



SOCOMATE
AN EKOSCAN COMPANY

UT ELECTRONICS

CONVENTIONAL

PHASED ARRAY

SDK/DLL



AN EKOSCAN COMPANY

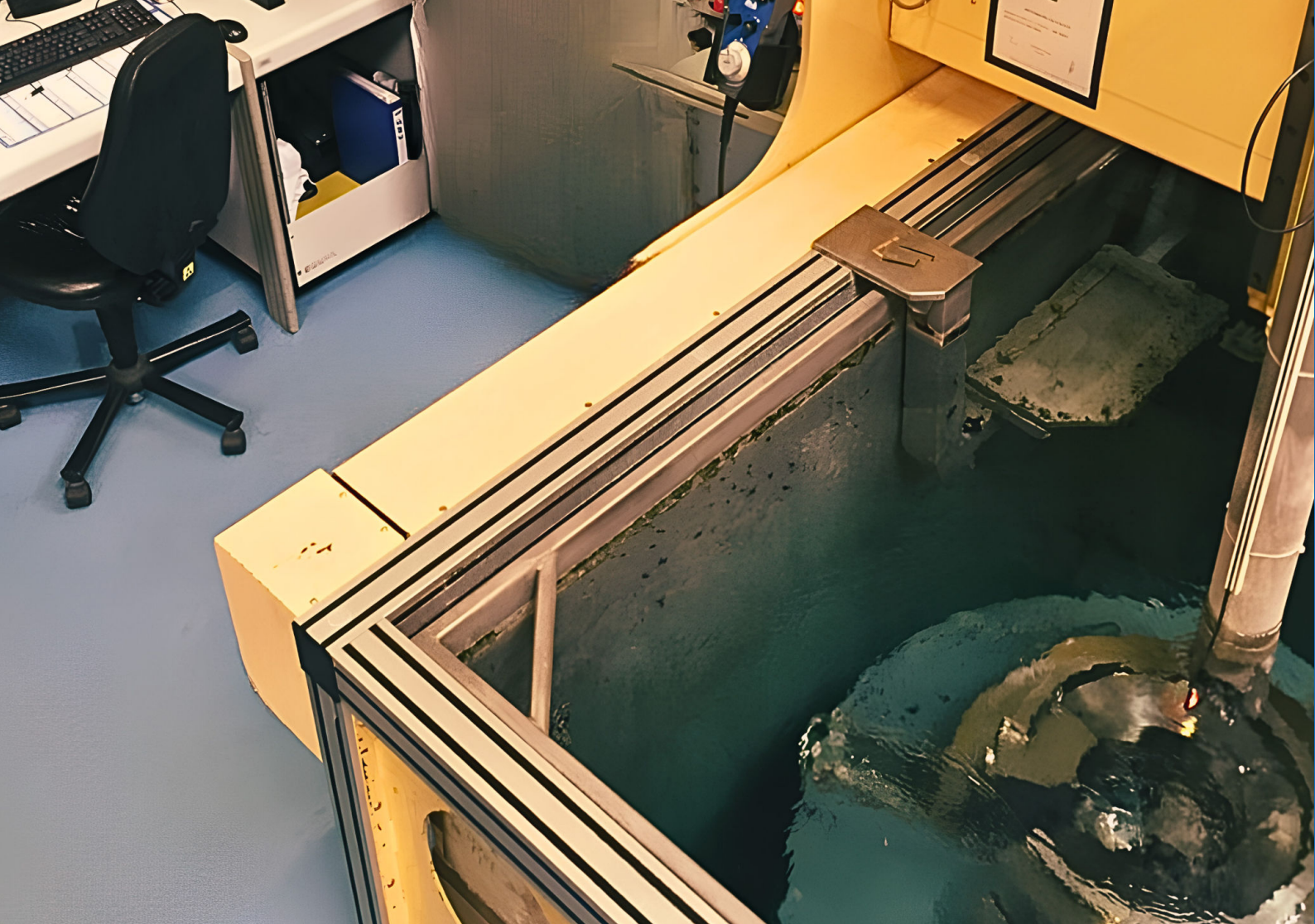
Your OEM partner
providing both **conventional** & **phased array UT electronics**
for automated inspections systems.

ADVANCED ULTRASONIC ELECTRONIC BOARDS FOR HIGH-PERFORMANCE APPLICATIONS

SOCOMATE has been providing state-of-the-art ultrasonic boards for the most demanding NDT applications across many industries. Leveraging over 40 years of experience, our products are renowned for their speed, reliability, robustness, and durability. Backed by a global network, our expert teams are committed to providing seamless support and innovative solutions for integrators and end-users worldwide.

Contents

OEM CONVENTIONAL ELECTRONICS	03
SOCO-1-UT	05
SOCO 8S	07
SOCO-4P/8P	09
PHASED ARRAY INSTRUMENTS	11
SOCOSWIFT	13
SOCOSCAN	15
FAAST PA	17
SPIKE	19



