



VMS-CFS-SLIM

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
- > -40C~70C Operating Temperature
- > 9~36Vdc DC Input, with Vehicle Power Management
- > Support RAID 0/1, Firmware TPM 2.0, iATM 12.0
- > CE, FCC, IP50, E Mark, ISO7637-2 Certified

+ Spec

System Information (CS)

Processor	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)
Platform Controller Hub	Intel® Q370 Express Chipset
System Memory	2 x 260-pin DDR4 SODIMM 2400/2666MHz up to 64 GB
Watchdog Timer	H/W Reset, 1sec. ~ 65535min.
H/W Status Monitor	Monitoring CPU & System Temperature and Voltage
TPM	TPM 2.0 (Firmware)
SBC	EBM-CFSV

Expansion (CS)

mPCIe	1 x Full Size Mini PCIe (w/ push-push SIM Slot)
M.2	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)
IET	1 x Avalue 80-Pin IET Interface

Storage (CS)

M.2	2 x M.2 Key-B SSD (SATA III, Max. up to 2280)
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Edge I/O (Front) (CS)

USB Port	2 x USB 3.2 Gen.1
Audio	1 x Line-Out 1 x Mic-In
Power Button	1 x Push Button for Power on/off w/ LED
Reset Button	1 x Push Button for Reset in hiding
LED Indicator	3 x LEDs for Storage, WLAN/ HSDPA
Digital I/O	1 x 8-bit GPIO, supports 1.5KV Isolation
SIM Slot	3 x SIM Card Slot (External Accessible w/Dust Protection Cover)

Edge I/O (Rear) (CS)

USB Port	4 x USB 3.2 Gen.1
COM Port	2 x RS232/422/485, (Jumper + DIP switch), with +5V and +12V support on Pin-9 via Jumper + DIP switch, support auto-flow (COM1 onboard, COM2 via Cable)
HDMI	2 x HDMI
DP	1 x DP
Audio	1 x Line-Out 1 x Mic-In
RJ-45	2 x RJ-45
CAN Bus	1 x CANBus (supports OBDII, SAE J1939/ J1708), share with COM2

GPS (CS)

Chipset	Onboard u-blox NEO-M8N module supports GPS/ Gloness/ QZSS/ Galileo/ Beidou
Sensitivity	Industry leading -167 dBm navigation sensitivity Product variants to meet performance and cost requirements Combines low power consumption and high sensitivity

Display (CS)

Graphic Chipset	Intel® UHD Graphics 630 (i7-8700T, i5-8500T, i3-8100T) Intel® UHD Graphics 610 (Pentium G5400T, Celeron G4900T)
Resolution	DP: Max. resolution 4096x2160 @ 60Hz HDMI: Max. resolution 4096x2160 @ 30Hz

Audio (CS)



Audio Codec	Realtek ALC888S supports 2-CH
Ethernet (CS)	
LAN Chipset	1 x Intel® I211AT 1 x Intel® I219LM
Specification	10/100/1000 Base-Tx GbE compatible
Power Requirement (CS)	
DC Input	Typical 12/24Vdc (+9~ 36Vdc)
DC Input Connector	3-Pin Terminal Block
ACPI	Single Power ATX Support S0, S3, S4, S5 ACPI 5.0 Compliant
Power Mode	Vehicle Power Mode (Default Setting) Industrial PC Power Mode supports AT/ATX
Software Support (CS)	
OS Information	Win10, Linux
Certification (CS)	
Certification Information	CE, FCC Class A, E13 Mark, ISO 7637-2, IP50
Mechanical & Environmental	
Operating Temperature	-40°C ~ 70C (-40°F ~ 158°F) with 0.5m/s air flow, extended temperature peripherals
Storage Temperature	-30°C ~ 70°C (-22°F ~ 158°F)
Operating Humidity	40°C @ 95% Relative Humidity, Non-condensing
Dimension (W x L x H)	239.4mm x 210mm x 75 mm(w/o wall mount)
Weight	TBD
Vibration Test	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
Shock Test	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
Mounting Kit	Wall Mount kit (Standard)
Construction	Aluminum + Metal
Ordering Information	
Ordering Information	With Intel® Q370 Chipset VMS-CFS-87-B1-4R (i7-8700T) VMS-CFS-85-B1-4R (i5-8500T) VMS-CFS-81-B1-4R (i3-8100T) VMS-CFS-54-B1-4R (Pentium Gold G5400T) VMS-CFS-49-B1-4R (Celeron G4900T) VMS-CFS-97-A1-4R (i7-9700TE) VMS-CFS-95-A1-4R (i5-9500TE) VMS-CFS-91-A1-4R (i3-9100TE)