Multi Functional CCTV Tester

Rapport II

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

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General

- Rapport Ⅱ is a Portable Service Monitor & Multimeter with a built-in 3.5 inch monitor.
- It's a simple and convenient multi-functional measurement and test tool which provides monitoring and analytical data when installing CCTV systems

Product Functions

- Video Input and Output
- Multimeter (Voltage and Resistance)
- Cable Test (UTP)
- PTZ Control

SPECIFICATIONS			
Electrical Characteristics	Input Power	12V ±10%, 1.2A or above	
	Battery	Built-in Lithium Polymer Battery	
	Built-in Charger	Recharging Time	More than 6 hours
		Operational Time	More than 3 hours
Video	Scanning System	NTSC, PAL	
	Video Level	1Vpp, 140 IRE	
PTZ Test	Protocol	Multi	
	Transmission Speed	2400bps ~ 38400bps	
	Transmission Method	RS-422, RS-485	
Size	Length(88mm) x Width(126mm) x Depth(40mm)		

- Operating Temperature: -10℃ ~ 50℃
- Relative Humidity: 30% ~ 90%
- Recharge Voltage: 12V ±10%, 1.2 A or above

General

Be sure to read through the "Safety Information" section before using this Rapport Ⅱ.

This basic instruction manual is for users of the Rapport Ⅱ. Starting with an outline of this Rapport, the manual explains its operation,how it connects to other devices, how to use the menu buttons,and how it should be operated.

It is highly recommended, even for those who have handled similar devices, as well as for those using it for the first time, to read all the instructions thoroughly, especially the precautions, before using the Rapport Ⅱ.

If there are any questions which arise when using the Rapport or the unit is damaged, please contact the supplier of your Rapport Ⅱ.

Chapter 1 details the "Safety Information" and highlights and explains the precautions which should be taken, for the safety of Users, when using the Rapport Ⅱ

Chapter 2, "Introduction to the Rapport Ⅱ", explains the available features and appearance.

Chapter 3, "Specifications of the Rapport Ⅱ", explains the specification of the Rapport Ⅱ.

Chapter 4, "Functional Use", details the functions of the Rapport Ⅱ and explains their uses.

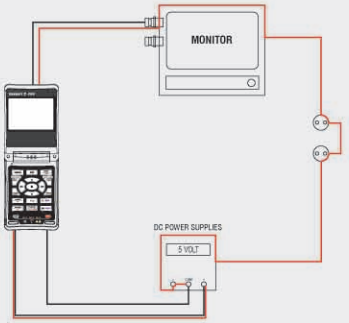
Precautions

The followings describes how to safely operate the Rapport Ⅱ.

Please read carefully “the precautions for use of this product” prior to using this device. Check the input and output ranges of any voltages being applied to all inputs and outputs of the device, and ensure their connections have been made properly so no abnormal load is placed on the operation of the device. If the measurement value is unknown when measuring a resistance, set the Rapport Ⅱ meter to its maximum value so that no abnormal load is placed upon the device.

The Rapport Ⅱ should only be used under the environment conditions shown in the specification where temperature and humidity figures should be adhered to.

Before using the multimeter function for circuit testing, always disconnect all Video In/Out connections made to any other external devices. Connecting the Test Lead Set to a circuit for testing, with these connections made, causes them to use a common grounding path and could result in damage to the device.



CHAPTER 1.
SAFETY INFORMATION

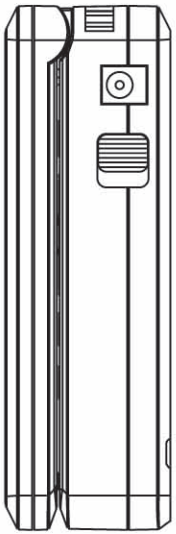
Precautions

Pay attention to the following precautions when using the Rapport Ⅱ.

