



J-TECH DIGITAL[®]

USER MANUAL



MULTI-INPUT 4X1 HDMI & HDBASET SWITCH
JTD-741 | JTECH-PS42B

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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.

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1. Features

- Incorporates HDBaseT extension technology
- HDMI 2.0 Compliant | Supports 4K@60Hz YUV4:4:4 HDR10
- Input Ports: 1 x VGA | 1 x Type-C | 2 x HDMI
- Output Ports: 1 x HDMI | 1 x HDBT (*simultaneous*)
- Transmit 1080p@60Hz 230FT | 4K@60Hz 130FT
- HDCP 1.4 / 2.2 Compliant
- Audio Sampling Rate up to 192KHz (*supports max 7.1CH*)
- Supports Analog Audio Embedding | Mic Input
- Supports Analog/SPDIF Audio Extraction | Analog Output supports PCM 2.0 | SPDIF Output supports Dolby/DTS 5.1
- Wide-band Bi-Directional IR Pass-Thru (38-56KHz)
- Supports RS232 Pass-Thru
- Supports Firmware Upgrades via Micro-USB
- Support Panel Button with LCD, IR Routing, RS232, TCP/IP, PC Tool Control
- Support POC (*receiver powered by HDBaseT switch*)

2. Package Contents

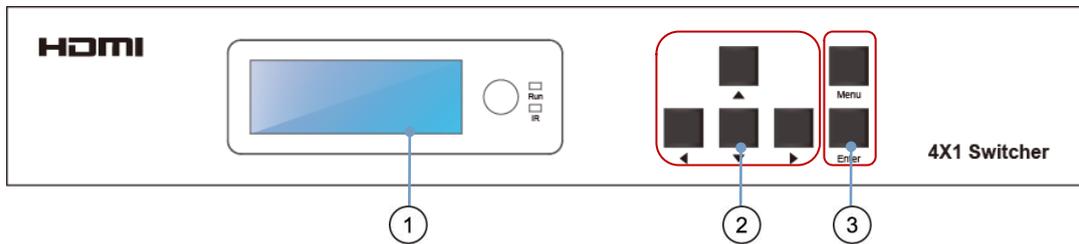
- (1) x J-Tech Digital JTECH-PS42B
- (1) x Power Supply DC24V 1A
- (1) x Remote Control
- (2) x IR Transmitter Cables | (3) x Wide-Band IR Receiver Cables
- (1) x CD for Control Software & User Manual
- (1) x HDBaseT Receiver

3. Specifications

Operating Temperature Range	23° to 104°F
Storage Temperature Range	14° to 140°F
Operating Humidity Range	5 to 90 % RH (<i>no condensation</i>)
Input Video Signal	0.5-1.0 volts p-p
Input DDC Signal	5 volts p-p (TTL)
Bandwidth	18 Gbps
Video Format Supported	4K@60Hz YUV4:4:4 4K@30Hz/1080P/1080i/720P/576P/480P
HDCP Compliant	HDCP 2.2 and HDCP 1.4
Output Video	HDMI 2.0 and HDMI 1.4 (<i>over HDBaseT and HDMI</i>)
Audio Format Supported	PCM 2.0 Dolby 5.1 DTS 5.1
Maximum Transmission Distance	1080p 230FT 4K 130FT (<i>HDBT output</i>) 1080p 30FT 4K 15FT (<i>HDMI output</i>)
Power Consumption	16.5 watts (<i>max</i>)
Dimensions (LxWxH)	9.25 in x 5.39 in x 1.54 in
Mass (Main Unit)	2.6 LBs

4. Panel Descriptions

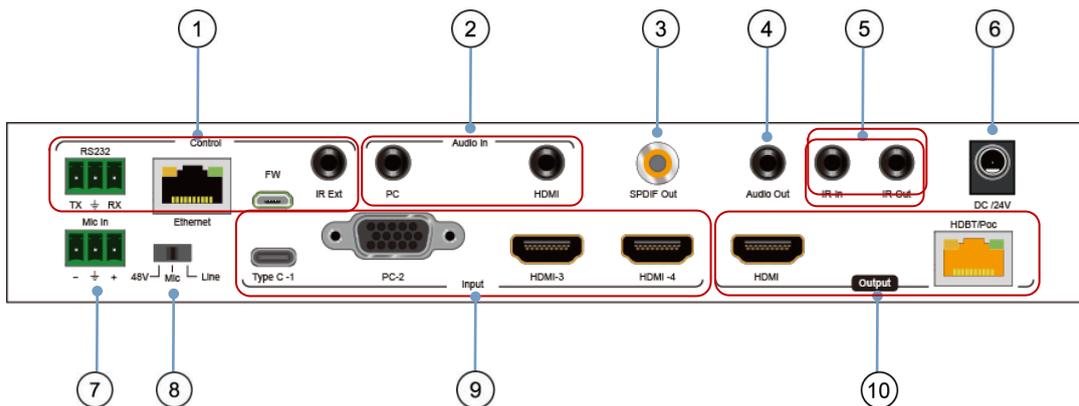
Front Panel



- ① **LCD:** Shows JTECH-PS42B Switch Information ② **Directional Buttons:** Up | Down | Left | Right
 ③ **Function Buttons:** Menu | Enter

◀	Left Guide button	Short Press: Left/Right choose function option in submenu. In MIC input VOL Analog Out VOL Adjustment: left (-) right (+)
▶	Right Guide button	
▲	Up Guide button	
▼	Down Guide button	Short Press: Up/Down choose function option in submenu
Enter	Confirm button	Short Press: Enter submenu / back to last status
Menu	Main Menu	Short Press: Display / direct back to main Menu

