FCC PART 15.247

TEST REPORT

For

SZ DJI TECHNOLOGY CO., LTD

14th floor, West Wing, Skyworth Semiconductor Design Building NO.18 Gaoxin South 4th Ave, Nanshan, Shenzhen, Guangdong, China

FCC ID: SS3-HG3101508

Report Type:	Product Type:
Original Report	OSMO

Test Engineer:	Allen Qiao
Report Number:	RDG150818003-00A
Report Date:	2015-08-31
Reviewed By:	Jerry Zhang EMC Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *SZ DJI TECHNOLOGY CO., LTD*'s product, model number: *OM160 (FCC ID: SS3-HG3101508)* (the "EUT") in this report was a *OSMO,* which was measured approximately: 5.3 cm (L) x 4.4 cm (W) x 16.1 cm (H), rated input voltage: DC 11.1V from Li-ion battery.

** All measurement and test data in this report was gathered from production sample serial number: 150818003 (Assigned by BACL, Dongguan). The EUT was received on 2015-08-18.*

Objective

This report is prepared on behalf of *SZ DJI TECHNOLOGY CO., LTD* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and C of the Federal Communications Commission's rules.

The tests were performed in order to determine the compliance of the EUT with FCC Part 15-Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

FCC NII submissions with FCC ID: SS3-HG3101508.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode, which was provided by the manufacturer.
For 2.4G band, 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

For 802.11g, and 802.11n20 modes were tested with Channel 1, 6 and 11.
For 802.11n40 mode were tested with Channel 3, 6 and 9.

The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all date rates bandwidths, and modulations.

EUT Exercise Software

The software "IPOP" was used in testing, which was provided by manufacturer. The worst condition (maximum power with 100% duty cycle) was setting by the software as following table:

Test Mode	Test Software Version	IPOP		
802.11g	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	(OFDM)6Mbps	(OFDM)6Mbps	(OFDM)6Mbps
	Power Level Setting	13	14	11
802.11n ht20	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	(HT Mixmode)MCS0	(HT Mixmode)MCS0	(HT Mixmode)MCS0
	Power Level Setting	13	14	11
802.11n ht40	Test Frequency	2422MHz	2437MHz	2452MHz
	Data Rate	(HT Mixmode)MCS0	(HT Mixmode)MCS0	(HT Mixmode)MCS0
	Power Level Setting	13	12	10

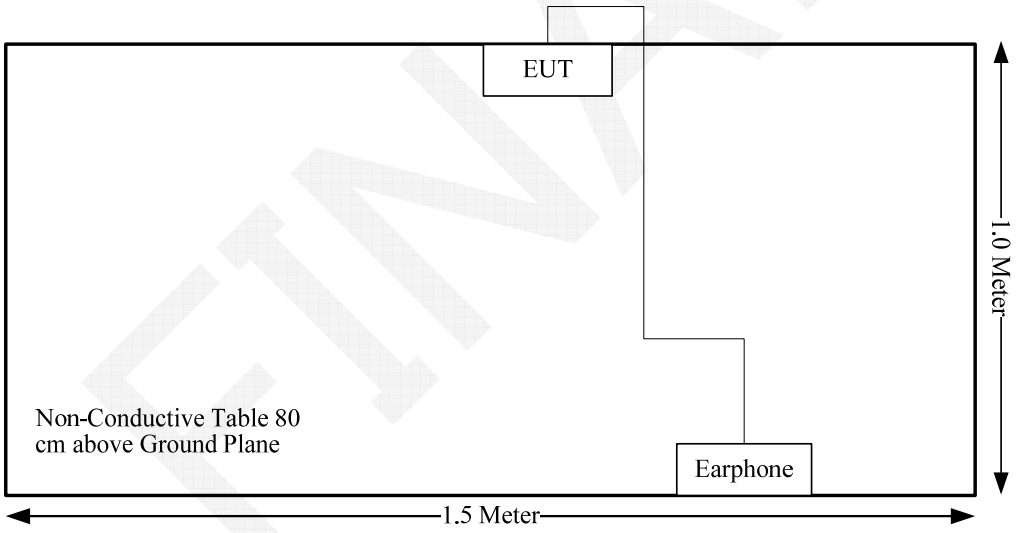
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Meizu	Earphone	EP-21HD	N/A
DJI	OSMO	OM160	N/A

External I/O Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Earphone	No	No	1.5	EUT	/

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	AC Line Conducted Emissions	Not Applicable
§15.247(d)	Spurious Emissions at Antenna Port	Compliance
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB Emission Bandwidth	Compliance
§15.247(b)(3)	Maximum Peak Output Power	Compliance
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance
§15.247(e)	Power Spectral Density	Compliance

FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

According to§15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB447498 D01 General RF Exposure Guidance v05r02:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Measurement Result

The maximum output power= 7.6 dBm (5.75mW) at 2412 MHz
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
= 5.75/5*(√2.412) = 1.79 < 3.0

So the stand-alone SAR evaluation is not necessary.

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.

Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Connector Construction

The EUT have one internal antenna and the gain is 2.28 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 2, then:
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If U_{lab} is greater than U_{cispr} of Table 2, then:
- compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
- non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

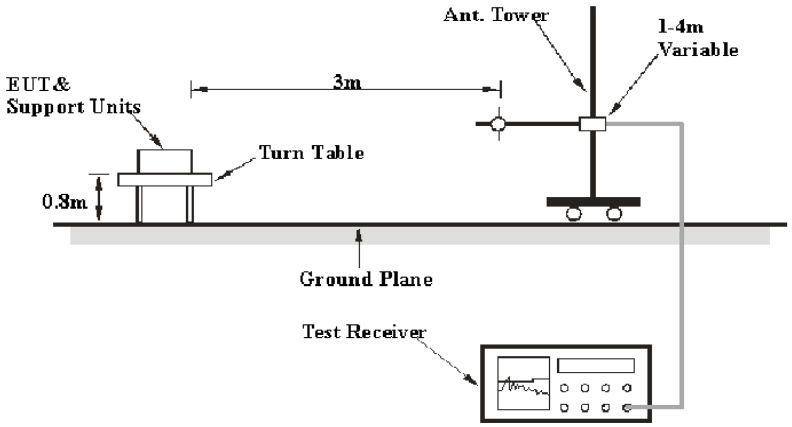
Based on CISPR 16-4-2-2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:
30M~200MHz: 5.0 dB
200M~1GHz: 6.2 dB
1G~6GHz: 4.45 dB
6G~18GHz: 5.23 dB

Table 2 – Values of U_{cispr}

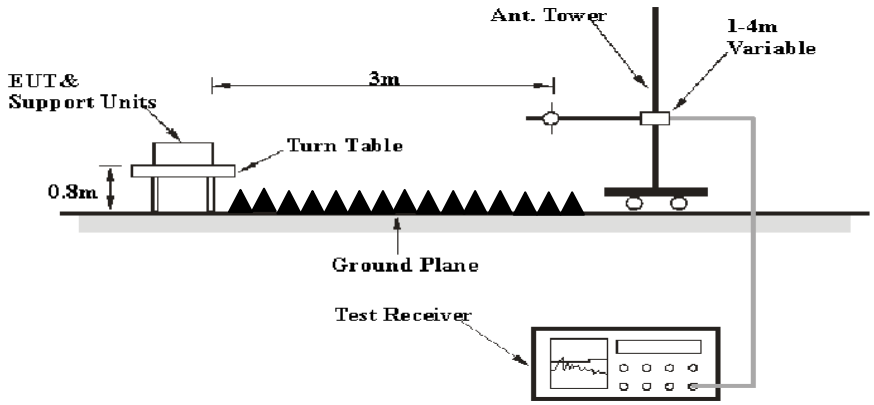
Measurement	U_{cispr}
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC 15.209, and FCC 15.247 limits.

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

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30MHz – 1000 MHz	120 kHz	300 kHz	120kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

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

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-05-09	2016-05-09
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2014-09-01	2015-09-01
N/A	Coaxial Cable	14m	N/A	2015-05-06	2016-05-06
N/A	Coaxial Cable	8m	N/A	2015-05-06	2016-05-06
Mini-circuits	High Pass Filter	VHF-3100+	31251	2015-05-06	2016-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06
Agilent	Spectrum Analyzer	E4440A	SG43360054	2014-12-04	2015-12-04
ETS-Lindgren	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2015-02-19	2016-02-19
R&S	Spectrum Analyzer	FSEM	831259/019	2015-05-09	2016-05-09
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2014-09-06	2015-09-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Section 15.205, 15.209 and 15.247, with the worst margin reading of:

2.1 dB at **2483.5 MHz** in the **Vertical** polarization for 802.11n 40 Mode

Test Data

Environmental Conditions

Temperature:	27.4°C
Relative Humidity:	57 %
ATM Pressure:	100 kPa

The testing was performed by Allen Qiao on 2015-08-28.

