



## Selection Guide





PX501



PA501









 <b>System</b>	<ul style="list-style-type: none"> <li>• Intel® Core™ i5-1335UE, Intel® Core™ i7 1365UE, Intel® Processor U300E</li> <li>• 8GB DDR5 SDRAM , Optional : 16/32GB DDR5 SDRAM</li> <li>• 128GB PCIE M.2 SSD, Optional : 256GB/512GB/1TB PCIE M.2 SSD</li> <li>• OS : Windows 11 GAC</li> </ul>	<ul style="list-style-type: none"> <li>• Qualcomm® Snapdragon™ 660 Octa-Core, 1.9GHz up to 2.2GHz</li> <li>• 4GB LPDDR4 RAM + 64GB eMMC storage</li> <li>• OS : Android 12, Google Mobile Services certified</li> </ul>
 <b>Display</b>	<ul style="list-style-type: none"> <li>• 10.1" TFT LCD WUXGA (1920 x 1200), Gorilla Glass</li> <li>• 1000 nits brightness with hyper dimming option</li> <li>• Capacitive multi-touch screen supports glove touch, 2mm hard tip stylus</li> <li>• Optional digitizer with IP54 pen</li> </ul>	<ul style="list-style-type: none"> <li>• 10.1" TFT LCD WUXGA (1920 x 1200)</li> <li>• 1000 nits brightness supports night mode and stealth mode</li> <li>• Capacitive 10-point multi-touch supports glove touch, 2mm hard tip stylus</li> </ul>
 <b>Durability</b>	<ul style="list-style-type: none"> <li>• IP65, MIL-STD-810H and MIL-STD-461G certified</li> <li>• Vibration, shock and 5-foot drop resistance</li> <li>• Operating temperature : -20° C to +60° C</li> </ul>	<ul style="list-style-type: none"> <li>• IP65, MIL-STD-810G &amp; MIL-STD-461G certified</li> <li>• Vibration &amp; shock &amp; 5' drop resistance</li> <li>• Operating temperature : -20° C to +60° C</li> </ul>
 <b>Communications</b>	<ul style="list-style-type: none"> <li>• Wi-Fi 6E (802.11 ax)</li> <li>• Bluetooth V5.3</li> <li>• GNSS (GPS/ GLONASS/ BeiDou)</li> <li>• Optional 4G LTE/ 5G (Sub-6G), Iridium LEO satellite</li> </ul>	<ul style="list-style-type: none"> <li>• Optional built-in NFC</li> <li>• Wi-Fi 5 (802.11 ac)</li> <li>• GNSS (GPS/ GLONASS/ BeiDou)</li> <li>• Bluetooth V5.0</li> <li>• 4G LTE certified with Verizon, AT&amp;T and FirstNet™ through optional Sierra Wireless EM7511</li> </ul>
 <b>Camera</b>	<ul style="list-style-type: none"> <li>• 2MP front camera</li> <li>• 8MP auto focus rear camera with LED flash</li> </ul>	<ul style="list-style-type: none"> <li>• 8MP fixed focus front camera</li> <li>• 13MP auto focus rear camera with LED flash</li> </ul>
 <b>Expansion Option</b>	<ul style="list-style-type: none"> <li>• Built-in 2D barcode reader (OCR option)</li> <li>• NFC + Smart card reader module</li> <li>• Fingerprint reader, MRZ reader</li> <li>• Snap-on connector easy for customization</li> </ul>	<ul style="list-style-type: none"> <li>• Built-in 2D barcode reader (OCR supported)</li> <li>• Fingerprint reader</li> <li>• Snap-on connector easy for customization</li> </ul>
 <b>I/O Interfaces</b>	<ul style="list-style-type: none"> <li>• USB 3.1 type A x1, Thunderbolt™ 4 Type-C x 1</li> <li>• RS-232 x 1, option USB 2.0 or Micro SD slot</li> <li>• Gigabit Ethernet (RJ45) x 1</li> <li>• Audio headset jack x 1</li> <li>• Nano SIM slot x 2</li> <li>• Optional RF pass-through connector x 2</li> <li>• Docking connector x 1, DC-in x 1</li> </ul>	<ul style="list-style-type: none"> <li>• USB 3.1 type C x 1 (DP supported) , USB 2.0 type A x 2</li> <li>• RS-232 x 1 (available for option USB 2.0)</li> <li>• Gigabit Ethernet (RJ45) x 1, Audio headset jack x 1</li> <li>• Micro SD slot x 1 (SDXC/ SDHC supported )</li> <li>• Micro SIM slot x 2</li> <li>• Optional RF pass-through connector x2</li> <li>• Docking connector x 1, DC-in x 1</li> </ul>
 <b>Security</b>	<ul style="list-style-type: none"> <li>• TPM 2.0</li> </ul>	<ul style="list-style-type: none"> <li>• ARM® TrustZone®</li> </ul>
 <b>Battery</b>	<ul style="list-style-type: none"> <li>• 4500mAh hot swappable battery</li> <li>• Optional 9000mAh hot swappable battery</li> <li>• Fast charging supported</li> </ul>	<ul style="list-style-type: none"> <li>• 4500mAh hot swappable battery</li> <li>• Optional 9000mAh hot swappable battery</li> <li>• Supports fast charging</li> </ul>
 <b>Dimensions &amp; Weight</b>	<ul style="list-style-type: none"> <li>• 280 x 195 x 23 mm (11" x 7.7" x 0.9") (W x H x D)</li> <li>• 1.36 kg (3 lbs)</li> </ul>	<ul style="list-style-type: none"> <li>• 280 x 195 x 23 mm (11" x 7.7" x 0.9") (W x H x D)</li> <li>• 1.4 kg (3.09 lbs)</li> </ul>



