FCC PART 15.247

TEST REPORT

For

AOC

14F-5, No. 258, Liancheng Rd., Zhonghe Dist., New Taipei City, Taiwan

FCC ID: 2AEB5-A732G

Report Type:	**Product Name:**
Original Report	Tablet PC

Report Number:	RDG170810004-00C
Report Date:	2017-12-13
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The ***AOC***'s product, model number: ***A732G (FCC ID: 2AEB5-A732G)*** (the "EUT") in this report was a ***Tablet PC ,*** which was measured approximately: 19.2 cm (L) x 11.2 cm (W) x 1.3 cm (H), rated input voltage: DC3.7V from Battery or DC 5V from adapter.

Adapter Information:
MODEL:LFS0501500D-A8S
INPUT: 100-240V~50/60Hz, 0.5A
OUTPUT: DC 5V, 1500mA

**All measurement and test data in this report was gathered from production sample serial number: 170810004 (Assigned by BACL,Dongguan). The EUT was received on 2017-08-10.*

Objective

This report is prepared on behalf of ***AOC*** in accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communications Commission's rules.

The tests were performed in order to determine the compliance of the EUT with FCC Rules 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: 2AEB5-A732G .
FCC Part 15C DSS submissions with FCC ID: 2AEB5-A732G.
FCC Part 22H, 24E PCE submissions with FCC ID: 2AEB5-A732G .

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).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~26.5GHz: 5.23 dB
Unwanted Emissions, conducted	±1.5 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

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 Industry Area, Tangxia, Dongguan, Guangdong, China

Bay Area Compliance Laboratories Corp. (Dongguan) has been accredited to ISO/IEC 17025 by CNAS(Lab code: L5662). And accredited to ISO/IEC 17025 by NVLAP(Test Laboratory Accreditation Certificate Number 500069-0), the FCC Designation No. CN5002 under the KDB 974614 D01.

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.

Bay Area Compliance Laboratories Corp. (Dongguan) was registered with ISED Canada under ISED Canada Registration Number 3062D.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode, which was provided by the manufacturer.

For 2.4GHz band, total 11 channels are provided:

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 test with channel 1,6,11.
For 802.11n ht40 mode was test with channel 3,6,9.

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.

For Bluetooth LE mode, 40 channels are provided for testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	…	…
…	…	…	…
…	…	…	…
..	…	38	2478
19	2440	39	2480

EUT was tested with channel 0, 19 and 39.

EUT Exercise Software

The software "Engineer Mode" was used for testing, which was provided by manufacturer. The maximum power was configured as below table, that provided by the manufacturer:

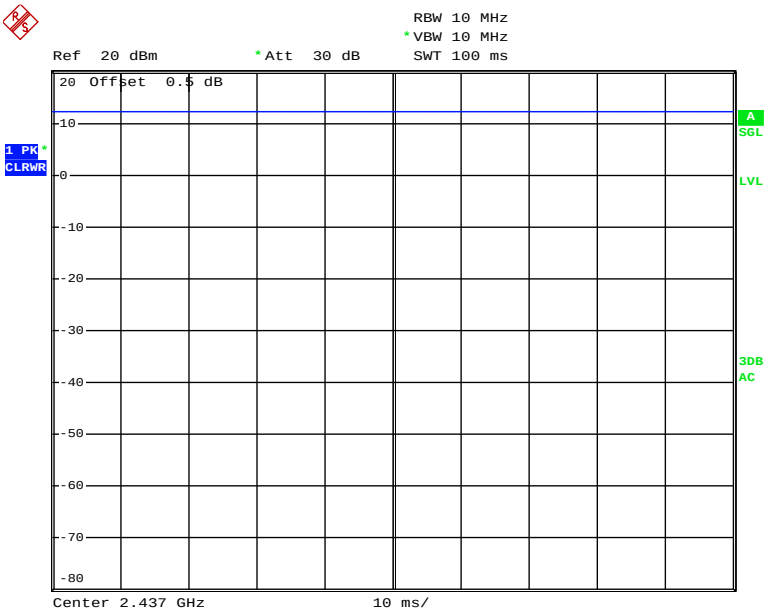
Test Mode	Test Software Version	Engineer Mode		
802.11b	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	1Mbps	1Mbps	1Mbps
	Power Level Setting	20	22	22
802.11g	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	6Mbps	6Mbps	6Mbps
	Power Level Setting	20	20	20
802.11n ht20	Test Frequency	2412MHz	2437MHz	2462MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	17	17	18
802.11n ht40	Test Frequency	2422MHz	2437MHz	2452MHz
	Data Rate	MCS0	MCS0	MCS0
	Power Level Setting	20	20	20

For BLE mode, the system configured maximum power level as default setting

The maximum duty cycle as following table:

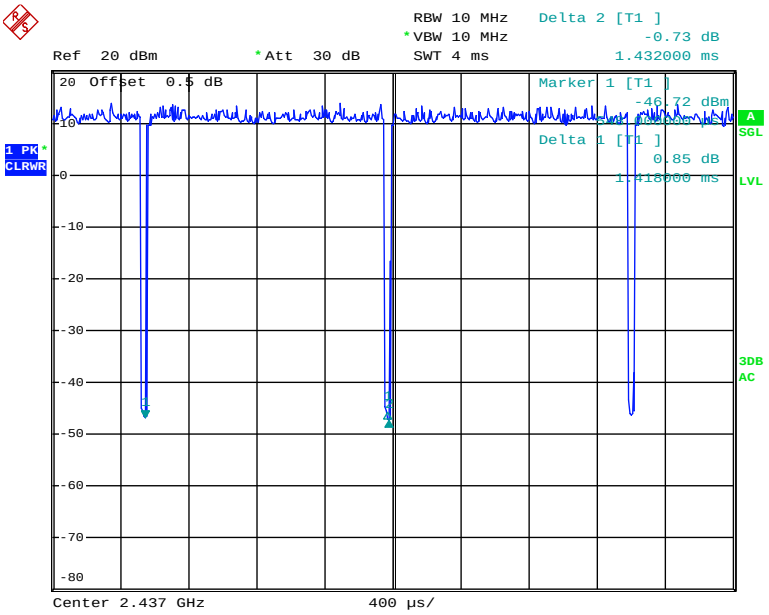
Test mode	T_{on} (ms)	T_{on+off} (ms)	Duty Cycle (%)
802.11b	100	100	100
802.11g	1.418	1.432	99.0
802.11n ht20	1.332	1.346	99.0
802.11n ht40	0.662	0.686	96.5
BLE	0.392	0.628	62.4

802.11b



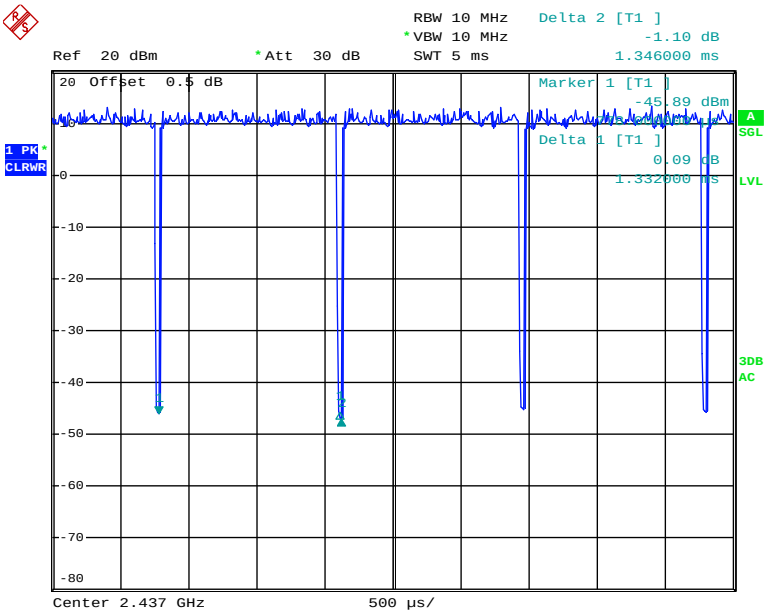
Date: 13.DEC.2017 11:35:43

802.11g



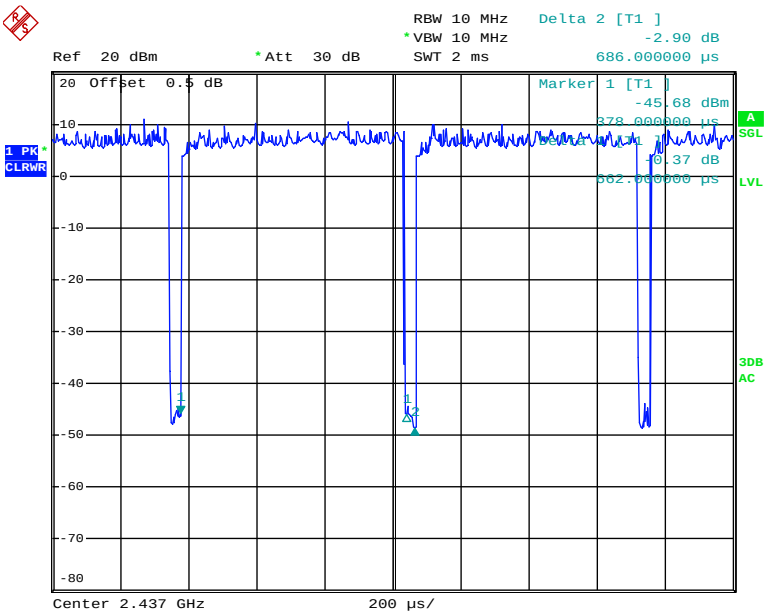
Date: 13.DEC.2017 11:35:11

802.11n ht20



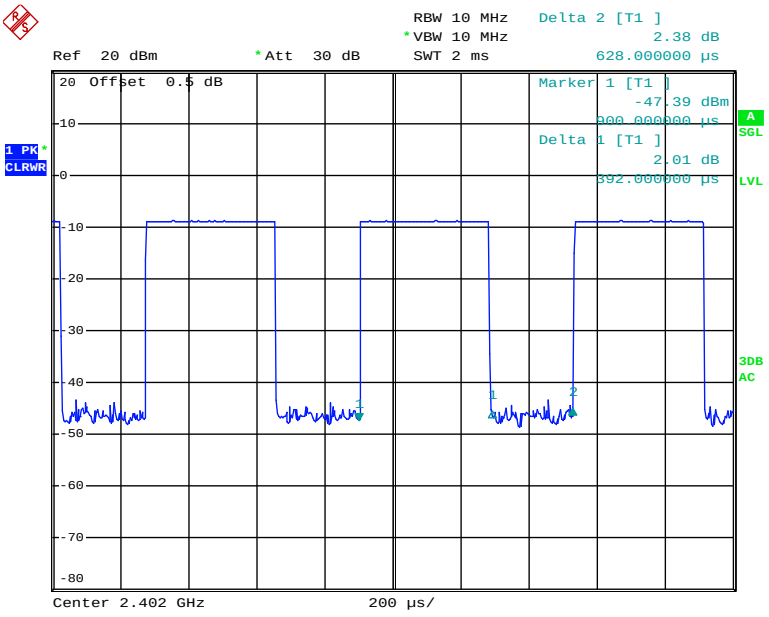
Date: 13.DEC.2017 11:34:10

802.11n ht40



Date: 13.DEC.2017 11:32:36

BLE



Date: 13.DEC.2017 11:38:12

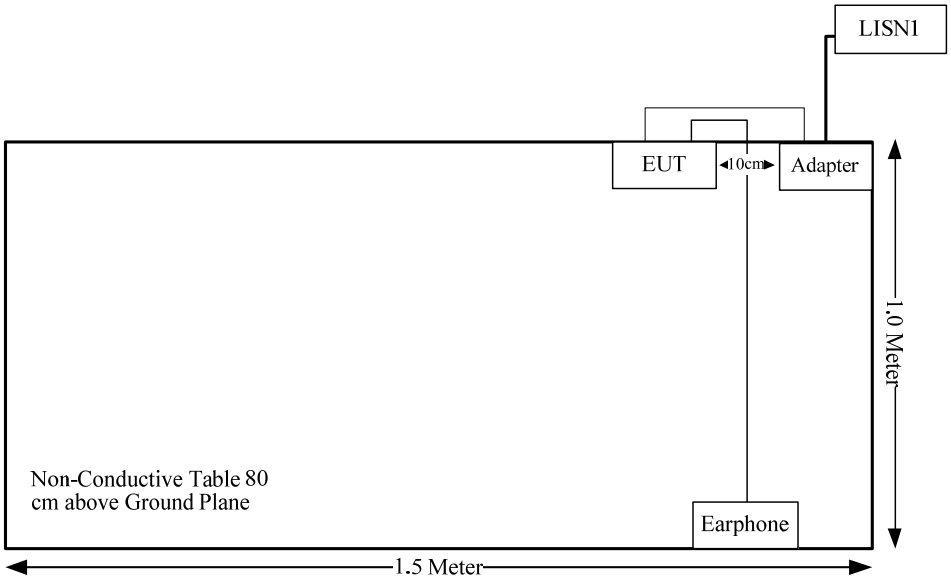
Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From	To
USB cable	Yes	no	1.0	Adapter	EUT
Earphone Cable	Yes	No	1.2	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
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(2)	6 dB 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:
[(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

For BLE:

The max conducted power including tune-up tolerance is -6.0 dBm (0.25 mW).
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
=0.25/5*(√2.480) = 0.1< 3.0

So the stand-alone SAR evaluation is not necessary.

For WiFi:

Please refer to the SAR report: RDG170810004-20

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.
c. 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 internal antenna arrangement for BT/WiFi, and the antenna gain is 1.0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

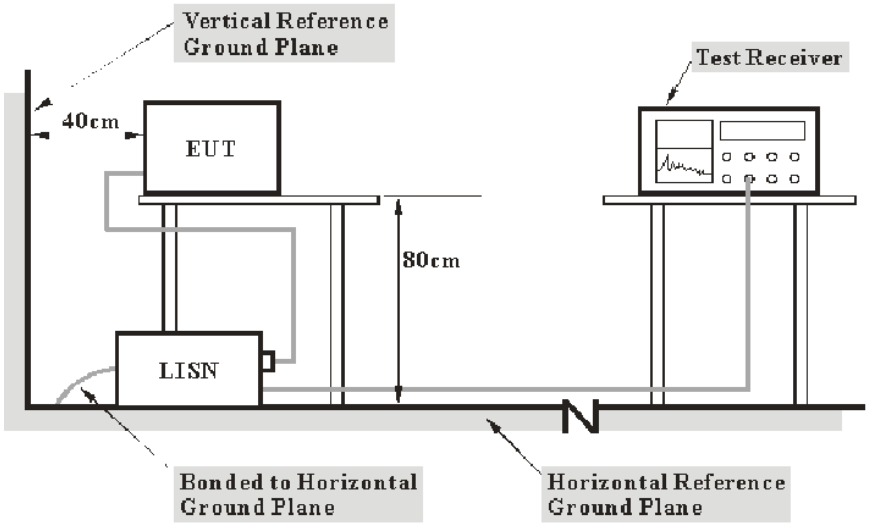
Result: Compliance.

FCC §15.207 (a)– AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207(a)

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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

The spacing between the peripherals was 10 cm.

The adapter was connected to the main lisn with a 120 V/60 Hz AC 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 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	ESCS 30	830245/006	2016-12-08	2017-12-08
R&S	Two-line V-network	ENV 216	3560.6550.12	2016-12-08	2017-12-08
R&S	L.I.S.N	ESH2-Z5	892107/021	2016-09-25	2017-09-25
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2016-09-01	2017-09-01

*** 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

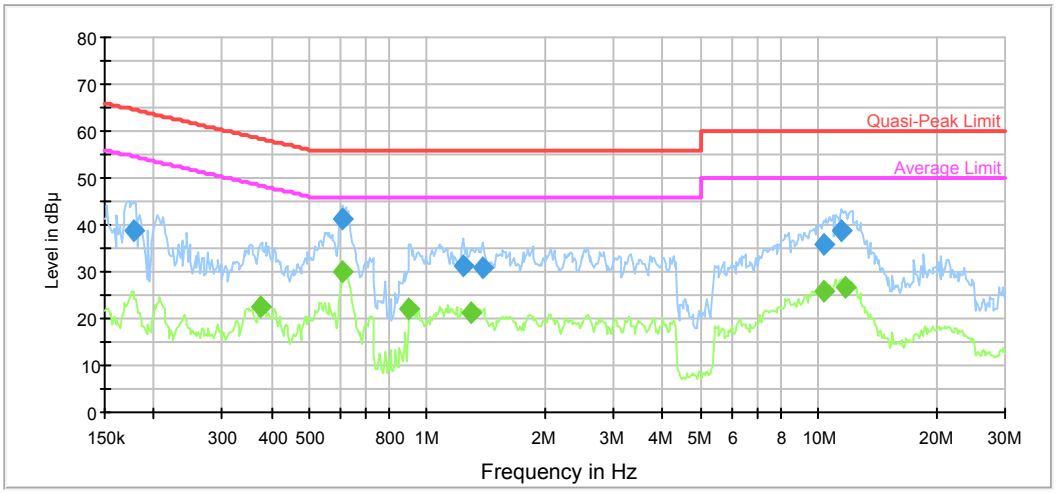
Environmental Conditions

Temperature:	26.8°C
Relative Humidity:	48 %
ATM Pressure:	100.2 kPa

The testing was performed by Gaochao Gong on 2017-08-12.

