

# FCC Test Report

**Applicant** : Shenzhen Radiomaster Co.,Ltd

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**Address** : 4F Yangtian Building, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China

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**Product Name** : MT12

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**Report Date** : Dec. 18, 2023

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**Shenzhen Anbotek Compliance Laboratory Limited**



**Shenzhen Anbotek Compliance Laboratory Limited**

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Code: AB-RF-05-b



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# TEST REPORT

Applicant : Shenzhen Radiomaster Co.,Ltd  
Manufacturer : Shenzhen Radiomaster Co.,Ltd  
Product Name : MT12  
Test Model No. : MT12 4IN1  
Reference Model No. : N/A  
Trade Mark : Radiomaster  
Rating(s) : Input: DC 6.6-8.4V  
**Test Standard(s) : FCC Part15 Subpart C, Section 15.247**  
**Test Method(s) : ANSI C63.10: 2020**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC Part 15 Subpart C requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of receipt

Aug. 29, 2023

Date of Test

Aug. 29~Dec. 08, 2023

Prepared by

*Ella Liang*

(Ella Liang)

Approved & Authorized Signer

*Edward Pan*

(Edward Pan)



**Revision History**

Report Version	Description	Issued Date
R00	Original Issue.	Dec. 18, 2023



## 1. General Information

### 1.1. Client Information

Applicant	:	Shenzhen Radiomaster Co.,Ltd
Address	:	4F Yangtian Building, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Manufacturer	:	Shenzhen Radiomaster Co.,Ltd
Address	:	4F Yangtian Building, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Factory	:	Shenzhen Radiomaster Co.,Ltd
Address	:	4F Yangtian Building, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China

### 1.2. Description of Device (EUT)

Product Name	:	MT12
Test Model No.	:	MT12 4IN1
Reference Model No.	:	N/A
Trade Mark	:	Radiomaster
Test Power Supply	:	AC 120V/60Hz from Adapter , DC 4.2V battery
Test Sample No.	:	1-2-1(Normal Sample), 1-2-2(Engineering Sample)
Adapter	:	N/A

#### RF Specification (module: 24L01-BUGSMINI)

Operation Mode	:	<input type="checkbox"/> DSSS <input checked="" type="checkbox"/> FHSS
Operation Frequency	:	2418~2459.2 MHz
Number of Channel	:	15 Channels
Modulation Type	:	GFSK
Antenna Type	:	Copper tube antenna
Antenna Gain(Peak)	:	2.02dBi



**RF Specification (module: 6936-MLINK)**Operation Mode :  DSSS  FHSS

Operation Frequency : 2403~2479 MHz

Number of Channel : 39 Channels

Modulation Type : GFSK

Antenna Type : Copper tube antenna

Antenna Gain(Peak) : 2.02dBi

**RF Specification (module: A7105-FLYSKY)**Operation Mode :  DSSS  FHSS

Operation Frequency : 2403.5~2473 MHz

Number of Channel : 16 Channels

Modulation Type : GFSK

Antenna Type : Copper tube antenna

Antenna Gain(Peak) : 2.02dBi

**RF Specification (module: CC2500-D8)**Operation Mode :  DSSS  FHSS

Operation Frequency : 2403.94~2472.94 MHz

Number of Channel : 47 Channels

Modulation Type : GFSK

Antenna Type : Copper tube antenna

Antenna Gain(Peak) : 2.02dBi

**Remark:** 1) All of the RF specification are provided by customer. 2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.



### 1.3. Auxiliary Equipment Used During Test

Description	Rating(s)
/	/

### 1.4. Description of Test Configuration

Module: 24L01-BUGSMINI									
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2418.00	4	2426.00	7	2435.20	10	2444.20	13	2452.00
2	2420.00	5	2427.80	8	2436.00	11	2447.40	14	2456.00
3	2423.00	6	2432.50	9	2439.80	12	2450.00	15	2459.20

Module: 6936-MLINK									
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2403.00	9	2419.00	17	2435.00	25	2451.00	33	2467.00
2	2405.00	10	2421.00	18	2437.00	26	2453.00	34	2469.00
3	2407.00	11	2423.00	19	2439.00	27	2455.00	35	2471.00
4	2409.00	12	2425.00	20	2441.00	28	2457.00	36	2473.00
5	2411.00	13	2427.00	21	2443.00	29	2459.00	37	2475.00
6	2413.00	14	2429.00	22	2445.00	30	2461.00	38	2477.00
7	2415.00	15	2431.00	23	2447.00	31	2463.00	39	2479.00
8	2417.00	16	2433.00	24	2449.00	32	2465.00	40	/

Module: A7105-FLYSKY									
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2403.50	5	2423.00	9	2443.00	13	2458.00		
2	2408.00	6	2428.00	10	2438.00	14	2463.00		
3	2413.00	7	2433.00	11	2488.00	15	2468.00		
4	2418.00	8	2438.00	12	2453.00	16	2473.00		





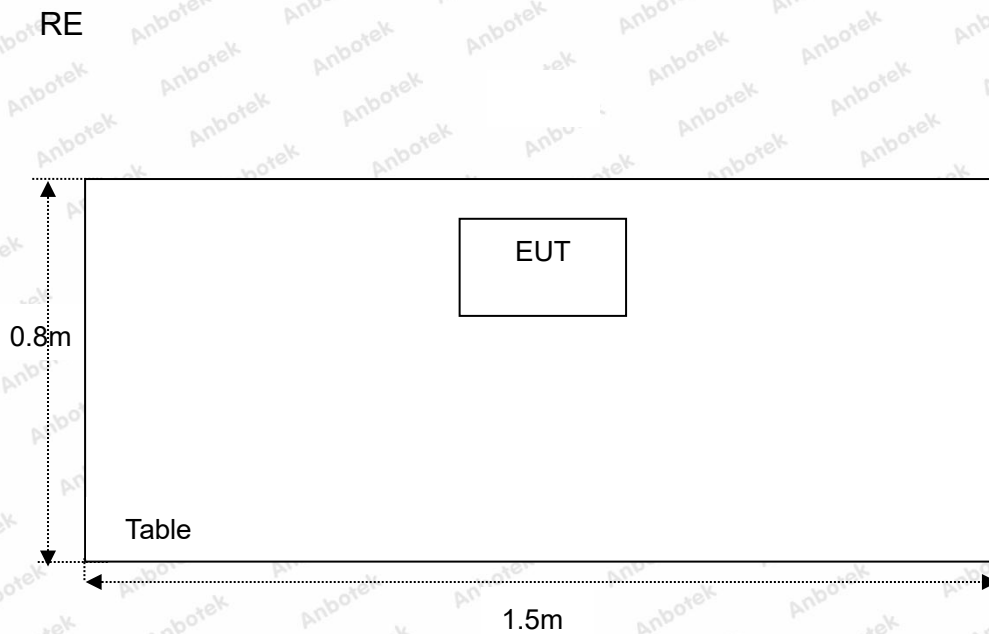
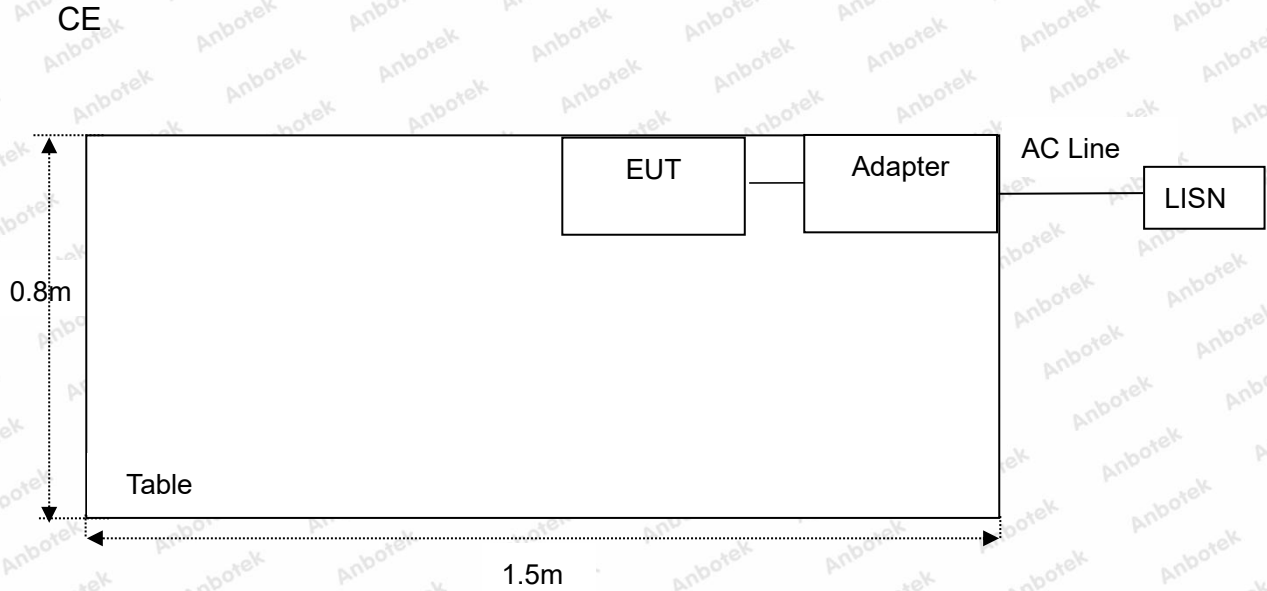
Module: CC2500-D8									
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)
1	2403.94	11	2418.94	21	2433.94	31	2448.94	41	2463.94
2	2405.44	12	2420.44	22	2435.44	32	2450.44	42	2465.44
3	2406.94	13	2421.94	23	2436.94	33	2451.94	43	2466.94
4	2408.44	14	2423.44	24	2438.44	34	2453.44	44	2468.44
5	2409.94	15	2424.94	25	2439.94	35	2454.94	45	2469.94
6	2411.44	16	2426.44	26	2441.44	36	2456.44	46	2471.44
7	2412.94	17	2427.94	27	2442.94	37	2457.94	47	2472.94
8	2414.44	18	2429.44	28	2444.44	38	2459.44		
9	2415.94	19	2430.94	29	2445.94	39	2460.94		
10	2417.44	20	2432.44	30	2447.44	40	2462.44		

**Note:**

1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.



## 1.5. Description Of Test Setup



### 1.6. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Oct. 12, 2023	1 Year
2.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul. 05, 2023	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 12, 2023	1 Year
4.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 12, 2023	1 Year
5.	MXA Spectrum Analysis	Agilent	N9020A	MY51170037	Oct. 12, 2023	1 Year
6.	EMI Preamplifier	SKET Electronic	LNPA-0118G -45	SKET-PA-002	Oct. 12, 2023	1 Year
7.	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	Oct. 16, 2022	3 Year
8.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	345	Oct. 23, 2022	3 Year
9.	Loop Antenna	Schwarzbeck	FMZB1519B	00053	Oct. 12, 2023	1 Year
10.	Horn Antenna	A-INFO	LB-180400- KF	J211060628	Oct. 12, 2023	1 Year
11.	Pre-amplifier	SONOMA	310N	186860	Oct. 12, 2023	1 Year
12.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
13.	MXA Spectrum Analysis	KEYSIGHT	N9020A	MY53280032	Oct. 12, 2023	1 Year
14.	MXG RF Vector Signal Generator	Agilent	N5182A	MY48180656	Oct. 12, 2023	1 Year
15.	Signal Generator	Agilent	E4421B	MY41000743	Oct. 12, 2023	1 Year
16.	DC Power Supply	IVYTECH	IV3605	1804D360510	Oct. 20, 2023	1 Year
17.	Constant Temperature Humidity Chamber	ZHONGJIAN	ZJ-KHWS80 B	N/A	Oct. 16, 2023	1 Year
18.	Spectrum Analyzer	Rohde & Schwarz	FSV40-N	101792	May. 26, 2023	1 Year



### 1.7. Measurement Uncertainty

Parameter	Uncertainty
Conducted emissions (AMN 150kHz~30MHz)	3.8dB
Occupied Bandwidth	925Hz
Conducted Output Power	0.76dB
Conducted Spurious Emission	1.24dB
Radiated spurious emissions (Below 30MHz)	3.53dB
Radiated spurious emissions (30MHz~1GHz)	Horizontal: 3.92dB; Vertical: 4.52dB
Radiated spurious emissions (above 1GHz)	1G-6GHz: 4.78dB; 6G-18GHz: 4.88dB 18G-40GHz: 5.68dB
The measurement uncertainty and decision risk evaluated according to AB/WI-RF-F-032. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

### 1.8. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### FCC-Registration No.: 434132

Shenzhen Anbotek Compliance Laboratory Limited, 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 our files. Registration No. 434132.

#### ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

#### Test Location

Shenzhen Anbotek Compliance Laboratory Limited.

1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.



**1.9. Disclaimer**

1. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
2. The test report is invalid if there is any evidence and/or falsification.
3. The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.
4. This document may not be altered or revised in any way unless done so by Anbotek and all revisions are duly noted in the revisions section.
5. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
6. The authenticity of the information provided by the customer is the responsibility of the customer and the laboratory is not responsible for its authenticity.

The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.



## 2. Summary of Test Results

Standard Section	Test Item	Result
15.203/15.247(c)	Antenna Requirement	PASS
15.207	Conducted Emission	PASS
15.205/15.209	Spurious Emission	PASS
15.247(b)(1)	Conducted Peak Output Power	PASS
15.247(a)(1)	20dB Occupied Bandwidth	PASS
15.247(a)(1)	Carrier Frequencies Separation	PASS
15.247(a)(1)(iii)	Number of Hopping Channel	PASS
15.247(a)(1)(iii)	Dwell Time	PASS
15.247(d)	Band Edge	PASS
<b>Remark:</b> "N/A" is an abbreviation for Not Applicable.		



