



FCC Part 1 Subpart I
FCC Part 2 Subpart J
ISED RSS-102 ISSUE 5

RF EXPOSURE REPORT

FOR

WIRELESS HEADPHONES

MODEL NAME: BMD0005/0006/0007/0008

**FCC ID: A94429638A
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**Prepared for
BOSE CORPORATION
100 THE MOUNTAIN
FRAMINGHAM, MA 01701,USA**

**Prepared by
UL LLC
12 LABORATORY DR.
RESEARCH TRIANGLE PARK, NC 27709 USA
TEL: (919) 549-1400**



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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Bose Corporation
100 The Mountain
Framingham, MA 01701, USA

EUT DESCRIPTION: Wireless Headphones

MODEL: BMD0005/0006/0007/0008

| APPLICABLE STANDARDS | |
|---|--------------|
| STANDARD | TEST RESULTS |
| FCC PART 1 SUBPART I & PART 2 SUBPART J | Compliant |
| ISED CANADA RSS-102 ISSUE 5 | Compliant |

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL LLC based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

Approved & Released
For UL LLC By:



Jeff Moser
Operations Leader
UL – Consumer Technology Division

Prepared By:



Brian T. Kiewra
Project Engineer
UL – Consumer Technology Division

2. TEST METHODOLOGY

All calculations were made in accordance with FCC Parts 2.1091, 2.1093 and KDB 447498 D01 v06 and IC Safety Code 6, RSS 102 Issue 5.

3. REFERENCES

All measurements were made as documented in test report UL LLC Documents R12844817-E4 and R12844817-E5 for operation in the 2.4 GHz band.

Output power, Duty cycle and Antenna gain data is excerpted from the applicable test reports.

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Dr., Research Triangle Park, NC 27709, USA and 2800 Perimeter Park Dr., Suite B, Morrisville, NC 27560, USA.

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0.

5. DEVICE UNDER TEST

The EUT is a wireless headphone that contains BT/BLE transceivers.

Other details regarding the EUT are documented in the applicable test reports and product documentation.

6. STANDALONE SAR TEST EXCLUSION CONSIDERATIONS

6.1. FCC

SAR test exclusion in accordance with KDB 447498.

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

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

- $f_{(\text{GHz})}$ 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

This test exclusion is applicable only when the minimum test separation distance is ≤ 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.

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

1. $\{[\text{Power allowed at numeric threshold for } 50 \text{ mm}]) + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f(\text{MHz})/150)]\}$ mW, for 100 MHz to 1500 MHz
 - $f_{(\text{MHz})}$ is the RF channel transmit frequency in MHz
2. $\{[\text{Power allowed at numeric threshold for } 50 \text{ mm}]) + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\}$ mW, for > 1500 MHz and ≤ 6 GHz

SAR Exclusion Calculation Table for Portable Devices (separation distance < 50 mm)

| Tx | Frequency (MHz) | AVG Output power | | Separation distances (mm) | Calculated Threshold |
|-----------|-----------------|------------------|------|---------------------------|----------------------|
| | | dBm | mW | | |
| BT - GFSK | 2480 | -1.804 | 0.66 | 5 | 0.2 |

Conclusion:

The computed values are < 3 ; therefore, the device qualifies for Standalone SAR test exclusion.

Maximum Declared Output Power, including tune up = 10 dBm (10 mW).

Actual Use Worst-Case Duty Cycle = 6.6%

Max. Source based time average EIRP = Max. EIRP $- 10^{\ast} \log (1/\text{DCF})$

$$10 \text{ dBm} - 10^{\ast} \log (1/0.066) = -1.804 \text{ dBm (0.66 mW)}$$

6.2. ISED CANADA

The SAR exclusion table from RSS-102 issue 5 is reproduced below:

Table 1: SAR evaluation - exemption limits for routine evaluation based on frequency and separation distance.

| Frequency MHz | Exemption Limits (mW) | | | | |
|------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| | At separation distance of ≤5mm | At separation distance of 10mm | At separation distance of 15mm | At separation distance of 20mm | At separation distance of 25mm |
| ≤300 | 71 mW | 101 mW | 132 mW | 162 mW | 193 mW |
| 450 | 52 mW | 70 mW | 88 mW | 106 mW | 123 mW |
| 835 | 17 mW | 30 mW | 42 mW | 55 mW | 67 mW |
| 1900 | 7 mW | 10 mW | 18 mW | 34 mW | 60 mW |
| 2450 | 4 mW | 7 mW | 15 mW | 30 mW | 52 mW |
| 3500 | 2 mW | 6 mW | 16 mW | 32 mW | 55 mW |
| 5800 | 1 mW | 6 mW | 15 mW | 27 mW | 41 mW |

| Frequency MHz | Exemption Limits (mW) | | | | |
|------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------------------|
| | At separation distance of 30mm | At separation distance of 35mm | At separation distance of 40mm | At separation distance of 45mm | At separation distance of ≥50mm |
| ≤300 | 223 mW | 254 mW | 284 mW | 315 mW | 345 mW |
| 450 | 141 mW | 159 mW | 177 mW | 195 mW | 213 mW |
| 835 | 80 mW | 92 mW | 105 mW | 117 mW | 130 mW |
| 1900 | 99 mW | 153 mW | 225 mW | 316 mW | 431 mW |
| 2450 | 83 mW | 123 mW | 173 mW | 235 mW | 309 mW |
| 3500 | 86 mW | 124 mW | 170 mW | 225 mW | 290 mW |
| 5800 | 56 mW | 71 mW | 85 mW | 97 mW | 106 mW |

The minimum antenna to user distance that will be encountered in normal use is 5 mm. This results in an exemption limit of 4 mW at 2450 MHz.

Although the maximum target output power (including tune up, etc.) is 10 mW, when you factor real use duty cycle and the source based time average, the target power is 0.085 dBm (1.02 mW) EIRP. Therefore, the DUT qualifies for SAR test exclusion.

Calculations

Maximum Declared Output Power, including tune up = 10 dBm (10 mW).

Peak antenna gain = 1.89 dBi

Max. EIRP = 11.89 dBm (15.45 mW)

Actual Use Worst-Case Duty Cycle = 6.6%

Max. Source based time average EIRP = Max. EIRP – 10*log (1/DCF)

$$11.89 \text{ dBm} - 10 \log (1/0.066) = 0.085 \text{ dBm (1.02 mW)}$$

1.02 mW is less than the 4 mW limit.

END OF TEST REPORT