GEKKO

PHASED–ARRAY FLAW DETECTOR

PHASED–ARRAY FLAW DETECTOR FOR FIELD INSPECTIONS

PAUT flaw detector

64:64 parallel channels
+ 4 additional TOFD/
conventional UT channels
International code compliance:
ASME, AWS, API, ASTM, ISO–EN

User–friendly

All–level operators
Step–by–step application
Calibration wizards
Analysis and reporting tools

Advanced features

Real–time and Adaptive TFM
Linear, Matrix, Dual Linear and Dual Matrix arrays
3 axis management
3D imaging
3D real time imaging
Cylindrical reconstruction

Field ready

10.4″ Resistive touch screen
Dust & water resistant
Hot swap battery
Multi–group applications

2PA + TOFD inspection

A WIDE RANGE OF APPLICATION

Weld inspection . Pressure vessel inspection . Blistering characterization . Pipeline girth welds inspection . Small diameter pipes . Corrosion mapping . Nozzle inspection . Composite inspection . Cladded weld inspection . Fillet weld inspection

Weld inspection

Rail inspection

Aircraft wing inspection
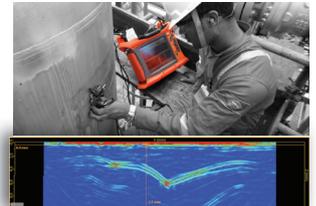
Corrosion mapping

STATE–OF–THE ART PHASED–ARRAY TECHNOLOGY

Real–time Total Focusing Method (TFM)

TFM is a powerful technique that focuses at each point of a user–specified zone for accurate defect characterization and high–resolution imaging. GEKKO extends standards views (A–B–S–C Scan + 3D views) to TFM allowing an operator to use advanced imaging in a familiar environment.
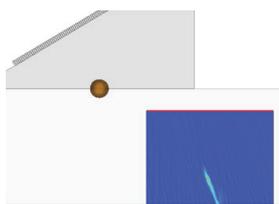
Defect characterization
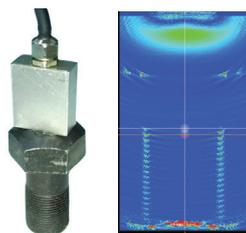
High resolution imaging

Adaptive TFM

Offered only on GEKKO, the Adaptive TFM module* computes in real–time TFM images inside components that have irregular surfaces. The ATFM process measures the top surface profile of a component and calculates at the same time a TFM image inside taking into account the variations of this profile. ATFM is usable for L–waves with soft wedges and immersion inspections.
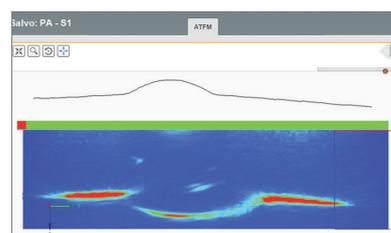
Adaptive Total Focusing Method

*GEKKO software option

M2M

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general

L x W x H: 410mm x 284mm x 126mm	10.4'' high contrast resistive screen - resolution 1024x768 px
Operating temperature range: from -10°C to 45°C | 14°F to 113°F	Weight: 6kg (without battery) ; 0,480g /battery
Storage temperature range: -10°C to 60°C | 14°F to 140°F with battery	IP66
Operating time: 4h (hot swappable battery)	Shock resistance according to MIL-STD-810G

standard phased-array

Linear scanning, sectorial scanning, compound scanning	Linear, matrix, DLA and DMA probes
Maximum active aperture: 64 channels	Up to 6 probes | Up to 8 groups | Up to 2,048 delay-laws
Phased array computation delay laws on plate, cylinder, T & Y, nozzle	CIVA fueled phased-array calculator
Focusing mode: true depth, sound path, projection	

real-time TFM

Reconstruction channels: up to 64	Max number of points of reconstructed image: up to 65k
Max refresh rate: up to 80fps	Sound paths: direct (L or S), indirect and converted modes

pulsers

64 phased-array channels*:	**4 UT-TOFD channels**:**
Negative square pulse, width: 35ns to 1250ns	Negative square pulse, width: 30ns to 1250ns
Voltage: 12V – 100V with 1V step	Voltage: 12V to 200V with 1V step
Max. PRF: up to 20kHz	Max. PRF: up to 20kHz

receivers

64 phased-array channels*:	**4 UT-TOFD channels**:**
Input impedance: 50 Ω	Input impedance: 50 Ω
Frequency range: 0.4 to 20MHz	Frequency range: 0.6 to 25MHz
Max. input signal: 2Vpp | TCG – ACG – DGS calibration wizard | DGS	Max. input signal: 2Vpp
Gain: up to 120dB (0.1dB step)	TCG – DAC calibration wizard
Cross-talk between two channels < 50 dB	Gain: up to 120dB (0.1dB step)

digitizer

Digitizing and real-time summation on 64 channels	Resolution: 16bits
FIR filters	Max. sampling frequency: 100 MHz
Real-time averaging up to x32	Digitizing depth up to 16k points
Rectified, RF, envelope	A-scan range or delay max 65k points

acquisition

Hardware acquisition gates	Max. data flow 150 MB/s on a 128Gb SSD (extensible up to 1 To)
A-Scan/Peak data recording	Inspection data file size: up to 10Gb
FMC recording	Data transfer through Ethernet
Acquisition trigger on time, event, encoder	800% amplitude range

wizards

CAD overlay and 3D view	Scanner calibration
Real-time phased array calculator	Amplitude calibration (TCG, DAC, DGS)
Base-time calibration for conventional UT	Probe design | Weld geometry design
Wedge calibration (angle, height, velocity)	Amplitude balancing
Specimen velocity calibration	Part geometry with parametric shapes: plate, cylinder, T & Y, nozzle

analysis

Capture © software with analysis and reporting tools – Free viewer	Amplitude range: up to 800%
A-Scan, B-Scan, C-Scan, D-Scan, Echodynamic, Top view, Side view, 3D view	Overlay part geometry: plate, cylinder, T or Y section, nozzle
Analysis gates	Overlay weld geometry
Compatibility with CIVA analysis and ENLIGHT	Customizable inspection report

I-O

1 IPEX connector for phased-array (can be upgraded to 2 with splitter)	4 LEMO 00 connectors for conventional UT
3 encoder inputs	1 external trigger
3 USB 2.0	Acquisition file transfer through Ethernet
	16 analog inputs

Indicated values may change without notice. *Standard: EN ISO 18563-1 for phased array channels*
**Standard: EN ISO 12668-1 for conventional channels*

M2M