dolphitech

MxTTU™

MATRIX THROUGH TRANSMISSION ULTRASOUND

MxTTU™ is the only portable device in the world that can offer the conclusiveness of through transmission ultrasound and the efficiency of matrix array evaluation. This means you can achieve reliable inspection of challenging materials in an easy-to-use, handheld platform.

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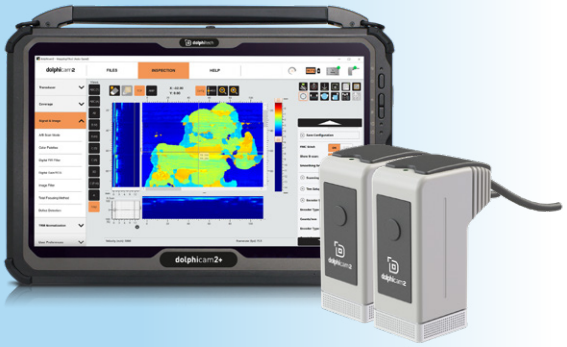
Made in Norway

MxTTU™

MxTTU™ operates using the same base platform as the dolphicam2 and dolphicam2+, requiring a hardware upgrade and an additional Transducer Module (TRM). Users then just need to connect both TRMs to the Black Box, switch from Pulse Echo to TTU mode, and start scanning. MxTTU™ is compatible with the full range of dolphicam2 TRMs, both with and without delay lines.

Aligning the transducers in MxTTU is much easier than with conventional TTU systems. This is because with a matrix array, misalignments can be readily observed in the amplitude C-scan and intuitively corrected for. Furthermore, users can toggle between pulse echo and MxTTU operation, meaning that flaws can be characterised in more detail without requiring a separate inspection.



Features

- Light and portable
- Live A, B and C scans
- Large inspection contact area
- Toggle between TTU* and PE**
- Inspect materials with high attenuation properties

*Through Transmission Ultrasound
**Pulse Echo

Can be used with a foot pedal for hands-free operation

- USB connection
- Emulates keyboard functions, up to 3 keys simultaneously
- Plug and Play technology, no additional drivers required
- 2.5m cable
- Rated 20mA 5V DC

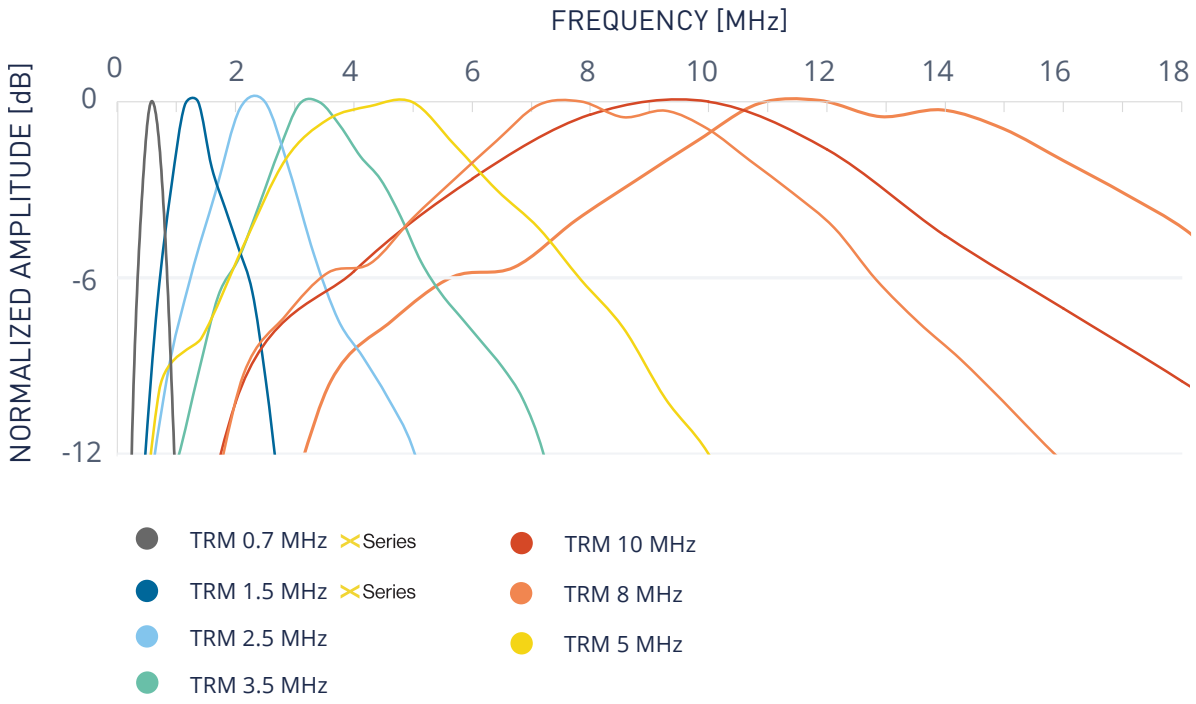
Size and weight

dolphicam2+ (Tablet, Black Box and TRM)
Size: 376 x 244 x 61mm / 14.8 x 8.8 x 2.4”
Weight: 5.2kg / 11.5lbs

