Erease all > |
|   |
| Main > Config > System >                                  |
| 1/2 1/2<br>Keep user > No @<br>Erease all > Yes           |
|   |

\*KEEP USER: restore running info.(include video,Audio,EDID,Setup). \*EREASE ALL: reset all default setup functions.

5. Info setting

Including Input, Output, System, LOG

Input: Showing connection status, input resolution, deep color, audio format and HDCP version etc. Output: Showing TV info.

System: Showing the device info., Versions, Network

LOG: Showing products common information like running time, booting times etc.

| Main >   |  |
|--|--|
| 5/5<br>Output ><br>Input ><br>Preset ><br>Config ><br>Info > | 1/4<br>Input ><br>Output ><br>System ><br>LOG >  |
| Main > Info >  | Input >  |
| 1/16<br>Input 1<br>Input 2<br>Input 3<br>Input 4<br>Input 5  | Link : Unconnect   |
| Main > Info >  | System >   |
| 1/2<br>System<br>Versions                                    | CO. : Model name<br>Type : can be showed here<br>ID : 3CB4B465<br>IP : 192.168.1.168<br>MAC : 4658-4E94-B465 |

| Main > Info > | LOG >                                       |  |
|---------------|---|--|
| 1/1<br>Common | Time :<br>Boot :<br>EXE :<br>ERR :<br>TMP : | 1D 06:32:02<br>52<br>6912<br>0<br>52 ℃ |

## 8. Remote Control Description

- ① Standby Mode
- 2 Lock or Unlock the Panel Button
- (3) Choose output from 1-16
- 4 Choose input from 1-16
- <sup>(5)</sup> Menu (back to previous option) button
- <sup>(6)</sup> UP button
- 0 Down button
- 8 Enter button



## 9. RS232 Command Control

| Default IP Address | 192.168.1.168 |
|--------------------|---------------|
| TCP Port           | 5000          |
| UDP Port           | 5001          |
| Telnet Port        | 23            |
| Baud Rate          | 115200        |

#### \*\*\*Default DHCP OFF!

Control software operation:

The serial control software is illustrated with SSCOM32 as an example. Basic Settings:



Double-click the software in the installation package to run specifically (as shown in figure 1 below) and install the RS232 software on the computer.

Enter the main interface of the software, as shown in the figure below.

| () SSCOM V5.12.1 串口/网络数据调试器,作者:习小适(大虾丁丁),2618058@qq.com. QQ群: 52502 | 449                       |                      |
|---|---------------------------|----------------------|
| 通讯端口 串口设置 显示发送 多字符串 小工具 帮助 回报作者 PCB打样                               |                           |                      |
| Video 01 to 04.   | 多条字符串发送   stm32/GD32 IS   | RP   STC/IAP15 ISP   |
| Video 01 to 06.   | ←拖动加宽 [循环发送 多             | 条帮助 导入ini 300t 🔺     |
| Video 01 to 08.   | HEX 字符串(双击注释)             | 点击发)+ -  es          |
| Video 01 to 09.   | Help?                     | 查询指令 1 1000          |
| Video OI to IU.<br>Video OI to 11                                   | UDI?                      | 字符串1 3 1000          |
| Video O1 to 12.   | V:1>1;                    | 視频切换 2 1000          |
| Video 01 to 13.<br>Video 01 to 14                                   | ▼ P:10/1/1;               | 4元注释 0 1000          |
| Video 01 to 15.   | F                         | 5无注释 0 1000          |
| Video 01 to 16.   | Factory!                  | 6元注释 0 1000          |
| Input to all.   |                           | 7无注释 0 1000          |
| Video O5 to O1.   |                           | 8无注释 0 1000          |
| Video 05 to 02.<br>Video 05 to 03                                   | P:10/10/13;               | 9元注释 0 1000          |
| Video 05 to 04.   |                           | 10 无注释 0 1000        |
| Video 05 to 06.   | P:10/7/4;                 | 11无注释 0 1000         |
| Video 05 to 01.<br>Video 05 to 08.                                  |                           | 12无注释 0 1000         |
| Video OS to O9.   | P:10/10/90;               | 13元注释 0 1000         |
| Video US to 10.<br>Video OS to 11                                   | P:10/10/90;               | 14元注释 0 1000         |
| Video O5 to 12.   | F                         | 15元注释 0 1000         |
| Video 05 to 13.   | P:10/14/0;                | 16元注释 0 1000         |
| Video 05 to 15.   | E                         | 17元注释 0 1000         |
| Video OS to 16.   |                           | 18无注释 0 1000 ,       |
|   |                           | 10-T:+157 In 11000 - |
| <b>清除窗口</b> 打开文件 / / / / / / / / / / / / / / / / / / /              |                           | 扩展 —                 |
| 端口号 COM2 Prolific USB-to-Serie、▼ □ HEX見示 保存動場 □ 接收数据到文件 □ HEX发送     | - 完时发送: 50 ms/次 厂 加       | 回车换行                 |
|   | S末尾hn构验 None ▼            |                      |
| 大阪中山 ひ 2.2000 → 115200 → P:16/8/15;                                 |                           | *                    |
|   |                           |                      |
| 当然就是嘉立创![进入] 友 医  |                           | -                    |
| 欢迎使用专业串口调试工具SSCOM! 作者:习小猛(丁丁),大虾电子网版主 最新版本下载地址: ht                  | tp://www.daxia.com/ 欢迎提出总 | 泊9建议!请将建议发到2618      |
| www.daxia.com S:371 R:4650 COM2 已打开 115200bps,8,1,None,None         |                           | CTS=0 DSR=0 R        |

