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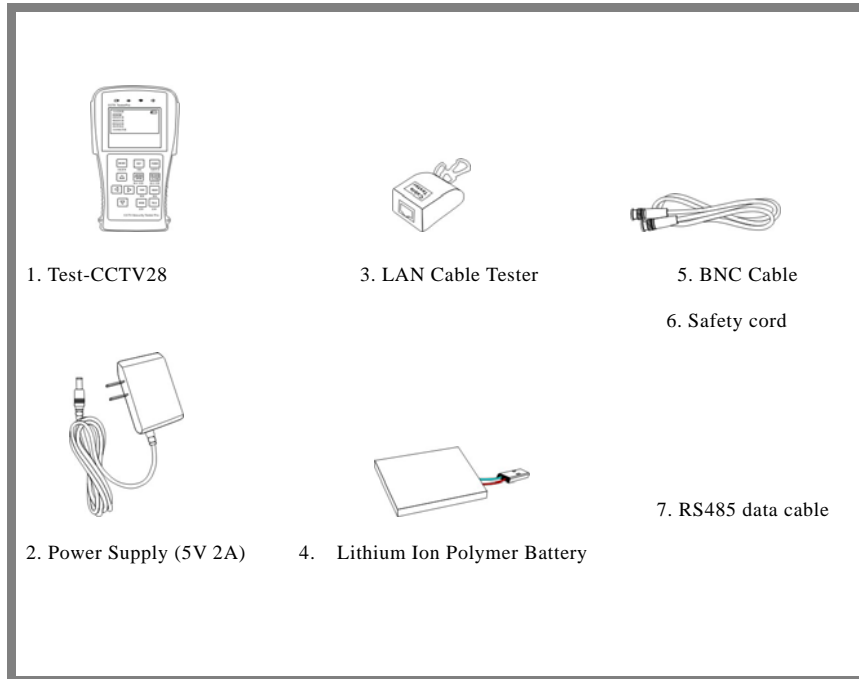
## Introduction

Test-CCTV28 was developed for the On-Site installation and maintenance of video monitoring system. It can be used for displaying video, controlling PTZ, generating images, capturing data of RS485 and testing LAN cable etc. Its functions, easy operation, and portability makes it simple for the CCTV technician to install and maintain CCTV system, improving work efficiency and get the labor cost down.

