

TEST REPORT

Applicant: ShenZhen FLYSKY Technology Co.,Ltd

Address of Applicant: 16F, Huafeng Building, No. 6006 Shennan Road, Futian District, Shenzhen, Guangdong, China

Manufacturer: ShenZhen FLYSKY Technology Co.,Ltd

Address of Manufacturer: 16F, Huafeng Building, No. 6006 Shennan Road, Futian District, Shenzhen, Guangdong, China

Factory: Dongguan Flysky RC Model technology Co.,Ltd

Address of Factory: West building 3, Huangjinyuan Ind Park, Qiaoli North Gate, Changping Town, Dongguan ,China

Equipment Under Test (EUT)

Product Name: Digital Proportional Radio Control System

Model No.: FMS-R3B

Trade Mark: FLYSKY

FCC ID: 2A2UNR3B00

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

Date of sample receipt: May 09, 2023

Date of Test: May 09-24, 2023

Date of report issued: May 24, 2023

Test Result : PASS *

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

Authorized Signature:



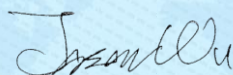
Robinson Luo
Laboratory Manager

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

2 Version

Version No.	Date	Description
00	May 24, 2023	Original

Prepared By:

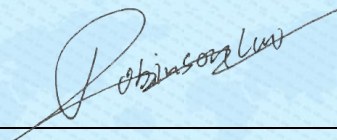


Date:

May 24, 2023

Project Engineer

Check By:



Date:

May 24, 2023

Reviewer

3 Contents

Page

1	COVER PAGE	1
2	VERSION	2
3	CONTENTS	3
4	TEST SUMMARY	4
4.1	MEASUREMENT UNCERTAINTY	4
5	GENERAL INFORMATION	5
5.1	GENERAL DESCRIPTION OF EUT	5
5.2	TEST MODE	7
5.3	TEST FACILITY.....	7
5.4	TEST LOCATION	7
5.5	DESCRIPTION OF SUPPORT UNITS	7
5.6	DEVIATION FROM STANDARDS.....	7
5.7	ABNORMALITIES FROM STANDARD CONDITIONS.....	7
5.8	ADDITIONAL INSTRUCTIONS.....	7
6	TEST INSTRUMENTS LIST	8
7	TEST RESULTS AND MEASUREMENT DATA.....	10
7.1	ANTENNA REQUIREMENT	10
7.2	CONDUCTED EMISSIONS	11
7.3	CONDUCTED PEAK OUTPUT POWER.....	14
7.4	20dB EMISSION BANDWIDTH	15
7.5	CARRIER FREQUENCIES SEPARATION.....	16
7.6	HOPPING CHANNEL NUMBER	17
7.7	DWELL TIME.....	18
7.8	SPURIOUS EMISSION IN NON-RESTRICTED & RESTRICTED BANDS	19
7.8.1	Conducted Emission Method.....	19
7.8.2	Radiated Emission Method.....	20
8	TEST SETUP PHOTO	39
9	EUT CONSTRUCTIONAL DETAILS	39

4 Test Summary

Test Item	Section	Result
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)	Pass
Dwell Time	15.247 (a)(1)	Pass
Pseudorandom Frequency Hopping Sequence	15.247(b)(4)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

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

Remark : Test according to ANSI C63.10:2013.

4.1 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:	Digital Proportional Radio Control System
Model No.:	FMS-R3B
Serial No.:	RD1001468
Test sample(s) ID:	GTS2023050118-1
Sample(s) Status	Engineer sample
Operation Frequency:	2408MHz~2475MHz
Channel numbers:	135
Modulation method:	FHSS
Modulation technology:	GFSK
Antenna Type:	External antenna
Antenna gain:	-1.11dBi
Power supply:	DC 6~8.8V

Remark: The system works in the frequency range of 2408MHz to 2475MHz. This band has been divided to 135 independent channels. Each radio system uses 16 different channels; the minimum channel separation is ≥ 4 MHz. By using various switch-on times, hopping scheme and channel frequencies, the system can guarantee a jamming free radio transmission. Pre-testing all radio systems, this radio system recorded in the report is the worst mode. The channel list is below.

The test frequencies are below:

Channel	Frequency
The lowest channel	2408MHz
The middle channel	2440MHz
The Highest channel	2475MHz

Operation Frequency each of channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2408.0	38	2426.5	75	2445.0	112	2463.5
2	2408.5	39	2427.0	76	2445.5	113	2464.0
3	2409.0	40	2427.5	77	2446.0	114	2464.5
4	2409.5	41	2428.0	78	2446.5	115	2465.0
5	2410.0	42	2428.5	79	2447.0	116	2465.5
6	2410.5	43	2429.0	80	2447.5	117	2466.0
7	2411.0	44	2429.5	81	2448.0	118	2466.5
8	2411.5	45	2430.0	82	2448.5	119	2467.0
9	2412.0	46	2430.5	83	2449.0	120	2467.5
10	2412.5	47	2431.0	84	2449.5	121	2468.0
11	2413.0	48	2431.5	85	2450.0	122	2468.5
12	2413.5	49	2432.0	86	2450.5	123	2469.0
13	2414.0	50	2432.5	87	2451.0	124	2469.5
14	2414.5	51	2433.0	88	2451.5	125	2470.0
15	2415.0	52	2433.5	89	2452.0	126	2470.5
16	2415.5	53	2434.0	90	2452.5	127	2471.0
17	2416.0	54	2434.5	91	2453.0	128	2471.5
18	2416.5	55	2435.0	92	2453.5	129	2472.0
19	2417.0	56	2435.5	93	2454.0	130	2472.5
20	2417.5	57	2436.0	94	2454.5	131	2473.0
21	2418.0	58	2436.5	95	2455.0	132	2473.5
22	2418.5	59	2437.0	96	2455.5	133	2474.0
23	2419.0	60	2437.5	97	2456.0	134	2474.5
24	2419.5	61	2438.0	98	2456.5	135	2475.0
25	2420.0	62	2438.5	99	2457.0		
26	2420.5	63	2439.0	100	2457.5		
27	2421.0	64	2439.5	101	2458.0		
28	2421.5	65	2440.0	102	2458.5		
29	2422.0	66	2440.5	103	2459.0		
30	2422.5	67	2441.0	104	2459.5		
31	2423.0	68	2441.5	105	2460.0		
32	2423.5	69	2442.0	106	2460.5		
33	2424.0	70	2442.5	107	2461.0		
34	2424.5	71	2443.0	108	2461.5		
35	2425.0	72	2443.5	109	2462.0		
36	2425.5	73	2444.0	110	2462.5		
37	2426.0	74	2444.5	111	2463.0		

5.2 Test mode

Transmitting mode	Keep the EUT in transmitting mode.
Remark: During the test, the duty cycle >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.	

5.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations: ● FCC —Registration No.: 381383 Designation Number: CN5029 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. ● IC —Registration No.: 9079A CAB identifier: CN0091 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. ● NVLAP (LAB CODE:600179-0) Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.4 Test Location

All other 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

5.5 Description of Support Units

Manufacturer	Description	Model	Serial Number
ShenZhen FLYSKY Technology Co.,Ltd	Remote control	MG4	N/A
GW	DC POWER SUPPLY	GPR-6030D	EF924756

5.6 Deviation from Standards

None.

5.7 Abnormalities from Standard Conditions

None.

5.8 Additional Instructions

Software (Used for test) from client
Built-in by manufacturer, power set 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	April 21, 2023	April 20, 2024
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	March 20, 2023	March 19, 2025
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 21, 2023	April 20, 2024
9	Coaxial Cable	GTS	N/A	GTS211	April 21, 2023	April 20, 2024
10	Coaxial cable	GTS	N/A	GTS210	April 21, 2023	April 20, 2024
11	Coaxial Cable	GTS	N/A	GTS212	April 21, 2023	April 20, 2024
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 21, 2023	April 20, 2024
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June 23, 2022	June 22, 2023
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
15	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
16	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
17	Power Sensor	Anritsu	MA2411B	GTS541	April 21, 2023	April 20, 2024
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June 23, 2022	June 22, 2023
19	Splitter	Agilent	11636B	GTS237	Nov. 29, 2022	Nov. 28, 2023
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	April 21, 2023	April 20, 2024
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 16, 2022	Oct. 15, 2023
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 16, 2022	Oct. 15, 2023
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 16, 2022	Oct. 15, 2023
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023

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	April 21, 2023	April 20, 2024
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 21, 2023	April 20, 2024
3	Spectrum Analyzer	Agilent	E4440A	GTS533	April 21, 2023	April 20, 2024
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 21, 2023	April 20, 2024
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 21, 2023	April 20, 2024
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 21, 2023	April 20, 2024
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 21, 2023	April 20, 2024
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 21, 2023	April 20, 2024

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	April 24, 2023	April 23, 2024
2	Barometer	ChangChun	DYM3	GTS255	July 26, 2022	July 25, 2023

