INTRODUCTION
Aeroflex Plainview, a supplier of standard products and custom microelectronic solutions offers Space and Military qualified assembly and test services meeting the requirements of MIL-PRF-38534 Class H & K. In addition, Aeroflex Plainview has been accredited by the Department of Defense as a Trusted Source, Category 1A supplier for assembly services.

Our MCM packaging technology enables our customers to realize the optimum Size, Weight and Power (SWaP) of their products by applying flip-chip, chip and wire, Chip-on-Board (COB), Surface Mount Technology (SMT) and Planar Magnetics. In many cases, more than one of these technologies are combined in a single module.

From DC to 40GHz, Aeroflex can provide microelectronic packaging and test solutions for high speed digital, precision analog and RF/Microwave devices used in military, space and critical industrial applications.

AEROFLEX Offers:
- One stop solution for your microelectronic assembly, evaluation, test and screening requirements
- MIL-PRF-38534 compliant (Class H & K), ISO-9001 and AS9100 certified
- Customer furnished tooling - Aeroflex is experienced in integrating customer originated designs into a smooth, seamless high quality process.
- Full turnkey and “design to spec” services for hybrid, SMT assemblies and boxes.
- Vertically integrated die to box facility, Class 1,000, Class 10,000 and Class 100,000 manufacturing space.
- High reliability Chip on Board design and manufacturing services
- RF/Microwave manufacturing services for high volume phased array antennas
- Value-added services such as radiation testing and characterization, classified testing and COTS / commercial upscreening
- Aeroflex HiRel products, such as FPGAs and ASICs, are available for vertical integration
- Off Shore assembly available for large volume: Hi-Rel, telecom and military applications

PRODUCTION CAPABILITIES
Aeroflex Plainview can provide a complete solution for your microelectronic assembly, evaluation, test and screening requirements.

- Assembly
  - Wafer saw and electrical probe
  - Assembly and wirebond
    - State-of-the Art gold ball bonding: 90µ pitch available
    - Large Area – 16” x 13” bondable area
    - 1 mil to 2 mil automatic gold ball bonding
    - Gold and aluminium wedge bonding
    - Heavy Aluminium – 4 mil to 20 mil wire
    - Ribbon Bonding – .25 mil x 3 mil to 2 mil x 10 mil
    - Vacuum brazing – Eutectic die and substrate attach
    - GaAs MMIC gold-tin die attach
    - Epoxy die bonding to 7µ placement accuracy
    - Gap welding – beam lead diodes / wire / ribbon
    - Active laser trim of thick and thin film resistors
    - RF / Microwave Tuning
    - Hi-Rel Chip-On-Board assemblies / SMT (See Figure 4/5)
    - Hermetic or epoxy package sealing
    - Plastic packages / flip chips
    - Transformers / coils
    - Internal preseal visual
      MIL-STD-883, Method 2010 or 2017, Cond A or B
    - Hermetic packages available
      - LCC, PGA, QFP, DIP, FP, TO cans, ring frame, Multi-Chip Modules (MCM), SOIC, CCGA, LGA
- Electrical test
  - Wafer level DC parametrics
  - Memory, logic and analog IC testing
  - Wafer probe and package IC testing
  - RF testing to 40GHz
- Burn-In Services
  - Static/Dynamic burn-in
- Environmental test per MIL-STD-883 Test Methods
  - Hermeticity – Method 1014, Cond A1, A2, C3
  - PIND – Method 2020, Cond A, B
  - Centrifuge – Method 2001
  - Temp cycle – Method 1010
  - Mechanical shock and variable vibration – Method 2007
  - Thermal vacuum testing
2MB Secondary Cache: Sync Burst Cache RAM, 4 Each

1,246 Gold wire bonds total

CPU Cycle FIFO: 2 each FPGA’s

Control CPLD

PLL clock driver

64 Bit MIPs µP: RM5271

Configuration serial PROM: FPGA

FIGURE 2 – Highly Integrated 10GHz RF Module – AMPF-128MDA

FIGURE 1 – Microprocessor MCM – ACT-5271SC-F10-M21C

DC control circuitry

Kovar package, seam welded for high reliability

Air wound coil + SMT Inductor forms a Bias Tee enabling a 30KHz low freq. response of 30KHz

4 Conductor layer thick film on Al₂O₃ substrate

Solid vias under RF isolation wall to optimize crosstalk

4 Discrete gain stages

Laser trimmed resistors to facilitate active tuning

Distributed amplifier MMIC to balance load

Co-Planar waveguide thin film substrate with detector

Cache TAG RAM

64 Bit MIPs µP: RM5271
FIGURE 3 – Box Assembly, Li Battery Electronic Unit (BEU)

FIGURE 4 – DC-DC Converter, Plug-and-Play Low-Voltage Power Supply, +28V Input. Output: +5V, +3.3V, +2.5V, 70W – ACT8616
Fact Sheet

- High I/O Count
- Ideal for Mixed Signal Applications
- Hermetic Seal over Die Island
- Suitable to 2 GHz
- Polyimide PWB for High Reliability Applications
- Low Mass allows device to be automatically picked & placed
- Ability to overcome Obsolescence
- MIL-PRF-38534 Qualification

FIGURE 5 – Chip On Board MCM BGA Assembly

Aeroflex Microelectronic Solutions reserves the right to change at any time without notice the specifications, design, function, or form of its products described herein. All parameters must be validated for each customer's application by engineering. No liability is assumed as a result of use of this product. No patent licenses are implied.