

PIPE INSPECTION CAMERA

User's Manual



Please follow all security measures in this user's manual to ensure a secure use

Please read and save these instructions. Read through this user' s manual carefully before using product. Protect yourself and others by observing all safety information, warnings and cautions. Failure to comply with instructions could result in personal injury and/ or damage to product or property. Please retain instructions for future reference.

1. Avoid using the device in extremely cold, heat, or humidity environment, it may damage the device.
2. Do not drop or press hard on the device.
3. Warranty invalidation if the device is disconnected by users or has any physical damages.
4. Always back up your data before connecting your SD device to this system. The manufacturer is not responsible for any data damage on your device for any reason.
5. Do not disconnect the unit while recording or playing. It may damage the unit and/or the SD device.

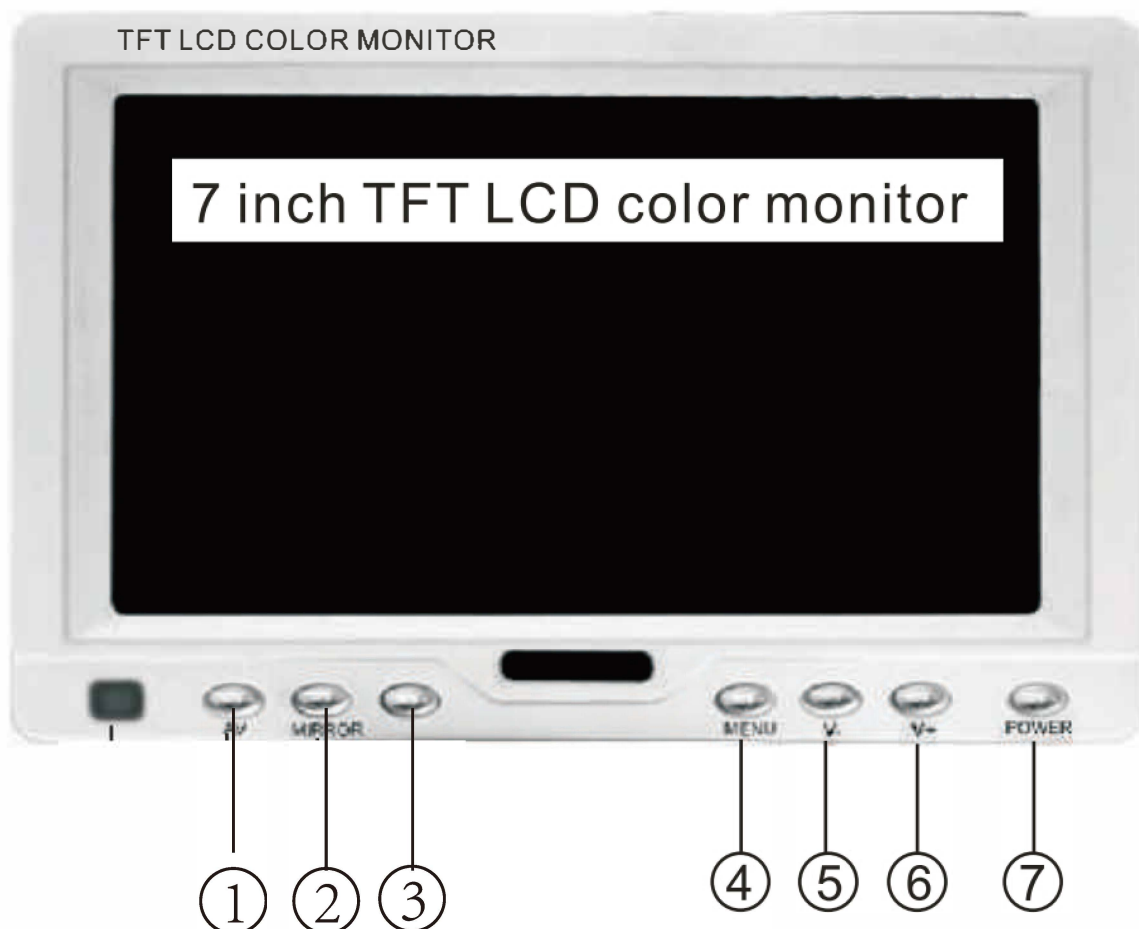
Specifications

Item	Description
Power adapter	110VAC-240VAC 12VDC 1000mA
Power supply	Lithium Battery
Length of cable	30 meters cable
Camera Illumination	12pcs White LEDs
Camera viewing angle	100°
Camera Depth-of-View	400 mm (approximate)
Camera Image	Color
Monitor Image	Color
Monitor Resolution	800x480
Monitor Input Voltage	12 Volts DC
System Operating Temperature	-20°F ~ 120°F (-28°C ~ 50°C)