LUNA 3



SOL 7

 <p><b>System</b></p>	<ul style="list-style-type: none"> <li>• Intel® Tiger Lake Celeron 6305E / i5-1145G7E</li> <li>• 8GB LPDDR4x RAM</li> <li>• 64 to 512GB M.2 2242 SSD storage</li> <li>• OS : Windows 11 IoT Enterprise</li> </ul>	<ul style="list-style-type: none"> <li>• Arrow Lake Ultra 5 225U / Arrow Lake Ultra 7 255U</li> <li>• 128 GB-1TB M.2 SSD</li> <li>• DDR5 SO-DIMM 8-32GB</li> <li>• OS : Windows 11 GAC</li> </ul>
 <p><b>Display</b></p>	<ul style="list-style-type: none"> <li>• 8" TFT LCD (1280 x 800)</li> <li>• 1000 nits brightness supports night mode and stealth mode</li> <li>• Capacitive 10-point multi-touch supports glove touch, 2mm hard tip stylus</li> <li>• Optional digitizer</li> </ul>	<ul style="list-style-type: none"> <li>• 12" TFT LCD (2160 x 1440)</li> <li>• 1000 nits high brightness</li> <li>• 10-point Capacitive Touch supports glove touch with Gorilla Glass</li> <li>• Capacitive multi-touch screen supports glove touch, water rejection, palm rejection, 2mm hard tip stylus</li> </ul>
 <p><b>Durability</b></p>	<ul style="list-style-type: none"> <li>• IP65, MIL-STD-810H and MIL-STD-461G certified</li> <li>• 4-feet drop resistance</li> <li>• Operating temperature : -20° C to +50° C</li> </ul>	<ul style="list-style-type: none"> <li>• IP65, MIL-STD-810H and MIL-STD-461G certified</li> <li>• Vibration, shock and 5-feet drop resistance</li> <li>• Operating temperature : -20° C to +60° C</li> </ul>
 <p><b>Communications</b></p>	<ul style="list-style-type: none"> <li>• Wi-Fi 6 E (802.11 ax) and Bluetooth V5.2</li> <li>• Optional 4G LTE &amp; GNSS</li> </ul>	<ul style="list-style-type: none"> <li>• Bluetooth V5.4</li> <li>• Wi-Fi 7 802.11be</li> <li>• GNSS (GPS/ Glonass / BeiDou)</li> <li>• Optional 4G LTE/5G (Sub-6g)</li> </ul>
 <p><b>Camera</b></p>	<ul style="list-style-type: none"> <li>• 2MP fixed focus front camera</li> <li>• 8MP auto focus rear camera with LED flash</li> </ul>	<ul style="list-style-type: none"> <li>• 2MP front camera, option 5MP windows hello</li> <li>• 11MP auto focus rear camera with LED flash</li> </ul>
 <p><b>Expansion Option</b></p>	<ul style="list-style-type: none"> <li>• Snap-on connector easy for customization x 2</li> <li>• Snap-on I : RJ45 + USB-A 2.0 / RJ45 + RS232 / NFC</li> <li>• Snap-on II : Bridge battery</li> <li>• (This is required for hot-swappable function)</li> </ul>	<ul style="list-style-type: none"> <li>• 2D barcode reader with OCR</li> <li>• Fingerprint reader</li> <li>• Smart Card Reader</li> <li>• FIDO2 NFC</li> <li>• UHF RFID</li> </ul>
 <p><b>I/O Interfaces</b></p>	<ul style="list-style-type: none"> <li>• USB 3.1 type C x 2</li> <li>• Micro SIM slot x 2</li> </ul>	<ul style="list-style-type: none"> <li>• USB 3.2 Gen1 type A x 1</li> <li>• USB 3.2 type C x 2 (support Thunderbolt &amp; charging)</li> <li>• Speaker x 2 (front side)</li> <li>• Audio jack (headphone/ microphone combo) x 1</li> <li>• RS-232 x 1 (available for option USB 2.0 / RJ45 / 2D barcode reader)</li> <li>• Sim slot x 1, eSim x 1</li> <li>• Docking connector x 1</li> <li>• Optional RF pass-through x 2</li> </ul>
 <p><b>Security</b></p>	<ul style="list-style-type: none"> <li>• Intel® TPM technology</li> </ul>	<ul style="list-style-type: none"> <li>• Intel® TPM technology</li> </ul>
 <p><b>Battery</b></p>	<ul style="list-style-type: none"> <li>• Typical capacity of 2400mAh, min. 2100mAh</li> <li>• Optional typical capacity of 4800mAh, min. 4200mAh</li> </ul>	<ul style="list-style-type: none"> <li>• Typical capacity of 3010mAh, min. 2935mAh</li> <li>• Optional typical capacity of 4800mAh, min. 4200mAh</li> </ul>
 <p><b>Dimensions &amp; Weight</b></p>	<ul style="list-style-type: none"> <li>• 225 x 158 x 22 mm (8.9" x 6.2" x 0.9") (W x H x D)</li> <li>• 0.85kg (1.87 lbs)</li> </ul>	<ul style="list-style-type: none"> <li>• 304 x 209 x 23.9 mm (12" x 8.2" x 0.94") (W x H x D)</li> <li>• 1.5kg (3.3lbs)</li> </ul>









