# PIPE INSPECTION CAMERA SYSTEM

Read these instructions completely before operating this system.

Please charge the battery first before using.

MANUAL

**Catalog**

# Safety and Notice



**Warning**

To Avoid electrical shock put the item indoor when Charging



**Warning**

Use only input AC 100~240V output DC 13.5V 5 A charger.
machine can only use the original charger and lithium battery, reminding the charging time is 5 hours. Please charge the battery before use!

1. Please check the appearance and functionality of the goods upon receipt. In the event of damaged or missing goods, please forward images to us within 3 working days, Otherwise, we will not be able to provide after-sales service

2. Working environment of camera system -10ºC~50ºC(14ºF~122ºF)≤95% RH; Storage

   environment: -20℃~70℃(-4℉~158℉) ≤95% RH.

3. The warranty becomes void if any physical damage is present by user or force majeure factors or if the system is disassembled or connect non-factory parts by the user

4. Do not disconnect the SD card while recording or playing as this may damage the system and/or the SD card

5. Remember to always back up the data on your SD card

6. Before using the SD card for the first time, it is recommended to use the check system to format the SD card.

7. Remember to slide the write protection tab to the unlocked position. Otherwise, all data on the SD card is protected and cannot be edited or formatted.

8. Use only the original accessories to avoid possible risks to health and property, and thus meet all related legal regulations.

9. Keep controller dry.

10. Do not drop, knock, or shake the inspection system. Inappropriate behavior when using the camera system may damage the internal electronic circuit board or deform the lens shape.

11. Make sure all accessories are connected before starting up.

12. Do not remove or install camera, keyboard, coil, SD card and other accessories when the machine is turned on. If replacement is required, please replace it in the power off state.

# 1．. Parts list

## 1.1. Accessories

| Item | Image | Description | Optional |
|---|---|---|---|
| **Control terminal** | | • Display：10.1 inch HD LCD，Pixel 1280 * 800<br>• Storage medium：64G SD card (maximum 256G)<br>• USB function: Support 256g disk<br>• Main functions: monitoring, recording, typing<br>• Battery：Li-ion- Battery 11.1V 6000mAh 66.6Wh<br>• Running Time：＞4hours | Standard |
| **Cable** | | • Cable material: Glass fiber core<br>• Cable length: 60m, 120m optional<br>• Cable diameter：Ø 10.8mm,9 cores<br>• Cable wheel material: stainless steel and aluminum alloy<br>• Counter accuracy: 0.1m<br>• Counter deviation:±5％ | Standard |
| **keyboard** | | • Waterproof keyboard<br>• Size：300.8 * 115.8 * 12.25mm<br>• Language: English<br>• Interface：USB | Standard |
| **Camera** | | • Size：Ø65* 157mm<br>• PTZ camera<br>• Pixels：1920*1080<br>• Rotation：Horizontal 360°Vertical 180°<br>• Focal length：manual focus<br>• Waterproof：IP68 1Bar<br>• SKID size: Ø80mm | Standard |
| **Transmitter** | | • Size：Ø32*70MM<br>• Emission frequency：512Hz<br>• Effective distance: 4.5m | Standard |
| **Spring** | | • Size：Ø 33*218mm | Standard |
| **Telescopic bracket** | | • Adaptation range:170~300mm | Optional |
| **Camera** | | • Size：Ø 50*107mm<br>• Pixels：1920*1080<br>• Balance: automatic balance<br>• Waterproof：IP68 3Bar<br>• SKID: Ø110/150/210mm | Optional |

| | | | |
|---|---|---|---|
| **Cable connection** |  | ● Size：Ø 5.3-7* 1500mm<br>● SF12-7 Waterproof self-locking joint | Standard |
| **Test Cable** |  | ● Size：Ø 5.3* 1000mm | Standard |
| **Headset with microphone** |  | ● Frequency Response：20-20KHz<br>● Plug diameter：3.5mm | Standard |
| **Charger** |  | ● Input：AC100-240V～50 / 60Hz<br>● Output：DC 13.5V / 5A<br>● Output plug specification：5521<br>● Weight：0.30KG | Standard |
| **SD Card ＆Card reader** |  | ● 64G SD card & card reader | Standard |
| **Tool kit** |  | ● Size：400*280*210MM | Standard |
| **Screw Driver** |  | ● 2.5mm | Standard |
| **Waterproof Ring** |  | | Standard |
| **Manual** | | | Standard |

