FCC Test Report (Bluetooth)

FCC ID	:	**2AFI5TU-W7982**
Applicant	:	**Lenoge Technology Ltd.** Room 24, 7/F. Nan Fung Commercial Centre, 19 Lam Lok Street, Kowloon Bay, Hong Kong
Sample Description		
Product Name	:	**Tablet PC**
Model No.	:	TU-W7982
Trademark	:	N/A
Receipt Date	:	2015-07-08
Test Date	:	2015-07-08 to 2015-07-17
Issue Date	:	2015-07-20
Test Standard(s)	:	**FCC CFR Title 47 Part 15 Subpart C Section 15.247**
Conclusions	:	**PASSED***

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

Test/Witness Engineer : Jason Deng

Approved & Authorized : Frank Zhang

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

Contents

CONTENTS **2**
1. GENERAL INFORMATION **4**
1.1. Client Information 4
1.2. General Description of EUT (Equipment Under Test) 4
1.3. Block Diagram Showing The Configuration of System Tested 5
1.4. Description of Support Units 5
1.5. External I/O Cable 5
1.6. Description of Test Mode 6
1.7. Test Instruments List 6
1.8. Laboratory Location 7
2. TEST SUMMARY **8**
3. ANTENNA REQUIREMENT **9**
3.1. Standard Requirement 9
3.2. Antenna Connected Construction 9
4. CONDUCTED EMISSION TEST **10**
4.1. Test Standard and Limit 10
4.2. Test Setup 10
4.3. Test Procedure 10
4.4. Test Data 11
5. CONDUCTED PEAK OUTPUT POWER TEST **14**
5.1. Test Standard and Limit 14
5.2. Test Setup 14
5.3. Test Procedure 14
5.4. Test Data 14
6. PEAK POWER SPECTRAL DENSITY **15**
6.1. Test Standard and Limit 15
6.2. Test Setup 15
6.3. Test Procedure 15
6.4. Test Data 15
7. BANDWIDTH **18**
7.1. Test Standard and Limit 18
7.2. Test Setup 18
7.3. Test Procedure 18
7.4. Test Data 18
8. BAND EDGE REQUIREMENT (CONDUCTED EMISSION METHOD) **21**
8.1. Test Standard and Limit 21
8.2. Test Setup 21

8.3. Test Procedure....21
8.4. Test Data....21
9. BAND EDGE REQUIREMENT (RADIATED EMISSION METHOD)....23
9.1. Test Standard and Limit....23
9.2. Test Setup....23
9.3. Test Procedure....23
9.4. Test Data....24
10. SPURIOUS EMISSION....25
10.1. Test Standard and Limit....25
10.2. Test Setup....25
10.3. Test Procedure....25
10.4. Test Data....26

1. General Information

1.1. Client Information

Applicant	:	Lenoge Technology Ltd.
Address	:	Room 24, 7/F. Nan Fung Commercial Centre, 19 Lam Lok Street, Kowloon Bay, Hong Kong
Manufacturer	:	Lenoge Technology Ltd.
Address	:	Room 24, 7/F. Nan Fung Commercial Centre, 19 Lam Lok Street, Kowloon Bay, Hong Kong

1.2. General Description of EUT (Equipment Under Test)

Product Name	:	Tablet PC	
Models No.	:	TU-W7982	
Trademark	:	N/A	
Product Description	:	Operation Frequency:	2402MHz~2480MHz
		Number of Channel:	40 Channels
		Modulation Type:	GFSK
		Modulation Technology:	BT4.0
		Antenna Type:	Integral PCB Antenna
		Antenna Gain:	0.8 dBi
Power Supply	:	DC 3.7V From battery or DC 5V From USB For Charge	

Note:

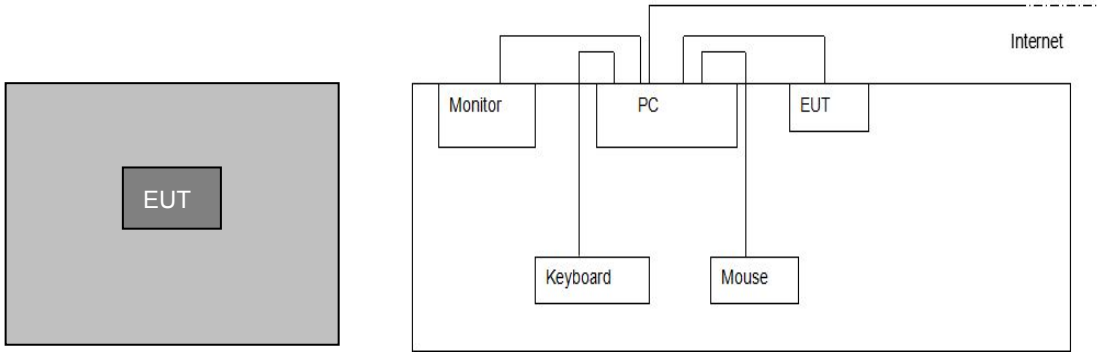
(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(2) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	14	2430	28	2458
01	2404	15	2432	29	2460
02	2406	16	2434	30	2462
03	2408	17	2436	31	2464
04	2410	18	2438	32	2466
05	2412	19	2440	33	2468
06	2414	20	2442	34	2470
07	2416	21	2444	35	2472

08	2418	22	2446	36	2474
09	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454	40	2456
13	2428	27	2456		
Remark: Channel 0, 39 &78 selected for GFSK, π/4-DQPSK and 8DPSK.					

1.3. Block Diagram Showing The Configuration of System Tested



1.4. Description of Support Units

Name	Model	Serial Number	Manufacturer
LCD Monitor	G205HV	10306738385	ACER
PC	ASPIREM1830	PTSF90C00305005CAC3000	ACER
Keyboard	SK-9625	KBUSB1580500037E0100	ACER
Mouse	MS.11200.014	M-UAY-ACR2	ACER

1.5. External I/O Cable

Cable Description	Length(m)	From/ Port	To
Shielding Detachable USB Cable	1.5	Host PC	Mouse
Shielding Detachable K/B Cable	1.5	Host PC	Keyboard
Shielding Detachable VGA Cable	1.5	Host PC	LCD Monitor
Unshielding Detachable USB Cable	0.8	EUT	Host PC
Unshielding Audio Cable	0.6	EUT	Host PC

1.6. Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

Test Mode	Description
Transmitting mode	Keep the EUT in Transmitting mode with worst case data rate
Remark	N/A