# Vehicle Mounted Computers



**VORTEX 07X**



**VULCAN 10X**

 <p><b>System</b></p>	<ul style="list-style-type: none"> <li>• Intel Core i5-1335UE up to 4.5GHz</li> <li>• Optional Intel Atom x7211E up to 3.20GHz</li> <li>• 8GB DDR5 SDRAM up to 16GB</li> <li>• 128GB M.2 2242 SSD up to 512GB</li> <li>• Built-in 6-axis IMU sensors(Accelerometer + Gyroscope), 2 x speaker</li> <li>• Windows 11 IoT Enterprise GAC / LTSC</li> </ul>	<ul style="list-style-type: none"> <li>• Intel® Core™ i5-8365UE 1.6GHz optional Intel® Celeron® 4305UE 2.0GHz</li> <li>• 4GB DDR4 SODIMM, expandable up to 32GB</li> <li>• 128GB M.2 2280 SSD up to 512GB</li> <li>• Built-in 6-axis IMU sensors(Accelerometer + Gyroscope), 2 x speaker</li> <li>• OS option : Windows 11 IoT Enterprise</li> </ul>
 <p><b>Display</b></p>	<ul style="list-style-type: none"> <li>• 7" TFT LCD WSVGA (1024 x 600)</li> <li>• 500 nits brightness support auto-dimming</li> <li>• Capacitive multi-touch (PCT)</li> </ul>	<ul style="list-style-type: none"> <li>• 10.4" TFT LCD XGA (1024 x 768)</li> <li>• 1200 nits brightness supports auto-dimming</li> <li>• 5-wire resistive touch supports defrost / defog function by request</li> <li>• PCT touch support rain and glove mode</li> </ul>
 <p><b>Durability</b></p>	<ul style="list-style-type: none"> <li>• Ingress Protection</li> <li>• IO-A: IEC 60529 IP65</li> <li>• IO-B: IEC 60529 IP65 (except bottom side I/O)</li> <li>• IO-C: IEC 60529 IP65</li> <li>• Vibration (operating): MIL-STD-810H Method 514.8 Category 4 and IEC 60721-3-5 class 5M3</li> <li>• Shock (operating) : MIL-STD-810H, Method 516.8, Procedure 1, functional shock</li> <li>• Operating temperature : Atom: -30°C to 55°C, Core i5: -30°C to 55°C</li> </ul>	<ul style="list-style-type: none"> <li>• IEC 60529 IP66</li> <li>• IEC 60721-3-5 class 5M3</li> <li>• Vibration (operating): MIL-STD-810H Method 514.8 Category 4 and IEC 60721-3-5 class 5M3</li> <li>• Shock (operating) : MIL-STD-810H, Method 516.8, Procedure 1, functional shock</li> <li>• Operating temperature : -30°C to +55°C</li> </ul>
 <p><b>Communications</b></p>	<ul style="list-style-type: none"> <li>• Wi-Fi 7 (IEEE 802.11be)</li> <li>• Bluetooth V5.4</li> <li>• Optional GNSS (GPS/Galileo/GLONASS/BeiDou/QZSS) , dead-reckoning, or RTK supported</li> <li>• Optional 4G LTE / HSPA+ / 5G</li> <li>• Optional Satellite</li> <li>• NFC by request</li> </ul>	<ul style="list-style-type: none"> <li>• Wi-Fi 802.11 a/b/g/n/ac/vr/k</li> <li>• Bluetooth V5.0</li> <li>• Optional 4G LTE / HSPA+ / GPRS or 5G</li> <li>• Optional GNSS (GPS/Galileo/GLONASS/BeiDou/QZSS) , dead-reckoning, or RTK supported</li> </ul>
 <p><b>Function Button</b></p>	<ul style="list-style-type: none"> <li>• Programmable Button x 5</li> <li>• Display On/Off x 1</li> <li>• Volume adjustment x 2</li> </ul>	<ul style="list-style-type: none"> <li>• Programmable button x 7, brightness adjustment x 2 volume adjustment x 2, display on/off x 1</li> <li>• Optional defrost / defog button x 1</li> </ul>
 <p><b>I/O Interfaces</b></p>	<ul style="list-style-type: none"> <li>• USB Type C x 1, USB 2.0 x 2</li> <li>• Micro SD slot x 1</li> <li>• Micro SIM slot x 1, eSIM x 1</li> <li>• RS-232 (RX, TX)/ RS-485 x 1</li> <li>• Gigabit Ethernet x 2</li> <li>• DI x 3, DO x 1, CAN bus x 1</li> <li>• Optional : Dual CAN FD/ SAE J1939 x 1</li> </ul>	<ul style="list-style-type: none"> <li>• RS-232 with power supported x 1, RS-232(TX,RX)/422/485 x 1, RS-232(TX,RX) x 2, RS-485 x 2</li> <li>• Gigabit Ethernet x 2</li> <li>• USB 3.1 x 1, USB 2.0 x 2, USB 3.1 type C x 1 (DP Alt mode supported)</li> <li>• Micro SD slot x 1, Micro SIM slot x 2</li> <li>• Optional CAN bus 2.0B x 2 or SAE J1939 x 1</li> <li>• DI x 2, DO x 2</li> <li>• Mic in x 2, Line out (L/R) x 1</li> <li>• Optional video input</li> <li>• DC-in x 1</li> </ul>
 <p><b>Power</b></p>	<ul style="list-style-type: none"> <li>• 9~60 VDC input</li> <li>• Vehicle power protection (ISO7637-2)</li> <li>• Ignition sense with delay on/off setting</li> <li>• Internal backup battery for graceful shutdown</li> </ul>	<ul style="list-style-type: none"> <li>• 9~60 VDC input</li> <li>• Internal backup battery for graceful shutdown</li> <li>• Ignition sense with delay on/off setting</li> </ul>
 <p><b>Dimensions &amp; Weight</b></p>	<ul style="list-style-type: none"> <li>• 220 x 152 x 53 mm (8.8" x 6.1" x 2") (W x H x D)</li> <li>• 1.67 kg (3.67 lbs)</li> </ul>	<ul style="list-style-type: none"> <li>• 278 x 234 x 57 mm (11" x 9.2" x 2.3") (W x H x D)</li> <li>• 3.2 kg (7.04 lbs)</li> </ul>



