

TEST REPORT

Product Name : True Wireless earbuds

: SONGX **Brand Mark**

Model No. : SX08

FCC ID : 2AW7B-SX08

Report Number : BLA-EMC-202111-A1402

Date of Sample Receipt : 2021/11/3

Date of Test : 2021/11/5 to 2021/11/22

Date of Issue : 2021/11/22

Test Standard : 47 CFR Part 15, Subpart C 15.247

Test Result : Pass

Prepared for:

ShenZhen Songplus Technology Co., Ltd. 701, building a, Fenghuang Zhigu, No. 50, tiezi Road, Bao'an District, Shenzhen ,China, 518102

Prepared by:

BlueAsia of Technical Services(Shenzhen) Co.,Ltd. Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province, China

TEL: +86-755-23059481

Compiled by:
Approved by:

Blue Thong

Review by:

Date:







Page 2 of 96

REPORT REVISE RECORD

Version No.	Date	Description
00	2021/11/22	Original





TABLE OF CONTENTS

1	TES	ST SUMMARY	5
2	GEN	NERAL INFORMATION	6
3	GEN	NERAL DESCRIPTION OF E.U.T	6
4	TES	ST ENVIRONMENT	7
5		ST MODE	
		ASUREMENT UNCERTAINTY	
6		SCRIPTION OF SUPPORT UNIT	
7			
8		BORATORY LOCATION	
9		ST INSTRUMENTS LIST	
10	AN1	TENNA REQUIREMENT	13
	10.1	CONCLUSION	13
11	COI	NDUCTED SPURIOUS EMISSIONS	14
•		LIMITS	
	11.1 11.2	BLOCK DIAGRAM OF TEST SETUP	
	11.3	TEST DATA	
12	200	OB BANDWIDTH	
12			
	12.1	BLOCK DIAGRAM OF TEST SETUP TEST DATA	
	12.2		
13	s cor	NDUCTED PEAK OUTPUT POWER	
	13.1	LIMITS	
	13.2	BLOCK DIAGRAM OF TEST SETUP	
	13.3	TEST DATA	18
14	COI	NDUCTED EMISSIONS AT AC POWER LINE (150KHZ-30MHZ)	19
	14.1	LIMITS	19
	14.2	BLOCK DIAGRAM OF TEST SETUP	19
	14.3	PROCEDURE	
	14.4	TEST DATA	21
15	RAI	DIATED SPURIOUS EMISSIONS	23
	15.1	LIMITS	23



_,	•	 202	•		•	•	•		-
		P	ac	зe	4		o	f96	;

1	5.2	BLOCK DIAGRAM OF TEST SETUP	24
1	5.3	PROCEDURE	24
1	5.4	TEST DATA	26
16	RAD	NATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS	34
1	6.1	LIMITS	34
1	6.2	BLOCK DIAGRAM OF TEST SETUP	35
1	16.3	PROCEDURE	
1	6.4	TEST DATA	37
17	CON	IDUCTED BAND EDGES MEASUREMENT	
1	7.1	LIMITS	
1	7.2	BLOCK DIAGRAM OF TEST SETUP	
1	17.3	TEST DATA	42
18	DWE	ELL TIME	
1	8.1	LIMITS	
1	8.2	BLOCK DIAGRAM OF TEST SETUP	43
1	18.3	TEST DATA	44
19	НОР	PING CHANNEL NUMBER	
1	9.1	LIMITS	45
1	9.2	BLOCK DIAGRAM OF TEST SETUP	45
1	19.3	TEST DATA	45
20	CAR	RIER FREQUENCIES SEPARATION	46
2	20.1	LIMITS	46
2	20.2	BLOCK DIAGRAM OF TEST SETUP	46
2	20.3	TEST DATA	46
21	APP	ENDIX	47
API	PENDI	X A: PHOTOGRAPHS OF TEST SETUP	94
API	PENDI	X B: PHOTOGRAPHS OF EUT	96



Page 5 of 96

1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(c)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
20dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.7	47 CFR Part 15, Subpart C 15.247(a)(1)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Dwell Time	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.4	47 CFR Part 15, Subpart C 15.247a(1)(iii)	Pass
Hopping Channel Number	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.3	47 CFR Part 15, Subpart C 15.247a(1)(iii)	Pass
Carrier Frequencies Separation	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.2	47 CFR Part 15, Subpart C 15.247a(1)	Pass



Page 6 of 96

2 GENERAL INFORMATION

Applicant	ShenZhen Songplus Technology Co., Ltd.
Address	701, building a, Fenghuang Zhigu, No. 50, tiezi Road, Bao'an District, Shenzhen ,China, 518102
Manufacturer	ShenZhen Songplus Technology Co., Ltd.
Address	701, building a, Fenghuang Zhigu, No. 50, tiezi Road, Bao'an District, Shenzhen ,China, 518102
Factory	Dongguan Qiaosike Digital Technology Co., Ltd
Address	Block F, Longxing Industrial Park, Hongjin Road, Lizhoujiao, Hongmei Town, Dongguan City, Guangdong, China.
Product Name	True Wireless earbuds
Test Model No.	SX08

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	V1.2
Software Version	V2.02
Operation Frequency:	2402MHz-2480MHz
Modulation Type:	GFSK, π/4 DQPSK, 8DPSK
Channel Spacing:	1MHz
Number of Channels:	79
Antenna Type:	Chip Antenna
Antenna Gain:	1dBi(Provided by the applicant)



Page 7 of 96

4 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25°C	3.7Vdc

5 TEST MODE

TEST MODE	TEST MODE DESCRIPTION					
Transmitting	ting Keep the EUT in continuously transmitting mode with modulation. (hopping and nor					
mode	hopping mode all have been tested, non hopping mode is worse case for RE)					
Remark: Full ba	Remark: Full battery is used during all test except ac conducted emission, DH1,DH3, DH5 all have been					
tested, during the test, GFSK, Pi/4QPSK, 8-DPSK modulation were all pre-scanned only GFSK worse						
case is reported						

6 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)		
Radiated Emission(9kHz-30MHz)	±4.34dB		
Radiated Emission(30Mz-1000MHz)	±4.24dB		
Radiated Emission(1GHz-18GHz)	±4.68dB		
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB		



Page 8 of 96

7 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
AC Adapter	UGREEN	CD112	N/A	N/A

8 LABORATORY LOCATION

All tests were performed at:

BlueAsia of Technical Services(Shenzhen) Co., Ltd.

Building C, No. 107, Shihuan Road, Shiyan Sub-District, Baoan District, Shenzhen, Guangdong Province,

China

Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673

No tests were sub-contracted.





Page 9 of 96

9 TEST INSTRUMENTS LIST

Test Equipment Of Conducted Spurious Emissions							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due		
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022		
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022		
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022		
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022		

Test Equipment Of 20dB Bandwidth						
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due	
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022	
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022	
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022	
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022	

Test Equipment Of Conducted Peak Output Power								
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due			
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022			
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022			
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022			
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022			

Test Equipment Of Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due



Page 10 of 96

Shield room	SKET	833	N/A	25/11/2020	24/11/2023
Receiver	R&S	ESPI3	101082	24/9/2021	23/9/2022
LISN	R&S	ENV216	3560.6550.15	24/9/2021	23/9/2022
LISN	AT	AT166-2	AKK1806000003	26/9/2021	25/9/2022
EMI software	EZ	EZ-EMC	N/A	N/A	N/A

Test Equipment Of Radiated Spurious Emissions							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due		
Chamber	SKET	966	N/A	10/11/2020	9/11/2023		
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022		
Receiver	R&S	ESR7	101199	24/9/2021	23/9/2022		
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	26/9/2020	25/9/2022		
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	26/9/2020	25/9/2022		
Amplifier	SKET	LNPA-0118-45	N/A	24/9/2021	23/9/2022		
EMI software	EZ	EZ-EMC	N/A	N/A	N/A		
Loop antenna	SCHNARZBECK	FMZB1519B	00102	26/9/2020	25/9/2022		

Test Equipment Of Radiated Emissions which fall in the restricted bands							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due		
Chamber	SKET	966	N/A	10/11/2020	9/11/2023		
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022		
Receiver	R&S	ESR7	101199	24/9/2021	23/9/2022		



Page 11 of 96

broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	26/9/2020	25/9/2022
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	26/9/2020	25/9/2022
Amplifier	SKET	LNPA-0118-45	N/A	24/9/2021	23/9/2022
EMI software	EZ	EZ-EMC	N/A	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	26/9/2020	25/9/2022

Test Equipment Of Conducted Band Edges Measurement							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due		
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022		
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022		
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022		
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022		

Test Equipment Of Dwell Time								
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due			
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022			
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022			
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022			
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022			

Test Equipment Of Hopping Channel Number							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due		
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022		



Page 12 of 96

Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022

Test Equipment Of Carrier Frequencies Separation							
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due		
Spectrum	R&S	FSP40	100817	24/9/2021	23/9/2022		
Spectrum	Agilent	N9020A	MY49100060	24/9/2021	23/9/2022		
Signal Generator	Agilent	N5182A	MY49060650	24/9/2021	23/9/2022		
Signal Generator	Agilent	E8257D	MY44320250	24/9/2021	23/9/2022		



Page 13 of 96

10 ANTENNA REQUIREMENT

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	N/A

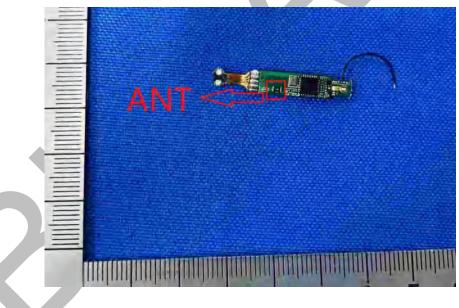
10.1 CONCLUSION

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1dBi.





