

NTSC WJ-HD316A (120 V AC) PAL WJ-HD316A (220 ~ 240 V AC)  
WJ-HD309A (120 V AC) WJ-HD309A (220 ~ 240 V AC)



### Advanced Digital Disk Recorder with system capability and disk expandability

#### Key Features

- Proprietary video compression including Inter-frame mode and Intra-frame mode
- 9/16 analog video inputs including 6/8 coax camera control inputs and 4 audio inputs (HD309A/HD316A)
- Various Recording Modes: Manual, Schedule, Event (Pre/Post), Emergency, External Timer
- 4 recording programs including Individual recording mode for each camera channel
- 25/30 ips (frame), 50/60 ips (field), 100/120 ips (SIF) recording frame rate (PAL/NTSC)
- Panasonic Camera Control: Camera control can be made by front panel buttons, system controller, web browser or optional software.
- Flexible Playback Controls: A-B Repeat, Goto Date (Jump to specific time/date), Goto Last (Jump to 5 sec. ~ 5 min. before the record end)
- Various Display Modes: Spot / Quad (4 patterns) / 6 / 7 / 9A / 9B / 10 / 13 / 16 / (Live / Playback), Spot Sequence / Quad sequence (Live), Dwell time 1 ~ 30 sec.
- 50 (PAL) or 60 (NTSC) ips/camera full rate live display in 16 split screen mode
- Filtered Search: Time & Date, Event type, Camera number, Text
- Various alarm sources include 16x terminal inputs, 16x camera alarms, PS-Data. Flexible alarm actions include Event recording, E-mail notification, alarm message, camera positioning, FTP image transfer, terminal output, Panasonic alarm protocol output, buzzer and LED
- VMD (Video Motion Detector): 4 areas, 3 sensitivity levels with vector and duration
- Up to 4 recorders can be integrated in cascade connection mode for up to 64 cameras.
- Recorded images and viewer software can be downloaded to a PC via network.
- Flexible setup options: OSD, browser, admin software with Quick/Advanced at users' preference
- Image transfer to FTP server: Recorded image upon alarm and/or live image periodically
- User/Host authentication, 4 user levels, 16 user priorities and User-Camera View/Control partitioning set up for sophisticated user management. Up to 32 user registrations.
- 1x front panel/PSD/RS232C user and 8x network users can access the recorder with individual priority at a time.
- Alteration detection for data security
- Optional system controller can be connected for easier operation.
- Multi-recorder, Multi-site system can be made with optional WV-ASM100 i-Pro Management Software.
- HDD capacity is expandable with 2 HDD slots in the main unit and up to 7 WJ-HDE300 optional Extension Units each with 4 HDD slots.
- Disk partitioning including Normal, Event, Copy for flexible record management
- HDD Safety Mode to protect HDDs during the installation of the recorder.
- RAID5 and RAID1 mirroring redundant recording

#### Standard Accessories

- CD-ROM\* ..... 1 pc.
- Operating Instructions ..... 1 pc.
- The followings are for installation:
- Power Cord ..... 1 pc.
- Rack Mounting Bracket ..... 2 pcs.
- Screw for Rack Mounting Bracket .. 4 pcs.
- Hard Disk Drive Fixing Screw ..... 4 pcs.
- \*The followings are included on the CD-ROM:
- Viewer software
- Decoder Plug-in software
- Network Operating Instructions (PDF)
- Network Setup Instructions (PDF)
- Operation Using The System Controllers (PDF)
- Administrator Console (Software)

#### Optional Accessories

Extension Unit  
**WJ-HDE300**  
(4 HDD slots for optional HDD units)

