

CCTV SECURITY TESTER User's Manual

CCTV SECURITY TESTER



- ◆ Thank you for purchasing the CCTV security tester. Please read the manual before using the CCTV SECURITY TESTER, and use properly.
- ◆ For using the CCTV SECURITY TESTER safely, please first read the 「Safety Information」 carefully in the manual.
- ◆ The manual should be kept well in case of reference.
- ◆ Keep the S/N label for after-sale service within warranty period. Product without S/N label will be charged for repair service.
- ◆ If there is any question or problem while using the CCTV SECURITY TESTER, or damages occurred on the product, please contact our Technical Department.

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1. Safety Information

- ◆ When using this device, please use in compliance with the local rules of the electrical usage and avoid to apply at the places which are inapplicable for the use of electrics such as hospital, gas station etc.
- ◆ When using this device, please use the original accompanying accessories to avoid damage which caused by the use of unauthorized accessories products.
- ◆ The instrument accessory is to meet own equipment only, please do not use for other purposes, in order to avoid the unpredictable accident.
- ◆ Do not expose the product to rain or moisture, in order to avoid performance degradation or damage.
- ◆ The exposed part of the tester should not be touched by the dust and liquid.
- ◆ During transportation and use, it is highly recommended to avoid the violent collision and vibration of the tester, lest damaging components and causing failure.
- ◆ Do not leave the tester alone while charging and recharging. If the battery is found severely hot, the tester should be powered off from the electric source at once. The tester should not be charged over 8 hours.
- ◆ Do not patch the instrument interfaces while equipment is power on.
- ◆ Do not use in high humidity areas. If the equipment gets wet, you should disconnect the power and all other cables immediately.
- ◆ Do not use in the environment with flammable gases.
- ◆ Do not disassembly the instrument since no component inside can be repaired by the user. If the disassembly is necessary indeed, please contact with the technician of our company.
- ◆ The instrument should not be used under the environment with strong electromagnetic interference.
- ◆ Do not touch the instrument with wet hands or wet objects.
- ◆ Do not use the detergent to clean and the dry cloth is suggested to use. If the dirt is not easy to remove, the soft cloth with water or neutral detergent can be used, but the cloth should be tweaked sufficiently.

2. Video Security Tester Introduction

2.1 General Introduction

The device is designed for video surveillance installing and maintenance. Combined with video displayer, PTZ controller, DC12V 1A power output, audio test, video generator, capturing data of RS485, and other functions.

This device is fully functional, easy to use, easy to carry, and very suitable for video security engineering installation, maintenance of front-end camera equipment. Engineering and installation efficiency can be greatly improved. And it also can reduce the cost of maintenance.

2.2 Product highlights

- ◇ With unique digital zoom function, the video image can be magnified.
- ◇ 2.8-inch high resolution LCD screen, 320 * RGB * 240(QVGA) resolution, 64K colors.
- ◇ LCD screen brightness / contrast / color saturation /backlight brightness is adjustable.
- ◇ Video Format NTSC, PAL automatically adapt and standard prompt.
- ◇ Video signal strength measurement, to test if video signal level is attenuated.
- ◇ DC12V 1A power output, to provide temporary power to the camera.
- ◇ With LED function.
- ◇ Audio input test, test microphones and other audio signals.
- ◇ Video generator outputs a variety of standard test images.
- ◇ Dome camera address search function can help users to find the dome camera address.
- ◇ Support RS485/RS422 interface, baud rate 150 – 19200bps is adjustable.
- ◇ Support varieties of control protocols, such as PELCO–P, PELCO–D, SAMSUNG etc.
- ◇ The PTZ data monitor help user to analysis control protocol command data, and help engineers to determine whether the RS485 transmission is normal or not.
- ◇ PTZ (pan tilt and zoom) control, can control the direction of rotation, camera zoom, focus, iris, and dome camera menu parameter settings, set and call preset position.
- ◇ Graphic display the battery level in real time. The device employs advanced power control and protection circuit. The device is high power efficient, energy saving and environmental protection. The battery charge time is about 4 hours. It can work for 15 hours after a single charge.