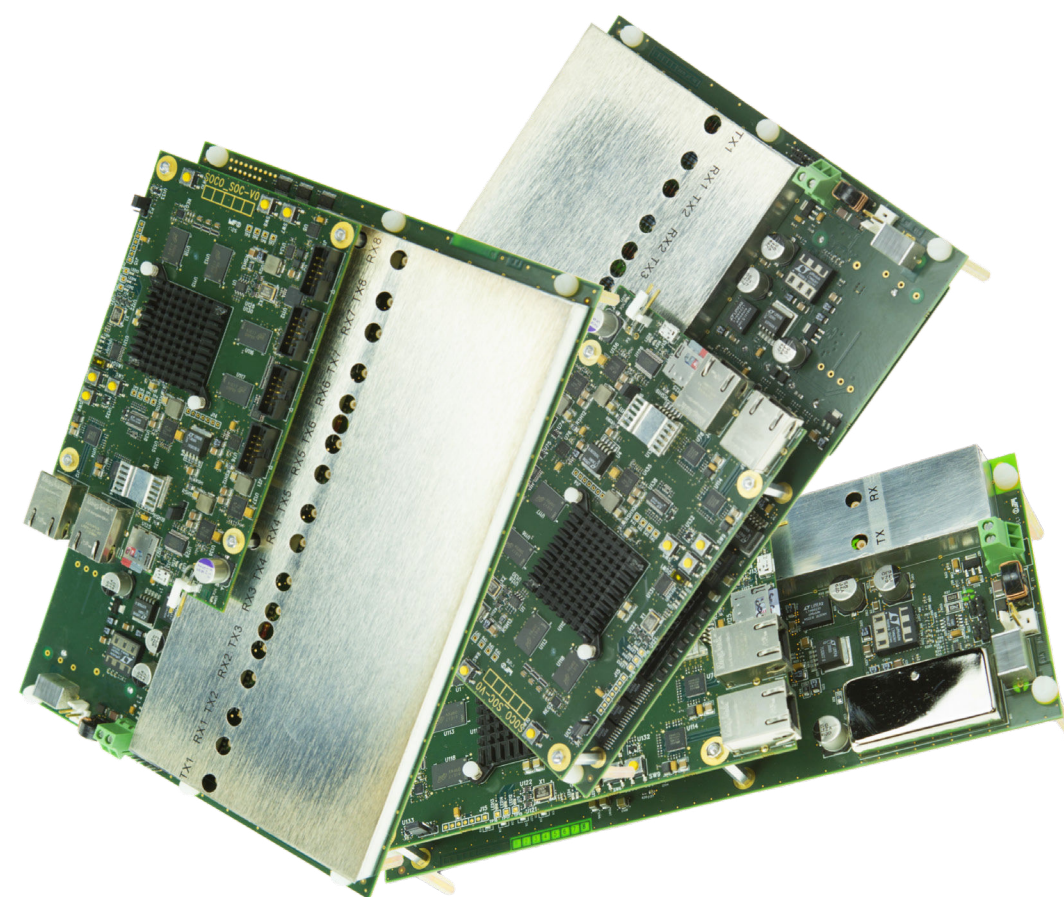
CONVENTIONAL UT

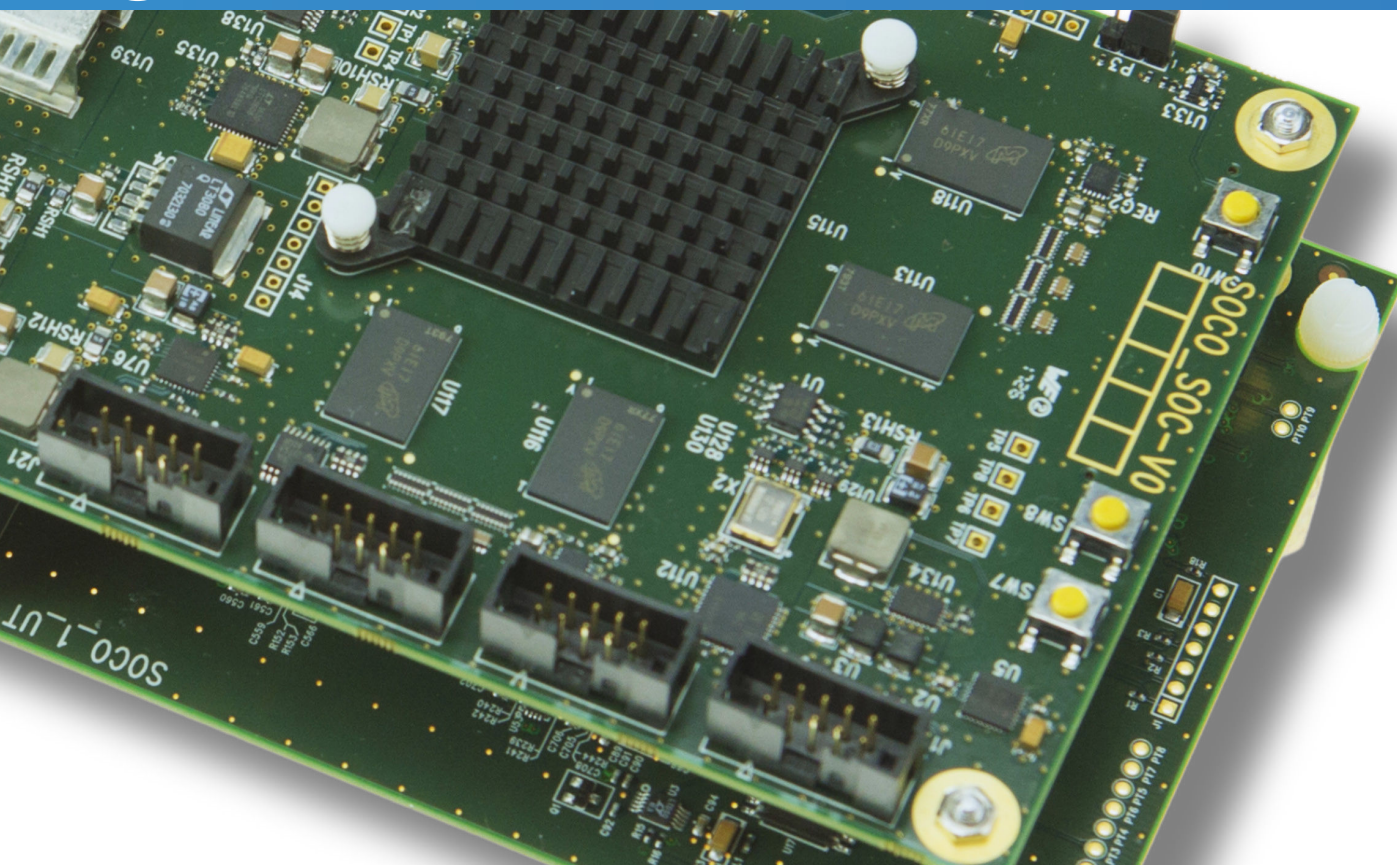
SOCO-1-UT

SOCO 8S

SOCO-4P/8P

OEM CONVENTIONAL UT ELECTRONICS





SOCO-1-UT

THE RIGHT SOLUTION FOR SINGLE OR FEW CHANNELS

Unleash the power of SOCO-1 OEM UT Boards for trusted inspection solutions.