7 Test results and Measurement Data

7.1 Antenna requirement

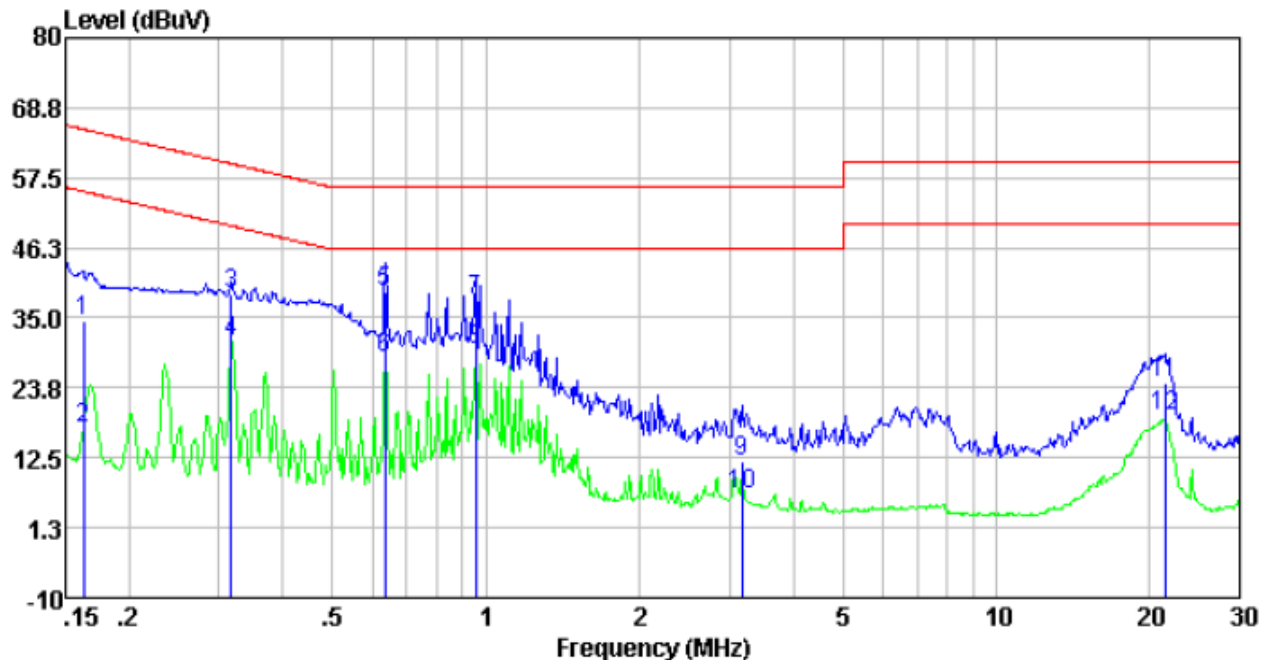
Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique 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:	
<i>The antenna is external antenna, the best case gain of the antenna is -1.11dBi, reference to the appendix II for details.</i>	

7.2 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 <i>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</i>					
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:	Pass					

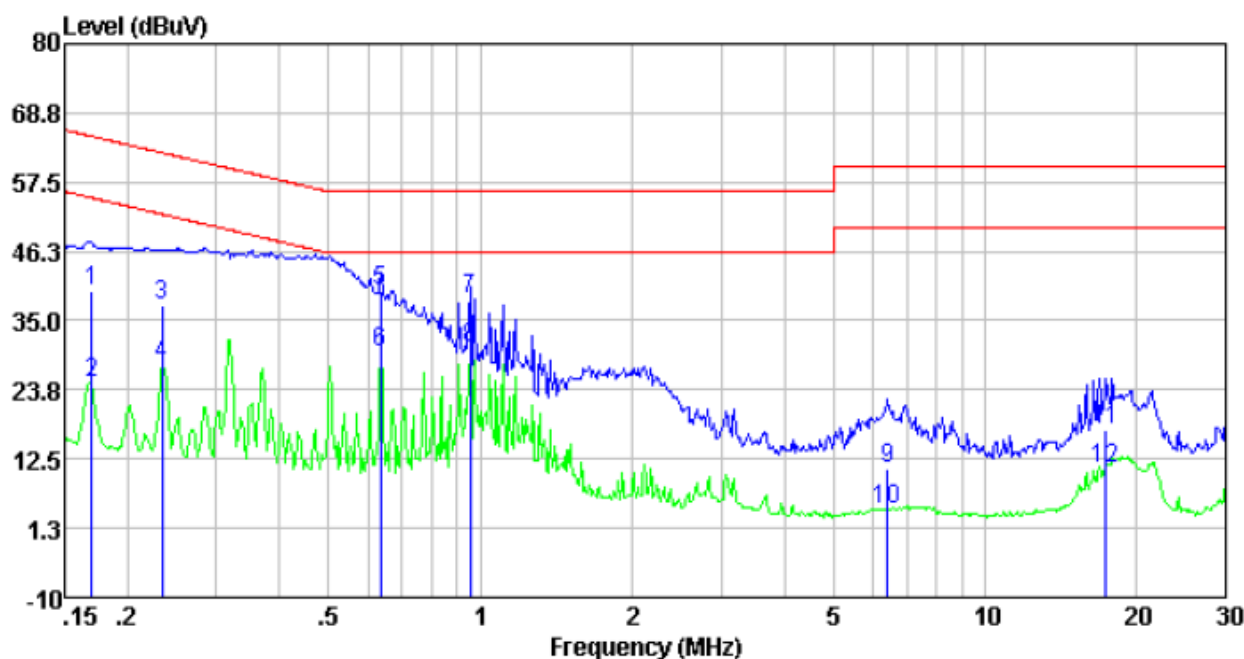
Measurement data:

Line:



Freq	Reading	LISN/ISN	Cable		Limit	Over	
	level	factor	loss	Level	level	limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.16	24.31	10.11	0.01	34.43	65.34	-30.91	QP
0.16	7.01	10.11	0.01	17.13	55.34	-38.21	Average
0.32	28.93	9.98	0.01	38.92	59.80	-20.88	QP
0.32	21.33	9.98	0.01	31.32	49.80	-18.48	Average
0.63	29.04	9.96	0.02	39.02	56.00	-16.98	QP
0.63	18.69	9.96	0.02	28.67	46.00	-17.33	Average
0.95	27.82	9.96	0.03	37.81	56.00	-18.19	QP
0.95	19.83	9.96	0.03	29.82	46.00	-16.18	Average
3.17	2.03	9.74	0.05	11.82	56.00	-44.18	QP
3.17	-3.16	9.74	0.05	6.63	46.00	-39.37	Average
21.37	14.96	9.44	0.19	24.59	60.00	-35.41	QP
21.37	9.50	9.44	0.19	19.13	50.00	-30.87	Average

Neutral:



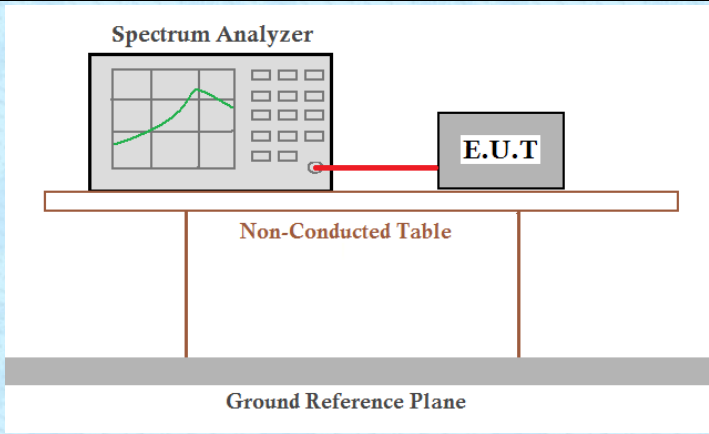
Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.17	29.79	10.12	0.01	39.92	64.99	-25.07	QP
0.17	14.72	10.12	0.01	24.85	54.99	-30.14	Average
0.23	27.46	10.03	0.01	37.50	62.30	-24.80	QP
0.23	17.85	10.03	0.01	27.89	52.30	-24.41	Average
0.63	29.88	9.96	0.02	39.86	56.00	-16.14	QP
0.63	19.76	9.96	0.02	29.74	46.00	-16.26	Average
0.95	28.62	9.96	0.03	38.61	56.00	-17.39	QP
0.95	20.52	9.96	0.03	30.51	46.00	-15.49	Average
6.42	1.17	9.51	0.08	10.76	60.00	-49.24	QP
6.42	-5.28	9.51	0.08	4.31	50.00	-45.69	Average
17.38	7.62	9.46	0.17	17.25	60.00	-42.75	QP
17.38	1.30	9.46	0.17	10.93	50.00	-39.07	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

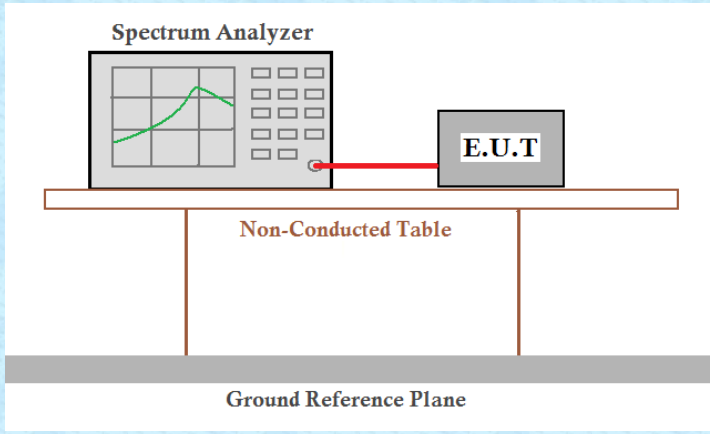
Final Level =Receiver Read level + LISN Factor + Cable Loss

7.3 Conducted Peak Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(1)
Test Method:	ANSI C63.10:2013
Limit:	20.97dBm
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table 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

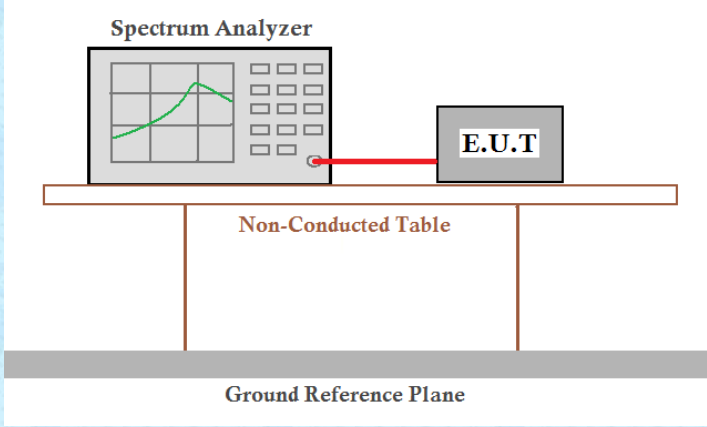
Measurement Data: The detailed test data see Appendix for 2.4G.

