

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.

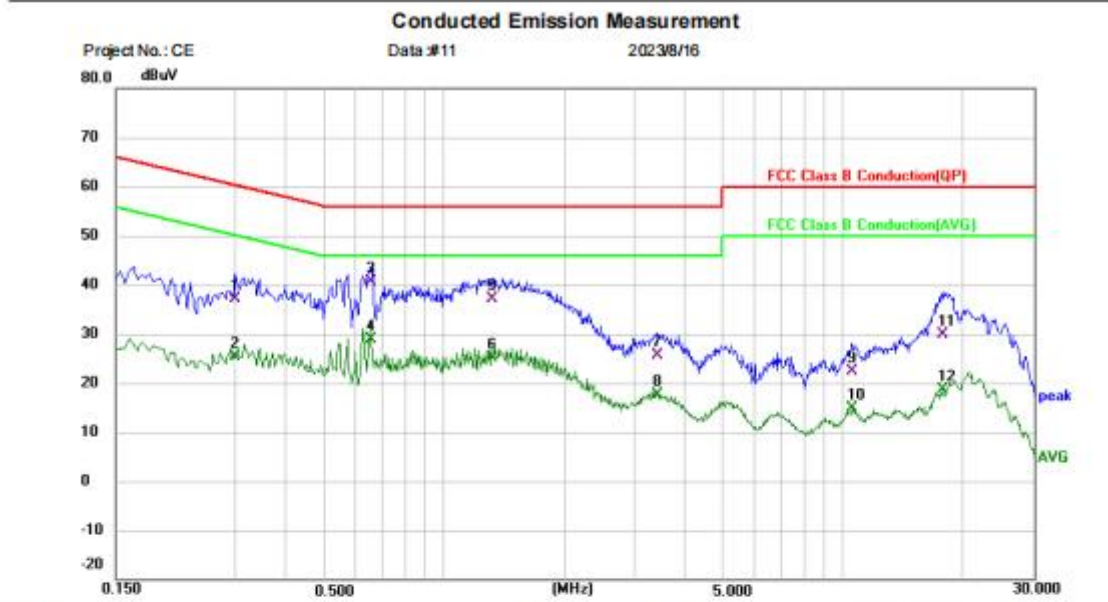
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.

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

BlueAsia

16.4 TEST DATA

[TestMode: TX mode]; [Line: Nutral]; [Power: 120V/60Hz]

