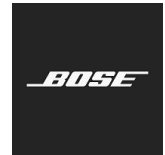




PRODUCT ASSURANCE ENGINEERING  
Wireless Transceiver DSS Test Report



FCC ID: A94BMD0010 IC: 3232A-BMD0010

Test Type: Emissions  Immunity

Product Type: Wireless Headphones

Product Name/Number: *Model Number(s): BMD0010*  
*FCC ID: A94BMD0010*  
*IC: 3232A-BMD0010*

Prepared For: *Product Assurance Engineering Department,*  
*Bose Corporation*

Test Results: Pass  Fail

Applicable Standards: Mains Conducted Interference within:  
FCC CFR 47 Part 15 Subpart B  
FCC CFR 47 Part 15 Subpart C  
Industry Canada RSS-247 Issue 2  
Industry Canada RSS-GEN Issue 5

Report Number: *EMC.431151.20.170.4*

General Comments/Special Test Conditions:

This report relates only to the items tested. This report covers EMC marking requirements for BMD0010

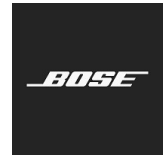
	Print Name	Signature	Date
Prepared By:	Karl Klemm		6/26/2020
Electrical Engineer Review* By:	Bryan Cerqua		6/24/2020

\* Since every test result is separately reviewed after its completion, the electrical engineer review indicated above represents a higher level review to ensure this report lists and contains all applicable and appropriate requirements.

If the report carries the "accredited" logo, the reviewer must verify all the tests in this report are covered under the current ISO17025 accreditation. The A2LA-accredited logo must be removed if any of the tests in the report are not performed under the current scope of accreditation. It is the responsibility of the reviewer to ensure the A2LA advertising policy is followed.



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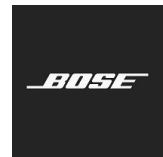
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Powerline Conducted Emissions.....	5



PRODUCT ASSURANCE ENGINEERING  
Wireless Transceiver DSS Test Report



FCC ID: A94BMD0010 IC: 3232A-BMD0010

# Test Report Summary

Product Information:

Description

The EUT is a wireless headphone that contains DSS/DTS transceivers, manufactured by Qualcomm Technologies, QCC5127. The EUT uses Adaptive Frequency Hopping (AFH) mode, using a reduced hop set if interference is detected in band, however a minimum of 20 channels is always maintained.

Setup (Cables and Accessories)

Power line conducted emissions was performed while the EUT battery is charging from an external power supply. The EUT cannot charge and play audio at the same time. EUT is not sold with a power supply so when necessary a Bose model number MOPP5V1.3C-1U-US power supply was used for charging.

EUT Antenna Description

The antenna is an internal PIF variant with antenna gain of -1.3 dBi formed by printed circuit board etch.

SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was version 0.2.114  
The test utility software used during testing was Polycmm, version 2.6.0 and Blue Suite version 3.2.3.

Scope:

This report covers EMC requirements. FCC CFR 47 PART 15 SUBPART C, Industry Canada RSS-247 Issue 2, and Industry Canada RSS-GEN Issue 5.

Test Objective:

Verify product meets all applicable EMC requirements.

Measurement Method:

ANSI C63.10 (2013).

Results:

Product complies with all applicable EMC requirements. All final results represent worst-case emissions and/or immunity.

Conclusions:

The device under test (D.U.T.):

meets all test standards selected in section 2 of this report.

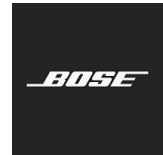
does not meet all test standards selected in section 2 of this report.

