

WEEKLY MAINTENANCE OF YOUR AUDIO PROCESSOR

Thoroughly wipe the external parts of your audio processor with a tissue and let them dry completely.

Drying your audio processor

The audio processor system includes a drying kit (electrical drying kit or drying box with drying capsules). For detailed information, please read the respective drying kit user manual.

The audio processor need not be completely disassembled. The batteries may remain in the battery pack frame but the battery pack cover should be removed from your audio processor.

We recommend that you dry your audio processor once a day (preferably overnight); although how often you will need to dry your equipment depends on the humidity in your environment. Excessive perspiration or high humidity in the air will require more frequent use of the drying kit.

Never swallow any drying capsules which may be included in the drying kit!

BATTERIES

The SONNET audio processor requires two 675 zinc air batteries. These batteries supply the external and internal components of the MED-EL Cochlear Implant System with energy. If you want to get more information on batteries, please contact your local MED-EL representative or CI center.

The battery pack cover has air inlets on its outer side. Do not cover these inlets as this may shorten battery life. If the inlets are contaminated, carefully clean them with the enclosed cleaning brush. If the contamination cannot be removed with the cleaning brush, replace the entire battery pack cover with a new one.

NOTE:

It is recommended to only use high power zinc air batteries to power the SONNET.

IMPORTANT

- Wash your hands after handling disposable batteries.
 - Do not try to recharge disposable batteries.
 - Do not disassemble, deform, immerse in water or incinerate batteries.
 - Avoid mix-up of old and new batteries or batteries of different types of brands.
 - Do not short-circuit batteries, e.g. by allowing the terminals of batteries to touch, carrying batteries loose in your pockets, wallet or purse or touching the battery terminals with metals (coins, wires, keys, etc.).
 - Store unused batteries in their original packaging, in a cool and dry place.
 - Do not expose batteries to heat (e.g. never leave batteries in direct sunlight, behind a window or in a car).
 - Do not use damaged, deformed batteries or leaking batteries. If any kind of substance leaks out of a battery, avoid direct skin contact with that substance. Such a substance could cause a chemical burn. In case of eye contact, rinse with copious amounts of water and seek medical attention immediately.
 - If you are not going to use your audio processor for an extended period of time, you should remove the batteries and store them separately. Cover the air openings on the top with adhesive tape when storing the batteries to avoid discharge.
 - Always remove used batteries immediately to avoid leakage and possible damage to the device.
 - Used batteries should be disposed of according to local regulations. Generally, batteries are collected separately and not disposed of with the household garbage.
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To prevent children from swallowing or choking on batteries, always keep new and used batteries out of the reach of children. Children shall be instructed not to swallow or put any components of their MED-EL Cochlear Implant System into their mouths or to play with any components. In young children, the battery pack cover lock must always be turned clockwise into the locked position (see Fig. 7-2), once the cover has been moved completely over the frame, to prevent the child from disassembling the audio processor.



Do not allow children to replace batteries without adult supervision.

Changing the batteries of your SONNET audio processor

When the indicator light on the control unit blinks red continuously (), the battery set must be replaced (see also chapter 8, Troubleshooting).

To change the batteries, proceed as follows:

1. Remove the SONNET and the coil from your head.
2. Make sure that the battery pack cover lock is in the unlocked position, as shown in Fig. 7-1. When it is not in the unlocked position, use the screwdriver provided with your SONNET kit to turn it counter-clockwise into the unlocked position.
3. Pull back and completely remove the battery pack cover.
4. Replace the used battery set by removing the two batteries with the coil magnet. To do so, move the center of the bottom part of the coil over each battery separately. Try not to touch the battery contacts (see Fig. 22).

IMPORTANT

Be careful not to place the coil on the SONNET control unit.

5. Before inserting the new battery set, make sure that the battery contacts are clean and dry. Remove the foil stickers covering the zinc air batteries before use. Check for correct polarity when inserting the new batteries. The positive pole \oplus must face outward, i.e. the \oplus sign is still visible after the batteries have been inserted.
6. Make sure that the battery pack cover lock is in the unlocked position as shown in Fig. 7-1. When it is not in the unlocked position, use the screwdriver provided with your SONNET kit to turn it counter-clockwise into the unlocked position.
7. Slide the battery pack cover completely over the battery pack frame to switch on the SONNET (see Fig. 4). Mind the correct orientation of the battery pack cover when sliding it over the frame and do not use excessive force. The orientation is correct when the air inlets on the battery pack cover are on the same side as the coil cable socket in the control unit.