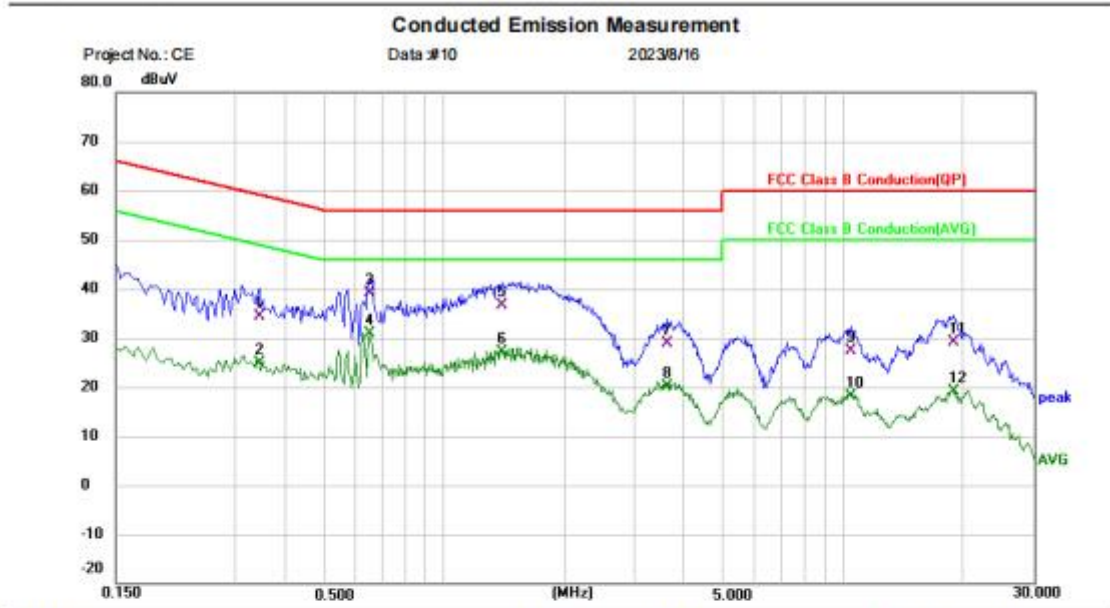


Project No.: CE
 Data #11
 2023/8/16
 Site: _____ Phase: **N** Temperature: _____ (C)
 Limit: FCC Class B Conduction(QP) Power: _____ Humidity: _____ %RH
 EUT: WIRELESS BLUETOOTH SPEAKER Distance: _____ RBW: 9 KHz
 M/N: M21 VBW: 30 KHz Sweep Time: 10 ms
 Mode: TX mode
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	cm	degree	Comment
1		0.2980	27.14	10.07	37.21	60.30	-23.09	QP		
2		0.2980	15.25	10.07	25.32	50.30	-24.98	AVG		
3	*	0.6540	30.47	10.04	40.51	56.00	-15.49	QP		
4		0.6540	18.92	10.04	28.96	46.00	-17.04	AVG		
5		1.3220	27.06	10.04	37.10	56.00	-18.90	QP		
6		1.3220	15.15	10.04	25.19	46.00	-20.81	AVG		
7		3.4260	15.59	9.97	25.56	56.00	-30.44	QP		
8		3.4260	7.55	9.97	17.52	46.00	-28.48	AVG		
9		10.5140	12.32	9.95	22.27	60.00	-37.73	QP		
10		10.5140	4.95	9.95	14.90	50.00	-35.10	AVG		
11		17.7540	19.83	10.03	29.86	60.00	-30.14	QP		
12		17.7540	8.48	10.03	18.51	50.00	-31.49	AVG		

Test Result: Pass

[TestMode: TX mode]; [Line: Line]; [Power:120V/60Hz]



Site: Phase: **L1** Temperature: (C)
 Limit: FCC Class B Conduction(QP) Power: Humidity: %RH
 EUT: WIRELESS BLUETOOTH SPEAKER Distance: RBW: 9 KHz
 M/N: M21 VBW: 30 KHz Sweep Time: 10 ms
 Mode: TX mode
 Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV	Limit dBuV	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1	0.3420	24.21	10.07	34.28	59.15	-24.87	QP			
2	0.3420	14.80	10.07	24.87	49.15	-24.28	AVG			
3	0.6500	29.03	10.08	39.11	56.00	-16.89	QP			
4 *	0.6500	20.70	10.08	30.78	46.00	-15.22	AVG			
5	1.3980	26.46	10.19	36.65	56.00	-19.35	QP			
6	1.3980	16.97	10.19	27.16	46.00	-18.84	AVG			
7	3.6100	18.84	10.15	28.99	56.00	-27.01	QP			
8	3.6100	10.03	10.15	20.18	46.00	-25.82	AVG			
9	10.4420	17.13	10.13	27.26	60.00	-32.74	QP			
10	10.4420	8.11	10.13	18.24	50.00	-31.76	AVG			
11	18.8340	19.24	10.00	29.24	60.00	-30.76	QP			
12	18.8340	9.23	10.00	19.23	50.00	-30.77	AVG			

Test Result: Pass

17 RADIATED SPURIOUS EMISSIONS

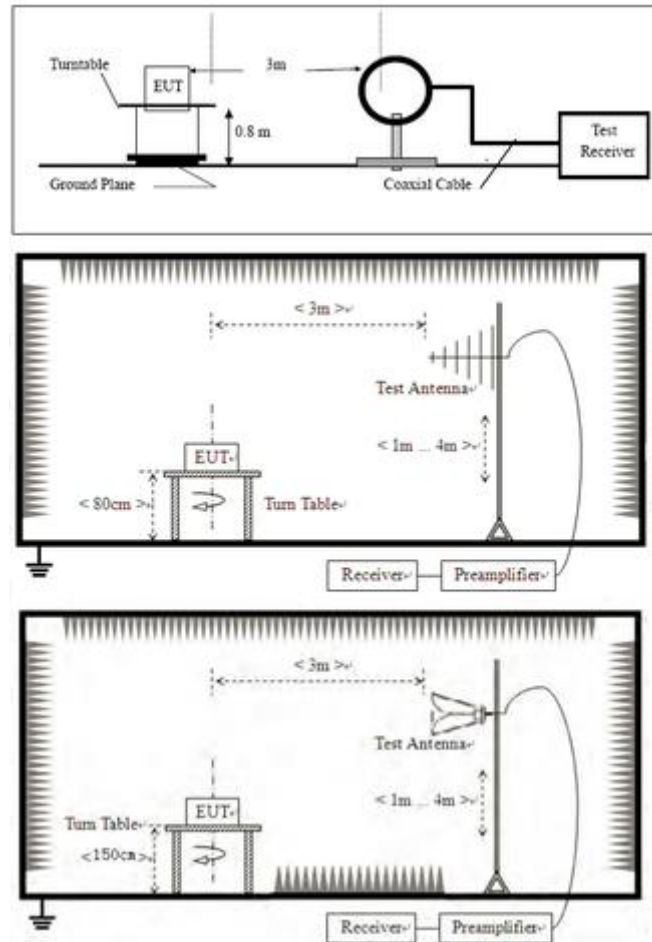
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.4,6.5,6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25°C
Humidity	60%

17.1 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.