In the parameter config. area, select the serial port number that the serial line connects to the PC Baud rate: 115200 (default)

Data location: 8.

Stop bit: 1

Check bit: no

Then can input commands in the command input area to control the local or remote receiver

#### Such as changing IP address to be 192.168.1.168: Command is: #network ip=192.168.1.168

#### **Instructions:**

1. All commands start from "#", command head "%c": "d" parameters, "l" lock,

"s" save.

2. The "\_" in the commands cannot omit. Parameter: %d: 0 means ALL.1-x means specified output( $1 \sim 16$ ).

3. Command head & Parameter1 & Parameter2... need to add one "SPACE".

## The following table is only an example. Please refer to the list of instructions.

| Instruction<br>description | instruction | parameter 1 | parameter 2 | parameter 3 |
|----------------------------|-------------|-------------|-------------|-------------|
| Video switch               | #video_%c   | out%d       | in%d        | matrix=%d   |
| Audio Mode Switch          | #audio_%c   | in%d        | /           | enc=%d      |
| EDID                       | #EDID_%c    | In%d        | cfg=%d      | /           |

Please refer to the "Command list" for details.

Example: ALL output switches to input 4.

Operation format: #video\_d out0 matrix=4

Supports multi-Outputs selecting, such as: #video\_d out3,2,1 source=3

#### **TCP/UDP Control**

- $(\underline{1})$  Commands are the same as the RS232 commands
- 2 TCP supports command feedback, UDP only for sending commands, no data feedback
- ③ Can't support PUTTY type's tools

#### **Telnet Control**

- ① "window"+ "R" typing"cmd"+ "Enter"
- 2 Typing: Telnet 192.168.1.168 (According to the correct IP address) + "Enter"
- ③ User: admin; Password: admin
- ④ Command: "#cmd" to get the command list

#### 10. Web Control



1). Connect the Ethernet port of matrix to the Ethernet port on PC by a crossover cable with RJ45 connectors.

2). Configure your PC as follows:

- ① Click Start > Control Panel > Network and Sharing Center.
- 2 Click Change Adapter Settings.
- (3) Highlight the network adapter you want to use to connect to the device and click **Change settings of this connection**.
- 3). The local Area commotion properties window for Network selection appears as below:
- 4). Click the Highlight Internet Protocol Version 4 (TCP/IPv4).
- 5). Click Properties.
- 6). Select Use the following IP Address for static IP addressing and fill in the details.

For TCP/IPv4 you can use any IP address in the range 192.168.1.1 to 192.168.1.255 (excluding 192.168.1.168).

