



FCC REPORT

Applicant: Resonian, Inc

Address of Applicant: 15615 Alton PKWY STE 450 Irvine, California 92618, United States

Manufacturer: Shenzhen SDMC Technology Co.,Ltd

Address of Manufacturer: 7/F,W2-A,Hi-Tech,Industrial Park,Nanshan District,Shenzhen, China,518027

Equipment Under Test (EUT)

Product Name: Bluetooth Remote control unit with Voice

Model No.: B009

Trade Mark: Kinetic TV

FCC ID: 2ARUM-B009

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249

Date of sample receipt: November 21, 2018

Date of Test: November 22-27, 2018

Date of report issued: November 27, 2018

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo

Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	November 27, 2018	Original

Prepared By:

Tiger Chen

Date:

November 27, 2018

Project Engineer

Check By:

Robinson

Date:

November 27, 2018

Reviewer

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
4.1 MEASUREMENT UNCERTAINTY	4
5 GENERAL INFORMATION	5
5.1 GENERAL DESCRIPTION OF EUT	5
5.2 TEST MODE	7
5.3 DESCRIPTION OF SUPPORT UNITS	7
5.4 TEST FACILITY	7
5.5 TEST LOCATION	7
5.6 ADDITIONAL INSTRUCTIONS	7
6 TEST INSTRUMENTS LIST	8
7 TEST RESULTS AND MEASUREMENT DATA	10
7.1 ANTENNA REQUIREMENT	10
7.2 RADIATED EMISSION METHOD	11
7.2.1 Field Strength of The Fundamental Signal	13
7.2.2 Spurious emissions	14
7.2.3 Bandedge emissions	22
7.3 20dB OCCUPY BANDWIDTH	26
8 TEST SETUP PHOTO	28
9 EUT CONSTRUCTIONAL DETAILS	29

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Not Applicable
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.209/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Remarks:

1. Test according to ANSI C63.10: 2013.
2. Pass: The EUT complies with the essential requirements in the standard.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	$\pm 4.34\text{dB}$	(1)
Radiated Emission	30MHz ~ 1000MHz	$\pm 4.24\text{dB}$	(1)
Radiated Emission	1GHz ~ 26.5GHz	$\pm 4.68\text{dB}$	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	$\pm 3.45\text{dB}$	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

Product Name:	Bluetooth Remote control unit with Voice
Model No.:	B009
Serial No.:	WH-5393_BLE
Hardware version:	WH-4956_BLE V1.5
Software version:	RemoteB009_v1.0F_fac
Test sample(s) ID:	GTS201811000145-1
Sample(s) Status	Engineered sample
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	40
Channel separation:	2MHz
Modulation type:	GFSK
Antenna Type:	PCB Antenna
Antenna gain:	1.92dBi(declare by applicant)
Power supply:	DC 3V (2*1.5 "AAA")

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	11	2422MHz	21	2442MHz	31	2462MHz
2	2404MHz	12	2424MHz	22	2444MHz	32	2464MHz
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
9	2418MHz	19	2438MHz	29	2458MHz	39	2478MHz
10	2420MHz	20	2440MHz	30	2460MHz	40	2480MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2440MHz
The Highest channel	2480MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data. New battery is used during all test.</i>	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	92.36	93.81	91.23

5.3 Description of Support Units

None.

5.4 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.: 381383**

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383, January 08, 2018.

- **Industry Canada (IC) —Registration No.: 9079A-2**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Additional Instructions

Test mode was pre-built-in by manufacturer, EUT transmit in its max output level.

6 Test Instruments list

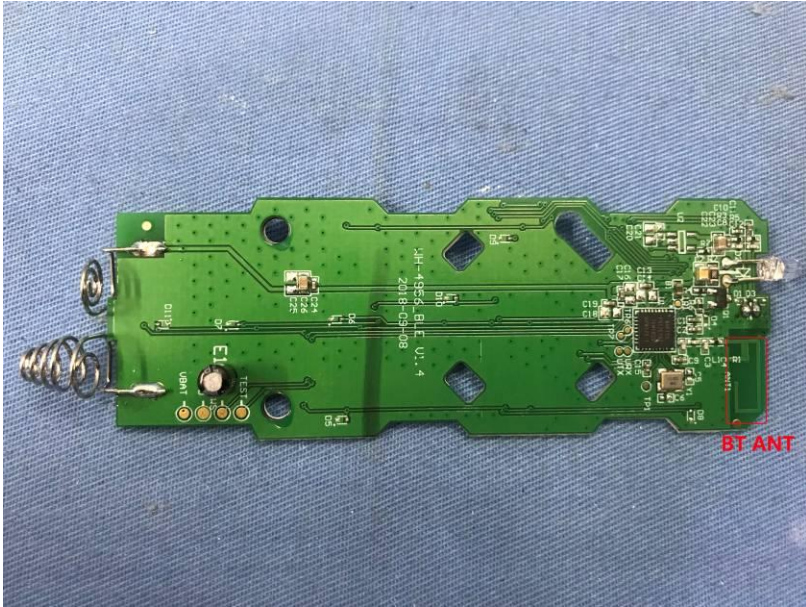
Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 27 2018	June. 26 2019
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 27 2018	June. 26 2019
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	June. 27 2018	June. 26 2019
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 27 2018	June. 26 2019
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 27 2018	June. 26 2019
9	Coaxial Cable	GTS	N/A	GTS211	June. 27 2018	June. 26 2019
10	Coaxial cable	GTS	N/A	GTS210	June. 27 2018	June. 26 2019
11	Coaxial Cable	GTS	N/A	GTS212	June. 27 2018	June. 26 2019
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 27 2018	June. 26 2019
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	June. 27 2018	June. 26 2019
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 27 2018	June. 26 2019
15	Band filter	Amindeon	82346	GTS219	June. 27 2018	June. 26 2019
16	Power Meter	Anritsu	ML2495A	GTS540	June. 27 2018	June. 26 2019
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 27 2018	June. 26 2019
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS588	June. 27 2018	June. 26 2019
19	Splitter	Agilent	11636B	GTS237	June. 27 2018	June. 26 2019
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 27 2018	June. 26 2019

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 27 2018	June. 26 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 27 2018	June. 26 2019
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 27 2018	June. 26 2019
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 27 2018	June. 26 2019
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 27 2018	June. 26 2019
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 27 2018	June. 26 2019
8	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 27 2018	June. 26 2019
9	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 27 2018	June. 26 2019

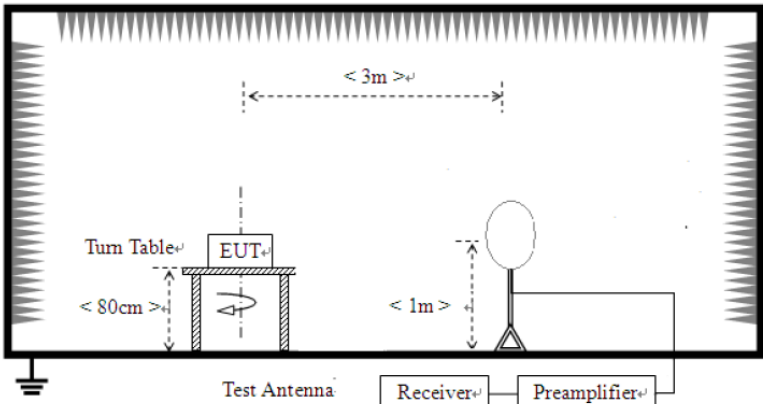
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	June 27 2018	June 26 2019

