

FCC Part 15C

Measurement and Test Report

For

ooma, Inc.

1840 Embarcadero Road, Palo Alto, California, United States

FCC ID: XFT-BFLY2

FCC Rule(s):	<u>FCC Part 15.247</u>
Product Description:	<u>Indoor/Outdoor Smart Security Camera</u>
Tested Model:	<u>BTFU2100</u>
Report No.:	<u>WTE19X05030827W</u>
Sample Receipt Date:	<u>2018-11-16</u>
Tested Date:	<u>2019-05-16 to 2019-05-31</u>
Issued Date:	<u>2019-05-31</u>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: ooma, Inc.
Address of applicant: 1840 Embarcadero Road, Palo Alto, California, United States

Manufacturer: Kenxen Digitech Limited
Address of manufacturer: Room 1605, APEC Plaza, 49 Hoi Yuen Road, Kwun Tong, Kowloon, Hong Kong

General Description of EUT	
Product Name:	Indoor/Outdoor Smart Security Camera
Trade Name:	Ooma Butterfleye
Model No.:	BTFU2100
Adding Model(s):	BTFU2300, BTFU2500
Rated Voltage:	Battery:DC3.8V
Power Adapter:	MODEL: CC10-050200U INPUT: 100-240V, 50/60Hz, 0.35A OUTPUT: 5V, 2A
<i>Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model BTFU2100, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 802.11b/g/n-HT20
RF Output Power:	5.54dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM, 64QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 72.2Mbps
Quantity of Channels:	11
Channel Separation:	5MHz
Type of Antenna:	Integral Antenna
Antenna Gain:	3dBi

1.2 Test Standards

The tests were performed according to following standards:

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

558074 D01 15.247 Meas Guidance v05r02: Guidance For Compliance Measurements On Digital Transmission System, Frequency Hopping Spread Spectrum System, And Hybrid System Devices Operating Under Section 15.247 Of The Fcc Rules.

ANSI C63.10-2013: American National Standard for Testing Unlicensed Wireless Devices.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, KDB 558074 D01 15.247 Meas Guidance v05r02.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions.

1.4 Test Facility

FCC – Registration No.: 125990

Shenzhen SEM Test Technology Co., Ltd. Laboratory has been recognized to perform compliance testing on equipment subject to the Commissions Declaration Of Conformity (DOC). The Designation Number is CN5010, and Test Firm Registration Number is 125990.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, with a duty cycle equal to 100%, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	802.11b	Low:2412MHz, Middle:2437MHz,High:2462MHz
TM2	802.11g	Low:2412MHz, Middle:2437MHz,High:2462MHz
TM3	802.11n-HT20	Low:2412MHz, Middle:2437MHz,High:2462MHz
Note: All test modes (different data rate and different modulation) are performed, but only the worst case is recorded in this report.		

Test Conditions	
Temperature:	22~25 °C
Relative Humidity:	50~56 %.
ATM Pressure:	1019 mbar

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Accessories Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	$\pm 0.42\text{dB}$
Occupied Bandwidth	Conducted	$\pm 1.5\%$
Power Spectral Density	Conducted	$\pm 1.8\text{dB}$
Conducted Spurious Emission	Conducted	$\pm 2.17\text{dB}$
Conducted Emissions	Conducted	9-150kHz $\pm 3.74\text{dB}$
		0.15-30MHz $\pm 3.34\text{dB}$
Transmitter Spurious Emissions	Radiated	30-200MHz $\pm 4.52\text{dB}$
		0.2-1GHz $\pm 5.56\text{dB}$
		1-6GHz $\pm 3.84\text{dB}$
		6-18GHz $\pm 3.92\text{dB}$

1.7 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2019-04-30	2020-04-29
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2019-04-30	2020-04-29
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2019-04-30	2020-04-29
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2019-04-30	2020-04-29
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2019-04-30	2020-04-29
SEMT-1011	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2019-05-05	2021-05-04
SEMT-1042	Horn Antenna	ETS	3117	00086197	2019-05-05	2021-05-04
SEMT-1121	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170582	2019-05-05	2021-05-04
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2019-05-05	2021-05-04
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2019-04-30	2020-04-29
SEMT-1003	L.I.S.N	Schwarz beck	NSLK8126	8126-224	2019-04-30	2020-04-29
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2019-04-30	2020-04-29
SEMT-1168	Pre-amplifier	Direction Systems Inc.	PAP-0126	14141-12838	2019-04-30	2020-04-29
SEMT-1169	Pre-amplifier	Direction Systems Inc.	PAP-2640	14145-14153	2019-04-30	2020-04-29
SEMT-1163	Spectrum Analyzer	Rohde & Schwarz	FSP40	100612	2019-04-30	2020-04-29
SEMT-1170	DRG Horn Antenna	A.H. SYSTEMS	SAS-574	571	2019-05-05	2021-05-04
SEMT-1166	Power Limiter	Agilent	N9356B	MY45450376	2019-04-30	2020-04-29
SEMT-1048	RF Limiter	ATTEN	AT-BSF-2400~2500	/	2019-04-30	2020-04-29
SEMT-1076	RF Switcher	Top Precision	RCS03-A2	/	2019-04-30	2020-04-29
SEMT-C001	Cable	Zheng DI	LL142-07-07-10M(A)	/	2019-03-18	2020-03-17
SEMT-C002	Cable	Zheng DI	ZT40-2.92J-2.92J-6M	/	2019-03-18	2020-03-17
SEMT-C003	Cable	Zheng DI	ZT40-2.92J-2.92J-2.5M	/	2019-03-18	2020-03-17
SEMT-C004	Cable	Zheng DI	2M0RFC	/	2019-03-18	2020-03-17
SEMT-C005	Cable	Zheng DI	1M0RFC	/	2019-03-18	2020-03-17
SEMT-C006	Cable	Zheng DI	1M0RFC	/	2019-03-18	2020-03-17

Software List			
Description	Manufacturer	Model	Version
EMI Test Software (Radiated Emission)*	CCS	EZ-EMC	V1.0
EMI Test Software (Conducted Emission)*	CCS	EZ-EMC	V1.0

*Remark: indicates software version used in the compliance certification testing

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§2.1093	RF Exposure	Compliant
§15.203;15.247(b)(4)(i)	Antenna Requirement	Compliant
§15.205	Restricted Band of Operation	Compliant
§15.207(a)	Conducted Emission	Compliant
§15.247(e)	Power Spectral Density	Compliant
§15.247(a)(2)	DTS Bandwidth	Compliant
§15.247(b)(3)	RF Output Power	Compliant
§15.209(a)	Radiated Emission	Compliant
§15.247(d)	Band Edge (Out of Band Emissions)	Compliant

N/A: not applicable

Note: Report is for C2PC only. Part of the test data (Power Spectral Density, DTS Bandwidth, RF Output Power) could use the same as the original report (the original report No.: STRD1810021I) .Those (not tested) not effected by the C2PC.

3. RF Exposure

3.1 Standard Applicable

According to §1.1307 and §2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the RF Exposure Report.

4. Antenna Requirement

4.1 Standard Applicable

According to FCC Part 15.203, 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 shall be considered sufficient to comply with the provisions of this section.

4.2 Evaluation Information

This product has an integral antenna, fulfill the requirement of this section.

5. Field Strength of Spurious Emissions

5.1 Standard Applicable

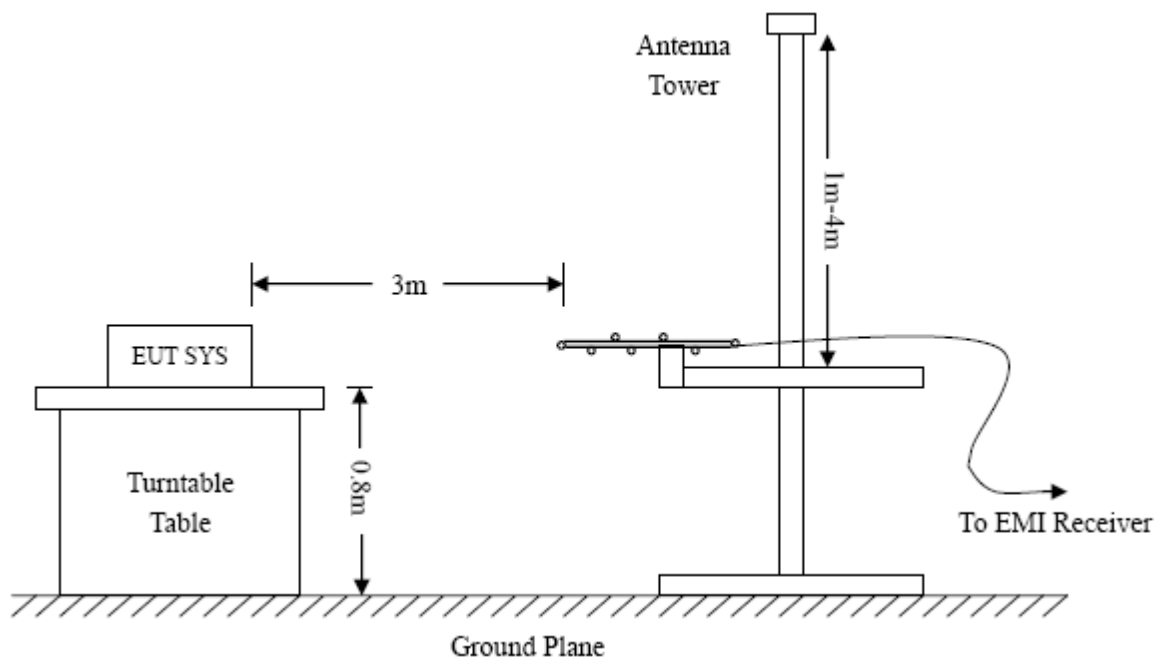
According to §15.247(d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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).

