Miscellaneous Panasonic Data

13 December 2004

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1 Camera Set Up RS-485 port[camsetup]

1.1 Initial camera communication parameters

Confirm the communication parameters of the matrix switcher (WJ-SX550A), and display the camera SET UP MENU.

The Initial camera communication parameters are shown below. The other parameters are as follows:

Daisy	OFF
Camera in Number	1
F/H Duplex	Full

```
        SET UP MENU
CAMERA*
UNIT NUMBER          1
BAUD RATE            19200
DATA BIT             8
PARITY               NONE
XON/XOFF             NOT USE
WAIT TIME            OFF
ALARM DATA           AUTO 2
DELAY TIME           OFF
COM. SET UP DISABLE
```

1.2 Changing the camera communication parameters

1. Display the SET UP MENU. Move the cursor to COM. SET UP DISABLE and press the CAM (SET) key to select COM. SET UP ENABLE.

2. Move the cursor to the item and select the parameter by moving the joystick to the left or right.

   The following communication parameters can be set :

   2.1. UNIT NUMBER: Specifies the camera ID numbers in case more than two cameras and WV-RM70 are daisy chain connected. Select(1-32), (33-64) or (65-96) with the dip switch. The factory setting is 1.

   2.2. BAUD RATE: Specifies the transmission speed (2400, 4800, 9600, 19200 bps). The factory setting is 19200.

   2.3. DATA BIT: Specifies the number of data bits (7 or 8 bits). The factory setting is 8.

   2.4. PARITY CHECK: Specifies the parity (NONE, ODD, EVEN). The factory setting is NONE.

   2.5. STOP BIT: Specifies the number of stop bits (1 or 2 bits). The factory setting is 1.

[2] $Header: d:/txb-p/RCS/CamSetup.inc,v 1.4 2004-11-19 09:45:24-08 Hamilton Exp Hamilton $

2.6. `X ON/X OFF`: Software flow control. (NOT USE, USE). The factory setting is `NOT USE`.

2.7. `WAIT TIME`: Specifies wait time to retransmit the ANSWER code when `ACK` is not sent from the controller or PC. (OFF: no transmission, 100, 200, 400, 1000 ms)

2.8. `ALARM DATA`: Specifies the alarm data transmission mode (`POLLING`, `AUTO 1`, `AUTO 2`). The factory setting is `AUTO 2`.

- `POLLING`: Sends alarm data to the controller/PC when requested by the controller/-PC.
- `AUTO 1`: Sends alarm data every time an alarm signal is received.
- `AUTO 2`: Sends alarm data every five seconds.

NOTE: When `POLLING` is selected alarm data is not transmitted automatically.

2.9. `DELAY TIME`: Specifies the time to transmit the acknowledge request when communicating on a two-wire connection. (OFF, 10, 20, 40, 100 ms) The factory setting is `OFF`.

(This menu appears only when a two wire communication is used.)

2 Camera Specifications[camtypes]

Model Number	WV-CSR600/G Color RS485	WV-CSR400/G Color RS485	WV-BSR300/G B/W RS485
Power supply	AC230V 19W	AC230V 14W	
Effective pixels	752(H)x582(V)		753(H)x582(V)
Scanning area	1/3 inch		
Signal method	PAL		CCIR
Synchronization	Internal, Multiplexed Vertical Drive, Power synchronization		
Scanning method	2:1 interlace		
Resolution H	480 TV lines		570TV or over
V	350 TV lines		480TV lines
Min. limit	3 lux		0.08 lux
Brightness S/N	48 dB(AGC OFF, WGT ON)		46 dB (AGC OFF, WGT OFF)
AGC	ON/OFF		
Title display	ON/OFF alphanumeric 16 characters		
Preset items	64 Preset Positions	⟵	⟵
	Items :	⟵	⟵
	TITLE, PAN, TILT, ZOOM, FOCUS, IRIS, WIDE-D RANGE		
	10 Scene Files :AGC,MOTION,W/B	⟵	⟵
Auto mode	Auto sequence/Sort sequence/Auto pan	AUTO PAN	
Zooming speed	Manual Approx. 6 sec. (TELE-WIDE)		
	Preset Approx. 2 sec. (TELE-WIDE)	⟵	⟵

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[3] `$Header: d:/txb-p/RCS/CamTypes.inc,v 1.7 2004-12-13 14:20:14-08 Hamilton Exp Hamilton $`

