



TT315 Thor Controller

For Robotics and Ground Vehicle Applications

Key Features

- ▶ Advanced AI Performance
- ▶ zQSFP+ 4x 25G Ethernet
- ▶ RJ-45 1G Ethernet
- ▶ NVMe M.2 M-Key Slot
- ▶ Wi-Fi/4G/5G
- ▶ 14-core ARM Poseidon-AE CPU
- ▶ 2560 CUDA Core NVIDIA GPU
- ▶ 128GB LPDDR5x Memory
- ▶ Hardware Security via SE050 TPM

Applications

- ▶ Autonomous Transportation
- ▶ Robotics
- ▶ Agriculture
- ▶ Mining
- ▶ UAV

Overview

The TT315 Thor Controller is a rugged, IP20 compute platform based on the powerful NVIDIA® Jetson AGX Thor™ module, which integrates a 14-core ARM Poseidon-AE 64-bit CPU, an NVIDIA Blackwell Architecture GPU with 2560 CUDA® cores and 96 4th Gen Tensor Cores, and 128GB LPDDR5x DRAM running at 4266 MHz with 273 GB/s bandwidth. Designed for industrial and commercial deployment.

The TT315 delivers up to 1050 FP8 TFLOPs / 2100 FP4 TFLOPs of AI compute, providing the performance needed for edge inference and real-time video analytics. It offers a comprehensive set of latest-generation interfaces on the Jetson AGX Thor, including a zQSFP+ interface, RJ-45 GbE interface, USB Type-C for KVM Interface, 8x protected Discrete IOs, 2x isolated CAN bus ports, M.2 M-Key Slot (PCIe x4), M.2 B-Key Slot (USB 2.0 and USB 3.2), M.2 E-Key Slot (PCIe x1 and USB 2.0), and USB 2.0. The zQSFP+ interface delivers high-performance, high-speed data transmission at up to 100 Gb/s, enabling the transfer of large data volumes with significantly reduced latency.

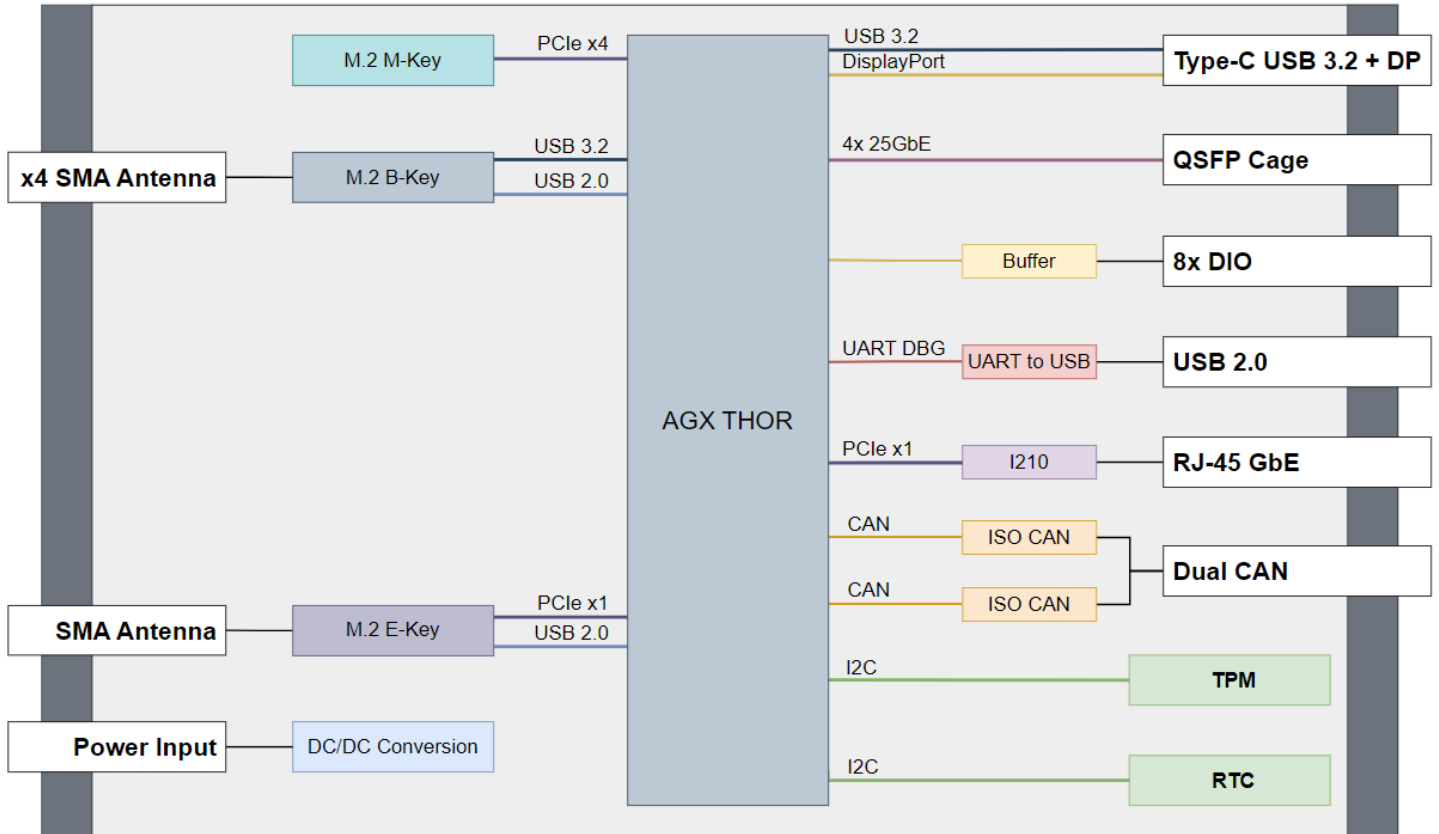
The platform incorporates the NXP SE050 Secure Element, offering hardware root of trust, secure credential storage, and cryptographic acceleration. With EAL 6+ certification, it ensures strong protection for security-critical AI and IoT applications. The TT315 supports 12V DC input and includes two built-in control pins for reset and force-recovery. Its enclosure, featuring a built-in heatsink, ensures dependable operation under heavy loads. This thermal design streamlines integration while safeguarding the platform from environmental influences.