Test Mode: Transmitting

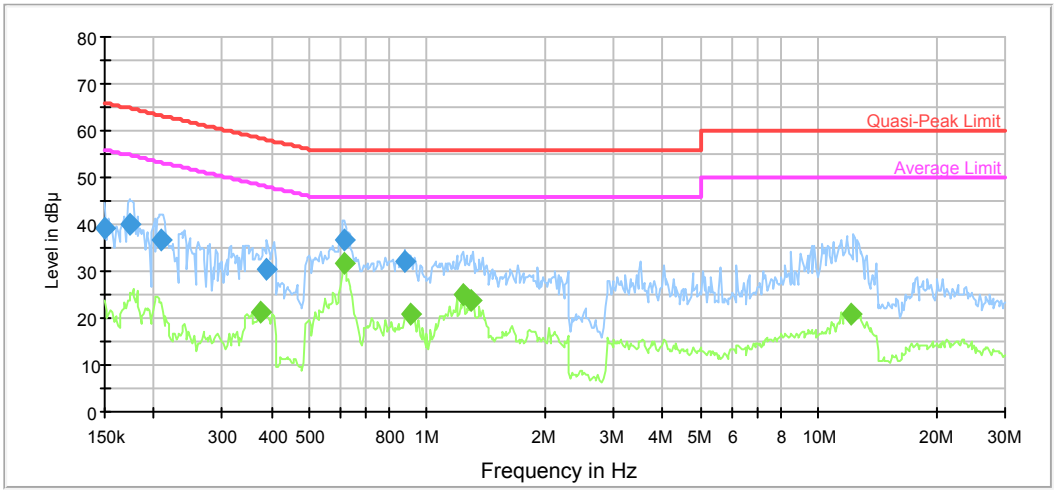
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.178741	38.7	9.000	L1	10.8	25.8	64.5	Compliance
0.609741	41.2	9.000	L1	9.8	14.8	56.0	Compliance
1.239175	31.4	9.000	L1	9.7	24.6	56.0	Compliance
1.385415	31.0	9.000	L1	9.7	25.0	56.0	Compliance
10.318917	35.8	9.000	L1	9.9	24.2	60.0	Compliance
11.445138	38.6	9.000	L1	9.9	21.4	60.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.375019	22.3	9.000	L1	10.0	26.1	48.4	Compliance
0.609741	29.8	9.000	L1	9.8	16.2	46.0	Compliance
0.900972	22.3	9.000	L1	9.8	23.7	46.0	Compliance
1.289541	21.1	9.000	L1	9.7	24.9	46.0	Compliance
10.318917	25.7	9.000	L1	9.9	24.3	50.0	Compliance
11.722024	26.7	9.000	L1	9.9	23.3	50.0	Compliance

AC120 V, 60 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	39.0	9.000	N	11.2	27.0	66.0	Compliance
0.173134	39.9	9.000	N	10.9	24.9	64.8	Compliance
0.209621	36.5	9.000	N	10.5	26.7	63.2	Compliance
0.390261	30.5	9.000	N	10.0	27.6	58.1	Compliance
0.614619	36.6	9.000	N	9.8	19.4	56.0	Compliance
0.879690	32.2	9.000	N	9.8	23.8	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.375019	21.1	9.000	N	10.0	27.3	48.4	Compliance
0.614619	31.6	9.000	N	9.8	14.4	46.0	Compliance
0.908180	21.0	9.000	N	9.8	25.0	46.0	Compliance
1.239175	25.1	9.000	N	9.7	20.9	46.0	Compliance
1.289541	24.0	9.000	N	9.7	22.0	46.0	Compliance
12.101654	20.7	9.000	N	9.9	29.3	50.0	Compliance

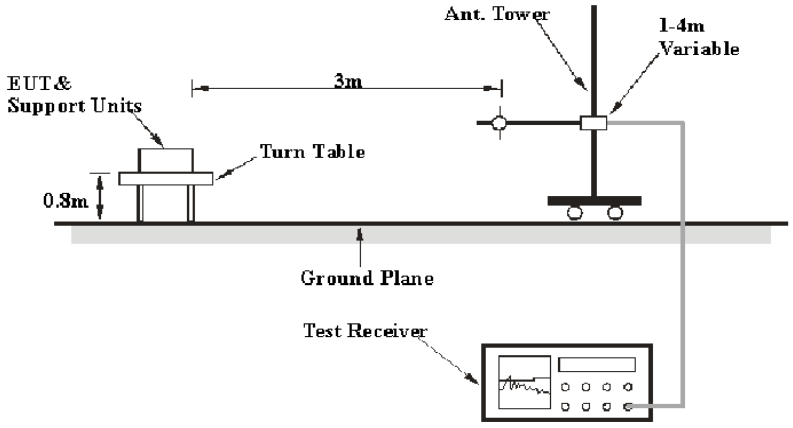
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

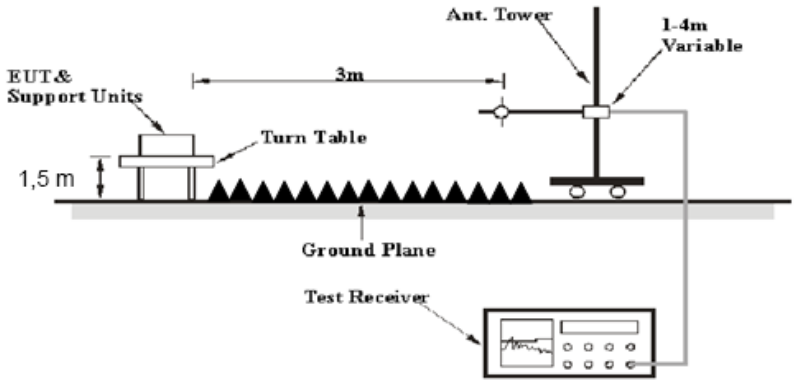
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters distance, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

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:

30MHz-1000MHz:

Measurement	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 25GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<98%	1MHz	1/T

Note: T is minimum transmission duration

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 Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + 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	2016-09-01	2017-08-31
Sunol Sciences	Antenna	JB3	A060611-1	2014-11-06	2017-11-05
HP	Amplifier	8447D	2727A05902	2016-09-05	2017-09-05
Agilent	Spectrum Analyzer	E4440A	SG43360054	2016-12-08	2017-12-08
ETS-Lindgren	Horn Antenna	3115	000 527 35	2016-01-05	2019-01-04
MITEQ	Amplifier	AFS42-00101800-25-S-42	2001271	2016-09-05	2017-09-05
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-02 1304	2016-11-18	2019-11-18
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2017-06-27	2018-06-27
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2016-09-01	2017-09-01
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2016-09-01	2017-09-01
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2016-09-01	2017-09-01
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2016-09-01	2017-09-01
Farad	Test Software	EZ-EMC	V1.1.4.2	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 Data

Environmental Conditions

Temperature:	28.2~28.8 °C
Relative Humidity:	33~45 %
ATM Pressure:	100.2~100.3 kPa

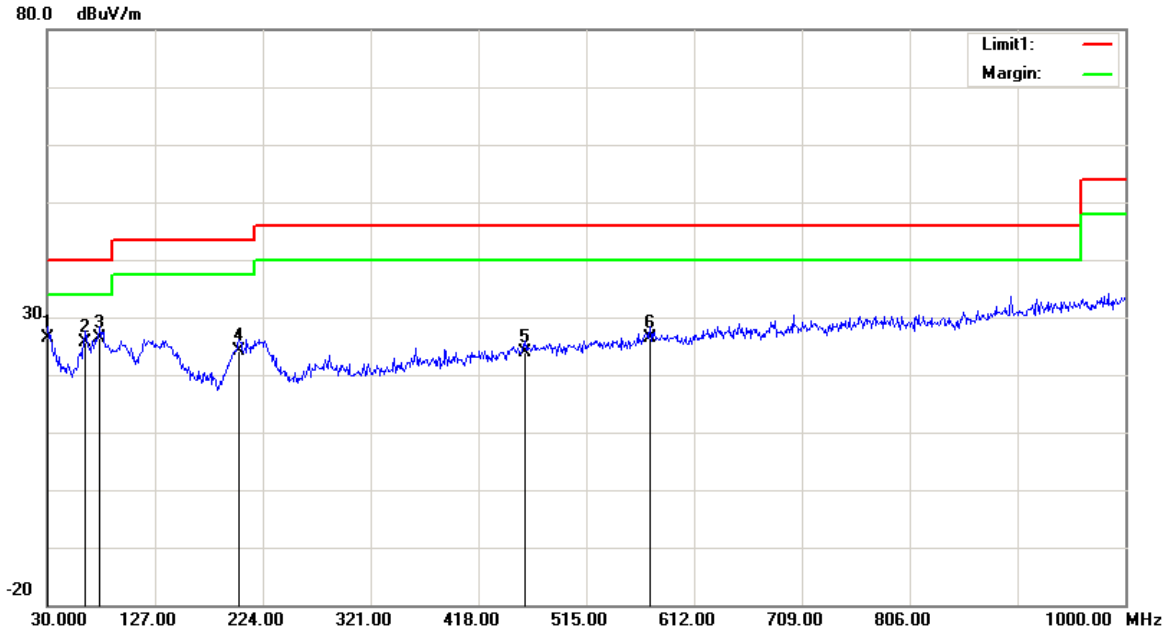
** The testing was performed by Blake Yang and Steven Zuo from 2017-08-14 to 2017-08-16.*

Test Result: Compliance, please Refer to the following data

Test Mode: Transmitting

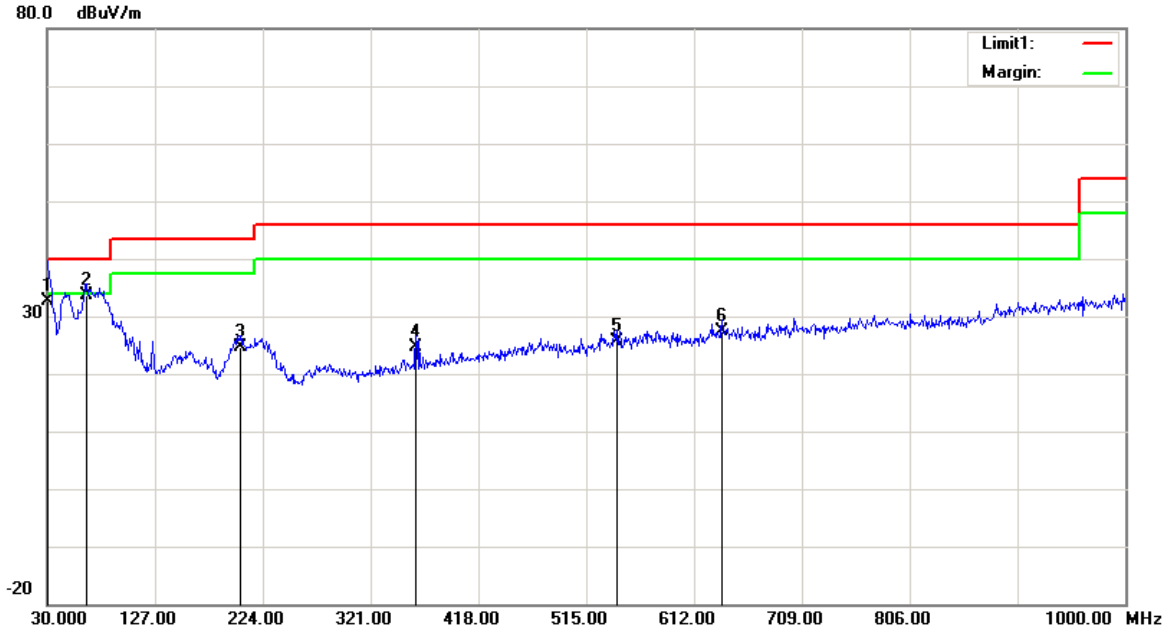
1) 30MHz-1GHz(802.11b mode High channel was the worst)

Horizontal:



Frequency (MHz)	Receiver Reading (dBµV)	Measurement	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.9700	26.15	QP	0.35	26.50	40.00	13.50
63.9500	37.72	QP	-12.02	25.70	40.00	14.30
77.5300	37.61	QP	-11.21	26.40	40.00	13.60
202.6600	30.54	QP	-6.34	24.20	43.50	19.30
459.7100	25.09	QP	-1.19	23.90	46.00	22.10
572.2300	25.88	QP	0.42	26.30	46.00	19.70

Vertical:



Frequency (MHz)	Receiver Reading (dBµV)	Measurement	Correction Factor (dB/m)	Cord. Amp. (dBµV/m)	Limit (dBµV/m)	Margin (dB)
30.9700	32.35	QP	0.35	32.70	40.00	7.30
65.8900	45.57	QP	-11.87	33.70	40.00	6.30
203.6300	31.15	QP	-6.55	24.60	43.50	18.90
361.7400	27.76	QP	-3.06	24.70	46.00	21.30
542.1600	26.07	QP	-0.37	25.70	46.00	20.30
637.2200	25.81	QP	1.59	27.40	46.00	18.60

2) 1-25GHz:

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)	Measurement	Polar (H/V)	Factor (dB)					
Low Channel: 2412 MHz									
2412	73.35	PK	H	28.12	3.11	0.00	104.58	N/A	N/A
2412	69.47	AV	H	28.12	3.11	0.00	100.70	N/A	N/A
2412	73.91	PK	V	28.12	3.11	0.00	105.14	N/A	N/A
2412	70.91	AV	V	28.12	3.11	0.00	102.14	N/A	N/A
2390	27.21	PK	V	28.08	3.10	0.00	58.39	74.00	15.61
2390	15.84	AV	V	28.08	3.10	0.00	47.02	54.00	6.98
4824	51.62	PK	V	32.95	4.33	35.49	53.41	74.00	20.59
4824	45.89	AV	V	32.95	4.33	35.49	47.68	54.00	6.32
7236	51.27	PK	V	35.81	5.47	35.97	56.58	74.00	17.42
7236	45.33	AV	V	35.81	5.47	35.97	50.64	54.00	3.36
6225	47.29	PK	V	34.26	4.94	35.80	50.69	74.00	23.31
6225	31.43	AV	V	34.26	4.94	35.80	34.83	54.00	19.17
Middle Channel: 2437 MHz									
2437	74.01	PK	H	28.17	3.11	0.00	105.29	N/A	N/A
2437	72.81	AV	H	28.17	3.11	0.00	104.09	N/A	N/A
2437	75.69	PK	V	28.17	3.11	0.00	106.97	N/A	N/A
2437	72.18	AV	V	28.17	3.11	0.00	103.46	N/A	N/A
4874	56.79	PK	V	33.05	4.39	35.53	58.70	74.00	15.30
4874	51.38	AV	V	33.05	4.39	35.53	53.29	54.00	0.71
7311	52.17	PK	V	36.01	5.52	35.97	57.73	74.00	16.27
7311	45.26	AV	V	36.01	5.52	35.97	50.82	54.00	3.18
5935	46.72	PK	V	34.27	4.63	35.85	49.77	74.00	24.23
5935	32.19	AV	V	34.27	4.63	35.85	35.24	54.00	18.76
6345	45.87	PK	V	34.23	5.08	35.77	49.41	74.00	24.59
6345	31.73	AV	V	34.23	5.08	35.77	35.27	54.00	18.73
High Channel: 2462 MHz									
2462	74.15	PK	H	28.22	3.10	0.00	105.47	N/A	N/A
2462	71.23	AV	H	28.22	3.10	0.00	102.55	N/A	N/A
2462	74.46	PK	V	28.22	3.10	0.00	105.78	N/A	N/A
2462	71.55	AV	V	28.22	3.10	0.00	102.87	N/A	N/A
2483.5	25.73	PK	V	28.27	3.10	0.00	57.10	74.00	16.90
2483.5	15.77	AV	V	28.27	3.10	0.00	47.14	54.00	6.86
4924	51.67	PK	V	33.15	4.42	35.57	53.67	74.00	20.33
4924	46.52	AV	V	33.15	4.42	35.57	48.52	54.00	5.48
7386	49.83	PK	V	36.20	5.57	35.98	55.62	74.00	18.38
7386	41.87	AV	V	36.20	5.57	35.98	47.66	54.00	6.34
5975	46.53	PK	V	34.29	4.66	35.85	49.63	74.00	24.37
5975	31.28	AV	V	34.29	4.66	35.85	34.38	54.00	19.62

