A long history of space program partnerships

Developing mission critical solutions for space applications has never been more challenging. Prime contractors delivering today’s deep space exploration, scientific discovery, military surveillance/protection, and commercial communications innovations demand suppliers who combine the highest reliability products with cost efficiency. API Technologies is exactly that kind of partner. With a space heritage dating to 1976, we have proven experience participating in a long line of past and present space programs.

API is a designer and manufacturer of RF/microwave and hybrid components, microwave semiconductors and microelectronic assemblies for space systems, satellites, launch vehicles, and associated support networks. We utilize five manufacturing space centers of excellence offering a wide range of space and Hi-Rel certifications and extensive testing capabilities. Our experienced engineering team will recommend one of our many space-approved standard designs or develop a custom solution radiation hardened to withstand the most extreme environments.
capabilities overview

Facilities
Rancho Cordova, California, USA
Marlborough, Massachusetts, USA
Nashua, New Hampshire, USA
Great Yarmouth, United Kingdom
Milton Keynes, United Kingdom

Certifications
- MIL-PRF-38534 Class K
- MIL-PRF-38534 Class H
- AS9100
- ISO9001
- IPC-610 Class 3
- J-STD 001
- MIL STD 883
- ESA/SCC 5010 – Microwave Diodes QPL

Brands
- Spectrum Microwave™
- C-MAC Aerospace™
- CMT™
- Filtran™

Testing
- Environmental to IECQ, MIL-STD-883 and MIL-STD-202
- Up-screening of selected passive component and active die lots
- Completed product qualification
- ISO 17025 accredited facility

Products
RF/Microwave
- Filters
- Multiplexers
- Switched Filter Banks
- Filter GPS LNA
- Couplers
- Dividers/Combiners
- Amplifiers
- Switches
- Diodes
- Limiters (Waveguide & Coax)
- Mixers
- SAW Oscillators
- VCOs

Microelectronics
- Microelectronic Assemblies
- Multi-Chip Modules (MCM)
- Build-to-Print

Magnetics
- Transformers
- Inductors
- Coils & Chokes
Deep Space
- Galileo
- Cassini
- USERS (2 sats)
- Selene & Okina
- Mars Phoenix
- Lunar Reconnaissance Orbiter

Scientific Missions
- SAOCOM
- Hershel Plank
- AMS-02
- Aquarius (SAC-D)
- Lisa Pathfinder
- Juno
- Grail (2 sats)
- EnMap
- Vegetation
- Cassini
- Meteosat

Communications
- GPS-2F
- Prima
- O3B
- Inmarsat
- Intelsat
- Sirius Radio
- Direct TV
- Optus 10
- Amazonas 3
- Thor 7
- MUOS
- Military Classified
- Hot Bird
- MARECS
- Olympus
- SkyNet
- Eutelsat
- Koreasat

Launch & Reentry Vehicles
- Taurus
- Minuteman
- H-II
program involvement

mars curiosity rover

Low Noise
High Linearity
& High Efficiency
Amplifiers

Mixers

Frequency Doubler

VCOs

Mixed Signal
The API Difference

Whether your mission requires a standard single function component, a custom multi-function assembly, or a build-to-print/testing supplier, API Technologies is poised to be your ideal space partner. With five facilities offering specialized capabilities and engineering support, API is unique in its ability to offer customers a flexible, responsive approach driven by proven technology.

Engineering Expertise

The API engineering team offers a strong heritage in designing high-reliability solutions for space payloads in a wide range of deep space, scientific, and commercial programs. We utilize all of the popular and accepted simulation and design tools, as well as several proprietary programs. In addition, as a vertically integrated manufacturer, we have in-house machining centers for quick-turn prototyping.

Certifications

API employs all of the quality systems and processes essential to being a qualified supplier for Hi-Rel space platforms. We have two facilities certified to MIL-PRF-38534 Class K out of fewer than 20 in the world, as well as facilities certified to a variety of other quality standards, including AS9100 and ISO9001. These space centers of excellence allow us to assign specific projects to the individual facility with the required certifications and specializations.

Testing

Our facilities offer a wide range of in-house mechanical and environmental screening and auto-electrical testing for element evaluation as well as completed product qualification. API has an independently managed, ISO 17025 accredited test facility providing full environmental testing against IECQ, MIL-STD-883, and MIL-STD-202 test methods. These test capabilities are an integral part of our internal process are also available for screening and qualification testing of customer-supplied designs and piece work.
centers of excellence

Marlborough
Massachusetts-USA

Specialization:
Design and manufacture high-performance hybrids, MCMs, SAW filters, SAW-based sub-systems, amplifiers, and build-to-print. Featured products include data converters, oscillators, filters, and precision analog circuits.

