



- Dual NIC Supports Multi-Address, Fault Tolerance, and Load Balance
- Smart H.265+ and Smart H.264+ Video Compression
- Maximum 320 Mbps Incoming Bandwidth
- Up to 12 MP Resolution for Preview and Playback
- Two (2) Gigabit Ethernet Connections
- Support for IPC and UPnP Protocols
- Customized Live View Layout with Support for Panoramic Displays
- Intelligent Video System with Business Analytics
- Compatible with Dahua Smart Motion Detection Cameras<sup>1</sup>

## System Overview

Dahua's Pro Series network video recorders offer excellent performance and high recording quality for IP video security 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 back up storage.

The NVR is compatible with numerous third-party devices making it the perfect solution for security 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

### 4K Resolution

4K resolution is a revolutionary breakthrough in image processing technology. 4K delivers four times the resolution of Full HD 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.

### Smart Motion Detection

Smart Motion Detection, a component of Dahua's Analytics+ technology, improves alarm accuracy and decreases the number of false alarms. The advanced SMD algorithm analyzes a scene for human or vehicle motion, while filtering out other motion due to trees, leaves, animals, weather, and triggers an alarm when detected<sup>1</sup>.

### 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 security. 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.

### Dual NIC

The NVR offers Dual NICs that support Multi-Address, Fault Tolerance, and Load Balance. Multi-Address allows connection to two different network schemes to separate the camera network from the NVR network. Fault Tolerance allows NVR connections to two different switches on a network; if one switch goes down, the NVR swaps to the secondary switch. Load Balancing requires a connection to a managed switch that can switch the NVR between networks depending on network traffic.

### Face Detection+

The NVR stores Face Detection+ video and data from a dedicated camera with Face Detection+ connected to the NVR. The NVR triggers an event if the camera detects a face with a specific set of features.

### 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.

## Technical Specification

### System

Main Processor	Embedded Quad-core Processor
Operating System	Embedded Linux

### Audio and Video

IP Camera Input	32 Channels
Two-way Talk	Input: One (1) Channel, RCA Output: Two (2) Channels, RCA

### Display

Interface	Two (2) HDMI Ports: • HDMI-1: 4K • HDMI-2: 1080p Two (2) VGA Ports (1080p)	
Native Output Resolution	HDMI-1	3840 x 2160, 1920 x 1080, 1280 x 1024, 1280 x 720, 1024 x 768
	VGA-1	1920 x 1080, 1280 x 1024, 1280 x 720, 1024 x 768
	HDMI-2 / VGA-2	1920 x 1080

Maximum Decoding	Two (2) Channels of 12MP at 20 fps Four (4) Channels of 8MP at 30 fps Five (5) Channels of 6MP at 30 fps Six (6) Channels of 5MP at 30 fps Eight (8) Channels of 4MP at 30 fps Eleven (11) Channels of 3MP at 30 fps Sixteen (16) Channels of 1080p at 60 fps Sixteen (16) Channels of 1080p/720p at 30 fps
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Fisheye Dewarping	Dewarps a single channel at a time
Multi-screen Display	First Screen: 1/4/8/9/16/25/36 Second Screen: 1/4/8/9/16
On-screen Display	Camera Title, Time, Camera Lock, Motion Detection, Recording

### Recording

Compression	Smart H.265+, H.265, Smart H.264+, H.264, MJPEG
Supported IP Camera Resolution	12 MP, 8 MP, 6 MP, 5 MP, 4 MP, 3 MP, 1080p, 1.3 MP, 720p, D1, CIF
Maximum Incoming Bandwidth	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, Snapshot, Buzzer, and Screen Tips
Video Detection	Motion Detection, MD Zones: 396 (22 x 18), Video Loss and Tampering
Alarm Input	16 Channels
Relay Output	Six (6) Channels,

### 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, Backup Selection, Digital Zoom
Backup Mode	USB Device, Network, eSATA Device

### Third-party Support

Third-party Support	Arecont Vision, Airlive, AXIS, Canon, Dynacolor, JVC, LG, Panasonic, Pelco, PSIA, Samsung, Sanyo, Sony, Watchnet and others
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### Network

Ethernet	Two (2) RJ-45 Ports (10/100/1000 Mbps), Independent or Joint
Forwarding Bandwidth	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, SDK, CGI

### Storage

Internal HDD	Four (4) SATA III Ports, Up to 10 TB capacity for each HDD
eSATA	One (1) Port

### Auxiliary Interface

USB	Two (2) USB 3.0 Ports, rear panel One (1) USB 2.0 Port, front panel
RS232	One (1) Port for PC Communication and Keyboard
RS485	One (1) Connection for PTZ Control

