



Sonatest XEO – Full Specification

Version 1.0 – as of March 11th, 2026

GENERAL	PHASED ARRAY (64:128 PR)	UT-TOFD (2PR)	FMC-TFM (128 Elements)
Multi-scan Quantity	Up to 10 PA scans	Up to 8 UT Up to 4 TOFD / Pitch and Catch	Up to 8 TFM scans Up to 8 TFMi with up to 4 modes each
Pulsers / Receivers	64:128PR (Option 32:128PR)	0, 6 or 8 (Depends on mini docking options)	Up to 128 elements probe
PA-UT Mini Docks [1 PA] ; [2 PA] ; [1 PA + 8 UT] ; [2 PA + 6 UT]	Via 1 or 2 I-PEX depending on the module dock	0, 6 or 8	Via 1 or 2 I-PEX
Gain Range	80dB	80dB	80 dB
Sampling Frequency	Up to 250 MHz FPGA @ 16-Bit (16-Bit processing with max dynamic FSH 100 to 3200% - Inspection app max)		
System Bandwidth	0.2 to 24 MHz	0.2 to 23 MHz	0.2 to 24 MHz
Max Pulse Rate Frequency	50 000 Hz	50 000 Hz	50 000 Hz
Pulse Voltage	Bipolar from ±25 to ±90V (up to 180 V peak to peak)	Bipolar from ±25 to ±90V (up to 180 V peak to peak)	Bipolar from ±25 to ±90V (up to 180 V peak to peak)
Focusing Mode	Natural or Constant Depth/Path/Offset/Resolution	n/a	Up to 128 Elem. TFM & product and keep max TFMi™ methods
Resolution	Up to 0.01°	n/a	4 Megapixels* *(Maximum number of Pixel)
L-Scan Resolution	1 element, double resolution, or custom element steps	n/a	TFM and TFMi resolution up to 0.1mm
Max PA Beams	PA or TFM focal laws up to 16 384 beams	n/a	FMC -> TFM: 2048 pixel ² PWI: Later Included PCI: Later Included
Measurement tools	EXTRACTION BOX, 4 gates/ A-Scan, TCG, DAC, Cartesian cursors, Indication table	4 gates/A-Scan, TCG, DAC, Indication table	EXTRACTION BOX and all the standard PA tools, Cartesian cursors, Indication table
General Phased Array		General FMC/TFM Technique	
Max Points per A-Scan	Up to 16 384 points per A-Scan	Propagation mode	16 TFM algorithms, up to 4 modes per TFMi™
Data Storage & File Size	500 GB SSD PCIe Gen 3x4 no file size limits	Fast TFM	Sparse matrix Capture (SMC) and Hardware Accelerated
Ultrasound Ray Tracing	PA-TFM Compatible with all geometries	Envelope / TFM	Hilbert Smoothing (default)
Advanced Focal Law Calculator	Sectorial Pulse-Echo, Sectorial Pitch & Catch, Linear Pulse-Echo, Linear Pitch & Catch, Curve surface solution.	TFM Calibration Wizard	Velocity, Time Corrected Gain, Amplitude Fidelity – <i>Coming soon</i>

OPERATING SYSTEM			
Onboard Reporting Tools	Export C-Scan data to CSV file Save Screenshots Anytime Save Audio File Indication table export to CSV	Multi-Task File Browser	Ability to load and read: <ul style="list-style-type: none"> • PDF • Images files (jpeg, png, gif) • Audio files
Onboard Scan Plan Tools	Onboard 3D live rendering on flat welds, curved and pipelines, T-joints, corners joints.	Calibration Standards	ISO18563-1
Integrated Online Help	Embedded manual and quick start guide	Remote Control	Powered by RDP

All above specifications subject to change without notice

USER INTERFACE & PORTS	PHASED ARRAY (64:128 PR)	UT-TOFD
Mini Dock PA & UT Connectors' options	IX 128 channels	Dual IX 64-64 channels
	IX 128 channels + 8x Lemo 00	Dual IX 64-64 channels + 6x Lemo 00
Instrument Display	11.56" Diagonal 1920 x 1080 LED Backlight Screen, Projective Capacitive Touch Panel Anti-glare replaceable film, Hardness of cover surface 6H Duplicated and extended display	
Encoder Ports	3 axes (16-pin LEMO 1K)	
GPIO Port (TTL)	Start, Stop, Index, Reset, Alarm(s), Trigger... (LEMO 1K)	
Communication Ports	Wi-Fi 6 – (802.11ax 2.4 GHz and 5 GHz) 2 USB-C with Power Delivery and DisplayPort Alternate Mode. Multiport adapter included (HDMI, Ethernet, USB)	
Remote Display Ports	Wi-Fi, Ethernet, HDMI or USB-C screen	
Data Transfer Ports	Wi-Fi, Ethernet or USB-C Drive (FAT32, NTFS, ext3 & ext4 formats)	

OPERATING TIME, ENCLOSURE & ENVIRONMENTAL

Operating Temperature	- 10°C to 45°C (14°F to 113°F) ; storage -20°C to 60°C (-4°F to 140°F) without batteries
Operating Time	5.2h (2x 99.4 Wh swappable batteries) using ISO18563-1:2022, section 8.2 standard setup parameters
Power Input	AC 110V/240V @ 50Hz/60Hz to USB-C 100W at 20V/5A
Power Output (USB-C)	5V / 1.5A (7.5W per port, total 15 W)
Unit Dimensions	380mm x 240mm x 105mm (15 x 9.45 x 4.10 inches)
Weight	5.2 kg (11.5 lb) with batteries, 0.46kg (1 lb)/battery)
Environmental Rating	IP65 Certified Vibration Tested: MIL-STD 810H Method 514.8 Cat.4
Safety and Cybersecurity	Compliant with EN 18031-1 cybersecurity requirements under the Radio Equipment Directive (RED) 2014/53/EU



Sonatest Software Specification

Version 1.0 – as of March 11th, 2026

Embedded XEO + Remote PC	UTstudio+	UTmap
Compatible with Linux/Windows 11/MAC OS with RDP client (Remote Desktop Protocol)	Gate edition in post-processing preserves amplitude information	C-scan and merged C-scan Stitching
Digital signature of components and secure boot protected	IFT Gate post-processing	C-scan flip/Rotation/Inversion
SSD with user-data encryption	Software Gain post processing	Independent C-scan analysis
Fully custom layouts with view edition (orientation, palettes, rulers)	Drag and drop images in Microsoft suite	Defect Auto-Sizing with contouring imaging
Post processing: Gates and IFT Gate edition, Software gain	3D data rendering	Part image/photo importation
All views: flip / Rotation / Inversion / 1:1 ratio C-Scan: export to CSV	A-B-C-End-Top-S-3D Views	Export to CSV
3D data rendering (later included - 2027)	Raytracing	Export to CSV Statistically Process
A-B-C-Top-Side-S-L-TFM Views (End view, Uncorrected C-Scan; later included)	FMC data post-processing into 10 different modes	Automatic report generation Report
Updates over the Web	FMC CSV export	Data file converter from .ONDE to .UTData
3D Scan plan and Raytracing	Annotation boxes to CSV table	
Annotation table with export to CSV	Data file converter from .ONDE to .UTData	
Calibration dashboard with quick overview and warnings		

All above specifications subject to change without notice