Experience seamless integration and unrivaled robustness in harsh environments.

Overview

- Single channel PR UT board
- Fully-documented SDK/DLL
- Stackable up to 32 boards
- Alarms, encoders and analogue
- High PRF and data throughput

Benefits

- Running nonstop 24/7/365
- Reduced time for integration
- Seamless development: focus on the essential

Proven excellence for the inspection of forgings panels

SOCO-1-UT - Single UT channel

→ TECHNICAL SPECIFICATION

GENERAL	
Configuration	1 channel per board
Dimensions (H x W x D)	48 x 100 x 252 mm (1.9 x 3.9 x 9.9 in)
Weight	0.45 kg (1.0 lb)
Stackable	Up to 32 boards (32 channels)
Power supply	External 24 V DC
Power consumption	33 W max
UT Connectors	SMB
Encoder connector	6 Axis (A, B and Z signals for each encoder)
I/O connectors	64 analog outputs / Up to 128 digital outputs / 18 digital inputs / 6 trigger inputs
Data throughput	Up to 50 MB/s Ethernet 1000Base-T, Giga- bit transfer

PULSERS	
Voltage	Up to 350 V (1V step)
Pulser type	Negative square pulse
Pulse width	25 ns to 500 ns (1 ns step)
Pulse repetition frequency (PRF)	20Hz to 20kHz

RECEIVERS	
Input impedance	50Ω
P/R mode	Pulse-echo or through transmission
Bandwidth	0.6 to 27 MHz
Gain	0 to 80 dB (0.1 dB step)
Crosstalk	>80 dB
DAC function	Slope 80 dB/ 0.1 us

DIGITIZER – SIGNAL PROCESSING	
A-Scan signal processing	RF, positive, negative, rectified and envelope
A-Scan processed in parallel	Up to 2*
Adjustable filters	Digital band-pass (FIR)
Time delay	Up to 655us
A-Scan resolution	8, 9 or 16 bits
Sampling frequency	Up to 200 MHz
Digitizing depth/ « full A-Scan storage »	Up to 16k samples
Ascan length display	Up to 444 points (9 bits) Up to 888 points (8 bits)
Gates	4 gates including synchro gate

SDK PACKAGE	
Open source SDK	Yes
Software languages	C++, C#, LabVIEW, Visua Basic
Operating system	From Windows 10 - 64 bits
Parametric software	Included, UT View
Imaging	A-Scan, B-Scan, C-Scan

*For SOCO-1AB-UT only

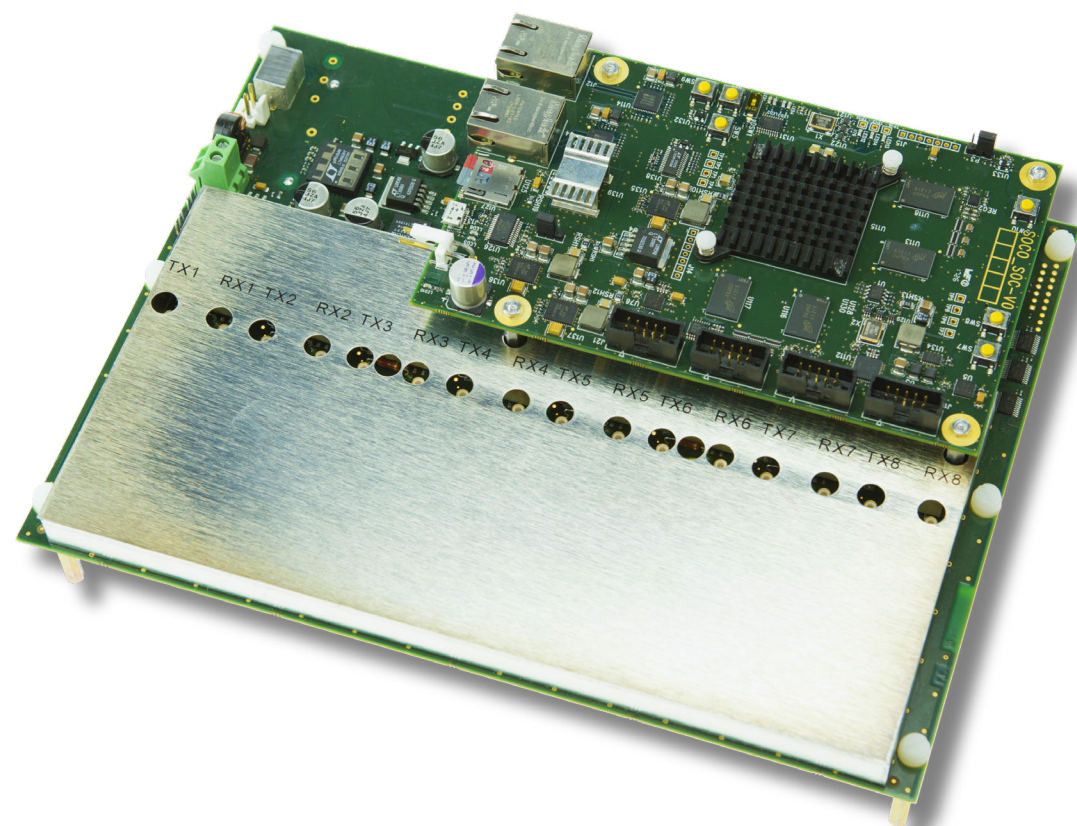
Main models and options with product references

SOCO-1-UT: standard model

SOCO-1-HV: option 350V

A/B option: 2 A-Scans in reception per shot

IO connectors: Input-output terminal board



SOCO-8S-UT

Versatile multichannel UT board for integrators

Unleash the power of SOCO-8S OEM UT Boards for versatile inspection solutions. Experience seamless integration and unrivaled robustness in harsh environments.

