

Panasonic
ideas for life

Digital Disk Recorders
WJ-HD88 Series



DIGITAL DISK RECORDERS
WJ-HD88
SERIES

High-density, Long-period Recording
Every effort is made to perfect live monitoring and after-the-fact verification.

Fine Picture Quality

Real-time 8ch Recording of Images and Audio at a Rate of 30 Images per second

By employing the superior moving image compression of MPEG-4 effectively, real-time recording of images and audio on a total of 8 channels at a rate of 30 images per second can be realized. High-density image recording minimizes the number of missed chances at the critical moment.

- Minimizing "missed focus" image recording opportunities.



- Existing products, by advancing frame after frame, fail to record important images.

Full-rate Live, 30 images per second Possible

A maximum of 30 images x 8ch of full-rate, live displays is possible.

Super Dynamic III Series Realizes Even Higher Quality Images

With WJ-HD88, separately purchased Super Dynamic III Series camera can be extended for maximum performance: a dynamic range of 128 times and high sensitivity of 0.5 lx - 0.6 lx. Being a Panasonic product, from image input to recording total solutions is realized.

SDIII
Super Dynamic



Weather Proof
Super Dynamic III
Color Dome Camera
WV-CW964



Super Dynamic III
Color Dome Camera
WV-CS954



Super Dynamic III
Color Surveillance Camera
WV-CP480 Series

2 TB Large-Capacity Design

In the main body of WJ-HD88 a maximum of eight 250 GB hard disk drives can be installed. A maximum of 2 TB large-capacity systems can be built.

HDD Installation Image



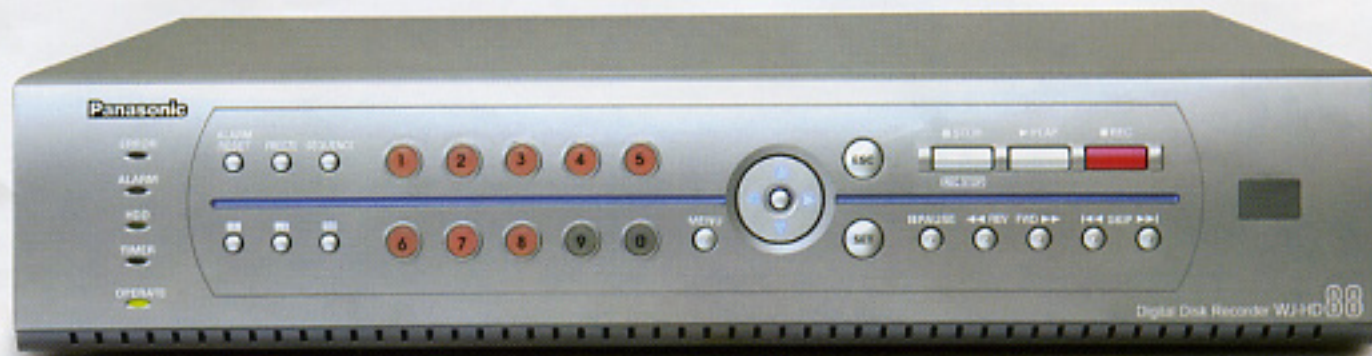
Table of Recording Length (Approximate recording days)

Recording mode	Image Quality	HDD capacity							
		250 GB	500 GB	750 GB	1000 GB	1250 GB	1500 GB	1750 GB	2000 GB
30 images / sec	Super Fine	7	14	21	28	35	43	50	57
	Fine	9	18	27	36	45	54	63	72
	Good	12	25	37	49	62	74	86	99
	Normal	17	34	51	68	86	103	120	137
	Extended	39	78	117	155	194	233	272	311

*1. Recording conditions: 8ch, Recording time: 10 hours/day, Stream type: CBR, Audio selection: Off, I frame Inter: 4 (default)
*2. The recording time may differ from the values in the table above, according to the selected picture quality.

Recording mode	Image Quality	HDD capacity							
		250 GB	500 GB	750 GB	1000 GB	1250 GB	1500 GB	1750 GB	2000 GB
30 images / sec	Super Fine	3	6	9	12	15	18	21	24
	Fine	4	7	11	15	19	22	26	30
	Good	5	10	15	20	26	31	36	41
	Normal	7	14	21	21	36	43	50	57
	Extended	16	32	48	48	81	97	113	130

*1. Recording conditions: 8ch, Recording time: 24 hours/day, Stream type: CBR, Audio selection: Off, I frame Inter: 4 (default)
*2. The recording time may differ from the values in the table above, according to the selected picture quality.



