RADIO TEST REPORT

For

DONGGUAN YEWELINK SMART TECHNOLOGY CO.,LTD..

Product Name:	WiFi Smart Switch
Model :	WF-WS03
Series Model:	SS120-01CMW, SS120-02CMW, SS120-03CMW, SS120-01CMB,SS120-02CMB, SS120-03CMB,WF-CS01,WF-FS01,WF-BS01
FCC ID:	2AO2E-WS03
Prepared By :	BSL Testing Co.,LTD.. NO. 24, ZH Park, Nantou, Shenzhen, 518000 China
Test Date:	Jan.23-30, 2018
Date of Report :	Jan.30, 2018
Test Result	pass
Report No.:	BSL1801712180001Y-ER-2

Testing Engineer : Lisa. Ji

Technical Manager : arno.liu

Authorized Signatory : Aileno

1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant:	DONGGUAN YEWELINK SMART TECHNOLOGY CO.,LTD.
Address of applicant:	Wen Tang Lian Yi Industrial Area,DongCheng district,DongGuan Guangdong
Manufacturer:	DONGGUAN YEWELINK SMART TECHNOLOGY CO.,LTD
Address of manufacturer:	Wen Tang Lian Yi Industrial Area,DongCheng district,DongGuan Guangdong

General Description of EUT	
Product Name:	WiFi Smart Switch
Trade Name:	
Model No.:	WF-WS03
Adding Model(s):	SS120-01CMW,SS120-02CMW,SS120-03CMW, SS120-01CMB,SS120-02CMB,SS120-03CMB, WF-CS01,WF-FS01,WF-BS01
Rated Voltage:	AC120V
Battery Capacity:	/
Power Adapter Model:	/
Software Version:	
Hardware Version:	
Note: The test data is gathered from a production sample provided by the manufacturer.	

The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model WF-WS03*, but the circuit and the electronic construction do not change, declared by the manufacturer.*

Technical Characteristics of EUT	
Support Standards:	802.11b, 802.11g, 802.11n
Frequency Range:	2412-2462MHz for 802.11b/g/n(HT20)
RF Output Power:	11.25dBm (Conducted)
Type of Modulation:	CCK, OFDM, QPSK, BPSK, 16QAM
Data Rate:	1-11Mbps, 6-54Mbps, up to 150Mbps
Quantity of Channels:	11 for 802.11b/g/n(HT20);
Channel Separation:	5MHz
Type of Antenna:	PCB
Antenna Gain:	0.5dBi
Lowest Internal Frequency	26mHz

1.2 Test Standards

The following report is prepared on behalf of the DONGGUAN YEWELINK SMART TECHNOLOGY CO.,LTD.in accordance with FCC Part 15, Subpart B, Subpart C, and section, 15.203, 15.205, 15.207, 15.209 and 15.247 of the Federal Communication Commissions rules.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard for Testing Unlicensed Wireless Devices, and ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. The measurement guide KDB 558074 D01 v04 for digital transmission systems shall be performed also.

1.4 Test Facility

BSL Testing Co.,LTD.

NO. 24, ZH Park, Nantou, Shenzhen, 518000 China
Designation Number :CN1217
Test Firm Registration Number:866035
Tel: 86- 755-26508703
Fax: 86- 755-26508703

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	802.11b	2412MHz, 2437MHz, 2462MHz
TM2	802.11g	2412MHz, 2437MHz, 2462MHz
TM3	802.11n-HT20	2412MHz, 2437MHz, 2462MHz
Note: All test modes (different data rate and different modulation) are performed, but only the worst case is recorded in this report.		

Accessories Equipment List and Details			
Description	**Manufacturer**	**Model No.**	**Serial Number**
/	/	/	/
Accessories Cable List and Details			
Cable Description	**Length (m)**	**Shielded/Unshielded**	**With Core/Without Core**
/	/	/	/
EUT Cable List and Details			
Cable Description	**Length (m)**	**Shielded/Unshielded**	**With Core/Without Core**
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	±0.42dB
Occupied Bandwidth	Conducted	±1.5%
Power Spectral Density	Conducted	±1.8dB
Conducted Spurious Emission	Conducted	±2.17dB
Conducted Emissions	Conducted	±2.88dB
Transmitter Spurious Emissions	Radiated	±5.1dB

