FCC PART 15.247

TEST REPORT

For

Sino Electron Co., Ltd Zhejiang

369# XinJiang Rd., Xinqian Street, Huangyan Taizhou, Zhejiang, China

FCC ID: 2AM6T-COLORFOX-X1

Report Type:	**Product Type:**
Original Report	Smart Projector

Test Engineer:	Ada Yu
Report Number:	RKSA170728001-00A
Report Date:	2017-10-25
Reviewed By:	Oscar Ye RF Leader
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road,Kunshan,Jiangsu province,China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Sino Electron Co., Ltd Zhejiang
Tested Model	COLORFOX X1
Product Type	Smart Projector
Dimension	155mm(L)×155 mm(W)×220 mm(H)
Power Supply	DC 15.12V from battery or DC 19V charging by adapter

Adapter Information:
Model: FSP090-DIECN2
Input: AC100-240 V 50/60Hz 1.5A
Output:19V, 4.74A

**All measurement and test data in this report was gathered from production sample serial number: 20170728001. (Assigned by the BACL. The EUT supplied by the applicant was received on 2017-07-28)*

Objective

This report is prepared on behalf of Sino Electron Co., Ltd Zhejiang in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules.

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

Related Submittal(s)/Grant(s)

N/A

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 and FCC KDB558074 D01 DTS Meas Guidance v04.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19 dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emission	30MHz~1GHz	6.11dB
	1GHz~6GHz	4.45dB
	6GHz~18GHz	5.23dB
Occupied Bandwidth		0.5kHz
Temperature		1.0℃
Humidity		6%

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road,Kunshan,Jiangsu province,China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 815570. 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

Channel list for 802.11b, 802.11g and 802.11n-HT20 mode:

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

EUT was tested with Channel 1, 6 and 11.

Channel list for BLE mode:

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.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

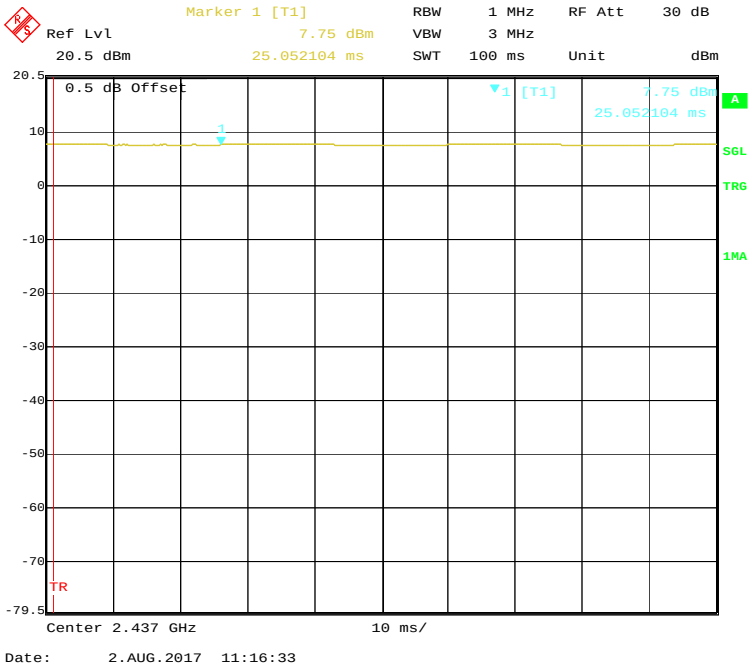
RF test tool: Ampak RFTestTool

Pre-scan with all the data rates, the below data rates are the worst case for Wi-Fi test.

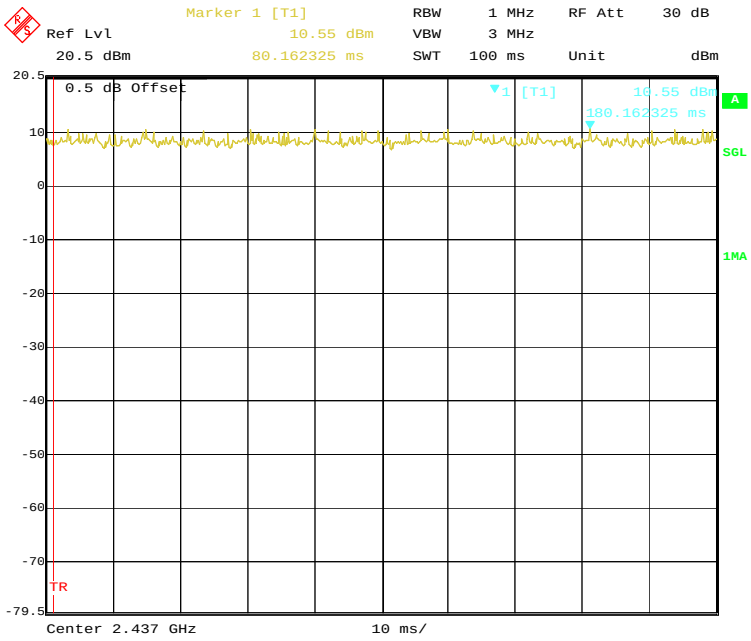
Mode	Data rate	Power level
802.11b	1 Mbps	19
802.11g	6 Mbps	20
802.11n-HT20	MCS0	20
BLE	/	12

Duty Cycle:

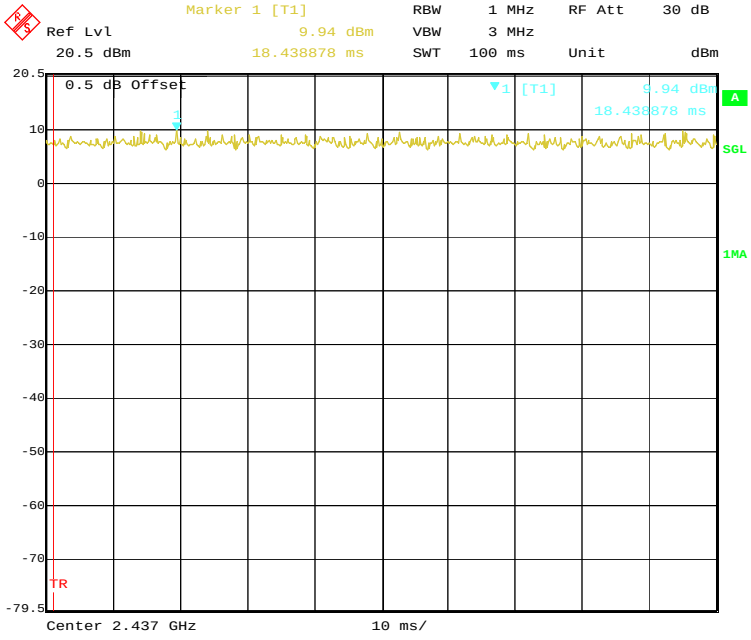
802.11b Mode Middle Channel



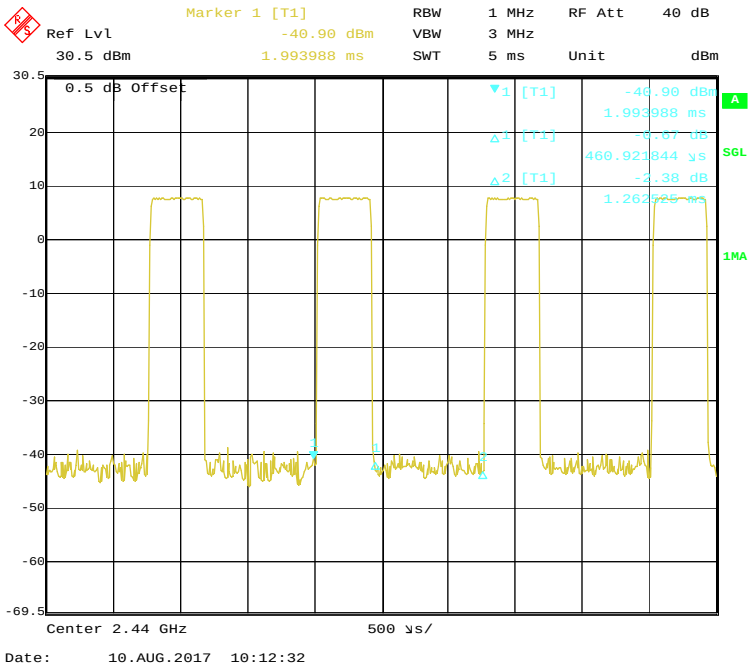
802.11g Mode Middle Channel



802.11n-HT20 Mode Middle Channel



BLE Mode Middle Channel



Band	Duty Cycle (%)	T(us)	1/T(kHz)	VBW Setting	10log(1/x)
802.11b	100	/	/	10Hz	0
802.11g	100	/	/	10Hz	0
802.11n-HT20	100	/	/	10Hz	0
BLE	36.50	461	2.17	3kHz	4.38

Note: "x" means "duty cycle".

Support Equipment List and Details

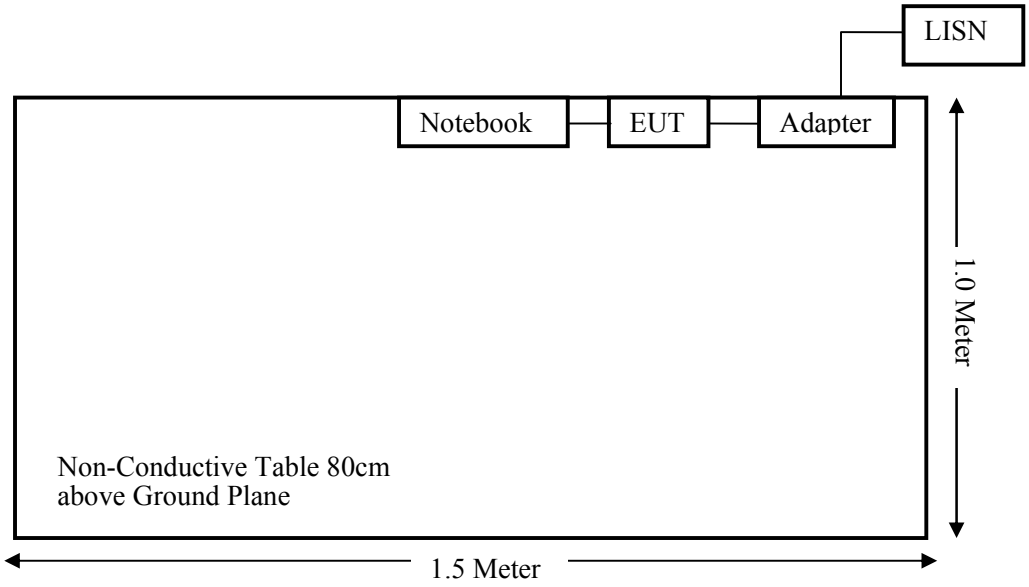
Manufacturer	Description	Model	Serial Number
DELL	Notebook	GX620	D65874152

External I/O Cable

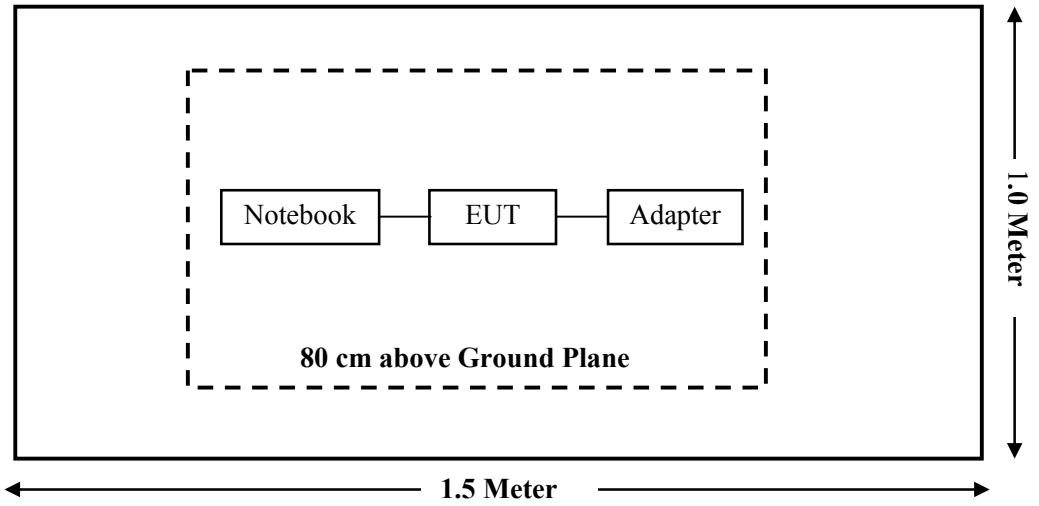
Cable Description	Length (m)	From Port	To
USB Cable	0.8	EUT	Notebook

Block Diagram of Test Setup

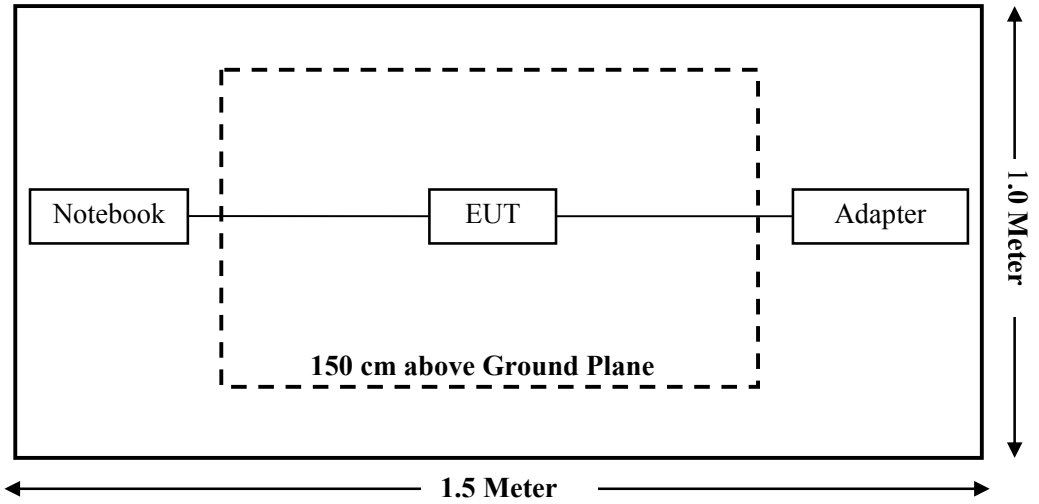
For Conducted Emissions:



For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.247 (i), §1.1307 (b) (1)& §2.1091	Maximum Permissible Exposure (MPE)	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

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-25	2017-11-24
Rohde & Schwarz	Signal Analyzer	FSIQ26	100048	2016-11-25	2017-11-24
Sunol Sciences	Broadband Antenna	JB3	A090314-2	2016-01-09	2019-01-08
ETS	Horn Antenna	3115	6229	2016-01-11	2019-01-10
ETS-LINDGREN	Horn Antenna	3116	00084159	2016-10-18	2019-10-17
Sonoma Instrunent	Pre-amplifier	330	171377	2016-12-12	2017-12-11
Narda	Pre-amplifier	AFS42-00101800	2001270	2016-12-12	2017-12-11
Heatsink Required	Amplifier	QLW-18405536-J0	15964001009	2016-12-12	2017-12-11
R&S	Auto test Software	EMC32	100361	/	/
Haojintech	Coaxial Cable	Cable-1	001	2016-12-12	2017-12-11
Haojintech	Coaxial Cable	Cable-2	002	2016-12-12	2017-12-11
Haojintech	Coaxial Cable	Cable-3	003	2016-12-12	2017-12-11
MICRO-COAX	Coaxial Cable	Cable-4	004	2016-12-12	2017-12-11
MICRO-COAX	Coaxial Cable	Cable-5	005	2016-12-12	2017-12-11
RF Conducted Test					
Rohde & Schwarz	Signal Analyzer	FSIQ26	836131/009	2016-09-21	2017-09-20
Agilent	Power Meter	N1912A	MY5000492	2016-11-18	2017-11-17
Agilent	Power Sensor	N1921A	MY54210024	2016-11-18	2017-11-17
Sino	RF Cable	/	/	2017-08-02	2018-08-01
Conducted Emission Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2016-11-25	2017-11-24
Rohde & Schwarz	LISN	ESH3-Z5	862770/011	2016-10-10	2017-10-09
ROHDE&SCHWARZ	LISN	ENV216	3560655016	2016-11-25	2017-11-24
Rohde & Schwarz	CE Test Software	EMC 32	100357	/	/
MICRO-COAX	Coaxial Cable	Cable-6	006	2016-09-08	2017-09-07

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

FCC§15.247 (i), §1.1310& §2.1091 –MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

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

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/		f/1500	30
1500-100,000	/		1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;
According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Mode	Frequency Range	Antenna Gain		Target Output Power		Evaluation Distance	Power Density	MPE Limit
	(MHz)	(dBi)	(numeric)	(dBm)	(mW)	(cm)	(mW/cm^2)	(mW/cm^2)
802.11b	2412~2462	2.00	1.58	17.00	50.12	20	0.0158	1.0
802.11g		2.00	1.58	21.00	125.89	20	0.0397	1.0
802.11 n-HT20		2.00	1.58	20.00	100.00	20	0.0315	1.0
BLE	2402-2480	2.00	1.58	12.00	15.85	20	0.0050	1.0

Note:

1. For the above target output power are all declared by the manufacturer.

2. The EUT has the BT, 2.4GHz Wi-Fi functions, they can transmitting simultaneously. According to KDB 447498 D01 General RF Exposure Guidance v06 and test data, the BT and 802.11g mode for 2.4G Wi-Fi are the worst case, their sum of MPE ratio is 0.0447, which is less than 1.0, so the collocation exposure exclusion applies.

