



EMI TEST REPORT

Test Report No.:14597255S-E-R1

Customer	NTT Sonority Inc.
Description of EUT	wireless on-ear speakers
Model Number of EUT	MBE001
FCC ID	2A58O-MBE001
Test Regulation	FCC Part 15 Subpart B, Class B
Test Result	Complied (Refer to SECTION 3)
Issue Date	February 1, 2023
Remarks	-

Representative test engineer

Yasumasa Owaki
Engineer

Approved by

Toyokazu Imamura
Leader



CERTIFICATE 1266.03

- ☐ The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan, Inc.
☒ There is no testing item of "Non-accreditation".

Report Cover Page - Form-ULID-003532 (DCS:13-EM-F0429) Issue# 21.0

ANNOUNCEMENT

- This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
- The results in this report apply only to the sample tested. (Laboratory was not involved in sampling.)
- This sample tested is in compliance with the limits of the above regulation.
- The test results in this test report are traceable to the national or international standards.
- This test report must not be used by the customer to claim product certification, approval, or endorsement by the A2LA accreditation body.
- This test report covers EMC technical requirements.
It does not cover administrative issues such as Manual or non-EMC test related Requirements. (if applicable)
- The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
- The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan, Inc. has been accredited.
- The information provided from the customer for this report is identified in Section 1.
- For test report(s) referred in this report, the latest version (including any revisions) is always referred.

REVISION HISTORY

Original Test Report No.: 14597255S-E

This report is a revised version of 14597255S-E. 14597255S-E is replaced with this report.

Revision	Test report No.	Date	Revised Contents
- (Original)	14597255S-E	January 20, 2023	-
1	14597255S-E-R1	February 1, 2023	P8 Exclusion of “C” from the EUTs (from “EUT (Supplied with MBE001)” to “Supplied with MBE001” in Remarks column. Modification of Remarks column of “1” (from “-” to “Supplied with MBE001” in Remarks column.

Reference: Abbreviations (Including words undescribed in this report)

A2LA	The American Association for Laboratory Accreditation	IEEE	Institute of Electrical and Electronics Engineers
AAN	Asymmetric Artificial Network	IF	Intermediate Frequency
AC	Alternating Current	ILAC	International Laboratory Accreditation Conference
AM	Amplitude Modulation	ISED	Innovation, Science and Economic Development Canada
AMN	Artificial Mains Network	ISN	Impedance Stabilization Network
Amp, AMP	Amplifier	ISO	International Organization for Standardization
ANSI	American National Standards Institute	JAB	Japan Accreditation Board
Ant, ANT	Antenna	LAN	Local Area Network
AP	Access Point	LCL	Longitudinal Conversion Loss
ASK	Amplitude Shift Keying	LIMS	Laboratory Information Management System
Atten., ATT	Attenuator	LISN	Line Impedance Stabilization Network
AV	Average	MRA	Mutual Recognition Arrangement
BPSK	Binary Phase-Shift Keying	N/A	Not Applicable
BR	Bluetooth Basic Rate	NIST	National Institute of Standards and Technology
BT	Bluetooth	NS	No signal detect.
BT LE	Bluetooth Low Energy	NSA	Normalized Site Attenuation
BW	BandWidth	OBW	Occupied BandWidth
C.F	Correction Factor	OFDM	Orthogonal Frequency Division Multiplexing
Cal Int	Calibration Interval	PER	Packet Error Rate
CAV	CISPR AV	PK	Peak
CCK	Complementary Code Keying	P _{LT}	long-term flicker severity
CDN	Coupling Decoupling Network	POHC(A)	Partial Odd Harmonic Current
Ch., CH	Channel	Pol., Pola.	Polarization
CISPR	Comite International Special des Perturbations Radioelectriques	PR-ASK	Phase Reversal ASK
Corr.	Correction	P _{ST}	short-term flicker severity
CPE	Customer premise equipment	QAM	Quadrature Amplitude Modulation
CW	Continuous Wave	QP	Quasi-Peak
DBPSK	Differential BPSK	QPSK	Quadrature Phase Shift Keying
DC	Direct Current	r.m.s., RMS	Root Mean Square
DET	Detector	RBW	Resolution BandWidth
D-factor	Distance factor	RE	Radio Equipment
Dmax	maximum absolute voltage change during an observation period	REV	Reverse
DQPSK	Differential QPSK	RF	Radio Frequency
DSSS	Direct Sequence Spread Spectrum	RFID	Radio Frequency Identifier
DUT	Device Under Test	RNSS	Radio Navigation Satellite Service
EDR	Enhanced Data Rate	RSS	Radio Standards Specifications
e.i.r.p., EIRP	Equivalent Isotropically Radiated Power	Rx	Receiving
EM clamp	Electromagnetic clamp	SINAD	Ratio of (Signal + Noise + Distortion) to (Noise + Distortion)
EMC	ElectroMagnetic Compatibility	S/N	Signal to Noise ratio
EMI	ElectroMagnetic Interference	SA, S/A	Spectrum Analyzer
EMS	ElectroMagnetic Susceptibility	SABS	South African Bureau of Standards
EN	European Norm	SANS	South African National Standards
e.r.p., ERP	Effective Radiated Power	SG	Signal Generator
ETSI	European Telecommunications Standards Institute	SVSWR	Site-Voltage Standing Wave Ratio
EU	European Union	THC(A)	Total Harmonic Current
EUT	Equipment Under Test	THD(%)	Total Harmonic Distortion
Fac.	Factor	TR, T/R	Test Receiver
FCC	Federal Communications Commission	Tx	Transmitting
FHSS	Frequency Hopping Spread Spectrum	VBW	Video BandWidth
FM	Frequency Modulation	Vert.	Vertical
Freq.	Frequency	WLAN	Wireless LAN
FSK	Frequency Shift Keying	xDSL	Generic term for all types of DSL technology (DSL: Digital Subscriber Line)
Fund	Fundamental		
FWD	Forward		
GFSK	Gaussian Frequency-Shift Keying		
GNSS	Global Navigation Satellite System		
GPS	Global Positioning System		
Hori.	Horizontal		
ICES	Interference-Causing Equipment Standard		
I/O	Input/Output		
IEC	International Electrotechnical Commission		

CONTENTS

	Page
Section 1 : Customer information	5
Section 2 : Equipment under test (EUT)	5
Section 3 : Test specification, procedures and results	6
Section 4 : Operation of EUT during testing	8
Section 5 : Conducted emission	9
Section 6 : Radiated emission	10
Appendix 1 : Data of EMI test	12
Appendix 2 : Test instruments	18
Appendix 3 : Photographs of test setup	19

Section 1: Customer information

Company Name	NTT Sonority Inc.
Address	1-5-1 Otemachi, Chiyoda-ku, Tokyo 100-8116, Japan
Telephone Number	+81-80-8231-5126
Contact Person	Akira Nakagawa

The information provided from the customer is as follows:

- Customer, Description of EUT, Model Number of EUT on the cover page and other relevant pages
 - Operating/Test Mode(s) (Mode(s)) on all the relevant pages
 - Section 1: Customer information
 - Section 2: Equipment under test (EUT) other than the Receipt Date and Test Date
 - Section 4: Operation of EUT during testing
- * The laboratory is exempted from liability of any test results affected from the above information in Section 2 and 4.