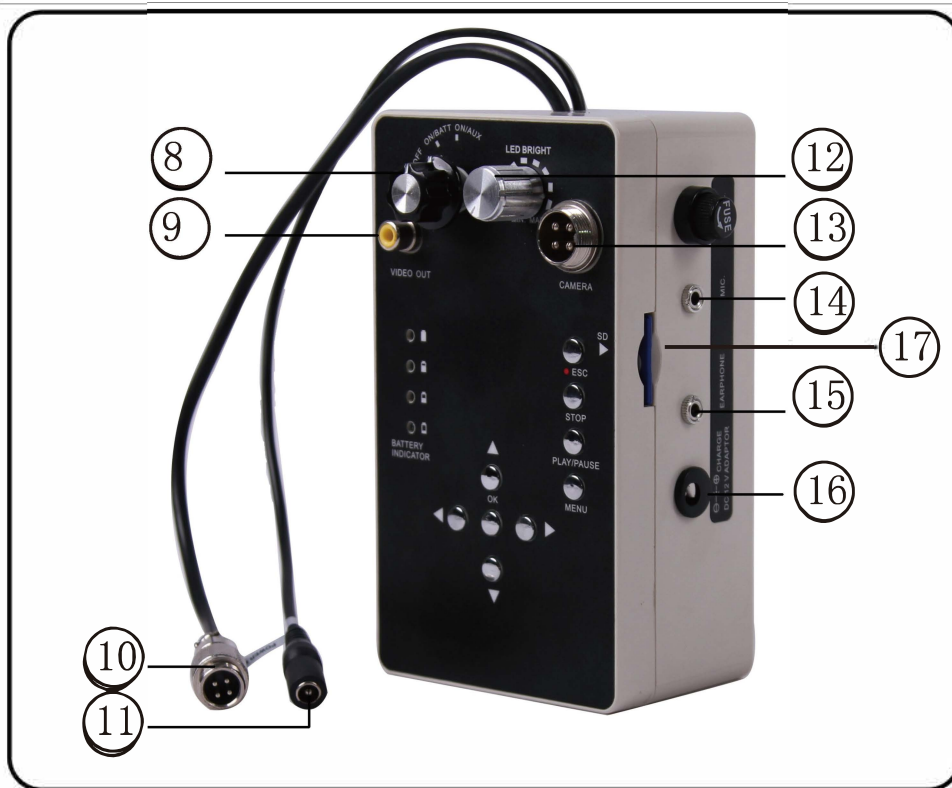
Application

WITH MINI-CAMERA FOR PIPE DIAMETER FROM 25MM TO 120MM ID

- WATER SUPPLY
- WASTE WATER
- ELECTRICAL ALRCONDITIONAL
- CABLE DUCTING
- DUCTED VACCUM SYSTEMS
- PLUMBIN
- IN BUILDING



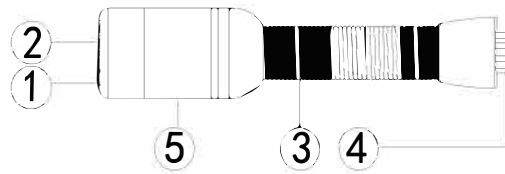
DVR Control Box



1	AV	10	Connector to Monitor
2	Image rotation	11	Connector to Battery
3	16:9 & 4:3 display switch	12	LED BRIGHT
4	MENU	13	Connector to Camera
5	Decrease(Switch)	14	MIC
6	Increase(Switch)	15	EARPHONE
7	Power of Monitor	16	DC 12V Adaptor
8	Power Switch	17	SD card slot
9	VIDEO OUT		

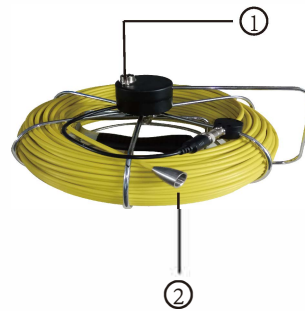
Camera (with sapphire glass, IP68)

1. 12pcs White LEDs
2. LENS
3. SPRING
- 4 4pins Point Touch Connector
5. Stainless Steel House

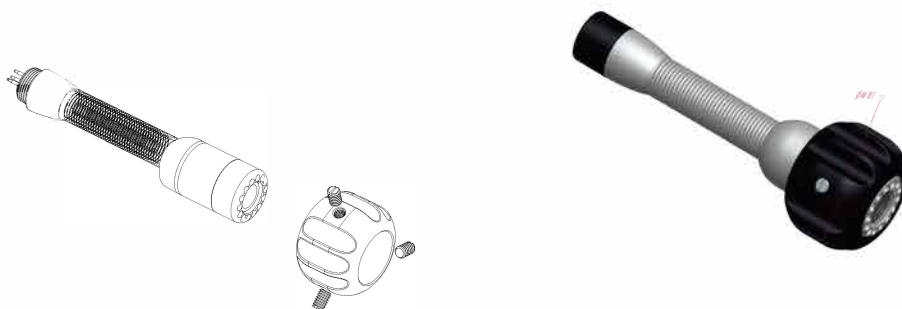


Camera & wheel

1. Connector to DVR Control Box
2. Connector to Camera head



SKID assemble



1.Features

This product uses the most advanced image processing technology to make the output image quality lossless, whether it is in the previewIt is almost equal to the original image quality when the video is played back, which solves the problem that many users use analog cameras as in-put The image quality is seriously degraded after DVR processing. At the same time, we use H265+MP4 video technology to makeVideo files are small-er in size and have a wider application range, and video files can be played back on various multimedia devices.