7.4 20dB Emission Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Limit:	N/A
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer, showing a frequency spectrum on its screen, is connected to an Equipment Under Test (E.U.T.) by a red cable. Both the Spectrum Analyzer and the E.U.T. are positioned on a table labeled 'Non-Conducted Table'. This table 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

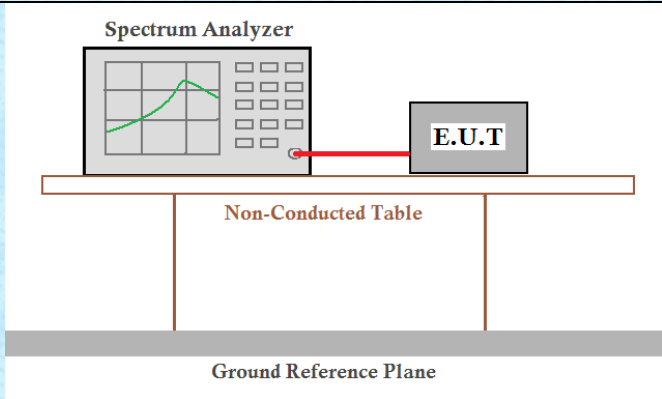
Measurement Data: The detailed test data see Appendix for 2.4G.

7.5 Carrier Frequencies Separation

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=100KHz, VBW=300KHz, detector=Peak
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer, showing a frequency spectrum on its screen, is connected to an E.U.T. (Equipment Under Test) box by a red cable. Both the Spectrum Analyzer and the E.U.T. are positioned on a table labeled 'Non-Conducted Table'. This table is supported by a 'Ground Reference Plane' at the base of the setup.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

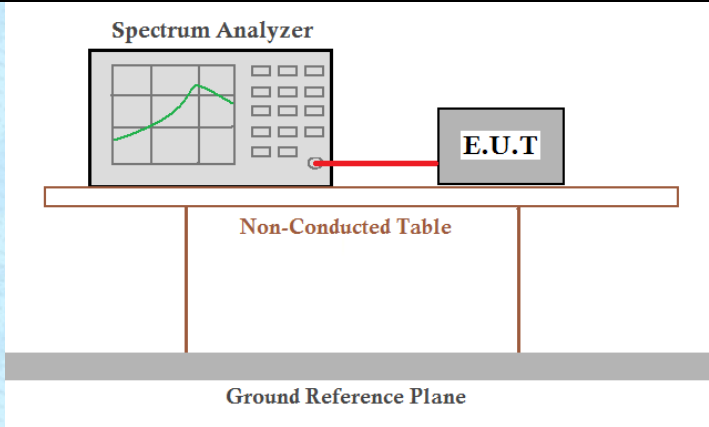
Measurement Data: The detailed test data see Appendix for 2.4G.

7.6 Hopping Channel Number

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=100kHz, VBW=300kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak
Limit:	15 channels
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table 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

Measurement Data: The detailed test data see Appendix for 2.4G.

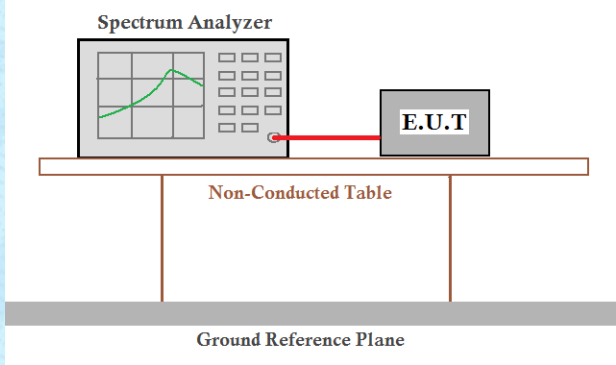
7.7 Dwell Time

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=1MHz, VBW=1MHz, Span=0Hz, Detector=Peak
Limit:	0.4 Second
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data: The detailed test data see Appendix for 2.4G.

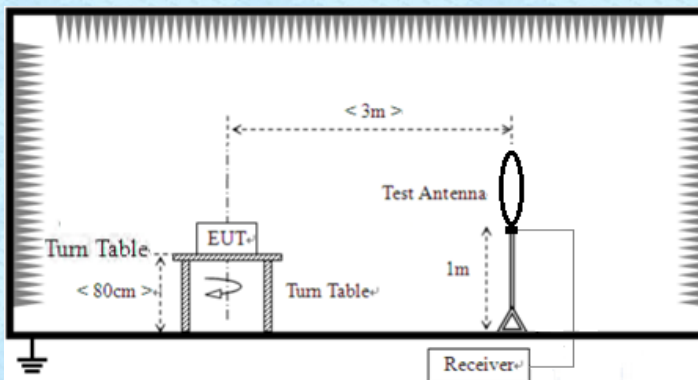
7.8 Spurious Emission in Non-restricted & restricted Bands

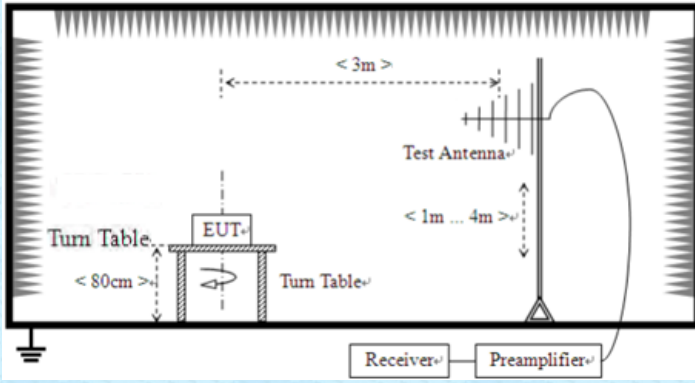
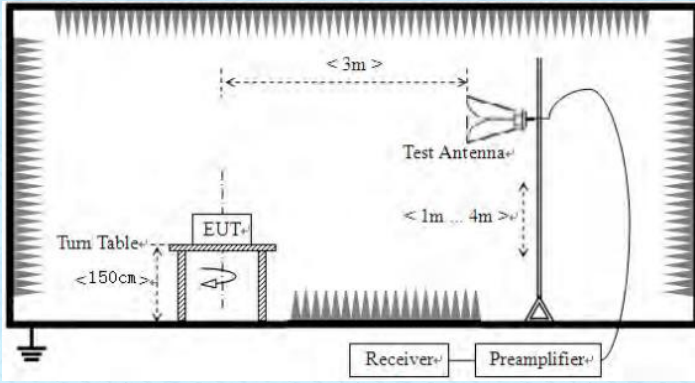
7.8.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=100kHz, VBW=300kHz, Detector=Peak
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. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.
Test Instruments:	Refer to section6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data: The detailed test data see Appendix for 2.4G.

7.8.2 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: (Spurious Emissions)	Frequency		Limit (uV/m)	Value	Measurement Distance
	0.009MHz-0.490MHz		2400/F(KHz)	PK/AV/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:	Below 30MHz				
					
	Below 1GHz				

	Report No.: CPE200001107  Above 1GHz 					
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8 meters for below 1GHz and 1.5meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.					
Test Instruments:	Refer to section 5.8 for details					
Test mode:	Refer to section 5.2 for details					
Temp. / Hum.	Temp.:	25 °C	Humid.:	52%	Press.:	1 012mbar

Test results:	Pass
---------------	------

Remark:

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

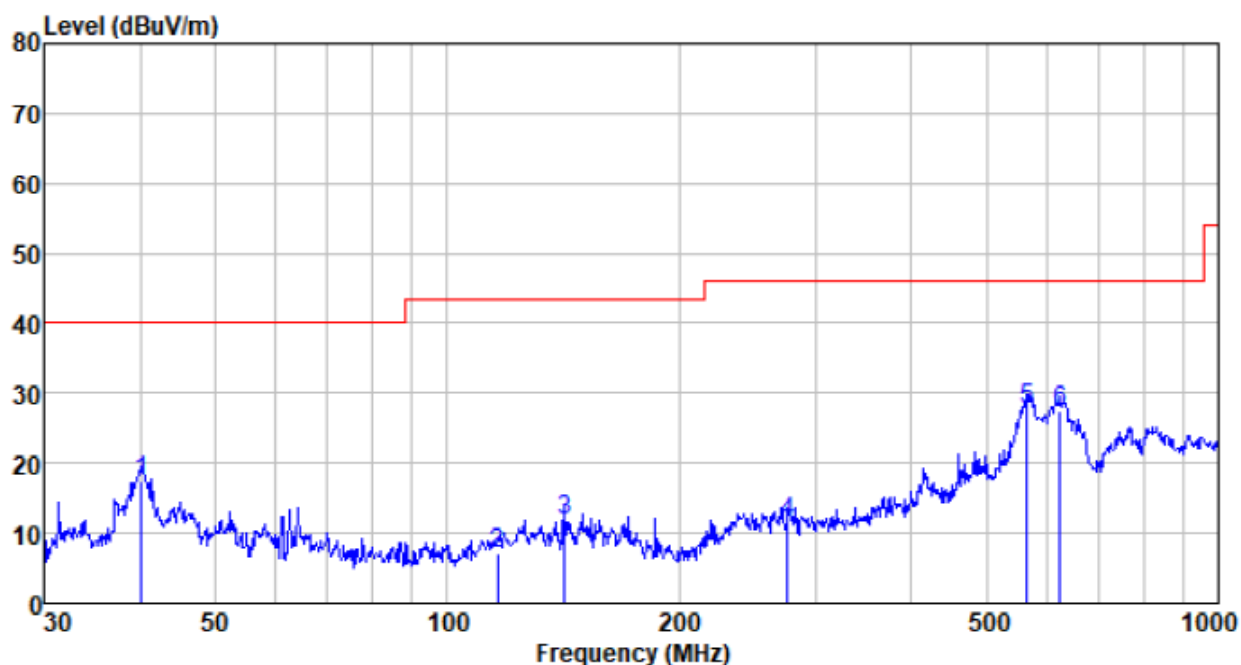
Measurement data:

■ **Below 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.

