Panasonic
ideas for life

All Solutions in a Single Engineering Art

WJ-HD300
Series

Preliminary

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 1/40. 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.

1/40 Super Compression: Proprietary Algorithm, Core Development of the WJ-HD300 Series

The new Panasonic propriety algorithm achieves high quality 1/40 compression. The image data can be compressed dramatically while maintaining uncompromising picture quality. The WJ-HD300 Series provide higher disk saving and extended capability. In addition, the new compression realizes higher ips live monitoring/playback and impressed downloading speed via network.

■ Comparison

Conventional Compression

Disk Saving

New Compression WJ-HD300 Series
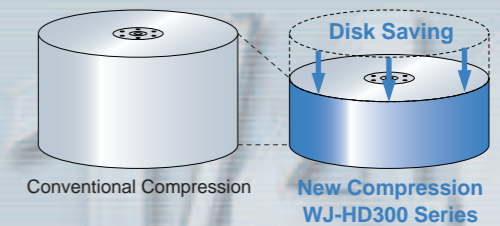
WJ-HD316

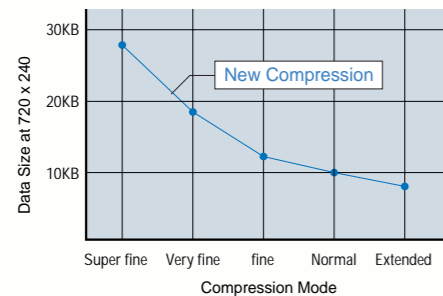WJ-HD309

Quality of the Picture & Disk Saving

The development of Panasonic's unique data compression algorithm dramatically improves data compression while retaining high-quality video images. The result is the saving of disk space.

Advantages of the New Compression Algorithm
❶ High picture quality by reducing block/edge noise during high compression.
❷ High compression by eliminating redundant data between adjacent fields.

Compared to a conventional algorithm, the data compression ratio has improved approximately double.

■ Data Size and Compression Mode

New Compression

Data Size at 720 x 240

30KB
20KB
10KB

Super fine | Very fine | fine | Normal | Extended

Compression Mode

New algorithm at Normal mode.

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

| STATUS | MON.OPERATION | RECORDER OPERATION | (OUTPUT) |

CAMERA PTZ, SEARCH & SETUP
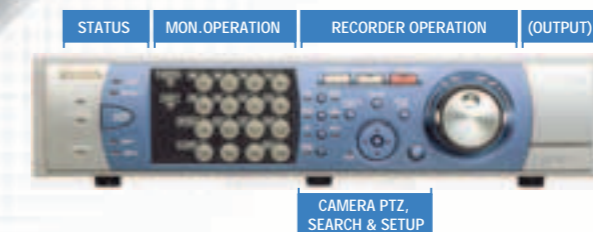
GUI BASE MENU
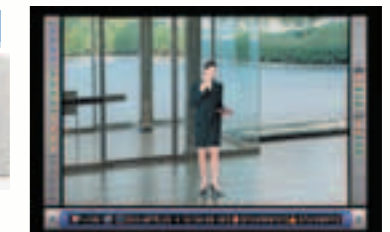
The Latest Value Added Features

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
• Independent 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 duration
• Various Network Operations: Live, PTZ control, Recording, Playback, and Downloading
• Network and serial open architecture

Featuring a full range of state-of-the-art specifications only from digital technologies surveillance is evolving and nearing perfection

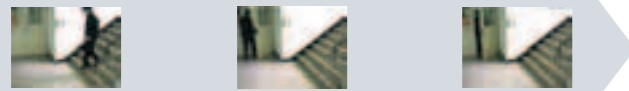## High-Refresh Rate Recording

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

> Max.120 image per sec. @ 360 x 290 (SIF/NTSC)
> Max. 60 image per sec. @ 720 x 240 (FIELD/NTSC)
> Max. 30 image per sec. @ 720 x 480 (FRAME/NTSC)
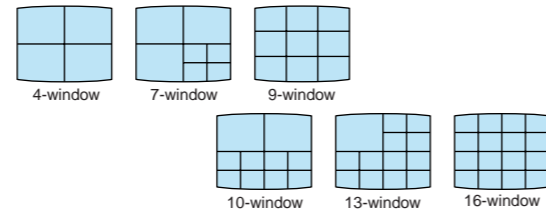
WJ-HD300 Series

Conventional

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. Experience real-time, full surveillance with full-rate video images.

