



Main Features

- IP65-rated rugged design
- Intel® Core™ dual core i7-6600U/i3-6100U (Skylake)
- 9~36VDC with ignition control
- Built-in GPS with optional dead reckoning
- Up to 2WLAN or two 3G/LTE via 4 mini-PCIe slots
- Electrical isolation for CAN2.0B & GPI/O
- Optional OBD function (SAE J1939/J1708)
- Rich and various GbE, USB 2.0/3.0, Serial I/O and storages
- Compliant to E-mark and ISO 7637-2
- Compliant to MIL-STD-810G in vibration/shock

Product Overview

MVS 5600-IP, an IP65-rated rugged enclosure, maintenance-free box computer, is ideal for data acquisition in extreme environments throughout a number of in-vehicle applications, like transportation, heavy duty and waste management, etc. All external interfaces, including Gigabit Ethernet, isolated CAN bus and digit I/O, USB, and RS232/485 serial ports, are implemented on IP67-proof connectors for reliable data transmission in harsh and rugged environments.

MVS 5600-IP is a modular design, it is flexible to use other kinds of expansion boards to extend different I/O functions for quickly tailored to a vast number of applications. Inside the system, there're four mini-PCIe slots with three SIM card slots offering WLAN, 3G/LTE cat.12, CAN OBD (SAE J1708/J1939) or CVBS functionality. Besides, it can operate at temperatures from -30°C to +60°C under fanless.

MVS 5600-IP supports 9~36VDC power input with ignition management and 12VDC at 2A maximum power output. It is compliant to E-mark and ISO 7637-2 in vehicle certificate and meet US military MIL-STD-810G, composite wheeled vehicle, for vibration and shock criteria.

Specifications

CPU

- 6th generation Intel® Core™ dual core i7-6600U, 3.4GHz/i3-6100U, 2.3GHz

Memory

- 204-pin DDR3L SO-DMIM socket support 1600MHz up to 16GB
- 2GB industrial grade memory in default

Storage

- 1 x 2.5" SATA 3.0 SSD/HDD
- 1 x CFast (externally accessible)

Expansion

- 1 x Full size mini-PCIe socket (USB 3.0/2.0)
- 1 x Full size mini-PCIe socket (USB 2.0)
- 1 x Full size mini-PCIe socket (USB 2.0 + PCIe)
- 1 x Half size mini-PCIe socket (USB 2.0 + PCIe)

GPS and On Board Sensor

- 1 x Default U-blox NEO-M8N GNSS module for GPS/Glonass/QZSS/Galileo/Beidou
- Optional modules with Dead Reckoning available
- Built-in G-sensor

