COMPACT RSL Railway Series

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

IPC/COMPACT82 - RSL

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**
- **24VDC Isolated input voltage**

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
Fanless, no moving parts

Product Features

Intel® Atom™ Elkhart Lake, up to 4 cores
up to 16GB LPDDR4 RAM
CFast socket
microSD socket
1GBit Ethernet and USB 3.1
Modular product design

Markets / Applications

Railway (rolling stock)
Transportation

		Order Code IPC/RSL82H15-A151E[1]
Processor / Performance		
Intel® Atom™ x6425RE - Quad core 1.9GHz clock | 16GB RAM		on request
Intel® Atom™ x6414RE - Quad core 1.5GHz clock | 4GB RAM		•
Memory / Storage		
L2 cache		1.5MB
3200MT/s LPDDR4x RAM soldered on board		4GB
16GB LPDDR4x RAM soldered on board		on request
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
Serial RS232 (not isolated)	(DSUB9)	2
CAN 2.0A/B & CAN FD (PEAK FPGA chip, SJA1000 compatible) active/passive, isolated	(DSUB9)	on request
M.2 Key B socket [2]	(3042)	1
M.2 Key E socket [2]	(2230)	1
Mini PCIe socket [2]		1
Buzzer		•
Wireless connectivity		
4G LTE Cat-13 (3G fallback) Sierra Wireless EM7590 - M2M only!	(2x SMA)	on request
Dual nano SIM slot for cellular modules for 4G module		on request
GNSS module u-blox NEO-M9V Module	(1x SMA)	on request
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)	on request
Technical Data		
Exterior Dimensions [mm] (housing incl. mounting plate)		w257 x h53 x d127
Net weight [gram]		~1750
Isolated input voltage, with ignition controller function	(M12 4P male a-coded)	16.8 ... 30VDC
Interruption of voltage supply time		EN50155 - Class: S1
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/B2I 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)

Syslogic Datentechnik AG
Täfernstrasse 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**

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industrial computing