NVR-EL16-2U32MP1

16 Channel 2U Network Video Recorder

- Multi-core embedded processor
- Smart H.265+/H.265/Smart H.264+/H.264/ MJPEG support
- Up to 32MP Resolution for Preview and Playback
- Supports up to 4K Display and dual HDMI output
- 384 Mbps Incoming Bandwidth, Dual Gigabit Ethernet ports
- 8 SATA III Ports, Up to 16TB capacity for each HDD, 1 eSATA, RAID 0/1/5/6/10 Support

System Overview

IC Realtime's newly updated NVR-EL16-2U32MP1 combines up to 4K output and H.265 encoding technology with high performance and flexibility. This 16 channel NVR from our Elite Lineup features dual gigabit ethernet ports and an impressive 384 Mbps total bandwidth to handle the most demanding cameras up to 32MP. Storage is built to support high resolution cameras, with storage for up to 8 HDDs at 16TB each with RAID support.

This NVR also sports onboard AI support with Intelligent Motion Detect and Perimeter protection for Human/ Vehicle Recognition and Face Recognition/ Detection with on-board database as well ANPR, Heat Map and People Counting by camera.

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.

Smart Fan Design
The smart fan can automatically turn on or turn off according to the CPU temperature. This function can effectively reduce the fan noise to provide a better user experience.

Smart H.265+
Smart H.265+ is the optimized implementation of the H.265 codec that uses a scene-adaptive encoding strategy, dynamic GOP, dynamic ROI, flexible multi-frame reference structure and intelligent noise reduction to deliver high-quality video without straining the network. Smart H.265+ technology reduces bit rate and storage requirements by up to 70% when compared to standard H.265 video compression.

Fisheye Dewarp
The NVR features multiple fisheye dewarping modes to make viewing video easy whether it's live or during playback.

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.

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	16 Channel (up to 32MP)
Throughput	**AI by Camera:** 384 Mbps incoming, 384 Mbps recording and 384 Mbps outgoing
	Object Search/ AI by NVR: 200 Mbps incoming, 200 Mbps recording and 200 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; CIF; QCIF
Bit Rate	16Kbps ~ 20Mbps Per Channel
Record Mode	Manual, Schedule (Regular, Motion Detection , Alarm, IVS), Stop
Record Interval	1 ~ 120 min (default: 60 min), Pre-record: 1 ~ 30 sec, Post-record: 10 ~ 300 sec

Audio

Interface	1 Channel Input, 2 Channel Output, RCA
Two-way Talk	Supported
Audio Compression	G.711a; G.711u; PCM; G726

Display

Interface	2-channel VGA, 2-channel HDMI video output. Heterogeneous video source output for HDMI1 and HDMI2, Simultaneous video source output for VGA1 and HDMI1, Simultaneous video source output for VGA2 and HDMI2
Resolution	HDMI: Up to 4K
	VGA: Up to 1080p
Display Decode	**AI disabled:** 2-channel 32 MP@20 fps; 2-channel 24 MP@20 fps; 4-channel 16 MP@30 fps; 5-channel 12 MP@30 fps;8-channel 8 MP@30 fps; 12-channel 5 MP@30 fps;16-channel 4 MP@30 fps
	AI disabled: 2-channel 32 MP@20 fps; 2-channel 24 MP@20 fps; 4-channel 16 MP@30 fps; 5-channel 12 MP@30 fps;8-channel 8 MP@30 fps; 12-channel 5 MP@30 fps;16-channel 4 MP@30 fps
Display Split	1st Screen: 1/4/8/9/16 2nd Screen: 1/4/8/9/16
OSD	Camera title, Time, Video loss, Camera lock, Motion detection, Recording

Playback & Backup

Multi-channel Playback	Up to 16 channels
Record Mode	General, motion detection; intelligent; alarm; POS
Playback Functions	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