Mode: Transmitting

802.11g Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2412 MHz									
2412	60.24	PK	H	25.67	3.68	0.00	89.59	N/A	N/A
2412	51.52	AV	H	25.67	3.68	0.00	80.87	N/A	N/A
2412	63.35	PK	V	25.67	3.68	0.00	92.70	N/A	N/A
2412	53.99	AV	V	25.67	3.68	0.00	83.34	N/A	N/A
2390	27.69	PK	V	25.61	3.63	0.00	56.93	74.00	17.07
2390	14.63	AV	V	25.61	3.63	0.00	43.87	54.00	10.13
4824	49.35	PK	V	30.64	5.03	27.41	57.61	74.00	16.39
4824	37.01	AV	V	30.64	5.03	27.41	45.27	54.00	8.73
7236	30.58	PK	V	34.17	6.65	25.90	45.50	74.00	28.50
7236	18.33	AV	V	34.17	6.65	25.90	33.25	54.00	20.75
9648	30.21	PK	V	36.06	8.55	27.46	47.36	74.00	26.64
9648	18.02	AV	V	36.06	8.55	27.46	35.17	54.00	18.83
3214	35.28	PK	V	27.88	6.14	27.36	41.94	74.00	32.06
3214	22.56	AV	V	27.88	6.14	27.36	29.22	54.00	24.78
491.72	41.6	QP	V	18.08	2.70	22.00	40.38	46.00	5.62
Middle Channel: 2437 MHz									
2437	60.95	PK	H	25.74	3.75	0.00	90.44	N/A	N/A
2437	51.05	AV	H	25.74	3.75	0.00	80.54	N/A	N/A
2437	62.63	PK	V	25.74	3.75	0.00	92.12	N/A	N/A
2437	52.71	AV	V	25.74	3.75	0.00	82.20	N/A	N/A
4874	49.03	PK	V	30.77	5.14	27.42	57.52	74.00	16.48
4874	36.85	AV	V	30.77	5.14	27.42	45.34	54.00	8.66
7311	30.3	PK	V	34.35	6.74	25.88	45.51	74.00	28.49
7311	17.68	AV	V	34.35	6.74	25.88	32.89	54.00	21.11
9748	29.68	PK	V	36.30	8.61	27.24	47.35	74.00	26.65
9748	17.35	AV	V	36.30	8.61	27.24	35.02	54.00	18.98
2950	34.81	PK	V	27.07	6.61	27.54	40.95	74.00	33.05
2950	21.96	AV	V	27.07	6.61	27.54	28.10	54.00	25.90
3250	35.62	PK	V	28.00	6.31	27.33	42.60	74.00	31.40
3250	22.75	AV	V	28.00	6.31	27.33	29.73	54.00	24.27
491.72	41.2	QP	V	18.08	2.70	22.00	39.98	46.00	6.02
High Channel: 2462 MHz									
2462	60.03	PK	H	25.80	3.75	0.00	89.58	N/A	N/A
2462	52.21	AV	H	25.80	3.75	0.00	81.76	N/A	N/A
2462	62.88	PK	V	25.80	3.75	0.00	92.43	N/A	N/A
2462	53.74	AV	V	25.80	3.75	0.00	83.29	N/A	N/A
2483.5	27.34	PK	V	25.86	3.67	0.00	56.87	74.00	17.13
2483.5	14.31	AV	V	25.86	3.67	0.00	43.84	54.00	10.16
4924	51.56	PK	V	30.90	5.34	27.43	60.37	74.00	13.63
4924	38.95	AV	V	30.90	5.34	27.43	47.76	54.00	6.24
7386	30.42	PK	V	34.53	6.83	25.86	45.92	74.00	28.08
7386	18.03	AV	V	34.53	6.83	25.86	33.53	54.00	20.47
9848	30.14	PK	V	36.54	8.66	26.94	48.40	74.00	25.60
9848	17.79	AV	V	36.54	8.66	26.94	36.05	54.00	17.95
3731	35.12	PK	V	29.31	4.58	27.34	41.67	74.00	32.33
3731	22.34	AV	V	29.31	4.58	27.34	28.89	54.00	25.11
491.72	41.4	QP	V	18.08	2.70	22.00	40.18	46.00	5.82

802.11 n20 Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB/m)					
Low Channel: 2412 MHz									
2412	59.71	PK	H	25.67	3.68	0.00	89.06	N/A	N/A
2412	50.33	AV	H	25.67	3.68	0.00	79.68	N/A	N/A
2412	62.34	PK	V	25.67	3.68	0.00	91.69	N/A	N/A
2412	52.72	AV	V	25.67	3.68	0.00	82.07	N/A	N/A
2390	29.65	PK	V	25.61	3.63	0.00	58.89	74.00	15.11
2390	17.63	AV	V	25.61	3.63	0.00	46.87	54.00	7.13
4824	50.41	PK	V	30.64	5.03	27.41	58.67	74.00	15.33
4824	38.02	AV	V	30.64	5.03	27.41	46.28	54.00	7.72
7236	34.56	PK	V	34.17	6.65	25.90	49.48	74.00	24.52
7236	22.01	AV	V	34.17	6.65	25.90	36.93	54.00	17.07
9648	30.14	PK	V	36.06	8.55	27.46	47.29	74.00	26.71
9648	17.88	AV	V	36.06	8.55	27.46	35.03	54.00	18.97
3214	35.16	PK	V	27.88	6.14	27.36	41.82	74.00	32.18
3214	22.43	AV	V	27.88	6.14	27.36	29.09	54.00	24.91
491.72	41.7	QP	V	18.08	2.70	22.00	40.48	46.00	5.52
Middle Channel: 2437 MHz									
2437	59.84	PK	H	25.74	3.75	0.00	89.33	N/A	N/A
2437	50.46	AV	H	25.74	3.75	0.00	79.95	N/A	N/A
2437	62.33	PK	V	25.74	3.75	0.00	91.82	N/A	N/A
2437	52.89	AV	V	25.74	3.75	0.00	82.38	N/A	N/A
4874	51.63	PK	V	30.77	5.14	27.42	60.12	74.00	13.88
4874	39.12	AV	V	30.77	5.14	27.42	47.61	54.00	6.39
7311	31.59	PK	V	34.35	6.74	25.88	46.80	74.00	27.20
7311	18.72	AV	V	34.35	6.74	25.88	33.93	54.00	20.07
9748	30.04	PK	V	36.30	8.61	27.24	47.71	74.00	26.29
9748	17.63	AV	V	36.30	8.61	27.24	35.30	54.00	18.70
2950	34.41	PK	V	27.07	6.61	27.54	40.55	74.00	33.45
2950	21.59	AV	V	27.07	6.61	27.54	27.73	54.00	26.27
3250	35.32	PK	V	28.00	6.31	27.33	42.30	74.00	31.70
3250	22.51	AV	V	28.00	6.31	27.33	29.49	54.00	24.51
491.72	41.6	QP	V	18.08	2.70	22.00	40.38	46.00	5.62
High Channel: 2462 MHz									
2462	60.35	PK	H	25.80	3.75	0.00	89.90	N/A	N/A
2462	50.04	AV	H	25.80	3.75	0.00	79.59	N/A	N/A
2462	63.89	PK	V	25.80	3.75	0.00	93.44	N/A	N/A
2462	52.63	AV	V	25.80	3.75	0.00	82.18	N/A	N/A
2483.5	27.68	PK	V	25.86	3.67	0.00	57.21	74.00	16.79
2483.5	15.13	AV	V	25.86	3.67	0.00	44.66	54.00	9.34
4924	53.44	PK	V	30.90	5.34	27.43	62.25	74.00	11.75
4924	41.82	AV	V	30.90	5.34	27.43	50.63	54.00	3.37
7386	30.62	PK	V	34.53	6.83	25.86	46.12	74.00	27.88
7386	18.21	AV	V	34.53	6.83	25.86	33.71	54.00	20.29
9848	30.29	PK	V	36.54	8.66	26.94	48.55	74.00	25.45
9848	17.86	AV	V	36.54	8.66	26.94	36.12	54.00	17.88
3731	35.62	PK	V	29.31	4.58	27.34	42.17	74.00	31.83
3731	22.71	AV	V	29.31	4.58	27.34	29.26	54.00	24.74
491.72	41.3	QP	V	18.08	2.70	22.00	40.08	46.00	5.92

