

TEST REPORT

Product Name : Smart Anti-Snore Pillow
Brand Mark : nitetronic
Model No. : Z1
Extension model : Z2, Z3, Z6, Z7, Z8
Report Number : BLA-EMC-202207-A3404
FCC ID : 2A85N-ZXL-US
Date of Sample Receipt : 2022/7/14
Date of Test : 2022/7/14 to 2022/10/21
Date of Issue : 2022/10/21
Test Standard : 47 CFR Part 15, Subpart C 15.247
Test Result : Pass

Prepared for:

Shanghai BackRobo Wellness Co.,Ltd
Room 902, Building B, Hongqiao Free Trade City, No. 125 Laiting South Road, Jiuting Town, Songjiang District, Shanghai

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:

Jozu

Approved by:

Blue Zhong

Review by:

Sueels

Date:

2022/10/21



REPORT REVISE RECORD

Version No.	Date	Description
00	2022/10/21	Original

BlueAsia

TABLE OF CONTENTS

1	TEST SUMMARY	5
2	GENERAL INFORMATION	6
3	GENERAL DESCRIPTION OF E.U.T.	6
4	TEST ENVIRONMENT	7
5	TEST MODE	7
6	MEASUREMENT UNCERTAINTY	7
7	DESCRIPTION OF SUPPORT UNIT	8
8	LABORATORY LOCATION	8
9	TEST INSTRUMENTS LIST	9
10	ANTENNA REQUIREMENT	12
10.1	CONCLUSION	12
11	RADIATED SPURIOUS EMISSIONS	13
11.1	LIMITS	13
11.2	BLOCK DIAGRAM OF TEST SETUP	14
11.3	PROCEDURE	14
11.4	TEST DATA	16
12	RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS	24
12.1	LIMITS	24
12.2	BLOCK DIAGRAM OF TEST SETUP	25
12.3	PROCEDURE	25
12.4	TEST DATA	27
13	CONDUCTED SPURIOUS EMISSIONS	43
13.1	LIMITS	43
13.2	BLOCK DIAGRAM OF TEST SETUP	43
13.3	TEST DATA	44
14	CONDUCTED BAND EDGES MEASUREMENT	45
14.1	LIMITS	45
14.2	BLOCK DIAGRAM OF TEST SETUP	45
14.3	TEST DATA	46

15	MINIMUM 6DB BANDWIDTH	47
15.1	LIMITS	47
15.2	BLOCK DIAGRAM OF TEST SETUP	47
15.3	TEST DATA	47
16	POWER SPECTRUM DENSITY	48
16.1	LIMITS	48
16.2	BLOCK DIAGRAM OF TEST SETUP	48
16.3	TEST DATA	48
17	CONDUCTED PEAK OUTPUT POWER	49
17.1	LIMITS	49
17.2	BLOCK DIAGRAM OF TEST SETUP	49
17.3	TEST DATA	50
18	CONDUCTED EMISSIONS AT AC POWER LINE (150KHZ-30MHZ)	51
18.1	LIMITS	51
18.2	BLOCK DIAGRAM OF TEST SETUP	51
18.3	PROCEDURE	51
18.4	TEST DATA	53
19	APPENDIX	55
	APPENDIX A: PHOTOGRAPHS OF TEST SETUP	105
	APPENDIX B: PHOTOGRAPHS OF EUT	107

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
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 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
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
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 7.8.5 & Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(1) & 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

2 GENERAL INFORMATION

Applicant	Shanghai BackRobo Wellness Co.,Ltd
Address	Room 902, Building B, Hongqiao Free Trade City, No. 125 Laiting South Road, Jiuting Town, Songjiang District, Shanghai
Manufacturer	Shanghai BackRobo Wellness Co.,Ltd
Address	Room 902, Building B, Hongqiao Free Trade City, No. 125 Laiting South Road, Jiuting Town, Songjiang District, Shanghai
Factory	IKEN INDUSTRIAL (SUZHOU) CO., LTD.
Address	Dongying Economic Development Zone,Huangjing Town. Taicang City 215427,JIANGSU Province,China
Product Name	Smart Anti-Snore Pillow
Test Model No.	Z1
Extension model	Z2, Z3, Z6, Z7, Z8
Note	All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are model name for commercial purpose.

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	V0.39
Operation Frequency:	802.11b/g/n(HT20): 2412MHz to 2462MHz 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
Channel Spacing:	5MHz
Number of Channels:	802.11b/g/n(HT20):11 802.11n(HT40):7
Antenna Type:	PCB Antenna
Antenna Gain:	1.97dBi (Provided by the applicant)

4 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25°C	DC5V

5 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
Transmitting mode	Keep the EUT in continuously transmitting mode with modulation. (The duty cycle is greater than 98%)
Remark: Full battery is used during all test except ac conducted emission, 802.11b/g/n(HT20) and 802.11n(HT40) all have been tested, During the radiated spurious emission test, 802.11b/11g/11nH20/11nH40 modulations all have been tested, only worse case 802.11b 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

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, Shiyuan Sub-District, Baoan District, Shenzhen, Guangdong Province,
China
Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673
No tests were sub-contracted.

9 TEST INSTRUMENTS LIST

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	24/9/2022	23/9/2023
Receiver	R&S	ESR7	101199	24/9/2022	23/9/2023
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	26/9/2022	25/9/2023
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	26/9/2022	25/9/2023
Amplifier	SKET	LNPA-0118-45	N/A	24/9/2022	23/9/2023
EMI software	EZ	EZ-EMC	N/A	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	26/9/2022	25/9/2023

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	24/9/2022	23/9/2023
Receiver	R&S	ESR7	101199	24/9/2022	23/9/2023
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	26/9/2022	25/9/2023
Horn Antenna	Schwarzbeck	9120D	01892 P:00331	26/9/2022	25/9/2023
Amplifier	SKET	LNPA-0118-45	N/A	24/9/2022	23/9/2023
EMI software	EZ	EZ-EMC	N/A	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	26/9/2022	25/9/2023

