ATOMO -10 MDT

Digitax
AUTOMOTIVE ELECTRONICS

ATOMO -10 MDT

The new ATOMO – 10 by Digitax is the solution for companies and systems integrators who need to provide their customers with a professional, certified, flexible and modular Mobile Data Terminal (MDT) specifically designed to fulfill the requirements of applications like public transportation, fleets and special vehicles managements and many others.
ATOMO – 10 is available as a stand alone Mobile Data Terminal (ATOMO – 10 MDT) as well as a ALL IN ONE integrated system (ATOMO – 10 ETS) made of the stand alone device, one or more Ticket Validators and one Printer, all of them produced and provided directly by Digitax, to allow the maximum flexibility for new setups or exhisting installations updating. The use of standard communication protocols makes ATOMO – 10 MDT able to be interfaced also with any other manufacturers ticket validators and printers, when required.
ATOMO – 10 MDT is equipped with a revolutionary Android Platform On Module allowing the device to be upgraded at any time to the latest release of Android HW Platform, OS, network/modem, 4G and 5G, Wifi and Bluetooth.
Features like customisable user interface, navigation, job dispatching and many others are also available with ATOMO – 10 MDT while Digitax Ticket Validators are available both in onboard and remote configurations and with different skins (grey, yellow, green) on request.

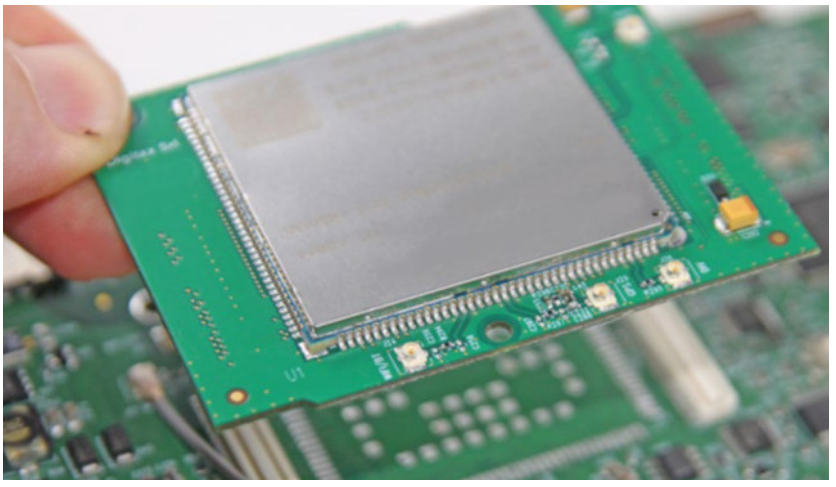
ATOMO – 10 MDT is a Smart Mobile Data Terminal designed to acquire and process a huge number of different, in the format and complexity, inputs coming from the many different peripherals typically used in the applications where a MDT is requested.
In particular ATOMO – 10 MDT offers the possibility of interacting with passive peripherals, removing the need of any signal pre or post processing in specific devices or in the peripherals themselves. Smart pheripherals can be easily managed by ATOMO – 10 MDT as well.
The use of ATOMO – 10 MDT allows to place in one device, ATOMO -10 MDT itself, the total complexity and the criticalities of the whole architecture reducing the number of the smart components needed for the implementation of the integrated systems.
Many benfetis come from this revolutionaty approach like the cost reductions related to architecture installation, the easier defects detection, maintanance and assistance.

- ANDROID 9-10 14-16
- CORTEX A53
- GPU ADRENO 506/ KRYO TM 619
- OCTA-CORE 1.8 GHz / 2.0 GHz
- BACKUP BATTERY
- 16:9 DISPLAY 10.1" 1K NITS
- 9-AXIS ACCELEROMETER
- WIFI 2.4GB/5G
- DIGITAX SDK
- RAM 2GB-3GB / STORAGE 16GB-32GB
- GPS
- 4G LTE
- BLUETOOTH 4.2 / 5.1

Direct Interfaces

Digitax **Atomo - 10 MDT** (Mobile Data Terminal) is capable of managing a wide range of direct interfaces from the vehicle, making it a highly versatile and powerful device. It supports numerous functionalities, providing seamless integration with various vehicle systems. Some of its key features are highlighted below as for example: **eSim technology, Dead Reckoning Technology, Driver Behaviour Merit System** and is directly interfaced with the **PIM Monitor Headrest Displays**.