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Model Number	WV-CSR600/G Color RS485	WV-CSR400/G Color RS485	WV-BSR300/G B/W RS485
Focus speed	Manual Approx. 5 sec. (FAR-NEAR, at Zoom: TELE)		
Auto focus	MANUAL/AUTO (linked PAN, TILT, ZOOM)	⟵	⟵
IRIS	Automatic/Manual (open-close tune)		
Electronic shutter	OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000	OFF, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000	
BLC	Normal/Auto/Preset		
Zoom ratio	10 times		
Focal length	5-50 mm		
Picture angle H	5.2-52.3		
V	4.0-39.7		
Maximum aperture ratio	1:1.2(WIDE) → 1.9(TELE)		
Shortest distance	1.2m		
Iris range	F1.2-22, CLOSE		
Pan range	360 continuous		
Pan speed	Manual Approx. 3-120/sec. (variable at 8-levels)	Manual Approx. 3-24/sec. (variable at 8-levels)	
	Preset Max. 240/s	⟵	⟵
Tilt speed	Manual Approx. 1.5-60/sec. (variable at 8-levels)	Manual Approx. 1.2-12/sec. (variable at 8-levels)	

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Model Number	WV-CSR600/G Color RS485	WV-CSR400/G Color RS485	WV-BSR300/G B/W RS485
	Preset Max. 120/s	⟵	⟵
Controller I/F	RS485		
Ambient operating temperature	-10/+50 deg (c)		
Outer dimensions	130x195 mm		

3 Interfacing Panasonic Equipment [panconec]

This section contains information about interfacing various pieces of Panasonic CCTV equipment.

3.1 The WV-CU161 keyboard [wv-cu161]

The WV-CU161 ("A") Panasonic keyboard is used to control Panasonic keyboards. It has two modes of operation. One mode is by using Panasonic's Super Coaxitron two way "up the wire" video communications and the other is by using Panasonic's implementation of RS-485 communications. Panasonic operates their version of RS-485 in two modes, two and four wire. The keyboard has switches on the rear (Figure 1, page 9) which allow a choice of which communication mode the keyboard will work in.

3.1.1 Information about keyboard "A"

1. The keyboard comes with a permanently attached lines power cord. There are probably two models of the keyboard, one for 110 VAC and the other for 220 VAC. The unit at Pelco is a 110 VAC unit.

2. When the keyboard is configured for "coax" communications, it does not sent out any commands until it is receiving video from an outside source. The video does not have to be supplied by a Panasonic camera. (I have used a Spectra III with no problems.)

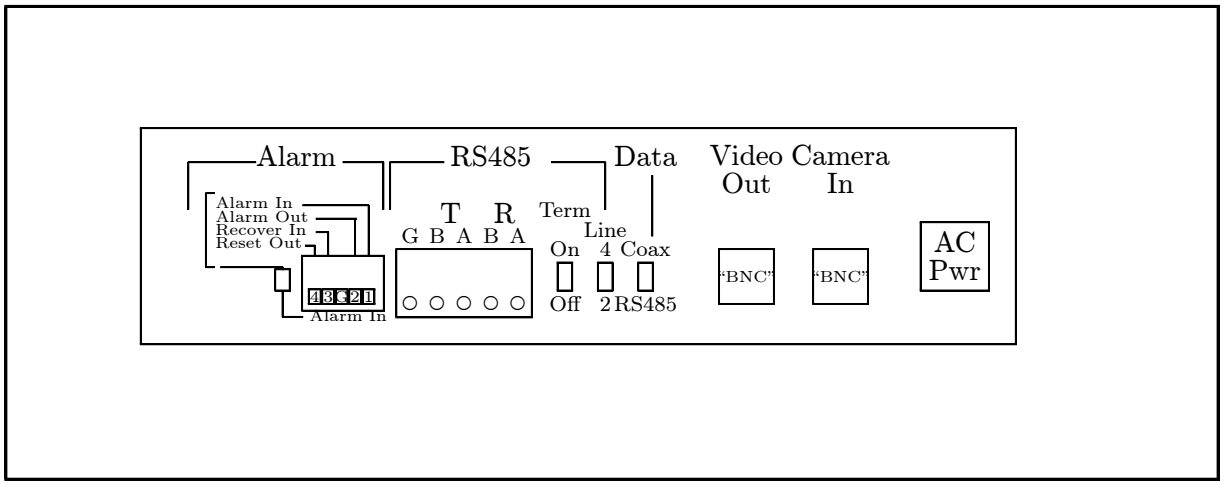
3. When the keyboard is configured for "RS-485" communications, it does not sent out any commands until it is receiving video from an outside source. The video does not have to be supplied by a Panasonic camera. (I have used a Spectra III with no problems.)

