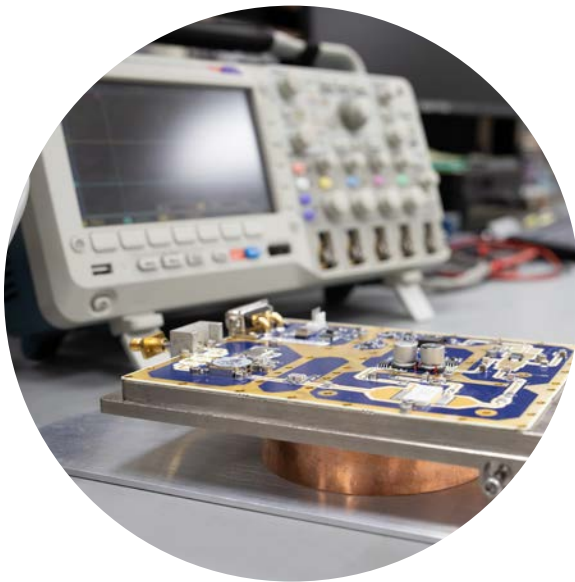




# We know design.

Proven expertise for tough challenges  
from start to finish.



## Your RF partner.

Because we know design, NextGen RF has become the chosen partner for companies worldwide who require a high level of design expertise and responsiveness for their product development. We understand the difficulties of developing RF products and have a proven track record of helping clients efficiently meet their design objectives and requirements. We focus on process-oriented engineering from discovery and idea generation, definition of product requirements and specifications to design, verification and ultimately factory introduction.

NextGen RF's engineering and project management teams have the knowledge, experience and technical acumen to provide successful solutions for the multiple facets and challenges of new or existing product design. Our lab is equipped with state-of-the-art design/testing equipment and is paired with a premier manufacturing center that offers clients immediate access and support for high mix, low to medium volume production of RF engineered intensive products.





## DESIGN

RF/WIRELESS  
ANTENNAS  
EMBEDDED DESIGN  
DIGITAL & ANALOG  
PCB DESIGN  
TEST FIXTURES & ATS

## SERVICES

PRODUCT DESIGN REQUIREMENTS  
PROJECT MANAGEMENT  
DESIGN CREATION  
VERIFICATION & VALIDATION  
INDEPENDENT DESIGN REVIEW  
CERTIFICATION MANAGEMENT  
MANUFACTURING

## WHY CHOOSE NEXTGEN?

1

Comprehensive Design Process

2

Proven Experience and Expertise from Design to Production

3

The Right Tools and Scalable Knowledge

4

Responsive and Open Communication



## RF/WIRELESS

- Discrete Design, Chip Down or Module/Modem
- High Power Amplifiers & Linearization
- Narrowband, High Performance or Wideband, High Data Rate Designs
- RF Range Optimization

## EMBEDDED DESIGN

- Software Defined Radio
- Embedded Control Systems Using Microcontrollers/ Microprocessors, FPGAs, SoCs
- RTOS & Baseband Stack Development
- Custom Modulation Schemes

## ANTENNAS

- Design Simulation (CST)
- Custom PCB Antenna Designs – Monopole, Dipole, Patch, Inverted F
- MIMO & Diversity System Design
- 3-Axis Pattern Measurement
- Matching and Optimization
- Pattern Steering

## DIGITAL & ANALOG

- Communications Interfaces – SPI, I2C, UART, Ethernet, USB and Parallel Address/Data Busses
- Power Supply Designs and Charging Systems
- ADC/DAC
- High Speed Memory
- Voltage & Waveform Generation
- Motor Control Circuit Design

## PCB DESIGN

- Specialists for RF Design Layouts, RF Grounding and Shielding
- High Speed Digital, High Power, EMI/EMC Expertise
- 3D Modeling of PCBs and Components
- Altium, Mentor Graphics, OrCAD, Solidworks

