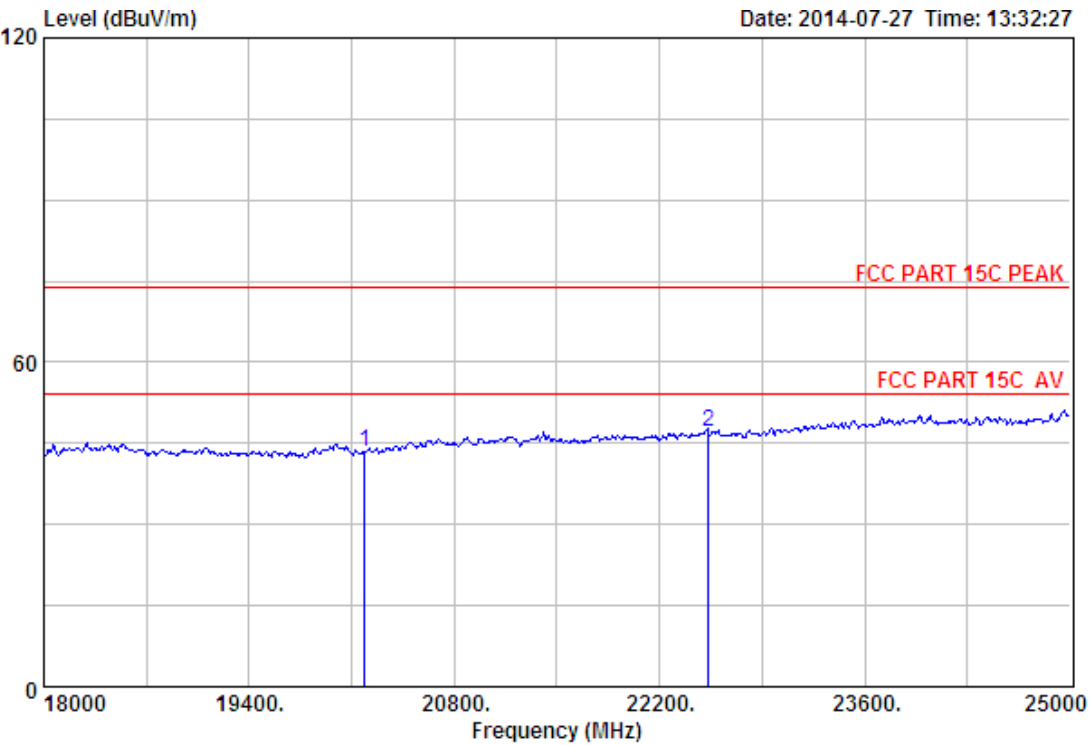
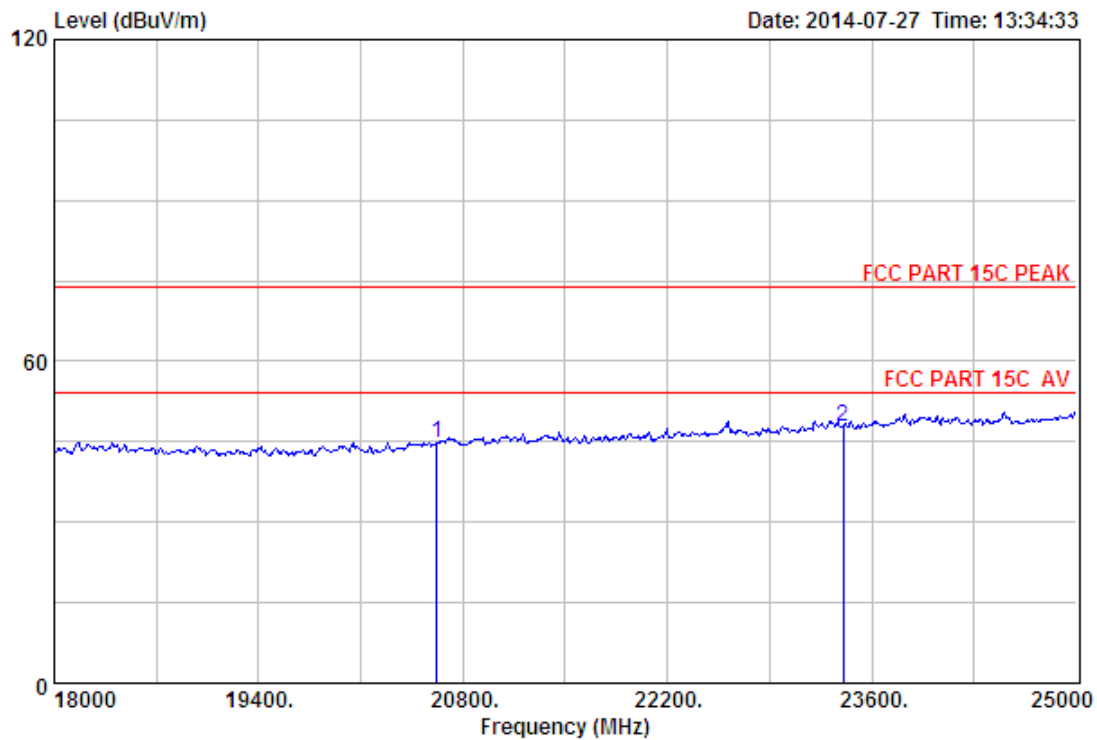




Site no. : 3m Chamber Data no. : 716
Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : DC 10V From Adapter Input AC 120V/60Hz
M/N : UB-SPB4M-101
Test Mode : GFSK TX 2441MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission				Remark
					Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)		
1	20191.00	46.06	19.77	36.52	14.17	43.48	74.00	30.52	Peak
2	22536.00	45.79	20.88	34.35	14.76	47.08	74.00	26.92	Peak

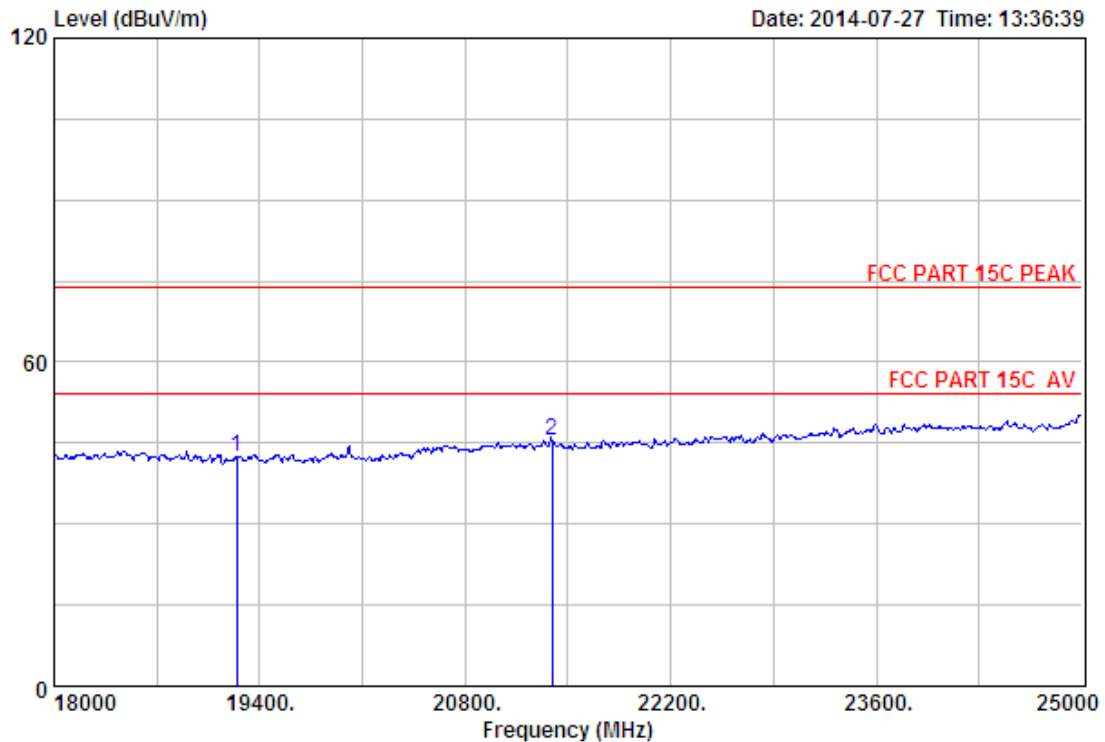
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 717
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6'; Humi:56%; Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
						Level (dBuV/m)	Limits (dBuV/m)		
1	20618.00	46.07	19.96	36.14	14.79	44.68	74.00	29.32	Peak
2	23404.00	45.68	21.51	33.43	14.13	47.89	74.00	26.11	Peak

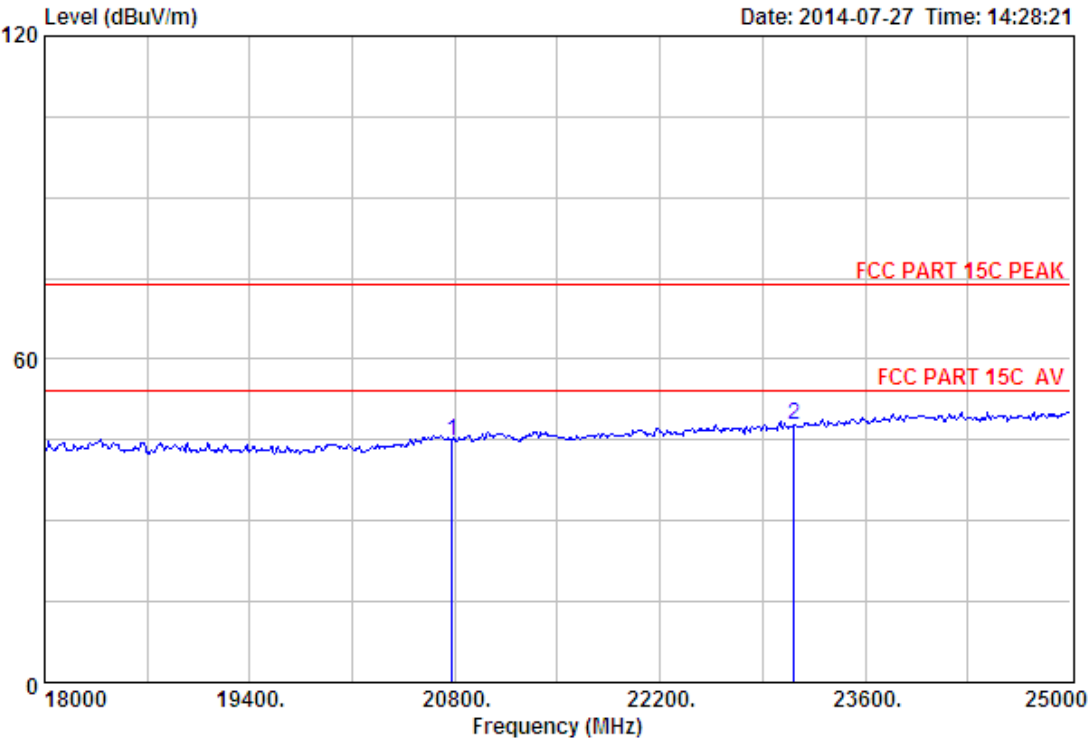
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 718
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2480MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
					Level (dBuV/m)				
1 19246.00	45.66	18.82	36.06	14.10	42.52		74.00	31.48	Peak
2 21395.00	46.07	20.30	35.44	14.65	45.58		74.00	28.42	Peak

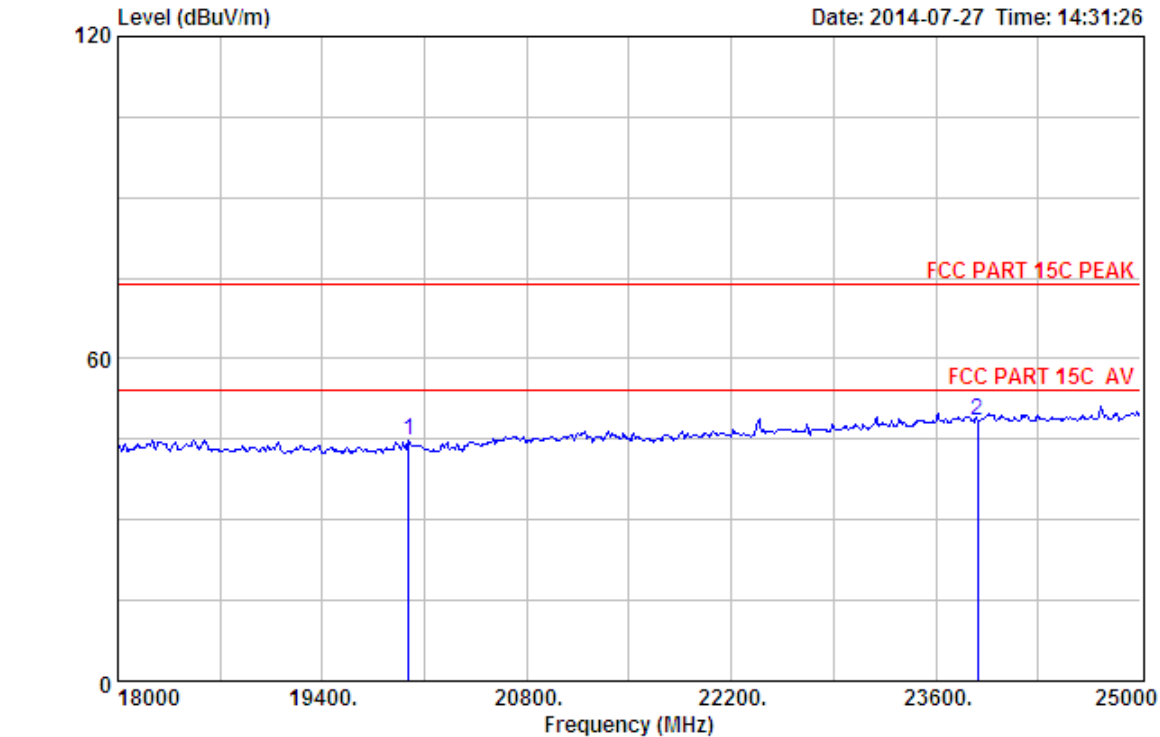
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 737
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : DC 10V From Adapter Input AC 120V/60Hz
M/N : UB-SPB4M-101
Test Mode : 8-DPSK TX 2402MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1 20779.00	46.16	20.03	36.00	14.63	44.82	74.00	29.18	Peak
2 23117.00	45.63	21.26	33.72	14.55	47.72	74.00	26.28	Peak

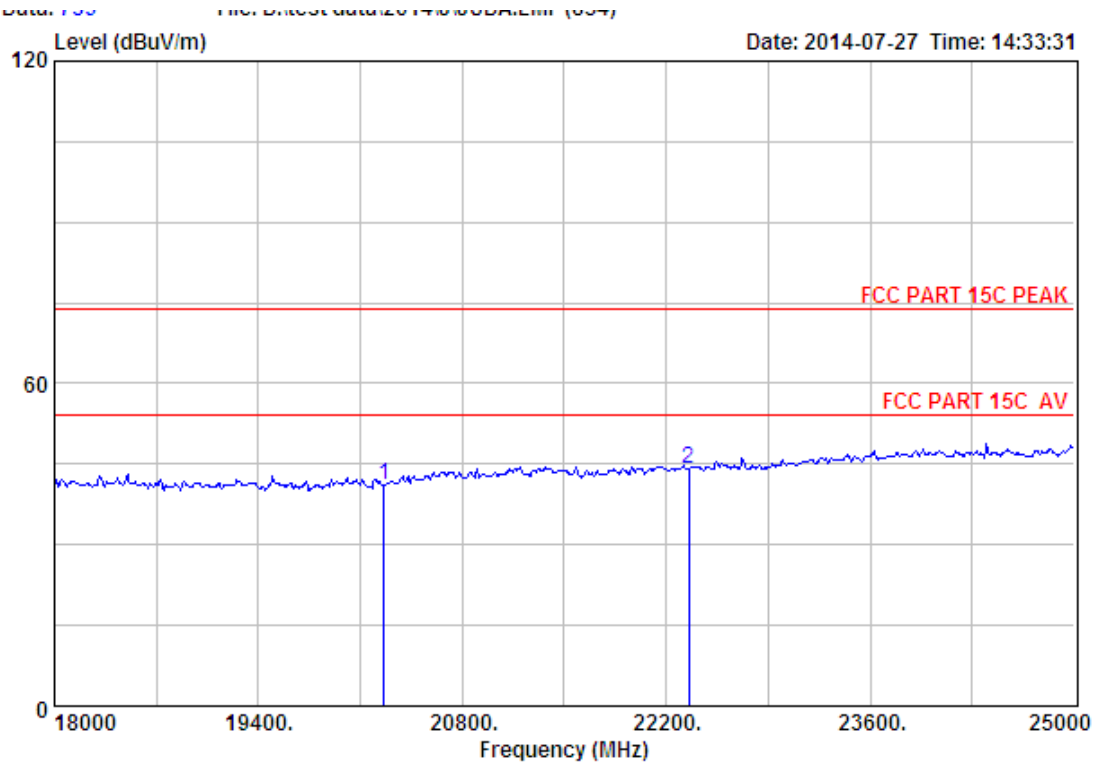
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 738
Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : DC 10V From Adapter Input AC 120V/60Hz
M/N : UB-SPB4M-101
Test Mode : 8-DPSK TX 2402MHz

