TEST REPORT

Applicant:	Guangdong Qunlong Precision Technology Co., Ltd.
Address of Applicant:	Zhangxi Low-Carbon Industrial Park, Raoping County, Chaozhou City, Guangdong Province, China
Manufacturer/Factory:	Guangdong Qunlong Precision Technology Co., Ltd.
Address of Manufacturer/Factory:	Zhangxi Low-Carbon Industrial Park, Raoping County, Chaozhou City, Guangdong Province, China
Equipment Under Test (EUT)	
Product Name:	Building block toys
Model No.:	See section 5.1
FCC ID:	2BCMIJZ
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of sample receipt:	August 04, 2023
Date of Test:	August 04-23, 2023
Date of report issued:	August 23, 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	*August 23, 2023*	*Original*

Prepared By: ***Date:*** *August 23, 2023*

Project Engineer

Check By: ***Date:*** *August 23, 2023*

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	N/A
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Remarks:

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

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz-30MHz	3.1dB	(1)
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:	Building block toys
Model No.:	5002, D1001, D1002, D1003, D1004, D1005, D1006, D1007, D1008, D1009, D1010, D1011, D1012, D1013, D1014, D1015, D1016, D1017, D1018, D1019, D1020, D1021, D1022, D1023, D1024, D1025, D1026, D1027, D1028, D1029, D1030, D1031, D1032, D1033, D1034, D1035, D1036, D1037, D1038, D1039, D1040, D1301, D1302, D1303, D1304, D1305, D1306, D1307, D1308, D1309, D1310, D1311, D1312, D1313, D1314, D1315, D1316, D1317, D1318, D1319, D1320, D1321, D1322, D1323, D1324, D1325, D1326, D1327, D1328, D1329, D1330, D1331, D1332, D1333, D1334, D1335, D1336, D1337, D1338, D1339, D1340, D2001, D2002, D2003, D2004, D2005, D2006, D2007, D2008, D2009, D2010, D2011, D2012, D2013, D2014, D2015, D2016, D2017, D2018, D2019, D2020, D2021, D2022, D2023, D2024, D2025, D2026, D2027, D2028, D2029, D2030, D2031, D2032, D2033, D2034, D2035, D2036, D2037, D2038, D2039, D2040, D3001, D3002, D3003, D3004, D3005, D3006, D3007, D3008, D3009, D3010, D3011, D3012, D3013, D3014, D3015, D3016, D3017, D3018, D3019, D3020, D3021, D3022, D3023, D3024, D3025, D3026, D3027, D3028, D3029, D3030, D3031, D3032, D3033, D3034, D3035, D3036, D3037, D3038, D3039, D3040, D5001, D5003, D5004, D5005, D5006, D5007, D5008, D5009, D5010, D5011, D5012, D5013, D5014, D5015, D5016, D5017, D5018, D5019, D5020, D5021, D5022, D5023, D5024, D5025, D5026, D5027, D5028, D5029, D5030, D5031, D5032, D5033, D5034, D5035, D5036, D5037, D5038, D5039, D5040
Test Model No.:	5002
Remark: All above models are identical in the same PCB layout, interior structure and electrical circuits. The differences are appearance color and model name for commercial purpose.	
Serial No.:	5002
Test sample(s) ID:	GTS2023080044-1
Sample(s) Status	Engineered sample
Operation Frequency:	2411MHz~2476MHz
Channel numbers:	66
Modulation type:	GFSK
Antenna Type:	PCB antenna
Antenna gain:	0dBi(Declared by applicant)
Power supply:	TX: DC 3.0V (2*1.5V Size “AAA” Battery)

Remark:
1. Antenna gain information provided by the customer
2. The relevant information of the sample is provided by the entrusting company, and the laboratory is not responsible for its authenticity.
3. The report is for TX device only.

Operation Frequency each of channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2411	18	2428	35	2445	52	2462
2	2412	19	2429	36	2446	53	2463
3	2413	20	2430	37	2447	54	2464
4	2414	21	2431	38	2448	55	2465
5	2415	22	2432	39	2449	56	2466
6	2416	23	2433	40	2450	57	2467
7	2417	24	2434	41	2451	58	2468
8	2418	25	2435	42	2452	59	2469
9	2419	26	2436	43	2453	60	2470
10	2420	27	2437	44	2454	61	2471
11	2421	28	2438	45	2455	62	2472
12	2422	29	2439	46	2456	63	2473
13	2423	30	2440	47	2457	64	2474
14	2424	31	2441	48	2458	65	2475
15	2425	32	2442	49	2459	66	2476
16	2426	33	2443	50	2460		
17	2427	34	2444	51	2461		

The test frequencies are below:

Channel	Frequency
The lowest channel	2411MHz
The middle channel	2442MHz
The Highest channel	2476MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: New battery is used during all test.	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	85.36	86.85	84.12

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**

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.

● **ISED—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 ISED 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).

5.7 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	June 23, 2021	June 22, 2024
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 14, 2023	April 13, 2024
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 19, 2023	March 18, 2025
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	April 17, 2023	April 16, 2025
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 14, 2023	April 13, 2024
8	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 29, 2022	Nov. 28, 2023
9	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 14, 2023	April 13, 2024
10	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 14, 2023	April 13, 2024
11	Horn Antenna (18-26.5GHz)	/	UG-598A/U	GTS664	Oct. 30, 2022	Oct. 29, 2023
12	Horn Antenna (26.5-40GHz)	A.H Systems	SAS-573	GTS665	Oct. 30, 2022	Oct. 29, 2023
13	FSV·Signal Analyzer (10Hz-40GHz)	Keysight	FSV-40-N	GTS666	March 13, 2023	March 12, 2024
14	Amplifier	/	LNA-1000-30S	GTS650	April 14, 2023	April 13, 2024
15	CDNE M2+M3-16A	HCT	30MHz-300MHz	GTS668	Dec. 20, 2022	Dec.19, 2023
16	Wideband Amplifier	/	WDA-01004000-15P35	GTS602	April 14, 2023	April 13, 2024
17	Thermo meter	JINCHUANG	GSP-8A	GTS643	April 19, 2023	April 18, 2024
18	RE cable 1	GTS	N/A	GTS675	July 31. 2023	July 30. 2024
19	RE cable 2	GTS	N/A	GTS676	July 31. 2023	July 30. 2024
20	RE cable 3	GTS	N/A	GTS677	July 31. 2023	July 30. 2024
21	RE cable 4	GTS	N/A	GTS678	July 31. 2023	July 30. 2024
22	RE cable 5	GTS	N/A	GTS679	July 31. 2023	July 30. 2024
23	RE cable 6	GTS	N/A	GTS680	July 31. 2023	July 30. 2024
24	RE cable 7	GTS	N/A	GTS681	July 31. 2023	July 30. 2024
25	RE cable 8	GTS	N/A	GTS682	July 31. 2023	July 30. 2024

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 14, 2023	April 13, 2024
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 14, 2023	April 13, 2024
3	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	April 14, 2023	April 13, 2024
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 14, 2023	April 13, 2024
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 14, 2023	April 13, 2024
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 14, 2023	April 13, 2024
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 14, 2023	April 13, 2024
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 14, 2023	April 13, 2024
9	Thermo meter	JINCHUANG	GSP-8A	GTS641	April 19, 2023	April 18, 2024

General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	KUMAO	SF132	GTS647	April 19, 2023	April 18, 2024

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. **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 PCB antenna, reference to the appendix II for details.	

