



Key Features

- NXP i.MX 8M Plus Quad-Core ARM® Cortex-A53, up to 1.6 GHz
- Hailo-8 AI Processor
- 6 GB LPDDR4 @ 4000 MHz
- 256 GB eMMC Storage on board
- 2 × MIPI Camera Ports (4-lane each)
- H.265/H.264 1080p60 Encoding + Decoding
- Display Output: microHDMI
- Analogue Audio: Mic/Line-in and Speaker
- Gigabit Ethernet (1000 Mbps)
- USB 3.0 Type-C
- microSD Card Slot
- 2 × Separate UART Serial
- General Purpose I/O (GPIO) for device control
- Compact Board Design - 51 x 51 mm

Product Description

The ANT-1776AILITE is a compact embedded processing platform that combines an NXP i.MX 8M Plus quad-core ARM® Cortex-A53 processor with a dedicated Hailo-8 AI processor, bringing camera capture, video processing and on-board AI acceleration together on a single 51 × 51 mm board.

Two 4-lane MIPI camera ports allow cameras to be connected directly to the board, while a multi-stream-capable HD video engine delivers H.265/H.264 decoding and encoding at 1080p60. The Hailo-8 AI processor is connected to the main processor via PCIe, providing dedicated hardware for AI processing alongside the video pipeline.

With 6 GB of LPDDR4 memory at 4000 MHz, 256 GB of onboard eMMC storage and a microSD card slot, the ANT-1776AILITE offers generous memory and storage for applications, recordings and data.

Connectivity includes Gigabit Ethernet, USB 3.0 Type-C and a microHDMI display output. Additional interfaces, including analogue audio (microphone/line-in and speaker), two UART serial ports and GPIO for device control, give system designers considerable flexibility. Two mezzanine interface connectors (J19 and J20) are also provided for optional expansion.

Operating from a 7–16 V DC supply (12 V DC typical) with a typical power consumption of 3.5 W and an operating temperature range of –40 °C to +85 °C, the ANT-1776AILITE provides a compact, capable solution for camera-based, AI-enabled embedded systems.



