

Test report No:  
NIE: 65936RAN.002

## Assessment report

### RF EXPOSURE REPORT ACCORDING TO FCC 47 CFR Part 2.1093

|                                             |                                                                                                                                                                                                                                     |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| (*) Identification of item under evaluation | Hearing aid                                                                                                                                                                                                                         |
| (*) Trademark                               | Phonak                                                                                                                                                                                                                              |
| (*) Model and /or type reference            | Phonak Slim P90-R left                                                                                                                                                                                                              |
| (*) Derived model not evaluated             | Phonak Slim P90-R right, Phonak Slim P70-R left, Phonak Slim P70-R right, Phonak Slim P50-R left, Phonak Slim P50-R right, Phonak Slim P30-R left, Phonak Slim P30-R right, Phonak Slim P-R Trial left, Phonak Slim P-R Trial right |
| (*) Other identification of the product     | HW version: 050-085-xx<br>SW version: Target 7.2<br>FCC ID: KWC-SLR<br>IC: 2262A-SLR                                                                                                                                                |
| (*) Features                                | Bluetooth, Bluetooth LE, DM, Flora                                                                                                                                                                                                  |
| (*) Manufacturer                            | SONOVA AG<br>Laubisruetistrasse 28, 8712 Staefa, Switzerland                                                                                                                                                                        |
| Test method requested, standard             | FCC 47 CFR Part 2.1093. Radiofrequency radiation exposure evaluation: portable devices                                                                                                                                              |
| Summary                                     | IN COMPLIANCE                                                                                                                                                                                                                       |
| Approved by (name / position & signature)   | Miguel Lacave<br>Antennas Lab Manager<br> 2021.12.14<br>15:11:40<br>+01'00'                                                                    |
| Date of issue                               | 2021-12-14                                                                                                                                                                                                                          |
| Report template No                          | FAN24_02<br>(*) "Data provided by the client"                                                                                                                                                                                       |

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## Data provided by the client

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The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item under evaluation", "Trademark", "Model and/or type reference", "Other identification of the product" and "General description of the device").
2. Maximum output power, maximum antenna gain and use distance information
3. Derived model not evaluated. These models have been declared by the supplier of the sample as being the same as the model under test.



DEKRA Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

## Identification of the client

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SONOVA AG

Laubisruetistrasse 28, 8712 Staefa, Switzerland

## Document history

| Report number | Date       | Description   |
|---------------|------------|---------------|
| 65936RAN.002  | 2021-12-14 | First release |

## Appendix A: FCC RF Exposure assessment result

## General description of the device under evaluation

The device under evaluation consists of a Receiver-in-Canal hearing aid with Li-ion rechargeable battery and Bluetooth.

According to the manufacturer, during its normal use, the separation distance between the radiating structures of the device and nearby users will be greater than 0 cm.

The equipment specifications declared by the manufacturer for each supported technology and band are:

| Technology / Mode | Band    | Frequency (MHz) | Maximum Conducted Output Power (dBm) | Antenna peak gain (dBi) | Maximum E.I.R.P. (dBm) | Maximum E.I.R.P. (mW) |
|-------------------|---------|-----------------|--------------------------------------|-------------------------|------------------------|-----------------------|
| BT Classic        | 2.4 GHz | 2400 - 2483.5   | 2.00                                 | -0.50                   | 1.50                   | 1.41                  |
| BTLE              | 2.4 GHz | 2400 - 2483.5   | 2.00                                 | -0.50                   | 1.50                   | 1.41                  |
| Proprietary DM    | 2.4 GHz | 2400 - 2483.5   | 2.00                                 | -0.50                   | 1.50                   | 1.41                  |
| Proprietary Flora | 2.4 GHz | 2400 - 2483.5   | 2.00                                 | -0.50                   | 1.50                   | 1.41                  |

**Table 1:** Equipment specifications

## Assessment summary

The assessment summary according to the radiofrequency radiation exposure limits defined in FCC 47 CFR § 2.1093 is the following:

| Technology / Mode | Band    | Frequency (MHz) | Verdict     |
|-------------------|---------|-----------------|-------------|
| BT Classic        | 2.4 GHz | 2400 - 2483.5   | <b>Pass</b> |
| BTLE              | 2.4 GHz | 2400 - 2483.5   | <b>Pass</b> |
| Proprietary DM    | 2.4 GHz | 2400 - 2483.5   | <b>Pass</b> |
| Proprietary Flora | 2.4 GHz | 2400 - 2483.5   | <b>Pass</b> |

