TEST REPORT

Applicant:	Autel Robotics Co.,Ltd.
Address of Applicant:	9th Floor, Bldg.B1, Zhiyuan, 1001 Xueyuan Rd.,Xili, Nanshan, Shenzhen, China
Manufacturer/Factory:	Autel Robotics Co.,Ltd.
Address of Manufacturer/Factory:	9th Floor, Bldg.B1, Zhiyuan, 1001 Xueyuan Rd.,Xili, Nanshan, Shenzhen, China

Equipment Under Test (EUT)

Product Name:	Dragon Fish
Model No.:	DF-1
Trade Mark:	AUTEL
FCC ID:	2AGNTDF2409A
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	Sep. 10, 2020
Date of Test:	Sep. 10 – Oct. 15, 2020
Date of report issued:	Oct. 16, 2020
Test Result :	PASS *

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

Authorized Signature:

Robinson Luo
Laboratory Manager

2 Version

Version No.	Date	Description
00	*Oct. 16, 2020*	*Original*

Prepared By: ***Date:*** *Oct. 16, 2020*

Project Engineer

Check By: ***Date:*** *Oct. 16, 2020*

Reviewer

3 Contents

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4 Test Summary

Test Item	Section	Result
Antenna requirement	FCC part 15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	FCC part 15.207	N/A
Conducted Peak Output Power	FCC part 15.247 (b)(3)	Pass
Channel Bandwidth & 99% OCB	FCC part 15.247 (a)(2)	Pass
Power Spectral Density	FCC part 15.247 (e)	Pass
Band Edge	FCC part 15.247(d)	Pass
Spurious Emission	FCC part 15.205/15.209	Pass

Remark: Test according to ANSI C63.10:2013 and RSS-Gen

Pass: The EUT complies with the essential requirements in the standard.

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(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:	Dragon Fish
Model No.:	DF-1
Serial No.:	N/A
Hardware Version:	V202010
Software Version:	V202010
Test sample(s) ID:	GTS202010000194-1
Sample(s) Status:	Engineer sample
Sample(s) Status	Engineer sample
Operation frequency:	2407.5MHz~2471.5 MHz
Operation bandwidth:	10MHz
Channel numbers:	65
Channel separation:	1MHz
Modulation technology:	16QAM
Antenna Type:	Integral antenna
Antenna working mode:	2T2R(Not support MIMO)
Antenna gain:	Antenna 1:1.3dBi Antenna 2:4.6dBi
Power supply:	2*DC 23.1V rechargeable battery

Operation Frequency each of channel			
10MHz Bandwidth			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	**2407.5**	**33**	**2439.5**
2	2408.5	……	……
3	2409.5	……	……
……	……	……	……
……	……	64	2470.5
32	2438.5	**65**	**2471.5**

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:

Test channel	Frequency (MHz)
Lowest channel	2407.5MHz
Middle channel	2439.5MHz
Highest channel	2471.5MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: During the test, the dutycycle >98%, 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.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 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.

● **IC —Registration No.: 9079A**

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

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.
Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102
Tel: 0755-27798480
Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Special test command provided by manufacturer
Power level setup	Default

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. 02 2020	July. 01 2025
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. 25 2020	June. 24 2021
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 25 2020	June. 24 2021
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 25 2020	June. 24 2021
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 25 2020	June. 24 2021
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 25 2020	June. 24 2021
9	Coaxial Cable	GTS	N/A	GTS211	June. 25 2020	June. 24 2021
10	Coaxial cable	GTS	N/A	GTS210	June. 25 2020	June. 24 2021
11	Coaxial Cable	GTS	N/A	GTS212	June. 25 2020	June. 24 2021
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 25 2020	June. 24 2021
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 25 2020	June. 24 2021
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 25 2020	June. 24 2021
15	Band filter	Amindeon	82346	GTS219	June. 25 2020	June. 24 2021
16	Power Meter	Anritsu	ML2495A	GTS540	June. 25 2020	June. 24 2021
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 25 2020	June. 24 2021
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 25 2020	June. 24 2021
19	Splitter	Agilent	11636B	GTS237	June. 25 2020	June. 24 2021
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 25 2020	June. 24 2021
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 19 2019	Oct. 18 2020
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 19 2019	Oct. 18 2020
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 19 2019	Oct. 18 2020
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 25 2020	June. 24 2021

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. 25 2020	June. 24 2021
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 25 2020	June. 24 2021
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 25 2020	June. 24 2021
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 25 2020	June. 24 2021
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 25 2020	June. 24 2021
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 25 2020	June. 24 2021
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 25 2020	June. 24 2021

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)

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.

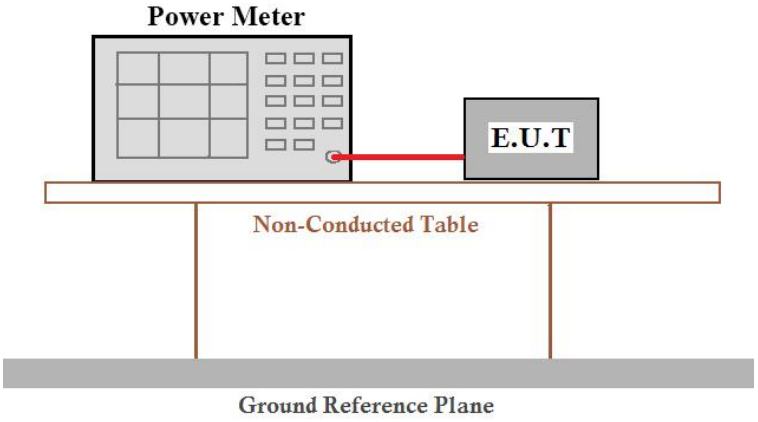
15.247(c) (1)(i) requirement:

(i) 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 6dBi.