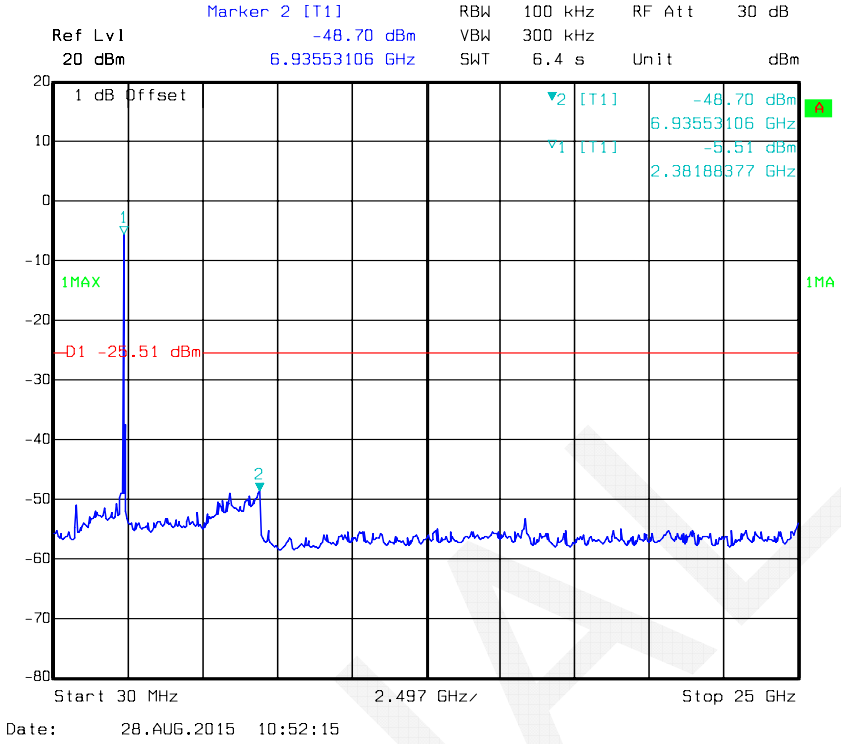
802.11 n40 Mode

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB/m)					
Low Channel: 2422 MHz									
2422	58.36	PK	H	25.70	3.71	0.00	87.77	N/A	N/A
2422	48.27	AV	H	25.70	3.71	0.00	77.68	N/A	N/A
2422	59.48	PK	V	25.70	3.71	0.00	88.89	N/A	N/A
2422	49.39	AV	V	25.70	3.71	0.00	78.80	N/A	N/A
2390	32.67	PK	V	25.61	3.63	0.00	61.91	74.00	12.09
2390	20.18	AV	V	25.61	3.63	0.00	49.42	54.00	4.58
4844	31.26	PK	V	30.69	4.99	27.42	39.52	74.00	34.48
4844	18.93	AV	V	30.69	4.99	27.42	27.19	54.00	26.81
7266	33.86	PK	V	34.24	6.68	25.89	48.89	74.00	25.11
7266	21.52	AV	V	34.24	6.68	25.89	36.55	54.00	17.45
9688	29.54	PK	V	36.15	8.58	27.37	46.90	74.00	27.10
9688	17.23	AV	V	36.15	8.58	27.37	34.59	54.00	19.41
3200	33.35	PK	V	27.84	6.08	27.37	39.90	74.00	34.10
3200	20.71	AV	V	27.84	6.08	27.37	27.26	54.00	26.74
491.72	41.3	QP	V	18.08	2.70	22.00	40.08	46.00	5.92
Middle Channel: 2437 MHz									
2437	58.25	PK	H	25.74	3.75	0.00	87.74	N/A	N/A
2437	48.13	AV	H	25.74	3.75	0.00	77.62	N/A	N/A
2437	59.14	PK	V	25.74	3.75	0.00	88.63	N/A	N/A
2437	49.22	AV	V	25.74	3.75	0.00	78.71	N/A	N/A
4874	30.69	PK	V	30.77	5.14	27.42	39.18	74.00	34.82
4874	18.78	AV	V	30.77	5.14	27.42	27.27	54.00	26.73
7311	31.52	PK	V	34.35	6.74	25.88	46.73	74.00	27.27
7311	19.04	AV	V	34.35	6.74	25.88	34.25	54.00	19.75
9748	29.15	PK	V	36.30	8.61	27.24	46.82	74.00	27.18
9748	17.03	AV	V	36.30	8.61	27.24	34.70	54.00	19.30
3200	33.12	PK	V	27.84	6.08	27.37	39.67	74.00	34.33
3200	20.58	AV	V	27.84	6.08	27.37	27.13	54.00	26.87
4001	32.36	PK	V	29.90	4.84	27.20	39.90	74.00	34.10
4001	20.14	AV	V	29.90	4.84	27.20	27.68	54.00	26.32
491.72	41.5	QP	V	18.08	2.70	22.00	40.28	46.00	5.72
High Channel: 2452 MHz									
2452	58.93	PK	H	25.78	3.78	0.00	88.49	N/A	N/A
2452	48.89	AV	H	25.78	3.78	0.00	78.45	N/A	N/A
2452	59.63	PK	V	25.78	3.78	0.00	89.19	N/A	N/A
2452	49.64	AV	V	25.78	3.78	0.00	79.20	N/A	N/A
2483.5	34.22	PK	V	25.86	3.67	0.00	63.75	74.00	10.25
2483.5	22.37	AV	V	25.86	3.67	0.00	51.90	54.00	2.10*
4904	31.13	PK	V	30.85	5.31	27.43	39.86	74.00	34.14
4904	18.58	AV	V	30.85	5.31	27.43	27.31	54.00	26.69
7356	32.56	PK	V	34.45	6.79	25.87	47.93	74.00	26.07
7356	20.19	AV	V	34.45	6.79	25.87	35.56	54.00	18.44
9808	29.68	PK	V	36.44	8.64	27.09	47.67	74.00	26.33
9808	17.25	AV	V	36.44	8.64	27.09	35.24	54.00	18.76
3200	33.41	PK	V	27.84	6.08	27.37	39.96	74.00	34.04
3200	20.87	AV	V	27.84	6.08	27.37	27.42	54.00	26.58
491.72	41.1	QP	V	18.08	2.70	22.00	39.88	46.00	6.12

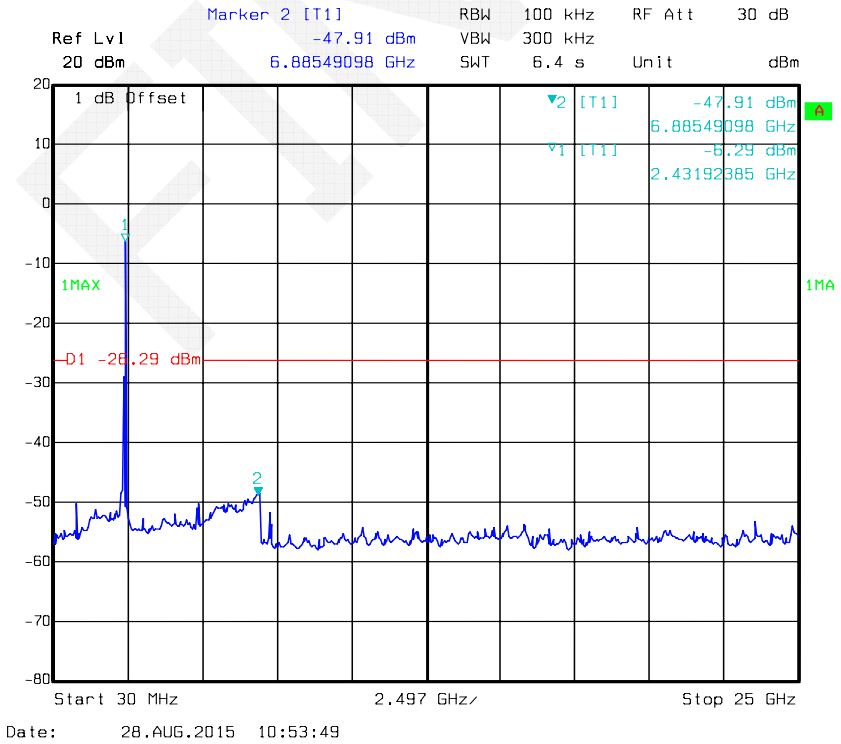
*Within measurement uncertainty!