1.7 Test Equipment List andDetails

Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
Communication Tester	Rohde & Schwarz	CMW500	100358	2017-10-21	2018-10-20
Spectrum Analyzer	R&S	FSP40	100550	2017-10-21	2018-10-20
Test Receiver	R&S	ESCI7	US47140102	2017-10-21	2018-10-20
Signal Generator	HP	83630B	3844A01028	2017-10-22	2018-10-21
Test Receiver	R&S	ESPI-3	100180	2017-10-21	2018-10-20
Amplifier	Agilent	8449B	4035A00116	2017-10-22	2018-10-21
Amplifier	HP	8447E	2945A02770	2017-10-22	2018-10-21
Signal Generator	IFR	2023A	202307/242	2017-10-22	2018-10-21
Broadband Antenna	SCHAFFNER	2774	2774	2017-10-17	2018-10-16
Biconical and log periodic antennas	ELECTRO-METRICS	EM-6917B-1	171	2017-10-17	2018-10-16
Horn Antenna	R&S	HF906	100253	2017-10-17	2018-10-16
Horn Antenna	EM	EM-6961	6462	2017-10-17	2018-10-16
LISN	R&S	ESH3-Z5	100196	2017-10-17	2018-10-16
LISN	COM-POWER	LI-115	02027	2017-10-17	2018-10-16
3m Semi-Anechoic Chamber	Chengyu Electron	9 (L)*6 (W)* 6 (H)	BSL086	2017-10-21	2018-10-20
Horn Antenna	A-INFOMW	LB-180400KF	BSL088	2017-10-21	2018-10-20
Power Meter	R&S	NRVS	GTS216	2017-10-21	2018-10-20
Power Semsor	R&S	NRVS-Z33	GTS220	2017-10-21	2018-10-20

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 2.1093	RF Exposure	Compliant
§ 15.203; § 15.247(b)(4)(i)	Antenna Requirement	Compliant
§15.205	Restricted Band of Operation	Compliant
§ 15.207(a)	Conducted Emission	Compliant
§ 15.247(e)	Power Spectral Density	Compliant
§ 15.247(a)(2)	6 dB Bandwidth	Compliant
§ 15.247(b)(3)	RF Output Power	Compliant
§ 15.209(a)	Radiated Emission	Compliant
§ 15.247(d)	Band Edge (Out of Band Emissions)	Compliant

N/A: not applicable

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the RF Exposure Report.

4. Antenna Requirement

4.1 Standard Applicable

According to FCC Part 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.

4.2 Evaluation Information

This product has a PCB antenna, fulfill the requirement of this section.

5. Power Spectral Density

5.1 Standard Applicable

According to 15.247(a)(1)(iii), 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.

5.2 Test Procedure

According to the KDB 558074 D01 v04, such specifications require that the same method as used to determine the conducted output power shall also be used to determine the power spectral density. The test method of power spectral density as below:

(g) Set instrument center frequency to DTS channel center frequency.
(h) Set span to at least 1.5 times the OBW.
(i) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz. .
(j) Set VBW ≥3 x RBW.
(k) Detector = peak
(l) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
(m) Sweep time = auto couple.
(n) Employ trace averaging (RMS) mode over a minimum of 100 traces.
(o) Use the peak marker function to determine the maximum amplitude level.
(p) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