# 1.2. Control terminal



| | | | |
|---|---|---|---|
| 1 | Visor | 14 | Zero count |
| 2 | Display | 15 | M/ft switch |
| 3 | No function (reserved) | 16 | Far focus |
| 4 | Record | 17 | Light brightness up |
| 5 | Photo/OK/ Photo folder | 18 | Near focus |
| 6 | Left/ Rewind/ Mute | 19 | Light brightness down |
| 7 | Down/ZOOM- | 20 | Tilt-up |
| 8 | Right/ Fast forward/ volume+ | 21 | Pan-right |
| 9 | Return / video input switch | 22 | Tilt-down |
| 10 | UP/ZOOM+ | 23 | Pan-left |
| 11 | Video directory | 24 | Speed range light |
| 12 | Menu/ Video input switch | 25 | Automatic rotation/ Reset |
| 13 | ON/OFF | 26 | Motor speed |
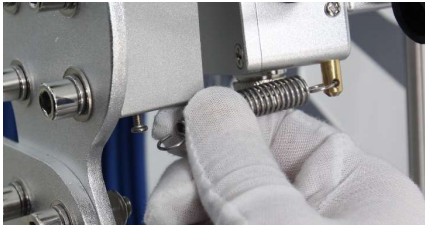
# 2. Quick Start Guide

## 2.1. Get accessories and charge the Battery

| 1. Connect the adapter to a power supply. | 2. Connect the plug to the port of the Control terminal. | 3. The indicator will change from red to green when finished charging. |
|---|---|---|
|  |  |  |

## 2.2. Connection

| 1. Take out the control terminal and insert it into the coil | 2. Tighten the screws | 3. Open the sunshade |
|---|---|---|
|  |  |  |
| 4. Connect one end of connect line. | 5. Connect the other end of the connect line. | 6. Connect keyboard. |
|  |  |  |
| 7. Loose the break. | 8. Remove the counter spring. | 9. Loosen the hand screw of the wire clamp guide wheel. |
|  |  |  |

| 10. Put the cable into the cable clamp guide wheel. | 11. Press the guide pulley onto the cable and tighten the hand screw. | 12. Hook up the counter spring. |
| --- | --- | --- |
|  |  |  |
| 13. Install camera, spring and transmitter. | 14. Locking casters. | 15. Installation is completed. |
|  |  |  |

## Warning:
**Check the waterproof ring between all connections.**





**WARNING**

Do not turn the camera rotating part by hand, to avoid damaging the motor.

# Be careful:

**Do not turn the camera rotating part by hand to avoid damaging the motor.**
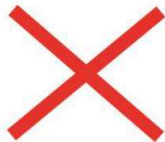


# Be careful：

**Pan tilt camera can't be used in severe blockage and sludge pipeline, otherwise the camera may be damaged.  After use, please clean the sediment on the camera with water in time to avoid jamming.**

## 2.3. Assemble skid
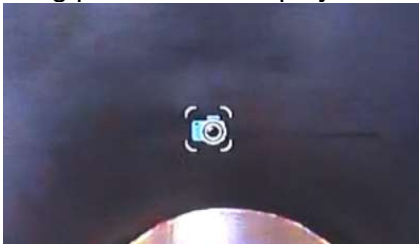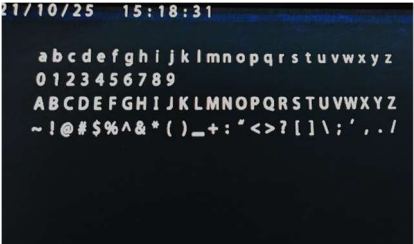
### 2.3.1. Install 80mm skids
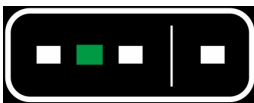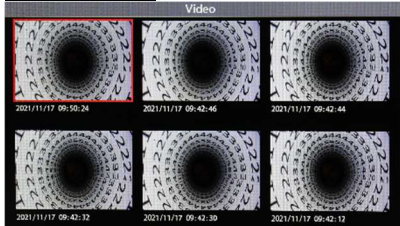
| 1. Remove the camera. | 2. Install the skid and lock the screws. | 3. Install to the coil spring connector. |
|---|---|---|
|  |  |  |