Product Features

- Support NTSC PAL camera
- Support up to 512G SD card
- Support snap during video recording
- Support SD card upgrade firmware
- Support remote control operation
- Multi-language support Chinese, English, German, Spanish, Polish, French
- Support MP4 video file format
- Support power failure protection function

1.3 remote control

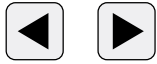


button	Operation introduction
	Video button
	Menu button
	Up buttons
	down buttons
	right buttons
	Left buttons
	Confirm button
	return key
	Play button
	Stop button

! Tips:



In the process of equipment recording, or in the real-time picture state, press the PLAY button
Can directly enter the playback file



During video playback, press the left and right buttons to fast forward and rewind



During the playback of the video, press the up and down keys to automatically jump to the next video
Or the previous video, which is convenient and quick.

2. Software icon description

2.1 Menu image interface

current time



Audio icon



N (NTSC) P (PAL)



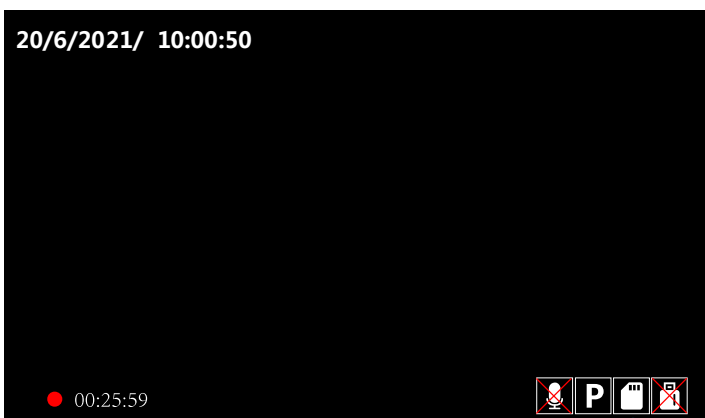
SD card display icon



U disk display icon

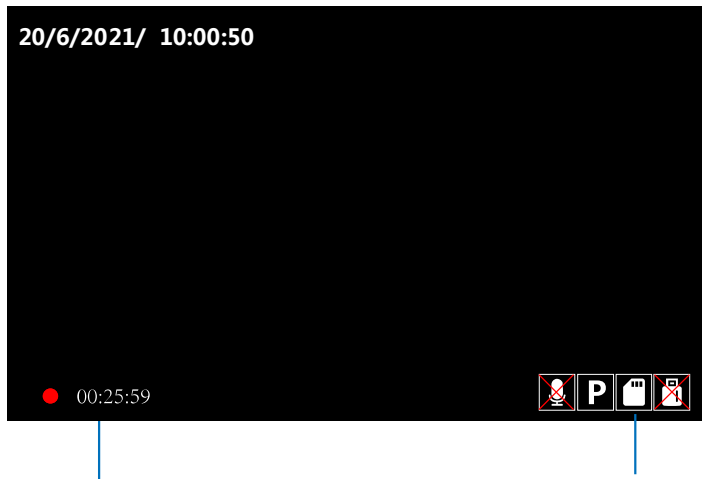


This icon indicates failure



Recording time period

This icon represents the SD card has been read



Recording time period

This icon represents the SD card has been read

After the device reads the card, press the remote control



The lower left corner of the screen during recording



00:25:59

Flashing

If you want to stop recording, click the

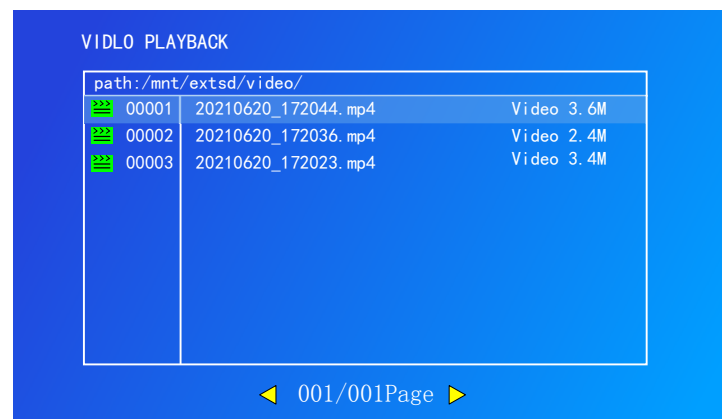
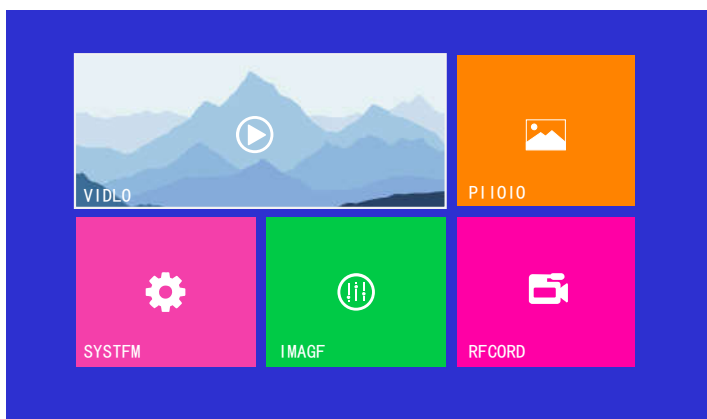


button

2.2 Menu playback interface



Tip: In the file list state,
Press the key STOP to delete the current file



1. "MENU" button on the remote controlCan enter directly
Menu page to operate
2. Click the OK button on the remote controlCan enter the play folder
3. Click the OK button on the remote controlEnter video playback
The list can be in accordance with the time periodChoose the video you
want to play
4. Enter the current playback video interface