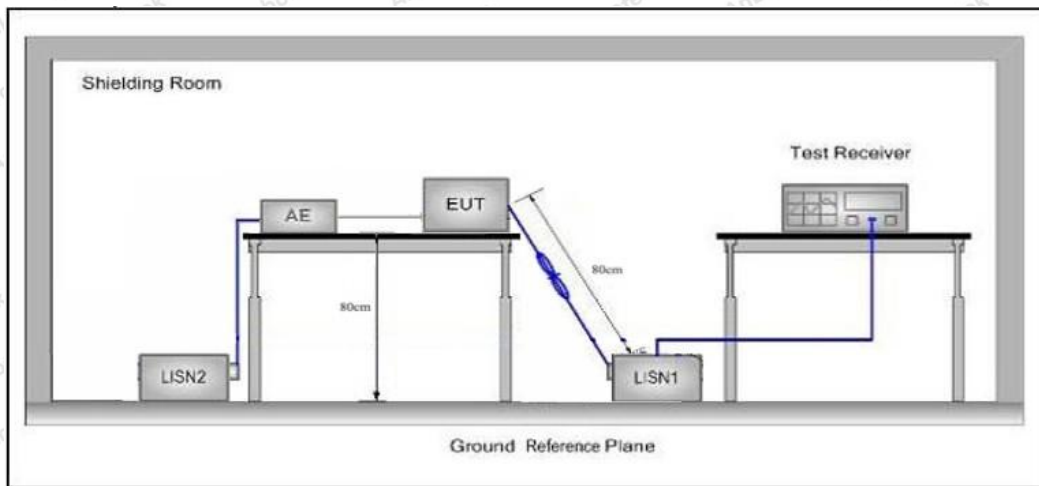
## 3. Conducted Emission Test

### 3.1. Test Standard and Limit

Test Standard	FCC Part15 Section 15.207		
	Frequency	Maximum RF Line Voltage (dBuV)	
		Quasi-peak Level	Average Level
Test Limit	150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
	500kHz~5MHz	56	46
	5MHz~30MHz	60	50

**Remark:** (1) \*Decreasing linearly with logarithm of the frequency.  
 (2) The lower limit shall apply at the transition frequency.

### 3.2. Test Setup



### 3.3. Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.10: 2020 on Conducted Emission Measurement.

The bandwidth of test receiver (ESCI) set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

### 3.4. Test Data

#### PASS

During the test, pre-scan all modes, only the worst case is recorded in the report.

AC conducted emission pre-test at both at AC 120V/60Hz and AC 240V/60Hz modes, recorded worst case AC 120V/60Hz.

Please to see the following pages.



### Conducted Emission Test Data

Module: 24L01-BUGSMINI

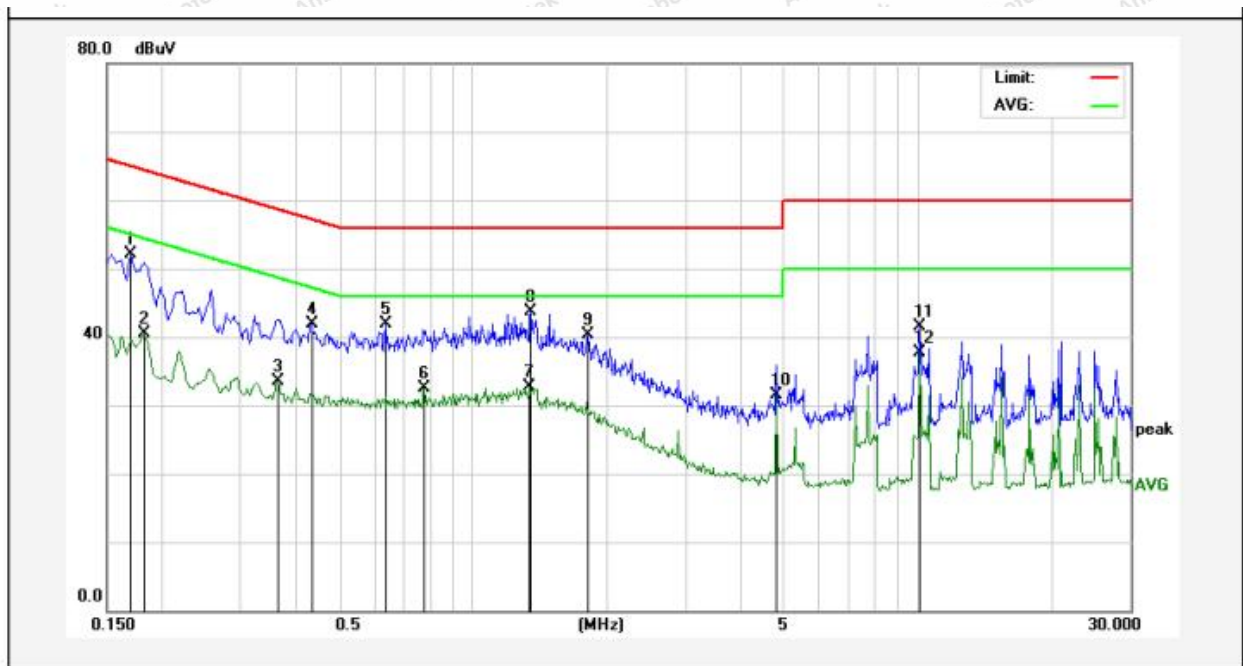
Test Site: 1# Shielded Room

Operating Condition: High CH

Test Specification: AC 120V/60Hz from Adapter

Comment: Live Line

Temp.(°C)/Hum.(%RH): 22.9°C/57%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1700	32.31	19.83	52.14	64.96	-12.82	QP	
2	0.1819	20.58	19.83	40.41	54.39	-13.98	AVG	
3	0.3619	13.69	19.82	33.51	48.68	-15.17	AVG	
4	0.4339	22.17	19.82	41.99	57.18	-15.19	QP	
5	0.6340	21.95	19.86	41.81	56.00	-14.19	QP	
6	0.7780	12.63	19.86	32.49	46.00	-13.51	AVG	
7	1.3380	12.87	19.84	32.71	46.00	-13.29	AVG	
8	1.3460	23.77	19.84	43.61	56.00	-12.39	QP	
9	1.8140	20.38	19.84	40.22	56.00	-15.78	QP	
10	4.8178	11.67	19.85	31.52	46.00	-14.48	AVG	
11	10.1178	21.57	19.98	41.55	60.00	-18.45	QP	
12	10.1178	17.69	19.98	37.67	50.00	-12.33	AVG	

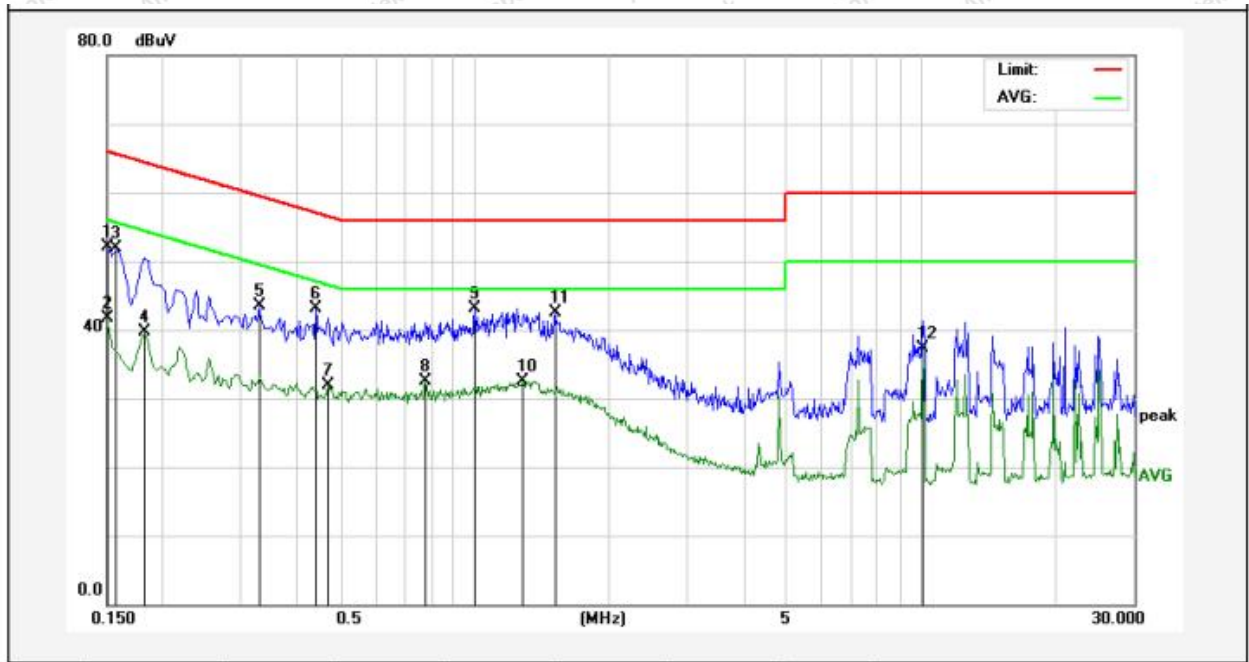




### Conducted Emission Test Data

**Module: 24L01-BUGSMINI**

Test Site: 1# Shielded Room  
 Operating Condition: High CH  
 Test Specification: AC 120V/60Hz from Adapter  
 Comment: Neutral Line  
 Temp.(°C)/Hum.(%RH): 22.9°C/57%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1499	32.22	19.82	52.04	66.00	-13.96	QP	
2	0.1499	21.80	19.82	41.62	56.00	-14.38	AVG	
3	0.1580	32.02	19.83	51.85	65.56	-13.71	QP	
4	0.1819	19.88	19.83	39.71	54.39	-14.68	AVG	
5	0.3300	23.69	19.82	43.51	59.45	-15.94	QP	
6	0.4420	23.25	19.83	43.08	57.02	-13.94	QP	
7	0.4700	12.14	19.84	31.98	46.51	-14.53	AVG	
8	0.7780	12.63	19.86	32.49	46.00	-13.51	AVG	
9	1.0020	23.25	19.85	43.10	56.00	-12.90	QP	
10	1.2780	12.66	19.84	32.50	46.00	-13.50	AVG	
11	1.5140	22.71	19.84	42.55	56.00	-13.45	QP	
12	10.1219	17.34	19.98	37.32	50.00	-12.68	AVG	



### Conducted Emission Test Data

**Module: 6936-MLINK**

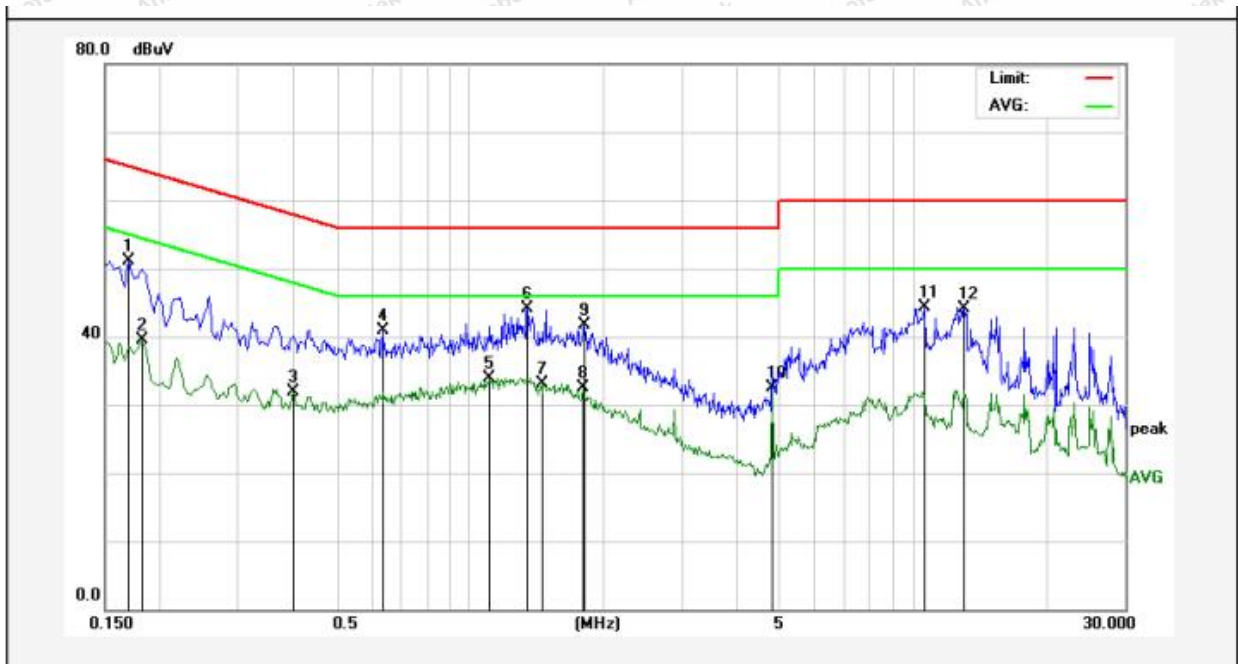
Test Site: 1# Shielded Room

Operating Condition: Low CH

Test Specification: AC 120V/60Hz from Adapter

Comment: Live Line

Temp.(°C)/Hum.(%RH): 22.9°C/57%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1700	31.31	19.83	51.14	64.96	-13.82	QP	
2	0.1819	19.58	19.83	39.41	54.39	-14.98	AVG	
3	0.3980	12.15	19.81	31.96	47.89	-15.93	AVG	
4	0.6340	20.95	19.86	40.81	56.00	-15.19	QP	
5	1.1100	14.13	19.85	33.98	46.00	-12.02	AVG	
6	1.3460	24.27	19.84	44.11	56.00	-11.89	QP	
7	1.4617	13.28	19.84	33.12	46.00	-12.88	AVG	
8	1.7980	12.64	19.84	32.48	46.00	-13.52	AVG	
9	1.8140	21.88	19.84	41.72	56.00	-14.28	QP	
10	4.8178	12.67	19.85	32.52	46.00	-13.48	AVG	
11	10.5975	24.33	20.01	44.34	60.00	-15.66	QP	
12	13.0099	23.92	20.10	44.02	60.00	-15.98	QP	



