

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

Applicant: Hong Kong AMobile Intelligent Corp. Limited Taiwan Branch
8F.-1, No.700, Zhongzheng Rd., Zhonghe Dist., New Taipei City
235, Taiwan

Product Name: GT78-V Rugged Android Tablet

Brand Name: AMobile

Model No.: GT78-V8, GT78-V7

Model Difference: Difference in screen size and position of light sensor

FCC ID: 2AQ5W-GT78V8

Report Number: E2/2018/80017

FCC Rule Part: §15.247, Cat: DTS

Issue Date: Nov. 21, 2018

Date of Test: Aug. 02, 2018 ~ Sep. 26, 2018

Date of EUT Re-
ceived: Aug. 02, 2018

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

The test results of this report relate only to the tested sample identified in this report.

Tested By:

Vito
Vito Pei / Engineer

Approved By:

CHUN-CHIEH, CHEN
Chun Chieh Chen / Sr. Engineer



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Revision History

Report Number	Revision	Description	Effected Page	Issue Date	Revised By
E2/2018/80017	Rev.00	Initial creation of document	All	Oct. 26, 2018	Stefanie Yu / Clerk
E2/2018/80017	Rev.01	Update information for Model No. and FCC ID	1,4	Nov. 21, 2018	Stefanie Yu / Clerk

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1 GENERAL INFORMATION

1.1 Product description

General:

Product Name:	GT78-V Rugged Android Tablet	
Brand Name:	AMobile	
Marketing Name:	N/A	
Model No.:	GT78-V8, GT78-V7	
Model Difference:	Difference in screen size and position of light sensor	
Software version:	N/A	
Hardware version:	N/A	
USB Cable	Model No.: N/A, Supplier: N/A	
Power Supply:	3.8Vdc from Rechargeable Li-polymer Battery	
	Battery:	Model No.: DPR999-00 Supplier: AMobile

WLAN 2.4GHz:

Wi-Fi	Frequency Range	Channels	Rated Power	Modulation Technology
11b/g	2412-2462	11	b: 15.55dBm g: 18.69dBm	DSSS, OFDM
11n	HT20 2412-2462	11	HT20: 18.69dBm	OFDM
11n	HT40 2422-2452	9	HT40: 19.75dBm	OFDM
Antenna Designation:		PCB Antenna, Gain: 3.5dBi		
Modulation type:		CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM		
Transition Rate:		802.11 b: 1/2/5.5/11 Mbps 802.11 g: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 72.2Mbps 802.11 n_40MHz: 13.5 - 150.0Mbps		

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1.2 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.247

FCC KDB 558074 D01 DTS Meas. Guidance v05

ANSI C63.10:2013

Note: All test items have been performed and record as per the above standards.

1.3 Test Facility

SGS Taiwan Ltd. Electronics & Communication Laboratory No.2, Keji 1st Rd.,
Guishan District, Taoyuan City, Taiwan 333 (TAF code 0513)

FCC Registration Number and Designation are: 735305 / TW0002

1.4 Special Accessories

There are no special accessories used while test was conducted.

1.5 Equipment Modifications

There was no modification incorporated into the EUT.

1.6 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m*9m*6m semi-anechoic chamber,
the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the
result came out very similar.

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2 SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz. The CISPR Quasi-Peak and Average detector mode is employed according to §15.207. The two LISNs provide 50 ohm/ 50 uH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

2.3.2 Radiated Emissions

The EUT is placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plane. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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2.4 Configuration of Tested System

**Fig. 2-1 Radiated Emission & Conducted
(Antenna Port)**



Fig. 2-2 Conduction (AC Power Line)



Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1	Notebook	Lenovo	L430	R9-WR6X4	Shielded	Unshielded
2	Bluetooth Test Software	N/A	N/A	N/A	N/A	N/A

3 SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.207(a)	AC Power Line Conducted Emission	Compliant
§15.247(b) (3)	Peak Output Power	Compliant
§15.247(a)(2)	6dB & 99% Emission Bandwidth	Compliant
§15.247(d)	Conducted Band Edge and Spurious Emission	Compliant
§15.247(d)	Radiated Band Edge and Spurious Emission	Compliant
§15.247(e)	Power Spectral Density	Compliant
§15.203 §15.247(b)	Antenna Requirement	Compliant

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4 DESCRIPTION OF TEST MODES

4.1 Operated in 2400 ~ 2483.5MHz Band

11 channels are provided for 802.11b, 802.11g and 802.11n HT20

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

7 channels are provided for 802.11n HT40

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
3	2422 MHz	7	2442 MHz
4	2427 MHz	8	2447 MHz
5	2432 MHz	9	2452 MHz
6	2437 MHz		

4.2 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case.

RADIATED EMISSION TEST:

RADIATED EMISSION TEST (BELOW 1 GHz)				
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11g	1 to 11	1,6,11	OFDM	6

RADIATED EMISSION TEST (ABOVE 1 GHz)				
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1
802.11g	1 to 11	1, 6, 11	OFDM	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	MCS 0
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	MCS 0

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Note:

The field strength of radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for 802.11b/g/n WLAN Transmitter for channel Low, Mid and High, the worst case E1 position was reported.

ANTENNA PORT CONDUCTED MEASUREMENT:

CONDUCTED TEST				
MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	DATA RATE (Mbps)
802.11b	1 to 11	1, 6, 11	DSSS	1
802.11g	1 to 11	1, 6, 11	OFDM	6
802.11n (HT20)	1 to 11	1, 6, 11	OFDM	MCS 0
802.11n (HT40)	3 to 9	3, 6, 9	OFDM	MCS 0

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5 MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
AC Power Line Conducted Emission	+/- 2.586 dB
Peak Output Power	+/- 0.84 dB
6dB Bandwidth	+/- 51.33 Hz
100 KHz Bandwidth Of Frequency Band Edges	+/- 0.84 dB
Peak Power Density	+/- 1.3 dB
Temperature	+/- 0.65 °C
Humidity	+/- 4.6 %
DC / AC Power Source	DC= +/- 0.13%, AC= +/- 0.2%

Radiated Spurious Emission:

Measurement uncertainty (Polarization : Vertical)	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : Horizontal)	9kHz – 30MHz: +/- 2.87 dB
	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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6 CONDUCTED EMISSION TEST

6.1 Standard Applicable

Frequency range within 150kHz to 30MHz shall not exceed the Limit table as below.

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

6.2 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
LISN	TESEQ	NNB 51	36076	2018/02/14	2019/2/13
EMI Test Receiver	R&S	ESCI	101300	2017/11/02	2018/11/1
Notebook	Lenovo	L420	S0012467	N/A	N/A

6.3 EUT Setup

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI 63.10:2013.
2. The AC/DC Power adaptor of EUT was plug-in LISN. The EUT was placed flushed with the rear of the table.
3. The LISN was connected with 120Vac/60Hz power source.

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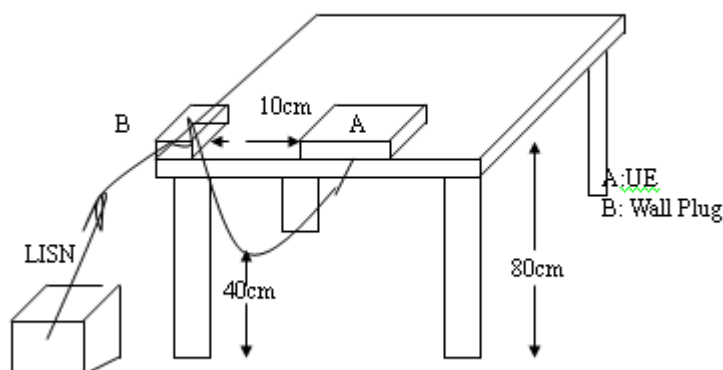
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6.4 Test SET-UP (Block Diagram of Configuration)



6.5 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all phases of power being supplied by given UE are completed

6.6 Measurement Result

Note: Refer to next page for measurement data and plots.

Note2: The * reveals the worst-case results that closet to the limit.

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AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	operation mode	Test By:	Jerry
-----------------	----------------	----------	-------

Site : Conduction Room

Phase: L1

Temperature: 22 °C

Limit: FCC Class B Conduction(QP)

Power: AC 120V/60Hz

Humidity: 64 %

Mode:

Note:

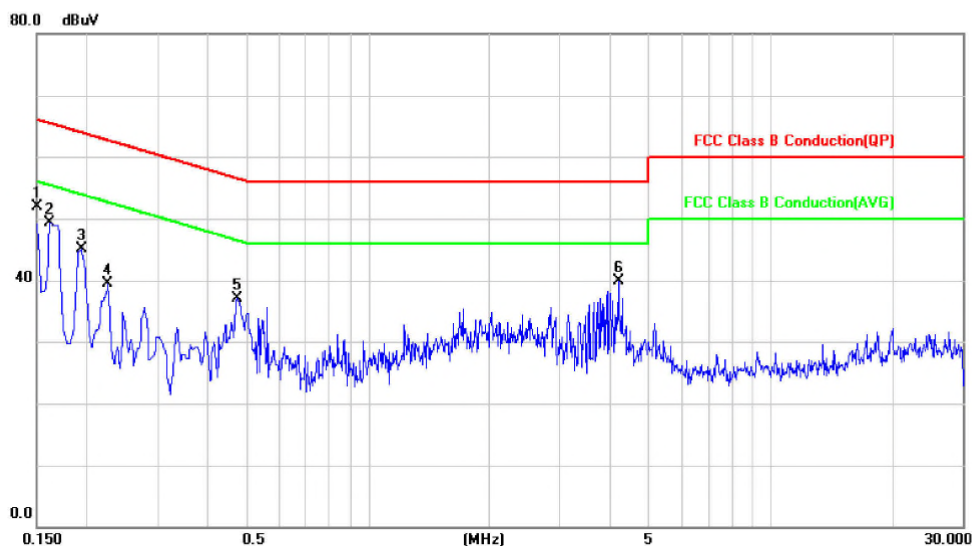
Conducted Emission

File :Conduction

Data :#1057

Date: 2018/9/3

Time: 下午 11:43:00



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1	*	0.1500	32.18	19.65	51.83	66.00	-14.17	peak	
2		0.1620	29.56	19.67	49.23	65.36	-16.13	peak	
3		0.1940	25.46	19.73	45.19	63.86	-18.67	peak	
4		0.2260	19.72	19.78	39.50	62.60	-23.10	peak	
5		0.4740	16.89	20.19	37.08	56.44	-19.36	peak	
6		4.1900	19.85	20.14	39.99	56.00	-16.01	peak	

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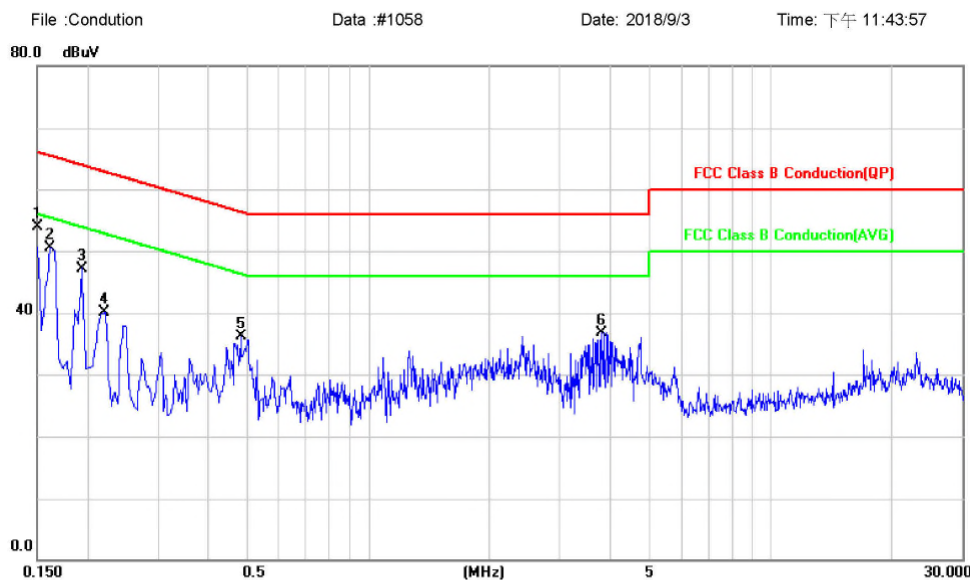
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Site : Conduction Room Phase: **N** Temperature: 22 °C
Limit: FCC Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 64 %
Mode:
Note:

Conducted Emission



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	34.33	19.64	53.97	66.00	-12.03	peak	
2		0.1620	30.79	19.66	50.45	65.36	-14.91	peak	
3		0.1940	27.49	19.71	47.20	63.86	-16.66	peak	
4		0.2220	20.36	19.76	40.12	62.74	-22.62	peak	
5		0.4820	15.99	20.19	36.18	56.30	-20.12	peak	
6		3.8180	16.59	20.20	36.79	56.00	-19.21	peak	

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7 DUTY CYCLE OF TEST SIGNAL

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle.

All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

Formula:

$$\text{Duty Cycle} = \text{Ton} / (\text{Ton} + \text{Toff})$$

Measurement Procedure:

1. Set span = Zero
2. RBW = 8MHz
3. VBW = 8MHz,
4. Detector = Peak

Duty Cycle:

	Duty Cycle (%)	Duty Factor (dB)	1/T (kHz)	VBW setting (kHz)
802.11b	100.00	0.00	0.00	0.01
802.11g	100.00	0.00	0.00	0.01
802.11n_20	100.00	0.00	0.00	0.01
802.11n_40	100.00	0.00	0.00	0.01

Duty Cycle Factor: $10 * \log(1/1) = 0$

Duty Cycle Factor: $10 * \log(1/1) = 0$

Duty Cycle Factor: $10 * \log(1/1) = 0$

Duty Cycle Factor: $10 * \log(1/1) = 0$

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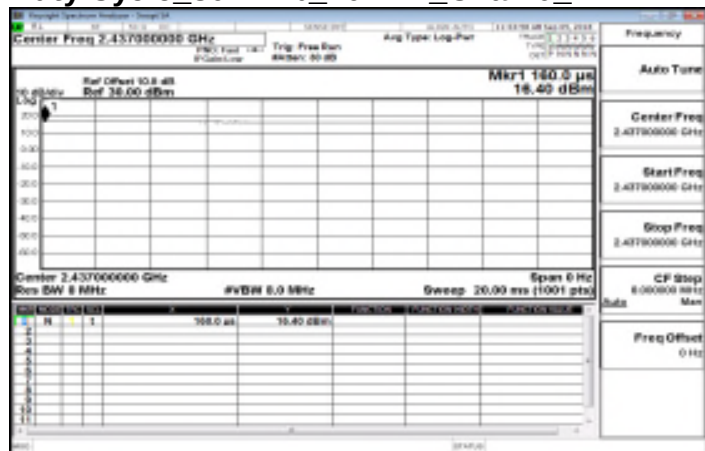
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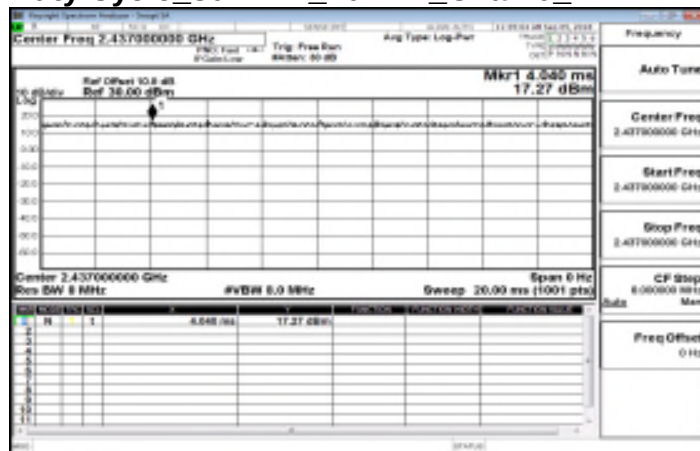
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7.1 DUTY CYCLE TEST SIGNAL Measurement Result

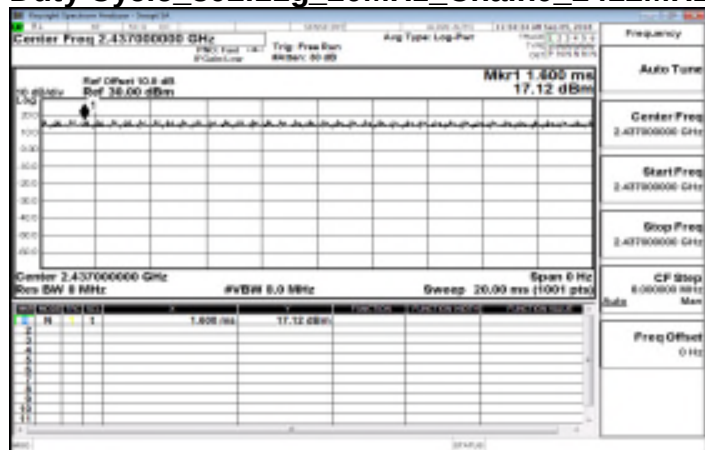
Duty Cycle 802.11b 20MHz Chain0 2412MHz



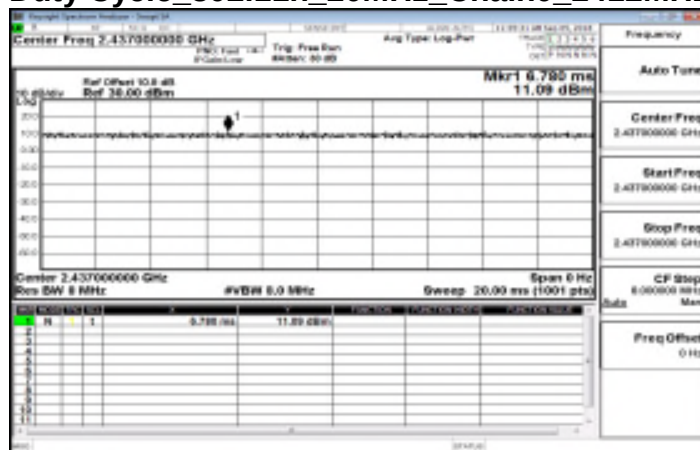
Duty Cycle 802.11n 20MHz Chain0 2412MHz



Duty Cycle 802.11g 20MHz Chain0 2412MHz



Duty Cycle 802.11n 20MHz Chain0 2412MHz



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8 PEAK OUTPUT POWER MEASUREMENT

8.1 Standard Applicable

For systems using digital modulation in the 2400-2483.5 MHz bands, the limit for peak output power is 1Watt.

If the transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the Antenna exceeds 6dBi.

In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of Antenna exceeds 6dBi.

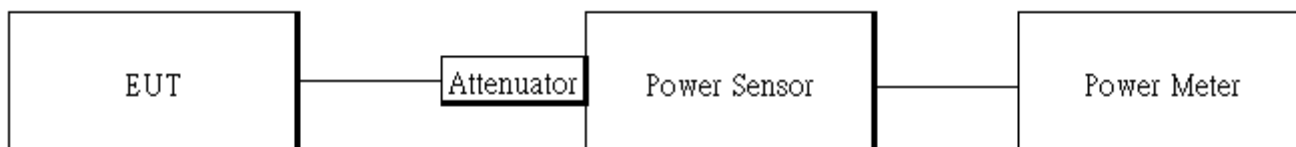
The antenna gain is not greater than 6 dBi. Therefore, reduction of power is not required.

8.2 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Power Meter	Anritsu	ML2496A	1326001	2018/08/09	2019/08/02
Power Sensor	Anritsu	MA2411B	1315048	2018/08/09	2019/08/02
Power Sensor	Anritsu	MA2411B	1315049	2018/08/09	2019/08/02
Attenuator	Marvelous	MVE2213-10	RF30	2017/12/26	2018/12/25
Attenuator	Marvelous	MVE2213-10	RF31	2017/12/26	2018/12/25

8.3 Test Set-up

Power Meter:



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8.4 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter.

Power Meter:

It is used as the auxiliary test equipment to conduct the output power measurement.

4. Record the max. Reading as observed from Spectrum or Power Meter.

8.5 Measurement Result

802.11b Ch0					
CH	Freq. (MHz)	Data Rate	Peak Output Power (dBm)	Limit	RESULT
1	2412	1	14.33	1 Watt = 30.00 dBm	PASS
6	2437	1	15.55	1 Watt = 30.00 dBm	PASS
11	2462	1	15.32	1 Watt = 30.00 dBm	PASS
802.11b Ch0					
CH	Freq. (MHz)	Data Rate	Max. Avg. Output include tune up tolerance Power (dBm)	Limit	RESULT
1	2412	1	12.42	1 Watt = 30.00 dBm	PASS
6	2437	1	13.35	1 Watt = 30.00 dBm	PASS
11	2462	1	12.35	1 Watt = 30.00 dBm	PASS

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802.11g Ch0					
CH	Freq. (MHz)	Data Rate	Peak Output Power (dBm)	Limit	RESULT
1	2412	6	16.70	1 Watt = 30.00 dBm	PASS
6	2437	6	18.69	1 Watt = 30.00 dBm	PASS
11	2462	6	17.57	1 Watt = 30.00 dBm	PASS
802.11g Ch0					
CH	Freq. (MHz)	Data Rate	Max. Avg. Output include tune up tolerance Power (dBm)	Limit	RESULT
1	2412	6	9.24	1 Watt = 30.00 dBm	PASS
6	2437	6	11.13	1 Watt = 30.00 dBm	PASS
11	2462	6	8.89	1 Watt = 30.00 dBm	PASS

802.11n_HT20M Ch0					
CH	Freq. (MHz)	Data Rate	Peak Output Power (dBm)	Limit	RESULT
1	2412	MCS0	16.91	1 Watt = 30.00 dBm	PASS
6	2437	MCS0	18.35	1 Watt = 30.00 dBm	PASS
11	2462	MCS0	18.69	1 Watt = 30.00 dBm	PASS
802.11n_HT20M Ch0					
CH	Freq. (MHz)	Data Rate	Max. Avg. Output include tune up tolerance Power (dBm)	Limit	RESULT
1	2412	MCS0	9.50	1 Watt = 30.00 dBm	PASS
6	2437	MCS0	10.71	1 Watt = 30.00 dBm	PASS
11	2462	MCS0	9.49	1 Watt = 30.00 dBm	PASS

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802.11n_HT40M Ch0					
CH	Freq. (MHz)	Data Rate	Peak Output Power (dBm)	Limit	RESULT
3	2422	MCS0	19.66	1 Watt = 30.00 dBm	PASS
6	2437	MCS0	19.75	1 Watt = 30.00 dBm	PASS
9	2452	MCS0	17.35	1 Watt = 30.00 dBm	PASS
802.11n_HT40M Ch0					
CH	Freq. (MHz)	Data Rate	Max. Avg. Output include tune up tolerance Power (dBm)	Limit	RESULT
3	2422	MCS0	10.31	1 Watt = 30.00 dBm	PASS
6	2437	MCS0	10.64	1 Watt = 30.00 dBm	PASS
9	2452	MCS0	9.62	1 Watt = 30.00 dBm	PASS

offset 10.80 dB for SISO mode

*** Note: The duty cycle factor is compensated to obtain the maximum value of measurement in average.**

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9 6DB BANDWIDTH MEASUREMENT

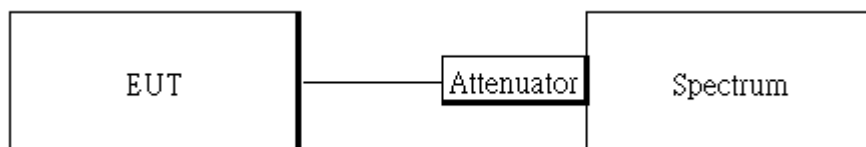
9.1 Standard Applicable

The minimum 6 dB bandwidth shall be at least 500 kHz.

9.2 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	N9010A	MY53400256	2017/10/30	2018/10/29
Attenuator	Marvelous	MVE2213-10	RF30	2017/12/26	2018/12/25
DC Block	PASTERNAK	PE8210	RF29	2017/12/26	2018/12/25

9.3 Test Set-up



9.4 Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
4. For 6dB Bandwidth:
Set the spectrum analyzer as RBW = 100 kHz, VBW = 3*RBW, Span = 30M/50MHz, Detector=peak, Sweep=auto.
5. Mark the peak frequency and -6dB (upper and lower) frequency.
6. For 99% Bandwidth:
Set the spectrum analyzer as RBW=1%, VBW = 3*RBW, Span = 30M/50MHz, Detector=Sample, Sweep=auto.
7. Turn on the 99% bandwidth function, max reading.
8. Repeat above procedures until all frequency of interest measured was complete.

