

Panasonic
ideas for life

PRELIMINARY

(Specifications subject to change)

Digital Disk Recorders

WJ-HD316

WJ-HD309

All Solutions in a Single Engineering Art



WJ-HD300

SERIES

The WJ-HD300 Series offers high quality picture and disk saving recording by featuring 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 concept of "All-in-One Solution," all the factors required for a surveillance recorder are condensed into one unit. With one single unit, unprecedented highly reliable surveillance recording is possible in a wide range of applications. Furthermore, it also features System Scalability to comply with 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 distortions and noise compared to a conventional compression.
- In addition in the mode-A compression data calculation within a four (4) fields images, called "Temporal Transforms", outputs data according to amount of movement; "No movement", "Slow speed movement", "Medium speed movement" and "High speed movement". Redundant data could be reduced through this process for compression.



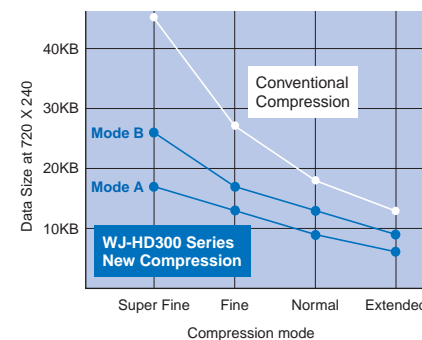
WJ-HD316

WJ-HD309

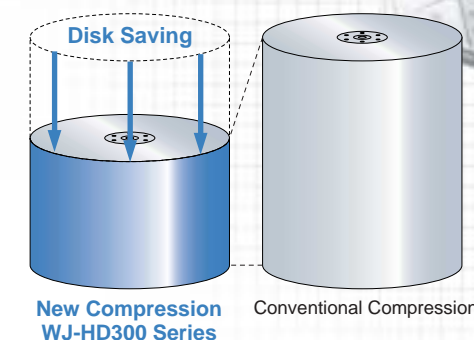
Quality of the Picture & Disk Saving

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

Data Size and Compression Mode



Comparison



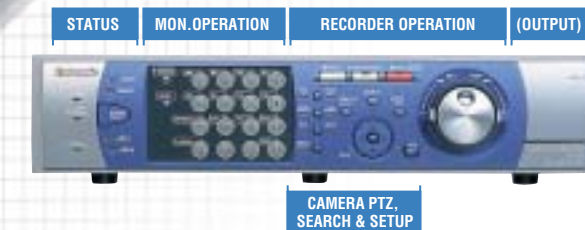
All in One Solution

By Instinct Operation

By pursuing simplicity and "by instinct" operation, the function 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 base menu screen enables quick set up for flexible, complex operations.

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

OPERATION BASE LAYOUT



GUI BASE MENU



The Latest Value Added Features

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: 60 ips* (120 ips* @SIF)
- Full rate live multi screen: 60 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.

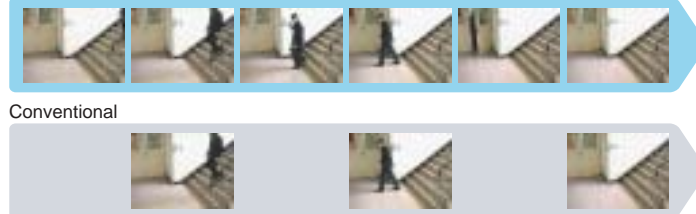


High-Refresh Rate Recording

High-speed digital processing enables high-refresh rate recording — you will not miss that crucial moment.

Max. **30** image per sec. @ 720 x 480 (FRAME/NTSC)
 Max. **60** image per sec. @ 720 x 240 (FIELD/NTSC)
 Max. **120** image per sec. @ 360 x 240 (SIF/NTSC)

WJ-HD300 Series

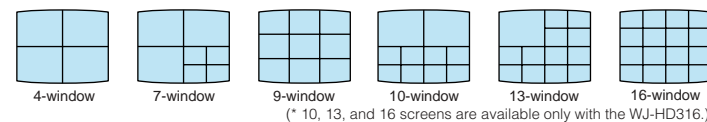


Full Rate Live Multi Screen

Even when images from multiple cameras are displayed on a multi-screen, you can achieve live monitoring of all cameras at full rate of 60 ips (image per second). Experience real-time, full surveillance with full-rate video images.



