SyncScan B 64

64:128PR Phased Array Flaw Detector with TFM

More Possibilities

Advanced Solutions for Welds & Corrosion

SIUI

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SyncScan 3 64

Phased Array Flaw Detector with TFM

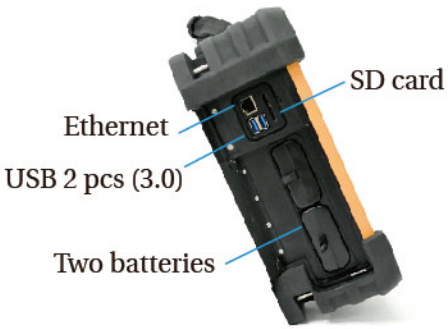
More Possibilities for Demanding Inspection

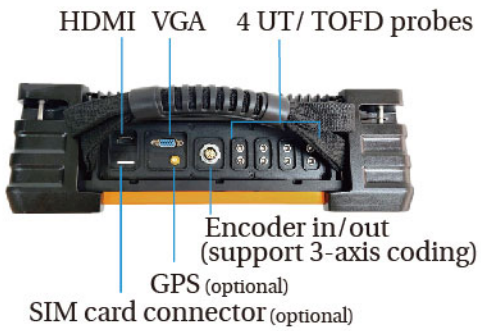
SyncScan 3 is 64:128PR PAUT flaw detector with total focusing method (TFM) and 4-ch TOFD, which brings more possibilities for demanding inspections in oil & gas, power industries, etc.

- TFM 3D real-time imaging.
- Up to 6 TFM modes in one time.
- Support TFM image resolution 1024x1024 & raw FMC data recorded.
- 64 channel PAUT with higher sensitivity and SNR, ideal for ⩾100mm thick welds.

Overview

- New practical buttons for quick access.(save, scan keys, etc)
- 12.1" high-resolution touch screen, for better view and user experience.
- Remote Meeting & Control function, provides fast support for technical guidance and training.
- Compatible with data files of SyncScan series, simplify parameters preparation. (Except SyncScan 1)

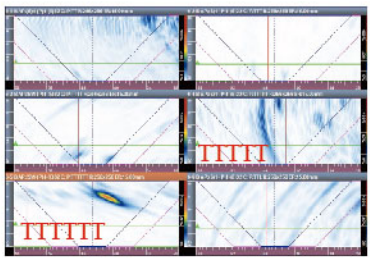




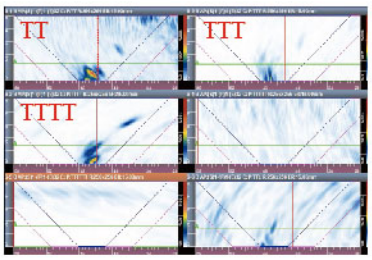
128-elements TFM

- Free selection for TFM image resolution and up to 1024x1024.
- Fitting Curve Algorithm(Patent) enhance data calculation ability, improve SNR and TFM imaging speed.
- 6 TFM modes simultaneously scanning, helps to identify the flaws in one time and improve testing efficiency.
- Raw FMC data can be recorded and exported, allowing TFM re-imaging by multiple propagation modes without re-scanning.

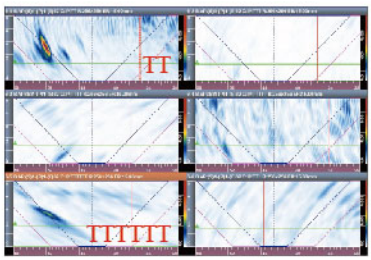
6 modes for plate weld (Thickness 21mm)