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9.5 Measurement Result

6dB Bandwidth

802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	8704.00	> 500	PASS
2437	9588.20	> 500	PASS
2462	8552.40	> 500	PASS

802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	9184.60	> 500	PASS
2437	16516.00	> 500	PASS
2462	11790.00	> 500	PASS

802.11_n HT20 Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	9605.30	> 500	PASS
2437	17736.00	> 500	PASS
2462	11352.00	> 500	PASS

802.11_n HT40 Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2422	11960.00	> 500	PASS
2437	11597.00	> 500	PASS
2452	15676.00	> 500	PASS

**Refer to next page for plots*

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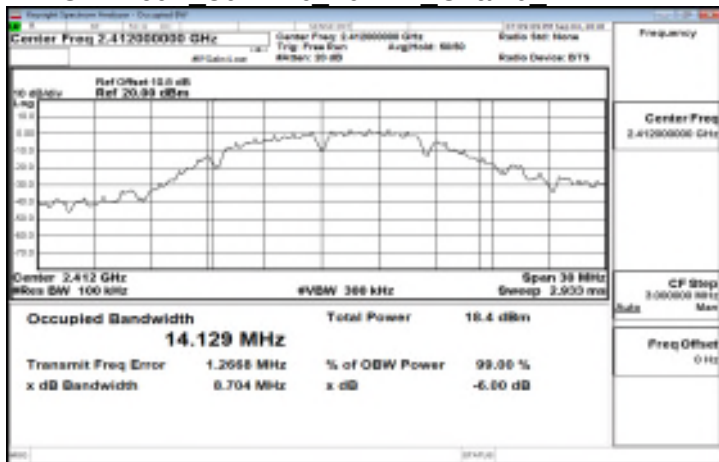
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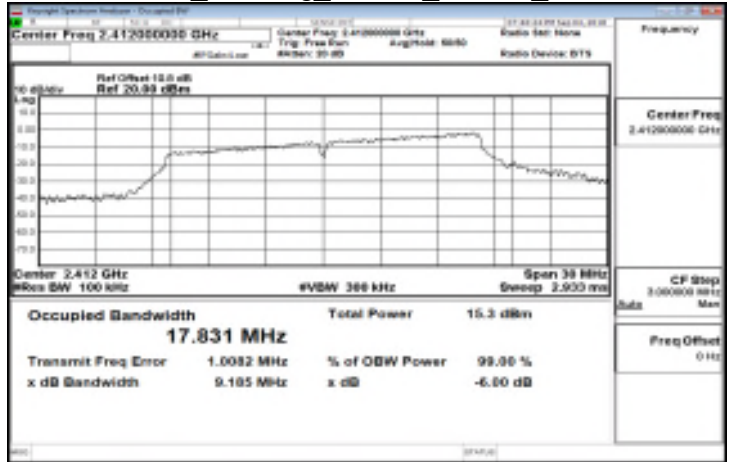
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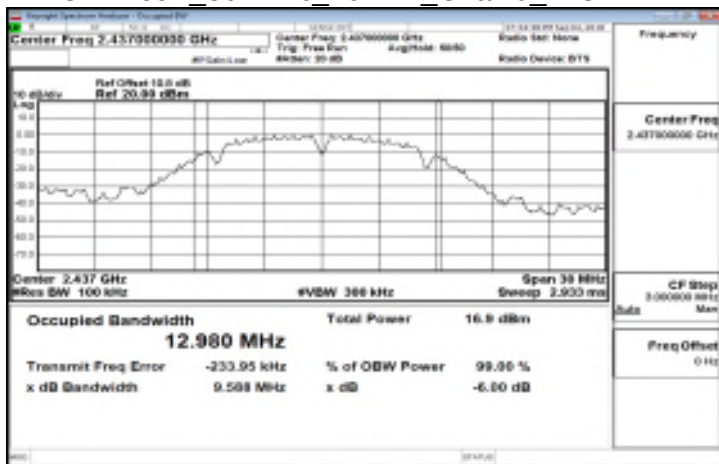
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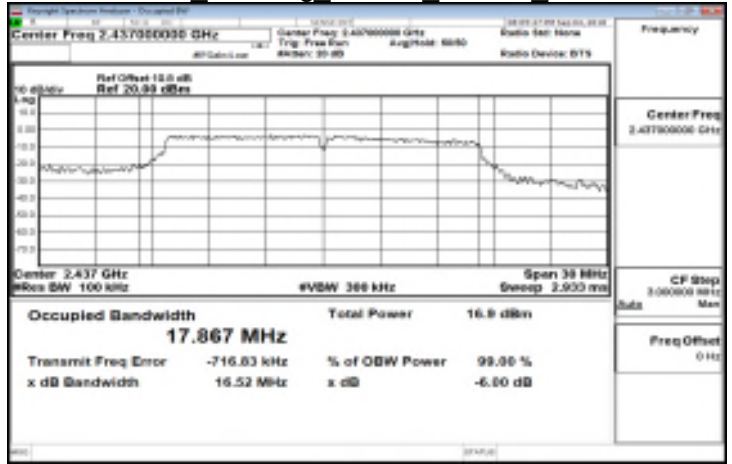
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OBW 6dB_802.11b_20MHz_Chain0_2437MHz



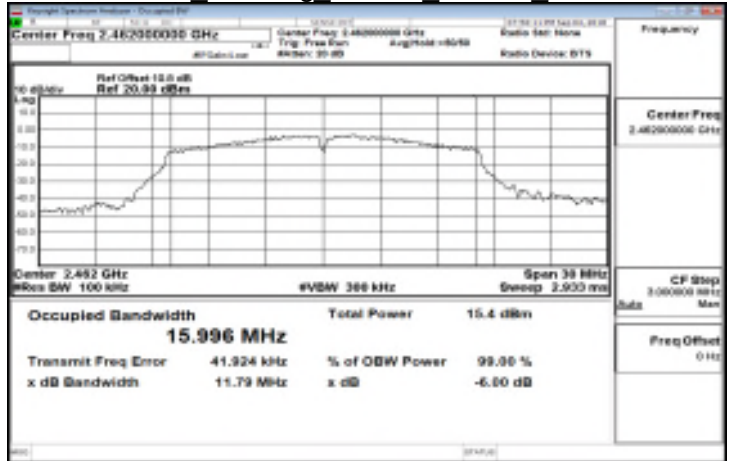
OBW 6dB_802.11g_20MHz_Chain0_2437MHz



OBW 6dB_802.11b_20MHz_Chain0_2462MHz



OBW 6dB_802.11g_20MHz_Chain0_2462MHz



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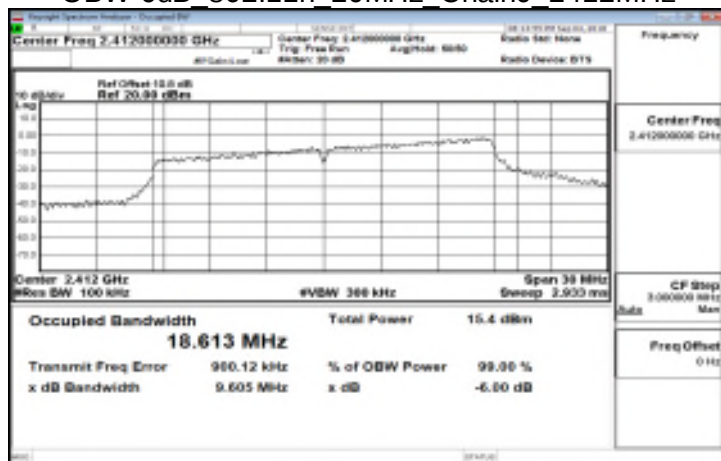
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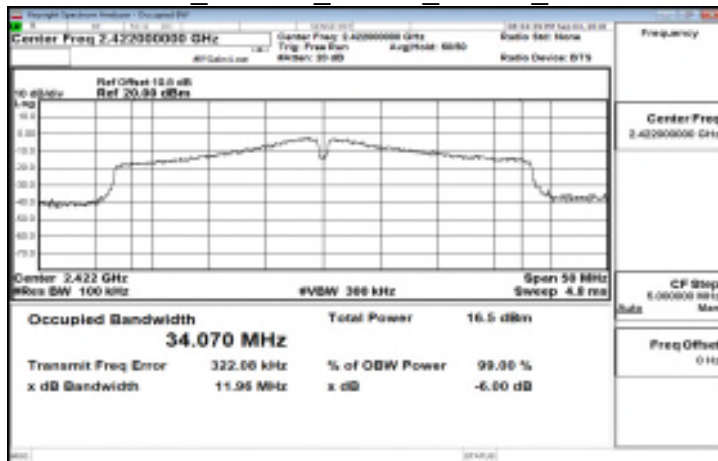
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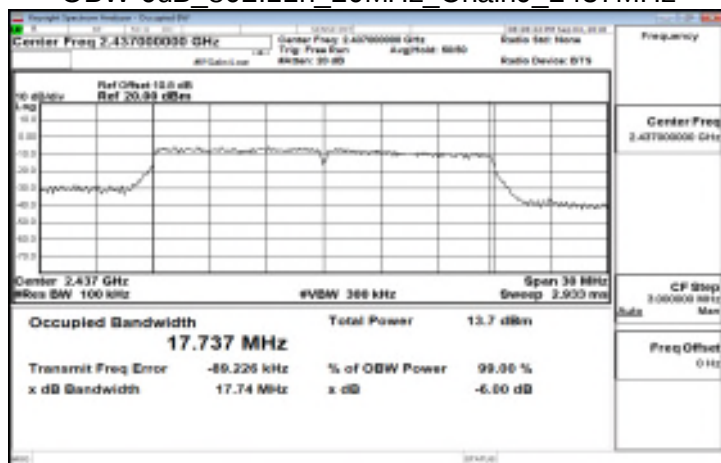
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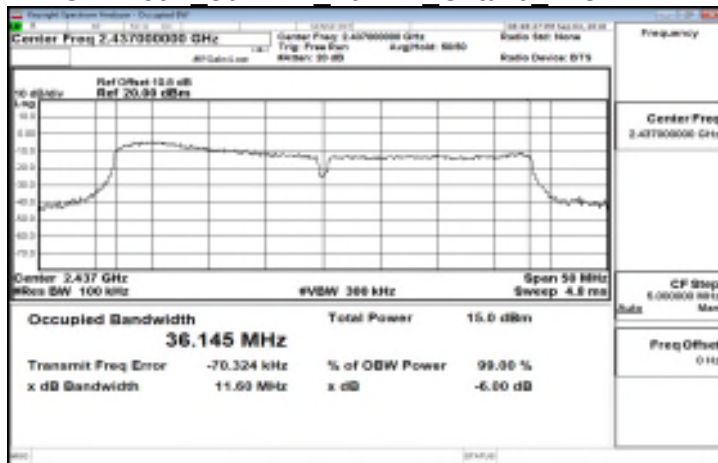
OBW 6dB 802.11n 40MHz Chain0 2422MHz



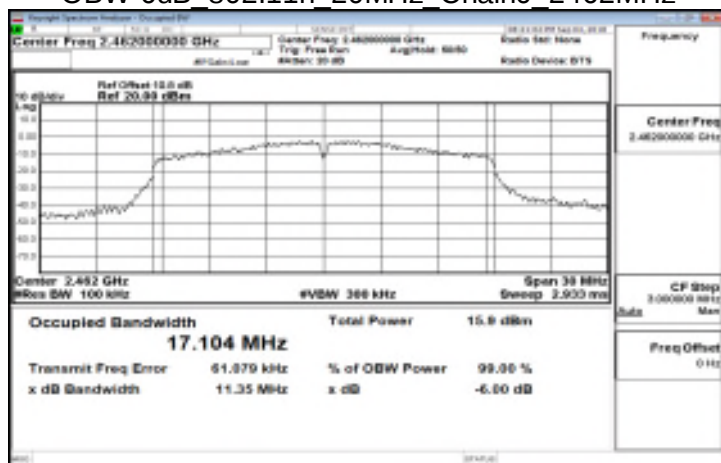
OBW 6dB 802.11n 20MHz Chain0 2437MHz



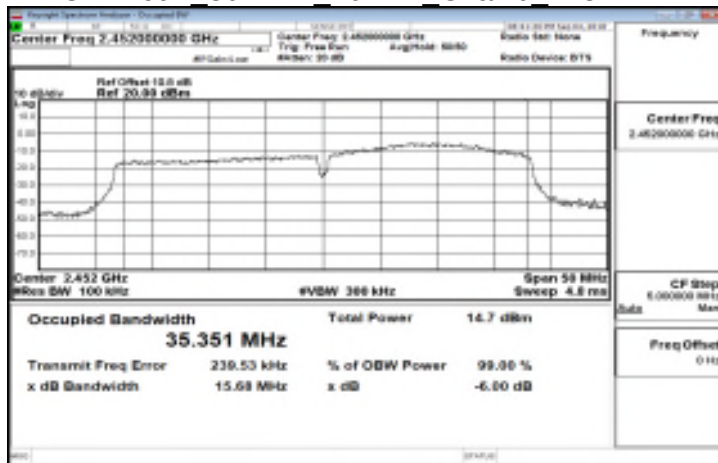
OBW 6dB 802.11n 40MHz Chain0 2437MHz



OBW 6dB 802.11n 20MHz Chain0 2462MHz



OBW 6dB 802.11n 40MHz Chain0 2452MHz



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10 CONDUCTED BAND EDGES AND SPURIOUS EMISSION MEASUREMENT

10.1 Standard Applicable

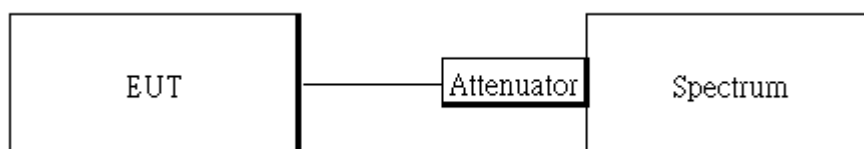
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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. 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).

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.

10.2 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	N9010A	MY53400256	2017/10/30	2018/10/29
Attenuator	Marvelous	MVE2213-10	RF30	2017/12/26	2018/12/25
DC Block	PASTERNAK	PE8210	RF29	2017/12/26	2018/12/25

10.3 Test SET-UP



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10.4 Measurement Procedure

Reference Level of Emission Limit:

1. Set analyzer center frequency to DTS channel center frequency.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW = 100kHz & VBW = 300 kHz.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.

Conducted Band Edge:

1. To connect Antenna Port of EUT to Spectrum.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
4. Set start to edge frequency, and stop frequency of spectrum analyzer so as to encompass the spectrum to be examined.
5. Set the spectrum analyzer as RBW=100 kHz, VBW=300 kHz, Detector = Peak, Sweep = auto
6. Mark the highest reading of the emission as the reference level measurement.
7. Set DL as the limit = reading on marker 1 – 20dBm
8. Marker on frequency, 2.3999GHz and 2.4836GHz, and examine shall 100 kHz immediately outside the authorized (2400~2483.5) be attenuated by 20dB at least relative to the maximum emission of power.
9. Repeat above procedures until all default test channel (low, middle, and high) was complete.

Conducted Spurious Emission:

1. To connect Antenna Port of EUT to Spectrum
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set RBW = 100 kHz & VBW= 300 kHz, Detector =Peak, Sweep = Auto.
4. Allow trace to fully stabilize.
5. Use the peak marker function to determine the maximum power level in any 100 kHz band segment within the fundamental EBW.
6. Repeat above procedures until all default test channel measured were complete.

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10.5 Measurement Result

Reference Level of Limit 802.11b mode			Reference Level of Limit 802.11g mode		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)	Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	2.09	-17.91	2412	-1.69	-21.69
2437	0.08	-19.92	2437	-3.21	-23.21
2462	2.64	-17.36	2462	-2.87	-22.87

Reference Level of Limit 802.11n20 mode			Reference Level of Limit 802.11n40 MODE		
Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)	Freq. (MHz)	PSD (dBm)	Reference Level of Limit (dBm)
2412	-1.09	-21.09	2422	-2.08	-22.08
2437	-6.18	-26.18	2437	-4.57	-24.57
2462	-2.27	-22.27	2452	-5.43	-25.43

offset 10.80 dB for SISO mode

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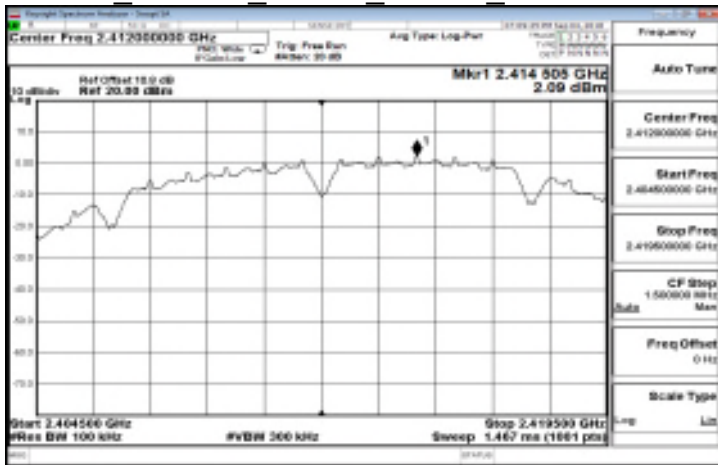
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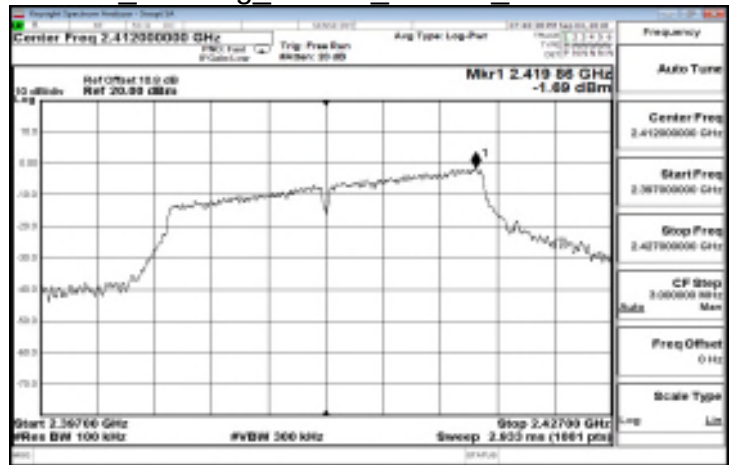
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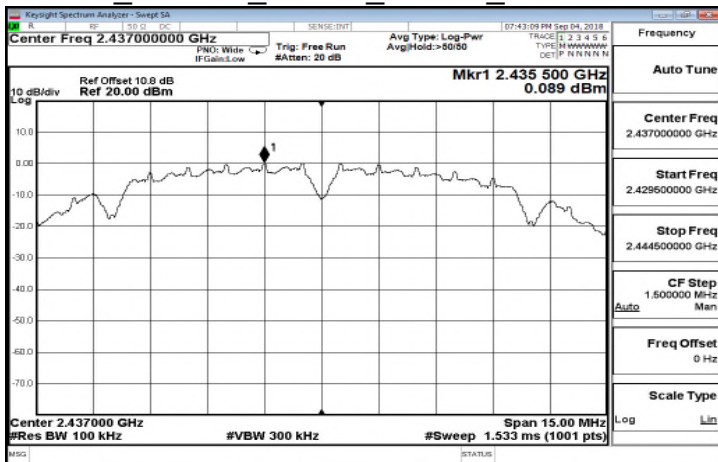
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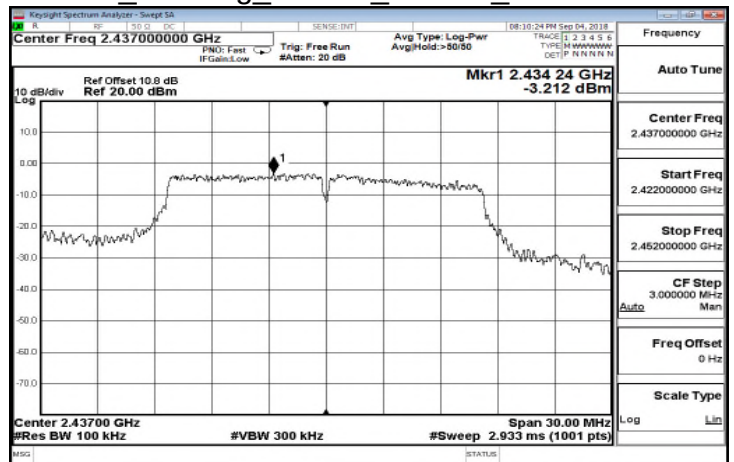
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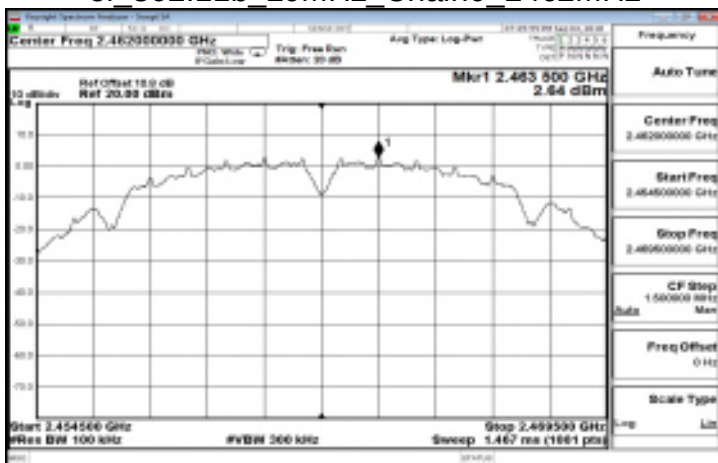
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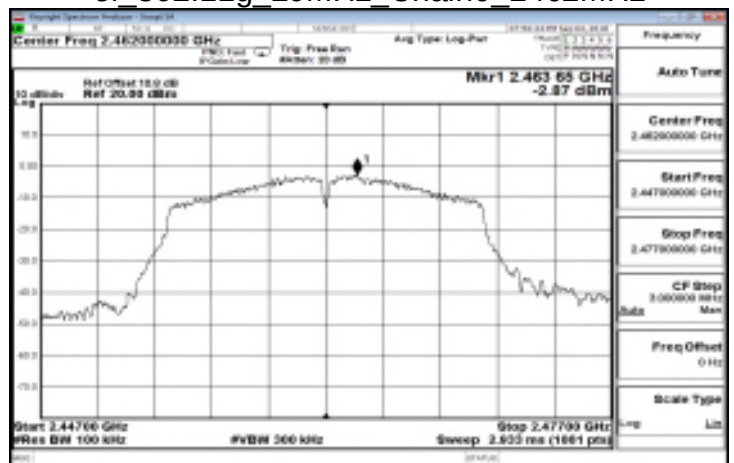
Reference Level
el 802.11g 20MHz Chain0 2437MHz



Reference Level
el 802.11b 20MHz Chain0 2462MHz



Reference Level
el 802.11g 20MHz Chain0 2462MHz



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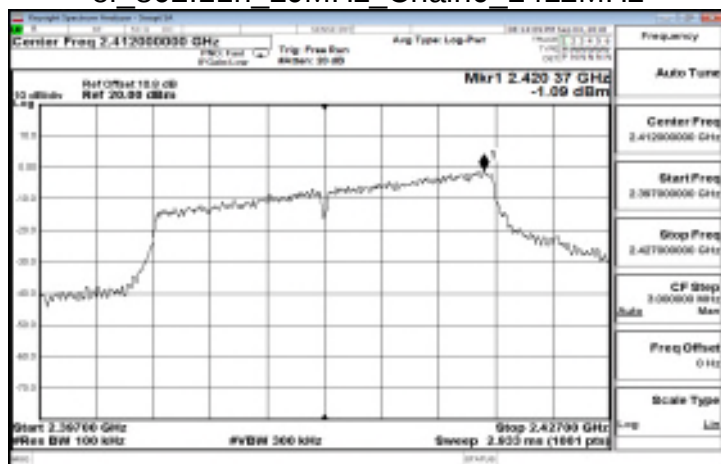
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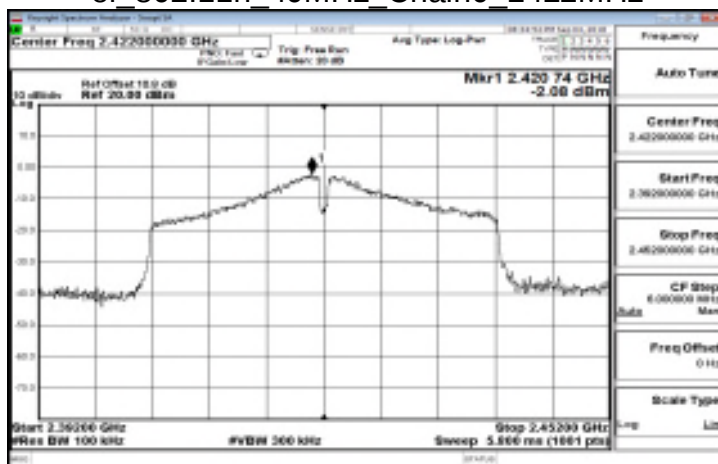
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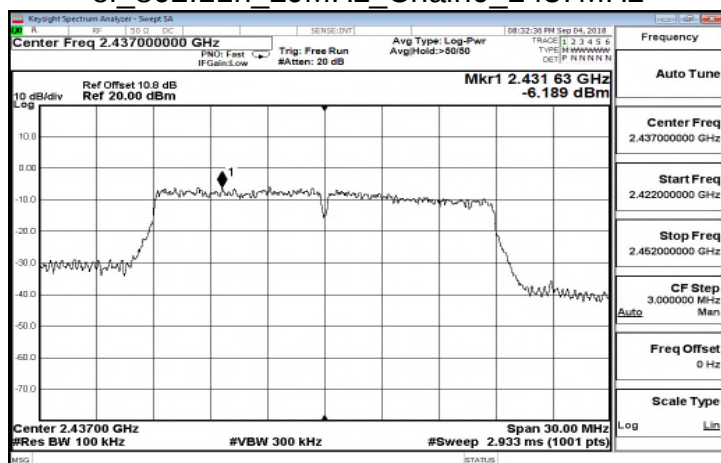
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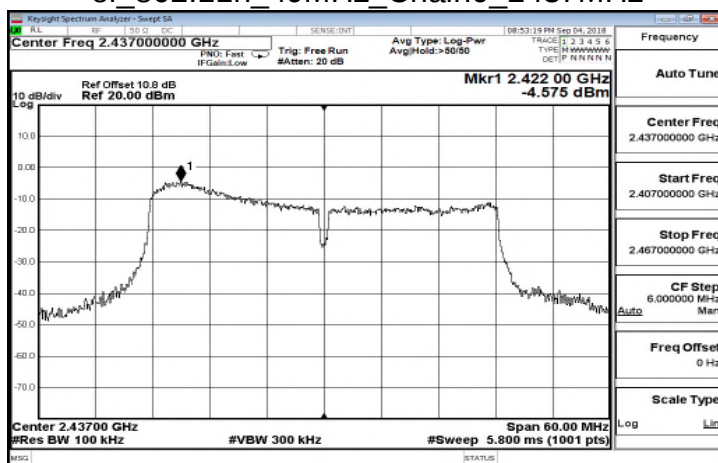
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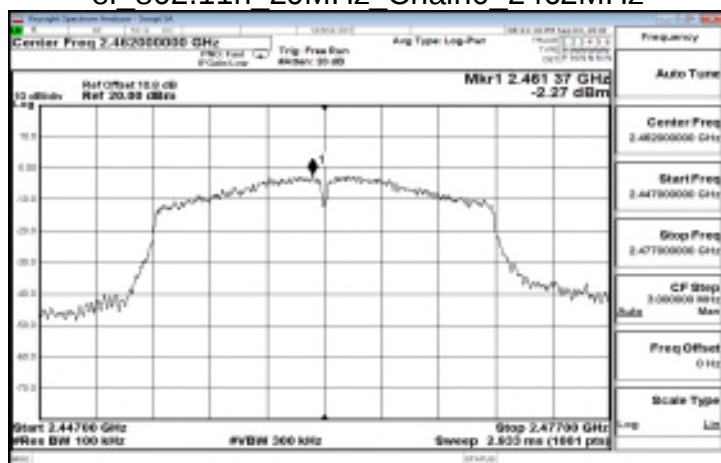
Reference Level 802.11n 20MHz Chain0 2437MHz



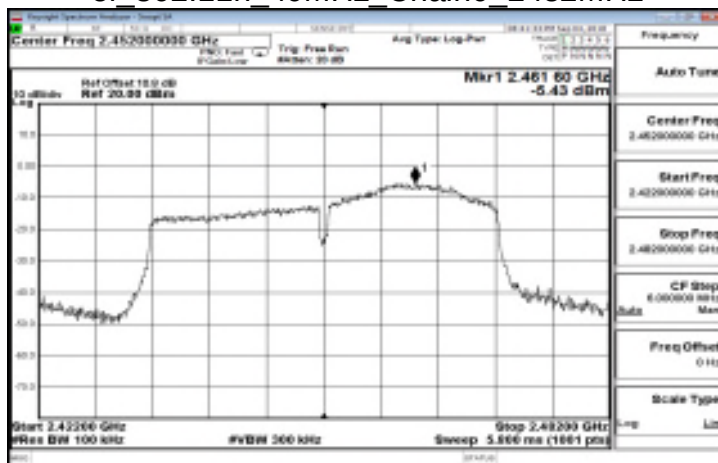
Reference Level 802.11n 40MHz Chain0 2437MHz



Reference Level 802.11n 20MHz Chain0 2462MHz



Reference Level 802.11n 40MHz Chain0 2452MHz



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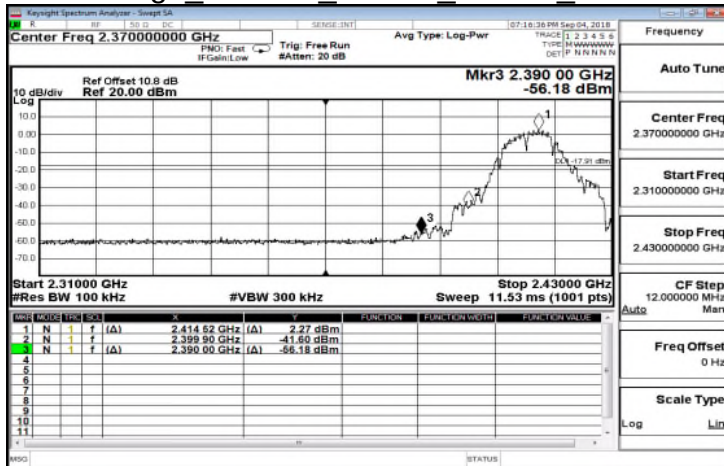
t (886-2) 2299-3279

f (886-2) 2298-0488

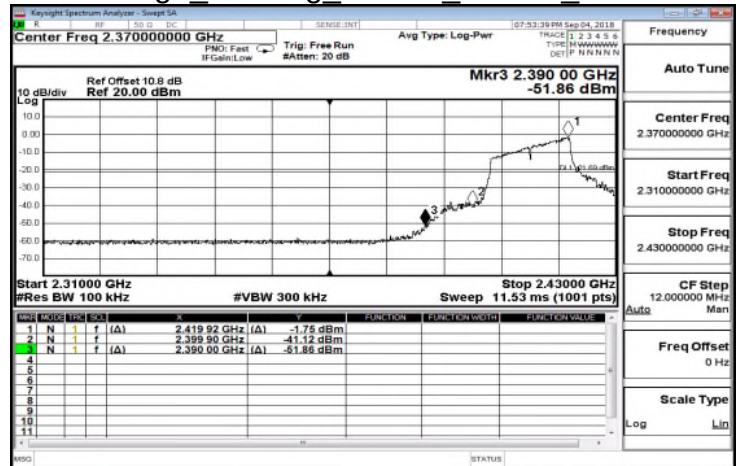
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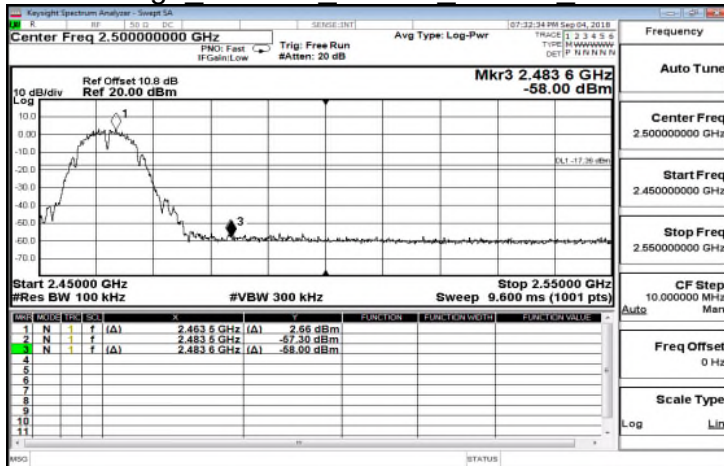
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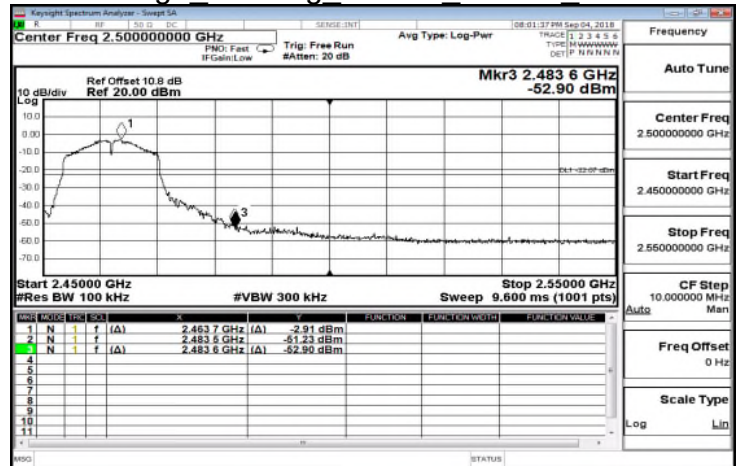
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Band Edge 802.11b 20MHz Chain0 2462MHz



