

HVS0401U

MICRO 4-CH
HDMI VIDEO SWITCHER

AVMATRIX®



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USING THE UNIT SAFELY

Before using this unit, please read below warning and precautions which provide important information concerning the proper operation of the unit. Besides, to assure that you have gained a good grasp of every feature of your new unit, read below manual. This manual should be saved and kept on hand for further convenient reference.



Warning And Cautions

- ※ Operate unit only on the specified supply voltage.
- ※ Disconnect power cord by connector only. Do not pull on cable portion.
- ※ Do not place or drop heavy or sharp-edged objects on power cord. A damaged cord can cause fire or electrical shock hazards. Regularly check power cord for excessive wear or damage to avoid possible fire / electrical hazards.
- ※ Ensure unit is properly grounded at all times to prevent electrical shock hazard.
- ※ Do not operate unit in hazardous or potentially explosive atmospheres. Doing so could result in fire, explosion, or other dangerous results.
- ※ Handle with care to avoid shocks in transit. Shocks may cause malfunction. When you need to transport the unit, use the original packing materials or alternate adequate packing.
- ※ Do not remove covers, panels, casing, or access circuitry with power applied to the unit! Turn power off and disconnect power cord prior to removal. Internal servicing / adjustment of unit should only be performed by qualified personnel.
- ※ Turn off the unit if an abnormality or malfunction occurs. Disconnect everything before moving the unit.



Please select the best installation position

- ※ Do not cover the air inlet and outlet of the unit, make sure that there is sufficient space around the ventilation holes on both sides to avoid blockage of ventilation.
- ※ To avoid falling or damage, please do not place this unit on an unstable cart, stand, or table. Make sure install this unit on a very stable horizontal surface for use.
- ※ Do not use this unit in a humid, dusty location or near water. Avoid liquids, metal pieces or other foreign materials to enter the unit.
- ※ Do not use this unit in an environment where the temperature is too cold or too hot.
- ※ Avoid placing this unit in direct sunlight or in a place where hot air from other products can blow.

Ventilation holes



Ventilation holes

Note: due to constant effort to improve products and product features, specifications may change without notice.

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1.BRIEF INTRODUCTION

1.1 Overview

The HVS0401U is a 4-Channel HDMI/DP multi-format video switcher with a compact and robust metal housing design for video switching, audio mixing and different conversion effects. The input signal is automatically detected, the PGM output is scalable and compatible with a wide range of devices for convenience and flexibility, and the USB output can be connected directly to a PC for video capture. This cost-effective switcher will be the perfect choice for your live streaming applications

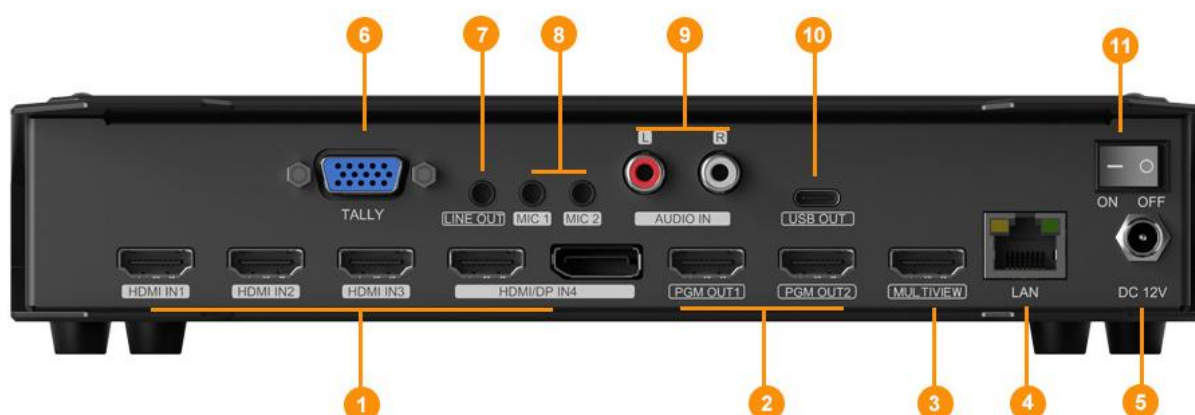


1.2 Main Features

- Inputs 1~3: HDMI, Input 4: HDMI/DP
- Outputs: HDMI PGM×2, HDMI multiview×1, USB type-C×1, LAN×1
- USB Type-C for video capturing (UVC)
- PIP function, adjustable size and position
- Audio mixer: 3.5mm MIC/ RCA/ HDMI embedded audio
- AUTO/ CUT transitions and MIX/ FADE/ WIPE effects
- GPIO interface for live tally system
- FTB for emergency situation