- Do not use the unit in damp, humid or gaseous environments.
- Do not touch it with wet hands.
- Be mindful not to shock or shake the unit while in use to avoid damage.
- Avoid areas with strong magnetic or electromotive fields, which can cause incorrect measurements or operability.
- Do not expose the ports or joints to dirt or liquids.
- Only use the specified replacement fuses as described in Chapter 3.
- Do not disassemble the Rapport Ⅱ.
- Do not use the meter function, if the Rapport Ⅱ or the Test Lead set look damaged.
- Do not measure resistance when power is applied to a circuit.
- When using the meter function, do not forget to turn on the power to the Rapport Ⅱ and use the correct measurement range before connecting to a circuit to be measured.
- Turn off the power to the circuit under test and discharge all high voltage capacitance before starting resistance or continuity tests to avoid damage to the Rapport Ⅱ.
- Place fingers behind the protecting pad when using a test probe.

Precautions

Battery Charging and Precautions



The Rapport II has a built-in Lithium Polymer Battery. It can be recharged using a DC12V power adapter with an output of 1.2A or above and reaches its full charge after a period in excess of 6 hours. After the battery has been fully charged for the first 2~3 charging cycles, it can be used for approximately 3 hours.

The battery condition can be checked, to see if its fully charged, at initial power on and it's also possible to confirm the battery status from the VIEW INFORMATION menu.

The battery can be recharged by connecting it to the DC adapter, regardless of OSD power, when the slider switch has been turned on.

- The discharge operation starts when the Main Switch is turned on and it then consumes power from the battery. Therefore, when the Rapport II is not being used for a period of time, make sure the Main Switch is turned off.

Precautions

Battery Handling

- Avoid short circuits, as this will cause internal damage to the battery.
- The soft packaging can easily be damaged by contact with sharp surfaces or objects, take care when handling or storing.
- The sealed edge adjacent to the battery contacts is a very sensitive area; take care not to bend or fold the edges.
- Do not open the folded edges.
- Do not bend the tabs are these are breakable.
- Avoid mechanical shocks to the battery.
- Do not immerse the battery in water.
- Only use the supplied battery charger or one with a safety guarantee.
- Stop charging immediately if the battery is overheating, emitting a burning smell, changed in colour or distorted.
- Keep away from static electronic fields while using, charging or when storing.
- Do not disassemble; the battery is not a serviceable item.
- Never short circuit the positive and negative poles of the battery.
- Do not charge the battery in ambient temperatures above 40°C/104°F

Summary

Designed, with portability and serious CCTV engineers in mind, the Rapport Ⅱ is an advanced piece of video test equipment consisting of many useful test functions needed to professionally install a CCTV system; test functions include Video Level, Service Monitor, Multimeter, UTP Test, PTZ Test, RS-422 and RS-485 Communication Test, etc.

Major Functions of Rapport Ⅱ

- Video Testing
  - Tests whether a video image is present, and its quality, by displaying the image on the built-in 3.5" TFT LCD Monitor
  - Conducts and displays the Video Level (IRE test) of the image.
  - Video signal generator Mode : It outputs a Colour Bar, Red, Blue or Green screen which allows the engineer to test a video monitor or DVR. Rapport Ⅱ both PAL & NTSC video signal format
- DVR Function (This funtion is only supported by the *Rapport ⅡPRO*)
  - Store the video input on to a SD Card and play it back.
- Meter
  - Functions for testing voltage, resistance and short circuits.
- PTZ Protocol Analyzer
  - It determines which protocol controls a PTZ camera from a PTZ Controller or DVR. This helps the CCTV Installer to understand the protocol and find faulty devices.
- UTP Cable Testing
  - Test the integrity of connection conditions of a Category 5e UTP cable. Checks for continuity or short circuits.

CHAPTER 2.
PRODUCT INTRODUCTION

Standard Items

Check the contents of your Rapport Ⅱ package against the standard checklist below :

