

# SM1R

**MANUAL**

**ENGLISH**

DOC00074 Rev.05



## INTRODUCTION

The SM1R is a state-of-the-art hearing protection (i.e., protects against harmful noise) communication system that allows you to retain situational awareness whilst remaining in full contact with your team via two-way radio communication.

There is an Intrinsically Safe variant of the product that meets international standards for use in explosive gas, dust, and mining environments.

Situational awareness is provided by **SENS**<sup>®</sup> processing technology and environmental microphones mounted within the headset.

Contact through two-way radios is enabled by the SRCK60xx\* cable assembly available separately.

Please note that the SM1R headset uses power from the two-way radio. The SM1R must be connected by the appropriate SRCK60xx cable to the radio to provide both **SENS**<sup>®</sup> situational awareness and communication to the two-way radio.

\*SRCK60xx part numbers vary depending on the radio connector. Consult your supplier for the appropriate cable.

For additional product information and language translations, please refer to [sensear.com/support/product-manuals](https://www.sensear.com/support/product-manuals).

## MAINTENANCE AND SAFETY INSTRUCTIONS

The SM1R has been designed such that minimal user maintenance is required. Only those parts listed on page 21 of this instruction manual are user replaceable.

**SPECIFIC CONDITIONS OF USE** Potential Electrostatic hazard, clean with damp cloth only.

**WARNING** The IS headset must not be disassembled. In the event of a malfunction, the unit should be switched off and returned to Sensear Pty Ltd.

**WARNING** Connection to the USB Connector located in the connector compartment of the right-hand ear-cup is not permitted. The USB is for service only.

## HEADSET ANATOMY

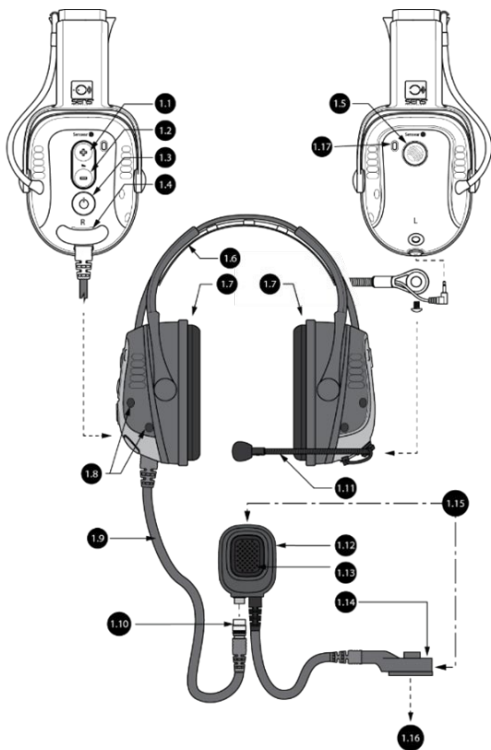
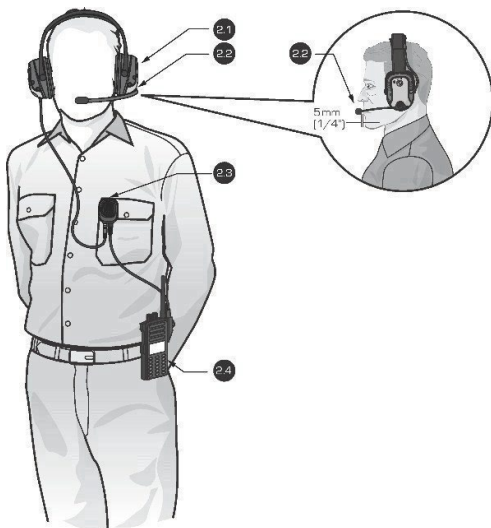


FIGURE 1

DOC00074 SM1R Manual rev 05

#	Description
<b>1.1</b>	Volume up button
<b>1.2</b>	Volume down button
<b>1.3</b>	Power button
<b>1.4</b>	Hatch cover, for programming and charging
<b>1.5</b>	Multi-function button (MFB)
<b>1.6</b>	Headband*
<b>1.7</b>	Ear cushions
<b>1.8</b>	<b>SENS</b> <sup>®</sup> Microphones
<b>1.9</b>	Headset cable
<b>1.10</b>	Headset connector
<b>1.11</b>	Boom microphone mount– M5 Hex screw Connector - 2.5mm Audio jack
<b>1.12</b>	Inline PTT
<b>1.13</b>	Inline PTT button
<b>1.14</b>	Two-way radio connector (Note: these will vary depending on your two-way radio)
<b>1.15</b>	SRCK60xx cable assembly
<b>1.16</b>	To the two-way radio
<b>1.17</b>	LED light (one on each side of headset)

## WEARING THE HEADSET



**FIGURE 2**

#	Description
<b>2.1</b>	Headset
<b>2.2</b>	Boom microphone
<b>2.3</b>	Inline PTT
<b>2.4</b>	Two-way radio

The SM1R headset is designed to be worn with the headset sealing around the ears. Specific examples of how to fit the headset around the ears are covered in the next three pages. The fit does alter slightly depending on what style of mount is used - Headband, Behind-the-Neck, or Helmet mounted.