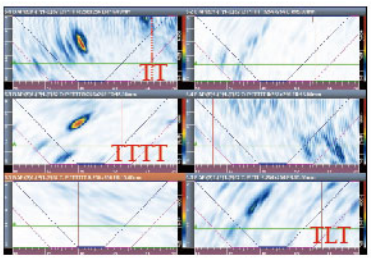
Longitudinal crack on surface



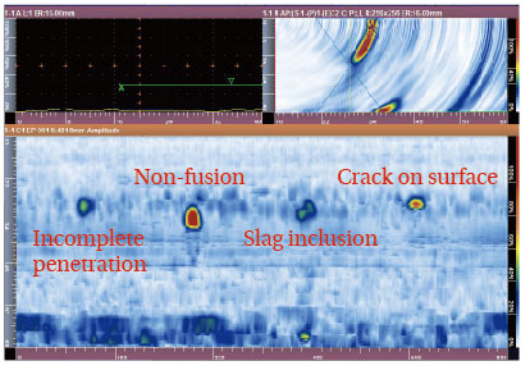
Incomplete root penetration



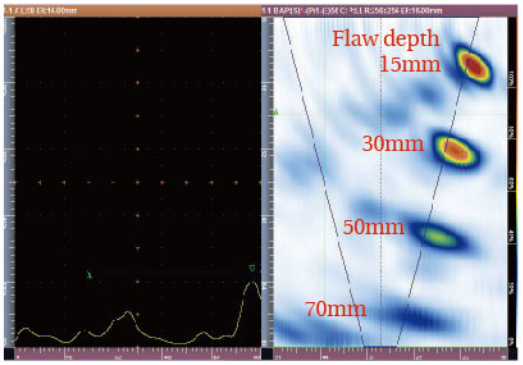
Lack of fusion



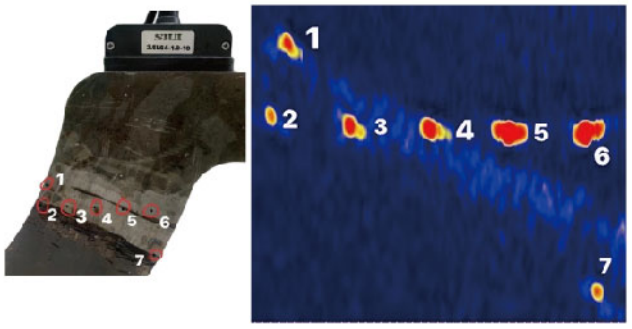
Slag inclusions



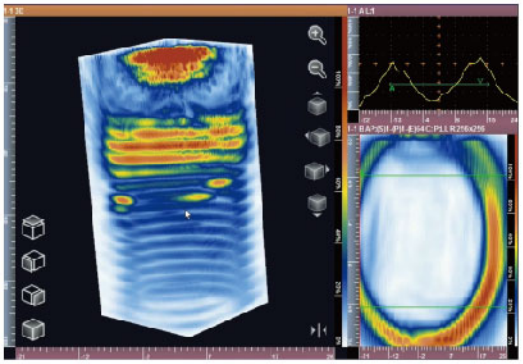
Austenitic plate with DLA probe (Thickness 40mm)



Austenitic block with DMA probe (Thickness 80mm)



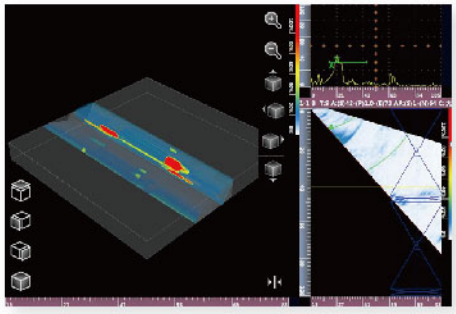
Austenitic butt weld test block



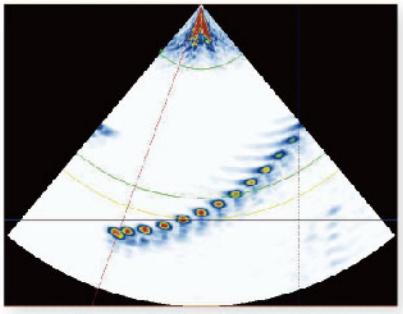
TFM 3D real-time imaging for bolt

● 64:128PR PAUT

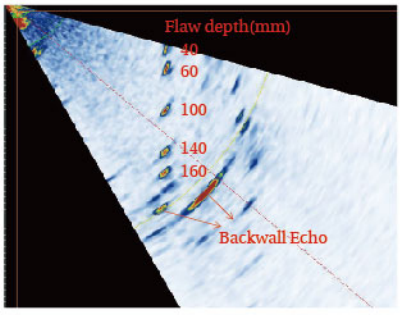
- 2.5X faster PAUT scanning speed, up to 7m/min.
- CAD import function, convenient for complex workpiece setup.
- 64 channel PAUT provides better coverage and SNR, especially suitable for inspecting ⩾100mm thick materials , complex composite materials, etc.



