



## VMS-CFS

### Intel® 8th/9th Coffee Lake Rugged Fanless Vehicle Telematics System



- > 8th/9th Generation Intel® Processors (6-Core/8-Core)
- > Intel® Q370 Express Chipset
- > Intel® UHD Graphics 630/610
- > Memory Max. Up to 64GB DDR4 2666
- > mPCIe.M.2 Key-E, M.2 Key-B Expansion Slots
- > -25~70/-40C~70C Operating Temperature
- > 9~36Vdc DC Input, with Vehicle Power Management
- > Support RAID 0/1/5/10, Firmware TPM 2.0, iATM 12.0
- > CE, FCC, IP50, E Mark, ISO7637-2 Certified

#### + Spec

##### -System Information-

<b>Processor</b>	Intel® Core™ i7-8700T Processor (12M Cache, up to 4.00 GHz) Intel® Core™ i5-8500T Processor (9M Cache, up to 3.50 GHz) Intel® Core™ i3-8100T Processor (6M Cache, 3.10 GHz) Intel® Pentium® Gold G5400T Processor (4M Cache, 3.10 GHz) Intel® Celeron® G4900T Processor (2M Cache, 2.90 GHz) Intel® Core™ i7-9700TE Processor (12M Cache, up to 3.80 GHz) Intel® Core™ i5-9500TE Processor (9M Cache, up to 3.60 GHz) Intel® Core™ i3-9100TE Processor (6M Cache, up to 3.20 GHz)
<b>Platform Controller Hub</b>	Intel® Q370 Express Chipset
<b>System Memory</b>	2 x 260-pin DDR4 SODIMM 2400/2666MHz up to 64 GB
<b>Watchdog Timer</b>	H/W Reset, 1sec. ~ 65535min.
<b>H/W Status Monitor</b>	Monitoring CPU & System Temperature and Voltage
<b>TPM</b>	TPM 2.0 (Firmware)
<b>SBC</b>	EBM-CFSV
<b>Expansion</b>	
<b>Expansion</b>	1 x Avalue 80-Pin IET Interface 1 x Full Size Mini PCIe (w/ push-push SIM Slot) 1 x M.2 Key-E 2230 for Wi-Fi & BT Module 2 x M.2 Key-B 2242/3042/2280 w/ push-push SIM slot for SSD/ LTE/ I/O Modules 1 x CANBus (supports OBDII, SAE J1939/ J1708 )
<b>Storage</b>	
<b>Storage</b>	2 x 2.5" Drive Bay (SATA III, Max. up to 12,5mm Height Storage) 2 x M.2 Key-B SSD (SATA III, Max. up to 2280)
<b>I/O</b>	
<b>USB Port</b>	6 x USB 3.1
<b>COM Port</b>	2 x RS-232/422/485 (BIOS) 1 x RS-232
<b>GPIO</b>	1 x 8bit GPIO, w/1.5KV isolation
<b>CAN Bus</b>	CANbus modules supports OBDII, SAE J1939/J1708 (Factory Option)
<b>SIM Slot</b>	3 x SIM Card Slot (External Accessible)
<b>Antenna</b>	5x Antenna Mounting Hole
<b>GPS</b>	
<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
<b>Display</b>	
<b>Graphic Chipset</b>	Intel® UHD Graphics 630 (i7-8700T, i5-8500T, i3-8100T) Intel® UHD Graphics 610 (Pentium G5400T, Celeron G4900T)
<b>Spec. &amp; Resolution</b>	DP: Max. resolution 4096x2160 @ 60Hz HDMI: Max. resolution 4096x2160 @ 30Hz LVDS: Max. resolution 1920x1200 @ 60Hz
<b>Multiple Display</b>	Triple Displays
<b>Audio</b>	
<b>Audio Codec</b>	Realtek ALC888S supports 2-CH
<b>Audio Interface</b>	2 x Mic-In 2 x Line-Out
<b>Certifications</b>	
<b>Certification Information</b>	CE, FCC Class A, E13 Mark, ISO 7637-2, IP50
<b>Ethernet</b>	
<b>LAN Chipset</b>	1 x Intel® I211AT 1 x Intel® I219LM



<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 12/24Vdc ( +9~ 36Vdc )
<b>DC Input Connector</b>	3-Pin Terminal Block
<b>DC Output</b>	12Vdc/4A
<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>	-40°C ~ 70C (-40°F ~ 158°F) with 0.5m/s air flow, extended temperature peripherals
<b>Storage Temperature</b>	-30°C ~ 70°C (-22°F ~ 158°F)
<b>Operating Humidity</b>	40°C @ 95% Relative Humidity, Non-condensing
<b>Dimension (W x L x H)</b>	239.4mm x 210mm x 110 mm(w/o wall mount)
<b>Weight</b>	5.4KG (w/packing) 4.5KG (System)
<b>Vibration Test</b>	Operating with SSD : MIL-STD-810G, Method 514.6, Category 4, common carrier US highway truck vibration exposure Non-Operating with SSD : MIL-STD-810G, Method 514.6, Category 24, minimum integrity test
<b>Shock Test</b>	Operating with SSD : MIL-STD-810H, Method 516.8, Procedure I, functional shock=20G Non-Operating with SSD: MIL-STD-810H, Method 516.8, 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>	Win10, Linux
<b>Ordering Information</b>	
<b>Ordering Information</b>	With Intel® Q370 Chipset VMS-CFS-87-B1-1R (i7-8700T) VMS-CFS-85-B1-1R (i5-8500T) VMS-CFS-81-B1-1R (i3-8100T) VMS-CFS-54-B1-1R (Pentium Gold G5400T) VMS-CFS-49-B1-1R (Celeron G4900T) VMS-CFS-97-A1-1R (i7-9700TE) VMS-CFS-95-A1-1R (i5-9500TE) VMS-CFS-91-A1-1R (i3-9100TE)