EUT Antenna:

The antennas are integral antenna, the best case gain of the antenna 1 is 1.3dBi, antenna 2 is 4.6dBi, reference to the appendix II for details

7.2 Conducted Peak Output Power

Test Requirement :	FCC Part15 C Section 15.247 (b)(3)
Test Method :	KDB558074 D01 DTS Meas Guidance v05or02
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

Measurement Data

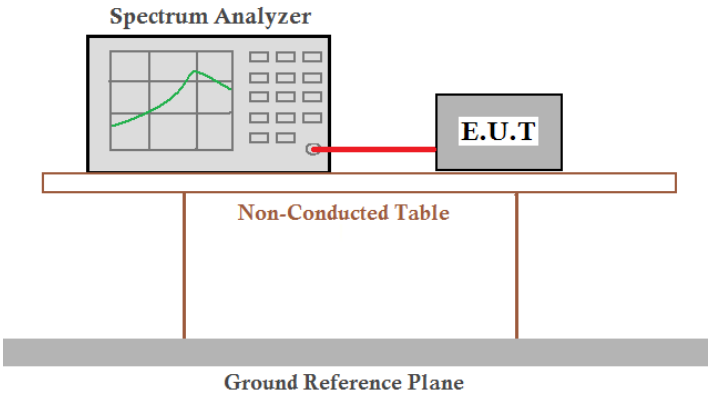
Antenna 1:

Test CH	Peak Output Power (dBm)	Limit(dBm)	Result
Lowest	26.45	30.00	Pass
Middle	26.09		
Highest	26.33		

Antenna 2:

Test CH	Peak Output Power (dBm)	Limit(dBm)	Result
Lowest	26.69	30.00	Pass
Middle	26.14		
Highest	26.42		

7.3 Channel Bandwidth & 99% Occupy Bandwidth

Test Requirement :	FCC Part15 C Section 15.247 (a)(2)
Test Method :	KDB558074 D01 DTS Meas Guidance v05or02
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

Measurement Data

Antenna 1:

Test CH	Channel Bandwidth (MHz)	Limit(KHz)	Result
Lowest	8.995	>500	Pass
Middle	8.998		
Highest	9.020		

Test CH	99% Occupy Bandwidth (MHz)	Result
Lowest	8.9304	Pass
Middle	8.9271	
Highest	8.9270	

Antenna 2:

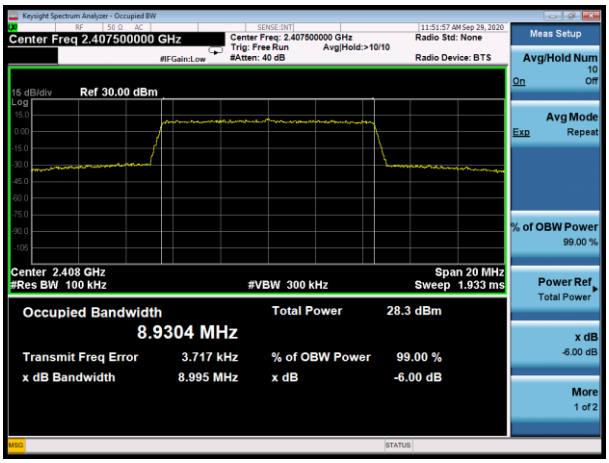
Test CH	Channel Bandwidth (MHz)	Limit(KHz)	Result
Lowest	8.996	>500	Pass
Middle	9.020		
Highest	8.900		

Test CH	99% Occupy Bandwidth (MHz)	Result
Lowest	8.9382	Pass
Middle	8.9303	
Highest	8.9509	

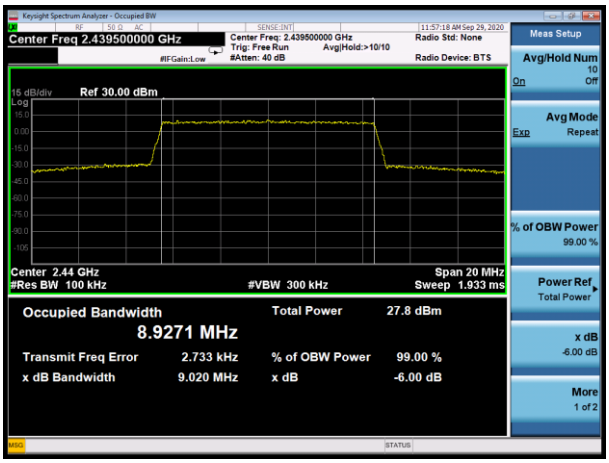
Test plot as follows:

Antenna 1:

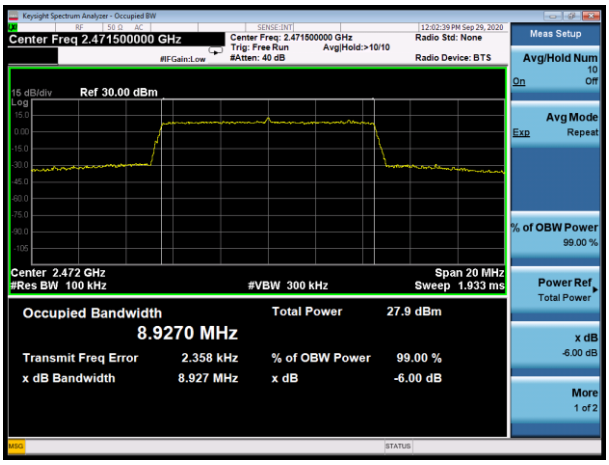
10MHz Bandwidth	



Lowest channel



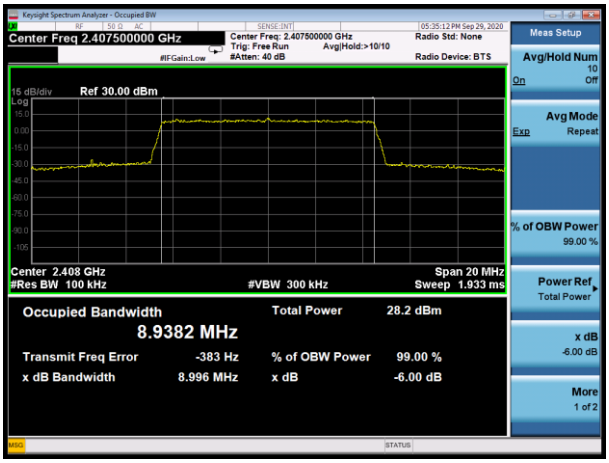
Middle channel



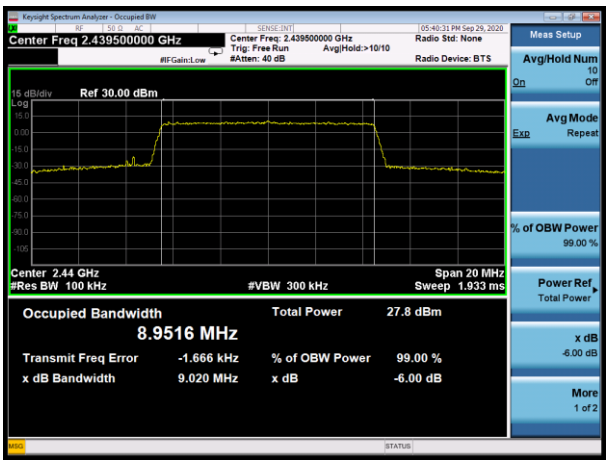
Highest channel

Antenna 2:

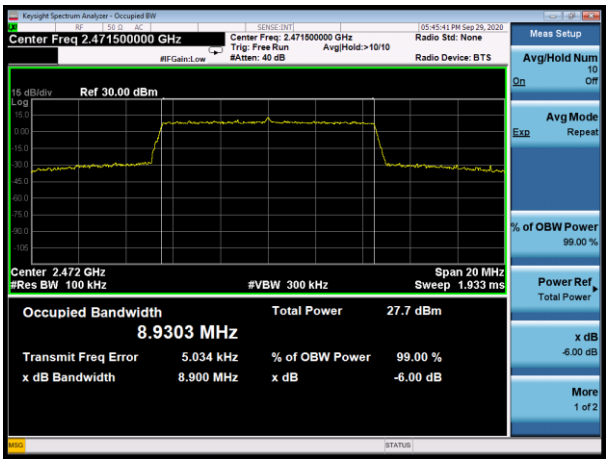
10MHz Bandwidth	



Lowest channel

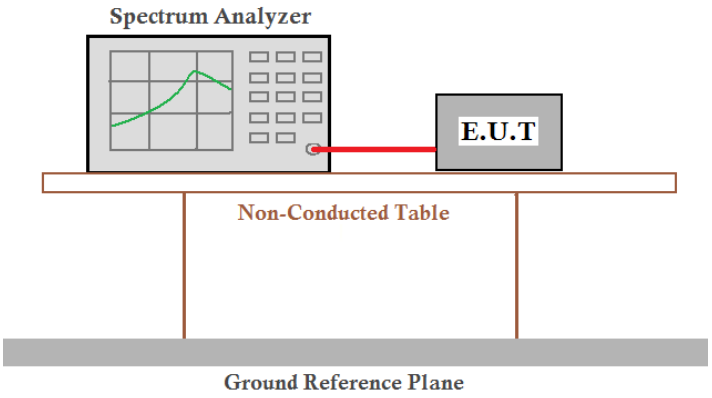


Middle channel



Highest channel

7.4 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB558074 D01 DTS Meas Guidance v05or02
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

Measurement Data

Antenna 1:

Test CH	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	-3.992	8.00	Pass
Middle	-2.708		
Highest	-3.419		

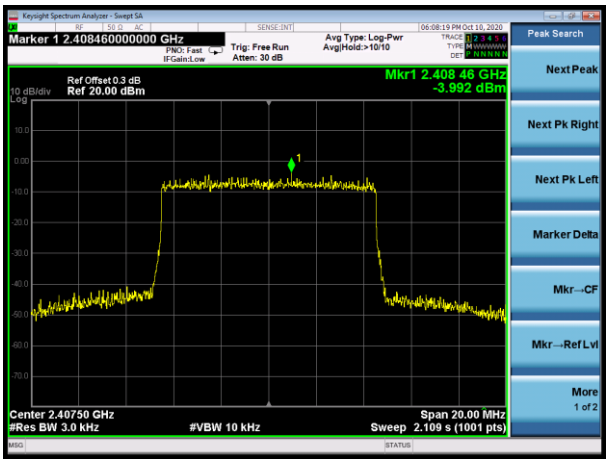
Antenna 2:

Test CH	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	-3.488	8.00	Pass
Middle	-3.213		
Highest	-3.485		

Test plot as follows:

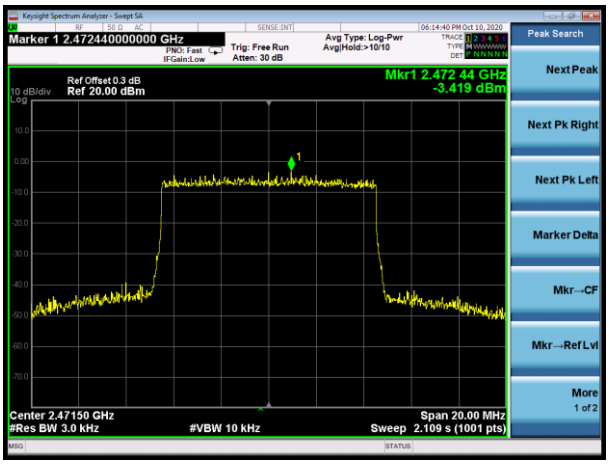
Antenna 1:

10MHz Bandwidth	



Lowest channel

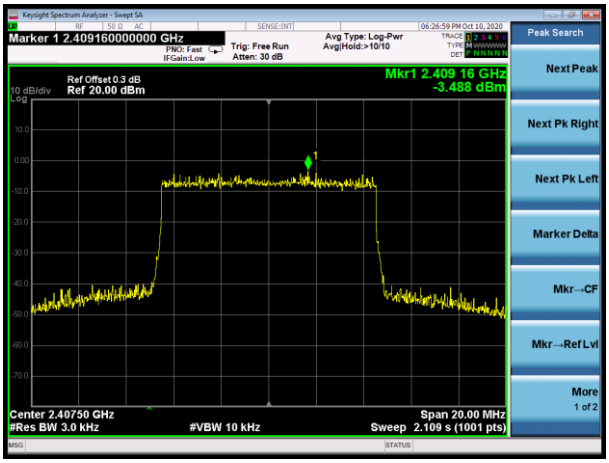
Middle channel



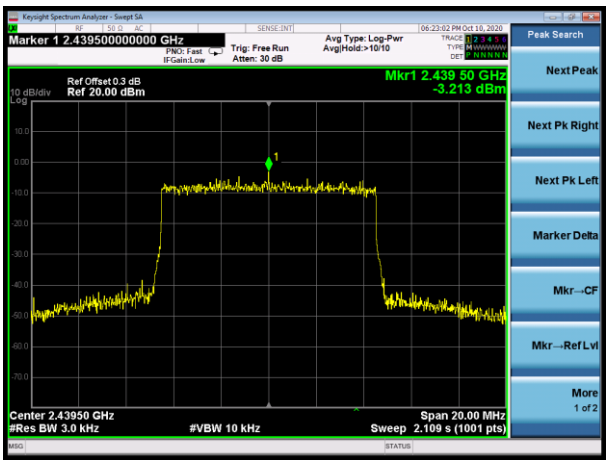
Highest channel

Antenna 2:

