SCH200

IEC-61850-3, IEEE-1613 1U Fanless Power Automation Computer

STAR LAKE

- Intel 9th. Core i7-9700TE Processor
- 2 x 100Base FX, 2 x 100Base TX
- 8 x COM ports support
- 2 x 200W DC-DC Redundant PSU
- -20℃~+60℃ Extreme Temp

**MIL-STD 810G**

IEC 61850-3
IEEE 1613

Introduction

SCH200 is equipped with 125V DC-in Redundant Power supply preventing the whole system from unexpected shutdown. Powered by Intel 9th Gen. Core i7-9700TE processor, SCH200 owns highly efficient processing capability to deal with a large amount of data delivering between IEC-61850 devices and the Control Center. In advantage of other outstanding features, such as 2 x 100Base-FX LAN port and 8 x COM (6 x RS232/422/485 variable, 2 x RS232), SCH200 is an undoubtedly best choice for Gateway application in Substation.
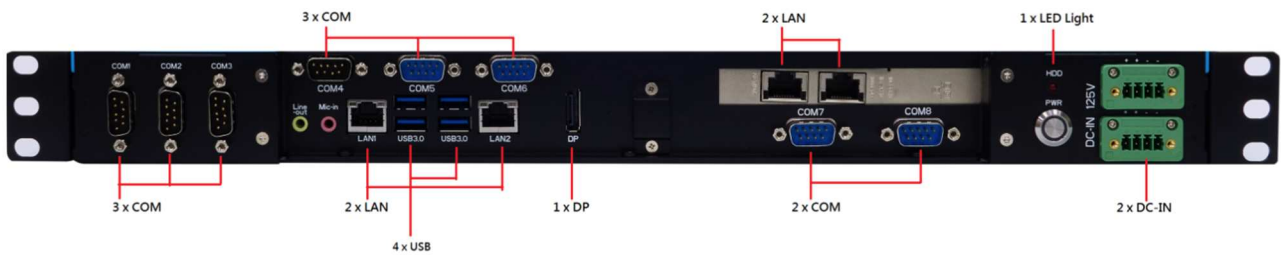
Key Features of SCH200

(1) Security Redundancy

(2) Data Redundancy

(3) Power Redundancy

(4) Network Redundancy

(5) Rich Communication Interface

(6) Extreme Temperature

(7) Multiple Ethernet Port

(8) IEC-61850-3

(9) IEEE-1613
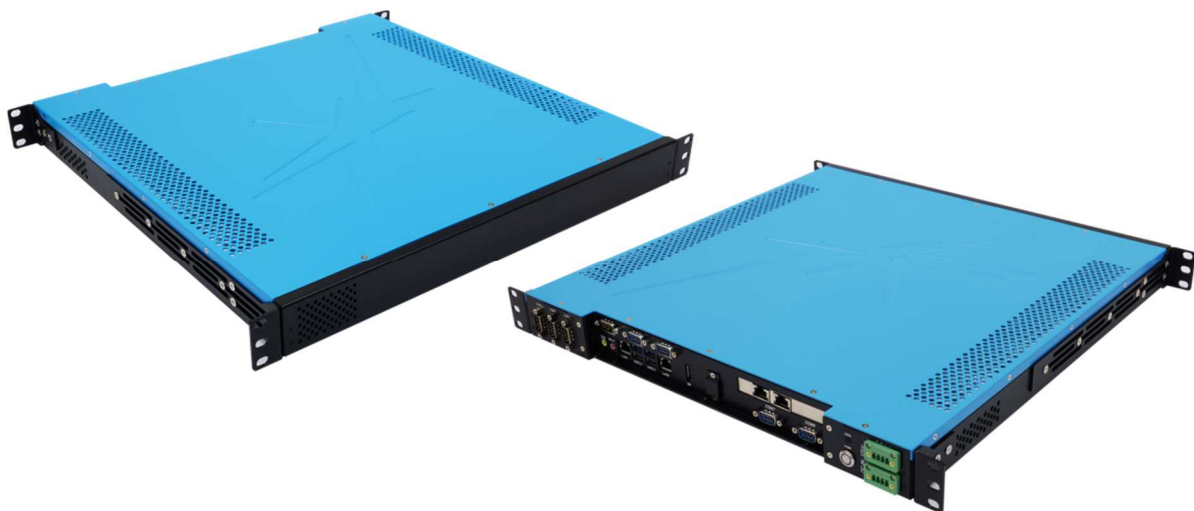
Description of Key Features

(1)Security Redundancy

Integrating TPM module, operating systems can require an authentication to protect keys, data or systems.