		Ant. Cable Amp			Emission		Limits	Margin	Remark
Freq.	(MHz)	Factor	Loss	Factor	Reading	Level			
		(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	19988.00	46.09	19.67	36.70	15.59	44.65	74.00	29.35	Peak
2	23887.00	45.62	21.94	32.93	14.00	48.63	74.00	25.37	Peak

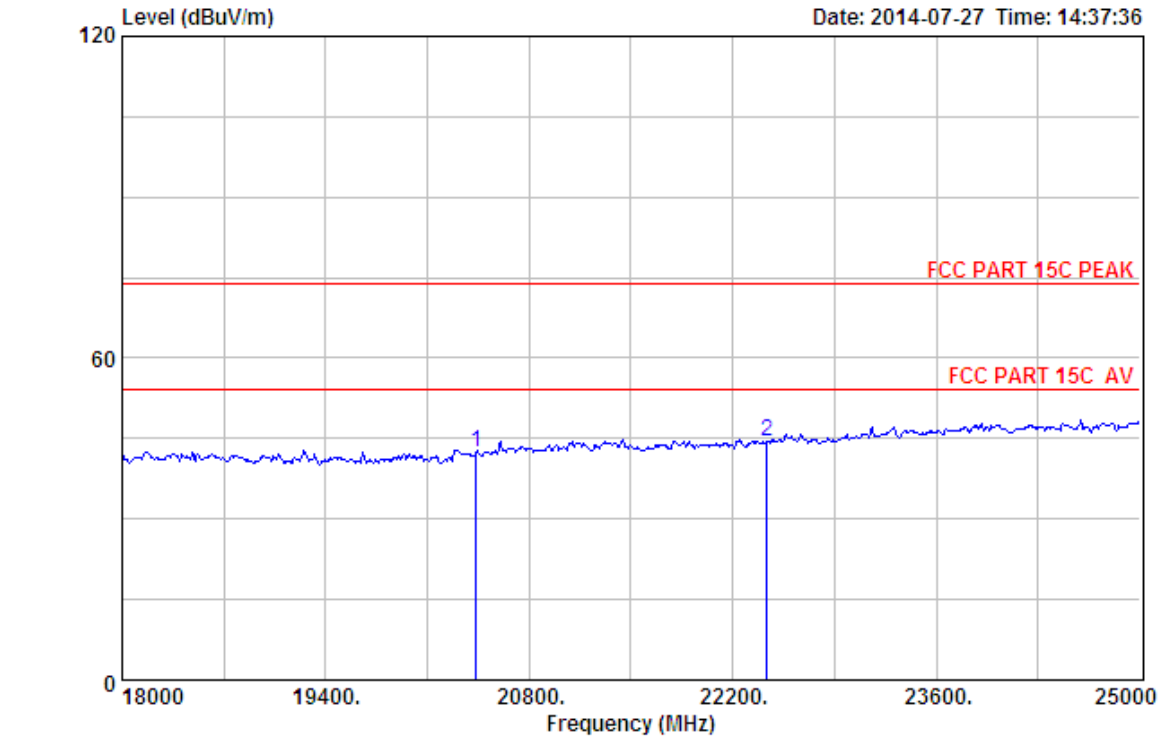
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 739
Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : DC 10V From Adapter Input AC 120V/60Hz
M/N : UB-SPB4M-101
Test Mode : 8-DPSK TX 2441MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
					Level (dBuV/m)				
1 20261.00	46.05	19.80	36.48	11.72	41.09		74.00	32.91	Peak
2 22354.00	45.77	20.77	34.53	12.15	44.16		74.00	29.84	Peak

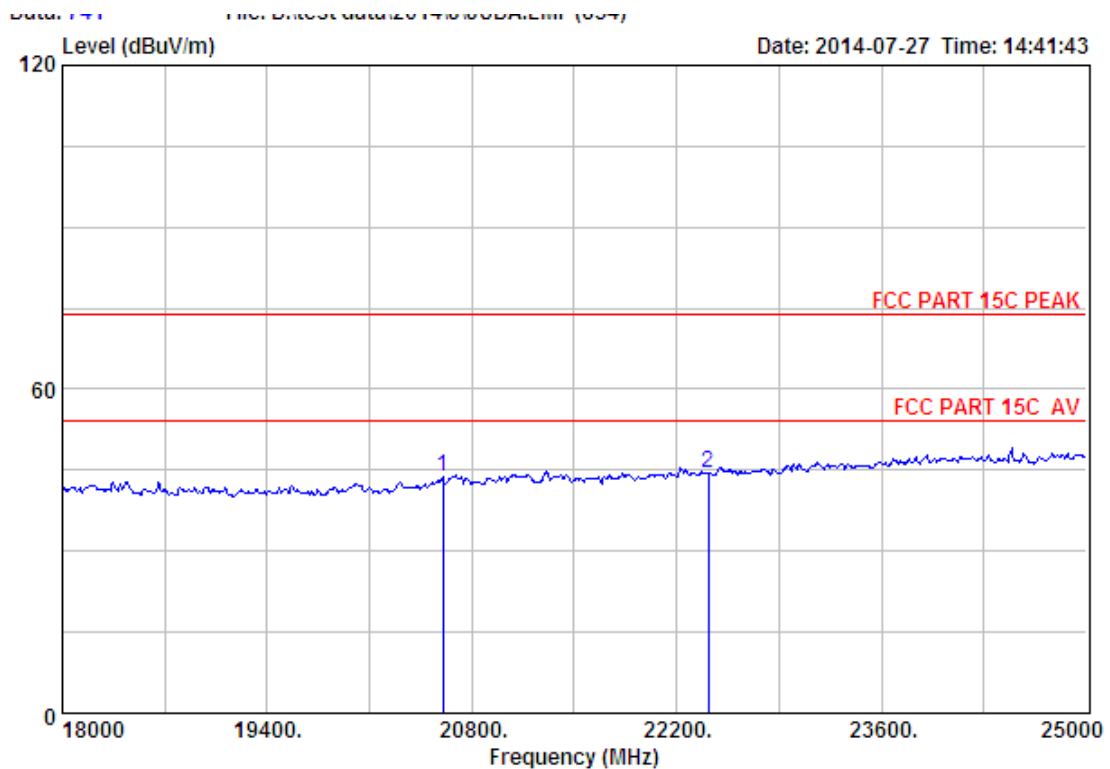
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official
limit are not reported.



Site no. : 3m Chamber Data no. : 740
Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : DC 10V From Adapter Input AC 120V/60Hz
M/N : UB-SPB4M-101
Test Mode : 8-DPSK TX 2441MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
					Level (dBuV/m)	Limits (dBuV/m)		
1 20436.00	46.01	19.88	36.32	12.73	42.30	74.00	31.70	Peak
2 22438.00	45.79	20.82	34.43	12.21	44.39	74.00	29.61	Peak

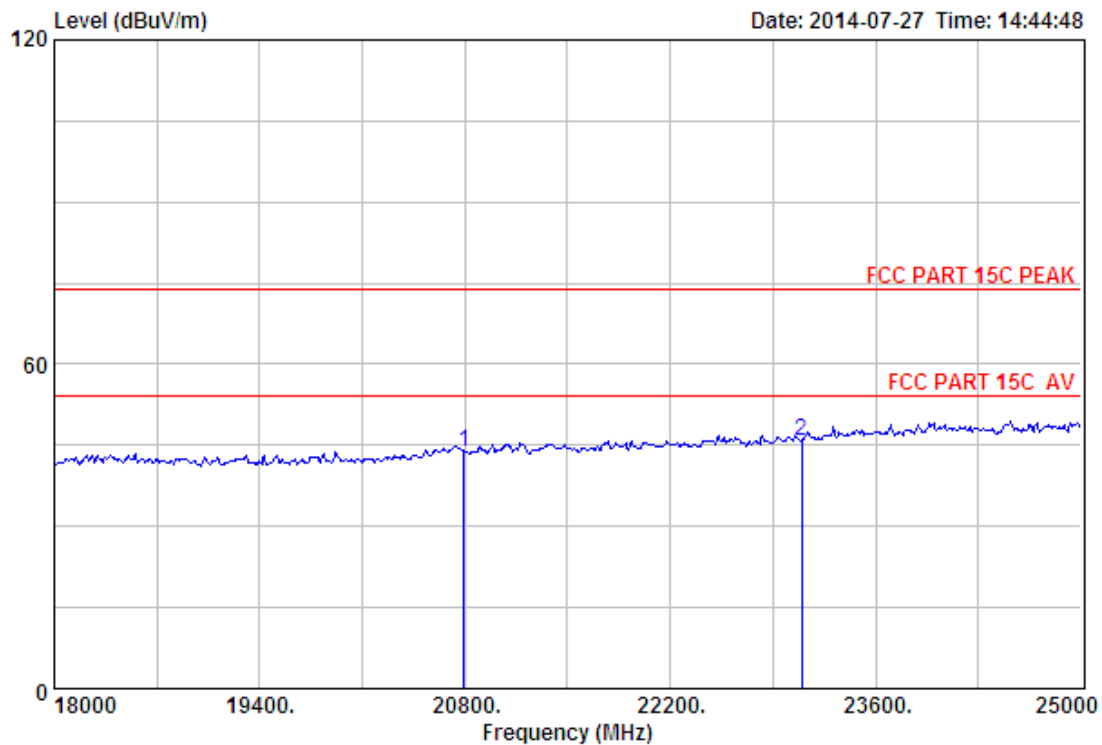
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 741
 Dis. / Ant. : 3m ANT ABOVE 18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2480MHz

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1 20604.00	46.05	19.95	36.16	13.82	43.66	74.00	30.34	Peak
2 22417.00	45.78	20.81	34.45	12.24	44.38	74.00	29.62	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 742
 Dis. / Ant. : 3m ANT ABVOE 18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2480MHz

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
						Level (dBuV/m)	Limits (dBuV/m)		
1	20793.00	46.18	20.04	35.98	13.67	43.91	74.00	30.09	Peak
2	23096.00	45.62	21.23	33.74	12.78	45.89	74.00	28.11	Peak

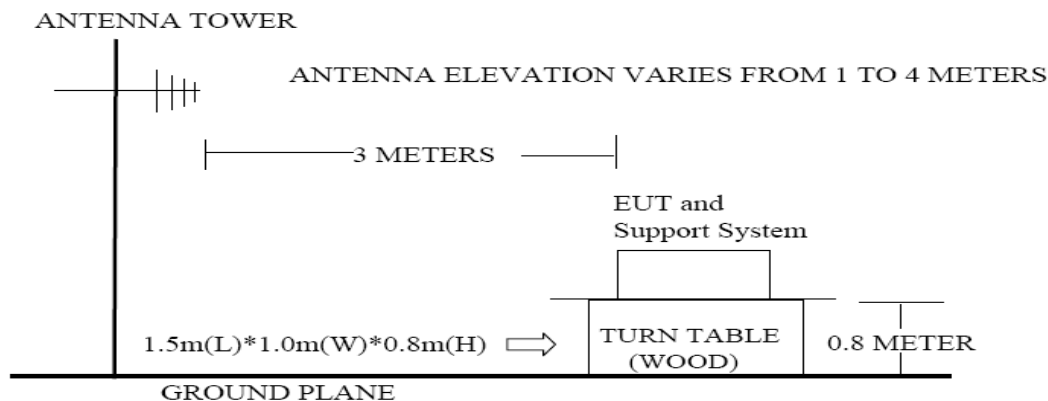
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

9. BAND EDGE COMPLIANCE

9.1. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

9.2. Block Diagram of Test setup



9.3. Test Procedure

EUT was placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarization of the antenna are set on test.

Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of emissions

- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

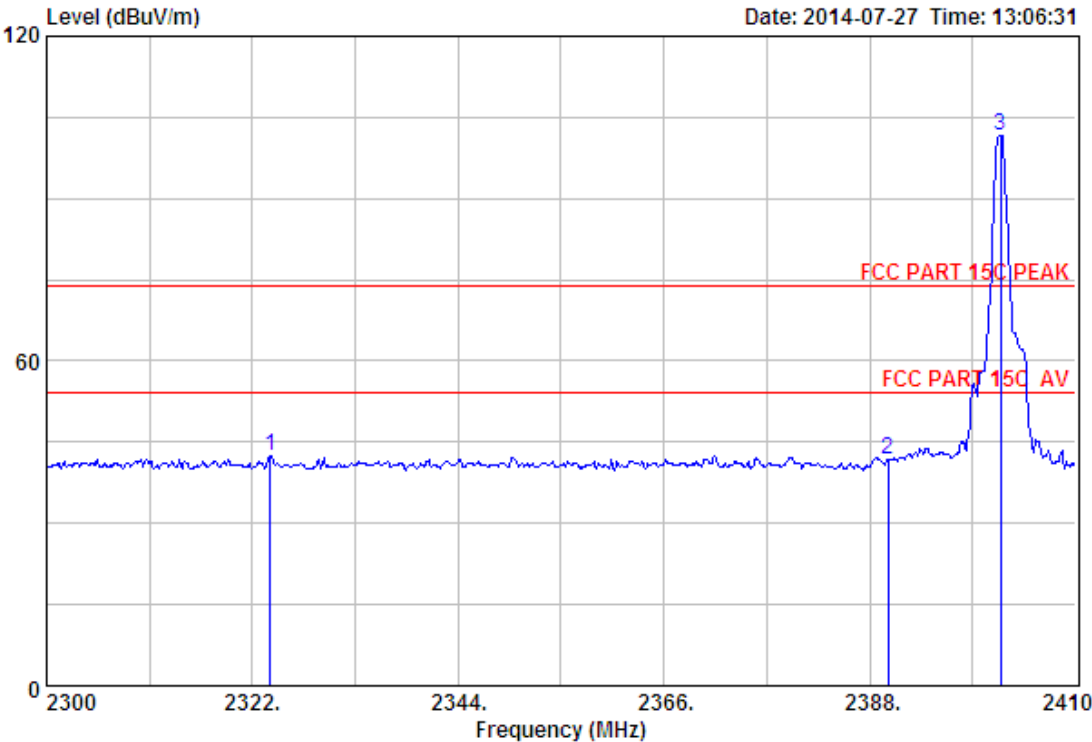
9.4. Test Result

EUT: Bluetooth Speaker
M/N: UB-SPB4M-101
Power: DC 10V From Adapter Input AC 120V/60Hz
Test date: 2014-07-27 Test site: 3m Chamber Tested by: Tony Tang
Test mode: Tx Mode (Hopping On & No Hopping)
Pass

Note: 1、 For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

- 2、 The frequency 2402MHz 、 2441MHz and 2480MHz is fundamental frequency which no limit, the limit on plots is automatically generated by the software, it's not fundamental limit, we can't remove it.