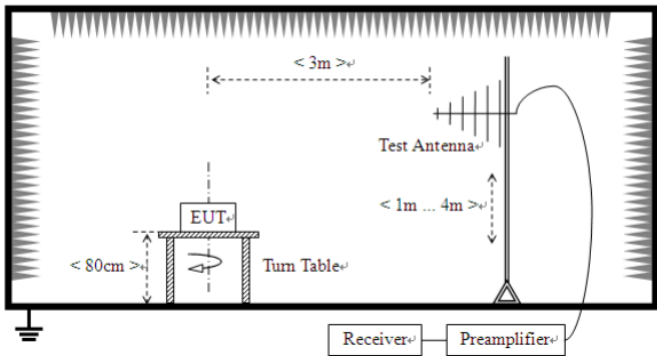
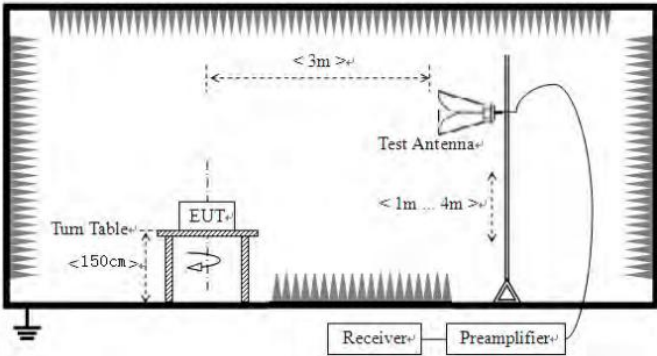
7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 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 permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit 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:	
<i>The antenna is PCB antenna, the best case gain of the antenna is 1.92dBi</i> 	

7.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209																							
Test Method:	ANSI C63.10:2013																							
Test Frequency Range:	9kHz to 25GHz																							
Test site:	Measurement Distance: 3m																							
Receiver setup:	<table><tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Remark</td></tr><tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr><tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr></table>				Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value	Peak	1MHz	10Hz	Average Value	
Frequency	Detector	RBW	VBW	Remark																				
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value																				
Above 1GHz	Peak	1MHz	3MHz	Peak Value																				
	Peak	1MHz	10Hz	Average Value																				
Limit: (Field strength of the fundamental signal)	Frequency		Limit (dBuV/m @3m)	Remark																				
	2400MHz-2483.5MHz		94.00	Average Value																				
Limit: (Spurious Emissions)	<table><tr><td>Frequency</td><td>Limit (uV/m)</td><td>Remark</td></tr><tr><td>30MHz-88MHz</td><td>100 @3m</td><td>Quasi-peak Value</td></tr><tr><td>88MHz-216MHz</td><td>150 @3m</td><td>Quasi-peak Value</td></tr><tr><td>216MHz-960MHz</td><td>200 @3m</td><td>Quasi-peak Value</td></tr><tr><td>960MHz-1GHz</td><td>500 @3m</td><td>Quasi-peak Value</td></tr><tr><td rowspan="2">Above 1GHz</td><td>500 @3m</td><td>Average Value</td></tr><tr><td>5000 @3m</td><td>Peak Value</td></tr></table>				Frequency	Limit (uV/m)	Remark	30MHz-88MHz	100 @3m	Quasi-peak Value	88MHz-216MHz	150 @3m	Quasi-peak Value	216MHz-960MHz	200 @3m	Quasi-peak Value	960MHz-1GHz	500 @3m	Quasi-peak Value	Above 1GHz	500 @3m	Average Value	5000 @3m	Peak Value
Frequency	Limit (uV/m)	Remark																						
30MHz-88MHz	100 @3m	Quasi-peak Value																						
88MHz-216MHz	150 @3m	Quasi-peak Value																						
216MHz-960MHz	200 @3m	Quasi-peak Value																						
960MHz-1GHz	500 @3m	Quasi-peak Value																						
Above 1GHz	500 @3m	Average Value																						
	5000 @3m	Peak Value																						
Limit: (band edge)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.																							
Test setup:	For radiated emissions from 9kHz to 30MHz  For radiated emissions from 30MHz to 1GHz																							

	 For radiated emissions above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test environment:	Temp.: 25 °C Humid.: 52% Press.: 1012mbar
Test voltage:	DC 3V
Test results:	Pass

Measurement data:

7.2.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	90.52	27.58	5.39	34.01	89.48	114.00	-24.52	Vertical
2402.00	93.38	27.58	5.39	34.01	92.34	114.00	-21.66	Horizontal
2440.00	90.78	27.48	5.43	33.96	89.73	114.00	-24.27	Vertical
2440.00	94.86	27.48	5.43	33.96	93.81	114.00	-20.19	Horizontal
2480.00	89.81	27.52	5.47	33.92	88.88	114.00	-25.12	Vertical
2480.00	94.04	27.52	5.47	33.92	93.11	114.00	-20.89	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2402.00	80.78	27.58	5.39	34.01	79.74	94.00	-14.26	Vertical
2402.00	82.73	27.58	5.39	34.01	81.69	94.00	-12.31	Horizontal
2440.00	80.84	27.48	5.43	33.96	79.79	94.00	-14.21	Vertical
2440.00	83.27	27.48	5.43	33.96	82.22	94.00	-11.78	Horizontal
2480.00	79.87	27.52	5.47	33.92	78.94	94.00	-15.06	Vertical
2480.00	82.46	27.52	5.47	33.92	81.53	94.00	-12.47	Horizontal

Note: RBW 2MHz VBW 6MHz , Peak detector is for PK value , RMS detector is for AV value.

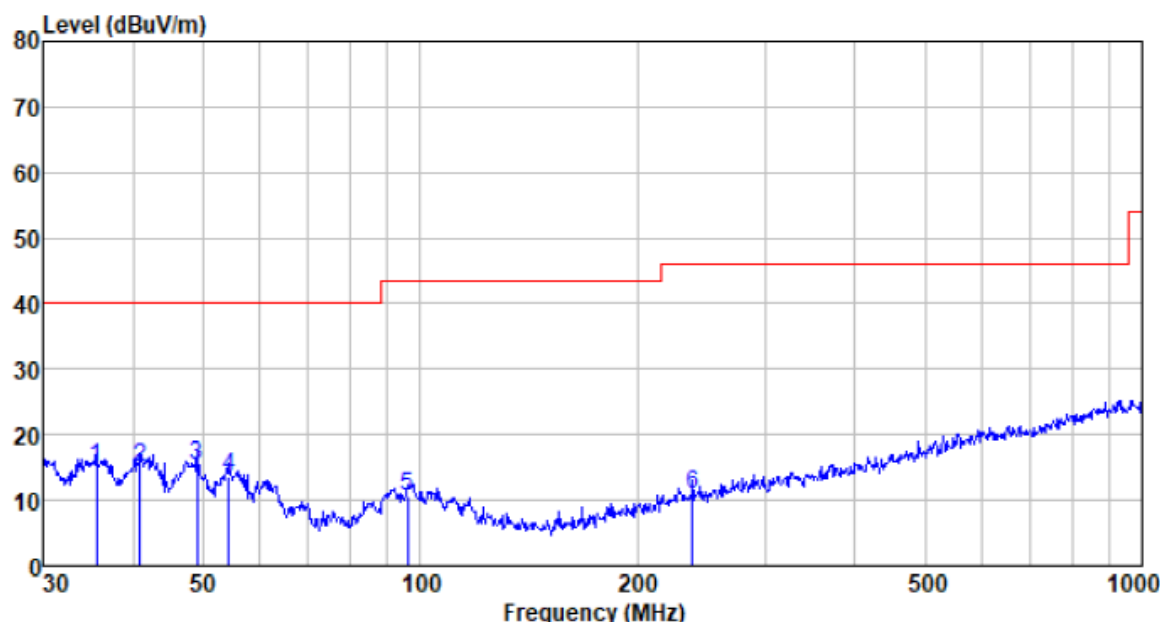
7.2.2 Spurious emissions

■ Below 30MHz

The emission from 9 kHz to 30MHz was pre-tested and found the result was 20dB lower than the limit, and according to 15.31(o), the test result no need to reported.

