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Ultrasonic algae-control comparison guide



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CLIENT COMPARISON GUIDE

Not all ultrasonic algae-control systems are the same

A practical comparison of frequency density, acoustic coverage, cavitation behaviour and monitoring capability.



- Frequency density
- Acoustic coverage
- Cavitation behaviour
- Monitoring capability

Compare the details →

Pulsar 4400 / Sentinel | LG Sonic | EnviroSonic | HBS Quattro-DB

Prepared by Algae Control Australia

Review copy

The simple difference

Our systems are built around precision, coverage and controllability — not just ultrasound output.

4,400+ frequencies

Designed for broad species targeting and finer resonance coverage.

10 Hz spacing in key upper range

Tighter spacing means fewer gaps between target frequencies.

4-transducer 360° output

Four direct-wave transducers create overlapping output fields for continuous 360° coverage.

Non-cavitating algae control

Designed to affect algae without cell rupture or sudden toxin release.*

Remote performance monitoring

System operation can be checked without waiting for a site visit.

No species program changes

One 4,400+ frequency platform, rather than choosing programs for individual algae species.

*Design and performance descriptions are supplied claims. Confirm the supporting evidence for the specific product and application.

Source: supplied comparison guide. Historical information is identified where used; specifications have not been independently verified.

Client comparison table

Key specifications and operating differences from the supplied comparison material.

Feature	Algae Control Australia Pulsar 4400 / Sentinel	LG Sonic	EnviroSonic	HBS Quattro-DB
Approx. total frequencies	4,400+	Approx. 960 total; approx. 80 active at one time	Approx. 40 — details limited	Approx. 1,582 unique
Frequency strategy	High-density micro-frequency coverage	12 factory-set presets; approx. 80 frequencies active per preset	Limited information; broad ranges	Same cycle; no presets
Upper target band example	Approx. 1,000 points at 10 Hz spacing	Not confirmed	Not confirmed	Approx. 17 points in the 195–205 kHz band
Coverage angle	360° standard via 4 direct-wave transducers and overlapping output fields	180° standard; 360° option understood to add a 2nd transducer	180° standard; 360° option understood to add a 2nd transducer	2-transducer split-direction head creating four-way output
Program changes	Not required	12 presets; understood to require factory-controlled changes	Not required	Not available / same cycle
Cavitation in algae treatment	No	No, older head/tail mass designs	Yes, based on supplied comparison material	No, based on known head/tail mass design
Remote performance monitoring	Included	Not standard	Not standard	Not confirmed

Check competitor specifications against current published material. The supplied comparison describes four direct-wave transducers for overlapping 360° output; Quattro-DB and LG Sonic 360° configurations are understood to use two transducers.

Source: supplied comparison guide. Historical information is identified where used; specifications have not been independently verified.

Why frequency density matters

The key difference is not simply “ultrasound”. It is the number of usable target points and how closely they are spaced.

Reported total frequencies



Common scale; the Pulsar total is reported as 4,400+.

A closer look at the upper band

Around 1,000 Pulsar frequencies and around 17 HBS Quattro-DB frequencies are reported in the 195–205 kHz band. Coverage also differs: four direct-wave transducers versus a two-transducer split-direction design.

Source: supplied comparison guide. Historical information is identified where used; specifications have not been independently verified.

Upper band example: 195–205 kHz

More closely spaced target points provide denser coverage across the illustrated band.

Pulsar 4400

Approx. 1,000 points

10 Hz spacing

195 kHz 205 kHz

HBS Quattro-DB

Approx. 17 unique points

Historical information



195 kHz 205 kHz

Spacing is schematic. Dot counts and positions are not a literal frequency schedule.

Why spacing matters

Wider gaps can miss species-specific resonance windows. Tighter spacing gives the system more target points without relying on high-energy cavitation.

Broader source claim: the supplied document also claims superiority over other brands across all bands. Supporting evidence is required before that broader claim is used.

Source: supplied comparison guide. Historical information is identified where used; specifications have not been independently verified.