We have added shortcut keys during video playback

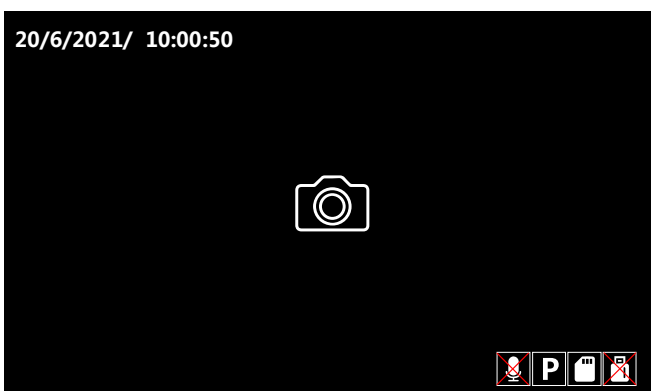
Preview image

1. Press **OK** to record directly
2. Press the **▲** button to take a photo
3. Press the **PLAY** key to enter directly Playback video interface **ESC** return

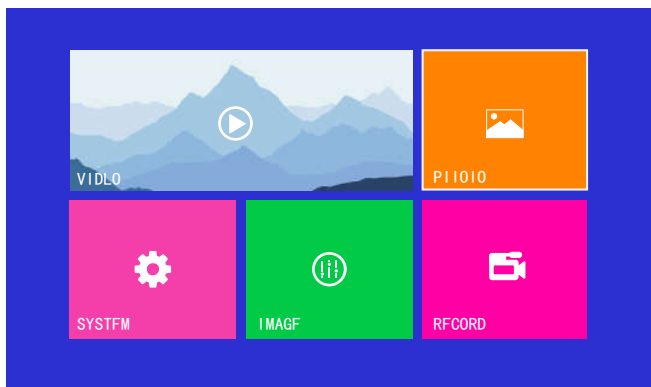
In playback mode

1. Press **▲** to play the previous video
2. Press **▼** to play the next video
3. Press **◀ ▶** to fast forward and rewind

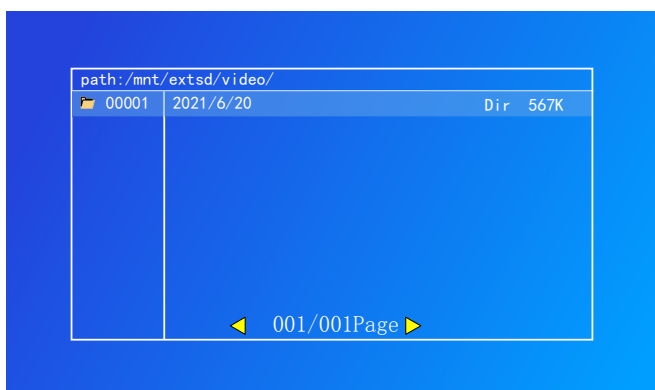
2.3 Picture playback



1. Press **▲** to take a photo
File will be stored on SD card
Inside the picture folder



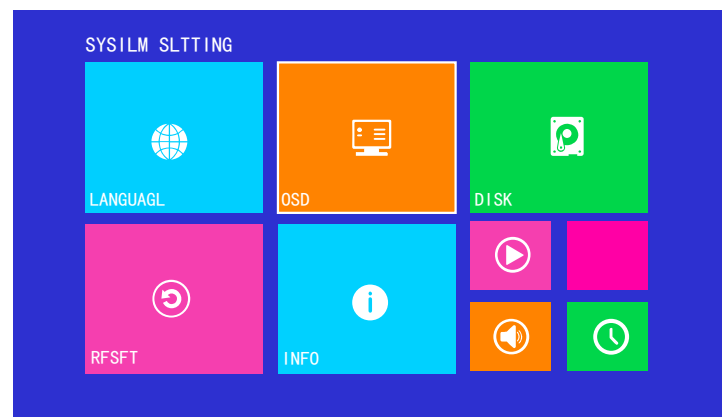
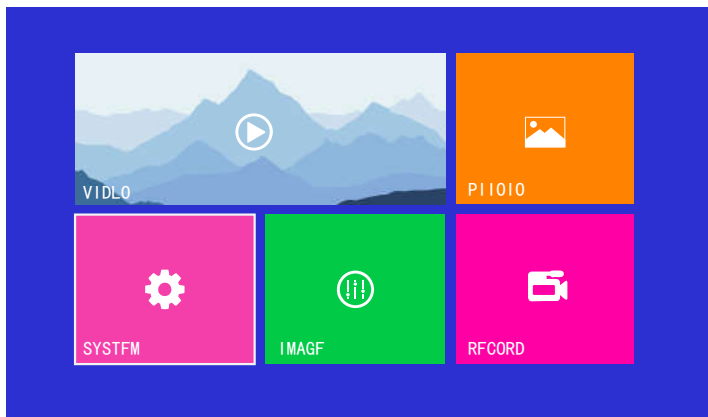
2. Press the remote **MENU** button
Enter the menu Select picture playback



