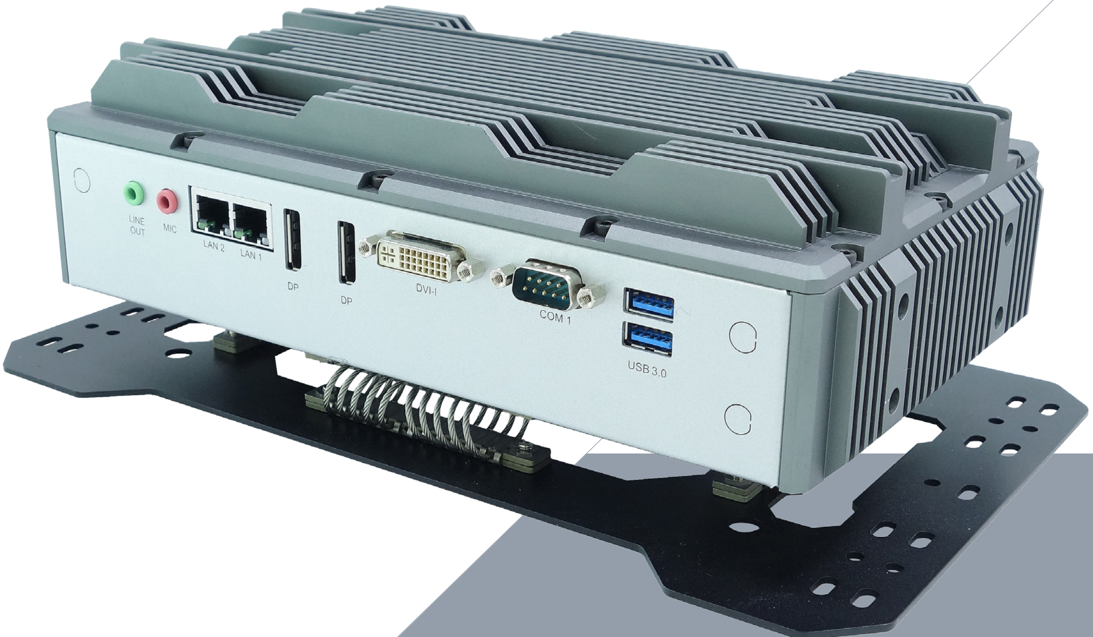
STACKRACK

SR10A

MIL-STD-810G RUGGED FANLESS COMPUTER WITH ULTRA VIBRATION PROOF

INTEL® CORE™ I7 HASWELL PROCESSOR,
FANLESS RUGGED VIBRATION PROOF SYSTEM,
MPCIE EXPANSION, 9V TO 36V DC-IN,
EXTENDED TEMP. -40~70°C



- MIL-STD-810G VIBRATION:10 GRMS, SHOCK: 75GRMS
- 4TH GENERATION INTEL® CORETM I7 HASWELL PROCESSORS (BGA)
- DDR3 UP TO 8GB XR-DIMM
- MSATA UP TO 512GB
- MULTI-DISPLAYS BY 2 X DP, 1 X DVI-I
- 2X RJ45 INTEL® GIGABIT ETHERNET
- 1 X MPCIE EXPANSION
- 4 X USB 3.0, 1 X COM PORTS (1X RS232/422/485)
- 9V~36V DC-IN WITH POWER DELAY ON/OFF
- EXTENDED TEMPERATURE -40 TO 70 °C
- OPTIONAL FOR WIPE ROPE VIBRATION ISOLATOR

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SPECIFICATIONS

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High Performance Processor	Intel® 4th Gen Core™ i7-4700EQ (Frequency 2.4GHz, Turbo Boost Frequency 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 Swiss-bit® DDR3 1600MHz XR-DIMM up to 8GB ECC SDRAM
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) ,one co-lay with mSATA for operating system, Rugged -40/+85C High Capacity Military-Grade mSATA up to 512GB. 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@60 Hz
DVI-I	Resolution up to 1920 x 1200@60 Hz
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	2 x Intel Gigabit Ethernet LAN Interfaces (10/100/1000Mbps)
REAR I/O	
DisplayPort	2 x 20Pin External 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	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

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 x32/x64, Windows 8 x32/x64, Windows 10 x32/x64 Fedora 20 , Ubuntu ,13.04 , Ubuntu 13.10 , Ubuntu 14.04

