

**Panasonic**  
ideas for life

Matrix System850  
VERSION 1.6

MATRIX  
SYSTEM  
850



# BIG TIME SECURITY

## Up to 8,192 Cameras and 1,024 Monitors. Large Scale Matrix System850

### For total security solutions bigger and better than ever before.

Panasonic now introduces the Matrix System850, opening a total whole new world to your CCVE system.

Matrix System850's scalable, high-density modular architecture allows users to design systems of various different sizes up to 8,192 video inputs, 1,024 video outputs and 128 system controllers, and space-saving installation.

**Flexible, scalable solutions**, with standard, enhanced or high-speed CPUs. The standard CPU supports up to 512 inputs and 64 outputs. The enhanced CPU increases the inputs to 1,024, and outputs to 256. The high-speed CPU supports up to 8,192 inputs and 1,024 outputs. All main system components are connected through an Ethernet 10Base-T/100Base-TX network.

**Extended distance coverage** is made possible by cable compensation circuitry which allows cables to be extended up to 1.2km long. Video, control and synchronization signals are all transmitted over a single coaxial cable, dramatically reducing both time and costs of installation. Control data can also be transmitted via separate RS-485 twisted pair cable for special applications.

### Front access and hot swapping of the boards allow easy maintenance.

An optional CPU management switch allows use of a redundant CPU (MCPU-B) which automatically takes-over the operation should the MCPU-A encounter a problem.

**Advanced features** include system partitioning, Sequences & Group preset and alarm activations. Controllers, cameras, monitors, digital disk recorders, alarms etc. can be partitioned and priority for operators, controllers and alarms-operators are programmable. The Matrix System850 features Tour SEQ, Group preset and Group SEQ. Tour SEQ allows users to view a series of images from different cameras on any monitor. The Group preset feature allows to view related spots from multiple cameras to predetermined monitors. Group SEQ enhances the ability by combining multiple Group presets and displays them sequentially. The Matrix System850 supports flexible alarm handling. Multiple alarm interfaces are available such as video motion detection of Panasonic cameras, terminal inputs and RS-232C. Each alarm can be assigned to a target which includes one or more monitors, and acknowledged, reset, disarmed and armed individually. Up to 10 actions can be linked to each alarm.

**Up to 64\* WJ-HD316 Digital Disk Recorder** can be networked with the Ethernet Controller WV-CU950 and/or RS-485 Controller WV-CU650. Besides Record and Replay, the Jog Dial and Shuttle Ring make it easy to Fast Forward and Rewind or Forward or Rewind one frame at a time. Add the wealth of other recorder functions at your fingertips, state-of-the-art high image quality and long-duration digital image recording. It has never been simpler to construct a system with reliability second to none.

(\*Standard: Up to 32; Enhanced: Up to 64)

### Ideal for any security needs.

Hotels, casinos, office buildings, rail and subway stations, stadiums, museums, shopping malls, and other secure installations-- wherever effective security requires a large-scale, total solution, the ideal choice is Panasonic and the **Matrix System850**.

## Key Features

version 1.6

- Up to 8,192 video inputs, 1,024 video outputs, 128 System controllers
- Scalable, space-saving, high-density modular architecture
- Roll free switching thanks to Panasonic VD2 timing pulse
- Choice of three CPUs
  - Standard: Up to 512 inputs, 64 outputs, and 16 System controllers
  - Enhanced: Up to 1,024 inputs, 256 outputs, and 64 System controllers
  - High Speed: Up to 8,192 inputs, 1,024 outputs, and 128 System controllers
- Ethernet 10Base-T/100Base-TX network for system communication.
- Up to 64 Digital Disk Recorders WJ-HD300 Series can be controlled by Ethernet Controller WV-CU950 and/or RS-485 Controller WV-CU650.
- Cable compensation circuitry enabling cable extension up to 1.2km long
- Control data, Alarm data and Timing Pulse (VD2) transmitted with video signal over a single coaxial cable or via separate RS-485 twisted pair cable.
- Multiple Alarm Action allows you to set up to 10 separate actions in response to a single alarm. There are four types of alarm actions to choose from: Spot, Tour SEQ, Text Only, and Group SEQ.
- Time & Date Displays can be switched on and off from the system controller.
- WV-CU950 and WV-CU650/WV-CU360CJ System Controllers allow you to use the following Panasonic Dome Cameras features:
  - \* Camera Function Code
  - \* Black&White/Colour Change
  - \* Patrol Learn Function
  - \* Auto Pan, Spot and SEQ
- Monitor Service features include Alarm Status, Video Loss Status, System Status, Alarm History, and Video Loss History displays.
- Timer Event allows you to pre-set times for automatic switching of selected events and modes.
- Video Loss Alarm warns you when camera connection malfunctions occur.
- Hot-swapping and front access maintenance
- Optional backup CPU for system reliability
- Ease of setup by Administration software
- Three grades controllers: Ethernet controller WV-CU950, RS-485 Controllers WV-CU650/WV-CU360CJ
- Flexible system partitioning
- Flexible alarm handling
- Tour SEQ, Group preset, Group SEQ
- Multiple alarm interfaces such as VMD of Panasonic cameras, RS-232C ports, terminal inputs and Video Loss.
- PC interface (Ethernet and RS-232C) for system integration
- Centralized time and date generation

Panasonic Dome Camera Series



Hot-swapping & front access



# Major Functions

## Area and System partitioning

The System850 allows users to create the Areas and partitioning. An Area includes Monitors, Controllers, Tour SEQs, Group presets and Group SEQs. All these items except controllers can have local number so that the user can select them by using simpler reference number such as monitor 1 instead of monitor 1,024 etc. The Timer Event feature permits automatic switching between pre-selected partitions. Flexible partitioning is also available as follows.

### Controller-to-area

A Controller belongs to an area. It can not access the other areas. Only programmed "Super-users" can access different areas.

### Controller-to-monitor

Limits the monitors that can be selected by the Controller.

### Controller-to-camera view

Limits the cameras that can be selected or controlled by the Controller.

### Controller-to-camera control

Limits the cameras that can be controlled by the Controller.

### Controller-to-Group SEQ

Limits the Group SEQ that can be launched by the Controller.

### Controller-to-Alarm

Limits the alarms that can be controlled by the Controller.

### Controller-to-Alarm I/O

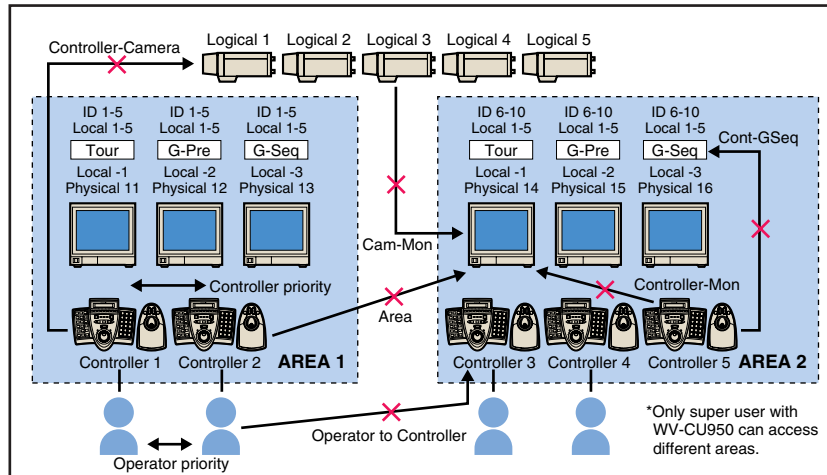
Limits the Alarm I/O ports that can be controlled by the Controller.

### Operator-to-Controller

Limits the Controllers that the operator can log on to.

### Monitor-to-camera

Limits the cameras that can be shown on the monitor.



### Operator Level

- Operator**  
Each Operator has priority. When two Operators are trying to control same camera/monitor, only higher priority Operator is allowed.
- Controller**  
Each Controller has priority. When two Controllers are trying to control same camera, only higher priority Controller is allowed.
- Alarm-Operator**  
Each Alarm has priority. When an operator is trying to select a monitor which currently displays an alarm camera, the priority of alarm and operator effects the result.

\* Operator priority has higher priority than Controller priority.

## Alarm

The Matrix System850 supports flexible alarm handling. Each alarm is assigned to a Target which includes one or more monitors, and Tour sequences or camera spot with preset position can be programmed as alarm activation. Multiple alarm interfaces are supported such as VMD of Panasonic cameras, RS-232C ports, Video Loss and terminal inputs.

### Example 1 SEQ mode

**Target 1** includes monitor 1,2,3, and AL1-5 are set to Target 1  
**Target 2** includes monitor 4,5,6, and AL6-7 are set to Target 2

#### set up of Administration software

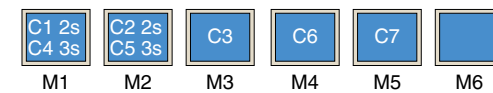
- AL1: Target 1: Cam 1: Dwell time 2 sec
- AL2: Target 1: Cam 2: Dwell time 2 sec
- AL3: Target 1: Cam 3: Dwell time 3 sec
- AL4: Target 1: Cam 4: Dwell time 3 sec
- AL5: Target 1: Cam 5: Dwell time 3 sec
- AL6: Target 2: Cam 6: Dwell time 2 sec
- AL7: Target 2: Cam 7: Dwell time 2 sec

#### When AL1 - AL3 are activated....



When AL1, AL2, AL3 are activated successively, Cam 1, 2 and 3 are displayed on Monitor 1, 2 and 3 respectively.

