

HDVR-EL1616-2U4K1-AI1

16 Channel Penta-brid 4K 2U Digital Video Recorder



- Embedded processor
- H.265+/H.265 dual-stream video compression
- Supports up to 4K HD-AVS/AHD/CVBS/TVI
- 16+16 channels IP camera inputs, up to 12MP
- 128 Mbps incoming bandwidth
- Up to 12 channels Perimeter Protection (analog)
- Up to 16 channels Intelligent Motion Detect (analog)
- Up to 6 channels face recognition (analog)

System Overview

The HDVR-EL1616-2U4K1-AI1 IC Realtime's premiere digital video recorder adopting HD-AVS. This technology is an over-coaxial-cable analog HD video transmission standard, allowing long-distance HD transmission at a lower cost to meet the requirements for a complex and large installation. It supports up to 16 channels of HD-AVS, TVI, AHD, or CVBS inputs, and up to 16 channels IP cameras (32 IP channels total if coax is disabled). It is also equipped to handle up to 8x 10TB hard drives to meet the demands of high resolution recordings.

This recorder also features a suite of intelligent features such as Perimeter Protection and Intelligent Motion detect (Human and Vehicle recognition) as well as Face Recognition. Furthermore, this HDVR is compatible with numerous third-party devices, as its open architecture supports multi-user access and is compatible with ONVIF 2.1.12.

HD-AVS/AHD/TVI/CVBS Auto Detect

The AVR can auto-recognize the signal of a camera without any configuration needing to be done. It makes operations friendlier and more convenient.

Intelligent Video System (IVS)

With built-in intelligent video analytics, the AVR has the ability to detect and analyze moving objects for improved video surveillance. The AVR provides optional 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 predetermined line has been crossed.

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.

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iMD (Intelligent Motion Detect)

This is an upgraded version of motion detection. The upgraded 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.

Technical Specification

System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

Video

IP Video Input	16+16 Channel, each channel up to 12MP *After IP channels are enabled beyond the existing channels, AI Functions (IVS, iMD, Face Detect/Recognition) will be disabled.
Analog Video Input	16 channel, BNC
AVS Resolution	4K, 6 MP, 5 MP, 4 MP, 1080p@25/30 fps; 720p@50/60 fps; 720p@25/30 fps.
AHD Resolution	4K, 5 MP, 4 MP, 3 MP, 1080p@25/30 fps; 720p@25/30 fps
TVI Resolution	4K, 5 MP, 4 MP, 3 MP, 1080p@25/30 fps; 720p@25/30 fps.
CVBS Standard	NTSC/ PAL
Bandwidth	Incoming bandwidth: 128 Mbps Recording bandwidth: 128 Mbps Outgoing bandwidth: 128 Mbps

Audio

Input	16-channel BNC (external) 16-channel BNC (coaxial audio)
Output	1 channel, BNC
Two-way Talk	1 Mic In, 1 Mic Out, BNC

Display

Interface	2 HDMI, 1 VGA
Resolution	HDMI 1: 3840×2160, 1920×1080, 1280×1024, 1280×720 HDMI2/ VGA: 1920×1080, 1280×1024, 1280×720
Display Split	IP channel extension disabled: 1/4/8/9/16 IP channel extension enabled: 1/4/8/9/16/25/36
OSD	Camera title, Time, Video loss, Camera lock, Motion detection, Recording

Recording

Video/Audio Compression	AI Coding/H.265+/H.265/H.264+/H.264
Image Resolution	4K, 6MP, 5MP, 4K-N, 4MP, 3MP, 1080P, 720P, 960H, D1, CIF
Record Rate	Main stream: 4K@(1fps-15 fps); 6 MP, 5 MP@(1fps-25 fps); 4K-N, 4 MP, 3 MP, 1080p, 720p, 960H, D1, CIF@(1fps-25/30fps) Sub stream: 960H@(1fps-15fps); D1,CIF@(1fps-25/30fps)
Bit Rate	32 Kbps-8192 Kbps Per Channel
Record Mode	Manual, Schedule (Regular, Continuous), MD (Video detection: Motion Detection, Video Loss, Tampering), Alarm, Stop
Record Interval	1 ~ 60 min (default: 60 min), Pre-record: 1 ~ 30 sec, Post-record: 10 ~ 300 sec

