Hikvision DS-7616NI-I2/16P

Hikvision DS-7616NI-I2/16P 16-Channel PoE 4K NVR User Manual

Model: DS-7616NI-I2/16P | Brand: Hikvision

1. Introduction

This manual provides detailed instructions for the installation, operation, and maintenance of the Hikvision DS-7616NI-I2/16P 16-Channel PoE 4K Network Video Recorder (NVR). Please read this manual thoroughly before using the product to ensure correct and safe operation.

Key Features:

- Supports up to 8 MP high-definition live view, storage, and playback.
- Features 16 independent Power over Ethernet (PoE) network interfaces for direct camera connection.
- Provides 160Mbps incoming bandwidth for efficient data handling.
- Equipped with up to 2 SATA interfaces for hard disk drives (HDDs), supporting up to 6TB capacity per HDD (HDDs sold separately).
- Compatible with various specialized cameras, including thermal, fisheye, people counting, heatmap, and Automatic Number Plate Recognition (ANPR) cameras.
- Incorporates dual-OS design for enhanced system reliability and supports firmware upgrades.
- Offers support for various Video Content Analytics (VCA) detection alarms and VCA search functions.

2. Product Overview

2.1 Package Contents

Verify that all components are present in the package. The main unit is the Hikvision DS-7616NI-I2/16P NVR. Hard disk drives are not included and must be purchased separately for local recording.



Image: Hikvision DS-7616NI-I2/16P NVR with its retail packaging, highlighting key features like high definition video stream input and remote management.

2.2 Front Panel



Image: Front view of the Hikvision NVR, showing indicator lights and a USB port for easy access.

The front panel typically includes status indicators (power, HDD, network) and a USB 2.0 port for convenient access, such as connecting a mouse or for data backup.