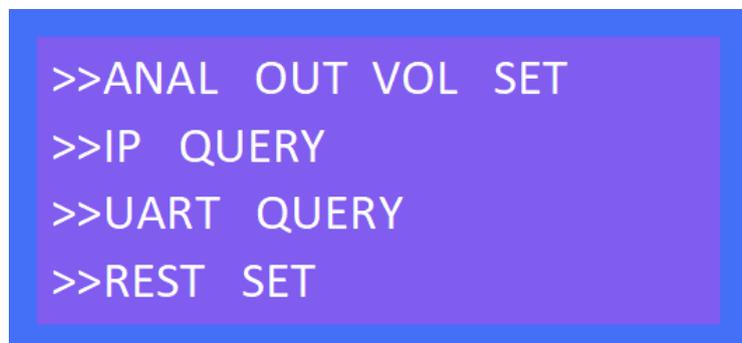
Rear Panel



- ① **RS232:** RS232 pass-thru | RS232 for PC App control; **Ethernet:** IP/Web control;
FW: Micro-USB port for firmware update; **IR Ext:** IR Extender cable for JTECH-PS42B switch control
- ② **PC:** Audio in Port (VGA input only); **HDMI:** Analog PCM2.0 Audio Embed Port
- ③ Coaxial SPDIF Out (Dolby, DTS, Max 5.1CH)
- ④ Analog PCM 2.0 Audio Out
- ⑤ IR In / IR Out for Bi-Directional IR Pass-thru
- ⑥ DC 24V/1A Power Supply
- ⑦ **MIC In:** For 48V microphone or MIC device (MIC mode available on HDMI/Type C/VGA)
- ⑧ **MIC Switch:** Left position for 48v phantom power microphone mode;
 Middle position for MIC mode; Right position for line mode (Analog PCM2.0 audio embedded)
- ⑨ **Video Input:** TypeC-1: USB-C in | PC-2: VGA in | **HDMI in:** HDMI-3/HDMI-4
- ⑩ **Video Output:** HDMI: HDMI out; **HDBT/POC:** HDBT out
- ***Note: When you need to use MIC in or Analog audio embed function, please set the audio input mode for “Analog” via front panel/PC tool/Web GUI first. Then move the MIC switch to choose the audio format(48v/Mic/Line).

4.1 Menu Display

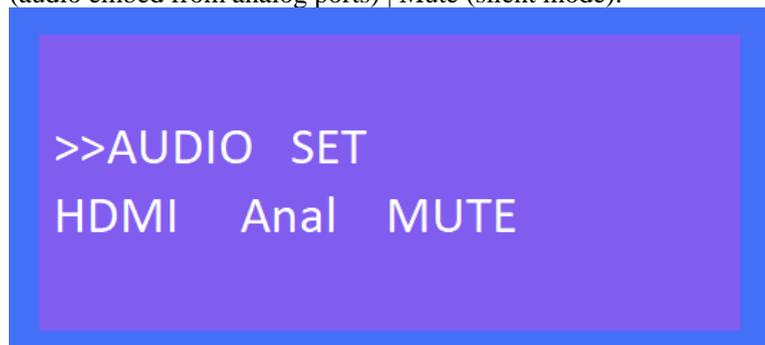
Press “Menu” button to access Main Menu: VIDEO SET | AUDIO SET | EDID SET | MIC IN VOL SET | ANAL OUT VOL SET | IP QUERY | UART QUERY | REST SET. Press any button to illuminate front LED screen. LED screen will auto-dim after 20 seconds with no user input.



1). **VIDEO SET:** For input selection, highlight VIDEO SET submenu and press the “Enter” button. Press “Left/Right” buttons to select desired input signal and press the “Enter” button again to apply change and automatically navigate back to Main Menu.



2). **AUDIO SET:** For audio input selection, highlight AUDIO SET submenu and press the “Enter” button. Press “Left/Right” buttons to select desired audio input port and press the “Enter” button again to apply change and automatically navigate back to Main Menu. ***Supports 3 Modes** – HDMI (audio from HDMI source) | Anal (audio embed from analog ports) | Mute (silent mode).



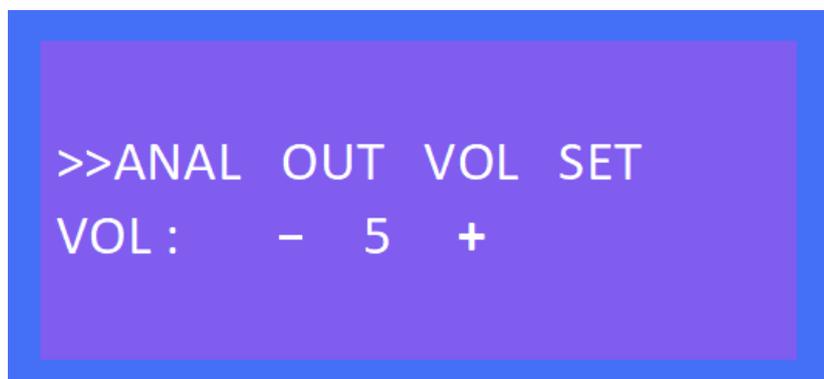
3). **EDID SET:** To set EDID, highlight EDID SET submenu and press the “Enter” button. Press “Left/Right” buttons to select desired EDID mode. Press “Enter” button again to apply change and automatically navigate back to Main Menu. ***Support 4 Modes** - 4K60(Default) | 1080p(Default) | COPY HDMI | COPY HDBT.



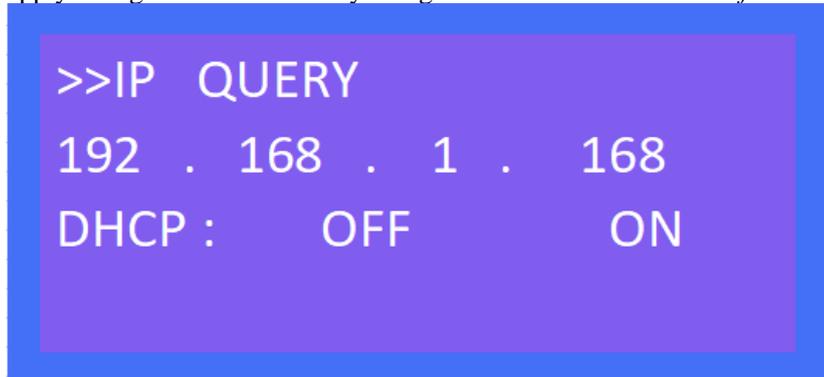
4). **MIC IN VOL SET:** To set Mic input volume, highlight MIC IN VOL SET submenu and press the “Enter” button for volume control mode. Press left button to decrease volume and press right button to increase volume. Press “Enter” button again to apply change and automatically navigate back to Main Menu. *Volume Range: 0 – 10 (max)*