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)	Measurement	Polar (H/V)	Factor (dB)					
Low Channel: 2412 MHz									
2412	73.82	PK	H	28.12	3.11	0.00	105.05	N/A	N/A
2412	64.66	AV	H	28.12	3.11	0.00	95.89	N/A	N/A
2412	74.81	PK	V	28.12	3.11	0.00	106.04	N/A	N/A
2412	65.26	AV	V	28.12	3.11	0.00	96.49	N/A	N/A
2390	32.17	PK	V	28.08	3.10	0.00	63.35	74.00	10.65
2390	17.21	AV	V	28.08	3.10	0.00	48.39	54.00	5.61
4824	49.94	PK	V	32.95	4.33	35.49	51.73	74.00	22.27
4824	36.15	AV	V	32.95	4.33	35.49	37.94	54.00	16.06
7236	47.86	PK	V	35.81	5.47	35.97	53.17	74.00	20.83
7236	32.49	AV	V	35.81	5.47	35.97	37.80	54.00	16.20
6145	45.67	PK	V	34.27	4.84	35.82	48.96	74.00	25.04
6145	31.28	AV	V	34.27	4.84	35.82	34.57	54.00	19.43
Middle Channel: 2437 MHz									
2437	75.88	PK	H	28.17	3.11	0.00	107.16	N/A	N/A
2437	66.67	AV	H	28.17	3.11	0.00	97.95	N/A	N/A
2437	77.48	PK	V	28.17	3.11	0.00	108.76	N/A	N/A
2437	68.13	AV	V	28.17	3.11	0.00	99.41	N/A	N/A
4874	50.39	PK	V	33.05	4.39	35.53	52.30	74.00	21.70
4874	36.46	AV	V	33.05	4.39	35.53	38.37	54.00	15.63
7311	47.35	PK	V	36.01	5.52	35.97	52.91	74.00	21.09
7311	32.69	AV	V	36.01	5.52	35.97	38.25	54.00	15.75
5849	46.75	PK	V	34.24	4.67	35.85	49.81	74.00	24.19
5849	32.34	AV	V	34.24	4.67	35.85	35.40	54.00	18.60
6115	45.61	PK	V	34.28	4.81	35.82	48.88	74.00	25.12
6115	31.37	AV	V	34.28	4.81	35.82	34.64	54.00	19.36
High Channel: 2462 MHz									
2462	74.43	PK	H	28.22	3.10	0.00	105.75	N/A	N/A
2462	64.88	AV	H	28.22	3.10	0.00	96.20	N/A	N/A
2462	75.68	PK	V	28.22	3.10	0.00	107.00	N/A	N/A
2462	66.62	AV	V	28.22	3.10	0.00	97.94	N/A	N/A
2483.5	37.48	PK	V	28.27	3.10	0.00	68.85	74.00	5.15
2483.5	20.45	AV	V	28.27	3.10	0.00	51.82	54.00	2.18
4924	48.27	PK	V	33.15	4.42	35.57	50.27	74.00	23.73
4924	33.42	AV	V	33.15	4.42	35.57	35.42	54.00	18.58
7386	46.72	PK	V	36.20	5.57	35.98	52.51	74.00	21.49
7386	32.15	AV	V	36.20	5.57	35.98	37.94	54.00	16.06
6245	45.81	PK	V	34.25	4.96	35.80	49.22	74.00	24.78
6245	31.49	AV	V	34.25	4.96	35.80	34.90	54.00	19.10

802.11n ht20 Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Measurement	Polar (H/V)	Factor (dB)					
Low Channel: 2412 MHz									
2412	72.94	PK	H	28.12	3.11	0.00	104.17	N/A	N/A
2412	63.66	AV	H	28.12	3.11	0.00	94.89	N/A	N/A
2412	75.55	PK	V	28.12	3.11	0.00	106.78	N/A	N/A
2412	66.35	AV	V	28.12	3.11	0.00	97.58	N/A	N/A
2390	37.21	PK	V	28.08	3.10	0.00	68.39	74.00	5.61
2390	20.13	AV	V	28.08	3.10	0.00	51.31	54.00	2.69
4824	48.86	PK	V	32.95	4.33	35.49	50.65	74.00	23.35
4824	33.48	AV	V	32.95	4.33	35.49	35.27	54.00	18.73
7236	46.53	PK	V	35.81	5.47	35.97	51.84	74.00	22.16
7236	32.16	AV	V	35.81	5.47	35.97	37.47	54.00	16.53
6125	46.25	PK	V	34.28	4.82	35.82	49.53	74.00	24.47
6125	31.64	AV	V	34.28	4.82	35.82	34.92	54.00	19.08
Middle Channel: 2437 MHz									
2437	75.51	PK	H	28.17	3.11	0.00	106.79	N/A	N/A
2437	67.24	AV	H	28.17	3.11	0.00	98.52	N/A	N/A
2437	76.23	PK	V	28.17	3.11	0.00	107.51	N/A	N/A
2437	66.85	AV	V	28.17	3.11	0.00	98.13	N/A	N/A
4874	47.93	PK	V	33.05	4.39	35.53	49.84	74.00	24.16
4874	32.76	AV	V	33.05	4.39	35.53	34.67	54.00	19.33
7311	46.54	PK	V	36.01	5.52	35.97	52.10	74.00	21.90
7311	32.34	AV	V	36.01	5.52	35.97	37.90	54.00	16.10
5875	45.81	PK	V	34.25	4.64	35.85	48.85	74.00	25.15
5875	32.14	AV	V	34.25	4.64	35.85	35.18	54.00	18.82
6625	45.67	PK	V	34.45	5.28	35.79	49.61	74.00	24.39
6625	31.53	AV	V	34.45	5.28	35.79	35.47	54.00	18.53
High Channel: 2462 MHz									
2462	73.28	PK	H	28.22	3.10	0.00	104.60	N/A	N/A
2462	63.65	AV	H	28.22	3.10	0.00	94.97	N/A	N/A
2462	73.57	PK	V	28.22	3.10	0.00	104.89	N/A	N/A
2462	63.91	AV	V	28.22	3.10	0.00	95.23	N/A	N/A
2483.5	39.54	PK	V	28.27	3.10	0.00	70.91	74.00	3.09
2483.5	19.85	AV	V	28.27	3.10	0.00	51.22	54.00	2.78
4924	47.39	PK	V	33.15	4.42	35.57	49.39	74.00	24.61
4924	32.61	AV	V	33.15	4.42	35.57	34.61	54.00	19.39
7386	46.58	PK	V	36.20	5.57	35.98	52.37	74.00	21.63
7386	32.14	AV	V	36.20	5.57	35.98	37.93	54.00	16.07
6465	45.77	PK	V	34.21	5.23	35.75	49.46	74.00	24.54
6465	31.56	AV	V	34.21	5.23	35.75	35.25	54.00	18.75

802.11n ht40 Mode:

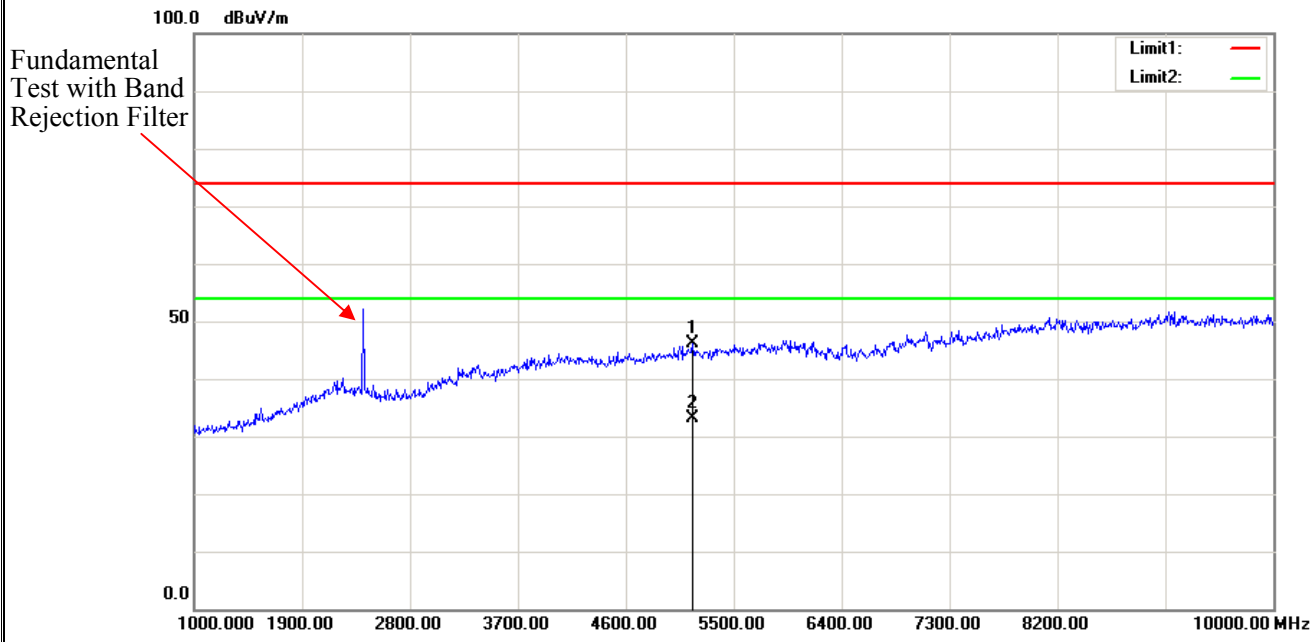
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
	Reading (dBµV)	Measurement	Polar (H/V)	Factor (dB)					
Low Channel: 2422 MHz									
2422	67.64	PK	H	28.14	3.11	0.00	98.89	N/A	N/A
2422	59.12	AV	H	28.14	3.11	0.00	90.37	N/A	N/A
2422	68.11	PK	V	28.14	3.11	0.00	99.36	N/A	N/A
2422	57.37	AV	V	28.14	3.11	0.00	88.62	N/A	N/A
2390	38.47	PK	V	28.08	3.10	0.00	69.65	74.00	4.35
2390	18.97	AV	V	28.08	3.10	0.00	50.15	54.00	3.85
4844	48.21	PK	V	32.99	4.35	35.51	50.04	74.00	23.96
4844	33.49	AV	V	32.99	4.35	35.51	35.32	54.00	18.68
7266	46.75	PK	V	35.89	5.49	35.97	52.16	74.00	21.84
7266	32.46	AV	V	35.89	5.49	35.97	37.87	54.00	16.13
6195	45.82	PK	V	34.26	4.90	35.81	49.17	74.00	24.83
6195	31.63	AV	V	34.26	4.90	35.81	34.98	54.00	19.02
Middle Channel: 2437 MHz									
2437	65.72	PK	H	28.17	3.11	0.00	97.00	N/A	N/A
2437	57.96	AV	H	28.17	3.11	0.00	89.24	N/A	N/A
2437	68.01	PK	V	28.17	3.11	0.00	99.29	N/A	N/A
2437	60.94	AV	V	28.17	3.11	0.00	92.22	N/A	N/A
4874	48.89	PK	V	33.05	4.39	35.53	50.80	74.00	23.20
4874	33.27	AV	V	33.05	4.39	35.53	35.18	54.00	18.82
7311	47.34	PK	V	36.01	5.52	35.97	52.90	74.00	21.10
7311	32.61	AV	V	36.01	5.52	35.97	38.17	54.00	15.83
5965	46.59	PK	V	34.29	4.65	35.85	49.68	74.00	24.32
5965	32.43	AV	V	34.29	4.65	35.85	35.52	54.00	18.48
6135	45.48	PK	V	34.27	4.83	35.82	48.76	74.00	25.24
6135	31.21	AV	V	34.27	4.83	35.82	34.49	54.00	19.51
High Channel: 2452 MHz									
2452	64.28	PK	H	28.20	3.10	0.00	95.58	N/A	N/A
2452	56.37	AV	H	28.20	3.10	0.00	87.67	N/A	N/A
2452	67.76	PK	V	28.20	3.10	0.00	99.06	N/A	N/A
2452	57.32	AV	V	28.20	3.10	0.00	88.62	N/A	N/A
2483.5	40.65	PK	V	28.27	3.10	0.00	72.02	74.00	1.98
2483.5	21.48	AV	V	28.27	3.10	0.00	52.85	54.00	1.15
4904	47.86	PK	V	33.11	4.42	35.56	49.83	74.00	24.17
4904	33.25	AV	V	33.11	4.42	35.56	35.22	54.00	18.78
7356	46.79	PK	V	36.13	5.55	35.98	52.49	74.00	21.51
7356	32.46	AV	V	36.13	5.55	35.98	38.16	54.00	15.84
6435	45.87	PK	V	34.21	5.19	35.75	49.52	74.00	24.48
6435	31.65	AV	V	34.21	5.19	35.75	35.30	54.00	18.70

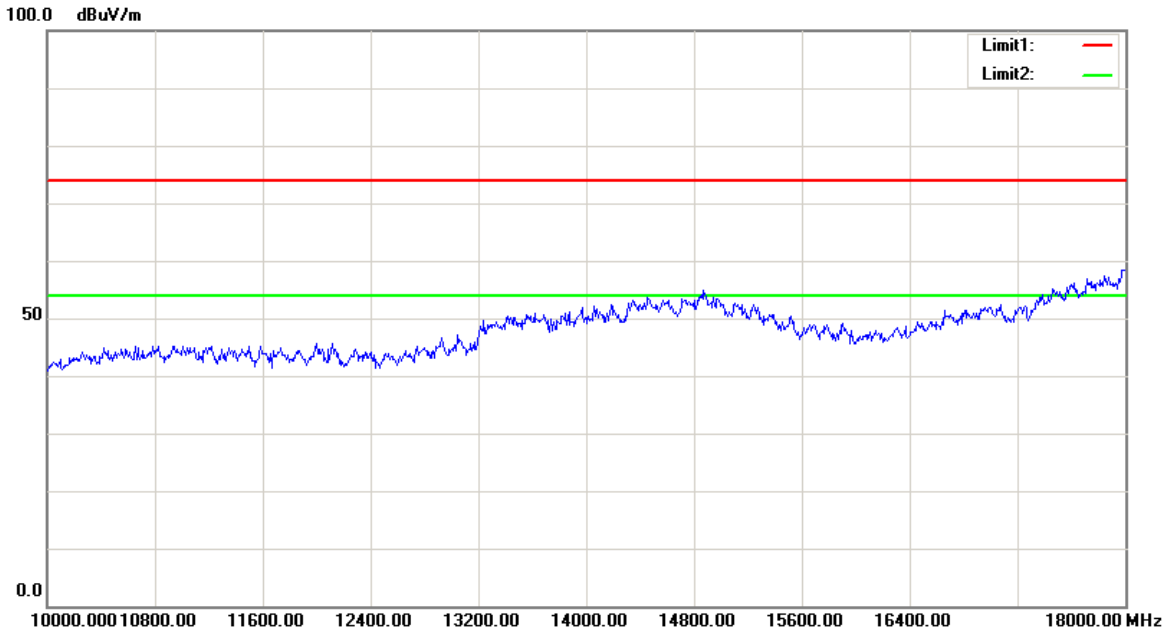
BLE Mode:

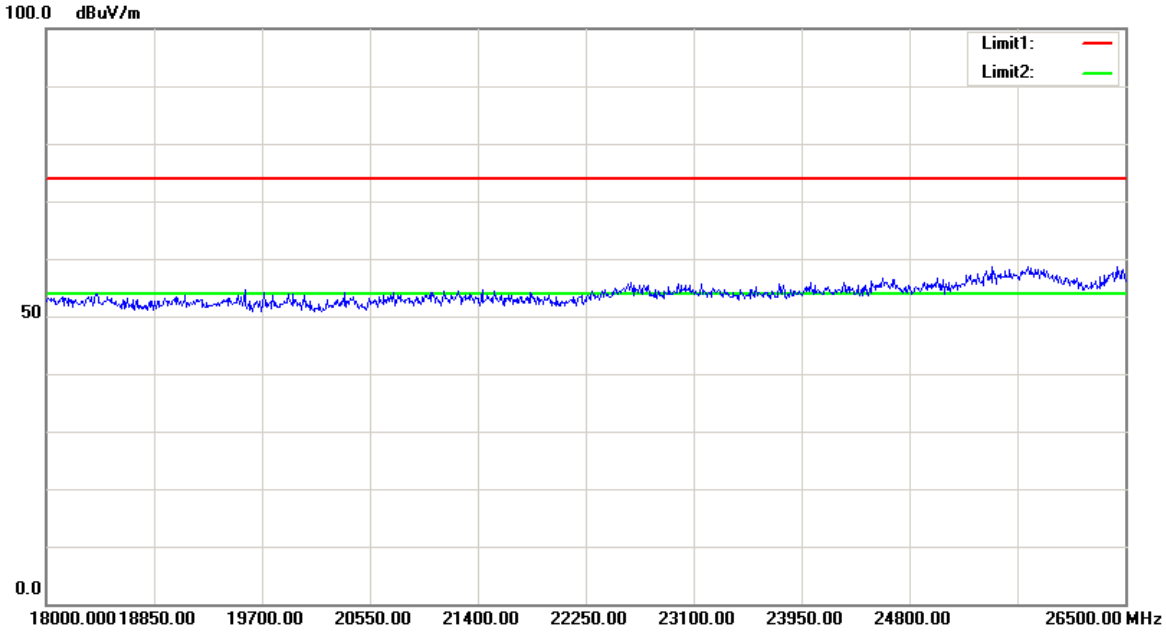
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Measurement	Polar (H/V)	Factor (dB)					
Low Channel: 2402 MHz									
2402	60.19	PK	H	28.10	3.11	0.00	91.40	N/A	N/A
2402	55.48	AV	H	28.10	3.11	0.00	86.69	N/A	N/A
2402	61.75	PK	V	28.10	3.11	0.00	92.96	N/A	N/A
2402	56.67	AV	V	28.10	3.11	0.00	87.88	N/A	N/A
2390	25.48	PK	V	28.08	3.10	0.00	56.66	74.00	17.34
2390	13.26	AV	V	28.08	3.10	0.00	44.44	54.00	9.56
4804	47.64	PK	V	32.91	4.30	35.48	49.37	74.00	24.63
4804	32.43	AV	V	32.91	4.30	35.48	34.16	54.00	19.84
7206	46.81	PK	V	35.74	5.45	35.97	52.03	74.00	21.97
7206	32.27	AV	V	35.74	5.45	35.97	37.49	54.00	16.51
5895	46.18	PK	V	34.26	4.62	35.85	49.21	74.00	24.79
5895	31.35	AV	V	34.26	4.62	35.85	34.38	54.00	19.62
Middle Channel: 2440 MHz									
2440	60.13	PK	H	28.18	3.11	0.00	91.42	N/A	N/A
2440	55.45	AV	H	28.18	3.11	0.00	86.74	N/A	N/A
2440	61.68	PK	V	28.18	3.11	0.00	92.97	N/A	N/A
2440	56.49	AV	V	28.18	3.11	0.00	87.78	N/A	N/A
4880	47.56	PK	V	33.06	4.40	35.54	49.48	74.00	24.52
4880	32.43	AV	V	33.06	4.40	35.54	34.35	54.00	19.65
7320	46.81	PK	V	36.03	5.52	35.98	52.38	74.00	21.62
7320	32.27	AV	V	36.03	5.52	35.98	37.84	54.00	16.16
5996	46.72	PK	V	34.30	4.67	35.85	49.84	74.00	24.16
5996	31.69	AV	V	34.30	4.67	35.85	34.81	54.00	19.19
6345	45.93	PK	V	34.23	5.08	35.77	49.47	74.00	24.53
6345	31.62	AV	V	34.23	5.08	35.77	35.16	54.00	18.84
High Channel: 2480 MHz									
2480	59.85	PK	H	28.26	3.10	0.00	91.21	N/A	N/A
2480	55.32	AV	H	28.26	3.10	0.00	86.68	N/A	N/A
2480	61.44	PK	V	28.26	3.10	0.00	92.80	N/A	N/A
2480	56.72	AV	V	28.26	3.10	0.00	88.08	N/A	N/A
2483.5	26.69	PK	V	28.27	3.10	0.00	58.06	74.00	15.94
2483.5	14.21	AV	V	28.27	3.10	0.00	45.58	54.00	8.42
4960	47.36	PK	V	33.22	4.42	35.60	49.40	74.00	24.60
4960	32.19	AV	V	33.22	4.42	35.60	34.23	54.00	19.77
7440	46.57	PK	V	36.34	5.60	35.99	52.52	74.00	21.48
7440	32.03	AV	V	36.34	5.60	35.99	37.98	54.00	16.02
6235	45.76	PK	V	34.25	4.95	35.80	49.16	74.00	24.84
6235	31.45	AV	V	34.25	4.95	35.80	34.85	54.00	19.15

Worst mode Plots(Wifi 802.11g Mode, high channel)

Horizontal:



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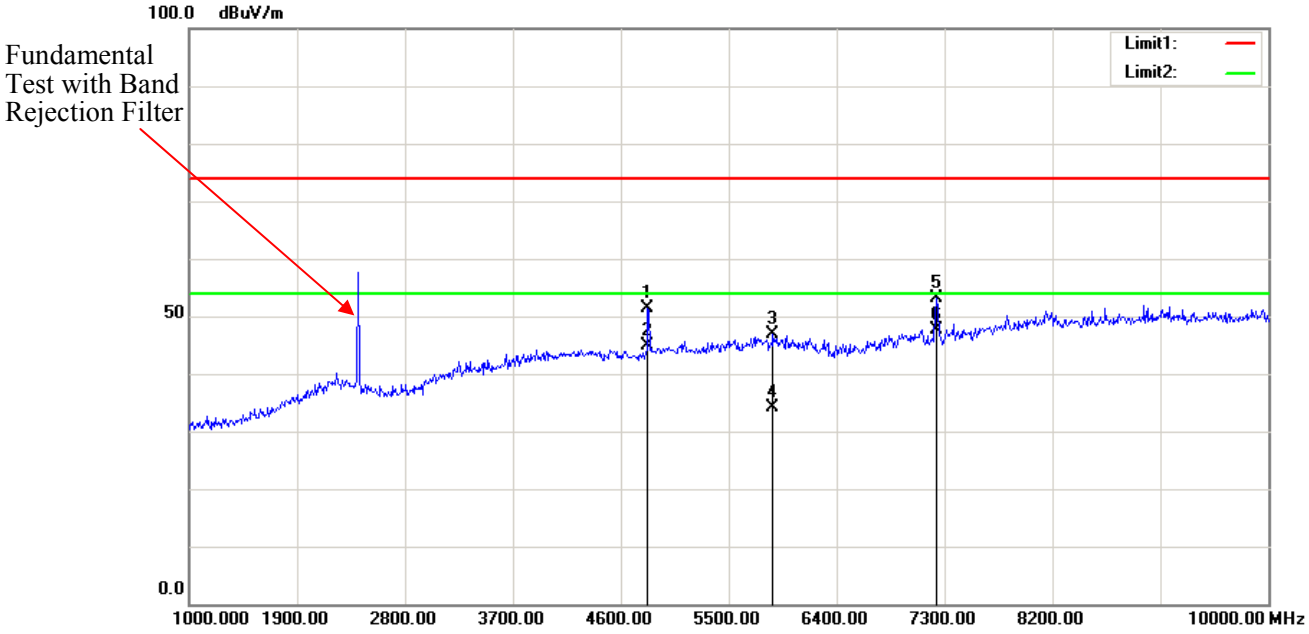
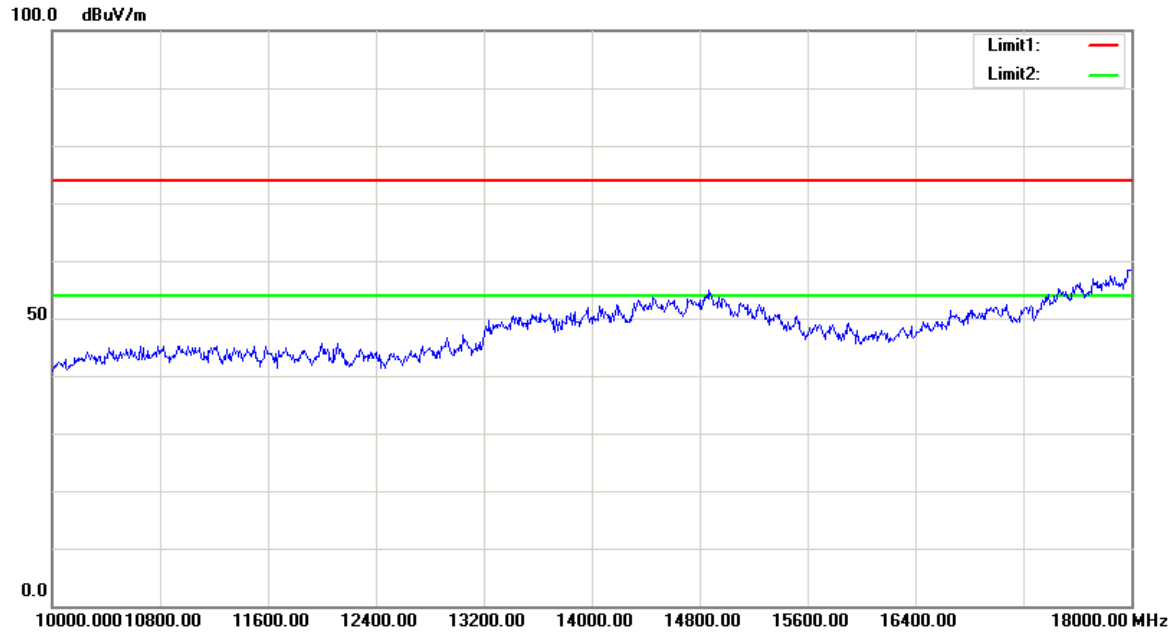
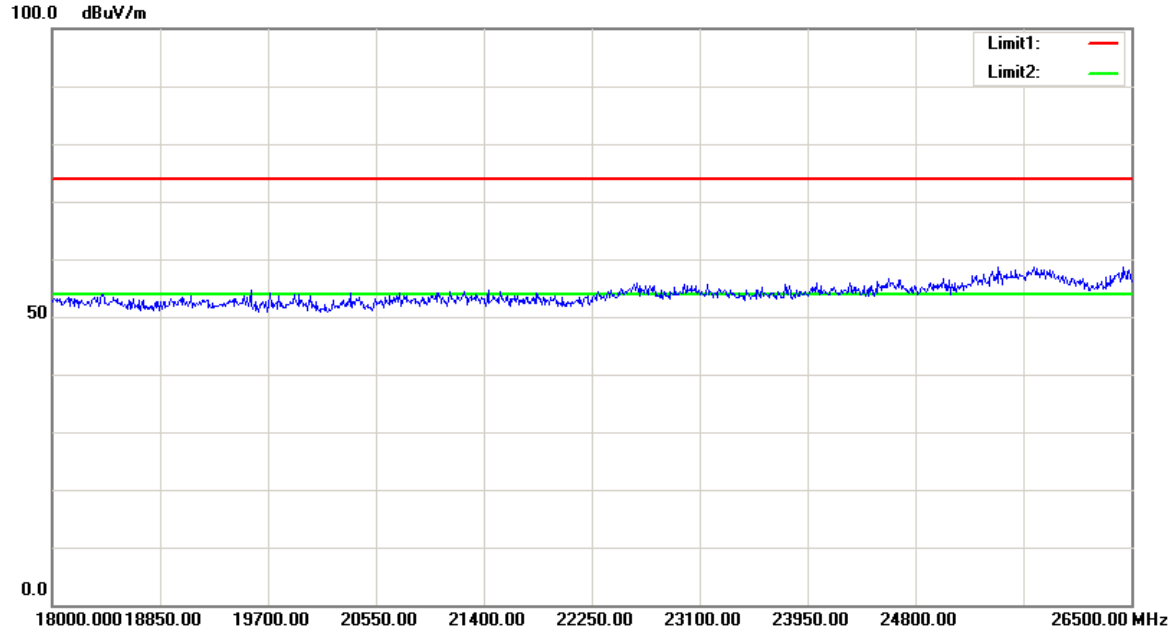
Limit2:
50
0.0
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz

Vertical:


100.0 dBuV/m
Fundamental Test with Band Rejection Filter
Limit1:
Limit2:
1
3
4
5
50
0.0
1000.000 1900.00 2800.00 3700.00 4600.00 5500.00 6400.00 7300.00 8200.00 10000.00 MHz


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
10000.000 10800.00 11600.00 12400.00 13200.00 14000.00 14800.00 15600.00 16400.00 18000.00 MHz


100.0 dBuV/m
Limit1:
Limit2:
50
0.0
18000.000 18850.00 19700.00 20550.00 21400.00 22250.00 23100.00 23950.00 24800.00 26500.00 MHz

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

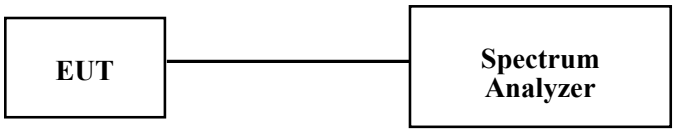
Applicable Standard

According to FCC §15.247(a) (2)

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) ≥ 3×RBW.
c) Detector = Peak.
d) Trace mode = max hold.
e) Sweep = auto couple.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	101121	2017-03-02	2018-03-02
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each Time	/

*** 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:	22.9~25.2 °C
Relative Humidity:	30~49 %
ATM Pressure:	100.2~102.3 kPa

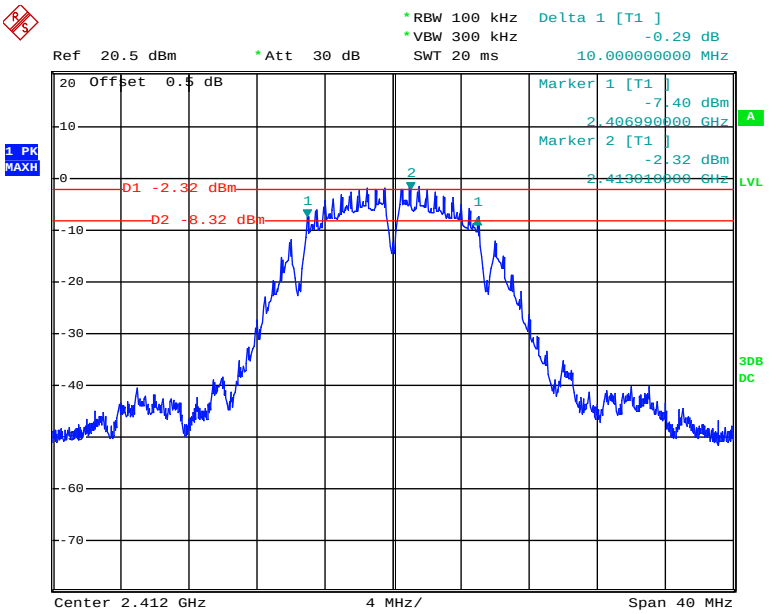
** The testing was performed by Nami Quan on 2017-08-14 &2017-12-22.*

Test Mode: Transmitting

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

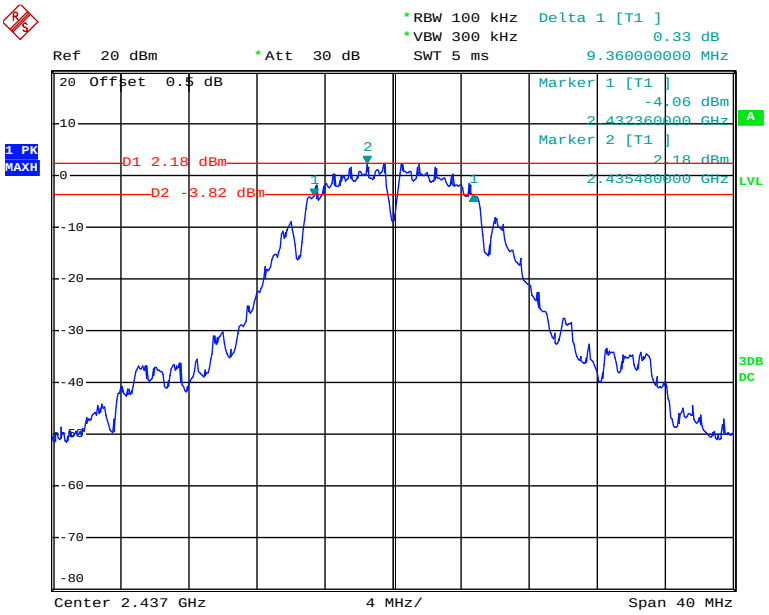
Test mode	Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Limit (MHz)
802.11b	Low	2412	10.00	≥0.5
	Middle	2437	9.36	≥0.5
	High	2462	9.44	≥0.5
802.11g	Low	2412	16.48	≥0.5
	Middle	2437	16.4	≥0.5
	High	2462	16.48	≥0.5
802.11n ht20	Low	2412	17.68	≥0.5
	Middle	2437	17.68	≥0.5
	High	2462	17.68	≥0.5
802.11n ht40	Low	2422	36.32	≥0.5
	Middle	2437	36.48	≥0.5
	High	2452	36.32	≥0.5
BLE	Low	2402	0.72	≥0.5
	Middle	2440	0.71	≥0.5
	High	2480	0.71	≥0.5

