

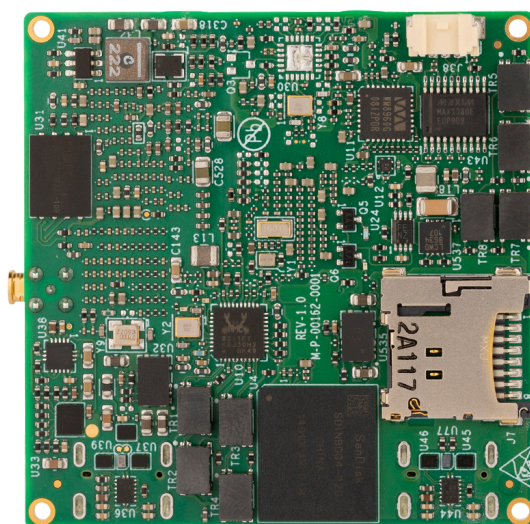
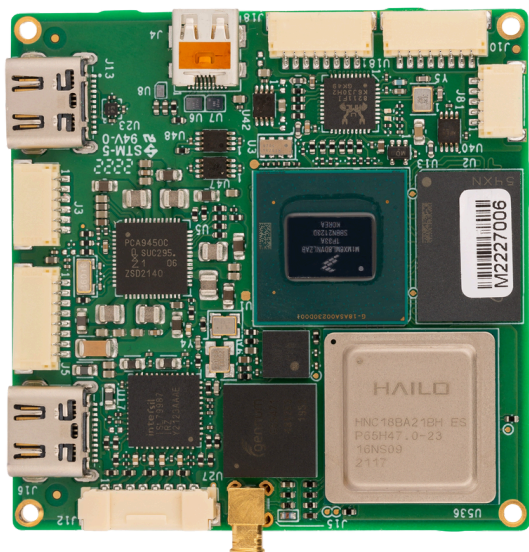
Key Features

- Multiple channel SD/HD H.265 codec+ Hailo-8 AI Acceleration.
- Ultra-compact form factor.
- H.264/5 encoder/decoder handles multiple video streams simultaneously.
- 4x CVBS, PAL, NTSC, 1x HD-SDI 1080p06, 2x USB 3.0 (UVC)
- Streaming over wired and wireless networks supporting Unicast, Multicast, Broadcast in UDP,
- RTP and RTSP with Forward Error Connection (FEC) support.
- Video and audio capture, encoding, decoding, transcoding and display.
- Transport stream, including metadata container generation.
- Simultaneous local recording and playback of video, audio and data.

Product Description

The ANT-1776AI is an advanced, multi-stream H.264/5 miniature video encoder featuring an integrated Hailo-8 AI accelerator. This onboard processing power enables efficient AI capabilities—including detection, classification, tracking, and other custom AI workloads. It supports 4x CVBS (PAL/NTSC), 1x HD-SDI 1080p60, and 2x USB 3.0 (UVC) inputs, all enhanced by Hailo-8 AI performance.

The ANT-1776AI has a compact form factor and low power consumption for extended surveillance and tactical operations. Ultra-low latency enables streaming over wired and wireless networks with Forward Error Connection (FEC) support. Capabilities include video, audio, data capture, encoding, decoding, transcoding and display, as well as video pre-processing.



Hardware Specifications

Feature	Specification
Processor	Quad-Core ARM® Cortex A53 processor up to 1.8 GHz per core
SoC	NXP i.MX 8M Plus
Memory	4 GB LPDDR4 @ 4000 MHz
Storage	32 GB eMMC on-board
Video Input	Simultaneous support for 7 Camera Opt Ports 4 x CVBS (PAL/NTSC) 1 x HD-SDI @ 1080p60 2 x USB 3.0 (UVC)
Video Display	HDMI on main board
AI Processor	Hailo 8
Network	2 Ethernet Ports 1000 Mbps
USB	USB 3.0 Type C, OTG USB 3.0 Host
I/O	General Purpose I/O for Device Control
Serial Interfaces	RS-232, RS-422
Analog Audio Input	Microphone Line in Microphone Line Out
SD Card	SD 3.0/SDXC, up to 1 TB 1 x External Connector
Audio Output	Speaker
H.264/5 Codec	VBR & CBR Multistream-capable HD video engine Encoding performance: 1 x 1080p60 (HD-SDI) + 4 x D1 (CVBS) + 2 x 1080p60 (UVC) Decoding resolution: 1 x 1080p60 (HDMI)