### 2.3.2. Install universal skids

| 1. Remove the camera. | 2. Loose the ring in the middle of skid, put into camera and tighten three screws to fix. | 3. Tighten the camera and coil connector. |
|---|---|---|
|  |  |  |

## 2.4. Starting up

| | | |
|---|---|---|
| **1.** Insert SD card or card reader & SD card | **2.** Plug in microphone. | **3. Staring up** Long press the power button for 3 seconds to turn on. |
| **4. Record video** Press this button to record, press again to stop recording. | **5. Take photo & playback** Press this button to take photo. Long press button to playback. | **6. Audio and text record** Support to record audio by microphone and input text by keyboard when recording video |
| **7. Meter counter** Press button to reset the counter. counter. Press button to switch meter/ feet. | **8. Zoom in and out** Press these two buttons to zoom in and zoom out image when recording.(max 8 levels) When play video or photo, also use these two buttons to choose video or photo. | **9. Adjust volume** Press these two buttons to adjust volume when recording or play video. |
| **10. Adjust lights of camera** Press these two buttons on control handle to adjust lights. | **11. Adjust pan tilt** Adjust the joystick on control handle to control pan and tilt | **12. Adjust manual focus** Press these two buttons on control handle to adjust focus of camera. |

| 13. Speed regulation | 14. Automatic rotation and Rest | 15. Play video |
|---|---|---|
| Briefly press this button to adjust the rotation speed of PTZ. There are three gears in total. The speed light will display the current gear. | Press this button briefly to make the camera rotate automatically; Press and hold this button to center the camera automatically | Press these two buttons to play video. |

**16. Delete video**
Press these two buttons to delete video.

When play back video, press  button to pause the video, and press  buttons to fast forward and backward the video.

## Warning:

**Do not insert two SD cards at the same time. Pay attention to the direction of the SD card.**

# 2.5. WIFI   (Optional)

Note: When WIFI mode is turned on, the USB flash disk cannot be used and the SD card is available.

### 2.5.1. Switch WIFI

1.  No WIFI icon in the lower right corner of the display indicates that WIFI is not turned on. Long

    press  for 5 seconds to display the transfer in switch between USB flash disk and WIFI,

    USB flash disk ->>WIFI or WIFI ->>USB flash disk. After pressing the  key, the automatic restart takes effect. After turning on WIFI, the lower right corner of the display screen displays WIFI icon, and the icon has an "X". At this time, the WIFI power is not turned on.
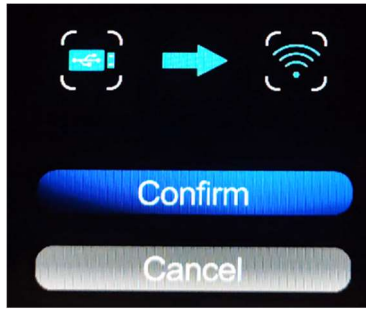
2. Enter the video settings, select WIFI, select "ON" to open, and return to the main interface. If there is no "X" in the WIFI icon, the WIFI power has been turned on.



| Video Setting | | |
|---|---|---|
| Loop Recording | 30 Minutes | ▶ |
| Record Audio | ON | ▶ |
| CVBS Output | PAL | ▶ |
| MIC Volume | | ▶ |
| Time Stamp | ON | ▶ |
| WIFI | ON | ▶ |

| WIFI |
|---|
| Off |
| ON |
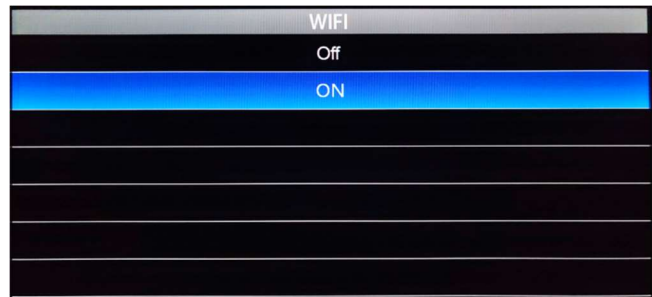
### 2.5.2. Connect WIFI

1. Install the APP "WPS CAM" on Android/iOS system devices; APP networking and storage permissions must be allowed.



WPS CAM

2. Search for WIFI and connect. WIFI name:WPS-HDWIFI; Password: 12345678; The WIFI indicator light at the lower left corner of the controller will change from slow flashing to fast flashing after successful connection;
3. Open the app and select "Image transmission" to view the image; Can perform photo, video, and playback operations. If there are no images, please restart the app; The WIFI transmission distance is about 5 meters.