# Vehicle Mounted Computers



**VULCAN 10A**



**VULCAN 12X**

 <p><b>System</b></p>	<ul style="list-style-type: none"> <li>• Qualcomm® Snapdragon™ 6490 Qcta-Core, 2.7GHz, AI engine(12 dense TOPS)</li> <li>• 4GB DDR3L SODIMM, expandable up to 16GB</li> <li>• 128GB USF storage</li> <li>• Built-in 3-axis G-sensor, dual speaker</li> <li>• OS option : Android 14, Google Mobile Services (GMS) certified</li> </ul>	<ul style="list-style-type: none"> <li>• Intel® Core™ i5-6300U 2.4GHz optional Intel® Celeron® 3955U 2GHz</li> <li>• 4GB DDR3L SODIMM, expandable up to 16GB</li> <li>• 64GB M.2 2280 SSD up to 512GB</li> <li>• Built-in 3-axis G-sensor, dual speaker</li> <li>• OS option : Windows 10 IoT Enterprise</li> </ul>
 <p><b>Display</b></p>	<ul style="list-style-type: none"> <li>• 12.1" TFT LCD XGA (1024 x 768)</li> <li>• 700 / 1200 nits brightness support auto-dimming</li> <li>• 5-wire resistive touch supports defroster function</li> <li>• PCT by request</li> </ul>	<ul style="list-style-type: none"> <li>• 12.1" TFT LCD XGA (1024 x 768)</li> <li>• 700 / 1200 nits brightness support auto-dimming</li> <li>• 5-wire resistive touch supports defroster function</li> <li>• PCT by request</li> </ul>
 <p><b>Durability</b></p>	<ul style="list-style-type: none"> <li>• IEC 60529 IP66</li> <li>• IEC 60721-3-5 class 5M3</li> <li>• Vibration (operating): MIL-STD-810H Method 514.8 Category 4 and IEC 60721-3-5 class 5M3</li> <li>• Shock (operating) : MIL-STD-810H, Method 516.8, Procedure 1, functional shock</li> <li>• Operating temperature : -30°C to 60°C</li> </ul>	<ul style="list-style-type: none"> <li>• IEC 60529 IP66</li> <li>• IEC 60721-3-5 class 5M3</li> <li>• Vibration (operating): MIL-STD-810H Method 514.8 Category 4 and IEC 60721-3-5 class 5M3</li> <li>• Shock (operating) : MIL-STD-810H, Method 516.8, Procedure 1, functional shock</li> <li>• Operating temperature : -30°C to 55°C</li> </ul>
 <p><b>Communications</b></p>	<ul style="list-style-type: none"> <li>• Wi-Fi 802.11 a/b/g/n/ac</li> <li>• Bluetooth V4.0 Class 2</li> <li>• Optional 4G LTE / HSPA+ / GPRS</li> <li>• Optional GNSS (GPS / QZSS or GLONASS)</li> </ul>	<ul style="list-style-type: none"> <li>• Wi-Fi 802.11 a/b/g/n/ac</li> <li>• Bluetooth V4.0 Class 2</li> <li>• Optional 4G LTE / HSPA+ / GPRS</li> <li>• Optional GNSS (GPS / QZSS or GLONASS)</li> </ul>
 <p><b>Function Button</b></p>	<ul style="list-style-type: none"> <li>• Programmable button x 9, brightness adjustment x 2 volume adjustment x 2, display on/off x 1</li> <li>• Optional defrost / defog button x 1</li> </ul>	<ul style="list-style-type: none"> <li>• Programmable button x 9, brightness adjustment x 2 volume adjustment x 2, display on/off x 1</li> <li>• Optional defrost / defog button x 1</li> </ul>
 <p><b>I/O Interfaces</b></p>	<ul style="list-style-type: none"> <li>• RS-232 with power supported x 1, RS-232/422/485 x 1</li> <li>• Gigabit Ethernet (RJ45) x 1</li> <li>• USB 3.0 / 2.0 x 1, USB 2.0 x 1</li> <li>• SD slot x 1</li> <li>• CAN bus (SAE J1939 support) x 1</li> <li>• DI x 2, DO x 2</li> <li>• Audio headset jack x 1</li> <li>• Optional video input x 4</li> <li>• DC-in x 1</li> </ul>	<ul style="list-style-type: none"> <li>• RS-232 with power supported x 1, RS-232/422/485 x 1</li> <li>• Gigabit Ethernet (RJ45) x 1</li> <li>• USB 3.0 / 2.0 x 1, USB 2.0 x 1</li> <li>• SD slot x 1</li> <li>• CAN bus (SAE J1939 support) x 1</li> <li>• DI x 2, DO x 2</li> <li>• Audio headset jack x 1</li> <li>• Optional video input x 4</li> <li>• DC-in x 1</li> </ul>
 <p><b>Power</b></p>	<ul style="list-style-type: none"> <li>• USB-C AC adapter (65W, 100-240V AC, 50/60Hz)</li> <li>• Fast charging supported</li> <li>• Standard : 3010 mAh, 11.625V, Dual hot swappable batteries</li> </ul>	<ul style="list-style-type: none"> <li>• USB-C AC adapter (65W, 100-240V AC, 50/60Hz)</li> <li>• Fast charging supported</li> <li>• Standard : 3010 mAh, 11.625V, Dual hot swappable batteries</li> </ul>
 <p><b>Dimensions &amp; Weight</b></p>	<ul style="list-style-type: none"> <li>• 276 x 234 x 57 mm(12.7" x 11" x 2.4") (W x H x D)</li> <li>• 3.2kg (7.05lbs)</li> </ul>	<ul style="list-style-type: none"> <li>• 325 x 280 x 696 mm (12.7" x 11" x 27.4") (W x H x D)</li> <li>• 4.8kg (10.6 lbs)</li> </ul>