Test Equipment Of Conducted Spurious Emissions					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	24/9/2022	23/9/2023
Spectrum	Agilent	N9020A	MY49100060	24/9/2022	23/9/2023
Signal Generator	Agilent	N5182A	MY49060650	24/9/2022	23/9/2023
Signal Generator	Agilent	E8257D	MY44320250	24/9/2022	23/9/2023

Test Equipment Of Conducted Band Edges Measurement					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	24/9/2022	23/9/2023
Spectrum	Agilent	N9020A	MY49100060	24/9/2022	23/9/2023
Signal Generator	Agilent	N5182A	MY49060650	24/9/2022	23/9/2023
Signal Generator	Agilent	E8257D	MY44320250	24/9/2022	23/9/2023

Test Equipment Of Minimum 6dB Bandwidth					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	24/9/2022	23/9/2023
Spectrum	Agilent	N9020A	MY49100060	24/9/2022	23/9/2023
Signal Generator	Agilent	N5182A	MY49060650	24/9/2022	23/9/2023
Signal Generator	Agilent	E8257D	MY44320250	24/9/2022	23/9/2023

Test Equipment Of Power Spectrum Density					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	24/9/2022	23/9/2023

Spectrum	Agilent	N9020A	MY49100060	24/9/2022	23/9/2023
Signal Generator	Agilent	N5182A	MY49060650	24/9/2022	23/9/2023
Signal Generator	Agilent	E8257D	MY44320250	24/9/2022	23/9/2023

Test Equipment Of Conducted Peak Output Power

Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	24/9/2022	23/9/2023
Spectrum	Agilent	N9020A	MY49100060	24/9/2022	23/9/2023
Signal Generator	Agilent	N5182A	MY49060650	24/9/2022	23/9/2023
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
Shield room	SKET	833	N/A	25/11/2020	24/11/2023
Receiver	R&S	ESPI3	101082	24/9/2022	23/9/2023
LISN	R&S	ENV216	3560.6550.15	24/9/2022	23/9/2023
LISN	安泰信	AT166-2	AKK1806000003	26/9/2022	25/9/2023
EMI software	EZ	EZ-EMC	N/A	N/A	N/A

10 ANTENNA REQUIREMENT

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

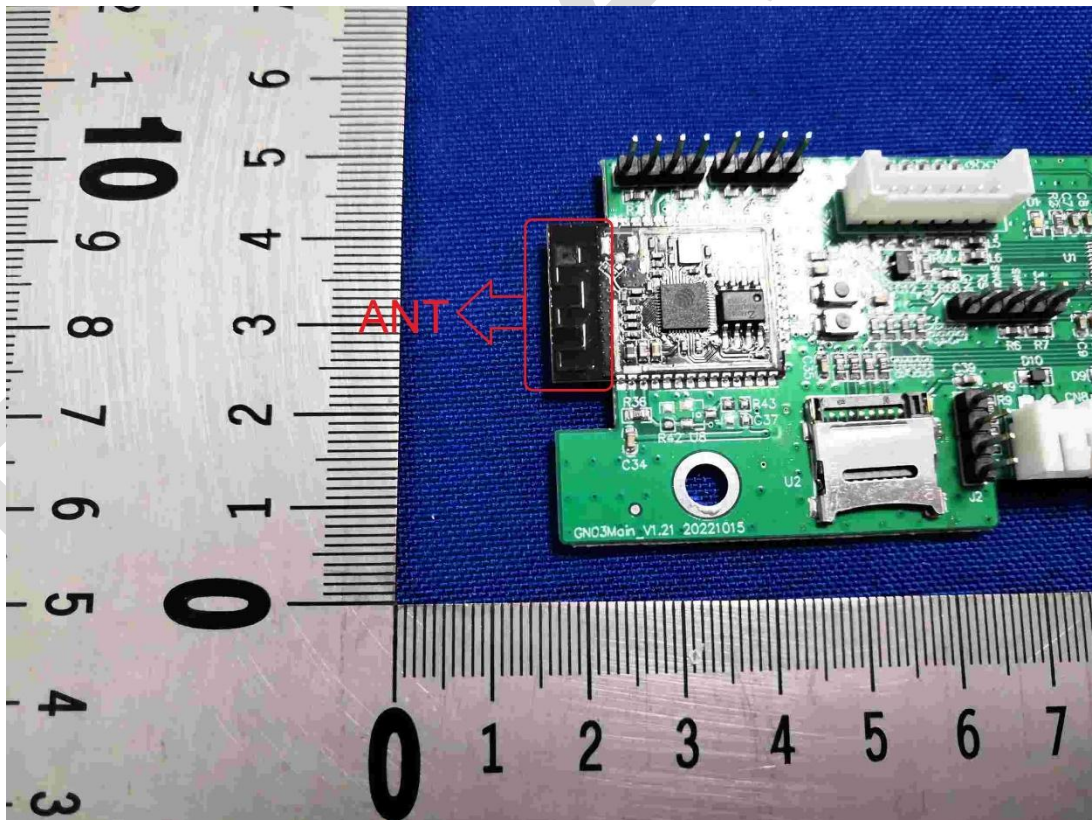
10.1 CONCLUSION

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 an 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 1.97dBi.