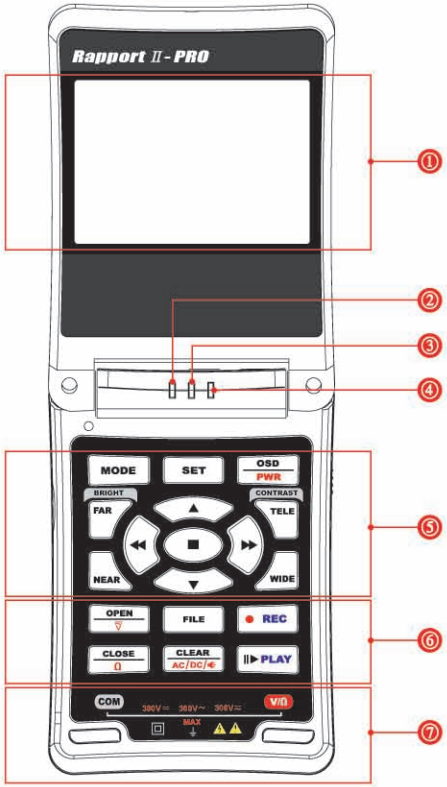
Rapport Ⅱ Main Test Unit

- User's Manual
- Test Lead Set (1 x Red Lead, 1 x Black Lead)
- Power Adapter (DC12V)
- Rechargeable Lithium Polymer Battery(7.4V 1900mA)
- Safety Strap
- UTP Test Terminal - Dongle
- BNC Video Cable

Optional Items

- Tester Carry Bag

Introduction

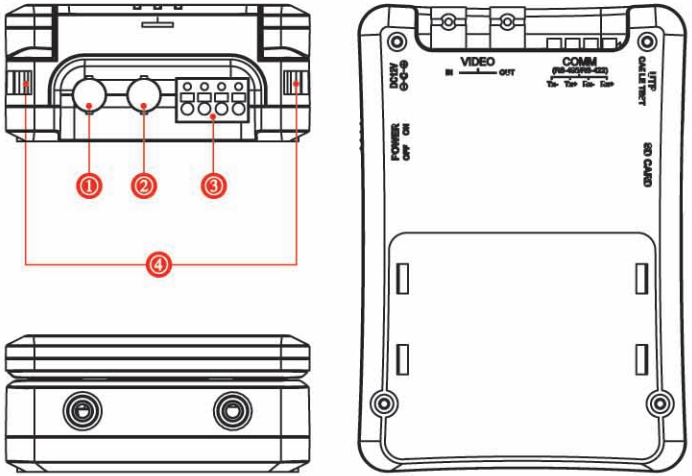


CHAPTER 2.
PRODUCT INTRODUCTION

Part	Name	Function
①	LCD	TFT LCD
②	POWER	Red LED is on when the OSD POWER is on
③	Data Transmitting LED	Red LED is on when Data is Transmitted
④	Data Receiving LED	Red LED is on when Data is Received
⑤ Key Button		For Controlling External Devices i.e. Rapport Ⅱ
MODE	MODE Button	Used to Change Setup
SET	SET Button	OSD Selection
OSD PWR	OSD Button	It toggles OSD & POWER on/off
FAR	FAR Button	Adjusts PTZ Focus (Far Direction) & Increases Video Image Brightness
NEAR	NEAR Button	Adjusts PTZ Focus (Near Direction) & Decreases Video Image Brightness
TELE	TELE Button	Zooms PTZ (Zoom In) & Increases Video Image Contrast
WIDE	WIDE Button	Zooms PTZ (Zoom Out) & Decreases Video Image Contrast
	Shift Setup Button	Moves PTZ Up, Down, Right, Left & Also Used for Menu Functions
⑥ Key Button		METER
OPEN	Voltage Button	Measures Voltage
CLOSE	Resistance Button	Measures Resistance
CLEAR AC/DC/Ω	Setup Change Button	Changes setup Between AC & DC, Resistance/continuity Test

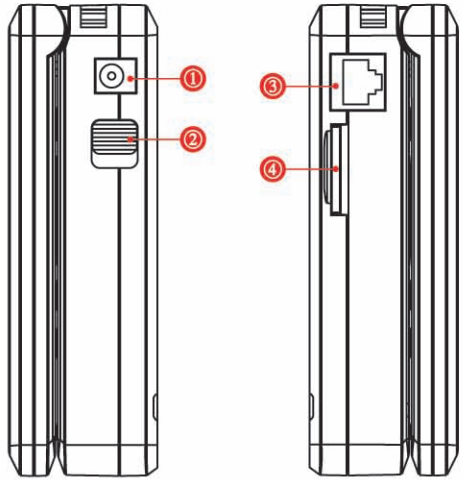
Note: DVR Function not available on Rapport II model.

