Panasonic
ideas for life

Digital Disk Recorders
WJ-HD316
WJ-HD309

DIGITAL DISK RECORDERS
WJ-HD300
SERIES

The WJ-HD300 Series offers high quality pictures and disk saving recording utilizing a new compression technology.

Panasonic presents the new WJ-HD300 Series with a unique new system featuring a high compression ratio of 1/30 for practical use. Under the "All-in-One Solution" concept, all the vital recording components and features are condensed into one unit. With one single unit, unprecedented, highly reliable surveillance recording is possible in a wide range of applications. The WJ-HD300 Series also features System Scalability to meet extended user needs.

1/30 Super Compression: Proprietary Algorithm, Core Development of the WJ-HD300 Series

- New algorithm divides entire screen into high and low frequency elements to reduce artificial distortion and noise compared to conventional compression.
- In addition, the mode-A compression data calculation within four (4) field images (called “Temporal Transforms”), outputs data according to the amount of movement: “No Movement,” “Slow Speed Movement,” “Medium Speed Movement,” and “High Speed Movement.” Redundant data can be reduced through this compression process.

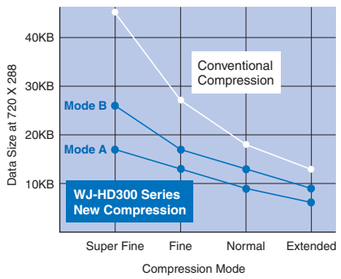
WJ-HD316

WJ-HD309

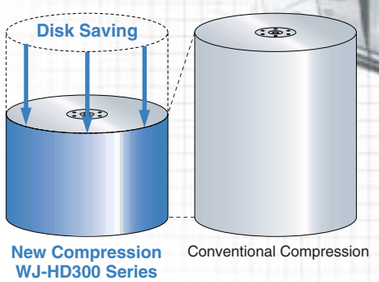
Picture Quality & Disk Saving

Compared to a conventional algorithm, the data compression ratio has improved approximately 1.5 ~ 2, depending on object and compression mode.

■ **Data Size and Compression Mode**



■ **Comparison**



All in One Solution

Instinctive Operation

Simple and instinctive, the functional base layout of the WJ-HD300 Series front panel is designed for ease-of-use. Eight (8)* directly connected Panasonic dome cameras can be controlled from the front panel. Also, the GUI based menu screen enables quick set up for flexible, more complex operations.

(* Six (6) cameras for the WJ-HD309)

OPERATION BASE LAYOUT

GUI BASE MENU

Value Added Featur es

The WJ-HD300 Series is equipped with the latest value added features to satisfy your requirements such as system reliability, operation efficiency, and cost savings.

Features include:

- High-density recording: 50 ips* (100 ips* @SIF)
- Full rate live multi screen: 50 ips*
- Simultaneous Live/Rec./Playback/Network
- 16 independent recording profiles
- Disk partitioning: Normal, Alarm, and Copy
- RAID 5 and mirror redundant recording
- Advanced VMD (Video Motion Detector): Area, direction, and vector.
- Various Network Operations: Live, PTZ control, Recording, Playback, and Downloading
- Network and serial open architecture

(* ips = image per second)

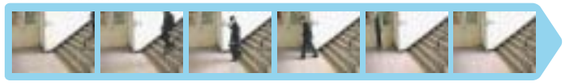
Superior surveillance made possible by state-of-the-art digital features.

High-Refresh Rate Recording

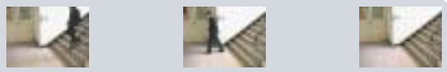
High-speed digital processing enables high-refresh rate recording — to ensure critical moments are not missed.

Max. **25** image per sec. @ 720 x 576 (FRAME/PAL)
Max. **50** image per sec. @ 720 x 288 (FIELD/PAL)
Max.**100** image per sec. @ 360 x 288 (SIF/PAL)

WJ-HD300 Series



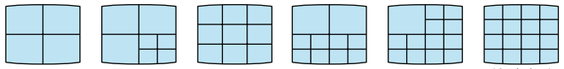
Conventional



Full Rate Live Multi-Screen

Even when images from multiple cameras are displayed on a multi-screen, live monitoring can be achieved on all cameras at a full rate of 50 ips (image per second). Experience real-time, full surveillance with full-rate video images.

