01 / PREPARE

# System overview

Clean and connect the optical assembly, start the Windows app, then save your first recording.




The kit has a readout unit, microphone with paired optical connector, supplied 9 VDC power supply and 2.5 mm fiber-cleaner pen. Use a USB data cable to connect your Windows computer.

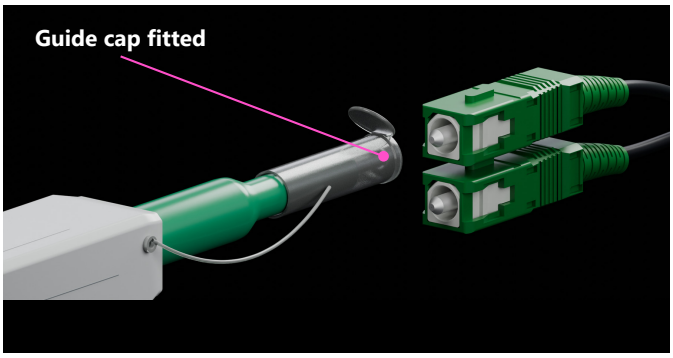
## Before you begin

- **Laser radiation: avoid direct eye exposure.** Never look into the probe tip, fiber ends or optical ports. Invisible light may be present.
- **Protect the probe.** Hold its casing. Never touch or clean the sensing face. Keep the tip at least **4 mm** from the target.
- **Protect the cable.** Do not kink or pull it. Keep every bend at a radius of at least **30 mm**.

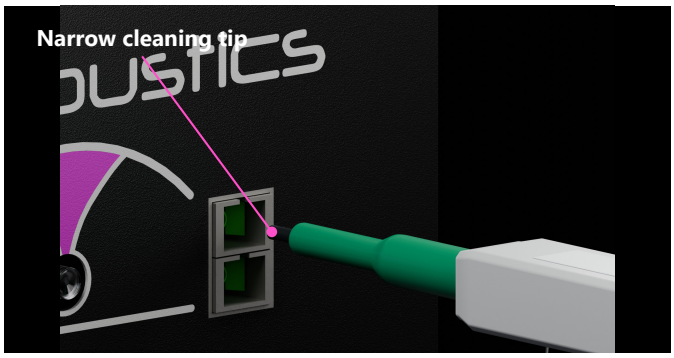
02 / OPTICAL CONNECTIONS

# Optical connection cleaning

Keep the 9 VDC supply unplugged. If the unit was running, select STOP, confirm breathing white, then unplug its power supply.




CONNECTORS / Guide cap fitted; small hinged cover open.



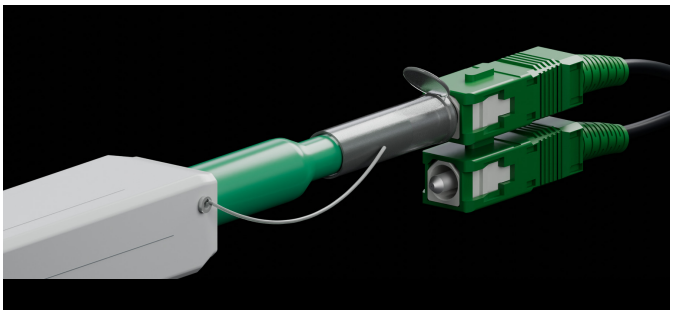

PORTS / Remove the whole guide cap to expose the narrow tip.

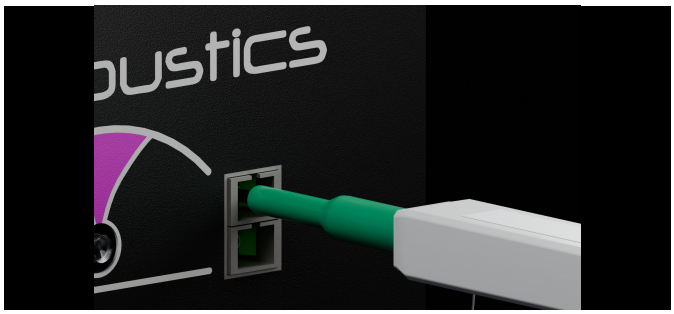
## 1 Clean both connectors

Support the paired connector housing. With the guide cap fitted and its small cover open, push the cleaner straight onto one connector until it clicks, then withdraw. Repeat for the second connector.