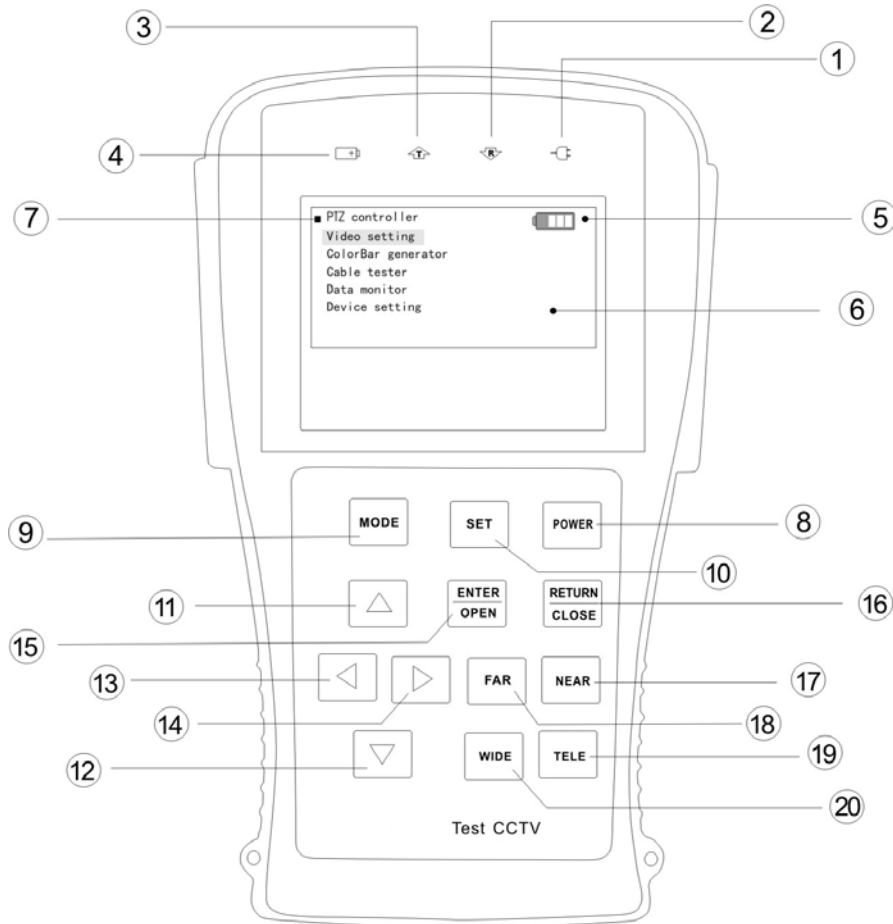
### 2.1 Features

- 2.8" TFT-LCD, 960 (H) × 240 (V) resolution.
- PTZ control. Pan/tilts the P/T unit, zooms in/out the lens, adjusts the focus, aperture and sets and calls the preset position
- Video displaying. Automatically adapts and displays the video format of NTSC/PAL. LCD Brightness/Contrast/Color Saturation are adjustable.
- Video Level testing, video signals measured in IRE or mV
- Video Generating, The PAL/NTSC multi-system Colour Bar generator (seven-system switchable, transmit/receive seven-system colourful imagines)
- Data analysis. Captures and analyzes RS485 controlling data to help the technician to find out the problem.
- Cable testing. It is powerful in testing LAN cable, measuring the connecting status , displaying the sequence of connection and the NO. of the LAN cable.
- Multi-interface and Multi-baudrate. Support RS232 ,RS485 and RS422 interface; baud rate ranging from 150, 600 to 19200bps.
- Multi-protocol. Supports more than twenty PTZ protocols. For example, PELCO-P, PELCO-D, SAMSUNG etc.
- PTZ address scanning, search up the ID of PTZ camera.
- Lithium Ion Polymer Battery (3.7V DC2000mAh). The device employs advanced power control and protection circuit. The device is high power-efficient, energy saving and environmental protection. It can last 11 hours for normal use after charging for 4 hours.




















Professional design, light and portability, video display and data control are deliberately integrated, which makes the instrument so simple, practicable, easy for use that the training is almost unnecessary for an operator to be skillful.



2.3 Front Panel



1		The power indicator: it lights green while the tester is powered on.
2		The data-reception indicator: it lights red while the data is being received.
3		The data-transmission indicator: it lights red while the data is being transmitted
4		The charge indicator: it lights red while the battery is being charged. As the charging is complete, the indicator turns off automatically.

5		The display Icon of battery electricity: it displays the electric quantity
6		Main-menu: it shows main functions of Test-CCTV28.
7		Sub-menu: Shows and sets the values of functions
8		Long-pressing it more than 2 seconds to turn on/off the tester; short-pressing to turn on/off the PTZ controller menu displaying.
9	 or  or 	Menu key: it pops up the main-menu; constant-press it or press the  or  key can shift between functions
10		Setup key : press it or press left or right key to enter sub-menu to set the parameters of functions.
11		Upward : Select the item which will be set or add the value of the parameter. Tilt the PTZ upward.
12		Leftward : Enter the sub-menu or select the parameter whose value will be changed. Reduce the value of the parameter. Pan the PTZ left.
13		Rightward : Enter the sub-menu or select the parameter whose value will be changed. Add the value of the parameter. Pan the PTZ right.
14		Downward : Select the item which will be set or reduce the value of the parameter. Tilt the PTZ downward.
15		Confirm/Open : Confirm the setting of parameters; open the aperture.
16		Return/Close : Return or cancel while setting parameters of the menu; close the aperture
17		Near focus: Focus the image nearby.
18		Far focus: Focus the image faraway.
19		TELE: zoom in the image

20



WIDE: zoom out the image

**2.4 Side view**

The diagrams illustrate the physical layout of the device. The **Left Side** view shows an RS232 interface (25). The **Top View** shows a video input (26), video output (27), and RS485/422 interface (28). The **Right Side** view shows a UTP cable port (24), a reset button (22), a DC IN power input (23), and a safety cord hole (29).