Space Heritage:
Since 1984

Certifications:
MIL-PRF-38534 Class H & K
MIL-STD-883 Screening
IPC-610 Class 3 Workmanship
J-STD 001 Soldering

Unique Capabilities:
- Void free solder die attach
- Auto flip chip/BGA
- Mixed signal testing
- Metal deposition
- 0.7 - 2 mil gold wire bonding
- Active and passive laser trim
- Environmental stress screening
- In-house SAW
- Thin film fabrication

Facility:
45,000 Sq. ft.
30,000 Sq. ft. Clean Room

Great Yarmouth
United Kingdom

Specialization:

Space Heritage:
Since 1986

Certifications:
MIL-PRF-38534 Class K
MIL-PRF-38534 Class H
AS9100
ISO9001:2008

Unique Capabilities:
- Environmental testing against IECQ, MIL-STD-883 and MIL-STD-202 test methods for element evaluation of microcircuit & semiconductor dice, passive components, substrates, packages, adhesives
- Engineering disciplines – sub-contract manufacture of analogue digital hybrids
- Up-screening of selected passive component and active die lots
- Testing for completed product qualification
- Offer monolithic and hybrid devices based on Linear Tech RF product line

Facility:
112,000 Sq. ft.

Nashua
New Hampshire-USA

Specialization:
RF/Microwave/mmW components - design and manufacture space grade components and integrated microwave assemblies for launch vehicles, payloads, and satellites.

Space Heritage:
Since 1995

Certifications:
ISO9001:2008
AS9100 Certification in Process
MIL-PRF-38534, 883 Screening
IPC-610 Class 3 Workmanship
J-STD 001 Soldering

Unique Capabilities:
- Vertically integrated to go from concept to qualification under one roof
- Engineering disciplines – RF/Microwave and mmW electrical design, assembly and verification testing
- Test at altitude
- Up-screening of selected passive component to meet platform requirements
- Testing for completed product qualification requirements
- Extensive library of space designs

Facility:
40,000 Sq. ft.
1,000 Sq. ft. Class 10 Clean Room

Milton Keynes
United Kingdom

Specialization:
Microwave semiconductors, hybrid and multifunction components - qualified to ESA and project specific specifications for space payloads. Completed formal qualification testing to ESA/SCC 5010 for a range of UK manufactured microwave diodes.

Space Heritage:
Since 1976

Certifications:
ESA/SCC 5010 Microwave Diodes QPL
ISO9001:2008
ISO14001

Unique Capabilities:
- Semiconductor in house wafer fab for two terminal microwave devices
- Engineering disciplines – non ITAR microwave component design
- Testing for completed product qualification
- ESA qualified microwave diodes

Facility:
50,000 Sq. ft.
High isolation between bands, stability over temperature

 ESA Qualified product line, EU manufacture

 Voltage controlled, Q-Swept, Low phase noise (400MHz to 4GHz) and low vibration sensitivity
mixers
Flight heritage on a broad product range, available EU manufacture if required

amplifiers
Low phase noise, High linearity, available EU manufacture if required

limiters
(waveguide & coax)
Broad product range supported by in-house diode manufacturing capability, EU manufacture
microelectronics
products & capabilities

microelectronic assemblies
Hermetic MIL-PRF-38534 class K certified line, high MTBF, available EU manufacture if required

radiation tolerant power products
MIL-PRF-38534 certified and experienced radiation test partners

multi chip modules
Multichip Modules (MCM) – L (PCB), Thin Film (D) or LTCC (C)
custom hybrids
Design and manufacture custom solutions with multiple technologies including Mixed Signal & Power, RF, Microwave & MMW, Optoelectronics, Thin Film & SAW Fab

build-to-print
DLA Certified, MIL-PRF-38534, Class K, available EU manufacture if required

magnetics
Custom magnetic components including transformers, inductors, coils and chokes
About API Technologies

API Technologies Corp. is a trusted provider of RF/microwave, microelectronics, power and security solutions for critical and high-reliability applications. The company designs, develops and manufactures electronic components, modules, systems and products for technically demanding defense, commercial/industrial and aerospace applications. API Technologies’ customers include many leading Fortune 500 companies, as well as a majority of NATO governments. While API was founded in 1981, our heritage brands have served the demanding, hi-rel marketplace for more than 70 years. API Technologies trades on the NASDAQ under the symbol ATNY.