

SyncScan 2



Maximize your efficiency for PA and TOFD

SIUI



SIUI's newly launched SyncScan 2, is a high-end ultrasonic flaw detector with 32:128PR PAUT and 2-ch TOFD, which can maximize your efficiency for PA and TOFD.



Superior Features

- High IP rate: IP 65
- Light weight: 4kg only including battery.
- 8.4" LCD with resolution 800×600 pixels.
- Working temperature: -10 °C ~ 45 °C
- Faster scan speed(Approximately 3 meters/minute).
- Removable electric fan: cool down the system when it works in high temperature.
- Support PA/TOFD/UT, suitable for weld, forging and plate inspection.
- 32-channel PA is more suitable for inspection on extra-thick wall and high-attenuation material.
- 32-channel PA and 2-channel TOFD work simultaneously, focusing on pressure vessel inspection.
- Support PR mode, focusing on pipe corrosion inspection when with high-end dual-crystal PA probe.
- System ports: encoder, VGA, standard SD card, USB 2.0/3.0.

Removable Electric Fan



Application Range

- Phased array inspection on tube, forged piece, bar, casting, weld, composite material, railway and alloy steel.
- TOFD inspection on weld of plate, pipeline, tank and boiler.
- Phased array, TOFD and conventional ultrasonic testing in various industries such as transportation, petrochemical engineering, machinery, metallurgy, railway, shipbuilding, aircraft and building.



Solution

PAUT Solution for Long-distance Pipeline

For one/dual-side inspection on long-distance pipeline in petrochemical industry.
Dual-side phased array inspection and PAUT+TOFD inspection for selection.



PAUT Solution for Small Pipe Weld

For girth weld inspection on pipe with OD ranging 20.32-114.3mm and wall thickness ranging 4-20mm.



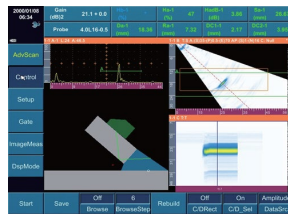
PAUT Solution for Medium Pipe Weld

For girth weld inspection on pipe with OD ranging 100-300mm.

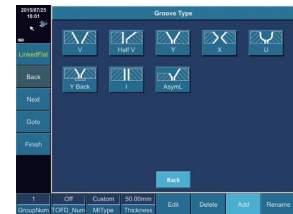


PAUT/TOFD Solution for Flat Weld

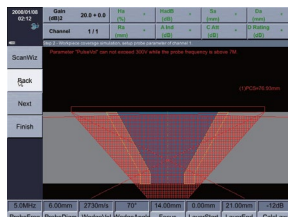
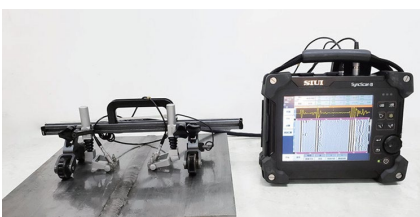
Compatible with different crawlers for various flat weld inspection.



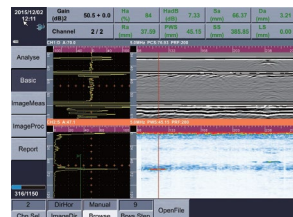
RayTracing (A+B+R scan)



Various Weld Types



Beam Coverage Simulation

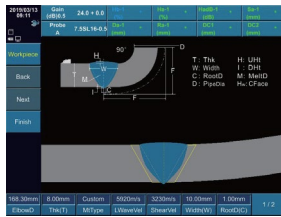


TOFD+Conventional UT to inspect blind zone area

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PAUT Solution for Corrosion

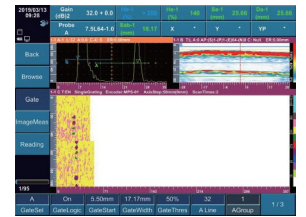
With Dual Linear Array Probe and different corrosion mapping scanner, SIUI's PA ultrasonic flaw detector can be used for phased array testing on small&medium areas, immersion pipeline and even for scanning in any direction in two-dimensional space.



