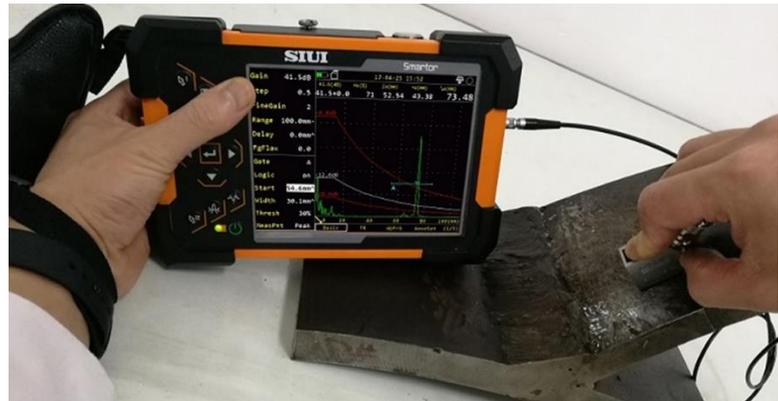


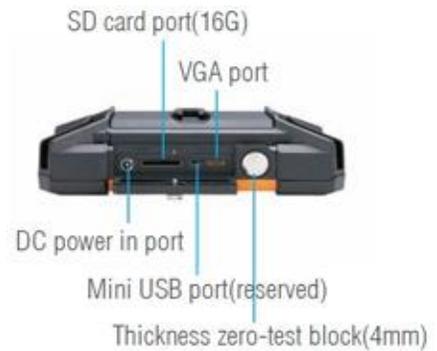
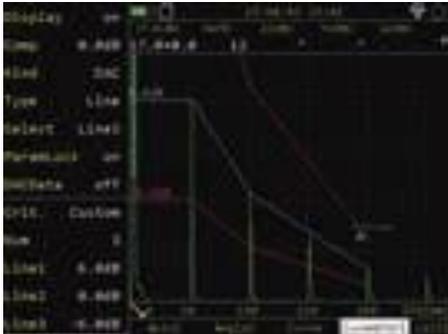
## Smartor Ultrasonic Flaw Detector & Thickness Gauge



- One-hand Operation
- Smart Test Wizard
- Weld Simulation
- Advanced Conventional UT & Thickness Measurement



## SIUI's new Smartor is a combination ultrasonic testing and ultrasonic thickness measurement





## Superior Features:

- **High IP Rating:** IP 66
- **Compact Size:** ~8" x 5" x 2" (198 x 128 x 50 mm) (W x H x D)
- **Lightweight:** 2 lbs. (0.9 kg) including battery
- 5.7" LCD with high resolution, 640 x 480 pixels
- Adjustable pulse width, negative square wave transmission is up to 350V.
- **Operating frequency range:** 0.5 - 20MHz, multiple steps of wide broadband and narrow-band for selection.
- **Easy operation:** Only a few buttons, well-defined intuitive interface, supported right-hand and left-hand operation, outdoor mode.
- **Multiple conventional UT functions:**
  - Weld, plate and forging test wizards are available, which can guide users to perform setup easily and improve inspection speed.
  - Peak memory, DAC curve, AGC (auto gain control) and video recording allows for convenient and efficient flaw detection
  - Optional functions such as B-Scan, TCG, probe spectral analysis, CSC (curved surface correction), weld simulation and crack height measurement are available upon request.
  - Featured with AWS D1.1/D1.5 and API 5UE evaluation standards
- **Multiple thickness measurement functions:**
  - Standard A-Scan thickness measurements (through coating measurement, echo to echo mode)
  - Auto-search, velocity measurement, alarm and dataset management are available upon request.
  - **Optional functions:** coating thickness measurement, B-Scan, multi-layer measurement, V-PATH, TDG and temperature compensation.
- **System Ports:** Encoder, VGA, standard SD card, USB