Electrical Characteristics

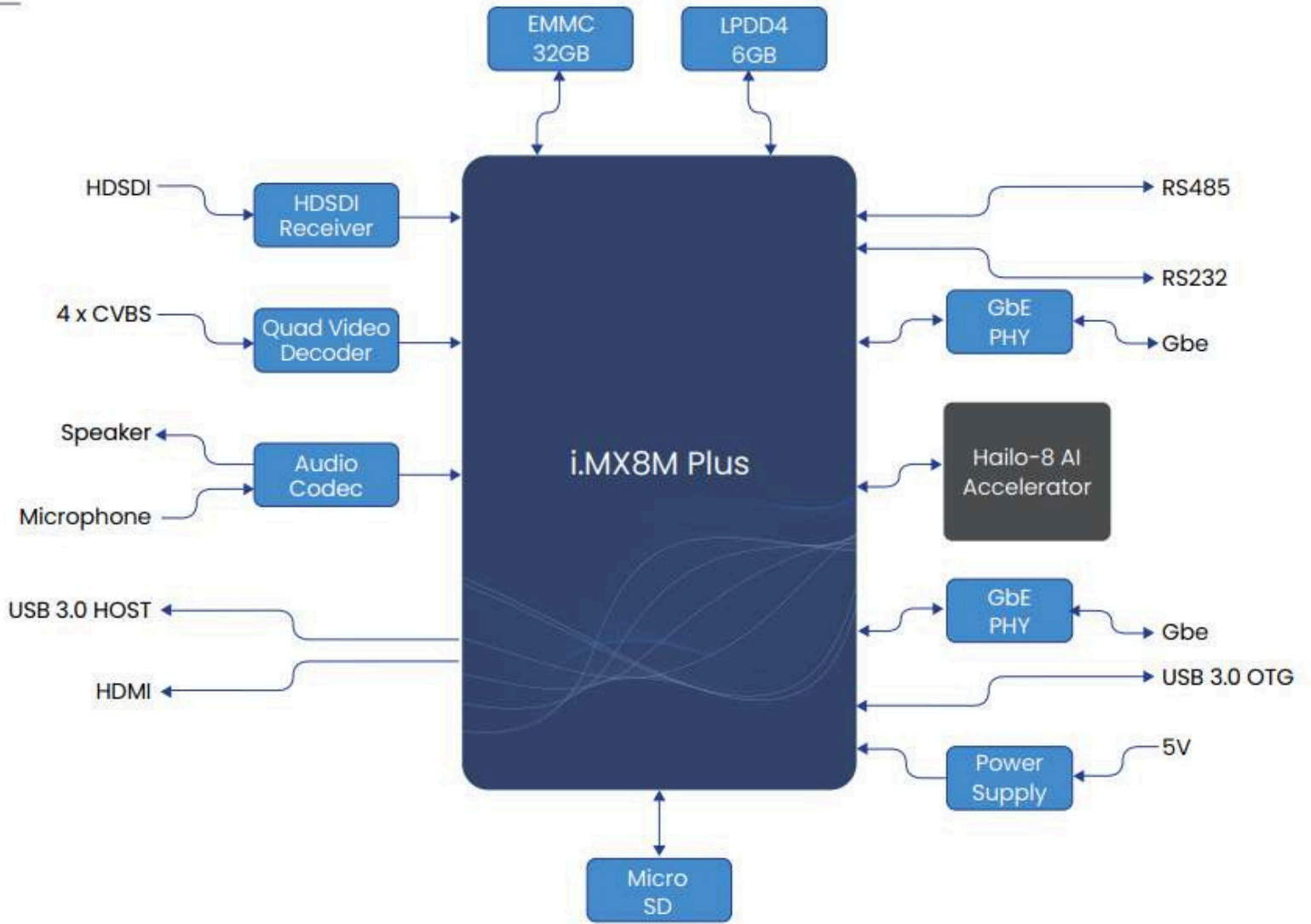
< 6 W for 1 x HD-SDI @ 1080p60 encoding, 1 x GbE and AI accelerator.