Multi-screen in versatile variations



16 Independent Recording Profiles

Flexible recording setup

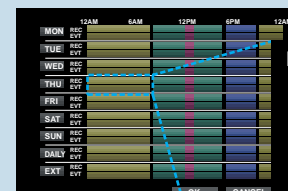
Independent recording settings (recording mode/recording rate/picture quality) for each 16* cameras enables flexible setup. (*16 cameras for the WJ-HD316 and 9 cameras for the WJ-HD309.)

• **Recording mode:** Manual / Schedule / Event / Emergency • **Recording rate:** Set the ips 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

Recording Action PROG 1

Resolution: FIELD

Recording Table

CAM	Manual REC 15 ips			Schedule REC 15 ips			Event REC 30 ips			
	RATE	QUALITY	TIME	RATE	QUALITY	TIME	RATE	QUALITY	TIME	
CAM1	AUTO	EXA	1ips	EXA	1ips	FQB	5s	4ips	EXB	30s
CAM2	AUTO	NQA	1ips	NQA	1ips	FQB	5s	4ips	NOB	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	3ips	EXB	10s
CAM14	AUTO	NQA	1ips	NQA	1ips	SFB	5s	3ips	NQB	30s
CAM15	AUTO	FQA	1ips	FQA	1ips	FQB	5s	2ips	FQB	30s
CAM16	AUTO	SFA	1ips	SFA	1ips	SFB	5s	2ips	SFB	30s

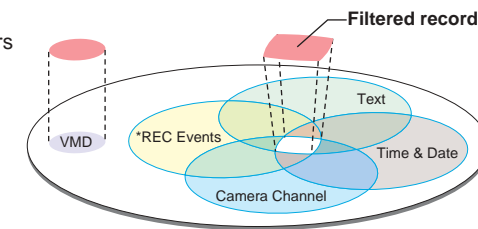
Actual recording result (Example)

CAM	Manual			Schedule			Event		
	RATE	QUALITY	TIME	RATE	QUALITY	TIME	RATE	QUALITY	TIME
CAM1	1ips	EXA	4ips	EXB	1ips	EXA	1ips	EXA	07:00
CAM2	1ips	NQA	4ips	NQB	1ips	NQA	1ips	NQA	
CAM3	1ips	FQA	2ips	FQB	1ips	FQA	1ips	FQA	
CAM4	1ips	SFA	2ips	SFB	1ips	SFA	1ips	SFA	
CAM5	1ips	EXA	1ips	NQA	1ips	EXA	1ips	EXA	
CAM6	1ips	NQA	1ips	FQA	1ips	NQA	1ips	NQA	
CAM7	1ips	FQA	1ips	SFA	1ips	FQA	1ips	FQA	
CAM8	1ips	NQA	1ips	SFA	1ips	NQA	1ips	NQA	
CAM9	1ips	EXA	OFF	OFF	1ips	EXA	1ips	EXA	
CAM10	1ips	NQA	OFF	OFF	1ips	NQA	1ips	NQA	
CAM11	1ips	FQA	OFF	OFF	1ips	FQA	1ips	FQA	
CAM12	1ips	SFA	OFF	OFF	1ips	SFA	1ips	SFA	
CAM13	1ips	EXA	3ips	EXB	1ips	EXA	1ips	EXA	
CAM14	1ips	NQA	3ips	NQB	1ips	NQA	1ips	NQA	
CAM15	1ips	FQA	1ips	FQA	1ips	FQA	1ips	FQA	
CAM16	1ips	SFA	1ips	SFA	1ips	SFA	1ips	SFA	

Instant Search and Playback

Filtering Search

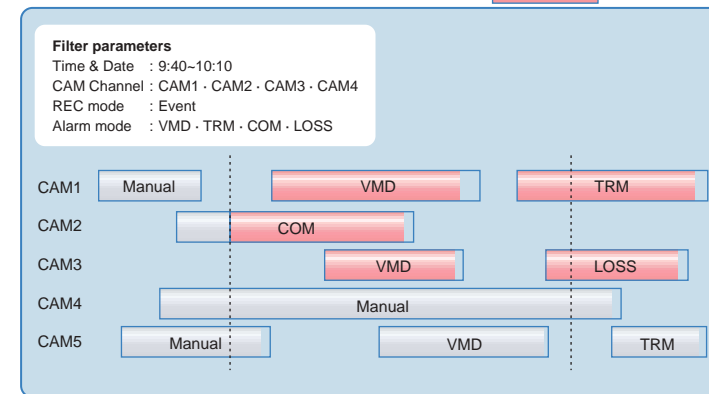
Various parameters/filters such as time & date, camera channel, REC events, text and VMD enables instant search and playback from mass recorded data.