**EN12668-1: 2010 (for UT) & EN15317-2007 (for TG) compliant**

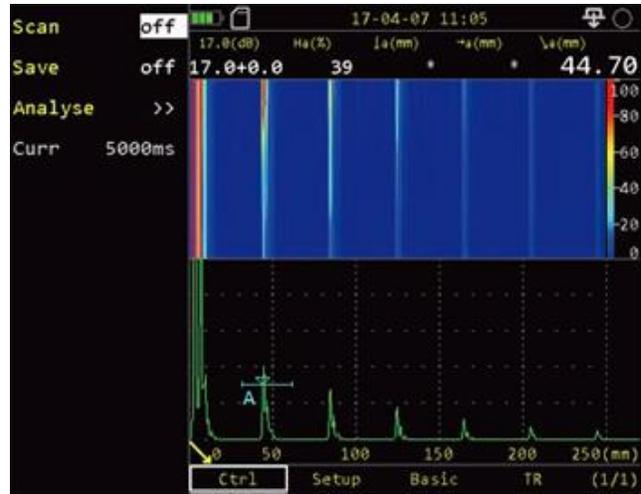
## Conventional UT

### Test Wizard



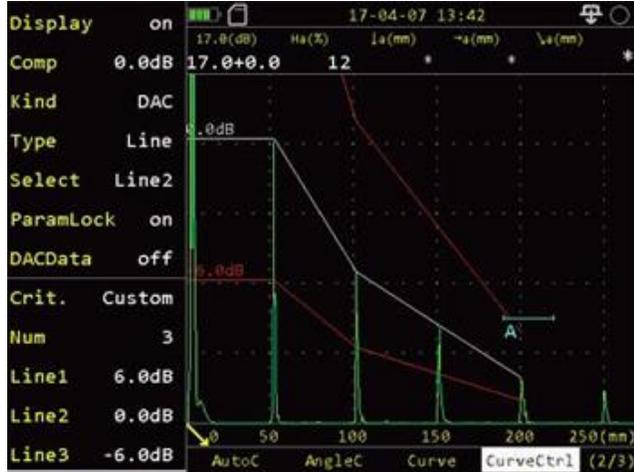
Setup wizard will help users configure the professional operation process, enabling more professional testing.

### B-Scan



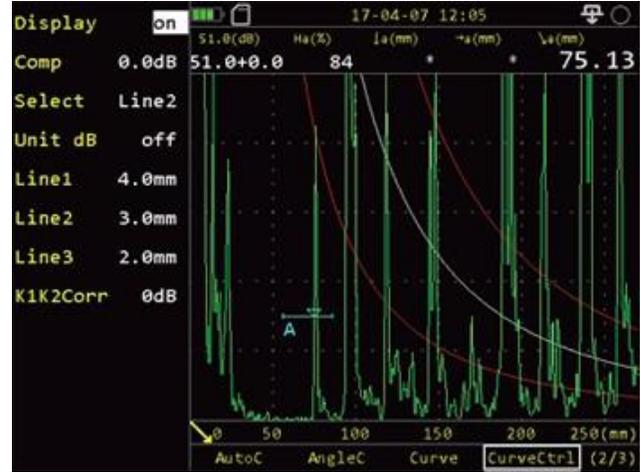
Display A-Scan echo in imaging mode, to achieve more intuitive test results for easy observation and analysis.

### DAC Curve



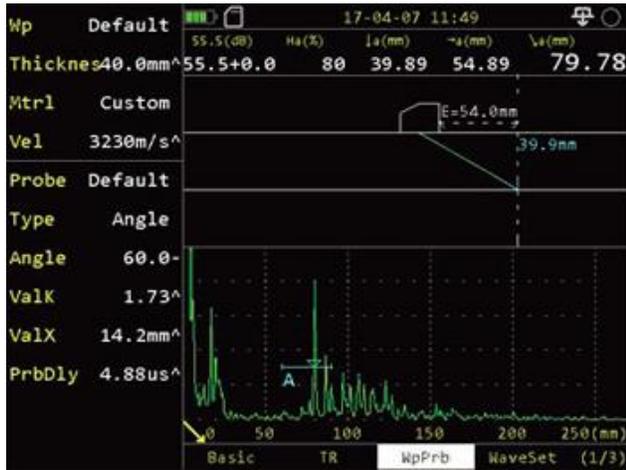
Easier, more convenient, flaw evaluation