⑦ Test Lead Connection	Test Lead Connection Positions
COM	Position of Black Test Lead, Common Ground(-ve)
V/Ω	Position of Red test Lead for Measuring Voltage & Resistance(+ve)



Prat	Name	Function
①	Input BNC	Input for External Video signal
②	Output BNC	Outputs the Screen Displayed on the Rapport Ⅱ, or the Internally Generated Video Test Signals
③	Communication Port	Connections for RS422 and RS485 Input & Output (Rx+, RX-, TX+, Tx-)
④	Safety Strap	Used to Carry the Rapport Safely

CHAPTER 2.
PRODUCT INTRODUCTION



Prat	Name	Function
①	DC Power Jack	DC Power Input Jack (DC12V, 1.2A)
②	Power Switch	ON/OFF Main Power Switch
③	UTP RJ45 Jack	Test Jack for UTP cable
④	SD Card	Not applicable to Rapport II

General Specification

Electric Characteristic	Input Voltage	12V ±10%, above 1.2A	
	Battery	Lithium Polymer Battery (Inner packaging)	
	Built-in Charger	Charging Time	More than 6 hrs
		Operation Time	More than 3 hrs
Image	TV Type	NTSC/PAL	
	Image level	1Vpp, 140 IRE	
PTZ Operation Test	Protocol	Multi	
	Transmission Speed	2400bps ~ 38400bps	
	Transmission Mode	RS-422, RS-485	
UTP Cable Test	Tests	Continuity/Crossed Cable, and Breaks or Short-Circuit	
Size	W(88mm) X L(126mm) X D(40mm)		

CHAPTER 3.
PRODUCT SPECIFICATION

Meter Specification

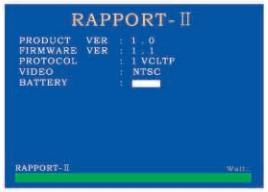
Mode	Range	Minimum Measuring	Accuracy
DC Voltage	400mV	100uV	±(2.5% +4dgts)
	4V	1mV	±(2.5% +4dgts)
	4V	10mV	
	300V	100mV	
AC Voltage	4V	1mV	±(2.5% +4dgts) (40Hz ~ 500Hz)
	40V	10mV	
	300V	100mV	
Resistance	400Ω	0.1Ω	±(2.0% +4dgts)
	4kΩ	1Ω	±(2.0% +2dgts)
	40kΩ	10Ω	
	400kΩ	100Ω	
	4kΩ	1kΩ	±(2.0% +4dgts)
	40kΩ	10kΩ	±(3.0% +5dgts)
Continuity	Beeper is activated when the resistance is below 20Ω		

Power ON/OFF

Use a DC12V Power Adapter and connect it to the DC Jack. Turn the Rapport II ON/OFF by using the slider switch located on the side of the product. After switching the power switch to the ON position, press the OSD button and the Rapport will be booted up. To turn the Rapport II OFF, keep the OSD button depressed for at least 3 seconds and wait until a POWER OFF message is displayed on the Main Screen. Release the OSD button and turn off the ON/OFF slider switch; power is now turned off.

- When charging the battery, keep it on charge for more than 6 hours or until the unit is fully charged. On full charge the operational time is approximately 3 hours.
- If the battery indication shows less than you need to recharge the battery. (Full recharge state:)

Initial OSD Screen When Power is Turned on



- After turning the power on, this OSD message is displayed on the LCD and approximately 3-5 seconds later it changes automatically to the Video Test Mode OSD message. The initial OSD message displays information showing the version and basic settings of the Rapport II on the screen.

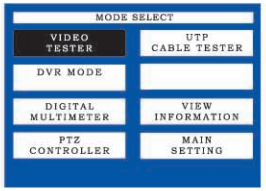
  Product Version : X.X
  Software Version : X.X
  Initial TV Method : NTSC/PAL Automatic Setting
  Battery :
  RAPPORT : User Name (The name can be changed using the editing function in the main menu)

  The versions of the product and software are changed whenever new firmware is uploaded.