PA 3D: Supports 3D display of workpiece, probe, wedge, beam simulation and flaws.



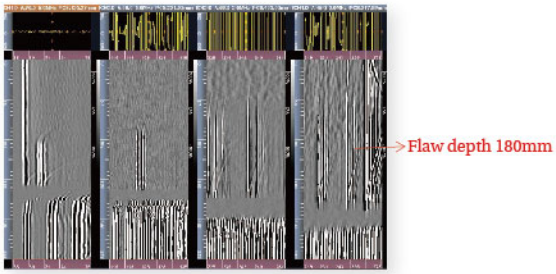
PA block type B



Workpiece thickness 168mm

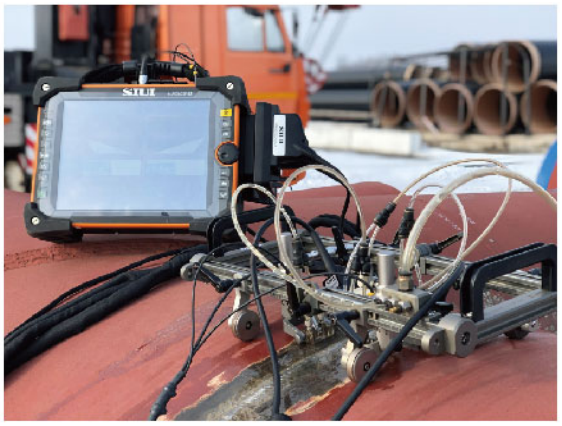
● 4 channel TOFD

- 3X faster TOFD scanning speed, up to 15m/min.
- 4-ch TOFD are especially suitable for welding inspection with thickness up to 300mm.
- Simultaneous display of TOFD + UT provides full coverage of workpiece without any blind zones.



Workpiece thickness 200mm

On-site Application


Technical Specification

TFM	
Propagation Modes	LL, LLL, LLLL, LLLLL,TT, TTT, TTTT, TTTTT, TTTTTT, LTT, TLT, TLL, TTL
Multi-mode	Up to 6 TFM modes in one time
Image Resolution	Up to 1024×1024; Horizontal/vertical resolution: 64-1024, step 16
Live TFM Envelope	Yes
No. of Channel	64
Probe Connector	Tyco, 1 pc
Max. Supporting Elements	128
Display Mode	B, A + B, A + B + C1, A + B + C1 + C2, A+B+3D
Scanning Length	≤3.2m/scan (default parameter, resolution 256×256, step 0.5mm)
Scanning Speed	≤0.6m/min (default parameter, display mode A+B+C, step 0.5mm)
FMC Data Acquisition	8192points/channel, 16bit/point
PRF	100Hz-6500KHz(resolution 64×64), step: 100/200/500/1000Hz
Pulse Voltage	10-100V, step 10V/20V
Pulse Width	50-1000ns, step: 10ns
Gain	0-80dB, step:0.1/0.5/2/6/12dB
Bandwidth	0.7-20MHz (-3dB)
A/D Sampling Rate	100MHz/12bit
Wizard	Amplitude Fidelity wizard; TCG calibration