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HBS Quattro-DB: relevant technical points

Historical technical context — not a confirmation of current product specifications.

01 **2-transducer split-direction output**

Two bidirectional transducers arranged at 90° produce four-way output. This differs from the Pulsar four direct-wave transducer head.

02 **Similar broad bandwidths**

Reported to cover similar bandwidths to Pulsar, but with fewer unique frequencies.

03 **1,582 unique frequencies**

Historical description indicates about 1,582 unique frequencies per cycle.

04 **No presets**

The same frequency cycle runs each time; no species-specific presets.

05 **Uneven spacing**

Spacing is not constant; reported skips can be much larger than Pulsar's 10 Hz spacing.

06 **Non-cavitating head design**

Reported head and tail mass configuration suggests non-cavitating operation.

Based on historical technical information, Quattro-DB appears to use fewer unique frequencies, less consistent spacing and a two-transducer split-direction head, compared with Pulsar 4400's four-transducer direct-wave 360° output.

Source: supplied comparison guide. Historical information is identified where used; specifications have not been independently verified.

Safety difference

Non-cavitating versus cavitating ultrasound.

Cavitation behaviour is an important distinction for regulators and health departments.

Pulsar 4400 algae-control mode

As described in the supplied comparison

- Non-cavitating treatment approach
- No intentional bubble-collapse action
- Designed to avoid sudden cell lysis (cell rupture)
- Lower risk of sudden toxin release*
- Supports gradual biological recovery*

Cavitating / high-energy systems

As described in the supplied comparison

- Use bubble formation and collapse
- Potential for algal-cell rupture*
- Potential toxin release from cell lysis*
- Regulatory and safety questions require review*
- Different from a precision non-cavitating approach

*Safety, toxin-release and recovery statements are supplied claims, not independently validated conclusions. Confirm the evidence for the specific system, operating settings and application.

Additional source claims needing evidence: the source links cavitation to limited frequency precision and makes broad claims about harm to wildlife and people. These generalisations require product- and application-specific substantiation.

Source: supplied comparison guide. Historical information is identified where used; specifications have not been independently verified.

Operational differences clients care about

The commercial difference is also in how the system is operated, monitored and supported after installation.

4-transducer 360° coverage

Four direct-wave transducers create overlapping output fields for unbroken 360° coverage as standard.

Remote performance monitor

Alerts and operating status are available without a site visit.

Optional water-quality monitoring

Water data can be added depending on the site requirement.

No factory preset selection

4,400+ frequencies active in one platform, rather than about 80 at a time through factory-set presets.

Non-chemical treatment

Designed to support long-term management without routine chemical dosing.*

Australian support

Supplied and supported locally by Algae Control Australia.

*Confirm product configuration, monitoring options and treatment claims for the proposed application.

Source: supplied comparison guide. Historical information is identified where used; specifications have not been independently verified.

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Questions to ask when comparing systems

Use these questions to compare frequency output, acoustic coverage, monitoring and support.

01 How many unique frequencies does the system actually output?

02 How closely spaced are the frequencies in the key target bands?

03 Is the system non-cavitating in algae-control operation?

04 Do I get true 360° coverage — and is it achieved by two transducers or four direct-wave transducers?

05 Are all frequencies available, or only about 80 at a time through factory-set presets?

06 Can system operation be monitored remotely?

07 What water-quality monitoring is included or optional?

08 Is local support available in Australia?

Source: supplied comparison guide. Historical information is identified where used; specifications have not been independently verified.

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System summary

Precision, coverage and controllability — with practical monitoring and local support.

Pulsar 4400

A precision-targeted, non-cavitating, four-transducer 360° ultrasonic algae-control platform.



4,400+

Frequencies, with tight spacing in key target ranges.

4 direct-wave

Transducers for overlapping 360° coverage.

