

FCC PART 15.247

TEST REPORT

For

MAXWEST INTERNATIONAL LIMITED

No.1, Longgang Road, Buji, Longgang, ShenzhenCity, Guangdong Province, P.R. China

FCC ID: 2AEN3LUXPAD7

Report Type: Original Report	Product Type: Tablet
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Report Number: RDG160419004-00A	
Report Date: 2016-04-28	
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
RELATED SUBMITTAL(S)/GRANT(S).....	4
TEST METHODOLOGY	4
TEST FACILITY	4
SYSTEM TEST CONFIGURATION.....	5
DESCRIPTION OF TEST CONFIGURATION	5
EQUIPMENT MODIFICATIONS	5
EUT EXERCISE SOFTWARE	5
EXTERNAL CABLE.....	6
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS	7
FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE	8
APPLICABLE STANDARD	8
FCC §15.203 - ANTENNA REQUIREMENT.....	9
APPLICABLE STANDARD	9
ANTENNA CONNECTOR CONSTRUCTION	9
FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS	10
APPLICABLE STANDARD	10
MEASUREMENT UNCERTAINTY.....	10
EUT SETUP	10
EMI TEST RECEIVER SETUP.....	11
TEST PROCEDURE	11
CORRECTED AMPLITUDE & MARGIN CALCULATION	11
TEST EQUIPMENT LIST AND DETAILS.....	12
TEST RESULTS SUMMARY	12
TEST DATA	12
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS.....	15
APPLICABLE STANDARD	15
MEASUREMENT UNCERTAINTY.....	15
EUT SETUP	15
EMI TEST RECEIVER & SPECTRUM ANALYZER SETUP	16
TEST PROCEDURE	16
CORRECTED AMPLITUDE & MARGIN CALCULATION	16
TEST EQUIPMENT LIST AND DETAILS.....	17
TEST RESULTS SUMMARY	17
TEST DATA	17
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH.....	28
APPLICABLE STANDARD	28
TEST PROCEDURE	28
TEST EQUIPMENT LIST AND DETAILS.....	28
TEST DATA	28
FCC §15.247(b) (3) - MAXIMUM CONDUCTED OUTPUT POWER.....	36

APPLICABLE STANDARD	36
TEST PROCEDURE	36
TEST EQUIPMENT LIST AND DETAILS.....	36
TEST DATA	36
FCC §15.247(d) – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE.....	38
APPLICABLE STANDARD	38
TEST PROCEDURE	38
TEST EQUIPMENT LIST AND DETAILS.....	38
TEST DATA	38
FCC §15.247(e) - POWER SPECTRAL DENSITY	44
APPLICABLE STANDARD	44
TEST PROCEDURE	44
TEST EQUIPMENT LIST AND DETAILS.....	44
TEST DATA	44

FINAL

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The MAXWEST INTERNATIONAL LIMITED's product, model number: *LuxPad Stream 7* (FCC ID: 2AEN3LUXPAD7) (the "EUT") in this report was a *Tablet*, which was measured approximately: 22.0 cm (L) x 14.8 cm (W) x 1.2 cm (H), rated input voltage: DC3.7V rechargeable Li-ion battery or DC5.0V charging from adapter.

Adapter information:

Model Name: LuxPad

Input: AC100-240V, 50/60 Hz 0.3A

Output: DC 5V, 2000mA

All measurement and test data in this report was gathered from production sample serial number: 160419004 (Assigned by BACL, Dongguan). The EUT was received on 2016-04-19.

Objective

This report is prepared on behalf of MAXWEST INTERNATIONAL LIMITED. 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 Part 15B JBP submissions with FCC ID: 2AEN3LUXPAD7.

FCC Part 15C DSS submissions with FCC ID: 2AEN3LUXPAD7.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

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 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 testing mode, which was provided by manufacturer. For 2.4GHz 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 802.11b, 802.11g, and 802.11n ht20 modes were tested with channel 1, 6 and 11. For 802.11n ht40 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 data rates bandwidths, and modulations.

Equipment Modifications

No modification was made to the EUT tested.

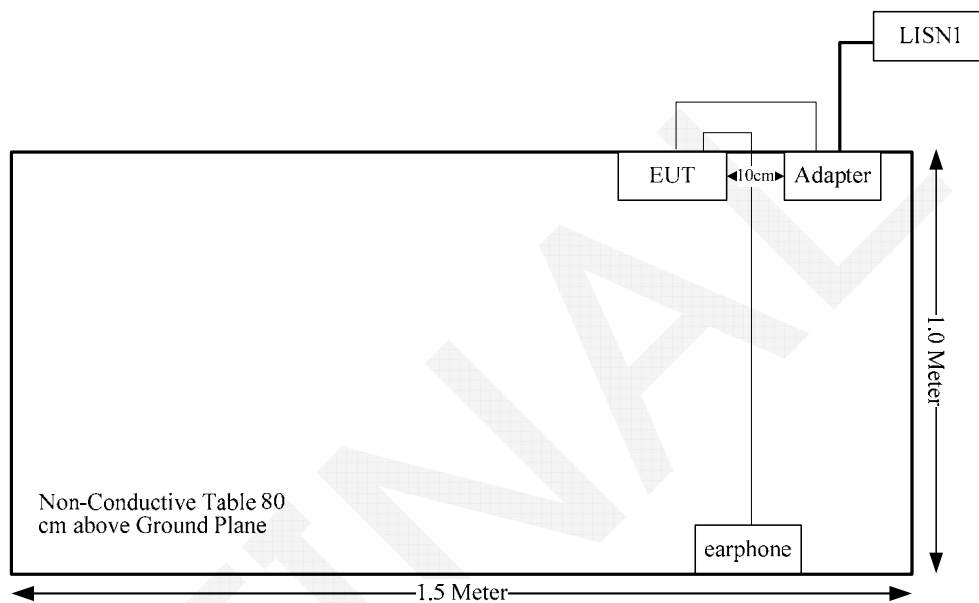
EUT Exercise Software

The worst condition (maximum power with 100% duty cycle) was setting by the software as following table:

Test Mode	Test Software Version	WLAN Test		
802.11b	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	1Mbps	1Mbps	1Mbps
	Power Level Setting	42	42	42
802.11g	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	6Mbps	6Mbps	6Mbps
	Power Level Setting	81	81	81
802.11n ht20	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	94	93	92
802.11n ht40	Test Frequency	2422MHz	2437MHz	2452MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	98	97	97

External Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Earphone Cable	No	No	1.03	Audio Port of EUT	Earphone

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	Compliance
§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 conducted 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 v06:

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:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ 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 tune-up power is 9.0dBm (7.94mW).

$[(\text{max. power of channel, mW})/(\text{min. test separation distance, mm})][\sqrt{f(\text{GHz})}]$
 $= 7.94/5 \cdot (\sqrt{2.462}) = 2.5 < 3.0$

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 has one integral antenna arrangement for WiFi/BT, which was permanently attached and the antenna gain is 3.0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

Measurement Uncertainty

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

FINAL

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

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

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF: voltage division factor of AMN

C_f : Correction Factor

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

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2015-10-20	2016-10-20
R&S	L.I.S.N	ESH2-Z5	892107/021	2015-07-16	2016-07-15
R&S	Two-line V-network	ENV 216	3560.6550.12	2015-11-26	2016-11-25
N/A	Coaxial Cable	1.8m	N/A	2015-05-06	2016-05-06
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

* **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 Part 15.207, with the worst margin reading of:

17.3 dB at 0.162441 MHz in the Line conducted mode

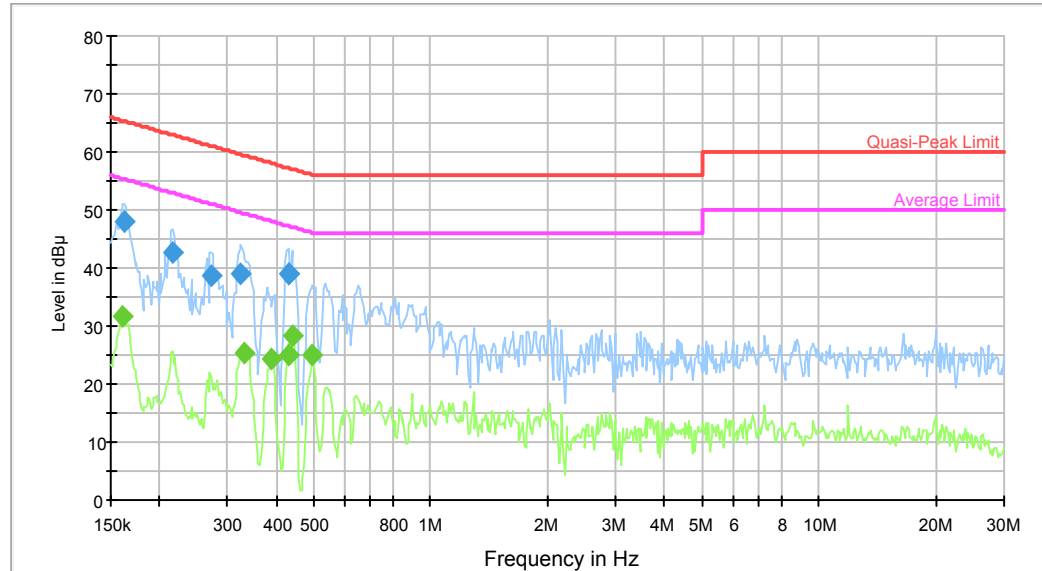
Test Data**Environmental Conditions**

Temperature:	27.3 °C
Relative Humidity:	65 %
ATM Pressure:	100.7 kPa

The testing was performed by Rocky Xiao on 2016-04-21.

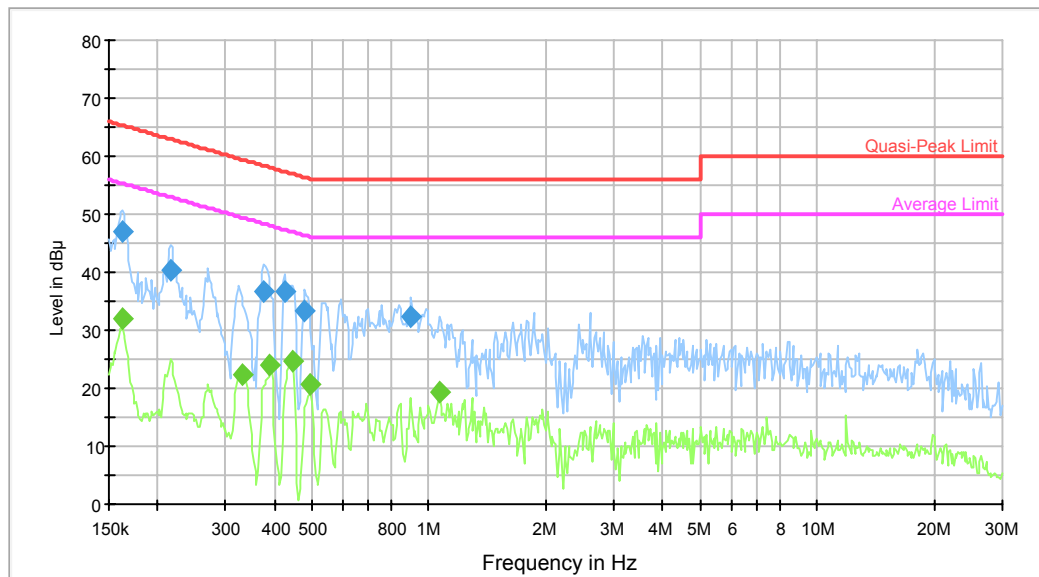
Test Mode: Transmitting

AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.162441	48.0	9.000	L1	10.2	17.3	65.3	Compliance
0.216409	42.7	9.000	L1	10.2	20.3	63.0	Compliance
0.272666	38.6	9.000	L1	10.2	22.4	61.0	Compliance
0.324910	38.8	9.000	L1	10.3	20.8	59.6	Compliance
0.429420	38.8	9.000	L1	10.2	18.5	57.3	Compliance
0.432855	38.9	9.000	L1	10.2	18.3	57.2	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.161152	31.7	9.000	L1	10.2	23.7	55.4	Compliance
0.330129	25.4	9.000	L1	10.3	24.0	49.4	Compliance
0.390261	24.5	9.000	L1	10.2	23.6	48.1	Compliance
0.429420	25.1	9.000	L1	10.2	22.2	47.3	Compliance
0.443327	28.2	9.000	L1	10.2	18.8	47.0	Compliance
0.495646	25.1	9.000	L1	10.1	21.0	46.1	Compliance

AC120 V, 60 Hz, Neutral:

Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.162441	47.1	9.000	N	10.1	18.2	65.3	Compliance
0.216409	40.2	9.000	N	10.2	22.8	63.0	Compliance
0.375019	36.7	9.000	N	10.2	21.7	58.4	Compliance
0.426011	36.8	9.000	N	10.2	20.5	57.3	Compliance
0.480097	33.4	9.000	N	10.1	22.9	56.3	Compliance
0.900972	32.4	9.000	N	10.4	23.6	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.162441	31.9	9.000	N	10.1	23.4	55.3	Compliance
0.330129	22.5	9.000	N	10.3	26.9	49.4	Compliance
0.390261	24.1	9.000	N	10.2	24.0	48.1	Compliance
0.446873	24.6	9.000	N	10.1	22.3	46.9	Compliance
0.495646	20.5	9.000	N	10.1	25.6	46.1	Compliance
1.065081	19.3	9.000	N	10.4	26.7	46.0	Compliance

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

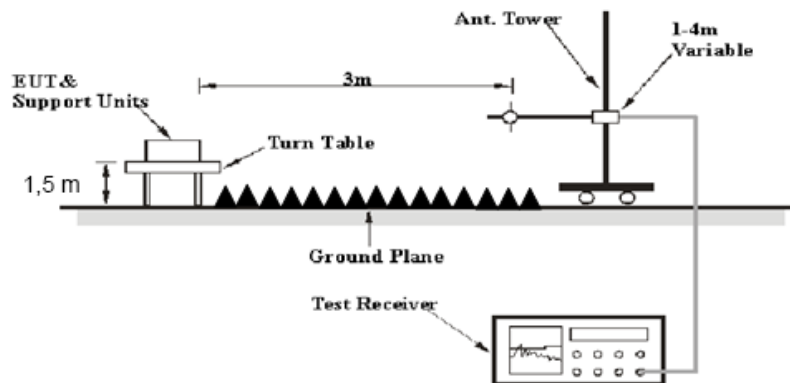
Applicable Standard

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

FINAL

Above 1GHz:

The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.10-2013. 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
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	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:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-08-03	2016-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2015-11-23	2016-11-22
ETS-Lindgren	Horn Antenna	3115	9808-5557	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2016-02-19	2017-02-19
R&S	Spectrum Analyzer	FSEM	DE23437	2015-11-23	2016-11-22
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
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
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2015-09-06	2016-09-06

* **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:

6.79 dB at 2483.5 MHz in the Horizontal polarization for 802.11 n40 Mode

Test Data

Environmental Conditions

Temperature:	27.3 °C
Relative Humidity:	57%
ATM Pressure:	100.6 kPa

The testing was performed by Rocky Xiao on 2016-04-28.