Result: The device meet FCC MPE at 20 cm distance.

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.
And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has an integrated antenna arrangement for Wi-Fi & BLE, which the antenna gain is 2 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

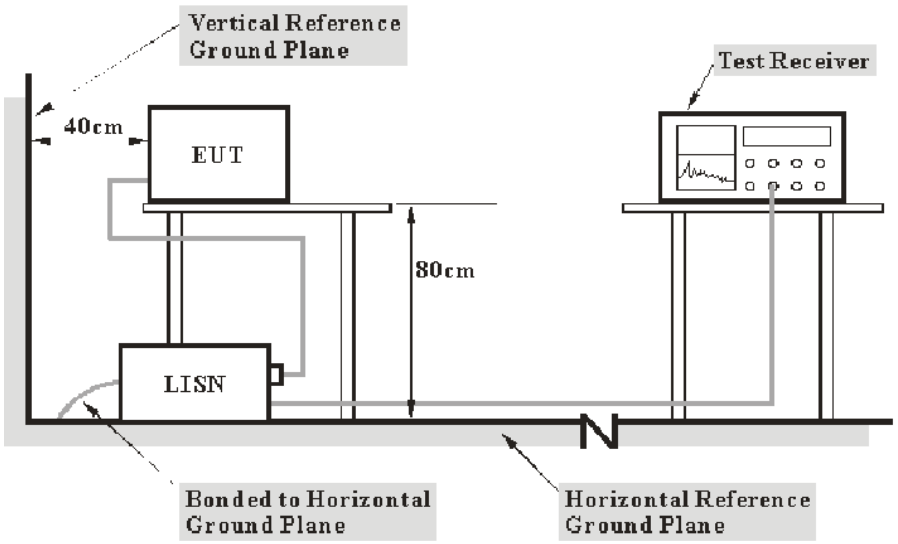
Result: Compliance.

FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

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 limits.

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 outlet of the 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 Factor & Margin Calculation

The Corrected factor is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Correction Factor = LISN VDF + Cable Loss

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

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.207.

Test Data

Environmental Conditions

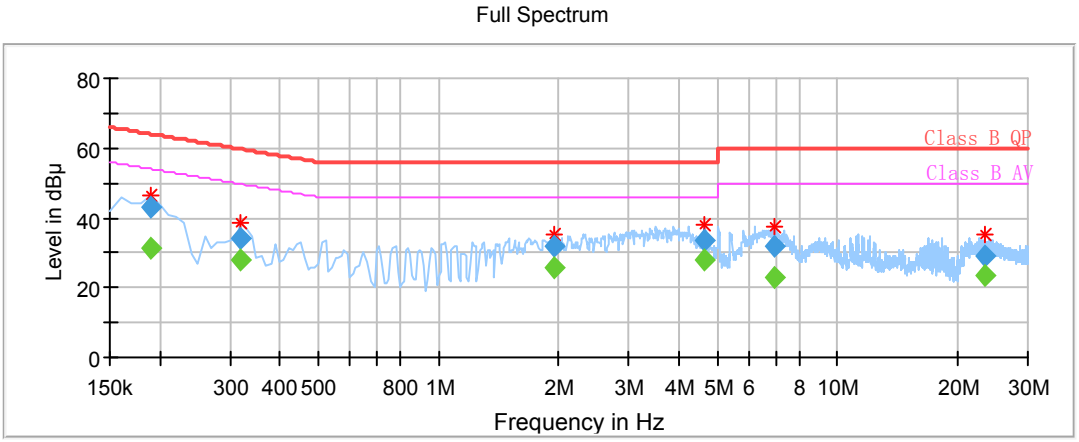
Temperature:	23.1 ℃
Relative Humidity:	55 %
ATM Pressure:	101.1kPa

The testing was performed by Ada Yu on 2017-08-07.

EUT operation mode: Transmitting

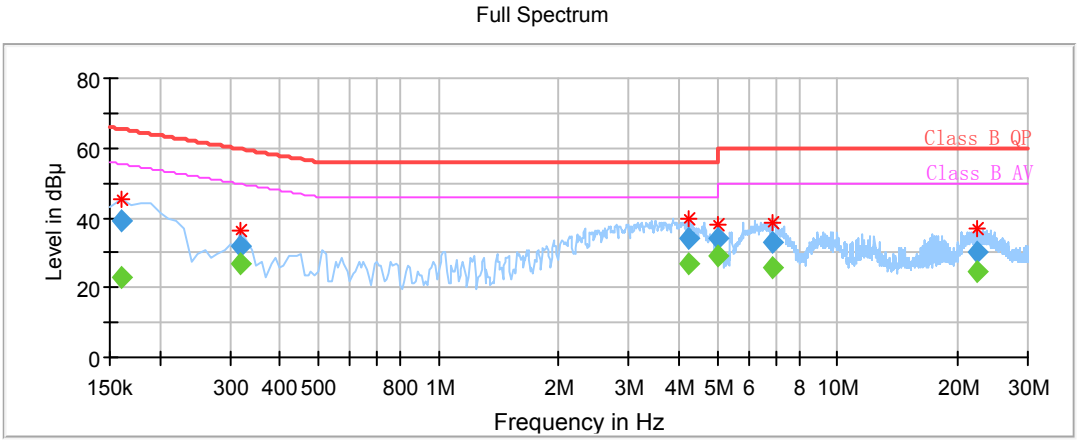
Wi-Fi Mode:

AC 120V/60 Hz, Line



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Bandwidth (kHz)	Line	Limit (dBµV)	Margin (dB)	Corr. (dB)	Comment
0.190000	---	31.36	9.000	L1	54.04	22.68	10.2	Compliance
0.190000	43.18	---	9.000	L1	64.04	20.86	10.2	Compliance
0.320000	---	27.95	9.000	L1	49.71	21.76	10.1	Compliance
0.320000	33.86	---	9.000	L1	59.71	25.85	10.1	Compliance
1.940000	---	25.71	9.000	L1	46.00	20.29	9.9	Compliance
1.940000	32.07	---	9.000	L1	56.00	23.93	9.9	Compliance
4.650000	---	28.00	9.000	L1	46.00	18.00	9.9	Compliance
4.650000	33.56	---	9.000	L1	56.00	22.44	9.9	Compliance
6.970000	---	22.85	9.000	L1	50.00	27.15	10.0	Compliance
6.970000	31.67	---	9.000	L1	60.00	28.33	10.0	Compliance
23.460000	---	23.47	9.000	L1	50.00	26.53	10.2	Compliance
23.460000	28.85	---	9.000	L1	60.00	31.15	10.2	Compliance

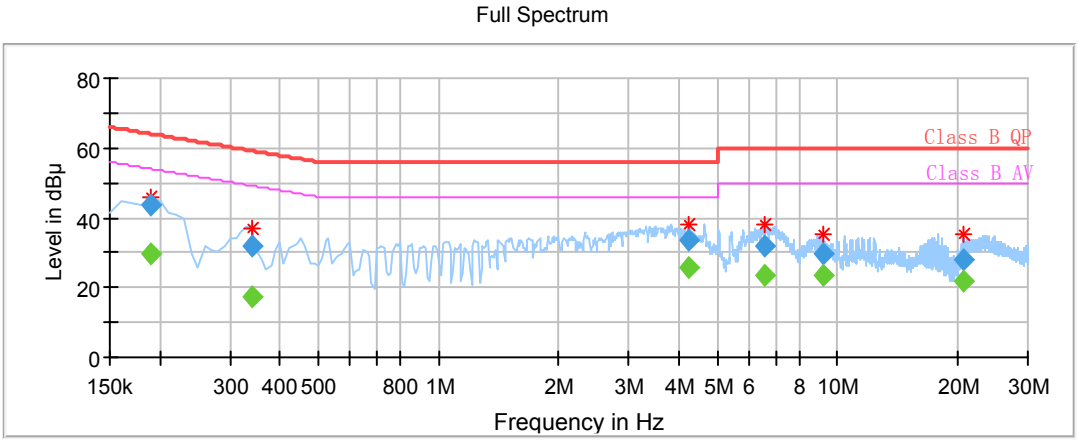
AC 120V/60 Hz, Neutral



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Bandwidth (kHz)	Line	Limit (dBµV)	Margin (dB)	Corr. (dB)	Comment
0.160000	---	22.97	9.000	N	55.46	32.49	10.1	Compliance
0.160000	38.89	---	9.000	N	65.46	26.57	10.1	Compliance
0.320000	---	26.76	9.000	N	49.71	22.95	10.1	Compliance
0.320000	31.99	---	9.000	N	59.71	27.72	10.1	Compliance
4.260000	---	26.75	9.000	N	46.00	19.25	9.9	Compliance
4.260000	34.17	---	9.000	N	56.00	21.83	9.9	Compliance
5.040000	---	29.13	9.000	N	50.00	20.87	9.9	Compliance
5.040000	34.40	---	9.000	N	60.00	25.60	9.9	Compliance
6.910000	---	25.84	9.000	N	50.00	24.16	9.9	Compliance
6.910000	33.14	---	9.000	N	60.00	26.86	9.9	Compliance
22.320000	---	24.66	9.000	N	50.00	25.34	10.2	Compliance
22.320000	30.14	---	9.000	N	60.00	29.86	10.2	Compliance

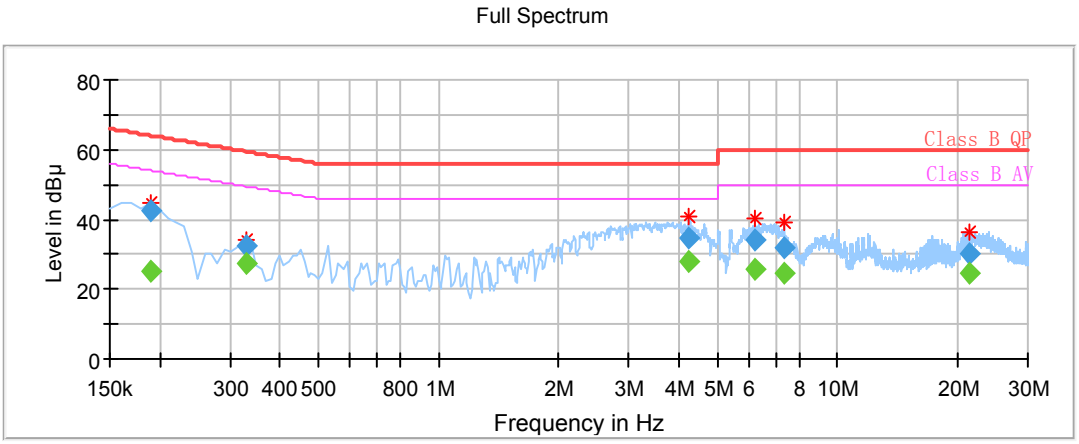
BLE Mode:

AC 120V/60 Hz, Line



Frequency (MHz)	QuasiPeak (dBµV)	Average (dB µ V)	Bandwidth (kHz)	Line	Limit (dBµV)	Margin (dB)	Corr. (dB)	Comment
0.190000	---	29.60	9.000	L1	54.04	24.44	10.2	Compliance
0.190000	43.58	---	9.000	L1	64.04	20.46	10.2	Compliance
0.340000	---	17.17	9.000	L1	49.20	32.03	10.1	Compliance
0.340000	31.98	---	9.000	L1	59.20	27.22	10.1	Compliance
4.240000	---	25.80	9.000	L1	46.00	20.20	9.9	Compliance
4.240000	33.30	---	9.000	L1	56.00	22.70	9.9	Compliance
6.580000	---	23.70	9.000	L1	50.00	26.30	10.0	Compliance
6.580000	32.10	---	9.000	L1	60.00	27.90	10.0	Compliance
9.240000	---	23.49	9.000	L1	50.00	26.51	10.0	Compliance
9.240000	29.87	---	9.000	L1	60.00	30.13	10.0	Compliance
20.780000	---	21.84	9.000	L1	50.00	28.16	10.2	Compliance
20.780000	28.08	---	9.000	L1	60.00	31.92	10.2	Compliance

AC 120V/60 Hz, Neutral



Frequency (MHz)	QuasiPeak (dBµV)	Average (dB µ V)	Bandwidth (kHz)	Line	Limit (dBµV)	Margin (dB)	Corr. (dB)	Comment
0.190000	---	25.03	9.000	N	54.04	29.01	10.1	Compliance
0.190000	42.37	---	9.000	N	64.04	21.67	10.1	Compliance
0.330000	---	27.38	9.000	N	49.45	22.07	10.1	Compliance
0.330000	32.47	---	9.000	N	59.45	26.98	10.1	Compliance
4.260000	---	27.78	9.000	N	46.00	18.22	9.9	Compliance
4.260000	34.84	---	9.000	N	56.00	21.16	9.9	Compliance
6.200000	---	25.93	9.000	N	50.00	24.07	9.9	Compliance
6.200000	34.40	---	9.000	N	60.00	25.60	9.9	Compliance
7.360000	---	24.63	9.000	N	50.00	25.37	9.9	Compliance
7.360000	31.98	---	9.000	N	60.00	28.02	9.9	Compliance
21.330000	---	24.75	9.000	N	50.00	25.25	10.2	Compliance
21.330000	30.47	---	9.000	N	60.00	29.53	10.2	Compliance

Note:

1) Corr.=LISN VDF (Voltage Division Factor) + Cable Loss
2) Corrected Amplitude = Reading + Corr.
3) Margin = Limit –Corrected Amplitude