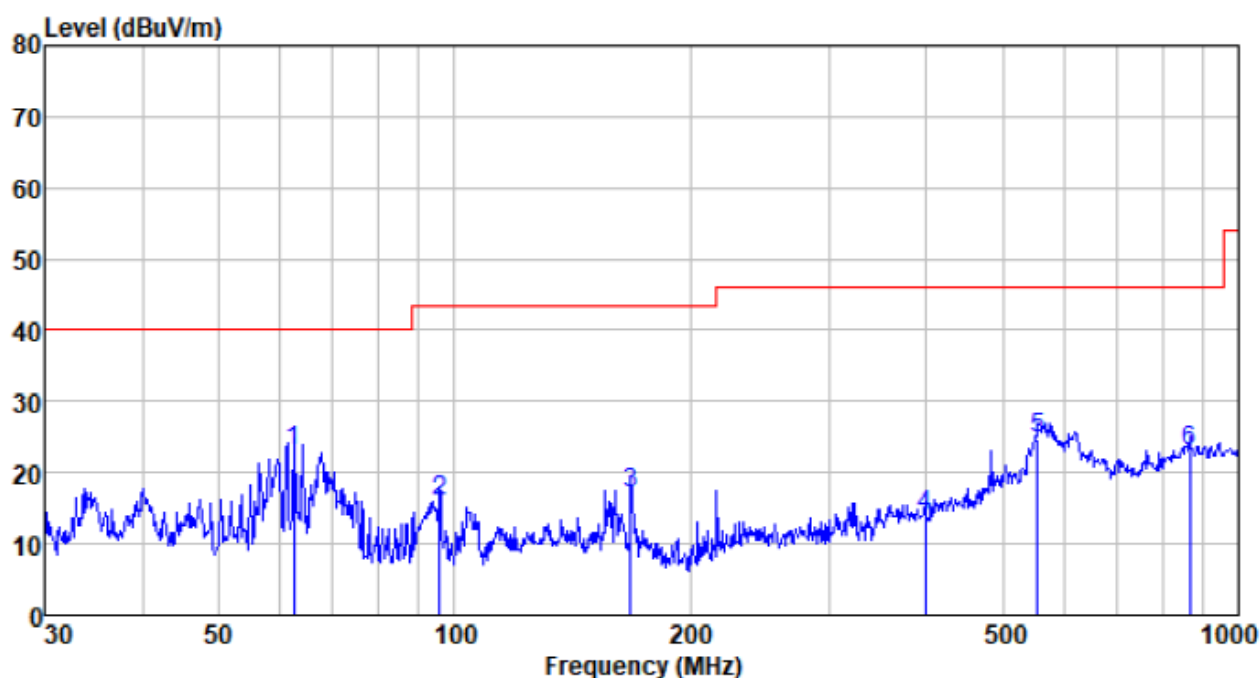
■ 30MHz ~ 1GHz

Test channel:	Lowest	Polarization:	Horizontal
---------------	--------	---------------	------------



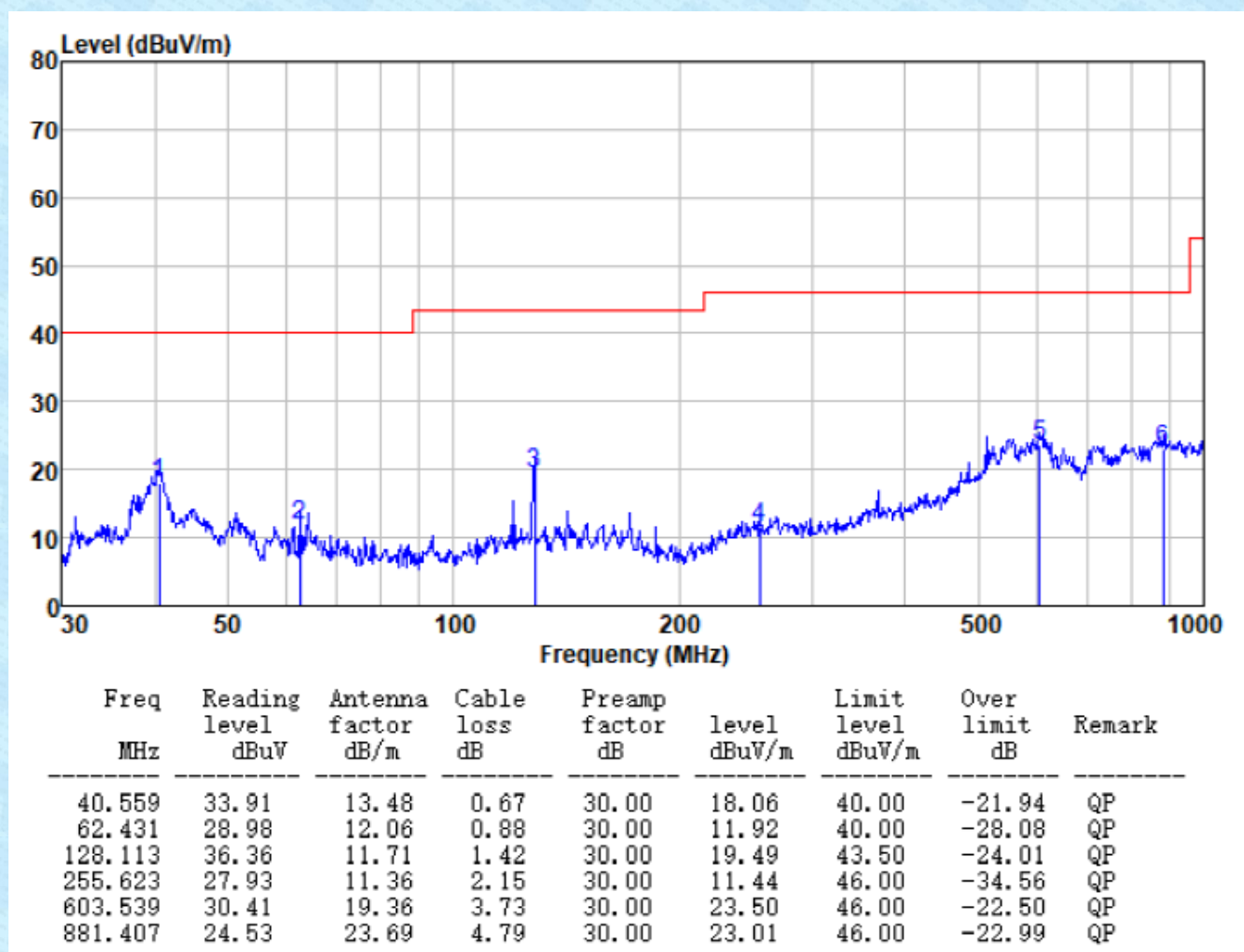
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
40.135	33.27	13.50	0.66	30.00	17.43	40.00	-22.57	QP
116.132	24.95	10.93	1.33	30.00	7.21	43.50	-36.29	QP
141.826	27.82	12.42	1.52	30.00	11.76	43.50	-31.74	QP
276.124	26.75	12.60	2.25	30.00	11.60	46.00	-34.40	QP
564.639	35.38	18.73	3.58	30.00	27.69	46.00	-18.31	QP
622.890	34.00	19.66	3.81	30.00	27.47	46.00	-18.53	QP

Test channel:	Lowest	Polarization:	Vertical
---------------	--------	---------------	----------

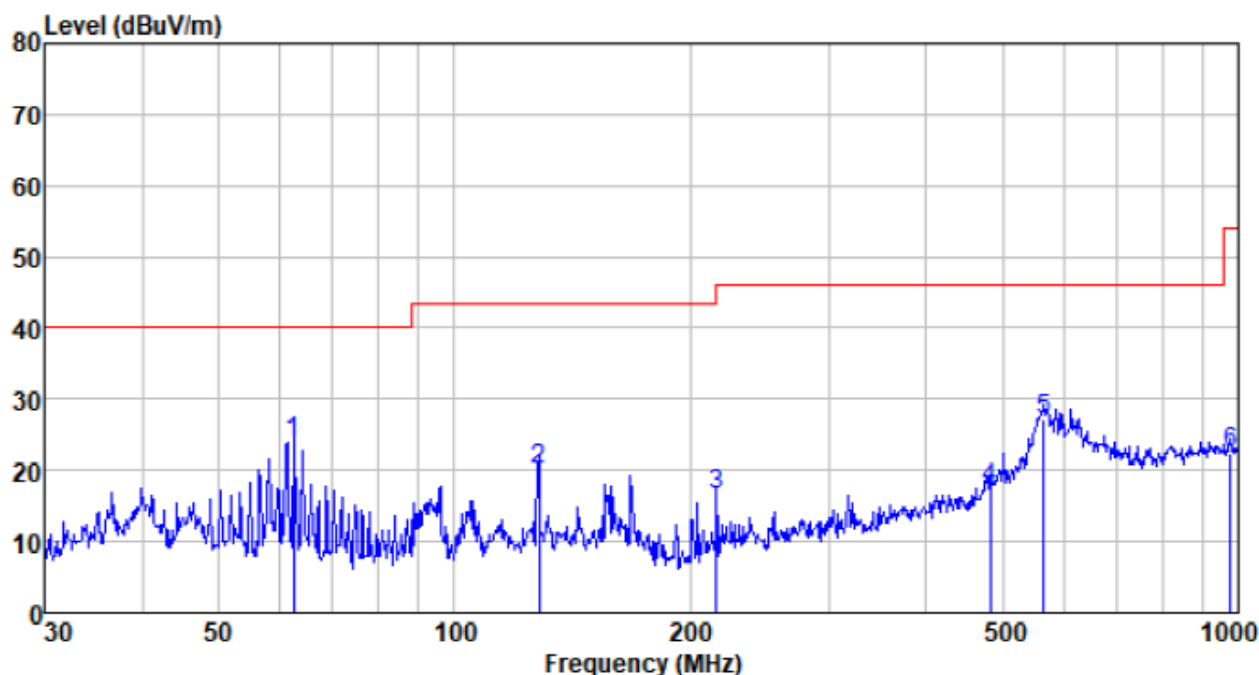


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
62.431	39.98	12.06	0.88	30.00	22.92	40.00	-17.08	QP
95.762	35.53	9.25	1.16	30.00	15.94	43.50	-27.56	QP
167.824	33.90	11.67	1.67	30.00	17.24	43.50	-26.26	QP
399.030	25.35	15.67	2.85	30.00	13.87	46.00	-32.13	QP
554.825	32.72	18.57	3.54	30.00	24.83	46.00	-21.17	QP
866.088	24.78	23.51	4.73	30.00	23.02	46.00	-22.98	QP

Test channel:	Middle	Polarization:	Horizontal
---------------	--------	---------------	------------