2.3 Rear Panel Interfaces

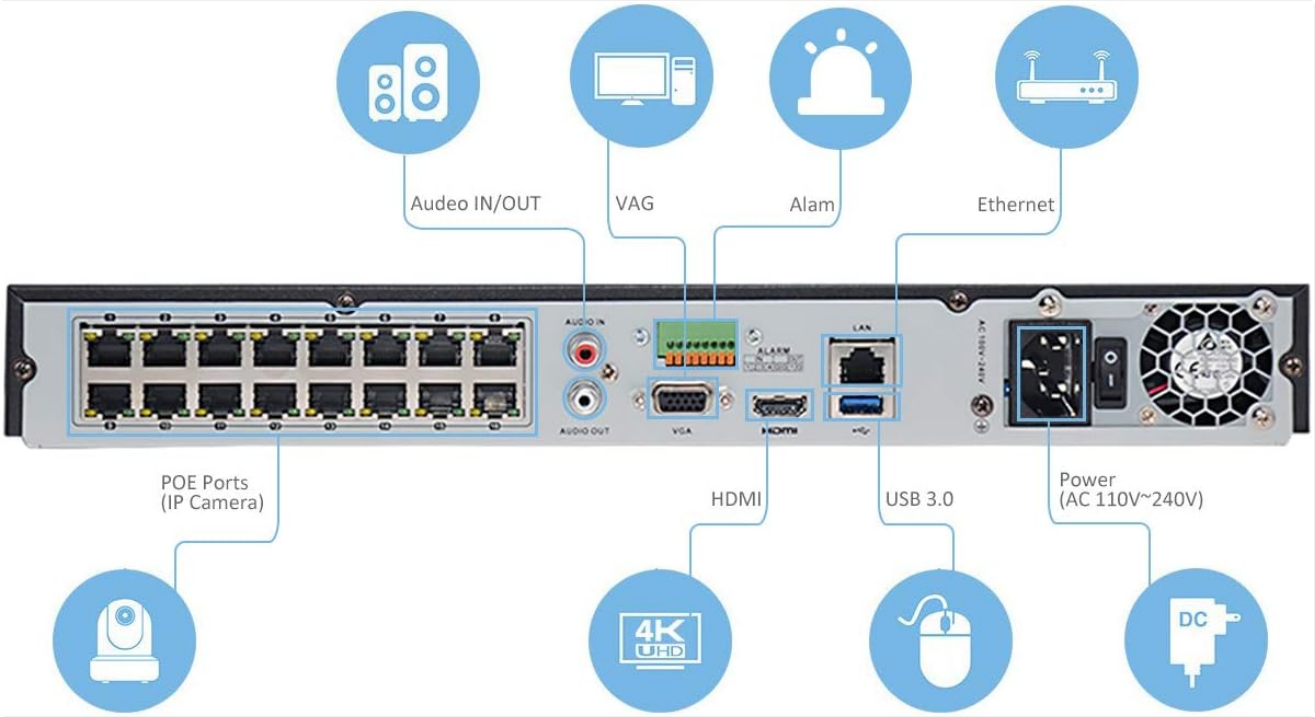


Image: Rear panel of the Hikvision NVR, clearly labeling all input and output ports including PoE ports, Audio In/Out, VGA, HDMI, USB 3.0, LAN, Alarm In/Out, and Power input.

The rear panel provides all necessary connection interfaces:

- **PoE Ports (IP Camera):** 16 independent 10/100 Mbps PoE Ethernet interfaces for connecting IP cameras.
- **Audio In/Out:** 1-channel RCA (2.0 Vp-p, 1kΩ) for two-way audio.
- **VGA Output:** 1-channel for monitor connection, supporting up to 1920x1080P/60Hz.
- **HDMI Output:** 1-channel for high-definition monitor connection, supporting up to 4K (3840x2160)/60Hz resolution.
- **USB 3.0:** 1 port for high-speed data transfer, typically used for backup or connecting a mouse.
- **LAN (Network Interface):** 1 RJ-45 10/100/1000Mbps self-adaptive Ethernet interface for network connection.
- **Alarm In/Out:** 4-channel alarm input, 1-channel alarm output.
- **Power Input:** AC 100 to 240 VAC, 50 to 60 Hz.

3. Setup and Installation

3.1 Hard Disk Drive (HDD) Installation

The NVR supports up to two SATA HDDs, with a maximum capacity of 6TB per drive. HDDs are not included and must be installed before recording can begin.

1. Power off the NVR and disconnect all cables.
2. Remove the cover screws and slide open the NVR casing.
3. Mount the HDD(s) into the designated bays using the provided screws.
4. Connect the SATA data and power cables from the NVR to the HDD(s).
5. Replace the NVR casing and secure the screws.

3.2 Initial Connections

1. **Connect a Monitor:** Use an HDMI or VGA cable to connect the NVR to a monitor.
2. **Connect a Mouse:** Plug the USB mouse into a USB port on the front or rear panel.
3. **Connect to Network:** Connect the NVR's LAN port to your router or network switch using an Ethernet cable.
4. **Connect IP Cameras:** Connect your PoE-enabled IP cameras directly to the NVR's PoE ports using Ethernet cables. The NVR will power the cameras and receive video data.
5. **Power On:** Connect the power adapter to the NVR and then to a power outlet. The NVR will start automatically.

3.3 Mobile Access Setup (Hik-Connect App)

The Hik-Connect app allows for remote viewing and management of your NVR system.

