

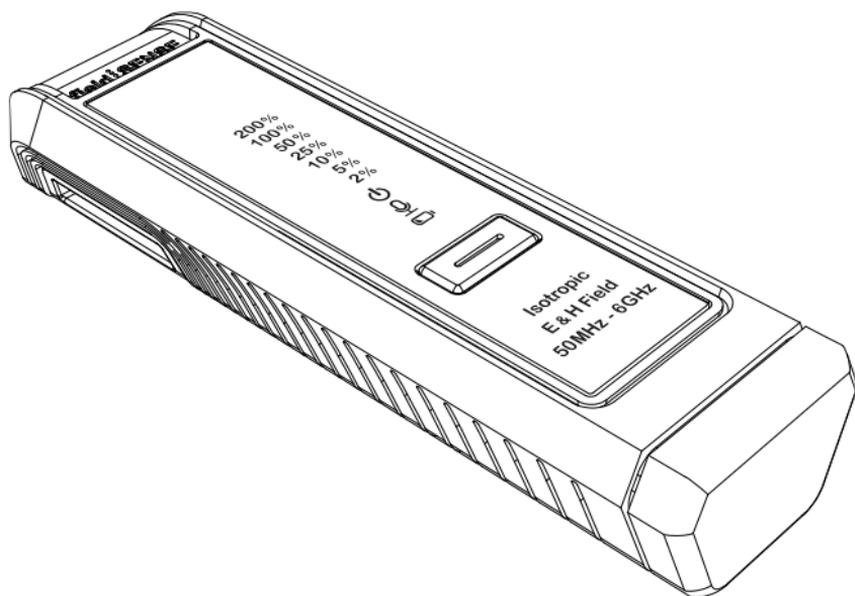
# field:SENSE

● Personal RF Monitor

## User Manual

for

### FieldSENSE 2.0



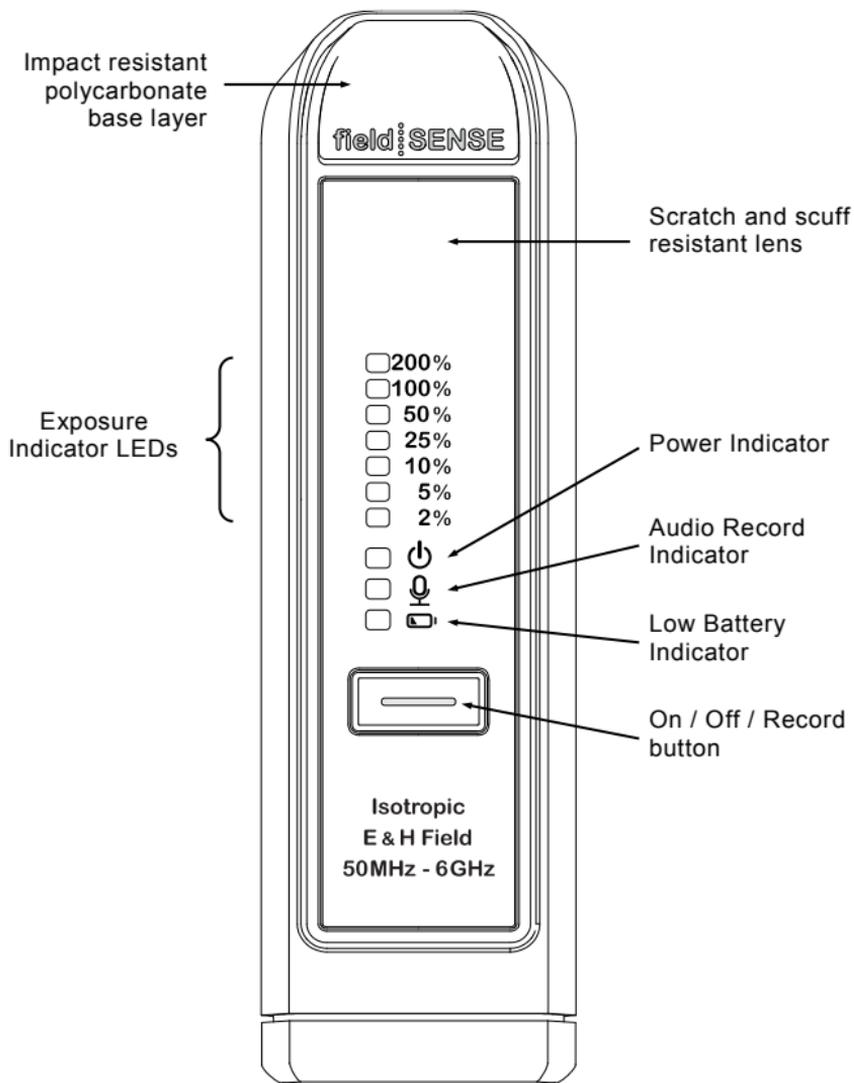
The FieldSENSE 2.0 is the next generation in Personal RF Monitors specifically designed for protecting personnel working near broadcast and telecommunications transmitting antennas from EMF/RF overexposure.

