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Real HD DS-9664NI-M8

Real HD DS-9664NI-M8 4K 64 Channel Enterprise NVR Instruction Manual

Model: DS-9664NI-M8

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of the Real HD DS-9664NI-M8 4K 64 Channel Enterprise Network Video Recorder (NVR). This NVR is designed for professional surveillance systems, supporting up to 64 IP camera inputs and advanced recording capabilities up to 32MP resolution.

▪ Specification

Video and Audio	
IP Video Input	64-ch
Incoming Bandwidth	400 Mbps
Outgoing Bandwidth	400 Mbps
HDMI 1 Output	8K (7680 × 4320)/30Hz, 4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080/60Hz
HDMI 2 Output	4K (3840 × 2160)/60Hz, 4K (3840 × 2160)/30Hz, 2K (2560 × 1440)/60Hz, 1920 × 1080/60Hz *: When HDMI 1 output resolution is 8K, the maximum HDMI 2 output resolution is 1080p.
VGA 1 Output	1920 × 1080/60Hz
VGA 2 Output	1920 × 1080/60Hz
Video Output Mode	HDMI 1 and VGA 1 provide simultaneous video output, and work as the main output; HDMI 2 and VGA 2 provide simultaneous video output, and work as the auxiliary output
CVBS Output	1-ch, BNC (1.0 Vp-p, 75 Ω), resolution: PAL: 704 × 576, NTSC: 704 × 480
Audio Output	2-ch, RCA (Linear, 1 KΩ)
Two-Way Audio	1-ch, RCA (2.0 Vp-p, 1 KΩ, using the audio input)
Decoding	
Decoding Format	H.265+/H.265/H.264+/H.264
Recording Resolution	32 MP/24 MP/12 MP/8 MP/7 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA/4CIF/DCIF/2CIF/CIF/QCIF
Synchronous playback	16-ch
Decoding Capability	2-ch@32 MP (30 fps) + 2-ch@8 MP (30 fps)/10-ch@8 MP (30 fps)/20-ch@4 MP (30 fps)/40-ch@1080p (30 fps)
Audio Compression	G.711ulaw/G.711alaw/G.722/G.726/AAC/MP2L2/PCM

Figure 1: Key features of the DS-9664NI-M8 NVR, highlighting its capabilities such as 64 IP camera inputs, 32MP recording, 400 Mbps bandwidth, dual HDMI/VGA outputs, special camera support, advanced streaming, RAID, and IP speaker connectivity.

Key Features Overview:

- Up to 64-channel IP camera inputs.
- Decoding capacity: 2-ch@32 MP, 2-ch@24 MP, 4-ch@12 MP, 8-ch@8 MP, 16-ch@4 MP, or 32-ch@1080p.
- Up to 400 Mbps incoming and 400 Mbps outgoing bandwidth.
- Dual HDMI (different source) and dual VGA (different source) interfaces, supporting 8K or dual 4K video outputs.
- Supports special cameras including people counting, ANPR (automatic number plate recognition), and fisheye cameras.
- Advanced streaming technology for smooth live view in poor network conditions.
- Supports RAID 0, 1, 5, 6, 10 and N+M hot spare for reliable data storage.
- Up to 8-channel IP speakers can be connected.

2. PRODUCT OVERVIEW



Figure 2: Front view of the Real HD DS-9664NI-M8 NVR unit, showing its rack-mountable design and front panel indicators.

The DS-9664NI-M8 is a robust network video recorder designed for enterprise-level surveillance. It features a standard rack-mountable chassis, providing efficient space utilization in server rooms or dedicated surveillance cabinets. The front panel typically includes status indicators and USB ports for easy access.

DS-9664NI-M8 M Series 8K NVR

Key Feature

- Up to 64-ch IP camera inputs
- Up to 2-ch@32 MP + 2-ch@8 MP/10-ch@8 MP/20-ch@4 MP/40-ch@1080p decoding capacity
- Up to 400 Mbps incoming bandwidth and 400 Mbps outgoing bandwidth
- 2 HDMI (different source) and 2 VGA (different source) interfaces, 8K or dual 4K video outputs
- Supports special cameras, including people counting camera, ANPR (automatic number plate recognition) camera, and fisheye camera
- Advanced streaming technology enables smooth live view in poor network conditions
- Supports RAID 0, 1, 5, 6, 10 and N+M hot spare for even more reliable data storage, effectively avoids data loss risks
- Up to 8-ch IP speakers can be connected

