Railway Computer RSL 10

Embedded Railway Computer with Intel® Core™ Raptor Lake (P-Series)

PRELIMINARY

Product Highlights

- Maintenance free
- Long term availability
- Hardware Watchdog
- Trusted platform module (TPM 2.0)
- UEFI Secure Boot
- Integrated IMU
- Ignition Controller
- Temperature supervision
- Persistent Flash BIOS
- Fanless, no moving parts

Market/Applications

- Railway (rolling stock)
- Transportation

IPC/RSL10-R

This fan less RSL COMPACT10 generation is based on the 13th Generation Intel® Core™ processor technology and offers high performance and 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.

→ Temperature acc. EN50155 OT4
→ Fully railway approved
→ EN50155 UPS with S2 backup
→ Shock and vibration resistant

Railway Computer RSL 10-R

		Order Code	IPC/RSL10L70-C101E[1]	IPC/RSL10L70-R101E[1]
Processor / Performance				
Intel® Core™ i7-1365URE U-Series 2 P-cores 1.7GHz up to 4.9GHz and 8 E-cores 1.2GHz up to 3.7GHz			on request	on request
Intel® Core™ i7-1370PRE P-Series 6 P-cores 1.9GHz up to 4.8GHz and 8 E-cores 1.2GHz up to 3.7GHz Intel's use cases for 24/7 and Turbo Mode usage apply. For further details please contact the manufacturer or the user manual.			✔	✔
Memory / Storage				
Intel® Smart Cache			12MB	12MB
Dual channel LPDDR5x 6000 MT/s SDRAM (memory soldered down)			64GB	64GB
M.2 2280 Key M socket (PCIe x4) for additional NVMe Drive 120GB to 2TB			2	2
CFast socket with latching retainer [2]			1	1
MicroSD Card socket [2]			1	1
Features				
Real time clock PC compatible with Goldcap backup (up to 48h)			✔	✔
Hardware Watchdog & Temperature supervisor			✔	✔
TPM 2.0 according to ISO/IEC11889			✔	✔
UEFI Secure Boot key material must be provided by customer, custom bios version required			on request	on request
Inertial measurement unit STMicroelectronics ISM330DHCX (Please see user documentation for more detailed information and maximum sampling rate)			✔	✔
Communication Interfaces				
DisplayPort 1.4			1	1
USB version 3.2	(Type A)		2	2
100/1000/2500Mbit Ethernet (NBASE-T) with separated Intel® I226 NICs	(M12 female X-coded)		4	4
CAN 2.0A/B & CAN FD (PEAK FPGA chip, ISO bus compatible) active/passive, isolated Expandable to max. 6x CAN-FD	(DSUB)		on request	on request
Serial RS232 RX, TX, RTS, CTS, GND	(DSUB)		on request	on request
Digital I/O module, 24/36VDC - Galvanic isolation 1500Vrms (process to Logic) current sourcing output / current sinking inputs	(M12 male, 8P A-coded)		4 inputs, 2 outputs	4 inputs, 2 outputs
M.2 Key E socket [2]	(2230)		1	
M.2 Key B socket [2]	(3042/52)		1	
Mini PCIe socket [2]			1	1
Buzzer			✔	✔
Wireless connectivity				
4G LTE Cat-13 (3G fallback) Sierra Wireless EM7590 - M2M only! Dual nano SIM slot for cellular modules for 4G module	(2x SMA)		on request	✔
Cellular 5G module (4G/3G fallback) with GNSS			on request	on request
GNSS module u-blox NEO-M9V Module	(1x SMA)		on request	✔
High precision GNSS module (with RTK) u-blox ZED-F9P	(1x SMA)[3]		on request	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)			tbd (w320 x h85 x d170)	tbd (w320 x h85 x d170)
Net weight [gram]			~3000	~3000
Input voltage isolated and reverse polarity protected	(M12 male K-coded)		16.8 ... 137.5VDC	16.8 ... 137.5VDC
Interruption of voltage supply time: EN50155 - Class: S2			10ms	10ms
Power consumption typ. in Watt @ 24V without Add-Ins, idle			TBD	TBD
Environmental Conditions				
Operating temperature (complies with EN50155 class OT4/ST0)[4]			-40°C ... +70°C	-40°C ... +70°C
Non operating temperature (Recommended storage temperature 20°C .. 25°C)			-40°C ... +85°C	-40°C ... +85°C
Ingress protection standard according to EN60529			IP40	IP40
Conformal coating [5]			PCX	PCX
MTBF @ 25°C according to Telcordia SR-332, Environment GM, excluding CFast and optional interfaces			tbd	tbd
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)			designed to meet	designed to meet
Fire protection DIN EN45545-2			HL3	HL3
eMark			on request	on request
CE/UKCA			✔	✔
Software				
Linux Debian 12 (Bookworm)			✔	✔
BSP Windows 10 IoT Enterprise LTSC			✔	✔

Optional accessories

- **Ethernet Cable with M12 Connector:** CPN/CABETHM12XMRJ-200A
- **Power Cable with M12-K Connector to Weidmüller 4 Pin Connector:** TBD
- **Device shelf for 19" server cabinet:** on request

Scope of delivery
1x Device packaging

[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)

For support and further information:
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