17.2 BLOCK DIAGRAM OF TEST SETUP



17.3 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.

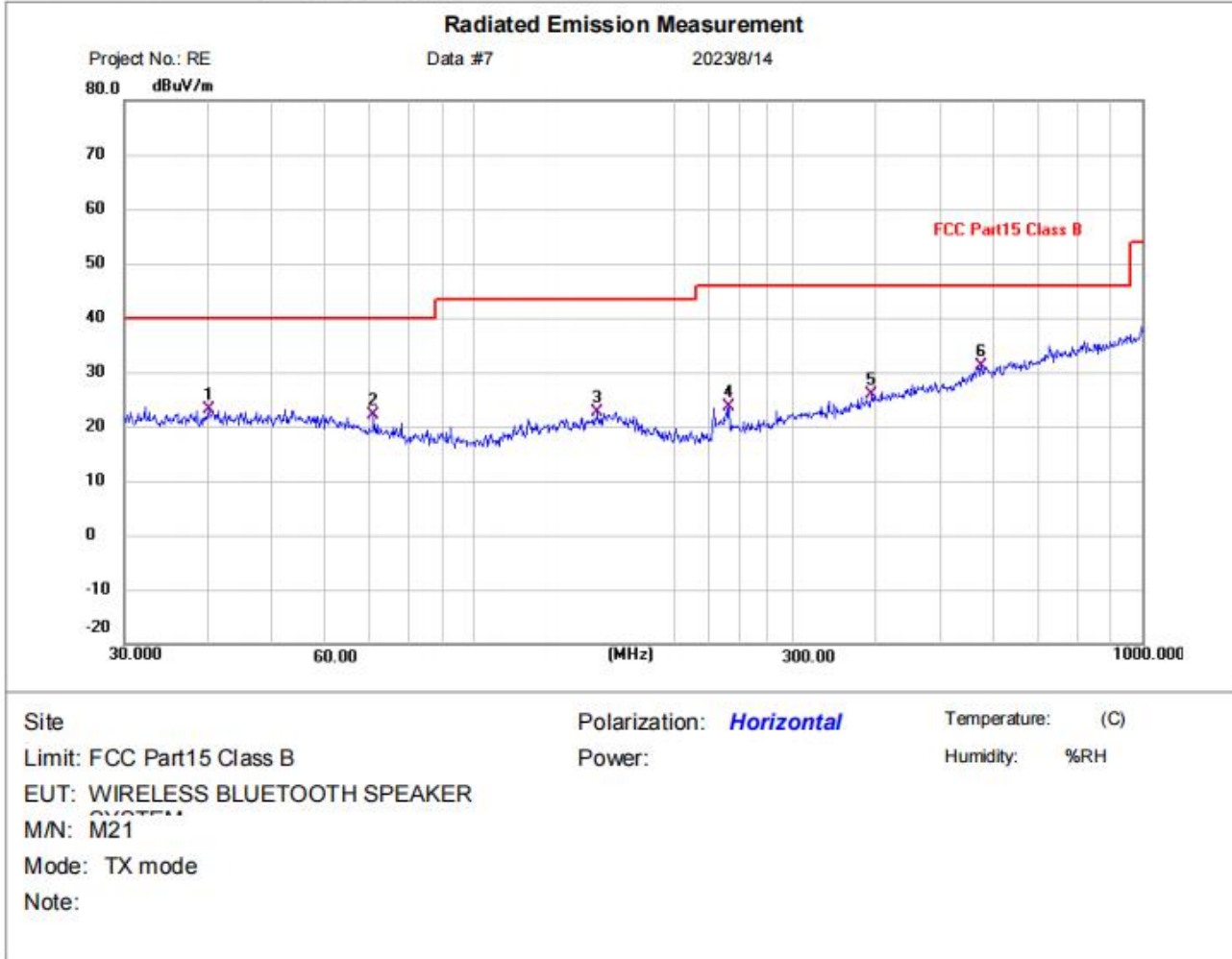
Remark:

- 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.