5.3 Environmental Conditions

Temperature:	21℃
Relative Humidity:	50%
ATM Pressure:	101.2

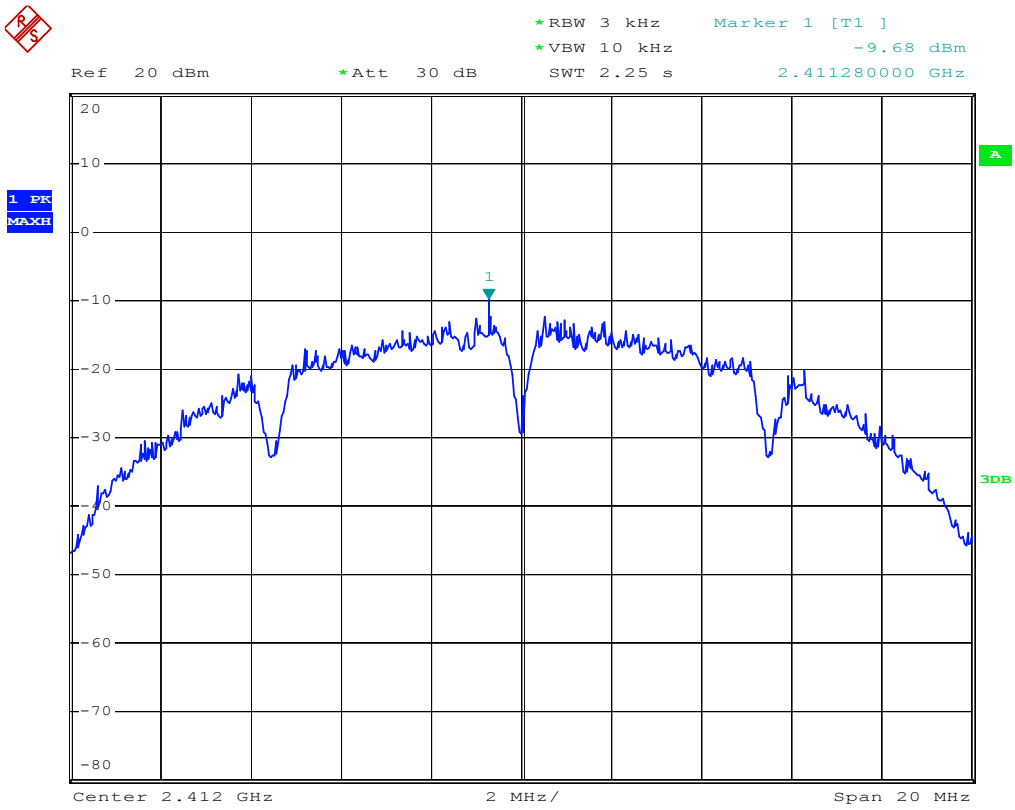
5.4 Summary of Test Results/Plots

pass

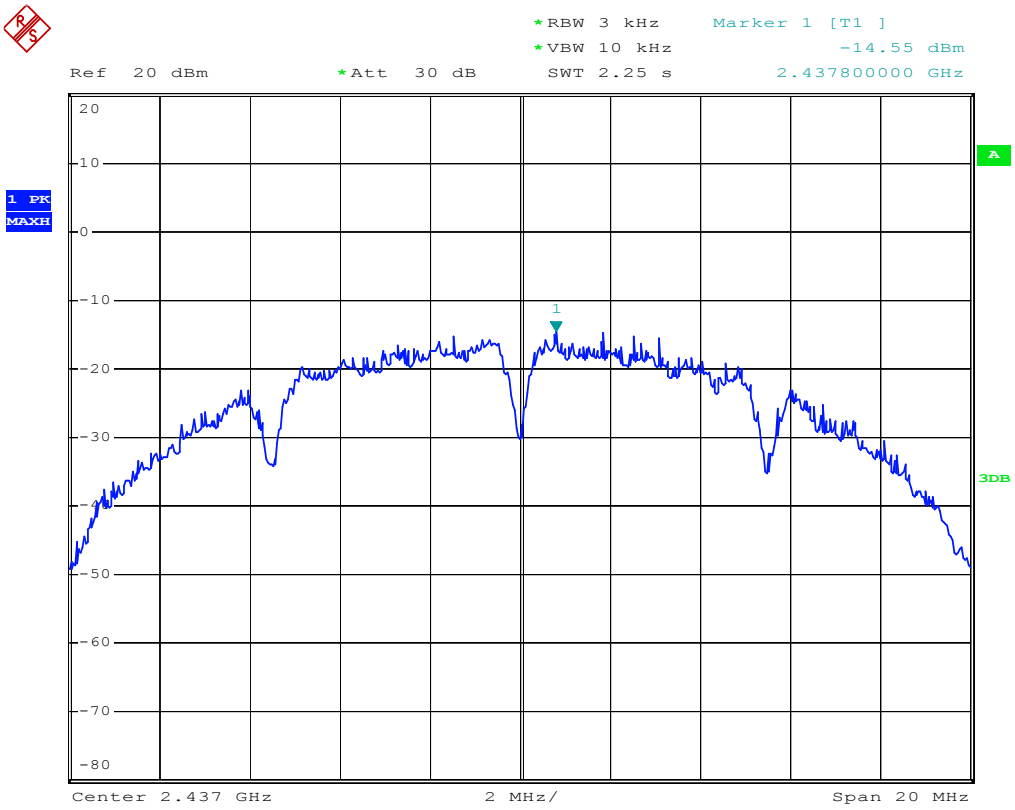
Test Mode	Test Channel MHz	Power Spectral Density dBm/3kHz	Limit dBm/3kHz
802.11b	2412	-9.68	8
	2437	-14.55	8
	2462	-13.55	8
802.11g	2412	-17.25	8
	2437	-18.91	8
	2462	-20.32	8
802.11n HT20	2412	-18.72	8
	2437	-20.74	8
	2462	-21.57	8

