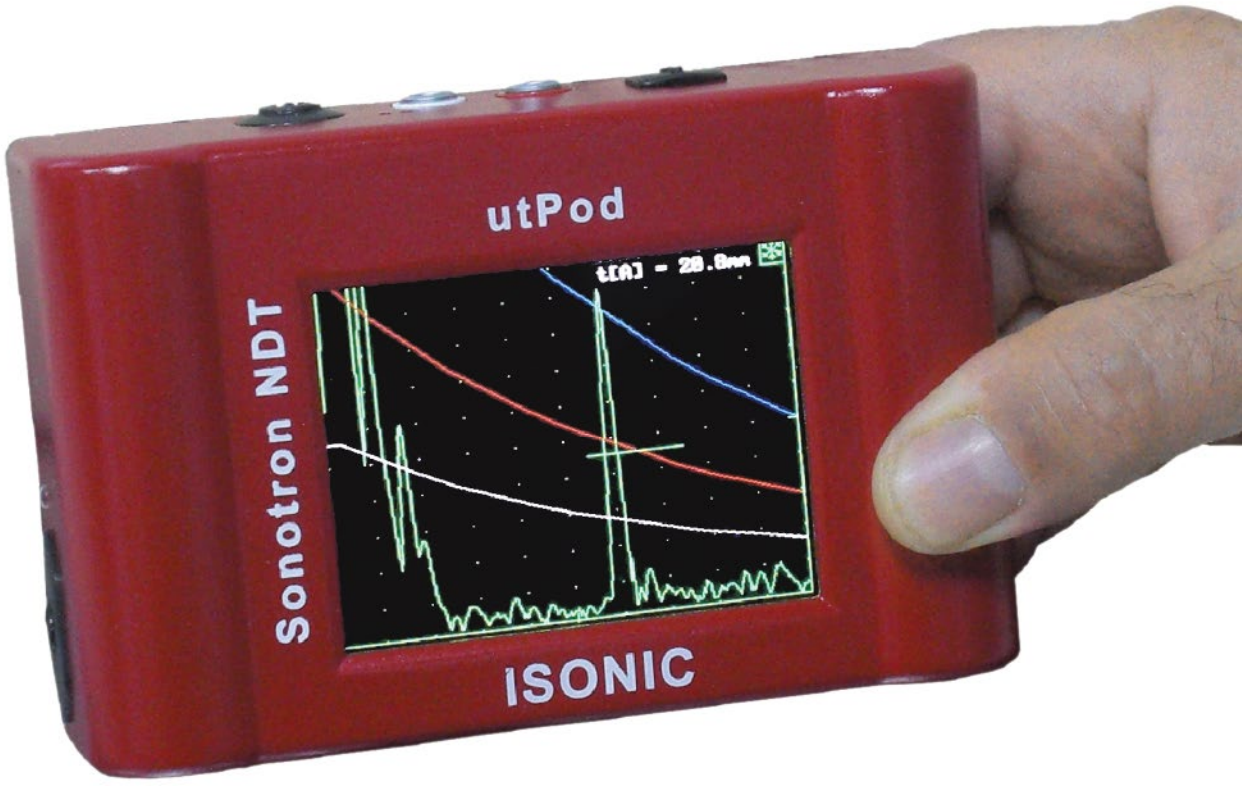
# ISONIC utPod

## ULTRA-PORTABLE MULTI-PURPOSE ULTRASONIC TESTING INSTRUMENT




## PERSONAL **400g** PACK OF ADVANCED TECHNOLOGY COMPRISING:

- ✓ Top Performance Flaw Detector
- ✓ All-Functional *A*-Scan Thickness Gauge
- ✓ Simple Corrosion Gauge
- ✓ Comprehensive Data Logger
- ✓ Fully USB Controllable

Sonotron NDT
4, Pekeris str., Rabin Science Park, Rehovot, 76702, Israel
Phone: +972-(0)8-9311000 Fax:+972-(0)8-9477712
www.sonotronndt.com

# ONE HAND INSPECTION

For the first time operator may hold the instrument and scan the material using one hand only – this makes rope access and similar inspection jobs much safer and reliable




## MINIATURE DIMENSIONS AND LIGHTEST WEIGHT EVER

ISONIC utPod delivers full functionality of the top performance ultrasonic detector such as