In young children, the battery pack cover lock must always be turned clockwise into the locked position (see Fig. 7-2), once the cover has been moved completely over the frame, to prevent the child from disassembling the audio processor.



Fig. 22 Changing the batteries of your audio processor

Changing the battery of your FineTuner

When your FineTuner generates an optical low battery warning signal (see also chapter 4, SONNET audio processor, FineTuner, FineTuner functions), replacing the battery of your FineTuner is recommended.

To change the battery, proceed as follows:

1. Open the lid on the back of the FineTuner with a small screwdriver.
2. Replace the used button battery (type CR2025) by removing it with the coil magnet or by gently shaking it into your hand. Try not to touch the battery contacts.
3. Insert the new battery with the ⊕ sign facing up.
4. Close the lid by carefully inserting it on the right side, then sliding it into place and tightening the screw.



Fig. 23 Changing the battery of your FineTuner

8. Troubleshooting

Once you are familiar with your MED-EL Cochlear Implant System, you will not find it difficult to handle minor technical problems, which are similar to those encountered in other electronic devices. Problems with functioning are most frequently related to batteries or cables.

Using cables or plugs not recommended or supplied by MED-EL may damage your MED-EL Cochlear Implant System or cause uncomfortable stimulation and the warranty may become void. If you have any questions or problems, please get in touch with your CI center or nearest MED-EL office.

Switching the audio processor on or off can cause a soft sound. You can remove the coil from the implant site before operating the switch if this sound bothers you.

IMPORTANT

If troubleshooting does not eliminate the problem and you do not hear sound with your MED-EL Cochlear Implant System, please contact your clinic or CI center immediately.

SPEECH PROCESSOR TEST DEVICE



Fig. 24 Speech Processor Test Device

For your convenience you have been provided with a small grey Speech Processor Test Device.

The Speech Processor Test Device is a simple, optional troubleshooting tool for MED-EL audio processors and is intended for use by cochlear implant users or other persons interacting with cochlear implant patients (parents, audiologists, teachers, etc.).

The Speech Processor Test Device is not necessary for the function of your audio processor. It is simply intended to help detect most common audio processor problems like defective coil cables, defective audio processor microphones, weak batteries or other minor defects that might cause improper functioning of the audio processor.

If you suspect a malfunction of your audio processor, contact your CI center or MED-EL or try the following procedure:

Switch on the audio processor and make sure that it is supplied with functioning batteries. Place the coil underneath the Speech Processor Test Device (see Fig. 24). The coil will position itself correctly due to magnetic attraction.

When speaking into the microphone, the red light on the Speech Processor Test Device should flicker in the rhythm of your voice. If the red light does not light up or stays on constantly, try the following:

- Adjust the volume setting. By using the appropriate loudness setting, you should be able to recognize the flickering of the red light in the rhythm of your voice.
- Change the batteries.
- Replace the existing coil cable with a substitute cable.

We recommend you try these steps, even if you are not using your Speech Processor Test Device. If these measures are not successful, immediately contact your CI center or MED-EL. Do not try to open the audio processor or to disassemble the coil, as this will cause damage to the device and immediately void any warranty.

The Speech Processor Test Device should be handled with care to achieve maximum lifetime and to ensure proper function. Do not expose your Speech Processor Test Device to conditions other than those suitable for your audio processor (see also chapter 6, General precautions and warnings).

