

TEST REPORT

Report No.:	E201605121202-3	Application No.:	E201605121202
Applicant:	BloomSky, Inc		
Applicant Address:	723 N, Shoreline Blvd, Mountain View, CA 94043, United States		
Sample Description:	SKY		
Model:	SKY2		
Adding Model:	/		
FCC ID:	2AD8ESKY2		
Test Specification:	FCC Part 15,Subpart C(Section 15.247)		
Test Date:	2016-05-12 to 2016-07-13		
Issue Date:	2016-07-13		
Test Result:	PASS		
Prepared By:	Reviewed By:	Approved By:	
Brian Xiao / Test Engineer	Lynn Xiao /Technical Manager	Yong Dai /Technical Manager	
			
Date:2016-07-13	Date:2016-07-13	Date:2016-07-13	
Other Aspects:			
/			
Abbreviations: ok / P = passed; fail / F = failed; n.a. / N = not applicable			
The test result in this test report refers exclusively to the presented test sample. This report shall not be reproduced except in full, without the written approval of GRGT.			

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Ver.:1.0 / 01.Jan.2011

DIRECTIONS OF TEST

1. This station carries out test task according to the national regulation of verifications which can be traced to National Primary Standards and BIPM.
2. The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.
3. If there is any objection concerning the test, the client should inform the laboratory within 15 days from the date of receiving the test report.

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1. TEST RESULT SUMMARY

FCC Part 15,Subpart C:2015			
Standard	Item	Limit / Severity	Result
FCC Part 15,Subpart C (15.247)	Antenna Requirement	§15.203	PASS
	Conducted Emissions	§15.207 (a)	PASS
	Radiated Electromagnetic Disturbance	§15.247(d)	PASS
	6 dB Bandwidth	§15.247 (a)(2)	PASS
	Maximum Peak Output Power	§15.247(b)(3)	PASS
	Power Spectral Density	§15.247(e)	PASS
	Emissions In Non-Rest ricted Frequency Bands	§15.247(d)	PASS
	Emissions In Restricted Frequency Bands	§15.205	PASS
	Band-Edge Measurements	§15.247(d)	PASS

2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: BloomSky, Inc
Address: 723 N, Shoreline Blvd, Mountain View, CA 94043, United States

2.2 MANUFACTURER

Name: BloomSky, Inc
Address: 723 N, Shoreline Blvd, Mountain View, CA 94043, United States

2.3 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: SKY
Model No.: SKY2
Adding Model: /
Trade Name: BloomSKY
Power Supply: AC 120V/60Hz; DC 12V;
AC adapter: Model: OH-1024E1202000U
INPUT: 100-240V~50/60Hz 650mA
OUTPUT: 12V 2A
Frequency Range: 2412MHz~2462MHz: 802.11b; 802.11g; 802.11n
Test Frequency: 802.11b/802.11g/802.11n(HT20): 2412MHz to 2462MHz
Modulation type: DSSS for 802.11b mode;
OFDM for 802.11g mode, 802.11n mode.
Antenna gain: 2dBi
Antenna type: Monopole antenna
Note: /

2.4 DESCRIPTION OF SUPPORT UNITS

Instruments:

Name of Equipment	Manufacturer	Model	Serial Number
PC	Lenovo	E40	0578DTC
USB TO TTL	/	YP-01	/

Test software:

Software version	Test level
Command	802.11b Power level: 16
	802.11g Power level: 8
	802.11n20 Power level: 8

2.5 DUTY CYCLE

In order to assist with the determination of the average level of fundamental and spurious emissions field strength, measurements were made of duty cycle to determine the transmission duration and the silent period time of the transmitter. The transmitter duty cycle was measured using a spectrum analyser in the time domain and calculated by using the following calculation:

Duty cycle= T on time / Period

Duty factor = $10 * \log (1/\text{Duty cycle})$

If duty cycle of test signal is > 98%, duty factor is not required.

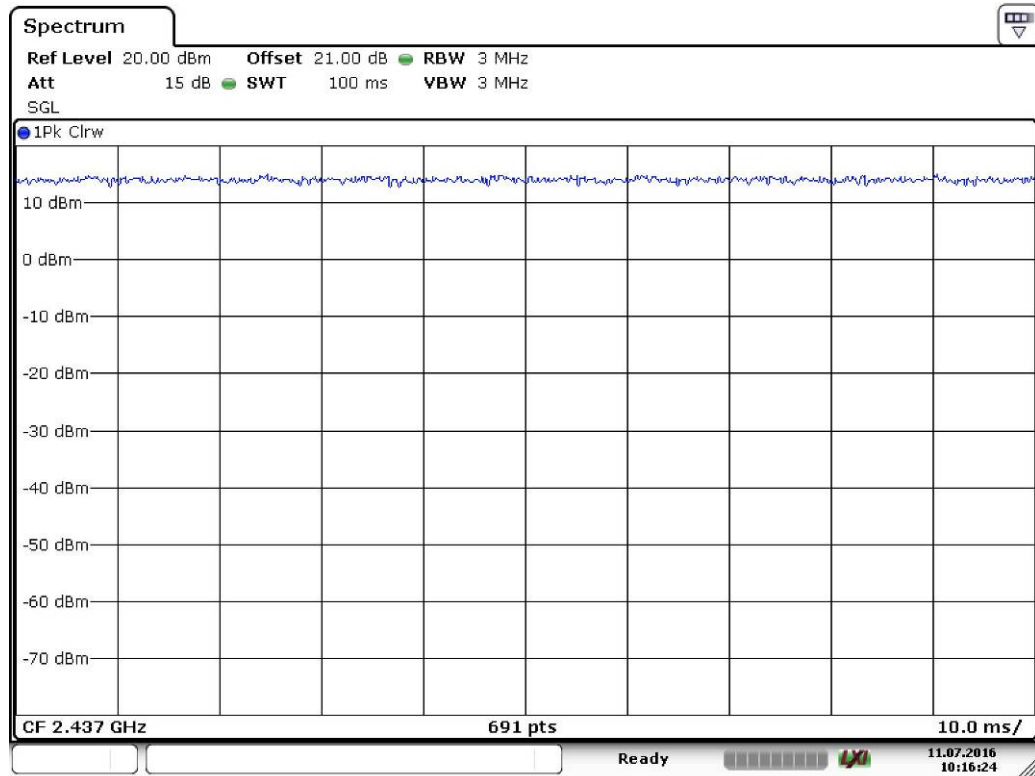
If duty cycle of test signal is < 98%, duty factor shall be considered.

Test data:

Test Mode	T on time(ms)	Period(ms)	Duty Cycle	Duty Factor
802.11b	N/A	N/A	100%	0
802.11g	N/A	N/A	100%	0
802.11n	N/A	N/A	100%	0

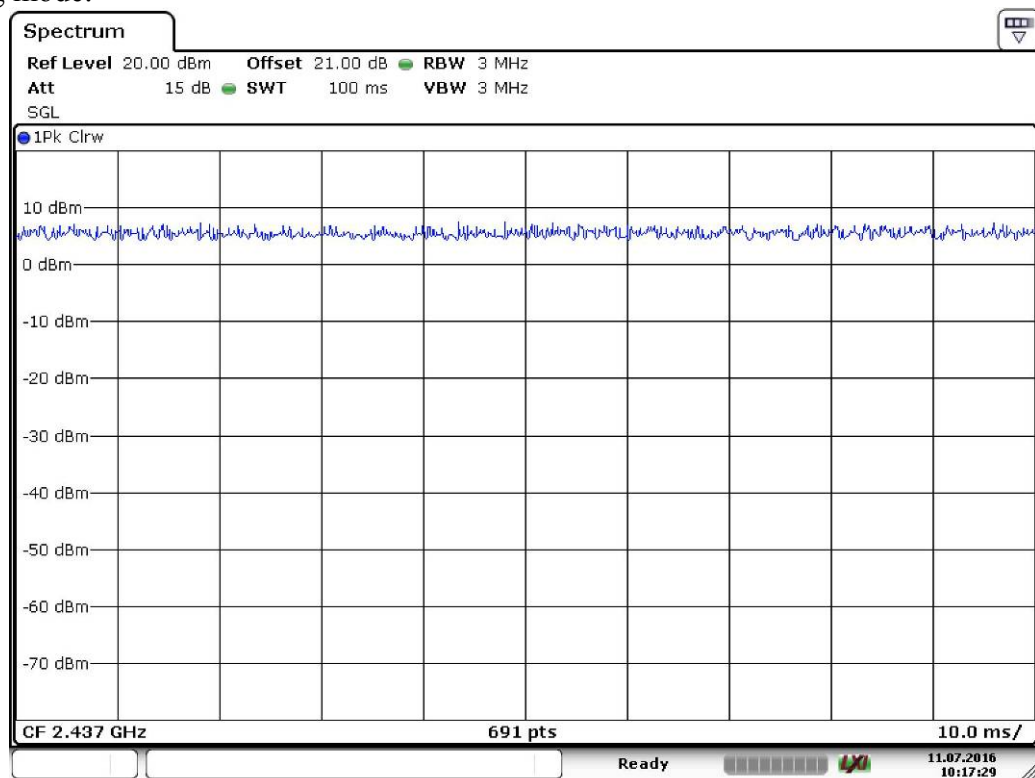
Test plot as below:

802.11b mode:



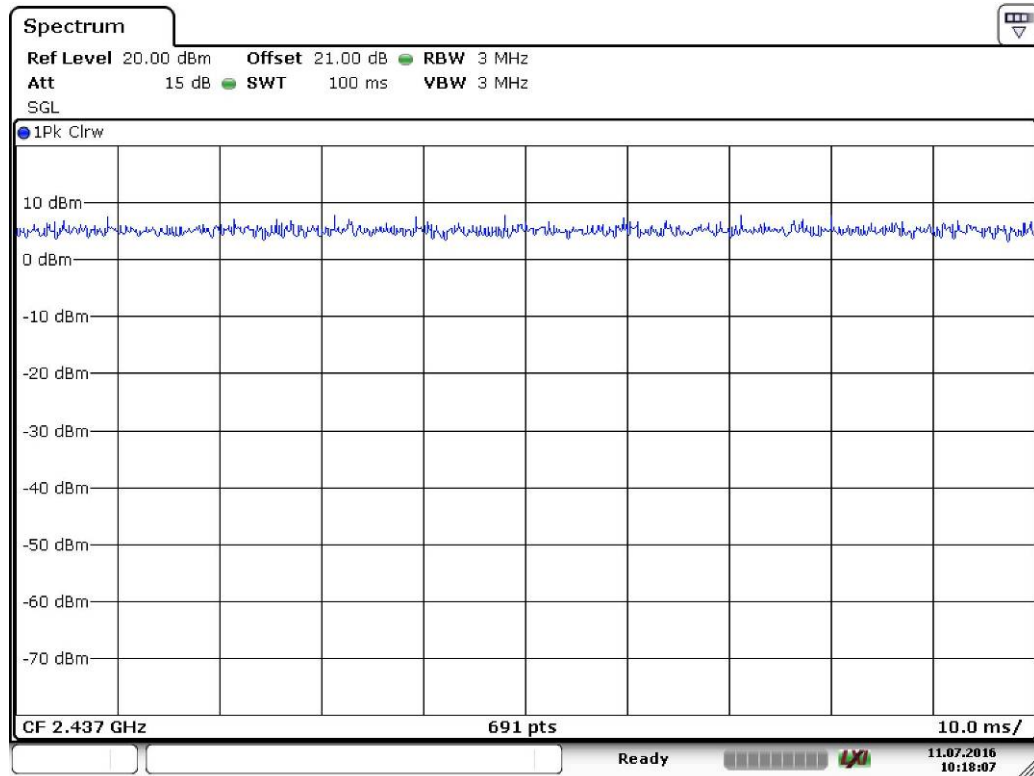
Date: 11.JUL.2016 10:16:24

802.11g mode:



Date: 11.JUL.2016 10:17:29

802.11n mode:



Date: 11.JUL.2016 10:18:07

3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests and measurements refer to this report were performed by Guangzhou GRG Metrology and Test CO., LTD.

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Telephone: +86-20-38699959, 38699960, 38699961

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3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC Listed Lab (No. 688188)
Canada	Registration No.:8355A-1

3.3 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	30MHz~1000MHz	4.2dB
		1GHz~26.5GHz	4.2dB
	Vertical	30MHz~1000MHz	4.4dB
		1GHz~26.5GHz	4.4dB
Conducted Emission		9kHz~30MHz	3.1 dB

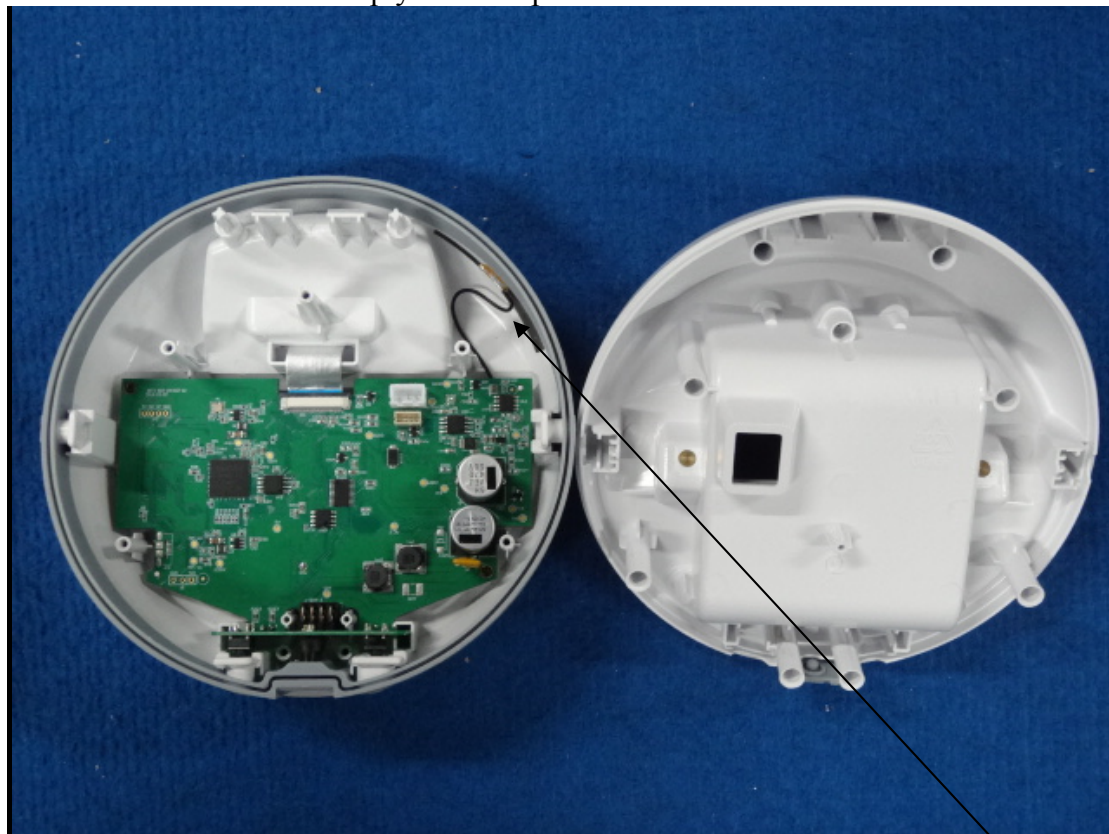
This uncertainty represents an expanded uncertainty factor of $k=2$.

3.4 LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS / BAND-EDGE MEASUREMENTS / 6dB BANDWIDTH TESTING / MAXIMUM PEAK OUTPUT POWER / POWER SPECTRAL DENSITY				
Spectrum Analyzer	R&S	FSV30	103246	2017-02-15
CONDUCTED EMISSION MEASUREMENT				
EMI Receiver	R&S	ESCI	100529	2017-02-15
L.I.S.N	SCHWARZBECK	NSLK 8127	8127450	2016-07-20
RADIATED ELECTROMAGNETIC DISTURBANCE / EMISSIONS IN RESTRICTED FREQUENCY BANDS				
Receiver	R&S	ESU26	100526	2017-02-16
Loop antenna	R&S	HFH2-Z2	881058/28	2017-03-10
Biconical Log-periodic Antenna	ETS.LINDGREN	3142C	75971	2017-03-14
Horn antenna	SCHWARZBECK	BBHA9120D	752	2017-02-03
Horn antenna	SCHWARZBECK	BBHA9170	411	2016-12-22
Broadband Amplifiers	SCHWARZBECK	bbv9718	9718-276	2017-06-10
Pre-amplifier	Rohde & Schwarz	SCU 40A	100432	2016-07-24
Semi-anechoic chamber	ETS	966(RFD-F/A-100)	3730	2017-01-04

4. ANTENNA REQUIREMENT

The EUT antenna is Monopole antenna. Antenna gain is 2dBi .which accordance 15.203.is considered sufficient to comply with the provisions of this section.



Antenna

5. CONDUCTED EMISSION MEASUREMENT

5.1 LIMITS

Frequency range	Limits (dB μ V)	
	Quasi-peak	Average
150kHz $\sim$ 0.5MHz	66 $\sim$ 56	56 $\sim$ 46
0.5 MHz $\sim$ 5 MHz	56	46
5 MHz $\sim$ 30 MHz	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150 kHz to 0.5MHz.

5.2 TEST PROCEDURES

Procedure of Preliminary Test

Test procedures follow ANSI C63.4:2013.

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

- Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:

- 1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or

- 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;

- All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;

- The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;

- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.

- I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

The test mode(s) described in Item 2.4 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.4 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

Note:

Pre-scan all the rate, found that:

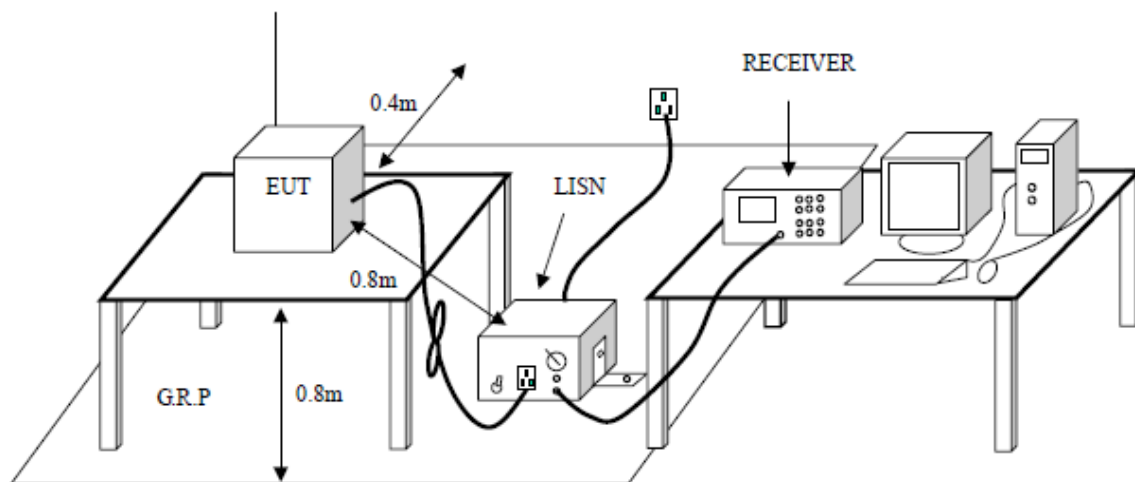
11Mbps of rate is the worst case of 802.11b;

54Mbps of rate is the worst case of 802.11g;

MCS7 of rate is the worst case of 802.11n20;

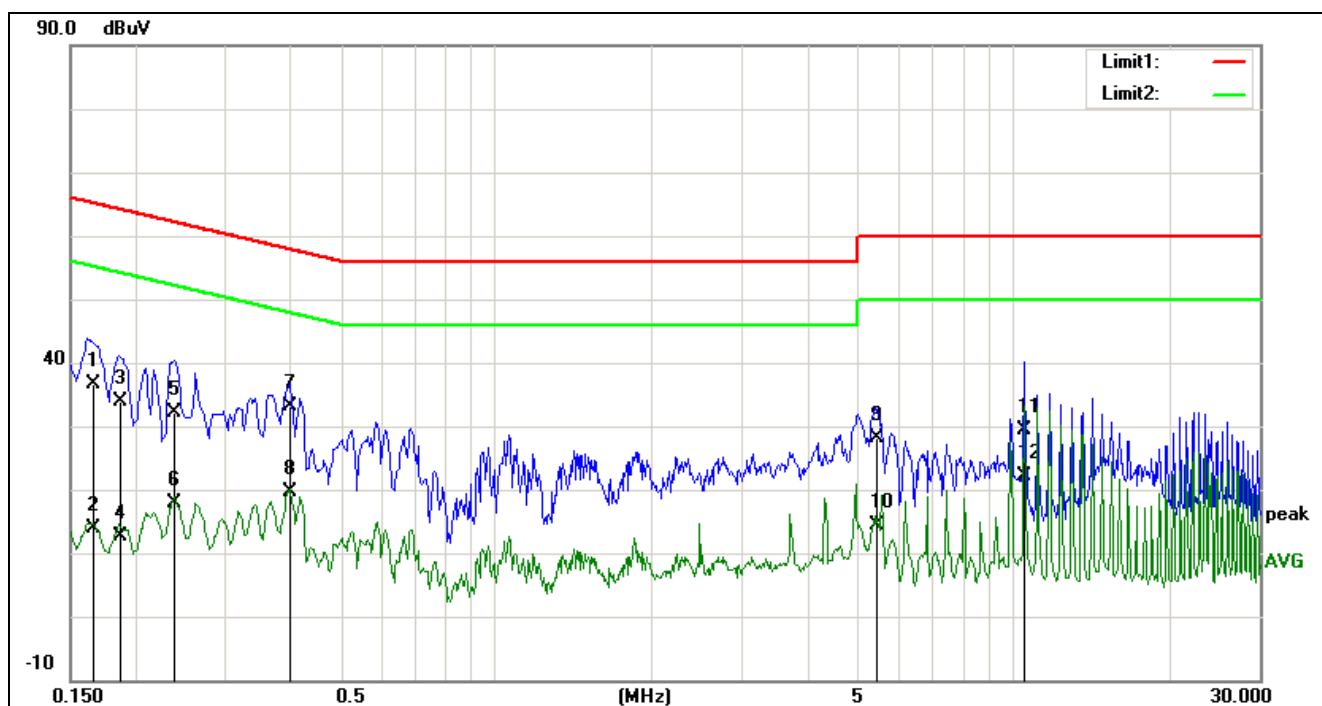
Pre-scan 802.11b mode, 802.11g mode and 802.11n20 mode, found that 802.11b mode for lowest channel is the worst case. The worst case emissions were reported.

5.3 TEST SETUP



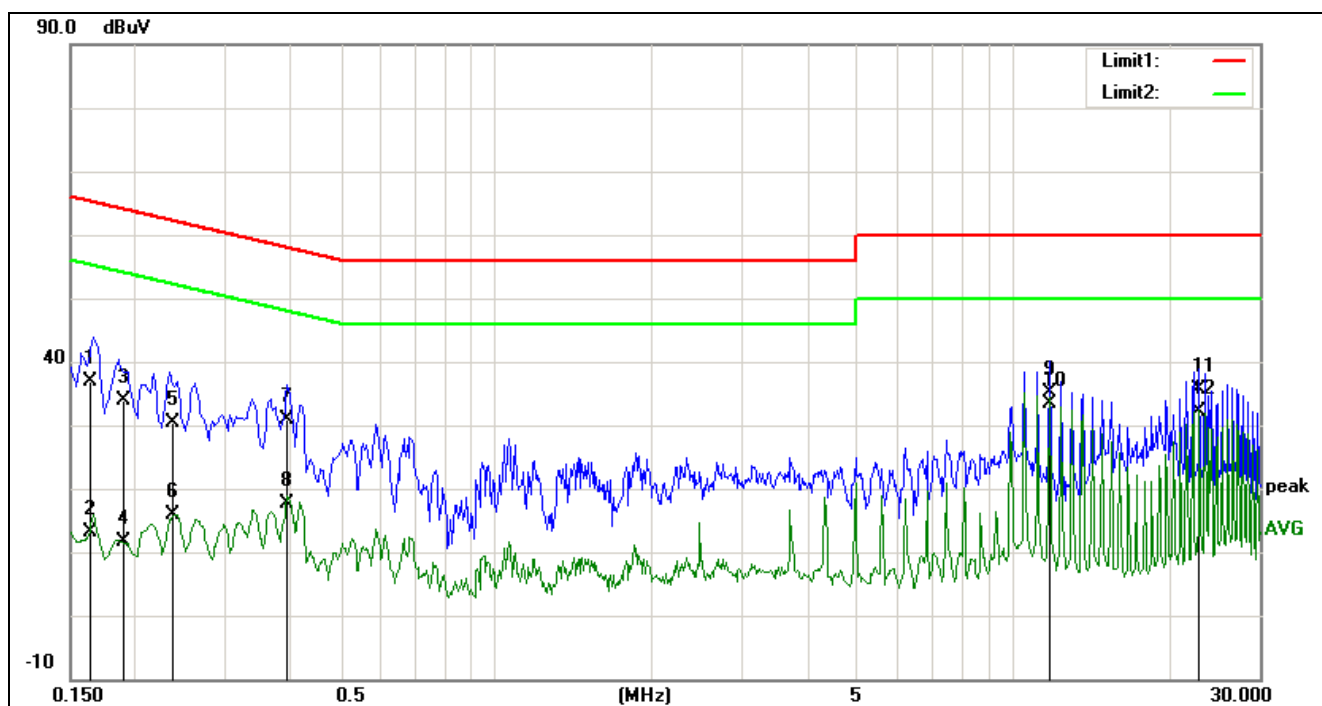
5.4 TEST RESULTS

Project No.:	E201605121202	Probe:	L1
Standard:	(CE)FCC PART 15 class B_QP	Power Source:	AC 120V/60Hz
Test item:	Conduction Test	Date:	2016-6-13
Temp./Hum.(%RH):	23.5°C/53%RH	Time:	15:18:22
EUT:	SKY	Test Result:	Pass
Model:	SKY2		
Note:	802.11b Mode 2412MHz		
Test by	Shihua Xu		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1664	29.90	6.63	36.53	65.13	-28.60	QP
2	0.1664	7.22	6.63	13.85	55.13	-41.28	AVG
3	0.1877	27.29	6.59	33.88	64.13	-30.25	QP
4	0.1877	6.16	6.59	12.75	54.13	-41.38	AVG
5	0.2368	25.54	6.54	32.08	62.20	-30.12	QP
6	0.2368	11.27	6.54	17.81	52.20	-34.39	AVG
7	0.3987	26.60	6.59	33.19	57.88	-24.69	QP
8	0.3987	13.04	6.59	19.63	47.88	-28.25	AVG
9	5.4631	21.35	6.88	28.23	60.00	-31.77	QP
10	5.4631	7.53	6.88	14.41	50.00	-35.59	AVG
11	10.5358	22.75	6.75	29.50	60.00	-30.50	QP
12	10.5358	15.45	6.75	22.20	50.00	-27.80	AVG

Project No.:	E201605121202	Probe:	N
Standard:	(CE)FCC PART 15 class B_QP	Power Source:	AC 120V/60Hz
Test item:	Conduction Test	Date:	2016-6-13
Temp./Hum.(%RH):	23.5°C/53%RH	Time:	15:24:07
EUT:	SKY	Test Result:	Pass
Model:	SKY2		
Note:	802.11b Mode 2412MHz		
Test by	Shihua Xu		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1631	30.33	6.63	36.96	65.30	-28.34	QP
2	0.1631	6.47	6.63	13.10	55.30	-42.20	AVG
3	0.1904	27.39	6.59	33.98	64.01	-30.03	QP
4	0.1904	5.05	6.59	11.64	54.01	-42.37	AVG
5	0.2373	23.94	6.54	30.48	62.19	-31.71	QP
6	0.2373	9.43	6.54	15.97	52.19	-36.22	AVG
7	0.3936	24.31	6.59	30.90	57.99	-27.09	QP
8	0.3936	10.92	6.59	17.51	47.99	-30.48	AVG
9	11.7692	28.32	6.86	35.18	60.00	-24.82	QP
10	11.7692	26.60	6.86	33.46	50.00	-16.54	AVG
11	22.9351	28.61	7.05	35.66	60.00	-24.34	QP
12	22.9351	25.06	7.05	32.11	50.00	-17.89	AVG

6. RADIATED ELECTROMAGNETIC DISTURBANCE

6.1 LIMITS

Frequency (MHz)	Quasi-peak(dB μ V/m)
30 ~ 88	40
88~216	43.5
216 ~ 960	46
Above 960	54

NOTE: (1) The lower limit shall apply at the transition frequencies.