DIGITAL DISK RECORDERS
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New Innovation Digital Disk Recorder Achieved by Panasonic.

Panasonic has developed a monitoring digital disk recorder revolutionary to the industry: the *WJ-HD88*. Consolidated in one unit the *WJ-HD88* is fundamental to a monitoring camera system promoting perfect synchronization of image and audio.

The *WJ-HD88* combines the two most sought after features in a recording system: high density and long-period recording. The *WJ-HD88* boasts excellent scalability from a network function and Panasonic's system controller. In addition, it is designed to offer system stability for trouble free operation providing a safe, functional and fast product. Used in combination with Panasonic's high performance related devices such as the Super Dynamic III series camera, the *WJ-HD88* is the ideal Digital Disk Recorder solution. With Panasonic receiving total solution is ensured.

Fine Picture Quality

The *WJ-HD88* uses the advanced MPEG-4 technology with superior compression efficiency. This technology allows for real time video image recording in all 8 channels 30 images per second per channel.

Reliable Network Function

The free, included NetClient software allows for total system integration and makes it possible to network multiple *WJ-HD88*'s. Some of the networked functions include: a simultaneous live/image playback split-screen display; search, download and playback of recorded images; and control of Panasonic's dome-type camera can all be conducted from a PC.



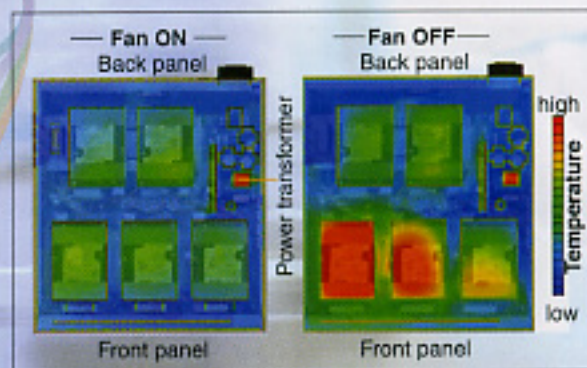
System Capability

With Panasonic's optional system controller, the *WV-CU650*, it is possible to develop a combination system with multiple *WJ-HD88* units and a matrix switcher.



System Stability

The *WJ-HD88* provides a stable system environment designed for efficient heat management to preserve the life of the hard disk drives.



Environment-friendly Design

Panasonic is a certified, registered company under the ISO14001 international standards. Our corporate mission supports ISO14001 and strives to develop products that will lighten the burden on the global environment. In keeping with our corporate philosophy, the *WJ-HD88* has eliminated from its components all harmful and toxic substances – while still maintaining the product quality and reliability you have come to expect from Panasonic.

Reliable Network Function

The WJ-HD88 is designed for the network environment.

By connecting WJ-HD88 and one's own PC to LAN/WAN or the internet, network function for remote monitoring becomes standard equipment.

The WJ-HD88 comes standard with NetClient software, which allows for the integrated management.



Screen Menu

1 Splitting Control Area

Split display by selecting either a single image or 4/6/9

2 Video Channel Selection

Channel selection and display of channel operating condition

3 System Control & Management

System manager can manipulate 12 different functions, including log-in/log-out, remote setting of parameter, system software remote upgrade, etc.

4 Information Area

User information, operating conditions of each channel, warning signal and alarm conditions, and the remaining hard disk capacity can be displayed.

5 Monitoring Control Bar

The monitoring control bar makes possible recorded image backup, image capturing, mute mode, full screen, PTZ and lens manipulation.



To display, double-click on Video Channel Selection.

