RF MICROTECH ELECTRONICS

Product/Hardware Engineering Services & Solutions

COMPLETE SPECTRUM OF SERVICES FOCUSING ON
MANUFACTURABILITY, RIGHT FROM THE CONCEPT DESIGN PHASE

Hardware forms the basic & critical building block of any successfully connected solution. With the rapid proliferation of lower process geometries, companies are moving towards miniature boards which are power-optimized and used in a wide range of applications. Hardware engineering is not limited to board design, providing connectivity, testing & validation, and certification, but also involves integrating the various modules to efficient platforms enabling seamless interoperability of the entire System/Product.

RF Microtech Electronics (RFME) - A proven engineering services partner with right experience and the expertise to deliver end-to-end product development solutions.

RFME has proven expertise in hardware engineering services & solutions including design and development of complex, faster, reliable, and efficient solutions. Our hardware engineering services & solutions range from the conceptualization stage to delivering re-engineered customized solutions.

RFME have a wide range of service portfolio offerings supporting design, prototyping, mass production, product testing and certification under a single roof.

RFME is well versed in designing hardware platforms for different requirements from small factor designs to complex PCB designs, from power optimized designs to ruggedized designs for IoT, Networking, Industrial, Defence and Automotive sector. Our very well defined and practiced design methodology helps in reducing time to market without compromising the performance.

Services Offerings:

RF & Microwave Engineering Services

- Gain/Power budget analysis
- Link budget analysis for various application
- Strong knowledge of PCB layout techniques to mitigate RF limitations and to ensure integrity
- Experience in building: Filters, Attenuators, Signal sources, Preamplifiers, Couplers, Splitters & combiners
- RF devices designed for Airborne & Military applications
- Experience in IoT interfaces (HAN, WAN, PAN, LPWAN types devices)
- RF Design up to 18GHz

Mechanical CAD Engineering Services

- Design of Housing for product & RF equipment
- Design of Racks, ATRs, Jigs & Fixtures, Heat sink, RF shield for Electronic Equipment
- Sheet Metal Design, Milled Box and Extrusion type design as per application requirement
- Support for 3D printing for quick prototype build
- Conversion of legacy paper design to CAD format

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MAKE IN INDIA

Product - Architecture , Design & Quick Prototyping

RF MICROTECH ELECTRONICS

- Digital design (microcontroller/processor/SoC)
- Analog front end designs and driver circuits
- Safety critical designs & intrinsically safe designs for hazardous locations
- RF designs including IoT device interface and connections
- RF devices – Filters, Attenuators, Signal sources, Preamplifiers, Couplers, Splitters & combiners
- Antenna placement of Devices meeting its performance
- High reliability system designs
- Communication protocol hardware design services (wired & wireless)
- Analog /mixed signal/ low power designs
- Signal conditioning for high SNR circuits, special sensor interface
- Modelling and simulations
- MTBF and reliability analysis
- Product testing
- Hardware Verification – Functional testing
- Hardware certification services
- Hardware - Software Integration

Electronics CAD Engineering Services

- Diversified PCB design Skills
- Exposure & Expertise in RF, Analog, Digital & High speeds
- Board Analysis – Signal & Power Integrity, DFM
- Expertise in RF layout meeting compliance
- 2 Layer PCB to Multilayer PCB design
- Design compliance to IPC standards
- Constraint management
- Fabrication and assembly support
- Antenna simulation in HFSS
- RF design & performance verification using HFSS
- Schematics design and netlist generation
- Library creation
- Conversion of legacy paper design to electronic form

RF & Basic Testing & Laboratory Services

- Simulate various radio frequencies to test interference
- Radio frequency test covers technology such as BLE, Wi-Fi, Zigbee, LPWAN, RFID, NFC, GPS, cellular technologies and more…
- RF / IoT devices Pre-compliance test cases as per EN300-220 or EN300-328
- RF Transmitters Test cases: Output Power, Adjacent Channel Leakage Power Ratio, Power Spectral Density, Spectrum Emission Mask, Occupied Channel Bandwidth, Frequency Stability / Error, Radiated Band Edge, Modulation Bandwidth, Transmitter unwanted emissions in the out-of-band or spurious Domain
- RF Receivers Test cases: Sensitivity, Adjacent Channel / Frequency Band Selectivity, Receiver Spurious Emissions, Receiver Intermodulation
- Antenna Impedance matching, Return loss, VSWR & Smith Chart measurements
- S parameters measurements for 1/2/4 port devices
- Semi or Fully Anechoic chamber calibration
- Cable loss, Gain measurement
- Hardware basic functional testing

Equipment's Lists: Spectrum Analyzer (up to 40GHz: 5+ nos.); Network Analyzer (up to 40GHz : 2 nos.); Digital Oscilloscope (200MHz : 5+ nos.); RF cable sets; Signal Generators (up to 40GHz); RF power meters

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