# Vehicle Mounted Computers



**VIKING 07X**



**VIKING II 07A**







 <p><b>System</b></p>	<ul style="list-style-type: none"> <li>• Intel® Atom™ E3815 1.46GHz, optional Intel® Atom™ E3826 1.46GHz</li> <li>• 2GB DDR3L SODIMM</li> <li>• mSATA SSD, Micro SD slot up to 128GB</li> <li>• Built-in 3-axis G-sensor, dual speaker</li> <li>• Windows 10 IoT Enterprise</li> </ul>	<ul style="list-style-type: none"> <li>• Qualcomm® Snapdragon™ 6490 Qcta-Core, 2.7GHz, AI engine(12 dense TOPS)</li> <li>• 8GB LPDDR4x RAM</li> <li>• 128GB UFS storage</li> <li>• Built-in 6-axis IMU sensors(Accelerometer + Gyroscope), 2 x speaker</li> <li>• OS : Android 14, Google Mobile Services (GMS) certified</li> </ul>
 <p><b>Display</b></p>	<ul style="list-style-type: none"> <li>• 7" WSVGA TFT LCD (1024 x 600), 500 nits brightness</li> <li>• Capacitive multi touch (PCT)</li> <li>• Support auto-dimming</li> </ul>	<ul style="list-style-type: none"> <li>• 7" TFT LCD WSVGA (1024 x 600), 500 nits brightness</li> <li>• Capacitive multi touch (PCT)</li> <li>• Support auto-dimming</li> </ul>
 <p><b>Durability</b></p>	<ul style="list-style-type: none"> <li>• IEC 60529 IP65 (except bottom side I/O)</li> <li>• Vibration (operating) : MIL-STD-810G, Method 514.7 c2/c3/c4</li> <li>• Shock (operating) : MIL-STD-810G, 40G at 11ms Terminal / Sawtooth</li> </ul>	<ul style="list-style-type: none"> <li>• IEC 60529 IP65 (except bottom side I/O)</li> <li>• Vibration (operating) : MIL-STD-810H Method 514.8 Category 4 and IEC 60721-3-5 class 5M3</li> <li>• Shock (operating) : MIL-STD-810H, Method 516.8, Procedure 1, functional shock</li> </ul>
 <p><b>Communications</b></p>	<ul style="list-style-type: none"> <li>• Gigabit Ethernet (RJ45 )</li> <li>• GNSS (GPS / QZSS or GLONASS or BeiDou), dead-reckoning supported</li> <li>• Optional Wi-Fi 802.11 a/b/g/n/ac (2.4GHz: 14.84 – 16.22 dBm / 5GHz: 13.34 – 18.65 dBm)</li> <li>• Optional 4G LTE / HSPA+ / GPRS (LTE: 23.8 – 24.0 dBm)</li> <li>• Optional Bluetooth V4.0 Class 2 ( BT 2.4GHz: -1.72 – 3.95 dBm)</li> </ul>	<ul style="list-style-type: none"> <li>• Wi-Fi 6E (IEEE 802.11ax)</li> <li>• Bluetooth V5.2</li> <li>• GNSS (GPS / GLONASS / BeiDou/ Optional dead-reckoning, or RTK supported)</li> <li>• Optional 4G LTE/ HSPA + / 5G</li> <li>• NFC</li> <li>• Optional Satellite</li> </ul>
 <p><b>Function Button</b></p>	<ul style="list-style-type: none"> <li>• Programmable button x 5</li> <li>• System On/Off x 1</li> <li>• Volume adjustment x 2</li> </ul>	<ul style="list-style-type: none"> <li>• Programmable button x 5</li> <li>• System On/Off x 1</li> <li>• Volume adjustment x 2</li> </ul>
 <p><b>I/O Interfaces</b></p>	<ul style="list-style-type: none"> <li>• RS-232 with power supported x 1, RS-232/422/485 x 1</li> <li>• USB 3.0 x 1, USB 2.0 x 1</li> <li>• Dual Micro SIM slot x 1</li> <li>• CAN bus (SAE J1939 supported) x 1</li> <li>• DI x 2, DO x 2</li> <li>• Audio headset jack x 1</li> <li>• DC-in x 1</li> </ul>	<ul style="list-style-type: none"> <li>• RS-232 with power supported x 1, RS-232 (RX, TX) x 1, RS-422 x 1, RS-485 x 1</li> <li>• Gigabit Ethernet x 1</li> <li>• USB 2.0 x 2, USB 3.1 type C x 1 (DisplayPort Alt Mode supported)</li> <li>• Micro SD slot x 1, Micro SIM slot x 2</li> <li>• CAN bus/ optional SAE J1939 x 1</li> <li>• DI x 2, DO x 2</li> <li>• Audio headset jack x 1</li> <li>• Optional CVBS input x 2</li> </ul>
 <p><b>Power</b></p>	<ul style="list-style-type: none"> <li>• 9~36 VDC input</li> <li>• Vehicle power protection (ISO7637-2 )</li> <li>• Ignition sense with delay on/off setting</li> <li>• Wake on RTC</li> <li>• Internal battery for graceful shutdown</li> </ul>	<ul style="list-style-type: none"> <li>• 9 - 36 VDC input</li> <li>• Vehicle power protection (ISO7637-2 )</li> <li>• Ignition sense with delay on/off setting</li> <li>• Internal battery for graceful shutdown</li> </ul>
 <p><b>Dimensions &amp; Weight</b></p>	<ul style="list-style-type: none"> <li>• 220 x 152 x 41 mm (8.8"x 6.1"x 1.6") (W x H x D)</li> <li>• 1.25 kg (2.75 lbs)</li> </ul>	<ul style="list-style-type: none"> <li>• 220 x 152 x 41 mm (8.8"x 6.1"x 1.6") (W x H x D)</li> <li>• 1.25 kg (2.75 lbs)</li> </ul>