2.3 The product features

2.3.1 Video test

This test device has a built-in 2.8 inch high resolution digital LCD monitor, user can inspect camera image more clearly. It can automatically recognize the input signal standard(PAL / NTSC).

2.3.2 Digital zoom function

With built-in high speed image processor, the device can display portion content of input video. With digital zoom, user can inspect video details more clearly. For example, the camera image corners can be enlarged for detailed observation, finding focus blur.

2.3.3 Video signal level measurement

The device can measure video signal level, and tell whether the video signal strength will be attenuated or too high. If the video cable is too long or in poor condition, the video signal will be attenuated. Attenuation of the video signal will cause the image dim, low image dynamic range. If the video signal is too high, it will cause the virtual shadow, and reduce the sharpness of the image. The video signal level measurement can display the video signal level value in real time. If the value is out of normal range, a message will appear on the screen to remind.

2.3.4 PTZ control function

More than 30 built-in PTZ control protocols, such as Pelco-D / P, SAMSUNG, Panasonic. Through RS485 interface, user can control the PTZ to turn upper, low, left and right rotation, as well as adjust the camera focus, aperture size. Support pan speed, tilt speed adjustment; save presets and recall preset; operate dome camera built in menu, setting parameters of the camera.

2.3.5 Multi-standard video signal generator

Multi-standard video generator send a variety of standards (PAL, NTSC) to graphic signal surveillance center through Video Out port. It can be used to check if the transmission of video channels works normal or not. At the same time, by inspecting received standard color graphics in the surveillance center, user can judge the signal attenuation or color interference during transmission.

2.3.6 DC12V 1A power output function

The device has a build in 12V 1A power output, to provide a temporary power supply for camera when power line is not ready or camera power adapter is worn out.

2.3.7 Audio test function

Audio test function can test microphones and other audio equipment.

2.3.8 PTZ control data monitor

The device can capture data from RS485/RS422interface. Displays codes sent from multifunction keyboard or DVR. Used to inspect the PTZ control command data, to verify RS485/RS422 data transmission. Device screen displays hexadecimal code, for example:

PELCO-P: A0 00 (address) xx xx xx xx AF xx

PELCO-D: FF 01 (address) xx xx xx xx xx

2.3.9 PTZ address scanning function

Video security tester has unique address scanning function. It can help user to find dome camera address quickly. When need to maintain a dome camera, you may not know the address of camera. There will be a lot of effort to remove the camera to look for the address. With PTZ address scanning function, user can quickly find the address of the dome camera.