7.2 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	Remark
9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value
150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	Peak	1MHz	10Hz	Average Value

Limit: (Field strength of the fundamental signal)

Frequency	Limit (dBuV/m @3m)	Remark
2400MHz-2483.5MHz	94.00	Average Value
	114.00	Peak Value

Limit: (Spurious Emissions)

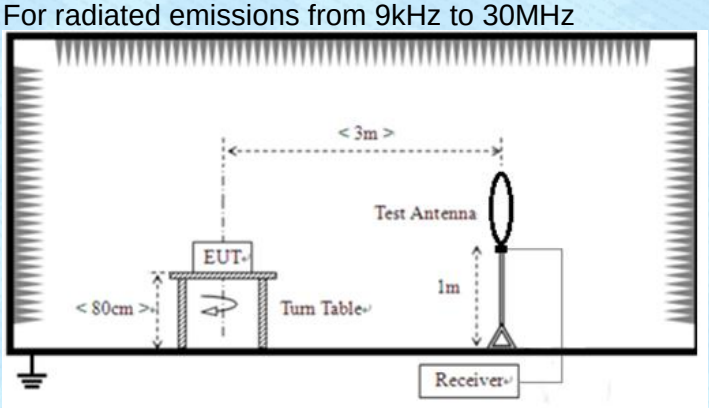
Frequency	Limit (uV/m)	Remark
0.009MHz-0.490MHz	2400/F(kHz) @300m	Quasi-peak Value
0.490MHz-1.705MHz	24000/F(kHz) @30m	Quasi-peak Value
1.705MHz-30.0MHz	30 @30m	Quasi-peak Value
30MHz-88MHz	100 @3m	Quasi-peak Value
88MHz-216MHz	150 @3m	Quasi-peak Value
216MHz-960MHz	200 @3m	Quasi-peak Value
960MHz-1GHz	500 @3m	Quasi-peak Value
Above 1GHz	500 @3m	Average Value
	5000 @3m	Peak Value

Limit: (band edge)

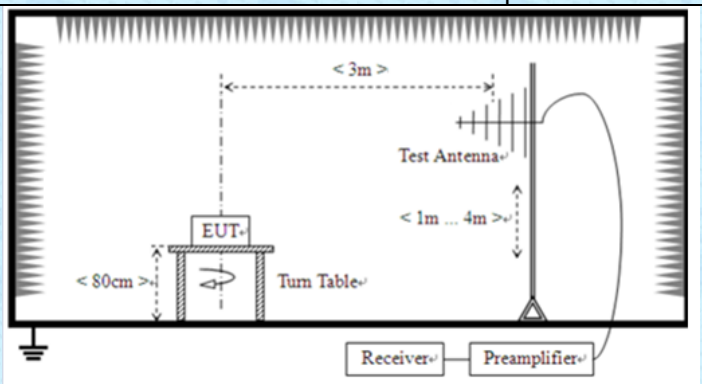
Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Test setup:

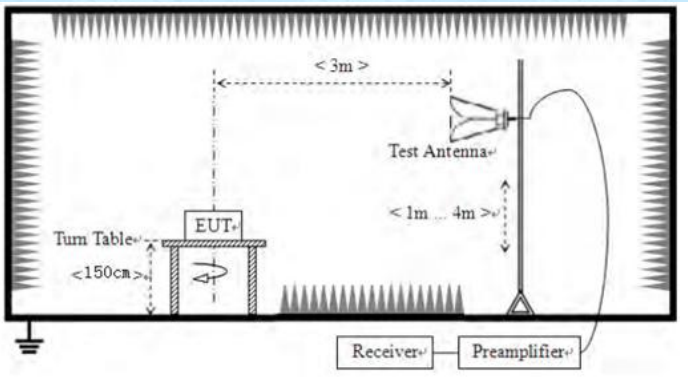
For radiated emissions from 9kHz to 30MHz



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 1GHz and 1.5 meters 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 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	DC 3V					
Test results:	Pass					

Measurement data:

7.2.1 Field Strength of The Fundamental Signal

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
2411.00	93.45	27.43	2.93	38.88	84.93	114.00	-29.07	Vertical
2411.00	86.56	27.43	2.93	38.88	78.04	114.00	-35.96	Horizontal
2442.00	95.32	27.55	2.96	38.98	86.85	114.00	-27.15	Vertical
2442.00	88.91	27.55	2.96	38.98	80.44	114.00	-33.56	Horizontal
2476.00	95.12	27.64	2.99	39.05	86.70	114.00	-27.30	Vertical
2476.00	88.44	27.64	2.99	39.05	80.02	114.00	-33.98	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
2411.00	81.84	27.43	2.93	38.88	73.32	94.00	-20.68	Vertical
2411.00	77.70	27.43	2.93	38.88	69.18	94.00	-24.82	Horizontal
2442.00	85.37	27.55	2.96	38.98	76.90	94.00	-17.10	Vertical
2442.00	79.43	27.55	2.96	38.98	70.96	94.00	-23.04	Horizontal
2476.00	86.19	27.64	2.99	39.05	77.77	94.00	-16.23	Vertical
2476.00	80.04	27.64	2.99	39.05	71.62	94.00	-22.38	Horizontal

Note: RBW>20dB BW, VBW> RBW, PK detector is for PK value, AV detector is for AV value .

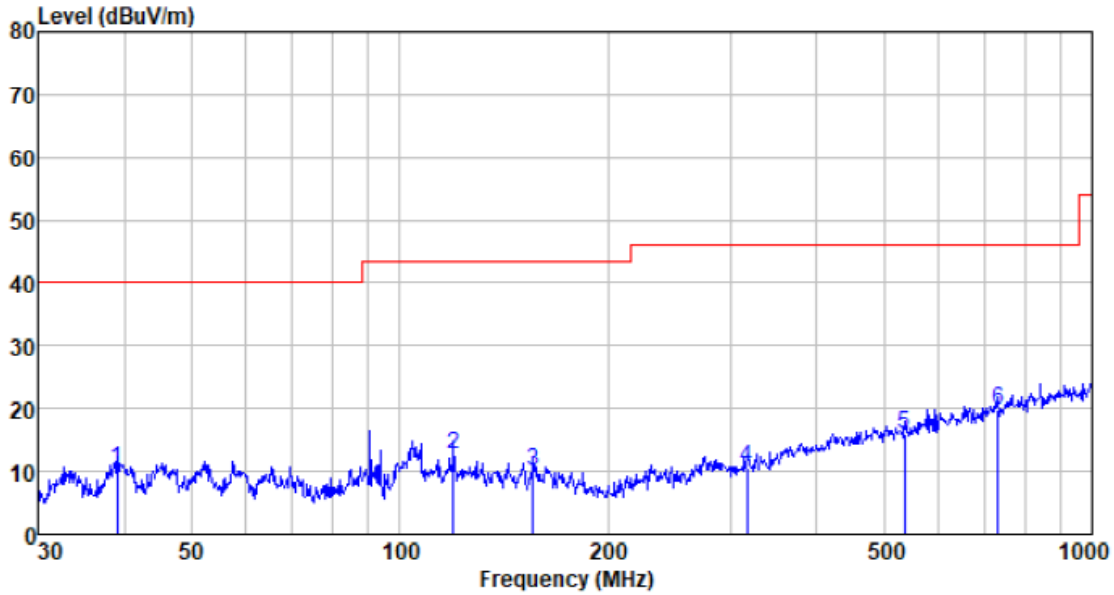
7.2.2 Spurious emissions

■ **Below 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), the test result no need to reported.