Ethernet

- 2-Port 10/100/1000 Mbps
- Controller: Intel® 1210-T1

Security

- TPM in option

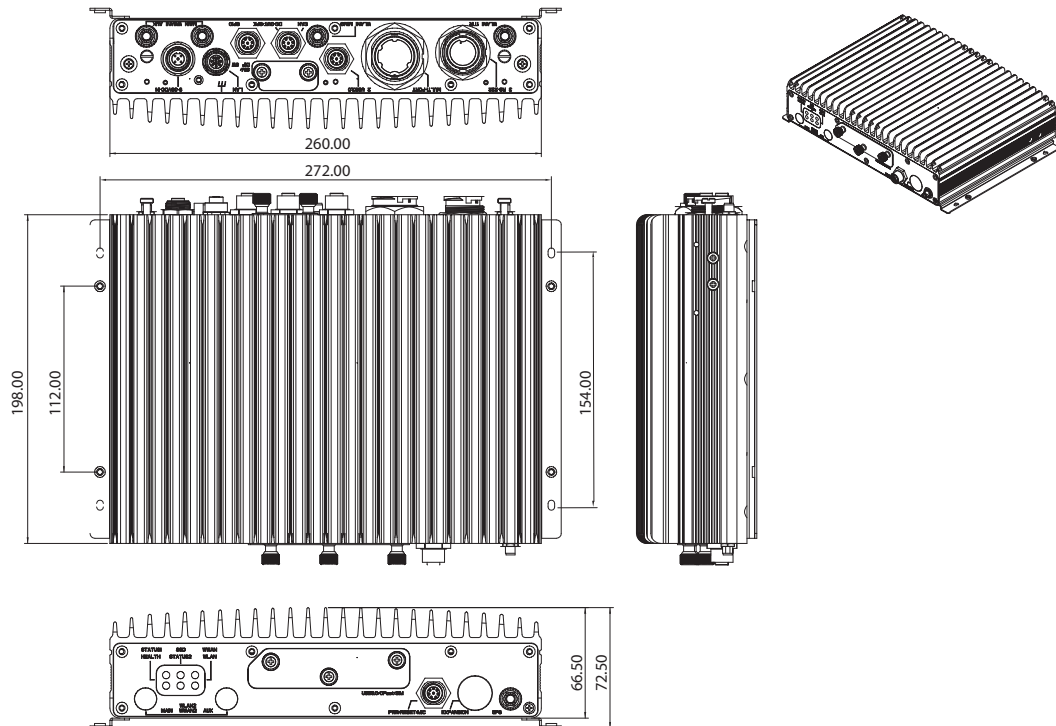
I/O Interface-Front

- 6 x LED indicators for power/storage/WLAN/WWAN/status/health
- 1 x USB type A USB 3.0 port (w/ lid)
- 1 x SIM slot (w/ lid)
- 1 x Mic-in, 1 x Line-out, power & reset buttons for M12 connector
- 3 x Antenna holes for WWAN/GPS
- One expansion port (M12-type) reserved

I/O Interface-Rear

- Circular 22-pin:
 - 3 x RS-232 (two for full, RI/5V/12V selectable)
- M12 8-pin:
 - 1 x GbE
- M12 8-pin:
 - 2 x USB 2.0
- M12 12-pin:
 - 3-bit GPO & 3-bit GPI
 - iButton
- M12 12-pin:
 - 1 x Line-out

Dimension Drawing



- DC12V-out, 2A max.
- OBD from optional VIOB-CAN-05/06 module (SAE J1708/J1939)
- 2 x CAN Bus 2.0B from optional VIOB-CAN-04 module
- Circular 31-pin:
 - 1 x VGA, resolution up to 2560 x 1600 @60Hz
 - 1 x GbE
 - 2 x RS-485 (2-wire)
 - 1 x CAN 2.0B w/ isolation
- M12 S-code:
 - DC 9~36V input with ignition and 40W typical power consumption
- 6-Bit DIP switch (w/ lid)
 - 3 x Digital inputs
 - Source-type: 9~36V-in (default)
 - External-type: 0~33VDC pull-high
 - Isolation
 - 3 x Digital outputs
 - Source-type: 9~36V-in (nominal 35mA@24V) (default)
 - External 5~27VDC pull-high, sink current: typical 220mA for each bit, 500mA max (@25°C)
 - Isolation
- Source or external selected by 6-bit DIP Switch
- 1 x SIM card socket (w/ lid) and 1x internal SIM card socket selectable
- 4 x Antenna holes for WLAN/WWAN
- 1 x M12 S-code for 9~36VDC-IN

Power Management

- Selectable boot-up & shut-down voltage for low power protection by software. Setting 8-level power on/ off delay time by software. Support S3/S4 suspend mode

Operating System

- Windows 7/WES7/Windows 8/WES8/Windows 10/Linux kernel 3.X

Dimensions

- 260mm (W) x 198mm (D) x 66.5mm (H) (10.24" x 7.80" x 2.62")
- 3.3kg

Environment

- Operating temperatures:
 - 30°C~60°C (w/ industrial SSD) with air flow
- Storage temperatures: -40°C~80°C
- Relative humidity: 10% to 90% (non-condensing)
- Vibration (random):
 - 1.5g@5~500 Hz (in operation, HDD), 2g@5~500 Hz (in operation, SSD)
- Vibration (SSD):
 - Operating: MIL-STD-810G, 514.6C, Category 4
 - Storage: MIL-STD-810G, 514.6, Category 24, minimum integrity test
- Shock (SSD/HDD):
 - Operating: MIL-STD-810G, Method 516.6, Procedure I, functional shock=20g
 - Non-operating: MIL-STD-810G, Method 516.6, Procedure V, crash hazard shock test=75g

Certifications

- CE approval, FCC Class A, E13

Ordering Information

- **MVS 5600-3IPK (P/N: 10VS0560005X0)**
Intel® Core™ 2c i3-6100U (Skylake) 2.3GHz, 2GB DDR3L industrial grade, 2 x GbE, VGA output, 3 x RS-232, 2 x RS-485, 2 x USB 2.0, 1 x USB 3.0, 12VDC output, 1 x CAN 2.0B
- **MVS 5600-7IPK (P/N: 10VS0560004X0)**
Intel® Core™ 2c i7-6600U (Skylake) 3.4GHz, 2GB DDR3L industrial grade, 2 x GbE, VGA output, 3 x RS-232, 2 x RS-485, 2 x USB 2.0, 1 x USB 3.0, 12VDC output, 1 x CAN 2.0B
- **Cable Kit (P/N: 10VS0262001X0)**
External cables for all the communication ports