* REC Event filter

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

Filtering Search (Example)



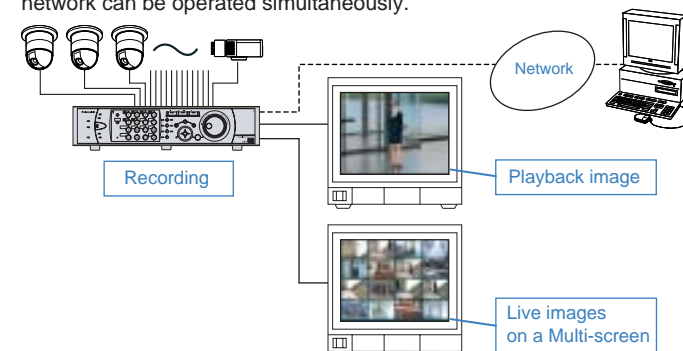
Thumbnail Display

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



Live / Recording / Playback / Network Simultaneous Performance

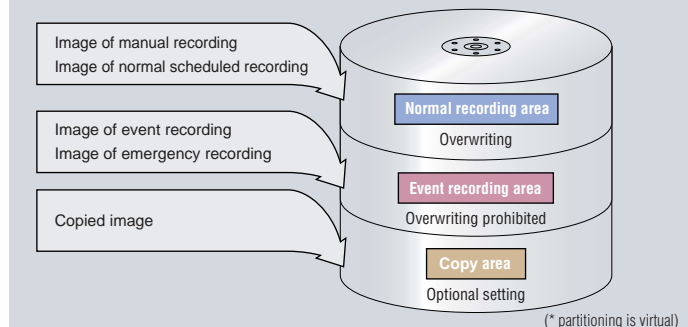
By adopting high speed signal processing, live / recording / playback / network can be operated simultaneously.



Disk Management

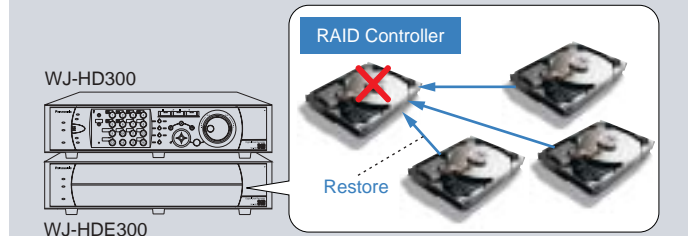
Hard Disk Partitioning Function automatically selects the partition to be recorded.

The hard disk is divided into three partitions, "Normal Recording," "Event Recording," and "Copy." Image data will be 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, for the event recording partition, overwriting is prohibited to protect data, copy partition is prepared for data retrieval to external medium.



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. In case of using one WJ-HD300 unit, mirroring function is available for data backup.



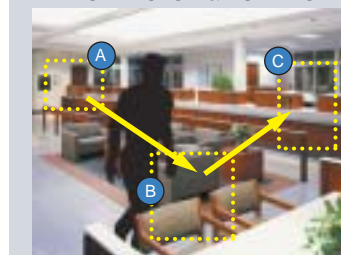
Advanced VMD

A new mode is added for sophisticate VMD detection.

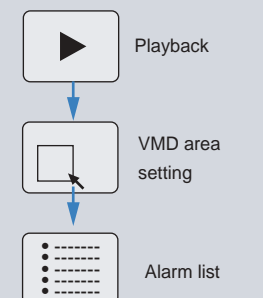
Playback VMD

One VMD area can be set one playback images for motion search.