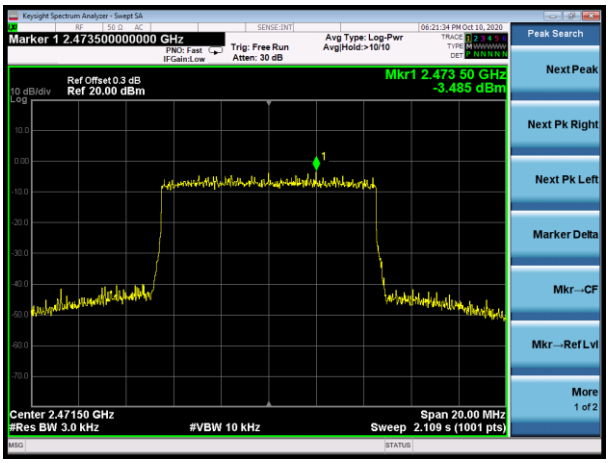
10MHz Bandwidth	



Lowest channel



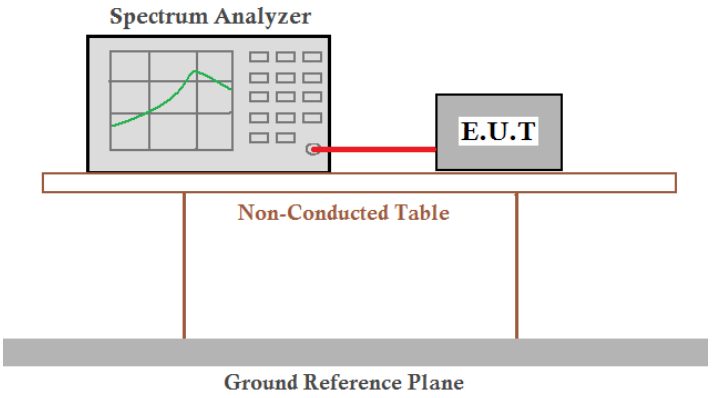
Middle channel



Highest channel

7.5 Band edges

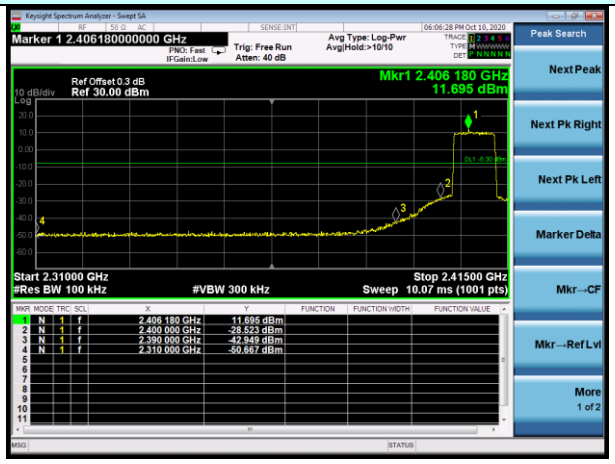
7.5.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D01 DTS Meas Guidance v05or02
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:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

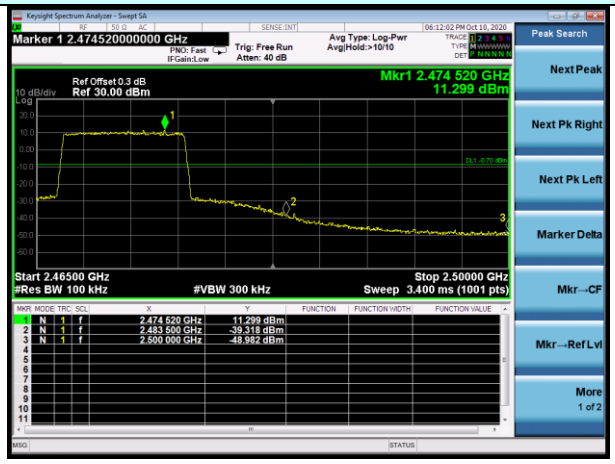
Test plot as follows:

Antenna 1:

Test mode:	10MHz Bandwidth



Lowest channel

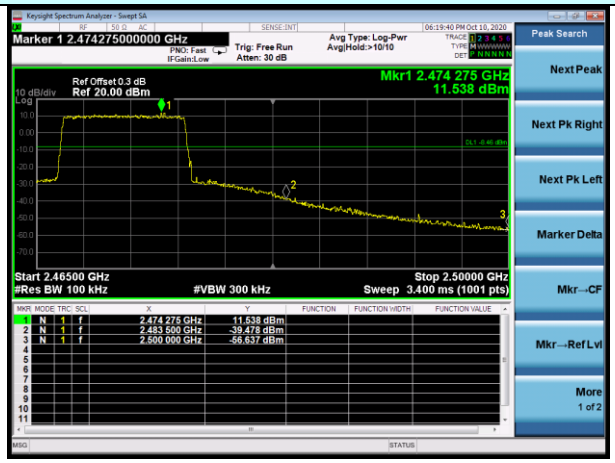


Highest channel

Antenna 2:

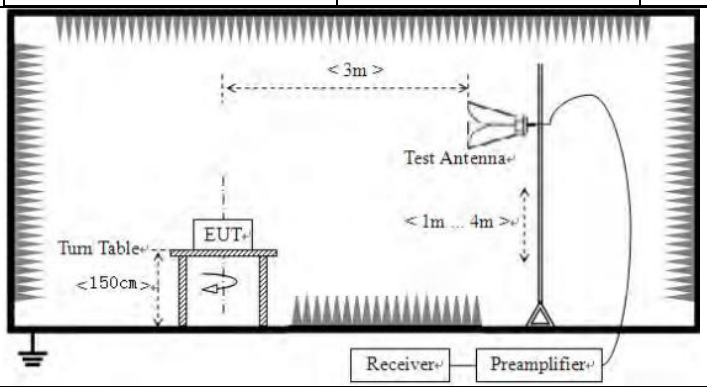
Test mode:	10MHz Bandwidth

Lowest channel



Highest channel

7.5.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>Test Frequency Range:</td><td>All of the restrict bands were tested, only the worst band’s (2310MHz to 2500MHz) data was showed.</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><td>Frequency</td><td>Detector</td><td>RBW</td><td>VBW</td><td>Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Average</td><td>1MHz</td><td>3MHz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td colspan="2">Frequency</td><td>Limit (dBuV/m @3m)</td><td>Value</td></tr>
<tr><td colspan="2" rowspan="2">Above 1GHz</td><td>54.00</td><td>Average</td></tr>
<tr><td>74.00</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Procedure:</td><td>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 Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
<tr><td>Test mode:</td><td>Refer to section 5.2 for details</td></tr>
<tr><td>Test results:</td><td>Pass</td></tr>
</table>

Measurement data:

All antennas have test, only the worst case ANT 2 report.