Remark: The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

1.7. Test Instruments List

	Test Equipment	Manufacturer	Model No.	Cal. Date	Cal. Due date
1	Bilog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	May 22, 2015	May 21, 2016
2	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	May 27, 2015	May 26, 2016
3	Coaxial Cable	N/A	N/A	Mar. 30, 2015	Mar. 29, 2016
4	Coaxial Cable	N/A	N/A	Mar. 30, 2015	Mar. 29, 2016
5	Coaxial cable	N/A	N/A	Mar. 30, 2015	Mar. 29, 2016
6	Coaxial Cable	N/A	N/A	Mar. 30, 2015	Mar. 29, 2016
7	Coaxial Cable	N/A	N/A	Mar. 30, 2015	Mar. 29, 2016
8	Amplifier (10kHz-1.3GHz)	HP	8447D	Mar. 30, 2015	Mar. 29, 2016
9	Amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	Jun. 07, 2015	Jun. 06, 2016
10	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	Mar. 30, 2015	Mar. 29, 2016
11	Horn Antenna	ETS-LINDGREN	3160	Mar. 30, 2015	Mar. 29, 2016
12	Positioning Controller	UC	UC3000	N/A	N/A

13	Spectrum analyzer 9kHz-30GHz	Rohde & Schwarz	FSP	May 27, 2015	May 26, 2016
14	EMI Test Receiver	Rohde & Schwarz	ESPI	Mar. 30, 2015	Mar. 29, 2016
15	Loop antenna	Laplace instrument	RF300	May 23, 2015	May 22, 2016
16	Universal radio communication tester	Rhode & Schwarz	CMU200	May 27, 2015	May 26, 2016
17	Signal Analyzer	Rohde & Schwarz	FSIQ3	May 27, 2015	May 26, 2016
18	L.I.S.N.#1	Rohde & Schwarz	NSLK8126	May 27, 2015	May 26, 2016
19	L.I.S.N.#2	Rohde & Schwarz	ENV216	May 27, 2015	May 26, 2016
20	Power Meter	Anritsu	ML2487A	May 27, 2015	May 26, 2016
21	Power sensor	Anritsu	MA2491A	May 27, 2015	May 26, 2016

1.8. Laboratory Location

Shenzhen TOBY technology Co., Ltd
Address: 1 A/F., Bldg.6, Yusheng Industrial Zone The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, 518057, China

At the time of testing, the Laboratory is accredited. It is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562 7.
Tel:0086-755-26509301 Fax: 0086-755-26509195

2. Test Summary

Standard Section	Test Item	Judgment
Section 15.247&15.209	Spurious Emission	PASSED
Section 15.207	Conduction Emission	PASSED
Section 15.247	Bandwidth Test	PASSED
Section 15.247	Peak Power	PASSED
Section 15.247	Power Density	PASSED
Section 15.247	Band Edge	PASSED
Section 15.203	Antenna Requirement	PASSED
Remark: “N/A” is an abbreviation for Not Applicable.		

3. Antenna Requirement

3.1. Standard Requirement

3.1.1 Test standard

FCC Part15 Section 15.203 /247(c)

3.1.2 Requirement

1) 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.

2) 15.247(c) (1)(i) requirement:
Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

3.2. Antenna Connected Construction

The bluetooth antenna is an integral antenna which permanently attached, and the best case gain of the antenna is 0.8 dBi. It complies with the standard requirement.

4. Conducted Emission Test

4.1. Test Standard and Limit

4.1.1 Test Standard

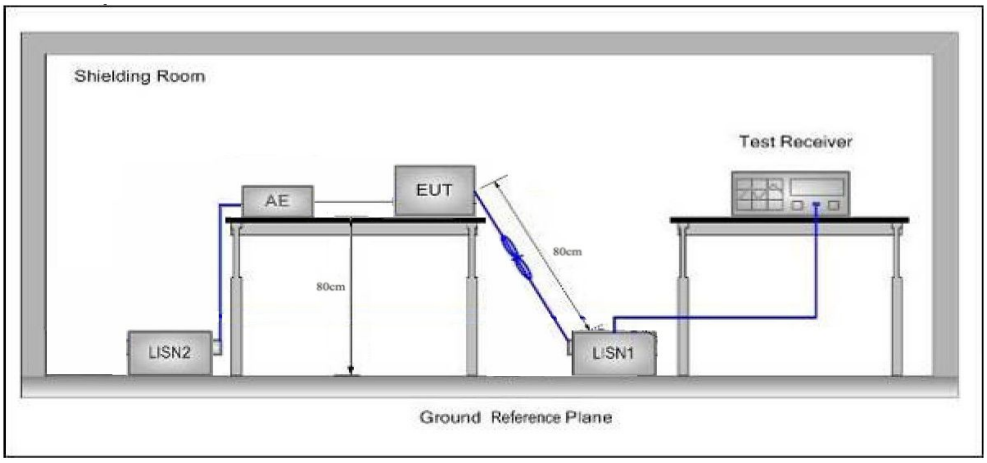
FCC Part15 Section 15.207

4.1.2 Test Limit

Conducted Emission Test Limit

Frequency	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50
Remark: (1) *Decreasing linearly with logarithm of the frequency. (2) The lower limit shall apply at the transition frequencies.		

4.2. Test Setup



4.3. Test Procedure

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

2) 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.

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

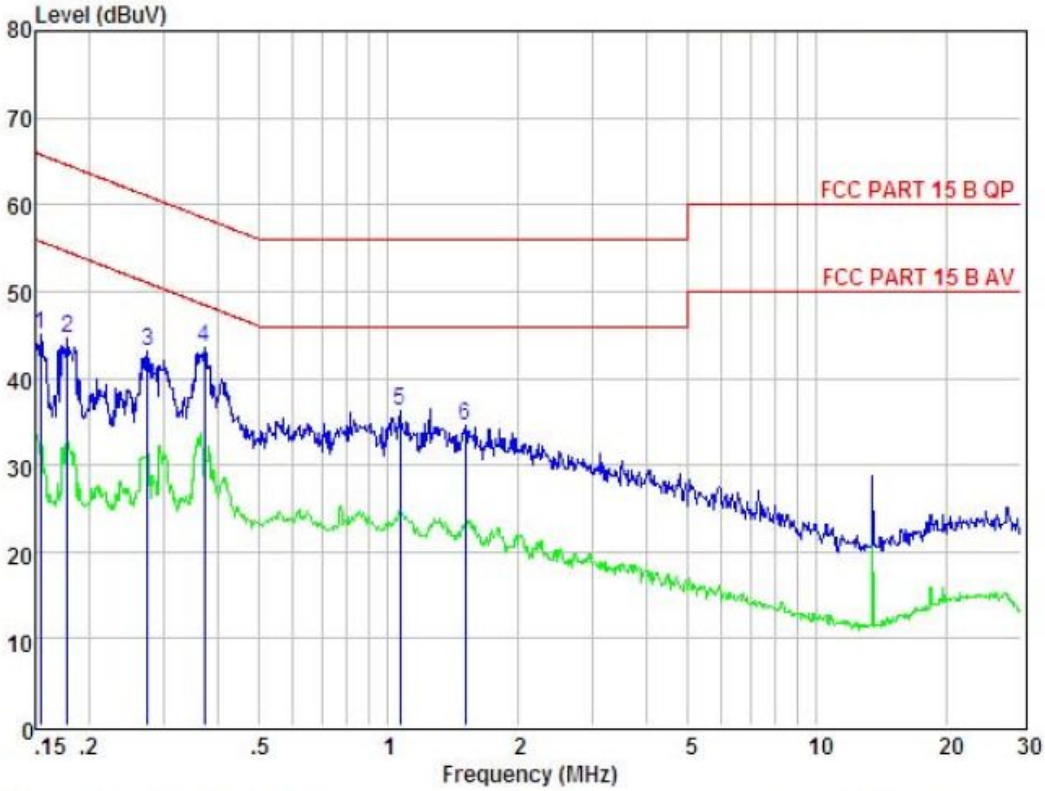
ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated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

The Test Receiver setup: RBW=9kHz, VBW=30kHz, Sweep time= auto

4.4. Test Data

PASS.