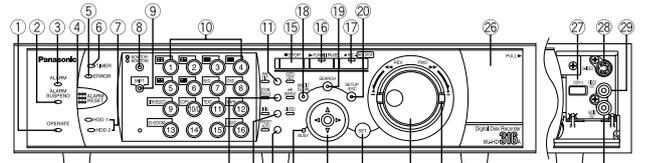


i-Pro Management Software  
**WV-ASM100**



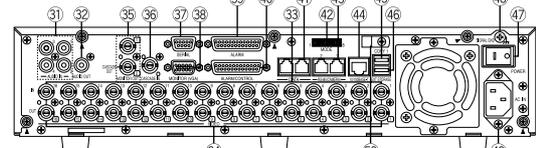
#### Part Names and Functions

##### Front View



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

##### Rear View



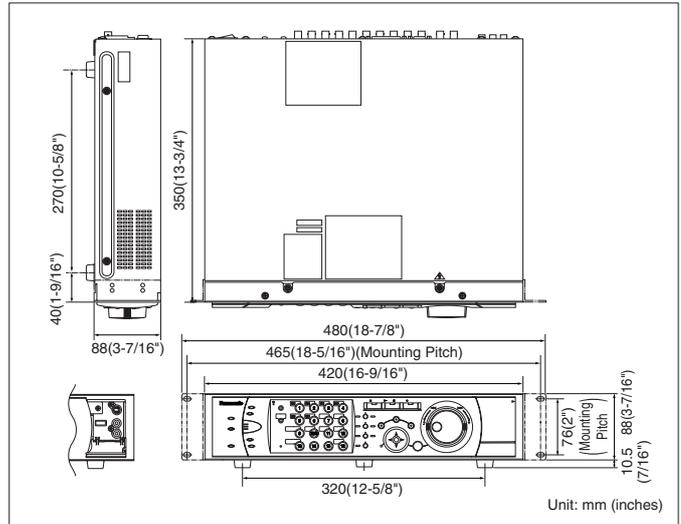
- |                              |                            |                           |
|------------------------------|----------------------------|---------------------------|
| ③① Audio Input Connectors    | ③③ Monitor Connector       | ④⑤ Copy Port              |
| ③② Audio Output Connector    | ③④ Alarm Connector         | ④⑥ Extra Storage Port     |
| ③⑤ Video Input Connectors    | ④⑦ Alarm/Control Connector | ④⑦ Power Switch           |
| ③④ Video Output Connectors   | ④⑧ PS-Data Ports           | ④⑧ Signal Ground Terminal |
| ③⑥ Monitor Output Connectors | ④⑨ Mode Switches           | ④⑨ Power Cord Inlet       |
| ③⑥ Cascade In Connector      | ④⑩ RS485 Ports             | ④⑩ Cable Clamp            |
| ③⑦ Serial Connector          | ④⑩ Network Port            |                           |