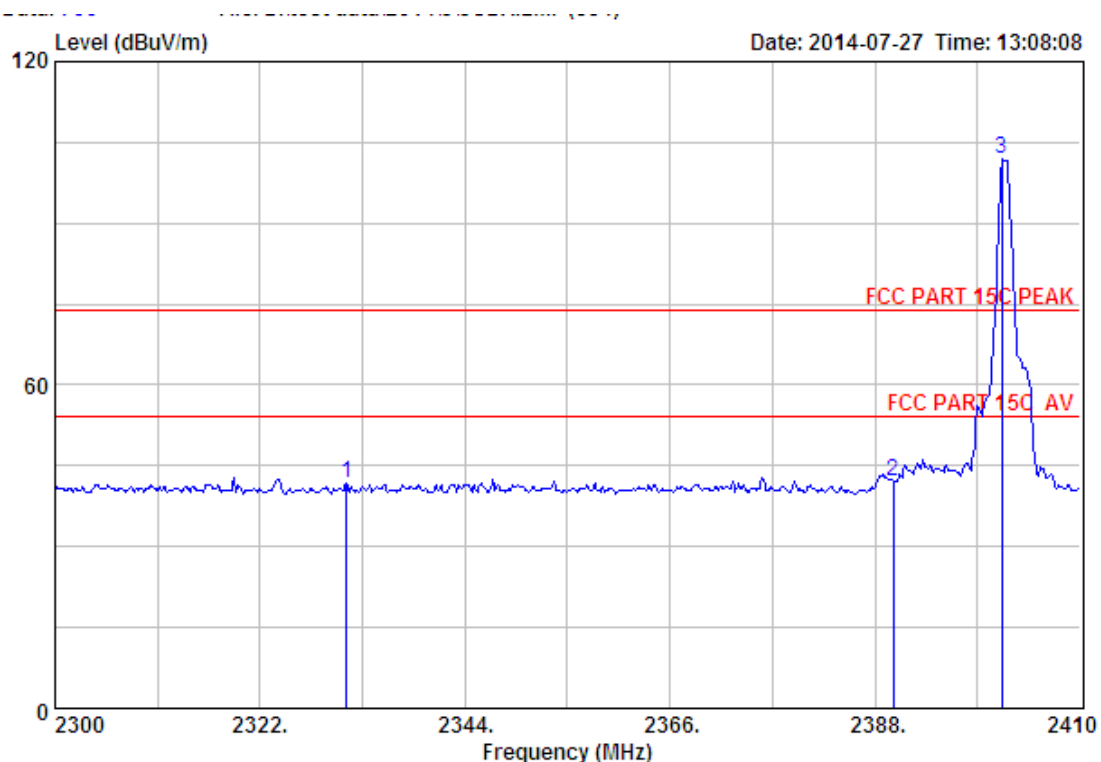
9.5. Test Data



Site no. : 3m Chamber Data no. : 705
Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
Limit : FCC PART 15C PEAK
Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
Engineer : Tony
EUT : Bluetooth Speaker
Power : DC 10V From Adapter Input AC 120V/60Hz
M/N : UB-SPB4M-101
Test Mode : GFSK TX 2402MHz(No Hopping)

	Freq.	Ant.	Cable	Amp	Emission				
	(MHz)	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1	2323.87	27.73	6.54	34.23	42.33	42.37	74.00	31.63	Peak
2	2390.00	27.64	6.62	34.19	41.73	41.80	74.00	32.20	Peak
3	2401.97	27.61	6.62	34.18	101.64	101.69	74.00	-27.69	Peak

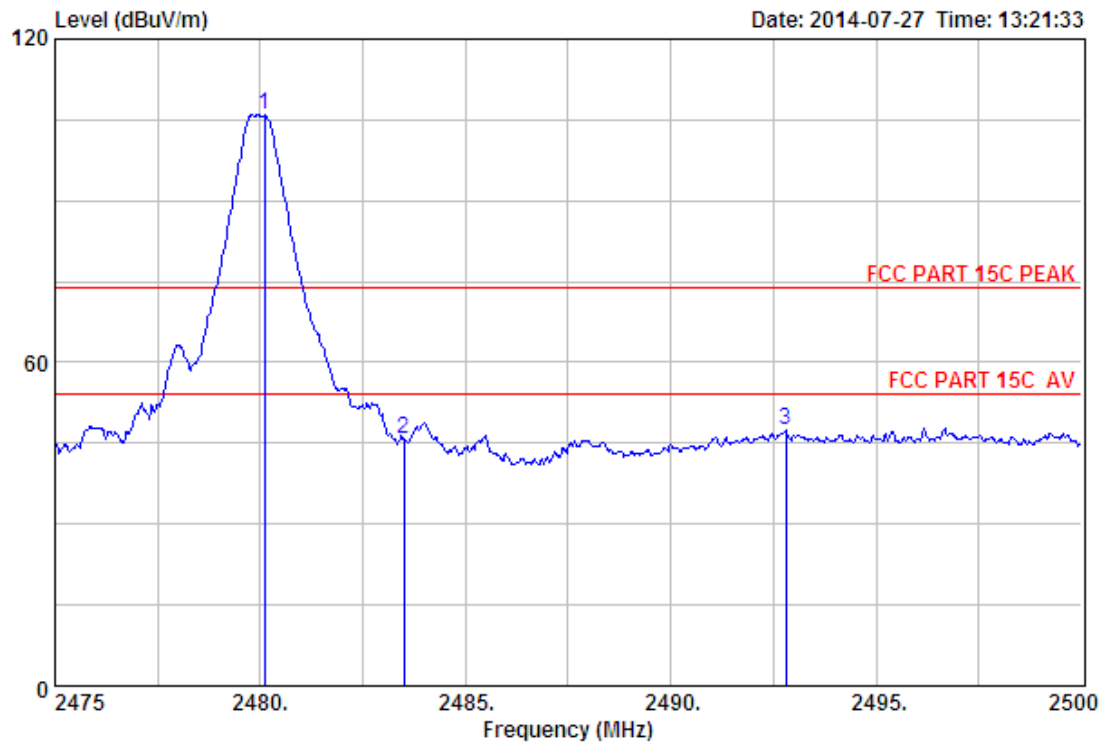
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 706
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2402MHz(No Hopping)

		Ant.	Cable	Amp	Emission				
Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2331.24	27.73	6.54	34.23	41.75	41.79	74.00	32.21	Peak
2	2390.00	27.64	6.62	34.19	42.21	42.28	74.00	31.72	Peak
3	2401.64	27.61	6.62	34.18	101.75	101.80	74.00	-27.80	Peak

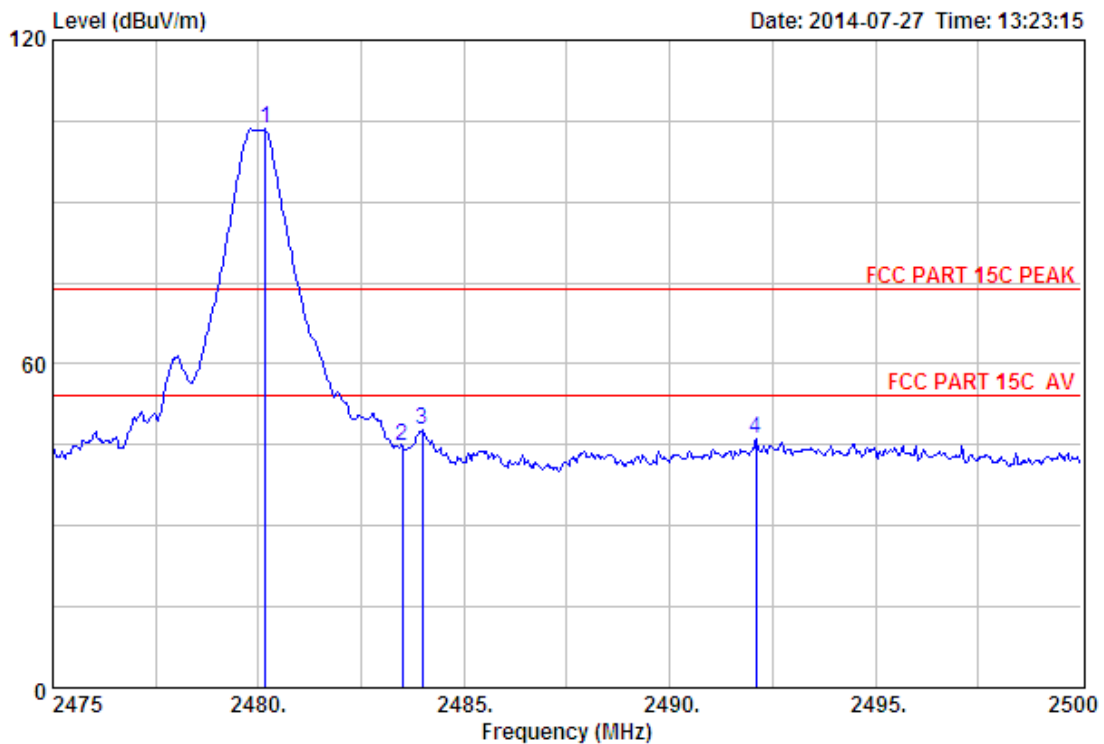
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 711
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2480MHz (No Hopping)

	Ant.	Cable	Amp	Emission					
Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2480.10	27.58	6.71	34.03	105.81	106.07	74.00	-32.07	Peak
2	2483.50	27.58	6.71	34.03	45.48	45.74	74.00	28.26	Peak
3	2492.80	27.58	6.73	34.03	47.09	47.37	74.00	26.63	Peak

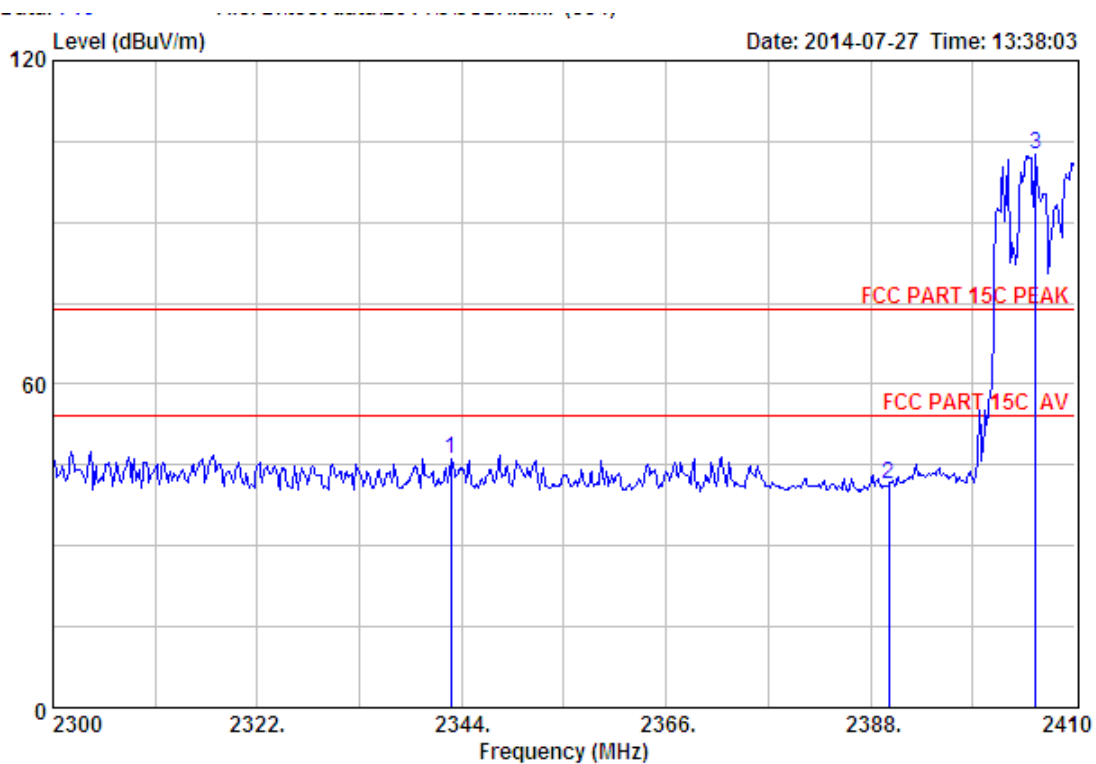
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 712
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6%;Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2480MHz (No Hopping)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2480.18	27.58	6.71	34.03	103.28	103.54	74.00	-29.54	Peak
2	2483.50	27.58	6.71	34.03	44.68	44.94	74.00	29.06	Peak
3	2483.98	27.58	6.71	34.03	47.56	47.82	74.00	26.18	Peak
4	2492.10	27.58	6.73	34.03	45.85	46.13	74.00	27.87	Peak

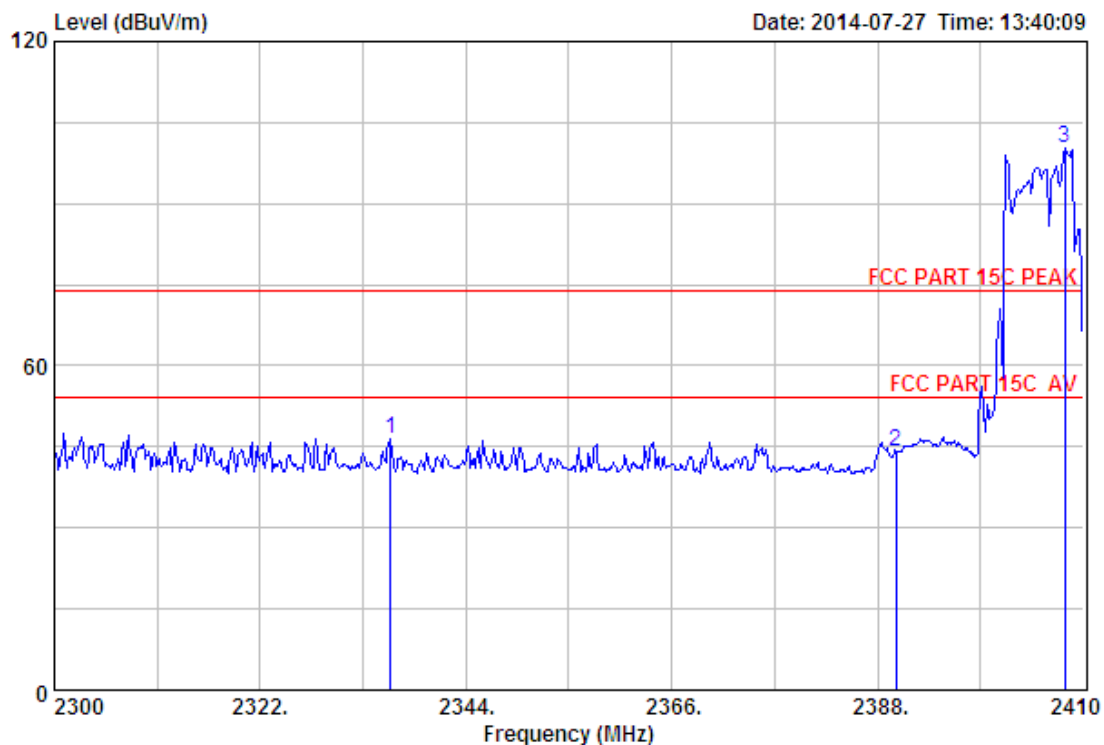
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 719
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2402MHz(Hopping On)

		Ant.	Cable	Amp	Emission				
Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2342.79	27.70	6.56	34.22	46.11	46.15	74.00	27.85	Peak
2	2390.00	27.64	6.62	34.19	41.43	41.50	74.00	32.50	Peak
3	2405.82	27.61	6.64	34.18	102.42	102.49	74.00	-28.49	Peak