■ **Multi-screen in versatile variations**



(* 10, 13, and 16 screens are available only with the WJ-HD316.)

16 Independent Recording Profiles

Flexible recording setup

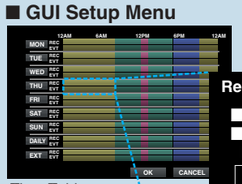
Independent recording settings (recording mode/recording rate/picture quality) for each camera* enables flexible setup.
(*16 cameras for the WJ-HD316 and 9 cameras for the WJ-HD309.)

- **Recording mode:** Manual / Schedule / Event / Emergency
- **Recording rate:** Set the ips (image per second) as needed.
- **Picture quality:** Super Fine / Fine / Normal / Extended

User-friendly setup

The user friendly GUI supports easy and smooth setup while confirming current status graphically.

■ **GUI Setup Menu**



Time Table

(ips = image per second)

Recording Action PROG 1

Recording Program 1

■ **Resolution** FIELD

■ **Recording Table**

Manual REC 15 ips **Schedule REC** 15 ips **Event REC** 20 ips

	MANUAL		SCHEDULE		EVENT(PRE)			EVENT(POST)		
	RATE	QUALITY	RATE	QUALITY	RATE	QUALITY	TIME	RATE	QUALITY	TIME
CAM1	AUTO	EXA	1ips	EXA	1ips	FQB	5s	2ips	EXB	30s
CAM2	AUTO	NQA	1ips	NQA	1ips	FQB	5s	2ips	NQB	30s
CAM3	AUTO	FQA	1ips	FQA	1ips	FQB	5s	2ips	FQB	10s
CAM4	AUTO	SFA	1ips	SFA	1ips	SFB	5s	2ips	SFB	20s
CAM5	AUTO	NQA	1ips	EXA	1ips	EXB	5s	1ips	EXB	30s
CAM6	AUTO	FQA	1ips	NQA	1ips	NQB	5s	1ips	NQB	30s
CAM7	AUTO	SFA	1ips	FQA	1ips	FQB	5s	1ips	FQB	30s
CAM8	AUTO	SFA	1ips	NQA	1ips	SFB	5s	1ips	SFB	30s
CAM9	AUTO	EXA	OFF	—	1ips	EXB	5s	1ips	EXB	30s
CAM10	AUTO	NQA	OFF	—	1ips	NQB	5s	1ips	NQB	30s
CAM11	AUTO	FQA	OFF	—	1ips	FQB	5s	1ips	FQB	30s
CAM12	AUTO	SFA	OFF	—	1ips	SFB	5s	1ips	SFB	30s
CAM13	AUTO	EXA	1ips	EXA	1ips	SFB	5s	1ips	EXB	10s
CAM14	AUTO	NQA	1ips	NQA	1ips	SFB	5s	1ips	NQB	30s
CAM15	AUTO	FQA	1ips	FQA	1ips	FQB	5s	1ips	FQB	30s
CAM16	AUTO	SFA	1ips	SFA	1ips	SFB	5s	1ips	SFB	30s

■ **Actual recording result (Example)**

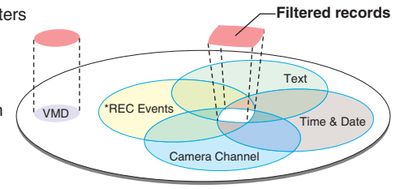
Manual | Schedule | Event

	00:00			07:00
CAM1	1ips EXA	2ips EXB	1ips EXA	
CAM2	1ips NQA	2ips NQB	1ips NQA	
CAM3	1ips FQA	2ips FQB	1ips FQA	
CAM4	1ips SFA	2ips SFB	1ips SFA	
CAM5	1ips EXA	1ips NQA	1ips EXA	
CAM6	1ips NQA	1ips FQA	1ips NQA	
CAM7	1ips FQA	1ips SFA	1ips FQA	
CAM8	1ips NQA	1ips SFA	1ips NQA	
CAM9	1ips EXA	OFF	1ips EXA	
CAM10	1ips NQA	OFF	1ips NQA	
CAM11	1ips FQA	OFF	1ips FQA	
CAM12	1ips SFA	OFF	1ips SFA	
CAM13	1ips EXA	1ips EXB	1ips EXA	
CAM14	1ips NQA	1ips NQB	1ips NQA	
CAM15	1ips FQA			
CAM16	1ips SFA			