Section 2 : Equipment under test (EUT)

2.1 Identification of EUT

Description	wireless on-ear speakers
Model Number	MBE001
Serial Number	Refer to 4.2.
Condition	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	No Modification by the test lab.
Receipt Date	December 1, 2022
Test Date	December 2 to 3, 2022

2.2 Product description

General Specification

Rating	Typical: DC 3.85 V (3.0 V to 4.4 V)
Clock frequency (ies) in the system	32 MHz

Radio Specification

Bluetooth (BR / EDR)

Equipment Type	Transceiver
Frequency of Operation	2402 MHz to 2480 MHz
Type of Modulation	FHSS (GFSK, $\pi/4$ DQPSK, 8 DPSK)
Antenna Gain	Left: -1.8 dBi, Right: -1.6 dBi

Bluetooth (Low Energy)

Equipment Type	Transceiver
Frequency of Operation	2402 MHz to 2480 MHz
Type of Modulation	GFSK
Antenna Gain	Left: -1.8 dBi, Right: -1.6 dBi

Section 3 : Test specification, procedures and results

3.1 Test specification

Test Specification	FCC Part 15 Subpart B The latest version on the first day of the testing period
Title	FCC 47CFR Part15 Radio Frequency Device Subpart B Unintentional Radiators

3.2 Procedures & results

Item	Test procedure	Limits	Worst margin	Result	Remarks
Conducted emission	ANSI C 63.4:2014 /C 63.4a:2017 7. AC powerline conducted emission measurements	Class B	32.2 dB Freq.: 0.17500 MHz Detector: Quasi-Peak Phase: L1 Power: AC 240 V / 60 Hz (AC Adapter)	Complied a)	-
Radiated emission	ANSI C 63.4:2014 /C 63.4a:2017 8. Radiated emission measurements	Class B	12.3 dB Freq.: 8647.700 MHz Detector: Average Polarization: Vertical Mode: Charge Power: AC 120 V / 60 Hz (AC Adapter)	Complied b)	*1)

Note: UL Japan's EMI work procedure: Work Instructions-ULID-003591

a) Refer to Appendix 1 (data of Conducted emission)

b) Refer to Appendix 1 (data of Radiated emission)

*1) Measurements have been performed up to 13 GHz since the highest frequency of internal source of the EUT is 2480 MHz.

3.3 Deviation from standard

Item	Normative references of FCC Subpart A Section 15.31	Actually applied
Conducted emission Radiated emission	ANSI C 63.4:2014	ANSI C 63.4:2014/C 63.4a:2017

Other than above, no addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

Measurement uncertainty is not taken into account when stating conformity with a specified requirement.
Note: When margins obtained from test results are less than the measurement uncertainty, the test results may exceed the limit.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k = 2$.

Item	Frequency range	Calculated Uncertainty ($\pm$)
Conducted emission (AC Mains) AMN/LISN	9 kHz to 150 kHz	3.1 dB
	150 kHz to 30 MHz	3.1 dB
Radiated emission (Measurement distance: 3 m)	30 MHz to 200 MHz	4.8 dB
	200 MHz to 1 GHz	6.1 dB
	1 GHz to 6 GHz	4.7 dB
	6 GHz to 18 GHz	5.3 dB
	18 GHz to 40 GHz	5.5 dB

3.5 Test location

UL Japan, Inc. Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken 259-1220 Japan

Telephone number : +81-463-50-6400

A2LA Certificate Number : 1266.03

(FCC Test firm registration number: 626366, ISED lab company number: 2973D / CAB identifier: JP0001)

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 Semi-anechoic chamber	20.6 x 11.3 x 7.65 Maximum measurement distance: 10 m	No.1 Shielded room	6.8 x 4.1 x 2.7
No.2 Semi-anechoic chamber	20.6 x 11.3 x 7.65 Maximum measurement distance: 10 m	No.2 Shielded room	6.8 x 4.1 x 2.7
No.3 Semi-anechoic chamber	12.7 x 7.7 x 5.35 Maximum measurement distance: 5 m	No.3 Shielded room	6.3 x 4.7 x 2.7
No.4 Semi-anechoic chamber	8.1 x 5.1 x 3.55	No.4 Shielded room	4.4 x 4.7 x 2.7
		No.5 Shielded room	7.8 x 6.4 x 2.7
		No.6 Shielded room	7.8 x 6.4 x 2.7
		No.7 Shielded room	2.76 x 3.76 x 2.4
		No.8 Shielded room	3.45 x 5.5 x 2.4
		No.1 Measurement room	2.55 x 4.1 x 2.5

3.6 Test setup, test data & test instruments

Refer to Appendix 1 to 3.

Section 4 : Operation of EUT during testing

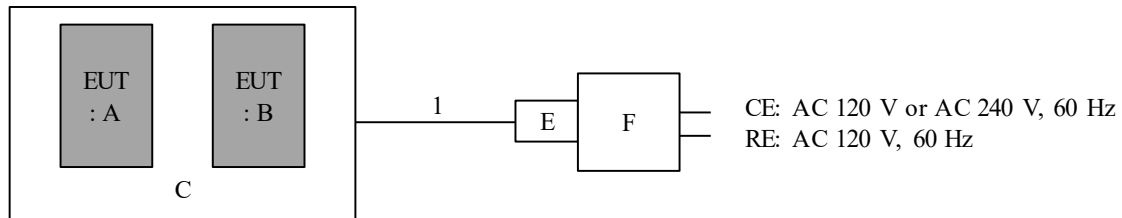
4.1 Operating modes

The EUT exercise program used during testing was designed to exercise the various system components in a manner similar to typical use.

