



850 Kacena Rd., Hiawatha, IA 52233 Ph. 319-378-1636  
AS9100 Certified QMS

**The MOST TRUSTED provider of computer architecture for operational, deployable, and high-reliability applications**



## Tested to Extreme Environments

Performance, Reliability, Scalability, and Longevity

- ✓ Ultra light weight carbon fiber chassis— 10.5- 15 lbs., Easily mounted— Delrin glides, or Jonathan® rails
- ✓ Rugged 1U, rack mounted 18" depth, available with optional Mil-Circ I/O
- ✓ Expandable with one (1) PCIe x 16 slot
- ✓ Up to 16 GB of memory
- ✓ Versatility with two (2) removable 3.5" drives or four (4) removable 2.5" drive Bays
- ✓ Leading edge Intel® Ivy Bridge CPU options

### Compact, Powerful, and Ultra-Lightweight

Weight relates to mission duration and fuel costs. Whether discussing UAVs, transit case mobility, or airborne workstations, weight has a significant impact on operational performance. Smaller, lighter, lower power are always better when it comes to high-end mobile computing. Crystal Group gives your mission these capabilities with a composite carbon fiber construction server boasting a mere 60% of the weight of an all aluminum 20" deep rugged chassis.

### Rugged and Dependable

Using our extensive avionics experience, we've created the next generation of computing. This game-changing technology provides advanced computer capability in a durable and compact package. This server is MIL-STD-461 compliant. We don't just design to a specification, we test to it. When we put our name on the Crystal RS Carbon Fiber Series, you can be sure it is both rugged and dependable.

### High Reliability at a Fraction of the Cost

Innovative packaging techniques and attention to the smallest of detail protect against high temperatures and extend the life of components. So much so, our products can run at 100% loading and duty cycle at elevated temperatures. A superior chassis design limits fatigue damage and further extends service life. We provide incredible processing power in a durable package with exceptional life at a fraction of the cost.

### Want to Work with a Company that Listens to You?

We don't sell servers, we sell successful solutions. We measure our value by helping customers succeed. That means we are most interested in helping you meet your individual needs. We are fast, flexible, and responsive. We guarantee you will never work with a more responsive, customer-focused computer company.

**CONTACT A CRYSTAL GROUP BUSINESS DEVELOPMENT MANAGER AT:  
800.378.1636 / [info@crystalrugged.com](mailto:info@crystalrugged.com) / [crystalrugged.com](http://crystalrugged.com)**



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# RS112PS18M Rugged 1U Carbon Fiber Server

Testing Standards\* see [www.crystalrugged.com](http://www.crystalrugged.com) for certification reports

## Mechanical 1U

Height: 1.75" (4.45 cm)  
Width: 17.5" (44.45 cm) [accepts Crystal Glides and Jonathan Rails] EIA-310 Rack Compliant  
Depth: 18" (45.7 cm)  
Weight: 10.5 - 15 lbs. (4.76- 6.80 kg)

## CPU

Intel® CPU architecture options from Intel embedded long-life roadmap  
Ivy Bridge-M i3, i5, or i7 (see motherboard for complete listing of options.)

## Expansion

One (1) full-height, 1/2 length PCIe X16 slot

## External Bay

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

## Memory

2-16 GB DDR3

## Mounting

Option 1: Mounted on Delrin glides  
Option 2: Jonathan rails

## Power Supply

Option 1: 460W 120/240VAC 50/60Hz w/PFC, 115VAC 400Hz  
Option 2: 425W 18-36VDC

## System Board (Note, these features are at the board level and may not all be available in the standard configuration)

Option 1: X9SPV-LN4F-3LE, FCBGA1023, i7-3555LE CPU, 2-16 GB ECC DDR3, 4-USB 2.0, 4-GBLAN, On-board SATA2 & SATA3	Option 5: X9SPV-LN4F-3QE, FCBGA1023, i7-3612QE CPU 2-16 GB ECC DDR3, 2-USB 2.0, 4-GBLAN, On-board SATA2 & SATA3
Option 2: X9SPV-F-3217UE, FCBGA1023, i3- 3217UE CPU, 2-16 GB ECC DDR3, 2-USB 2.0, 2-GBLAN, On-board SATA2 & SATA3	Option 6: X9SPV-F-3610ME, FCBGA1023, i5-3610ME CPU, 2-16 GB ECC DDR3, 2-USB 2.0, 2-GBLAN, On-board SATA2 & SATA3
Option 3: X9SPV-M4, FCBGA1023, i7-3555LE CPU, 2-16 GB ECC DDR3, 2-USB 3.0, 2-USB 2.0, 4-GBLAN, On-board SATA2 & SATA3	Option 7: X9SPV-M4-3QE, FCBGA1023, i7-3612QE CPU, 2-16 GB ECC DDR3, 2-USB 3.0, 2-USB 2.0, 4-GBLAN, On-board SATA2 & SATA3
Option 4: X9SPV-M4-3UE, FCBGA1023, i7-3517UE CPU, 2-16 GB ECC DDR3, 2-USB 3.0, 2-USB 2.0, 4-GBLAN, On-board SATA2 & SATA3	

## Environmental Standards

MIL-STD-810, Operational Temperature, Method 501, Procedure I/II: -40°C to +55°C w/SSD, capable of -40°C to +71°C with SSDs  
MIL-STD-810, Storage, Method 501, Procedure I/II: -40°C to +85°C  
MIL-STD-810, Humidity, Method 507, Procedure II: 240 hours with humidity kit  
MIL-STD-810, Operating Altitude, Method 500, Procedure II: 12,500ft  
MIL-STD-810, Vibration, Method 514, Category 13: 5.5 grms with vibration kit  
MIL-STD-810 Shock, Method 516, Procedure I: 20G, 11 ms  
MIL-S-901, Grade A, Class 2, Type B  
MIL-S-901, Grade A, Class 2, Type A: With solid state drives + vibration kits

## Electromagnetic Compatibility Standards

Some standards may require an internal kit  
AC, FCC compliant  
AC, MIL-STD-461, RE102, CE102 compliant  
DC, MIL-STD-461, RE102, CE102 compliant  
RTCA DO-160 Section 21, Category M

## 14 CFR 25 - Airworthiness Standards

Flammability Airworthiness Test 14 CFR Part 25: Amendment 25-83 and 25-116, Appendix F, Part I, Para a(1), subparagraphs i, ii, and iv

## Export Compliance

ECCN: 5A992  
Classification is dependent on configuration and is subject to change. Please contact your Business Development Manager to receive the classification of your product.

## Mil-Circ I/O

Mil-Circ I/O options are motherboard dependent.

## Cooling

High speed, high volume, long life fans (6) CPU temperature controlled

## Software Compatibility

Windows 7®, Windows 8®, Windows Server 2008®, Windows Server 2012®, VMware®, or Linux®



\*Crystal Group designs all servers to meet or exceed the specifications listed herein. Due to the sheer number of models and combinations of components (memory, CPU, peripheral cards, hard drives), it is not practical to test every combination of servers offered. Please ask your Crystal Business Development Manager for data on qualification testing for configurations similar to the desired configuration for your application.

Need something different?  
We customize!

Contact a Crystal Group Business Development Manager at:  
800.378.1636 / [info@crystalrugged.com](mailto:info@crystalrugged.com) / [crystalrugged.com](http://crystalrugged.com)

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