11 RADIATED SPURIOUS EMISSIONS

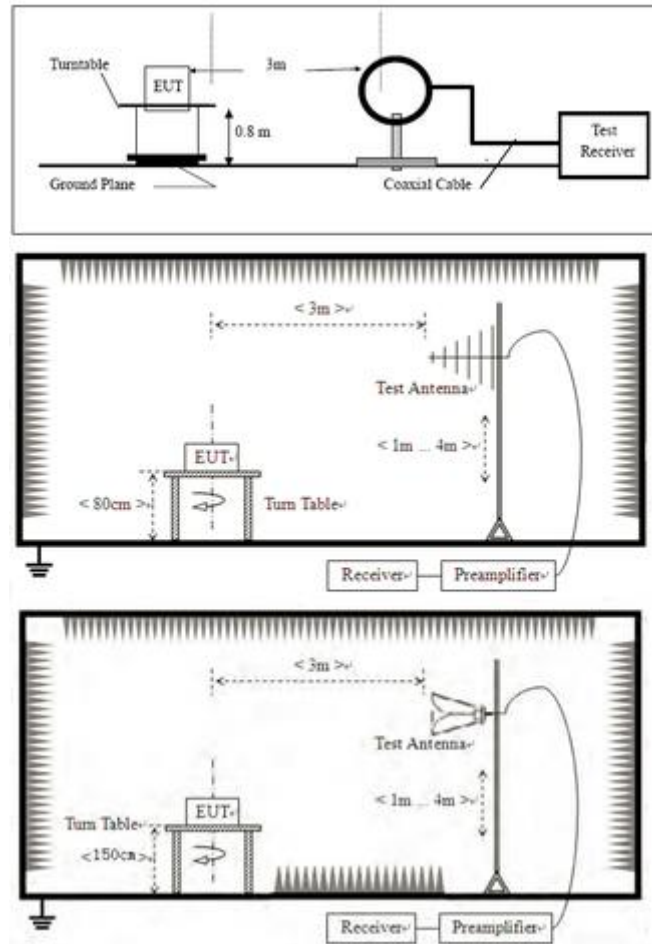
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Jozu
Temperature	25℃
Humidity	60%

11.1 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.

11.2 BLOCK DIAGRAM OF TEST SETUP



11.3 PROCEDURE

- 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.
- 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.
- 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.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.

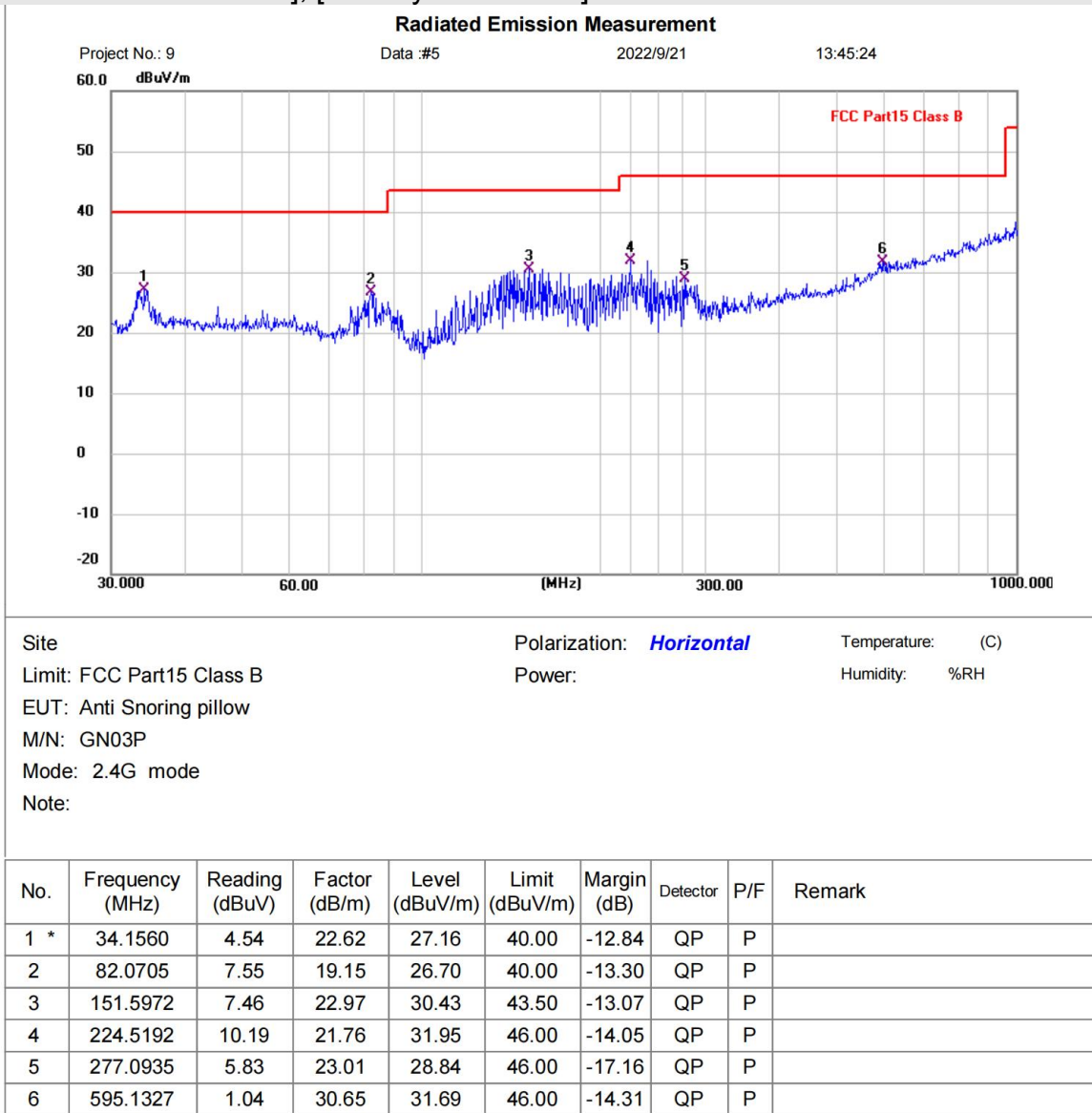
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- j. Repeat above procedures until all frequencies measured was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

