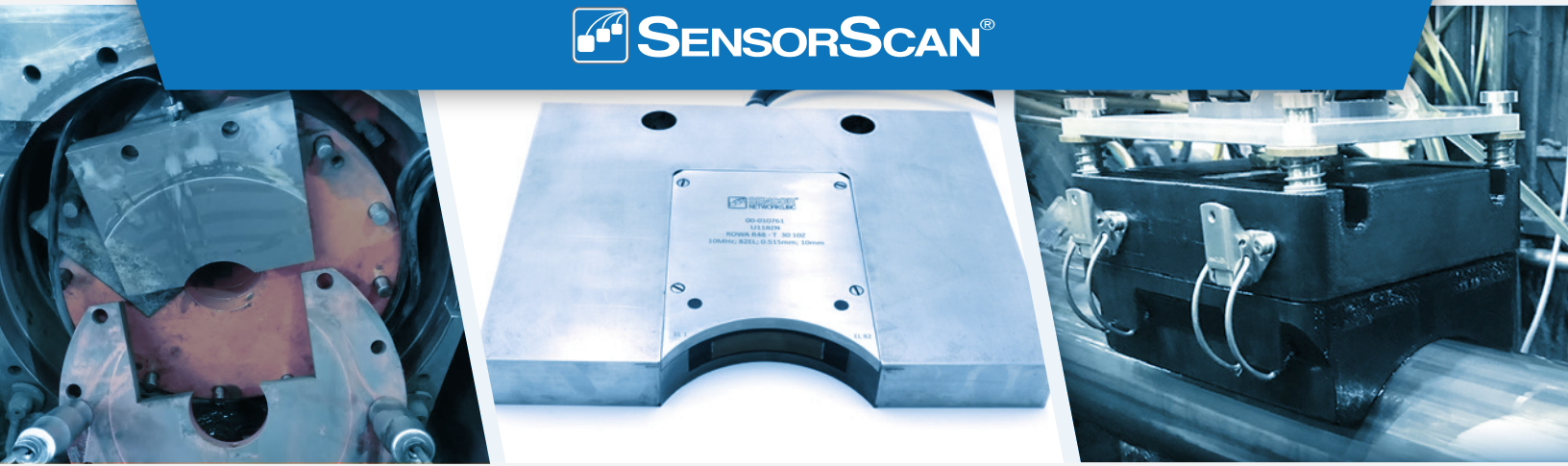


Ultrasonic Testing Machine Transducers, Arrays & Capabilities



Sensor Networks, Inc is a Pennsylvania-based technology company specializing in the design and fabrication of industrial ultrasonic transducers and tooling for demanding in-line test and inspection applications. Our offerings include conventional single-element and phased-array transducers used in industrial, factory floor settings for testing machine applications including:

- **Tube and Bar** - including SAW Spiral, Longitudinal, ERW, Full Body Seamless and Girth Weld
- **ROWA & Tanks**
- **Plate**
- **Rail/Wheel**
- **Composite Material**



Inspection, Testing & Asset-Integrity Solutions

Testing Machine Transducer Specifications

Ultrasonic testing machines are offered by many Original Equipment Manufacturers (OEMs) to cover a wide variety of inspection applications including tube and bar, plate, rail wheel and composites testing. This in turn requires transducers with a wide variety of physical and performance specifications. Sensor Networks specializes in offering OEM-equivalent testing machine transducers, including new make and repair of existing transducers. Whether a one-for-one replacement or system upgrade, SNI can help.

Common Specifications Met

- Type: Linear, Curved Linear, Matrix, Dual Matrix, Internal Wedge, Bi-Curved, Annular, Segmented Annular, Daisy
- Frequency: 0.5MHz - 10MHz
- 1-256+ Number of Elements
- Pitch & Elevation
- Cable Length up to 50 meters
- Cable Jacket: PU, PVC, Protective options: Tygon Tube, metal jacket, plastic conduit
- Connector: IPEX, ZPAC, Hypertronics, ITT CANNON, 78 Dsub, Glenair, and more.
- Standard and Custom Cases
- Immersion, Contact, Bubbler, Wedge Mount

Vertically Integrated, In-House Capabilities

CIVA Modeling

- Acoustic beam modeling and delay-law calculation for conventional and phased arrays

SolidWorks to CAM & 5-Axis CNC

- Parametric 3D CAD
- Mechanical properties modeling

Machine Shop

- CAD/CAM
- 5-Axis CNC mill, CNC lathe

Application Development

- Acoustics, fixturing, instrument set-up
- Rapid prototyping

Ceramic Shop

- Proprietary composite design
- Dicing saw, backgrinder

Support

- Decades of experience in UT and test machine technical support
- Documentation and certifications

In-house design-build means faster turn-around times



Tube & Bar

Common Arrays Used Curved Linear, Linear, Matrix, Dual Matrix



7MHz | 128 element | Curved Linear
0.75mm Pitch | 12mm Elevation



10MHz | 82 element | Curved Linear
0.515mm Pitch | 10mm Elevation



2.25MHz | 168 element
Linear Array
0.75mm Pitch | 12mm Elevation



5MHz | 92 element
Curved Linear
0.6mm Pitch | 12mm Elevation



4MHz | 128 element
Curved Linear
0.49mm Pitch | 11mm Elevation



Composite

Common Arrays Used

Curved Linear
Matrix
Dual Matrix



Annular Dual Frequency
Outer - 1MHz 25.4mm \varnothing x12.5mm \varnothing
Center - 5MHz 9.5mm \varnothing



3.5MHz | 64 element
Linear Array | 0.787mm Pitch
6.35mm Elevation



5MHz | 64 element | Linear
Hardwater
1.27mm Pitch | 8mm Elevation

Plate

Common Arrays Used

Linear
Matrix
Multi-Single Element
Paintbrush



10MHz | Single Element | Paintbrush
Cylindrical Focus



4MHz | 1 Transmit (52.3mm)
4 Receive (13.3mm)

Rail/Wheel

Common Arrays Used

Linear
Matrix
Dual Matrix



5MHz | 128 element | Linear Array
0.73mm Pitch | 10mm Elevation



3.5MHz | 64 element | Linear Array
1mm Pitch | 7mm Elevation



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