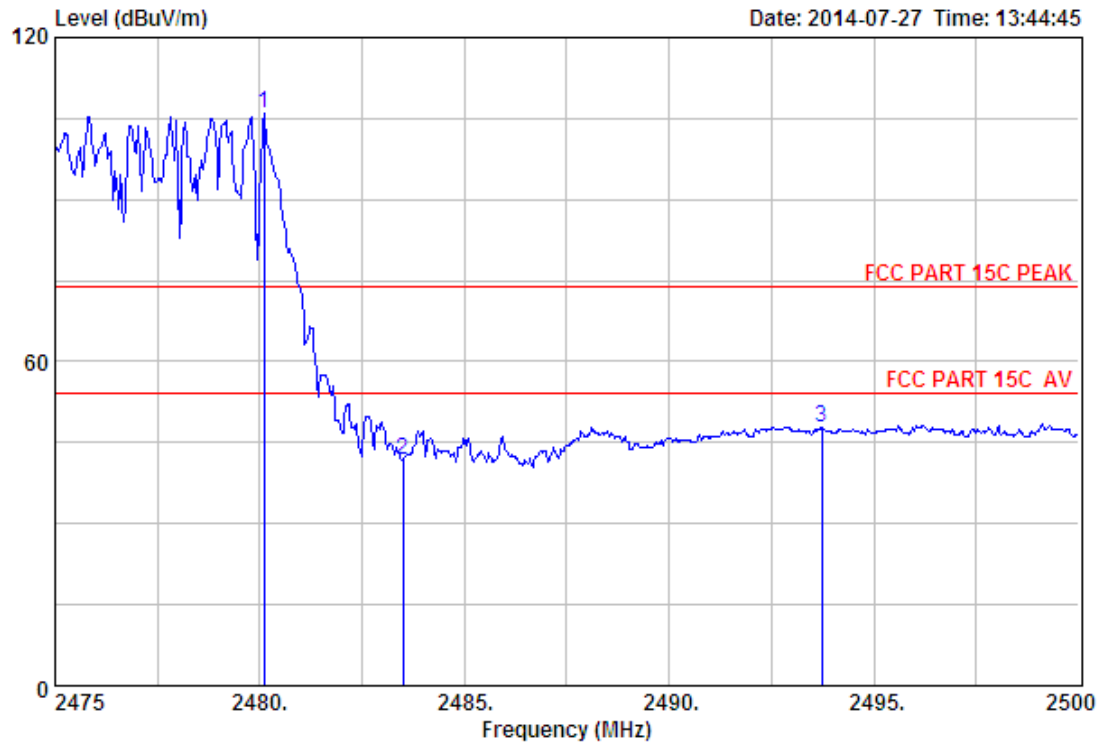
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 720
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2402MHz(Hopping On)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission		Margin (dB)	Remark
						Level (dBuV/m)	Limits (dBuV/m)		
1	2335.97	27.73	6.56	34.23	46.35	46.41	74.00	27.59	Peak
2	2390.00	27.64	6.62	34.19	44.04	44.11	74.00	29.89	Peak
3	2408.02	27.61	6.64	34.18	100.15	100.22	74.00	-26.22	Peak

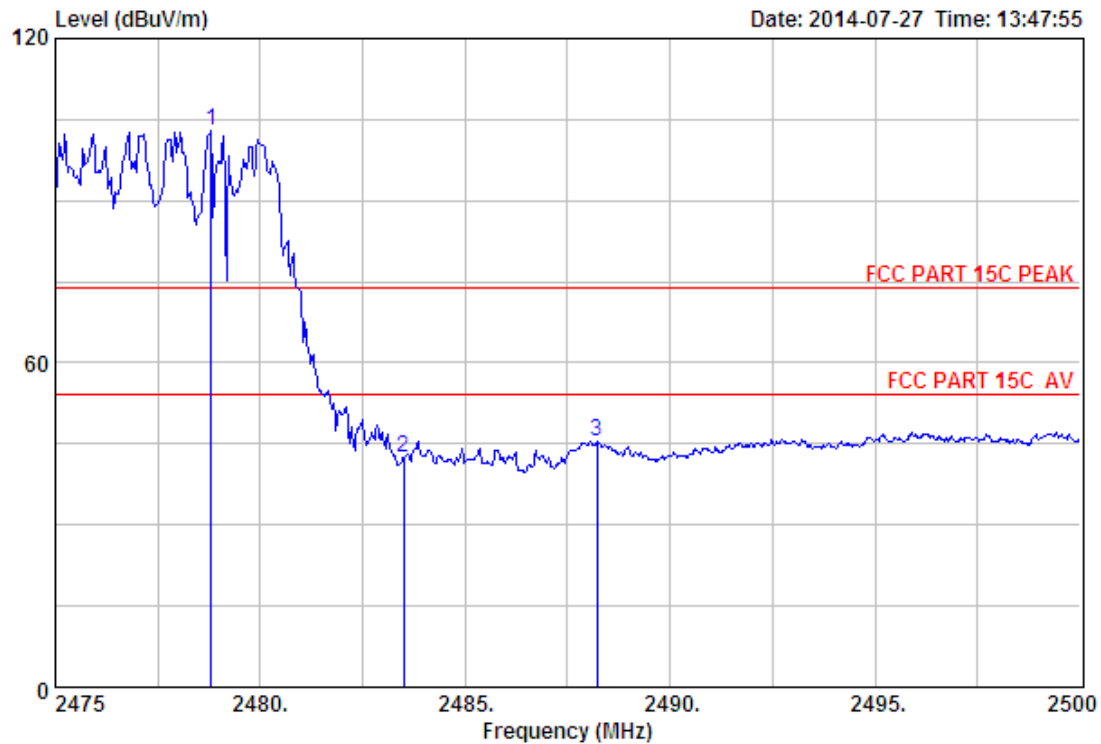
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 721
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2480MHz(Hopping On)

	Freq.	Ant.	Cable	Amp	Emission				
	(MHz)	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.10	27.58	6.71	34.03	105.81	106.07	74.00	-32.07	Peak
2	2483.50	27.58	6.71	34.03	41.60	41.86	74.00	32.14	Peak
3	2493.73	27.58	6.73	34.03	47.61	47.89	74.00	26.11	Peak

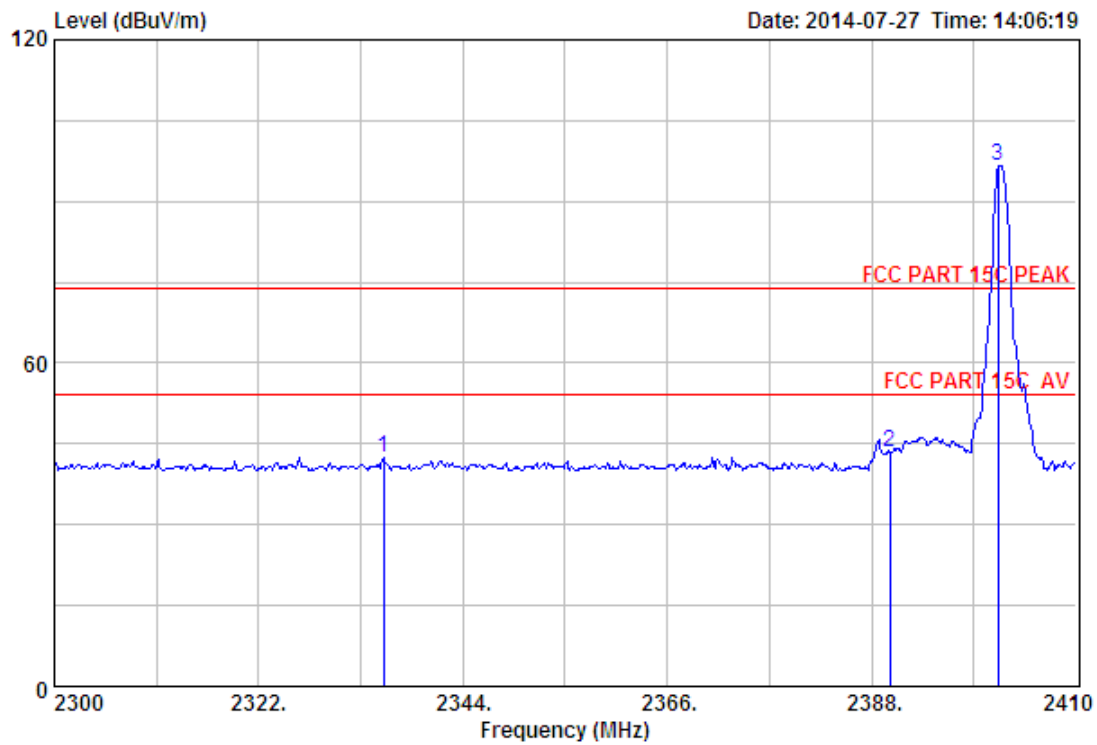
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 722
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : GFSK TX 2480MHz (Hopping On)

	Freq.	Ant.	Cable	Amp	Emission				
	(MHz)	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2478.80	27.58	6.71	34.03	102.73	102.99	74.00	-28.99	Peak
2	2483.50	27.58	6.71	34.03	42.21	42.47	74.00	31.53	Peak
3	2488.23	27.58	6.73	34.03	45.24	45.52	74.00	28.48	Peak

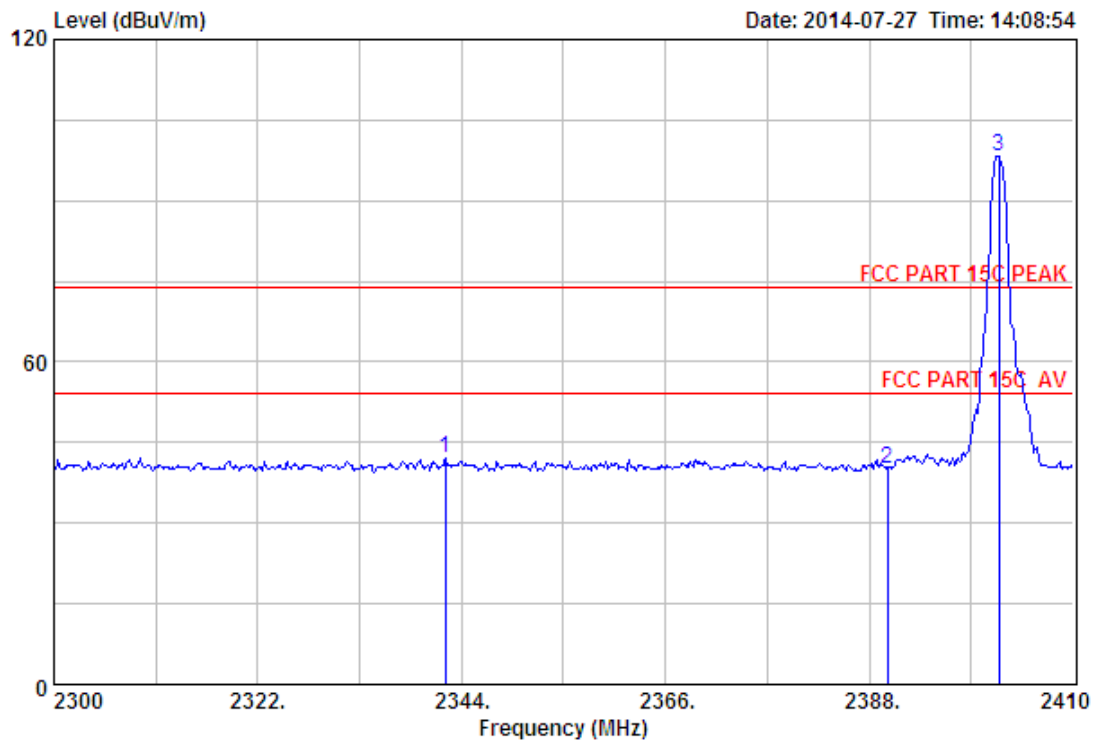
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 729
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2402MHz(No Hopping)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
					Reading	Level			
					(dBuV)	(dBuV/m)			
1	2335.42	27.73	6.56	34.23	42.26	42.32	74.00	31.68	Peak
2	2390.00	27.64	6.62	34.19	43.52	43.59	74.00	30.41	Peak
3	2401.64	27.61	6.62	34.18	96.69	96.74	74.00	-22.74	Peak

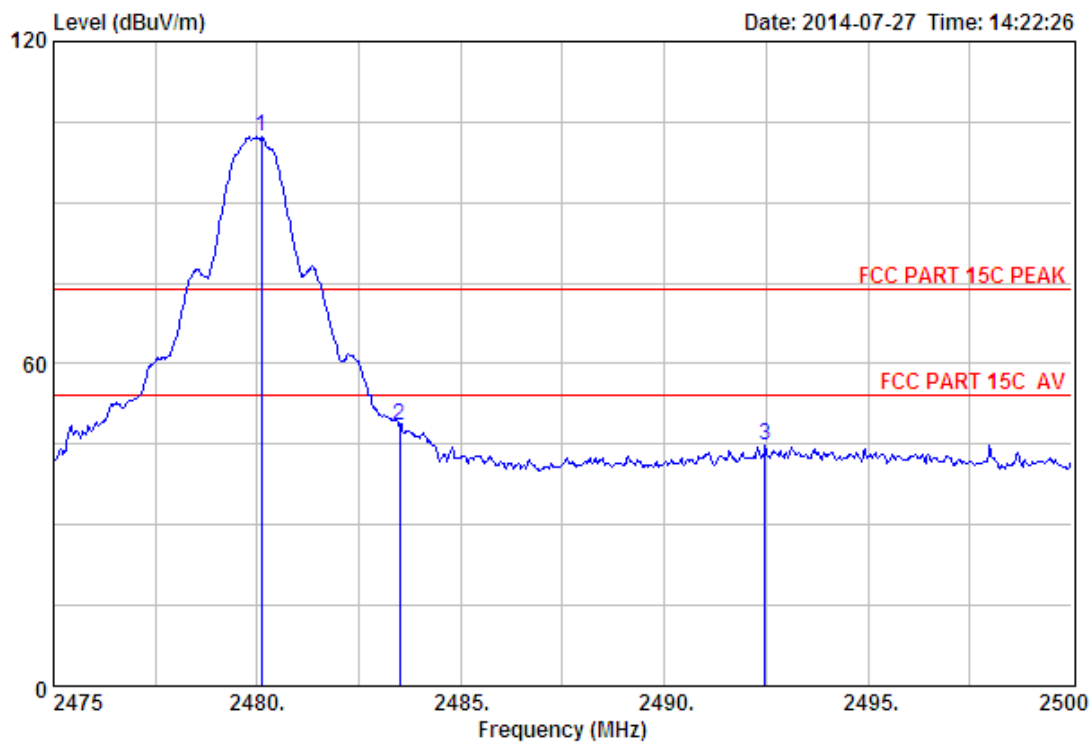
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 730
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2402MHz (No Hopping)

Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1 2342.24	27.70	6.56	34.22	42.07	42.11	74.00	31.89	Peak
2 2390.00	27.64	6.62	34.19	40.16	40.23	74.00	33.77	Peak
3 2401.97	27.61	6.62	34.18	98.19	98.24	74.00	-24.24	Peak