Parameter	Minimum	Typical	Maximum
Main Input Voltage	4.5 V	5 V	5.5 V
Power Consumption		3.5 W	
Operating Temperature	-40 °C		+85 °C
CPU Clock		1.6 GHz	

Connector Details

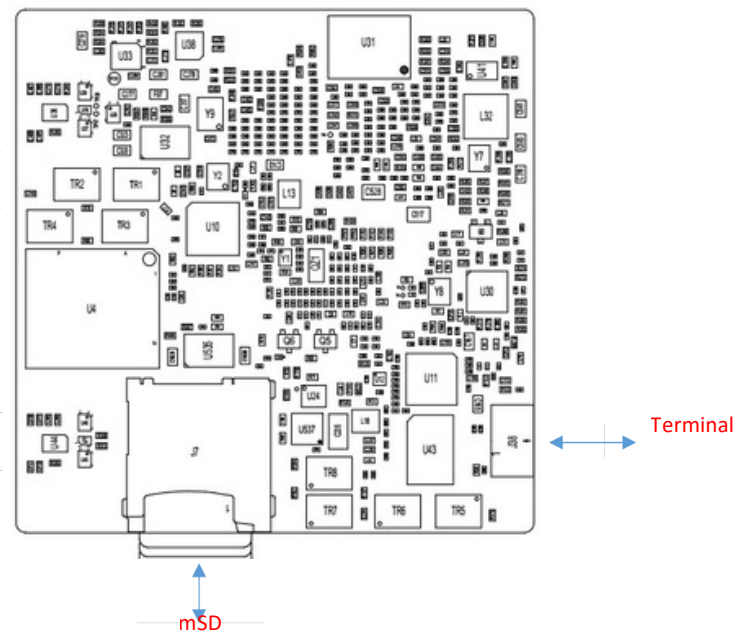
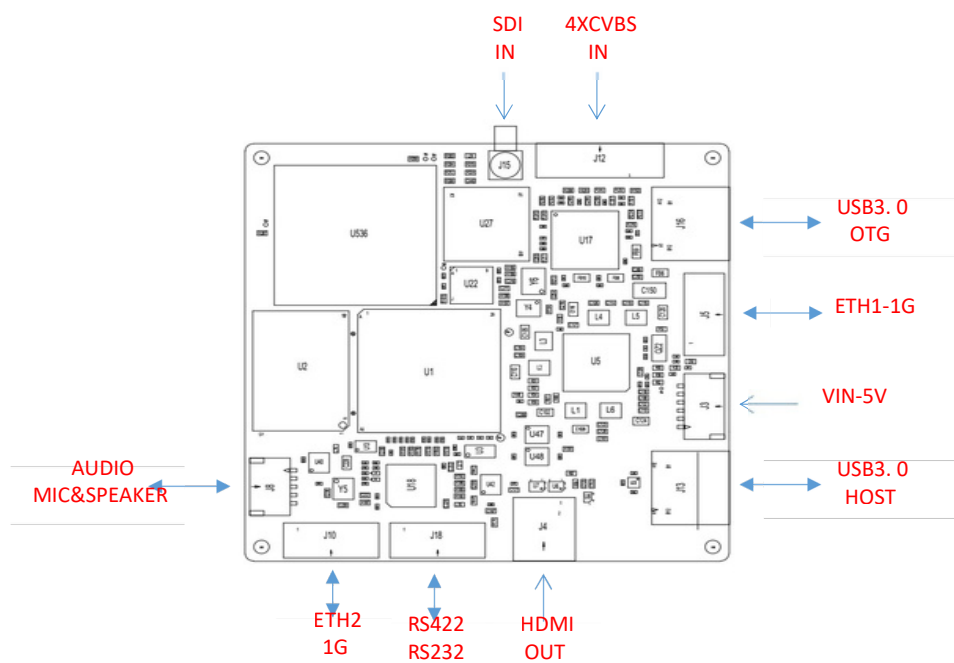
Pin	Manufacturer	Part Number	Note	Mating
J3	JST	SM06B-SRSS-TB	POWER	A06SR06SR30K51A
J7	Molex	5031820853	mSD	STD
J4	Molex	467650302	HDMI OUT	STD
J5	JST	SM08B-SRSS-TB	ETHERNET1	A08SR08SR30K305A
J8	JST	SM05B-SRSS-TB	AUDIO	A05SR05SR30K254A
J38	Molex	53261-0471	TERMINAL	----
J10	JST	SM08B-SRSS-TB	ETHERNET2	A08SR08SR30K305A
J16	JAE Electronics	DX07S024JA2R1200	USB 3.0 OTG	STD
J13	JAE Electronics	DX07S024JA2R1200	USB 3.0 HOST	STD
J12	Molex	504195-0870	4 x CVBS	5041930800 & 5041851000
J18	JST	SM08B-SRSS-TB	RS-232	A08SR08SR30K305A