- Bi-polar square wave pulser with tunable pulse duration and amplitude (up to 300 V pp) and boosted leading / falling edges enhancing ultrasound penetration for various materials characterized either by high or low grain, sound attenuation, and the like
- 100 dB analogue gain / 0.2 ... 25 MHz bandpass / 100 MHz sampling rate
- 32-Taps FIR band pass digital filter with controllable lower and upper frequency limits
- Analogue performance *A*-Scan with no range limit for RF display mode
- Up to 2 kHz pulse repetition frequency
- Multi-curve DAC, DGS / TCG
- 2 independent gates
- Automatic evaluation including trigonometric functions, thickness and curvature correction, etc
- AWS / API defect evaluation
- And more... (see technical data page)



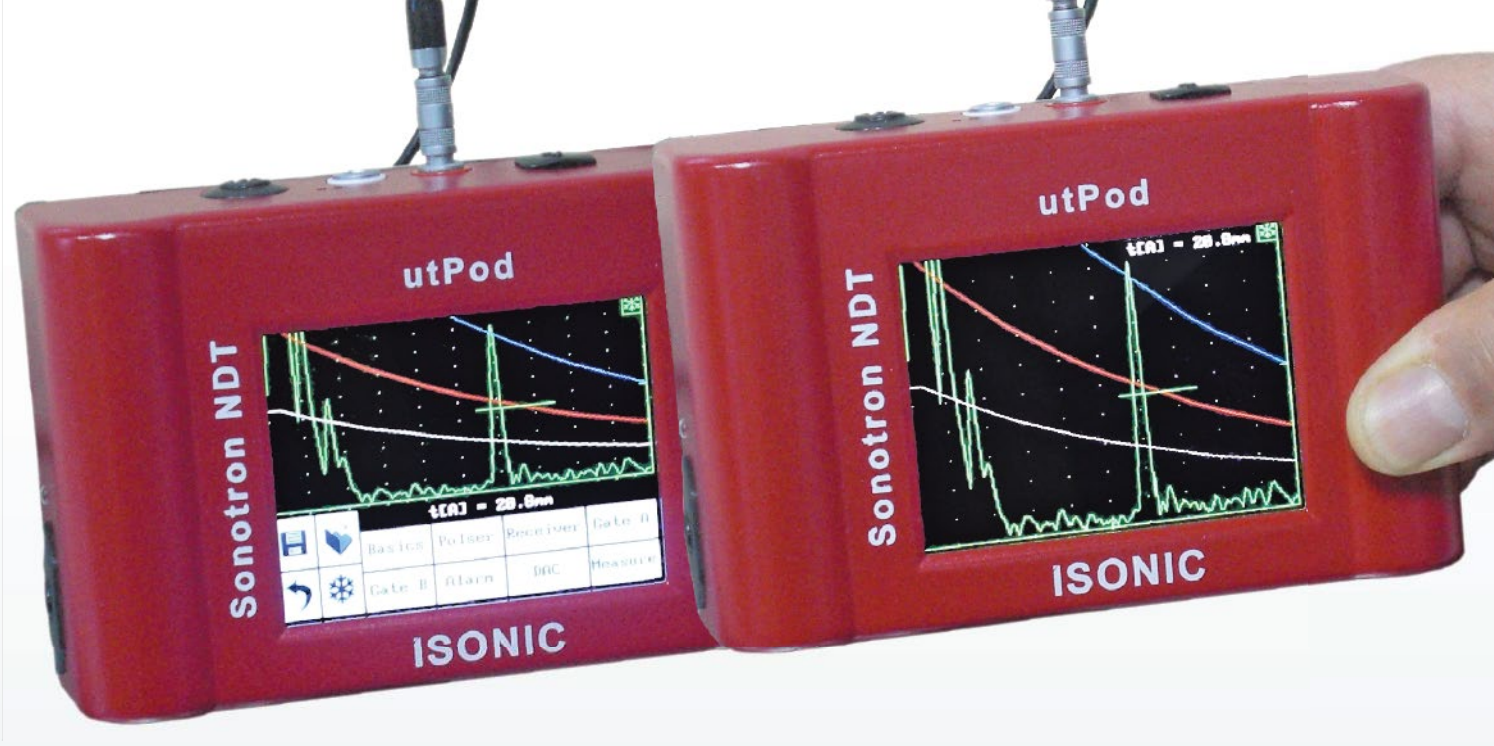

# TOUCH CONTROL

ISONIC utPod is controlled through highly intuitive user interface provided on the high definition sun readable touch screen




## ALL-FUNCTIONAL THICKNESS GAUGE AND SIMPLE CORROSION GAUGE

- Dual / Single element probe operation
- Automatic gain / initial pulse control
- 100 MHz sampling rate
- Multiple back wall echo technique with delay line single element probe for high precision measurements
- Pure Digital Display
- Digital Display Combined with *A*-Scan
- Min/Max
- Differential
- Variety of calibration and zeroing techniques
- Ultrasound velocity gauge



