# AutoPi TMU CM4

**Faster** data rate at your fingertips

Bluetooth

Raspberry Pi Compute Module 4

Security Element

HDMI Port

USB Ports

Voice Speaker

Accelerometer/ Gyroscope

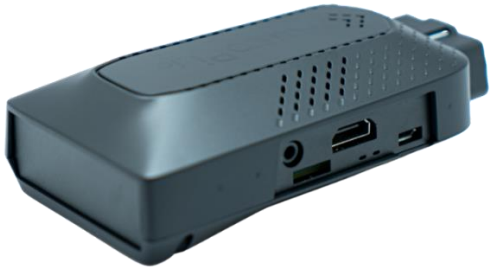
2x Dedicated CAN

GPS/GLONASS

4G/3G LTE Cat 4 Modem

WiFi

Native Real-time Clock



## Key Benefits

**4G/LTE with global coverage**
The integrated modem with worldwide coverage.

**Built in 2x CAN interface**
Automotive connection with dual CAN.

**Factory integrated unit or aftermarket add-on**
Use as a factory integrated OEM device or aftermarket add-on.

**Integrated power-safe functionality**
Proven and experienced power fail-safe functionality integrated.

**Runs full Linux OS**
Boost a well proved and tested OS, with guarantee for stability.

**Can be extended to almost any usage**
Allows extension to both business and personal use cases.

**Upgradeable CPU/RAM**
Upgrade the device with additional CPU/RAM

**Automotive certified (CE/FCC)**
Certified to automotive standards for global usage.

**Security element**
Secure and encrypt your data

**Upgraded automotive interface**
The device comes with a 2x CAN interface and can be further expanded with additional CAN interfaces. Support for Diagnostics over IP (DoIP)

**Runs LINUX OS**
AutoPi Core is based on a full LINUX OS (Raspberry Pi OS), with endless possibilities for extensions and integrations. Well proven and tested OS, with high endurance.

**Open source-software**
The device runs on an open source-software, which allows users to build a custom code on top of that. All drivers and implementations in AutoPi Core is available from our GitHub repository.

**Computing Power**
Broadcom BCM2711 Quad-core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz provides incredible speed and functionality. 1GB LPDDR4 RAM and an integrated GPU. Upgradeable to even more memory



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# Technical Specifications

| | |
|---|---|
| Processor | Broadcom BCM2711 Quad-core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz |
| Memory | 1GB LPDDR4 SDRAM<br>**Upgrade:** 2GB, 4GB or 8GB LPDDR4 SDRAM (depending on model) |
| Storage | 8GB on board eMMC<br>**Upgrade:** 16GB and 32GB (depending on model) |
| Size, Weight and Casing | **Casing:** Improved expansion options with exchangeable back shield for external antennas, additional USB ports, ethernet port. |
| Modem | Integrated 4G/LTE Cat 4 connection (3G/EDGE fallback)<br>150Mbit DL / 50Mbit UL<br>Worldwide support in a single device<br>**4G LTE Bands (Global):** B1 / B2 / B3 / B4 / B5 / B7 / B8 / B12 / B13 / B18 / B19 / B20 / B25 / B26 / B28 / B38 / B39 / B40 / B41<br>**3G Fallback (WCDMA):** B1 / B2 / B4 / B5 / B6 / B8 / B19<br>**EDGE Fallback:** B2 / B3 / B5 / B8 / Quad-band |
| Certifications | EN 301 489-1 v2.2.0, EN55025:2008, EN 50498 and Directive 2004/104/EC, ISO 7637-2:2011, EN 301 489-3 V2.1.1, FCC 47 CFR Part 15, Class A:10–1–17 Edition |
| Security Element (NEW) | - Hardware Based Secure Key Management<br>- Public Key Algorithms: RSA and ECC asymmetric, AES and DES symmetric cryptography algorithms. HMAC, CMAC, SHA-1, SHA-224/256/384/512 operations<br>- Crypto Curves: ECC NIST, Brainpool, Twisted Edwards Ed2551, Montgomery Curve25519, Koblitz, Barreto-Naehrig Curve, Montgomery Curve448<br>- Secure Storage of Keys, Certificates and Data<br>- Unique Serial Number<br>- Intrusion Detection |
| GPS | Integrated GPS + A-GPS. **Supports:** GPS/GLONASS/BeiDou/Galileo/QZSS |
| Power | **Line Voltage:** 12.5V AC (Car battery power). Up to 35V (Trucks). Support for trucks with up to 35V<br>Built-in Power Management system to prevent the vehicle's battery from being drained |
| Expansion | **2 X USB:** USB 2.0<br>**Ethernet:** Built in Ethernet<br>**GPIO:** UART/I2C/SPI |
| Wireless | Built on Cypress CYW43455 Chipset<br>**WiFi:** 2.4GHz and 5GHz IEEE 802.11.b/g/n/ac wireless LAN<br>**Bluetooth:** Bluetooth 5.0 + Bluetooth Low Energy (BLE) |
| Accelerometer | Built in 3-axis accelerometer |
| Gyroscope | Built in 3-axis gyroscope |
| Automotive Interface | **2 X CAN:** CAN interface with up to 1Mbps Data rate with integrated CAN data filter<br>**DoIP:** Upgradeable to allow support for DoIP |
| Input slots | **SIM Card:** Nano SIM – *Not Included* |
| Audio | Built-in speakers |
| Video Out | HDMI @ 1080P60 Video Output |
| Absolute Maximum Operating Environment | **Operating Temperature:** -20° TO 70° C (-4° TO 158° F)<br>**Relative Humidity:** 0% TO 75% Noncondensing |
| Operating System | Raspbian OS with preconfigured AutoPi Core |



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