3. Press the remote **OK** button
Enter the picture folder

3.System settings

3.1 System settings



1. Press the remote  button
Enter the menu

  key to select system settings
 key to enter

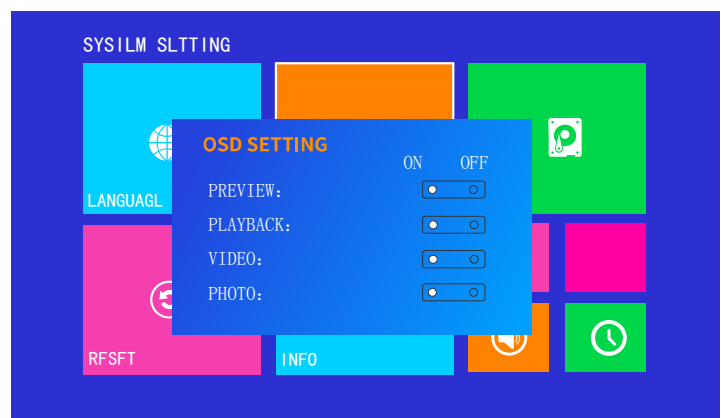
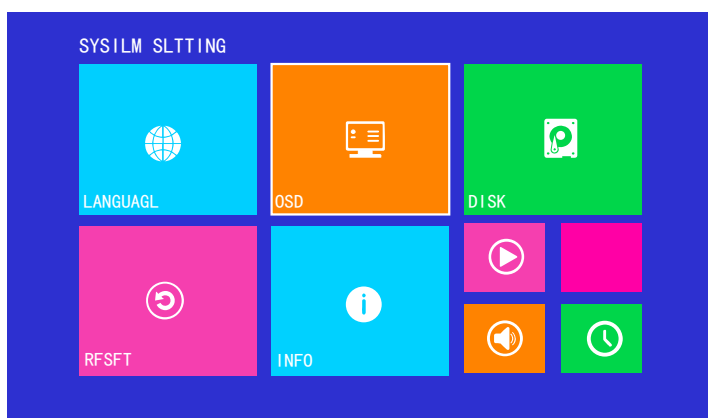
 Play settings
 Sound settings
 time setting

language settings: Include Chinese/English/German/Spain/Polish/French

Factory settings: This option can be used to restore the factory default settings(operate with caution)

system version: This setting is to view the system software version number

3.2 OSD settings



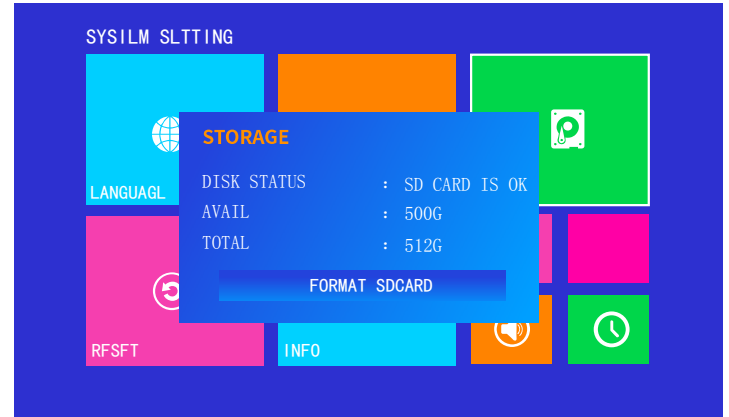
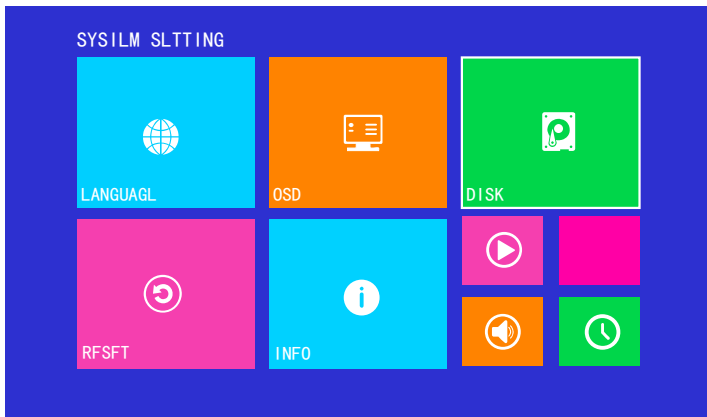
Preview :In the real-time preview stateNo watermark on the screen.

