TEST REPORT
FCC ID:ZHZLPS8N

Report Number. .....:	ZKT-220901L6391E-1
Date of Test	Aug. 20, 2022 to Aug. 24, 2022
Date of issue.....:	Aug. 24, 2022
Total number of pages	32
Test Result .....:	PASS
Testing Laboratory. .....:	**Shenzhen ZKT Technology Co., Ltd.**
Address .....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name ..... :	**Dragino Technology Co., Limited**
Address .....:	Room 202, Block B, BCT Incubation Bases, No.8 CaiYunRoad LongCheng Street, LongGang District ; Shenzhen 518116,China
Manufacturer's name ..... :	**Dragino Technology Co., Limited.**
Address .....:	Room 202, Block B, BCT Incubation Bases, No.8 CaiYunRoad LongCheng Street, LongGang District ; Shenzhen 518116,China
Test specification:	
Standard .....:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Test procedure .....:	/
Non-standard test method .....:	N/A
Test Report Form No..... :	TRF-EL-110_V0
Test Report Form(s) Originator.... :	ZKT Testing
Master TRF ..... :	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC and IC requirements. And it is applicable only to the tested sample identified in the report.
This report shall not be reproduced except in full, without the written approval of ZKT, this document may be altered or revised by ZKT, personal only, and shall be noted in the revision of the document.

Product name..... :	**LoRaWAN IOT Gateway**
Trademark .....:	DRAGINO
Model/Type reference .....:	LPS8N
Ratings .....:	SWITCHING ADAPTER MODEL:HP-050200A1-VDE INPUT:AC100-240V~50/60Hz 0.3A OUTPUT:DC5V/2000mA

Testing procedure and testing location:

Testing Laboratory.....:	**Shenzhen ZKT Technology Co., Ltd.**
Address.....:	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature).....:	Jim Liu
Reviewer (name + signature).....:	Jackson Fang
Approved (name + signature).....:	Lake Xie

TABLE OF CONTENTS

Page

1.Version

Report No.	Version	Description	Approved
ZKT-220901L6391E-1	Rev.01	Initial issue of report	Aug. 24, 2022

2. Test Summary

FCC Part 15.247,Subpart C RSS-247 Issue 2		
Test Item	**Standard**	**Result**
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
-6dB Occupied Bandwidth	15.247 (a)(2)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass
Power Spectral Density	15.247 (e)	Pass

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.

Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225

Designation Number: CN1299

IC Registered No.: 27033

CAB identifier: CN0110

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %。

No.	Item	Uncertainty
1	3m camber Radiated spurious emission(9KHz-30MHz)	U=4.5dB
2	3m chamber Radiated spurious emissio (30MHz-1GHz)	U=4.8dB
3	3m chamber Radiated spurious emission(1GHz-6GHz)	U=4.9dB
4	3m chamber Radiated spurious emission(6GHz-40GHz)	U=5.0dB
5	Conducted disturbance	U=3.2dB
6	RF Band Edge	U=1.68dB
7	RF power conducted	U=1.86dB
8	RF conducted Spurious Emission	U=2.2dB
9	RF Occupied Bandwidth	U=1.8dB
10	RF Power Spectral Density	U=1.75dB
11	humidity uncertainty	U=5.3%
12	Temperature uncertainty	U=0.59℃

3. General Information

3.1 General Description of EUT

Product Name:	LoRaWAN IOT Gateway
Model No.:	LPS8N
Sample(s) Status:	Engineer sample
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	125KHz:902.3MHz~914.9MHz 500KHz:923.3MHz~927.5MHz
Channel numbers:	8
Channel separation:	600KHz for 500KHz bandwidth
Modulation type:	Lora
Antenna Type:	External antenna
Antenna gain:	5dBi
Power supply:	SWITCHING ADAPTER MODEL:HP-050200A1-VDE INPUT:AC100-240V~50/60Hz 0.3A OUTPUT:DC5V/2000mA

600KHz for DTS:

Operation Frequency each of channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	923.30	4	925.10	7	926.90
2	923.90	5	925.70	8	927.50
3	924.50	6	926.30		

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:

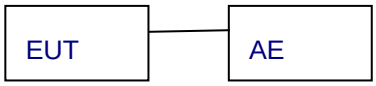
Channel	Frequency(600KHz)
The lowest channel	923.30MHz
The middle channel	925.10MHz
The Highest channel	927.50MHz

3.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
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.	

3.3 Test Setup Configuration

Radiated Emission



Conducted Spurious

3.4 Support Equipment

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	LoRaWAN IOT Gateway	DRAGINO	LPS8N	N/A	EUT
E-2	SWITCHING ADAPTER	/	HP-050200A1-VDE	N/A	AE
E-3	PC	HP	TPN-C129	N/A	AE