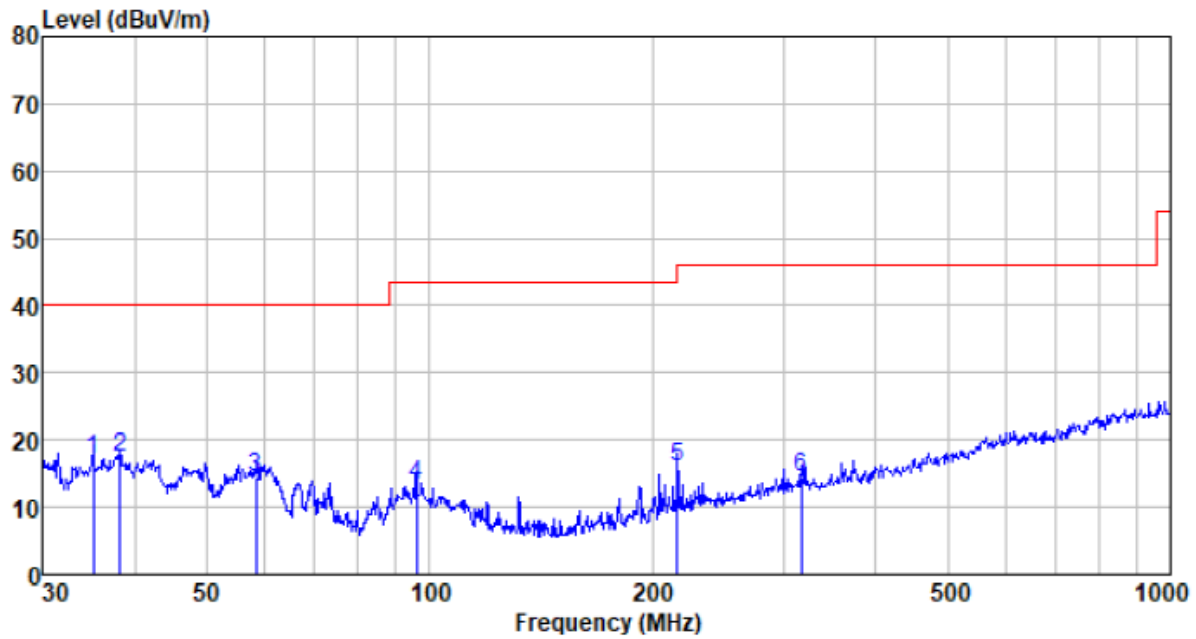
■ Below 1GHz

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
35.624	38.51	11.42	0.62	35.40	15.15	40.00	-24.85	QP
40.845	37.84	12.21	0.67	35.71	15.01	40.00	-24.99	QP
49.014	38.49	12.29	0.76	36.13	15.41	40.00	-24.59	QP
54.261	37.17	11.85	0.81	36.24	13.59	40.00	-26.41	QP
96.099	34.42	11.65	1.16	36.69	10.54	43.50	-32.96	QP
238.310	34.39	11.78	2.06	37.37	10.86	46.00	-35.14	QP

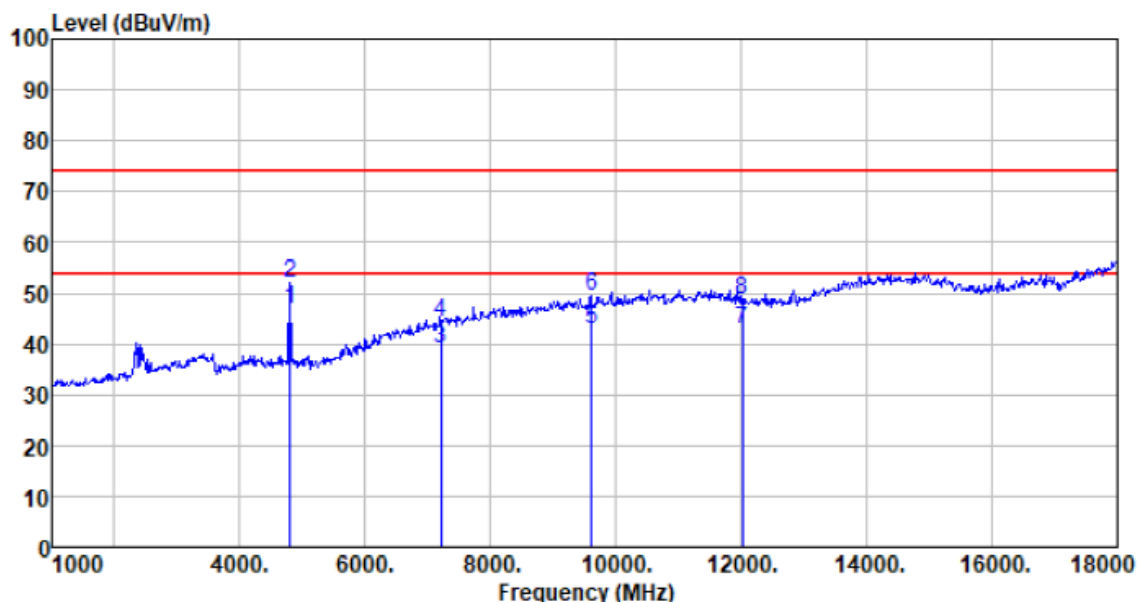
Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
35.128	40.60	11.33	0.61	35.36	17.18	40.00	-22.82	QP
38.212	40.41	11.92	0.64	35.56	17.41	40.00	-22.59	QP
58.203	38.46	11.48	0.84	36.30	14.48	40.00	-25.52	QP
96.099	37.25	11.65	1.16	36.69	13.37	43.50	-30.13	QP
216.024	40.43	11.02	1.93	37.35	16.03	46.00	-29.97	QP
317.701	35.38	13.93	2.45	37.44	14.32	46.00	-31.68	QP