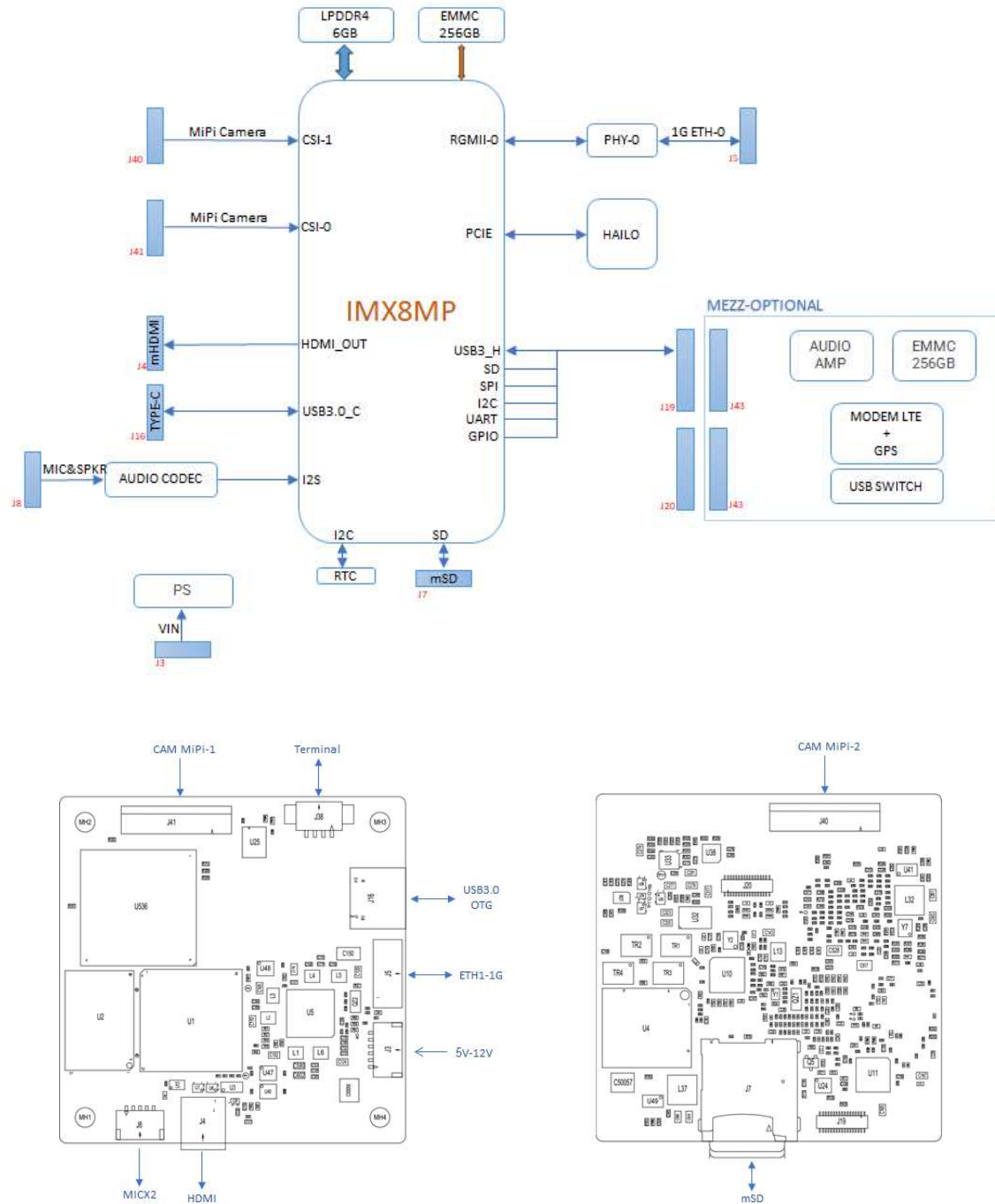
Electrical Characteristics

Parameter	Min	Typ	Max	Unit
Main Input Voltage	7	12	16	V DC
Power Consumption	-	3.5	-	W
Operating Temp	-40		+85	°C
CPU Clock	-	-	1.6	GHz

Connector Details

REF	Manufacturer	PN	Note
J3	JST	SM06B-SRSS-TB	Power
J38	Molex	532610471	Terminal
J5	JST	SM08B-SRSS-TB	Ethernet
J6	JST	SM05B-SRSS-TB	Audio
J16	JAE Electronics	DX07S024JA2R1200	USB 3.0 Type-C
J7	Molex	5031820853	microSD
J19	Hirose	DF40C-30DP-0.4V	Mezz I/F
J20	Hirose	DF40C-30DP-0.4V	Mezz I/F
J4	JST	TBC	Micro HDMI
J40	Molex	0545482271	MIPI Camera
J41	Molex	0545482271	MIPI Camera

Block Diagram

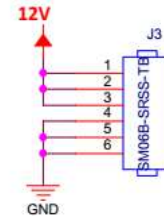


Connector locations (both sides of the board)

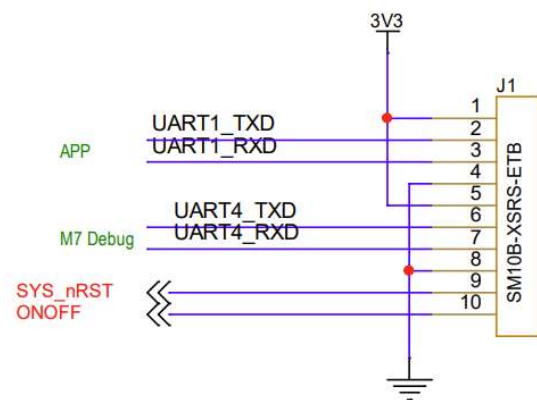


Pinout

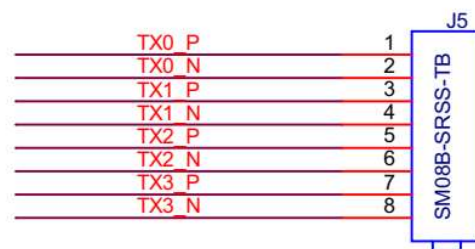
J3 POWER	
Pin Number	Signal
1-3	VIN
4-6	GND



J2 UART/GPIO	
Pin Number	Signal
1	3.3V
2	UART1_TXD
3	UART1_RXD
4	GND
5	3.3V
6	UART4_TXD
7	UART4_RXD
8	GND
9	Nrst
10	ON/OFF