EUT:	Tablet PC	M/N: TU-W7982
Operating Condition:	Bluetooth TX mode	
Test Site:	Conduction Room	
Operator:	Jason	
Test Specification:	DC 5V from USB port with AC120V/60HZ	
Polarization:	Line	
Note	Tem:23℃ Hum:50%	

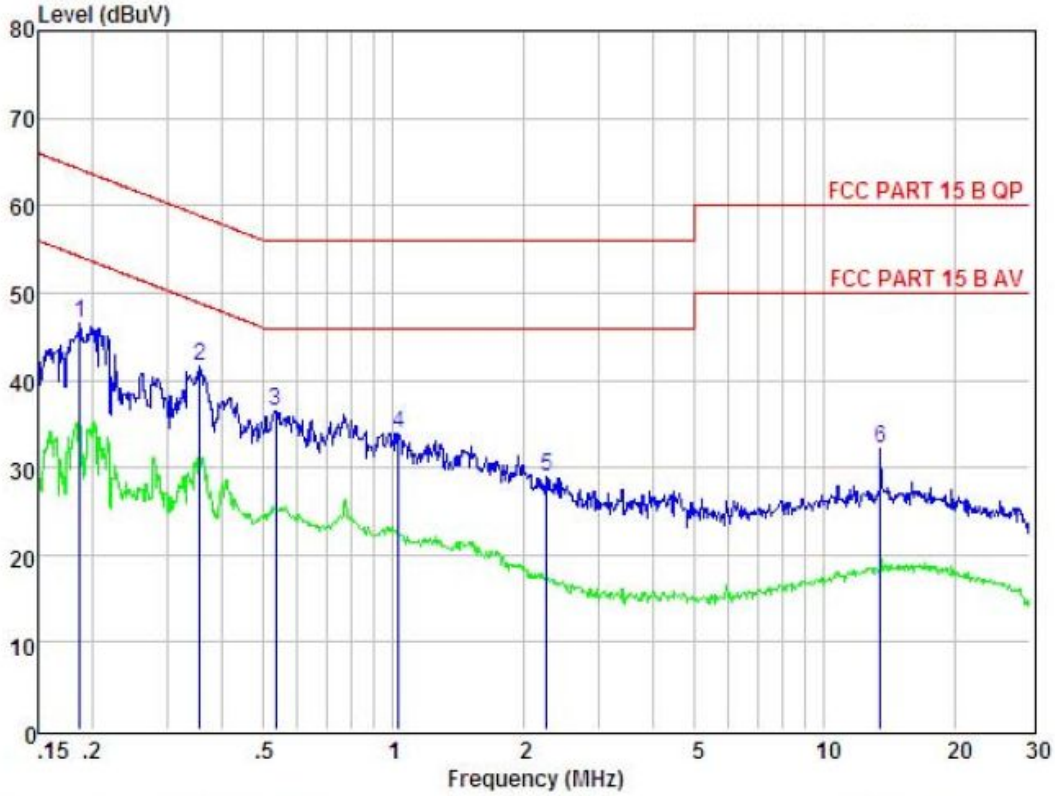


Condition : FCC PART 15 B QP POL: LINE Temp:24 ℃ Hum:56 %

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Lose dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.154	35.21	0.03	-9.72	0.10	45.06	65.78	-20.72	Peak
2	0.179	34.80	0.03	-9.72	0.10	44.65	64.55	-19.90	Peak
3	0.274	33.24	0.03	-9.72	0.10	43.09	60.98	-17.89	Peak
4	0.373	33.75	0.03	-9.72	0.10	43.60	58.43	-14.83	Peak
5	1.065	26.41	0.04	-9.71	0.10	36.26	56.00	-19.74	Peak
6	1.511	24.65	0.05	-9.71	0.10	34.51	56.00	-21.49	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

EUT:	Tablet PC	M/N: TU-W7982
Operating Condition:	Bluetooth TX mode	
Test Site:	Conduction Room	
Operator:	Jason	
Test Specification:	DC 5V from USB port with AC120V/60HZ	
Polarization:	Neutral	
Note	Tem:23℃ Hum:50%	



Condition : FCC PART 15 B QP POL: NEUTRAL Temp:24 ℃ Hum:56 %

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Lose dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.187	36.78	0.03	-9.72	0.10	46.63	64.15	-17.52	Peak
2	0.356	31.71	0.03	-9.72	0.10	41.56	58.83	-17.27	Peak
3	0.535	26.68	0.03	-9.72	0.10	36.53	56.00	-19.47	Peak
4	1.027	23.96	0.04	-9.71	0.10	33.81	56.00	-22.19	Peak
5	2.273	19.10	0.06	-9.70	0.11	28.97	56.00	-27.03	Peak
6	13.479	22.31	0.23	-9.42	0.22	32.18	60.00	-27.82	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

5. Conducted Peak Output Power Test

5.1. Test Standard and Limit

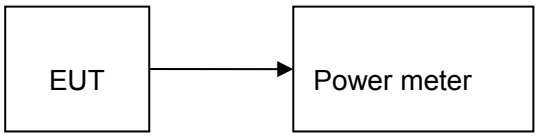
5.1.1 Test Standard

FCC Part15 C Section 15.247 (b)(3)

5.1.2 Test Limit

FCC Part 15 Subpart C(15.247)		
Test Item	Limit	Frequency Range (MHz)
Peak Output Power	Hopping Channels>75 Power<1W(30dBm) Other <125 mW(21dBm)	2400~2483.5

5.2. Test Setup



5.3. Test Procedure

(1) The EUT was directly connected to peak power meter and antenna output port as show in the block diagram above.

(2) Measure out each mode and each bands peak output power of EUT.

(3) The EUT was set to continuously transmitting in the max power during the test.