Alarm

Alarm Input / Output	Input: 16 Channel
	Output: 8 channels (1-channel 12 V 1 A output)
General Alarm	Motion detection; privacy masking; local alarm
Anomaly Alarm	Camera offline; storage error; disk full; IP conflict; MAC conflict; login lock; abnormal behavior of fan; cybersecurity exception
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/IPv6; RTSP; UDP; SNMP; NTP; DHCP; DNS; SMTP; UPnP; IP Filter; PPPoE; FTP; DDNS; Alarm Server; IP Search (Supports IC Realtime IP cameras, DVR, NVS, etc.); Multicast; P2P; Auto Registration
Smart Phone	Android, iOS, iPhone
Interoperability	ONVIF 21.12(Profile T; Profile S; 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, for PC Communication and Keyboard
RS485	2 (1 port for half-duplex serial communication, 1 port for full-duplex serial communication)

General

Power Supply	AC100V ~ 240V, 50 ~ 60 Hz
Power Consumption	≤ 13 W (without HDD)
Operating Humidity	10%–93% (RH)
Working Environment	+14°F ~ +131°F (-10°C ~ +55°C), 86 ~ 106kpa
Storage Conditions	-4°F ~ +140 °F (-20°C ~ +60°C)
Installation Type	Rack mountable
Dimensions (W×D×H)	2U, 17.32" × 18.03" ×3.50" (439.9 mm × 457.9 mm x 89.0 mm)
Weight	14.11 lb (6.4 kg) (without HDD)
Gross Weight	19.86 lb (9.01 kg) (without HDD)