■ Multi-screen in versatile variations

4-window 7-window 9-window

10-window 13-window 16-window

(* 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 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 / Very 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

■ Recording Action Table

Manual 16 ips   Schedule 12 ips   Event 32 ips

■ Actual recording result (Example)

Manual   Schedule   Event

	00:00		07:00
CAM1	1ips EXT.	4ips F.	1ips EXT.
CAM2	1ips NML.	4ips F.	1ips NML.
CAM3	1ips F.	2ips F.	1ips F.
CAM4	1ips S.F.	2ips S.F.	1ips S.F.
CAM5	1ips EXT.	1ips NML.	1ips EXT.
CAM6	1ips NML.	1ips F.	1ips NML.
CAM7	1ips F.	1ips S.F.	1ips F.
CAM8	1ips NML.	1ips S.F.	1ips NML.
CAM9	1ips EXT.	OFF	1ips EXT.
CAM10	1ips NML.	OFF	1ips NML.
CAM11	1ips F.	OFF	1ips F.
CAM12	1ips S.F.	OFF	1ips S.F.
CAM13	1ips EXT.	3ips S.F.	1ips EXT.
CAM14	1ips NML.	3ips S.F.	1ips NML.
CAM15		1ips F.	
CAM16		1ips S.F.	

Instant Search and Playback

Filtering Search

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

An appropriate image

*REC Events   Time & Date

All records   Camera Channel
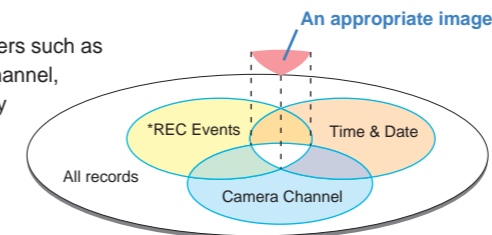
* REC Event filter

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

■ Filtering Search (Example)

Filter parameters
Time & Date : 9:40–10:10
CAM Channel : CAM1 · CAM2 · CAM3 · CAM4
REC mode : Event
Alarm mode : VMD · TRM · COM · LOSS

| CAM1 | Manual | VMD | TRM |
CAM2	COM		
CAM3	VMD	LOSS	
CAM4	Manual		
CAM5	Manual	VMD	TRM

Thumbnail Display

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

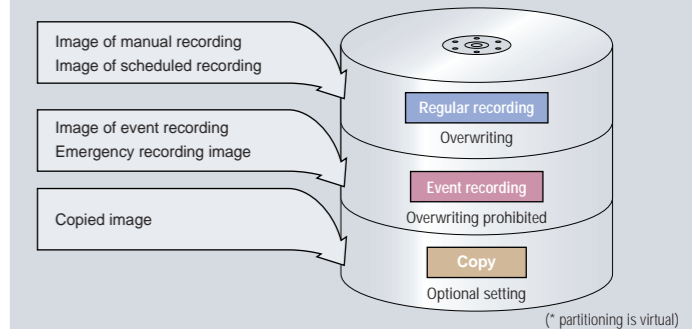## Live / Recording / Playback / Network Independent Performance

By adopting independent Live/Recording/Playback/Network processing, each operation does not effect each others performance.