802.11b Low Channel



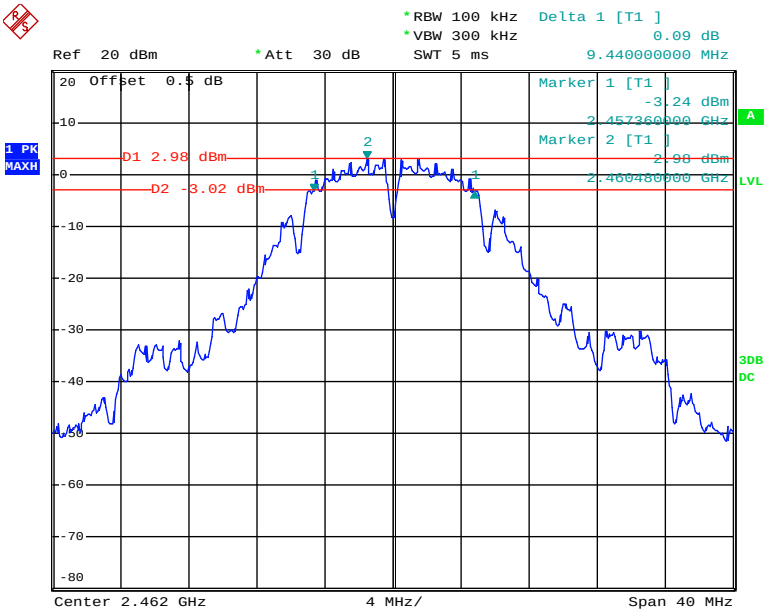
Date: 14.AUG.2017 16:12:55

802.11b Middle Channel



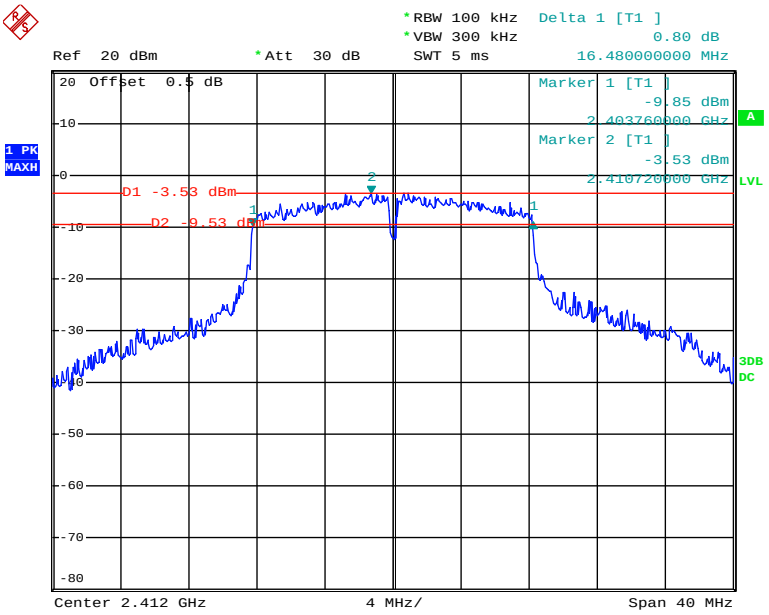
Date: 14.AUG.2017 16:39:43

802.11b High Channel



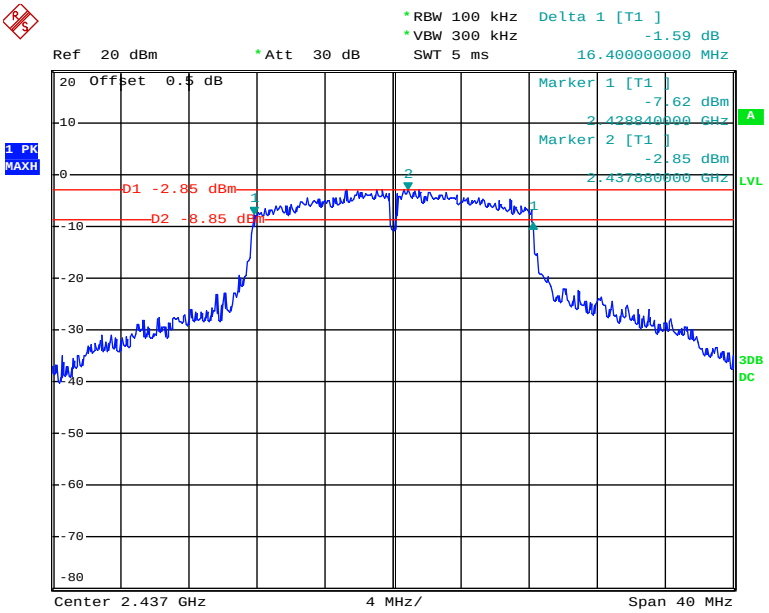
Date: 14.AUG.2017 16:43:08

802.11g Low Channel



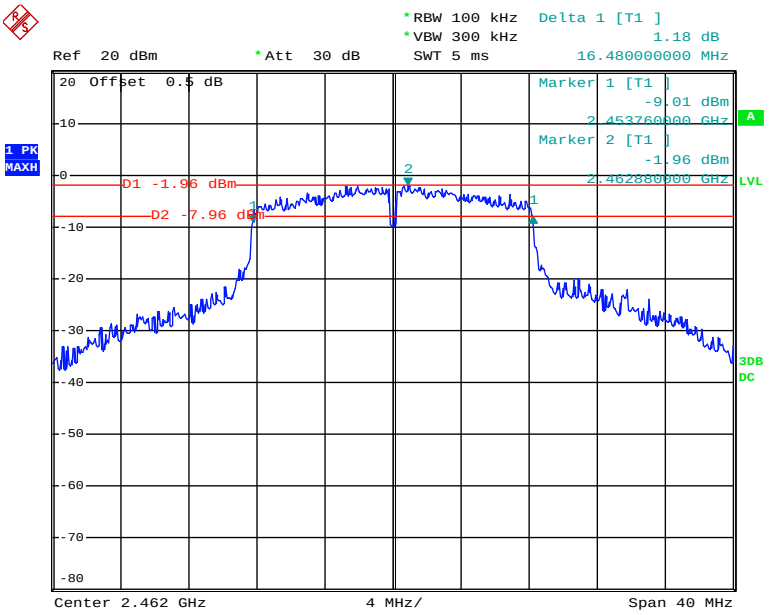
Date: 14.AUG.2017 16:45:15

802.11g Middle Channel



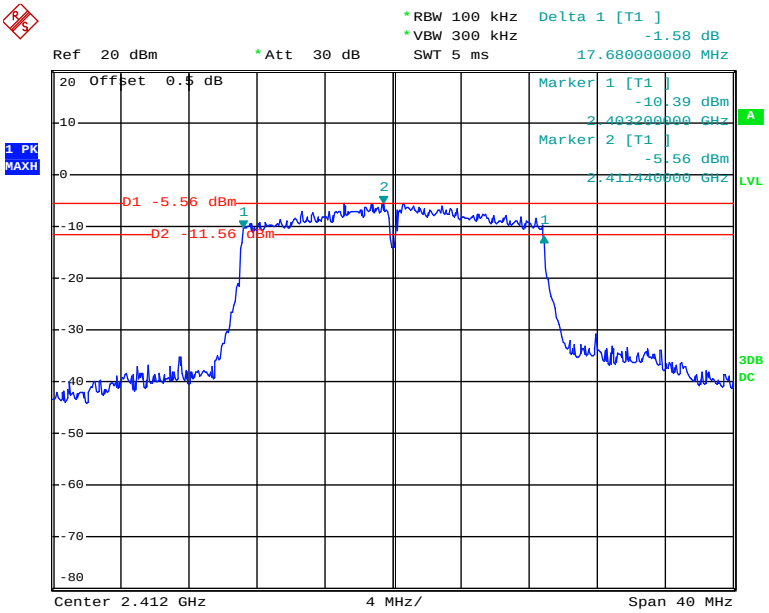
Date: 14.AUG.2017 16:47:09

802.11g High Channel



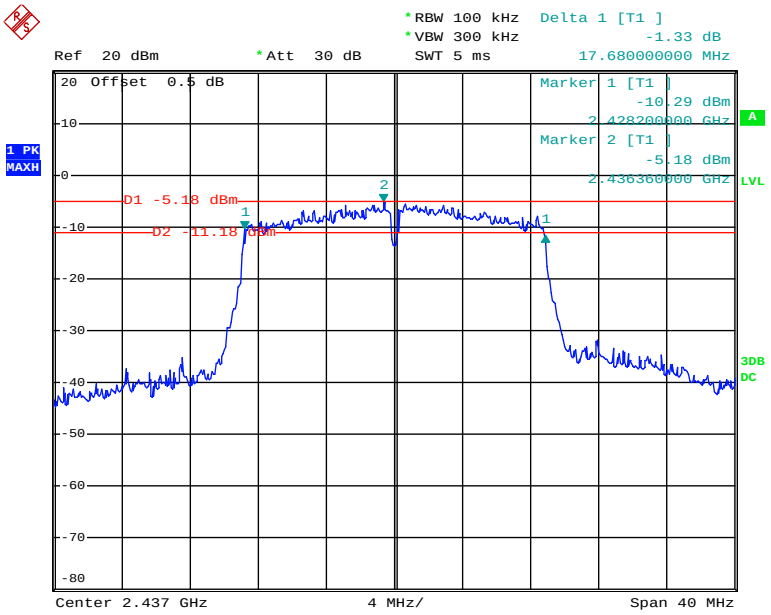
Date: 14.AUG.2017 16:49:37

802.11n ht20 Low Channel



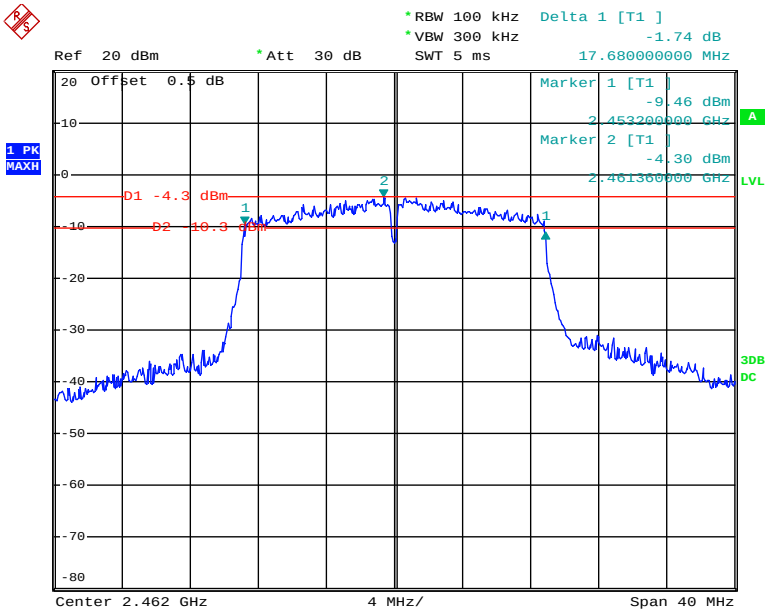
Date: 14.AUG.2017 16:57:20

802.11n ht20 Middle Channel



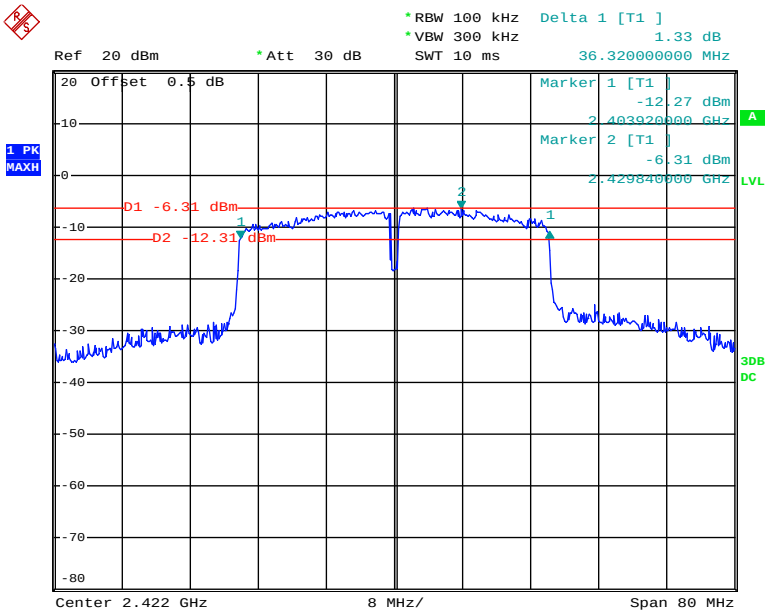
Date: 14.AUG.2017 16:58:43

802.11n ht20 High Channel



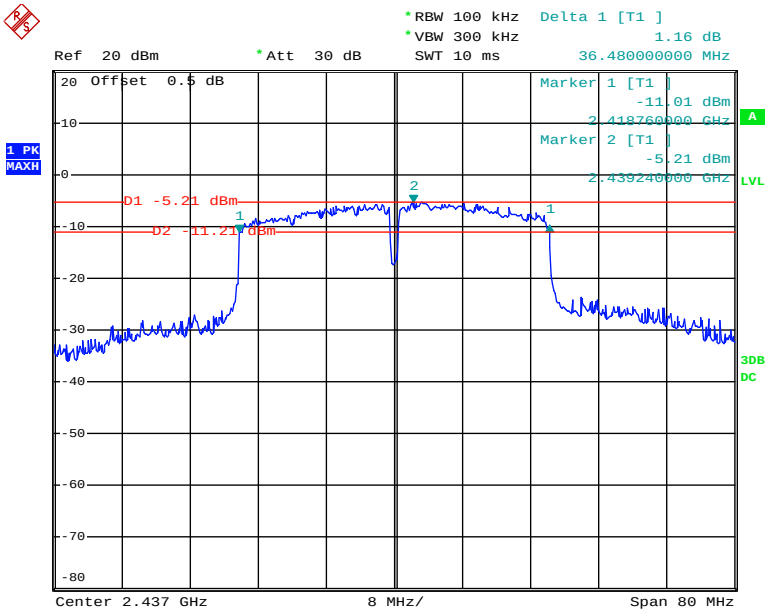
Date: 14.AUG.2017 17:00:04

802.11n ht40 Low Channel



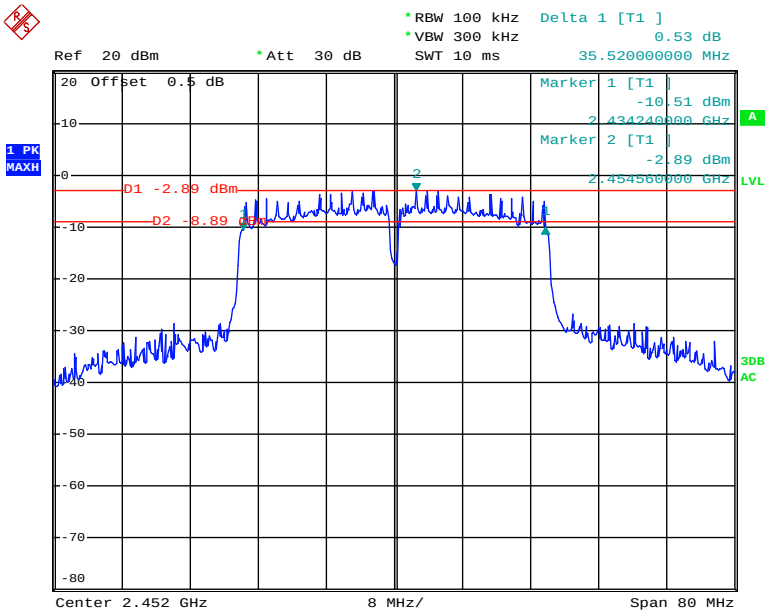
Date: 14.AUG.2017 16:52:25

802.11n ht40 Middle Channel



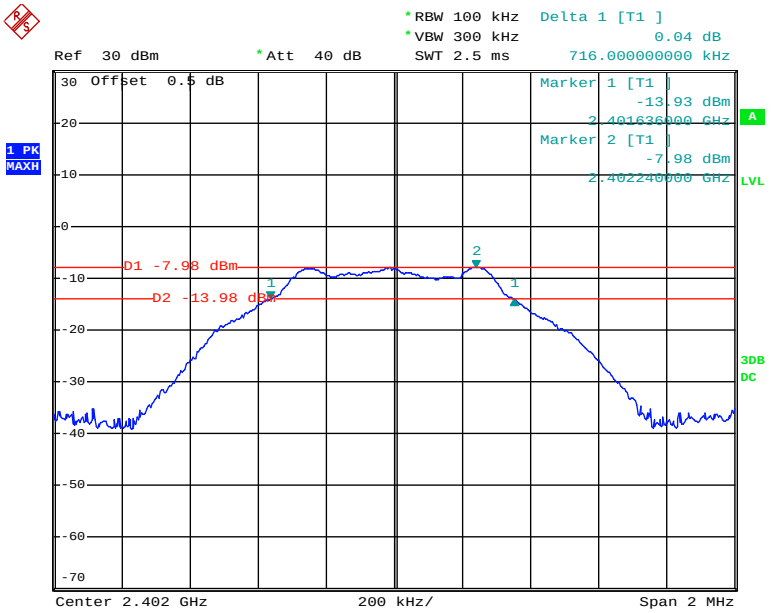
Date: 14.AUG.2017 16:54:03

802.11n ht40 High Channel



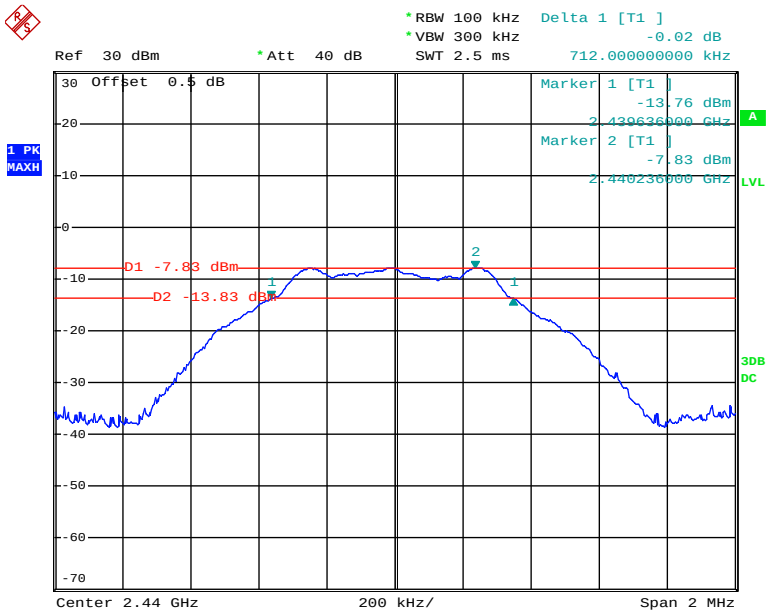
Date: 22.DEC.2017 16:39:31

BLE Low Channel



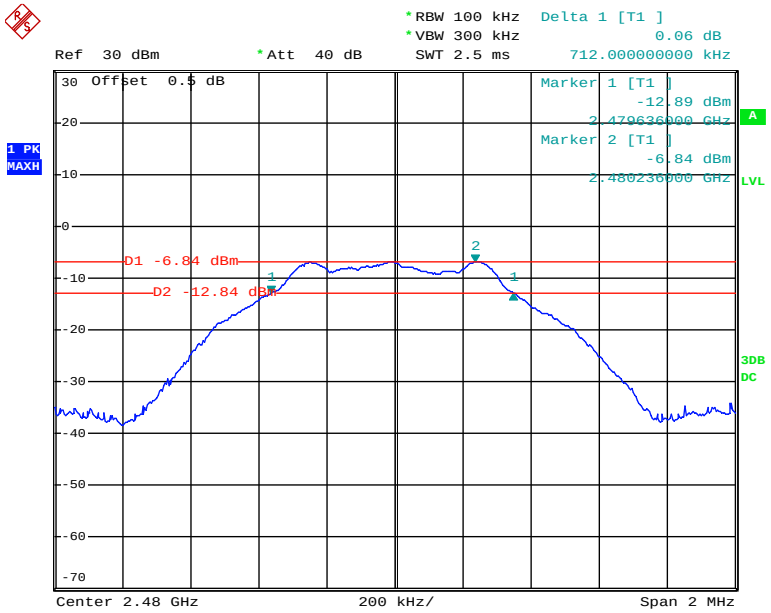
Date: 14.AUG.2017 14:46:12

BLE Middle Channel



Date: 14.AUG.2017 14:50:53

BLE High Channel



Date: 14.AUG.2017 14:51:34

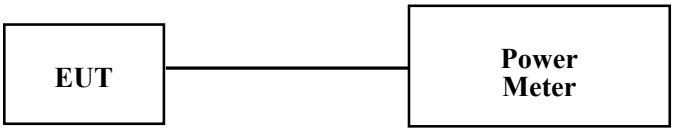
FCC §15.247(b) (3) - MAXIMUM PEAK CONDUCTED OUTPUT POWER

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.
4. Set the power Meter to test Peak output power, record the result as peak power.
5. Set the power meter to test average output power, record the result as average power.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Wideband Power Sensor	N1921A	MY54210016	2016-11-03	2017-11-03
