

Safe and Sound Pro mmWave Operation Manual



BY SAFE LIVING TECHNOLOGIES INC.

Safe Living Technologies Inc.

70 Watson Pkwy S, Unit 6

Guelph, ON N1L 0C3

1.888.814.2425

Support@SafeLivingTechnologies.com

www.SafeLivingTechnologies.com

ABOUT

Safe Living Technologies is pleased to introduce the Safe and Sound Pro mmWave RF Meter. Designed to meet our professional standards of accuracy and reliability, the Safe and Sound Pro mmWave features:

- A true $\pm 6\text{dB}$ response from 20 GHz - 40 GHz with reduced tolerance down to 18 GHz
- Measurements range: 5 - 500,000 $\mu\text{W}/\text{m}^2$ (Omni)
0.5 - 30,000 $\mu\text{W}/\text{m}^2$ (Horn)
- Standard semi-omni "Stub" antenna included
- Optional high-gain horn antenna for increased sensitivity and direction finding for 25-40 GHz
- Optional 100x (20dB) attenuator for extreme levels
- Can display units of measure in $\mu\text{W}/\text{m}^2$ or V/m
- Long battery life: >6 hours with speaker on
- A clear display with PEAK, MAX & AVG readings
- Loud adjustable speaker sound output - 3 levels
- 1/8" stereo headphone jack
- Continuous operation via USB-C power



This sensitive meter is capable of measuring potentially harmful mmWave radiation from any continuous or pulsed digital sources. To help identify these various sources, the Safe and Sound Pro mmWave includes a built in speaker with adjustable volume levels. Each mmWave source has its own unique sound signature.

[Click here to view our sound library.](#)

BACKGROUND

Biological damage from microwave radiation at a cellular level occurs at levels much lower than the current government safety standards. They only consider the heating of tissue to be a health concern. This meter reflects the latest science and Building Biology standards.

Environments with high levels of RF are often a reality now. The goal is to reduce your exposure as much as possible. This is especially important in sleeping areas.

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OPERATION

First, attach the included semi - omni antenna, or optional high-gain horn antenna to the RF input connector. Looking from above, turn the knob counter-clockwise to tighten. For optimum frequency response using the semi - omni antenna, the SLT Logo should face forward.

To turn ON the unit, simply push and hold the power button. The startup screen will show the self calibration process and the approximate battery level in percent remaining.

Next, select the antenna type that is attached with the mode button to move the -> symbol. Push and hold the mode button to select that antenna.

You will now see the measurement screen.

Scan the area to record the highest max reading by moving the meter in all directions while keeping it at least 30 cm or 1 foot from your body.

If the RF levels are at or below a safe, long-term exposure level for sleeping areas, the green LED will be solid or flashing. To change display units from $\mu\text{W}/\text{m}^2$ to V/m or vice versa, press and hold the max reset button down until the units change.



STARTUP SCREEN



ANTENNA SCREEN



MEASUREMENT SCREEN



QUICK VIEW INDICATOR LIGHTS

- RED: Extreme**

Move away from this exposure.

Flashing indicates more than 10x extreme.

Fast flashing indicates more than 100x extreme.
- ORANGE: High**

Try to limit the time of your exposure at this level.
- YELLOW: Moderate**

Reduce this level for long term exposure.
- GREEN: Slight**

Good for sleeping areas and long term exposure.

Flashing indicates best and ideal conditions.



DISPLAY LEGEND

PEAK: Maximum instantaneous signal level.

MAX: Highest measured PEAK level.

AVG: Time averaged signal power density.

NOTES

The unit will shut down if extremely high RF power levels are detected to protect itself from damage. If this happens, please install the optional 100x (20dB) attenuator.

The unit will turn itself off after 30 minutes to conserve battery life.

To use the Safe and Sound Pro mmWave meter continuously, or without batteries, connect a computer or 5V USB charger to the USB-C jack.

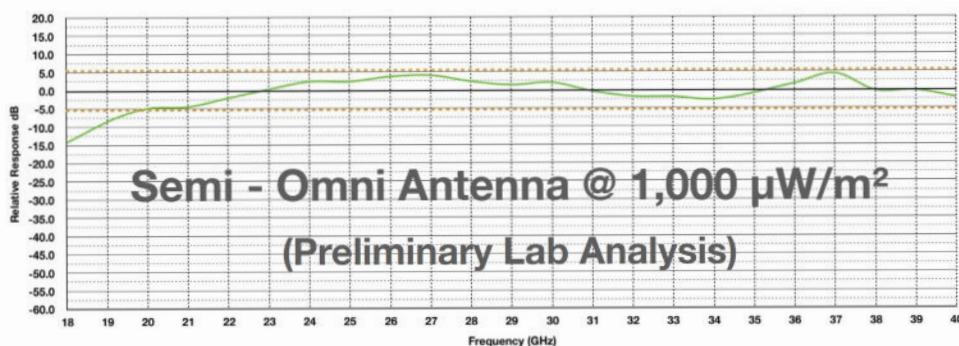
When headphones are connected to the 1/8" jack, the internal speaker is automatically muted.