22	Reset the default settings of parameters.
23	External power supply (DC, 5V): It is highly recommended to use the equipped power adapter.
24	UTP cable port: Please use together with UTP LAN cable tester.
25	RS232 interface: RS232 communication for the PTZ.
26	Video input (BNC input interface): Inputs the video.
27	Video output (BNC output interface): Outputs the video.
28	RS485/422 Interface: RS485/RS422 communication for the PTZ.
29	Hole for the safety cord.


## 2.5 Installing the Battery

The tester has built-in lithium ion polymer rechargeable battery. The battery cable inside battery cabin should be disconnected for safety during transportation!



Prior to the use of the instrument, the battery cables inside the battery cabin should be well connected and the color of cables should be at the same side.





Usually it need not to disconnect the cable at the normal use, pressing  key continuously can power on or off the tester.



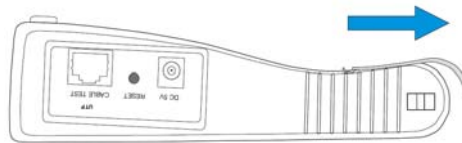
At the first time of use, the batteries should be completely exhausted and then recharged for 4 or 5 hours.



The Charge Indicator  lights red when charging the battery, The charge indicator turns off automatically when the charging is completed.

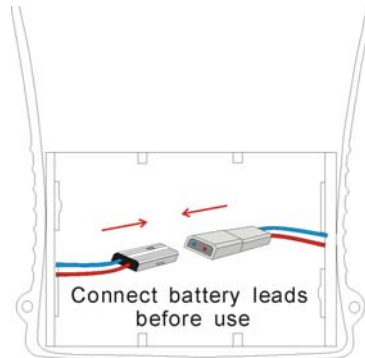
- △ Notice: When the Charge Indicator  turns off, the battery is approximately 90% charged. The charging time can be extended for about 1 hour and the charging time within 8 hours will not damage the battery.
- △ The tester can work as usual while it is being charged, however. But the charging time will be extended.
- △ Press the RESET key at the right of the instrument to restore the default settings when the instrument works abnormally.

**Unlock the battery cover by pushing horizontally as the direction illustrated**

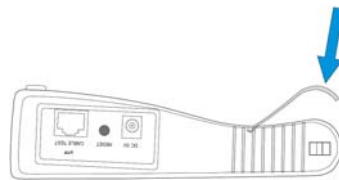


⚠ Warning: Connect the terminal of the battery with the direction illustrated. Please take care of the polarity of terminal.

(The wires of the same color should be both at the one side)




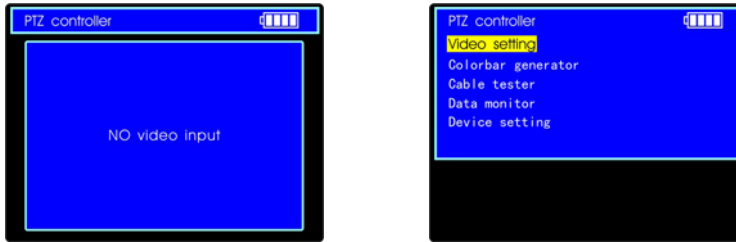
Lock the batteries by pressing as the direction illustrated





### 3. Operation

#### 3.1 Power on

Continuously press  (at least 2 seconds) to power on/off the Test-CCTV28. When Test-CCTV28 powers on, press MODE key the main-menu will pop up.