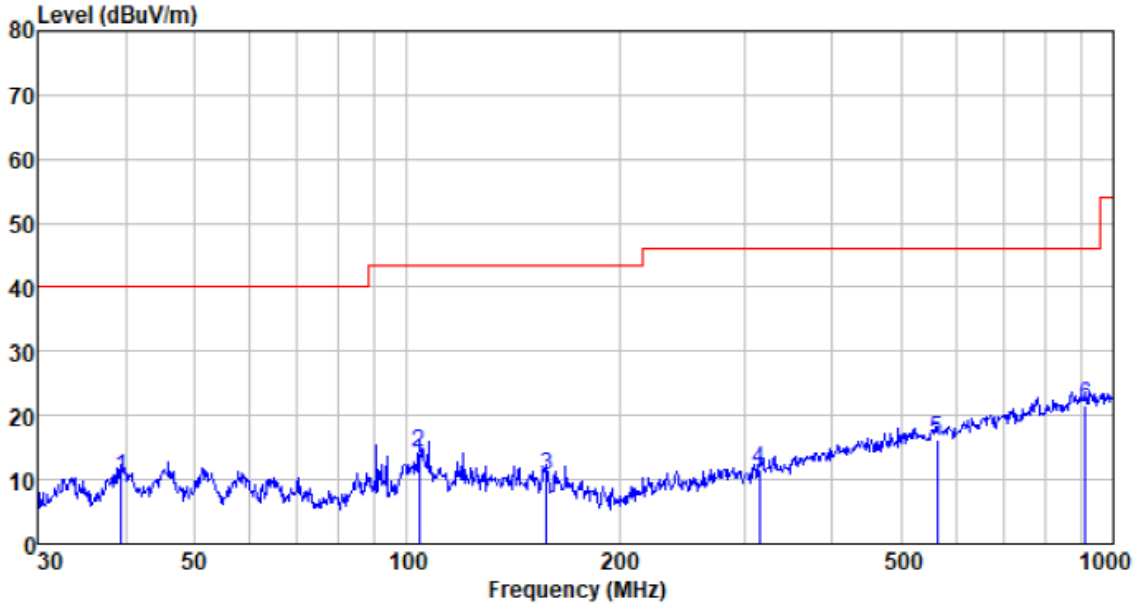
■ **Below 1GHz**

Test channel:	Lowest	Polarization:	Horizontal



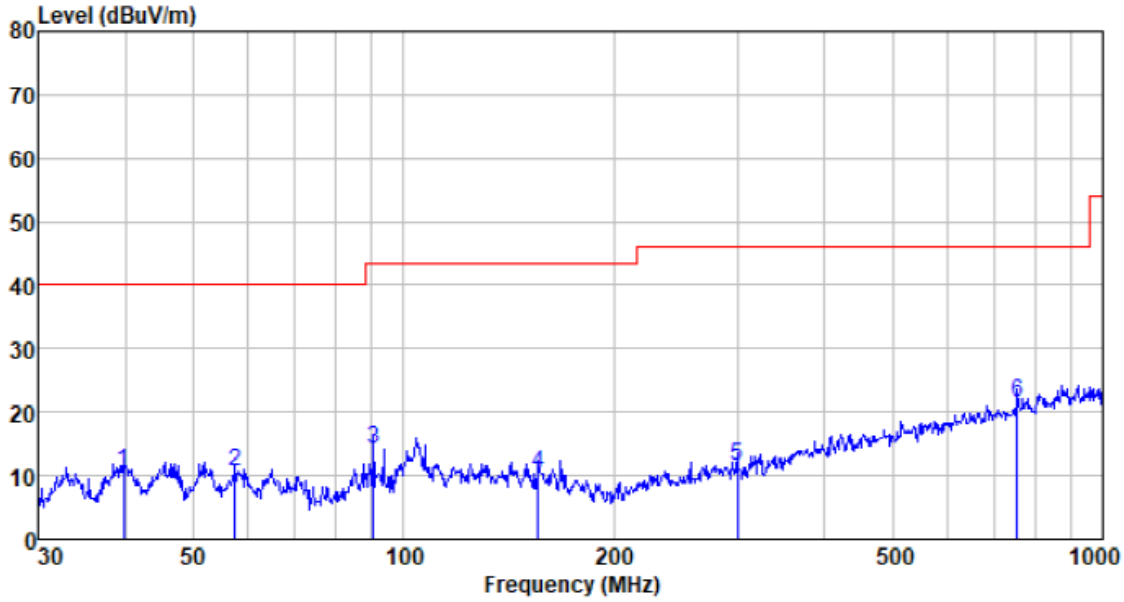
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
39.024	26.29	13.35	0.65	30.00	10.29	40.00	-29.71	QP
119.436	30.27	11.16	1.36	30.00	12.79	43.50	-30.71	QP
155.910	26.01	12.56	1.60	30.00	10.17	43.50	-33.33	QP
317.701	25.16	13.06	2.45	30.00	10.67	46.00	-35.33	QP
535.707	24.18	18.24	3.46	30.00	15.88	46.00	-30.12	QP
731.920	24.15	21.43	4.20	30.00	19.78	46.00	-26.22	QP

Test channel:	Lowest	Polarization:	Vertical



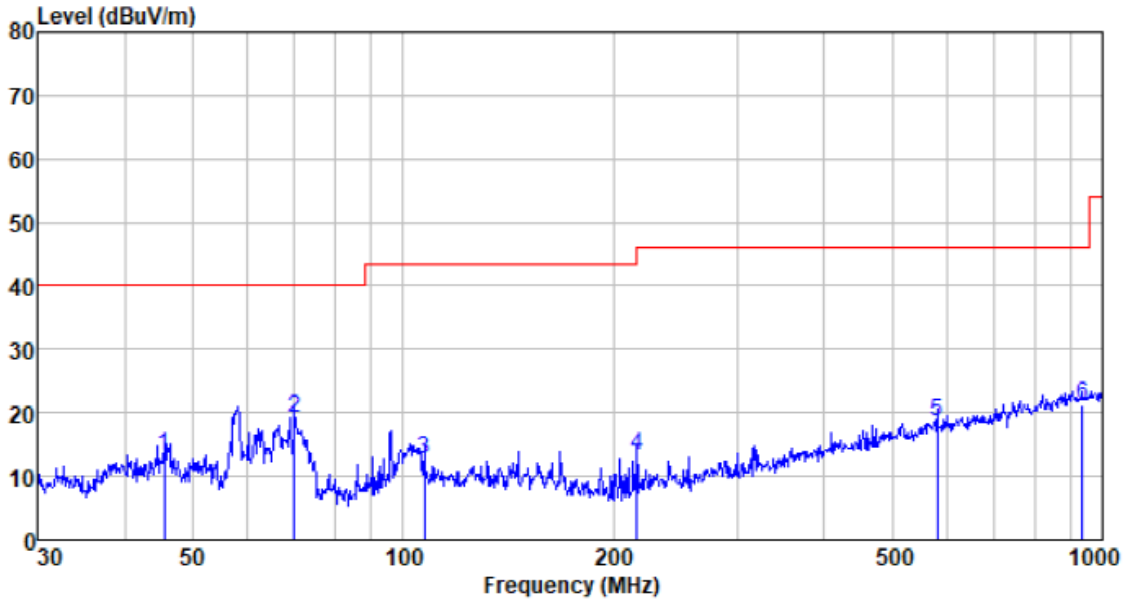
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
39.437	26.26	13.42	0.65	30.00	10.33	40.00	-29.67	QP
104.170	32.96	10.04	1.23	30.00	14.23	43.50	-29.27	QP
157.559	26.31	12.58	1.62	30.00	10.51	43.50	-32.99	QP
315.481	26.09	12.98	2.44	30.00	11.51	46.00	-34.49	QP
562.662	23.95	18.70	3.57	30.00	16.22	46.00	-29.78	QP
912.862	22.69	24.01	4.90	30.00	21.60	46.00	-24.40	QP