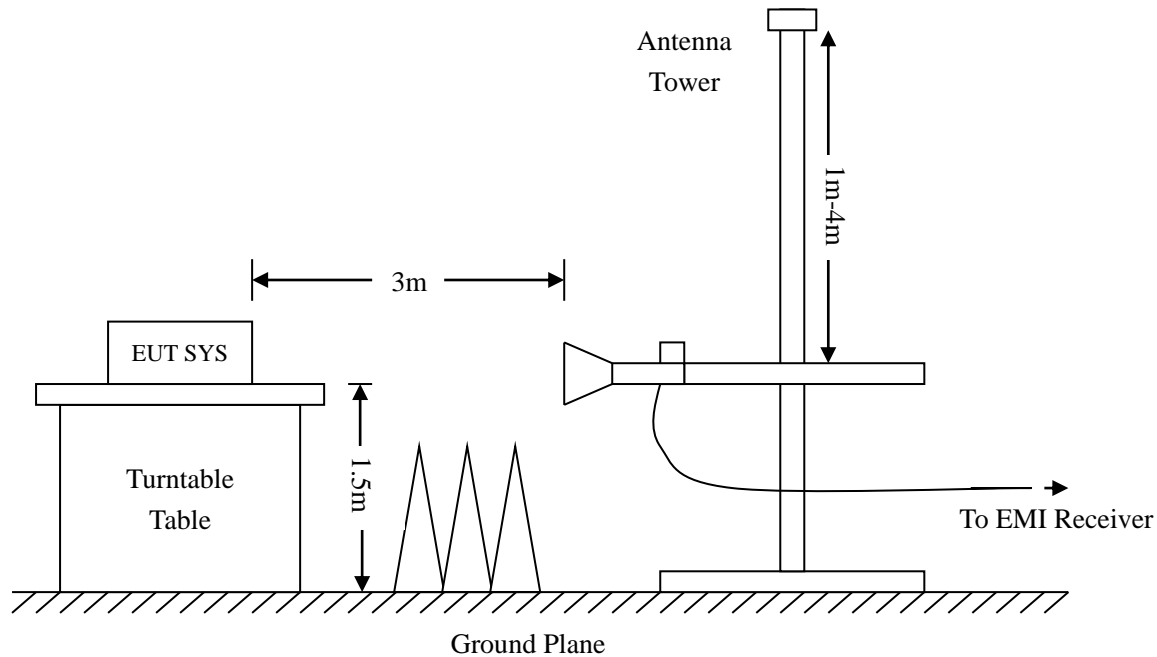
The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

5.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.





Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=360KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

5.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Ant. Factor} + \text{Cable Loss} - \text{Ampl. Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15 Limit}$$

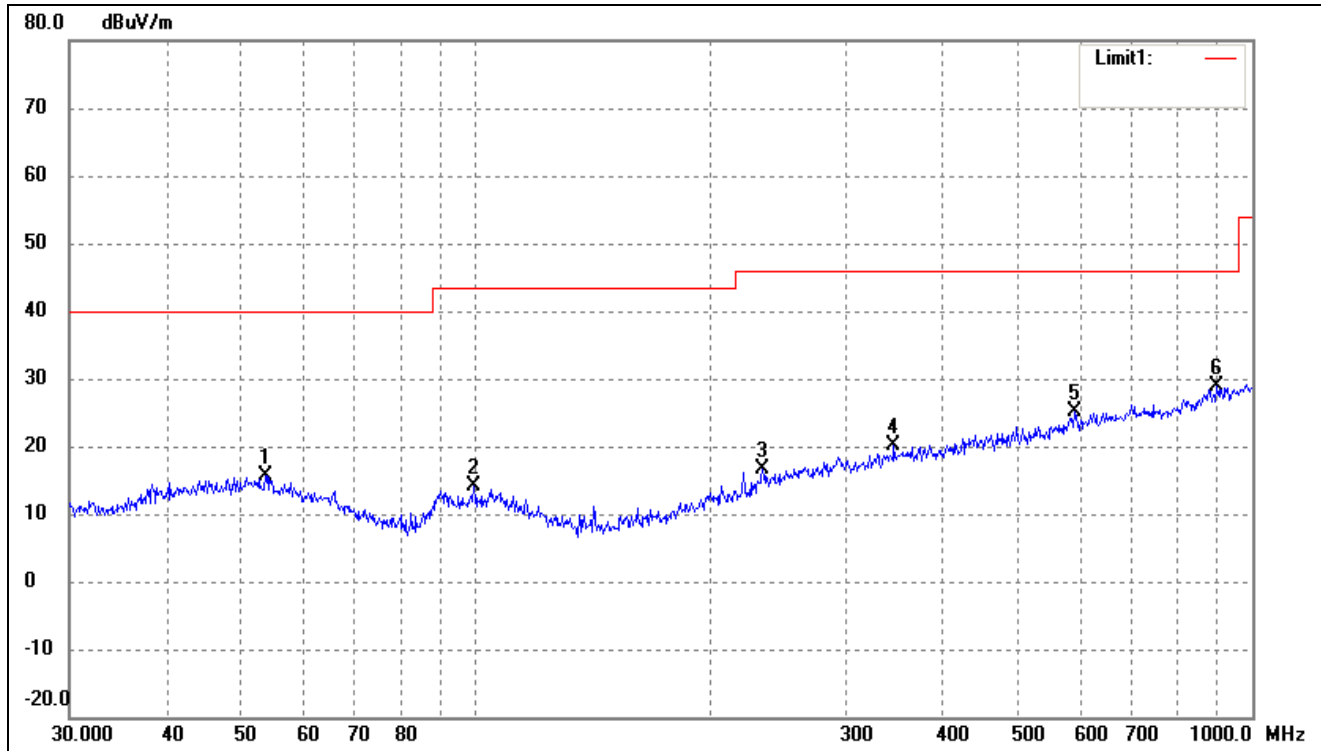
5.4 Summary of Test Results/Plots

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

All test modes (different data rate and different modulation) are performed, but only the worst case is recorded in this report.

