



## VMS-APL

### Intel® Pentium®/Celeron®/Atom™ Processor Fanless Vehicle Telematics System



- > Intel® Pentium®/Celeron®/Atom™ Processor
- > One 204-pin SODIMM Socket Up to 8GB DDR3L 1866MHz SDRAM
- > Rich I/O, 1 DP, 1 LVDS, 1 DC-Out, 1 8-bit GPIO, 1 M.2 SSD, 1 SD Card, 1 2.5" Swappable Drive Bay, 2 Line-out, 2 Mic-in, 2 LAN, 2 COM, 4 USB, 5 Antenna Mounting
- > Onboard u-box M8N concurrent GNS module (GPS/QZSS, GLONASS, BeiDou)
- > Rugged Fanless Design Compliant with MIL-STD-810G
- > Power Management and Low Voltage Protection Design
- > Wake on RTC/SMS Via WWAN Module
- > Optional CAN modules supports OBD II, SAE J1939 or J1708
- > Wide Range DC Power Input from 9 ~ 36V
- > Fanless Operating from -20/40 ~ 70°C
- > Supports TPM 1.2/2.0 (Factory Option), SD card(SD 3.0)

#### + Spec

System Information	
<b>Processor</b>	Intel® Pentium® Processor N4200 (2M Cache, up to 2.5 GHz) Intel® Celeron® Processor N3350 (2M Cache, up to 2.4 GHz) Intel® Celeron® Processor J3455 (2M Cache, up to 2.3 GHz) Intel Atom® x7-E3950 Processor (2M Cache, up to 2.00 GHz) Intel Atom® x5-E3940 Processor (2M Cache, up to 1.80 GHz) Intel Atom® x5-E3930 Processor (2M Cache, up to 1.80 GHz)
<b>System Memory</b>	1 x 204-Pin DDR3L 1866MHz SO-DIMM up to 8 GB
<b>Watchdog Timer</b>	H/W Reset, 1sec. ~ 65535sec.
<b>H/W Status Monitor</b>	Monitoring CPU & System Temperature and Voltage
<b>SBC</b>	EBM-APLV
Expansion	
<b>Expansion</b>	1 x Avalue 80-Pin IET Interface 2 x Full Size Mini PCIe (w/ SIM Slot) 1 x CANBus module Interface (UART) 1 x M.2 (2242/3042) B-Key (SATA)
Storage	
<b>Storage</b>	1 x 2.5" Drive Bay (SATA III) 1 x M.2 (SATA III) 1 x SD (3.0)
I/O	
<b>USB Port</b>	4 x USB 3.0
<b>COM Port</b>	2 x RS-232/422/485 (Jumper)
<b>GPIO</b>	1 x 8-Bit GPIO (Digital Input) Input Voltage (Internal Type): 5VDC TTL (default) Input Voltage (Source Type): 0~30 VDC (Digital Output) Digital Output (Sink Type): 5VDC TTL (default), max current: 20mA Digital Output (Source Type): 0~30VDC, max current: 250mA
<b>CAN Bus</b>	CANbus modules supports OBDII, SAE J1939/J1708 (Factory Option)
<b>SIM Slot</b>	2 x SIM Card Slot (External Accessible)
<b>Antenna</b>	5 x Antenna Mounting with Dust Cover
GPS	
<b>Chipset</b>	Onboard u-blox NEO-M8N module supports GPS/ Gloness/ QZSS/ Galileo/ Beidou
<b>Sensitivity</b>	Industry leading -167 dBm navigation sensitivity Product variants to meet performance and cost requirements Combines low power consumption and high sensitivity
Display	
<b>Graphic Chipset</b>	Processor Graphics Intel® HD Graphics 505 (N4200, E3950) Intel® HD Graphics 500 (E3950, E3940, E3930)
<b>Spec. &amp; Resolution</b>	DP: Max. Resolution 4096x2160 @ 60Hz LVDS: Max. Resolution 1920x1200 @ 60Hz
<b>Multiple Display</b>	Dual Display
Audio	
<b>Audio Codec</b>	Realtek ALC888S supports 2.1-CH
<b>Audio Interface</b>	2 x Mic-In, 2 x Line-Out
Certifications	
<b>Certification Information</b>	CE, FCC Class B, e13 Mark, ISO7637-2, IP50 Rating
Ethernet	
<b>LAN Chipset</b>	2 x Intel® I211AT
<b>Ethernet Interface</b>	10/100/1000 Base-Tx GbE compatible



<b>LAN Port</b>	2 x RJ-45
<b>Power Requirement</b>	
<b>DC Input</b>	Typical 12/24 Vdc ( +9~ 36V )
<b>DC Input Connector</b>	3-Pin Terminal Block
<b>DC Output</b>	12Vdc/6A
<b>DC Output Connector</b>	2-Pin Terminal Block
<b>ACPI</b>	Single Power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
<b>Power Mode</b>	Vehicle Power Mode (Default Setting) Industrial PC Power Mode supports AT/ATX
<b>Mechanical &amp; Environmental</b>	
<b>Operating Temperature</b>	N4200/ N3350/J3455 With extended temperature peripherals: -20°C ~ 70°C (-4°F ~ 158°F) with air flow E3950/ E3940/ E3930 With extended temperature peripherals: -40°C ~ 70°C (-40°F ~ 158°F) with air flow
<b>Storage Temperature</b>	-40°C ~ 85°C (-40°F ~ 185°F)
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing
<b>Dimension (W x L x H)</b>	9.45" x 7.3" x 2.44" (239mm x 186mm x 62mm)
<b>Weight</b>	2.6kg (system) 3.2kg (w/package)
<b>Vibration Test</b>	Operating with SSD : MIL-STD-810G, Method 514.6, Category 4, common carrier US highway truck vibration exposure Storage with SSD : MIL-STD-810G, Method 514.6, Category 24, minimum integrity test
<b>Shock Test</b>	Operating with SSD : MIL-STD-810G, Method 516.6, Procedure I, functional shock=20G Non-Operating with SSD : MIL-STD-810G, Method 516.6, Procedure V, crash hazard shock test=75G
<b>Mounting Kit</b>	Wall Mount kit (Standard)
<b>Construction</b>	Aluminum + Metal
<b>Software Support</b>	
<b>OS Information</b>	Win 10, Linux Android (by request)
<b>Ordering Information</b>	
<b>Ordering Information</b>	VMS-APL-N42-B1-1R Intel® Pentium® Processor N4200 Fanless Vehicle Telematics System  VMS-APL-N33-B1-1R Intel® Celeron® Processor N3350 Fanless Vehicle Telematics System  VMS-APL-J34-B1-1R Intel® Celeron® Processor J3455 Fanless Vehicle Telematics System  VMS-APL-E50-B1-1R Intel® Celeron® Processor E3950 Fanless Vehicle Telematics System  VMS-APL-E40-B1-1R Intel® Celeron® Processor E3940 Fanless Vehicle Telematics System  VMS-APL-E30-B1-1R Intel® Celeron® Processor E3930 Fanless Vehicle Telematics System