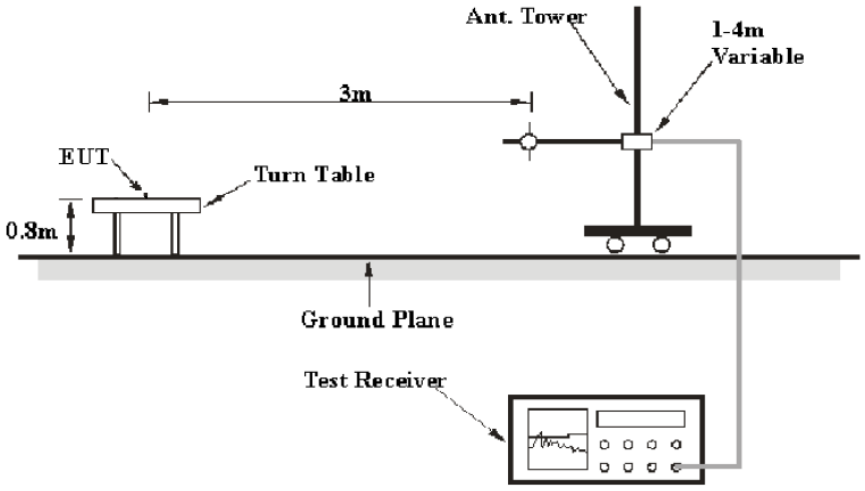
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

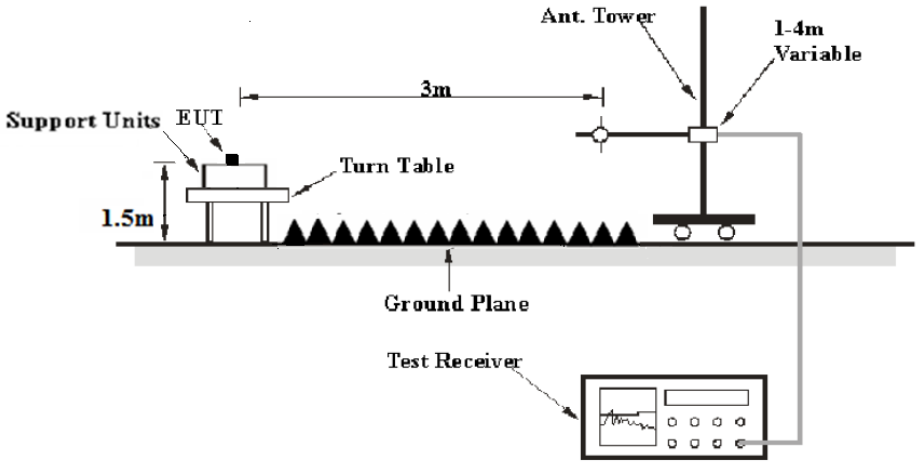
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

Below 1 GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters 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.

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

Frequency Range	Item	RBW	Video B/W	Duty cycle	Detector
1GHz – 25GHz	PK Value	1MHz	3 MHz	Any	PK
		1MHz	10 Hz	>98%	PK
	AV Value	1MHz	1/T	<98%	

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 detection mode 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 Results Summary

According to the recorded data in following table, the EUT complied with the FCC Title 47, Part 15, Subpart C, section 15.205, 15.209 and 15.247.

Test Data

Environmental Conditions

Temperature:	24.1 ℃
Relative Humidity:	54 %
ATM Pressure:	101.2kPa

The testing was performed by Ada Yu on 2017-08-02&2017-08-07.

EUT operation mode: Transmitting (Scan with X-Axis, Y-Axis and Z-Axis position, the worst case was recorded)

30MHz-25GHz

802.11b Mode:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP /Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel (2412 MHz)									
208.84	41.73	QP	226	165	H	-1.40	40.33	43.5	3.17
2412.00	106.20	PK	126	222	V	-4.13	102.07	/	/
2412.00	100.73	Ave	126	222	V	-4.13	96.60	/	/
2412.00	111.48	PK	102	223	H	-4.13	107.35	/	/
2412.00	105.44	Ave	102	223	H	-4.13	101.31	/	/
2390.00	48.52	PK	86	163	H	-4.19	44.33	74	29.67
2390.00	40.13	Ave	86	163	H	-4.19	35.94	54	18.06
3917.51	43.26	PK	291	239	V	1.98	45.24	74	28.76
3917.51	34.15	Ave	291	239	V	1.98	36.13	54	17.87
1735.23	44.58	PK	257	136	V	-6.54	38.04	74	35.96
1735.23	36.72	Ave	257	136	V	-6.54	30.18	54	23.82
4824.00	36.98	PK	57	132	H	4.19	41.17	74	32.83
4824.00	29.73	Ave	57	132	H	4.19	33.92	54	20.08
7236.00	29.16	PK	262	218	H	11.50	40.66	74	33.34
7236.00	19.51	Ave	262	218	H	11.50	31.01	54	22.99

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Middle Channel (2437 MHz)									
208.84	40.98	QP	148	197	H	-1.40	39.58	43.5	3.92
2437.00	106.13	PK	182	198	V	-4.07	102.06	/	/
2437.00	100.72	Ave	182	198	V	-4.07	96.65	/	/
2437.00	111.50	PK	243	128	H	-4.07	107.43	/	/
2437.00	105.38	Ave	243	128	H	-4.07	101.31	/	/
1365.79	43.26	PK	164	176	H	-8.73	34.53	74	39.47
1365.79	33.56	Ave	164	176	H	-8.73	24.83	54	29.17
3725.61	44.17	PK	339	122	V	1.22	45.39	74	28.61
3725.61	34.28	Ave	339	122	V	1.22	35.50	54	18.50
4874.00	39.16	PK	233	169	H	4.32	43.48	74	30.52
4874.00	29.07	Ave	233	169	H	4.32	33.39	54	20.61
6198.35	43.21	PK	45	140	V	7.92	51.13	74	22.87
6198.35	33.62	Ave	45	140	V	7.92	41.54	54	12.46
7311.00	29.10	PK	181	156	H	11.62	40.72	74	33.28
7311.00	19.49	Ave	181	156	H	11.62	31.11	54	22.89

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
High Channel (2462 MHz)									
208.84	41.56	QP	134	229	H	-1.40	40.16	43.5	3.34
2462.00	106.14	PK	157	179	V	-4.00	102.14	/	/
2462.00	100.79	Ave	157	179	V	-4.00	96.79	/	/
2462.00	111.44	PK	347	154	H	-4.00	107.44	/	/
2462.00	105.47	Ave	347	154	H	-4.00	101.47	/	/
2483.50	44.59	PK	324	158	H	-3.94	40.65	74	33.35
2483.50	38.27	Ave	324	158	H	-3.94	34.33	54	19.67
1735.21	43.15	PK	301	166	V	-6.54	36.61	74	37.39
1735.21	36.73	Ave	301	166	V	-6.54	30.19	54	23.81
4924.00	40.18	PK	70	122	H	4.45	44.63	74	29.37
4924.00	29.48	Ave	70	122	H	4.45	33.93	54	20.07
6410.29	43.15	PK	342	184	H	8.87	52.02	74	21.98
6410.29	38.55	Ave	342	184	H	8.87	47.42	54	6.58
7386.00	29.18	PK	199	139	H	11.74	40.92	74	33.08
7386.00	19.47	Ave	199	139	H	11.74	31.21	54	22.79

802.11g Mode:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel (2412 MHz)									
216.37	31.53	QP	337	159	H	-1.40	30.13	46	15.87
2412.00	106.78	PK	206	223	V	-4.13	102.65	/	/
2412.00	101.14	Ave	206	223	V	-4.13	97.01	/	/
2412.00	112.02	PK	180	178	H	-4.13	107.89	/	/
2412.00	105.89	Ave	180	178	H	-4.13	101.76	/	/
2390.00	48.57	PK	195	101	H	-4.19	44.38	74	29.62
2390.00	40.15	Ave	195	101	H	-4.19	35.96	54	18.04
3621.08	43.29	PK	40	161	V	0.80	44.09	74	29.91
3621.08	34.08	Ave	40	161	V	0.80	34.88	54	19.12
1604.24	44.64	PK	33	213	V	-7.19	37.45	74	36.55
1604.24	36.81	Ave	33	213	V	-7.19	29.62	54	24.38
4824.00	36.93	PK	152	244	H	4.19	41.12	74	32.88
4824.00	29.72	Ave	152	244	H	4.19	33.91	54	20.09
7236.00	29.11	PK	11	208	H	11.50	40.61	74	33.39
7236.00	19.49	Ave	11	208	H	11.50	30.99	54	23.01

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Middle Channel (2437 MHz)									
216.37	31.53	QP	25	142	H	-1.40	30.13	46	15.87
2437.00	107.15	PK	27	216	V	-4.07	103.08	/	/
2437.00	101.60	Ave	27	216	V	-4.07	97.53	/	/
2437.00	112.34	PK	134	137	H	-4.07	108.27	/	/
2437.00	106.35	Ave	134	137	H	-4.07	102.28	/	/
1604.24	43.23	PK	86	189	H	-7.19	36.04	74	37.96
1604.24	33.53	Ave	86	189	H	-7.19	26.34	54	27.66
3211.56	44.11	PK	315	159	V	-0.48	43.63	74	30.37
3211.56	34.28	Ave	315	159	V	-0.48	33.80	54	20.20
4874.00	39.13	PK	295	135	H	4.32	43.45	74	30.55
4874.00	28.99	Ave	295	135	H	4.32	33.31	54	20.69
6451.33	43.30	PK	54	245	V	9.06	52.36	74	21.64
6451.33	33.55	Ave	54	245	V	9.06	42.61	54	11.39
7311.00	29.10	PK	119	128	H	11.62	40.72	74	33.28
7311.00	19.61	Ave	119	128	H	11.62	31.23	54	22.77

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
High Channel (2462 MHz)									
216.37	31.52	QP	119	248	H	-1.40	30.12	46	15.88
2462.00	107.35	PK	70	220	V	-4.00	103.35	/	/
2462.00	101.98	Ave	70	220	V	-4.00	97.98	/	/
2462.00	112.71	PK	271	196	H	-4.00	108.71	/	/
2462.00	106.53	Ave	271	196	H	-4.00	102.53	/	/
2483.50	44.56	PK	210	211	H	-3.94	40.62	74	33.38
2483.50	38.25	Ave	210	211	H	-3.94	34.31	54	19.69
1604.24	43.24	PK	193	212	V	-7.19	36.05	74	37.95
1604.24	36.75	Ave	193	212	V	-7.19	29.56	54	24.44
4924.00	40.24	PK	161	199	H	4.45	44.69	74	29.31
4924.00	29.57	Ave	161	199	H	4.45	34.02	54	19.98
6451.33	43.17	PK	347	128	V	9.06	52.23	74	21.77
6451.33	38.56	Ave	347	128	V	9.06	47.62	54	6.38
7386.00	28.99	PK	353	210	H	11.74	40.73	74	33.27
7386.00	19.34	Ave	353	210	H	11.74	31.08	54	22.92

802.11n-HT20 Mode:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel (2412 MHz)									
216.37	34.25	QP	67	128	H	-1.40	32.85	46	13.15
2412.00	104.71	PK	234	177	V	-4.13	100.58	/	/
2412.00	99.22	Ave	234	177	V	-4.13	95.09	/	/
2412.00	110.05	PK	255	199	H	-4.13	105.92	/	/
2412.00	103.95	Ave	255	199	H	-4.13	99.82	/	/
2390.00	48.48	PK	193	176	H	-4.19	44.29	74	29.71
2390.00	40.07	Ave	193	176	H	-4.19	35.88	54	18.12
2400.00	43.20	PK	239	176	H	1.48	44.68	74	29.32
2400.00	34.18	Ave	239	176	H	1.48	35.66	54	18.34
1604.24	44.56	PK	120	175	V	-7.19	37.37	74	36.63
1604.24	36.64	Ave	120	175	V	-7.19	29.45	54	24.55
4824.00	36.90	PK	231	234	H	4.19	41.09	74	32.91
4824.00	29.80	Ave	231	234	H	4.19	33.99	54	20.01
7236.00	29.21	PK	224	216	H	11.50	40.71	74	33.29
7236.00	19.60	Ave	224	216	H	11.50	31.10	54	22.90

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Middle Channel (2437 MHz)									
216.37	33.67	QP	128	100	H	-1.40	32.27	46	13.73
2437.00	105.31	PK	338	216	V	-4.07	101.24	/	/
2437.00	99.83	Ave	338	216	V	-4.07	95.76	/	/
2437.00	110.63	PK	169	223	H	-4.07	106.56	/	/
2437.00	104.54	Ave	169	223	H	-4.07	100.47	/	/
1604.24	43.21	PK	325	160	H	-7.19	36.02	74	37.98
1604.24	33.59	Ave	325	160	H	-7.19	26.40	54	27.60
3211.56	44.15	PK	276	132	V	0.80	44.95	74	29.05
3211.56	34.21	Ave	276	132	V	0.80	35.01	54	18.99
4874.00	39.08	PK	293	123	H	4.32	43.40	74	30.60
4874.00	29.15	Ave	293	123	H	4.32	33.47	54	20.53
6451.33	43.29	PK	208	109	V	9.06	52.35	74	21.65
6451.33	33.63	Ave	208	109	V	9.06	42.69	54	11.31
7311.00	29.07	PK	112	194	H	11.62	40.69	74	33.31
7311.00	19.43	Ave	112	194	H	11.62	31.05	54	22.95

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
High Channel (2462 MHz)									
216.37	33.88	QP	263	160	H	-1.40	32.48	46	13.52
2462.00	105.85	PK	173	174	V	-4.00	101.85	/	/
2462.00	100.46	Ave	173	174	V	-4.00	96.46	/	/
2462.00	111.27	PK	24	100	H	-4.00	107.27	/	/
2462.00	105.26	Ave	24	100	H	-4.00	101.26	/	/
2483.50	44.68	PK	352	211	H	-3.94	40.74	74	33.26
2483.50	38.35	Ave	352	211	H	-3.94	34.41	54	19.59
1604.24	43.15	PK	249	167	V	-7.19	35.96	74	38.04
1604.24	36.79	Ave	249	167	V	-7.19	29.60	54	24.40
4924.00	40.10	PK	248	139	H	4.45	44.55	74	29.45
4924.00	29.40	Ave	248	139	H	4.45	33.85	54	20.15
6451.33	43.06	PK	235	228	H	9.06	52.12	74	21.88
6451.33	38.58	Ave	235	228	H	9.06	47.64	54	6.36
7386.00	29.22	PK	215	240	H	11.74	40.96	74	33.04
7386.00	19.50	Ave	215	240	H	11.74	31.24	54	22.76

BLE Mode:

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel (2402 MHz)									
282.71	40.46	QP	85	184	V	1.17	41.63	46	4.37
2402.00	106.64	PK	30	234	V	-4.16	102.48	/	/
2402.00	100.26	Ave	30	234	V	-4.16	96.10	/	/
2402.00	113.20	PK	124	198	H	-4.16	109.04	/	/
2402.00	107.76	Ave	124	198	H	-4.16	103.60	/	/
2390.00	49.59	PK	313	101	H	-4.19	45.40	74	28.60
2390.00	41.37	Ave	313	101	H	-4.19	37.18	54	16.82
1689.18	44.15	PK	225	102	H	-6.77	37.38	74	36.62
1689.18	36.24	Ave	225	102	H	-6.77	29.47	54	24.53
3210.23	43.58	PK	332	134	V	-0.48	43.10	74	30.90
3210.23	34.81	Ave	332	134	V	-0.48	34.33	54	19.67
4804.00	43.28	PK	292	116	H	4.13	47.41	74	26.59
4804.00	34.19	Ave	292	116	H	4.13	38.32	54	15.68
7206.00	28.61	PK	6	217	H	11.45	40.06	74	33.94
7206.00	18.34	Ave	6	217	H	11.45	29.79	54	24.21