Conducted Spurious Emissions at Antenna Port

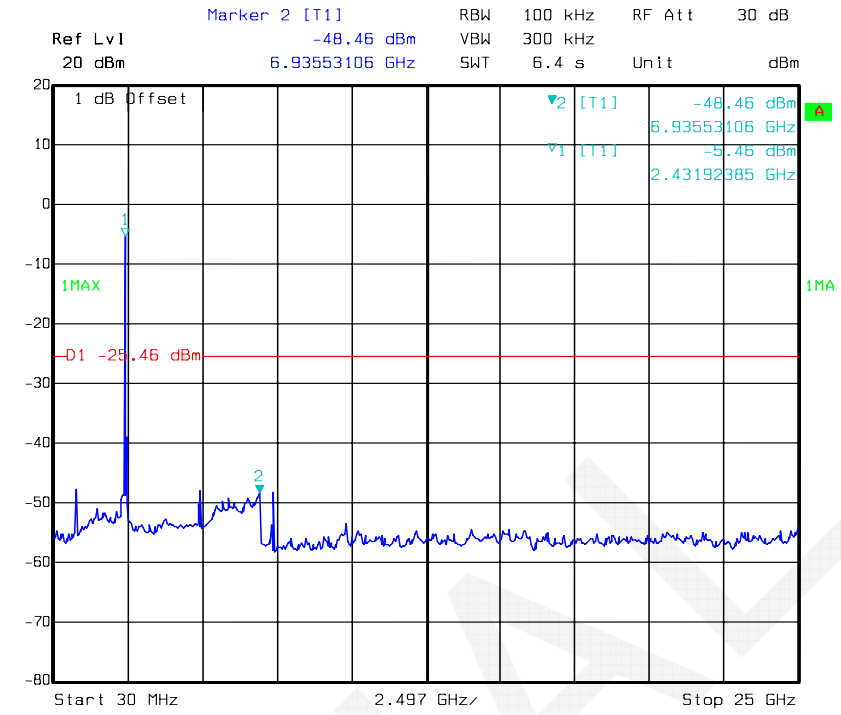
802.11g Low Channel



802.11g Middle Channel

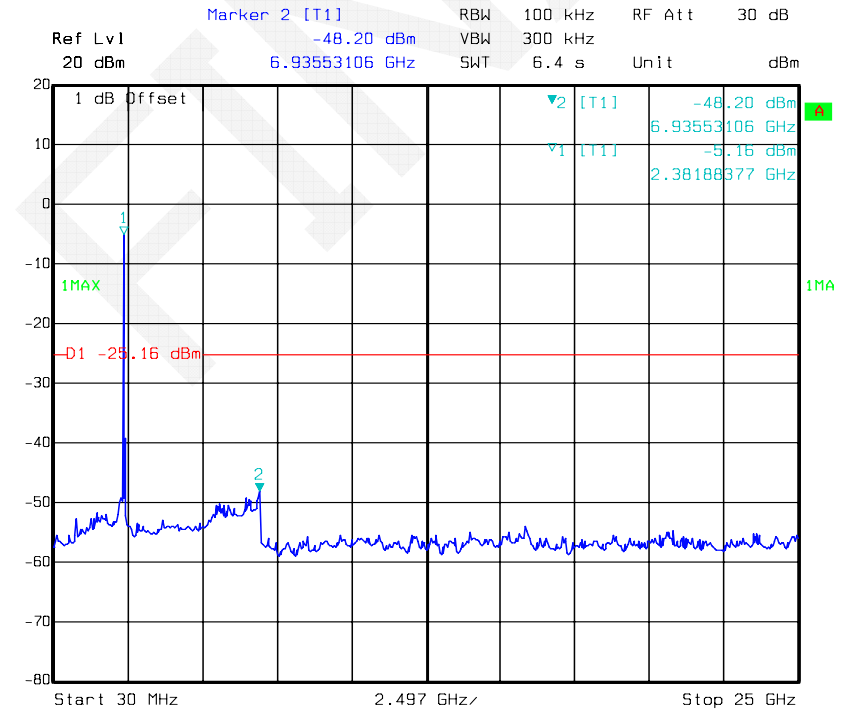


802.11g High Channel



Date: 28.AUG.2015 10:55:51

802.11n20 Low Channel



Date: 28.AUG.2015 10:49:37

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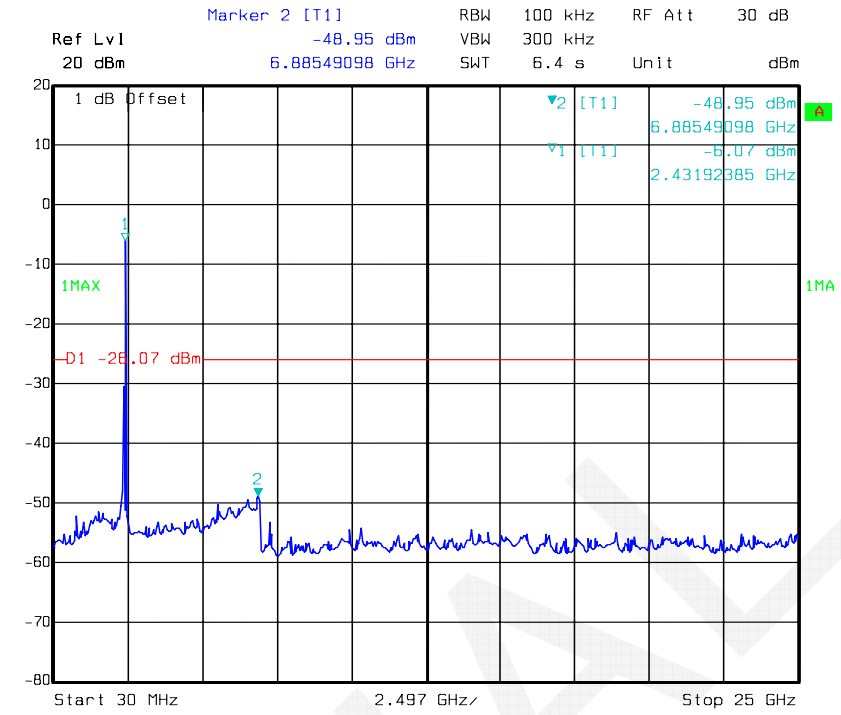
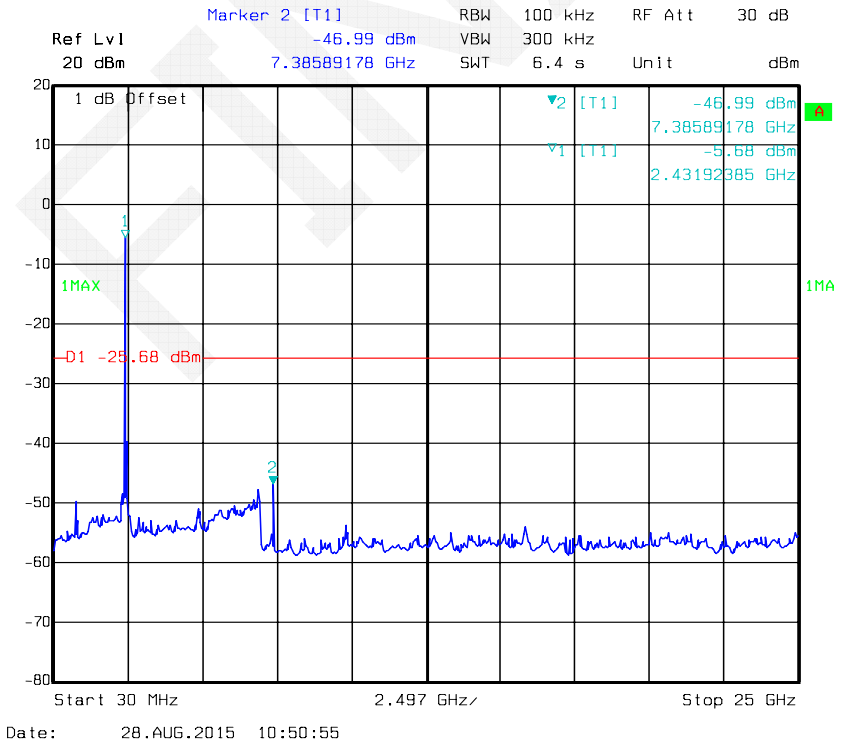
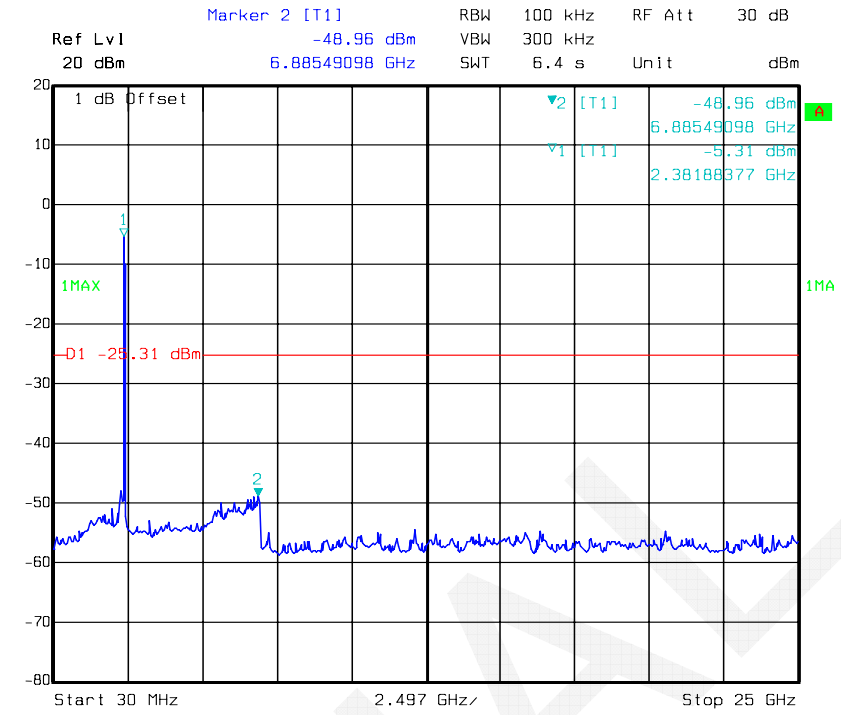


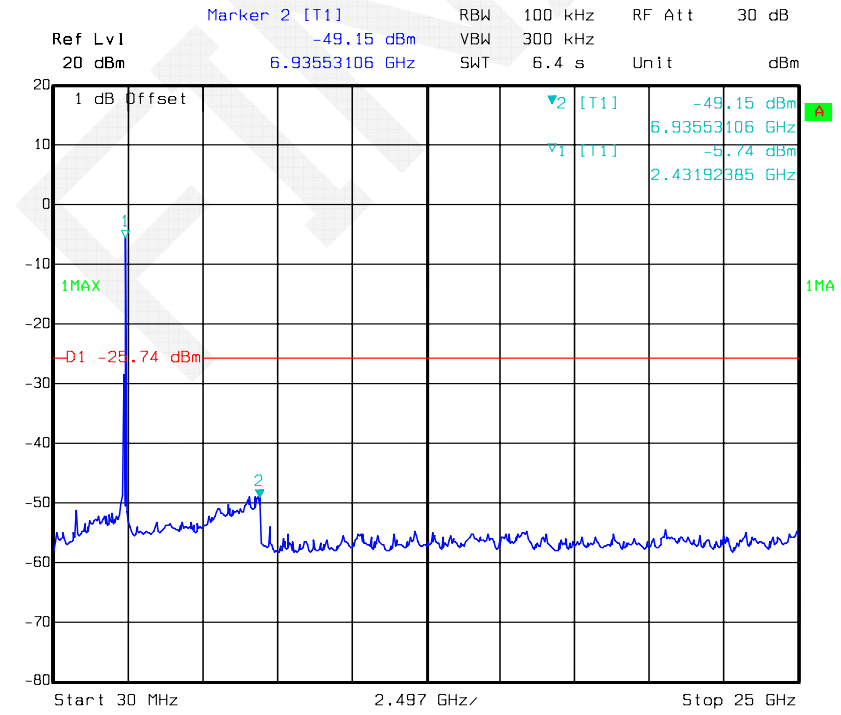
802.11n20 High Channel



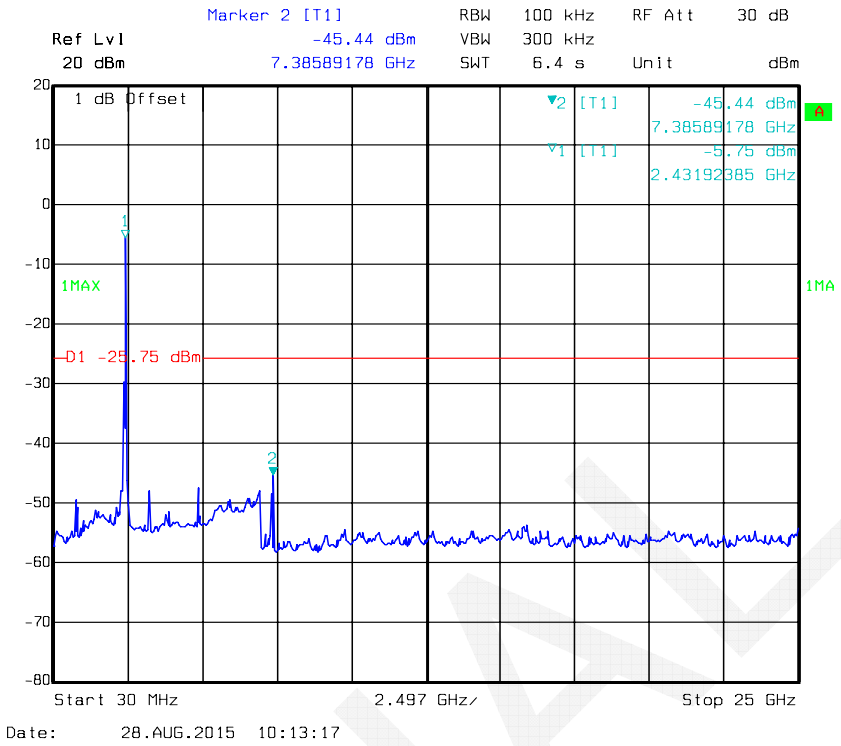
802.11n40 Low Channel



802.11n40 Middle Channel



802.11n40 High Channel



FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

Applicable Standard

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.

Test Procedure

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. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	27.1°C
Relative Humidity:	58 %
ATM Pressure:	100kPa

** The testing was performed by Allen Qiao on 2015-08-25.*

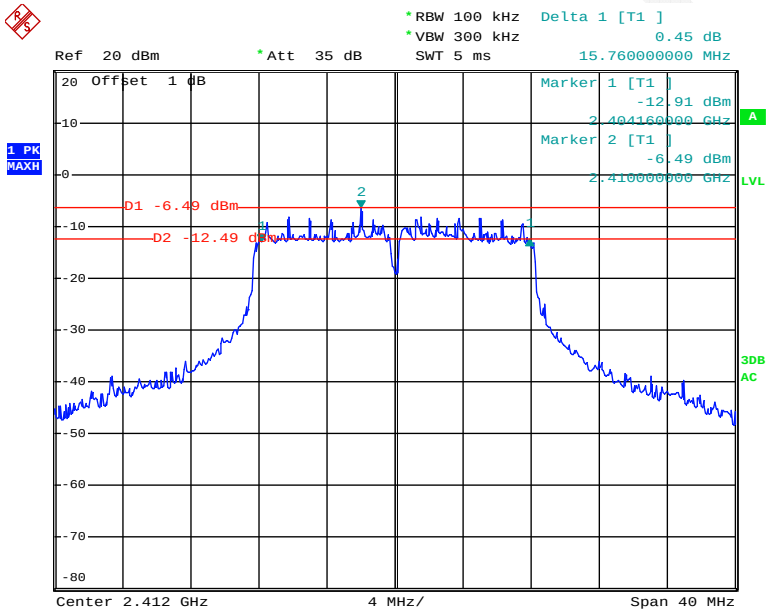
Test Result: Pass.

