

MICHAEL D. FERRARA

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CLEARANCES: SECRET – ACTIVE

SUMMARY:

Entrepreneurial, innovative RF/Microwave Engineer and business owner with 25+yrs experience specializing in RF/MW component, module and/or system design from DC-40+GHz. Expertise with SIGINT, radar, EW, SATCOM, RF over fiber and other similar RF/MW defense systems. Out of the box creativity with innovative open architecture, modular design techniques enabling reduced C-SWAP.

PROFESSIONAL EXPERIENCE:

Patents:

Noble Technologies - 1/2017 – 4/2017

- Initiated patent for RF Design Assist Tool

FARO Technologies - 2/2016 – 12/2016

Co-authored pending patent (P5323-US, FAO0776US) for absolute distance measurement system

Business Development:

Deepwave Digital - 5/2021 – 5/2022

- Perused SBIR topics and other literature looking for new opportunities where an AI SDR platform would be of benefit

API Technologies - 10/2020 – 5/2021

- Prepared a product roadmap for CTO/CEO highlighting miniaturized, QFN-based, RF modules like switched filter banks, frequency converters and other multifunction modules

Electronic Warfare Associates - 5/2017 – 6/2018

- Initiated response to SBIR for a low SWAP-C high power T/R module
- Championed efforts to align future system designs to utilize the OpenVPX Standard

Noble Technologies - 1/2017 – 4/2017

- Authored two SBIR proposals on GaN MMIC-based circulators and Fast Tunable Notch Filters
- Initiated RIF white paper for multi-sensor common processor subsystem utilizing data fusion
- Initiated patent and business development for RF Design Assist Tool
- Assisted with business development efforts leading to expected OSD contract

ACI Technologies - 2013 – 2016

- Secured business from key Navy personnel for development of radar hardware in the loop for rapid response to emerging threats

Mid Atlantic RF Systems - 2011-2013

- Initiated business development efforts via product updates to website and investigation of new areas for product and customer expansion

Cantada - 2010-2011

Co-authored three white papers about phased arrays; high speed digital acquisition for radar receiver and for SIGINT receiver

Leadership:

Honeywell Technology Solutions - 2005-2010

- Entrusted to handle operations during manager absence

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Radar Systems:

Lockheed Martin RMS - 5/2023 – Present

- Innovatively reduced SWAP-C via modularization and advanced packaging for Lockheed Martin's X Band Radar suite

Sovereign RF Systems, LLC - 5/2016 – 5/2023

- Developed weighted beamformer module to cover C to Ku Band

Electronic Warfare Associates - 5/2017 – 6/2018

- Led all efforts for the RF and mmW designs of a radar test simulator system termed RATES

ACI Technologies - 2013-2016

- Recognized by managers as a subject matter expert in radar RF system and module design
- Co-developed GaN based high pulsed power transmitter for AN/SPS-76
- Called upon by management to troubleshoot and complete a high voltage solid state switch assembly prototype using SiC FETs for AN/SPY-1 radar

Mid Atlantic RF Systems - 2011 – 2013

- Championed system to circuit derivation of requirements to improve a 0.5-18GHz, 500MHz IBW, radar warning receiver; co-designed modules; interfaced with software consultant; led testing, tuning and troubleshooting to insure timely delivery of systems

Northrop Grumman - 1998 – 2002

- Selected as lead engineer for modernization of IF portion of MODAR Upconverter

Software Defined Radio:

Deepwave Digital - 5/2021 – 5/2022

- Recognized as SME for mixed signal and analog RF design for AI based SDR platform
- Maintained production flow of RF Rx front end modules

Sovereign RF Systems, LLC - 5/2016 – 5/2023

- Successfully produced a space constrained 2 channel SDR front end covering 30-6000MHz utilizing double-sided, multilayer PCB design and SMT devices

Cantada - 2010 – 2011

- Improved RF design on miniature UHF transceiver PCB

RF Over Fiber:

Faro Technologies - 2/2016 – 12/2016

- Recognized as SME RF/Analog Engineer for RF over fiber absolute distance measurement equipment
- Reduced noise and improved errors in analog electronics for opto-electronic systems