Overview

- Multiplexed 8-channel PR UT board
- Fully-documented SDK & DLL
- Stackable up to 32 boards (256 channels)
- Alarms and encoders
- High PRF, data throughput and ethernet connetion to PC

Benefits

- Versatile deployment in various environments
- Reduced time for integration
- Running nonstop 24/7/365
- Seamless development: focus on the essential

Proven excellence for inspection of large corrosion mapping areas.

SOCO-8S-UT - Multiplexer

→ TECHNICAL SPECIFICATION

GENERAL	
Configuration	8 multiplexed channels per board
Dimensions (H x W x D)	48 x 190 x 252 mm (1.9 x 7.5 x 9.9 in)
Weight	0.85 kg (1.9 lb)
Stackable	Up to 32 boards (256 channels)
Power supply	External 24 V DC
Power consumption	55 W max
UT Connectors	SMB
Encoder connector	6 Axis (A, B and Z signals for each encoder)
I/O connectors	64 analog outputs / Up to 128 digital outputs / 18 digital inputs / 6 trigger inputs
Data throughput	Up to 50 MB/s Ethernet 1000Base-T, Gigabit transfer

PULSERS	
Voltage	Up to 250 V (1V step) for SOCO 8S UT Up to 350 V (1V step) for SOCO 8S HV
Pulser type	Negative square pulse
Pulse width	25 ns to 500 ns (1 ns step)
Pulse repetition frequency (PRF)	20Hz to 20kHz

RECEIVERS	
Input impedance	50Ω
P/R mode	Pulse-echo or through transmission
Bandwidth	0.6 to 27 MHz
Gain	0 to 80 dB (0.1 dB step)
Crosstalk	>80 dB
DAC function	Slope 80 dB/ 0.1 us

DIGITIZER – SIGNAL PROCESSING	
A-Scan signal processing	RF, positive, negative, rectified and envelope
Adjustable filters	Digital band-pass (FIR)
Time delay	Up to 655us
A-Scan resolution	8, 9 or 16 bits
Sampling frequency	Up to 200 MHz
Digitizing depth/ « full A-Scan storage »	Up to 16k samples
Ascan length display	Up to 444 points (9 bits) Up to 888 points (8 bits)
Gates	4 gates including synchro gate

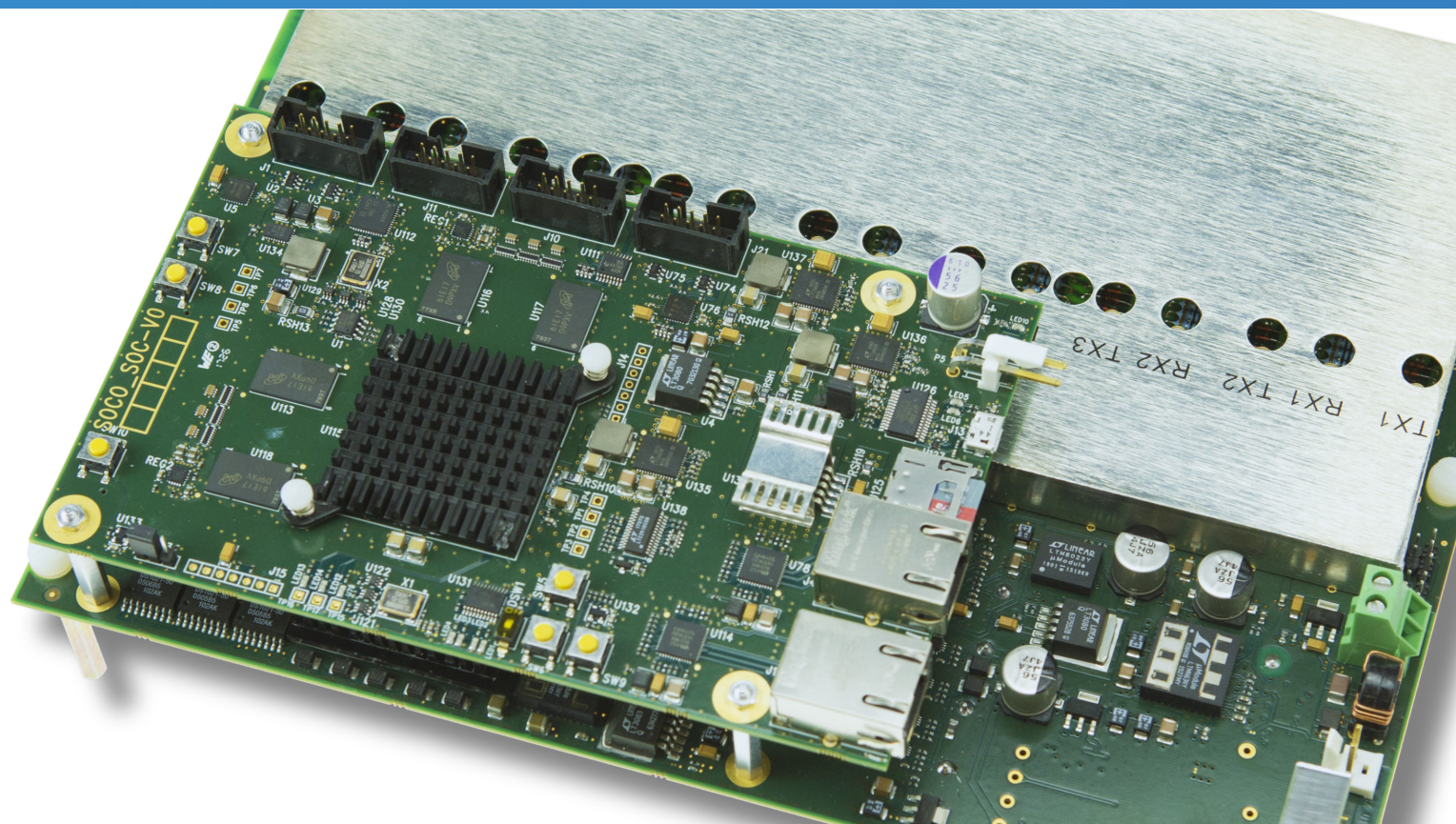
SDK PACKAGE	
Open source SDK	Yes
Software langages	C++, C#, LabVIEW, Visual Basic
Operating system	From Windows 10 - 64 bits
Parametric software	Included, UT View
Imaging	A-Scan, B-Scan, C-Scan

