



SPECTRA AEROSPACE & DEFENSE

RUGGED RECORDERS, COMPUTERS, AND DISPLAYS



Table of contents

Together, Spectra companies ensure mission-readiness.

CALCULEX	04
Galleon Embedded Computing	06
ArgonFDS	10
Capture, Process, Display	12
Contact	13
Notes	14





Integrated, open system data acquisition, recording, processing and routing solutions for today's demanding national security needs.

CALCULEX® was founded in Las Cruces, New Mexico in 1986 and – for over 30 years – has provided integrated and federated open system airborne mission data and video recording, processing, and routing systems.

CALCULEX® designs, produces, and supports secure, mission-critical defense electronics and software systems for numerous aircraft fleets, missile and UAV systems, and the flight test community. Our trusted systems are fielded on dozens of military platforms, both fixed and rotary wing.

CALCULEX® has a verifiable track record of rapidly supplying affordable and long life national security data management solutions to the U.S. Air Force, U.S. Navy, U.S. Marine Corps, U.S. Army, and other international armed forces.

Our reputation for providing innovative, cost-effective, and highly reliable solutions has been built over 3 decades. CALCULEX's modular Commercial Off the Shelf (COTS) RIPR® (Recorder – Integrated Processor – Router) product families and plug-and-play architecture provide the baseline for customization to specific mission and platform needs. Our solutions provide a low-cost growth plan for continued upgrades and capability insertions for both new and legacy platforms.

Compact, Highly Configurable, and Rugged Computing Solutions

CALCULEX's highly skilled team of engineers applies the latest technologies within a well-established framework of industry and open standards, leading to products that consistently meet and exceed customer expectations. CALCULEX has developed and implemented a Quality Assurance System that is certified to AS9100D and ISO9001 standards. CALCULEX has been part of Spectra Aerospace & Defense since February 2021.

Rugged Solutions

Modifiable and Reconfigurable COTS: Advanced, Highly-Versatile Multi-Channel Data & Video Recording in Deployed Applications.

RIPR Model 1201/1401/1402/1403

CALCULEX® RIPRs, (Recorder, Integrated Processor, and Router) are designed for use on any mobile platform for applications that require a small form factor data acquisition, processing, routing, recording and/or streaming capability. With the variety of factory or user stackable/reconfigurable or fixed models, the CALCULEX Model 1201/1401,1402,1403 RIPRs are the smart choice for any commercial or military data acquisition application.



RAPTOR Fiber Optic Recorder

With its advanced fiber optic 24-channel input data rates that support 2 Gbps, 10 Gbps, and 25 Gbps per channel, the RAPTOR sets a new standard in high-speed data capture. Its ultra-high density Removable Memory Module (RMM) storage offers 132 TB capacity, which is expandable up to 640 TB. CALCULEX's RMM proudly boasts the largest data storage capacity of any rugged recording device on the market.



RAPTOR Fiber Optic Splitter

This ultra-rugged solution is engineered to provide the front-end splitting necessary to seamlessly duplicate and integrate fiber optic systems, such as CALCULEX's RAPTOR recorder, into a one-way high-speed fiber channel. With its 24-in to 24x2-out fiber lanes and selectable speed settings of 2, 10, 25 Gbps, this splitter offers systems agility and flexibility in a highly durable, compact package.



Removable Media Module (RMM)

CALCULEX's Removable Memory Module (RMM) is a game-changer in data acquisition storage systems. It provides the highest-capacity available on any rugged recorder, offering unrivaled flexibility and versatility for capturing, processing, and storing vast amounts of critical data.





An Innovative and Agile Provider of Rugged and Secure C5ISR-Enabling Technologies.

Founded in 2009, Galleon Embedded Computing quickly earned a reputation as an innovative and agile provider of Commercial off-the-shelf (COTS) rugged computing products for the defense and aerospace market.

Meticulously designed and engineered to support national security requirements around the world, Galleon's secure and reliable C5ISR-enabling technologies promote a tactical advantage and foster peace of mind in the harshest battlefield conditions possible.

High-Density Secure Storage, File Serving, and Mission Processing

Serving as an integral support piece to the Capture & Process categories, Galleon's high-density secure storage and file server solutions are both used to serve files to another computing system. It provides the needed capacity and transfer speed to house large amounts of data for on-the-fly review while maintaining a secure and reliable connection.

Galleon's rugged military computing solutions are intentionally designed and engineered to handle unique and varying payload requirements. From ultra-small, low-power scenarios intended for unmanned operations to full-size manned-transport applications, Galleon has proven experience meeting the diverse needs of its customers and their mission.