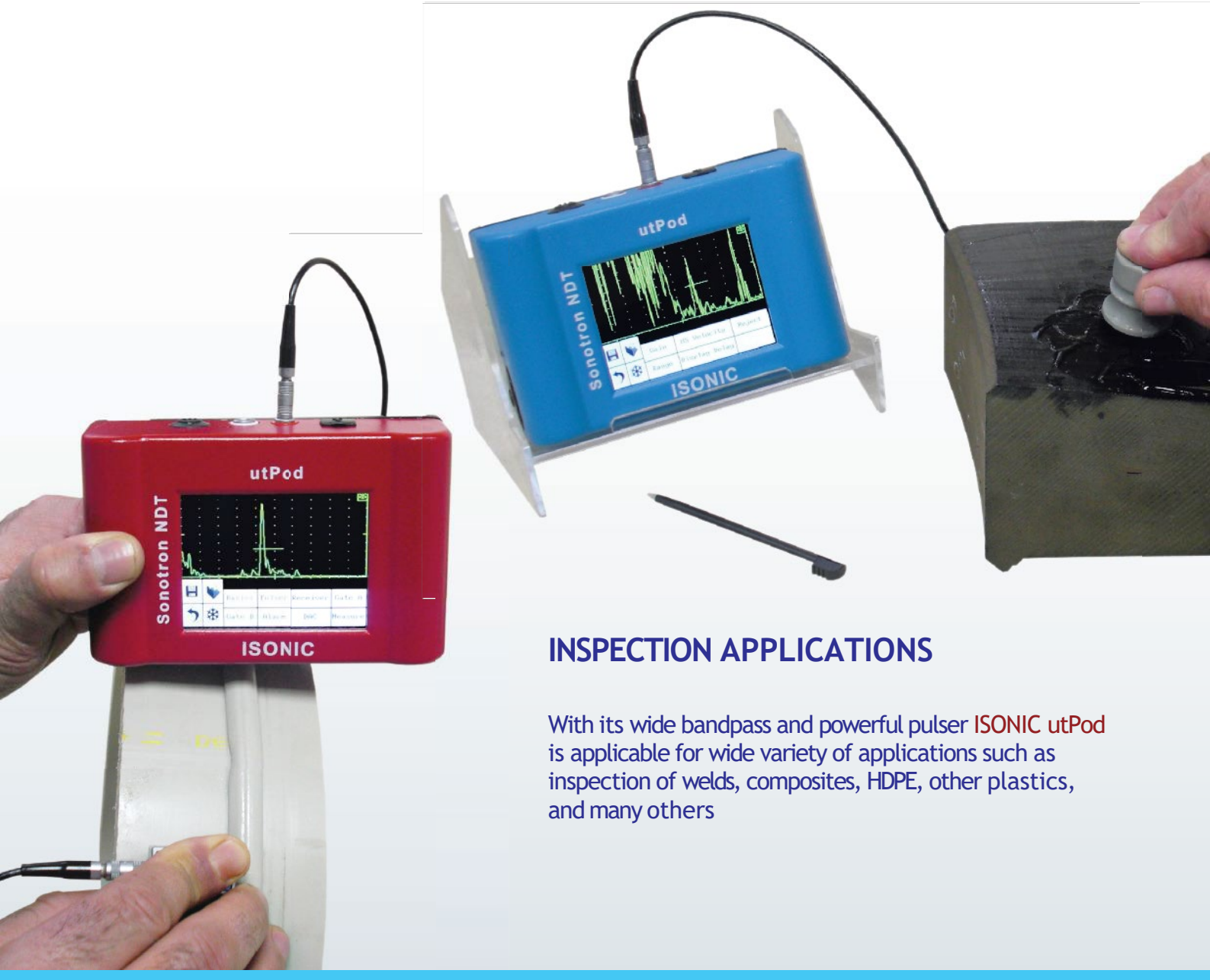

## ZOOM *A*-SCAN

Simple double click on the *A*-Scan expands it to the full screen area / returns to the combined *A*-Scan / Control Menu View

# "GOOSE NECK" FIXTURE

This optional adaptor has been designed to ensure positioning of the instrument on any surface and allows the operator to optimize the instrument location and viewing angle freeing both hands for probe manipulation, holding onto ladders, etc