Note:
(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

3.5 Test Instruments list

Radiation Test equipment

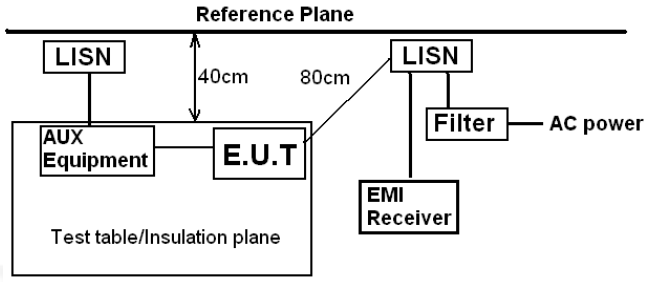
Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY45109572	Sep. 22, 2021	Sep. 21, 2022
2	Spectrum Analyzer (1GHz-40GHz)	Agilent	E4446A	100363	Sep. 22, 2021	Sep. 21, 2022
3	Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Sep. 22, 2021	Sep. 21, 2022
4	Bilog Antenna (30MHz-1400MHz)	Schwarzbeck	VULB9168	00877	Sep. 22, 2021	Sep. 21, 2022
5	Horn Antenna (1GHz-18GHz)	SCHWARZBECK	BBHA9120D	1541	Sep. 22, 2021	Sep. 21, 2022
6	Horn Antenna (18GHz-40GHz)	A.H. System	SAS-574	588	Sep. 22, 2021	Sep. 21, 2022
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	N/A	Sep. 22, 2021	Sep. 21, 2022
8	Amplifier (1GHz-40GHz)	全聚达	DLE-161	097	Sep. 22, 2021	Sep. 21, 2022
9	Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	014	Sep. 22, 2021	Sep. 21, 2022
10	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Sep. 22, 2021	Sep. 21, 2022
11	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Sep. 22, 2021	Sep. 21, 2022
12	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Sep. 22, 2021	Sep. 21, 2022
13	CMW500 Test	R&S	CMW500	106504	Sep. 22, 2021	Sep. 21, 2022
14	ESG Signal Generator	Agilent	E4421B	GB40051203	Sep. 22, 2021	Sep. 21, 2022
15	Signal Generator	Agilent	N5182A	MY47420215	Sep. 22, 2021	Sep. 21, 2022
16	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 22, 2021	Sep. 21, 2022
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 22, 2021	Sep. 21, 2022
3	Test Cable	N/A	C01	N/A	Sep. 22, 2021	Sep. 21, 2022
4	Test Cable	N/A	C02	N/A	Sep. 22, 2021	Sep. 21, 2022
5	EMI Test Receiver	R&S	ESRP3	101946	Sep. 22, 2021	Sep. 21, 2022
6	Absorbing Clamp	DZ	ZN23201	N/A	Sep. 22, 2021	Sep. 21, 2022

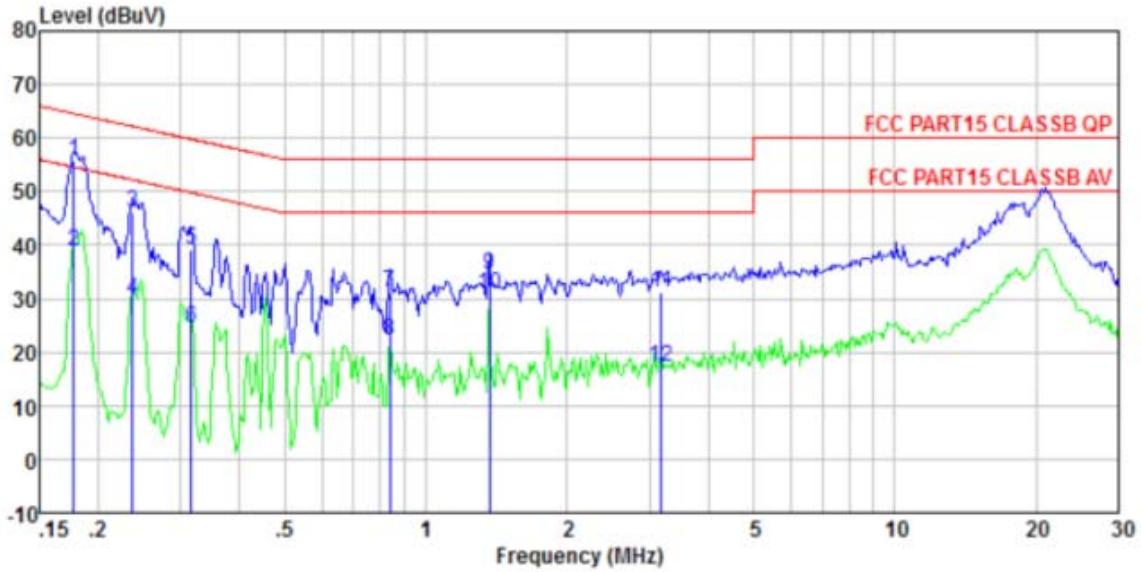
4 Test Items for DTS

Conducted Emissions

<table>
<tr><td>Test Requirement:</td><td colspan="6">FCC Part15 C Section 15.207</td></tr>
<tr><td>Test Method:</td><td colspan="6">ANSI C63.10:2013</td></tr>
<tr><td>Test Frequency Range:</td><td colspan="6">150KHz to 30MHz</td></tr>
<tr><td>Class / Severity:</td><td colspan="6">Class B</td></tr>
<tr><td>Receiver setup:</td><td colspan="6">RBW=9KHz, VBW=30KHz, Sweep time=auto</td></tr>
<tr><td>Limit:</td><td colspan="6">
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* Decreases with the logarithm of the frequency.
</td></tr>
<tr><td>Test setup:</td><td colspan="6"> 

