The Most Trusted Provider for High-Reliability Applications

Aviation

Communication

Oil & Gas

Industrial

Power

Railway Transit

Mining

Weather Radar

CRYSTAL™
The process of creating, distributing, and monitoring electricity from different energy forms, such as nuclear, thermal, hydro, or renewable power, can require unique computing challenges.

Multiple protocols exist for substation automation including proprietary procedures with custom communication links. Substations are typically not computer friendly environments, and can be located in fairly remote locations.

To fulfill computing needs of a power substation automation system, Crystal Group offers IEC 61850, and IEEE 1613 compliant embedded computer systems such as the RE0813 and RE0814. Engineered for operation in extreme environments, our rugged embedded computer systems endure EMC, dust, shock, vibration, and thermal conditions for superior reliability.

Crystal Group Inc. products are designed and built to meet and exceed requirements for EMC, sand, dust, fog, humidity, shock, vibration, and extended temperatures. We also offer integration services in addition to configuration management, product life-cycle planning, and 5+ year warranties. Crystal Group is certified to ISO 9001:2008 and AS9100C:2009 aerospace standards, the most advanced quality management system (QMS) standards for aviation, space, and defense industries. Within the Industrial markets, we offer numerous reliable solutions for a variety of critical applications.

Applications
- Substation control
- Plant monitoring
- Outage identification
- Field monitoring
Oil & Gas

Improvements in computing technology have allowed for advances in seismic data processing and analysis, along with reservoir modeling and simulations. Crystal Group hardware is a reliable and trusted solution used to monitor and control well sensors. Our units replace the need for traditional monitoring by eliminating extensive labor and reducing the potential for errors.

With the increased focus on production monitoring, Crystal Group’s rugged platforms meet the challenges to increase overall high performance computing (HPC) throughput and productivity, while reducing system footprint, power, and cooling overheads.

There can be many differences from field to field making it a necessity to have a customizable solution. Our exceptional capabilities allow for highly innovative and customizable solutions through engineering expertise, manufacturing precision, and configuration management. Crystal Group delivers highly reliable solutions, on-site responsiveness, private labeling, and unparalleled customer support.

Crystal Group offers many ideal solutions for the oil and gas industry including the IS200 and RE0813. The IS200 is a rack mountable solution that has high storage and processing capabilities. The RE0813 is often selected for its small form factor, and high thermal performance of up to +85°C.

Crystal Group products are designed, built, and tested to meet and exceed requirements for EMI, dust, sand, salt, fog, shock, and vibration environments.

Applications
- Well production monitoring
- Fracking operations
- Down hole fiber analysis
- Pipeline health monitoring

RE0813 Rugged Embedded Computer
Crystal Group adds value for customers with the in-house ability to customize and create branded face plates using the customer logo and colors along with unique custom removable drive arrangements.

The Industrial Server line (IS100, IS200, and IS300) is proven to be essential for many communication applications. The IS line is tested to UL 60950-1 and FCC Class A standards.

Rapid advancement in communication has increased the need for long-life, high-reliability, application-ready computing solutions to handle the movement and storage of signals and data streams. Crystal Group’s industrial servers and embedded equipment are used in a wide variety of communication applications in the medical field, care facilities, nursing homes, broadcast media, IT industries, and security markets.

For instance, our communication solutions support a live television Internet broadcast platform with security features to protect against cyber breaches, and our application for call box systems allow patients to quickly reach nurses or emergency personnel.

Applications
- Call boxes to reach emergency personnel
- Live television Internet broadcast program
- Video processing
- Video storage

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Rail networks require sophisticated automation to deliver scalable configurations, multiple functionality, and high performance. Railway computing is needed to ensure rail safety, location monitoring, communication, lighting, fault detection, and collision avoidance.

Crystal Group servers are the ultimate solution for many functions of the rail industry. Our servers are tested to meet and exceed shock and vibration standards needed to fulfill the demands of railway transit computing, video surveillance, data acquisition, control monitoring, communication, security, storage, and signaling.

Crystal Group’s RS363SF is an ideal solution for the railway industry due to its ruggedness and reliability. The RS363SF is installed onboard the train and used for recording and monitoring rail security. In this environment the server requires exceptional shock and vibration capabilities which our hardware meets and exceeds. The RS363SF has a short chassis depth of 13” which allows for placement in space constrained areas. A front I/O design makes it is easily accessible to plug in and extract information.

Crystal Group provides a variety of customizable solutions that offer high-reliability, EMC protection, high thermal performance, and ruggedness to meet demanding environmental standards.

Applications
- Data acquisition
- Control monitoring
- Signal control
- Collision avoidance
- Traffic management

RS363SF Rugged 3U Server
Weather radar systems are a versatile tool for atmospheric evaluation. These vital systems include rainfall estimates (location and intensity), cloud detection, and speed and direction of cell motion. No matter the weather radar application, Crystal Group has the right solution. Our weather technology related solutions can be found in several university programs and private weather research installations across the globe.

To fulfill the needs of weather radar computing, Crystal Group offers a variety of Industrial Server solutions that have leading edge compute capabilities with a high thermal performance range, built to withstand the harshest environments. The IS200, IS300, RS252S, and the RS373 are common units installed on weather radar systems. These units can be used for data acquisition, digital processing, radar meteorology, and many other applications.

Crystal Group has a proven reputation for responsiveness, willingness to make on-site visits, and the ability to support the demands of the program. These attributes, along with having the most reliable computers, and ability to maintain and support long life configurations have allowed us to be frequently selected to replace other end of life systems in the weather radar industry.

Applications
- Data acquisition
- Digital processing
- Radar meteorology
- Remote radar stations

Weather Radar

Greater capabilities and responsive customer service set us apart from our competitors.
Commercial Aviation

Crystal Group has a strong presence in commercial aviation, in part due to our outstanding ability to provide custom solutions. Reduced size and weight qualities make our hardware stand out in the industry and desirable on any aircraft. Crystal Group servers are used to capture aircraft data, video, surveillance, topography, and equipment monitoring.

Preferred units for commercial aviation include the RE0412, RS252S13, RS373S17, RS232SF, and the RS114PS18. Carbon fiber units such as the RS114PS18 and RE0412 are an ideal fit. The technology used in creating these carbon fiber units represent significant advantages in EMI/EMC protection, shock and vibration resilience, and ultra-lightweight construction.

Applications
- Wind tunnel testing
- Onboard diagnostics
- Video capture
- Search and Rescue applications
- Custom instrumentation packages

RS114PS18 Rugged 1U Carbon Fiber Server

RE0412 Rugged Embedded Computer
Mining

Mining environments increasingly depend on sophisticated computing technology to improve safety, increase productivity, and reduce costs. Crystal Group’s innovative mining automation solutions are designed to help customers meet these challenges with high reliability and low maintenance. Our servers are robust and trusted to succeed in tough mining operations where vibration, dust, extreme heat and cold, air pressure, and humidity are challenges.

Applications
- Shovel control
- Wireline monitoring
- Surface mining operations
- Topology mapping

Since 1987 Crystal Group has been developing reliable solutions for our customers’ most challenging needs. Crystal Group excels at providing commercial-off-the-shelf (COTS) and custom designed computer systems tailored to specification.

Meet Our Team

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