- 7). Click OK.
- 8). Click Close.

|  | Ceneral  |  |
|--|--|--|
| Connect using:   | You can get IP settings assigned                 | automatically if your network supports |
| Intel(R) 82579V Gigabit Network Connection                           | for the appropriate IP settings.                 | leed to ask your retwork auministrator |
| Configure  | Obtain an IP address autor                       | natically                              |
| his connection uses the following items:                             | <ul> <li>Use the following IF address</li> </ul> | 55:                                    |
| Gient for Microsoft Networks      Aicrosoft Network Monitor 3 Driver | IP address:                                      | 192.168.1.2                            |
| 🗹 🜉 QoS Packet Scheduler   | Subnet mask:                                     | 255, 255, 255, 0                       |
| File and Printer Sharing for Microsoft Networks                      | Default externation                              |  |
| Internet Protocol Version 6 (TCP/IPV6)                               | Default gateway:                                 | <u> </u>                               |
| Link-Layer Topology Discovery Mapper I/O Driver                      | Obtain DNS server address                        | automatically                          |
| <ul> <li>Link-Layer Topology Discovery Responder</li> </ul>          | Use the following DNS serv                       | er addresses:                          |
| Install Uninstall Properties   | Preferred DNS server:                            |  |
| Description  | Alternate DNS server:                            |  |
| that provides communication across diverse interconnected            |  |  |
| networks.  | Validate settings upon exit                      | Advanced                               |

## **10.1. Enter Web and Control**

Enter the default IP address of the matrix: 192.168.1.168 (Not available when DHCP ON) Account: admin Password: admin ( If forgetting the account information, sending command: "#factory1" back to the default account information)

| LOG IN - |  |
|----------|--|
| admin    |  |
| P        |  |
| Log in   |  |
|          |  |

## 10.2. Status interface:

## Input Info & Output Info & Preset Info:

| Status        | Video Switching |            |                | Presets    |          |               |        |
|---------------|-----------------|------------|----------------|------------|----------|---------------|--------|
| Video         | Output          | Current In | iput           | Name       | Activate | Save          | Clear  |
| Million:      | OUTPUT 1        | INPUT 1    | 7              | Preset1    | Save     | Carl          | Clear  |
| Input         | OUTPUT 2        | INPUT 1    | 4              | P          |          | Sector Sector |        |
|               | OUTPUT 3        | INPUT 1    | ~              | Presetz    | 2210     | 1040          | Circle |
| Output        | OUTPUT 4        | INPUT 1    | - <del>-</del> | Preset3    | Save     | (Certin)      | Chine  |
|               | OUTPUT 5        | INPUT 1    | -              | Preset4    | Save     | C.O.          | Clear  |
| Network       | OUTPUT 6        | INPUT 1    | 2.94           | Relation - |          |               |        |
| 1979-772.0984 | OUTPUT 7        | INPUT 1    |                | PresetS    | Save     | Call .        | Oeer   |
| System        | OUTPUT 8        | INPUT 1    | 1              | Presető    | Sam      | Call          | Clear  |
|               | OUTPUT 9        | INPUT 1    | ~              | Preset7    | Save     | 100           | Clear  |
|               | OUTPUT 10       | INPUT 1    |                |            |          |               |        |
|               | OUTPUT 11       | INPUT 1    | -              | Presetä    | Save     | Call          | Chear  |
|               | OUTPUT 12       | INPUT 1    | 1              |            |          |               |        |
|               | OUTPUT 13       | INPUT 1    | . 9            |            |          |               |        |
|               | OUTPUT 14       | INPUT 1    | -              |            |          |               |        |
|               | OUTPUT 15       | INPUT 1    | 3              |            |          |               |        |
|               | OUTPUT 16       | INPUT 1    | -              |            |          |               |        |
|               | All Output      | INPUT 1    | 4              |            |          |               |        |

## 10.3. "Input" interface:

Rename: Double click to revise the input port's name, max 15 characters

Active: Connecting information

EDID: For setting and checking Default EDID, Copy output and User EDID information USER EDID: Supports saving Default or Output's EDID to User EDID, and using the BIN documents upload to the User EDID

|         | Input Settings |        |          |        |           |    |
|---------|----------------|--------|----------|--------|-----------|----|
| Status  | Input          | Active | Rename   | Video  | EDID      |    |
|         | HDMI 1         |        | input 1  | OFF ON | Default1: | 12 |
| Video   | HDMI 2         |        | input 2  | DRF ON | Default1: | 24 |
| Input   | HDMI 3         |        | Input 1  | OFF ON | Default1: | 8  |
| Output  | HDMI 4         | 0      | input 4  | OFF ON | Default1: | 3  |
| ouput   | HDMI 5         |        | loput 5  | OFF ON | Default1: |    |
| Network | HDMI 6         |        | input 6  | DIF ON | Default1: | 9  |
| System  | HDML7          |        | liquit 7 | OSE ON | Default1: | 1  |
|         | HDMI 8         | 0      | imput 8  | OFF ON | Default1: | 8  |
|         | HDMI 9         |        | input 9  | OTT ON | Default1: | 22 |
|         | HDML10         | +      | input 10 | OFF ON | Default1: | 2  |
|         | HDMI 11        | 0      | input 11 | OET ON | Default1: | 9  |
|         | HDMI 12        | 0      | input 12 | OFF ON | Default1: |    |
|         | HDMI 13        |        | input 13 | OFF ON | Default1: |    |
|         | HDMI 14        |        | input 14 | OFF ON | Default1: |    |
|         | HDMI 15        |        | input 15 | OFF ON | Default1: | 3  |
|         | HDMI 16        |        | input 16 | OFF ON | Default1: |    |