11.4 TEST DATA

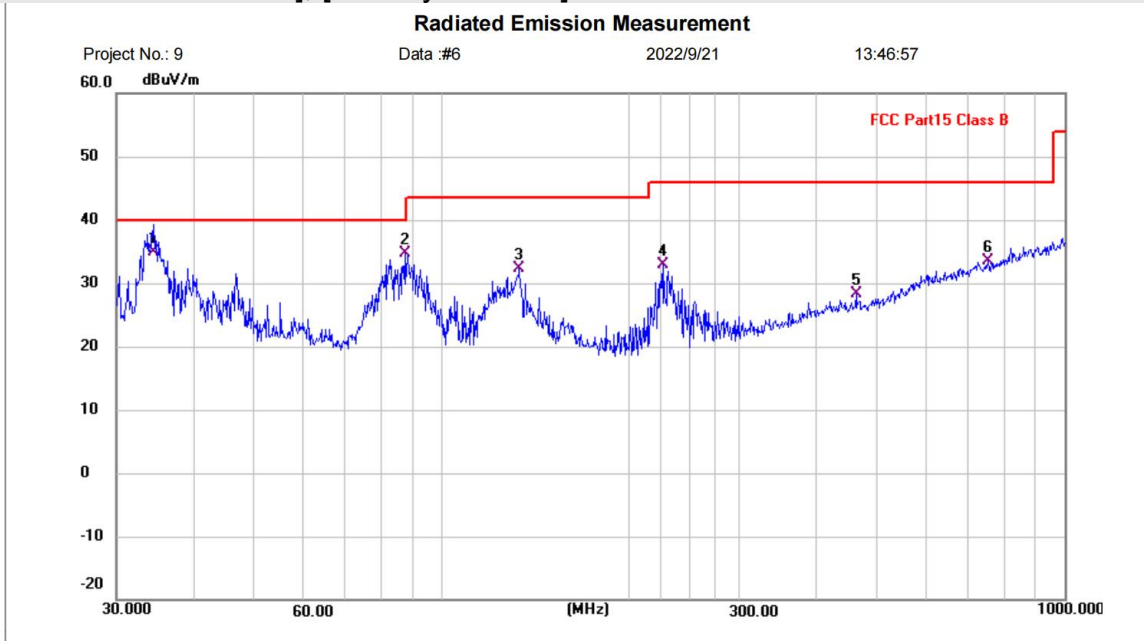
[Test Mode: TX below 1G]; [Polarity: Horizontal]



*:Maximum data x:Over limit !:over margin

Test Result: Pass

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



Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 Class B Power: Humidity: %RH
EUT: Anti Snoring pillow
M/N: GN03P
Mode: 2.4G mode
Note:

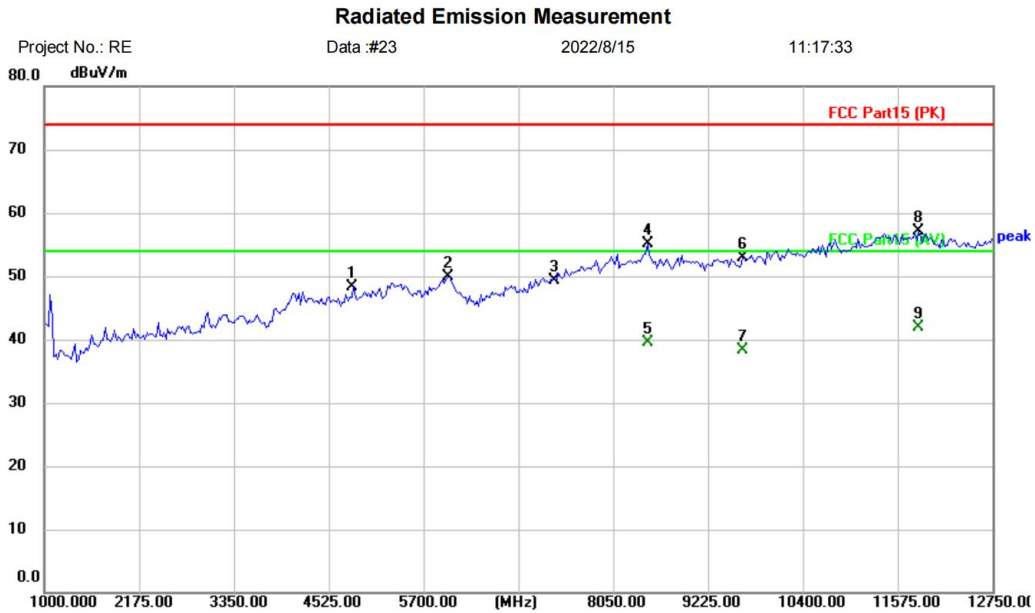
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	34.3964	12.22	22.68	34.90	40.00	-5.10	QP	P	
2	87.1116	15.66	18.97	34.63	40.00	-5.37	QP	P	
3	133.1510	9.46	22.76	32.22	43.50	-11.28	QP	P	
4	226.8936	11.07	21.85	32.92	46.00	-13.08	QP	P	
5	462.3455	0.90	27.38	28.28	46.00	-17.72	QP	P	
6	752.7431	0.88	32.69	33.57	46.00	-12.43	QP	P	

*:Maximum data x:Over limit !:over margin

Test Result: Pass

Remark: During the test, pre-scan the 802.11b/g/n mode, and found the 802.11b mode which it is worse case.

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



Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Bluetooth voice remote control
 M/N: HTR-U29
 Mode: 11B TX-L
 Note:

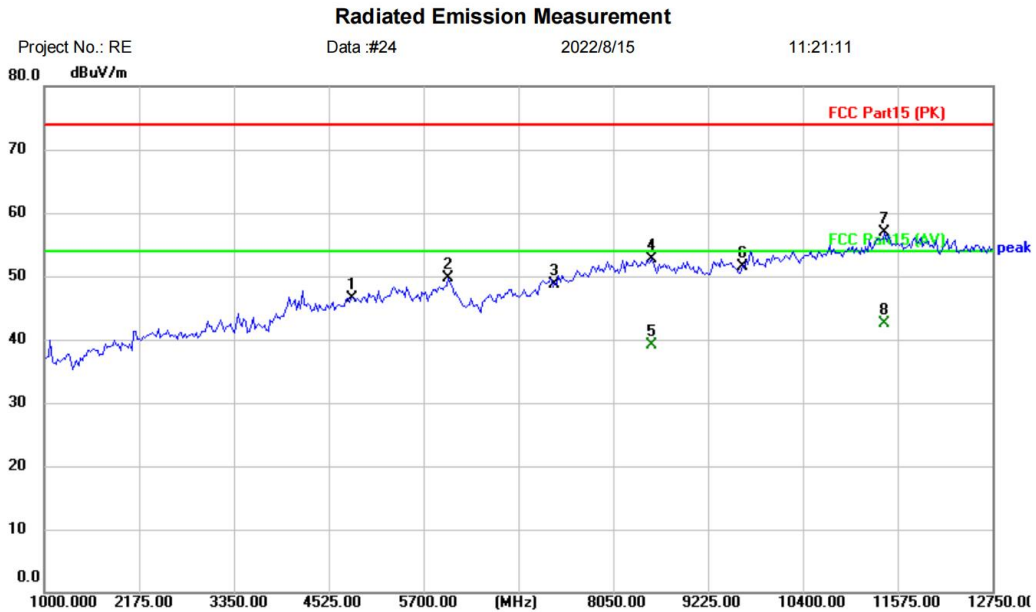
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	42.68	5.61	48.29	74.00	-25.71	peak	
2		6005.500	43.16	6.76	49.92	74.00	-24.08	peak	
3		7326.000	39.30	10.03	49.33	74.00	-24.67	peak	
4		8473.000	42.21	12.92	55.13	74.00	-18.87	peak	
5		8473.000	26.56	12.92	39.48	54.00	-14.52	AVG	
6		9648.000	39.72	13.11	52.83	74.00	-21.17	peak	
7		9648.000	25.20	13.11	38.31	54.00	-15.69	AVG	
8		11833.500	40.06	16.98	57.04	74.00	-16.96	peak	
9	*	11833.500	24.83	16.98	41.81	54.00	-12.19	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

