

SAR Exemption: KDB 447498 D04 Interim General RF Exposure Guidance V01

Product Type: Wireless Headphones

Product Model Number(s): 440108
Name/Number: FCC ID: A94440108

Prepared For: Product Assurance Engineering Department,
Bose Corporation

Postal Address of The Mountain
manufacturing Framingham, MA 01701
Agency: USA

Product is SAR exempt based on clause 2.1.3 of KDB 447498 D04 Interim Guidance v01 RF Exposure Guidance. See exemption calculations on page 2 of this document.

To figure out the minimum separation distance between device antenna and the human ear, the ear cushion was fully compressed against a supporting board. This was done to get a worst-case estimate on the minimum separation distance.

Note: Due to full compression of the ear cushion it would be extremely unlikely and uncomfortable to wear the headset under these conditions.

The thickness of the supporting board is subtracted from the measurement.

Antenna PCB



Supporting board thickness = ~1.6 mm



Minimum separation distance = $27.3 - 1.6 = 25.7$ mm



Maximum power from FCC QHS report: 12.9 dBm

Maximum tune up tolerance =+ 1 dBm

Maximum output power = 12.9 + 1 = 13.9 dBm (24.5 mW)

Note: Max power is for QHS mode.

Only one TX mode is active at a time.

RF Exposure Exemption Form			
Step	Text	Value	Action
1	Select the exposure environment	General/Uncontrolled	Continue to step 2.
2	Enter the maximum time-averaged output power or ERP in milliwatts (mW)	24.5	Continue to step 3.
3	Does the device operate between 300 MHz and 6 GHz and with test separation distances between 0.5 cm and 40 cm?	Yes	Complete Schedule A worksheet and proceed to step 4.
4	Enter the value calculated in line 14 of Schedule A	61.8	STOP. The device is exempt. (Clause 2.1.3)

Schedule A - SAR-Based Exemption per 1.1307(b)(3)(i)(B)			
Line	Text	Value	Formula
1	Enter the operating frequency in GHz	2.45	-
2	Multiply line 1 by 2040	4.998E+03	=D13*2040
3	Enter the smaller of line 2 and 3060	3.060E+03	=MIN(D14,3060)
4	Enter the separation distance in cm	2.57	-
5	Multiply line 4 by 1/20	1.285E-01	=D16*1/20
6	If line 5 is less than or equal to 1 enter '1'. If line 5 is greater than 1 enter '0'	1.000E+00	=IF(D17<=1,1,0)
7	Enter the square root of line 1	1.565E+00	=SQRT(D13)
8	Multiply line 3 and line 7	4.790E+03	=D15*D19
9	Multiply line 8 by 1/60	7.983E+01	=D20*1/60
10	Enter the logarithm (base 10) of line 9	1.902E+00	=LOG10(D21)
11	Multiply line 6 and line 10	1.902E+00	=D18*D22
12	Enter line 5 raised to the power of line 11	2.018E-02	=D17^D23
13	If the device is for extremity use only, enter 2.5. Otherwise, enter 1.	1	-
14	Multiply lines 3, 12, and 13. Enter this value on line 4 of the RF Exposure Exemption Form	6.176E+01	=D15*D24*D25

Based on above (top spreadsheet row 4) calculations the device is considered to be SAR exempt.