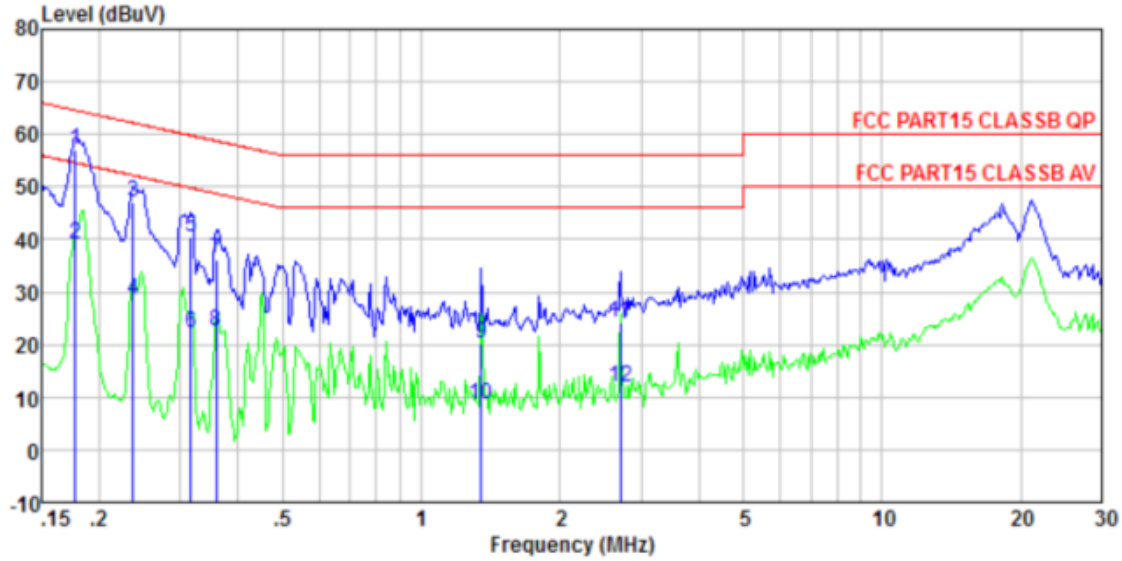
Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m</td></tr>
<tr><td>Test procedure:</td><td colspan="6">1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH 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.</td></tr>
<tr><td>Test Instruments:</td><td colspan="6">Refer to section 3.5 for details</td></tr>
<tr><td>Test mode:</td><td colspan="6">TX mode</td></tr>
<tr><td>Test environment:</td><td>Temp.:</td><td>25 °C</td><td>Humid.:</td><td>52%</td><td>Press.:</td><td>1012mbar</td></tr>
<tr><td>Test voltage:</td><td colspan="6">DC 5V</td></tr>
<tr><td>Test results:</td><td colspan="6">Pass</td></tr>
</table>

Line:



Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.178	55.14	0.40	0.09	55.63	64.59	-8.96	QP
0.178	38.35	0.40	0.09	38.84	54.59	-15.75	Average
0.237	45.70	0.40	0.11	46.21	62.22	-16.01	QP
0.237	29.42	0.40	0.11	29.93	52.22	-22.29	Average
0.317	38.52	0.39	0.10	39.01	59.80	-20.79	QP
0.317	24.15	0.39	0.10	24.64	49.80	-25.16	Average
0.839	30.73	0.23	0.14	31.10	56.00	-24.90	QP
0.839	21.74	0.23	0.14	22.11	46.00	-23.89	Average
1.367	34.13	0.20	0.16	34.49	56.00	-21.51	QP
1.367	30.61	0.20	0.16	30.97	46.00	-15.03	Average
3.173	30.64	0.20	0.19	31.03	56.00	-24.97	QP
3.173	16.84	0.20	0.19	17.23	46.00	-28.77	Average

Neutral:



Freq MHz	Reading level dBuV	lISN/ISN factor dB	Cable loss dB	level dBuV	Limit level dBuV	Over limit dB	Remark
0.178	56.64	0.40	0.09	57.13	64.59	-7.46	QP
0.178	38.75	0.40	0.09	39.24	54.59	-15.35	Average
0.237	46.50	0.40	0.11	47.01	62.22	-15.21	QP
0.237	27.89	0.40	0.11	28.40	52.22	-23.82	Average
0.317	40.06	0.39	0.10	40.55	59.80	-19.25	QP
0.317	21.64	0.39	0.10	22.13	49.80	-27.67	Average
0.360	35.60	0.37	0.10	36.07	58.74	-22.67	QP
0.360	22.04	0.37	0.10	22.51	48.74	-26.23	Average
1.352	19.73	0.20	0.16	20.09	56.00	-35.91	QP
1.352	8.18	0.20	0.16	8.54	46.00	-37.46	Average
2.707	23.83	0.20	0.19	24.22	56.00	-31.78	QP
2.707	11.59	0.20	0.19	11.98	46.00	-34.02	Average

Remark:Level=Reading + Factor+Cable loss , Margin=Level– Limit.

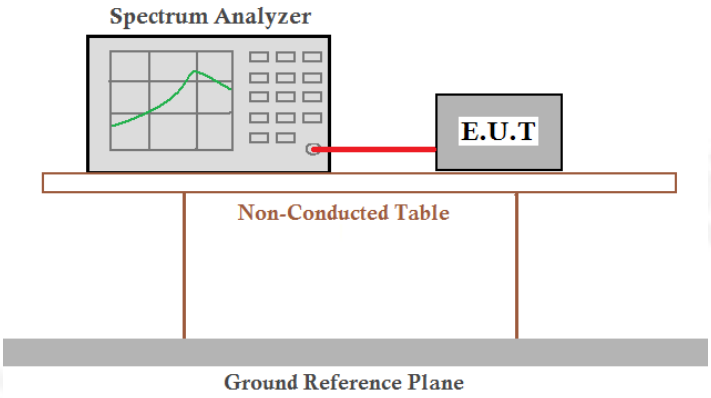
.