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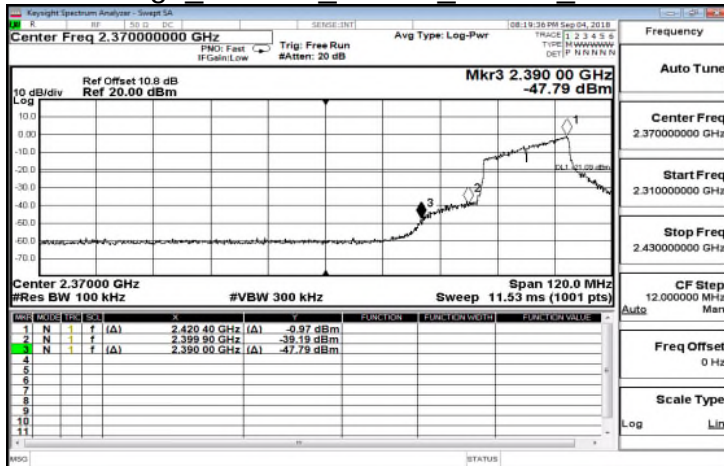


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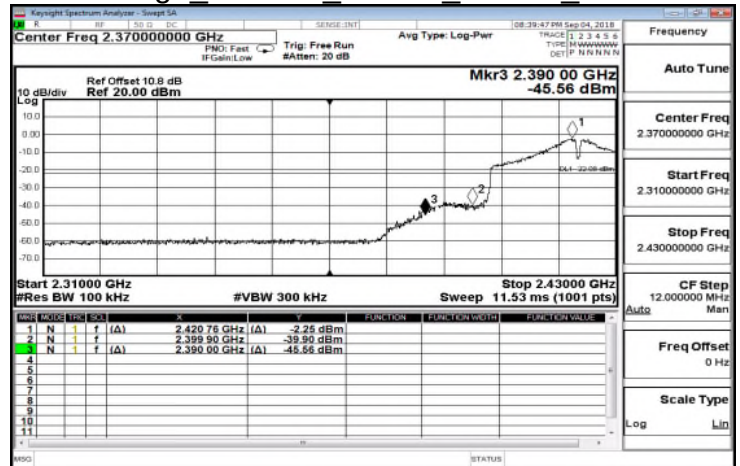
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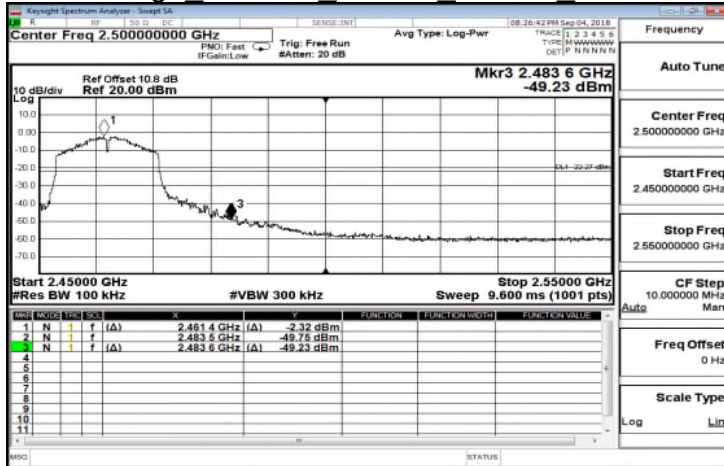
Band Edge 802.11n 20MHz Chain0 2412MHz



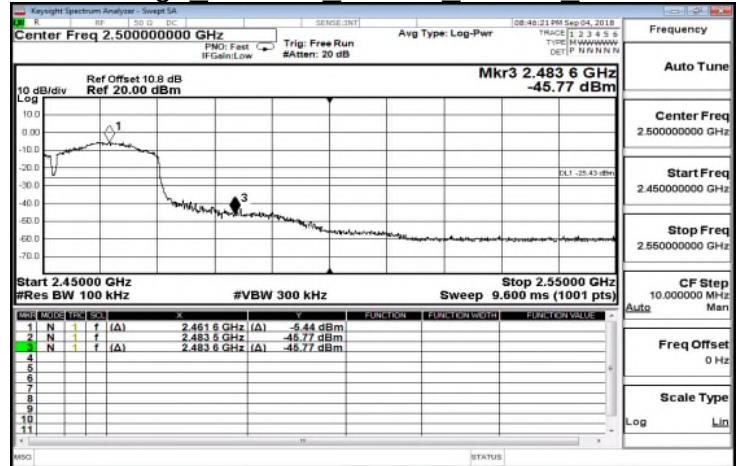
Band Edge 802.11n 40MHz Chain0 2422MHz



Band Edge 802.11n 20MHz Chain0 2462MHz



Band Edge 802.11n 40MHz Chain0 2452MHz

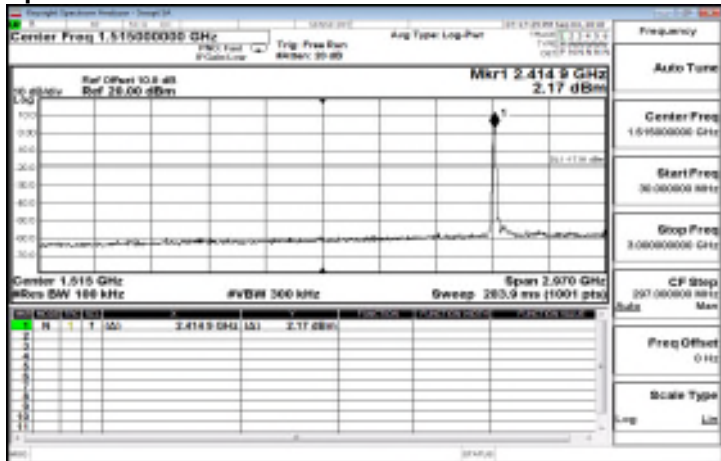


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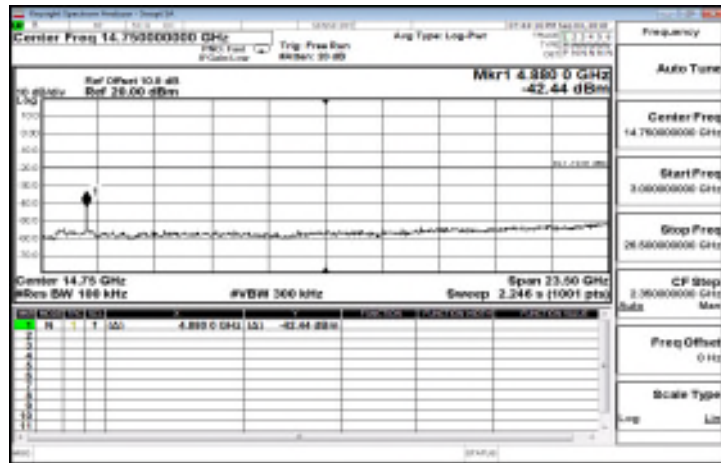
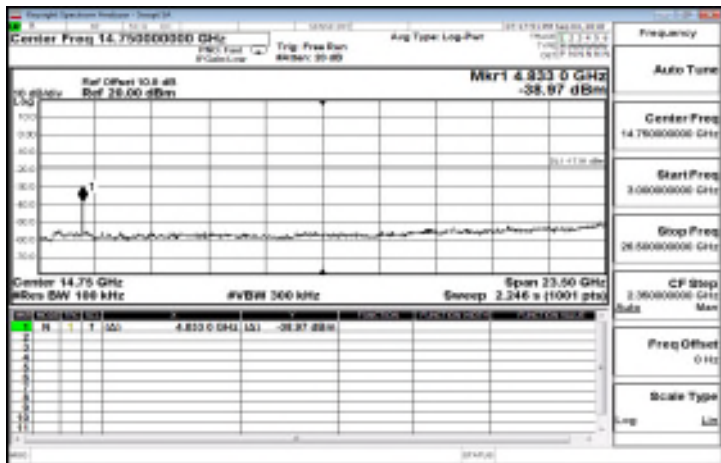
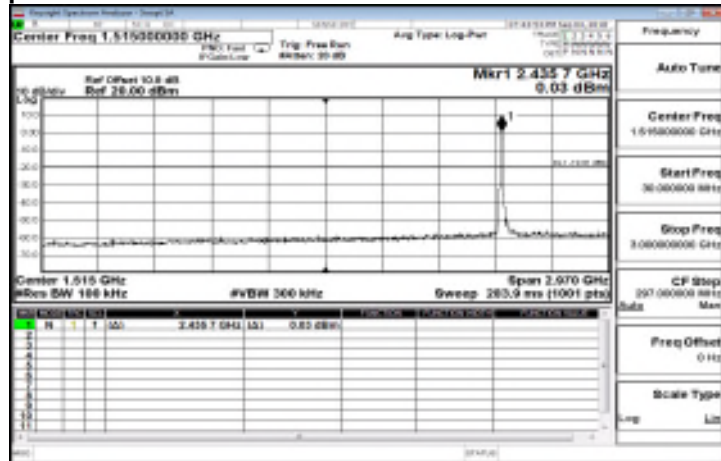
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802.11b Spurious Emission Test Data CH-Low



Spurious Emission Test Data CH-Mid



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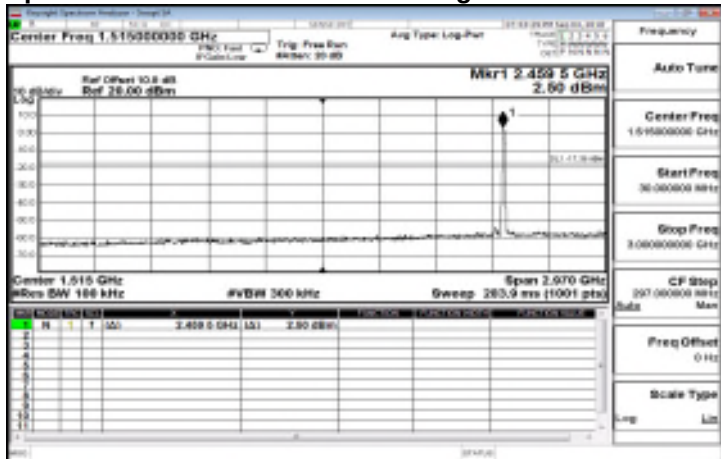
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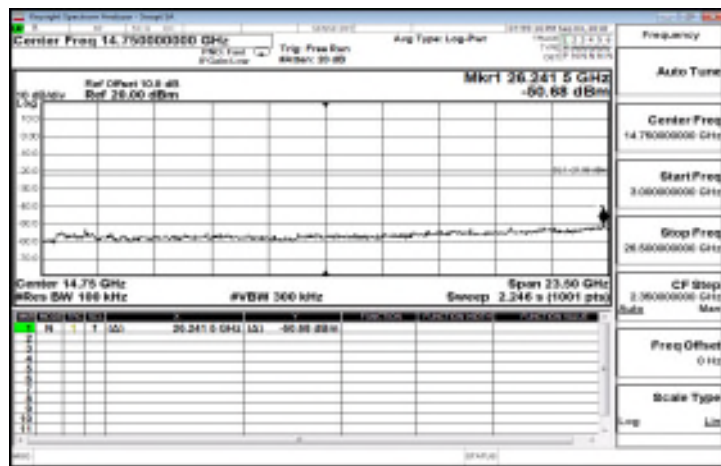
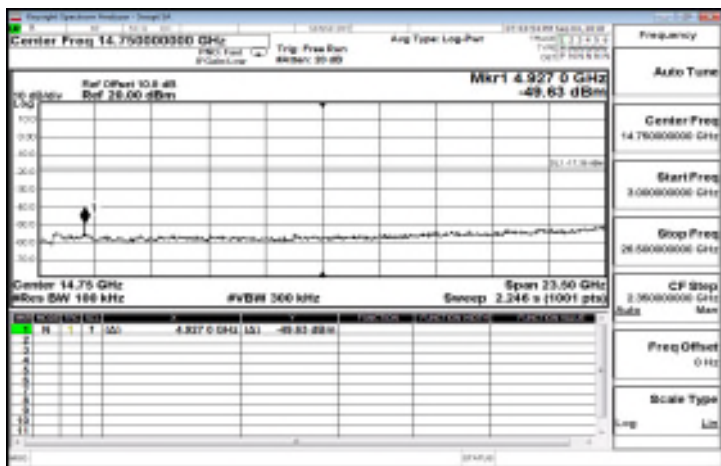
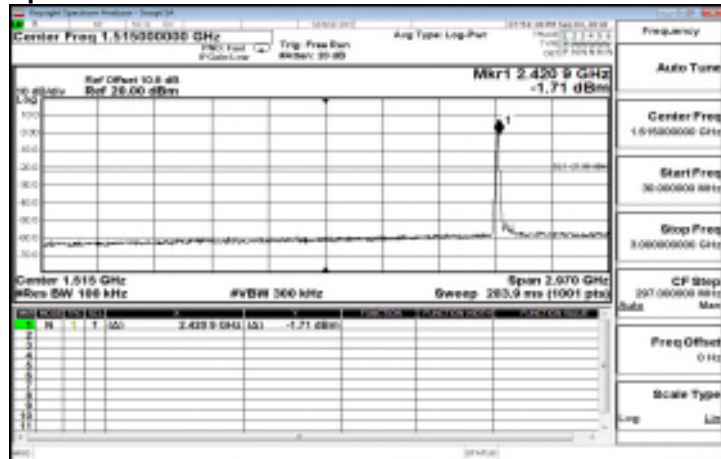
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Spurious Emission Test Data CH-High



802.11g

Spurious Emission Test Data CH-Low



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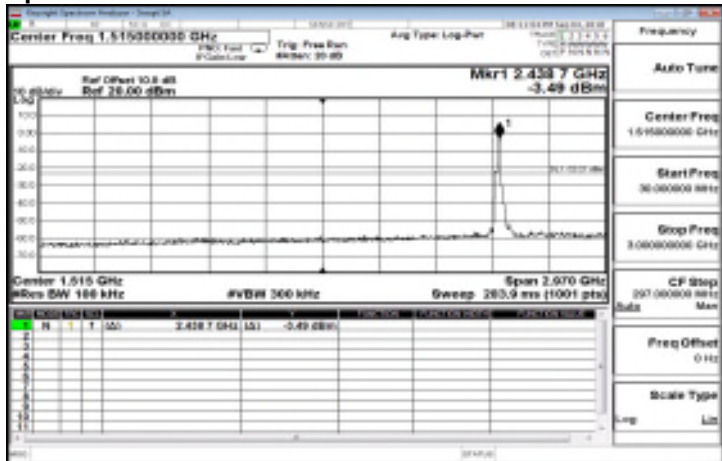
t (886-2) 2299-3279

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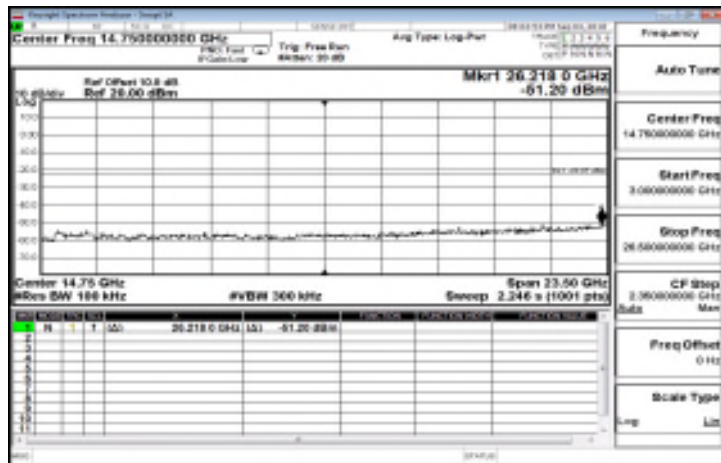
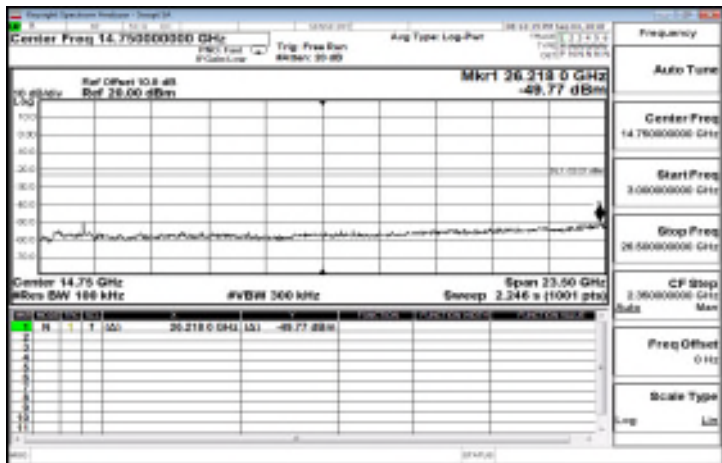
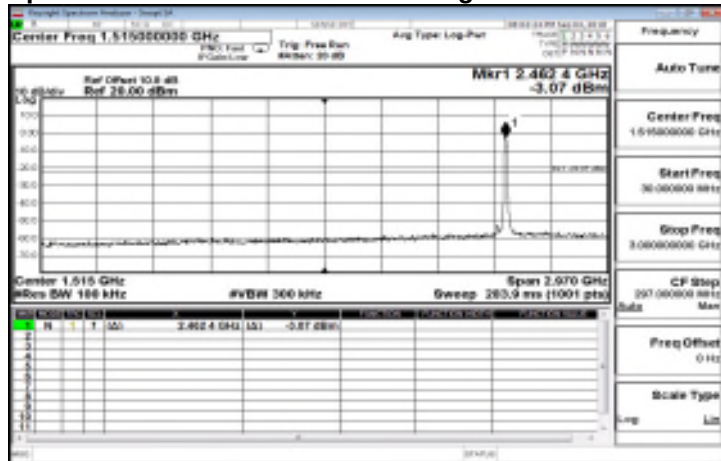
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Spurious Emission Test Data CH-Mid



Spurious Emission Test Data CH-High



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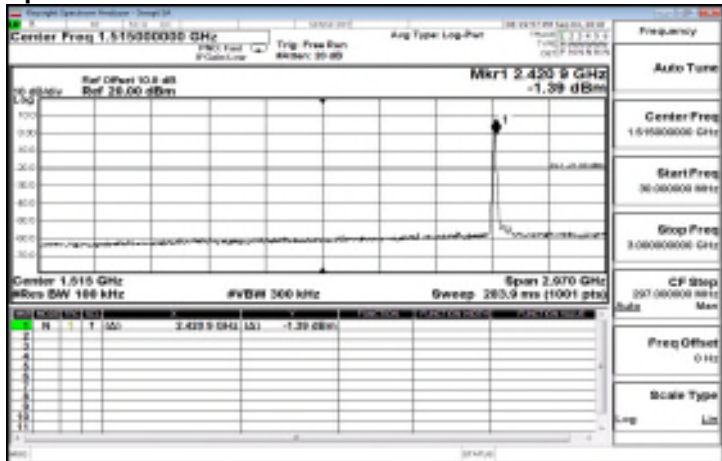
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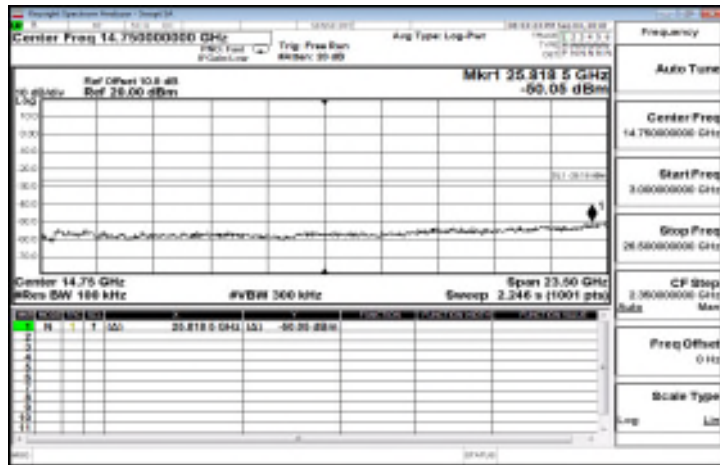
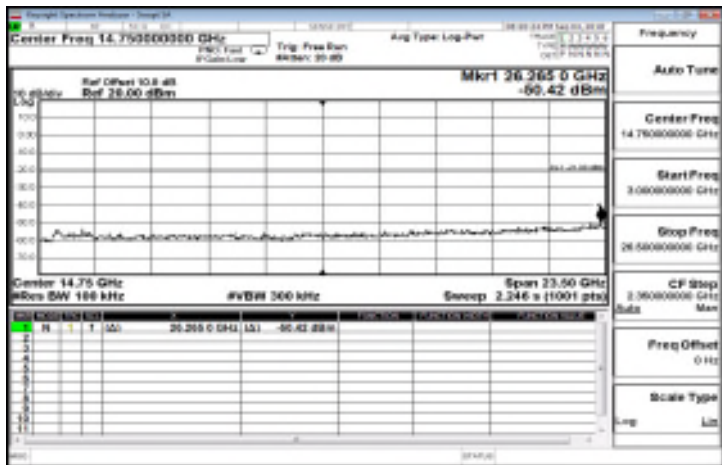
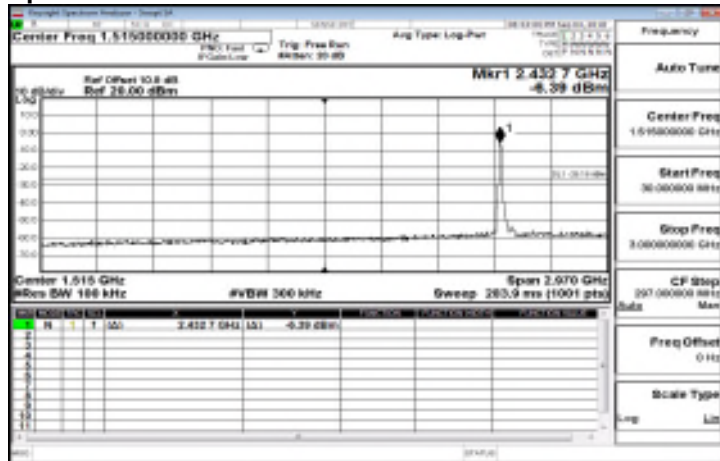
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802.11n_HT20
Spurious Emission Test Data CH-Low



Spurious Emission Test Data CH-Mid



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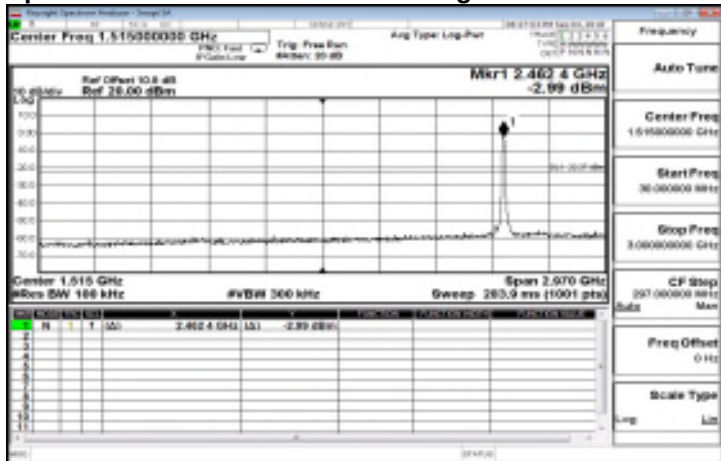
t (886-2) 2299-3279

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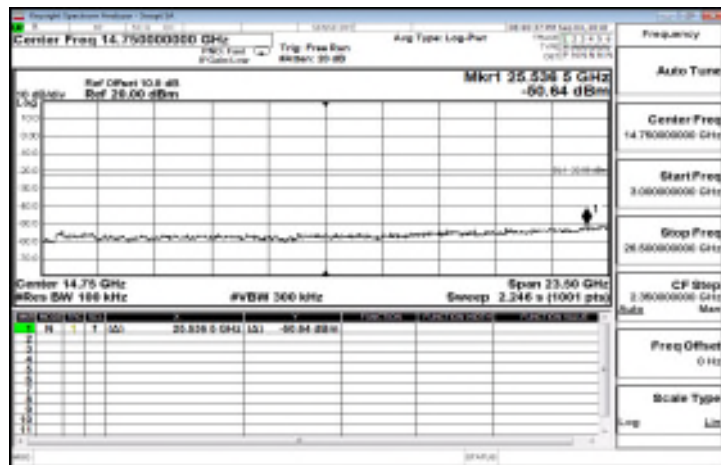
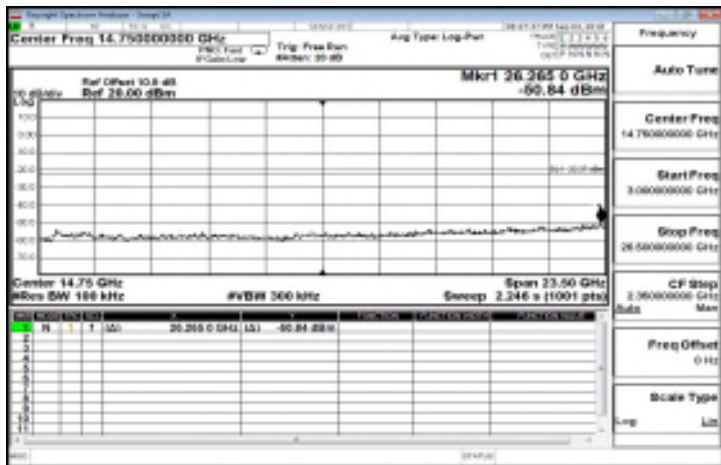
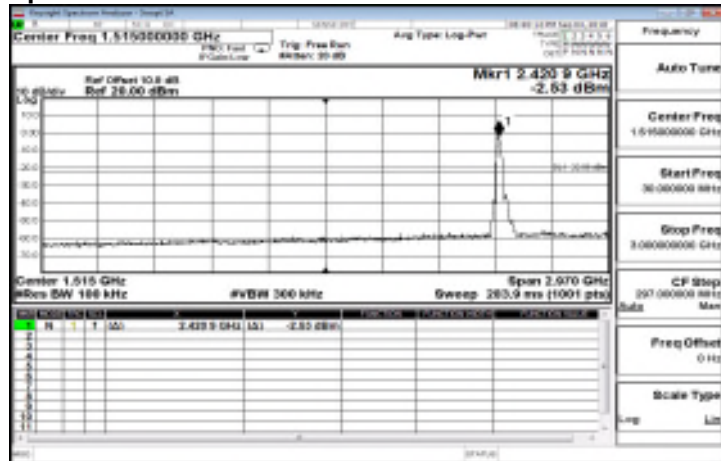
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Spurious Emission Test Data CH-High