Video Detection & Alarm

Trigger Events	Recording, PTZ, Tour, Video Push, Email, FTP, Snapshot, Buzzer and Screen Tips
Video Detection	Motion Detection, MD Zones: 396 (22 × 18), Video Loss, Tampering and Diagnosis
Alarm Input	16 channel
Relay Output	6 channel

Playback & Backup

Sync Playback	1/4/9/16
Search Mode	Time /Date, Alarm, MD and AI Search
Playback Functions	Play, Pause, Stop, Rewind, Fast play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Repeat, Shuffle, Backup Selection, Digital Zoom
Backup Mode	USB Device/Network/eSATA Device

Network

Ethernet	2 RJ-45 Ports (1000 Mbps)
Network mode	Multi-address mode,Fault Tolerance,Load Balance
Network Functions	HTTP; HTTPS; TCP/IP; IPv4; RTSP; UDP; SMTP; NTP; DHCP; DNS; DDNS; P2P
Max. User Access	128 users
Interoperability	ONVIF 21.12; CGI Conformant
Smart Phone	Android, iOS, iPhone

Storage

Internal HDD	8 SATA Ports, up to 10TB capacity for each disk
External HDD	1 eSATA port

Auxiliary Interface

USB	4 USB Ports (2 USB 2.0 , 2 USB 3.0)
RS232	1 port, For PC communication & Keyboard
RS485	1 Port, for PTZ Control

General

Power Supply	AC100V-240V,50/60Hz
Power Consumption	<30W (Without HDD)
Working Environment	+14°F ~ +131°F (-10°C ~ +55°C), 0~ 90% RH
Mounting	Rack or desktop
Dimensions (WxDxH)	2U, 17.32" × 17.94" × 3.73" (439.9 mm × 455.6 mm × 94.9 mm)
Weight	15.21 lb (6.9 kg) (without HDD)
Gross Weight	20.94 lb (9.5 kg)

Certifications

Certifications	FCC: PART 15 SUBPART B
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AI Features

Perimeter Protection

Capabilities	Virtual Line Detection alarm for human and vehicle. Filters misinformation such as leaves and light. Function configuration: Set up to 10 rules with area intrusion and tripwire intrusion.
Performance	Advanced Model (Increased Accuracy): 6 channels General Model: 12 channels
AI Search	Search by target classification (Human, Vehicle)

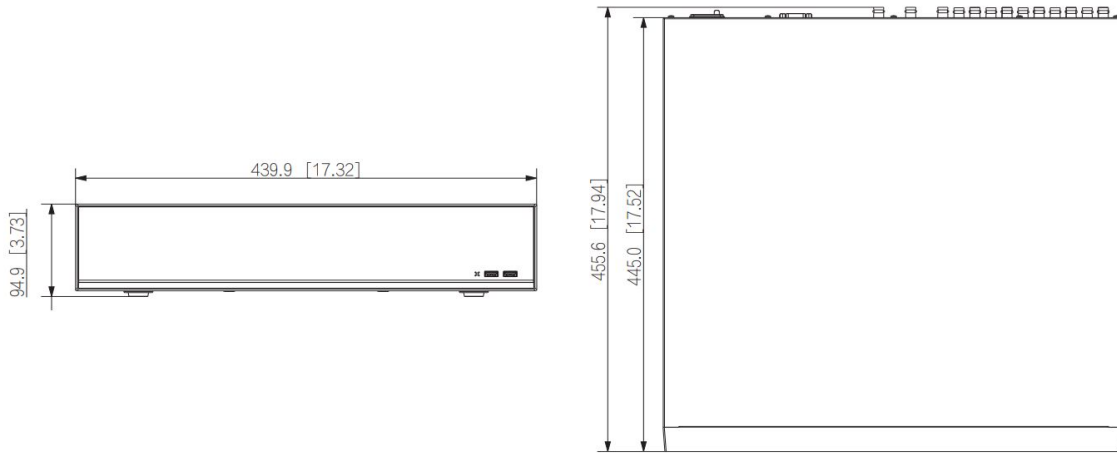
Intelligent Motion Detect (iMD)