DETECT VECTOR & DURATION



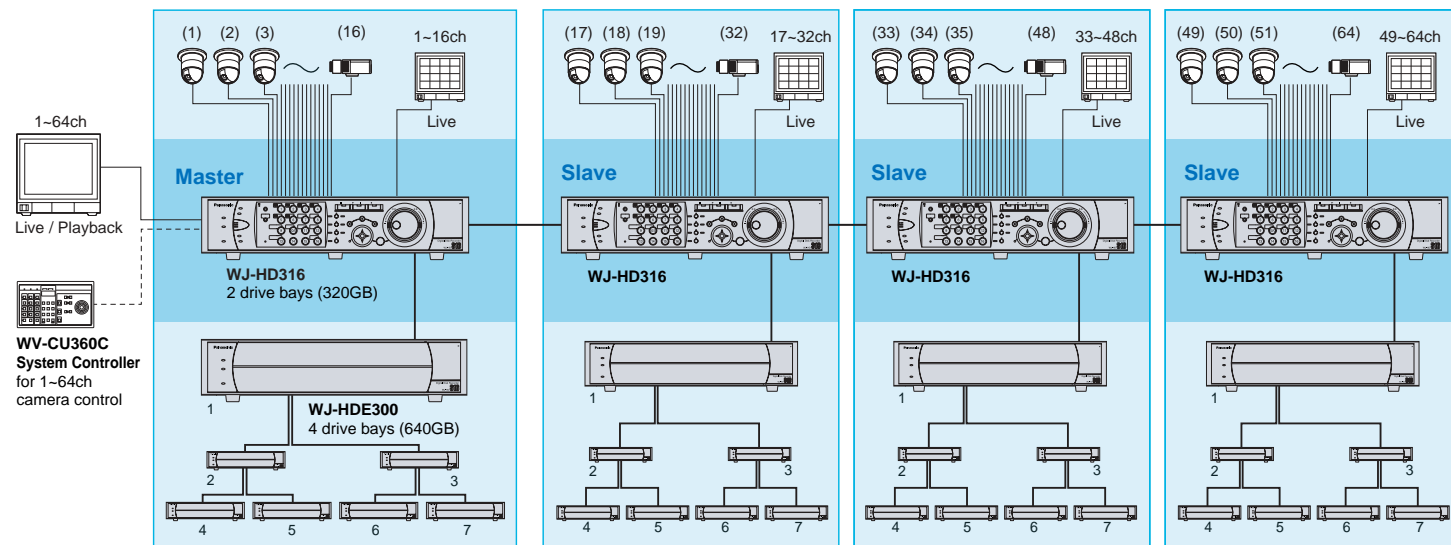
DETECT A 5sec. B 10sec. C



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.

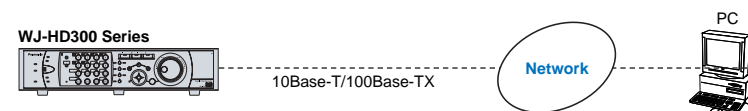


Expandable to 4.8 TB

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:

Various function via network is supported such as 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.



Control Tab
The switcher function for live monitoring are operable.

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

Network Operating Menu

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) can be performed.