Please refer to the following tables and plots.

Test Mode: Transmitting

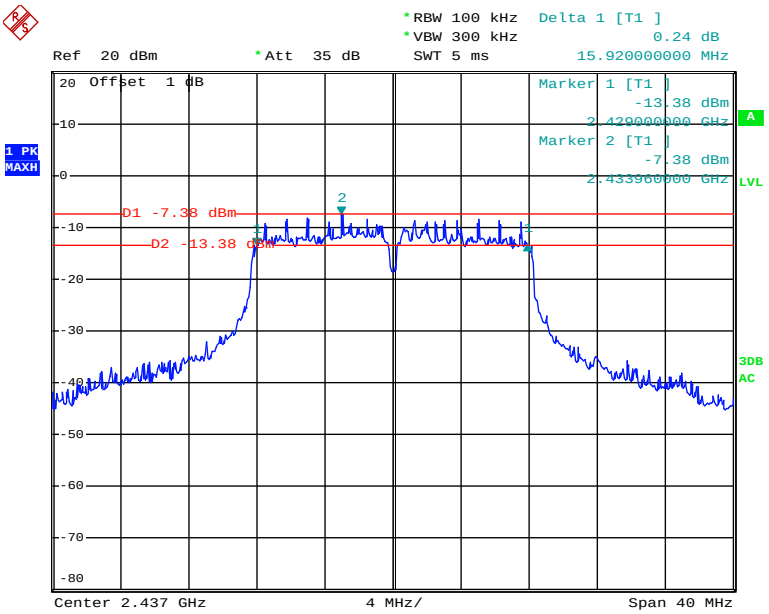
Mode	Channel	Frequency(MHz)	6 dB OBW(MHz)	Limit (MHz)
802.11 g	Low	2412	15.76	0.5
	Middle	2437	15.92	0.5
	High	2462	15.52	0.5
2.4G 802.11 n20	Low	2412	17.6	0.5
	Middle	2437	17.6	0.5
	High	2462	17.36	0.5
2.4G 802.11 n40	Low	2422	35.2	0.5
	Middle	2437	35.2	0.5
	High	2452	35.36	0.5

802.11g Low Channel



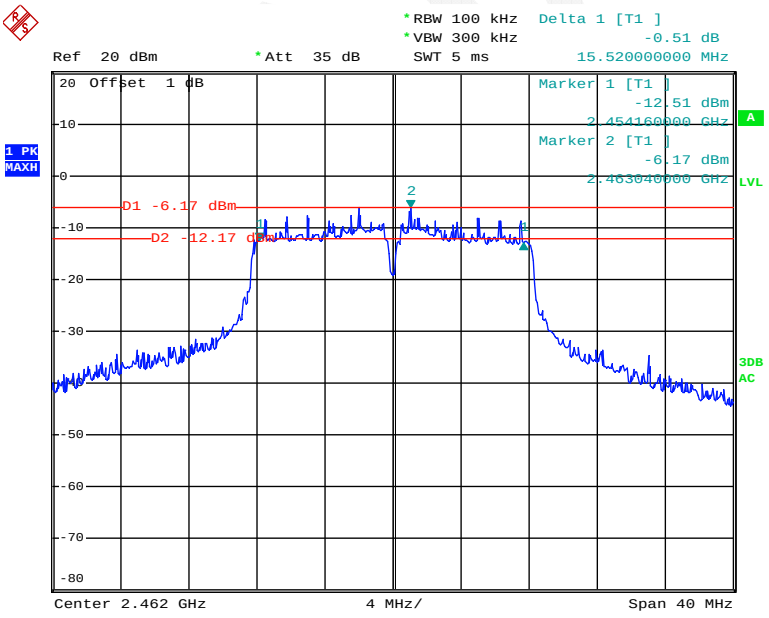
Date: 25.AUG.2015 19:58:07

802.11g Middle Channel



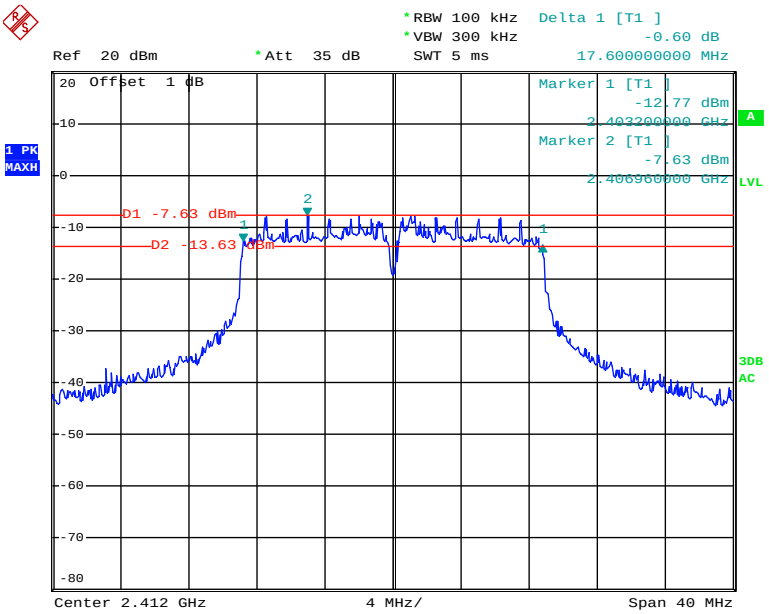
Date: 25.AUG.2015 20:04:46

802.11g High Channel



Date: 25.AUG.2015 20:08:00

802.11n20 Low Channel



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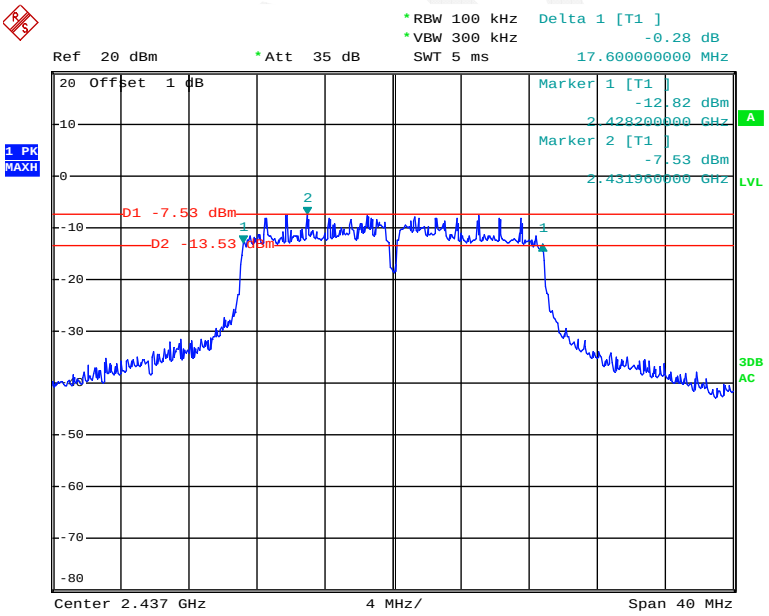
802.11n20 Middle Channel



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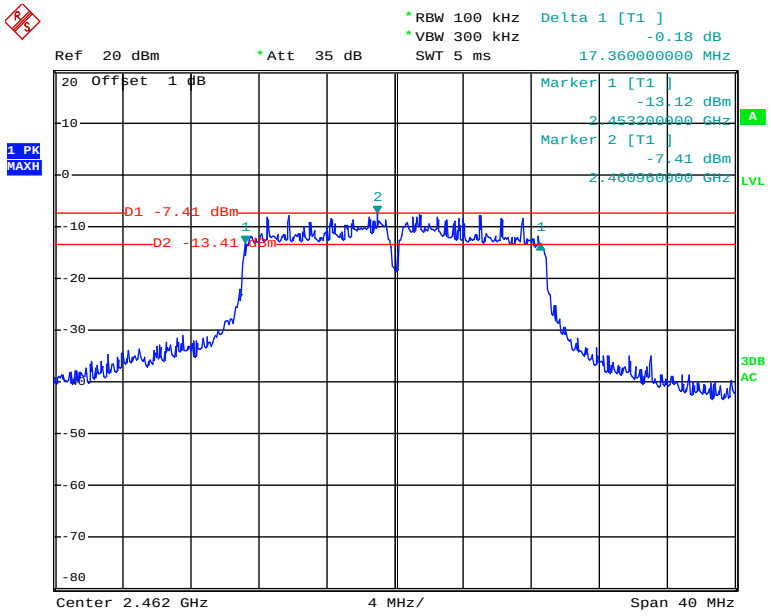
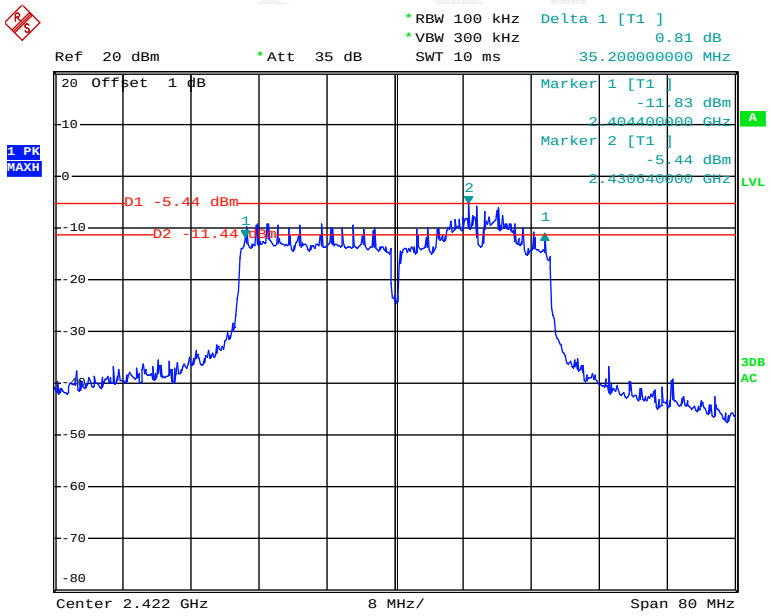
802.11n20 High Channel