4.1 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.10:2013
Limit:	FCC Part 15.247,Subpart C RSS-247 Issue 2

Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247(b)(3) RSS 247 Issue 2	Output Power	1 watt or 30dBm	902-928	PASS
RSS-247	EIRP	4W	902-928	PASS

Test setup:



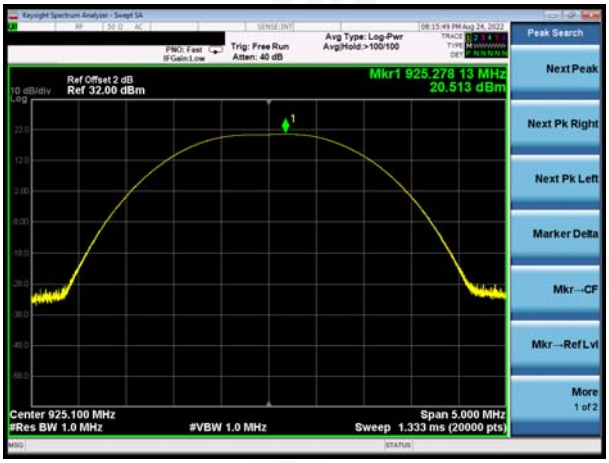
Test Instruments:	Refer to section 3.5 for details
Test mode:	TX mode
Test results:	Pass

Measurement Data

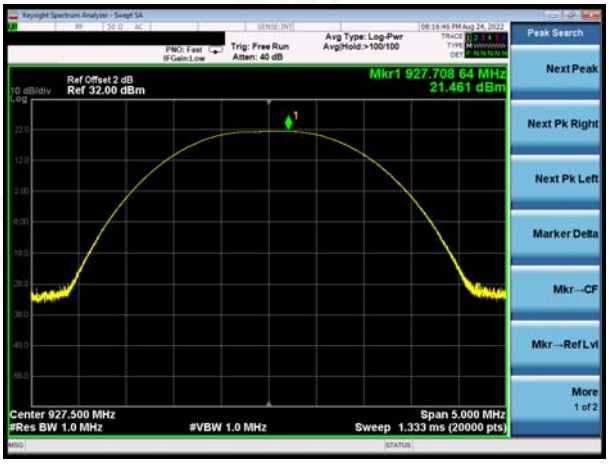
Test channel	Peak Output Power (dBm)	Limit(dBm)	Result
Lowest	19.797	30.00	Pass
Middle	20.513		
Highest	21.461		

Test plot as follows:

Low Channel

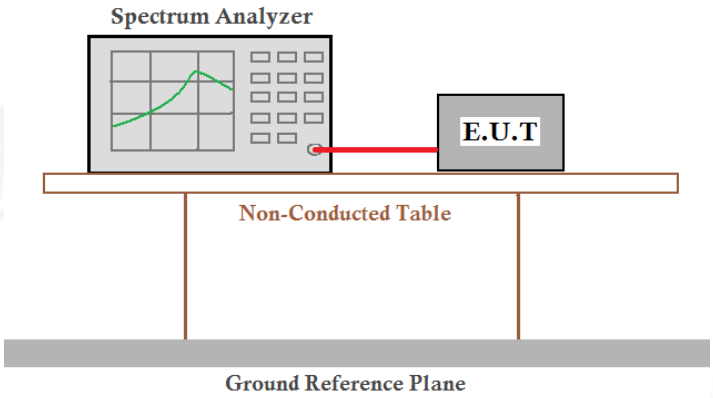


Middle Channel



High Channel

4.2 Channel Bandwidth

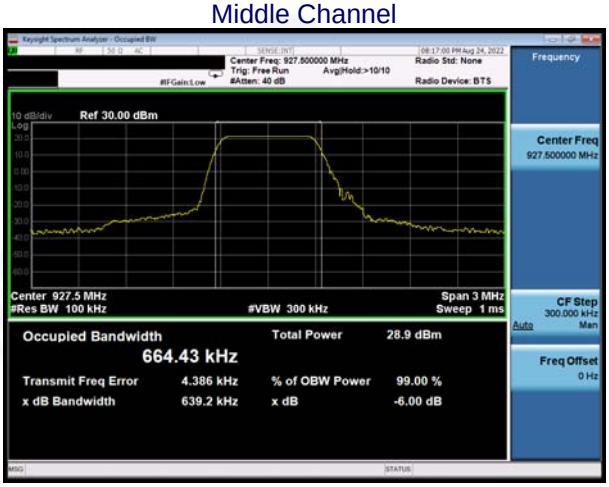
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.10:2013
Limit:	>500KHz
Test setup:	
Test Instruments:	Refer to section 3.5 for details
Test mode:	TX mode
Test results:	Pass

Measurement Data

Test channel	-6dB Bandwidth (kHz)	Limit(KHz)	Result
Lowest	533.2	>500	Pass
Meddle	640.8		
Highest	639.2		

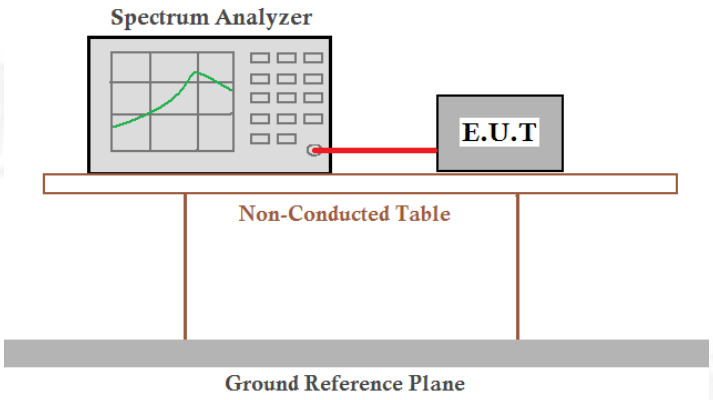
Low Channel

Middle Channel



High Channel

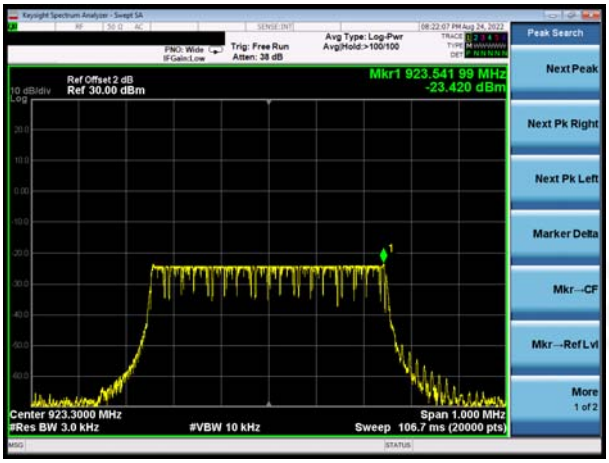
4.3 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2013
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 3.5 for details
Test mode:	TX mode
Test results:	Pass

