



TEST Report

Applicant: Dongguan RuiJun Electronic CO. Ltd

Address of Applicant: 3F 2F, No.6, Lane17, WenMing Road, Nanshan District
4, Humen Town, Dongguan City, Guangdong, China.

Manufacturer : Dongguan RuiJun Electronic CO. Ltd

Address of Manufacturer : 3F 2F, No.6, Lane17, WenMing Road, Nanshan District
4, Humen Town, Dongguan City, Guangdong, China.

Equipment Under Test (EUT)

Product Name: Wireless Mouse

Model No.: RJ-363

Series model: N/A

Trade Mark: **Ducollye** Sujieen

FCC ID: 2A8BYRJ-363

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of sample receipt: Jul. 21, 2022

Date of Test: Jul. 21, 2022- Aug. 04, 2022

Date of report issued: Aug. 04, 2022

Test Result : PASS *

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



Report No.: HTT202207307F01

1. Version

Version No.	Date	Description
00	Aug. 04,2022	Original

Tested/ Prepared By Ervin Xu Date: Aug. 04,2022
Project Engineer

Check By: Bruce Zhu Date: Aug. 04,2022
Reviewer

Approved By : Kevin Yang Date: Aug. 04,2022
Authorized Signature



2. Contents

Page

1. VERSION	2
2. CONTENTS	3
3. TEST SUMMARY	4
4. GENERAL INFORMATION	5
4.1. GENERAL DESCRIPTION OF EUT	5
4.2. TEST MODE	7
4.3. DESCRIPTION OF SUPPORT UNITS	7
4.4. DEVIATION FROM STANDARDS	7
4.5. ABNORMALITIES FROM STANDARD CONDITIONS	7
4.6. TEST FACILITY	7
4.7. TEST LOCATION	7
4.8. ADDITIONAL INSTRUCTIONS	7
5. TEST INSTRUMENTS LIST	8
6. TEST RESULTS AND MEASUREMENT DATA	9
6.1. CONDUCTED EMISSIONS	9
6.2. CONDUCTED OUTPUT POWER	10
6.3. CHANNEL BANDWIDTH	12
6.4. BAND EDGES	16
6.5.1 Conducted Emission Method	16
6.5.2 Radiated Emission Method	18
6.5. SPURIOUS EMISSION	22
6.6.1 Conducted Emission Method	22
6.6.2 Radiated Emission Method	24
7. ANTENNA REQUIREMENT	32
8. EUT CONSTRUCTIONAL DETAILS	32



3. Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Output Power	15.247 (b)(3)	Pass
Channel Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

Remarks:

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

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9k~30MHz	3.17 dB	(1)
Radiated Emission	30~1000MHz	3.45 dB	(1)
Radiated Emission	1~6GHz	3.54 dB	(1)
Radiated Emission	>6GHz	4.89dB	(1)
Conducted Disturbance	0.15~30MHz	2.66 dB	(1)
RF power, conducted	/	0.16 dB	(1)
Spurious emissions, conducted	/	0.21dB	(1)

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



4. General Information

4.1. General Description of EUT

Product Name:	Wireless Mouse
Model No.:	RJ-363
Series model:	N/A
Model Difference	N/A
Operation frequency	2403.65MHz~2479.65MHz
Number of Channels	16
Modulation Type	GFSK
Bit Rate of Transmitter	2Mbps
Antenna Type:	PCB Antenna
Antenna Gain:	3.85dBi
Power Supply:	DC 1.5V Form Battery
Battery	DC 1.5V AA R6 Battery



Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2403.65	9	2414.65
2	2426.65	10	2436.65
3	2441.65	11	2459.65
4	2463.65	12	2473.65
5	2407.65	13	2419.65
6	2422.65	14	2439.65
7	2445.65	15	2453.65
8	2466.65	16	2479.65

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	2403.65MHz
The middle channel	2441.65MHz
The Highest channel	2479.65MHz



4.2. 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.</i>	

4.3. Description of Support Units

None.

4.4. Deviation from Standards

None.

4.5. Abnormalities from Standard Conditions

None.

4.6. Test Facility

The test facility is recognized, certified, or accredited by the following organizations: FCC-Registration No.: 779513 Designation Number: CN1319 Shenzhen HTT Technology Co.,Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements. A2LA-Lab Cert. No.: 6435.01 Shenzhen HTT Technology Co.,Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement. The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.10 and CISPR 16-1-4:2010.

4.7. Test Location

All tests were performed at:
Shenzhen HTT Technology Co.,Ltd. 1F, Building B, Huafeng International Robotics Industrial Park, Hangcheng Road,Nanchang Community, Xixiang Street, Bao'an District, Shenzhen, Guangdong, China Tel: 0755-23595200 Fax: 0755-23595201

4.8. Additional Instructions

Test Software	Special AT test command provided by manufacturer to Keep the EUT in continuously transmitting mode and hopping mode
Power level setup	Default