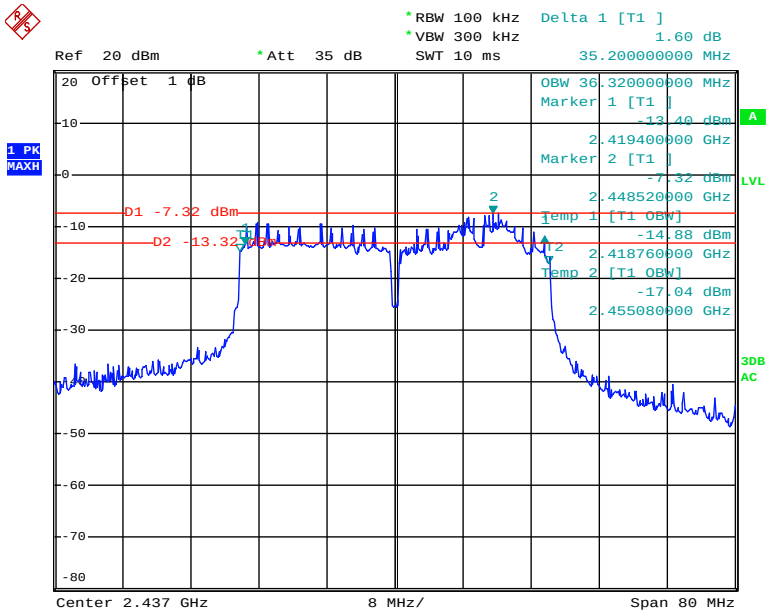
Date: 25.AUG.2015 20:12:14

802.11n40 Low Channel



Date: 25.AUG.2015 21:29:57

802.11n40 Middle Channel



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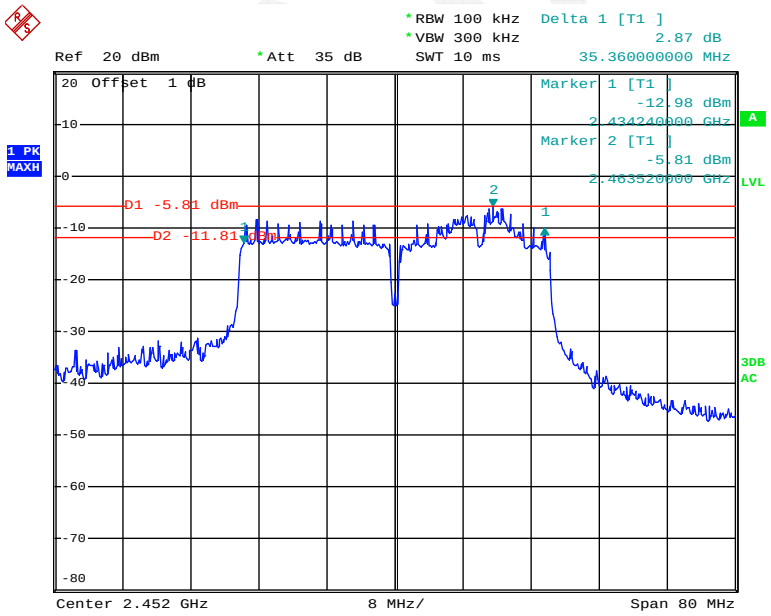
802.11n40 High Channel



Date: 25.AUG.2015 21:04:48

FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

1. According to KDB 558074 D01 DTS Meas Guidance v03r02, 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 a spectrum analyzer or power meter sensor and power meter.
3. Add a correction factor to the display.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Wideband Power Sensor	N1921A	MY54210016	2014-11-03	2015-11-03
Agilent	Wideband Power Sensor	N1921A	MY54170013	2014-11-03	2015-11-03
Agilent	P-Series Power Meter	N1912A	MY5000448	2014-11-03	2015-11-03

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	27.1°C
Relative Humidity:	58 %
ATM Pressure:	100kPa

** The testing was performed by Allen Qiao on 2015-08-25.*

Test Mode: Transmitting

Mode	Channel	Frequency(MHz)	Conducted Peak Output Power (dBm)	Limit (dBm)
802.11 g	Low	2412	10.92	30
	Middle	2437	10.64	30
	High	2462	11.07	30
802.11 n20	Low	2412	11.51	30
	Middle	2437	11.45	30
	High	2462	11.48	30
802.11 n40	Low	2422	12.98	30
	Middle	2437	12.83	30
	High	2452	13.44	30

Mode	Channel	Frequency(MHz)	Conducted Average Output Power (dBm)	Limit (dBm)
802.11 g	Low	2412	7	30
	Middle	2437	7.06	30
	High	2462	7.44	30
802.11 n20	Low	2412	7.6	30
	Middle	2437	7.53	30
	High	2462	7.43	30
802.11 n40	Low	2422	6.31	30
	Middle	2437	6.28	30
	High	2452	6.76	30

FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Procedure

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 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 RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

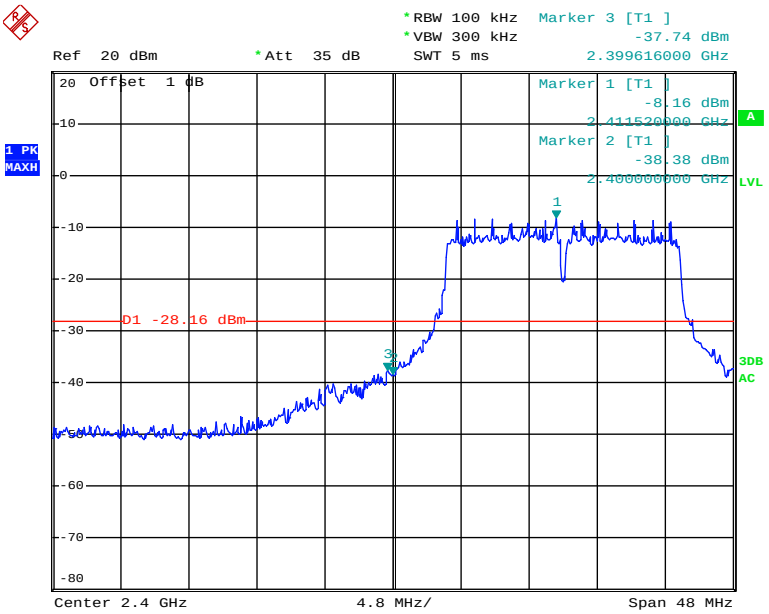
Environmental Conditions

Temperature:	27.1°C
Relative Humidity:	58 %
ATM Pressure:	100kPa

** The testing was performed by Allen Qiao on 2015-08-25.*

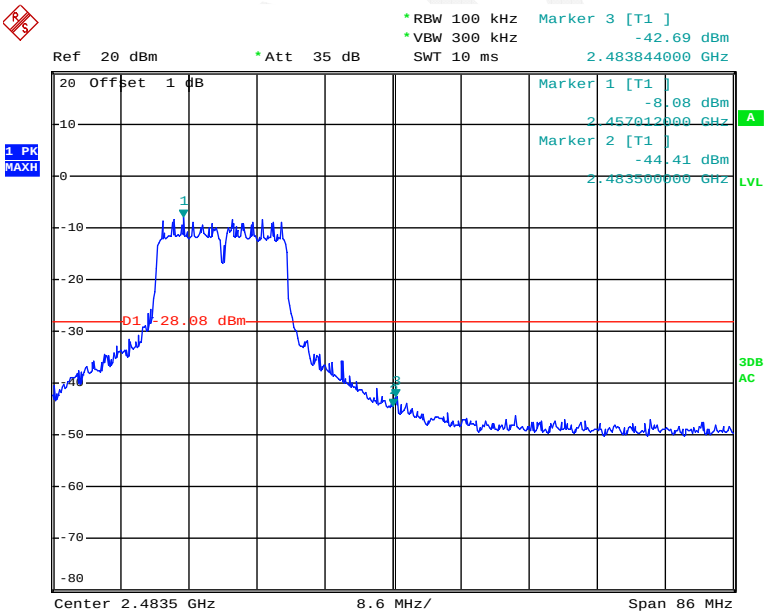
Test Result: *Compliance*
Please refer to following table and plots.