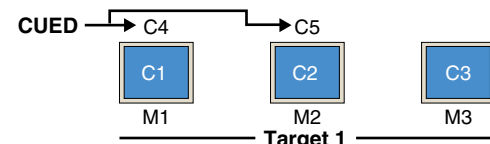
#### When AL1-AL7 are activated....



When AL4 and AL5 are, then activated successively, Cam 1 and Cam 4 are displayed on Monitor1, Cam 2 and Cam 5 are displayed on Monitor 2 in sequence with programmed dwell time. When AL6 and AL7 are activated, Cam 6 and Cam 7 are displayed on Monitor 4 and Monitor 5 respectively.

### Example 2 Hold mode

When multiple alarms are received in Hold mode, 1st alarm camera is kept displayed on the assigned monitor while the system holds next alarm camera. The alarm camera which is cued and 1st alarm camera are displayed sequentially by selecting the alarm cued.



\* Camera preset position is also available.

## Tour SEQ, Group preset and Group SEQ

The System850 allows users to choose combination of sequence modes that best suits the requirement, building layout and work style. Sequence modes can be triggered automatically by alarms, timer or manually by the operator.

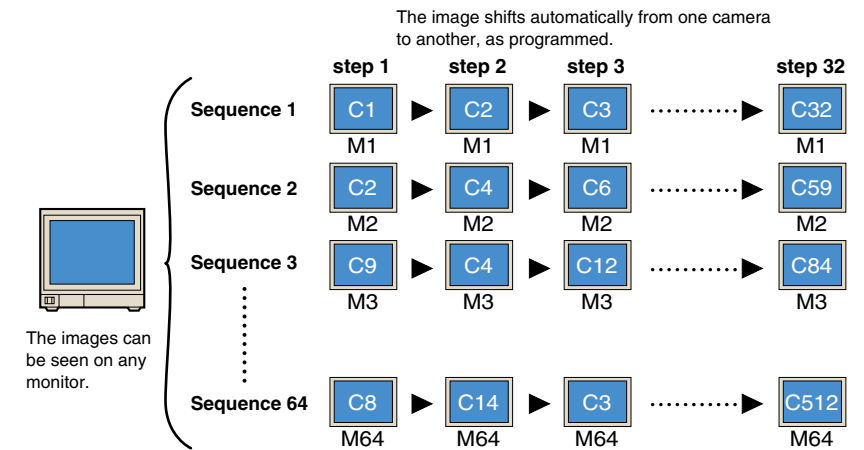
### Tour Sequence

This mode automatically displays the images from programmed cameras sequentially on a monitor.

#### Sequences and Steps by Type of CPU

Type	Standard	Enhanced	High-Speed
Sequences	64	128	256
Steps	32	64	128

The Standard CPU allows the use of up to 64 separate tour sequences, each including up to 32 steps. Camera positions and dwell times can be set separately for each step.



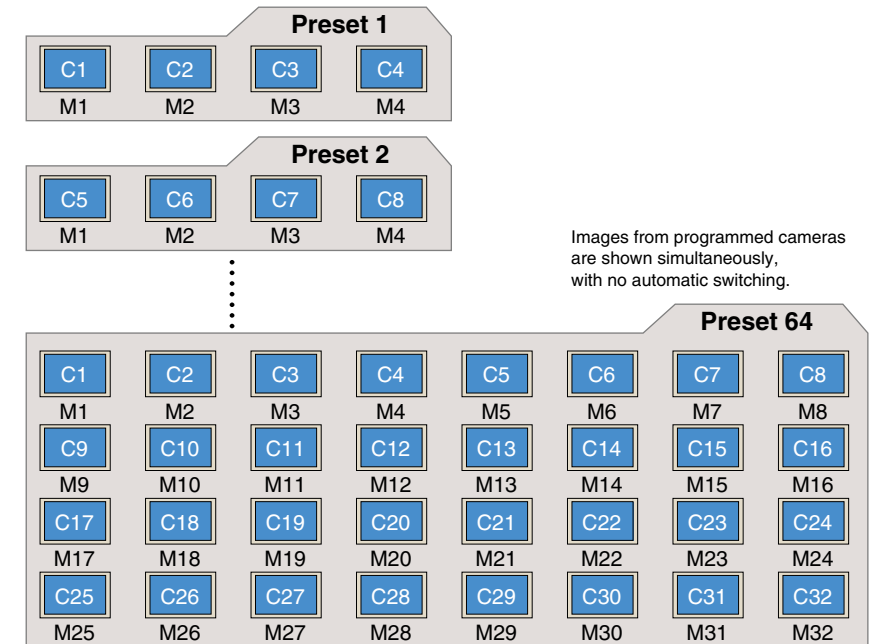
### Group Preset

Images from groups of programmed camera are shown on a group of monitors.

#### Monitors and Presets by Type of CPU

Type	Standard	Enhanced	High-Speed
Monitors	32	64	128
Presets	64	128	256

The Standard CPU allows the grouping of up to 32 monitors, in up to 64 separate preset. Camera preset position can be programmed separately for each of these presets.



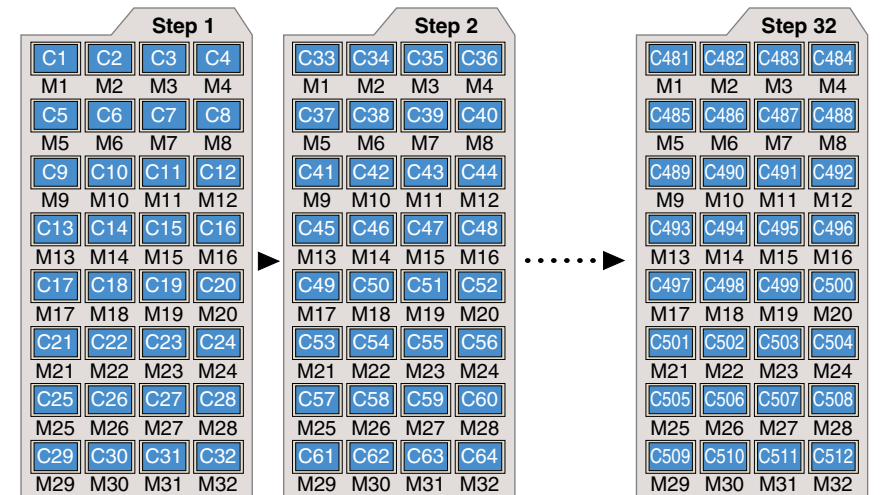
### Group Sequence

The Group sequence sequences the Group Presets with individual dwell times.

#### Monitors, Sequences and Steps by Type of CPU

Type	Standard	Enhanced	High-Speed
Monitors	32	64	128
Sequences	64	128	256
Steps	32	64	128

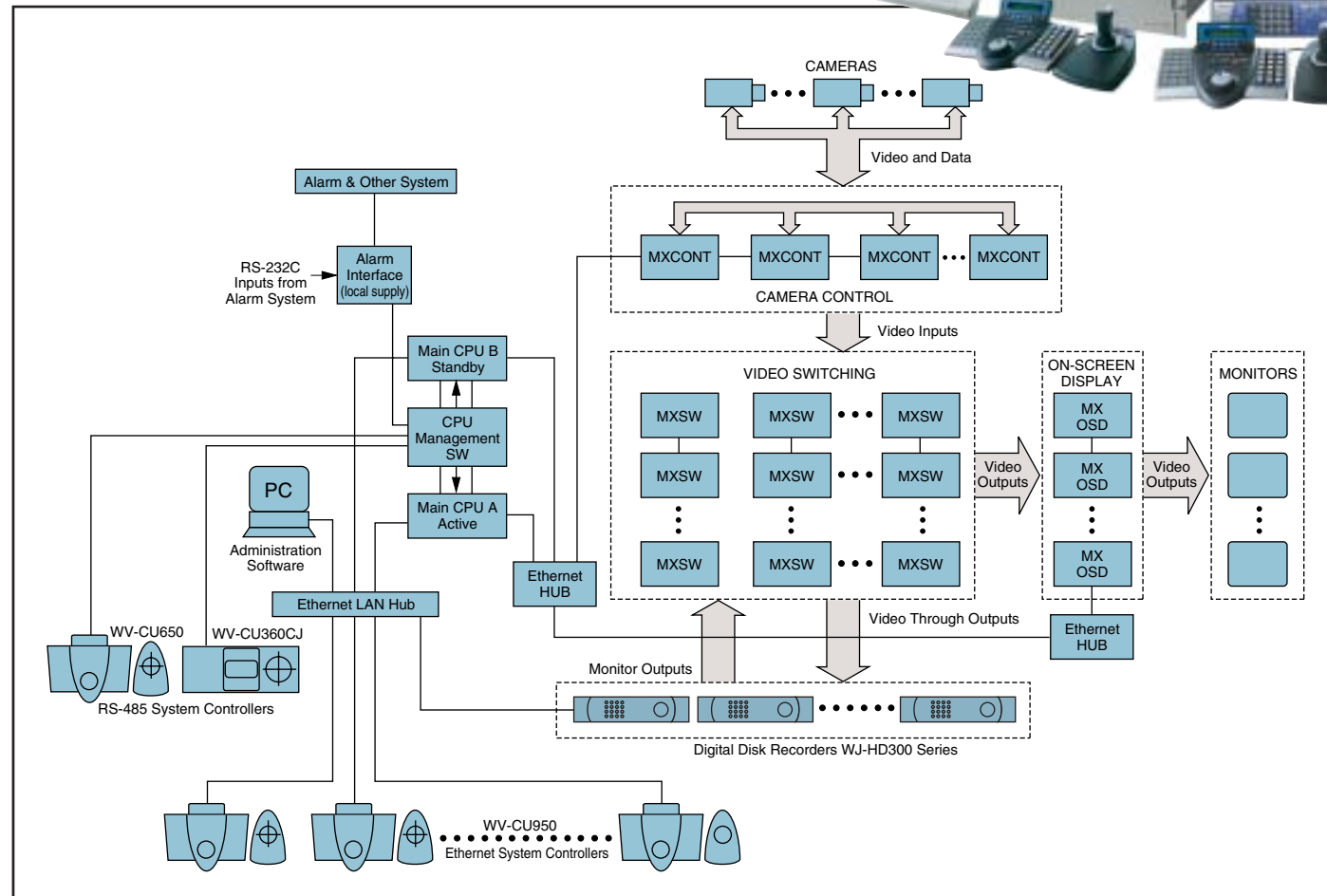
The Standard CPU allows the grouping of up to 32 monitors in up to 64 sequences with up to 32 steps in each sequence. Camera positions and dwell times can be set separately for each step.



