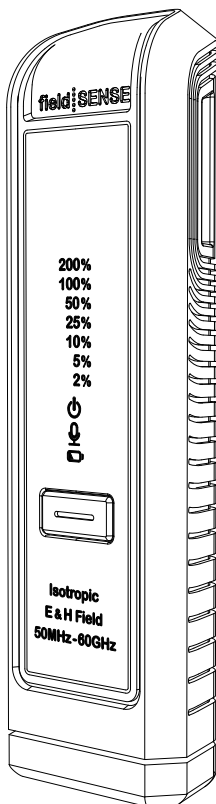


field:SENSE

60

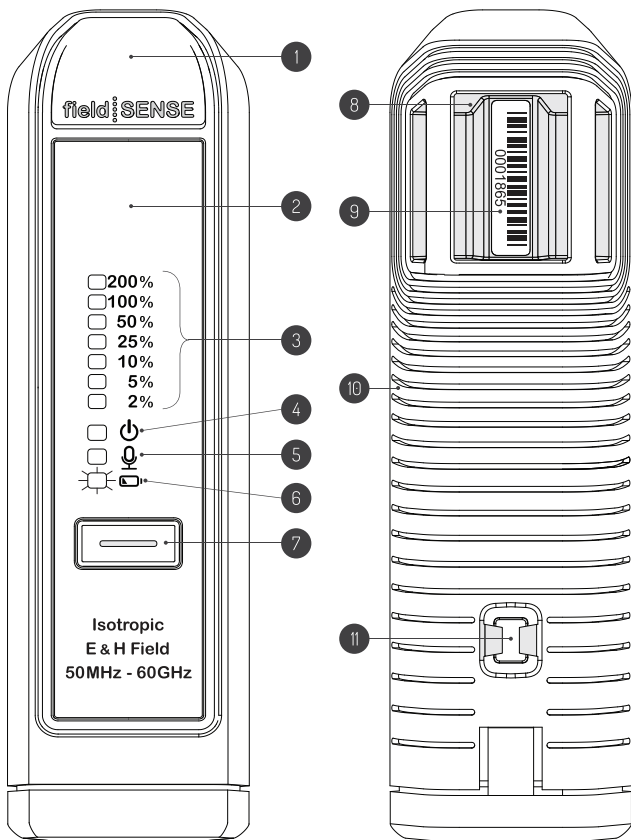
Personal RF Monitor

**WORKS
AS HARD AS YOU**

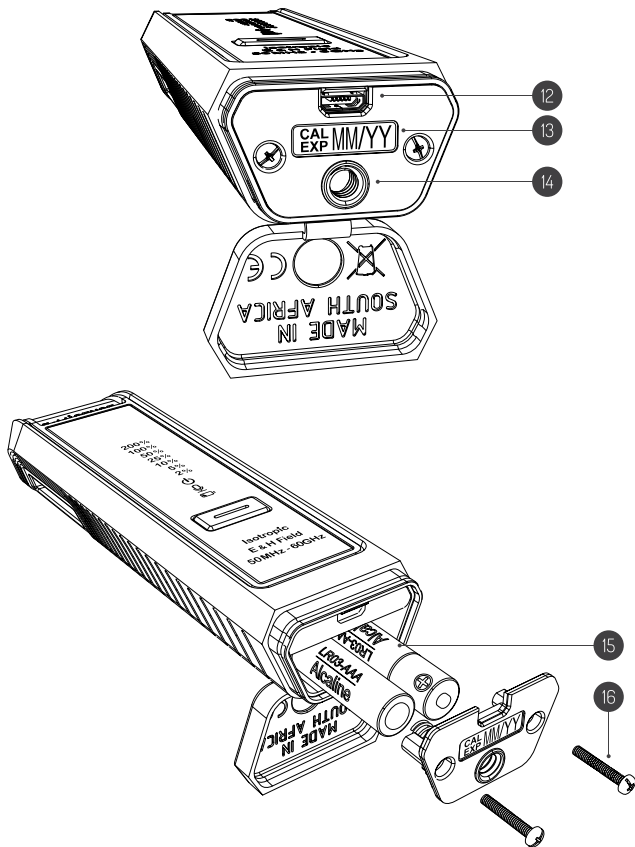


USER MANUAL

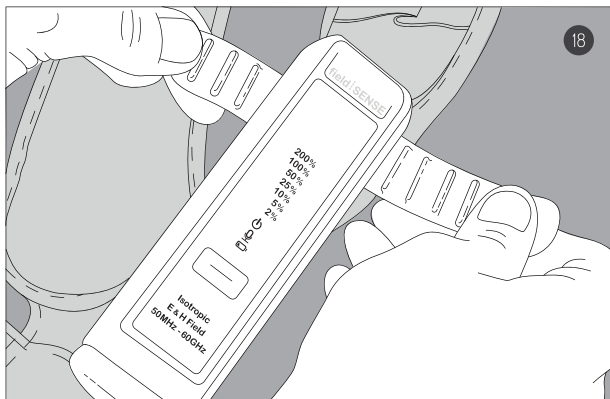
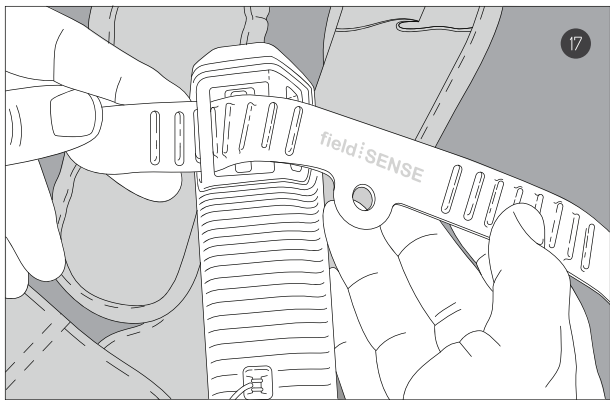
FIELDSENSE DEVICE | FRONT & BACK



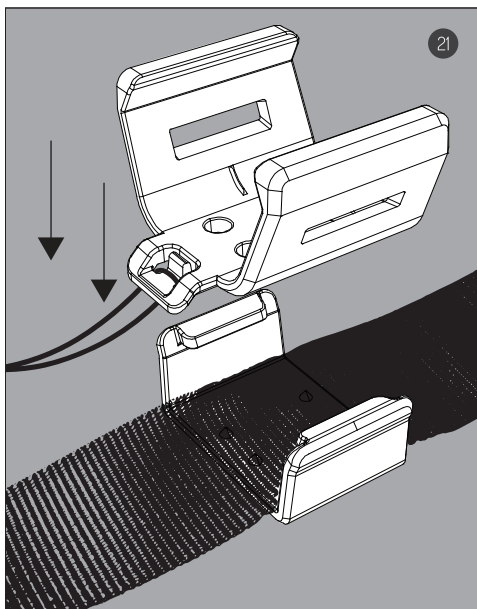
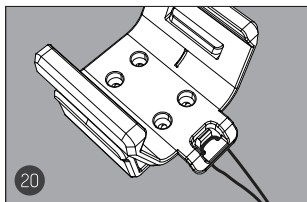
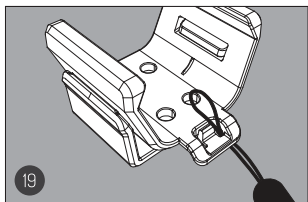
FIELDSENSE DEVICE | REPLACING BATTERIES



FIELDSense DEVICE | HARNESS ATTACHMENT-STRAP



FIELDSENSE DEVICE | HARNESS ATTACHMENT-CLIP



ENGLISH

INSTRUCTION MANUAL

CONTENTS

INTRODUCTION	1	FALL DETECTION & ALARM	4
DEVICE OVERVIEW.....	2	REPLACING THE BATTERIES	4
RF MONITOR OPERATION	2	HARNESS ATTACHMENT.....	5
EXPOSURE LOGGING.....	3	SPECIFICATIONS	6
VOICE NOTES.....	4	REGULATORY COMPLIANCE	7

INTRODUCTION

The FieldSENSE 60 is the latest in the FieldSENSE range of Personal RF monitors which are field proven to work as hard as you, regardless the conditions. The extended upper frequency range of the FS60 ensures that you are warned of inadvertent RF overexposure, now also when working on mmWave 5G systems.

The FieldSENSE 60 probe architecture is specially designed for both near field conditions and far field conditions

through the use of a combined E & H field probe utilizing 6 separate orthogonal probes. Now with the extended frequency range of 50 MHz up to 60 GHz.

The shaped response ensures that multiple sources of concurrent radiation are individually assessed and weighed against the safe working limits and then combined giving you the total exposure in percentage of the occupational limits.

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.

DEVICE OVERVIEW

See technical figures on cover pages.

1. Impact resistant polycarbonate base layer
2. Scratch & scuff resistant lens
3. Incident exposure indicator LED's
4. Device Power On/Off indicator
5. Audio recording indicator
6. Low Battery indicator
7. Power/Record button
8. Strap harness attachment point
9. Device serial number and barcode
10. Heavy duty shock absorbing elastomer outer layer
11. Lanyard attachment point
12. USB connection for data logging.
NOT FOR CHARGING
13. Date Calibration Expires
14. Tripod attachment point
15. AAA Alkaline batteries (LR03)
16. Battery lid removal screws (M2)

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 with AAA Alkaline batteries.
- Should the exposure level rise above 50% an audible alarm is sounded.