**Table 2:** Assessment summary

## Evaluation Results

The evaluation according to the minimum intended use distance of 0 cm (5mm applied for the evaluation according to KDB 447498 D01 General RF Exposure Guidance, see Appendix B for additional information) will be as follow:

| Technology / Mode | Band    | Frequency (MHz) | Distance (cm) | Result | Limit 1-g SAR | SAR Test Exclusion |
|-------------------|---------|-----------------|---------------|--------|---------------|--------------------|
| BT Classic        | 2.4 GHz | 2400 - 2483.5   | 0.50          | 0.50   | 3.00          | Pass               |
| BTLE              | 2.4 GHz | 2400 - 2483.5   | 0.50          | 0.50   | 3.00          | Pass               |
| Proprietary DM    | 2.4 GHz | 2400 - 2483.5   | 0.50          | 0.50   | 3.00          | Pass               |
| Proprietary Flora | 2.4 GHz | 2400 - 2483.5   | 0.50          | 0.50   | 3.00          | Pass               |

**Table 3:** FCC Evaluation Result

The computed value(s) are below the limit(s), so according to KDB 447498 D01 – General RF Exposure Guidance, these modes qualify for Standalone SAR test exclusion for 1-g SAR and 10-g Extremity SAR.

## Appendix B: FCC RF Exposure information

## FCC SAR test exclusion considerations for portable devices

For transmission frequencies below 6GHz, as stated by the FCC (47 CFR §2.1093), human exposure to RF emissions from portable devices, which are defined as transmitting devices to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user, must be evaluated with respect to the FCC-adopted limits for SAR.

According to FCC OET KDB 447498 D01 General RF Exposure Guidance:

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Test Exclusion Threshold condition is satisfied.

### - For distances $\leq 50$ mm

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$\frac{[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})]}{[\sqrt{f(\text{GHz})}]} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR}$$

Where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion.

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table:

| MHz  | 5  | 10 | 15  | 20  | 25  | 30  | 35  | 40  | 45  | 50  | mm                                         |
|------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|--------------------------------------------|
| 150  | 39 | 77 | 116 | 155 | 194 | 232 | 271 | 310 | 349 | 387 | SAR Test<br>Exclusion<br>Threshold<br>(mW) |
| 300  | 27 | 55 | 82  | 110 | 137 | 164 | 192 | 219 | 246 | 274 |                                            |
| 450  | 22 | 45 | 67  | 89  | 112 | 134 | 157 | 179 | 201 | 224 |                                            |
| 835  | 16 | 33 | 49  | 66  | 82  | 98  | 115 | 131 | 148 | 164 |                                            |
| 900  | 16 | 32 | 47  | 63  | 79  | 95  | 111 | 126 | 142 | 158 |                                            |
| 1500 | 12 | 24 | 37  | 49  | 61  | 73  | 86  | 98  | 110 | 122 |                                            |
| 1900 | 11 | 22 | 33  | 44  | 54  | 65  | 76  | 87  | 98  | 109 |                                            |
| 2450 | 10 | 19 | 29  | 38  | 48  | 57  | 67  | 77  | 86  | 96  |                                            |
| 3600 | 8  | 16 | 24  | 32  | 40  | 47  | 55  | 63  | 71  | 79  |                                            |
| 5200 | 7  | 13 | 20  | 26  | 33  | 39  | 46  | 53  | 59  | 66  |                                            |
| 5400 | 6  | 13 | 19  | 26  | 32  | 39  | 45  | 52  | 58  | 65  |                                            |
| 5800 | 6  | 12 | 19  | 25  | 31  | 37  | 44  | 50  | 56  | 62  |                                            |

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and  $\leq 50$  mm

**- For distances > 50 mm**

For 100 MHz to 6 GHz frequencies and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following:

**1) [Power allowed at numeric threshold for 50 mm in table 1) + (test separation distance - 50 mm)·(f(MHz)/150)] mW, at 100 MHz to 1500 MHz**

**2) [Power allowed at numeric threshold for 50 mm in table 1) + (test separation distance - 50 mm)·10] mW, at > 1500 MHz and ≤ 6 GHz**