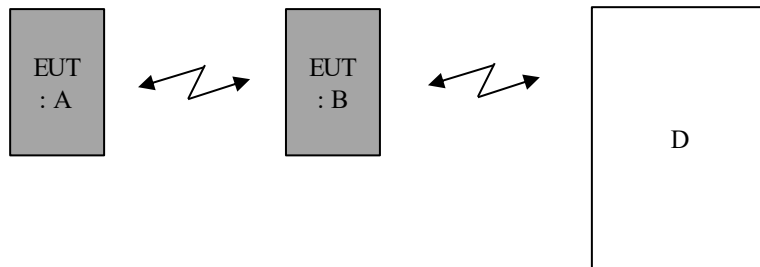
Operation mode(s)	1. Charge mode 2. BT Communication mode
Software	Version: 0.8.2
Justification	The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 Configuration and peripherals

Charge mode



BT Communication mode



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	wireless on-ear speakers	MBE001	B2242002E02	Foster Electric	EUT (Left)
B	wireless on-ear speakers	MBE001	B2242012802	Foster Electric	EUT (Right)
C	Carrying case	-	6	Foster Electric	Supplied with MBE001
D	Smartphone	CLT-L29	WCR7N18523000926	HUAWEI	-
E	USB Type C to A	GP-CPARAH/SG	-	GOPPA	-
F	AC Adapter	A1720	-	Apple	-

List of cables used

No.	Cable	Length (m)	Shield-Cable	Shield-Connector	Remarks
1	USB	0.5	Shielded	Shielded	Supplied with MBE001

* Refer to Appendix 3 for abbreviations.

Section 5 : Conducted emission

5.1 Test conditions

Frequency range	0.15 MHz to 30 MHz
EUT position	Table top

5.2 Test configuration

The EUT was placed on a platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals was aligned and was flushed with rear of tabletop. All other surfaces of tabletop were at least 80 cm from any other grounded conducting surface. The EUT was located 0.8 m from Line Impedance Stabilization Network (LISN). Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN to the input power source. Photographs of the set up are shown in Appendix 1.

5.3 Test procedure

The emission had been measured with the EUT in the shielded room. An overview sweep with peak detection has been performed. The measurements had been performed with a quasi-peak detector and if required, with a CISPR average detector (CAV).

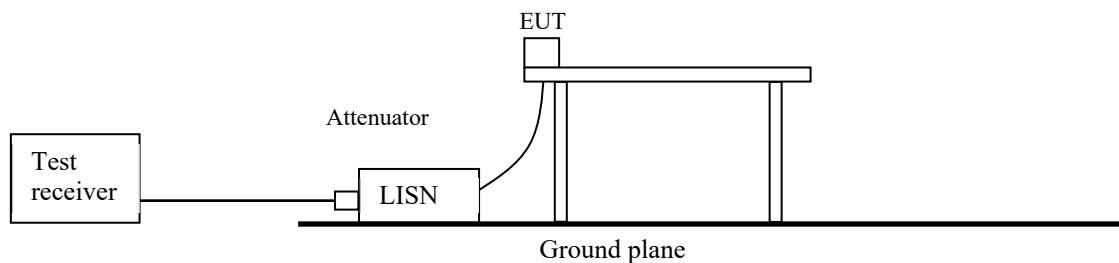
The conducted emission measurements were made with the following detector function.

Detector Type	QP / CAV
IF Bandwidth	9 kHz / 9 kHz

5.4 Results

Summary of the test results : Pass

Figure 1. Test Setup



Section 6 : Radiated emission

6.1 Test conditions

Frequency range	30 MHz to 13 GHz
EUT position	Table top

6.2 Test configuration

The EUT was placed on a platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. The table is made of expanded polystyrol and expanded polypropylene and the table top is covered with polycarbonate. That has very low permittivity. Photographs of the set up are shown in Appendix 1.

6.3 Test procedure

The Radiated Electric Field Strength intensity has been measured in a Semi-Anechoic Chamber with a ground plane at a distance of 3 m*.

* Measuring distance (below 1 GHz)

The boundary of the EUT is defined by an imaginary circular periphery.

The measuring antenna height was varied between 1 m and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for both vertical and horizontal antenna polarization.

Test antenna was aimed at the emission source for receiving the maximum signal and always kept. (above 1 GHz)

The radiated emission measurements were made with the following detector function.

	30 MHz to 1000 MHz (Test receiver)	1 GHz to 13 GHz (Spectrum analyzer)	
Detector Type	QP	AV *1)	PK
IF Bandwidth	120 kHz	RBW 1 MHz/ VBW 10 Hz	RBW 1 MHz/ VBW 3 MHz

*1) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

The noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

6.4 Results

Summary of the test results : Pass

Figure 2. Antenna angle

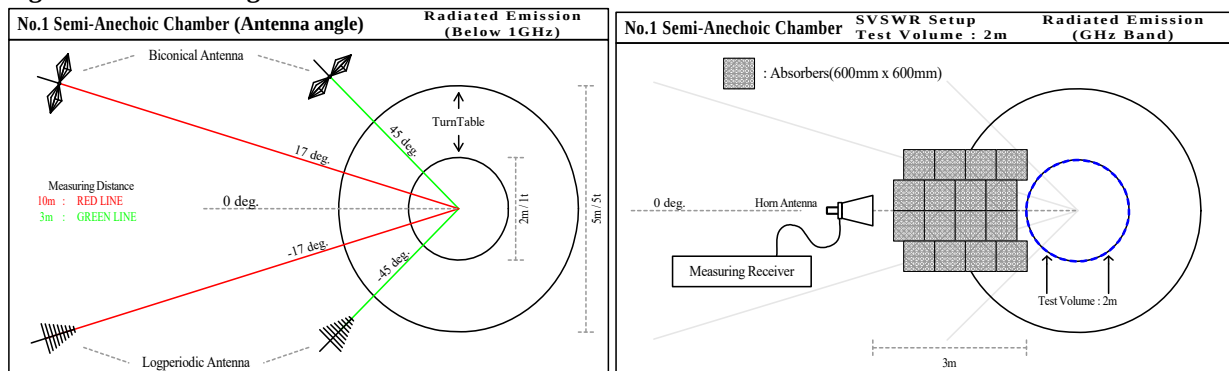
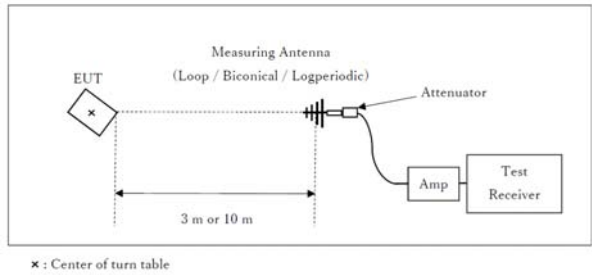


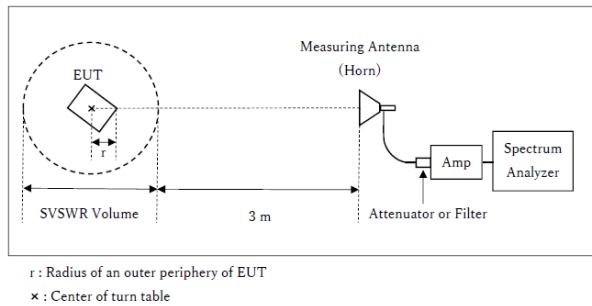
Figure 3. Test Setup

Below 1 GHz



Test Distance: 3 m

1 GHz to 13 GHz



Distance Factor: $20 \times \log (3.94 \text{ m}^*/3.0 \text{ m}) = 2.37 \text{ dB}$
* Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.94 \text{ m}$

SVSWR Volume: 2 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 0.06 \text{ m}$

Distance Factor is based on FCC Subpart A Section 15.31 (f).