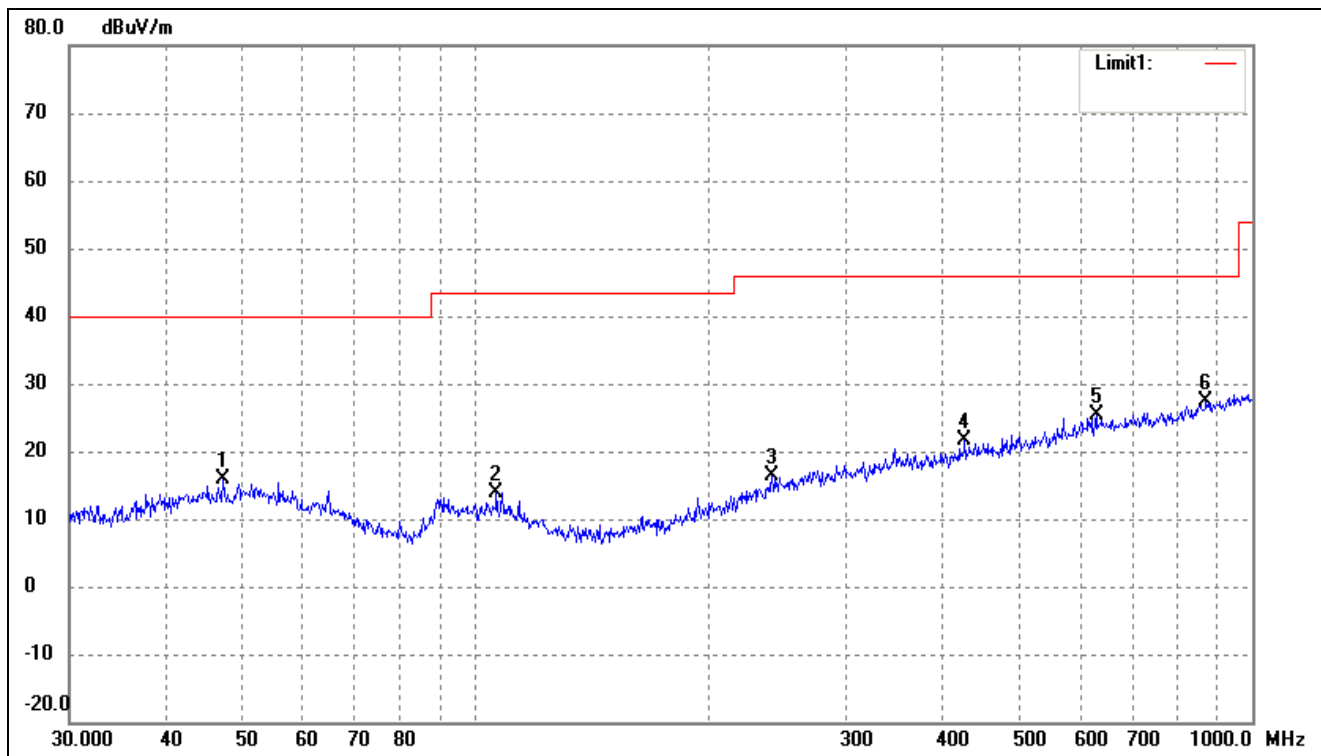
➤ Spurious Emissions Below 1GHz

802.11b_11Mbps			
Test Channel	Low	Polarity:	Horizontal



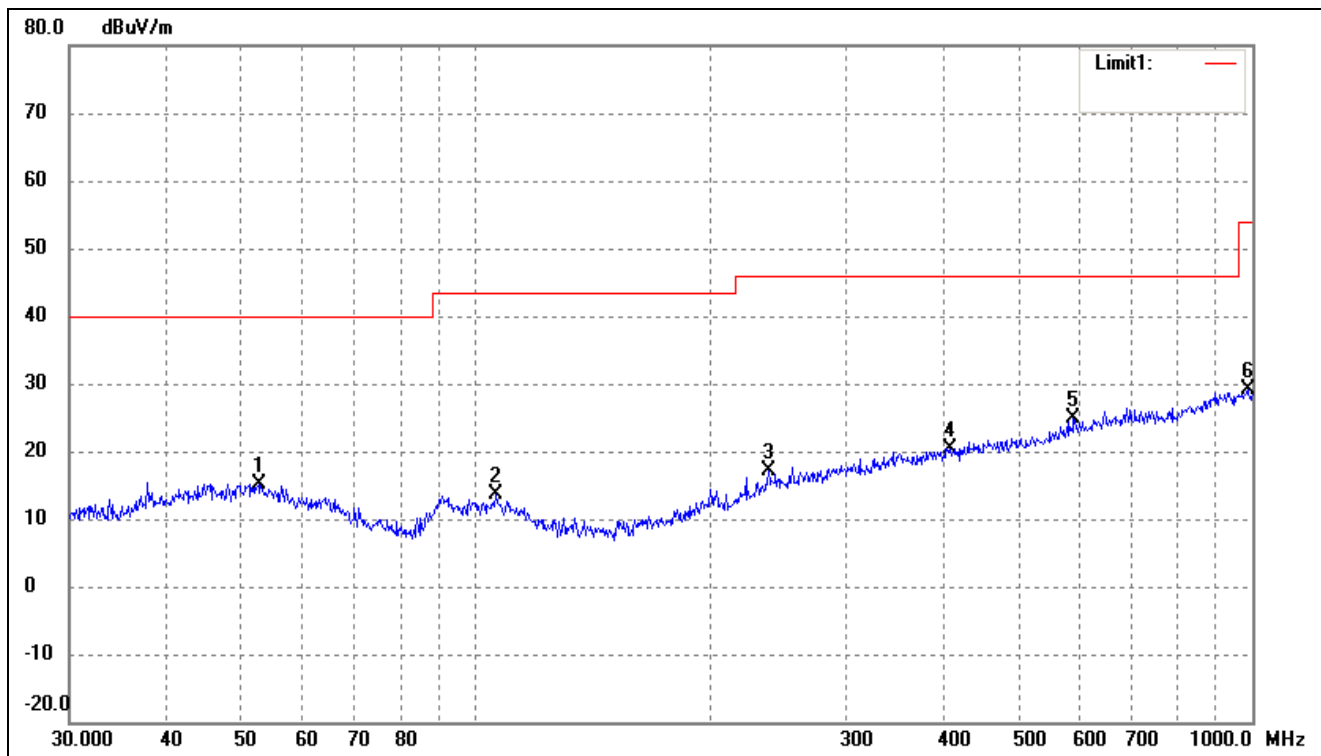
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	53.6931	27.56	-11.83	15.73	40.00	-24.27	201	100	peak
2	99.5279	28.05	-13.86	14.19	43.50	-29.31	96	100	peak
3	234.1683	27.33	-10.78	16.55	46.00	-29.45	61	100	peak
4	345.5951	27.12	-7.06	20.06	46.00	-25.94	96	100	peak
5	590.9737	28.38	-3.37	25.01	46.00	-20.99	86	100	peak
6	900.1473	27.90	0.86	28.76	46.00	-17.24	199	100	peak

802.11b_11Mbps			
Test Channel	Low	Polarity:	Vertical



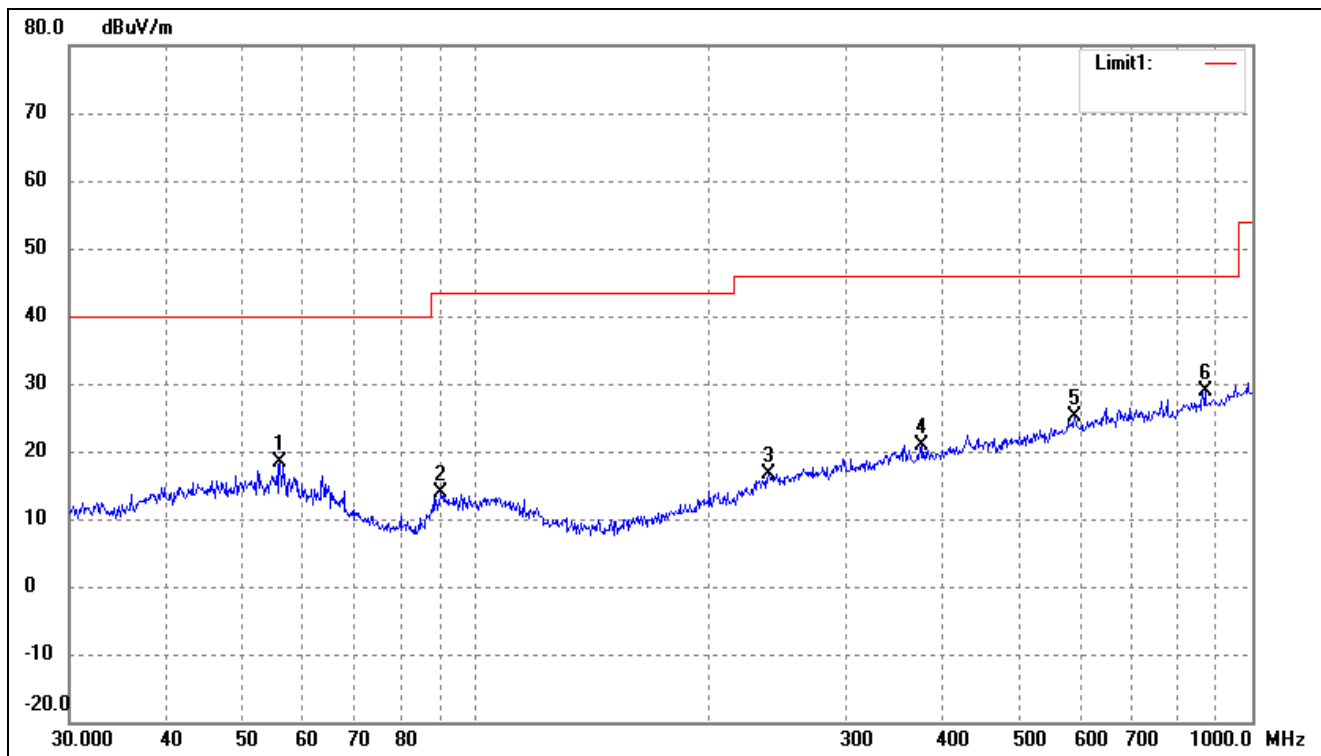
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	47.3253	27.68	-11.70	15.98	40.00	-24.02	277	100	peak
2	106.3850	27.43	-13.51	13.92	43.50	-29.58	96	100	peak
3	240.8302	26.41	-10.01	16.40	46.00	-29.60	355	100	peak
4	426.5210	27.77	-6.14	21.63	46.00	-24.37	94	100	peak
5	629.4772	28.04	-2.74	25.30	46.00	-20.70	137	100	peak
6	872.1832	26.86	0.44	27.30	46.00	-18.70	118	100	peak

