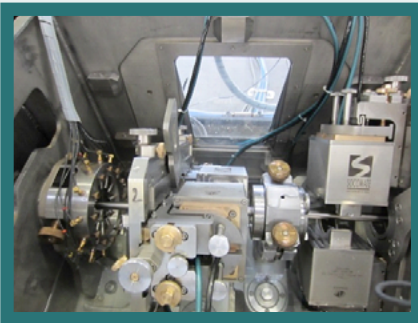


# FAAST-PA, A unique and patented UT Phased Array

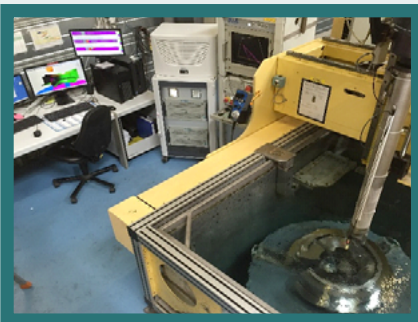
## FAAST References



OCTG Tube



Precision tube with e.Rota and FAAST



Aircraft Components



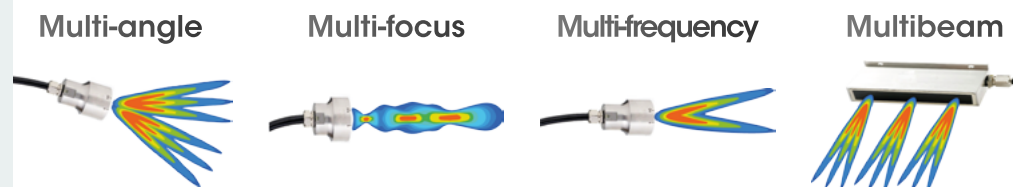
Railway on-track inspection



Patented Phased Array technology FAAST (ISO 18563-1)

## Main Features

- Up to 128 full parallel channel per rack (8x16; 4x32; 2x64; 1x128)
- All channels driven with the same standard software, API and SDK, allowing numerous arrangements:
  - 2 Racks: 16x16; 8x32; 4x64; 2x128; 1x256
  - 4 Racks: 32x16; 16x32; 8x64; 4x128; 2x256; 1x512
  - Ability to drive more racks (ie: Channels) on request
- Transmission of multiple oriented beams in one single shot through all type of multi-element array probes. The capabilities of our FAAST technology are the following:



- Real time data processing and multi A-Scan display
- Real time analog & digital outputs
- Ethernet Gigabit data transfer
- Complete & Friendly Software development kit included with source code

\*For more details, please contact us on [www.socomate.com](http://www.socomate.com)



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# MAIN SPECIFICATIONS

## HARDWARE

Industrial rack 19" - 3U. Including: FRB connector for multi-element probes Consumption per 64CH rack: 0.45 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 – 20 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: 0,5% 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

Ethernet gigabit data transfer

## SOFTWARE & SDK

FPGAs: Allowing real time stand alone running (Socomate property). Standard API (LabVIEW): USPC.exe + sources. API tutorial software: Help!, DLL for Windows O.S.(x64 bit): 7 / 10...and over. DLL with Help! tutorial software.  
•LabVIEW demo acquisition software with \*.exe + sources.  
•For Visual Samples Studio 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.

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