Upgradable Android Platform



Digitax ATOMO – 10 MDT can be equipped, on request, with the full Android Platform On Module. With this option the CPU can be updated to the latest features and O.S, Modem/network, WiFi, Bluetooth releases. This unique feature allows to keep the MDT updated and tuned as per eventual future requirements.

Currently they are available 4 different chipsets Platform: OCTA Core Android 9, OCTA Core Android 10, OCTA Core Android 14 and OCTA Core Android 16. The next step will be Digitax providing new platforms with AI features, increased computational power, newer and updated OS and peripherals.

Interchangeable current and future android platforms (SOC) by module replacement

THE SOC PLATFORM INCLUDE:

- **Android CPU**
- **Android GPU**
- **Android RAM & eMMC Memories**
- **Android OS**
- **Modem**
- **GPS**
- **WiFi**
- **BLUETOOTH**

ATOMO -10 MOT

Dual CPU

MAIN CPUs :

OCTACORE - 600
Android 9-10
CPU ARM Cortex-A53 64-bit Processor
Octacore 8 X 2 Ghz
GPU Adreno 506
2GB + 8GB uMCP(LPDDR4x) (default)
32GB + 3GB uMCP(LPDDR4x) (option)
Multi-constellation GNSS receiver
4G LTE Cat 6
Bluetooth 4.2
WiFi 2.4G/5.0G

OCTACORE - 530
Android 14
CPU 2* A75@2.0GHz
OCTACORE +6*A55@1.8GHz
GPU Mali G57 @750MHz
2GB + 8GB uMCP(LPDDR4x) (default)
32GB + 3GB uMCP(LPDDR4x) (option)
Multi-constellation GNSS receiver
4G LTE Cat 4
Bluetooth 5.0
WiFi 2.4G/5.0G

OCTACORE 927
Android 14/16
CPU 64bit ARM
OCTACORE (4*A73 2.4GHz+4*A53 1.9GHz)
GPU Adreno™ 610
64GB + 4GB uMCP(LPDDR4x) (default)
32GB + 3GB uMCP(LPDDR4x) (option)
Multi-constellation GNSS receiver
4G LTE CAT.4
Bluetooth 5.1
WIFI 802.11 ax ready