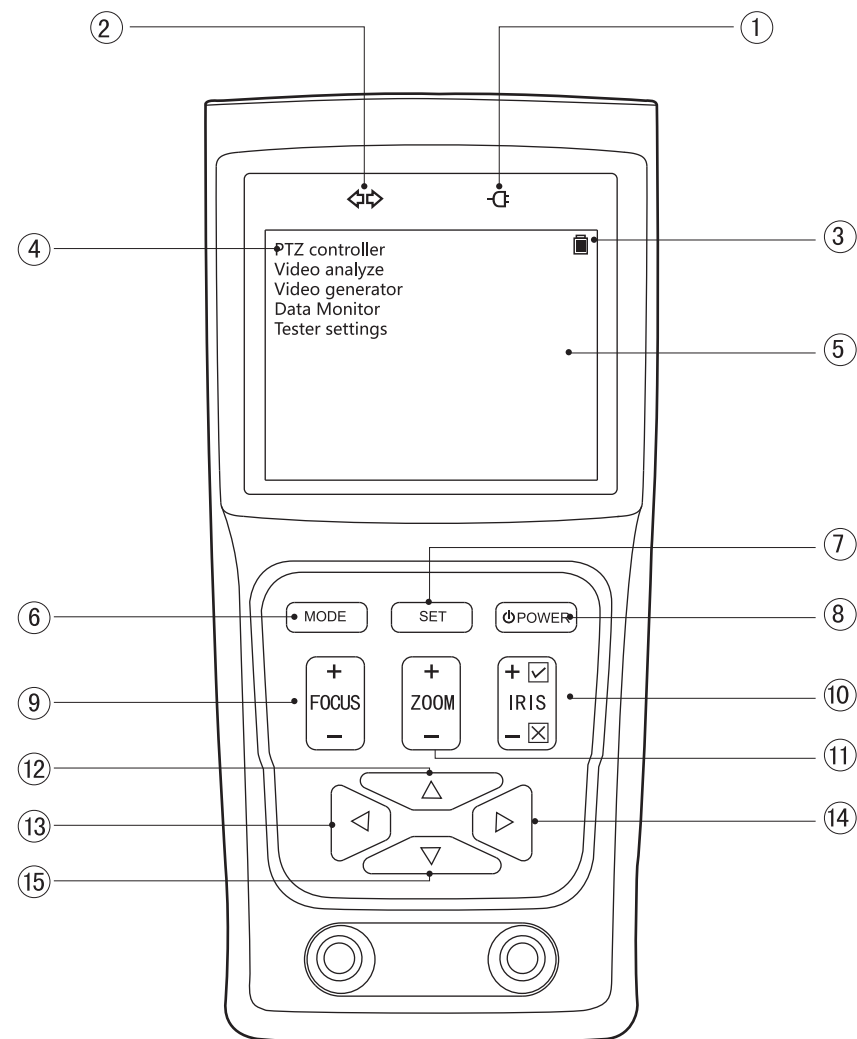
2.3.10 LED Function


















Equipped with high light LED on the top of tester. Press **SET** for at least 2 seconds to turn on the light. This function is still available when power off.

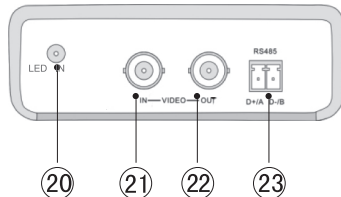
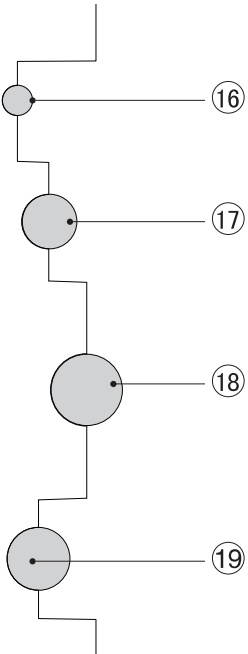
2.4 Accessories

- ① Video security tester device
- ② DC5V 2.0A DC 5V 2.0A charger
- ③ Built-in 3.7V Lithium polymer battery,3000mAh
- ④ BNC cable
- ⑤ RS485 cable
- ⑥ Power output conversion cable
- ⑦ AUDIO cable
- ⑧ Lanyard
- ⑨ User's Manual