17.4 TEST DATA

Below 1GHz

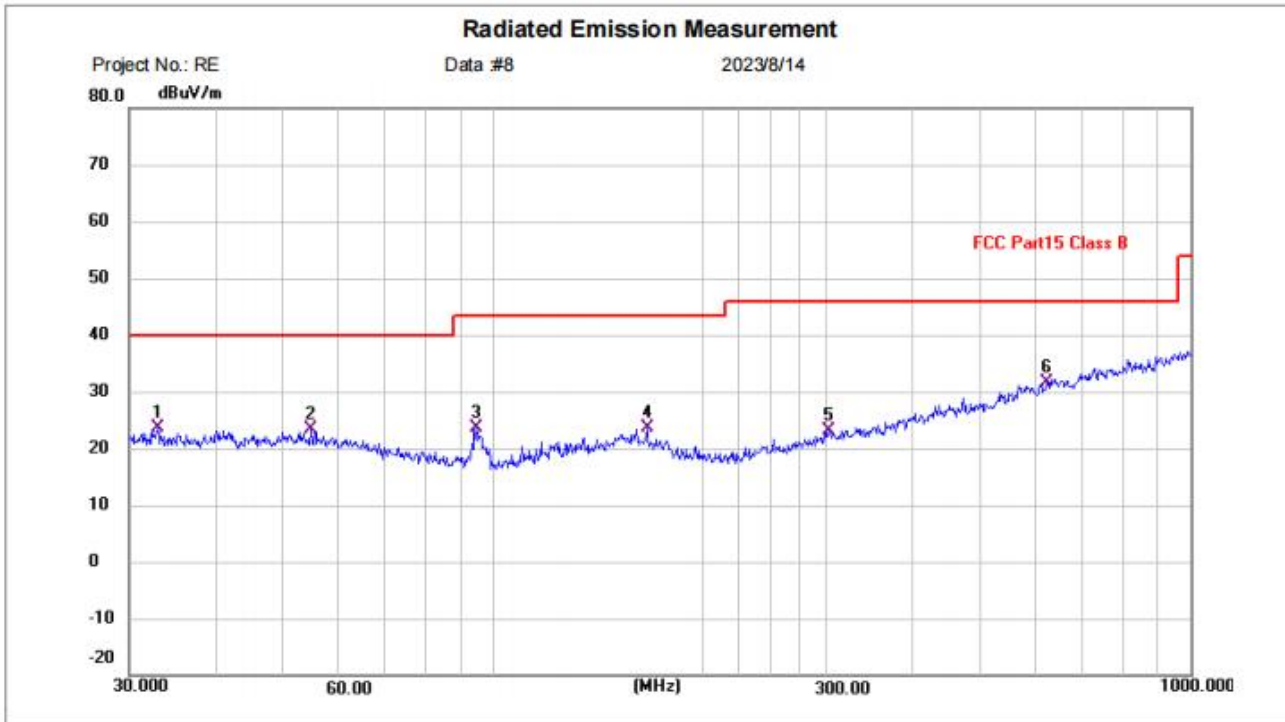
[TestMode: TX]; [Polarity: Horizontal]



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	40.1347	-0.77	23.83	23.06	40.00	-16.94	QP	P	
2	70.8315	1.13	20.89	22.02	40.00	-17.98	QP	P	
3	153.2003	-1.03	23.70	22.67	43.50	-20.83	QP	P	
4	240.8303	2.48	21.17	23.65	46.00	-22.35	QP	P	
5	393.4723	0.01	25.79	25.80	46.00	-20.20	QP	P	
6 *	574.6258	1.69	29.51	31.20	46.00	-14.80	QP	P	

Test Result: Pass

[TestMode: TX]; [Polarity: Vertical]