## TEST FIXTURES & ATS

- Specialized in RF/Wireless Functional Test Fixtures
- Single-Up & Multi-Up Designs
- Custom Bed-of-Nails and RF Interfaces
- Automated Test Systems
- LabVIEW Certified Programmers





## PRODUCT DESIGN REQUIREMENTS

- Define Market Expectations
- Develop Product Requirements
- Create Detailed Design Specifications

## PROJECT MANAGEMENT

- Earned Value Management
- Detailed Project Reporting
- Track Schedule and Budget vs. Plan Baseline
- Detailed Time Tracking and Resource Management
- Milestone Driven Project Management

## DESIGN CREATION

- Proven, Process Driven Design
- Cross-Team Design Reviews at Critical Checkpoints
- BOM Analysis & Parts Procurement
- Quick Turn Prototype Fabrication and Assembly

## VERIFICATION & VALIDATION

- Detailed Design Verification Test Plan
- Traceability to Design Specifications
- Electrical, Mechanical, Embedded, Environmental
- Wide Variety of Test Equipment, RF and Environment Chambers

## INDEPENDENT DESIGN REVIEW

- CRF, Embedded, Antennae, PCB Design, Digital/Analog
- FCC, IC, ETSI, UL, NEC, IEC, IEC-60601
- Design for Test (DFT), Design for Manufacturing (DFM)
- Hazard Analysis
- Failure Analysis

## RF CERTIFICATION MANAGEMENT

- Identification of Required Certification Tests
- Develop Certification Test Plan
- Pre-Scan and EMC/EMI Testing Support
- Certification Testing Support



## MEDICAL

NextGen RF has extensive experience supporting design for medical electronics. Our work has ranged from PCB layout to design and development of implantable NFC sensors and related transceivers. We have supported characterization and miniaturization of antennas as well as power amplifiers for deep ultrasonic therapy and RF tissue ablation. Our experience with RF and microwave transmitters, receivers, modulation and antennas, along with our familiarity with the medical equipment industry allows us to support your project as an integral member of your design team.



## INDUSTRIAL

Wireless solutions for industrial applications are almost limitless. NextGen RF has participated in myriad projects including MESH network radio design, SCADA and telemetry radios, FPGA and SoC interface electronics, RF power amplifier design, development of production line test fixtures and ATE sets, electronic enclosures and more. Our expertise allows us to assist in the design of individual hardware elements up to systems integration including the firmware/software necessary to interface with other equipment in the overall system.

## PUBLIC SAFETY

NextGen RF is a leader in providing radio solutions for public safety applications. Our experience includes designs for high power, high linearity APCO P25 P1 & P2 base station transceivers; APCO P25 software defined radios (SDRs), Power amplifier designs featuring high linearity Cartesian feedback used in positive train control (PTC) systems, to public safety hand held radios used by first responders and radio designs as part of a school messaging alert system used in the event of emergency lock-downs. NextGen RF is a proven partner and our designs work to accommodate any environment within public safety field.



## TEST EQUIPMENT & INSTRUMENTATION

Test equipment and instrumentation can pose unique design challenges. In order to be used as calibration or measurement "standards", these applications require significantly higher levels of precision, accuracy and repeatability than the products they will be used to test. NextGen RF has designed a variety of test equipment, test fixtures and calibration standards for clients to meet these demanding requirements.

## MILITARY

Military and government agencies have been at the forefront in the use of wireless solutions since the early days of radio. NextGen RF has supported development of software defined radio front ends, MESH radio transceivers, antenna design and implementation and highly linear RF power amplifiers.







## IoT (INTERNET OF THINGS)

Internet of Things (IoT)—wireless technology enabling the connection of all variety of sensors, connected through the backbone of the internet, able to communicate interrelated data to create powerful new applications. That's what IoT is. NextGen RF's breadth of experience in wireless allows us to recommend specific solutions to knit together and connect the devices of IoT—enabling your next generation of products—providing compelling solutions that can lessen installation costs or provide capability that only a wireless link can deliver.



