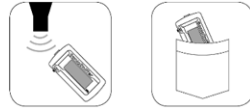# SonicSniffer User Guide

Non-contact frequency meter for power ultrasonic equipment.

1. INTRODUCTION

The SonicSniffer was designed to provide long lifespan and outstanding performance on measuring the frequency of power ultrasonic equipment operating continuously or in bursts. This user guide holds indispensable information on the proper use and maintenance of the equipment. Please read it carefully before starting up the measurements.

⚠ **WARNING! Improper use can lead to incorrect results**

2. SPECIFICATIONS

Models: SSNF80k-Plus and SSNF80kP-XXX.
Frequency range / resolution: 5-80 kHz / 10 Hz.
Noise immunity: ≥ 105 dB in the 0-5 kHz range.
Measurement distance: From 2.5 cm (1 in) to 1.2 m (4 ft).
Measurable signals: Sinusoidal continuous or in bursts with duration equal or greater than 0.1 s.
Temperature drift: 7 ppm/°C (12.6 ppm/°F); 0.14 Hz/°C (0.24 Hz/°F) at 20 kHz.
Uncertainty at 25 °C (77 °F) for 95 % confidence level:
  ±8 Hz for continuous signals and for bursts with duration ≥ 0.35 s provided the time off ≥ 0.27 s.
  ±40 Hz for short bursts with duration between 0.10 and 0.35 s provided the time off ≥ 0.27 s.

Latency: 0.1 s.
Refresh rate: Dynamic, 10 Hz typical.
Memory: 01 (last effective measurement).
Sensitivity: 70 dB ±5 dB @ 10 kHz.
Size: 9.1 x 5.1 x 1.6 cm (0.36 x 0.20 x 0.06 in).
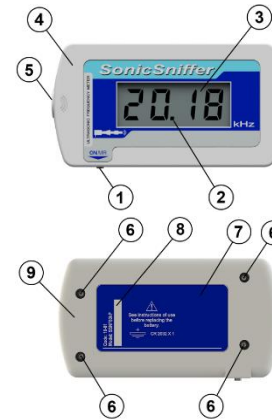**Weight:** <50 g (<1.6 oz) including battery.
IP protection level: IP40.

Lithium coin: CR 2032 (1-year on standby or 1000 uses).

3. CALIBRATION AND FUNCTIONAL TEST

It is recommended a calibration interval of 03 years with regards frequency accuracy. To perform the calibration, a high frequency speaker (a tweeter) can be used with a calibrated frequency generator set on 10,000 kHz ±1 Hz. The calibration with regards sensitivity is not required. For a fast and low-cost functional test, a smartphone and the free Android app "Signal Generator" from RandonSoft can be used. Turn the app on at 10,000 kHz and place the SonicSniffer high frequency sensor at 1 cm (≈0.5 inch) away from the smartphone speaker.

4. FEATURES

(1) ON/MR – On-off and Memory Recovery button;
(2) Decimal point;
(3) Four digits LCD display;
(4) Case top part;
(5) High frequency sensor;
(6) Fixing screws (remove for lithium coin replacement);
(7) Back Label;
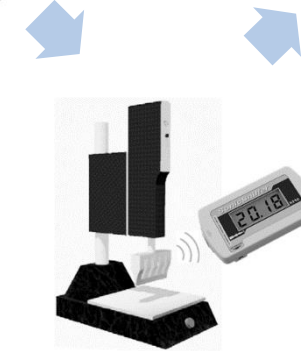(8) Serial number;
(9) Case bottom part.

5. OPERATION

1°) Turn it on: Press the **ON**/MR button briefly to turn the equipment on;

2°) Measure: Move it to a distance of 10 cm (4 inches) from the horn (tool, sonotrode);

3°) Recover memory: Press the **ON**/MR button briefly to recovery the last result;

4°) Turn it off: Press and hold the **ON**/MR button to turn the equipment off. Otherwise, the auto-shutdown function will turn it off automatically after 3 minutes in idle.

⚠ **If other power ultrasonic equipment is operating around, reduce the distance to 2.5 cm (1 inch) to avoid cross-talk interference.**

Notes:
- The minimum burst duration (welding time) for measurement is 0.1 s.
- The minimum interval between signal bursts is 0.27 s.
- The noise immunity in the 0-5 kHz range is valid for the measurement distance of 10 cm (4 in).
- Do not blow air directly in the high frequency sensor.
- The equipment saves the last result; however, this data is lost after turn it off by pressing the **ON**/MR button. It will display "-- --" after an empty memory recovery.
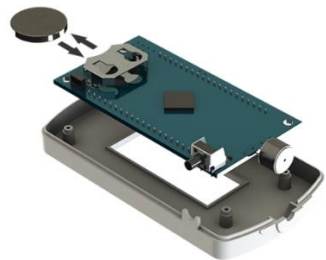
7. REPLACING THE LITHIUM COIN

The equipment operates with a lithium coin model CR 2032 (3V). Replace it when display shows the message "Lo b" (see image). It means "Low battery" (voltage below 2.3 Volts).

To replace the lithium coin:

1°) Remove the four screws (6) located on the case bottom part (9) using a small Phillips screwdriver and then remove the case bottom as shown in the figure;

2°) Carefully remove the electronics of the case and push the lithium coin out of the holder;

3°) Insert the new lithium coin in the holder (pay attention to the polarity indicated on the holder's top);

4°) Replace the electronic circuit making sure to place it exactly over the four holders;

5°) Attach the case bottom (9) and close the set. Insert and tighten the screws (6) until fix the case firmly.

8. WARRANTY

The SonicSniffer has 02 years warranty from the date of purchase against defects in material and manufacturing. Factors that imply the loss of warranty:
- Failure to observe this user's guide recommendations;
- Accidents, fall, improper operation or any other damage caused by misuse or action of natural agents;
- Modifications in the equipment or in its parts.