

Fanless Mini - METIS - In-Vehicle - IP50(12V)

AI Compute

Fanless • Passively cooled

IP50

In-Vehicle Fanless Mini PC



Product Overview

The FM-METISIV-50-12V is an in-vehicle edge AI platform purpose-built for continuous operation in mobile environments. Unlike a general-purpose fanless system, it combines vehicle-specific power management, rugged mechanical design, and on-device AI acceleration to deliver reliable edge computing on the move. Intelligent ignition control synchronizes system startup and shutdown with the vehicle's ignition while automatically managing power to help protect the vehicle battery from unnecessary drain. A fully fanless, passively cooled enclosure, reinforced with an anti-vibration design, provides dependable operation under constant movement, shock, vibration, and dusty conditions, eliminating moving parts that could fail in demanding deployments.

Powered by the Axelera Metis AIPU, the platform performs AI inference directly inside the vehicle, enabling real-time vision and analytics workloads without relying on a continuous network connection. Optional Wi-Fi and 4G connectivity support connected fleet operations, remote management, and data synchronization when required, while its standardized hardware configuration enables straightforward, repeatable deployment and maintenance across large vehicle fleets. These capabilities make the FM-METISIV-50-12V well suited for fleet management, transportation networks, public safety vehicles, and field service operations, where rugged, reliable edge AI must operate wherever the vehicle goes.

Key Specifications

- **Processor:** Rockchip RK3588 - 8 Core (4 x Cortex-A76 + 4 x Cortex-A55)
- **Intelligent ignition control:** Powers on and off with the vehicle ignition and power automatically, protecting the battery from drain.
- **Anti-vibration plate** and a no-moving-parts design keep operation stable through shock and vibration.
- **AI inference** on-device The Axelera Metis AIPU processes vision and analytics inside the vehicle, without depending on a connection.

Key benefits of FANLESS and RUGGED computers



No fans obviously means no noise, but it's not the only benefit!



No fans allow an important decrease in power consumption, making our products more sustainable!



A fanless computer eliminates the risk to draw in dust and dirt from the environment, the cause of potential failures and costly downtime.



The absence of moving parts enable our products to resist shocks and vibrations, for an increased reliability.



They are built to withstand harsh and constrained working conditions.



High Ingress Protection (IP) rating, indication the protection level of products against both solid and liquids in electrical enclosures.



The in-house designed and milled aluminium chassis is optimized for efficient passive cooling and durability. Its conception proved their reliability in extended operating temperatures.



The aluminium used for the chassis production is repurposed and recycled, and the production waste is recycled too!

SOLUTION FAMILY

Tranquil AI - AI Compute platforms

Tranquil AI by 2CRSi Edge combines best-in-class AI processing technology with industrial-grade engineering, enabling organisations to deploy powerful AI solutions outside the datacentre. Designed and assembled in the UK, Tranquil AI platforms transform AI development hardware into deployable production systems suitable for industrial, transport, security, smart-city and infrastructure applications. Fanless operation, rugged construction and configurable deployment options allow customers to move from proof-of-concept to production without redesigning their AI infrastructure.

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I/O Rear

Power/reset switch, DC-In 12, 2x RJ45 for LAN, 4x USB 3.1, 1x USB-C, 1x HDMI, Micro SD Slot

Technical Specification

Processor	Rockchip RK3588 (ARM-based) – 8 Core (4 x Cortex-A76 + 4 x Cortex-A55) – up to 2.4 GHz		
Memory	Capacity: 16GB Type: LPDDR4X ECC Support: No	Storage	Included: 64 GB onboard eMMC Storage 1 Max (option): 8TB 2.5" SATA SSD Storage 2 (option): MicroSD Card Slot
AI Accelerator	Axelera Metis AIPU	AI Performance	214 TOPS
Graphics	ARM Mali-G610 GPU (integrated)	Graphics	1 x HDMI 2.0 - 4096 x 2160 @ 60Hz
Network Interface	2x Gigabit LAN	Network Options	Optional Wi-Fi or 4G/LTE connectivity via internal M.2
Network Feature	Wake-on-LAN PXE	Encryption	ARM TrustZone
Hardware Monitoring	Watchdog On-Board	Supported OS	Yocto-based Linux OS Docker Support
Power Input	3-pin 5.08mm pitch "Phoenix" connector		
Input Voltage	12V		
Consumption	9-20w		

Physical Specification

I/O Front	Power/reset switch	LED Front	Power
Extra IO	GPIOs, ADC, I2C, SPI	COM Port Option	UART
Operational Temp	0C to 60C (32F to 140F)	Storage Temp	-20C to 70C (-4F to 158F)
Maximum relative humidity	5% to 95%	Cooling Type	Passive Cooling
Size	80 x 336 x 221 mm	Weight	9.4 KG
Accessories	Power connector	Optional Accessories	Wireless Antenna, Mounting options (Desk, Wall or Anti-Vibration plate)
Certifications	    	Warranty	3 Years



Configuration options (OS, branding, software preload) are available and do not alter the certified platform baseline. For bespoke requirements requiring engineering change, enquire about Tranquil Studio.