### Electrical

Power Supply	Single, 100 VAC to 240 VAC, 50/60 Hz
Power Consumption	< 16.7 W, without HDD
Smart Fan	NVR Automatically adjusts fan running speed

### Environmental

Operating Conditions	-10° C to +55° C (+14° F to +131° F), 86 to 106 kpa
Storage Conditions	-20° C to +70° C (-4° F to +158° F), 0 to 90% RH

### Construction

Dimensions	1.5U, 440.0 mm x 411.20 mm x 76.0 mm (17.32 in. x 16.19 in. x 2.99 in.)
Net Weight	4.30 kg (9.50 lb), without HDD
Gross Weight	7.0 kg (15.40 lb), without HDD
Installation	Rack-mount

### Certifications

CE	EN55022, EN55024, EN50130-4, EN60950-1
Safety	UL 60950-1
Electromagnetic Compatibility (EMC)	FCC CFR 47 Part 15 Subpart B ANSI C63.4-2014

### Camera Support

Thermal Cameras	16 Channels
Analytics+ Cameras	
Face Detection	Four (4) Channels
Perimeter Protection	16 Channels
Metadata	10 Channels
Smart Motion Detection <sup>1</sup>	Any channel connected to a Dahua Network camera with Smart Motion Detection

### Intelligence

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

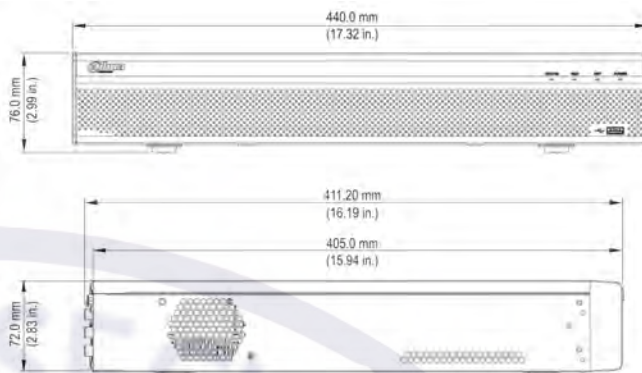
Standard Features	<ul style="list-style-type: none"> <li>• Tampering with the camera.</li> <li>• Camera loses or changes focus drastically.</li> <li>• Error writing to an onboard Micro SD card.</li> <li>• Error sending or receiving data over the network.</li> <li>• Unauthorized access to the camera.</li> </ul>
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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 Detection+	Any channel to a Dahua Network camera with Face Detection+.
People Counting	Measure the number of customers, visitors or passengers in a scene.
Heat Map	Generates a visual representation of data.

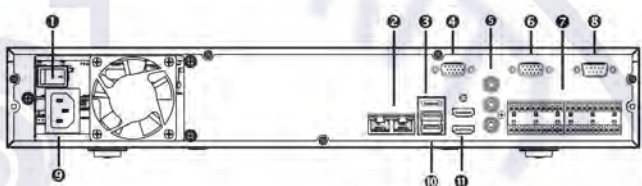
### Ordering Information

	N54B5N	No pre-installed HDD
32-channel NVR	N54B5N4	32-channel 1.5U 4K H.265 Network Video Recorder, 4 TB
	N54B5N6	32-channel 1.5U 4K H.265 Network Video Recorder, 6 TB
	N54B5N8	32-channel 1.5U 4K H.265 Network Video Recorder, 8 TB
	N54B5N10	32-channel 1.5U 4K H.265 Network Video Recorder, 10 TB
	N54B5N20	32-channel 1.5U 4K H.265 Network Video Recorder, 20 TB
	N54B5N40	32-channel 1.5U 4K H.265 Network Video Recorder, 40 TB

### Dimensions (mm/in.)



### Rear Panel



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|--|---|
| 1 On/Off Button                              | 7 Alarm Input/Output and RS485 Connection (use A/B ports) |
| 2 1000 Mbps Ethernet Port, RJ-45 (x2)        | 8 RS232 Port  |
| 3 eSATA Port                                 | 9 Power Input   |
| 4 VGA-1 Output                               | 10 USB 3.0 Port (x2)                                      |
| 5 Audio Input, RCA<br>Audio Output, RCA (x2) | 11 HDMI-1 Output<br>HDMI-2 Output                         |
| 6 VGA-2 Output                               |   |

1. The recorder SMD functions are available only when connected to a Dahua network camera with SMD functionality. Pair a Smart Motion Detection camera with a Dahua recording device that also offers SMD functionality to take advantage of SMD alarm filtering and object classification when searching and playing back recorded video.