2.5 Partial indication and functions

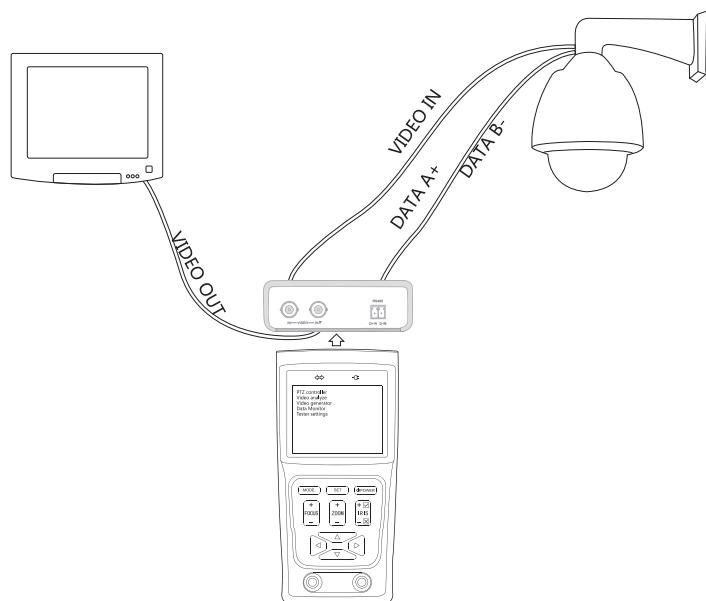


1		External power indicator, when connected to external power supply, the green light is on.
2		Data receiving indicator, red lights flashing when receiving/sending data.
3		The battery power icon display of battery power in real time.
4		The function menu, switch utility functions of the tester.
5		Display area, display the video image, battery power level, and the function related menu and data.
6		Function select button. Use this key to bring up function select menu. Keeping clicking this key or use the  ,  key to select device function.
7		Setting/lighting button. It is use to bring up parameters setting menu for each function. Or to turn on the torch after 2 seconds press. This function still available when power off.
8		Press and hold for over 2 seconds to turn on or turn off the device. Short press to open or close the menu display.
9		Control camera focus. Or used as “yellow” +/- button.
10		Confirm and Cancel button. Some parameters setting needs confirm, press <input checked="" type="checkbox"/> to confirm the change, press <input type="checkbox"/> to control camera iris. Or used as “blue” +/- button.
11		Control camera zoom. Or used as “red” +/- button.
12		Up Arrow. Change highlighted menu item/dome camera tilt control.
13		Down Arrow. Change highlighted menu item/dome camera tilt control.
14		The left arrow. Change highlighted parameters /dome camera pan control.
15		The right arrow. Change highlighted parameters /dome camera pan control.

 <p>Figure of top side</p>  <p>Figure of left side</p>	
16	RESET button. Restore to the factory default settings, and restarts device.
17	12V 1A DC temporary power output.
18	5V DC charger connector. Please use the 5V / 2A power adapter of accessories.
19	Audio input connector.
20	LED light.
21	Video input BNC connector.
22	Video output BNC connector.
23	RS485 connector, used for PTZ control.

3. Operating Introductions

3.1 Device connection



- (1) Connect the video output of the camera to the video input of the video security tester. The LCD screen will display images from the camera.
- (2) Connect the VIDEO OUT to an external monitor or optical video transceiver. The tester will output video while displaying.
- (3) Connect camera PTZ RS485 wires to the RS485 port the tester. Beware of the cable polarity.

3.2 Menu operation

- ◆ Press and hold **[POWER]** for more than 2 seconds, device turned on.
- ◆ Press and hold **[SET]** for more than 2 seconds to control the LED light. The LED function is still available when power off.
- ◆ When device is on, press and hold **[POWER]** for more than 2 seconds, device is turned off. Auto power off is also available.
- ◆ When the device is on, press **[MODE]** function menu key will bring up the function select menu, press **[MODE]** multiply times or combine the use of to select function . Device will enter highlighted function if not switching for 2 seconds. User can also use to enter instantly.
- ◆ In some function mode, press **[SET]** to bring up parameter setting menu.
- ◆ After changing parameters, when there is a confirm prompt displayed, press to confirm. Or press to cancel.

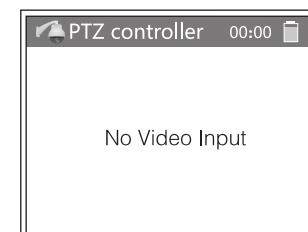
When the device is on, press **[MODE]** key will bring up the function select menu. Press **[MODE]** key multiply times or combine the use of up and down key to select function. Device will enter highlighted function if not switching for 2 seconds.

PTZ controller
Video analyze
Video generator
Data Monitor
Tester settings








3.2.1 PTZ controller

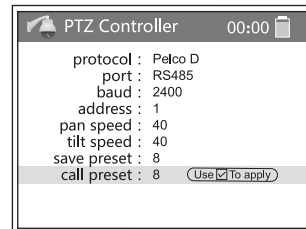
In PTZ controller function, screen will display input video. Press **[SET]** will bring up the PTZ parameter setting menu. Press **[POWER]** will turn off/on the PTZ controller title bar, displays full screen video.