TRMs (excluding cable and delay line)
Width: 40mm /1.6”
Length: 40mm /1.6”
Height: 84mm / 3.4”
Weight: 0.26kg / 0.57lbs

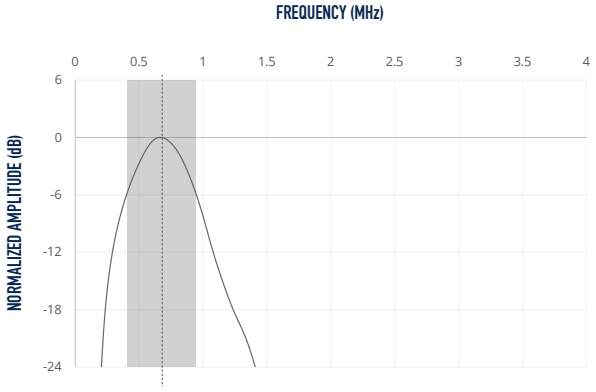
Frequencies available from 0.7 MHz – 10 MHz

Two TRMs of the same frequency must be used.



TRM 0.7 MHz Series

The 0.7 MHz transducer module (TRM) is currently our lowest frequency on offer and is designed for the inspection ofof very thick GFRP sections and low-grade GRP materials. Applications include wind turbine blades, ship hulls, GRP piping and composite overwrap repairs. Typical component thicknesses are around 1–100mm*.



Transducer Models

TRM-FAx-0.7MHz (no delay line)

Technical details

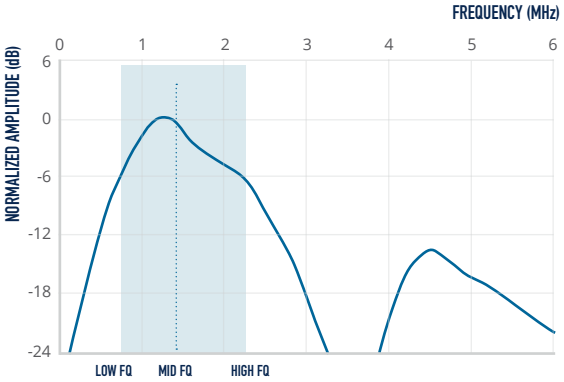
Transducer Type	Matrix (2D-array)
Transducer Elements	32 x 32 (1,024)
Transducer Aperture	32 x 32mm
Element Pitch	1mm (1,000µm)
Center Frequency	0.7MHz
-6dB Frequency Bandwidth	80%
Sample Rate	50MHz
Acquisition Rate	A-scans 100,000 – 500,000 datasets per second 10-40 3D volumes per second

Zero degree beam using our piezoelectric polymer film

The 0.7MHz TRM is compatible with our range of replaceable delay line models, and can also be used in direct contact with the part.

TRM 1.5 MHz Series

The 1.5 MHz transducer module (TRM) on offer is designed for maximum penetration of thick GFRP and thick, out-of-autoclave CFRP with porosity. Applications include wind turbine blades, marine GFRP and thick section GFRP piping. Typical component thicknesses are around 1-60 mm*.



Transducer Models

TRM-EA-1.5MHz (no delay line)

TRM-EC-1.5MHz (12mm Aqualene 320)

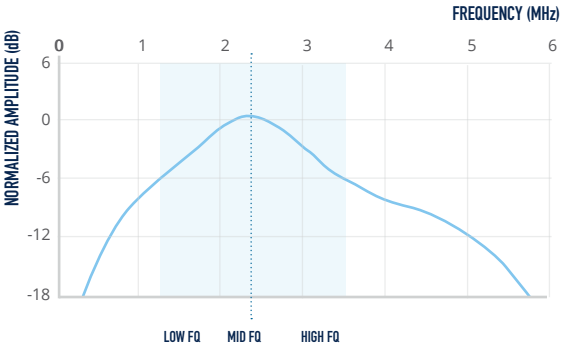
Technical details

Transducer Type	Matrix (2D-array)
Transducer Elements	64x64 (4,096)
Transducer Aperture	32x32 mm
Element Pitch	250 µm
Center Frequency	1.5 MHz
-6dB Frequency Bandwidth	110%
Sample Rate	50 MHz
Acquisition Rate	A-scans 100,000 – 500,000 datasets per second 10-40 3D volumes per second