Test mode:	10MHz Bandwidth	Test channel:	Lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	52.55	27.59	5.38	34.01	51.51	74.00	-22.49	Horizontal
2400.00	61.49	27.58	5.39	34.01	60.45	74.00	-13.55	Horizontal
2390.00	54.33	27.59	5.38	34.01	53.29	74.00	-20.71	Vertical
2400.00	63.47	27.58	5.39	34.01	62.43	74.00	-11.57	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	39.20	27.59	5.38	34.01	38.16	54.00	-15.84	Horizontal
2400.00	47.57	27.58	5.39	34.01	46.53	54.00	-7.47	Horizontal
2390.00	40.88	27.59	5.38	34.01	39.84	54.00	-14.16	Vertical
2400.00	48.75	27.58	5.39	34.01	47.71	54.00	-6.29	Vertical

Test mode:	10MHz Bandwidth	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	53.18	27.53	5.47	33.92	52.26	74.00	-21.74	Horizontal
2500.00	49.08	27.55	5.49	29.93	52.19	74.00	-21.81	Horizontal
2483.50	55.53	27.53	5.47	33.92	54.61	74.00	-19.39	Vertical
2500.00	51.71	27.55	5.49	29.93	54.82	74.00	-19.19	Vertical

Average value:

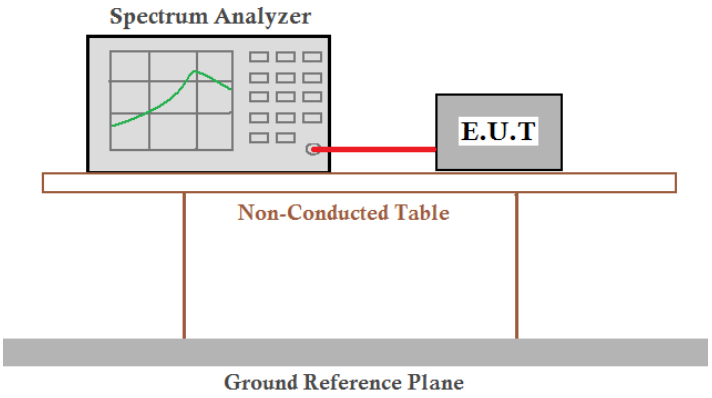
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	39.53	27.53	5.47	33.92	38.61	54.00	-15.39	Horizontal
2500.00	35.65	27.55	5.49	29.93	38.76	54.00	-15.24	Horizontal
2483.50	41.65	27.53	5.47	33.92	40.73	54.00	-13.27	Vertical
2500.00	37.43	27.55	5.49	29.93	40.54	54.00	-13.46	Vertical

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
3. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
4. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

7.6 Spurious Emission

7.6.1 Conducted Emission Method

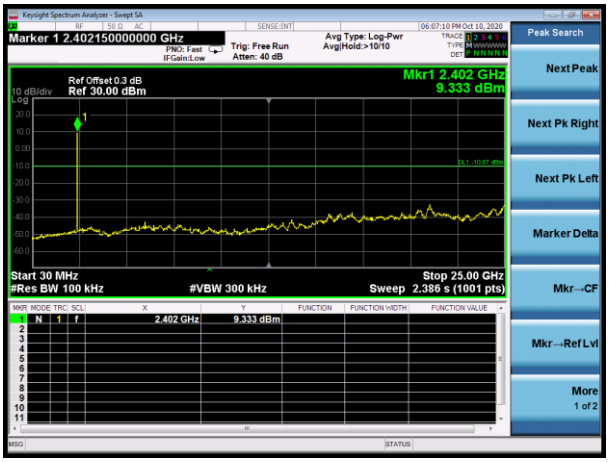
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D01 DTS Meas Guidance v05or02
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall 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:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

Antenna 1:

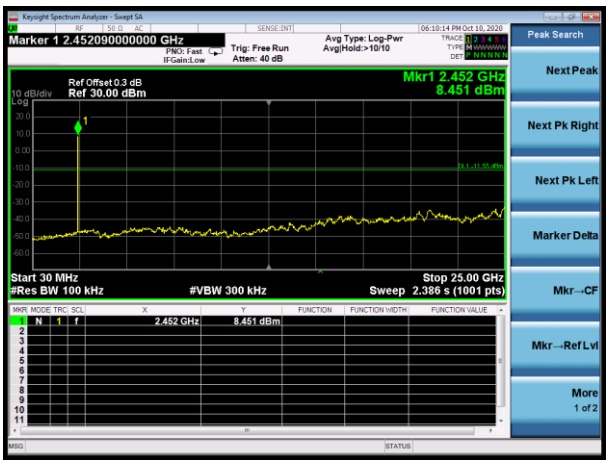
10MHz Bandwidth

Lowest channel



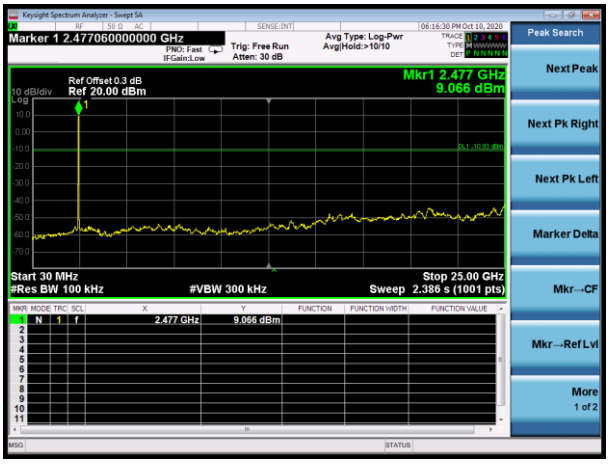
30MHz~25GHz

Middle channel



30MHz~25GHz

Highest channel

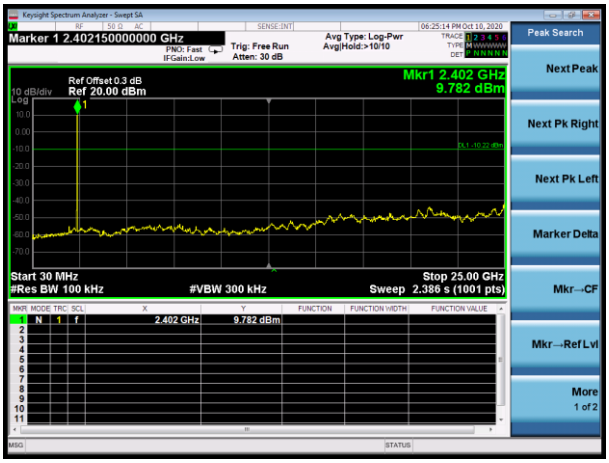


30MHz~25GHz

Antenna 2:

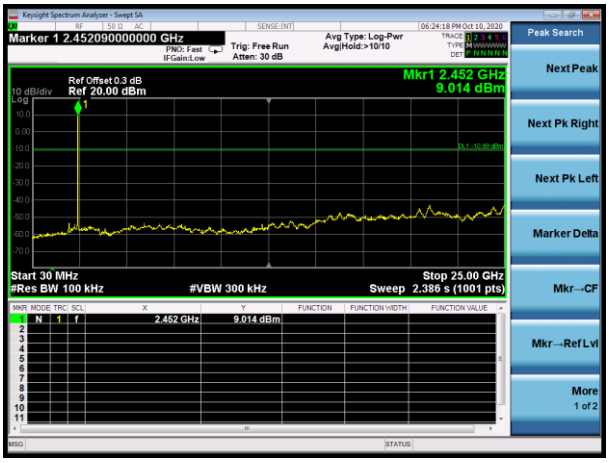
10MHz Bandwidth

Lowest channel



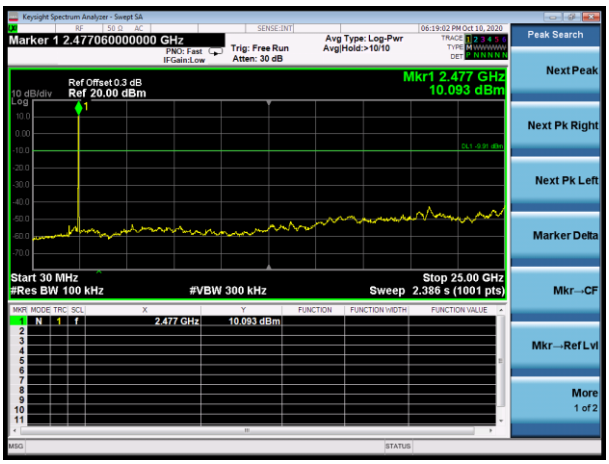
30MHz~25GHz

Middle channel



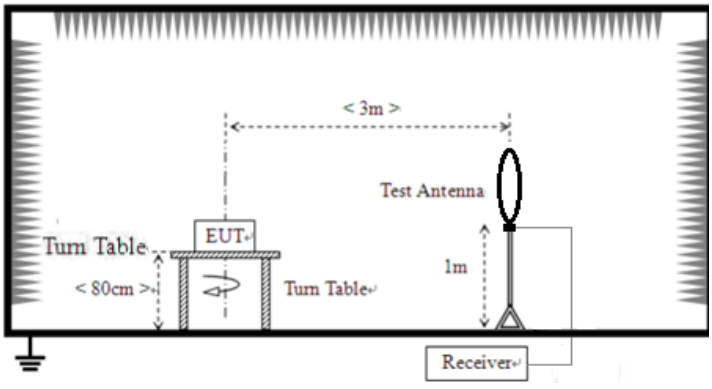
30MHz~25GHz

Highest channel

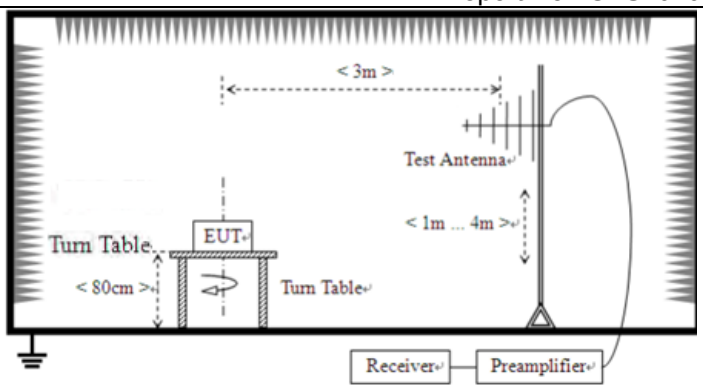


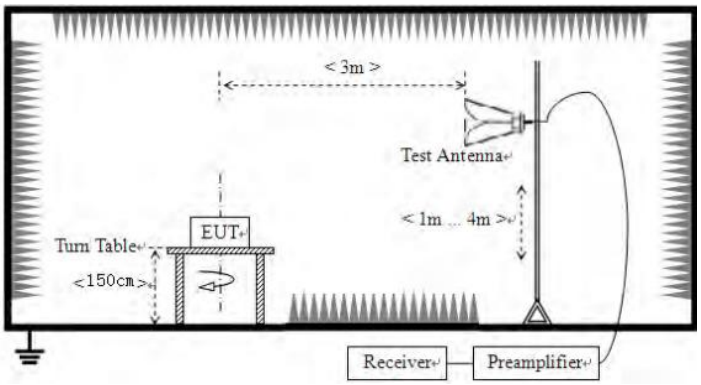
30MHz~25GHz

7.6.2 Radiated Emission Method

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>Test Frequency Range:</td><td>9kHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Value</th></tr>
<tr><td>9KHz-150KHz</td><td>Quasi-peak</td><td>200Hz</td><td>600Hz</td><td>Quasi-peak</td></tr>
<tr><td>150KHz-30MHz</td><td>Quasi-peak</td><td>9KHz</td><td>30KHz</td><td>Quasi-peak</td></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>120KHz</td><td>300KHz</td><td>Quasi-peak</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (uV/m)</th><th>Value</th><th>Measurement Distance</th></tr>
<tr><td>0.009MHz-0.490MHz</td><td>2400/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>0.490MHz-1.705MHz</td><td>24000/F(KHz)</td><td>QP</td><td>300m</td></tr>
<tr><td>1.705MHz-30MHz</td><td>30</td><td>QP</td><td>30m</td></tr>
<tr><td>30MHz-88MHz</td><td>100</td><td>QP</td><td rowspan="7">3m</td></tr>
<tr><td>88MHz-216MHz</td><td>150</td><td>QP</td></tr>
<tr><td>216MHz-960MHz</td><td>200</td><td>QP</td></tr>
<tr><td>960MHz-1GHz</td><td>500</td><td>QP</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>500</td><td>Average</td></tr>
<tr><td>5000</td><td>Peak</td></tr>
</table>
</td></tr>
<tr><td>Test setup:</td><td>For radiated emissions from 9kHz to 30MHz
 

