Railway Computer

COMPACT RSL Railway Series

Embedded Railway Computer with Intel® Atom™ Elkhart Lake processor (x6000 Series)

GNSS / LTE / WiFi

image similar

CFast
uSD

DisplayPort

2x USB 3.1

2x Gbit LAN
M12 x-coded

2x CAN

DC Supply
16.8 … 137.5VDC

IPC/COMPACT82 - RSL-R

This fanless railway 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 rolling stock applications and guarantees long term availability.

- **Intel® Atom™ Elkhart Lake Series**
- **Railway approved (EN50155 & EN45545)**
- **Shock and vibration resistant**
- **Designed for 24/7 continuous operation**
- **24/110VDC wide input range**

Windows IoT

Product Highlights

Maintenance free & long term availability
Power Ignition controller
Inertial measurement unit (IMU)
Trusted platform module (TPM 2.0)
UEFI Secure Boot
GNSS with dead reckoning
Wide input voltage 16.8 ... 137.5VDC
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
Modular product design

Markets / Applications

Railway (rolling stock)
Transportation

Your partner for reliable embedded computer

Order Code	IPC/RSL82J19-R152E[1]

Processor / Performance

Intel® Atom™ x6425RE - Quad core 1.9GHz clock | 16GB RAM	•
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 [2]	1
MicroSD Card socket [2]	1

Features

Real time clock PC compatible with Goldcap backup (up to 48h)	•
Hardware Watchdog & Temperature supervisor	•
Intelligent power management (Ignition controller)	•
TPM 2.0 according to ISO/IEC11889	•
UEFI Secure Boot key material must be provided by customer	•
Inertial measurement unit STMicroelectronics ISM330DHCXTR (Please see user documentation for more detailed information and maximum sampling rate)	•

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 & CAN FD (PEAK FPGA chip, SJA1000 compatible) active/passive, isolated	(DSUB9)	2
Mini PCIe socket [2]		1
Buzzer		•

Wireless connectivity

4G LTE Cat-13 (3G fallback) Sierra Wireless EM7590 - M2M only!	(2x SMA)	•
Dual nano SIM slot for cellular modules for 4G module		•
GNSS module u-blox NEO-M9V Module	(1x SMA)	•
High precision GNSS module (with IMU, RTK) u-blox ZED-F9P/R	(1x SMA)[3]	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)	•

Technical Data

Exterior Dimensions [mm] (housing incl. mounting plate)		w298 x h58 x d138
Net weight [gram]		~2100
110VDC wide input voltage (isolated and reverse polarity protected)	(M12 4P male a-coded)	16.8 ... 137.5VDC
Interruption of voltage supply time: EN50155 - Class: S2		10ms
Power consumption typ. in Watt @ 24V without Add-Ins, idle		~17

Environmental Conditions

Operating temperature (complies with EN50155 class OT4/ST0) [4]	-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 [5]	PCX
Railway certification EN50155	•
Railway environmental conditions EN50125	•
Shock EN60068-2-27 / EN61373	•
Vibration EN60068-2-64 / EN61373	•
EMI-Conformity EN50121-3-2 / EN301489-1	•
Safety (according to EN62368-1)	designed to meet
Fire protection DIN EN45545-2	HL3
MTBF @ 25°C according to Telcordia SR-332, Environment GM, excluding CFast and optional interfaces	tbd

[1] Please contact factory for minimum order quantities

[2] Internal connector

[3] Multiband antenna needed (GNSS L1 band and L2/E5b/B2l bands). Example u-Blox type ANN-MB

[4] Depending on installation situation and interface connection. Please see user documentation.

[5] on all possible components (excl. Connectors and wireless devices)

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

+41 56 200 90 40   **Switzerland (Headquarters)**
+49 7741 9671-420   **Germany and Austria**

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