Elbow Weld



Flange Weld



Corrosion C scan

Compatible Crawler



Phased array butt weld inspection crawler



Phased array & TOFD crawler



Corrosion mapping crawler

Technical Specification

	Conventional UT	Phased Array	TOFD
System			
No. of Channel	2	32	2
Probe Connector	LEMO 00, 4 pcs	Tyco, 1 pc	LEMO 00, 4 pcs(same as UT)
Max. Supporting Elements	4	128	4
PR(Pitch & Catch) Function	—	Available	—
Pulser	Negative square	Bi-polar square	Negative square
PRF	Adjustable 10-2000Hz Step: 20Hz	100Hz-10KHz 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	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	10 levels: 1-4/0.5-10/2-20/ 1/2.5/4/5/10/13/15MHz	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	6 levels: 0.5-5/0.5-10/3.5-10/0.5-15/5-15/ 0.5-20MHz
Reject	0-80%, step:1%	—	—
Scan			
Scan Type	A	A/S/L/C/D	A/ TOFD
Trigger Mode	—	Time-based/encoder	Time-based/encoder
Scan Length	—	≤4m/scan (default parameter, step 0.5mm)	≤50m/scan, 0.5mm/step
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	—
Basic			
Range	0-15000mm Min. display range 5mm	0-1000mm, min. step 0.01mm, min display range 3mm	0-15000mm, min. step 0.1mm
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
Wizard	DAC, AVG/ DGS, Angle calibration, Auto calibration (velocity, zero), Plate, weld, forging scan	Scan wizard velocity/delay/sensitivity/TCG calibration wizard	Scan wizard, PCS Calculation, Probe Zero Calibration, Ultrasound Parameter, Time Window
Calibration	Zero, Velocity, Angle	Zero, Velocity, Delay, Sensitivity, TCG	PCS, Wedge Delay, PCS/Depth, Time Window, Probe Zero
Test Point Selection	Peak/ Flank/ J Flank/G Flank G Peak	Peak/ Flank/ J Flank/ G Flank G Peak	—
Measurement	Three gates: to measure echo amplitude, amplitude dB difference, sound path, Ra/Da Cursor: two cursors to measure horizontal and vertical position of B scan and distance between cursors (active when optional B scan function is available.).	Three gates for each A scan, max. 18 gates: to measure echo amplitude, sound path, Ra/Da Cursor: two cursors to measure horizontal and vertical position of B/C/D scan and distance between cursors on B/C/D scan.	Flaw height and length measurement.
Gate Mode	Normal, Tracing	Sound Path, Depth	—
Gate Start	Full range	Full range	—

	Conventional UT	Phased Array	TOFD
Basic			
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, full screen.	—
Measurement			
Curve Function	AVG/DGS DAC: Max. 6 lines&16 points for each line	TCG & DAC: Max. 6 lines, max. 16 points for each line	—
Auxiliary Function	Full screen, coordinates switch (sound path/ depth/ horizontal), auto gain (single/ continuous), second leg color, wave compare, gate expansion, wave filling, peak envelope, auto freeze, Cinelooop, screenshot, crack height measurement, API, AWS, UT probe spectrum analysis, CSC(Curved Surface Correction, TCG, B scan, flat weld groove, BEA	Auto gain: Single/ Continuous Auto Search: Search the highest echo amplitude scan line within gate range in B scan.(available when in R view) Group function: max. 6 groups Flat weld groove C Scan In-Depth Probe Element Testing	—
Alarm Signal	Signal and sound alarm: positive/ negative	Signal and 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	—	—
Software			
Optional Software	—	Flat Weld Solution Angle Weld Solution Corrosion Solution Pipe Girth Weld Solution Simultaneous Display of PAUT and TOFD Software PA Long Pipe Solution	SAFT 1-ch TOFD 2-ch TOFD

General Technical Specification	
Display Screen	8.4" high brightness TFT LCD, 800×600 pixels
Dimension (W×H×D)	284×220×105(mm)
Weight	4 kg with battery
Battery	Lithium battery, 1 pc (0.55kg)
Battery Capacity	7.5 Ah/pc, operation time around 4 hours
External Power Supply for Adaptor	AC 100-240V 50Hz/60Hz
Adaptor Output	15V DC
Power	26VA for PAUT 20VA for UT/TOFD
Data Storage	Standard SD card (16G)

General Technical Specification	
Input/Output	
USB Connector	2 pcs
Ethernet Connector	1 pc
Video Output	VGA port
Encoder Connector	1 pc (14-core)
Environment Tests	
Operation Temperature	-10℃ -45℃
Storage Temperature	-20℃ -60℃
IP Code	IP65

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