802.11n_HT40

Spurious Emission Test Data CH-Low



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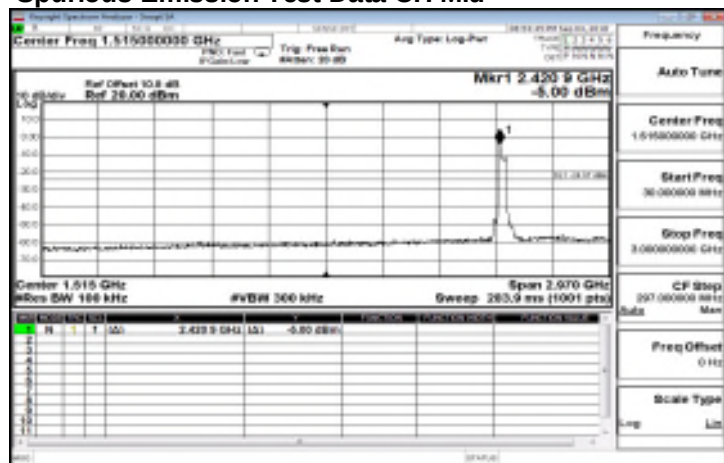
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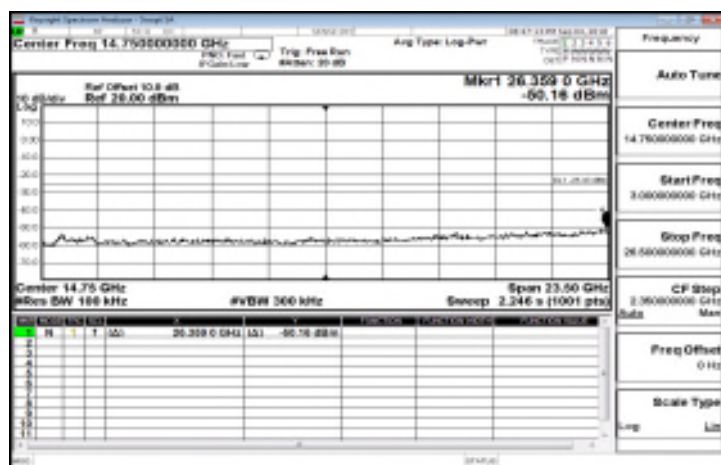
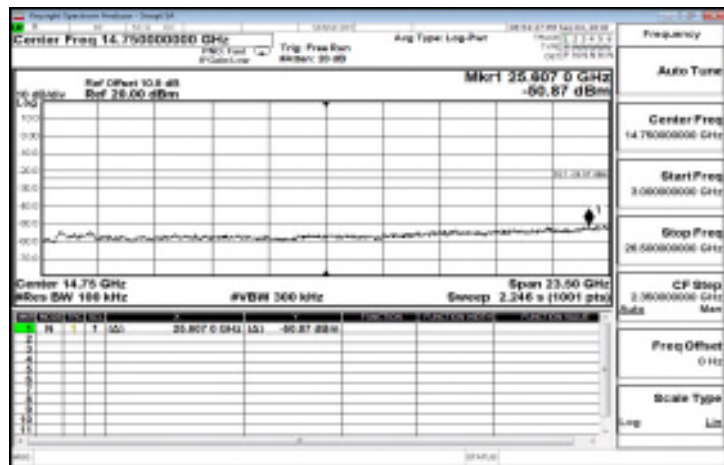
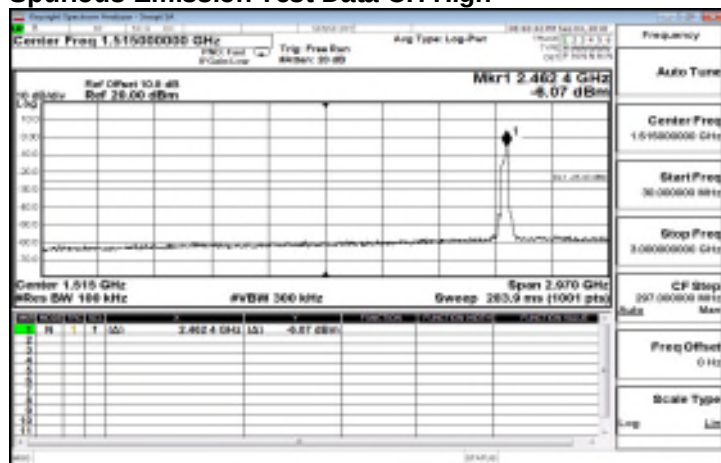
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Spurious Emission Test Data CH-Mid



Spurious Emission Test Data CH-High



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11 RADIATED BANDEdge AND SPURIOUS EMISSION MEASUREMENT

11.1 Standard Applicable

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. In addition, radiated emissions which fall in the restricted bands must also comply with the §15.209 limit as below.

And according to §15.33(a) (1), for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

Frequency (MHz)	Field strength (microvolts/meter)	Distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Note:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBμV/m) = 20 log Emission level (dBμV/m)

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11.2 Measurement Equipment Used:

966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Broadband Antenna	SCHWAZBECK	VULB 9168	9168-617	2017/10/27	2018/10/26
Horn Antenna	Schwarzbeck	BBHA9120D	1341	2018/06/07	2019/06/06
Horn Antenna	SCHWAZBECK	BBHA9170	184	2017/12/12	2018/12/11
Loop Antenna	ETS.LINDGREN	6502	148045	2018/04/19	2019/04/18
3m Site NSA	SGS	966 chamber D	N/A	2018/07/06	2019/07/05
EMI Test Receiver	R&S	ESU 40	100363	2018/04/11	2019/04/10
Pre-Amplifier	EMC Instruments	EMC184045B	980135	2017/10/27	2018/10/26
Pre-Amplifier	EMC Instruments	EMC9135	980234	2017/12/26	2018/12/25
Pre-Amplifier	EMC Instruments	EMC12630SE	980271	2017/12/26	2018/12/25
Attenuator	Marvelous	WATT-218FS-10	RF246	2017/12/26	2018/12/25
Highpass Filter	Micro Tronics	BRM50701-01	G008	2017/12/26	2018/12/25
Coaxial Cable	Huber Suhner	EMC106-SM-SM-7200	150703	2017/12/26	2018/12/25
Coaxial Cable	Huber Suhner	RG 214/U	W22.03	2017/12/26	2018/12/25

NOTE: N.C.R refers to Not Calibrated Required.

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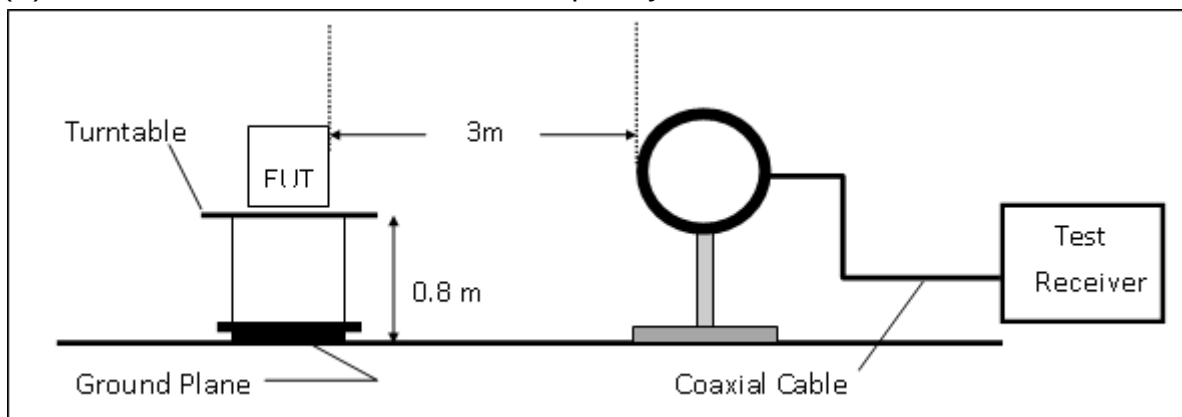
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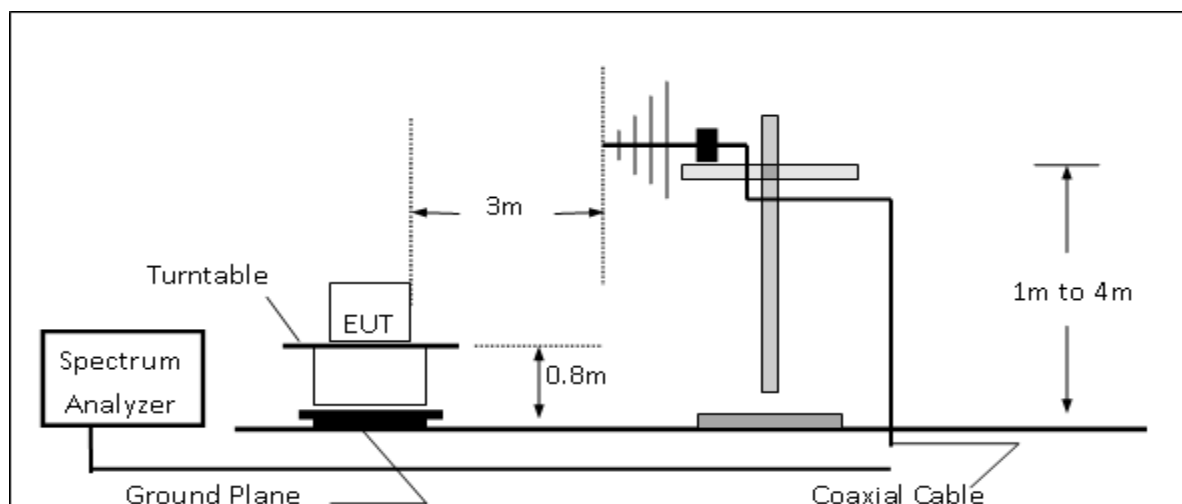
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11.3 Test SET-UP

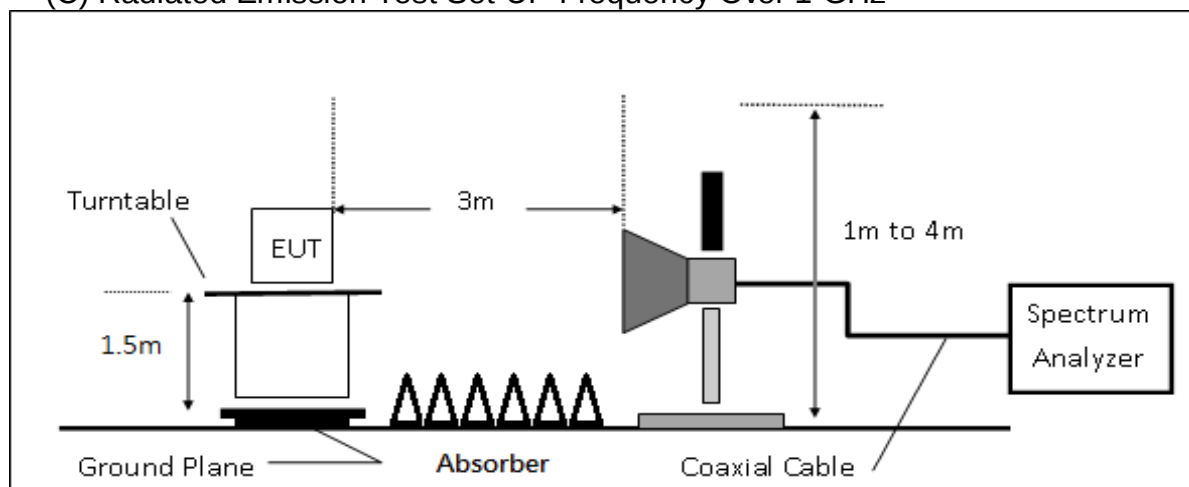
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



(B) Radiated Emission Test Set-UP, Frequency form 30MHz to 1000MHz



(C) Radiated Emission Test Set-UP Frequency Over 1 GHz



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11.4 Measurement Procedure

1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
2. The EUT was placed on a turn table with 0.8m for frequency< 1GHz and 1.5m for frequency> 1GHz above ground plane.
3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
5. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.
6. Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and Quasi-peak (QP) at frequency below 1 GHz.
7. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
8. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
9. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
10. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
11. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. On spectrum, change spectrum mode in linear display mode, and reduce VBW = 10Hz if average reading is measured.
12. Repeat above procedures until all default test channel measured were complete.

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11.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
RA = Reading Amplitude	AG = Amplifier Gain
AF = Antenna Factor	

Actual FS(dBμV/m) = SPA. Reading level(dBμV) + Factor(dB)

Factor(dB) = Antenna Factor(dBμV/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

11.6 Test Results of Radiated Spurious Emissions form 9 kHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) was not reported.

11.7 Measurement Result

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

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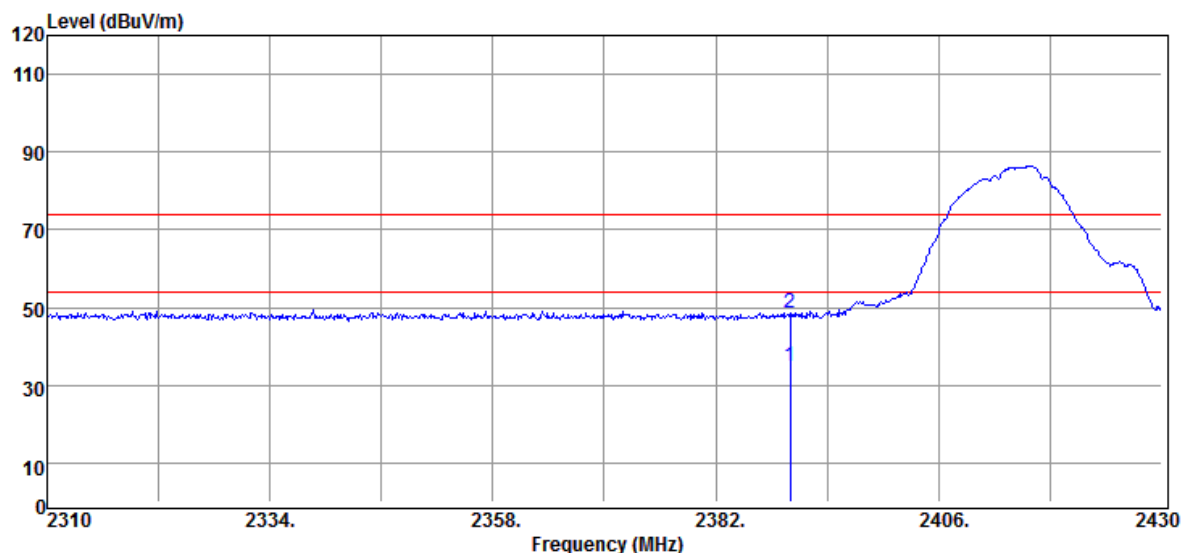
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Radiated Band Edge Measurement Result

Operation Mode	:802.11b	Test Date	:2018-08-31
Test Mode	:BE CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
2390.00	Average	40.53	-5.57	34.96	54.00	-19.04
2390.00	Peak	54.14	-5.57	48.57	74.00	-25.43

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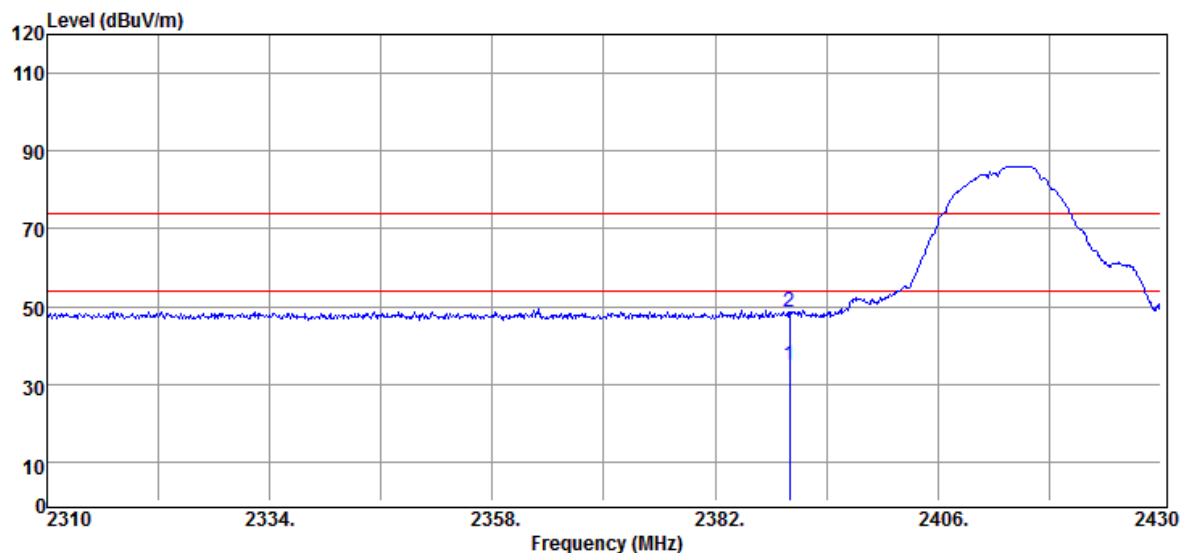
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Operation Mode :802.11b
Test Mode :BE CH Low
EUT Pol :E1 Plan
Test Channel :2412 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol. :HORIZONTAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2390.00	Average	40.44	-5.57	34.87	54.00	-19.13
2390.00	Peak	54.26	-5.57	48.69	74.00	-25.31

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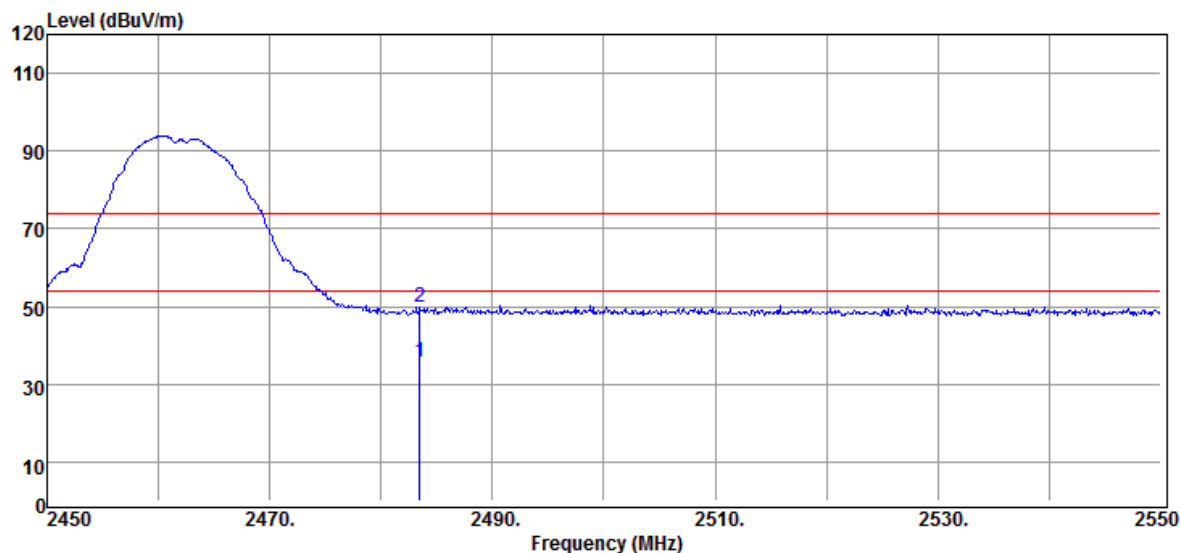
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Operation Mode :802.11b
Test Mode :BE CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.50	Average	40.58	-4.90	35.68	54.00	-18.32
2483.50	Peak	54.71	-4.90	49.81	74.00	-24.19

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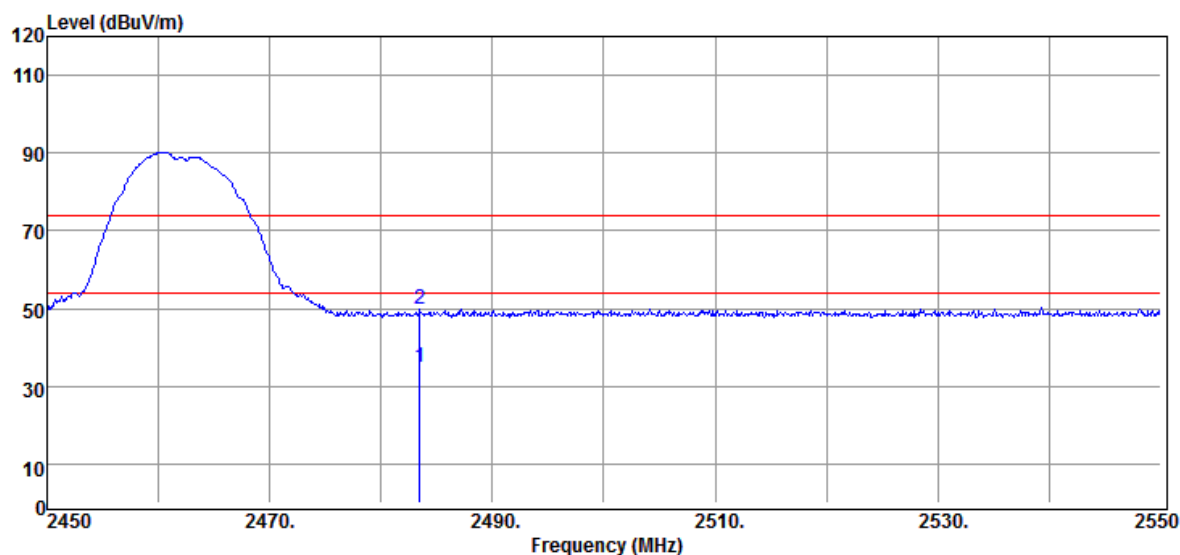
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Operation Mode	:802.11b	Test Date	:2018-08-31
Test Mode	:BE CH High	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2462 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.50	Average	39.97	-4.90	35.07	54.00	-18.93
2483.50	Peak	54.60	-4.90	49.70	74.00	-24.30

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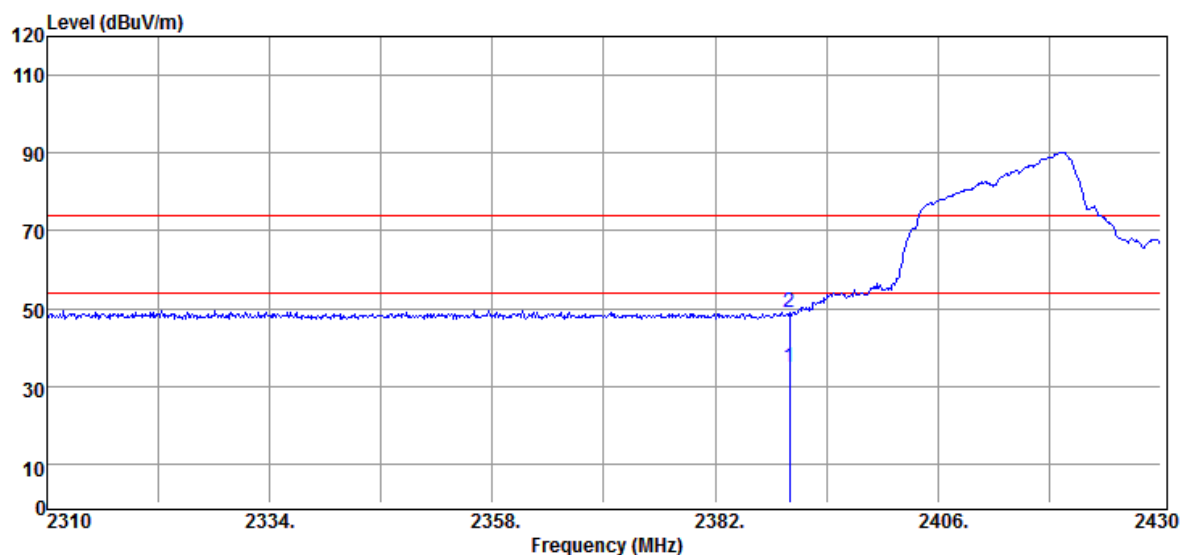
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Operation Mode :802.11g
Test Mode :BE CH Low
EUT Pol :E1 Plan
Test Channel :2412 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2390.00	Average	40.53	-5.57	34.96	54.00	-19.04
2390.00	Peak	54.73	-5.57	49.16	74.00	-24.84

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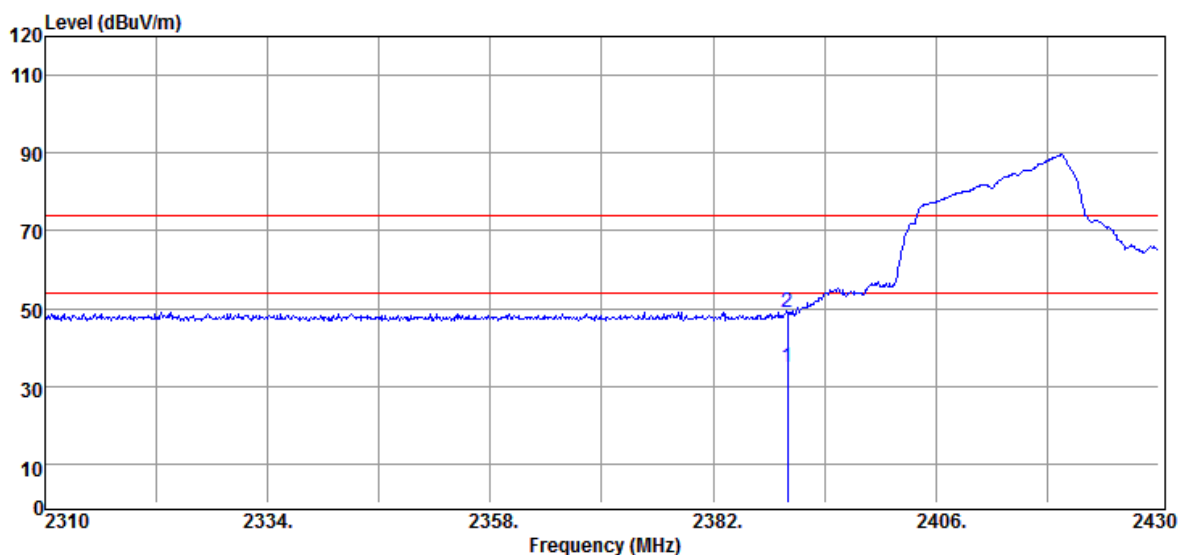
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Operation Mode	:802.11g	Test Date	:2018-08-31
Test Mode	:BE CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2390.00	Average	40.52	-5.57	34.95	54.00	-19.05
2390.00	Peak	54.61	-5.57	49.04	74.00	-24.96

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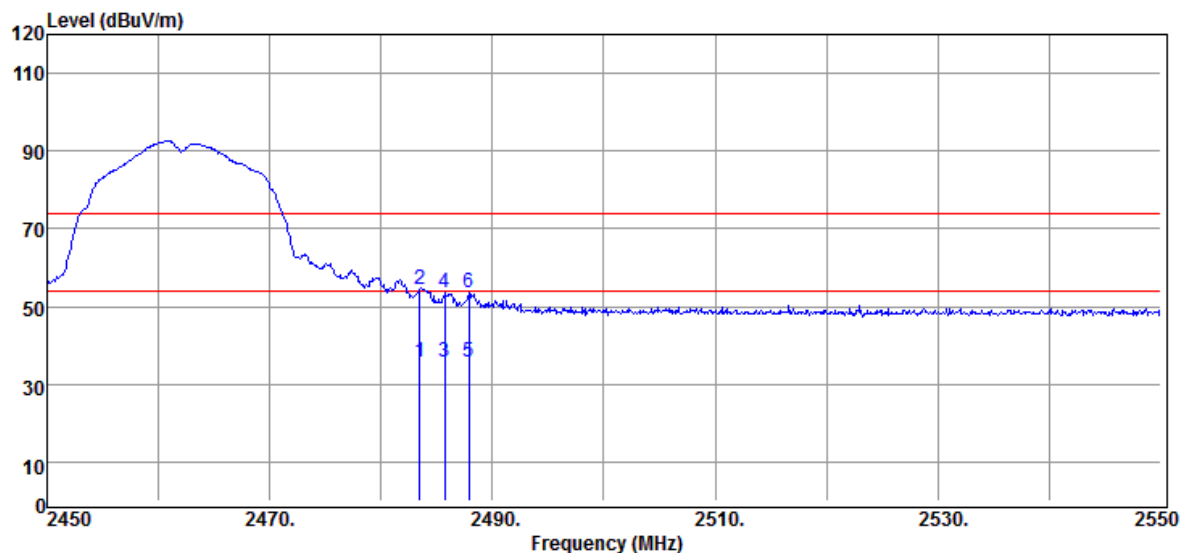
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Operation Mode	:802.11g	Test Date	:2018-08-31
Test Mode	:BE CH High	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2462 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.50	Average	40.56	-4.90	35.66	54.00	-18.34
2483.50	Peak	59.16	-4.90	54.26	74.00	-19.74
2485.70	Average	40.46	-4.88	35.58	54.00	-18.42
2485.70	Peak	58.37	-4.88	53.49	74.00	-20.51
2487.90	Average	40.59	-4.86	35.73	54.00	-18.27
2487.90	Peak	58.63	-4.86	53.77	74.00	-20.23