Network

Recording

Playback image

Live images on a Multi-screen
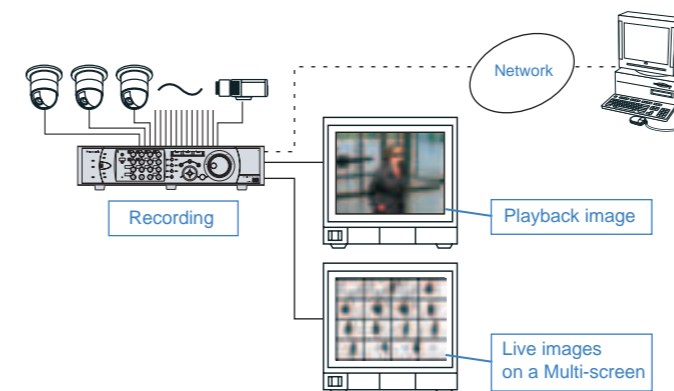
Disk Management

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, and for the copy partition, you can optionally enable or disable the overwriting.

Image of manual recording
Image of scheduled recording

Regular recording
Overwriting

Image of event recording
Emergency recording image

Event recording
Overwriting prohibited

Copied image

Copy

Optional setting

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

RAID Controller

WJ-HD300

WJ-HDE300

Restore
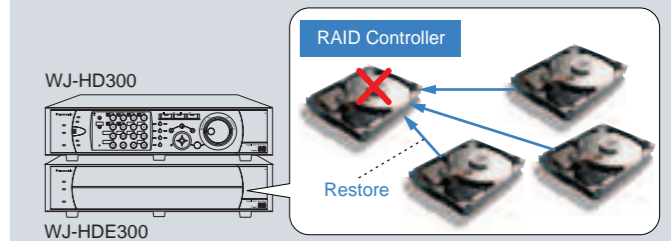
Advanced VMD

A new mode is added for sophisticate VMD detection.

DETECT DIRECTION & DURATION

DETECT A 5sec. B 10sec. C
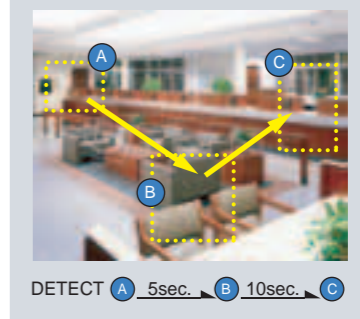
Playback VMD

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

Playback

VMD area setting

Alarm list
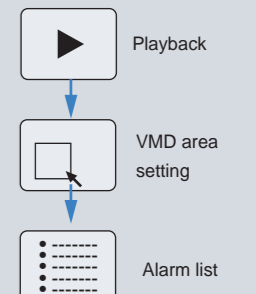
System Scalability:

Cascaded connection up to 4 main units
Up to four (4) WJ-HD300 units can be cascaded to increase maximum 64 video inputs. All 64 cameras can be switched and viewed from the master unit, while each slave unit has its own live viewing monitor.

Master WJ-HD316 2 drive bays (320GB)
Slave WJ-HD316
Slave WJ-HD316
Slave WJ-HD316

WJ-HDE300 4 drive bays (640GB)