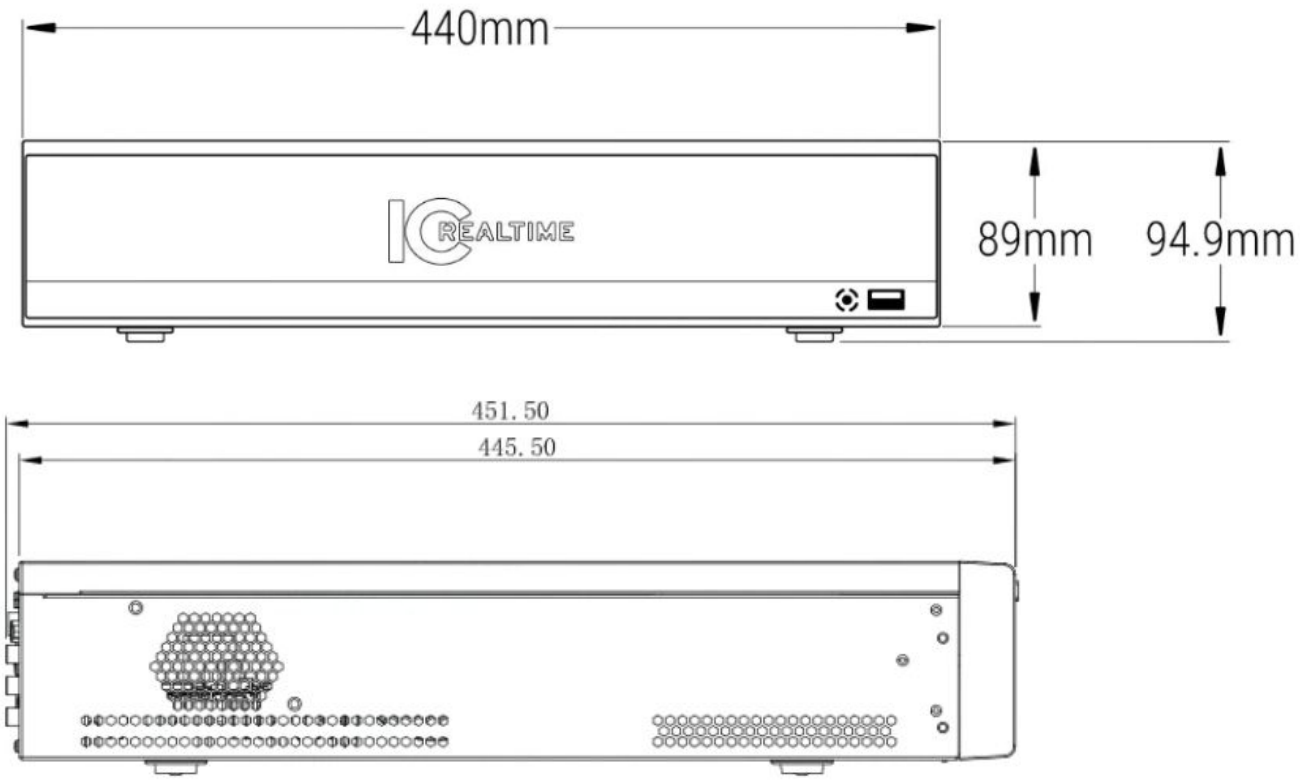
Certifications

Certifications	FCC: Part 15 Subpart B, UL Certified

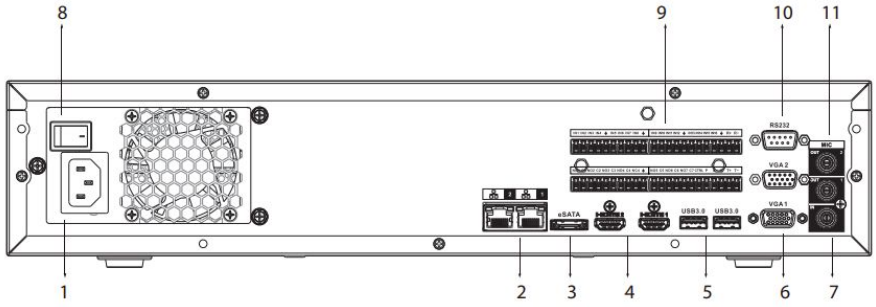
AI Features

AI Capabilities	
AI by Recorder	Face detection, face recognition, perimeter protection, and iMD
AI by Camera	Face detection; face recognition; perimeter protection; iMD Plus; ANPR; people counting; 3D analysis; heat map
Perimeter Protection	
Capabilities	Tripwire & intrusion; Recognition of human and vehicle
Performance (AI by Recorder)	**4 channels**, 10 IVS rules for each channel
Performance (AI by Camera)	**16 channels**
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)	**8 channels**
Performance (AI by Camera)	**16 channels**
AI Search	Search by target classification (Human, Vehicle)
Face Detection	
Capabilities	Gathers **Face attribute**s: Gender; age group; glasses; expressions; face mask; beard
Performance (AI by Recorder)	**2 channels** (up to 12 face images/s each channel)
Performance (AI by Camera)	16 channels
Face Recognition	
Capabilities	Captures faces within camera images and compares them to an internal database. .
Performance (AI by Recorder)	1. 16-channel FD (by camera) + FR (by recorder), image stream: 16 face images/s 2. 2-channel FD (by recorder) + FR (by recorder), video stream: 12 face images/s
Performance (AI by Camera)	**16 channels**
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 20 face databases with 20,000 images, with a total capacity of 2.5 GB. 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 **Human attributes:** Top color, top type, bottom color, bottom type, hat, bag, age, gender and umbrella
	Gathers **Motor Vehicle attributes:** License plate, plate color, vehicle body, vehicle model, vehicle logo, calling, seatbelt, vehicle interior, vehicle registration location.
	Gathers **Non-Motor attributes**: Vehicle model, vehicle color, number of persons, helmet.
Performance (AI by Camera)	**8 channels**
Vehicle License Plate Comparison	
Capabilities	Compares License Plates captured from motor Vehicles
Performance (AI by Camera)	**8 channels**
Database Management	1. Create up to 20,000 plate numbers 2. Blocklist and allowlist creation

Dimensions (mm/in)



Panels



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