CHAPTER 4.
FUNCTIONAL SPECIFICATION

Mode setup

- The OSD menu changes whenever the MODE key is pressed, and sequences through in the following order : VIDEO – DVR – METER – PTZ - UTP.
- The MODE SELECT menu is displayed when MODE key is kept depressed for more than 3 seconds. Use the Direction Keys to navigate to a menu selection and then press the SET key to select the chosen menu option.



Video Tester Mode :
This function displays the image of an externally input video signal, or is used to output internally generated signals when in PATTERN GENERATOR mode.

Digital Multimeter mode :
Tests voltage, resistance, & continuity.

PTZ Controller mode :
This function allows up, down, right and left movements of a PTZ camera to be made. Also, zoom & manual focus can be adjusted.

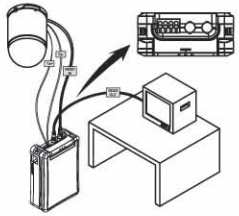
UTP Cable Tester mode :
Tests UTP cable connectivity – tests for straight & crossed cables, for breaks and short circuits.

View Information mode :
Displays the basic information for the Rapport II (firmware version, battery condition, communications protocol and baud rate).

Main Setting mode :
This function allows changes to be made to the basic setup of the Rapport II (user name, auto power off time, beeper, brightness, contrast, etc.)

VIDEO TESTER

Connect the output terminal of video output system to the video input BNC of Rapport. Connect the video output BNC of RapportⅡ to the video input terminal of system.



OSD Screen Setup

VIDEO :
Indicates that the RapportⅡ is in video test mode. When video input connected on video mode, it shall be displayed the video level on the screen automatically.

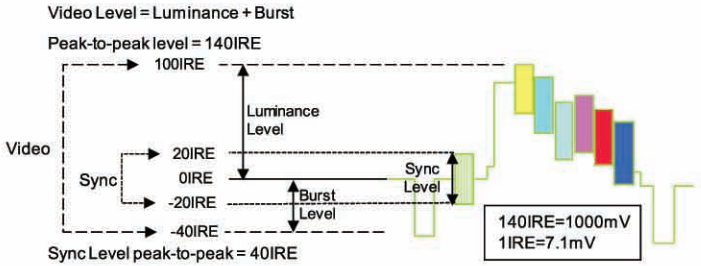
On NTSC mode,
the video will be displayde in IRE.

On PAL mode,
the video will be displayde in mV.

Video and Testing : By default the Video and Sync levels will be displayed in the lower-left portion of the screen. If there is no video signal at the VIDEO IN port of the RapportⅡ/RapportⅡPRO no information will be displayed.

Depending on the type of camera connected to the tester the Video and Sync level will automatically change between IRE(Institute of Radio Engineers) and mV. NTSC signals that are used in North America are measured in IRE units, PAL signals that are common throughout the rest of the world are measured in mV(millivolts)

CHAPTER 4.
FUNCTIONAL SPECIFICATION



Understanding Video and Sync Level

RapportⅡ/RapportⅡPRO measures the combined Luminance and Burst levels of a composite video signal as the Video Level. The Sync signal is embedded between the Luminance and Color Burst signals. See the following chart for a description of the levels that are expected.

NTSC	Luminance Level	100 ± 10 IRE
	Color Burst Level	40 ± 5 IRE
	Vdeo Level	**140 ± 15 IRE**
	Sync Level	**40 ± 5 IRE**
PAL	Luminance Level	700 ± 140 mV
	Color Burst Level	300 ± 35 mV
	Video Level	**1000 ± 175 mV**
	Sync Level	**300 ± 35 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 definition.

The Sync Level controls the drawing of each line on the monitor. Sync Levels that are too low will cause the picture to breakup or roll while Sync Levels that are too high will result in a picture with reduced grey colors and dynamic range.

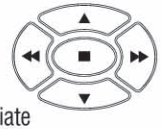
In an installation with multiple cameras, the video and sync levels should be matched as closely as possible at the head-end to prevent noticeable picture quality differences when switching between cameras on a sigle monitor. Values outside the recommended tolerances can cause the operators to experience eye fatigue.