Key Advantages

- ▶ Powered by NVIDIA Jetson AGX Thor
- ▶ NVIDIA Blackwell GPU with 2560 CUDA® cores and 96 4th Gen Tensor Cores
- ▶ 14-core Arm® Poseidon-AE CPU with 4MB shared L3 Cache
- ▶ 4K Graphics & High-Speed Communication
- ▶ 3x M.2 PCIe Expansion Slots for LTE/5G, Wi-Fi/BT and Storage
- ▶ SE050 Secure Element for Secure AI & IoT Operations



Block Diagram



Specifications

SOM	NVIDIA® Jetson AGX Thor up to 1050 FP8 TOPS/2100 FP4 TOPS
SYSTEM MEMORY	128GB LPDDR5x 4266MHz 256-bit, 273GB/s
DISPLAY INTERFACE	USB Type-C Display Port
ETHERNET	4x 25GbE LAN zQSPF+ Interface
	RJ-45 GbE Port
I/O	USB 3.2 Type-C + DP
	8x Protected Discrete I/O
	2x isolated CAN 2.0
EXPANSION	1x M.2 PCIe Slot M-Key PCIe x4 (for NVMe SSD)
	1x M.2 PCIe Slot E-Key PCIe x1 (for Wi-Fi/BT)
	1x M.2 PCIe Slot B-Key (for LTE/5G)
ADDITIONAL FEATURES	SE050 TPM
	RTC
	Debug USB 2.0
OS SUPPORT	Ubuntu 24.04
POWER	12V DC input
	Maximum 180W total power budget
DIMENSION	185 mm (W) x 165 mm (D) x 90 mm (H)

Environmental

OPERATING TEMPERATURE	-20°C to 60°C
STORAGE TEMPERATURE	-40°C to 85°C
HUMIDITY	10% to 90%, non-condensing
VIBRATION	Operating, MIL-STD-810H, Method 514.8, Category 4
SHOCK	Operating, MIL-STD-810H, Method 516.8, Procedure I
EMC	Designed to meet FCC, CE, and UL certifications, where applicable

Ordering Options

Part Number	Description
TT315-100-000-000	TT315 with NVIDIA Jetson AGX Thor 128GB

The system can be customized for specific customer requirements, contact Tauro Technologies sales for details.



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