Ultrasonics Applications
Engineering & Custom Transducers
Conventional & Phased-array
Ultrasonic Transducers & Accessories

In-situ tooling, fixtures and integrated UT solutions for composite materials, rotating equipment, heat exchangers, pressure vessels and piping welds.
Sensor Networks uses industry-preferred design and simulation tools to create an optimized mechanical, electrical and ultrasonic model of the inspection task, including its scan plan.

Successful Ultrasonic Applications Engineering

is the result of 3 major elements:

- Experience
- Capabilities
- Process

Our experienced team of engineers, technicians, assemblers and general management has an extremely deep level of knowledge and background in solving unusual, demanding and complicated NDT projects with an average and aggregate of 20 and 250 years, respectively, of experience. Industries served over this time include aerospace engines and airframes, nuclear vessels and heat exchangers, large gas turbines and others.

For NDI problems, SNI has UT Level II & III-qualified Engineers capable of assisting clients with the tools, techniques and training for demanding inspection applications.

In-house machine shop capabilities, including Mr. Lee Wagner’s 25-plus years’ NDT experience, allow faster prototyping and turn-around times.

Our Process:

1. application request
2. extensive consultation
3. special probe request
4. design prototype
5. modify prototype
6. test prototype
7. finalize design
8. produce solution
9. document solution
10. subject geometry
11. customer issue
12. import or model test
13. concept development
14. build prototype

SNI’s deep domain expertise enhances NDT solutions through the selection, design and optimization of the ultrasonic technique. The transducer’s efficiency is paramount for converting electrical energy into sound, then coupling and directing that acoustic energy into the test piece to maximize its signal-to-noise ratio.

Who We Are: Sensor Networks is a Pennsylvania-based technology company specializing in the design and fabrication of industrial ultrasonic transducers and tooling for demanding in-situ test and inspection applications. Engineered for precision, ease-of-use and maximum durability, our offering includes ultrasonic transducers, fixtures, couplant-delivery systems, qualification/calibration standards, procedure development, personnel training and instrumentation.

SolidWorks: Parametric 3D CAD and Mechanical Properties Modeling
AutoCad: 2D CAD and Ray-Tracing
CIVA: Acoustic Beam Modeling and Delay Law Calculation for Conventional and Phased Arrays
PiezoCad: Transducer Construction & Performance Modeling
Field II: Transducer Construction & Performance Modeling
UltraVision 3D: NDT Data Imaging and Analysis Software for Conventional and Phased Arrays
ES Beam Tool: Ultrasonic Inspection Plan Design and Validation Software.
Optimized Solutions for Cost-effective Productivity

In-situ: self-aligning wand transducers for hard-to-access rotating equipment

O.D. Transducers: for tubing weld or braze joints

Phased-array: linear & matrix • annular, daisy & circular • contact & immersion • single & dual • flat & curved

ASME Section XI: compound-radius wedges • refracted longitudinal • phased-array duals • contact or immersion • TOFD • complex wedges & delays

Small-diameter (< 0.25”/6 mm)

ID Bore Probes: shear-wave, L-wave, duals and tandem types

7 MHz Ultra-high-temp Delay-line: transducer and mounting clamp for continuous 500°C (932°F)

SensorScan™ QS: conventional transducers for quick swapping onto delay lines or wedges

2 MHz PAUT Dual: with 2×16 elements per probe and detachable wedge

Sensor Networks offers transducer solutions in a variety of styles, compatible with any major manufacturer’s conventional or phased-array instruments.

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