FINETUNER

The FineTuner transmits commands to the audio processor via a radio frequency (RF) link. If the audio processor does not respond to FineTuner commands, the following may be potential reasons and solutions for this:

- The audio processor is out of the FineTuner's operational range. To overcome this, you should move the FineTuner closer to the audio processor.
- The FineTuner keyboard lock is active. In this case, follow the instructions for the unlocking function as described in chapter 4, SONNET audio processor, FineTuner, FineTuner functions.
- Interference from other electronic or electrical equipment is present that blocks the transmission. To eliminate this interference, you need to move the FineTuner closer to the audio processor and/or go to a different location.
- The audio processor and the FineTuner are not synchronized. In this case, you need to refer to the section described in chapter 4, SONNET audio processor, FineTuner, How to configure your FineTuner.
- In the case of a suspected malfunction of the FineTuner, you need to remove the battery and re-insert it after a few minutes, as described in chapter 7, Care and maintenance, Batteries, Changing the battery of your FineTuner.
- The FineTuner battery is low. In this case you need to replace the battery as described in chapter 7, Care and maintenance, Batteries, Changing the battery of your FineTuner.
- The desired command in the audio processor has been disabled by your audiologist during fitting. To enable this command, you will need to contact your clinic, CI center or MED-EL.
- The indicator light in the audio processor has been disabled by your audiologist during fitting. To enable the indicator light, you will need to contact your clinic, CI center or MED-EL.


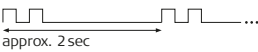

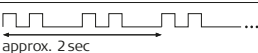

Additional troubleshooting information:

- If you or your child have used the **T** (telecoil) or **MT** (microphone and telecoil) settings and are unable to return to the **M** (microphone) signal source input with the FineTuner, you need to switch the audio processor off and on again. When the audio processor is switched on again, it will automatically start with the **M** (microphone) setting activated.
- If you or your child have lost the FineTuner, please contact your clinic, CI center or MED-EL immediately and ask for a replacement.



SONNET INDICATOR LIGHT

The multi-color indicator light on top of the audio processor flashes with different patterns and colors to indicate different conditions. If the indicator light begins flashing, use the following tables to determine the cause. Your audiologist can deactivate the blinking signals (except error patterns) if you prefer this.


Error patterns (RED)

Blinking pattern	Meaning	Required action	Remarks
	Electronic problem or temporary processor disturbance	Switch processor off. Switch processor back on.	If the blinking persists, the audio processor must be replaced.
	Selected position is not programmed, or there has been a programming failure	Select another position.	If the blinking persists, the processor should be reprogrammed by the clinic.
	Electronic problem or temporary processor disturbance	Switch processor off. Switch processor back on.	If the blinking persists, the processor should be reprogrammed by the clinic; if the blinking still persists, the audio processor must be replaced.
	Electronic problem or programming failure	Switch processor off. Switch processor back on.	If the blinking persists, the processor must be reprogrammed.
	Electronic problem or temporary processor disturbance	Switch processor off. Switch processor back on.	

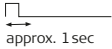
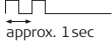
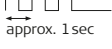
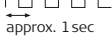
Warning patterns (RED)

Blinking pattern	Meaning	Required action	Remarks
 <p>approx. 1 sec</p>	Batteries empty	Switch processor off. Change the batteries. Switch processor back on.	If the processor is not switched off, the indicator light will continue to blink.
	Maximum or minimum value of volume or audio sensitivity range reached	Stop pushing button(s) on FineTuner.	

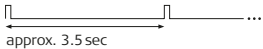
Confirmation pattern (GREEN)

Blinking pattern	Meaning	Required action	Remarks
Brief flash of indicator light	FineTuner command received and accepted	None	IMPORTANT: Pressing the Default key  on your FineTuner only affects volume and audio sensitivity. The program position does not change.

Program change pattern (GREEN)

Blinking pattern	Meaning	Required action	Remarks
 <p>approx. 1 sec</p>  <p>approx. 1 sec</p>  <p>approx. 1 sec</p>  <p>approx. 1 sec</p>	Program 1 to 4 selected	None	The indicator light will blink depending on the selected program position.

Status pattern (GREEN)

Blinking pattern	Meaning	Required action	Remarks
 <p>approx. 3.5 sec</p>	The processor is initialized and working	None	

PRIVATE ALERT

The private alert feature allows adding an acoustic warning signal to the audio signal. This added signal is audible only to the user of the audio processor and can be adjusted in 8 loudness steps. Your audiologist will set the loudness accordingly.

Battery low warning signal

If the battery voltage falls below a certain level, four short warning beeps will be generated approximately every 14 seconds. You are still able to hear, but you should change the batteries of the audio processor as soon as possible.

End of range reached warning signal

If a maximum or minimum value of volume or audio sensitivity has been reached, a continuous beeping signal is audible for the user as long as the key of the FineTuner is pressed.

