



## IPC/RSL81

This fanless RSL COMPACT81 generation is based on the Intel® Atom™ E3900 (Apollo Lake) processor technology and 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.

- **Railway approved (EN50155 & EN45545)**
- **24/7 continuous operation**
- **M12 connectors for Power and LAN**
- **Shock and vibration resistant**
- **Full -40...+85°C on component level**



### Product Highlights

- Power Ignition controller
- Inertial Measurement Unit (IMU)
- GNSS with dead reckoning
- Fanless, No moving parts
- Maintenance free
- Long term availability

### Product Features

- Intel® Atom™ E3900 Series up to 2.0GHz, 4 Cores
- RAM soldered on board 8GB
- Socket for CFast storage card
- Gbit Ethernet, USB, RS232, CAN
- M12 connectors
- Stainless steel housing
- Protection class IP40
- 5G, 4G, Wi-Fi & Bluetooth options

### Markets / Applications

- Railway (rolling stock)
- Transportation

**Processor / Performance**

Intel® Atom™ x7-E3950 2.00GHz (Burst) | 1.6GHz Clock - Quad Core | 8GB RAM

Intel® Atom™ x5-E3940 1.80GHz (Burst) | 1.6GHz Clock - Quad Core | 4GB RAM

•  
optional**Memory**

L2 cache

2MB

RAM DDR3L 1866MT/s soldered on board

8GB

**Features**

Inertial measurement unit (IMU) STMicroelectronics ISM330DHCXTR

•

Real time clock (RTC) with goldcap backup (holds charge for 48h)

•

Hardware watchdog &amp; Temperature supervisor

•

Intelligent power management (Ignition controller)

•

TPM 2.0 according to ISO/IEC11889

•

**Communication Interfaces**

DisplayPort 1.4 (up to 7680 x 4320 @ 60Hz)

1

USB version 3.1

(Type A)

2

Ethernet 10/100/1000 Mbit (Intel I210-IT)

(M12 female x-coded)

2

Serial RS232, isolated

(DSUB9)

up to 2<sup>3</sup>CAN 2.0A/2.0B & CAN FD (PEAK FPGA chip, SJA1000 compatible), isolated,  
The CAN signals give no network feedback and are attached via non-volatile I/O port on the I2C bus

(DSUB9)

up to 2<sup>3</sup>CFast socket with retention frame <sup>2</sup>

1

M.2 Key B socket <sup>2</sup>

(M.2 3042)

1

M.2 Key E socket <sup>2</sup>

(M.2 2230)

1

Mini PCIe socket <sup>2</sup>

1

MicroSD Card socket <sup>2</sup>

1

Buzzer <sup>2</sup>

1

I2C bus <sup>2</sup>

1

**Wireless Connectivity**GNSS positioning module u-blox NEO-M9 Module <sup>4</sup>

(1x SMA)

optional

Wireless LAN IEEE 802.11ac/a/b/g/n/ dual-band 2x2 MIMO SparkLAN WxxB-263ACNI(BT)

(2x RP-SMA)

optional

Cellular 4G module (3G/2G fallback) Sierra Wireless EM7455 - M2M only!

(2x SMA)

optional

Cellular 5G module (4G/3G fallback) Sierra Wireless EM9191 - M2M only!

(2x SMA)

optional

High accuracy GNSS positioning module w/ RTK support u-blox ZED F9P module

(1x SMA)

optional

Dual nano SIM slot for cellular modules

optional

**Technical Data**

Exterior dimensions [mm]

w228 x h53 x d127

Net weight [gram]

~1750

Isolated input voltage, with ignition controller function, reverse polarity protected<sup>5</sup>

(M12 4P male a-coded)

16.8 ... 30VDC

Current consumption typ. in mA @ 24V without Add-Ins, idle

~500

Power consumption typ. in Watt @ 24V without Add-Ins, idle

~12

**Environmental Conditions**Operating temperature (complies with EN50155 class OT4) <sup>6</sup>

-40°C ... +70°C

Storage temperature

-40°C ... +85°C

Ingress Protection standard EN60529

IP40

Conformal coating<sup>7</sup>

PCX

Shock

IEC/EN 61373

Vibration

IEC/EN 61373

EMI-Conformity

EN 50121-3-2 (IEC 62236-3-2)

Safety (designed to meet)

EN 62368-1

Fire protection

EN 45545-2 HL3

Radio and Telecommunication (designed to meet)

RED

MTBF @ 25°C according to Telcordia SR-332, Environment GB, excluding optional extensions

~480 000h

<sup>1</sup> Please contact factory for minimum order quantities<sup>2</sup> Internal connector<sup>3</sup> A total of two DSUB9 ports are available for either 2x CAN, 2x RS232 or 1x CAN & 1x RS232. It is also possible to configure the device without any CAN or RS232 interfaces.<sup>4</sup> NEO M9 Series, NEO-M9V (with dead reckoning) is planned, however subject to availability the NEO-M9N (without dead reckoning) may be used prior.<sup>5</sup> Power supply complies with EN50155 class S1<sup>6</sup> Depending on installation situation and interface connection. Please see user documentation.<sup>7</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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