Honeywell Technology Solutions - 2005 – 2010

- Recognized as SME for research/use of RF over fiber links up to 18GHz

SIGINT (DF) Systems:

Honeywell Technology Solutions - 2005 – 2010

- Owned multiple, mostly quick react, RF/microwave subsystems
- Successfully implemented and fielded the following:
 - o Two channel crossover
 - o Multicouplers up to 18GHz

Applied Signal and Image Technology - 2003 – 2005

- Selected as lead electrical engineer for UAV based direction finding modules from 0.5 to 3000MHz
- Resolved key integration issues in system design and post design support with customer
- Finalized an incomplete analog beamformer design

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Phase Locked Oscillator (PLO), Synthesizers and Frequency Conversion:

Sovereign RF Systems, LLC - 5/2016 – 5/2023

- Approached by solid performing industry player to take over customer and their present project after choice was made to move away from that customer's industry. Project is repair of Ku Band upconverter with high power output for wireless video applications
- Developed a small form factor Ku Band up/downconverter for military and commercial SATCOM
- Produced L Band BIT synthesizer for SATCOM product with production that started in March 2020
- Produced several PLO's ranging in frequencies from 840MHz to 13.6GHz with attention to low phase noise design per customer requirements

Cantada - 2010 – 2011

- Led design on a L Band SATCOM multiplexer

Honeywell Technology Solutions - 2005 – 2010

- Successfully implemented and fielded frequency converters up to 60GHz
- Selected by customer to investigate feasibility and begin design of advanced synthesizer from 2-40GHz

Amplifier Design and Test:

Sovereign RF Systems, LLC - 5/2016 – 5/2023

- Produced low phase noise amplifier designs up to 2GHz for internal use and in response to a customer request

API Technologies - 10/2020 – 5/2021

- Simulated for product development a 1W PA from 6-12GHz for low phase noise applications utilizing GaAs MESFETs and thin film design techniques

Northrop Grumman - 1998 – 2002

- Performed successful Amplitude Modulation (AM) noise tests on low noise amplifiers (LNAs)

Filters:

Sovereign RF Systems, LLC - 5/2016-5/2023

- Executed failure analysis of three, four channel, amplified, switched filter bank modules covering frequencies of 2-18GHz using a mixture of SMT and bare die assembly

Honeywell Technology Solutions - 2005 – 2010

- Successfully implemented and fielded lumped element and distributed filters up to 18GHz

High Power/High Voltage RF/Analog Electronics

ITT Industries - 2002 – 2003

- Met key delivery dates as a test engineer for high power transmitter systems
- Assured design correctness by performing quality control of various communication systems up to 4.5GHz.

Analog Electronics:

Mid Atlantic RF Systems - 2011 - 2013

- Led all efforts in the design of a multi-channel, multi-output video distribution unit

Sovereign RF Systems, LLC - 5/2016 – 5/2023

- Productized a Negative Impedance Converter circuit based off theory presented by Dr. Alfred Grayzel

Antennas:

Applied Signal and Image Technology - 2003 – 2005

- Selected to perform research and design of antenna matching/couplers up to 2GHz
- Selected to perform feasibility study of high power VHF antenna tuner

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Software:

Northrop Grumman - 1998 – 2003

- Developed successful control software for the 4 – channel demonstration of the Discoverer II space – based radar in MATLAB and C

EDUCATION:

Bachelor of Science in Electrical Engineering from Drexel University 1998

Related Training/Short Courses:

MIT Phased Array Radar; Antenna Engineering – PE GA Tech; Introduction to RF/Microwave Design Using ADS; Introduction to Mentor Design Architect; DxDesigner Training Mentor Graphics; Introduction to MS Project; MATLAB for Engineers

COMPUTER SKILLS:

CAD Tools: Keysight Genesys, ADS; Cadence-AWR Microwave Office; Cadence-AWR Visual System Simulator; SPICE; Cadence OrCAD PCB Editor; Altium; Cadsoft Eagle, MS Visio,

Administrative Tools: MS Office; MS Project; QuickBooks; Turbo Project; Google-based apps

SOCIETIES AND ACTIVITIES:

Member, Institute of Electrical and Electronics Engineers (IEEE)

Member, Microwave Theory and Techniques (MTT) Society of IEEE

Member Association of Old Crows