## **10.4. "Output" interface:**

Rename: Double click to revise the output port's name, max 15 characters Active: Connecting information

Stream: Turn On / off the output signal, won't effect the audio extraction function

|         | Output Settings |        |           |         |        |           |      |
|---------|-----------------|--------|-----------|---------|--------|-----------|------|
| Status  | Output          | Active | Rename    | Video   | Audio  | Dec Src   |      |
| Status  | Output f        |        | output 1  | OFF ON  | OFF ON | Auto HDMI |      |
| Video   | Output 2        | 0      | output 2  | OFF ON  | DFF ON | Auto HDMI | - 3  |
| Input   | Output 3        | 0      | output 3  | OFF ON  | OFF ON | Auto HDMI | 19   |
| Ontrol  | Output 4        | 0      | output 4  | 1017 CN | OFF ON | Auto HDMI | 19   |
| Compan  | Output 5        |        | output 5  | OFF ON  | OFF ON | Auto HDMI | - 3  |
| Network | Output 6        |        | output 6  | off on  | OFF ON | Auto HDMI | 3    |
| System  | Cutput 7        |        | output 7  | OFF ON  | OFF ON | Auto HDMI | - 24 |
|         | Output 8        | •      | output 8  | OFF ON  | OFF ON | Auto HDMI |      |
|         | Output 9        | •      | output 9  | OFF ON  | OFF ON | Auto HDMI |      |
|         | Output 10       | •      | output 10 | OFF ON  | OFF ON | Auto HDMI |      |
|         | Output 11       | •      | output 11 | OFF ON  | OFF ON | Auto HDMI |      |
|         | Output 12       | •      | output 12 | OFF ON  | OFF ON | Auto HDMI |      |
|         | Output 13       | 0      | output 13 | OFF ON  | OFF ON | Auto HDMI |      |
|         | Output 14       | •      | output 14 | OFF ON  | OFF ON | Auto HDMI |      |
|         | Output 15       | •      | output 15 | OFF ON  | OFF ON | Auto HDMI |      |
|         | Output 16       | •      | output 16 | OFF ON  | OFF ON | Auto HDMI |      |

## 10.5. "Network" interface:

For IP Setting and Web Login Settings, including turn on/off the DHCP and Change user name and PW here.

| Status  | IP Settings  |              |               |  |
|---------|--|--------------|---------------|--|
| Video   | DHCP   | OFF ON       |               |  |
| Input   | IP Address   |              | Gateway       |  |
| Output  | Subnet Mask  |              | TCP Port      |  |
| Network | Subnet Mask  |              | UDP Port      |  |
| System  | Web Login Settings<br>User Name<br>New Password<br>Confirm the<br>Password |              |               |  |
|         |  | fort Nerpeon | Notautis Save |  |
|         |  |              |               |  |

## 10.6. "System" interface:

| Output     Network       Slystem     Apply       Reboot     Apply | Status<br>Video<br>Input    | Serial Baud Rate                        |       |
|---|-----------------------------|---|-------|
| Reboot  | Output<br>Network<br>System | 4890 9000 19200 29000 19200 29000 19200 | Asstr |
|   |                             | Reboot                                  | Apply |

## **11. FW UPGRADE**

First upgrade MCU (layer of application) and then upgrade CPLD, finally upgrade MCU,HTML, (CPLD = C0, HTML = F0, MCU = A1 all support to use USB Micro port for upgrading)