(2)Data Redundancy

RAID function supports an assortment to help protect or speed up the performance of a computer's disk storage. RAID 0/1 function makes SCH200 to archive it.

(3)Power Redundancy

The SCH200 redundant power supplies can provide 2 x 200W DC-DC power modules in one power supply for non-stop applications. The design of wide power range keeps the system's reliability and you can expect longer life-span as well. Sudden drop or surge of power posts absolutely no threat to this smart system.

(4)Network Redundancy

PRP/HSR network will be required as an efficient and cost effective solution in order to construct a seamless/bumpless communication infrastructure to ensure maximum system availability.

(5)Rich communication Interface

In advantage of SCH200 diverse I/O, 8 x COM (6 x support RS232/422/485, 2 x RS232), 4 x USB, 4 x LAN (or 2 x SPF+ connector), the SCH200 system can satisfy all our clients.

(6)Extreme Temperature

Copper heat spreader, pure copper heat pipe and aluminum heat sink, with all these benefits of fanless design. To ensure high reliability and stability while SCH200 working under wide range temperature from -20°C up to +60°C. And, with SCH200 special industrial extended range of temperature layout, it can also reduce the potential computer glitches caused by hardware incompatibility and losses of connectivity caused by shock and vibration.

(7)Multiple Ethernet Port

Provide the multiple selections for Ethernet port: 2 x 100Base-FX port, or 2 x 100Base-TX, or 4 X RJ-45 LAN.

(8)IEC-61850-3

The standardization of IEC-61850 enables the integration of the equipment and systems from different suppliers, reducing the burden on the configuration and maintenance of these systems. The protocol also meets utilities' requirements for long-term system expandability. Thus, there are more and more electric companies perform power-system automation by using IEC-61850 protocol with Intelligent electronic devices (IED)

(9)IEEE-1613

The widespread use of multifunctional intelligent electronic devices with advanced communications capabilities has resulted in a new trend in substation automation systems. The intelligent electronic devices exchange messages over the substation local area network. Detail environment and testing requirements for communications networking devices in electric power substations.
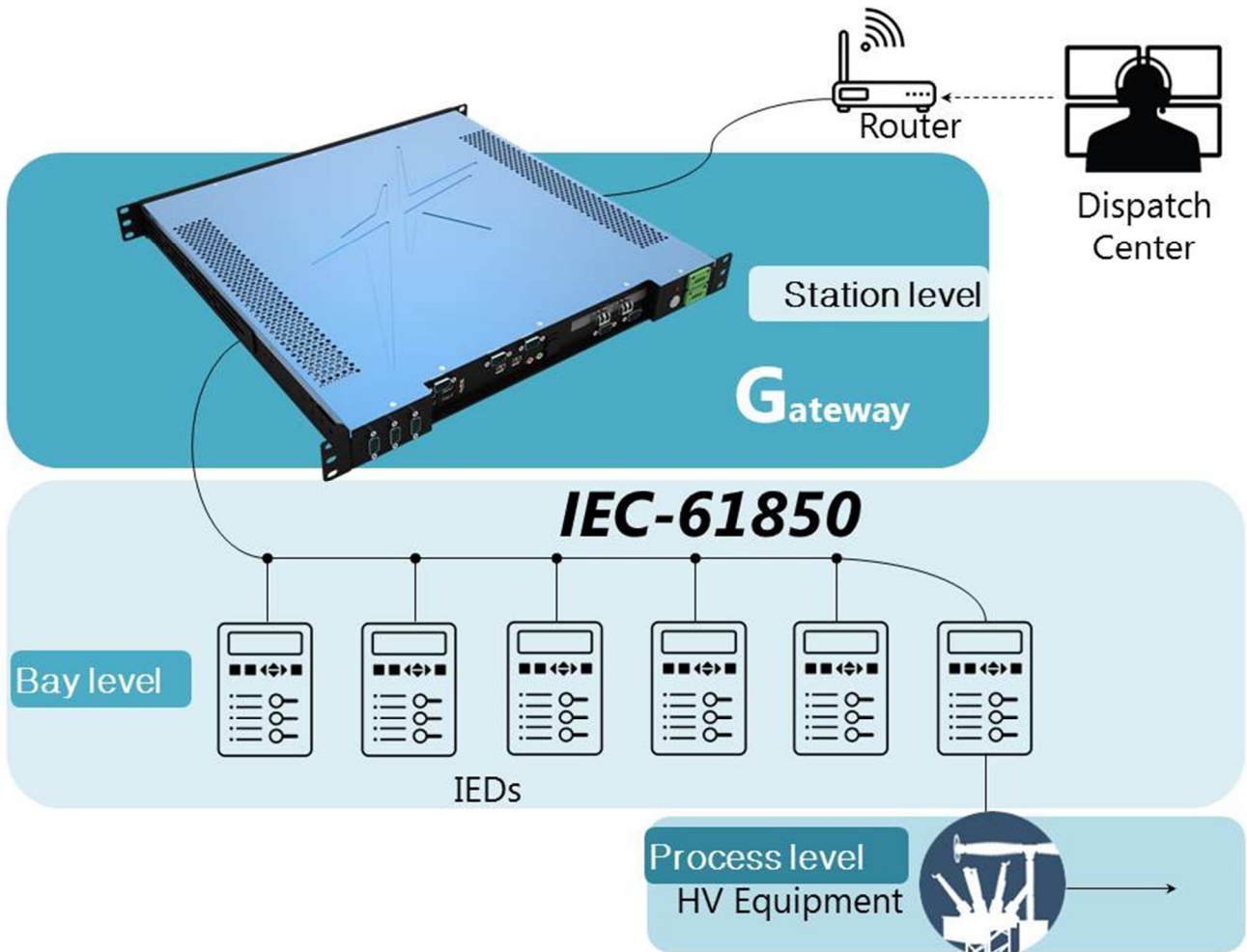
Specifications