The chart below is a system diagram for the Panasonic **System850**. The camera video signals are connected to the Camera Control/Input Cages (MXCONT) that include the Multiplex Video Input Boards (WJ-PB85X08) with the Character Generator Daughter Boards and/or the RS-485 Data Communication Boards (WJ-PB85R08). A single cage can have up to 128 video inputs with full camera control and the system can be expanded to 8,192 video inputs by adding additional cages. The signals are routed to the Crosspoint Switch Cages (MXSW) that include the Video Cross Point Input Boards (WJ-PB85C16) and the Video Cross Point Output Boards (WJ-PB85M16). A MXSW Cage can accept up to 256 video inputs with 32 video outputs which can be expanded to 8,192 inputs/1,024 outputs by adding MXSW Cages. The video signals are routed from the output terminals of the Cross Point Output Boards according to camera/monitor selection operations and supplied to the Monitors OSD Boards in the OSD/Output Cages (MXOSD). A MXOSD can have up to 128 video outputs and the system can be expanded up to 1,024 video outputs by adding MXOSDs. The OSD boards in the MXOSD Cages generate, system status characters which are then routed to the monitor displays. Cameras can be controlled by Multiplex Video Input Boards (WJ-PB85X08) via single coax or RS-485 Data communication Boards (WJ-PB85R08) via RS-485. In system without camera control, genlock and cable compensation requirement, camera can be connected directly to the Crosspoint Switch Cage, typical in smaller systems, different type boards may be combined in the one cage.

The **System850** can be controlled by the Ethernet System Controller (WV-CU950) or the RS-485 System Controllers (WV-CU650/WV-CU360CJ). The system communication is managed via 10Base-T/100Base-TX Ethernet, all CPU's feature 3 RS-232C ports enabling integrations with external system such as Card access, Fire alarm, and Intrusion detection.

Three types of CPU's are available such as the Standard Main CPU Unit (WJ-MPU850), the Enhanced Main CPU Unit (WJ-MPU855) and High Speed Main CPU Unit (T.B.A.). A redundant CPU setup is available. When a failure happens in one MCPU (MCPU-A), CPU Management Switch (WJ-MPS850) switches the system control to the other MCPU (MCPU-B). The entire system is programmed and maintained by the Administration Console WJ-ASC8501.



Cage Legend	Description
MXCONT	Camera Control/Input Cage
MXSW	Crosspoint Switch Cage
MXOSD	Monitor OSD/Output Cage

Cage Legend	Description
MXALM	Alarm I/O Cage
MXLPT	Loop Through/Passive Input Cage

**Note:** These legends are used to describe cages by function. They are not product names nor Model No.

## WJ-ASC8501



### Main menu



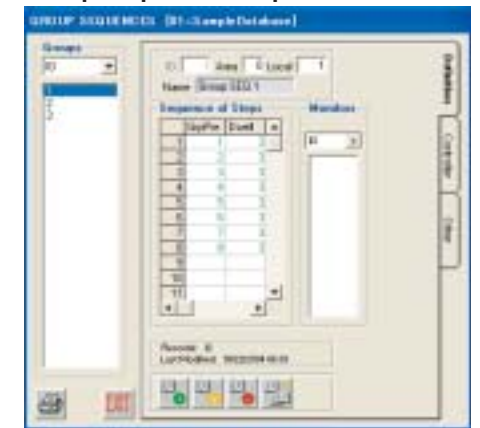
### Camera setup menu



### Digital Recorder setup menu



### Group Sequence setup menu



### Alarm setup menu



### Operator Class setup menu



### Controller setup menu



The **WJ-ASC8501 administration software** is principally used to configure the System850, program its functions such as Tour SEQ, Group Preset and Alarm, and back up entire data of System850. Programming of the WJ-ASC8501 includes camera, controller, monitor, alarm I/O, alarm, operator, digital disk recorder, tour seq, group preset, group seq, card cage and grade of CPU.

Camera setup menu determines logical channel ID, control port, video port, type of the camera, cable compensation and camera title. Use the Digital Recorder setup menu to select logical channel ID, digital recorder model number, IP address, video port and video channels.

Group SEQ setup menu determines area, local group seq ID, and group seq steps. Corresponding monitor numbers are also displayed in the group seq setup menu.

Alarm setup menu provides logical alarm number, priority, alarm source, action of alarm, acknowledge/reset mode, arm/disarm and dwell time for multi-alarm sequence.

Operator Class menu allows you to check and re-set the scope of all System850 operations.

Data base manager, Account manager, AC log and Log manager are also available for advanced administration.

## Ethernet System Controller WV-CU950

### The Surveillance Cockpit for Total Control of the System850.



#### Integrated System Control

##### Camera Control

- Detached joystick controls Pan/Tilt and Zoom, allowing seamless tracking.
- Larger numeric keypad provides direct access to cameras.

##### Recorder Control

- Jog Dial and Shuttle Ring for smoother control of WJ-HD300 Series recorders
- Dedicated Record, Play, and Search buttons

##### Switcher Control

- Image switching and sequencing buttons

#### Easy to Operate While Focused on Surveillance

##### Universal Design for Right or Left Hand Use

- Detached joystick pad
- Layout with Jog Dial and Shuttle Ring in centre

##### More Comfortable Extended Surveillance

- Soft padding on joystick
- Adjustable joystick height for large or small hands
- Low centre of gravity design and adjustable angle minimize strain

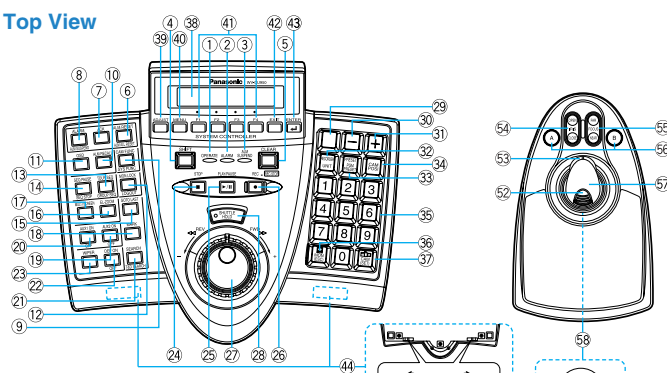
##### Instinctive Operation

- Cockpit style button layout

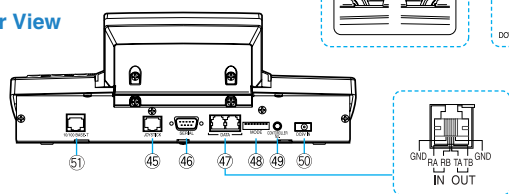
#### System Management Capability

- User level management for registered users
- User assignable buttons: four in main unit plus three in palm rest