Please refer to the following test plots:

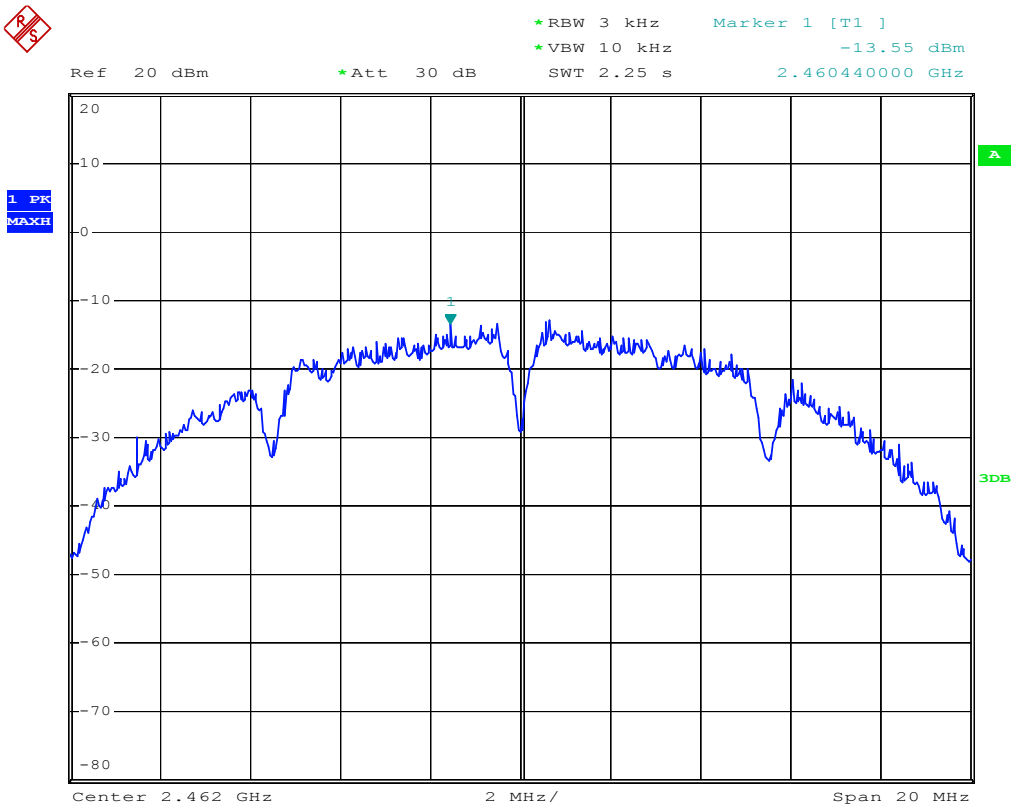
802.11b-Low Channel



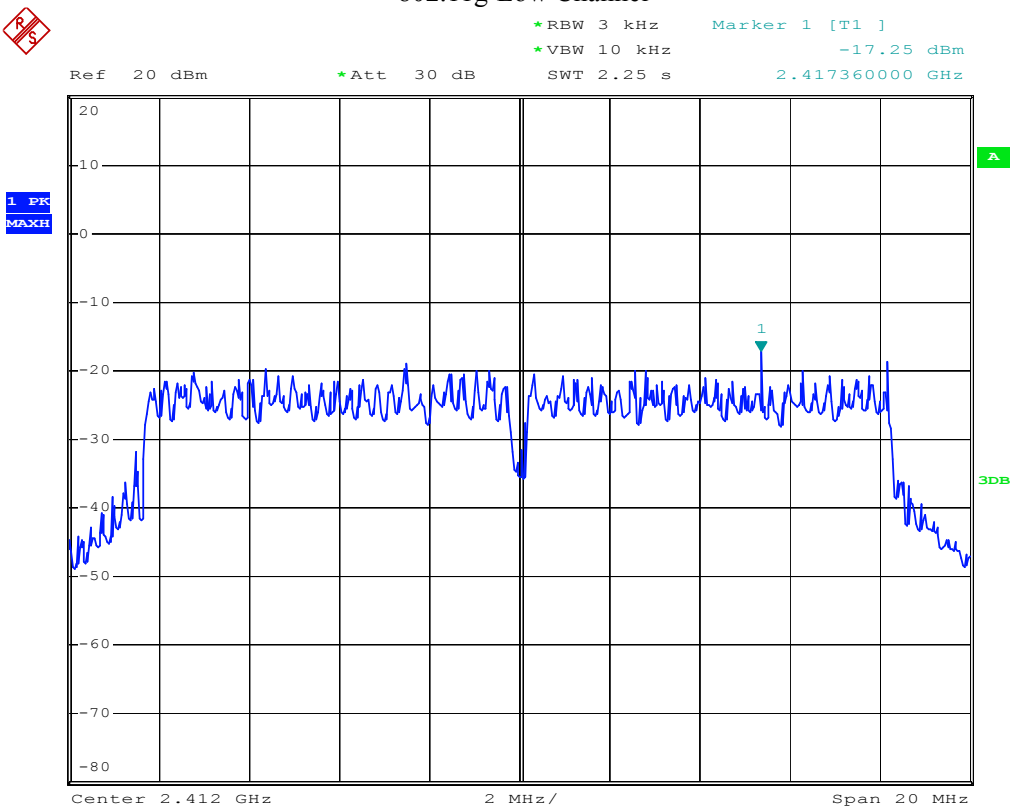
802.11b-Middle Channel