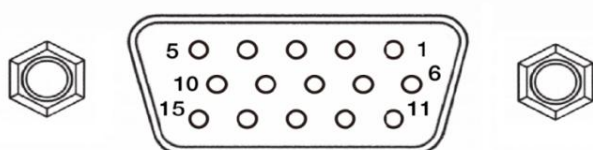
2. INTERFACES

2.1. Interface Overview



1	IN1~IN3: HDMI×3; IN4: HDMI / Display Port × 1
2	PGM OUT × 2
3	MULTIVIEW OUT × 1
4	LAN port (For live streaming and upgrade)
5	DC 12V IN
6	GPIO (For tally)
7	LINE OUT × 1
8	MIC × 2
9	RCA(L/R) × 1
10	USB TYPE-C (For capturing on PC)
11	POWER ON/OFF

2.2. Tally PIN Definition



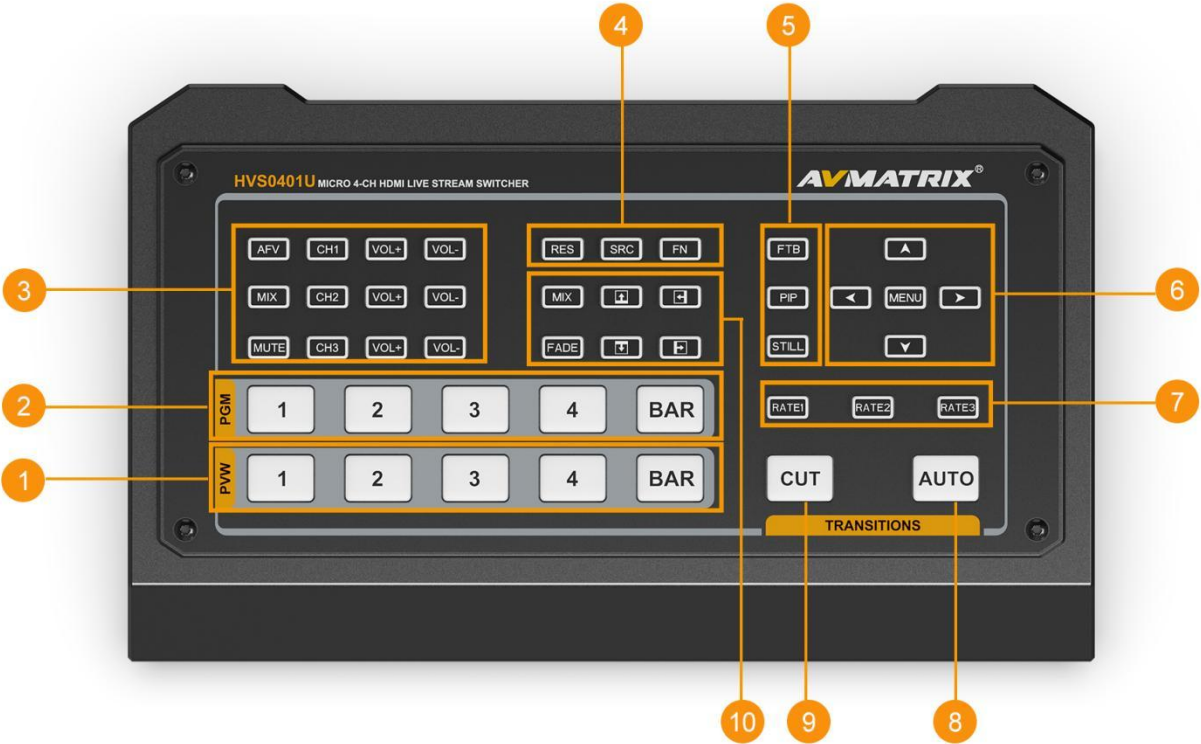
PIN	Definition	PIN	Definition
11	PGM-IN1	6	PVW-IN1
12	PGM-IN2	7	PVW-IN2
13	PGM-IN3	8	PVW-IN3
14	PGM-IN4	9	PVW-IN4
15	NC	10	NC
3	NC	4	NC
5	GND		

