

# NVR-EL64-2U32MP1

64 Channel 2U 4K AI Network Video Recorder



- Multi-core embedded processor
- Max 64 IPC inputs, Max 1024Mbps Incoming Bandwidth, H.265/H.264/MJPEG support
- Up to 32MP Resolution for Preview and Playback
- Supports up to 4K and 8K Display with quad HDMI outputs
- Supports IVS, Face Detect, Perimeter Protection and Intelligent Motion Detect by NVR
- Dual 10/100/1000 Ethernet ports
- 8 SATA III Ports, Up to 16TB capacity for each HDD, RAID 0/1/5/6/10 Support

## System Overview

IC Realtime's NVR-EL64-2U32MP1 features dual gigabit network ports, 4K resolution dual HDMI output and up to 12MP camera support in a robust, 2U rack mountable package. This 64 channel NVR is built to handle high resolution cameras with a hot swappable front panel supporting up to 128TB of total storage as well as RAID 0/1/5/6/10 support.

This recorder's powerful AI processor and incredible throughput enables Perimeter Protection with Tripwire and Intrusion, Intelligent Motion Detect and Face Recognition by NVR. Other features include ANPR support for License Plate Recognition cameras, Fisheye Dewarp and N+M Hot standby for storage backup and redundancy. The NVR is also ONVIF compliant, making it compatible to most third party IP camera manufacturers.

## Functions

### Perimeter Protection

IC Realtime's Perimeter Protection features significantly improve detection accuracy. The benefits of Perimeter Protection include up to a 90% reduction in false alarms. Other advantages include a decrease in pixel count requirement for object detection, which translates into more efficiency with less strain on the system. Perimeter Protection options let you customize tripwires based on the object type and allow intelligent automation within a limited area of access such as pedestrian or vehicle-only zones. The combination of advanced AI analytics and real-time alerts maximizes efficiency & balance of the total systems capacity and resources resulting in greater surveillance system efficiency.

### Intelligent Video System (IVS)

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

### 4K Resolution

4K resolution is a revolutionary breakthrough in image processing technology. 4K delivers four times the resolution of standard HDTV 1080p cameras 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.

### iMD (Intelligent Motion Detect)

This is an upgraded version of motion detection currently known as Intelligent Motion Detection (iMD). The upgraded Plus version greatly improves alarm accuracy by pre-loading a deep learning algorithm that recognizes people and vehicles. Motion detection alerts containing a human and/or vehicle intrusion event are now possible with up to 95% accuracy. Eliminate false alarms, save time and keep stress levels low knowing you're protected.

### RAID 0/1/5/6/10

Offering a balance between storage performance, storage capacity, and data integrity, the NVR features RAID 0/1/5/6/10 for faster and safer recording.

## Technical Specification

### System

Main Processor	Multi-core embedded processor
Operating System	Embedded LINUX, ICR 4.0

### Video

Max IP Channels	64 Channels (up to 32MP)
Throughput	<b>AI by Camera:</b> 1024 Mbps incoming, 1024 Mbps recording and 800 Mbps outgoing <b>Object Search/ AI by NVR:</b> 512 Mbps incoming, 512 Mbps recording and 400 Mbps outgoing
Video Compression	Smart H.265+/H.265/Smart H.264+/H.264/MJPEG
Image Resolution	32 MP; 24 MP; 16 MP; 12 MP; 8 MP; 5 MP; 4 MP; 1080p; 720p; D1
Record Mode	Manual; alarm; motion detection; scheduled
Record Interval	1 ~ 120 min (default: 60 min), Pre-record: 1 ~ 30 sec, Post-record: 10 ~ 300 sec

### Audio

Interface	1 input, 2 output (RCA)
Two-way Talk	Supported
Audio Compression	G711a; G711u; PCM; G726

### Display

Interface	2x VGA, 4x HDMI video output
Resolution	<b>Simultaneous mode:</b> max resolution of VGA1 and VGA2: 1080p, max resolution of HDMI1 and HDMI2: 4K max resolution of HDMI3: 8K max resolution of HDMI4: 1080p  <b>Mixed mode:</b> Simultaneous video source output for VGA1 & HDMI1 Simultaneous video source output for VGA2 & HDMI2 max resolution of VGA1 and VGA2: 1080p, max resolution of HDMI1, HDMI2 and HDMI3: 4K max resolution of HDMI4: 1080p
Display Decode	2-channel 32 MP@30 fps; 2-channel 24 MP@30 fps; 4-channel 16 MP@30 fps; 8-channel 8 MP@30 fps; 16-channel 4 MP@30 fps; 32-channel 1080p@30 fps; 72-channel 720P@30 fps
Display Split	Main screen: 1/4/8/9/16/25/36/64 Sub screen: 1/4/8/9/16/25/36
OSD	Camera title, Time, Video loss, Camera lock, Motion detection, Recording