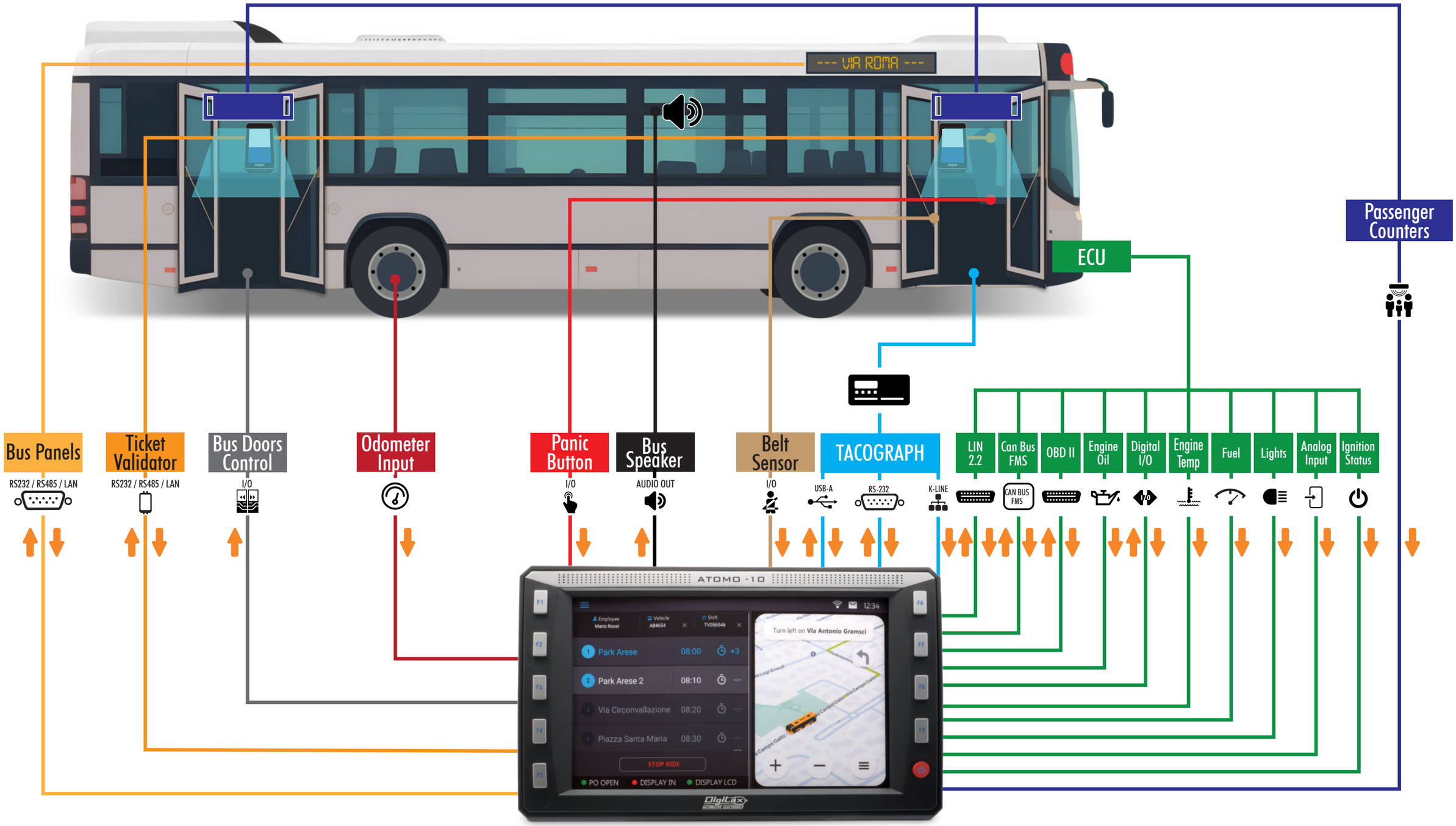
OCTACORE 700 (5G)
Android 13-16
CPU Kryo™ 670 CPU
8 core Kryo™ CPU
(2* GoldA78 2.4GHz + 6*
SliverA55 2.0GHz)
GPU Andreno 613 - 812Ghz
32Gb + 6Gb
5G - mmWave/Sub-6 GHz
Multi-constellation GNSS receiver
Bluethooth 5.2
WiFi 6E

SECONDARY CPU AITP (for all versions) :

AITP (Automotive Intensive Task Processor) dedicated to the necessary functionalities in the automotive field, like power management, Safe Shutdown, Wheel Pulses Odometer, Distance and Speed calculation, Wake-Up on Ring, Over-the-Air services for software and firmware updates. The AITP is OTA programmable for remote automatic firmware and tariff upgrade, and is always powered ON; it can turn-ON and OFF the Device and its peripherals.

ATOMO -10 MDT

DIRECT INTERFACES



ATOMO -10 MOT

FEATURES

Dual CPU

PRIMARY CPU

The Octa-core, OS Android 9 - 10 or 14, LTE 4G allows remarkable flexibility and efficiency in computing power together with reduced power consumption.

SECONDARY CPU

The dedicated AITP handles key automotive functions like power management, Safe Shutdown, Wheel Pulses Odometer, distance/speed calculation, WakeUp on Ring, and OTA software/firmware updates. Always ON and remotely programmable, it enables automatic firmware and rate upgrades and controls device/peripheral power.

Fleet and Security Applications

The device implements the latest technology to match any professional fleet and security application. Ideal for Fleet Management, AVM, Ticketing Validator, Job Dispatching, Service Certification and Navigation, it is a reliable, professional, compact, flexible, modular, and automotive-approved Mobile Data Terminal. The 4G LTE or 5G LTE modem allows very reliable communication with back-end servers.