Affirmation of Test Results:

	Print Name	Signature	Date
Testing Engineer/Technician	Kevin Thibodeau	<i>Kevin Thibodeau</i>	6/26/2020



PRODUCT ASSURANCE ENGINEERING  
Wireless Transceiver DSS Test Report



FCC ID: A94BMD0010 IC: 3232A-BMD0010

# Test Standards

**Emissions:**

- Standard
- FCC Part 15C
- Canada RSS-247
- Canada RSS-GEN

# Environmental Conditions

**Ambient:**

- Temperature: 22±4 °C
- Humidity: 30-60 %RH
- Mains Voltage:  5 Vdc

# FCC Test Site Accreditation.

<u>Firm Name</u>	<u>Location</u>	<u>Accreditation</u>	<u>MRA</u>	<u>Designation</u>	<u>Expiration</u>	<u>Contact</u>	<u>Contact</u>
				<u>Number</u>	<u>Date</u>		<u>Title</u>
<a href="#">Bose Corporation</a>	1 New York Avenue, Framingham, MA	American Association for Laboratory Accreditation	N/A	US1088	09/30/2020	Carole Park	Quality Manager

# Canadian Test Site Registration.

Organization	CAB identifier	Scope / Recognition Date (yyyy-mm-dd)	Expiration (yyyy-mm-dd)
BOSE CORPORATION  1 New York Avenue Framingham, MA 01701 UNITED STATES  Website: <a href="https://www.bose.com/en_us/index.html">https://www.bose.com/en_us/index.html</a>  <b>ISED#: 3232A</b>  Contact: Benjamin Cerretani <a href="mailto:benjamin_cerretani@bose.com">benjamin_cerretani@bose.com</a>	US0210	RSS-GEN (2019-02-11)  RSS-210 (2019-02-11) RSS-247 (2019-02-11)	<b>RECOGNIZED UNTIL: 2020-07-31</b>  A2LA ISO/IEC 17025:2005 Expires: 2020-07-31

# Powerline Conducted Emissions

## Requirement:

For radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits below, as measured using a 50  $\mu$ H / 50  $\Omega$  line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

AC power-line conducted emissions limits

Frequency MHz	Limits dB( $\mu$ V)	
	Quasi-peak	Average
0.15 -0.5	66-56	56-46
0.5 – 1.6	56	46
1.6 – 30	60	50

**Note 1:** The level decreases linearly with the logarithm of the frequency.

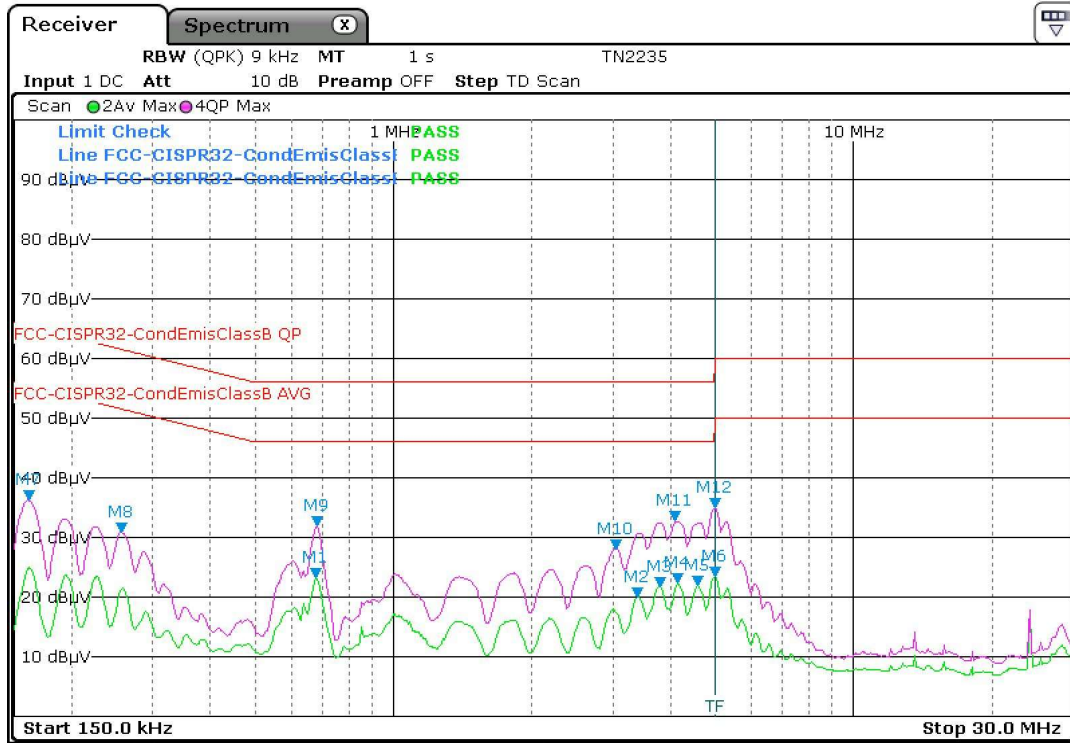
## Test Procedure:

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The test receiver is set to a resolution bandwidth of 9 kHz. Quasi-peak and average detectors were used. Line conducted data is recorded for both line and neutral.