Agilent	Wideband Power Sensor	N1921A	MY54170013	2016-11-03	2017-11-03
Agilent	P-Series Power Meter	N1912A	MY5000448	2016-11-03	2017-11-03
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each Time	/

*** 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:	22.9~25.2 °C
Relative Humidity:	30~49 %
ATM Pressure:	100.2~102.3 kPa

** The testing was performed by Nami Quan on 2017-08-14&2017-12-22.*

Test Mode: Transmitting

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

Test mode	Channel	Frequency (MHz)	Max Peak Conducted Output Power (dBm)	Max Conducted Average Output Power (dBm)	Limit (dBm)
802.11b	Low	2412	16.07	12.68	30
	Middle	2437	15.33	11.9	30
	High	2462	16.16	12.85	30
802.11g	Low	2412	17.05	12.09	30
	Middle	2437	17.67	11.94	30
	High	2462	18.59	12.77	30
802.11n ht20	Low	2412	15.54	11.85	30
	Middle	2437	15.7	11.26	30
	High	2462	15.55	10.59	30
802.11n ht40	Low	2422	16.09	8.87	30
	Middle	2437	16.15	8.47	30
	High	2452	15.90	8.14	30
BLE	Low	2402	-7.36	/	30
	Middle	2440	-6.81	/	30
	High	2480	-6.26	/	30

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

Applicable Standard

According to FCC§15.247(d):In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (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	EMI Test Receiver	ESCI	101121	2017-03-02	2018-03-02
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each Time	/

*** 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

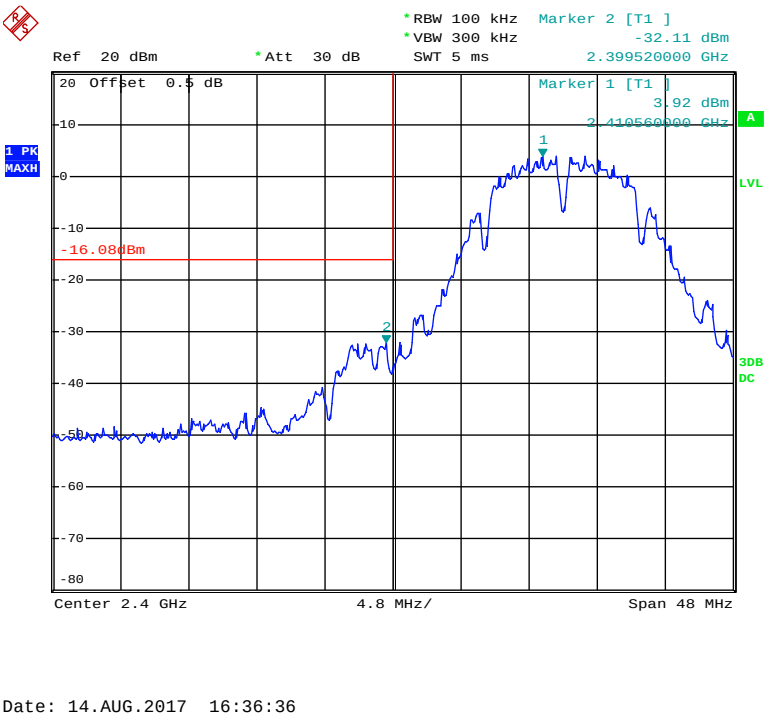
Temperature:	22.9~25.2 °C
Relative Humidity:	30~49 %
ATM Pressure:	100.2~102.3 kPa

** The testing was performed by Nami Quan on 2017-08-14&2017-12-22.*

Test mode: Transmitting

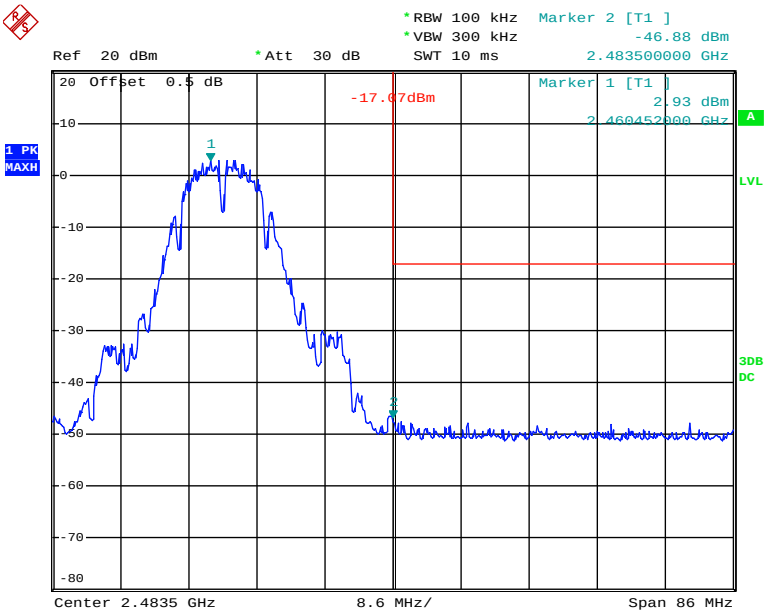
Test Result: Compliant. Please refer to following plots.