4. If a Panasonic dome's video is connected to the keyboard, **but** the RS-485 cable is not connected and the keyboard is configured for RS-485 mode, the keyboard continues to send data out the same as it did when connected to a Spectra III.

5. The "Data" switch on the back of the keyboard is only read on power up. I.e. if the unit is operating in RS-485 mode and the switch is moved to coax mode, the keyboard does not change to Super Coaxitron mode until after a power cycle. (And contri-wise.)

6. If the Super Coaxitron is sent to a Spectra III, sometimes the Spectra III goes slowly bonkers. (It seems to interpret the Super Coaxitron as junk Pelco Coaxitron commands.)

[4] $Header: d:/txb-p/RCS/PanConec.inc,v 1.4 2004-11-19 09:45:37-08 Hamilton Exp Hamilton $
[5] $Header: d:/txb-p/RCS/WV-CU161.inc,v 1.4 2004-11-16 14:05:55-08 Hamilton Exp Hamilton $
[6] $Header: d:/txb-p/RCS/Back161.inc,v 1.3 2004-11-04 14:43:31-08 Hamilton Exp Hamilton $



$RCSfile: Back161.inc,v $

Figure 1. Real panel of the WV-CU161 Keyboard `[back161]`

3.2 Shortcuts, Color CCTV Camera, Operating Instructions, Model No. WV-CW864[camcmnds]

Shortcut operations are available for controllers having the CAM FUNCTION key. Entering from one to three digits using the numeric key(s) and pressing the CAM FUNCTION key will create a shortcut to the respective functions. The CAM FUNCTION key is abbreviated as [CAM FUNC] in the table below.

To get these to work the SHIFT light on the keyboard must be on.

Function	Key(s)	Command	Response
Selecting a PRESET position From #1 to #64			
#1	[1] + [CAM FUNC]	9030000	ACK
#10	[1] + [0] + [CAM FUNC]	9030009	ACK
#64	[6] + [4] + [CAM FUNC]	903003F	ACK
AUTO PAN			
ON	[6] + [5] + [CAM FUNC]	9030040	ACK
OFF	[6] + [6] + [CAM FUNC]	9030041	ACK
Speed Up	[6] + [7] + [CAM FUNC]	9030042	ACK
Speed Down	[6] + [8] + [CAM FUNC]	9030043	ACK
Setting Start Point	[6] + [9] + [CAM FUNC]	9030044	ACK
Setting End Point	[7] + [0] + [CAM FUNC]	9030045	ACK
Setting PAN Reverse	[7] + [4] + [CAM FUNC]	9030049	ACK
AUTO MODE			
MODE Off	[7] + [1] + [CAM FUNC]	9030046	ACK
SEQ On	[7] + [2] + [CAM FUNC]	9030047	ACK
SORT On	[7] + [3] + [CAM FUNC]	9030048	ACK
ENDLESS PAN			
On	[7] + [6] + [CAM FUNC]	903004B	ACK
Off	[7] + [7] + [CAM FUNC]	903004C	ACK
DIGITAL FLIP			
On	[7] + [8] + [CAM FUNC]	903004D	ACK
Off	[7] + [9] + [CAM FUNC]	903004E	ACK
PROP. PAN/TILT			
On	[8] + [0] + [CAM FUNC]	903004F	ACK
Off	[8] + [1] + [CAM FUNC]	9030050	ACK
BLC			
On	[8] + [4] + [CAM FUNC]	9030053	ACK
Off	[8] + [5] + [CAM FUNC]	9030054	ACK
AUTO FOCUS			

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[7] $Header: d:/txb-p/RCS/CamCmnds.inc,v 1.6 2004-12-13 14:20:14-08 Hamilton Exp Hamilton $