### Conducted Emission Test Data

**Module: 6936-MLINK**

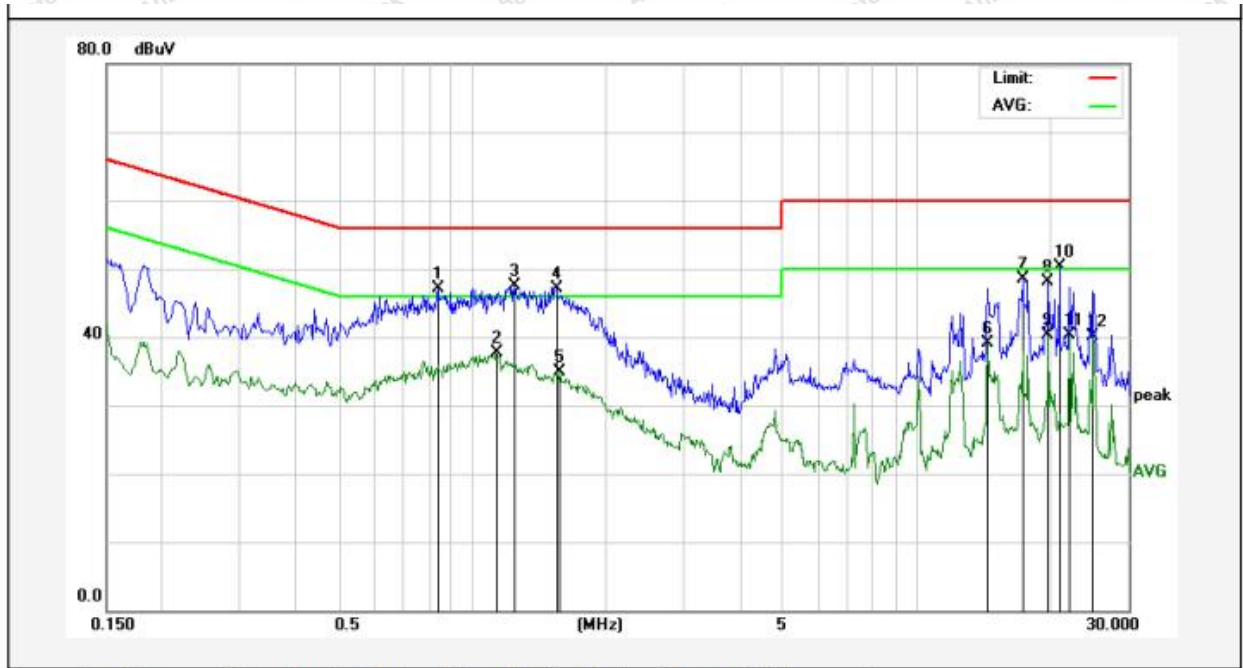
Test Site: 1# Shielded Room

Operating Condition: Low CH

Test Specification: AC 120V/60Hz from Adapter

Comment: Neutral Line

Temp.(°C)/Hum.(%RH): 22.9°C/57%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.8377	27.30	19.86	47.16	56.00	-8.84	QP	
2	1.1338	17.84	19.85	37.69	46.00	-8.31	AVG	
3	1.2459	27.75	19.84	47.59	56.00	-8.41	QP	
4	1.5500	27.34	19.84	47.18	56.00	-8.82	QP	
5	1.5700	14.99	19.84	34.83	46.00	-11.17	AVG	
6	14.4618	18.97	20.15	39.12	50.00	-10.88	AVG	
7	17.3415	28.22	20.23	48.45	60.00	-11.55	QP	
8	19.7539	27.74	20.30	48.04	60.00	-11.96	QP	
9	19.7539	20.02	20.30	40.32	50.00	-9.68	AVG	
10	20.9939	29.87	20.46	50.33	60.00	-9.67	QP	
11	22.1539	19.55	20.66	40.21	50.00	-9.79	AVG	
12	25.0500	18.99	21.13	40.12	50.00	-9.88	AVG	



### Conducted Emission Test Data

**Module: A7105-FLYSKY**

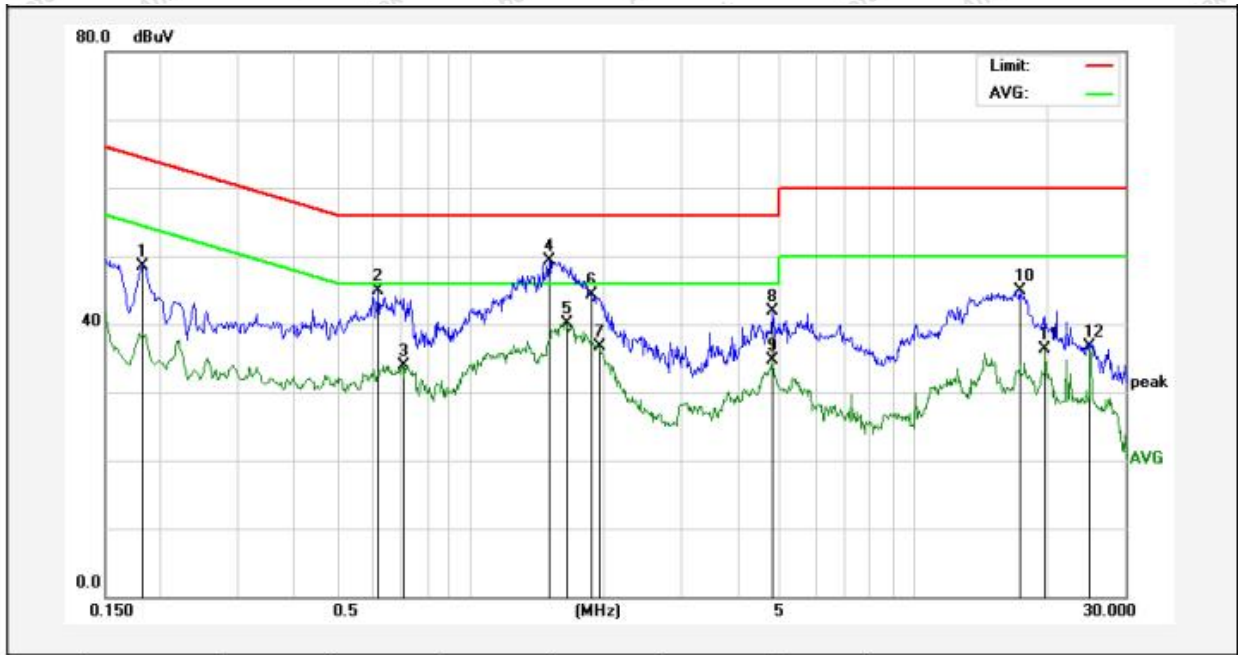
Test Site: 1# Shielded Room

Operating Condition: Low CH

Test Specification: AC 120V/60Hz from Adapter

Comment: Live Line

Temp.(°C)/Hum.(%RH): 22.9°C/57%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1819	28.63	19.83	48.46	64.39	-15.93	QP	
2	0.6179	25.04	19.86	44.90	56.00	-11.10	QP	
3	0.7017	14.11	19.87	33.98	46.00	-12.02	AVG	
4	1.5100	29.42	19.83	49.25	56.00	-6.75	QP	
5	1.6457	20.35	19.84	40.19	46.00	-5.81	AVG	
6	1.8700	24.50	19.83	44.33	56.00	-11.67	QP	
7	1.9457	16.94	19.83	36.77	46.00	-9.23	AVG	
8	4.8219	22.02	19.85	41.87	56.00	-14.13	QP	
9	4.8219	14.92	19.85	34.77	46.00	-11.23	AVG	
10	17.3414	24.72	20.23	44.95	60.00	-15.05	QP	
11	19.7539	16.02	20.30	36.32	50.00	-13.68	AVG	
12	25.0500	15.49	21.13	36.62	50.00	-13.38	AVG	



### Conducted Emission Test Data

**Module: A7105-FLYSKY**

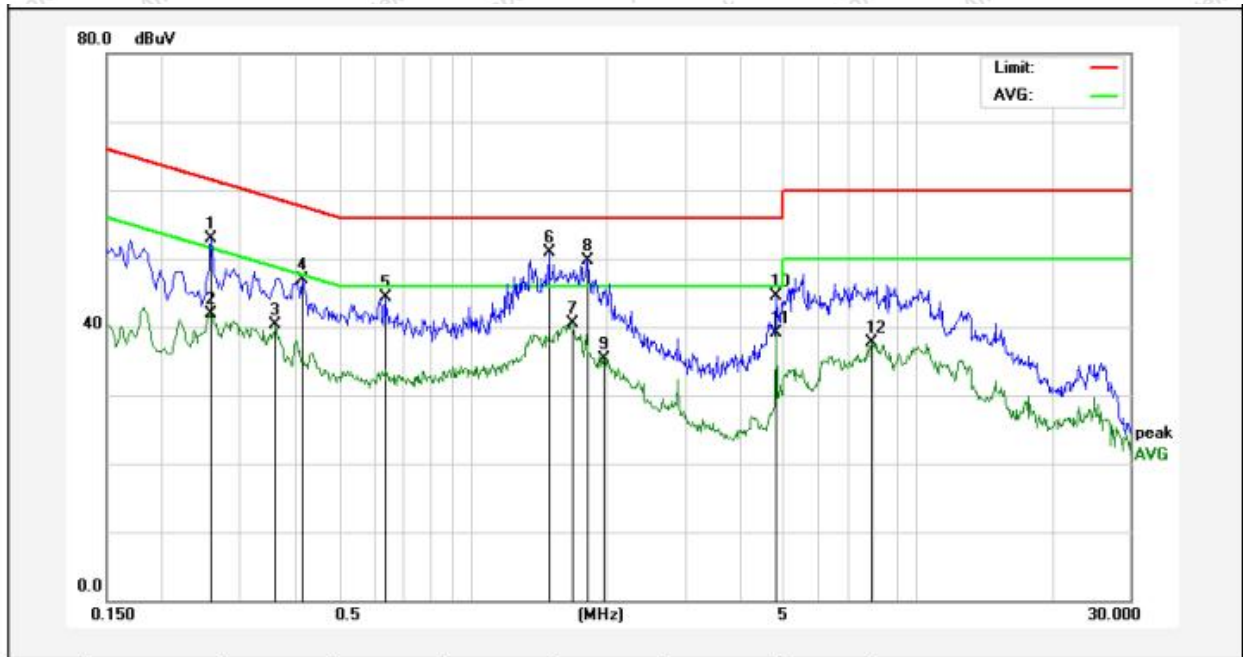
Test Site: 1# Shielded Room

Operating Condition: Low CH

Test Specification: AC 120V/60Hz from Adapter

Comment: Neutral Line

Temp.(°C)/Hum.(%RH): 22.9°C/57%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.2580	33.05	19.83	52.88	61.49	-8.61	QP	
2	0.2580	22.11	19.83	41.94	51.49	-9.55	AVG	
3	0.3593	20.45	19.82	40.27	48.74	-8.47	AVG	
4	0.4138	27.06	19.82	46.88	57.57	-10.69	QP	
5	0.6340	24.45	19.86	44.31	56.00	-11.69	QP	
6	1.4858	31.06	19.84	50.90	56.00	-5.10	QP	
7	1.6695	20.61	19.84	40.45	46.00	-5.55	AVG	
8	1.8140	29.88	19.84	49.72	56.00	-6.28	QP	
9	1.9697	15.48	19.83	35.31	46.00	-10.69	AVG	
10	4.8178	24.56	19.85	44.41	56.00	-11.59	QP	
11	4.8178	19.17	19.85	39.02	46.00	-6.98	AVG	
12	7.8859	17.78	19.90	37.68	50.00	-12.32	AVG	



### Conducted Emission Test Data

**Module: CC2500-D8**

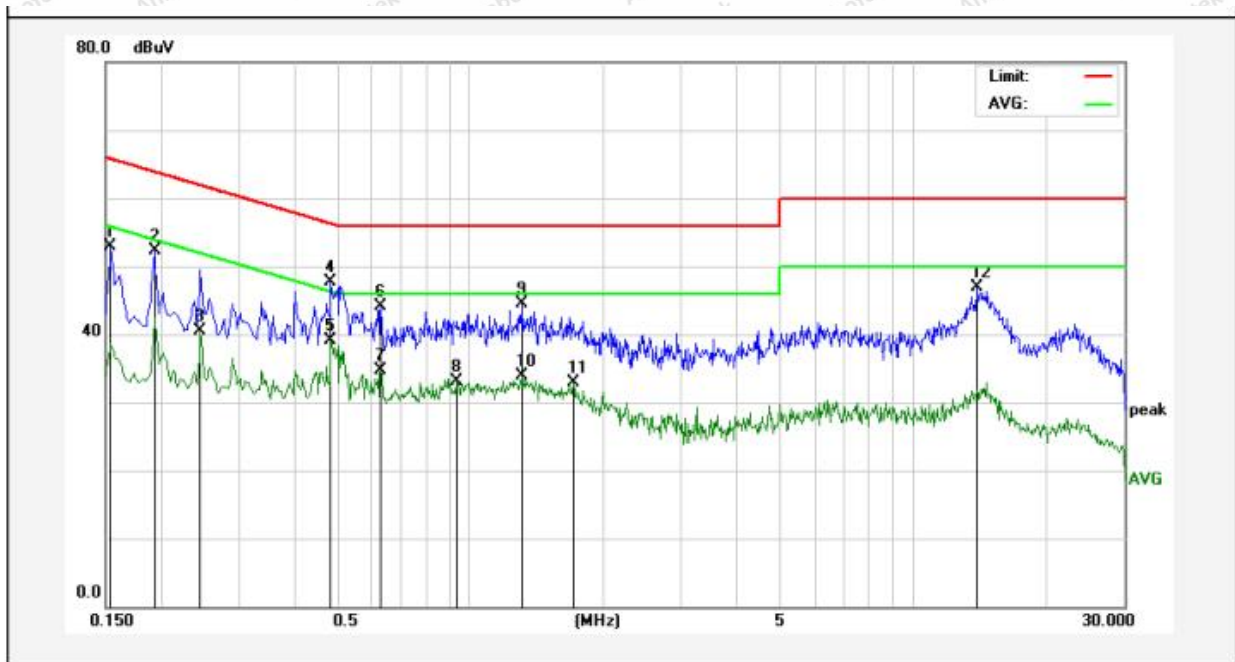
Test Site: 1# Shielded Room

Operating Condition: Low CH

Test Specification: AC 120V/60Hz from Adapter

Comment: Live Line

Temp.(°C)/Hum.(%RH): 22.9°C/57%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1539	33.00	19.83	52.83	65.78	-12.95	QP	
2	0.1940	32.54	19.83	52.37	63.86	-11.49	QP	
3	0.2460	20.75	19.83	40.58	51.89	-11.31	AVG	
4	0.4860	27.85	19.84	47.69	56.24	-8.55	QP	
5	0.4860	19.27	19.84	39.11	46.24	-7.13	AVG	
6	0.6300	24.26	19.86	44.12	56.00	-11.88	QP	
7	0.6300	14.88	19.86	34.74	46.00	-11.26	AVG	
8	0.9300	13.35	19.85	33.20	46.00	-12.80	AVG	
9	1.3099	24.72	19.84	44.56	56.00	-11.44	QP	
10	1.3099	14.14	19.84	33.98	46.00	-12.02	AVG	
11	1.7100	13.08	19.84	32.92	46.00	-13.08	AVG	
12	13.9700	26.69	20.14	46.83	60.00	-13.17	QP	



