**System Overview**

Dahua's Pro Series network video recorders offer excellent performance and high recording quality for IP video surveillance applications. For applications where details are critical for identification, this professional NVR provides a powerful processor with up to 4K resolution. Additionally, the NVR features a mouse shortcut operation menu, remote management and control, center storage, edge storage, and backup storage.

Designed as a cost-effective and easy to install recorder, this NVR is an ideal addition to any security system that monitors public spaces, water conservancy, transportation, city centers, schools, and financial institutions.

The NVR is compatible with numerous third-party devices making it the perfect solution for surveillance systems with or without a video management system (VMS). Its open architecture supports multi-user access and it is compatible with ONVIF 2.4, enabling interoperability when combined with 4K cameras.

**Functions**

**Dewarping Mode**

The NVR has the ability to correct the distortion in a circular panoramic view produced by a fisheye lens. The NVR offers various dewarping modes for different installations and configurations.

**N+M Hot Standby**

The highly reliable N+M Hot Standby redundancy design provides a secure, fail-over technique ensuring immediate backup. In the event of a system failure, the slave instantly takes over the master ensuring no data is lost.

**4K Resolution**

4K resolution is a revolutionary breakthrough in image processing technology. 4K delivers four times the resolution of standard HDTV 1080p devices and offers superior picture quality and image details. 4K resolution improves the clarity of a magnified scene to view or record crisp forensic video from large areas.

**Intelligent Video System (IVS) Recording**

With built-in intelligent video analytics, the NVR has the ability to detect and analyze moving objects for improved video surveillance. The NVR provides standard intelligence at the edge allowing detection of multiple object behaviors such as abandoned or missing objects. IVS also supports Tripwire analytics, allowing the camera to detect when a pre-determined line has been crossed, People Counting, ideal for business intelligence, and Facial Detection, for searching or identification of individuals.

**Face Recognition**

The NVR stores face recognition video and data from a dedicated facial recognition camera connected to the NVR. The NVR triggers an event if the recognition database on the camera detects a face match.

**Heat Map**

The Heat Map option highlights the areas with the highest concentration of people. This information can then be exported into a customized report to assist in business or forensic analysis.

**Automatic Network Replenishment Technology (ANR)**

Network Video Recorders with the ANR function automatically store video data on an IP camera SD card when the network is disconnected. After recovery of the network, the NVR automatically retrieves the video data stored on the camera.

**Automatic License Plate Capture**

The NVR automatically captures and stores vehicle license plate images from a dedicated license plate capture camera connected to the NVR. During playback, an operator can perform a license plate search by Time and Date to view thumbnail images of all plates captured during the specified time period. License plate capture technology offers effective entrance/exit management, traffic surveillance, and parking lot monitoring.¹
### Technical Specification

#### System
- **Main Processor**: Embedded Quad-core Processor
- **Operating System**: Embedded Linux

#### Audio and Video
- **IP Camera Input**: 24 Channels
- **Two-way Talk**: Input: One (1) Channel, RCA
  Output: One (1) Channel, RCA

#### Display
- **Interface**: One (1) HDMI Port (4K)  
  One (1) VGA Port (1080p)
- **Resolution**: 3840 x 2160, 1920 x 1080, 1280 x 1024, 1280 x 720, 1024 x 768
- **Multi-screen Display**: 1/4/8/9/16/25
- **On-screen Display**: Camera Title, Time, Video Loss, Camera Lock, Motion Detection, Recording

#### Recording
- **Compression**: Smart H.265+, H.265, Smart H.264+, H.264, MJPEG
- **Resolution**: 12 MP, 8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 1080p, 1.3 MP, 720p, D1, CIF
- **Fisheye Dewarping**: One (1) Channel of 12 MP
- **Recording Bit Rate**: 320 Mbps
- **Bit Rate**: 16 Kbps to 20 Mbps per channel
- **Record Mode**: Manual, Schedule (Regular, Motion Detection), Alarm, IVS, Stop
- **Record Interval**: 1 to 120 minutes (default: 60 minutes)
  Pre-record: 1 to 30 s
  Post-record: 10 to 300 s

#### Video Detection and Alarm
- **Trigger Events**: Recording, PTZ, Tour, Alarm Out, Video Push, Email, FTP, Snapshot, Buzzer and Screen Tips
- **Video Detection**: Motion Detection, MD Zones: 396 (22 x 18), Video Loss and Tampering
- **Alarm Input**: Four (4) Channels, Low Level Effective, Green Terminal Interface
- **Relay Output**: Two (2) Channels, NO/NC Programmable, Green Terminal Interface

#### Playback and Backup
- **Sync Playback**: 1/4/9/16
- **NVR Video Output**: Four (4) Channels at 4K or 16 Channels at 1080p
- **Search Mode**: Time/Date, Alarm, MD and Exact Search (accurate to one second)
- **Playback Function**: Play, Pause, Stop, Rewind, Fast Play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Repeat, Shuffle, Backup Selection, Digital Zoom
- **Backup Mode**: USB Device, Network