## **MCU Upgrade:**

Open the software UART\_ISP\_V1.6.exe on PC, select the correct port and baud rate 115200, enter "A1" in Port, then select the path of the program in PATH (XXX. Bin), and click UPDATA to complete the upgrade

| MCU Fw encrypt<br>COM   |   | BAUD     |
|---|---|----------|
| COM21 USB-SERIAL CH340  | ~ | 115200 \ |
| PORT  |   |          |
| Al  |   | REFRESH  |
| PATH  |   |          |
|   |   |          |
|   |   |          |
|   |   | UPDATA   |
|   |   |          |
|   |   |          |
| 00000 MCU fw is encrypted   |   | ^        |
| 00000 MCU fw is encrypted<br>File start : 0x3000  |   | ^        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlAck link ok !   |   | ^        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlAck link ok !<br>Send eras  |   | ^        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlAck link ok !<br>Send eras<br>Ack eras ok !   |   | ^        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlRok link ok !<br>Send eras<br>Ack eras ok !<br>Send data  |   | Â        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlAck link ok !<br>Send eras<br>Ack eras ok !<br>Send data<br>Ack data ok !   |   | ^        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlAck link ok !<br>Send eras<br>Ack eras ok !<br>Send data<br>Ack data ok !<br>Send stop  |   | Â        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlAck link ok !<br>Send eras<br>Ack eras ok !<br>Send data<br>Ack data ok !<br>Send stop<br>Ack stop ok !   |   | Ŷ        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlAck link ok !<br>Send eras<br>Ack eras ok !<br>Send data<br>Ack data ok !<br>Send stop<br>Ack stop ok !<br>Spend time : 38546 ms                      |   | Ŷ        |
| 00000 MCU fw is encrypted<br>File start : 0x3000<br>Send link AlAck link ok !<br>Send etas<br>Ack eras ok !<br>Send data<br>Ack data ok !<br>Send stop<br>Ack stop ok !<br>Spend time : 30546 ms<br>### Succeed ! ### |   | ^        |

## HTML (WEB GUI) Upgrade:

Open the software UART\_ISP\_V1.6.exe on PC, select the correct port and baud rate 115200, enter "F0" in Port, then select the path of the program (XXX. HTML) in PATH, and click UPDATA to complete the upgrade

| UART_ISP V1.6   |                                  | -10 |          |
|---|----------------------------------|-----|----------|
| COM   | HTML Fw                          |     | BAUD     |
| COM21 USB-SERIA   | AL CH340                         | ~   | 115200 ~ |
| PORT  |                                  |     |          |
| FO  |                                  |     | REFRESH  |
| PATH  |                                  |     |          |
| E.  |                                  | -   |          |
|   |                                  |     | UPDATA   |
| File size : 87<br>File crc : 881<br>Send link F0<br>Send eras<br>Ack eras ok !<br>Send data | 7,198<br>046A2A<br>Ack link ok ! |     | ^        |
| Ack data ok !<br>Send stop<br>Ack stop ok !<br>Spend time : 10<br>### Succeed !             | )781 ms                          |     |          |
|   | ***                              |     |          |

#### MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner of benzine to clean this unit.

#### **PRODUCT SERVICE**

(1) Damage requiring service:

The unit should be serviced by qualified service personnel if:

- (a) The DC power supply cord or AC adaptor has been damaged;
- (b) Objects or liquids have gotten into the unit;
- (c) The unit has been exposed to rain;
- (d) The unit does not operate normally or exhibits a marked change in performance;

The unit has been dropped or the cabinet damaged.

(2) Servicing Personnel: Do not attempt to service the unit beyond that described in these operating instructions.Refer all other servicing to authorized servicing personnel.

(3) **Replacement parts:** When parts need replacing ensure the servicer uses parts

specified by the manufacturer or parts that have the same characteristics as the

original parts. Unauthorized substitutes may result in fire, electric shock, or other Hazards.

(4) **Safety check:** After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

## WARRANTY

If your product does not work properly because of a defect in materials or workmanship, our Company (referred to as "the warrantor") will, for the length of the period indicated as below, (Parts(1)Year, Labor(90) Days) which starts with the date of original purchase ("Limited

Warranty period"), at its option either(a) repair your product with new or refurbished parts, or (b) replace it with a new of a refurbished product. The decision to repair or replace will be made by the warrantor.

During the "Labor" Limited Warranty period there will be no charge for labor.

During the "Parts" warranty period, there will be no charge for parts. You must mail-in your product during the warranty period. This Limited Warranty is extended only to the original purchaser and only covers product purchased as new. A purchase receipt or other proof of original purchase date is required for Limited Warranty service.