Frequency (GHz)	Quasi-peak(dB μ V/m)
1 ~ 26.5	74
1~26.5	54

6.2 TEST PROCEDURES

Procedure of Preliminary Test

According to ANSI C63.10:2013, a calibrated, linearly polarized antenna shall be positioned at the specified distance from the periphery of the EUT. The specified distance is the distance between the horizontal projection onto the ground plane of the closest periphery of the EUT and the projection onto the ground plane of the center of the axis of the elements of the receiving antenna.

Measurements shall be made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna shall be varied in height above the reference ground plane to obtain the maximum signal strength. Unless otherwise specified, the measurement distance shall be 3 m. The EUT put on a 0.8m table below 1GHz, on 1.5m table above 1GHz. At any measurement distance, the antenna height shall be varied from 1 m to 4 m. These height scans apply for both horizontal and vertical polarizations, except that for vertical polarization, the minimum height of the center of the antenna shall be increased so that the lowest point of the bottom of the lowest antenna element clears the site reference ground plane by at least 25 cm. For a tuned dipole, the minimum heights as measured from the center of the antenna are those specified in the NSA measurement requirements.

For tabletop systems, cables or wires should be manipulated within the range of likely arrangements. For floor-standing equipment, the cables or wires should be located in the same manner as the user would install them and no further manipulation is made. For combination EUTs, the tabletop and floor-standing portions of the EUT shall follow the procedures for their respective setups and cable manipulation.

Table-top equipment is placed on a non-conductive set-up table with height $0.8/1.5 \text{ m} \pm 0.01 \text{ m}$, ANSI C63.10:2013 specifies the method to determine the impact of the non-conductive set-up table on test results. If the manner of cable installation is not known, or if it changes with each installation, cables or wires for floor-standing equipment shall be manipulated to

the extent possible to produce the maximum level of emissions. For each mode of operation required to be tested, the frequency spectrum shall be monitored. Variations in antenna height between 1 m and 4 m, antenna polarization, EUT azimuth, and cable or wire placement shall be explored to produce the emission that has the highest amplitude relative to the limit.

Procedure of Final Test

EUT and support equipment were set up on the turntable as per the configuration with highest emission level in the preliminary test. The Analyzer / Receiver scanned from 30MHz to 1000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level. Record at least six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

Below 1GHz Set the spectrum analyzer: RBW =100KHz VBW $\geq$ RBW, Span = enough to catch the trace. Sweep = auto; Detector Function = QP. Trace = Max-hold.

Above 1GHz Set the spectrum analyzer: RBW =1MHz VBW $\geq$ RBW, Span = enough to catch the trace. Sweep = auto; Detector Function = Peak and AVG. Trace = Max-hold.

Note:

Pre-scan all the rate, found that:

11Mbps of rate is the worst case of 802.11b;

54Mbps of rate is the worst case of 802.11g;

MCS7 of rate is the worst case of 802.11n20;

The worst case emissions were reported.

Above 1GHz, the tested values of Peak are lower than the correspondingly limited values of AVG. So don't read the values of AVG. For this intentional radiator operates below 25 GHz. the spectrum shall be investigated to the tenth harmonic of the highest fundamental frequency. And above the third harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 7rd harmonic.

6.3 TEST SETUP

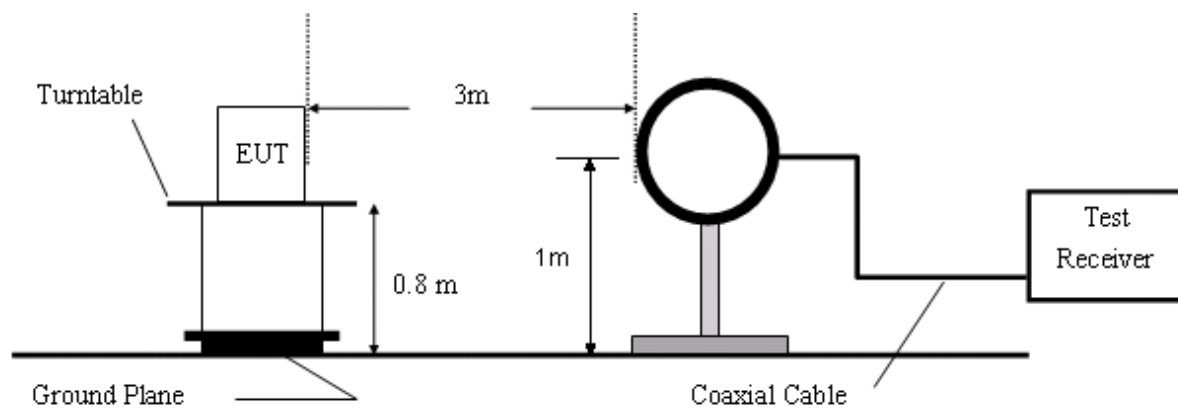


Figure 1. 9KHz to 30MHz radiated emissions test configuration

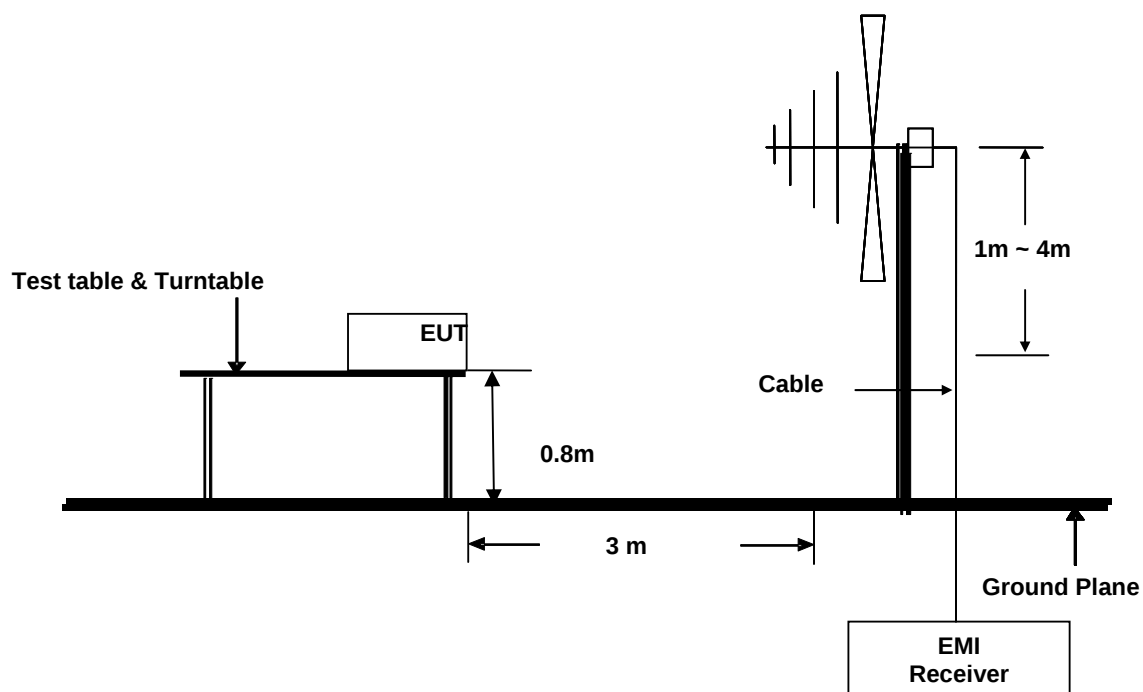


Figure 2. 30MHz to 1GHz radiated emissions test configuration

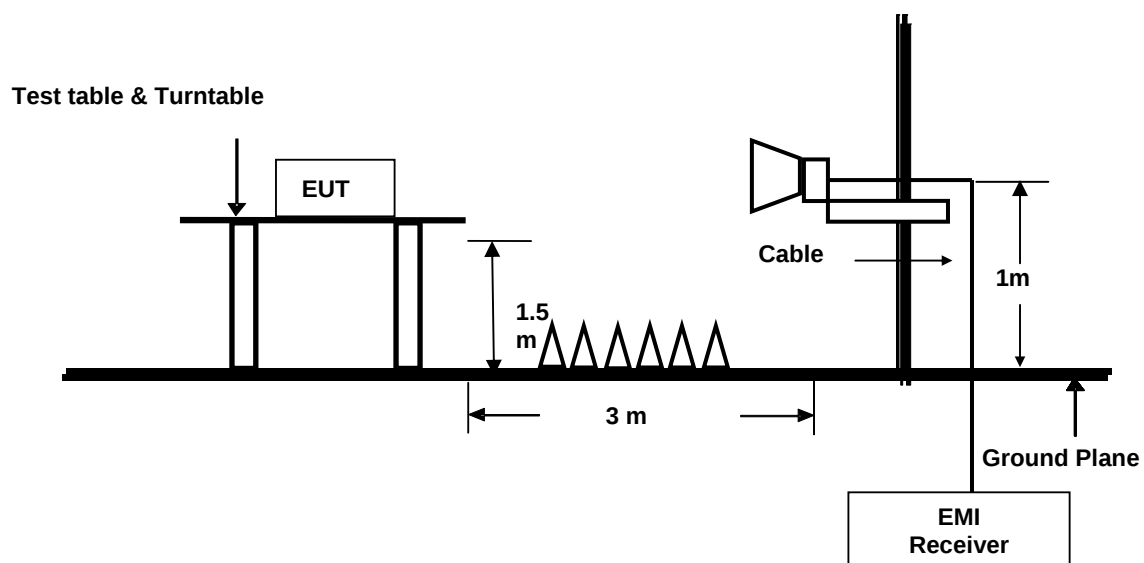
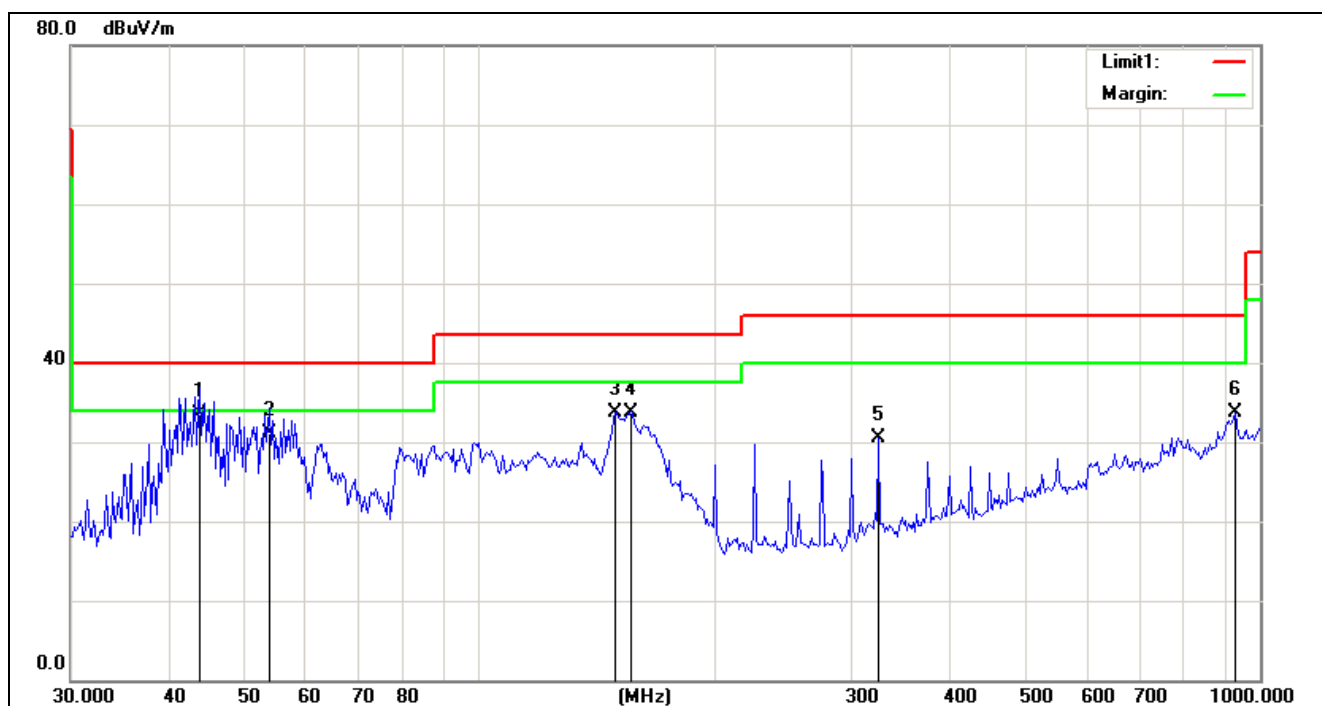


Figure 3. Above 1GHz radiated emissions test configuration

6.4 TEST RESULTS

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-26
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:44:03
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11b Mode 2412MHz		
Test by	Shihua Xu		

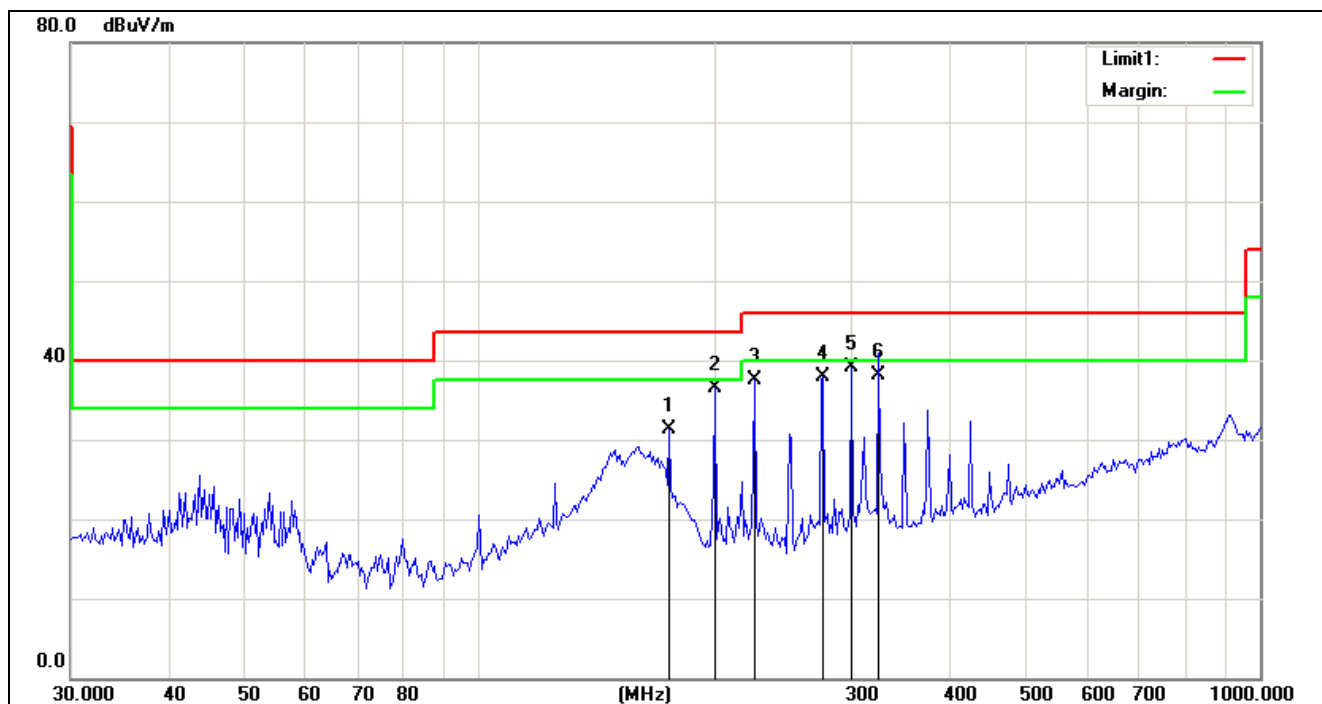


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9619	20.04	13.56	33.60	40.00	-6.40	QP
2	53.8188	21.19	10.01	31.20	40.00	-8.80	QP
3	149.6606	21.88	11.86	33.74	43.50	-9.76	peak
4	156.5422	22.32	11.48	33.80	43.50	-9.70	peak
5	325.0108	15.13	15.43	30.56	46.00	-15.44	peak
6	929.5513	6.82	26.82	33.64	46.00	-12.36	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5153.779	30.41	11.65	42.06	54.00	-11.94	peak
2	6407.277	30.23	13.20	43.43	54.00	-10.57	peak
3	7605.097	29.77	14.17	43.94	54.00	-10.06	peak
4	11067.480	28.18	17.01	45.19	54.00	-8.81	peak
5	13320.329	28.69	20.11	48.80	54.00	-5.20	peak
6	16331.563	27.27	17.92	45.19	54.00	-8.81	peak

Project No.:	E201605121202	Polarization:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-26
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:45:02
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11b Mode 2412MHz		
Test by	Shihua Xu		

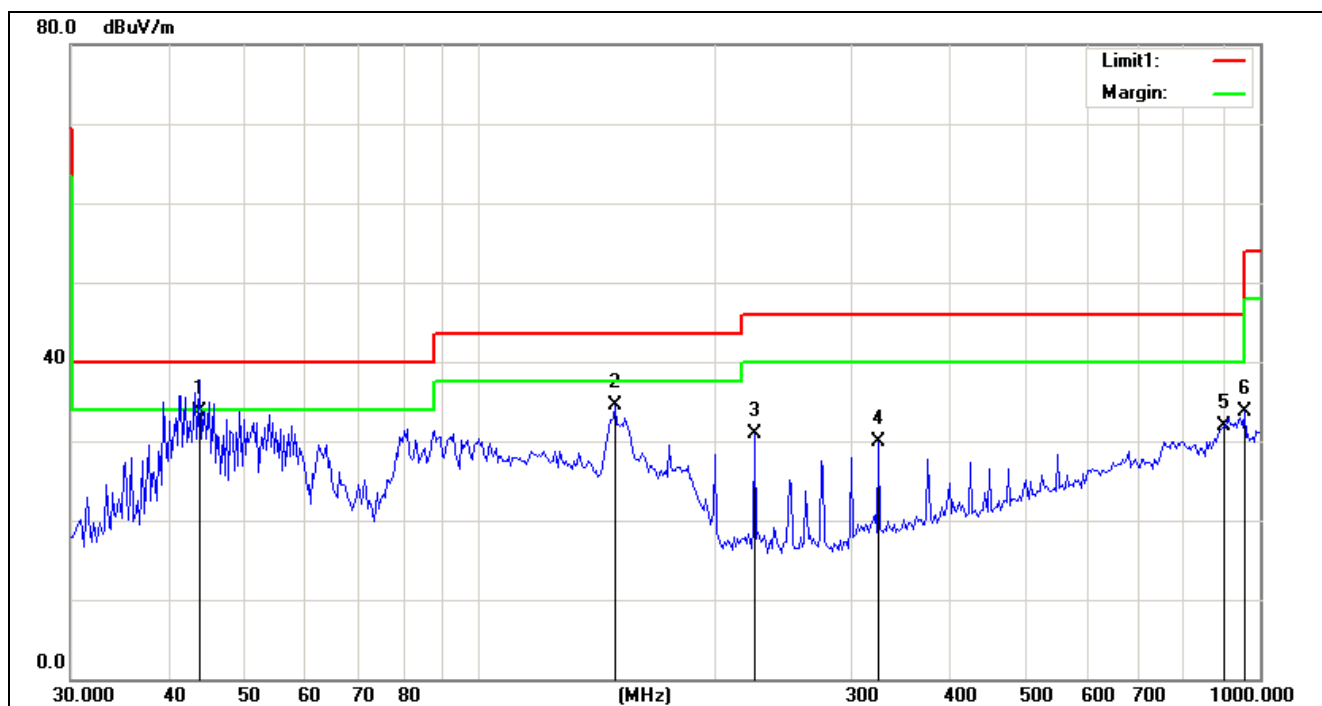


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	175.1627	20.42	10.79	31.21	43.50	-12.29	peak
2	200.4535	24.89	11.52	36.41	43.50	-7.09	peak
3	225.5612	24.60	12.89	37.49	46.00	-8.51	peak
4	276.1360	24.20	13.75	37.95	46.00	-8.05	peak
5	300.4212	24.73	14.44	39.17	46.00	-6.83	peak
6	325.0108	22.67	15.43	38.10	46.00	-7.90	QP

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5201.745	31.20	5.81	37.01	54.00	-16.99	peak
2	6680.030	31.28	9.93	41.21	54.00	-12.79	peak
3	8618.256	28.86	15.22	44.08	54.00	-9.92	peak
4	11118.864	28.04	19.93	47.97	54.00	-6.03	peak
5	13759.306	28.57	21.29	49.86	54.00	-4.14	peak
6	17916.817	26.90	23.40	50.30	54.00	-3.70	peak

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-26
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:47:43
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11b Mode 2437MHz		
Test by	Shihua Xu		

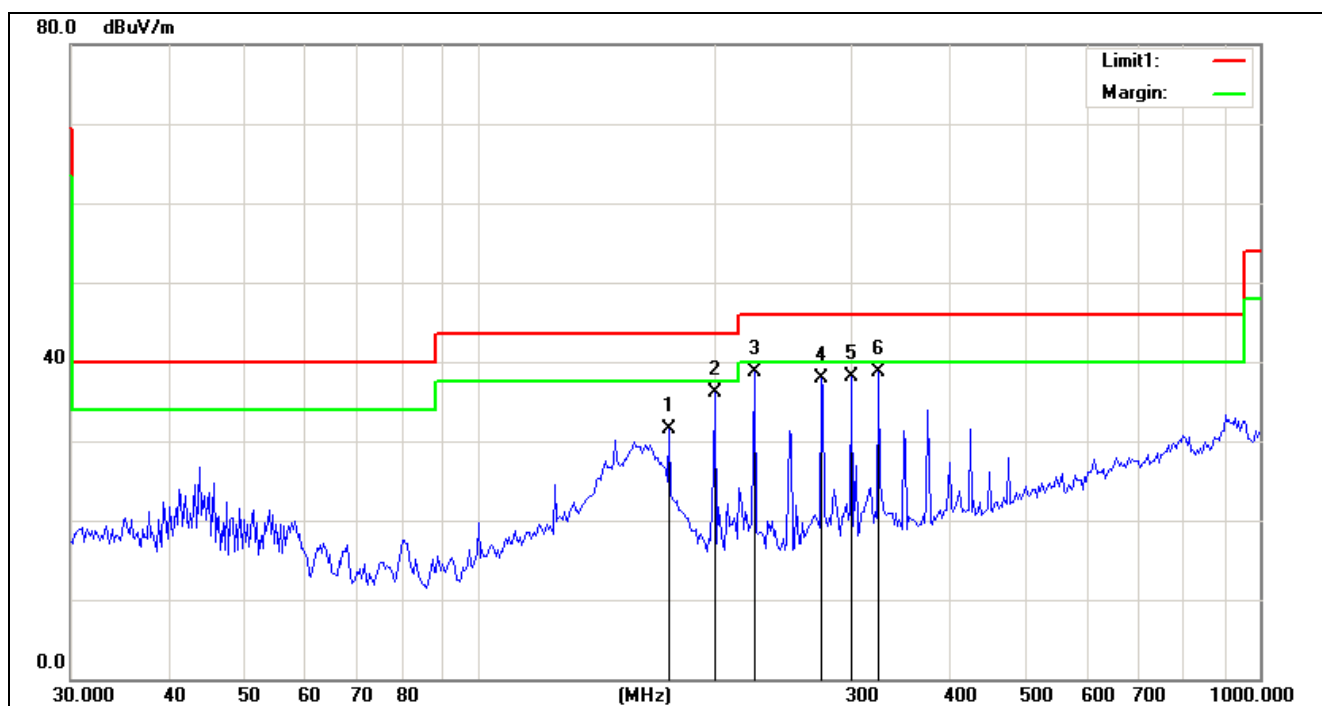


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9619	20.14	13.56	33.70	40.00	-6.30	QP
2	149.6606	22.55	11.86	34.41	43.50	-9.09	peak
3	225.5613	18.09	12.89	30.98	46.00	-15.02	peak
4	325.0108	14.53	15.43	29.96	46.00	-16.04	peak
5	898.7322	5.59	26.35	31.94	46.00	-14.06	peak
6	956.0397	8.68	24.93	33.61	46.00	-12.39	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4050.603	32.22	3.63	35.85	54.00	-18.15	peak
2	5601.902	29.96	6.86	36.82	54.00	-17.18	peak
3	6742.201	31.48	10.02	41.50	54.00	-12.50	peak
4	8266.364	30.19	14.62	44.81	54.00	-9.19	peak
5	11808.968	29.05	19.61	48.66	54.00	-5.34	peak
6	13887.365	28.87	21.47	50.34	54.00	-3.66	peak

Project No.:	E201605121202	Polarization:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-26
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:48:32
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11b Mode 2437MHz		
Test by	Shihua Xu		