## TRANSPORTATION & TELEMATICS

Telematics—the technology backbone for the connected car is constantly expanding, extending our “always on” lives into our vehicles. We have supported design and development of asset tracking equipment including M2M solutions integrating VHF/UHF, cellular, satellite and GPS radio elements, RF electronics integrated with automotive diagnostic and service test sets and multi-band antenna electronics for infotainment. Our broad range of design and service capabilities have allowed us to support various clients' telematics applications, delivering successful solutions that have married solid technical performance and aesthetics with the tough challenge of low cost, ruggedness and reliability.



## AGRICULTURAL

As agriculture becomes more high tech and sophisticated, the technologies employing RF/Wireless technology are expanding rapidly. NextGen RF is providing valuable technology solutions to help clients in their effort to increase yields, profits and improve safety. Our experience includes developing radios, antennas and systems for farming and ranching applications such as controlling agricultural pivot line systems, sensor systems for gathering data metrics to guide farmers decisions for crop irrigation, when and how much fertilizer or pesticides to apply, RFID based ear tag monitoring systems for livestock health, feeding and medications tracking and radio designs in support of RF ablation treatment for poultry. Whether the technology is Wi-Fi, BLE, LoRa, Cellular, GPS or something else, you can rely on NextGen RF to help you with your design challenge.

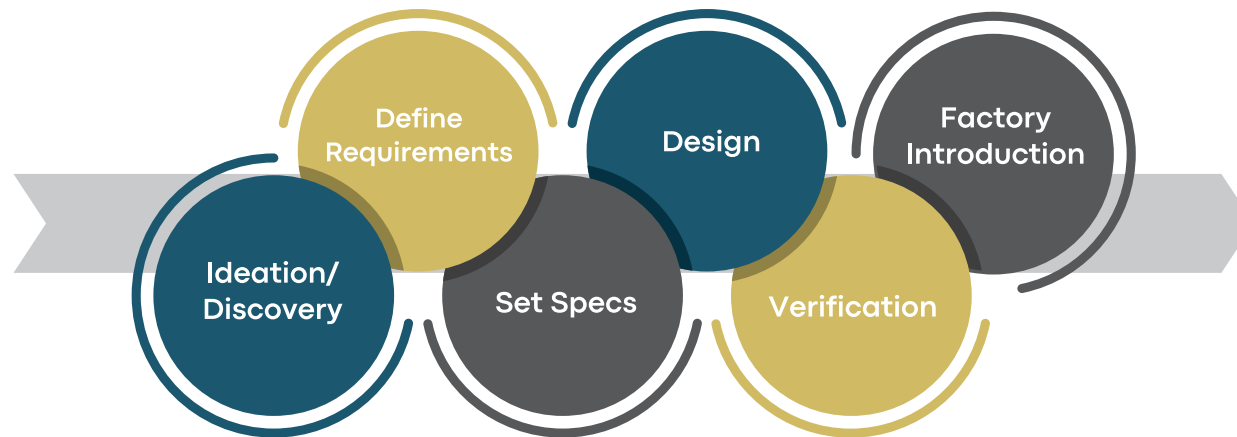


## CONSUMER

Gadgets, tools and toys. Wireless has forever shaped the way we work, play and interact with our environment. NextGen RF has helped clients successfully implement wireless functionality in numerous products providing fundamental radio designs, telemetry solutions, antenna design and optimization and development and optimization of non-line of sight radios. We can also assist in the pre-certification and licensing process.