3.SPECIFICATION

CONNECTION	
Video In	IN1~IN3: HDMI type-A ×3; IN4: HDMI type-A/ Display Port ×1
Video Out	PGM: HDMI type-A×2 Multiview: HDMI type-A×1 USB Capture: USB type-C ×1
Audio In	MIC/ Line ×2 (3.5mm audio) RCA(L/R) ×1 (stereo audio)
Tally Port	DB-15 ×1
Power In	DC 12V IN ×1
FUNCTIONS	
Functions	Image Still/ Transition Speed/ MUTE/ Audio follows Video/ Audio Mixer
Transitions	AUTO/ CUT
Effects	WIPE/ MIX/ FADE/ FTB
Layouts	PIP, Multiview
STANDARDS	
HDMI In Format Support	1080p 60/ 59.94/ 50/ 30/ 29.97/ 25/ 24/ 23.98/23.976 1080i 50/ 59.94/ 60 720p 60/ 59.94 /50/ 30/ 25/ 24 576i 50, 576p 50, 480p 59.94/ 60, 480i 59.94/ 60
PC HDMI/DP Input Format Support	2560×1600, 2048×1152, 1920×1080,1680×1050, 1600×1200, 1600×900, 1400×1050, 1440×900, 1366×768, 1360×768, 1280×1024, 1280×960, 1280×800, 1280×768, 1280×720, 1280×600, 1152×864, 1024×768, 800×600, 640×480
HDMI PGM Out	1080p 60/ 50/ 30/ 25/ 24 1080i 60/ 50
HDMI Multiview Out	1080p60
HDMI Color Space	RGB/ YCbCr
USB Capture Out	MJPEG , Up to 1080p60
OTHERS	
Power	12V, 1.5A, 18W
Dimension (LWD)	238.5×140.4×43.5mm
Weight	Net: 785g; Gross: 1500g
Temperature	Working: -10℃~60℃, Storage: -30℃~70℃

Standard Accessories	Power supply(12V 2A) ×1, USB cable(type A-C) ×1, Tally connector(DB-15) ×1
Optional Accessories	Handbag ×1, Tally cable ×1

4.FRONT CONTROL PANEL



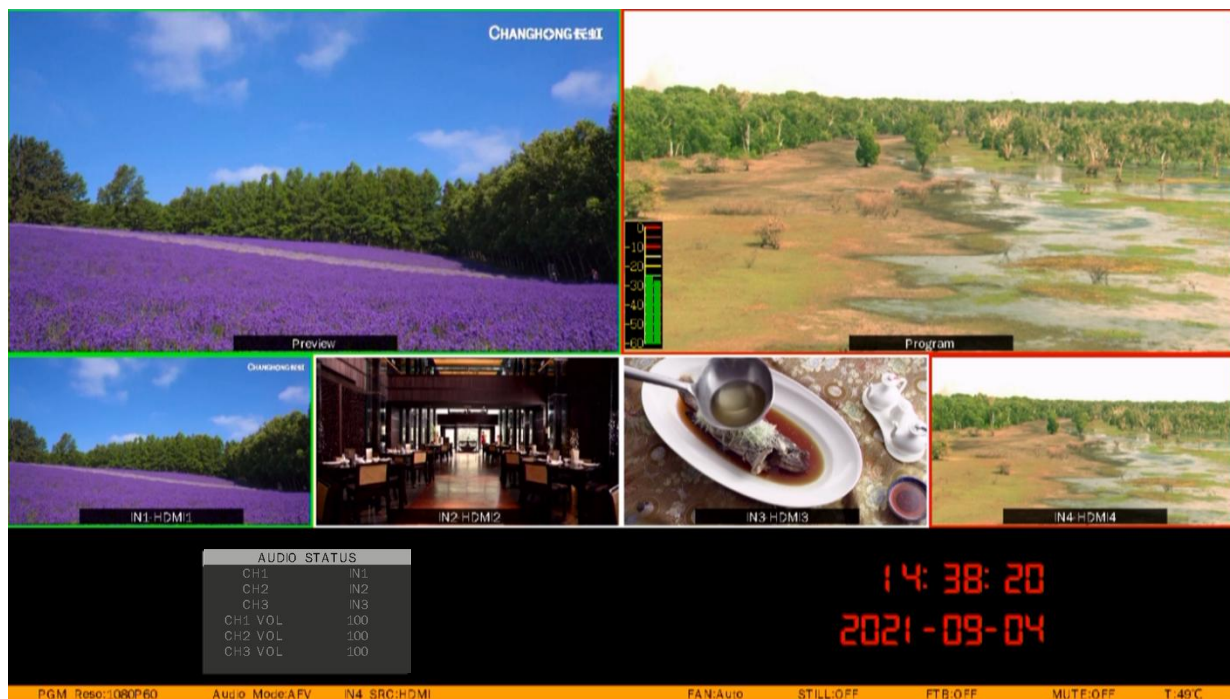
1	PVW	Selecting the signal source for Preview
2	PGM	Selecting the signal source for Program
3	AUDIO	User can configure the audio of each channel in this area, including AFV or audio mix mode, audio source selecting, adjust volume + & volume -
4	RES	RES: Adjust the resolution of the PGM output SRC: Switching IN4 sources between HDMI and DP. FN:Reserved
5	FUNCTIONS	FTB: Fade to Black, used for emergency PIP: Picture-in-picture, adjustable position & size STILL: PGM output still
6	MENU	MENU: For menu control KEYS: Up and down keys to select menu