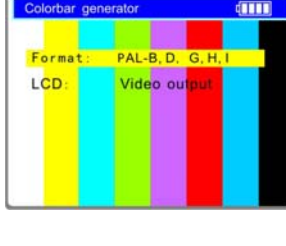
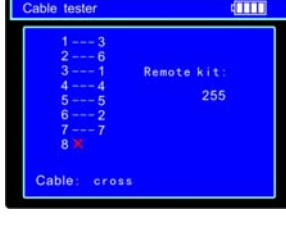


#### Menu & Functions

Press MODE key continuously or press the  or  key to select the function (PTZ controller, Video settings, Color Bar generator, LAN cable tester, Data monitors, Device setting) and enter corresponding function setting sub-menu. Press SET key to set the parameters in function sub-menu.

Note: When the Test-CCTV28 is powered on, it will return to the function which is being operated before it is turned off.

	<p><b>1. PTZ controller</b></p> <p>Display the input video images. Pan/tilt the P/T unit and zoom in/ out the image. Setup the controlling parameters like protocol, communication port, baud rate, PTZ ID, pan/tilt speed; set and call preset position.</p>



 <p>The screenshot shows the 'Video setting' menu with the following options: Brightness: +0, Contrast: +2, Saturation: +09, NO VIDEO INPUT, Format: (blank), and Amplitude: (blank).</p>	<p><b>2. Video setting</b></p> <p>Adjust the LCD brightness, Contrast, Color saturation.</p> <p>Video Format displaying and Video level testing</p>
 <p>The screenshot shows the 'Colorbar generator' menu with the following options: Format: PAL-B, D, G, H, I and LCD: Video output.</p>	<p><b>3. Colour Bar generator</b></p> <p>Output or receive seven different forms of video color bar to tester monitor, cable or other equipment.</p>
 <p>The screenshot shows the 'Cable tester' menu with the following options: 1---3, 2---6, 3---1, 4---4, 5---5, 6---2, 7---7, 8---, Remote kit: 255, and Cable: cross.</p>	<p><b>4. Cable tester</b></p> <p>Test LAN cable or telephone cable.</p> <p>The connecting condition and the sequence of wires will be displayed, as well as the serial number of the cable tester kit.</p>
 <p>The screenshot shows the 'Data monitor' menu with the following options: Port: 485, Baud: 4800, and a list of hexadecimal data: A0 00 00 08 00 40 AF 47, A0 00 00 00 00 00 AF 0F, A0 00 00 10 00 40 AF 5F, A0 00 00 00 00 00 AF 0F, A0 00 00 04 40 00 AF 4B, A0 00 00 00 00 00 AF 0F, A0 00 00 02 40 00 AF 4D, A0 00 00 00 00 00 AF 0F.</p>	<p><b>5. Data Monitor</b></p> <p>Captures the protocol from the controlling system and display command data. It is helpful to debug and maintain RS485 communication.</p>
 <p>The screenshot shows the 'Device setting' menu with the following options: Auto poweroff: 10 min, Keypad tone: ON, Language: English, Brightness: 7, Not saved, and Enter to apply.</p>	<p><b>6. Device setting</b></p> <p>Set the parameters of the Test-CCTV28 (Auto poweroff/ Keypad tone/Language/Brightness)</p>

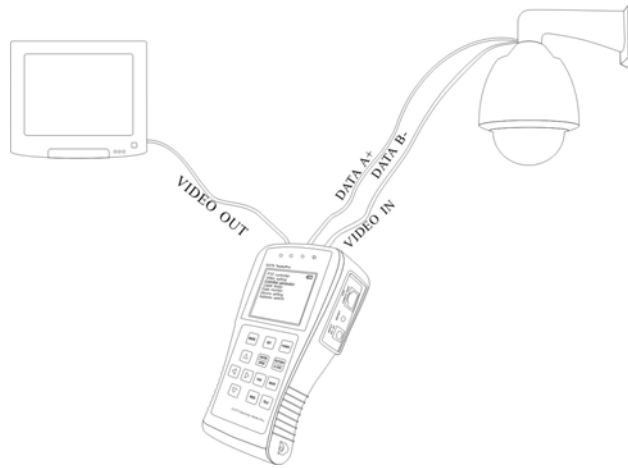
### 3.2 PTZ Controller



Display the input video images. Pan/tilt the P/T unit and zoom in/ out the image. Setup the controlling parameters like protocol, communication port, baud rate, PTZ ID, pan/tilt speed; set and call preset position.