802.11g Band Edge, Left Side



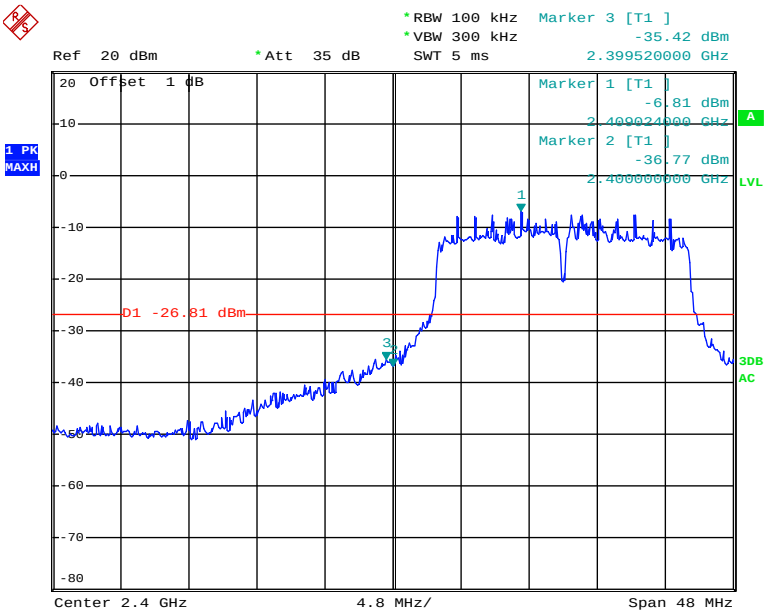
Date: 25.AUG.2015 19:59:50

802.11g Band Edge, Right Side



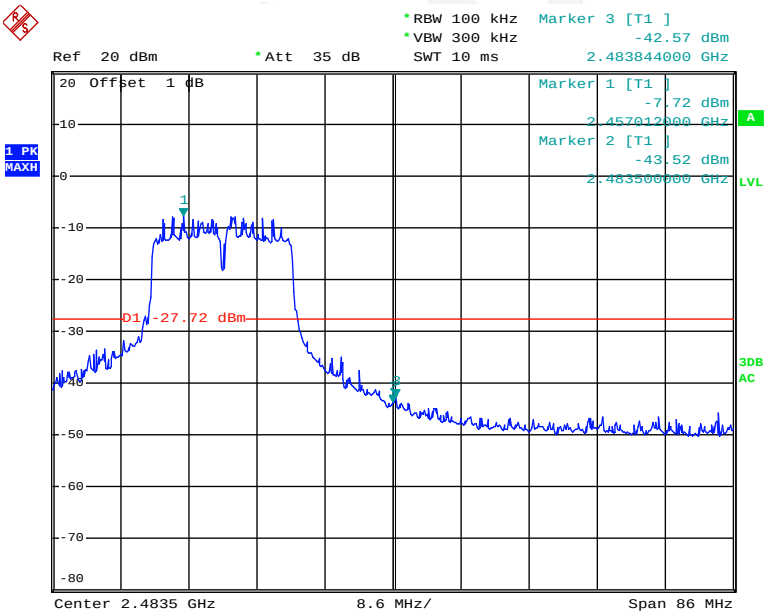
Date: 25.AUG.2015 20:09:49

802.11n20 Band Edge, Left Side



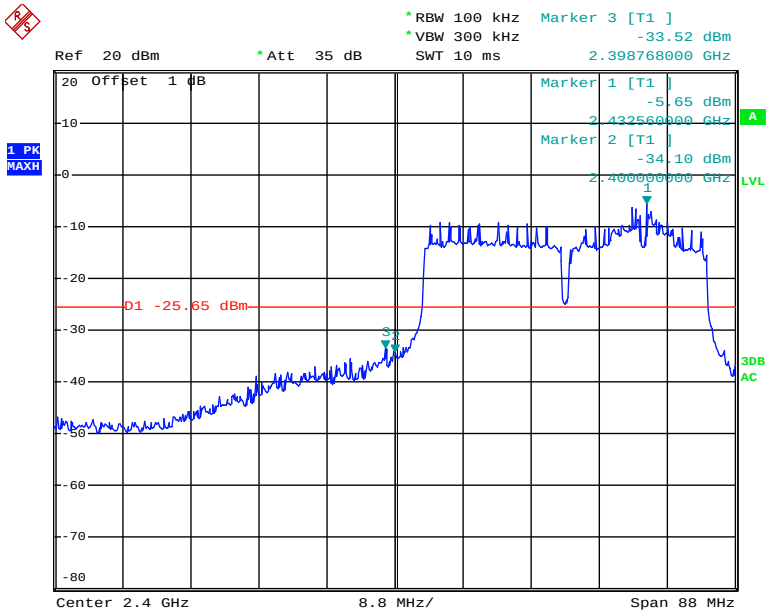
Date: 25.AUG.2015 20:22:28

802.11n20 Band Edge, Right Side



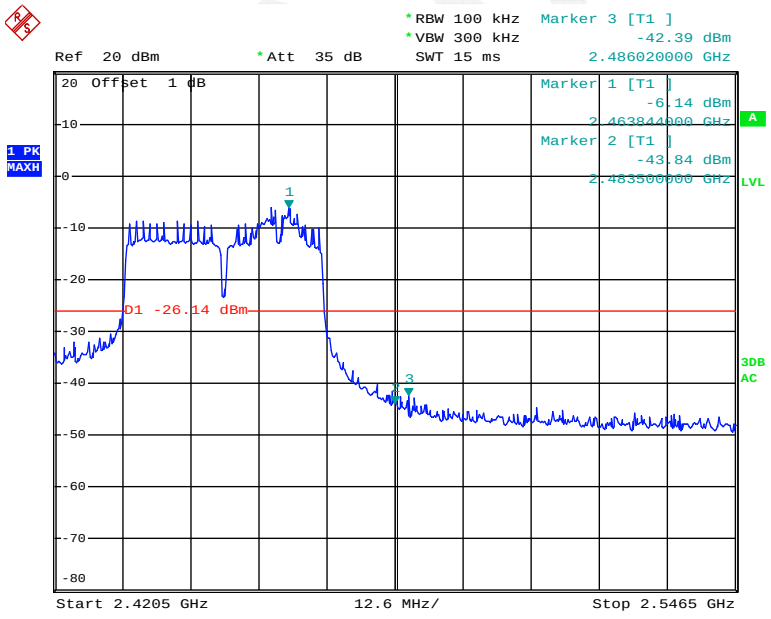
Date: 25.AUG.2015 20:14:04

802.11n40 Band Edge, Left Side



Date: 25.AUG.2015 21:31:55

802.11n40 Band Edge, Right Side



Date: 25.AUG.2015 21:07:03

FCC §15.247(e) - POWER SPECTRAL DENSITY

Applicable Standard

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. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Procedure

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 RBW = 3 kHz, VBW = 10 kHz, Set the span to 1.5 times the DTS bandwidth.
4. Use the peak marker function to determine the maximum amplitude level.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2015-05-06	2016-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	27.1°C
Relative Humidity:	58 %
ATM Pressure:	100kPa

** The testing was performed by Allen Qiao on 2015-08-25.*

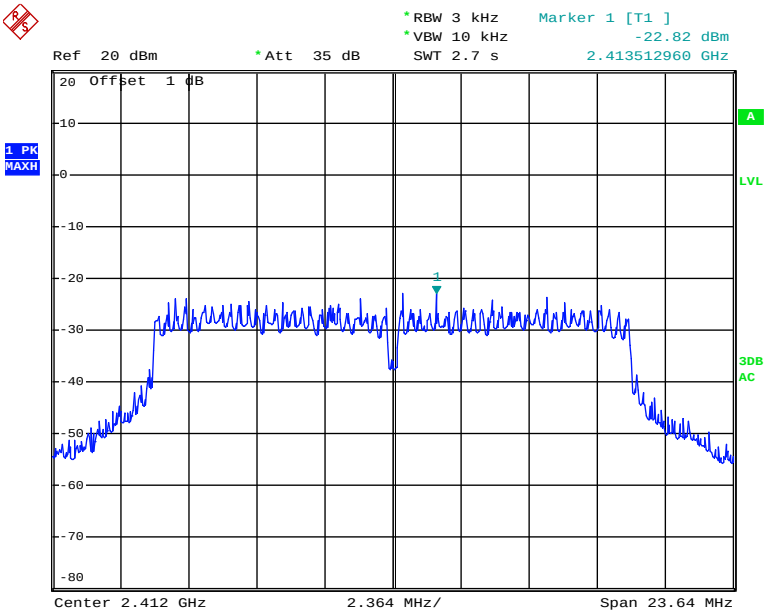
Test Mode: Transmitting

Test Result: Pass

Mode	Channel	Frequency (MHz)	Power Spectral Density(dBm/3kHz)	Limit (dBm/3kHz)
802.11 g	Low	2412	-22.82	8
	Middle	2437	-23.69	8
	High	2462	-22.86	8
802.11 n20	Low	2412	-23.15	8
	Middle	2437	-22.61	8
	High	2462	-22.2	8
802.11 n40	Low	2422	-23.22	8
	Middle	2437	-23.78	8
	High	2452	-22.24	8