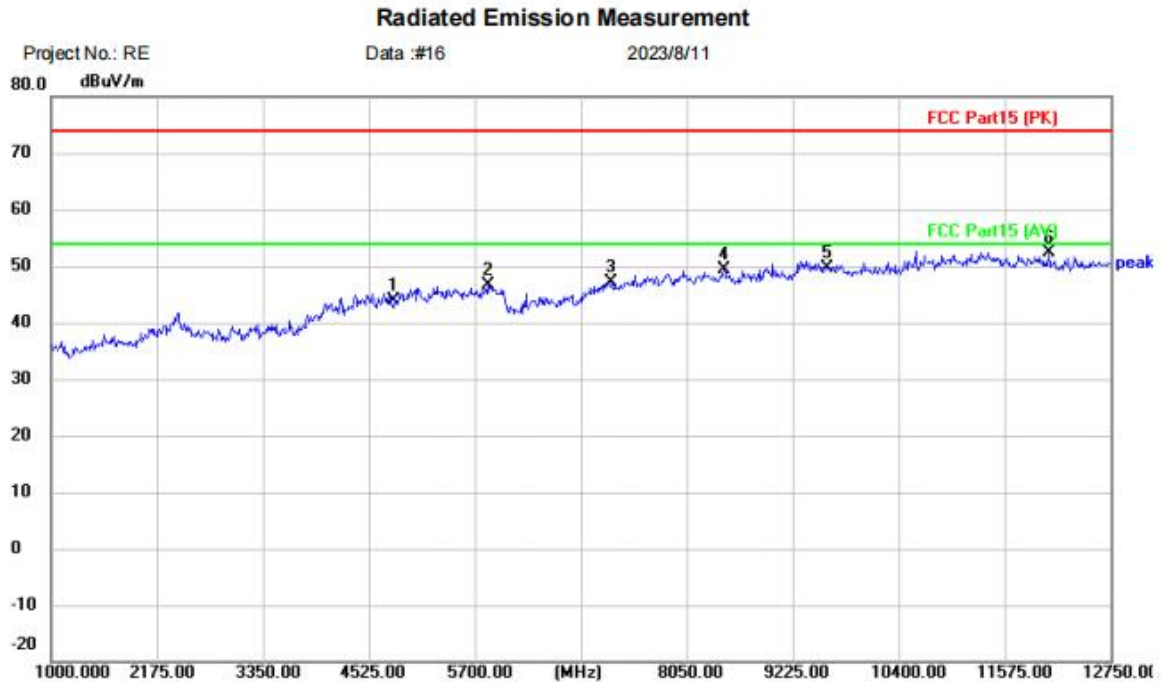


Site: Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 Class B Power: Humidity: %RH
 EUT: WIRELESS BLUETOOTH SPEAKER SYSTEM
 M/N: M21
 Mode: TX mode
 Note:

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	32.9791	0.79	22.89	23.68	40.00	-16.32	QP	P	
2	54.6429	0.18	23.08	23.26	40.00	-16.74	QP	P	
3	94.4284	4.58	19.02	23.60	43.50	-19.90	QP	P	
4	166.0680	0.18	23.40	23.58	43.50	-19.92	QP	P	
5	302.4812	-0.26	23.48	23.22	46.00	-22.78	QP	P	
6 *	620.7096	0.54	31.11	31.65	46.00	-14.35	QP	P	

Test Result: Pass

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



Site Polarization: **Vertical** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: WIRELESS BLUETOOTH SPEAKER