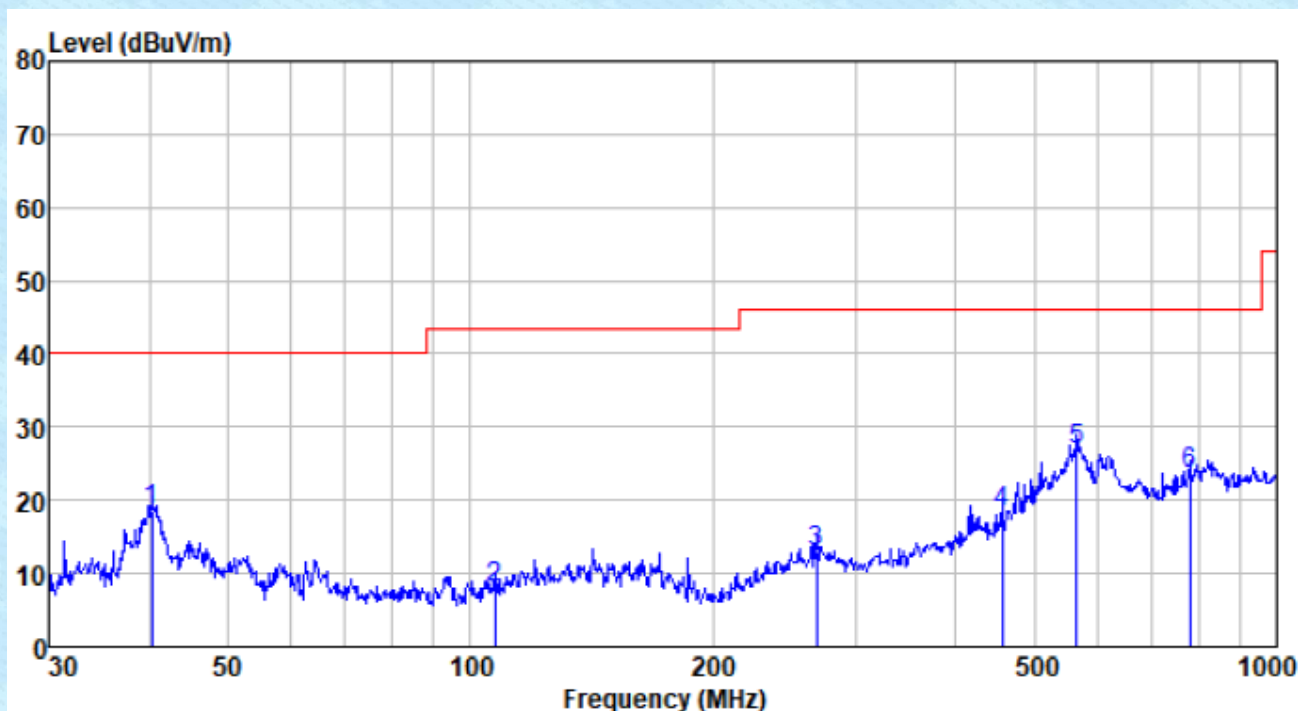


Test channel:	Middle	Polarization:	Vertical
---------------	--------	---------------	----------



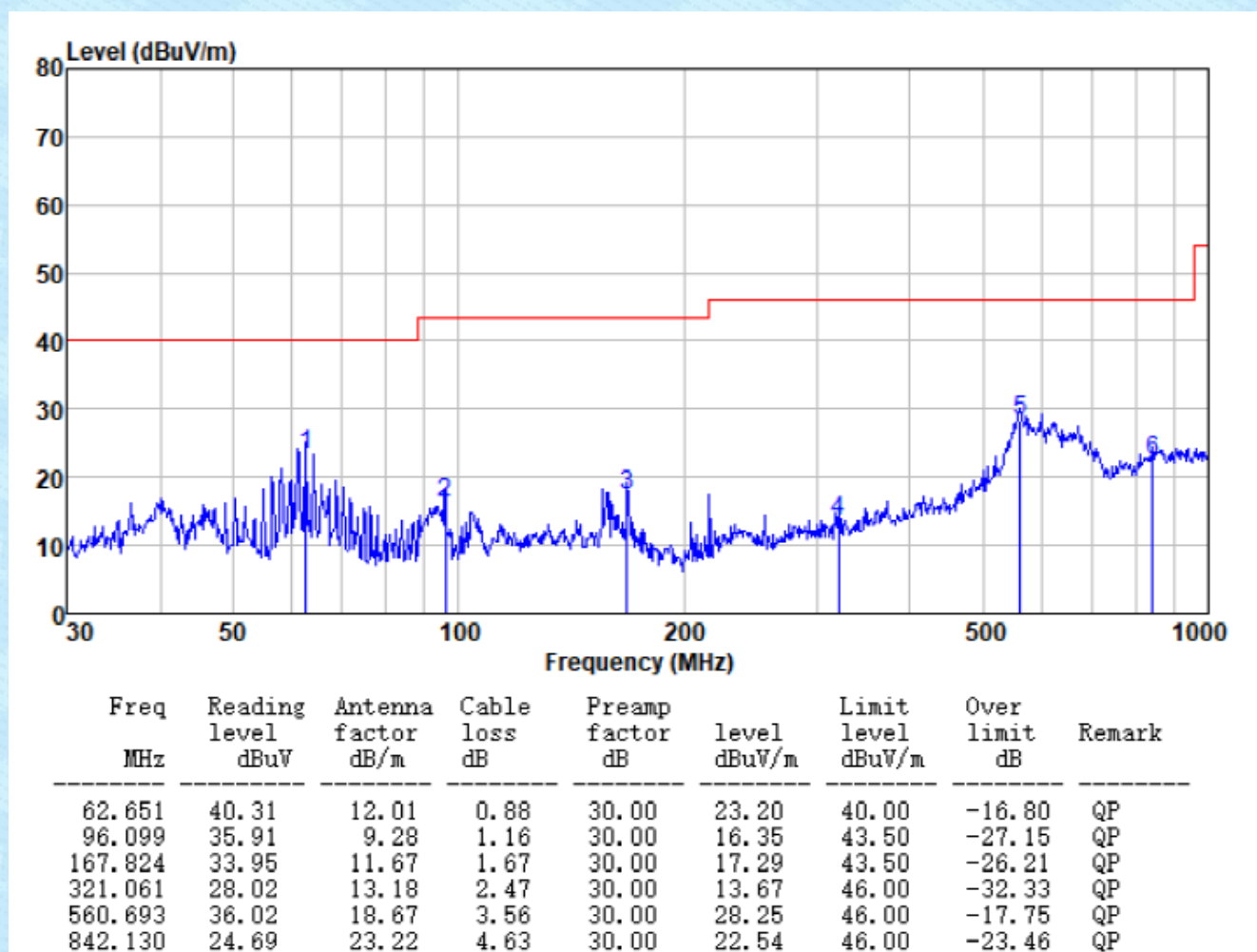
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
62.431	40.94	12.06	0.88	30.00	23.88	40.00	-16.12	QP
128.113	37.00	11.71	1.42	30.00	20.13	43.50	-23.37	QP
216.024	34.39	10.09	1.93	30.00	16.41	46.00	-29.59	QP
482.216	26.92	17.29	3.23	30.00	17.44	46.00	-28.56	QP
564.639	34.77	18.73	3.58	30.00	27.08	46.00	-18.92	QP
975.753	22.71	24.51	5.14	30.00	22.36	54.00	-31.64	QP

Test channel:	Highest	Polarization:	Horizontal
---------------	---------	---------------	------------



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
40.276	34.37	13.49	0.66	30.00	18.52	40.00	-21.48	QP
107.134	26.49	10.27	1.25	30.00	8.01	43.50	-35.49	QP
268.485	28.88	11.99	2.21	30.00	13.08	46.00	-32.92	QP
455.906	28.49	16.81	3.11	30.00	18.41	46.00	-27.59	QP
564.639	34.48	18.73	3.58	30.00	26.79	46.00	-19.21	QP
779.607	26.82	22.33	4.38	30.00	23.53	46.00	-22.47	QP

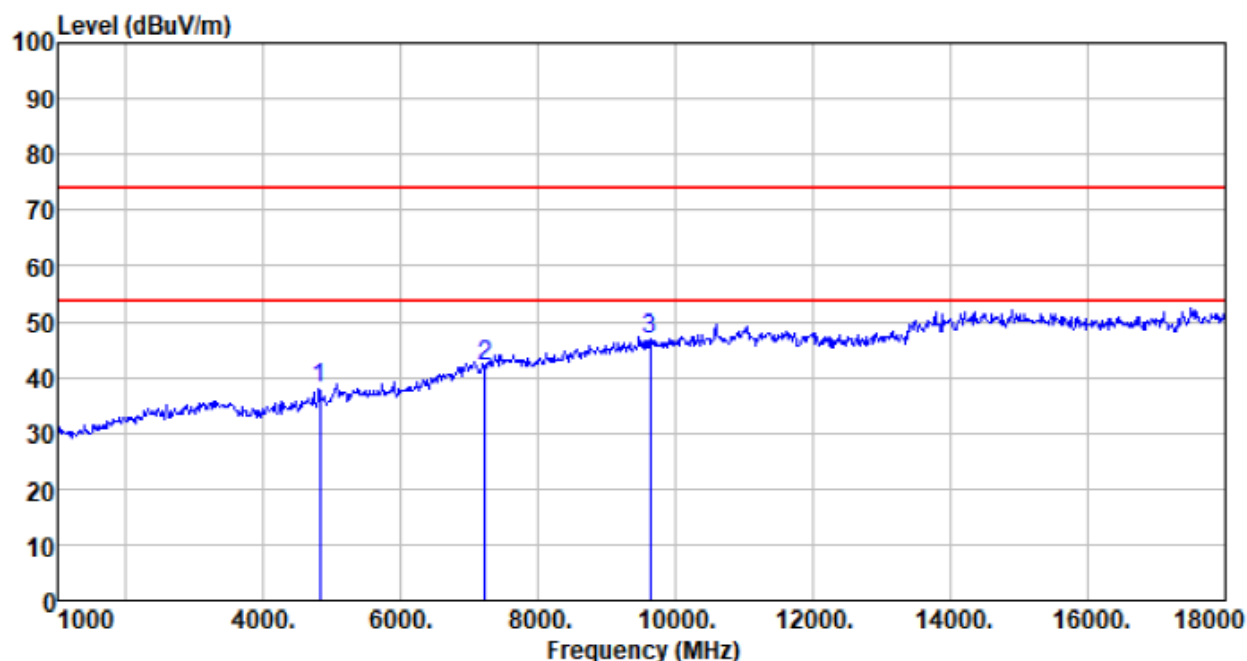
Test channel:	Highest	Polarization:	Vertical
---------------	---------	---------------	----------