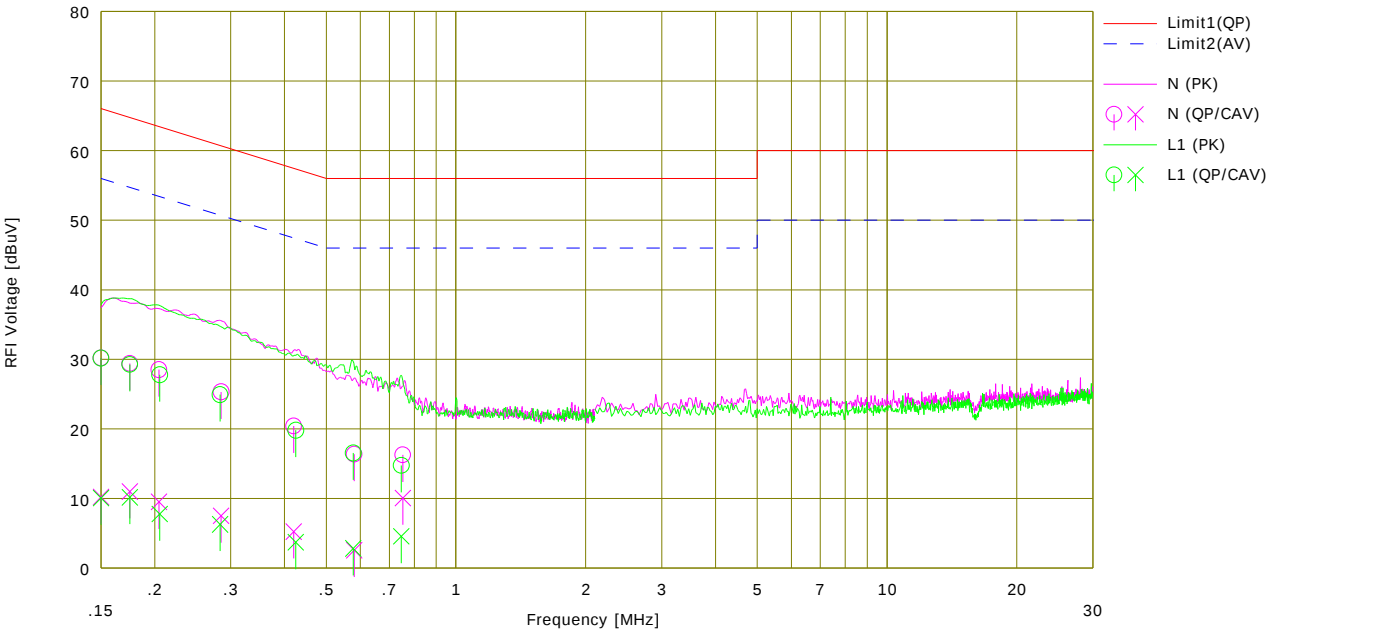
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.1 Shielded Room
 Date : 2022/12/03

Company	: NTT Sonority Inc.	Mode	: Charge
Kind of EUT	: wireless on-ear speakers	Order No.	: 14597255
Model No.	: MBE001	Power	: AC 120 V / 60 Hz (AC Adapter)
Serial No.	: L: B2242002E02, R: B2242012802	Temp./Humi.	: 21 deg.C / 34 %RH
Remarks	: -		

Limit : EN 55032_Class B_AC mains

Engineer : Yasumasa Owaki



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<CAV>		<QP>	<CAV>	<QP>	<AV>	<QP>	<AV>		
		[dBuV]	[dBuV]		[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15000	17.60	-2.40	12.60	30.20	10.20	66.00	56.00	35.8	45.8	N	
2	0.17500	16.80	-1.60	12.60	29.40	11.00	64.72	54.72	35.3	43.7	N	
3	0.20459	15.90	-3.10	12.61	28.51	9.51	63.42	53.42	34.9	43.9	N	
4	0.28520	12.70	-5.10	12.62	25.32	7.52	60.66	50.66	35.3	43.1	N	
5	0.42056	7.80	-7.40	12.63	20.43	5.23	57.44	47.44	37.0	42.2	N	
6	0.58080	3.70	-10.10	12.66	16.36	2.56	56.00	46.00	39.6	43.4	N	
7	0.75275	3.60	-2.60	12.67	16.27	10.07	56.00	46.00	39.7	35.9	N	
8	0.15000	17.60	-2.50	12.57	30.17	10.07	66.00	56.00	35.8	45.9	L1	
9	0.17500	16.70	-2.40	12.57	29.27	10.17	64.72	54.72	35.4	44.5	L1	
10	0.20554	15.20	-4.80	12.58	27.78	7.78	63.38	53.38	35.6	45.6	L1	
11	0.28350	12.30	-6.30	12.60	24.90	6.30	60.71	50.71	35.8	44.4	L1	
12	0.42555	7.20	-8.90	12.60	19.80	3.70	57.34	47.34	37.5	43.6	L1	
13	0.57780	3.90	-9.80	12.64	16.54	2.84	56.00	46.00	39.4	43.1	L1	
14	0.74691	2.10	-8.10	12.65	14.75	4.55	56.00	46.00	41.2	41.4	L1	