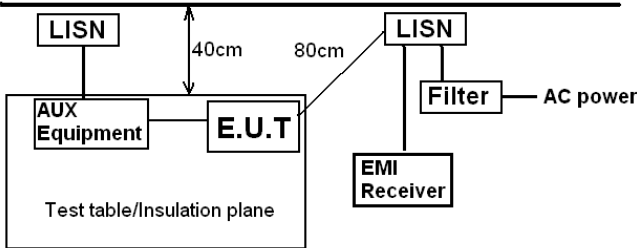


5. Test Instruments list

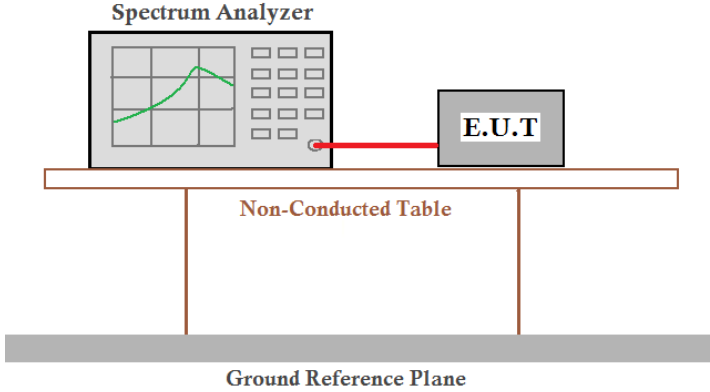
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	Shenzhen C.R.T technology co., LTD	9*6*6	HTT-E028	Aug. 10 2020	Aug. 09 2024
2	Control Room	Shenzhen C.R.T technology co., LTD	4.8*3.5*3.0	HTT-E030	Aug. 10 2020	Aug. 09 2024
3	EMI Test Receiver	Rohde&Schwar	ESCI7	HTT-E022	May 21 2022	May 20 2023
4	Spectrum Analyzer	Rohde&Schwar	FSP	HTT-E037	May 21 2022	May 20 2023
5	Coaxial Cable	ZDecl	ZT26-NJ-NJ-0.6M	HTT-E018	May 21 2022	May 20 2023
6	Coaxial Cable	ZDecl	ZT26-NJ-SMAJ-2M	HTT-E019	May 21 2022	May 20 2023
7	Coaxial Cable	ZDecl	ZT26-NJ-SMAJ-0.6M	HTT-E020	May 21 2022	May 20 2023
8	Coaxial Cable	ZDecl	ZT26-NJ-SMAJ-8.5M	HTT-E021	May 21 2022	May 20 2023
9	Composite logarithmic antenna	Schwarzbeck	VULB 9168	HTT-E017	Aug. 22 2021	Aug. 21 2022
10	Horn Antenna	Schwarzbeck	BBHA9120D	HTT-E016	Aug. 22 2021	Aug. 21 2022
11	Loop Antenna	Zhinan	ZN30900C	HTT-E039	Aug. 22 2021	Aug. 21 2022
12	Horn Antenna	Beijing Hangwei Dayang	OBH100400	HTT-E040	Aug. 22 2021	Aug. 21 2022
13	low frequency Amplifier	Sonoma Instrument	310	HTT-E015	May 21 2022	May 20 2023
14	high-frequency Amplifier	HP	8449B	HTT-E014	May 21 2022	May 20 2023
15	Variable frequency power supply	Shenzhen Anbiao Instrument Co., Ltd	ANB-10VA	HTT-082	May 21 2022	May 20 2023
16	EMI Test Receiver	Rohde & Schwarz	ESCS30	HTT-E004	May 21 2022	May 20 2023
17	Artificial Mains	Rohde & Schwarz	ESH3-Z5	HTT-E006	May 21 2022	May 20 2023
18	Artificial Mains	Rohde & Schwarz	ENV-216	HTT-E038	May 21 2022	May 20 2023
19	Cable Line	Robinson	Z302S-NJ-BNCJ-1.5M	HTT-E001	May 21 2022	May 20 2023
20	Attenuator	Robinson	6810.17A	HTT-E007	May 21 2022	May 20 2023
21	Variable frequency power supply	Shenzhen Yanghong Electric Co., Ltd	YF-650 (5KVA)	HTT-E032	May 21 2022	May 20 2023
22	Control Room	Shenzhen C.R.T technology co., LTD	8*4*3.5	HTT-E029	May 21 2022	May 20 2023
23	DC power supply	Agilent	E3632A	HTT-E023	May 21 2022	May 20 2023
24	EMI Test Receiver	Agilent	N9020A	HTT-E024	May 21 2022	May 20 2023
25	Analog signal generator	Agilent	N5181A	HTT-E025	May 21 2022	May 20 2023
26	Vector signal generator	Agilent	N5182A	HTT-E026	May 21 2022	May 20 2023
27	Power sensor	Keysight	U2021XA	HTT-E027	May 21 2022	May 20 2023
28	Temperature and humidity meter	Shenzhen Anbiao Instrument Co., Ltd	TH10R	HTT-074	May 21 2022	May 20 2023

6. Test results and Measurement Data

6.1. Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207						
Test Method:	ANSI C63.10:2013						
Test Frequency Range:	150KHz to 30MHz						
Class / Severity:	Class B						
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto						
Limit:	Frequency range (MHz)		Limit (dBuV)				
			Quasi-peak		Average		
	0.15-0.5		66 to 56*		56 to 46*		
	0.5-5		56		46		
	5-30		60		50		
* Decreases with the logarithm of the frequency.							
Test setup:	Reference Plane  Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m						
Test procedure:	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement.						
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:	AC 120V, 60Hz						
Test results:	N/A						

6.2. Conducted Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)					
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02					
Limit:	30dBm					
Test setup:						
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar

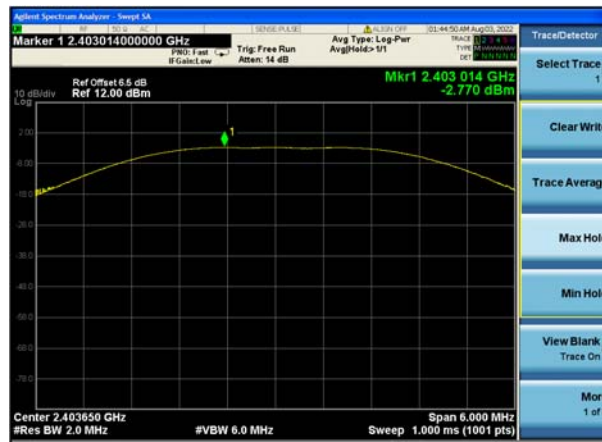
Measurement Data

Test channel	Peak Output Power (dBm)	Limit(dBm)	Result
Lowest	-2.770	30.00	Pass
Middle	-3.087		
Highest	-3.226		



Report No.: HTT202207307F01

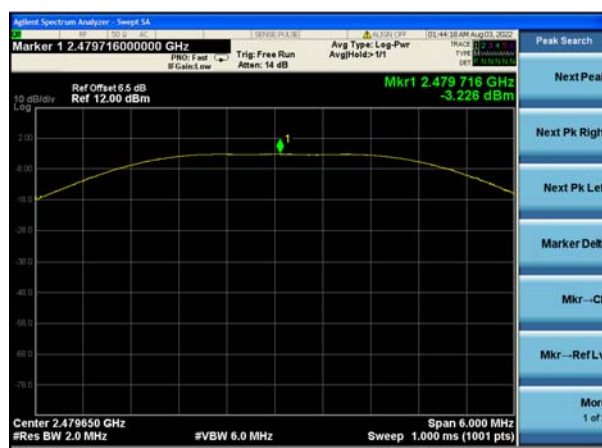
Test plot as follows:



Lowest channel

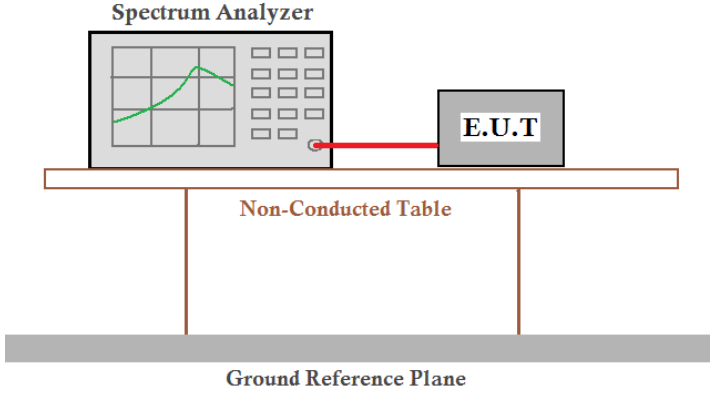


Middle channel



Highest channel

6.3. Channel Bandwidth

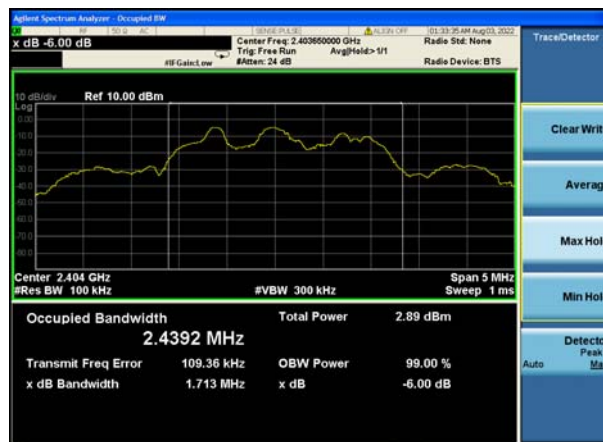
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)					
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02					
Limit:	>500KHz					
Test setup:						
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar

Measurement Data

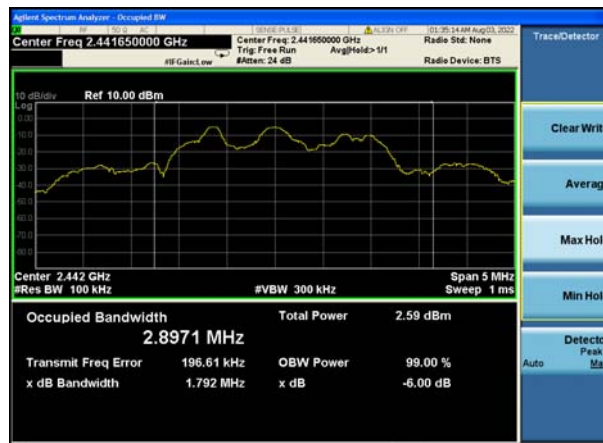
Test channel	Channel Bandwidth (MHz)	Limit(KHz)	Result
Lowest	1.713	>500	Pass
Middle	1.792		
Highest	1.853		



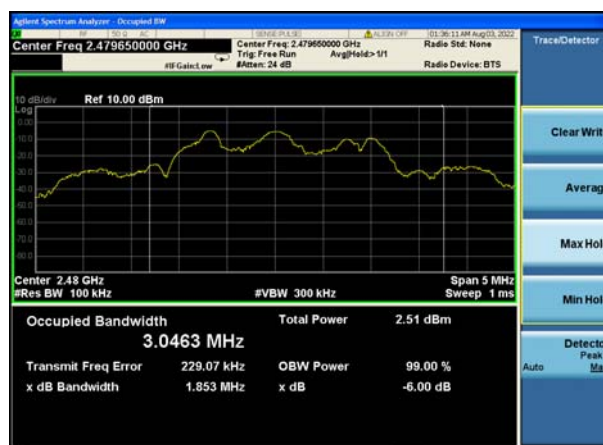
Test plot as follows:



Lowest channel



Middle channel

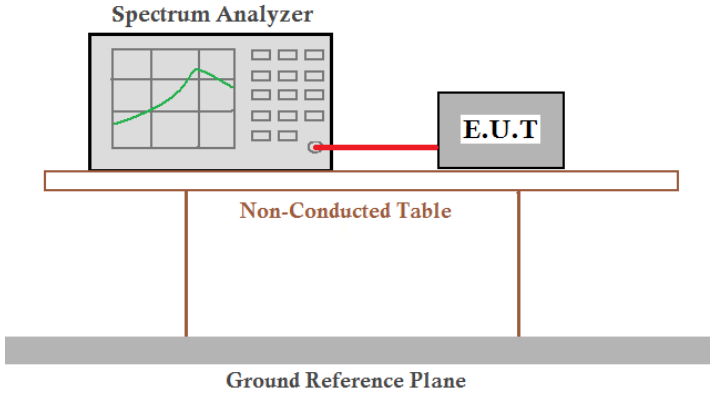


Highest channel



Report No.: HTT202207307F01

Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)					
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02					
Limit:	8dBm/3kHz					
Test setup:						
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar

Measurement Data

Test channel	Power Spectral Density (dBm/3kHz)	Limit(dBm/3kHz)	Result
Lowest	-19.318	8.00	Pass
Middle	-19.208		
Highest	-19.523		



Test plot as follows:



Lowest channel



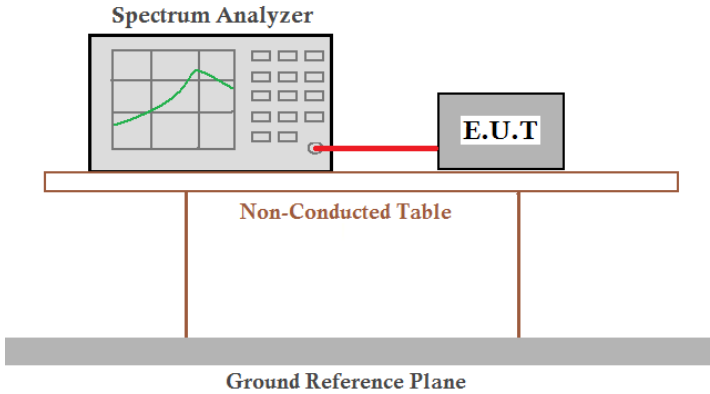
Middle channel



Highest channel

6.4. Band edges

6.5.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)					
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02					
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.					
Test setup:	 The diagram illustrates the test setup for conducted emission measurement. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table, which is supported by 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					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar



Frequency Band	Delta Peak to band emission (dBc)	>Limit (dBc)	Result
2400	40.25	20	Pass
2483.5	39.19	20	Pass

Test plot as follows:

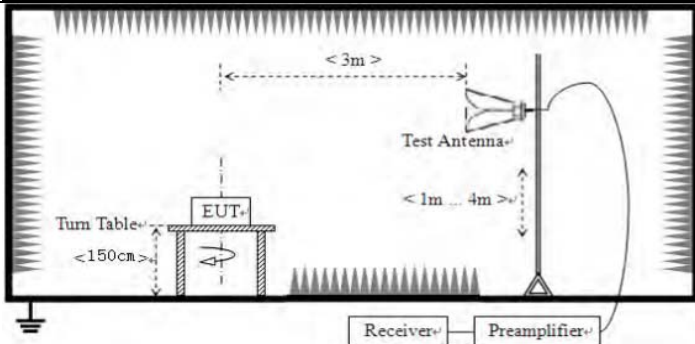


Lowest channel



Highest channel

6.5.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.					
Test site:	Measurement Distance: 3m					
Receiver setup:	Frequency	Detector	RBW	VBW	Value	
	Above 1GHz	Peak	1MHz	3MHz	Peak	
		RMS	1MHz	3MHz	Average	
Limit:	Frequency		Limit (dBuV/m @3m)		Value	
	Above 1GHz		54.00		Average	
			74.00		Peak	
Test setup:						
Test Procedure:	1. The EUT was placed on the top of a rotating table 1.5 meters 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. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test results:	Pass					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar



Report No.: HTT202207307F01

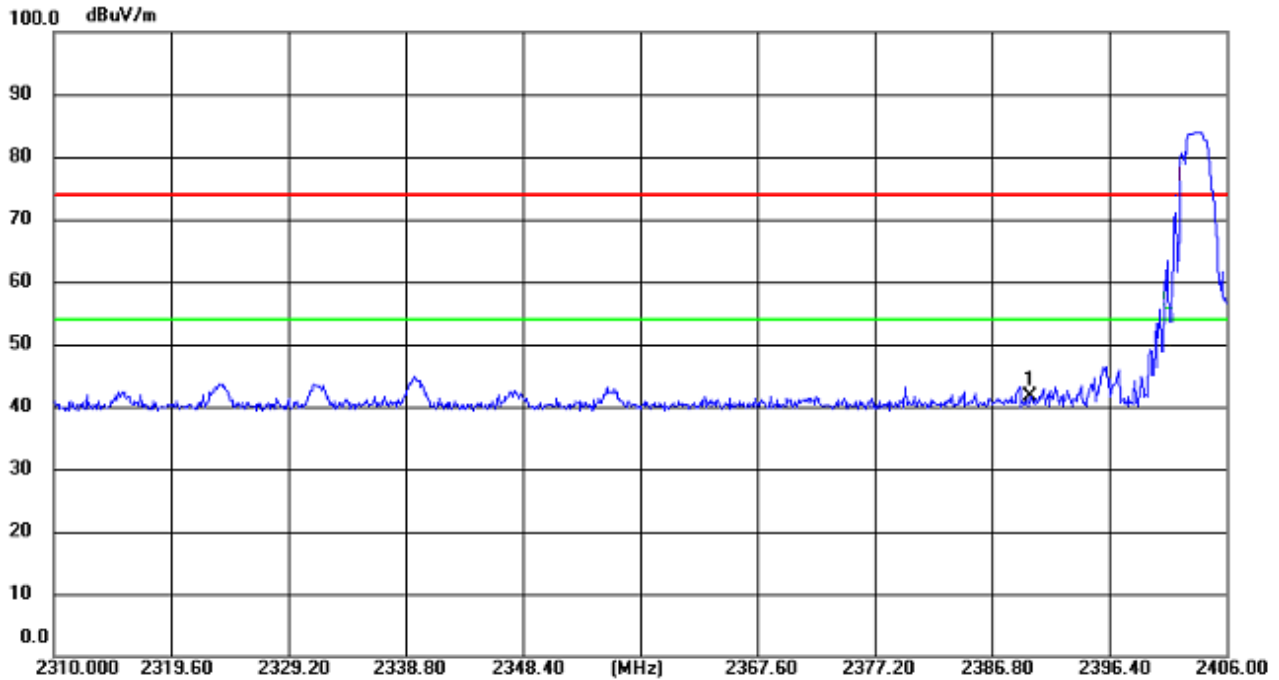
Measurement Data

Operation Mode: GFSK TX

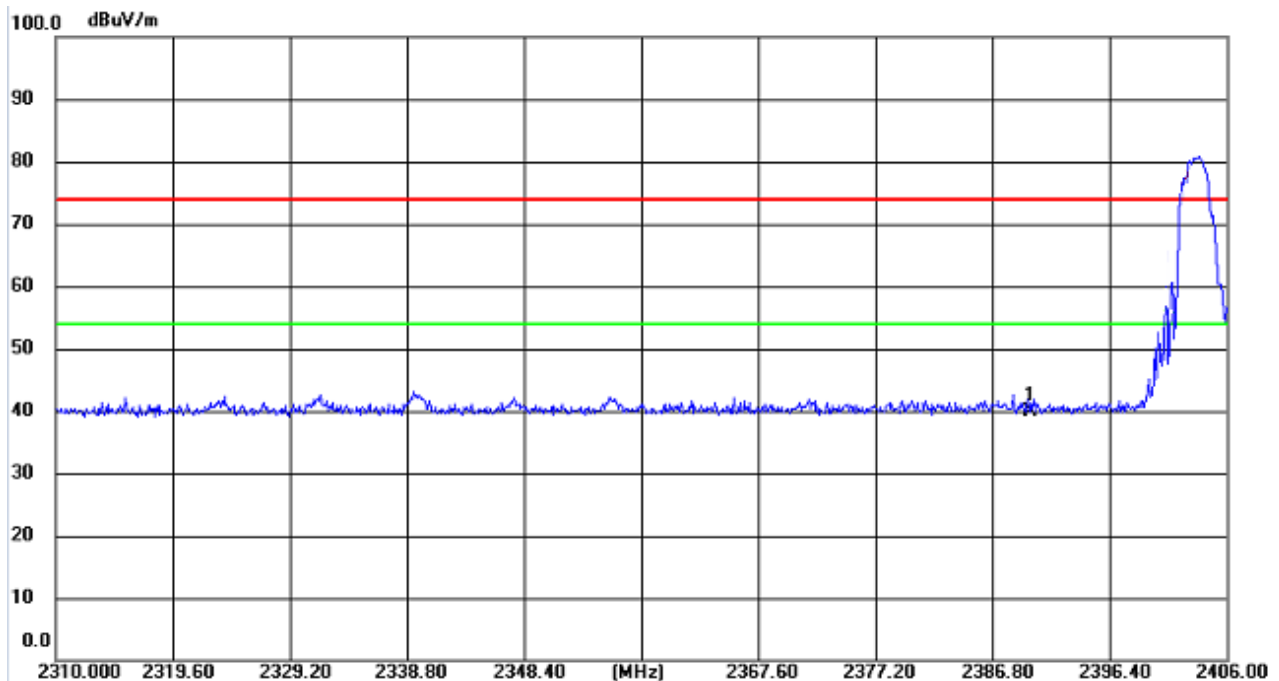
Freq. (MHz)	Ant.Pol. H/V	Reading		Ant/CF CF(dB)	Act		Limit		Note
		Peak (dBuv)	AV (dBuv)		Peak (dBuv/m)	AV (dBuv/m)	Peak (dBuv/m)	AV (dBuv/m)	
2390.00	H	47.31	--	-5.79	41.52	--	74.00	54.00	CH00
2390.00	V	45.78	--	-5.79	39.99	--	74.00	54.00	CH00
2483.50	H	44.76	--	-4.98	39.78	--	74.00	54.00	CH39
2483.50	V	46.34	--	-4.98	41.36	--	74.00	54.00	CH39