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Function	Key(s)	Command	Response
STOP AF On*	[8] + [6] + [CAM FUNC]	9030055	ACK
STOP AF Off*	[8] + [7] + [CAM FUNC]	9030056	ACK
AF On (Activate)	[8] + [8] + [CAM FUNC]	9030057	ACK
HOME POSITION			
Move to HOME	[8] + [9] + [CAM FUNC]	9030058	ACK
B/W or C/L			
B/W On*	[9] + [0] + [CAM FUNC]	9030059	ACK
B/W Off*	[9] + [1] + [CAM FUNC]	903005A	ACK
B/W AUTO*	[9] + [2] + [CAM FUNC]	903005B	ACK
CAMERA ID			
On	[9] + [3] + [CAM FUNC]	903005C	ACK
Off	[9] + [4] + [CAM FUNC]	903005D	ACK
AREA TITLE			
NESW On	[9] + [5] + [CAM FUNC]	903005E	ACK
USER On	[9] + [6] + [CAM FUNC]	903005F	ACK
TITLE Off	[9] + [7] + [CAM FUNC]	9030060	ACK
EL-ZOOM			
On	[9] + [8] + [CAM FUNC]	9030061	ACK
Off	[9] + [9] + [CAM FUNC]	9030062	ACK
RESTART			
Begin	[1] + [0] + [0] + [CAM FUNC]	9030063	ACK
Memorize PRESET From #1 to #64**			
Position #1	[1] + [0] + [1] + [CAM FUNC]	9030064	ACK
Position #10	[1] + [1] + [0] + [CAM FUNC]	903006D	ACK
Position #64	[1] + [6] + [4] + [CAM FUNC]	90300A3	ACK
PATROL			
PLAY	[1] + [6] + [5] + [CAM FUNC]	90300A4	ACK
STOP	[1] + [6] + [6] + [CAM FUNC]	90300A5	ACK
LEARN (Start)	[1] + [6] + [7] + [CAM FUNC]	90300A6	ACK
IRIS			
Open	[1] + [6] + [9] + [CAM FUNC]	90300A8	ACK
Close	[1] + [7] + [0] + [CAM FUNC]	90300A9	ACK
EL-SHUTTER			
On	[1] + [7] + [1] + [CAM FUNC]	90300AA	ACK
Off	[1] + [7] + [2] + [CAM FUNC]	90300AB	ACK
Speed Up	[1] + [7] + [3] + [CAM FUNC]	90300AC	ACK

Continued on the next page.

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Function	Key(s)	Command	Response
Speed Down	[1] + [7] + [4] + [CAM FUNC]	90300AD	ACK
AGC			
On	[1] + [7] + [5] + [CAM FUNC]	90300AE	ACK
Off	[1] + [7] + [6] + [CAM FUNC]	90300AF	ACK
SENS UP			
On	[1] + [7] + [7] + [CAM FUNC]	90300B0	ACK
Off	[1] + [7] + [8] + [CAM FUNC]	90300B1	ACK
Up	[1] + [7] + [9] + [CAM FUNC]	90300B2	ACK
Down	[1] + [8] + [0] + [CAM FUNC]	90300B3	ACK
SENS UP AUTO			
On	[1] + [8] + [1] + [CAM FUNC]	90300B4	ACK
Off	[1] + [8] + [2] + [CAM FUNC]	90300B5	ACK
Up	[1] + [8] + [3] + [CAM FUNC]	90300B6	ACK
Down	[1] + [8] + [4] + [CAM FUNC]	90300B7	ACK
LL SYNC phase			
INC	[1] + [8] + [5] + [CAM FUNC]	90300B8	ACK
DEC	[1] + [8] + [6] + [CAM FUNC]	90300B9	ACK
PAN			
180 turn	[1] + [8] + [7] + [CAM FUNC]	90300BA	ACK
CLEANING			
On	[1] + [8] + [8] + [CAM FUNC]	90300BB	ACK
Off	[1] + [8] + [9] + [CAM FUNC]	90300BC	ACK
BW SW AUTO			
30 sec.	[1] + [9] + [0] + [CAM FUNC]	90300BD	ACK
60 sec.	[1] + [9] + [1] + [CAM FUNC]	90300BE	ACK
300 sec.	[1] + [9] + [2] + [CAM FUNC]	90300BF	ACK
600 sec.	[1] + [9] + [3] + [CAM FUNC]	90300C0	ACK

Note

1. Shortcut operations marked with * will change parameter settings only. Actual operation takes place when the conditions for the changed settings are met.
2. When entering shortcuts marked with **, "NO REGS. ; FLIP ON" may appear on the monitor. Re-enter the shortcut.
3. Shortcuts may be ignored while PAN/TILT, ZOOM or FOCUS is in operation.
4. PATROL LEARN saves only [1] through [6]+[4], [1]+[6]+[9] and [1]+[7]+[0] in the memory.
5. PATROL PLAY stops when a shortcut other than [1]+[6]+[9] or [1]+[7]+[0] is entered.