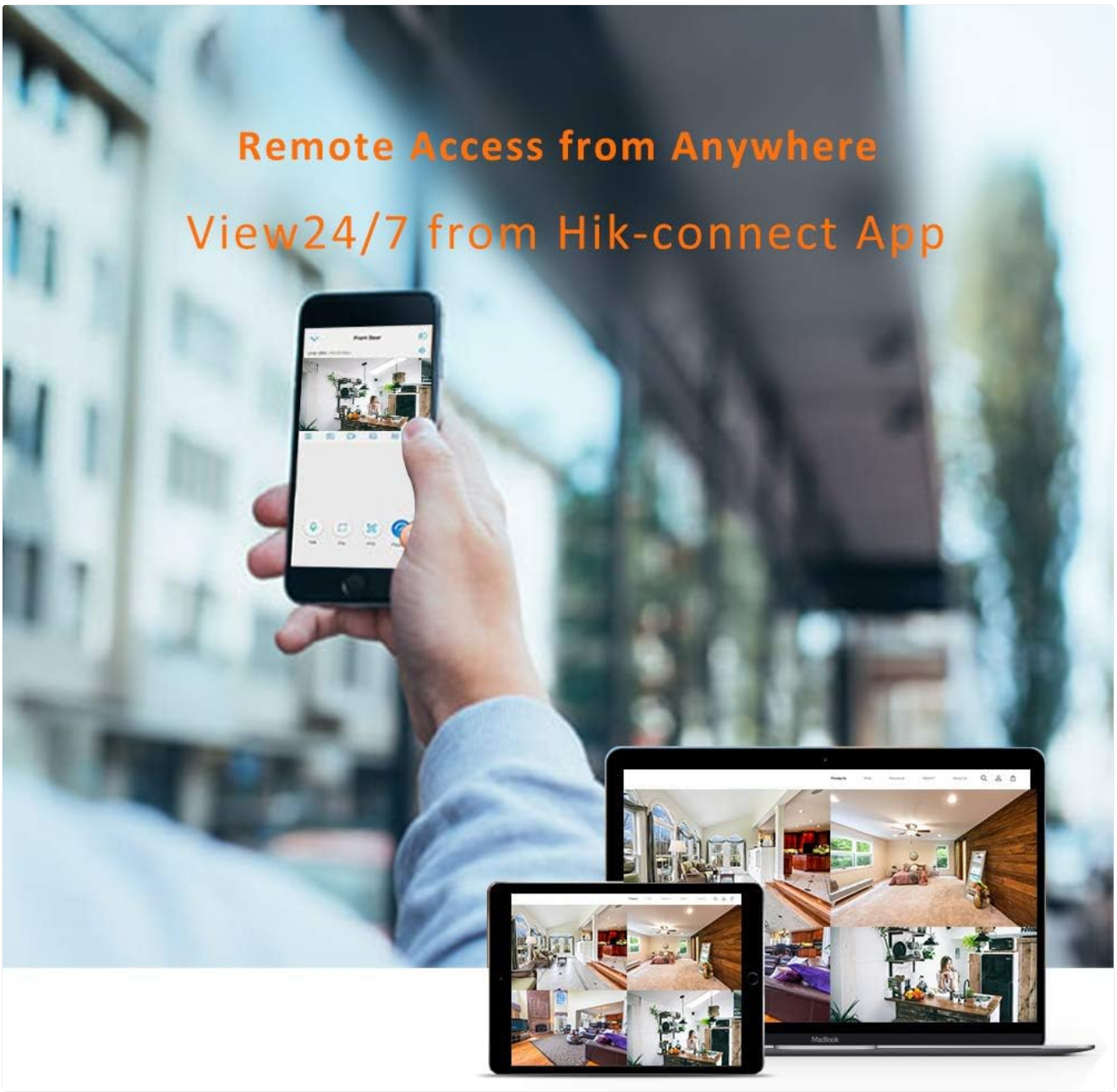


Image: A visual guide illustrating the simple connection of the NVR to a network and the subsequent steps to download the Hik-Connect application for mobile access.

1. **Simple Connection:** Ensure your NVR is connected to the internet via your router.
2. **Download Hik-Connect APP:** Search for "Hik-Connect" in your mobile device's app store (iOS App Store or Google Play Store) and install it.

3. **Register/Login:** Open the app, register a new account, or log in with an existing one.
4. **Add Device:** Follow the in-app instructions to add your NVR by scanning the QR code on the NVR or manually entering its serial number.
5. **Enjoy Live View:** Once added, you can access live camera feeds and playback recordings remotely.

4. Operation

4.1 User Interface Navigation

Upon startup, you will be guided through an initial setup wizard. Use the connected mouse to navigate the graphical user interface (GUI) on the monitor. The main menu provides access to live view, playback, recording settings, network settings, and system configuration.

4.2 Live View and Playback

The NVR supports live viewing of up to 16 channels simultaneously. You can select individual cameras or multiple camera layouts. For playback, access the playback menu, select the desired camera(s) and time range to review recorded footage.