NTSC :
Indicates if the input or output video signal system is NTSC or PAL. Input video signal is output onto the LCD screen and automatically switches to NTSC or PAL without using a special setup key. The output video signal when in Pattern Generator mode can be switched to NTSC or PAL, using ◀◀ or ▶▶ keys.

B ▬▬ :
Indicates screen brightness, and brightness increases by +1 when the FAR key is pressed, and decreases by -1 when the NEAR key is pressed. It returns to the initial setup value when either of the two keys is depressed for more than 3 seconds.

C ▬▬ :
Indicates screen contrast, and contrast increases by +1 when TELE key is pressed, and decreases by -1 when WIDE key is pressed. It returns to the initial setup value when either of the two keys is depressed for more than 3 seconds.

Displays the PATTERN GENERATOR when the SET key is pressed if in VIDEO mode. The output video system can be changed from NTSC to PAL, using ◀◀ or ▶▶ keys. Output patterns available are COLOUR BAR, RED, BLUE, and GREEN; use the ▲ and ▼ keys to select the appropriate pattern.



COLOUR BAR RED BLUE GREEN

Press the SET key to return to the Video Test function.

Introduction to the DVR Function (*Rapport II PRO*)

Not applicable to Rapport II Model

CHAPTER 4.
FUNCTIONAL SPECIFICATION

Digital Multimeter

Voltage, resistance and continuity can be tested.

WARNING

To prevent electric shocks, injury or damage Rapport II, disconnect the power supply to the circuit under test, and discharge all high-voltage capacitors before testing resistance and continuity.

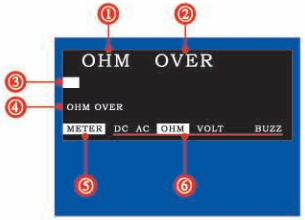
When using the meter function of the Rapport II, make sure the unit is switched on and set to the appropriate the test mode before connecting the test lead set to the circuit under test.

Setup Keys

Press the CLOSE Ω button to measure resistance; pressing the CLEAR AC/DC button changes from the OHM scale to BUZZER (for continuity testing).

Press the OPEN ▽ button to measure voltage; pressing the CLEAR AC/DC button causes the measurement range to toggle between ACV and DCV.

Description of Meter Function LCD Window



Part	Function	Description
①	Type of Test Set Up	- Resistance Test - Continuity Test - DC and AC Voltage
②	Test value Displayed	- Unit of resistance Test - Indicator the AC or DC Voltage Range - AC Voltage are indicated as RMS (Root Mean Square) Values
③	Measured Graph Value	- The Measured Input value is Displayed in the Form of a Graph • The Graph is Changed Automatically and is Equal to the Measured Value • OVER is Displayed When the Measured Value is Higher Than the Setup Value
④	Measured Value on Hold	The Measured Value is Stored and Displayed Here When the SET Key is pressed.
⑤	MODE Display	Digital Multimeter Mode is displayed
⑥	DC	DC Voltage Test
	AC	AC Voltage Test
	OHM	Resistance Test (Measuring Unit : Ω)
	VOLT	Voltage Test (Measuring Unit : V)
	BUZZ	Continuity Test (Starts to beep when below 20Ω)

CHAPTER 4.
FUNCTIONAL SPECIFICATION

Measuring Resistance

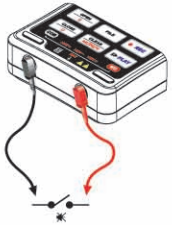
The unit of resistance is the Ω. The meter sends a low current into the circuit so that the resistance can be measured. This current runs along all paths between the two probes and enables the total resistance to be calculated.

How to measure : Connect the red lead to V/Ω and the black lead to COM ,as shown in the figure above at left, and measure the resistance directly.

