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TRANSDUCER (TRM) PRODUCT SPECIFICATION

The transducer connects to the dolphicam2 Black Box through a standard USB C cable which handles power, control signals and data. The unique 128x128 “crossed electrodes” transducer using PVDF - Polymer Polyvinylidene Fluoride (PVDF) Film (creates a grid of 16,384 individual ultrasonic echoes (“A-scans”) over the 32x32mm transducer area, which makes it capable of detecting very small defects

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Made in Norway

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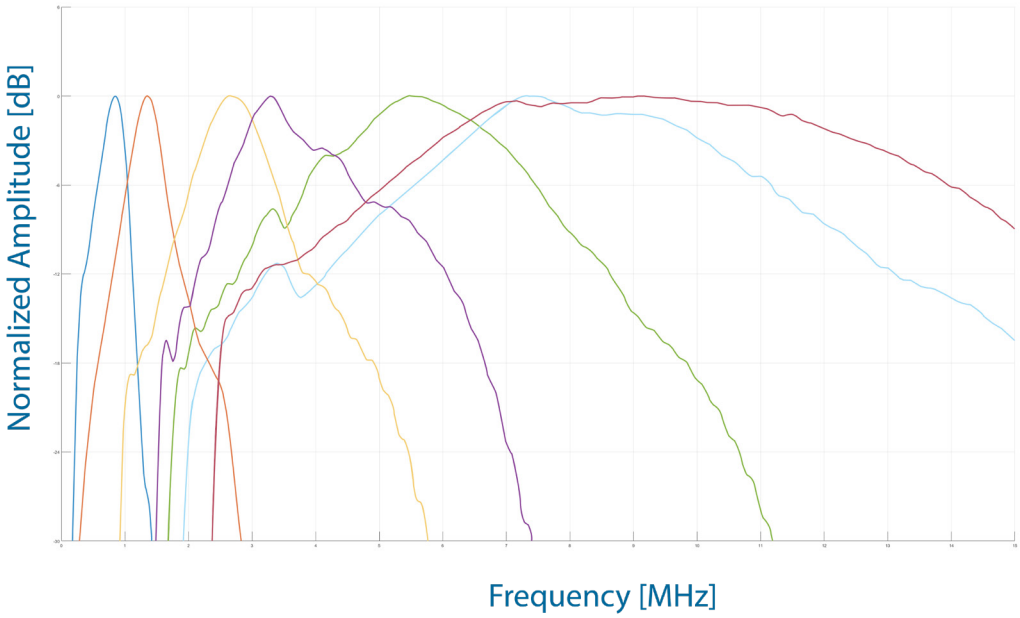
Each frequency TRM comes as standard with a delay line that has been chosen to match the acoustic properties of the transducer. These materials include Rexolite and Aqualene, with delay line thickness options of 8 and 12mm. For increased flexibility you can choose a TRM without a delay line as we offer a range of replaceable models.



Size and weight

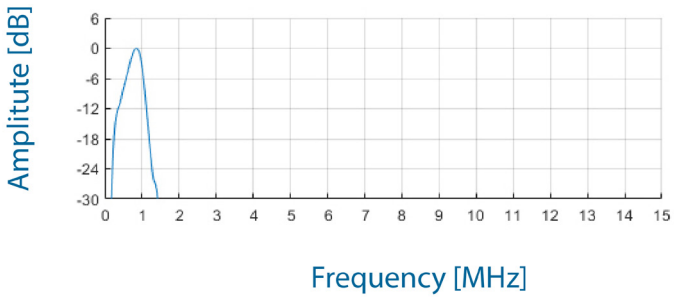
Size and weight are excluding cable and delay line.

Width 40mm / 1.6 inch
Length 40mm / 1.6 inch
Height 84mm / 3.4 inch
Weight 265 grams

TRM 0.7 MHz

The 0.7 MHz transducer module (TRM) is currently our lowest frequency on offer and is designed for the inspection of of 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*.

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



Transducer Models

TRM-FAx-0.7MHz (no delay line)

TRM-FCx-0.7MHz (12mm Aqualene 320)

Technical details

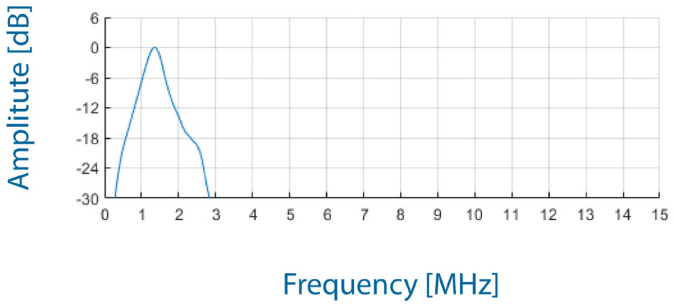
Transducer Type	Matrix (2D-array)
Transducer Elements	32 x 32 (1,024)
Transducer Aperture	32 x 32mm
Element Pitch	1mm (1,000µm)
Center Frequency	0.7MHz
-6dB Frequency Bandwidth	60%
Sample Rate	50MHz
Acquisition Rate	A-scans 100,000 – 500,000 datasets per second 10-40 3D volumes per second

