

# EXTREME SYSTEM

## RUGGED FANLESS SYSTEM

Designed for tight integration into military vehicle and other platforms. MIL-STD-D38999 connectors, rugged-by-design internal components, and completely passive cooling maximize reliability for operations in harsh conditions. StackRACK™ provide shock and vibration immunity exceeding MIL-STD-810G standards, and operate at full CPU speed over a wide temperature range of -40 to +70°C.



**4<sup>th</sup> Generation**  
**Intel® Haswell**



## PCIe/104 EXTENSION MODULES



NVIDIA GT730M  
Graphics Card-SK210



Quad-Port Gigabit  
Ethernet Card-SK506



Storage Card-SK401

### NVIDIA GPU ON GT730M

- NVIDIA CUDA (384) Technology
- OpenGL 4.4 Support
- 4 DisplayPort



# StackRACK

## SR100

# PERFECTRON

Intel® QM87 Extreme Fanless Rugged System with Intel® Core™ i7/i3 Haswell Processor, 9V to 36V DC-in, Wide Temp. -20 ~ 60°C (-40 ~ 70°C)



**EXTENDED  
TEMPERATURE**

## KEY FEATURE

- 4th Generation Intel® Core™ i7/i3 Haswell processors (BGA)
- Swissbit XR-DIMM up to 8 GB RAM
- Onboard NANO SATA 3.0 SSD up to 32 GB
- Multi-Displays by 2 x DP, 1 x DVI-I
- 2 x mPCIe Expansion slot (One Co-Layout with mSATA)
- 2 x PCIe Intel® Gigabit Ethernet
- 4 x USB 3.0, 1 x COM ports
- 9V~36V DC-in with power delay on/off

*it's perfect!*

# SR100

PERFECTRON

Intel® QM87 Extreme Fanless Rugged System with Intel® Core™ i7/i3 Haswell Processor, 9V to 36V DC-in, Wide Temp. -20 to 60°C



## Main Features

- 4th Generation Intel® Core™ i7/i3 Haswell processors (BGA)
- Swissbit XR-DIMM up to 8 GB RAM
- Built-in Industrial Embedded SATA nano SSD 32 GB
- Multi-Displays by 2 x DP, 1 x DVI-I
- 2 x mPCIe Expansion slot (One Co-Layout with mSATA)
- 2 x PCIe Intel® Gigabit Ethernet
- 4 x USB 3.0, 1 x COM ports
- 9V~36V DC-in with power delay on/off
- Extended Temperature -20 to 60 °C (-40 to 70°C optional)

## ► Specifications

### System

CPU Type	Intel® Core™ i7/i3 Haswell , BGA type Core i7-4700EQ (4C x 2.4/1.7 GHz), 6M Cache (47W) Core i3-4102E (2C x 1.6 GHz), 3M Cache (25W)
Chipset	Intel® QM87 PCH
Memory	1 x DDR3 1600 Swissbit XR-DIMM up to 8 GB with ECC
Expansion Slot	2 x mPCIe (1 x colay with mSATA)
Touch	PenMount 6000
Storage Device	1 x SATA III 6 Gb/s 2.5" SSD/HDD

### Front I/O

Power Button	YES
Power LED	YES
HDD LED	YES
LAN LED	YES
Reset Button	YES
USB	2 x USB 3.0
Power	1 x Terminal Block

### Display

Display Interface	DVI-D interface x 1: 29-pin DVI-I connectors (female); resolution up to 1920 x 1200@60 Hz Display port interface x 2: 20-pin display port connectors (female); resolution up to 3840 x 2160@60 Hz
Graphics Controller	Onboard Intel® HD 4600 graphics

### Rear I/O

DisplayPort	2
DVI-I	1
Ethernet	2 x RJ45
COM	1 x RS232/422/485 with 5V/12V selectable
USB	2 x USB 3.0
Audio	1 x MIC, 1 x Line out

### Mechanical and Environment

Power Requirement	9V to 36V DC-in, AT/ATX mode supports with power delay on/off
Dimension(W x H x D)	250 x 149 x 76 mm
Operating Temp.	-20 to 60°C (ambient with airflow)
Storage Temp.	-40 to 85°C
Relative Humidity	5% to 95%, non-condensing