Test Mode: Transmitting

802.11b 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	68.24	PK	H	25.67	3.68	0.00	97.59	N/A	N/A
2412	65.91	AV	H	25.67	3.68	0.00	95.26	N/A	N/A
2412	66.82	PK	V	25.67	3.68	0.00	96.17	N/A	N/A
2412	63.64	AV	V	25.67	3.68	0.00	92.99	N/A	N/A
2390	26.3	PK	H	25.61	3.63	0.00	55.54	74.00	18.46
2390	15.34	AV	H	25.61	3.63	0.00	44.58	54.00	9.42
4824	42.15	PK	H	30.64	5.03	27.41	50.41	74.00	23.59
4824	39.61	AV	H	30.64	5.03	27.41	47.87	54.00	6.13
7236	33.16	PK	H	34.17	6.65	25.90	48.08	74.00	25.92
7236	21.43	AV	H	34.17	6.65	25.90	36.35	54.00	17.65
9648	29.65	PK	H	36.06	8.55	27.46	46.80	74.00	27.20
9648	16.43	AV	H	36.06	8.55	27.46	33.58	54.00	20.42
3160	33.07	PK	H	27.71	6.80	27.40	40.18	74.00	33.82
3160	21.14	AV	H	27.71	6.80	27.40	28.25	54.00	25.75
312	30.2	QP	H	14.37	2.19	21.55	25.21	46.00	20.79
Middle Channel: 2437 MHz									
2437	70.84	PK	H	25.74	3.75	0.00	100.33	N/A	N/A
2437	67.35	AV	H	25.74	3.75	0.00	96.84	N/A	N/A
2437	66.51	PK	V	25.74	3.75	0.00	96.00	N/A	N/A
2437	63.44	AV	V	25.74	3.75	0.00	92.93	N/A	N/A
4874	41.83	PK	H	30.77	5.14	27.42	50.32	74.00	23.68
4874	39.24	AV	H	30.77	5.14	27.42	47.73	54.00	6.27
7311	32.91	PK	H	34.35	6.74	25.88	48.12	74.00	25.88
7311	20.86	AV	H	34.35	6.74	25.88	36.07	54.00	17.93
9748	29.27	PK	H	36.30	8.61	27.24	46.94	74.00	27.06
9748	16.58	AV	H	36.30	8.61	27.24	34.25	54.00	19.75
3160	33.15	PK	H	27.71	6.80	27.40	40.26	74.00	33.74
3160	21.28	AV	H	27.71	6.80	27.40	28.39	54.00	25.61
3730	32.14	PK	H	29.31	4.58	27.34	38.69	74.00	35.31
3730	20.28	AV	H	29.31	4.58	27.34	26.83	54.00	27.17
312	30.1	QP	H	14.37	2.19	21.55	25.11	46.00	20.89
High Channel: 2462 MHz									
2462	70.31	PK	H	25.80	3.75	0.00	99.86	N/A	N/A
2462	66.82	AV	H	25.80	3.75	0.00	96.37	N/A	N/A
2462	66.03	PK	V	25.80	3.75	0.00	95.58	N/A	N/A
2462	62.35	AV	V	25.80	3.75	0.00	91.90	N/A	N/A
2483.5	25.81	PK	H	25.86	3.67	0.00	55.34	74.00	18.66
2483.5	15.32	AV	H	25.86	3.67	0.00	44.85	54.00	9.15
4924	41.53	PK	H	30.90	5.34	27.43	50.34	74.00	23.66
4924	38.67	AV	H	30.90	5.34	27.43	47.48	54.00	6.52
7386	32.41	PK	H	34.53	6.83	25.86	47.91	74.00	26.09
7386	20.76	AV	H	34.53	6.83	25.86	36.26	54.00	17.74
9848	29.11	PK	H	36.54	8.66	26.94	47.37	74.00	26.63
9848	16.51	AV	H	36.54	8.66	26.94	34.77	54.00	19.23
3160	33.06	PK	H	27.71	6.80	27.40	40.17	74.00	33.83
3160	21.32	AV	H	27.71	6.80	27.40	28.43	54.00	25.57
312	30.6	QP	H	14.37	2.19	21.55	25.61	46.00	20.39

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	72.93	PK	H	25.67	3.68	0.00	102.28	N/A	N/A
2412	63.12	AV	H	25.67	3.68	0.00	92.47	N/A	N/A
2412	68.76	PK	V	25.67	3.68	0.00	98.11	N/A	N/A
2412	58.01	AV	V	25.67	3.68	0.00	87.36	N/A	N/A
2390	35.92	PK	H	25.61	3.63	0.00	65.16	74.00	8.84
2390	12.23	AV	H	25.61	3.63	0.00	41.47	54.00	12.53
4824	37.84	PK	H	30.64	5.03	27.41	46.10	74.00	27.90
4824	24.51	AV	H	30.64	5.03	27.41	32.77	54.00	21.23
7236	33.41	PK	H	34.17	6.65	25.90	48.33	74.00	25.67
7236	21.6	AV	H	34.17	6.65	25.90	36.52	54.00	17.48
9648	29.58	PK	H	36.06	8.55	27.46	46.73	74.00	27.27
9648	16.52	AV	H	36.06	8.55	27.46	33.67	54.00	20.33
3160	33.07	PK	H	27.71	6.80	27.40	40.18	74.00	33.82
3160	20.26	AV	H	27.71	6.80	27.40	27.37	54.00	26.63
312	30.2	QP	H	14.37	2.19	21.55	25.21	46.00	20.79
Middle Channel: 2437 MHz									
2437	72.37	PK	H	25.74	3.75	0.00	101.86	N/A	N/A
2437	62.51	AV	H	25.74	3.75	0.00	92.00	N/A	N/A
2437	68.19	PK	V	25.74	3.75	0.00	97.68	N/A	N/A
2437	57.73	AV	V	25.74	3.75	0.00	87.22	N/A	N/A
4874	37.51	PK	H	30.77	5.14	27.42	46.00	74.00	28.00
4874	24.23	AV	H	30.77	5.14	27.42	32.72	54.00	21.28
7311	33.21	PK	H	34.35	6.74	25.88	48.42	74.00	25.58
7311	21.65	AV	H	34.35	6.74	25.88	36.86	54.00	17.14
9748	29.54	PK	H	36.30	8.61	27.24	47.21	74.00	26.79
9748	16.51	AV	H	36.30	8.61	27.24	34.18	54.00	19.82
3160	33.16	PK	H	27.71	6.80	27.40	40.27	74.00	33.73
3160	20.93	AV	H	27.71	6.80	27.40	28.04	54.00	25.96
3730	32.41	PK	H	29.31	4.58	27.34	38.96	74.00	35.04
3730	20.18	AV	H	29.31	4.58	27.34	26.73	54.00	27.27
312	30.4	QP	H	14.37	2.19	21.55	25.41	46.00	20.59
High Channel: 2462 MHz									
2462	71.52	PK	H	25.80	3.75	0.00	101.07	N/A	N/A
2462	61.57	AV	H	25.80	3.75	0.00	91.12	N/A	N/A
2462	67.35	PK	V	25.80	3.75	0.00	96.90	N/A	N/A
2462	57.62	AV	V	25.80	3.75	0.00	87.17	N/A	N/A
2483.5	31.45	PK	H	25.86	3.67	0.00	60.98	74.00	13.02
2483.5	16.8	AV	H	25.86	3.67	0.00	46.33	54.00	7.67
4924	37.6	PK	H	30.90	5.34	27.43	46.41	74.00	27.59
4924	24.05	AV	H	30.90	5.34	27.43	32.86	54.00	21.14
7386	33.17	PK	H	34.53	6.83	25.86	48.67	74.00	25.33
7386	21.51	AV	H	34.53	6.83	25.86	37.01	54.00	16.99
9848	29.43	PK	H	36.54	8.66	26.94	47.69	74.00	26.31
9848	16.43	AV	H	36.54	8.66	26.94	34.69	54.00	19.31
3160	33.41	PK	H	27.71	6.80	27.40	40.52	74.00	33.48
3160	20.6	AV	H	27.71	6.80	27.40	27.71	54.00	26.29
312	30.2	QP	H	14.37	2.19	21.55	25.21	46.00	20.79

802.11 n ht20 Mode

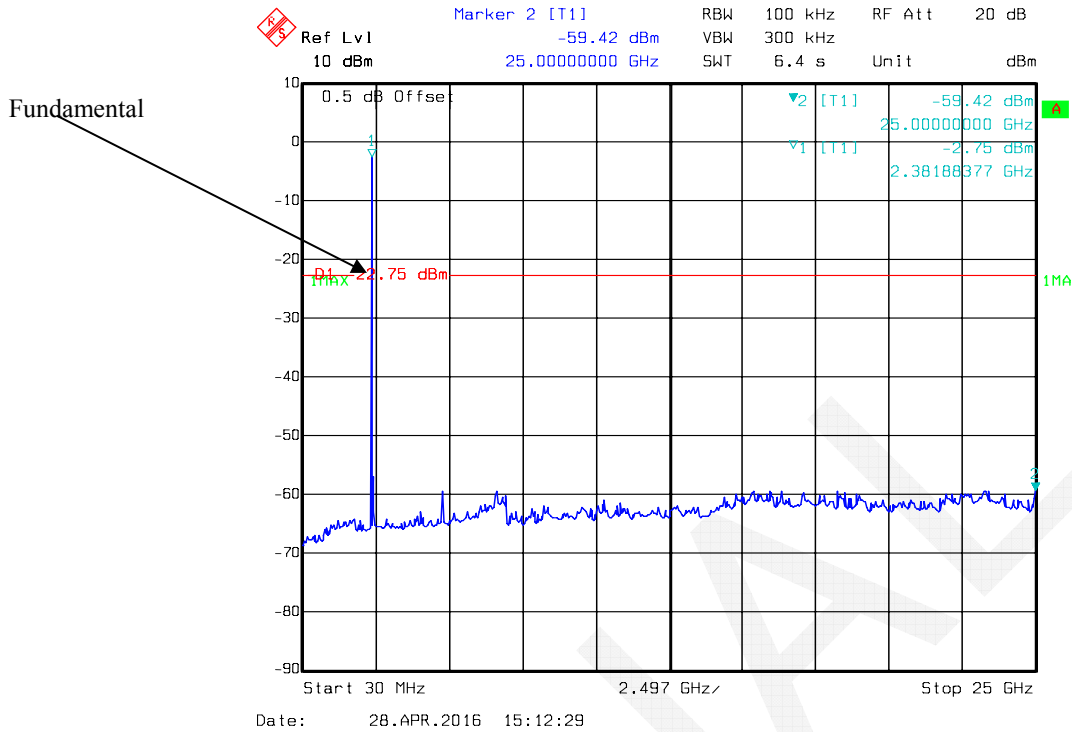
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2412 MHz									
2412	70.14	PK	H	25.67	3.68	0.00	99.49	N/A	N/A
2412	59.43	AV	H	25.67	3.68	0.00	88.78	N/A	N/A
2412	65.93	PK	V	25.67	3.68	0.00	95.28	N/A	N/A
2412	55.18	AV	V	25.67	3.68	0.00	84.53	N/A	N/A
2390	35.54	PK	H	25.61	3.63	0.00	64.78	74.00	9.22
2390	15.93	AV	H	25.61	3.63	0.00	45.17	54.00	8.83
4824	36.47	PK	H	30.64	5.03	27.41	44.73	74.00	29.27
4824	23.58	AV	H	30.64	5.03	27.41	31.84	54.00	22.16
7236	33.04	PK	H	34.17	6.65	25.90	47.96	74.00	26.04
7236	21.48	AV	H	34.17	6.65	25.90	36.40	54.00	17.60
9648	29.46	PK	H	36.06	8.55	27.46	46.61	74.00	27.39
9648	16.47	AV	H	36.06	8.55	27.46	33.62	54.00	20.38
2950	33.24	PK	H	27.07	6.61	27.54	39.38	74.00	34.62
2950	21.03	AV	H	27.07	6.61	27.54	27.17	54.00	26.83
312	30.4	QP	H	14.37	2.19	21.55	25.41	46.00	20.59
Middle Channel: 2437 MHz									
2437	69.81	PK	H	25.74	3.75	0.00	99.30	N/A	N/A
2437	59.14	AV	H	25.74	3.75	0.00	88.63	N/A	N/A
2437	65.54	PK	V	25.74	3.75	0.00	95.03	N/A	N/A
2437	54.98	AV	V	25.74	3.75	0.00	84.47	N/A	N/A
4874	36.07	PK	H	30.77	5.14	27.42	44.56	74.00	29.44
4874	23.35	AV	H	30.77	5.14	27.42	31.84	54.00	22.16
7311	32.47	PK	H	34.35	6.74	25.88	47.68	74.00	26.32
7311	21.39	AV	H	34.35	6.74	25.88	36.60	54.00	17.40
9748	29.36	PK	H	36.30	8.61	27.24	47.03	74.00	26.97
9748	16.42	AV	H	36.30	8.61	27.24	34.09	54.00	19.91
3160	33.21	PK	H	27.71	6.80	27.40	40.32	74.00	33.68
3160	20.73	AV	H	27.71	6.80	27.40	27.84	54.00	26.16
3730	32.14	PK	H	29.31	4.58	27.34	38.69	74.00	35.31
3730	19.93	AV	H	29.31	4.58	27.34	26.48	54.00	27.52
312	30.4	QP	H	14.37	2.19	21.55	25.41	46.00	20.59
High Channel: 2462 MHz									
2462	69.12	PK	H	25.80	3.75	0.00	98.67	N/A	N/A
2462	58.61	AV	H	25.80	3.75	0.00	88.16	N/A	N/A
2462	64.82	PK	V	25.80	3.75	0.00	94.37	N/A	N/A
2462	54.42	AV	V	25.80	3.75	0.00	83.97	N/A	N/A
2483.5	36.39	PK	H	25.86	3.67	0.00	65.92	74.00	8.08
2483.5	18.88	AV	H	25.86	3.67	0.00	48.41	54.00	5.59
4924	35.72	PK	H	30.90	5.34	27.43	44.53	74.00	29.47
4924	23.15	AV	H	30.90	5.34	27.43	31.96	54.00	22.04
7386	32.73	PK	H	34.53	6.83	25.86	48.23	74.00	25.77
7386	21.42	AV	H	34.53	6.83	25.86	36.92	54.00	17.08
9848	29.41	PK	H	36.54	8.66	26.94	47.67	74.00	26.33
9848	16.35	AV	H	36.54	8.66	26.94	34.61	54.00	19.39
3160	32.87	PK	H	27.71	6.80	27.40	39.98	74.00	34.02
3160	20.59	AV	H	27.71	6.80	27.40	27.70	54.00	26.30
312	30.3	QP	H	14.37	2.19	21.55	25.31	46.00	20.69