#### Top View



#### Rear View

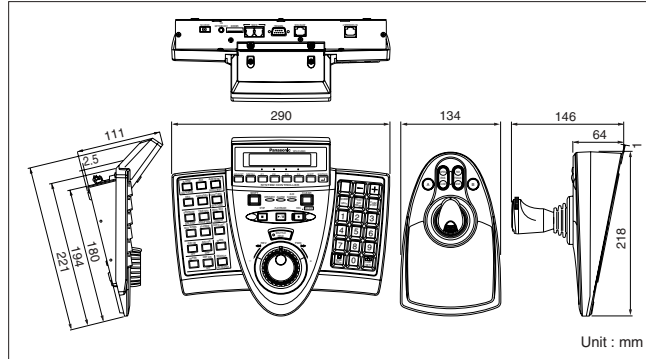


- |   |  |
|---|--|
| 1. Operation Indicator                    | 17. Multiscreen Selection Button             |
| 2. Alarm Indicator                        | 18. Mark Button                              |
| 3. Alarm Suspend Indicator                | 19. Auxiliary 2 ON/OFF Button                |
| 4. Shift Button                           | 20. Auxiliary 1 ON/OFF Button                |
| 5. Clear Button                           | 21. Search/Time and Date Search Button       |
| 6. Alarm Reset/Alarm All Reset Button     | 22. Defroster Button                         |
| 7. Alarm Acknowledge Button               | 23. Wiper Button                             |
| 8. Alarm/Alarm Suspend Button             | 24. Stop Button                              |
| 9. Camera Function/System Function Button | 25. Play/Pause Button                        |
| 10. Alarm Recall Button                   | 26. Recording Button                         |
| 11. On-Screen Display Button              | 27. Shuttle Ring (Outside)/ JogDial (Inside) |
| 12. Monitor Lock/Logout Button            | 28. Shuttle Hold Button                      |
| 13. Tour Sequence/Group Sequence Button   | 29. History Button                           |
| 14. Sequence Pause/Sequence Stop Button   | 30. -Button                                  |
| 15. Go To Last Button                     | 31. +Button                                  |
| 16. Electronic Zoom Button                | 32. Recorder/Unit Selection Button           |

#### SPECIFICATIONS [PAL]

Power Source	9 V DC, 600 mA (using the supplied AC adapter)
Power Source (supplied AC adapter)	230 V AC, 50 Hz, 150 mA
Ethernet Port	10Base-T/100Base-TX, RJ-45 x1
Data Output/Input Port	6-conductor modular jack (RS-485, Full duplex) x2
Serial Port	9-pin D-sub connector
Controller Number	1 to 8 (rotary switch)
Ambient Operating Temperature	-10 °C to +50 °C
Unit Number Selection	1 to 99
Monitor Number Selection	1 to 99
Camera Number Selection	1 to 256
Dimensions (W x H x D)	Main Unit: 290 x 111 x 221 mm 3D Joystick Unit: 134 x 146 x 218 mm
Weight (without the AC adapter)	Main Unit: 1.3 kg 3D Joystick Unit: 0.8 kg

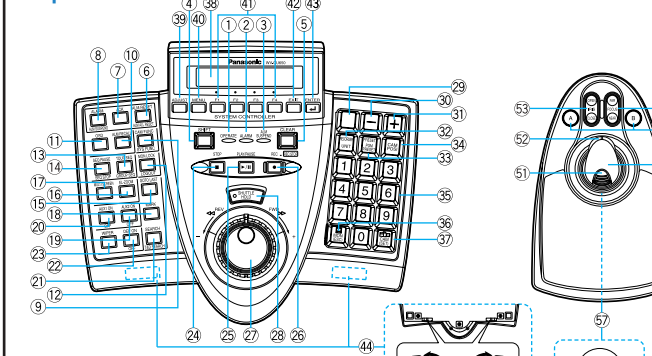
#### APPEARANCE



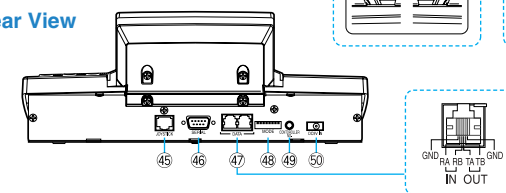
- |                                  |                              |                              |
|----------------------------------|------------------------------|------------------------------|
| 33. Preset/Program Preset Button | 42. Exit Button              | 51. 10Base-T/100Base-TX Port |
| 34. Camera Position Button       | 43. Enter Button             | 52. Top Button               |
| 35. Numeric Buttons              | 44. Feet                     | 53. Zoom Wheel Controller    |
| 36. Monitor/Escape Button        | 45. Joystick Connector       | 54. Iris Control Buttons     |
| 37. Camera/Set Button            | 46. Serial Port              | 55. Focus Control Buttons    |
| 38. LCD                          | 47. Data Ports               | 56. A and B Buttons          |
| 39. Adjustment Button            | 48. Mode Selection Switches  | 57. 3D Joystick              |
| 40. Menu Button                  | 49. Controller Number Switch | 58. Adjusting Screw          |
| 41. Function Buttons             | 50. DC 9V Input Jack         |                              |

## RS-485 System Controller WV-CU650

#### Top View



#### Rear View

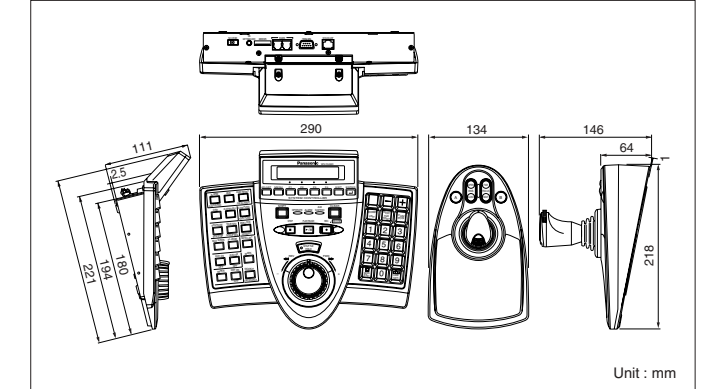


- |   |  |
|---|--|
| 1. Operation Indicator                    | 17. Multiscreen Selection Button             |
| 2. Alarm Indicator                        | 18. Mark Button                              |
| 3. Alarm Suspend Indicator                | 19. Auxiliary 2 ON/OFF Button                |
| 4. Shift Button                           | 20. Auxiliary 1 ON/OFF Button                |
| 5. Clear Button                           | 21. Search/Time and Date Search Button       |
| 6. Alarm Reset/Alarm All Reset Button     | 22. Defroster Button                         |
| 7. Alarm Acknowledge Button               | 23. Wiper Button                             |
| 8. Alarm/Alarm Suspend Button             | 24. Stop Button                              |
| 9. Camera Function/System Function Button | 25. Play/Pause Button                        |
| 10. Alarm Recall Button                   | 26. Recording Button                         |
| 11. On-Screen Display Button              | 27. Shuttle Ring (Outside)/ JogDial (Inside) |
| 12. Monitor Lock/Logout Button            | 28. Shuttle Hold Button                      |
| 13. Tour Sequence/Group Sequence Button   | 29. History Button                           |
| 14. Sequence Pause/Sequence Stop Button   | 30. -Button                                  |
| 15. Go To Last Button                     | 31. +Button                                  |
| 16. Electronic Zoom Button                | 32. Recorder/Unit Selection Button           |

#### SPECIFICATIONS [PAL]

Power Source	9 V DC, 300 mA (using the supplied AC adapter)
Power Source (supplied AC adapter)	230 V AC, 50 Hz, 150 mA
Data Output/Input Port	6-conductor modular jack (RS-485, Full duplex) x2
Serial Port	9-pin D-sub connector
Controller Number	1 to 8 (rotary switch)
Ambient Operating Temperature	-10 °C to +50 °C
Unit Number Selection	1 to 99
Monitor Number Selection	1 to 99
Camera Number Selection	1 to 256
Dimensions (W x H x D)	Main Unit: 290 x 111 x 221 mm 3D Joystick Unit: 134 x 146 x 218 mm
Weight (without the AC adapter)	Main Unit: 1.3 kg 3D Joystick Unit: 0.8 kg

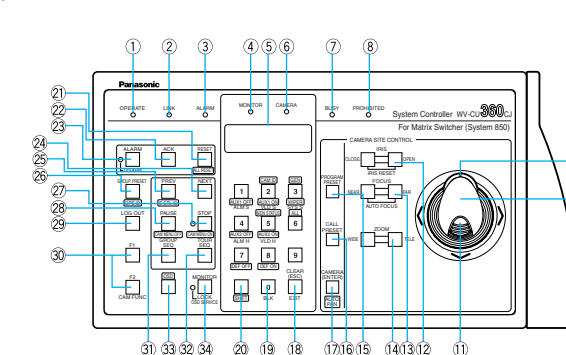
#### APPEARANCE



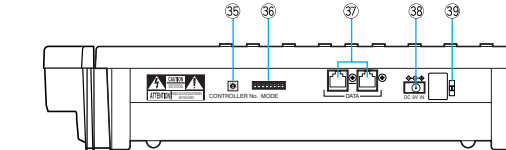
- |                                  |                              |                           |
|----------------------------------|------------------------------|---------------------------|
| 33. Preset/Program Preset Button | 42. Exit Button              | 51. Top Button            |
| 34. Camera Position Button       | 43. Enter Button             | 52. Zoom Wheel Controller |
| 35. Numeric Buttons              | 44. Feet                     | 53. Iris Control Buttons  |
| 36. Monitor/Escape Button        | 45. Joystick Connector       | 54. Focus Control Buttons |
| 37. Camera/Set Button            | 46. Serial Port              | 55. A and B Buttons       |
| 38. LCD                          | 47. Data Ports               | 56. 3D Joystick           |
| 39. Adjustment Button            | 48. Mode Selection Switches  | 57. Adjusting Screw       |
| 40. Menu Button                  | 49. Controller Number Switch |                           |
| 41. Function Buttons             | 50. DC 9V Input Jack         |                           |