The boom microphone should be placed approximately 5mm (1/4") in front of the mouth. Check to ensure the white dot or microphone label is facing towards you. The orientation is essential as the microphone is directional. If the microphone faces a different direction, this may lead to a reduction in transmission quality.

The inline PTT has a rotatable clip behind it to allow it to attach to the shirt/upper garment.

The inline PTT must be connected to the two-way radio using the multi-pin connector.

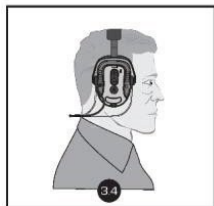
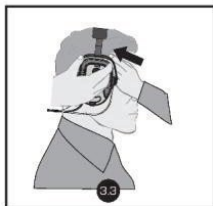
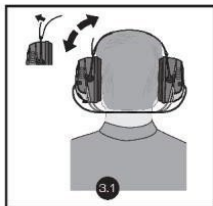
## **FITTING THE HEADSET**

It is recommended that the wearer should ensure that:

- The earmuffs are fitted, adjusted, and maintained in accordance with the manufacturer's instructions
- The earmuffs are always worn in high noise conditions

If the above recommendations are not adhered to, the protection afforded by the earmuffs will be severely impaired.





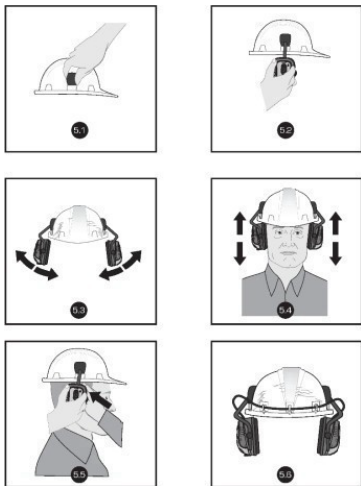
## BEHIND-THE-NECK MOUNT FITTING INSTRUCTIONS

#	Description
<b>3.1</b>	Adjust Velcro strap so that the earmuff cups completely enclose the ears.
<b>3.2</b>	The earmuff cushions should seal firmly against the head.
<b>3.3</b>	For best results, remove all hair from under the ear cushion.
<b>3.4</b>	Noise reduction will be adversely affected by anything that breaks the seal of the earmuff cushions.



## HEADBAND MOUNT FITTING INSTRUCTIONS

#	Description
4.1	Adjust the headband by pulling the center band out equally on both sides.
4.2	Ensure no hair is inside the earmuff cushions.
4.3	Fit the earmuffs over the ears ensuring a tight fit around the ears.
4.4	Ensure the muff surrounds the ears.
4.5	Press down on the headband to obtain a snug and comfortable fit.



## HELMET MOUNT FITTING INSTRUCTIONS

#	Description
5.1	Attach the adaptors to each side of the helmet by sliding them into the slots.
5.2	Attach the earmuffs by sliding into the adaptors.
5.3	Ensure the earmuff is firmly attached by lifting the arm up and down.
5.4	Place the helmet on the head and adjust by sliding the earmuffs up and down.
5.5	Earmuffs should seal firmly against the head. For best results, remove hair from under the earmuffs.
5.6	Three adhesive mounts and ties are included to secure the earmuff cable to the helmet. The mounts should be evenly spaced around the rear outside of the helmet. Fit the tie through the mount. The cable should feed through each tie and secured in place.

## OPERATING THE HEADSET

### POWER ON:

1. Connect the SRCK60xx cable to the two-way radio
2. Turn the two-way radio on
3. Connect the headset cable to the SRCK60xx cable at the inline PTT
4. The headset will power up and an audible sound will be heard through the headset

### POWER OFF:

1. Turn the two-way radio off  
or
2. Disconnect the headset cable from the SRCK60xx cable at the inline PTT (brings audio back to the two-way radio)

### SENS® MODE:

When the headset is powered up, the unit is set into 'SENS® mode'\*. 'SENS® mode' allows full situational awareness of your surroundings in addition to two-way radio or face-to-face communications.

- The power button toggles between Quiet mode and SENS® mode
- The volume control buttons can be used to raise or lower the audio level of the SENS® mode
- \*The default mode on power up can be programmed using the Sensear app

### QUIET MODE:

By pressing the power button, this toggles 'Quiet mode'. Quiet mode only allows audio from two-way radios to pass through the headset.