Confirmation signal

If a command from the FineTuner has been executed successfully by the audio processor, a confirmation beep is audible for the user of the audio processor.

These 3 signals may be deactivated by your audiologist if this is your preference.

FINETUNER INDICATOR FUNCTIONS

Three indicator lights with different colors (left and right: amber; center: red [warnings]) indicate various conditions of the FineTuner.

Keyboard locked

If you press a key while the keyboard is locked, the red indicator light comes on. For power saving reasons the red indicator light goes off after 5 seconds even if the key is still pressed.

Transmitting

If a key is accepted and the FineTuner transmits commands to the audio processor, the left or right or both indicator lights (depending on the current side mode of the FineTuner) blink synchronously to the transmitted signals. To save energy, the FineTuner stops transmitting (and the indicator light stops blinking) after 3 seconds, even if the key is still pressed.

Switch to side

If the FineTuner is programmed for two different audio processors (for bilateral users), the left indicator light illuminates when pressing ◀; the right indicator light illuminates when pressing ▶ and both indicator lights illuminate when pressing ◀▶. To save energy, any indicator light goes off after 5 seconds even if the key is still pressed (if ◀▶ is pressed for more than 5 seconds, the FineTuner enters the program mode, see below).

Low battery

The FineTuner checks the battery status after each transmission to the audio processor. If a low battery status is detected, the red indicator light (center) blinks in a regular pattern (□□□□□ - red indicator light on your FineTuner goes on 3 times).

Configuration successful

If configuration of your FineTuner (see chapter 4, SONNET audio processor, FineTuner, How to configure your FineTuner) was successful, or if the automatic keyboard lock feature was successfully activated/deactivated, both amber indicator lights will illuminate for approximately one second.

Program mode

If ◀▶ is pressed for more than 5 seconds (must be unlocked; see chapter 4, SONNET audio processor, FineTuner, FineTuner functions for locking/unlocking instructions), the FineTuner enters the program mode. The three indicator lights start flashing. When the red indicator light is on, the two amber indicator lights are off and vice versa. Flashing stops and the program mode is left after 5 seconds or earlier when a correct key is pressed.

9. Technical data

AUDIO PROCESSOR

Dimensions of SONNET audio processor (mm/in.)¹



Weight¹

10.6 g (0.374 oz.) (including batteries)

Power supply

2 hearing aid batteries type 675 zinc air (1.4V), high power batteries recommended

Hardware

- Fully digital signal processing
- Various parameters programmable
- 4 programs selectable
- Up to 12 band pass filters; filter characteristics programmable
- Non-linear amplification programmable
- 2 omnidirectional microphones
- Integrated telecoil
- Audio processor self-test: checksum on programs, continuous parity check
- Automatic Gain Control (AGC) configurable
- FineTuner commands can selectively be disabled

¹ typical values

Audio input

- Via FM Battery Pack Cover
- Hearing aid type three pin connection (Euro Audio) acc. to IEC 60118-12
- Sensitivity: -57.5 dBV^1 (corresponds to 70 dB SPL at 1 kHz)
- Impedance: $4.5 \text{ k}\Omega^1$

Controls/Indicators

- ON/OFF switch
- Indicator light: 1 multi-color LED

Materials

- Mixture of polycarbonate and acrylonitrile-butadiene-styrol polymer (PC/ABS): audio processor, all colors
- Polyamide (PA): earhook

Temperature and humidity range

Operating temperature range: 0°C to 50°C (32°F to 122°F)

Storage temperature range: -20°C to 60°C (-4°F to 140°F)

Relative humidity range: 10% to 93%

Essential performance

None of the performance characteristics of the SONNET (incl. all accessories) are essential performance, as defined in IEC 60601-1

Radio frequency (RF) link (FineTuner)

Frequency band of reception: 9.07 kHz ($\pm 3\%$)

Radio frequency link (wireless network)

Frequency band of reception / transmission: 2400 MHz - 2483.5 MHz

Short Range Device (SRD) according to ERC/REC 70-03 Annex 1 (band H)

Receiver category 3

Type of modulation: Gaussian frequency shift keying (GFSK)

Maximum effective radiated power (ERP): $106\mu\text{W}$ (-9.75 dBm)

¹ typical values

FINETUNER

Dimensions¹

Length: 85.5 mm (3.366 in.)