DATA OF CONDUCTED EMISSION TEST

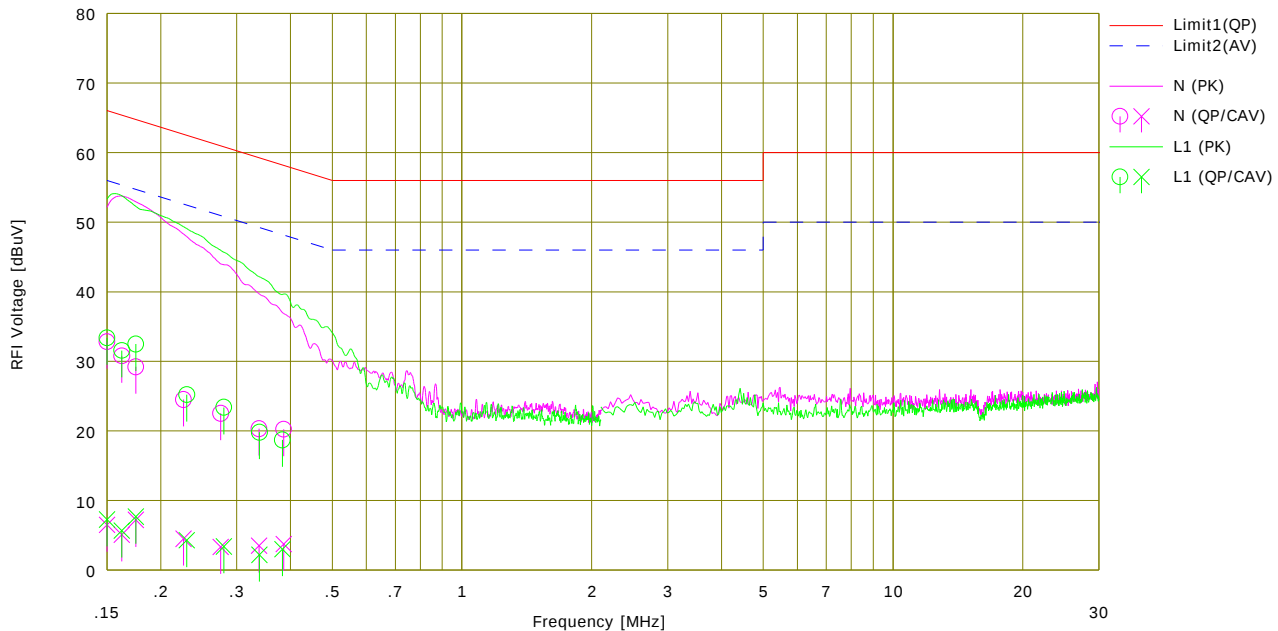
UL Japan, Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2022/12/03

Company : NTT Sonority Inc.
Kind of EUT : wireless on-ear speakers
Model No. : MBE001
Serial No. : L: B2242002E02, R: B2242012802
Remarks : -

Mode : Charge
Order No. : 14597255
Power : AC 240 V / 60 Hz (AC Adapter)
Temp./Humi. : 21 deg.C / 34 %RH

Limit : EN 55032_Class B_AC mains

Engineer : Yasumasa Owaki



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<CAV>		<QP>	<CAV>	<QP>	<AV>	<QP>	<AV>		
		[dBuV]	[dBuV]		[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15000	20.20	-6.10	12.60	32.80	6.50	66.00	56.00	33.2	49.5	N	
2	0.16250	18.20	-7.50	12.60	30.80	5.10	65.34	55.34	34.5	50.2	N	
3	0.17500	16.60	-5.40	12.60	29.20	7.20	64.72	54.72	35.5	47.5	N	
4	0.22581	11.90	-8.10	12.60	24.50	4.50	62.60	52.60	38.1	48.1	N	
5	0.27570	9.90	-9.30	12.61	22.51	3.31	60.94	50.94	38.4	47.6	N	
6	0.33840	7.70	-9.10	12.61	20.31	3.51	59.24	49.24	38.9	45.7	N	
7	0.38571	7.60	-8.90	12.63	20.23	3.73	58.16	48.16	37.9	44.4	N	
8	0.15000	20.80	-5.30	12.57	33.37	7.27	66.00	56.00	32.6	48.7	L1	
9	0.16250	19.00	-6.90	12.57	31.57	5.67	65.34	55.34	33.7	49.6	L1	
10	0.17500	19.90	-4.90	12.57	32.47	7.67	64.72	54.72	32.2	47.0	L1	
11	0.23002	12.60	-8.30	12.59	25.19	4.29	62.45	52.45	37.2	48.1	L1	
12	0.28001	10.80	-9.20	12.59	23.39	3.39	60.82	50.82	37.4	47.4	L1	
13	0.33901	7.20	-10.40	12.60	19.80	2.20	59.23	49.23	39.4	47.0	L1	
14	0.38291	6.10	-9.60	12.60	18.70	3.00	58.22	48.22	39.5	45.2	L1	

DATA OF RADIATED EMISSION TEST

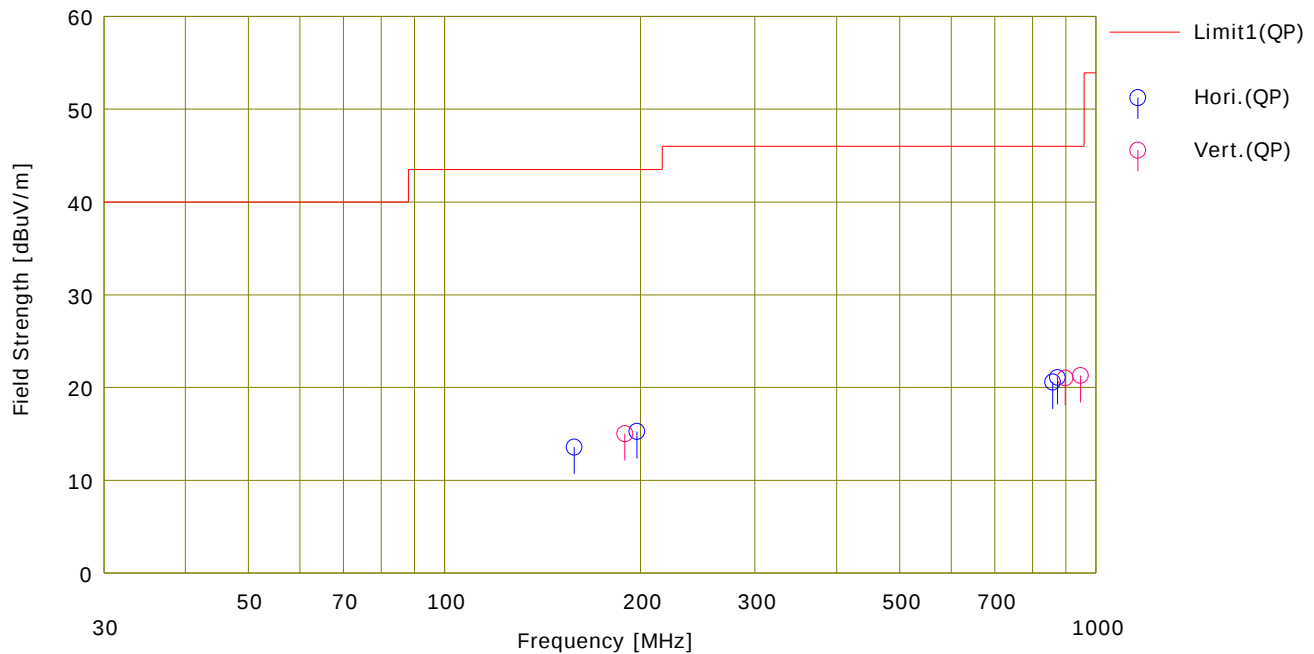
UL Japan, Inc. Shonan EMC Lab. No.1 Semi-Anechoic Chamber
Date : 2022/12/02