WV-CU360C System Controller for 1~64ch camera control

10Base-T/100Base-TX Network PC
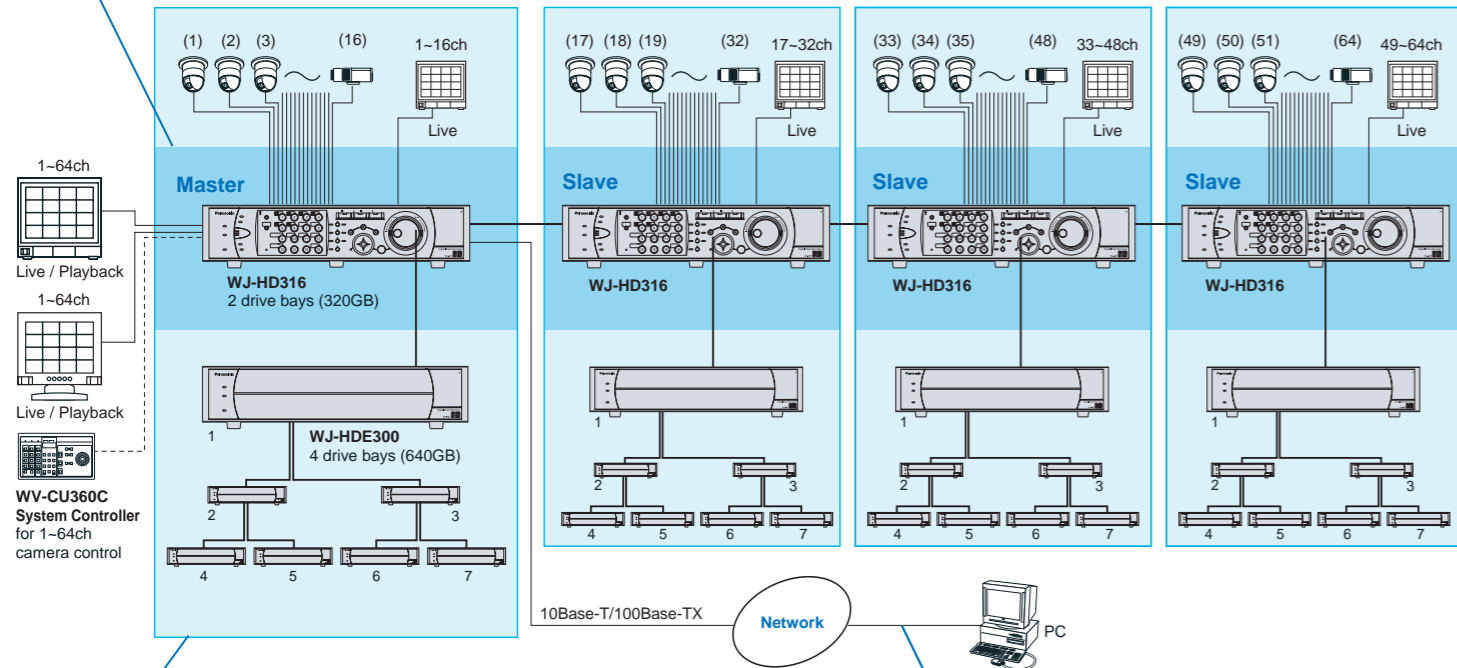
Expandable to 4.8 TB
In addition to a total 320 GB capacity of the main unit WJ-HD316/309, one WJ-HDE300 extension unit provides up to 640 GB. With seven (7) extension units, the maximum capacity can be extended up to 4.8 TB to satisfy long recording requirements.
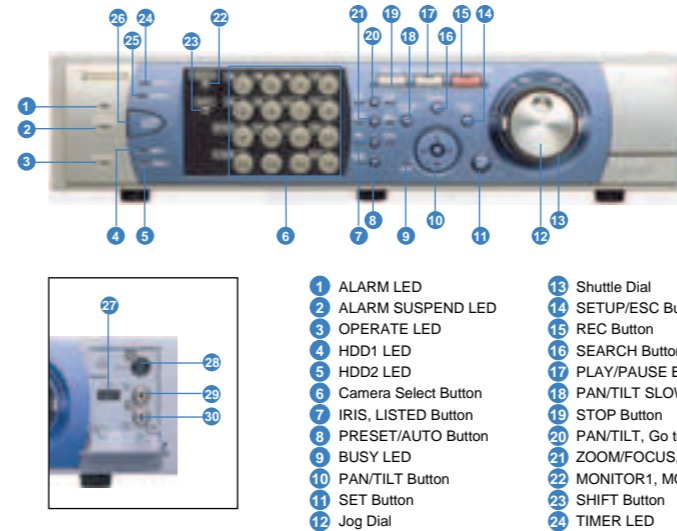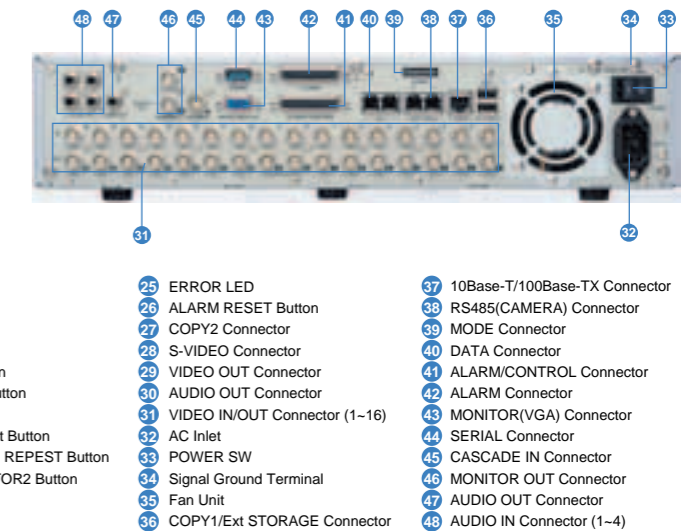