### AVG/DGS Curve



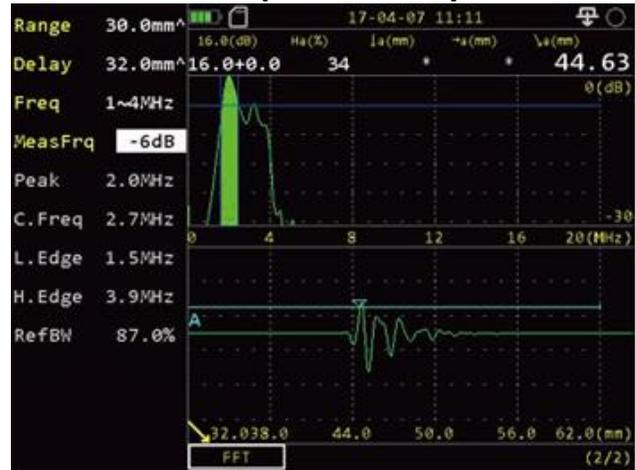
Auto created by taking a known flat-bottom hole or large flat-bottom echo for reference.

## Weld Simulation

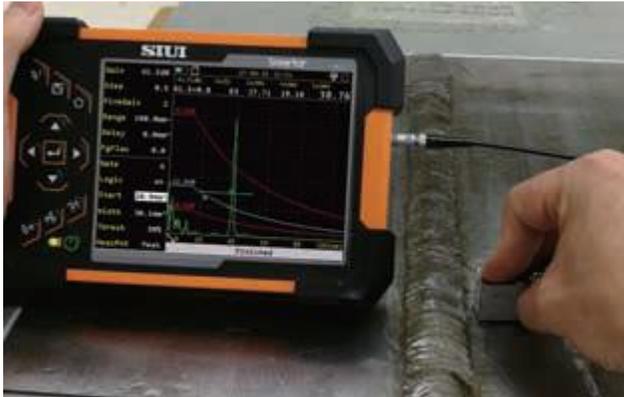


Simulates the weld shape and uses the dynamic beam tracking function to assist the user to quickly determine the location of flaws in the weld.

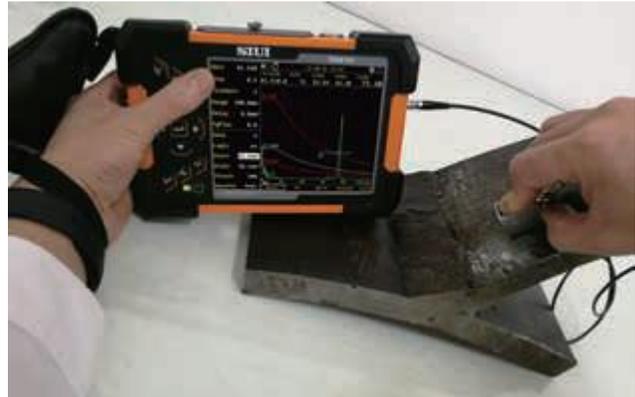
## Probe Spectral Analysis



The probe waveform, spectrum and center frequency of the probe can be measured precisely by capturing echoes.



Flat weld Testing



Angle weld testing

## Thickness Measurement

### B-Scan



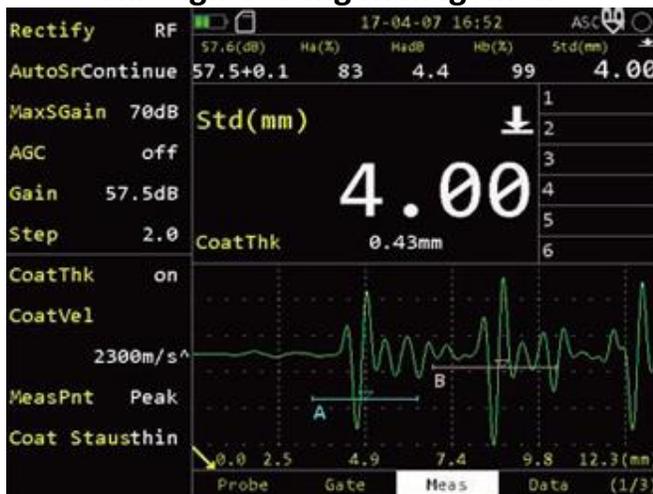
Based on time interval or encoder, you can display the measurement readings in a B-mode image.