Note: Other functions of the APP require optional Bluetooth usage.

| | |
|---|---|
| Connect | Image transmission | Type | Control | Template |
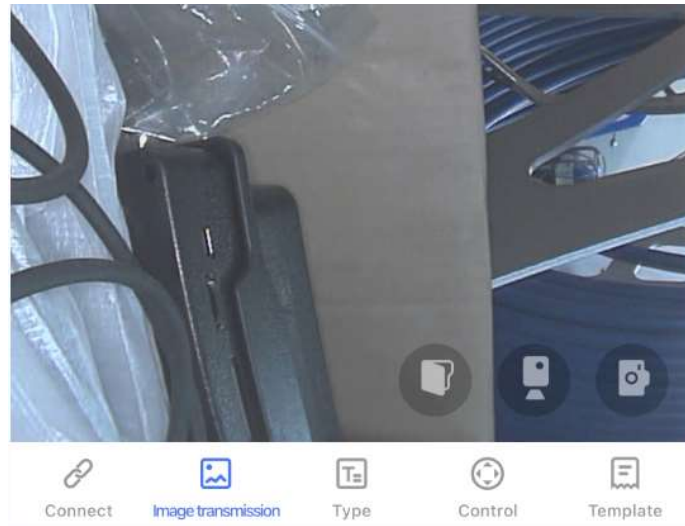
## 2.6. CVBS/HDMI Oput

| 1. Let the screen power up and light up | 2. The CVBS/HDMI interface connects to an external display. | 3. Long press the menu button for 3 seconds each time to switch CVBS/HDMI/body display. |
|---|---|---|
|  |  |  |

# 3. Menu

Press [icon] to enter menu. Press [icons] choose the items. Press [OK icon] enter submenu. Press [back icon] enter upper submenu until to homepage.

**Play Video**



**Play Photo**



**Video settings**



**System settings**
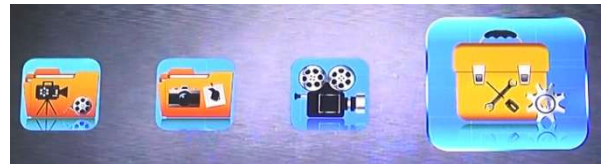


## 3.1. Play Video

The video folder can be opened in the menu, or it can be opened quickly by pressing " Quick playback ".

● "OK" button to play the video, "◄►"backward/ Fast forward， "▲▼"adjust the volume， "MENU" button to delete the video.
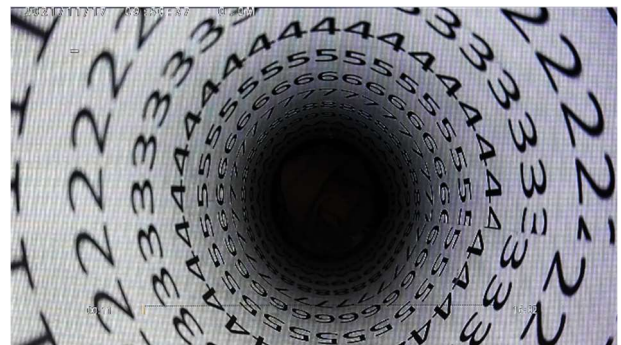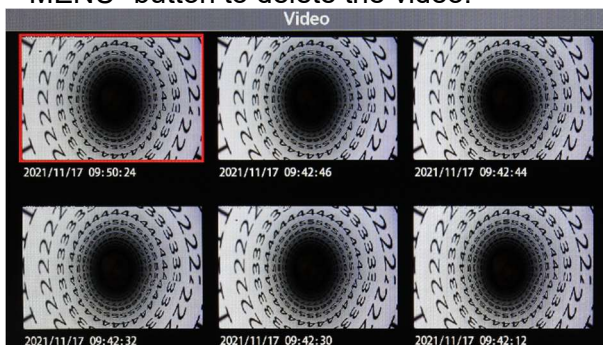


## 3.2. Play Photo

The photo folder can be opened in the menu, or you can press and hold the "OK" button for 3 seconds to quickly open it.

