API Technologies’ RF, Microwave & Microelectronics business unit is a dominant provider of precision-engineered, high performance RF, microwave, mmW and microelectronic solutions for high-reliability and mission critical applications in the global defense, commercial and space markets.
Locations

**API Technologies Corp.**

- State College, PA
- Juarez, MX
- Dongguan, China
- Melbourne, FL
- Delmar, DE
- Marlborough, MA
- Philadelphia, PA
- Columbia, MD
- Auburn, NY
- Nashua, NH

**Key**
- RF2M – US Locations
- RF2M – UK Locations
- Low Cost Manufacturing Centers

- Great Yarmouth, UK
- Milton Keynes, UK
- Dongguan, China
### Systems & Subsystems

API Technologies-designed & manufactured systems & subsystem for C4ISR, defense & communications applications

- AESA Radar Solutions: Active Antenna Array Unit (AAAU)
- I-Band Transponder
- RRB Receiver
- Nuclear Event Detector
- Radar and Communications Power Amplifier Subsystems

### Integrated Assemblies

High-performance solutions designed for OEMs needing feature-rich, custom and configurable solutions & a high level of integration

- Multi-Function Assemblies (MFAs) and Integrated Microwave Assemblies (IMAs)
- Integrated Power Amplifier Assemblies
- Integrated Filter Assemblies, Wireless Assemblies, Co-Location Solutions
- Receiver Front-Ends, IFMs, DFDs
- T/R Modules

### High-Reliability Modules & Components

Standard and customizable, high-reliability RF, microwave and millimeterwave modules & components for defense, communications, industrial and space

- High Frequency, High Linearity and Low Noise Amplifiers
- High Performance Filters
- SAW/BAW, Delay Lines, Rotary Joints, Phase Shifters, Power Dividers, Couplers
- Synthesizers, Multipliers, Oscillators and Complex Sources
- Mixers, Delay Lines, Antennas
- Switches, Limiters, Diodes
- Custom Hybrids & MCMs
- Optical Transceivers
## Markets & Applications

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Frequency Control Components Overview

Topology
- Double Balanced
- Triple Balanced
- Image Reject
- Frequency Doublers
- Diode Based Technology

Frequency
- DC to 26 GHz frequency coverage
- IF frequencies up to 10 GHz
- Frequency Doublers to 20 GHz
- Diode Based Technology

Performance
- Low Conversion Loss
- Low Spurious
- High Isolation
- High Dynamic Range
- Broadband
Double Balanced Mixers employ a single quad diode ring with two broadband baluns, one for the modulating signal and one for the carrier signal.

- Excellent LO to IF Isolation through the use of matched diode selection
- Superior LO to RF Isolation through strict line length symmetry
Triple Balanced Mixers feature a pair of quad diode rings and balun structures on all three ports of the mixers.

Triple Balanced Mixers provide wider operating frequency bandwidths, overlapping RF and IF frequency ranges, and higher available LO drive levels of up to +23 dBm.
Image Reject Mixers minimize the impact of image noise on the system noise figure compared to the SSB performance.

API’s Image Reject Mixers also suppress by 25 dB the spurious products generated by undesired signals falling in the system’s image frequency range.
Multi-octave spanning **Frequency Doublers** extend the useful range of lower frequency signal sources.

- Quarter wavelength stubs are used to provide diode ground paths and optimize Return Loss
- Synthesized input and output matching networks maintain maximum response flatness across the performance band
Our mixers use high performance monolithic diodes for superior isolation and the lowest loss possible.

Synthesized input and output matching networks maintain maximum response flatness across the performance band.
Our mixers use **rugged duroid construction** for **proven performance against thermal dynamics** and shock.

**Dependable** chip and wire technology offers **repeatability** under extreme conditions.
In order to protect Against corrosion and oxidation in extreme environments, hermetic sealing in Nitrogen is an option on select Kovar packages.
Unlike other mixer companies, API routinely laser welds its mixers for improved hermeticity and environmental integrity.
We offer drop-in-replacements to many old, obsolete or hard-to-find components from other manufacturers.

Marki  M/A Com  Avantek  Mica  WJ
API mixers are available in many industry standard surface mount, drop-in and connectorized housings.
Contacts

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Engage

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