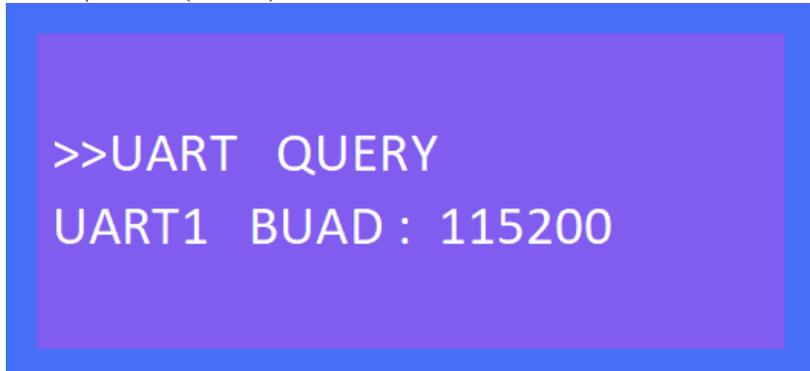
5). **ANAL OUT VOL SET:** To set Analog output volume, highlight ANAL OUT VOL SET submenu and press “Enter” button for volume control mode. Press left button to decrease volume and press right button to increase volume. Press “Enter” button again to apply change and automatically navigate back to Main menu. *Volume Range: 0 - 10 (max)*



6). **IP QUERY:** Press the “Left/Right” buttons to select desired DHCP status. Short press “Enter” button to apply change and automatically navigate back to Main Menu. *Default IP Address 192.168.1.168.*



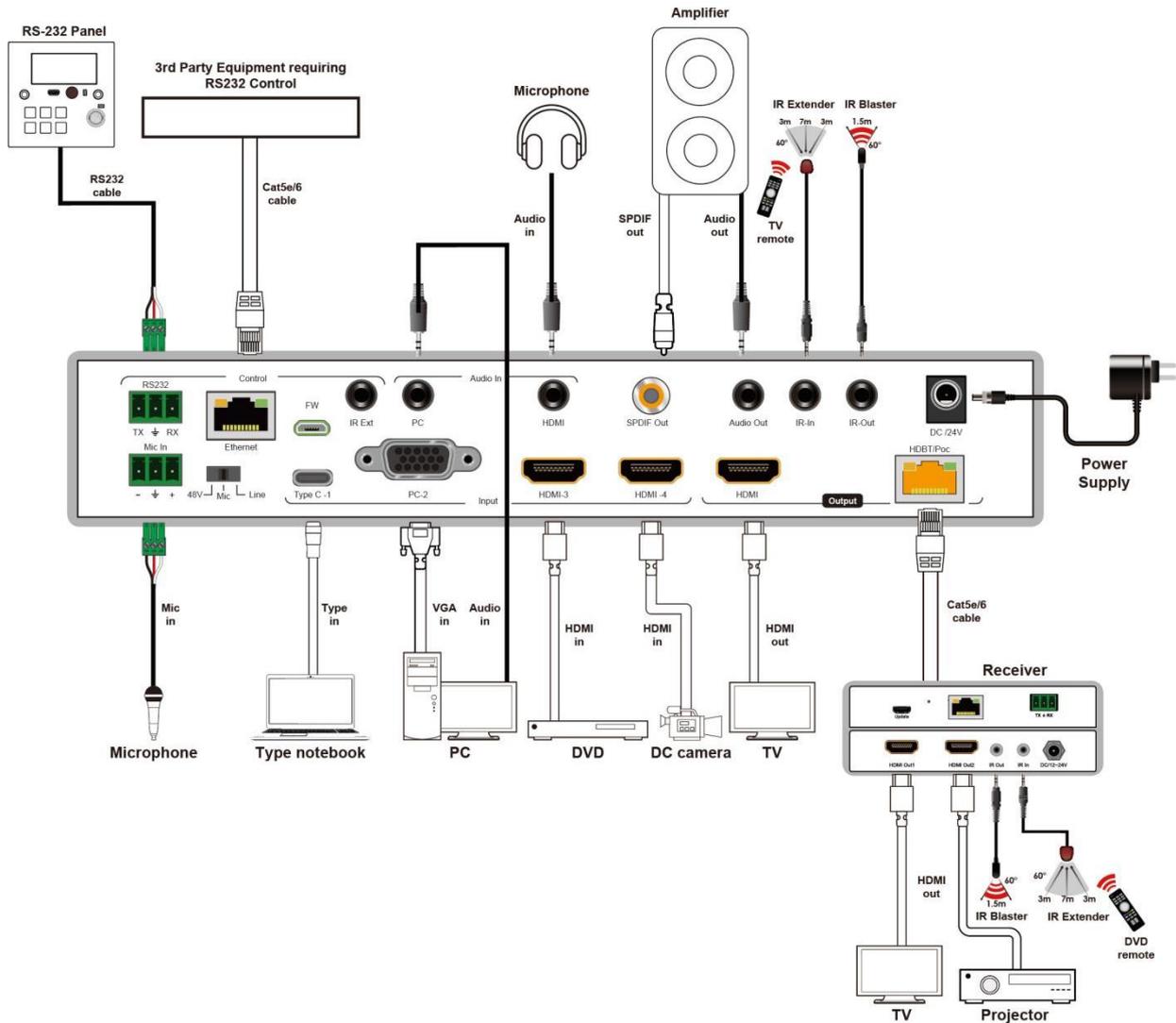
7). **UART QUERY:** Press “Enter” button to check current baud rate. Device support 9600 | 19200 | 38400 | 57600 | 115200(default). *Note – **You cannot set baud rate via front panel.**



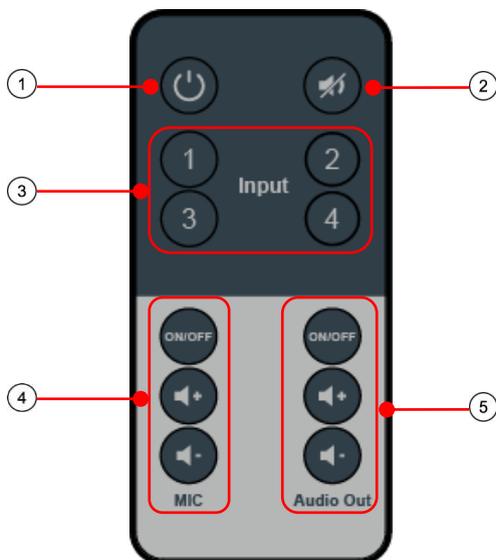
8). **SYSTEM RESET:** Short press “Enter” button to restore factory default settings.