7	RATE	Three levels of transition speed rates
8	AUTO	Performs an automated switch between Program and Preview
9	CUT	Performs a simple immediate switch between Program and Preview
10	TRANSITION EFFECT	MIX, FADE & WIPE transition effects MIX: Selects a basic A/B dissolve for the next transition WIPE: Transition from one source to another FADE: Gradual transition that transitions from one source to another

5. OPERATION INSTRUCTION

5.1 Multiview Output Layout

The Multiview includes PGM (Program), PVW (Preview), 4 HDMI signal sources, menu, clock, working temperature, still status, UCV and PGM bar chart.



6. USB CAPTURE

The video switcher's USB output is based on UVC (USB video class) and UAC (USB audio class) standard. No additional drivers must be installed. After installation in operating system, the relevant video and audio devices will be added. In the Windows Device Manager, for example, it will appear two new devices:

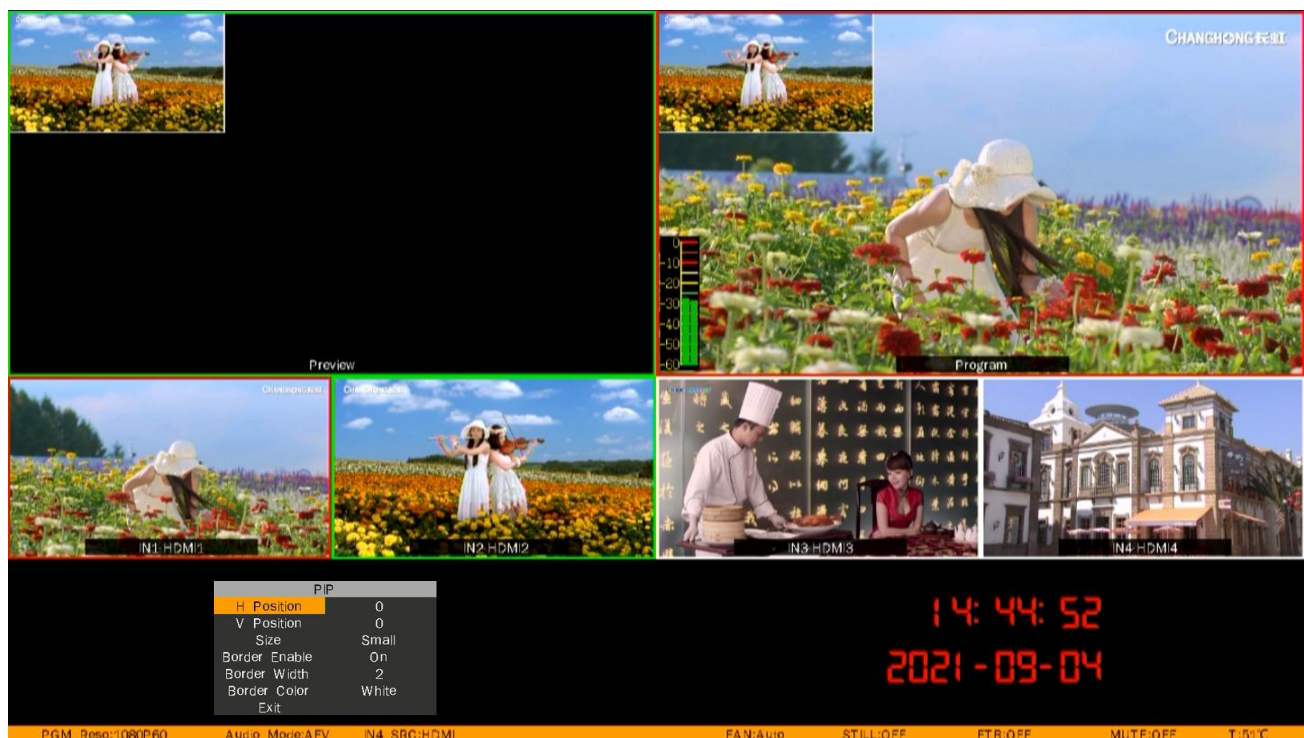
- Under Camera: Switcher USB Video
- Under Audio inputs and outputs: Switcher USB audio