Physical

Dimension (W x D x H)	250 x 149 x 69 mm
Weight	3.81 Kg (8.38 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
Vibration Isolator	Wire Rope Isolator (Hongyuan GGT 2.1-23/GGT 2.7-25)
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 certificated
Green Product	RoHS, WEEE compliance

Ordering Information

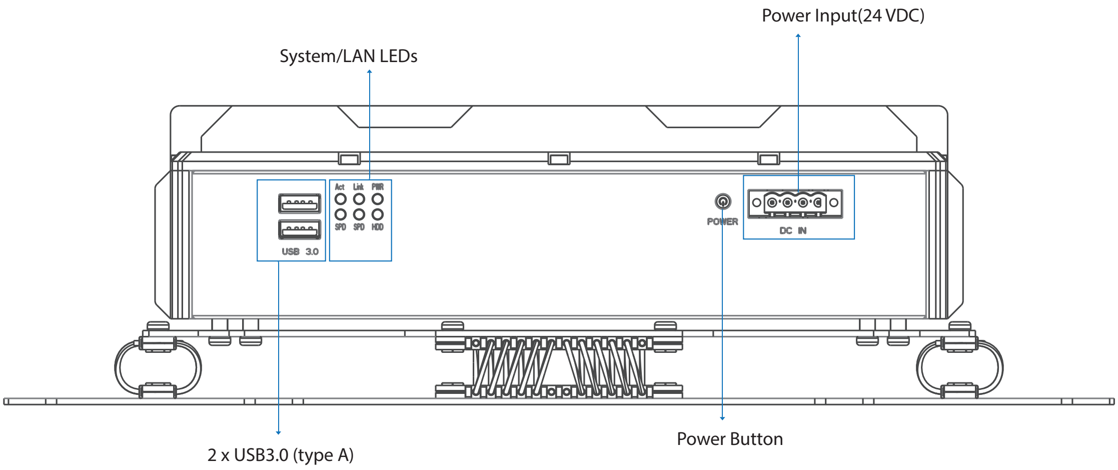
SR10A

MIL-STD-810G Rugged Computer with Intel® Core™ i7-4700EQ, 9V to 36V DC-in, Mini PCIe, high vibration / shock protection, Extended Temp. -40~70°C

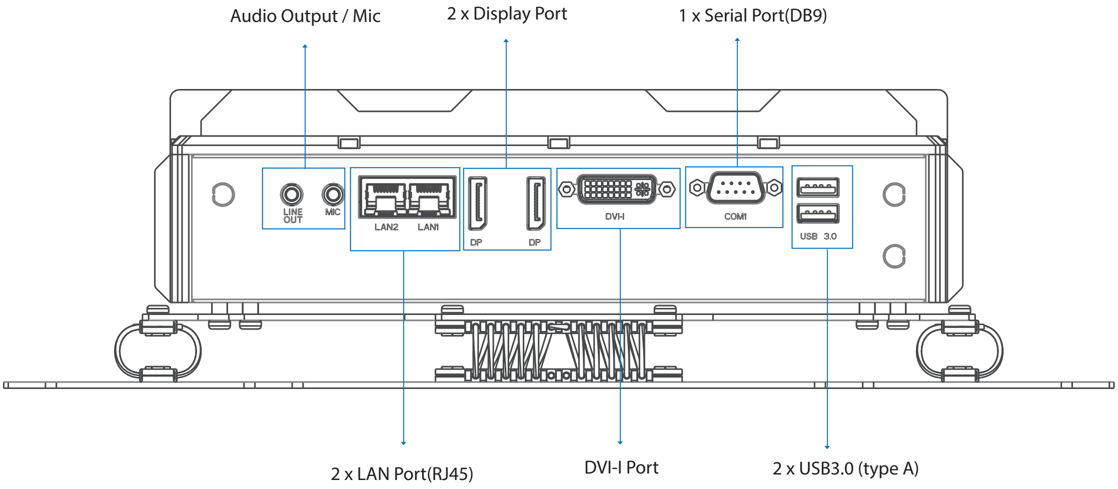
SR10A , a MIL-STD-810G Standard System highlights in its 4th Generation Haswell Core i7-4700QE Fanless System with rugged XR-DIMM RAM, rich I/O with 4x USB 3.0, 1x COM Port, 2x LAN, 3 Video outputs and mPCIe expansion slot. Besides variety outputs, PERFECTRON has design an unique Wipe Rope VibrationIsolator for better vibration and shock resistance.