Major Functions

- Main unit set-up
- Live image display, recorded image playback, search, download
- Image playback of downloaded recorded images and images stored on back-up drive
- A layout of multiple WJ-HD88 images can be displayed on a split screen
- User management by password
- Map function: Displaying the location arrangement of digital recorders and cameras on a map makes it possible to manipulate them on the screen

Operation Environment

PC	PC/AT compatible machine
OS	Windows 2000 Professional SP4 / Windows XP
CPU	Inter Pentium 4, above 2.4 GHz
Main memory	Above 512 MB
Graphic memory	Above 64 MB (independent)
Graphic accelerator	A board for displaying hardware overlay. Environment compatible with a full-color accelerator above 1024 x 768, and later model than Direct x 8.0a.
Interface	Installed with 100 Mbps network interface card

The system can be extended while maintaining simple operability

System Capability

System extension using System Controller

By using Panasonic System Controller WV-CU650, even without using the network it is possible to build a personal system with several WJ-HD88 units.



System Controller WV-CU650

With Panasonic's rich line-up, system total coordination is easy.

Optional Components

Cameras Weather Proof Super Dynamic III Color Dome Camera WV-CW964 	Super Dynamic III Color Dome Camera WV-CS954 	Super Dynamic III Color Surveillance Cameras WV-CP480 Series 
Weather Proof Color Camera WV-CW374 	Vandal Proof Color Dome Cameras WV-CW474A Series 	Color Monitors LCD AV Monitors •WV-LC1710 (17" LCD) •WV-LD2000 (20" LCD) •WV-LD1500 (15" LCD) 

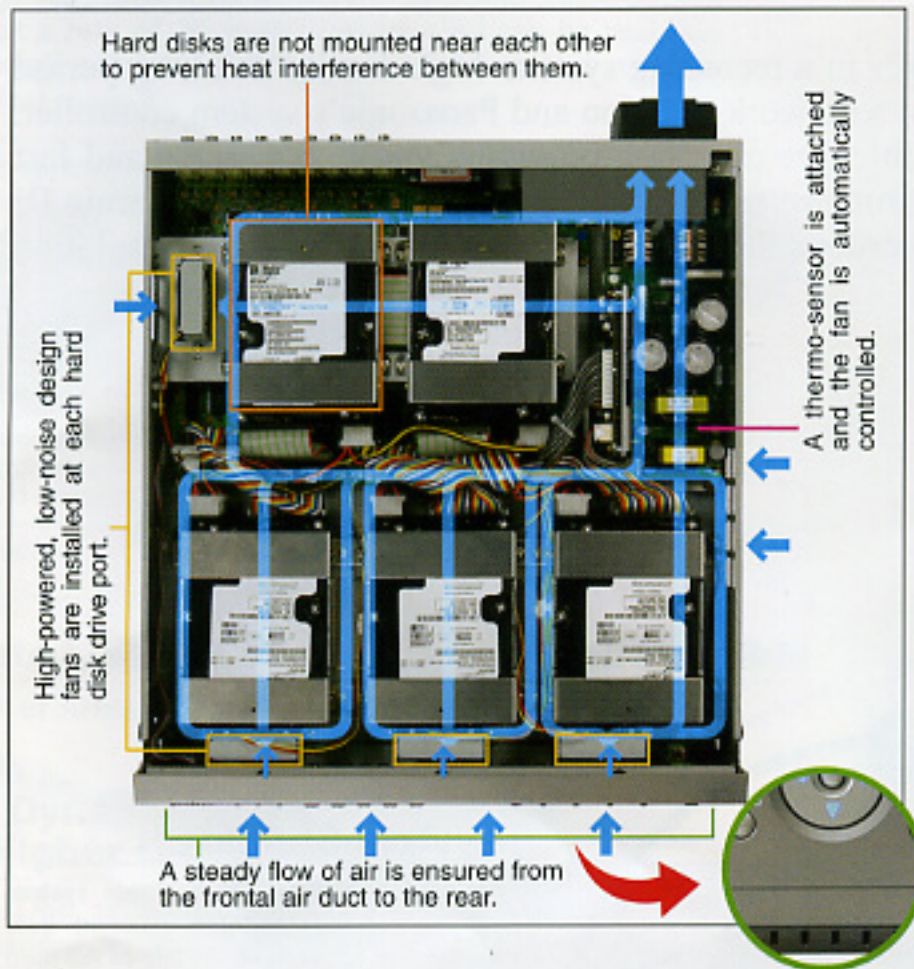
Basic premise for high-function maximum performance. The real merit of Panasonic products originates here.