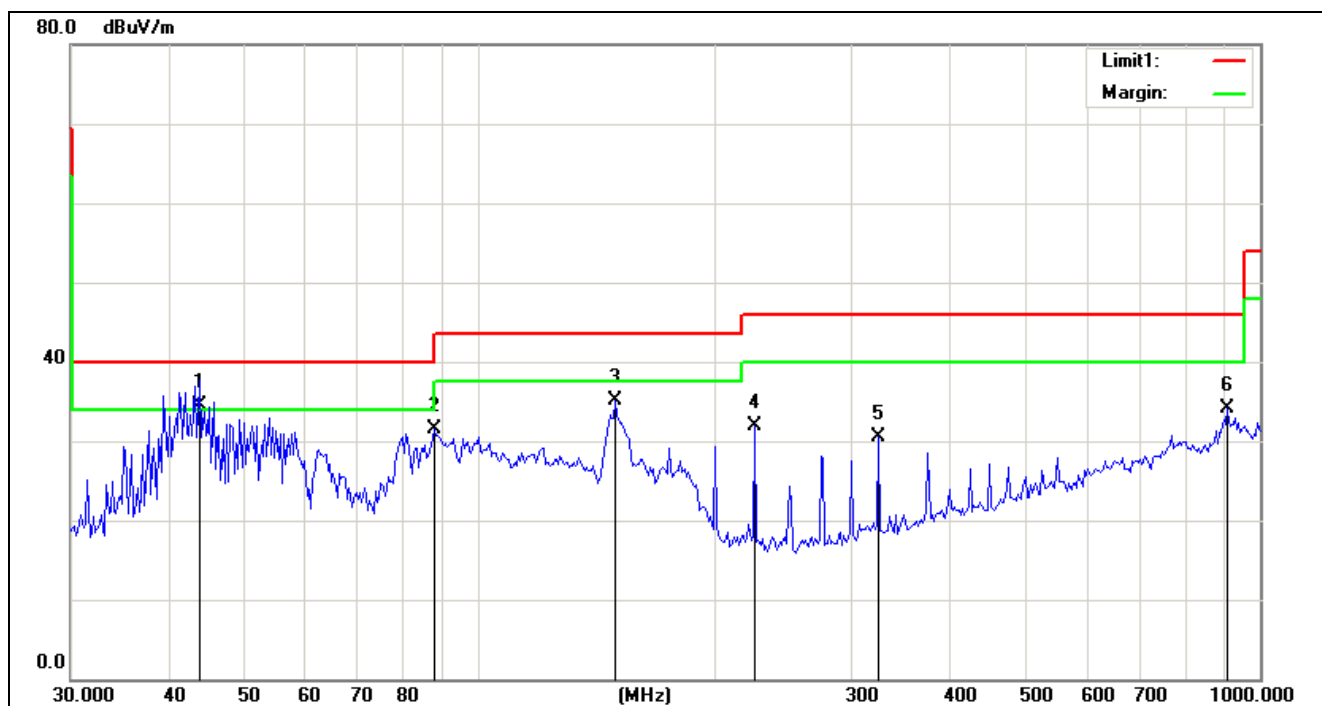


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	175.1627	20.81	10.79	31.60	43.50	-11.90	peak
2	200.4536	24.58	11.52	36.10	43.50	-7.40	peak
3	225.5613	25.80	12.89	38.69	46.00	-7.31	peak
4	274.5886	24.18	13.73	37.91	46.00	-8.09	peak
5	300.4213	23.74	14.44	38.18	46.00	-7.82	peak
6	325.0108	23.27	15.43	38.70	46.00	-7.30	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	5398.117	30.85	6.31	37.16	54.00	-16.84	peak
2	6649.159	30.12	9.89	40.01	54.00	-13.99	peak
3	8266.364	29.63	14.62	44.25	54.00	-9.75	peak
4	11222.348	28.63	19.93	48.56	54.00	-5.44	peak
5	13444.302	28.42	20.80	49.22	54.00	-4.78	peak
6	17834.018	27.54	22.81	50.35	54.00	-3.65	peak

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-26
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:50:16
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11b Mode 2462MHz		
Test by	Shihua Xu		

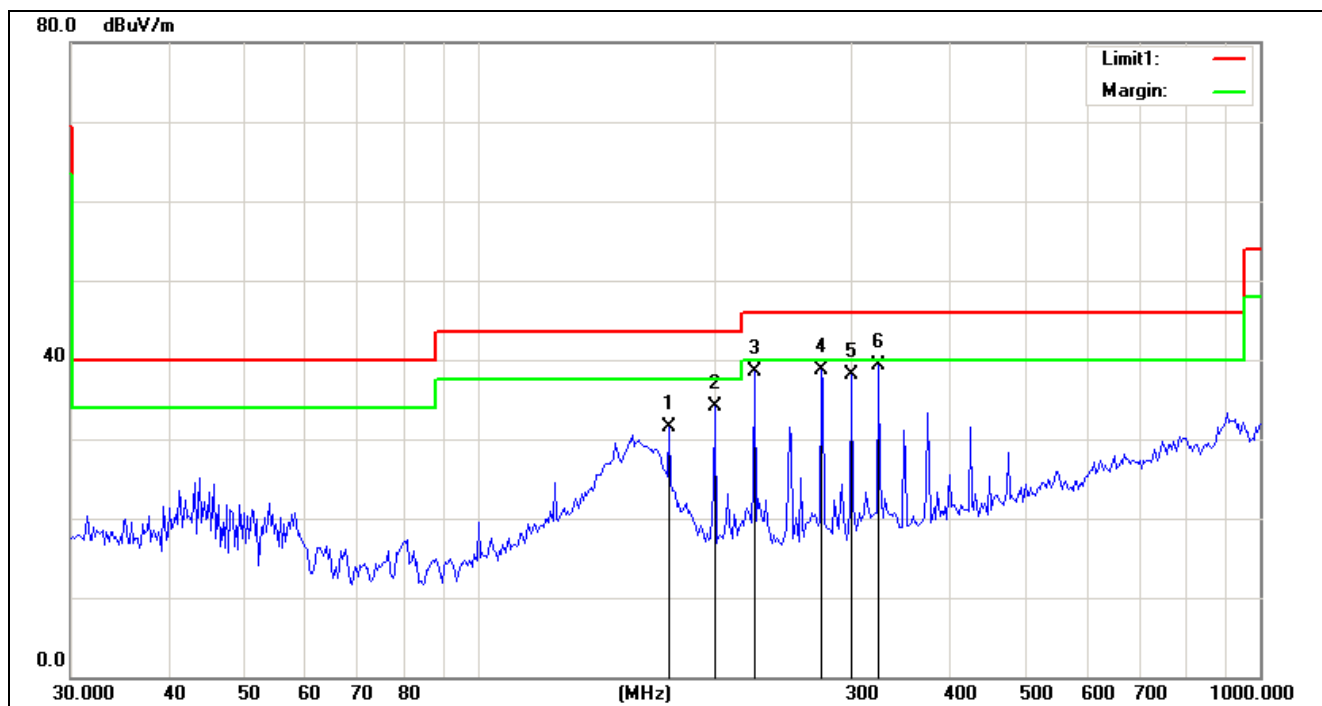


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9619	20.94	13.56	34.50	40.00	-5.50	QP
2	87.7524	23.26	8.31	31.57	40.00	-8.43	peak
3	149.6606	23.27	11.86	35.13	43.50	-8.37	peak
4	225.5613	18.93	12.89	31.82	46.00	-14.18	peak
5	325.0108	15.04	15.43	30.47	46.00	-15.53	peak
6	908.8900	7.10	27.00	34.10	46.00	-11.90	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6527.098	31.89	9.73	41.62	54.00	-12.38	peak
2	8228.163	31.09	14.52	45.61	54.00	-8.39	peak
3	12254.770	29.54	19.37	48.91	54.00	-5.09	peak
4	13695.720	29.14	21.19	50.33	54.00	-3.67	peak
5	14613.291	27.84	21.25	49.09	54.00	-4.91	peak
6	17916.817	28.31	23.40	51.71	54.00	-2.29	peak

Project No.:	E201605121202	Polarization:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-26
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:50:55
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11b Mode 2462MHz		
Test by	Shihua Xu		

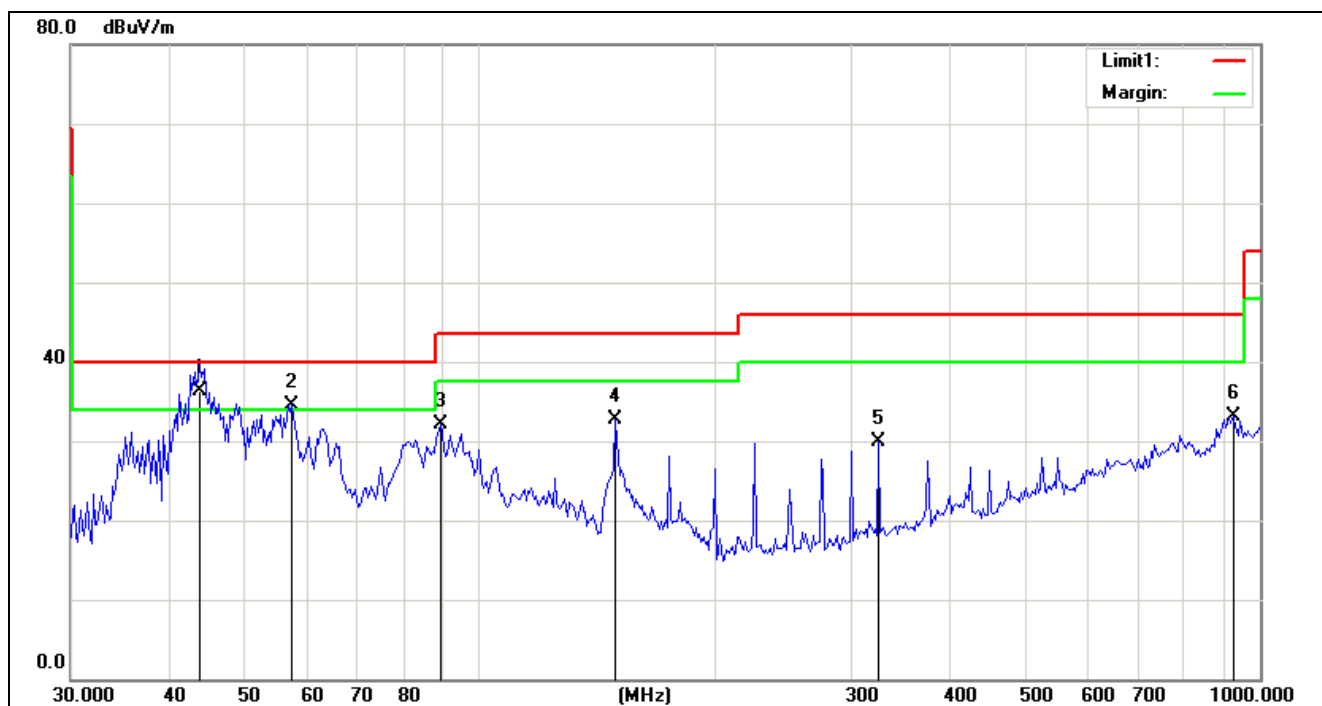


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	175.1627	20.63	10.79	31.42	43.50	-12.08	peak
2	200.4536	22.49	11.52	34.01	43.50	-9.49	peak
3	225.5613	25.69	12.89	38.58	46.00	-7.42	peak
4	274.5886	25.04	13.73	38.77	46.00	-7.23	peak
5	300.4213	23.68	14.44	38.12	46.00	-7.88	peak
6	325.0108	23.81	15.43	39.24	46.00	-6.76	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	7396.645	30.10	11.12	41.22	54.00	-12.78	peak
2	9857.287	29.41	15.93	45.34	54.00	-8.66	peak
3	11118.864	29.22	19.93	49.15	54.00	-4.85	peak
4	12895.357	29.41	19.83	49.24	54.00	-4.76	peak
5	13823.187	28.97	21.38	50.35	54.00	-3.65	peak
6	17751.602	29.64	22.22	51.86	54.00	-2.14	peak

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-26
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:54:34
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11g Mode 2412MHz		
Test by	Shihua Xu		

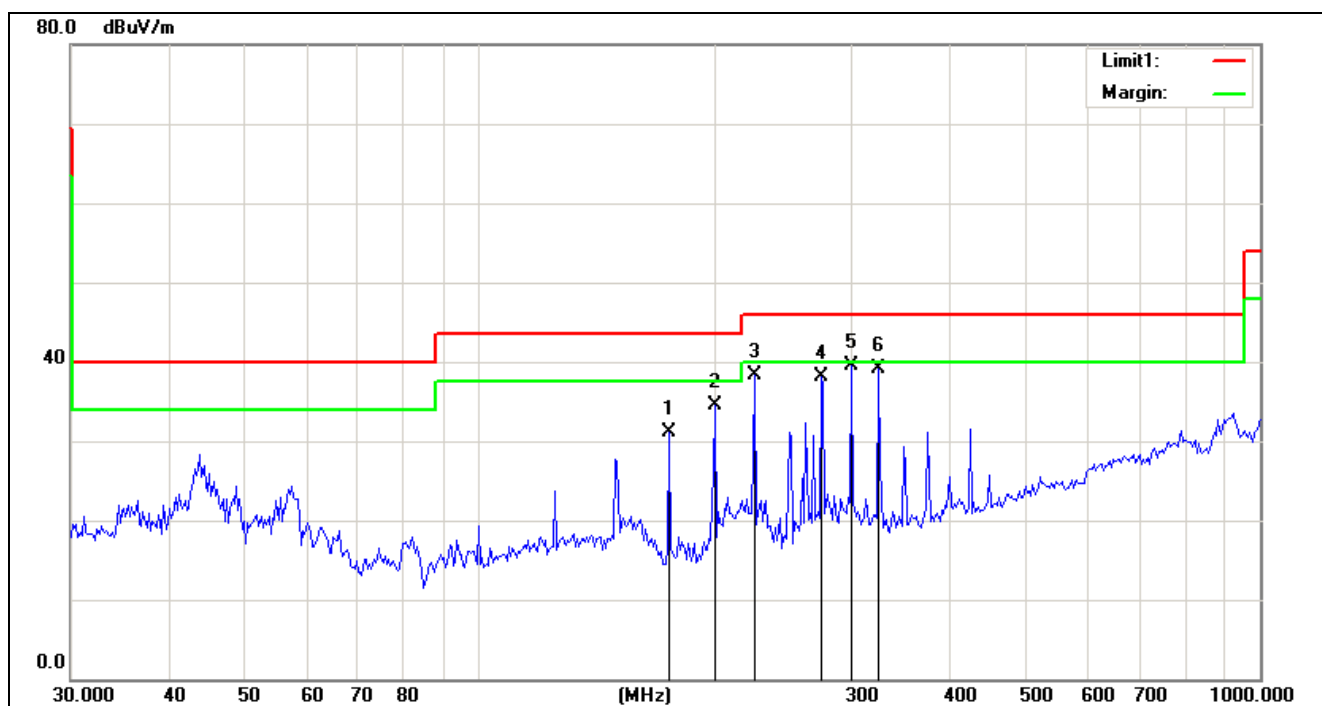


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9619	22.84	13.56	36.40	40.00	-3.60	QP
2	57.5732	24.93	9.63	34.56	40.00	-5.44	peak
3	89.2443	23.60	8.51	32.11	43.50	-11.39	peak
4	149.6606	20.92	11.86	32.78	43.50	-10.72	peak
5	325.0108	14.55	15.43	29.98	46.00	-16.02	peak
6	924.3423	6.26	26.91	33.17	46.00	-12.83	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6711.043	31.32	9.98	41.30	54.00	-12.70	peak
2	8343.299	30.37	14.81	45.18	54.00	-8.82	peak
3	9631.615	30.34	15.92	46.26	54.00	-7.74	peak
4	11016.334	30.64	19.94	50.58	54.00	-3.42	peak
5	12483.943	30.95	19.31	50.26	54.00	-3.74	peak
6	17751.602	29.42	22.22	51.64	54.00	-2.36	peak

Project No.:	E201605121202	Polarization:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-26
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:55:58
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11g Mode 2412MHz		
Test by	Shihua Xu		

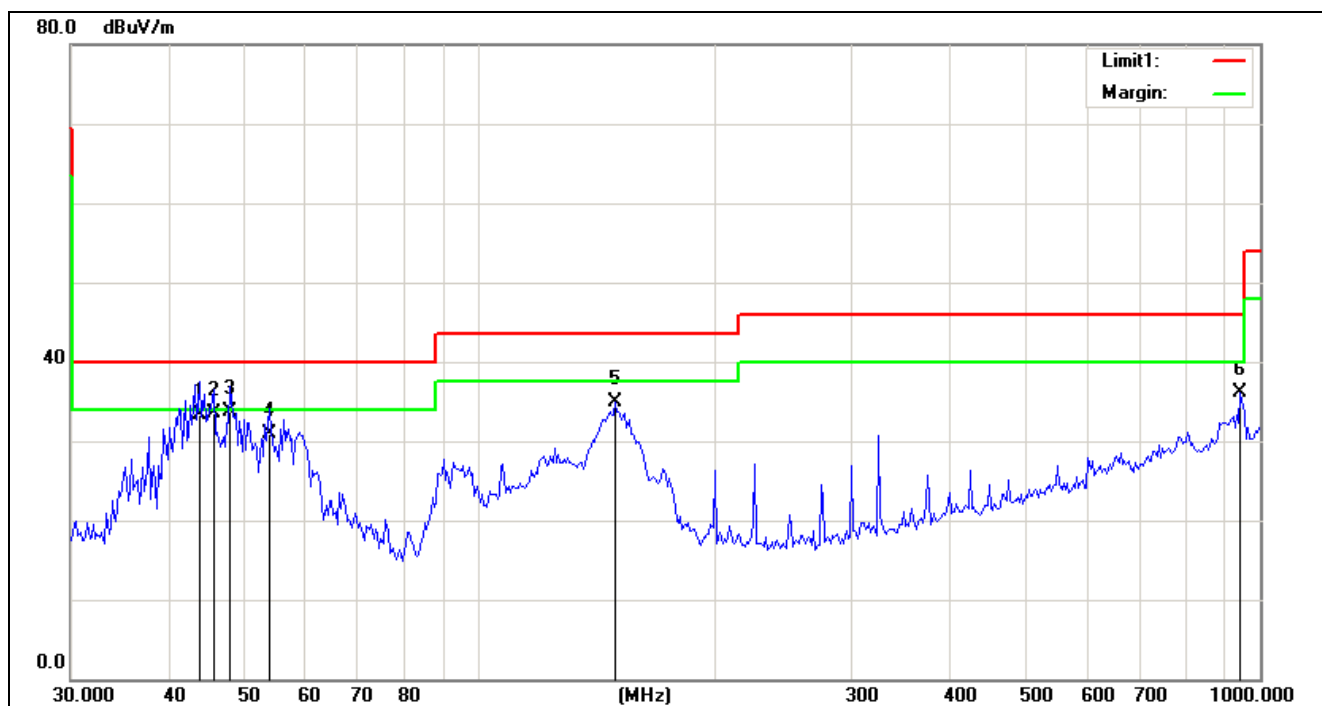


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	175.1627	20.30	10.79	31.09	43.50	-12.41	peak
2	200.4535	22.91	11.52	34.43	43.50	-9.07	peak
3	225.5612	25.34	12.89	38.23	46.00	-7.77	peak
4	274.5885	24.41	13.73	38.14	46.00	-7.86	peak
5	300.4212	25.11	14.44	39.55	46.00	-6.45	peak
6	325.0108	23.69	15.43	39.12	46.00	-6.88	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6437.025	32.33	9.48	41.81	54.00	-12.19	peak
2	8266.364	30.92	14.62	45.54	54.00	-8.46	peak
3	11016.334	29.22	19.94	49.16	54.00	-4.84	peak
4	13382.172	28.99	20.68	49.67	54.00	-4.33	peak
5	14212.750	28.92	21.59	50.51	54.00	-3.49	peak
6	17916.817	28.47	23.40	51.87	54.00	-2.13	peak

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:39:52
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11g Mode 2437MHz		
Test by	Shihua Xu		

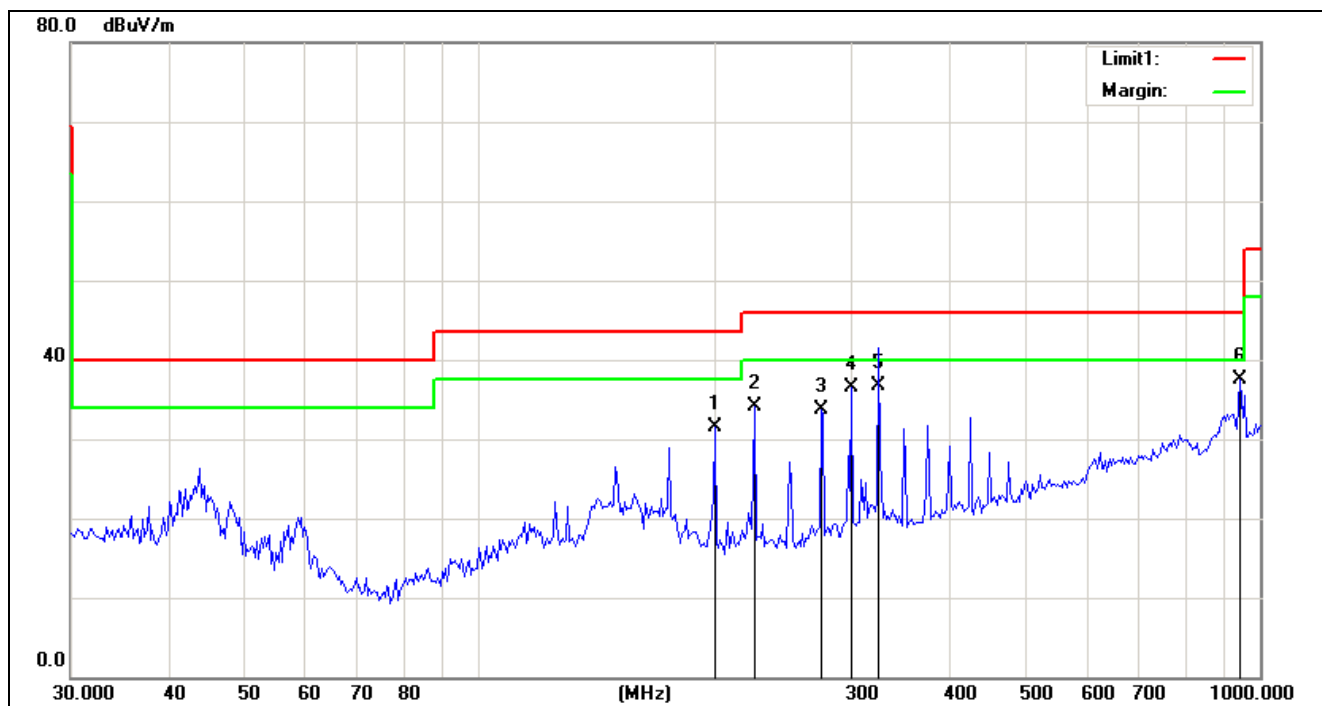


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9619	19.84	13.56	33.40	40.00	-6.60	QP
2	45.7255	20.65	12.85	33.50	40.00	-6.50	QP
3	48.0977	21.90	11.90	33.80	40.00	-6.20	QP
4	53.8188	20.89	10.01	30.90	40.00	-9.10	QP
5	149.6606	22.99	11.86	34.85	43.50	-8.65	peak
6	945.3549	10.85	25.31	36.16	46.00	-9.84	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8228.163	31.41	14.52	45.93	54.00	-8.07	peak
2	9411.110	29.95	15.75	45.70	54.00	-8.30	peak
3	12198.137	30.40	19.38	49.78	54.00	-4.22	peak
4	13695.720	29.65	21.19	50.84	54.00	-3.16	peak
5	14681.137	28.96	21.09	50.05	54.00	-3.95	peak
6	18000.000	27.79	23.99	51.78	54.00	-2.22	peak

Project No.:	E201605121202	Polarization:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:41:02
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11g Mode 2437MHz		
Test by	Shihua Xu		

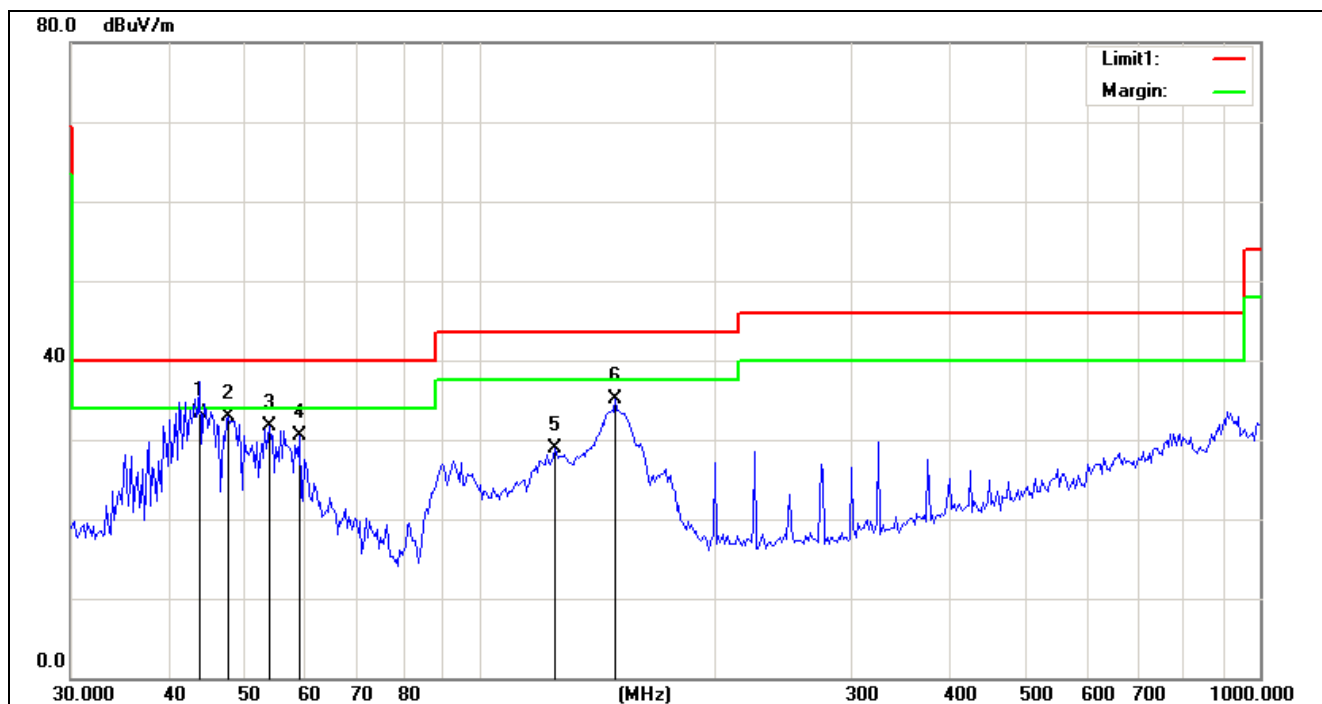


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	200.4535	20.06	11.52	31.58	43.50	-11.92	peak
2	225.5612	21.25	12.89	34.14	46.00	-11.86	peak
3	274.5885	19.95	13.73	33.68	46.00	-12.32	peak
4	300.4212	22.13	14.44	36.57	46.00	-9.43	peak
5	325.0108	21.37	15.43	36.80	46.00	-9.20	QP
6	945.3549	12.24	25.31	37.55	46.00	-8.45	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6437.025	31.63	9.48	41.11	54.00	-12.89	peak
2	8152.289	31.06	14.34	45.40	54.00	-8.60	peak
3	11016.334	29.69	19.94	49.63	54.00	-4.37	peak
4	13444.302	29.45	20.80	50.25	54.00	-3.75	peak
5	14613.291	30.04	21.25	51.29	54.00	-2.71	peak
6	18000.000	28.36	23.99	52.35	54.00	-1.65	peak