SENS® mode	Green LED, blink twice every 4 seconds
Quiet mode	Green LED, blink once every 4 seconds

## COMMUNICATING

### COMMUNICATING OVER TWO-WAY RADIO:

To transmit over the two-way radio:

- Press and hold the button located on the inline PTT.
- Release the inline PTT button to cease transmission.
- To change the volume of the two-way radio communications, use the two-way radio's volume controls

### NOTES:

- When the headset is powered off (and disconnected from the inline PTT), the inline PTT button may not activate the two-way radio. The PTT located on the two-way radio should be used.
- When the headset is powered on, the two-way radio PTT may not activate the two-way radio
- Audio will revert to radio when the headset connector is disconnected at the PTT (dependent on radio type and compatible SRCK radio cable)

**Two-Way Radio VOX:** VOX can be used on VOX-enabled two-way radios. Refer to the two-way radio documentation for the setup and use of the VOX feature. To disable VOX, you can either turn VOX off on the two-way radio or press the headset PTT once, depending on which two-way radio model you use.

## USER MAINTENANCE AND STORAGE

This product may be adversely affected by certain chemical substances. Further information should be sought from the manufacturer.

The headset contains replaceable cushions (Part #: SMHK0006 or SMHK0005). Cushions are recommended to be replaced every 3-6 months to maintain the appropriate hearing protection that the product is certified to. Cushions should be inspected regularly for signs of damage or wear. Cushions can be removed simply by gripping the cushion and pulling firmly to unclip from the baseplate. Replacement cushions may be pushed into the clips around the baseplate.

The headset should be stored at room temperature (between 15°C/59°F and 25°C/77°F).

## ACCESSORIES AND SPARE PARTS

The following accessories and spare parts may be ordered separately:

SRCK60xx	Various models, two-way radio interface cables for most popular two-way radios
SRCK60xxx001	Various models, <b>Intrinsically Safe</b> two-way radio interface cables for most popular two-way radios. Check with a representative to ensure IS model compatibility.
SMHK0006	Earmuff hygiene kits
SMHK0005	Dual Protection hygiene kits
SMBE0000	Behind-the-Neck replacement band
SMBB0000	Headband replacement band
SMMK0001	Smart Muff Helmet Mount Replacement
SMHA0000	SM1 Helmet Adaptor – 3718
SMHA0001	SM1 Helmet Adaptor – 3713
SMHA0002	SM1 Helmet Adaptor – 3714
SMBM0001	Non- IS/Ex Replacement boom microphone
SMBM0003	IS/Ex Replacement boom microphone
SMAP0000	Cooling Pads
MFPO0062B	Dual Protection replacement earpiece pair
SMWS0001	Smart Muff Wind Protector Kit
SMBMHK01	Smart Muff Boom Microphone Wind Sock X5
SMPW0001	Wall Charger 5.5V 1.0A
PRGTAB01	Programming Tablet

Further information may be obtained from your Sensear representative, via the Sensear website, or by emailing or writing to the address on this User Manual.

## SENSEAR STANDARD WARRANTY TERMS & CONDITIONS

Sensear Pty Ltd (“SENSEAR”) warrants the SENSEAR manufactured HEARING PROTECTION products (“Product”) listed below to be free from defects in material and workmanship under normal use and service for a period of 12 months from the original date of purchase.

SENSEAR will at its absolute discretion repair or replace the Product where a defect in material or workmanship occurs, at no charge to the end user for parts or labor. SENSEAR reserves the right to replace the Product with the same or equivalent part or Product rather than repair it. Where a part or Product is replaced, the part or Product becomes the property of SENSEAR. SENSEAR reserves the right to use refurbished parts or Product for repair or replacement.

SENSEAR is not responsible for any damage caused to or by accessory or ancillary equipment connected or attached to the Product that is not provided by SENSEAR and is not expressly designed to operate in conjunction with the Product.

This warranty is not assignable or transferable to any other party, this warranty is extended to the original purchaser of the Product only.

This warranty is in addition to your statutory rights provided under the Trade Practices Act, or relevant legislation in your state or territory.

SENSEAR reserves the right to limit its liability to the repair, replacement, or refund of the purchase price of a Product. Under no event shall SENSEAR be liable for damages more than the original purchase price of the Product, for any loss of use, loss of time, inconvenience, loss of profits or savings, loss of revenue, commercial loss, or any other incidental, special or consequential loss to the full extent such may be disclaimed by the law.