5.4. Test Data

GFSK mode				
Channel Number	**Channel Frequency (MHz)**	**Test Result (dBm)**	**Limit (30dBm)**	**Judgment**
CH 00	2402	-7.798	30	PASSED
CH 19	2440	-6.473	30	PASSED
CH 39	2480	-5.387	30	PASSED

6. PEAK POWER SPECTRAL DENSITY

6.1. Test Standard and Limit

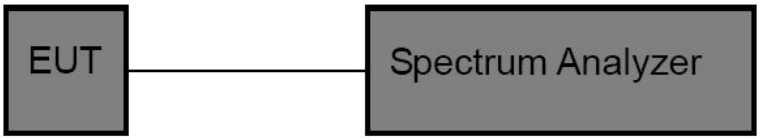
6.1.1 Test Standard

FCC Part15 C Section 15.247

6.1.2 Test Limit

FCC Part 15 Subpart C(15.247)	
Test Item	Limit
Power Density	8dBm

6.2. Test Setup



6.3. Test Procedure

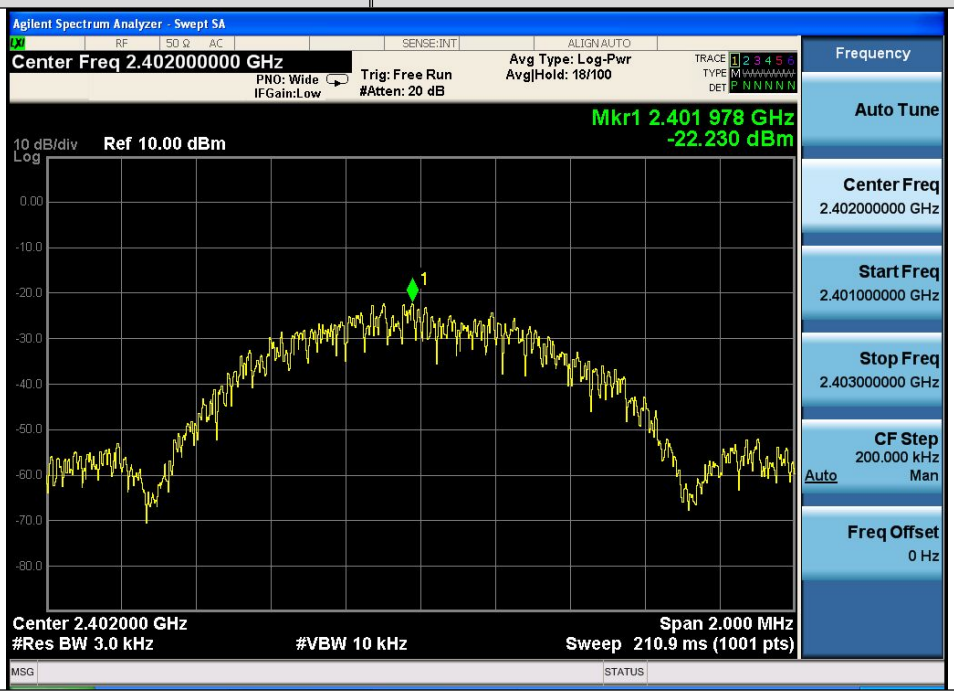
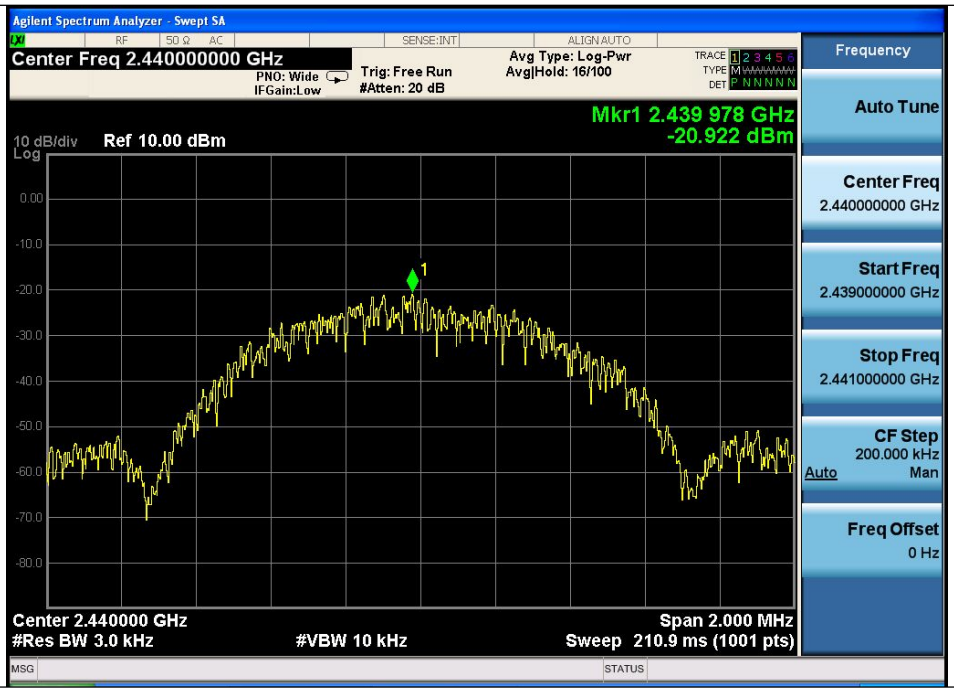
(1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

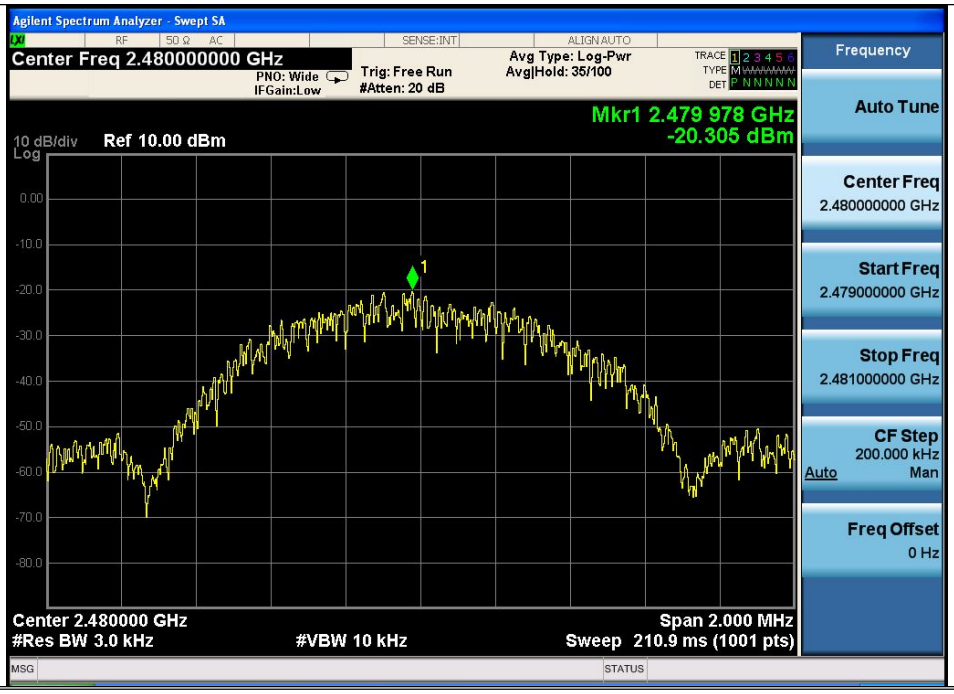
(2) Spectrum Setting:

Bandwidth: RBW=3kHz, VBW=1 kHz, detector= Peak

6.4. Test Data

Channel Number	Channel Frequency	Power Density
		GFSK
CH 00	2402(MHz)	-22.230
CH 19	2440MHz)	-20.922
CH 39	2480(MHz)	-20.305
Remark: Test plot as follows		

Modulation mode		GFSK mode
2402MHz		
2440Hz		

2480MHz		 Agilent Spectrum Analyzer - Swept SA Center Freq 2.480000000 GHz PNO: Wide IFGain:Low Trig: Free Run #Atten: 20 dB Avg Type: Log-Pwr Avg|Hold: 35/100 Mkr1 2.479 978 GHz -20.305 dBm 10 dB/div Ref 10.00 dBm Log Center 2.480000 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 2.000 MHz Sweep 210.9 ms (1001 pts) Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.479000000 GHz Stop Freq 2.481000000 GHz CF Step 200.000 kHz Auto Man Freq Offset 0 Hz	

7. Bandwidth

7.1. Test Standard and Limit

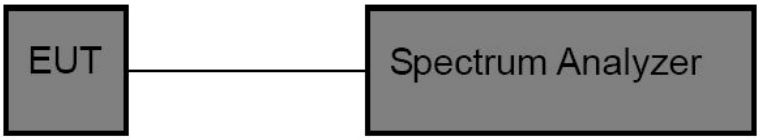
7.1.1 Test Standard

FCC Part15 C Section 15.247 \

7.1.2 Test Limit

FCC Part 15 Subpart C(15.247)		
Test Item	Limit	Frequency Range (MHz)
6dB Bandwidth	500KHz	2400~2483.5

7.2. Test Setup



7.3. Test Procedure

(1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

(2) Spectrum Setting:
RBW=100 kHz, VBW=300 kHz, detector= Peak, Sweep Time =auto.

(3) The EUT was set to the Hopping Mode for Channel Separation Test and continuously transmitting for the Test.

7.4. Test Data

Channel	Frequency (MHz)	6dB Bandwidth (KHz)	Limit (KHz)	Result
CH0	2402	685.2	500	PASS
CH19	2440	696.5	500	PASS
CH39	2480	696.8	500	PASS

Modulation mode		GFSK mode
2402MHz		
2440MHz		

2480MHz		Agilent Spectrum Analyzer - Occupied BW Center Freq 2.480000000 GHz Center Freq: 2.480000000 GHz Trig: Free Run Avg|Hold:>10/10 #Atten: 20 dB Radio Std: None Radio Device: BTS #IFGain:Low 10 dB/div Ref 10.00 dBm Center 2.48 GHz #Res BW 100 kHz #VBW 300 kHz Span 3 MHz Sweep 1 ms Occupied Bandwidth 1.0321 MHz Total Power 0.47 dBm Transmit Freq Error 3.907 kHz OBW Power 99.00 % x dB Bandwidth 696.8 kHz x dB -6.00 dB Frequency Center Freq 2.480000000 GHz CF Step 300.000 kHz Auto Man Freq Offset 0 Hz

8. Band Edge Requirement (Conducted Emission Method)

8.1. Test Standard and Limit

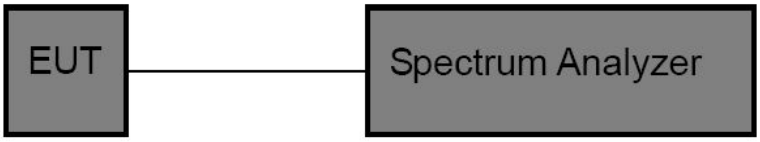
8.1.1 Test Standard

FCC Part15 C Section 15.247 (d)

8.1.2 Test Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

8.2. Test Setup



8.3. Test Procedure

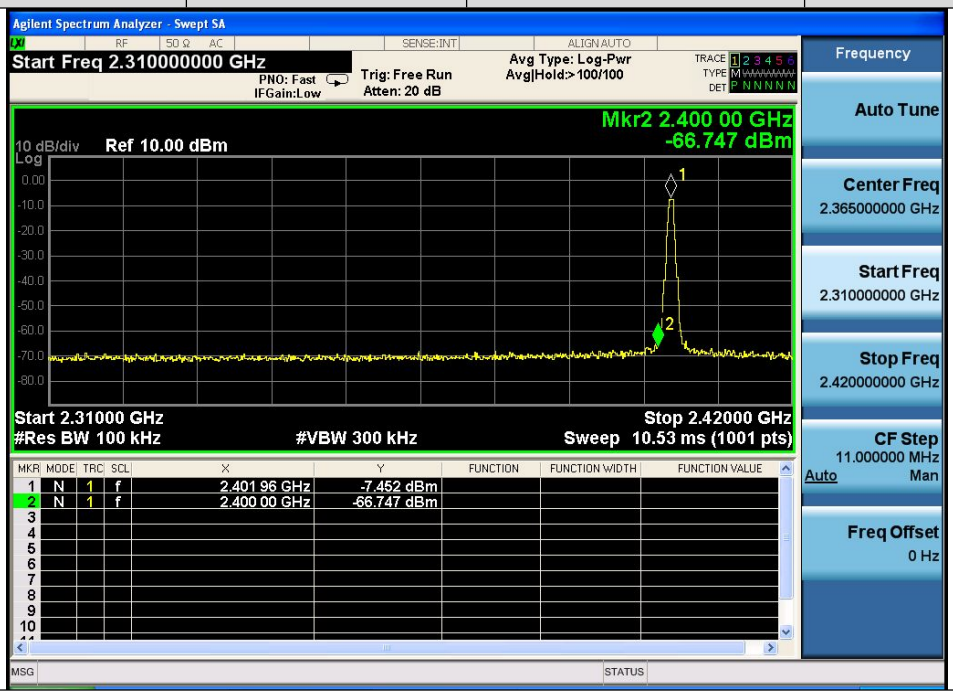
(1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.