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:43:46
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11g Mode 2462MHz		
Test by	Shihua Xu		

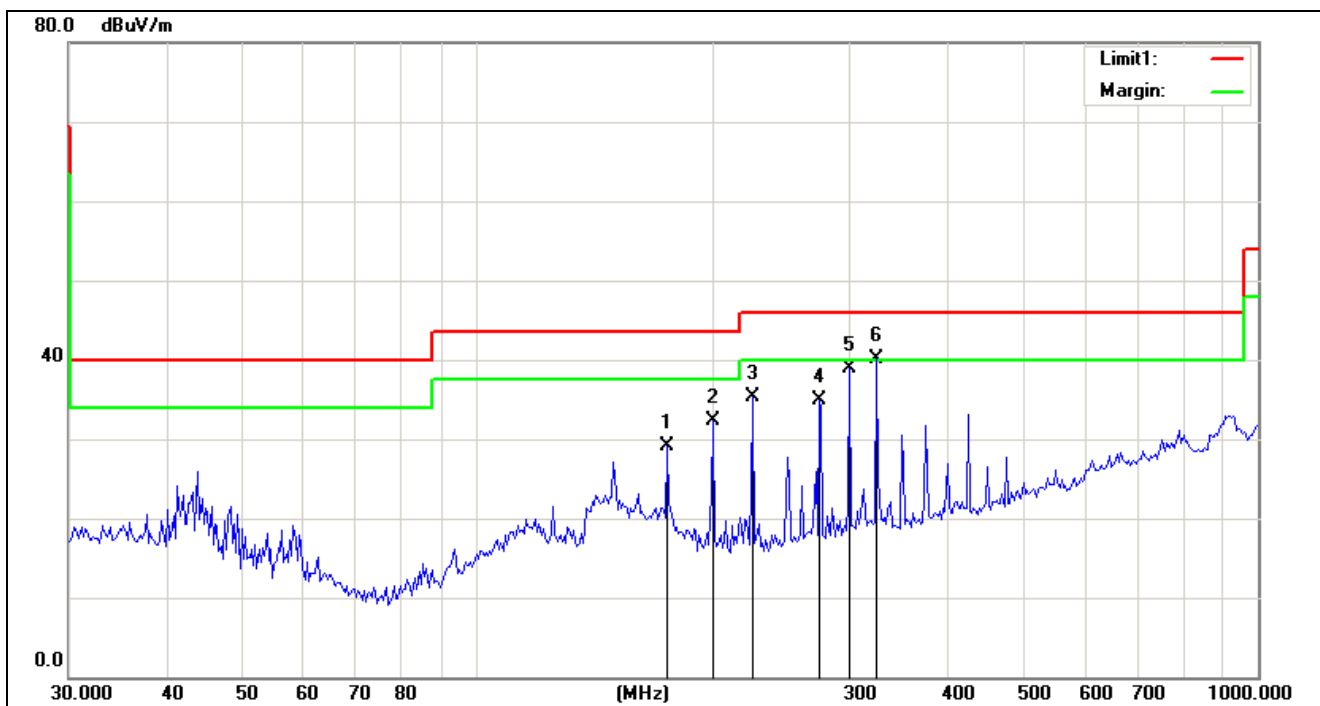


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9618	19.84	13.56	33.40	40.00	-6.60	QP
2	47.8282	20.80	12.01	32.81	40.00	-7.19	peak
3	53.8188	21.64	10.01	31.65	40.00	-8.35	peak
4	58.8819	20.91	9.51	30.42	40.00	-9.58	peak
5	125.0290	15.74	13.07	28.81	43.50	-14.69	peak
6	149.6605	23.27	11.86	35.13	43.50	-8.37	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8266.364	30.19	14.62	44.81	54.00	-9.19	peak
2	9857.287	29.83	16.07	45.90	54.00	-8.10	peak
3	11016.334	29.64	19.94	49.58	54.00	-4.42	peak
4	12311.666	31.10	19.35	50.45	54.00	-3.55	peak
5	13695.720	28.79	21.19	49.98	54.00	-4.02	peak
6	18000.000	27.69	23.99	51.68	54.00	-2.32	peak

Project No.:	E201605121202	Polarization:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:44:34
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11g Mode 2462MHz		
Test by	Shihua Xu		

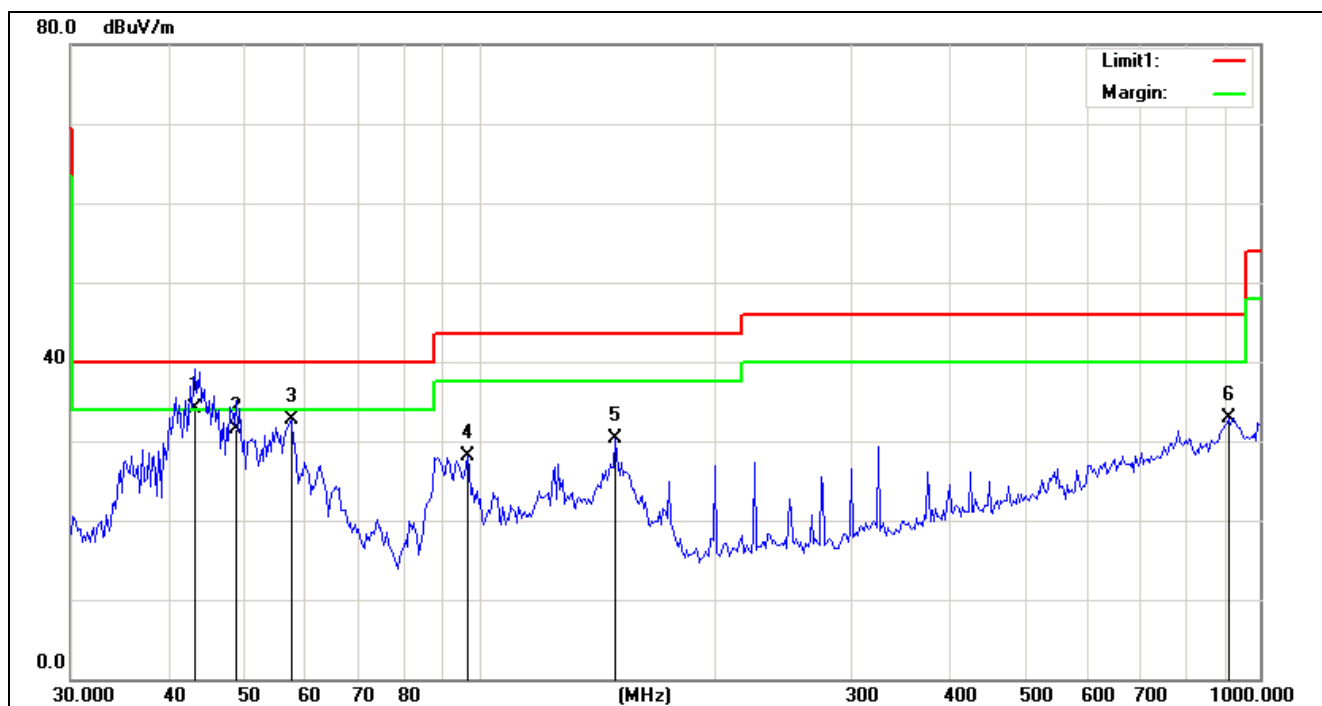


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	175.1627	18.38	10.79	29.17	43.50	-14.33	peak
2	200.4535	20.76	11.52	32.28	43.50	-11.22	peak
3	225.5612	22.40	12.89	35.29	46.00	-10.71	peak
4	274.5885	21.10	13.73	34.83	46.00	-11.17	peak
5	300.4212	24.50	14.44	38.94	46.00	-7.06	peak
6	325.0108	24.73	15.43	40.16	46.00	-5.84	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6618.432	30.89	9.86	40.75	54.00	-13.25	peak
2	8266.364	29.99	14.62	44.61	54.00	-9.39	peak
3	11118.864	29.05	19.93	48.98	54.00	-5.02	peak
4	13759.306	29.23	21.29	50.52	54.00	-3.48	peak
5	14545.759	28.40	21.42	49.82	54.00	-4.18	peak
6	17916.817	28.19	23.40	51.59	54.00	-2.41	peak

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:46:55
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11n20 Mode 2412MHz		
Test by	Shihua Xu		

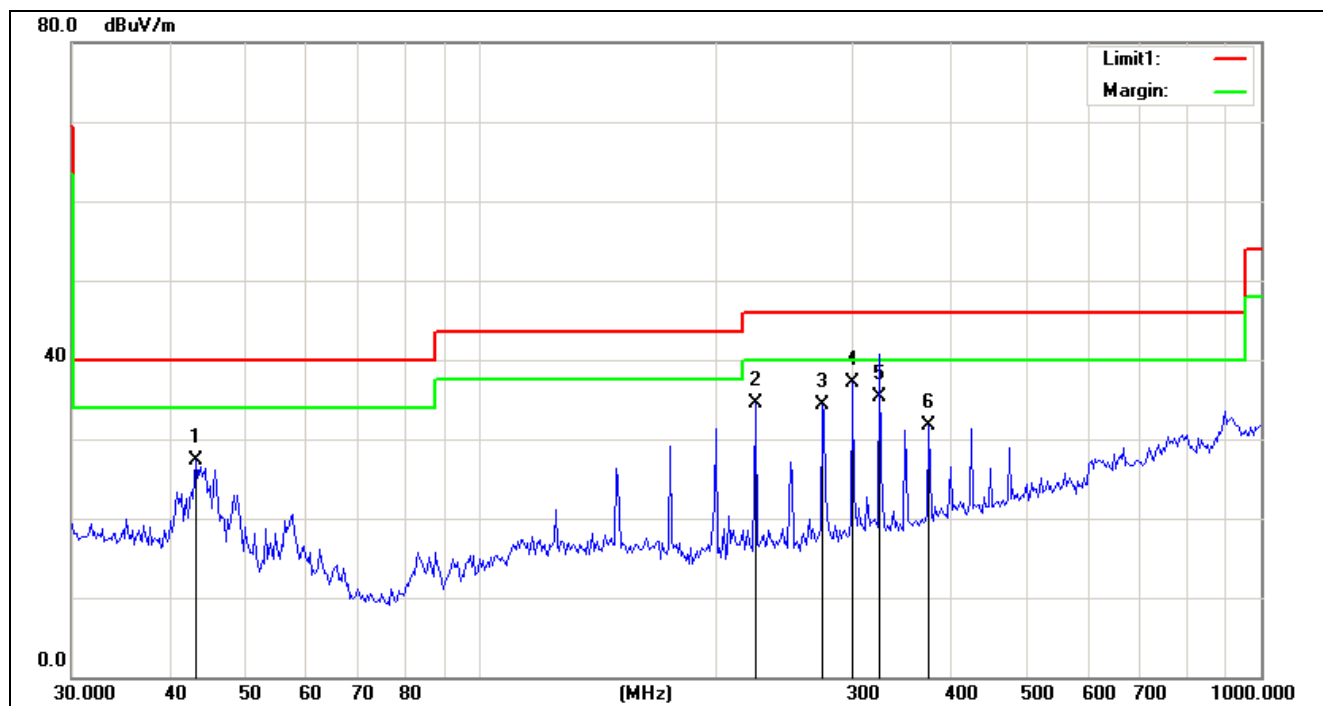


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.2269	20.44	13.66	34.10	40.00	-5.90	QP
2	48.9153	20.02	11.58	31.60	40.00	-8.40	QP
3	57.5732	23.10	9.63	32.73	40.00	-7.27	peak
4	96.5489	18.38	9.78	28.16	43.50	-15.34	peak
5	149.6606	18.37	11.86	30.23	43.50	-13.27	peak
6	914.0119	5.84	27.04	32.88	46.00	-13.12	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6557.402	32.63	9.77	42.40	54.00	-11.60	peak
2	8228.163	30.59	14.52	45.11	54.00	-8.89	peak
3	11067.480	30.06	19.94	50.00	54.00	-4.00	peak
4	12311.666	30.38	19.35	49.73	54.00	-4.27	peak
5	13887.365	29.44	21.47	50.91	54.00	-3.09	peak
6	17916.817	28.32	23.40	51.72	54.00	-2.28	peak

Project No.:	E201605121202	Polarziation:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:47:33
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11n20 Mode 2412MHz		
Test by	Shihua Xu		

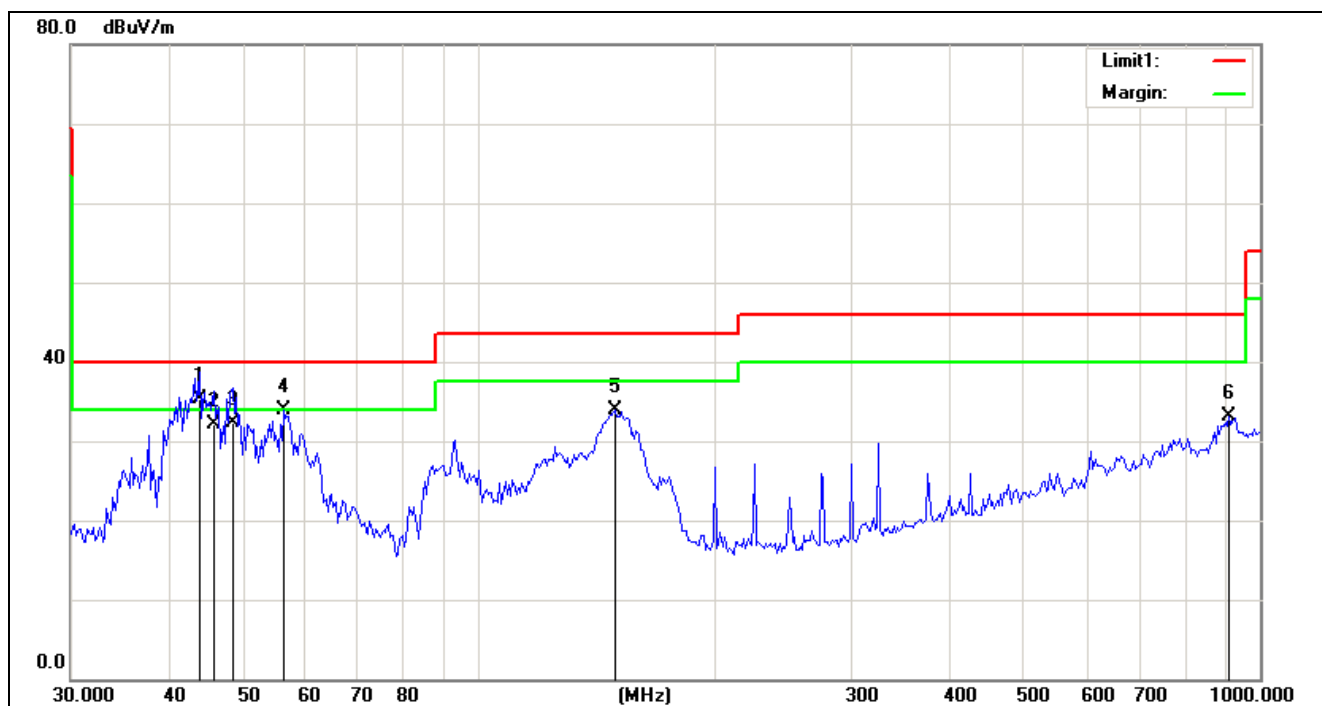


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.2269	13.63	13.66	27.29	40.00	-12.71	peak
2	225.5613	21.61	12.89	34.50	46.00	-11.50	peak
3	274.5886	20.61	13.73	34.34	46.00	-11.66	peak
4	300.4213	22.61	14.44	37.05	46.00	-8.95	peak
5	325.0108	19.87	15.43	35.30	46.00	-10.70	QP
6	376.1414	14.91	16.72	31.63	46.00	-14.37	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6804.951	30.73	10.10	40.83	54.00	-13.17	peak
2	8266.364	30.21	14.62	44.83	54.00	-9.17	peak
3	11016.334	29.07	19.94	49.01	54.00	-4.99	peak
4	12426.251	29.88	19.32	49.20	54.00	-4.80	peak
5	13759.306	28.59	21.29	49.88	54.00	-4.12	peak
6	17834.018	28.79	22.81	51.60	54.00	-2.40	peak

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:50:04
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11n20 Mode 2437MHz		
Test by	Shihua Xu		

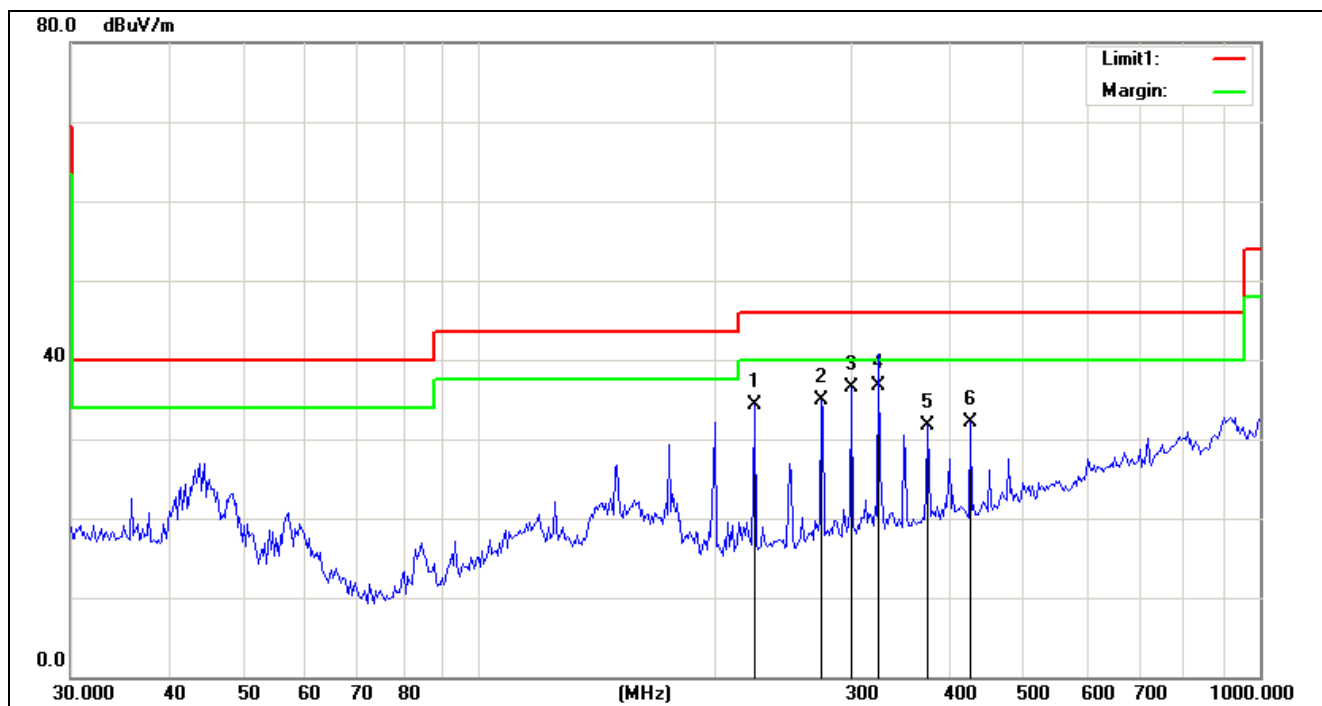


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.9619	21.84	13.56	35.40	40.00	-4.60	QP
2	45.7255	19.25	12.85	32.10	40.00	-7.90	QP
3	48.3687	20.60	11.80	32.40	40.00	-7.60	QP
4	56.2935	24.21	9.75	33.96	40.00	-6.04	peak
5	149.6606	22.10	11.86	33.96	43.50	-9.54	peak
6	914.0119	6.02	27.04	33.06	46.00	-12.94	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	8266.364	30.64	14.62	45.26	54.00	-8.74	peak
2	9110.858	30.04	15.43	45.47	54.00	-8.53	peak
3	11067.480	29.67	19.94	49.61	54.00	-4.39	peak
4	13759.306	29.15	21.29	50.44	54.00	-3.56	peak
5	14613.291	28.40	21.25	49.65	54.00	-4.35	peak
6	17834.018	28.45	22.81	51.26	54.00	-2.74	peak

Project No.:	E201605121202	Polarization:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:50:44
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11n20 Mode 2437MHz		
Test by	Shihua Xu		

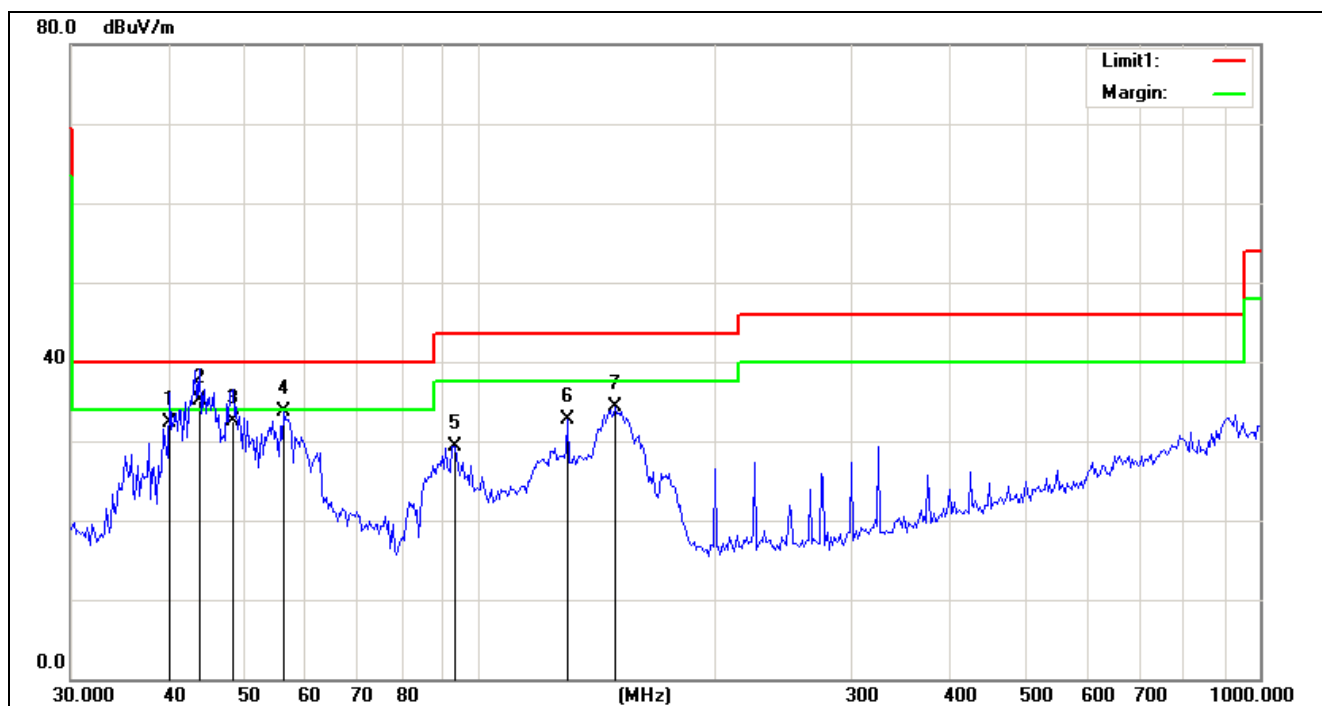


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	225.5613	21.34	12.89	34.23	46.00	-11.77	peak
2	274.5886	21.17	13.73	34.90	46.00	-11.10	peak
3	300.4213	21.99	14.44	36.43	46.00	-9.57	peak
4	325.0108	21.37	15.43	36.80	46.00	-9.20	QP
5	376.1414	15.02	16.72	31.74	46.00	-14.26	peak
6	425.6399	14.36	17.65	32.01	46.00	-13.99	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6618.432	31.04	9.86	40.90	54.00	-13.10	peak
2	8152.289	30.49	14.34	44.83	54.00	-9.17	peak
3	11067.480	28.53	19.94	48.47	54.00	-5.53	peak
4	12368.826	30.08	19.34	49.42	54.00	-4.58	peak
5	13759.306	29.24	21.29	50.53	54.00	-3.47	peak
6	17916.817	28.56	23.40	51.96	54.00	-2.04	peak

Project No.:	E201605121202	Polarization:	Vertical
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:52:31
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11n20 Mode 2462MHz		
Test by	Shihua Xu		