Main models and options with product references

SOCO-8S-UT: standard model

SOCO-8S-HV: option 350V

IO connectors: additional Input-output terminal board



SOCO-(4P to 8P)-UT

High-speed multi-channel UT board for integrators

Unleash the power of SOCO-4P/8P OEM UT Boards for high-speed inspection solutions. Experience seamless integration and unrivaled robustness in harsh environments.

Overview

- Parallel 4 to 8-channel PR UT board
- Fully-documented SDK & DLL
- Stackable up to 32 boards (256 channels)
- Alarms and encoders
- High PRF and data throughput

Benefits

- High-productivity inspections
- Reduced time for integration
- Running nonstop 24/7/365
- Reduced time for training
- Versatile deployment in various environments

Proven excellence for the inspection of plates and slabs.

SOCO-(4 to 8)P-UT - Parallel channels

→ TECHNICAL SPECIFICATION

GENERAL	
Configuration	From 4 to 8 parallel channels per board
Dimensions (H x W x D)	74 x 190 x 252 mm (2.9 x 7.5 x 9.9 in)
Weight	1.0 kg (2.2 lb)
Stackable	Up to 32 boards (256)
Power supply	External 24 V DC
Power consumption	55 W max
UT Connectors	SMB
Encoder connector	6 Axis (A, B and Z signals for each encoder)
I/O connectors	64 analogue outputs / Up to 128 digital outputs / 18 digital inputs / 6 trigger inputs
Data throughput	Up to 50 MB/s Ethernet 1000Base-T, Gigabit transfer
Operating temperature	0 to 40°C (32 to 104°F)

PULSERS	
Voltage	Up to 250 V (1V step) for SOCO 8P UT Up to 350 V (1V step) for SOCO 8P HV
Pulser type	Negative square pulse
Pulse width	25 ns to 500 ns (1 ns step)
Pulse repetition frequency (PRF)	20Hz to 20kHz

RECEIVERS	
Input impedance	50Ω
P/R mode	Pulse-echo or through transmission
Bandwidth	0.6 to 27 MHz
Gain	0 to 80 dB (0.1 dB step)
Crosstalk	>80 dB
DAC function	Slope 80 dB/ 0.1 us

DIGITIZER – SIGNAL PROCESSING	
A-Scan signal processing	RF, positive, negative and rectified, envelope
Adjustable filters	Digital band-pass (FIR)
Time delay	Up to 655us
A-Scan resolution	8, 9 or 16 bits
Sampling frequency	Up to 200 MHz
Digitizing depth/ « full A-Scan storage »	Up to 16k samples
Ascan length display	Up to 444 points (9 bits) Up to 888 points (8 bits)
Gates	4 gates including synchro gate

SDK PACKAGE	
Open source SDK	Yes
Software languages	C++, C#, LabVIEW, Visual Basic
Operating system	From Windows 10 - 64 bits
Parametric software	Included, UT View
Imaging	A-Scan, B-Scan, C-Scan

Main models and options with product references

SOCO-4P-UT: standard model

SOCO-4P-HV: option 350V

SOCO-8P-UT: standard model

SOCO-8P-HV: option 350V

IO connectors: Input-output terminal board



PHASED ARRAY INSTRUMENTS

PHASED ARRAY

SOCOSWIFT

SOCOSCAN

FAAST PA

SPIKE





SOCOSWIFT

High-speed phased-array UT instrument for integrators

Unleash the power of SOCOSCAN PAUT Instruments for high-speed inspection solutions.

Experience seamless integration and unrivaled robustness in harsh environments.

Overview

- Parallel 32-32 to 256-256 PAUT instruments
- Up to 64 simultaneous parallel reconstructions
- Alarms and encoders
- High PRF and data throughput
- Fully-documented SDK & DLL

Benefits

- High-productivity inspections
- Versatile deployment in various environments
- Reduced time for integration
- Running nonstop 24/7/365
- Reduced time for training
- Reduced time for seamless software development

Proven excellence for tube inspections.