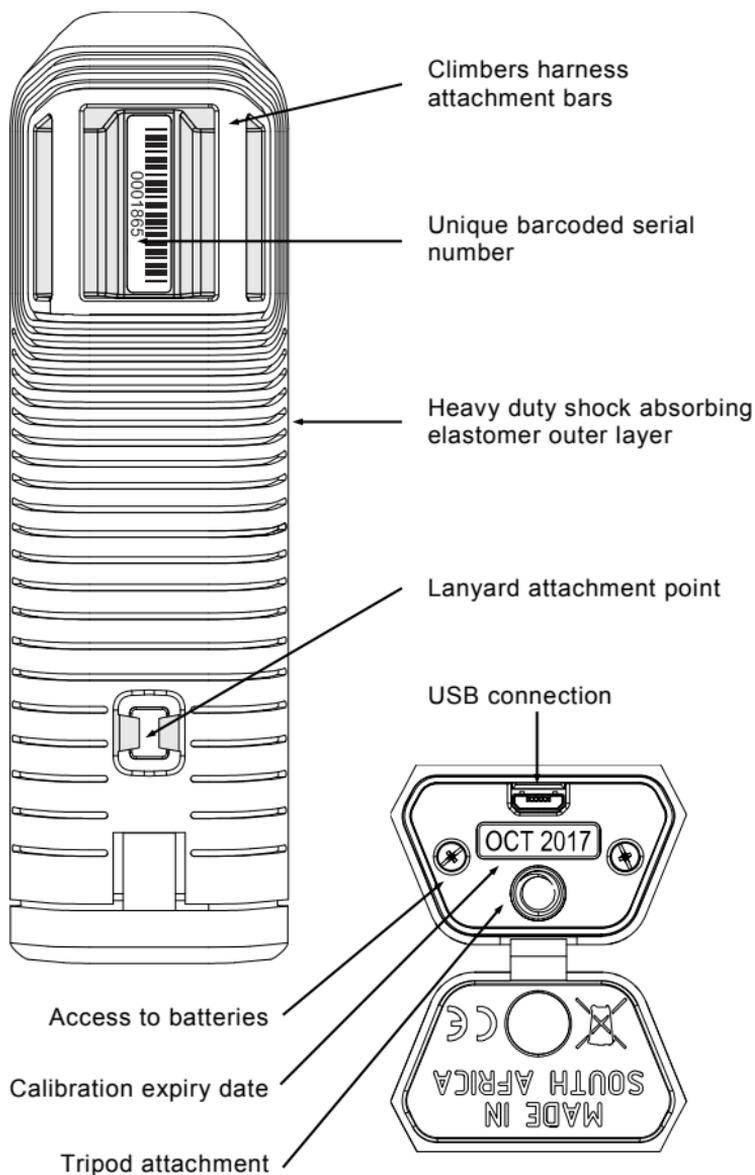
The FieldSENSE 2.0 measures both E and H fields spanning from 50 MHz to 6 GHz with an isotropic probe architecture. The probe response is shaped to internationally accepted exposure safety limits and is designed for both body worn, handheld or remote monitoring applications.

Make sure that the device is within its 2 year calibration cycle and do not use it if it appears to have been damaged.

Used correctly, it will give an indication of field levels approaching or exceeding associated exposure limits, and is a valuable tool to assist in preventing EMF/RF overexposure.

**\*\* NOTE: This device is only to be used by RF trained personnel with a complete understanding of the risks involved with working with RF and know the necessary precautions to be taken. Furthermore only use this device within the limits of the design specifications, and ensure that it is not damaged prior to usage.**