## RS-485 System Controller WV-CU360CJ

#### Top View



#### Rear View

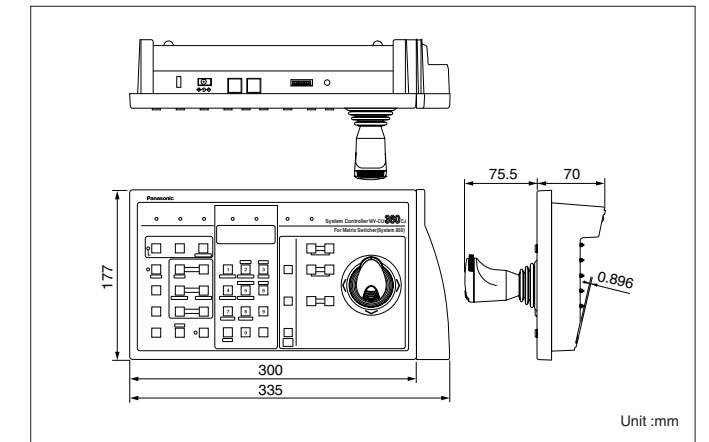


- |                          |                                    |  |
|--------------------------|------------------------------------|--|
| 1. Operate Indicator     | 15. Program Preset Button          | 29. Log Out Button   |
| 2. Link Indicator        | 16. Call Preset Button             | 30. Function Buttons   |
| 3. Alarm Indicator       | 17. Camera/Enter Button            | 31. Group Sequence Button                                    |
| 4. Monitor Indicator     | 18. Clear/Escape Button            | 32. Tour Sequence Button                                     |
| 5. LED Display           | 19. Numeric Buttons                | 33. OSD Button   |
| 6. Camera Indicator      | 20. Shift Button                   | 34. Monitor/Monitor Lock/ OSD Service Button, Lock Indicator |
| 7. Busy Indicator        | 21. Alarm Reset Button             | 35. Controller Number Switch                                 |
| 8. Prohibited Indicator  | 22. Alarm Acknowledge Button       | 36. Mode Selection Switches                                  |
| 9. Zoom Wheel Controller | 23. Alarm Button, Disarm Indicator | 37. Data Ports   |
| 10. Joystick             | 24. Next Button                    | 38. DC 9V Input Jack   |
| 11. Auto Focus Button    | 25. Previous Button                | 39. Cable Clamp  |
| 12. Iris Buttons         | 26. Group Preset Button            |  |
| 13. Focus Buttons        | 27. Stop Button                    |  |
| 14. Zoom Buttons         | 28. Pause Button                   |  |

#### SPECIFICATIONS [PAL]

Power Required	9 V DC 400 mA (use exclusive AC adapter supplied with the controller)
LED Display	5 digits for Monitor, and Camera
Keys and Joystick	Numeric keys: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, SHIFT, CLEAR Select keys: CAMERA, MONITOR Sequence Control: GROUP PRESET, GROUP SEQ, TOUR SEQ NEXT, PREV, STOP, PAUSE Camera Control: Joystick pan-tilt (Variable speed) CLOSE, OPEN, NEAR, FAR, WIDE, TELE Alarm Control: ACK, ALARM, RESET Function keys: LOGOUT, CALL PRESET, PROGRAM PRESET, OSD Special Function keys: F1, F2
Data Output Port	6-conductor Modular Jack (RS-485, Full Duplex)
Ambient Operating Temperature	-10 °C - +50 °C
Ambient Operating Humidity	Less than 90%
Dimensions	335 (W) x 145.5 (H) x 177 (D) mm
Weight	1.4 kg without AC Adapter
AC Adapter	220 V-240 V AC, 50Hz

#### APPEARANCE



Standard Main CPU Unit **WJ-MPU850**

**Front View**

**Rear View**

1. Operate Indicator
2. Reset Button
3. Fan Alarm Indicator
4. HDD (Hard Disk Drive) Indicator
5. Active Indicator
6. Ethernet Ports [for WV-CU950]
7. Controller Ports (RS-485) [for WV-CU650/CU360CJ]
8. Peripheral Interface Ports (RS-232C)
9. Redundant CPU Selector
10. Mode Selector
11. Parallel Port
12. Cooling Fan Unit
13. Fuse Holder
14. AC Inlet Socket

**SPECIFICATIONS** [PAL]

Power Supply	220 V-240 V AC, 50Hz
Power Consumption	(92 W)
Controllable Cameras	512 cameras (4 card cages)
Cross Point Controllable Cages	512 x 64 (4 card cages)
Controllable Monitors	64 (1 card cage)
System Controller Ports	Ethernet; 10Base-T/100Base-TX, 8-conductor modular jack (RJ-45) Maximum 16 controllers RS-485; 6-conductor modular jack (RJ-11) Maximum 6 controllers
Ethernet Ports	10Base-T/100Base-TX, 8-conductor modular jack for card cage control (RJ-45)
RS-232C Port	9-pin D-sub connector (x3)
Ambient Operating Temperature	-10°C - +50°C
Ambient Operating Humidity	Less than 90%
Dimensions	430 (W) x 132 (H) x 350 (D) mm
Weight	16 kg

**APPEARANCE**

Unit : mm

Enhanced Main CPU Unit **WJ-MPU855**

**Front View**

**Rear View**

1. Operate Indicator
2. Reset Button
3. Fan Alarm Indicator
4. HDD (Hard Disk Drive) Indicator
5. Active Indicator
6. Ethernet Ports [for WV-CU950]
7. Controller Ports (RS-485) [for WV-CU650/CU360CJ]
8. Peripheral Interface Ports (RS-232C)
9. Redundant CPU Selector
10. Mode Selector
11. Parallel Port
12. Cooling Fan Unit
13. Fuse Holder
14. AC Inlet Socket

**SPECIFICATIONS** [PAL]

Power Supply	220 V-240 V AC, 50Hz
Power Consumption	(90 W)
Controllable Cameras	1,024 cameras (8 card cages)
Cross Point Controllable Cages	1,024 x 256 (32 card cages)
Controllable Monitors	256 (2 card cage)
System Controller Ports	Ethernet; 10Base-T/100Base-TX, 8-conductor modular jack (RJ-45) Maximum 64 controllers RS-485; 6-conductor modular jack (RJ-11) Maximum 12 controllers
Ethernet Ports	10Base-T/100Base-TX, 8-conductor modular jack for card cage control (RJ-45)
RS-232C Port	9-pin D-sub connector (x3)
Ambient Operating Temperature	-10°C - +50°C
Ambient Operating Humidity	Less than 90%
Dimensions	430 (W) x 132 (H) x 350 (D) mm
Weight	16 kg

**APPEARANCE**

Unit : mm

CPU Management Switch **WJ-MPS850**

**Front View**

**Rear View**

1. Operate Indicator
2. CPU Mode Selector
3. Reset Buttons
4. CPU Diagnostic Indicators
5. Controller Ports (RS-485)
6. Peripheral Interface Ports (RS-232C)
7. Diagnostic Input Ports
8. Fuse Holder
9. AC Inlet Socket

**SPECIFICATIONS** [PAL]

Power Supply	220V - 240 V AC, 50Hz
Power Consumption	11W
System Controller Ports	RS-485; 6-conductor modular jack (x36)
Peripheral Interface Ports	RS-232C; 9-pin D-sub connector (x9)
Diagnostic Input Ports	9-pin D-sub connector (x2)
Ambient Operating Temperature	-10°C - +50°C
Ambient Operating Humidity	Less than 90%
Dimensions	430 (W) x 132 (H) x 350 (D) mm
Weight	11 kg

**APPEARANCE**

Unit : mm

Card Cage w/PS and LCPU **WJ-SX850**

**Front View**

**Rear View**

1. Operate Indicator
2. VS/VD Input Connector
3. VS/VD Output Connector
4. VD Output Connector
5. Ethernet Port
6. RS-232C Port
7. AC Inlet Socket

**SPECIFICATIONS** [PAL]

Power Supply	220 V-240 V AC, 50Hz
Power Consumption	150 W (max. 150 W when all slots are occupied)
VS/VD Input	2 (BNC)
VS/VD Output	2 (BNC)
VD Output	Video Level 4 V [p-p]/75 Ω (BNC)
Ethernet Port	10Base-T/100Base-TX, 8-Conductor modular jack
RS-232C Port	25-pin D-sub connector
Ambient Operating Temperature	-10°C - +50°C
Ambient Operating Humidity	Less than 90%
Dimensions	430 (W) x 265 (H) x 350 (D) mm
Weight	13 kg

**APPEARANCE**

Unit : mm

Passive Card Cage **WJ-BX850**

**Front View**

**Rear View**

**SPECIFICATIONS** [PAL]

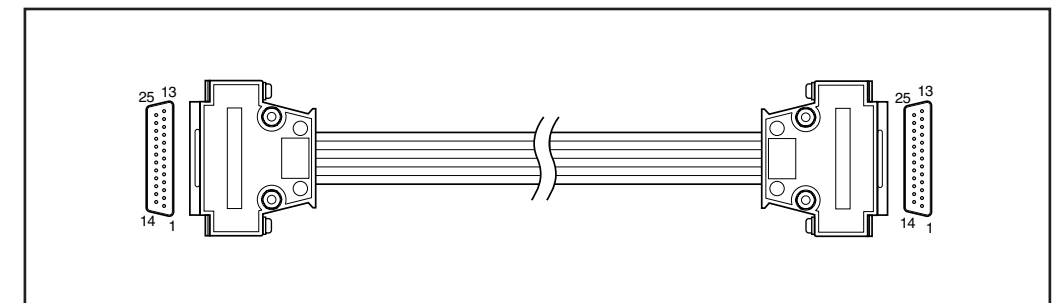
Dimensions	430 (W) x 265 (H) x 350 (D) mm
Weight	13 kg