802.11b: Band Edge, Left Side



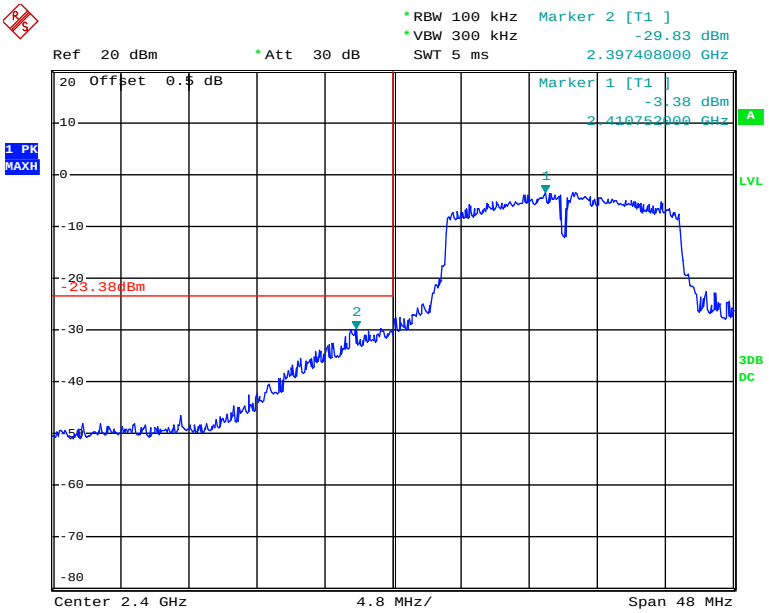
Date: 14.AUG.2017 16:36:36

802.11b: Band Edge, Right Side



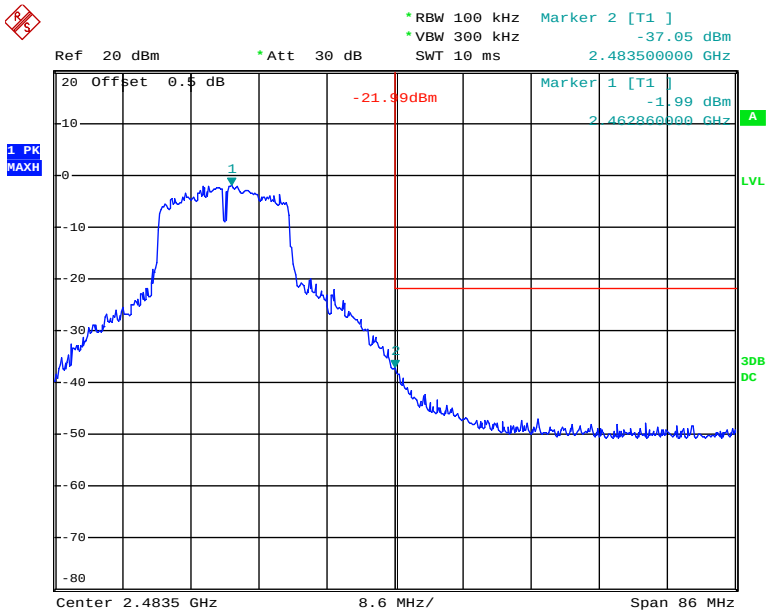
Date: 14.AUG.2017 16:43:59

802.11g: Band Edge, Left Side



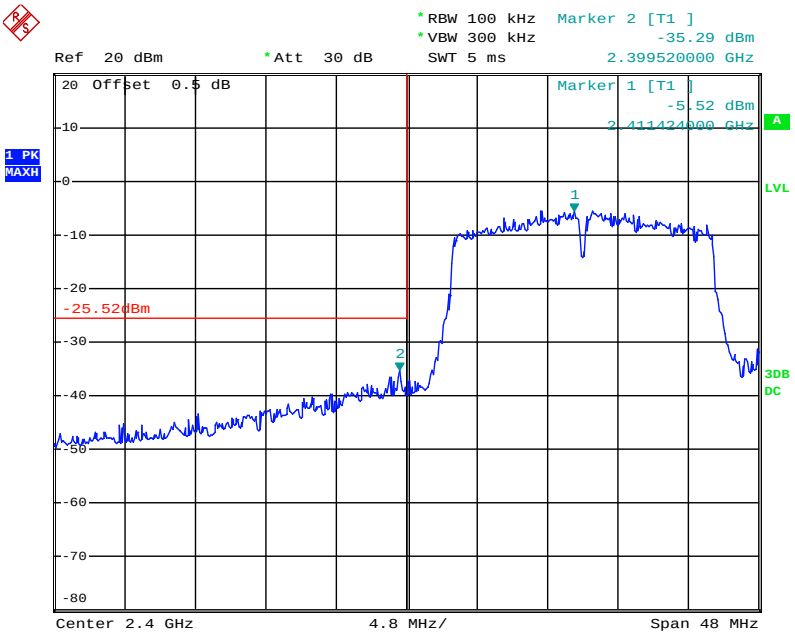
Date: 14.AUG.2017 16:46:02

802.11g: Band Edge, Right Side



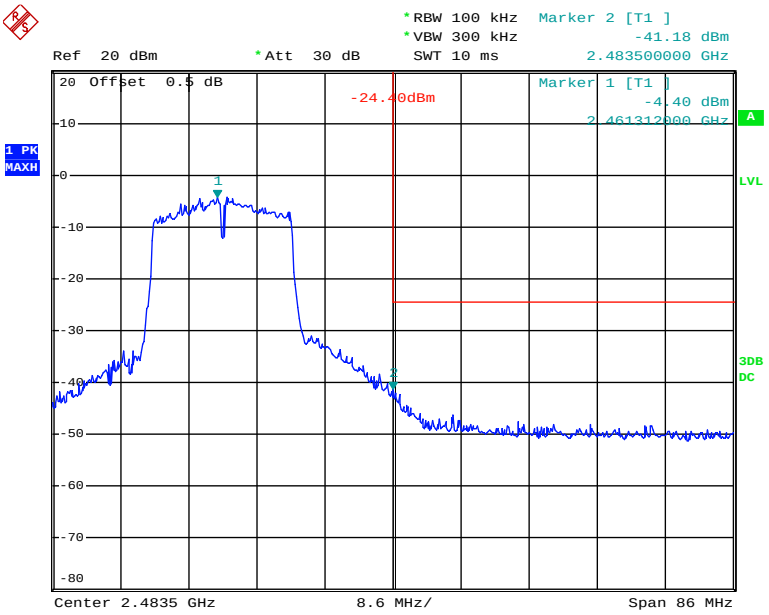
Date: 14.AUG.2017 16:50:32

802.11n ht20 Band Edge, Left Side



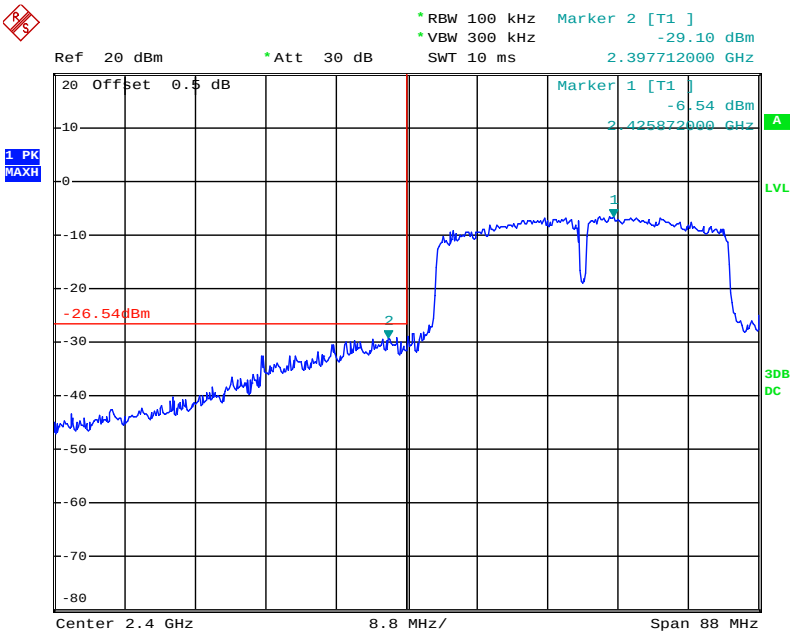
Date: 14.AUG.2017 16:58:06

802.11n ht20 Band Edge, Right Side



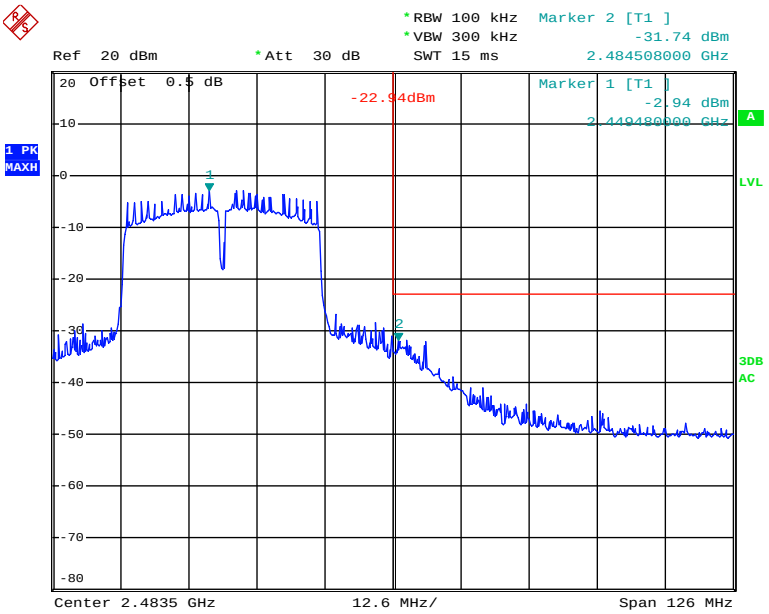
Date: 14.AUG.2017 17:00:52

802.11n ht40 Band Edge, Left Side



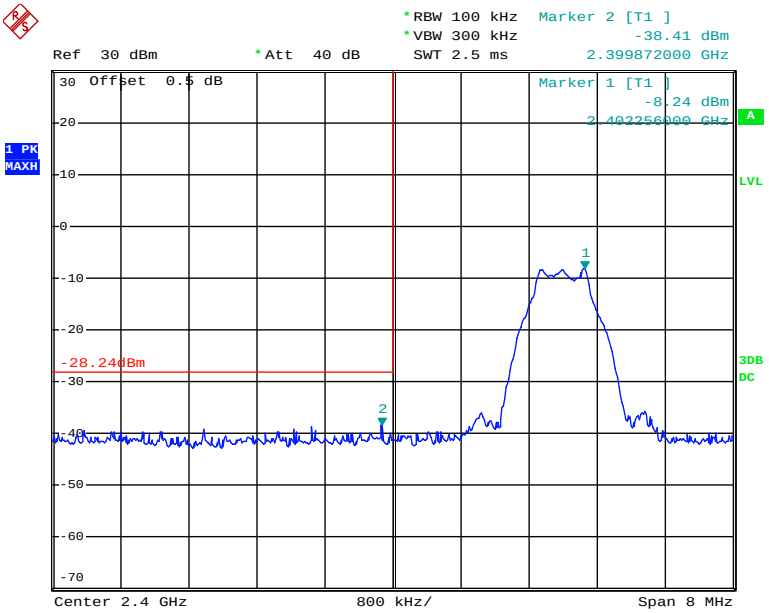
Date: 14.AUG.2017 16:53:12

802.11n ht40 Band Edge, Right Side



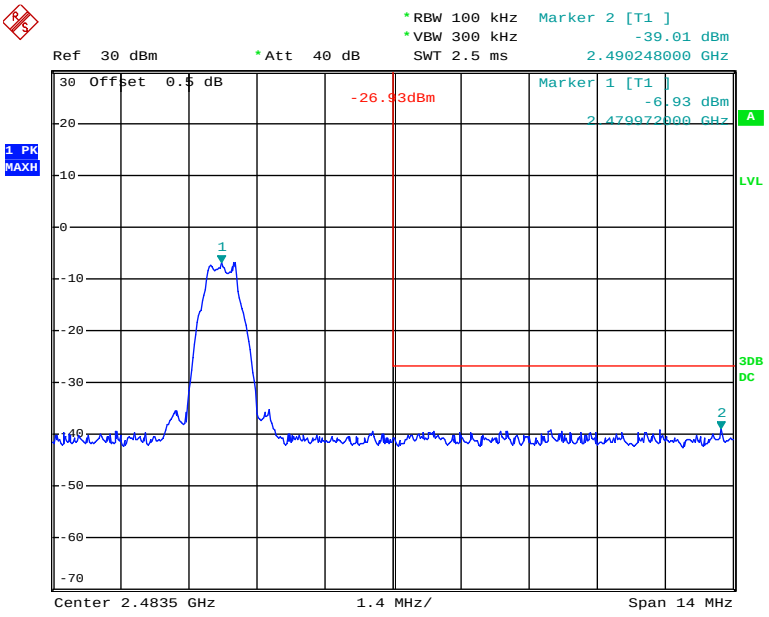
Date: 22.DEC.2017 16:40:44

BLE Band Edge, Left Side



Date: 14.AUG.2017 14:47:45

BLE Band Edge, Right Side



Date: 14.AUG.2017 14:52:27

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	EMI Test Receiver	ESCI	101121	2017-03-02	2018-03-02
Unknown	Coaxial Cable	C-SJ00-0010	C0010/01	Each Time	/

*** 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:	22.9~25.2 °C
Relative Humidity:	30~49 %
ATM Pressure:	100.2~102.3 kPa

** The testing was performed by Nami Quan on 2017-08-14&2017-12-22.*

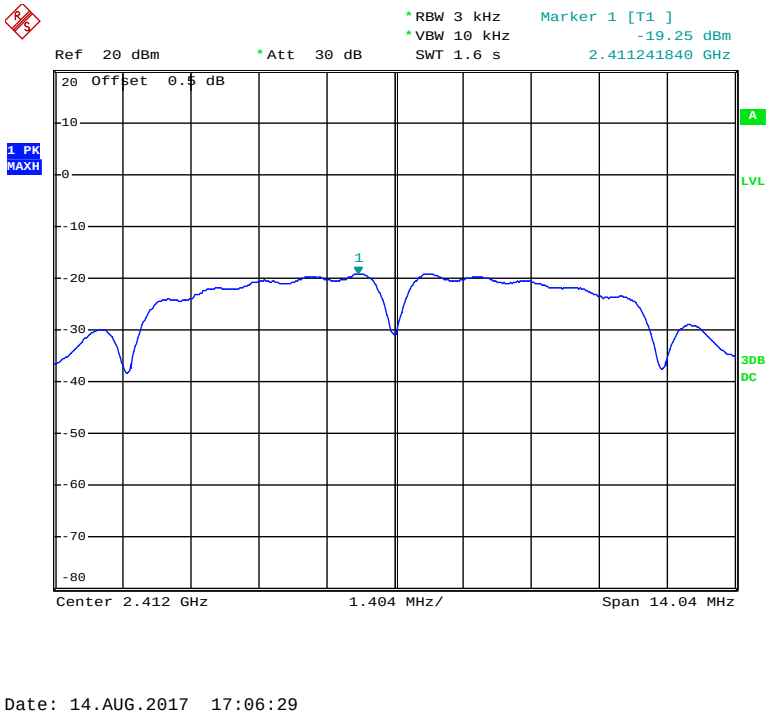
Test Result: Compliance

Test Mode: Transmitting

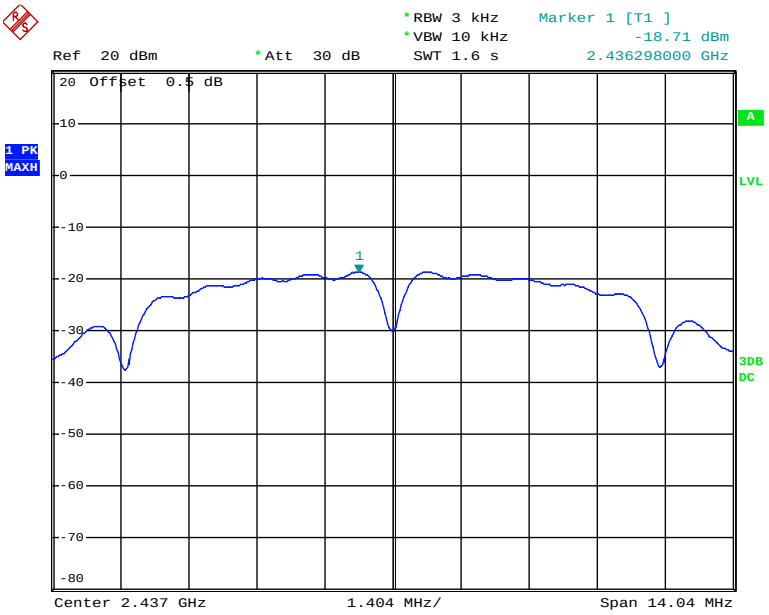
Test Result: Compliant. Please refer to the following table and plots

Test mode	Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
802.11b	Low	2412	-19.25	≤8
	Middle	2437	-18.71	≤8
	High	2462	-17.53	≤8
802.11g	Low	2412	-20.14	≤8
	Middle	2437	-16.14	≤8
	High	2462	-16.74	≤8
802.11n ht20	Low	2412	-18.72	≤8
	Middle	2437	-17.15	≤8
	High	2462	-18.38	≤8
802.11n ht40	Low	2422	-23.76	≤8
	Middle	2437	-21.68	≤8
	High	2452	-15.56	≤8
BLE	Low	2402	-26.89	≤8
	Middle	2440	-25.93	≤8
	High	2480	-24.94	≤8