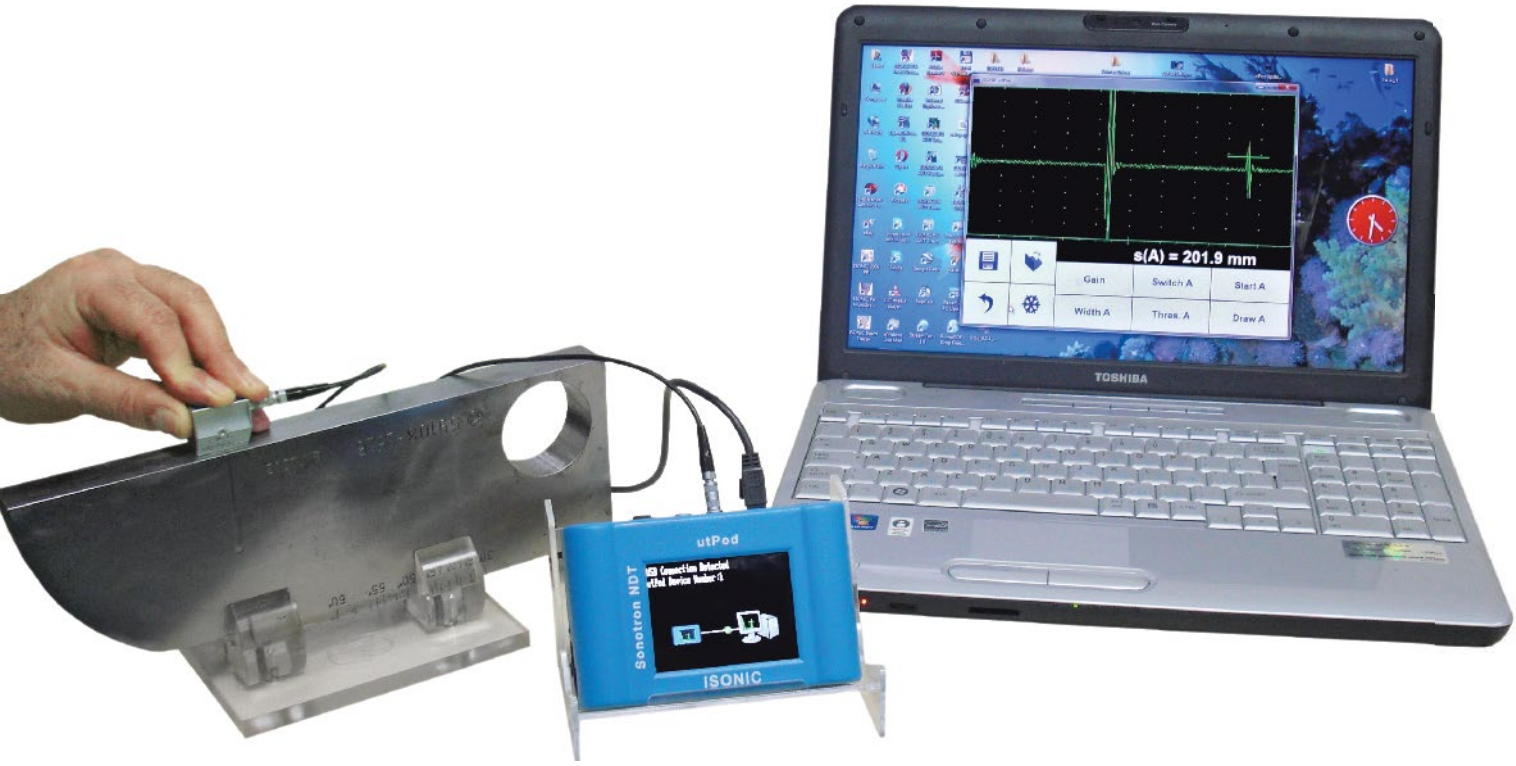

## INSPECTION APPLICATIONS

With its wide bandpass and powerful pulser ISONIC utPod is applicable for wide variety of applications such as inspection of welds, composites, HDPE, other plastics, and many others

# DATA LOGGER

ISONIC utPod data logger allows storage of point-by-point measurement results accompanied with corresponding A-Scans into a database organized as either 1D (linear), 2D (X, Y), 3D (X, Y, Z), or 4D (X, Y, Z, retake) array






# CONNECTION TO THE COMPUTER

On connection to the computer via USB port ISONIC utPod is recognized automatically and becomes fully controllable by mouse and keyboard. This allows performing of instrument operation enjoying comfort of friendly graphic interface and live *A*-Scan on the computer screen provided by ISONIC utPod for PC software. This extremely useful utility delivered with every ISONIC utPod unit at no additional cost carries a number of important features such as transfer data and setup files to / from the instrument, data logger files processing, generating of editable comprehensive inspection reports in MS Word® format, hard copy print, etc