5. Application Diagram



6. Remote Control Description



- ① Power On / Standby Mode
- ② Mute
- ③ Video Input: “1” for TypeC-1
“2” for PC-2(VGA)
“3” for HDMI-3
“4” for HDMI-4
- ④ MIC In (ON/OFF) / VOL control
- ⑤ Analog Audio Out (ON/OFF) / VOL control

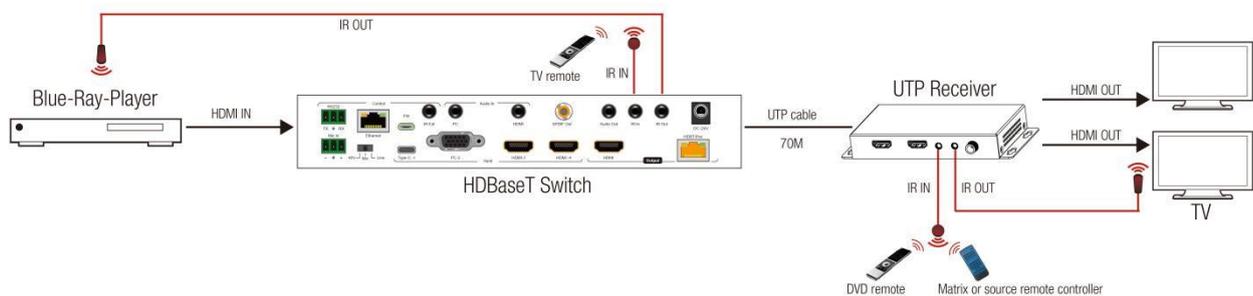
7. IR System

The JTECH-PS42B switch can pass an IR signal through the IR system to the HDMI source or pass the IR signal from the HDMI source's remote to the HDMI sink.



IR Routing Methods:

- 1) Connect IR-RX cable to HDBaseT Receiver's IR-In port to control the JTECH-PS42B switch via remote from extended location.
- 2) Connect IR-RX Cable to JTECH-PS42B's IR-In Port, connect IR-TX cable to HDBaseT receiver's IR-Out port to control TV via remote from JTECH-PS42B location.
- 3) Connect IR-RX cable to JTECH-PS42B's IR-EXT port to control the JTECH-PS42B switch via remote at the JTECH-PS42B location.



8. PC Tool Control

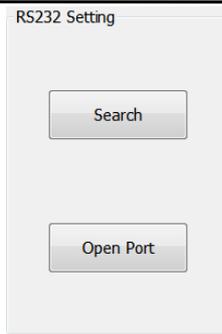
- 1) Download the "JTECH-PS42B.exe" software to your computer and then open it.
- 2) Use a USB to RS232 cable connect to the RS232 port of JTECH-PS42B switch.
- 3) Press "Search" button to identify the correct COM port and then click "Open Port".

8.1 Port Setup

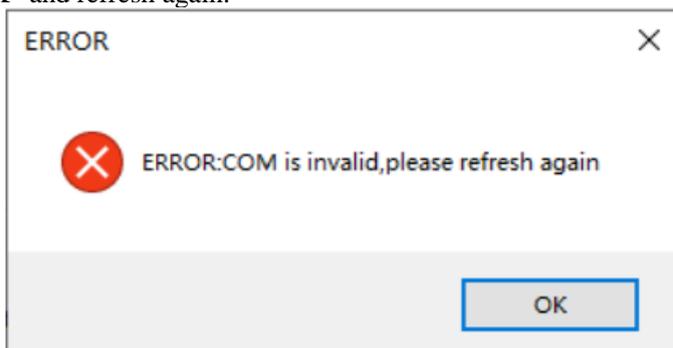
- 1). **Communication Port Setting:** In PC windows system run the "JTECH-PS42B.exe" software. In the RS232 INFO section, select correct COM port and Baud rate setting.



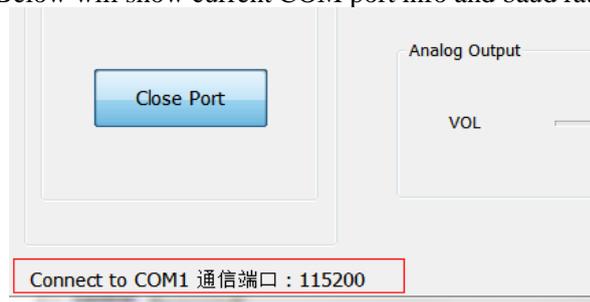
- 2). Click "Search" to refresh communication port
- 3). **"Open Port"**: disconnected from device | **"Close Port"**: connected to device



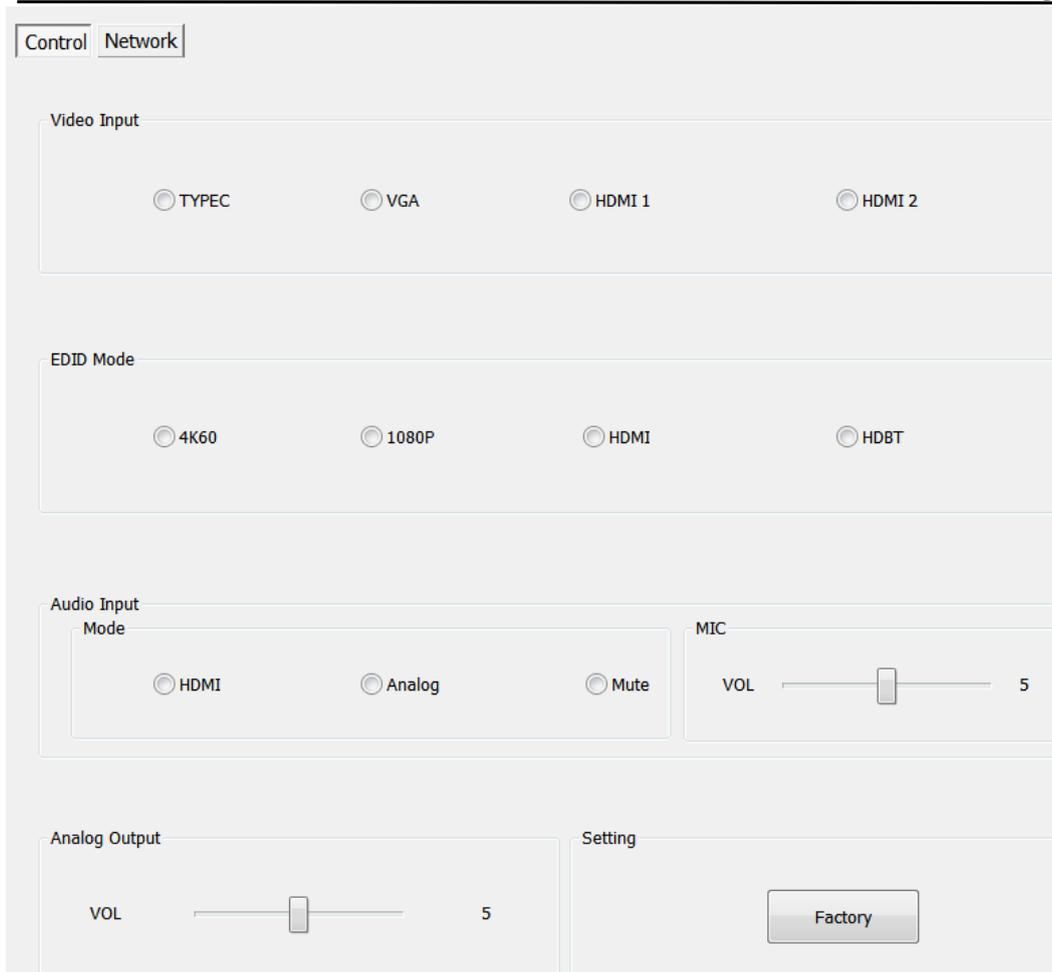
4). If “ERROR” prompt occurs, the COM port is invalid and cannot connect to switch correctly. Please press “OK” and refresh again.



