



CRS112R Rugged 1U Server



Rugged Series Structural Features

All Aluminum Construction

- 6061T-651 strain hardened structural aircraft aluminum
- 0.187 to 0.500" thk. cross-sections
- MIL-DTL-81706, Type II, Class 3, Clear Chem Film protection

Built to Survive Shock and Vibe

- Multiple attachment points on motherboard and CPU heatsink stabilize PWB
- All fasteners and connectors retained with locking mechanisms
- Cabling dressed and secured to prevent chafing
- Removable HDD, shock isolated

Key Features

- Rugged 1U in a 19" rack or transit case EIA form factor, short depth, 20"
- Light weight, 16-20 lbs depending on content
- Socket 1366 (Intel Nehalem-EP & Westmere-EX) CPUs
- One (1) full-height, 3/4 length slot; combination is configuration dependent
- Extended temperature range, -15°C to +55°C, -40°C optional SSHDD, +71°C option with higher temp CPU
- Kits available for MIL-STD-810G Vibration, MIL-STD-810F Humidity, MIL-STD-810G Shock, MIL-S-901D Shock, MIL-STD-167-1 Vibration, MIL-STD-461E/F EMC
- Configuration Management available upon request; designed for long-life thru Intel® Roadmap partner
- Front mounted with Delrin glides, fixed mount or Jonathan rails

Superior Cooling and EMI Performance

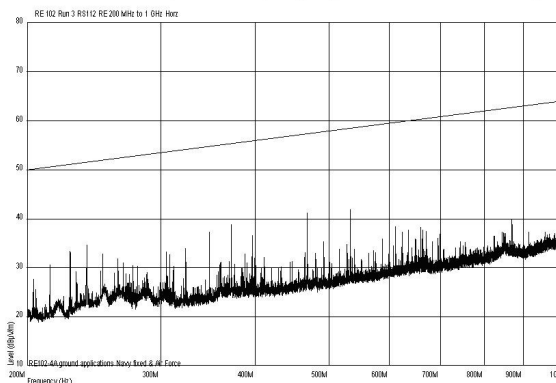
Cooling

- High speed, high volume, thermostatically controlled fans offer maximum airflow and are designed for long life
- Custom cabling reduces internal pressure drop to increase airflow
- Conduction and convection cooling techniques optimized for each CPU design

EMI/EMC

- Passed EMC, MIL-STD-461F, CE102 and RE102 testing with significant margin using Crystal designed 461 kit
- Internal compartments segregated to isolate EMI emissions
- Finish applied maintains superior EMI/EMC characteristics throughout life of the unit.
- Superior grounding paths

The radiated emissions data plot for the frequency range 200 MHz to 1000 MHz – Horz. (RE-102)



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Military Standards (*designed to or tested to)

Operational Temperature, MIL-STD-810F, Method 501.5, Procedure I/II	-15°C to +55°C, +71°C option, with higher temp CPU -40°C with solid state drive
Storage, MIL-STD-810F, Method 501.5, Procedure I/II	-55°C to 85°C
Humidity, MIL-STD-810F, Method 507.4	48 Hour, 95% RH 40-65C— w/humidity kit
Altitude, MIL-STD-810F, Method 500.4	12,500ft operation, 40,000ft transport
Vibration, MIL-STD-810G, Method 514.6, Procedure I	4.43 G _{RMS} , 5-2000Hz, 60 min/axis— with solid state drives + vibe kits
Shock, MIL-STD-810G, Method 516.6, Procedures I/V	20g, 11msec—functional shock; 40g, 11msec crash hazard shock
MIL-S-901D, Grade A, Class I, Type A	With solid state drives + vibe kits
EMC, MIL-STD-461F CE102 (conducted) & RE102 (radiated) emissions	Passed with significant margin using Crystal designed 461 kit

Mechanical (1U)

Height	1.75" (4.45 cm)
Width	17.75" (45.1 cm)
Depth	20.125" (51.11 cm)
Weight	15-21 lbs (6.80-9.52 kg) (excludes vibe kit mods)

CPU

Intel® CPU architecture options from Intel embedded long-life roadmap	Nehalem-EP and Westmere-EX dual Dual Core, dual Quad Core or dual Hexa Core options
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Expansion Slots (1)

Option 1	One (1) full-height, 3/4 length slot; combination is configuration dependent
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External Bays (2)

Option 1 (std)	Two (2) removable SATA or SAS 2.5" or 3.5" HDD
Option 2	Four (4) 2.5" SATA or SAS HDDs
Option 3 (can be combined with HDD option)	One (1) CD/DVD (R/W) or Blu-ray

Cooling

Option 1 (std)	High speed, high volume fans (6 + 2 PS) Thermostatically controlled
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Mounting Options

Option 1 (std)	Mounted on Delrin glides
Option 2	Fixed mount, front and rear
Option 3	Jonathan rails

Power Supply Options

Option 1 (std)	120/240VAC w/PFC
Option 2	24VDC (MIL-STD kits not available with this option)

System Board

Option 1—One PCI-e 2.0 x16 (x8 signals)	X8DTL-3F, Socket 1366, 2-96 GB ECC Reg. DDR3, PS/2 KB/M, DB9 Serial, VGA, 2-USB, 2-GBLAN, On-board SAS, IPMI w/ KVM over IP
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