	Conventional UT	Phased Array	TOFD
System			
No. of Channel	4	64	4
Probe Connector	LEMO 00, 8 pcs	Tyco, 1 pc	LEMO 00, 8 pcs(same as UT)
Max. Supporting Elements	8	128	8
PR (Pitch & Catch)	——	Available	——
Pulser	Negative square	Bi-polar square	Negative square
PRF	Adjustable 10-2000Hz, step: 20Hz	100Hz-20KHz, step: 100/200/500/1000Hz	Adjustable 10-2000Hz, step: 20Hz
Pulse Voltage	50V~400V, min. step 1V	10-100V, step 10V/20V	50V~400V, min. step 1V
Pulse Energy	——	4 levels	——
Pulse Width	30-1000ns, step:10ns	50-1000ns, step: 10ns	30-1000ns, step: 10ns
Damping	25/75/200/1000Ω, 4 levels	——	25/75/200/1000Ω, 4 levels
Pulser Delay	——	0-20μs, resolution 5ns	——
Pulser Focusing	——	Single point focusing	——
Receiver			
Gain	0-110dB, step:0.5/2/6/12dB Fine gain: -4~+4, step:1	0-80dB, step:0.1/0.5/2/6/12dB	0-110dB, step: 0.5/2/6/12dB
Bandwidth	0.5-20MHz (-3dB)	0.7-20MHz (-3dB)	0.5-20MHz (-3dB)
A/D Sampling Rate	170MHz/12bit	100MHz/12bit	170MHz/12bit
Sampling Point	1024, 16bit/ point	Adjustable 256/512/1024, 16bit/point	1024, 16bit/point
Rectification	Positive/ Negative/ Full/ RF	Positive/ Negative/ Full/ Filter/ RF	RF
Receiver Delay	——	0-20μs, resolution 2.5ns	——
Receiver Focusing	——	Max. range: 1008 foci per scan line	——
Filter	Digital 10 levels: 1-4/0.5-10/2-20/ 1/2.5/4/5/10/13/15MHz Analog 4 levels: 3/5/10MHz/whole	14 levels: Band-pass: 0.7-4/2.5-7/4-8.5/7-10/9-15/0.7-20MHz High-pass: HPF2.5/HPF4.0/HPF7.0/HPF9.0 Low-pass: LPF7.0/LPF8.5/LPF10.0/LPF15.0	16 levels: 0.5-5/0.5-10/3.5-10/0.5-15/5-15/ 0.5-20/1-4/0.5-10/2-20/1/2.5/4/5/10/ 13/15MHz
Reject	0-80%, step: 1%	——	——

Technical Specification

	Conventional UT	Phased Array	TOFD
Scan			
Scan Type	——	Linear/ Sector/ Compound	——
Trigger Mode	——	Time-based/encoder	Time-based/encoder
Scanning Length	——	⩽19m/scan (default parameter, step 0.5mm)	⩽50m/scan, 0.5mm/step
Scanning Speed	——	⩽ 7.5m/min (display mode A+B+C, step 0.5mm, subject to PRF)	⩽15m/min
Focal Laws	——	512	——
Scan Angle Range	——	-89°~+89°, step 1°	——
Angle Spacing	——	0.1°-5°, step 0.1°	——
Line Average	——	——	4 levels, 1/2/4/8
Focus Position	——	3-500mm, step: 1mm	——
Focal Mode	——	Depth, Sound Path	——
Measurement			
Range	0-15000mm Min. display range 5mm	0-1000mm, min. step 0.01mm, Min. display range 3mm	0-15000mm, min. step 0.1mm, Min. display range 5mm
Material Velocity	500-15000m/s, min. step:1m/s	500-15000m/s, min. step:1m/s	500-15000m/s, min. step:1m/s
Display Delay	-10-1000mm, min. step: 0.01mm	0-1000mm, min. step: 0.01mm	-10-1000mm, min. step 0.01mm
Probe Zero	0-200us, min. step: 0.01us	——	0-200us, min. step 0.01us
Probe Flank	0-100mm, step: 0.01mm	——	0-100mm, step 0.01mm
Test Point Selection	Peak/ Flank/ J Flank/ G Peak	Peak/ Flank/ J Flank/ G Peak	——
Wizard	Plate/ weld/forging scan DAC, AVG/ DGS, Angle calibration, Auto calibration (velocity, zero),	Scan wizard, Velocity/delay/sensitivity/TCG/manual TCG/ Horizontal zero / Wedge calibration	Scan wizard, PCS Calculation, Time Window, Probe Zero Calibration, Ultrasound Parameter
Curve Function	AVG/DGS; TCG & DAC: Max. 6 lines & 16 points for each line	TCG & DAC: Max. 6 lines & 16 points for each line; Manual TCG	——
Auxiliary Function	Coordinates switch (sound path/depth horizontal), full screen, auto freeze, auto gain (single/continuous), second leg color, wave compare, gate expansion, wave filling, peak envelope, Cineloop, screenshot	Auto gain: Single/ Continuous Auto Search: Search the highest echo amplitude scan line within gate range in B scan.(available when in R view); CAD import; Probe/wedge import/export	——
Measurement	Three gates: to measure echo amplitude, amplitude dB difference, sound path, Ra/Da	Three gates for each A scan, max. 18 gates: to measure echo amplitude, sound path, Ra/Da	Flaw height and length measurement.
	Cursor: two cursors to measure horizontal and vertical position of B scan and distance between cursors.	Cursor: two cursors to measure horizontal and vertical position of B/C/D scan and distance between cursors on B/C/D scan.	
Gate Mode	Normal, Tracing	Sound Path, Depth	——
Gate Start	Full range	Full range	——
Gate Width	Full range	Full range	——
Gate Thresh	10-90%, step: 1%	10-90%, step: 1%	——
Display Mode	——	A, B, C, D, A+B, B+C, B+D, A+B+C, A+B+D, 3A+B, A+B+C+D, A+B+R, A+B+C+R, A+[B], A+C, A+B+3D, full screen.	——
Alarm Signal	Signal&sound alarm: positive/ negative	Signal&sound alarm: positive/ negative	——
Display Measure Value	——	8 positions can be user-defined.	——
Data Analysis	——	Image mode switch, image gate dynamic reconstruction and report generation	LW/BW straightening/ removal, contrast adjust, gain adjust, zoom
Testing Index			
Time Base Linearity	⩽0.5%	——	——
Vertical Linearity	⩽3%	——	——
Amplitude Linearity	⩽±2%	——	——
Attenuator Precision	20dB±1dB	——	——
Dynamic Range	⩾32dB	——	——