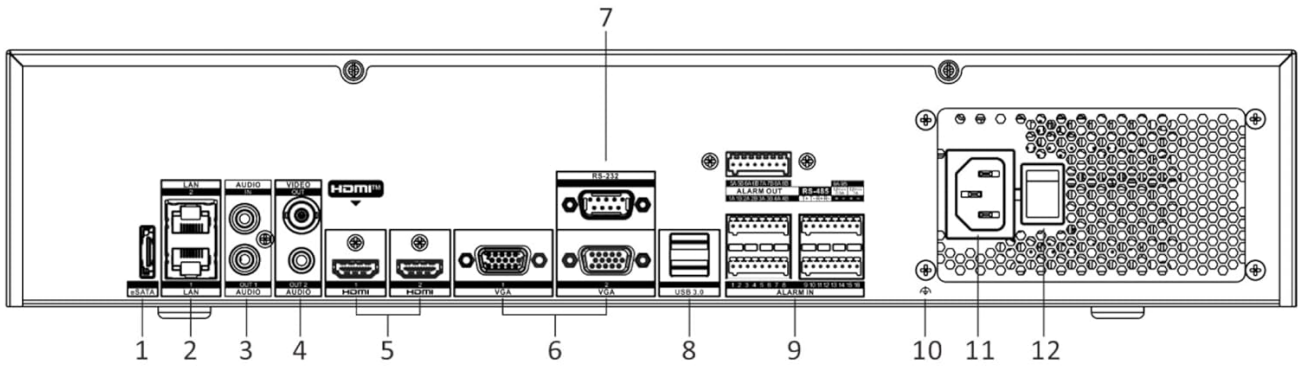


Figure 3: Side view of the Real HD DS-9664NI-M8 NVR, illustrating its ventilation design for optimal heat dissipation.

Physical Interface

The rear panel of the NVR provides various ports for connecting cameras, monitors, network, and other peripherals. Refer to the diagram below for a detailed layout of the interfaces.

Physical Interface



No.	Description	No.	Description
1	eSATA interface	7	RS-232 Serial interface
2	LAN interfaces	8	USB 3.0 interfaces
3	Audio in and out	9	Alarm in, alarm out, RS-485 serial interface, Ctrl 12V and DC 12V
4	Audio out and video out	10	GND
5	HDMI 1 and HDMI 2 interfaces	11	100 to 240 VAC power supply
6	VGA 1 and VGA 2 interfaces		

Available Model

DS-9664NI-M8

Figure 4: Rear panel interface diagram of the DS-9664NI-M8 NVR, showing all connection ports.

No.	Description	No.	Description
1	eSATA interface	7	RS-232 Serial interface
2	LAN interfaces	8	USB 3.0 interfaces
3	Audio in and out	9	Alarm in, alarm out, RS-485 serial interface, Ctrl 12V and DC 12V
4	Audio out and video out	10	GND
5	HDMI 1 and HDMI 2 interfaces	11	100 to 240 VAC power supply
6	VGA 1 and VGA 2 interfaces	12	Power switch

3. SETUP

3.1 Hard Drive Installation

The DS-9664NI-M8 NVR supports up to 8 SATA HDDs and 1 eSATA interface. Hard drives are not included with the NVR and must be purchased separately. Follow these general steps for installation:

1. Power off the NVR and disconnect all cables.
2. Open the NVR chassis by removing the screws on the rear panel and sliding the cover off.
3. Mount the SATA hard drives into the designated bays using the provided screws.
4. Connect the SATA data and power cables from the NVR motherboard to each hard drive.

5. Securely close the NVR chassis.

3.2 Connecting Peripherals

Before powering on the NVR, connect all necessary peripherals:

- **IP Cameras:** Connect IP cameras to the LAN interfaces (No. 2) using Ethernet cables. Ensure cameras are powered and configured correctly.
- **Monitors:** Connect a monitor to either the HDMI (No. 5) or VGA (No. 6) output ports. For 8K resolution, use HDMI 1.
- **Network:** Connect the NVR to your local network using one of the LAN interfaces (No. 2).
- **USB Devices:** Connect a mouse, keyboard, or USB storage devices to the USB 2.0 (front panel) or USB 3.0 (No. 8) ports.
- **Audio:** Connect audio input/output devices to the Audio in/out ports (No. 3, No. 4).
- **Alarm/Serial:** Connect alarm devices or serial communication devices to the respective ports (No. 7, No. 9).