Zero degree beam using our piezoelectric polymer film

TRM 2.5 MHz

The 2.5 MHz transducer module (TRM) is well-suited to thicker section and lower grade composite material inspection. These include GFRP, out-of-autoclave CFRP as well as thick, coarse-grained metals and TTU paste adhesive bonded structures. Applications include wind turbine blades, marine GFRP and CFRP, GFRP piping and thermal power. Typical component thicknesses are around 1-50 mm.*



Transducer Models

TRM-BE-2.5MHz (no delay line)

TRM-BG-2.5MHz (8mm Aqualink 100)

TRM-BF-2.5MHz (8 mm Aqualene 320)

TRM-BH-2.5MHz (12 mm Aqualene 320)

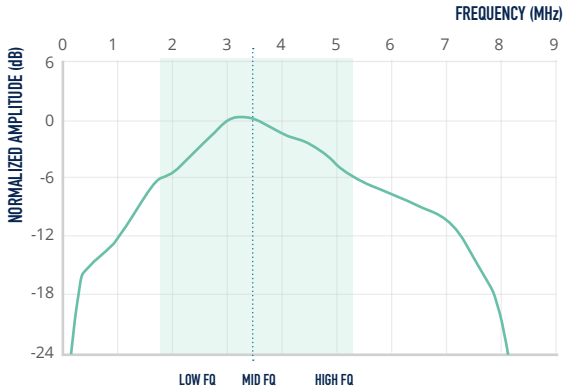
Technical details

Transducer Type Matrix	(2D-array)
Transducer Elements	128x128 (16,384)
Transducer Aperture	32x32 mm
Element Pitch	250 µm
Center Frequency	2.5 MHz
-6dB Frequency Bandwidth	90%
Sample Rate	50 MHz
Acquisition Rate	A-scans 100,000 – 500,000 datasets per second 10-40 3D volumes per second

Zero degree beam using our piezoelectric polymer film

TRM 3.5 MHz

The 3.5 MHz transducer module (TRM) is an excellent choice for CFRP applications, as the frequency is low enough to travel through CFRP but still high enough to get a great resolution on your inspection. This TRM is approved and recommended to be used within both the aerospace and automotive industries for CFRP inspection. It also works well for thicker metals, and for inspection of attenuative metals such as stainless steel and Inconel. It also works well for thicker metals, and for inspection of attenuative metals such as stainless steel and Inconel and Pi joints. Typical component thicknesses are around 1-40 mm.*



Transducer Models

TRM-AE-3.5MHz (no delay line)

TRM-AG-3.5MHz (8mm Aqualink 100)

TRM-AF-3.5MHz (8 mm Aqualene 320)

TRM-AH-3.5MHz (12mm Aqualene 320)

TRM-AA-3.5MHz (8 mm Rexolite)

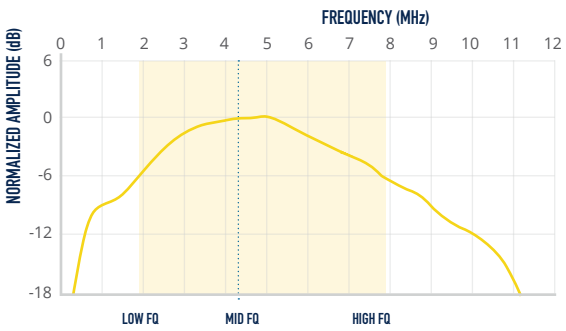
Technical details

Transducer Type Matrix	(2D-array)
Transducer Elements	128x128 (16,384)
Transducer Aperture	32x32 mm
Element Pitch	250 µm
Center Frequency	3.5 MHz
-6dB Frequency Bandwidth	100%
Sample Rate	50 MHz
Acquisition Rate	A-scans 100,000 – 500,000 datasets per second
	10-40 3D volumes per second

Zero degree beam using our piezoelectric polymer film

TRM 5 MHz

The 5 MHz Transducer module (TRM) sits at the middle of our range and is a fantastic all-rounder, well-suited to both metallic and composite applications. It provides superior resolution while maintaining good penetration through a wide variety of materials. Applications include heavy industry, aerospace and automotive with TTU inspection of solid laminates.