Remote monitoring

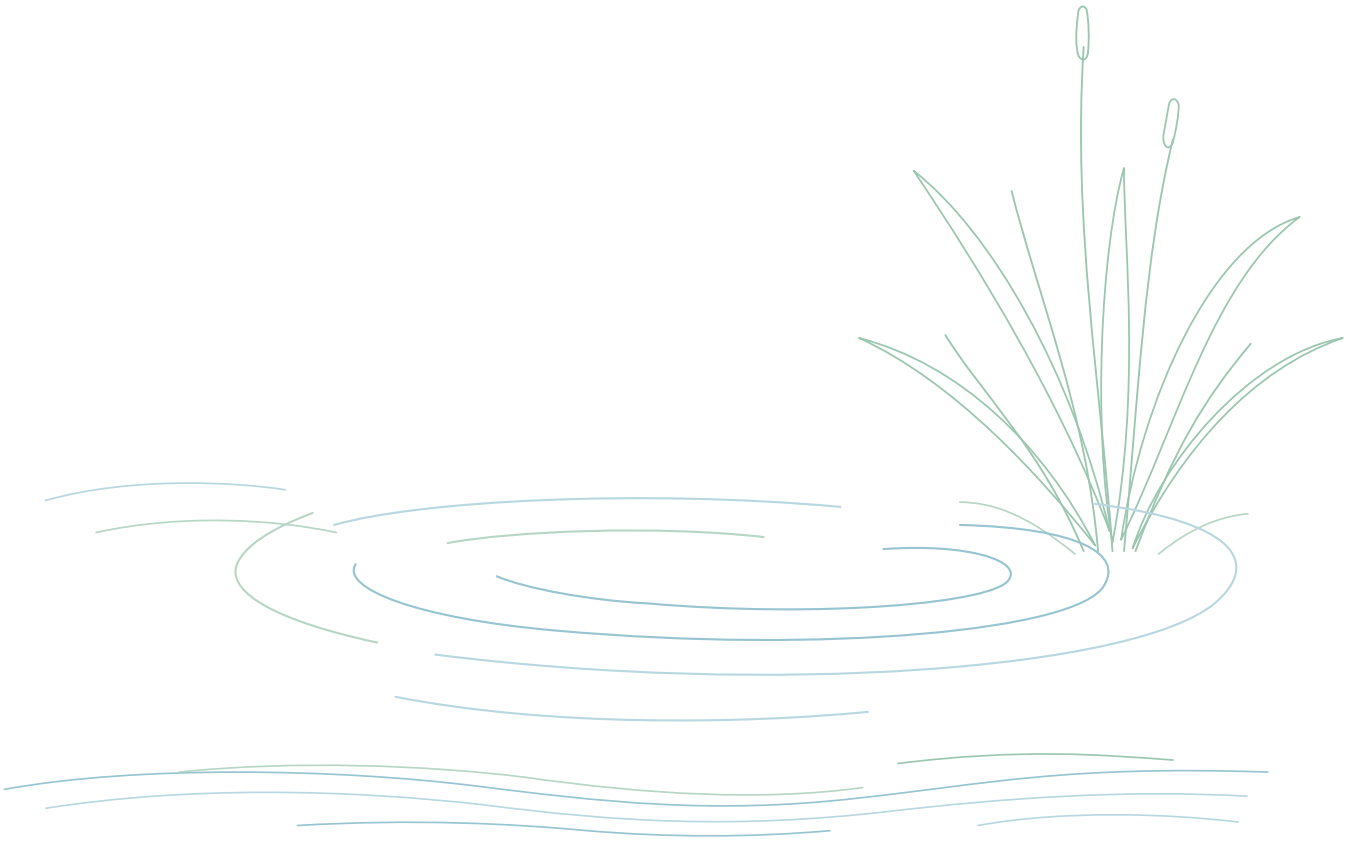
System performance, plus optional water-quality monitoring.

The supplied comparison distinguishes this approach from lower-frequency-density, factory-preset, two-transducer, directional or cavitating systems.

Discuss your site requirements

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Water imagery is illustrative, from the selected concept; it is not a documented installation.



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