802.11b_11Mbps			
Test Channel	Middle	Polarity:	Horizontal



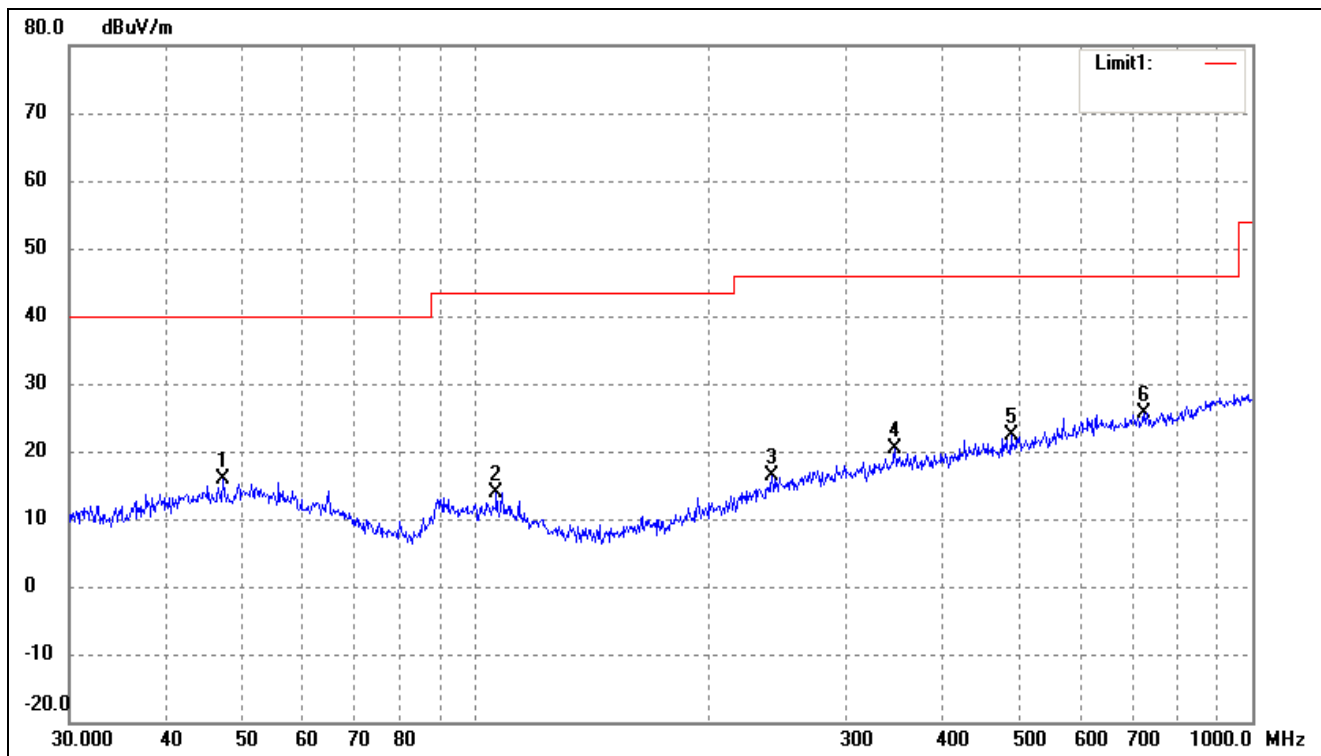
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	52.5752	26.84	-11.67	15.17	40.00	-24.83	268	100	peak
2	106.3850	27.06	-13.51	13.55	43.50	-29.95	119	100	peak
3	238.3102	27.37	-10.23	17.14	46.00	-28.86	54	100	peak
4	407.5144	26.89	-6.55	20.34	46.00	-25.66	261	100	peak
5	588.9050	28.27	-3.40	24.87	46.00	-21.13	152	100	peak
6	986.0716	26.92	2.16	29.08	54.00	-24.92	302	100	peak

802.11b_11Mbps			
Test Channel	Middle	Polarity:	Vertical



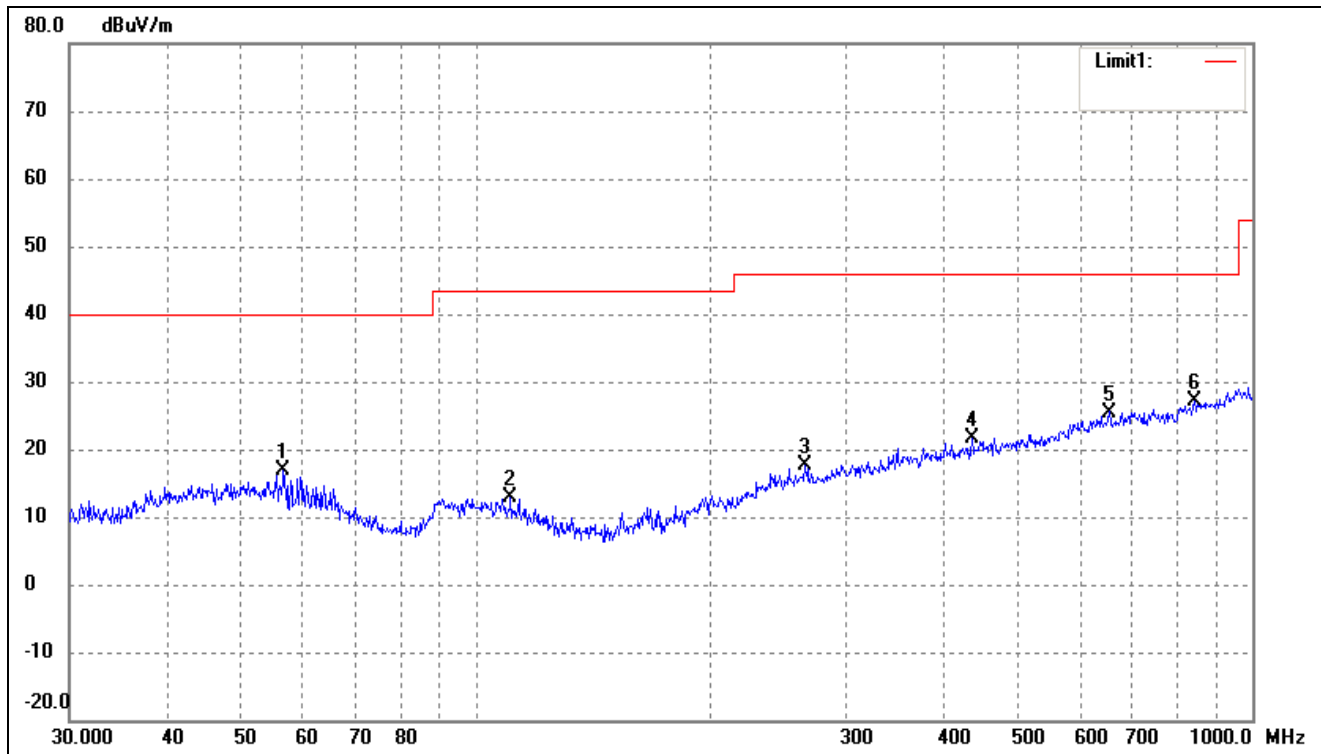
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	56.0007	30.72	-12.36	18.36	40.00	-21.64	316	100	peak
2	90.2205	27.27	-13.44	13.83	43.50	-29.67	96	100	peak
3	238.3102	26.89	-10.23	16.66	46.00	-29.34	74	100	peak
4	375.9384	28.08	-7.11	20.97	46.00	-25.03	216	100	peak
5	590.9737	28.51	-3.37	25.14	46.00	-20.86	100	100	peak
6	869.1301	28.54	0.38	28.92	46.00	-17.08	156	100	peak

802.11b_11Mbps			
Test Channel	High	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	47.3253	27.68	-11.70	15.98	40.00	-24.02	174	100	peak
2	106.3850	27.43	-13.51	13.92	43.50	-29.58	106	100	peak
3	240.8303	26.41	-10.01	16.40	46.00	-29.60	81	100	peak
4	346.8091	27.32	-7.01	20.31	46.00	-25.69	109	100	peak
5	489.0269	27.92	-5.57	22.35	46.00	-23.65	155	100	peak
6	724.2611	27.74	-2.03	25.71	46.00	-20.29	193	100	peak

802.11b_11Mbps			
Test Channel	High	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	56.5929	29.56	-12.60	16.96	40.00	-23.04	53	100	peak
2	110.9571	26.91	-14.05	12.86	43.50	-30.64	120	100	peak
3	265.6757	26.56	-8.95	17.61	46.00	-28.39	89	100	peak
4	435.5898	27.67	-6.08	21.59	46.00	-24.41	135	100	peak
5	654.2318	28.01	-2.51	25.50	46.00	-20.50	112	100	peak
6	842.1296	27.35	-0.32	27.03	46.00	-18.97	100	100	peak