### Data Set Management



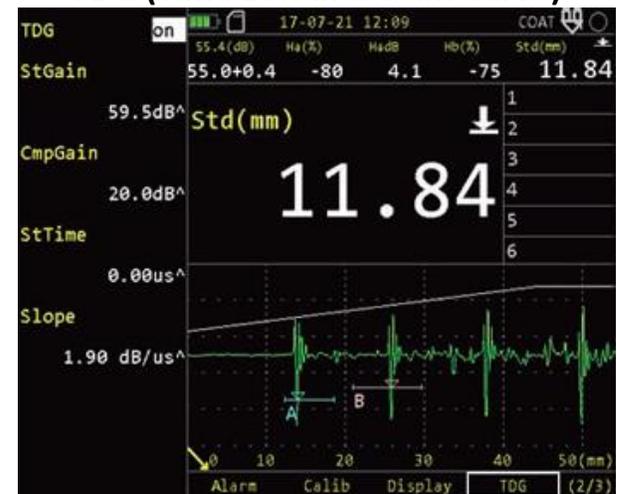
Measurements are recorded and displayed in grids.

### Through-coating Management



After setting the coating velocity, through-coating thickness and coating-thickness can be displayed at the same time.

### TDG (Time Distance Gain Curve)



It can be used for compensating the loss of echo amplitude due to propagation of sound path.

## TempComp Function

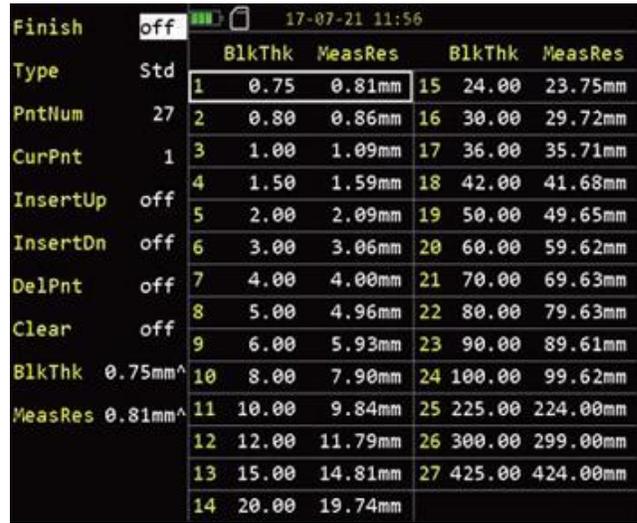


When there is a temperature difference between the calibration block and the detected workpiece, this can be used for temperature compensation.



Thickness measurement on pipe

## V-PATH Function



Finish	off	BlkThk	MeasRes	BlkThk	MeasRes
Type	Std	1	0.75 0.81mm	15	24.00 23.75mm
PntNum	27	2	0.80 0.86mm	16	30.00 29.72mm
CurPnt	1	3	1.00 1.09mm	17	36.00 35.71mm
InsertUp	off	4	1.50 1.59mm	18	42.00 41.68mm
InsertDn	off	5	2.00 2.09mm	19	50.00 49.65mm
DelPnt	off	6	3.00 3.06mm	20	60.00 59.62mm
Clear	off	7	4.00 4.00mm	21	70.00 69.63mm
		8	5.00 4.96mm	22	80.00 79.63mm
		9	6.00 5.93mm	23	90.00 89.61mm
BlkThk	0.75mm	10	8.00 7.90mm	24	100.00 99.62mm
MeasRes	0.81mm	11	10.00 9.84mm	25	225.00 224.00mm
		12	12.00 11.79mm	26	300.00 299.00mm
		13	15.00 14.81mm	27	425.00 424.00mm
		14	20.00 19.74mm		

All the original dual element probes have a set of default V-PATH calibration curves. Users can make a set of UserVpath curves for a specific probe.



