- H.265+/H.265 dual-stream video compression
- Supports 4 HD-AVS/AHD/TVI/CVBS/IP video inputs up to 5MP (including 16:9 aspect ratio)
- Supports up to 4+2 channels IP camera inputs, each channel up to 6MP
- 32 Mbps incoming bandwidth
- IVS Perimeter Protection, iMD (Intelligent Motion Detect)
- Supports Real-Time Face Recognition

System Overview

IC Realtime's HDVR-MX0402-1U5MP-AI2 blends IC Realtime's AVS HD-over-coax support with new AI features. This compact pentabrid recorder also supports H.264 and H.265 as well as new AI Coding compression. This allows for enhanced video quality while keeping the bit rate the same, allowing you have both storage efficiency and quality.

The recorder has the capability of supporting up to 4 AVS, TVI, AHD or CVBS cameras up to 5MP (including 16:9 aspect ratio) as well as 2 (6MP or less) or 6 total IP cameras by disabling all of the coax inputs.

This recorder also supports a suite of AI features including: IVS Perimeter Protection, Intelligent Motion Detect (iMD) and a channel of Real-Time Face Recognition with built-in face database. The HDVR is also ONVIF 21.06 compliant, 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.

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.

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, ICR 4.0

Video

IP Video Input	4+2 Channel, each channel up to 6MP
Analog Video Input	4
AVS Resolution	5MP (Supports 16:9 Aspect ratio), 4MP, 1080P@25/30fps, 720P@50/60fps, 720P@25/30fps
AHD Resolution	5MP, 4MP, 1080P@25/30, 720P@25/30fps
TVI Resolution	5MP, 4MP, 1080P@25/30, 720P@25/30fps
CVBS Standard	NTSC/ PAL

Audio

Input	4 channel, RCA
Output	1 channel, RCA
Two-way Talk	Reuse audio in/out, RCA
Audio Compression	G.711A; G.711U; PCM

Display

Interface	1 HDMI, 1 VGA
Resolution	1920 × 1080, 1280 × 1024, 1280 × 720
Display Split	When IP extension mode disabled: 1/4 When IP extension mode enabled: 1/4/6
Privacy Masking	4 rectangular zones (each camera)
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	5M-N, 4M-N, 1080P, 1080N, 720P, 960H, D1, CIF
Record Rate	Main stream: All channels 5M-N (1fps–10fps); 4M-N/1080P (1fps–15fps); 1080N/720P/960H/D1/CIF (1fps–25/30fps)
	Sub stream: D1/CIF (1fps–15fps)
Bit Rate	32Kbps–6144Kbps Per Channel
Record Mode	Manual, Schedule (General, 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	8 channel
Relay Output	3 channel

Playback & Backup

Sync Playback	1/4
Search Mode	Time /Date, Alarm, MD and Exact Search (accurate to second)
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

Network

Ethernet	1 RJ-45 Port (100 MB)
Network Functions	HTTP, HTTPS, IPv4/IPv6, TCP/IP, UPnP, RTSP, UDP, SMTP, NTP, DHCP, DNS, PPPoE, DDNS, FTP, IP Filter, SNMP, P2P
Interoperability	ONVIF 21.06, CGI Conformant
Max. User Access	128 users
Smart Phone	Android, iOS, iPhone

Storage

Internal HDD	1 SATA Port, up to 10TB capacity for each disk
External HDD	N/A

Auxiliary Interface

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

General

Power Supply	DC 12V/1.5A
Power Consumption	<4W (Without HDD)
Working Environment	+14°F ~ +131°F (-10°C ~ +55°C), 10~ 90% RH
Installation	Desktop installation
Dimensions (W×D×H)	Mini 1U, 12.80" × 10.10" × 2.17" (325 mm × 257 mm × 55 mm)
Net Weight	2.43 lb (1.1 kg)
Gross Weight	3.97 lb (1.8 kg)