802.11 n ht40 Mode

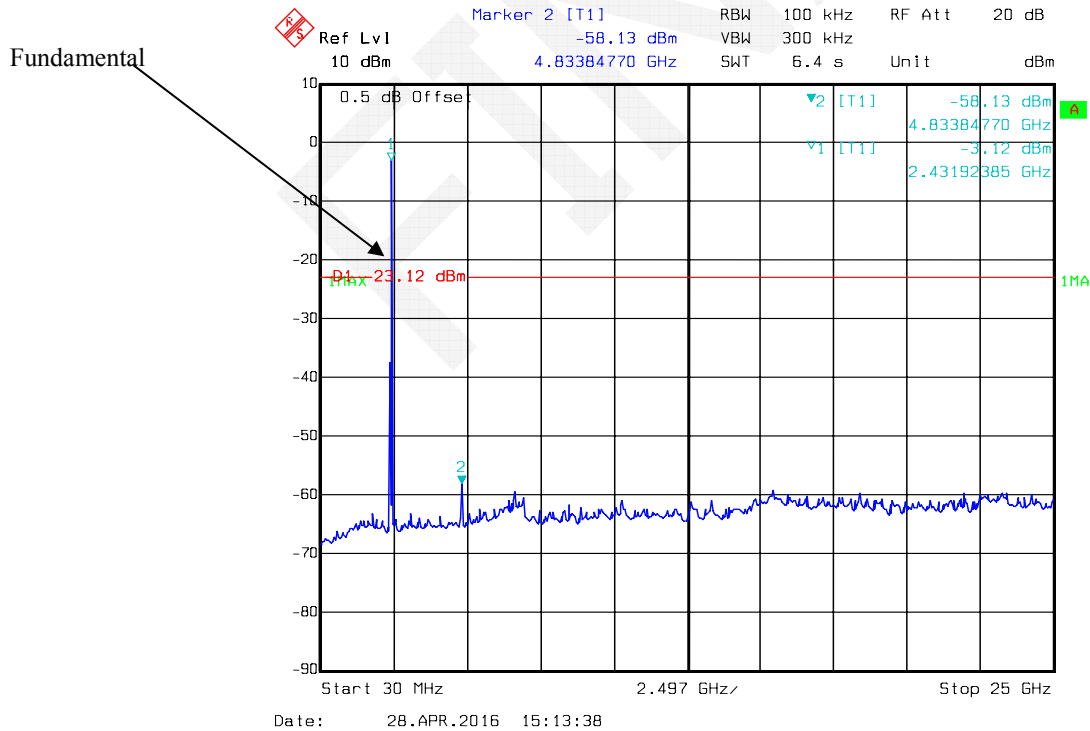
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)					
Low Channel: 2422 MHz									
2422	69.17	PK	H	25.70	3.71	0.00	98.58	N/A	N/A
2422	57.18	AV	H	25.70	3.71	0.00	86.59	N/A	N/A
2422	67.21	PK	V	25.70	3.71	0.00	96.62	N/A	N/A
2422	54.18	AV	V	25.70	3.71	0.00	83.59	N/A	N/A
2400	32.42	PK	H	25.64	3.65	0.00	61.71	74.00	12.29
2400	18.63	AV	H	25.64	3.65	0.00	47.92	54.00	6.08
4844	34.67	PK	H	30.69	4.99	27.42	42.93	74.00	31.07
4844	22.58	AV	H	30.69	4.99	27.42	30.84	54.00	23.16
7266	34.97	PK	H	34.24	6.68	25.89	50.00	74.00	24.00
7266	21.42	AV	H	34.24	6.68	25.89	36.45	54.00	17.55
9688	32.19	PK	H	36.15	8.58	27.37	49.55	74.00	24.45
9688	19.14	AV	H	36.15	8.58	27.37	36.50	54.00	17.50
2950	36.58	PK	H	27.07	6.61	27.54	42.72	74.00	31.28
2950	23.37	AV	H	27.07	6.61	27.54	29.51	54.00	24.49
312	35.4	QP	H	14.37	2.19	21.55	30.41	46.00	15.59
Middle Channel: 2437 MHz									
2437	68.89	PK	H	25.74	3.75	0.00	98.38	N/A	N/A
2437	56.93	AV	H	25.74	3.75	0.00	86.42	N/A	N/A
2437	65.87	PK	V	25.74	3.75	0.00	95.36	N/A	N/A
2437	54.51	AV	V	25.74	3.75	0.00	84.00	N/A	N/A
4874	34.13	PK	H	30.77	5.14	27.42	42.62	74.00	31.38
4874	22.31	AV	H	30.77	5.14	27.42	30.80	54.00	23.20
7311	34.78	PK	H	34.35	6.74	25.88	49.99	74.00	24.01
7311	21.53	AV	H	34.35	6.74	25.88	36.74	54.00	17.26
9748	32.12	PK	H	36.30	8.61	27.24	49.79	74.00	24.21
9748	18.69	AV	H	36.30	8.61	27.24	36.36	54.00	17.64
2950	36.62	PK	H	27.07	6.61	27.54	42.76	74.00	31.24
2950	23.35	AV	H	27.07	6.61	27.54	29.49	54.00	24.51
3610	34.57	PK	H	29.04	4.61	27.28	40.94	74.00	33.06
3610	21.42	AV	H	29.04	4.61	27.28	27.79	54.00	26.21
312	35.2	QP	H	14.37	2.19	21.55	30.21	46.00	15.79
High Channel: 2452 MHz									
2452	70.71	PK	H	25.78	3.78	0.00	100.27	N/A	N/A
2452	58.79	AV	H	25.78	3.78	0.00	88.35	N/A	N/A
2452	67.49	PK	V	25.78	3.78	0.00	97.05	N/A	N/A
2452	55.61	AV	V	25.78	3.78	0.00	85.17	N/A	N/A
2483.5	31.19	PK	H	25.86	3.67	0.00	60.72	74.00	13.28
2483.5	18.53	AV	H	25.86	3.67	0.00	48.06	54.00	5.94
4904	34.78	PK	H	30.85	5.31	27.43	43.51	74.00	30.49
4904	22.35	AV	H	30.85	5.31	27.43	31.08	54.00	22.92
7356	35.36	PK	H	34.45	6.79	25.87	50.73	74.00	23.27
7356	21.74	AV	H	34.45	6.79	25.87	37.11	54.00	16.89
9808	32.45	PK	H	36.44	8.64	27.09	50.44	74.00	23.56
9808	19.47	AV	H	36.44	8.64	27.09	37.46	54.00	16.54
2950	36.42	PK	H	27.07	6.61	27.54	42.56	74.00	31.44
2950	21.18	AV	H	27.07	6.61	27.54	27.32	54.00	26.68
312	34.8	QP	H	14.37	2.19	21.55	29.81	46.00	16.19