- Spurious Emissions Below 1GHz
- *Test Mode: 802.11b_11Mbps (worst case)*

Frequency	Reading	Correct	Result	Limit	Margin	Polar	Detector
(MHz)	(dBuV/m)	dB	(dBuV/m)	(dBuV/m)	(dB)	H/V	
Low Channel-2412MHz							
4824.00	59.34	-3.87	55.47	74.00	-18.53	H	PK
4824.00	44.45	-3.87	40.58	54.00	-13.42	H	AV
7236.00	55.71	1.14	56.85	74.00	-17.15	H	PK
7236.00	39.88	1.19	41.07	54.00	-12.93	H	AV
4824.00	60.43	-3.86	56.57	74.00	-17.43	V	PK
4824.00	45.22	-3.86	41.36	54.00	-12.64	V	AV
7236.00	55.61	1.10	56.71	74.00	-17.29	V	PK
7236.00	39.79	1.10	40.89	54.00	-13.11	V	AV
Middle Channel-2437MHz							
4874.00	60.59	-3.74	56.85	74.00	-17.15	H	PK
4874.00	45.70	-3.74	41.96	54.00	-12.04	H	AV
7311.00	55.18	1.47	56.65	74.00	-17.35	H	PK
7311.00	41.24	1.47	42.71	54.00	-11.29	H	AV
4874.00	60.88	-3.74	57.14	74.00	-16.86	V	PK
4874.00	45.31	-3.74	41.57	54.00	-12.43	V	AV
7311.00	55.12	1.47	56.59	74.00	-17.41	V	PK
7311.00	40.19	1.47	41.66	54.00	-12.34	V	AV
High Channel-2462MHz							
4924.00	58.85	-3.59	55.26	74.00	-18.74	H	PK
4924.00	44.31	-3.59	40.72	54.00	-13.28	H	AV
7386.00	54.86	1.79	56.65	74.00	-17.35	H	PK
7386.00	39.54	1.79	41.33	54.00	-12.67	H	AV
4924.00	60.23	-3.59	56.64	74.00	-17.36	V	PK
4924.00	45.17	-3.59	41.58	54.00	-12.42	V	AV
7386.00	54.67	1.79	56.46	74.00	-17.54	V	PK
7440.00	40.92	1.79	42.71	54.00	-11.29	V	AV

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

6. Out of Band Emissions

6.1 Standard Applicable

According to §15.247 (d), in any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. 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).

6.2 Test Procedure

According to the KDB 558074 D01 v05r02 Subclause 8.5 and ANSI C63.10-2013 Subclause 11.12, the emissions in restricted frequency bands test method as follows:

A. Radiated emission measurements:

Set span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation (2310MHz to 2420MHz for low bandedge, 2460MHz to 2500MHz for the high bandedge)

RBW = 1MHz, VBW = 1MHz for peak value measured

RBW = 1MHz, VBW = 10Hz for average value measured

Sweep = auto; Detector function = peak/average; Trace = max hold

All the trace to stabilize, set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Those emission must comply with the 15.209 limit for fall in the restricted bands listed in section 15.205. Note that the method of measurement KDB publication number: 913591 may be used for the radiated bandedge measurements.

B. Antenna-port conducted measurements

Peak emission levels are measured by setting the instrument as follows:

a) RBW = as specified in Table 9/

b) $VBW \geq [3 \times RBW]$.

c) Detector = peak.

d) Sweep time = auto.

e) Trace mode = max hold.

f) Allow sweeps to continue until the trace stabilizes. (Note that the required measurement time may be lengthened for low-duty-cycle applications.)

Table 9—RBW as a function of frequency

Frequency	RBW
9 kHz to 150 kHz	200 Hz to 300 Hz
0.15 MHz to 30 MHz	9 kHz to 10 kHz
30 MHz to 1000 MHz	100 kHz to 120 kHz
>1000 MHz	1 MHz

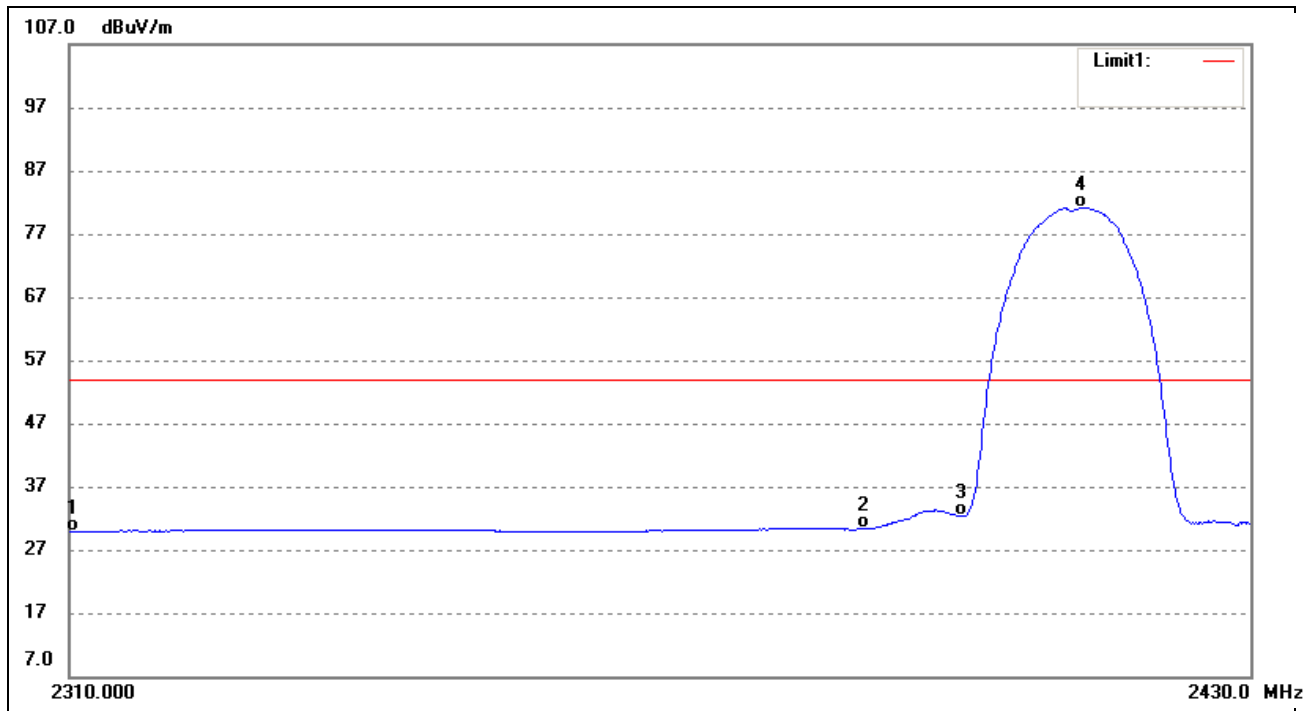
If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in section 8.1. Report the three highest emissions relative to the limit.

6.3 Summary of Test Results/Plots

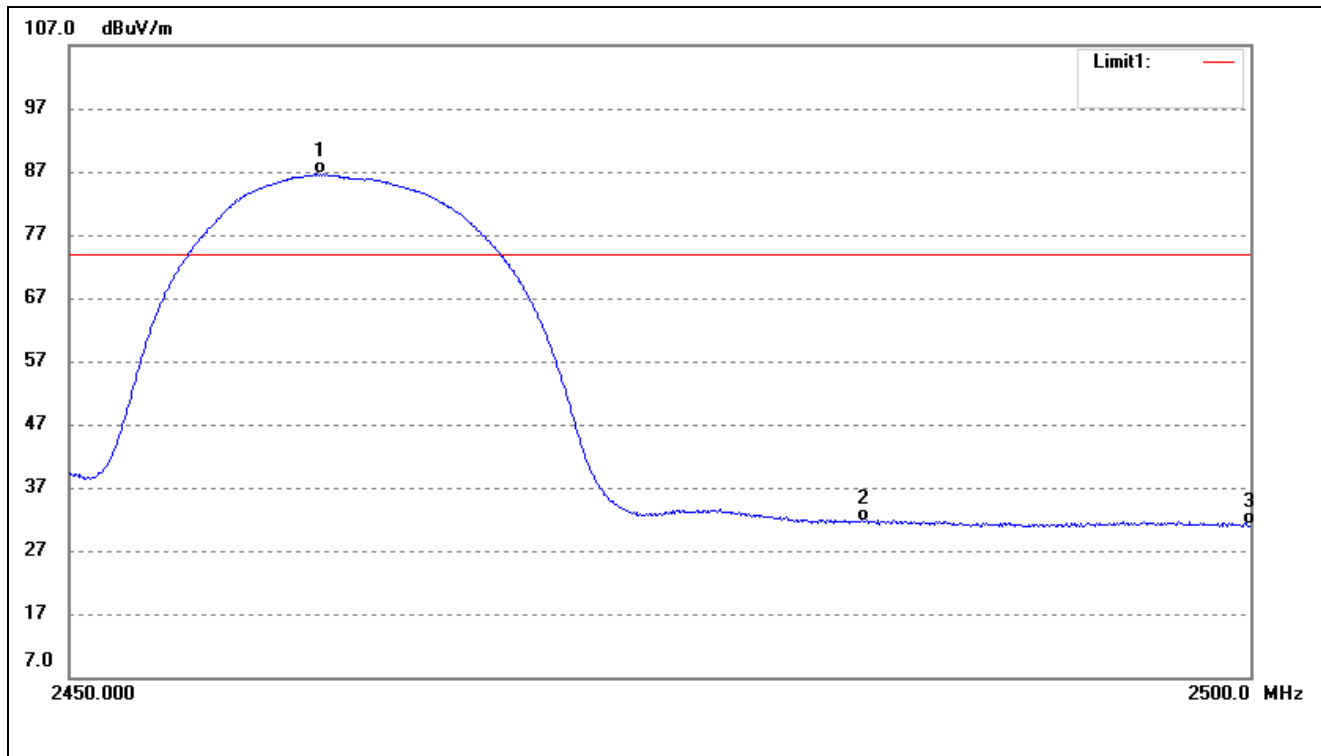
➤ Radiated test

802.11b_11Mbps			
Test Channel	Low	Polarity:	Vertical(worst case)