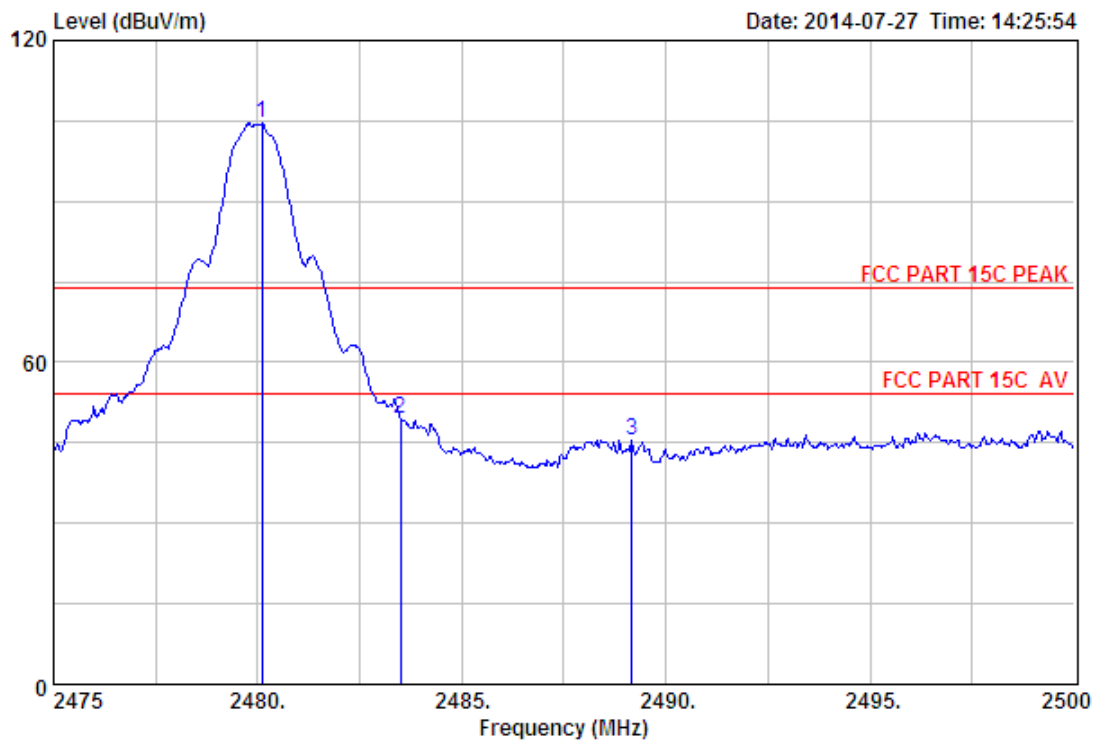
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 735
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2480MHz (No Hopping)

	Freq.	Ant.	Cable	Amp	Emission				
	(MHz)	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.10	27.58	6.71	34.03	102.00	102.26	74.00	-28.26	Peak
2	2483.50	27.58	6.71	34.03	48.34	48.60	74.00	25.40	Peak
3	2492.48	27.58	6.73	34.03	44.53	44.81	74.00	29.19	Peak

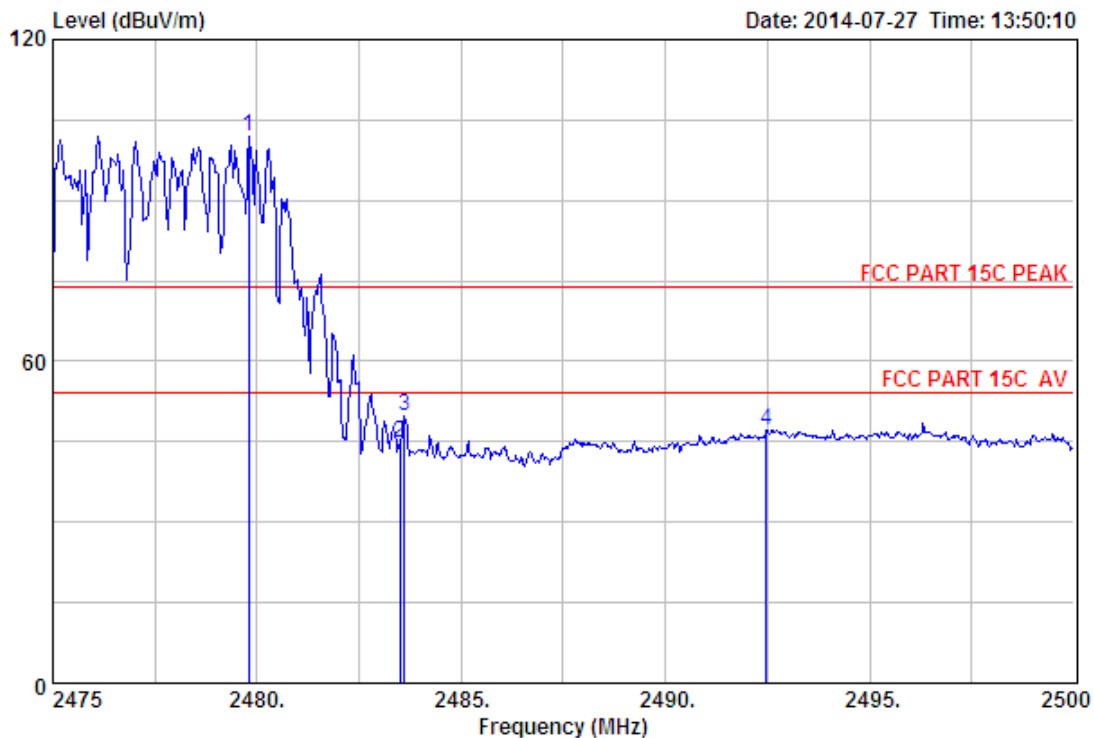
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 736
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2480MHz (No Hopping)

	Freq.	Ant.	Cable	Amp	Emission				
	(MHz)	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2480.10	27.58	6.71	34.03	104.27	104.53	74.00	-30.53	Peak
2	2483.50	27.58	6.71	34.03	49.35	49.61	74.00	24.39	Peak
3	2489.18	27.58	6.73	34.03	45.20	45.48	74.00	28.52	Peak

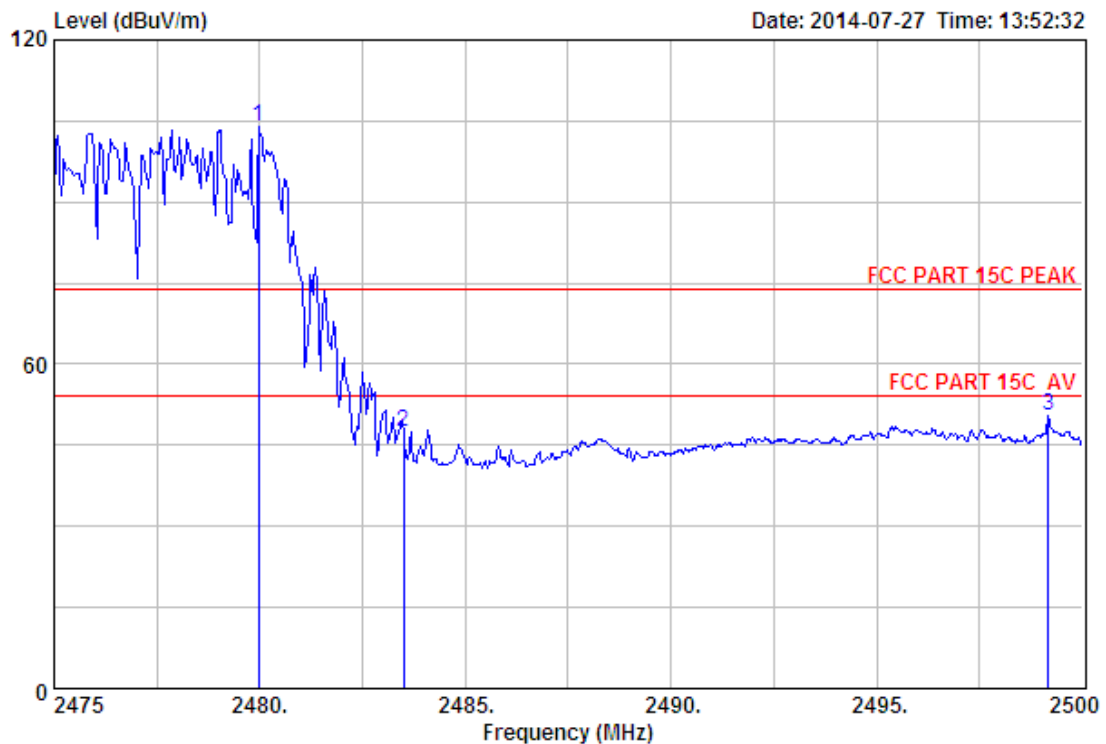
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 723
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2480MHz (Hopping On)

	Ant.	Cable	Amp		Emission				
Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)		
1	2479.80	27.58	6.71	34.03	101.83	102.09	74.00	-28.09	Peak
2	2483.50	27.58	6.71	34.03	44.39	44.65	74.00	29.35	Peak
3	2483.60	27.58	6.71	34.03	49.65	49.91	74.00	24.09	Peak
4	2492.48	27.58	6.73	34.03	47.00	47.28	74.00	26.72	Peak

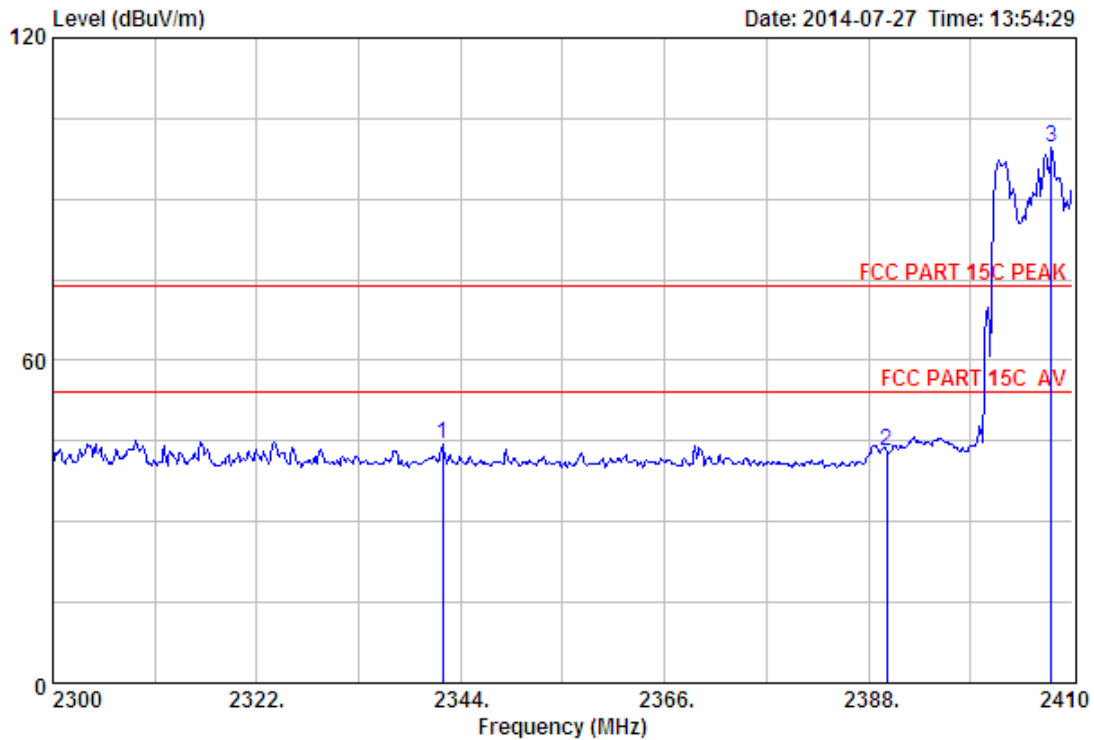
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 724
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2480MHz (Hopping On)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.98	27.58	6.71	34.03	103.74	104.00	74.00	-30.00	Peak
2	2483.50	27.58	6.71	34.03	47.12	47.38	74.00	26.62	Peak
3	2499.18	27.57	6.73	34.00	50.28	50.58	74.00	23.42	Peak

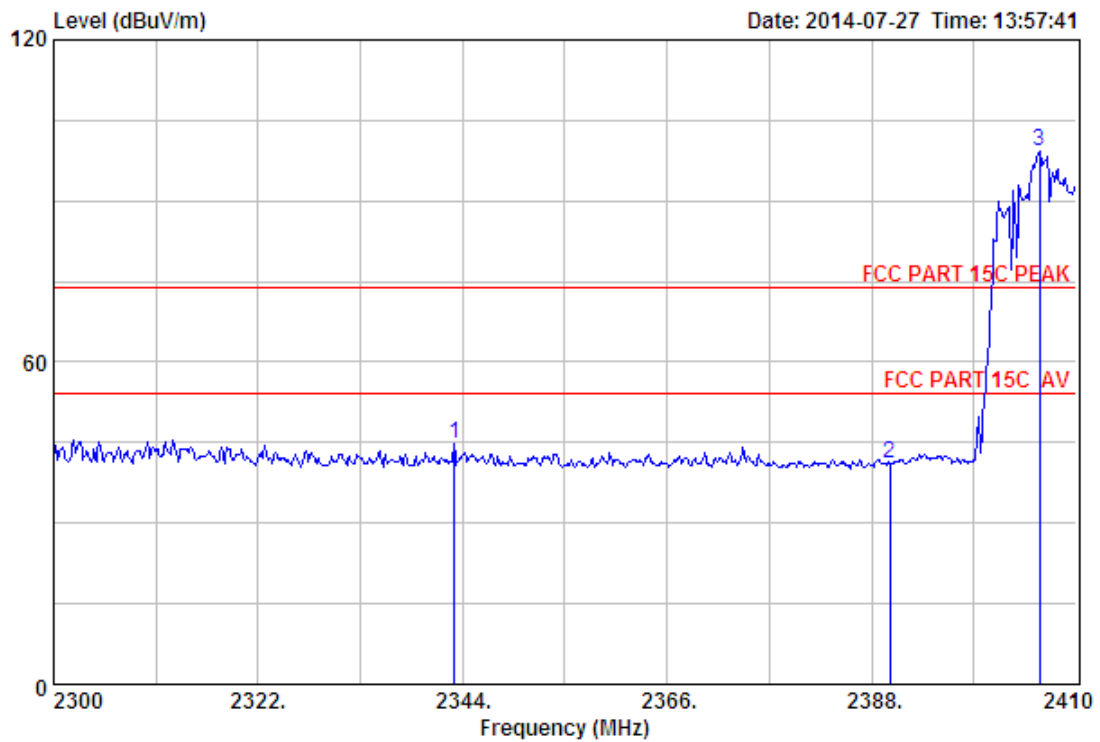
Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 725
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6°;Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2402MHz (Hopping On)

		Ant.	Cable	Amp	Emission				
	Freq.	Factor	Loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2342.02	27.70	6.56	34.22	44.34	44.38	74.00	29.62	Peak
2	2390.00	27.64	6.62	34.19	43.13	43.20	74.00	30.80	Peak
3	2407.69	27.61	6.64	34.18	99.43	99.50	74.00	-25.50	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 726
 Dis. / Ant. : 3m ANT 1-18G Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : Temp:25.6';Humi:56%;Press:101.52kPa
 Engineer : Tony
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : 8-DPSK TX 2402MHz (Hopping On)

	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Amp Factor (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
					Reading	Level			
					(dBuV)	(dBuV/m)			
1	2343.12	27.70	6.56	34.22	44.63	44.67	74.00	29.33	Peak
2	2390.00	27.64	6.62	34.19	41.10	41.17	74.00	32.83	Peak
3	2406.04	27.61	6.64	34.18	99.33	99.40	74.00	-25.40	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

10. POWER LINE CONDUCTED EMISSIONS

10.1. Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

10.2. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT was charged from PC's USB port which connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#).. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2009 on Conducted Emission Test.