5). Below will show current COM port info and baud rate when connected to device:



8.2 Control Interface



1). Video Input: USB Type C | VGA | HDMI 1 | HDMI 2

2). EDID Mode:

4K60: Default EDID 4K@60Hz

1080P: Default EDID 1080P@60Hz

HDMI: Copy HDMI out EDID for input (Copy mode)

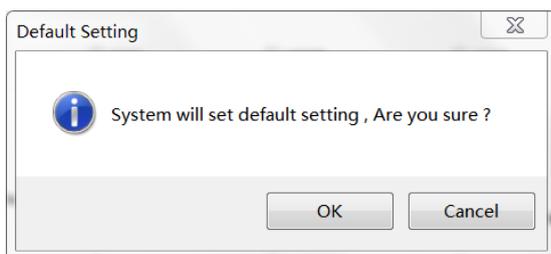
HDBT: Copy HDBT out EDID for input (Copy mode)

3). **Audio Input Mode:** HDMI | Analog | Mute (HDMI - Audio from Type C/VGA/HDMI | Analog - Audio from embed or MIC in)

4). **MIC:** Volume control for MIC input. Number on right hand side represents current volume setting. *Note: You can only set the MIC VOL after choosing “Analog” for audio input

5). **Analog Output:** Volume control for Analog Output. Number on right hand side represents current volume setting. *Note: You cannot set VOL when audio input mode is “Mute”)

6). **Setting:** Factory reset.



**Note - Please set the audio input mode to “Analog” first via panel/PC tool/Web GUI when you need to use MIC in/Analog audio embed function.*

8.3 Network Interface for Device

The screenshot shows a web-based network configuration interface. At the top, there are two tabs: 'Control' and 'Network', with 'Network' selected. Below the tabs is a section titled 'Network INFO.'. The interface contains several input fields and a button:

- MAC Address:** An empty text input field.
- IP Address :** A text input field containing the value '192. 168. 1. 168'.
- Net Mask Address:** A text input field containing the value '255. 255. 255. 0'.
- Gate Way Address :** A text input field containing the value '192. 168. 1. 1'.
- DHCP :** A button labeled 'DHCP OFF'.
- Apply:** A button labeled 'Apply' located at the bottom center.

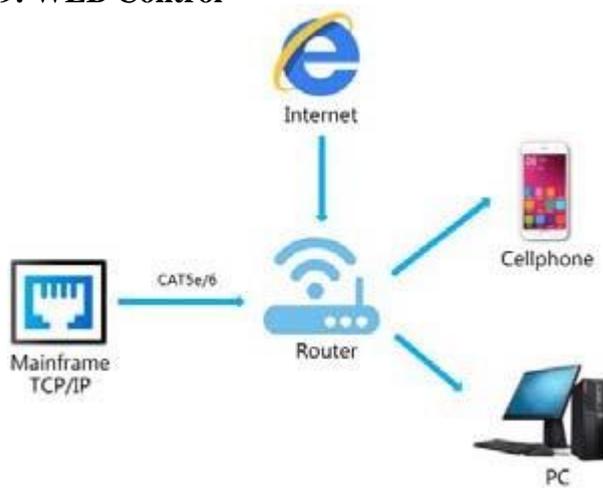
- ① **MAC Address:** Cannot modify
- ② **IP Address:** Customizable
- ③ **Net Mask Address:** Customizable
- ④ **Gate Way Address:** Customizable
- ⑤ **DHCP ON/OFF**
- ⑥ **Apply:** Click to apply customization changes

**Note - When DHCP is enabled, IP Address, Net Mask Address, Gate Way Address fields all become grey and cannot be modified.*

This screenshot shows the same network configuration interface as above, but with the DHCP setting changed to 'ON'. The fields for IP Address, Net Mask Address, and Gate Way Address are now greyed out, indicating they are not modifiable when DHCP is enabled. The 'DHCP' button is now labeled 'DHCP ON' and has a blue gradient. The 'Apply' button remains at the bottom.

- MAC Address:** An empty text input field.
- IP Address :** A greyed-out text input field containing the value '192. 168. 1. 168'.
- Net Mask Address:** A greyed-out text input field containing the value '255. 255. 255. 0'.
- Gate Way Address :** A greyed-out text input field containing the value '192. 168. 1. 1'.
- DHCP :** A button labeled 'DHCP ON' with a blue gradient.
- Apply:** A button labeled 'Apply' located at the bottom center.

9. WEB Control



9.1 Change the IP Address of your PC

1). Connect the Ethernet port of JTECH-PS42B switch to the Ethernet port on your PC via Cat5e/6 ethernet cable.

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 connection properties window appears as below.

