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THE DOLPHICAM2 PLATFORM

Ultrasound Imaging platform for NDT

MATERIAL INSPECTION CAPABILITIES: METALS | CFRP | GFRP | GLARE

INSPECTION DEPT: up to 60mm*

FULL MATRIX CAPTURE (FMC)

Frequency range: 0.5 – 15MHz Transducer arrays: 128 x 128 Transducer elements: 16 384 TRM dimentions: 40 mm x 40 mm Element Pitch: 250 µm (10 mils)

SCANS/VISUALISATION-MODES VIEW: A-scan, B-scan, C-scan (2D), or 3D OPTIONS: Amplitude or Time-of-Flight

Real-time visualisation

LARGE AREA STITCHING

PLATFORM WEIGHT : 3.0 kg/ 7 lbs.

MADE IN NORWAY

Dolphicam2 is developed and manufactured in Norway by Dolphitech AS. We work with a global network of partners to deliver the most innovative and feature-rich NDT platform on the market.

* This is material dependent



PHYSICAL	
Total Weight (black box + TRM + Toughpad)	3045 grams (6.7 lbs.)
Transducer Module (TRM)	265 grams (0.58 lbs.) 84 x 40 x 40 mm (3.3 x 1.57 x 1.57 ")
black box	985 grams (2.167 lbs.) 200 x 130 x 32 mm (7.87 x 5.12 x 1.26 ")
TOUGHPAD FZ-G1	
Display	Touch screen — 10.1" (1920 x 1200)
OS & Software	Windows 10 – dolphi cam 2 Software installed
CPU, Storage, RAM	Intel i5, 256GB SSD, 8GB RAM
BLACK BOX POWER	
Power supply	Battery/charger (12VDC)
Battery specification	Re-chargeable Li-ion battery pack (7.2V 6.7Ah)
Battery life	5-6 hours of continuous scanning
CONNECTIVITY & IO	
Communication	USB C 3.0, USB A 2.0, Ethernet
Transducer ports	2 x Quadrature Encoder & GPIO (General Purpose In/Out) DSUB-9 (for X-Y scanning)
Notifications	Audio Buzzer
ENVIRONMENTAL	
Operating Temperature	0°C to +40° C (32°F to 104°F)
Operating Temp with Degrading	-20°C to +50°C (-4°F to 122°F)
Storage Temperature	-20°C to 65°C (-4°F to 149°F)
Max operating altitude	2000 meters (6562 feet)
Ingress Protection	IP66
Decreasing linearity to 50% rela- tive humidity at 40 °C	Maximum relative humidity 80% for temperatures up to 31°C. Decreasing linearity to 50% relative humidity at 40°C.
EMC	EN61326, FCC part 15B, FCC part 18
Vibration and Shock	Mil-STD810G 516.6
Electrical Safety	IEC-61010-1:2010

TECHNICAL SPECIFICATION

TRANSDUCER TECHNOLOG	(
Transducer type	Matrix (2D-array)
Transducer arrays	128 × 128
Transducer elements	16 384
Element size	210 µm
Element pitch	250 µm (10 mils)
IRM frontface dimensions	40 x 40 mm
IRM active area	32 x 32 mm
Receiver Channels	32 (parallel acquisitions)
Receiver Bandwidth	0.5MHz to 15MHz
Acquisition/Frame Rate (Scan stream or FMC)	5 to 50 frames/sec
Digitizing (Sampling) Rate	50 to 65 MHz (Up-sampled to 200 MHz)
A-scan resolution	12 bits (+/- 2048) Up sampled to 16 bits (+/-32 768)
Transmit Pulse	0-70 V square wave
Rise/Fall time	~ 5 ns
GENERAL FUNCTIONALITY	
Scans/visualisation-modes	A-scan B-scan Horizontal & Vertical C-scan Amplitude & Time-of-Flight 3D Amplitude & Time-of-Flight Stitching
Measurements	Depth B-scan Depth & Amplitude in C-scan Rectangle (Width, Height, Area) Circular (Diameter, Circumference, Area)
Reporting	Images & settings
Full Matrix Capture (FMC)	Save & Load FMC – Post process on FMC
Configuration Settings	Save & Load
Others	Colour Focus Reset settings to default Save screenshot GUI scan button



TRANSDUCER FUNCTIONALITY		
Gain	-40dB to 0dB	
Time Corrected Gain (TCG)	0 to 10 dB/µs	
Transmit Elements (Aperture)	1 – 32	
Averaging	1-16	
Pulse length	5 – 635 ns (5 ns increments)	
COVERAGE FUNCTIONALITY		
Delay	1 – 82 μs (delay between transmit and acquisition)	
Depth	1 – 120 mm @ 6000 m/s	
Speed of Sound	100 – 20 000 m/s (Preset list)	
Gates	Up to 3 separate gates	
Amplitude Threshold	The threshold for each gate	
Capture Method (for C-Scan)	Max Absolute, Max Negative, Max Positive	
A/B Scan Mode (RF)	Full, Absolute, Envelope	
Colour Palettes	Jet, Grey, Grey-inverted, Autumn, Bone, Winter, Rainbow, Ocean, Summer, Spring, HSV, Pink, Hot	
Image Filter	None, Gaussian, Median	
CALIBRATION		
TRM Calibration/balancing	Amplitude Time-of-Flight	
USER PREFERENCES		
Measurement Unit	Millimeters, Inches, Mils	
STITCHING		
Manual Stitching	No accessories needed	
GridTool Stitching	Used with Grid Tool	
Encoder Stitching	X and Y – Used with any quadrature encoders	
DATASHEET VERSION 1 OCT 2019		

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