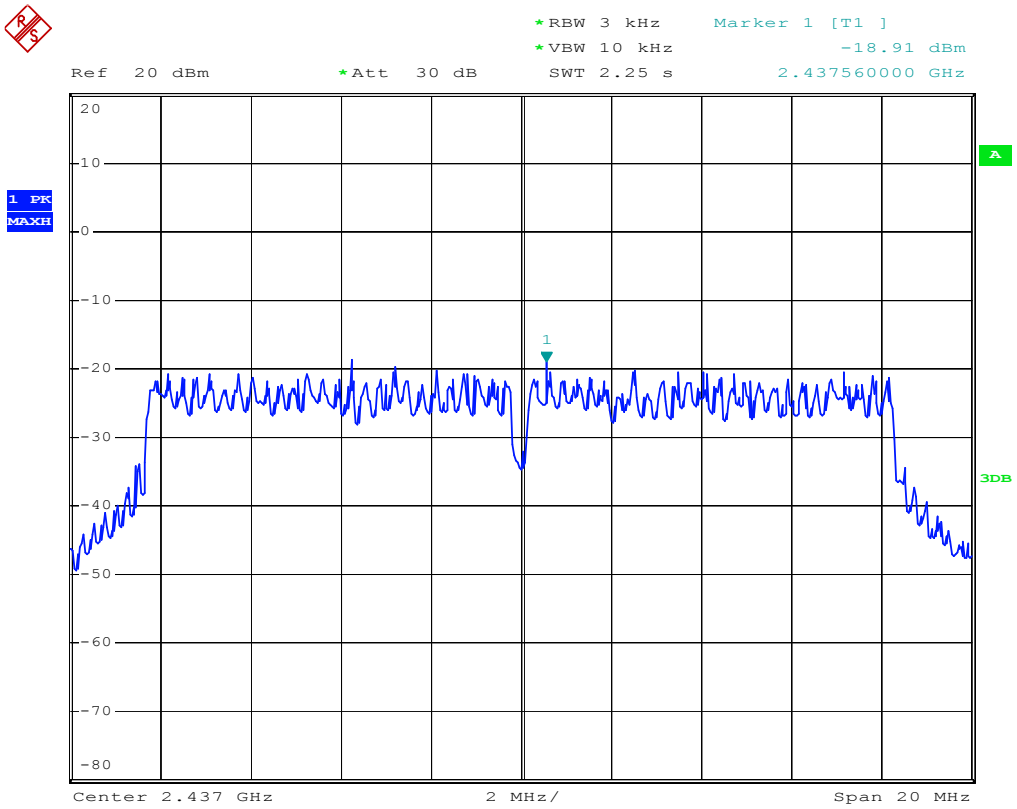
802.11b-High Channel



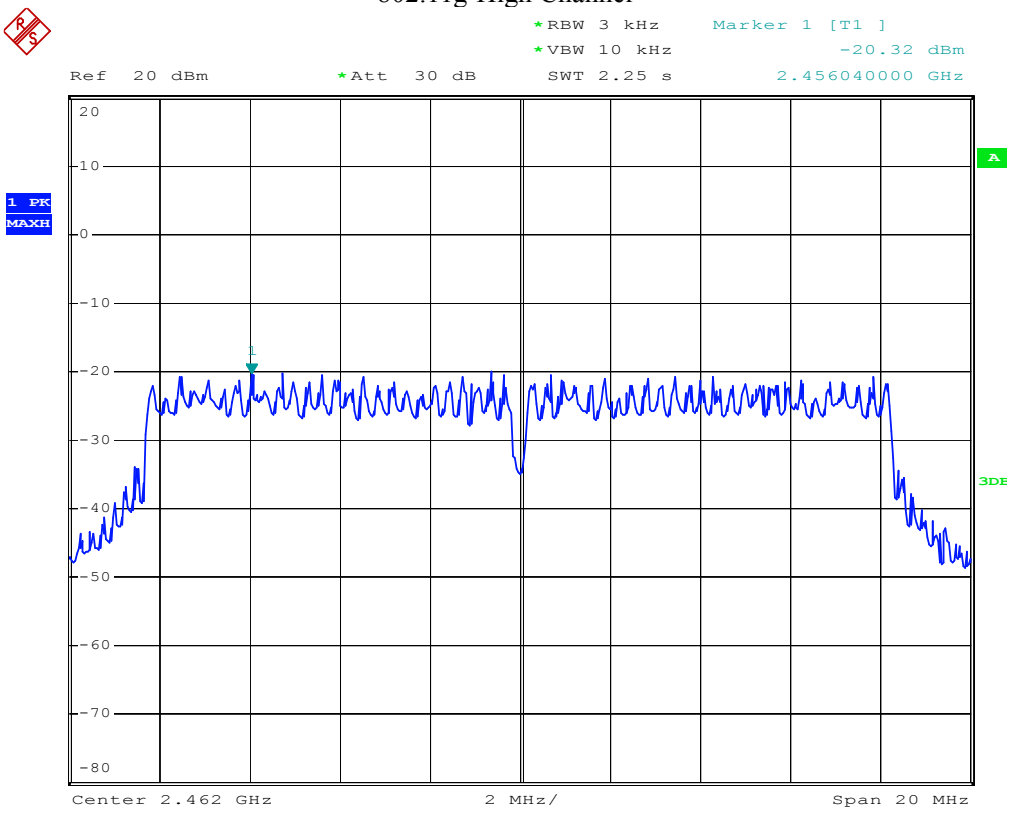
802.11g-Low Channel



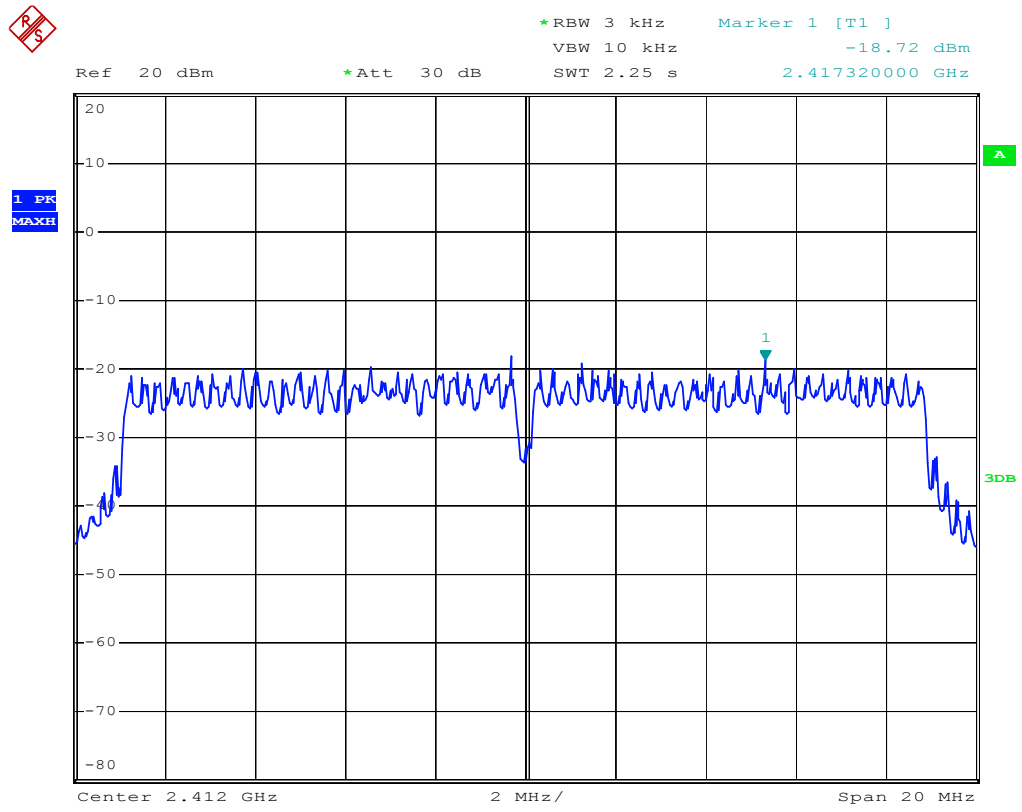
802.11g-Middle Channe



