

Mentor UT

A new generation of ultrasonic inspection.



Reimagine ultrasonic testing

The pressure to reduce operating costs and increase productivity while maintaining reliable inspections is higher than ever. And with increasingly complex testing procedures, more instrument parameters to understand, and the growing loss of domain expertise, it's becoming even more challenging.

The majority of Ultrasonic Phased Array Testing (PAUT) systems on the market are complex and require extensive inspector training. Instruments designed to gather a wealth of data for a range of use-cases can lead to inconsistency among procedures. That means higher costs and less efficiency.

But what if performing high-quality, efficient UT inspections was as easy as using a smartphone? With Mentor UT, it is.



Consistency you can customize.

Mentor UT offers a new kind of inspection experience by combining outstanding UT performance, customizable workflow applications and user interfaces, and intuitive hardware with embedded expertise—making inspections more accessible and efficient. Visit inspectionworks.com to download the software at no cost.



Mentor Create

This desktop software allows you to customize or create inspection “apps” for your unique testing procedures, industry applications, and experience levels. These can be as detailed or generic as you see fit.



Mentor PC

Utilize all the tools available on Mentor UT, right on your PC. With Mentor PC, you can conveniently upload and analyze your inspection data on your computer without having to purchase or learn another specialized software package.

With Mentor PC Live, you can harness the processing power of your PC to drive the Mentor UT remotely with the scan data saved directly to your local network



Workflows

User-defined menus can walk technicians through every step of any inspection—from probe selection and calibration, to reporting—ensuring consistency across your inspections, every time, from every inspector. And with the flexibility to load multiple workflows on one device, you can guarantee easy access to the right apps for any inspection.



Remote Collaboration

With live video and two-way chat and annotation features, remote experts can see what the inspector sees and instantly communicate, troubleshooting issues on the spot, without the inspector ever leaving the inspection site.



Power meets performance

Mentor UT was developed with the quality and precision you expect from Waygate Technologies. And it's now more powerful than ever.

Field-ready right out of the box

Take the guesswork out of inspection setup with probe kits and inspection apps already installed on your device. Reference guides are also immediately accessible during field inspections with pictures, videos, training documents, and detailed inspection procedures.

Remote calibration-capable

Save time and resources. Every Mentor UT is InspectionWorks enabled. This makes it the first UT device to easily allow wireless connectivity and live streaming. Now, you can get expert advice or a second opinion for tough inspection calls when you need it: in real time.

Rugged durability

Mentor UT stands up to tough environments with its IP65 durability rating. It's extensively tested for water and dust resistance, extreme heat and humidity, cold, vibration, shocks, and drops.

High-performance design

With 20 kHz pulse repetition frequency (PRF), Mentor UT combines a 32:32 phased array flaw detector (upgradable to 32:128) with a conventional UT channel to instantly switch between phased array and conventional inspections as needed.

Intuitive operation

With a glove-friendly, daylight-readable touchscreen, data collection, archiving and reporting are simplified with the ability to store A-scan data, as well as post-inspection analyses, right on the device.

Find the solution tailored for your application.

When you need a strong tool that knows how to set the bar high, Mentor UT and its custom-tailored workflows are ideal for any industrial application, guiding you through consistent inspections and ensuring reliable results.



With superb mechanical design and quality, our field-proven PALM scanners offer unparalleled ease of use for operators inspecting circumferential butt welds.



Despite the increasing use of adhesives as a joining technology for automotive body panels, adhesive bonding may not provide 100% process reliability. The Bond Scanner identifies areas with lack of adhesive, as well as misaligned bond lines, and provides a workflow-based, reliable inspection with the Mentor UT.



With performance rivaling that of a full immersion C-scan system, our easy-to-use RotoArray gives you faster, more reliable Scan-images, all with the portability of a handheld probe. Together with the Mentor UT, this phased array inspection device allows rapid scanning of a wide variety of materials and components, making ultrasonic inspections even simpler.



Increase productivity with our solid axle mechanized testers (SAMT). Designed for front-face inspections of railway axles, this flexible solution delivers the required steering angles to optimally cover the axle's full lateral service. And combining SAMT with our Mentor UT's multi-group capabilities enables faster, safer and more accurate inspections.

With a demonstrated history of providing a wide array of solutions, our experienced Application Engineers and Specialists will work closely with you to provide technical assistance, design custom products or do whatever it takes to solve your ultrasonic testing challenges.