This warranty does not cover:

- Defect or damage resulting from use of the Product in other than its normal or intended manner.
- Defects or damage occurring from misuse, abuse, accident, corrosion, fire, liquid intrusion, or neglect, including during transportation.
- Defects or damage occurred from improper or unauthorized testing, operation, maintenance, service, repair, alteration, modification, or adjustment.
- Freight costs to the place of repair.
- Product that has been subjected to unauthorized or illegal alteration of the firmware or software in the Product.
- Cosmetic damage to the Product that does not interfere with the intended operation of the Product.
- Normal wear and tear.
- Product where the serial number has been removed or altered.
- Any batteries rechargeable or otherwise either shipped with or internal to the Product.
- Any consumable items, for example replaceable ear tips or earcup pads.
- Warranty claims made outside of the warranty period.
- Warranty claims made without appropriate proof of purchase bearing both the original purchase price and date.
- All other warranties, conditions, terms, representations, and undertakings whether express or implied.

### **How to Get Warranty Service**

To register your product visit: [sensear.com/support/headset-registration](https://sensear.com/support/headset-registration)

If you require warranty service visit: [sensear.com/support/returns-repairs-new](https://sensear.com/support/returns-repairs-new)

## TROUBLESHOOTING

1. If the headset does not power up, the headset is switching on and off intermittently, or the headset is not reacting to any controls:
  - Disconnect the headset at the inline PTT and check that the connectors are clear from any particles or fluids, then reconnect the headset.
  - Check that the two-way radio is powered on and that the two-way radio battery is charged.
  - Check that the two-way radio connector is properly connected to the two-way radio. If the connector has threaded screws to hold the connector in place, ensure these are fastened correctly.
2. If the two-way radio audio is not clear or distorted, or the headset cuts out:
  - Adjust the two-way radio volume at the two-way radio controls. Setting a volume level of 50% is a good starting point.
  - Check that the battery in the two-way radio is charged.
3. If you can't hear any of the surrounding environment:
  - The headset may be in 'Quiet mode,' or power is not present to the headset. Press the power button on the headset to toggle between Quiet mode and **SENS** mode
4. If the receiver can't hear your voice and you can only hear the background noise:
  - Refer to the 'Wearing the headset' chapter of the manual. Ensure that your boom microphone is set up appropriately.

# SM1R

## TECHNICAL INFORMATION

**Rev: 7/31/23**

For most recent technical information, visit  
[sensear.com/support/technical-information](https://sensear.com/support/technical-information)

## FORWARD

Product Safety and RF Exposure Compliance:

This product is designed to be used in isolation or in conjunction with a two-way radio. Before using this product with a two-way radio, read the operating instructions for safe usage contained in the Product Safety and RF Exposure booklet enclosed with the two-way radio.

## FCC COMPLIANCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

# DECLARATION OF CONFORMITY

Manufacturer's Name: Sensear Pty Ltd.  
Manufacturer's Address: 4 Hehir Street, Belmont, Western Australia, 6104 Australia

This declaration of conformity is issued under the sole responsibility of the manufacturer and herewith declares that the products SM1 series Smart Muff Headsets.

Conforms to the following directives:

2011/65/EU (L174/88-110)	RoHS Directive
(EU)2016/425 (L81/51-98)	PPE Directive
2014/53/EU (L153/62-106)	Radio Equipment Directive

As attested by conformity with harmonized standards

**RoHS:**

RoHS 2 Directive 2011/65/EU

**EMC and EMF Specifications:**

Electromagnetic Compatibility	EN301 489-1: V2.1.1 (2017-02)
Electromagnetic Compatibility	EN301 489-17: V3.1.1 (2017-02)
Electromagnetic Compatibility	EN301 357: V2.1.1 (2017-06)
Electromagnetic Compatibility	EN300 328: V2.2.2 (2019-07)
Electromagnetic Compatibility	EN61000-6-2 Ed 3.0
Electromagnetic Compatibility	EN61000-6-3 Ed 2.1
Electromagnetic Fields	EN62479:2010

**Safety Specifications:**

IT Equipment EN62368-1: 2014 +AC:2015

**PPE Specifications:**

**PPE Conformance:** Finnish Institute of Occupational Health, Topeliuksenkatu, 41b, FI-00250 Helsinki, Finland, Notified Body: 0403 performed the EU Type Examination (Module B) and issued the EU type-examination certificate numbers 29223RGS02 and 10409GDS01.

