

Ready for the future,
caring for the customer



Ultrasonic Products

SONIA[®]

An Advanced
Ultrasonic System

FPA-128M

32x128 channels UT
phased-array module



www.tecnatom-ndt.com



FPA-128M 32x128 channels UT phased-array module

FPA-128M is a phased-array ultrasonic module compatible with SONIA architecture. This module has 32x128 (multiplexed) UT channels with high performance in analog electronics and in digital signal processing.



MAIN FEATURES

- 32x128 UT channels, multiplexed (32 receivers, 128 pulsers).
- Separated TX/RX for pulse-echo, through-transmission and tandem applications.
- Apertures from 1 to 32 elements.
- Bandwidth from 0.45 to 28MHz (probes from 0.5 to 20MHz).
- Negative square wave pulser, up to -100 V.
- High digital signal processing capabilities (DDF, digital filters, gates, signal types, etc. ...).
- Small size that permits to minimize the length of the transducers cables, digitizing the UT signal very close to the transducers. This implies lower UT signal distortion, attenuation and noise.
- Replace the analog communication lines by digital ones, immune to electromagnetic interferences (fiber optic), which means no signal distortion and/or noise in the transmitted signals and performance independent of installation layout.
- Low power consumption.
- Rugged enclosure , protection degree IP54.

FPA-128M TECHNICAL SPECIFICATION

GENERAL

Electronics	Compatible with SONIA architecture
UT channels	32x128 multiplexed channels (TX/RX separated)
UT techniques	Pulse-echo, through-transmission, tandem

PULSER

Type	Negative square wave
Voltage	-15 to -100 V, 1V steps.
Width	20 to 500 ns, 2.0 ns steps
Maximum PRF	20 KHz
Fall time	<6 ns
Impedance	<15 Ω

RECEIVER

Input range	0.8 Vpp
Bandwidth	0.45 to 28MHz @-3dB
Gain range	0 to 80dB, 0.1 dB steps (analog gain) 0 to 40dB, 0.1 dB steps (digital gain)
TGC	60 dB maximum range, 16 points, 16 ms extent, 32 ns resolution, 40dB/us slope.

BEAM FORMER

Focal laws	Up to 4096, 128 scans.
Electronic Scan types	Linear, sectorial, complex
Focusing	Dynamic Depth Focusing (DDF)

DIGITAL FUNCTIONS

A/D sampling rate	125 MSPS, 12 bits (internal processing @18 bits) Sampling decimation factor: 1 to 16
Gates	4 gates, max + 8 first echoes per gate. 1 gate for interface echo synchronization.
Signal modes	RF, True Envelope, Rectified (full, +/-), Logarithmic (digital)
Frequency Filters	Digital programmable IIR type, low-pass, high-pass, band-pass.
Noise reduction filters	Averaging Anti-impulsive noise
Post-Rectsmoothing filter	0 to 100% smoothing level control
Other digital functions	Real time alarms associated to echoes in gates. Signal inversion. Signal compression factor up to 64.

OTHERS

UT connectors	I-PEX Minidock
General I/O	4 digital inputs, 2 digital output (up to 24 V) optocoupled.
Fiberoptic port	LC-Duplex optical connector (1 Gbitfull-duplex)
Dimensions	166x 111x 64 mm (DxWxH).
Power	24 Vdc, 25W typ.
Accessories	IPEX to Hypertronics connectors converter IPEX splitter (2x64 channels) for dual probe applications





Tecnatom S.A.
Av. Montes de Oca, 1
28703, San Sebastián de los Reyes / Madrid- Spain

www.tecnatom-ndt.com