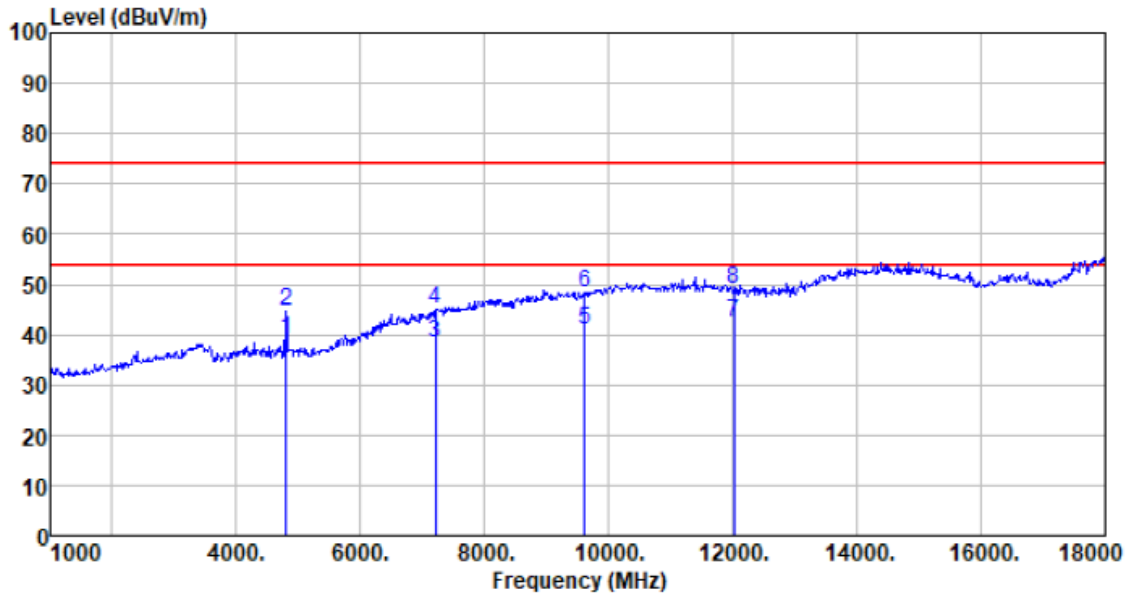
■ Above 1GHz

Polarization:	Horizontal	Test Frequency :	2402MHz
---------------	------------	------------------	---------



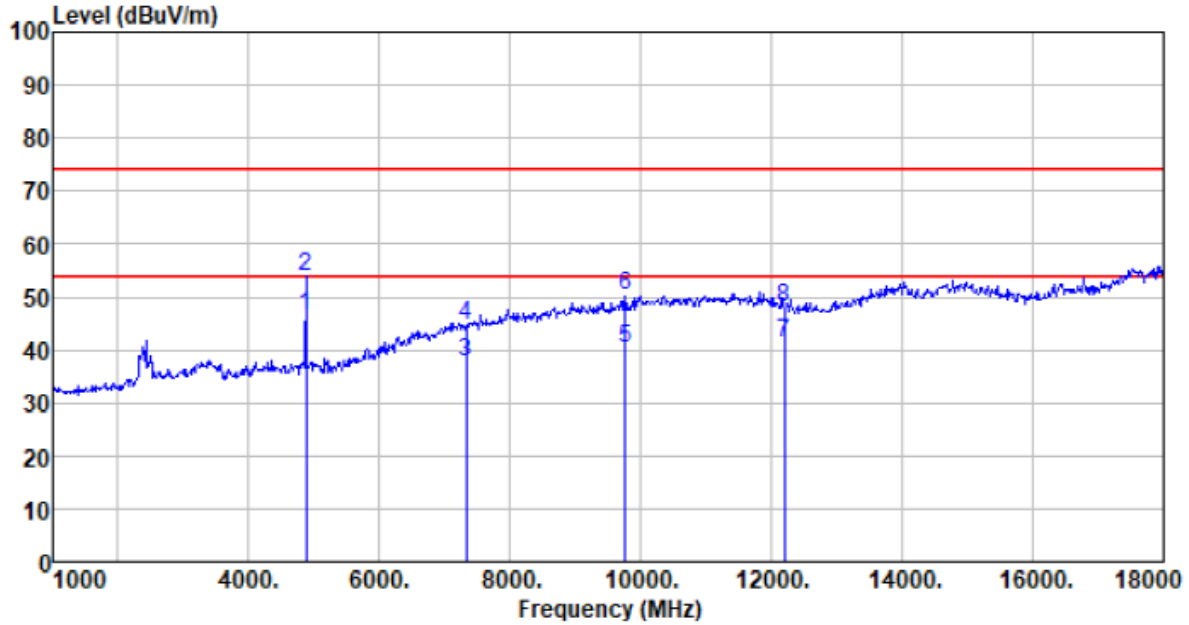
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4804.000	43.71	31.35	9.36	37.58	46.84	54.00	-7.16	Average
4804.000	49.00	31.35	9.36	37.58	52.13	74.00	-21.87	Peak
7204.000	27.54	35.89	11.21	35.44	39.20	54.00	-14.80	Average
7204.000	32.72	35.89	11.21	35.44	44.38	74.00	-29.62	Peak
9608.000	27.11	37.74	12.91	34.96	42.80	54.00	-11.20	Average
9608.000	33.59	37.74	12.91	34.96	49.28	74.00	-24.72	Peak
12010.000	25.85	38.70	14.54	36.40	42.69	54.00	-11.31	Average
12010.000	31.98	38.70	14.54	36.40	48.82	74.00	-25.18	Peak

Polarization: Vertical Test Frequency : 2402MHz



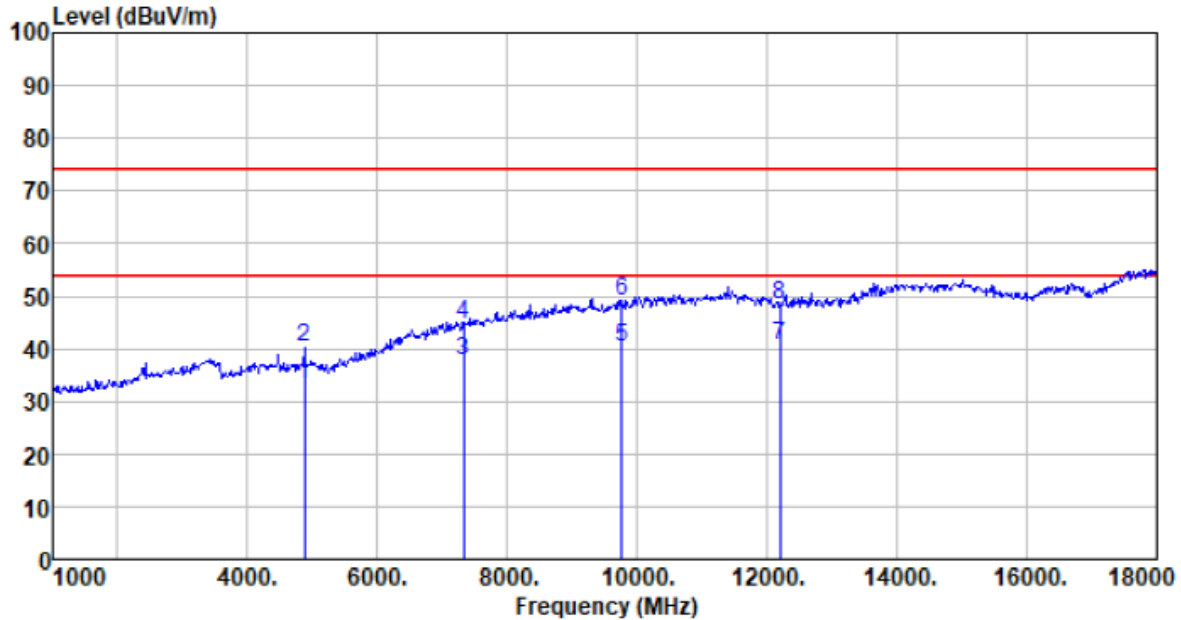
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4804.000	36.07	31.35	9.36	37.58	39.20	54.00	-14.80	Average
4804.000	41.63	31.35	9.36	37.58	44.76	74.00	-29.24	Peak
7206.000	26.69	35.89	11.21	35.44	38.35	54.00	-15.65	Average
7206.000	33.33	35.89	11.21	35.44	44.99	74.00	-29.01	Peak
9608.000	25.37	37.74	12.91	34.96	41.06	54.00	-12.94	Average
9608.000	32.59	37.74	12.91	34.96	48.28	74.00	-25.72	Peak
12010.000	25.70	38.70	14.54	36.40	42.54	54.00	-11.46	Average
12010.000	32.38	38.70	14.54	36.40	49.22	74.00	-24.78	Peak