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Middle Channel (2440 MHz)									
282.71	39.18	QP	26	215	V	1.17	40.35	46	5.65
2440.00	106.72	PK	351	196	V	-4.06	102.66	/	/
2440.00	100.23	Ave	351	196	V	-4.06	96.17	/	/
2440.00	113.11	PK	299	140	H	-4.06	109.05	/	/
2440.00	107.80	Ave	299	140	H	-4.06	103.74	/	/
1604.23	44.08	PK	110	144	V	-7.19	36.89	74	37.11
1604.23	36.33	Ave	110	144	V	-7.19	29.14	54	24.86
3211.68	43.65	PK	254	160	H	-0.48	43.17	74	30.83
3211.68	34.74	Ave	254	160	H	-0.48	34.26	54	19.74
4880.00	43.32	PK	133	116	H	4.33	47.65	74	26.35
4880.00	34.15	Ave	133	116	H	4.33	38.48	54	15.52
6451.24	43.66	PK	55	205	V	9.06	52.72	74	21.28
6451.24	34.77	Ave	55	205	V	9.06	43.83	54	10.17
7320.00	28.65	PK	282	158	H	11.63	40.28	74	33.72
7320.00	18.37	Ave	282	158	H	11.63	30.00	54	24.00

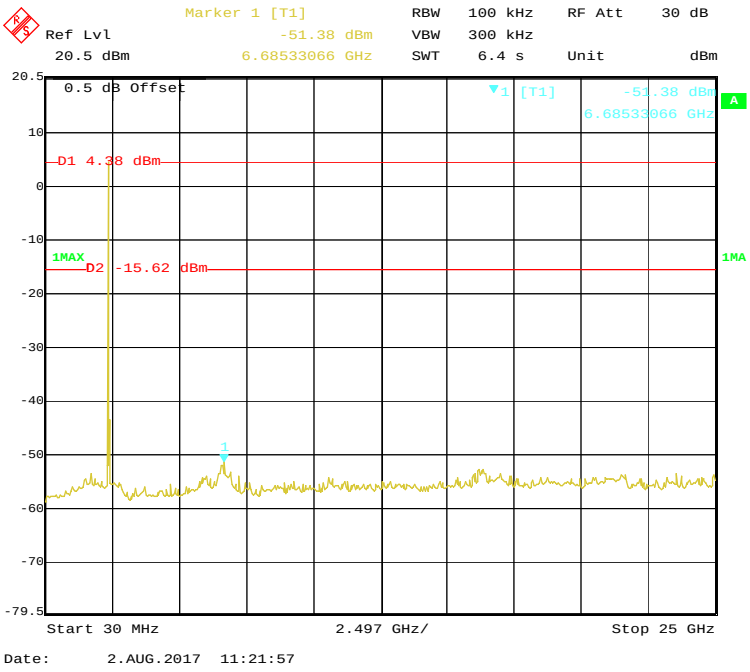
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/205/209	
	Reading (dBµV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)	(dB)	(dBµV/m)	Limit (dBµV/m)	Margin (dB)
High Channel (2480MHz)									
282.71	40.09	QP	293	172	V	1.17	41.26	46	4.74
2480.00	106.70	PK	208	198	V	-3.95	102.75	/	/
2480.00	100.21	Ave	208	198	V	-3.95	96.26	/	/
2480.00	113.20	PK	79	201	H	-3.95	109.25	/	/
2480.00	107.70	Ave	79	201	H	-3.95	103.75	/	/
2483.50	49.65	PK	127	133	H	-3.94	45.71	74	28.29
2483.50	41.44	Ave	127	133	H	-3.94	37.50	54	16.50
1605.22	43.39	PK	90	147	V	-7.19	36.20	74	37.80
1605.22	34.09	Ave	90	147	V	-7.19	26.90	54	27.10
4960.00	43.30	PK	197	145	H	4.54	47.84	74	26.16
4960.00	34.19	Ave	197	145	H	4.54	38.73	54	15.27
6454.87	43.49	PK	342	247	V	9.08	52.57	74	21.43
6454.87	34.17	Ave	342	247	V	9.08	43.25	54	10.75
7440.00	28.71	PK	151	192	H	11.83	40.54	74	33.46
7440.00	18.43	Ave	151	192	H	11.83	30.26	54	23.74

Simultaneous Transmission Mode:

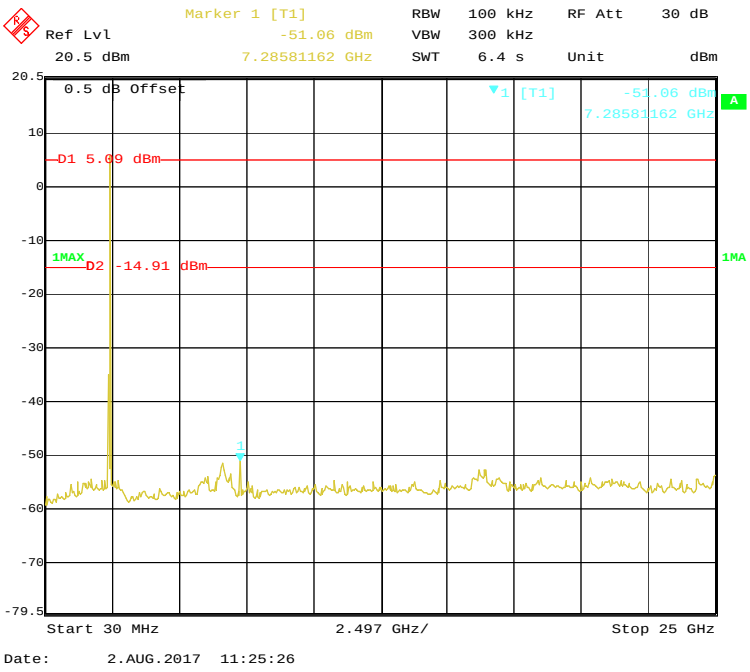
Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor	Corrected Amplitude	FCC Part 15.247/205/209	
	Reading (dBµV)	Detector (PK/QP/ Ave.)		Height (cm)	Polar (H/V)	(dB)	(dBµV/m)	Limit (dBµV/m)	Margin (dB)
282.71	40.02	QP	293	172	V	1.17	41.19	46	4.81
1605.22	43.07	PK	90	147	V	-7.19	35.88	74	38.12
1605.22	33.44	Ave	90	147	V	-7.19	26.25	54	27.75
6454.87	43.4	PK	342	247	V	9.08	52.48	74	21.52
6454.87	33.91	Ave	342	247	V	9.08	42.99	54	11.01

Conducted Spurious Emissions at Antenna Port:

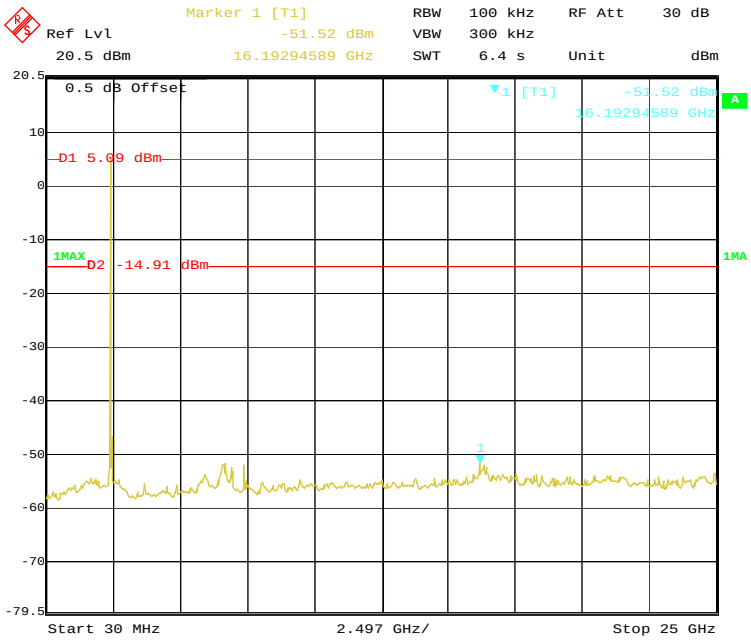
802.11b Low Channel



802.11b Middle Channel

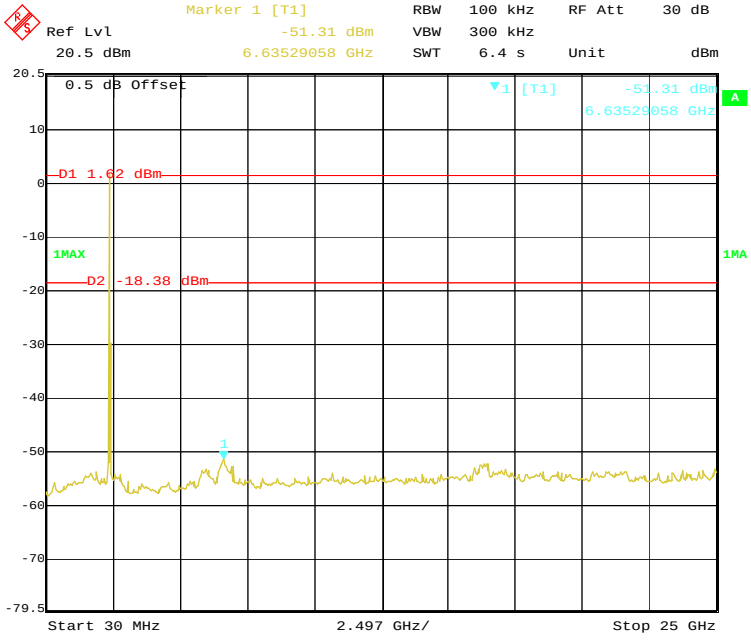


802.11b High Channel



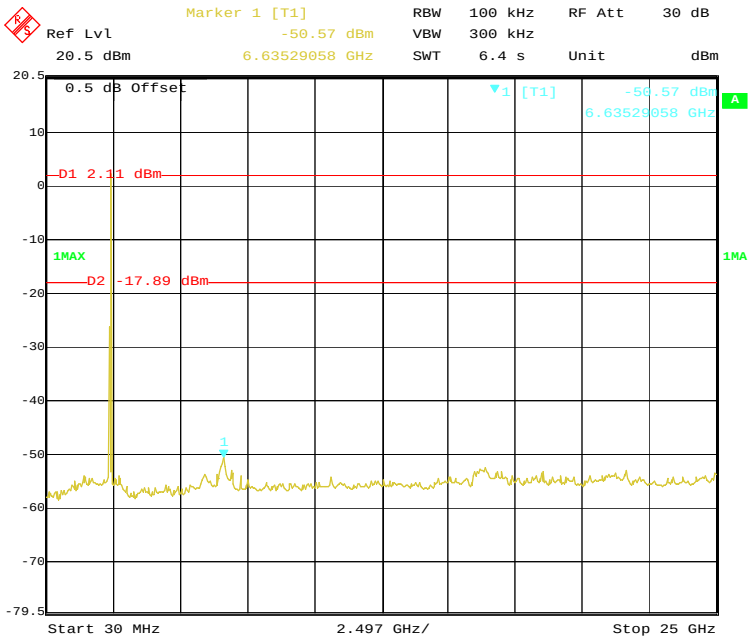
Date: 2.AUG.2017 11:11:44

802.11g Low Channel

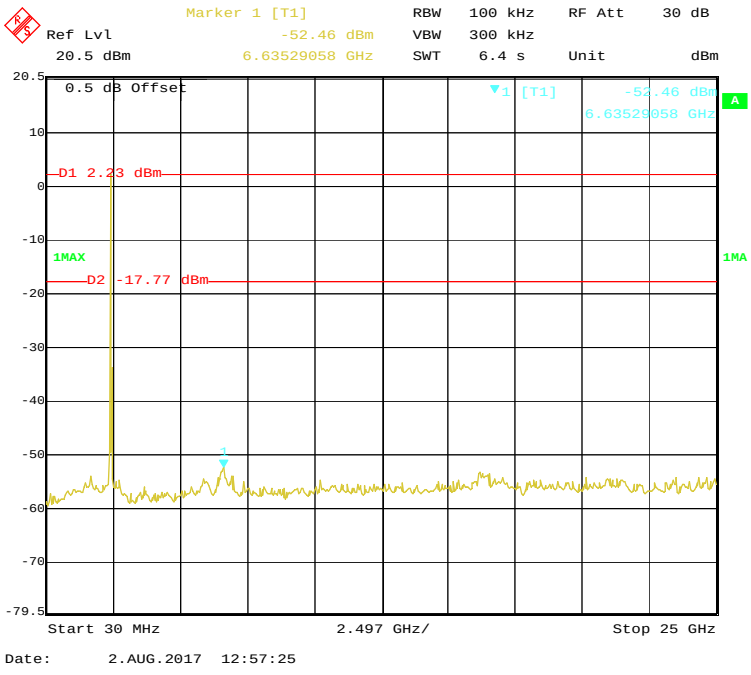


Date: 2.AUG.2017 12:43:10

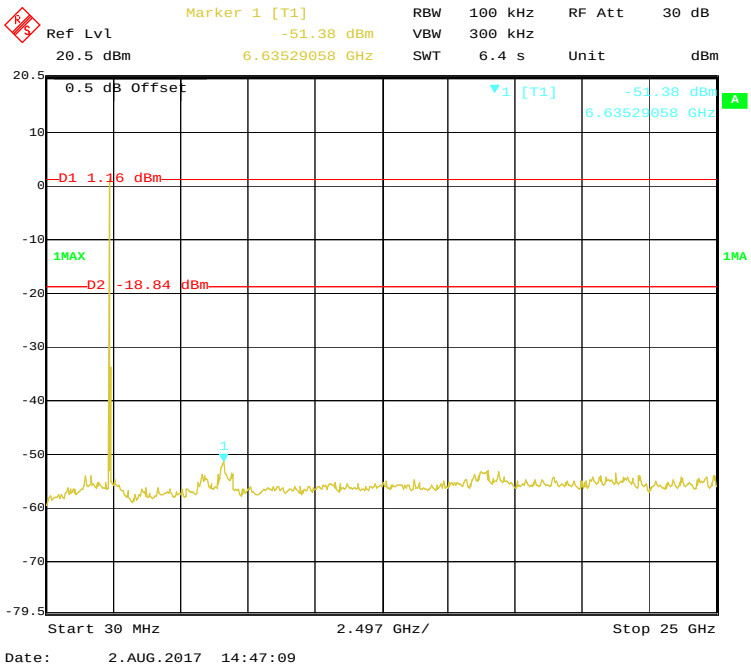
802.11g Middle Channel



802.11g High Channel

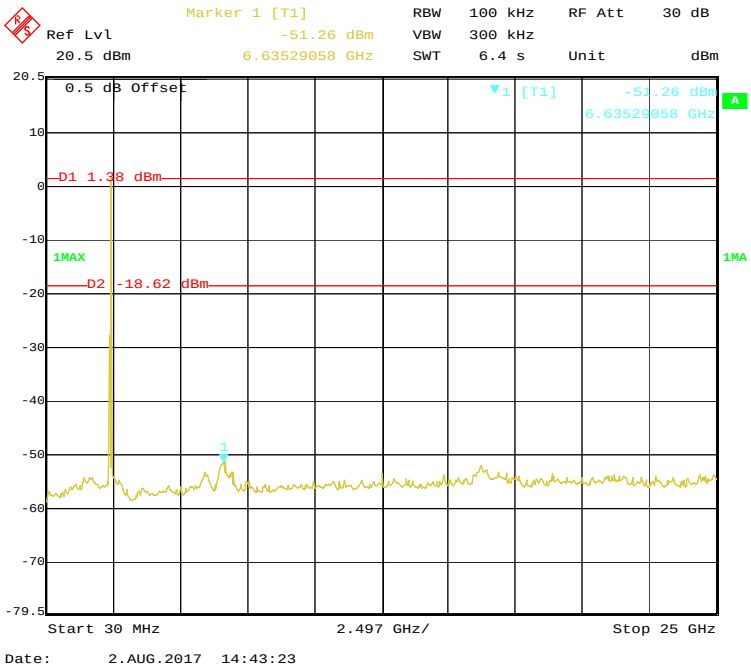


802.11n-HT20 Low Channel



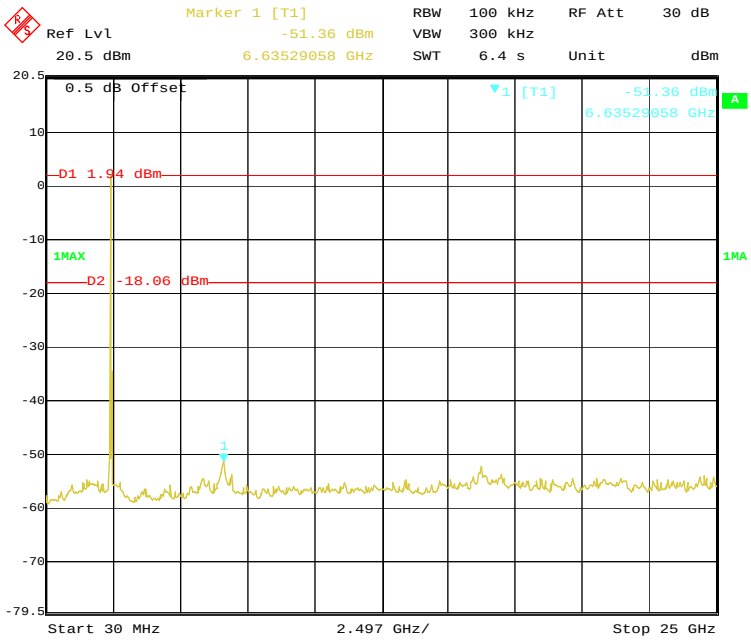
Date: 2.AUG.2017 14:47:09

802.11n-HT20 Middle Channel



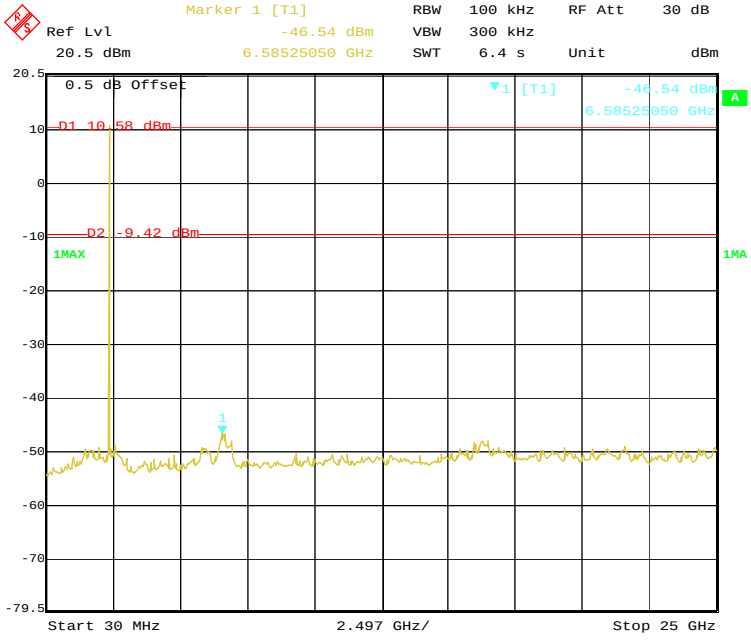
Date: 2.AUG.2017 14:43:23

802.11n-HT20 High Channel



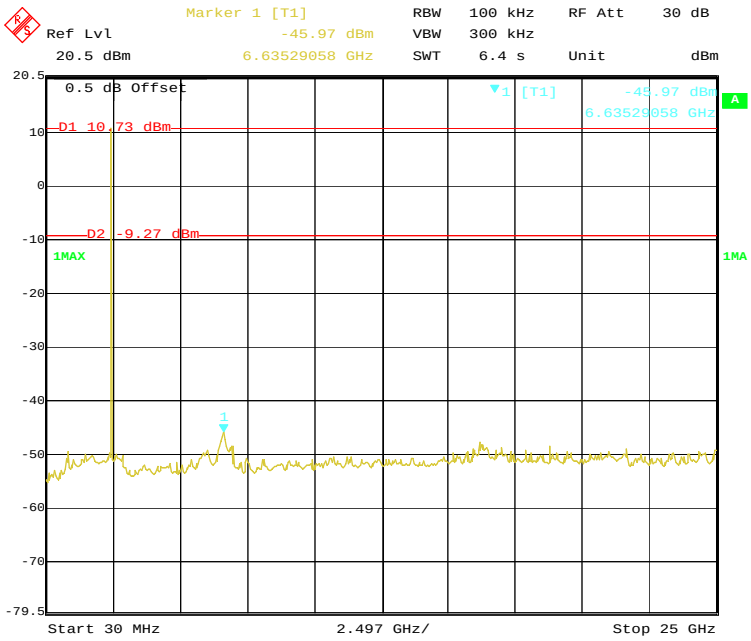
Date: 2.AUG.2017 14:33:26

BLE Mode Low Channel



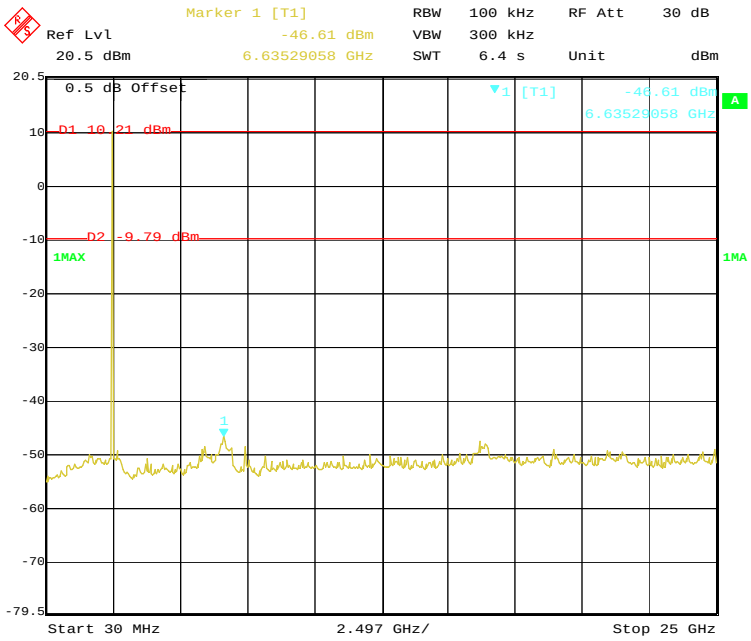
Date: 7.AUG.2017 10:58:59

BLE Mode Middle Channel



Date: 7.AUG.2017 11:00:49

BLE Mode High Channel



Date: 7.AUG.2017 11:02:01

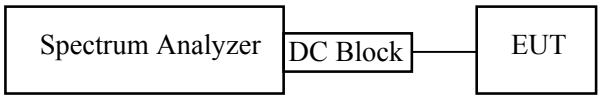
FCC §15.247(a) (2) – 6 dB EMISSION BANDWIDTH

Applicable Standard

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

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.



Test Data

Environmental Conditions

Temperature:	24.1 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

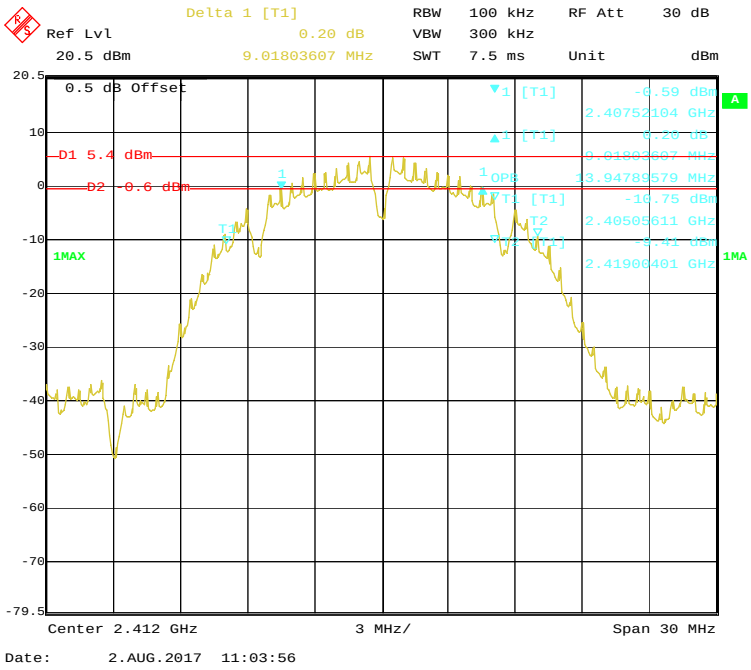
The testing was performed by Ada Yu on 2017-08-02 to 2017-08-07.

EUT operation mode: Transmitting

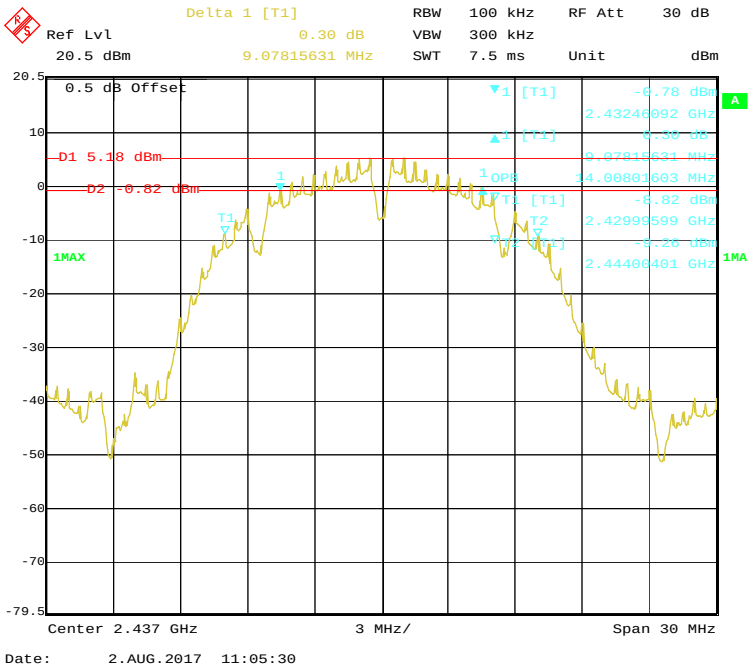
Test Result: Pass

Channel	Frequency (MHz)	6 dB Emission Bandwidth (MHz)	Limit (MHz)
802.11b mode			
Low	2412	9.02	≥0.5
Middle	2437	9.08	≥0.5
High	2462	9.02	≥0.5
802.11g mode			
Low	2412	15.75	≥0.5
Middle	2437	16.05	≥0.5
High	2462	15.99	≥0.5
802.11n-HT20 mode			
Low	2412	17.50	≥0.5
Middle	2437	17.07	≥0.5
High	2462	17.25	≥0.5
BLE mode			
Low	2402	0.745	≥0.5
Middle	2440	0.745	≥0.5
High	2480	0.739	≥0.5

