

ITA-560NX

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



Features

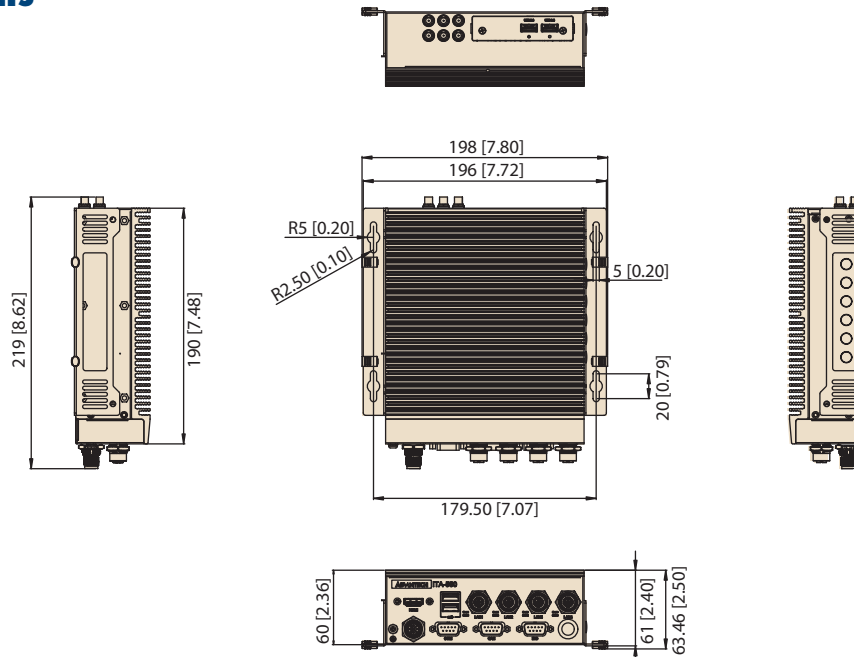
- Fanless box computer designed for AI inference
- Embedded NVIDIA® Jetson Orin™ NX platform
- Compliant with EN 50155 OT3 and EN 50121-3-2 EMC standards
- Rugged M12 connectors suitable for harsh, industrial environments
- 1 x Mini PCIe, 1 x M.2 (E-key), 1 x M.2 (M-key) and 1 x M.2 (B-key) for easy expansion
- Bundled with Linux Ubuntu 20.04 operating system

Specifications

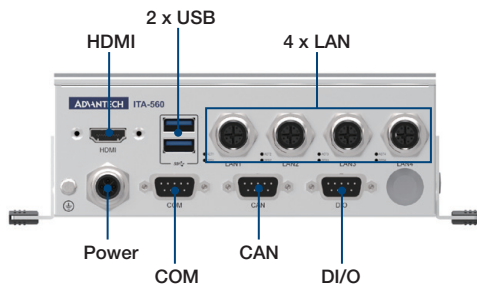
| | | |
|-----------------------------|------------------------|---|
| System | GPU | NVIDIA® Ampere GPU 1024 NVIDIA CUDA cores and 32 Tensor cores Up to 100 (Sparse) INT8 TOPs and 50 (Dense) INT8 TOPs |
| | CPU | NVIDIA® Jetson Orin™ NX 8-core Arm® Cortex®-A78AE v8.2 64-bit CPU |
| | DLA | 20 TOPS each (Sparse INT8) |
| Memory | Max. Capacity | 16 GB 128-bit LPDDR5 102.4 GB/s |
| 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) | CAN | 1 x CAN, DB9 (optional) |
| | 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/storage 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 ~ 70 °C/-13 ~ 158 °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) | 190 x 60 x 160 mm/7.48 x 2.36 x 6.29 in |
| | Mount Options | Wall mount |
| Certification | EMC | CE, FCC, BSMI, CCC |
| | Safety | CE, FCC, BSMI, CCC |
| EN50155 Compliance | Ambient Temperature | -25 ~ 70 °C/-13 ~ 158 °F (EN 50155 OT3) |
| | Shock and Vibration | IEC 61373 body mount class B |
| | Voltage Interruptions | Class S2 |
| | Supply Change Over | Class C2 |
| | 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 3.1 (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 |

Optional Expansion Modules

| Part Number | Description |
|--------------------|--|
| AIW-355DQ-E01 | Qualcomm SDX55 5G M.2 3052 module (EU) |
| AIW-355DQ-C01 | Qualcomm SDX55 5G M.2 3052 module (China) |
| AIW-355DQ-N01 | Qualcomm SDX55 5G M.2 3052 module (US) |
| AIW-152BQ-001 | M.2 2230 802.11AC + BT4.2 i-temp module |
| SQF-C3AV1-128G-EDE | M.2 2230 OPAL 720 128 GB 3D TLC BiCS3 module (-40 ~ 85 °C/-40 ~ 185 °F) |
| EWM-W158F01E | 802.11 a/b/g/n, Atheros AR9592-AR1B, 2T2R module (wide temperature) |
| PCM-27D24DI-AE* | Isolated digital I/O module with 16 DI and 8 DO, 1 x mPCIe, and 1 x DB37 |

* Requires a specific chassis

External Cables and Connectors

| Part Number | Description |
|------------------|----------------------------------|
| FRU-ITA5831-0002 | External cable - Power to M12 |
| FRU-ARS2600-0001 | External cable - RJ45 to M12 |
| Y5D5231005 | External connector - LAN X-coded |
| Y5A5231004 | External connector - PWR S-coded |