Continuity Testing

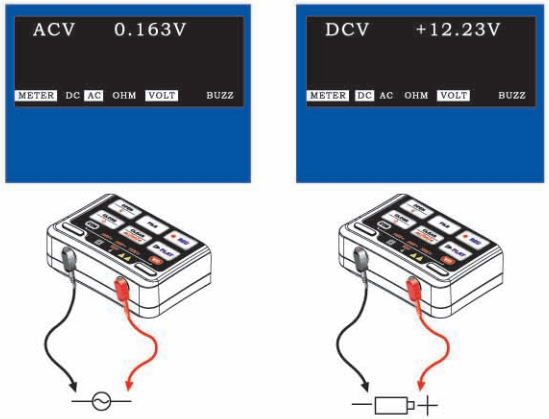
Continuity means the presence of a complete path for current to flow. The continuity test features a beep that sounds when a circuit is complete. The beep allows users to quickly test continuity without having to watch the display.

How to test : Resistance mode changes to continuity mode, when CLEAR AC/DC/◀ is pressed. The beeper is activated when the resistance between the red and black probes is less than 20Ω.



Measuring AC & DC Voltage

Voltage is the difference in electrical potential between two points.
The polarity of an AC voltage varies with time, while DC polarity is constant.
The meter displays AC voltage as RMS values (root mean square readings).
The RMS value is the equivalent DC voltage measured in a time varying sinusoidal signal.

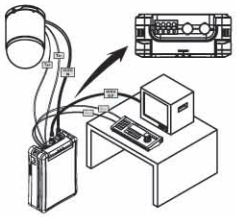


How to measure : Press the OPEN voltage measuring button, and then select AC or DC by pressing CLEAR button. When DCV is being measured, place the red lead on +ve side and the black lead on -ve side of the voltage source.

PTZ Controller

How to connect each terminal and LCD screen

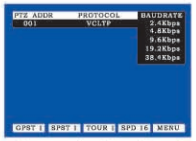
PTZ Operation Test : Performs basic operational PTZ movements: Up, Down, Left, Right, Zoom, and Manual Focus. It also tests various protocols and their transmission speeds. In order to control a PTZ, connect the PTZ communications cables to TX terminals of the Rapport Ⅱ.



- PTZ Control Setup Screen

ADD Setup Screen

Protocol Setup Screen



Communications Speed Setup Screen

- Key Board Control Code Screen

- The controlling protocol from the keyboard or the DVR is displayed on this screen. More important, however is that the communications speeds are matched.

How To Control PTZ Camera

PTZ functions - Up, Down, Left, Right movements are carried out using the SHIFT SETUP Buttons. Focus and Zoom adjustments are made using the FAR/NEAR (Focus) and TELE/WIDE (Zoom) buttons.

Function Setup of the PTZ

SET — Use the SHIFT SETUP keys to adjust GPST / SPST / TOUR / SPD and MENU settings (displayed on the lower part of the LCD screen) by pressing the SET key once.

GPST (GO TO PRESET) : Moves the camera view to a designated preset location; Presets are numbered 1 to 99. The cursor moves to the GPST position when the SET key is pressed. Select the previously stored PRESET number using ▲ & ▼ keys. Once selection is complete, press the SET key once more and the camera will move to the PRESET location.

SPST (SET PRESET) : Sets and stores PRESET information in the range from 1 to 99. First, move the camera to the required view and press the SET key, and use ◀◀ & ▶▶ keys to place the cursor at the location of the chosen preset. Then set up the address where the preset is to be stored by using the ▲ & ▼ keys, and press the SET key once more. The location information is now stored as a preset address.

TOUR : Follows the TOUR pattern set up using the SPST and MENU information. The Setup range is from1 to 99. TOUR can be designated in the MENU of PTZ.

SPD (SPEED) : Move the cursor to the SPD icon, using the procedures described above. A total of 16 increments in speed (1 to 16) are available for selection using the ▲ & ▼ keys.

MENU : Place the cursor at the MENU location, using the procedures described above. The MENU of the PTZ can be displayed on LCD screen. using the SET key.

CHAPTER 4.
FUNCTIONAL SPECIFICATION

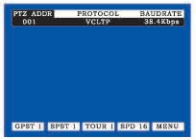
⚠ CAUTION

1. Make sure to check the communication protocol, transmission speed, and PTZ ID.
2. The input signal from the controller can be checked when the communication line is connected to the Rx terminal of the RapportⅡ.

