



## IPC/COMPACT82 - RML

This fanless railway RML COMPACT82 generation is based on the Intel® Atom™ Elkhart Lake (x6000E) processors, 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 railway 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



### 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
- 5G/4G, GNSS and WiFi connectivity
- CFast socket
- microSD socket
- 1Gbit Ethernet and USB 3.1
- CAN-FD and Serial Ports
- Modular product design
- wide range of expansion options

### Industries / Applications

- Railway (rolling stock)
- Transportation

Processor / Performance			
Intel® Atom™ x6425RE - Quad core 1.9Ghz clock		•	•
Intel® Atom™ x6214RE - quad core 1.5Ghz clock <small>(with 4GB LPDDR4 RAM)</small>		optional	optional
Memory / Storage			
L2 cache		1.5MB	1.5MB
4267MT/s LPDDR4x RAM soldered on board		16GB	16GB
Internal eMMC		32GB	32GB
CFast socket with retention frame <sup>2</sup>		1	1
MicroSD Card socket <sup>2</sup>		1	1
Features			
Real time clock PC compatible with Goldcap backup holds charge for approx. 48h		•	•
Hardware Watchdog (customized settings 100ms - 256s) & Temperature supervisor		•	•
TPM 2.0 according to ISO/IEC11889		•	•
UEFI Secure Boot key material must be provided by customer <sup>1</sup>		•	•
Inertial measurement unit STMicroelectronics ISM330DHCXTR		•	•
Communication Interfaces			
DisplayPort 1.4 (up to 7680 x 4320 @ 60Hz)		1	1
USB 3.1 Gen2 (Type A)		2	2
Ethernet 10/100/1000 BASE-T (1x Intel® GbE   1x Intel® I210-IT)	(M12 female x-coded)	2	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	2
M.2 Key B socket <sup>2</sup> - used for wireless extensions depending on configuration	(3042)	1	1
M.2 Key E socket <sup>2</sup> - used for wireless extensions depending on configuration	(2230)	1	1
Mini PCIe socket <sup>2</sup> - used for wireless extensions depending on configuration		1	1
Buzzer		1	1
Digital I/O module, 24VDC <small>multiple DI/O modules possible</small>	(4 inputs, 4 outputs)	•	•
Analog input, 16Bit resolution, voltage input: +/-10V, 0 ... 30V <small>Accuracy: +/- 0.1%</small>	(4 inputs)	optional	optional
Analog input, 16Bit resolution, current input: 0-20mA	(4 inputs)	optional	optional
Serial RS232	(DSUB9)	2	1
Serial RS422/485, isolated	(DSUB9)	1	optional
Wireless connectivity			
5G cellular module with integrated eSIM (4G/3G/2G fallback) Module tbd	(SMA)	optional	optional
4G Cat-13 Worldwide cellular module Sierra Wireless EM7590 - M2M only!	(2x SMA)	•	•
Dual SIM support (nanoSIM)		•	•
GNSS module (with dead reckoning <sup>1</sup> ) u-blox NEO-M9x Module	(1x SMA)	•	•
Wireless LAN (Wi-Fi 6) 802.11ax/ac/a/b/g/n <small>SparkLAN 802.11ax/ac/a/b/g/n</small>		•	•
Technical Data			
Exterior dimensions [mm]		w262 x h105 x d138	w262 x h105 x d138
Net weight [gram]		~2100	~2100
110VDC wide input voltage (isolated and reverse polarity protected)	(M12 4P male a-coded)	16.8 ... 137.5VDC	16.8 ... 137.5VDC
Interruption of voltage supply time		EN50155 - Class: S2	EN50155 - Class: S2
Power consumption typ. in Watt @ 24V without Add-Ins, idle		tbd	tbd
Environmental Conditions			
Operating temperature (up to 85°C for 10 min., complies with EN50155 class OT4) <sup>3</sup>		-40°C ... +70°C	-40°C ... +70°C
Storage temperature		-40°C ... +85°C	-40°C ... +85°C
Ingress protection standard according to EN60529		IP40	IP40
Conformal coating <sup>4</sup>		PCX / PC2	PCX / PC2
Railway certification / Railway environmental conditions		EN50155	EN50155
Shock (designed to meet)		EN60068-2-27 / EN61373	EN60068-2-27 / EN61373
Vibration (designed to meet)		EN60068-2-64 / EN61373	EN60068-2-64 / EN61373
EMI-Conformity		EN50121-3-2 / EN301489-1	EN50121-3-2 / EN301489-1
Safety (according to)		EN62368-1	EN62368-1
Fire protection (designed to meet)		DIN EN45545-2 HL3	DIN EN45545-2 HL3
Radio and Telecommunication (designed to meet)		RED	RED
MTBF @ 25°C ambient <small>according to Telcordia SR-332, Environment GB, excluding battery and optional interfaces</small>		tbd	tbd

<sup>1</sup> Please contact factory for minimum order quantities<sup>3</sup> Depending on installation situation and interface connection. Please see user documentation.<sup>2</sup> Internal connector<sup>4</sup> 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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