Instant Search and Playback

Filtered Search

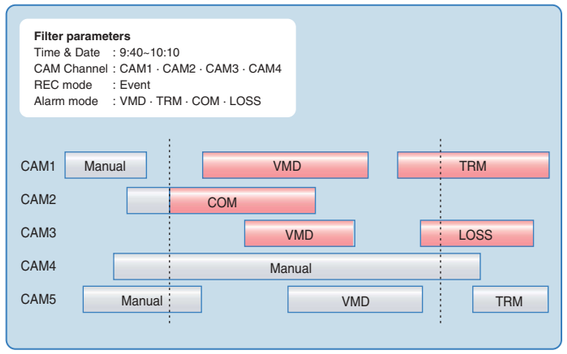
Various parameters/filters such as time & date, camera channel, REC events, text and VMD enables instant search and playback from mass recorded data.



*** REC Event filter**

REC mode	Emergency, Event, Schedule, Manual
Alarm mode	VMD, Terminal, Command, Video loss

■ **Filtered Search (Example)** Filtered records

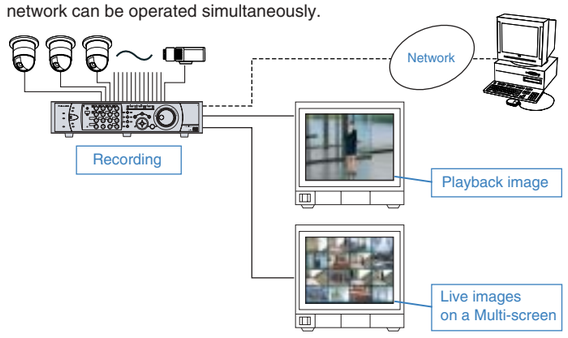


Thumbnail Display

In addition to search result by "list", "thumbnail" display is available for visual confirmation.

Live / Recording / Playback / Network Simultaneous Performance

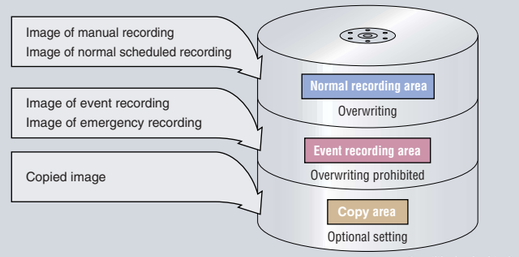
By adopting high speed signal processing, live / recording / playback / network can be operated simultaneously.



Disk Management

Hard Disk Partitioning Function* automatically selects the partition to be recorded.

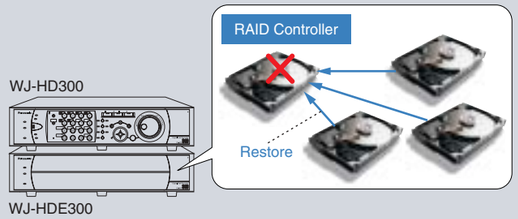
The hard disk is divided into three partitions: "Normal Recording," "Event Recording," and "Copy." Image data is automatically recorded to the appropriate partition according to the recording mode. For the normal recording partition, the data is overwritten when the capacity is full. The event recording partition prohibits overwriting to protect data. Copy partition prepares data for retrieval to external medium.



(* partitioning is virtual)

RAID5 / Mirroring Function

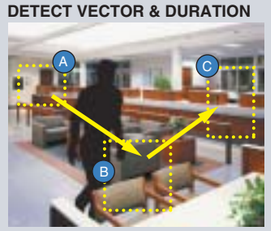
RAID5 distributes image data to multiple hard disks in the extension unit. Upon hard disk breakdown, lost data can be restored from other hard disks. When using one WJ-HD300 Series unit, mirroring function is available for data backup.



Advanced VMD

A new mode is added for sophisticated VMD detection.