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



Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Bluetooth voice remote control
 M/N: HTR-U29
 Mode: 11B TX-L
 Note:

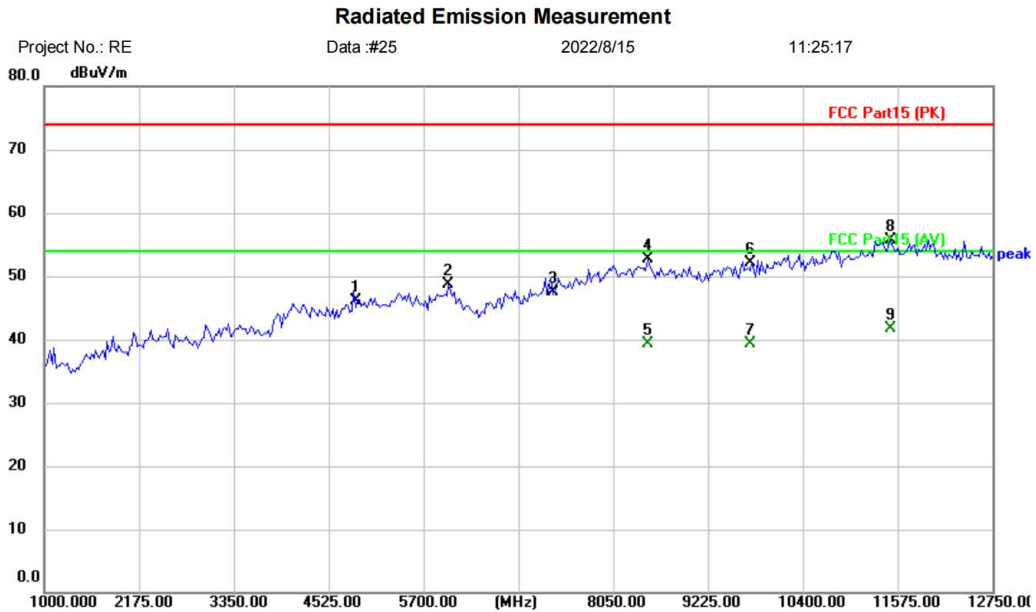
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4824.000	40.81	5.61	46.42	74.00	-27.58	peak	
2		6005.500	43.03	6.76	49.79	74.00	-24.21	peak	
3		7326.000	38.61	10.03	48.64	74.00	-25.36	peak	
4		8520.000	39.74	12.98	52.72	74.00	-21.28	peak	
5		8520.000	26.05	12.98	39.03	54.00	-14.97	AVG	
6		9648.000	38.49	13.11	51.60	74.00	-22.40	peak	
7		11410.500	39.46	17.48	56.94	74.00	-17.06	peak	
8	*	11410.500	24.98	17.48	42.46	54.00	-11.54	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

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



Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Bluetooth voice remote control
 M/N: HTR-U29
 Mode: 11B TX-M
 Note:

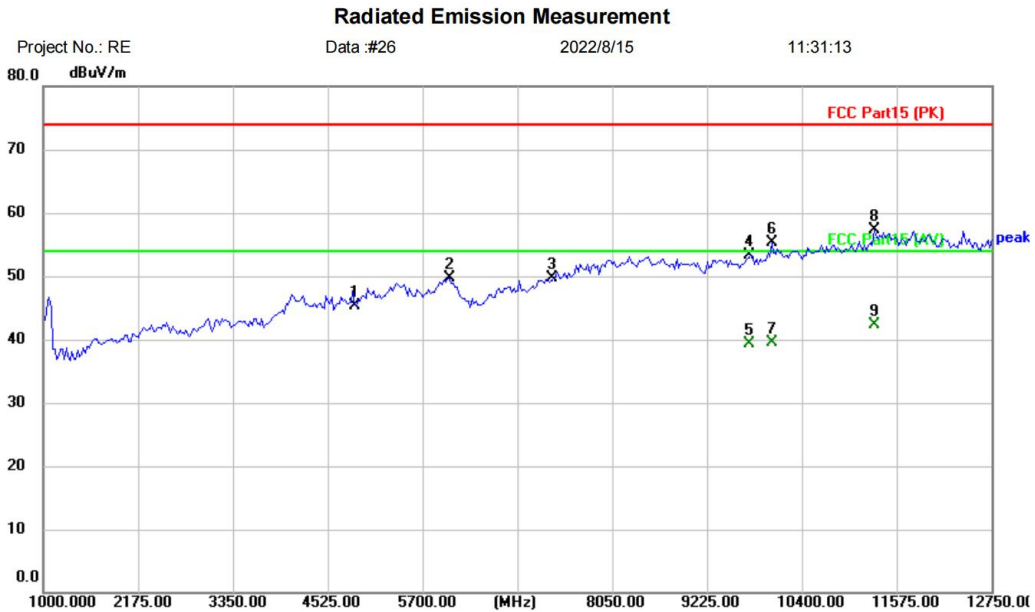
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4874.000	40.30	5.78	46.08	74.00	-27.92	peak	
2		6005.500	41.99	6.76	48.75	74.00	-25.25	peak	
3		7311.000	37.58	9.97	47.55	74.00	-26.45	peak	
4		8473.000	39.72	12.92	52.64	74.00	-21.36	peak	
5		8473.000	26.38	12.92	39.30	54.00	-14.70	AVG	
6		9748.000	38.03	14.02	52.05	74.00	-21.95	peak	
7		9748.000	25.36	14.02	39.38	54.00	-14.62	AVG	
8		11481.000	38.14	17.51	55.65	74.00	-18.35	peak	
9	*	11481.000	24.27	17.51	41.78	54.00	-12.22	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