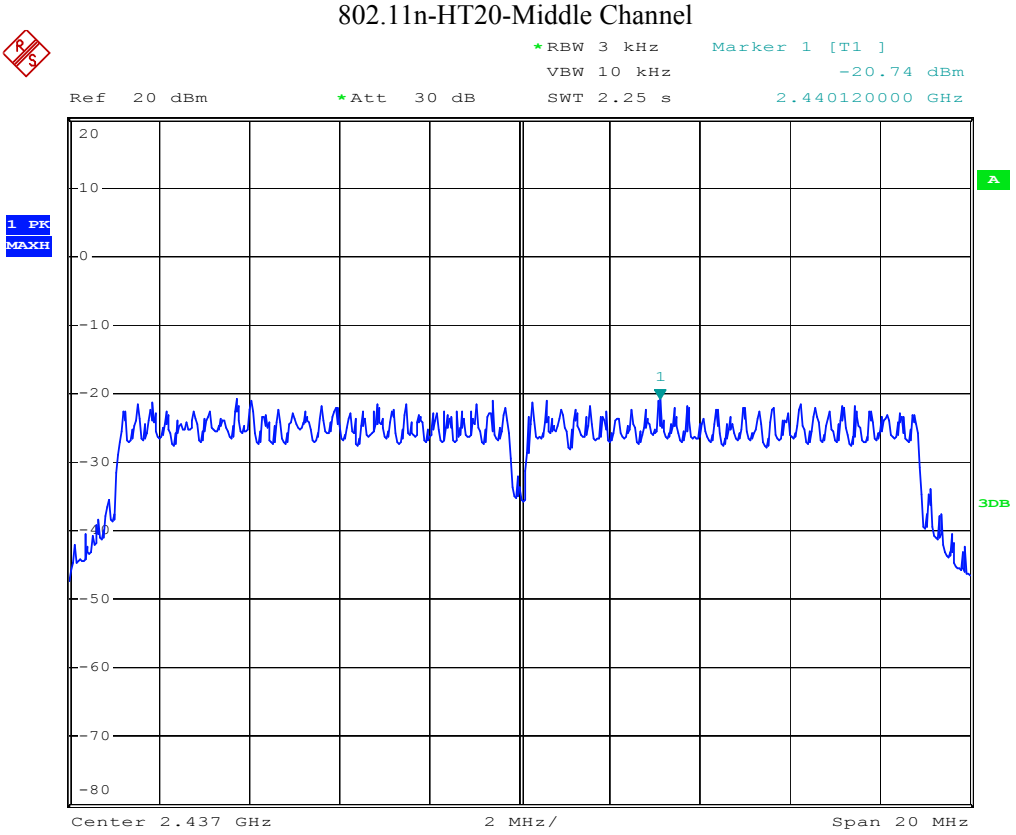
802.11g-High Channel



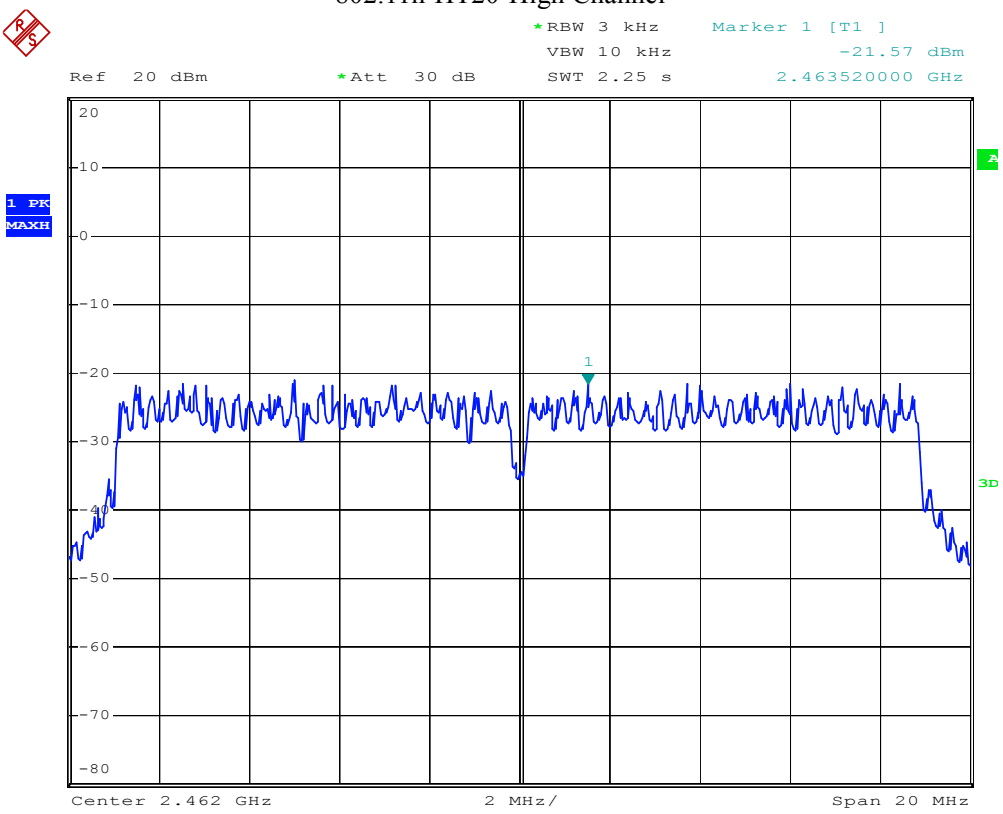
802.11n-HT20-Low Channel



802.11n-HT20-Middle Channel



802.11n-HT20-High Channel



6. 6dB Bandwidth