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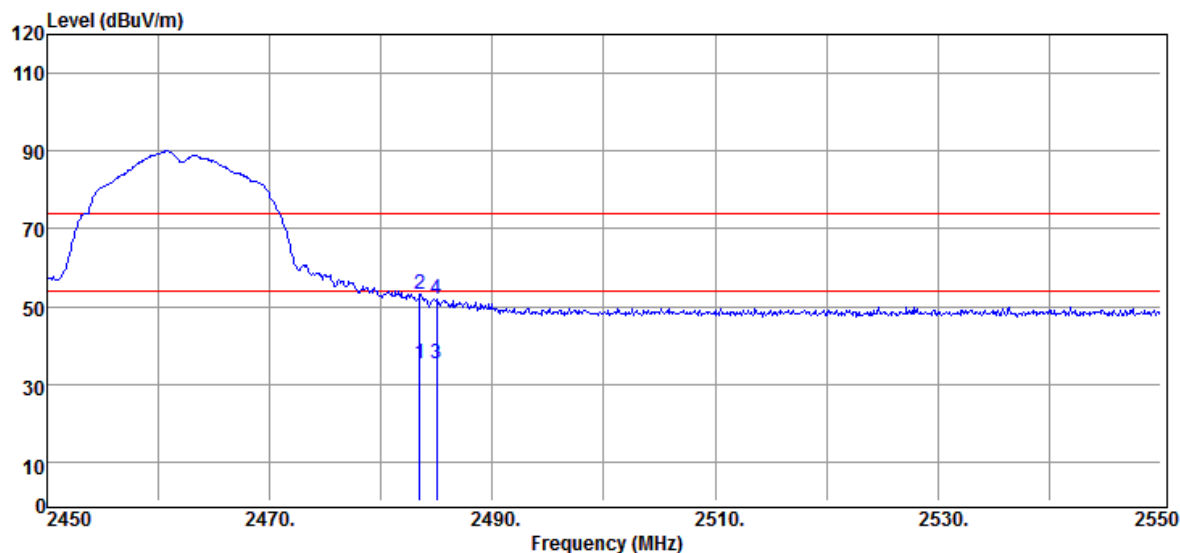
f (886-2) 2298-0488

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Operation Mode :802.11g
Test Mode :BE CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol. :HORIZONTAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.50	Average	40.11	-4.90	35.21	54.00	-18.79
2483.50	Peak	57.90	-4.90	53.00	74.00	-21.00
2485.00	Average	40.10	-4.90	35.20	54.00	-18.80
2485.00	Peak	56.79	-4.90	51.89	74.00	-22.11

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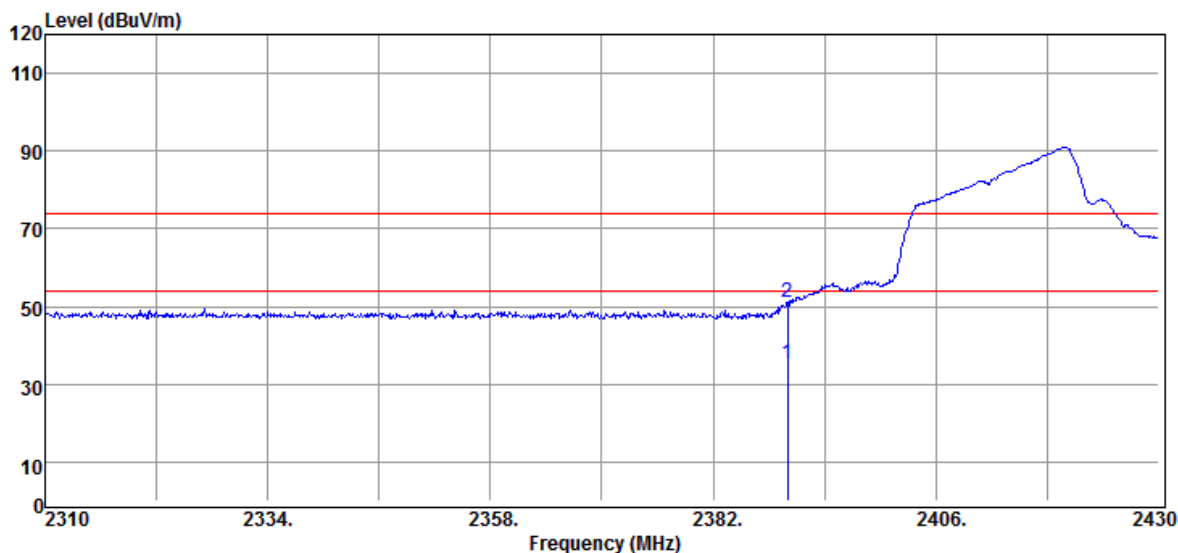
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Operation Mode :802.11n20
Test Mode :BE CH Low
EUT Pol :E1 Plan
Test Channel :2412 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2390.00	Average	40.72	-5.57	35.15	54.00	-18.85
2390.04	Peak	56.86	-5.58	51.28	74.00	-22.72

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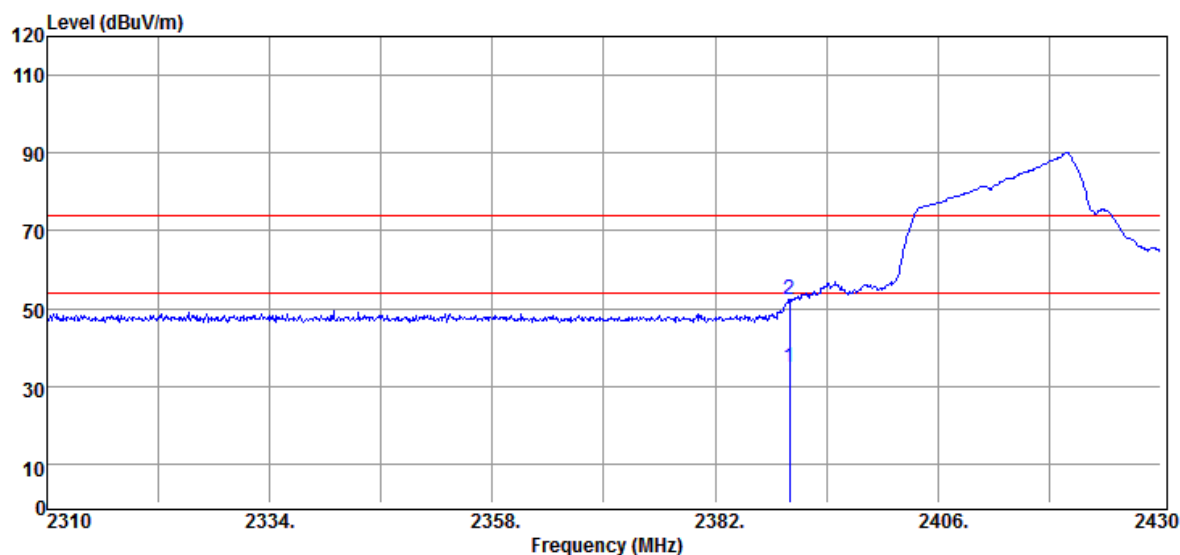
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Operation Mode	:802.11n20	Test Date	:2018-08-31
Test Mode	:BE CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2390.00	Average	40.63	-5.57	35.06	54.00	-18.94
2390.00	Peak	57.82	-5.57	52.25	74.00	-21.75

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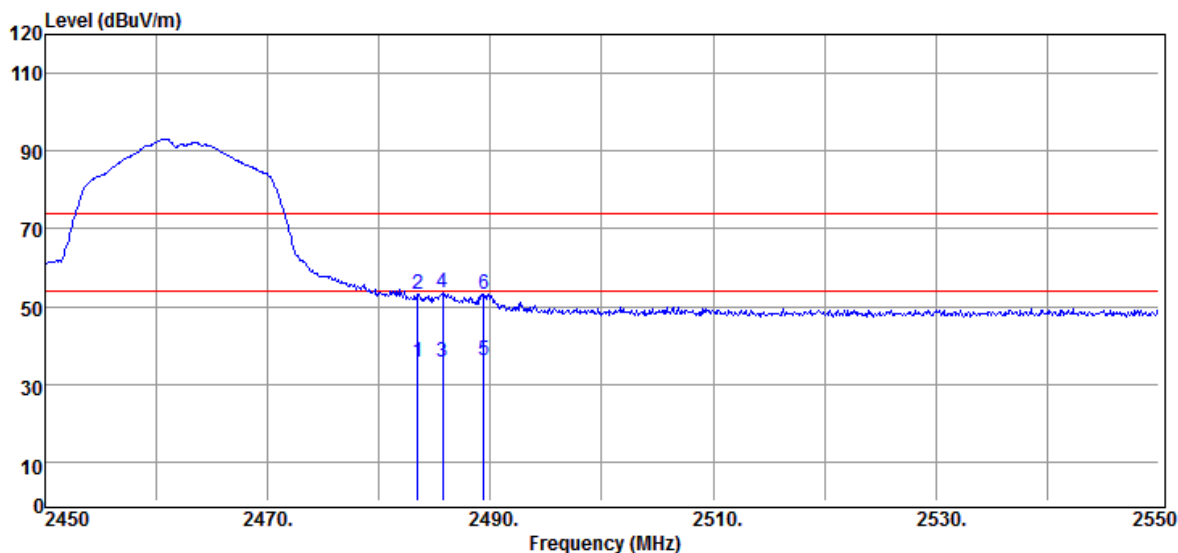
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Operation Mode :802.11n20
Test Mode :BE CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol. :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.50	Average	40.80	-4.90	35.90	54.00	-18.10
2483.50	Peak	58.17	-4.90	53.27	74.00	-20.73
2485.70	Average	40.70	-4.88	35.82	54.00	-18.18
2485.70	Peak	58.52	-4.88	53.64	74.00	-20.36
2489.40	Average	40.94	-4.85	36.09	54.00	-17.91
2489.40	Peak	57.94	-4.85	53.09	74.00	-20.91

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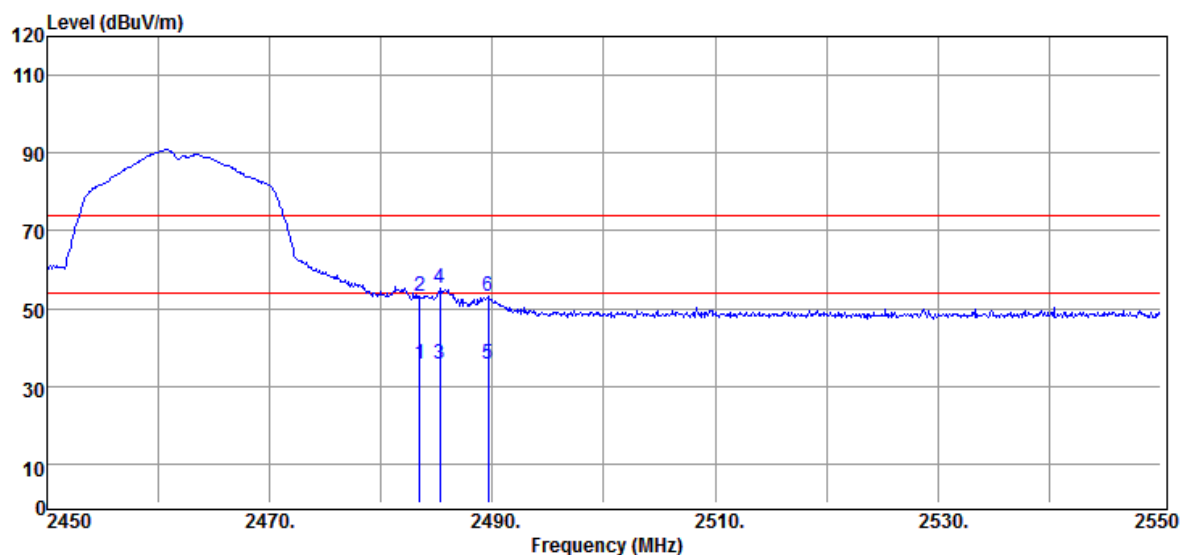
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Operation Mode :802.11n20
Test Mode :BE CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol. :HORIZONTAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.50	Average	40.59	-4.90	35.69	54.00	-18.31
2483.50	Peak	57.93	-4.90	53.03	74.00	-20.97
2485.30	Average	40.46	-4.89	35.57	54.00	-18.43
2485.30	Peak	60.08	-4.89	55.19	74.00	-18.81
2489.60	Average	40.36	-4.85	35.51	54.00	-18.49
2489.60	Peak	57.97	-4.85	53.12	74.00	-20.88

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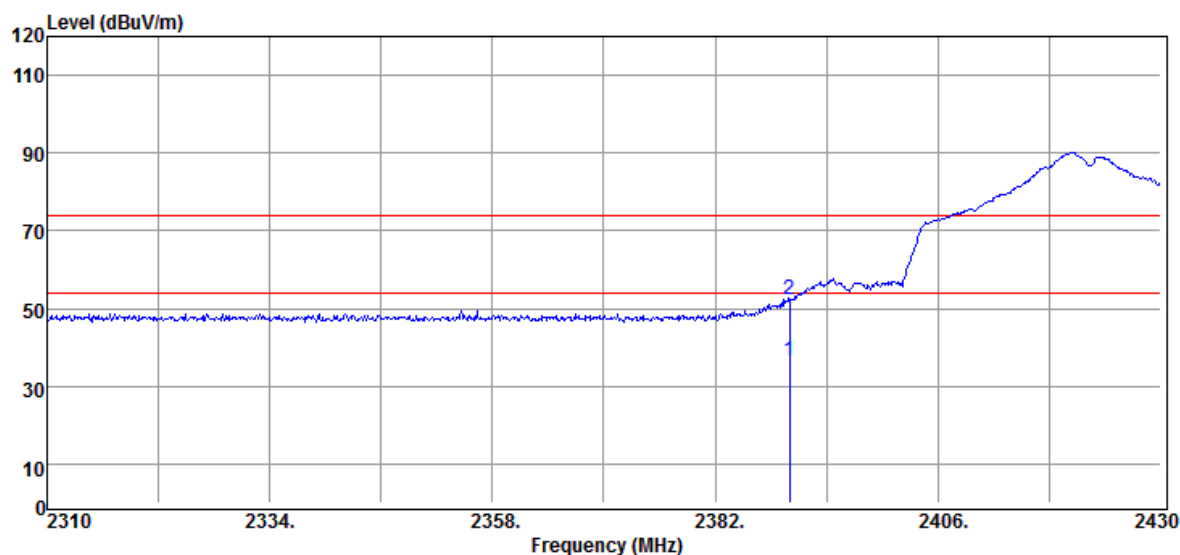
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Operation Mode :802.11n40
Test Mode :BE CH Low
EUT Pol :E1 Plan
Test Channel :2422 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
2390.00	Average	42.03	-5.57	36.46	54.00	-17.54
2390.00	Peak	57.95	-5.57	52.38	74.00	-21.62

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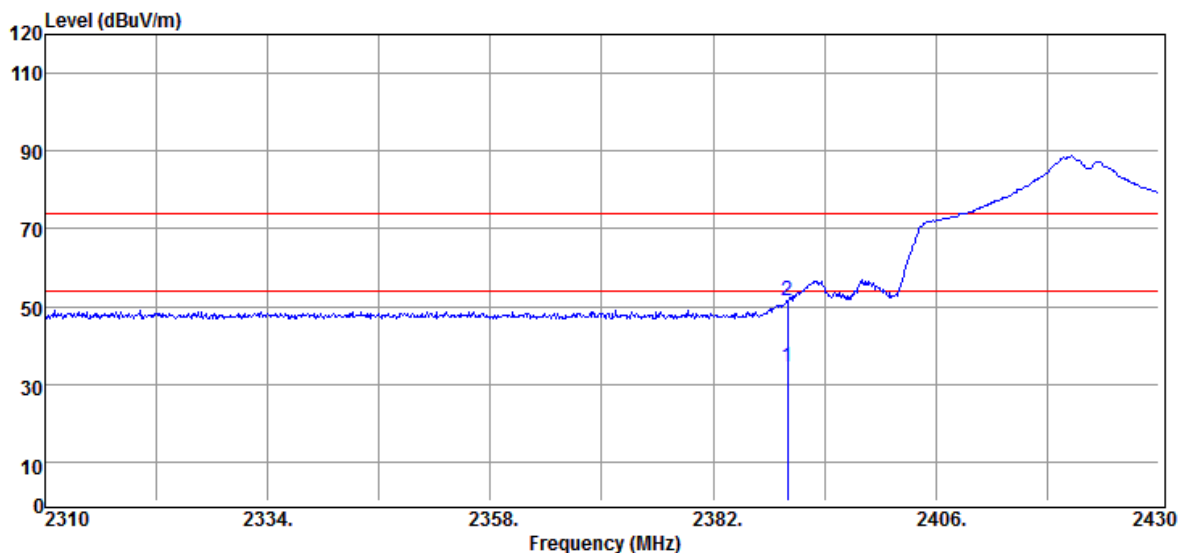
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Operation Mode :802.11n40
Test Mode :BE CH Low
EUT Pol :E1 Plan
Test Channel :2422 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol. :HORIZONTAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
2390.00	Average	40.10	-5.57	34.53	54.00	-19.47
2390.00	Peak	56.89	-5.57	51.32	74.00	-22.68

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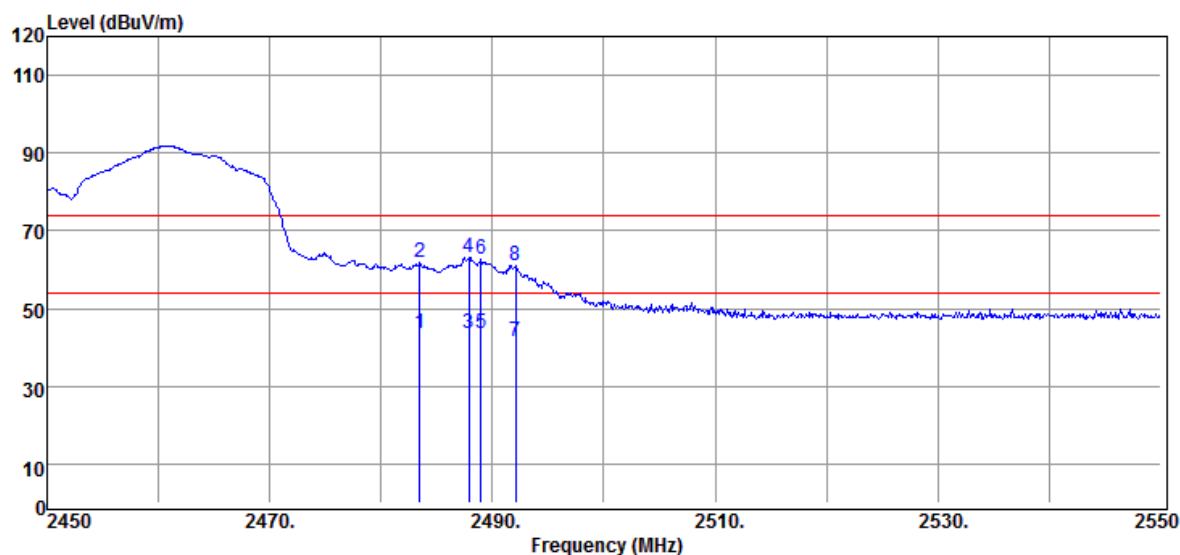
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Operation Mode :802.11n40
Test Mode :BE CH High
EUT Pol :E1 Plan
Test Channel :2452 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.50	Average	48.38	-4.90	43.48	54.00	-10.52
2483.50	Peak	66.62	-4.90	61.72	74.00	-12.28
2487.90	Average	48.44	-4.86	43.58	54.00	-10.42
2487.90	Peak	67.98	-4.86	63.12	74.00	-10.88
2489.00	Average	48.56	-4.85	43.71	54.00	-10.29
2489.00	Peak	67.41	-4.85	62.56	74.00	-11.44
2492.10	Average	46.56	-4.83	41.73	54.00	-12.27
2492.10	Peak	65.76	-4.83	60.93	74.00	-13.07

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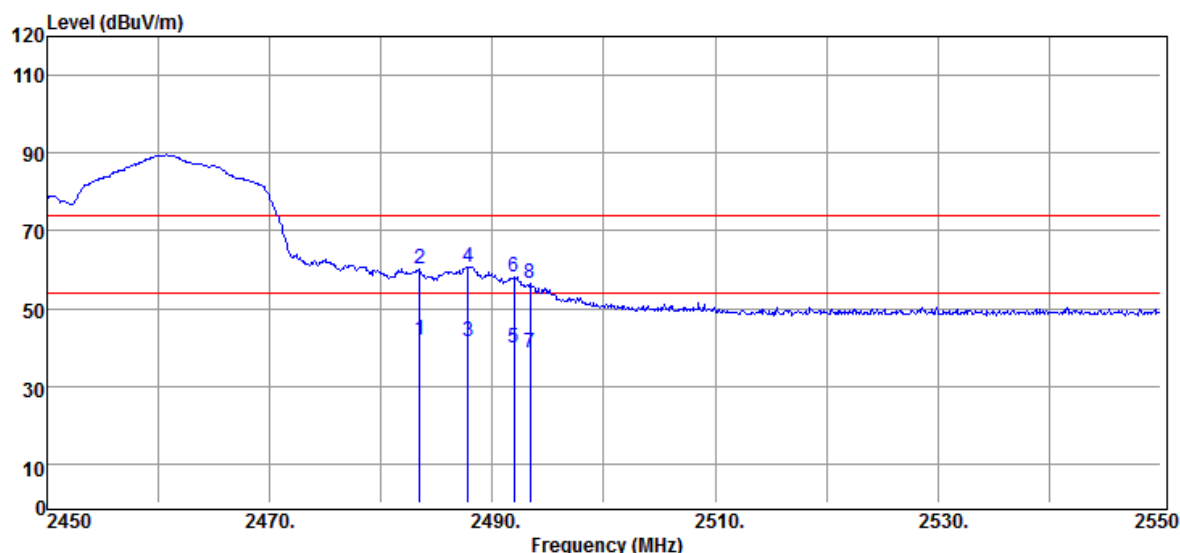
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Operation Mode :802.11n40
Test Mode :BE CH High
EUT Pol :E1 Plan
Test Channel :2452 MHz

Test Date :2018-08-31
Temp./Humi. :25/60
Antenna Pol. :HORIZONTAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
2483.50	Average	46.86	-4.90	41.96	54.00	-12.04
2483.50	Peak	64.92	-4.90	60.02	74.00	-13.98
2487.80	Average	46.50	-4.87	41.63	54.00	-12.37
2487.80	Peak	65.69	-4.87	60.82	74.00	-13.18
2491.90	Average	44.62	-4.83	39.79	54.00	-14.21
2491.90	Peak	62.88	-4.83	58.05	74.00	-15.95
2493.40	Average	43.36	-4.82	38.54	54.00	-15.46
2493.40	Peak	61.32	-4.82	56.50	74.00	-17.50

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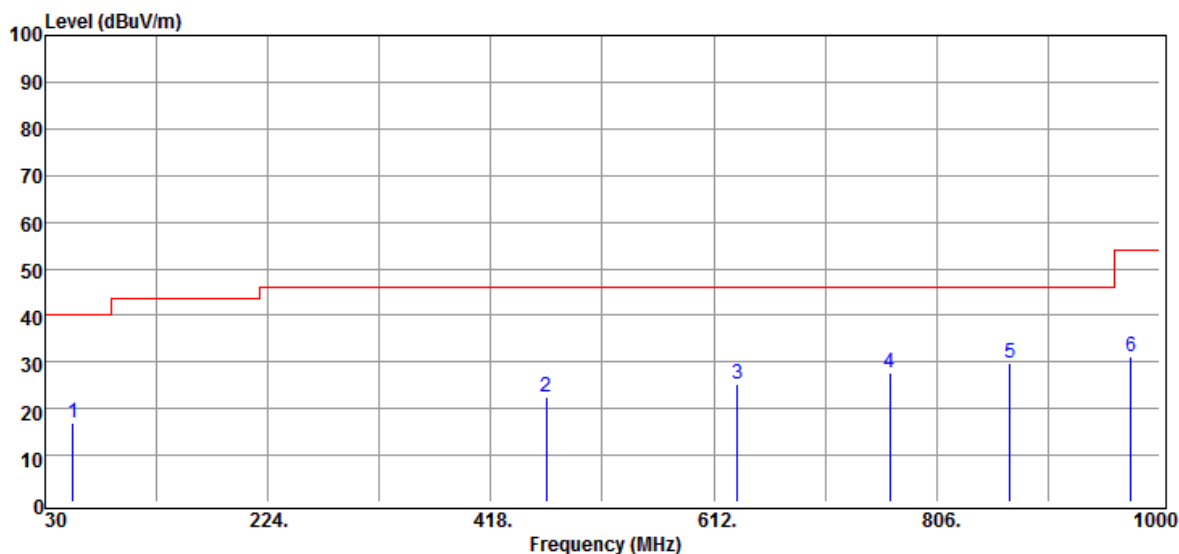
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Below 1GHz Worst-Case Data:

Radiated Spurious Emission Measurement Result

Operation Mode	:802.11g	Test Date	:2018-09-03
Test Mode	:Tx CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
54.25	Peak	34.05	-17.19	16.86	40.00	-23.14
466.50	Peak	34.11	-11.48	22.63	46.00	-23.37
632.37	Peak	33.54	-8.12	25.42	46.00	-20.58
765.26	Peak	34.39	-6.83	27.56	46.00	-18.44
870.02	Peak	34.43	-4.84	29.59	46.00	-16.41
974.78	Peak	34.42	-3.38	31.04	54.00	-22.96

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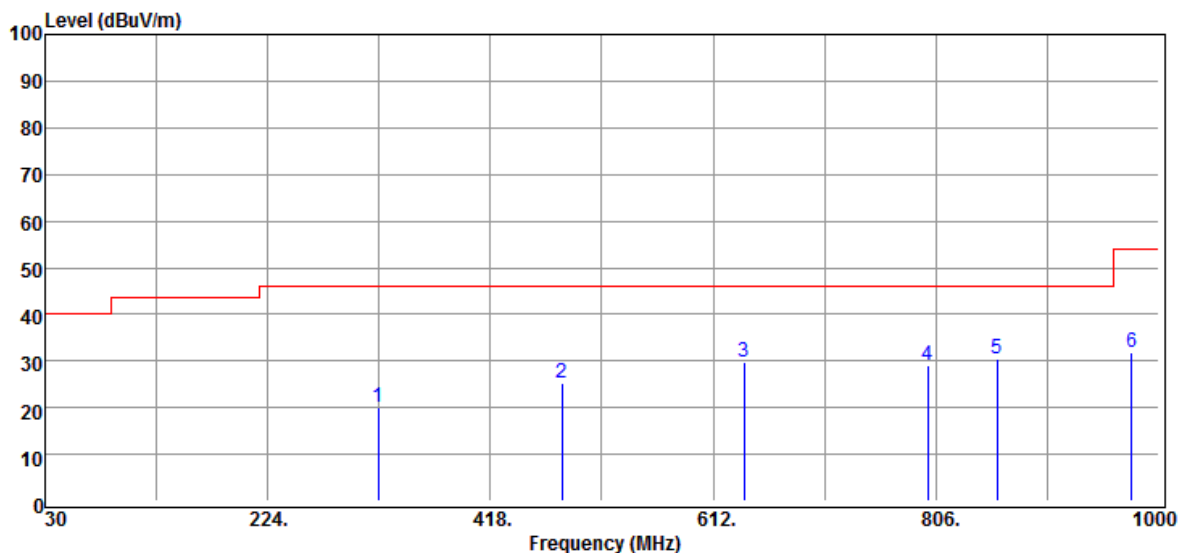
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Operation Mode	:802.11g	Test Date	:2018-09-03
Test Mode	:Tx CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
320.03	Peak	36.99	-16.87	20.12	46.00	-25.88
480.08	Peak	36.35	-11.04	25.31	46.00	-20.69
639.16	Peak	37.76	-8.13	29.63	46.00	-16.37
799.21	Peak	35.45	-6.49	28.96	46.00	-17.04
859.35	Peak	35.88	-5.45	30.43	46.00	-15.57
976.72	Peak	35.14	-3.42	31.72	54.00	-22.28