### Conducted Emission Test Data

**Module: CC2500-D8**

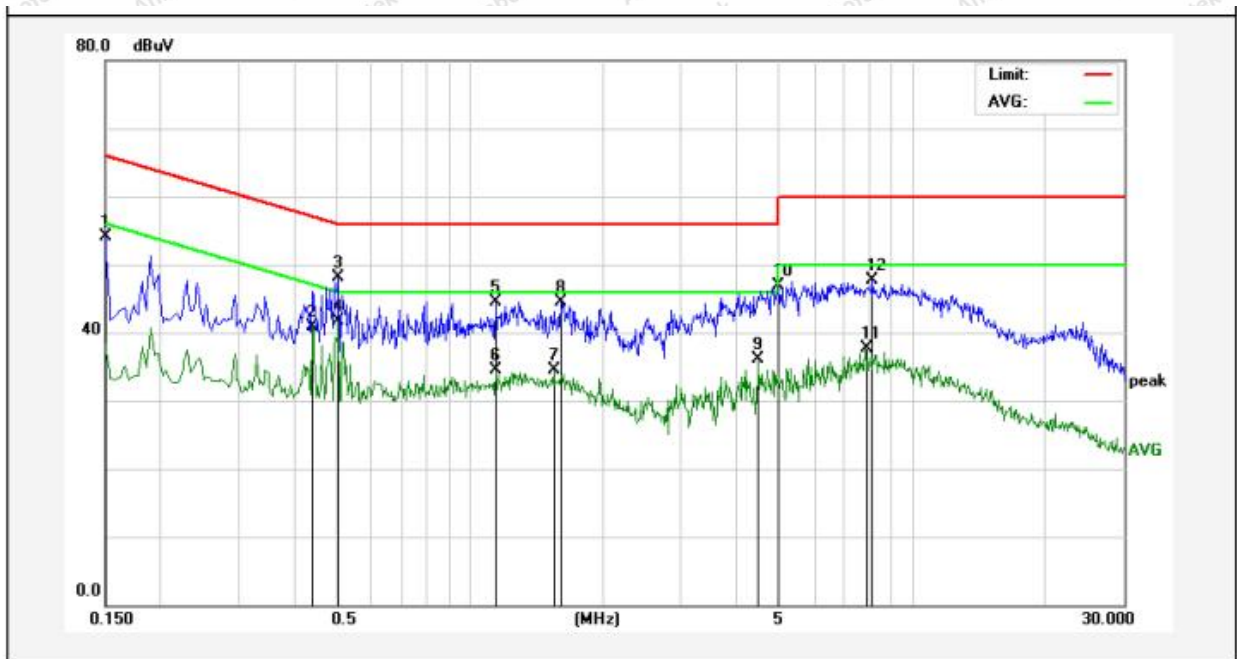
Test Site: 1# Shielded Room

Operating Condition: Low CH

Test Specification: AC 120V/60Hz from Adapter

Comment: Neutral Line

Temp.(°C)/Hum.(%RH): 22.9°C/57%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1500	34.22	19.82	54.04	65.99	-11.95	QP	
2	0.4420	21.17	19.83	41.00	47.02	-6.02	AVG	
3	0.5060	28.16	19.85	48.01	56.00	-7.99	QP	
4	0.5060	21.76	19.85	41.61	46.00	-4.39	AVG	
5	1.1460	24.65	19.85	44.50	56.00	-11.50	QP	
6	1.1460	14.61	19.85	34.46	46.00	-11.54	AVG	
7	1.5460	14.71	19.84	34.55	46.00	-11.45	AVG	
8	1.6100	24.74	19.84	44.58	56.00	-11.42	QP	
9	4.4860	16.29	19.84	36.13	46.00	-9.87	AVG	
10	4.9820	27.03	19.85	46.88	56.00	-9.12	QP	
11	7.8300	17.75	19.90	37.65	50.00	-12.35	AVG	
12	8.1340	27.86	19.91	47.77	60.00	-12.23	QP	



## 4. Radiation Spurious Emission and Band Edge

### 4.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.209 and 15.205				
Test Limit	Frequency (MHz)	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz~0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz~88MHz	100	40.0	Quasi-peak	3
	88MHz~216MHz	150	43.5	Quasi-peak	3
	216MHz~960MHz	200	46.0	Quasi-peak	3
	960MHz~1000MHz	500	54.0	Quasi-peak	3
	Above 1000MHz	500	54.0	Average	3
-		-	74.0	Peak	3

**Remark:**

- (1) The lower limit shall apply at the transition frequency.
- (2) 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

### 4.2. Test Setup

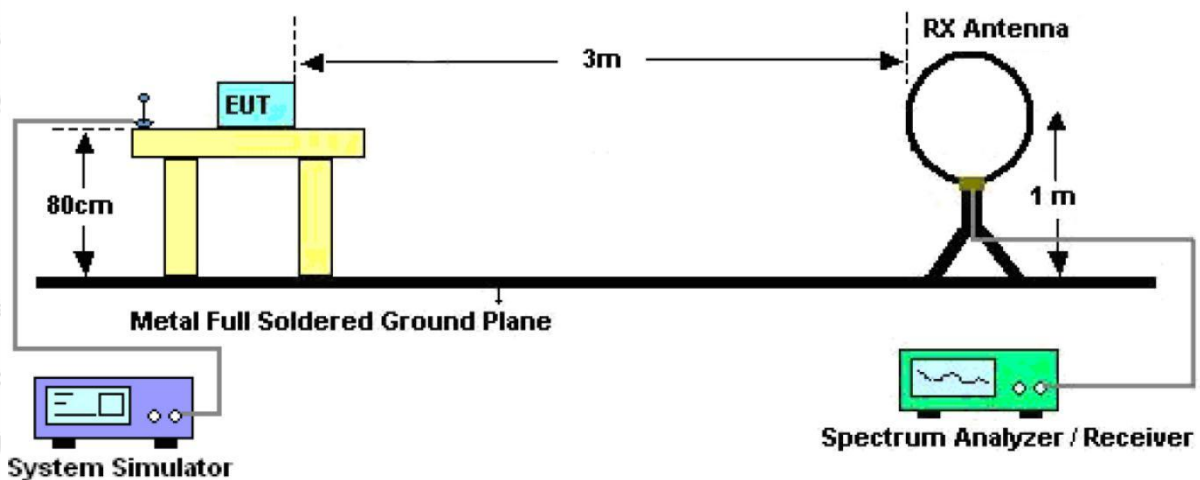


Figure 1. Below 30MHz





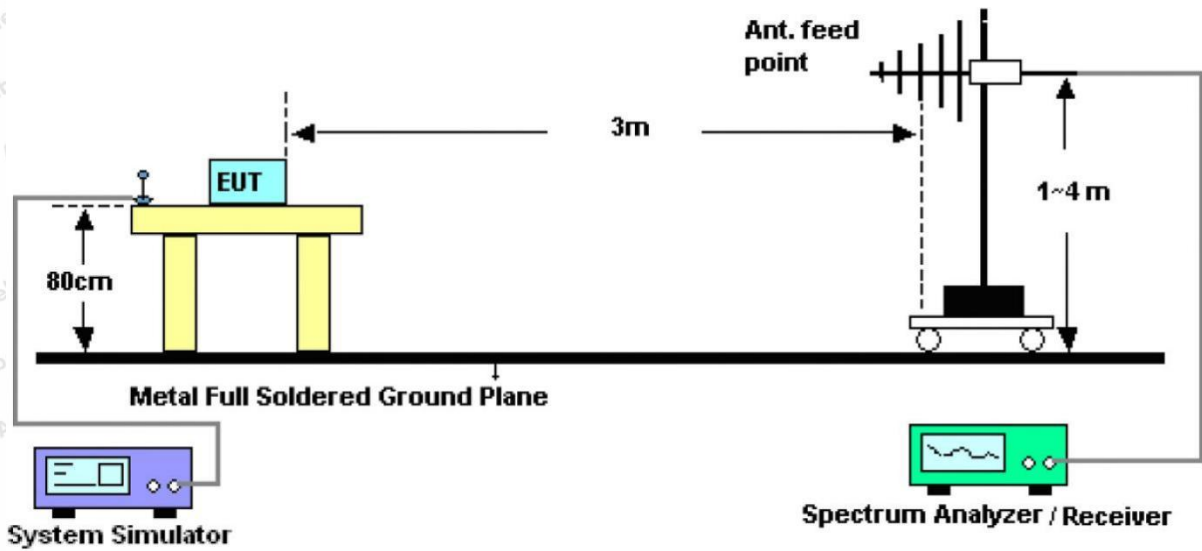


Figure 2. 30MHz to 1GHz

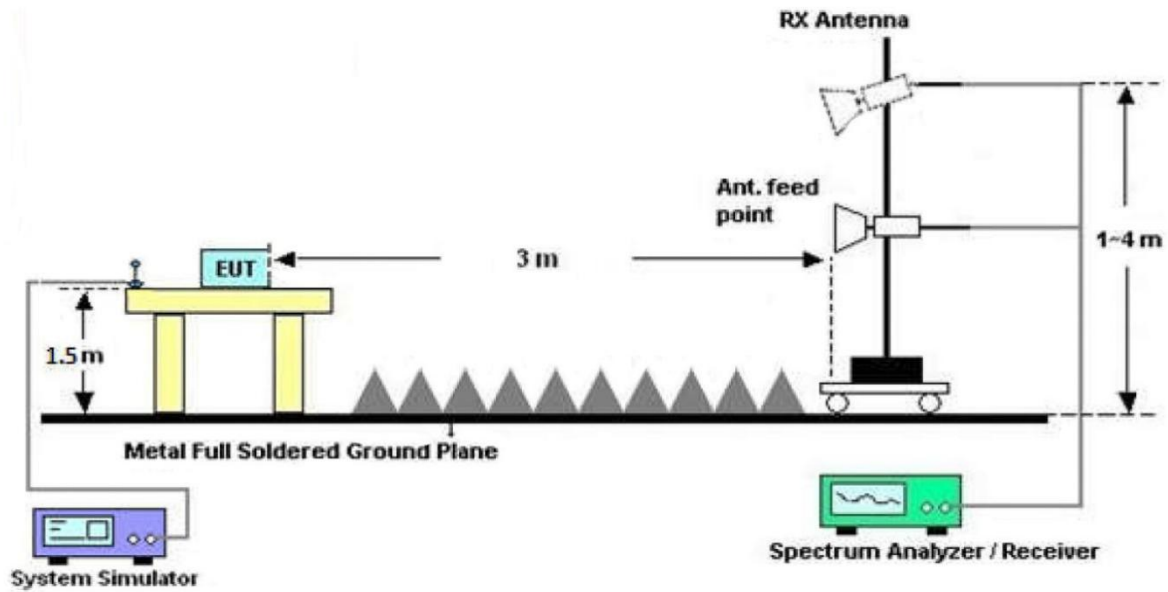


Figure 3. Above 1 GHz

### 4.3. Test Procedure

For below 1GHz: The EUT is placed on a turntable, which is 0.8m above the ground plane.

For above 1GHz: The EUT is placed on a turntable, which is 1.5m above the ground plane.

The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Rotated the EUT through three orthogonal axes to determine the maximum emissions, both horizontal and vertical polarization of the antenna are set on test. The EUT is tested in 9\*6\*6 Chamber. The device is evaluated in xyz orientation.



For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

For 9kHz to 150kHz, Set the spectrum analyzer as:

RBW = 200Hz, VBW = 1kHz, Detector = Quasi-Peak, Trace mode = Max hold, Sweep - auto couple.

For 150kHz to 30MHz, Set the spectrum analyzer as:

RBW = 9kHz, VBW = 30kHz, Detector = Quasi-Peak, Trace mode = Max hold, Sweep - auto couple.

For 30MHz to 1000MHz, Set the spectrum analyzer as:

RBW = 120kHz, VBW = 300kHz, Detector = Quasi-Peak, Trace mode = Max hold, Sweep - auto couple.

For above 1GHz, Set the spectrum analyzer as:

RBW = 1MHz, VBW = 1MHz, Detector = Peak, Trace mode = Max hold, Sweep - auto couple.

For average measurement: use duty cycle correction factor method (DCCF)

Average level = Peak level + DCCF

#### 4.4. Test Data

##### PASS

During the test, Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the X-axis is the worst case.

The test results of 9kHz-30MHz was attenuated more than 20dB below the permissible limits, so the results don't record in the report.

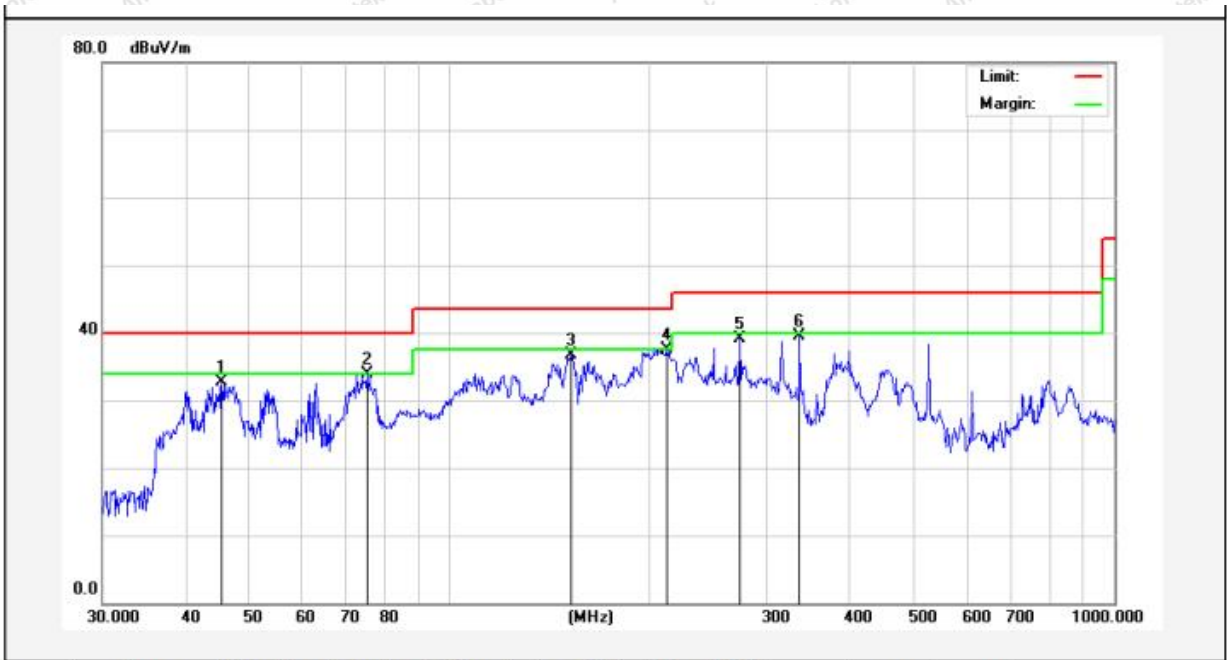
During the test, pre-scan all modes, only the worst case is recorded in the report.



