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SR200

Intel® 4th Gen. Haswell® Core™ i7-4700EQ nVidia GT730M GPUMIL-STD Fanless Rugged System

Extended Temperature
+70°C
-40°C

- MIL-STD 810G Compliance
- 4th Generation Intel® Core™ i7-4700EQ Haswell Processor
- XR-DIMM up to 8 GB RAM
- Onboard uSSD SATAIII up to 64 GB
- nVidia GT730M Independent Displays by 4 x DP
- 2 x mPCIe expansion slot (One Co-Layout with mSATA)
- 2 x Intel® Gigabit Ethernet
- 4 x USB 3.0, 1 x COM port
- 9V to 36V DC-in with power delay on/off

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Specifications

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High Performance Processor	Intel® 4th Gen Core™ i7-4700EQ (Frequency 2.4GHz, Turbo Boost up to 3.4GHz), Quad-Core, 8 Thread Support, 6MB SmartCache. Build-in HD Graphics 4600 for excellent 3D, Turbo Boost Technology 2.0, VPro and Hyper-Threading support.
Memory	1 x SAMTEC XR-DIMM™ Rugged Memory connector (BTH-120-01-L-D-A) with Swissbit® DDR3 1600MHz XR-DIMM up to 8GB
Chipset	Intel® QM87 Chipset providing integrated USB 3.0 and supporting 4th generation Intel® Core™ processor families
Expansion Slot	2 x Full-size miniPCIe (ACES 88911-5204M), 1 co-lay with mSATA 1 x Onboard SIM Card slot (ASTRON 5190006-007-R) for 3.5G connectivity
Display	
GPU	NVIDIA GT730M
Display Port	Resolution up to 3840 x 2160@60Hz
DVI-I	Resolution up to 1920 x 1200@60Hz
Storage	
uSSD	Onboard uSSD SATAIII up to 64 GB
mSATA	mSATA Solid State Disk (SSD) - up to 512GB Capacity. Rugged Industrial NAND Flash mSATA Storage w/ Rugged -40/+85C High Capacity, optional Pre-loaded with Linux or Windows OS. 64 / 128 / 256 / 512GB Innodisk 3MG2-P Series MLC SATA III 6Gb/s Flash SSD, Rated for 520 MB/sec Sequential Read ; 350 MB/sec Write Max.
Ethernet	
Ethernet	2 x Intel Gigabit Ethernet LAN Interfaces (10/100/1000Mbps)
Rear I/O	
DisplayPort	2 x 20Pin DisplayPort connectors (Female)
DVI-I	1 x 29Pin DVI-I connector (Female)
Ethernet	2 x RJ45 Gigabit Ethernet LAN Interfaces
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
Front I/O	
Button	1 x Power Button
DC-IN	4P Rugged Terminal connector
Indicator LED	Power, HDD, LAN (Link/Active/Speed)
USB Port	2 x USB3.0 standard-A connectors
DisplayPort	4 x 20Pin DisplayPort connectors (Female)

Applications, Operating System	
Applications	Commercial and Military Platforms Requiring Compliance to MIL-STD-810G Embedded Computing, Process Control, Intelligent Automation and manufacturing applications where Harsh Temperature, Shock, Vibration, Altitude, Dust and EMI Conditions. Used in all aspects of the military.
Operating System	Windows 7 , Windows 8 , Windows 8.1 , Windows 10 Ubuntu13.04, Ubuntu13.10, Ubuntu14.04, Fedora 20
Physical	
Dimension (W x D x H)	308 x 149 x 76mm
Weight	4.3 Kg (9.47 lbs)
Chassis	Aluminum Alloy, Corrosion Resistant.
Finish	Anodic aluminum oxide (Color Iron gray)
Cooling	Natural Passive Convection/Conduction. No Moving Parts.
Connectors	DC-IN : PHOENIX CONTACT 1776715 RJ45 Ethernet : RTB-19GB9J1A DVI-I : BANGSON DVI02-0123001-T DisplayPort : FOXCONN 3VD21203-H7U0-4 Audio : WTJ-035-67S1A01/ WTJ-035-67S1A02
Ingress Protection	Dust Proof (Similar to IP50)
Environmental	
MIL-STD-810G Test	Method 507.5, Procedure II (Temperature & Humidity) Method 516.6 Shock-Procedure V Non-Operating (Mechanical Shock) Method 516.6 Shock-Procedure I Operating (Mechanical Shock) Method 514.6 Vibration Category 24/Non-Operating (Category 20 & 24, Vibration) Method 514.6 Vibration Category 20/Operating (Category 20 & 24, Vibration) Method 501.5, Procedure I (Storage/High Temperature) Method 501.5, Procedure II (Operation/High Temperature) Method 502.5, Procedure I (Storage/Low Temperature) Method 502.5, Procedure II (Operation/Low Temperature) Method 503.5, Procedure I (Temperature shock)
Reliability	No Moving Parts; Passive Cooling. Designed & Manufactured using ISO 9001/2000 Certified Quality Program.
EMC	CE and FCC compliance
Green Product	RoHS, WEEE compliance