Built-in Network interface
Various function via network is supported such as live image monitoring through multi-screen display, camera PTZ control, recording/search/playback, downloading image/log data, e-mail notification, and setup data upload/download.
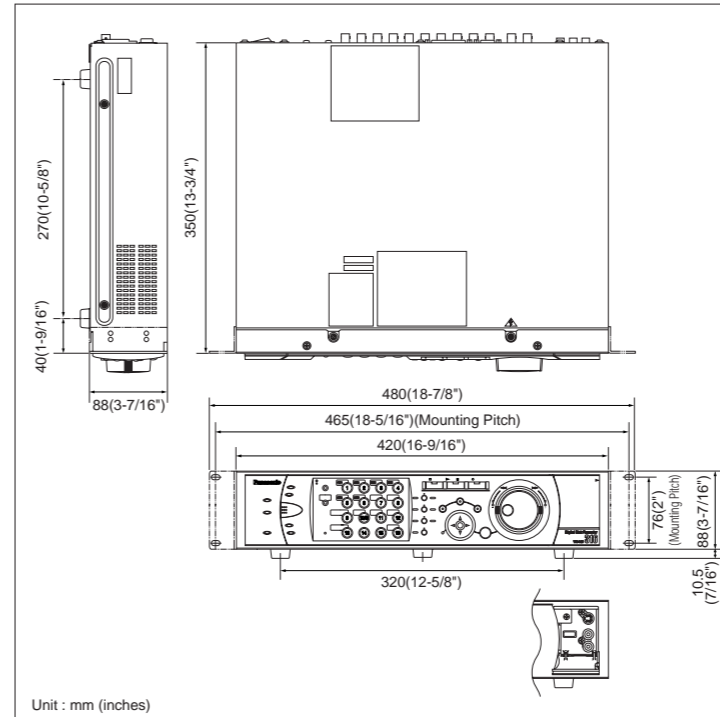
DISK Data Refference Chart
Color NTSC Video Signal, HDD Unit : 320GB (160GB x 2 units), **16 Channel** Video Inputs, Audio Signal : Off, Sampling Pixel Size 720 x 240 FIELD Mode