(2) Spectrum Setting: RBW=100 kHz, VBW=300 kHz, Detector=Peak

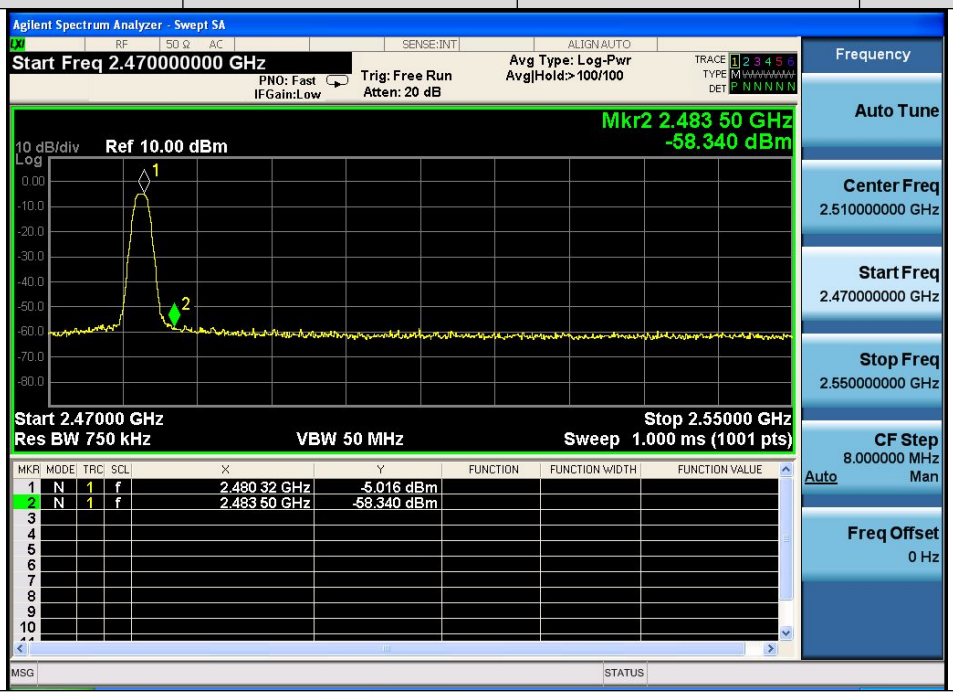
8.4. Test Data

Test plot as follows

Modulation mode	GFSK	Test channel	Lowest



Modulation mode	GFSK	Test channel	Highest



9. Band Edge Requirement (Radiated Emission Method)

9.1. Test Standard and Limit

9.1.1 Test Standard

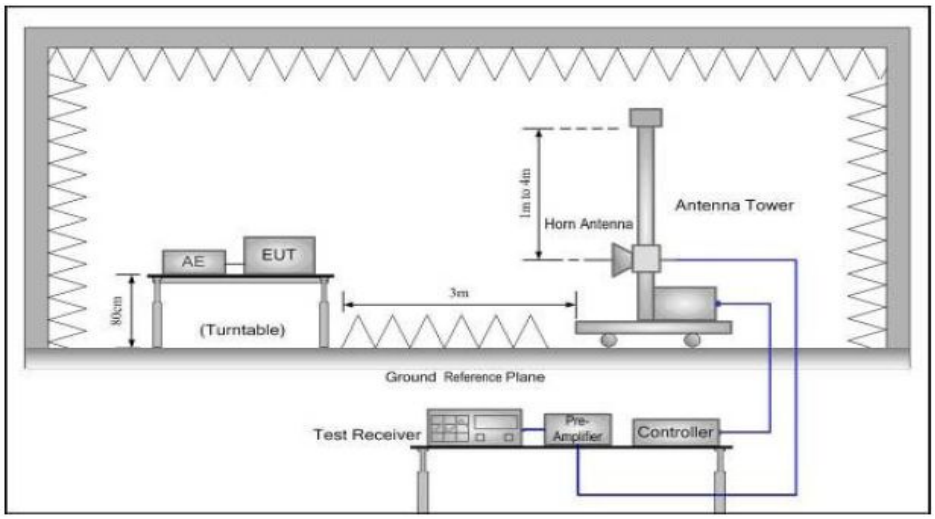
FCC Part15 C Section 15.209 and 15.205

9.1.2 Test Limit

Radiated Emission Test Limit

Frequency	Limit (dBμV/m @3m)	Remark
Above 1GHz	54.00	Average value
	74.00	Peak value

9.2. Test Setup



9.3. Test Procedure

1) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic 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 rotatable 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. Peak Value: RBW=1MHz, VBW=3MHz; Average value: RBW=1MHz, VBW=10Hz

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.

9.4. Test Data

Remark:

1. During the test, pre-scan the GFSK, π/4-DQPSK, 8DPSK, and all data were shown in the report.
2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.

Test mode: GFSK					Test channel: Lowest				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Level
2400.00	20.36	27.58	5.67	0	53.61	74.00	-20.39	H	PEAK
2400.00	20.49	27.58	5.67	0	53.74	74.00	-20.26	V	PEAK
2400.00	8.94	27.58	5.67	0	42.19	54.00	-11.81	H	AVG.
2400.00	9.12	27.58	5.67	0	42.37	54.00	-11.63	V	AVG.
Test mode: GFSK					Test channel: Highest				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Level
2483.50	20.29	27.52	5.7	0	53.51	74.00	-20.49	H	PEAK
2483.50	20.89	27.52	5.7	0	54.11	74.00	-19.89	V	PEAK
2483.50	8.75	27.52	5.7	0	41.97	54.00	-12.03	H	AVG.
2483.50	9.33	27.52	5.7	0	42.55	54.00	-11.45	V	AVG.

Remark:

1. Final Level = 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.

10. Spurious Emission

10.1. Test Standard and Limit

10.1.1 Test Standard

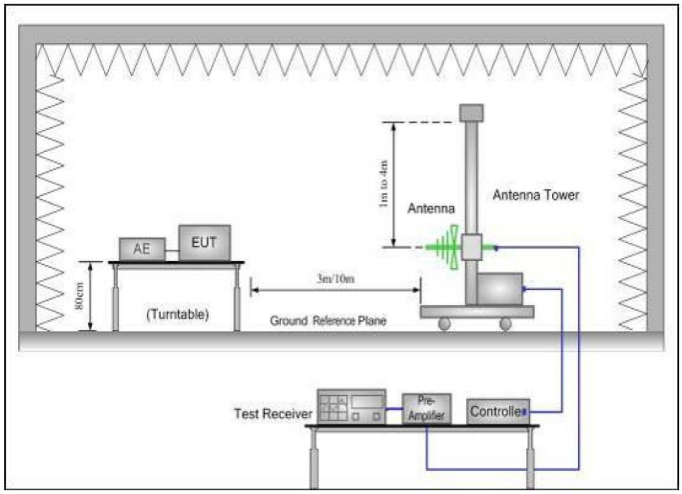
FCC Part15 C Section 15.209

10.1.2 Test Limit

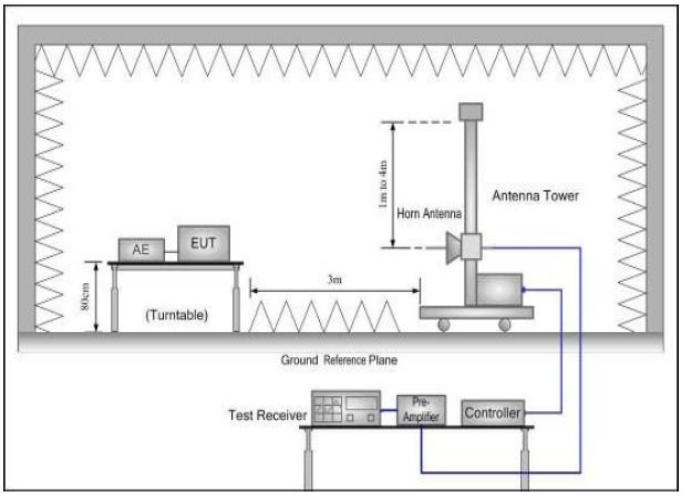
Frequency (MHz)	Limit (dBμV/m) At 3m Distance	
30MHz~88MHz	40	Quasi-peak
88MHz~216MHz	43.5	Quasi-peak
216MHz~960MHz	46	Quasi-peak
960MHz~1000MHz	54	Quasi-peak
Above 1000MHz	54	Average
	74	Peak
Remark: 1. The lower limit shall apply at the transition frequency.		