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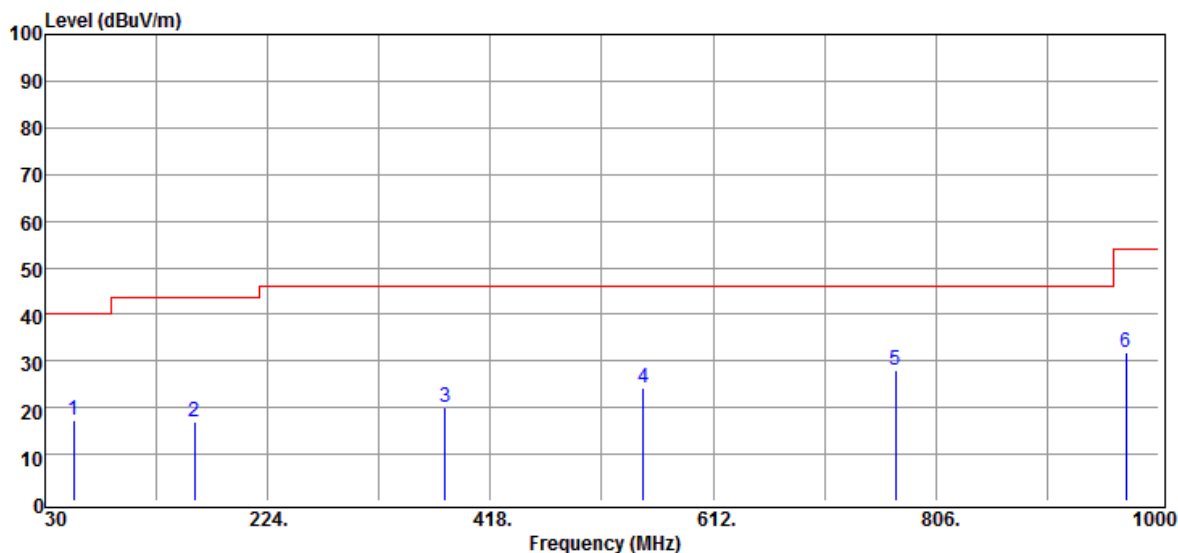
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Operation Mode :802.11g
Test Mode :Tx CH Mid
EUT Pol :E1 Plan
Test Channel :2437 MHz

Test Date :2018-09-03
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
55.22	Peak	34.65	-17.26	17.39	40.00	-22.61
159.98	Peak	33.20	-16.19	17.01	43.50	-26.49
378.23	Peak	33.37	-13.25	20.12	46.00	-25.88
550.89	Peak	34.50	-10.36	24.14	46.00	-21.86
771.08	Peak	34.91	-6.92	27.99	46.00	-18.01
971.87	Peak	35.27	-3.33	31.94	54.00	-22.06

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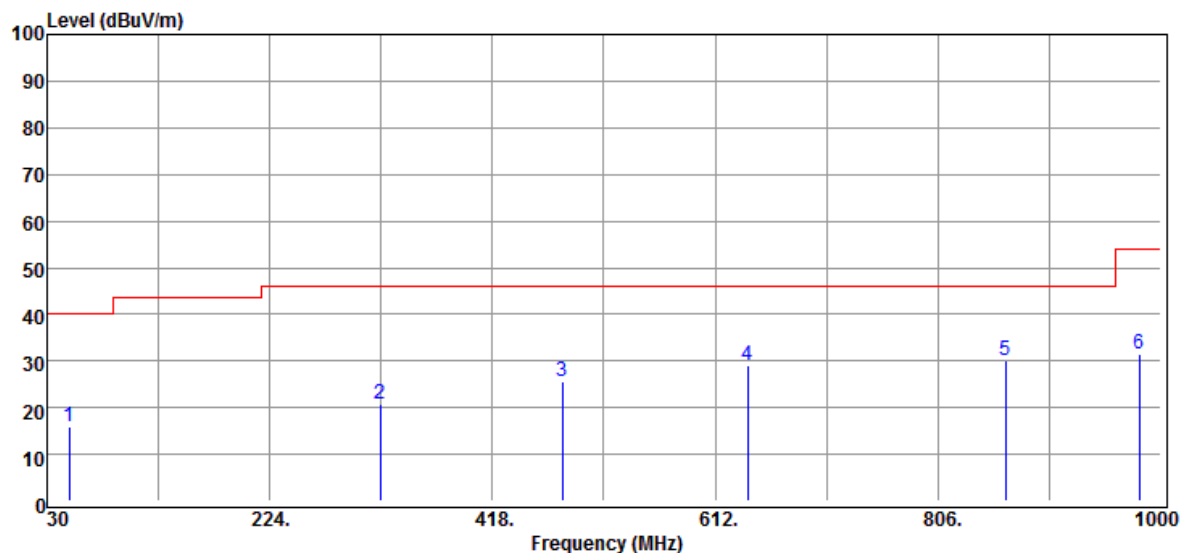
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Operation Mode	:802.11g	Test Date	:2018-09-03
Test Mode	:Tx CH Mid	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2437 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
49.40	Peak	32.91	-16.90	16.01	40.00	-23.99
320.03	Peak	37.72	-16.87	20.85	46.00	-25.15
479.11	Peak	36.62	-11.07	25.55	46.00	-20.45
640.13	Peak	37.23	-8.14	29.09	46.00	-16.91
865.17	Peak	35.13	-5.12	30.01	46.00	-15.99
981.57	Peak	34.90	-3.54	31.36	54.00	-22.64

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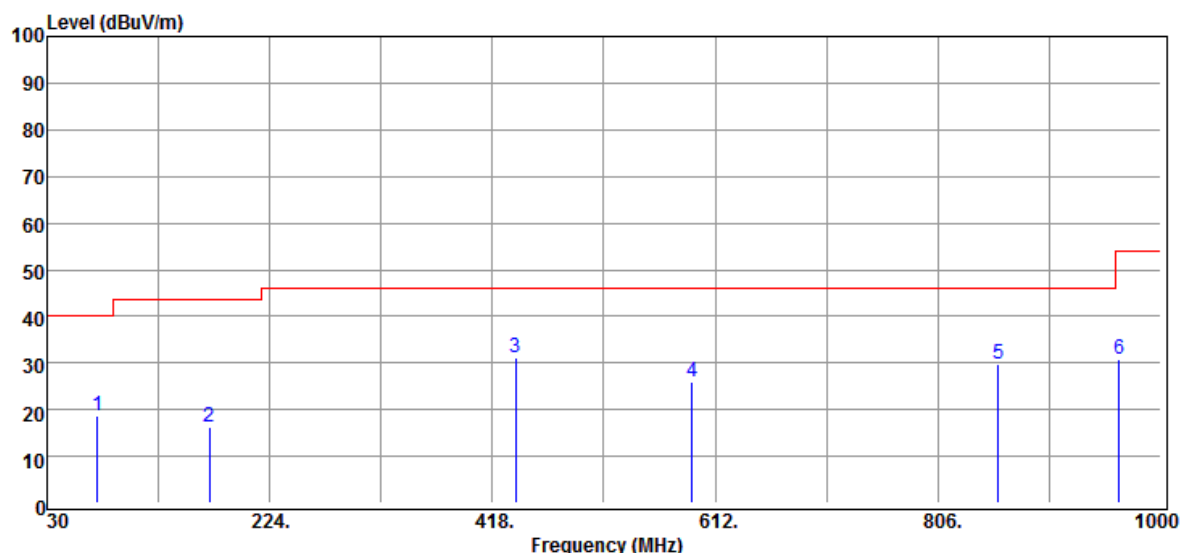
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Operation Mode :802.11g
Test Mode :Tx CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-09-03
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
73.65	Peak	38.95	-20.23	18.72	40.00	-21.28
171.62	Peak	33.03	-16.62	16.41	43.50	-27.09
438.37	Peak	42.97	-11.77	31.20	46.00	-14.80
591.63	Peak	34.62	-8.77	25.85	46.00	-20.15
858.38	Peak	35.17	-5.47	29.70	46.00	-16.30
964.11	Peak	34.49	-3.77	30.72	54.00	-23.28

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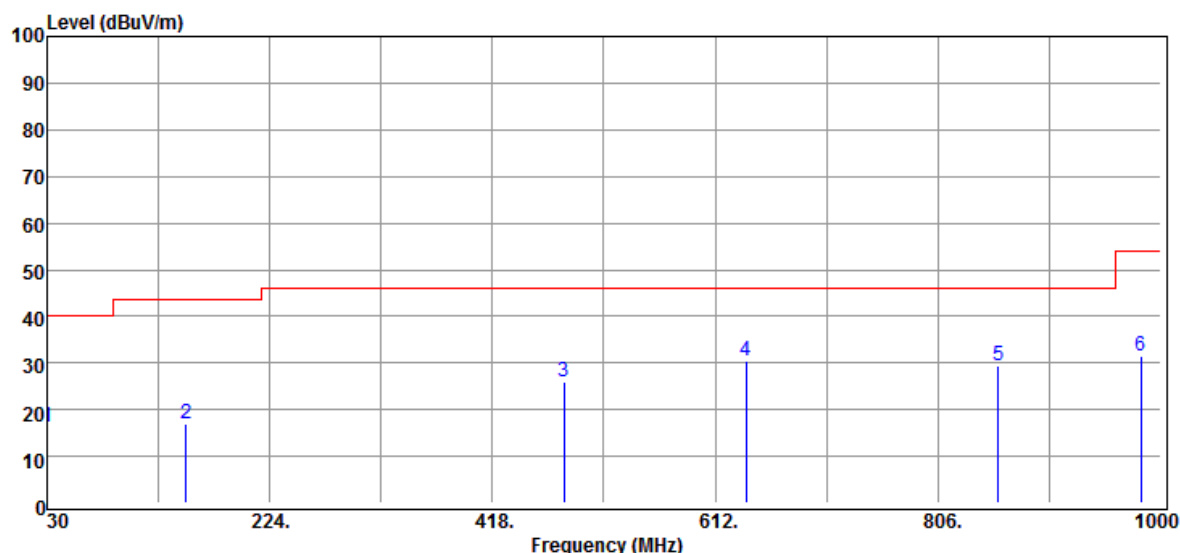
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Operation Mode :802.11g
Test Mode :Tx CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-09-03
Temp./Humi. :25/60
Antenna Pol. :HORIZONTAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
30.00	Peak	33.37	-17.05	16.32	40.00	-23.68
151.25	Peak	33.12	-16.17	16.95	43.50	-26.55
480.08	Peak	36.82	-11.04	25.78	46.00	-20.22
639.16	Peak	38.66	-8.13	30.53	46.00	-15.47
858.38	Peak	35.00	-5.47	29.53	46.00	-16.47
982.54	Peak	35.04	-3.57	31.47	54.00	-22.53

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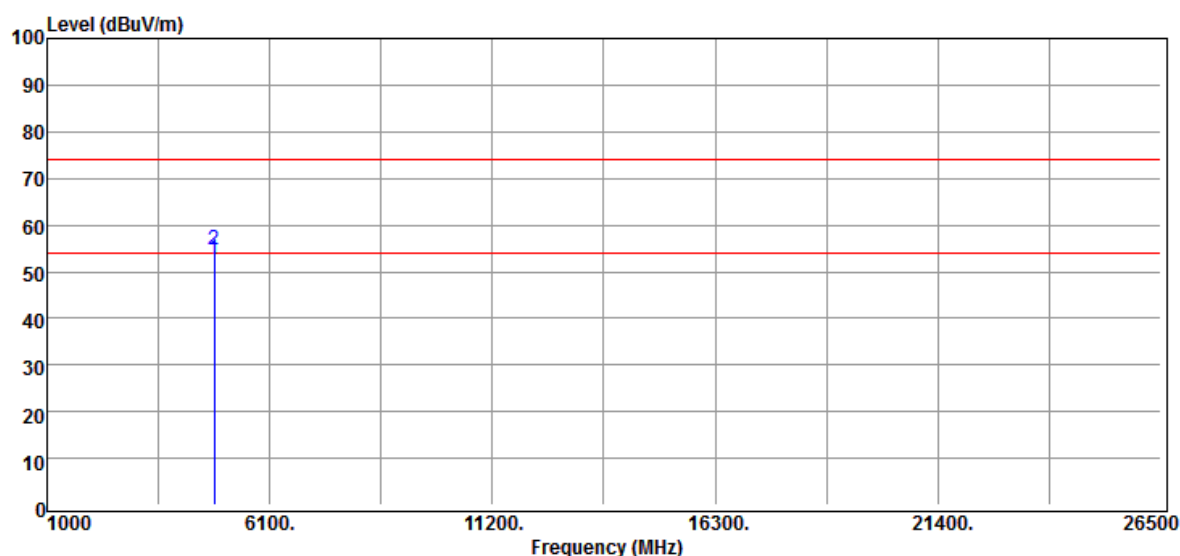
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Above 1GHz Data:

Radiated Spurious Emission Measurement Result

Operation Mode	:802.11b	Test Date	:2018-08-31
Test Mode	:Tx CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.00	Average	52.30	0.38	52.68	54.00	-1.32
4824.00	Peak	54.12	0.38	54.50	74.00	-19.50

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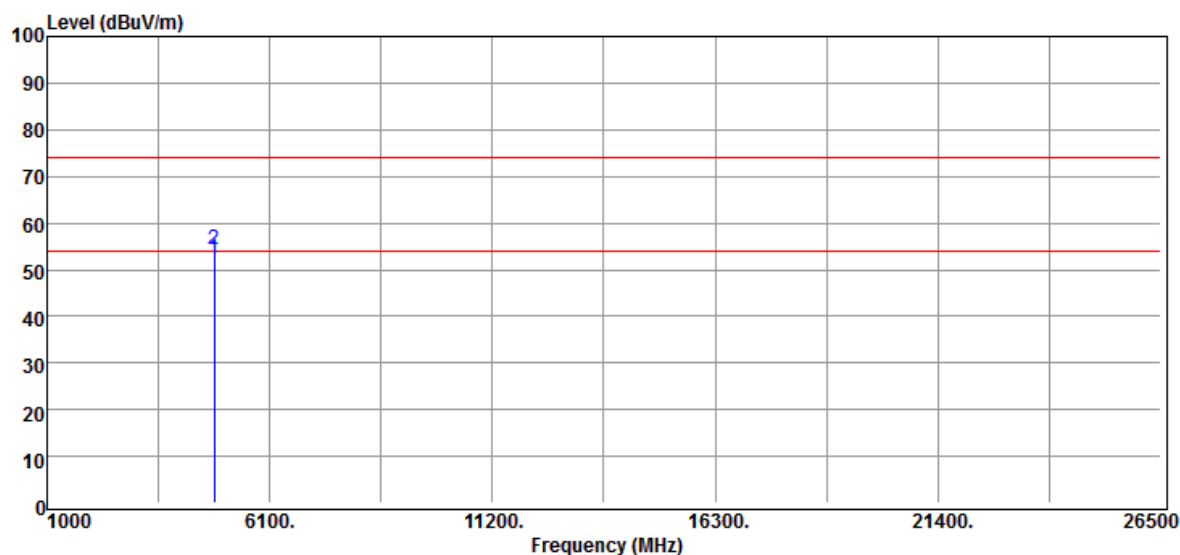
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Operation Mode	:802.11b	Test Date	:2018-08-31
Test Mode	:Tx CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.00	Average	51.89	0.38	52.27	54.00	-1.73
4824.00	Peak	53.92	0.38	54.30	74.00	-19.70

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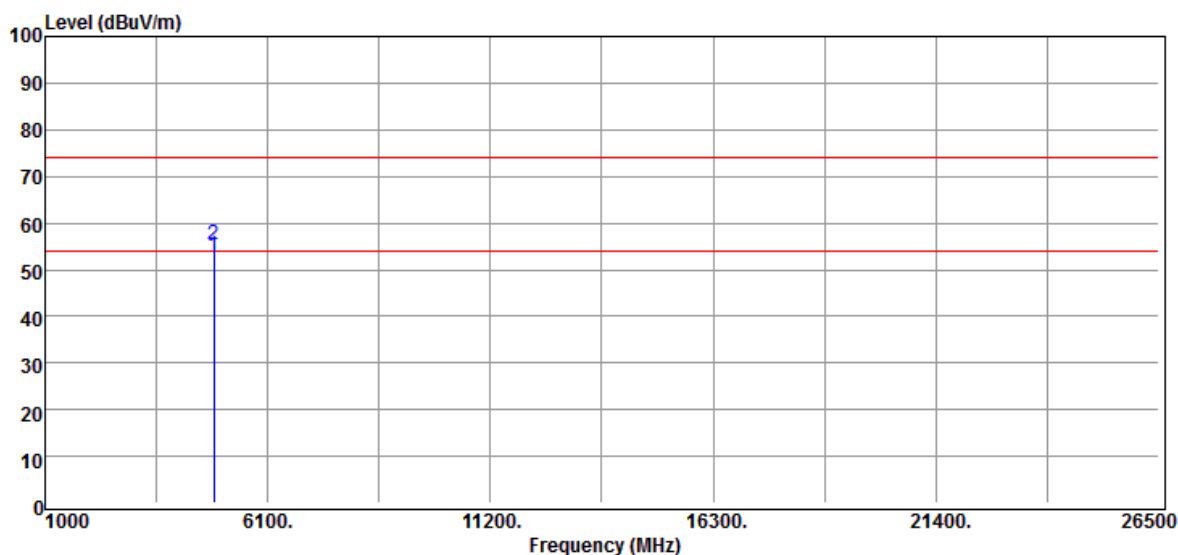
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Operation Mode	:802.11b	Test Date	:2018-08-31
Test Mode	:Tx CH Mid	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2437 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4874.00	Average	52.14	0.66	52.80	54.00	-1.20
4874.00	Peak	54.60	0.66	55.26	74.00	-18.74

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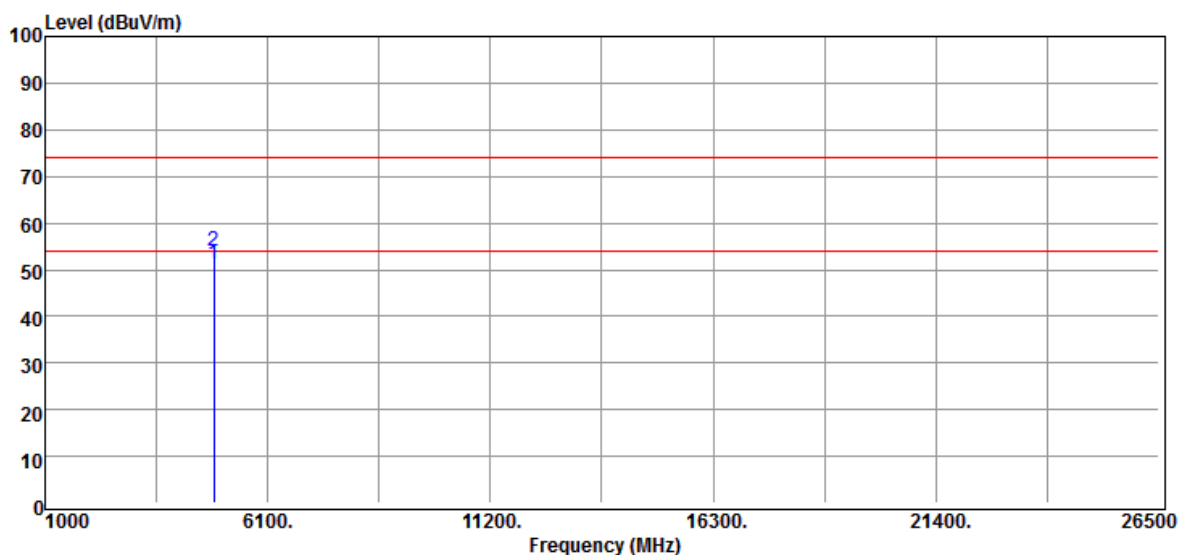
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Operation Mode	:802.11b	Test Date	:2018-08-31
Test Mode	:Tx CH Mid	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2437 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4874.00	Average	50.72	0.66	51.38	54.00	-2.62
4874.00	Peak	53.47	0.66	54.13	74.00	-19.87

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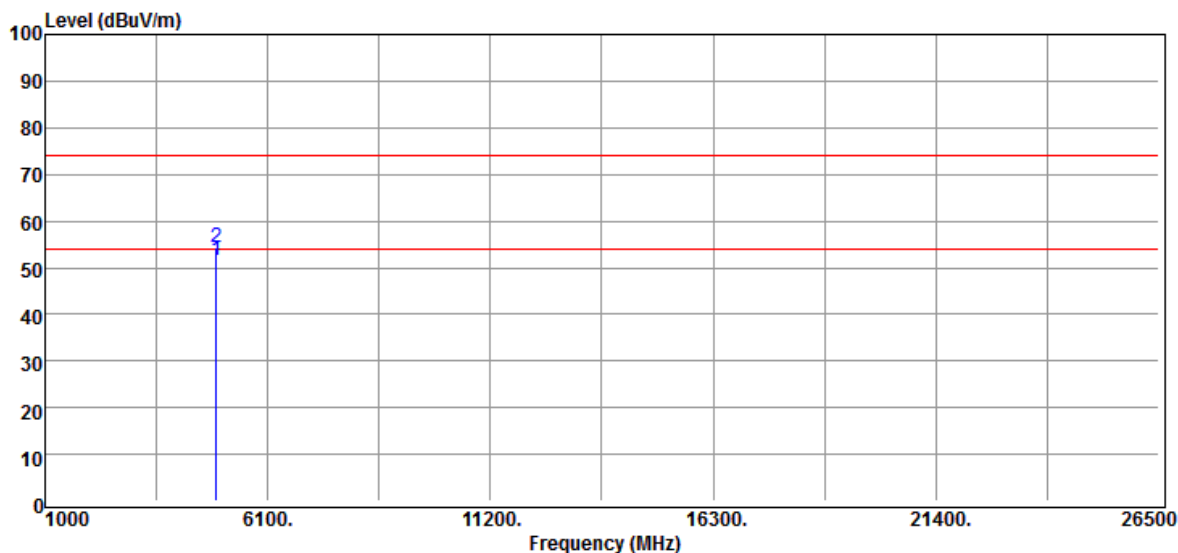
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Operation Mode :802.11b
Test Mode :Tx CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-09-03
Temp./Humi. :25/60
Antenna Pol. :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4924.00	Average	50.57	0.97	51.54	54.00	-2.46
4924.00	Peak	53.52	0.97	54.49	74.00	-19.51

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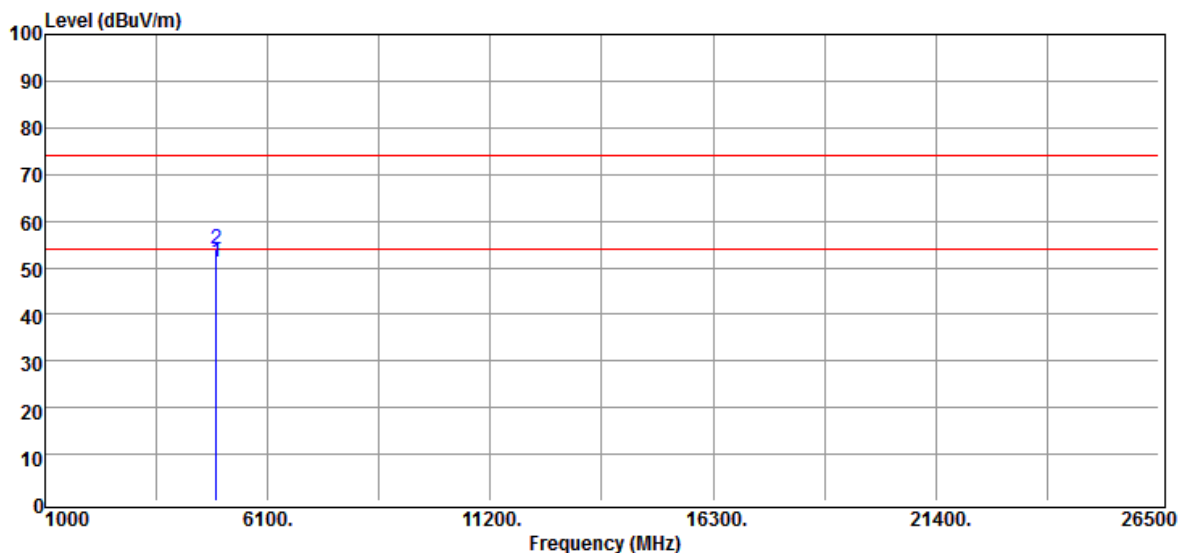
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Operation Mode	:802.11b	Test Date	:2018-09-03
Test Mode	:Tx CH High	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2462 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4924.00	Average	50.09	0.97	51.06	54.00	-2.94
4924.00	Peak	53.16	0.97	54.13	74.00	-19.87

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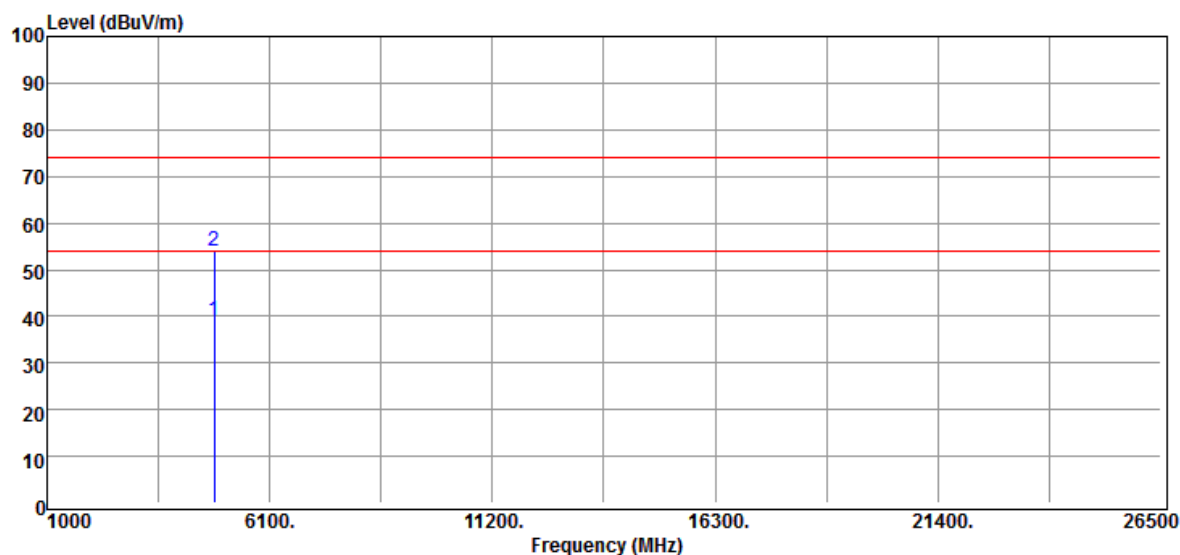
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Operation Mode :802.11g
Test Mode :Tx CH Low
EUT Pol :E1 Plan
Test Channel :2412 MHz

Test Date :2018-09-01
Temp./Humi. :25/60
Antenna Pol. :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.00	Average	38.61	0.38	38.99	54.00	-15.01
4824.00	Peak	53.43	0.38	53.81	74.00	-20.19