## Test setup details:

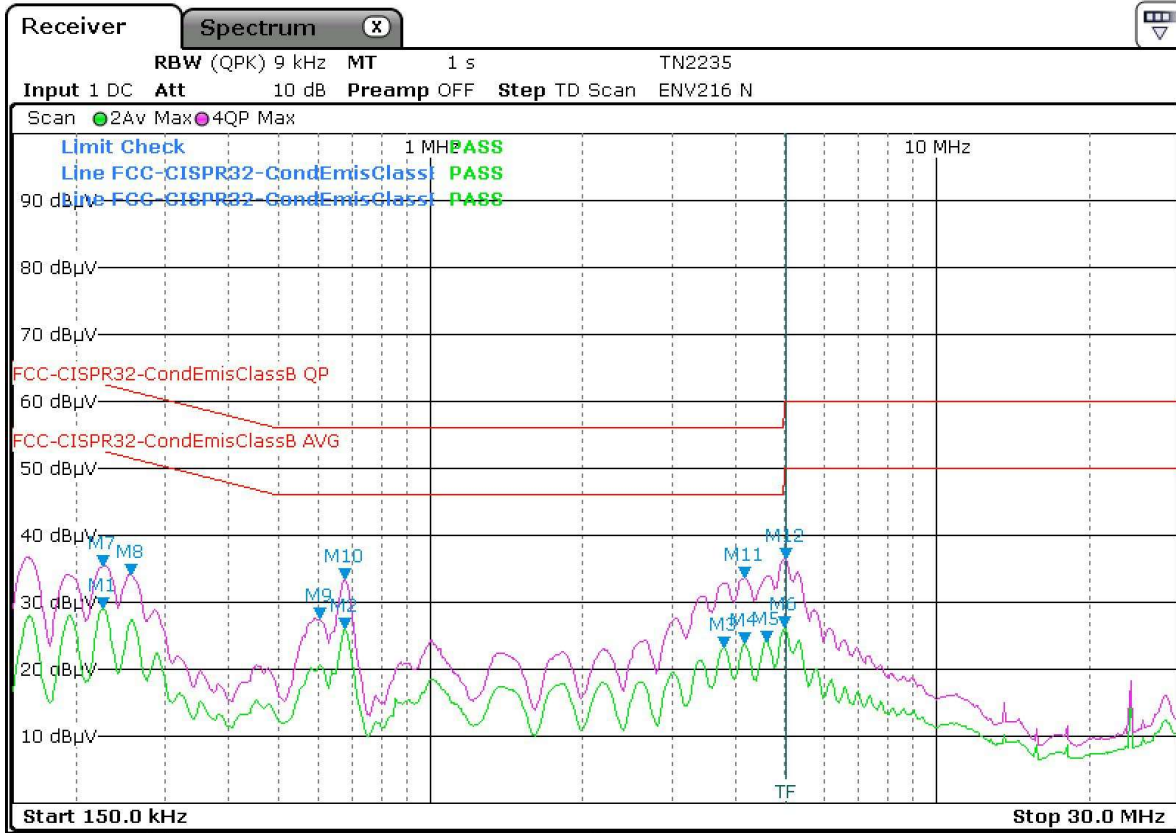
EUT is connected to a power supply and charging; no audio is playing. EUT is not provided with a power supply; using Bose power supply MN: MOPP5V1.3C-1U-US.