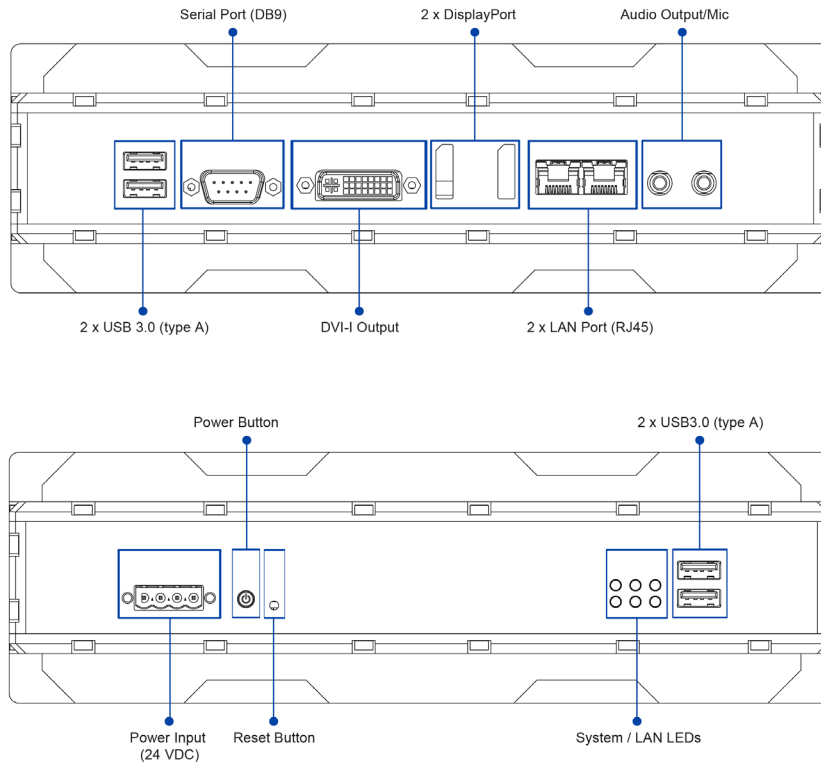
### Serial Interface & Signals

Serial Standards	1x RS-232/422/485 ports, Jumper-selectable (DB9 male)
RS-232	TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND
RS-422	TxD+, TxD-, RxD+, RxD-, GND
RS-485-4w	TxD+, TxD-, RxD+, RxD-, GND
RS-485-2w	Data+, Data-, GND

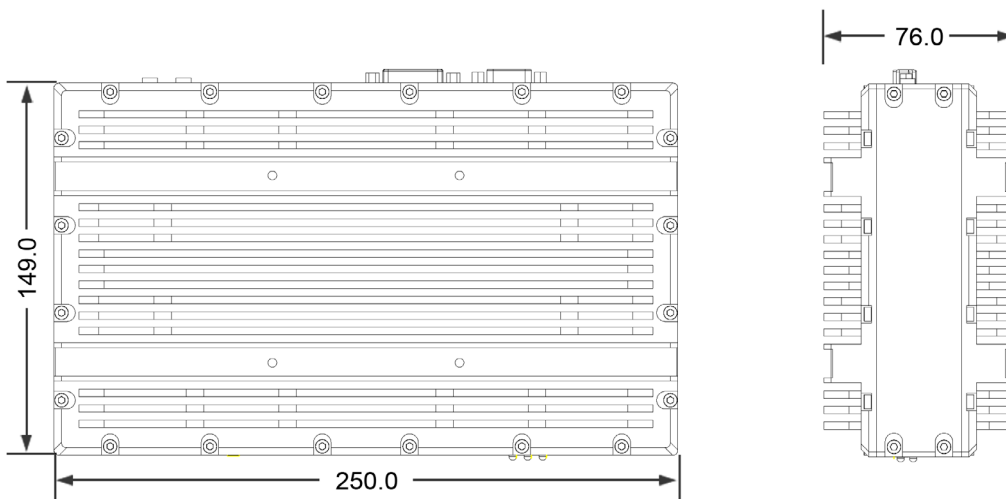
### Standards and Certifications

EMC	CE and FCC compliance
Green Product	RoHS, cRoHS, WEEE compliance

## ► Appearance



## ► Dimensions



## ► Packing List

- SR100 Fanless Rugged System
- Driver CD

## ► Optional Accessories

- Swissbit XR-DIMM up to 8 GB RAM

## ► Ordering Information

### Modules

Model Number	Description
SR100-ET	Intel® QM87 Fanless Rugged System with Intel® Core i7/i3 Haswell Processor, 9V to 36V DC-in, Wide Temp -20 to 60°C
SR100-UT	Intel® QM87 Fanless Rugged System with Intel® Core i7/i3 Haswell Processor, 9V to 36V DC-in, Wide Temp -40 to 70°C

