

TRX R2

Rugged Cellular Gateway with Edge Compute

Key Features

- Intel® Atom™ Denverton 8-core, 4-core or 2-core processor options
- Two 4G/LTE modems with Band 14 Firstnet support or one 5G modem
- NVMe-based storage with up to 512 GB capacity
- Two copper 1 Gb Ethernet ports
- Two 10 Gb SFP+ ports in 8-core variant
- SD-WAN support for LTE modem aggregation, secure VPN, and headend
- Simultaneous Wi-Fi AP and client
- KlasOS Keel software providing:
 - Connectivity
 - Virtualization
 - Telematics
 - Management
- NIAP Common Criteria Certified as a firewall with KlasOS Keel
- NSA CSfC component listed [Traffic filtering firewall]



Connecting Vehicles and Operators

TRX R2 is a rugged compute gateway that combines both connectivity and local compute so that vehicles and operators have connectivity when they need it, but local processing capabilities when connectivity is unreliable. The solution is underpinned by KlasOS Keel, a lightweight OS with integrated hypervisor, SD-WAN and Wi-Fi, and cellular connectivity management. TRX R2 can be configured with two 4G/LTE modems or with a single 5G modem. In addition, the TRX R2 integrates GPS, Wi-Fi, and 2 x 10 Gb Ethernet (8-core variant).



Combined with Klas' proven SD-WAN feature embedded in Keel, multiple transports can be used simultaneously in a secure and agile way. A broad range of virtual machines are also supported, including VPN technology, WAN optimization, RoIP, and video analytics.



TRAINS



AUTONOMOUS



FLEET

Specifications



Physical Specifications

- 7.4" W x 6.3" L x 2" H (188 mm x 160 mm x 52 mm)
- 4.4 lb / 2 kg

Electrical Specifications

- 9 - 36 VDC input
- 15 - 32 W power consumption

Construction

- Aluminum chassis with fanless cooling

Operational Temperature Range

- **C3308:** 0°C to 60°C
- **C3538:** 0°C to 60°C
- **C3508:** -32°C to 60°C
- **C3708:** -32°C to 50°C

Ports

- 2 x 4G/LTE modem slots (M.2), or 1 x 5G slot (M.2)
- SIMS accessible via front panel
- 2 x SIM card slots (one for each LTE modem, or 1 for 5G modem)
- 2 x 1 GbE ports
- 2 x 10 GbE SFP+ ports (8-core only)
- 4 x modem antennas (2 per LTE modem or 4 per 5G modem)
- 1 x GPS antenna port
- 3 x Wi-Fi antenna ports
- 2 x USB 2.0 interfaces
- RJ45 serial console port with hypervisor access

GNSS

- Concurrent reception of 2 GNSS systems (GPS/QZSS, GLONASS, BeiDou)
- Accuracy 2.5m
- Passive and active antenna support

CPU Options

- **Intel® Atom™ Denverton C3308 2-Core** (2 Threads) processor with 1.6 GHz, 4 MB Cache
- **Intel® Atom™ Denverton C3538 4-Core** (4 Threads) processor with 2.1 GHz, 8 MB Cache
- **Intel® Atom™ Denverton C3508 4-Core** (4 Threads) processor with 1.6 GHz, 8 MB Cache
- **Intel® Atom™ Denverton C3708 8-Core** (8 Threads) processor with 1.7 GHz, 16 MB Cache
- Memory options:
 - 16 GB RAM as standard
 - Upgrade option to 32 GB or 64 GB RAM

4G LTE Modems

- **2 x Sierra Wireless LTE** modems. Multiple options supported covering all regions, supporting up to Cat-12 LTE with fallback to 3G networks. Certified for use on Verizon, AT&T and FirstNet.

5G Modem

- **1x Thales MV31-W** global support. Supports 5G SA and NSA (6 Gbps DL, 2 Gbps UL) plus fall-back to LTE Cat.20/ Cat.13 and 3G networks.

Storage

- VIK+ NVMe removable storage (256GB or 512GB)

Wi-Fi Interface

- IEEE802.11 ac/b/g/n modem with data rates of 1.3 Gb/s downlink
- 3x3 MIMO
- Supports 2.4 GHz and 5 GHz bands
- Enhanced wireless security supporting 64/128-bits
- WEP, WPA, WPA2, 802.1x

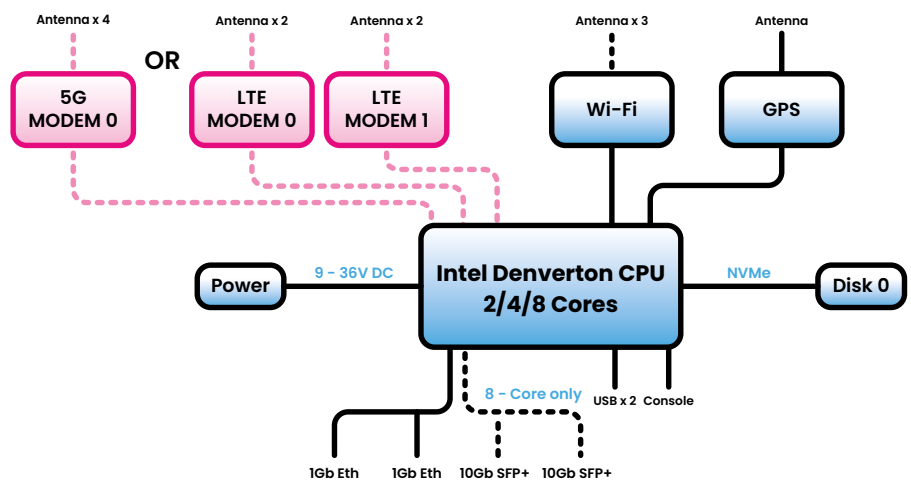
Software Support

- KlasOS Keel, a lightweight OS with integrated hypervisor and SD-WAN
- Blackrock - IT automation, management and monitoring

Compliance

- NIAP Validation Report: CCEVS-VR-VID11436-2024
- NSA CSfC component listed
- Designed to meet:
 - MIL-STD-810G
 - MIL-STD-461F
 - FCC Part 15 B
 - CE
 - RoHS, REACH

Cellular Connectivity Options



KLASOS KEEL | BLACKROCK

Optimised Management & Virtualization