

Rugged Computer

## COMPACT Rugged Series

Industrial rugged PC with Intel® Atom™ E3900 processor (Apollo Lake)



## RPC/COMPACT81

This fanless Rugged COMPACT 81 generation is based on the Intel® Atom™ E3900 processor technology and offers a wide range of interface options.

The new ultra rugged housing made of tough anodized aluminum offers a IP67 / IP69 protection and has no moving parts. The robust and uncompromising industrial design allows implementation in the most demanding applications and guarantees long term availability.

- Multi-core 64-bit Intel® Atom™ processor
- Protection class IP67 / IP69
- Extended temperature range
- Shock and Vibration resistant



### Product Highlights

Ultra rugged  
Sealed housing  
Maintenance free  
No moving parts / passively cooled  
Hardware watchdog  
Temperature supervision  
Long term availability (fixed BOM)  
-40°C...+85°C on component level

### Product Features

Intel® Atom™ E3900 Series  
up to 2.0GHz, up to 4 Cores  
RAM soldered on board up to 8GB  
Socket for CFast storage card (up to 480GB)  
Gbit Ethernet, CAN-FD, USB 3.1, RS232  
Digital I/Os  
Optional LTE, GNSS & WiFi extensions  
Rugged M12 connectors  
Rugged aluminum housing  
Protection class IP67, IP69

### Industries / Applications

Heavy Industry  
Agriculture  
Transportation  
Construction  
Mining vehicles  
Automated guided vehicles (AGV)  
Outdoor applications

Order Code RPC/RSL81I20-A154E<sup>1</sup>

## 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 PC compatible with battery backup Renata CR2477N (950 mAh)	•
Hardware Watchdog & Temperature supervisor	•
Intelligent power management (Ignition controller)	•
TPM 2.0 Infineon SLB9665	•

## Communication Interfaces

DisplayPort 1.4 (up to 7680 x 4320 @ 60Hz) <small>behind the front cover</small>	1
USB version 3.1 <small>behind the front cover</small>	(Type A) 2
Ethernet 10/100/1000 Mbit (Intel I210-IT)	(M12 female, x-coded) 2
PoE+ IEEE802.3at 10/100/1000Mbit (PSE) <small>requires taller housing: w276 x h88 x d165 mm</small>	(M12 female, x-coded) optional
CAN 2.0A/B & CAN FD (PEAK FPGA chip, SJA1000 compatible) active/passive, isolated	(1x M12 female, 8P a-coded) 2
Serial RS232	(M12 male, 8P a-coded) 1
Digital I/O, 24VDC	(M12 male, 8P a-coded) 4 inputs, 2 outputs
CFast socket with retention frame <sup>2</sup>	1
M.2 Key B socket <sup>2</sup>	(M.2 3042 - used for LTE Module) •
M.2 Key E socket <sup>2</sup>	(M.2 2230 - used for WiFi Module) •
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
Serial RS232 or RS422/485, isolated	optional
Analog input, 16bit resolution, voltage input: -10 ... +10V / 0 ... 30V <sup>1</sup>	(4 inputs) optional
Analog input, 16bit resolution, current: 0-20mA <sup>1</sup>	(4 inputs) optional
HD Audio, Line in / out <sup>2</sup>	optional

## Wireless Connectivity

Cellular 4G module (3G/2G fallback) Sierra Wireless EM7565 - M2M only!	(2x SMA) •
Dual nano SIM slot for cellular modules	•
Wireless LAN IEEE 802.11ac/a/b/g/n/ dual-band 2x2 MIMO Intel Wireless-AC 9260	(2x RP-SMA) •
GNSS positioning module (GPS, GLONASS, Galileo, BeiDou) u-blox NEO-M9V	(1x SMA) •
High accuracy GNSS positioning module w/ RTK support u-blox ZED F9P	(1x SMA) optional

## Technical Data

Dimensions [mm] (housing, incl. mounting)	w276 x h58 x d210
Net weight [gram]	~3450
Non-isolated input voltage, with ignition controller function, reverse polarity protected	(M12 male, 4P a-coded) 8.4 ... 45VDC
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 <sup>3</sup>	-40°C ... +70°C
Storage temperature	-40°C ... +85°C
Ingress Protection standard EN60529 (ISO 20653)	IP67, IP69
Road vehicles (UNECE-R10 "E-mark")	on request
Conformal coating <sup>4</sup>	on request
Shock (designed to meet)	EN60068-2-27
Vibration (designed to meet)	EN60068-2-64
EMI-Conformity (designed to meet)	EN55032 / EN55035
Safety (designed to meet)	EN62368-1
Radio and Telecommunication (designed to meet)	RED
MTBF @ 25°C according to Telcordia SR-332, Environment GB, excluding battery and optional extensions	~480 000h

<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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industrial computing

## 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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