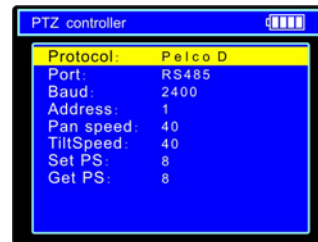
The following connections should be confirmed before use

- a. The Video In interface of the Test-CCTV28 and the output interface of camera
- b. Data A+ of the Test-CCTV28 and A+ of the PTZ camera or controlling device, data B- of the instrument and B- of the PTZ camera or controlling device

Note: Don't connect communications interface with a circuit the voltage higher than 6V.



- a. Press SET key to enter the sub-menu of PTZ controller.
- b. Press the  or  key to select the parameter which we want to change the value.
- c. Press ENTER key to save the change or press RETURN key to give up the change
- d. Press SET key to exit the sub-menu.
- e. Press POWER key to full-screen the image



**A. Protocol:** Select the protocol according to the protocol of the PTZ camera. Up to 21

popular protocols are available, like elco P, Pelco D, Samsung, Yaan, LiLin, CSR600 etc.

**B. Port:** Select the communication port for the PTZ camera controlling (RS232/422/485)

**C. Baud:** Select the baudrate according to baudrate of the PTZ camera.(150, 300, ... , 19200bps)

**D. Address: Set the ID** according the ID of PTZ camera (0~254).



**E. Pan Speed:** Set the pan speed of PTZ camera (0~63)

**F. TiltSpeed:** Set the tilt speed of PTZ camera (0~63)



**G. Set PS:** Setup preset position (0~128)

a. P/T/Z the camera to desired position



b. Press SET key to enter PTZ controller submenu

c. Move the yellow cursor to "Set PS" and then press  or  key to select the preset position number.



d. Press ENTER key to complete preset position setting or preset RETURN key to give up preset position setting.

Tips: Press  or  key to accelerate the value changing.

**H. Go PS:** Call the preset position. (0~128) The PTZ camera will go to the desired preset position.





a. Move the yellow cursor to "Go PS" and then press  or  key to select the preset position number.

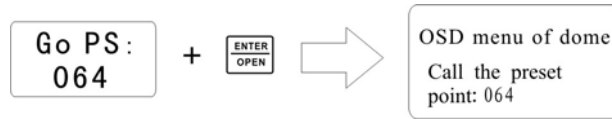
b. Press ENTER key to complete preset position calling or preset RETURN key to give up preset position calling.

Tips: Press  or  key to accelerate the value changing.

The way of calling the OSD menu and preset of the PTZ camera may vary with control systems from different manufacturers. Please read the operation manual of control system manufacturer for details. The way of calling OSD provided for reference is calling preset-64.

a. Move the yellow cursor to "PTZ controller" to enter PTZ controller mode

- b. Press SET key to enter PTZ controller sub-menu. Press  or  key to move the yellow cursor to “Go PS”,
- c. Press  or  key to select the preset number 64, and then press ENTER key to call OSD menu of the PTZ controller.