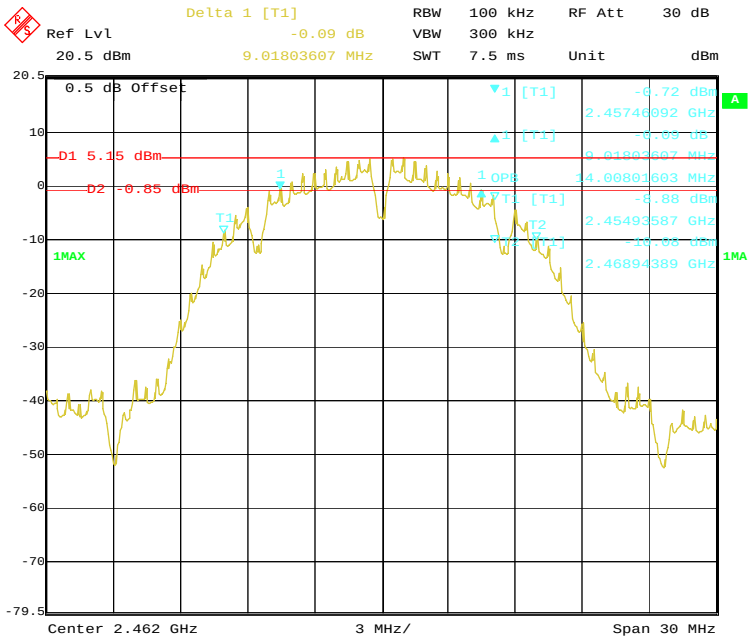
802.11b, Low Channel



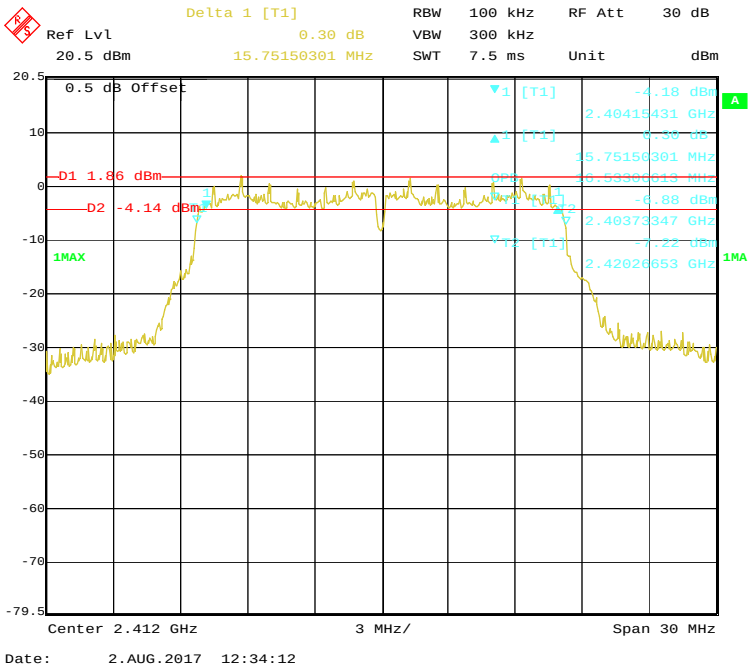
802.11b, Middle Channel



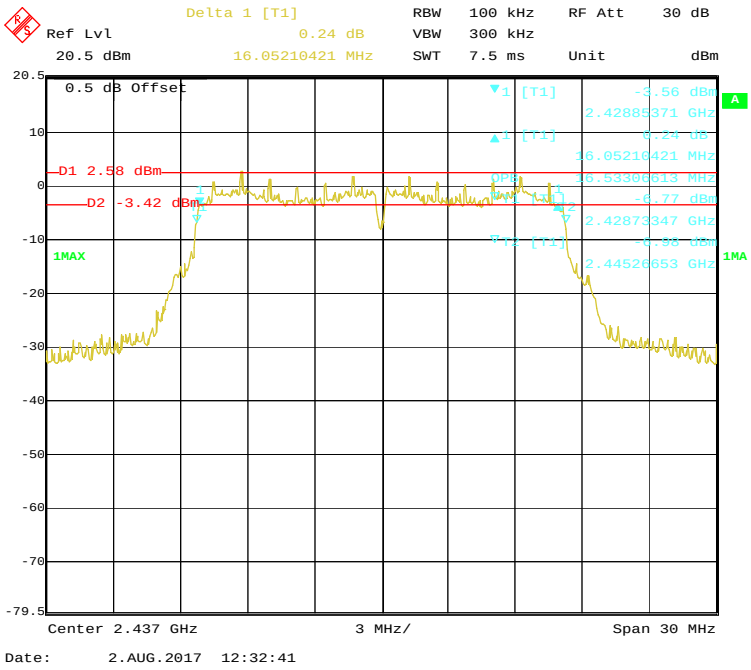
802.11b, High Channel



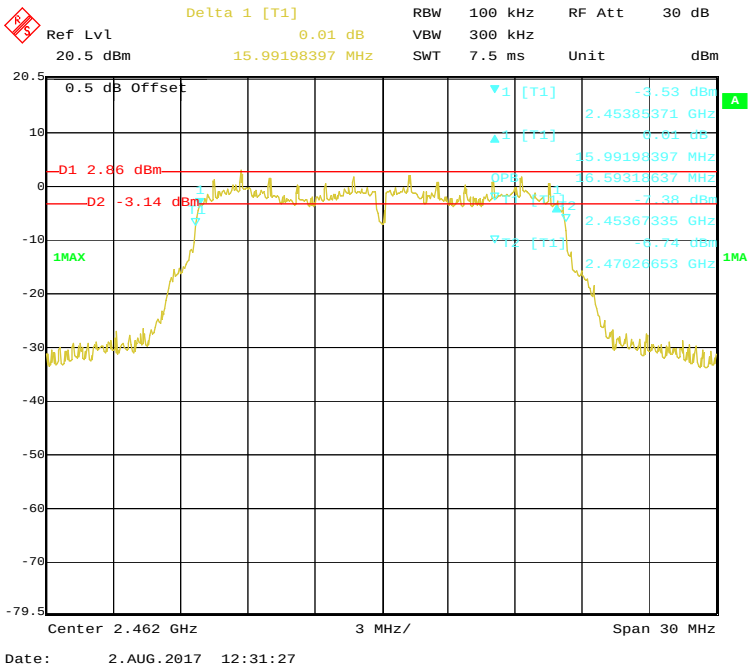
802.11g, Low Channel



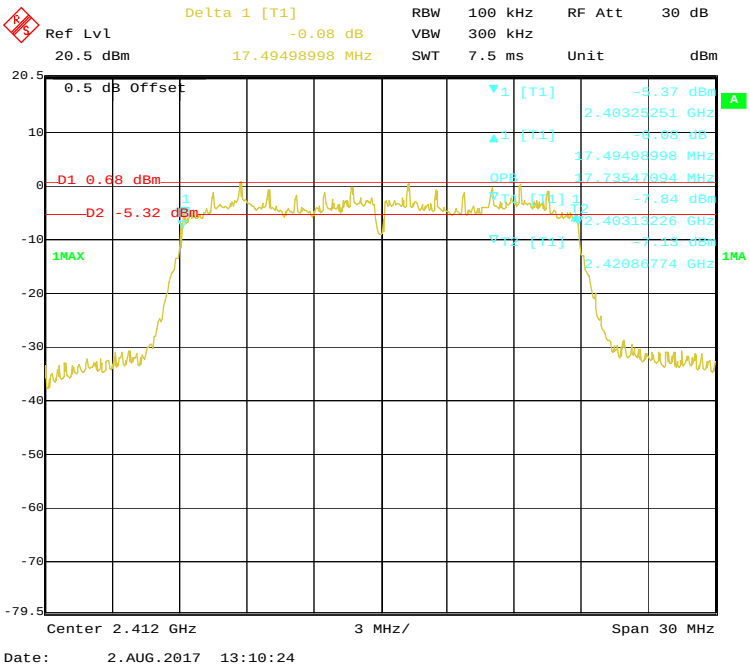
802.11g, Middle Channel



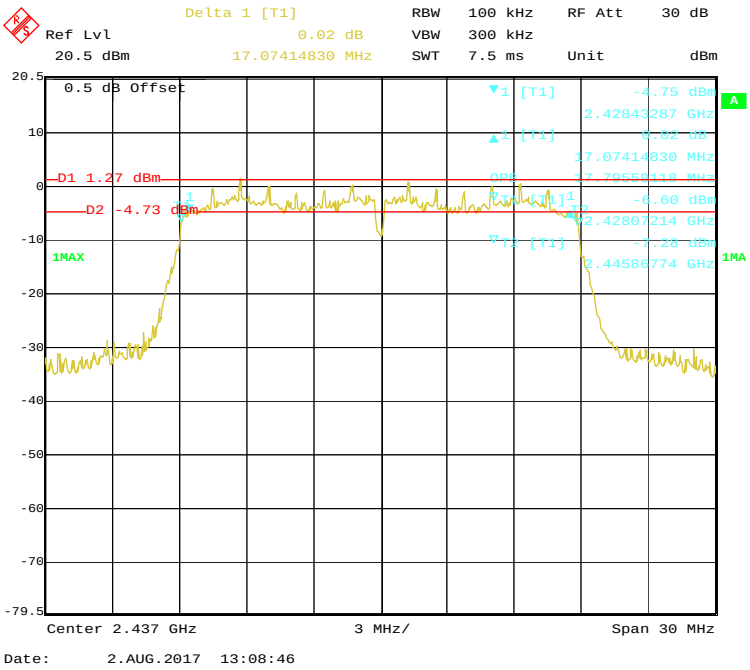
802.11g, High Channel



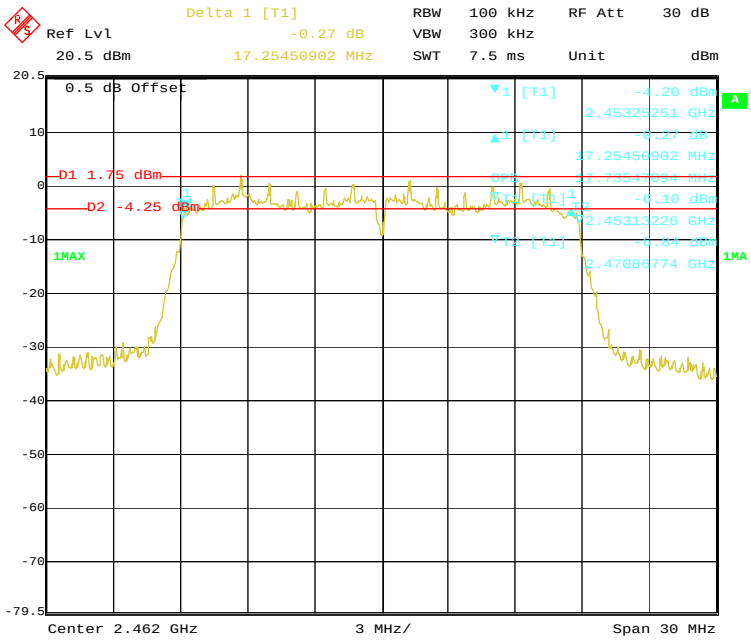
802.11n-HT20, Low Channel



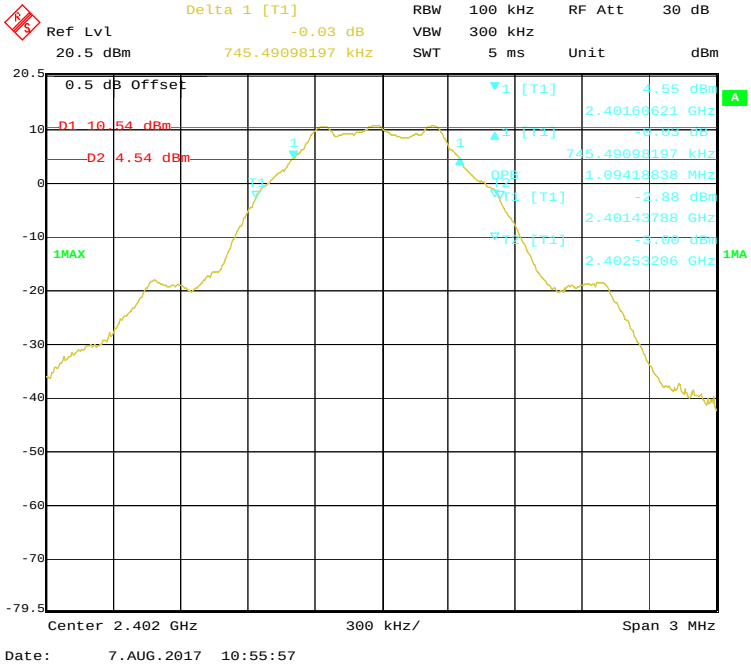
802.11n-HT20, Middle Channel



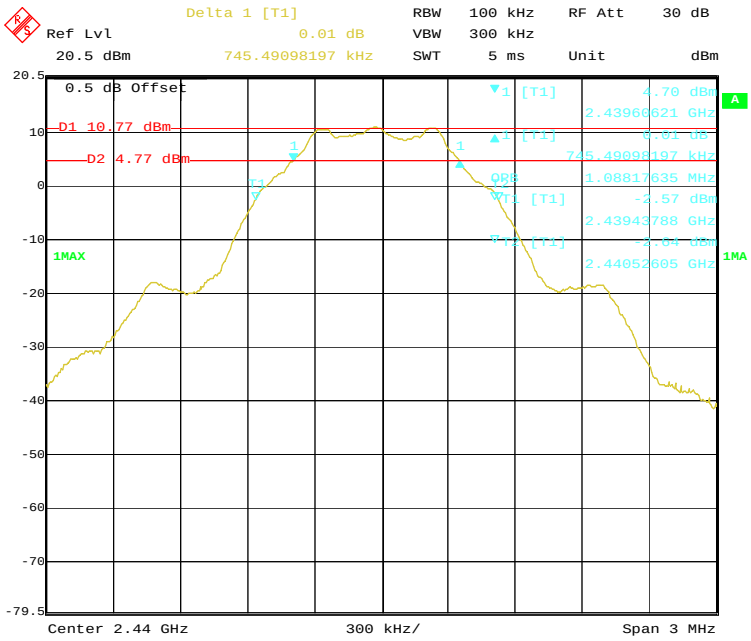
802.11n-HT20, High Channel



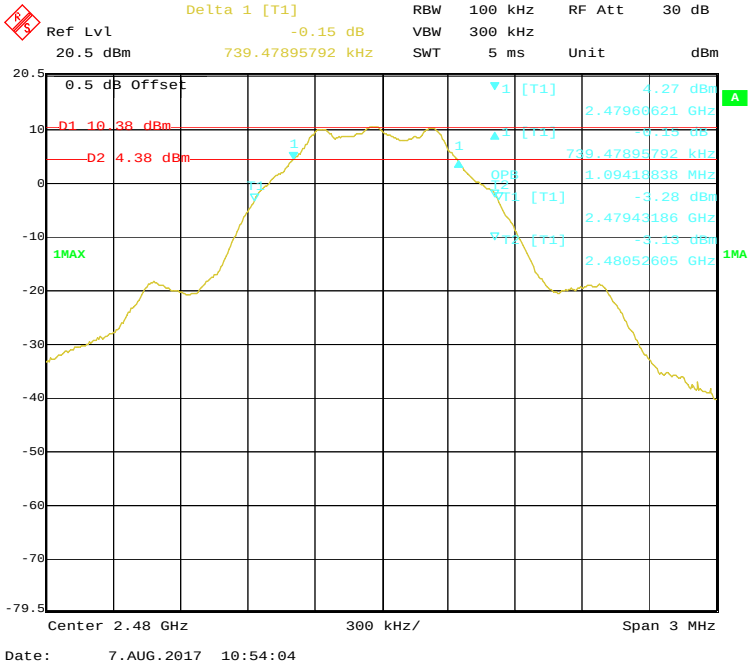
BLE Mode, Low Channel



BLE Mode, Middle Channel



BLE Mode, High Channel



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 one test equipment.
3. Add a correction factor to the display.

Note: We use signal Analyzer for peak power test and power meter for average power test.

Test Data

Environmental Conditions

Temperature:	23.8℃
Relative Humidity:	54 %
ATM Pressure:	101.2 kPa

The testing was performed by Ada Yu on 2017-08-07.

EUT operation mode: Transmitting

Channel	Frequency (MHz)	Max Conducted Peak Output Power (dBm)	Limit (dBm)	Result
802.11b				
Low	2412	16.60	30	Pass
Middle	2437	16.71	30	Pass
High	2462	16.91	30	Pass
802.11g				
Low	2412	20.26	30	Pass
Middle	2437	20.64	30	Pass
High	2462	20.78	30	Pass
802.11n-HT20				
Low	2412	19.08	30	Pass
Middle	2437	19.54	30	Pass
High	2462	19.68	30	Pass
BLE				
Low	2402	11.63	30	Pass
Middle	2440	11.82	30	Pass
High	2480	11.58	30	Pass

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 Data

Environmental Conditions

Temperature:	24.3 ℃
Relative Humidity:	55 %
ATM Pressure:	101.3 kPa

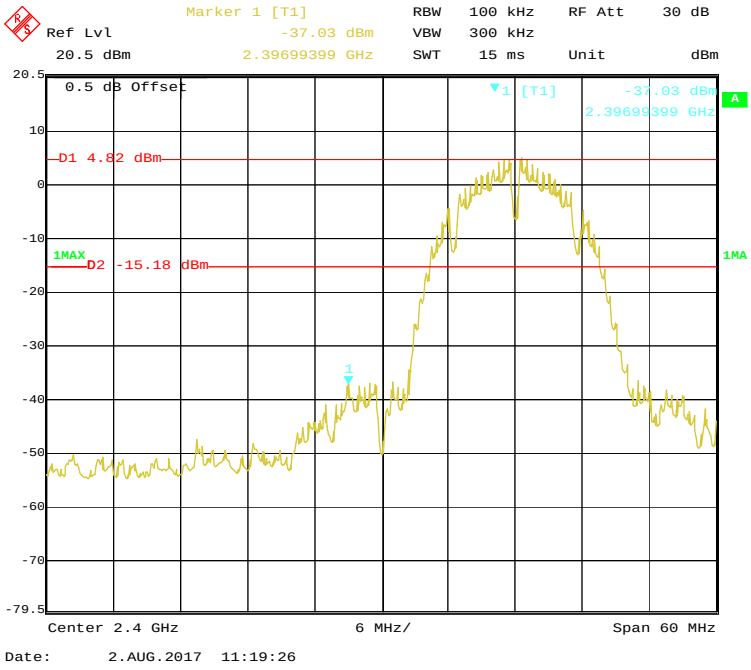
The testing was performed by Ada Yu on 2017-08-02&2017-08-07.