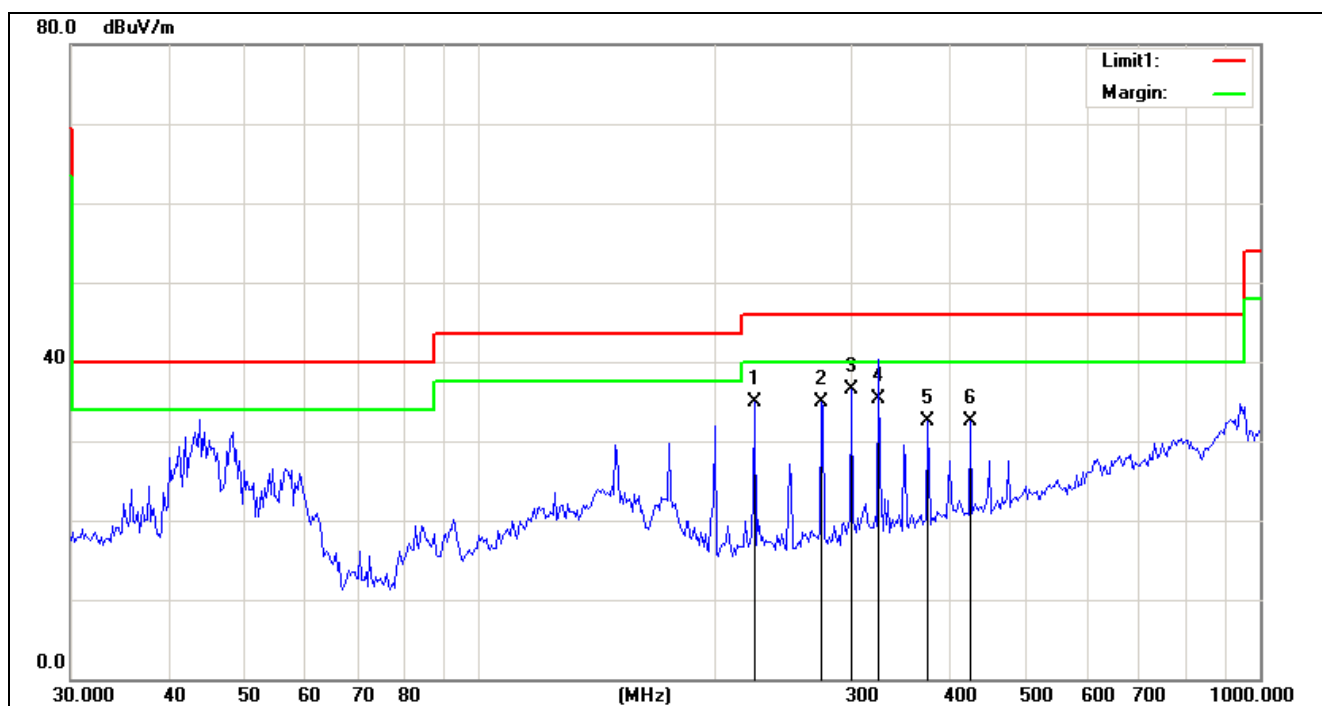


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	40.1817	18.33	13.97	32.30	40.00	-7.70	QP
2	43.9619	21.54	13.56	35.10	40.00	-4.90	QP
3	48.3687	20.80	11.80	32.60	40.00	-7.40	QP
4	56.2935	23.98	9.75	33.73	40.00	-6.27	peak
5	93.3479	20.20	9.17	29.37	43.50	-14.13	peak
6	130.0453	19.45	13.20	32.65	43.50	-10.85	peak
7	149.6606	22.54	11.86	34.40	43.50	-9.10	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6618.432	31.31	9.86	41.17	54.00	-12.83	peak
2	8077.115	30.58	14.16	44.74	54.00	-9.26	peak
3	9026.844	29.53	15.33	44.86	54.00	-9.14	peak
4	11067.480	29.49	19.94	49.43	54.00	-4.57	peak
5	13695.720	29.28	21.19	50.47	54.00	-3.53	peak
6	17916.817	28.33	23.40	51.73	54.00	-2.27	peak

Project No.:	E201605121202	Polarziation:	Horizontal
Standard:	(RE)FCC PART 15 class B 3m	Power Source:	AC 120V/60Hz
Test item:	Radiation Test	Date:	2016-5-31
Temp./Hum.(%RH):	22.4°C/59%RH	Time:	8:54:55
EUT:	SKY	Distance:	3m
Model:	SKY2	Test Result:	Pass
Note:	802.11n20 Mode 2462MHz		
Test by	Shihua Xu		



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	225.5613	21.92	12.89	34.81	46.00	-11.19	peak
2	274.5886	21.27	13.73	35.00	46.00	-11.00	peak
3	300.4213	22.14	14.44	36.58	46.00	-9.42	peak
4	325.0108	19.87	15.43	35.30	46.00	-10.70	QP
5	376.1414	15.79	16.72	32.51	46.00	-13.49	peak
6	425.6399	14.92	17.65	32.57	46.00	-13.43	peak

Emission above 1GHz:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	6618.432	31.63	9.86	41.49	54.00	-12.51	peak
2	7500.147	31.80	11.32	43.12	54.00	-10.88	peak
3	8152.289	30.53	14.34	44.87	54.00	-9.13	peak
4	9324.328	30.27	15.65	45.92	54.00	-8.08	peak
5	11067.480	29.29	19.94	49.23	54.00	-4.77	peak
6	13823.187	28.82	21.38	50.20	54.00	-3.80	peak

Note: Below 30MHz, since the radiated emission of the EUT is too weak to be detected.

7. 6dB BANDWIDTH TESTING

7.1 LIMITS

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2 TEST PROCEDURES

Test procedures follow ANSI C63.4:2013 and KDB 558074 D01 DTS Measurement Guidance v03r05.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Set resolution bandwidth (RBW) = 100kHz. Set the video bandwidth (VBW) $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission. Compare the resultant bandwidth with the RBW setting of the analyzer.
5. Repeat above procedures until all frequencies measured were complete.

Remark:

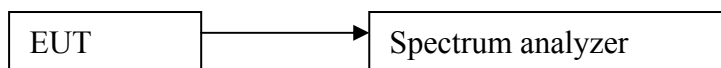
Pre-scan all the rate, found that:

11Mbps of rate is the worst case of 802.11b,

54Mbps of rate is the worst case of 802.11g,

MCS7 of rate is the worst case of 802.11n (HT20),

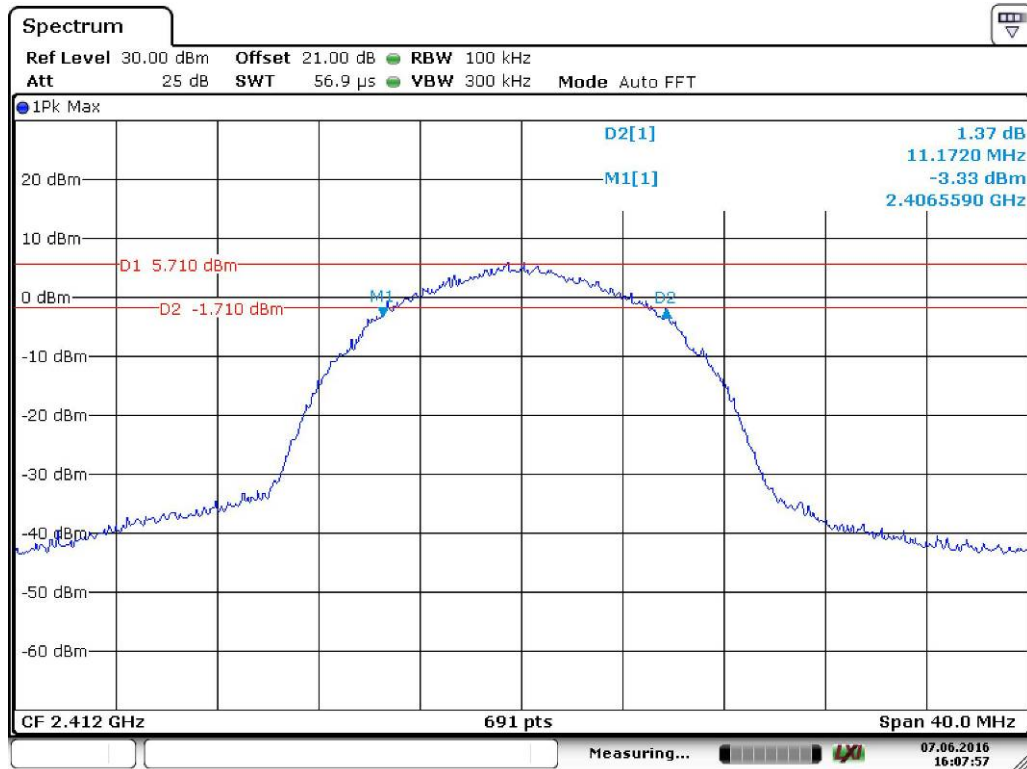
7.3 TEST SETUP



7.4 TEST RESULTS

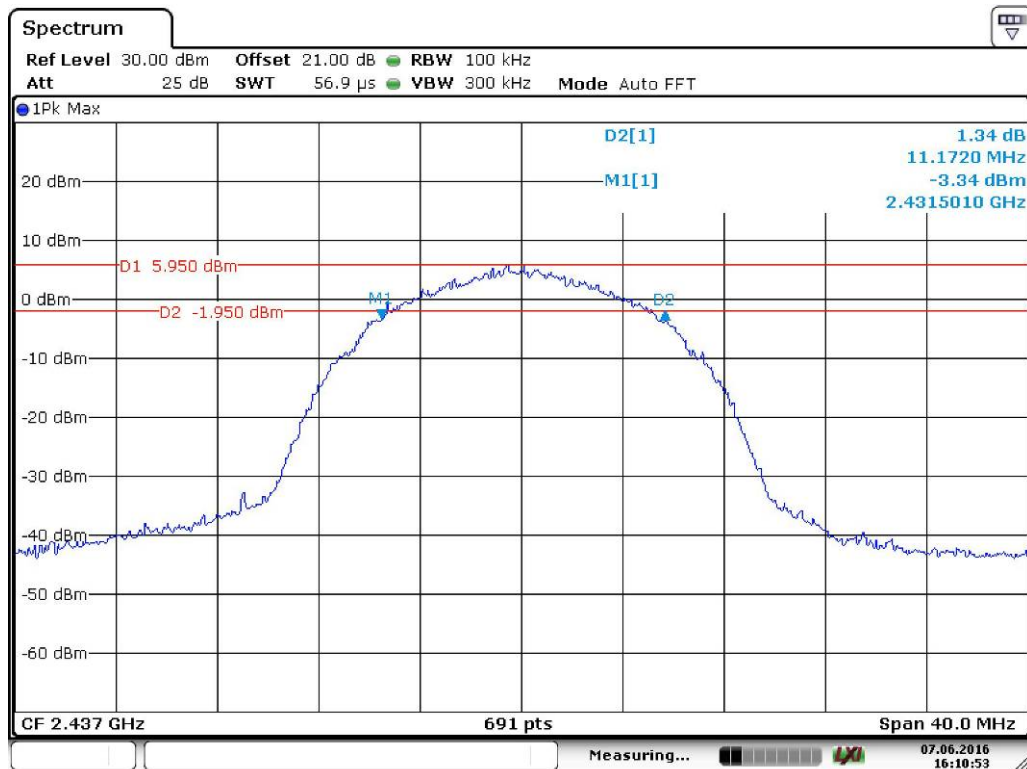
Channel	Channel Frequency (MHz)	Data Rate (Mbps)	6dB Bandwidth (MHz)	Limit (kHz)
802.11b Mode				
Low Channel	2412	11	11.172	>500
Middle Channel	2437	11	11.172	>500
High Channel	2462	11	11.056	>500

802.11b mode:
Channel 2412MHz



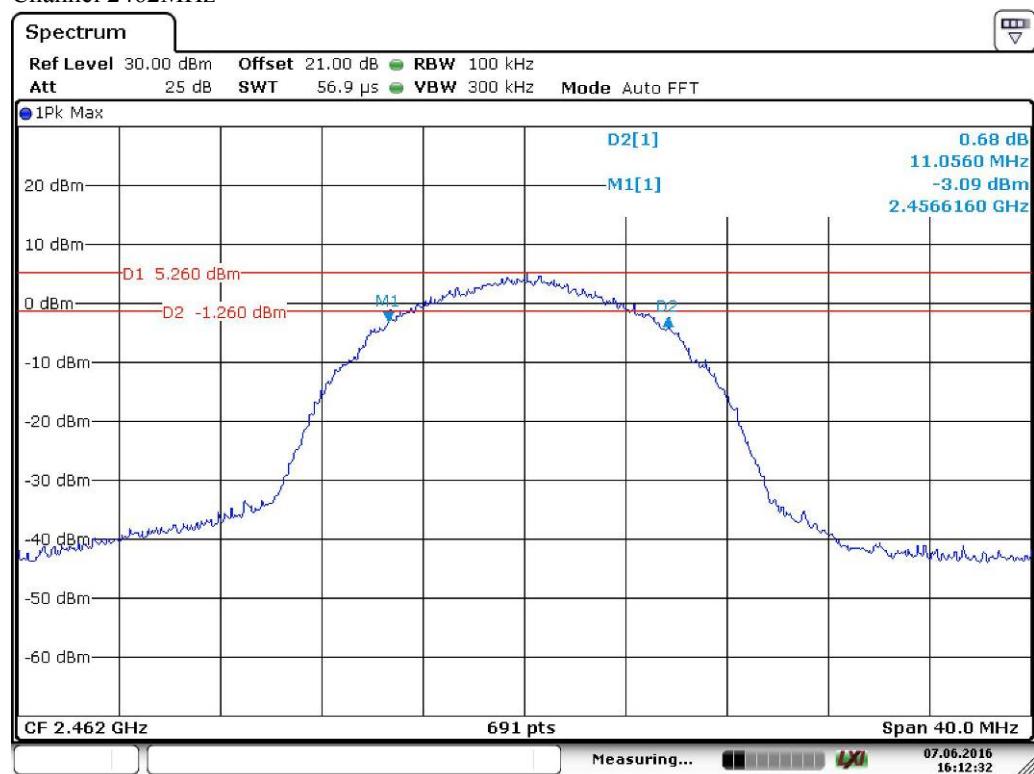
Date: 7.JUN.2016 16:07:57

Channel 2437MHz



Date: 7.JUN.2016 16:10:53

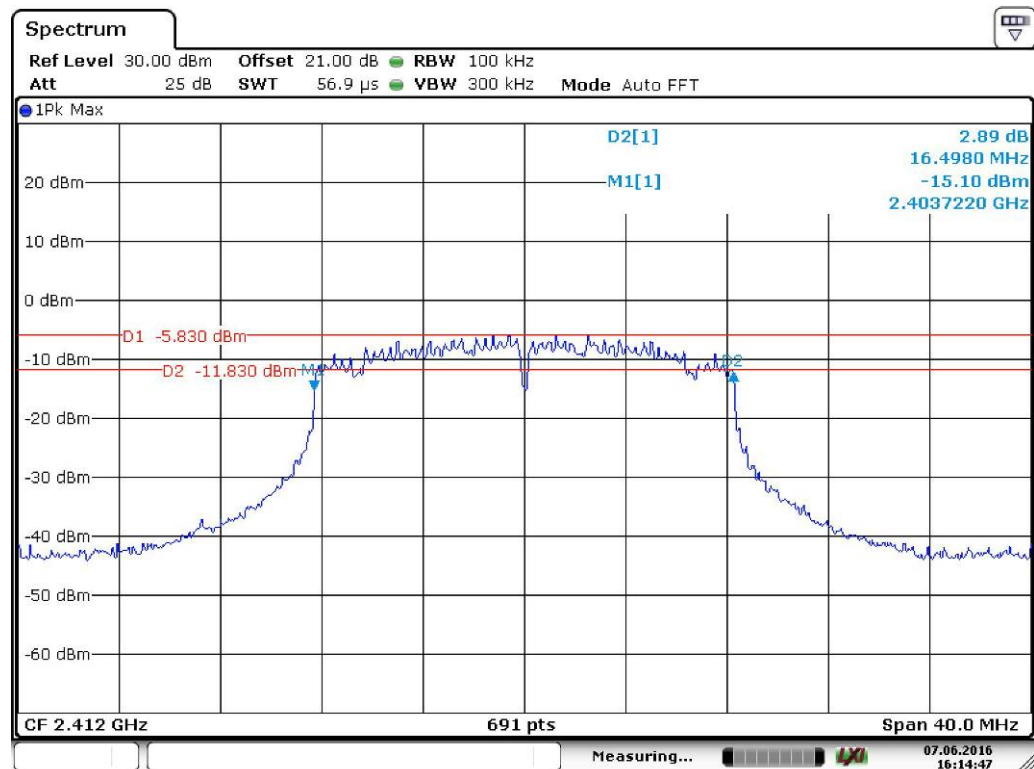
Channel 2462MHz



Date: 7.JUN.2016 16:12:32

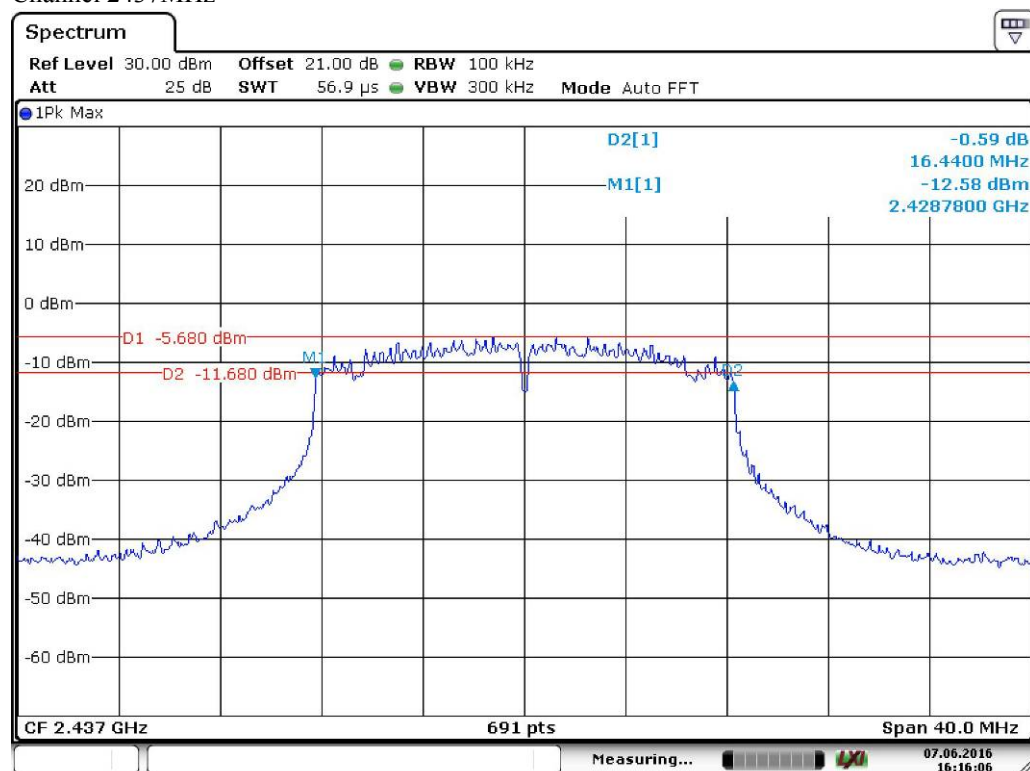
Channel	Channel Frequency (MHz)	Data Rate (Mbps)	6dB Bandwidth (MHz)	Limit (kHz)
802.11g Mode				
Low Channel	2412	54	16.498	>500
Middle Channel	2437	54	16.440	>500
High Channel	2462	54	16.440	>500

802.11g mode:
Channel 2412MHz



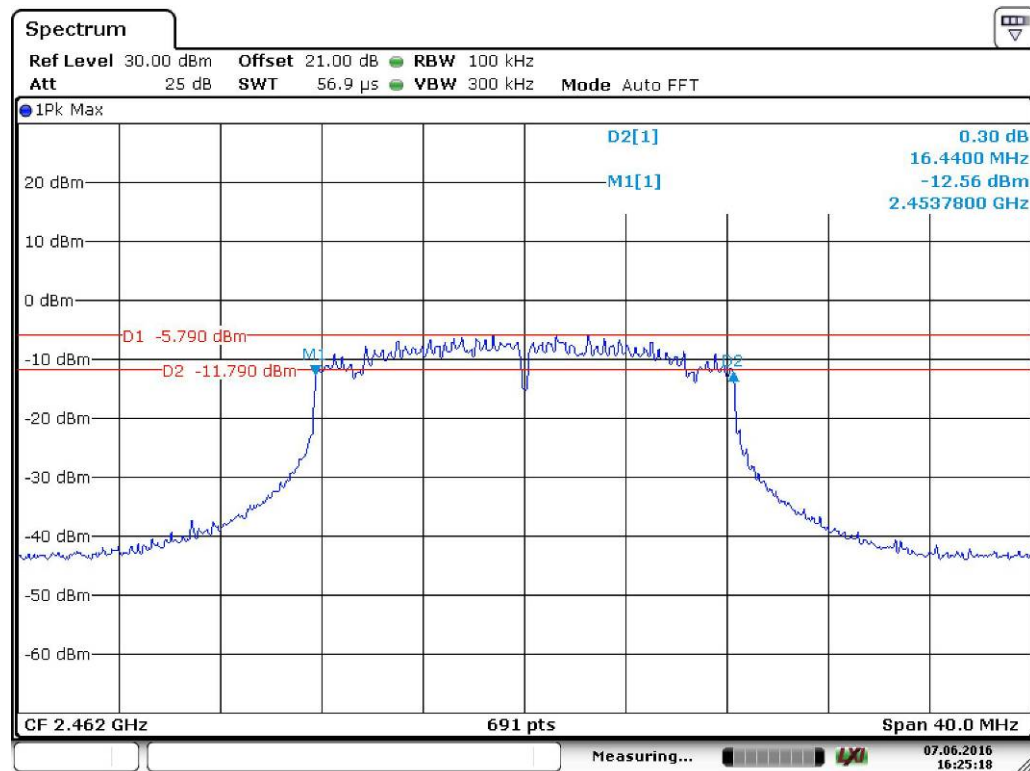
Date: 7.JUN.2016 16:14:47

Channel 2437MHz



Date: 7.JUN.2016 16:16:06

Channel 2462MHz

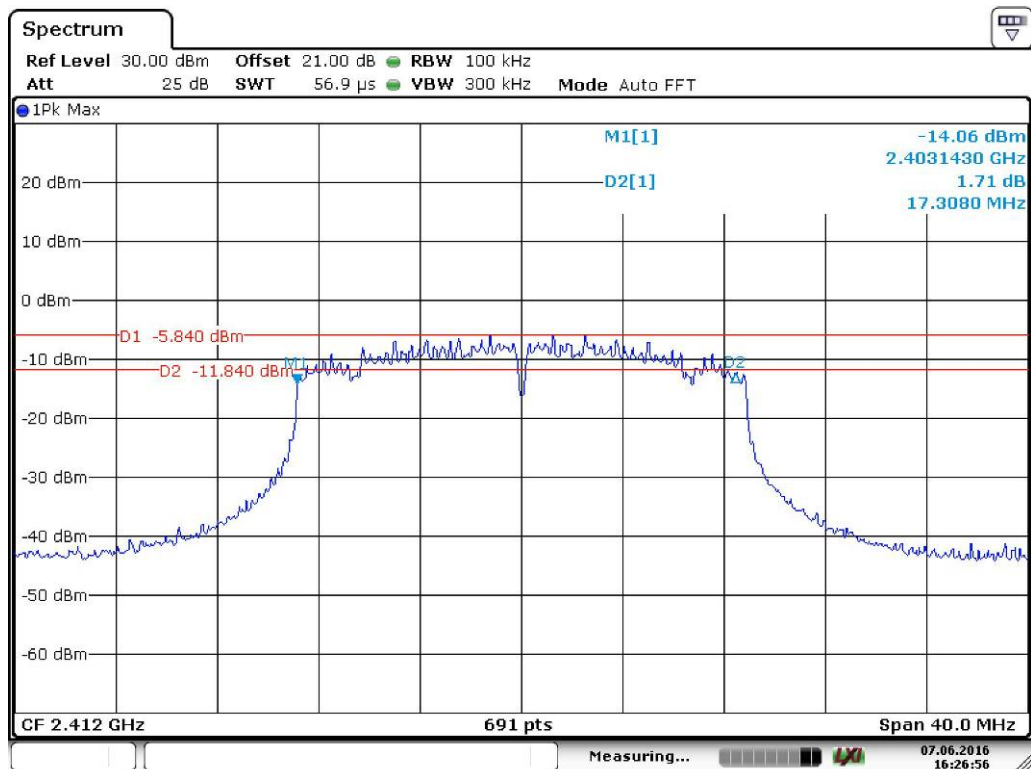


Date: 7.JUN.2016 16:25:18

Channel	Channel Frequency (MHz)	Data Rate (Mbps)	6dB Bandwidth (MHz)	Limit (kHz)
802.11n20 Mode				
Low Channel	2412	MCS7	17.308	>500
Middle Channel	2437	MCS7	17.308	>500
High Channel	2462	MCS7	17.366	>500

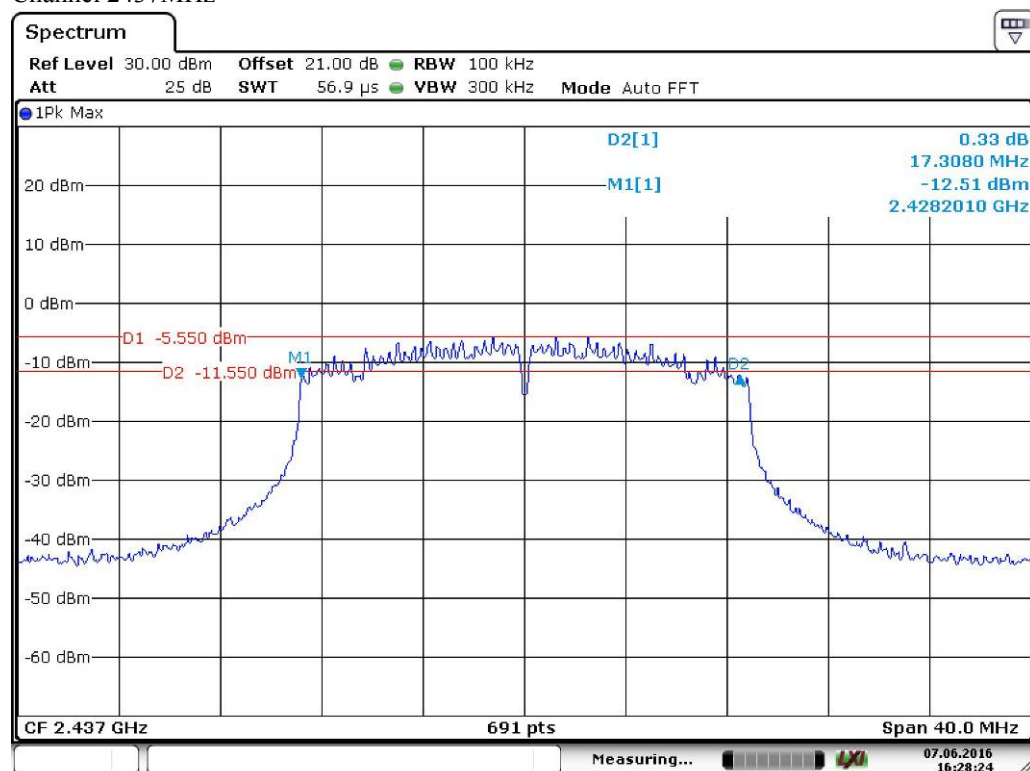
802.11n20 mode:

Channel 2412MHz



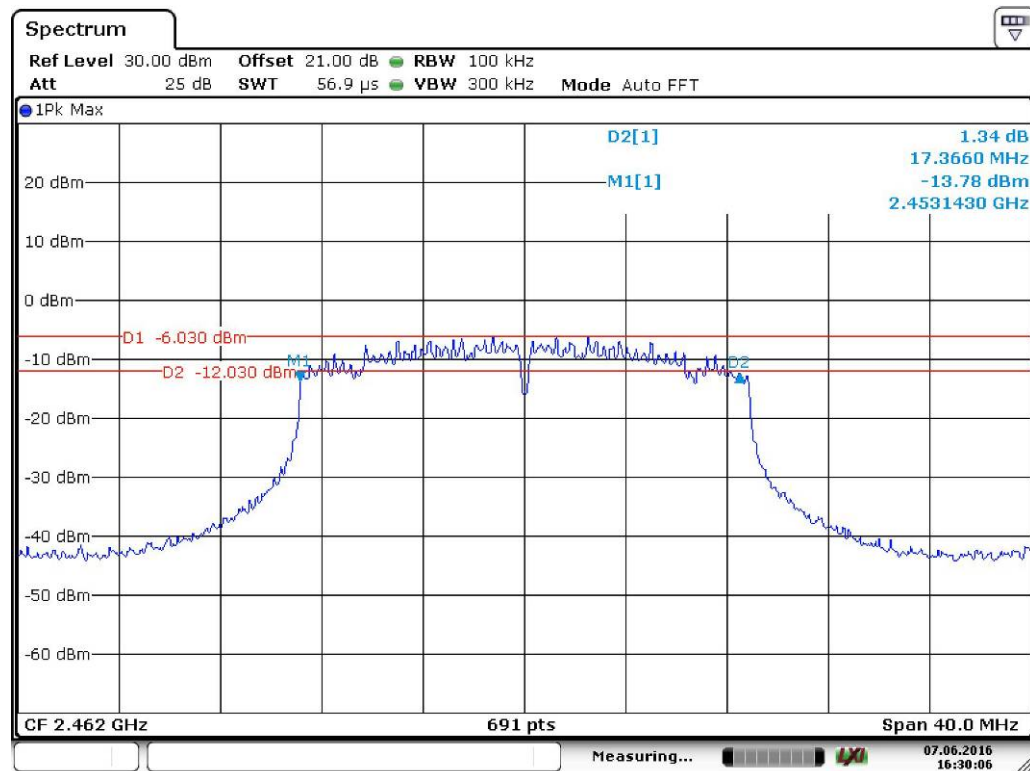
Date: 7.JUN.2016 16:26:56

Channel 2437MHz



Date: 7.JUN.2016 16:28:24

Channel 2462MHz



Date: 7.JUN.2016 16:30:06

8. MAXIMUM PEAK OUTPUT POWER

8.1 LIMITS

The maximum Peak output power measurement is 1W (30dBm).