3.3 CW864 DIP switch settings[cw864sw]

3.3.1 Switch 1

From the "Operating Instructions" for the WV-CW864A dome pages 47 → 50.

"Switch 1, an 8-bit DIP switch, specifies the unit number or restores the factory default settings when using the Panasonic protocol.

When the switch position corresponding to the unit number 1 — 96 is selected, setting should be made on the RS485 SET UP menu (see page 43)."

For Panasonic's Protocol								
1	2	3	4	5	6	7	8	Use
F	N	F	N	N	F	F	F	Returns to the factory default settings.
N	F	N	N	N	F	F	F	19,200 baud
F	N	N	N	N	F	F	F	9,600 baud
N	N	N	N	N	F	F	F	4,800 baud
-	-	-	-	-	-	-	-	1 — 96
N	F	F	F	F	F	F	N	1
F	N	F	F	F	F	F	N	2
N	N	F	F	F	F	F	N	3
F	F	N	F	F	F	F	N	4
.	.	.	.	.	.	.	.	...
.	.	.	.	.	.	.	.	...
.	.	.	.	.	.	.	.	...
F	F	F	N	N	F	N	N	88
N	F	F	N	N	F	N	N	89
F	N	F	N	N	F	N	N	90
N	N	F	N	N	F	N	N	91
F	F	N	N	N	F	N	N	92
N	F	N	N	N	F	N	N	93
F	N	N	N	N	F	N	N	94
N	N	N	N	N	F	N	N	95

Table 1. Switch 1 camera address selection[camaddress]

[8] $Header: d:/txb-p/RCS/CW864sw.inc,v 1.6 2004-11-16 14:05:36-08 Hamilton Exp Hamilton $

3.3.2 Switch 2

"The 4-bit DIP switch is used for RS485 termination."

RS485 Setting				
1	2	3	4	Use
N	-	-	-	Termination ON
F	-	-	-	Termination OFF
-	N	N	N	Half duplex (2 line)
-	F	F	F	Full duplex (4 line)

Table 2. Switch 2 camera communications selection `[camcommunications]`

Note

"Full duplex is not available in a daisy chain connection. (Panasonic system controllers only)."

3.4 WV-CS854 switch setting

From a Technial Note, No FWT_GS002_Rev0, by Seyeon Tech Co., Ltd, www.flexwatch.com.

1. Select a protocol. Power up the camera.
2. Power down the camera.
3. Select a baud rate and communications mode. Power up the camera.
4. Power down the camera.
5. Set an address in.
6. Power up and use the camera.

3.4.1 Protocol Selection[protocolselect]

Protocol Selection								
1	2	3	4	5	6	7	8	Use
F	N	F	N	N	F	F	F	Conventional Protocol
N	N	F	N	N	F	F	F	"New" Protocol

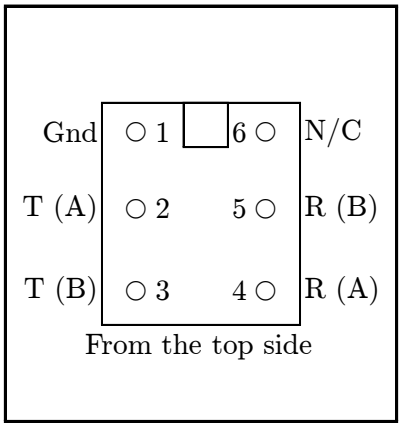
Table 3. Select a protocol

3.4.2 Baud Rate Selection[baudrateselect]

Communications Selections								
1	2	3	4	5	6	7	8	Use
N	F	N	N	N	F	F	F	19,200 baud
N	N	N	N	N	F	F	F	9,600 baud
N	N	N	N	N	F	F	F	4,800 baud

Table 4. Select a baud rate

[9] $Header: d:/txb-p/RCS/PanRj11.inc,v 1.2 2004-11-15 16:03:58-08 Hamilton Exp Hamilton $

