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Extensive and diversified RF and analog engineering experience encompassing requirements, specification, design, testing, qualification, integration and vendor selection at the component, circuit, subsystem module and system level. Demonstrated ability to engage and work with technical and management groups outside of development engineering to solve problems. Experienced at providing engineering support to solve customer, supplier and factory issues. Proficient in the use of RF test and measurement equipment.

PROFESSIONAL EXPERIENCE

Cobra Electronics Corporation, Chicago, IL

Senior Project Engineer: March 2012 – October 2014

- Successfully brought to market new Marine and GMRS radios as Engineering representative on the New Product Development team.
- Created product Detailed Technical Specifications, User Interface Guides and Quality Control Procedures.
- Evaluated engineering samples for electrical, functional and mechanical fit/finish from first engineering sample through factory pilot production.
- Communicated with vendors throughout product development cycle to resolve product performance issues.
- Submitted samples and documentation for regulatory testing (FCC, EU, IC certification) and acted as point of contact between supplier and testing facility.

Northrop Grumman Corporation, Rolling Meadows, IL

Electronics Engineer, T4: October 2005 – January 2012

- Held Top Secret security clearance with DoD
- Requirements generation from system-level documentation.
- Create block diagrams, Interconnect Control Documents, wiring diagrams, schematics and specifications.
- Perform analysis, design tradeoffs, select and test components and evaluate suppliers.
- Conduct design reviews from Requirements to Preliminary Design to Critical Design, documenting reviews using ClearCase/ClearQuest.
- Perform pwb (printed wiring board) fit-checks and work with PWB Layout technology to specify pwb stack-up and layout.
- Create test procedures and test plans and perform assembly testing.
- Track design issues in ClearQuest and track cost, hours and status for management.
- Work with Systems Engineering, Hardware (HW) Integrated Product Team, Mechanical engineering, PWB Layout technology and Operations to implement designs meeting customer requirements while following organization processes and procedures.

Lead HW Electrical Engineer for the following airborne and naval RF electronic warfare (EW) assemblies-

- RF Converter rack SRU (Ship Replaceable Unit), a wideband multi-channel RF to IF assembly incorporating multiple RF converter Integrated Microwave Assemblies (IMAs) and circuit-card assemblies (CCAs).
- BIT/CAL SRU, a wideband RF, phase-matched assembly used to deliver calibration and test signals to an EW receive system.
- Multiple RF Switch assemblies used to amplify, filter and distribute signals at the front-end of a Receiver/Transmitter assembly LRU (Line Replaceable Unit).
- Receiver Distribution SRU (Shop Replaceable Unit) and IMA requirements and specification, a wideband RF assembly used to filter, amplify and distribute signals from multiple antennas to multiple RF converter channels.
- Receiver backplane assemblies, power supply extender CCA and high-speed processor extender CCA.

Additional activities-

- Test high-power broadband RF power amplifier to verify supplier meeting required performance.
- RF HW Integration support for Systems engineering.
- Resolve production issues due to obsolete parts and vendor specification changes for current production products.
- Support of engineering organization by performing CMMI evidence collection, creating design checklists, updating component de-rating guidelines and standard RF pwb stack-up

XINDIUM TECHNOLOGIES, Crystal Lake, IL

RF Design Engineer (full-time employee): May 2005 – October 2005

Independent contracting RF engineer: August 2004 – May 2005

- Assembly of cellular subscriber RF PA modules using 0201 passive components, bare die and chip-scale IC components.
- Performed measurement and test of completed PA modules.
- Trained technicians to perform assembly and wire-bonding tasks.

MOTOROLA, INC., Arlington Heights, IL

Senior Engineer to Principal Staff Engineer, Global Telecommunications Solutions Sector: 1983 - 2003

- Performed early test and evaluation of Base Transceiver System (BTS) product lines for operation with CDMA 1XEV-DV and 1XEV-DO high-speed voice and data digital wireless air interface.
- Analyzed BTS cell site dimensioning, installation and deployment costs, improving understanding of cell site economics for a new BTS product.
- Developed cell site RF spectrum monitoring data collection measurement system, performed cell-site surveys and used data to determine receiver line-up requirements in terms of IM, desense, filtering and dynamic range.
- Measured and analyzed effects of in-band unlicensed user interference for major customer cell site operator, resulting in quantification of impacts on CDMA receiver performance and the resulting degradations in cellular system C/I and coverage.
- Analyzed requirements, wrote specifications and performed testing, qualification and vendor selection of CDMA site BTS/antenna interface frame duplexer filters, triplexers and combiner RF hardware, reducing the number of new cell sites needed to meet customer system deployment requirements.
- Bench tested unlicensed user transmitter performance, improving analysis of interference effects on CDMA receiver performance due to transmitter sideband noise and spurs.
- Worked with a team of technical staff engineers to develop a standard high power RF filter specification and test set, addressing customer concerns on multi-carrier site transmit filtering and combining module performance.
- Specified, sourced, tested components and wrote installation guidelines for multi-BTS GPS RF signal distribution, decreasing the complexity and cost of cell site auxiliary equipment.

Experience prior to 1983:

Senior Engineer, Communications and Electronics Division, Schaumburg, IL

- Power-supply design for RF transceivers and cellular base stations.

TRW, INC., Wheeling, IL

Design Engineer, Electronics and Components Group

- Design of switch-mode power supply for prototype Bell Labs personal computer.

MOTOROLA, INC., Schaumburg, IL

Engineer 1 and Engineer 2, Communications and Electronics Division

- Switch-mode power supply design for communications service monitor.
- IF and crystal filter design for mobile radio products.

EDUCATION

BSEE, Iowa State University, Ames, IA

Introduction to Systems Engineering (Northrop Grumman training)

Introduction to ADS for RF Design (Agilent training)

Matlab Fundamentals and Programming Techniques (MathWorks training class)

IEEE COMSOC Wireless Communications Engineering: Current Practices