**Test Results (30~1000MHz)**

**Module: 24L01-BUGSMINI**

Test Mode: High CH  
 Power Source: DC 4.2V battery  
 Polarization: Vertical  
 Temp.(°C)/Hum.(%RH): 24.1°C/48%RH



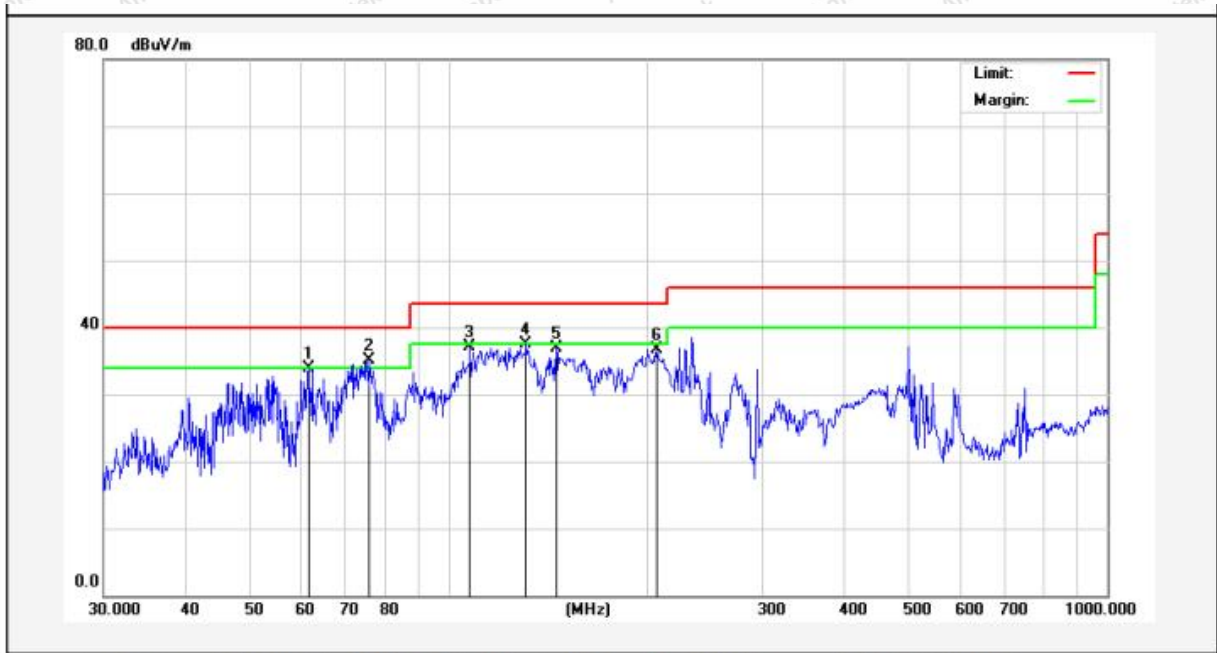
No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	45.3755	47.93	-15.25	32.68	40.00	-7.32	QP			
2	75.1821	55.91	-22.04	33.87	40.00	-6.13	QP			
3	152.1297	59.76	-23.11	36.65	43.50	-6.85	QP			
4	212.2692	59.63	-22.12	37.51	43.50	-5.99	QP			
5	273.2341	58.61	-19.48	39.13	46.00	-6.87	QP			
6	336.0350	55.73	-16.32	39.41	46.00	-6.59	QP			



**Test Results (30~1000MHz)**

**Module: 24L01-BUGSMINI**

Test Mode: High CH  
 Power Source: DC 4.2V battery  
 Polarization: Horizontal  
 Temp.(°C)/Hum.(%RH): 24.1°C/48%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	61.3462	51.97	-17.98	33.99	40.00	-6.01	QP			
2	75.7112	54.82	-19.80	35.02	40.00	-4.98	QP			
3	107.8876	54.85	-17.84	37.01	43.50	-6.49	QP			
4	131.2965	58.97	-21.56	37.41	43.50	-6.09	QP			
5	145.8608	59.12	-22.13	36.99	43.50	-6.51	QP			
6	207.1226	56.09	-19.42	36.67	43.50	-6.83	QP			



**Test Results (30~1000MHz)**

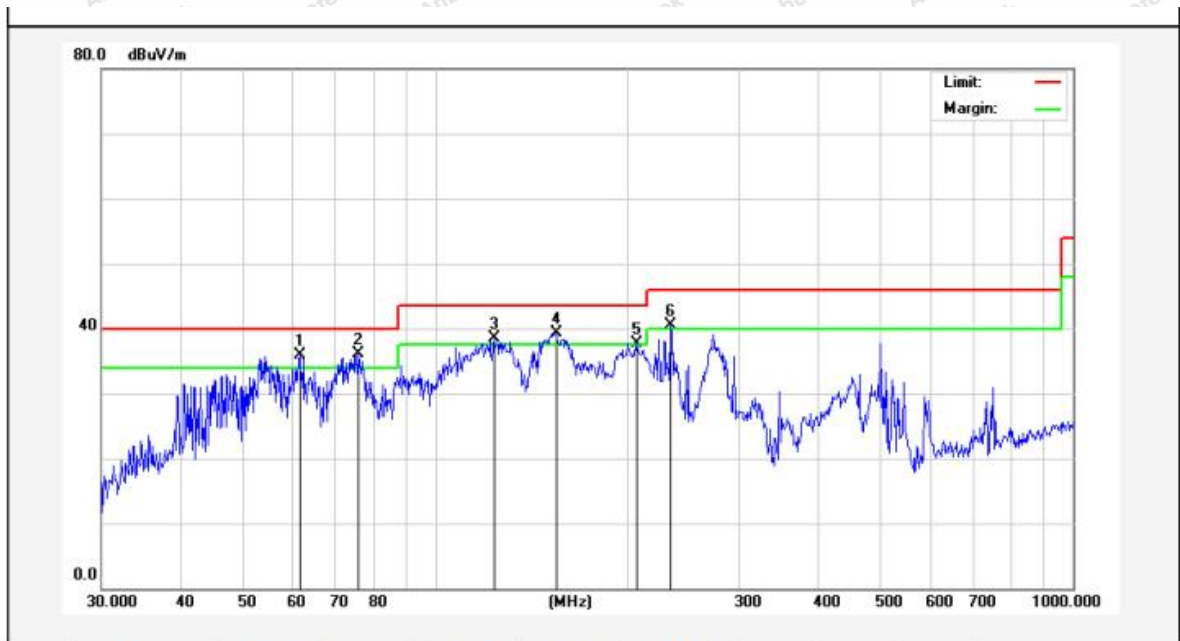
**Module: 6936-MLINK**

Test Mode: Low CH

Power Source: DC 4.2V battery

Polarization: Vertical

Temp.(°C)/Hum.(%RH): 24.1°C/48%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	61.3462	53.97	-17.98	35.99	40.00	-4.01	QP			
2	75.7113	55.82	-19.80	36.02	40.00	-3.98	QP			
3	123.6984	58.99	-20.51	38.48	43.50	-5.02	QP			
4	154.8204	61.18	-21.88	39.30	43.50	-4.20	QP			
5	207.1226	57.09	-19.42	37.67	43.50	-5.83	QP			
6	234.1683	59.04	-18.48	40.56	46.00	-5.44	QP			



**Test Results (30~1000MHz)**

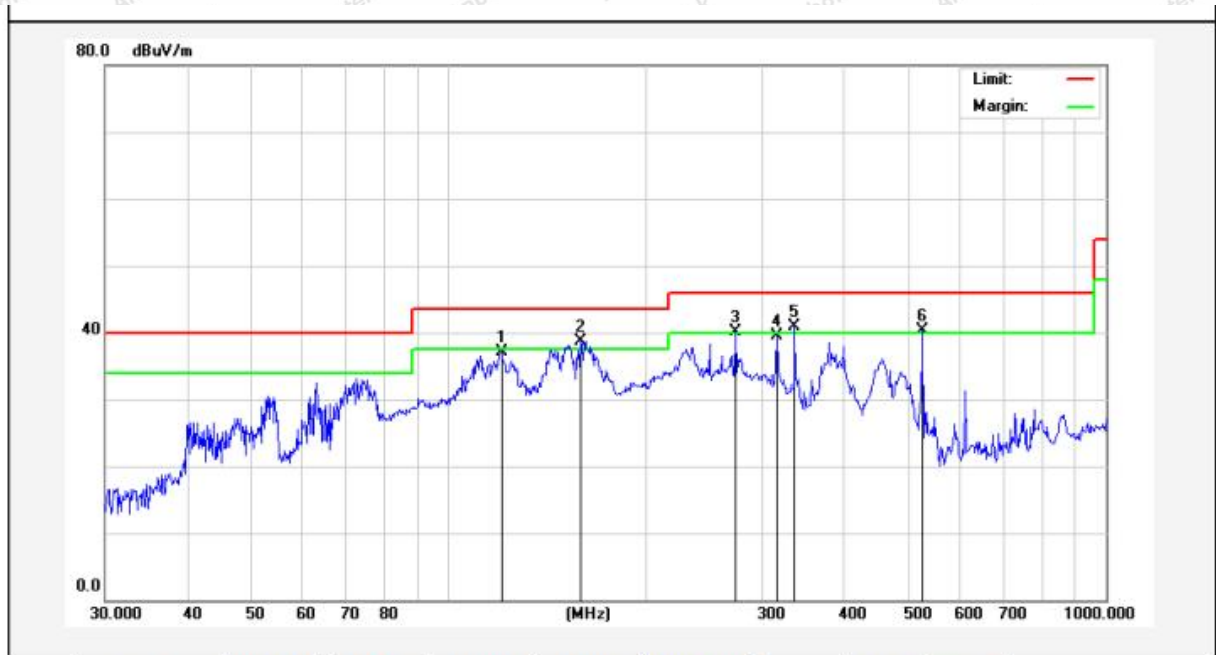
**Module: 6936-MLINK**

Test Mode: Low CH

Power Source: DC 4.2V battery

Polarization: Horizontal

Temp.(°C)/Hum.(%RH): 24.1°C/48%RH



No.	Freq. (MHz)	Reading (dBUV)	Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	120.2766	61.11	-23.91	37.20	43.50	-6.30	QP			
2	158.6676	62.51	-23.86	38.65	43.50	-4.85	QP			
3	273.2341	59.61	-19.48	40.13	46.00	-5.87	QP			
4	315.4806	56.40	-16.80	39.60	46.00	-6.40	QP			
5	336.0351	57.23	-16.32	40.91	46.00	-5.09	QP			
6	526.3967	53.09	-12.71	40.38	46.00	-5.62	QP			



**Test Results (30~1000MHz)**

**Module: A7105-FLYSKY**

Test Mode: Low CH

Power Source: DC 4.2V battery

Polarization: Vertical

Temp.(°C)/Hum.(%RH): 24.1°C/48%RH



No.	Freq. (MHz)	Reading (dBUV)	Factor (dB/m)	Result (dBUV/m)	Limit (dBUV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	53.1313	51.36	-16.93	34.43	40.00	-5.57	QP			
2	69.8448	54.80	-22.17	32.63	40.00	-7.37	QP			
3	142.8241	59.83	-23.01	36.82	43.50	-6.68	QP			
4	161.4739	60.59	-23.97	36.62	43.50	-6.88	QP			
5	273.2341	58.61	-19.48	39.13	46.00	-6.87	QP			
6	368.1116	55.34	-16.04	39.30	46.00	-6.70	QP			



**Test Results (30~1000MHz)**

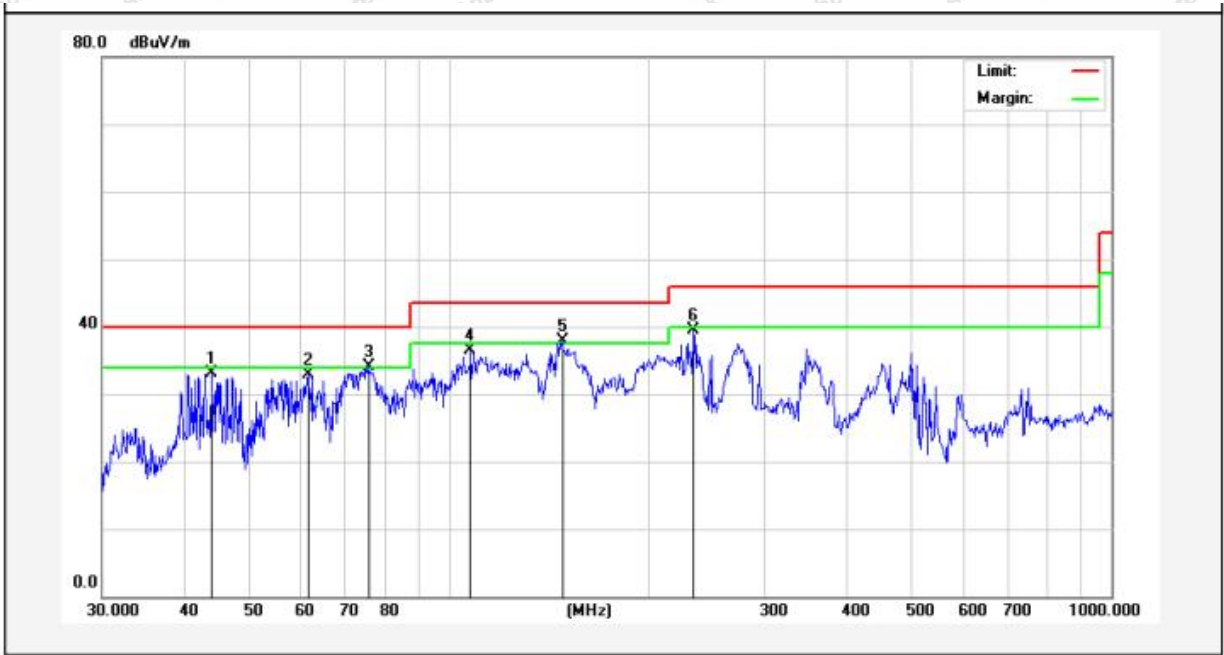
**Module: A7105-FLYSKY**

Test Mode: Low CH

Power Source: DC 4.2V battery

Polarization: Horizontal

Temp.(°C)/Hum.(%RH): 24.1°C/48%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	43.8119	48.00	-14.94	33.06	40.00	-6.94	QP			
2	61.3462	50.97	-17.98	32.99	40.00	-7.01	QP			
3	75.7112	53.82	-19.80	34.02	40.00	-5.98	QP			
4	107.8876	54.35	-17.84	36.51	43.50	-6.99	QP			
5	148.4410	59.96	-22.10	37.86	43.50	-5.64	QP			
6	234.1682	58.04	-18.48	39.56	46.00	-6.44	QP			





