SR10M

MIL-STD-810G Rugged Computer with M12 Rugged connector

Intel® Core™ i7 Haswell Processor, Fanless Rugged System, 9V to 36V DC-in, Extended Temp. -40~70°C

- Design for reliability under demanding MIL-STD-810G Thermal, Shock, Vibration, Humidity/EMI/EMC conditions
- Heavy-duty fully IP54 Rugged aluminum chassis with M12 connectors
- 4th Gen Intel®Core™ i7 Haswell processor (BGA)
- DDR3 Up to 8GB XR-DIMM
- Onboard uSSD SATAIII up to 64 GB
- Multi-Displays by 2 x DP, 1 x DVI-I
- 2 x RJ45 , 2 x Rugged M12 Intel® Gigabit Ethernet
- 4 x USB 3.0, 1 x COM (RS232/422/485)
- 1 x Line-out / MIC-in
- 9V~36V DC-in
- Extended Temperature -40 to 70 °C

SPECIFICATIONS

SPECIFICATIONS	
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	1 x Full-size miniPCIe (ACES 88911-5204M) co-lay with mSATA, 1 x Onboard SIM Card slot (ASTRON 5190006-007-R) for 3.5G connectivity 1 x FPE connector (SAMTEC SEAF-20-06.0-L-10-2-A-K-TR) 1 x StackPC connector (SAMTEC ASP-129637-03)
DISPLAY	
Display Port	Resolution up to 3840 x 2160@60Hz
DVI-I	Resolution up to 1920 x 1200@60Hz
STORAGE	
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	4 x Intel Gigabit Ethernet LAN Interfaces (10/100/1000Mbps) (2 x Rugged M12 connectors, 2 x RJ45 connectors)
REAR I/O	
DisplayPort	2 x 20Pin External connectors (Female)
DVI-I	1 x 29Pin DVI-I connector (Female)
Ethernet	2 x Rugged M12 connectors, 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
DC-IN	1 x Rugged M12 connector
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	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 189 x 58 mm
Weight	2.98 Kg (6.57 lbs)
Chassis	Aluminum Alloy, Corrosion Resistant.
Finish	Anodic aluminum oxide (Color Iron gray)
Cooling	Natural Passive Convection/Conduction. No Moving Parts.
Connectors	DC-IN : Amphenol M12S-04BFFB-SL7002 M12 Ethernet : GTC GT234112-11080 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

SR10M

MIL-STD-810G Rugged computer with Intel® Core™ i7 Haswell Processor, µSSD 64GB onbord, 9V to 36V DC-in, Extended Temp. -40~70°C

STACKRACK
WWW.STACKRACK.COM

SR10M , a Standard System highlights in its 4th Gen. Haswell Core i7-4700EQ Fanless System with rugged XR-DIMM RAM, rich I/O with 4x USB 3.0, 1x COM Port, 4x LAN and 3 Video outputs.

Appearance

Front Side

2 x USB3.0 (type A)   Power Button

System / LAN LEDs

Back Side

Power Input (9-36V)

2 x LAN (RJ45)

1 x DVI-I

2 x USB3.0 (type A)

Audio-Out / MIC   2 x Display Port   2 x LAN (M12)

1 x Serial Port (DB9)

Dimensions

58

308

72

86

21

20

20

189   149

20

34

72

86
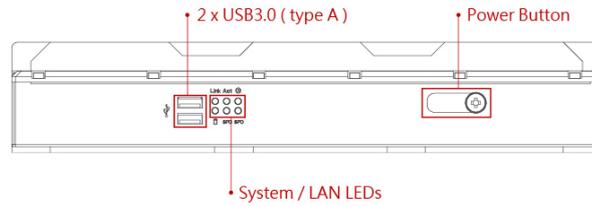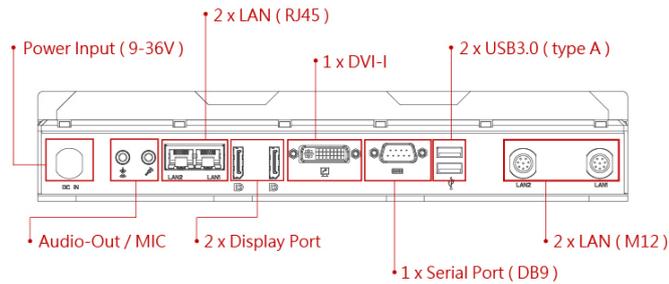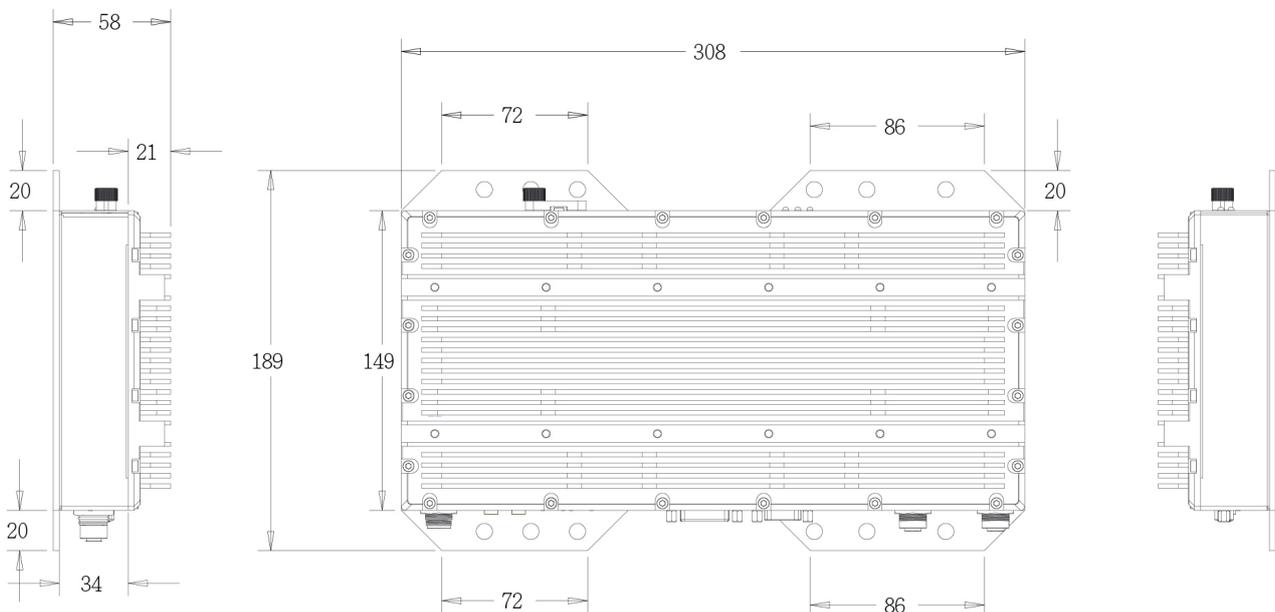
CPU Performance

