ITA-560

AI Inference Box Computer Powered by NVIDIA® Jetson Orin™ NX/Orin™ Nano for Railway Applications



Features

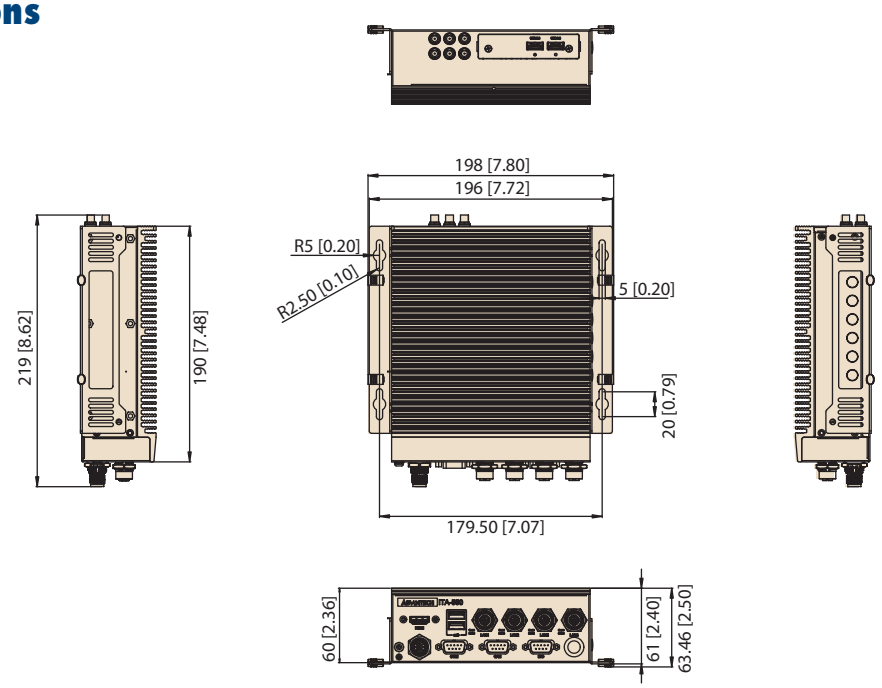
- Fanless box computer designed for AI inference
- Embedded NVIDIA® Jetson Orin™ NX/Orin™ Nano platform
- Compliant with EN 50155 OT1 and EN 50121-3-2 EMC standards
- Rugged M12 connectors suitable for harsh, industrial environments
- 1 x Mini PCIe, 1 x M.2 (E-key),1 x M.2 (M-key) and 1 x M.2 (B-key) for easy expansion
- Bundled with Linux Ubuntu 20.04 operating system

Specifications

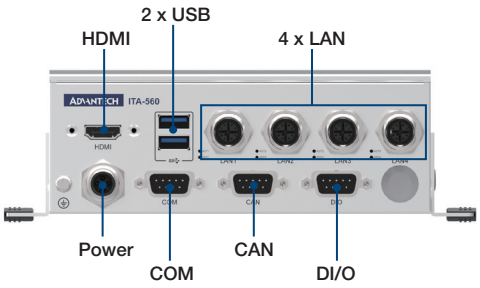
System	GPU	NVIDIA® Ampere GPU 1024 NVIDIA CUDA cores and 32 Tensor cores Up to 100 (Sparse) INT8 TOPs and 50 (Dense) INT8 TOPs	NVIDIA® Ampere GPU 1024 NVIDIA CUDA cores and 32 Tensor cores Up to 40 (Sparse) INT8 TOPs and 20 (Dense) INT8 TOPs
	CPU	NVIDIA® Jetson Orin™ NX 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU	NVIDIA® Jetson Orin™ Nano 6-core Arm® Cortex®-A78AE v8.2 64-bit CPU
	DLA	20 TOPS each (Sparse INT8)	-
Memory	Max. Capacity	16 GB 128-bit LPDDR5	8GB 128-bit LPDDR5
I/O - External	Display	1 x HDMI	
	CAN	1 x CAN, DB9	
	USB	2 x USB 3.0 type A	
	Serial Port	1 x RS-232/RS-422/RS-485, DB9	
	DI/O	1 x 8bit (4in/4out), DB9	
I/O - Internal (Pin Header)	OTG USB	1 x Micro USB	
	Serial Port	1 x RS-232/RS-422/RS-485, DB9 (optional)	
Ethernet	Controller	Intel® I210-IT	
	Interface	10/100/1000 Mbps	
	Connector	4 x M12 (X-coded)	
Expansion	Mini PCIe	1 x Mini PCIe slot	
	M.2	1 x M.2 (B-key) 3052 for 5G/LTE 1 x M.2 (E-key) 2230 for Wi-Fi/Bluetooth 1 x M.2 (M-key) 2280 for storage	
	SIM	1 x Nano SIM card slot	
	Antenna	6	
Power	Input Range	24/110V_{DC}	
	Connector	1 x M12 (S-coded)	
Environmental	Operating Temperature	-25 ~ 55 °C/-13 ~ 131 °F	
	Storage Temperature	-40 ~ 85 °C/-40 ~ 185 °F	
	Humidity	5% ~ 95% @ 40 °C/104 °F (non-condensing)	
Mechanical	Dimensions (W x H x D)	160 x 60 x 190 mm/6.29 x 2.36 x 7.48 in	
	Mount Options	Wall mount	
Certification	EMC	CE, FCC, BSMI, CCC	
	Safety	CE, FCC, BSMI, CCC	
EN50155 Compliance	Ambient Temperature	-25 ~ 55 °C/-13 ~ 131 °F (EN 50155 OT1)	
	Shock and Vibration	IEC 61373 body mount class B	
	Voltage Interruptions	Class S2	
	Supply Change Over	Class C1	
	EMC	EN 50121-3-2	

Dimensions

Unit: mm [inch]



I/O Layout



Ordering Information

Part Number	Processor	Voltage (M12-S-Male)	Ethernet GbE (M12-X-F)	USB 3.0 (Type A)	Mini PCIe	M.2 (M-Key)	M.2 (E-key)	M.2 (B-key)	CAN	COM	DI/O	HDMI
ITA-560NX-LOA1	Orin NX	$24V_{DC}$	4	2	1	1	1	1	1	1	1	1
ITA-560NX-SOA1	Orin NX	$110V_{DC}$	4	2	1	1	1	1	1	1	1	1
ITA-560Nano-LOA1	Orin Nano	$24V_{DC}$	4	2	1	1	1	1	1	1	1	1
ITA-560Nano-SOA1	Orin Nano	$110V_{DC}$	4	2	1	1	1	1	1	1	1	1

External Cables and Connectors

Part Number	Description
FRU-ITAPWR-0001	External cable - Power to M12
FRU-ITALAN-0003	External cable - RJ45 to M12