**APPEARANCE**

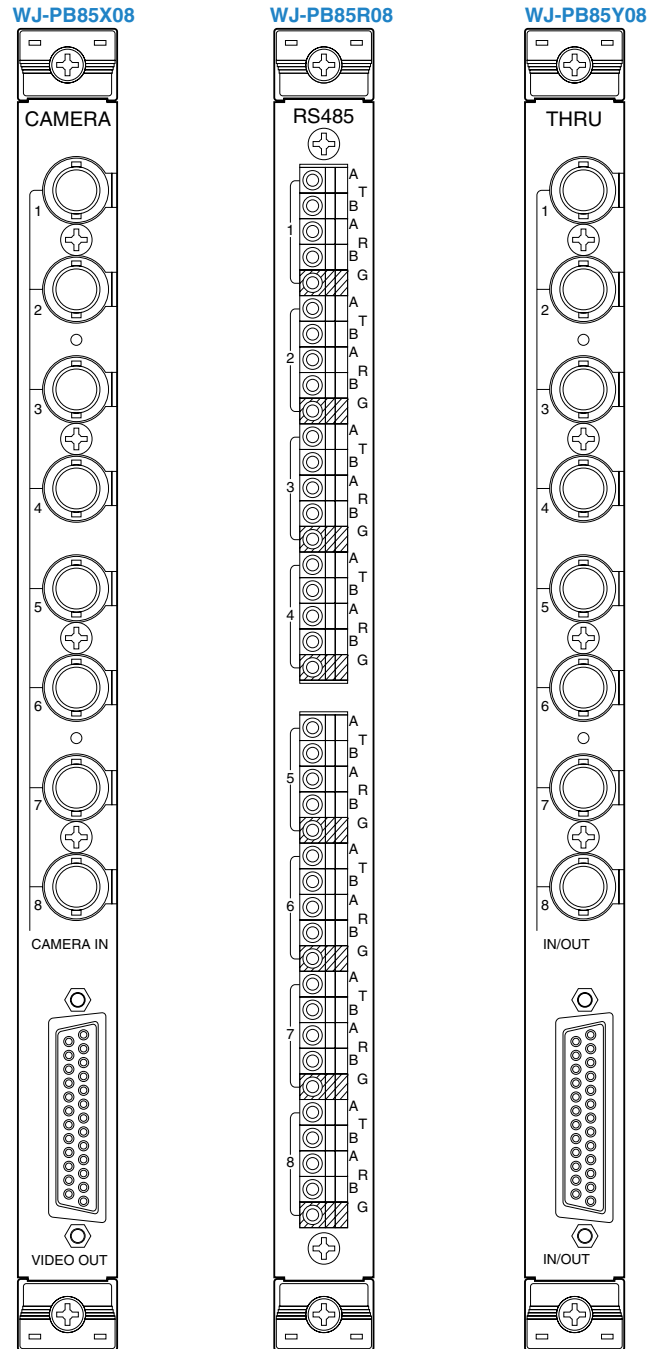
Unit : mm

Multiple Video Cables

- WJ-CA85L05** (0.5 m)
- WJ-CA85L10** (1.0 m)
- WJ-CA85L15** (1.5 m)
- WJ-CA85L20** (2.0 m)
- WJ-CA85L25** (2.5 m)
- WJ-CA85L30** (3.0 m)
- WJ-CA85L50** (5.0 m)



## Connectors on Rear Board



**8-Channel Multiplex Video Input Board**  
**WJ-PB85X08**

**SPECIFICATIONS** **PAL**

<b>Camera Input (1 - 8)</b>	1.0 V [p-p]/75Ω composite video signal 0.5 V [p-p]/75Ω data signal and 2.5 V [p-p]/ 75Ω vertical timing pulse multiplexed.
<b>Video Output</b>	1.0 V [p-p]/75Ω composite video signal 25-pin D-sub connector
<b>Functions</b>	Cable compensation: S, M, L (Short, Middle, Long) Vertical Drive Pulse (VD2) Output: On / Off Control Data Output: On / Off
<b>Dimensions</b>	Front Board ; 255 (W) x 250 (H) x 12 (D) mm Rear Board ; 117.5 (W) x 265 (H) x 20 (D) mm
<b>Weight</b>	0.6 kg

**8-Channel RS-485 Data Communication Board**  
**WJ-PB85R08**

**SPECIFICATIONS** **PAL**

<b>Data Input/Output (1 - 8)</b>	RS-485 [5-pin T(A), T(B), R(A), R(B), G] x8 Full Duplex or Half Duplex selectable
<b>Transmission Speed</b>	(Baud Rate) 1,200 - 19,200 bps
<b>Dimensions</b>	Front Board ; 255 (W) x 250 (H) x 12 (D) mm Rear Board ; 117.5 (W) x 265 (H) x 20 (D) mm
<b>Weight</b>	0.5 kg

**8-Channel Loop Through Board**  
**WJ-PB85Y08**

**SPECIFICATIONS** **PAL**

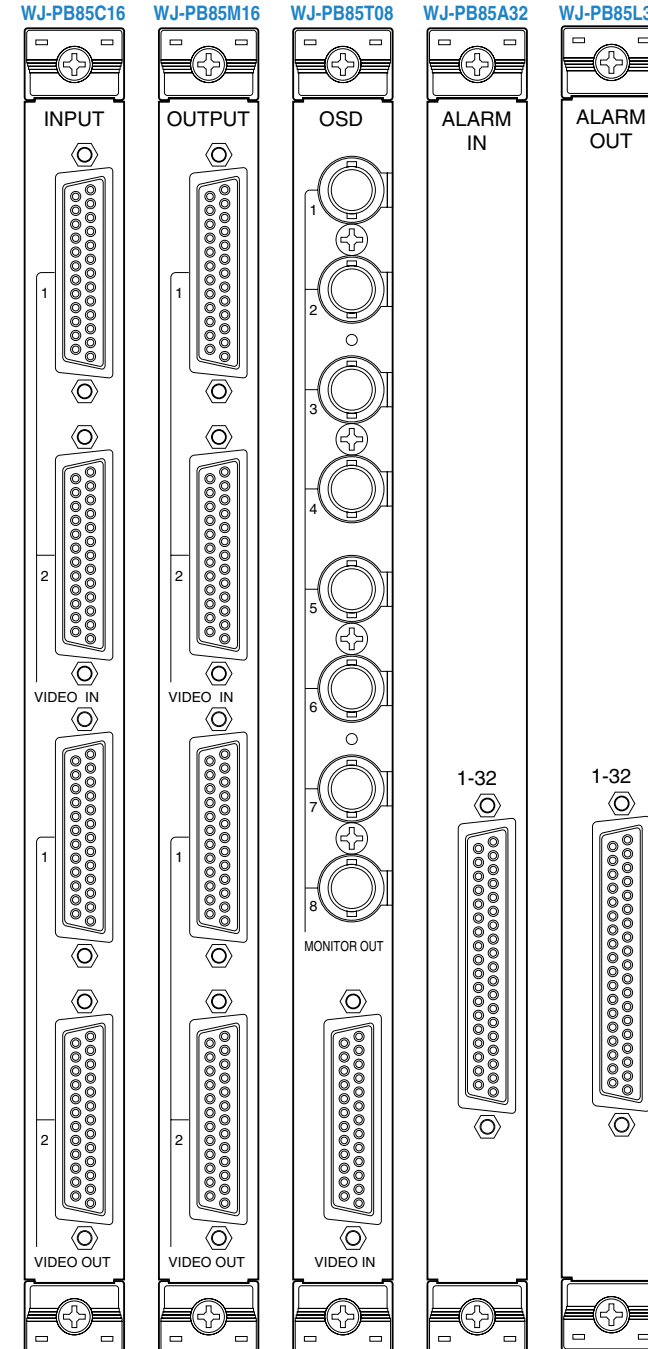
<b>Video Input/Output (1 - 8)</b>	1.0 V [p-p]/75Ω composite video signal BNC connector (x8)
<b>Video Input/Output</b>	1.0 V [p-p]/75Ω composite video signal 25-pin D-sub connector (x1)
<b>Dimensions</b>	117.5 (W) x 265 (H) x 20 (D) mm
<b>Weight</b>	0.2 kg

**8-Channel ANK Character Generator Daughter Board**  
**WJ-PB85D01**

**SPECIFICATIONS** **PAL**

<b>Dimensions</b>	125 (W) x 175 (H) x 10 (D) mm
<b>Weight</b>	0.1 kg

## Connectors on Rear Board



**32-Channel Alarm Input Board**  
**WJ-PB85A32**

**SPECIFICATIONS** **PAL**

<b>Alarm Input (1 - 32)</b>	Normally Open or Normally Closed selectable 37-pin D-sub connector (Alarm Output) Open Collector Output, 12 V DC 50 mA maximum
<b>Dimensions</b>	Front Board ; 255 (W) x 250 (H) x 12 (D) mm Rear Board ; 117.5 (W) x 265 (H) x 20 (D) mm
<b>Weight</b>	0.5 kg