When No video input, a "No input video" prompt will be displayed.(as figure on the right)





(1) PTZ controller parameter settings



In the PTZ controller mode, press **SET** to bring up the PTZ parameter setting menu.(as figure on the right). Use  to  select highlighted item, use  to  change highlighted item values. If the change parameters item need to be confirmed, a  prompt will be displayed, press  to confirm or press  to cancel the operation.





A. Protocol

Highlight the protocol item, then use   to select PTZ protocol. The device with over 30 protocols available for users to choose, including: Pelco-P, Pelco-D, Samsung, Yaan, LiLin, CSR600, Panasonic, Sony-EVI etc.



B . Port

Highlight the "Port" item, then use   to select PTZ control port . RS485 and RS422 is supported.

C. Baud rate

Highlight the "Baud" item, then use   to select communication baud rate,150/300/600/1200/2400/4800/9600/19200 is available.

D. Address

Highlight the "Address" item, then use   to change to different address. The address range is depend on protocol. For most protocol, address range is 0~255. Maximum address is 16383. The address setting must be same with the address of the dome camera to control.




E. Pan speed

Highlight the "Pan speed" item, then use   to change pan speed setting. Range is 0~63.




F. Tilt speed

Highlight the "Tilt speed" item, then use   to change tilt speed setting. Range is 0~63.

G. Set preset position

Highlight the "set preset " item, then use   to change preset number. Range is 0~128. To actually save current camera position as a preset position, press  to confirm.

H. Call preset position

Highlight the "call preset " item, then use   to change preset number. Range is 0~128. To actually call current camera position, press  to confirm.




Maximum preset number is depend on dome camera.

For some dome camera, calling specified preset number will bring up the camera built in menu. Please refer to camera operating manual.







Please be careful to check and make sure the protocol, address, port, baud parameter is meeting the camera setting. Otherwise the camera cannot be controlled.


After finished the parameters setting, the tester can control the PTZ and lens:

	Press "+" increased iris(open). Press "-" decrease iris(close).
	Press "+" to zoom tele. Press "-" to zoom wide.
	Press "+" to focus far. Press "-" to focus near.

(2) Dome camera preset position save and recall

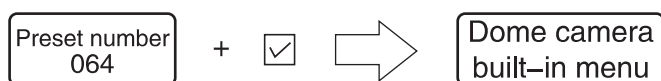
Save presets position:

First set the PTZ parameter to gain control of the PTZ. And put the camera to desired position. Then press **SET** to bring up the parameter set menu. Use   to highlight the "set preset" item, and   to select desired preset number.

Finally press  to save the current position as a preset position, preset number is the setting number.

Calling preset position

First set the PTZ parameter to gain control of the PTZ. Then press **SET** to bring up the parameter set menu. Use **▶▶** to highlight the "call preset" item, and **▶▶** to select desired preset number. Finally press **☑** to call the desired preset position, preset number is the setting number. The camera will instantly turn to the preset position, including camera angle, zoom, focus and iris. Press **☒** to exit.



Note: The preset positions are save in the dome camera. Total settable preset number is depends on the dome camera.

(3) Operating camera built-in menu

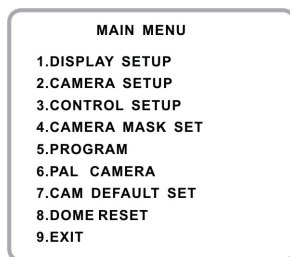
Different dome camera use different way to operate their built-in menu. Here is just an example. Please refer to camera manual.

In this example, the dome camera uses preset number 64 to bring up the built-in menu.

Under PTZ control function, first gain control of the camera, then press **SET** to enter PTZ parameter setting, highlight "call preset" item. Use **▶▶** to change the value to 64. Press **☑** to confirm.