Company : NTT Sonority Inc.
Kind of EUT : wireless on-ear speakers
Model No. : MBE001
Serial No. : L: B2242002E02, R: B2242012802
Remarks : (EUT Axis) Hori: Y, Vert: Y

Mode : BT Communication
Order No. : 14597255
Power : DC 3.85 V (Battery)
Temp./Humi. : 20 deg.C / 42 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yasumasa Owaki



No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dBuV/m]	[dB]					
1	158.185	21.20	15.23	8.82	31.79	0.12	13.58	43.50	29.9	Hori.	200	313	BC	
2	197.450	21.30	16.66	9.21	31.77	-0.14	15.26	43.50	28.2	Hori.	150	252	BC	
3	859.200	20.50	21.89	9.78	31.59	0.00	20.58	46.00	25.4	Hori.	100	229	LP	
4	873.605	20.60	22.12	9.85	31.50	0.00	21.07	46.00	24.9	Hori.	100	81	LP	
5	189.345	21.30	16.49	9.13	31.77	-0.12	15.03	43.50	28.4	Vert.	100	264	BC	
6	897.605	20.20	22.20	9.97	31.35	0.00	21.02	46.00	24.9	Vert.	100	359	LP	
7	947.200	20.00	22.20	10.17	31.08	0.00	21.29	46.00	24.7	Vert.	150	187	LP	

DATA OF RADIATED EMISSION TEST

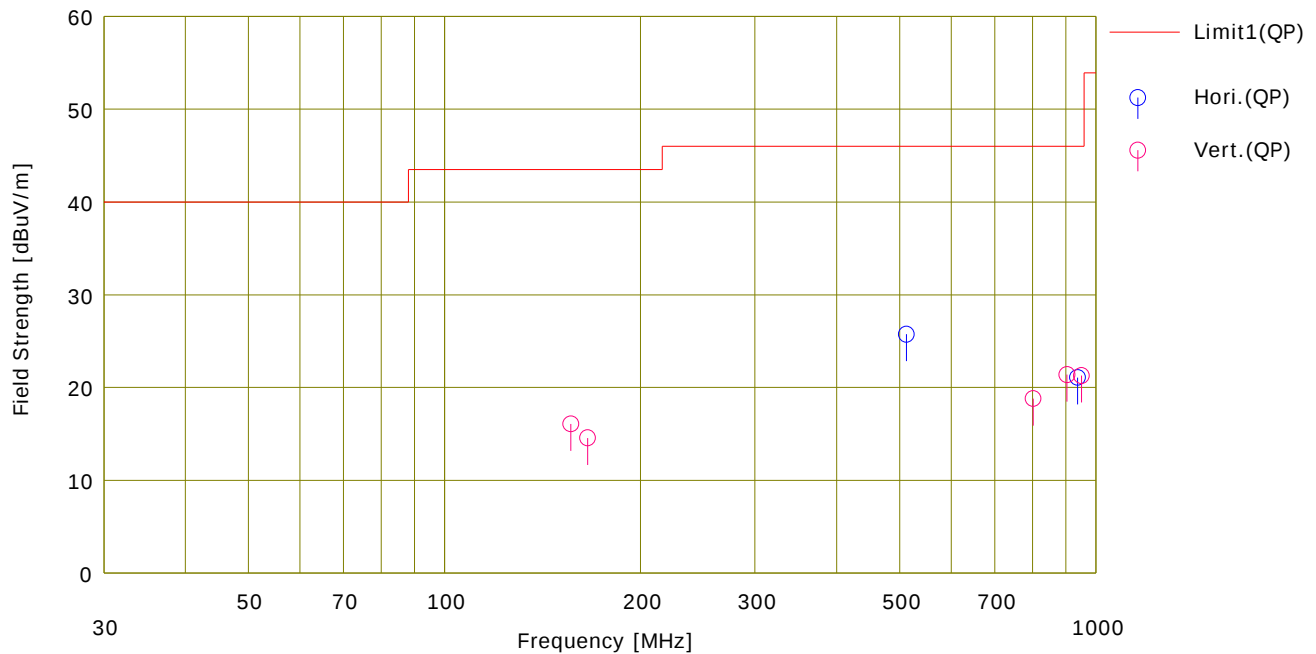
UL Japan, Inc. Shonan EMC Lab. No.1 Semi-Anechoic Chamber
Date : 2022/12/02

Company : NTT Sonority Inc.
Kind of EUT : wireless on-ear speakers
Model No. : MBE001
Serial No. : L: B2242002E02, R: B2242012802
Remarks : -

Mode : Charge
Order No. : 14597255
Power : AC 120 V / 60 Hz (AC Adapter)
Temp./Humi. : 20 deg.C / 42 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Yasumasa Owaki



No.	Freq. [MHz]	Reading <QP> [dBuV]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP> [dBuV/m]	Limit <QP> [dBuV/m]	Margin <QP> [dB]	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
1	512.000	31.90	17.80	7.96	31.93	0.00	25.73	46.00	20.2	Hori.	184	143	LP	
2	938.400	20.00	22.08	10.13	31.12	0.00	21.09	46.00	24.9	Hori.	150	1	LP	
3	156.485	23.80	15.13	8.80	31.79	0.13	16.07	43.50	27.4	Vert.	100	198	BC	
4	166.000	21.80	15.55	8.90	31.78	0.09	14.56	43.50	28.9	Vert.	100	1	BC	
5	801.625	20.30	20.86	9.49	31.85	0.00	18.80	46.00	27.2	Vert.	150	78	LP	
6	904.000	20.50	22.19	10.00	31.31	0.00	21.38	46.00	24.6	Vert.	100	137	LP	
7	951.200	19.90	22.24	10.19	31.05	0.00	21.28	46.00	24.7	Vert.	100	123	LP	