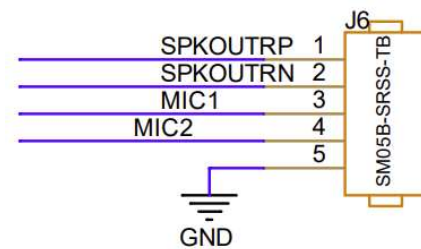
J5 ETHERNET	
Pin Number	Signal
1	TX0_P
2	TX0_N
3	TX1_P
4	TX1_N
5	TX2_P
6	TX2_N
7	TX3_P
8	TX3_N



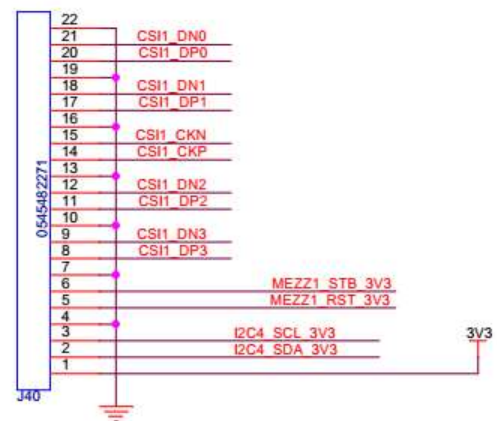
J38 Terminal	
Pin Number	Signal
1	3V3
2	TXD
3	RXD
4	GND



J6 AUDIO	
Pin Number	Signal
1	SPEAKER_P
2	SPEAKER_N
3	MIC1
4	MIC2
5	GND

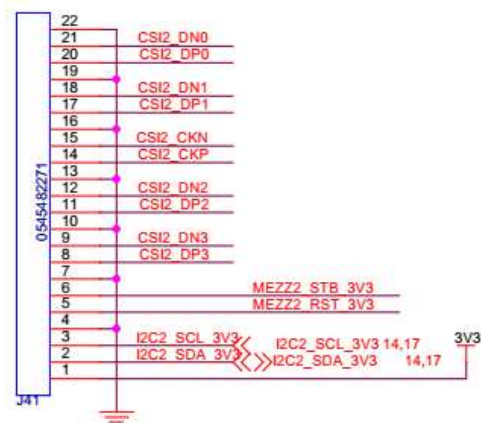


J40 CAMERA MIPI-CS11	
Pin Number	Signal
1	3V3
2	SDA
3	SCL
4	GND
5	RST
6	GPIO_STB
7	GND
8	DP3
9	DN3
10	GND
11	DP2
12	DN2
13	GND
14	CLKP
15	CLKN
16	GND
17	DP1
18	DN1
19	GND
20	DP0
21	DN0
22	GND



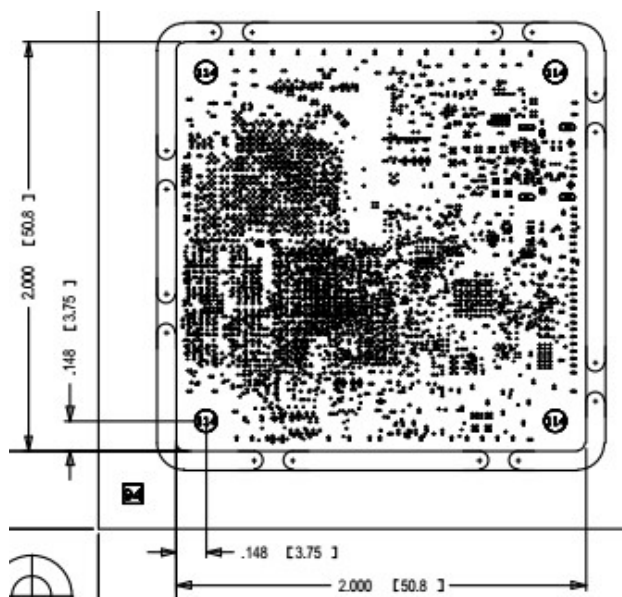


J41 CAMERA MIPI-CSI2	
Pin Number	Signal
1	3V3
2	SDA
3	SCL
4	GND
5	RST
6	GPIO_STB
7	GND
8	DP3
9	DN3
10	GND
11	DP2
12	DN2
13	GND
14	CLKP
15	CLKN
16	GND
17	DP1
18	DN1
19	GND
20	DP0
21	DN0
22	GND



Mounting

The overall dimensions of the ANT-1776AILITE board are 51 x 51 mm.



Mounting drawing – dimensions in inches [mm]