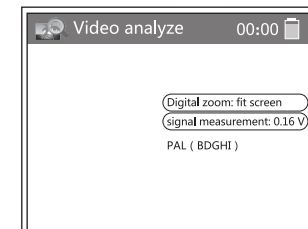
The camera built-in menu will be brought up. User can operate the menu by using **◀▶** keys. For camera built-in menu operation, please refer to camera manual.

Dome camera built-in menu:



3.2.2 Video analyze

Press **MODE** multiply times or press **◀▶** to highlight the video analyze function. After two seconds, the device will enter video analyze function.

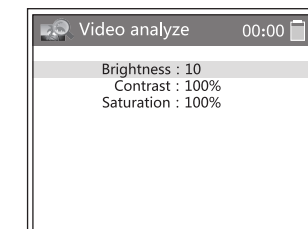


1. Digital zoom function

When in video analyze, press **+** **zoom** **-** to adjust digital zoom mode. "Fit screen" , "1X" , "2X" and "4X " four zoom mode are supported. When selected zoom mode other than "fit screen", the video is only partially displayed on the screen. Use **◀▶** to move the view window around the full input video.

2. Video image input format

When in video analyze mode, the standard of input video (PAL or NTSC), will be displayed on the screen. This function needs no setup.





3. Video signal level measurement

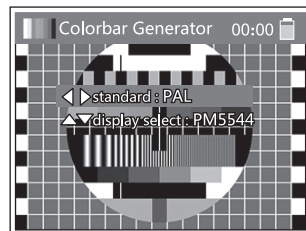
When in video analyze mode, the video signal level is constantly measured. The level of the input video signal is displayed on screen. By using different color of the prompt bar, **Amplitude:** the device is telling whether the video signal level(amplitude) is normal(blue) or exceeds normal range(orange).





Digital zoom usage: It is common that cameras having defects like corner focus blur, or having dust on lens. And when installing a camera, user needs to adjust some finest detail. To discover the camera defects and do the adjust, there are some difficulty if using a small size screen. With the digital zoom function, user can do the job easily and efficiently.

Video signal level measurement function is mainly for finding signal attenuation. When video transmit cable is too long, signal attenuation is badly. This attenuation will cause image dim, reduce of image dynamic range. If video signal is too strong, it will cause the video shadow, reduce of clarity of image. The video signal level measurement function displays the video signal level in real time. Also help user to verify the video quality and fixing problems.

3.2.3 Video generator

Press **MODE** multiply times, or use 、 to highlight the “video generator” item in the function select menu. Device will enter the video generator function after two seconds.





The video generator supports global PAL/NTSC standards. Press 、 to change the video format. Then press 、 to change different standard test images.

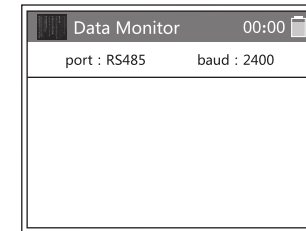
Practicality:



In maintaining the CCTV device, it can send image to the monitoring center designs. If the monitoring center can receive images, it indicates video transmission is normal. In the meantime, the monitoring center can determine if image quality is normal according to the received color bar image.



Note: Screen display image is not exact the same with the output signal.


3.2.4 Data monitor

Press **MODE** multiply times or the use of   keys to highlight the “Data Monitor” item, the device will enter “Data Monitor” function after 2 seconds.



Press **SET** to highlight the “port:485”, then use   to change data port to monitor.

Press **SET** to highlight the “baud:4800”, then use   to change data baud rate of transmission.



Then press **SET** to confirm. Press  to clean the screen.

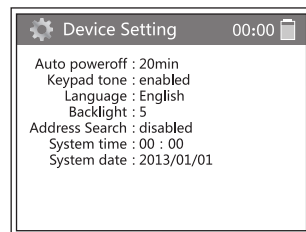
Use this data monitor function to capture data from control room keyboard or DVR. The data is sent to PTZs. User can judge if the transmission is good, by inspecting the displayed data. (Note: data communication baud rate must be set to the exact transmission rate)

Practicality:

To maintaining the front-end dome camera, this function can used to determine whether video devices, such as optical transceiver RS 485 data communication, is normal or not. With the code which captured by Data Monitor, engineers can analyze the PTZ control device better.