Width: 54.0 mm (2.126 in.)

Height: 6.3 mm (0.248 in.)

Weight: 33.0 g (1.164 oz.) (incl. battery)

Controls/Indicators

- Default key
- Volume keys
- Sensitivity keys
- Program selection keys
- Input selection keys
- Processor selection keys
- Indicator lights: 1 red LED, 2 amber LEDs

Power supply

- 1 lithium/manganese dioxide battery type CR2025 (3V)
- Battery life expectancy is typically more than 6 months

Classification

- Short Range Device (SRD) according to ERC/REC 70-03 Annex 9 (band A1) and Annex 12 (band A)
- Equipment class 3
- 47 CFR Part 15 Low Power Transmitter below 1705 kHz-US

Materials

Mixture of polycarbonate and acrylonitrile-butadiene-styrol polymer (PC/ABS)

Temperature and humidity range

Operating temperature range: 0 °C to 50 °C (32 °F to 122 °F)

Storage temperature range: -20 °C to 60 °C (-4 °F to 140 °F)

Relative humidity range: 10 % to 93 %

Radio frequency (RF) link

Carrier frequency: 9.07 kHz ($\pm 0.7\%$)

Type of modulation: phase shift keying (PSK)

Maximum RF output power: 11.7 dB μ A/m @ 10 m

Maximum operating distance: ~ 1.15 m (3.77 ft.)

¹ typical values

REGULATORY STATEMENTS

Applicable in Canada only:

Model: SONNET (Me1310), SONNET EAS (Me1320) Model: FineTuner
IC: 11986A-ME1300 Canada 310

The above devices comply with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Les appareils mentionnés ci-dessus sont conformes aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Applicable in the USA only:

Model: SONNET (Me1310), SONNET EAS (Me1320) Model: FineTuner
FCC ID: VNP-ME1300 FCC ID: VNP-FT

The above devices comply 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. 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. Warning: Changes or modifications made to this equipment not expressly approved by MED-EL may void the FCC authorization to operate this equipment. NOTE: 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.

SYMBOLS



The SONNET audio processor and the FineTuner are in compliance with directive 90/385/EEC (Active Implantable Medical Devices/AIMD).

CE mark applied in 2014

Hereby MED-EL declares that the SONNET audio processor and the FineTuner are in compliance with the essential requirements and other relevant provisions of directive 1999/5/EC (Radio Equipment and Telecommunications Terminal Equipment/R&TTE). The Declaration of Conformity can be obtained directly from MED-EL Worldwide Headquarters (for address see chapter 10, Appendices).



MR unsafe



MR Conditional



Caution, consult the instructions for use (manual) for important cautionary information



Type BF
(IEC 60601-1)



Non-ionizing radiation



Fragile; handle with care



Relative humidity



Temperature limit


IP54 IP54
Moisture and dust protection acc. to IEC 60529

This classification means that your audio processor is protected against failure from ingress of dust and splashing water when fully assembled and in the ON position, i.e. when

- the microphone cover and the earhook are snapped onto the control unit,
- an ear mold is connected to the earhook (only relevant for SONNETeas variant),
- the coil cable and coil is connected to the control unit,
- the battery pack frame is connected to the control unit,
- the standard battery pack cover is completely moved over the battery pack frame (ON position).



The FineTuner and the Speech Processor Test Device are in compliance with directive 2002/96/EC (Waste Electrical and Electronic Equipment/WEEE).

The WEEE logo () on the product or in this user manual indicates that this product must not be disposed of or dumped with your other household waste. You are liable to dispose of all external components of your MED-EL Cochlear Implant System by returning them to your local MED-EL subsidiary or distributor. Isolated collection and proper recovery of your electronic and electrical waste equipment at the time of disposal will allow us to help conserve natural resources. Moreover, proper recycling of the electronic and electrical waste equipment will ensure safety of human health and environment.

SPEECH PROCESSOR TEST DEVICE



The Speech Processor Test Device is in compliance with directive 2004/108/EC (Electromagnetic Compatibility/EMC).