Conducted Spurious Emissions at Antenna Port

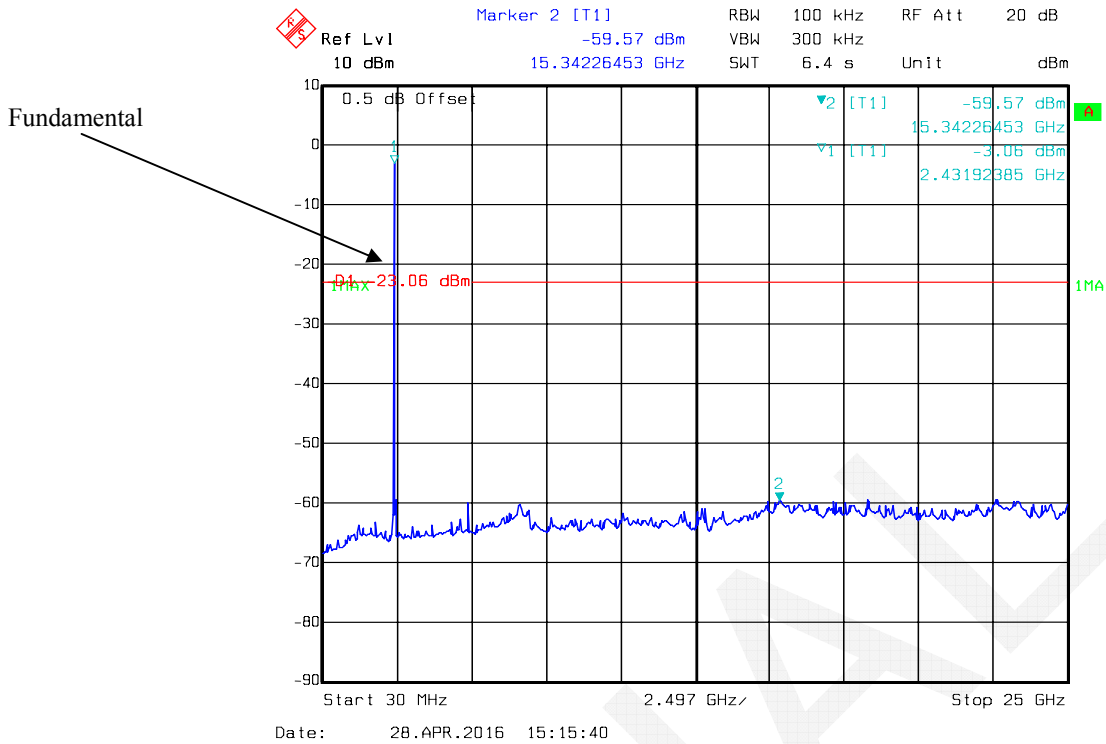
802.11b Low Channel



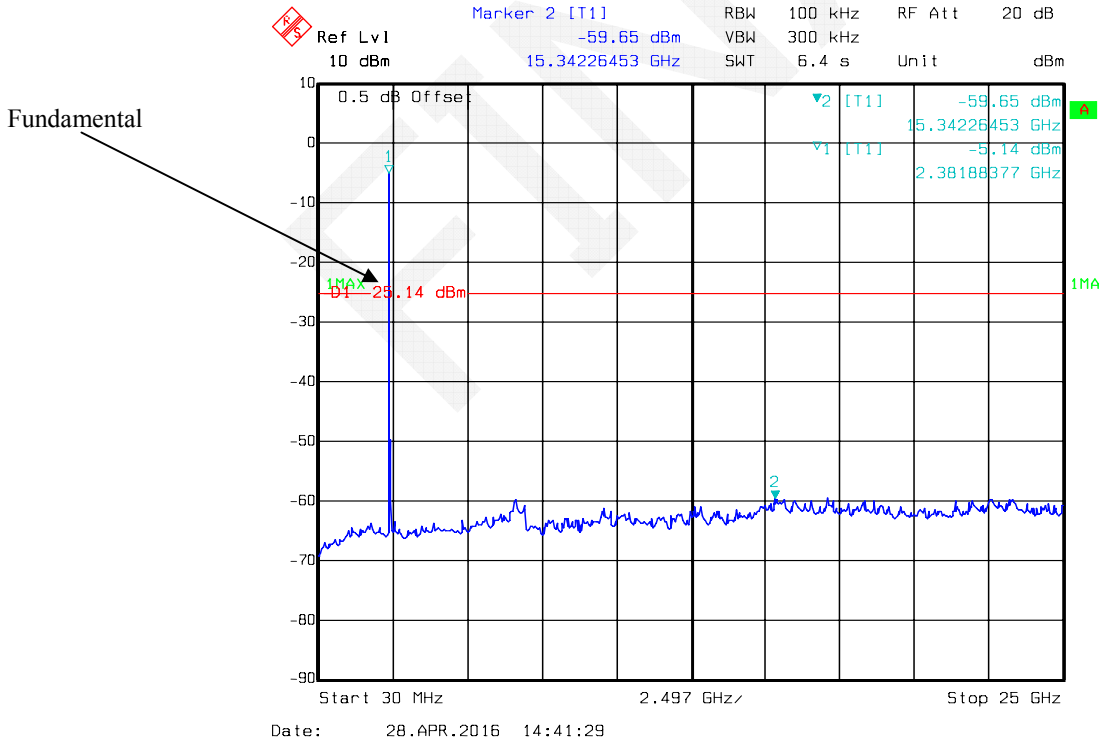
802.11b Middle Channel



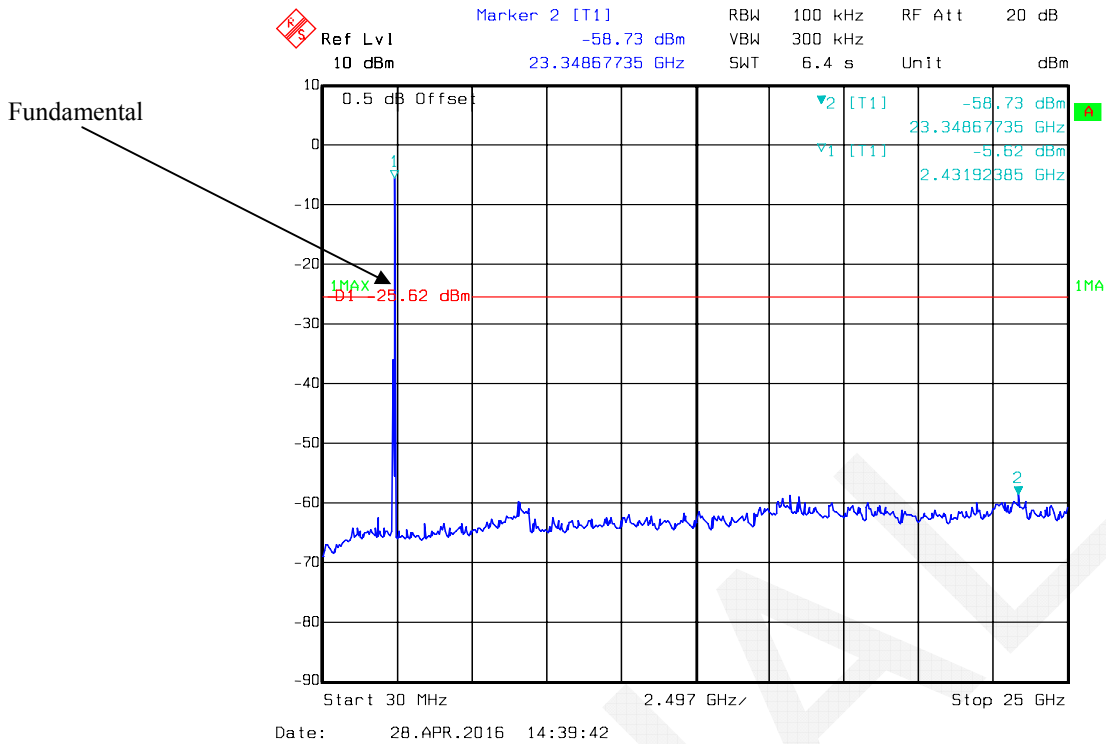
802.11b High Channel



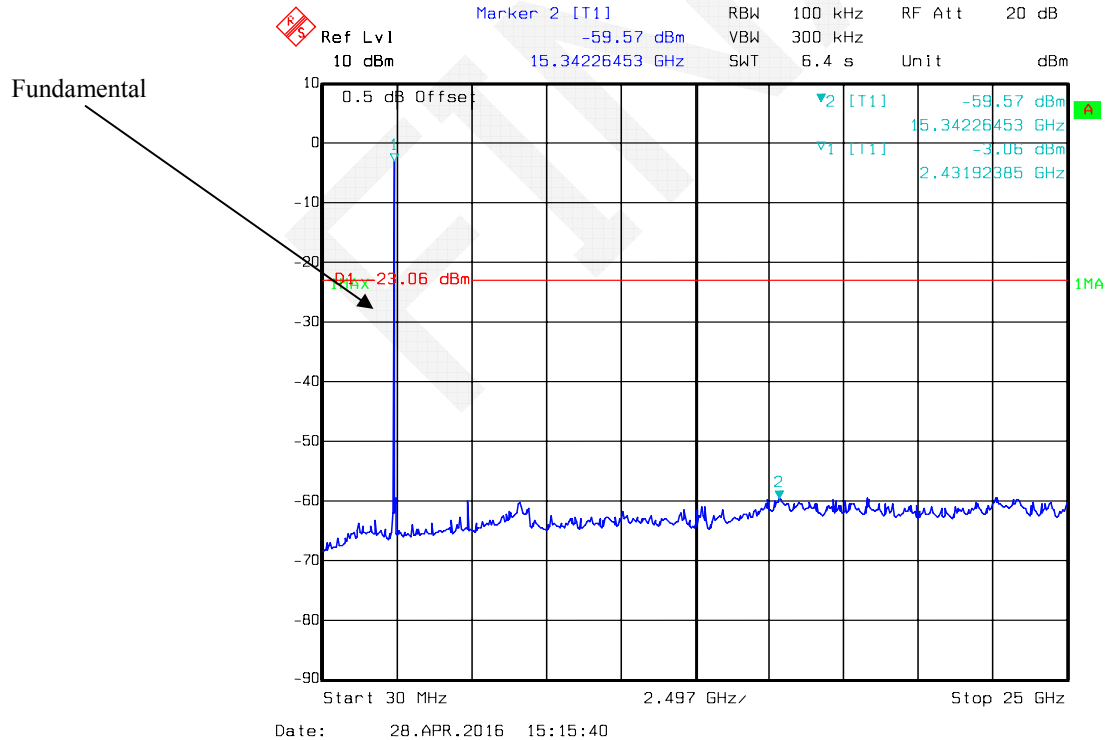
802.11g Low Channel



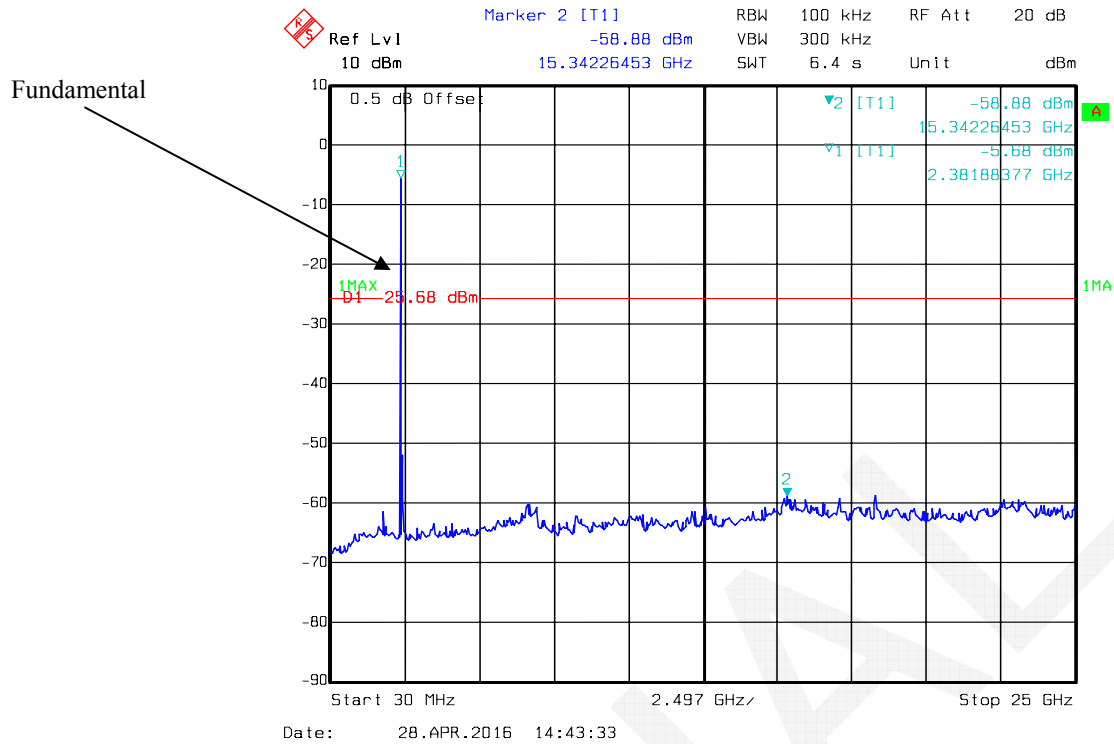
802.11g Middle Channel



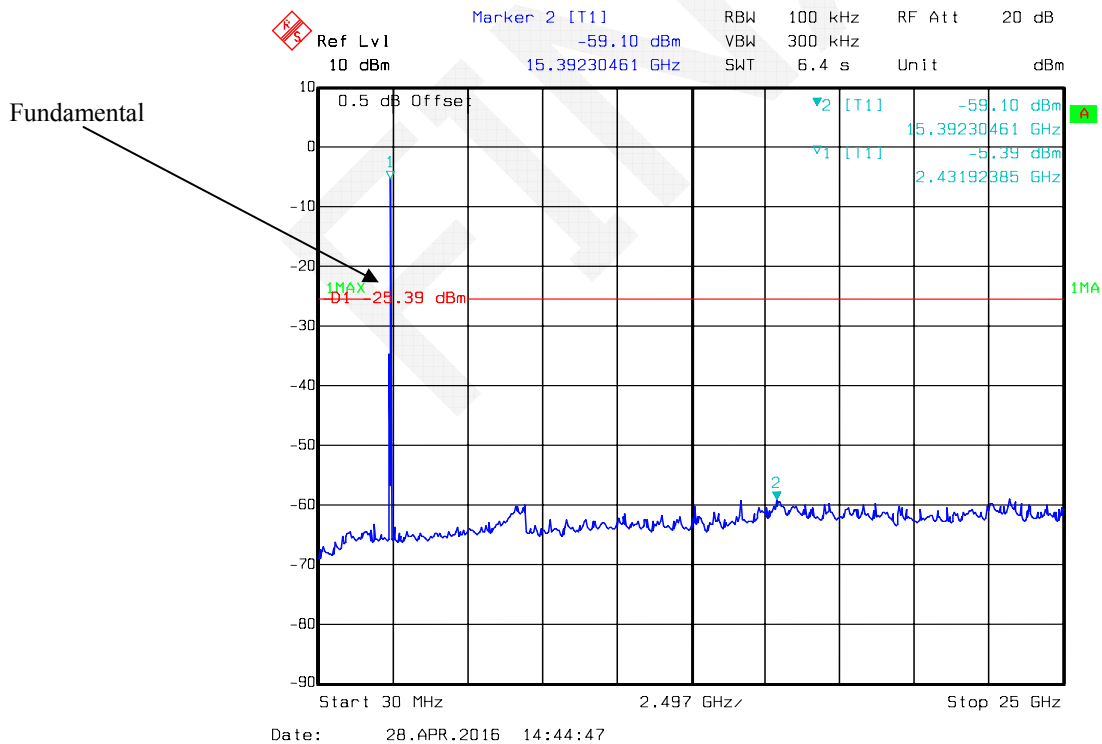
802.11g High Channel



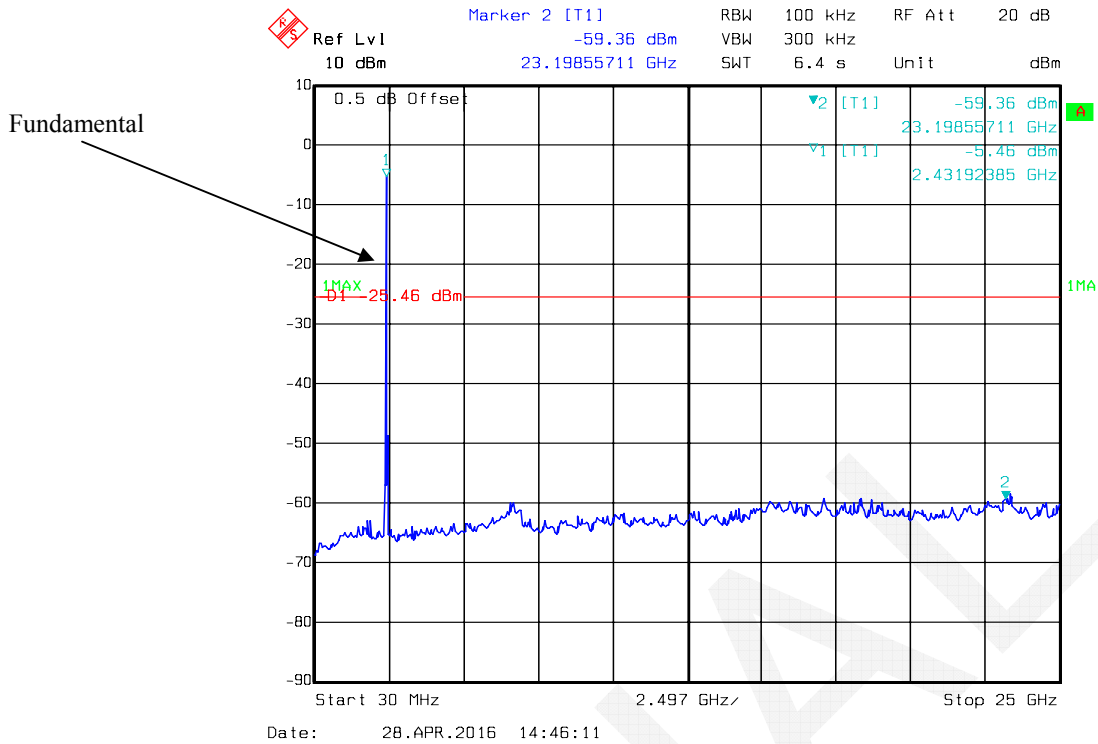
802.11n ht20 Low Channel



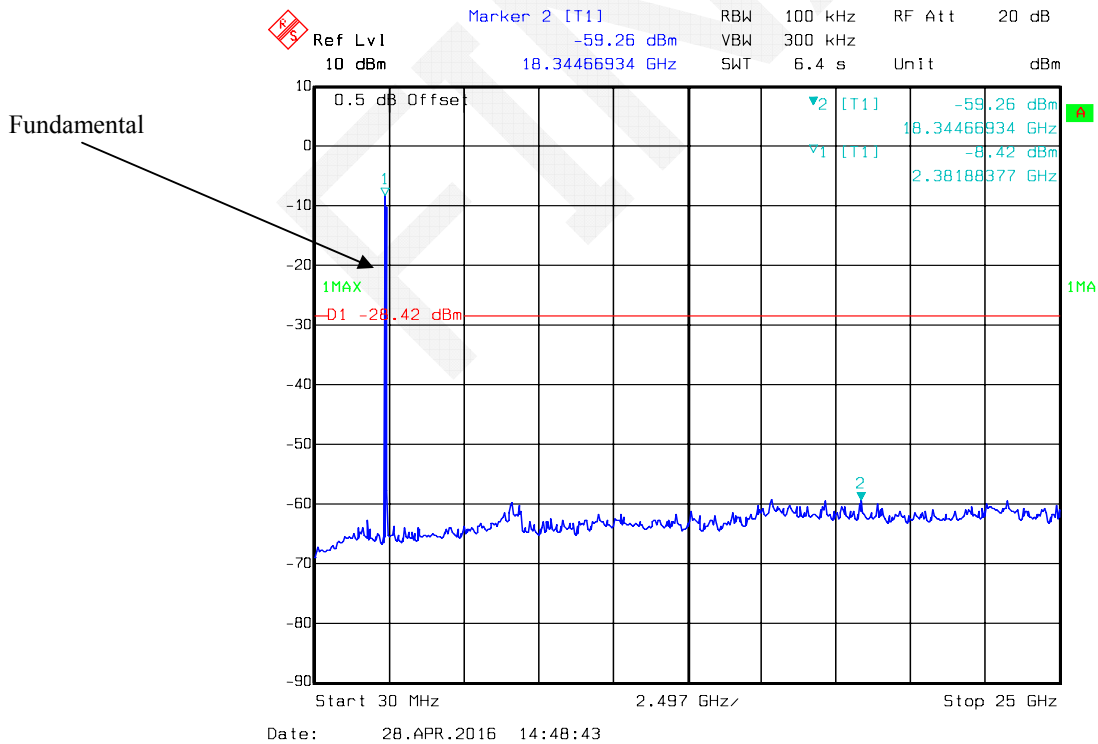
802.11n ht20 Middle Channel



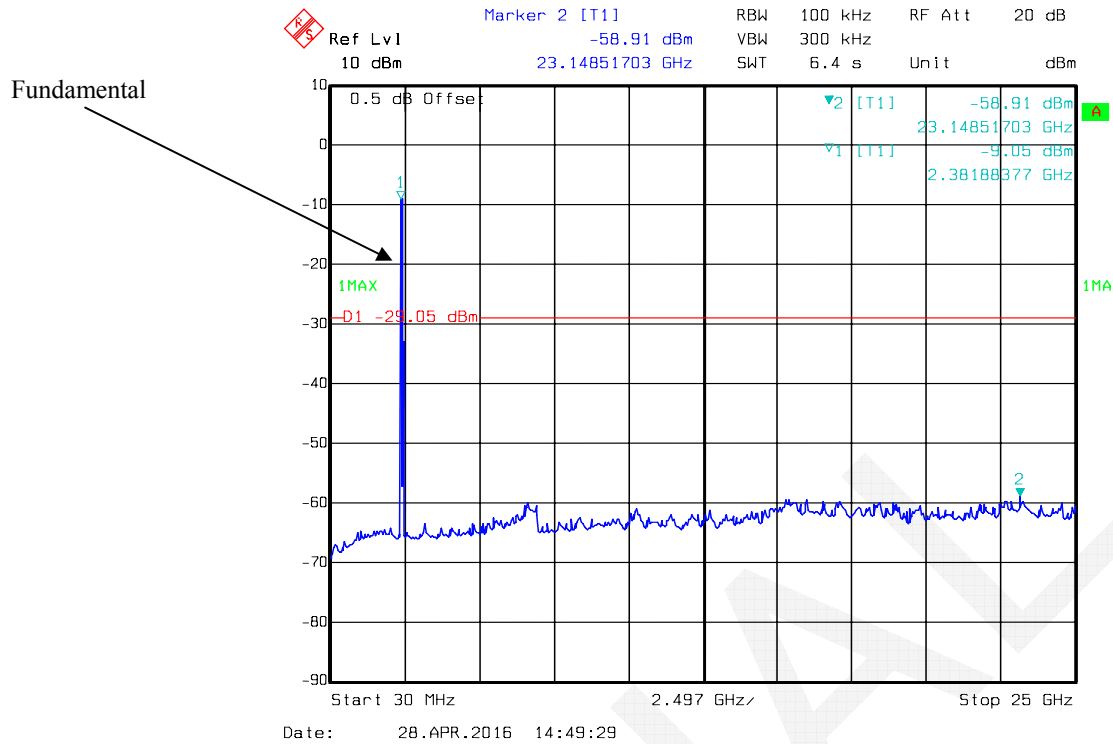
802.11n ht20 High Channel



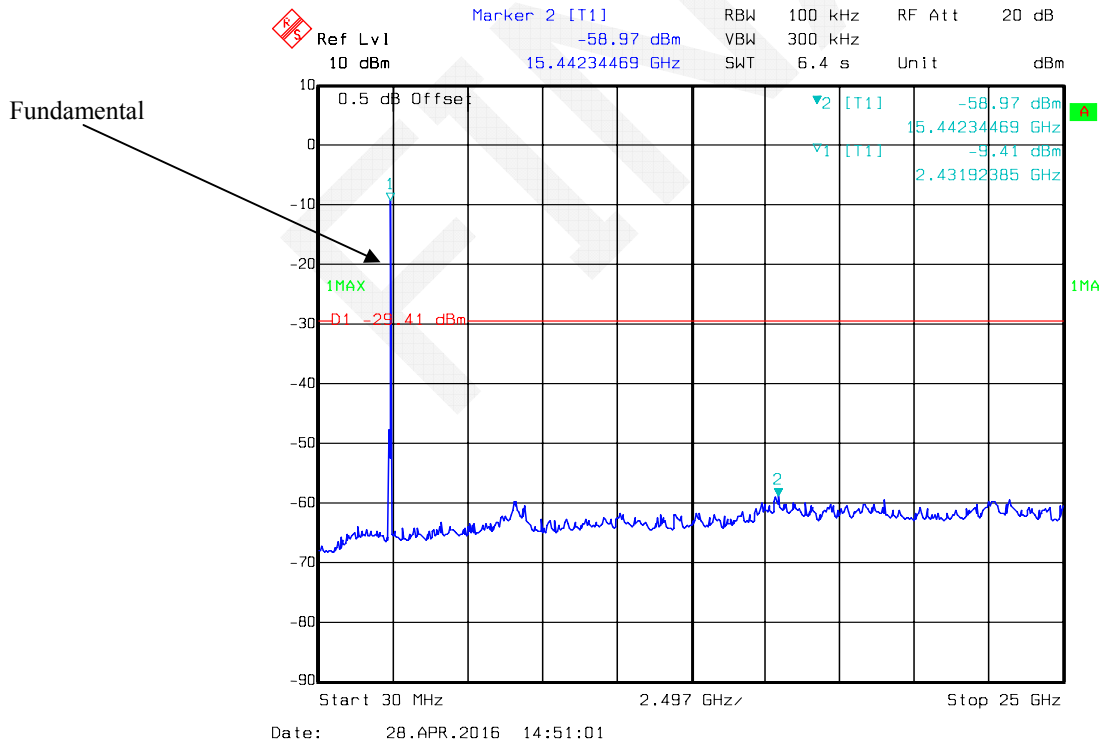
802.11n ht40 Low Channel



802.11n ht40 Middle Channel



802.11n ht40 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

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)

