



# SR10-SCHX2

Intel® CM236 MIL-STD Fanless Rugged  
System with Intel® Core™ i7-6820EQ  
Processor, 9V to 36V DC-in,  
Wide Temp. -40 ~ 60°C



**User's Manual**

Revision Date: Nov.1.2017

## Safety Information

### Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Make sure that your power supply is set to the correct voltage in your area.
- If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your local distributor.

### Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter any technical problems with the product, contact your local distributor

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- All product specifications are subject to change without prior notice

## Specifications

### SYSTEM

|                            |  |
|----------------------------|--|
| High Performance Processor | Intel® 6th Gen Core™ i7-6820 EQ (Frequency 2.8 GHz, Turbo Boost up to 3.5 GHz), Quad-Core, 8 Thread Support, 8MB SmartCache. Build-in HD Graphics 530 for excellent 3D, Turbo Boost Technology 2.0, VPro and Hyper-Threading support |
| Memory type                | 1 x DDR4 XR-DIMM<br>1 X DDR4 SO-DIMM<br>Total up to 32 GB  |
| Chipset                    | Intel® QM170 Chipset supporting 6th generation Intel® Core™ processor families.  |

### DISPLAY

|              |                              |
|--------------|------------------------------|
| Display Port | Resolution up to 3840 x 2160 |
| DVI-I        | Resolution up to 1920 x 1200 |

### STORAGE

|             |  |
|-------------|--|
| mSATA       | mSATA Solid State Disk (SSD) - up to 512GB Capacity. |
| Onboard SSD | Onboard uSSD 64GB                                    |

### REAR I/O

|              |   |
|--------------|---|
| Display Port | 2 x 20Pin External connectors (Female)        |
| DVI-I        | 1 x 29Pin DVI-I connector (Female)            |
| Ethernet     | 2 x RJ45 Gigabit Ethernet LAN 'FNBMF          |
| Audio        | 2 x 3.5mm Audio Jacks (1 x MIC, 1 x Line-Out) |
| Serial Port  | 1 x DB9 connector (RS-232/422/485)            |
| USB Port     | 2 x USB3.0 standard-A connectors              |
| DC-IN        | 1 x4 Pin rugged terminal block                |

### FRONT I/O

|               |                                     |
|---------------|-------------------------------------|
| Button        | Power Button w/cover                |
| Indicator LED | Power, HDD, LAN (Link/Active/Speed) |
| USB Port      | 2 x USB3.0 standard-A connectors    |

### APPLICATIONS, OPERATING SYSTEM

|              |   |
|--------------|---|
| Applications | Energy/Smart Grid/Power Plant Management, Intelligent Automation and manufacturing applications |
|--------------|---|

|                  |  |
|------------------|--|
| Operating System | Windows 8, Windows 8.1, Windows 10, Ubuntu 14.04, Ubuntu 16.04 |
|------------------|--|

## PHYSICAL

|                       |                  |
|-----------------------|------------------|
| Dimension (W x D x H) | 308 x 149 x 58mm |
|-----------------------|------------------|

|        |        |
|--------|--------|
| Weight | 2.96Kg |
|--------|--------|

|         |                                     |
|---------|-------------------------------------|
| Chassis | Aluminum Alloy, Corrosion Resistant |
|---------|-------------------------------------|

|        |   |
|--------|---|
| Finish | Anodic aluminum oxide (Color Iron gray) |
|--------|---|

|         |  |
|---------|--|
| Cooling | Natural Passive Convection/Conduction. No Moving Parts |
|---------|--|

|                   |                          |
|-------------------|--------------------------|
| Relative Humidity | 5% to 95% non-condensing |
|-------------------|--------------------------|

|                    |                              |
|--------------------|------------------------------|
| Ingress Protection | Dust Proof (Similar to IP50) |
|--------------------|------------------------------|

## ENVIRONMENTAL

|                   |   |
|-------------------|---|
| MIL-STD-810G Test | Method 507.5, Procedure II (Temperature & Humidity)<br>Method 516.6 Shock-Procedure V Non-Operating (Mechanical Shock) Method 516.6 Shock-Procedure I Operating (Mechanical Shock)<br>Method 514.6 Vibration Category 24/Non-Operating (Category 20 & 24, Vibration)<br>Method 514.6 Vibration Category 20/Operating (Category 20 & 24, Vibration)<br>Method 501.5, Procedure I (Storage/High Temperature)<br>Method 501.5, Procedure II (Operation/High Temperature)<br>Method 502.5, Procedure I (Storage/Low Temperature)<br>Method 502.5, Procedure II (Operation/Low Temperature)<br>Method 503.5, Procedure I (Temperature shock) |
|-------------------|---|

|                       |                                    |
|-----------------------|------------------------------------|
| Operating Temperature | -40 to 60°C (ambient with airflow) |
|-----------------------|------------------------------------|

|                     |             |
|---------------------|-------------|
| Storage Temperature | -40 to 85°C |
|---------------------|-------------|

|     |                       |
|-----|-----------------------|
| EMC | CE and FCC compliance |
|-----|-----------------------|

|               |                       |
|---------------|-----------------------|
| Green Product | RoHS, WEEE compliance |
|---------------|-----------------------|

