

Cavitation monitor



Precision Acoustics Ltd is pleased to offer a complete cavitation monitoring solution designed for industrial monitoring and research applications. Comprising a robust and compact DAQ and signal processing control box with a range of interchangeable sensors, the Precision Acoustics cavitation monitor can be used to monitor cavitation in a variety of situations.

A user-interface with highly visible red/green cavitation indicators for industrial monitoring combined with a status logging function allows for easy remote monitoring whilst the research mode with analysis of harmonic bands and spectral amplitude over the 20kHz to 20 MHz range provides real-time insight into the nature of the cavitation.

FEATURES

- **Easy to use** interface with operator and researcher modes
- **Automatic logging** of cavitation status to file
- **Provides an assessment** of inertial and non-inertial cavitation levels*
- **Spectral viewer** for cavitation analysis
- **Harmonic, sub-harmonic and ultra-harmonic analysis** for non-inertial cavitation fields
- **Compatible** with a wide range of Precision Acoustics sensors and hydrophones**

APPLICATIONS

- **Industrial monitoring** – pumps, impellers, fluid systems
- **Marine noise monitoring** – vessel noise, marine biology
- **Infrastructure protection** - Data centers, cooling systems
- **Scientific research** – Ultrasonics, fluid dynamics, hydrodynamic optimization

ARCHITECTURE

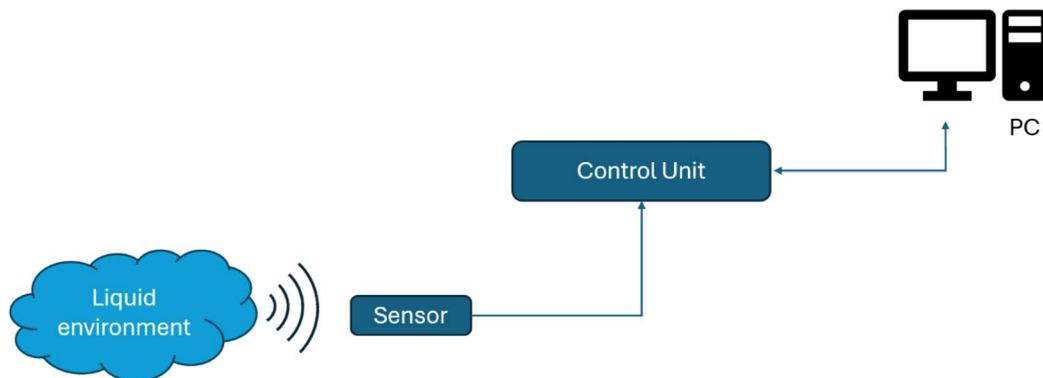


Figure 1. Schematic of cavitation monitoring setup.

