HDVR-MX1616-1U4K-AI3
16 Ch 4K AVS, Analog, & IP 1U Standalone DVR

IC REALTIME

- 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)
- 6/2ch Real-Time Face Detection/ Recognition

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.

The recorder also supports a suite of AI features including: IVS Perimeter Protection, Intelligent Motion Detect (iMD) and Real-Time Face Recognition with database. Its open architecture supports multi-user access & is compatible with ONVIF 21.12 making it compatible with numerous third-party devices.

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.)

IC REALTIME

Technical Specification

System

Main Processor	Embedded Processor
Operating System	Embedded LINUX

Video

Analog Video Input	16
Bandwidth	Incoming bandwidth: 128 Mbps
	Recording bandwidth: 128 Mbps
	Outgoing bandwidth: 128 Mbps
TV Output	1 channel
IP Video Input	16+16 Channel, each channel up to 8MP
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

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)

Recording

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

Video Detection & 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

AI Features

Perimeter Protection

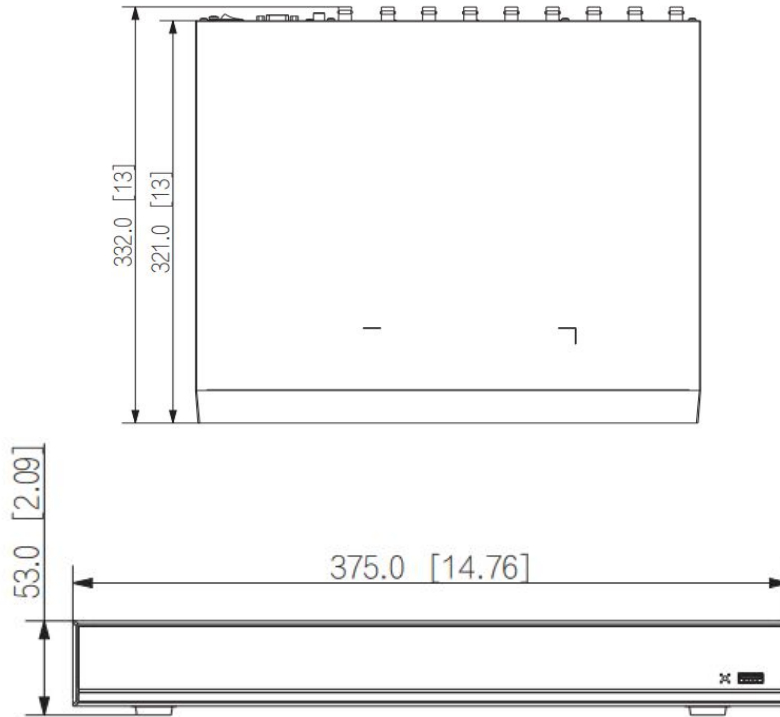|	
Capabilities	Virtual Line Detection alarm for human and vehicle. Filters misinformation such as leaves and light. **Function configuration**: Set up to 10 rules with area intrusion and tripwire intrusion.
Performance	**Advanced Model (Increased Accuracy):** 6 channels **General Model:** 12 channels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

Intelligent Motion Detect (iMD)

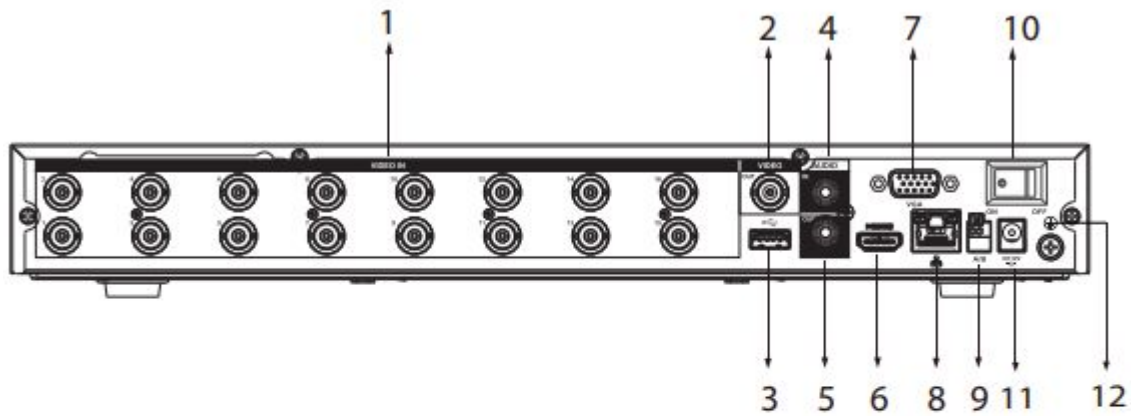|	
Capabilities	Motion detection alarm with human and vehicle recognition. Filters misinformation such as leaves and light.
Performance	Up to **16 channels** (coax channel only)
AI Search	Search videos through channels, time and target types.

Face Recognition

Capabilities	Up to 12 face pictures/sec processing (modeling and comparing).
Performance	Up to **2 channels** of human face recognition or **6 channels** of 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)

332.0 [13]
321.0 [13]
53.0 [2.09]
375.0 [14.76]

Panels

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