

# SyncScan 2

32:128PR PAUT & 2-ch TOFD Flaw Detector



**Maximize** Your Efficiency

Multiple Solutions for Welds & Corrosion

**SIUI**



# SyncScan 2

## High-end PAUT & TOFD Flaw Detector

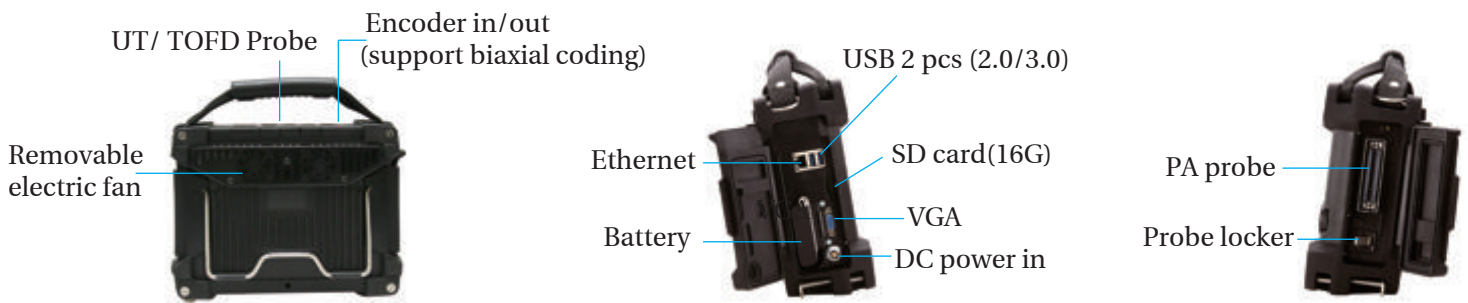
### ● Maximize Your Efficiency



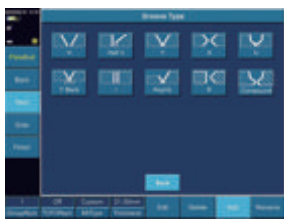
SyncScan 2 is 32:128PR PAUT flaw detector with optional 2-ch TOFD, which can maximize your efficiency for PA and TOFD.

- Light weight: 4kg only including battery.
- Faster scan speed (Approx. 3 meters/minute).
- Removable electric fan: cool down the system when in high temperature.
- 1 or 2 ch-TOFD for your selection by license activation.
- Support UT/PA/TOFD, 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 on pressure vessel inspection (TOFD can measure thickness up to 100mm).
- Support pitch and catch (PR) mode, corrosion inspection with dual linear array probe.

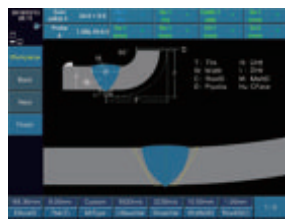
### ● Overview



### ● Advanced Software



Various Weld Types



Elbow Weld

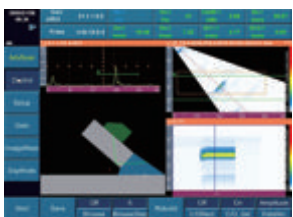


Flange Weld

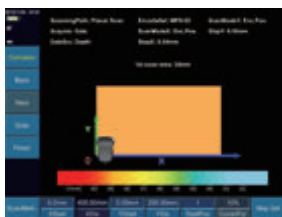


Conner Joint Weld

- Various workpieces and weld types for selection according to different on-site application.



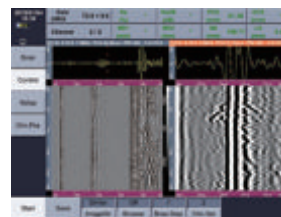
RayTracing (A+B+R scan)



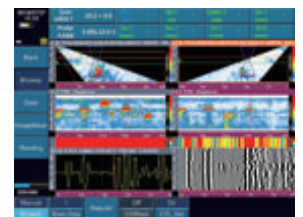
Corrosion Wizard



Color Map Edit



2 ch-TOFD



Simultaneous Display of PAUT&TOFD

- Multi-view mode helps to locate defects more easily.
- Customized color map to visualize different wall thickness.
- PAUT+TOFD inspection enhances the testing efficiency.

\* EN-12668-1 compliant; ISO 18563-1:2015 as optional.

\* Specific functions are subject to final order.

## Multiple Solutions for Welds

### Suitable for Different Applications

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

### PAUT Solution for Austenitic Weld

With dual matrix array probe for inspecting austenitic weld in petrochemical and nuclear power industries.



### PAUT & TOFD Solution for Long-distance Pipeline

For circumferential weld inspection on long-distance pipeline with OD 1000-1300mm (39.38-51.18 inch).

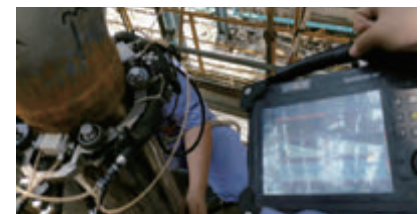
2 PAUT & PAUT+TOFD inspection for selection.



### PAUT & TOFD Solution for Medium-to-large-diameter Pipe

For circumferential weld inspection on medium & large pipes with OD 100-1000mm (3.94-39.37 inch) and higher wall thickness.