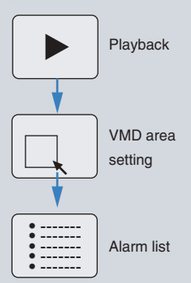
DETECT VECTOR & DURATION



DETECT A 5sec. B 10sec. C

Playback VMD

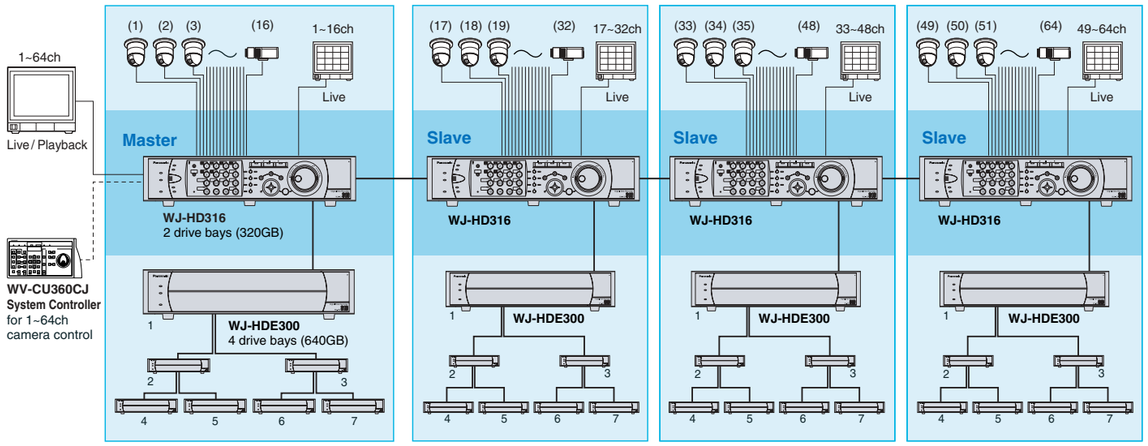
One VMD area can set one playback image for motion search.



System Scalability:

Viewing cascade connection (up to 4 main units)

Up to four (4) WJ-HD316 units can be cascaded to increase maximum 64 video inputs. All 64 cameras can be switched and viewed in live and playback from the master, while each slave unit has its own live viewing monitor.

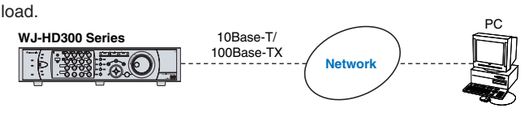


Expandable to 4.8 Terabytes (TB)

In addition to a total 320 GB capacity of the main unit WJ-HD316/309, one WJ-HDE300 extension unit provides up to 640 GB. With seven (7) extension units, the maximum capacity can be extended up to 4.8 TB to satisfy long recording requirements.

Built-In Network Interface:

Network functions include live image monitoring through multi-screen display, camera PTZ control, recording/search/playback, downloading image/log data, e-mail notification, and setup data upload/download.



Network Operating Menu

Control Tab
The switcher function for live monitoring is operable.

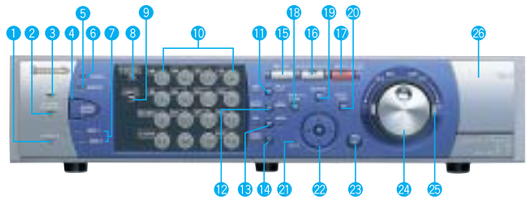
Setup Tab
Setup of WJ-HD300 Series can be performed.

Cam Tab Remote control the camera selected on control tab page. (Only for 1-8ch Panasonic PTZ dome cameras)

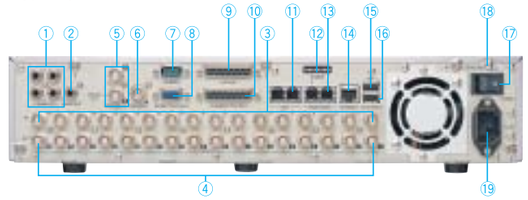
HDD Tab Operation for recorded images such as playback or downloading (saving) to PC.

