



## Specifications

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System Mainboard             | MBT-3101V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| CPU Type                     | Intel® Atom® x7433RE Processor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| System Speed                 | Up to 2.7GHz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Memory                       | 1x DDR5-4800 SO-DIMM socket<br>Up to 16GB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| AI Inference Computing Power | On board Hailo-8™ Accelerator, up to 26 TOPS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Front Panel External I/O     | 1x USB 3.2 Gen2 stack Type-A connector<br>2x external accessible SIM socket<br>1x USB Type-C connector with screw-lock<br>1x Removable 2.5 SSD device bay<br>1x DB9 female connector for Line-out & MIC-in<br>1x reset button<br>1x 14-pin terminal block 6-in & 6-out digital I/O with 24V input and output<br>2x FAKRA I-code plug Beige color connector for WiFi / Bluetooth<br>1x FAKRA C-code plug Blue color connector for GPS<br>2x FAKRA D-code plug Violet color connector for 4G/5G<br>4x light-pipe for status LED Indicators |
| Rear Panel External I/O      | 2x M12 X-code 8P female for GbE LAN1/LAN2<br>1x terminal block 3-pin for DC INput<br>1x VGA connector for graphic output (optional)<br>1x DisplayPort output<br>1x DB9F connector for 2x CAN FD bus connection (works with extra CAN module)<br>2x DB9M for COM1 / COM2<br>2x USB 2.0 Type-A connector<br>2x light-pipes for LAN status LED Indicators                                                                                                                                                                                   |
| Expansion Slot               | 1x M.2 2230 E-Key socket for WLAN & BT connection (PCIe + USB 2.0 + SMBus)<br>1x M.2 3042/52 B-Key socket for WWAN (4G/5G) connection (USB3 .2 Gen1 + SMBus)<br>1x M.2 2280 M-Key socket for SSD device (SATA III)<br>1x Mini PCIe full-sized socket for MVB/CAN FD module (PCIe + USB 2.0 + SMBus)<br>1x Mini-PCIe half-size socket for GPS module (USB 2.0 only)                                                                                                                                                                       |
| Storage                      | 1x M.2 2280 M-Key socket for SSD (SATA III signal)<br>1x 2.5" removable device bay for SSD                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Power Requirement            | In-vehicle battery (84W)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Power Supply                 | DC INput 9V ~ 36V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Construction                 | Aluminum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Chassis Color                | Black                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Mounting Type                | Wall mount                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Dimensions                   | 250 (W) x 150 (D) x 55 (H) mm<br>9.84 (W) x 5.9 (D) x 2.16 (H)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Weight                       | 2.5 kg (5.5 lbs)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Operating Temperature        | -40°C ~ 70°C (-40°F ~ 158°F) (w/o Fan & SSD)<br>-20°C ~ 55°C (-4°F ~ 131°F) (w/ PCIe card)                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Features

- Intel® Atom® x7000RE Series Processor
- Robust M12 & FAKRA connectors with rich I/O interface
- Dual SIM sockets support WWAN redundancy
- Rich I/O interfaces for wireless, SSD, GPS, WWAN and add-on card expansion
- 9V-36V DC INput with ignition power control
- E-Fuse power protection and supercapacitor-based battery design
- Wide-range voltage GPIO interface
- Wide-range operating temperature from -40°C to 70°C
- Built in Hailo-8 AI accelerator chip (MPT-3100V-AI)
- Optional isolated CANbus thru Mini PCIe card
- Removable 2.5 device bay for SSD storage

|                     |                                                                                                                        |
|---------------------|------------------------------------------------------------------------------------------------------------------------|
| Storage Temperature | -40°C ~ 85°C (-40°F ~ 185°F)                                                                                           |
| Relative Humidity   | 10 ~ 95% RH @45°C (non-condensing)                                                                                     |
| Vibration           | Operating/Non-operating (SSD): 2.26 Grms (5~500 Hz) / MIL-STD-810G composite wheeled condition (Z-axis only)           |
| Shock               | Operating: Sawtooth: 20G, 11msec (Z-axis) / MIL-STD-810G Non-operating: Sawtooth: 40G, 11 msec (Z-axis) / MIL-STD-810G |
| Certification       | ITXPT, E-Mark-24<br>CE (EN 62368-1 / EN55032 / EN55035), FCC Class-A                                                   |
| Operating System    | Windows 11                                                                                                             |

## Ordering Information

|              |                                                                                                                                             |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| MPT-3100V    | MPT-3100V with MBT-3101, Intel® Atom® x7433RE Processor w/ 1x 8GB DDR5-4800, 1x SSD bay, No PSU, No storage (RoHS)                          |
| MPT-3100V-AI | MPT-3100V with MBT-3101, Intel® Atom® x7433RE Processor w/ 1x 8GB DDR5-4800, w/ Hailo AI accelerator, 1x SSD bay, No PSU, No storage (RoHS) |

## Dimensions and Drawing