Test channel:	Middle	Polarization:	Horizontal



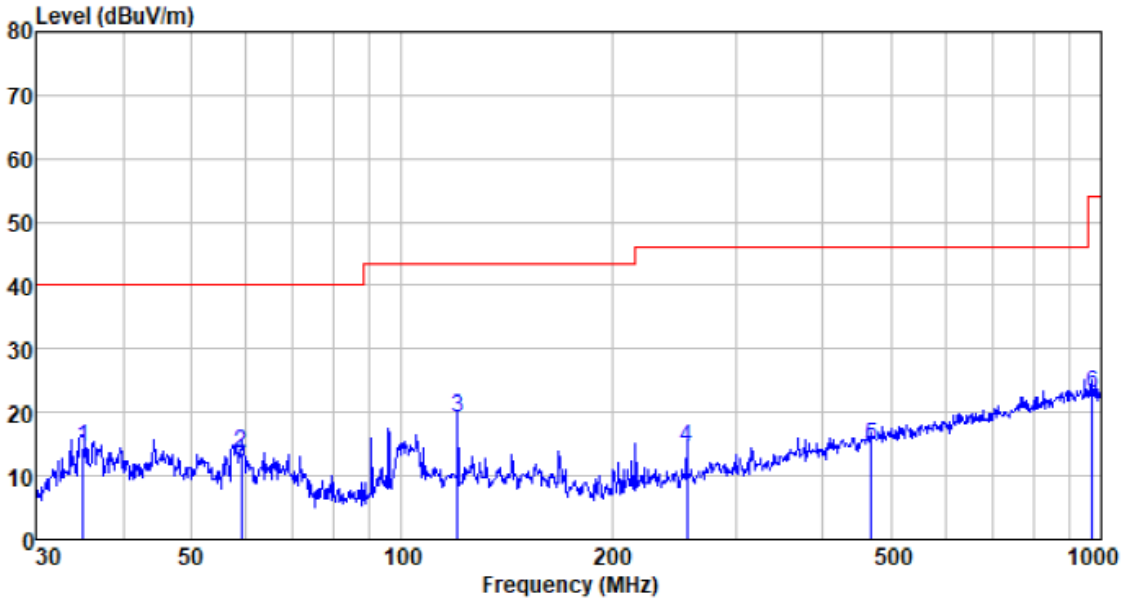
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
39.715	26.59	13.46	0.66	30.00	10.71	40.00	-29.29	QP
57.392	26.95	12.75	0.84	30.00	10.54	40.00	-29.46	QP
90.537	34.35	8.66	1.11	30.00	14.12	43.50	-29.38	QP
155.910	26.15	12.56	1.60	30.00	10.31	43.50	-33.19	QP
300.367	26.87	12.41	2.36	30.00	11.64	46.00	-34.36	QP
755.387	25.43	21.88	4.29	30.00	21.60	46.00	-24.40	QP

Test channel:	Middle	Polarization:	Vertical



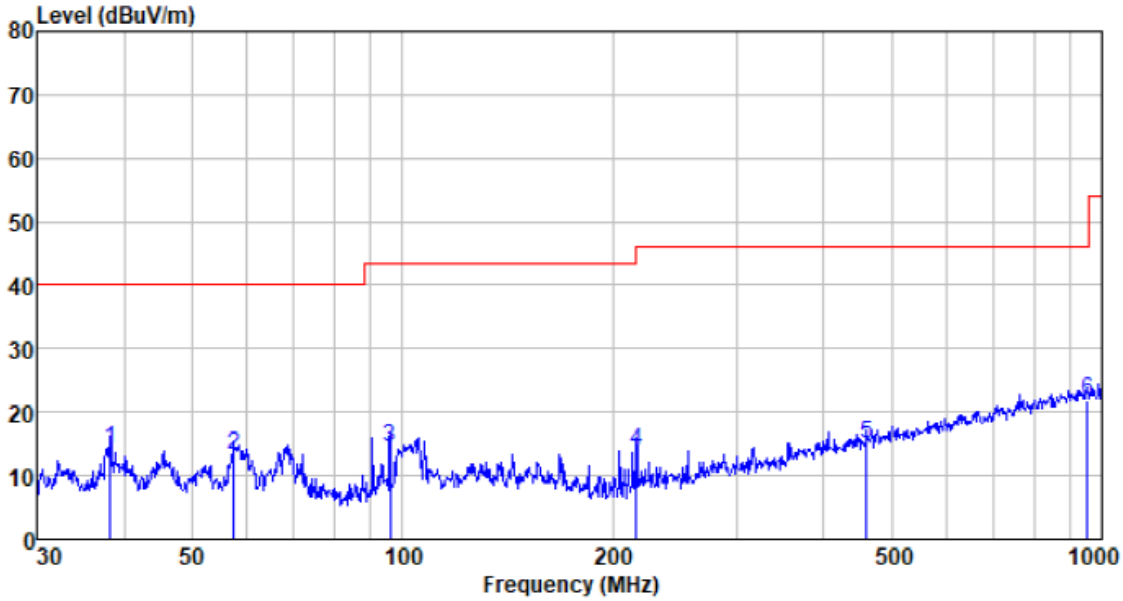
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
45.535	29.24	13.33	0.72	30.00	13.29	40.00	-26.71	QP
69.845	37.79	10.53	0.94	30.00	19.26	40.00	-20.74	QP
107.134	31.28	10.27	1.25	30.00	12.80	43.50	-30.70	QP
216.024	31.14	10.09	1.93	30.00	13.16	46.00	-32.84	QP
580.703	26.07	19.00	3.65	30.00	18.72	46.00	-27.28	QP
935.546	22.19	24.19	4.99	30.00	21.37	46.00	-24.63	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
35.005	31.28	12.70	0.61	30.00	14.59	40.00	-25.41	QP
59.025	30.09	12.65	0.85	30.00	13.59	40.00	-26.41	QP
120.277	36.67	11.22	1.36	30.00	19.25	43.50	-24.25	QP
255.623	31.05	11.36	2.15	30.00	14.56	46.00	-31.44	QP
468.876	24.58	17.05	3.18	30.00	14.81	46.00	-31.19	QP
972.337	23.44	24.49	5.12	30.00	23.05	54.00	-30.95	QP