Capabilities	Motion detection alarm with human and vehicle recognition. Filters misinformation such as leaves and light.
Performance	Up to 16 channels (coax channel only)
AI Search	Search videos through channels, time and target types.

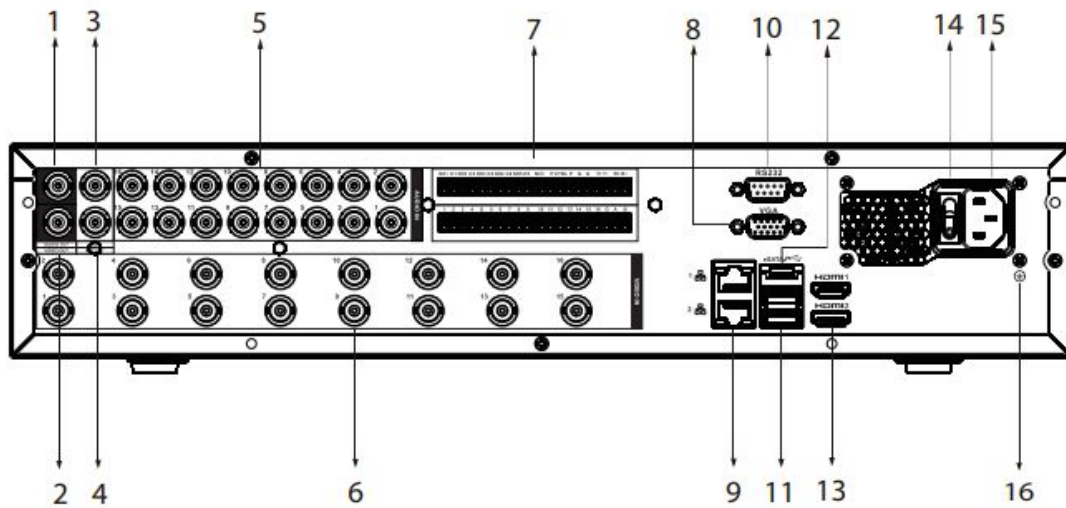
Face Recognition

Capabilities	Up to 12 face pictures/sec processing (modeling and comparing).
Performance	Up to 6 channels of human face recognition or face detection (coax channel only)
Stranger Mode	Detect strangers' faces (not in device's face database). Similarity threshold can be set manually.
AI Search	Up to 8 target face images search at same time, similarity threshold can be set for each target face image.
Database Management	Up to 10 face databases with 20,000 face images in total. Name, gender, birthday, address, certificate type, certificate No., countries & regions and state can be added to each face image
Database Application	Each database can be applied to video channels independently

Dimensions (mm/in)



Panels



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|----------------------------|--------------------------|
| 1 AUDIO OUT, BNC Connector | 2 VIDEO OUT |
| 3 MIC IN, BNC Connector | 4 MIC OUT, BNC Connector |
| 5 AUDIO IN, BNC Connector | 6 VIDEO IN |
| 7 Alarm In/Out | 8 VGA Port |
| 9 Network Ports | 10 RS-232 Port |
| 11 USB Ports | 12 eSATA Port |
| 13 HDMI Ports | 14 Power Switch |
| 15 Power Input | 16 Ground |