3.3 Powering On

After all connections are made, connect the power cable to the 100 to 240 VAC power supply port (No. 11) and then to a power outlet. Press the power switch (No. 12) to turn on the NVR. The system will boot up, and you should see the initial setup wizard on the connected monitor.

4. OPERATION

4.1 Initial Configuration

Upon first boot, the NVR will guide you through an initial setup wizard. This typically includes setting up an administrator password, network settings (DHCP or static IP), date and time, and hard drive initialization. It is crucial to format the installed hard drives before recording can begin.

4.2 Video Input and Recording

The NVR supports various recording resolutions and decoding capabilities. You can configure recording schedules, motion detection, and other event-triggered recordings through the NVR's graphical user interface (GUI). The system supports H.265+/H.265/H.264+/H.264 video compression formats for efficient storage.

4.3 Network Configuration

Access the network settings in the NVR's menu to configure IP addresses, subnet masks, gateways, and DNS servers. The NVR supports various network protocols including TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SMTP, SNMP, and ONVIF (Version 2.2) for broad compatibility with IP cameras.

4.4 RAID Configuration

For enhanced data reliability and performance, the NVR supports RAID 0, 1, 5, 6, 10, and N+M hot spare configurations. Access the RAID management section in the NVR's system settings to create and manage RAID arrays. This helps protect against data loss in case of a hard drive failure.

4.5 Mobile Access (HIK-CONNECT)

To access your NVR and view live camera feeds remotely, download and install the HIK-CONNECT application on your mobile device. The app is available on the App Store, Google Play, and Android Market.



Figure 5: HIK-CONNECT mobile application download options and interface preview for remote NVR access.

Follow the in-app instructions to register an account, add your NVR using its serial number or QR code, and configure remote viewing settings.

5. SPECIFICATIONS

5.1 Technical Specifications

The following table details the technical specifications of the Real HD DS-9664NI-M8 NVR:

Network	
Network Protocol	TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SADP, SMTP, SNMP, NFS, iSCSI, ISUP, UPnP™, HTTP, HTTPS, ONVIF(Version 2.2), OTAP
Network Interface	2, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface
Camera Access Protocol	ONVIF (Version 2.5), RTSP
RAID	
RAID Type	RAID0, RAID1, RAID5, RAID6, RAID10
Auxiliary Interface	
Serial Interface	1 RS-485 (full-duplex), 1 RS-232
SATA	8 SATA interfaces supporting hot-plug
eSATA	1 eSATA interface
Capacity	Up to 16 TB capacity for each disk
Alarm In/Out	16/9
USB Interface	Front panel: 2 × USB 2.0; Rear panel: 2 × USB 3.0
Ctrl 12V	Controllable 12 VDC, 1 A power output for external alarm device; The power will be turned on when the alarm output is triggered. *: The Ctrl 12V power is controlled by alarm output 9.
DC 12V	12 VDC, 1 A power output
General	
Power Supply	100 to 240 VAC, 50 to 60 Hz
Consumption	≤ 50 W (without HDD)
Working Temperature	-10 °C to 55 °C (14 °F to 131 °F)
Working Humidity	10% to 90%
Chassis	2U chassis
Dimension (W × D × H)	442 × 462 × 88 mm (17.4" × 18.2" × 3.5")
Weight	≤ 10 kg (22 lb)
Certification	
Obtained Certification	CE, FCC
FCC	Part 15 Subpart B, ANSI C63.4-2014
CE	EN 55032:2015, EN 61000-3-2, EN 61000-3-3, EN 50130-4

Figure 6: Detailed technical specifications for the DS-9664NI-M8 NVR, including video, audio, network, RAID, and general parameters.