**Test Results (30~1000MHz)**

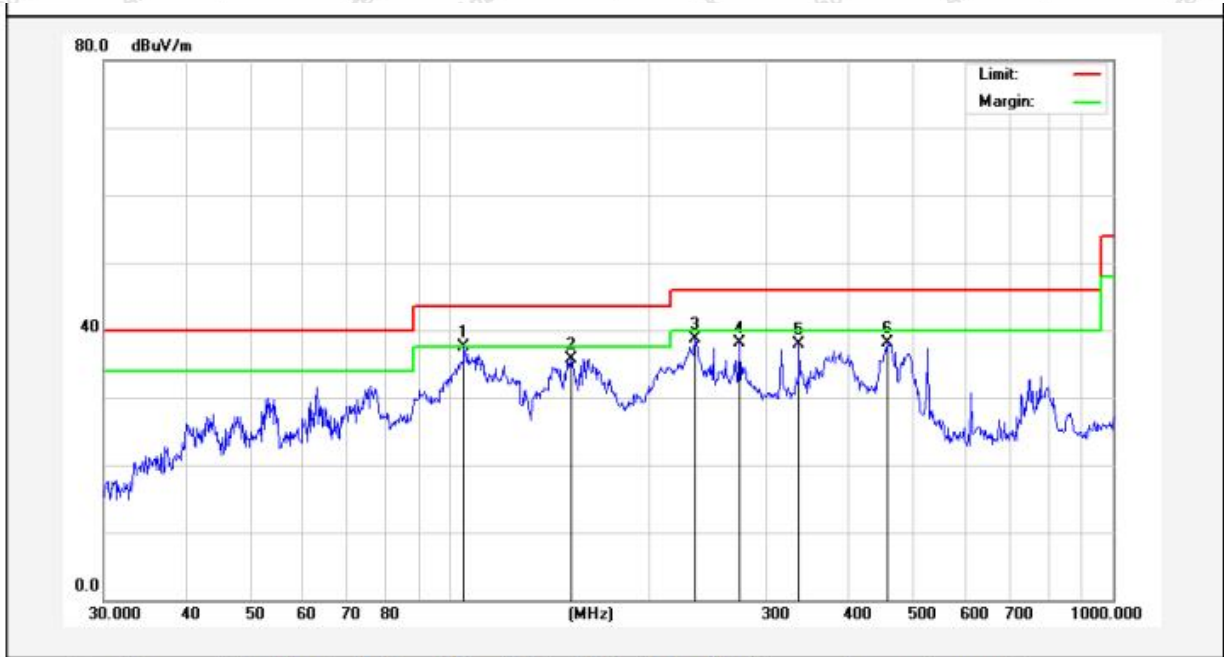
**Module: CC2500-D8**

Test Mode: Low CH

Power Source: DC 4.2V battery

Polarization: Vertical

Temp.(°C)/Hum.(%RH): 24.1°C/48%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	104.9033	59.73	-22.21	37.52	43.50	-5.98	QP			
2	152.1297	58.76	-23.11	35.65	43.50	-7.85	QP			
3	234.1682	60.56	-21.76	38.80	46.00	-7.20	QP			
4	273.2341	57.61	-19.48	38.13	46.00	-7.87	QP			
5	336.0350	54.23	-16.32	37.91	46.00	-8.09	QP			
6	455.9057	53.33	-15.28	38.05	46.00	-7.95	QP			



**Test Results (30~1000MHz)**

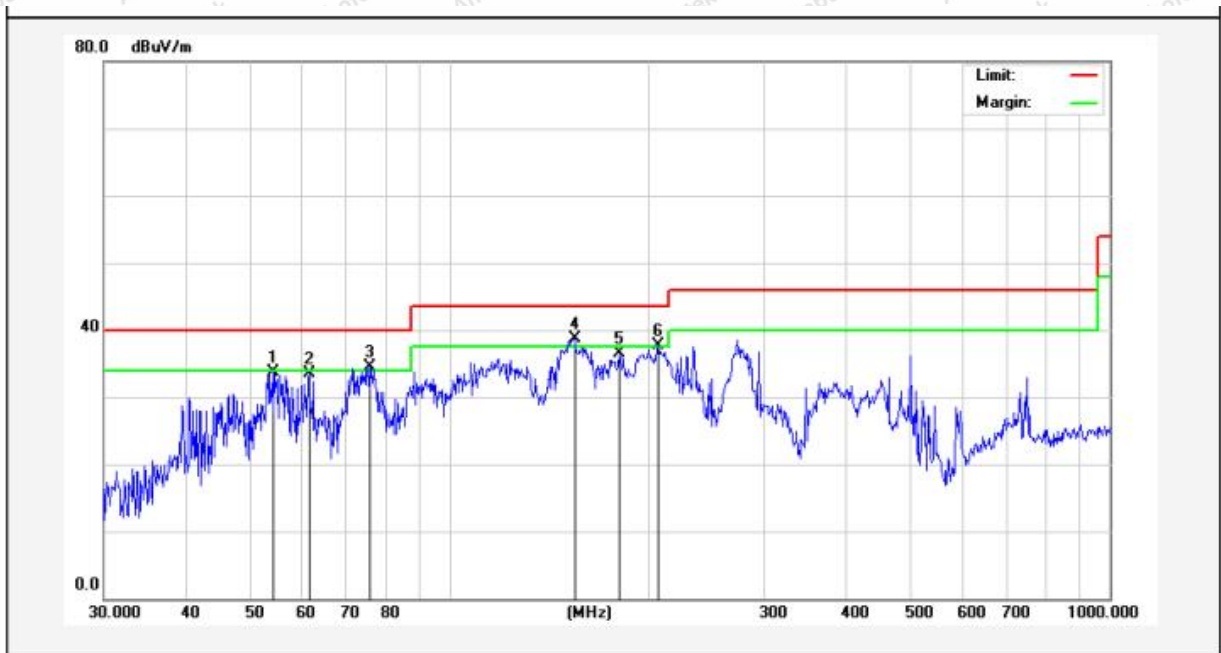
**Module: CC2500-D8**

Test Mode: Low CH

Power Source: DC 4.2V battery

Polarization: Horizontal

Temp.(°C)/Hum.(%RH): 24.1°C/48%RH



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	54.0711	50.96	-17.28	33.68	40.00	-6.32	QP			
2	61.3462	51.47	-17.98	33.49	40.00	-6.51	QP			
3	75.7112	54.32	-19.80	34.52	40.00	-5.48	QP			
4	154.8204	60.68	-21.88	38.80	43.50	-4.70	QP			
5	180.6484	57.01	-20.57	36.44	43.50	-7.06	QP			
6	207.1226	57.09	-19.42	37.67	43.50	-5.83	QP			



**Module: 24L01-BUGSMINI****Test Results (1GHz-25GHz)**

Test channel: Lowest						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4836.00	27.79	15.27	43.06	74.00	-30.94	Vertical
7254.00	29.00	18.09	47.09	74.00	-26.91	Vertical
9672.00	29.91	23.76	53.67	74.00	-20.33	Vertical
12090.00	*			74.00		Vertical
14508.00	*			74.00		Vertical
4836.00	28.19	15.27	43.46	74.00	-30.54	Horizontal
7254.00	28.91	18.09	47.00	74.00	-27.00	Horizontal
9672.00	28.62	23.76	52.38	74.00	-21.62	Horizontal
12090.00	*			74.00		Horizontal
14508.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4836.00	17.17	15.27	32.44	54.00	-21.56	Vertical
7254.00	18.03	18.09	36.12	54.00	-17.88	Vertical
9672.00	18.93	23.76	42.69	54.00	-11.31	Vertical
12090.00	*			54.00		Vertical
14508.00	*			54.00		Vertical
4836.00	16.54	15.27	31.81	54.00	-22.19	Horizontal
7254.00	17.97	18.09	36.06	54.00	-17.94	Horizontal
9672.00	17.93	23.76	41.69	54.00	-12.31	Horizontal
12090.00	*			54.00		Horizontal
14508.00	*			54.00		Horizontal



**Test Results (1GHz-25GHz)**

Test channel: Middle						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4870.40	27.81	15.42	43.23	74.00	-30.77	Vertical
7305.60	28.85	18.02	46.87	74.00	-27.13	Vertical
9740.80	28.92	23.80	52.72	74.00	-21.28	Vertical
12176.00	*			74.00		Vertical
14611.20	*			74.00		Vertical
4870.40	27.89	15.42	43.31	74.00	-30.69	Horizontal
7305.60	28.90	18.02	46.92	74.00	-27.08	Horizontal
9740.80	28.32	23.80	52.12	74.00	-21.88	Horizontal
12176.00	*			74.00		Horizontal
14611.20	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4870.40	16.90	15.42	32.32	54.00	-21.68	Vertical
7305.60	18.13	18.02	36.15	54.00	-17.85	Vertical
9740.80	18.79	23.80	42.59	54.00	-11.41	Vertical
12176.00	*			54.00		Vertical
14611.20	*			54.00		Vertical
4870.40	16.45	15.42	31.87	54.00	-22.13	Horizontal
7305.60	17.53	18.02	35.55	54.00	-18.45	Horizontal
9740.80	18.44	23.80	42.24	54.00	-11.76	Horizontal
12176.00	*			54.00		Horizontal
14611.20	*			54.00		Horizontal



## Test Results (1GHz-25GHz)

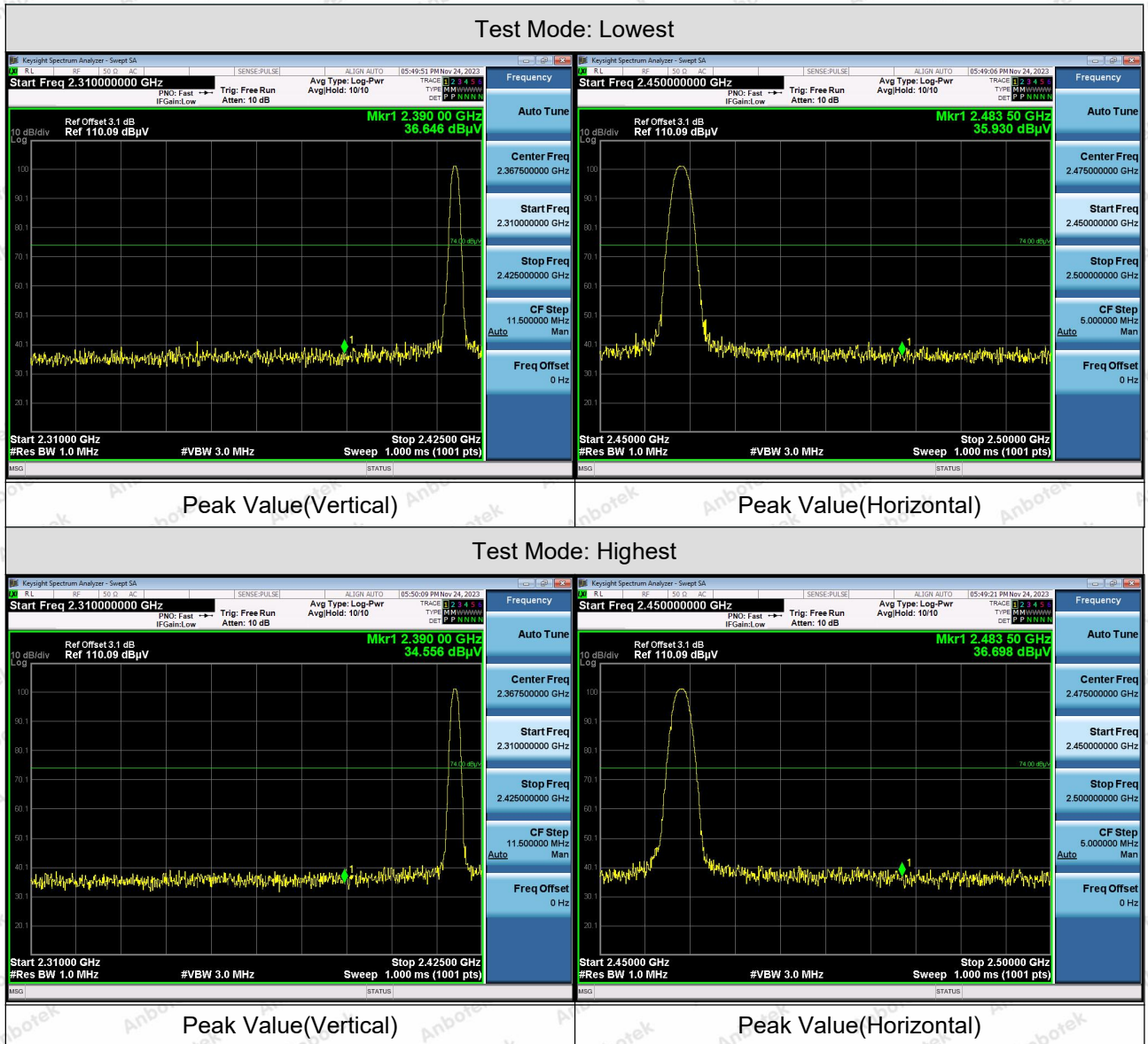
Test channel: Highest						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4918.40	28.08	15.58	43.66	74.00	-30.34	Vertical
7377.60	28.86	17.93	46.79	74.00	-27.21	Vertical
9836.80	29.47	23.83	53.30	74.00	-20.70	Vertical
12296.00	*			74.00		Vertical
14755.20	*			74.00		Vertical
4918.40	27.96	15.58	43.54	74.00	-30.46	Horizontal
7377.60	28.93	17.93	46.86	74.00	-27.14	Horizontal
9836.80	29.00	23.83	52.83	74.00	-21.17	Horizontal
12296.00	*			74.00		Horizontal
14755.20	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4918.40	18.02	15.58	33.60	54.00	-20.40	Vertical
7377.60	19.14	17.93	37.07	54.00	-16.93	Vertical
9836.80	19.34	23.83	43.17	54.00	-10.83	Vertical
12296.00	*			54.00		Vertical
14755.20	*			54.00		Vertical
4918.40	17.89	15.58	33.47	54.00	-20.53	Horizontal
7377.60	18.90	17.93	36.83	54.00	-17.17	Horizontal
9836.80	18.34	23.83	42.17	54.00	-11.83	Horizontal
12296.00	*			54.00		Horizontal
14755.20	*			54.00		Horizontal

## Remark:

1. Result = Reading + Factor
2. "\*" means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.



**Radiated Band Edge:**



Note: When the PK measure result value is less than the AVG limit value, the AV measure result values test not applicable.