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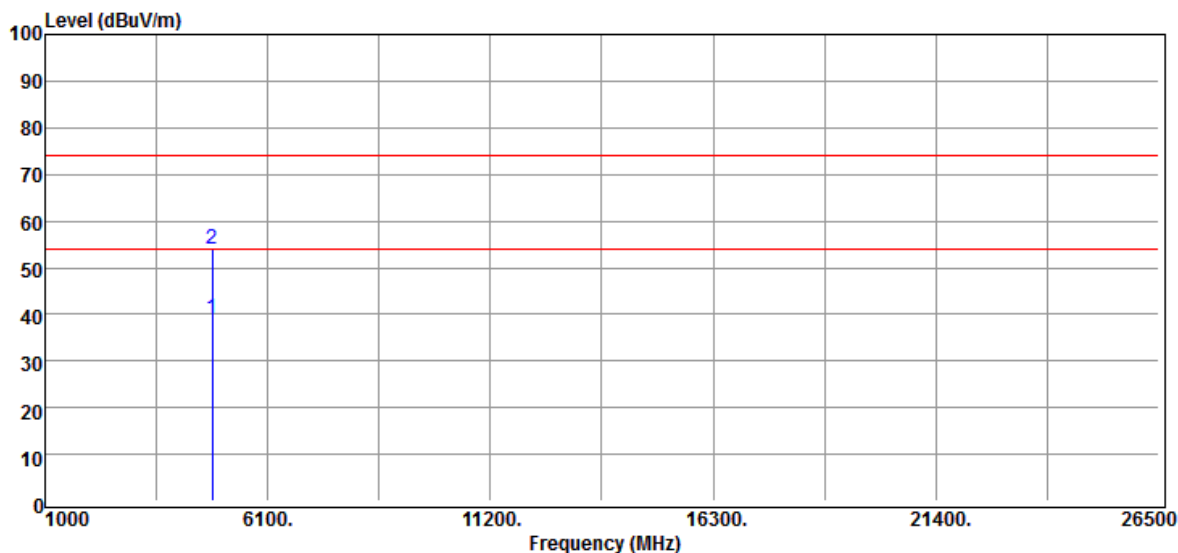
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Operation Mode	:802.11g	Test Date	:2018-09-01
Test Mode	:Tx CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
MHz	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.00	Average	38.89	0.38	39.27	54.00	-14.73
4824.00	Peak	53.52	0.38	53.90	74.00	-20.10

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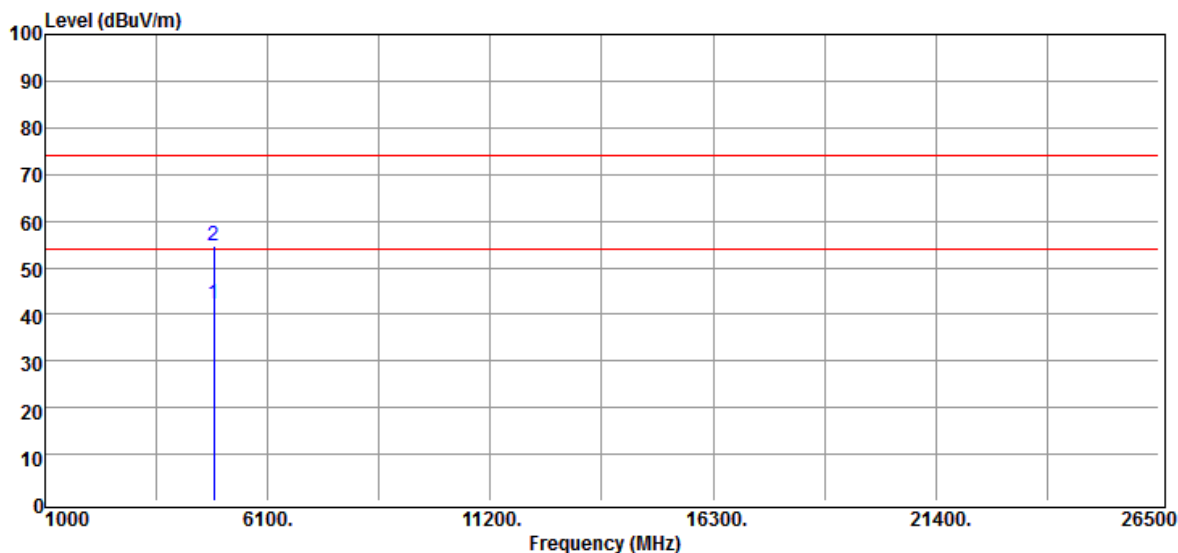
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Operation Mode :802.11g
Test Mode :Tx CH Mid
EUT Pol :E1 Plan
Test Channel :2437 MHz

Test Date :2018-09-01
Temp./Humi. :25/60
Antenna Pol. :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4874.00	Average	41.67	0.66	42.33	54.00	-11.67
4874.00	Peak	54.10	0.66	54.76	74.00	-19.24

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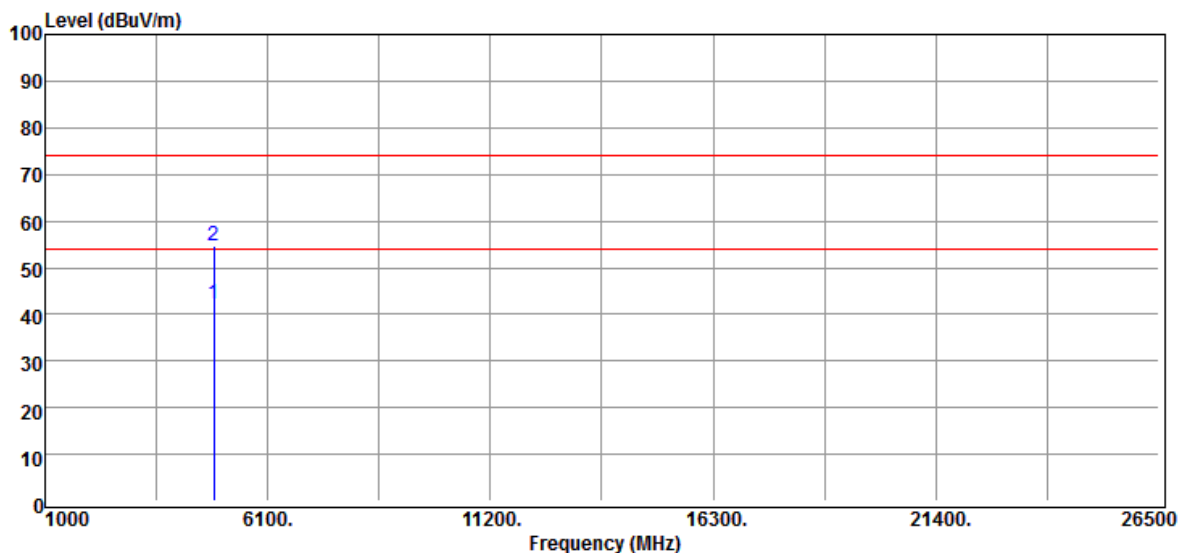
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Operation Mode	:802.11g	Test Date	:2018-09-01
Test Mode	:Tx CH Mid	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2437 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4874.00	Average	41.58	0.66	42.24	54.00	-11.76
4874.00	Peak	53.91	0.66	54.57	74.00	-19.43

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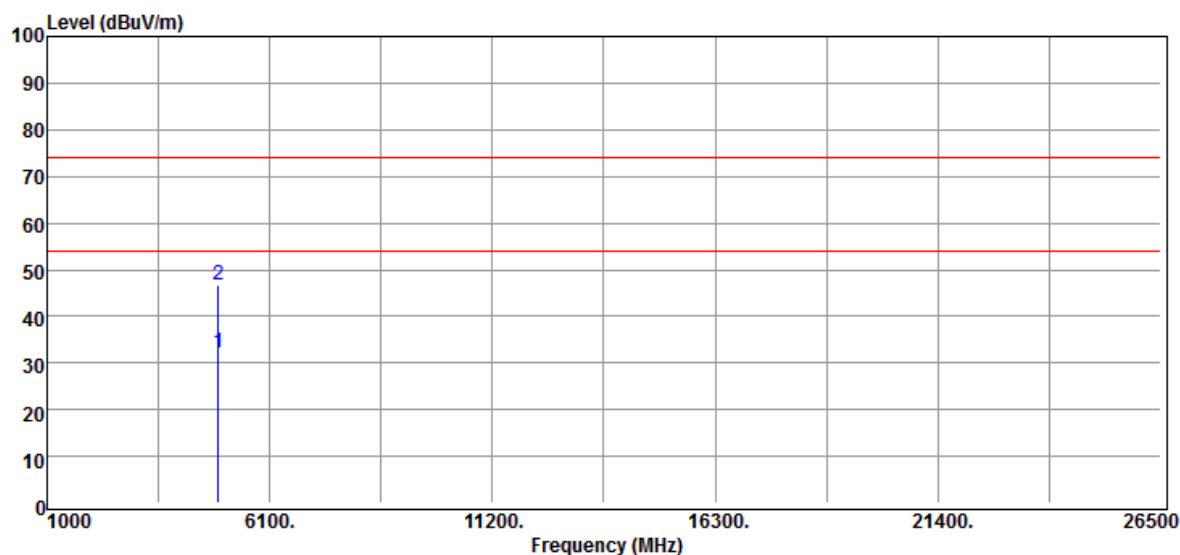
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Operation Mode :802.11g
Test Mode :Tx CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-09-01
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4924.00	Average	31.36	0.97	32.33	54.00	-21.67
4924.00	Peak	45.82	0.97	46.79	74.00	-27.21

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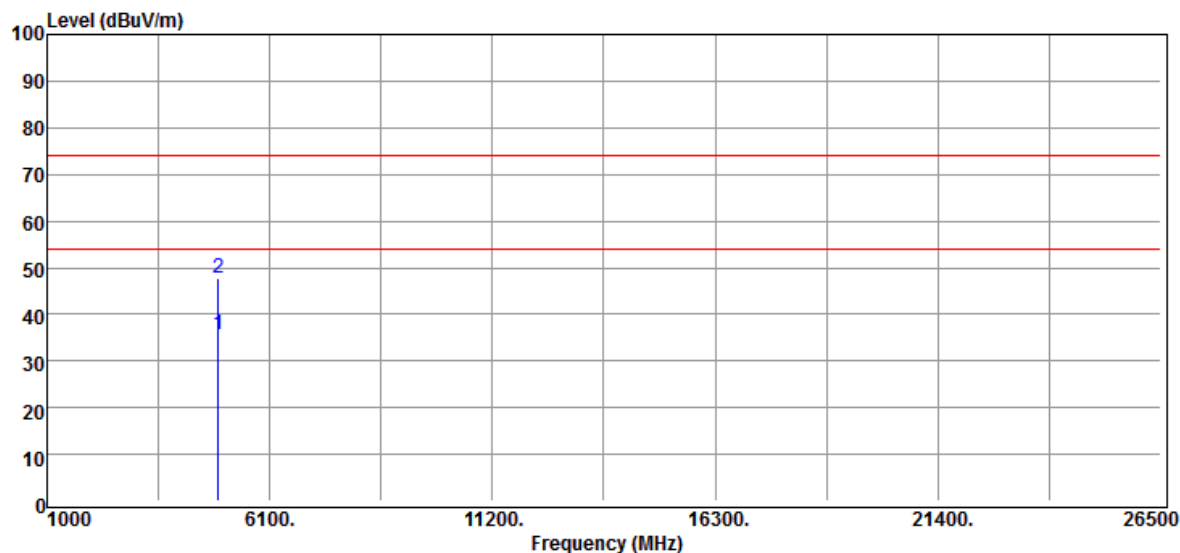
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Operation Mode :802.11g
Test Mode :Tx CH High
EUT Pol :E1 Plan
Test Channel :2462 MHz

Test Date :2018-09-01
Temp./Humi. :25/60
Antenna Pol. :HORIZONTAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4924.00	Average	34.68	0.97	35.65	54.00	-18.35
4924.00	Peak	46.93	0.97	47.90	74.00	-26.10

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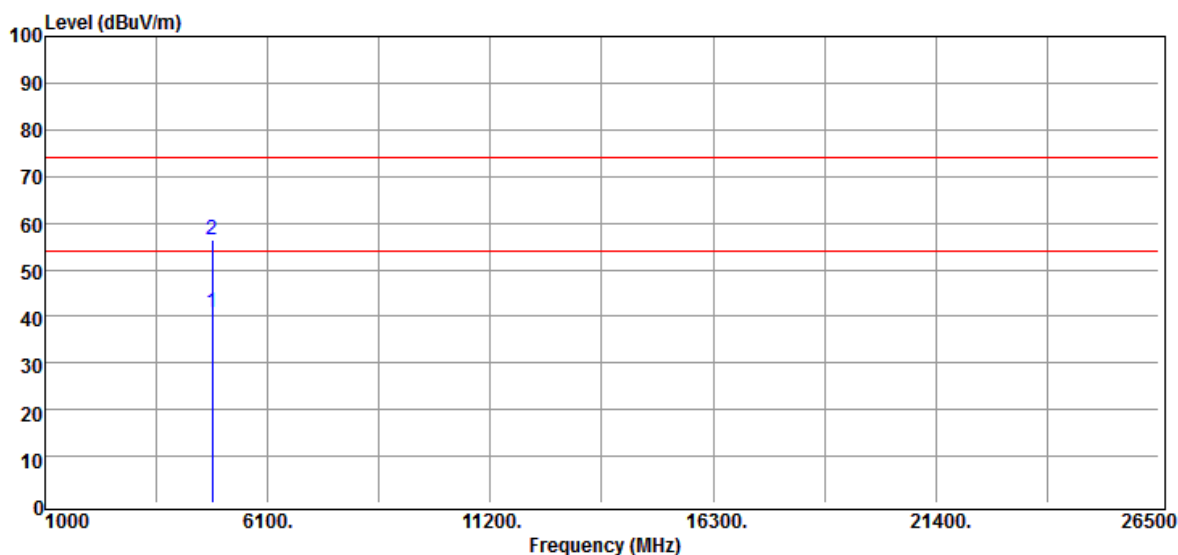
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Operation Mode	:802.11n20	Test Date	:2018-09-01
Test Mode	:Tx CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.00	Average	40.61	0.38	40.99	54.00	-13.01
4824.00	Peak	56.15	0.38	56.53	74.00	-17.47

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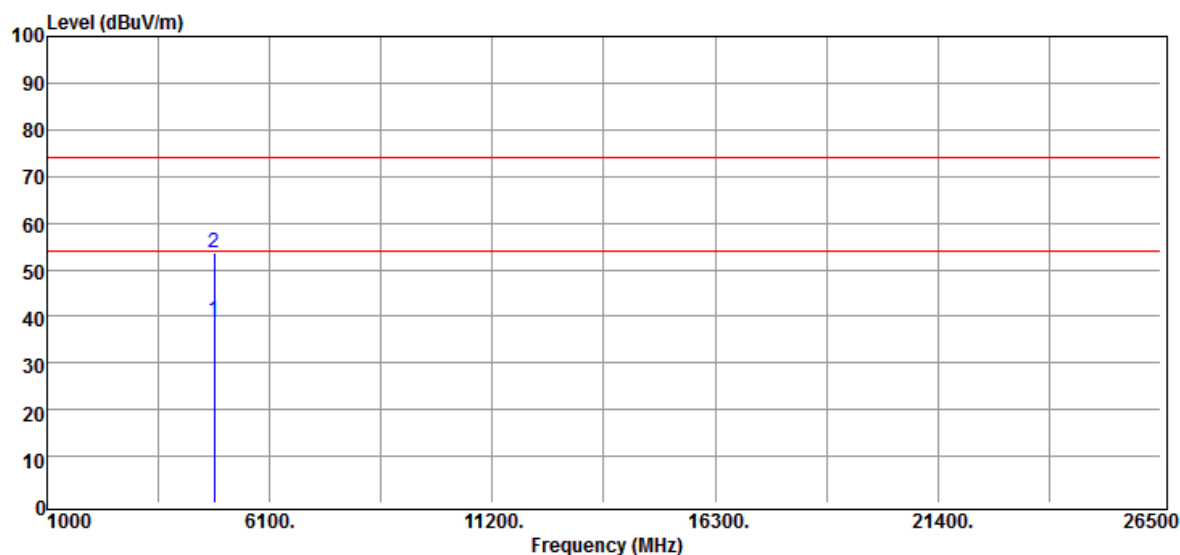
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Operation Mode	:802.11n20	Test Date	:2018-09-01
Test Mode	:Tx CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2412 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4824.00	Average	38.58	0.38	38.96	54.00	-15.04
4824.00	Peak	53.36	0.38	53.74	74.00	-20.26

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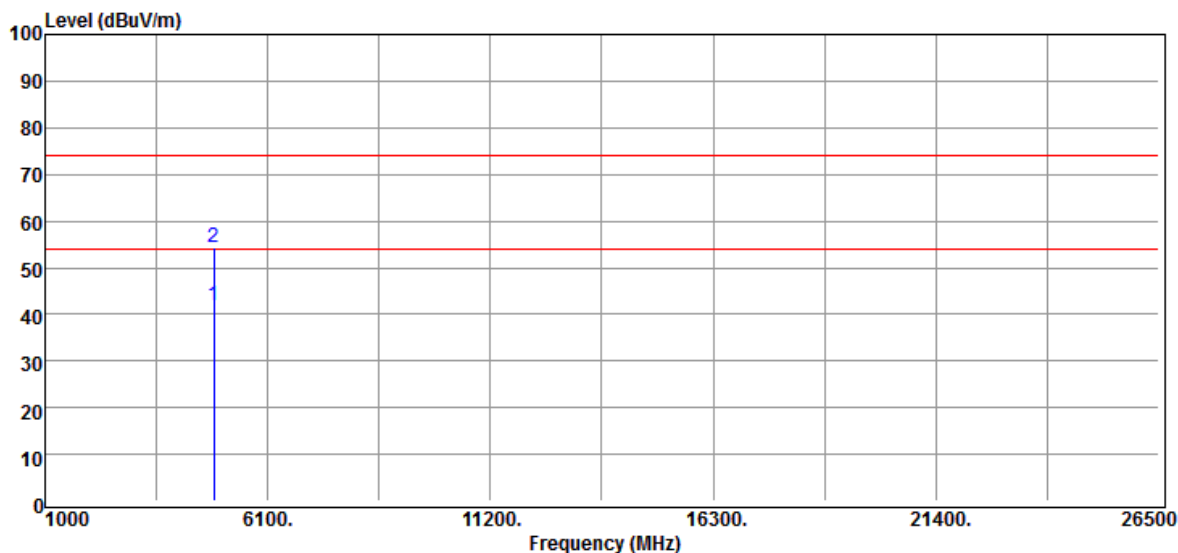
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Operation Mode :802.11n20
Test Mode :Tx CH Mid
EUT Pol :E1 Plan
Test Channel :2437 MHz

Test Date :2018-09-01
Temp./Humi. :25/60
Antenna Pol. :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4874.00	Average	41.23	0.66	41.89	54.00	-12.11
4874.00	Peak	53.58	0.66	54.24	74.00	-19.76

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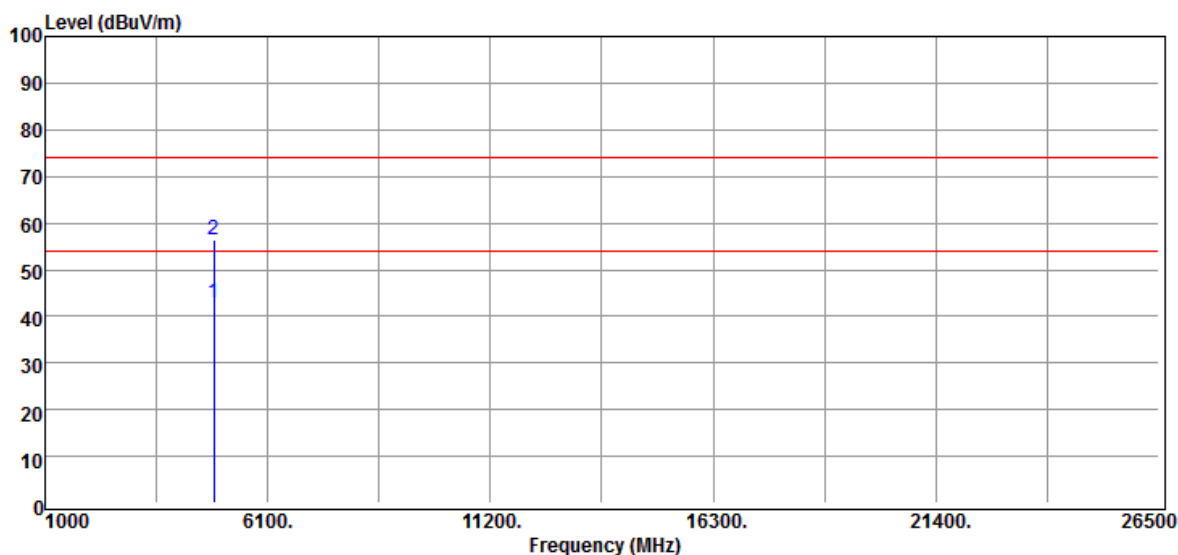
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Operation Mode	:802.11n20	Test Date	:2018-09-01
Test Mode	:Tx CH Mid	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2437 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4874.00	Average	42.39	0.66	43.05	54.00	-10.95
4874.00	Peak	55.68	0.66	56.34	74.00	-17.66

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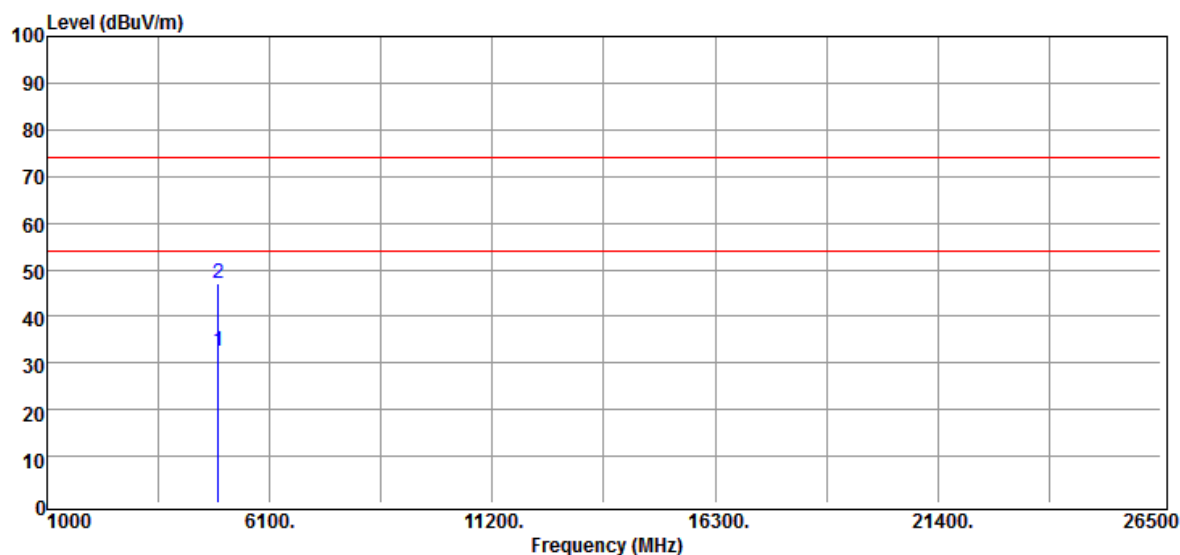
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Operation Mode	:802.11n20	Test Date	:2018-09-01
Test Mode	:Tx CH High	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2462 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4924.00	Average	31.53	0.97	32.50	54.00	-21.50
4924.00	Peak	46.08	0.97	47.05	74.00	-26.95

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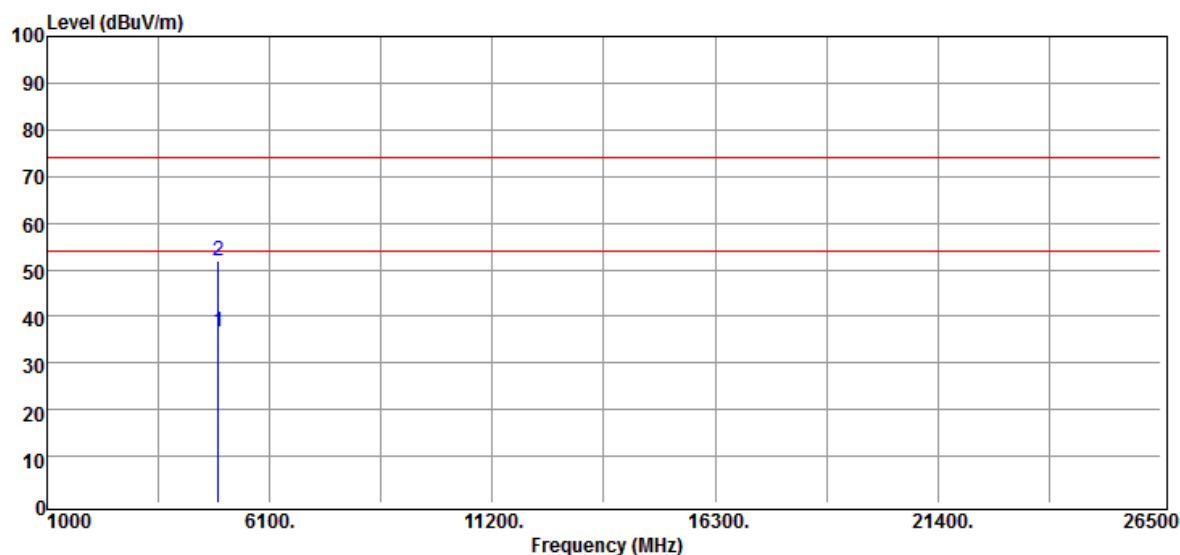
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Operation Mode	:802.11n20	Test Date	:2018-09-01
Test Mode	:Tx CH High	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2462 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4924.00	Average	35.57	0.97	36.54	54.00	-17.46
4924.00	Peak	50.93	0.97	51.90	74.00	-22.10

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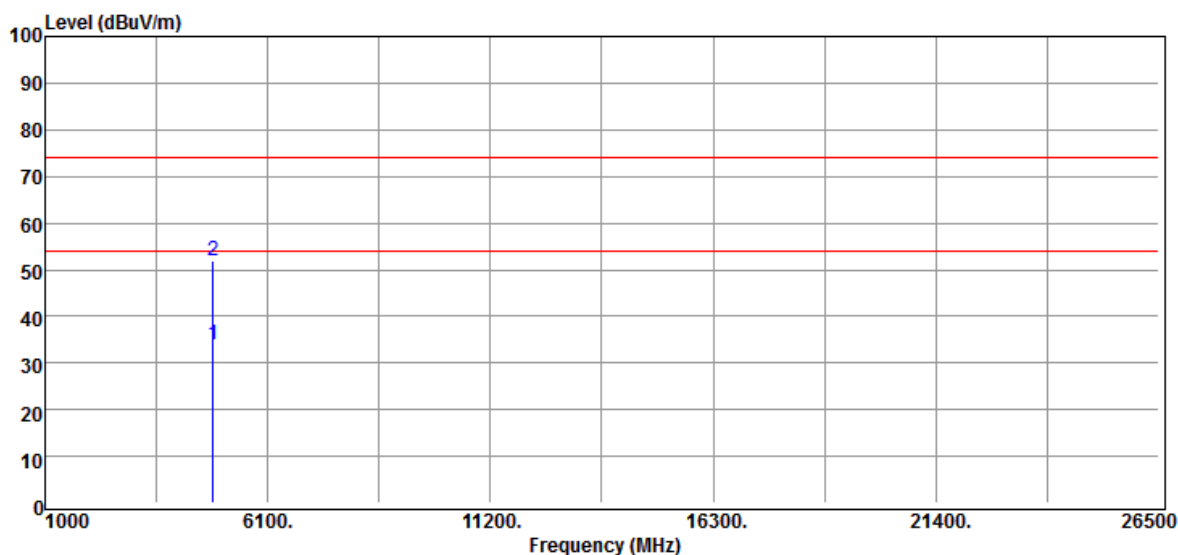
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Operation Mode	:802.11n40	Test Date	:2018-09-01
Test Mode	:Tx CH Low	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2422 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4844.00	Average	33.27	0.49	33.76	54.00	-20.24
4844.00	Peak	51.51	0.49	52.00	74.00	-22.00