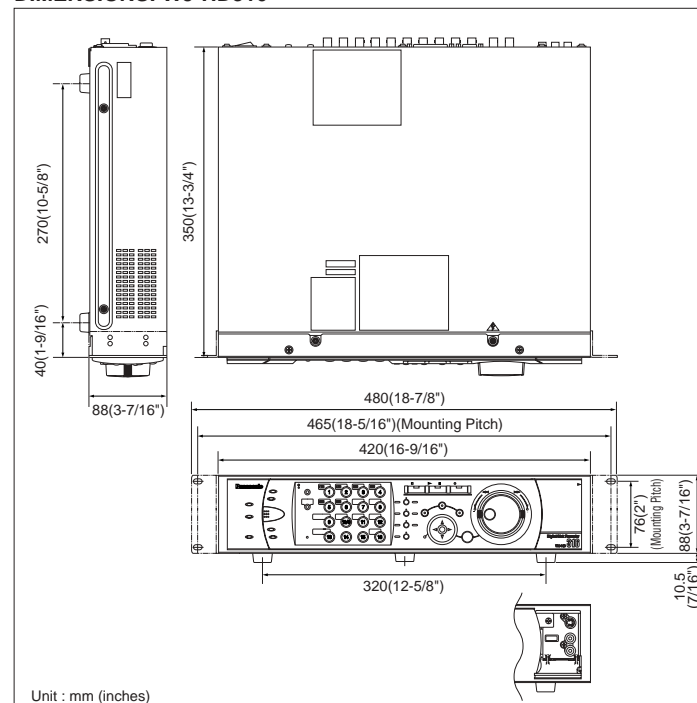
MAJOR OPERATING CONTROLS

Front View

Rear View

1 Operate Indicator	11 Pan, Tilt, Latest Recorded Image Playback Button	21 Busy Indicator	31 Audio Input Connectors	41 PS-Data Ports
2 Alarm Suspension Indicator	12 Zoom, Focus, A - B Repeat Button	22 Arrow Buttons	42 Audio Output Connector	42 Mode Switches
3 Alarm Indicator	13 Iris, Listing Button	23 Set Button	43 Video Input Connectors	43 RS485 Ports
4 Alarm Reset Button	14 Preset, Auto Pan Button	24 Jog Dial	44 Video Output Connectors	44 Network Port
5 Error Indicator	15 Stop Button	25 Shuttle Ring	45 Monitor Output Connector	45 Copy Port
6 Timer Indicator	16 Play/Pause Button	26 Connectors Cover	46 Connectors In Connector	46 Extra Storage Port
7 HDD Access Indicators	17 Record Button	27 Copy Port	47 Serial Connector	47 Power Switch
8 Monitor Switch Button	18 Slow Button	28 S-Video Output Connector	48 Monitor Connector	48 Signal Ground Terminal
9 Shift Button	19 Search Button	29 Video Output Connector	49 Alarm Connector	49 Power Cord Inlet
10 Camera Selection Buttons	20 Setup, Escape Button	30 Audio Output Connector	50 Alarm/Control Connector	

DIMENSIONS: WJ-HD316



SPECIFICATIONS: WJ-HD316

General	
Power Source	120 V AC, 60 Hz
Power Consumption	85 W
Ambient Operating Temperature	+5°C to +45°C
Ambient Operating Humidity	Less than 90 %
Dimensions	420 mm (W) x 88 mm (H) x 350 mm (D) [16-9/16" (W) x 3-7/16" (H) x 13-3/4" (D)] (excluding rubber feet and projections)
Weight	9.5 kg (21 lbs.)
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=0.286 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 ⁶ (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 NTSC Color Video Signal, 320GB(160GB unit x 2), 16 Channel Video Inputs, Auto Mode Manual Recording

Mode A						Mode B					
		Field Mode						Field Mode			
Global IPS*	Compression Mode	EXTENDED	NORMAL	FINE	SUPER FINE	Global IPS*	Compression Mode	EXTENDED	NORMAL	FINE	SUPER FINE
3		7,500	5,600	3,700	2,800	3		5,600	3,700	2,800	1,800
6		2,500	1,800	1,200	930	6		1,800	1,200	930	620
7.5		1,800	1,400	930	700	7.5		1,400	930	700	480
15		1,500	1,100	750	560	15		1,100	750	560	370
30		750	560	370	280	30		560	370	280	180
60		250	180	120	90	60		180	120	90	60

Mode A						Mode B					
		SIF Mode						SIF Mode			
Global IPS*	Compression Mode	EXTENDED	NORMAL	FINE	SUPER FINE	Global IPS*	Compression Mode	EXTENDED	NORMAL	FINE	SUPER FINE
3		15,000	11,200	7,500	5,600	3		11,200	7,500	5,600	3,700
6		5,000	3,700	2,500	1,800	6		3,700	2,500	1,800	1,200
7.5		3,700	2,800	1,800	1,400	7.5		2,800	1,800	1,400	930
15		3,000	2,200	1,500	1,100	15		2,200	1,500	1,100	750
30		1,500	1,100	750	560	30		1,100	750	560	370
60		500	370	250	180	60		370	250	180	120
120		200	150	100	70	120		150	100	70	50

STANDARD PRODUCT CONFIGURATIONS

Digital Disk Recorder
WJ-HD316



- 16ch Camera Input
- Built-in 160GB HDD Unit
- 1 drive bay for optional HDD Unit