Note: Emission Level = Meter Reading + Factor

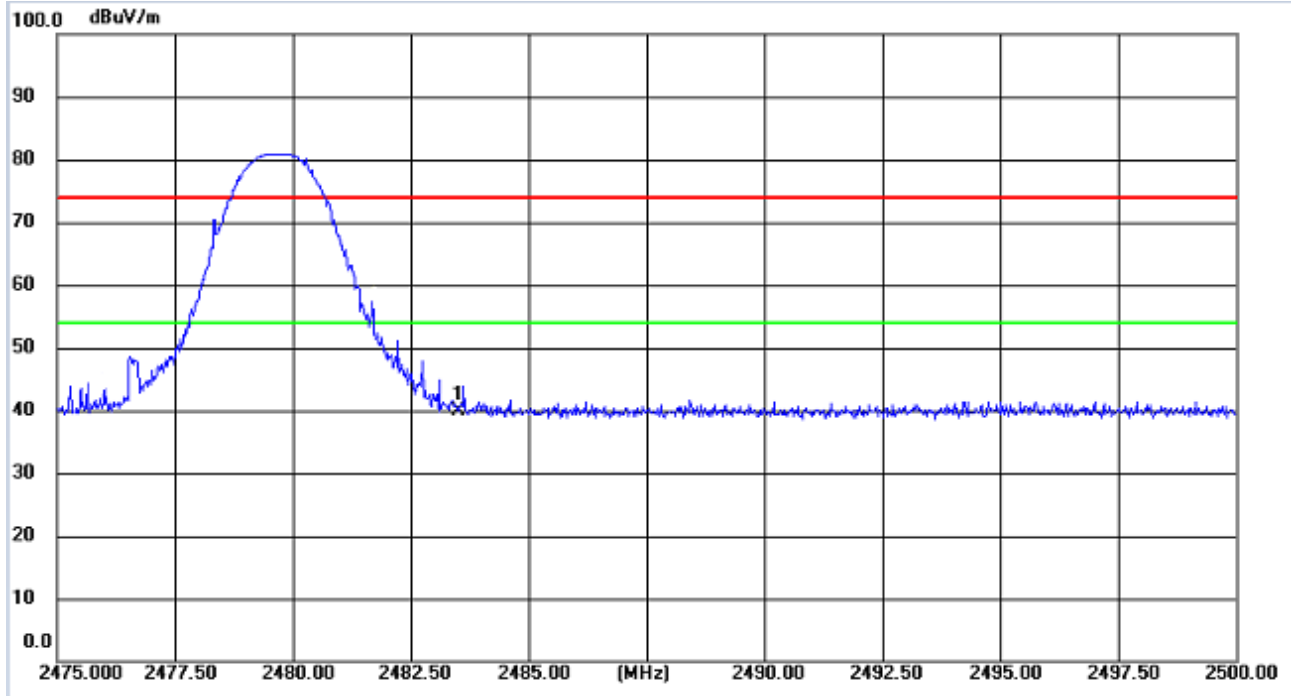
Horizontal



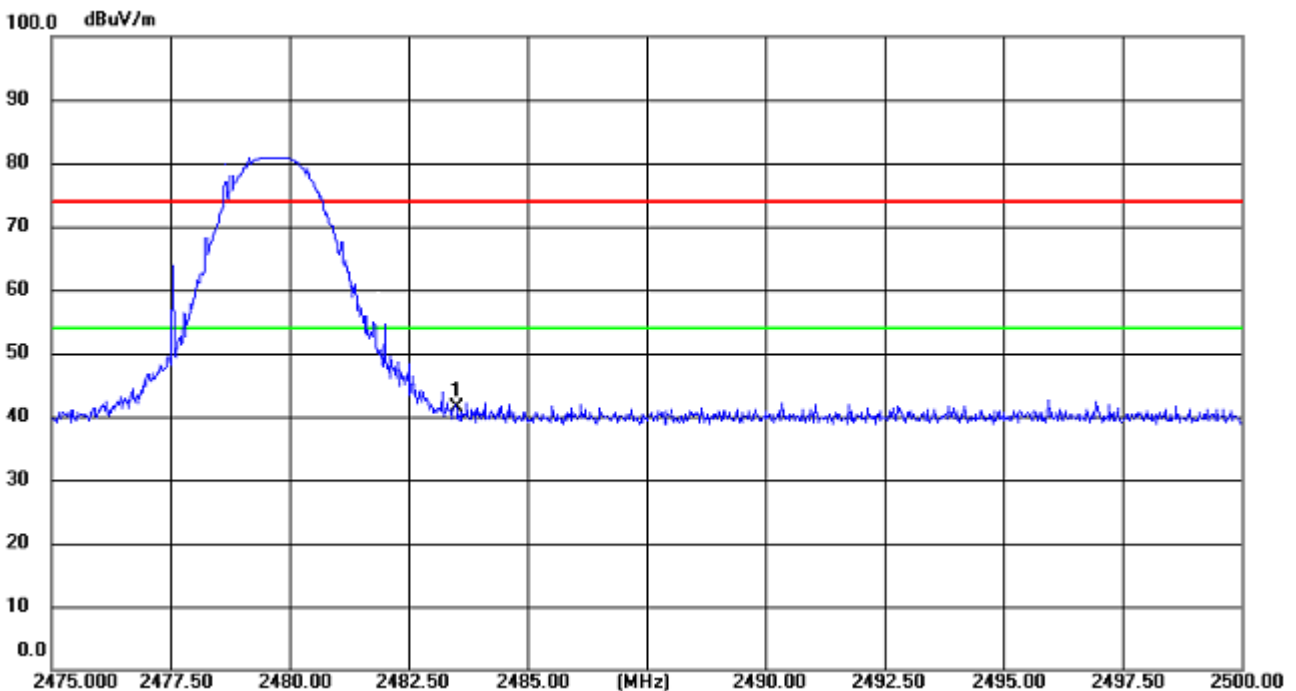
Vertical



Horizontal

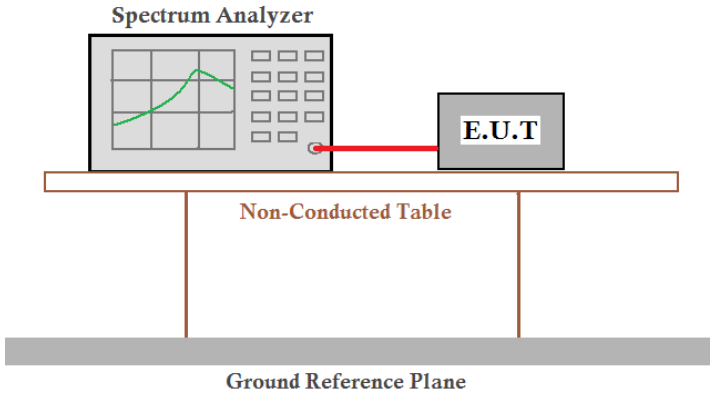


Vertical



6.5. Spurious Emission

6.6.1 Conducted Emission Method

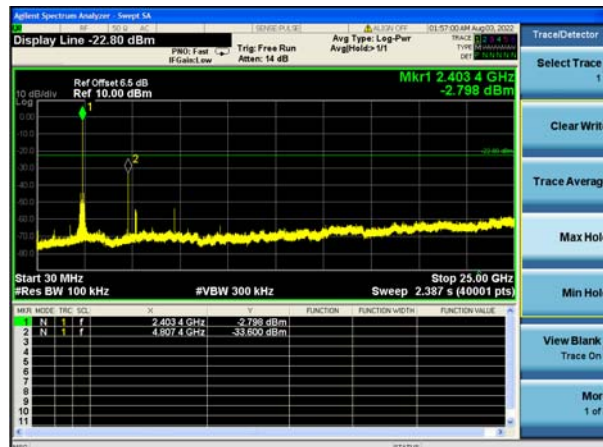
Test Requirement:	FCC Part15 C Section 15.247 (d)					
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance V05r02					
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by 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.					
Test setup:	 The diagram illustrates the test setup for conducted emission measurement. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table, which is supported by 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					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar



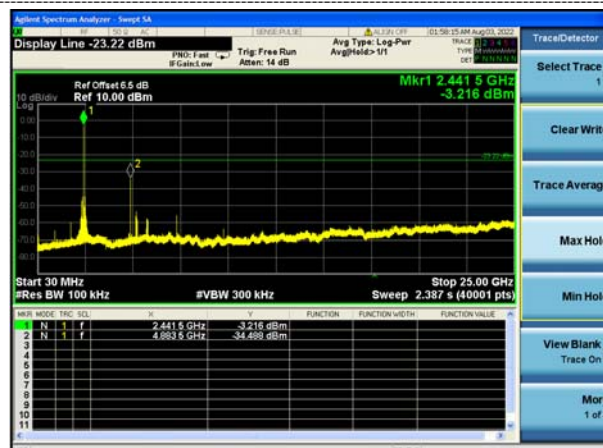
Report No.: HTT202207307F01

Test plot as follows:

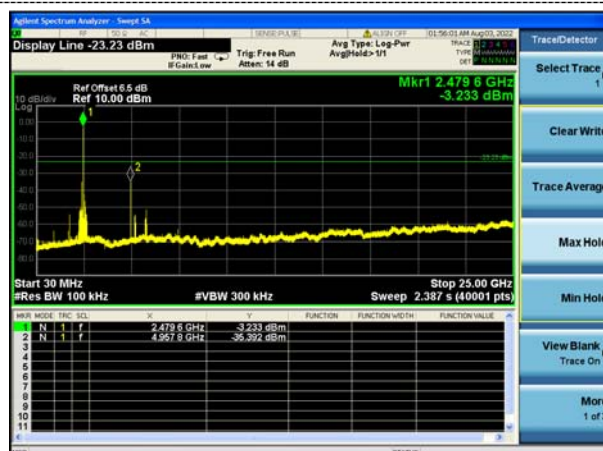
GFSK



Low Channel

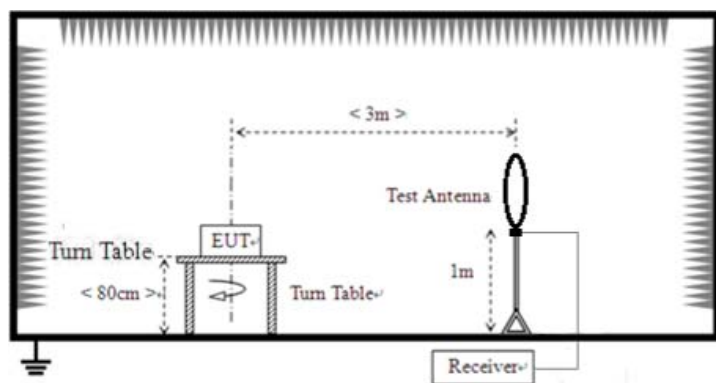


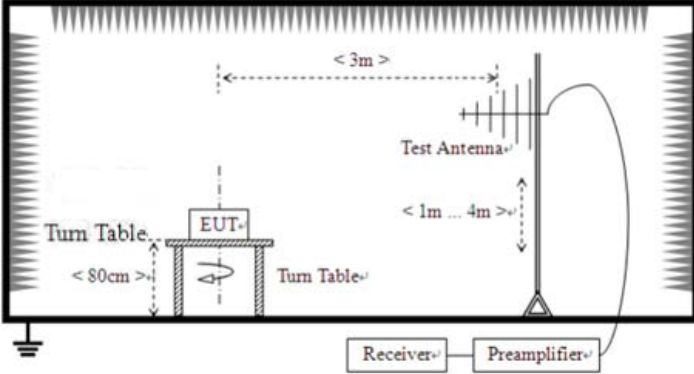
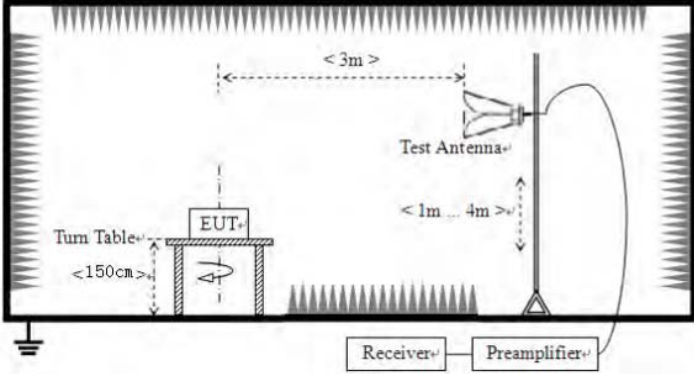
Mid Channel



High Channel

6.6.2 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:	Frequency	Detector	RBW	VBW	Value
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Limit (uV/m)	Value	Measurement Distance	
	0.009MHz-0.490MHz	2400/F(KHz)	QP	300m	
	0.490MHz-1.705MHz	24000/F(KHz)	QP	30m	
	1.705MHz-30MHz	30	QP	30m	
	30MHz-88MHz	100	QP	3m	
	88MHz-216MHz	150	QP		
	216MHz-960MHz	200	QP		
	960MHz-1GHz	500	QP		
	Above 1GHz	500	Average		
		5000	Peak		
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 1G and 1.5m for above 1G) 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



Report No.: HTT202207307F01

Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	DC3.7V					
Test results:	Pass					

Measurement data:

Remark:

Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

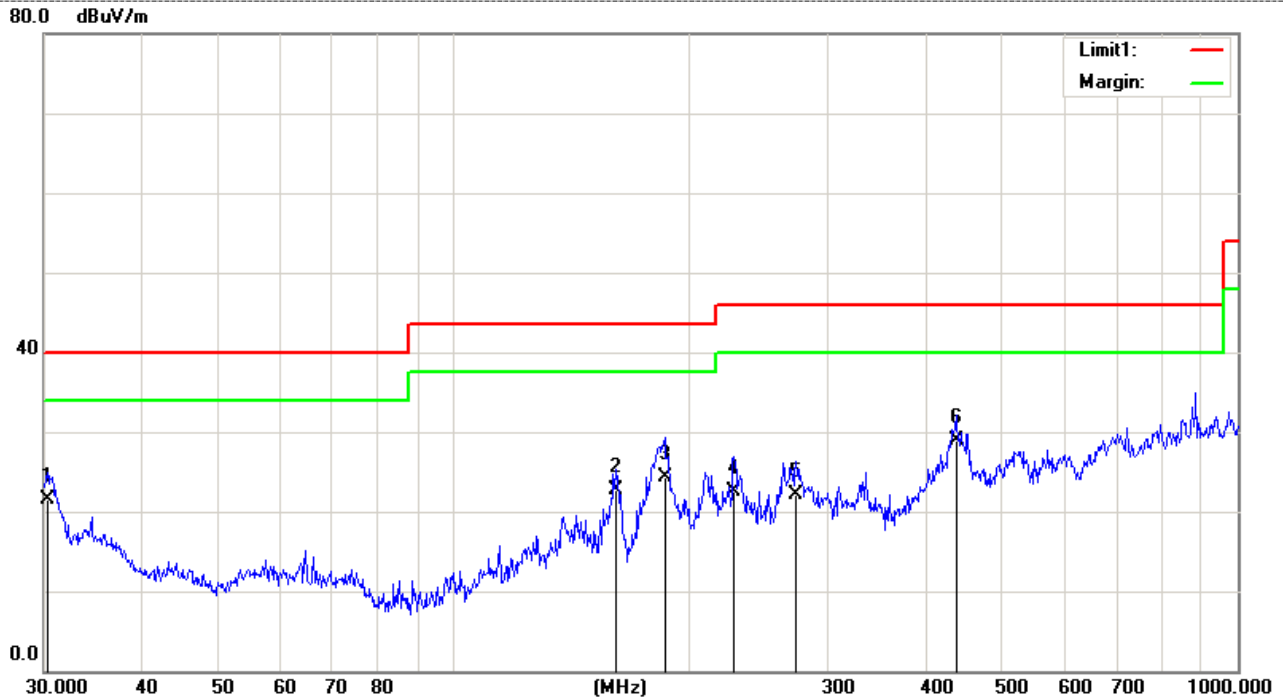
■ 9kHz~30MHz

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.