2 PAUT & PAUT+TOFD inspection for selection.



### PAUT or TOFD Solution for Small & Medium Tube Welds

With 16 or 32 elements low-profile PA probes, suitable for girth welds inspection on small tube with OD 20.32-114.3mm (0.84-4.5 inch) and medium tube with OD 100-300mm (3.94-11.81 inch).

2 PA or TOFD inspection for selection.



### PAUT & TOFD Solution for Flat Weld

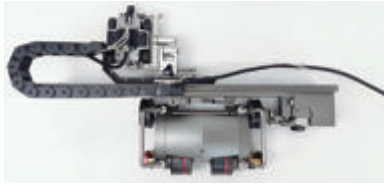


# SyncScan 2

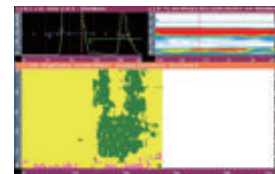
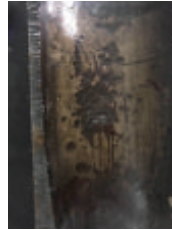
## Multiple Solutions for Corrosion

### PAUT Solution for Corrosion

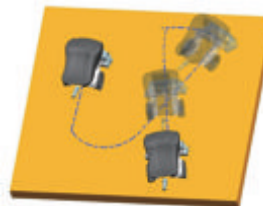
With automatic 2-axis scanner CUS-01 for automated PA corrosion mapping on pipes with OD  $\geq$  100mm (3.94 inch) and plate.



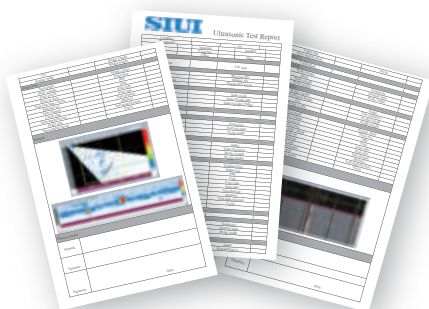
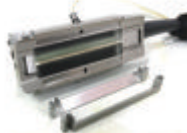
With scanner MPS-01A for PA immersion testing for corrosion on pipes with OD  $\geq$  100mm(3.94 inch) and plate.



With scanner MPS-02 for PA corrosion mapping on pipes with OD  $\geq$  100mm(3.94 inch) and plate in any direction in 2D space.



With dual linear array probe for detecting coarse-grained and composite materials with severe attenuation.



Report

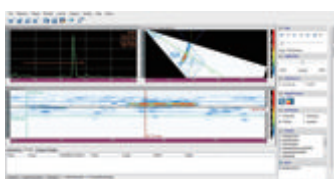
### SuporUp PC Software

Checking data file, screen capture, measuring data analysis, playback. generating test reports in word or excel format.

Several files from corrosion solution can be opened and combined.

Abundant report samples are available.

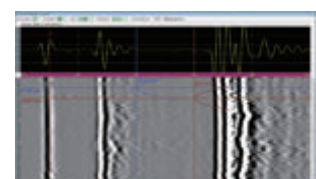
It can be installed in every operator's laptop without extra cost.



PAUT File Measurement



Corrosion File Measurement



TOFD File Measurement

## Technical Specification

	Conventional UT	Phased Array	TOFD
<b>System</b>			
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: 2.5ns	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	—
<b>Receiver</b>			
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	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%	—	—
<b>Scan</b>			
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	—
<b>Basic</b>			
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
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	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 (active when optional B scan function is available.).	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, full screen.	—

## Technical Specification

	Conventional UT	Phased Array	TOFD
<b>Measurement</b>			
Curve Function	AVG/DGS DAC: Max. 6 lines & 16 points for each line	TCG & DAC: Max. 6 lines & 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, Cineloop, screenshot, CrackMeas, API 5UE, AWS, FFT, CSC, TCG, B-Scan, FlatWeldSim, 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 FlatWeldSim, C Scan In-Depth Probe Element Testing	—
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
<b>Testing Index</b>			
Time Base Linearity	≤0.5%	—	—
Vertical Linearity	≤3%	—	—
Amplitude Linearity	≤±2%	—	—
Attenuator Precision	20dB±1dB	—	—
Dynamic Range	≥32dB	—	—
<b>Software</b>			
SyncScan 2 Optional Software	—	PA Flat Weld Solution PA Angle Weld Solution PA Corrosion Solution PA Pipe Girth Weld Solution Simultaneous Display of PAUT and TOFD Software PA Long Pipe Solution PA Corner Joint Solution	SAFT 1-ch TOFD 2-ch TOFD
SuporUp PC Analysis Software	Analysis Software (Standard) PA Corrosion Software (Optional) PA Emulator Software (Optional) Acquisition Software (Optional)		Two-ways Activation: •License •Dongle



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 4.5 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)
Language	English/ German/ French/ Polish/ Czech/ Hungarian
<b>Input/Output</b>	
USB Connector	2 pcs
Ethernet Connector	1 pc
Video Output	VGA port
Encoder Connector	1 pc (14-core)
<b>Environment Tests</b>	
Operation Temperature	-10℃-45℃
Storage Temperature	-20℃-60℃
IP Code	IP65

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