Page 14 of 96

11 CONDUCTED SPURIOUS EMISSIONS

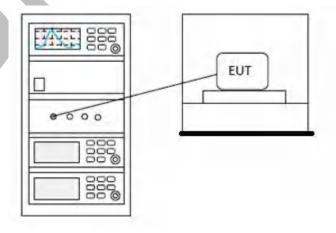
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.6 & Section 11.11
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

11.1 LIMITS

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

11.2 BLOCK DIAGRAM OF TEST SETUP





11.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details

Page 15 of 96



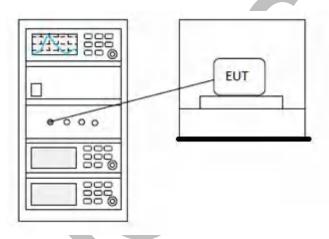


Page 16 of 96

12 20DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.7
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

12.1 BLOCK DIAGRAM OF TEST SETUP



12.2 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details



Page 17 of 96

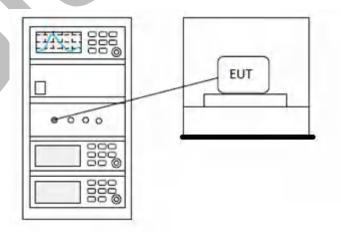
13 CONDUCTED PEAK OUTPUT POWER

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 7.8.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

13.1 LIMITS

Frequency range(MHz)	Output power of the intentional radiator(watt)
	1 for ≥50 hopping channels
902-928	0.25 for 25≤ hopping channels <50
	1 for digital modulation
	1 for ≥75 non-overlapping hopping channels
2400-2483.5	0.125 for all other frequency hopping systems
	1 for digital modulation
	1 for frequency hopping systems and digital
5725-5850	modulation

13.2 BLOCK DIAGRAM OF TEST SETUP



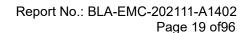


Page 18 of 96

13.3 TEST DATA

Pass: Please Refer To Appendix: Appendix1 For Details







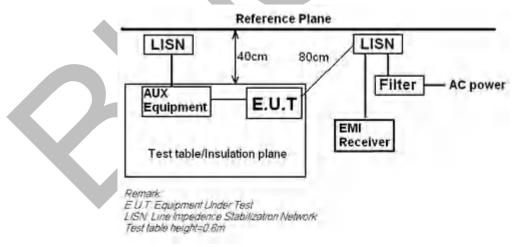
14 CONDUCTED EMISSIONS AT AC POWER LINE (150KHZ-30MHZ)

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.2
Test Mode (Pre-Scan)	Transmitting mode
Test Mode (Final Test)	Transmitting mode
Tester	Jozu
Temperature	25℃
Humidity	60%

14.1 LIMITS

Frequency of	Conducted limit(dBµV)						
emission(MHz)	Quasi-peak	Average					
0.15-0.5	66 to 56*	56 to 46*					
0.5-5	56	46					
5-30	60	50					
*Decreases with the logarithm	of the frequency.						

14.2 BLOCK DIAGRAM OF TEST SETUP



14.3 PROCEDURE

- 1) The mains terminal disturbance voltage test was conducted in a shielded room.
- 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50ohm/50H + 5ohm linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.



Page 20 of 96

3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,

4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

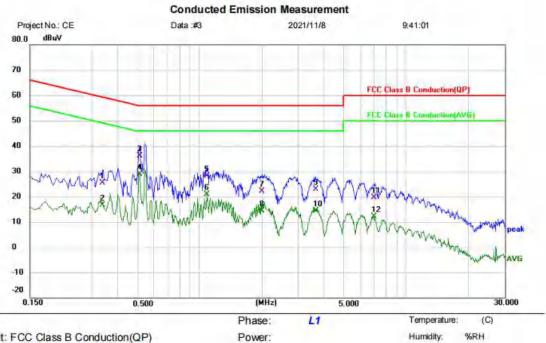
Remark: LISN=Read Level+ Cable Loss+ LISN Factor





14.4 TEST DATA

[TestMode: BT mode]; [Line: Line] ;[Power:AC120V/60Hz]



Limit: FCC Class B Conduction(QP)

EUT: Ture Wrieless earbuds

M/N: SX08

Mode: BT mode

Note:

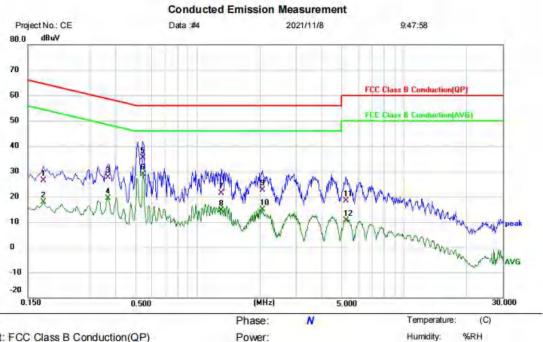
Site

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3379	15.51	9.85	25.36	59.25	-33.89	QP	
2		0.3379	6.87	9.85	16.72	49.25	-32.53	AVG	
3		0.5100	26.38	9.87	36.25	56.00	-19.75	QP	
4		0.5100	19.03	9.87	28.90	46.00	-17.10	AVG	
5		1.0820	18.30	9.92	28.22	56.00	-27.78	QP	
6		1.0820	10.90	9.92	20.82	46.00	-25.18	AVG	
7		2.0059	12.09	9.94	22.03	56.00	-33.97	QP	
8		2.0059	4.38	9.94	14.32	46.00	-31.68	AVG	
9		3.6580	13.05	9.91	22.96	56.00	-33.04	QP	
10		3.6580	4.44	9.91	14.35	46.00	-31.65	AVG	
11		6.9780	9.62	10.09	19.71	60.00	-40.29	QP	
12		6.9780	2.14	10.09	12.23	50.00	-37.77	AVG	

*:Maximum data x:Over limit (Reference Only !:over margin



[TestMode: BT mode]; [Line: Nutral] ;[Power:AC120V/60Hz]



Limit: FCC Class B Conduction(QP)

EUT: Ture Wrieless earbuds

M/N: SX08 Mode: BT mode

Note:

Site

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1780	16.33	10.10	26.43	64.58	-38.15	QP	
2	0.1780	7.67	10.10	17.77	54.58	-36.81	AVG	
3	0.3660	17.78	9.78	27.56	58.59	-31.03	QP	
4	0.3660	9.69	9.78	19.47	48.59	-29.12	AVG	
5	0.5420	25.47	9.79	35.26	56.00	-20.74	QP	
6 *	0.5420	19.09	9.79	28.88	46.00	-17.12	AVG	
7	1.3020	11.41	9.85	21.26	56.00	-34.74	QP	
8	1.3020	4.85	9.85	14.70	46.00	-31.30	AVG	
9	2.0579	12.67	9.86	22.53	56.00	-33.47	QP	
10	2.0579	4.93	9.86	14.79	46.00	-31.21	AVG	
11	5.2260	8.31	9.96	18.27	60.00	-41.73	QP	
12	5.2260	0.68	9.96	10.64	50.00	-39.36	AVG	

*: Maximum data x:Over limit !:over margin (Reference Only



Page 23 of 96

15 RADIATED SPURIOUS EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

15.1 LIMITS

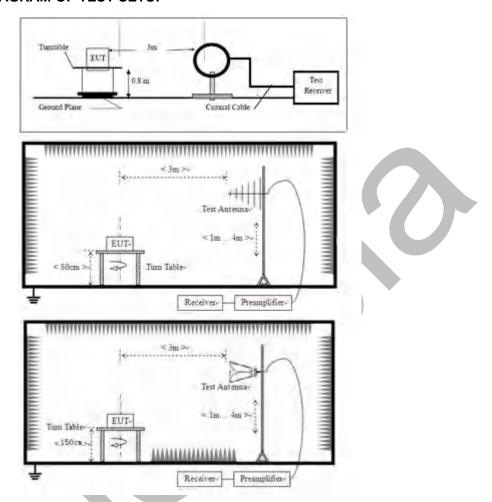
Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.



Page 24 of 96

15.2 BLOCK DIAGRAM OF TEST SETUP



15.3 PROCEDURE

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.



