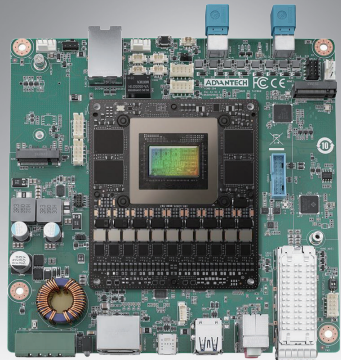


AIMB-294

Mini-ITX Motherboard Powered by NVIDIA® Jetson Thor™

Preliminary



EdgeAI
SDK



WISE-DeviceOn



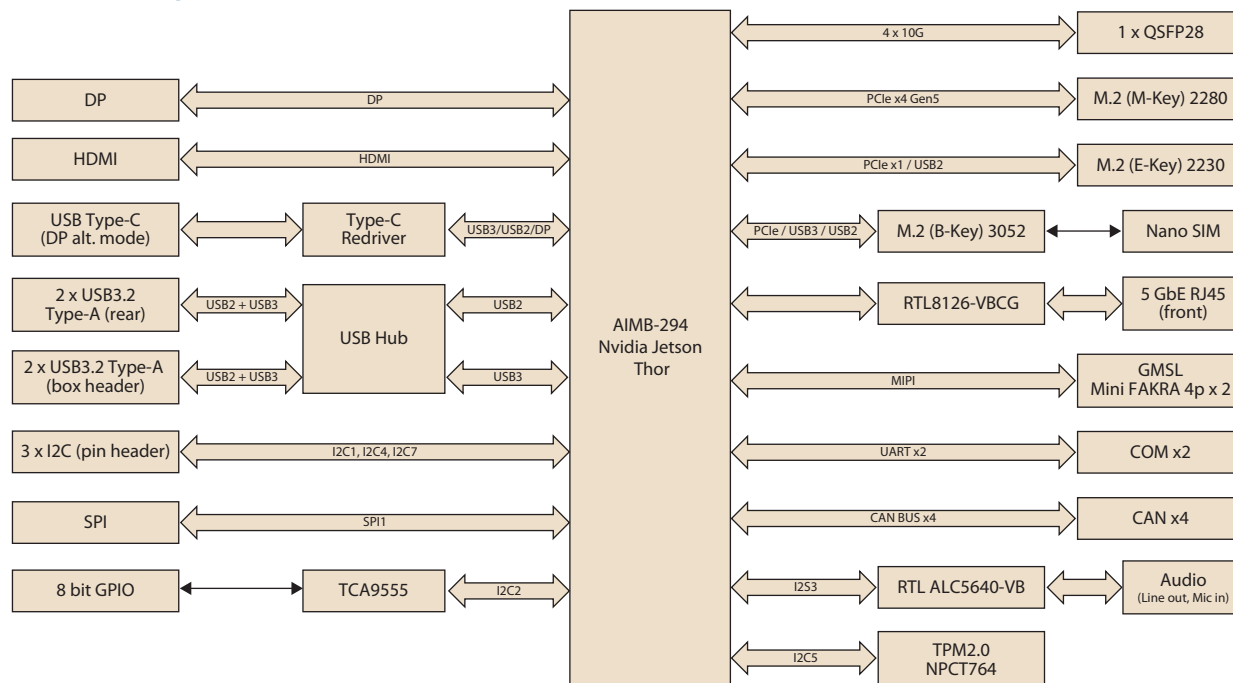
Features

- Powered by NVIDIA Jetson T5000™ and Jetson T4000™, delivering up to 2070 TFLOPS FP4 inference performance
- Super speed I/O: USB3.2 gen2, GMSL, 4 x 10G optical connectivity, 4K displays
- Rich Expansion: M.2 M-key NVMe SSD, B-key & E-key for Wireless connection
- Reliable operation: TPM2.0 onboard, ESD Level 4 protection
- 24V DC power input, Mini-ITX (170 x 170 mm)