Use a third-party Video Media Player software like OBS, PotPlayer, VLC, Windows Media Player to play and store the captured video content.

7. PIP MODE

When press PIP, there will be a small image display on the top left corner of PVW window as below image. And the menu will enter an interface as below image for PIP settings. The window size (Small, Large, Medium), position (Horizontal position and Vertical position) and border (Border enable, Border width, Border color) of PIP can be set from menu.

Press PIP again, the menu returns to STATUS page.



8. TRANSITION EFFECT

The video switcher provides various transition effects and types for user's choice, including WIPE, MIX, FADE. Users can also switch directly to the CUT button for simple and instant quick switching without transition effects.

8.1 WIPE

Press the WIPE button to perform the wipe transition effect. User can choose different styles through menu. Then press AUTO to execute the transition. Different transition rates can be switched by pressing the RATE1/RATE2/RATE3 buttons on the panel.



: Upward wipe transition effects



: Leftward wipe transition effects



: Downward wipe transition effects



: Rightward wipe transition effects

8.2 MIX

Press the MIX button and press the AUTO button to perform the MIX transition effect. In addition, different transition rates can be switched by pressing the RATE1/RATE2/RATE3 buttons on the panel.



8.3 FADE

Select the FADE button and press the AUTO button to execute the FADE transition effect (as shown in the image below). In addition, you can press the RATE1/RATE2/RATE3 buttons on the keyboard to switch between different transition rates.



9.MENU SETTINGS

9.1 Status

Select the CH1/CH2/CH3 button on the control panel to switch the audio source from IN1/IN2/IN3/IN4/RCA IN/MIC1/MIC2. Press the VOL- or VOL+ button to adjust the corresponding audio volume. The control panel is shown below.



Also, audio can be selected via the menu. Press the UP/DOWN button to select the CH1/CH2/CH3 option and press the MENU button to confirm.

AUDIO STATUS	
CH1	IN3
CH2	IN2
CH3	IN3
CH1 VOL	100
CH2 VOL	100
CH3 VOL	100

AUDIO STATUS	
CH1	IN3
CH2	IN2
CH3	MIC2
CH1 VOL	60
CH2 VOL	63
CH3 VOL	100

9.2 Main Menu Settings

AUDIO STATUS	
CH1	IN3
CH2	IN2
CH3	MIC2
CH1 VOL	60
CH2 VOL	63
CH3 VOL	100

When STATUS menu is not selected, press the MENU button to enter the Main Menu directly.

MAIN MENU	
Audio Setting	
System Settings	
Network Settings	
Firmware	
Exit	

When the STATUS menu is selected, adjust the selected item to the top, and press UP button to exit and become unselected. Press MENU button to enter the Main Menu.

9.2.1 Audio Settings

● Audio mode

This video switcher supports both MIX mode and AFV mode (audio follows video), users can press AFV or MIX on the panel to select the audio mode, adjust the volume level, or enter the main menu to set the audio mode, master volume and mute switch in the audio settings.