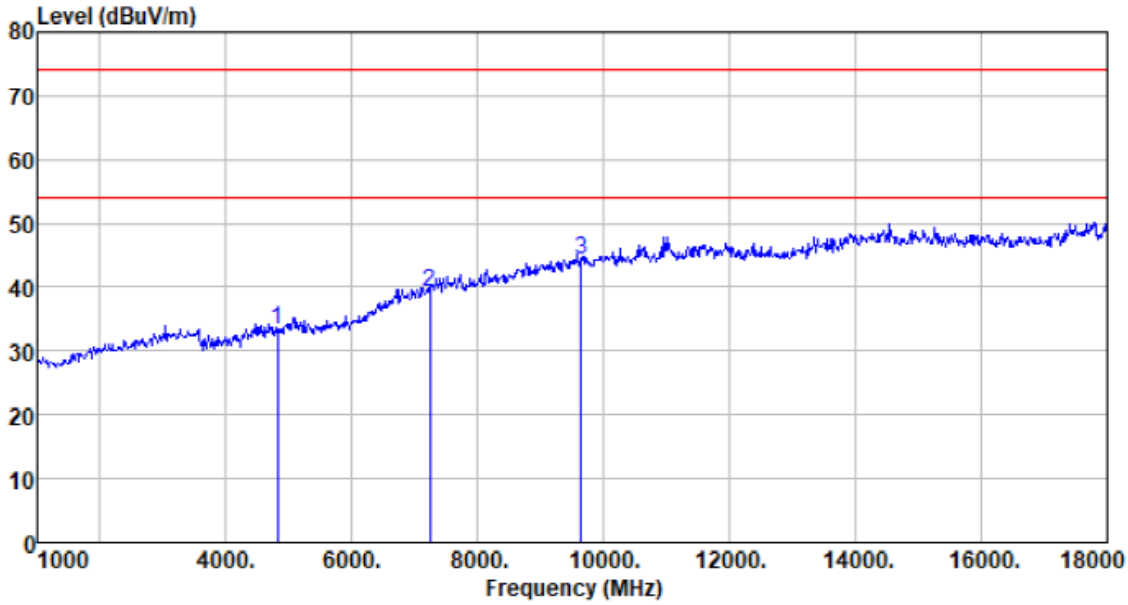
Test channel:	Highest	Polarization:	Vertical



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
38.212	30.31	13.23	0.64	30.00	14.18	40.00	-25.82	QP
57.392	29.83	12.75	0.84	30.00	13.42	40.00	-26.58	QP
96.099	34.14	9.28	1.16	30.00	14.58	43.50	-28.92	QP
216.024	31.97	10.09	1.93	30.00	13.99	46.00	-32.01	QP
460.727	25.10	16.90	3.14	30.00	15.14	46.00	-30.86	QP
952.094	22.62	24.33	5.04	30.00	21.99	46.00	-24.01	QP

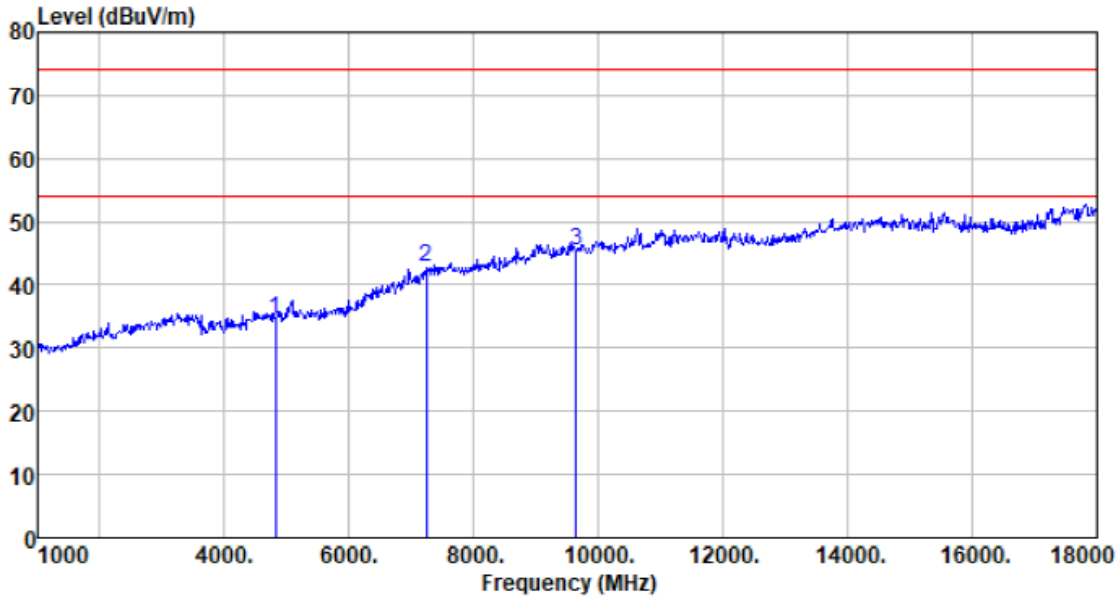
■ **Above 1GHz**

Test channel:	Lowest	Polarization:	Horizontal



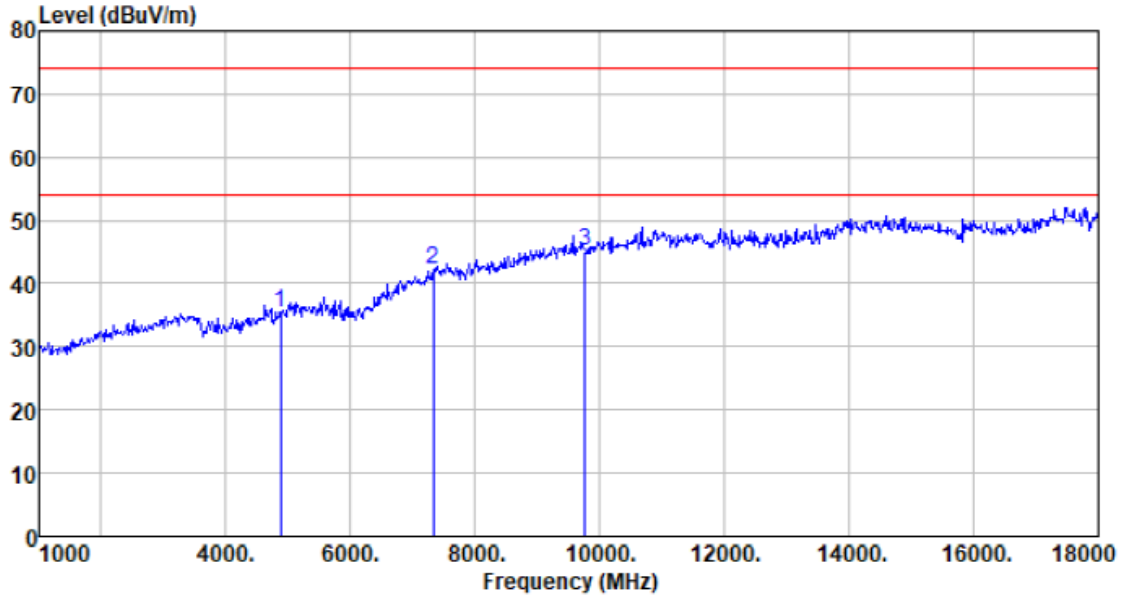
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4822.000	35.86	31.10	4.63	38.36	33.23	74.00	-40.77	Peak
7233.000	35.67	35.97	6.52	38.97	39.19	74.00	-34.81	Peak
9644.000	37.99	37.94	7.98	39.69	44.22	74.00	-29.78	Peak