## 2 Clean both ports

Remove the whole guide cap. Insert the narrow tip straight into one SC/APC port. Push until it clicks, then withdraw. Repeat for the other port.





Use the supplied **2.5 mm SC/ST/FC cleaner**. Follow its instructions if the mechanism differs. Do not force the tool or separate the paired housing.

**Never use the pen or liquids on the sensing face.** Inspect connector end faces with a suitable inspection tool while power is disconnected. Persistent dirt, scratches or chips require support.

03 / CONNECT

# Hardware connections

Keep power disconnected until both optical connectors are fully seated.




Align the keyed housing with both ports.




Push straight in until both connectors are seated.

Hold the connector housing, not the cable. It fits in one orientation only. Never force it. Keep the removed protective caps clean for later use.






## 3 Power and USB

Connect the supplied **9 VDC** power supply to the rear input. Connect the rear **USB-C data port** to your computer. A charging-only cable will not carry data.

## 4 Ventilation clearance

Keep at least **5 cm** clear around each ventilation opening. Breathing white means the unit is powered and the lasers are off.

Next, open the software and use START. Keep the probe still and away from sound sources during warm-up.

04 / START

# Software startup

The app warms up and calibrates automatically after START.

## 5 Extract the Windows download

Get the portable ZIP from ultracoustics.ca/downloads. Right-click and choose **Extract All**. Keep the executable and **_internal** folder together. No Python installation is required.

## 6 Launch and start

Open **BROADSONIC ReadoutGUI v2.0.0.exe**. Check that the readout unit is detected, then select **START**. Keep the microphone still and the acoustic source quiet while the status says **Warming up**.

## 7 Wait for Ready and check the units

Wait for **Ready** before measuring or recording. A successful calibration reports **Calibrated**. Check the plot units before interpreting pressure levels.




**1** **Ready**
Startup complete

**2** **Waveform**
Optical power (µW)

**3** **Spectrum**
Calibrated dB SPL/√Hz

If the app says it is using the last calibration, keep the probe still and the room quiet, then select STOP and START again. If it does not calibrate, see the manual troubleshooting section.

05 / RECORD

# Measurement and recording

Ready means the microphone can measure. Keep the probe clear of the target and avoid moving the cable.

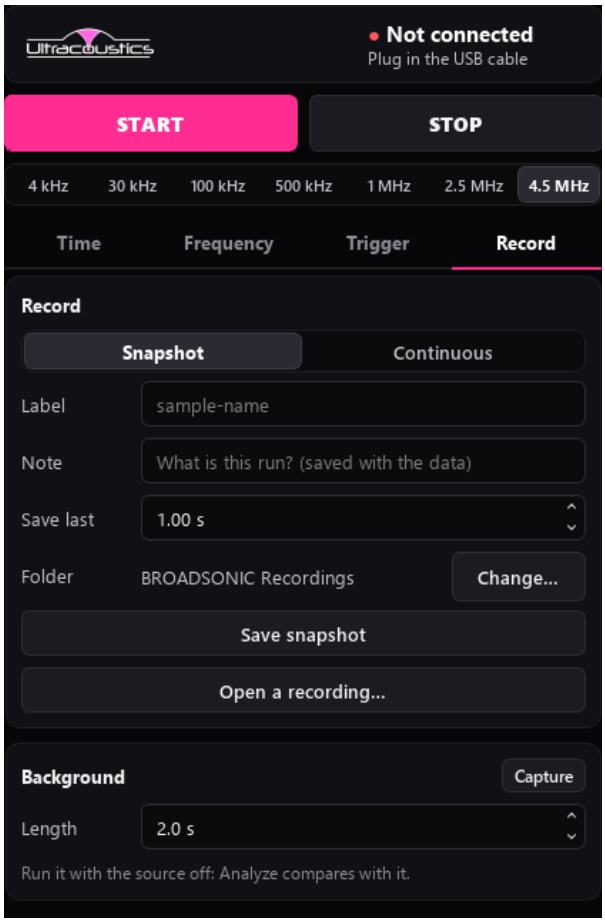
**Choose your view.** The quick-range buttons set the frequency span. Use **Time** for the waveform and **Frequency** for the spectrum. Reset View restores the plot view.