**16-Channel Video Cross Point Input Board**  
**WJ-PB85C16**

**SPECIFICATIONS** **PAL**

<b>Video Input (1 - 2)</b>	1.0 V [p-p]/75 Ω composite video signal 8 inputs 25-pin D-sub connector (x2)
<b>Video Output (1 - 2)</b>	1.0 V [p-p]/75 Ω composite video signal 8 outputs 25-pin D-sub connector (x2)
<b>Dimensions</b>	Front Board ; 255 (W) x 250 (H) x 12 (D)mm Rear Board ; 117.5 (W) x 265 (H) x 20 (D)mm
<b>Weight</b>	0.5 kg

**16-Channel Video Cross Point Output Board**  
**WJ-PB85M16**

**SPECIFICATIONS** **PAL**

<b>Video Input (1 - 2)</b>	1.0 V [p-p]/75 Ω composite video signal 8 inputs 25-pin D-sub connector (x2)
<b>Video Output (1 - 2)</b>	1.0 V [p-p]/75 Ω composite video signal 8 outputs 25-pin D-sub connector (x2)
<b>Dimensions</b>	Front Board ; 255 (W) x 250 (H) x 12 (D)mm Rear Board ; 117.5 (W) x 265 (H) x 20 (D)mm
<b>Weight</b>	0.5 kg

**8-Channel On Screen Display Board**  
**WJ-PB85T08**

**SPECIFICATIONS** **PAL**

<b>Video Input</b>	1.0 V [p-p]/75Ω composite video signal 8 inputs 25-pin D-sub connector
<b>Video Output</b>	1.0 V [p-p]/75Ω composite video signal
<b>On Screen Display</b>	Time and Date : 3 display types selectable Camera Title : 1 Line, 30 alphanumeric characters maximum
<b>Dimensions</b>	Front Board ; 255 (W) x 250 (H) x 12 (D) mm Rear Board ; 117.5 (W) x 265 (H) x 20 (D) mm
<b>Weight</b>	0.6 kg

**32-Channel Alarm Output Board**  
**WJ-PB85L32**

**SPECIFICATIONS** **PAL**

<b>Alarm Output (1 - 32)</b>	24V DC 500 mA maximum Normally Open or Normally Closed selectable 37-pin D-sub connector
<b>Dimensions</b>	Front Board ; 255 (W) x 250 (H) x 12 (D) mm Rear Board ; 117.5 (W) x 265 (H) x 20 (D) mm
<b>Weight</b>	0.5 kg

# System Examples

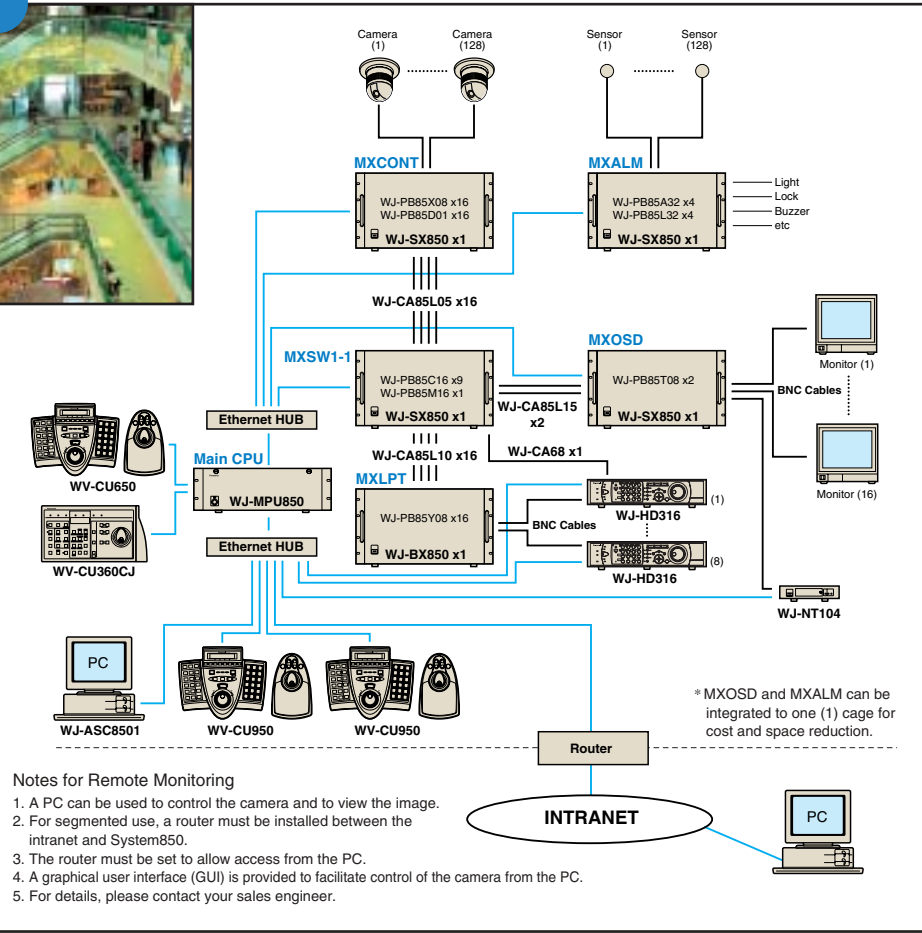
## 128 inputs x 16 outputs at Shopping Malls

at Shopping Malls

128 inputs  
16 outputs  
128 alarm inputs  
128 alarm outputs  
128 loop through outputs

MODEL No.	Description	Q'ty
WJ-SX850	Card Cage w/PS and LCPU	4
WJ-BX850	Passive Card Cage	1
WJ-PB85X08	8ch Multiplex Video Input Board	16
WJ-PB85D01	8ch ANK Character Generator	16
WJ-PB85Y08	8ch Video Loop Through Board	16
WJ-PB85C16	16ch Video Cross Point Input Board	9
WJ-PB85M16	16ch Video Cross Point Output Board	1
WJ-PB85T08	8ch Monitor OSD Board	2
WJ-PB85A32	32ch Alarm Input Board	4
WJ-PB85L32	32ch Alarm Output Board	4
WJ-MPU850	Standard Main CPU Unit	1
WV-CU950	Ethernet System Controller	2
WV-CU650	RS-485 System Controller	1
WV-CU360CJ	RS-485 System Controller	1
WJ-ASC8501	Administration Software	1
WJ-CA85L05	0.5 m Multiple Video Cable	16*
WJ-CA85L10	1.0 m Multiple Video Cable	16*
WJ-CA85L15	1.5 m Multiple Video Cable	2*
WJ-CA68	D-sub/BNC Video Cable	1

\* Cable Length depends on the cage layout.



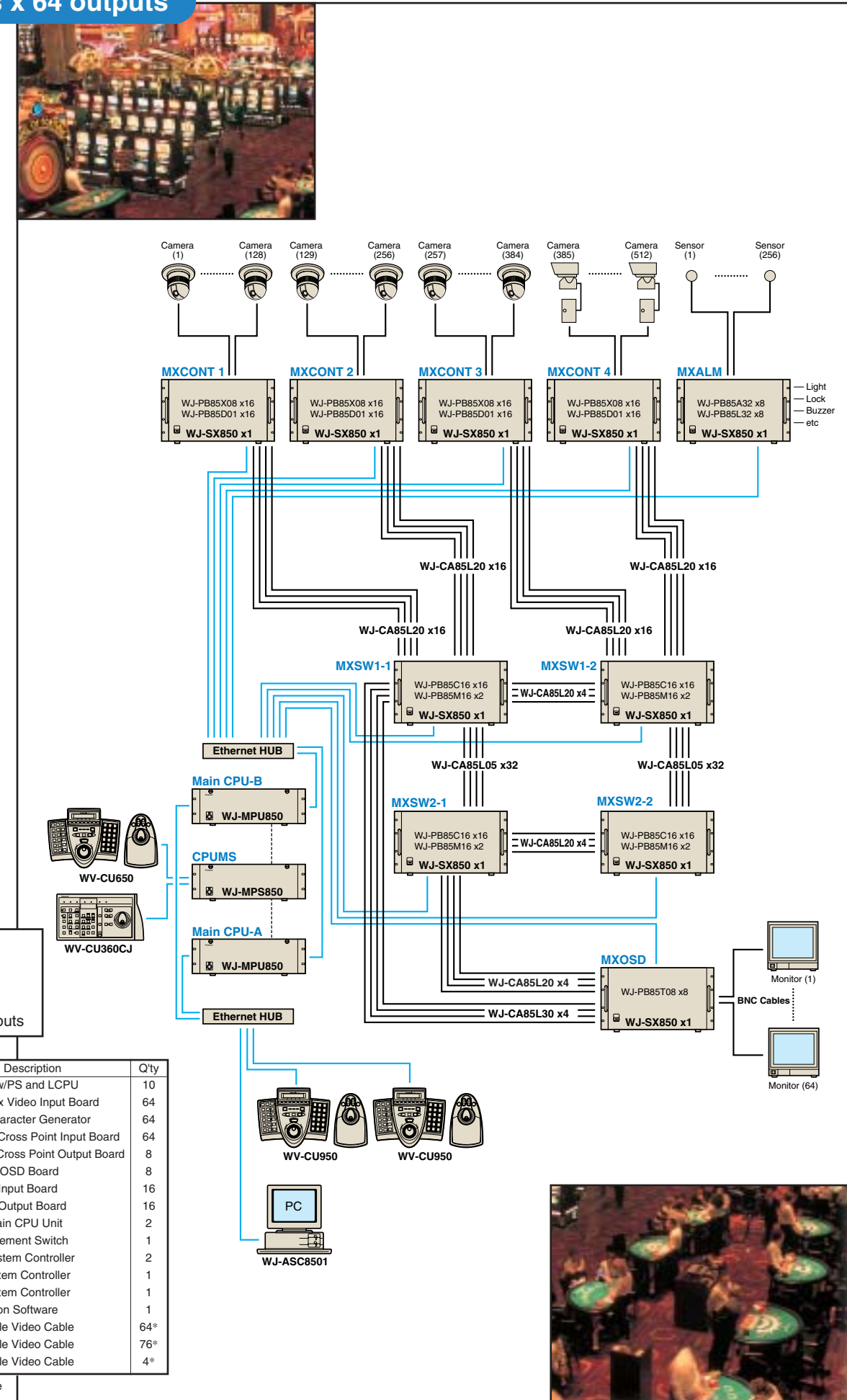
## 512 inputs x 64 outputs at Hotels/Casinos