## Revision History

| Revision    | Date (yyyy/mm/dd) | Changes         |
|-------------|-------------------|-----------------|
| Version 1.0 | 2018/01/16        | Initial release |

## Packing list

- ☐ SR10-SCHX2 Fanless Rugged System
- ☐ CD (Driver + Quick Installation Guide)
- ☐ Bracket Ear x 2
- ☐ Screw for fixing Bracket Ear

## Ordering information

| Model Number | Description   |
|--------------|---|
| SR10-SCHX2   | Intel® Skylake-H Processor Core™ i7-6820EQ, Fanless System, 9V to 36V DC-in, Wide temperature -40 to 60°C |



If any of the above items is damaged or missing, please contact your local distributor.

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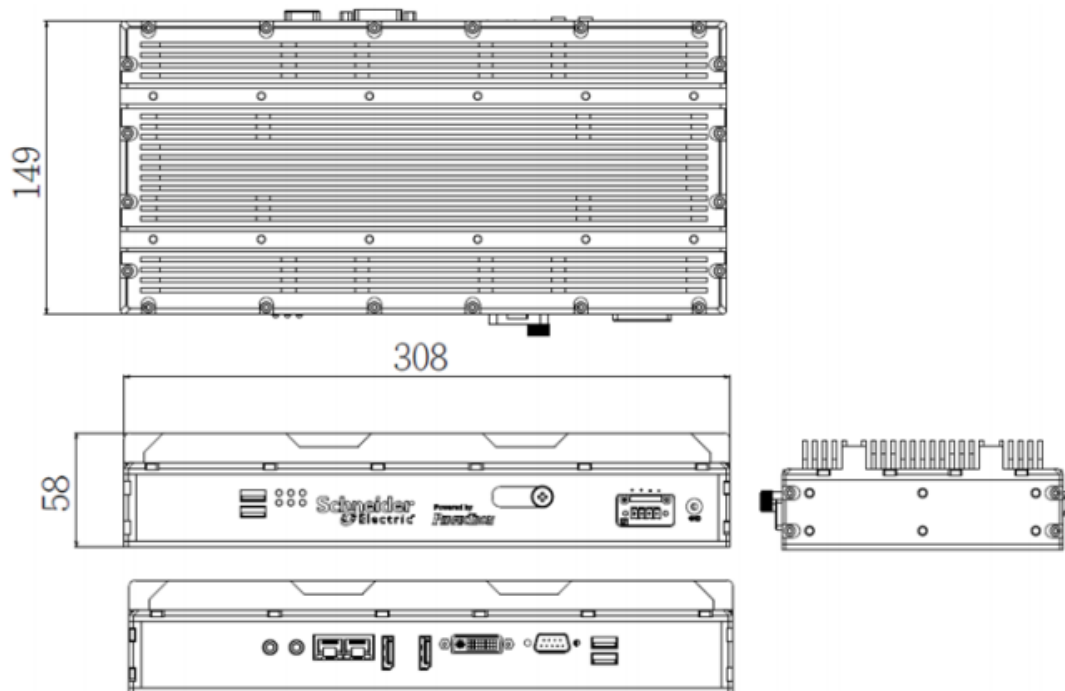
## Chapter 1: Product Introduction