(Hours)

Compression IPS	EXTENDED	NORMAL	FINE	VERY FINE	SUPER FINE
0.1	7,716	5,787	3,858	2,894	1,929
0.2	3,858	2,894	1,929	1,447	965
0.3	2,572	1,929	1,286	965	643
0.4	1,929	1,447	965	723	482
0.5	1,543	1,157	772	579	386
1	772	579	386	289	193
2	386	289	193	145	96
3	257	193	129	96	64
5	154	116	77	58	39
6	129	96	64	48	32
7	110	83	55	41	28
10	77	58	39	29	19
15	51	39	26	19	13
30	26	19	13	10	6
60	13	10	6	5	3

MAJOR OPERATING CONTROLS

Front View

Rear View

1 ALARM LED	13 Shuttle Dial	25 ERROR LED	37 10Base-T/100Base-TX Connector
2 ALARM SUSPEND LED	14 SETUP/ESC Button	26 ALARM RESET Button	38 RS485(CAMERA) Connector
3 OPERATE LED	15 REC Button	27 COPY2 Connector	39 MODE Connector
4 HDD1 LED	16 SEARCH Button	28 S-VIDEO Connector	40 DATA Connector
5 HDD2 LED	17 PLAY/PAUSE Button	29 VIDEO OUT Connector	41 ALARM/CONTROL Connector
6 Camera Select Button	18 PAN/TILT SLOW Button	30 AUDIO OUT Connector	42 ALARM Connector
7 IRIS, LISTED Button	19 STOP Button	31 VIDEO IN/OUT Connector (1~16)	43 MONITOR(VGA) Connector
8 PRESET/AUTO Button	20 PAN/TILT, Go to last Button	32 AC Inlet	44 SERIAL Connector
9 BUSY LED	21 ZOOM/FOCUS, A-B REPEST Button	33 POWER SW	45 CASCADE IN Connector
10 PAN/TILT Button	22 MONITOR1, MONITOR2 Button	34 Signal Ground Terminal	46 MONITOR OUT Connector
11 SET Button	23 SHIFT Button	35 Fan Unit	47 AUDIO OUT Connector
12 Jog Dial	24 TIMER LED	36 COPY1/Ext STORAGE Connector	48 AUDIO IN Connector (1~4)

DIMENSIONS <WJ-HD316>

Unit : mm (inches)

SPECIFICATIONS: WJ-HD316

General	
Power Source	120V AC, 60Hz
Power Consumption (approx.)	85 W
Ambient Operating Temperature	-10˚C - +45˚C (14˚F - 113˚F)
Ambient Operating Humidity	Less than 90%
Standard Hard Disk Drive Unit	1bay (160GB)
Drive Bay for Optional HDD Unit	1 bay
Dimensions (W x H x D)	420 x 88 x 350 mm (16-9/16" x 3-7/16" x 13-3/4")
Weight (approx.)	9.5 kg (20.9 lbs.)

Input / Output		
Video	Video Input	1V [p-p] / 75 Ω, NTSC composite video signal with automatic termination / looping through, multiplexed control data, 8-input (1-8ch)∗1 (BNC)
		1V [p-p] / 75 Ω, NTSC composite video signal with automatic termination / looping through, 8-input (9-16ch)∗2 (BNC)
	Cascade Input	1V [p-p] / 75 Ω (BNC)
	Video Output	1V [p-p] / 75 Ω, NTSC composite video signal / active looping through, 8-input (1-8ch)∗1 (BNC)
		1V [p-p] / 75 Ω, NTSC composite video signal with automatic termination / looping through, 8-input (9-16ch)∗2 (BNC)
	Monitor Output	1V [p-p] / 75 Ω, 2 terminals (BNC)
	Monitor Terminal (VGA)	RGB output, 1 terminal (D-sub 15-pin)
	S Video Output	Y=1V [p-p] / 75 Ω, C=0.286V [p-p], 1 terminal (S terminal)
	Video Output (front panel)	1V [p-p] / 75 Ω, 1 terminal (Pin jack)
Audio	Audio Input	-10dB, 10 KΩ, 4 terminals (Pin jack)
	Audio Output	-10dB, 600 Ω, unbalanced, 2 terminals (Pin jack)
Others	External Storage Terminal	High speed serial interface (approx. 480 Mbps), 1 terminal
	Copy Terminal	High speed serial interface (approx. 480 Mbps), 2 terminals
	Control Terminal	Emergency recording input, Disk end status output, HDD emergency output, camera emergency output, emergency output, power off output, time adjustment input/output, sequence select input/output, power inspection input, external storage unit recording mode select (D-sub 25-pin)
	Alarm Connector	1-8ch∗3 alarm input, 9-16ch∗4 alarm input, 1-16ch∗5 alarm output, alarm recover input, alarm suspend input, (D-sub, 25-pin)
	RS485 Port	RS485 (4line/2line), 2 terminals (RJ-11)
	Data	RS485, 2 terminals (RJ-11)
	Serial Port	RS232C, 1 terminals (D-sub, 9-pin)
	Network Interface Port	10Base-T/100Base-TX (RJ-45)