Galleon's SWaP-C optimized solutions are actively serving in all modern battlespace domains, ranging from the depths of our oceans through the vacuum of space, and everywhere in between. Galleon's highly skilled team of engineers applies the latest technologies within a well-established framework of industry standards, leading to products that consistently meet and exceed customer expectations. Galleon Embedded Computing has developed and implemented a Quality Assurance System that is structured to meet the requirements of AS9100.

XSR Product Family

The Galleon XSR product family provides superior rugged computing performance in a very small form factor. Equipped with removable storage, the XSR product family ensures short ground times.

XSR NAS / Server

The XSR NAS/Server is capable of handling a high number of simultaneous connections without compromising system performance. The XSR supports a variety of Ethernet connections with options of 1Gb, 10Gb, 25Gb, 40Gb, and 100Gb providing increased connectivity and throughput for demanding applications. Intel Xeon-E and Xeon-D processor options, including the latest 9th generation, are supported with up to 96GB SDRAM supporting ECC.



XSR Mission Computer

The XSR Mission Computer is a high-performance processing platform designed on the use of Open Architecture COTS modules, allowing the user to have flexibility in the choice of embedded processor and I/O configuration. The host module provides a standard I/O configuration including Ethernet, serial comms, GPIO, USB, and graphics.



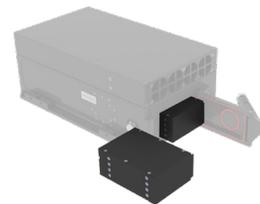
XSR Recorder

The XSR Recorder is capable of capturing the recording of critical mission data from a wide range of inputs such as video, Ethernet, serial SFDP, and other customer-specific input requirements. Removable Data Modules (XSR-RDMs) enables instant access to recorded data in the ground access system without the need to download the recorded data over a slow drain interface.



XSR Removable Data Module (RDM)

The XSR Removable Data Module (RDM) fits all Galleon data recorders, NAS, and servers, providing an extremely flexible data solution to suit the target application. The RDM can be exchanged in the field in seconds, with no tools required.



G1 Product Family

The Galleon G1 product family provides a wide range of capabilities packaged in extremely small enclosures. They have been designed to meet the most severe environmental conditions without compromising on functionality and performance.

G1 microNAS

A versatile network attached storage solution capable of handling a high number of simultaneous connections without compromising system performance. Four channels of Gigabit Ethernet connections are available for multi-channel high bandwidth applications. An optional 10GBASE-T can also be added. The unit can be delivered with Windows Embedded Storage Server or Linux Enterprise Server preconfigured to suit your application needs.



G1 microSERVER

A full featured server ideal for surveillance, reconnaissance, intelligence, and flight test applications where large amounts of data must be collected and stored during very long missions. The microServer can be configured with RedHat Enterprise Linux, or Windows 10 and Windows Server.



G1 microRECORDER

A recorder capable of capturing up to four Gigabit Ethernet ports at full line rate and remove at close to 120MB/s per Ethernet port. With the optional 10GbE port, recording rates increase to greater than 800MB/s. Fitted with up to 40TB of Industrial Grade MLC storage or up to 20TB Military Grade SLC storage, the removable data modules allow very short turnaround times between missions and easy transport of data between the vehicle or aircraft and the command station or lab where the data is analyzed or distributed.



G1 Removable Data Module (G1-RDM)

This RDM fits all Galleon G1 data recorders, NAS and servers, providing an extremely flexible storage solution to suit the target application. It can be exchanged in the field in seconds, with no tools required and is rated for 100,000 insertion cycles. The storage module uses industry standard 2.5" solid-state storage (SSD) modules. Two individual SSDs can be fitted supporting capacities up to 40TB total.



Rugged. Secure. Powerful.

Galleon's rugged computing solutions can be found in a wide array of applications across the globe, ranging from the depths of our oceans to the harsh vacuum of space, and everywhere in between.

Ground Vehicle Computer

Galleon's Ground Vehicle Computer is a compact, high-performance computing platform designed to execute your complex ground vehicle processing needs. Building on Galleon's long experience with military computer design, it was developed specifically for military ground vehicle applications and meets the rugged computing requirements for the most severe environmental conditions without compromising on performance, functionality, or reliability. The GVC's removable storage, equipped with multi-layer encryption, ensures a fast and secure offload of data. Equipped with high-performance graphics, multiple gigabit Ethernet ports, CANbus, USB 2.0 and 3.0, Serial Comms, GPIO and audio, the GVC is an ideal computing solution for integration with state-of-the-art network-centric Battle Management Systems, Situational Awareness vehicle self-protection systems, and Vetronics applications.