SOCOSWIFT

→ TECHNICAL SPECIFICATION

INSTRUMENT		PHASED ARRAY	
Configuration	32:32, 64:64, 96:96, 128:128 or 256:256 parallel channels	Firing modes	Pulse-Echo, through transmission, electronic scanning, sectorial scanning, customized focusing, DDF, multi-beam/parallel firing
Dimensions (H x W x D)	133.5 (3U) x 450 x 500 mm (5.2 x 17.7 x 19.7 in)	Multi-Beam	Up to 64*
Weight	From 4 kg to 13 kg (8.8 to 28.6 lb)*	Number of delay laws	Up to 128
Power supply	110-230V AC	Active aperture	Up to 256 channels
UT Connectors	Up to 2 Hypertronics (FRB) per instrument	Delay law transmission	Up to 160 us, 2.5 ns resolution
I/O connectors	Up to 64 analog outputs / Up to 128 digital outputs / 18 digital inputs / 6 trigger inputs	Delay law reception	Up to 40 us, 5 ns resolution
Data throughput	Up to 50 MB/s Ethernet 1000Base-T, Gigabit transfer	DIGITIZER – SIGNAL PROCESSING	
Operating temperature	0 to 30°C (32 to 86°F)	A-Scan signal processing	RF, positive, negative, rectified and envelope
PULSERS		Adjustable filters	Digital band-pass (FIR)
Voltage	Up to 250V (1V step)	Maximum time delay	Up to 1.6 ms, 20 ns step
Pulser type	Negative square pulse	A-Scan resolution	8, 9 or 16 bits
Pulse width	25 ns to 500 ns (1 ns step)	Sampling frequency	Up to 200 MHz
Pulse repetition frequency (PRF)	20Hz to 20kHz	Digitizing depth	Up to 16k samples
Fall and rise time	Down to 5 ns	Ascan length display	Up to 444 points(9 bits) Up to 888 points(8 bits)
RECEIVERS		Gates	4 gates including synchro gate
Input impedance	50Ω	SDK PACKAGE	
Bandwidth	0,6 to 20 MHz	Open source SDK	Yes
Analog gain	0 to 40 dB (0.1 dB step)	Software languages	C++, C#, LabVIEW, Visual Basic
Digital gain	0 to 70 dB (0.1 dB step)	Operating system	From Windows 10 - 64 bits
Crosstalk	>50 dB	Parametric software	Included, UT View
TCG/DAC	Digital, up to 70 dB compensation	Imaging	A-Scan, B-Scan, C-Scan, D-Scan, E-Scan, S-Scan
		Focal law calculator	Included, SIPATool

Main models and options with product references

Table with all configurations:

32:32, 64:64, 96:96, 128:128 or 256:256 parallel channels
Option IPEX
Option FRB
Option splitter

	Full parallel mode
SOCOSWIFT	Up to 4 beams
SOCOSWIFT+	Up to 64 beams



SOCOSCAN

High-speed phased-array UT instrument for integrators

Unleash the power of SOCOSCAN PAUT Instruments for versatile inspection solutions.
Experience seamless integration and unrivaled robustness in harsh environments.

Overview

- Multiplexed 16-64 to 32-256 PAUT Instrument
- Up to 3 simultaneous parallel reconstructions
- Fully-documented SDK & DLL
- Stackable up to 16 boards
- Alarms & enconders

Benefits

- Versatile deployment in various environments
- Cost-effective PAUT inspection solution
- Reduced time for integration
- Running nonstop 24/7/365
- Reduced time for seamless software development

Proven excellence for bar inspections.

SOCOSCAN

→ TECHNICAL SPECIFICATION

INSTRUMENT		PHASED ARRAY	
Configuration	16:64, 16:128,32:64, 32:128 or 32:256* multiplexed channels	Firing modes	Pulse-Echo, through tranmission, electronic scanning,sectorial scanning, customized focusing, DDF, multi-beam*
Dimensions (H x W x D)	133.5 (3U) x 450 x 500 mm (5.2 x 17.7 x 19.7 in)	Multi-Beam	Up to 3*
Weight	From 4 kg to 13 kg (8.8 to 28.6 lb)*	Number of delay laws	Up to 128
Power supply	110-230V AC	Active aperture	Up to 32 channels
UT Connectors	Up to 2 Hypertronics (FRB) per instrument	Delay law transmission	Up to 160 us, 2.5 ns resolution
Encoder connector	6 axis	Delay law reception	Up to 40 us, 5 ns resolution
I/O connectors	Up to 64 analog outputs/ Up to 128 digital outputs/ 18 digital inputs/ 6 trigger inputs	DIGITIZER – SIGNAL PROCESSING	
Data throughput	Up to 50 MB/s Ethernet 1000Base-T, Gigabit transfer	A-Scan signal processing	RF, positive, negative and rectified
PULSERS		Adjustable filters	Digital band-pass (FIR)
Voltage	Up to 150 V (1Vstep) for SOCOSCAN Up to 250 V (1Vstep) for SOCOSCAN+	Maximum time delay	Up to 1.6 ms, 20 ns step
Pulser type	Negative square pulse	A-Scan resolution	8, 9 or 16 bits
Pulse width	25 ns to 500 ns (1 ns step)	Sampling frequency	Up to 200 MHz
Pulse repetition frequency (PRF)	20Hz to 20kHz	Digitizing depth	Up to 16k samples
RECEIVERS		Ascan length display	Up to 444 points(9 bits) Up to 888 points(8 bits)
Input impedance	50Ω	Gates	4 gates including synchro gate
Bandwidth	0.6 to 20 MHz	SDK PACKAGE	
Analog gain	0 to 40 dB (0.1 dB step)	Open source SDK	Yes
Digital gain	0 to 70 dB (0.1 dB step)	Software langages	C++, C#, LabVIEW, Visual Basic
Crosstalk	> 45 dB for SOCOSCAN > 50 dB for SOCOSCAN+	Operating system	From Windows 10 - 64 bits
TCG/DAC	Digital, up to 70 dB compensation	Parametric software	Included, UT View
		Imaging	A-Scan, B-Scan, C-Scan, D-Scan, E-Scan,S-Scan
		Focal law calculator	Included, SIPATool

	Available channel config	Multi beam	Voltage	Crosstalk
SOCOSCAN	16:64, 16:128, 32:64, 32:128	NO	Up to 150V	> 45 dB
SOCOSCAN+	16:64, 16:128, 32:128, 32:256	Up to 3	Up to 250V	> 50 dB

Main models and options with product references
Table with all configurations:

32:32, 64:64, 96:96, 128:128 or 256:256 parallel channels
Option IPEX
Option FRB
Option splitter



FAAST PA

The ultra-fast phased-array UT instrument for integrators

Unleash the power of FAAST PAUT instruments for unmatched inspection performance.
Experience seamless integration and unrivaled robustness in harsh environments.

