

SCALING WITH OUR CUSTOMERS

YOUR VISION. OUR CAPABILITIES.
ENDLESS POSSIBILITIES



VOLUME & BEYOND

SCALE.
SUCCEED.



NPI
PLAN.
QUALIFY.



PROTOTYPE

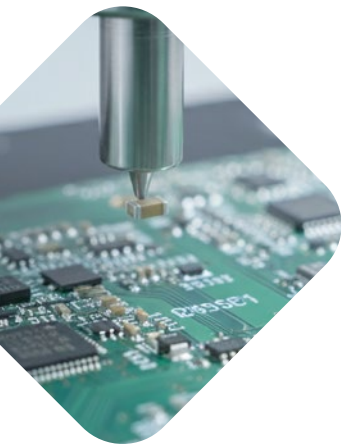
VALIDATE.
REFINE.



CONCEPT

COLLABORATE.
INNOVATE.



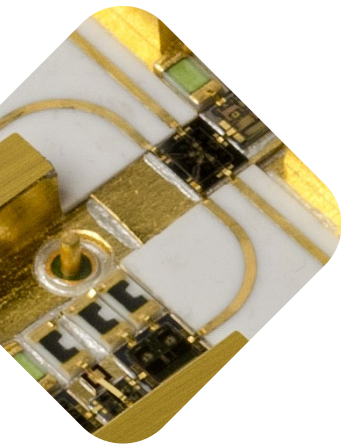


SMT ASSEMBLY

PRECISION. PERFORMANCE. RELIABILITY.

Naprotek delivers advanced Surface Mount Technology (SMT) assembly solutions for high-reliability and mission-critical applications. From prototype through full-rate production, our processes are engineered for precision, repeatability, and scalability.

- **High-density SMT with fine-pitch components (down to 0.35 mm and below)**
- **Ultra-miniature placement capability (01005 and smaller)**
- **BGA, QFN, LGA and microelectronics integration**
- **Rigid, flex, and rigid-flex PCB assembly**
- **Lead-free and tin-lead process support**
- **AOI, X-ray, and functional testing**
- **Selective solder, wave solder and mixed-technology assembly**



RF/MICROWAVE ASSEMBLY

HIGH-FREQUENCY PERFORMANCE.

Combining Naprotek's microelectronics manufacturing expertise with SemiGen's RF and microwave specialization, we deliver fully integrated RF solutions from wafer to system-level assembly.

- **RF and microwave module assembly and integration**
- **Complex RF builds including MCM and SIP**
- **Die attach (epoxy and eutectic) and precision component placement**
- **Gold & aluminum wire bonding (wedge, ball, ribbon)**
- **Thin film circuit integration and packaging**
- **Hermetic sealing, encapsulation, and environmental protection**
- **RF test, tuning, and validation**

WHY NAPROTEK + SEMIGEN

Capabilities

- Seamless NPI to volume production
- DFM & process optimization
- Integrated supply chain
- Built for aerospace, defense, medical and high-performance markets

Integrated Technologies

- Custom RF passive components
- High-performance diode solutions
- Thin film foundry services & ion beam milling
- Rapid customization for frequency-specific applications

End-to-End Advantage

- In-house design, fabrication and assembly
- Reduced supply chain risk and lead times
- Optimized performance for high-frequency, high-reliability environments

MARKET SEGMENTS

ADVANCED SOLUTIONS. MISSION CRITICAL IMPACT.



SPACE

Enabling space exploration and satellite systems with high-reliability components and rigorous process control.



DoW

Delivering trusted electronic solutions for defense systems and mission-critical applications across all domains.



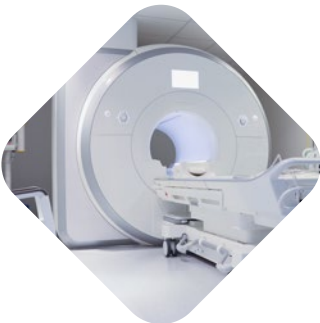
SDA

Powering modern communications and sensing systems through innovative RF, microwave, and high-frequency solutions.



SEMICAP

Supporting leading semiconductor capital equipment OEMs with precision electronic assemblies and advanced microelectronics.

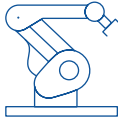
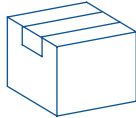


MEDICAL

Building reliable electronics for life-saving medical devices and advanced diagnostic systems.