Page 25 of 96

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was complete.

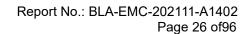
Remark:

- 1) For emission below 1GHz, through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.
- 2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor

- 3) Scan from 9kHz to 25GHz, the disturbance above 12.75GHz and below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. fundamental frequency is blocked by filter, and only spurious emission is shown.
- 4) For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



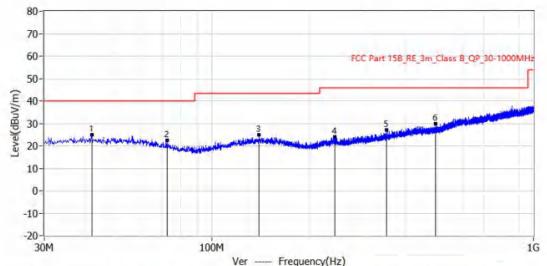




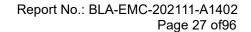
15.4 TEST DATA

[TestMode: TX below 1G]; [Polarity: Vertical]

Test Lab: BlueAsia EMC Lab (RE #1)	Project: BLA-EMC-202111-A14	
EUT: True Wireless earbuds	Test Engineer: Charlie	
M/N: SX08	Temperature:	
S/N:	Humidity:	
Test Mode: TX mode	Test Voltage:	
Note:	Test Data: 2021-11-18 10:10:18	



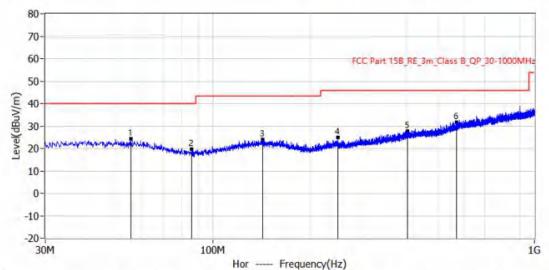
No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar	Height cm	Angle deg
1*	42.125MHz	40.0	25.0	-15.0	1.0	24.0	QP	Ver	100.0	74.0
2*	72.316MHz	40.0	22.6	-17.4	1.6	21.0	QP	Ver	100.0	291.0
3*	139.610MHz	43.5	24.8	-18.7	1.1	23.7	QP	Ver	100.0	301.0
4*	240.854MHz	46.0	24.1	-21.9	1.3	22.8	QP	Ver	100.0	42.0
5*	349.373MHz	46.0	27.0	-19.0	1.4	25.6	QP	Ver	100.0	0.0
6*	494.266MHz	46.0	29.8	-16.2	1.4	28.4	QP	Ver	100.0	0.0



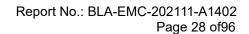


[TestMode: TX below 1G]; [Polarity: Horizontal]

Test Lab: BlueAsia EMC Lab (RE #1)	Project: BLA-EMC-202111-A14			
EUT: True Wireless earbuds	Test Engineer: Charlie			
M/N: SX08	Temperature:			
S/N:	Humidity:			
Test Mode: TX mode	Test Voltage:			
Note:	Test Data: 2021-11-18 10:12:16			



No.	Frequency	Limit dBuV/m	Level dBuV/m	Delta dB	Reading dBuV	Factor dB/m	Detector	Polar	Height cm	Angle deg
1*	55.341MHz	40.0	24.2	-15.8	0.6	23.6	QP	Hor	100.0	31.0
2*	85.775MHz	40.0	19.7	-20.3	0.2	19.5	QP	Hor	100.0	16.0
3*	142.641MHz	43.5	23.9	-19.6	0.3	23.6	QP	Hor	100.0	0.0
4*	244.734MHz	46.0	24.8	-21.2	2.0	22.8	QP	Hor	100.0	224.0
5*	401.631MHz	46.0	27.7	-18.3	0.4	27.3	QP	Hor	100.0	0.0
6*	572.351MHz	46.0	31.8	-14.2	1.3	30.5	QP	Hor	100.0	208.0



Temperature:

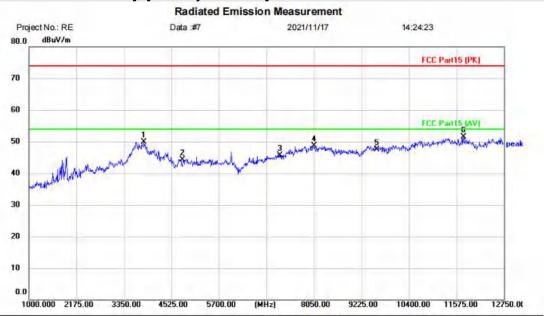
Humidity:

(C)

%RH



[TestMode: TX low channel]; [Polarity: Vertical]



Polarization: Vertical

Limit: FCC Part15 (PK)

EUT: True Wireless earbuds

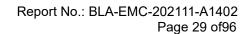
M/N: SX08 Mode: TX-L Note:

Site

No. N	Иk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1	384	43.500	42.77	7.12	49.89	74.00	-24.11	peak		
2	480	04.000	40.58	3.71	44.29	74.00	-29.71	peak		
3	720	06.000	39.83	5.96	45.79	74.00	-28.21	peak		
4	808	50.000	40.79	8.01	48.80	74.00	-25.20	peak		
5	960	08.000	38.13	9.29	47.42	74.00	-26.58	peak		
6	1175	51.250	39.79	11.66	51.45	74.00	-22.55	peak		

Power:

*:Maximum data x:Over limit !:over margin (Reference Only



Temperature:

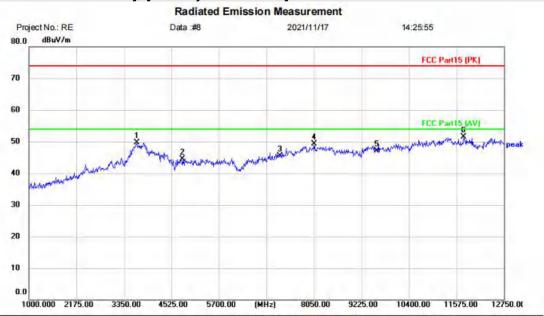
Humidity:

(C)

%RH



[TestMode: TX low channel]; [Polarity: Horizontal]



Polarization: Horizontal

peak

Limit: FCC Part15 (PK)

EUT: True Wireless earbuds

11751.250

11.66

51.48

39.82

M/N: SX08 Mode: TX-L Note:

Site

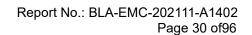
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3667.250	42.03	7.75	49.78	74.00	-24.22	peak	
2		4804.000	40.85	3.71	44.56	74.00	-29.44	peak	
3		7206.000	39.64	5.96	45.60	74.00	-28.40	peak	
4		8050.000	41.20	8.01	49.21	74.00	-24.79	peak	
5		9608 000	37.77	9 29	47.06	74.00	-26 94	neak	

74.00

-22.52

Power:

*:Maximum data x:Over limit !:over margin (Reference Only



Humidity:

%RH



[TestMode: TX mid channel]; [Polarity: Horizontal]

Radiated Emission Measurement



Limit: FCC Part15 (PK)

EUT: True Wireless earbuds

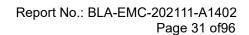
M/N: SX08 Mode: TX-M

Note:

No. I	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3855.250	43.53	6.97	50.50	74.00	-23.50	peak	
2		4882.000	44.44	3.36	47.80	74.00	-26.20	peak	
3	- 1	7323.000	39.64	6.43	46.07	74.00	-27.93	peak	
4	- 3	8191.000	41.20	8.20	49.40	74.00	-24.60	peak	
5		9764.000	38.11	9.63	47.74	74.00	-26.26	peak	
6	* 1	1269.500	39.92	11.94	51.86	74.00	-22.14	peak	

Power:

*:Maximum data x:Over limit !:over margin (Reference Only



Temperature:

Humidity:

(C)

%RH



[TestMode: TX mid channel]; [Polarity: Vertical]

Radiated Emission Measurement Project No.: RE Data :#16 2021/11/17 15:44:58 dBuV/m 80.0 FCC Part15 (PK) 70 60 50 30 20 10 0.0 1000.000 2175.00 3350.00 4525.00 5700.00 9225.00 10400.00 11575.00

Polarization: Vertical

Limit: FCC Part15 (PK)

EUT: True Wireless earbuds

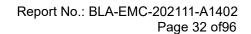
M/N: SX08 Mode: TX-M Note:

Site

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3655.500	42.35	7.76	50.11	74.00	-23.89	peak	
2		4882.000	43.98	3.36	47.34	74.00	-26.66	peak	
3		7323.000	39.24	6.43	45.67	74.00	-28.33	peak	
4		8273.250	40.75	8.23	48.98	74.00	-25.02	peak	
5		9764.000	38.53	9.63	48.16	74.00	-25.84	peak	
6	*	11304.750	40.22	11.89	52.11	74.00	-21.89	peak	

Power:

*:Maximum data x:Over limit !:over margin (Reference Only



Temperature:

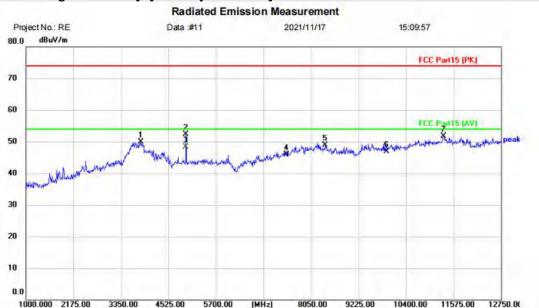
Humidity:

(C)

%RH



[TestMode: TX high channel]; [Polarity: Vertical]



Polarization: Vertical

Limit: FCC Part15 (PK)

EUT: True Wireless earbuds

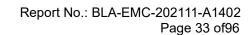
M/N: SX08 Mode: TX-H Note:

Site

Reading Correct Measure-Limit Over No. Mk. Freq. Factor Level ment MHz dBuV dB/m dBuV/m dBuV/m dB Detector Comment 1 3843.500 42.69 7.12 49.81 74.00 -24.19 peak 2 4959.750 48.48 3.75 52.23 74.00 -21.77 peak 4959.750 44.50 3.75 48.25 54.00 3 -5.75AVG 7440.000 6.86 -28.13 39.01 45.87 74.00 4 peak 5 8402.500 40.65 8.28 48.93 74.00 -25.07 peak 6 9920.000 36.71 10.16 46.87 74.00 -27.13 peak 7 11328.250 39.85 11.86 51.71 74.00 -22.29 peak

Power:

*:Maximum data x:Over limit !:over margin (Reference Only

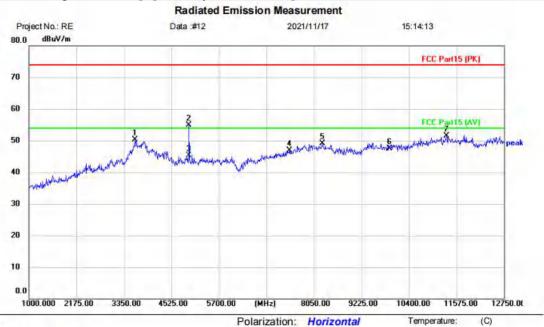


Humidity:

%RH



[TestMode: TX high channel]; [Polarity: Horizontal]



Limit: FCC Part15 (PK)

EUT: True Wireless earbuds

M/N: SX08 Mode: TX-H Note:

Site

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment
1		3620.250	42.47	7.79	50.26	74.00	-23.74	peak	
2		4959.750	51.13	3.75	54.88	74.00	-19.12	peak	
3	*	4959.750	41.51	3.75	45.26	54.00	-8.74	AVG	
4		7440.000	40.12	6.86	46.98	74.00	-27.02	peak	
5		8261.500	40.81	8.23	49.04	74.00	-24.96	peak	
6		9920.000	37.38	10.16	47.54	74.00	-26.46	peak	
7		11328.250	39.59	11.86	51.45	74.00	-22.55	peak	

Power:

*:Maximum data x:Over limit !:over margin (Reference Only



Page 34 of 96

16 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

Test Standard	47 CFR Part 15, Subpart C 15.247	
Test Method	ANSI C63.10 (2013) Section 6.10.5	
Test Mode (Pre-Scan)	TX	
Test Mode (Final Test)	TX	
Tester	Jozu	
Temperature	25℃	
Humidity	60%	

16.1 LIMITS

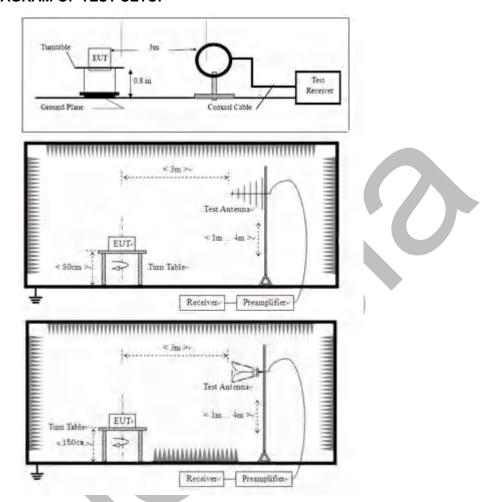
Evaguanay(MHz)	Field	Measurement
Frequency(MHz)	strength(microvolts/meter)	distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.



Page 35 of 96

16.2 BLOCK DIAGRAM OF TEST SETUP



16.3 PROCEDURE

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.



Page 36 of 96

h. Test the EUT in the lowest channel, the middle channel, the Highest channel.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.





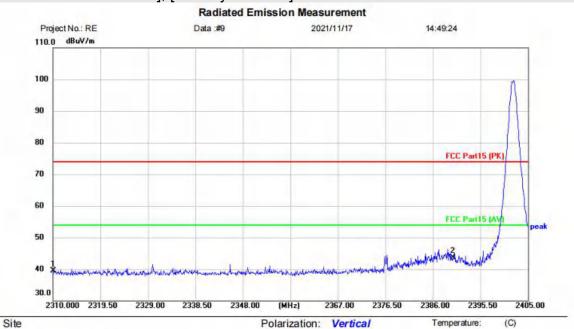
Humidity:

%RH

Page 37 of 96

16.4 TEST DATA

[TestMode: TX low channel]; [Polarity: Vertical]



Limit: FCC Part15 (PK)

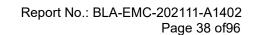
M/N: SX08 Mode: TX-L Note:

EUT: True Wireless earbuds

No. M	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1		2310.000	43.43	-3.93	39.50	74.00	-34.50	peak		
2	*	2390.000	47.30	-3.58	43.72	74.00	-30.28	peak		

Power:

*:Maximum data x:Over limit !:over margin (Reference Only



Temperature:

Humidity:

(C)

%RH



[TestMode: TX low channel]; [Polarity: Horizontal]

Radiated Emission Measurement Project No.: RE Data :#10 2021/11/17 14:51:32 110.0 dBuV/m 100 90 80 FCC Part15 (PK 70 60 FEE Part 15 (AV 50 30.0 2310.000 2319.50 2329.00 2338.50 2348.00 2367.00 2376.50 2405.00

Polarization: Horizontal

EUT: True Wireless earbuds

M/N: SX08 Mode: TX-L Note:

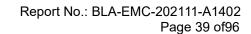
Site

Limit: FCC Part15 (PK)

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1		2310.000	42.50	-3.93	38.57	74.00	-35.43	peak		
2	*	2390.000	48.93	-3.58	45.35	74.00	-28.65	peak		

Power:

*:Maximum data x:Over limit !:over margin (Reference Only





[TestMode: TX high channel]; [Polarity: Horizontal]

Radiated Emission Measurement Project No.: RE Data :#13 2021/11/17 15:19:57 107.0 dBuV/m 97 87 77 FCC Part15 (PK) 67 57 FCC Part 15 (AV) 47 2 37

(MHz)

Power:

2491.20

Polarization: Horizontal

2493.40

Temperature:

Humidity:

(C)

%RH

Site Limit: FCC Part15 (PK)

EUT: True Wireless earbuds

2500.000

47.23

-3.08

44.15

2478.000 2480.20

2482.40

2484.60

2486.80

M/N: SX08 Mode: TX-H Note:

3

27.0

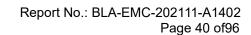
Reading Correct Measure-No. Mk. Limit Over Freq. Level Factor ment MHz dBuV dB/m dBuV/m dBuV/m dB Detector Comment 1 2483.500 54.95 -3.1451.81 74.00 -22.19peak 2483.500 45.86 -3.14 42.72 54.00 -11.28 AVG 2

-29.85

peak

74.00

*:Maximum data x:Over limit !:over margin (Reference Only





[TestMode: TX high channel]; [Polarity: Vertical]

Radiated Emission Measurement Project No.: RE Data :#14 2021/11/17 15:22:45 107.0 dBuV/m 97 87 77 FCC Part15 (PK) 67 57 FCC Part 15 (AV) 47 37 27.0

2491.20 2493.40

Temperature:

Humidity:

(C)

%RH

Polarization: Vertical

Site Limit: FCC Part15 (PK)

EUT: True Wireless earbuds

2478.000 2480.20

2482.40

2484.60

2486.80

M/N: SX08 Mode: TX-H

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment		Over			
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	Comment	
1	*	2483.500	53.37	-3.14	50.23	74.00	-23.77	peak		
2		2500.000	44.70	-3.08	41.62	74.00	-32.38	peak		

Power:

*:Maximum data x:Over limit !:over margin (Reference Only



Page 41 of 96

17 CONDUCTED BAND EDGES MEASUREMENT

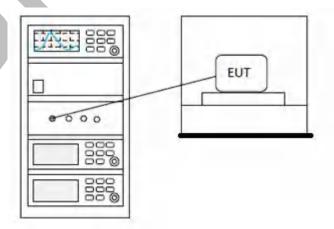
Test Standard	47 CFR Part 15, Subpart C 15.247				
Test Method	ANSI C63.10 (2013) Section 7.8.8 & Section 11.13.3.2				
Test Mode (Pre-Scan)	TX				
Test Mode (Final Test)	TX				
Tester	Jozu				
Temperature	25℃				
Humidity	60%				