This product is Category III and is subject to Module D conformity to type based on quality assurance of the production process and is under the surveillance of BSI Group ANZ Pty Ltd (Notified Body 2797). Certification Number: CE 717133

**Single protection:**

EN 352-1:2020 Hearing protectors. General requirements Part 1: Ear-muffs  
EN 352-3:2020 Hearing protectors. General requirements Part 3: Ear-muffs attached to an industrial safety helmet  
EN 352-4:2020 Hearing protectors. General requirements Part 4: Level-dependent ear-muffs  
EN 352-6:2020 Hearing protectors. General requirements Part 6: Ear-muffs with electrical audio input

**Dual protection:**

EN 352-6:2020 Hearing protectors. General requirements Part 6: Ear-muffs with electrical audio input  
EN 352-7:2020 Hearing protectors. General requirements Part 7: Level-dependent ear-plugs

Sensear PTY Ltd: Hehir Street, Belmont, Perth, Western Australia Date: 27 July 2023

*William Choo*

William Choo  
Engineering & Operations Director

Tel: +61 8 9277 7332, Toll Free: 1-300-859-120, Web: [www.sensear.com](http://www.sensear.com)

For most recent Declaration of Conformity, please visit  
[sensear.com/support/declaration-of-conformity](http://sensear.com/support/declaration-of-conformity)

## TECHNICAL SPECIFICATIONS

	<b>Headband</b>	<b>Behind-the-Neck</b>	<b>Helmet Mount</b>
Weight	495g (17.46 oz.)	428g (15.09 oz.)	480g (16.93 oz.)
Operating temperature	-20°C to +60°C (-4°F to 140°F)		
Power	See radio cable documentation		
Housing material	PP, ABS + TPE		
RoHS Compliant	Yes		

## NRR AND SLC80

The SM1R has been certified to international hearing protection standards including AS/NZS 1270:2002, ANSI S3.19-1974, ANSI S12.6-2008, EN352-1, EN352-3, EN352-4, and EN352-6. The following passive attenuation ratings were observed:

### PASSIVE ATTENUATION (ANSI S3.19-1974)

SM1R measured in accordance with ANSI S3.19 -1974.

#### Headband mount - SM1RB001

<i>Frequency (Hz)</i>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>3150</b>	<b>4000</b>	<b>6300</b>	<b>8000</b>	<i>NRR</i>
Mean atten. (dB)	22.1	24.4	31.1	35.1	35.8	37.0	39.9	40.7	40.7	27 dB
Standard dev. (dB)	3.1	2.4	2.0	2.5	3.2	3.0	3.3	2.7	2.9	

#### Behind-the-Neckmount – SM1RE001

<i>Frequency (Hz)</i>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>3150</b>	<b>4000</b>	<b>6300</b>	<b>8000</b>	<i>NRR</i>
Mean atten. (dB)	18.9	22.4	28.6	33.6	33.5	35.3	37.3	38.8	37.4	24 dB
Standard dev. (dB)	3.5	3.4	2.6	2.8	2.3	3.5	4.0	2.9	3.4	

#### Helmet mount – SM1RH001

<i>Frequency (Hz)</i>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>3150</b>	<b>4000</b>	<b>6300</b>	<b>8000</b>	<i>NRR</i>
Mean atten. (dB)	18.6	20.8	27.3	33.6	37.1	35.5	35.3	37.1	35.0	23 dB
Standard dev. (dB)	3.2	2.7	3.1	3.9	2.3	3.1	3.8	3.8	3.4	

**PASSIVE ATTENUATION (ANSI S12.6– 2008)**

SM1R measured in accordance with ANSI S12.6 - 2008.

**Headband mount- SM1RB001**

<b>Frequency (Hz)</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>NRR(SF)</b>
Mean attenuation (dB)	21.4	21.9	29.8	33.7	35.8	37.2	38.5	27 dB
Standard Dev. (dB)	3.0	2.1	1.7	2.8	1.5	1.9	2.8	
APV80	18.9	20.1	28.4	31.3	34.5	35.6	36.1	

**Behind-the-Neck mount-SM1RE001**

<b>Frequency (Hz)</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>NRR(SF)</b>
Mean attenuation (dB)	18.7	19.9	28.0	34.1	31.5	35.6	35.3	24.3 dB
Standard Dev. (dB)	3.0	2.5	2.2	1.7	3.2	3.4	4.1	
APV80	16.2	17.8	26.2	32.7	28.8	32.7	31.9	

**Helmet mount - SM1RH001**

<b>Frequency (Hz)</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>NRR(SF)</b>
Mean attenuation (dB)	15.0	17.7	25.2	30.4	33.9	34.5	33.8	19.1 dB
Standard Dev. (dB)	6.5	6.7	6.6	4.0	3.3	5.9	5.1	
APV80	9.5	12.1	19.7	27.0	31.1	29.5	29.5	



**PASSIVE ATTENUATION (AS/NZS 1270:2002)**

SM1R measured in accordance with AS/NZS 1270:2002.