### Playback & Backup

Multi-channel Playback	Up to 16 channels
Record Mode	Manual; alarm; motion detection; scheduled
Playback Functions	1. Play, pause, stop, fast forward, fast backward, rewind, play by frame 2. Full screen, backup (cut/file), partially enlarge, audio on/off
Backup Mode	Portable hard drive, eSATA disk, burner, USB device and network

### Alarm

Alarm Input / Output	<b>Input:</b> 16 Channel <b>Output:</b> 8 Channel
General Alarm	Motion detection; video tampering; video loss; scene changing, PIR alarm, IPC external alarm
Anomaly Alarm	Camera offline; storage error; disk full; IP conflict; MAC conflict; login lock; abnormal behavior of fan
Intelligent Alarm	Face detection; perimeter protection; face recognition; video metadata (human, motor vehicles, and non-motor vehicles); IMD; stereo analysis; crowd distribution; people counting; ANPR; vehicle density; heat map
Alarm Linkage	Record; snapshot (panoramic); local alarm output; IPC external alarm output; access controller; audio; buzzer; log, preset; email

### Network

Ethernet	2 RJ-45 Ports (10/100/1000Mbps)
PoE	N/A
Network Functions	HTTP; HTTPS; TCP/IP; IPv4; RTSP; UDP; NTP; DHCP; DNS; SMTP; UPnP; DDNS; Alarm Server; IP Search (Supports IC Realtime IP cameras, DVR, NVS, etc.); Multicast; P2P; Auto Registration; iSCSI
Smart Phone	Android, iOS, iPhone
Interoperability	ONVIF (Profile S/profile T/Profile G); CGI; SDK
Browser Compatibility	Chrome, IE 9 or later, Edge, Safari, Firefox

### Storage

Internal HDD	8 SATA III Ports, Up to 16 TB capacity for each HDD
eSATA	1 eSATA
External HDD	N/A
RAID	RAID 0,1,5,6,10 Support

### Auxiliary Interface

USB	4 (2 front USB 2.0 ports, 2 rear USB 3.0 ports)
RS232	1 Port
RS485	2 (1 port for half-duplex serial communication, 1 port for full-duplex serial communication)

### General

Power Supply	100~240 VAC, 50/60 Hz
Power Consumption	≤ 18 W (without HDD)
Operating Humidity	10%~93% (RH)
Working Environment	14 °F to +131 °F (-10 °C to +55 °C)
Installation Type	Rack mountable
Dimensions (W×D×H)	17.48" × 17.98" × 3.74" (570.0 mm × 570.0 mm × 226.0 mm)
Weight	14.11 lb (6.4 kg)(without HDD)
Gross Weight	22.82 lb (10.35 kg)(without HDD)

### Certifications

Certifications	FCC: Part 15 Subpart B, UL Certified
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## AI Features

### Perimeter Protection

Capabilities	Tripwire & intrusion; Recognition of human and vehicle
Performance (AI by Recorder)	24 channels, 10MVS rules for each channel
Performance (AI by Camera)	<b>64 channels</b>
AI Search	Search by target classification (Human, Vehicle)

### Intelligent Motion Detect (iMD)

Capabilities	Secondary filtering for human and motor vehicle , reducing false alarms caused by leaves, rain and lighting condition change
Performance (AI by Recorder)	<b>32 channels</b>
Performance (AI by Camera)	<b>64 channels</b>
AI Search	Search by target classification (Human, Vehicle)

### Face Detection

Capabilities	<b>Gathers Face attributes:</b> Gender; age group; glasses; expressions; face mask; beard
Performance (AI by Recorder)	<b>4 channels</b> (up to 12 face images/s each channel)
Performance (AI by Camera)	<b>64 channels</b>

### Face Recognition

Capabilities	Captures faces within camera images and compares them to an internal database
Performance (AI by Recorder)	1. <b>20-channel</b> FD (by camera) + FR (by recorder), image stream: 20 face images/s 2. <b>4-channel</b> FD (by recorder) + FR (by recorder), video stream: 12 face images/s
Performance (AI by Camera)	<b>32 channels</b>
Stranger Mode	Detect strangers' faces (not in device's face database); Similarity threshold can be set manually
AI Search	Similarity threshold can be set for each target face image during search
Database Management	Up to 40 face databases with 300,000 images, with a total capacity of <b>48 GB</b> ; Name, gender, birthday, address, credential type, credential No., countries & regions and state can be added to each face image
Database Application	Each database can be applied to video channels independently