Digital Disk Recorder
WJ-HD309



- 9ch Camera Input
- Built-in 160GB HDD Unit
- 1 drive bay for optional HDD Unit

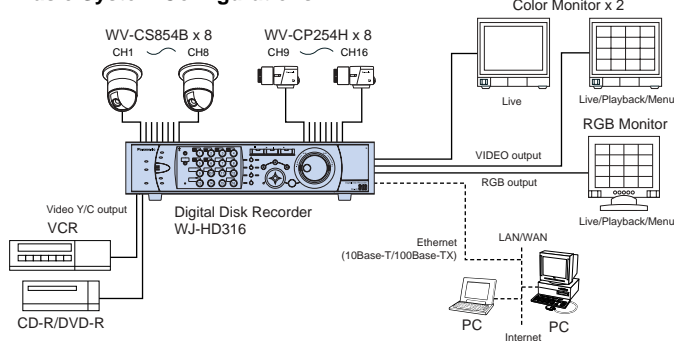
OPTIONAL COMPONENT

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

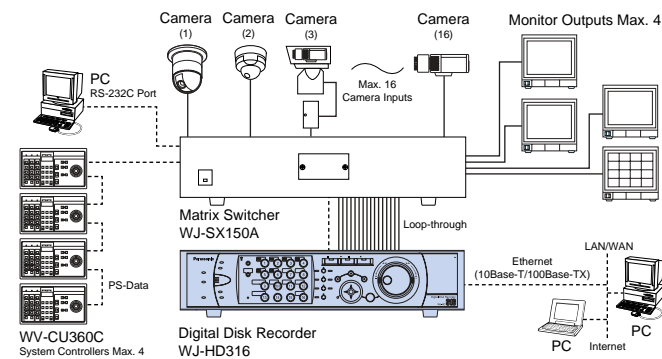


SYSTEM EXAMPLES

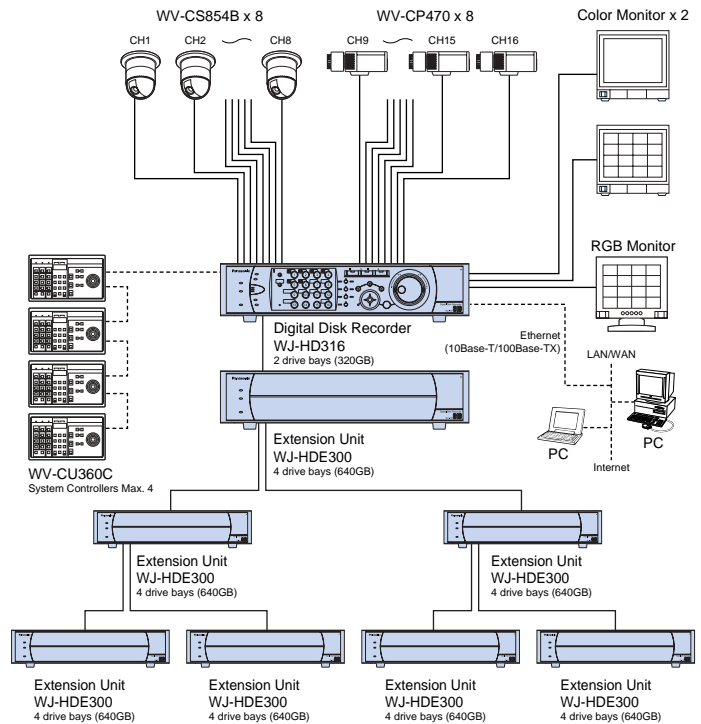
1 Basic System Configurations



2 With optional Panasonic Matrix System 150



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



OPTIONAL COMPONENTS

COLOR SURVEILLANCE CAMERAS

Weather Proof & Vandal Resistant
Color Dome Camera
WV-CW864A



SDII

Super Dynamic II
Color Surveillance Cameras
WV-CP470 Series



SDII

(Lens: option)

Super Dynamic II
Color Dome Camera
WV-CS854B



SDII

Compact Color Surveillance Camera
WV-CP254H



(Lens: option)

Vandal Proof
Super Dynamic II Color Cameras
WV-CW474 Series



SDII

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



(Lens: option)

Vandal Proof
Color Cameras
WV-CW244 Series



Color Dome Camera
WV-CF224



MATRIX SYSTEM 150

Matrix Switcher System Controller
WJ-SX150A WV-CU360C



SYSTEM CONTROLLER

System Controller
WV-CU360C



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Panasonic

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