Test channel:	Lowest	Polarization:	Vertical



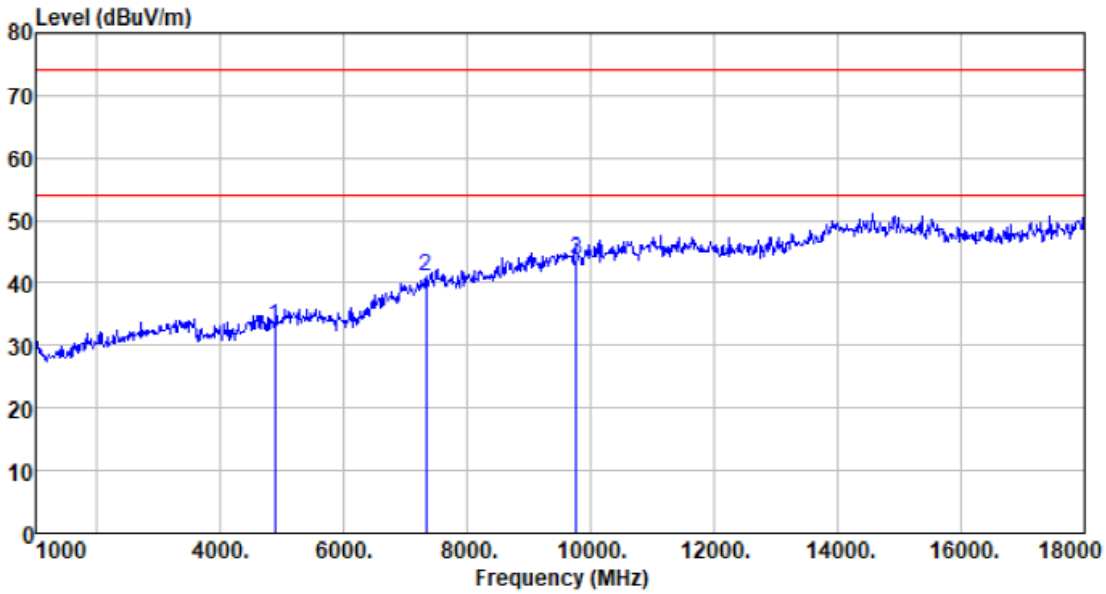
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4822.000	37.09	31.10	4.63	38.36	34.46	74.00	-39.54	Peak
7233.000	39.14	35.97	6.52	38.97	42.66	74.00	-31.34	Peak
9644.000	39.35	37.94	7.98	39.69	45.58	74.00	-28.42	Peak

Test channel:	Middle	Polarization:	Horizontal



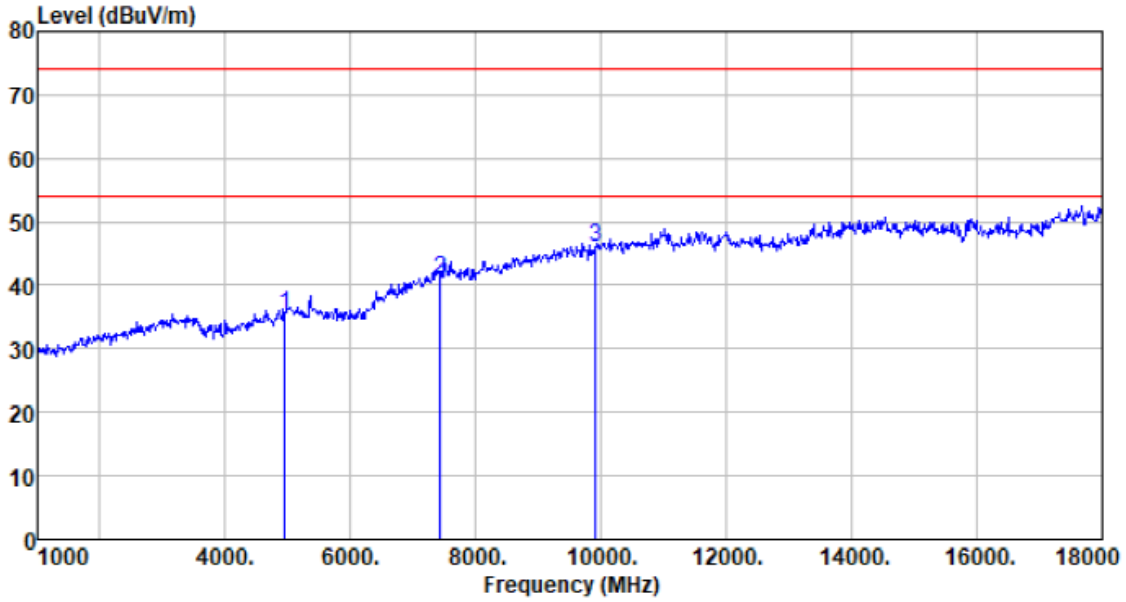
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4884.000	37.81	31.28	4.69	38.38	35.40	74.00	-38.60	Peak
7326.000	38.31	36.15	6.63	39.00	42.09	74.00	-31.91	Peak
9768.000	38.94	38.07	8.03	39.73	45.31	74.00	-28.69	Peak

Test channel:	Middle	Polarization:	Vertical



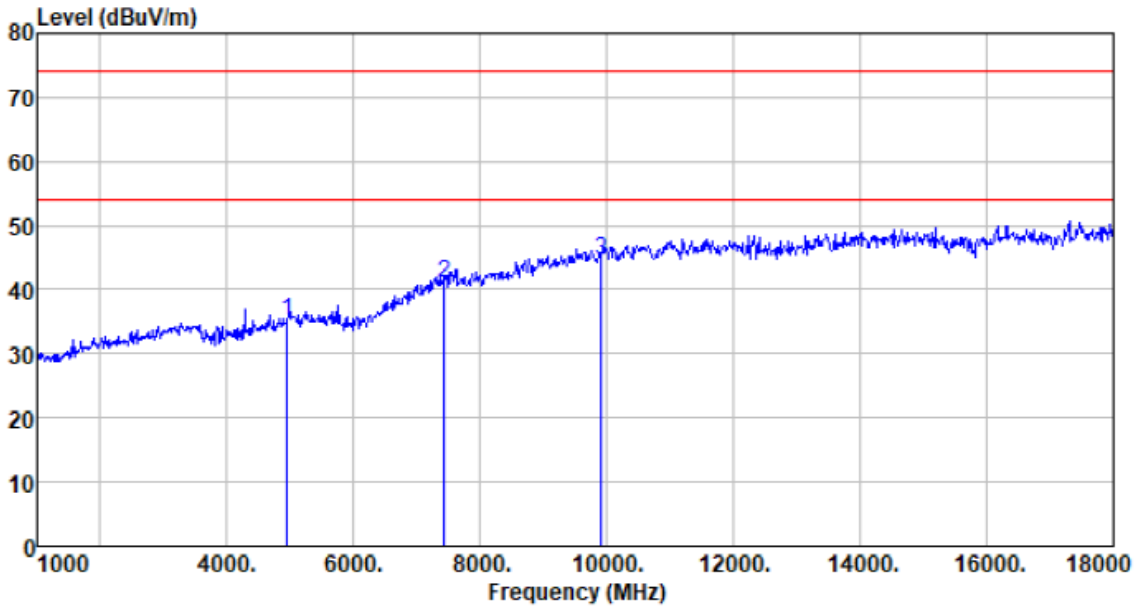
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
4884.000	35.48	31.28	4.69	38.38	33.07	74.00	-40.93	Peak
7326.000	37.27	36.15	6.63	39.00	41.05	74.00	-32.95	Peak
9768.000	37.35	38.07	8.03	39.73	43.72	74.00	-30.28	Peak

