

# HDVR-MX1616-1U4K-AI3

16 Ch 4K AVS, Analog, & IP 1U Standalone DVR



- H.265+/H.265 dual-stream video compression
- Supports up to 16 channels of 4K HD-AVS/AHD/ TVI/ CVBS/ video inputs
- Supports up to 32 channels of IPC access, each channel up to 8MP input;
- Max 128 Mbps Incoming Bandwidth
- 12ch IVS Perimeter Protection, 16 ch iMD (Intelligent Motion Detect), 2ch Real-Time Face Detection/ Recognition (Coax channels only)

## System Overview

IC Realtime's newest generation digital video recorder adopts HD-AVS technology, our in-house 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/AHD/TVI or CVBS inputs, up to 4K resolution. The recorder also has the capability to add up to 8 IP cameras (8MP or less) or have 32 IP channels total by disabling all of the coaxial inputs.

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 it is compatible with ONVIF 21.12.

## Functions

### 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.

### 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 detail. 4K resolution improves the clarity of a magnified scene to view or record crisp forensic video from large areas.

### High Definition Camera Input

The AVR supports up to 8MP HD AVS cameras and 8MP IP camera input.

### Real-Time Face Recognition

This feature works with live video, historic footage, and snapshots. It allows users to identify facial attributes include gender, age, and expression of emotion. Additional characteristics can be applied such as glasses, mustache, face or mouth mask, and beard. Metadata can also be used to identify these characteristics. Enhanced features allow the user to import new facial images and catalog recorded or live view faces into a database for future alerts. Users are further able to create numerous lists and catalog facial images corresponding to those named lists. This allows for precise notification via email, text and push notifications via SmartICRSS PRO app. (Real-Time Facial Detection gives users the flexibility to analyze target feature while streaming live video or viewing history or snapshots. Importing facial images gives users full functionality and notification by retaining and cataloging faces.)

## Technical Specification

### System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

### Video

Analog Video Input	16
IP Video Input	16+16 Channel, each channel up to 8MP
Throughput	Incoming bandwidth: 128 Mbps
	Recording bandwidth: 128 Mbps
	Outgoing bandwidth: 128 Mbps
TV Output	1 channel
AVS Resolution	4K@25/30 fps; 6 MP@20 fps; 5 MP@25 fps; 4 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps; 720p@50/60 fps.
AHD Resolution	4K@15 fps; 5 MP@20 fps; 4 MP@25/30 fps; 3 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps.
TVI Resolution	4K@15 fps; 5 MP@20 fps; 4 MP@25/30 fps; 3 MP@25/30 fps; 1080p@25/30 fps; 720p@25/30 fps
CVBS Standard	PAL/NTSC
Video/Audio Compression	AI Coding; Smart H.265+; H.265; Smart H.264+; H.264
Image Resolution	4K, 6MP, 5MP, 4K-N, 4MP, 3MP, 4M-N, 1080P, 720P, 960H, D1, CIF, QCIF
Record Rate	Main stream: 4K@(1fps-15 fps); 6 MP@(1fps-20 fps); 5 MP, 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
Record Mode	General, motion detection; intelligent; alarm
Record Interval	1 ~ 60 min (default: 60 min), Pre-record: 1 ~ 30 sec, Post-record: 10 ~ 300 sec

### Audio

Input	1-channel RCA 16-channel BNC (Coaxial Audio)
Output	1 channel, RCA
Two-way Talk	Yes (uses the same audio input as the first channel)

### Display

Interface	1 HDMI, 1 VGA
Resolution	VGA: 1920 × 1080, 1280 × 1024, 1280 × 720 HDMI: 3840 × 2160, 1920 × 1080, 1280 × 1024, 1280 × 720
Display Split	1/4/8/9/16 or 1/4/8/9/16/25 with IP cameras
Multi Screen	Main + Extra screen (only coax channels are supported on the extra screen)

### Alarm

General Alarm	Motion detection; video loss; tampering; local alarm
Anomaly Alarm	No disk; storage error; disk full; camera offline; IP conflict; MAC conflict
Intelligent Alarm	Face detection; face recognition; perimeter protection
Alarm Input/ Output	None

### Playback & Backup

Sync Playback	1/4/9/16
Search Mode	Time /Date, Alarm, MD and Exact Search (accurate to the second)
Playback Mode	Instant playback, general playback, event playback, tag playback, smart playback (face and motion detection)
Backup Mode	USB Device/Network

### Network

Ethernet	1 RJ-45 port (10/100M/1000M)
Network Functions	HTTP; HTTPS; TCP/IP; IPv4; RTSP; UDP; SMTP; NTP; DHCP; DNS; DDNS; P2P
Interoperability	ONVIF 21.12; CGI
Smart Phone	Android, iOS

### Storage

Internal HDD	2 SATA Port, up to 10TB capacity for each disk
External HDD	N/A

### Auxiliary Interface

USB	2 ports (1 USB2.0, 1 USB3.0)
RS232	N/A
RS485	1 Port, for PTZ Control

### General

Power Supply	DC 12V/5A
Power Consumption	<32W (Without HDD)
Working Environment	+14°F ~ +131°F (-10°C ~ +55°C), 10~ 90% RH
Installation	Rack or desktop
Dimensions (W×D×H)	1U, (14.76" × 13.08" × 2.09") (375.0 mm × 332.0 mm × 53.0 mm)
Weight	5.30 lb (2.4kg) (without HDD)
Gross Weight	8.82 lb (4 kg) (without HDD)