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

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-EAx-1.5MHz (no delay line)

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

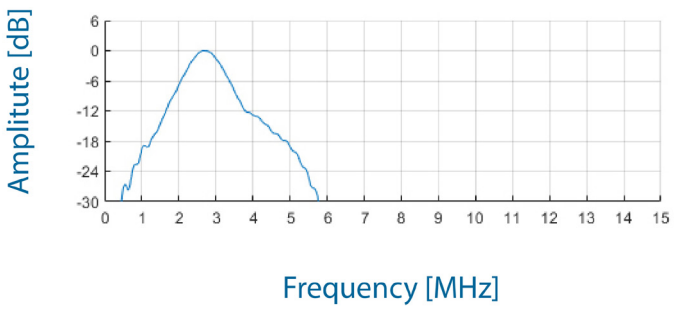
Technical details

Transducer Type	Matrix (2D-array)
Transducer Elements	64x64 (4,096)
Transducer Aperture	32x32 mm
Element Pitch	0.5mm (500um)
Center Frequency	1.5 MHz
-6dB Frequency Bandwidth	70%
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. 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-BEx-2.5MHz (no delay line)

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

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

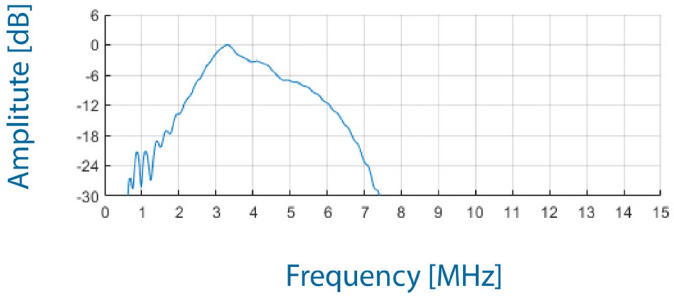
Technical details

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	50%
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. Typical component thicknesses are around 1-40 mm*.



Transducer Models

TRM-AEx-3.5MHz (no delay line)

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

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

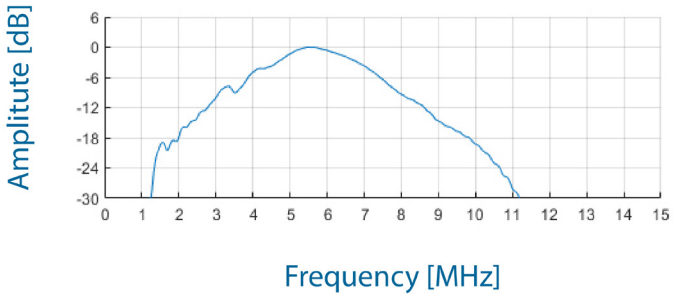
Technical details

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	50%
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. Typical component thicknesses are around 1-30mm*.



Transducer Models

TRM-CHx-5MHz (no delay line)

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

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

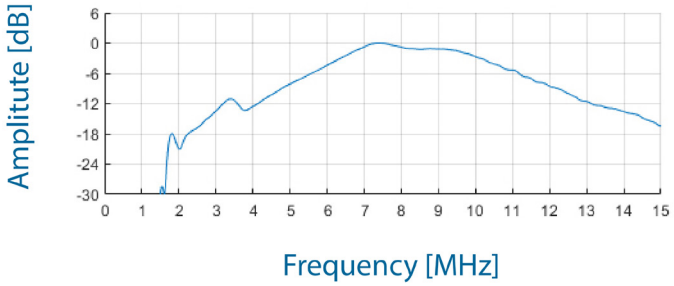
Technical details

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	60%
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-DBx-8MHz (8 mm Rexolite)

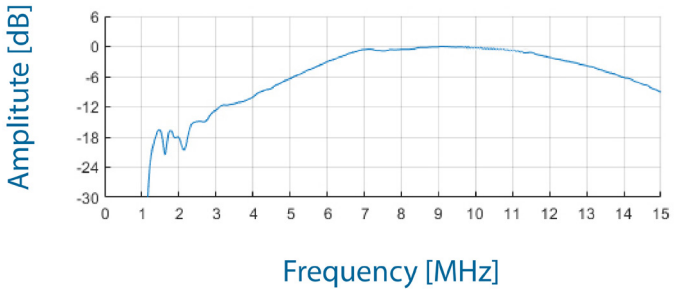
Technical details

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	60%
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-DAx-10MHz (8 mm Rexolite)
TRM-DFx-10MHz (8mm Aqualene 320)

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	80%
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 the dolphicam2

Contact us to arrange a 10 minute demonstration with one of our expert consultants to understand how you can utilize dolphicam2

sales@dolphitech.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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