Follow 15.247(i) “Systems operating in the 2400– 2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak 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.”

8.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS Measurement Guidance v03r05.

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to an EMI Test Receiver.
3. The spectrum analyzer resolution bandwidth that is $\leq$ EBW. So we test the Maximum Conducted Output Power — Integrated band power method.
4. Set the analyzer span $\geq 1.5 \times$ DTS bandwidth. Set the RBW = 1 MHz. Set the VBW ≥ 3 MHz. Sweep time = auto couple. Detector = peak. Allow trace to fully stabilize.

Remark:

Pre-scan all the rate, found that:

11Mbps of rate is the worst case of 802.11b,

54Mbps of rate is the worst case of 802.11g,

MCS7 of rate is the worst case of 802.11n (HT20),

8.3 TEST SETUP



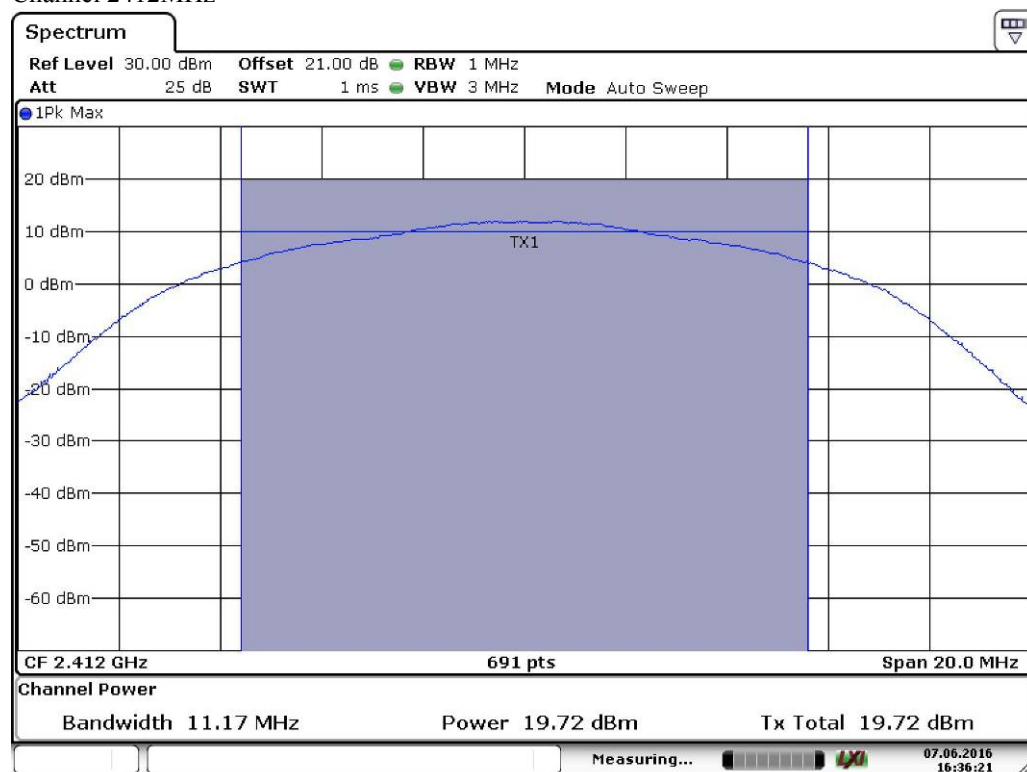
8.4 TEST RESULTS

802.11b Mode:

Channel No.	Frequency (MHz)	Mode	Data Rate	Measured Channel Power (dBm)	Limit	Result
1	2412	802.11b	1Mbps	19.31	30dBm	Pass
6	2437			19.17		Pass
11	2462			19.04		Pass
1	2412		11Mbps	19.72		Pass
6	2437			19.65		Pass
11	2462			19.29		Pass

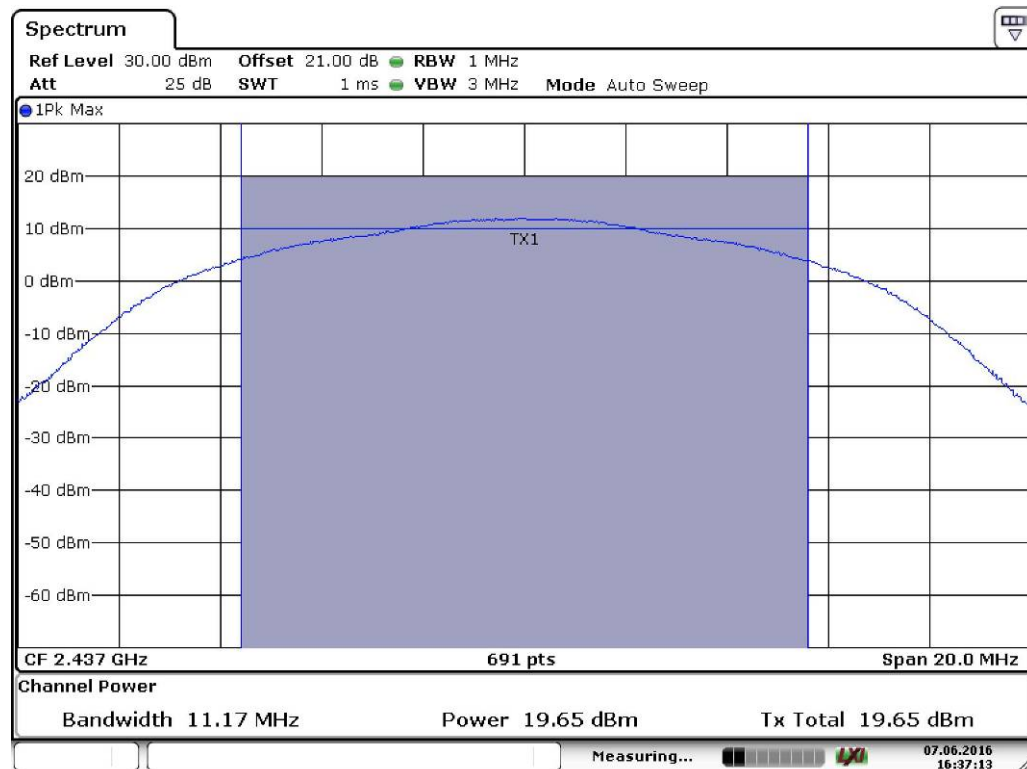
802.11b mode: 11Mbps

Channel 2412MHz



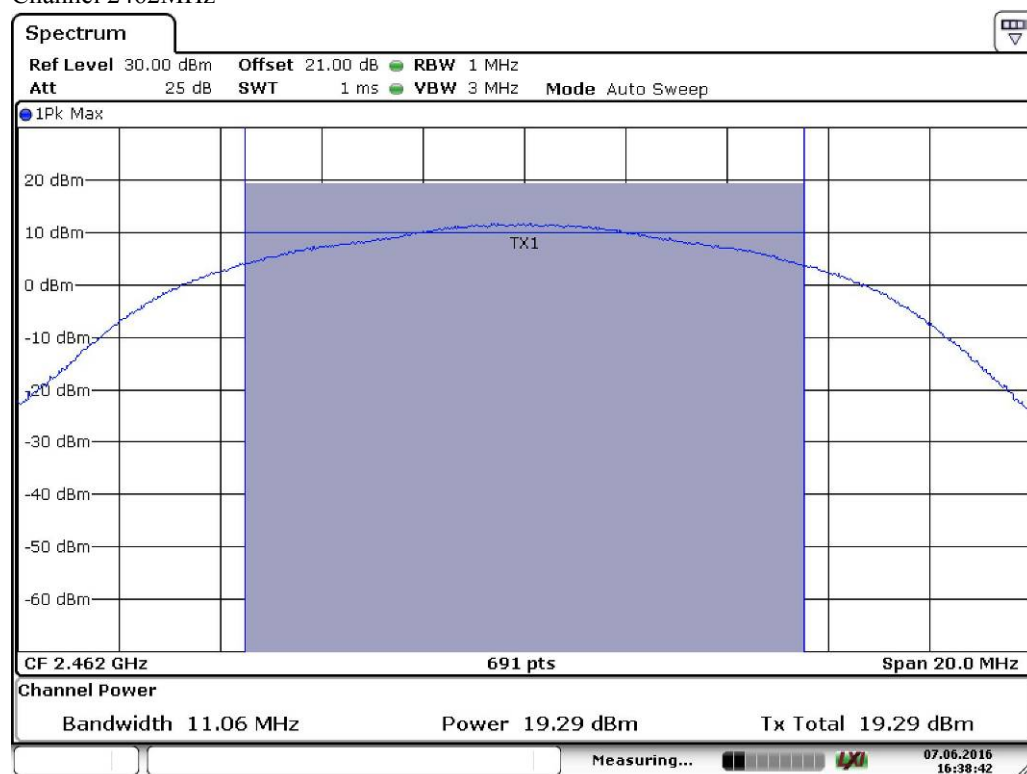
Date: 7.JUN.2016 16:36:21

Channel 2437MHz



Date: 7.JUN.2016 16:37:14

Channel 2462MHz



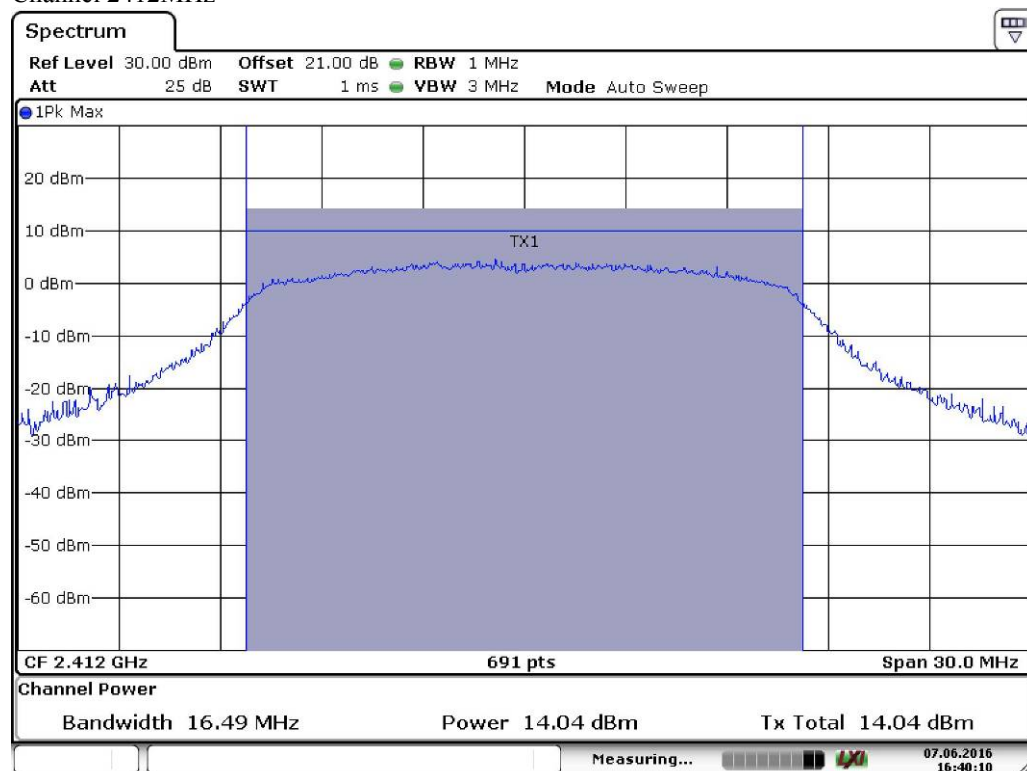
Date: 7.JUN.2016 16:38:42

802.11g Mode:

Channel No.	Frequency (MHz)	Mode	Data Rate	Measured Channel Power (dBm)	Limit	Result
1	2412	802.11g	6Mbps	13.89	30dBm	Pass
6	2437			14.11		Pass
11	2462			14.01		Pass
1	2412		54Mbps	14.04		Pass
6	2437			14.26		Pass
11	2462			14.20		Pass

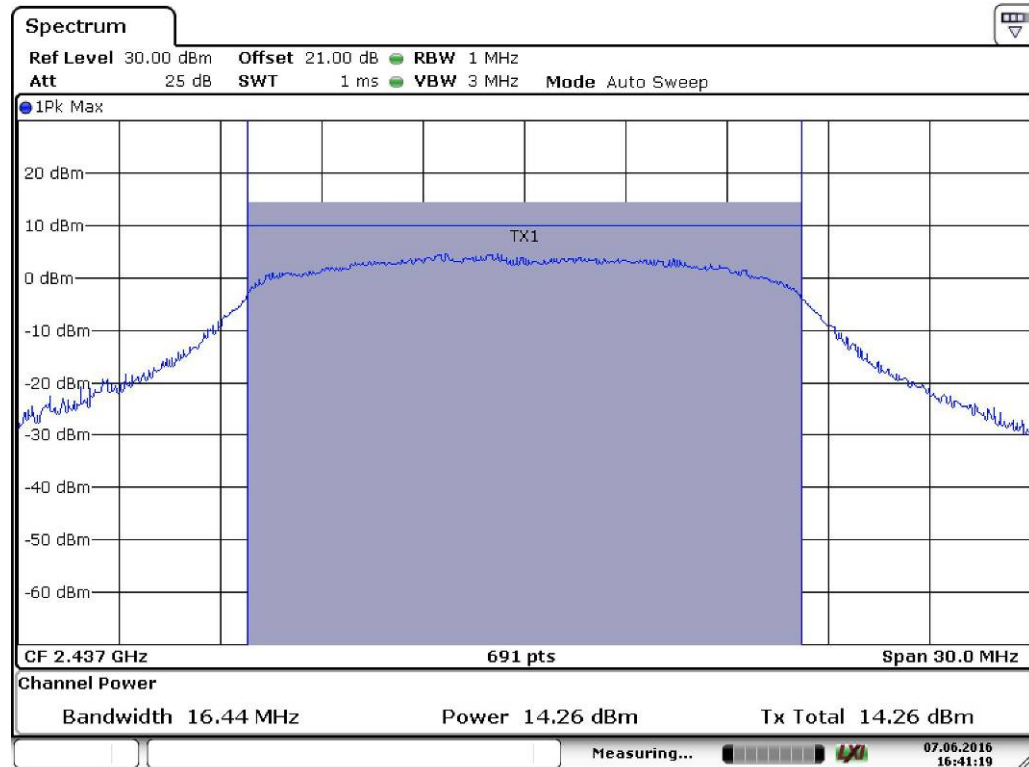
802.11g mode: 54Mbps

Channel 2412MHz



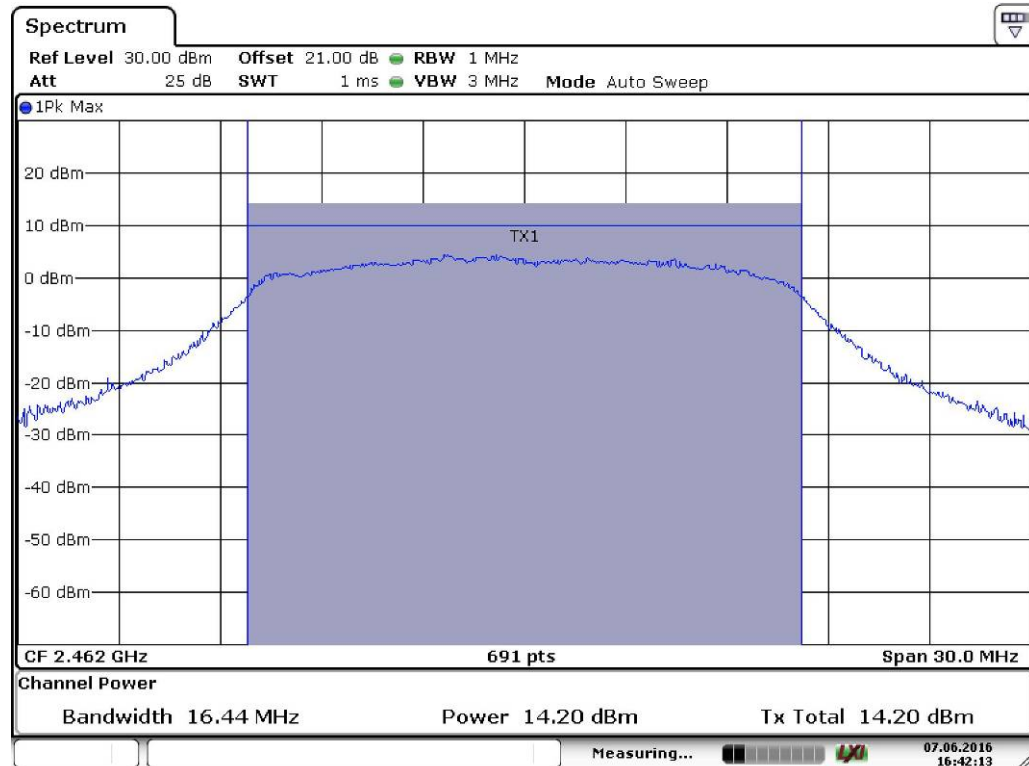
Date: 7.JUN.2016 16:40:10

Channel 2437MHz



Date: 7.JUN.2016 16:41:19

Channel 2462MHz



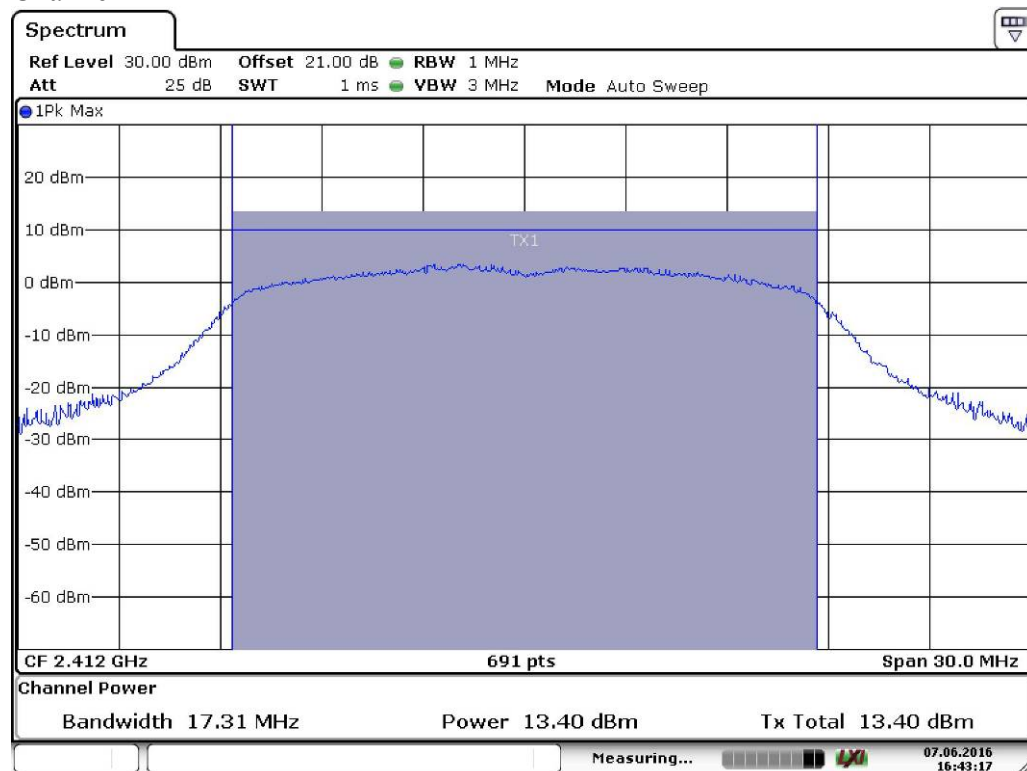
Date: 7.JUN.2016 16:42:13

802.11n20 Mode:

Channel No.	Frequency (MHz)	Mode	Data Rate	Measured Channel Power (dBm)	Limit	Result
1	2412	802.11n20	MCS1	13.03	30dBm	Pass
6	2437			12.99		Pass
11	2462			13.31		Pass
1	2412		MCS7	13.40		Pass
6	2437			13.92		Pass
11	2462			13.57		Pass

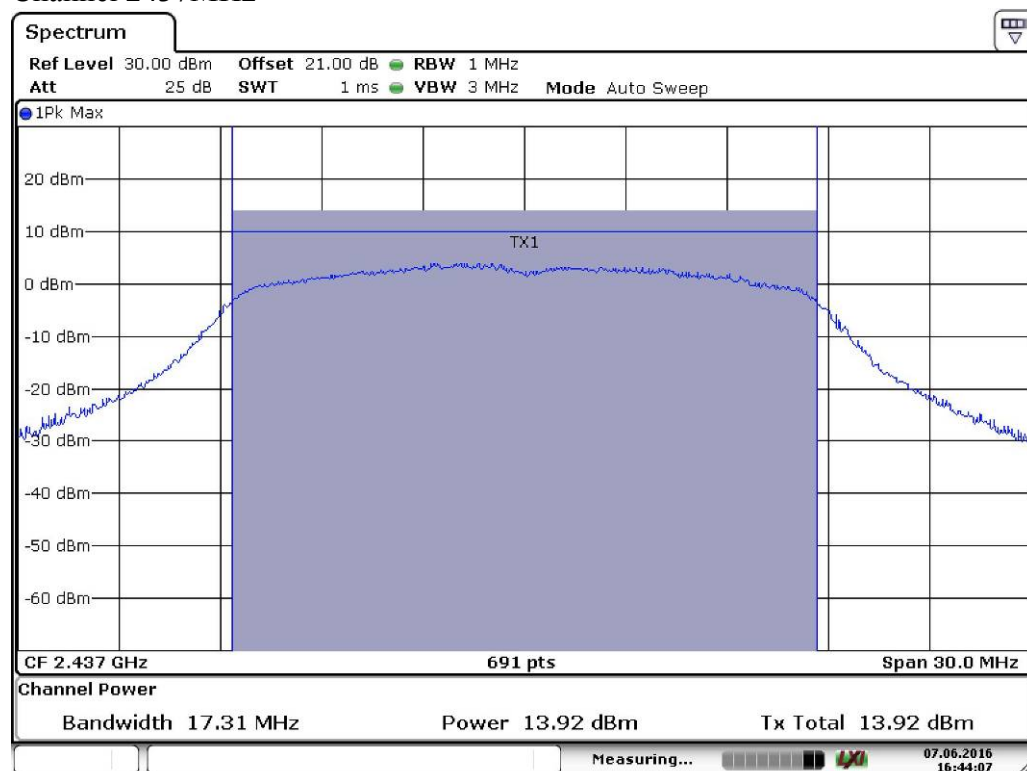
802.11n20 mode: MCS7

Channel 2412MHz



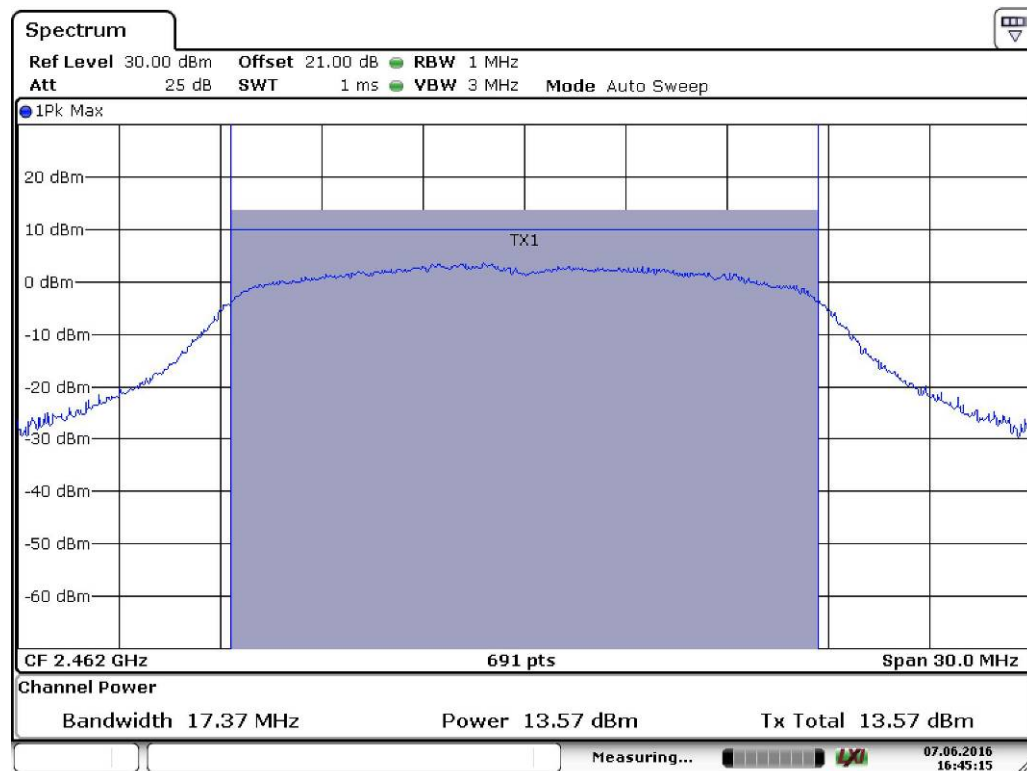
Date: 7.JUN.2016 16:43:18

Channel 2437MHz



Date: 7.JUN.2016 16:44:07

Channel 2462MHz



Date: 7.JUN.2016 16:45:15

9. POWER SPECTRAL DENSITY

9.1 LIMITS

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. Follow 15.247(i) “Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak 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.