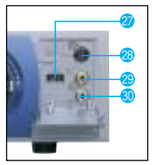
MAJOR OPERATING CONTROLS: WJ-HD316

Front View



Rear View

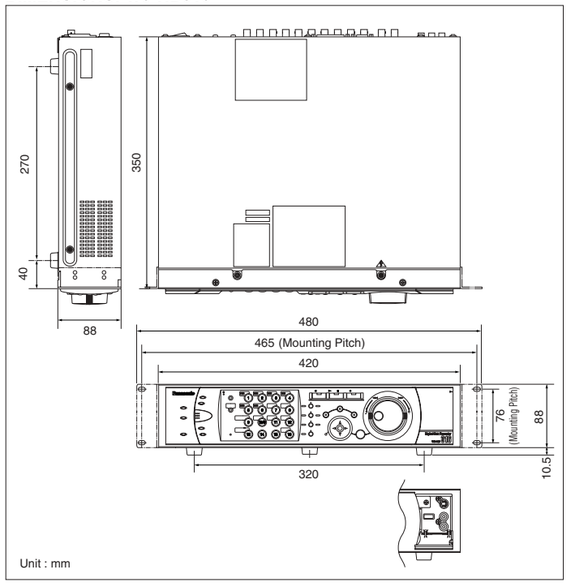




1. Operate Indicator
2. Alarm Suspension Indicator
3. Alarm Indicator
4. Alarm Reset Button
5. Error Indicator
6. Timer Indicator
7. HDD Access Indicators
8. Monitor Switch Button
9. Shift Button
10. Camera Selection Buttons
11. Pan, Tilt, Latest Recorded Image Playback Button
12. Zoom, Focus, A - B Repeat Button
13. Iris, Listing Button
14. Preset, Auto Pan Button
15. Stop Button
16. Play/Pause Button
17. Record Button
18. Slow Button
19. Search Button
20. Setup, Escape Button
21. Busy Indicator
22. Arrow Buttons
23. Set Button
24. Jog Dial
25. Shuttle Ring
26. Connectors Cover
27. Copy Port
28. S-Video Output Connector
29. Video Output Connector
30. Audio Output Connector

1. Audio Input Connectors
2. Audio Output Connector
3. Video Input Connectors
4. Video Output Connectors
5. Monitor Output Connector
6. Cascade In Connector
7. Serial Connector
8. Monitor Connector
9. Alarm Connector
10. Alarm/Control Connector
11. PS-Data Ports
12. Mode Switches
13. RS485 Ports
14. Network Port
15. Copy Port
16. Extra Storage Port
17. Power Switch
18. Signal Ground Terminal
19. Power Cord Inlet

DIMENSIONS: WJ-HD316



Unit : mm

SPECIFICATIONS: WJ-HD316 PAL

General		
Power Source		220 V - 240 V AC, 50 Hz
Power Consumption		85 W
Ambient Operating Temperature		+5°C - +45°C
Ambient Operating Humidity		Less than 90 %
Dimensions		420 mm (W) x 88 mm (H) x 350 mm (D) (excluding rubber feet and projections)
Weight		9.5 kg
Input/Output		
Video	Video Input Connectors	1 V [P-P] / 75 Ω, with auto termination loop-thru, vertical timing pulse multiplexed, x8 (1 to 8 CH) (BNC)
		1 V [P-P] / 75 Ω, with auto-termination loop-thru, x8 (9 to 16 CH) (BNC)
	Cascade Input Connector	1 V [P-P] / 75 Ω (BNC)
	Video Output Connectors	1 V [P-P] / 75 Ω, active loop-thru output, x8 (1 to 8 CH) (BNC)*1
		1 V [P-P] / 75 Ω, active loop-thru output, x8 (9 to 16 CH) (BNC)
	Monitor Output Connectors	1 V [P-P] / 75 Ω, x2 (BNC)
	Monitor Output Connector (VGA)	RGB output, x1 (15-pin D-sub)
	S-Video Output Connector	Y = 1 V [P-P] / 75 Ω, C = 0.3 V [P-P] / 75 Ω, x1 (S-video output connector)
	Video Output Connector (Front Panel)	1 V [P-P] / 75 Ω, x1 (RCA pin)
Audio	Audio Input Connectors	–10 dB, 10 KΩ, x4 (RCA pin)
	Audio Output Connectors	–10 dB, 600 Ω, unbalanced, x2 (RCA pin)
Others	Expansion Connector	High-speed serial interface, 480 Mbps (theoretical value), x1
	Copy Connectors	High-speed serial interface, 480 Mbps (theoretical value), x2
	Control Connectors	Emergency recording input*2, additional space warning output*3 (for devices connected to copy connectors), HDD trouble output*3, camera trouble output*3, trouble output*3, electricity failure recovery completion output*4, time adjust input/output*5, sequence switching input/output*5, electricity failure detection input*2, external recording mode switching*2 (25-pin D-sub), +5 V output*7
	Alarm Port	1 to 8 CH alarm input*6, 1 to 16 CH alarm input*2, 1 to 16 alarm output*3, alarm recovery input*2, alarm suspension input*5 (25-pin D-sub)
	RS-485 Ports	RS-485 (full duplex/half duplex*8), x2 (RJ-11)
	DATA Ports	RS-485, x2 (RJ-11)
	SERIAL Connector	RS-232C, x1 (9-pin D-sub)
	Ethernet Port	10 Base-T/100 Base-TX (RJ-45)

