

Railway Computer

COMPACT RSL Railway Series

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



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

	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/IEC 11889		•
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)

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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industrial computing

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