



**Field tested, failsafe and long life performance in extreme conditions.** Feature rich Crystal Group Embedded Computer Systems are powerful, compact, and rugged. Completely and easily configurable, the Embedded product line boasts advanced thermal management and a carbon fiber chassis, are field-tested to withstand shock and vibration, extended temperature ranges, harsh elements and harsh environments. Crystal Group Embedded Computer Systems follow the Intel® Roadmap to ensure access to the latest, powerful Intel chipsets and processors.

**Innovative solutions.** Crystal Group's portfolio of rugged and industrial computing products are engineered and tested to withstand challenging environments, meet and exceed military standards, and provide the latest COTS technologies and benefits, such as cost, availability, upgradability, and flexibility.

**Dependable services.** When a computing application requires a custom solution, Crystal Group delivers – on time and on budget – with professional services, including product design and development, testing, systems engineering and integration, mechanical and electrical engineering, configuration management, and product lifecycle planning.

**Dedicated support.** Crystal Group's expert staff and global network provide fast and effective product support when and where it is needed, whether in-house or in the field. Count on Crystal Group for fast response times, quick turnarounds, 5+ year warranties, and quality service around the clock and around the globe.

### FEATURES

- Compact construction – 6"H x 15.4" W x 9.6"D footprint
- Compact composite construction provides low SWaP
- Xeon®-D CPU technology
- Up to 16 cores Xeon-D
- 18-72 VDC power
- Up to nine 7/9mm SSD storage options, removable drives
- Up to 128GB ECC DDR4 unbuffered, non ECC DDR4 1.2V SO-DIMM or 128GB ECC DDR4 with Xeon-D offering
- MIL-STD-461 CE102, RE102 compliant
- Bulk head or tray mounted options
- Supports full height, half length expansion cards
- Offers high volume, high speed network connections

*A clear advantage.*

## Specifications

### Mechanical

Height: 6" (15.24 cm) max  
 Width: 15.4" (39.11 cm)  
 Depth: 9.6" (24.38 cm) excluding connectors  
 Weight: 7.52 lbs. (3.4 kg)  
 Power: 55-80W with select configurations, CPU dependent

### Expansion

Two PCIe 3.0x16 full height, half length expansion bay

### Internal Bay

Up to nine SATA 2.5" SSD (externally removable)

### Cooling

Three high reliability 92mm fans

### Mounting

Tray or bulkhead mounted using ears supplied

### Power Supply

Option 1: 18-36 VDC  
 Option 2: 36 -72 VDC, 120VAC Watt power brick

### System Board

Option 1: X10 SDV - 7TP8F  
 Option 2: X10 SDV - 7TP4F  
 Other options available

### Software Compatibility

Windows® 10, Server 2016®, RHEL® 6.8/7.1/7.2, SUSE SLES® 11, 12 Ubuntu® 16/18, or Centos® 7.1

### Environmental Standards

MIL-STD-810, Operational Temperature: -40°C to +60°C<sup>1</sup>  
 MIL-STD-810, Storage, Method 501, Procedure I/II: -40°C to +85°C<sup>1</sup>  
 MIL-STD-810, Humidity, Method 507, Procedure II: 240 hours with humidity kit<sup>1</sup>  
 MIL-STD-810, Altitude, Method 500: 12,500ft operation, 40,000ft transport<sup>1</sup>  
 MIL-STD-810, Vibration, Method 514, Procedure I: 5.5G, 5-2,000Hz, 60 min/axis, 3 axes with vibration kit<sup>1</sup>

### Electromagnetic Compatibility Standards

Some standards may require an internal kit

MIL-STD-461, CE102, RE102<sup>1</sup>

### 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.



1 - Designed to meet standard

Certification reports for select products are available on [Crystalrugged.com](http://Crystalrugged.com). Crystal Group designs all embedded computers to meet or exceed the specifications listed herein. Due to the numerous models and component combinations, some configurations are still being tested. Please contact your Crystal Business Development Manager for test data on desired requirements.