System Stability

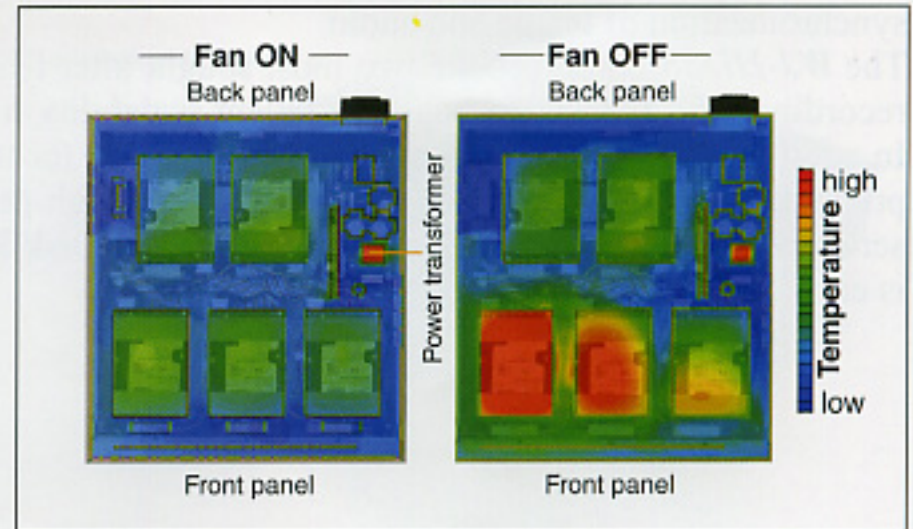
Strengthened Hard Disk Drive Heat Management

The WJ-HD88 is designed to prevent hard disk trouble caused by heat, paying close attention to heat management of the main unit.

WJ-HD88 Panoramic View



Comparison of Thermo-graphs of Hard Disk Drive Ports



Realizing Operation Stability with the Stand-alone Design

WJ-HD88 uses the RTOS stand-alone design. This is more stable than that of the PC base model.

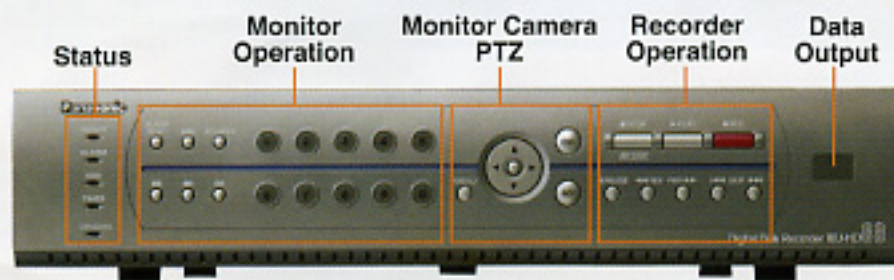
Temporary Emergency Power

During an emergency power stoppage, WJ-HD88 continues to operate.

More Features

User-friendly Panel Layout

On the front panel of the WJ-HD88, there is a systematic area layout for each function resulting in superior operability.



Independent Image Recording Setting

From the WJ-HD88, image quality and recording rate of each channel can be set separately. Also the recording mode can be selected according to the desired use: from timer recording, alarm recording, to video motion detector function.

All 4 Operations Capable of Being Run Simultaneously

When several different requests are received from clients at the same time, four different operations—recording, search, playback and live monitoring—can be conducted simultaneously without omitting anything.

Perfect Synchronization of Image and Audio*

There is no time lag between image and audio.*

* Exception: In case of images through the network, at times there is a time lag.

Creating Operation History Log Data

The WJ-HD88 creates a system operation history by storing log data. Parameter changes, alarms, start-up of video motion detector function, access through the network, video loss, etc. as many as 300 items are stored in an "Event Log." System errors in the main unit of WJ-HD88 or the hard disk drive, along with lighting up the error LED on the front panel, records up to 300 items in the "System Log." Logged data can be confirmed by network software and system management can be conducted by remote.