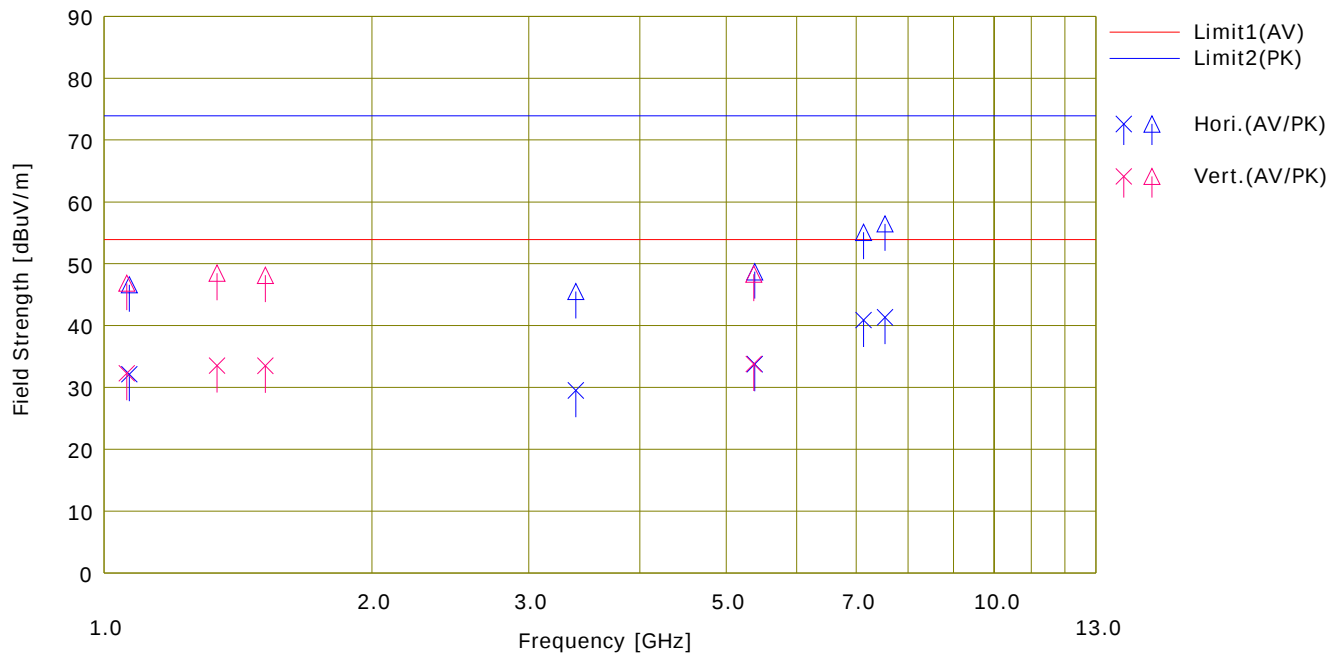
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.1 Semi-Anechoic Chamber
Date : 2022/12/02

Company : NTT Sonority Inc. Mode : BT Communication
Kind of EUT : wireless on-ear speakers Order No. : 14597255
Model No. : MBE001 Power : DC 3.85 V (Battery)
Serial No. : L: B2242002E02, R: B2242012802 Temp./Humi. : 20 deg.C / 40 %RH
Remarks : (EUT Axis) Hori: Y, Vert: Y, Test Distance = 394 cm

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Masahide Ozaki



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>					
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]					
1	1068.423	31.67	46.12	24.19	13.20	39.29	2.37	32.14	46.59	53.90	73.90	21.7	27.3	Hori.	100	359	31SH1	
2	3388.317	31.54	47.54	28.18	7.01	39.58	2.37	29.52	45.52	53.90	73.90	24.3	28.3	Hori.	100	0	31SH1	
3	5382.739	31.37	46.32	31.68	8.19	39.85	2.37	33.76	48.71	53.90	73.90	20.1	25.1	Hori.	100	359	31SH1	
4	7130.000	31.98	46.16	36.72	9.37	39.55	2.37	40.89	55.07	53.90	73.90	13.0	18.8	Hori.	100	0	31SH1	
5	7535.125	31.83	46.93	36.91	9.63	39.39	2.37	41.35	56.45	53.90	73.90	12.5	17.4	Hori.	100	359	31SH1	
6	1061.204	31.84	46.44	24.16	13.20	39.29	2.37	32.28	46.88	53.90	73.90	21.6	27.0	Vert.	100	359	31SH1	
7	1340.214	31.53	46.49	25.27	13.56	39.21	2.37	33.52	48.48	53.90	73.90	20.3	25.4	Vert.	100	0	31SH1	
8	1518.413	31.63	46.27	24.87	13.80	39.17	2.37	33.50	48.14	53.90	73.90	20.4	25.7	Vert.	100	359	31SH1	
9	5371.489	31.45	45.96	31.65	8.19	39.84	2.37	33.82	48.33	53.90	73.90	20.0	25.5	Vert.	100	0	31SH1	

Calculation: Result[dBuV/m] = Reading[dBuV] + Ant.Fac[dB/m] + Loss(Cable + ATT or HPF)[dB] + D.Fac[dB] - Gain(AMP)[dB]