For radiated emissions from 30MHz to1GHz</td></tr>
</table>

<table>
<tr><td></td><td> 

For radiated emissions above 1GHz

</td></tr>
<tr><td>Test Procedure:</td><td>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.</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 6.0 for details</td></tr>
</table>

Test mode:	Refer to section 5.2 for details					
Test voltage:	AC120V 60Hz					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Remarks:

1. *Only the worst case Main Antenna test data.*
2. *Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.*

Measurement data:

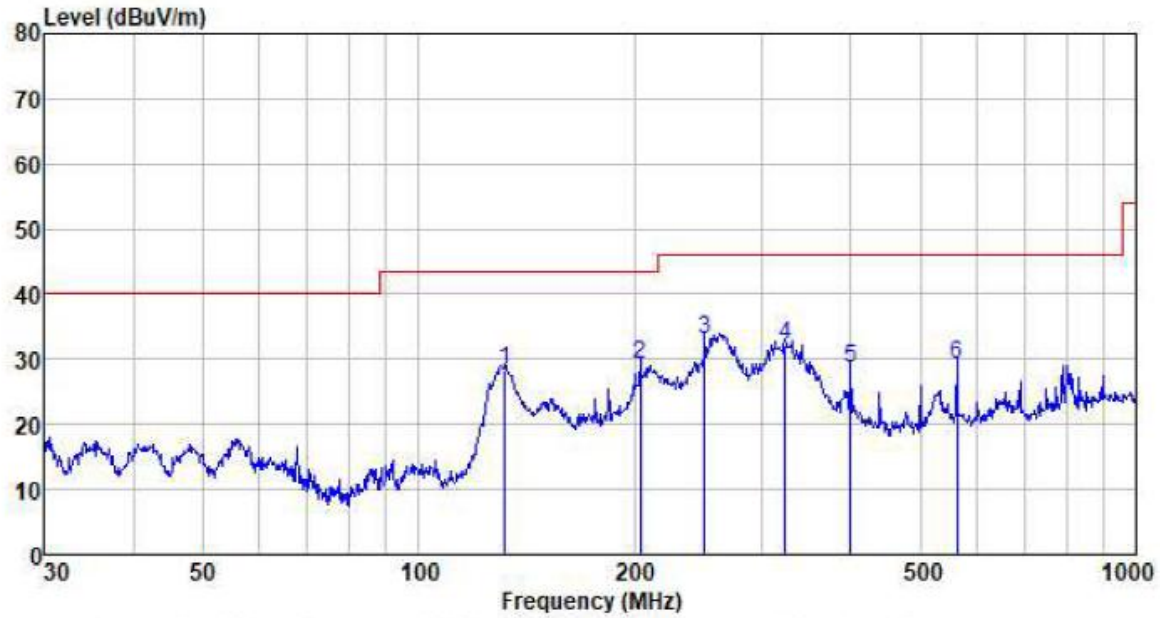
■ **9kHz~30MHz**

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) & RSS-Gen 6.13, the test result no need to reported.

■ **Below 1GHz**

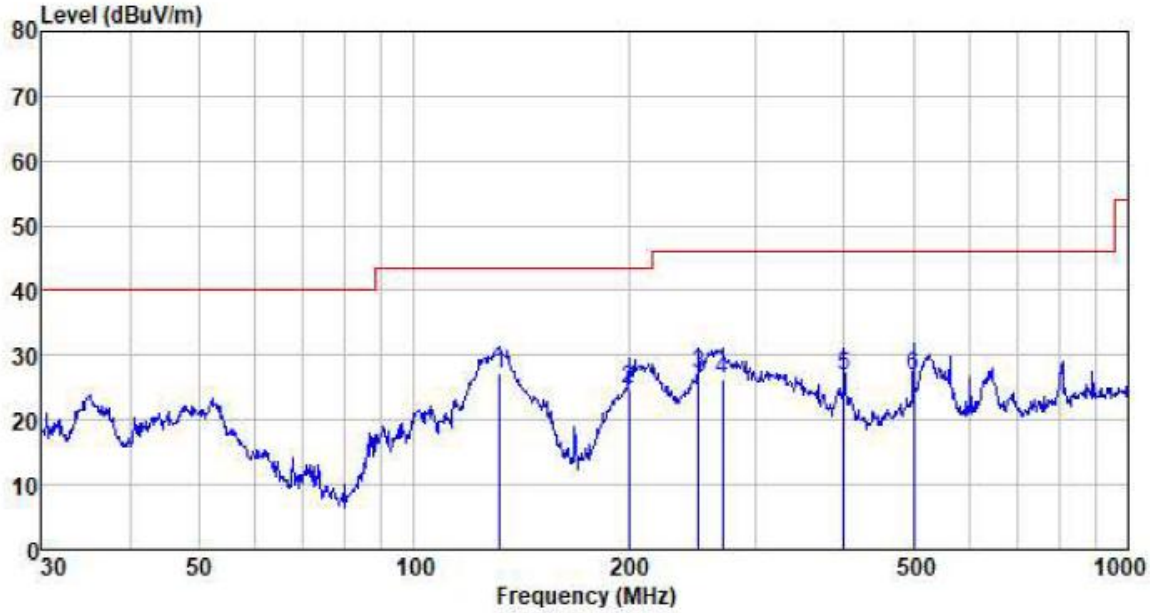
Pre-scan all test modes, found worst case at antenna 2 of 2407.5MHz, and so only show the test result antenna 2 of 2407.5MHz.