No.	Time & Date	Event
1	2005-01-24 10:41:00	Ch-1 I/O alarm
2	2005-01-24 10:41:00	Camera 1 loss signal
3	2005-01-24 10:41:00	Port-2 Terminal alarm
4	2005-01-24 10:41:00	Camera 4 get signal
5	2005-01-24 10:41:00	Port-2 Terminal alarm
6	2005-01-24 10:41:00	Camera 3 loss signal
7	2005-01-24 10:41:00	Port-2 Terminal alarm
8	2005-01-24 10:41:00	Camera 2 loss signal
9	2005-01-24 10:41:00	Ch-1 I/O alarm
10	2005-01-24 10:41:00	Ch-1 I/O alarm

Event Log

No.	Time & Date	Event
1	2005-01-24 10:41:00	Modify Network
2	2005-01-24 10:41:00	1984880 Login
3	2005-01-24 10:41:00	10 Modify Time
4	2005-01-24 10:41:00	Modify Year Set
5	2005-01-24 10:41:00	Modify I/O Set
6	2005-01-24 10:41:00	Modify Operator Set
7	2005-01-24 10:41:00	Modify Manager Set
8	2005-01-24 10:41:00	Restore Default Set
9	2005-01-24 10:41:00	Normal Startup
10	2005-01-24 10:41:00	10 Reason System

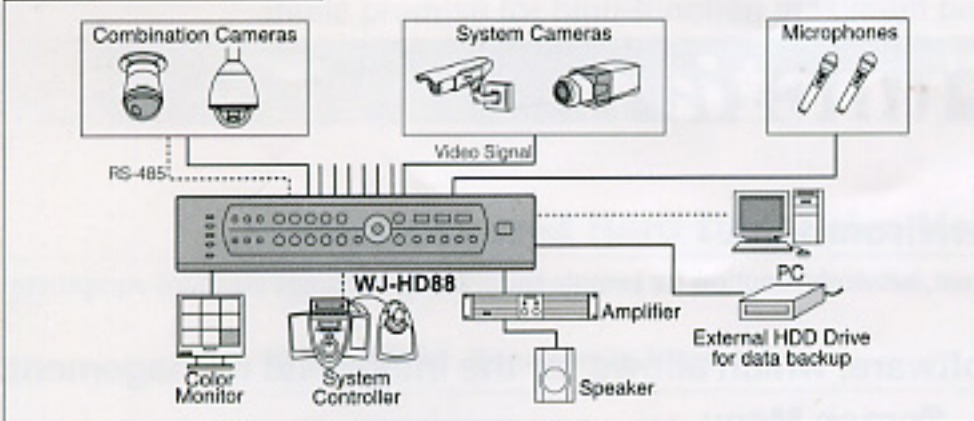
System Log

Dome-type Cameras Operated from Front Panel

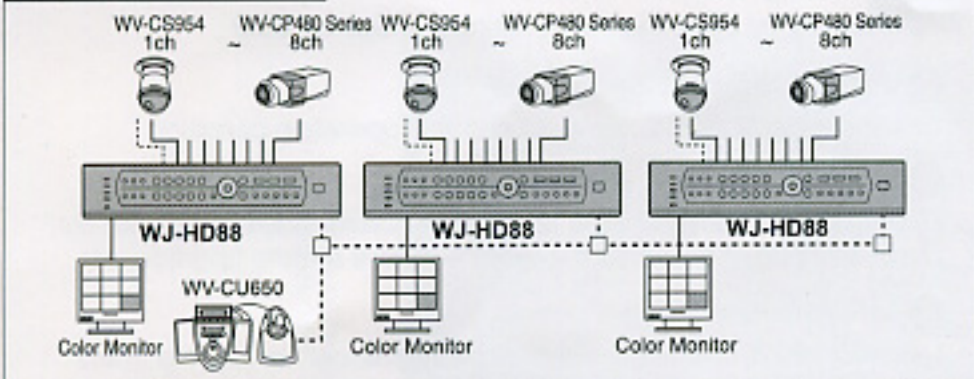
By operating the arrow-key on the front side it is possible to control the PTZ, focus and iris of a dome-type camera of Panasonic make via RS485.