Appearance

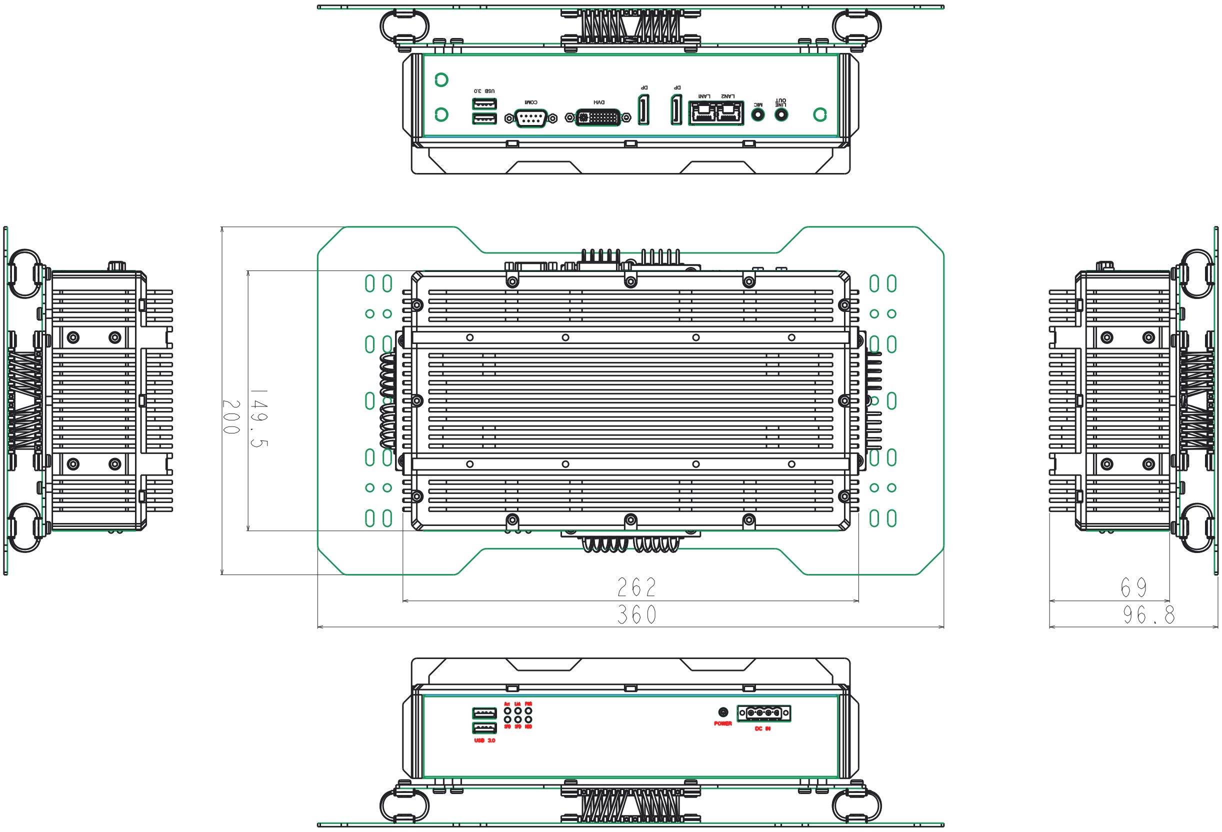
Front Side

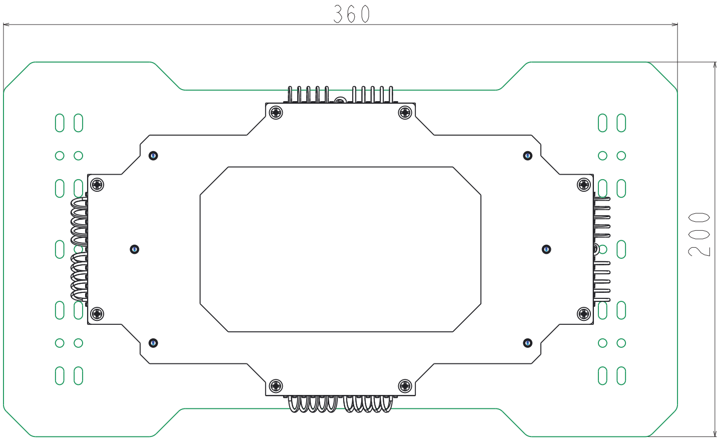


Back Side



DIMENSIONS


USB 3.0
COM1
DVI
DP
DP
LAN1
LAN2
MIC
LINE OUT
200
149.5
262
360
69
96.8
USB 3.0
POWER
DC IN


360
200

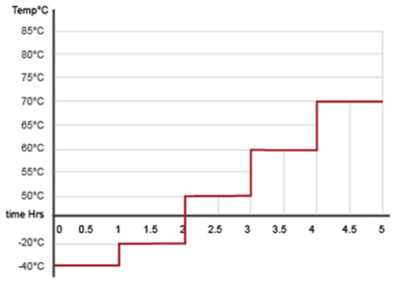
CPU PERFORMANCE

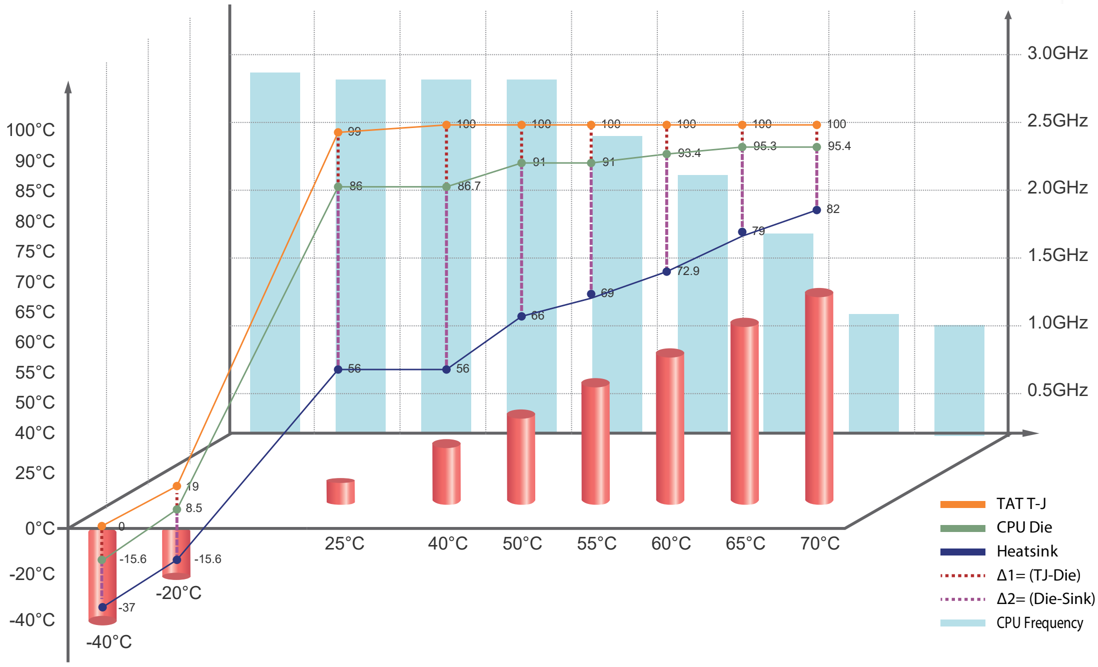
TEST CONFIGURATION

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 1

TEST RESULT

Model	SR10A	Test Result	Pass
Tester	Ian Huang		

Diagram of curves	Test Temperature	Test Time
	High 0~70°C Low -40~0°C	3Hours 2Hours
	Test Standard	Reference IEC60068-2
	Test Software	Burnin test v7.1
	Criteria	After testing, system can't halt.



SR10-1A MB HeatSink - IO Performance

Point	-40°C	-20°C	25°C Room Temperature	40°C	50°C	55°C	60°C	65°C	70°C
CPU T-J	0	19	99	100	100	100	100	100	100
CPU Die	-15.6	8.5	86	86.7	91	91	93.4	95.3	95.4
Heat sink	-37	-15.6	56	56	66	69	72.9	79	82
Delta 1 = (TJ-Die)	15.6	10.5	13	13.3	9	9	6.6	4.7	4.6
Delta 2 = (Die-Heatsink)	21.4	24.1	30	30.7	25	22	20.5	16.3	13.4
CPU Frequency	2.82GHz	2.79GHz	2.79GHz	2.79GHz	2.39GHz	2.19GHz	1.7GHz	1.1GHz	1.0GHz