**Headband mount - SM1RB001**

<i>Frequency (Hz)</i>	<b>125</b>	<b>250</b>	<b>50</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>SLC80</b>
Mean atten. (dB)	20.3	21.7	30.3	33.2	35.2	36.6	37.3	31dB, Class 5
Standard dev. (dB)	4.3	3.1	2.7	3.0	2.7	2.5	3.3	
Mean atten. – Standard dev. (dB)	16.0	18.6	27.6	30.2	32.5	34.1	34.0	

**Behind-the-Neckmount - SM1RE001**

<i>Frequency (Hz)</i>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>SLC80</b>
Mean attenuation(dB)	19.3	20.0	27.0	33.7	30.5	33.9	33.0	27 dB, Class 5
Standard deviation(dB)	5.1	4.1	3.7	2.4	4.5	3.8	5.2	
Mean atten. – Standard dev. (dB)	14.2	15.9	23.3	31.3	26.0	30.1	27.8	

**Helmet mount - SM1RH001**

<i>Frequency (Hz)</i>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>SLC80</b>
Mean atten. (dB)	15.6	19.1	24.7	29.7	34.0	34.5	33.4	26 dB, Class 5
Standard deviation(dB)	5.7	5.5	5.2	3.9	3.0	5.5	5.0	
Mean atten. – Standard dev. (dB)	9.9	13.6	19.5	25.8	31.0	29.0	28.4	

**PASSIVE ATTENUATION (EN352-1 AND EN352-3)**

SM1R measured in accordance with EN352-1 and EN352-3.

**Headband mount - SM1RB001 (EN352-1)**

<b>Frequency (Hz)</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>H</b>	<b>M</b>	<b>L</b>	<b>SNR</b>
								<b>(dB)</b>			
Mean attenuation (dB)	22.5	24.5	31.5	34.9	35.8	38.0	39.8	35	30	24	33
Standard Dev. (dB)	4.8	2.6	2.3	3.1	2.5	2.1	2.7				
Mean attenuation – Standard Dev. (dB)	17.7	21.9	29.2	31.8	33.3	35.9	37.1				

**Behind-the-Neck mount - SM1RE001 (EN352-1)**

<b>Frequency (Hz)</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>H</b>	<b>M</b>	<b>L</b>	<b>SNR</b>
								<b>(dB)</b>			
Mean attenuation (dB)	20.7	21.3	27.7	34.0	33.3	35.3	36.1	32	27	21	30
Standard Dev. (dB)	5.1	3.3	3.1	2.5	2.9	2.3	2.6				
Mean attenuation – Standard Dev. (dB)	15.6	18.0	24.6	31.5	30.4	33.0	33.5				

**Helmet mount - SM1RH001 (EN352-3)**

<b>Frequency (Hz)</b>	<b>125</b>	<b>250</b>	<b>500</b>	<b>1000</b>	<b>2000</b>	<b>4000</b>	<b>8000</b>	<b>H</b>	<b>M</b>	<b>L</b>	<b>SNR</b>
								<b>(dB)</b>			
Mean attenuation (dB)	20.4	22.2	28.2	33.5	36.9	38.0	37.5	34	28	22	31
Standard Dev. (dB)	3.6	3.3	3.3	3.6	2.3	3.9	3.0				
Mean attenuation – Standard Dev. (dB)	16.9	18.8	24.9	29.8	34.6	34.1	34.6				

The SM1R has level dependent facilities and the criterion levels as defined in EN352-4 are displayed below:

<i>Model</i>	<i>H</i>	<i>M</i>	<i>L</i>
	<i>dB(A)</i>		
SM1R	108.6	104.6	103.4

### **EARMUFFS WITH ELECTRICAL AUDIO INPUT (EN352-6)**

The electrical input level for which the mean plus one standard deviation is A-weighted diffused-field related sound pressure level is equal to 82 dB(A) is an RMS voltage  $U = 108\text{mV}$ .

### **SIZE RANGES**

**WARNING** Earmuffs complying with EN352-1 are of 'small size range', 'Medium size range' or 'large size range'. 'Medium size range' earmuffs will fit most wearers. 'Small size range' or 'large size range' earmuffs are designed to fit wearers for whom 'medium size range' earmuffs are not suitable. The SM1R Headband, SM1R Behind-the-Neck, and SM1R Helmet adapters may be adjusted for small, medium, or large size.

## MAINTENANCE AND CLEANING

The headset is an active hearing protector that allows audible contact with your surroundings while providing protection from harmful noise.

It is recommended that the headset is fitted, adjusted, and maintained in accordance with these instructions. This headset should always be worn in noisy surroundings. The headset should be regularly inspected for serviceability.