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
4952.000	37.46	31.47	4.77	38.39	35.31	74.00	-38.69	Peak
7428.000	37.07	36.36	6.75	39.03	41.15	74.00	-32.85	Peak
9904.000	39.54	38.20	8.09	39.77	46.06	74.00	-27.94	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
4952.000	37.34	31.47	4.77	38.39	35.19	74.00	-38.81	Peak
7428.000	36.81	36.36	6.75	39.03	40.89	74.00	-33.11	Peak
9904.000	38.19	38.20	8.09	39.77	44.71	74.00	-29.29	Peak

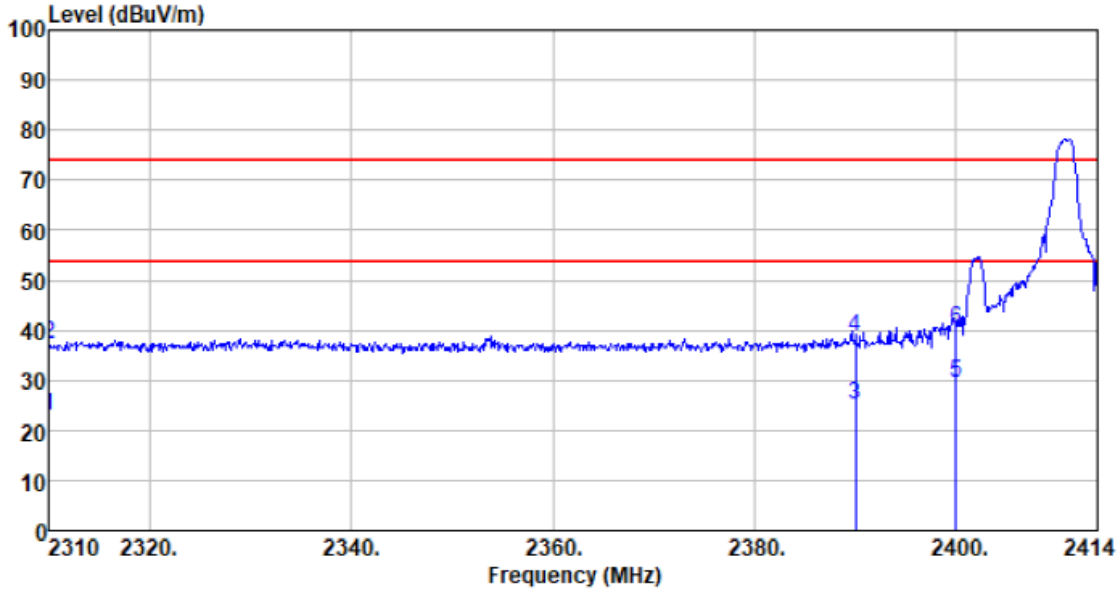
Remarks:

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. *For above 18GHz, no emission found.*

7.2.3 Bandedge emissions

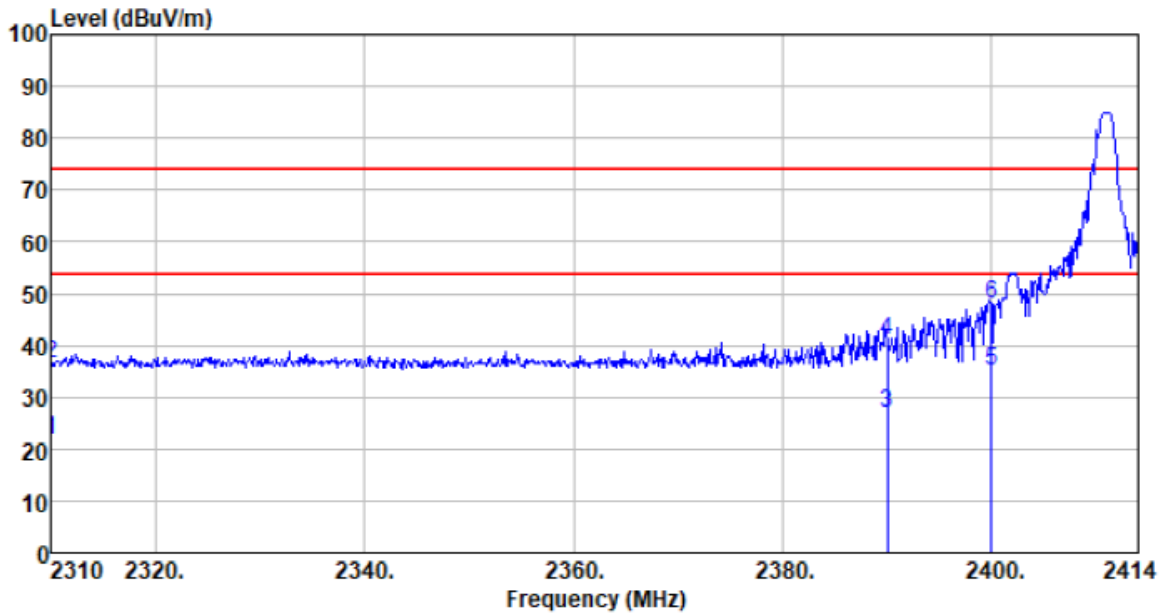
All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest	Polarization:	Horizontal



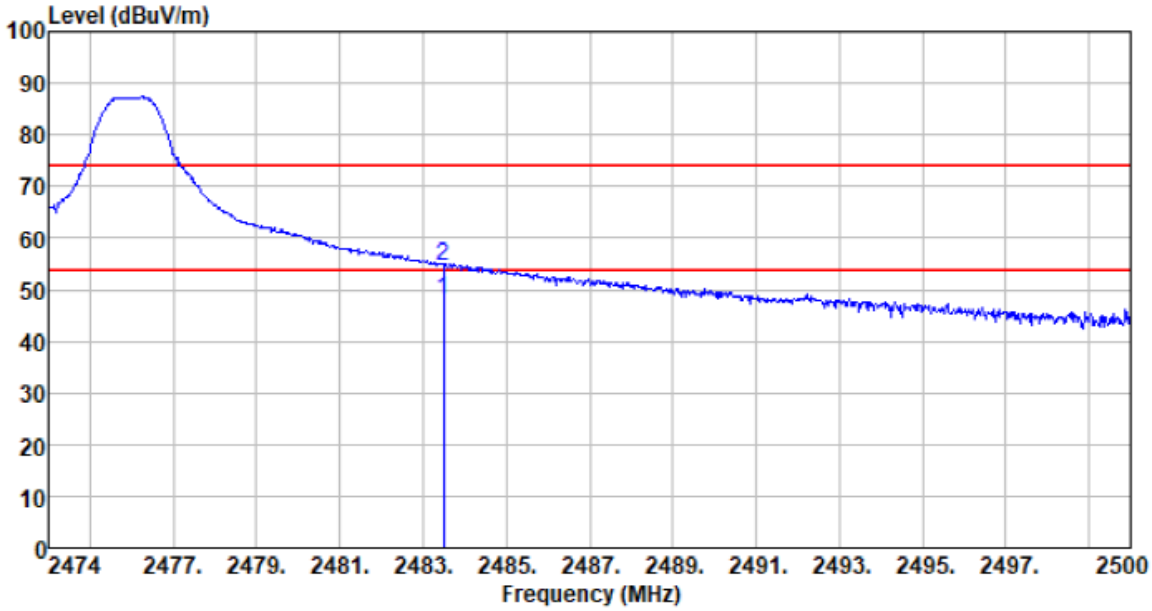
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	31.53	27.17	2.81	38.52	22.99	54.00	-31.01	Average
2310.000	45.77	27.17	2.81	38.52	37.23	74.00	-36.77	Peak
2390.000	33.35	27.27	2.91	38.56	24.97	54.00	-29.03	Average
2390.000	47.28	27.27	2.91	38.56	38.90	74.00	-35.10	Peak
2400.000	37.94	27.28	2.91	38.56	29.57	54.00	-24.43	Average
2400.000	48.71	27.28	2.91	38.56	40.34	74.00	-33.66	Peak