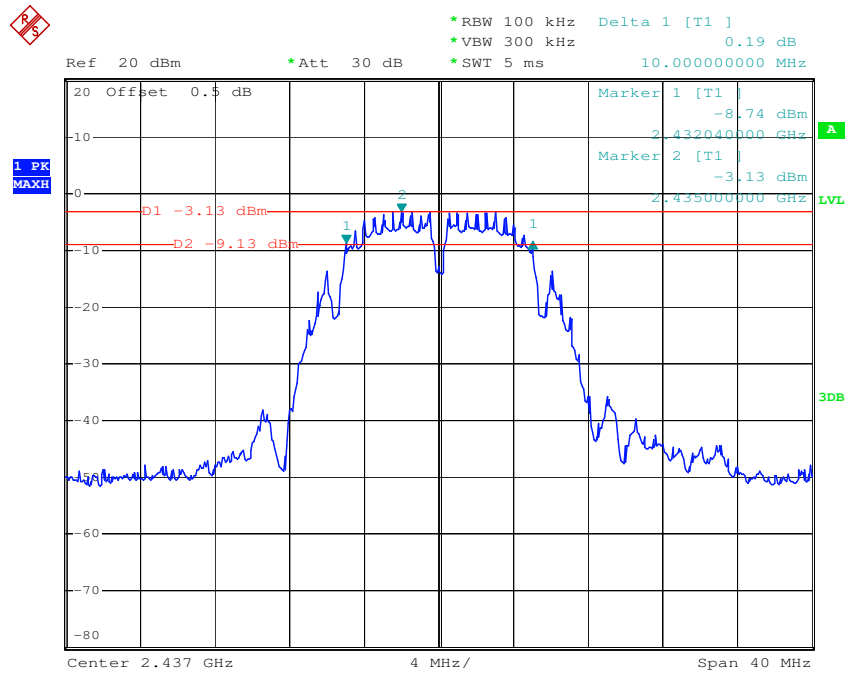
FINAL

Test Mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots.

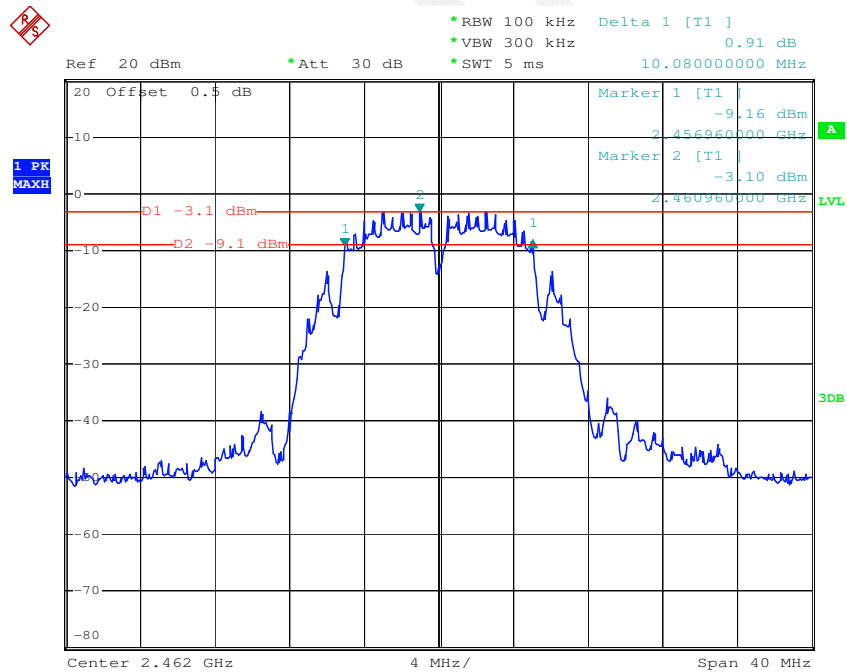
Test mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
802.11b	Low	2412	10.08	

802.11b Middle Channel



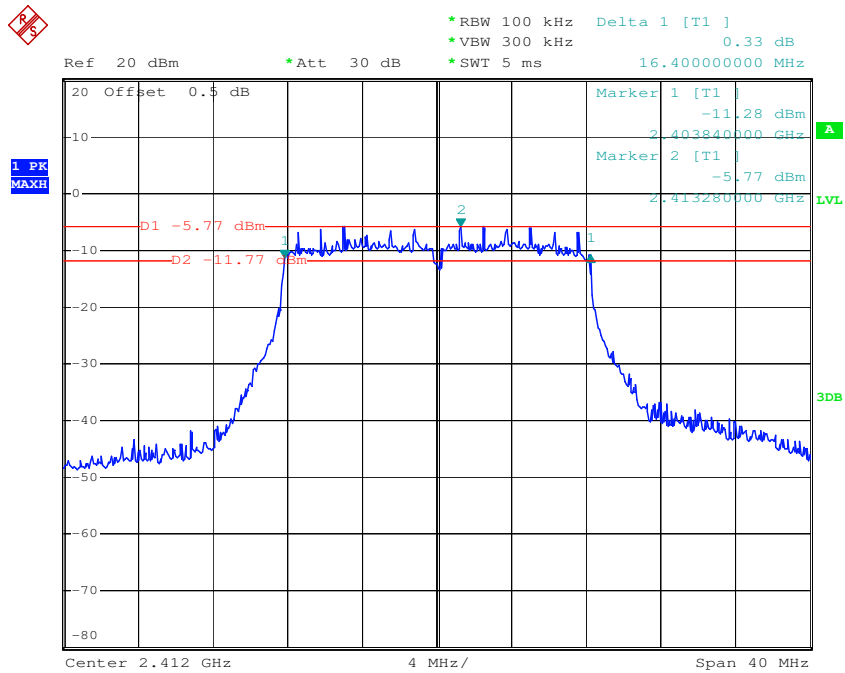
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802.11b High Channel



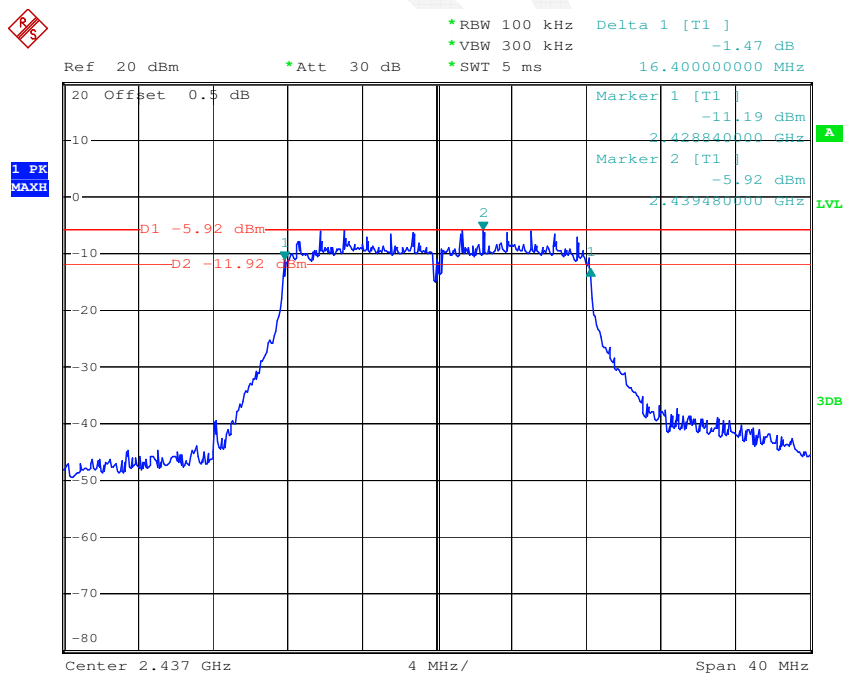
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802.11g Low Channel



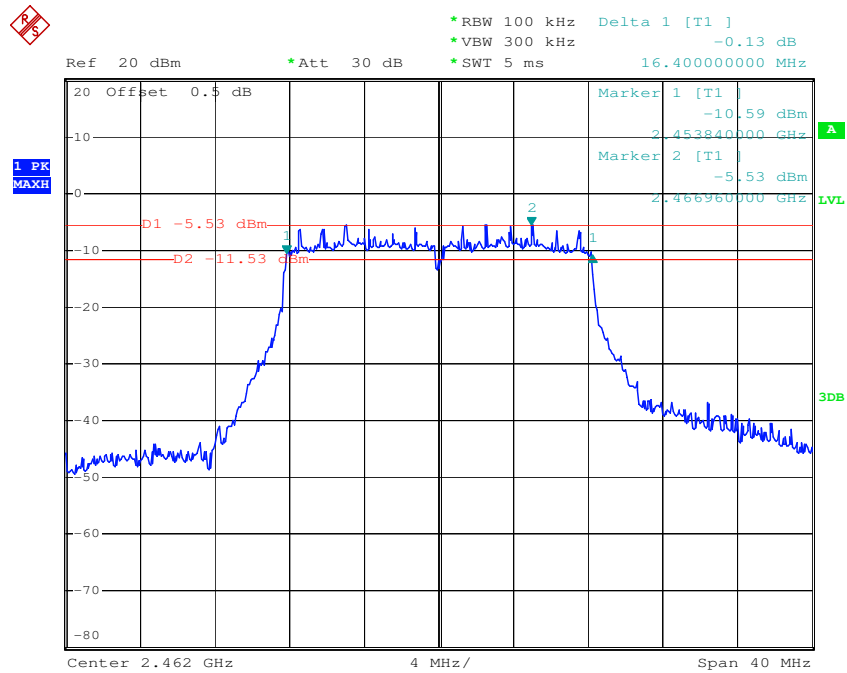
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802.11g Middle Channel



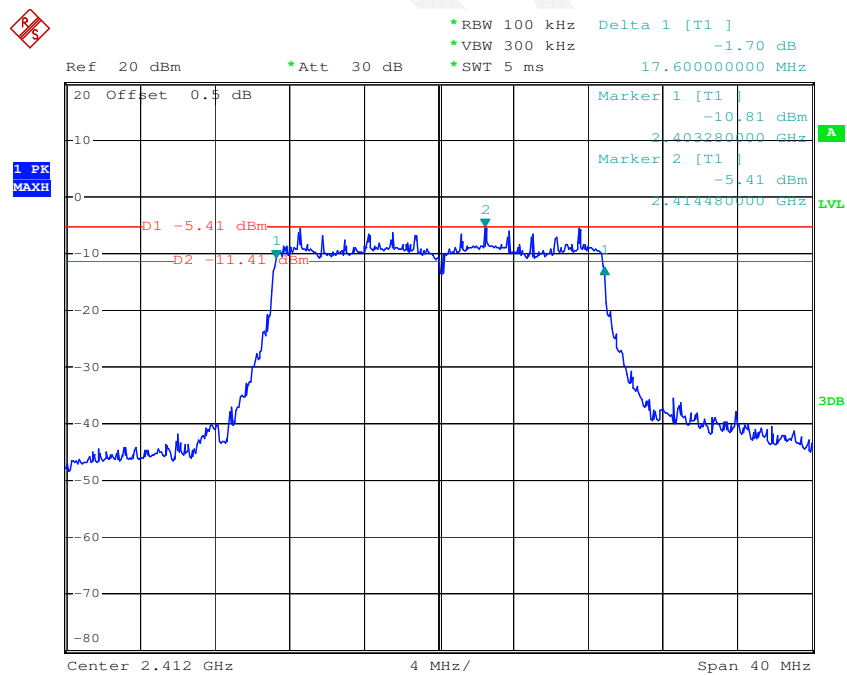
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802.11g High Channel



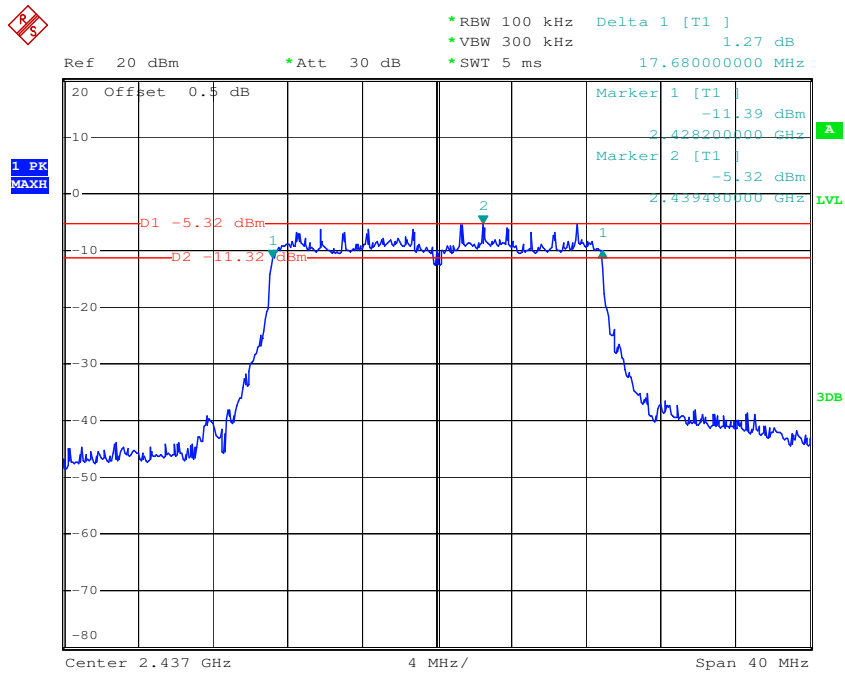
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802.11n ht20 Low Channel