# Specifications

| TV System              |                          | NTSC  | PAL  |  |
|------------------------|--------------------------|---|--|--|
| Audio / Video IF       | Video Inputs             | WJ-HD316A:<br>16x 1.0 V [p-p] / 75 Ω composite video inputs (BNC) with 8x active loop through outputs (1 ~ 8 CH) and 8x auto termination loop through (9 ~ 16 CH).<br>8x multiplexed control data (1 ~ 8 CH).<br>Cascade IN: 1x 1.0 V [p-p] / 75 Ω composite video signal (BNC)<br>WJ-HD309A:<br>9x 1.0 V [p-p] / 75 Ω NTSC composite video inputs (BNC) with 6x active loop through outputs (1 ~ 6 CH) and 3x auto termination loop through (7 ~ 9 CH).<br>6x multiplexed control data (1 ~ 6 CH).<br>Cascade IN: 1x 1.0 V [p-p] / 75 Ω composite video signal (BNC) |  |  |
|                        | Video Outputs            | Monitor 1: 1.0 V [p-p] / 75 Ω composite video signal (BNC)<br>Monitor 2 / Cascade: 1.0 V [p-p] / 75 Ω composite video signal (BNC)<br>Monitor (VGA): RGB output (15 pin D-sub), Same video as Monitor 2<br>S-Video (front): Same video as Monitor 2<br>Video output (front RCA): Same video as Monitor 2  |  |  |
|                        | Audio Inputs             | WJ-HD316A: 4x -10 dBV, 10 KΩ (RCA) (1 ~ 4 CH)<br>WJ-HD309A: 4x -10 dBV, 51 KΩ (RCA) (1 ~ 4 CH)  |  |  |
|                        | Audio Outputs            | Rear: 1x -10 dBV, 600 Ω, Unbalanced (RCA),<br>Front: 1x RCA (same signal as rear)   |  |  |
| Audio / Video Format   | Recording                | Image Resolution  | Frame (3D ON/OFF) (720 x 480 pixels),<br>Field (720 x 240 pixels),<br>SIF (360 x 240 pixels)   |  |
|                        |                          | Video Compression   | Proprietary: SFA, FQA, NQA, EXA, SFB, FQB, NQB, EXB, Independent quality for each camera   |  |
|                        | Network                  | Image Resolution  | Field (720 x 240 pixels) / Field (720 x 288 pixels)  |  |
|                        |                          | Color Mode  | Standard: 4 : 2 : 2, Standard: 4 : 1 : 1, B/W  |  |
| Recording              | Audio Compression Method | PCM 11.025 kHz, 16 bit (Monaural)   |  |  |
|                        | Recording Mode           | Manual, Event, Schedule, Emergency, External timer  |  |  |
|                        | Schedule REC Mode        | 4 programs, 6 time zone/day, Independent setup for each day of the week   |  |  |
|                        | Frame Rate / Camera      | 0.1 ~ 60 ips (Depending on the image size), Independent frame rate for each camera  | 0.1 ~ 50 ips (Depending on the image size), Independent frame rate for each camera   |  |
|                        | Frame Rate Total         | 120 ips at SIF, 60 ips at Field, 30 ips at Frame  | 100 ips at SIF, 50 ips at Field, 25 ips at Frame   |  |
|                        | Pre-Alarm Recording      | Up to 60 images, Up to 60 min. with exclusive HDD in the WJ-HDE300  |  |  |
|                        | Main Unit Functions      | Camera Control  | Pan/Tilt, Zoom, Focus, Iris, Preset position call (up to 256), Auto mode   |  |
|                        |                          | REC / Playback Control  | REC, PLAY, Rev PLAY, Pause, Stop, FF, REW, Prev Record, Next Record, Prev Image, Next Image, A-B Repeat, Goto Date, Goto Last (5 sec. ~ 5 min.), Text display, Jog/Shuttle |  |
|                        |                          | Search Mode   | Search criteria: Time date, Event type, Camera number, Text ON/OFF   |  |
|                        |                          | Multiscreen Mode  | Spot / Quad (4 patterns) / 6 / 7 / 9A / 9B / 10 / 13 / 16 / (Live / Playback), Spot Sequence / Quad Sequence (Live), Dwell time 1 ~ 30 sec.                                |  |
| Copy to External Media |                          | Recorded data of selected cameras and time date range can be copied to external CD, DVD or HDD  |  |  |
| Copy to Copy Partition |                          | Recorded data of selected cameras and time date range can be copied to the COPY partition   |  |  |
| Camera Title           |                          | OSD, Alphanumeric, Up to 16 characters  |  |  |
| Clock Display          |                          | OSD or Image embedded, Time: 12H / 24H, Date: 3 formats   |  |  |
| Alarm Control          |                          | Reset, Suspend  |  |  |
| Digital Zoom           |                          | 2x, 4x  |  |  |
| Browser GUI            | Text Attachment          | Free comment can be attached for each record. Up to 200 characters  |  |  |
|                        | System Log               | Operator access (100), Network error (1,000), Error (100), Event (750)  |  |  |
|                        | System Setup             | OSD setup menu in English, French, Italian, Spanish, German, Russian, Chinese, Japanese   |  |  |
|                        | OSD Language             | English, French, Italian, Spanish, German, Russian, Chinese, Japanese   |  |  |
|                        | VMD                      | 4 areas, 3 sensitivity levels, with vector and duration setup   |  |  |
|                        | Video Loss Detection     | Yes   |  |  |
|                        | User Registration        | Up to 32 users (Same as NW users)   |  |  |
|                        | User Level               | Admin and 3 user levels (programmable, same as NW user levels)  |  |  |
|                        | Time Synchronization     | Terminal (Master or Slave), NTP (Client)  |  |  |
|                        | Summer Time              | User definable (Menu setup required)  |  |  |
| Browser GUI            | Camera Control           | Pan/Tilt, Zoom, Focus, Iris, Preset position call (up to 256), Auto mode  |  |  |
|                        | REC/Playback Control     | REC, PLAY, Rev PLAY, Pause, Stop, FF, REW, Prev Record, Next Record, Prev Image, Next Image, Goto Date, Goto Last (5 sec. ~ 5 min.), Text display   |  |  |
|                        | Search Mode              | Search criteria: Time date, Event type, Camera number, Text ON/OFF  |  |  |
|                        | Display Mode             | Spot / Quad (A, B, C, D) / 9 (A, B) / 16 (Live, Playback), Spot Sequence (Live)   |  |  |
|                        | Image Download           | Recorded data of selected camera and time range (up to 99 min 59 sec.) can be downloaded to a PC. Viewer software can be downloaded separately.   |  |  |
|                        | Copy to Copy Partition   | Recorded data of selected cameras and time date range can be copied to the COPY partition   |  |  |
|                        | Camera Title             | On the browser, Up to 16 characters   |  |  |
|                        | Clock Display            | On the browser or Image embedded, Time: 12H / 24H, Date: 3 formats  |  |  |
|                        | Alarm Control            | Reset, Suspend  |  |  |
|                        | Digital Zoom             | Up to 4 times   |  |  |
| Browser GUI            | Text Attachment          | Free comment can be attached for each record. Up to 200 characters  |  |  |
|                        | System Log               | Operator access (100), Network error (1,000), Error (100), Event (750)  |  |  |
|                        | System Setup             | Setup page in English   |  |  |
|                        | GUI Language             | English   |  |  |
|                        | Supported OS             | Microsoft® Windows Vista® Business 32 bit, Microsoft® Windows® XP Home/Professional SP2 English, German, French, Italian, Spanish   |  |  |
|                        | Supported Browser        | Windows® Internet Explorer® 7.0 (Microsoft® Windows Vista® Business 32 bit), Microsoft® Internet Explorer® 6.0 SP2 (Microsoft® Windows® XP Home/Professional SP2)   |  |  |