3.2.5 Tester settings

Press **MODE** multiply times or combine the use of  、
 keys to highlight the “Device setting” item, the
device will enter “Device setting” screen after two
seconds automatically.



Press   to highlight items that needs change. Use   to change settings.

If a **Use ☒ To apply** is displayed, use ☒ to save change. Or use ☐ to discard change.

Automatic power off : Set to automatically power off time from 5 to 60 minutes, or disable this function. If not operating the device for a time exceeds the setting, the tester will shut down automatically.

Keypad tone : Set keypad touch tone On or Off.

Language: Selecting menu language.

Backlight : Setting the display backlight brightness. From 0 to 7 is adjustable. High brightness of the backlight is applicable to bright environment, but consuming more battery.

PTZ address search: use to turn the address search function On/Off.

This option will reset automatically when you turn off the device. This is to reduce the mis-operate of the address search function.

When this option is turned on, there will be a "address search" item be added to the function select menu.

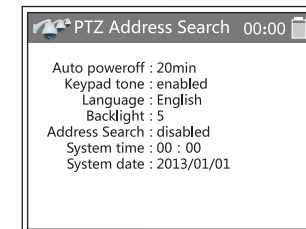
When the function of PTZ address scan is on, the main menu will add new menu bar of PTZ address scan, the operator can enter PTZ address scan interface in this menu bar. If this function is not turned on, function select menu does not display the PTZ address scan function.

System Time: Setting the system time.

System Date: Setting the system date.

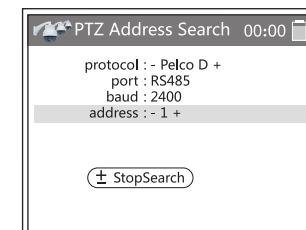
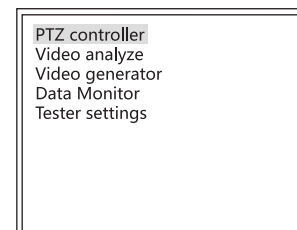
3.2.6 PTZ address scan



To use this function, you need to enter device setting and set the “address search” item to “enable”, and be sure to press ☒ to confirm. Then the “address search” function will appear in the function select menu.







Note: When using this function, only operate in front-end with a single dome camera data line connected. It is prohibited to use this function in back-end with many camera connected on a same data line. Otherwise it will cause multiple dome camera to rotate constantly! Thus this function will be stopped each time when the device is turned off, user will need to set the option on when you need to use it next time.

After enabling the PTZ address search function, choose to enter the PTZ address search function.



First, the protocol, communication port and communication rate must be consistent with scanned PTZ. When the protocol, port and address are set to the same with the camera, the camera will move down for a small angle. This movement can be observed on the tester screen. At this time, user can do test control to the PTZ by using . If control is confirmed, press  to exit the the address search function.

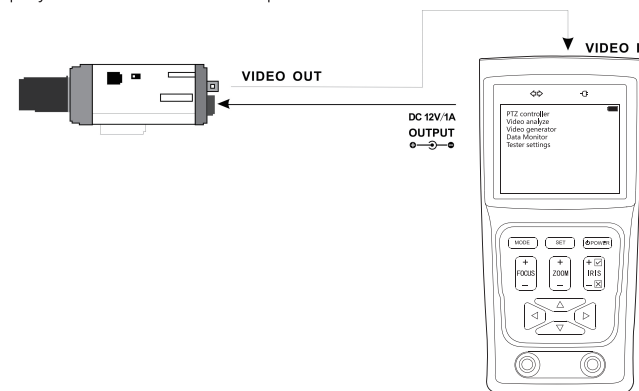
When  is display, press the “blue” key will start automatic address increase or decrease. When the address passes the camera address, the camera will start to rotate to its right side non-stop. User should keep watching the video and press “blue” key again to stop the address increase or decrease once the camera to rotate. After address auto adjust is stoped, user can use  to test control the camera. If it don't work, user should adjust address by using  key. Once the address is same with the camera, the camera will stop rotating, and move down a little. Then, user can use  to test control the camera.