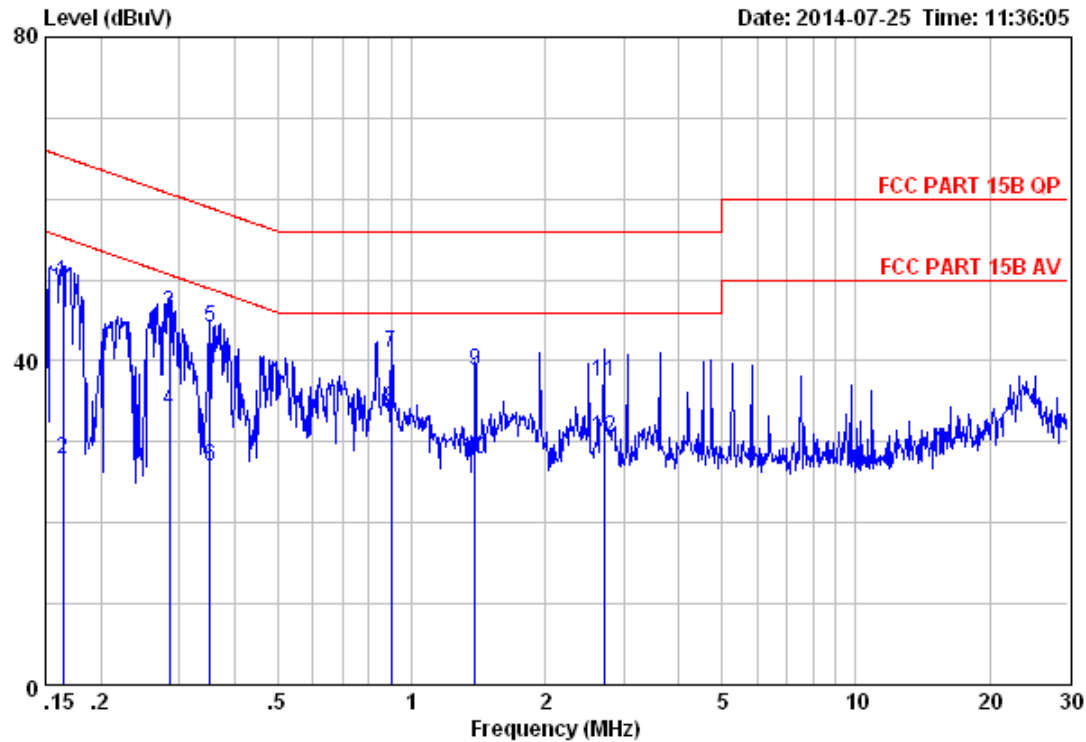
The bandwidth of test receiver (R & S ESHS30) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked.

10.3. Test Result

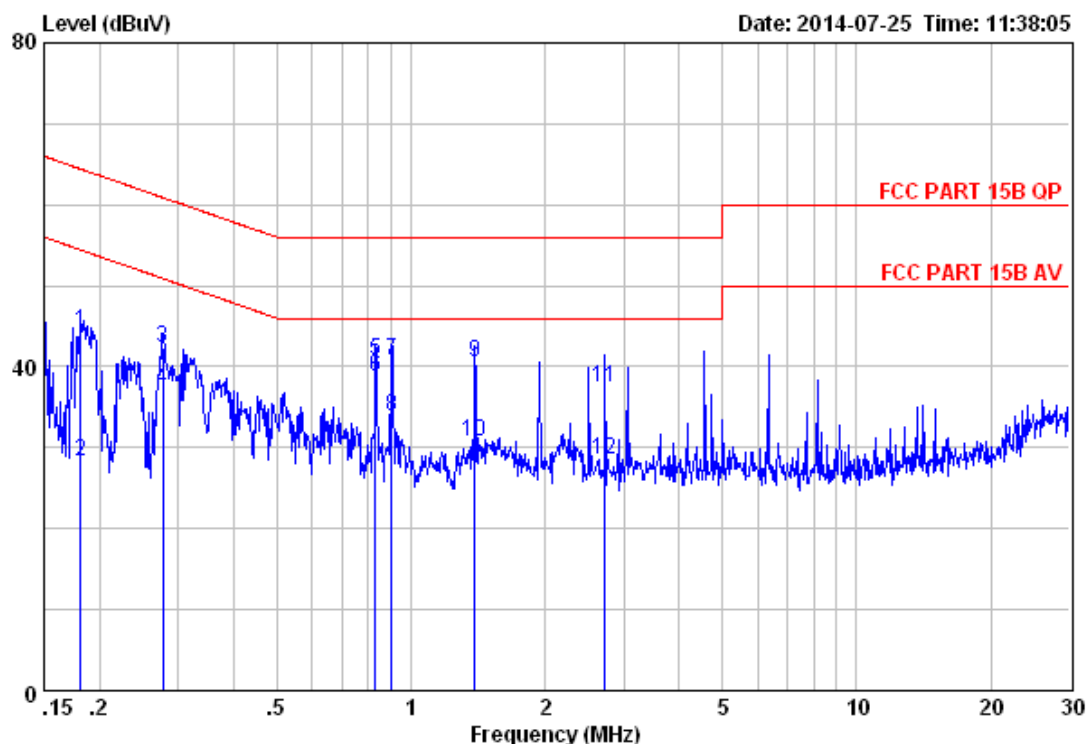
0.15MHz—30MHz Conducted emissison Test result	
EUT: Bluetooth Speaker	M/N:UB-SPB4M-101
Power: DC 10V From Adapter Input AC 120V/60Hz	
Test date: 2014-07-25 Test site: 3m Chamber Tested by: Tony.Tang	
Test mode: Tx Mode	
Pass	

10.4. Test data



Site no. : EST Conduction Shielded RoomData no. : 361
Limit : FCC PART 15B QP LINE Phase : LINE
Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa
Engineer : Dick
EUT : Bluetooth Speaker
Power : DC 10V From Adapter Input AC 120V/60Hz
M/N : UB-SPB4M-101
Test Mode : TX Mode

		LISN	Cable		Emission			
	Freq.	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.16	9.61	9.81	30.34	49.76	65.25	15.49	QP
2	0.16	9.61	9.81	8.34	27.76	55.25	27.49	Average
3	0.28	9.61	9.83	26.46	45.90	60.68	14.78	QP
4	0.28	9.61	9.83	14.46	33.90	50.68	16.78	Average
5	0.35	9.61	9.83	24.59	44.03	58.91	14.88	QP
6	0.35	9.61	9.83	7.59	27.03	48.91	21.88	Average
7	0.90	9.63	9.82	21.56	41.01	56.00	14.99	QP
8	0.90	9.63	9.82	14.56	34.01	46.00	11.99	Average
9	1.39	9.63	9.82	19.39	38.84	56.00	17.16	QP
10	1.39	9.63	9.82	8.39	27.84	46.00	18.16	Average
11	2.71	9.62	9.84	17.99	37.45	56.00	18.55	QP
12	2.71	9.62	9.84	10.99	30.45	46.00	15.55	Average



Site no. : EST Conduction Shielded Room Data no. : 363
 Limit : FCC PART 15B QP LINE Phase : NEUTRAL
 Env. / Ins. : Temp:25.3'C Humi:58% Press:101.50kPa
 Engineer : Dick
 EUT : Bluetooth Speaker
 Power : DC 10V From Adapter Input AC 120V/60Hz
 M/N : UB-SPB4M-101
 Test Mode : TX Mode

	Freq.	LISN	Cable		Emission			
	(MHz)	Factor	Loss	Reading	Level	Limits	Margin	Remark
		(dB/m)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.18	9.55	9.80	24.91	44.26	64.42	20.16	QP
2	0.18	9.55	9.80	8.91	28.26	54.42	26.16	Average
3	0.28	9.60	9.83	22.80	42.23	60.90	18.67	QP
4	0.28	9.60	9.83	17.80	37.23	50.90	13.67	Average
5	0.83	9.62	9.81	21.30	40.73	56.00	15.27	QP
6	0.83	9.62	9.81	19.30	38.73	46.00	7.27	Average
7	0.90	9.62	9.82	21.43	40.87	56.00	15.13	QP
8	0.90	9.62	9.82	14.43	33.87	46.00	12.13	Average
9	1.39	9.61	9.82	21.22	40.65	56.00	15.35	QP
10	1.39	9.61	9.82	11.22	30.65	46.00	15.35	Average
11	2.72	9.63	9.84	18.04	37.51	56.00	18.49	QP
12	2.72	9.63	9.84	9.04	28.51	46.00	17.49	Average

11.ANTENNA REQUIREMENTS

11.1.Limit

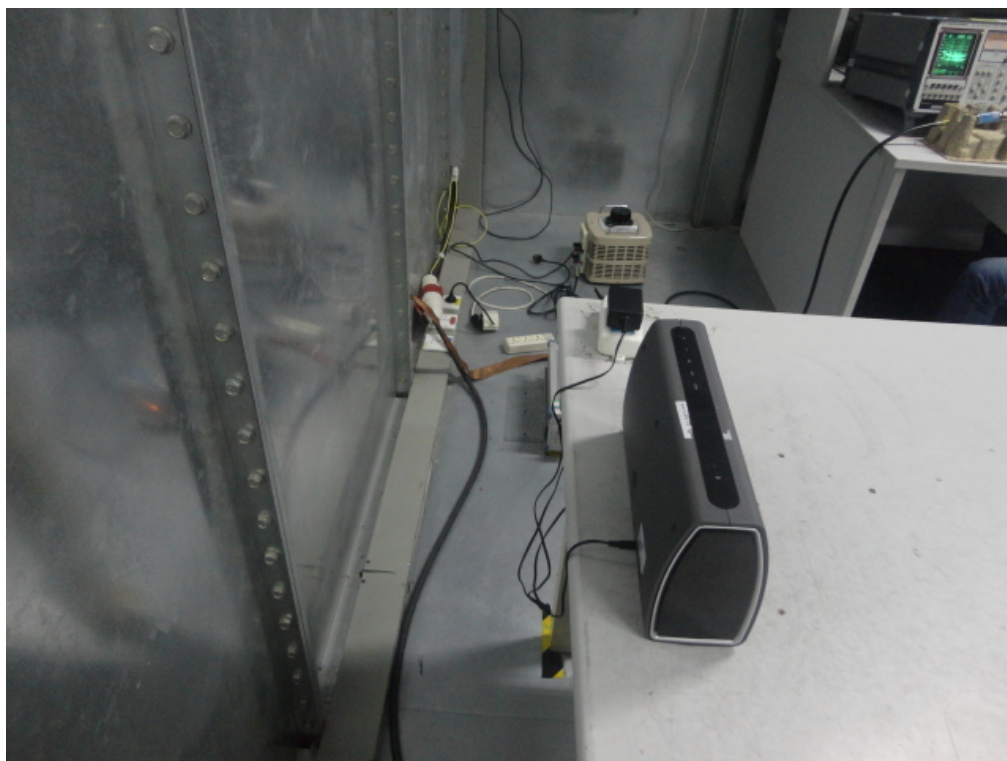
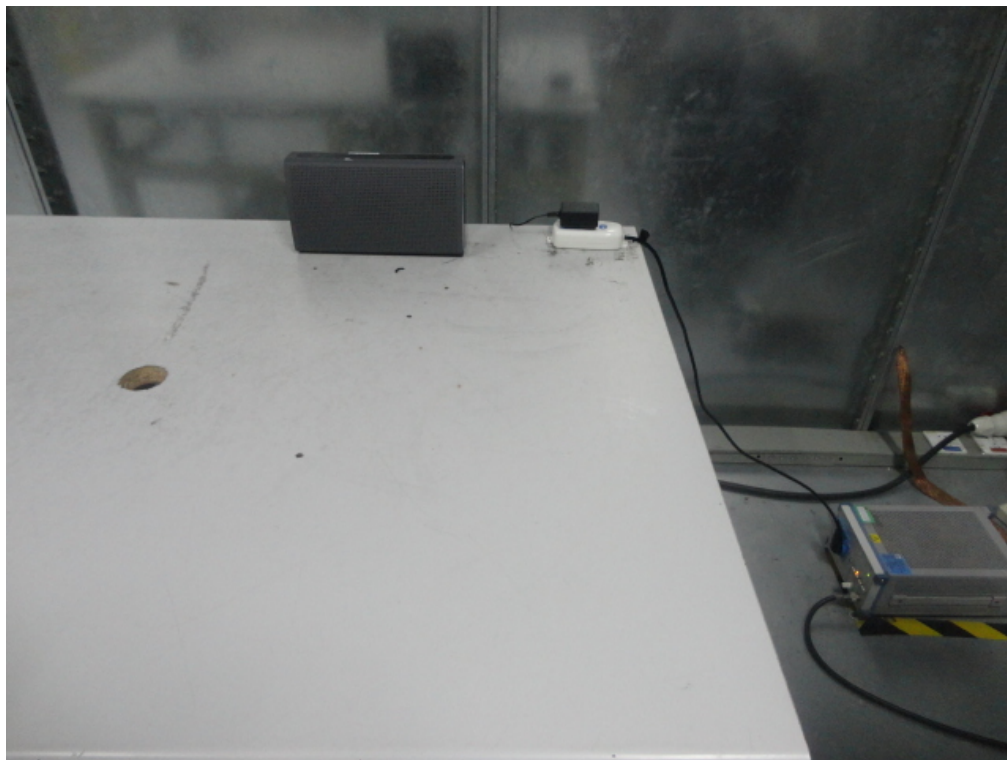
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

11.2.Result

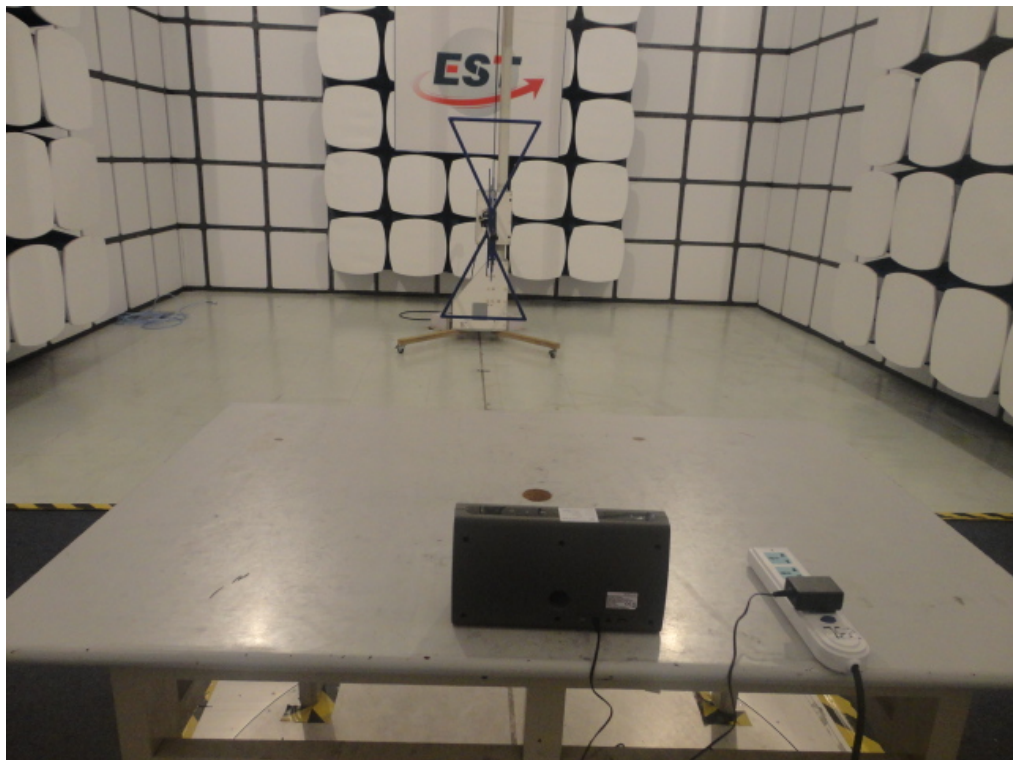
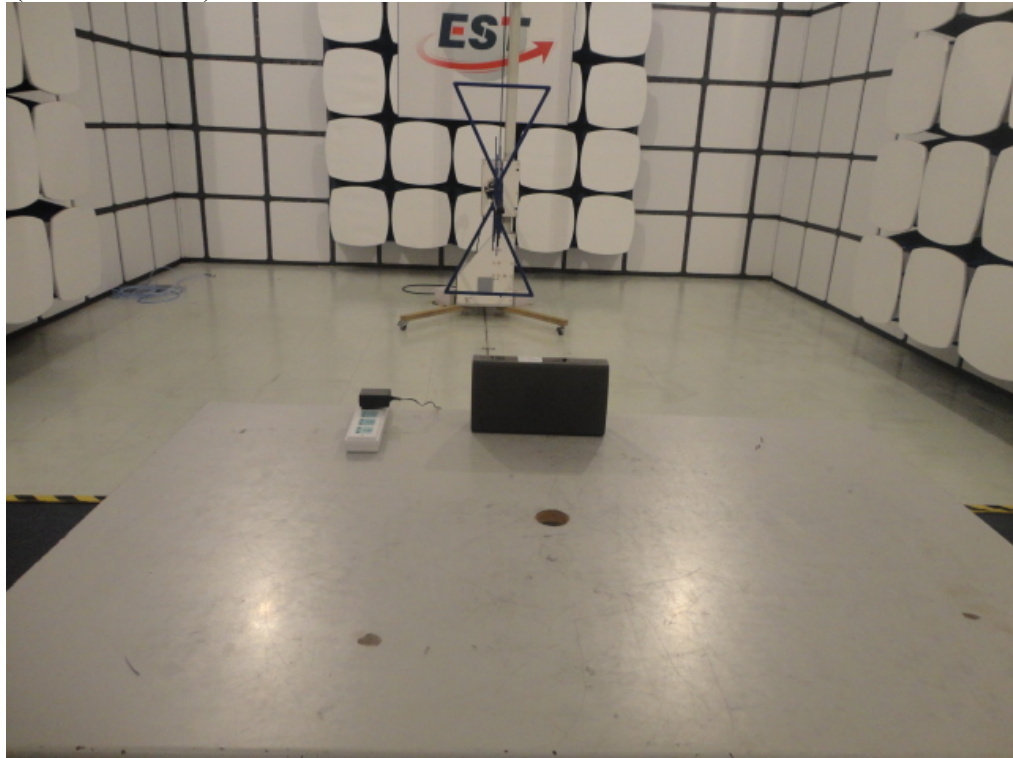
The antennas used for this product are integral Patch Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.