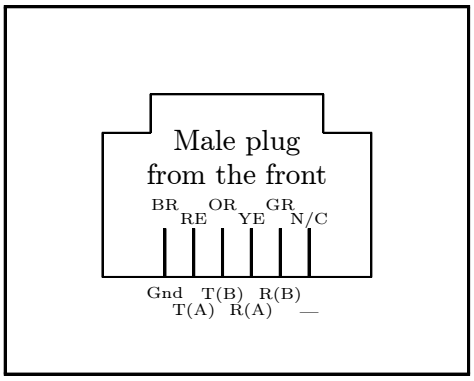


$RCSfile: Pan11Blk.inc,v $

Figure 2. Panasonic RJ-11 connector block `[pan11blk]`

DB-9 Pin	RJ-11 Pin
6 Tx-	2 RE
1 Tx+	3 OR
9 Rx-	4 YE
5 Rx+	5 GR

Table 5. Panasonic RS-485 connections



$RCSfile: PanRj11.inc,v $

Figure 3. Panasonic's RJ-11 connector wiring `[panrj11]`

4 Model No. WV-CW864A[cw864a]

From: Operating Instructions, WV-CW864A

The color cameras WV-CW864A are designed for installation in an outdoor video surveillance system. The camera incorporates the digital signal processor, pan/tilt mechanism, x22 zoom lens and RS485 communication interface in a compact outdoor enclosure.

A newly developed 1/4" CCD makes the camera suitable for use under extremely low illumination conditions as well as in daylight.

Setup menus allow the camera to perform surveillance tasks by such means as motion detection, digital flip, patrol-learn and privacy zones.

4.1 Features

1. Outdoor enclosure based on IP66[11] of IEC-60529 standard.
2. Provided with built-in heater and fan.
3. High quality picture of 768 x 494 pixels.
4. Minimum illumination of 1 lux for color and 0.06 lux for black/white surveillance.
5. Super-Dynamic 2 extends the dynamic range up to 48 dB..
6. Privacy zone feature enables users to veil unwanted zones.
7. Protocol adaptability to Panasonic's protocol.
8. Auto black/white mode enables the camera to switch between color and B/W in response to input light levels.
9. Reduction in minimum illuminance to 0.03 lux in the black/white mode thanks to `PIX SENS UP`.
10. Digital flip allows 180^o tilting to trace objects passing under the camera.
11. A run of manual operations is memorized in the patrol-learn mode for repetitive use in future.
12. Built-in digital motion detector and alarm outputs.
13. Up to 64 preset positions.
14. 360^o panning at a rotation speed of 300 ^{o}/s.
15. Sync selectable from among internal, line-lock and VD2.
16. Automatic gain control circuit.
17. Image hold.

[10] `$Header: d:/txb-p/RCS/Cw864A.inc,v 1.3 2004-11-18 08:35:41-08 Hamilton Exp Hamilton $`

[11] Waterproof structure resistant to powerful jetting as classified by the International Protection code.

18. Digital noise reduction effect.
19. Setting change executable only by authorized personnel thanks to the password lock function.
20. Enhanced horizontal resolution by resolution setting.

4.2 Special Features

4.2.1 Preset Data Uploading or Downloading

To download the preset data from the camera to the controller or upload the downloaded data to the camera, set the following functions to OFF.

Downloading or uploading the data may not work normally if these functions are set to ON.

1. Alarm
2. Preset alarm
3. Cleaning
4. Motion detection
5. Auto mode
6. Self return

Aim the camera at a motionless object such as a wall, if possible, to download or upload the preset data.

Note: Take notice of the following when uploading the downloaded data to the camera.

1. Preset positions may vary. If a preset position has deviated, delete the preset position and set the correct preset position newly.
2. **Uploading of WV-CW864A preset data to other models (e.g. WV-CW864, WV-CS854, WV-CS854A and WV-NS324) may cause an error and failure of the uploading process.**

   Caution: The preset data for other cameras (`WV-CW654` for example) is incompatible with `WV-CW864A`'s. `WV-CW864A`'s preset data will be destroyed if you upload the conventional data. If this happened, reset the `WV-CW864A` to the default settings. Download the factory settings into the controller and upload the correct preset data newly to the initialized `WV-CW864A`.

1. Self Return (`SELF RETURN`)

   The self return function allows the camera to resume one of the operations described below after a specified time.

   This function automatically works after a lapse of setting time from manual operation is finished.

