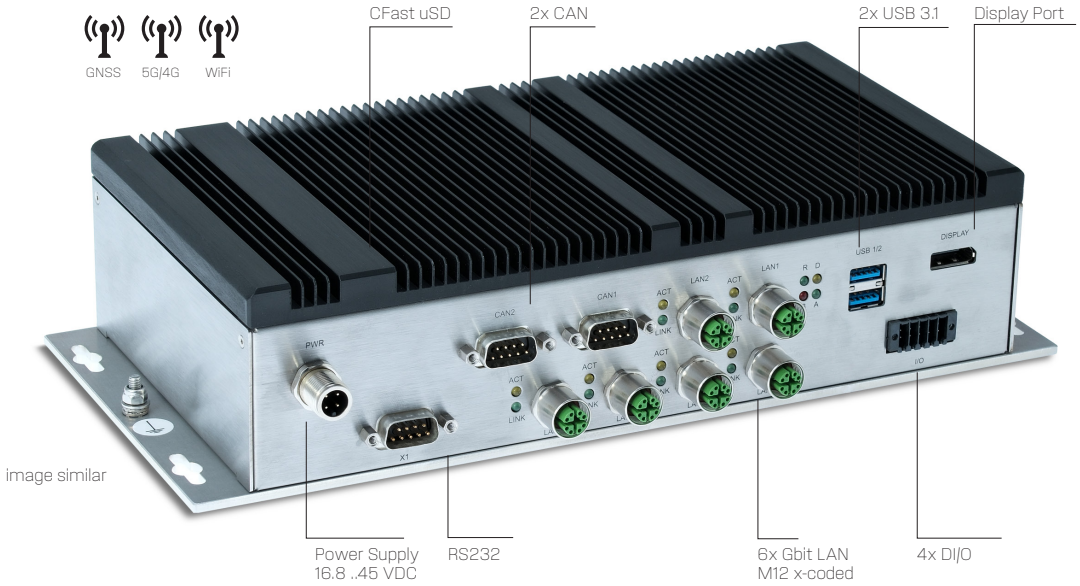
Railway

syslogic

Railway Computer RML-R82

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

PRELIMINARY



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

Market/Applications

- Railway (rolling stock)
- Transportation

IPC RML-R82

This fanless Railway Computer RML-R82 generation is based on the Intel® Atom™ Elkhart Lake (EKL) 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)
→ Designed for 24/7 continuous operation
→ 24VDC Isolated input voltage

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		Order Code	**IPC/RML82J19-R252E**[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 3.2 (5Gps)	(Type A)		2
Ethernet 10/100/1000 BASE-T (1x Intel® GbE | 1x Intel® I210-IT)	(M12 female x-coded)		2
Ethernet 10/100/1000 BASE-T (4x Intel® I210-IT)	(M12 female x-coded)		4
CAN 2.0A/B & CAN FD (PEAK FPGA chip, SJA1000 compatible) active/passive, isolated	(DSUB9)		2
Serial RS232 (not isolated)	(DSUB9)		1
Serial RS422/485, isolated	(DSUB9)		on request
Mini PCIe socket [2]			2
Buzzer			✓
Digital I/O module, 24/36VDC - Galvanic isolation 1500Vrms (process to Logic) current sourcing output / current sinking inputs (Mating plug type Weidmüller B2CF 3.5/10/180F SN BK)	(2x5-Pin Terminal Block)		4 in / 4 out
Analog input, 16Bit resolution, voltage input: +/-10V, 0 ... 30V Accuracy: +/- 0.1%	(4 inputs)		on request
Analog input, 16Bit resolution, vurrent input: 0 - 20mA	(4 inputs)		on request
Wireless connectivity			
5G LTE Cat-16 (4G fallback) Quectel RM520N-GL	(4x 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]			~2300
input voltage	(M12 4P male a-coded)		16.8 ... 45VDC
Interruption of voltage supply time			EN50155 - Class: S2
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
MTBF @ 25°C according to Telcordia SR-332, Environment GM, excluding CFast and optional interfaces			238'414 hours
Certifications			
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)			✓
Fire protection DIN EN45545-2			HL3
UKCA/CE			✓
Software			
Linux Debian 10.0			✓
BSP Windows 10 IoT Enterprise LTSC			✓

[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)

Scope of delivery
2xProtective cap USB A
1xProtective cap DisplayPort
6xProtective cap for M12 Female
1xProtective cap for M12 Male
3xProtective cap for DSUB9
7xProtective cap for SMA connector
1x Device packaging

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For support and further information:
sales@syslogic.com
or **syslogic.com**

Assured Systems

Assured Systems is a leading technology company with over 1,500 regular clients in 80 countries, deploying over 85,000 systems to a diverse customer base in 12 years of business. We offer high-quality and innovative rugged computing, display, networking and data collection solutions to the embedded, industrial, and digital-out-of-home market sectors.

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