4). Highlight **Internet Protocol Version 4 (TCP/IPv4).**

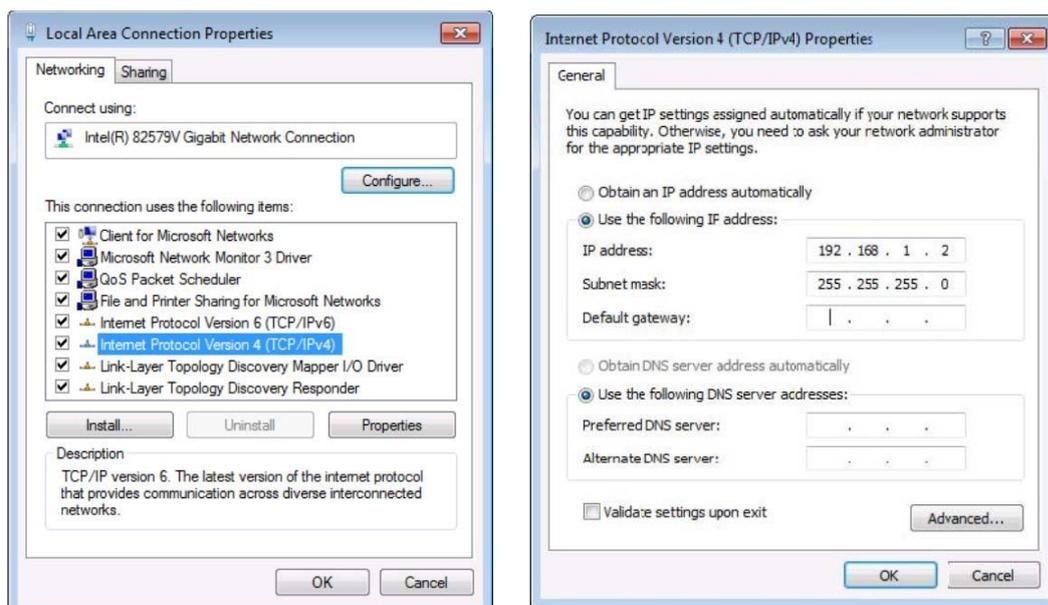
5). Click **Properties.**

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.**



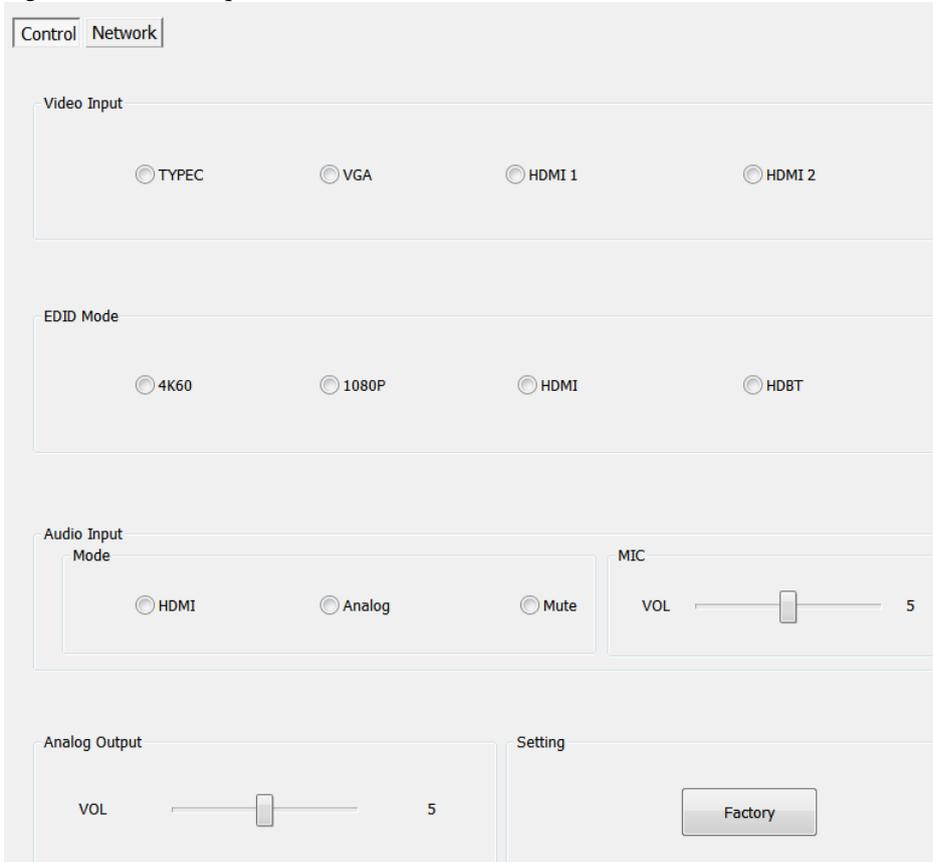
(Default IP Address: 192.168.1.168; MASK: 255.255.255.0; Gateway:192.168.1.1)

9.2 Enter Web and Control

1). Enter the default IP address of the matrix, 192.168.1.168, into the address bar of your web browser.

2). You will see the following picture and control:

(No login credentials required)



(JTECH-PS42B.exe control software shares the same interface)

**Note - Google Chrome, Microsoft Edge, Mozilla Firefox are recommended for use with the web interface.*

Other web browsers may not be supported.

10. Command Control

Control software operation:

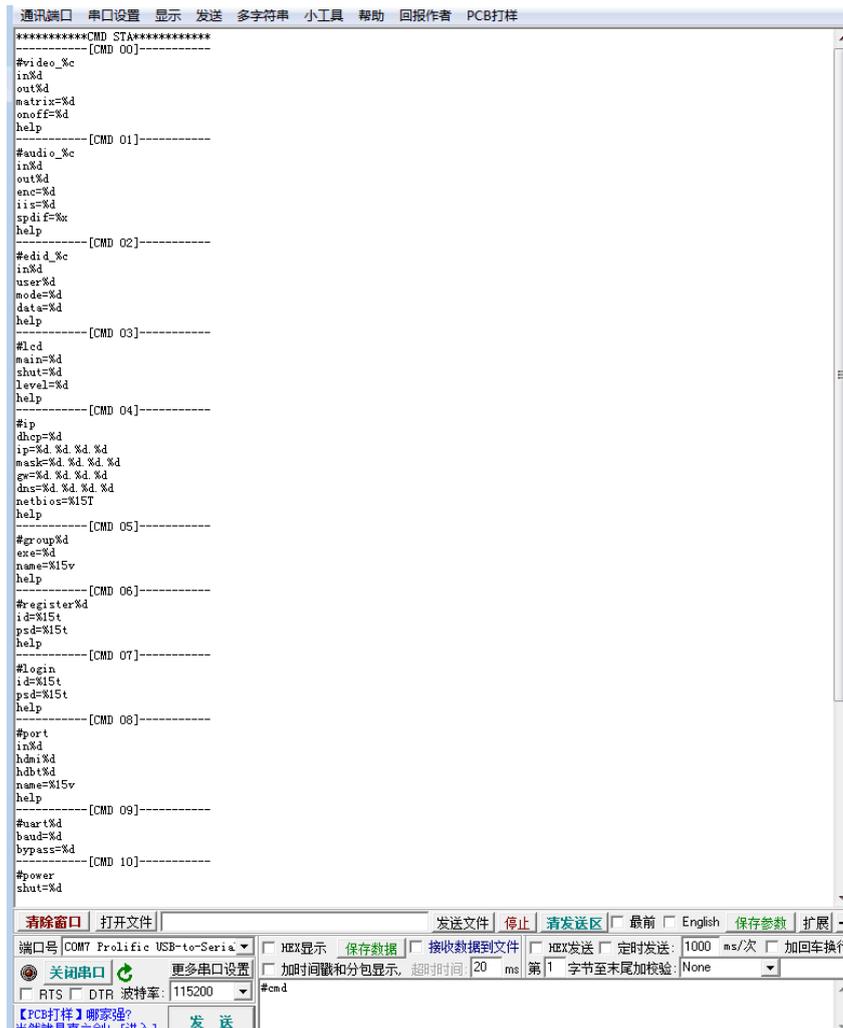
You can use provided serial command software, SSCOM, to send serial commands to JTECH-PS42B switch.

Basic Settings:

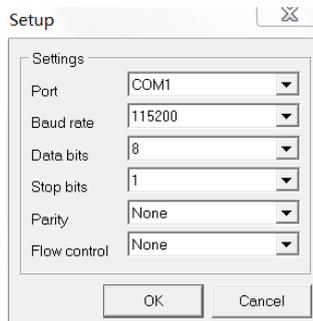


Double-click the software in the installation package to run specifically (as shown in figure 1) and install the RS232 software on the computer.

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



Please use a USB to RS232 cable to connect the PC and JTECH-PS42B. Open RS232 software. In the parameter configuration area, select the COM port you are using on the PC and set the baud rate of the communication protocol: 115200 (default), data bits: 8. Stop bits: 1, Parity: None. You can input the desired command in the command input area and control the switch.



Instructions:

- 1). All commands start from “#”, “%d” parameters No.
- 2). The “_” in the commands cannot be omitted.

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

Instruction Description	Command format (%d: parameter number)	Parameter 1	Parameter 2
Command Query	#cmd		
Video Input Channel Switch	#video_d in%d	1:TYPEC 2:VGA 3:HDMI1 4:HDMI2	
Audio Embed In	#audio_d enc=%d value=%d	0:HDMI 1:IIS,MIC 2:Mute	MIC VOL adjust numerical range (0~10)
Audio IIS out VOL Set	#audio_d iis=%d	VOL adjust numerical range(0~10)	
EDID Mode Set	#edid_d mode=%d	0:(4K60),1:(1080p) 2:(HDMI),3:(HDBT)	
Factory Reset	#factory		
Baudrate Set	#uart baud=%d		0:9600 1:19200 2:38400 3:57600 4:115200
IP Query	#ip help?		
DHCP Set	#ip dhcp=%d	0:Close ,1:Open	

Please refer to above “Command list” for details.

For example:

Operation format

Video Input Channel Switch: #video_d in1 (Switch to Type C input)

Audio Embed In: #audio_d enc=1 value=7 (MIC VOL adjust to 7)

Audio IIS out VOL Set: #audio_d iis=7 (Analog audio VOL adjust to 7)

EDID Mode Set: #edid_d mode=2 (Copy EDID of HDMI out for input)

Baud Rate Set: #uart baud=0 (Current baud rate set is 9600)

DHCP Set: #ip dhcp=1 (DHCP open)

11. Power Off and Reboot Input Priority Mode

When JTECH-PS42B switch reboots and does not detect an active input signal, the device will auto switch to highest priority input port. If there is no active signal on the priority input port, the device will try the next highest priority.

Priority table for input:

Signal for Input	Priority	Switch Condition
HDMI 1	First (highest)	Reboot and inspect HDMI 1. If no active signal, device switches to next lower priority input
HDMI 2	Second	Reboot and inspect HDMI 2. If no active signal, device switches to next lower priority input.
Type C in	Third	Reboot and inspect Type C. If no active signal, device switches to next lower priority input.
VGA in	Fourth (lowest)	Reboot and inspect VGA. If no active signal, device will auto switch to higher priority input. If no other active signals, device will stay on current input port.

***Note -**

- 1). If current input port has an active signal, device will not auto switch to another input when rebooted

- 2). When all input ports have no active signal, the switch will revert back to the last used input port.
- 3). The priority mode is only valid when the switch has multiple active input signals.

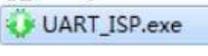
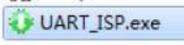
12. RS232 Pass-Thru

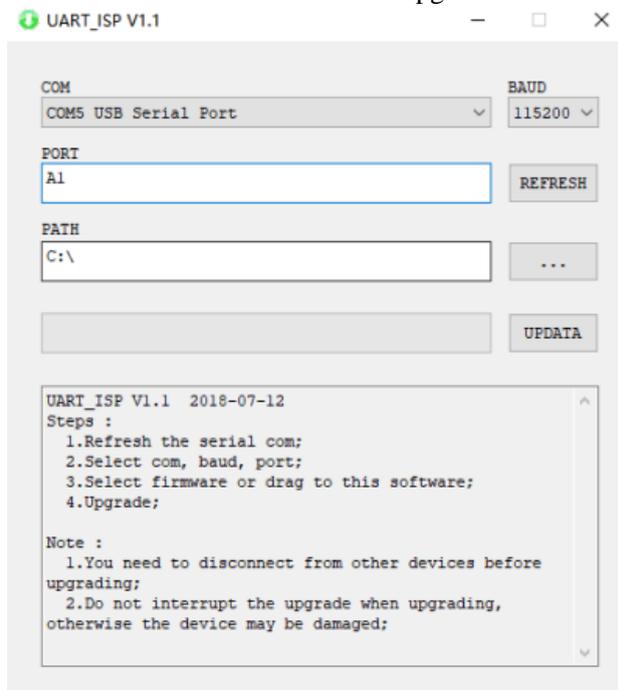
The JTECH-PS42B switch can send RS232 data to control the receivers. The receiver can also send RS232 data to control the JTECH-PS42B switch.