■ Unwanted Emissions in Non-Restricted Frequency Bands

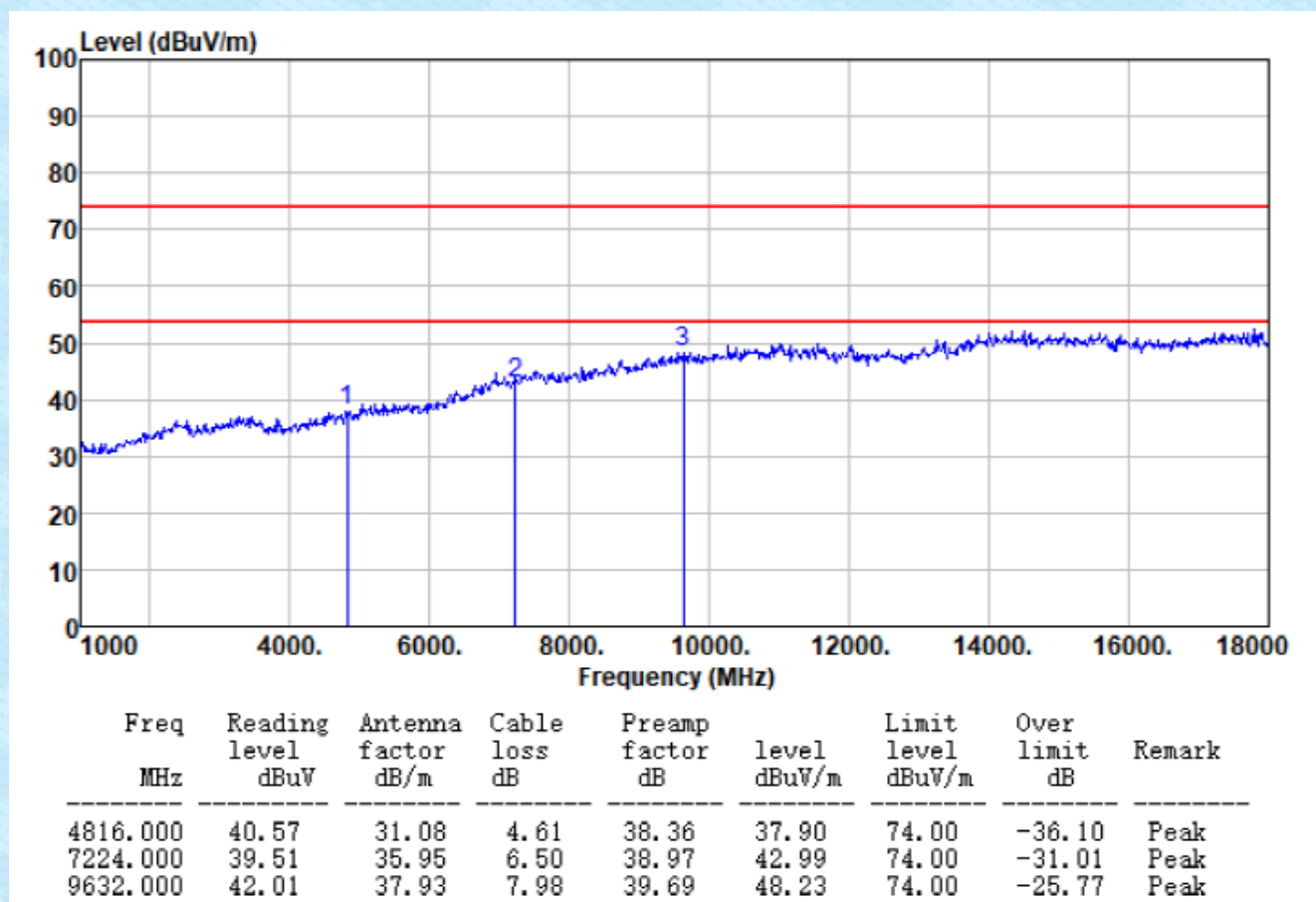
■ Above 1GHz

Test channel:	Lowest	Polarization:	Horizontal
---------------	--------	---------------	------------

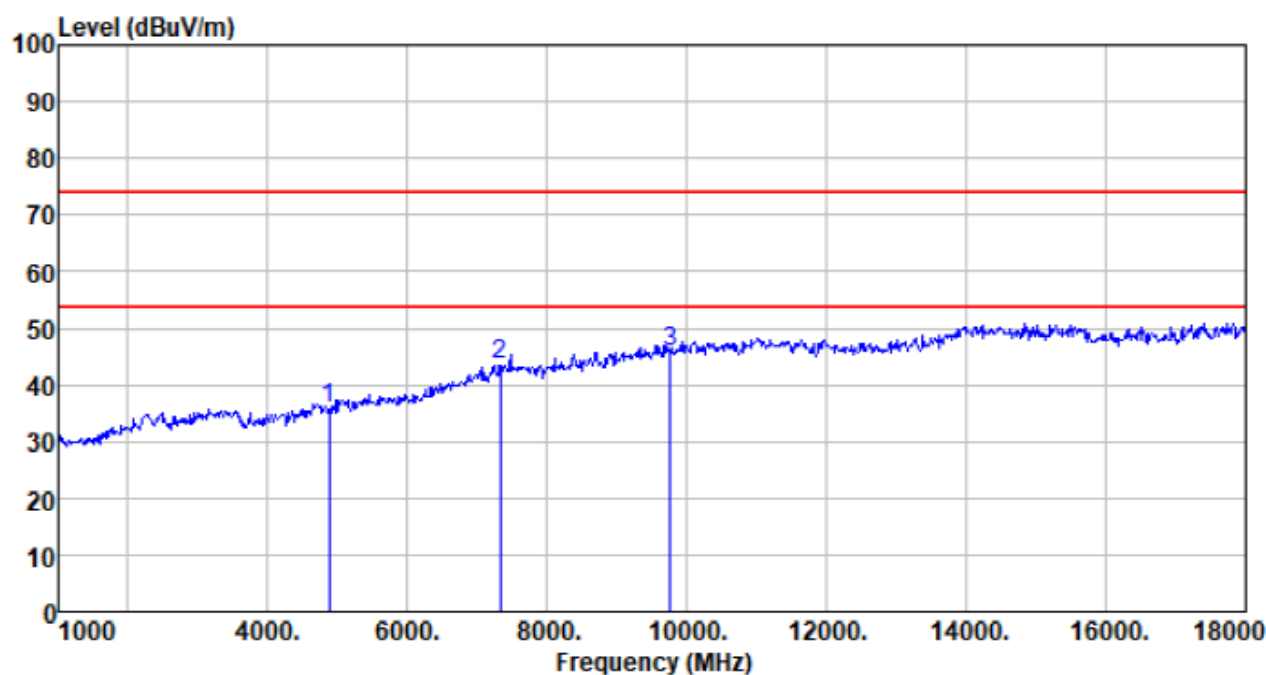


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBUV/m	Limit level dBUV/m	Over limit dB	Remark
4816.000	40.68	31.08	4.61	38.36	38.01	74.00	-35.99	Peak
7224.000	38.42	35.95	6.50	38.97	41.90	74.00	-32.10	Peak
9632.000	40.48	37.93	7.98	39.69	46.70	74.00	-27.30	Peak

Test channel:	Lowest	Polarization:	Vertical
---------------	--------	---------------	----------

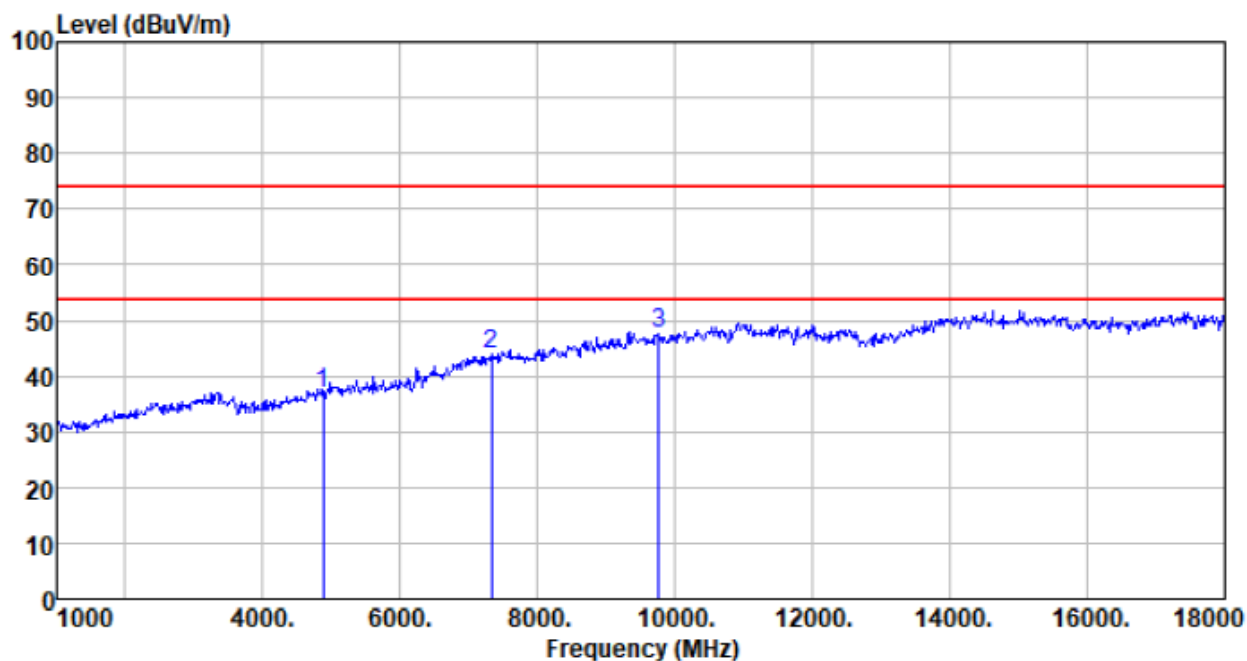


Test channel:	Middle	Polarization:	Horizontal
---------------	--------	---------------	------------