TEST CONFIGURATION

Item	Device Information
CPU Type	Intel® Core i7-4700EQ (4C x 2.4Ghz), 6M Cache (47W)
PCH	Intel® QM87
Memory	8GB DDR3 1600 MHz XR DIMM
mSATA PORT	innodisk 256GB MSATA
Test Software	Burnin test v7.1, Crystal DiskMARK3.03, Intel Extreme Tuning Utility

TEST RESULT

Model	SR10M	Test Result	Pass
Tester	Ian Huang		

Diagram of curves	Test Temperature		Test Time

	Test Temperature		Test Time
High	0~75℃	5Hours	
Low	-40~0℃	2Hours	
Test Standard	Reference IEC60068-2		
Test Software	Burnin test v7.1		
Criteria	After testing, system can't halt.		

Legend: TAT T-J, CPU Die, Heatsink, Δ1= (TJ-Die), Δ2= (Die-Sink), CPU Frequency
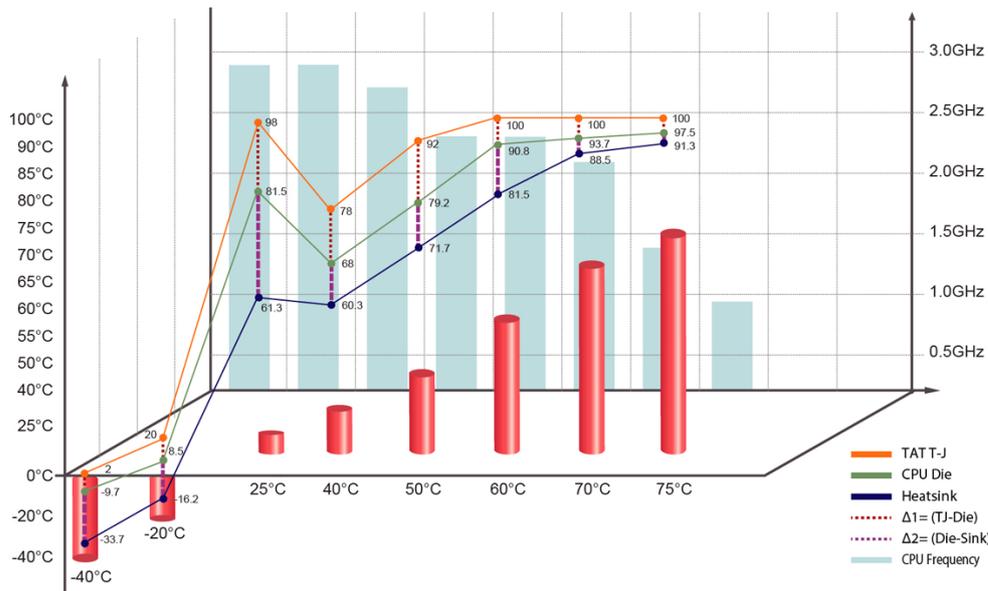
SR10-01M - IO Performance (-40 ~ 70)								
Point	-40℃	-20℃	25℃ Room temperature	40℃	50℃	60℃	70℃	75℃
CPU T-J	2	20	98	78	92	100	100	100
CPU Die	-9.7	8.5	81.5	68	79.2	90.8	93.7	97.5
Heatsink	-33.7	-16.2	61.3	60.3	71.7	81.5	88.5	91.3
Δ1= (TJ-Die)	11.7	11.5	16.5	10	12.8	9.2	6.3	2.5
Δ2= (Die-Heatsink)	24	24.7	20.2	7.7	7.5	9.3	5.2	6.2
CPU Frequency	2.79	2.79	2.69	2.39	2.39	2.1	1.3	0.9