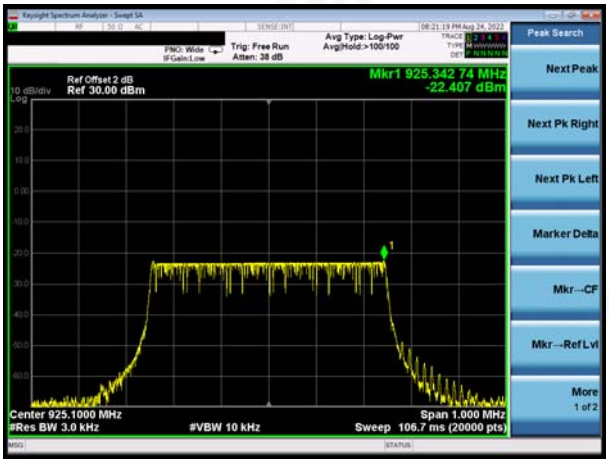
Measurement Data

Test plot as follows:

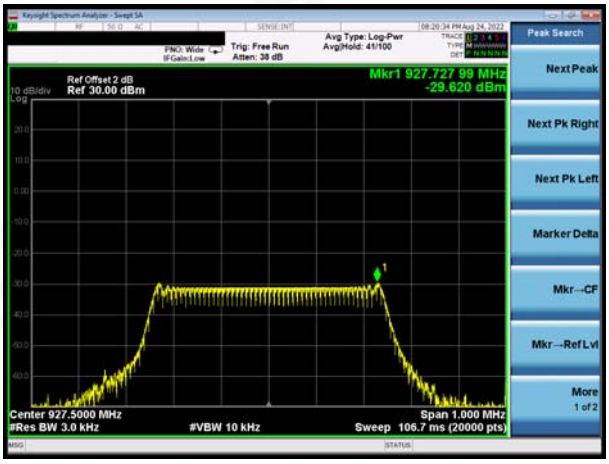
500kHz



Lowest channel

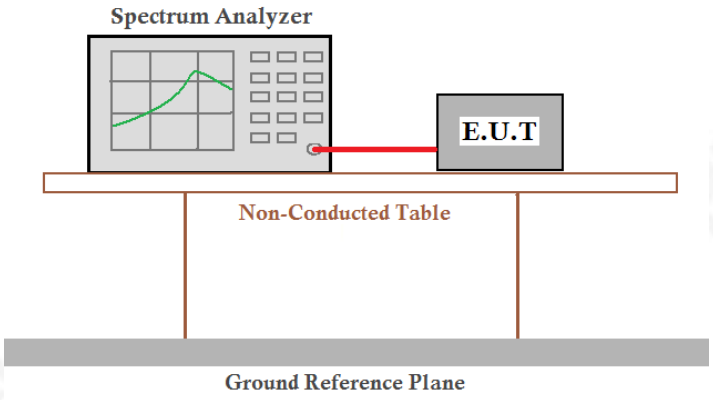


Middle channel

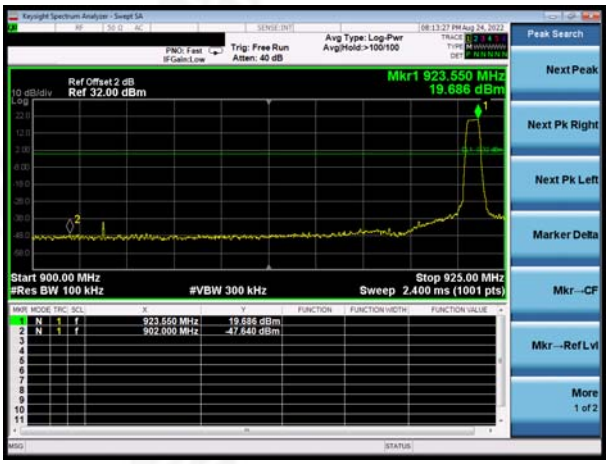


Highest channel

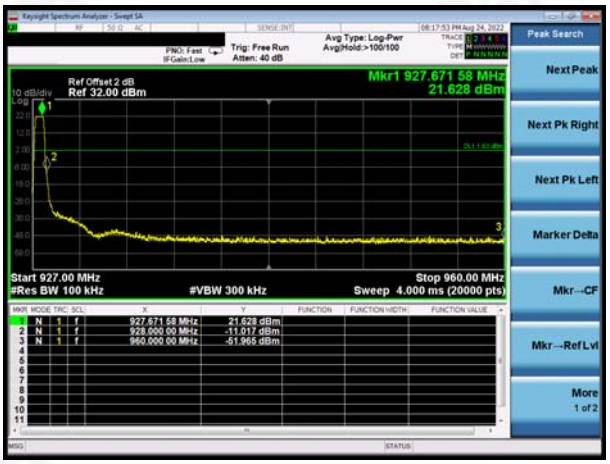
4.4 Band edges

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013
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 3.5 for details
Test mode:	TX mode
Test results:	Pass

Test plot as follows:



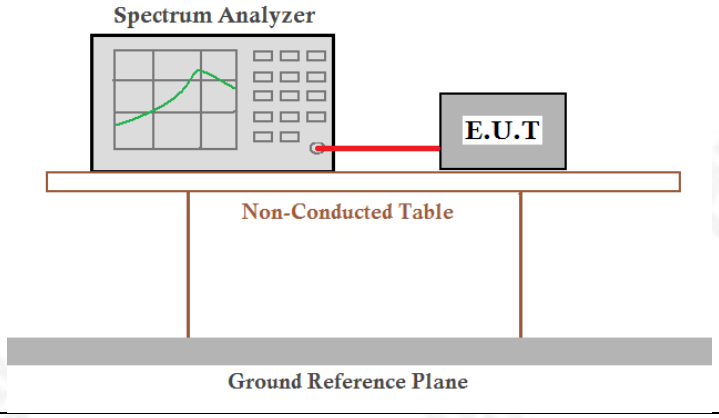
Lowest Channel



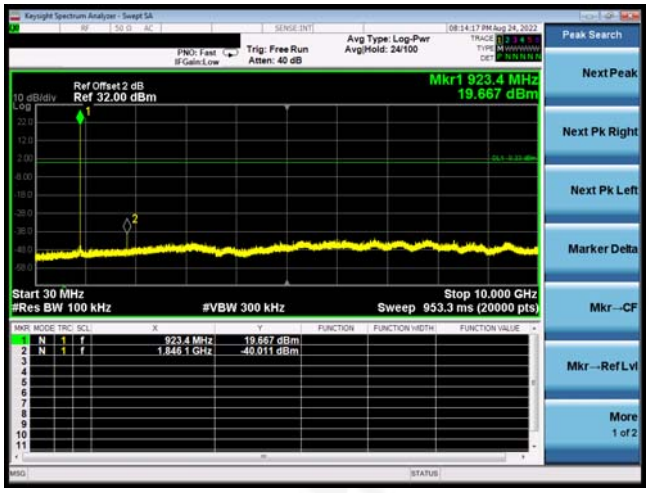
Highest Channel

4.5 Spurious Emission

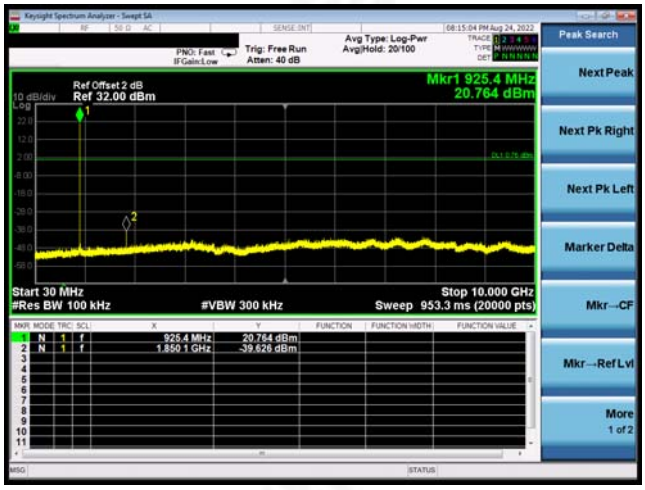
Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013
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 3.5 for details
Test mode:	TX mode
Test results:	Pass

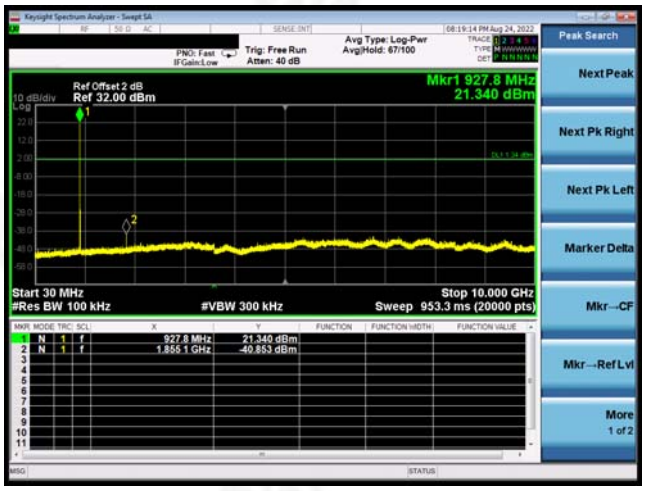
Test plot as follows:



Low Channel



Middle Channel



High Channel

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:

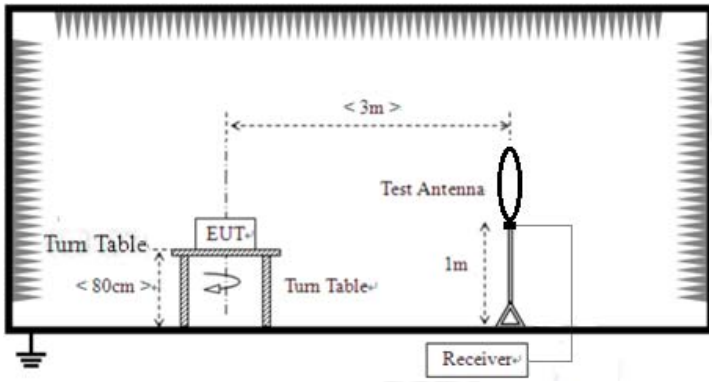
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