Press the 'Max Reset' button to clear the 'MAX' value or hold for 3 seconds to toggle the measurement units between $\mu\text{W}/\text{m}^2$ or V/m.

Please ensure the antenna stays as still as possible when tightening the connection with the black knob. Improper tightening can potentially damage the meter and/or antenna.

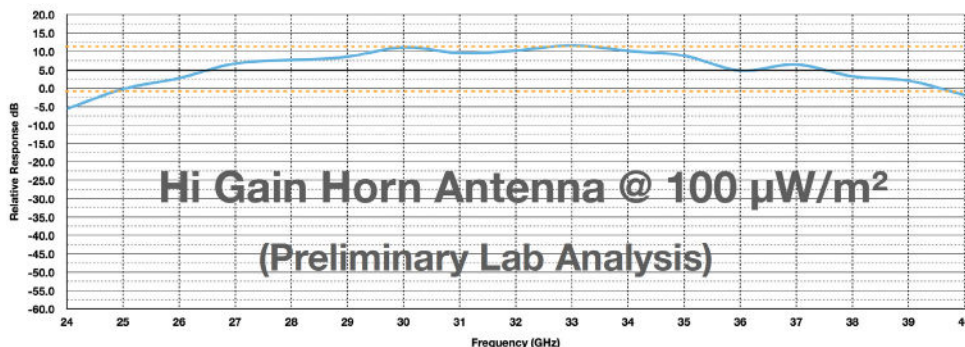
Use AA Alkaline batteries only.

SEMI-OMNI ANTENNA FREQUENCY RESPONSE



$\pm 5\text{dB}$, 20GHz-40GHz
3dB Response Time: < 50 μs

HI GAIN HORN ANTENNA FREQUENCY RESPONSE



$\pm 6\text{dB}$, 25 GHz - 40 GHz
3dB Response Time: < 50 μs

RF / MICROWAVE EXPOSURE GUIDELINES

1> BUILDING BIOLOGY PRECAUTIONARY GUIDELINES (SBM-2015) For Sleeping Areas*

Power density (Peak)	No Concern	Slight Concern	Severe Concern	Extreme Concern
microWatts per square meter $\mu\text{W}/\text{m}^2$	< 0.1	0.1 - 10	10 - 1000	> 1000
microWatts per square cm $\mu\text{W}/\text{cm}^2$	< 0.000,01	0.000,01 - 0.001	0.001 - 0.1	> 0.1
milliWatts per square meter mW/m^2	<0.000,1	0.000,1 - 0.01	0.01 - 1	> 1
Signal strength				
Volts per meter V/m	< 0.006,14	0.006,14 – 0.061,4	0.061,4 – 0.614	> 0.614

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2> **BIOINITIATIVE REPORT PRECAUTIONARY GUIDELINES (Dec 31, 2012) Updated 2014-2020** www.bioinitiative.org
Bioinitiative Working Group, Cindy Sage and David O. Carpenter, Editors. A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Radiation. Precautionary target level is **3 - 6 $\mu\text{W}/\text{m}^2$ or 0.000,3 – 0.000,6 $\mu\text{W}/\text{cm}^2$ (Peak)**

3> CANADA AND UNITED STATES GOVERNMENT GUIDELINES (1999, 2009, 2019)

In Canada, guidelines for Radio Frequency Wave exposure lay under the jurisdiction of Health Canada. Safety code 6 was developed in 1999 and offers federal guidelines for safe RF exposure levels. These limits are in the range of **2,000,000 to 10,000,000 $\mu\text{W}/\text{m}^2$ or 200 to 1000 $\mu\text{W}/\text{cm}^2$ (Time Averaged)** and are based solely on the short term thermal effects or the heating of body tissue. Adverse biological effects have been documented at levels far below Safety Code 6 guidelines. No Canadian biological exposure guidelines exist for long term exposure to low level Radio Frequency Radiation. This also holds true for the USA and their FCC guidelines.

CONTACT US

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