



16:64 Specifications (specifications are subject to change)

PHASED ARRAY

Pulsers

Configuration	16:64 (16 pulser/receivers; driving up to 64 elements)
Test Mode	Pulse-Echo and Transmit/Receive
Transducer Socket	I-PEX
Pulse Voltage	-50 V to -100 V (in steps of 10 V)
Pulse Shape	Negative square wave (with ActiveEdge)
Pulse Width	adjustable 25ns to 1000ns (2.5ns resolution)
Edge Time	<10 ns in 50 ohms load
Output Impedance	<16 ohms
Trigger	
Synchronisation	Encoder or free-running (time based)
Tx/Rx Focus	
Delay Range	0 to 10 µs (2.5 ns resolution)

Receivers

Gain Range	0-84 dB, in steps of 0.1dB
Input Impedance	50 ohms
Bandwidth	200kHz - 27MHz (-3 dB)

Data Acquisition

Architecture	Full digital delay and sum architecture
Digitizing Frequency	50/100 MHz
Digitizer Resolution	12 bits
Data Processing	16 bits/sample
Data Recording	Full raw data recorded
Max A-Scan Length	8192 samples (32 metres in steel LW, 50MHz, 1:128)

Maximum PRF

Focal Law Qty	Up to 1024
Focussing Type	Constant Depth, Constant Sound Path, Constant Offset
Processing	Smoothing, Averaging, Keep Max, Software Gain
Filters	7 narrow bands and 3 broadbands, automatic
Sub-sampling	1:1 to 1:128
Rectifier	RF, Full, Positive, Negative.
Reference	Initial pulse or gate, IFT supported

Scan & Views

Supported Scans	S-Scan & L-Scan
Real Time Views	S, L, B, C-Scan, Top and End view.
Colour Maps	8 Standards (Rainbow, Grayscale, Spectrum, Aeronautic or custom)
Multi-Group	Multiple Sector scans and 1 TOFD Scan

Cursors

Type	Cartesian, 2D Box, Angular
Measurements	Path Length, Depth, Surface Distance, DAC, AWS

CONVENTIONAL UT/TOFD (MONO ELEMENT CHANNELS)

Pulsers

No. of Channels	2 TX/RX (2 multiplexed channels) 2 RX
Test Mode	Pulse-Echo, transmit/receive, TOFD
Transducer Socket	BNC or LEMO 1 (factory option)
Pulse Voltage	-400 V (adjustable from -100 to -400 V in steps of 10 V)
Pulse Shape	Negative Square Pulse (with ActiveEdge)
Pulse Width	Adjustable from 25 ns to 2000 ns, resolution 2.5 ns
Edge Time	<20 ns in 50 ohms load
Output Impedance	<10 ohms

Receivers

Gain Range	102 dB (-30 dB to 72 dB)
Input Impedance	400 ohms
Filter Bands	Narrow bands centred at 0.5 MHz, 1 MHz, 2.25 MHz 5 MHz, 10 MHz and 15 MHz Broadband at 1 MHz to 18 MHz (-6dB)

Data Acquisition

Digitizing Frequency	50/100/200 MHz
Digitizer Resolution	10 bits/sample
Data Processing	16 bits
Data Recording	Full raw data
Max. A-Scan Length	8192 samples
Maximum PRF	12 kHz
Processing	Smoothing, Filter, Keep max
Sub-sampling	1:1 to 1:128
Rectifier	RF, Full, Positive, Negative
Trigger Synchronisation	External digital input, encoder or internal

Scans & Views

Supported Scans	A-Scans,
Views	A, B-Scan, TOFD

Cursors

Type	Cartesian, Hyperbolic
Measurements	Path Length, Depth, Surface Distance, DAC, AWS

CONVENTIONAL AND PHASED ARRAY

DAC

Number of Points	16
DAC Quantity	1 with 3 sub-DAC (per focal law in PA)

Time Corrected Gain (TCG)

Number of Points	16
Gain Range	0 to 60 dB
Max Gain Slope	>50 dB/µs

Gates

A-Scan Gates	4 gates per A-scan (3 extracted A-scans per S/L-scan)
Gate Trigger	Flank/Peak
S/L-Scan	2 "2D gates" per S/L-scan
Alarm LED	1 (sync on all gates & DACs)
Measurements	Available in A-Scan view 1D Peak (FSH, dB, D, BPL, SD) 1D Flank (FSH, dB, D, BPL, SD) Echo to Echo

Reporting

PDF Reader	PDF file, PNG screen captures, customer logo Allows viewing any uploaded PDF document
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GENERAL

Data Storage

Internal	6 GB (standard)
External	Hot removable "User" USB 8 GB (standard) Only limited by USB key capacity
Transfer Rate	To User Key - Up to 23 MB/s Write mode Up to 27 MB/s Read mode

Data File size

Typical Scanning Speed	10 to 15 cm/s (3.9 to 5.9 in/s)
Typical Scan Length	>10 m (32.8ft)

Display

Size	25.9 cm (10.2 in) Wide aspect ratio
Resolution	1024 x 600 pixels
Colour	260k (65535 colours for scan palettes)
Type	TFT LCD

I/O Ports

USB Ports	3 x USB certified ports (480 Mbps)
Ethernet	Gbit Ethernet (1000 Mbps)
Video Output	VGA Analog (1024 x 600)

I/O

Encoder	1 or 2 axis quadrature encoder (LEMO connectors) Single ended and differential input
Digital Input/Output	2 input lines (5V TTL) for trigger or sync (Shared between Conventional and PA module) 4 output lines (5V TTL, 20 mA) for alarm or other external control (Shared between Conventional and PA module) 8 pin LEMO socket
Power Output	5 V, 500 mA, current limited

Integrated Help

Language Support	Active parameter description and Optimisation Tips. Six user selectable languages from: English, German, French, Spanish, Russian, Chinese.
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Batteries & Power Supply

Battery Type	Intelligent Li-ion batteries
Number of Batteries	2
Operation	1 battery or 2 batteries, DC Power pack
Battery Replacement	Hot swappable - no tools required
Battery Recharge	Batteries recharge in unit, operating or not
Battery Life	6+ hours (typical operation).

Enclosure

Size	H220 mm x W335 mm x D115 mm (8.66 in x 13.19 in x 4.52 in)
Weight	5.28 kg(11.6 lb) 1 battery/ 5.75 kg (12.6 lb) 2 batteries

Environmental

Temperature	Operating -10 °C to 40 °C (14 °F -104 °F). Storage -25 °C to 70 °C (-13 °F -158 °F)
Relative Humidity	5 to 95% non-condensing
Environmental	Meets IP66

Warranty

Calibration Standard	1 year. EN12668.
Vibration	EN60068-2-6 Sinusoidal vibration, 50hz to 500Hz, 0.5mm, 18g, 5 sweep cycles

Supported Inspection Codes

Other relevant Code are also met.

- ASME Code Case 2235-9 Use of Ultrasonic Examination in Lieu of Radiography
- ASME Code Case 2541 Use of Manual Phased Array Ultrasonic Examination Section V ASME
- ASTM E2491 Standard Guide for Evaluating Performance Characteristics of Phased-Array Ultrasonic Examination Instruments and Systems
- ASTM E2700 Standard Practice for Contact Ultrasonic Testing of Welds Using Phased Array
- CEN EN 583-6 - Nondestructive testing - Ultrasonic examination - Part 6 -TOFD as a Method for Defect Detection and Sizing
- BSI BS7706 - Guide to Calibration and Setting-Up of the Ultrasonic TOFD Technique for the Detection, Location, and Sizing of Flaws