Polarization: Horizontal Test Frequency : 2440MHz



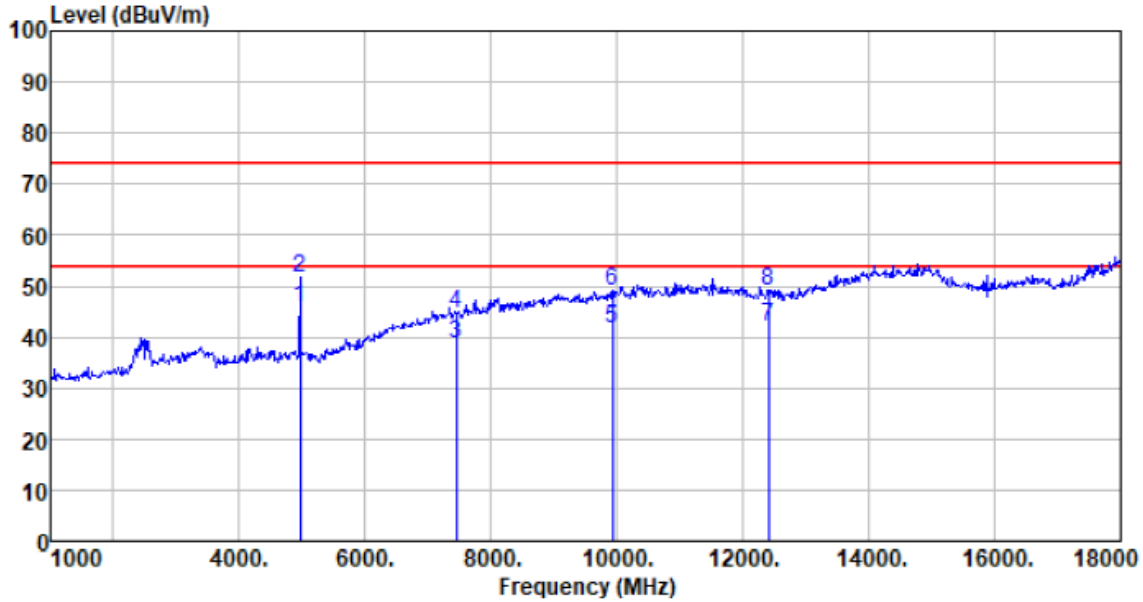
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4880.000	43.36	31.48	9.42	37.59	46.67	54.00	-7.33	Average
4880.000	50.52	31.48	9.42	37.59	53.83	74.00	-20.17	Peak
7320.000	25.69	36.17	11.30	35.47	37.69	54.00	-16.31	Average
7320.000	32.67	36.17	11.30	35.47	44.67	74.00	-29.33	Peak
9760.000	24.41	38.07	13.01	35.09	40.40	54.00	-13.60	Average
9760.000	34.10	38.07	13.01	35.09	50.09	74.00	-23.91	Peak
12200.000	24.54	38.62	14.67	36.44	41.39	54.00	-12.61	Average
12200.000	31.08	38.62	14.67	36.44	47.93	74.00	-26.07	Peak

Polarization: Vertical Test Frequency : 2440MHz



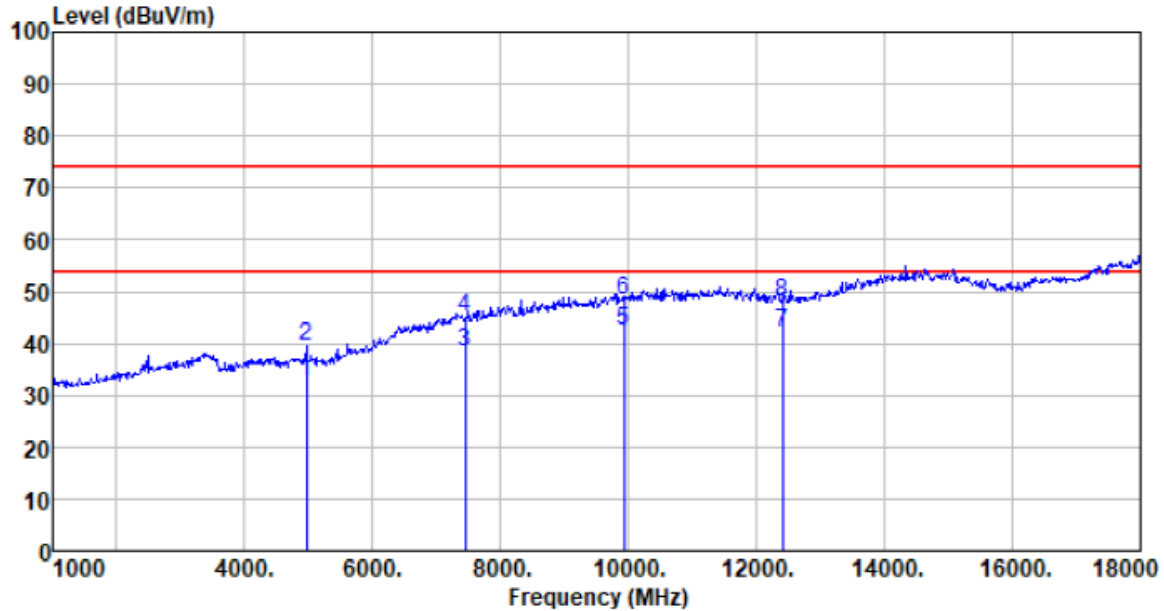
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4880.000	29.82	31.48	9.42	37.59	33.13	54.00	-20.87	Average
4880.000	37.08	31.48	9.42	37.59	40.39	74.00	-33.61	Peak
7320.000	25.82	36.17	11.30	35.47	37.82	54.00	-16.18	Average
7320.000	32.83	36.17	11.30	35.47	44.83	74.00	-29.17	Peak
9760.000	24.27	38.07	13.01	35.09	40.26	54.00	-13.74	Average
9760.000	33.25	38.07	13.01	35.09	49.24	74.00	-24.76	Peak
12200.000	23.88	38.62	14.67	36.44	40.73	54.00	-13.27	Average
12200.000	31.31	38.62	14.67	36.44	48.16	74.00	-25.84	Peak

Polarization: Horizontal Test Frequency : 2480MHz



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4960.000	42.38	31.63	9.48	37.60	45.89	54.00	-8.11	Average
4960.000	48.23	31.63	9.48	37.60	51.74	74.00	-22.26	Peak
7440.000	26.38	36.46	11.39	35.49	38.74	54.00	-15.26	Average
7440.000	32.43	36.46	11.39	35.49	44.79	74.00	-29.21	Peak
9920.000	25.40	38.42	13.13	35.23	41.72	54.00	-12.28	Average
9920.000	32.71	38.42	13.13	35.23	49.03	74.00	-24.97	Peak
12400.000	25.27	38.54	14.80	36.48	42.13	54.00	-11.87	Average
12400.000	32.22	38.54	14.80	36.48	49.08	74.00	-24.92	Peak