Ordering Information

SR200-ET

MIL-STD-810G Rugged Computer with Intel® Core i7-4700EQ, NVIDIA GT730M GPU, 4 Independent DP, Mini PCIe, 9V to 36V DC-in, Extended Temp -20 to 60°C

SR200-UT

MIL-STD-810G Rugged Computer with Intel® Core i7-4700EQ, NVIDIA GT730M GPU, 4 Independent DP, Mini PCIe, 9V to 36V DC-in, Extended Temp -40 to 70°C

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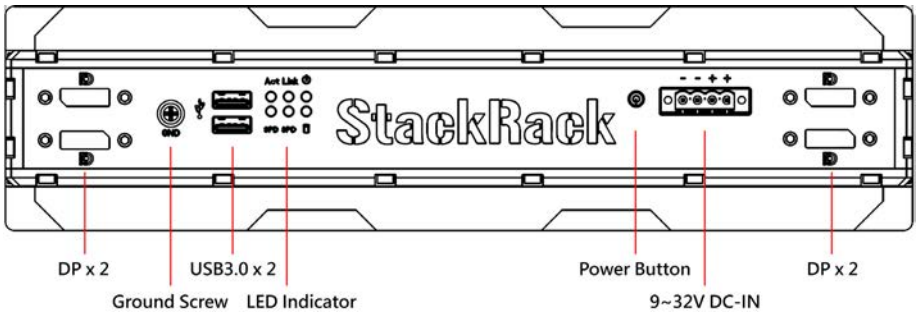
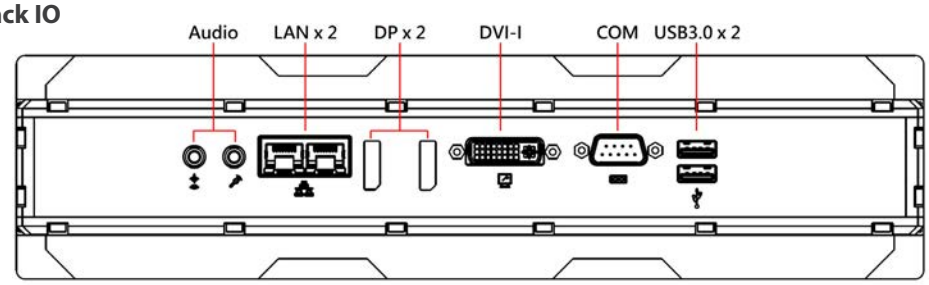
SR200, EBX rugged system is a powerful system that is driven by Intel® 4th generation Haswell CPU and chipset soldering onboard, integrated with Nvidia GPU GT730M that supports 4 independent DisplayPort. Processor i7-4700EQ plus Intel® QM87 chipset supports clock speed 2.4GHz, up to 3.4GHz. Quad cores, turbo up to 8 cores to cope with enormous data computing.