CE mark applied in 2005

GUIDANCE AND MANUFACTURER'S DECLARATION

Tables according to IEC 60601-1-2 for SONNET

Electromagnetic emissions – for all equipment and systems

The SONNET is intended for use in the electromagnetic environment specified below. The customer or the user of the SONNET should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The SONNET uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The SONNET is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

Electromagnetic immunity – for all equipment and systems


The SONNET is intended for use in the electromagnetic environment specified below. The customer or the user of the SONNET should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/output lines	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV line(s) to line(s) ±2 kV line(s) to earth	Not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0.5 cycle 40% U_T (60% dip in U_T) for 5 cycles 70% U_T (30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5 sec	Not applicable	Mains power quality should be that of a typical commercial or hospital environment. If the user of the SONNET requires continued operation during power mains interruptions, it is recommended that the SONNET be powered from an uninterruptible power supply or a battery.
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	3A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

NOTE U_T is the a.c. mains voltage prior to application of the test level.

Electromagnetic immunity – for equipment and systems that are not life-supporting

The SONNET is intended for use in the electromagnetic environment specified below. The customer or the user of the SONNET should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment – guidance
Conducted RF IEC 61000-4-6	3Vrms 150kHz to 80MHz	3Vrms	<p>Portable and mobile RF communications equipment should be used no closer to any part of the SONNET, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.</p> <p>Recommended separation distance</p> $d = 1.17 * \sqrt{P}$
Radiated RF IEC 61000-4-3	3V/m 80 MHz to 2.5 GHz	3V/m	$d = 1.17 * \sqrt{P}$ <p>80 MHz to 800 MHz</p> $d = 2.33 * \sqrt{P}$ <p>800 MHz to 2.5 GHz</p> <p>where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).</p> <p>Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,^a should be less than the compliance level in each frequency range.^b</p> <p>Interference may occur in the vicinity of equipment marked with the following symbol:</p> 

NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a: Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the SONNET is used exceeds the applicable RF compliance level above, the SONNET should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the SONNET.

b: Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3V/m.

Recommended separation distances between portable and mobile RF communications equipment and the SONNET – for equipment and systems that are not life-supporting

The SONNET is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the SONNET can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the SONNET as recommended below according to the maximum output power of the communications equipment.

Rated maximum output power of transmitter W	Separation distance according to frequency of transmitter m		
	150 kHz to 80 MHz $d = 1.17 * \sqrt{P}$	80 MHz to 800 MHz $d = 1.17 * \sqrt{P}$	800 MHz to 2.5 GHz $d = 2.33 * \sqrt{P}$
0.01	0.12 (0.39 ft.)	0.12 (0.39 ft.)	0.23 (0.75 ft.)
0.1	0.37 (1.21 ft.)	0.37 (1.21 ft.)	0.74 (2.43 ft.)
1	1.17 (3.84 ft.)	1.17 (3.84 ft.)	2.33 (7.64 ft.)
10	3.70 (12.14 ft.)	3.70 (12.14 ft.)	7.39 (24.25 ft.)
100	11.70 (38.39 ft.)	11.70 (38.39 ft.)	23.30 (76.44 ft.)

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

- NOTE 1 At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
- NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

10. Appendices

WARRANTY, GUARANTEE AND REGISTRATION CARD

Our warranty is in agreement with statutory warranty claims. In addition, we grant a five- year guarantee for the SONNET audio processor and coil. This warranty exclusively covers product failures; it shall not apply to any MED-EL product subjected to physical or electrical abuse or misuse, or operated in any manner inconsistent with the applicable MED-EL instructions.

Statutory warranty claims shall not be granted unless the registration card is completed and returned to MED-EL within three weeks of the initial fitting. The warranty period for the SONNET audio processor and coil begins with the date of first audio processor fitting. The implant itself is covered by a 10-year warranty. MED-EL shall provide a new implant, free of charge, if the implant fails due to a mechanical or electrical defect caused by MED-EL. The warranty period for the implant begins with the date of implant surgery and depends on the completion and return of the registration form (CI patient card) that is delivered to the clinic with the implant. Guarantees exceeding statutory warranty periods shall not be granted unless the registration form is completed and sent to MED-EL. Please ensure that you and your clinic complete both the registration card and registration form (CI patient card), and return them to MED-EL via registered mail.

MANUFACTURER ADDRESS

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11. Contact MED-EL

Please refer to the accompanying Contact Sheet for your local office.



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