

Railway Computer

COMPACT-RS Rail Series

Embedded Railway Computer with Intel® Atom™ E39xx processor (formerly Apollo Lake-I)

preliminary



IPC/COMPACT81 - RS

This fan less RPC COMPACT81 generation is based on the Intel® Atom™ E3900 (formerly Apollo Lake-I) processor technology and offers a wide range of interface options. The robust and uncompromising industrial design allows the implementation in the most demanding rail applications and guarantees long term availability.

- 24/7 continuous operation
- Extended AI Computing
- Temperature acc. EN50155 OT 4 (former TX)
- Fully railway approved (EN50155 & EN45545)
- Optional EN50155 Class S2 power supply



Product Highlights

Maintenance free/Long term availability
Goldcap instead of battery backup
No moving parts
Scalable CPU core
Hardware watchdog
Temperature supervision
Intelligent power management system
ESD- protection on all interfaces
Motion Sensor
Dead Reckoning
Shock and vibration resistant

Product Features

Intel® Atom™ E3900 Series
up to 2.0GHz, up to 4 Cores
RAM soldered on board up to 8GB
Socket for CFast
Graphic resolution up to WUXGA
Ethernet, USB, CAN
M12 connectors
Stainless steel housing
Protection class IP40
EN50155 certified (OT4 /Tx Class)

Markets / Applications

Railway (rolling stock)
Automotive
Traffic control
Transportation and vehicle construction
Automated Guided Vehicle (AGV)

Order Code IPC/RS81G13-A101E¹ IPC/RS81H18-A101E¹ IPC/RS81I20-A101E¹

Processor module / Performance				
Intel® Atom™ x5-E3930 1.80GHz (Burst) 1.3GHz Clock - Dual Core	•			
Intel® Atom™ x5-E3940 1.80GHz (Burst) 1.6GHz Clock - Quad Core		•		
Intel® Atom™ x7-E3950 2.00GHz (Burst) 1.6GHz Clock - Quad Core			•	
Memory / Storage				
L2 cache	2MB	2MB	2MB	
DDR3 RAM	2GB	4GB	8GB	
uSD Card socket	1	1	1	
CFast socket with retention frame ²	1	1	1	
Features				
Real time clock PC compatible with Goldcap backup	•	•	•	
Hardware Watchdog & Temperature supervisor	•	•	•	
Intelligent power management (Ignition controller)	•	•	•	
Goldcap backup	•	•	•	
TPM2.0 (SLB9665)	•	•	•	
Motion sensor	•	•	•	
Dead reckoning	•	•	•	
Communication Interfaces				
DisplayPort 1.2 up to 4096x2160 @60Hz	•	•	•	
USB version 3.0 (Type A)	1	1	1	
USB version 2.0 (Type A)	1	1	1	
Ethernet 10/100/1000 (I210-IT) (M12 female X-coded)	2	2	2	
RS232 / RS422/485 ESD protected (DSUB9)	optional	optional	optional	
CAN (PEAK, SJA1000 compatible) ESD protected, isolated (DSUB9)	optional	optional	optional	
Mini PCIe socket ²	1	1	1	
I2C bus ²	•	•	•	
HD Audio / Speaker ²	optional	optional	optional	
Buzzer	•	•	•	
Technical Data				
Dimensions w174 x h47 x d127 mm (housing without mounting bracket)	•	•	•	
Net weight in gram	~950	~950	~950	
Input voltage isolated and reverse polarity protected (M12 4P male A-coded)	16.8 ... 45VDC	16.8 ... 45VDC	16.8 ... 45VDC	
16.8... 137.5VDC Input voltage, isolated and reverse polarity protected ³ (M12 4P male A-coded)	optional	optional	optional	
Interruption of voltage supply time: EN50155	Class S2	Class S2	Class S2	
Power consumption typ. in Watt @ 24V without Add-Ins, idle	~25	~25	~25	
Environmental Conditions				
Operating temperature (up to 85°C for 10 min. according to EN 50155 Class OT4 / TX) ⁴	-40°C ... +70°C	-40°C ... +70°C	-25°C ... +60°C	
Storage temperature -40 ... +85°C	•	•	•	
Protection standard: IP40	•	•	•	
Conformal coating ⁵	•	•	•	
Shock: EN60068-2-27 / EN61373	•	•	•	
Vibration: EN60068-2-64 / EN61373	•	•	•	
EMI-Conformity EN-50121-3-2	•	•	•	
Safety according to EN62368-1	•	•	•	
Fire protection: DIN EN 45545-2 HL3	•	•	•	
Radio and Telecommunication: Designed to meet R&TTE / RED	•	•	•	
MTBF ~200 000h (22.8 Years) @ 25°C excluding battery and S2 power supply	tbd	tbd	tbd	
Optional enhancement cards				
Wireless Module (LTE / GSM / GPS / BT / WiFi) ¹	optional	optional	optional	

¹ Please contact factory for minimum order quantities

² Internal connector

³ Different and slightly bigger housing required (approx: 227 x 47 x 127 mm)

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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