Power Spectral Density, 802.11b Low Channel

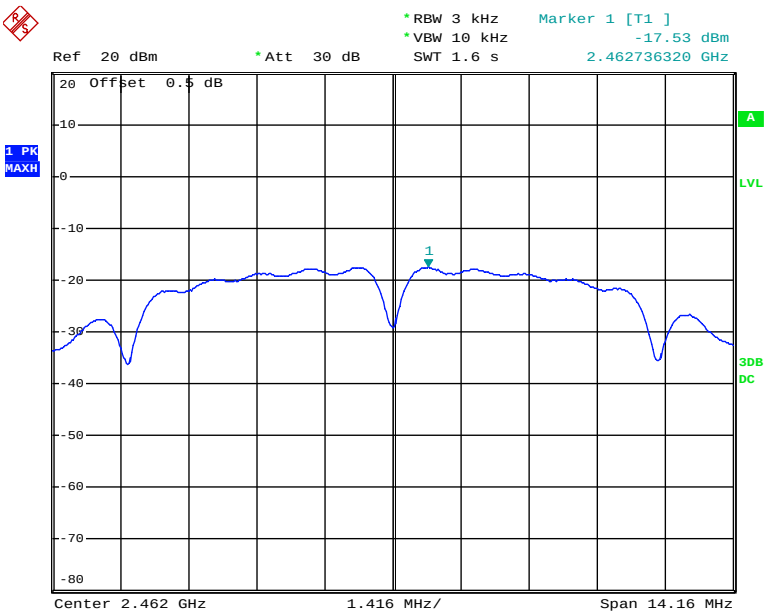


Power Spectral Density, 802.11b Middle Channel



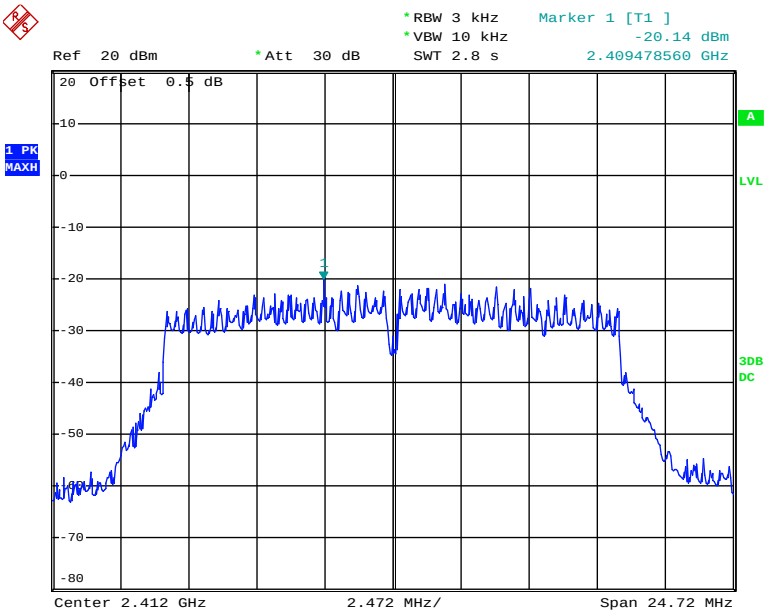
Date: 14.AUG.2017 17:08:20

Power Spectral Density, 802.11b High Channel



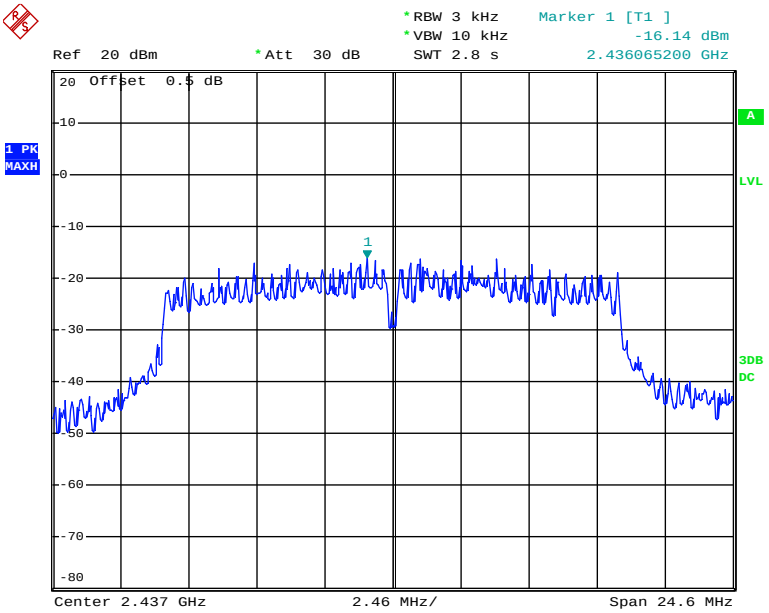
Date: 14.AUG.2017 17:08:57

Power Spectral Density, 802.11g Low Channel



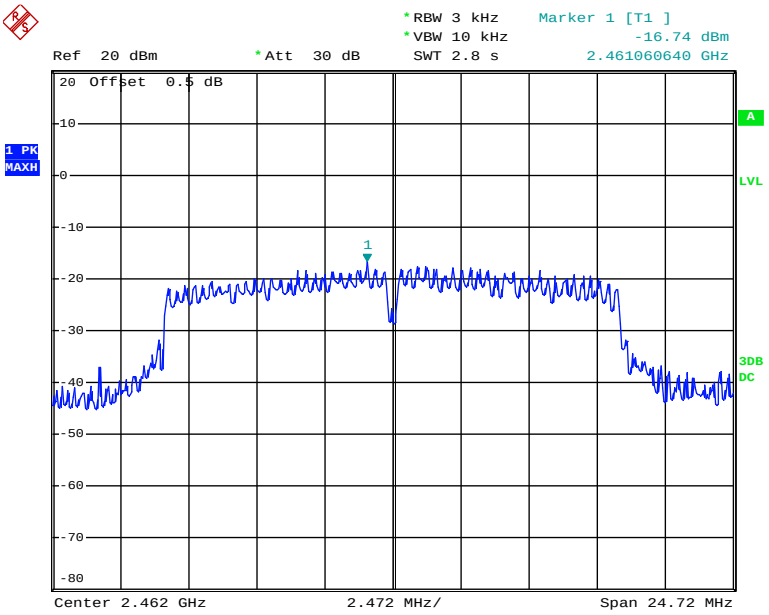
Date: 14.AUG.2017 17:10:33

Power Spectral Density, 802.11g Middle Channel



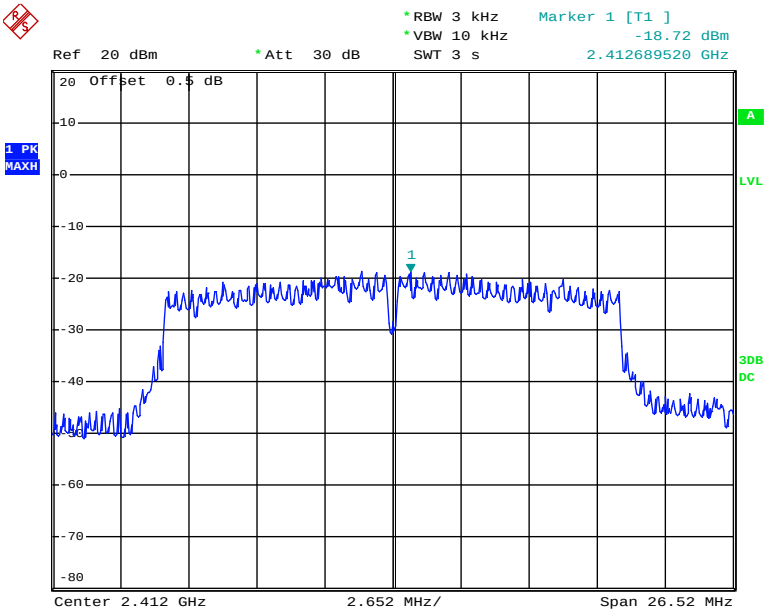
Date: 14.AUG.2017 17:11:27

Power Spectral Density, 802.11g High Channel



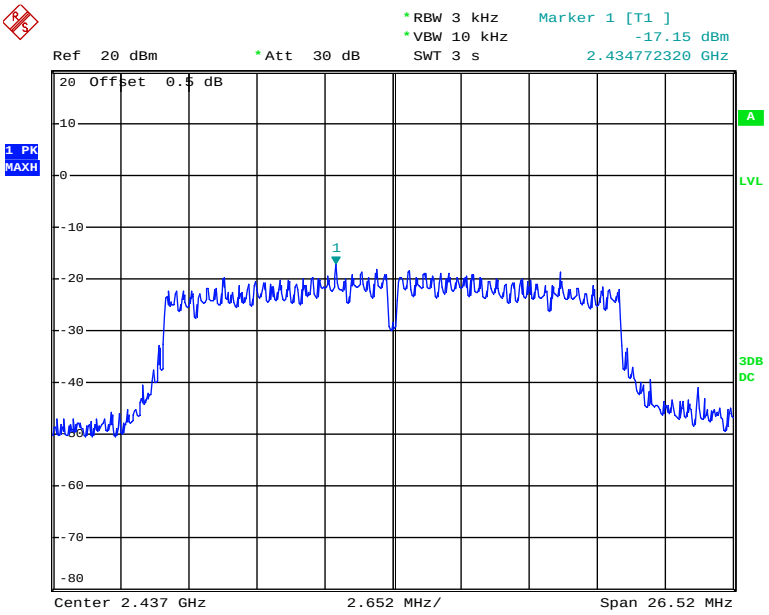
Date: 14.AUG.2017 17:12:02

Power Spectral Density, 802.11n ht20 Low Channel



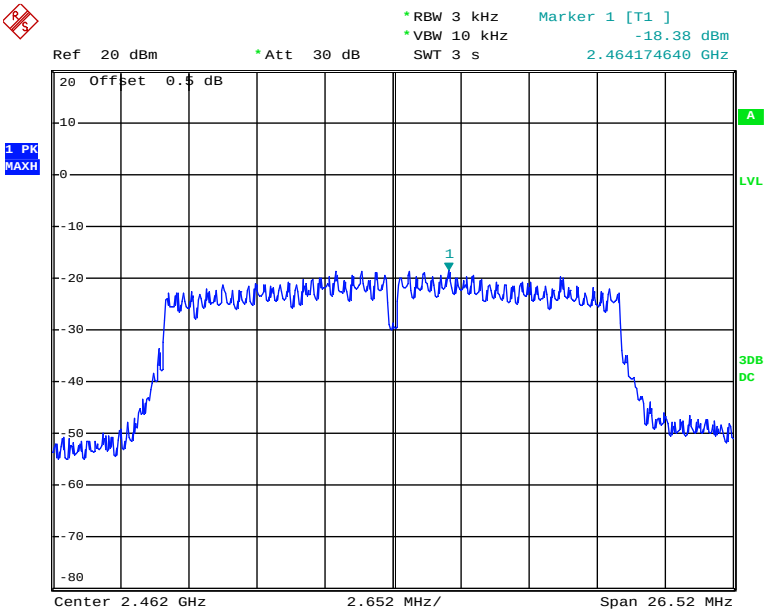
Date: 14.AUG.2017 17:12:53

Power Spectral Density, 802.11n ht20 Middle Channel



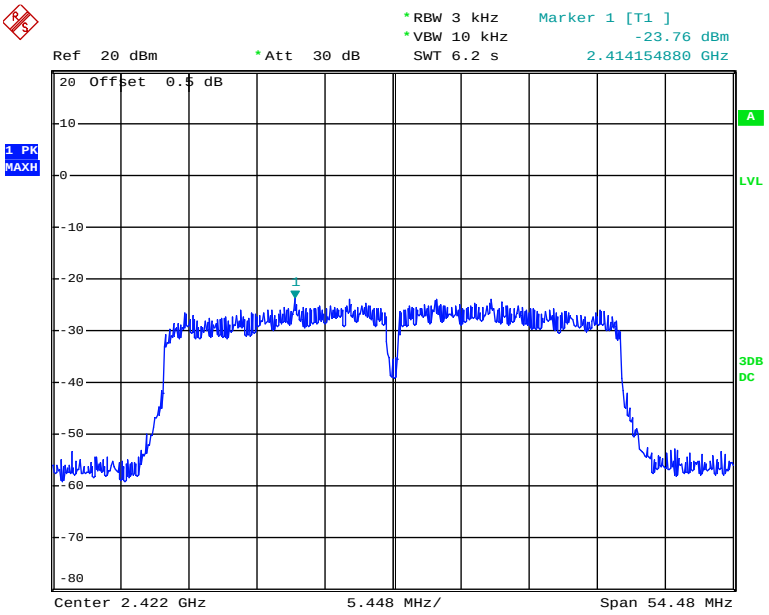
Date: 14.AUG.2017 17:13:25

Power Spectral Density, 802.11n ht20 High Channel



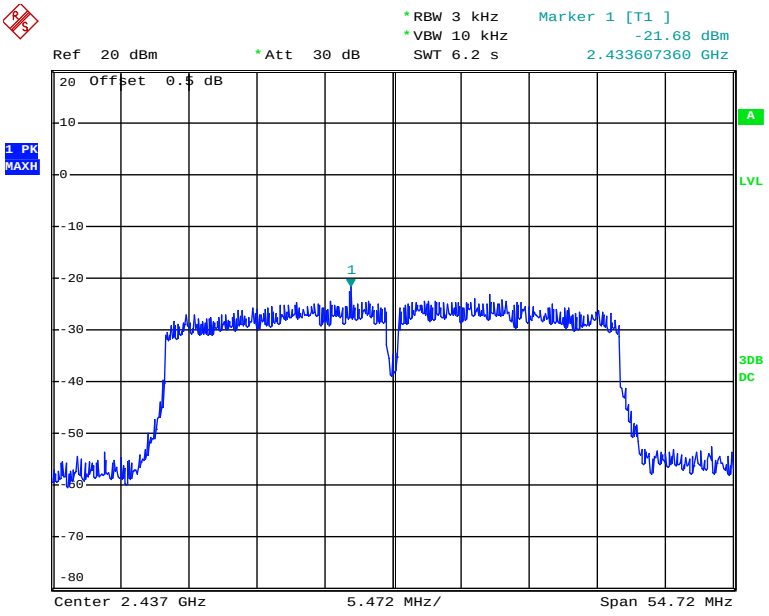
Date: 14.AUG.2017 17:14:13

Power Spectral Density, 802.11n ht40 Low Channel



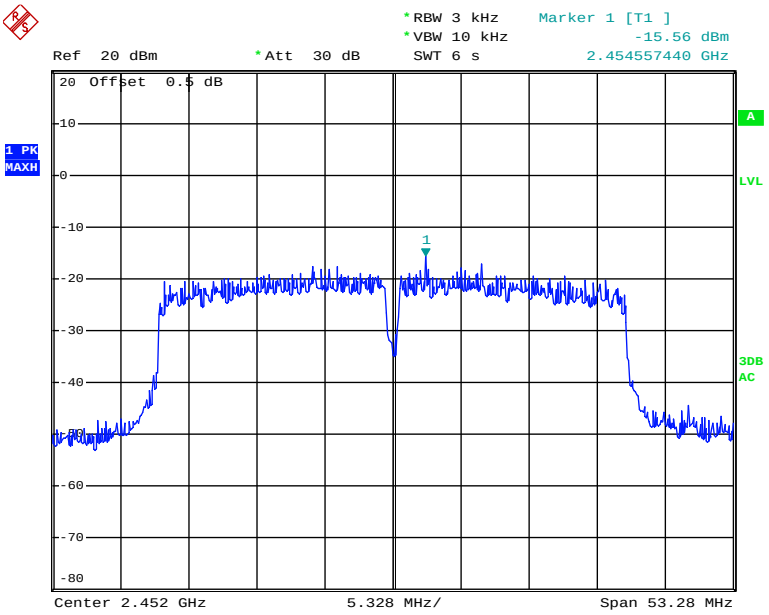
Date: 14.AUG.2017 17:17:37

Power Spectral Density, 802.11n ht40 Middle Channel



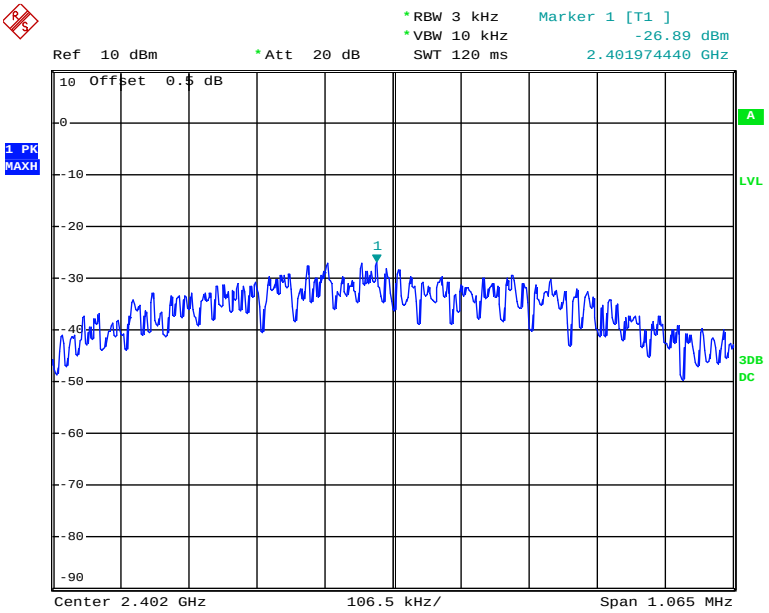
Date: 14.AUG.2017 17:18:32

Power Spectral Density, 802.11n ht40 High Channel



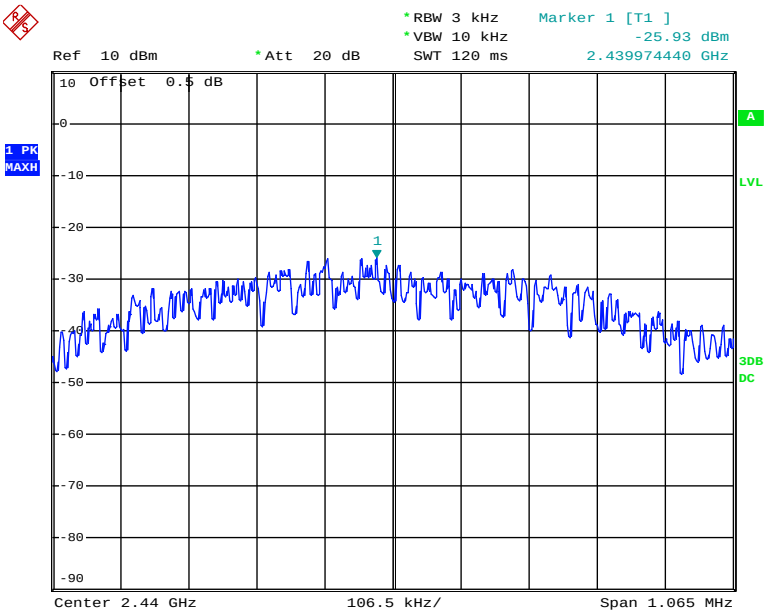
Date: 22.DEC.2017 16:40:29

Power Spectral Density, BLE Low Channel



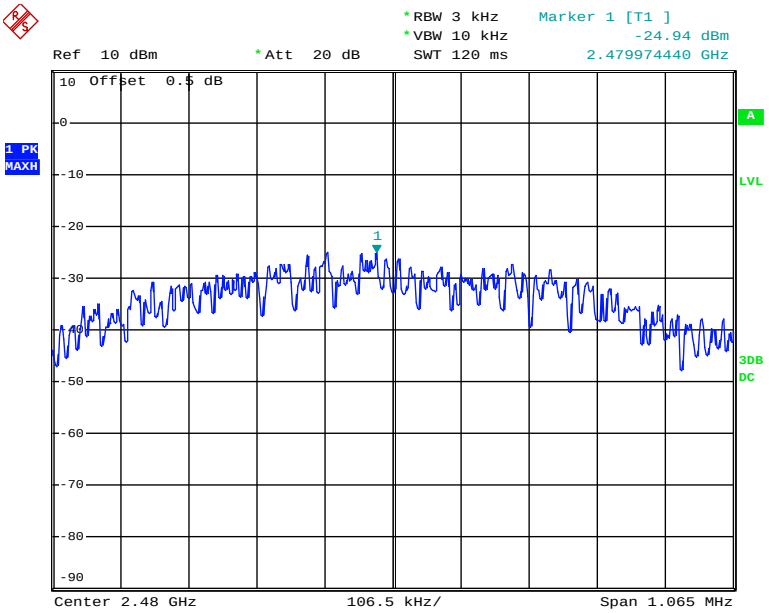
Date: 14.AUG.2017 15:00:07

Power Spectral Density, BLE Middle Channel



Date: 14.AUG.2017 15:01:01

Power Spectral Density, BLE High Channel



Date: 14.AUG.2017 15:01:38

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