● "OK" button to view photos, "MENU" button to delete photos.
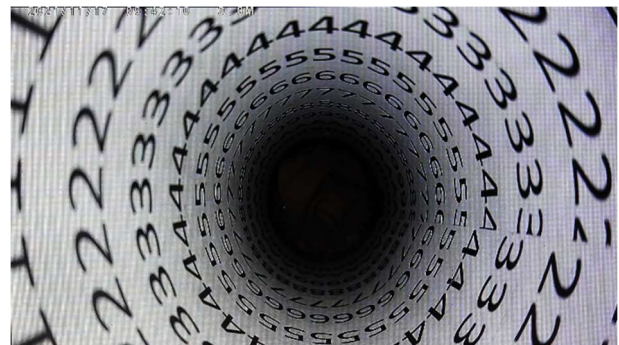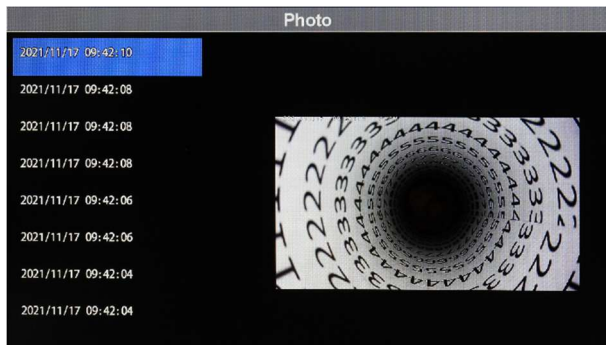
## 3.3. Video settings