Block Diagram



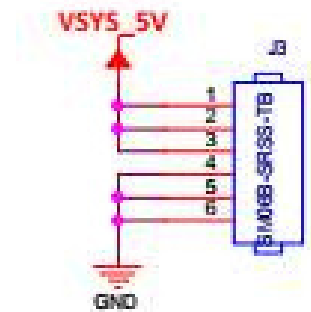
Top View of the ANT-1776AI Board

Bottom View of the ANT-1776AI Board



J3 Pinout – Power

Pin Number	Signal
1 – 3	Input Voltage
4 – 6	Ground



J18 Pinout – Interface

Pin Number	Signal
1 2 3 4 5 6 7	RS232_TxD
8	RS232_Rx
	GND
	SYS_RSTn
	RS422_P_IN
	RS422_N_IN
	RS422_P_OUT
	RS422_N_OUT



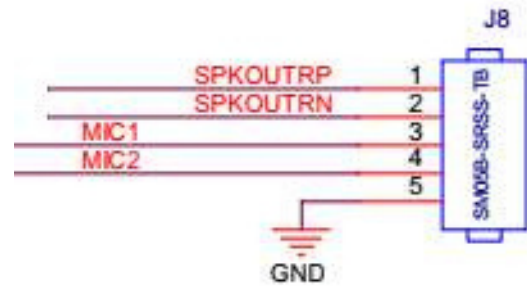
J5 and J10 Pinout – Ethernet

Pin Number	Signal
1 2 3 4 5 6 7	TX0_P
8	TX0_N
	TX1_P
	TX1_N
	TX2_P
	TX2_N
	TX3_P
	TX3_N



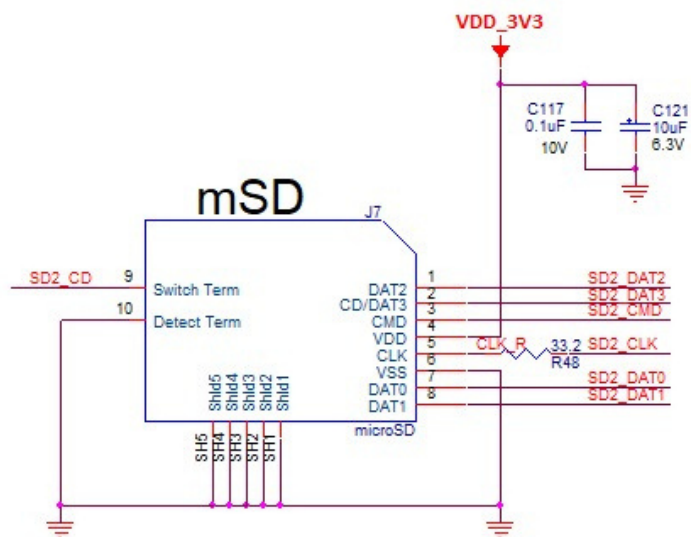
J8 Pinout – Audio

Pin Number	Signal
1 2 3 4 5	SPEAKER_P
	SPEAKER_N
	MIC1
	MIC2
	Ground



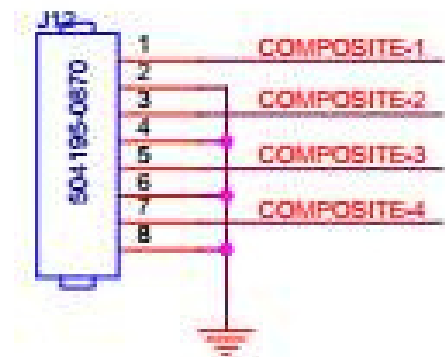
J7 Pinout – MicroSD

Pin Number	Signal
1 2 3 4 5 6 7	DATA2
8	DATA3
9	CMD
10	VDD
	CLK
	GND
	DATA0
	DATA1
	CD
	GND



J12 Pinout – 4XCVB

Pin Number	Signal
1 2 3 4 5 6 7	CVBS1
8	GND
	CVBS2
	GND
	CVBS3
	GND
	CVBS4
	GND



Dimensions

The overall dimensions of the ANT-1776AI are 50.8 mm x 50.8 mm.

