



VM-521

10.4" Ultra-Rugged Vehicle Mount Computer



Ultra-rugged looks, stunning performance  
Born to challenge most extreme conditions



## Features Highlight



### Class-leading Structural Superiority

In order to create a class-leading ruggedized structure, RuggON adopts most rigorous standards to design vehicle mount computer. Our rugged features include IP66 for dust and water resistance, MIL-STD-810G for temperature (-30°C to 55°C), humidity, shock and vibration (514.6 C1-C3). These significant advantages ensure non-stop operation and efficiency in harsh and extreme conditions.



### The Latest Quad-core Processor for Mobility

VM-521 is Powered by Intel's next-generation processor Bay Trail-I E3845, which is specifically designed for intelligent systems, delivering outstanding computing, graphical, and media performance. This significant feature makes VM-521 offer best-in-class performance and energy efficiency for mobile field workers.



### Superb Visibility Anytime, Anywhere



Featuring 1,000 nits truly sunlight readable display, VM-521 offers superb viewability even in direct sunlight. It also comes with 0.1 nits hyper dimming technology, providing a widest brightness adjustable display to meet dim-to-black requirement. A best-in-class visibility makes VM-521 ideal for day and night operations.



### Full Coverage Makes Your Job in Top Form

- Designed to be flexible and simple for seamless communications, VM-521 offers built-in antennas plus external antennas for WLAN/Bluetooth/GNSS/WWAN. It provides full coverage to reduce wireless interference, ensuring non-stop operation.
- Most notably, VM-521 features the next generation Wi-Fi standard - 802.11 ac to provide faster processing, broader coverage, more stable and efficient transmission. Moreover, it offers higher capacity for networking of more devices to simultaneously transfer data.







## Industrial Communications for Field Use

With two gigabit Ethernet ports, two USB ports, four digital I/O ports, two COM ports and two CAN buses, VM-521 is truly designed for field operators. The isolated ports protect VM-521 from ground loop and improve system reliability. In addition, these ports also meet NMEA0183/NMEA2000 physical layer standard.



## Optimal Power Design of Vehicle Application

In order to fulfill diversified vehicle power requirements, VM-521 provides two types of wide range power modules – 9 to 36 VDC and 18 to 75 VDC. Moreover, battery built-in design protects VM-521 from unstable power input during the vehicle operation.



9~36VDC

18~75VDC

## Market Focus



## On-Road Application

- Sunlight readable and hyper dimming display for driving safety.
- Adopt rigorous ruggedness standards to ensure high degree of reliability.
- Complete and powerful RF technology for real-time data capture and efficient fleet management.
- Come with wide range power input for diverse vehicles.
- Built-in battery prevents system damage and data loss caused by unstable power input.
- Optional video surveillance function for reducing liability claims and driving behavior management.
- Integrated CAN-BUS for vehicle diagnostics.





## Off-Road Application

- Adopt rigorous ruggedness standards to withstand toughest environmental conditions.
- Wide temperature feature ensures stable and reliable operation of field applications.
- The comprehensive wireless coverage increases process efficiency.
- Come with wide range of isolated power input for diverse vehicles.
- Built-in battery prevents system damage and data loss caused by unstable power input sources.



## Maritime Application

- Optimize visibility with sunlight readable and hyper dimming display in dark environment.
- Adopt rigorous ruggedness standards to ensure high degree of reliability.
- Complete and powerful RF technology for real-time data transfer and communication.
- CAN-Bus supports NMEA2000 physical layer.
- Optional video surveillance function for monitoring onboard activity.



## Specifications

### CPU

- Intel® Quad-Core ATOM E3845 1.91 GHz (Bay Trail-I)

### Memory

- 4GB DDR3L SDRAM, up to 8GB (service door)

### Storage

- 64GB SATA SSD, SD slot x 1 (service door)

### Display

- 10.4-inch 1024 x 768 XGA; 70,000 hrs backlight life
- 1,000 nits sunlight readable (MIL-STD-85762A) to 0.1 nits hyper dimming for night mode operation
- Anti-reflection tempered 5-wire resistive touch panel
- PCT (Gorilla glass), defroster by request

### RF

- 802.11 ac/a/b/g/n
- Bluetooth v4.0
- GNSS(GPS /QZSS or GLONASS)
- WWAN by request
- Both built-in and external antennas

### Power Input / Battery

- Wide range isolated 9-36 or 18-75VDC
- Battery : 3,000 mAh, 7.4V

### Housing

- Die-cast aluminum alloy, fanless design

### Mounting

- VESA 75 x 75, 100 x 100 mm

### Video Capture

- Optional video input up to 4 ports w/ comprehensive SDK included

### I/O Interfaces

- Dual Gigabit Ethernet support teaming / redundant function
- RS-232 x 1 + 5V support; 3KVRms isolation protection for RS-422/485 x 1 (RS-485 supports auto flow control and NMEA 0183 physical layer)
- USB x 2 compliant with USB 2.0 and 1.1 Host
- 2.5 KVRms isolation protection CAN x 2, NMEA 2000 physical layer support
- 3KVRms isolation protection for 4 DI +4 DO
- Stereo microphone x 1 or line-in, stereo HD audio x 1
- Waterproof speaker x 2

### Physical Characteristics

- Dimensions : 276 (W) x 252 (H) x 67.3 mm (D)
- Weight : 3.8kg

### Certification

- CE, FCC, CB

### Operating System

- Windows Embedded 8.1 Industry 64-bit
- Windows Embedded Standard 7 64-bit
- Windows 7 Professional 64-bit
- Windows Embedded Standard 8 64-bit
- Linux

### Environment (In accordance w/ MIL-STD-810G)

- IP66
- Shock : 40G, 11ms terminal sawtooth
- Vibration : common carrier / composite two-wheeled trailer / composite wheeled vehicle
- Operating temperature -30 to 55°C
- Humidity 5-95%, non-condensing