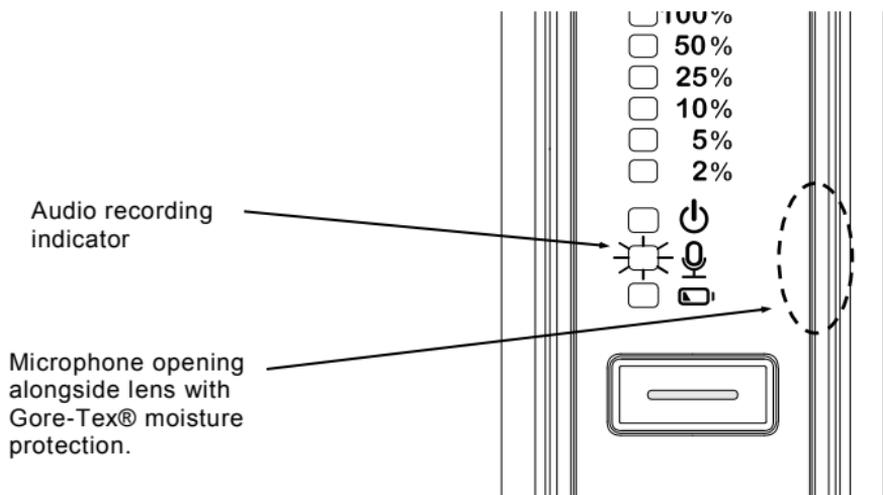
## RF monitor operation

- Prior to entering an area where transmitting antennas could be present be sure to switch your FieldSENSE on.
- Switch the FieldSENSE on by pressing and holding the On/Off button for approximately 1 second.
- The LEDs illuminate in sequence followed by a BEEP. Once on the power indicator will flash.
- Should the battery level be low the low battery indicator will illuminate. Replace the batteries (Page 8).
- When the exposure level rises above 50% an audible alarm is sounded.
- When close to or exceeding 100% of the exposure limit, the necessary precautions need to be taken.
- Once switched on the field strength data logger will record all field values measured. These are accessible via the PC application available from [www.FieldSENSE.com](http://www.FieldSENSE.com). A micro B male USB connection will be required.
- Once the FieldSENSE is on, the fall detect & alarm system is armed and in the event of a fall being detected an alarm will sound which can only be cleared by switching the device off and on again.
- To ensure that the device is not inadvertently left switched on causing unnecessary drain on the batteries a timer will switch the unit off after 8 hours.

\* Always adhere to the relevant safety regulations pertaining to RF exposure in the country of use.

## data logging & voice notes

- Once the FieldSENSE is switched on the cumulative exposure from all sources present are stored as Maximum, E and H percentages together with the associated date and time.
- The values are a percentage of the associated exposure guideline power density, either referenced to E or H field.
- Accessing these values and synchronizing the date/time of the device is achieved using the program available from [www.fieldsense.com](http://www.fieldsense.com).
  
- The FieldSENSE 2.0 can also capture voice notes which are paired with the measured data.
- Once the device is on, double tap the power button and the Audio recording LED will illuminate.
- Speak directly into the front of the device slowly and clearly for best performance.
- A single press of the button will end the audio recording.
- Voice notes can be downloaded from the FieldSENSE using the program available from [www.fieldsense.com](http://www.fieldsense.com)



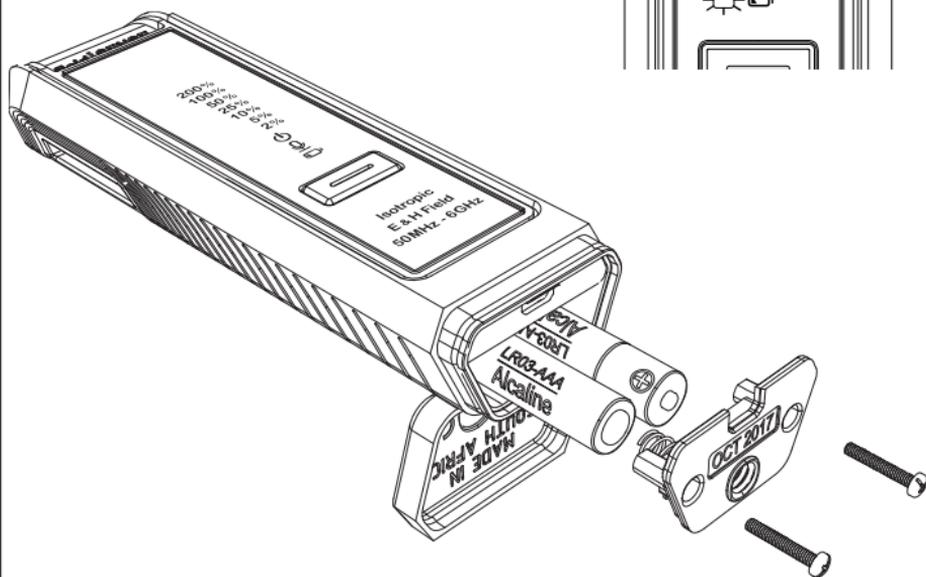
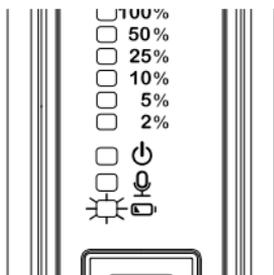
## fall detection & alarm

