



## PAUT 16/128

### Phased Array Instrument Cartridge for Advanced Nondestructive Testing

Ultrasound (UT), Phased Array (PAUT) and Time-of-Flight Diffraction (TOFD)

The PAUT 16/128 cartridge is versatile to get started in phased array. It features enough active channels, focal laws, encoders and speed needed for to address mainstream portable inspections and some automated inspections.

The cartridge can be connected on the PragmaPro portable platform or on the PragmaPod remote-control platform. This allows maximum flexibility when developing applications, providing an upward compatibility path for PAUT 32/128 or to reach automation.

#### ■ Modular

Can be connected on either PragmaPro portable platform or PragmaPod remote-control platform.

#### ■ 16 channels + 4 Mono

Maximum flexibility with wide active apertures for various UT, PAUT and TOFD applications.

#### ■ 128 elements

Maximum PAUT flexibility and speed with multiplexing over 128 elements.

#### ■ 200V Pulsing

Sharp and snappy bipolar pulsing to inject as much acoustic energy in the material, for best possible sensitivity.

#### ■ More than 2000 focal laws

Maestro<sup>®</sup> beamformer capable of generating all the beams that are needed, for up to 16 groups.

#### ■ Superb Signal

Wide dynamic range with up to 92 dB of variable gain (TCG) and programmable digital filters, for the best SNR available.

#### ■ Ready for 3D, with up to 12 axis

Direct support for position tracking devices, from one-axis quadrature encoder to full-fledge laser 6DOF trackers.



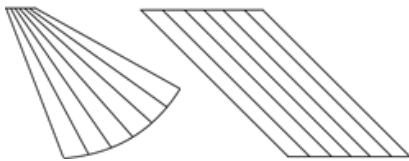
The cartridge features an I-PEX connector with standard pinout, offering PAUT probe compatibility with other brands.



Our state-of-the-art bipolar square-wave pulser is adjustable up to 200 Volts. That extra power sends more ultrasound energy in the material, to improve sensitivity or penetrate deeper.



The 4 independent mono-channels can sample up to 1 GHz, which allows for high-frequency transducers and new applications.



The beamformer can execute up to 2048 beams (focal laws) at a rate up to 30 kHz, which allows for super high-resolution imaging and/or extended volume coverage. It also provides a strong backbone for more advanced beamforming capabilities like FMC, TFM and Excitelet™ (options).

### General

Phased Array (PAUT)	16 active channels, multiplexed on 128 elements
PAUT Connector	I-PEX 200 pins, compatible with other brands
PAUT Probe Supported	Linear, matrix, dual linear array, dual matrix array and annular
Conventional/Mono (UT)	4 independent channels, allowing any TX/RX combination (PE, TTU, TOFD, Tandem, etc.)
UT Connectors	4x LEMO_00
Encoders and IOs	1x LEMO 9 pins 2 axis quadrature encoder, 7 axis CMM input, etc.

### Pulsers

High-Voltage Supply	Adjustable from 30 to 200 Vpp
Pulse Width	Adjustable from 20 to 1000 ns
Pulse Shape	Bipolar Square Wave
Output Impedance	Less than 30 Ohms
Trigger	Free-running or on encoder position

### Receivers

Input Impedance	50 Ohms
Analog Gain	Adjustable from 0 to 92 dB (also for TCG)
Analog Bandwidth	0.5 to 30 MHz (-3 dB)
Element Calibration	Relative gain for each probe element
Angle-Corrected Gain	Relative gain for each beam (focal law)
Time-Corrected Gain	Up to 16 points, per beam (focal law)

### PAUT Beamforming

Digitizing Frequency	125 MHz (PAUT), up to 1 GHz (Mono)
Sampling Quantification	12 bits per channel
Max Rate	30 kHz (C-scan)
Number of Data Points	Max 16,535 per A-scan
Real-Time Averaging	2 to 64
Rectification	RF, Full Wave, Half Wave +, Half Wave -
Filtering	Digital filter (fully adjustable), 5x presets
Video Filtering	Optimal Decimation

### Files and Analysis

File Formats	Config (.cfg, .xml), 3D (.pgdat), vector (.svg), .CIVA* Import/export focal laws (.law)
Analysis Tool	Embedded software and windows PC viewer*

### Environmental

Dimensions & Weight	WxHxT: 120 x 190 x 68 mm (4.7 x 7.5 x 2.7 in.) 1.0 kg (2.4 lbs)
Operating Temperature	-10 to +45 C (14 to 113 F) typical
Storage Temperature	-20 to +70 C (-4 to 158 F)
Relative Humidity	0 to 90% noncondensing Designed for IP66 and MIL-STD-810G 507.5
Rain and Sand Proofness	Designed for IP66 and MIL-STD-810G 506.5/510.5
Shockproof Rating	Designed for MIL-STD-810G 516.6