10.2. Test Setup

Below 1GHz



Above 1GHz



10.3. Test Procedure

1) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic 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 rotatable 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.

Peak value: RBW=1MHz, VBW=3MHz;

Average value: RBW=1MHz, VBW=10Hz;

;

QP Value: RBW=120kHz, VBW=300kHz

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.

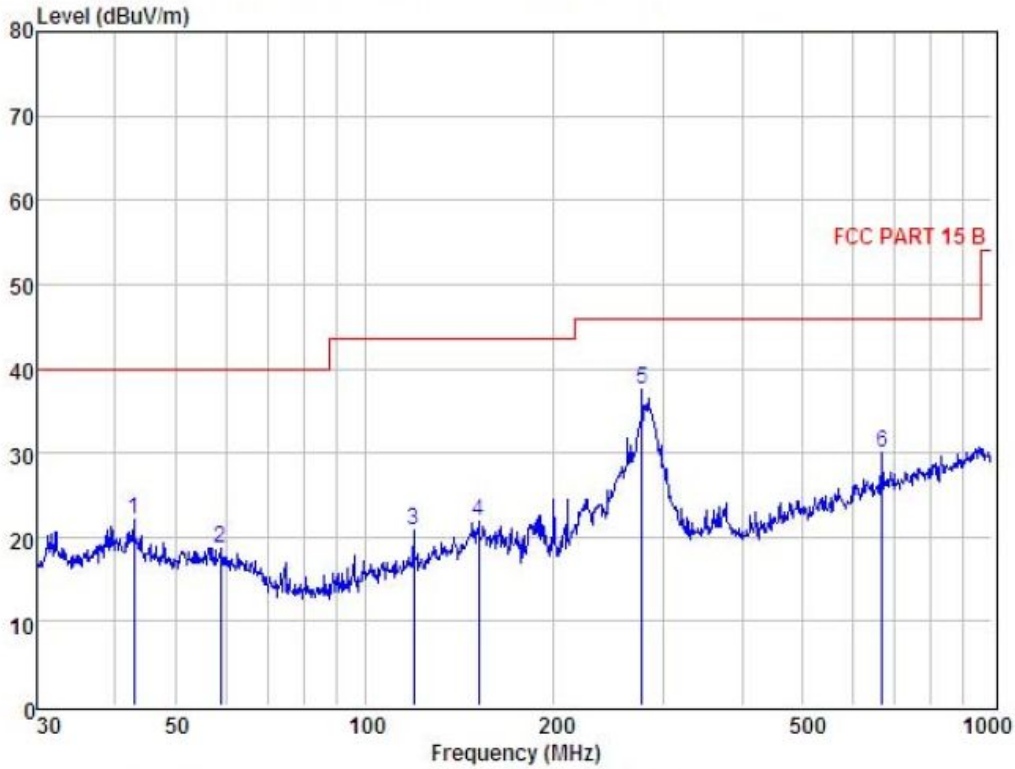
10.4. Test Data

Remark:

1. During the test, pre-scan the GFSK.
2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.
3. 9 kHz to 30 MHz is noise floor, so only shows the data of above 30MHz in this report.

Radiated Emission Test Data (Below 1GHz)

EUT:	Tablet PC	M/N:	TU-W7982
Operating Condition:	Bluetooth TX mode		
Test Site:	3m chamber		
Operator:	Jason		
Test Specification:	DC 5V From USB Port with AC120V/60Hz		
Polarization:	Horizontal		
Note	Tem:23℃ Hum:50%		



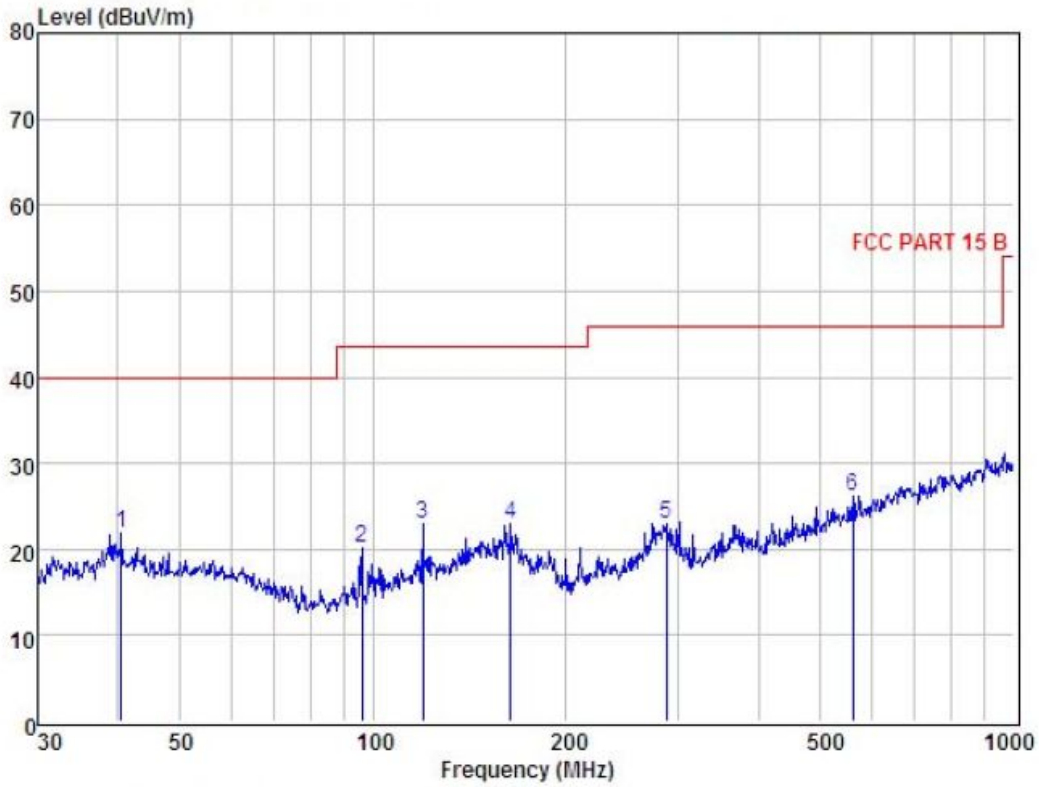
Condition : FCC PART 15 B 3m POL: HORIZONTAL