M/N: M21

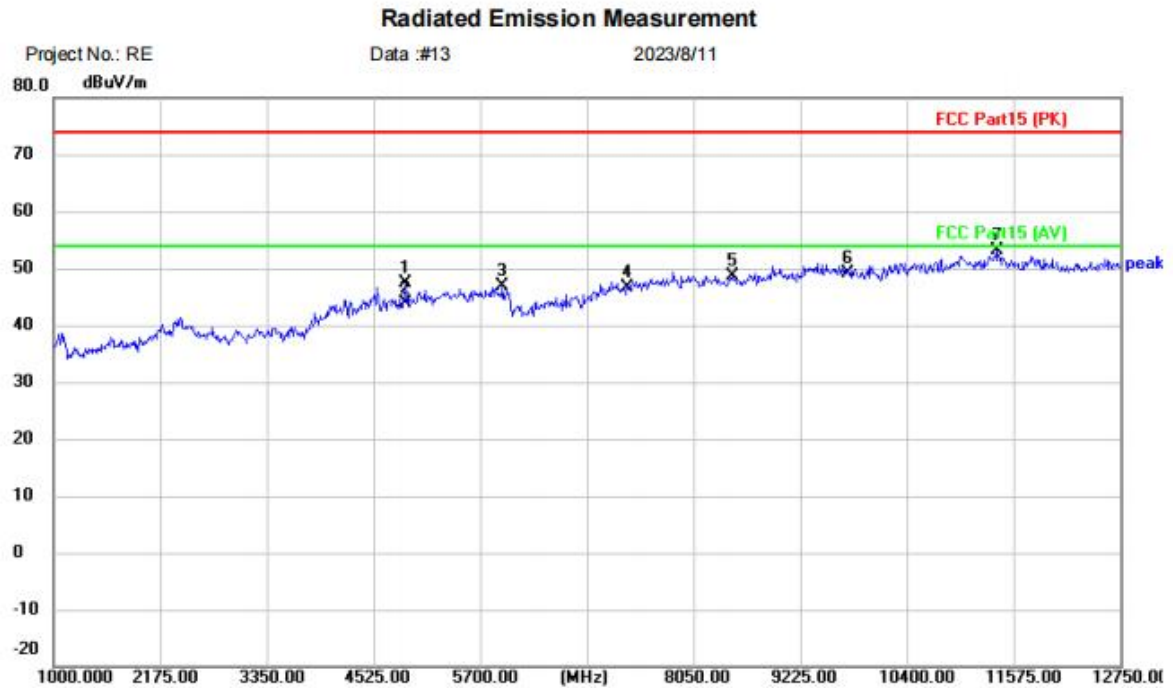
Mode: TX-L

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4804.000	39.41	4.51	43.92	74.00	-30.08	peak	
2		5841.000	40.05	6.49	46.54	74.00	-27.46	peak	
3		7206.000	39.78	7.41	47.19	74.00	-26.81	peak	
4		8461.250	40.05	9.25	49.30	74.00	-24.70	peak	
5		9608.000	38.00	11.59	49.59	74.00	-24.41	peak	
6	*	12068.50	39.33	13.15	52.48	74.00	-21.52	peak	

Test Result: Pass

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



Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: WIRELESS BLUETOOTH SPEAKER
 M/N: M21
 Mode: TX-M
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		4877.500	42.75	4.59	47.34	74.00	-26.66	peak	
2		4882.000	39.28	4.60	43.88	74.00	-30.12	peak	
3		5946.750	40.10	6.73	46.83	74.00	-27.17	peak	
4		7323.000	38.89	7.82	46.71	74.00	-27.29	peak	
5		8473.000	39.43	9.31	48.74	74.00	-25.26	peak	
6		9764.000	37.44	11.76	49.20	74.00	-24.80	peak	
7	*	11398.75	39.82	13.41	53.23	74.00	-20.77	peak	

Test Result: Pass

18 RADIATED EMISSIONS WHICH FALL IN THE RESTRICTED BANDS

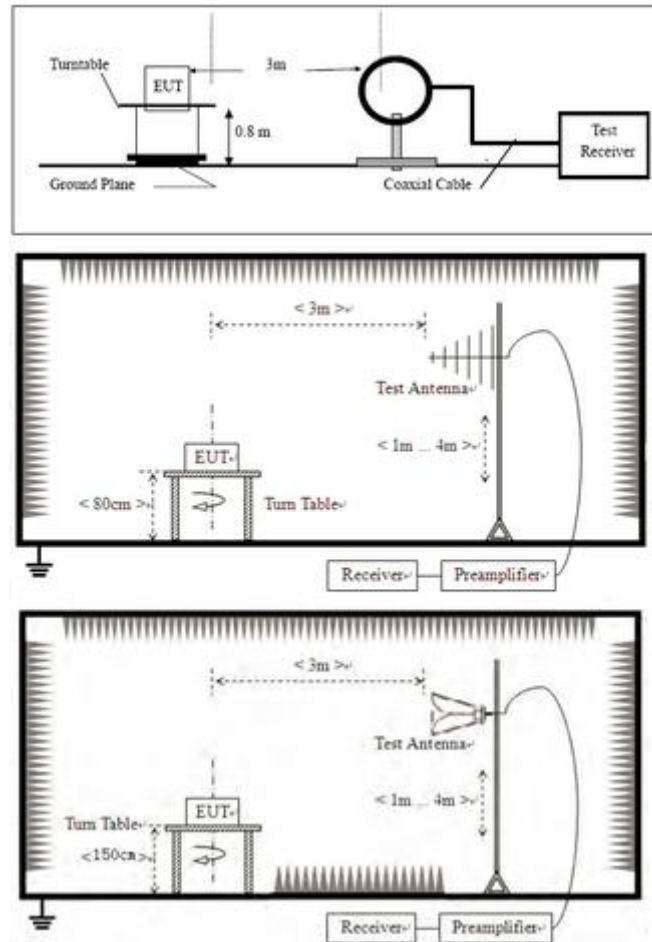
Test Standard	47 CFR Part 15, Subpart C 15.247
Test Method	ANSI C63.10 (2013) Section 6.10.5
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25°C
Humidity	60%

18.1 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.

18.2 BLOCK DIAGRAM OF TEST SETUP



18.3 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.