INTERFACE

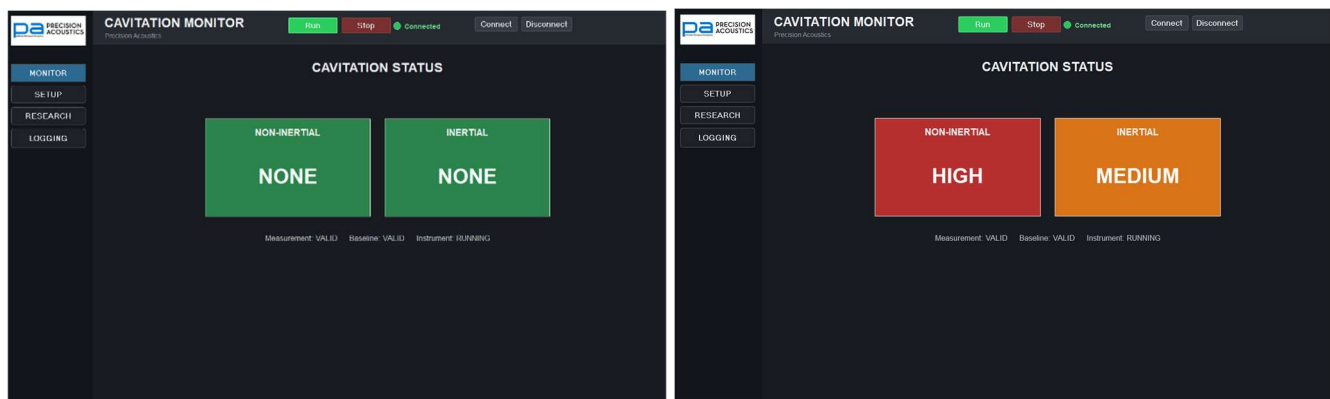


Figure 2. Clear cavitation status reporting with front panel diagnostics

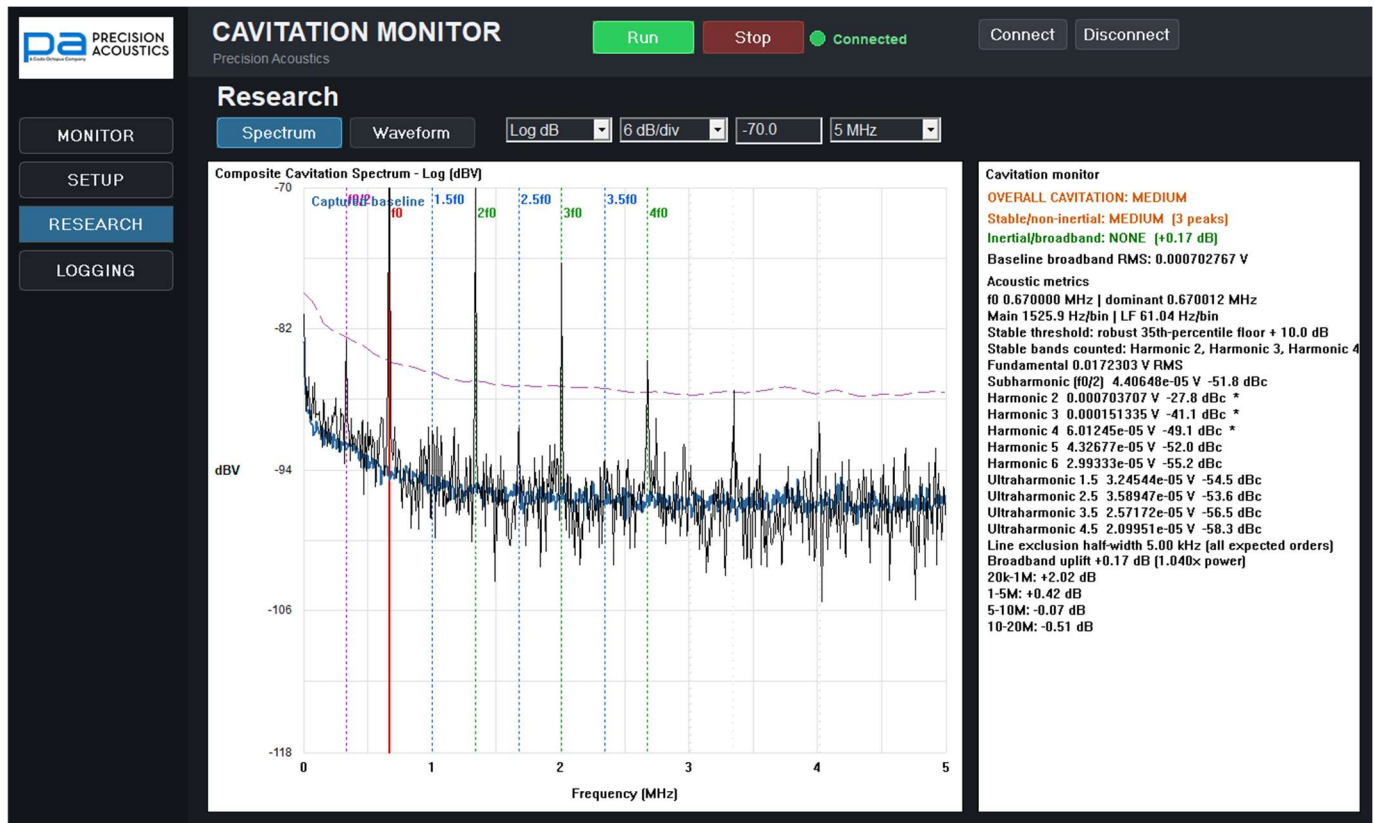


Figure 3. Spectral viewer in research mode displaying the spectral peaks associated with non-inertial cavitation from an ultrasound transducer.