Approximate SAR test exclusion power thresholds at selected frequencies and test separation distances are illustrated in the following table

| MHz  | 50  | 60  | 70  | 80  | 90  | 100 | 110 | 120 | 130 | 140  | 150  | 160  | 170  | 180  | 190  | mm                                |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|-----------------------------------|
| 100  | 474 | 481 | 487 | 494 | 501 | 507 | 514 | 521 | 527 | 534  | 541  | 547  | 554  | 561  | 567  | SAR Test Exclusion Threshold (mW) |
| 150  | 387 | 397 | 407 | 417 | 427 | 437 | 447 | 457 | 467 | 477  | 487  | 497  | 507  | 517  | 527  |                                   |
| 300  | 274 | 294 | 314 | 334 | 354 | 374 | 394 | 414 | 434 | 454  | 474  | 494  | 514  | 534  | 554  |                                   |
| 450  | 224 | 254 | 284 | 314 | 344 | 374 | 404 | 434 | 464 | 494  | 524  | 554  | 584  | 614  | 644  |                                   |
| 835  | 164 | 220 | 275 | 331 | 387 | 442 | 498 | 554 | 609 | 665  | 721  | 776  | 832  | 888  | 943  |                                   |
| 900  | 158 | 218 | 278 | 338 | 398 | 458 | 518 | 578 | 638 | 698  | 758  | 818  | 878  | 938  | 998  |                                   |
| 1500 | 122 | 222 | 322 | 422 | 522 | 622 | 722 | 822 | 922 | 1022 | 1122 | 1222 | 1322 | 1422 | 1522 |                                   |
| 1900 | 109 | 209 | 309 | 409 | 509 | 609 | 709 | 809 | 909 | 1009 | 1109 | 1209 | 1309 | 1409 | 1509 |                                   |
| 2450 | 96  | 196 | 296 | 396 | 496 | 596 | 696 | 796 | 896 | 996  | 1096 | 1196 | 1296 | 1396 | 1496 |                                   |
| 3600 | 79  | 179 | 279 | 379 | 479 | 579 | 679 | 779 | 879 | 979  | 1079 | 1179 | 1279 | 1379 | 1479 |                                   |
| 5200 | 66  | 166 | 266 | 366 | 466 | 566 | 666 | 766 | 866 | 966  | 1066 | 1166 | 1266 | 1366 | 1466 |                                   |
| 5400 | 65  | 165 | 265 | 365 | 465 | 565 | 665 | 765 | 865 | 965  | 1065 | 1165 | 1265 | 1365 | 1465 |                                   |
| 5800 | 62  | 162 | 262 | 362 | 462 | 562 | 662 | 762 | 862 | 962  | 1062 | 1162 | 1262 | 1362 | 1462 |                                   |

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and > 50 mm

**- For frequencies below 100 MHz**

The following may be considered for SAR test exclusion:

**1) For test separation distances > 50 mm and < 200 mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by [1 + log(100/f(MHz))]**

**2) For test separation distances ≤ 50 mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by ½**

Approximate SAR test exclusion power thresholds at selected frequencies and test separation distances are illustrated in the following table

| MHz  | < 50 | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  | 150  | 160  | 170  | 180  | 190  | mm |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|----|
| 100  | 237  | 474  | 481  | 487  | 494  | 501  | 507  | 514  | 521  | 527  | 534  | 541  | 547  | 554  | 561  | 567  | mW |
| 50   | 308  | 617  | 625  | 634  | 643  | 651  | 660  | 669  | 677  | 686  | 695  | 703  | 712  | 721  | 729  | 738  |    |
| 10   | 474  | 948  | 961  | 975  | 988  | 1001 | 1015 | 1028 | 1041 | 1055 | 1068 | 1081 | 1095 | 1108 | 1121 | 1135 |    |
| 1    | 711  | 1422 | 1442 | 1462 | 1482 | 1502 | 1522 | 1542 | 1562 | 1582 | 1602 | 1622 | 1642 | 1662 | 1682 | 1702 |    |
| 0.1  | 948  | 1896 | 1923 | 1949 | 1976 | 2003 | 2029 | 2056 | 2083 | 2109 | 2136 | 2163 | 2189 | 2216 | 2243 | 2269 |    |
| 0.05 | 1019 | 2039 | 2067 | 2096 | 2125 | 2153 | 2182 | 2211 | 2239 | 2268 | 2297 | 2325 | 2354 | 2383 | 2411 | 2440 |    |
| 0.01 | 1185 | 2370 | 2403 | 2437 | 2470 | 2503 | 2537 | 2570 | 2603 | 2637 | 2670 | 2703 | 2737 | 2770 | 2803 | 2837 |    |

SAR Test Exclusion Thresholds for frequencies < 100 MHz