AFV Mode: Press AFV button to enable the audio-follow-video mode. Under Follow mode the audio is coming from the embedded audio of Program video source. You can control the audio volume by adjusting the button VOL- and VOL+.

MIX Mode:

Press button MIX to set audio mode as mixing. Press CH1/CH2/CH3 to switch the audio sources from IN1/ IN2 /IN3 /IN4 /RCA IN/MIC1/MIC2. Press button VOL- or VOL+ to adjust the corresponding audio volume.

Besides, you also can set the audio though menu. Press UP/DOWN to select and press MENU to confirm.

AUDIO SETTINGS	
Audio Mode	MIX
Master VOL	80
Mute	OFF
Exit	

AUDIO SETTINGS	
Audio Mode	AFV
Master VOL	80
Mute	OFF
Exit	

- Master

Adjust the total volume in the Audio Settings menu via the UP/DOWN button on the control panel.

AUDIO SETTINGS	
Audio Mode	AFV
Master VOL	80
Mute	OFF
Exit	

- Mute

Mute on/off, control PGM mute or you can turn it on/off by pressing the MUTE button from the control panel.

AUDIO SETTINGS	
Audio Mode	AFV
Master VOL	80
Mute	OFF
Exit	

9.2.2 System Settings

- Language

SYSTEM SETTINGS	
Language	English
PGM Out	1080P50
Fan RPM	Auto
Reset	
Return	

- PGM output

Users can select the resolution of the PGM output from the menu, or by pressing RES on the panel.

SYSTEM SETTINGS	
Language	English
PGM Out	1080P50
Fan RPM	Auto
Reset	
Return	

- Fan RPM

Setting the cooling fan speed to control the temperature and noise of the switcher. There are 5 options, AUTO/ OFF/ HIGH/MEDIUM/LOW. The default setting of the fan is in AUTO mode that the speed of the fan is adjusted automatically depending on the switcher's operating temperature. If the working environment requires special quiet for a special application, the user can turn off the fan manually from the menu. If the switcher is working in a high temperature environment, the auto fan setting cannot meet the cooling requirement, then user can select the fan setting to HIGH option to keep the fan in high speed.

SYSTEM SETTINGS	
Language	English
PGM Out	1080P50
Fan RPM	Auto
Reset	
Return	

- Reset

Restore all settings to default Factory Settings.

9.2.3 Network Settings

- Network

There are two methods to acquire the IP: Dynamic (IP configured by router) and Static (set IP freely by yourself). Select the method you need by menu. The default setting is Dynamic.

Dynamic: Connecting the video switcher with a router with DHCP features, then it will obtain an IP address automatically. Make sure that the video switcher and PC are in the same local network.

Static: Select static IP acquire method when the PC is without DHCP. Connect the video switcher with PC via network cable, set the PC's IP address to the same IP range as video switcher (the video switcher's default IP address 192.168.1.100), or set the switcher's IP address to the same range as PC's IP address.

NETWORK SETTINGS		NETWORK SETTINGS	
DHCP	ON	DHCP	OFF
IP	000.000.000.000	IP	192.168.001.100
NetMask	000.000.000.000	NetMask	255.255.255.000
GateWay	000.000.000.000	GateWay	192.168.001.001
Save		Save	
Return		Return	

- NetMask

Set the NetMask. The default setting is 255.255.255.000.

- GateWay

Set the GateWay according to current IP address.

Save the configuration when network setting finish.

9.2.4 Firmware

Check the firmware version number and SN (serial number) of this switcher from the Device Information in the menu.

FIRMWARE	
BOARDWARE	V2.2
BOOTLOAD	V1.0.0
MCU APP	V1.0.r13
FPGA VER	V1.0.r1
HDMI VER	V1.0.2
DEVICE SN	0401U10000171
Return	

10. Software Control and Time Setting

10.1 Software control

The video switcher comes with a software for remote control. You can connect the switcher to a Windows computer by LAN network cable. Download the software from AVMATRIX official website www.avmatrix.cn.

10.2 Time Setting

Connect video switcher to a PC via LAN port and download a time setting software from AVMATRIX official website www.avmatrix.cn. Open the software and click Scan to search and connect the device, then the clock time will be changed to same time to the PC's time.