### 1.1 Key Features

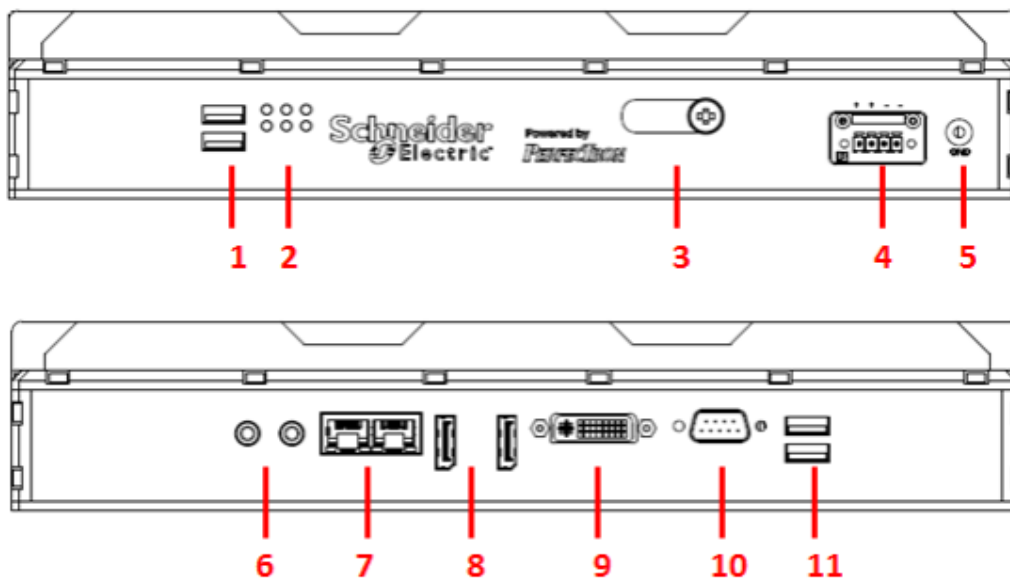
| System                   |   |
|--------------------------|---|
| CPU                      | Intel® 14 nm Skylake-H Intel® Core™ i7-6820EQ Processor (8M SmartCache, 3.50 GHz) |
| Memory Type              | Up to 32GB SDRAM  |
| BIOS                     | AMI® BIOS   |
| Storage Device           | 64 GB SATA SSD onboard  |
| Front I/O                |   |
| HDD LED                  | 1 x Red LED   |
| Power LED                | 1 x Green LED   |
| Power Button             | 1 x Power Button with LED backlight   |
| LAN LED                  | Link/Activity/Speed LED   |
| USB                      | 2 x USB 3.0   |
| System Power DC-IN       | 1 x 4-pin terminal block, 9~36V DC input  |
| Ground Screw             | 1   |
| Rear I/O                 |   |
| DisplayPort              | 2   |
| DVI-D                    | 1   |
| COM                      | 1 x RS232/422/485   |
| USB                      | 2 x USB 3.0   |
| Audio                    | 1 x Mic In, 1 x Line Out  |
| Ethernet                 | 2 x RJ45  |
| Mechanical & Environment |   |
| Construction             | Aluminum chassis with fanless design  |
| Power Requirements       | 9V to 36V DC-in<br>#Power consumption under 60 Watt.                              |
| Dimension (W x H x D)    | 308 x 58 x 149mm<br>(12.16" x 2.28" x 5.87")                                      |
| Operating Temp.          | -40 to 60°C (ambient with air flow)   |
| Storage Temp.            | -40 to 85°C   |
| Relative Humidity        | 5% to 95%, non-condensing   |

\* Specifications are subject to change without notice\*

## 1.2 Dimensions



## 1.3 Panel Component

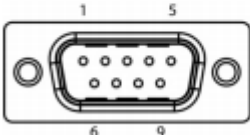


|    |   |
|----|---|
| 1  | 2 x USB3.0  |
| 2  | Power, HDD, LAN (Link/Active/Speed) Indicator LED |
| 3  | Power Button w/cover                              |
| 4  | DC-IN   |
| 5  | Ground Screw                                      |
| 6  | MIC-In, Line-Out                                  |
| 7  | 2 x RJ45 GbE LAN                                  |
| 8  | 2 x DisplayPort                                   |
| 9  | DVI-D   |
| 10 | COM1(RS232)                                       |
| 11 | 2 x USB3.0  |


## Chapter 2: Jumpers and Connectors Locations

### 2.1 Rear Panel Connector Pin Definitions

#### COM1: RS232

| Pin | RS-232               |  |
|-----|----------------------|---|
| 1   | DCD-                 |   |
| 2   | RXD                  |   |
| 3   | TXD                  |   |
| 4   | DTR-                 |   |
| 5   | GND                  |   |
| 6   | DSR-                 |   |
| 7   | RTS-                 |   |
| 8   | CTS-                 |   |
| 9   | +5V/+12V/RI(Default) |   |

#### DC-IN: 9~36V DC-in

| Pin | Definition |  |
|-----|------------|--|
| 1   | +9V~36V    | <div>14</div>  |
| 2   | +9V~36V    |  |
| 3   | GND        |  |
| 4   | GND        |  |