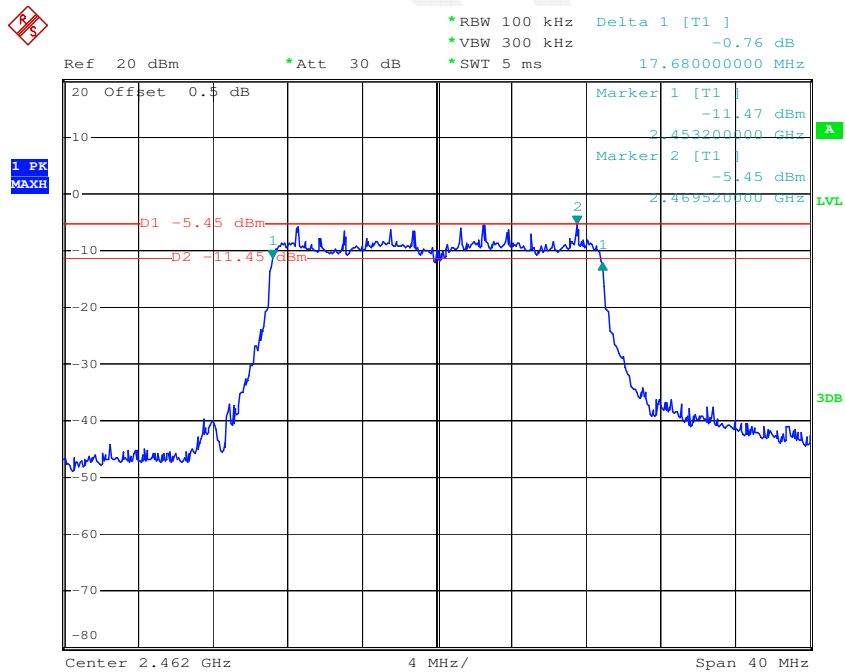
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802.11n ht20 Middle Channel



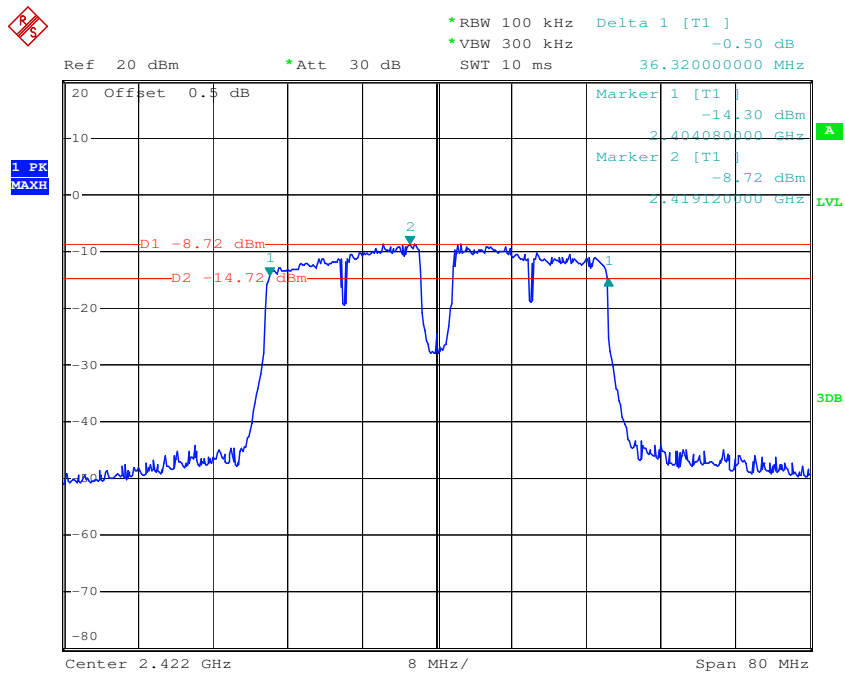
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802.11n ht20 High Channel



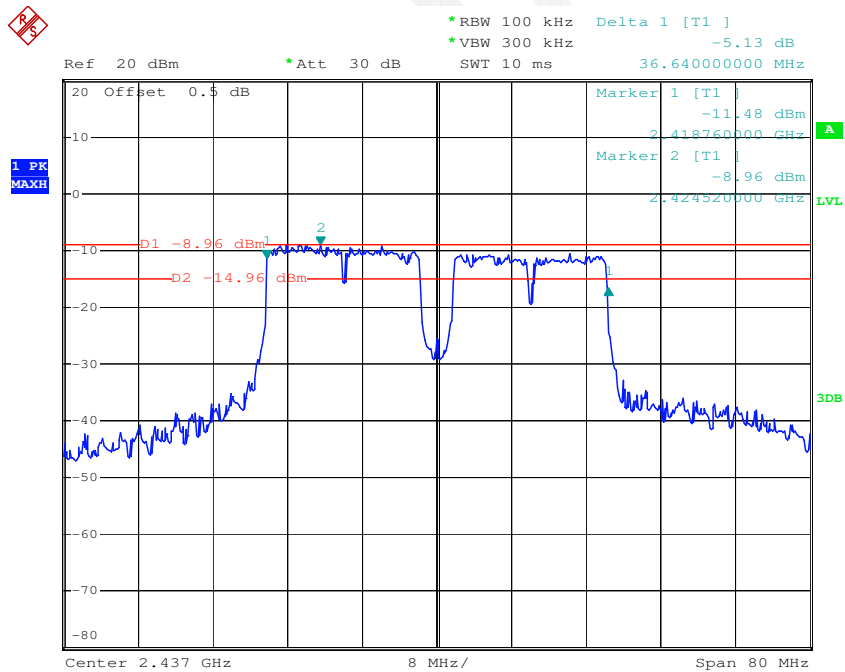
Date: 24.APR.2016 17:44:37

802.11n ht40 Low Channel



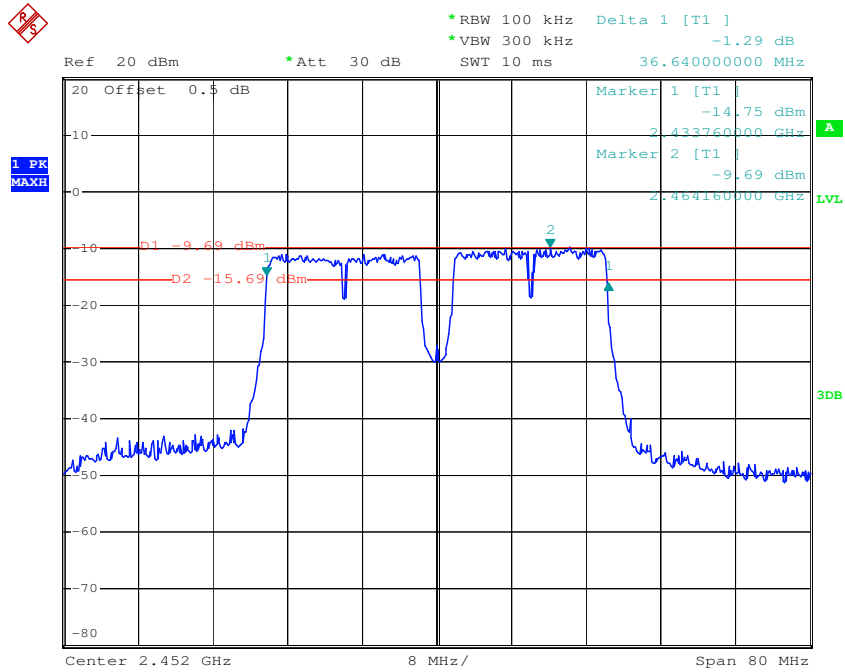
Date: 24.APR.2016 18:13:10

802.11n ht40 Middle Channel



Date: 24.APR.2016 18:10:27

802.11n ht40 High Channel



Date: 24.APR.2016 18:07:11

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. 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 test equipment.
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	2015-11-03	2016-11-03
Agilent	Wideband Power Sensor	N1921A	MY54170013	2015-11-03	2016-11-03
Agilent	P-Series Power Meter	N1912A	MY5000448	2015-11-03	2016-11-03
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
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:	26.1°C
Relative Humidity:	54 %
ATM Pressure:	100.5 kPa

* The testing was performed by Rocky Xiao on 2016-04-24.

Test Mode: Transmitting

Test Result: Compliant. Please refer to the following table.

Test mode	Channel	Frequency	Max Peak Conducted Output Power	Max Conducted Average Output Power	Limit
		(MHz)	(dBm)	(dBm)	(dBm)
802.11b	Low	2412	10.09	8.73	30
	Middle	2437	9.83	8.51	30
	High	2462	9.96	8.83	30
802.11g	Low	2412	12.77	8.34	30
	Middle	2437	12.71	8.31	30
	High	2462	13.02	8.62	30
802.11n20	Low	2412	12.98	8.41	30
	Middle	2437	13.12	8.52	30
	High	2462	13.10	8.46	30
802.11n40	Low	2422	14.97	8.86	30
	Middle	2437	14.90	8.87	30
	High	2452	14.59	8.47	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	2015-11-23	2016-11-22
N/A	Coaxial Cable	0.1m	N/A	2015-05-06	2016-05-06
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:	26.1 °C
Relative Humidity:	58 %
ATM Pressure:	100.5 kPa

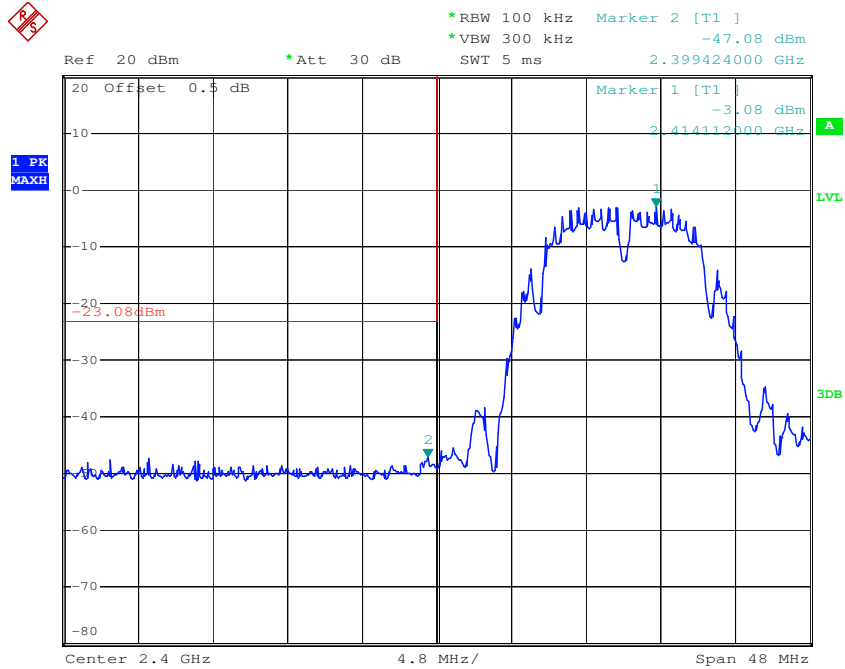
* The testing was performed by Rocky Xiao on 2016-04-24.

Test mode: Transmitting

FINAL

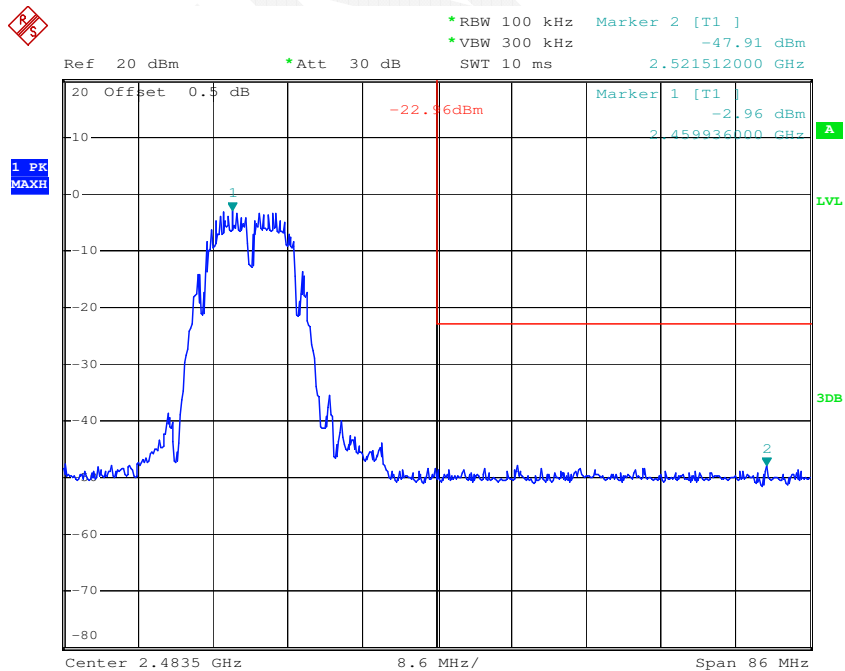
Test Result: Compliant. Please refer to following plots.