■ Below 1GHz

■ Horizontal



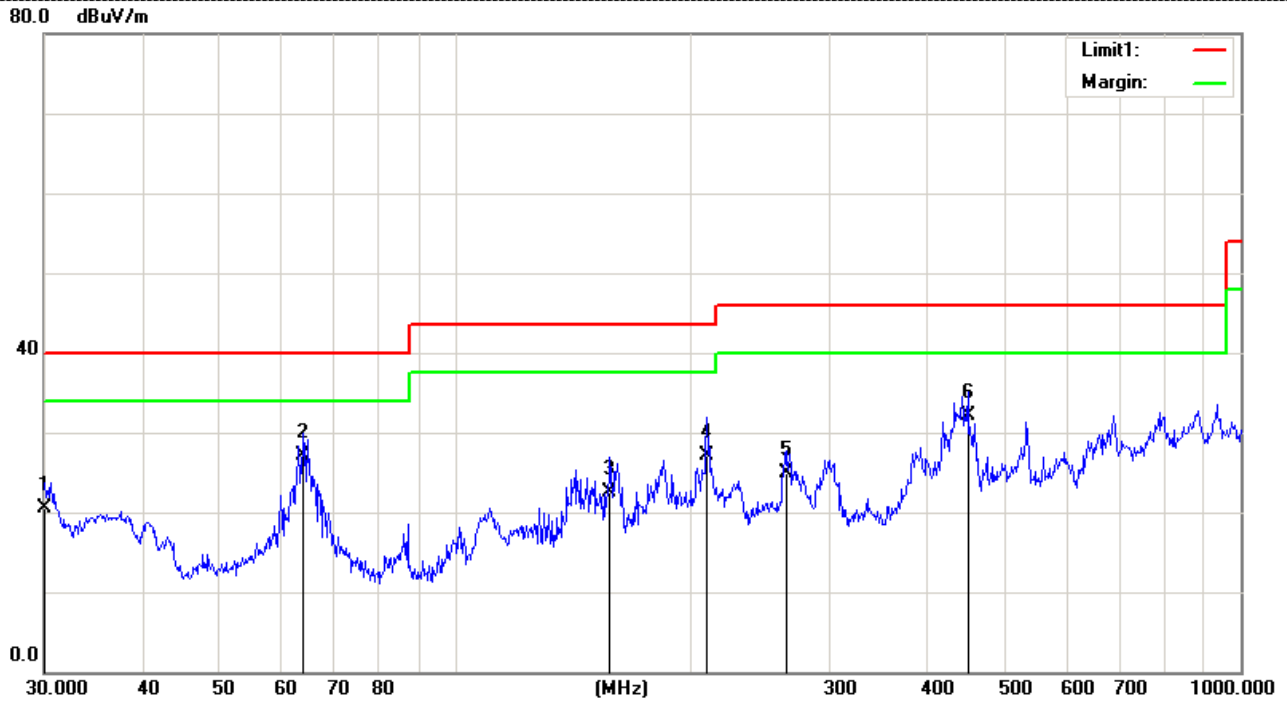
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.3172	30.24	-8.73	21.51	40.00	-18.49	QP
2	160.9088	34.21	-11.46	22.75	43.50	-20.75	QP
3	185.7881	37.22	-12.83	24.39	43.50	-19.11	QP
4	227.6905	32.86	-10.40	22.46	46.00	-23.54	QP
5	273.2341	31.14	-9.07	22.07	46.00	-23.93	QP
6	437.1198	31.41	-2.50	28.91	46.00	-17.09	QP

Note: Emission Level = Meter Reading + Factor, Margin= Emission L evel - Limit



Report No.: HTT202207307F01

Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	30.1053	29.25	-8.71	20.54	40.00	-19.46	QP
2	64.2074	38.05	-11.01	27.04	40.00	-12.96	QP
3	157.5588	33.97	-11.39	22.58	43.50	-20.92	QP
4	209.3129	35.52	-8.36	27.16	43.50	-16.34	QP
5	263.8190	32.35	-7.42	24.93	46.00	-21.07	QP
6	449.5557	35.15	-3.14	32.01	46.00	-13.99	QP

Note: Emission Level = Meter Reading + Factor, Margin= Emission L evel - Limit



■ Above 1GHz

CH Low (2403.65MHz)

Horizontal:

Frequency	Meter Reading	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4807.3	51.63	31.40	8.18	32.10	59.11	74.00	-14.89	peak
4807.3	35.88	31.40	8.18	32.10	43.36	54.00	-10.64	AVG
7210.95	42.02	35.80	10.83	31.40	57.25	74.00	-16.75	peak
7210.95	26.33	35.80	10.83	31.40	41.56	54.00	-12.44	AVG
---	---			---	---	---	---	---
---	---			---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4807.3	50.12	31.40	8.18	32.10	57.60	74.00	-16.40	peak
4807.3	34.52	31.40	8.18	32.10	42.00	54.00	-12.00	AVG
7210.95	37.77	35.80	10.83	31.40	53.00	74.00	-21.00	peak
7210.95	24.15	35.80	10.83	31.40	39.38	54.00	-14.62	AVG
---	---			---	---	---	---	---
---	---			---	---	---	---	---

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Note: Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



CH Middle (2441.65MHz)

Horizontal:

Frequency	Meter Reading	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4883.3	48.74	31.40	9.17	32.10	57.21	74.00	-16.79	peak
4883.3	33.41	31.40	9.17	32.10	41.88	54.00	-12.12	AVG
7324.95	40.05	35.80	10.83	31.40	55.28	74.00	-18.72	peak
7324.95	24.33	35.80	10.83	31.40	39.56	54.00	-14.44	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4880	49.02	31.40	9.17	32.10	57.49	74.00	-16.51	peak
4880	32.74	31.40	9.17	32.10	41.21	54.00	-12.79	AVG
7320	39.58	35.80	10.83	31.40	54.81	74.00	-19.19	peak
7320	23.15	35.80	10.83	31.40	38.38	54.00	-15.62	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Note: Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit



CH High (2479.65MHz)

Horizontal:

Frequency	Meter Reading	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4960	47.77	31.40	9.17	32.10	56.24	74.00	-17.76	peak
4960	32.16	31.40	9.17	32.10	40.63	54.00	-13.37	AVG
7440	38.47	35.80	10.83	31.40	53.70	74.00	-20.30	peak
7440	21.84	35.80	10.83	31.40	37.07	54.00	-16.93	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Vertical:

Frequency	Meter Reading	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
4960	46.54	31.40	9.17	32.10	55.01	74.00	-18.99	peak
4960	31.23	31.40	9.17	32.10	39.70	54.00	-14.30	AVG
7440	39.11	35.80	10.83	31.40	54.34	74.00	-19.66	peak
7440	22.35	35.80	10.83	31.40	37.58	54.00	-16.42	AVG

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Note: Emission Level = Meter Reading + Factor, Margin= Emission Level - Limit

Remark:

(1) Data of measurement within this frequency range shown “--- ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(2) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed.



Test Setup Photo

Reference to the **appendix I** for details.

7. 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:	
The antenna is a PCB antenna and no consideration of replacement. Antenna max gain is 3.85 dBi from 2.4GHz to 2.5GHz.	

8. EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----