### WARNING:

- If these instructions are not followed the protection of the headset will be severely impaired.
- Noise reduction will be adversely affected by anything that impairs the seal of the earmuff cushions against the head, such as thick spectacle frames and balaclavas
- The reported attenuation will be obtained only if the headset is in good condition and worn as directed (Refer to AS/NZS 1269.3 for guidance).
- This product should not be used where there is a risk that the connecting cord could be caught up during use.
- This product is provided with level-dependent in-ear audio playback. The wearer should check correct operation before use. If distortion, or failure is detected. The wearer should refer to the manufacturer's advice for maintenance and/or replacement.

### WARNING:

- Performance may deteriorate with battery usage. The typical period of continuous use that can be expected from the headset will depend on the two-way radio battery.
- The output of the level-dependent circuit of this hearing protector may exceed the daily limit sound level. This limit can be adjusted with a Sensear programming tablet.
- This headset has been tested and approved according to the methods described in the EN352 series of standards.

## CLAMPING FORCE

The clamping force of the SM1R has been measured in accordance with AS/NZS 1270:

Model	Part #	Units	Initial measurements			Post-flex measurements		
			A	B	C	A	B	C
SM1R – Headband mount	SM1RB001	Newton (N)	11.6	11.1	11.1	11.1	10.7	11.1
		Pounds (lbs)	2.6	2.5	2.5	2.5	2.4	2.5
SM1R – Behind-the-Neck mount	SM1RE001	N	14.2	14.7	14.2	14.2	14.7	14.2
		lbs	3.2	3.3	3.2	3.2	3.3	3.2
SM1R – Helmet mount	SM1RH001	N	9.3	9.3	9.3	9.3	8.9	9.3

## MAINTENANCE AND STORAGE OF YOUR HEADSET

This product may be adversely affected by certain chemical substances. Further information should be sought from the manufacturer.

The headset contains replaceable cushions (Part # SMHK0000). Cushions are recommended to be replaced every 3-6 months to maintain the appropriate hearing protection that the product is certified to. Cushions should be inspected regularly for signs of damage or wear. Cushions can be removed simply by gripping the cushion and pulling firmly to unclip from the baseplate. Replacement cushions may be pushed into the clips around the baseplate.

The headset should be stored at room temperature (between 15°C/59°F and 25°C/77°F).

## INTRINSICALLY SAFE CERTIFICATION – IS MODEL

The SM1R-IS meets the following international standards for use in explosive gas environments:

- TIA-4950-A Rev. May 13, 2014

Requirements For Battery-Powered, Portable Land Mobile Radio Applications in Class I, II, III, Division 1, Hazardous (Classified) Locations

- CSA C22.2 No. 157-92 (R2012) + UPD1 + UPD2

Intrinsically Safe and Non-Incendive Equipment for use in Hazardous Locations

- UL913 5th Ed. February 21, 1997

Standard for Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II, III, Division 1, Hazardous (Classified) Locations

### MARKINGS

The SM1R-IS contains the following markings:

Manufacturer's name, Hazardous location class and group and temperature class



## **COPYRIGHT NOTICE**

This document remains the property of Sensear Pty. Ltd. All rights reserved. No part of this document may be reproduced in any form, either in an electronic retrieval system or otherwise, without the prior written consent of Sensear Pty. Ltd.

## **IMPORTANT NOTICE**

Sensear Pty. Ltd. Reserves the right to make corrections, modifications, enhancement, improvements and other changes to its products and services and to discontinue any product or service without notice.

While Sensear Pty. Ltd. makes every effort to ensure that the information in this document is correct at the time of publication, users and potential users should first check with Sensear Pty. Ltd. to ensure that they have received the most up-to-date documentation.



## Waste (Disposal) of your Electronic and Electric Equipment

EN

### European Union (EU) Waste of Electrical and Electronic Equipment (WEEE) directive

The European Union's WEEE directive requires that products sold into EU countries must have the crossed-out trash bin label on the product (or the package in some cases). As defined by the WEEE directive, this crossed-out trash bin label means that customers and end-users in EU countries should not dispose of electronic and electrical equipment or accessories in household waste. Customers or end-users in EU countries should contact their local equipment supplier representative or service center for information about the waste collection system in their country.

FR

### Directive de l'Union Européenne (UE) sur l'Élimination des Équipements Électriques et Électroniques (DEEE)

La directive DEEE de l'Union Européenne impose que les produits vendus dans les pays de l'UE portent la marque (éventuellement sur l'emballage) d'une poubelle sur roues barrée d'une croix. Comme la directive DEEE l'explique, cette marque composée d'une poubelle sur roues barrée d'une croix signifie que les clients et les utilisateurs des pays de l'UE ne devraient pas inclure leurs équipements électriques et électroniques ou accessoires dans leurs déchets ménagers. Les clients et utilisateurs des pays de l'UE devraient contacter le représentant local de leur fournisseur d'équipement ou un centre de service pour s'informer sur le système de collection de déchets dans leur pays.