**OSD Menu of Dome (For reference only)**

MAIN MENU	MAIN MENU
1. DISPLAY SETUP	1. Display configuration
2. CAMERA SETUP	2. Set camera parameters.
3. CONTROL SETUP	3. Set PTZ controlling
4. CAMERA MASK SET	4. Set privacy mask
5. PROGRAM	5. Set auto-running functions
6. PAL CAMERA	6. PAL/NTSC Switch
7. CAM DEFAULT SET	7. Restore the default settings
8. DOME RESET	8. Reset the dome
9. EXIT	9. Exit the main menu

■ **Operate auto-running functions by calling preset position(effective for some brands of PTZ camera)**

Call preset-33—Open Auto-flip function

Call preset-34—Reset zero point of PTZ camera

Call preset-64—Enter the main menu of the PTZ camera

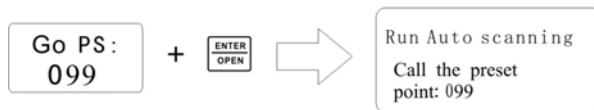
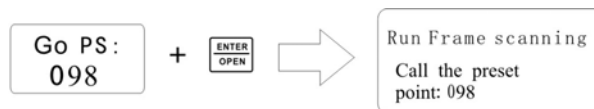
Call preset-95—Enter the main menu of the PTZ camera or stop the PATTERN recording.

Call preset-96—Run pattern-1

Call preset-97—Run preset tour-1

Call preset-98—Run frame Scan





Call preset-99—Run Auto scan



### 3.4. Video Setting

User can customize the brightness, contrast and saturation of the LCD according to the using environment , the CCTV tester auto display the format(PAL/NTSC) of video input, and analysis the input video signal level.



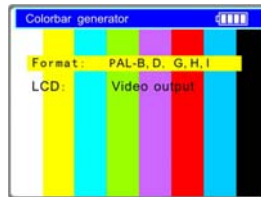
- a. Press the  or  key to select the parameter which we want to change the value.
- b. Press the  or  key to change the value. Press ENTER key to save the change or press RETUR key to give up the change
- c. The Video Format and Video Level will be displayed in the lower portion of the screen. If there is no video signal at the Video IN port of the Test-CCTV28, the type of NTSC or PAL , and Video Level will not be displayed.





Depending on the type of camera connected to the Test-CCTV28, the Video “Format: “ will automatically change between NTSC and PAL, and the Video Level will automatically change between IRE (Institute of Radio Engineers) and mV. NTSC signals measured in IRE units, PAL signals measured in mV.

The Video Level should be within the indicated range. Levels that are too low will result in a dim picture with reduced dynamic range. A Video Level that is too high will result in washed out pictures with decreased. The Test-CCTV28 will display “Normal” when video levels are  $1000\text{mV} \pm 20\%$ , “Exceed” or “Weak” will be displayed when video level out of  $1000\text{mV} \pm 20\%$ .

### 3.5. Colorbar generator (Output video at any mode)

Output or receive seven different forms of video color bar to test monitor, video cable or other equipment.

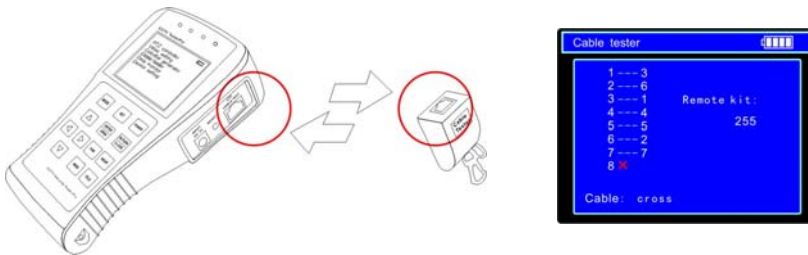


- a. Press the  or  key to select the parameter which we want to change the value.
- b. Press the  or  key to change the value.
- c. Press ENTER key to save the change or press RETURN key to give up the change

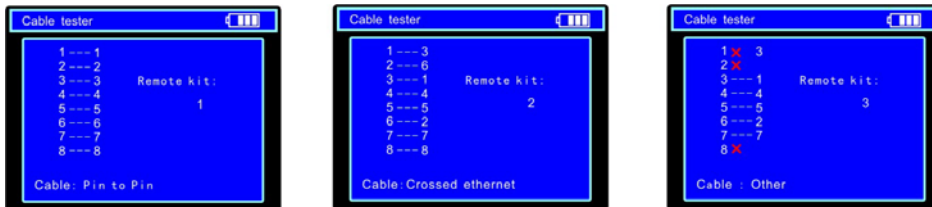
### 3.6 Cable Tester

Test LAN cable or telephone cable.