## HOW WE WORK



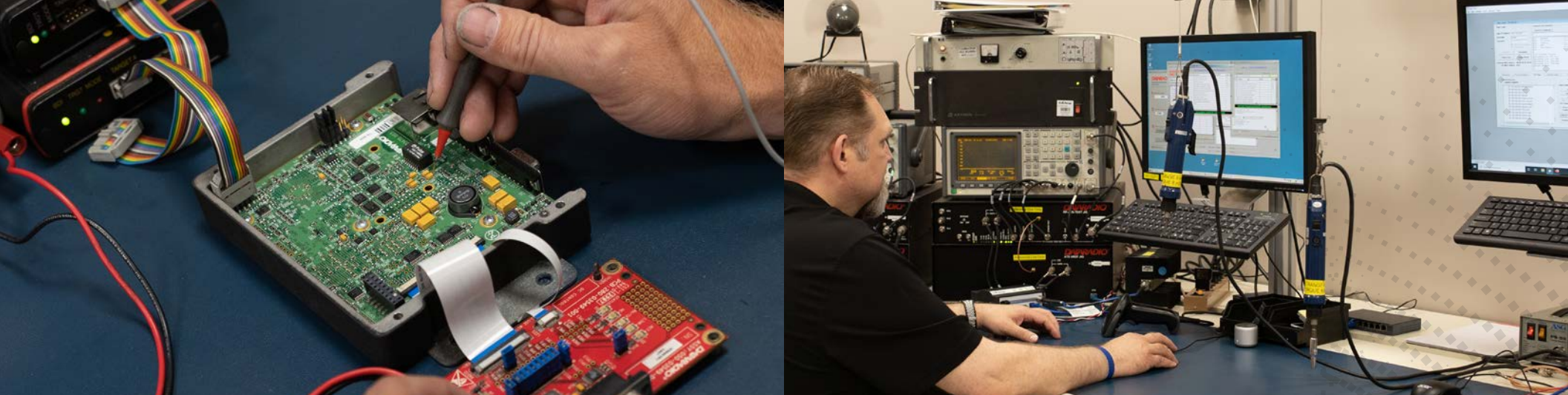
## RESULT: MINIMIZE RISK—MAXIMIZE EFFICIENCY

Successful outcomes are the rule based on NexGen RF's proven design process and project management tools. This comprehensive design process captures, tracks and executes on all key requirements necessary from project initiation through completion of the design. The result is minimized risk and improved efficiency.

At NextGen RF, we make a commitment to being responsive and keeping an open channel of communication with our clients throughout all phases of design ensuring each project's success and long-term relationships.

## DESIGN PARTNERS

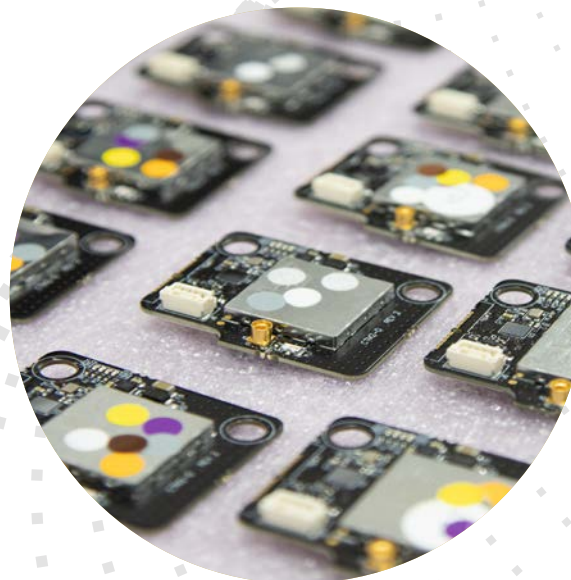




## ○ Our Manufacturing Facility

NextGen RF's premier manufacturing center offers clients the opportunity to produce high mix, low to medium volume products in a timely, cost effective manner without sacrificing quality and reliability. As a full service provider, we help clients from concept and prototype through finished product. Our team is experienced and can appropriately provide design solutions customized to scale to your volumes.

- Specialized in RF/Wireless Products
- Troubleshooting and Issues Resolution for RF/Wireless
- Test Fixture Design, Build and Maintenance
- Sustainment Engineering





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