Customizable User Interface

The full HD 10.1" 1KNIT 16:9 TFT display enables versatile and accessible applications, thanks to the integrated capacitive touchscreen controller and 10 LED-equipped Function Keys. These keys, handling common operations, extend touchscreen lifespan, while the ambient light sensor ensures optimal brightness in any lighting. The programmable Smart Power Button (ON/OFF) supports multiple functions, including disabling or activating Ghost Mode (fake shutdown).

Stealth Mode

Stealth mode keeps the system running while disabling display and audio, useful in various scenarios:

- Driver Monitoring: The "wake up on ring" feature allows remote activation to check vehicle position, record audio, and collect data.
- Ghost Mode: When turned OFF, the device enters Stealth mode, staying operational while reducing power consumption.
- Alarm Management: If OFF, pressing the alarm button starts the system in Stealth mode, discreetly sending alerts, GPS location, screenshots, or audio streams to the control center.

Reliability

The device can withstand glitches, when starting the vehicle engine, and overvoltage up to 32V. It is also immune to ESD and EMC interferences. Thanks to the AITP processor user applications and Android OS can close safely in case of sudden disconnection of the main power.

Inputs and Outputs

A wide range of I/O channels are available: 3 Hi-Speed Host, 1 USB Client port and a total of 7 RS232 and RS485 serial ports. In particular the special programmable digital I/O allow to bidirectionally interact with external generic devices and equipments.

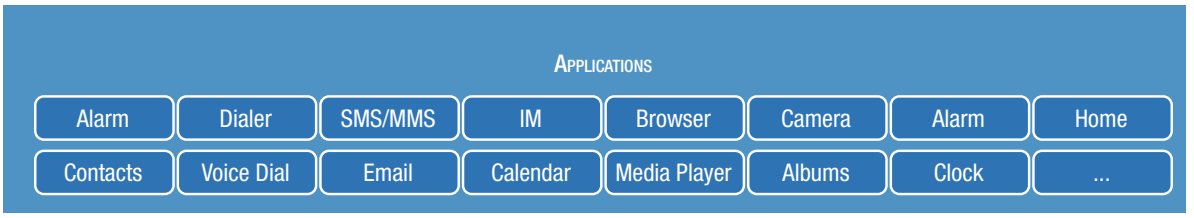
Software Customization

Digitax R&D Team can customize and keep updated every System software module.

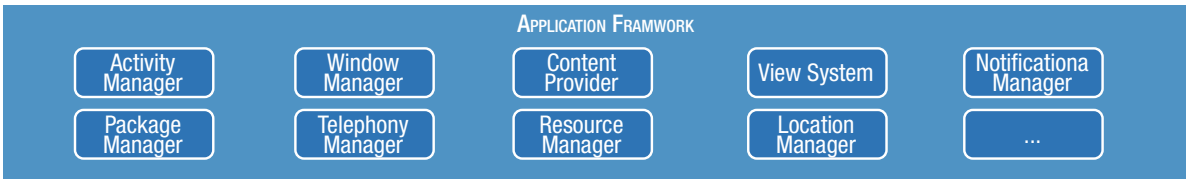
Together with the technical support, Digitax also provides Libraries, Code Samples and anything is required to let the customers to develop customized and proprietary applications by their own.