Polarization: Vertical Test Frequency : 2480MHz



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
4960.000	28.80	31.63	9.48	37.60	32.31	54.00	-21.69	Average
4960.000	35.80	31.63	9.48	37.60	39.31	74.00	-34.69	Peak
7440.000	26.15	36.46	11.39	35.49	38.51	54.00	-15.49	Average
7440.000	32.69	36.46	11.39	35.49	45.05	74.00	-28.95	Peak
9920.000	26.05	38.42	13.13	35.23	42.37	54.00	-11.63	Average
9920.000	32.03	38.42	13.13	35.23	48.35	74.00	-25.65	Peak
12400.000	25.36	38.54	14.80	36.48	42.22	54.00	-11.78	Average
12400.000	31.24	38.54	14.80	36.48	48.10	74.00	-25.90	Peak

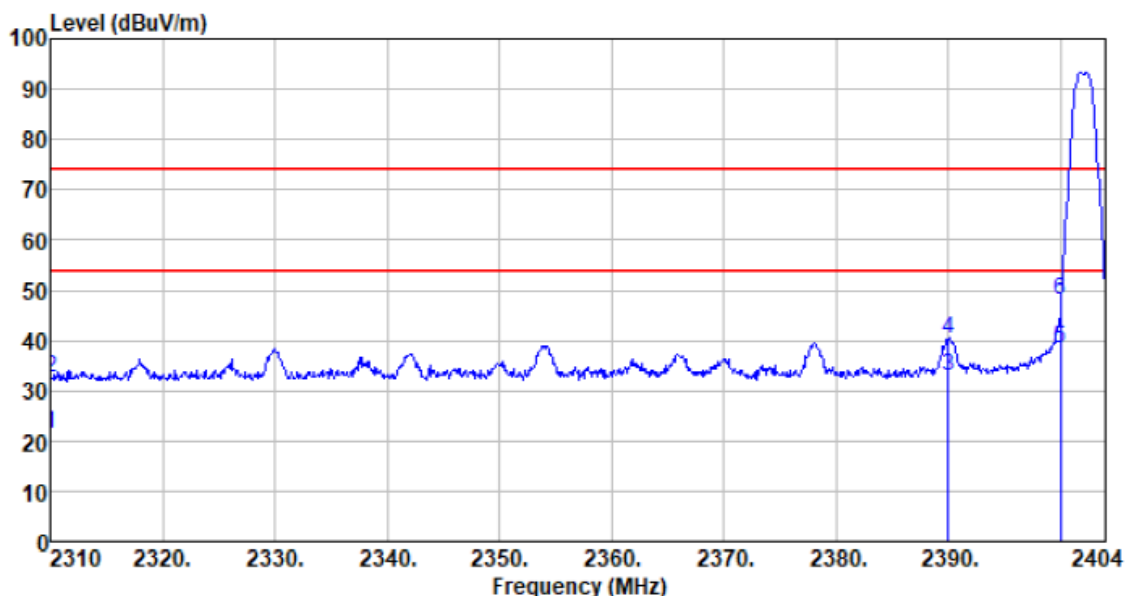
Remarks:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.
3. “*”, means this data is the too weak instrument of signal is unable to test.
4. For above 18GHz, no emission found

7.2.3 Bandedge emissions

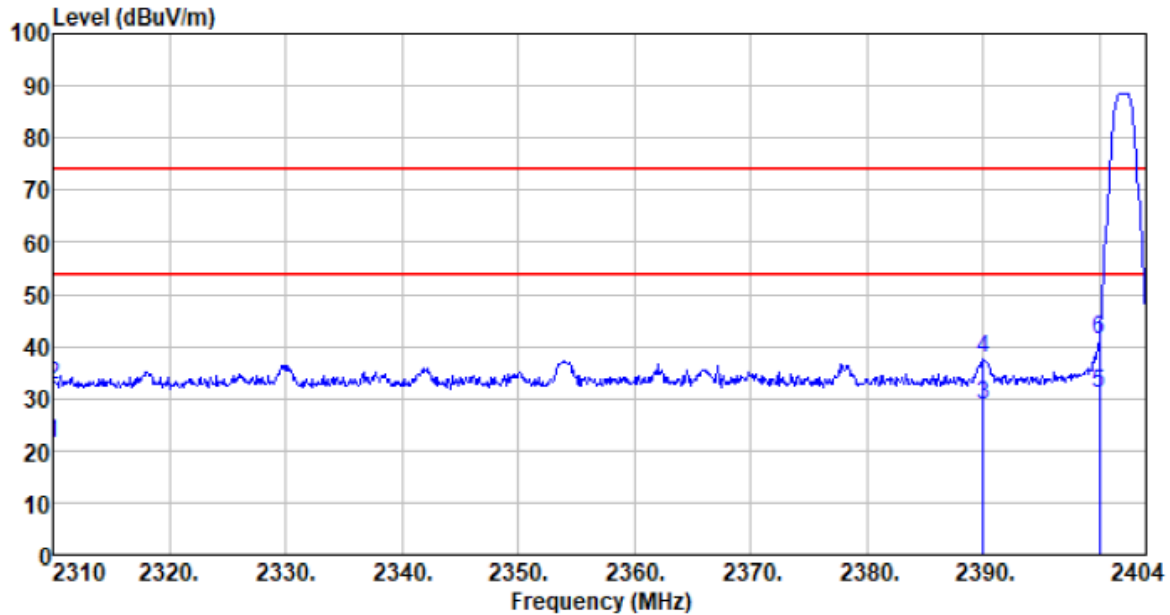
All of the restriction bands were tested, and only the data of worst case was exhibited.

Polarization: Horizontal Test Frequency : 2402MHz



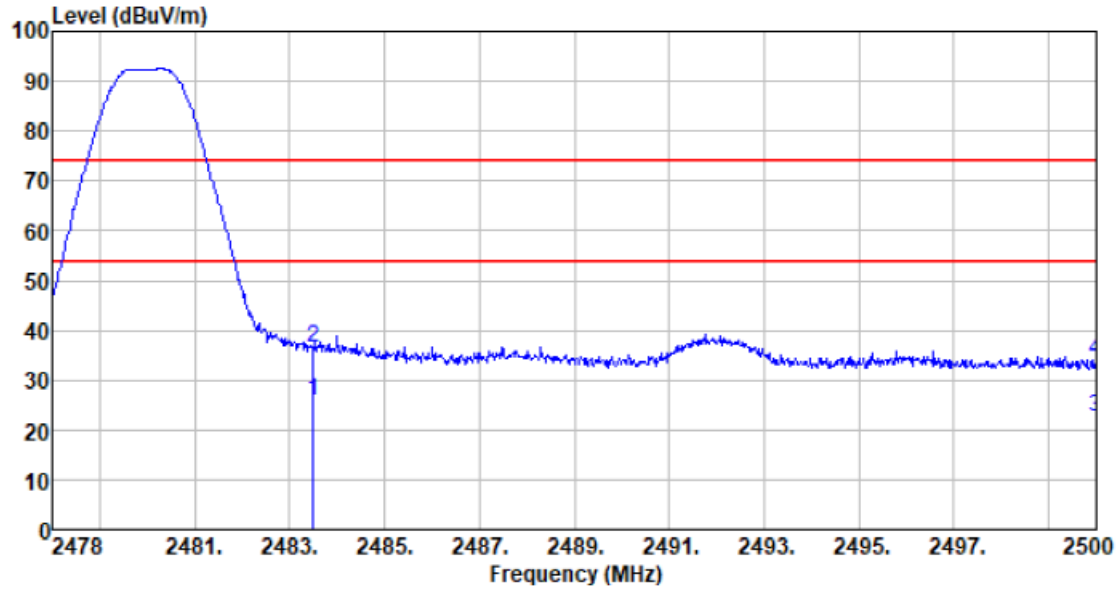
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2310.000	24.89	27.21	6.19	36.95	21.34	54.00	-32.66	Average
2310.000	36.07	27.21	6.19	36.95	32.52	74.00	-41.48	Peak
2390.000	36.24	27.41	6.31	37.01	32.95	54.00	-21.05	Average
2390.000	43.68	27.41	6.31	37.01	40.39	74.00	-33.61	Peak
2400.000	41.46	27.44	6.33	37.01	38.22	54.00	-15.78	Average
2400.000	51.05	27.44	6.33	37.01	47.81	74.00	-26.19	Peak