EUT operation mode: Transmitting

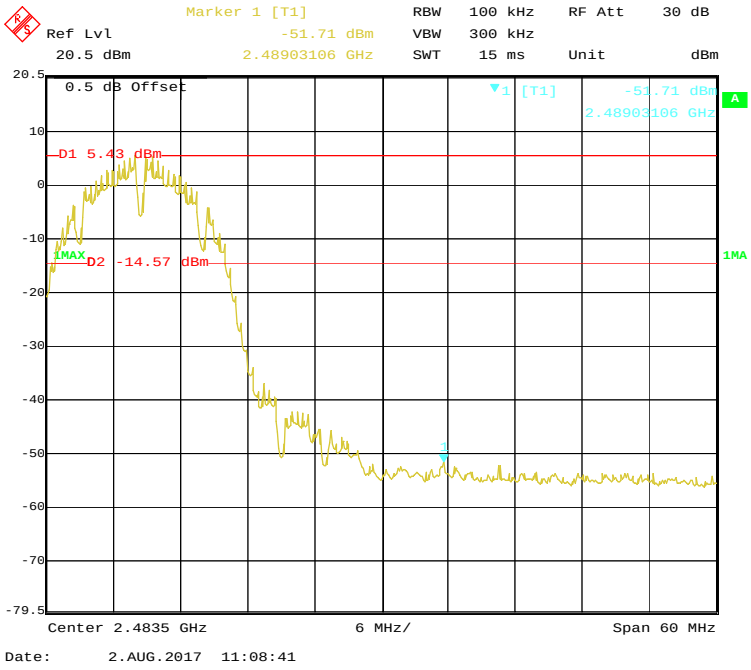
Test Result: *Compliance*

Band Edge

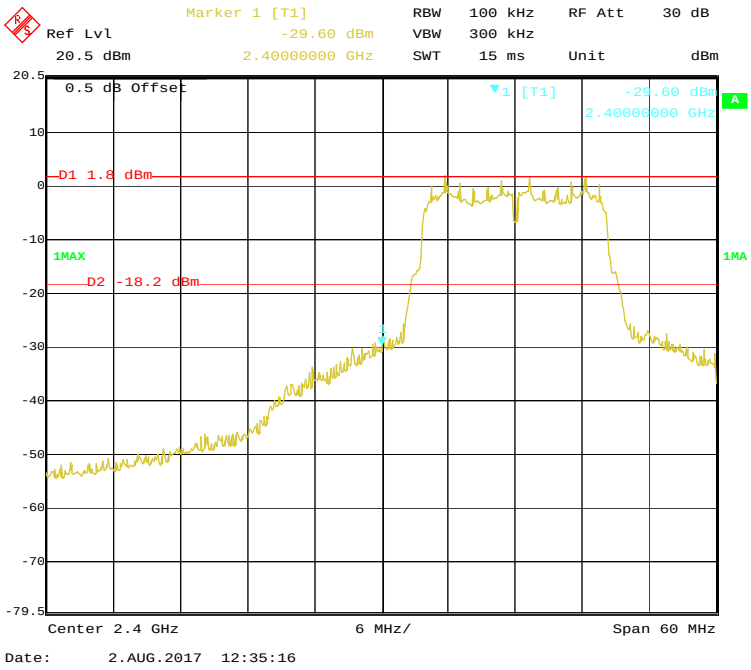
802.11b: Left Side



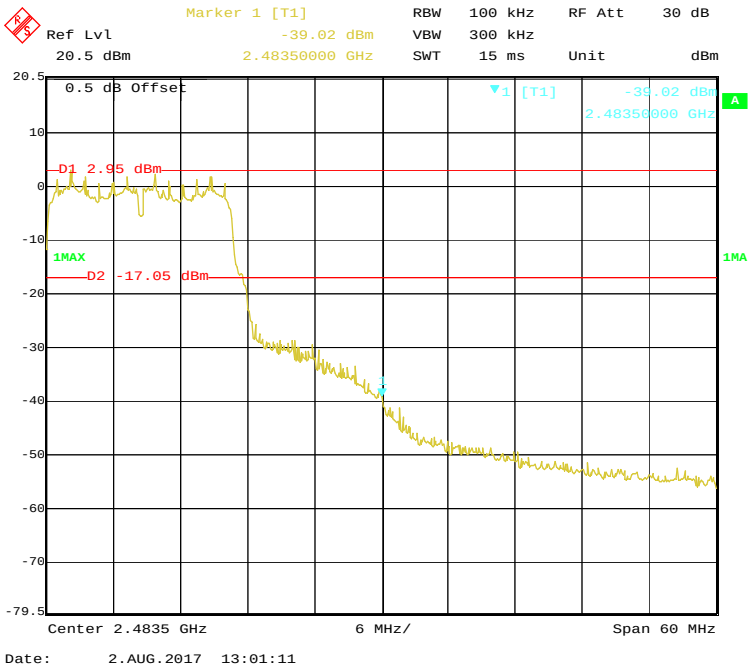
802.11b: Right Side



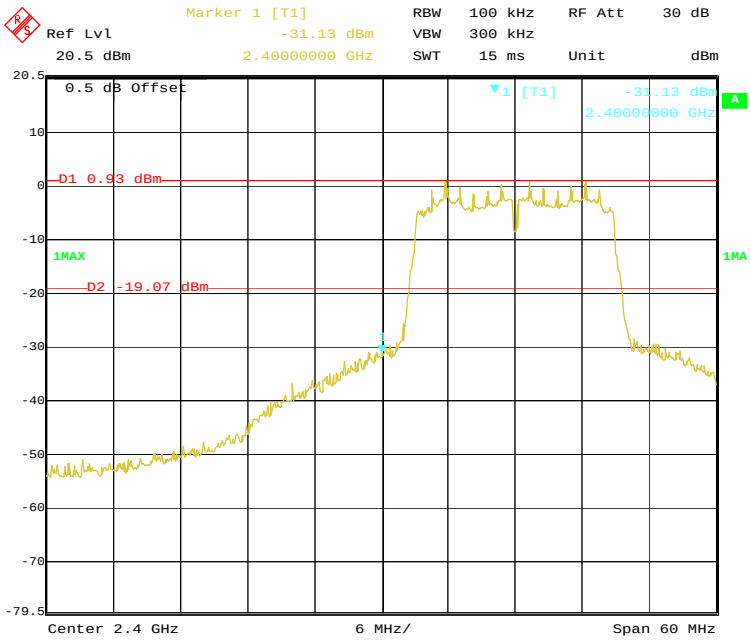
802.11g: Left Side



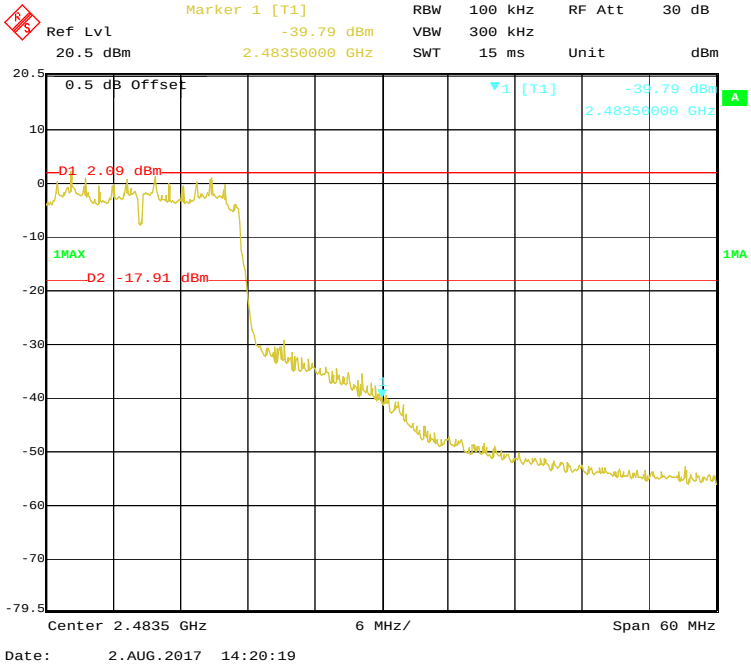
802.11g: Right Side



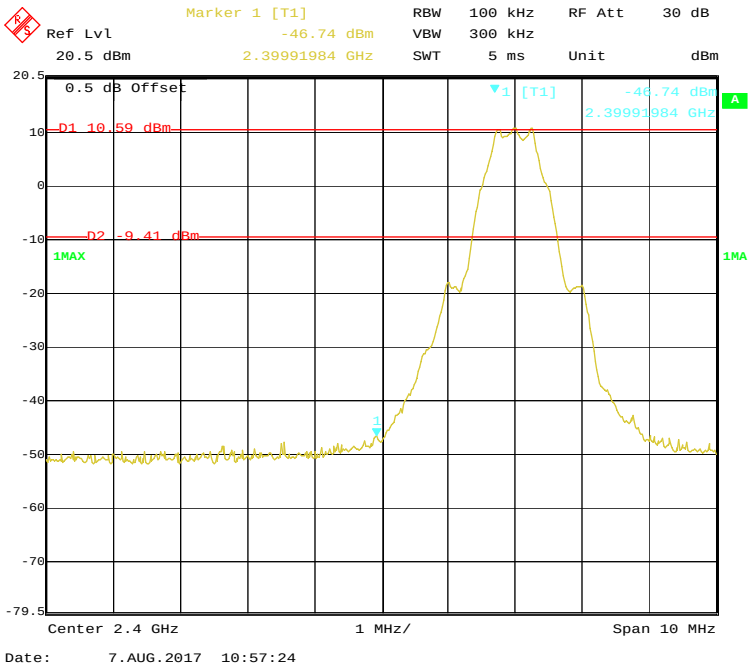
802.11n-HT20: Left Side



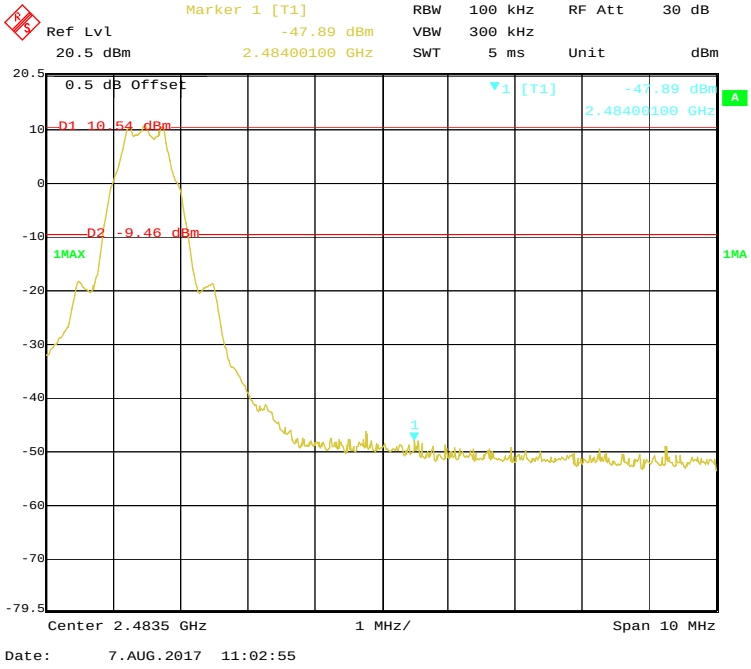
802.11n-HT20: Right Side



BLE: Left Side



BLE: Right Side



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

According to KDB558074 D01 DTS Meas Guidance v04.

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW to: 3kHz≤ RBW≤100 kHz.
3. Set the VBW ≥ 3×RBW.
4. Set the span to 1.5 times the DTS bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

Test Data

Environmental Conditions

Temperature:	24.1 ℃
Relative Humidity:	54 %
ATM Pressure:	101.3 kPa

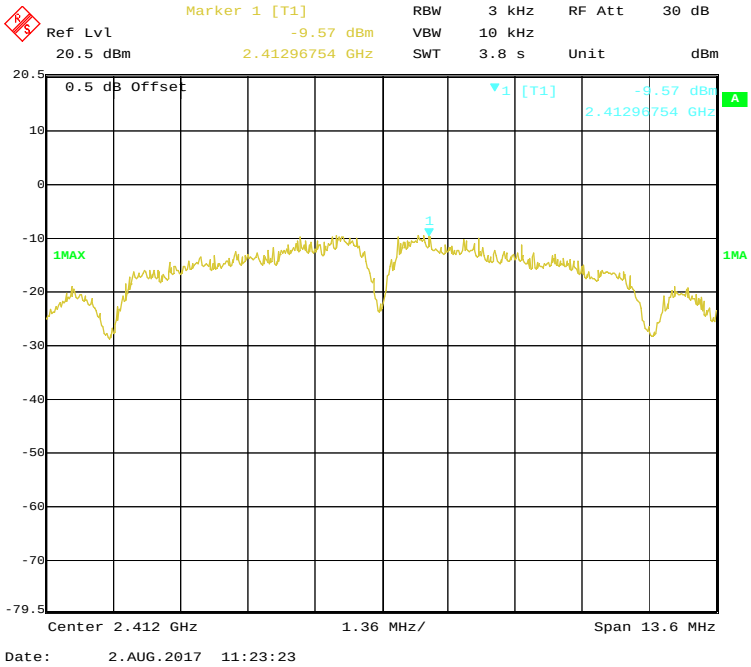
The testing was performed by Ada Yu on 2017-08-02&2017-08-07.

EUT operation mode: Transmitting

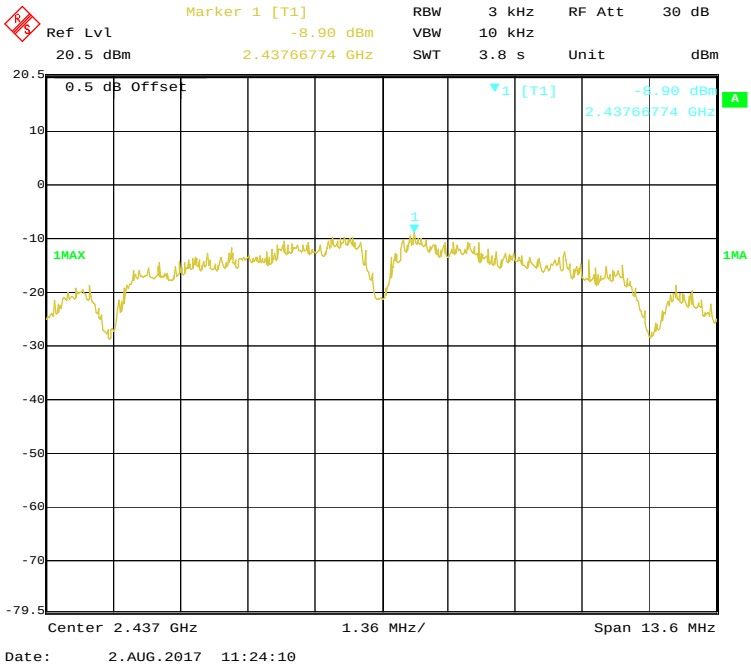
Test Result: Pass

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)
802.11b mode			
Low	2412	-9.57	≤8
Middle	2437	-8.90	≤8
High	2462	-8.24	≤8
802.11g mode			
Low	2412	-11.12	≤8
Middle	2437	-11.92	≤8
High	2462	-11.71	≤8
802.11n-HT20 mode			
Low	2412	-13.64	≤8
Middle	2437	-13.21	≤8
High	2462	-12.44	≤8
BLE mode			
Low	2402	-2.76	≤8
Middle	2440	-2.56	≤8
High	2480	-3.03	≤8