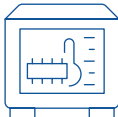
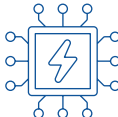
CAPABILITIES OVERVIEW

FROM COMPONENT TO SYSTEM—COMPLETE END-TO-END SOLUTIONS

 Design & NPI • DFM Support • Prototyping • Process Development • NPI & Ramp Programs	 Assembly • SMT, BGA, Flip-Chip • Thru-Hole, Press-Fit • RF/Microwave Assembly • Box Build & Integration	 Test & Inspection • Functional Test • RF Performance Test • AOI/AXI/ICT/FPT	 Qualification & Reliability • Environmental Test • Burn-in/Life Test • Screening • Failure Analysis	 Delivery • Global Logistics • Consignment Options • Full Traceability • On-Time Delivery
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TEST CAPABILITIES

PRECISION MEASUREMENT. RELIABLE PERFORMANCE

 RF & Microwave Testing • Insertion Loss • VSWR • Gain • Noise Figure • Isolation • Custom	 Functional Testing • ICT (In-Circuit Test) • Boundary Scan (JTAG) • Flying Probe Test • Automated Functional Test	 Environmental Testing • Thermal Cycling • Temperature/Humidity • Shock & Vibration • Burn-in/Life Test • HALT/HASS (As Required)	 X-Ray Inspection • 2D/2.5D/3D AXI • µCT Scanning • Solder Voids • Head-in-Pillow • Failure Analysis	 Electrical Safety & Conformance • Dielectric Withstand (Hipot) • Insulation Resistance • Continuity • Ground Bond • IPC & Customer Specs
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KEY EQUIPMENT HIGHLIGHTS

AOI • 3DAOI Systems • High Resolution Inspection • Fine Pitch Capability • IPC-Compliant Verification	Flying Probe • In-Circuit Test Without Fixtures • High Test Coverage • Fast NPI & Low-volume Testing	3D AXI • 2D/2.5D/3D X-Ray Inspection • Void & Head-in-Pillow Analysis • µCT & Failure Analysis • Full Traceability
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HI-REL SCREENING & QUALIFICATION

• MIL-PRF-38534, MIL-PRF-38535, MIL-PRF-19500 • MIL-STD-883, MIL-STD-750 • Screening Levels: Class H, K, S-Level • 100% Conformance Inspection • TX, TXV, S-Level Subgroup Testing
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CERTIFICATIONS

AS9100: 2016 Rev D

ISO9001:2015

ISO 13485:2016

CMMC Level 2

NIST 800-171



MIL/AERO REGISTRATIONS

ITAR

International Traffic in Arms Regulations

SAM

System for Award Management

OASIS

Online Aerospace Supplier Info System

GIDEP

Government Industry Data Exchange Program



INDUSTRY STANDARDS

• IPC-A-600

• IPC-A-610

• IPC-WHMA-A-620

• J-STD-001 (Including Space Addendum)

• ANSI/ESD S20.20

• MIL-STD-750, MIL-STD-883, MIL-STD-1688C

• MIL-PRF-38534, MIL-PRF-38535, MIL-PRF-19500

NAPROTEK + SEMIGEN

ONE PARTNER. ENDLESS POSSIBILITIES



NAPROTEK™

San Jose, California

Naprotek is a trusted provider of advanced microelectronics design, assembly and SMT services for high-reliability applications.

- **55,000 Sq. ft.**
- **7 SMT Lines**
- **Class 10K Clean Room**
- **AOI, FP, SPI, X-Ray, ICT**
- **Box Build**
- **QMS**
- **ITAR**
- **CMMC Level 2**



Londonderry, New Hampshire

SemiGen brings deep expertise in RF and microwave technologies and semiconductor products. Our in-house capabilities span RF/microwave assembly, NPI, testing, and foundry services.

- **43,000 Sq. ft.**
- **4 MicroE Cells**
- **Class 10K Clean Room (15k sq. ft.)**
- **XRF, X-Ray, Inspection**
- **RF Products**
- **Foundry**
- **QMS**
- **ITAR**
- **CMMC Level 2**

STRONGER TOGETHER

As one integrated company, Naprotek and SemiGen combine complementary expertise, advanced technologies, and a shared commitment to quality and customer success. We provide a seamless, vertically integrated solution that accelerates innovation and delivers confidence at every stage.



**End to End
Capabilities**



**Advanced RF &
Semiconductor
Expertise**



**Engineered for
Quality, Reliability
& Performance**



**A True Extension
of Your Team**

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