Thickness measurement on step block



## Technical Specifications for Conventional UT & Thickness Measurement

General Technical Specifications		
Display Screen:	5.7" high brightness TFT LCD, 640 x 480 pixels	
Measuring Units:	Inch / mm	
Peripheral Ports:	USB, SD card (16G) and VGA ports (sharing same mini HDMI with I/O signal port)	
Languages:	English, German, Russian, Polish, Hungarian	
Power Supply:	DC 12V (external power supply); 7.4V (battery)	
Battery Operating Time:	≥8h (under factory default mode)	
Operating Temperature:	14°F - 113°F (-10°C - 45°C)	
Storage Temperature:	-4°F - 140°F (-20°C - 60°C)	
IP Code:	IP66	
Weight:	~2 lbs. (0.9 kg) including battery	
Dimensions:	~8" x 5" x 2" (198 x 128 x 50mm)	
Encoder Connector:	1pc (4-core)	
	Conventional UT	Thickness Measurement
No. of Channels:		1
Probe Connector Type:		LEMO 00
No. of Probe Connectors:		2
Max. Supporting Elements:		2
Work Mode:		<p><b>Standard</b> (R-B1, measurement from transmit pulse to the first bottom wave) All measurements using Zero Crossing.</p> <p><b>Echo to Echo</b> (B1-B2, measurement by auto-tracking the second bottom wave according to the first bottom wave).</p> <p>Through-coating measurement.</p>
Pulse:	Negative Square, Negative spike pulse	Negative Square, Negative spike pulse (auto fits the probe)
Transmitting Voltage:	50 – 350V, steps 50V	50 – 350V (auto fits the probe)



Pulse Width:	<b>Negative Square:</b> 50-500ns, step 10ns <b>Negative spike pulse:</b> ≤40ns	<b>Negative Square:</b> 50-500ns (auto fits the probe) <b>Negative spike pulse:</b> ≤40ns (auto fits the probe)
PRF:	<b>Negative Square:</b> 10-1000Hz adjustable, step 10Hz <b>Negative spike pulse:</b> 10-2000Hz adjustable, step 10Hz	200Hz
Damping:	50/1000Ω, 2 levels	50/1000Ω, 2 levels (auto fits the probe)
A/D Sampling Rate:	240MHz / 10bit	
Sampling Point:	1024 points, 16bit/point	
Gain:	0-110dB, step: 0.5/2/6/12dB	0-110dB Manually adjustable step: 0.5/2/6/12dB Auto adjustable (auto-search or auto-gain)
Fine Gain:	-4-4	
Surface Compensation:	Full gain range	
Bandwidth:	0.5 – 20MHz (-3dB)	
Operating Frequencies:	1-4MHz/ 0.5-10MHz/ 1MHz/ 2.5MHz/ 4MHz/ 5MHz/ 10MHz/ 13MHz/ 15MHz/ 20MHz, 11 levels	
Rectify:	Negative/ Positive/ Full/ RF/ Filter	Negative/ Positive/ Full/ RF
Reject:	0-80%, step 1%	
Detection Range:	0-39" (0-1500mm), min. display range 0.1" (2.5mm)	0.02"-24" (0.5-600mm) (subject to probe, material, temperature and selected configuration)
Indication Resolution:	0.0001"/ 0.001"/ 0.01" (0.001/ 0.01/ 0.1mm)	
Indication Precision Error:	0.03"-0.4" ± 0.002" (0.80-9.99mm ± 0.05mm) 0.4"-4" (10.00-99.99mm) ±	