Replay :Refers to the playback of video or picturesNo watermark

video : Video file watermark off

picture: Picture file watermark off

3.3 Save settings/format



Storage settings:
you can view storage usage
Capacity and remaining capacity.

If the device cannot be displayed
Storage status,
Available through this function
Format the storage device.



Fault judgment

Can't read card and can't record video?

1. Please use a genuine card.
2. If the card is not read, enter "Save Settings" to format
3. For SD cards that have not been used for a long time, please clean the pins of the SD card before inserting it into the device.
4. The card is not read, please restart the device.

4. Image settings

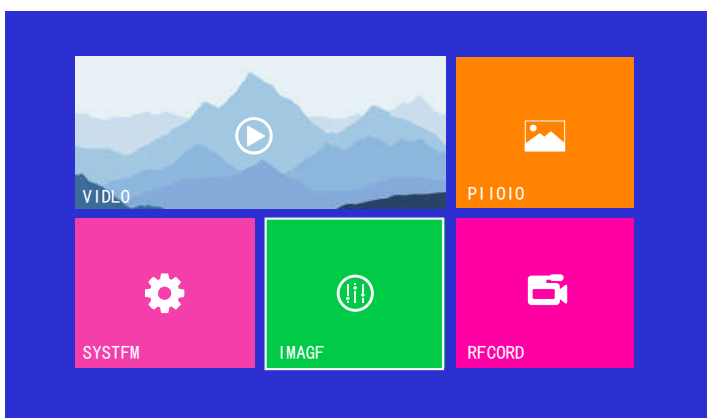
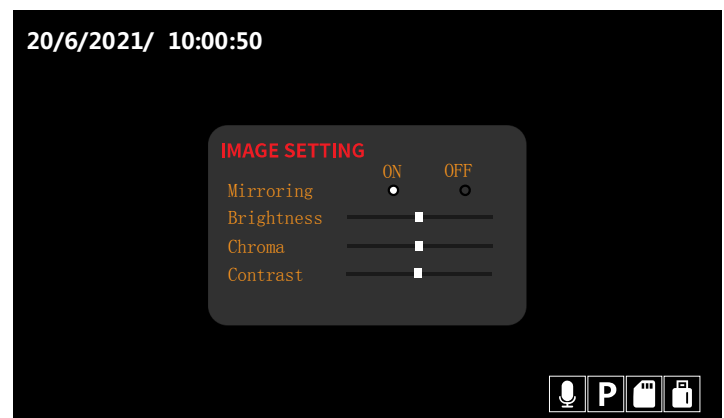


Image setting:
through color contrast
Brightness adjusts image
parameters in real time.



Mirror settings:

After entering the image settings ,
the remote control ◀ ▶ key to select
enable or disable, then press **ESC**
key it can be automatically saved.

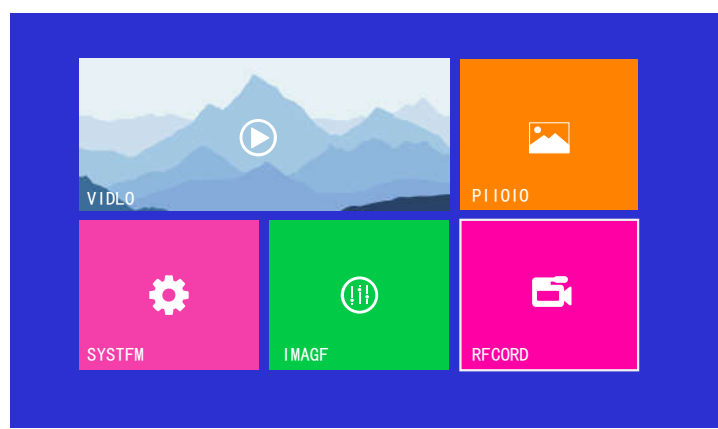
Chroma: refers to adjusting the brightness of the screen on the screen to high or low

Color saturation: refers to adjusting the color of the screen picture to dark or light

Contrast: A measure of comparison between the bright and dark parts of the same picture. The contrast is large, and the picture is very bright in black and white.

5.Video settings

5.1 Recording time/segment setting



Remote control  key to enter the menuSelect "Video Settings"  button to enter



Video packaging time:
Press  to pop up the option bar,
then press  to select
If you want the time period,
press  to confirm and save.

Video packaging time: After this function option bar is expanded, 1/5/10/15/30/60 minutes and other time periods, After the settings are saved, the device packs the video files according to this time period, For example: set to 1 minute, then the device will save the video as a video file per 1 minute when recording

5.2 Video frame rate

Video frame rate: low frame rate video, the advantage of saving storage space, if not necessary, you can press the default setting.

VIDEO SETTING	
VIDEO CLIP TIME	1 MINUTE
FRAME RATL	NTSC30FPS/PAL25FPS
VIDEO QUALITY	NTSC30FPS/PAL25FPS
COMPRESS	15FPS 5FPS
PHOTO QUALITY	HIGH
RECORD MODE	MANUAL
OVERWRITE	ON
TV SYSTEM	PAL

Video frame rate:

Press **OK** to pop up the option bar,

then press  to select

If you want the time period,

press **OK** to confirm and save.

