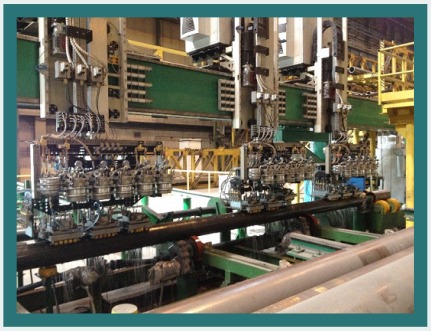
FAAST_II Phased Array

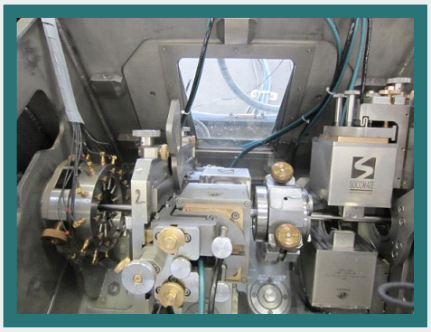
SOCOMATE INTERNATIONAL

AdvancedNDT

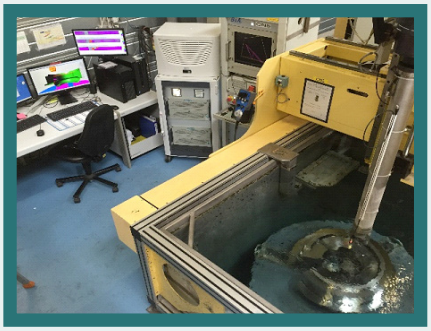
FAAST References



OCTG Tube



Precision tube with e.Rota and FAAST



Aircraft Components

Railway on-track inspection

*For more details, please contact us on www.socomate.com

Patented Phased Array technology FAAST (ISO 18563-1)

Main Features

- Up to 64 full parallel channel per rack (4x16; 2x32; 1x64).
- All channels droven with the same standard software, API and SDK, allowing numerous arrangments :
  - 1 Rack: 4x16, 2x32, 1x64
  - 2 Racks: 8x16, 4x32, 2x64, 1x128
  - 4 Racks: 16x16, 8x32, 4x64, 2x128, 1x256
  - Ability to drive more racks (ie: Channels) on request
- Transmission of multiple oriented and/or focused beams in one single shot through all type of multi-element array probes. Linear, Bi-linear* and matrix.
- Real time data processing and multi A-Scan display.
- Linear & sectorial scanning with single or multiple beams.
- Compatible with « active* » type probes embedding electronics: pulser, preamplifier, multiplexer.
- I/O: 8 analog & 9 digital outputs per card – Up to 16 cards per rack.
- Gigabit data transfer: 500Mb/s.
- Software development kit included with source code.

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MAIN SPECIFICATIONS

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HARDWARE	Industrial PC rack 19" - 6U. Including: Specific power supply for FAAST_II linear transmitters, FRB connector for multi-element probes and up to 16 UT PCI cards (Ref: USPCFAAST_II). Consumption per 64CH rack: 1 kVA. Operating temperature: 0° to 40°C – (32° to 104°F)
LINEAR TRANSMITTERS	Single shot multi-directional transmitter and arbitrary waveform generator per channel. Delay resolution: up to 1 ns. Probe frequency range: 0.5 – 15MHz. Max amplitude: 80Vpp (50 Ohms). Max PRF: 20kHz.
RECEIVERS	Pass-band: 0.5 – 17 MHz (-3 dB). Gain: 0 to 70 dB. DAC dynamic: 70 dB. DAC slope: ±70 dB/ 0.1 µs Max.
GATES	Gate IF (yellow). Gate 1 (red) & Gate 2 (blue); All gates fully independent. Start: 80 ns to 655 µs/ 20 ns step. Width: 20 ns to 655 µs/ 20 ns step. Level: 10% to 90%/ 1% step. Double threshold: Gates 1 & 2. Triggers: Not active/ Initial pulse/ Interface/ Artificial, on Gates 1 & 2, and Gate-to-Gate on Gate 2. Back-echo tracking on Gate 1.
FLAW IN-LINE	Flaw alarm: Positive/ Negative. Noise suppression: 0 to 250 violations. Flaw mode: Max. or first echo peak amplitude on Gates 1 & 2. Amplitude resolution: 1% FSH.
TOF/ Wall Thickness In-line	Alarms: Min. & Max. Noise suppression : 0 to 30 violations. Mode: First echo on Gate IF and Max. or first echo on Gates 1 & 2. Origins: Peak, flank, zero crossing. Gating mode: HW+, HW-, FW & RF. WT Data process(DSP): Upper & lower limits, Max deviation, filtering, averaging, etc…
A-SCAN DISPLAY	Mode: HW+, HW-, FW & RF. Gates: Yellow (IF), Red (G1) & Blue (G2). DAC Curve: 0% to 70% FSH (0-70dB). Delay: 0 to 655 µs/ 20 ns step. Range: 1 µs to 1.3 ms/ 20 ns step. Trigger: Initial pulse/ Gate 1 Start/ Gate 2 Start/ Gate 1 Trigger/ Gate 2 Trigger. Displayed peak: Snapshot or Max. peak. Velocity: Interface and material. A-Scan length: 100 to 512 points. Acquisition mode: Free running or external. Angle beam trigonometry: Distance & depth. Units: µs/ mm/ inch/ composite Ply resitution. Moving averaging: on 1/ 2/ 4/ 8/ 16 A-Scan.
DATA PROCESSING	Digitizer per channel: 14 bits. Delay resolution: Up to 5 ns. Processing and display: Real time multi-directional A-Scan.
DATA TRANSFER	PCI bus master mode data transfer to the DLL. Real time A, B & C-Scan data acquisition at 500Mb/s via gigabit ethernet.
SOFTWARE & SDK	DSPs & FPGAs: Allowing real time stand alone running (Socomate property). Standard API (LabVIEW): USPC.exe + sources. API tutorial software: Help!. Multiple card control: Up to 64 via Ethernet. Drivers for Windows O.S.(x32): XP/ VISTA/ 7...and over. DLL with Help! tutorial software. Active X control with Help!. •LabVIEW demo acquisition software with *.exe + sources. •VB & VC samples with *.exe + sources.
FAAST SOFTWARE TOOLS:	3D display of material, multi-element probe, water gap and oriented reflector. Delay laws automatic calculation. Importation of delay laws calculated with external software tools. Downloading of arbitrary wave forms. Multiple A-Scan representation with one A-Scan per delay law. Automatic balancing of all elements. Multi-element virtual probes calibration. Optimum law determination. Optimum mechanical positioning of PA probe in X, Y, Z. Multiple beams in parallel and/or sequential.

STANDARDS & APPROVALS

Phased Array: ISO 18563-1

Socomate International maintains the right to modify the specification of their equipments, at any time and in whatever manner, in order to improve their performances.