802.11b: Band Edge, Left Side



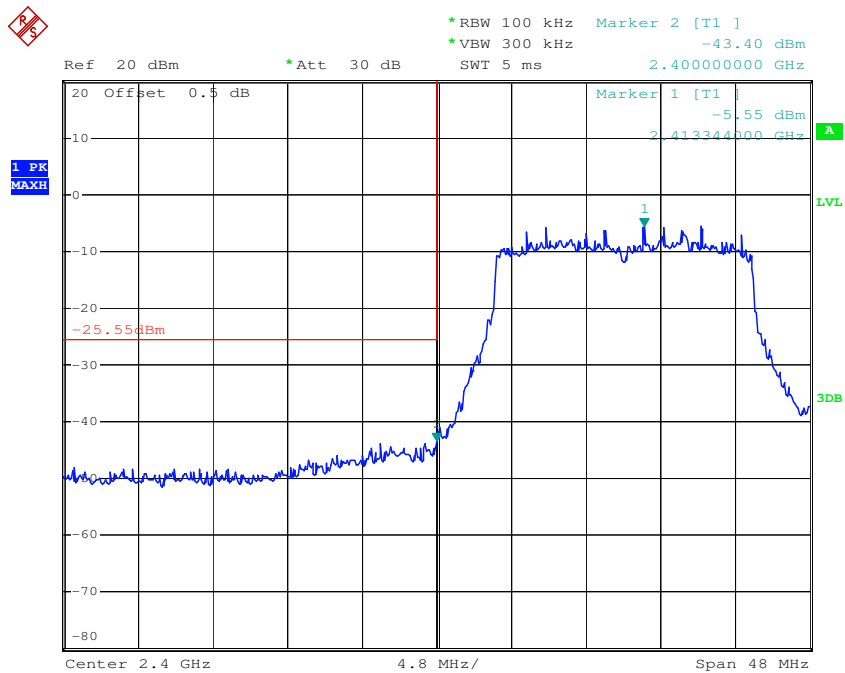
Date: 24.APR.2016 17:02:02

802.11b: Band Edge, Right Side



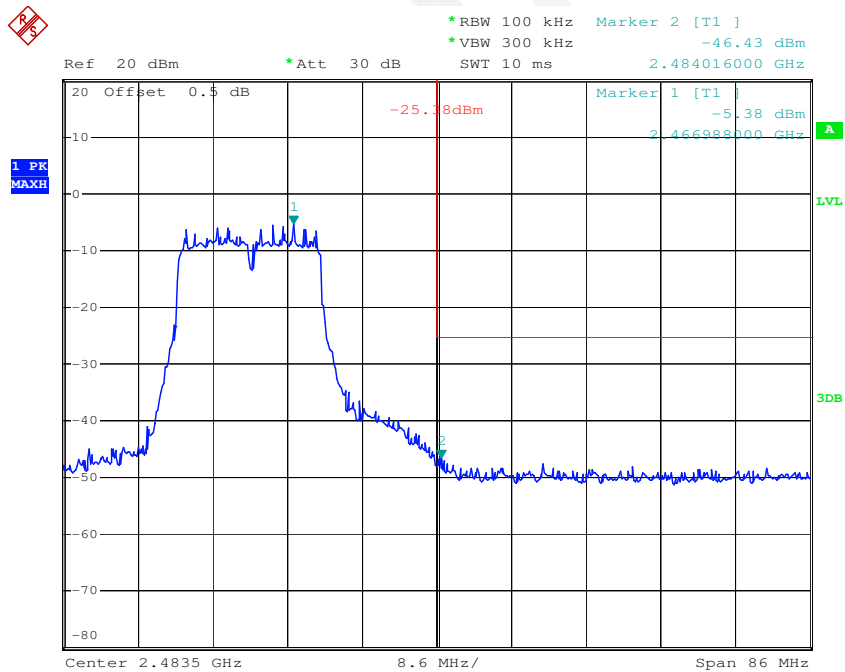
Date: 24.APR.2016 17:11:50

802.11g: Band Edge, Left Side



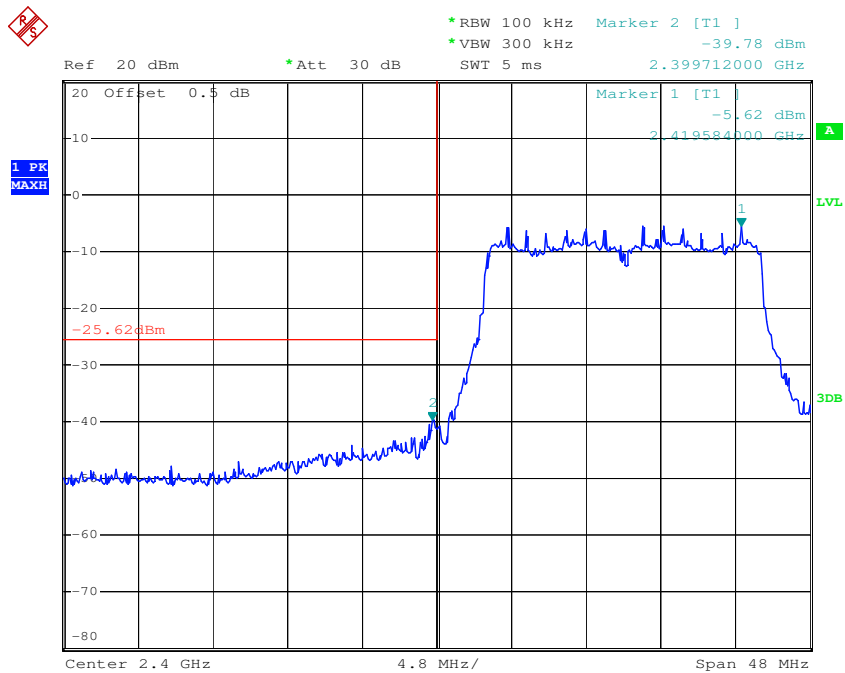
Date: 24.APR.2016 17:18:31

802.11g: Band Edge, Right Side



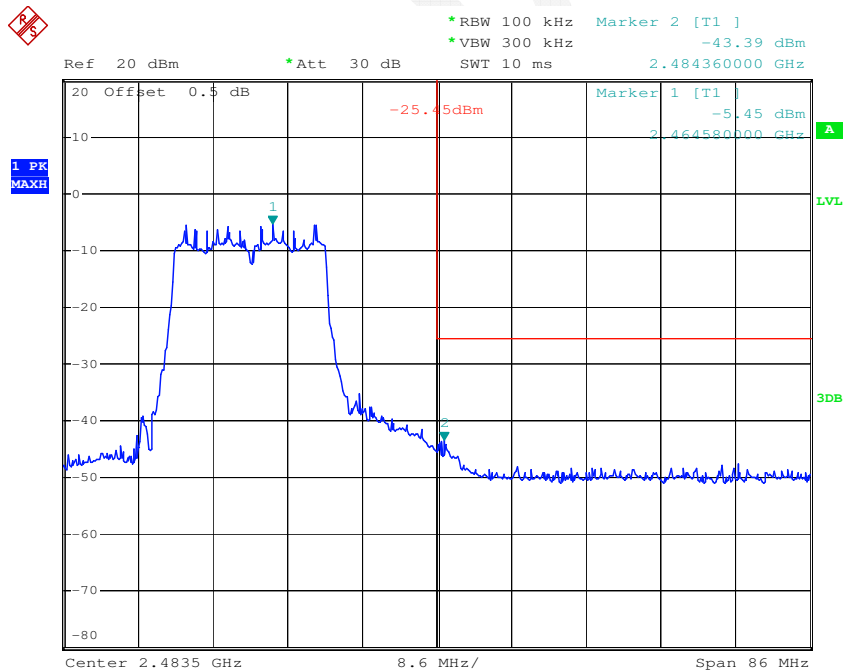
Date: 24.APR.2016 17:40:15

802.11n ht20 Band Edge, Left Side



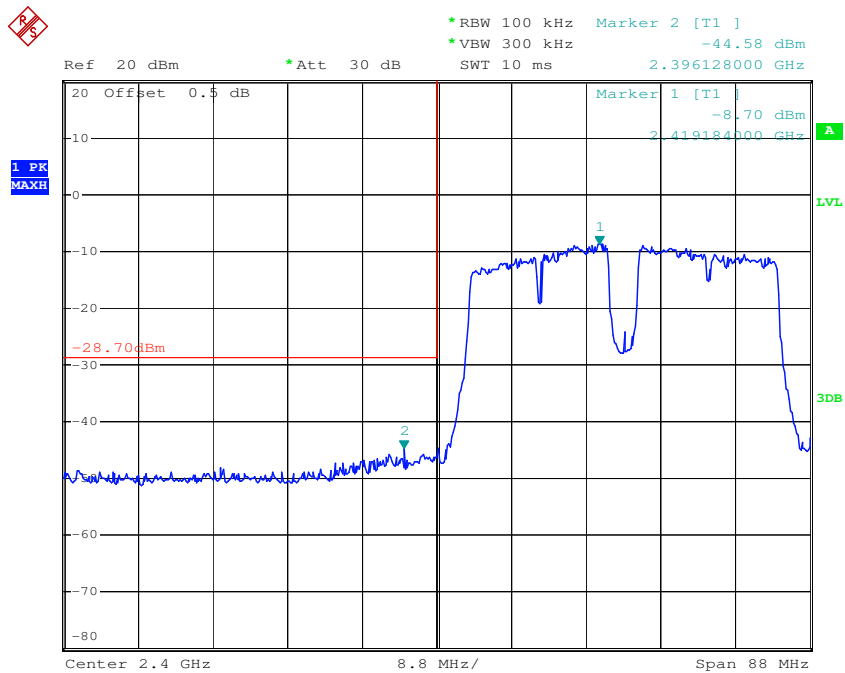
Date: 24.APR.2016 17:59:08

802.11n ht20 Band Edge, Right Side



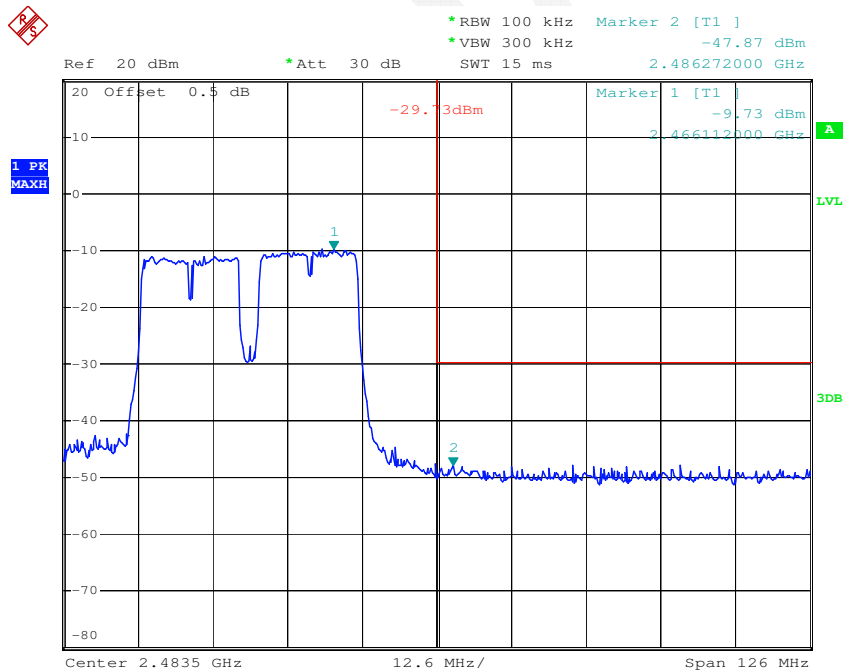
Date: 24.APR.2016 17:47:00

802.11n ht40 Band Edge, Left Side



Date: 24.APR.2016 18:15:25

802.11n ht40 Band Edge, Right Side



Date: 24.APR.2016 18:09:34

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

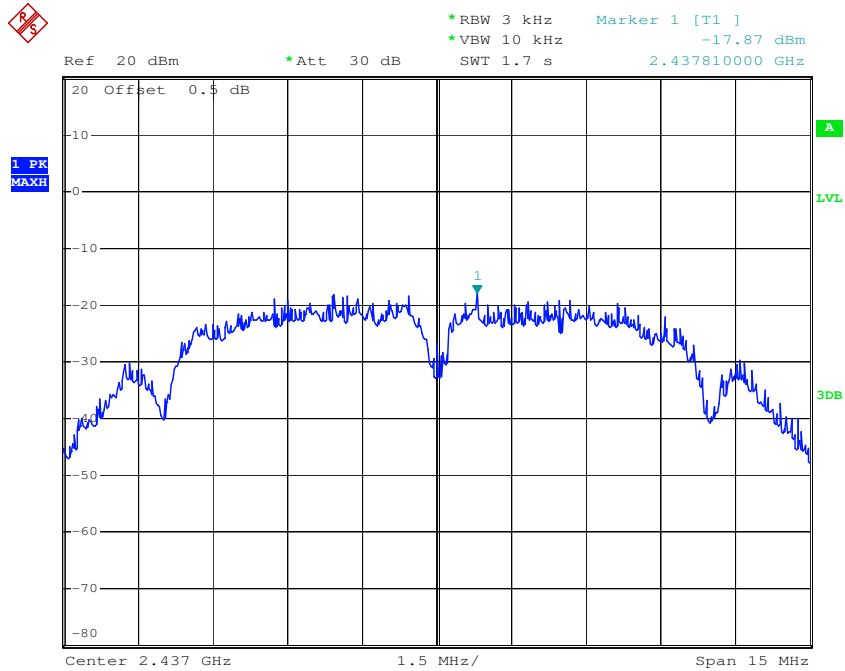
- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- d) Set the VBW ≥ 3

Test Mode: Transmitting

Test Result: Compliant. Please refer to the following table and plots

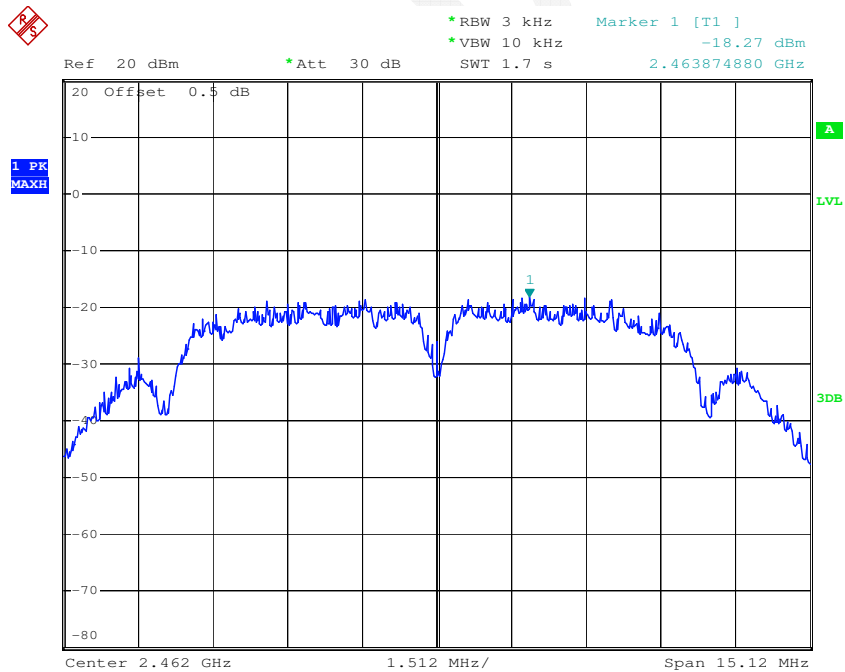
Test mode	Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
802.11b	Low	2412	-18.33	