1.1. OFF: Cancels the auto mode (`SEQ`, `SORT`, `AUTO PAN` and `PATROL`).
1.2. AT (the auto mode is set to `OFF`): Shifts the camera direction to the home position.
1.3. AT (the auto mode is set to other than `OFF`): Activates the auto mode.
1.4. HP: Shifts the camera direction to the home position.
1.5. AP: Starts the auto pan function.
1.6. SQ: Starts the sequence function.
1.7. SR: Starts the sort function.
1.8. PT: Starts the patrol function.

2. Auto Mode (`AUTO MODE`)

   The auto mode is used for setting the movement of the camera.

   You can select one of four automatic operation modes and one manual operation mode as follows:

   2.1. OFF: No automatic operation. The camera can be operated only manually.
   2.2. SEQ: The camera operates in the sequence of preset positions in numerical order.
   2.3. SORT: The camera operates in the sequence of preset positions counterclockwise from pan starting point.
   2.4. AUTO PAN: The camera automatically turns within the preset panning range.
   2.5. PATROL: The camera operates in the patrol-learn function.

3. Proportional Pan-Tilt Speed (`PROPO. P/T`)

   If `ON` is selected, the pan-tilt speed changes automatically corresponding to the zoom ratio. For example, the pan-tilt speed slows down when the camera zooms in.

4. Electronic Zoom (`EL-ZOOM`)

   Up to 10-fold electronic zooming is available besides 22-fold optical zooming.

5. Image Hold (`IMAGE HOLD`)

   The camera picture remains as a still image on the monitor screen or until the camera reaches the preset position. This function is useful for surveillance via a local area network.

6. Tilt Angle 0^o5^o

   You can select a titling range. If 5^o is selected, the tilting angle is adjustable up to 5^o beyond the horizontal position.

4.2.2 Camera

1. Self-diagnosis Function

   If the camera continues operating abnormally for 30 seconds or more due to such accident as external noise, the camera will automatically reset its power. In the case it happens frequently, check if there would be any environmental cause.

4.2.3 RS485 Communication

RS485 Parameter Setup

The selected protocol, communication parameters, and set unit numbers are read into the camera when the power is switched on.

1. Switch off the camera.
2. Set the switch.
3. Set the unit number with the DIP switch.
4. Switch on the camera to read in the changed switch settings.

Note: The changed communication parameters are displayed on the `RS485 SET UP` menu after the camera has been switched on.

1. Full/Half duplex
2. Transmission speed (4,900 - 19,200 bps)
3. Parity bit, Stop bit, Flow control
4. Wait time, Delay time, Alarm output
5. Camera units (96 units max.)
6. Termination `ON/OFF`

   The 4-bit DIP switch is used for RS485 termination.
7. Reset parameters

4.2.4 Pan Offset

If the camera is replaced with a new one, the pan offset function is used to adjust its positions to be the same as before except patrol setting. The system controller can download or upload the preset position data.

4.2.5 Setting the Switches

The 8-bit DIP switch has two functions. It is used to restore the factory default settings and to specify the unit number. Before setting, peel off the seal covering the switch holes. After setting the switch, replace the seal. The 4-bit DIP switch selects termination ON/OFF and half/full duplex for RS485 communication. The switch settings are read into the camera when the power is turned on. After changing the switch settings, be sure to turn the power off, then turn it back on again. Switch positions and functions are shown below. Seal

4.2.6 Unit Number

Switch 1, an 8-bit DIP switch, specifies the unit number or restores the factory default settings when using the Panasonic protocol. When the switch position corresponding to the unit number 1-96 is selected, setting should be made on the `RS485 SET UP` menu.

5 References[refs]

1. **Panasonic CCVE Products Document Number 010**, 12/03/97, Protocol Information WV-CSR600, WV-CSR400, WV-BSR300, VER. 5.3, NOV. 27. 1997, Overseas Sales Department, AV Systems Division, Matsushita Communication Industrial Co., LTD.[oldone]

2. **Panasonic CCVE Products Document**, 10/11/03, Protocol Information, WV-CS850(A)(B), WV-CS860A, VER. 3.1, Overseas Sales Department, DRAFT By Software Development Section, AV Systems Division, Matsushita Communication Industrial Co., LTD.[newone]

3. **Panasonic, Color CCTV Camera, Operationg Instructions, Model No. WV-CW864A** [cw864amanual]

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