NL

### De richtlijn inzake afgedankte elektrische en elektronische apparatuur (AEEA) van de Europese Unie (EU)

De richtlijn AEEA van de Europese Unie vereist dat product en die in de landen van de EU worden verkocht (of in sommige gevallen de verpakking daarvan), moeten zijn voorzien van het etiket met een doorgekruiste vuilnisbak. Zoals bepaald door de richtlijn AEEA, betekent dit etiket met de doorgekruiste vuilnisbak dat klanten en eindgebruikers in landen van de EU elektrische en elektronische apparatuur of toebehoren niet met het huisvuil mogen wegwerpen. Klanten en eindgebruikers binnen de EU moeten contact opnemen met hun plaatselijke leverancier of onderhoudscentrum voor informatie over het afvalinzamelsysteem in hun land.

DE

### Richtlinie über Elektro- und Elektronik-Altgeräte (WEEE) der Europäischen Union (EU)

Produkte, die in EU Ländern auf den Markt gebracht werden, müssen mit einer durchgestrichenen Abfalltonne gekennzeichnet sein (oder in einzelnen Fällen die Verpackung). Die WEEE Richtlinie definiert, dass Kunden und Endnutzer in Ländern der Europäischen Union (EU) elektronische und elektrische Geräte sowie elektronisches oder elektrisches Zubehör nicht in den Hausmüll entsorgen dürfen. Innerhalb der EU setzen Sie sich bitte mit dem örtlichen Vertreter oder Kundendienst Ihres Geräteherstellers in Verbindung, der Ihnen Auskunft zur Altgeräteentsorgung/-abholung geben kann.



**IT**

**La direttiva de la Unione Europea (EU) sui rifiuti di apparecchiature elettriche ed elettroniche (RAEE)**  
La direttiva RAEE della Unione Europea richiede che i prodotti venduti nei paesi della UE devono essere marcati con il simbolo di un contenitore di spazzatura mobile barrato sul prodotto (in casi eccezionali sull'imballaggio). Il simbolo di un contenitore di spazzatura mobile barrato, conforme alla direttiva RAEE, significa che i clienti detentori finali nei paesi dell'UE, non dovrebbero smaltire gli apparecchi o gli accessori elettronici ed elettrici con i rifiuti domestici. I clienti detentori finali nei paesi della UE dovrebbe rivolgersi al fornitore, rappresentante o centro di riparazione locale per ottenere informazioni sui sistemi predisposti nel proprio paese per la raccolta di tali apparecchi usati.

**PT**

Directiva da União Europeia (UE) relativa aos Resíduos de Equipamentos Eléctricos e Electrónicos (REEE) A Directiva REEE União Europeia exige que os produtos vendidos em países UE tenham etiqueta como símbolo do conteúdo do lixo barrado com uma cruz no próprio produto (ou, em determinados casos, na embalagem). Tal como definido pela Directiva REEE, este conteúdo do lixo barrado com uma cruz significa que os clientes utilizadores finais nos países da UE não devem eliminar equipamentos eléctricos e electrónicos ou acessórios junto com o lixo doméstico. Os clientes ou utilizadores finais dos países UE devem contactar representante local fornecedor equipamento ou centro de assistência para obter informações relativas ao sistema de recolha de lixo no país onde vivem.

**RU**

**Директива Европейского Союза (ЕС) об утилизации электрического и электронного оборудования («УЭЭО»).**

Директива «УЭЭО» Европейского Союза требует, чтобы изделия, продаваемые в странах ЕС (в отдельных случаях на их упаковке), были нанесена маркировка в виде перечёркнутого мусорного контейнера. Как установлено в директиве «УЭЭО», такая маркировка в виде перечёркнутого мусорного контейнера означает, что покупатели и конечные пользователи не должны выбрасывать электронное и электрическое оборудование или приборы бытового мусора. Покупателям и конечным пользователям в странах ЕС следует обращаться к местным представителям поставщиков оборудования или в сервисные центры для получения информации о системе сбора отходов в их стране.

**ES**

**La directiva de la Unión Europea (EU) sobre Residuos de Aparatos Eléctricos y Electrónicos (RAEE)**  
La directiva RAEE de la Unión Europea requiere que los productos vendidos en los países de la UE sean rotulados mediante el símbolo de un contenedor de basura tachado sobre el producto (en algunos casos sobre envase). Conforme con la directiva RAEE, el símbolo del contenedor de basura tachado significa que los clientes usuarios finales en los países de la UE no deberían disponer los aparatos eléctricos electrónicos ni ninguno de sus componentes junto a la basura doméstica. Clientes Usuarios Finales En Los Países de la UE debe entrar en contacto con el centro del servicio proveedores del equipo para obtener información acerca del sistema de recolección en su país



Printed in Australia