| TV System              |                               | NTSC  | PAL   |
|------------------------|-------------------------------|---|---|
| Network                | Network Interface             | 10Base-T / 100Base-TX (RJ-45) x1  |   |
|                        | Bandwidth Limitation          | 32 Kbps ~ Unlimited   |   |
|                        | Supported Protocol            | TCP/IP, UDP/IP, HTTP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP   |   |
|                        | E-mail                        | Upon Alarm or Warning   |   |
|                        | No. of Client at a Time       | 8   |   |
|                        | User Registration             | Up to 32 users (Same as main unit users)  |   |
|                        | User Level                    | Admin and 3 user levels (programmable, same as main unit user levels)   |   |
|                        | Partitioning                  | User - Camera (View only, View & Control, No Access)  |   |
|                        | Security Method               | User authentication (ID 32 digit, PW 32 digit), Host authentication (IP address), Alteration detection  |   |
|                        | Alarm / Event                 | Alarm Source  | 16x Terminal inputs, 16x Camera alarm, PS-Data                      |
| Event Mode             |                               | Alarm / Activity / OFF  |   |
| Alarm Action           |                               | Event recording, e-mail notification, Alarm message, Camera positioning, FTP image transfer, Terminal output, Panasonic alarm protocol output, Buzzer, LED        |   |
| Alarm Control          |                               | Reset, Suspend  |   |
| External IF            | Alarm Control                 | 750   |   |
|                        | Alarm                         | 16x Alarm inputs (25 pin D-sub, Make contact, N.O./N.C.) 16x Alarm outputs (25 pin D-sub, Open collector, N.O./N.C.) 1x Alarm reset input, 1x Alarm suspend input |   |
|                        | EXT Storage                   | 1x High-speed serial interface (USB type connector) for WJ-HDE300 Extension Unit.   |   |
|                        | Error / Warning               | Disk space warning, HDD error, System error, Camera error   |   |
|                        | Recording                     | Emergency recording input, External recording mode input  |   |
|                        | Time Adjustment               | Time adjustment input/output  |   |
|                        | Controls                      | Sequence switching signal input, Power outage detection output, Shut down ready output  |   |
|                        | PS-Data (RS-485) Controller   | 2x RJ-11  |   |
|                        | RS-485 Camera                 | 2x RJ-11  |   |
|                        | Copy                          | 2x High-speed serial interface (USB type connector) for external copy device (Front / Rear)   |   |
| HDD                    | Type                          | 1x 3.5 inch 250 GB HDD (Factory default), Up to 2x 500 GB HDDs (Specific model)   |   |
|                        | Maximum Capacity              | 15 TB (with 7x WJ-HDE300 extension units, 4x 500 GB HDDs installed in each unit)  |   |
|                        | RAID                          | RAID5 supported (with WJ-HDE300)  |   |
|                        | Partitioning                  | Normal / Event / Copy   |   |
| Viewer Software        | REC / Playback Control        | Play, Rev Play, Pause, FF, REW, Prev Image, Next Image  |   |
| Software               | Additional Functions          | Alteration detection, Save as JPEG/BMP, Two times zoom, Print   |   |
|                        | Supported OS                  | Same as Browser GUI   |   |
| Admin Software         | Supported OS                  | Same as Browser GUI   |   |
|                        | General Specifications        | Safety/EMC Standard   | UL (6500), FCC (Part15 ClassA), C-UL (E60065), DOC (ICES003 ClassA) |
| General Specifications | Power Source                  | 120 V AC, 60 Hz   | 220 ~ 240 V AC, 50 Hz   |
|                        | Power Consumption             | 75 W  |   |
|                        | Ambient Operating Temperature | +5 °C ~ +45 °C (41 °F ~ 113 °F)   |   |
|                        | Ambient Operating Humidity    | Less than 85 % (without condensation)   |   |
|                        | 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.)  |   |

## Appearance



### Trademarks and registered trademarks

– Microsoft, and Windows are registered trademarks of Microsoft Corporation in the U.S. and other countries.

### 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.
- All product pictures are NTSC models.

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