## OTHER IMPORTANT FEATURES

- High Color Resolution QVGA screen – 3.2" Active Matrix LCD with an embedded PICASO-GFX2 graphics controller
- Built-in horn and virtual lamps on the screen to alarm the defect indications
- On-board rechargeable long durability Li-Ion battery



## UT LEVEL I, II TRAINING CLASS IN A SINGLE CASE

- Six units with cables and typical probes
- Direct control from computer through USB port / large screen projection
- Comprehensive Training Syllabus
- Attractive pricing policy



# ISONIC utPod – Technical Data

| | |
|---|---|
| Operating Modes | Flaw Detector<br>All-Functional *A*-Scan Thickness Gauge<br>Simple Corrosion Gauge |
| Initial Pulse Type | Bipolar Square Wave Pulse |
| Initial Transition | ≤ 5 ns (10 – 90 %) |
| Pulse Amplitude | Smoothly tunable (12 levels) 60 V ... 300 V pp into 50 Ω |
| Pulse Duration | 50...600 ns for each half wave synchronously controllable in 10 ns step |
| Modes | Single / Dual |
| PRF | 15...2000 Hz controllable in 1 Hz resolution |
| Gain | 0...100 dB controllable in 0.5 dB resolution |
| Advanced Low Noise Design | 81 µV peak to peak input referred to 80 dB gain / 25 MHz bandwidth |
| Frequency Band | 0.2 ... 25 MHz Wide Band |
| Digital Filter | 32-Taps FIR band pass with controllable lower and upper frequency limits |
| Ultrasound Velocity | 300...20000 m/s (11.81...787.4 "/ms) controllable in 1 m/s (0.1 "/ms) resolution |
| Range | 0.5...7000 µs controllable in 0.01 µs resolution |
| Display Delay | 0...3200 µs controllable in 0.01 µs resolution |
| Probe Angle | 0...90° controllable in 1° resolution |
| Probe Delay | 0 to 70 µs controllable in 0.01 µs resolution |
| Display Modes | RF, Rectified (Full Wave / Negative or Positive Half Wave) |
| Reject | 0...99 % of screen height controllable in 1 % resolution |
| DAC / TCG | Multi-curve (up to 4)<br>Theoretical – through keying in dB/mm (dB/") factor as used for AWS evaluation, inspection of highly attenuative materials, and the like<br>Experimental – through recording echo amplitudes from variously distanced equal reflectors, up to 40 points<br>46 dB Dynamic Range, Slope ≤ 120 dB/µs<br>Available for Rectified and RF Display |
| DGS | Standard Library for 18 probes / expandable |
| Gates | 2 Independent Gates |
| Gate Start and Width | Controllable over the whole range of *A*-Scan time base settings<br>in 0.1 mm / 0.001" resolution |
| Gate Threshold | 5...95 % of *A*-Scan height controllable in 1 % resolution |
| Signal Evaluation – Digital Readout | 19 automatic functions / expandable; curved surface / thickness / skip correction for angle beam probes; material velocity and probe delay auto-calibration for all types of probes; AWS / API evaluation |
| Freeze | Freeze All / Freeze Peak |
| Data Storage Capacity | At least 100000 sets including calibration dumps accompanied with *A*-Scans |
| Data Logger | 1D (linear), 2D (X, Y), 3D (X, Y, Z), or 4D (X, Y, Z, retake) array |
| Internal Flash Memory | 2 Gigabytes |
| Output | USB – calibration and data files transfer to / from PC, generation of inspection reports<br>in editable format and hard copy / full control by PC |
| Screen | 3.2" High Color Resolution QVGA Sun-Readable Active Matrix LCD<br>with an embedded PICASO-GFX2 graphics controller |
| Controls | Touch Screen |
| Power | On-board Li-Ion Rechargeable Battery, 6-10 hours continuous operation depending on mode of use<br>Mains - External AC/DC converter / charger 100-240 VAC, 40-70 Hz |
| Housing | IP 67 rugged plastic case |
| Dimensions | 130 × 84 × 42 mm (5.12"× 3.31" × 1.65") |
| Weight | 400 g (0.88 lbs) – with battery |
| Hardware Warranty | 12 months |
| Firmware Warranty | Lifetime free update with the latest version available for free access at www.sonotronndt.com/support.htm |
| ISONIC utPod for PC Software Warranty | Lifetime free update with the latest version available for free access at www.sonotronndt.com/support.htm |
| Available in three colors | Blue, Red, Black |

Updated Mar 31, 2011