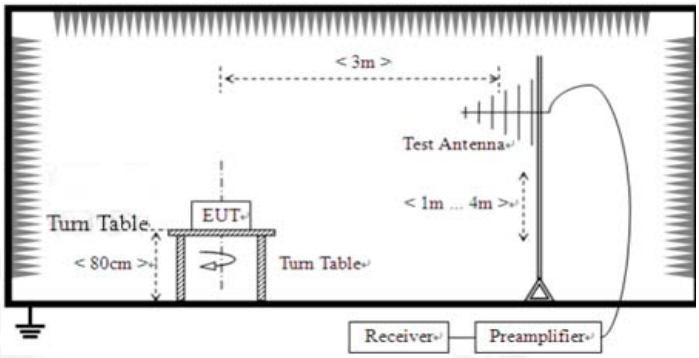
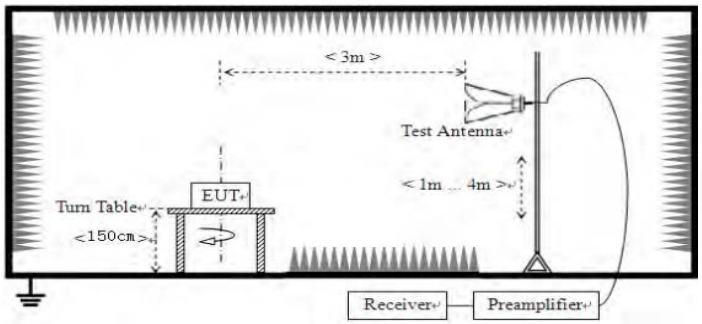
Limit:

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 to1GHz  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. 1. 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. 2. 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. 3. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 4. 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 3.5 for details
Test mode:	TX mode
Test environment:	Temp.: 25 °C Humid.: 52% Press.: 1012mbar
Test voltage:	DC 5V
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.

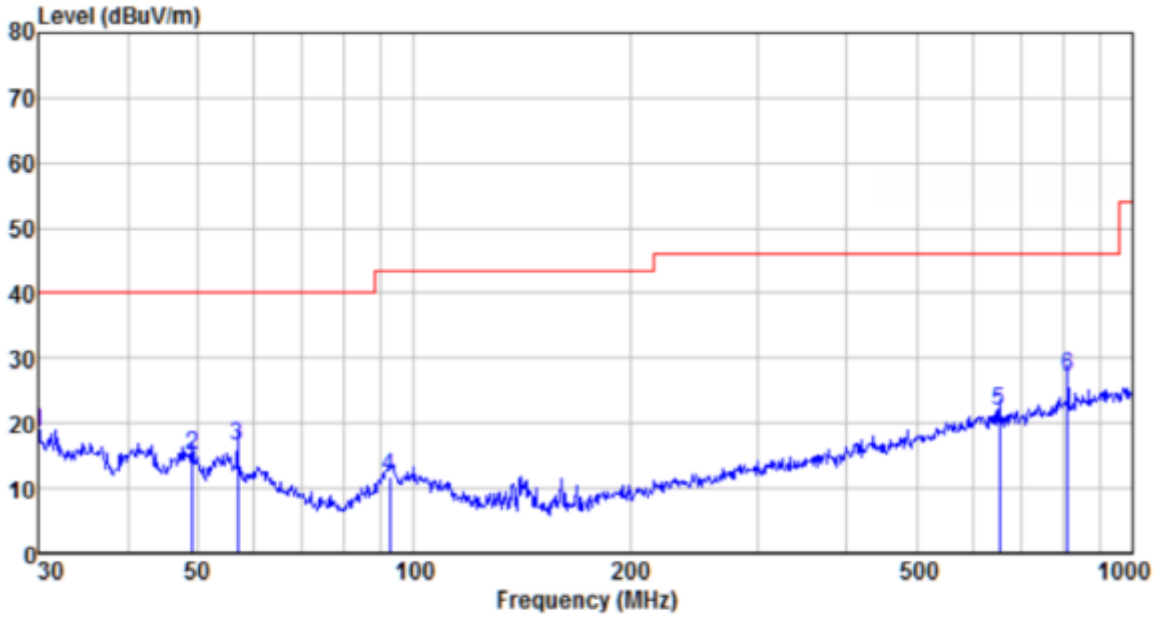
- **9kHz~30MHz**

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**

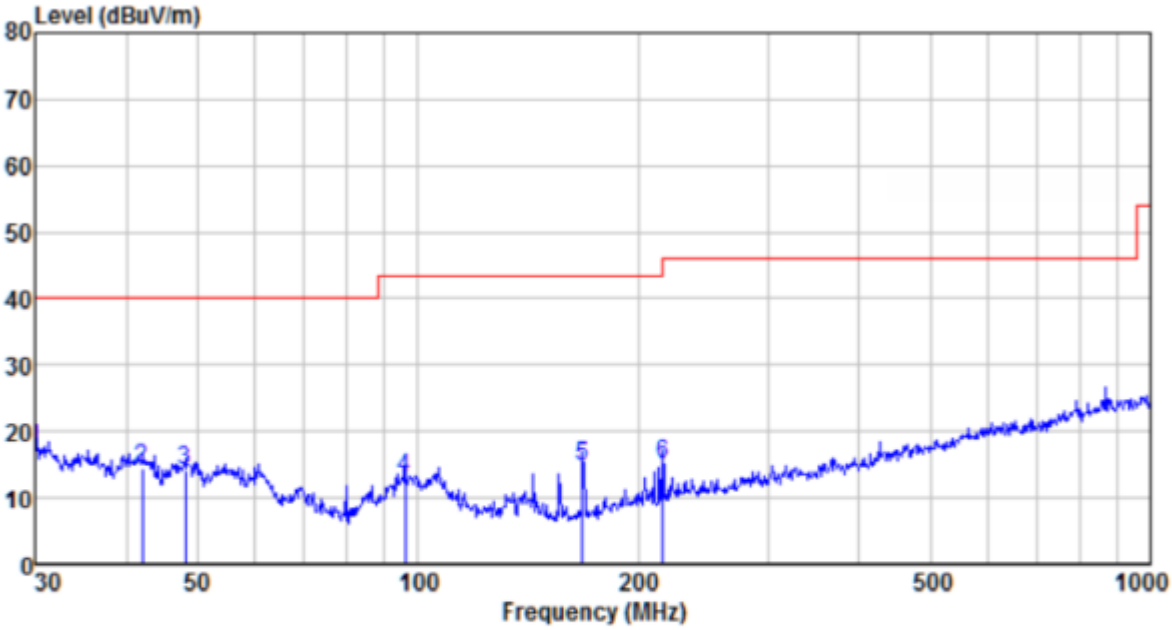
Pre-scan all test modes, found worst case at lowest channel of 500KHz bandwidth, so only show the worst case in the report.