**Check the units.** Pressure units require a valid calibration. The calibrated measurement band is **0-4.5 MHz**; sample rate is a different quantity.

**Save recent data.** In **Record**, check Folder, enter a Label and Note, choose **Snapshot**, set **Save last**, then select **Save snapshot**.

**Record forward.** Choose **Continuous** and **Start recording**. Use Stop after for a timed run or stop recording yourself.

**Keep the pair.** Move the **.sigmf-data** and **.sigmf-meta** files together. Use **Open a recording...** to inspect saved data in Analyze.

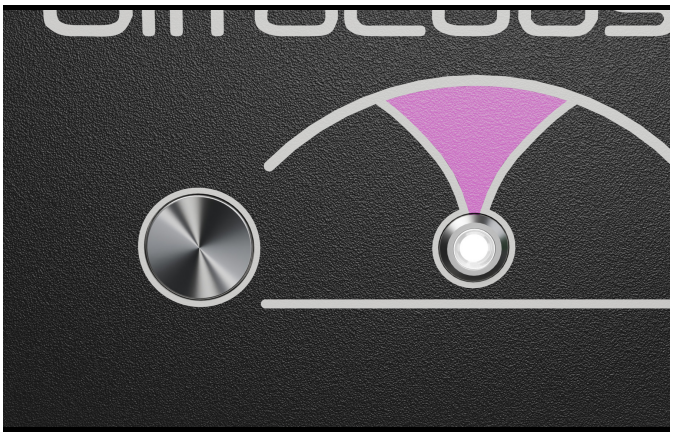



Recording becomes available after the microphone is ready.

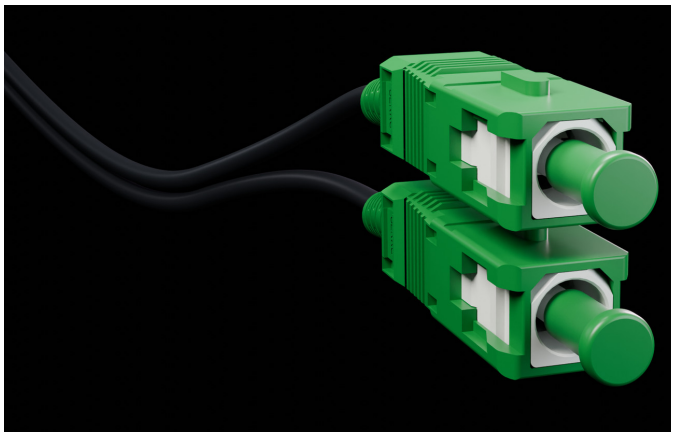
06 / FINISH

# Shutdown and storage

Stop any recording before stopping the hardware. Analyze and Pause do not switch off the lasers.



Breathing white confirms the stopped state.



Refit clean caps to the disconnected optical connections.

## 8 Stop and disconnect safely

Select **STOP** and confirm **breathing white**. Unplug the 9 VDC supply before disconnecting or cleaning. Remove the paired connector by its housing and refit clean caps. Store the probe with its sensor cap fitted and cable loosely coiled.

| What you see | What to do |
|---|---|
| Warming up | Keep the probe still and the room quiet. Wait for Ready. |
| Ready and solid magenta | Normal measuring state. Check calibration and displayed units. |
| Repeated quick flashes | Note the color and number of flashes between pauses. See manual Section 5.1. |
| Not connected or blank plots | Check power, USB data cable and START status. Use the full extracted package. See manual Section 6. |

**Support.** Help > Hardware tour and Software tour replay the guidance. For persistent problems, run Diagnostics > Self-check, then request support at ultracoustics.ca/contact. Describe the symptoms and include the report details.