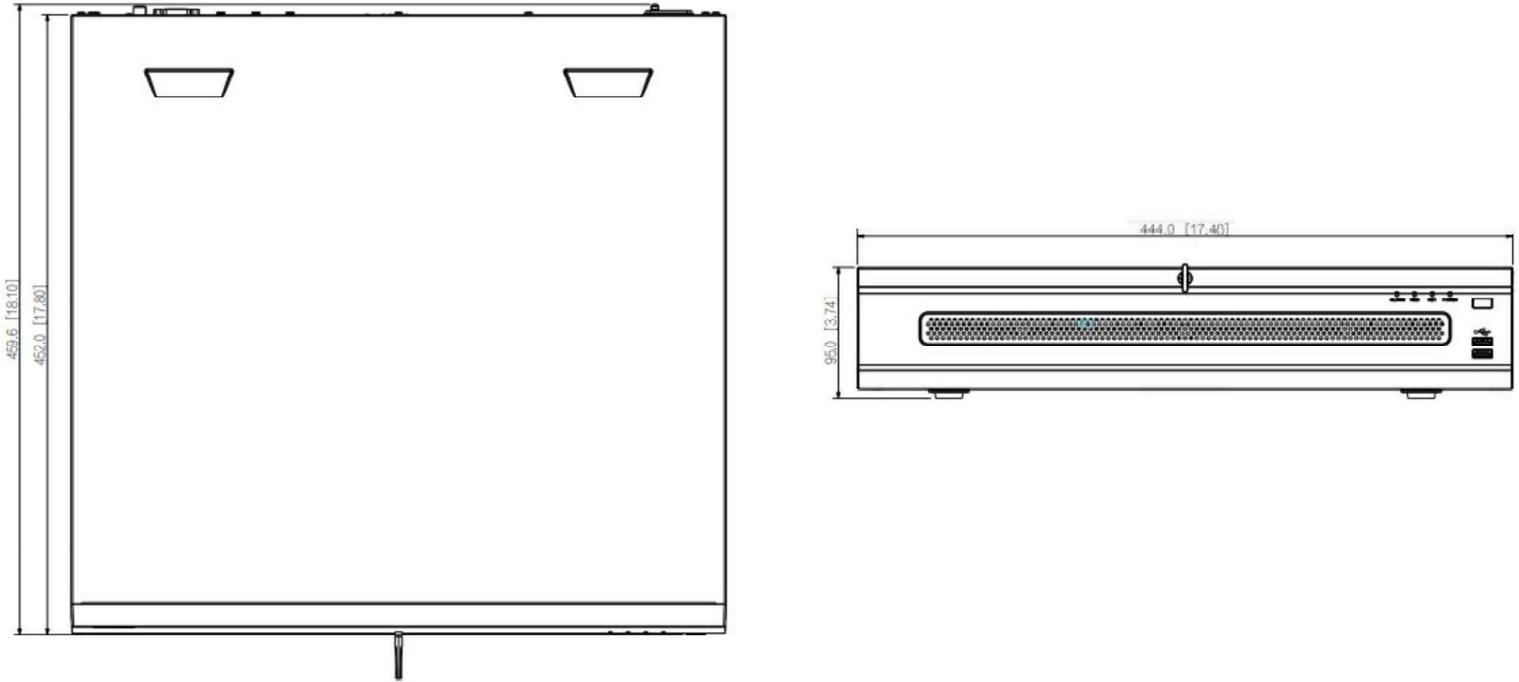
### Video Metadata

Capabilities	Gathers <b>Human attributes:</b> Top color, top type, bottom color, bottom type, hat, bag, age, gender and umbrella Gathers <b>Motor Vehicle attributes:</b> License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle interior, vehicle registration location Gathers <b>Non-Motor attributes:</b> Vehicle model, vehicle color, number of persons, helmet
Performance (AI by Recorder)	<b>8 channels</b>
Performance (AI by Camera)	<b>32 channels</b>

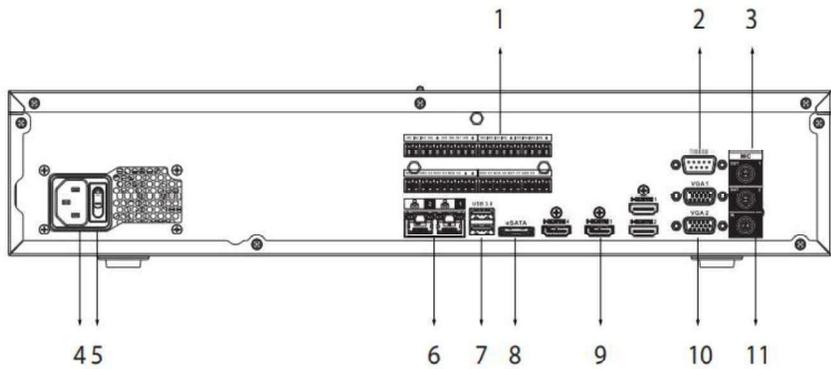
### Vehicle License Plate Comparison

Capabilities	Compares License Plates captured from motor Vehicles
Performance (AI by Camera)	<b>32 channels</b>
Database Management	1. Create up to 20,000 plate numbers 2. Blocklist and allowlist creation

Dimensions (mm/in)



Ports



- |                            |                 |
|----------------------------|-----------------|
| 1 Alarm In/Out             | 2 RS-232 Port   |
| 3 AUDIO OUT, RCA Connector | 4 Power Input   |
| 5 Power Switch             | 6 Network Ports |
| 7 USB Ports                | 8 eSATA Port    |
| 9 HDMI Ports               | 10 VGA Ports    |
| 11 AUDIO IN, RCA Connector |                 |