General specifications

Physical	
Dimensions (W x H x D)	295 mm x 230 mm x 60 mm (12" x 9.4" x 2.4")
Weight, w/Battery	2.9 kg (6.5 lbs)

Display	
Size	264 mm (10.4") diagonal
Resolution	1024 x 768 pixels
Mode	Indoor and outdoor specific color modes
Viewing Angle	± 85° all directions

Touch Screen (Multi-touch)	
Gloved Operation	Yes
Surface	Chemically strengthened glass, scratch resistant, chemical resistant, optically bonded to display

Data Storage	
Solid State Hard Drive	128 GB
USB Storage	USB 2.0 w included module
Data Capture	Full ASCAN capture for every CSCAN point, all settings. Recall on instrument with full analysis capability
Data Files	memd files, CSV files
Settings Files	All instrument settings plus position in workflow
Screen Capture	JPG Format
Report	PDF Format

Connectivity	
Wi-Fi	802.11 b, g, n
Connectors	USB 2.0, Ethernet, HDMI
Remote Collaboration	Local Network and Internet-Enabled via InspectionWorks Connect
InspectionWorks	Enabled

I/O	
Axes	2 digital quadrature encoders for X-Y axes
Audible	Tone, 2.7 kHz

Power	
Internal Battery	63 WH Lithium Ion
External Battery	84 WH Lithium Ion
Power Supply	100 to 240 VAC, 47–63 Hz, 1.9 A; 12VDC
Battery Life	3 hrs internal, 6 hrs with external battery under typical operating conditions
Compliance	Meets IATA air transport regulations with one contained installed battery and one packed external battery

Environmental	
Operating Temperature	-20C to +55 C (-4F to 131F) to MIL-STD-810G Method 501.5 & 502.5, Procedure I
Storage Temperature	-20C to +70C (-4F to 158F) to MIL-STD-810G Method 501.5 & 502.5, Procedure II
Ingress Protection	Tested to IP65
Shock	4' Transit Drop to MIL-STD-810G method 516.6, Procedure V

Data Visualization	
User Interface	Customizable with Mentor Create software
Zoom	Any data view may be expanded to full screen with gesture
Instructional Material	Rich Text, JPG, PNG, BMP, PDF or Video (MP4)
Views	A-SCAN, C-SCAN, C-SCAN OVERVIEW, E-SCAN, S-SCAN
Probe Selection	Swap between conventional and phased array on same screen
Evaluation	2 Gates, one can be used as interface echo gate
Measurements	Amplitudes, Depth, Distance, % Wall Loss, Thinnest Point, X and Y Positions
Calibrations	Phased Array: TCG, Material Velocity, Probe Delay, Auto80, Encoder Cal, Dead Element Check Conventional: 2 Point (Material Velocity and Probe Delay)

Ultrasonic specifications

Configuration

Phased Array

Channels	32:32 PR
Aperture	1–32 Elements
Focal Laws	1024
Scanning	Linear, sectorial, focused
Groups	Up to 8

Conventional

Channels	1
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Pulsar (Phased Array and Conventional)

PRF	10 Hz to 20 kHz
Pulse Shape	Bipolar or unipolar square wave
Voltage	20–150 V _{pp} , 0 – -75V _{op} ; in 5 V steps
Width (auto or manual)	50–3000 nS
Delay Step Increment	10 nS

Receiver and Digitizer (Phased Array and Conventional)

Gain	0–78 dB (Phased Array), 0–94 dB (Conventional); in 0.2 dB steps
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TCG

Number of Points	Up to 16
Slope	50 dB/μS
Rectification	Pos HW, Neg HW, Full, RF
Bandwidth	0.5 MHz to 15 MHz
Digitizing Rate	62.5 MHz, up-sampled to 500 MHz
Delay Step Increment	2.5 nS
Acquisition Range	50 nS to 150 μS
ASCAN Compression Points	512, 1024, 2048, 4096

MUX module specifications

Physical

Dimensions (W x H x D)	8.6" x 8.4" x 4.1"
Weight, w/Battery	6.5 lbs

Power

Exchangable Battery, hot swap	84 WH Lithium Ion
Power Supply	100 to 240 VAC, 47–63 Hz, 1.9 A; 12VDC

Configurations

Phased Array

Channels	32:128 PR
Aperture	1–32 Elements
Focal Laws	1024
Scanning	Linear, sectorial, focused

Conventional

Channels	1
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Mentor UT and MUX Module complies to standard EN ISO 18563-1 for Phased Array Channels and EN ISO 12668-1 for Conventional Channels.

With Waygate Technologies, innovation is the standard.

Waygate Technologies' industry-leading Mentor portables are designed to enable the most reliable inspections, regardless of experience level. With outstanding performance and advanced software, these connected NDT portable devices can help you improve inspection productivity, asset reliability, and confidence.

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Waygate Technologies, formerly GE Inspection Technologies, is a global leader in NDT solutions with more than 125 years of experience in ensuring quality, safety and productivity.

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