Ant.Type=BC:Biconical Antenna LP:Logperiodic Antenna **SH*: Horn Antenna

DATA OF RADIATED EMISSION TEST

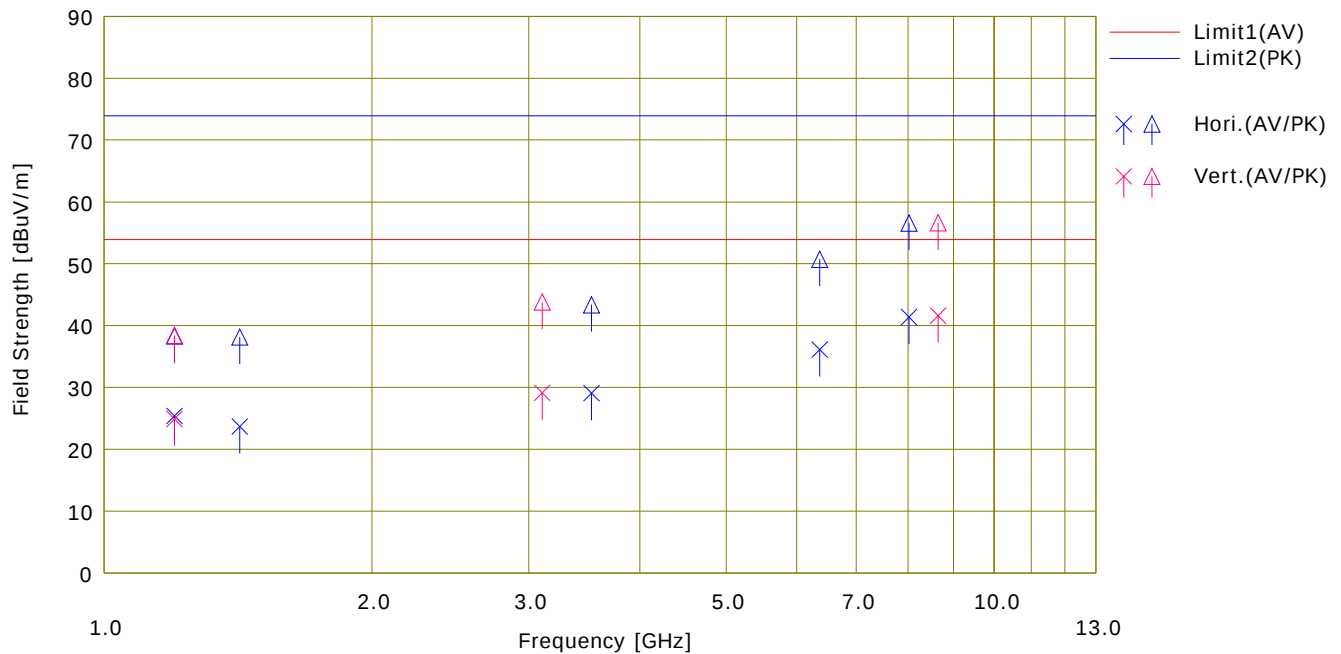
UL Japan, Inc. Shonan EMC Lab. No.1 Semi-Anechoic Chamber
Date : 2022/12/02

Company : NTT Sonority Inc.
Kind of EUT : wireless on-ear speakers
Model No. : MBE001
Serial No. : L: B2242002E02, R: B2242012802
Remarks : Test Distance = 394 cm

Mode : Charge
Order No. : 14597255
Power : AC 120 V / 60 Hz (AC Adapter)
Temp./Humi. : 20 deg.C / 40 %RH

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Engineer : Masahide Ozaki



No.	Freq.	Reading		Ant.Fac	Loss	Gain	D.Fac	Result		Limit		Margin		Pola.	Height	Angle	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>					
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]					
1	1199.976	34.07	46.96	24.79	3.44	39.25	2.37	25.42	38.31	53.90	73.90	28.4	35.5	Hori.	240	183	31SH1	
2	1421.185	31.58	46.05	25.19	3.73	39.18	2.37	23.69	38.16	53.90	73.90	30.2	35.7	Hori.	100	0	31SH1	
3	3528.962	31.76	46.02	28.71	5.88	39.62	2.37	29.10	43.36	53.90	73.90	24.8	30.5	Hori.	100	359	31SH1	
4	6370.548	31.87	46.46	33.82	8.00	39.93	2.37	36.13	50.72	53.90	73.90	17.7	23.1	Hori.	100	0	31SH1	
5	8019.942	31.60	46.80	37.50	9.03	39.12	2.37	41.38	56.58	53.90	73.90	12.5	17.3	Hori.	100	359	31SH1	
6	1199.971	33.56	47.07	24.79	3.44	39.25	2.37	24.91	38.42	53.90	73.90	28.9	35.4	Vert.	389	189	31SH1	
7	3107.108	32.01	46.70	28.72	5.50	39.46	2.37	29.14	43.83	53.90	73.90	24.7	30.0	Vert.	100	359	31SH1	
8	8647.700	31.89	46.91	37.37	9.53	39.56	2.37	41.60	56.62	53.90	73.90	12.3	17.2	Vert.	100	0	31SH1	

APPENDIX 2

Test Instruments

EMI test equipment

Test Name	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
CE	SAT3-13	150923	Attenuator	JFW	50HF-003N	-	2022/02/21	12
CE	SCC-A12/A13/SRS E-01	144966	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-269(RF Selector)	2022/04/20	12
CE	SLS-02	145539	LISN	Rohde & Schwarz	ENV216	100512	2022/02/23	12
CE	SOS-16	167990	Thermo-Hygrometer	CUSTOM. Inc	CTH-202	708Q08R	2022/10/18	12
CE,RE	COTS-SEMI-5	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	-	-	-
CE,RE	SJM-22	207279	Measuring Tool, Tape Measure	ASKUL	-	-	-	-
CE,RE	STR-08	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2022/03/02	12
CE,RE	STS-01	145792	Digital Hitester	HIOKI E.E. CORPORATION	3805-50	80997812	2022/09/20	12
RE	KAT6-04	144899	Attenuator	Inmet	18N-6dB	-	2021/12/10	12
RE	SAEC-01(NSA)	145597	Semi-Anechoic Chamber	TDK	SAEC-01(NSA)	1	2022/04/11	12
RE	SAEC-01(SVSWR)	145561	Semi-Anechoic Chamber	TDK	SAEC-01(SVSWR)	1	2022/05/13	12
RE	SAF-01	145003	Pre Amplifier	SONOMA	310N	290211	2022/02/24	12
RE	SAF-04	145127	Pre Amplifier	Toyo Corporation	TPA0118-36	2072554	2022/05/20	12
RE	SAT10-05	145136	Attenuator	Keysight Technologies Inc	8493C-010	74864	2022/10/20	12
RE	SAT3-09	144959	Attenuator	JFW	50HF-003N	-	2022/08/23	12
RE	SBA-01	145161	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	BBA9106	91032664	2022/04/16	12
RE	SCC-A1/A3/A5/A7/A8/A13/SRSE-01	144967	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	2022/04/20	12
RE	SCC-A2/A4/A6/A7/A8/A13/SRSE-01	144968	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	2022/04/20	12
RE	SCC-G05	145039	Coaxial Cable	Junkosha	J12J102207-00	APR-30-15-037	2022/01/06	12
RE	SCC-G40	166491	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	1612S005	2022/01/06	12
RE	SCC-G62	196985	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	803650/2	2022/03/08	12
RE	SFL-02	145301	Highpass Filter	MICRO-TRONICS	HPM50111	51	2022/10/20	12
RE	SHA-01	145383	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	9120D-725	2022/03/01	12
RE	SLA-05	145527	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	193	2022/04/16	12
RE	SOS-20	191837	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2022/08/06	12

*Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

The expiration date of the calibration is the end of the expired month.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards

Test Item:

CE: Conducted emission,

RE: Radiated emission