Polarization:	Vertical	Test Frequency :	2402MHz
---------------	----------	------------------	---------



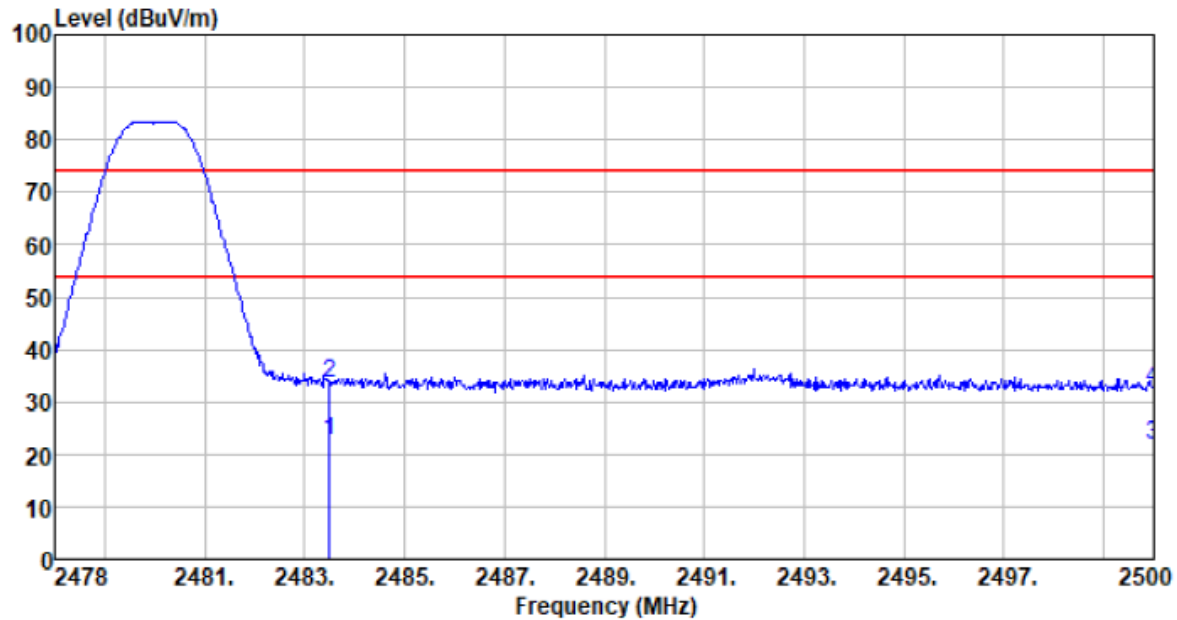
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2310.000	24.92	27.21	6.19	36.95	21.37	54.00	-32.63	Average
2310.000	35.95	27.21	6.19	36.95	32.40	74.00	-41.60	Peak
2390.000	32.01	27.41	6.31	37.01	28.72	54.00	-25.28	Average
2390.000	40.85	27.41	6.31	37.01	37.56	74.00	-36.44	Peak
2400.000	34.15	27.44	6.33	37.01	30.91	54.00	-23.09	Average
2400.000	44.43	27.44	6.33	37.01	41.19	74.00	-32.81	Peak

Polarization: Horizontal Test Frequency : 2480MHz



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2483.500	28.67	27.66	6.45	37.07	25.71	54.00	-28.29	Average
2483.500	39.47	27.66	6.45	37.07	36.51	74.00	-37.49	Peak
2500.000	25.46	27.70	6.47	37.09	22.54	54.00	-31.46	Average
2500.000	36.73	27.70	6.47	37.09	33.81	74.00	-40.19	Peak

Polarization:	Vertical	Test Frequency :	2480MHz
---------------	----------	------------------	---------

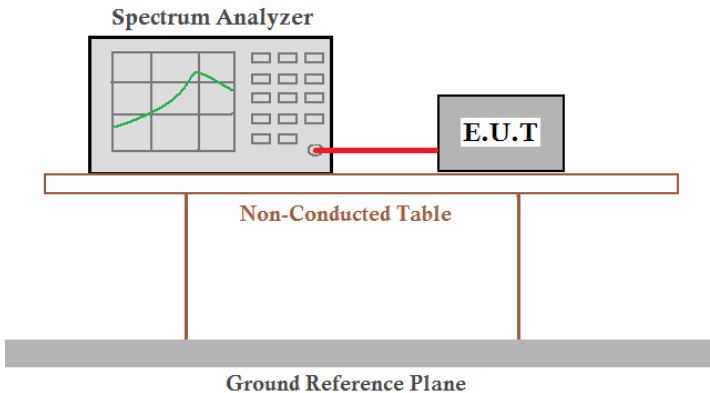


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
2483.500	25.62	27.66	6.45	37.07	22.66	54.00	-31.34	Average
2483.500	36.53	27.66	6.45	37.07	33.57	74.00	-40.43	Peak
2500.000	24.84	27.70	6.47	37.09	21.92	54.00	-32.08	Average
2500.000	35.55	27.70	6.47	37.09	32.63	74.00	-41.37	Peak

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

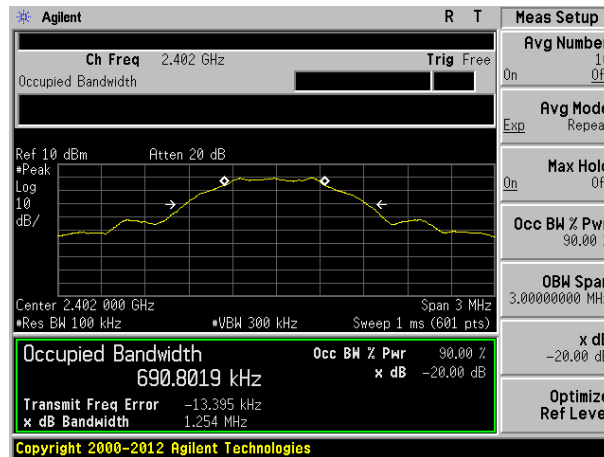
7.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

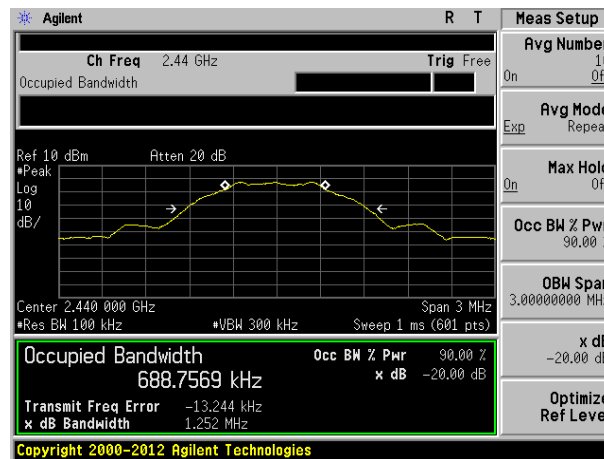
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	1.254	Pass
Middle	1.252	Pass
Highest	1.242	Pass