#### Third-party Support
- **Dahua, Arecont Vision, AXIS, Bosch, Brickcom, Canon, CP Plus, Dynacolor, Honeywell, Panasonic, Pelco, Samsung, Sanyo, Sony, Videotec, Vivotek, and others**

#### Network
- **Ethernet**: One (1) RJ-45 Port (10/100/1000 Mbps)
- **PoE**: 24 Ports (IEEE802.3af/at), 10/100 Mbps
- **Forwarding Rate**: 320 Mbps
- **Network Function**: HTTP, HTTPS, TCP/IP, IPv4/IPv6, UPnP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPOE, DDNS, FTP, Alarm Server, IP Search (Support for Dahua IP cameras, DVRs, NVS)
- **Maximum User Access**: 128 Users
- **Mobile Operating System**: IOS, Android
- **Interoperability**: ONVIF 2.4, CGI Conformant

#### Storage
- **Internal HDD**: Two (2) SATA III Ports, Up to 10 TB capacity for each HDD
- **HDD Mode**: Single

#### Auxiliary Interface
- **USB**: One (1) USB 3.0 Port, rear panel  
  One (1) USB 2.0 Port, front panel
- **RS232**: One (1) Port for PC Communication and Keyboard

#### Electrical
- **Power Supply**: Single, 100 VAC to 240 VAC, 50/60 Hz
- **Power Consumption**: < 16 W, without HDD
- **Total PoE Power**: 25.5 W single port, 220 W total

#### Environmental
- **Operating Conditions**: -10° C to +55° C (+14° F to +131° F)
- **Storage Conditions**: -20° C to +70° C (-4° F to +158° F), 0 to 90% RH

#### Construction
- **Dimensions**: 1U, 440.0 mm x 419.96 mm x 43.65 mm  
  (17.30 in. x 16.50 in. x 1.70 in.)
- **Net Weight**: 4.50 kg (9.90 lb), without HDD
- **Gross Weight**: 6.45 kg (14.20 lb)
- **Installation**: Rack-mounted

#### Certifications
- **Safety**: UL 60950-1  
  CAN/CSA C22.2 No.60960-1
- **Electromagnetic Compatibility (EMC)**: FCC Part 15 Subpart B  
  ANSI C63.4-2014
Pro Series | N52A4P

Camera Support

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Cameras</td>
<td>N52A4P1</td>
<td>24-channel 1U 24 PoE Ports 4K H.265 Network Video Recorder, 1 TB</td>
</tr>
<tr>
<td>Analytics+ Cameras</td>
<td>N52A4P2</td>
<td>24-channel 1U 24 PoE Ports 4K H.265 Network Video Recorder, 2 TB</td>
</tr>
<tr>
<td>Face Recognition</td>
<td>N52A4P3</td>
<td>24-channel 1U 24 PoE Ports 4K H.265 Network Video Recorder, 3 TB</td>
</tr>
<tr>
<td>Perimeter Protection</td>
<td>N52A4P4</td>
<td>24-channel 1U 24 PoE Ports 4K H.265 Network Video Recorder, 4 TB</td>
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<tr>
<td>Metadata</td>
<td>N52A4P6</td>
<td>24-channel 1U 24 PoE Ports 4K H.265 Network Video Recorder, 6 TB</td>
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<tr>
<td></td>
<td>N52A4P8</td>
<td>24-channel 1U 24 PoE Ports 4K H.265 Network Video Recorder, 8 TB</td>
</tr>
<tr>
<td></td>
<td>N52A4P12</td>
<td>24-channel 1U 24 PoE Ports 4K H.265 Network Video Recorder, 12 TB</td>
</tr>
<tr>
<td>Accessory, Optional</td>
<td>PFH101</td>
<td>Rack Mount Tray, compatible with 1U, Mini 1U, and Compact 1U Storage Devices 482.60 mm x 281.20 mm x 43.70 mm (19.0 in. x 11.07 in. x 1.72 in.)</td>
</tr>
</tbody>
</table>

Intelligence

IVS triggers an alarm and takes a defined action for the following events:

**Standard Features**
- Tampering with the camera.
- Camera loses or changes focus drastically.
- Error writing to an onboard Micro SD card.
- Error sending or receiving data over the network.
- Unauthorized access to the camera.

**Premium Features**
- Motion: An object moves through any part of the scene.
- Tripwire: A target crosses a user-defined line.
- Intrusion: A target enters or exits a defined perimeter.
- Scene Change: A person or object moves the camera to change the scene or covers the camera to obscure the scene.
- Abandoned/Missing Object: A target leaves an object in designated area, or a target removes an object from the same designated area.

**Advanced Features**
- Facial Detection: Detects and captures a snapshot of a human face in a defined area within a scene.
- Face Recognition: Triggers an event if the connected facial recognition camera matches a face to one stored on the camera's database.
- People Counting: Measure the number of customers, visitors or passengers in a surveillance scene.
- Heat Map: Generates a visual representation of data.

Ordering Information

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<tbody>
<tr>
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<td>24-channel 1U 24 PoE Ports 4K H.265 Network Video Recorder, 1 TB</td>
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<tr>
<td></td>
<td>N52A4P2</td>
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Dimensions (mm/in.)

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