# Test Results:



<b>EUT S/N:</b>	081001U01152048AE	<input checked="" type="checkbox"/> L1	<input type="checkbox"/> Neutral	<input checked="" type="checkbox"/> 120V 60Hz	<input type="checkbox"/> 230V 50Hz	<input type="checkbox"/> GNDED	<input checked="" type="checkbox"/> UN-GNDED
<b>EUT Setup:</b>	EUT tested in charging mode. EUT will not play Bluetooth while in charging mode						
<b>Comments:</b>	Emissions checked at various levels of battery charge; no difference seen. Plot taken with EUT reporting battery at 50% charge level.						

FCC 15B and CISPR 32 Class B Product								
Mk #	Frequency MHz	MEASURED		LIMIT		MARGIN		Notes
		dBµV QP	dBµV AVG	dBµV QP	dBµV AVG	dB QP	dB AVG	
1	0.6788	31.90	23.30	56.0	46.0	24.1	22.7	
2	3.3990	30.60	20.00	56.0	46.0	25.4	26.0	
3	3.7905	32.50	21.80	56.0	46.0	23.5	24.2	
4	4.1573	32.70	22.30	56.0	46.0	23.3	23.7	
5	4.5780	32.40	22.00	56.0	46.0	23.6	24.0	
6	4.9920	34.80	23.60	56.0	46.0	21.2	22.4	
7	0.1613	36.20	25.00	65.4	55.4	29.2	30.4	
8	0.2558	30.90	21.30	61.6	51.6	30.7	30.3	
9	0.6810	31.90	23.30	56.0	46.0	24.1	22.7	
10	3.0458	28.10	17.80	56.0	46.0	27.9	28.2	
11	4.0920	32.70	21.90	56.0	46.0	23.3	24.1	
12	4.9988	34.90	23.60	56.0	46.0	21.1	22.4	

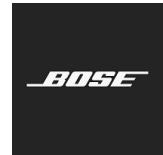


<b>EUT S/N:</b>	081001U01152048AE	<input type="checkbox"/> L1	<input checked="" type="checkbox"/> Neutral	<input checked="" type="checkbox"/> 120V 60Hz	<input type="checkbox"/> 230V 50Hz	<input type="checkbox"/> GND'ED	<input checked="" type="checkbox"/> UN-GND'ED
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<b>Comments:</b>	Emissions checked at various levels of battery charge; no difference seen. Plot taken with EUT reporting battery at 50% charge level.						

FCC 15B and CISPR 32 Class B Product								
Mk #	Frequency MHz	MEASURED		LIMIT		MARGIN		Notes
		dBµV QP	dBµV AVG	dBµV QP	dBµV AVG	dB QP	dB AVG	
1	0.2265	35.40	29.10	62.6	52.6	27.2	23.5	
2	0.6788	33.60	26.20	56.0	46.0	22.4	19.8	
3	3.8063	32.90	23.20	56.0	46.0	23.1	22.8	
4	4.1663	33.60	23.90	56.0	46.0	22.4	22.1	
5	4.6118	33.80	24.20	56.0	46.0	22.2	21.8	
6	5.0168	36.60	26.20	60.0	50.0	23.4	23.8	
7	0.2265	35.40	29.10	62.6	52.6	27.2	23.5	
8	0.2558	34.20	27.20	61.6	51.6	27.4	24.4	
9	0.6045	27.70	20.60	56.0	46.0	28.3	25.4	
10	0.6788	33.60	26.20	56.0	46.0	22.4	19.8	
11	4.1730	33.60	23.90	56.0	46.0	22.4	22.1	
12	5.0303	36.60	26.20	60.0	50.0	23.4	23.8	



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# Test Equipment Used:

TN	Description	Model	S/N	Manufacturer	Most Recent Service	Service Due Date
2319	EMI Test Receiver	ESR26	101276	Rohde & Schwarz	26-Mar-2019	23-Jun-2020
2235	2-LINE V-NETWORK	ENV216	101192	Rohde & Schwarz	07-Apr-2020	07-Apr-2022
1380	Conducted Comb Generator	CGC-510	311559	Com-Power Corporation	15-Mar-2019	2-Jul-2020
2114	Henry Room (Screen Room III)	N/A	1698C	Panashield Inc.	12-Aug-2019	11-Aug-2020

Date(s) of test: 01-Jun-2020





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# End of Report