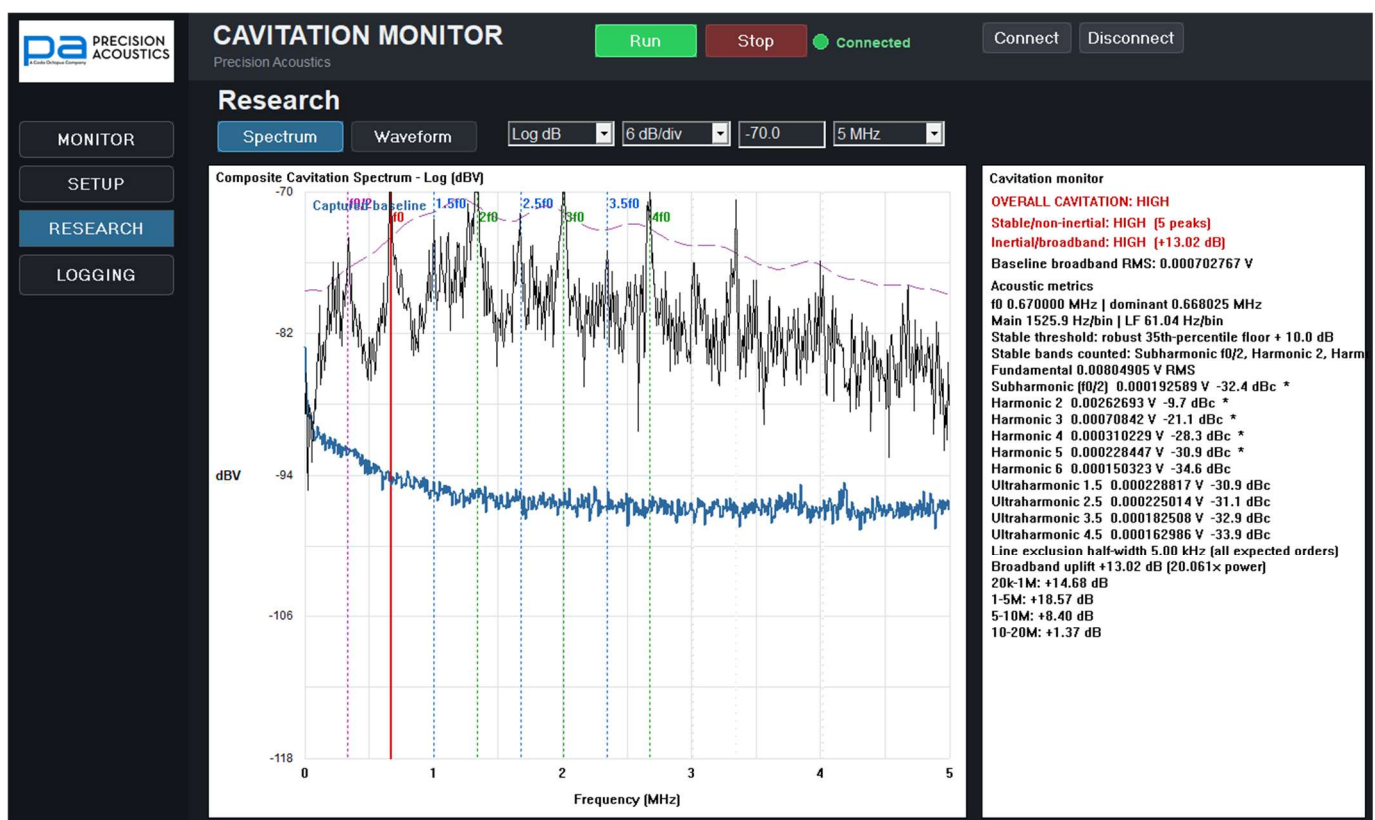


Figure 4. Spectral viewer in research mode showing a broadband uplift in spectral amplitude and harmonic peaks resulting from the presence of both inertial and non-inertial cavitation.

SPECIFICATIONS

Size	235x170x55 mm (LxWxD)
Weight	1.2 kg
Materials	Aluminium instrument enclosure, zinc plated steel screws
PC connection	USB C
Sensor connection	BNC socket
Environmental	For indoor use only

PC REQUIREMENTS

Operating system	Windows 10 or Windows 11, 64-bit
Processor	2 GHz or faster
Memory	8 GB RAM minimum
Storage	1 GB free disk space
Display	1920 × 1080 resolution recommended at 100% scaling
USB	One available USB 3.0 port
Architecture	x64 (64-bit) processor and operating system

*The built-in cavitation assessment is intended as a guide and should not be considered as a definitive analysis. It is possible to configure the analysis such that cavitation is reported when none is present or vice versa. The cavitation monitor is not a substitute for routine inspection and maintenance.

**Contact sensors@acoustics.co.uk for advice on choosing an optimal sensor, or to discuss our design service for incorporating a sensor directly into your setup/installation.

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