

# Space-rated Embedded Electronics and Systems

*Mission Proven.  
Space Proven. AI Ready.*



# Securing a Better Tomorrow



## The Universe is Calling

No matter the orbit, radiation requirements or mission duration, rely on Aitech's 40 years of experience in COTS technologies to make your next space exploration a success. As pioneers of several space technology innovations, we offer a proven flight pedigree, as well as unmatched technical knowledge to provide robust, reliable integrated systems that operate in the harshest, most unforgiving environments. Our rugged embedded electronics have flown trillions of miles and operated over a million hours without a failure.

- Technical experience to handle the complexities of space-rated systems
- Fast delivery of cost-effective COTS and semi-custom solutions
- Deep knowledge of embedded computing in the harshest conditions
- Program management driven by risk-informed decision making
- Aitech's Space Digital Backbone: a unified, digital infrastructure enables seamless integration
- Quality engineering and testing to AS9100D and NASA requirements

## Built on a Legacy of Innovation

Aitech's strong leadership in rugged embedded computing for space applications is founded on the pivotal technological and business innovations the company has spearheaded, including the use of cost-effective COTS in space, as well as supplying and internally radiation-qualifying multiple products for use on the International Space Station (ISS), many of which are still in use today. Our space-proven products and systems are engineered for programs throughout Lab, LEO and GEO+ environments. The goal of every innovation Aitech has delivered over the past four decades is to secure a better tomorrow.



Cost-effective and proven COTS for use in space electronics, from SBCs to subsystems



Low power SWaP-optimized SFF products with user-specific functionality



Fully tested radiation-characterized products and systems

"With the dedication of both military and commercial suppliers in the space market, we are going to see leaps in space computing performance that will enable satellite manufacturers to do more, which will ultimately help all of us here on Earth."

– Pratish Shah, General Manager USA, Aitech

## A Proven Pedigree

We're no strangers to harsh space environments or the evolving needs of our customers. Our design history holds a few notable industry milestones, including establishing a successful methodology of using COTS products in space applications in the 1990s, a model now widely used in space electronics. We're proud that the first true radiation-tolerant, 3U CompactPCI embedded computing products deployed in Earth's orbit and in manned space came from our engineering team.

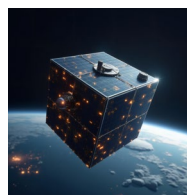




# Products and Systems

Covering all orbits levels, from LEO to GEO and beyond, Aitech's space innovations address the design challenges system engineers face by balancing the need for more computing performance with the appropriate risk mitigation and reliable system operation requirements. Aitech offers cost-effective embedded solutions, from fully integrated systems to COTS boards, that are fully characterized and tested, radiation tolerant – and even rad hard – to meet the industry's ever-evolving requirements by offering design flexibility, optimal cost-to-performance ratios and continued technological advancements. Our experienced customer and technical support team meets your challenges across all space mission programs, from customizing products through COTS-based solutions.

## SPACE SYSTEMS



### AI-enabled Satellite Platform

A broad range of cost effective, scalable and accessible capabilities for military space, public safety and commercial space applications.



Courtesy: ESA/ATG medialab

### Earth Observation Systems

These systems host cameras and sensors and support standard camera data transfer protocols for satellites performing long-term global observations, along with camera, focus and steering control.



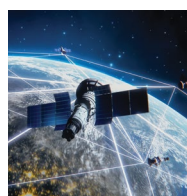
### Power and Engine Control Systems

Deliver control and power for sensors, actuators, motors, robotic actuators, heaters, solar panels, antennas and robotics with our space-ready systems.



### Robotics Subsystems

These systems provide functionality such as lighting, release mechanisms, heating, cooling, temperature and position feedback.



### CC&DH Systems

Communication systems include Ethernet edge, a wireless access point, Ethernet switch and optical communications; C&DH systems are used for constellations, space edge computing, space-based data terminals and more.

## INTEGRATED SFF SYSTEMS



### Ethernet Switches

Our space-rated switches reliably transfer data, and offer on-board memory, as well as key function redundancy for LEO applications.



### AI Supercomputers

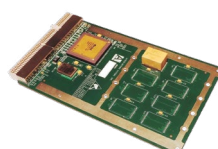
Our small form factor (SFF) systems include SWaP-optimized GPGPU and radiation-tolerant supercomputers that are ready for LEO.

## BOARDS, CARDS AND ACCESSORIES



### Single Board Computers

Our radiation-characterized, low power 3U SpaceVPX and CompactPCI SBCs for any orbit provide maximum reliability in the most challenging environments for all space missions.



### Boards and Enclosures

Aitech offers boards, carrier cards, and transition modules for additional functionality including memory, multitasking I/O and communications protocols, as well as a variety of space-rated 3U enclosures.

# Beyond Just Products

By investing heavily in our people and infrastructure, we ensure that our customers have the integrated technology platforms that will meet the industry's evolving computing requirements. We pride ourselves on our responsiveness to designers' needs and work to evolve partnerships so that we can build faster systems and leverage our large portfolio of space-rated products, at a price and speed that our customers desire.

- Full Program Management to Reduce Time to Market
- COTS Lifecycle+™– Obsolescence Management and Complete Product Lifecycle Support for 5+ Years
- Robust Quality Management System Based On, and Certified To, AS9100D
- Built In Test (BIT) Firmware and Toolkit for SP1 and SP0-S SBCs
- Third Party Hardware, Software and Drivers
- Technical Support Hotline and Repairs

We carefully define all manufacturing processes and tests, and ensure that our company and all our contract manufacturing partners are ISO 9001:2008 and AS9100:2009 registered. Parts selected and used for our standard space products follow strict selection processes in accordance with NASA NEPP EEE-INST-002, PEM-INST-00 or GSFC-STD-7000b.

## Some of the Worldwide Companies We're Honored to Call Customers

Aitech's customer base includes system integrators developing products for the defense and aerospace markets from around the world: Airbus Defense Systems, Ansaldo, Avio, BACE, BAE, Ball Aerospace, Bharat Electronics Ltd., Boeing, CWCEC, DMT, Elbit Systems, Fujitsu, General Atomics, Hindustan Aeronautics Ltd., IAI, IMI, INPE, Intuitive Machines, JPL, L3, Larsen & Toubro, LeoStella, LIG Nex1, Lockheed Martin, Magellan Aerospace, MDA, Mercury Computers, Mitsubishi, NASA, Nippon Japan Radio Corp, Rafael, Raytheon, Saab, Sagem, Selex Galileo, Selex Integrated Systems, Sidus Space, Solstar Space, TAI, TATA, TechMer, Thales, Toshiba and Virgin Galactic.



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