Jupiter-Drones
Drone-oriented dual channel SD/HD H.265 codec

An advanced drone-oriented dual channel H.264/H.265 codec, Jupiter-Drones handles multiple streams simultaneously and supports end-to-end 100msec ultra-low-latency streaming over networks using Maris SW player for Windows, Linux and Android. Jupiter-Drones streams over wired and wireless networks, supporting Unicast, Multicast, Broadcast in UDP, RTP, RTSP with Forward Error Correction (FEC) support.

Capabilities include video and audio capture, encoding, decoding, transcoding and display, and video raw-data pre-processing.

Optional AI acceleration addon module within the same factor, which includes powerful Hailo-8, 26 TOPS AI Accelerator enabling high AI accuracy detection & tracking as well as hosting customers AI processes.

Markets and applications

Professional Civilian
Autonomous vehicles, agriculture and visual inspection

Homeland Security
Search and rescue, border protection, intelligence gathering

Defense
Target recognition, observation, and situational awareness
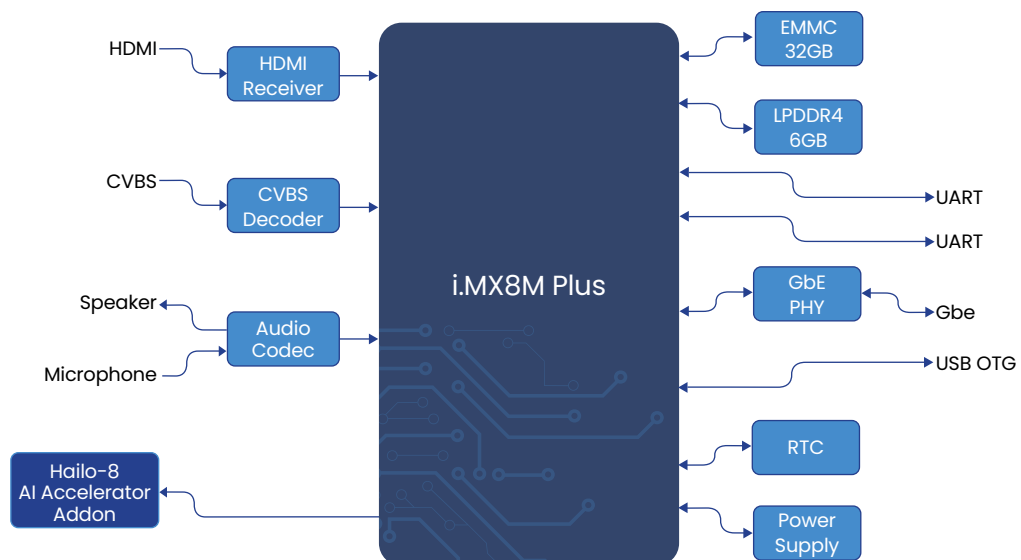
Key Benefits

- Compact form factor
- Reliable HDMI connection
- Handles multiple streams simultaneously

Key Features

- Acts as H.264/H.265 Encoder and handles multiple video streams simultaneously
- Video and audio capture, encoding, decoding, transcoding and display
- Video raw-data pre-processing, including scaling and graphics overlay
- Transport Stream (including metadata container generation)
- Video, audio and data simultaneous local recording and playback
- Streaming over wired and wireless networks, supporting Unicast, Multicast, Broadcast in UDP, RTP, RTSP with FEC support
- Optional AI acceleration addon module within the same factor, which includes powerful Hailo-8, 26 TOPS AI Accelerator enabling high AI accuracy detection & tracking as well as hosting customers AI processes
- Support end-to-end 100msec ultra-low-latency streaming over networks using Maris SW player for Windows, Linux and Android

Block Diagram

HDMI → HDMI Receiver → i.MX8M Plus

CVBS → CVBS Decoder

Speaker ← Audio Codec ← Microphone

Hailo-8 AI Accelerator Addon

EMMC 32GB
LPDDR4 6GB
UART
UART
GbE PHY → Gbe
USB OTG
RTC
Power Supply

Technical Specifications

SoC	NXP i.MX 8M Plus
Memory	6GB LPDDR4 32GB EMMC
Video in	analog, HDMI and USB video inputs IP 8 GigE
Audio in	Microphone
Audio out	Speaker
H.264/H.265 codec	VBR & CBR Encoding performance: 8 x D1 4 x 1080p60 2 x 1080p60 + 4 x D1 Decoding resolutions: 1 x 1080p60
Network	GbE
Storage media	32GB EMMC
Serial interfaces	Dual UART
USB	USB - OTG
Dimensions	25.4 x 50.8 mm (board only)
Operating temperature	-40ºC to +85ºC
Power	<4W 5-12V