PRECISION ACOUSTICS
A Coda Octopus Company

Shockwave Transducers

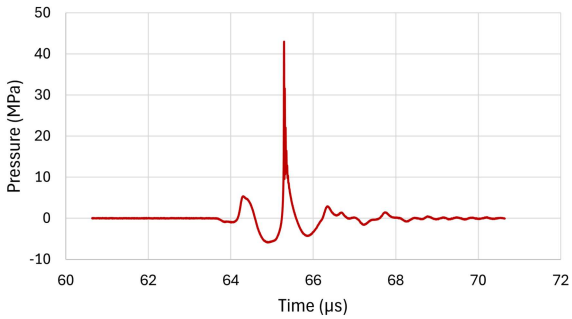
What's new?

Precision Acoustics have developed a range of broadband high power transducers targeted at pulsed applications.

Capable of producing high pressure amplitudes with rapid rise times and minimal pulse duration without overly compromising efficiency, these transducers are ideal for a wide range of uses.

The applications are:

- Histotripsy research
- Shockwaves
- Burst wave lithotripsy research
- Cavitation
- Sonochemistry
- Microbubble activation
- Targeted drug delivery



The graph above shows a hydrophone measurement of a waveform produced by a 1 MHz Precision Acoustics broadband HIFU transducer TXH-1-75-BB. Exhibiting non-linearity under high voltage drive conditions.

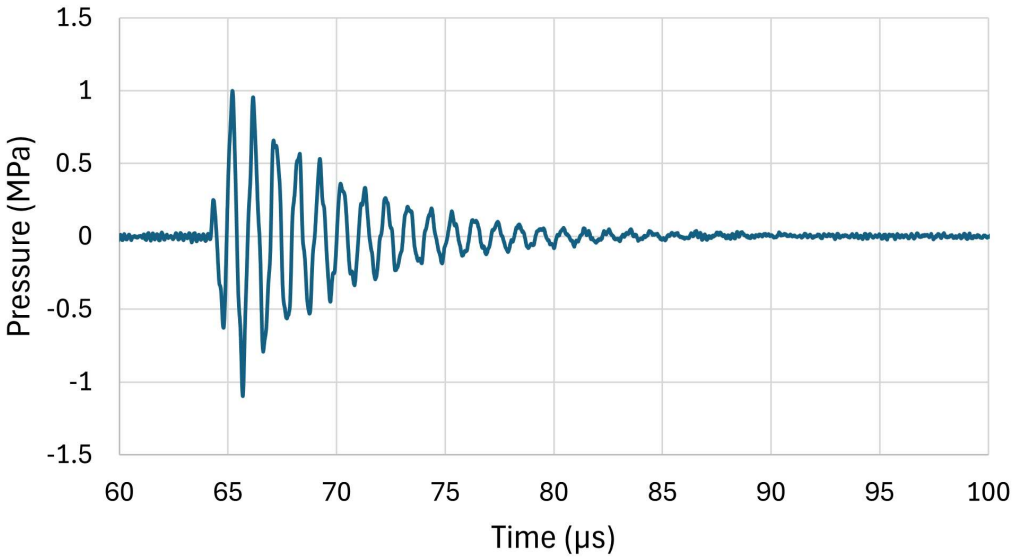
If you have a particular requirement, talk to us about our custom transducer development and fabrication services if you require specific set of materials

For further information contact our sensors team at sensors@acoustics.co.uk, visit our website https://www.acoustics.co.uk or call +44 (0)1305 264669 to discuss your requirements.

Did you know ...

The engineering required to optimise a broadband transducer is fundamentally at odds with the engineering required for a high power transducer. The usual qualities which make good broadband devices; high levels of damping within the piezo, high density backings, etc, all contribute to a loss of efficiency.

High power transducers must be optimally efficient, which usually means optimising performance at one particular frequency and sacrificing useable bandwidth. This leads to very resonant devices and temporally long impulse responses; the graph below shows a hydrophone measurement of a waveform produced by a 1 MHz Precision Acoustics HIFU transducer TXH-1-75 in response to a single cycle Sinusoidal input. Optimised for single frequency use.



These long pulses are great for applications which use long duration bursts or continuous wave drive signals, eg: tissue ablation, but not good for applications requiring short pulses, e.g. histotripsy. Precision Acoustics broadband HIFU transducers combine high efficiency integrated electrical impedance matching techniques with precision-machined sub wavelength mechanical impedance matching layers to achieve their high bandwidth without overly compromising the ability to produce short, broadband pulses with high acoustic pressures.

Visit our website for further information on our shockwave transducers

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