High Performance Recorder and Processor

The High Performance Recorder (HPR) offers superior performance in a small form factor, and it is capable of capturing UDP or TCP/IP data from up to 8x 10Gb Ethernet interfaces up to 5GBytes/s recording speeds. The removable data module (RDM) can be configured as a build option for either high performance NVME or high capacity SATA storage using rugged and reliable solid state storage. Offering industry-leading storage density, NVME RDMs offer up to 32 TB of storage and SATA RDMs offer up to 80TB of storage.



Dual-Layer Encryption

Optional Hardware Full Disk Encryption (HWFDE) and Software Full Disk Encryption (SWFDE) can be added to any of the XSR or G1 systems to provide a dual layer protection based on the NSA's Commercial Solutions for Classified Program. The dual layer approach provides critical data protection to the removable storage allowing for quick and easy deployment of these systems in the most sensitive of applications and environments.





ArgonFDS designs, produces, and supports rugged computing and display solutions that serve sea, air, and land applications worldwide.

ArgonFDS has been providing rugged computer and display solutions to mission critical defense applications for over thirty years. ArgonFDS focuses on the demanding requirements of our customer base and offers a wide variety of solutions that minimize size, weight, and power while maintaining state-of-the-art visualization and computing performance.

ArgonFDS recognizes that a "one-size-fits-all" product approach does NOT typically meet the specific needs of all programs. ArgonFDS maintains a business model where customization to individual program requirements is embedded into our design and business strategies. We are ready and willing to meet your computing, display, I/O and mechanical needs while we deliver a reliable, survivable, and affordable solution.

A Trusted & Proven Partner

ArgonFDS prides itself on working collaboratively with customers to precisely achieve their desired solution. We match requirements with our exacting standards. Our products have demonstrated longevity and high reliability in a range of challenging environments and conditions and this has earned ArgonFDS the reputation of being a partner our customers can trust.

In 2021, ArgonFDS became part of the Spectra Aerospace and Defense Company providing a larger and strong business base from which to support our customers and grow from. Our sole business is to bring custom and COTS rugged solutions to the worldwide military market. With a deep knowledge of what is required to design a rugged product that will survive severe environments, along with the market knowledge and technical know-how to create long term supportable designs, ArgonFDS has the depth of knowledge and experience to bring a quality product to the field and provide support for years to come.

ArgonFDS has developed a standing reputation for working with customers to design affordable custom solutions and reliable products, with the lowest risk. ArgonFDS maintains two facilities, one located in Great Neck, New York, and the other in Alpharetta, Georgia. Both facilities are ISO9001:2015 certified and DFARS 252.204-7012 compliant. Design & Development is carried out at both our locations, with production in our Alpharetta, Georgia factory.

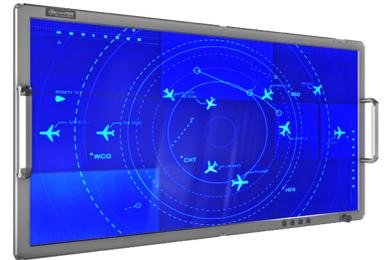
Rugged Solutions

ArgonFDS offers a rich line of computing solutions that support the lowest in size, weight and power (SWaP) in the industry.

Rugged Displays

ArgonFDS offers a rugged LCD product line with an unprecedented range of sizes from 5.0" to 43". Applications are virtually unlimited and Argon solutions can be found on military land, air and sea platforms worldwide. With proven standard options such as Sunlight Readability, NVG Compatibility, Rugged AR Touch Screen, Video Inputs, Bezel Keys and Cold Start, ArgonFDS has an existing library of designs to quickly bring you a customized unit that perfectly fits your application and installation.

Argon is constantly innovating our range and offerings as customers bring us challenges that others can not or will not meet. For example, Argon was recently challenged to develop a 19" rack mount 21.3" viewable LCD with an LED backlighting system that is less than 3" deep. Argon met and exceeded that challenge and now offers the lightest weight and highest viewable surface for a 19" rack mount application - the ARD21.



Rugged Computing

In some applications there can be unforeseen conflicts between the rugged Display Monitor and the Computer. At this point it can become difficult to determine which unit is the cause. By procuring both the Display and Computer from the same supplier, you are assured that such a conflict will not occur or will be swiftly managed and resolved. Argon offers a rich line of computing solutions that support the lowest in Size, Weight and Power (SWaP) in the industry