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



Project No.: RE Data :#26 2022/8/15 11:31:13
 Site Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Bluetooth voice remote control
 M/N: HTR-U29
 Mode: 11B TX-M
 Note:

No.	Mk.	Freq.	Reading	Correct	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		4874.000	39.49	5.78	45.27	74.00	-28.73	peak	
2		6029.000	42.86	6.80	49.66	74.00	-24.34	peak	
3		7311.000	39.73	9.97	49.70	74.00	-24.30	peak	
4		9748.000	39.38	14.02	53.40	74.00	-20.60	peak	
5		9748.000	25.34	14.02	39.36	54.00	-14.64	AVG	
6		10024.000	40.11	15.28	55.39	74.00	-18.61	peak	
7		10024.000	24.14	15.28	39.42	54.00	-14.58	AVG	
8		11293.000	40.15	17.07	57.22	74.00	-16.78	peak	
9	*	11293.000	25.14	17.07	42.21	54.00	-11.79	AVG	

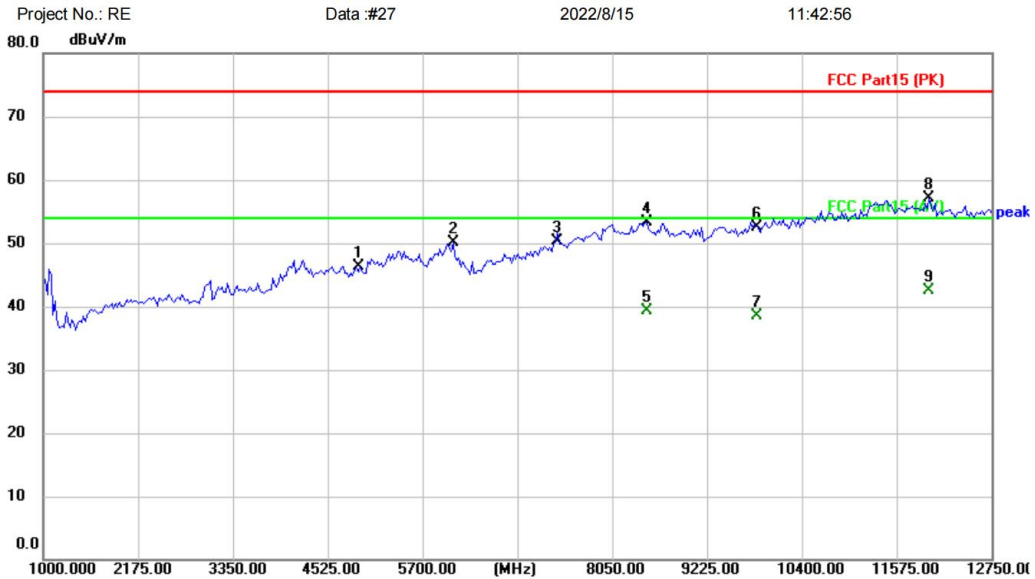
*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

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

Radiated Emission Measurement



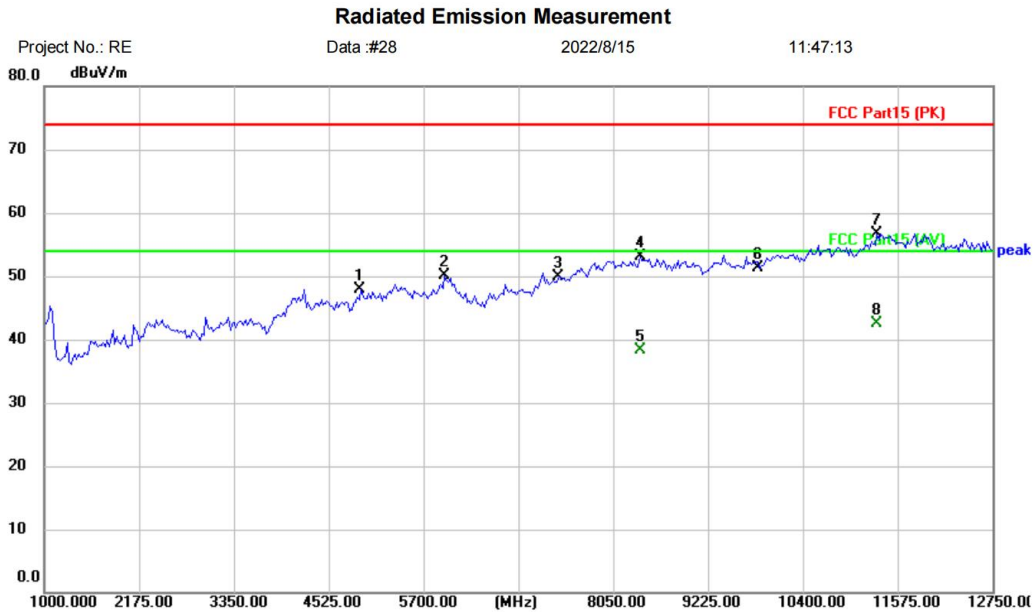
Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Bluetooth voice remote control		
M/N: HTR-U29		
Mode: 11B TX-H		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		4924.000	40.02	6.26	46.28	74.00	-27.72	peak	
2		6076.000	43.15	6.90	50.05	74.00	-23.95	peak	
3		7386.000	40.03	10.24	50.27	74.00	-23.73	peak	
4		8473.000	40.32	12.92	53.24	74.00	-20.76	peak	
5		8473.000	26.33	12.92	39.25	54.00	-14.75	AVG	
6		9848.000	37.85	14.67	52.52	74.00	-21.48	peak	
7		9848.000	23.89	14.67	38.56	54.00	-15.44	AVG	
8		11974.500	39.69	17.32	57.01	74.00	-16.99	peak	
9	*	11974.500	25.23	17.32	42.55	54.00	-11.45	AVG	

