

BROADSONIC Quick Start Guide

BROADSONIC optical microphone / ReadoutGUI v2.0.0 / Calibrated band: 0-4.5 MHz



WARNING / Delicate fiber optics and laser radiation

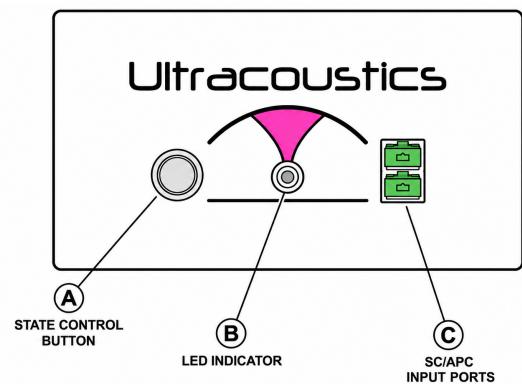
Handle the delicate fiber optics with extreme care. Never touch the sensor face or optical tips, or pull, clamp or sharply bend the cable. **This device emits laser radiation. Avoid direct eye exposure:** never look into the probe tip, fiber ends or control-unit apertures. The 1550 nm beam is invisible. Stop using damaged fibers or enclosures.

1 Connect the paired probe

Connect the probe **before connecting power**. Remove the protective caps from the connector and both front ports.

Hold the shared connector housing, align its key and insert until fully seated. Both fibers connect together: one to **638 nm**, one to **1550 nm**. It fits in only one orientation; do not force it.

Handle the housing, never pull the cable. Maintain a bend radius of at least **30 mm**. Replace caps when disconnected.

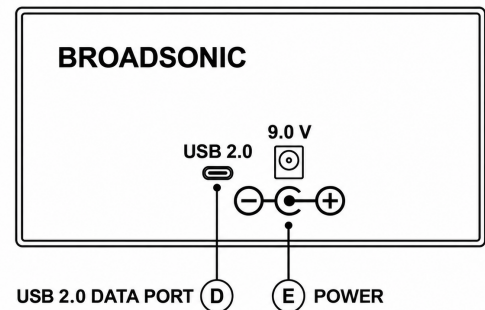


FRONT / Paired SC/APC ports, state button and LED.

2 Connect power and USB

Use the supplied **9 VDC power supply** at the rear power input. Connect the rear **USB-C data port** to your Windows computer with a data-capable USB cable.

The LED should breathe white: power is on and the laser boards are inactive. Keep **5 cm** clear around vents. A charging-only USB cable will not carry data.



REAR / USB data and supplied 9 VDC power.

3 Open the software; capture dark

Run **BROADSONIC ReadoutGUI v2.0.0** and confirm the device is detected. In **Calibrate**, select the correct probe profile; check **Probe parameters...** against the values supplied for that probe.

Select **STOP** so the lasers are off, then select **Capture dark**. Confirm the dark-capture step reports success before proceeding.

Next: start the hardware, complete the thermal fit, then save your first measurement.

Calibrate, measure & save

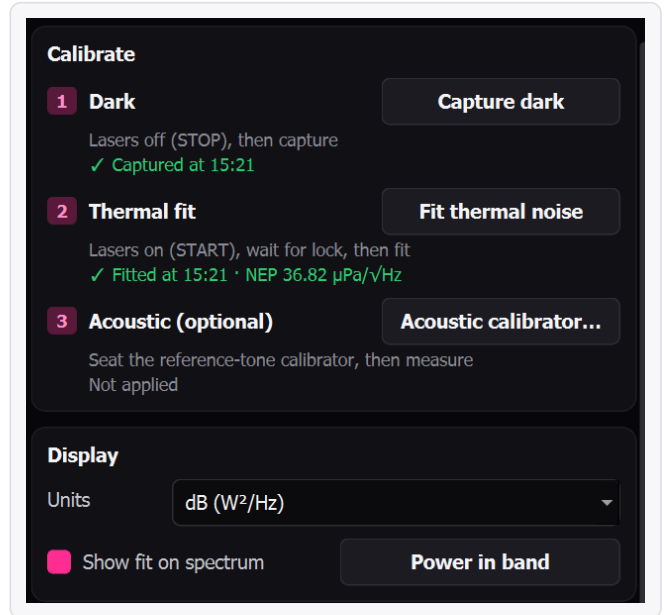
Continue after connecting the probe and completing the lasers-off dark capture.

4 Start and complete calibration

Select **START**, or briefly press and release the front button. Wait for **solid magenta**, then allow **30 seconds** to settle.

In **Calibrate**, select **Fit thermal noise**. Confirm a successful fit and inspect **Show fit on spectrum**. Then select **Pa²/Hz** or **dB SPL** for pressure units.

Optional acoustic reference: use **Acoustic calibrator...** after the thermal fit. Enter the reference source's actual frequency and level, review the proposed adjustment, then confirm.



Completed dark capture and thermal fit. Example session values are not calibration targets.

5 Position and view

Hold the probe by its casing and keep the sensor tip at least **4 mm** from the target. Avoid cable movement and vibration.

Use **Waveform** and **Spectrum** to set the visible ranges. The calibrated measurement band is **0-4.5 MHz**. Check the displayed units before reading a level.

6 Save your first recording

Open **Record**. Check the folder, label and note. Choose **Snapshot**, set **Save last**, then select **Save snapshot**.

For a longer run, choose **Continuous** and **Start recording**; set **Stop after** for a timed capture. Keep the **.sigmf-data** and **.sigmf-meta** files together.

LED status at a glance

Breathing white: inactive. **Teal, yellow, amber:** startup and readiness. **Solid magenta:** measuring. **Breathing blue:** standby. If amber returns, wait for solid magenta.

Counted flashes + a pause: record the color and count; use manual Section 5.1. **Solid bright cyan:** firmware writing; keep power connected.

Finish: select **STOP** and confirm breathing white. GUI **Pause** does not stop the hardware. For full handling, recovery and fault details, use the user manual.