SYSTEM EXAMPLES

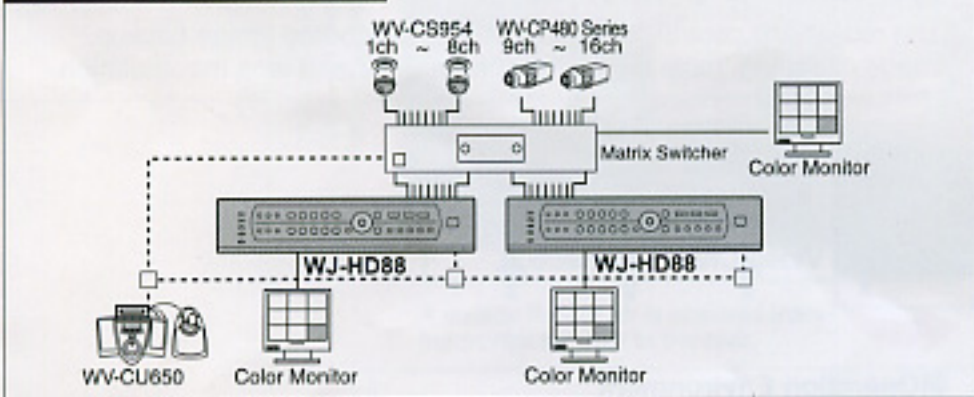
Basic System Configurations



With Several WJ-HD88 Units

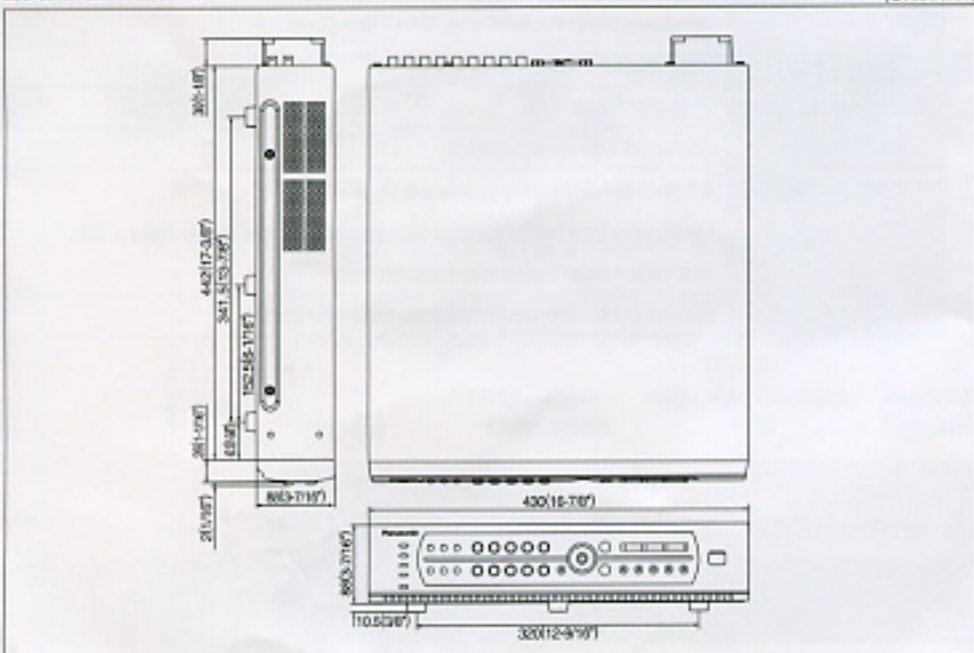


With Matrix System Configurations



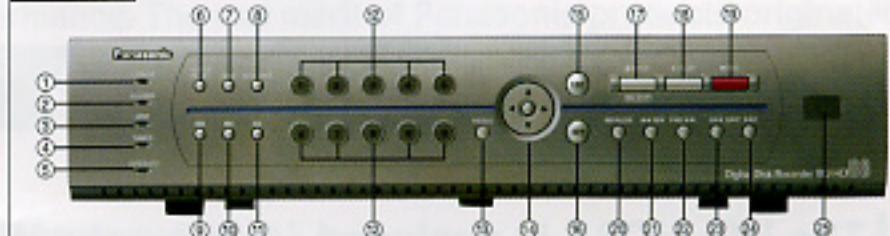
APPEARANCE

(Unit : mm)