Technical Specification

Software			
Basic Version	UT API 5UE UTAWS UT TCG UT CSC UT FFT UT B-Scan UT FlatWeldSim UT CrackMeas	PA DAC PA Groups PA Probe Element Testing PA FlatWeldSim PA C Scan In-Depth	——
	SuporUp PC Analysis Software: Analysis Software		
Full Version	UT API 5UE UT AWS UT TCG UT CSC UT FFT UT B-Scan UT FlatWeldSim UT CrackMeas	PA DAC PA Groups PA Probe Element Testing PA FlatWeldSim PA C Scan In-Depth PA Flat Weld Solution PA Angle Weld Solution PA Corrosion Solution PA Pipe Girth Weld Solution PA Long Pipe Solution PA Corner Joint Solution	1-ch TOFD 2-ch TOFD 3-ch TOFD 4-ch TOFD TOFD SAFT Simultaneous Display of PAUT and TOFD Software
	SuporUp PC Analysis Software:	Analysis Software	
		PA Corrosion Software	Two-ways Activation: •License •Dongle
		PA Emulator Software	
		Acquisition Software	

General Technical Specification	
Display Screen	12.1" high brightness TFT LCD, 1024×768 pixels
Dimension (W×H×D)	365×270×115 (mm)
Weight	7.7kg with 2 batteries
Battery	Lithium batteries, 2 pcs
Battery Capacity	7.5Ah /pc, operation time ⩾4 hours
External Power Supply for Adaptor	AC 100-240V 50Hz/60Hz
Adaptor Output	15VDC
Power	⩽70VA
Data Storage	64 GB SSD
Language	English/ German/ French/ Polish/ Czech/ Hungarian
USB Connector	2 pcs (3.0)
SD Card Connector	Standard SD card (64G)
Ethernet Connector	1 pc
Video Output	VGA/ HDMI ports
Encoder Connector	1 pc (14-core); including 6 digital inputs/outputs, TTL
GPS	1 pc (Optional Function)
SIM Card Connector	1 pc (Optional Function)
WIFI	Yes
Bluetooth	Yes
Operation Temperature	-10℃-45℃
Storage Temperature	-20℃-60℃
IP Code	IP65
Shockproof Rating	Drop-tested according to MIL-STD-810G
Certifications	ISO22232-1 or EN12668-1 or ISO 18563-1 (Extra Cost)

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