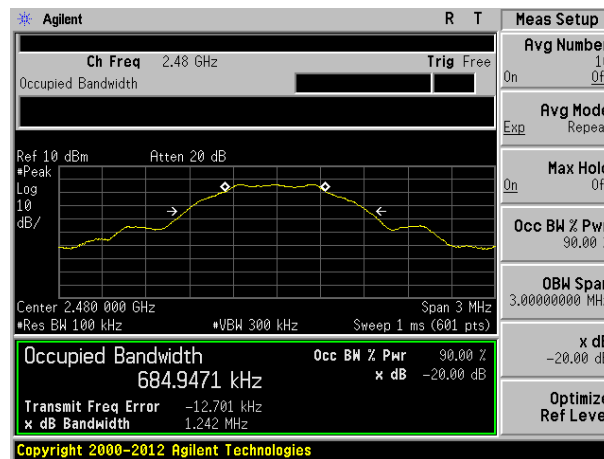
Test plot as follows:



Lowest channel



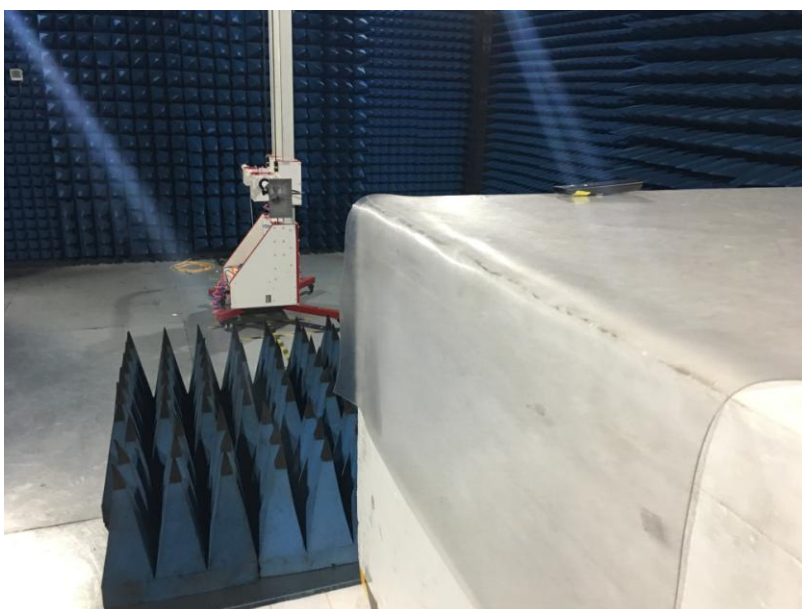
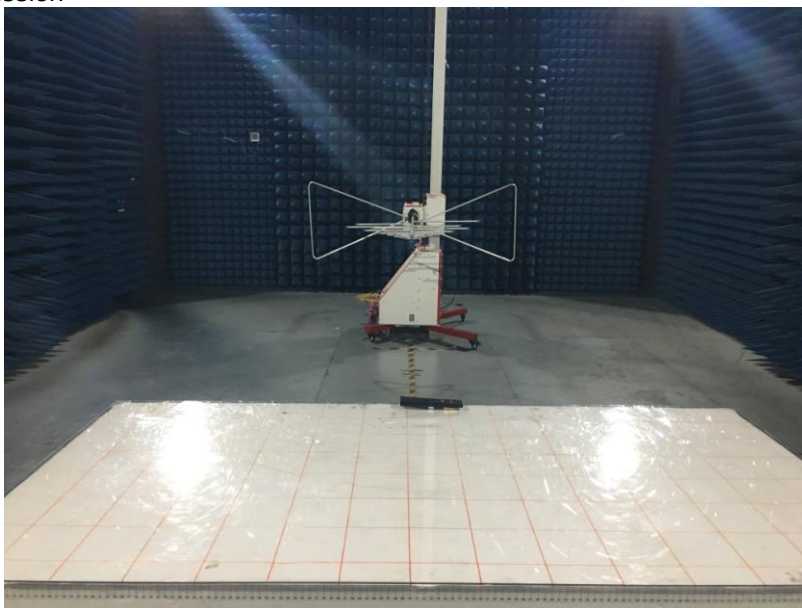
Middle channel



Highest channel

8 Test Setup Photo

Radiated Emission

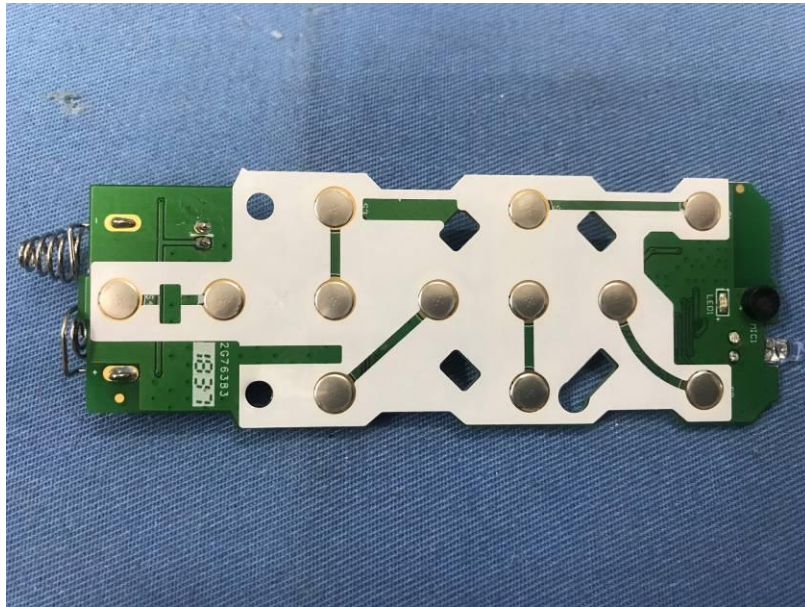


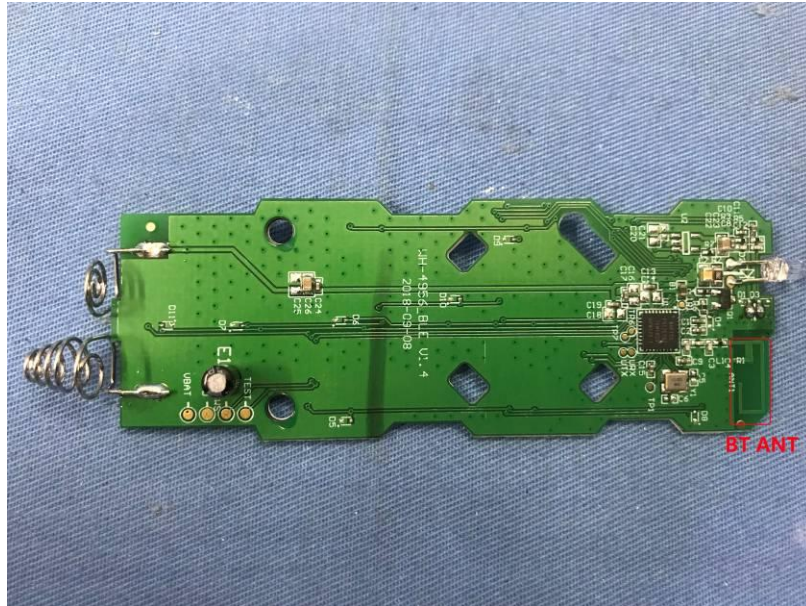
9 EUT Constructional Details











-----End-----