12. TEST SETUP PHOTO

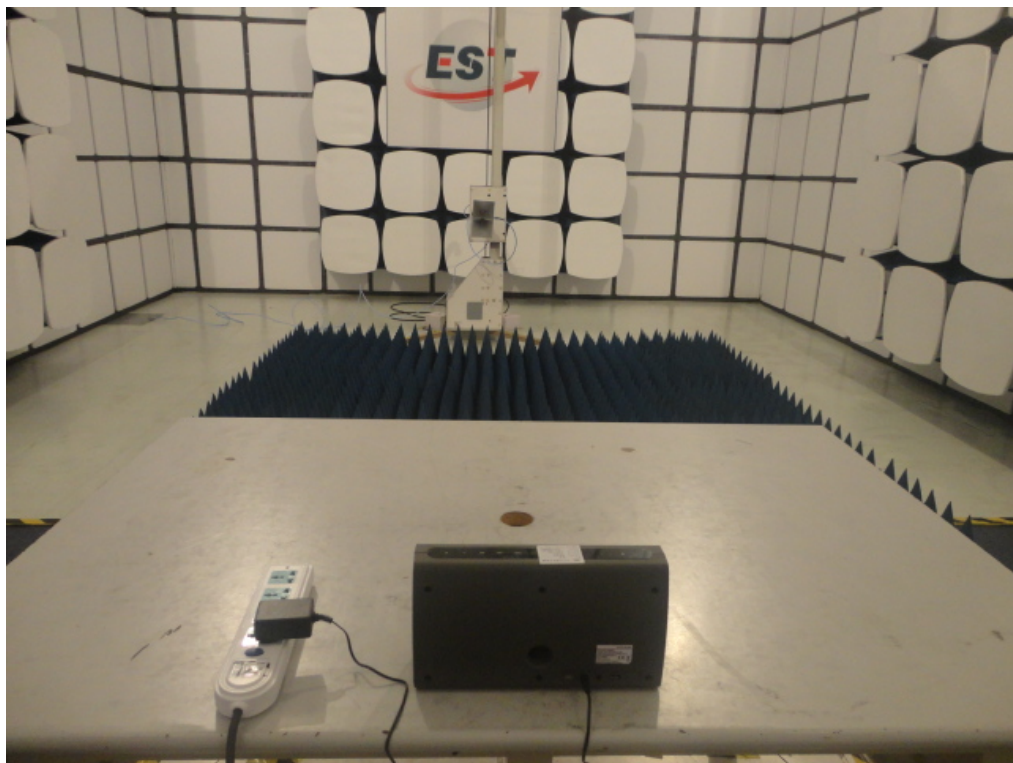
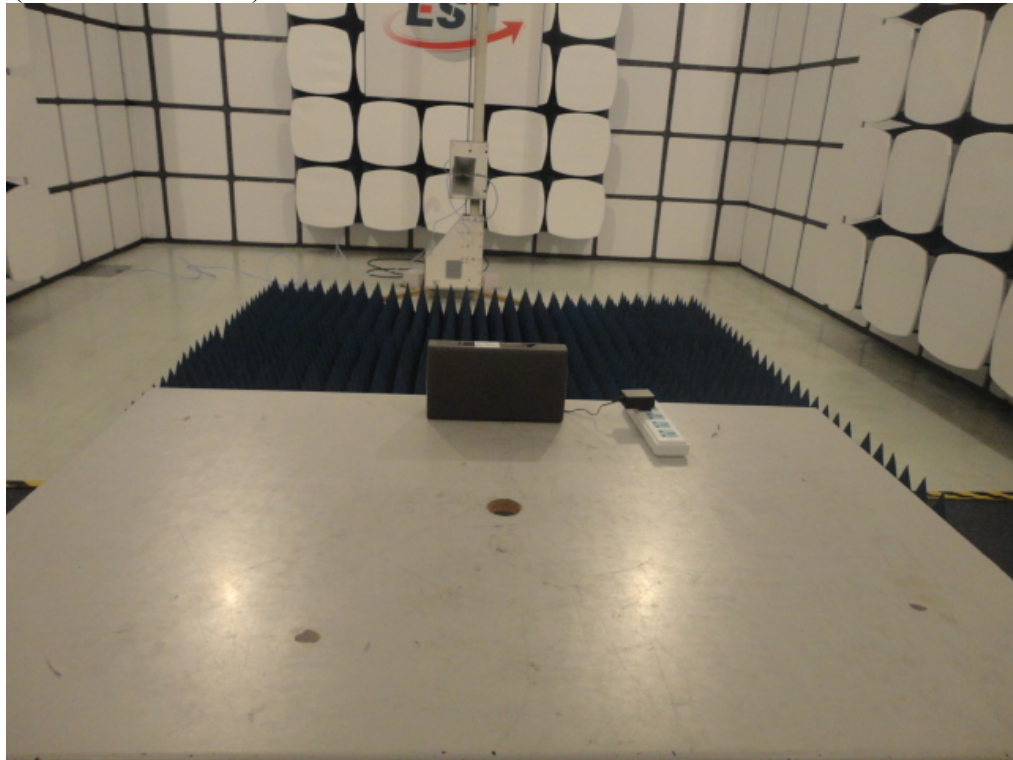
Conducted Test



Radiated Test (30-1000 MHz)

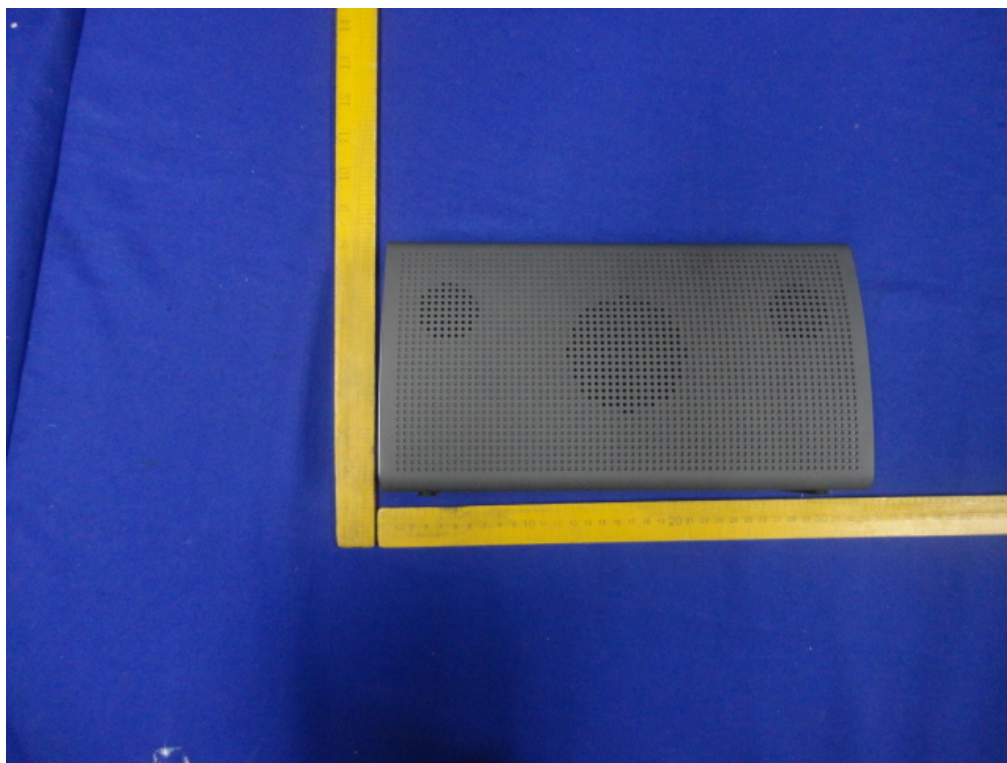


Radiated Test (1000-25000 MHz)