Category		Parameter
Video and	IP Video Input	64-ch
	Incoming Bandwidth	400 Mbps
	Outgoing Bandwidth	400 Mbps

Video and Audio Category		Parameter
	HDMI 1 Output	8K (7680 × 4320)/30 Hz, 4K (3840 × 2160)/60 Hz, 4K (3840 × 2160)/30 Hz, 2K (2560 × 1440)/60 Hz, 1920 × 1080/60 Hz
	HDMI 2 Output	4K (3840 × 2160)/60 Hz, 4K (3840 × 2160)/30 Hz, 2K (2560 × 1440)/60 Hz, 1920 × 1080/60 Hz (Max 1080p when HDMI 1 is 8K)
	VGA 1 Output	1920 × 1080/60 Hz
	VGA 2 Output	1920 × 1080/60 Hz
Decoding	Decoding Format	H.265+/H.265/H.264+/H.264
	Recording Resolution	32 MP/24 MP/12 MP/8 MP/7 MP/6 MP/5 MP/4 MP/3 MP/1080p/UXGA/720p/VGA/4CIF/DCIF/2CIF/CIF/QCIF
	Synchronous Playback	16-ch
	Decoding Capability	2-ch@32 MP (30 fps) + 2-ch@8 MP (30 fps)/10-ch@8 MP (30 fps)/20-ch@4 MP (30 fps)/40-ch@1080p (30 fps)
	Audio Compression	G.711ulaw/G.711alaw/G.722/G.726/AAC/MP2L2/PCM
Network	Network Protocol	TCP/IP, DHCP, IPv4, IPv6, DNS, DDNS, NTP, RTSP, SADP, SMTP, SNMP, NFS, iSCSI, UPnP, HTTP, HTTPS, ONVIF (Version 2.2), OTAP
	Network Interface	2, RJ-45 10/100/1000 Mbps self-adaptive Ethernet interface
	Camera Access Protocol	ONVIF (Version 2.5), RTSP
RAID	RAID Type	RAID0, RAID1, RAID5, RAID6, RAID10
Auxiliary Interface	Serial Interface	1 RS-485 (full-duplex), 1 RS-232
	SATA	8 SATA interfaces supporting hot-plug
	eSATA	1 eSATA interface
	Capacity	Up to 16 TB capacity for each disk
	USB Interface	Front panel: 2 × USB 2.0; Rear panel: 2 × USB 3.0
General	Power Supply	100 to 240 VAC, 50 to 60 Hz
	Consumption	≤ 50 W (without HDD)
	Working Temperature	-10 °C to 55 °C (14 °F to 131 °F)
	Working Humidity	10% to 90%

Category		Parameter
	Chassis	2U chassis
	Weight	≤ 10 kg (22 lb)
Certification	Obtained Certification	CE, FCC
	FCC	Part 15 Subpart B, ANSI C63.4-2014

5.2 Dimensions

The physical dimensions of the NVR are provided below:

Dimension

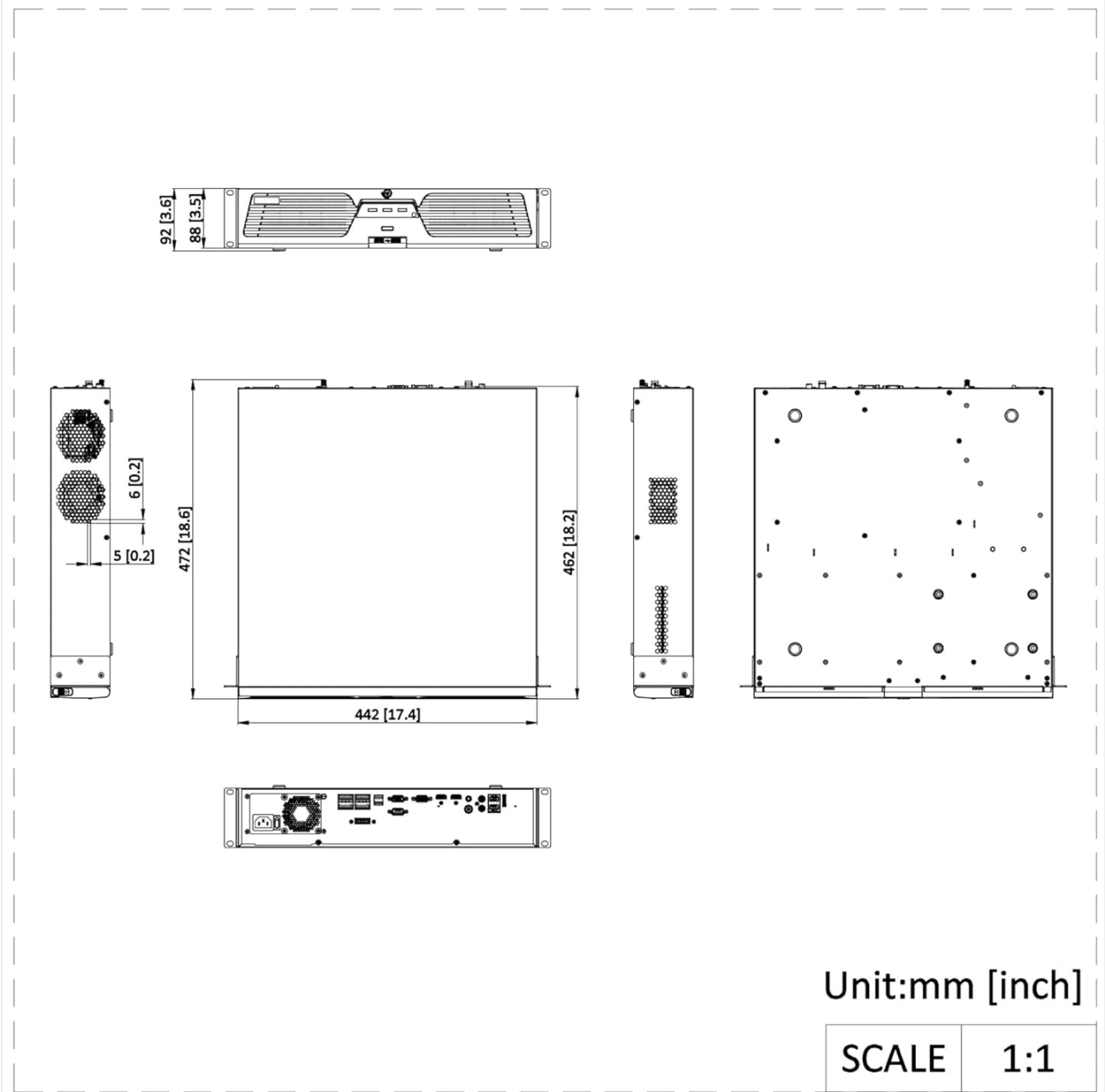


Figure 7: Dimensional drawing of the DS-9664NI-M8 NVR, showing measurements in millimeters and inches.

- **Dimensions (W × D × H):** 442 × 462 × 88 mm (17.4" × 18.2" × 3.5")

6. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your NVR system.

- **Cleaning:** Regularly clean the exterior of the NVR with a soft, dry cloth. Ensure ventilation openings are free from dust and obstructions to prevent overheating. Do not use liquid cleaners directly on the unit.
- **Environmental Conditions:** Operate the NVR within the specified temperature (-10 °C to 55 °C) and humidity (10% to 90%) ranges. Avoid direct sunlight, excessive heat, and high moisture environments.
- **Firmware Updates:** Periodically check the manufacturer's website for firmware updates. Keeping the firmware updated can improve performance, add new features, and enhance security.
- **Data Backup:** Regularly back up critical recordings to external storage to prevent data loss, especially if not utilizing RAID.

7. TROUBLESHOOTING

This section addresses common issues you might encounter with your NVR. For more complex problems, refer to the online support resources or contact technical support.

- **No Power:** Ensure the power cable is securely connected to both the NVR and a working power outlet. Check the power switch and any associated circuit breakers.
- **No Video Output:** Verify that the monitor is correctly connected to the HDMI or VGA port and is set to the correct input source. Check the resolution settings on the NVR if possible.
- **Cameras Not Recording:** Confirm that hard drives are installed, initialized, and healthy. Check recording schedules and ensure cameras are properly connected and configured within the NVR interface.
- **Network Connectivity Issues:** Ensure Ethernet cables are securely connected. Verify NVR IP address, subnet mask, gateway, and DNS settings are correct and match your network configuration. Test network cables.
- **Forgotten Password:** Refer to the NVR's specific password reset procedure, which may involve a physical reset button or a software utility.

8. WARRANTY AND SUPPORT

8.1 Warranty Information

The Real HD DS-9664NI-M8 NVR comes with a **1-year manufacturer's warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims. The warranty does not cover damage caused by misuse, accidents, unauthorized modifications, or improper installation.

8.2 Technical Support

For technical assistance, troubleshooting, or warranty inquiries, please contact Real HD customer support. Refer to the official Real HD website for the most current contact information, support resources, and FAQs.

Online Resources: Visit the Real HD official website for product documentation, firmware updates, and support forums.