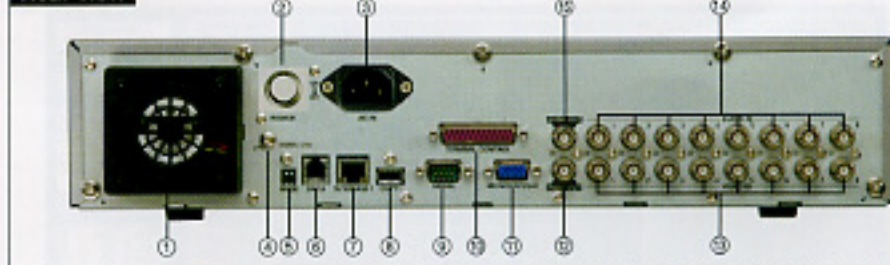
MAJOR OPERATING CONTROLS

Front View



- 1 Error Indicator
- 2 Alarm Indicator
- 3 HDD Access Indicator
- 4 Timer Recording Indicator
- 5 Operate Indicator
- 6 Alarm Reset Button
- 7 Still Button
- 8 Sequence Button
- 9 4-split Screen Button
- 10 6-split Screen Button
- 11 9-split Screen Button
- 12 Camera Selection Buttons
- 13 Menu Button
- 14 Direction Button
- 15 Cancel Button
- 16 Set Button
- 17 Stop Button
- 18 Play Button
- 19 Recording Button
- 20 Pause Button
- 21 Fast Reverse Play Button
- 22 Fast Forward Play Button
- 23 Skip Playback Button
- 24 Copy Connector

Rear View



- 1 Power Cooling Fan
- 2 Power Switch
- 3 AC Power Connector
- 4 Signal Ground Terminal
- 5 Mode Selection DIP Switches
- 6 Data Port
- 7 10Base-T/100Base-TX Port
- 8 Copy Port
- 9 Serial Data Port
- 10 Terminal Control Port
- 11 VGA Output Port
- 12 Video Output Connector
- 13 Video Input Connectors
- 14 Audio Input Connectors
- 15 Audio Output Connector

SPECIFICATIONS NTSC

General		
Power Supply	120 V AC, 60 Hz	
Power Consumption (approx.)	120 W	
Ambient Operating Temperature	+5 °C ~ +45 °C	
Ambient Operating Humidity	5 % ~ 90 % (without condensation)	
Dimensions	430 mm(W) x 68 mm(H) x 470 mm(D) [16-7/8"(W) x 3-7/16"(H) x 18-1/2"(D)]	
Weight (approx.)	WJ-HD88 9.0 kg(19.8 lbs.)	
Input/Output		
Video	Video Input	1.0 V(p-p) / 75 Ω NTSC Composite video signal (BNC) x 8
	Video Output	1.0 V(p-p) / 75 Ω NTSC Composite video signal (BNC) x 1 RGB output (15-pin D-sub) x 1
Audio	Audio Input	-10 dB, 22 KΩ (BNC) x 8
	Audio Output	-10 dB, 22 KΩ (BNC) x 1
Alarm	Alarm Input	Voltage value alarm input (25-pin, D-sub) x 8
	Alarm Output	Switch volume output (contact output of normally ON and OFF) (25-pin, D-sub)
Ethernet Interface	10 Base-T / 100 Base-TX Ethernet port (RJ-45) x 1	
Remote Interface	RS485 x 1 (25-pin D-sub) Applies to Panasonic Camera WV-CS850B, WV-CW864A, WV-CS954, WV-CW964	
DATA Interface	RS-485 x 1 (RJ-11) Applies to the Panasonic System Controller WV-CU650, WV-CU380C	
DATA Backup Interface	High speed serial interface (front panel x 1, rear panel x 1)	
HDD Interface	4 IDE interfaces are incorporated. (capable of installing eight hard disks)	
Function	Video Compression Mode	MPEG-4 (CBR/variable bit stream/VBR/variable bit stream)
	Audio Compression Mode	ADPCM
	Picture Quality (Compressed Level)	Class 5 (independent setting enabled for each line)
	Image Resolution	Live aspect 704 x 480 Recording picture playback 352 x 240 (SIF)
	Image Display	1/4/6/9 split screen display
	Image Recording Rate	Live recording of each line (1~30 images/sec. for each line, adjustable)
	Simultaneous Operation	Field multi screen monitoring, recording, playback, network monitoring
	Recording Mode	Manual / Timer / Alarm / VMD / Power ON REC mode
Video Motion Detection	126 items of motion detector area/motion detector sensitivity Class 99 can be independently set up for each line. (Adjustments are possible.)	

STANDARD PRODUCT CONFIGURATIONS

WJ-HD88	8-channel camera inputs
	8 drive bays
	Built-in Ethernet Port

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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 manufacture 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.

Panasonic

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