Appearance

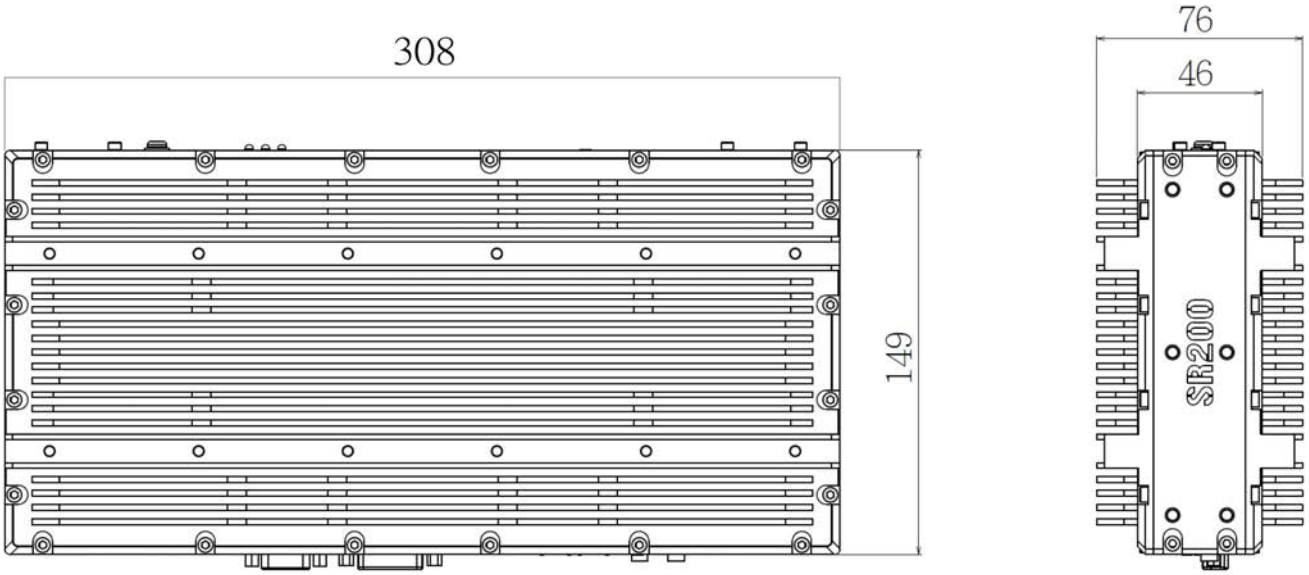
Front IO



Back IO



Dimensions

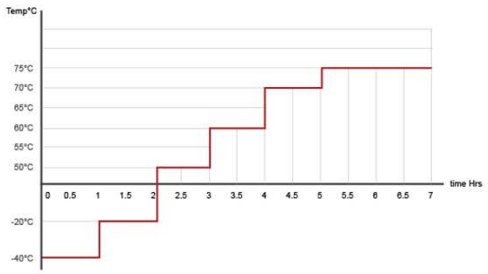


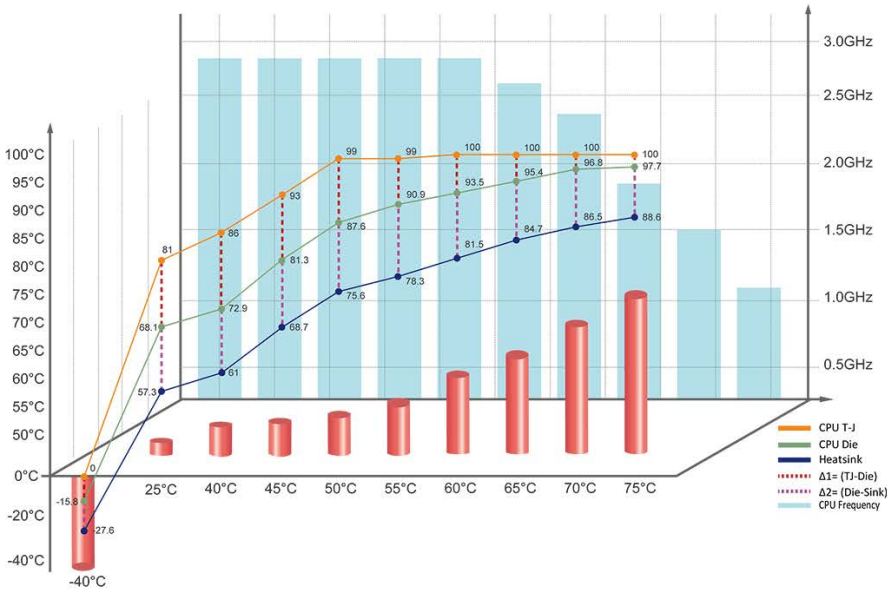
Test Configuration

Item	Device Information
CPU Type	Intel® Core i7-4700EQ 2.40GHz
PCH	Mobile Intel QM87 Express Chipset
Memory	Swissbit XR-DIMM 4 GB DDR3-1600
port3 SATAII	Innodisk 3ME3 mSATA 64GB
Test Software	Burnin test v6.0, AS SSD Benchmark, Intel Extreme Tuning Utility 4.3.0.11

Test Result

Model	SR200	Test Result	Pass
Tester	Ian Huang		

Diagram of curves	Test Temperature	Test Time
	High 0~75°C Low -40~0°C	5Hours 2Hours
	Test Standard	Reference IEC60068-2
	Test Software	Burnin test v6.0
	Criteria	After testing, system can't halt.



SR200 System - IO Performance (-40 to 75°C)										
Point	-40℃	25℃ Room temperature	40℃	45℃	50℃	55℃	60℃	65℃	70℃	75℃
CPU T-J	0	81	86	93	99	99	100	100	100	100
CPU Die	-15.8	68.1	72.9	81.3	87.6	90.9	93.5	95.4	96.8	97.7
Heatsink	-27.6	57.3	61	68.7	75.6	78.3	81.5	84.7	86.5	88.6
Δ1= (TJ-Die)	15.8	12.9	13.1	11.7	11.4	8.1	6.5	4.6	3.2	2.3
Δ2= (Die-Heatsink)	11.8	10.8	11.9	12.6	12	12.6	12	10.7	10.3	9.1
CPU Frequency	2.79GHz	2.79GHz	2.79GHz	2.79GHz	2.79GHz	2.59GHz	2.39GHz	1.8GHz	1.5GHz	1.09GHz