Certifications

Certifications	FCC: Part 15 Subpart B

AI Features

Perimeter Protection

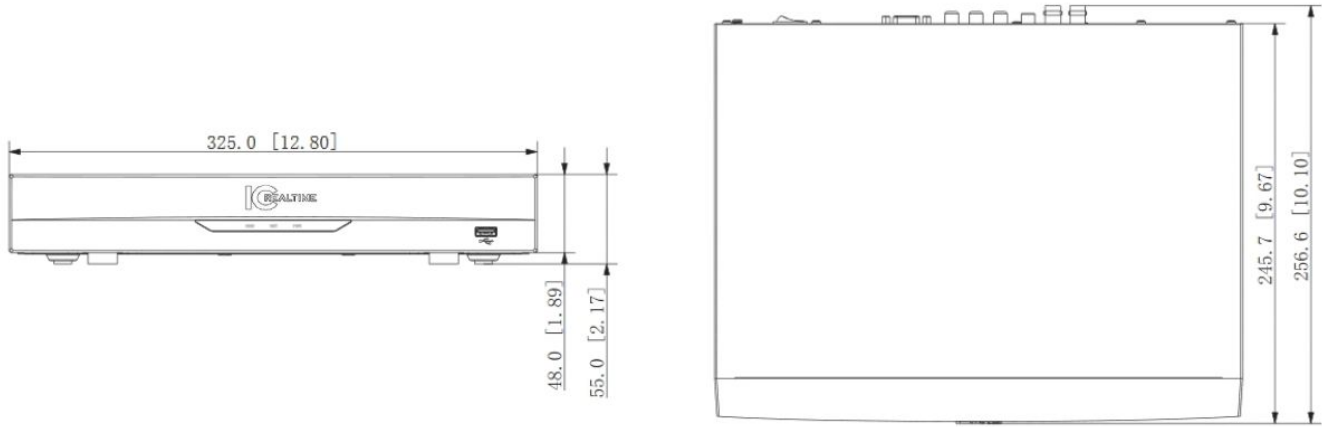|	
Capabilities	1 channel (coax channel only) Max 10 rules such as area intrusion and tripwire intrusion per channel.
Performance	Human/Vehicle secondary recognition for tripwire and intrusion
AI Search	Search by target classification (Human, Vehicle)

Intelligent Motion Detect (iMD)

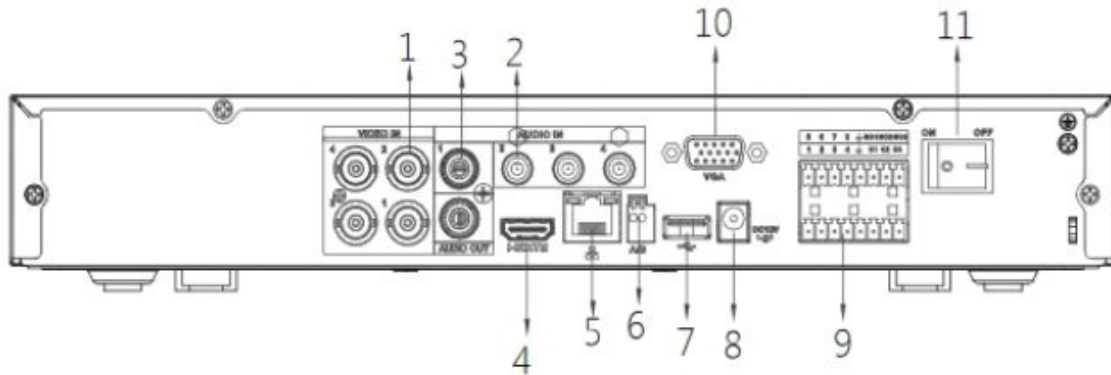|	
Capabilities	Up to 4 channels or 3 channels if Perimeter Protection is enabled (coax channel only)
Performance	Human/Vehicle recognition, filters out objects such as leaves and light.
AI Search	Search by target classification (Human, Vehicle)

Face Recognition

Capabilities	1 channel (coax channel only)
Performance	Max 8 face pictures/sec processing
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 10,000 face images in total. Name, gender, birthday, address, certificate type, certificate No., countries & regions and state can be added to each face picture.
Database Application	Each database can be applied to video channels independently
Triggerable Events	Buzzer, Voice Prompts, Email, Snapshot, Recording, Alarm Out, PTZ Activation, etc.

Dimensions (mm/in)

Panels

1	VIDEO IN	7	USB port
2	AUDIO IN, RCA Connector	8	DC12V Power Input
3	AUDIO OUT, RCA Connector	9	ALARM IN / OUT
4	HDMI port	10	VGA port
5	Network port	11	Power Switch
6	RS485 port		