Sonatest

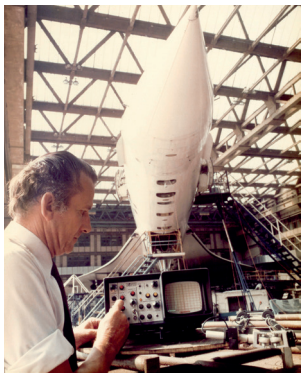
Simplicity | Capability | Reliability

Portable Ultrasonic NDT Solution

For the Composite Industry

Simplicity | Capability | Reliability

How does Ultrasonic NDT
respond to composite inspection?


CONCORDE program UK-1960s

Ultrasonic Non-Destructive Testing (NDT) has helped engineers inspect all sorts of composite materials for years. Whether it be traditional aluminum laminates or today's more complex carbon fibre-based composites, ultrasonic NDT technology has the ability to acoustically see through these parts and create complete inspection maps. Comprehensive volumetric integrity reports can be generated and supported by imaging reports that are as easy to interpret as traditional X-Ray.

Active with key industry leaders for more than 60 years, Sonatest is proud to present the new generation RapidScan: The RSflite, UTmap and WheelProbe2 linear array solution.

Fast, integrated and portable, this is an optimal inspection solution for the composite industry.


WheelProbe2


RSflite


UTmap

Scan → **Record** → **Report**

Key features
- Light reinforced frame
- Patented rubber wheel
- Best acoustics on market

Advantages
- Portability with immersion quality A-Scan data
- Ease of use with a lightweight and ergonomic design
- Great near surface resolution

Key features
- Linear Scanning
- Touch screen
- Portable device

Advantages
- User interface optimised for composite inspection
- Fast setup and outstanding inspection speed
- Ready for all site conditions

Key features
- T-Scan stitching
- Post analysis re-gating
- Automatic report

Advantages
- The adjustments can be done in post-acquisition
- Automatic data analysis and fast interpretation
- The freedom to make it fit

Save time. Be more efficient.

Fast composite inspection with **RS**flite & WP2

Simplify data analysis with **UT**map

Automatic measurements that are **ready to share**

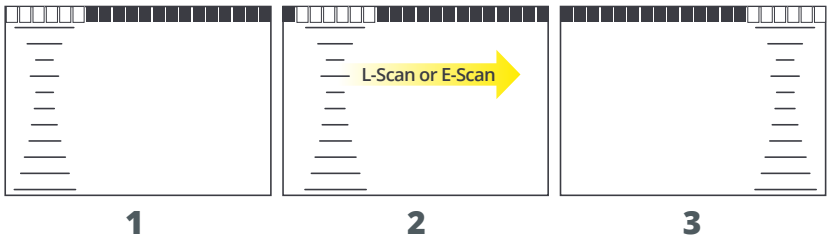
Challenges of composite ultrasonic NDT inspection.

Covering a large surface is an important challenge when it comes to inspecting composite structures. Ultrasonic linear scanning has proven over the years to resolve this issue.

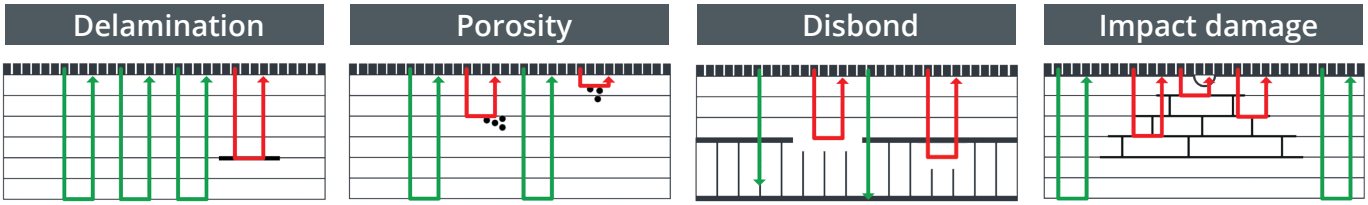
The position and overlap of the recorded information is also a challenge in itself. The UTmap unique stitching capabilities resolve this issue as every stripe of data can be re-aligned precisely on the T-Scan workspace.

Ultrasonic linear scanning solution

For composite inspection, a linear scan (L-Scan), sometimes referred to as an electronic scan (E-Scan), uses a group of elements of a linear array probe to pulse a single straight beam **(1)**, then another adjacent beam **(2)**. This sequence is repeated equally over the full length of the array **(3)**.