*1. When power is not supplied, video output signal was not sent from the unit even if video input signal is supplied. *2. Non-voltage N.O. Contact, 100 mA, +5 V pull-up *3. Open collector output, maximum under conditions of 24 V DC and 100 mA or less *4. High (+12 V, 6.3 mA) *5. 30 KΩ, 5 V pull-up, –100 mA, N.O. Contact *6. 5 V pull-up, –100 mA, Non-voltage N.O. Contact input *7. 240 mA at maximum *8. Changeable with the mode switch

DISK DATA REFERENCE CHART PAL Colour Video Signal, 320GB (160GB unit x 2), 16 Channel Video Inputs, Audio Signal: Off, Auto Mode Manual Recording

Sampling Pixel Size: 720 x 288 — **Field Mode (Mode A)**

Global IPS* \ Compression Mode	EXTENDED	NORMAL	FINE	SUPER FINE
2.5	6,200	4,600	3,100	2,300
4.2	3,100	2,300	1,500	1,100
6.3	2,000	1,500	1,000	780
12.5	1,200	930	620	460
25	620	460	310	230
50	200	150	100	75

*IPS (Image Per Second) (Hours)

Sampling Pixel Size: 720 x 288 — **Field Mode (Mode B)**

Global IPS* \ Compression Mode	EXTENDED	NORMAL	FINE	SUPER FINE
2.5	4,600	3,100	2,300	1,500
4.2	2,300	1,500	1,100	780
6.3	1,500	1,000	780	520
12.5	930	620	460	310
25	460	310	230	150
50	150	100	75	50

*IPS (Image Per Second) (Hours)

Sampling Pixel Size: 360 x 288 — **SIF Mode (Mode A)**

Global IPS* \ Compression Mode	EXTENDED	NORMAL	FINE	SUPER FINE
2.5	12,500	9,300	6,200	4,600
4.2	6,200	4,600	3,100	2,300
6.3	4,100	3,100	2,000	1,500
12.5	2,500	1,800	1,200	930
25	1,200	930	620	460
50	400	300	200	150
100	200	150	100	75

*IPS (Image Per Second) (Hours)

Sampling Pixel Size: 360 x 288 — **SIF Mode (Mode B)**

Global IPS* \ Compression Mode	EXTENDED	NORMAL	FINE	SUPER FINE
2.5	9,300	6,200	4,600	3,100
4.2	4,600	3,100	2,300	1,500
6.3	3,100	2,000	1,500	1,000
12.5	1,800	1,200	930	620
25	930	620	460	310
50	310	200	150	100
100	150	100	75	50

*IPS (Image Per Second) (Hours)

(above figures are approximate, actual recording time may differ depending on picture imaging)

STANDARD PRODUCT CONFIGURATIONS

Digital Disk Recorder
WJ-HD316

- 16ch camera inputs & independent recording settings
- Built-in 160GB HDD unit, and 1 drive bay for optional HDD unit
- Built-in an Ethernet port

Digital Disk Recorder
WJ-HD309

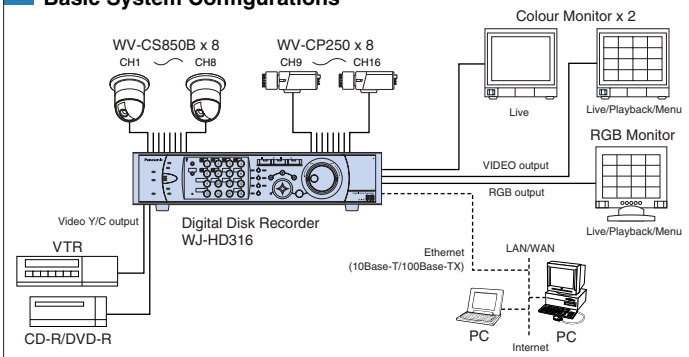
- 9ch camera inputs & independent recording settings
- Built-in 160GB HDD unit, and 1 drive bay for optional HDD unit
- Built-in an Ethernet port

