

# Jupiter-AI

Multiple channel SD/HD H.265  
codec+ Hailo-8 AI acceleration



An advanced multi-stream H.264/5 codec, Jupiter AI integrates a powerful onboard Hailo-8 AI accelerator that enables highly efficient AI features such as detection, classification and tracking and other customer AI processes, with compact form factor and low power consumption for extended professional and tactical operations.

Ultra-low latency enables streaming over wired and wireless networks with forward error correction (FEC) support. Capabilities include video, audio and data capture, encoding, decoding, transcoding and display, and video pre-processing.

**The Jupiter-AI addresses multiple markets and applications when mounted on autonomous and semi-autonomous platforms**

## Professional Civilian

Autonomous vehicles,  
agriculture and visual  
inspection

## Homeland Security

Search and rescue,  
border protection,  
intelligence gathering

## Defense

Target recognition,  
observation, and  
situational awareness

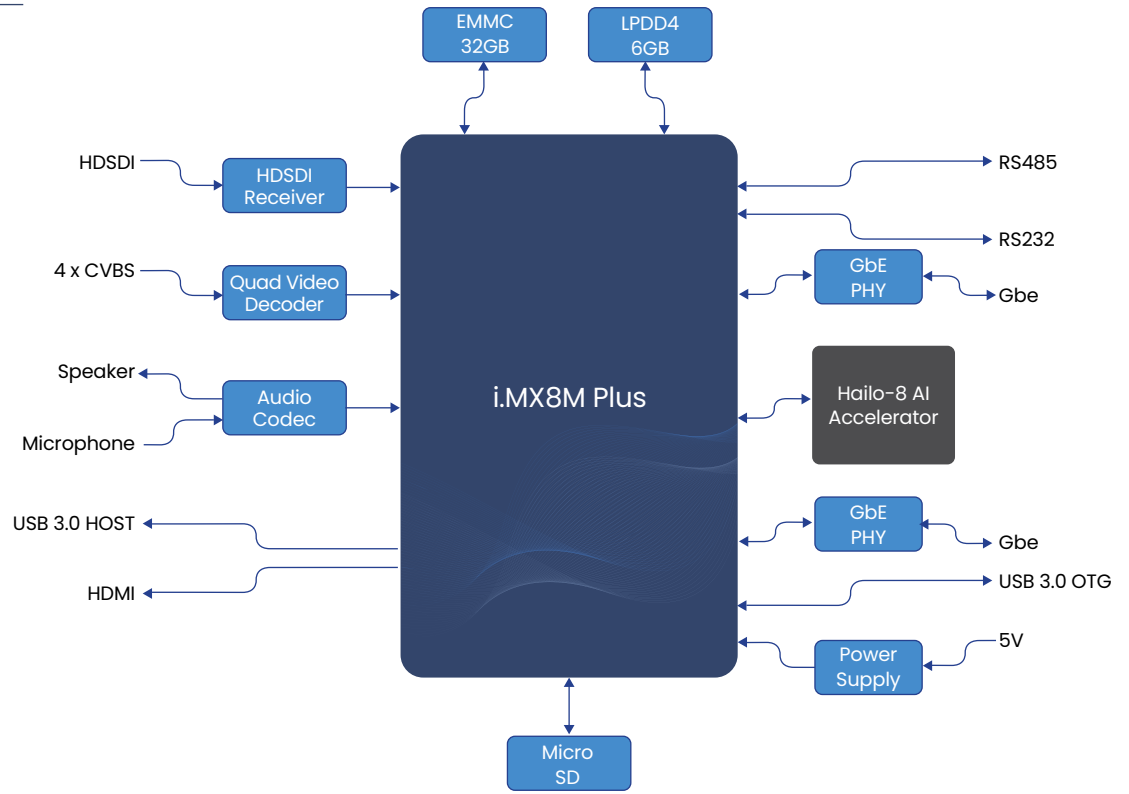
## Key Benefits

- Miniature and lightweight
- Low power
- High video quality over narrow-band wireless networks
- Low-latency streaming
- Powerful deep learning and AI acceleration enabled by Hailo-8

## Key Features

- H.264/5 Encoder or Decoder capabilities; Simultaneous multi-stream video processing simultaneously
- Video and audio capture, encoding, decoding, transcoding and display
- Video raw-data pre-processing, including scaling, graphics overlay, picture-in-picture
- Transport Stream (including metadata) container generation
- Video, audio and data simultaneous local recording and playback
- ONVIF support
- Onboard Hailo-8, 26 TOPS AI Accelerator enabling high AI accuracy detection and tracking as well as AI process hosting
- Streaming over wired and wireless networks, supporting, Multicast, Broadcast in UDP, RTP, RTSP with FEC support
- End-to-end 100msec ultra-low-latency streaming over wired and wireless networks using Maris SW player for Windows, Linux and Android
- Controlled using web-browser or API via Ethernet and serial ports

## Block Diagram



## Technical Specifications

SoC	NXP i.MX 8M Plus
Memory	6GB LPDDR4 32GB EMMC
AI accelerator	Hailo-8
Video in	Simultaneous support for: 1 x HDSDI @ 1080p60 4 x CVBS (PAL/NTSC) 2 x USB 3.0 (UVC)
Video out	HDMI
Audio in	Microphone
Audio out	Speaker
H.264/5 codec	VBR & CBR Encoding performance: 1 x 1080p60 (HDSDI) + 4 x DI (CVBS) + 2 x 1080p60 (UVC) Decoding resolutions: 1 x 1080p60 (HDMI)
Network	2 x GbE
Storage media	32GB EMMC Up to 1TB micro-SD
Serial interfaces	RS232 RS485
USB	USB 3.0 Host USB 3.0 OTG
Dimensions	50 x 50 mm
Operating temperature	-40°C to +85°C
Power	5V input <6W for 1 x HDSDI @ 1080p60 encoding, 1 x GbE and AI accelerator

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