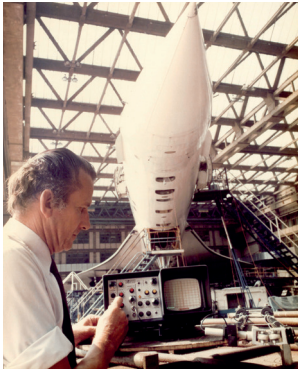




# Portable Ultrasonic NDT Solution For the Composite Industry



# 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



## 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 RSflite & WP2



**Simplify data**  
analysis with UTmap



**Automatic measurements**  
that are **ready to share**



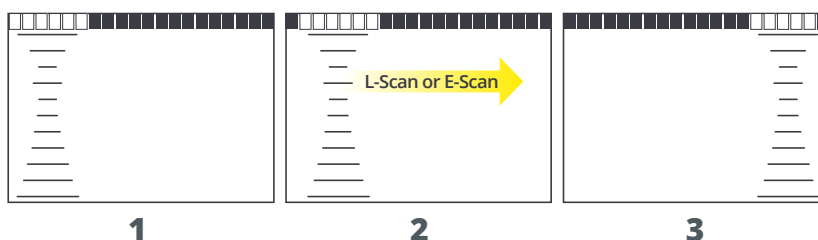
## Challenges of composite ultrasonic NDT inspection.

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.

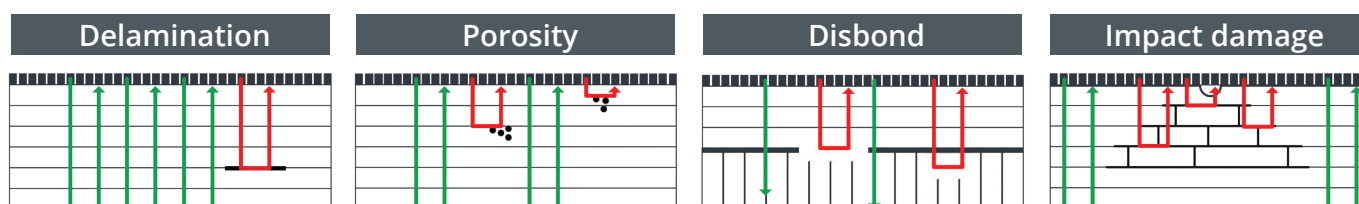
The position and overlap of the recorded information is also a challenge in itself. The UTmap unique stitching capabilities resolve this issue as every stripe of data can be re-aligned precisely on the T-Scan workspace.

## 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)**.

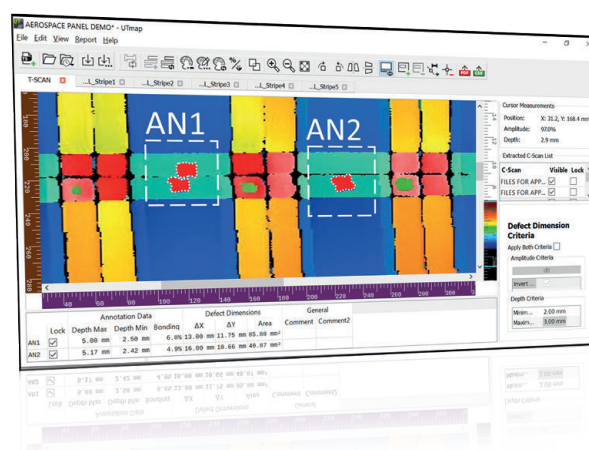


This ultrasonic NDT technique is particularly efficient to detect the most common defects inside a composite structure as it covers large area rapidly and generates high resolution data sets and images..



## 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 swappable batteries)                           |                         |
| Operating Temperature       | -10°C to 40°C (14°F to 104°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 positioning 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