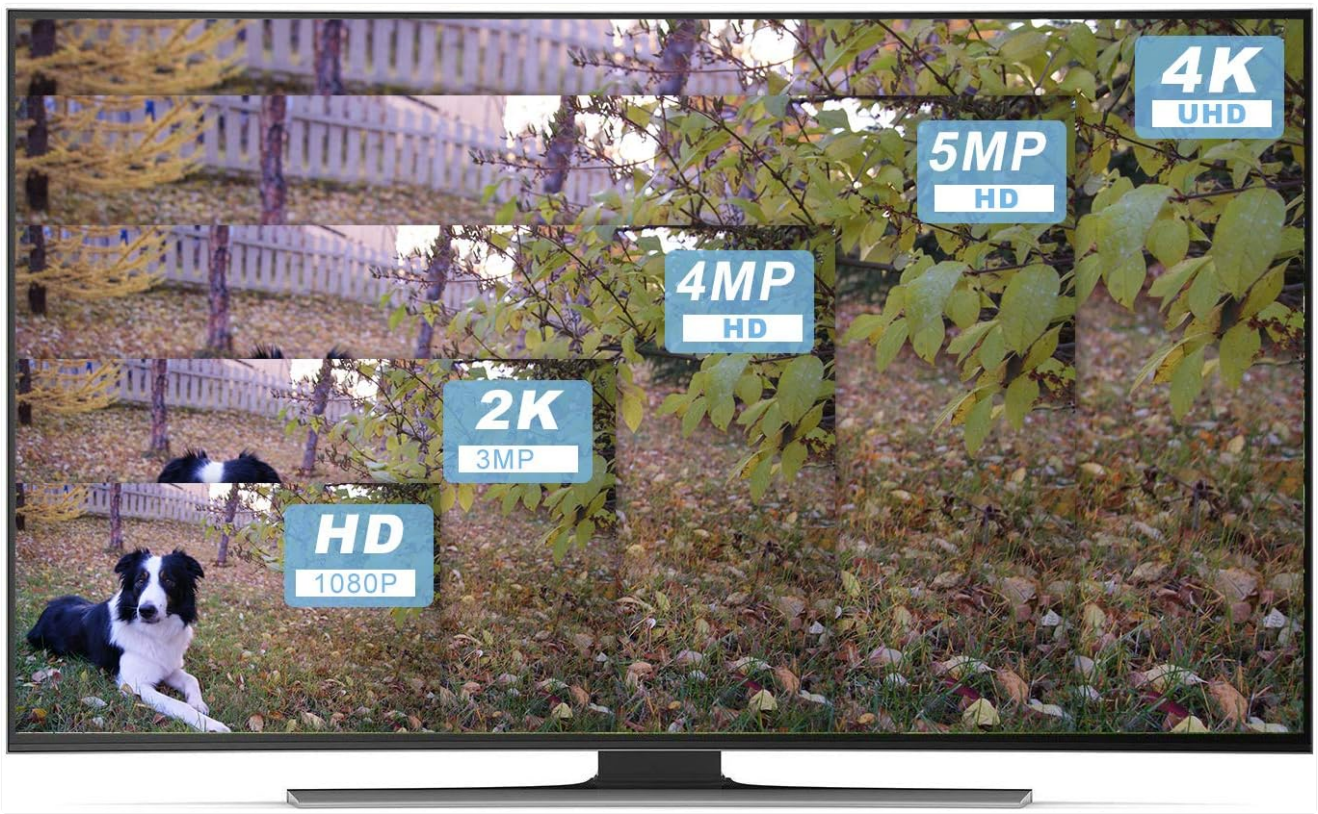


Image: A visual comparison demonstrating the difference in detail and clarity across various video resolutions, from standard HD (1080P) up to 4K UHD, highlighting the NVR's capability to handle high-resolution streams.

The NVR supports recording resolutions up to 12MP, ensuring high-detail footage. Playback is supported for resolutions including 8MP, 6MP, 5MP, 4MP, 3MP, 1080p, UXGA, 720p, VGA, 4CIF, DCIF, 2CIF, CIF, and QCIF.

4.3 Remote Access

Once the Hik-Connect app is configured, you can access your NVR system from anywhere with an internet connection. This includes live viewing, playback, and receiving alarm notifications.



Image: Multiple devices (smartphone, tablet, laptop) displaying live camera feeds via the Hik-Connect app, demonstrating the NVR's remote access capabilities.

4.4 Advanced Features (VCA)

The NVR supports various Video Content Analytics (VCA) functions. These features, when used with compatible cameras, can provide intelligent detection capabilities such as line crossing detection, intrusion detection, and object removal detection. Refer to the NVR's on-screen menu for configuration of these features.

5. Maintenance

5.1 Firmware Upgrade

Regularly check for and install firmware updates to ensure optimal performance, security, and access to new features. Firmware updates can typically be performed via the NVR's web interface or through the Hik-Connect app. Always back up your configuration before performing a firmware upgrade.