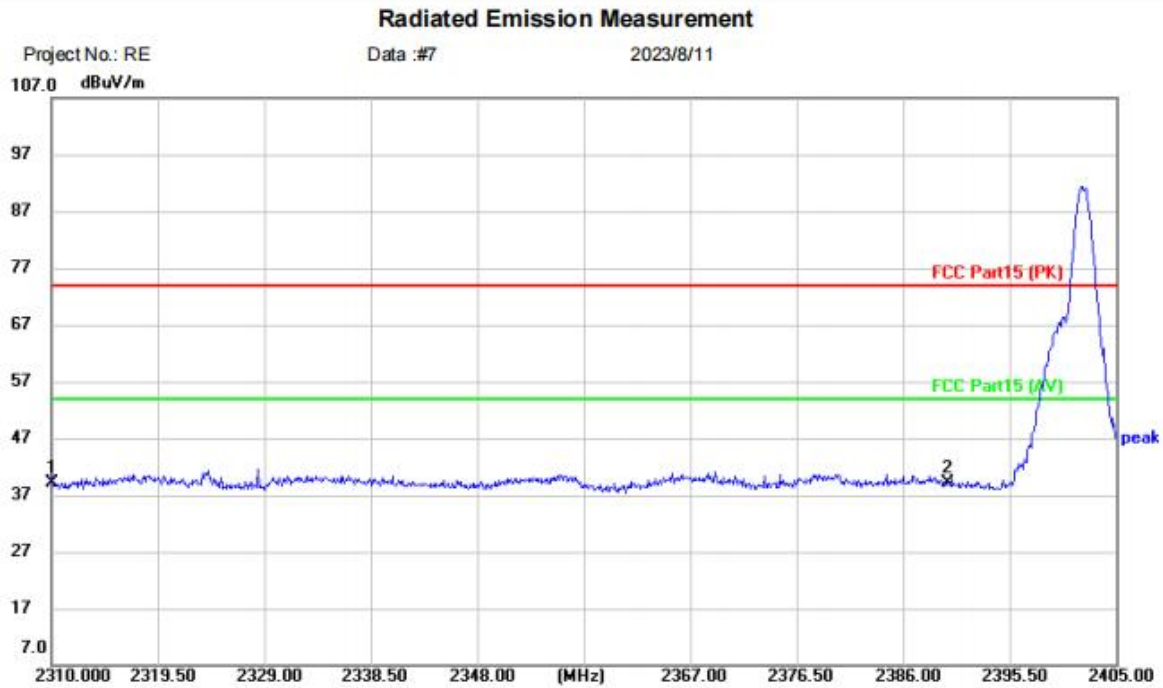
Remark 1: $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamp Factor}$

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

18.4 TEST DATA

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



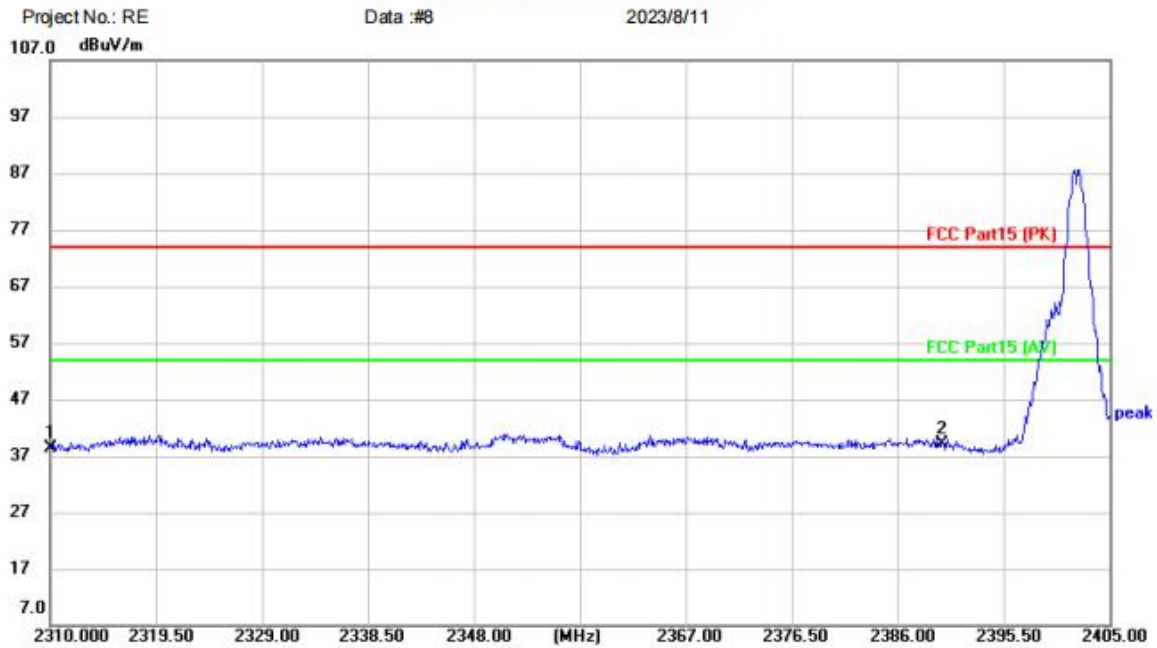
Site	Polarization: Horizontal	Temperature: (C)
Limit: FCC Part15 (PK)	Power:	Humidity: %RH
EUT: WIRELESS BLUETOOTH SPEAKER		
M/N: M21		
Mode: TX-L		
Note:		