5.2 Video quality

VIDEO SETTING	
VIDEO CLIP TIME	1 MINUTE
FRAME RATL	NTSC30FPS/PAL25FPS
VIDEO QUALITY	HIGH
COMPRESS	HIGH MIDDL LOW
PHOTO QUALITY	LOW
RECORD MODE	MANUAL
OVERWRITE	ON
TV SYSTEM	PAL

Video quality:
High/medium/
low, three modes

5.3 Video compression format

VIDEO SETTING	
VIDEO CLIP TIME	1 MINUTE
FRAME RATL	NTSC30FPS/PAL25FPS
VIDEO QUALITY	HIGH
COMPRESS	H. 264
PHOTO QUALITY	H. 264 H. 265
RECORD MODE	MANUAL
OVERWRITE	ON
TV SYSTEM	PAL

Video compression method:
H.264/
H.265 two compression
methods

5.3 Picture quality

High/medium/low, three modes, the higher the picture quality, the clearer the picture.

VIDEO SETTING	
VIDEO CLIP TIME	1 MINUTE
FRAME RATE	NTSC30FPS/PAL25FPS
VIDEO QUALITY	HIGH
COMPRESS	H. 264
PHOTO QUALITY	HIGH
RECORD MODE	HIGH
OVERWRITE	MIDDLE
TV SYSTEM	LOW
	PAL

Picture quality:
High/medium/low, three modes

5.4 Video settings

VIDEO SETTING	
VIDEO CLIP TIME	1 MINUTE
FRAME RATE	NTSC30FPS/PAL25FPS
VIDEO QUALITY	HIGH
COMPRESS	H. 264
PHOTO QUALITY	HIGH
RECORD MODE	MANUAL
OVERWRITE	MANUAL
TV SYSTEM	POWER UP
	PAL

Video mode:
Manual recording/automatic recording:
Set up manual recording
Need to use buttons, etc.
Power-on video: when the device is
turned on
Automatically record

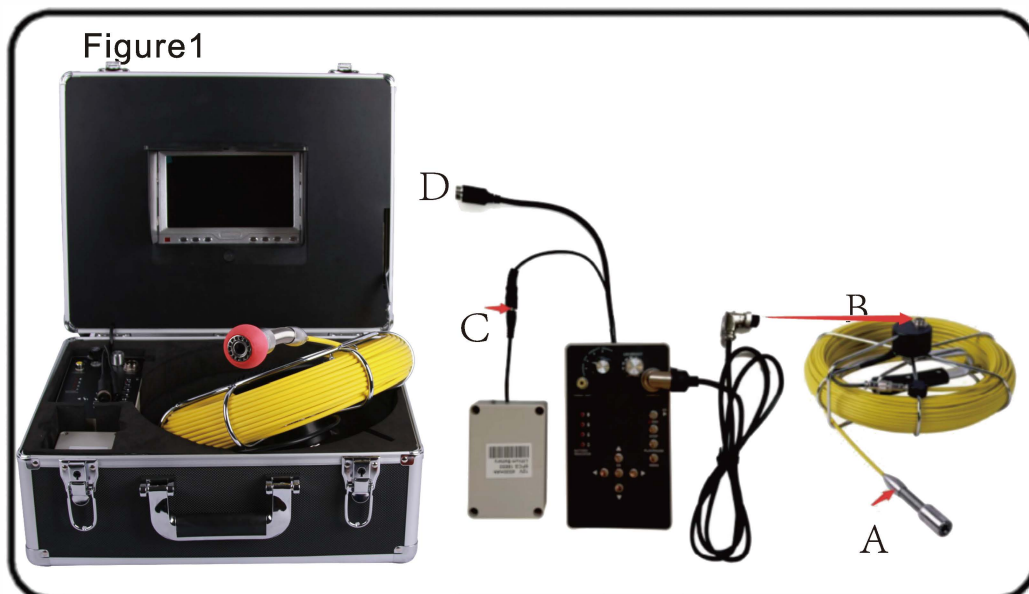
5.5 Loop recording settings

VIDEO SETTING	
VIDEO CLIP TIME	1 MINUTE
FRAME RATE	NTSC30FPS/PAL25FPS
VIDEO QUALITY	HIGH
COMPRESS	H. 264
PHOTO QUALITY	HIGH
RECORD MODE	MANUAL
OVERWRITE	ON
TV SYSTEM	ON
	OFF

Video coverage: refers to the
automatic
Loop, if closed, after the device
is fullAutomatically stop, it is
recommended to turn on (default is
on status)

INSTALLATION

1. **IMPORTANT:** When connecting the Camera to the Monitor the power must be off or both units will be damaged.
2. Screw the Camera to the wheel Cable (See Figure1-A) & Connect the wheel to the Monitor (See Figure 1-B)
3. Plug the Power Adapter cord into the wall AC socket and other end into the DC 12V-Input Jack; or plug the cord from the Battery Box into the DC 12V-Input Jack (See Figure1-C). If use the Battery Case Power, plug the Power Cord of Battery Case into the DC 12V-Input Jack.
4. Turn on the POWER Switch on the front of the Monitor.
5. Gently lower the Camera into a pipe duct, etc and reel out the Cable until it is at the desired depth.
6. Turn on the LED Button & adjust the Brightness from the MENU.
7. Record the pictures if you need (see DVR Operating).
8. By a video cable you can transfer the picture to other larger Screen.
9. When finish, carefully remove the Camera from the pipe duct, etc. Screw out the Camera and clean it with a clean, soft and dry cloth then put the Camera into the previous position.