**Module: 6936-MLINK**

**Test Results (1GHz-25GHz)**

Test channel: Lowest						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4806.00	28.06	15.27	43.33	74.00	-30.67	Vertical
7209.00	29.26	18.09	47.35	74.00	-26.65	Vertical
9612.00	30.23	23.76	53.99	74.00	-20.02	Vertical
12015.00	*			74.00		Vertical
14418.00	*			74.00		Vertical
4806.00	28.45	15.27	43.72	74.00	-30.28	Horizontal
7209.00	29.16	18.09	47.25	74.00	-26.75	Horizontal
9612.00	28.76	23.76	52.52	74.00	-21.48	Horizontal
12015.00	*			74.00		Horizontal
14418.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4806.00	17.44	15.27	32.71	54.00	-21.29	Vertical
7209.00	18.29	18.09	36.38	54.00	-17.62	Vertical
9612.00	19.25	23.76	43.01	54.00	-11.00	Vertical
12015.00	*			54.00		Vertical
14418.00	*			54.00		Vertical
4806.00	16.80	15.27	32.07	54.00	-21.93	Horizontal
7209.00	18.22	18.09	36.31	54.00	-17.69	Horizontal
9612.00	18.07	23.76	41.83	54.00	-12.17	Horizontal
12015.00	*			54.00		Horizontal
14418.00	*			54.00		Horizontal



**Test Results (1GHz-25GHz)**

Test channel: Middle						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	28.08	15.42	43.50	74.00	-30.50	Vertical
7323.00	29.11	18.02	47.13	74.00	-26.87	Vertical
9764.00	29.24	23.80	53.04	74.00	-20.97	Vertical
12205.00	*			74.00		Vertical
14646.00	*			74.00		Vertical
4882.00	28.15	15.42	43.57	74.00	-30.43	Horizontal
7323.00	29.15	18.02	47.17	74.00	-26.83	Horizontal
9764.00	28.46	23.80	52.26	74.00	-21.74	Horizontal
12205.00	*			74.00		Horizontal
14646.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4882.00	17.17	15.42	32.59	54.00	-21.41	Vertical
7323.00	18.39	18.02	36.41	54.00	-17.59	Vertical
9764.00	19.11	23.80	42.91	54.00	-11.10	Vertical
12205.00	*			54.00		Vertical
14646.00	*			54.00		Vertical
4882.00	16.71	15.42	32.13	54.00	-21.87	Horizontal
7323.00	17.78	18.02	35.80	54.00	-18.20	Horizontal
9764.00	18.58	23.80	42.38	54.00	-11.62	Horizontal
12205.00	*			54.00		Horizontal
14646.00	*			54.00		Horizontal





**Test Results (1GHz-25GHz)**

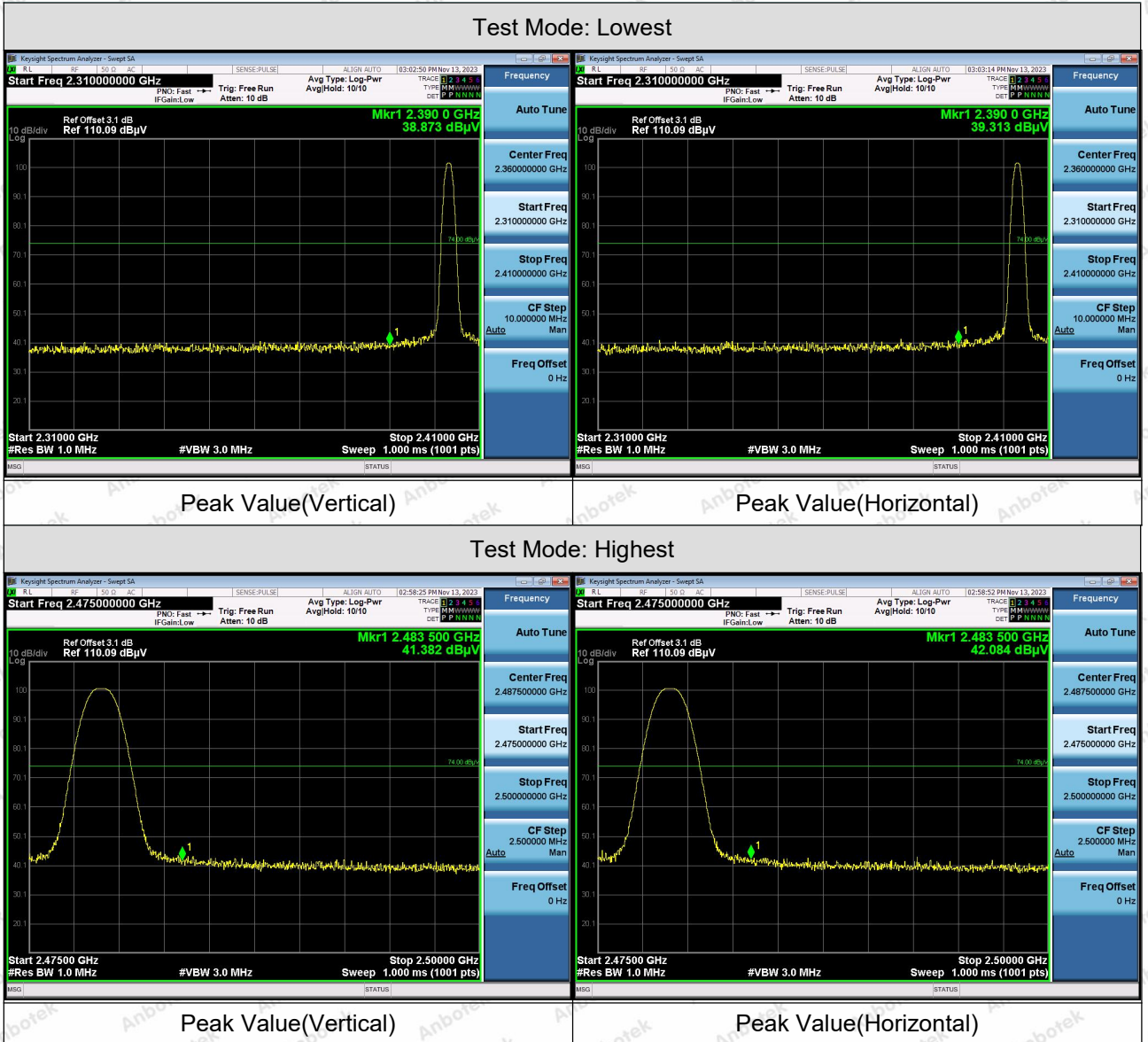
Test channel: Highest						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4958.00	28.35	15.58	43.93	74.00	-30.07	Vertical
7437.00	29.12	17.93	47.05	74.00	-26.95	Vertical
9916.00	29.79	23.83	53.62	74.00	-20.39	Vertical
12395.00	*			74.00		Vertical
14874.00	*			74.00		Vertical
4958.00	28.22	15.58	43.80	74.00	-30.20	Horizontal
7437.00	29.18	17.93	47.11	74.00	-26.89	Horizontal
9916.00	29.14	23.83	52.97	74.00	-21.03	Horizontal
12395.00	*			74.00		Horizontal
14874.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4958.00	18.29	15.58	33.87	54.00	-20.13	Vertical
7437.00	19.40	17.93	37.33	54.00	-16.67	Vertical
9916.00	19.66	23.83	43.49	54.00	-10.52	Vertical
12395.00	*			54.00		Vertical
14874.00	*			54.00		Vertical
4958.00	18.15	15.58	33.73	54.00	-20.27	Horizontal
7437.00	19.15	17.93	37.08	54.00	-16.92	Horizontal
9916.00	18.48	23.83	42.31	54.00	-11.69	Horizontal
12395.00	*			54.00		Horizontal
14874.00	*			54.00		Horizontal

Remark:

1. Result = Reading + Factor
2. "\*" means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.



**Radiated Band Edge:**



Note: When the PK measure result value is less than the AVG limit value, the AV measure result values test not applicable.



**Module: A7105-FLYSKY**

**Test Results (1GHz-25GHz)**

Test channel: Lowest						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4807.00	27.42	15.27	42.69	74.00	-31.31	Vertical
7210.50	28.64	18.09	46.73	74.00	-27.27	Vertical
9614.00	29.46	23.76	53.22	74.00	-20.78	Vertical
12017.50	*			74.00		Vertical
14421.00	*			74.00		Vertical
4807.00	27.82	15.27	43.09	74.00	-30.91	Horizontal
7210.50	28.56	18.09	46.65	74.00	-27.35	Horizontal
9614.00	28.42	23.76	52.18	74.00	-21.82	Horizontal
12017.50	*			74.00		Horizontal
14421.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4807.00	16.80	15.27	32.07	54.00	-21.93	Vertical
7210.50	17.67	18.09	35.76	54.00	-18.24	Vertical
9614.00	18.48	23.76	42.24	54.00	-11.76	Vertical
12017.50	*			54.00		Vertical
14421.00	*			54.00		Vertical
4807.00	16.17	15.27	31.44	54.00	-22.56	Horizontal
7210.50	17.62	18.09	35.71	54.00	-18.29	Horizontal
9614.00	17.73	23.76	41.49	54.00	-12.51	Horizontal
12017.50	*			54.00		Horizontal
14421.00	*			54.00		Horizontal



**Test Results (1GHz-25GHz)**

Test channel: Middle						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4876.00	27.44	15.42	42.86	74.00	-31.14	Vertical
7314.00	28.49	18.02	46.51	74.00	-27.49	Vertical
9752.00	28.47	23.80	52.27	74.00	-21.73	Vertical
12190.00	*			74.00		Vertical
14628.00	*			74.00		Vertical
4876.00	27.52	15.42	42.94	74.00	-31.06	Horizontal
7314.00	28.55	18.02	46.57	74.00	-27.43	Horizontal
9752.00	28.12	23.80	51.92	74.00	-22.08	Horizontal
12190.00	*			74.00		Horizontal
14628.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4876.00	16.53	15.42	31.95	54.00	-22.05	Vertical
7314.00	17.77	18.02	35.79	54.00	-18.21	Vertical
9752.00	18.34	23.80	42.14	54.00	-11.86	Vertical
12190.00	*			54.00		Vertical
14628.00	*			54.00		Vertical
4876.00	16.08	15.42	31.50	54.00	-22.50	Horizontal
7314.00	17.18	18.02	35.20	54.00	-18.80	Horizontal
9752.00	18.24	23.80	42.04	54.00	-11.96	Horizontal
12190.00	*			54.00		Horizontal
14628.00	*			54.00		Horizontal



## Test Results (1GHz-25GHz)

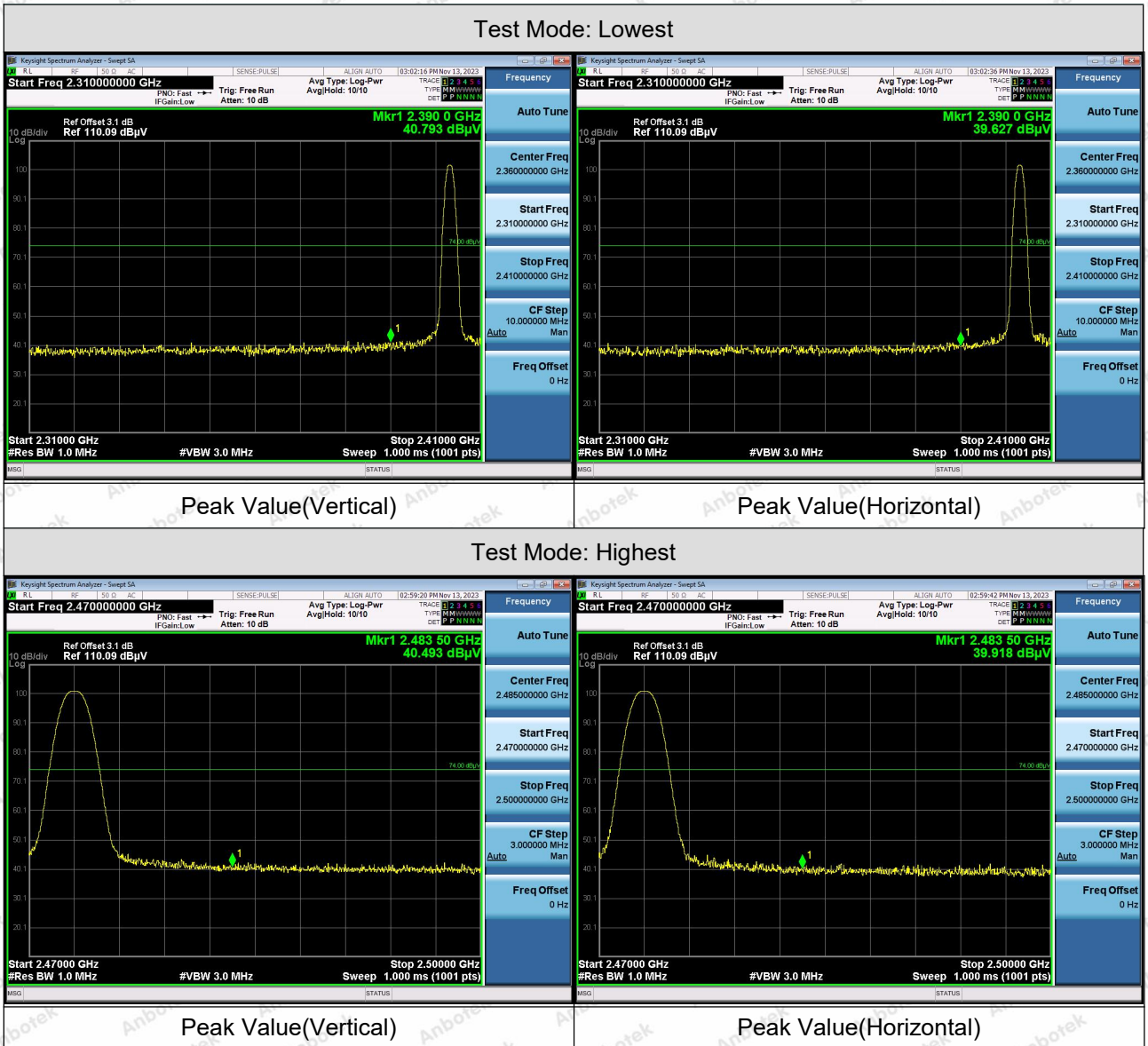
Test channel: Highest						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4946.00	27.71	15.58	43.29	74.00	-30.71	Vertical
7419.00	28.50	17.93	46.43	74.00	-27.57	Vertical
9892.00	29.02	23.83	52.85	74.00	-21.15	Vertical
12365.00	*			74.00		Vertical
14838.00	*			74.00		Vertical
4946.00	27.59	15.58	43.17	74.00	-30.83	Horizontal
7419.00	28.58	17.93	46.51	74.00	-27.49	Horizontal
9892.00	28.80	23.83	52.63	74.00	-21.37	Horizontal
12365.00	*			74.00		Horizontal
14838.00	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4946.00	17.65	15.58	33.23	54.00	-20.77	Vertical
7419.00	18.78	17.93	36.71	54.00	-17.29	Vertical
9892.00	18.89	23.83	42.72	54.00	-11.28	Vertical
12365.00	*			54.00		Vertical
14838.00	*			54.00		Vertical
4946.00	17.52	15.58	33.10	54.00	-20.90	Horizontal
7419.00	18.55	17.93	36.48	54.00	-17.52	Horizontal
9892.00	18.14	23.83	41.97	54.00	-12.03	Horizontal
12365.00	*			54.00		Horizontal
14838.00	*			54.00		Horizontal

## Remark:

1. Result =Reading + Factor
2. "\*" means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.



**Radiated Band Edge:**



Note: When the PK measure result value is less than the AVG limit value, the AV measure result values test not applicable.



