

Ready for the future,  
caring for the customer

Ultrasonic Products

**SONIA**<sup>®</sup>

An Advanced  
Ultrasonic System

**FPR-8 / FPR-8A**

8 conventional  
UT channels module



 **tecnatom**

[www.tecnatom-ndt.com](http://www.tecnatom-ndt.com)

CE

# FPR-8 / FPR-8A 8 conventional UT channels module

FPR-8 (FPR-8A) is a conventional ultrasonic module compatible with SONIA architecture. This module has 8 UT channels with high performance in analog electronics and in digital signal processing.



## MAIN FEATURES

- 8 UT channels, single or dual crystal probes.
- Conventional applications (pulse-echo, through-transmission and TOFD techniques).
- Linear and logarithmic amplifiers, with high dynamic range (>90 dB).
- Bandwidth from 0.4 to 30 MHz (probes from 0.5 to 20 MHz).
- Negative square wave pulser, up to -300 V.
- High digital signal processing capabilities (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. The electronic boards are sealed in non ventilated rugged enclosure

## FPR-8 / FPR-8A TECHNICAL SPECIFICATION

### PULSER (FPR-8 module)

Type	Negative square wave
Voltage	-100 to -300 V, 5V steps
Width	40 to 500 ns, 1.0 ns steps
Maximum PRF	20 KHz
Fall time	<5 ns
Impedance	<10 $\Omega$
Internal damping	150 $\Omega$

### PULSER (FPR-8A module)

Type	Negative square wave
Voltage	-20 to -300 V, 1V steps.
Width	15 to 1000 ns, 1.0 ns steps
Maximum PRF	20 KHz
Fall time	<7 ns
Impedance	<4 $\Omega$
Internal damping	470 $\Omega$

### RECEIVER

Amplifier type	Linear & Logarithmic
Input range	2.1 Vpp
Bandwidth	0.4 to 30 MHz @-3dB
Gain range	0 to 120 dB, 0.1 dB steps (80 dB analog + 40 dB digital)
DAC curve	80 dB maximum range, 16 points, 16 ms, 32 ns resolution, 40dB/us slope.
Dynamic range	90dB (in logarithmic mode)

### DIGITAL FUNCTIONS

A/D sampling rate	125 MSPS, 14 bits Sampling decimation factor: 1 to 16
Gates	8 gates, max + 8 first echoes per gate. 1 gate for interface echo synchronization.
Signal modes	RF, True Envelope, Rectified (full, +/-), Logarithmic (analog), 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	16 x LEMO 00 coaxial connectors (8 T/R + 8 R connectors)
General I/O	4 digital inputs, 2 digital output (up to 24 V) optocoupled.
Fiberoptic port	LC-Duplex optical connector (1 Gbitfull-duplex)
Dimensions	175 x 115 x 64 mm (DxWxH).
Power	24 Vdc, 0.5 A max





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

[www.tecnatom-ndt.com](http://www.tecnatom-ndt.com)