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	42.90	40.05	13.79	31.87	0.14	22.11	40.00	-17.89	Peak
2	58.82	37.44	12.75	31.75	0.32	18.76	40.00	-21.24	Peak
3	119.86	39.67	12.06	31.31	0.36	20.78	43.50	-22.72	Peak
4	152.13	38.38	14.16	31.18	0.41	21.77	43.50	-21.73	Peak
5	277.09	55.36	12.31	30.65	0.49	37.51	46.00	-8.49	Peak
6	668.14	38.94	19.30	29.31	1.01	29.94	46.00	-16.06	Peak

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

Radiated Emission Test Data (Below 1GHz)

EUT:	Tablet PC	M/N:	TU-W7982
Operating Condition:	Bluetooth TX mode		
Test Site:	3m chamber		
Operator:	Jason		
Test Specification:	DC 5V From USB	Port with AC120V/60Hz	
Polarization:	Vertical		
Note	Tem:23℃	Hum:50%	



Condition : FCC PART 15 B 3m POL: VERTICAL

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	40.56	39.60	14.07	31.89	0.18	21.96	40.00	-18.04	Peak
2	96.10	41.25	9.87	31.39	0.41	20.14	43.50	-23.36	Peak
3	119.86	41.85	12.06	31.31	0.36	22.96	43.50	-20.54	Peak
4	163.76	39.83	13.76	31.12	0.45	22.92	43.50	-20.58	Peak
5	286.98	40.39	12.54	30.60	0.72	23.05	46.00	-22.95	Peak
6	560.69	37.11	17.56	29.47	1.05	26.25	46.00	-19.75	Peak

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

Radiated Emission Test Data (Above 1GHz)

Test mode: GFSK					Test channel: Lowest				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Level
4804.00	36.49	31.53	8.9	40.24	36.68	74.00	-37.32	V	PEAK
7206.00	33.15	36.47	10.59	41.24	38.97	74.00	-35.03	V	PEAK
9608.00	*					74.00		V	PEAK
12010.00	*					74.00		V	PEAK
14412.00	*					74.00		V	PEAK
16814.00	*					74.00		V	PEAK
4804.00	34.29	31.53	8.9	40.24	34.48	74.00	-39.52	H	PEAK
7206.00	33.09	36.47	10.59	41.24	38.91	74.00	-35.09	H	PEAK
9608.00	*					74.00		H	PEAK
12010.00	*					74.00		H	PEAK
14412.00	*					74.00		H	PEAK
16814.00	*					74.00		H	PEAK
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Level
4804.00	35.47	31.53	8.9	40.24	35.66	54.00	-18.34	V	AVG.
7206.00	33.28	36.47	10.59	41.24	39.1	54.00	-14.90	V	AVG.
9608.00	*					54.00		V	AVG.
12010.00	*					54.00		V	AVG.
14412.00	*					54.00		V	AVG.
16814.00	*					54.00		V	AVG.
4804.00	35.16	31.53	8.9	40.24	35.35	54.00	-18.65	H	AVG.
7206.00	33.59	36.47	10.59	41.24	39.41	54.00	-14.59	H	AVG.
9608.00	*					54.00		H	AVG.
12010.00	*					54.00		H	AVG.
14412.00	*					54.00		H	AVG.
16814.00	*					54.00		H	AVG.

Remark:

1. Final Level = Read Level + Antenna Factor + Cable Loss – Preamplifier Factor
2. "*", means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Radiated Emission Test Data (Above 1GHz)

Test mode: GFSK					Test channel: Middle				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Level
488000	35.27	31.58	8.98	40.15	35.68	74.00	-38.32	V	PEAK
732000	33.49	36.48	10.69	41.15	39.51	74.00	-34.49	V	PEAK
9764.00	*					74.00		V	PEAK
12205.00	*					74.00		V	PEAK
14646.00	*					74.00		V	PEAK
17087.00	*					74.00		V	PEAK
488000	35.09	31.58	8.98	40.15	35.5	74.00	-38.50	H	PEAK
732000	32.28	36.48	10.69	41.15	38.3	74.00	-35.70	H	PEAK
9764.00	*					74.00		H	PEAK
12205.00	*					74.00		H	PEAK
14646.00	*					74.00		H	PEAK
17087.00	*					74.00		H	PEAK
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Level
4882.00	35.18	31.58	8.98	40.15	35.59	54.00	-18.41	V	AVG.
7323.00	32.74	36.47	10.69	41.15	38.75	54.00	-15.25	V	AVG.
9764.00	*					54.00		V	AVG.
12205.00	*					54.00		V	AVG.
14646.00	*					54.00		V	AVG.
17087.00	*					54.00		V	AVG.
4882.00	34.89	31.58	8.98	40.15	35.3	54.00	-18.70	H	AVG.
7323.00	33.47	36.47	10.69	41.15	39.48	54.00	-14.52	H	AVG.
9764.00	*					54.00		H	AVG.
12205.00	*					54.00		H	AVG.
14646.00	*					54.00		H	AVG.
17087.00	*					54.00		H	AVG.

Remark:

1. Final Level = Read Level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*”, means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

Radiated Emission Test Data (Above 1GHz)

Test mode: GFSK					Test channel: Highest				
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Level
4960.00	34.88	31.69	9.08	40.03	35.62	74.00	-38.38	V	PEAK
7440.00	34.09	36.6	10.8	41.05	40.44	74.00	-33.56	V	PEAK
9920.00	*					74.00		V	PEAK
12400.00	*					74.00		V	PEAK
14880.00	*					74.00		V	PEAK
17360.00	*					74.00		V	PEAK
4960.00	34.18	31.69	9.08	40.03	34.92	74.00	-39.08	H	PEAK
7440.00	32.71	36.6	10.8	41.05	39.06	74.00	-34.94	H	PEAK
9920.00						74.00		H	PEAK
12400.00	*					74.00		H	PEAK
14880.00	*					74.00		H	PEAK
17360.00	*					74.00		H	PEAK
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Pol.	Level
4960.00	34.32	31.69	9.08	40.03	35.06	54.00	-18.94	V	AVG.
7440.00	32.58	36.6	10.8	41.05	38.93	54.00	-15.07	V	AVG.
9920.00	*					54.00		V	AVG.
12400.00	*					54.00		V	AVG.
14880.00	*					54.00		V	AVG.
17360.00	*					54.00		V	AVG.
4960.00	35.77	31.69	9.08	40.03	36.51	54.00	-17.49	H	AVG.
7440.00	32.84	36.6	10.8	41.05	39.19	54.00	-14.81	H	AVG.
9920.00	*					54.00		H	AVG.
12400.00	*					54.00		H	AVG.
14880.00	*					54.00		H	AVG.
17360.00	*					54.00		H	AVG.

Remark:

1. Final Level = Read Level + Antenna Factor + Cable Loss – Preamplifier Factor
2. "*", means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.