Power Spectral Density, 802.11b Middle Channel



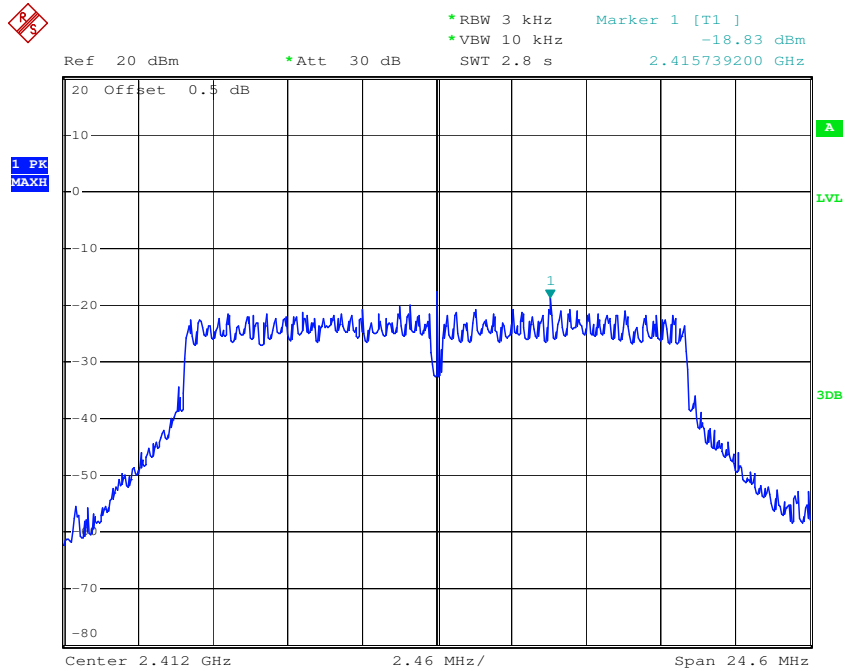
Date: 24.APR.2016 17:07:00

Power Spectral Density, 802.11b High Channel



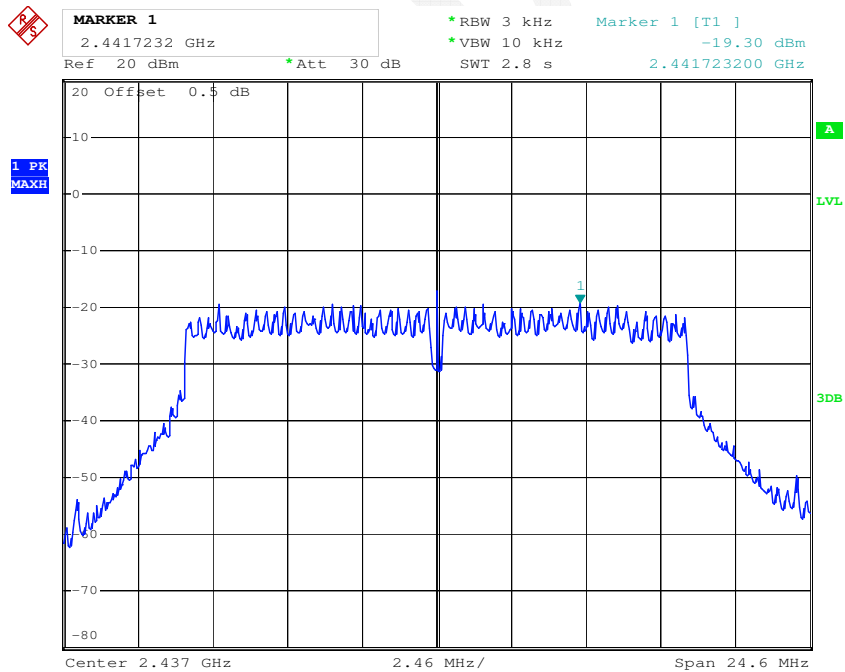
Date: 24.APR.2016 17:11:22

Power Spectral Density, 802.11g Low Channel



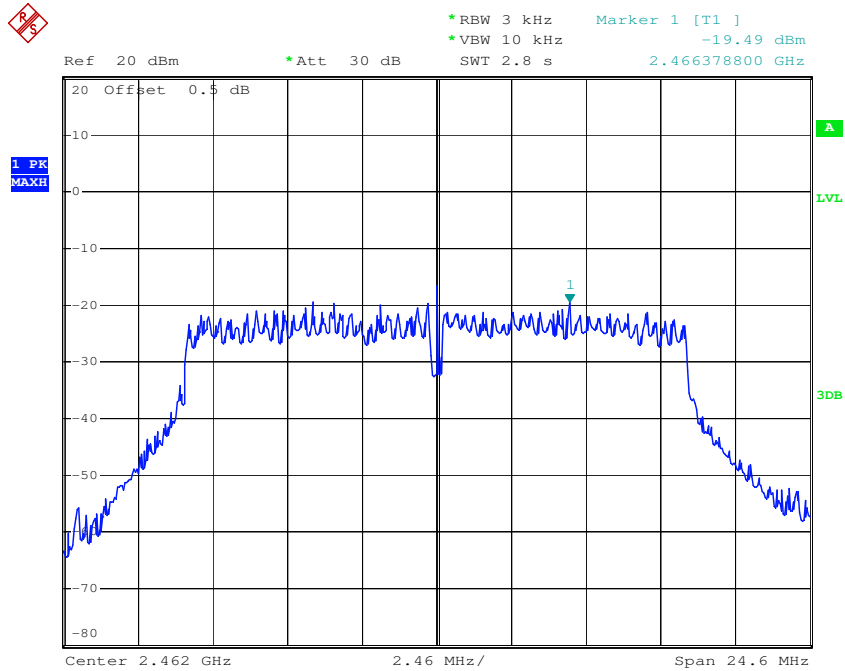
Date: 24.APR.2016 17:17:59

Power Spectral Density, 802.11g Middle Channel



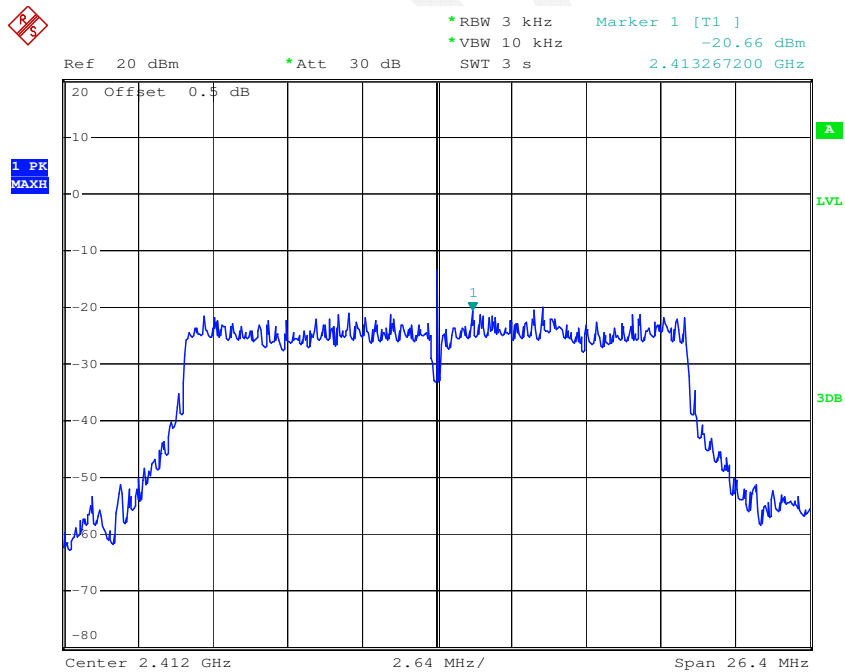
Date: 24.APR.2016 17:38:47

Power Spectral Density, 802.11g High Channel



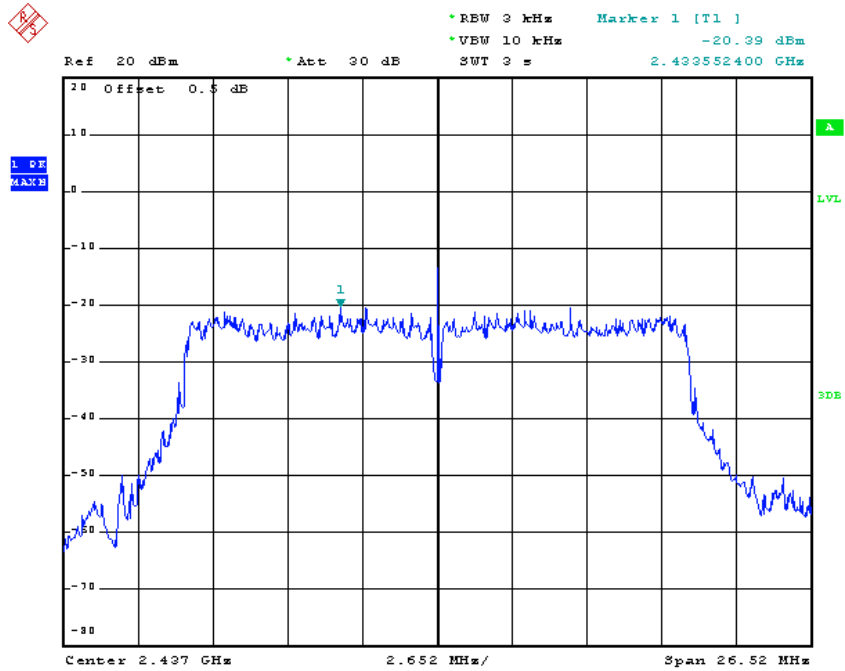
Date: 24.APR.2016 17:39:48

Power Spectral Density, 802.11n ht20 Low Channel



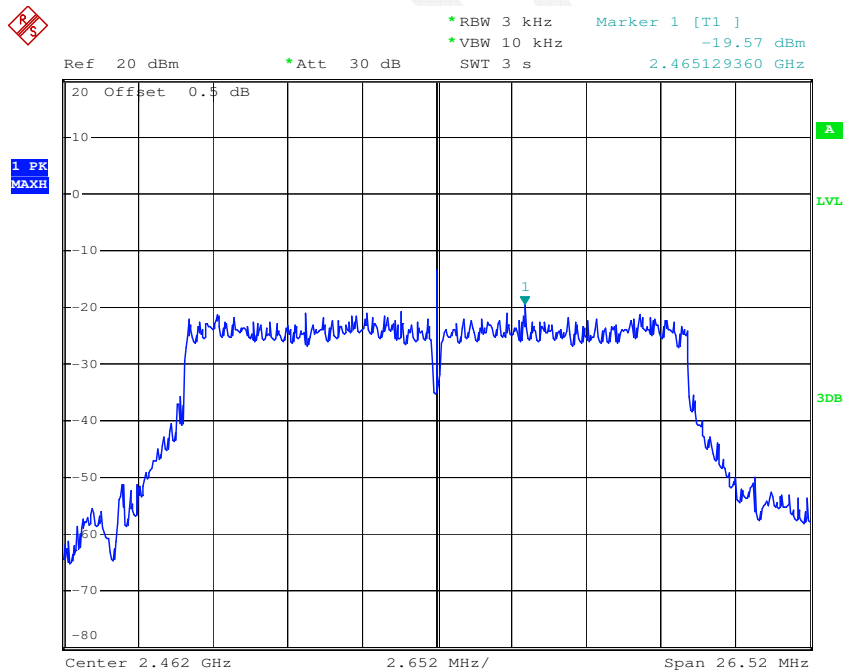
Date: 24.APR.2016 17:58:40

Power Spectral Density, 802.11n ht20 Middle Channel



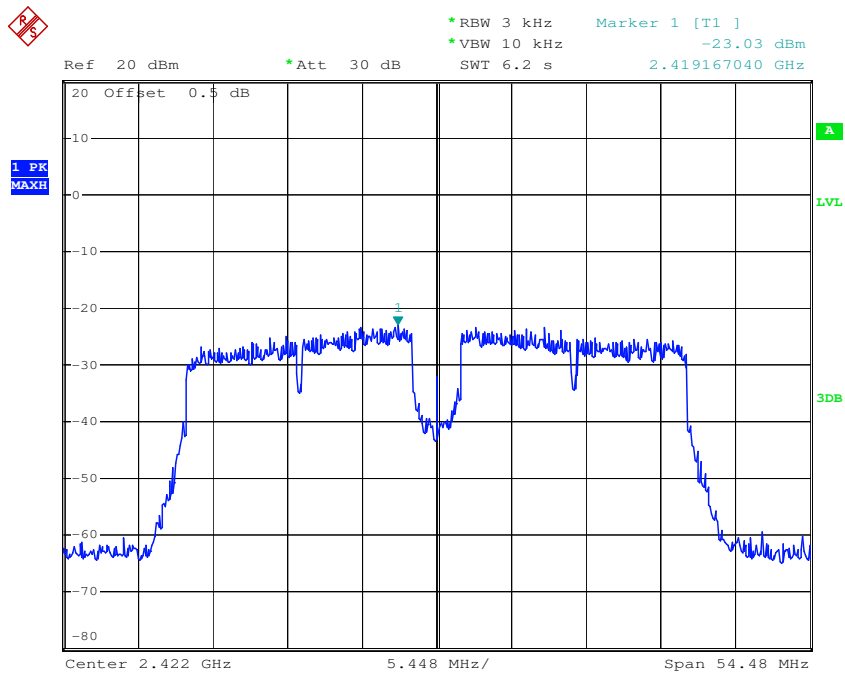
Date: 24.APR.2016 17:51:21

Power Spectral Density, 802.11n ht20 High Channel



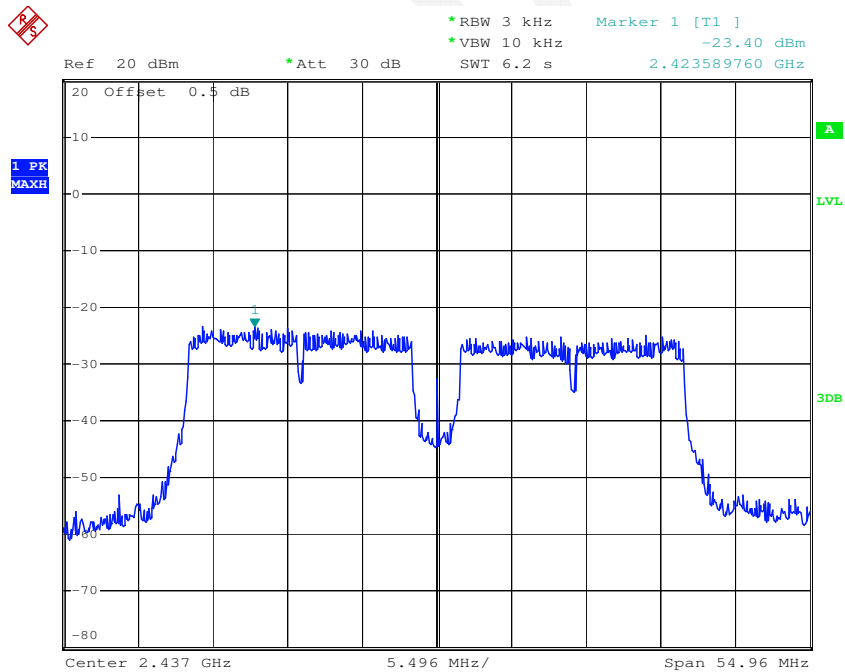
Date: 24.APR.2016 17:46:33

Power Spectral Density, 802.11n ht40 Low Channel



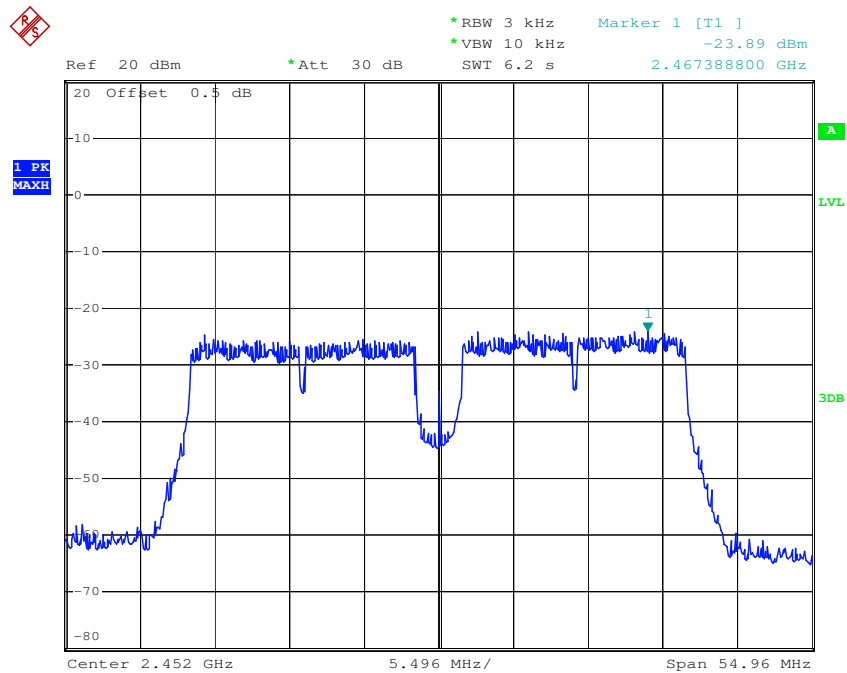
Date: 24.APR.2016 18:14:58

Power Spectral Density, 802.11n ht40 Middle Channel



Date: 24.APR.2016 18:12:15

Power Spectral Density, 802.11n ht40 High Channel



Date: 24.APR.2016 18:09:08

***** END OF REPORT *****