SPARK 7



VECTOR





 <b>System</b>	<ul style="list-style-type: none"> <li>• Qualcomm® Snapdragon™ 6490</li> <li>• 8GB DDR4</li> <li>• Storage 128GB, MicroSD</li> <li>• Android 14</li> </ul>	<ul style="list-style-type: none"> <li>• I32-bit ARM Cortex M7 core with FPU</li> <li>• STM32H7 480 MHz / 2 MB Flash</li> <li>• STM32F1 IOMCU</li> <li>• TCXO</li> </ul>
 <b>Display</b>	<ul style="list-style-type: none"> <li>• 7", 1080P, Sunlight readable – Display /Touch Outdoor / Multi-touch</li> </ul>	
 <b>I/O Interfaces</b>	<ul style="list-style-type: none"> <li>• 1x Type-C (USB-3.1 ,DP), 1x USB 2.0, 1x RJ45</li> <li>• 2x Joysticks, 1x Gimbal Joystick (Shutter)</li> <li>• 1x Toggle Switch, 4x Function Buttons</li> <li>• 2x thumbwheel, 1x Power Button</li> </ul>	<ul style="list-style-type: none"> <li>• PWM 14 (PWM x 8, AUX x 6)</li> <li>• Telemetry x 2</li> <li>• CAN x 2</li> <li>• USB x 1</li> <li>• I2C x 1</li> <li>• SPI x 1</li> <li>• GPS x 2 (GPS x 1 + UART x 1)</li> <li>• S.BUS input</li> <li>• PPM sum signal</li> <li>• RSSI Input</li> <li>• 3.3V and 6.6V ADC inputs</li> </ul>
 <b>Frequencies</b>	<ul style="list-style-type: none"> <li>• Depending on communication modules</li> </ul>	
 <b>Power</b>	<ul style="list-style-type: none"> <li>• 1x DC-IN (AC adapter 65W/20V)</li> <li>• 1x Battery Pack Hot-Swappable</li> </ul>	<ul style="list-style-type: none"> <li>• Maximum Voltage Input : +5.0V ~ +6.0V</li> </ul>
 <b>Sensors</b>		<ul style="list-style-type: none"> <li>• ICM-42688-P 6-Axis MEMS IMU (GYRO Noise 2.8(mdps/rt-Hz))</li> <li>• IIM-42652 6-Axis MEMS IMU (GYRO Noise 3.8(mdps/rt-Hz))</li> </ul>