17.1 LIMITS

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

17.2 BLOCK DIAGRAM OF TEST SETUP





Page 42 of 96

17.3 TEST DATA





Page 43 of 96

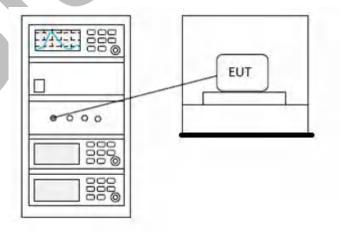
18 DWELL TIME

Test Standard	47 CFR Part 15, Subpart C 15.247				
Test Method	ANSI C63.10 (2013) Section 7.8.4				
Test Mode (Pre-Scan)	TX				
Test Mode (Final Test)	TX				
Tester	Jozu				
Temperature	25℃				
Humidity	60%				

18.1 LIMITS

Frequency(MHz)	Limit			
	0.4S within a 20S period(20dB			
002.029	bandwidth<250kHz)			
902-928	0.4S within a 10S period(20dB			
	bandwidth≥250kHz)			
	0.4S within a period of 0.4S multiplied by the			
2400-2483.5	number			
	of hopping channels			
5725-5850	0.4S within a 30S period			

18.2 BLOCK DIAGRAM OF TEST SETUP





Page 44 of 96

18.3 TEST DATA





Page 45 of 96

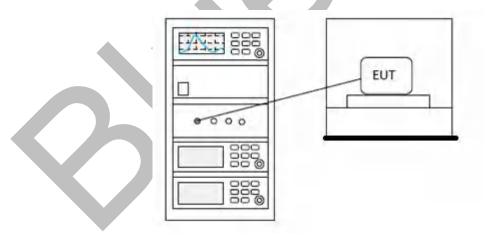
19 HOPPING CHANNEL NUMBER

Test Standard	47 CFR Part 15, Subpart C 15.247		
Fest Method ANSI C63.10 (2013) Section 7.8.3			
Test Mode (Pre-Scan)	TX		
Test Mode (Final Test)	TX		
Tester	Jozu		
Temperature	25℃		
Humidity	60%		

19.1 LIMITS

Frequency range(MHz)	Number of hopping channels (minimum)
002.020	50 for 20dB bandwidth <250kHz
902-928	25 for 20dB bandwidth ≥250kHz
2400-2483.5	15
5725-5850	75

19.2 BLOCK DIAGRAM OF TEST SETUP



19.3 TEST DATA



Page 46 of 96

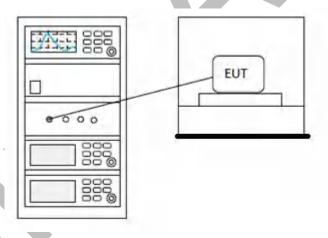
20 CARRIER FREQUENCIES SEPARATION

Test Standard	47 CFR Part 15, Subpart C 15.247		
Test Method ANSI C63.10 (2013) Section 7.8.2			
Test Mode (Pre-Scan)	TX		
Test Mode (Final Test)	TX		
Tester	Jozu		
Temperature	25℃		
Humidity	60%		

20.1 LIMITS

Limit: 2/3 of the 20dB bandwidth base on the transmission power is less than 0.125W

20.2 BLOCK DIAGRAM OF TEST SETUP



20.3 TEST DATA



21 APPENDIX

Report No.: BLA-EMC-202111-A1402 Page 47 of96

Appendix1

Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	Ant1	2.31	21	Pass
NVNT	1-DH1	2441	Ant1	2.021	21	Pass
NVNT	1-DH1	2480	Ant1	3.029	21	Pass
NVNT	2-DH1	2402	Ant1	2.282	21	Pass
NVNT	2-DH1	2441	Ant1	1.976	21	Pass
NVNT	2-DH1	2480	Ant1	2.832	21	Pass
NVNT	3-DH1	2402	Ant1	2.547	21	Pass
NVNT	3-DH1	2441	Ant1	2.182	21	Pass
NVNT	3-DH1	2480	Ant1	2.756	21	Pass

Power NVNT 1-DH1 2402MHz Ant1



Power NVNT 1-DH1 2441MHz Ant1



Apillent Spectrum Analyzer - Swept SA

| R | F | SD2 | AC | SENSE:INT | ALISNAUTO | 10:34:29 AMNAVO 50, 2021
| Center Freq 2.441000000 GHz | PNO; Fast | Avg Type: Log-Pwr | Avg Hold: 100/100 | TRACE | 3:34:56 | TYPE | Avg Hold: 100/100 | PNO; Fast | Avg

Power NVNT 1-DH1 2480MHz Ant1



Power NVNT 2-DH1 2402MHz Ant1





Power NVNT 2-DH1 2441MHz Ant1



Power NVNT 2-DH1 2480MHz Ant1



Power NVNT 3-DH1 2402MHz Ant1



Power NVNT 3-DH1 2441MHz Ant1





Power NVNT 3-DH1 2480MHz Ant1





Page 52 of 96

-20dB Bandwidth

Condition	Mode	Frequency	Antenna	-20 dB Bandwidth	Limit -20 dB	Verdict
		(MHz)		(MHz)	Bandwidth (MHz)	
NVNT	1-DH1	2402	Ant1	0.869	0	Pass
NVNT	1-DH1	2441	Antl	0.861	0	Pass
NVNT	1-DH1	2480	Ant1	0.874	0	Pass
NVNT	2-DH1	2402	Antl	1.206	0	Pass
NVNT	2-DH1	2441	Ant1	1.186	0	Pass
NVNT	2-DH1	2480	Ant1	1.213	0	Pass
NVNT	3-DH1	2402	Ant1	1.196	0	Pass
NVNT	3-DH1	2441	Ant1	1.194	0	Pass
NVNT	3-DH1	2480	Antl	1.206	0	Pass

-20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



-20dB Bandwidth NVNT 1-DH1 2441MHz Ant1



10:34:42 AMNov 05, 2021 Center Freq: 2.441000000 GHz Trig: Free Run Avg #Atten: 30 dB Center Freq 2.441000000 GHz Radio Std: None Avg|Hold: 100/100 Radio Device: BTS #IFGain:Low Mkr3 2.441425 GHz -22,850 dBm Ref Offset 2.03 dB Ref 22.03 dBm Span 2 MHz Sweep 2.667 ms Center 2.441 GHz #Res BW 30 kHz **#VBW 100 kHz Total Power** 7.59 dBm Occupied Bandwidth 824.13 kHz Transmit Freq Error -5.154 kHz **OBW Power** 99.00 % x dB Bandwidth 860.9 kHz -20.00 dB x dB

-20dB Bandwidth NVNT 1-DH1 2480MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2402MHz Ant1



10:36:08 AMNov 05, 2021 Center Freq: 2.402000000 GHz Trig: Free Run Avg #Atten: 30 dB Center Freq 2.402000000 GHz Radio Std: None Avg|Hold: 100/100 Radio Device: BTS #IFGain:Low Mkr3 2.402595 GHz Ref Offset 2.01 dB Ref 22.01 dBm -22.670 dBm Span 2 MHz Sweep 2.667 ms Center 2.402 GHz #Res BW 30 kHz **#VBW 100 kHz Total Power** 7.34 dBm Occupied Bandwidth 1.1370 MHz Transmit Freq Error -7.938 kHz **OBW Power** 99.00 % x dB Bandwidth 1.206 MHz -20.00 dB x dB

-20dB Bandwidth NVNT 2-DH1 2441MHz Ant1



-20dB Bandwidth NVNT 2-DH1 2480MHz Ant1





-20dB Bandwidth NVNT 3-DH1 2402MHz Ant1



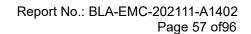
-20dB Bandwidth NVNT 3-DH1 2441MHz Ant1



10:41:31 AMNov 05, 2021 Center Freq: 2.441000000 GHz Trig: Free Run Avg #Atten: 30 dB Center Freq 2.441000000 GHz Radio Std: None Avg|Hold: 100/100 Radio Device: BTS #IFGain:Low Mkr3 2.441602 GHz Ref Offset 2.03 dB Ref 22.03 dBm -19,307 dBm Span 2 MHz Sweep 2.667 ms Center 2.441 GHz #Res BW 30 kHz **#VBW 100 kHz Total Power** 7.66 dBm Occupied Bandwidth 1.1067 MHz Transmit Freq Error 5.254 kHz **OBW Power** 99.00 % x dB Bandwidth 1.194 MHz -20.00 dB x dB