5.2 Hard Disk Management

Monitor the health and capacity of your installed HDDs through the NVR's system settings. Replace HDDs if they

show signs of failure or if more storage capacity is required. Ensure proper shutdown procedures are followed before replacing any hardware components.

5.3 Environmental Conditions

To ensure the longevity and stable operation of the NVR, operate it within the specified environmental conditions:

- **Working Temperature:** -10 °C to +55 °C (+14 °F to +131 °F)
- **Working Humidity:** 10% to 90% (non-condensing)

Avoid exposing the NVR to extreme temperatures, high humidity, dust, or direct sunlight.

6. Troubleshooting

This section addresses common issues you might encounter with your Hikvision NVR.

- **NVR Offline / Cameras Not Connecting:**
  - Verify all network cables are securely connected to the NVR, cameras, and router/switch.
  - Ensure the NVR has a valid IP address and network connectivity.
  - Check if cameras are receiving power from the PoE ports.
  - Restart the NVR and the affected cameras.
  - Confirm camera IP addresses are not conflicting and are within the NVR's network range.
- **No Hard Drive Detected / Recording Issues:**
  - Ensure HDDs are correctly installed and both SATA data and power cables are securely connected.
  - Check the HDD status in the NVR's system settings. Format new HDDs if necessary.
  - Verify that recording schedules are properly configured.
- **System Performance Issues (Lagging Video, Freezing):**
  - Ensure the NVR's incoming bandwidth (160Mbps) is not exceeded by the total bitrate of connected cameras.
  - Reduce camera resolution or frame rate if the NVR is overloaded.
  - Check for firmware updates.
  - Ensure the NVR is in a well-ventilated area to prevent overheating.
- **Password Reset:**
  If you forget your NVR password, contact Hikvision technical support for assistance with password reset procedures. Unauthorized password reset attempts may void your warranty or cause data loss.

7. Technical Specifications

Category	Specification
Model	DS-7616NI-I2/16P
Video Input	16-channel IP video input
Two-way Audio Input	1-ch, RCA (2.0 Vp-p, 1kΩ)
Incoming Bandwidth	160Mbps

Category	Specification
Outgoing Bandwidth	256Mbps
HDMI Output	1-ch, up to 4K (3840x2160)/60Hz
VGA Output	1-ch, up to 1920x1080P/60Hz
Recording Resolution	12MP/8MP/6MP/5MP/4MP/3MP/1080p/UXGA/720p/VGA/4CIF/DCIF/2CIF/CIF/QCIF
Audio Output	1-ch, RCA (Linear, 1kΩ)
Synchronous Playback	16-ch
Decoding Capability	2-ch @ 8 MP (25fps) / 4-ch @ 4MP (30fps) / 16-ch @ 1080p (30fps)
SATA Interfaces	2 SATA interfaces for 2 HDDs
HDD Capacity	Up to 6TB capacity for each HDD
Network Interface	1 RJ-45 10/100/1000Mbps self-adaptive Ethernet interface
USB Interface	Front panel: 1 × USB 2.0; Rear panel: 1 × USB 3.0
Alarm In/Out	4-ch In / 1-ch Out
PoE Standard	AF and AT
PoE Interfaces	16 independent 10/100 Mbps PoE Ethernet interfaces
Max. PoE Power	200W
Power Supply	100 to 240 VAC, 50 to 60 Hz
Consumption (without HDD and PoE)	≤20 W
Working Temperature	-10 °C ~ +55 °C (+14 °F ~ +131 °F)
Working Humidity	10 % ~ 90 %
Dimensions (W×D×H)	445 × 390 × 70 mm (15.2" × 12.4" × 2.0")
Weight (without HDD)	≤3 Kg (11 lb)

8. Warranty and Support

For warranty information, please refer to the warranty card included with your product or visit the official Hikvision website. For technical support, firmware updates, or further assistance, please contact Hikvision customer service or your authorized dealer. When contacting support, please have your product model (DS-7616NI-I2/16P) and serial number ready.

Note: Some customer reviews mention issues with password resets and product authorization. It is crucial to purchase from authorized sellers and contact official Hikvision support for such matters to ensure proper assistance and product authenticity.