Control Setup of PTZ

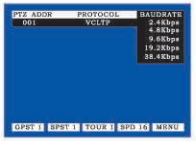
The PTZ ADDR menu bar is accessed, on the top section of the LCD screen, when the SET key is depressed for more than 3 seconds.
The activated menu can be changed to PROTOCOL and BAUDRATE by pressing the ◀◀ & ▶▶ keys.

PTZ ADDR : Setup the PTZ ID. The default value is 001. To change the PTZ ID use the ▲ & ▼ keys.
The available values are 001 through to 255.



PROTOCOL : Used to set the PTZ PROTOCOL . The default value is set to PELCO-D. To change to another protocol, use the ▲ & ▼ keys to see the available protocols.

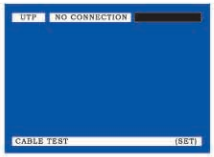
BAUDRATE : Sets the TRANSMISSION SPEED. The default value is 2.4Kbps.
Use the ▲ & ▼ keys to alter the speed – the available options are from 2.4Kbps~ 38.4Kbps.



⚠ CAUTION

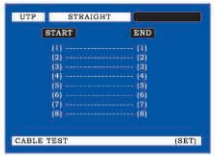
Check the CAMERA ID, PROTOCOL and BAUDRATE settings prior to testing.
A PTZ camera cannot be controlled unless all three settings are correct.

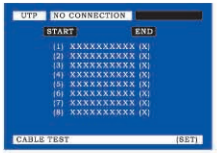
UTP CABLE TESTER



- Connect the UTP cable to be tested to the UTP port of the Rapport Ⅱ, and connect the other end of the cable to the yellow UTP test dongle.

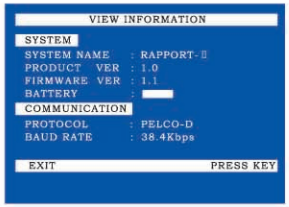
Once the connection is completed, the connectivity of the cable under test is checked by pressing the [SET] key. Straight through and crossed cables can be verified.
Disconnections and short-circuits are also displayed.





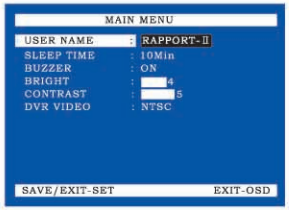
VIEW INFORMATION

Mode Select : To access this menu depress the [MODE] key for more than 3 seconds. Select VIEW INFORMATION from the MODE SELECT list, then press the [SET] key.



MAIN SETTING

Mode Select : To access this menu depress the [MODE] key for more than 3 seconds. Select MAIN SETTING from the MODE SELECT list, then press the [SET] key.



Select a menu item by pressing the ▲ & ▼ keys. Each setup value can be changed by pressing the ◀◀ & ▶▶ keys

- Selecting USER NAME initiates an editing menu and shows the associated key strokes.
- SLEEP TIME makes the power go OFF automatically, unless a button is pressed. The options are OFF, 1, 5, 10, 30 or 60 minutes.

TABLE 1 - SYMBOLS

**The equipment shall not be used for measurements of categories II, III and IV.
**If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Number	Symbol	Reference	Description
1		IRE 60417 - 5031	Direct current
2		IRE 60417 - 5032	Alternating current
3		IRE 60417 - 5033	Both direct and alternating current
4			Three-phase alternating current
5		IRE 60417 - 5017	Earth (ground) TERMINAL
6		IRE 60417 - 5019	PROTECTIVE CONDUCTOR TERMINAL
7		IRE 60417 - 5020	Frame or chassis TERMINAL
8		IRE 60417 - 5021	Equipotentiality
9		IRE 60417 - 5007	On(Supply)
10		IRE 60417 - 5008	Off(Supply)
11		IRE 60417 - 5172	Equipment protected throughout by DOUBLE INSULATION or REINFORCED INSULATION
12			Caution, rick of electronic shock
13		IRE 60417 - 5041	Caution, hot surface

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