at Hotels/Casinos

512 inputs  
64 outputs  
256 alarm inputs  
256 alarm outputs  
0 loop through outputs

MODEL No.	Description	Q'ty
WJ-SX850	Card Cage w/PS and LCPU	10
WJ-PB85X08	8ch Multiplex Video Input Board	64
WJ-PB85D01	8ch ANK Character Generator	64
WJ-PB85C16	16ch Video Cross Point Input Board	64
WJ-PB85M16	16ch Video Cross Point Output Board	8
WJ-PB85T08	8ch Monitor OSD Board	8
WJ-PB85A32	32ch Alarm Input Board	16
WJ-PB85L32	32ch Alarm Output Board	16
WJ-MPU850	Standard Main CPU Unit	2
WJ-MPS850	CPU Management Switch	1
WV-CU950	Ethernet System Controller	2
WV-CU650	RS-485 System Controller	1
WV-CU360CJ	RS-485 System Controller	1
WJ-ASC8501	Administration Software	1
WJ-CA85L05	0.5 m Multiple Video Cable	64*
WJ-CA85L20	2.0 m Multiple Video Cable	76*
WJ-CA85L30	3.0 m Multiple Video Cable	4*

\* Cable Length depends on the cage layout.



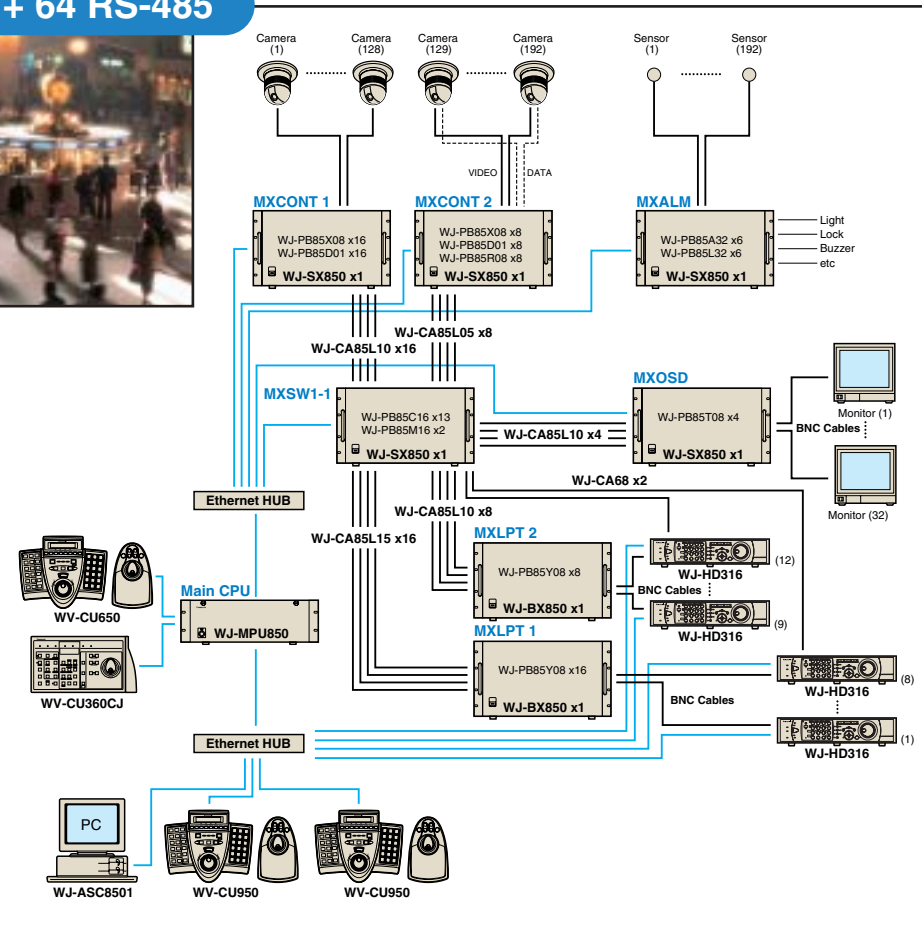
## 192 inputs x 32 outputs + 64 RS-485 at Stations/Stadiums

at Stations/Stadiums

192 inputs  
64 RS-485  
32 outputs  
192 alarm inputs  
192 alarm outputs  
192 loop through outputs

MODEL No.	Description	Q'ty
WJ-SX850	Card Cage w/PS and LCPU	5
WJ-BX850	Passive Card Cage	2
WJ-PB85X08	8ch Multiplex Video Input Board	24
WJ-PB85D01	8ch ANK Character Generator	24
WJ-PB85R08	8ch RS-485 Data Communication Board	8
WJ-PB85Y08	8ch Video Loop Through Board	24
WJ-PB85C16	16ch Video Cross Point Input Board	13
WJ-PB85M16	16ch Video Cross Point Output Board	2
WJ-PB85T08	8ch Monitor OSD Board	4
WJ-PB85A32	32ch Alarm Input Board	6
WJ-PB85L32	32ch Alarm Output Board	6
WJ-MPU850	Standard Main CPU Unit	1
WV-CU950	Ethernet System Controller	2
WV-CU650	RS-485 System Controller	1
WV-CU360CJ	RS-485 System Controller	1
WJ-ASC8501	Administration Software	1
WJ-CA85L05	0.5 m Multiple Video Cable	8*
WJ-CA85L10	1.0 m Multiple Video Cable	28*
WJ-CA85L15	1.5 m Multiple Video Cable	16*
WJ-CA68	D-sub/BNC Video Cable	2

\* Cable Length depends on the cage layout.



# Product Components Line-up

<p>Ethernet System Controller <b>WV-CU950</b></p> 	<p>RS-485 System Controller <b>WV-CU650</b></p> 	<p>RS-485 System Controller <b>WV-CU360CJ</b></p> 	
<p>Standard Main CPU Unit <b>WJ-MPU850</b></p> 	<p>Enhanced Main CPU Unit <b>WJ-MPU855</b></p> 	<p>Card Cage w/PS and LCPU <b>WJ-SX850</b></p> 	<p>Passive Card Cage <b>WJ-BX850</b></p> 
<p>8ch Multiplex Video Input Board <b>WJ-PB85X08</b></p> 	<p>8ch ANK Character Generator Daughter Board <b>WJ-PB85D01</b></p> 	<p>8ch RS-485 Data Communication Board <b>WJ-PB85R08</b></p> 	
<p>8ch Video Loop Through Board <b>WJ-PB85Y08</b></p> 	<p>16ch Video Cross Point Input Board <b>WJ-PB85C16</b></p> 	<p>16ch Video Cross Point Output Board <b>WJ-PB85M16</b></p> 	
<p>8ch On Screen Display Board <b>WJ-PB85T08</b></p> 	<p>32ch Alarm Input Board <b>WJ-PB85A32</b></p> 	<p>32ch Alarm Output Board <b>WJ-PB85L32</b></p> 	
<p>Administration Software <b>WJ-ASC8501</b></p> 	<p>Multiple Video Cables  <b>WJ-CA85L05</b> (0.5m)  <b>WJ-CA85L10</b> (1.0m)  <b>WJ-CA85L15</b> (1.5m)  <b>WJ-CA85L20</b> (2.0m)  <b>WJ-CA85L25</b> (2.5m)  <b>WJ-CA85L30</b> (3.0m)  <b>WJ-CA85L50</b> (5.0m)            D-sub/BNC Video Cable  <b>WJ-CA68</b> (8ch)</p> 	<p>CPU Management Switch <b>WJ-MPS850</b></p> 	<p>Digital Disk Recorders  <b>WJ-HD316</b> (16ch)  <b>WJ-HD309</b> (9ch)</p> 

**Important** – Safety Precaution: carefully read the operating instructions and installation manual before using this product.

– Panasonic can not be responsible for network performance and/or other manufacturer products that reside on the network.

• All TV pictures are simulated. • Weights and dimensions are approximate. • Specifications are subject to change without notice. • These products may be subject to export control regulations.

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