Digitax will provide technical support

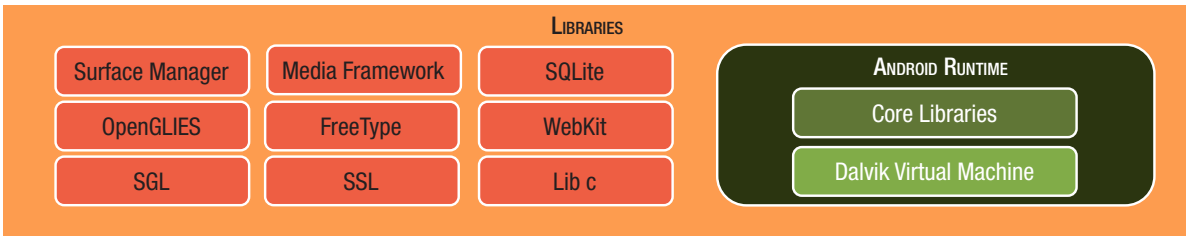
APP LAYER



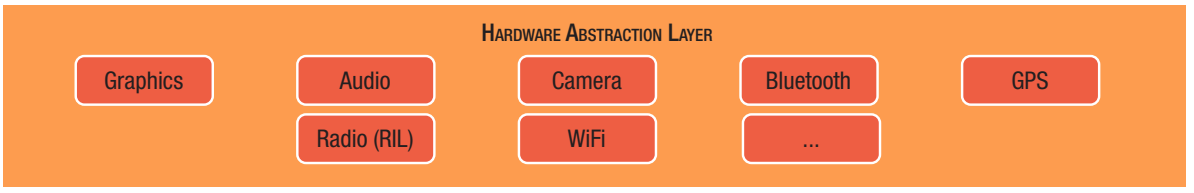
JAVA LAYER



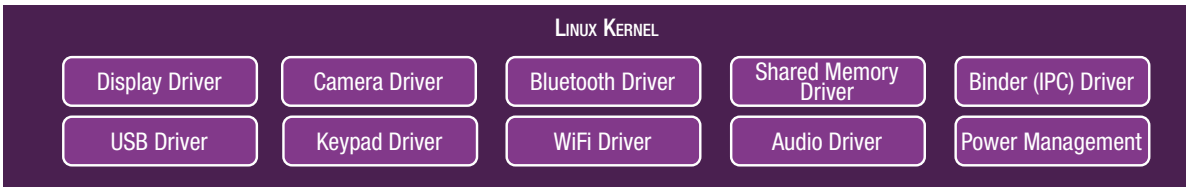
NATIVE LAYER



HAL



LINUX KERNEL



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SPECIFICATIONS

OPTION 1: CPU (OctaCORE 600)	Android 9-10, ARM Cortex-A53 64-bit Processor, Octacore 8 X 2 Ghz GPU Adreno 506, 2GB + 8GB uMCP(LPDDR4x) (default), 32GB + 3GB uMCP(LPDDR4x) (option), Multi-constellation GNSS receiver, 4G LTE Cat 6, Bluetooth 4.2, WiFi 2.4G/5.0G
OPTION 2: CPU (OctaCORE 530)	Android 14, OCTACORE 2* A75@2.0GHz +6*A55@1.8GHz, GPU Mali G57 @750MHz, 2GB + 8GB uMCP(LPDDR4x) (default), 32GB + 3GB uMCP(LPDDR4x) (option), Multi-constellation GNSS receiver, 4G LTE Cat 4 Bluetooth 5.0, WiFi 2.4G/5.0G
OPTION 3: CPU (OctaCORE 927)	Android 14/16, CPU 64bit ARM, (4*A73 2.4GHz+4*A53 1.9GHz) GPU Adreno™ 610, 64GB + 4GB uMCP(LPDDR4x) (default), 32GB + 3GB uMCP(LPDDR4x) (option), Multi-constellation GNSS receiver, 4G LTE CAT.4, Bluetooth 5.1, WIFI 802.11 ax ready
OPTION 4: CPU (OctaCORE 700 5G)	Android 13-16 CPU Kryo™ 670 CPU 8 core Kryo™ CPU (2* GoldA78 2.4GHz + 6* SliverA55 2.0GHz) GPU Andreno 613 - 812Ghz 32Gb + 6Gb 5G - mmWave/Sub-6 GHz Multi-constellation GNSS receiver + Bluethooth 5.2 + WiFi 6E
Secondary Intensive Task CPU Processor (AITP)	Secondary CPU The dedicated AITP (Automotive Intensive Task Processor) supplies the functionalities required by the automotive market like power management, Safe Shutdown, Wheel Pulses Odometer, Distance and Speed calculation, Wake-Up on Ring, Over-the-Air services for software and firmware updates. The AITP is OTA programmable for remote automatic firmware and tariff upgrade and is always powered ON. It can also switch ON and OFF the device and the peripherals.
Ram Memory	+2GB LPDDR
Storage Solid State Hard Disk Memory	16GB EMMC
External SD	Up to 256 GB for external storage
Communication Modem 4G	LTE Cat 6 modem supporting 2 × 20 MHz carrier aggregation, with maximum download speed up to 300 Mbps. Worldwide LTE, UMTS/HSPA+ and GSM/GPRS/EDGE coverage. 2 Sim Card slots
GPS Receiver	Multi-constellation GNSS receiver available for applications requiring fast and accurate fixes in any environment
Antennas	Internal GPS-WiFi-BT-LTE / External GPS-WiFi-BT-LTE Rugged Combo (option)
Multimedia	Audio: MP3, AAC+, eAAC, AMR-NB, -WB, G.711, WMA 9/10 Pro Video Encode: 30fps 720P (H.264), 30fps WVGA (MPEG-4/VP8) Decode: 30fps 1080P (H.264/MPEG-4/VP8/H.265 DivX4/5/6), 30fps WVGA (H.263) Internal and external Speaker and Microphone Supports wave speaker volume control
Connectivity	Wi-Fi Connection2.4G/5.8G, 802.11 a/b/g/n + Bluetooth class 2BT2.1+EDR/3.0/4.1 LE. / 5.1
Operating system	Android 7.1 (QuadCORE Version) Android 9/14/16 (OctaCORE Version) Development Tools Adb/Android Studio IDE with USB debugging support SDK for Android O.S. Sample code for SDK Digitax Framework (Digitax Libraries): GPS, Odometer, Hardware Keys, WatchDog, OTA, Stealth Mode Controller, Logs, And Restore, Light Dimmer, Hardware Identification, Alarm, Card Reader and Windows Status Serial port driver and test tools Digital I/O driver

