

FAB S and LAB S

Cobham Advanced Electronic Solutions' Radar & EW Microelectronics Meeting the growing A&D demand



Cobham Advanced
Electronic Solutions
Radar & EW Micro-

electronic Solutions facility is located in San Diego occupying 188,000 square feet of space with its seven buildings across the campus. The facility currently employs more than 1,000 people while running two shifts. The recently renovated and upgraded buildings were designed using Lean 3P (Production Preparation Process) principles to meet the growing demands of the U.S. air and surface fleet plus the research and development of next generation systems.

The large facility designs and manufactures a wide range of technology from custom MMICs to highly integrated digital receiver/exciter (DREX) RF/digital subsystems with sophisticated built in calibration functions. Their DREX products are designed utilizing a mix of direct analog and Direct Digital Synthesis (DDS) techniques that realize very fast settling time performance that are also phase coherent. These DREX products have low phase noise and spurious performance that enable the most sophisticated radars to be built.

Cobham's front-end diplexer and filters are combined with high power switches and limiters to produce antenna switching modules that protect high sensitivity receivers from a variety of undesired jamming techniques. Their high isolation filter products are used in wide bandwidth fast switching filter banks that enable low spurious frequency multiplier local oscillator generators to be produced. These low phase noise, low spurious signal generators enable advanced EW, radar and space platforms. They also produce front-end protection line replaceable units (LRUs) that allow sensitive systems to operate in the presence of jamming, as well as integrated high performance RF/microwave filters; all providing state-of-the-art phase noise and spurious performance. These are produced for a wide range of end markets including shipboard radar, aircraft (radar and EW), missiles and space. Many products are designed for demanding environmental conditions, temperature extremes, high shock and vibration applications and radiation (space/hypersonics).

The facility has more than 140 engineers performing

RF/microwave/mmWave, MMIC, mechanical, digital and software design and development. They also have many engineers involved in process development, manufacturing and industrial engineering, and vertically integrated manufacturing development. The facility supports many processes including machining, plating, laser welding, substrate fabrication (thin film and Duroid), custom capacitor and inductor design and fabrication, surface mount assembly (pick and place, reflow, automated optical inspection), MIC chip and wire assembly (five assembly cells), automated epoxy and die placement, automated wire/ribbon bonding and hybrid/MIC automated optical inspection. They have 500+ tune and test benches, 16,000+ test assets and an environmental test facility. The location is certified to the AS9100 and MIL-PRF38534, Class H standards.

Cobham Advanced Electronic Solutions has been producing filters and integrated microwave assemblies for space applications for more than 20 years. The company is now combining their latest developments in multi-chip module (MCM) packaging and mmWave technology with their legacy technology to produce new products for emerging LEO and MEO space systems. Built on their legacy of radar and EW marque programs, the company is also developing technology in the areas of mmWave, Flip chip MCM, MMIC (GaN, SiGe, SOI) to support emerging platform capabilities in space, hypersonics and advanced EW.

Cobham Advanced Electronic Solutions' San Diego facility is constantly pushing A&D technology forward with the development of new advanced high frequency products and developing new processes and designs to meet the military's future needs. They are exploring new areas like hypersonics and low-cost space products as they continue to innovate.

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