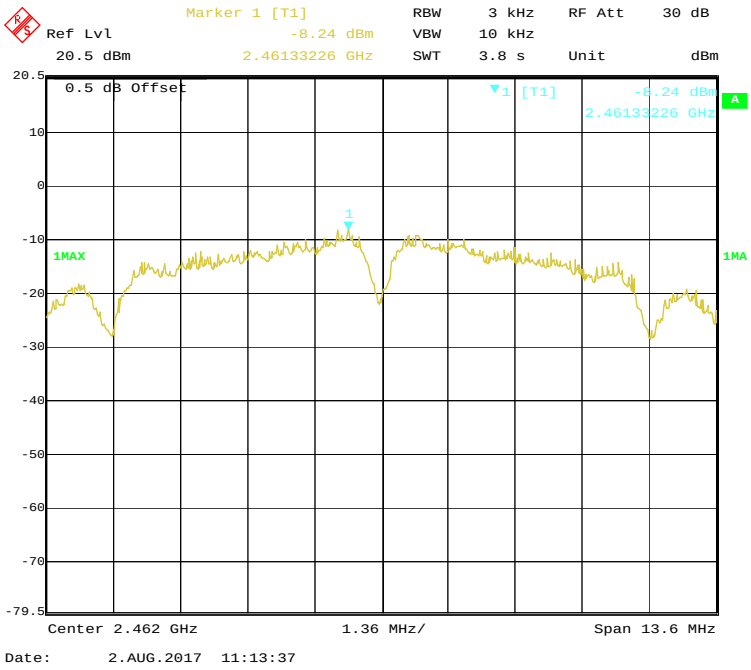
802.11b Low Channel



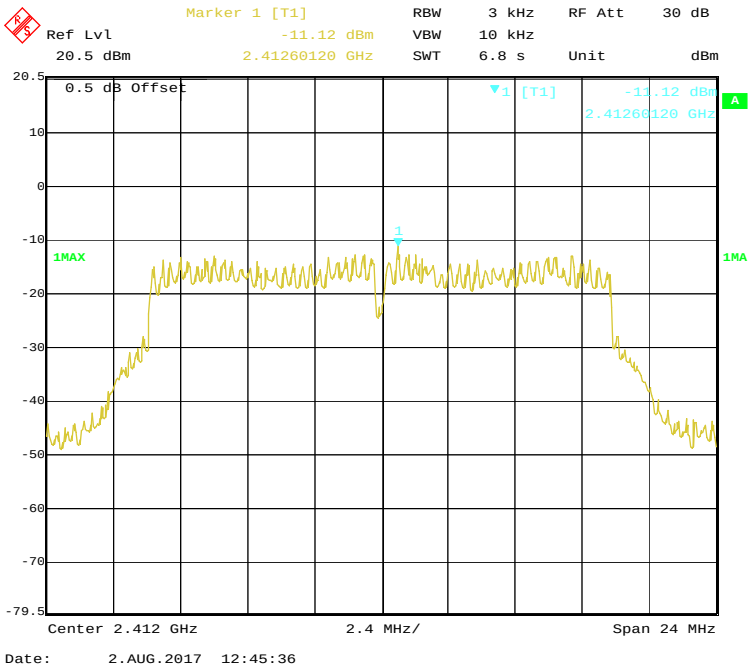
802.11b Middle Channel



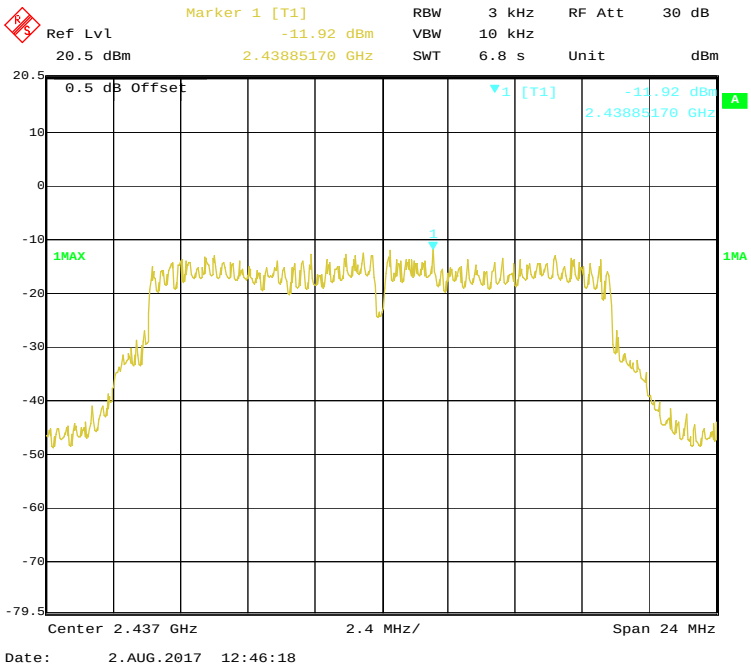
802.11b High Channel



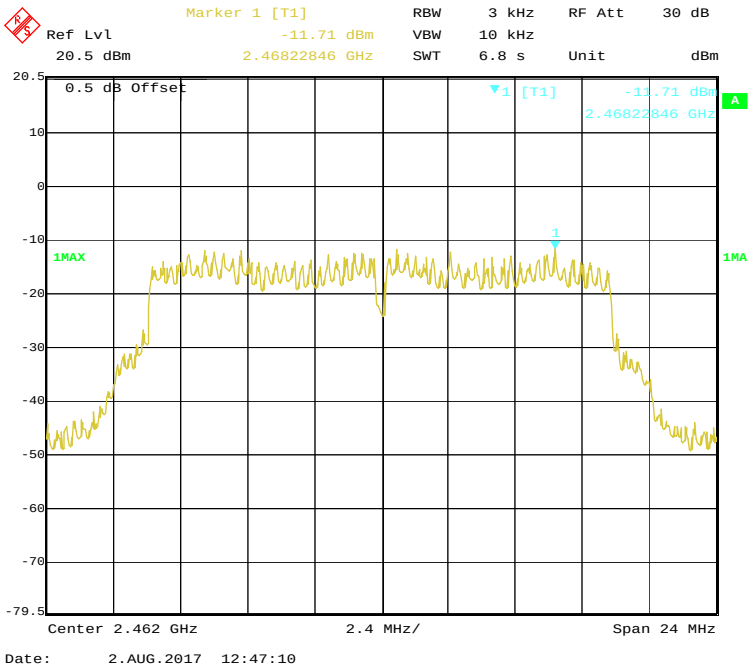
802.11g Low Channel



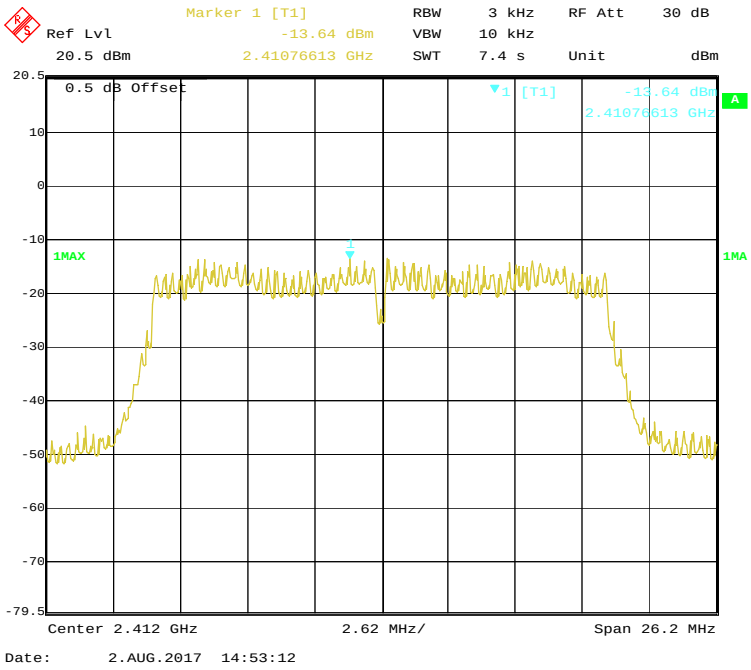
802.11g Middle Channel



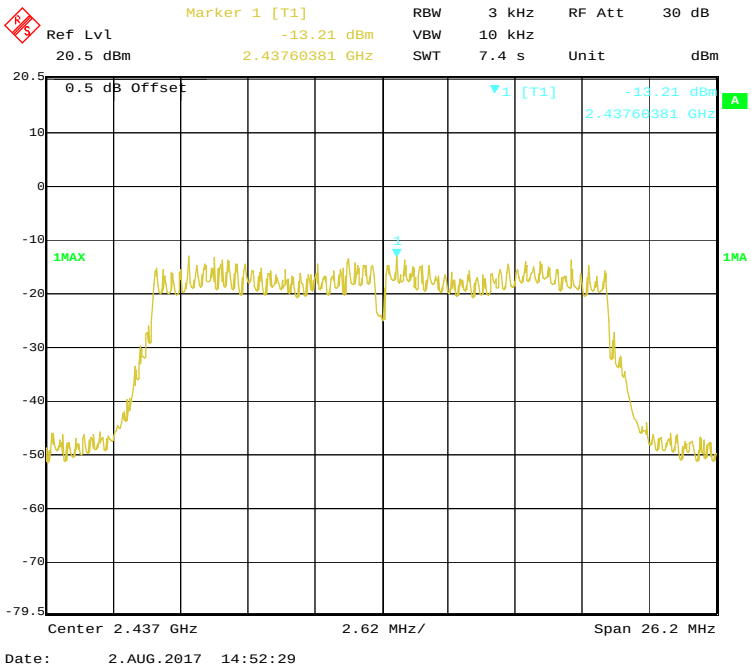
802.11g High Channel



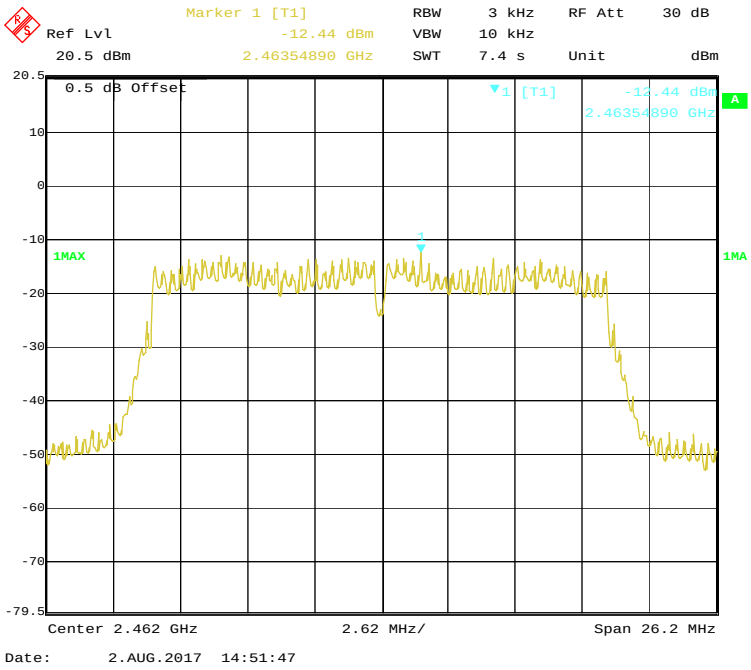
802.11n-HT20 Low Channel



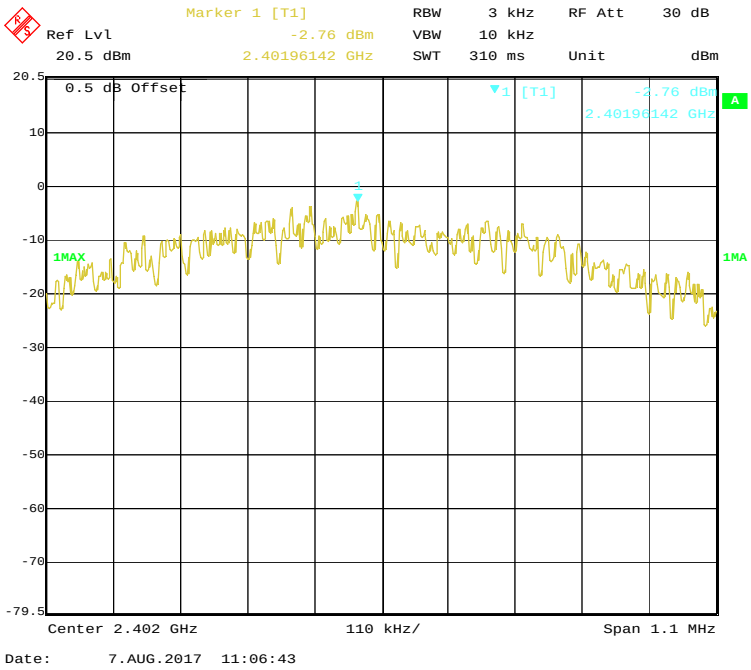
802.11n-HT20 Middle Channel



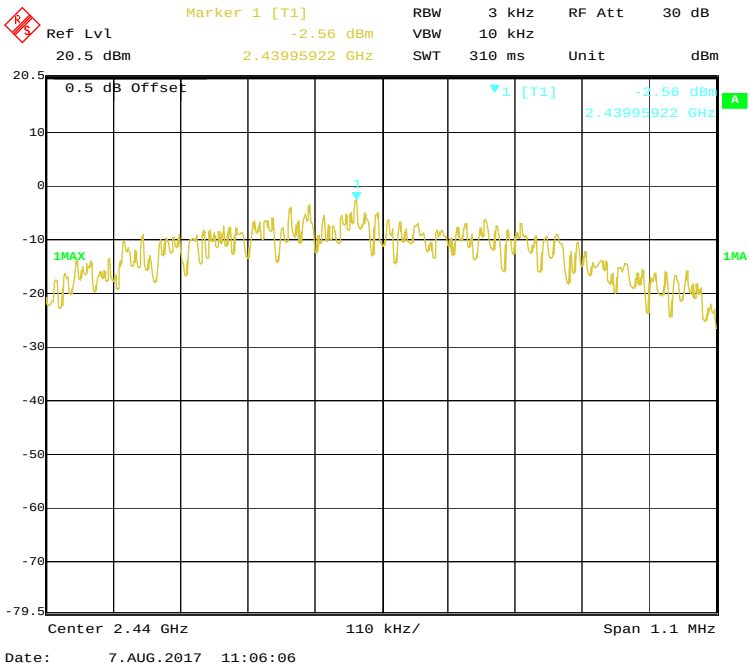
802.11n-HT20 High Channel



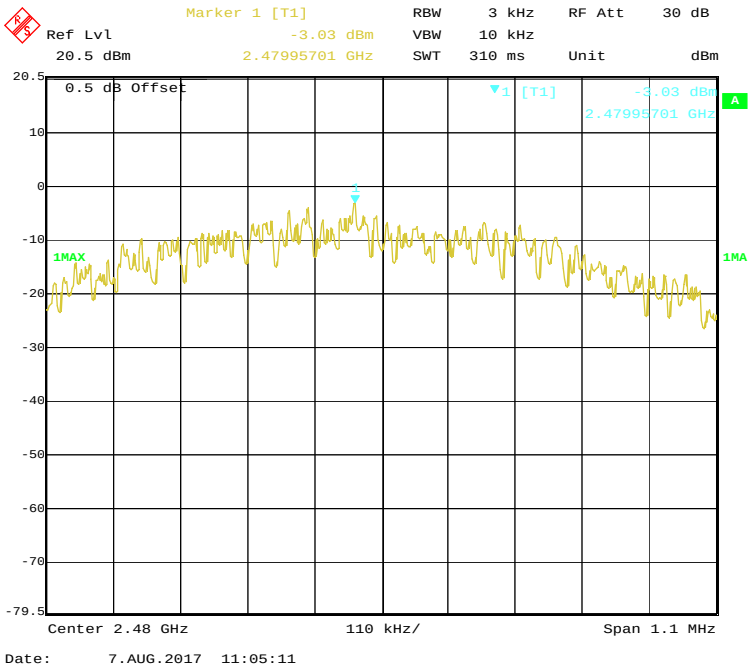
BLE Mode, Low Channel



BLE Mode, Middle Channel



BLE Mode, High Channel



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