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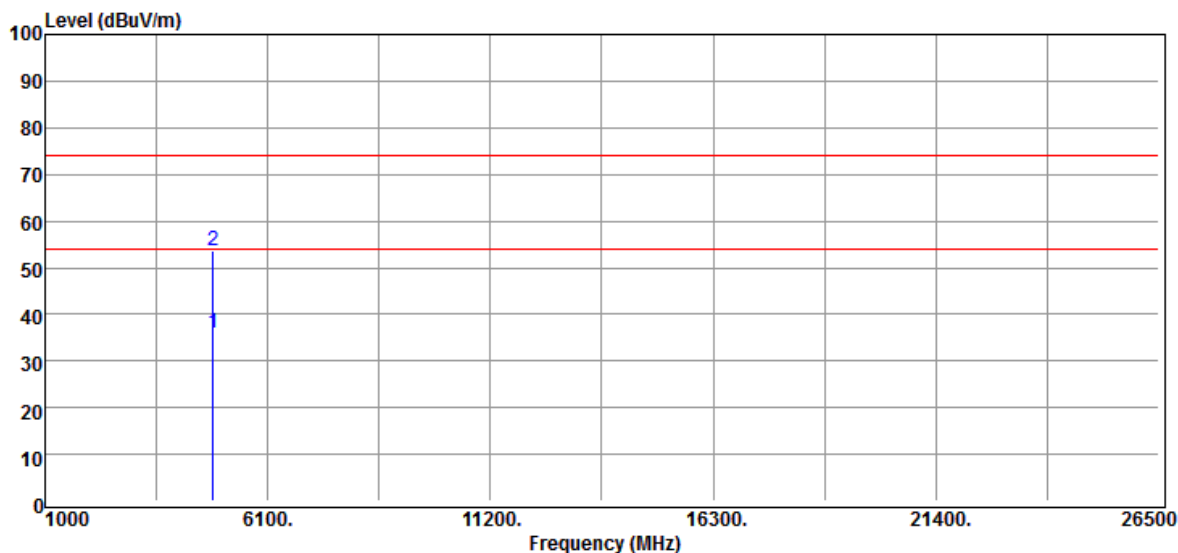
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Operation Mode :802.11n40
Test Mode :Tx CH Low
EUT Pol :E1 Plan
Test Channel :2422 MHz

Test Date :2018-09-01
Temp./Humi. :25/60
Antenna Pol. :HORIZONTAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4844.00	Average	35.34	0.49	35.83	54.00	-18.17
4844.00	Peak	53.25	0.49	53.74	74.00	-20.26

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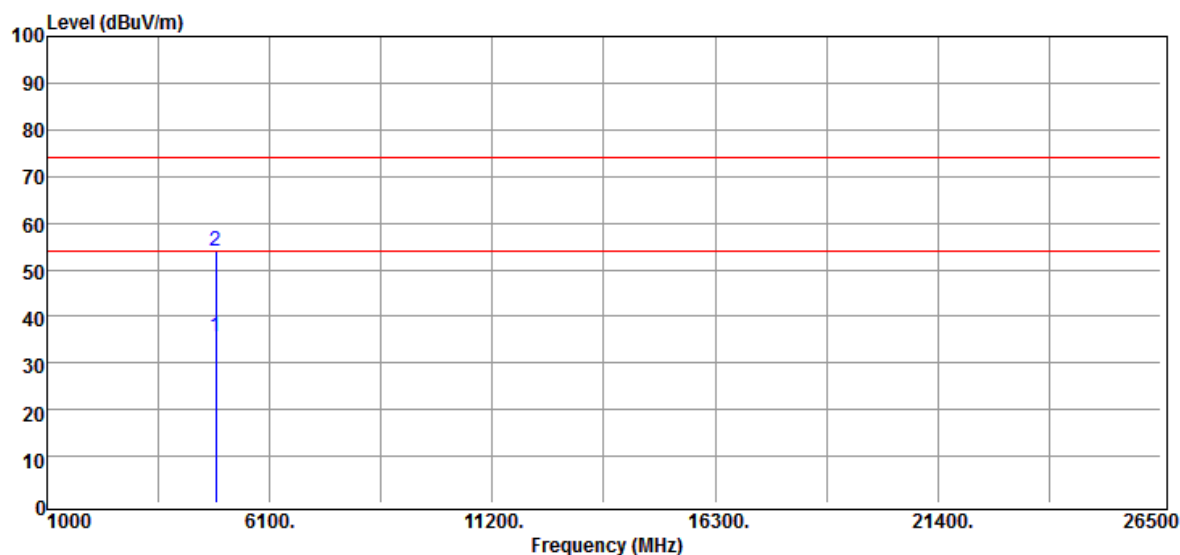
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Operation Mode	:802.11n40	Test Date	:2018-09-01
Test Mode	:Tx CH Mid	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:VERTICAL
Test Channel	:2437 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4874.00	Average	35.15	0.66	35.81	54.00	-18.19
4874.00	Peak	53.22	0.66	53.88	74.00	-20.12

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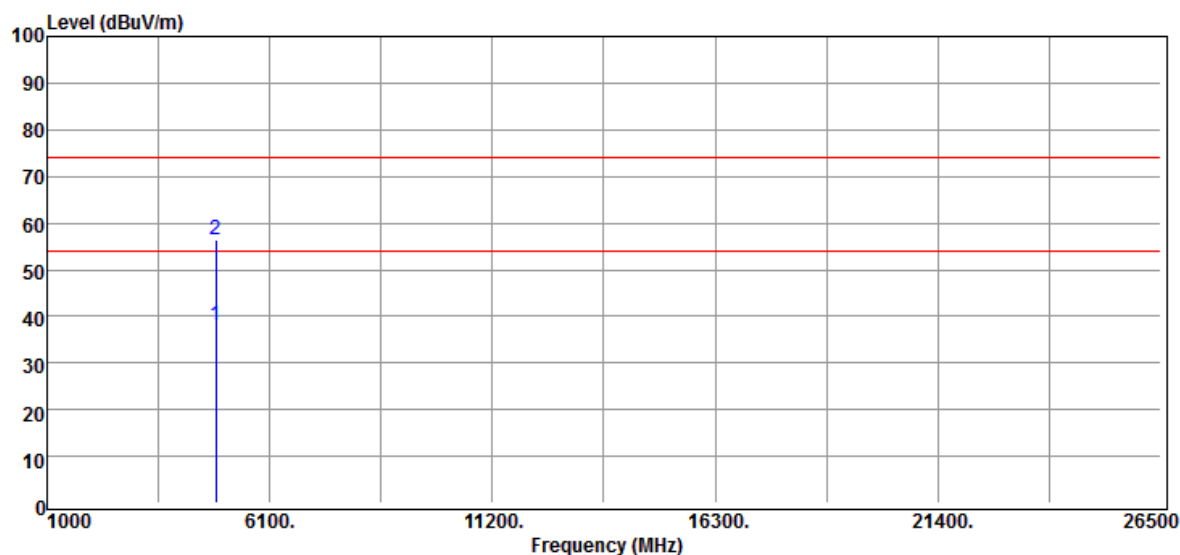
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Operation Mode	:802.11n40	Test Date	:2018-09-01
Test Mode	:Tx CH Mid	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2437 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4874.00	Average	37.30	0.66	37.96	54.00	-16.04
4874.00	Peak	55.69	0.66	56.35	74.00	-17.65

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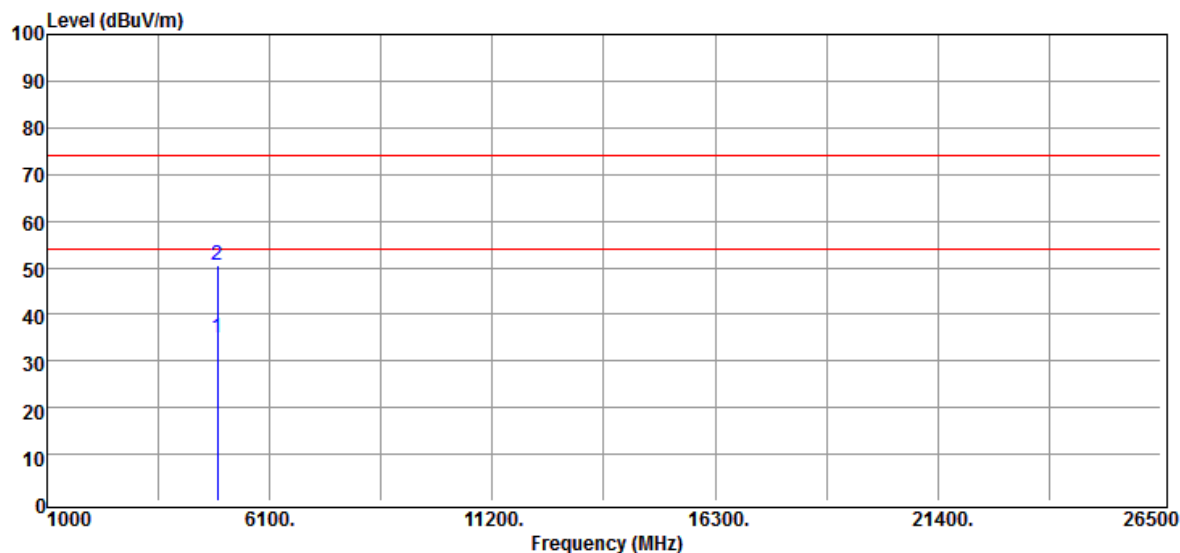
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Operation Mode :802.11n40
Test Mode :Tx CH High
EUT Pol :E1 Plan
Test Channel :2452 MHz

Test Date :2018-09-01
Temp./Humi. :25/60
Antenna Pol :VERTICAL
Engineer :Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dB μ V	dB	dB μ V/m	dB μ V/m	dB
4904.00	Average	34.01	0.84	34.85	54.00	-19.15
4904.00	Peak	49.63	0.84	50.47	74.00	-23.53

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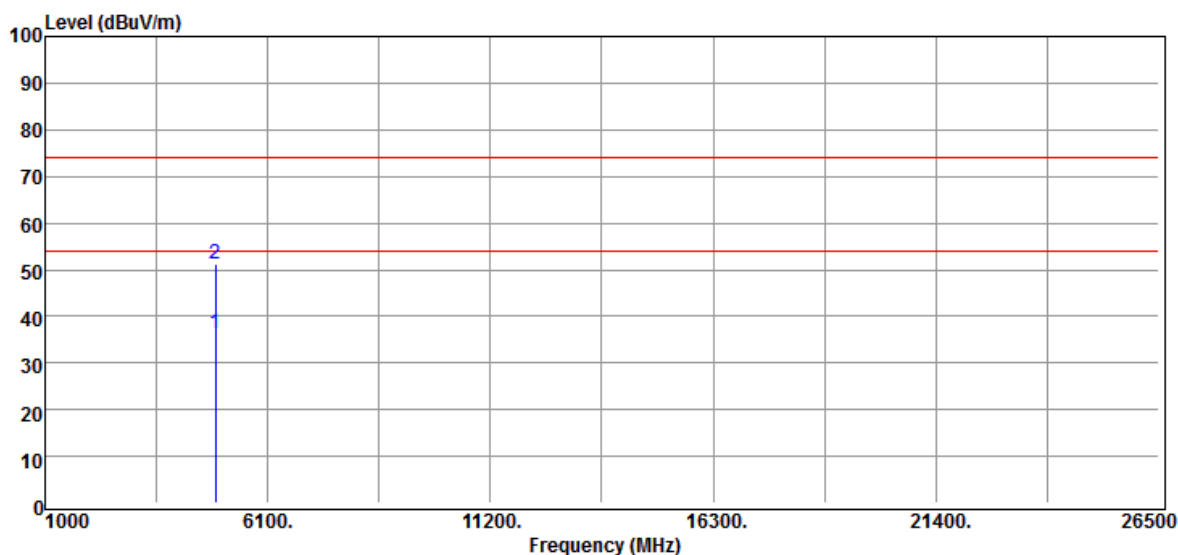
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Operation Mode	:802.11n40	Test Date	:2018-09-01
Test Mode	:Tx CH High	Temp./Humi.	:25/60
EUT Pol	:E1 Plan	Antenna Pol.	:HORIZONTAL
Test Channel	:2452 MHz	Engineer	:Jerry



Freq.	Detector	Spectrum	Factor	Actual	Limit	Margin
MHz	Mode	Reading Level		FS	@3m	
	PK/QP/AV	dBμV	dB	dBμV/m	dBμV/m	dB
4904.00	Average	35.57	0.84	36.41	54.00	-17.59
4904.00	Peak	50.21	0.84	51.05	74.00	-22.95

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12 PEAK POWER SPECTRAL DENSITY

12.1 Standard Applicable

Per Part 15.247 (e)

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm 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. The same method of determining the conducted output power shall be used to determine the power spectral density.

The antenna gain is not greater than 6 dBi. Therefore, reduction of power is not required.

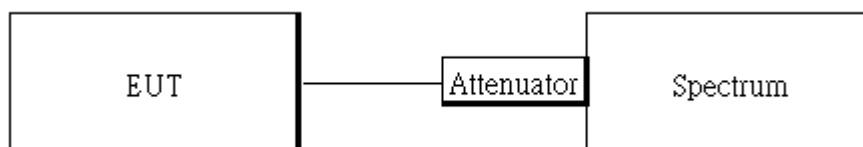
Per RSS-247 section 5.4 d

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1 W. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

12.2 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	N9010A	MY53400256	2017/10/30	2018/10/29
Attenuator	Marvelous	MVE2213-10	RF30	2017/12/26	2018/12/25
DC Block	PASTERNAK	PE8210	RF29	2017/12/26	2018/12/25

12.3 Test Set-up



12.4 Measurement Procedure

1. Set analyzer center frequency to DTS channel center frequency.
2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
3. Set the span to 1.5 times the DTS channel bandwidth.
4. Set the RBW = 3 kHz & VBW = 10 kHz.

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5. For defining Restricted Band Edge Limit:
Set the RBW = 100kHz & VBW = 300 kHz
6. Detector = peak.
7. Sweep time = auto couple.
8. Trace mode = max hold.
9. Allow trace to fully stabilize.
10. Use the peak marker function to determine the maximum amplitude level.

12.5 Measurement Result

POWER DENSITY 802.11b				POWER DENSITY 802.11g			
Freq. (MHz)	PPSD (dBm)	Limit (dBm)	Result	Freq. (MHz)	PPSD (dBm)	Limit (dBm)	Result
2412	-16.87	8.00	PASS	2412	-15.88	8.00	PASS
2437	-18.57	8.00	PASS	2437	-17.23	8.00	PASS
2462	-16.11	8.00	PASS	2462	-16.85	8.00	PASS

POWER DENSITY 802.11n HT20				POWER DENSITY 802.11n HT40			
Freq. (MHz)	PPSD (dBm)	Limit (dBm)	Result	Freq. (MHz)	PPSD (dBm)	Limit (dBm)	Result
2412	-15.53	8.00	PASS	2422	-16.47	8.00	PASS
2437	-20.68	8.00	PASS	2437	-18.24	8.00	PASS
2462	-16.39	8.00	PASS	2452	-18.55	8.00	PASS

offset 10.80 dB for SISO mode

*Refer to next page for plots

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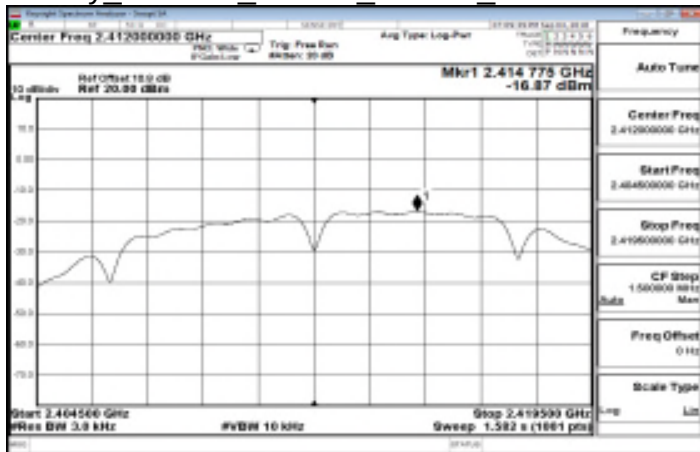
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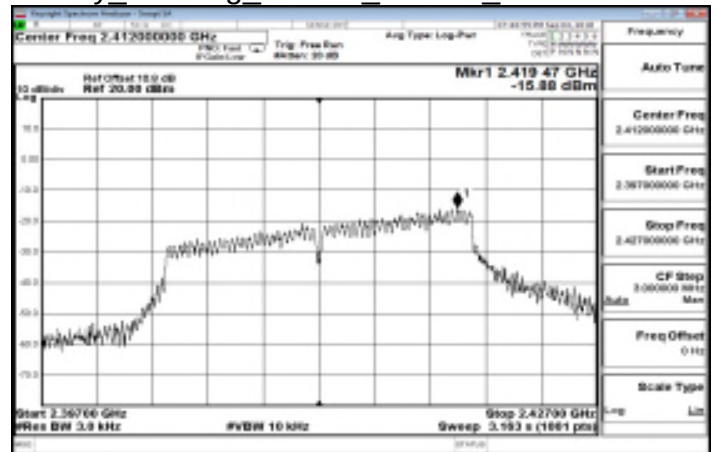
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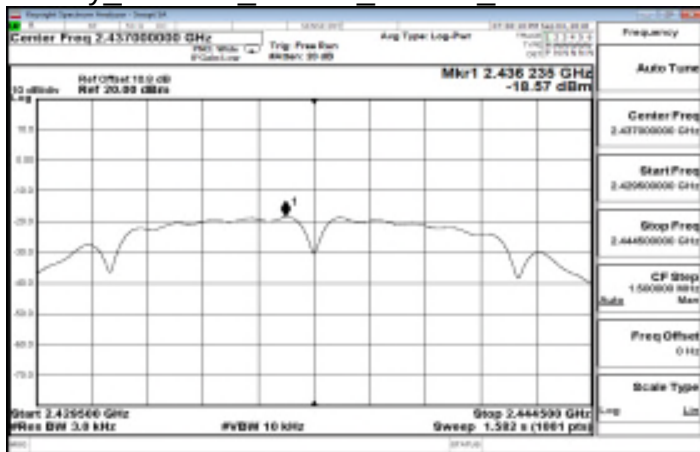
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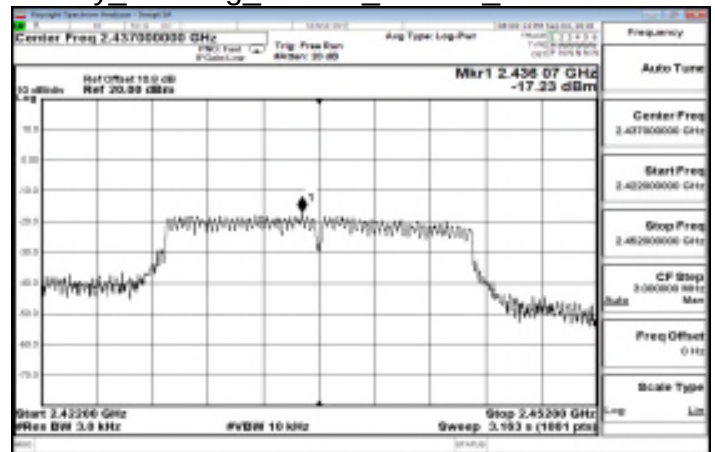
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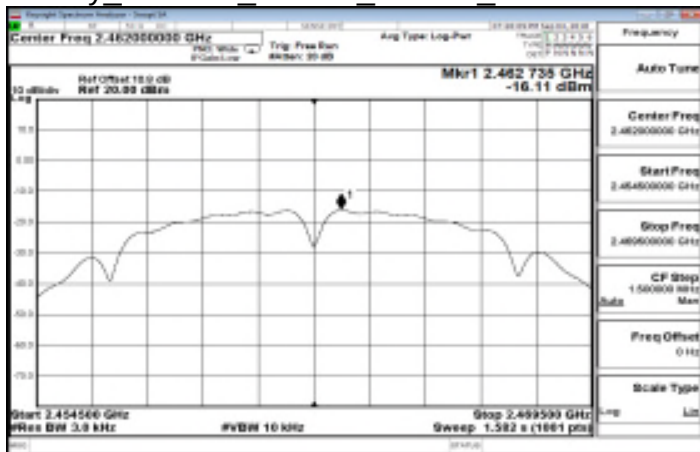
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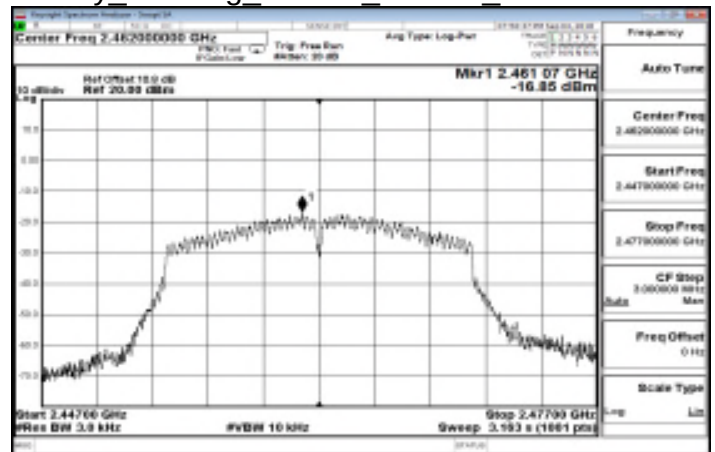
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Power Density 802.11b 20MHz Chain0 2462MHz



Power Density 802.11g 20MHz Chain0 2462MHz



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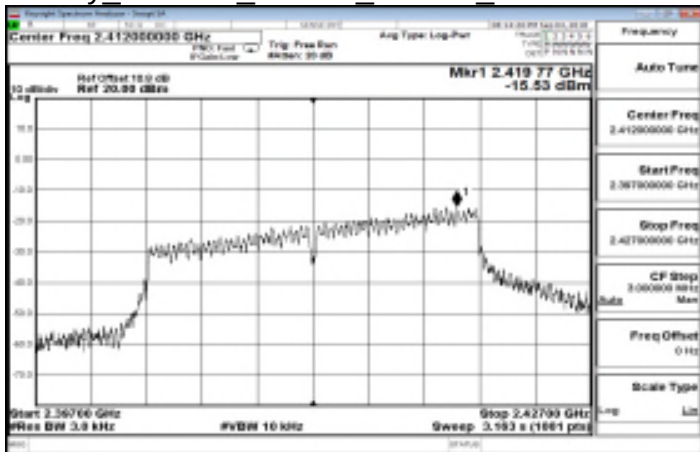
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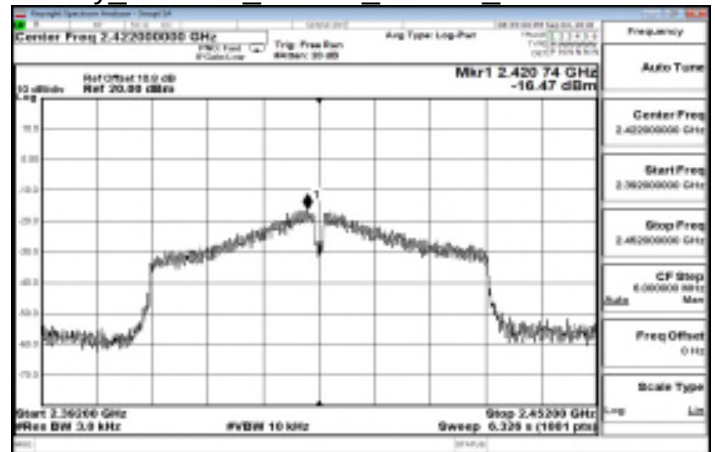
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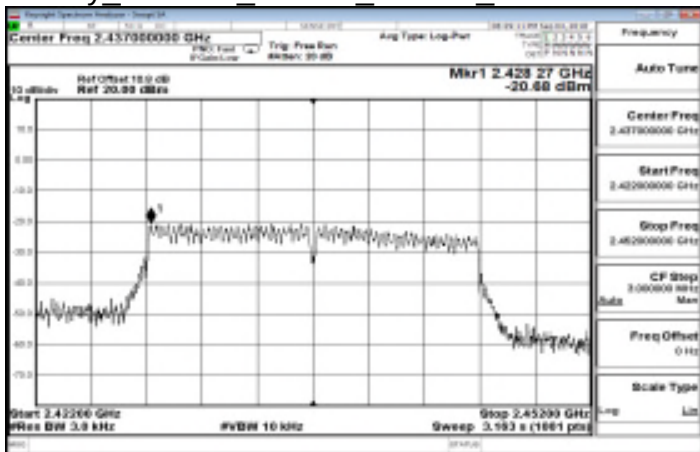
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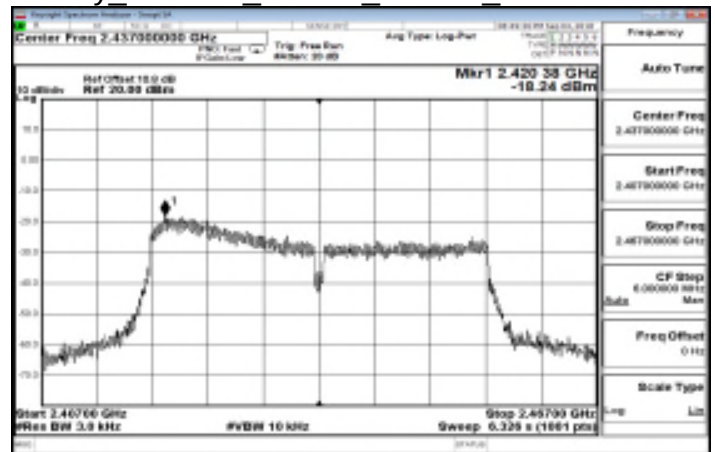
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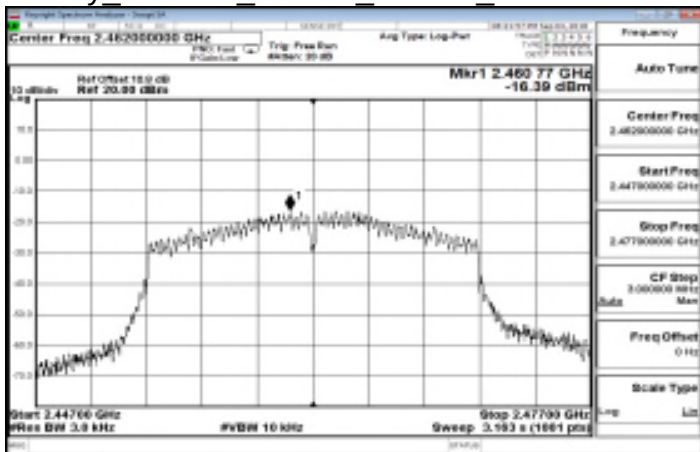
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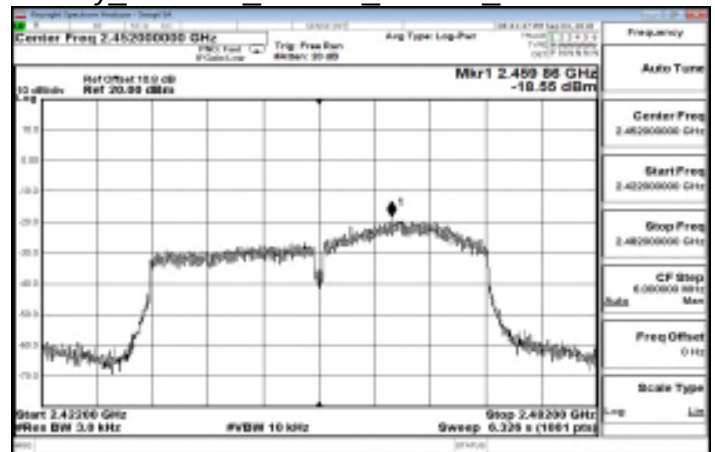
Power Density 802.11n 40MHz Chain0 2437MHz



Power Density 802.11n 20MHz Chain0 2462MHz



Power Density 802.11n 40MHz Chain0 2452MHz



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13 ANTENNA REQUIREMENT

13.1 Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.

If the transmitting antenna is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

13.2 Antenna Connected Construction

The antenna is designed with unique RF connector and no consideration of replacement. Please see EUT photo for details.

~ End of Report ~

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