Overview

- Parallel 32 :32 to 256 :256 PAUT instrument
- Up to 64 simultaneous parallel reconstructions
- Fully-documented SDK & DLL
- Stackable up to 16 boards
- Alarms & enconders

Benefits

- Unmatched productivity inspections
- Save on probes and mechanics
- Address challenging inspections cases
- Reduced time for integration
- Running nonstop 24/7/365
- Reduced time for seamless software development

Proven excellence for aircraft forging inspections.

FAAST PA

→ TECHNICAL SPECIFICATION

INSTRUMENT		PHASED ARRAY	
Configuration	32:32, 64:64, 96:96, 128:128, 256:256 parallel channels	Firing modes	Pulse-Echo, through tran mission, electronic scanning,sectorial scanning, customized focusing, DDF, multi-beam*
Dimensions (H x W x D)	133.5 (3U) x 450 x 500 mm (5.2 x 17.7 x 19.7 in)	Patented FAAST feature	Multi-angles, multi focusing and multi frequencies in one shot
Weight	From 4 kg to 15 kg (8.8 to 28.6 lb)* according to configuration	Multi-Beam	Up to 64
Power supply	110-230V AC	Number of delay laws	Up to 128
UT Connectors	Up to 2 Hypertronics (FRB)	Active aperture	Up to 256 channels
I/O connectors	Up to 64 analog outputs/ Up to 128 digital outputs/ 18 digital inputs/ 6 trigger inputs	Delay law transmission	Up to 40 us, 1 ns resolution
Data throughput	Up to 50 MB/s Ethernet 1000Base-T, Gigabit transfer	Delay law reception	Up to 40 us, 5 ns resolution
Operating temperature	0 to 30°C (32 to 86°F)	DIGITIZER – SIGNAL PROCESSING	
PULSERS		A-Scan signal processing	RF, positive, negative, rectified and envelope
Voltage	Up to 80Vpp (1Vstep)	Adjustable filters	Digital band-pass (FIR)
Pulser type	Arbitrary waveform generator per channel	Maximum time delay	Up to 255 us
Pulse width	25 ns to 500 ns (1 ns step)	A-Scan resolution	8, 9 or 16 bits
Pulse repetition frequency (PRF)	20Hz to 20kHz	Sampling frequency	Up to 200 MHz
Delay resolution	Down to 1 ns	Digitizing depth	Up to 16k samples
RECEIVERS		Ascan lengh display	Up to 444 points(9 bits) Up to 888 points(8 bits)
Input impedance	50Ω	Gates	4 gates including synchro gate
Bandwidth	0.6 to 27 MHz	SDK PACKAGE	
Analog gain	0 to 40 dB (0.1 dB step)	Open source SDK	Yes
Digital gain	0 to 70 dB (0.1 dB step)	Software langages	C++, C#, LabVIEW, Visual Basic
Crosstalk	>50 dB	Operating system	From Windows 10 - 64 bits
TCG/DAC	Digital, up to 70 dB compensation	Parametric software	Included, UT View
		Imaging	A-Scan, B-Scan, C-Scan,
		Focal law calculator	Included, SIPATool

Main models and options with product references

Table with all configurations: 32:32, 64:64, 96:96, 128:128

Option IPEX
Option FRB
Option splitter



SPIKE

Compact & versatile phased-array UT board

Unleash the power of the newest **SPIKE PAUT boards** built for challenging inspection requirements. Experience seamless integration thanks to its **modular compact design** and **multi-environment compatibility**.

ADVANTAGES



EASY DEPLOYMENT
FOR ALL TYPES OF
AUTOMATION



COST-EFFECTIVE PAUT
INSPECTION SOLUTION



FLEXIBLE MULTI-OS
ENVIRONMENT



REDUCED TIME FOR
INTEGRATION

KEY FEATURES

- Multiplexed 16:64 to 32:128 PAUT board
- Compact and low consumption
- Windows, Linux and Android compatible
- FMC recording capabilities
- Very-high data throughput
- Fully-documented SDK - DLL

