

## COMPACT VSL Vehicle Series

Embedded In-Vehicle Computer with Intel® Atom™ Elkhart Lake processor (x6000 Series)



## IPC/COMPACT82 - VSL

This fanless RSL COMPACT82 generation is based on the Intel® Atom™ Elkhart Lake (EHL) processor technology, using the new 10nm "Tremont" architecture, it offers a wide range of interface options. The robust and uncompromising industrial design allows the implementation in the most demanding applications and guarantees long term availability.

- Multi-core Intel® Atom™ processor
- Shock and vibration resistant
- Wide Temp. -40...+85°C on component level
- Made for 24/7 continuous operation



### Product Highlights

- Maintenance free & long term availability
- Power Ignition controller
- Hardware Watchdog
- Trusted platform module (TPM 2.0)
- UEFI Secure Boot
- Temperature supervision
- Persistent Flash BIOS
- Fanless, no moving parts

### Product Features

- Intel® Atom™ Elkhart Lake, up to 4 cores
- up to 16GB LPDDR4 RAM
- LTE-4G, GNSS and WiFi6 connectivity
- CFAST socket
- microSD socket
- 1Gbit Ethernet and USB 3.1
- CAN-FD and Serial Ports
- Modular product design
- wide range of expansion options

### Industries / Applications

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

**Processor / Performance**

Intel® Atom™ x6425RE - Quad core 1.9GHz clock | 16GB RAM

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Intel® Atom™ x6414RE - Quad core 1.5GHz clock | 4GB RAM

on request

**Memory / Storage**

L2 cache

1.5MB

4267MT/s LPDDR4x RAM soldered on board

16GB

Internal eMMC

32GB

CFast socket with latching retainer <sup>2</sup>

1

MicroSD Card socket <sup>2</sup>

1

**Features**

Real time clock (RTC) with battery backup

CR2477N

Hardware Watchdog &amp; Temperature supervisor

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Intelligent power management (Ignition controller)

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TPM 2.0 according to ISO/IEC11889

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UEFI Secure Boot key material must be provided by customer

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Inertial measurement unit STMicroelectronics ISM330DHCXTR

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**Communication Interfaces**

DisplayPort 1.4 (4096 x 2160 @ 60Hz)

1

USB version 3.1

(Type A)

2

Ethernet 10/100/1000 BASE-T (1x Intel® GbE | 1x Intel® I210-IT)

(M12 female x-coded)

2

CAN 2.0A/B &amp; CAN FD (PEAK FPGA chip, SJA1000 compatible) active/passive, isolated

(DSUB9)

2

M.2 Key B socket <sup>2</sup> - used for LTE-4G extensions

(3042)

M.2 Key E socket <sup>2</sup> - used for WiFi extensions

(2230)

Mini PCIe socket <sup>2</sup>

1

Buzzer

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**Wireless connectivity**

4G LTE Cat-13 (3G fallback) Sierra Wireless EM7590 - M2M only!

(2x SMA)

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Dual nano SIM slot for cellular modules for 4G module

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GNSS module u-blox NEO-M9V Module

(1x SMA)

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High precision GNSS module (with IMU, RTK) u-blox ZED-F9P/R

(1x sMA)<sup>3</sup>

on request

Wireless LAN (Wi-Fi 6) 802.11ac/a/b/g/n/ax Intel, Bluetooth 5.2 Module Intel Wireless- AX210

(2x RP-SMA)

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**Technical Data**

Exterior Dimensions [mm] (housing incl. mounting plate)

w228 x h53 x d127

Net weight [gram]

~1750

Non-isolated input voltage, with ignition controller function, reverse polarity protected

(M12 4P male a-coded)

8.4 ... 45VDC

Power consumption typ. in Watt @ 24V without Add-Ins, idle

~17

**Environmental Conditions**Operating temperature <sup>4</sup>

-40°C ... +70°C

Non operating temperature (Recommended storage temperature 20°C .. 25°C)

-40°C ... +85°C

Ingress protection standard according to EN60529

IP40

Conformal coating <sup>5</sup>

on request

UNECE-R10 certified (E-mark)

on request

Shock EN60068-2-27 / EN61373

•

Vibration EN60068-2-64 / EN61373

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EMI-Conformity EN50121-3-2 / EN301489-1

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Safety (according to EN62368-1)

designed to meet

MTBF @ 25°C according to Telcordia SR-332, Environment GM, excluding CFast and optional interfaces

tbd

<sup>1</sup> Please contact factory for minimum order quantities<sup>2</sup> Internal connector<sup>3</sup> Multiband antenna needed (GNSS L1 band and L2/E5b/B21 bands). Example u-Blox type ANN-MB<sup>4</sup> Depending on installation situation and interface connection. Please see user documentation.<sup>5</sup> 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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Syslogic Datentechnik AG  
Täferstrasse 28  
CH-5405 Baden Dättwil

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For further information and support:  
info@syslogic.com  
support@syslogic.com  
www.syslogic.com

+41 56 200 90 40 Switzerland (Headquarters)  
+49 7741 967 14 20 Germany and Austria

 **syslogic**  
industrial computing