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
30.000	41.76	11.20	0.55	35.00	18.51	40.00	-21.49	QP
49.187	38.02	12.29	0.76	36.14	14.93	40.00	-25.07	QP
56.792	40.53	11.60	0.83	36.28	16.68	40.00	-23.32	QP
92.462	36.15	11.04	1.13	36.66	11.66	43.50	-31.84	QP
651.942	35.84	19.55	3.92	37.59	21.72	46.00	-24.28	QP
813.112	38.59	21.54	4.51	37.62	27.02	46.00	-18.98	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
30.000	40.64	11.20	0.55	35.00	17.39	40.00	-22.61	QP
42.007	37.44	12.22	0.69	35.78	14.57	40.00	-25.43	QP
48.163	37.11	12.28	0.75	36.09	14.05	40.00	-25.95	QP
96.099	36.92	11.65	1.16	36.69	13.04	43.50	-30.46	QP
167.824	41.80	8.46	1.67	37.18	14.75	43.50	-28.75	QP
216.024	39.43	11.02	1.93	37.35	15.03	46.00	-30.97	QP

■ **Above 1GHz**

Test channel:	Lowest channel

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
1815.31	40.21	25.25	4.85	34.08	36.23	74.00	-37.77	Vertical
2721.00	39.56	28.12	5.66	33.68	39.66	74.00	-34.34	Vertical
3626.00	33.08	29.19	7.25	37.37	32.15	74.00	-41.85	Vertical
4518.00	*					74.00		Vertical
5427.00	*					74.00		Vertical
6325.00	*					74.00		Vertical
1812.21	35.67	25.25	4.85	34.08	31.69	74.00	-42.31	Horizontal
2721.00	35.73	28.12	5.66	33.68	35.83	74.00	-38.17	Horizontal
3626.00	32.35	29.19	7.25	37.37	31.42	74.00	-42.58	Horizontal
4518.00	*					74.00		Horizontal
5427.00	*					74.00		Horizontal
6325.00	*					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
1812.21	30.23	25.25	4.85	34.08	26.25	54.00	-27.75	Vertical
2721.00	24.46	28.12	5.66	33.68	24.56	54.00	-29.44	Vertical
3626.00	25.14	29.19	7.25	37.37	24.21	54.00	-29.79	Vertical
4518.00	*					54.00		Vertical
5427.00	*					54.00		Vertical
6325.00	*					54.00		Vertical
1812.21	29.32	25.25	4.85	34.08	25.34	54.00	-28.66	Horizontal
2721.00	25.14	28.12	5.66	33.68	25.24	54.00	-28.76	Horizontal
3626.00	25.23	29.19	7.25	37.37	24.30	54.00	-29.70	Horizontal
4518.00	*					54.00		Horizontal
5427.00	*					54.00		Horizontal
6325.00	*					54.00		Horizontal

Remarks:

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

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
1824.43	40.22	25.43	4.89	34.12	36.42	74.00	-37.58	Vertical
2753.40	36.72	28.34	5.68	33.57	37.17	74.00	-36.83	Vertical
3653.34	34.52	29.42	7.29	37.66	33.57	74.00	-40.43	Vertical
4564.14	*					74.00		Vertical
5487.67	*					74.00		Vertical
6413.58	*					74.00		Vertical
1824.43	40.13	25.43	4.89	34.12	36.33	74.00	-37.67	Horizontal
2753.40	34.25	28.34	5.68	33.57	34.70	74.00	-39.30	Horizontal
3653.34	36.42	29.42	7.29	37.66	35.47	74.00	-38.53	Horizontal
4564.14	*					74.00		Horizontal
5487.67	*					74.00		Horizontal
6413.58	*					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
1824.43	30.42	25.43	4.89	34.12	34.12	54.00	-27.38	Vertical
2753.40	26.14	28.34	5.68	33.57	33.57	54.00	-27.41	Vertical
3653.34	25.63	29.42	7.29	37.66	37.66	54.00	-29.32	Vertical
4564.14	*					54.00		Vertical
5487.67	*					54.00		Vertical
6413.58	*					54.00		Vertical
1824.43	32.63	25.43	4.89	34.12	28.83	54.00	-25.17	Horizontal
2753.40	24.15	28.34	5.68	33.57	24.60	54.00	-29.40	Horizontal
3653.34	26.23	29.42	7.29	37.66	25.28	54.00	-28.72	Horizontal
4564.14	*					54.00		Horizontal
5487.67	*					54.00		Horizontal
6413.58	*					54.00		Horizontal

Remarks:

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

5. 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 antenna is Internal antenna, the best case gain of the antennas is 5dBi, reference to the appendix II for details	

6. Test Setup Photo

Reference to the appendix I for details.

7. EUT Constructional Details

Reference to the appendix II for details.

※※※※※ END OF REPORT ※※※※※