After the camera address is found, please press  to exit the address search function.

3.3 DC12V 1A power output

The DC12V/1A OUTPUT port on the right side of the device is a temporary power supply for the camera. It should be used with power output cable in accessory. Connect the smaller plug of the cable to the tester DC12V output, and the bigger plug to the camera power input port.

Power supply output function is mainly used in demonstrating or testing a camera. In some field that need to install cameras, but the power line is not ready yet, then the power supply function of the tester play the essential role in the process.

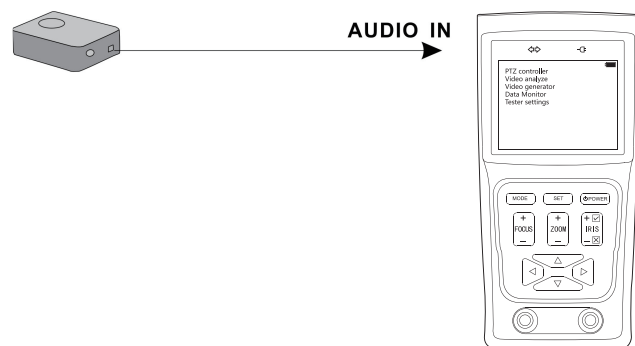


! NOTE:

1. Do not connect any external power supply to the device DC12V/1A OUTPUT port (like chargers, etc.). Otherwise the device will be damaged, and the external power supply device could be damaged too. Artificial damage is not within the scope of the device warranty.
2. Do not connect the DC12V/1A output to the tester DC5V power input port, otherwise the instrument may be damaged. Artificial damage is not within the scope of the device warranty.
3. The DC12V power output current is limited to 1A. If the camera current is higher than 1A, the tester will reduce output voltage to limit output current. In some cases, the tester may enter protected mode. In this case, disconnect DC12V power output cable from the tester and charge the tester using the tester charger. This will can release protection.
4. When using this function, make sure that the battery level is full or over 50%, otherwise the power output time is very short.

3.4 Audio test function

The audio test function is used to test microphones or other audio equipment. Through the tester device built in speaker, user can hear the audio, and judge the quality of microphone or audio equipment.



4. SPECIFICATION

Model	CCTV SECURITY TESTER
Video test	
Video System	NTSC/PAL, Automatically recognize
Video level	1Vpp
Display screen	2.8-inch LCD 320 * 320 * 240 (QVGA) resolution, 64K color
Screen adjustment	Video display brightness, contrast, color saturation adjustable, LCD backlight brightness is adjustable.
Video input / output	1 channel BNC Video IN, 1 channel BNC Video output
Video Analysis	
Signal level measurement	Measure the video signal level, and displays exception information
Digital zoom	Support "fit screen" "1X" "2X" "4X" options
12V power output	
Power output	Temporary power output 12V 1A DC
Audio test	
Audio test	Input audio signal, and played on the internal speaker
PTZ control test	
Communication Interface	RS485/RS422 bus support
PTZ Protocol	Built-in Pelco-D/P, Samsung, Panasonic, Lulin, Yaan... Totally over 30 protocols
Baud Rate	150, 300, 600, 1200, 2400, 4800, 9600, 19200bps
Video Signal	
Video signal generator	Support PAL / NTSC formats, a variety of standards video signal test
Data monitor	
Data monitor	RS485/RS422 bus support, capture and display data
Power supply	
External power supply	DC 5V (2A)
Battery-powered	Built-in 3.7V li-polymer battery, Capacity 3000mAh Charge time 3-4 hours
Charge	Battery power time 15 hours
Power saving features	Low power consumption, automatic power off, Real-time display of battery level
System settings	
Language settings	English user selectable
Auto power off	Disable / 5-30 minutes
Keyboard sound	On / off
Working environment and Specifications	
Temperature	-20℃ --- +70℃
Humidity	30%-90%
Dimension	165mm x 30mm x 27mm