Connect LAN cable or telephone cable with the Test-CCTV28 and cable tester. And then the connecting status, cable type and the sequence of wires will be displayed, as well as the serial number of the cable tester kit



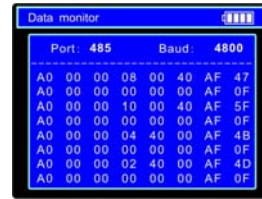
The right picture shows line1-7 are closed, line8 is open and the number of the cable tester box is







Straight-through Line                      Cross Line                      Open Line or Short Line

### 3.7. Data monitor

Capture the command data from RS485 controlling system.



- a. Connect the RS485 or RS232 interface of controlling system with the RS485 or RS232 interface of the Test-CCTV28 (In case of RS485, A to A, B to B)
- b. Press SET key and then press  or  key to select communication port according to the system connection. Press SET key to save the change.
- d. Press  or  key to select the baud rate according to the baud rate of controlling system and then press SET key to save the change and capture command data from controlling system.
- e. Press RETURN key to clear the screen.

### 3.8 Device setting

Set the parameters of the Test-CCTV28







Auto power off: Setting the time of auto shut-down.(Disable,5,10,...,60)

Disable: Disable the “Auto power off” function. 5 means the CCTV will power off after 5 minutes when there is no any operation.

Keypad tone: Open or close the beep of pressing keypad.

Language: Select language of OSD menu


Brightness: Setting the brightness of OSD menu and background.(0~7)  
[www.allthings.com.au](http://www.allthings.com.au)

- a. Press  or  key to move the parameter we want to change.
- b. Press  or  to change the value.
- c. Press ENTER to save the change or press RETURN key to give up the change.


### 3.9 PTZ address scanning

Search up the ID of PTZ camera.

**Note:** Please isolate the PTZ camera with other PTZ cameras before searching up. Otherwise all the PTZ cameras in the same system will pan at the same time.

Press  keys to “Device setting” menu:






Press  key to confirm after change “Address search:”

to “on”, which add address scan sub-menu. Press  to switch the sub-menu as illustrated:

(**Note:** The system returns to “OFF” after shutdown, and the scan sub-menu closes automatically. Set “ON” again for next use.)



Press  key to set: protocol, communication port, communication rate, make them same as the PTZ camera

Press  or  key, the address values is constantly on the rise or decrease.

**NEAR:** The tester will search up the ID quickly and continuously (from 1 to 256). When the ID is searched, the PTZ camera will pan right. At this time, please press any key to stop searching up.

**FAR:** The tester will search up the ID quickly and continuously (from 256 to 1). When the ID is searched, the PTZ camera will pan left. At this time, please press any key to stop searching up.



**WIDE:** The tester will search up the ID step by step (from 1 to 256). When the ID is searched, the PTZ camera will stop panning.

**FAR:** The tester will search up the ID step by step (from 256 to 1). When the ID is searched, the PTZ camera will stop panning.

Press  button, the tester will search up the ID quickly and continuously(from 1 to 256). When the ID is searched, the PTZ camera will pan right. At this time, please press any key to stop searching up. Press  manual single-step decreasing button, the tester will search up the ID step by step (from 256 to 1). When the ID is searched, the PTZ camera will stop panning.

Press  button, the tester will search up the ID quickly and continuously(from 256 to 1). When the ID is searched, the PTZ camera will pan left. At this time, please press any key to stop searching up. Press  manual single-step incremental button, the tester will search up the ID step by step (from 1 to 256). When the ID is searched, the PTZ camera will stop panning.

Press the direction control button to adjust Speed Dome Camera. Press  button to quit from the address-scanning function menu.