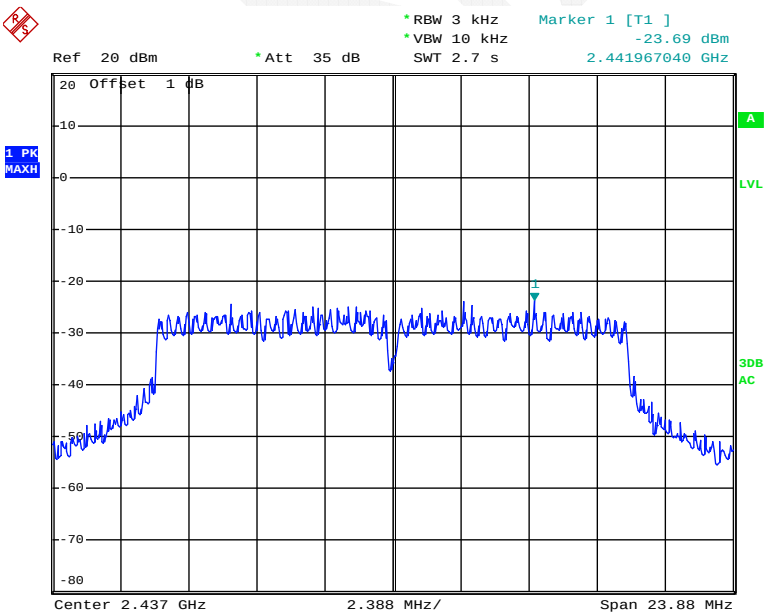
Please refer to the following plots

802.11g Low Channel



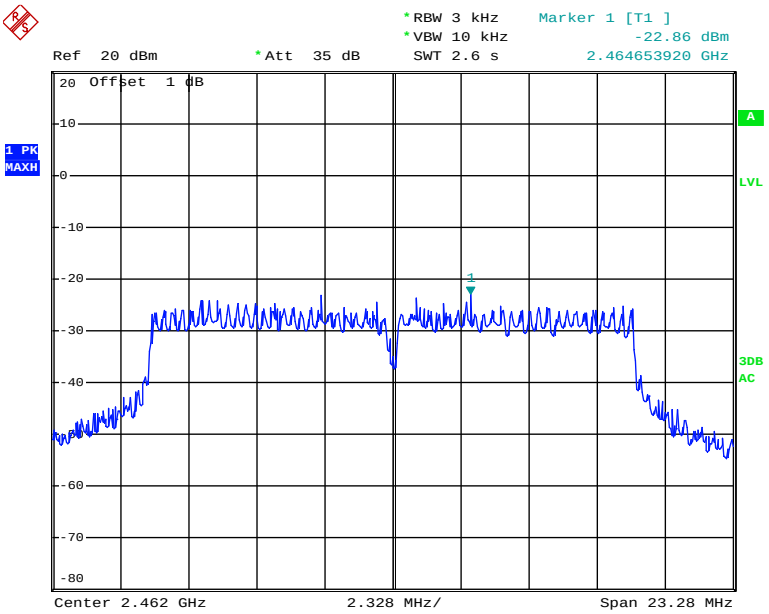
Date: 25.AUG.2015 19:59:30

802.11g Middle Channel



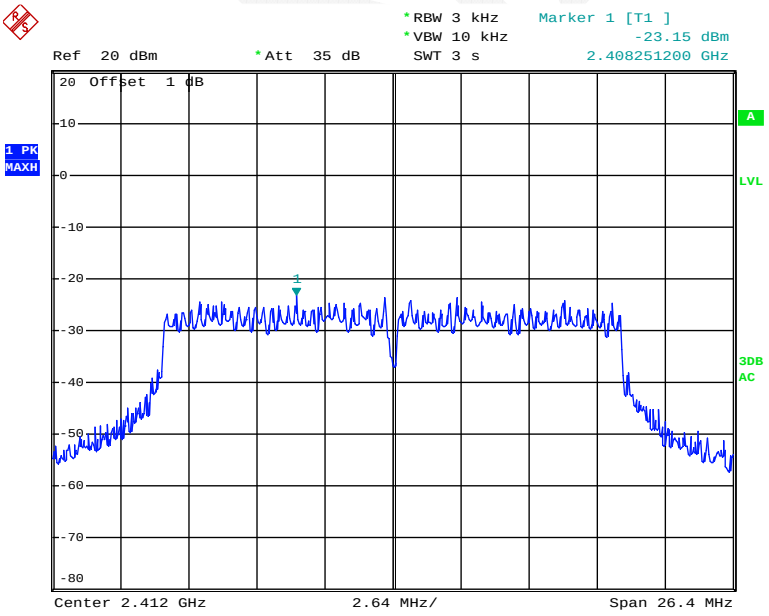
Date: 25.AUG.2015 20:06:05

802.11g High Channel



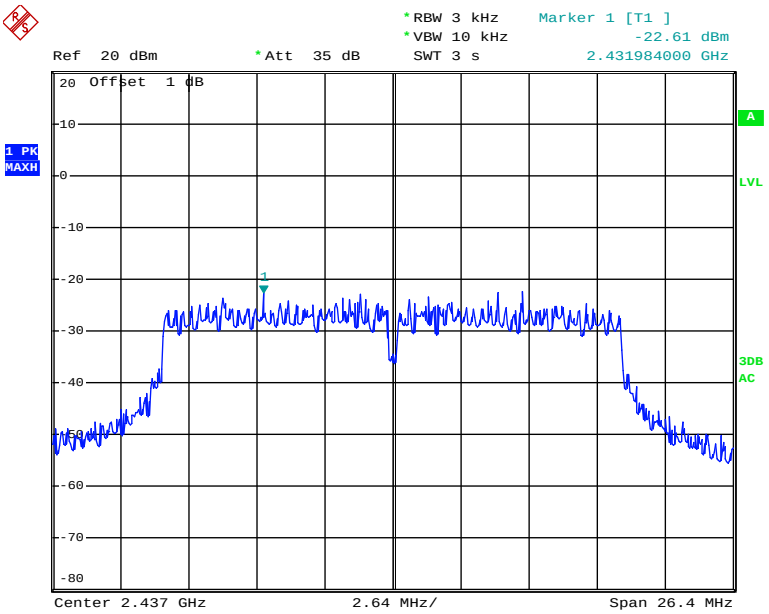
Date: 25.AUG.2015 20:09:27

802.11n20 Low Channel



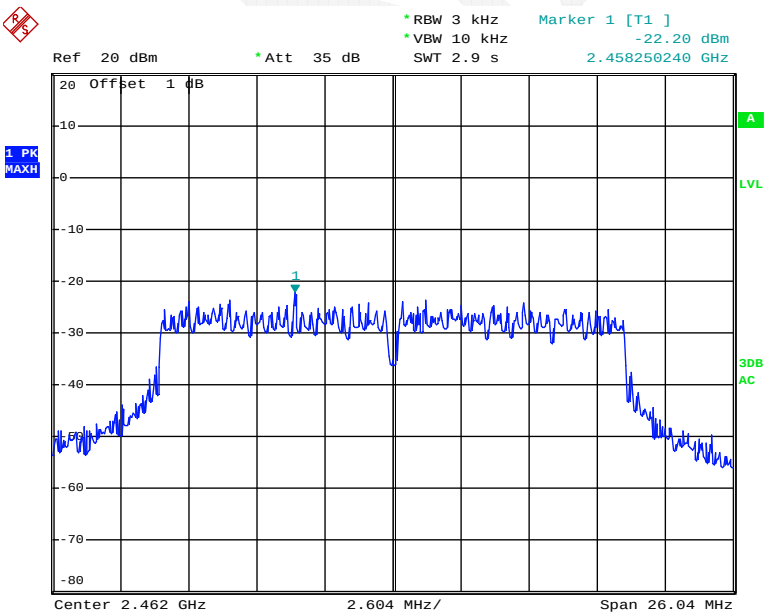
Date: 25.AUG.2015 20:22:08

802.11n20 Middle Channel



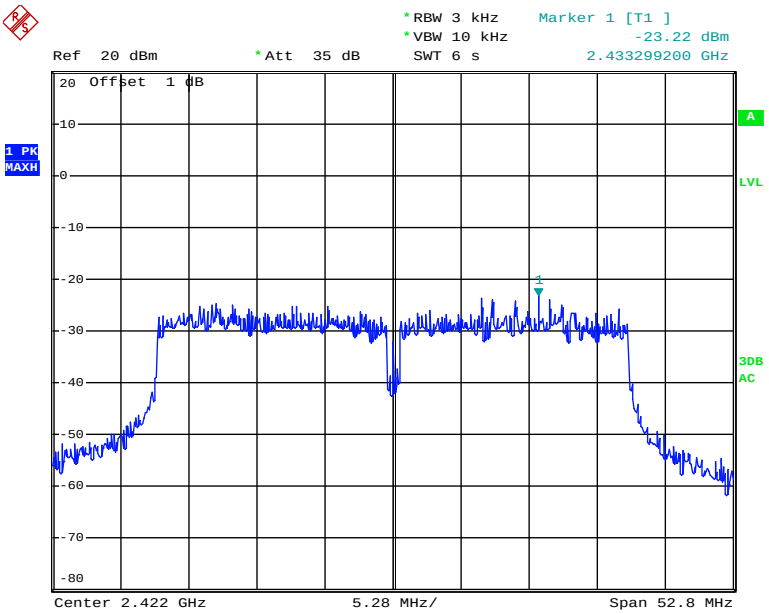
Date: 25.AUG.2015 20:17:35

802.11n20 High Channel



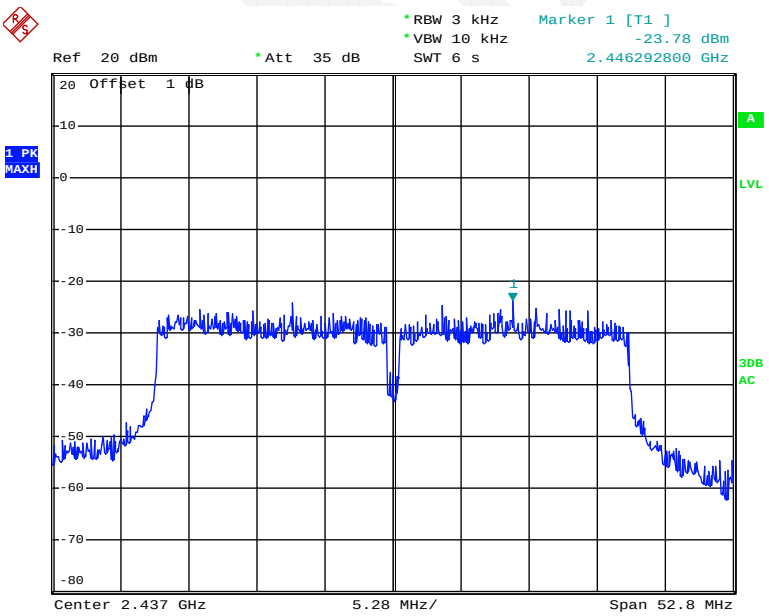
Date: 25.AUG.2015 20:13:44

802.11n40 Low Channel



Date: 25.AUG.2015 21:33:28

802.11n40 Middle Channel



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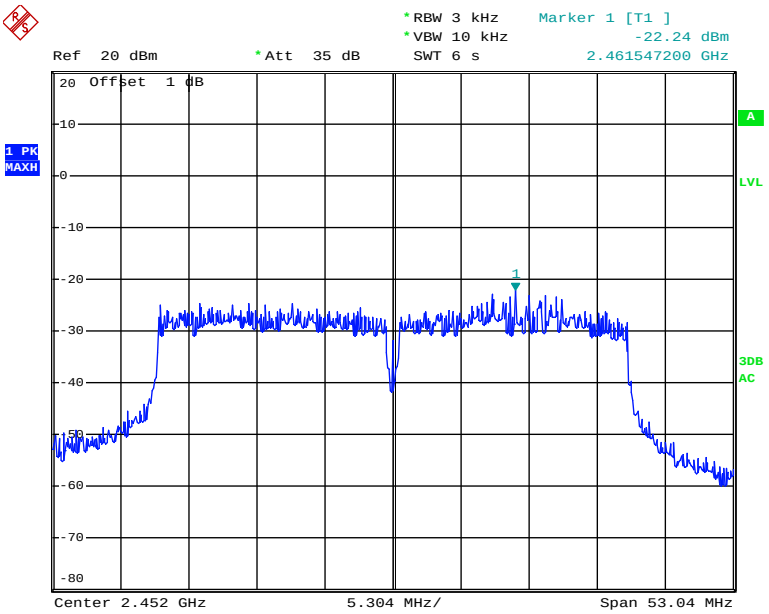
802.11n40 High Channel



Date: 25.AUG.2015 21:06:34

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