**XR 10**



**XR 12**

 <b>System</b>	<ul style="list-style-type: none"> <li>• Intel® Core™ i7-6822EQ, 4 cores, 2.0 GHz(6th Generation Skylake)</li> <li>• 8GB DDR4 XRDIMM, up to 16GB</li> <li>• M.2 2242 SATA MLC SSD x 2</li> </ul>	<ul style="list-style-type: none"> <li>• Intel® Core™ i7-9850HL, 6 cores, 1.9 GHz (9th Gen Coffee Lake)</li> <li>• 16GB DDR4 onboard; Expandable to 32GB</li> <li>• 1 x 512GB SSD (M.2 2280, SATA), with a removable tray; 1TB and 2TB options available</li> </ul>
 <b>Display</b>	<ul style="list-style-type: none"> <li>• 10.4" TFT LCD XGA (1024 X 768)</li> <li>• Brightness (before touch panel): 1300 nits</li> <li>• 10 Point Multi touch, AMR resistive</li> </ul>	<ul style="list-style-type: none"> <li>• 12.1" TFT LCD XGA (1024 X 768)</li> <li>• Brightness (before touch panel): 1300 nits</li> <li>• 10 Point Multi touch, AMR resistive</li> </ul>
 <b>Durability</b>	<ul style="list-style-type: none"> <li>• IEC 60529 IP67</li> <li>• MIL-STD-810G (vibration, shock, altitude, salt fog)</li> <li>• Operating temperature : -40° C to +71° C</li> </ul>	<ul style="list-style-type: none"> <li>• IEC 60529, IP68</li> <li>• MIL-STD-810H (vibration, shock, altitude, salt fog)</li> <li>• Operating temperature : -46° C to +71° C</li> </ul>
 <b>Expansion Option</b>	<ul style="list-style-type: none"> <li>• NVIDIA RTX A1000 GPU (MXM-A, PCIe Gen 4.0x8, 4GB GDDR6, 35W, DP output)</li> </ul>	<ul style="list-style-type: none"> <li>• NVIDIA RTX A1000 GPU (MXM-A, PCIe Gen 4.0x8, 4GB GDDR6, 35W, DP output)</li> </ul>
 <b>I/O Interfaces</b>	<ul style="list-style-type: none"> <li>• Video In: 4 x CVBS</li> <li>• Video Out: 1 x VGA, 1 x DVI-D</li> <li>• USB 2.0: 6 x USB 2.0</li> <li>• Ethernet LAN: 4 x 1Gb Ethernet</li> <li>• CAN Bus: 2 x CAN Bus</li> <li>• GPIO: 8 x GPI, 8 x GPO</li> <li>• Audio: 1 x Audio Line-in, 1 x Audio Line-out, 1 x Mic-in</li> <li>• RS-232: 4 x RS-232</li> <li>• RS-422/485: 4 x (Selectable RS-422 or RS-485, Isolated)</li> </ul>	<ul style="list-style-type: none"> <li>• Video In: 4 x CVBS, 2 x SDI</li> <li>• Video Out: 1 x VGA, 1 x DVI-D</li> <li>• USB 2.0: 6 x USB 2.0</li> <li>• Ethernet LAN: 4 x 1Gb Ethernet</li> <li>• CAN Bus: 2 x CAN Bus</li> <li>• GPIO: 8 x GPI, 8 x GPO</li> <li>• Audio: 1 x Audio Line-in, 1 x Audio Line-out, 1 x Mic-in</li> <li>• RS-232: 4 x RS-232</li> <li>• RS-422/485: 4 x (Selectable RS-422 or RS-485, Isolated)</li> </ul>