Horizontal:



Freq	Reading level	Antenna factor	Cable loss	Preamp factor	level	Limit level	Over limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV	dBuV/m	dB	
131.758	55.75	8.06	1.45	36.96	28.30	43.50	-15.20	QP
203.523	54.02	10.55	1.86	37.33	29.10	43.50	-14.40	QP
250.301	56.04	12.18	2.12	37.38	32.96	46.00	-13.04	QP
324.456	53.05	14.07	2.49	37.45	32.16	46.00	-13.84	QP
400.432	47.90	15.34	2.85	37.52	28.57	46.00	-17.43	QP
562.662	44.50	18.73	3.57	37.53	29.27	46.00	-16.73	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
131.758	54.74	8.06	1.45	36.96	27.29	43.50	-16.21	QP
199.986	49.75	10.40	1.84	37.33	24.66	43.50	-18.84	QP
250.301	50.22	12.18	2.12	37.38	27.14	46.00	-18.86	QP
270.375	48.55	12.76	2.22	37.40	26.13	46.00	-19.87	QP
400.432	46.29	15.34	2.85	37.52	26.96	46.00	-19.04	QP
501.179	43.76	17.30	3.31	37.51	26.86	46.00	-19.14	QP

■ **Above 1GHz**

All antennas have test, only the worst case ANT 2 report.

Test mode:	10MHz Bandwidth	Test channel:	lowest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4815.00	41.66	31.78	8.60	32.09	49.95	74.00	-24.05	Vertical
7222.50	35.26	36.15	11.65	32.00	51.06	74.00	-22.94	Vertical
9630.00	34.00	37.95	14.14	31.62	54.47	74.00	-19.53	Vertical
12037.50	*					74.00		Vertical
14445.00	*					74.00		Vertical
16852.50	*					74.00		Vertical
4815.00	40.18	31.78	8.60	32.09	48.47	74.00	-25.53	Horizontal
7222.50	35.33	36.15	11.65	32.00	51.13	74.00	-22.87	Horizontal
9630.00	32.87	37.95	14.14	31.62	53.34	74.00	-20.66	Horizontal
12037.50	*					74.00		Horizontal
14445.00	*					74.00		Horizontal
16852.50	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4815.00	30.71	31.78	8.60	32.09	39.00	54.00	-15.00	Vertical
7222.50	24.12	36.15	11.65	32.00	39.92	54.00	-14.08	Vertical
9630.00	24.34	37.95	14.14	31.62	44.81	54.00	-9.19	Vertical
12037.50	*					54.00		Vertical
14445.00	*					54.00		Vertical
16852.50	*					54.00		Vertica
4815.00	29.69	31.78	8.60	32.09	37.98	54.00	-16.02	Horizontal
7222.50	23.90	36.15	11.65	32.00	39.70	54.00	-14.30	Horizontal
9630.00	22.61	37.95	14.14	31.62	43.08	54.00	-10.92	Horizontal
12037.50	*					54.00		Horizontal
14445.00	*					54.00		Horizontal
16852.50	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

Test mode:	10MHz Bandwidth	Test channel:	Middle

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4879.00	40.64	31.85	8.67	32.12	49.04	74.00	-24.96	Vertical
7318.50	35.29	36.37	11.72	31.89	51.49	74.00	-22.51	Vertical
9758.00	34.98	38.35	14.25	31.62	55.96	74.00	-18.04	Vertical
12197.50	*					74.00		Vertical
14637.00	*					74.00		Vertical
17076.50	*					74.00		Vertical
4879.00	40.98	31.85	8.67	32.12	49.38	74.00	-24.62	Horizontal
7318.50	34.25	36.37	11.72	31.89	50.45	74.00	-23.55	Horizontal
9758.00	34.17	38.35	14.25	31.62	55.15	74.00	-18.85	Horizontal
12197.50	*					74.00		Horizontal
14637.00	*					74.00		Horizontal
17076.50	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4879.00	31.46	31.85	8.67	32.12	39.86	54.00	-14.14	Vertical
7318.50	23.59	36.37	11.72	31.89	39.79	54.00	-14.21	Vertical
9758.00	24.23	38.35	14.25	31.62	45.21	54.00	-8.79	Vertical
12197.50	*					54.00		Vertical
14637.00	*					54.00		Vertical
17076.50	*					54.00		Vertical
4879.00	31.08	31.85	8.67	32.12	39.48	54.00	-14.52	Horizontal
7318.50	23.33	36.37	11.72	31.89	39.53	54.00	-14.47	Horizontal
9758.00	23.88	38.35	14.25	31.62	44.86	54.00	-9.14	Horizontal
12197.50	*					54.00		Horizontal
14637.00	*					54.00		Horizontal
17076.50	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

Test mode:	10MHz Bandwidth	Test channel:	Highest

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4943.00	46.43	31.93	8.73	32.16	54.93	74.00	-19.07	Vertical
7414.50	36.13	36.59	11.79	31.78	52.73	74.00	-21.27	Vertical
9886.00	38.40	38.81	14.38	31.88	59.71	74.00	-14.29	Vertical
12357.50	*					74.00		Vertical
14829.00	*					74.00		Vertical
17300.50	*					74.00		Vertical
4943.00	45.56	31.93	8.73	32.16	54.06	74.00	-19.94	Horizontal
7414.50	35.33	36.59	11.79	31.78	51.93	74.00	-22.07	Horizontal
9886.00	33.86	38.81	14.38	31.88	55.17	74.00	-18.83	Horizontal
12357.50	*					74.00		Horizontal
14829.00	*					74.00		Horizontal
17300.50	*					74.00		Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4943.00	37.29	31.93	8.73	32.16	45.79	54.00	-8.21	Vertical
7414.50	26.03	36.59	11.79	31.78	42.63	54.00	-11.37	Vertical
9886.00	26.89	38.81	14.38	31.88	48.20	54.00	-5.80	Vertical
12357.50	*					54.00		Vertical
14829.00	*					54.00		Vertical
17300.50	*					54.00		Vertical
4943.00	35.89	31.93	8.73	32.16	44.39	54.00	-9.61	Horizontal
7414.50	24.71	36.59	11.79	31.78	41.31	54.00	-12.69	Horizontal
9886.00	23.11	38.81	14.38	31.88	44.42	54.00	-9.58	Horizontal
12357.50	*					54.00		Horizontal
14829.00	*					54.00		Horizontal
17300.50	*					54.00		Horizontal

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *"*", means this data is the too weak instrument of signal is unable to test.*

8 Test Setup Photo

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

9 EUT Constructional Details

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

------End------