# Target Market

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## Video Wall / Control Room



### Main Requirements

- ◆ 4 x Independent Displays
- ◆ 3 x 1080P Displays
- ◆ NVidia CUDA Support
- ◆ INTEL Core i7 Support
- ◆ FAN-LESS

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## In Vehicle Heavy Duty Transportation



### Main Requirements

- ◆ 6 Gigabit LAN Support
- ◆ Anti-Shock / Vibration
- ◆ MIL-STD 810G
- ◆ Wide Range DC 9V~36V
- ◆ Ignition On/Off By Software
- ◆ FAN-LESS

# Target Market

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## Automation Energy Management



### Main Requirements

- ◆ CPU Full Speed Over Wide Temp
- ◆ High Computing Power
- ◆ Intel Core i7 Quad Cores
- ◆ NVidia CUDA
- ◆ CPU/SSD Soldering on board

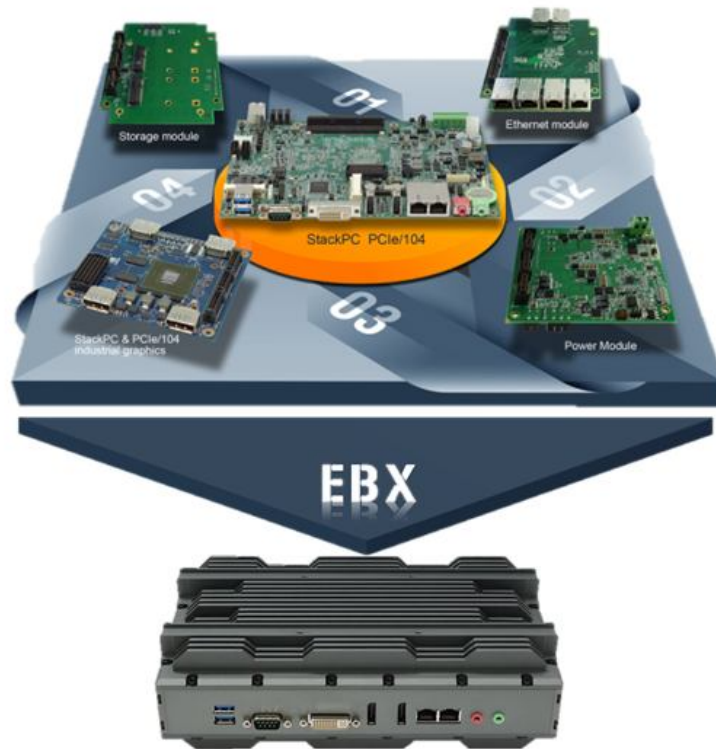
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## Military



### Main Requirements

- ◆ Stackable Expansion
- ◆ High Computing Power
- ◆ MIL-STD 810G
- ◆ CPU/SSD Soldering
- ◆ IP6x Water-Tight
- ◆ Wide Range DC 9V~36V



## PCIe/104 Extension Module

**SK401**  
Storage module



- 1 x 2.5" SSD/HDD
- 2 x mSATA

**SK506**  
Quad-Port Gigabit  
Ethernet LAN



- Intel i350-AM4  
supporting 4 x GbE
- 2 x GbE through  
PCIe/104

**SK210**  
Nvidia GTX 730M  
Graphic Card



- GTX730M GPU
- 4 Independent DP Ports
- CUDA Score 384
- DirectX 11
- OpenGL4.1

## 4 Independent Displays

### Video Wall / Control Room



### Main Requirements

- ◆ 4 x Independent Display Ports
- ◆ 3 x 1080P Displays
- ◆ NVidia CUDA Support
- ◆ OpenGL 4.1 support
- ◆ NVIDIA Adaptive Vertical Sync
- ◆ Microsoft DirectX 11 support
- ◆ INTEL Core i7 Support
- ◆ FAN-LESS



## 6 Gigabit Ethernet LAN

### In Vehicle Heavy Duty Transportation



### Main Requirements

- ◆ 6 Gigabit LAN Support
- ◆ Anti-Shock / Vibration
- ◆ MIL-STD 810G
- ◆ Wide Range DC 9V~36V
- ◆ Ignition On/Off By Software
- ◆ FAN-LESS