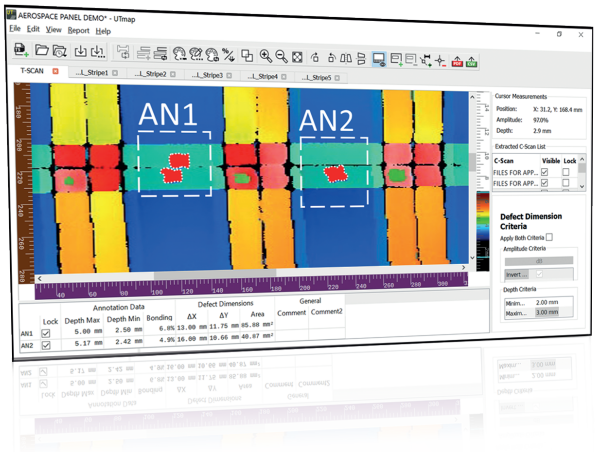


This ultrasonic NDT technique is particularly efficient to detect the most common defects inside a composite structure as it covers large area rapidly and generates high resolution data sets and images..



Advanced solution benefits

- With a linear scanning workflow-oriented and simplified user interface; the complete solution optimises the training time and on-site performances.
- The outstanding signal-to-noise ratio and patented WheelProbe 2 rubber design offers the best acoustic performances for composite inspection.
- The combination of RSflite and WheelProbe2 is the fastest portable inspection solution on the market.
- The advanced UTmap analysis tools and unique C-Scan stitching capability increase overall productivity and enhance the inspection quality.



Thinking about other applications like corrosion mapping? Contact us!

RSflite Key Specifications

	LINEAR SCANNING	CONVENTIONAL UT
System Bandwidth	0.2 to 23 MHz	0.2 to 18 MHz
Pulse Voltage	100V - 50V ActiveEdge©	400V - 100V ActiveEdge©
Channels	128 channels	2 channels
Gain Range	80dB	100dB
Max PRF	50 000 Hz	20 000 Hz
L-Scan Resolution	1,2,3... element step & double res.	-
Data Throughput and Storage	155 MB/sec and 128 GB SSD (no file size limit)	
Instrument Display	TOUCH 10.4" wide, LED-backlit LCD,1024 x 600 resolution	
Communication Ports	WiFi 802.11n, Ethernet Gigabits & 3 master USB2	
Calibration Standards	ISO18563 (EN16392) & EN12668	
Operating Time	6.6h (hot swapable batteries)	
Operating Temperature	-10°C to 50°C (14°F to 122°F)	
Unit Dimensions	115 x 220 x 335 mm (4.52 x 8.66 x 13.19 in)	
Weight	4.80 kg (10.5 lb) no battery, 460 g (1 lb)/battery	
Analysis Software	UTmap for Windows® 10 & 64-bit OS	
Remote Control Software	Xpair for Windows® 10 OS	

WP2 key specifications

Coupling wheel	Patented rubber - optimal acoustic performances
Near surface resolution	Up to 0.8 mm (0.032 in)
Probe frequency	2 MHz, 3.5 MHz, 5 MHz or 10 MHz
Probe array specs	64 elements, pitch 0.8mm
Probe active length	51 mm (2 in)
Detachable cable	Standard 2.5m and 5m or custom order
Weight	1.06 Kg (2.34 lb) lightweight polymer frame
Dimensions (H x L x W)	125 x 150 x 155 mm (4.9 x 5.9 x 6.1 in)
Operating temperature	10 to 50 °C (50 to 122 °F)

UTmap key specifications

Post-acquisition tools	T-Scan stitching for precise positionning of C-Scan
	T-Scan overlapping for precise data adjustment
	C-Scan re-gating (individually or synchronise all)
	Individual C-Scan software gain fine adjustment
Analysis tools	Industry standard and custom colour palettes
	Automatic defect measurements and statistics
	Real-time defective zone contouring
	Conditional defect criteria (depth and amplitude)
Reporting tools	CAD and image part overlay
	Geometric and freehand cursors
	Automatic PDF report generation
	Customised measurement selection
	Advanced reporting (CSV export)
File format	Sonatest .UTDATA and .TSCAN formats
Operating system	Windows® 10 & 64-bit OS

Solution package including

- RSflite instrument
- WheelProbe 2 - 5MHz with 5m cable
- WP2 Composite Pack
- WP2 advanced Kit 2 + Horizontal Handle
- UTmap license
- Xpair license

Package options

1. X-Glider manual kit including
- X3 - 5MHz 64 elements Linear Array
- X-Glider 25mm rubber delay line
- Manual Encoder with 2.5m cable

2. Extra WP2 probe (pick your frequency) plus Test and demonstration plate

X-Glider

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