9.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS Measurement Guidance v03r05.

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set the analyzer span to 1.5 times the DTS bandwidth. Set the RBW = 3 kHz. Set the VBW ≥ 3 RBW. Detector = peak. Ensure that the number of measurement points in the sweep $\geq 2 \times \text{span/RBW}$ (use of a greater number of measurement points than this minimum requirement is recommended).
4. Repeat above procedures until all frequencies measured were complete.

Remark:

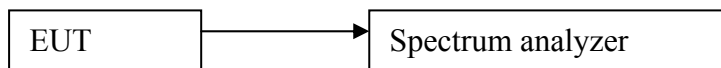
Pre-scan all the rate, found that:

11Mbps of rate is the worst case of 802.11b,

54Mbps of rate is the worst case of 802.11g,

MCS7 of rate is the worst case of 802.11n (HT20),

9.3 TEST SETUP



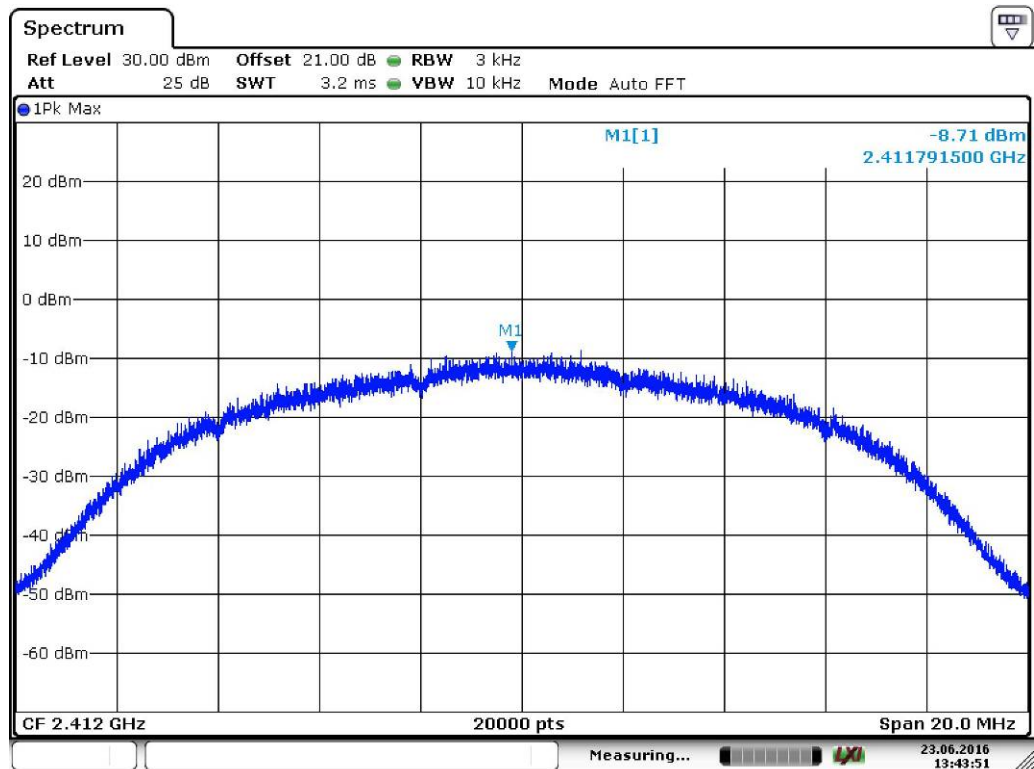
9.4 TEST RESULTS

802.11b mode:

Channel No.	Frequency (MHz)	Mode	Data Rate	PSD (dBm/3KHz)	Limit	Result
1	2412	802.11b	11Mbps	-8.71	8dBm/3KHz	Pass
6	2437			-8.44		Pass
11	2462			-9.07		Pass

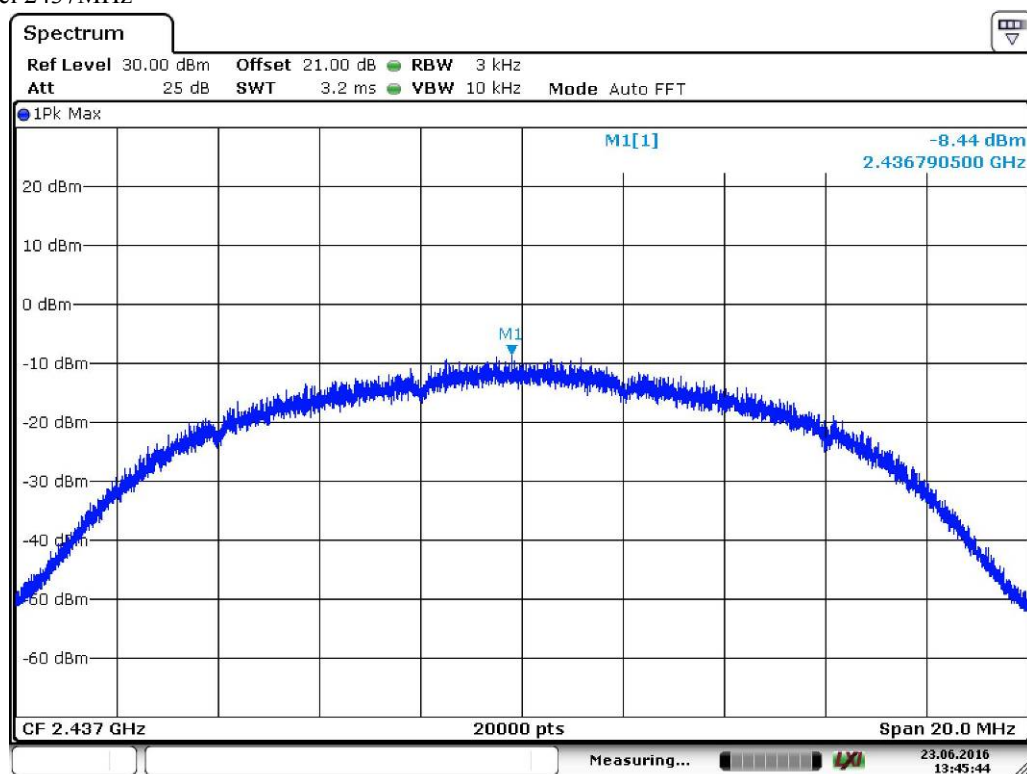
802.11b mode:

Channel 2412MHz



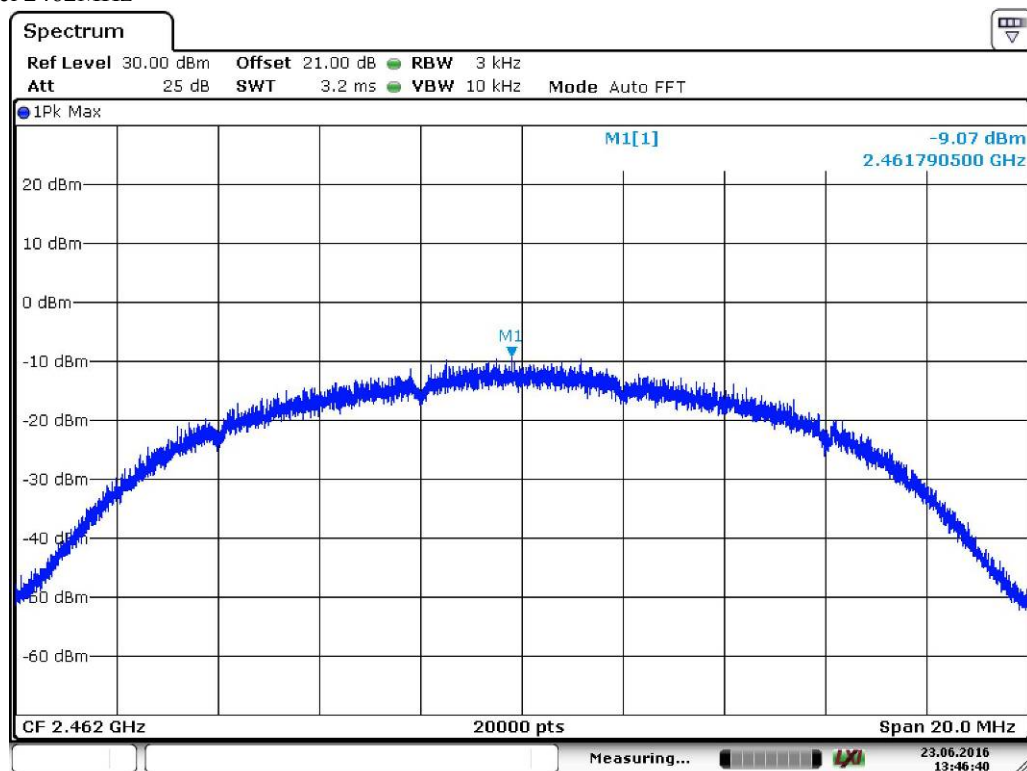
Date: 23.JUN.2016 13:43:51

Channel 2437MHz



Date: 23.JUN.2016 13:45:44

Channel 2462MHz



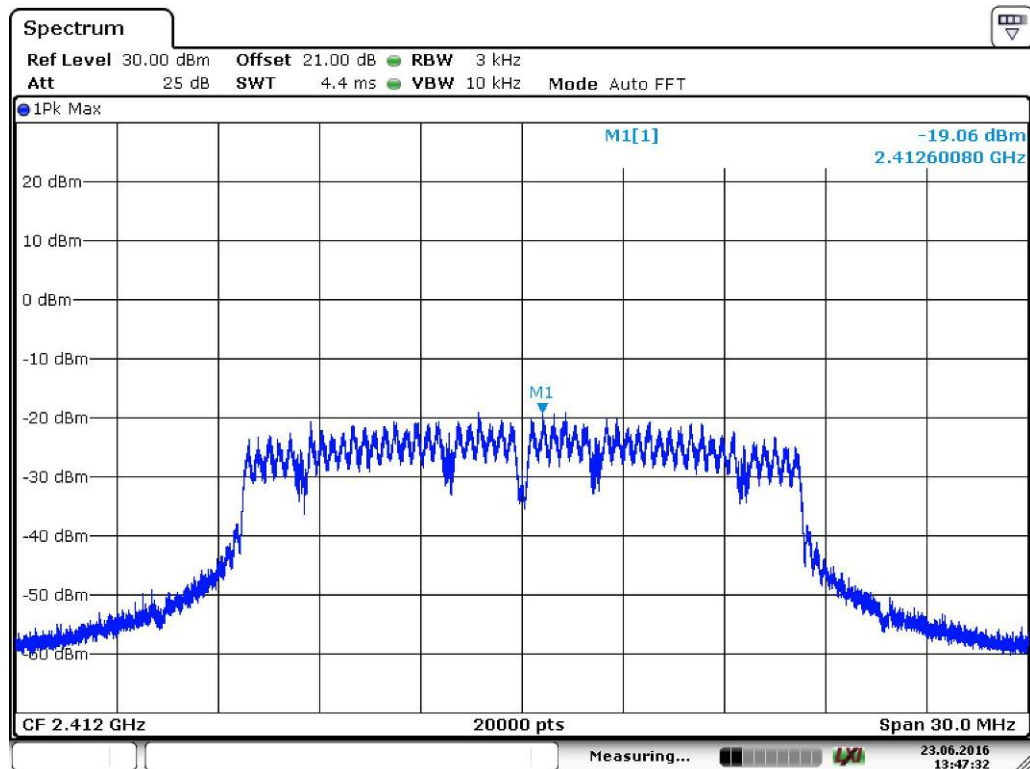
Date: 23.JUN.2016 13:46:40

802.11g mode:

Channel No.	Frequency (MHz)	Mode	Data Rate	PSD (dBm/3KHz)	Limit	Result
1	2412	802.11g	54Mbps	-19.06	8dBm/3KHz	Pass
6	2437			-18.58		Pass
11	2462			-19.08		Pass

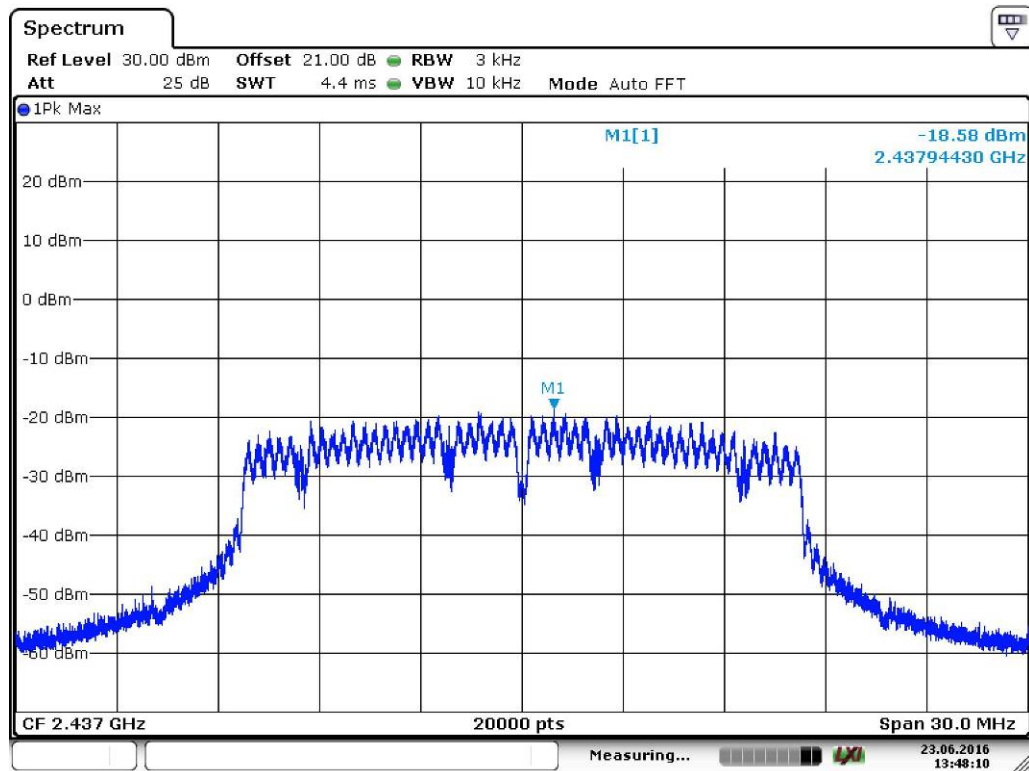
802.11g mode:

Channel 2412MHz



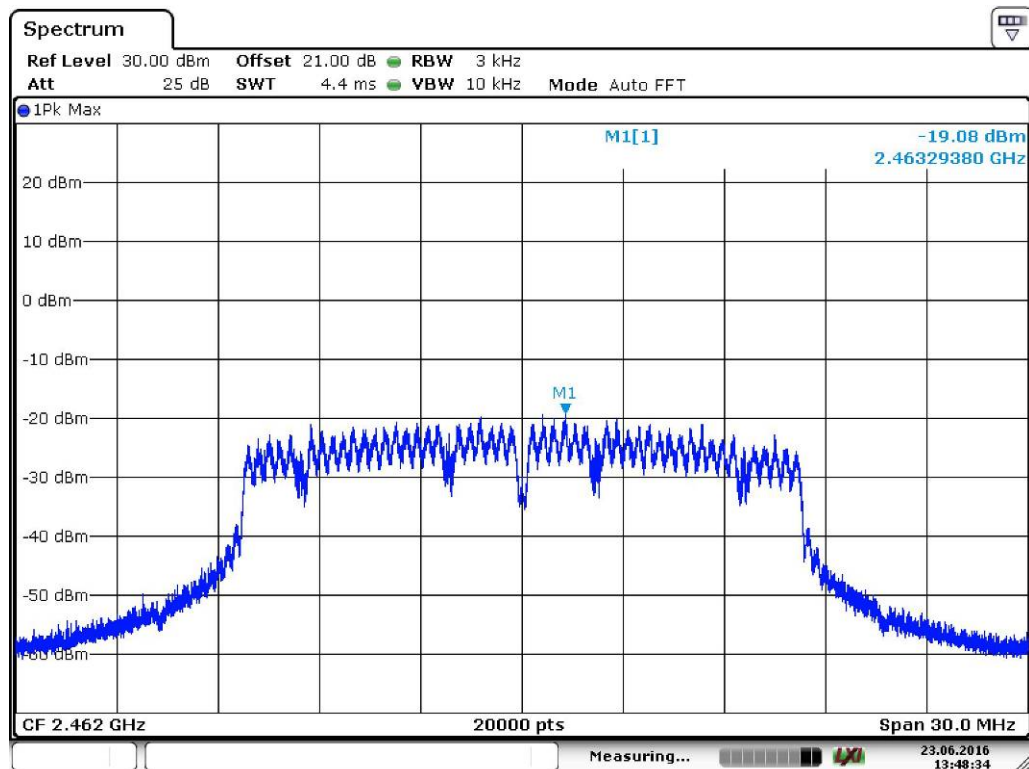
Date: 23.JUN.2016 13:47:32

Channel 2437MHz



Date: 23.JUN.2016 13:48:10

Channel 2462MHz



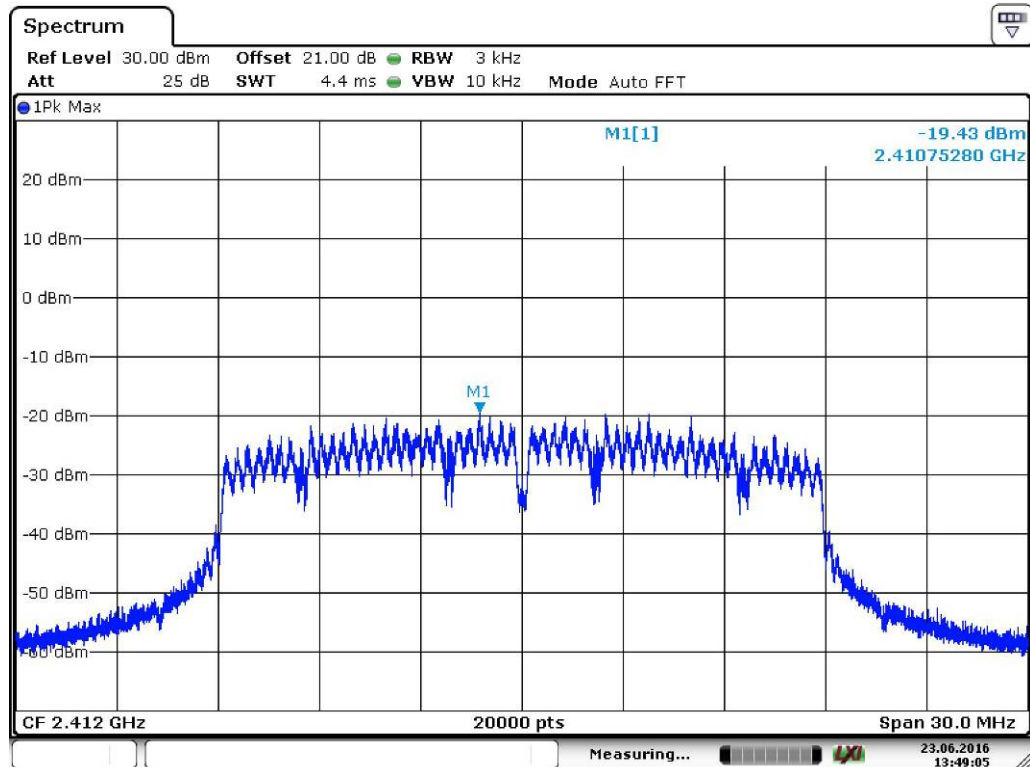
Date: 23.JUN.2016 13:48:33

802.11n20 mode:

Channel No.	Frequency (MHz)	Mode	Data Rate	PSD (dBm/3KHz)	Limit	Result
1	2412	802.11n20	MCS7	-19.43	8dBm/3KHz	Pass
6	2437			-18.88		Pass
11	2462			-19.50		Pass

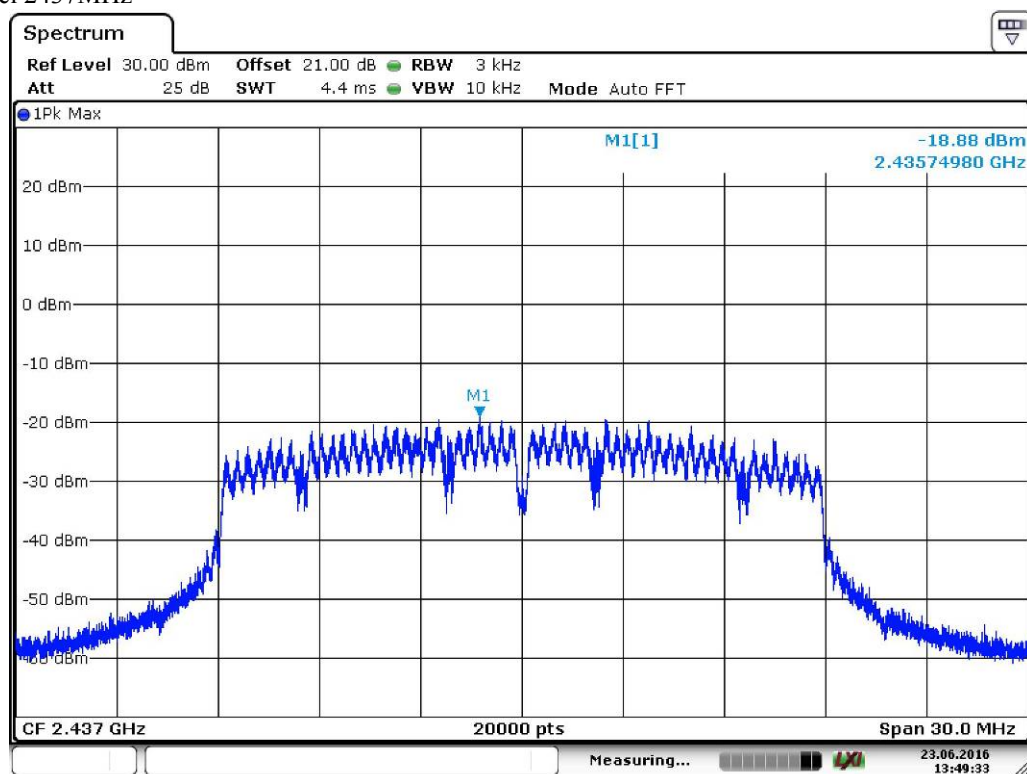
802.11n20 mode:

Channel 2412MHz



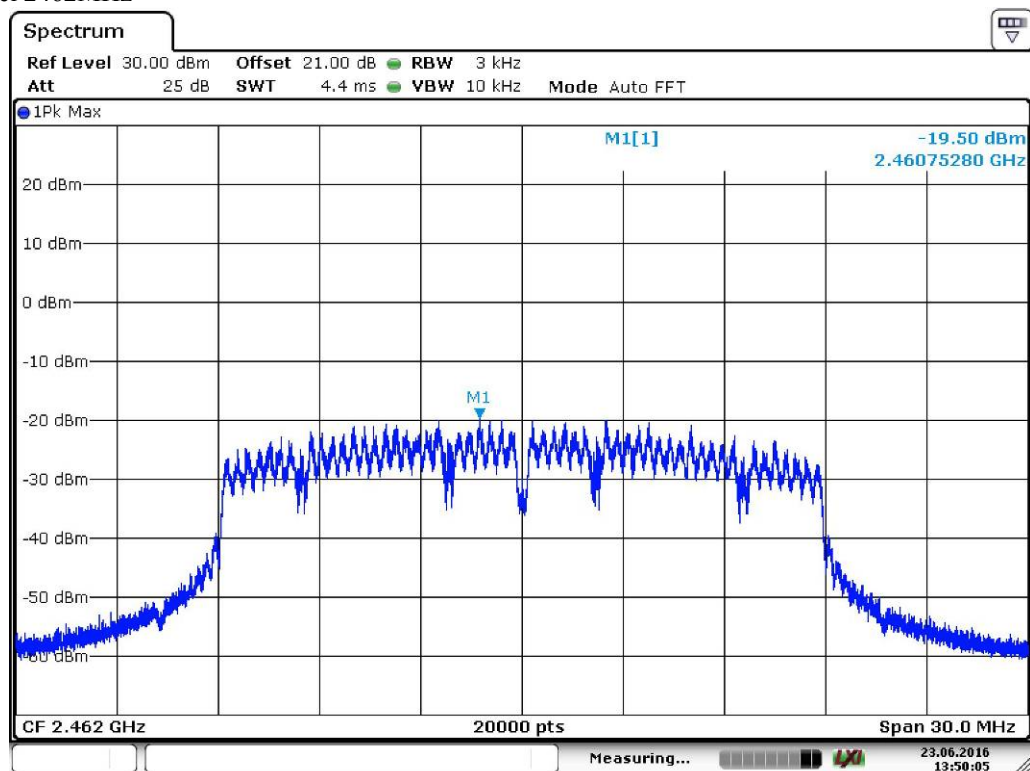
Date: 23.JUN.2016 13:49:05

Channel 2437MHz



Date: 23.JUN.2016 13:49:34

Channel 2462MHz



Date: 23.JUN.2016 13:50:05

10. EMISSIONS IN NON-RESTRICTED FREQUENCY BANDS

10.1 LIMITS

FCC 15.247(d) & 15.209

10.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 DTS Measurement Guidance v03r05.

Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.

1. Reference level measurement

Below 1GHz Set the spectrum analyzer: RBW =100KHz VBW $\geq$ 3*RBW, Set the span to $\geq$ 1.5 times the DTS bandwidth. Sweep = auto; Detector Function = peak. Trace = Max-hold. Allow the trace to stabilize.

2. Set the spectrum analyzer: RBW =100KHz VBW $\geq$ 3*RBW, Set the span to $\geq$ 1.5 times the DTS bandwidth. Sweep = auto; Detector Function = peak. Trace = Max-hold. Allow the trace to stabilize.

Remark:

Pre-scan all the rate, found that:

11Mbps of rate is the worst case of 802.11b,

54Mbps of rate is the worst case of 802.11g,

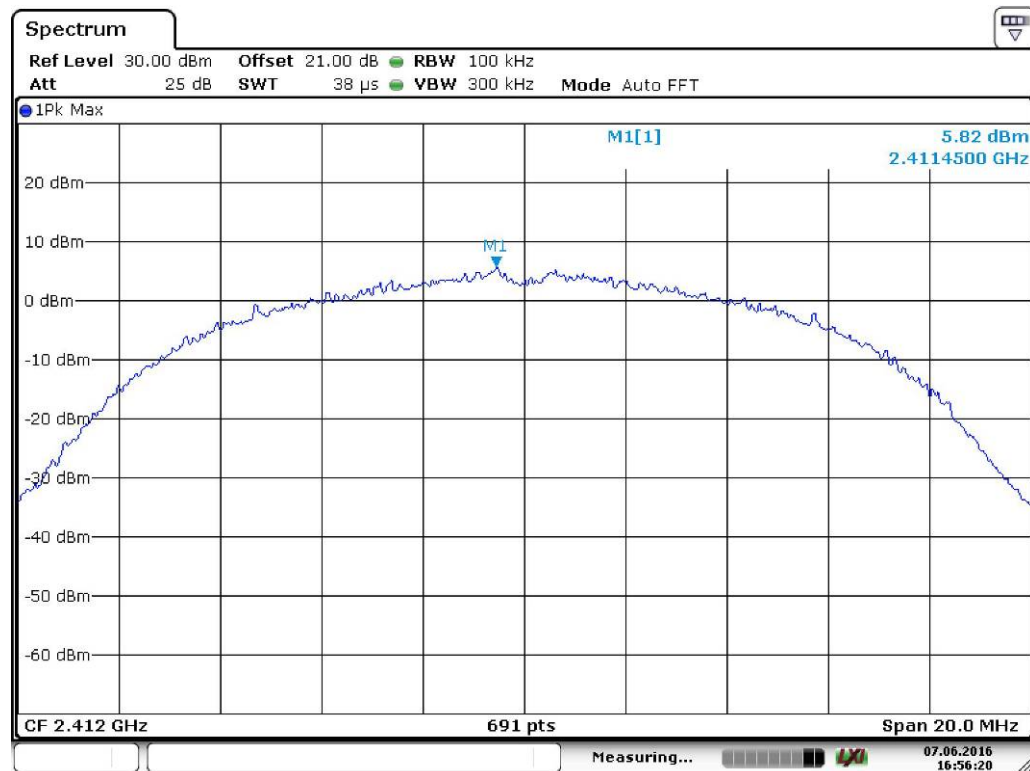
MCS7 of rate is the worst case of 802.11n (HT20),

10.3 TEST SETUP



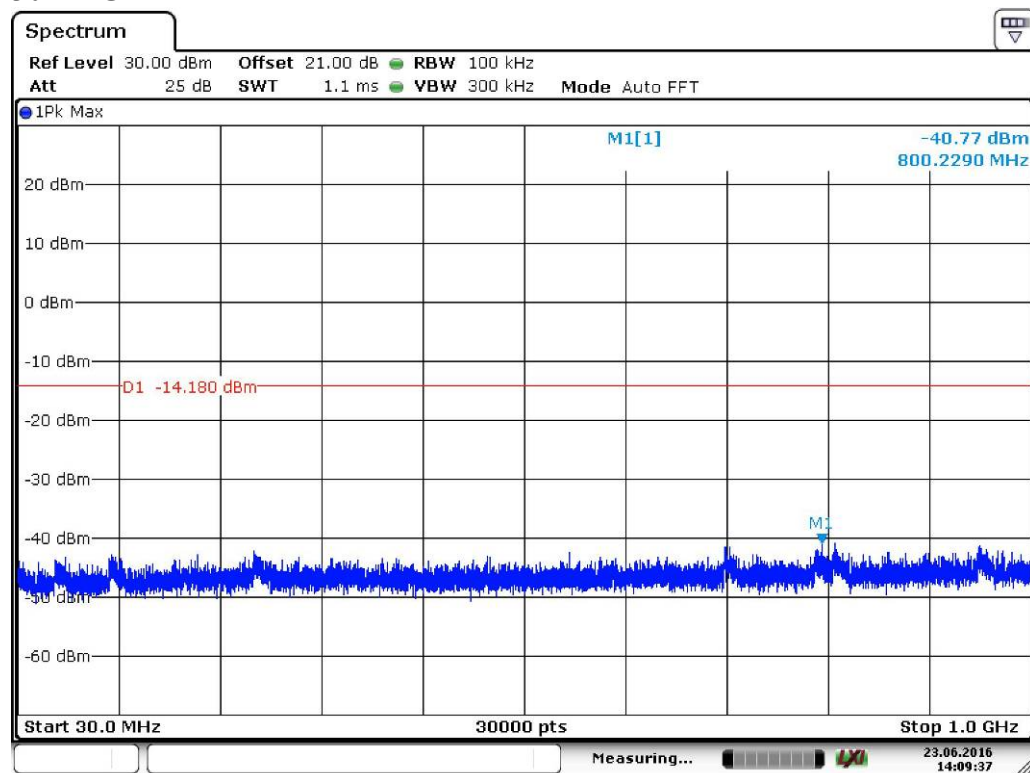
10.4 TEST RESULTS

802.11b mode:
Channel 2412MHz
reference level:



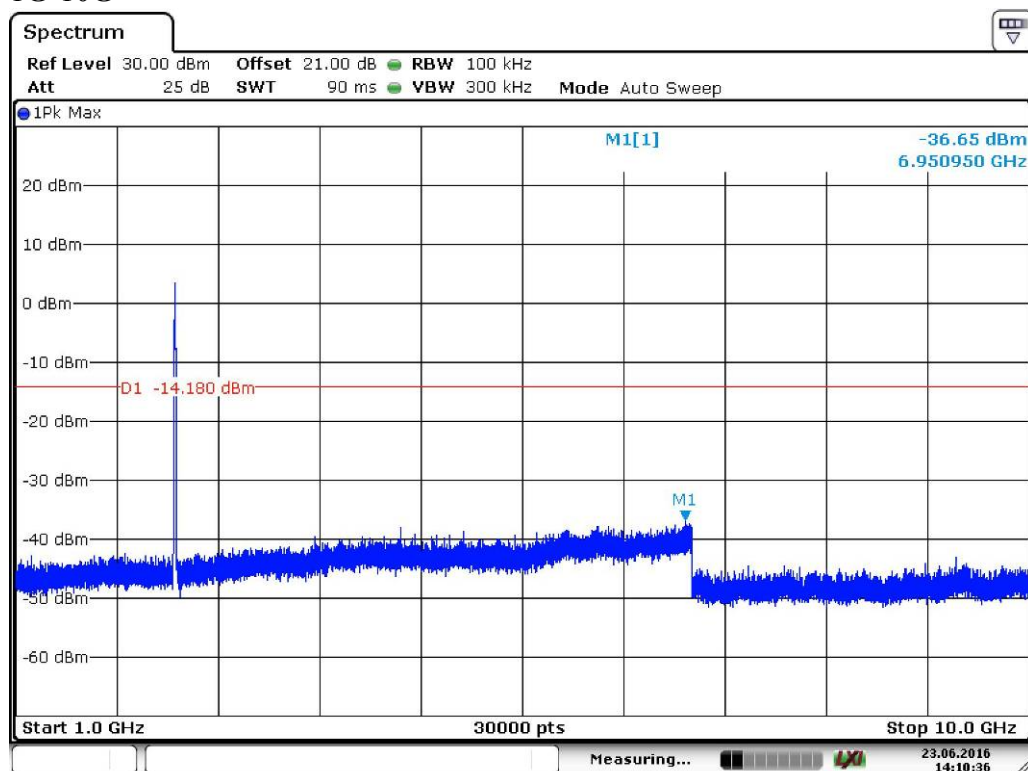
Date: 7.JUN.2016 16:56:21

30M-1G



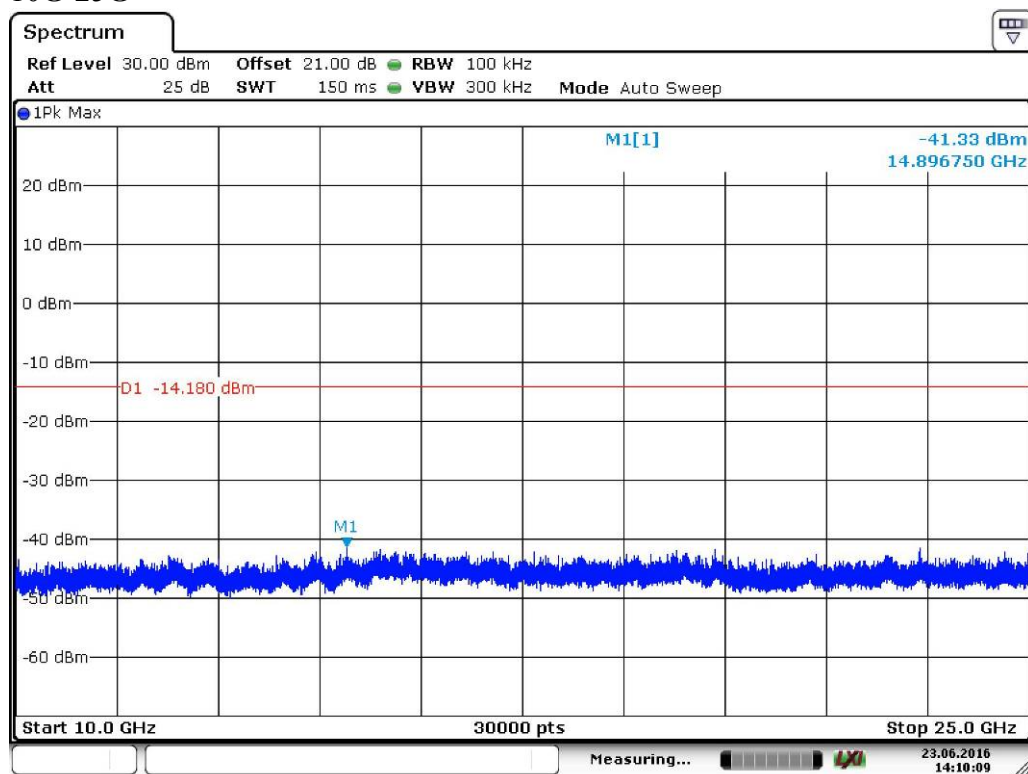
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1G-10G



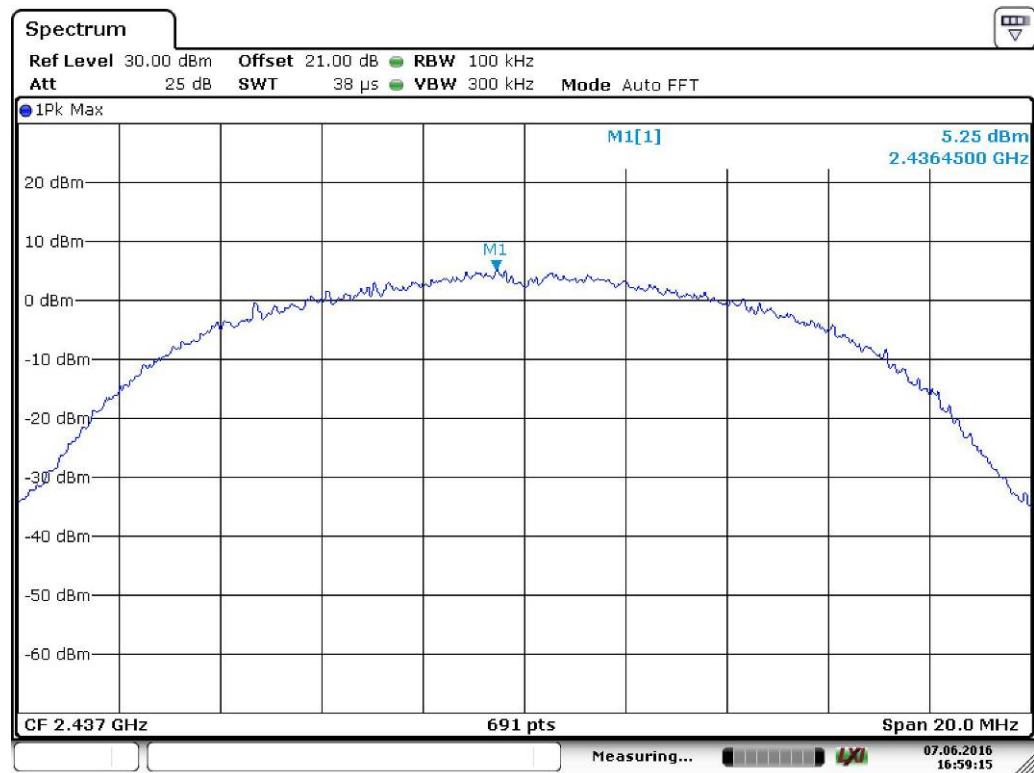
Date: 23.JUN.2016 14:10:36

10G-25G



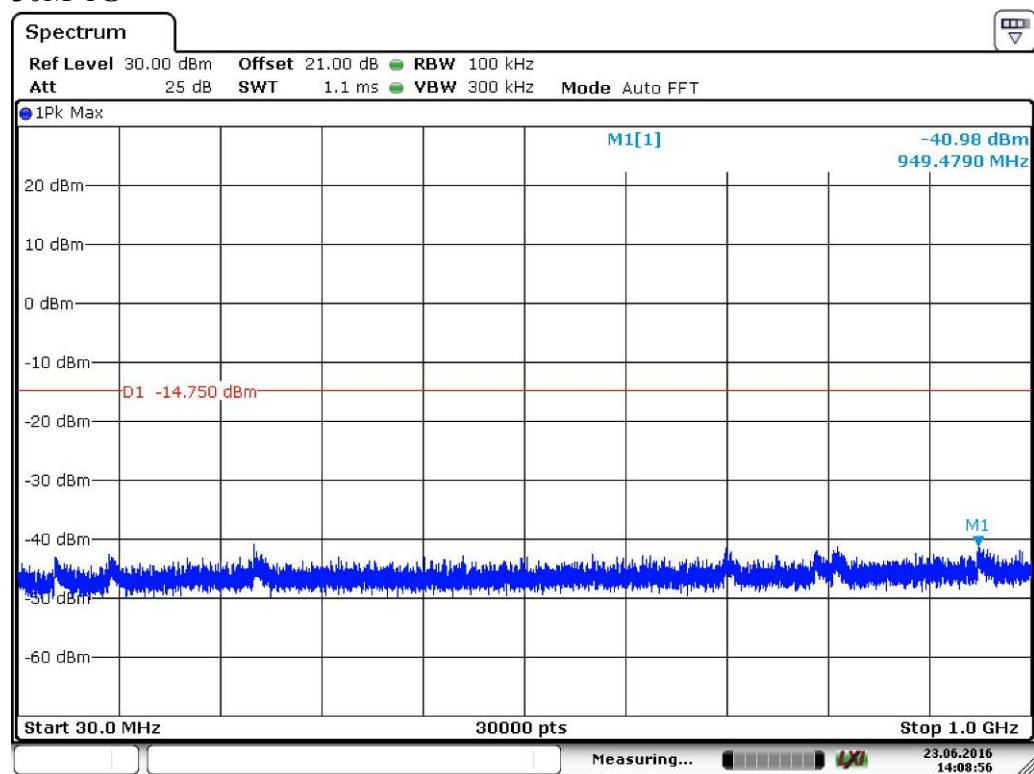
Date: 23.JUN.2016 14:10:10

802.11b mode:
Channel 2437MHz
Reference level



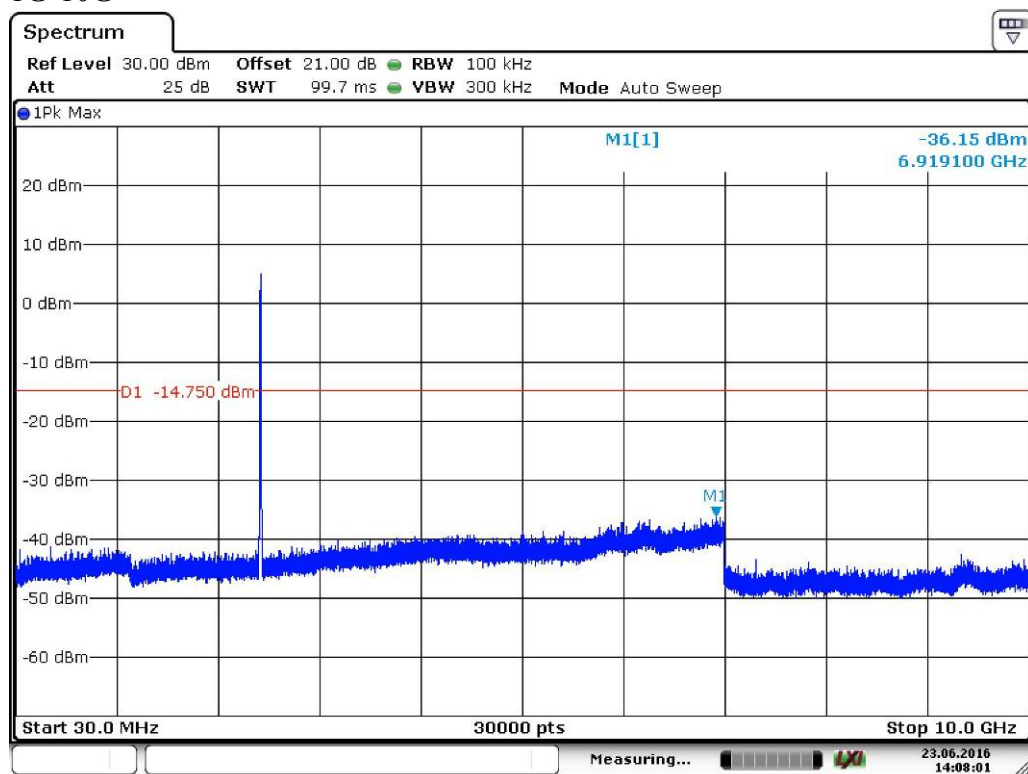
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30M-1G



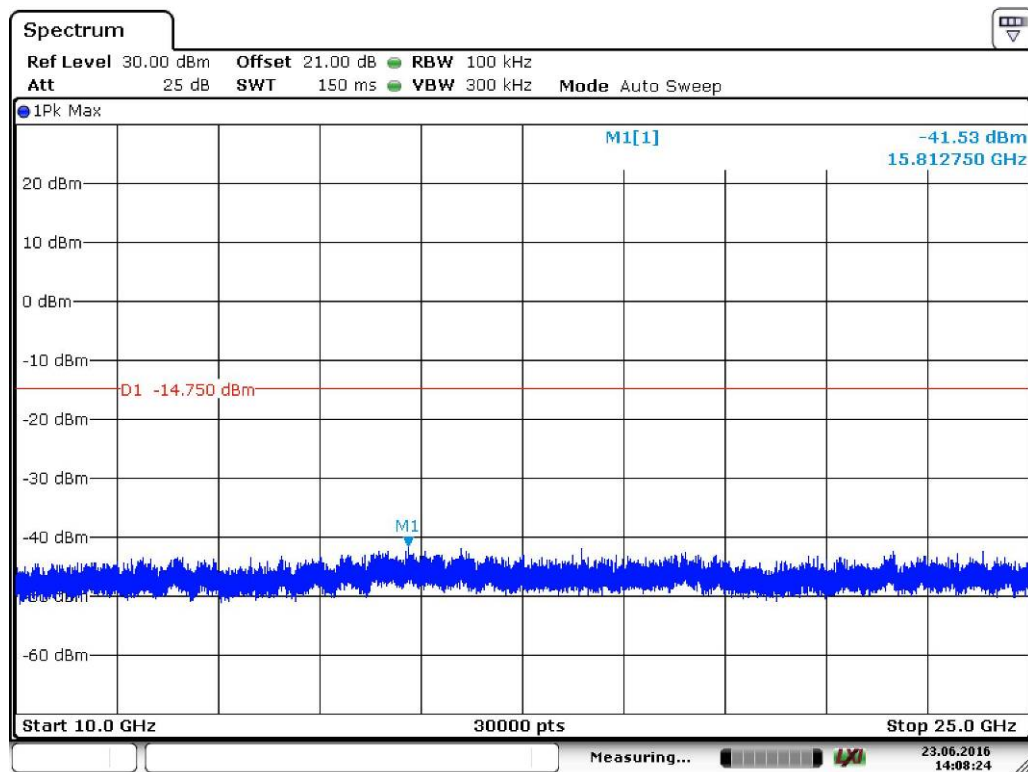
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1G-10G



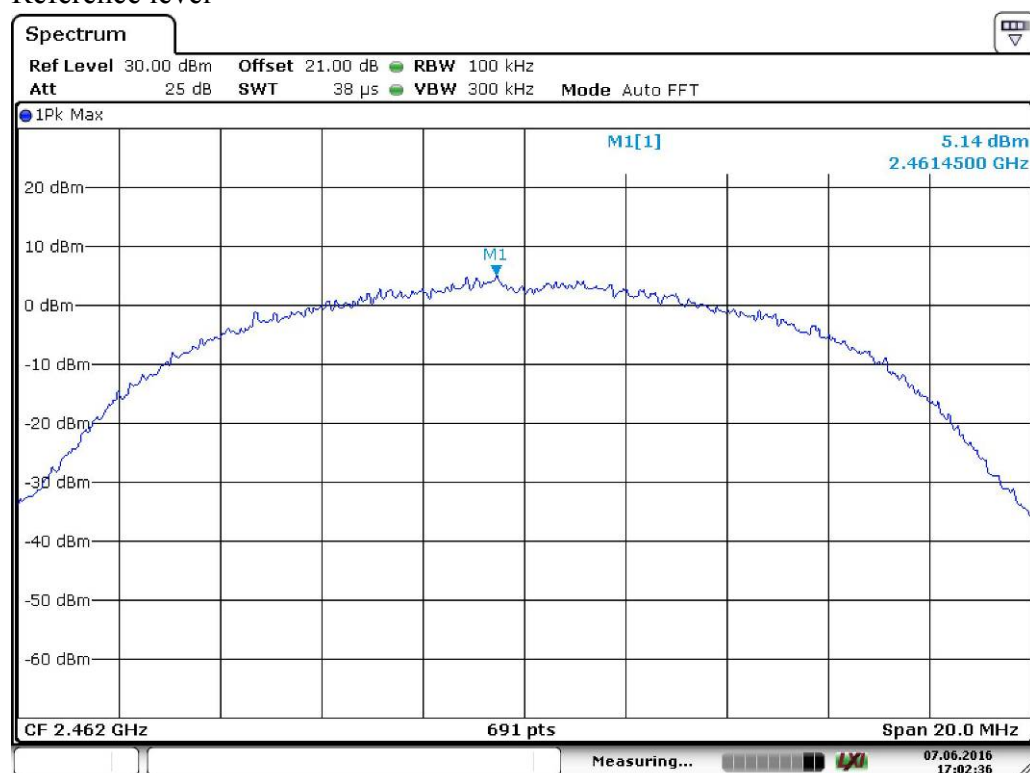
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10G-25G



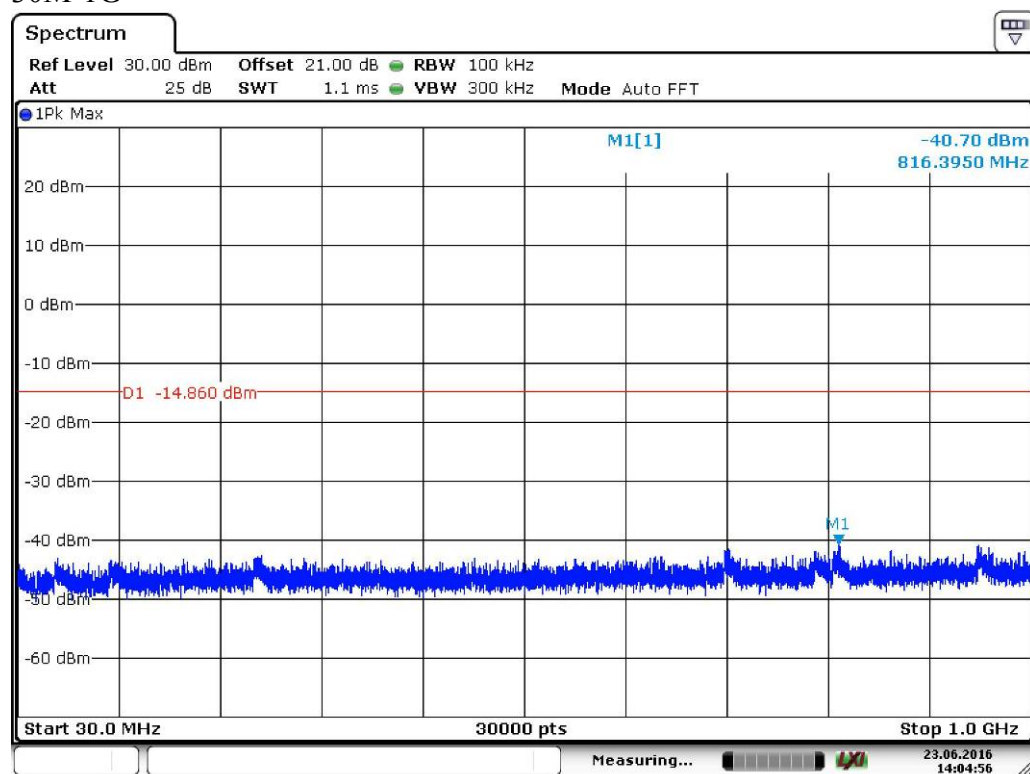
Date: 23.JUN.2016 14:08:24

802.11b mode:
Channel 2462MHz
Reference level



Date: 7.JUN.2016 17:02:35

30M-1G



Date: 23.JUN.2016 14:04:56