WJ-HD309 ∗1: 6-input (1-6ch), ∗2: 3-input (7-9ch), ∗3: 1-6ch, ∗4: 7-9ch, ∗5: 1-9ch

STANDARD 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
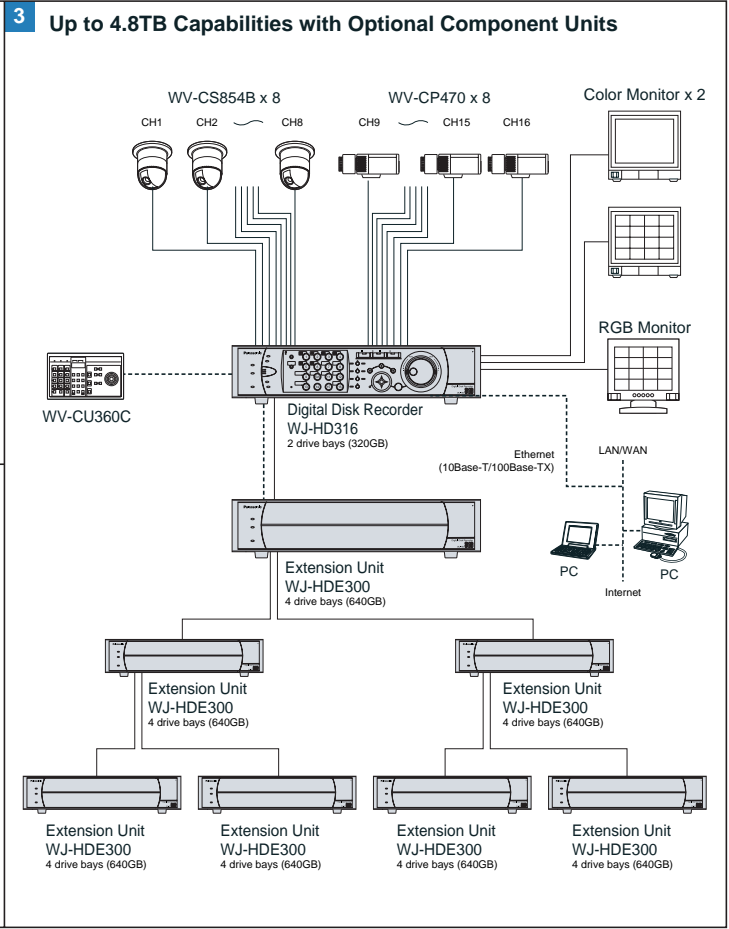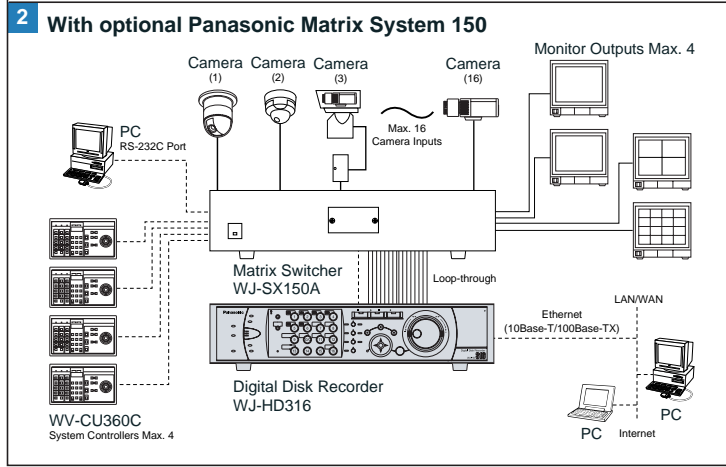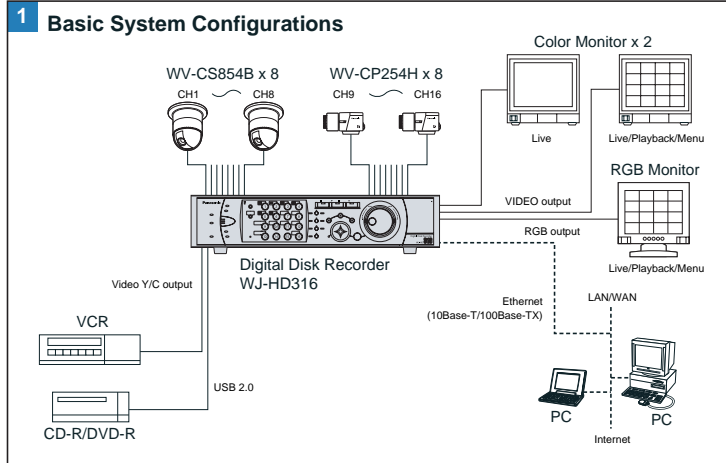• Built-in 160GB HDD Unit
• 1 drive bay for optional HDD Unit