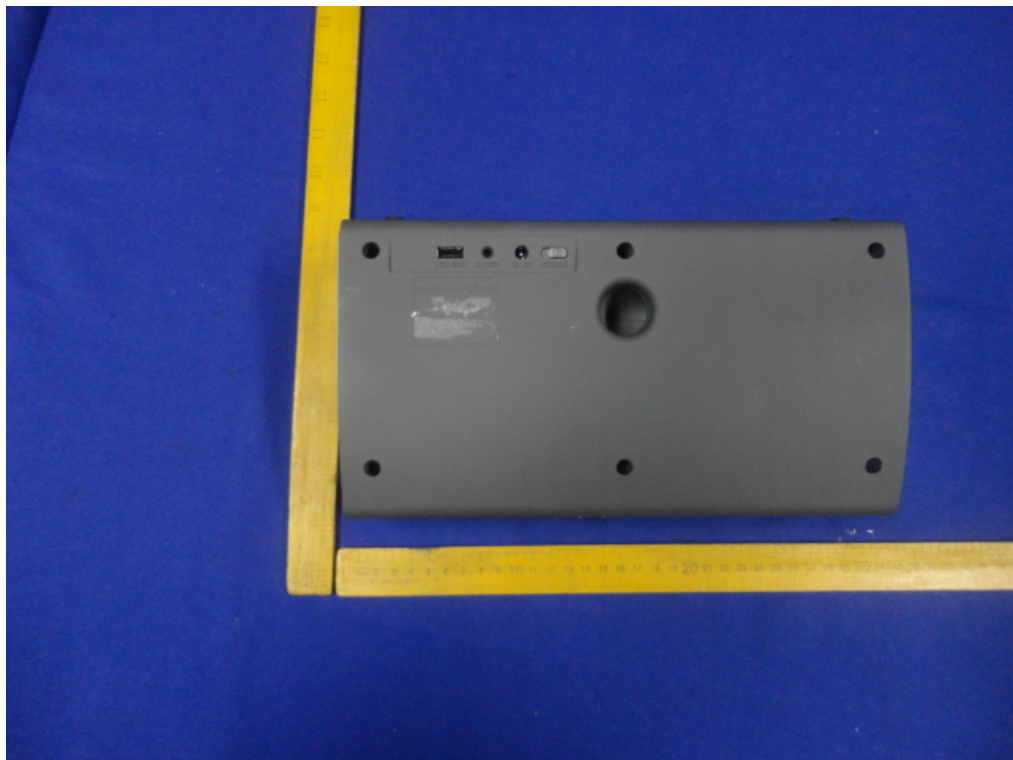


13. PHOTOS OF EUT

External Photos
M/N: UB-SPB4M-101



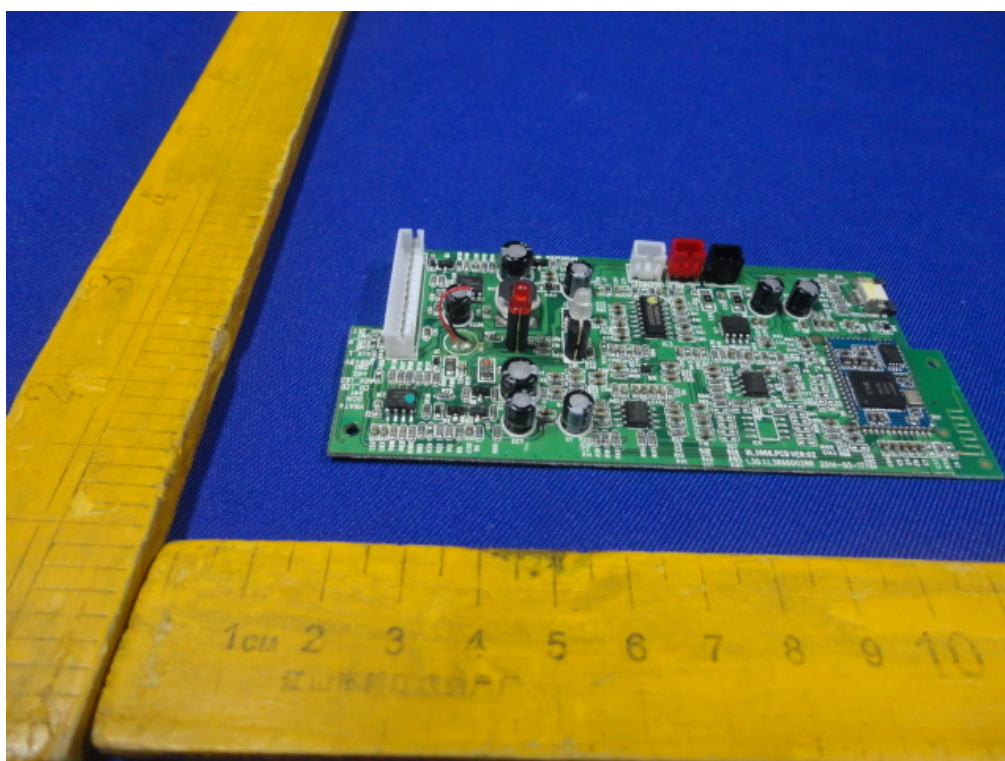
External Photos
M/N: UB-SPB4M-101



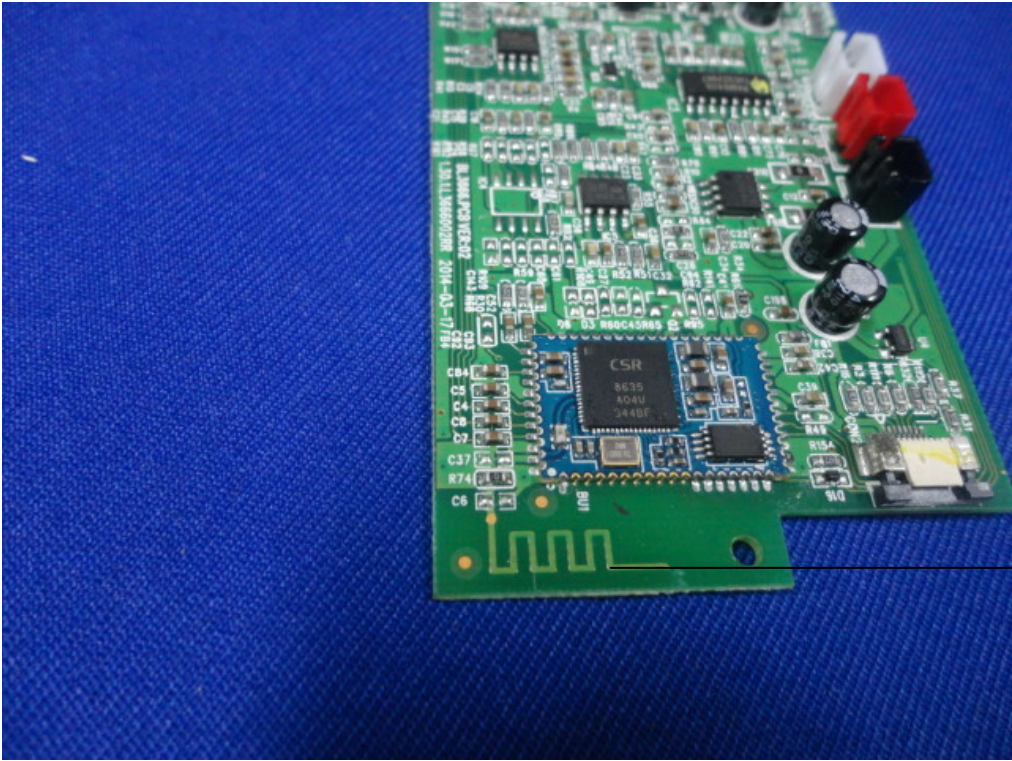
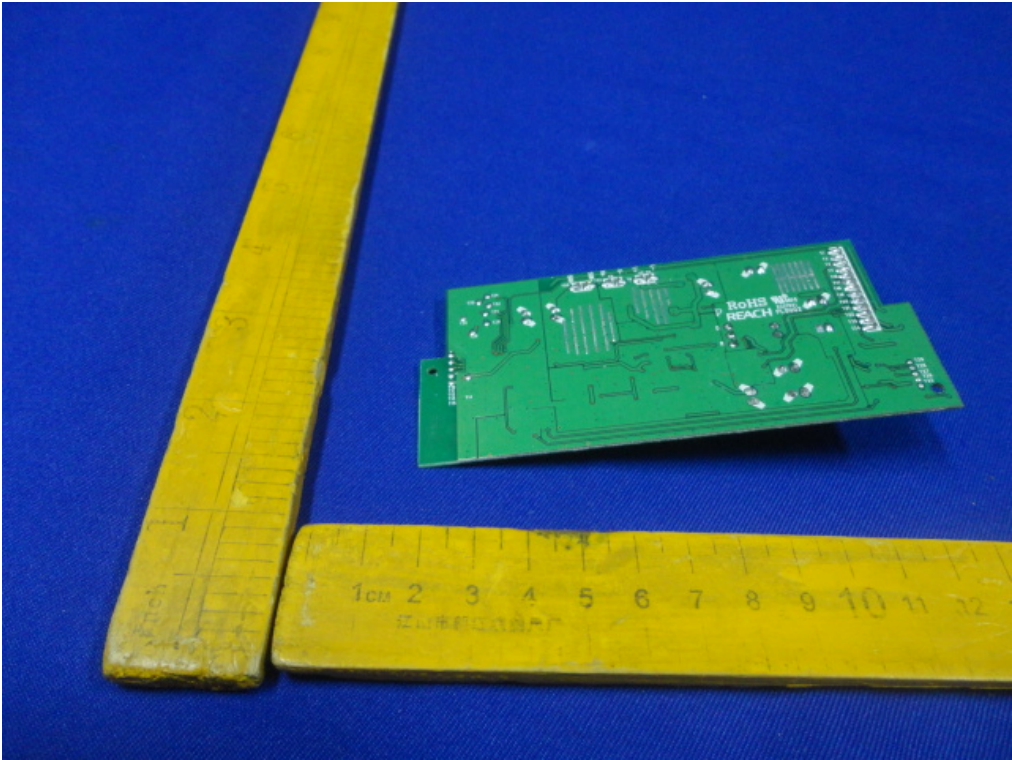
External Photos
M/N: UB-SPB4M-101



Internal Photos
M/N: UB-SPB4M-101

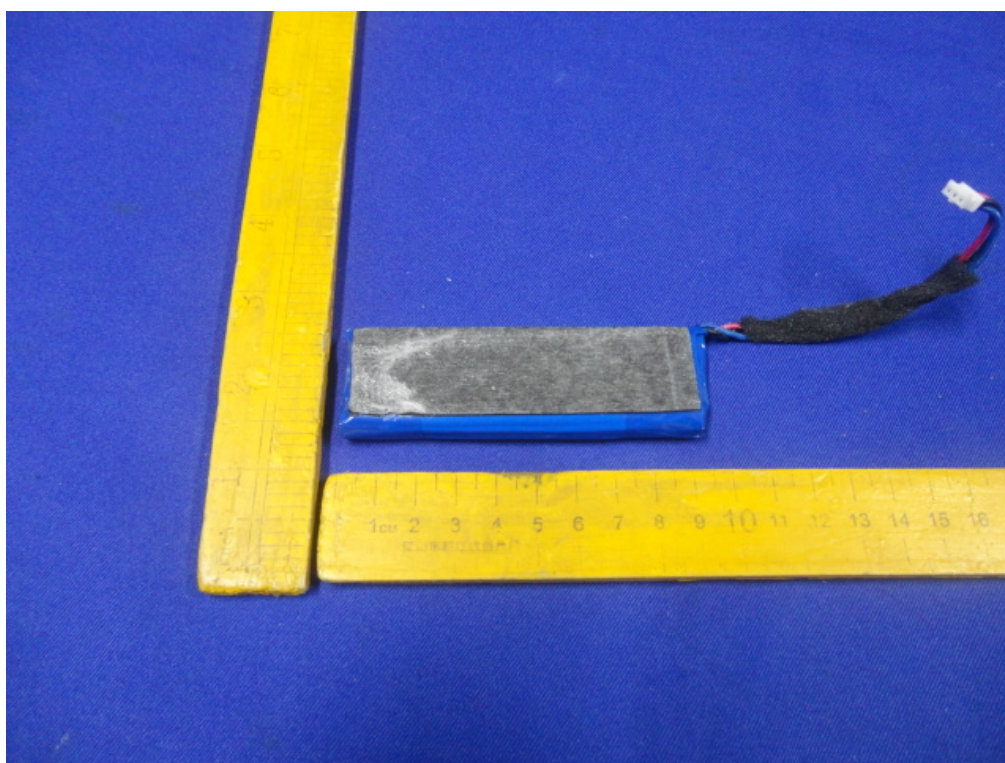


Internal Photos
M/N: UB-SPB4M-101

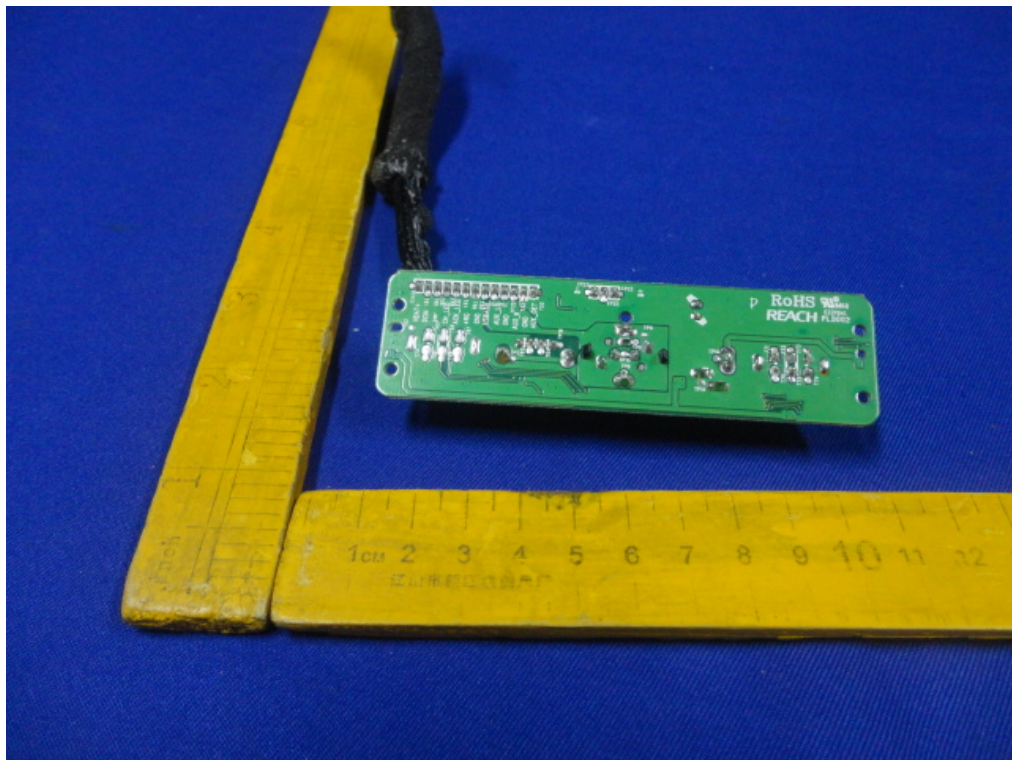
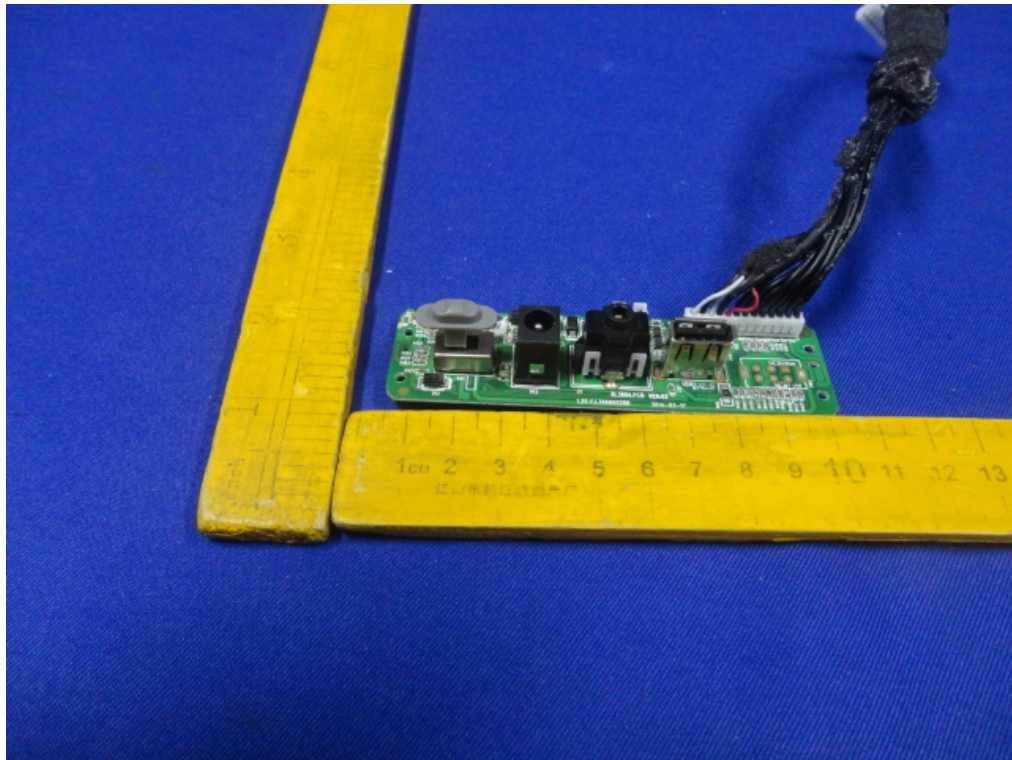


Bluetooth
Antenna

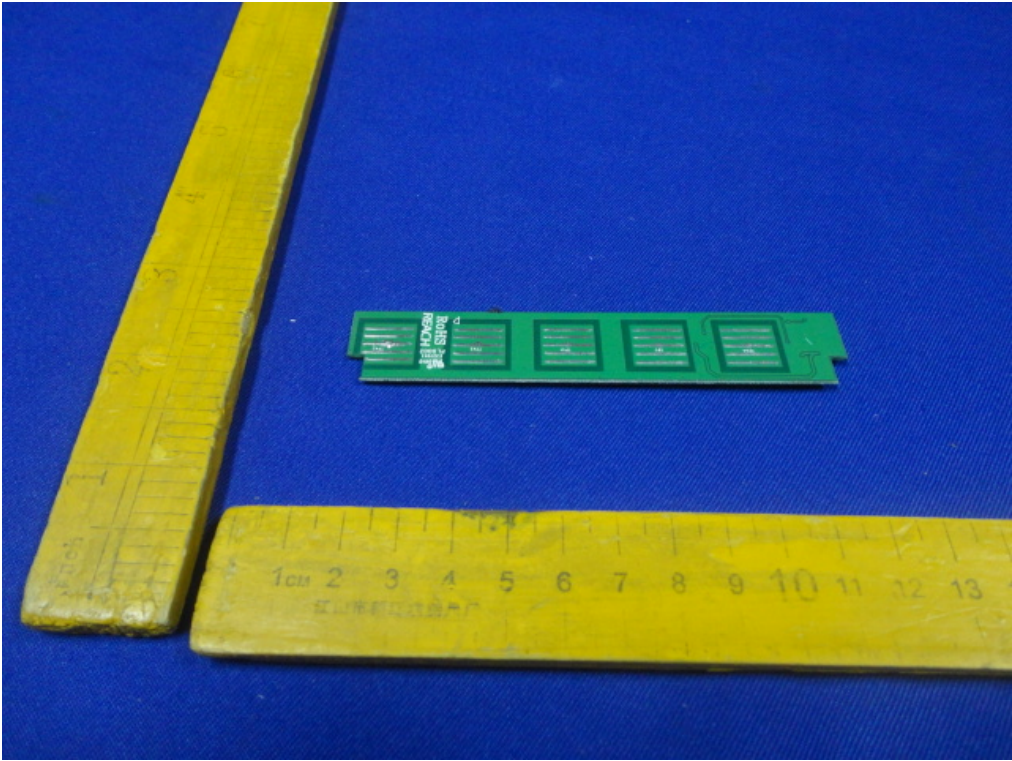
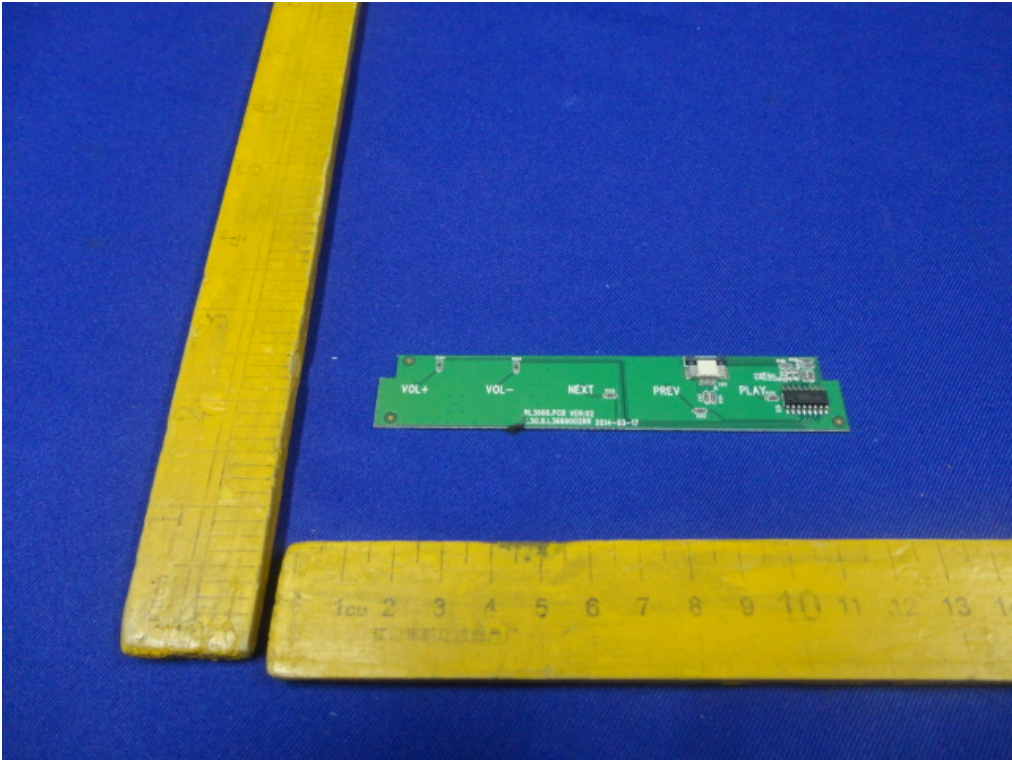
Internal Photos
M/N: UB-SPB4M-101



Internal Photos
M/N: UB-SPB4M-101



Internal Photos
M/N: UB-SPB4M-101



Adapter Photos