All Platforms include the following features

IP protection	IP65 waterproof sealed.
Display	Ergonomic and orientable 10.1" TFT IPS Normally black Transmissive Display with 1920x1200 pixel resolution (1280x800 500 cd/m2) and 16.7M colors. Aspect Ratio 16:9. Display clearly viewable with 1000 cd/m2 or 500 cd/m2. Ambient Light Sensor with Automatic Regulation.
Touchscreen	Capacitive Touch screen. Extended Temperature Range. IK8
User Interaction	Operation with capacitive touchscreen or dedicated and programmable Function Keys (10 Keys).
USB Ports	UpTo 3 X USB Host (with USB Support for Mouse and Keyboard) Hi-Speed. 1 USB Device.
Serial Ports	1 External Full Modem RS232 Port. 2 External TX/RX RS232 / RS485 Port. 4 External RS232 Serial Ports (option).
I/O ports connection	4 Digital Inputs. 3 + 5 Power Output Ports. Dedicated Ignition input. 2 Analog Ports input. External Speakers output. External Microphone input. Odometer input.
Can Bus	Can Bus Interface OBD-II OBD2-FMS-SAJ1708 LIN 2.2
Alarm and Security	Panic Button input / Emergency Switch input. Stealth Mode Controller (system ON display, audio and lightings off).
Power on key	1 Smart Power On/Off button.
Connectivity	Ethernet: 10/100 Mbps LAN Controller. Witch 4 different switch ports.
Development Tools	Adb/Android Studio IDE with USB debugging support SDK for Android O.S. Serial port driver and test tools. Digital I/O driver.
OS Image Loader	Over The Air (OTA) OS image loader or microSDHC Card Image Loader.
Power Supply	8 - 32 V with Surge Protector.
Battery	Internal Battery Package (option) for controlled shutdown without any damage risk.
Operating Temperature	-20°C to 80°C
Humidity	Humidity up to 95% non-condensing.
Vibration	Vibration Sine wave, 10 ~ 500 ~ 10Hz, 1.5G, 0.37oct/min 3 axis, 1hour/axis.
eSIM	Yes
Dead Reckoning Module	Yes

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