

# RF & Microwave Capabilities



# Active Electronically Scanned Array (AESA)



*API Technologies is a leader and trusted provider of high-performance RF/microwave solutions.*

The company offers a broad portfolio of high performance phased array solutions, covering S, C, X, and Ku bands. API Technologies brings to bear a long and rich heritage in the microwave space, applying years of design expertise and collaboration with the world's leading primes, and a breadth of systems knowledge to deliver exceptionally reliable products to meet customers rigorous requirements.

Beyond phased array solutions, API designs, develops, and manufactures RF, microwave, millimeter wave, and micro-electronic products, including receiver protectors, Phase Locked Oscillators (PLOs), and navigational equipment, as well as subsystems, modules, single and multi-function assemblies, sophisticated components, and state-of-the art Integrated Microwave Assemblies (IMAs) for military and aerospace applications

Other products include high-power diplexers and multiplexers, narrowband SAW filters for IF filtering, high power/small signal power amps and GaN broadband power amplifiers. Finally, the company offers a broad selection of space-qualified (Class K) products, where high reliability is a necessity.

API Technologies' customers include many leading Fortune 500 companies, international defence organizations, and NATO governments. While API was founded in 1981, the company's heritage brands have served the demanding, hi-rel marketplace for more than 70 years. API Technologies trades on the NASDAQ under the symbol ATNY.

## Power & Systems Solutions

## RF/Microwave & Microelectronics

## Electromagnetic Integrated Solutions

## Electronics Manufacturing Services

## Secure Systems & Information Assurance

# About API Technologies

API Technologies Corp. is a trusted provider of RF/microwave, microelectronics, 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 60 years. API Technologies trades on the NASDAQ under the symbol ATNY.

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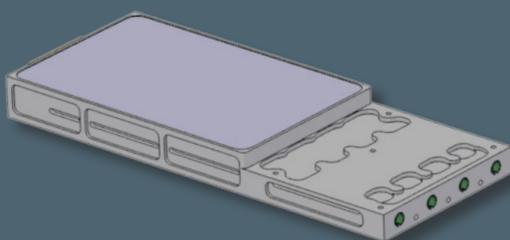
# Active Antenna Array Unit (AAAU)

API has developed a modular and scalable **Active Antenna Array Unit (AAAU)** solution used to improve the performance and reduce the maintenance costs of data links, satcom systems, and next generation radar systems, including **Active Electronic Scanned Array (AESA)**.

At a time when defence budgets are under pressure and multinational collaboration is being adopted more widely, typified by NATO's "Smart Defence" concept, API's AAAU solution offers unparalleled interoperability an ease of use, and reduced cost of ownership (procurement, operation and maintenance),

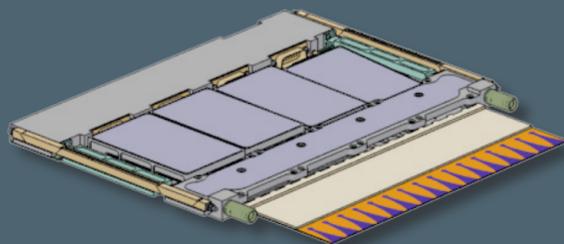
The system is comprised of multiple QTRM (Quad Transmit Receive Module) assemblies, packaged in removable planks that form the AAAU sub-array. The QTRMs are Line Replaceable Units (LRU), which allow for ease of assembly and maintenance. The API designed and manufactured QTRMs are ready to use out of the box. All that is necessary is the upload of system calibration data, which then propagates through the system, speeding set-up time.

This common module approach, which uses API's European designed and manufactured elements and COTS components, delivers ease of system integration, first line repair and reduced cost.



## QTRM

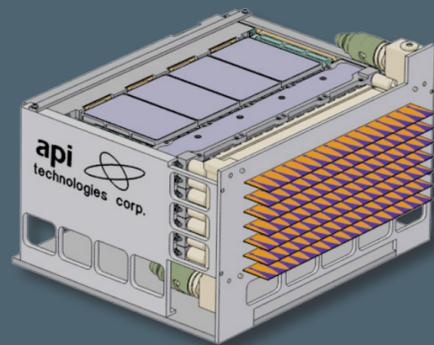
Each Quad Transmit Receive Module (QTRM) includes full RF, DC, control functionality (logic interface), calibration and BITE status for each TRM, thermal and current overload protection, as well as receive and transmit functions. Each field-replaceable QTRM common module is factory calibrated. The only set-up needed is a one-time laptop upload of antenna offsets.



## Plank

The Plank is the quick-remove host for four QTRMs, creating a 16-channel assembly with integrated antenna. The plank incorporates the RF manifold, DC distribution and logic/control distribution and is inserted into the AAAU as a rack-mounted sub-assembly.

API has a range of cooling solutions to support different platform applications that can either be implemented at QTRM level or at plank level.



## AAAU

API's steerable AAAU easily bolts on to the SPU for use in air, sea, and ground-based AESA radar, data link, and satcom applications. Both the unit's compact size and scalability allow for use across multiple defence and commercial aerospace programs. The AAAU is comprised of multiple, easy-to-replace Planks, which form a sub-array.

# Featured Installations



### UAV

Tactical Data Links

### Aircraft

Upgrade passive array multi-mode fire-control radar to AESA with AAAU

### Ground Station

Provide surveillance tracking and comms for defence and civilian applications such as air traffic control

### Military Vehicle

Fire Finder Radar, Weapon Location Radar and Counter Fire Acquisition

# Featured Applications

## Radar

API's AAAU concept is suitable for multi-function radar systems for naval, air and land defence applications, delivering surveillance, tracking, guidance and communications. In the civilian aerospace markets, the AAAU concept is ideal for air traffic control radar.

## Data Links

The AAAU is equally applicable to data link solutions for tactical command and control, enabling surveillance, tracking, guidance and communication.

## Satcom

AESA enables tactical communication via satellite. API's AAAU can deliver electronic steering/tracking of the satellite, and can be configured as a low profile antenna or as a conformal antenna for fixed wing aircraft.