### 3.3.1. Set the length of time to record video

- 5 minute
- 15 minute
- 30 minute



### 3.3.2. Record Audio

- ON
- OFF
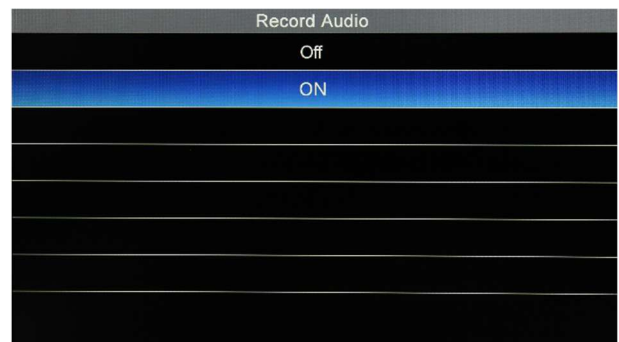


### 3.3.3. CVBS output

- NTSC
- PAL
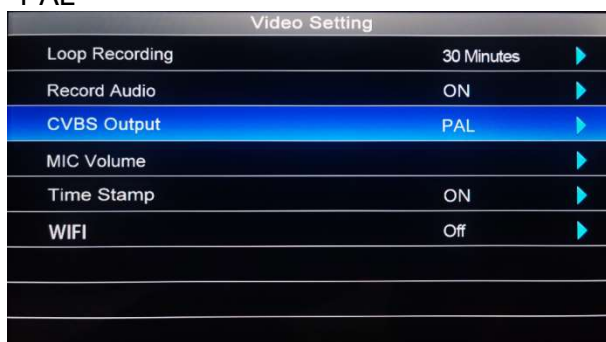
### 3.3.4. Mic volume

● First press the OK key, press the left and right keys to adjust the volume



### 3.3.5. Time Stamp

● ON
● OFF
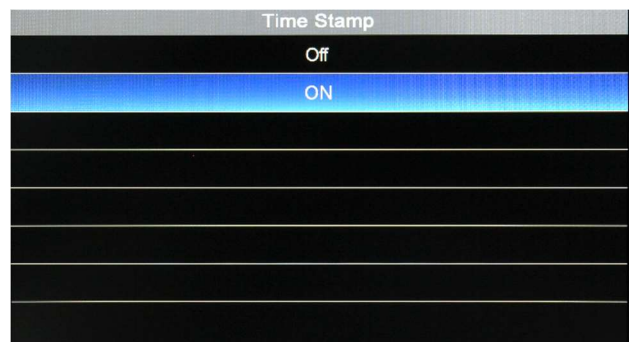


### 3.3.6. WIFI

● ON
● OFF



## 3.4. System settings

### 3.4.1. Image

● Brightness
● Contrast
● Chroma
● Reset
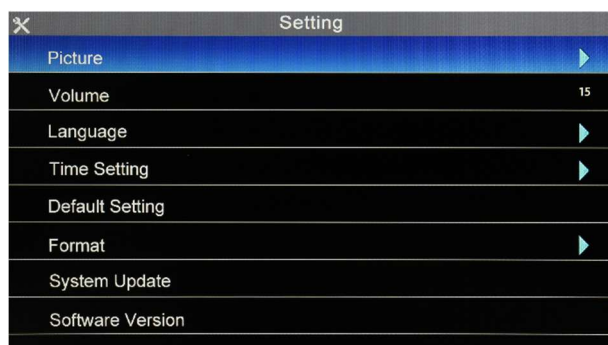
### 3.4.2. Volume

● Press the left and right keys to adjust the volume
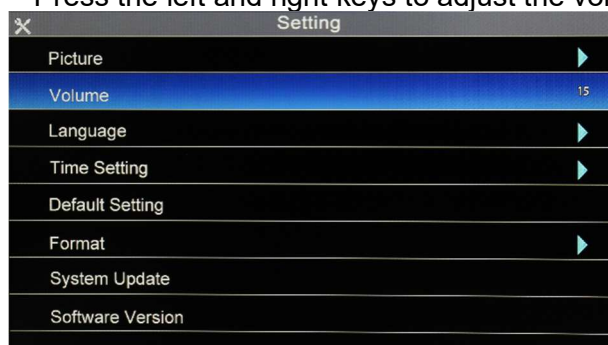


### 3.4.3. Language
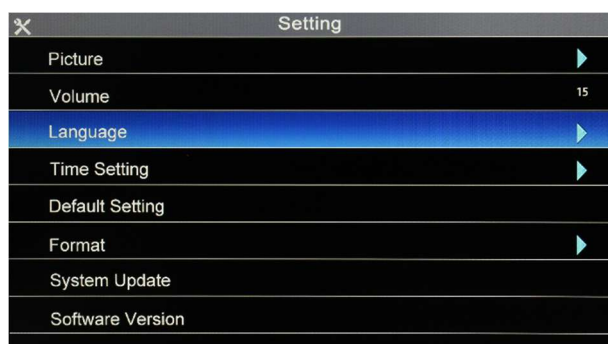


### 3.4.4. Time

Date and time
Press the up and down keys to set the date and time, and press the left and right keys to select the time and date
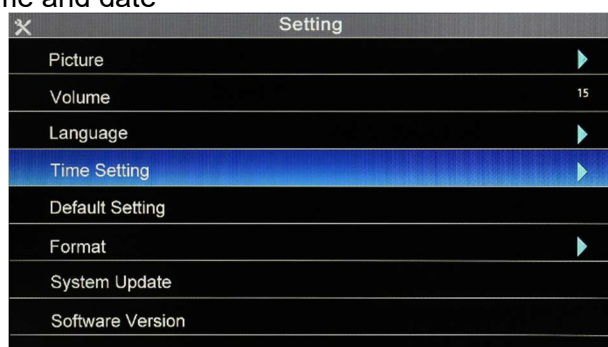
### 3.4.5. Restore default

- No: Cancel
- Yes: Confirm

| Setting | |
|---|---|
| Picture | ▶ |
| Volume | 15 |
| Language | ▶ |
| Time Setting | ▶ |
| **Default Setting** | |
| Format | ▶ |
| System Update | |
| Software Version | |