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

Test Result: Pass

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



Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Bluetooth voice remote control
 M/N: HTR-U29
 Mode: 11B TX-H
 Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		4924.000	41.69	6.26	47.95	74.00	-26.05	peak	
2		5958.500	40.73	9.45	50.18	74.00	-23.82	peak	
3		7386.000	39.59	10.24	49.83	74.00	-24.17	peak	
4		8379.000	40.32	12.71	53.03	74.00	-20.97	peak	
5		8379.000	25.58	12.71	38.29	54.00	-15.71	AVG	
6		9848.000	36.55	14.67	51.22	74.00	-22.78	peak	
7		11316.500	39.61	17.16	56.77	74.00	-17.23	peak	
8	*	11316.500	25.31	17.16	42.47	54.00	-11.53	AVG	

*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

12 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°C
Humidity	60%

12.1 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.

12.2 BLOCK DIAGRAM OF TEST SETUP



12.3 PROCEDURE

- 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.
- 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.
- 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.
- 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.
- 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.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- 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.

- 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.

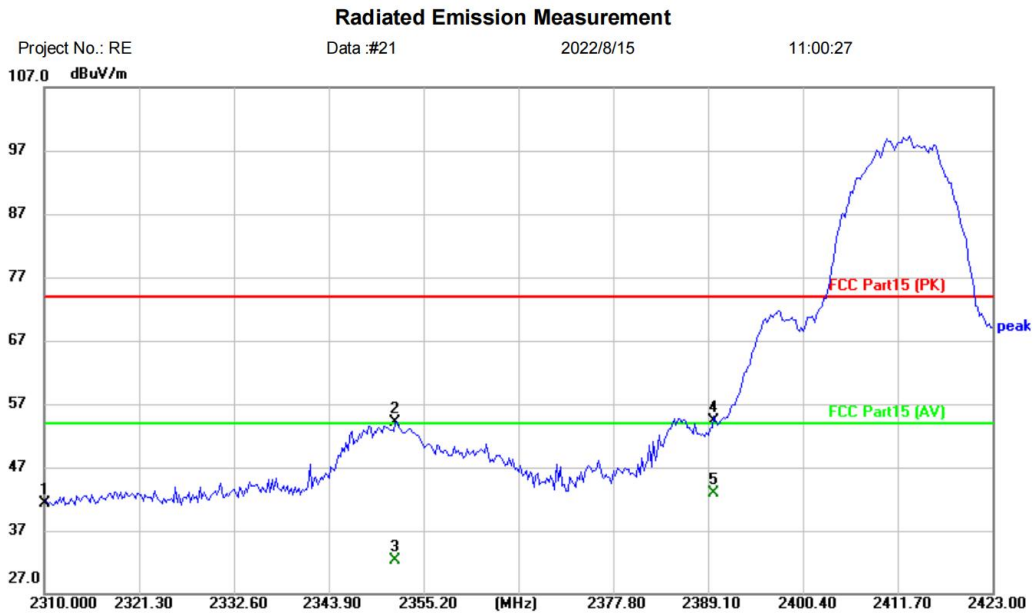
Remark 1: $Level = Read\ Level + Cable\ Loss + Antenna\ Factor - Preamp\ Factor$

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.

BlueAsia

12.4 TEST DATA

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



Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Bluetooth voice remote control
 M/N: HTR-U29
 Mode: 11B TX-L
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1		2310.000	44.29	-3.02	41.27	74.00	-32.73	peak	
2		2351.810	56.86	-2.74	54.12	74.00	-19.88	peak	
3		2351.810	35.12	-2.74	32.38	54.00	-21.62	AVG	
4		2390.000	56.75	-2.50	54.25	74.00	-19.75	peak	
5	*	2390.000	45.34	-2.50	42.84	54.00	-11.16	AVG	

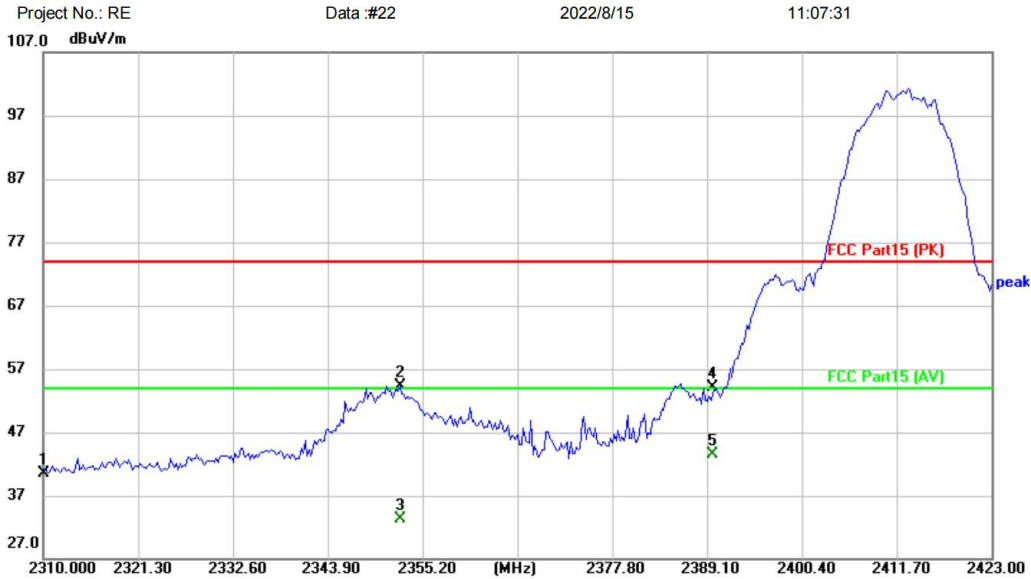
*:Maximum data x:Over limit !:over margin