### Certifications

Certifications	FCC: Part 15 Subpart B
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## AI Features

**Note: HDVR AI functions are coax channel only and will be disabled when IP camera extension is enabled.**

### Perimeter Protection

Capabilities (AI by Recorder)	Tripwire & intrusion; Recognition of human and vehicle Set up to 10 rules.
Performance	<b>6 channels</b> , 10 IVS for each channel
AI Search	Search by target classification (Human, Vehicle)

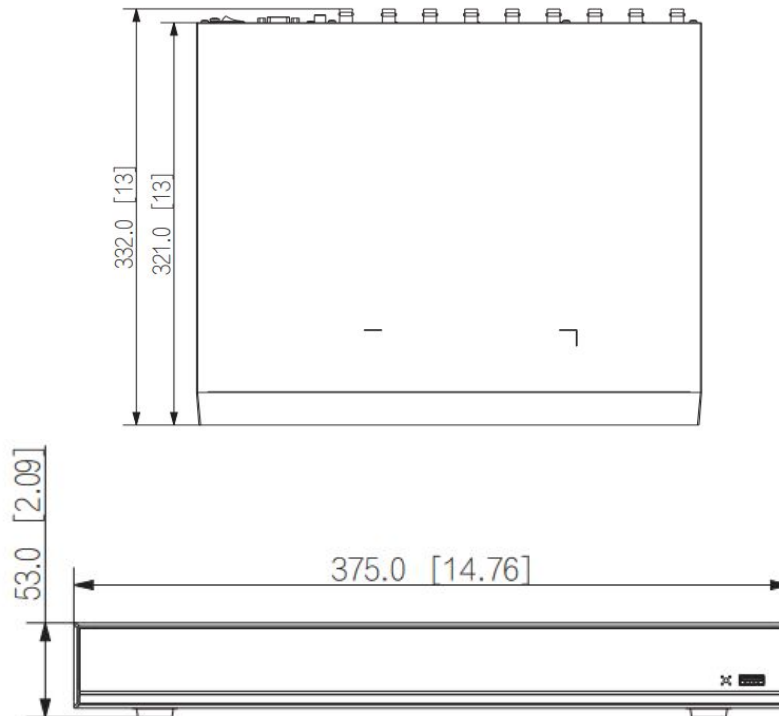
### Intelligent Motion Detect (iMD)

Capabilities (AI by Recorder)	Secondary filtering for human and motor vehicle , reducing false alarms caused by leaves, rain and lighting condition change
Performance	Up to <b>16 channels</b> (coax channel only)
AI Search	Search videos through channels, time and target types.

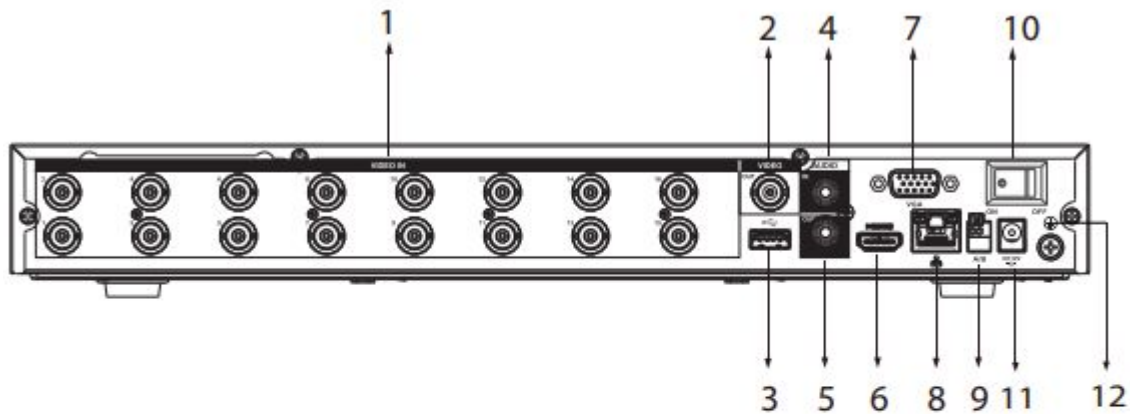
### Face Recognition

Capabilities (AI by Recorder)	Up to 12 face pictures/sec processing (modeling and comparing).
Performance	Up to <b>2 channels</b> support human face recognition (coax channel only) *If enabled, All other AI features will be disabled.
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 10 face databases with 10,000 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 VIDEO IN                 | 2 VIDEO OUT               |
| 3 USB Port                 | 4 AUDIO IN, RCA Connector |
| 5 AUDIO OUT, RCA Connector | 6 HDMI Port               |
| 7 VGA Port                 | 8 Network Port            |
| 9 RS-485 Port              | 10 Power Switch           |
| 11 Power Input             | 12 Ground                 |