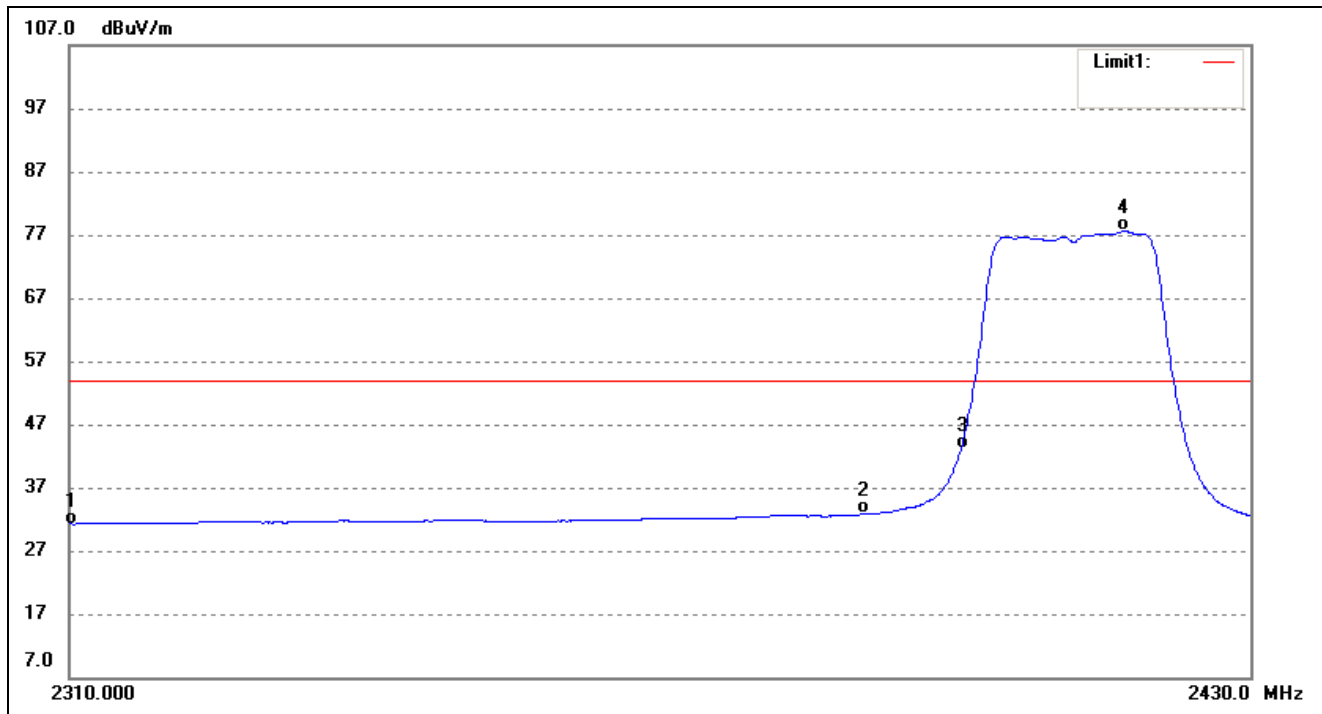
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	39.20	-9.35	29.85	54.00	-24.15	Average Detector
	2310.000	52.31	-9.35	42.96	74.00	-31.04	Peak Detector
2	2390.000	39.53	-9.22	30.31	54.00	-23.69	Peak Detector
	2390.000	52.44	-9.22	43.22	74.00	-30.78	Average Detector
3	2400.000	41.52	-9.20	32.32	Delta=48.84dBc		Average Detector
4	2412.710	90.34	-9.18	81.16			Average Detector

802.11b_11Mbps			
Test Channel	High	Polarity:	Vertical(worst case)



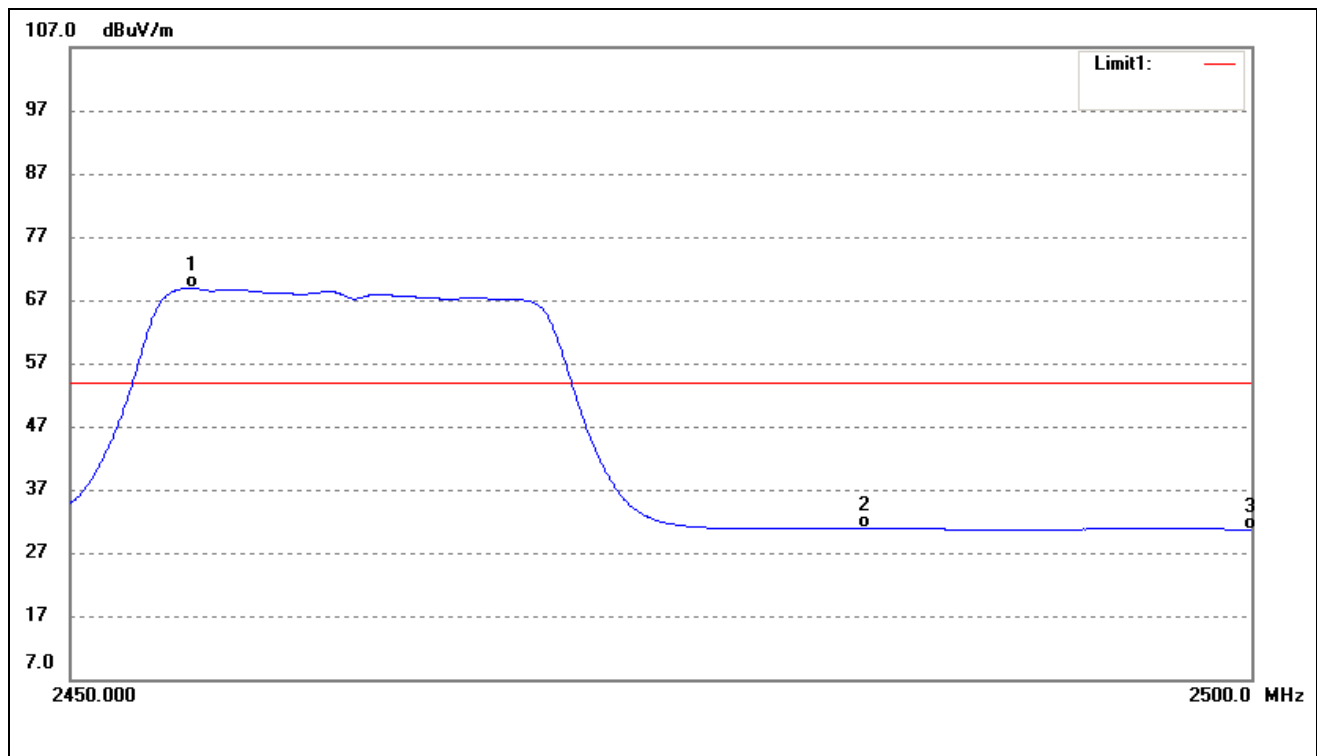
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2460.516	95.71	-9.10	86.61	/	/	Average Detector
	2461.759	103.70	-9.10	94.60	/	/	Peak Detector
2	2483.500	40.70	-9.07	31.63	74.00	-42.37	Average Detector
	2483.500	51.38	-9.07	42.31	74.00	-31.69	Peak Detector
3	2500.000	40.24	-9.03	31.21	74.00	-42.79	Peak Detector
	2500.000	50.85	-9.03	41.82	74.00	-32.18	Average Detector

802.11g_54Mbps			
Test Channel	Low	Polarity:	Vertical(worst case)