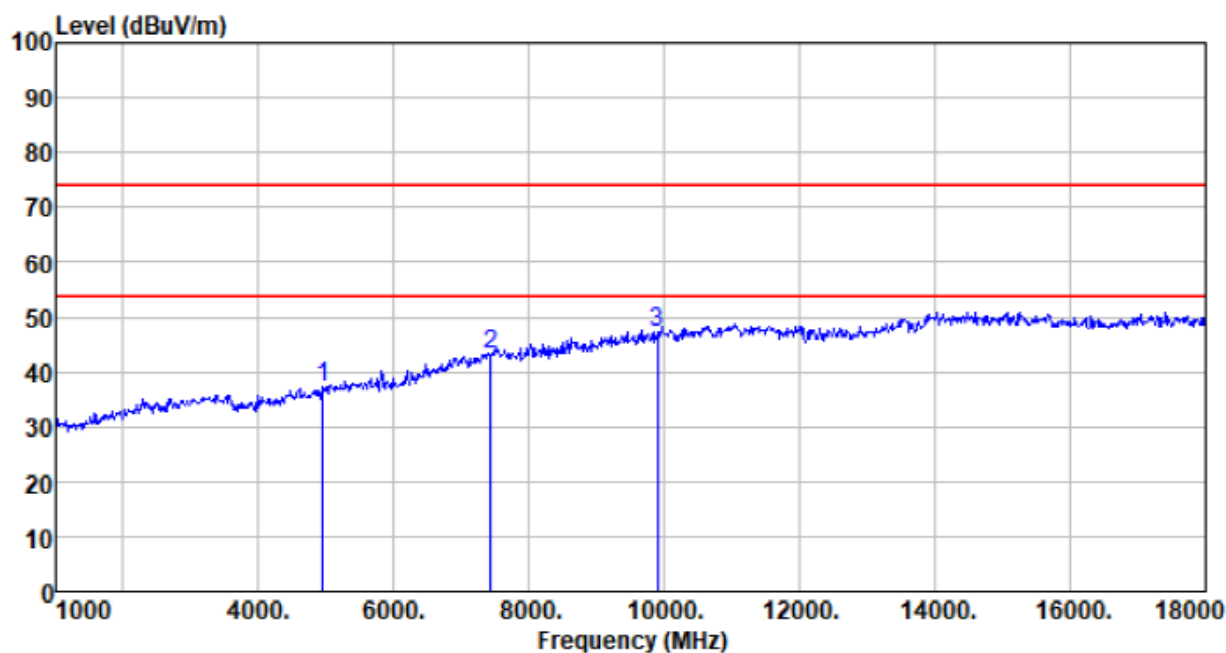
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4880.000	38.06	31.26	4.69	38.38	35.63	74.00	-38.37	Peak
7320.000	39.90	36.14	6.63	39.00	43.67	74.00	-30.33	Peak
9760.000	39.21	38.06	8.03	39.73	45.57	74.00	-28.43	Peak

Test channel:	Middle	Polarization:	Vertical
---------------	--------	---------------	----------



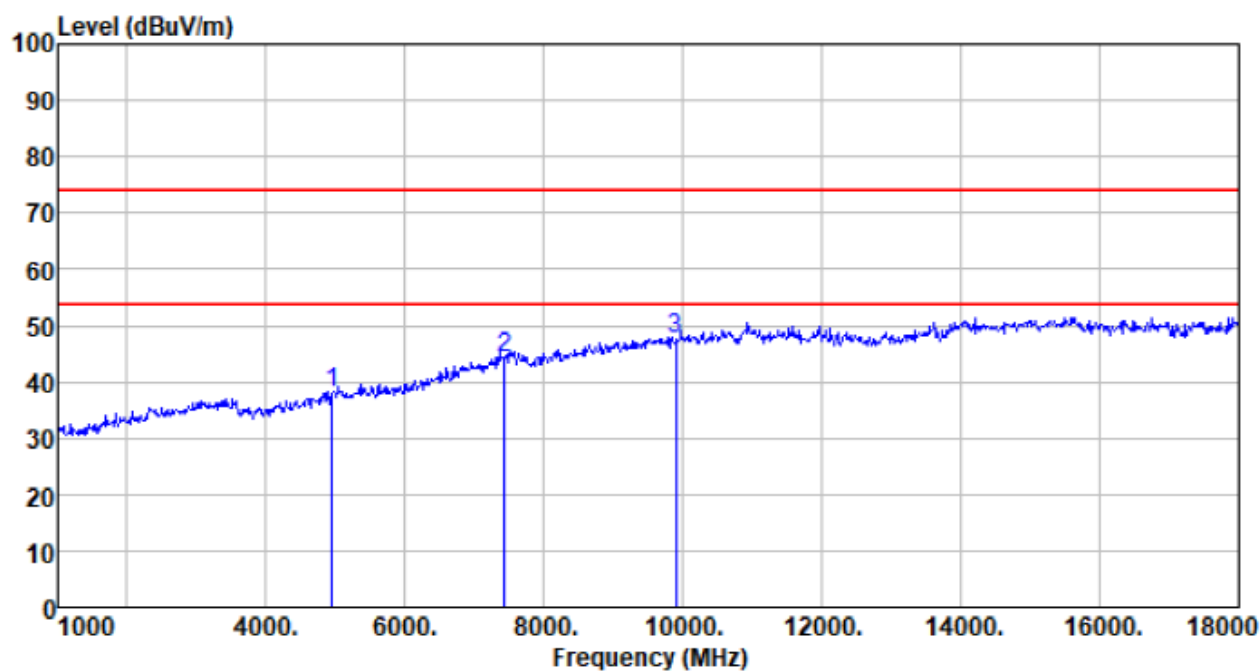
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4880.000	39.25	31.26	4.69	38.38	36.82	74.00	-37.18	Peak
7320.000	40.17	36.14	6.63	39.00	43.94	74.00	-30.06	Peak
9760.000	41.06	38.06	8.03	39.73	47.42	74.00	-26.58	Peak

Test channel:	Highest	Polarization:	Horizontal
---------------	---------	---------------	------------



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4950.000	39.27	31.46	4.77	38.39	37.11	74.00	-36.89	Peak
7425.000	39.08	36.35	6.75	39.03	43.15	74.00	-30.85	Peak
9900.000	40.68	38.20	8.09	39.77	47.20	74.00	-26.80	Peak

Test channel:	Highest	Polarization:	Vertical
---------------	---------	---------------	----------



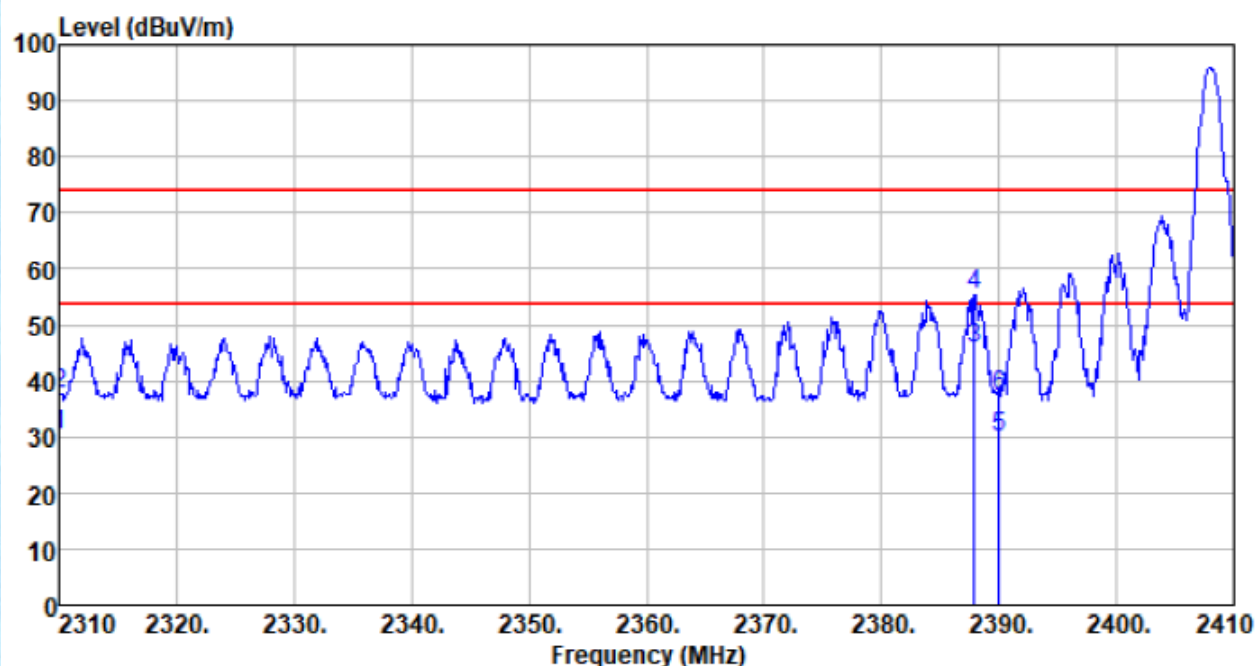
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4950.000	40.30	31.46	4.77	38.39	38.14	74.00	-35.86	Peak
7425.000	40.38	36.35	6.75	39.03	44.45	74.00	-29.55	Peak
9900.000	41.14	38.20	8.09	39.77	47.66	74.00	-26.34	Peak

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.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