OPTIONAL COMPONENT

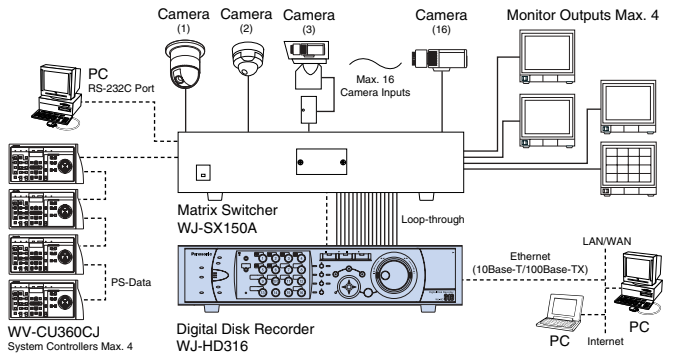
Extension Unit
WJ-HDE300
(4 drive bays for optional HDD units)

SYSTEM EXAMPLES

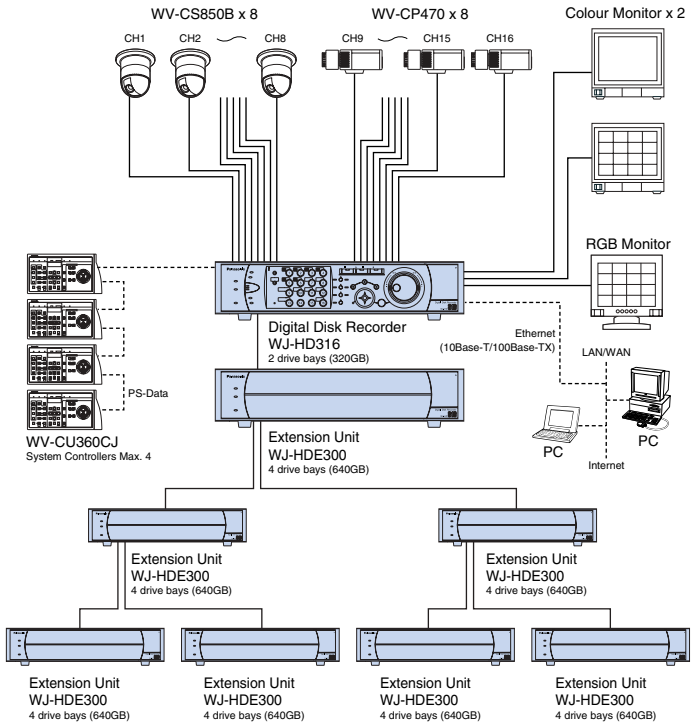
1 Basic System Configurations



2 With optional Panasonic Matrix System 150



3 Up to 4.8TB Capabilities with Optional Extension Unit & HDDs



OPTIONAL COMPONENTS

Colour Surveillance Cameras

Weather Proof & Vandal Resistant
Colour Dome Cameras
WV-CW860A Series

Super Dynamic Ⅱ
Colour Dome Cameras
WV-CS850B Series

Vandal Proof
Super Dynamic Ⅱ Colour Camera
WV-CW474F

Colour Dome Camera
WV-CF224

1/2-type CCD
Colour Surveillance Cameras
WV-CL920A Series

(Lens: option)

Super Dynamic Ⅱ
Colour Surveillance Cameras
WV-CP470 Series

(Lens: option)

Compact Colour Surveillance Cameras
WV-CP250 Series

(Lens: option)

1/3-type DSP
Colour CCD Cameras
WV-CP240 Series

(Lens: option)

MATRIX SYSTEM 150

Matrix Switcher
WJ-SX150A

System Controller
WV-CU360CJ

Matrix Switcher (with Multiplexer Function)
WJ-SX155

SYSTEM CONTROLLER

System Controller
WV-CU360CJ

PS·Data

- 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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