Transducer Models

TRM-CH-5MHz (no delay line)

TRM-CJ-5Mhz (8mm Aqualink 100)

TRM-CI-5MHz (8 mm Aqualene 320)

TRM-CK-5MHz (12 mm Aqualene 320)

TRM-CC-5Mhz (8mm Rexolite)

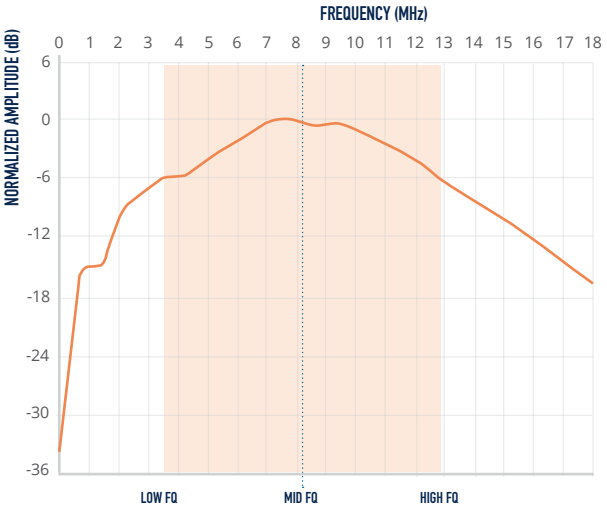
Technical details

Transducer Type Matrix	(2D-array)
Transducer Elements	128x128 (16,384)
Transducer Aperture	32x32 mm
Element Pitch	250 µm
Center Frequency	5 MHz
-6dB Frequency Bandwidth	120%
Sample Rate	50 MHz
Acquisition Rate	A-scans 100,000 – 500,000 datasets per second
	10-40 3D volumes per second

Zero degree beam using our piezoelectric polymer film

TRM 8 MHz

The 8 MHz transducer module (TRM) is a great choice for a wide range of metallic applications. This frequency provides high resolution for great sensitivity, while also providing enough penetration for fine grained metal. It is also capable of inspection of high-grade composites, such as aerospace CFRP. Other applications include process piping, Typical component thickness range are around 1-20 mm*.



Transducer Models

TRM-DB-8MHz (8 mm Rexolite)

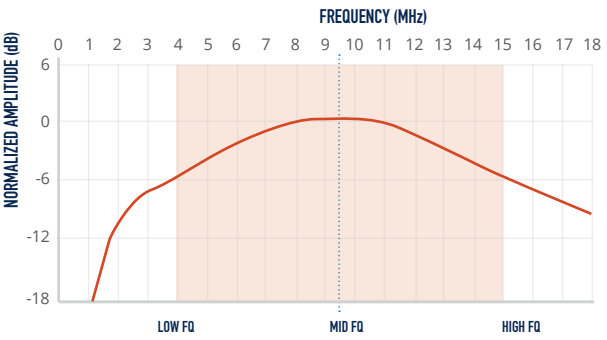
Technical details

Transducer Type Matrix	(2D-array)
Transducer Elements	128x128 (16,384)
Transducer Aperture	32x32 mm
Element Pitch	250 µm
Center Frequency	8 MHz
-6dB Frequency Bandwidth	120%
Sample Rate	50 MHz
Acquisition Rate	A-scans 100,000 – 500,000 datasets per second
	10-40 3D volumes per second

Zero degree beam using our piezoelectric polymer film

TRM 10 MHz

The 10 MHz transducer module (TRM) is our highest frequency model and provides great sensitivity for inspections of thinner components. The short wavelengths generated by this TRM provide high spatial resolution through the depth of the component. Sheet metal, adhesive bonding layers, thin metallic vessels and pipes can all be inspected.
Typical component thicknesses are around 1-15 mm*.



Transducer Models

TRM-DA-10MHz (8 mm Rexolite)

Technical details

Transducer Type Matrix	(2D-array)
Transducer Elements	128x128 (16,384)
Transducer Aperture	32x32 mm
Element Pitch	250 µm
Center Frequency	10 MHz
-6dB Frequency Bandwidth	115%
Sample Rate	50 MHz
Acquisition Rate	A-scans 100,000 – 500,000 datasets per second
	10-40 3D volumes per second

Zero degree beam using our piezoelectric polymer film

*Get in touch for specific material and penetration information as it can vary.

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MORE INFORMATION

Want to learn more about what you can do with MxTTU™

Contact us to arrange a 10-minute demonstration with one of our expert consultants to understand how you can utilize MxTTU™

sales@dolphicam.com

Why dolphitech

EXPERTS IN OUR FIELD
dolphicam2 is the culmination of over 10 years of dedicated R&D and field experience.

TOTAL FOCUS ON CLIENT CHALLENGES
We push the boundaries on development and build the capabilities of our platform to meet challenges our customers face.

UNIQUE APPROACH TO ULTRASONIC TESTING (UT)
dolphicam2 is the next generation of ultrasonic imaging and data capture, changing the face of critical NDT inspections.

SUPPORTING YOUR TEAM, GROWING YOUR EXPERTISE
We provide the right tools, training and resources for you and your team to enhance your capabilities with our UT platform.

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