- The FieldSENSE 2.0 is equipped with a 3 axis accelerometer which is able to detect if the device experiences a fall.
- This is immediately active when the device is switched on, and should the device detect a fall of approximately 2m it will sound an alarm.
- The alarm can only be cleared by switching the device off again.
- The goal of this is to immediately draw attention to a climber who may have fallen, and may be unconscious.
- The alarm, if uncleared, will continue until the batteries are exhausted.

# replacing the batteries

- When the Low Battery Indicator begins to flash, replace the batteries.
- Open the elastomer flap at the bottom of the FieldSENSE revealing the battery lid screws.
- Remove the screws and lid and slide out the old batteries. Dispose of these correctly.
- Insert 2 x new AAA (LR03) batteries.
- Replace the battery lid and retighten the screws.
- Securely close the elastomer cover to ensure the moisture seal remains intact.

\* *Removing the batteries for an extended period of time will cause the device to lose time on the internal clock. This is corrected by plugging it into the USB connection on a PC.*



- **Frequency range of operation** ..... 50MHz - 6 GHz
- **Frequency response** ..... Shaped (Occupational/Controlled)
  - ICNIRP(1998)
  - FCC [NCRP] OET65 (1997)
  - Canada Safety Code 6 (2015)
  - IEEE C95.1 (2005) \*(see associated table p10)
- **Sensor polarisation** ..... Isotropic
- **Isotropy \*** .....  $\pm 3$ dB
- **Probes** .....3 orthogonal E and 3 orthogonal H field
- **Result type** .....Time-averaged RMS power density
- **Calibration interval** ..... 2 yearly
- **CW damage level**..... 26 dB above Standard/ 40 000% of Standard
- **Battery type** .....2 x 1.5V Size AAA(LR03) Alkaline
- **Battery life** .....6 months—1 year (average usage)
- **Weight (incl. batteries)** .....0.25 lb, 115 gr
- **Dimensions** .....146 x 26 x 42mm
- **IEC 60529 rating** ..... IP64 (battery cap closed)
- **Temperature range** .....-20°C to 50 °C
- **Fall detection** ..... 3 axis accelerometer

\* Isotropy is the measure of deviation from the mean over the sphere at a frequency.

Frequency response<sup>1</sup>

Frequency [MHz]	ICNIRP (1998)	FCC/NCRP (1997)	Canada SC6 (2015)
50—80	0.5 ± 3.5 dB	0.5 ± 3.5 dB	-1.5 ± 3.5 dB
80—400	2.0 ± 3.0 dB	2.0 ± 3.0 dB	0.5 ± 3.5 dB
400—700	1.3 ± 2.3 dB	2.9 ± 2.1 dB	1.3 ± 2.3 dB
700—3000	0.3 ± 3.2 dB	1.2 ± 3.8 dB	-1.0 ± 4.0 dB
3000—6000	0.0 ± 3.5 dB	0.0 ± 3.5 dB	-1.5 ± 2.5 dB

1. The response is a combined E & H field deviation from the relevant standard including the isotropy as is reported by the LED indicators.
2. Positive values indicate conservative readings i.e. early warning.
3. NB! Only use the device in this frequency range, measurements outside of this frequency range will not be accurate and cannot be guaranteed.
4. H field contributions assessed from 50MHz — 1 GHz only.
5. Not suitable for Radar applications.

## **CE Compliance for Europe**

The manufacturer, EMSS Consulting (Pty) Ltd, hereby declares that Field-SENSE 2.0 complies with the following Directives; **2002/96/EC**-Waste Electrical and Electronic Equipment; **2002/95/EC**-Restriction of the use of Hazardous Substances; **2004/108/EC**-Electromagnetic compatibility; **2001/95/EC**-General Product Safety Directive through conformity to **IEC 61000-6-4**; **IEC 6100-6-2**; **IEC 60950-1**.

## **FCC regulatory information for the USA**

This device complies with part 15 of the FCC Rules: Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## **CSA regulatory information for Canada**

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

## calibration certificate

EMSS Consulting (Pty) Ltd hereby certifies that the performance of this unit has been verified to be within operating specifications.

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Serial Number:

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Calibration Date:

Valid for 24 months

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QA Approved

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● Personal RF Monitor

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