Please reference the command list in the user manual.

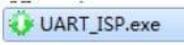
13. Micro USB for Firmware Upgrade

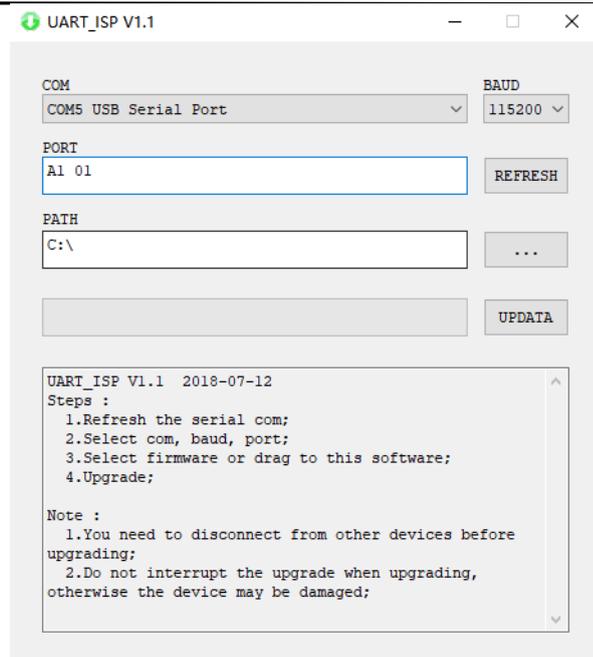
13.1 MCU application layer upgrade

- 1). The user should use the included CD to read and install software  on PC;
- 2). Connect the JTECH-PS42B to a PC via USB cable from the switch's micro-USB port. Open  software and refresh. Choose correct COM port used by the PC and set the baud rate to 115200(default). The baud rate setting is consistent with the host baud rate.
- 3). Type in "A1" in PORT and choose the firmware file in PATH. Then click UPDATA to apply update. Prompt will show "Succeed" after the firmware upgrade has been completed successfully.

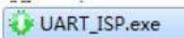


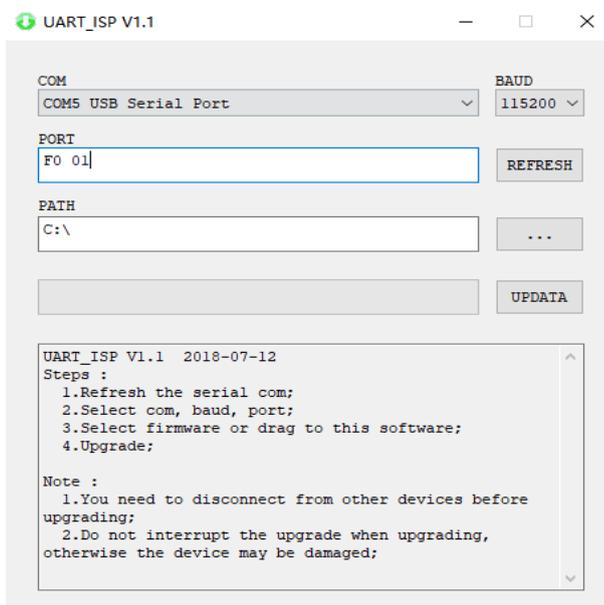
13.2 GUI Application Layer Upgrade

- 1). Connect the JTECH-PS42B to a PC via USB cable from the switch's micro-USB port. Open  software and refresh. Choose correct COM port used by the PC and set the baud rate to 115200(default). The baud rate setting is consistent with the host baud rate.
- 2). Type in "A1 01" in PORT and choose the firmware file in PATH. Then click UPDATA to apply update. Prompt will show "Succeed" after the firmware upgrade has been completed successfully.



13.3 GUI Web upgrade

- 1). Connect the JTECH-PS42B to a PC via USB cable from the switch's micro-USB port. Open  software and refresh. Choose correct COM port used by the PC and set the baud rate to 115200(default). The baud rate setting is consistent with the host baud rate.
- 2). Type in "F0 01" in PORT and choose the firmware file in PATH. Then click UPDATA to apply update. Prompt will show "Succeed" after the firmware upgrade has been completed successfully.



***Note - If the upgrade progress bar has stopped in the middle of the upgrade, then the host will need to be rebooted, then the serial port will be upgraded.**

MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or 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, J-Tech Digital (referred to as "the warrantor") will, for the length of the period indicated as below, **(Parts 1 Year)** 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 or 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.

MAIL-IN SERVICE

When shipping the unit carefully pack and send it prepaid, adequately insured and preferably in the original carton. Include a letter detailing the complaint and provide a day time phone and/or email address where you can be reached.

LIMITED WARRANTY LIMITS AND EXCLUSIONS

1). This Limited Warranty ONLY COVERS failures due to defects in materials or workmanship, and DOES NOT COVER normal wear and tear or cosmetic damage.

The Limited Warranty ALSO DOES NOT COVER damages which occurred in shipment, or failures which are caused by products not supplied by warrantor, or failures which result from accidents, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, set-up adjustments, mis-adjustment of consumer controls, improper maintenance, power line surge, lightning damage, modification, or service by anyone other than a Factory Service center or other Authorized Servicer, or damage that is attributable to acts of God.

2). THERE ARE NO EXPRESS WARRANTIES EXCEPT AS LISTED UNDER "LIMITED WARRANTY COVERAGE". THE WARRANTOR IS NOT LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. (As examples, this excludes damages for lost time, cost of having someone remove or re-install an installed unit if applicable, travel to and from the service, loss of or damage to media or images, data or other recorded content. The items listed are not exclusive, but are for illustration only.)

3). PARTS AND SERVICE, WHICH ARE NOT COVERED BY THIS LIMITED WARRANTY, ARE YOUR RESPONSIBILITY

EXTENDED WARRANTY

With the registration of supported J-Tech Digital products, you extend the current warranty by 6 months. This extension is added to the warranty that starts at the purchase date of the device supported. Total product warranty with the extended period will equate to a total of 18 months of warranty from the date of purchase.

For extended warranties to be accepted, all warranty extensions must be claimed within 30 days of purchasing the eligible J-Tech Digital product. Extensions attempted to be claimed outside of the 30-day window will not be accepted.



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