		(1%H + 0.04) 4"-16" (100.00-400.00mm) ± 3%H Tested with TGM5-10L Probe; H is the measured thickness.
Tube Wall Thickness Measurement:		With TGM5-10L probe, it can measure steel tubes with diameters no less than 0.8" (20mm) and wall thickness no less than 0.08" (2mm)
Material Velocity:	100-20000m/s, min step 1m/s	100-20000m/s
Display Range:		0.2"-40" (5-1000mm)
Pulse Shift Range:	-0.4"-40" (-10-1000mm) min step 0.004" (0.1mm)	-0.4"-20" (-10-500mm)
Probe Zero:	0-200us, min step 0.01us	0-200us
Probe Flank:	0"-4" (0-100mm), step 0.004" (0.1mm)	
Wizard:	For weld, plate and forge testing	
Test Point:	Peak/ Flank/ J Frank	
Measurement:	<b>Gate:</b> amplitude, amplitude dB difference, sound path, horizontal distance, vertical distance, south path difference between Gate A and B. <b>Cursor:</b> 2 cross cursors, measuring horizontal and vertical positions on B-scan image and distance between cursors (activated for optional B-scan)	
Gate Mode:	Standard	Gate A is selected in standard measurement mode
No. of Gates:	2	



Gate Start:	Full range	Gate A start: -0.4"-4" (-10-1000mm), min step 0.004" (0.1mm)
Gate Width:	Full range	Gate A width: 0.04"-4" (1-1000mm), min step 0.004" (0.1mm)
Gate Thresh:	10-90%, step 1%	Gate A thresh: 10-90% or -10-90% (for RF), step 1%
Auto Search:		Off/on; if enabled, auto adjusts to proper display range, gain and gate position based on the measured wave signals, to improve measurement efficiency.
Velocity Measurement:		Velocity dynamic measurement
Calibration:	Zero point, zero point + velocity, probe angle	Measure the known reference block for fast zero point calibration. Custom calibration (zero point/zero point + velocity calibration)
Measurement Reading Mode:		Std / MinVal / MaxVal / Avg / Diff
Alarm:	Audible and visual alarm: positive/ negative	Upper and lower limit alarm (sound, indicator light)
Screen Display Combination:	Normal, full screen	A/BVa, A/Ba/SVa, Ba/BVa (A-Scan + big value/ A-Scan + data grid + small value/ data grid + big value)
Refresh rate of measurement:		4/8/16/32Hz
Curve Function:	Up to 6 DAC (curve/ line), up to 10 reference points for each curve line. AVG/DGS	



Auxiliary Function:	Full screen, coordinates switch (sound path/ depth/ horizontal), single/ continuous auto gain (10-100%, step 10%), SeeColor, WaveComp, WaveFull, PeakEnv, PeakEcho, FastScan, Outdoor, gate magnify, CineRec, PrintScreen. Auto freeze (Gate: A, B, A and B, A or B)	Freeze, auto gain, history reading column, last reading maintained, inch/mm switch, outdoor mode.
Storage Function:	Save, recall and delete the parameter, data files, record files, printscreens, depends on the SD card capacity.	Save, recall and delete parameter, data sets, printscreens, depends on the SD card capacity.
Dataset File:		1D/2D/3D file format Measurements recorded and displayed in grids; record length customizable. Each record point data includes measured values, basic parameter settings and A-Scan waveform data.
Data Post Processing:	Playback, analysis, reports of parameters, record files, printscreen files in SuporUp software.	Playback, analysis, reports of parameters, data sets, printscreen files in SuporUp software.
Time Base Linearity:	≤0.5%	
Vertical Linearity:	≤3%	
Amplitude Linearity:	≤±2%	
Attenuator Precision:	20dB+1dB	
Dynamic Range:	≥30dB	
Optional Software:	AWS, API, CSC (Curved Surface Correction), TCG,	CoatTHK, V-PATH, TDG, Temperature Compensation,

# NDT Supply.com

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Lenexa, KS 66214 USA



	B-Scan, Flat weld simulation, Crack height measurement, Probe Spectrum Analysis.	Multi-layers measurement, B-Scan.
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