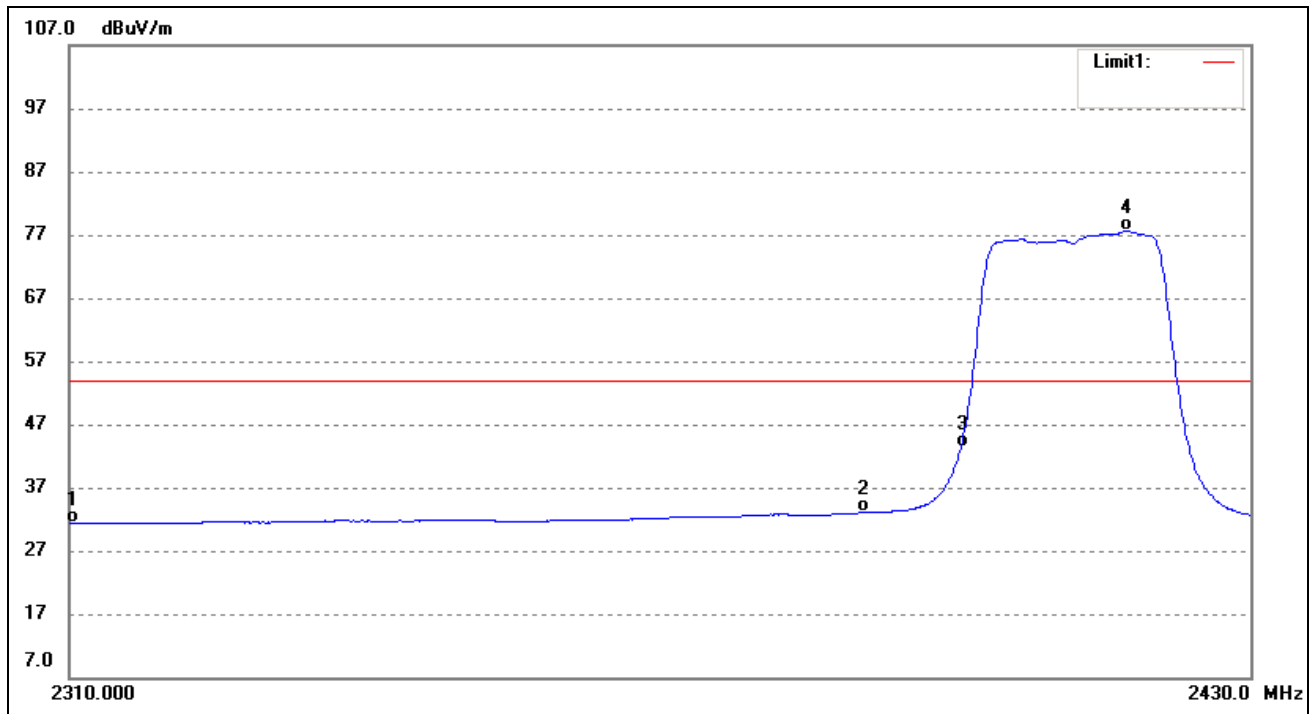
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	40.60	-9.35	31.25	54.00	-22.75	Average Detector
	2310.000	51.37	-9.35	42.02	74.00	-31.98	Peak Detector
2	2390.000	41.99	-9.22	32.77	54.00	-21.23	Peak Detector
	2390.000	52.94	-9.22	43.72	74.00	-30.28	Average Detector
3	2400.000	52.34	-9.20	43.14	Delta=34.47dBc		Average Detector
4	2416.868	86.78	-9.17	77.61			Average Detector

802.11g_54Mbps			
Test Channel	High	Polarity:	Vertical(worst case)



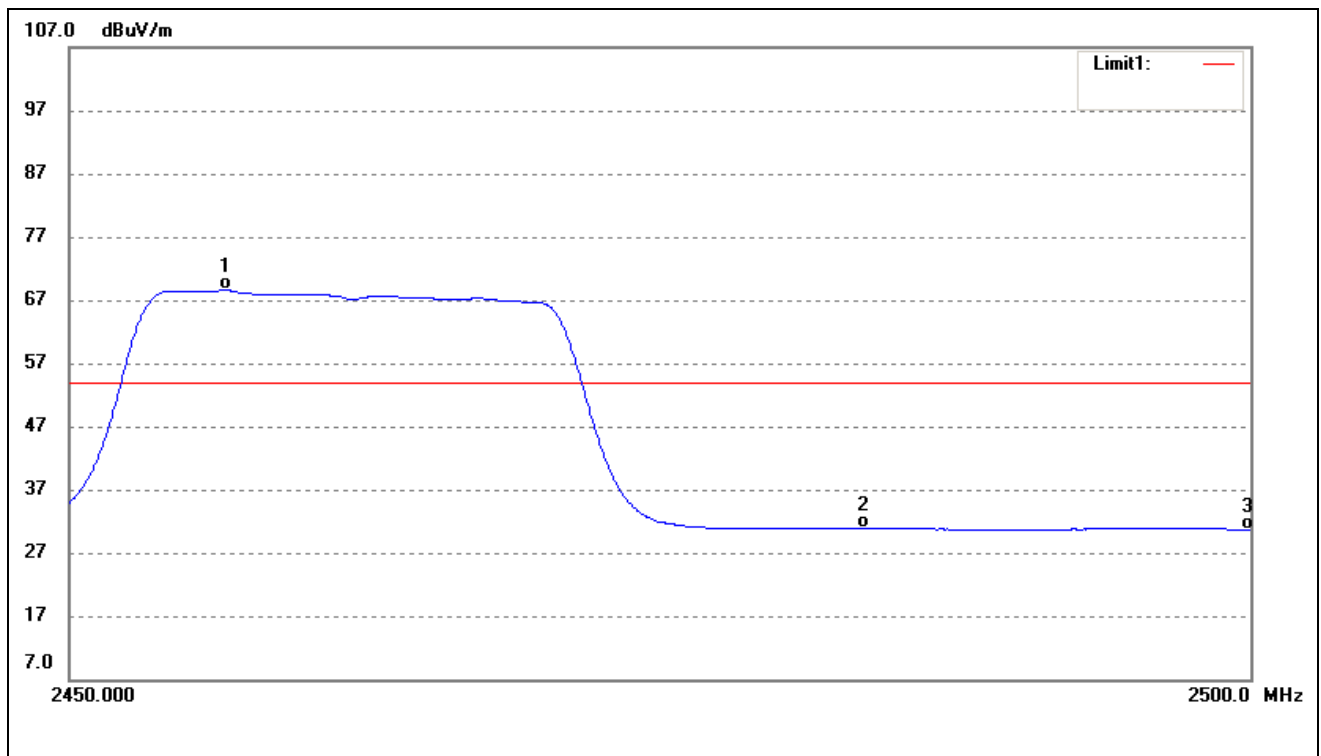
No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2455.054	77.93	-9.10	68.83	/	/	Average Detector
	2462.853	92.63	-9.10	83.53	/	/	Peak Detector
2	2483.500	39.99	-9.07	30.92	54.00	-23.08	Average Detector
	2483.500	51.29	-9.07	42.22	74.00	-31.78	Peak Detector
3	2500.000	39.75	-9.03	30.72	54.00	-23.28	Average Detector
	2500.000	50.83	-9.03	41.80	74.00	-32.20	Peak Detector

802.11n-HT20_MCS7			
Test Channel	Low	Polarity:	Vertical(worst case)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2310.000	40.63	-9.35	31.28	54.00	-22.72	Average Detector
	2310.000	50.96	-9.35	41.61	74.00	-32.39	Peak Detector
2	2390.000	42.23	-9.22	33.01	54.00	-20.99	Peak Detector
	2390.000	52.77	-9.22	43.55	74.00	-30.45	Average Detector
3	2400.000	52.68	-9.20	43.48	Delta=34.15dBc		Average Detector
4	2417.113	86.80	-9.17	77.63			Average Detector

802.11n-HT20_MCS7			
Test Channel	High	Polarity:	Vertical(worst case)