**Default Setting**

press the "Confirm" button to
restore the factory settings
and press the "Cancel"
button to return

| Confirm | Cancel |
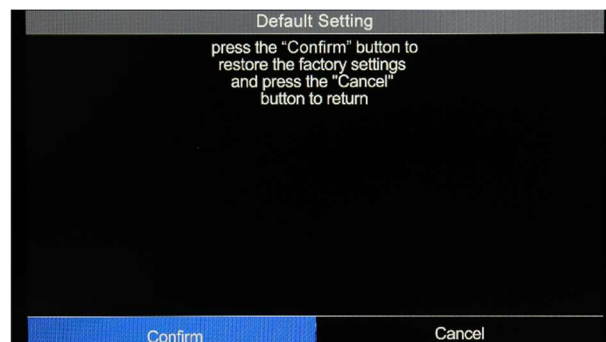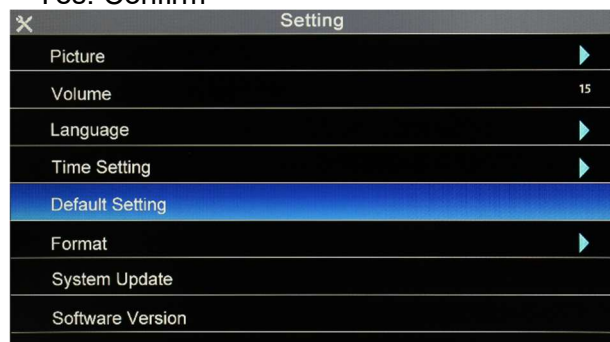
### 3.4.6. Format

- No: Cancel
- Yes: Format SD card(Note: please back up the data in the SD card before operation)

| Setting | |
|---|---|
| Picture | ▶ |
| Volume | 15 |
| Language | ▶ |
| Time Setting | ▶ |
| Default Setting | |
| **Format** | ▶ |
| System Update | |
| Software Version | |

**Format**

press the "Confirm" button
to start formatting and press
the "Cancel" button to return

| Confirm | Cancel |
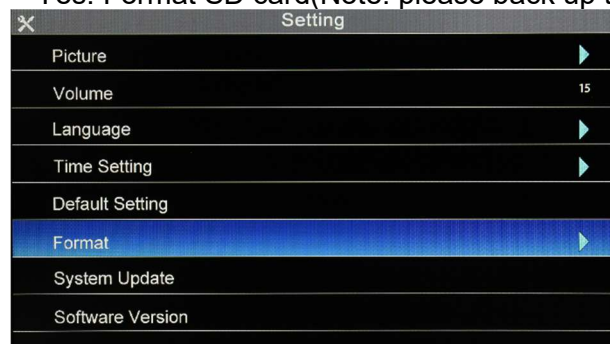
### 3.4.7. Firmware update

- No: Don't upgrade system
- Yes: Start to upgrade

| Setting | |
|---|---|
| Picture | ▶ |
| Volume | 15 |
| Language | ▶ |
| Time Setting | ▶ |
| Default Setting | |
| Format | ▶ |
| **System Update** | |
| Software Version | |
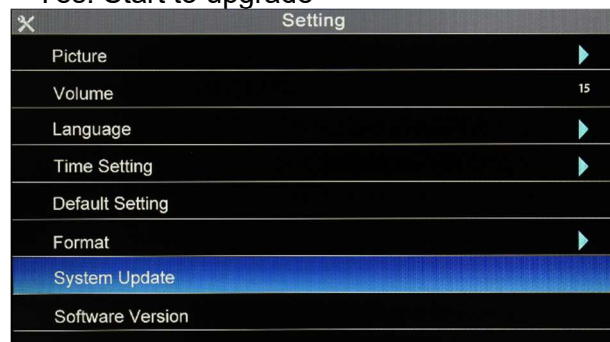
### 3.4.8. View software version

- View software version, date

| Setting | |
|---|---|
| Picture | ▶ |
| Volume | 15 |
| Language | ▶ |
| Time Setting | ▶ |
| Default Setting | |
| Format | ▶ |
| System Update | |
| **Software Version** | |