Specifications

Processor System	NVIDIA Jetson Thor Module	NVIDIA Jetson T5000	NVIDIA Jetson T4000
	CPU	14-core Arm® Neoverse®-V3AE 64-bit	12-core Arm® Neoverse®-V3AE 64-bit
	GPU	2560-core NVIDIA Blackwell architecture, with 96 fifth-gen Tensor Cores	1536-core NVIDIA Blackwell architecture, with 64 fifth-gen Tensor Cores
		Max Frequency: 1.57 GHz	Max Frequency: 1.57 GHz
	Max. TDP	130W	70W
	Memory	128GB 256-bit LPDDR5X	64GB 256-bit LPDDR5X
TPM	TPM2.0	NPCT764	
Expansion Slot	M.2 M-Key	1 x M-Key, 2280. Signal: PCIe5 x4 (NVMe SSD)	
	M.2 B-Key	1 x B-Key, 3052. Signal: PCIe x1/USB3.2/USB2/I2C	
	M.2 E-Key	1 x E-Key, 2230. Signal: PCIe x1, USB2	
Rear I/O	DP	1 x DP1.4a, max 7680x4320 (8K) 30Hz	
	HDMI	1 x HDMI 2.1, max. 7680x4320 (8K) 30Hz	
	Ethernet	QSFP28: 4 x 10G by T5000; 3 x 10G by T4000	
	USB	1 x USB Type-C 2 x USB3.2 Type-A	
	Audio	Mic in & Line out	
Internal Connector	USB	2 x USB3.2 (Box header)	
	USB for debug	1 port	
	GMSL	2 x MINI FAKRA (4P)	
	Ethernet	RJ45: 1 x 5GbE	
	Serial	2 x COM (RS232/RS485)	
	CANBus	4 x CAN (only T5000)	
	I2C	3 (pin header)	
	GPIO	8-bit	
	Smart fan	1 (CPU fan) & 2 (System fan)	
Power Requirements	Boost	24V DC in (± 10%)	
	Typical	4-pin Phoenix connector	
Environment	Temperature	Operating: -15 ~ 60 °C (5 ~140 °F)	
Physical Characteristics	Dimensions	170 x 170 mm (6.69" x 6.69")	

Block Diagram



Ordering information

P/N	Thor Module	HDMI	DP	Mini FAKRA	QSFP28	5GbE	USB-C	USB3.2	COM	CAN Bus	M.2 M-key	M.2 B-Key	M.2 E-key	TPM	Audio
AIMB-294AT5-00A1	AGX T5000	1	1	4P x2	1	1	1	4	2	4	1	1	1	1	2

Packing List

Part No.	Description	Quantity
AIMB-294 Board	AIMB-294 motherboard assembled with NVIDIA Jetson Thor T5000	1
	NVIDIA Jetson Thor T5000	1
	M.2 2280 512G SSD	1
1700035844-01	COM cable 9-pin 25cm	1
1700019967-01	DIO cable 9-pin 15cm	1
1700030518-01	CANBus cable 9-pin 15cm	1
1700035843-01	Power switch cable 40cm	1
19350304A0	M.2 screws (M3, L=4mm)	2

Embedded OS / API

OS/API	Part No.	Description
Ubuntu 24.04	20706UJTNS0044	Image Ubuntu 24.04 JetPack 7.1 V100 AIMB-294

Optional Accessory

Part No.	Description
96ICAM-222	GMSL camera
1751000758-01	1-to-4 GMSL camera cable (connect to mini FAKRA)
1751000759-01	1-to-1 GMSL camera cable (Depending on the quantity of cameras, up to 4 cameras per port) Note: These 2 cables must be purchased together.
1700029719-11	1-to-2 USB 3.2 cable, 30cm
1970006341T001	Thor T5000 cooler, 130W, H: 37.9mm