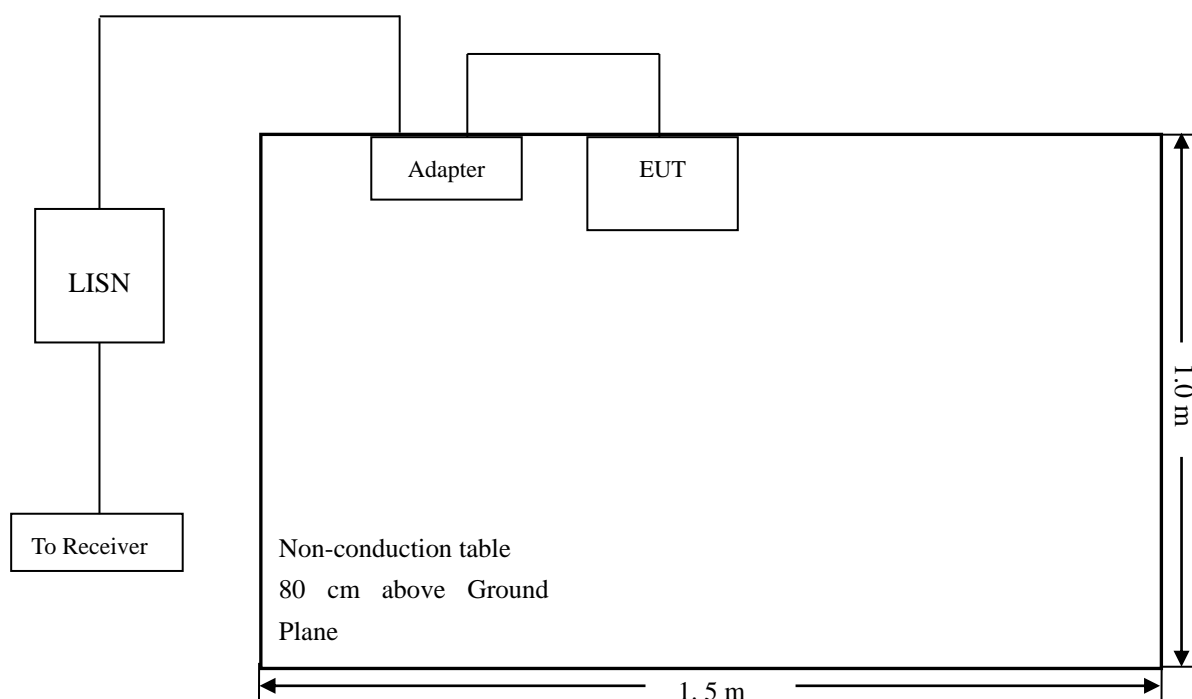


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2456.592	77.65	-9.10	68.55	/	/	Average Detector
	2456.592	95.93	-9.10	86.83	/	/	Peak Detector
2	2483.500	39.97	-9.07	30.90	54.00	-23.10	Average Detector
	2483.500	51.16	-9.07	42.09	74.00	-31.91	Peak Detector
3	2500.000	39.77	-9.03	30.74	54.00	-23.26	Average Detector
	2500.000	51.98	-9.03	42.95	74.00	-31.05	Peak Detector

7.1 Test Procedure

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

7.2 Basic Test Setup Block Diagram



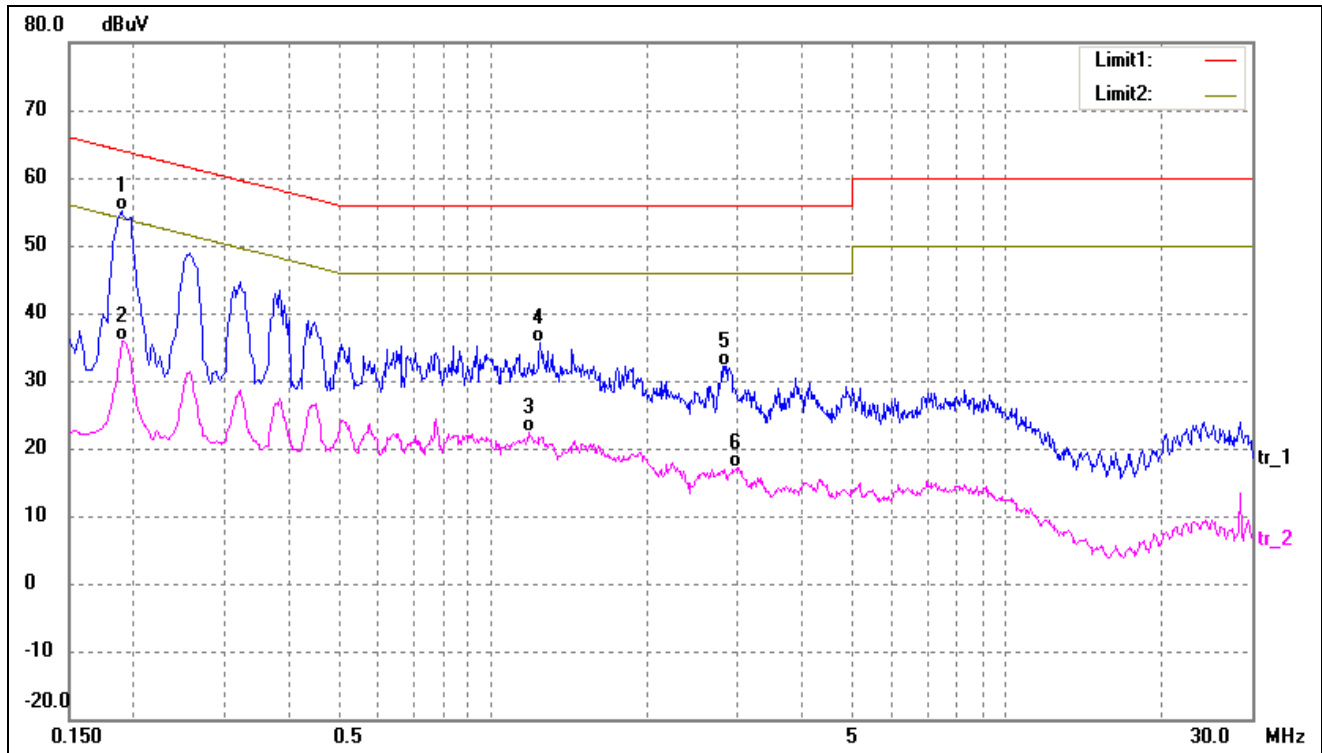
7.3 Test Receiver Setup

During the conducted emission test, the test receiver was set with the following configurations:

Start Frequency	150 kHz
Stop Frequency	30 MHz
Sweep Speed	Auto
IF Bandwidth.....	10 kHz
Quasi-Peak Adapter Bandwidth	9 kHz
Quasi-Peak Adapter Mode	Normal

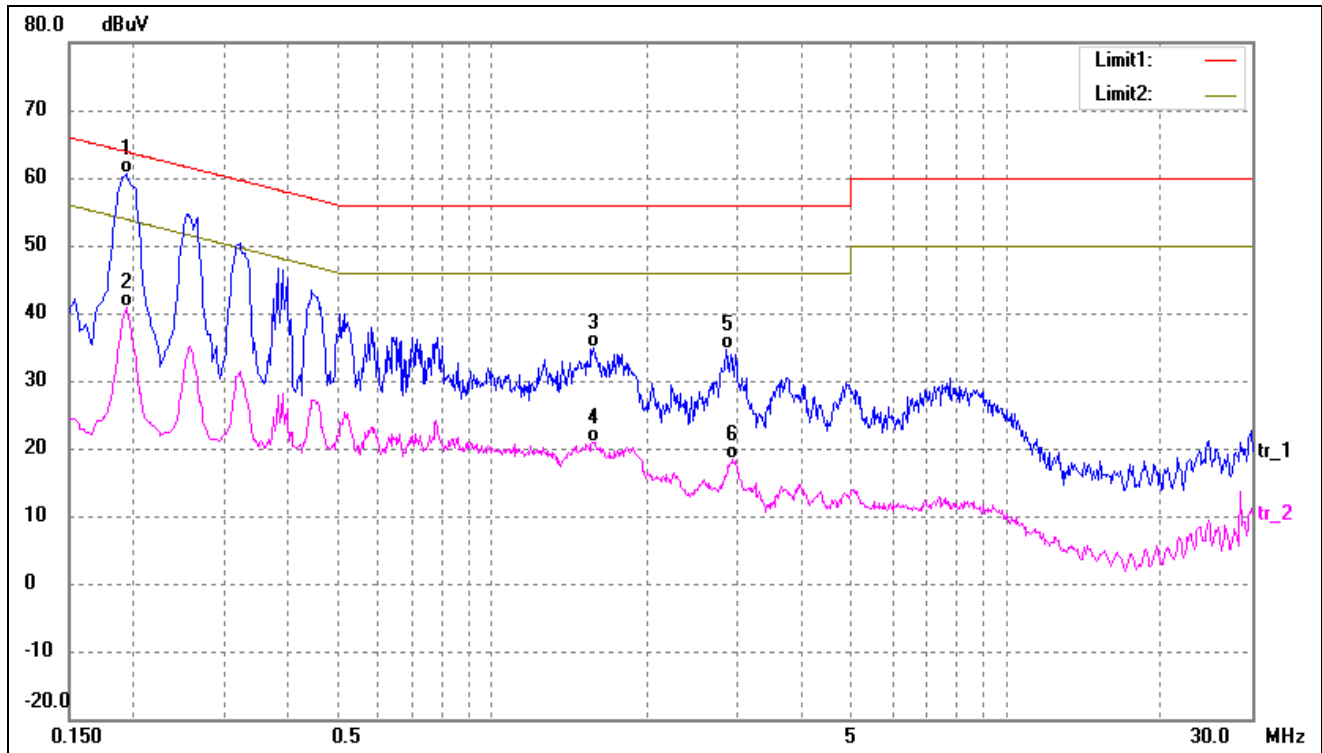
7.4 Summary of Test Results/Plots

Test Mode	Communication	AC120V 60Hz	Polarity:	Neutral
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No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1900	44.94	10.12	55.06	64.03	-8.97	QP
2	0.1900	25.80	10.12	35.92	54.03	-18.11	AVG
3	1.1740	11.79	10.52	22.31	46.00	-23.69	AVG
4	1.2380	25.03	10.53	35.56	56.00	-20.44	QP
5	2.8260	21.57	10.67	32.24	56.00	-23.76	QP
6	2.9820	6.49	10.68	17.17	46.00	-28.83	AVG

Test Mode	Communication	AC120V 60Hz	Polarity:	Line
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***** END OF REPORT *****