OPTIONAL COMPONENT

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

SYSTEM EXAMPLES

1 Basic System Configurations

WV-CS854B x 8
CH1 ~ CH8

WV-CP254H x 8
CH9 ~ CH16

Color Monitor x 2

Live

Live/Playback/Menu

VIDEO output

RGB Monitor

RGB output

Live/Playback/Menu

Digital Disk Recorder
WJ-HD316

Video Y/C output

VCR

USB 2.0

CD-R/DVD-R

Ethernet
(10Base-T/100Base-TX)

LAN/WAN

PC

PC

Internet

2 With optional Panasonic Matrix System 150

Camera (1) Camera (2) Camera (3)

Camera (16)

Monitor Outputs Max. 4

PC
RS-232C Port

Max. 16
Camera Inputs

Matrix Switcher
WJ-SX150A

Loop-through

Digital Disk Recorder
WJ-HD316

Ethernet
(10Base-T/100Base-TX)

LAN/WAN

WV-CU360C
System Controllers Max. 4

PC

PC Internet

3 Up to 4.8TB Capabilities with Optional Component Units

WV-CS854B x 8
CH1   CH2 ~ CH8

WV-CP470 x 8
CH9 ~ CH15   CH16

Color Monitor x 2

WV-CU360C

Digital Disk Recorder
WJ-HD316
2 drive bays (320GB)

Ethernet
(10Base-T/100Base-TX)

LAN/WAN

PC

PC

Internet

RGB Monitor

Extension Unit
WJ-HDE300
4 drive bays (640GB)

Extension Unit
WJ-HDE300
4 drive bays (640GB)

Extension Unit
WJ-HDE300
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4 drive bays (640GB)

Extension Unit
WJ-HDE300
4 drive bays (640GB)

OPTIONAL COMPONENTS

Color Surveillance Cameras

Weather Proof & Vandal Resistant
Color Dome Camera
WV-CW864A

SDII

Super Dynamic II
Color Dome Camera
WV-CS854B

SDII

Vandal Proof
Super Dynamic II Color Cameras
WV-CW474 Series

SDII

Vandal Proof
Color Cameras
WV-CW244 Series

Super Dynamic II
Color Surveillance Cameras
WV-CP470 Series

SDII

Compact Color CCTV Camera
WV-CP254H

(Lens: option)

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

(Lens: option)

Color Dome Camera
WV-CF224

(Lens: option)

MATRIX SYSTEM 150

Matrix Switcher
WJ-SX150A
System Controller
WV-CU360C

SYSTEM CONTROLLER

System Controller
WV-CU360C

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.

Panasonic

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