 <b>EMC</b>	<ul style="list-style-type: none"> <li>• MIL-STD-461G, Method CE102, CS101, CS114, CS115, CS116, RE102, RS103</li> </ul>	<ul style="list-style-type: none"> <li>• EMI Compliance: MIL-STD-461G (CE102, CS101, CS114, CS115, CS116, CS118, RE102, RS103)</li> </ul>
 <b>Power</b>	<ul style="list-style-type: none"> <li>• 28 VDC Nominal input</li> <li>• Ignition sense with time delay setting</li> <li>• Compliance with MIL-STD-1275E</li> </ul>	<ul style="list-style-type: none"> <li>• 28 VDC Nominal input</li> <li>• Ignition sense with time delay setting</li> <li>• Compliance with MIL-STD-1275E</li> </ul>
 <b>Dimensions &amp; Weight</b>	<ul style="list-style-type: none"> <li>• 329 x 299.30 x 84.93mm (w/SSD Box)</li> <li>• 329 x 278 x 84.93mm (w/o SSD Box)</li> <li>• 6.3KG (13.89 lbs)</li> </ul>	<ul style="list-style-type: none"> <li>• 329mm x 278mm x 74.78mm (w/o connectors)</li> <li>• 329mm x 278mm x 90.14mm (w/connectors)</li> <li>• 6.4kg (13.1lbs) (w/connectors, SSD Box, and storage)</li> </ul>



**XR 15**



**System**

- Intel® Xeon® W-11155MLE, 6 cores, 1.9GHz (11th Generation Tiger Lake)
- 32GB DDR4 SODIMM; Expandable to 48GB.
- 1 x 1TB SSD (M.2 2280, SATA), with a removable tray; 2TB option available



**Display**

- 15.6" TFT LCD XGA (1920 X 1080)
- Brightness (before touch panel): 1200 nits
- 10 Point Multi touch, AMR resistive



**Durability**

- IEC 60529, IP67
- MIL-STD-810H (vibration, shock, altitude, salt fog)
- Operating temperature : -40° C to +81° C



**Expansion Option**

- NVIDIA RTX A1000 GPU (MXM-A, PCIe Gen 4.0x8, 4GB GDDR6, 35W, DP output)



**I/O Interfaces**

- Video In: 4 x CVBS, 4 x HD/3G-SDI
- Video Out: 1 x VGA, 1 x DVI-D, 4 x HD/3G-SDI (Loop Out)
- USB 2.0: 6 x USB 2.0
- Ethernet LAN: 4 x 1Gb Ethernet
- CAN Bus: 2 x CAN Bus
- GPIO: 8 x GPI, 8 x GPO
- Audio: 1 x Audio Line-in, 1 x Audio Line-out, 1 x Mic-in
- RS-232: 4 x RS-232
- RS-422/485: 4 x (Selectable RS-422 or RS-485, Isolated)



**EMC**

- EMI Compliance: MIL-STD-461G  
(CE102, CS101, CS114, CS115, CS116, CS118, RE102, RS103)



**Power**

- 28 VDC Nominal input
- Ignition sense with time delay setting
- Compliance with MIL-STD-1275E



**Dimensions & Weight**

- 441mm x 290.4mm x 81.35mm (w/o connectors)
- 441mm x 290.4mm x 118mm (w/connectors)
- 9.6kg (21.2lbs) (w/connectors and storage)





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