**Software Version**

Jul 13 2021 / 15:44:11
FH 20210708 / 10:43:43 16M
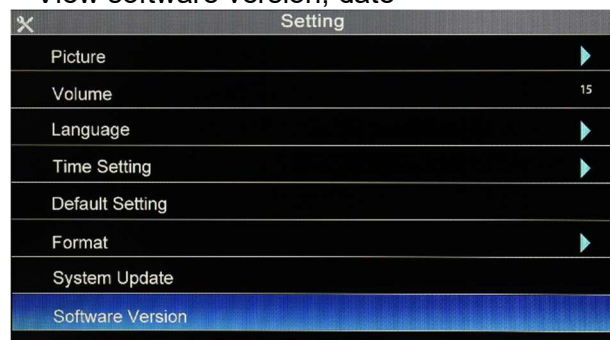
# 4. Keyboard
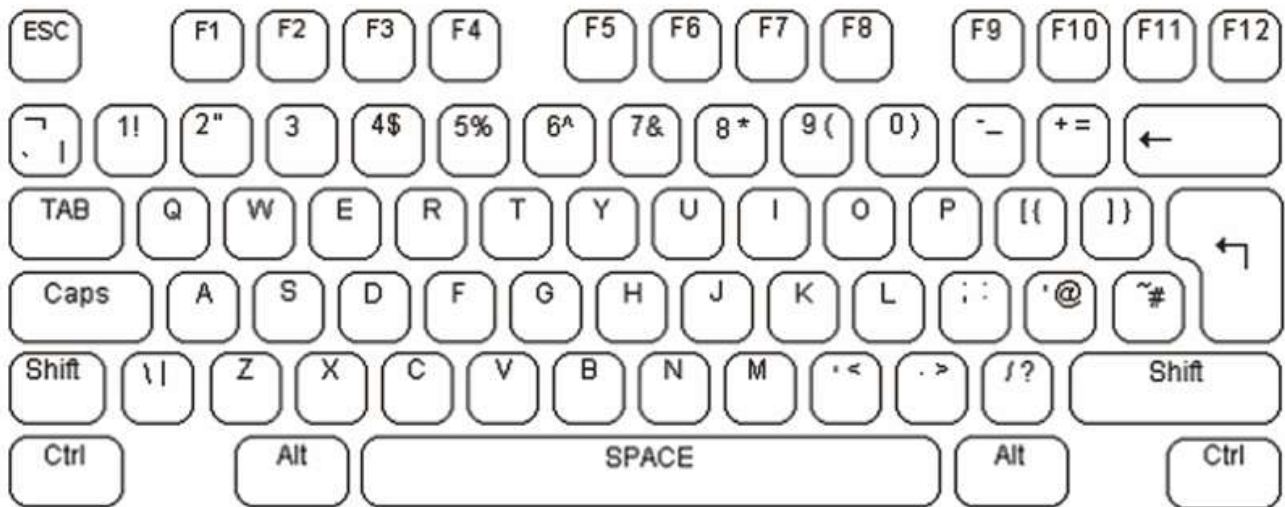


1. The font and character size have been set and cannot be changed.
2. The basic operation of characters is to automatically push back, covering the input characters on the image.
3. The cursor flashing indicates the current position of the character to be input on the screen. The cursor position can be controlled by the direction key on the keyboard. The cursor will move from left to right, from top to bottom and back. After typing a character, the cursor flashes quickly at the position of the next character, and then disappears. Press F6 to switch between cursor flashing and cursor clearing.
4. Video character overlay input uses a standard American keyboard. The alphabetic characters in the QWERTY area and the numeric characters of the keypad can be directly input to the screen. Normally, lowercase letters are entered. When you press and hold the shift key or press caps lock, you can enter uppercase letters. When exiting uppercase input, press caps lock again. Use the backspace key to move the characters on the screen, which will quickly replace the characters to the left of the cursor with blank characters, and the cursor will move to the left. The delete key on the keyboard does not give any function. Press enter to move the cursor to the start of the next line.

| F6 | The switch cursor flashes |
|---|---|
| F9 | Clear screen |
| ↑↓←→ | Move cursor position |
| CTRL+1~8 | Quick jump page |

5. The video text superimposing unit displays it in the current screen page. The text written to these pages will be saved in the local nonvolatile memory until it is overwritten. To move between screen pages, use the page up and page down keys. To quickly jump to page 1 ~ 8, press Ctrl + X (x stands for 1 ~ 8). Supports up to 64 page editing. To clear the screen page of the text, press F9.