Test channel:	Lowest	Polarization:	Vertical



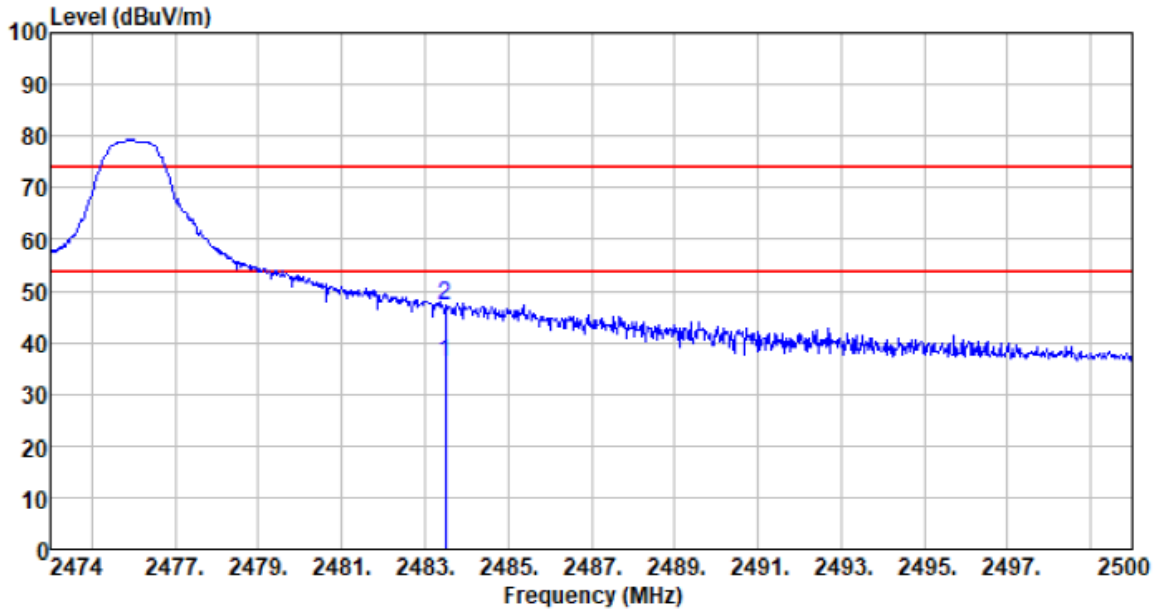
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2310.000	30.16	27.17	2.81	38.52	21.62	54.00	-32.38	Average
2310.000	45.03	27.17	2.81	38.52	36.49	74.00	-37.51	Peak
2390.000	35.23	27.27	2.91	38.56	26.85	54.00	-27.15	Average
2390.000	49.40	27.27	2.91	38.56	41.02	74.00	-32.98	Peak
2400.000	43.47	27.28	2.91	38.56	35.10	54.00	-18.90	Average
2400.000	56.32	27.28	2.91	38.56	47.95	74.00	-26.05	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
2483.500	56.07	27.38	2.99	38.59	47.85	54.00	-6.15	Average
2483.500	62.77	27.38	2.99	38.59	54.55	74.00	-19.45	Peak
2500.000	51.10	27.40	3.01	38.60	42.91	74.00	-31.09	Peak
2500.000	51.10	27.40	3.01	38.60	42.91	74.00	-31.09	Peak

Test channel:	Highest	Polarization:	Vertical

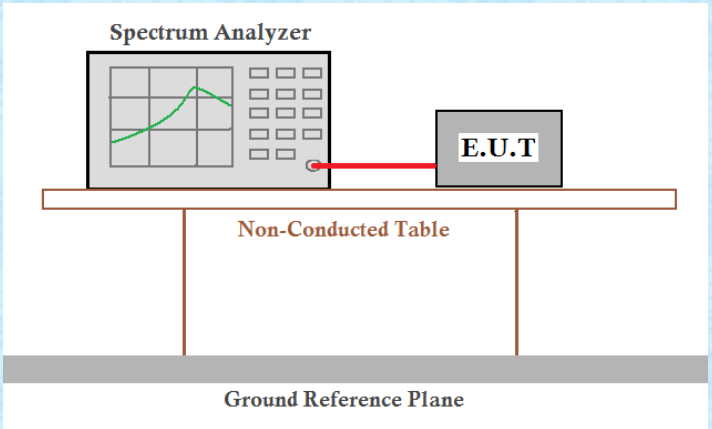


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
2483.500	44.54	27.38	2.99	38.59	36.32	54.00	-17.68	Average
2483.500	55.35	27.38	2.99	38.59	47.13	74.00	-26.87	Peak
2500.000	37.67	27.40	3.01	38.60	29.48	54.00	-24.52	Average
2500.000	46.27	27.40	3.01	38.60	38.08	74.00	-35.92	Peak

Remark:

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

7.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

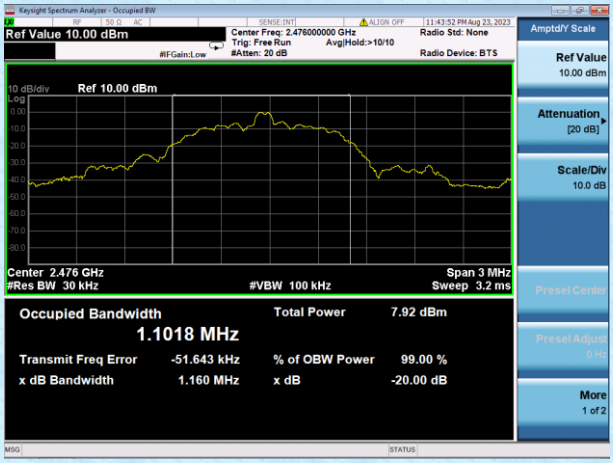
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	1.364	Pass
Middle	1.265	Pass
Highest	1.160	Pass

Test plot as follows:

Lowest channel

Middle channel



Highest channel

8 Test Setup Photo

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

9 EUT Constructional Details

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

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