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	43.47	-4.40	39.07	74.00	-34.93	peak	
2	*	2390.000	43.48	-4.31	39.17	74.00	-34.83	peak	

Test Result: Pass

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

Radiated Emission Measurement

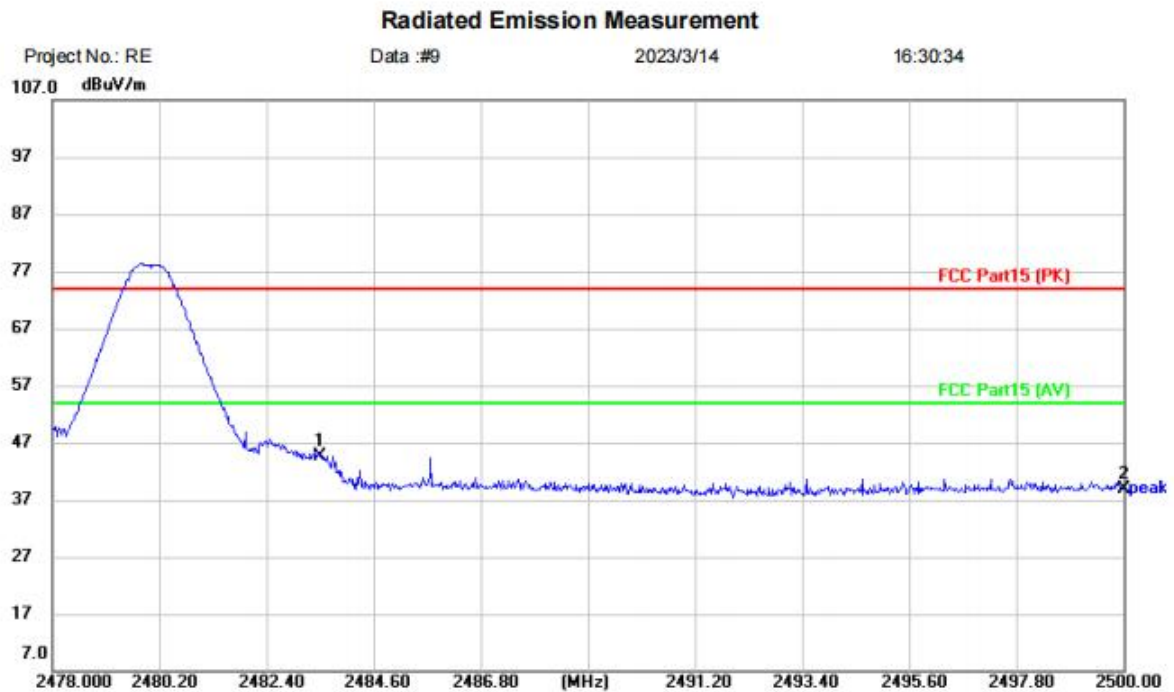


Site Polarization: **Vertical** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: WIRELESS BLUETOOTH SPEAKER
 M/N: M21
 Mode: TX-L
 Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		2310.000	42.84	-4.40	38.44	74.00	-35.56	peak	
2	*	2390.000	43.56	-4.31	39.25	74.00	-34.75	peak	

Test Result: Pass

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



Site: Polarization: **Horizontal** Temperature: (C)
 Limit: FCC Part15 (PK) Power: Humidity: %RH
 EUT: Bluetooth Wireless Headphones
 M/N: Monster Airmars XKT21
 Mode: 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	48.52	-3.96	44.56	74.00	-29.44	peak	
2		2500.000	42.92	-4.00	38.92	74.00	-35.08	peak	

Test Result: Pass