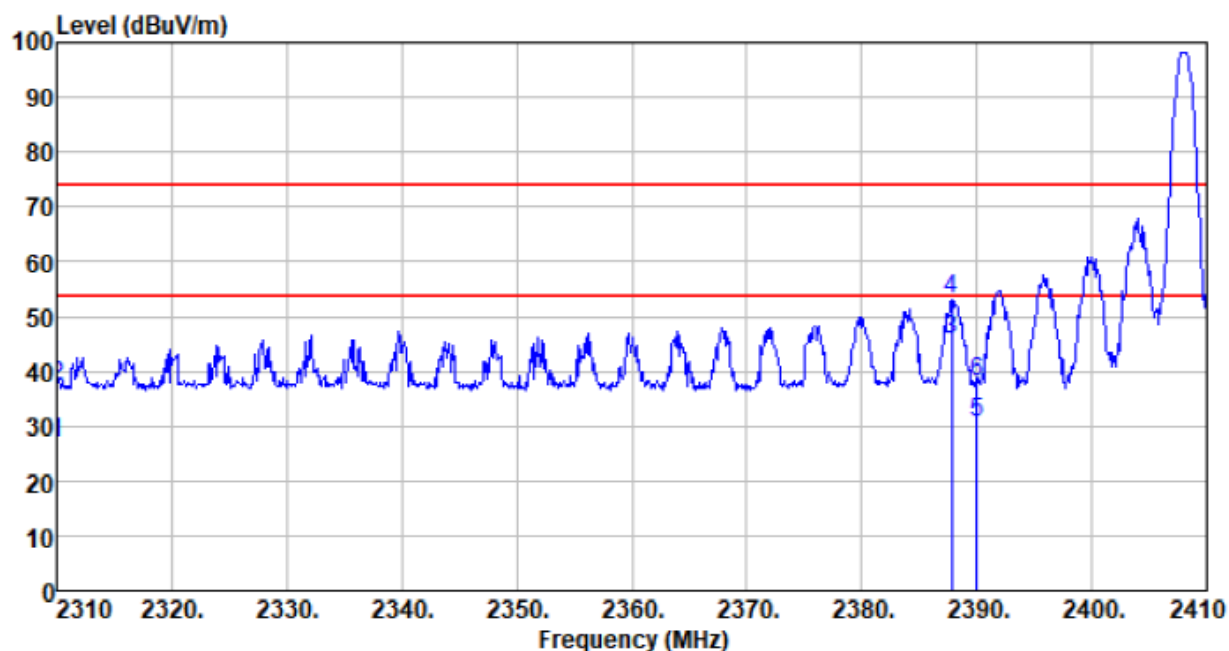
Unwanted Emissions in Restricted Frequency Bands

Test channel:	Lowest	Polarization:	Horizontal
---------------	--------	---------------	------------



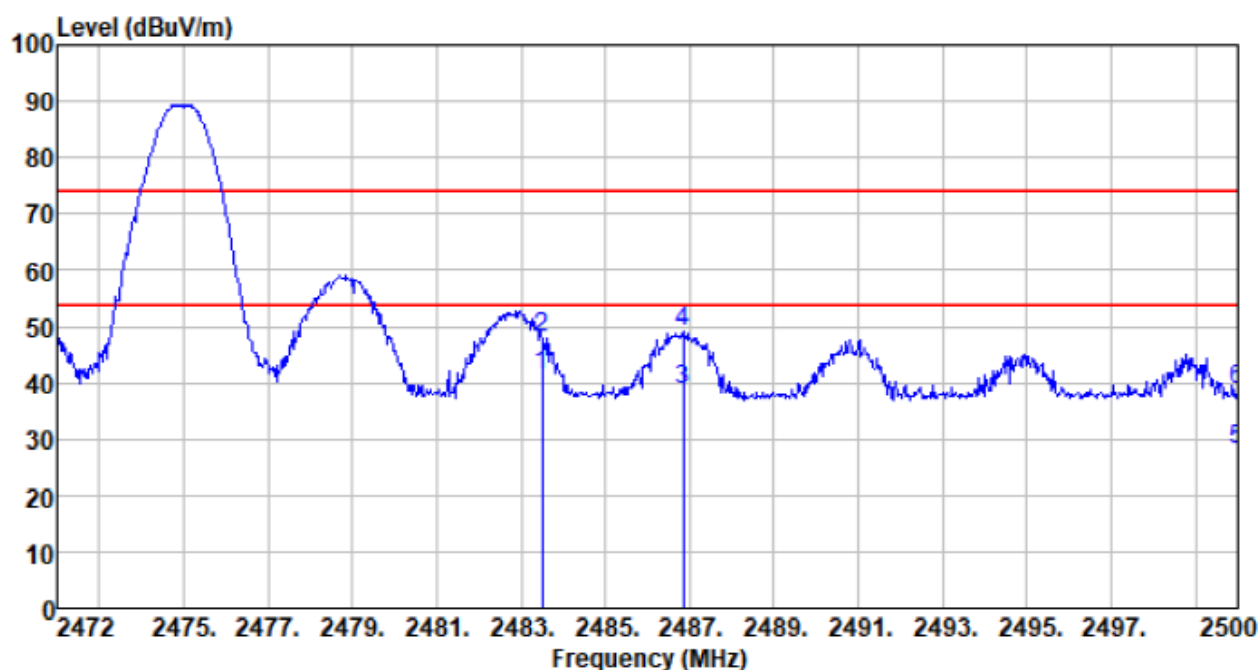
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	38.62	27.17	2.81	38.52	30.08	54.00	-23.92	Average
2310.000	46.32	27.17	2.81	38.52	37.78	74.00	-36.22	Peak
2387.900	54.09	27.27	2.91	38.56	45.71	54.00	-8.29	Average
2387.900	63.71	27.27	2.91	38.56	55.33	74.00	-18.67	Peak
2390.000	38.15	27.27	2.91	38.56	29.77	54.00	-24.23	Average
2390.000	45.82	27.27	2.91	38.56	37.44	74.00	-36.56	Peak

Test channel:	Lowest	Polarization:	Vertical
---------------	--------	---------------	----------



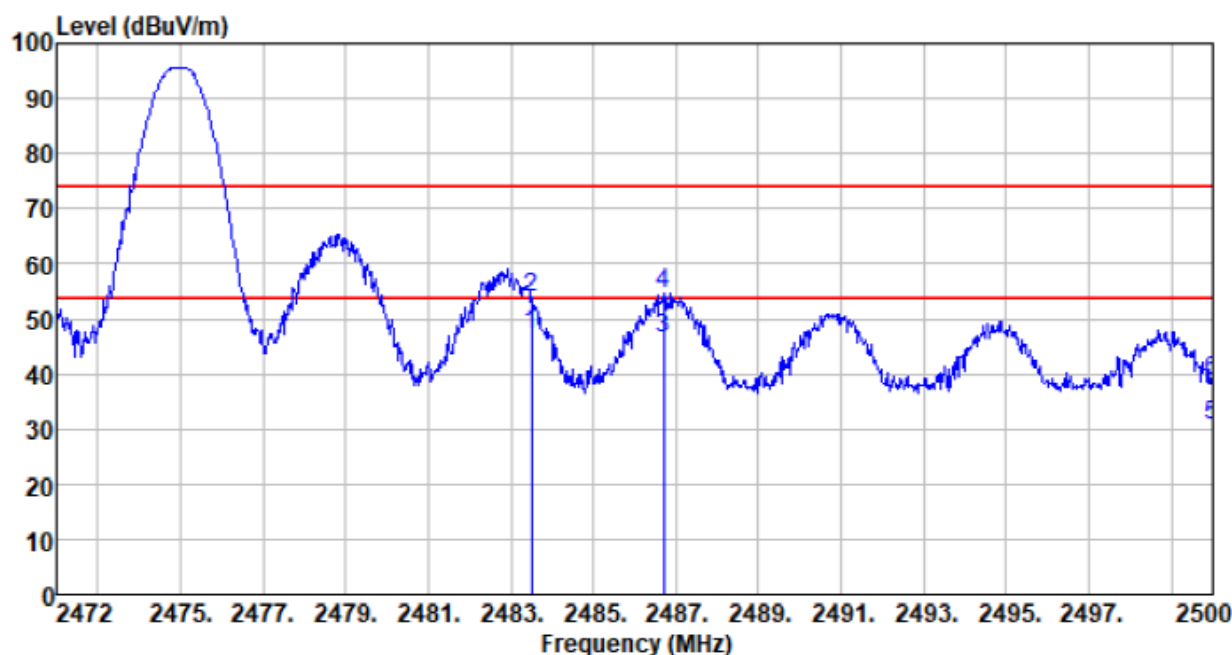
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	35.31	27.17	2.81	38.52	26.77	54.00	-27.23	Average
2310.000	45.83	27.17	2.81	38.52	37.29	74.00	-36.71	Peak
2387.800	54.10	27.27	2.91	38.56	45.72	54.00	-8.28	Average
2387.800	61.61	27.27	2.91	38.56	53.23	74.00	-20.77	Peak
2390.000	39.05	27.27	2.91	38.56	30.67	54.00	-23.33	Average
2390.000	46.44	27.27	2.91	38.56	38.06	74.00	-35.94	Peak

Test channel:	Highest	Polarization:	Horizontal
---------------	---------	---------------	------------



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2483.508	49.53	27.38	2.99	38.59	41.31	54.00	-12.69	Average
2483.508	56.23	27.38	2.99	38.59	48.01	74.00	-25.99	Peak
2486.840	47.12	27.38	2.99	38.59	38.90	54.00	-15.10	Average
2486.840	57.41	27.38	2.99	38.59	49.19	74.00	-24.81	Peak
2500.000	36.11	27.40	3.01	38.60	27.92	54.00	-26.08	Average
2500.000	47.11	27.40	3.01	38.60	38.92	74.00	-35.08	Peak

Test channel:	Highest	Polarization:	Vertical
---------------	---------	---------------	----------



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2483.500	55.42	27.38	2.99	38.59	47.20	54.00	-6.80	Average
2483.500	62.14	27.38	2.99	38.59	53.92	74.00	-20.08	Peak
2486.700	54.86	27.38	2.99	38.59	46.64	54.00	-7.36	Average
2486.700	62.78	27.38	2.99	38.59	54.56	74.00	-19.44	Peak
2500.000	38.92	27.40	3.01	38.60	30.73	54.00	-23.27	Average
2500.000	46.79	27.40	3.01	38.60	38.60	74.00	-35.40	Peak

Remarks:

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

8 Test Setup Photo

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

9 EUT Constructional Details

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

---End---