Recharge the Battery

- 1). Plug the AC cord into wall AC socket & insert the other end into the Battery Box AC jack(See Figure2-A)
- 2). Switch the Power Switch knob on the Control box to CHARGE mode
- 3). The LED on the charger will be RED color flashing during charging, and turn to Green color after full charged (it will taking about 6-8 hours)

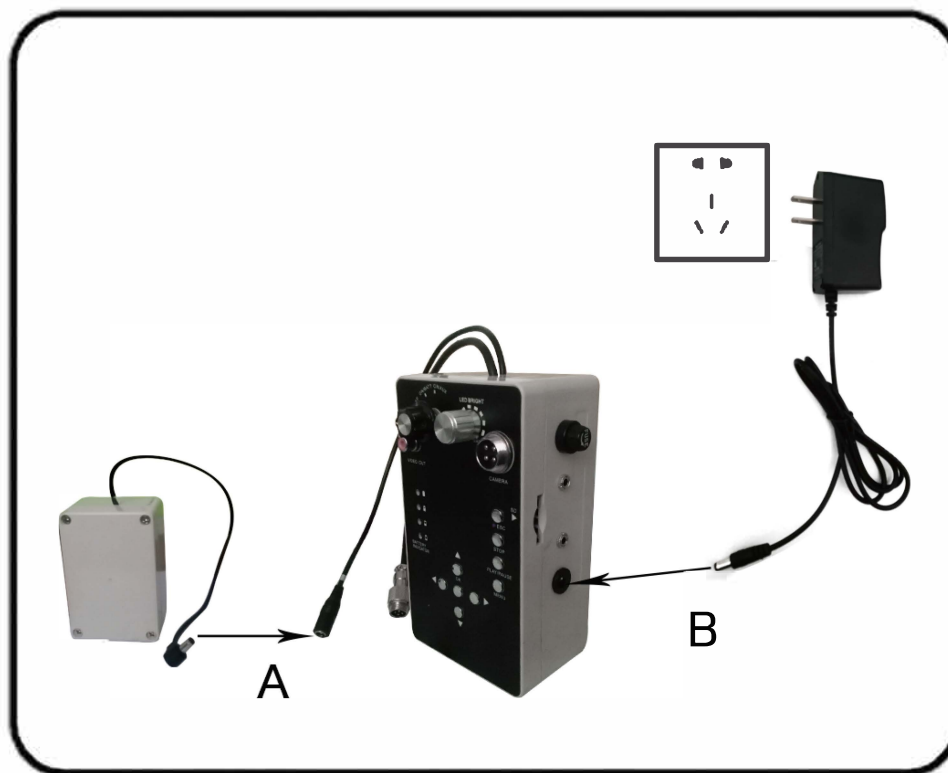


Figure2

Do NOT overcharge the battery, or it will destroy the battery or cause fire

Item	DESCRIPTION
1	CAMERA HEAD
2	CONNECTING CABLE
3	REMOTE CONTROL (for monitor only)
4	LITHIUM BATTERY
5	CABLE WITH WHEEL
6	CHARGER
7	DVR CONTROL BOX
8	SUNVISOR
9	MONITOR
10	MIC



Note: If you can not read the recording pictures on our computer, please download the Codec software from the disc.

DISPOSAL INSTRUCTION

Disposal of the packaging

- Please make reference to the guidelines and standards for appropriate disposal of the packaging valid in your region. In part, the package may consist of plastic bags - watch this respect, with special care to ensure that this is not out of the reach of children. There is a risk of suffocation!

Disposal of waste equipment

- Equipment must be disposed of in accordance with the rules and regulations of the local waste disposal.



Meaning of the "dustbin"

Protect our environment; electrical appliances do not belong in household waste. Use the provided for the disposal of electrical equipment collection points and enter your electrical and electronic equipment that you no longer use. They help ensure that the potential effects of incorrect disposal on the environment and human health to be avoided. So do your part to recycle, recycling and other forms of recovery of waste electrical and electronic equipment. Information on where the devices are disposed of, please contact your local authorities or local Governments.

Parameters Table

System language	Include Chinese/English/German/Spain/Polish/French
AV input	CVBS NTSC PAL
data storage	SD card (support up to 512G)
voltage range	Input 12V
Play video jump	press the up and down keys to jump to the next video
Video mode	automatic / manual
Video standard	CVBS
Video format	MP4
Playback software	VLC media pLayer/WINAMP
Operating temperature	-20° ~+60°
Control Method	button
Snap an image	Support to capture pictures during recording
Watermark	Support watermark off
reset	support
Automatic coverage	Optional whether to be overwritten
Mirror settings	Support mirror setting
Image adjustment	Support image adjustment
Fastforwardandrewind	support