-20dB Bandwidth NVNT 3-DH1 2480MHz Ant1







Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	1-DH1	2402	Ant1	0.8154858507
NVNT	1-DH1	2441	Ant1	0.8381137776
NVNT	1-DH1	2480	Ant1	0.8286689051
NVNT	2-DH1	2402	Ant1	1.13120259
NVNT	2-DH1	2441	Ant1	1.136546235
NVNT	2-DH1	2480	Ant1	1.142045924
NVNT	3-DH1	2402	Ant1	1.090627909
NVNT	3-DH1	2441	Ant1	1.116943797
NVNT	3-DH1	2480	Ant1	1.10483081

OBW NVNT 1-DH1 2402MHz Ant1



OBW NVNT 1-DH1 2441MHz Ant1





OBW NVNT 1-DH1 2480MHz Ant1



OBW NVNT 2-DH1 2402MHz Ant1





OBW NVNT 2-DH1 2441MHz Ant1



OBW NVNT 2-DH1 2480MHz Ant1





OBW NVNT 3-DH1 2402MHz Ant1



OBW NVNT 3-DH1 2441MHz Ant1





OBW NVNT 3-DH1 2480MHz Ant1







Band Edge

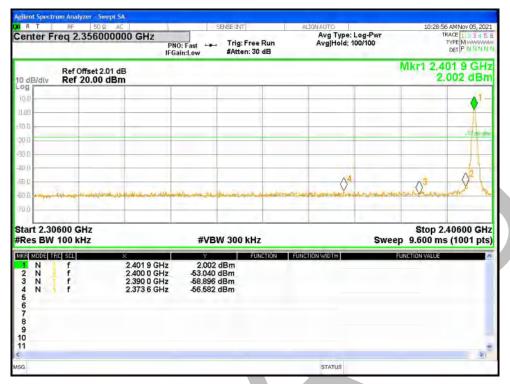
Condition	Mode	Frequency	Antenna	Hopping	Max Value	Limit	Verdict
		(MHz)		Mode	(dBc)	(dBc)	
NVNT	1-DH1	2402	Ant1	No-Hopping	-58.6	-20	Pass
NVNT	1-DH1	2480	Ant1	No-Hopping	-58.02	-20	Pass
NVNT	2-DH1	2402	Ant1	No-Hopping	-56.7	-20	Pass
NVNT	2-DH1	2480	Ant1	No-Hopping	-57.47	-20	Pass
NVNT	3-DH1	2402	Ant1	No-Hopping	-57.87	-20	Pass
NVNT	3-DH1	2480	Ant1	No-Hopping	-56.75	-20	Pass

Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref

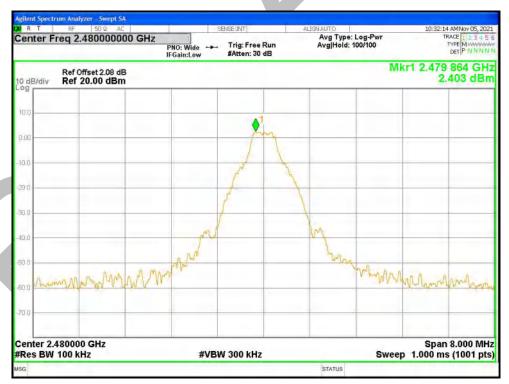


Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission



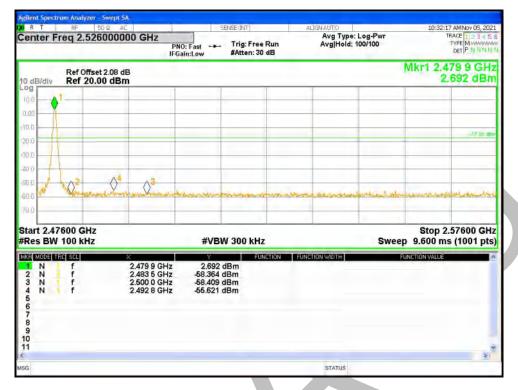


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

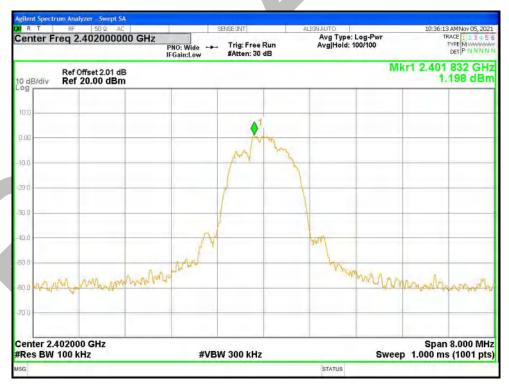


Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission



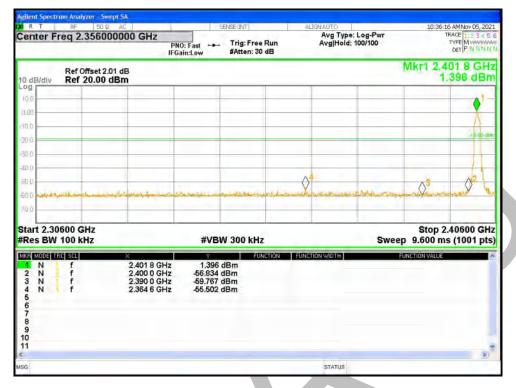


Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref



Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission



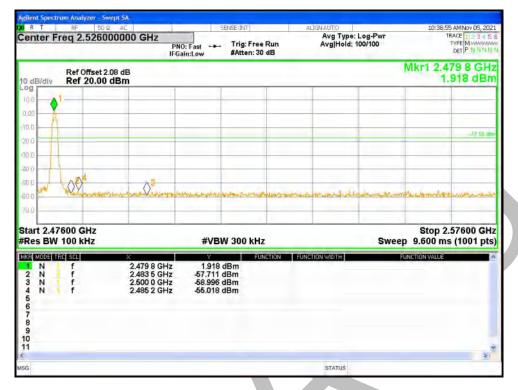


Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref

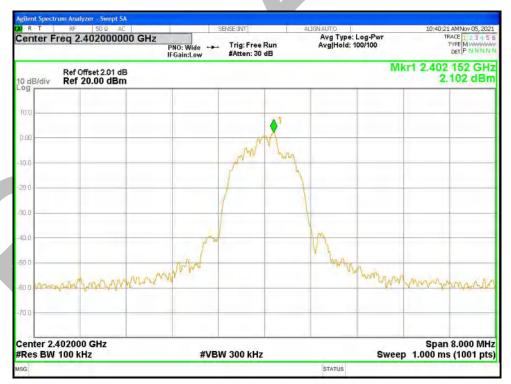


Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission



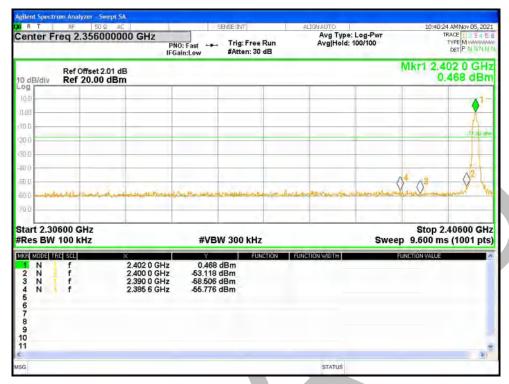


Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref

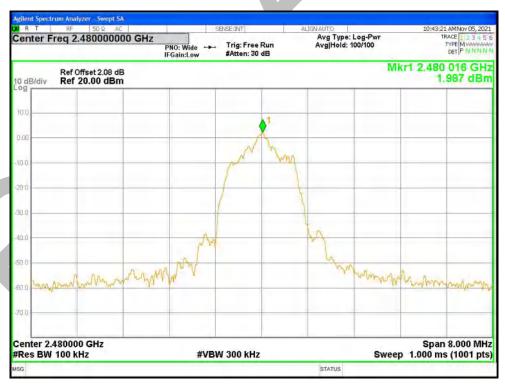


Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission



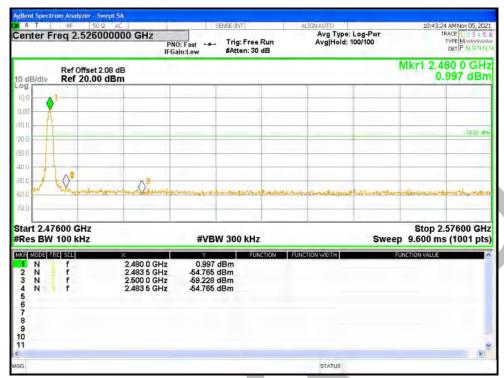


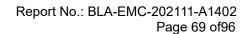
Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref



Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission









Band Edge(Hopping)

Condition	Mode	Frequency	Antenna	Hopping	Max Value	Limit	Verdict
		(MHz)		Mode	(dBc)	(dBc)	
NVNT	1-DH1	2402	Ant1	Hopping	-56.75	-20	Pass
NVNT	1-DH1	2480	Ant1	Hopping	-56.34	-20	Pass
NVNT	2-DH1	2402	Ant1	Hopping	-55.51	-20	Pass
NVNT	2-DH1	2480	Ant1	Hopping	-55.36	-20	Pass
NVNT	3-DH1	2402	Ant1	Hopping	-57.37	-20	Pass
NVNT	3-DH1	2480	Ant1	Hopping	-57.31	-20	Pass

Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission



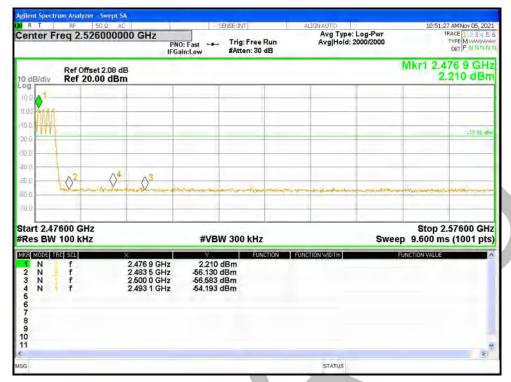


Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission





Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref

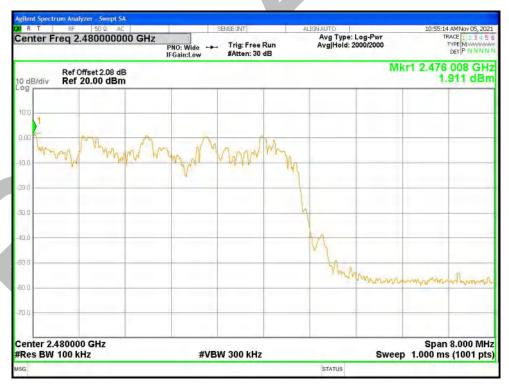


Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Emission



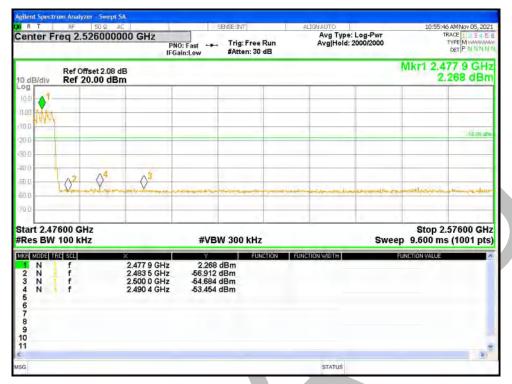


Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref

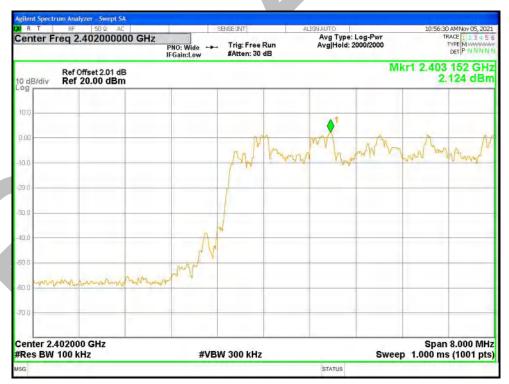


Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission



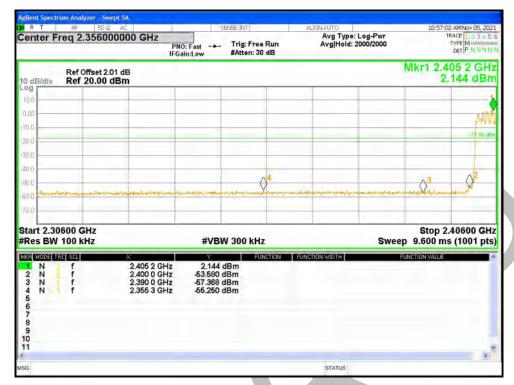


Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission



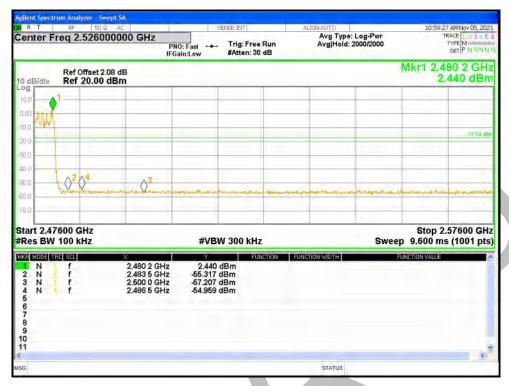


Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref



Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission







Conducted RF Spurious Emission

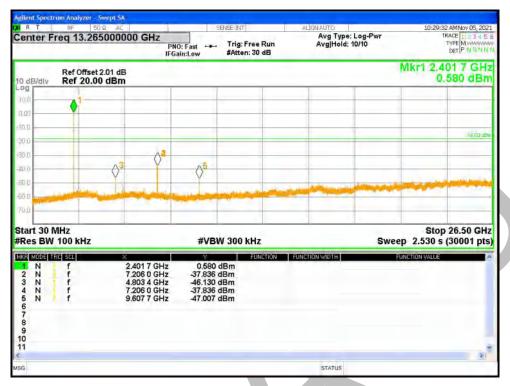
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Ant1	-39.81	-20	Pass
NVNT	1-DH1	2441	Ant1	-41.15	-20	Pass
NVNT	1-DH1	2480	Ant1	-41.08	-20	Pass
NVNT	2-DH1	2402	Ant1	-41.35	-20	Pass
NVNT	2-DH1	2441	Ant1	-39.51	-20	Pass
NVNT	2-DH1	2480	Ant1	-42.53	-20	Pass
NVNT	3-DH1	2402	Ant1	-42.1	-20	Pass
NVNT	3-DH1	2441	Ant1	-40.68	-20	Pass
NVNT	3-DH1	2480	Ant1	-44.05	-20	Pass

Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission



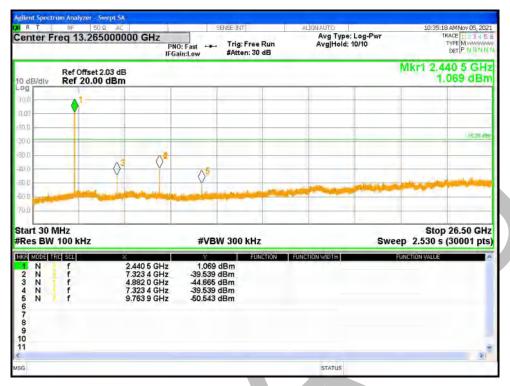


Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission



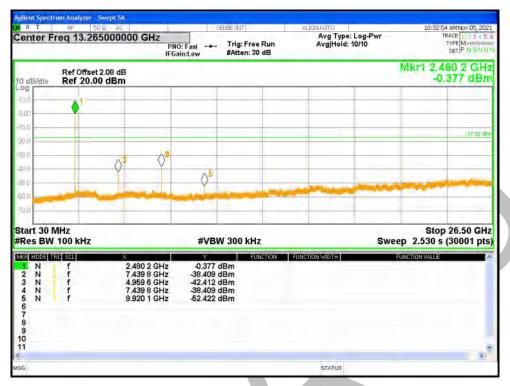


Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission



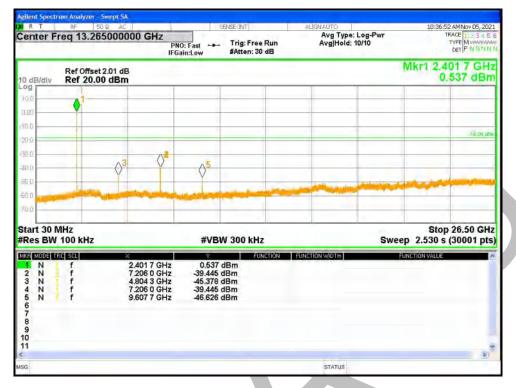


Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission



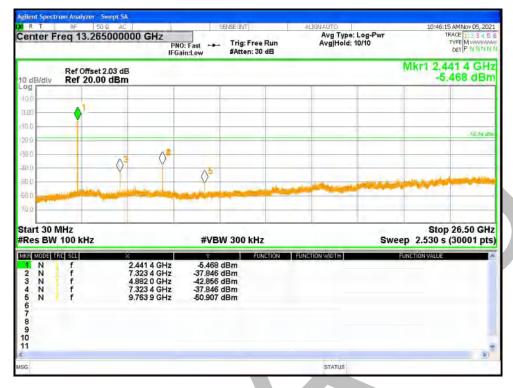


Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission



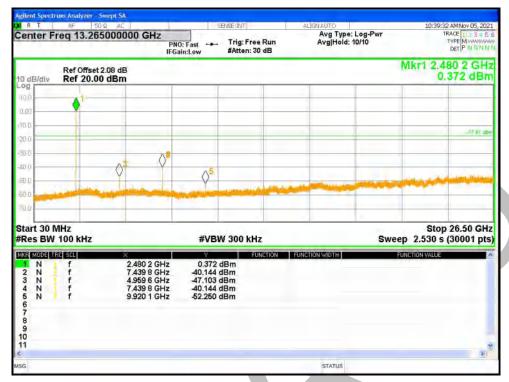


Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission



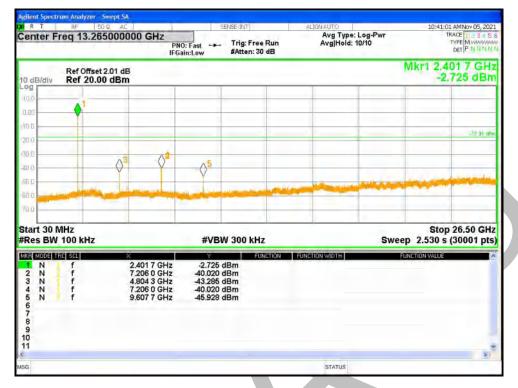


Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission



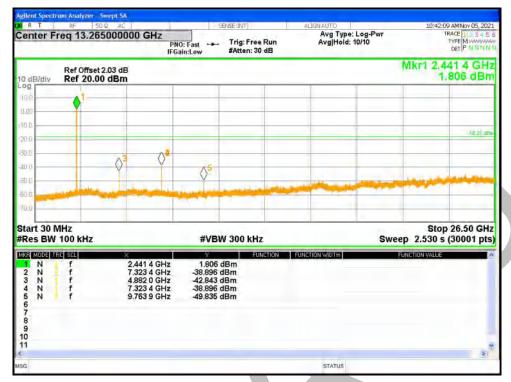


Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission



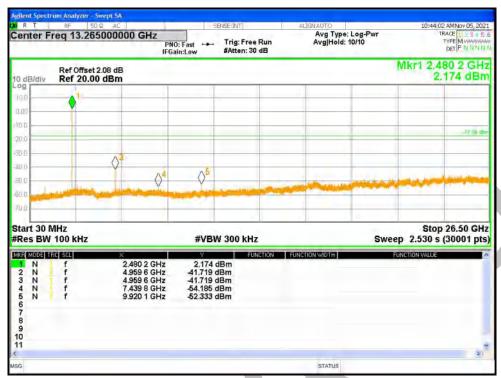


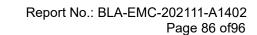
Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref



Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission









Carrier Frequencies Separation

Condition	Mode	Antenna	Hopping Freq1	Hopping Freq2	HFS	Limit	Verdict
			(MHz)	(MHz)	(MHz)	(MHz)	
NVNT	1-DH1	Ant1	2441.005	2441.95	0.945	0.861	Pass
NVNT	2-DH1	Ant1	2441.014	2441.839	0.825	0.791	Pass
NVNT	3-DH1	Ant1	2440.8985	2442.0715	1.173	0.796	Pass





CFS NVNT 2-DH1 2441MHz Ant1





CFS NVNT 3-DH1 2441MHz Ant1





Number of Hopping Channel

Condition	Mode	Antenna	Hopping Number	Limit	Verdict
NVNT	1-DH1	Ant1	79	15	Pass
NVNT	2-DH1	Ant1	79	15	Pass
NVNT	3-DH1	Ant1	79	15	Pass

Hopping No. NVNT 1-DH1 2441MHz Ant1



Hopping No. NVNT 2-DH1 2441MHz Ant1



Center Freq 2.441750000 GHz Avg Type: Log-Pwr Avg|Hold:>100/100 PNO: Fast IFGain:Low Trig: Free Run #Atten: 30 dB DET P N N N N Mkr1 2.401 503 0 GHz Ref Offset 2.03 dB Ref 20.00 dBm -6.731 dBm Stop 2.48350 GHz Sweep 8.000 ms (1001 pts) Start 2.40000 GHz #Res BW 100 kHz **#VBW 300 kHz** MKR MODE TRC SCL -6.731 dBm -4.312 dBm 23456789 1011

Hopping No. NVNT 3-DH1 2441MHz Ant1





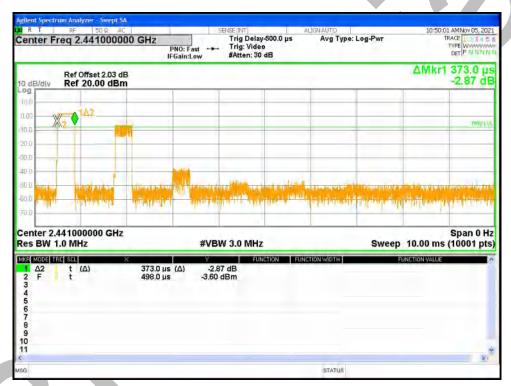
Report No.: BLA-EMC-202111-A1402

Page 90 of 96

Dwell Time

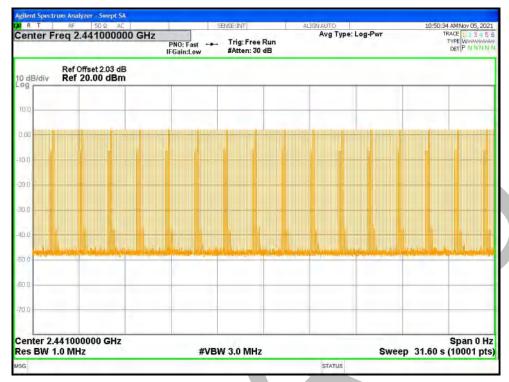
Condition	Mode	Frequency	Antenna	Pulse	Total	Burst	Period	Limit	Verdict
		(MHz)		Time	Dwell	Count	Time	(ms)	
				(ms)	Time		(ms)		
					(ms)				
NVNT	1-DH1	2441	Ant1	0.373	118.987	319	31600	400	Pass
NVNT	1-DH3	2441	Ant1	1.62	257.58	159	31600	400	Pass
NVNT	1-DH5	2441	Ant1	2.868	304.008	106	31600	400	Pass

Dwell NVNT 1-DH1 2441MHz Ant1 One Burst

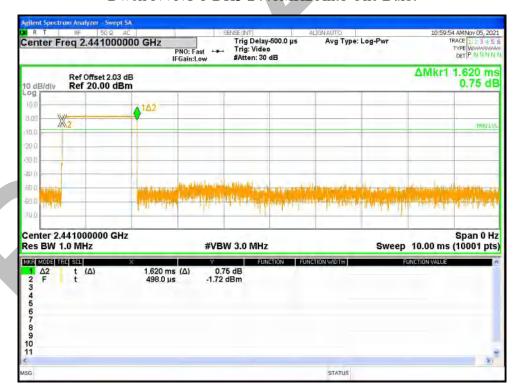


Dwell NVNT 1-DH1 2441MHz Ant1 Accumulated



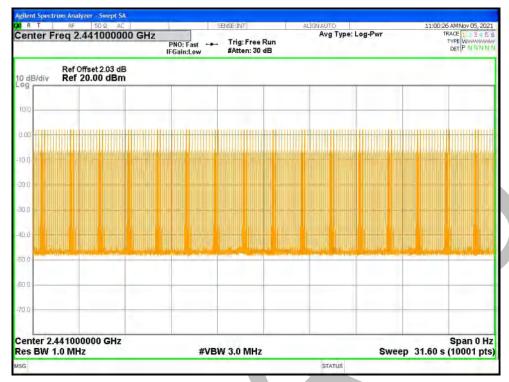


Dwell NVNT 1-DH3 2441MHz Ant1 One Burst

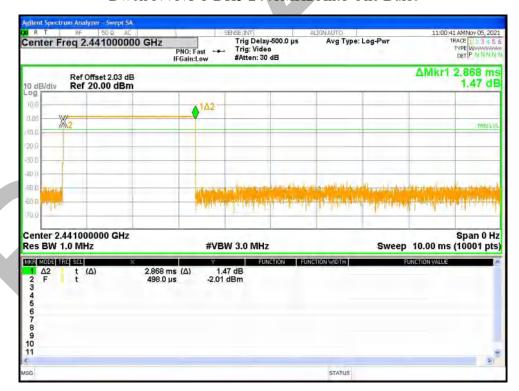


Dwell NVNT 1-DH3 2441MHz Ant1 Accumulated



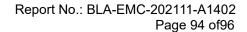


Dwell NVNT 1-DH5 2441MHz Ant1 One Burst



Dwell NVNT 1-DH5 2441MHz Ant1 Accumulated





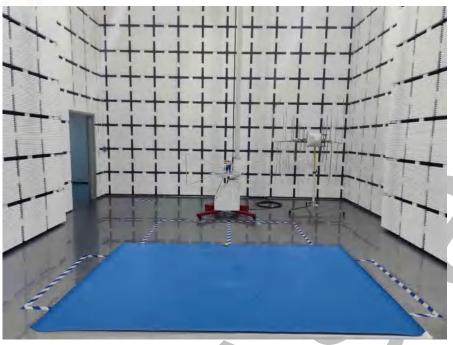


APPENDIX A: PHOTOGRAPHS OF TEST SETUP













Report No.: BLA-EMC-202111-A1402

Page 96 of 96

APPENDIX B: PHOTOGRAPHS OF EUT

Reference to the test report No. BLA-EMC-202111-A1401

----END OF REPORT----

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of BlueAsia, this report can't be reproduced except in full.