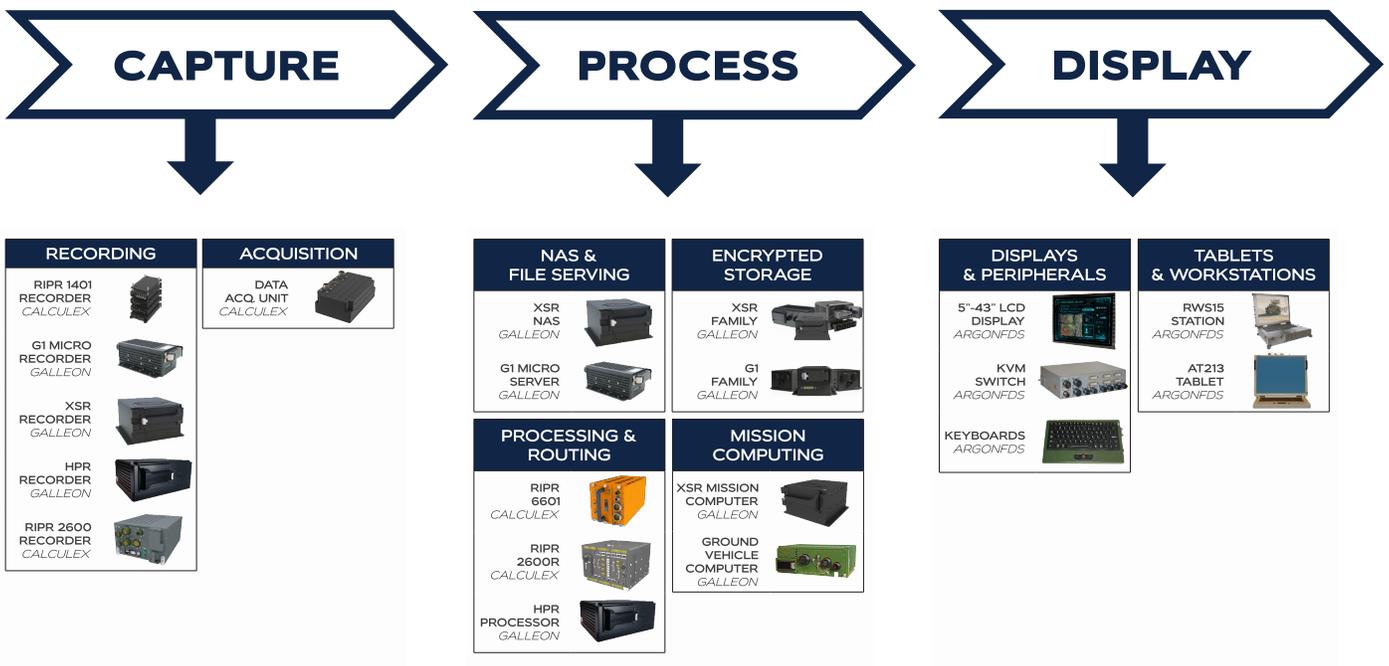
Rugged Peripherals

ArgonFDS offers a Rugged KVM Switch that is NIAP EAL4 Certified assuring you information security when needed. Further, ArgonFDS offers a family of Rugged Keyboards for nearly any application and provides a variety of NVIS compatible, sealed and backlit keypads, indicators, buttons and an integrated trackball. Different options such as I/O (USB, PS/2, RS-232/422), pointing devices, mounting schemes and even 19" rack mount hinges are all available. As for all ArgonFDS products, we will customize the keyboard to your application.



Conquer the Elements with Spectra

The Spectra family of companies boasts a half-century of extensive C5ISR experience. Our proven and trusted systems ensure a reliable **capture, process, and display** of complex mission data in harsh **sea, air, land, and space** operations.



Contact Us

Let us know how Spectra's full spectrum of rugged Information products & systems can help meet your needs. We look forward to answering your questions and discussing your project requirements with you.



Address:
CALCULEX, Inc.
132 W. Las Cruces Ave.,
Las Cruces, NM 88001

US Sales
+1 575-525-0131
sales@calculex.com

Website
www.CALCULEX.com



Address:
Galleon Embedded Computing
1260 Pin Oak Rd. Suite 205
Katy, TX 77494

US Sales
+1 (281) 769-8211
us_sales@galleonec.com

International Sales
+47 2108 0290
sales@galleonec.com

Website
www.Galleonec.com



Address:
ArgonFDS
6435 Shiloh Road
Alpharetta, GA 30005

US Sales
+1 470-239-7400
sales@argonfds.com

International Sales
+39 335 831 8060
sales@argonfds.com

Website
www.ArgonFDS.com



SPECTRA AEROSPACE & DEFENSE

Spectra Aerospace & Defense

6435 Shiloh Road
Alpharetta, GA 30005

Spectra +1 470-239-7400
CALCULEX +1 575-525-0131
Galleon +1 281-769-8211
ArgonFDS +1 470-239-7400
Intl. Sales +44 7501 378664

www.spectra-aerodef.com