**ALWAYS ADHERE TO THE RELEVANT SAFETY REGULATIONS
PERTAINING TO RF EXPOSURE IN THE COUNTRY OF USE.**

- 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 every second. These are accessible via the PC application available from www.fieldsense.com
- 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.

EXPOSURE LOGGING

Once the FieldSENSE 2.0 is switched on the cumulative exposure from all sources present within the operating frequency and exposure dynamic range are stored as the Maximum, E and H percentages with the associated date and time thereof.

- It is important to synchronize your device time to your local time by plugging it into a PC running the FieldSENSE app available from www.fieldsense.com
- The reported and recorded values are a percentage of the associated exposure guideline power density, either referenced to the E or H field.
- Data points are stored at up to once every second in a changing field. In static field conditions or below the device noise floor less points are stored to conserve memory.
- A 6 minute average is also calculated and stored.
- Accessing these values and synchronizing the date/time of the device is achieved using the app available from www.fieldsense.com

VOICE NOTES

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 short press of the power button will end the audio recording session, but the RF monitor remains on.
- Voice notes can be downloaded from the FieldSENSE using the app available from www.fieldsense.com

FALL DETECTION & ALARM

The FieldSENSE is equipped with a tri-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.
- This is to immediately draw attention to a climber who may have fallen and is in need of support.
- 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.

- It is NOT possible to charge the device through the USB port, this is exclusively for access to data and voice logs.
- Open the elastomer flap at the bottom of the FieldSENSE revealing the battery lid screws (16).

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 RUNNING THE FIELDSENSE APP.

- Remove the screws (16) and lid (14) and slide out the old batteries (15). Dispose of these correctly.
- Insert 2 x new AAA (LR03) batteries (15), paying attention to the polarity thereof.
- Replace the battery lid (14) and retighten the screws (16).
- Securely close the elastomer cover to ensure the dust & moisture seal remains intact.

HARNESS ATTACHMENT

Elastic strap

- Insert the one end of the elastomer strap through the strap harness attachment bars (8) as shown in (17).
- Pass the other end of the elastomer strap around the webbing on the harness you wish to attach it to.
- Feed the other end of the elastomer strap through the bars as above.
- Pull on both ends until securely fastened to the webbing.

Clip & coiled lanyard

- Attach the coiled lanyard to the lanyard attachment point (11) on the FieldSENSE.
- Pass the other end of the coiled lanyard through the harness clip mechanism as shown in (19), pulling it back to clip in place as shown in (20).
- Set the rear clip section behind the webbing you wish to attach to and press the front clip section firmly into it until both ends clip (21).
- The FieldSENSE can now be pressed into the clip and easily removed as needed with a single handed operation.

SPECIFICATIONS

Frequency range of operation.....	50MHz - 60 GHz
Frequency response.....	Shaped (Occupational/Controlled)
• -ICNIRP(1998)	
• -FCC [NCRP] OET65 (1997)	
• -Canada Safety Code 6 (2015)	
• -IEEE C95.1 (2005)	
Sensor polarisation	Isotropic
Isotropy ¹	± 3dB
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

Frequency response²

Frequency	ICNIRP	FCC/NCRP	Canada SC6
50 MHz – 10 GHz	2.0 ± 3.0 dB	2.5 ± 3.5 dB	1.0 ± 4.0 dB
10 GHz – 27 GHz	1.0 ± 4.0 dB	1.0 ± 4.0 dB	1.0 ± 4.0 dB
27 GHz – 40 GHz	6.0 ± 4.0 dB	6.0 ± 4.0 dB	6.0 ± 4.0 dB
40 GHz – 60 GHz	7.5 ± 5.5 dB	7.5 ± 5.5 dB	7.5 ± 5.5 dB

1. *Isotropy is the measure of deviation from the mean over the sphere at a frequency, below 6 GHz*
2. *The response is a combined E & H field deviation from the relevant standard as is reported by the exposure indicators with planar wave illumination on the rearside of the device, both vertically & horizontally polarised.*
3. *Positive values indicate conservative readings i.e. early warning.*
4. *NB! Only use the device in this frequency range, measurements outside of this frequency range will not be accurate and cannot be guaranteed.*
5. *H field contributions assessed from 50MHz – 1 GHz only.*
6. *Not suitable for Radar applications.*

REGULATORY COMPLIANCE

CE Compliance for Europe

The manufacturer, Alphawave Mobile Network Products (Pty) Ltd, hereby declare that the FieldSENSE 60 has been designed and is manufactured to comply with all the applicable essential requirements of the following directives:

- 2012/19/EU-Waste Electrical and Electronic Equipment;
- 2011/65/EU-Restriction of the use of Hazardous Substances;
- 2014/30/EU-Electromagnetic compatibility;
- 2001/95/EC-General Product Safety Directive through conformity to IEC 61000-6-4; IEC 6100-6-2; IEC 62368-1.

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.