APPLICATIONS / INDUSTRIES



IN-LINE
Gantry, robot,
immersion tank



ON-SCANNER
ROV, crawler, drone



FIELD INSPECTION
Portable flaw
detector



R&D
Desktop unit,
laboratory

SPIKE

→ TECHNICAL SPECIFICATION

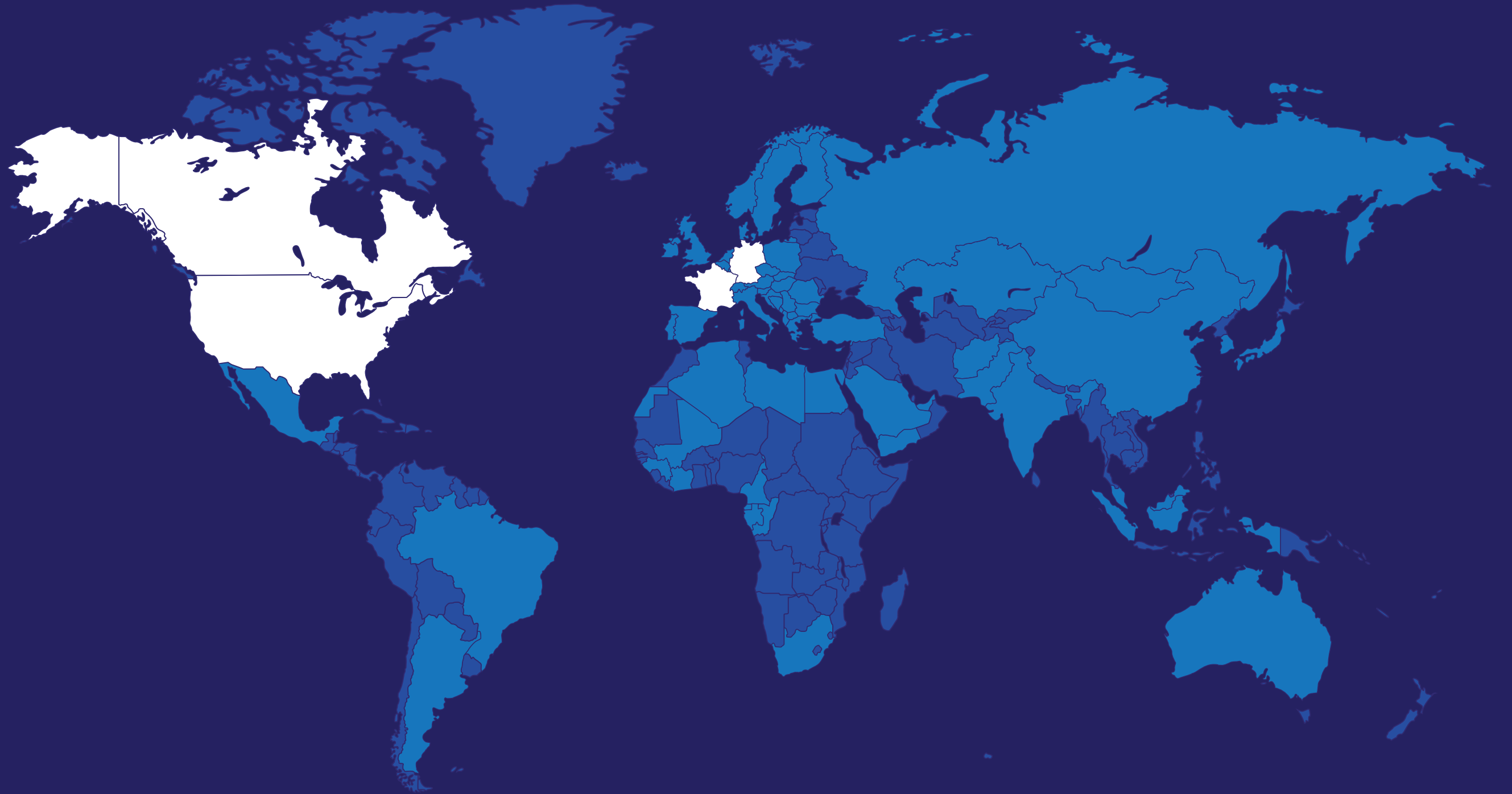
GENERAL			
WITHOUT CASING		WITH FANLESS CASING	
Configurations	16:64, 32:64, 32:128 channels	16:64, 32:64, 32:128 channels	
Dimensions (HxWxD)	20 x 95 x 75 mm (0.9 x 3.7 x 3.0 in)	47.9 X 171.6 X 90 mm (1.9 X 6.7 X 3.5 in)	
Weight	70 to 90 g (0.15 to 0.2 lb)	1060 g (2.34 lb)	
Operating temperature	0 to 40°C (32 to 104°F) Heat sink required	0 to 40°C (32 to 104°F)	
INSTRUMENT		PHASED ARRAY	
Configuration	16:64, 32:64, 32:128 channels	Firing modes	Pulse-Echo, Through Transmission, Electronic scanning, Sectorial scanning
Dimensions (H x W x D)	20 x 95 x 75 mm (0.9 x 3.7 x 3.0 in)	FMC recording	Up to 32 channels*
Weight	90 g (0.2 lb)	Number of delay laws	Up to 1024
Power supply	5-15V AC	Active aperture	Up to 32 channels*
Power consumption	5 W to 15 W*	Max delay law	Up to 20 µs
I/O	3 encoders (5V supplied), 1 external trigger, 1 programmable input, 4 programmable outputs	DIGITIZER – SIGNAL PROCESSING	
Data throughput	Up to 320 MB/s through USB 3.0	AScan display	RF, rectified , envelope
Operating temperature	0 to 40 °C (32 to 104 °F) (heat sink required)	Filters	Analog and digital filters on elementary channels Digital filters on sum
PULSERS		Time delay	Up to 2 ms
Voltage	20 to 100Vpp (1V step)	A-Scan resolution	14 bits (16 bits for processing)
Pulser type	Negative or bipolar square pulse	Sampling frequency	Up to 100 MHz for PA, 50 MHz for FMC
Pulse width	25 ns to 500 ns (5 ns step)	Digitizing depth	Up to 32k samples
Pulse repetition frequency (PRF)	100 Hz to 20 kHz	Gate	3 gates with synchronization
		Gate detection types	First echo , max echo
RECEIVERS		SDK PACKAGE BASIC & ADVANCED	
Bandwidth	0.6 to 27 MHz	Open source SDK	Yes
Analog gain	0 to 30 dB	Software languages	C, C++ ,Python and more
Digital gain	0 to 60 dB (0.1 dB step)	Operating system	Windows 64, Linux, Android
Digital gain per channel	-6 to 12 dB (0.1 dB step)	Demo software	Open source, compatible with all OS environments
Digital TCG	Up to 16 points per shot	Configuration software	Optional, Synapse (Windows based)

* Depending on channel configuration

FRANCE

8, rue des Abbesses
77580 Crécy-la-Chapelle

sales@socomate.fr



 Physical presence

 Countries served



Excellence in UT Electronics since 1977

www.socomate.com

contact@socomate.fr