System

CPU	Socket LGA 1151 for Intel® Core i7/i5/i3/Celeron® (Supports up to 65W) Intel®
Memory type	2 x SO-DIMM DDR4 2400/2666 MHz up to 64GB
Chipset	Intel® Q370 Chipset

Display

Display Port	Resolution up to 4096 x 2304 60@Hz
HDMI	Resolution up to 4096 x 2160 30@Hz

Storage

M.2	Up to 1TB SSD RAID 0/1 (Optional)

Ethernet

Ethernet	4 x 10/100/1000 Base-T (Optional : LAN 1, 10/100/1000 Base-T LAN 2, 10/100/1000 Base-T LAN 3, 100Base-FX port supported LAN4, 100Base-FX port supported)

Rear I/O

Display	1 x Display port 1 x HDMI port
Ethernet	4 x RJ45 (100Base-FX/ 2 x 100Base-TX Ethernet module, optional)
Audio	2 x 3.5mm Audio Jacks (1 x MIC, 1 x Line-Out)
USB	4 x USB 3.0
DC-IN	2 x DC-in (Redundant Optional)
Button	1 x Power Button w/Indicator LED
COM	8 x ports (6 x RS-232/422/485 support, 2 x RS-232)

Power Requirement

Power Input	2 x 125V DC-DC Redundant power supply (Optional: 2 x 96 V DC-DC Redundant power supply 2 x 72 V DC-DC Redundant power supply)

Applications, Operating System

Applications	Energy/Smart Grid/Power Plant Management, Intelligent Automation and manufacturing applications
Operating System	Windows 10 64Bit ,Windows server 2012 r2, Windows server 2016 Ubuntu13.04, Ubuntu13.10, Ubuntu14.04, Fedora20

Physical

Dimension	450 x 482 x 44 mm (W x D x H)
Operation Temp.	-20°C to 60°C
Storage Temp.	-40°C to 85°C
Relative Humidity	5% to 95%, non-condensing
System Design	Conduction Cooing
Heatsink	Aluminum Alloy, Corrosion Resistant
Finish	Anodic aluminum oxide

Environment

MIL-STD-810G Test

Operating Tests

Low Temperature	Method 502.5 Procedure 2	exposure(24h x 3 cycle) at -40℃ min.
High Temperature	Method 501.5 Procedure 2	60°C for 2 hours after temperature stabilization.
Humidity	Method 507.5 Procedure 2	RH -95%. Test cycles: ten 24-hours , functional test after 5th and 10th cycles
Vibration	Method 514.6 Category 20	10─500Hz 1.04Grms Test duration: 1 hours x 3 axis (total 3 hours)
Shock	Method 516.6 Procedure 1	20G, 11mSec, 3 per axis

Non-Operating Tests

Low Temperature Storage	Method 502.5	exposure(24h x 7 cycle) at -40℃ min.
High Temperature Storage	Method 501.5 Procedure 1	71°C for 2 hours after temperature stabilization.
Vibration	Method 514.6 Category 24	200 to 2000Hz Test duration: One hour per axis; rms = 7.7 gs

	Method 516.6	
Shock	Procedure V	40G, 11ms, 3 pluse.

Ordering Information

Model	No.	Description
SCH200	S201	Dual DC-DC 72V
SCH200	S202	Dual DC-DC 96V
SCH200	S203	Dual DC-DC 125V
SCH200	S204	2 x 100Base FX Ethernet Module
SCH200	S205	4 x LAN Port

Dimension