



**Field tested, fail-safe 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 an all-aluminum 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 and industrial 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 – 8.8”H x 15.8”W x 19.5”D footprint
- 8th/9th Generation Intel® Core®
- Up to 8 cores in Xeon D 1500 Series
- Flexible configuration option with up to six removable drives (SSD)
- Standard 2950 battery
- 17.3" TFT LCD wide screen with keyboard mouse
- Supports 3840 x 2160 resolution
- Integrated, protected, water resistant case for transportation
- Cyber compliant

*A clear advantage.*

## Specifications

### Mechanical

Height: 8.8" (22.35 cm)  
 Width: 15.8" (40.13 cm)  
 Depth: 19.5" (49.53 cm)  
 Weight: 35lbs (15.87 kg)

### Storage

Option 1: Two Samsung NF1 removable storage modules, up to 15.36TB each  
 Option 2: Two 2.5" SSD  
 Option 3: One m.2 drives

### Cooling

Forced air convection cooling with no air over components

### Power Supply

MIL-STD-1275 and 704: 12 or 28 VDC

### LCD Characteristics

Screen size: 17.3"  
 Backlight type: LED  
 Resolution: 3840 x 2160  
 View angles (h/v): 178/178  
 Max. color: 16.7M

### Environmental Standards

MIL-STD-810, Operational Temperature: -40°C to +60°C<sup>1</sup>  
 MIL-STD-810, Storage, Method 501, Procedure I/II: -55°C to +85°C<sup>1</sup>  
 MIL-STD-810, Humidity, Method 507, Procedure II: 240 hours aggravated<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 IV: 4.63G, 5-2,000Hz, 60 min/axis<sup>1</sup>

### Electromagnetic Compatibility Standards

#### Some standards may require an internal kit

MIL-STD-461, CE102, RE102<sup>1</sup>  
 RTCA DO-160 Section 21, Cat M<sup>1</sup>

### System Board

8th/9th Generation Intel® Core® CPU  
 Up to 64GB dual channel ECC DDR4 SO-DIMM  
 Two USB 3.1 Type A ports and two USB 3.1 Type C ports  
 5x SATA 6Gb/s

### Export Compliance

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



<sup>1</sup> - Designed to meet standard

Certification reports for select products are available on [Crystalrugged.com](http://Crystalrugged.com). Crystal Group designs all products 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 Group program manager for test data on desired requirements.