(Reference Only)

Test Result: Pass

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

Radiated Emission Measurement



Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Bluetooth voice remote control
 M/N: HTR-U29
 Mode: 11B TX-L
 Note:

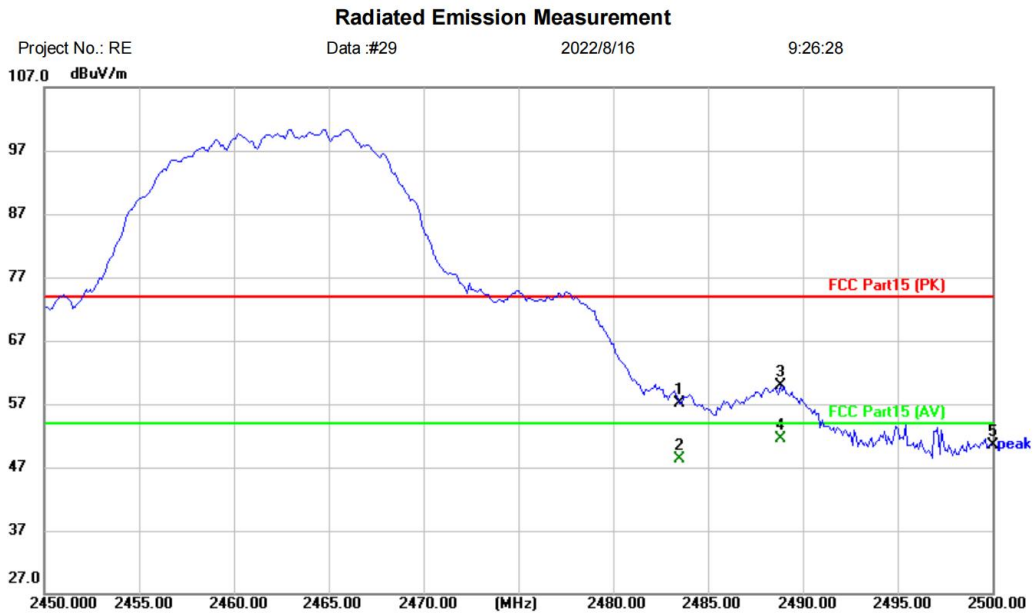
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	43.51	-3.02	40.49	74.00	-33.51	peak	
2		2352.488	57.14	-2.74	54.40	74.00	-19.60	peak	
3		2352.488	36.09	-2.74	33.35	54.00	-20.65	AVG	
4		2390.000	56.67	-2.50	54.17	74.00	-19.83	peak	
5	*	2390.000	46.05	-2.50	43.55	54.00	-10.45	AVG	

*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass

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



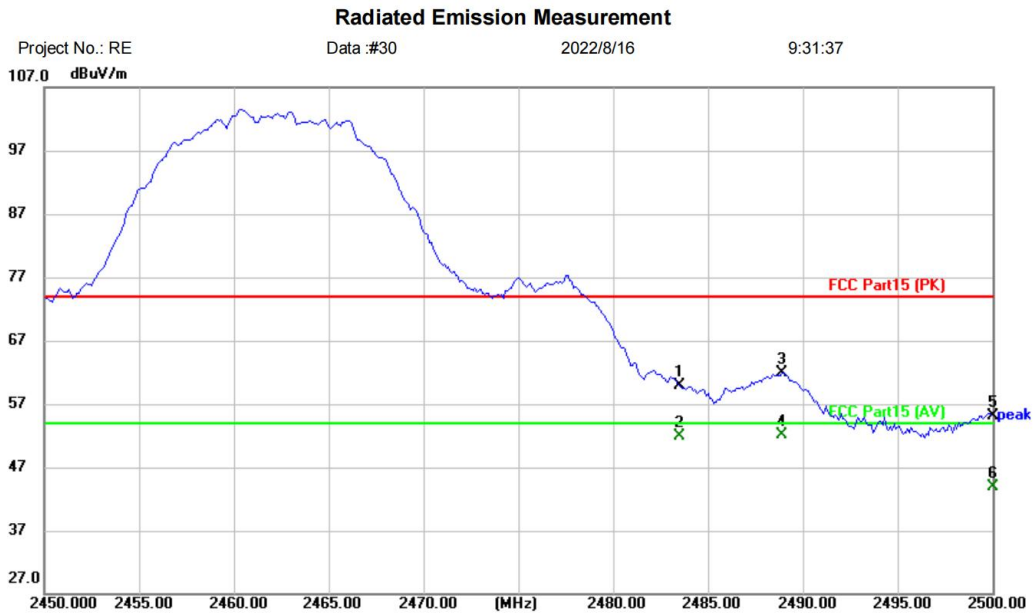
Site	Polarization: Vertical	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Bluetooth voice remote control		
M/N: HTR-U29		
Mode: 11B TX-H		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	59.68	-2.52	57.16	74.00	-16.84	peak	
2		2483.500	50.83	-2.52	48.31	54.00	-5.69	AVG	
3		2488.800	62.38	-2.54	59.84	74.00	-14.16	peak	
4	*	2488.800	54.03	-2.54	51.49	54.00	-2.51	AVG	
5		2500.000	53.02	-2.55	50.47	74.00	-23.53	peak	

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

Test Result: Pass

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



Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: Bluetooth voice remote control		
M/N: HTR-U29		
Mode: 11B TX-H		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2483.500	62.52	-2.52	60.00	74.00	-14.00	peak	
2		2483.500	54.36	-2.52	51.84	54.00	-2.16	AVG	
3		2488.900	64.53	-2.54	61.99	74.00	-12.01	peak	
4	*	2488.900	54.72	-2.54	52.18	54.00	-1.82	AVG	
5		2500.000	57.66	-2.55	55.11	74.00	-18.89	peak	
6		2500.000	46.49	-2.55	43.94	54.00	-10.06	AVG	

*:Maximum data x:Over limit !:over margin

<Reference Only

Test Result: Pass