

Vehicle Computer

COMPACT-VSL Series

Embedded In-Vehicle Computer with Intel® Atom™ E39xx processor



IPC/VSL81

This fan less Vehicle VSL COMPACT81 generation is based on the Intel® Atom™ E3900 (formerly Apollo Lake) processor technology and offers a wide range of interface options. The robust and uncompromising industrial design allows the implementation in the most demanding IoT applications and guarantees long term availability.

- Multi-core 64-bit Intel® Atom™ processor
- 24/7 continuous operation
- M12 connector for Power and LAN
- Shock and vibration resistant
- Full -40...+85°C on component level



Product Highlights

Power Ignition controller
Trusted Platform Module - TPM2.0
Inertial Measurement Unit (IMU)
GPS with dead reckoning
Fanless, No moving parts
Maintenance free / Long term availability

Product Features

Intel® Atom™ E3900 Series
up to 2.0GHz, up to 4 Cores
RAM soldered on board up to 8GB
Socket for CFast
Ethernet, USB, CAN
M12 connectors
Stainless steel housing
Protection class IP40
LTE, GNSS, WiFi & Bluetooth options

Markets / Applications

Automotive
Transportation
Automated Guided Vehicles (AGV)
Special purpose vehicles
Agriculture
Industrial trucks

Order Code IPC/VSL81I20-A153E¹

Processor / Performance

Intel® Atom™ x7-E3950 2.00GHz (Burst) 1.6GHz Clock - Quad Core	•
Intel® Atom™ x5-E3940 1.80GHz (Burst) 1.6GHz Clock - Quad Core	optional

Memory

L2 cache	2MB
RAM DDR3L 1866MT/s soldered on board	4GB
8GB DDR3 RAM ¹	optional

Features

Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR	•
Real time clock (RTC) with battery backup Renata CR2477N (950 mAh)	•
Hardware Watchdog & Temperature supervisor	•
Intelligent power management (Ignition controller)	•
TPM 2.0 according to ISO/IEC11889 Infineon SLB9665	•

Communication Interfaces

DisplayPort 1.4 (up to 7680 x 4320 @ 60Hz)		1
USB version 3.1	(Type A)	1
USB version 2.0	(Type A)	1
Ethernet 10/100/1000 BASE-T (Intel I210-IT)	(M12 female x-coded)	2
PoE+ IEEE802.3at 10/100/1000Mbit requires taller housing: w228 x h85 x d127 mm	(M12 female x-coded)	optional
CAN 2.0A/2.0B & CAN FD (PEAK FPGA chip, SJA1000 compatible), isolated, The CAN signals give no network feedback and are attached via non-volatile I/O port on the I2C bus	(DSUB9)	2
CFast socket with retention frame ²		1
M.2 Key B socket ² , used for radio options depending on config	(3042)	1
M.2 Key E socket ² , used for radio options depending on config	(2230)	1
Mini PCIe socket ²	(full size)	1
MicroSD Card socket ²		1
Buzzer		1
I2C bus ²		1
Serial RS232 ²		2
Serial RS422/485, isolated	(DSUB9)	optional
HD Audio, Line in / out ²		optional
Digital I/O, 24VDC (latency <1ms)	(4 inputs, 4 outputs)	optional
Analog input, 16bit resolution, voltage input: -10 ... +10V / 0 ... 30V Accuracy: +/- 0.1%		optional

Wireless Connectivity

4G cellular module (3G/2G fallback) Sierra Wireless EM7455 - M2M only! with dual nano SIM support	(2x SMA)	optional
GNSS positioning module with dead reckoning u-blox NEO-M9 Module	(1x SMA)	optional
Wireless LAN IEEE 802.11ac/a/b/g/n/ dual-band 2x2 MIMO SparkLAN WNFB-263ACNI(BT)	(2x RP-SMA)	optional

Technical Data

Exterior dimensions [mm]		w228 x h55 x d127
Net weight [gram]		~ 1750
Non-isolated input voltage, reverse polarity protected	(M12 4P male a-coded)	8.4 ... 45VDC
Current consumption typ. in mA @ 24V without Add-Ins, idle		~ 500
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~ 12

Environmental Conditions

Operating temperature ³		-40°C ... +70°C
Storage temperature		-40°C ... +85°C
Ingress Protection standard EN60529 (ISO 20653)		IP40
Road vehicles (UNECE-R10 'E-mark')		on request
Conformal coating ⁴		on request
Shock		EN60068-2-27
Vibration		EN60068-2-64
EMC Conformity		EN55032 / EN55035
Safety (designed to meet)		EN62368-1
Radio and Telecommunication (designed to meet)		RED
MTBF @ 25°C according to Telcordia SR-332, Environment GB, excluding battery and optional extensions		~ 480 000h

¹ Please contact factory for minimum order quantities

² Depending on installation situation and interface connection. Please see user documentation.

³ Internal connector

⁴ On all possible components (excl. Connectors and wireless devices)

Product specifications subject to change without notice. | All data is for information purposes only and not guaranteed for legal purposes. Information in this data sheet has been carefully checked and is believed to be accurate. However, no responsibility is assumed for inaccuracies. Please refer to the user documentation for additional product specification.

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Version 1.0 | October 2021

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