**Module: CC2500-D8**

**Test Results (1GHz-25GHz)**

Test channel: Lowest						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4807.88	28.24	15.27	43.51	74.00	-30.49	Vertical
7211.82	29.43	18.09	47.52	74.00	-26.48	Vertical
9615.76	30.44	23.76	54.20	74.00	-19.80	Vertical
12019.70	*			74.00		Vertical
14423.64	*			74.00		Vertical
4807.88	28.63	15.27	43.90	74.00	-30.10	Horizontal
7211.82	29.33	18.09	47.42	74.00	-26.58	Horizontal
9615.76	28.85	23.76	52.61	74.00	-21.39	Horizontal
12019.70	*			74.00		Horizontal
14423.64	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4807.88	17.62	15.27	32.89	54.00	-21.11	Vertical
7211.82	18.46	18.09	36.55	54.00	-17.45	Vertical
9615.76	19.46	23.76	43.22	54.00	-10.78	Vertical
12019.70	*			54.00		Vertical
14423.64	*			54.00		Vertical
4807.88	16.98	15.27	32.25	54.00	-21.75	Horizontal
7211.82	18.39	18.09	36.48	54.00	-17.52	Horizontal
9615.76	18.16	23.76	41.92	54.00	-12.08	Horizontal
12019.70	*			54.00		Horizontal
14423.64	*			54.00		Horizontal



**Test Results (1GHz-25GHz)**

Test channel: Middle						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4876.88	28.26	15.42	43.68	74.00	-30.32	Vertical
7315.32	29.28	18.02	47.30	74.00	-26.70	Vertical
9753.76	29.45	23.80	53.25	74.00	-20.75	Vertical
12192.20	*			74.00		Vertical
14630.64	*			74.00		Vertical
4876.88	28.33	15.42	43.75	74.00	-30.25	Horizontal
7315.32	29.32	18.02	47.34	74.00	-26.66	Horizontal
9753.76	28.55	23.80	52.35	74.00	-21.65	Horizontal
12192.20	*			74.00		Horizontal
14630.64	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4876.88	17.35	15.42	32.77	54.00	-21.23	Vertical
7315.32	18.56	18.02	36.58	54.00	-17.42	Vertical
9753.76	19.32	23.80	43.12	54.00	-10.88	Vertical
12192.20	*			54.00		Vertical
14630.64	*			54.00		Vertical
4876.88	16.89	15.42	32.31	54.00	-21.69	Horizontal
7315.32	17.95	18.02	35.97	54.00	-18.03	Horizontal
9753.76	18.67	23.80	42.47	54.00	-11.53	Horizontal
12192.20	*			54.00		Horizontal
14630.64	*			54.00		Horizontal





## Test Results (1GHz-25GHz)

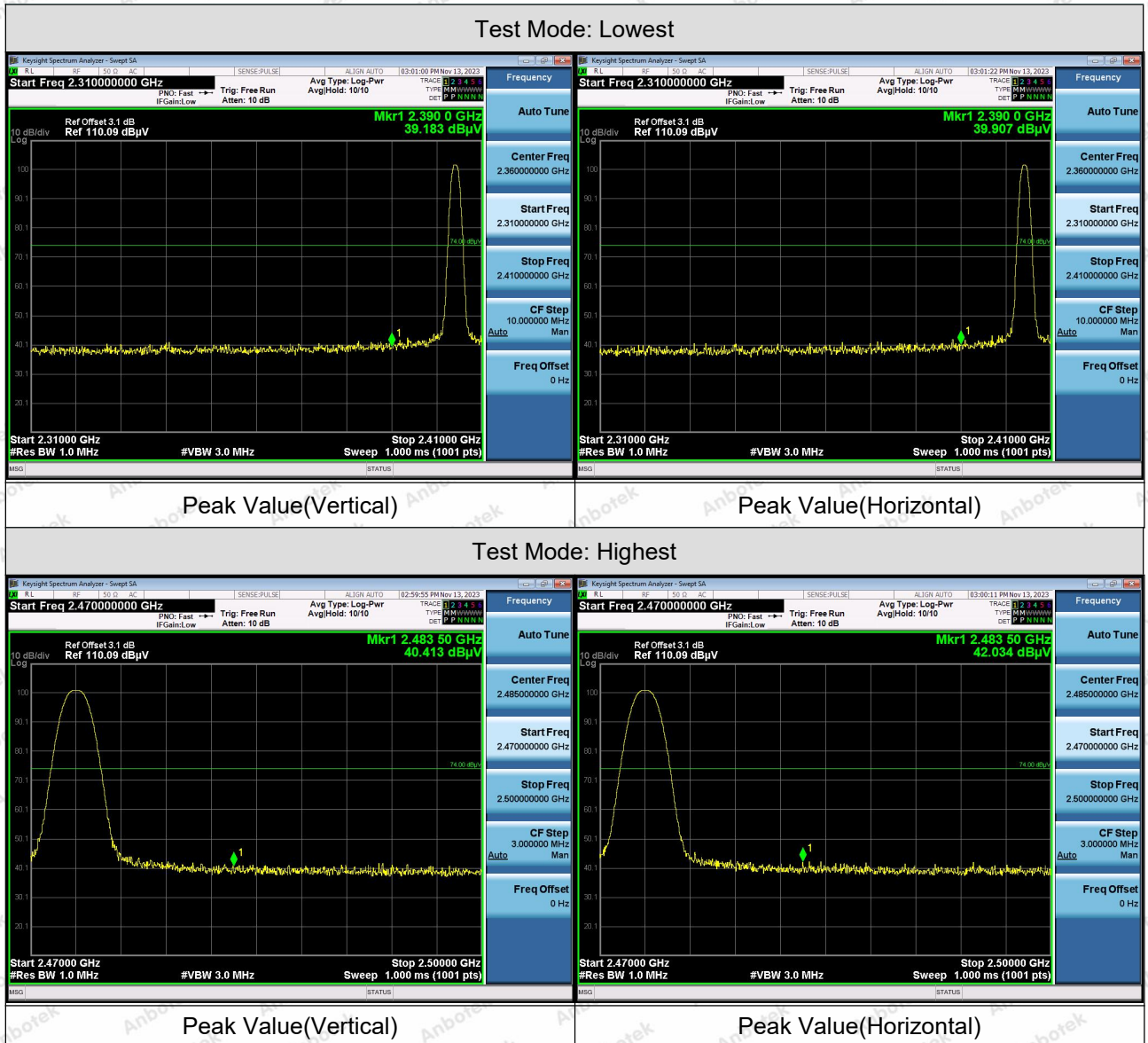
Test channel: Highest						
Peak value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4945.88	28.53	15.58	44.11	74.00	-29.89	Vertical
7418.82	29.29	17.93	47.22	74.00	-26.78	Vertical
9891.76	30.00	23.83	53.83	74.00	-20.17	Vertical
12364.70	*			74.00		Vertical
14837.64	*			74.00		Vertical
4945.88	28.40	15.58	43.98	74.00	-30.02	Horizontal
7418.82	29.35	17.93	47.28	74.00	-26.72	Horizontal
9891.76	29.23	23.83	53.06	74.00	-20.94	Horizontal
12364.70	*			74.00		Horizontal
14837.64	*			74.00		Horizontal
Average value:						
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	polarization
4945.88	18.47	15.58	34.05	54.00	-19.95	Vertical
7418.82	19.57	17.93	37.50	54.00	-16.50	Vertical
9891.76	19.87	23.83	43.70	54.00	-10.30	Vertical
12364.70	*			54.00		Vertical
14837.64	*			54.00		Vertical
4945.88	18.33	15.58	33.91	54.00	-20.09	Horizontal
7418.82	19.32	17.93	37.25	54.00	-16.75	Horizontal
9891.76	18.57	23.83	42.40	54.00	-11.60	Horizontal
12364.70	*			54.00		Horizontal
14837.64	*			54.00		Horizontal

## Remark:

1. Result = Reading + Factor
2. "\*" means the test results were attenuated more than 20dB below the permissible limits, so the results don't record in the report.



**Radiated Band Edge:**



Note: When the PK measure result value is less than the AVG limit value, the AV measure result values test not applicable.

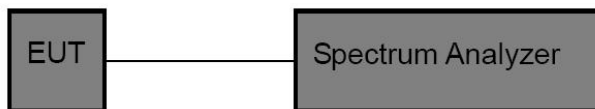


## 5. Maximum Peak Output Power Test

### 5.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (b)(1)
Test Limit	For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

### 5.2. Test Setup



### 5.3. Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above,
2. Spectrum Setting:
  - RBW > the 20 dB bandwidth of the emission being measured
  - Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
  - VBW ≥ RBW
  - Sweep = auto
  - Detector function = peak
  - Trace = max hold

### 5.4. Test Data

Pass

*Please refer to Appendix C of the Appendix Test Data.*

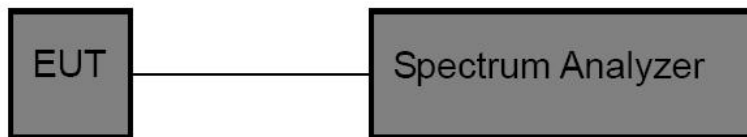


## 6. 20DB Occupy Bandwidth Test

### 6.1. Test Standard

Test Standard	FCC Part15 C Section 15.247 (a)(1)
---------------	------------------------------------

### 6.2. Test Setup



### 6.3. Test Procedure

Using the following spectrum analyzer settings:

1. Span= approximately 2 to 3 times the 20dB bandwidth, centered on a hopping channel.
2. Set the RBW  $\geq 1\%$  of the 20 dB bandwidth.
3. Set the VBW  $\geq$ RBW
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

### 6.4. Test Data

Pass

*Please refer to Appendix A of the Appendix Test Data.*

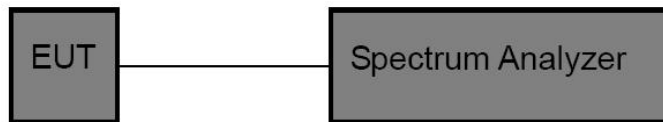


## 7. Carrier Frequency Separation Test

### 7.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)
Test Limit	Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

### 7.2. Test Setup



### 7.3. Test Procedure

The EUT must have its hopping function enabled. Using the following spectrum analyzer settings:

1. Span= Wide enough to capture the peaks of two adjacent channels
2. Set the RBW =approximately 30% of the channel spacing.
3. Set the VBW  $\geq$  RBW.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

### 7.4. Test Data

Pass

*Please refer to Appendix D of the Appendix Test Data.*

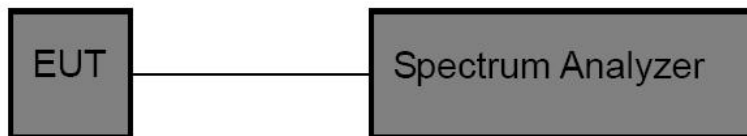


## 8. Number of Hopping Channel Test

### 8.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)(iii)
Test Limit	>15 channels

### 8.2. Test Setup



### 8.3. Test Procedure

The EUT must have its hopping function enabled. Using the following spectrum analyzer setting:

1. Span= the frequency band of operation
2. Set the RBW = less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.
3. Set the VBW  $\geq$  RBW.
4. Sweep time = auto couple.
5. Detector function = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.

### 8.4. Test Data

Pass

*Please refer to Appendix F of the Appendix Test Data.*

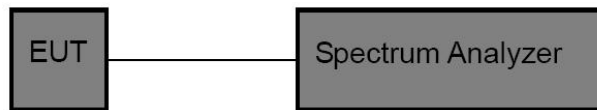


## 9. Dwell Time Test

### 9.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (a)(1)(iii)
Test Limit	0.4 s

### 9.2. Test Setup



### 9.3. Test Procedure

The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:

1. Span= zero span, centered on a hopping channel
2. Set the RBW = 1 MHz.
3. Set the VBW  $\geq$  RBW.
4. Sweep time = as necessary to capture the entire dwell time per hopping channel.
5. Detector function = peak.
6. Trace mode = clear write.

### 9.4. Test Data

Pass

*Please refer to Appendix E of the Appendix Test Data.*

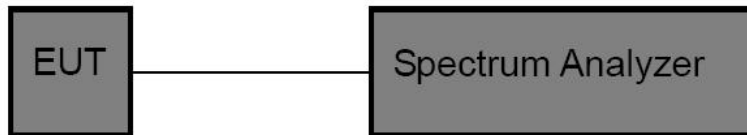


## 10. 100kHz Bandwidth of Frequency Band Edge Requirement

### 10.1. Test Standard and Limit

Test Standard	FCC Part15 C Section 15.247 (d)
Test Limit	In any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

### 10.2. Test Setup



### 10.3. Test Procedure

The EUT must have its hopping/Non-hopping function enabled. Using the following spectrum analyzer setting:

1. Set the RBW = 100kHz.
2. Set the VBW = 300kHz.
3. Sweep time = auto couple.
4. Detector function = peak.
5. Trace mode = max hold.
6. Allow trace to fully stabilize.

### 10.4. Test Data

Pass

Please refer to Appendix G & Appendix H of the Appendix Test Data.





## 11. Antenna Requirement

### 11.1. Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203 /247(c)
Requirement	<p>1) 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.</p> <p>2) 15.247(c) (1)(i) requirement: 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 6 dBi.</p>

### 11.2. Antenna Connected Construction

The antenna is Copper tube antenna which permanently attached, and the best case gain of the antenna is 2.02dBi. It complies with the standard requirement.



## **APPENDIX I -- TEST SETUP PHOTOGRAPH**

Please refer to separated files Appendix I -- Test Setup Photograph

## **APPENDIX II -- EXTERNAL PHOTOGRAPH**

Please refer to separated files Appendix II -- External Photograph

## **APPENDIX III -- INTERNAL PHOTOGRAPH**

Please refer to separated files Appendix III -- Internal Photograph

----- End of Report -----

