Since 2016 Sovereign RF Systems, LLC (SRFS) has been providing consulting services and product design of reduced C-SWAP RF/MW and mixed-signal components, modules and subsystems from DC-40GHz. SRFS is wholly owned and operated by Mr. Michael Ferrara of Garnet Valley, PA, a BSEE graduate of Drexel University with 20 years experience in the defense industry. Mr. Ferrara has worked on systems ranging from radars, direction finding front ends, electronic warfare, SATCOM ground systems, hardware-in-the-loop (HIL) systems and their associated electronics.

**SRFS Capabilities:**

**Requirements flow down critical for successful, reduced C-SWAP systems**
The right balance of gain, noise figure, linearity, spurious products, power consumption, modularity, and cost are required for advanced RF/MW systems with reduced C-SWAP.

**Simulation and modeling key to producing successful first run designs**
SRFS accomplishes this using Keysight’s Genesys powered by Modelithics’ COMPLETE library within the linear simulator and Momentum GXF, planar 3D EM simulator.

**Accurate and controlled design documentation minimizes production issues**
SRFS utilizes Cadence OrCAD products to realize product design. Folder structures, part numbering and revision control insure that design documentation is accurate and up to date. In addition, SRFS backs up its information on an external system on a regular basis.

**Product Realization – Network of resources provide timely services**
SRFS has a network of resources that adds value to its products/services. SRFS maintains resources for mechanical drafting, software, PCB and mechanical fabrication, and PCB/module assembly. SRFS can take your custom product requirement from concept to production.

**Testing**
SRFS products come with full detailed test reports. If it is specified, it is tested and reported.

**Previous work**
- Analog front-end for electrical impedance spectroscopy
- Phase locked oscillators various fixed frequencies from 840MHz to 13.6GHz
- L Band synthesizer
- Specification development Direction Finding front end up to 6GHz

**Under development**
- Printed bandpass filter at 16.3GHz
- Gain equalizer for 100ft LMR240UF cable at L Band
- Ultra-low phase noise 10MHz reference module

SRFS was created with two purposes: Glorify God by utilizing the skills and talents given to provide the industry with quality RF/MW design and services that not only meets but exceeds customer needs. Second, to be a blessing to the Greater Philadelphia area by providing employment opportunities to those who have had personal struggles yet have skills useful to the industry, to provide cooperative education employment to train up the next generation of RF/MW Engineers, and finally to educate high school students in the challenges and rewards of a STEM career.

*Work heartily as unto the Lord – Colossians 3:23*