6.1 Standard Applicable

According to 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.

6.2 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.
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.

6.3 Environmental Conditions

Temperature:	21℃
Relative Humidity:	50%
ATM Pressure:	101.2

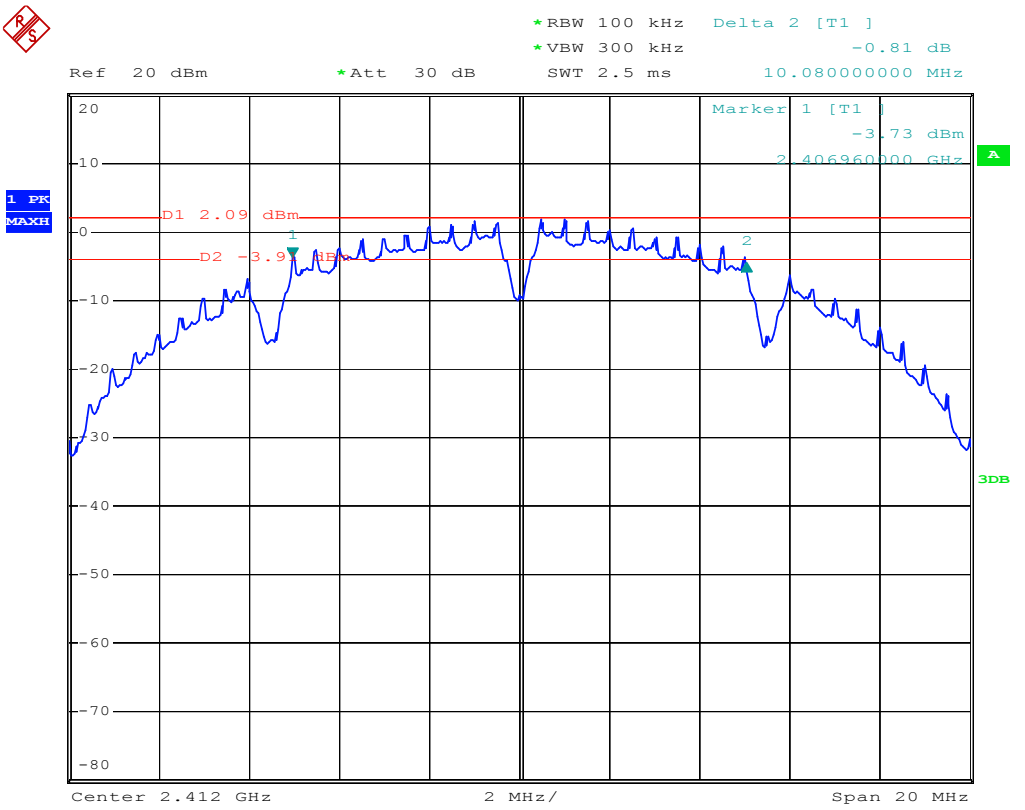
6.4 Summary of Test Results/Plots

pass

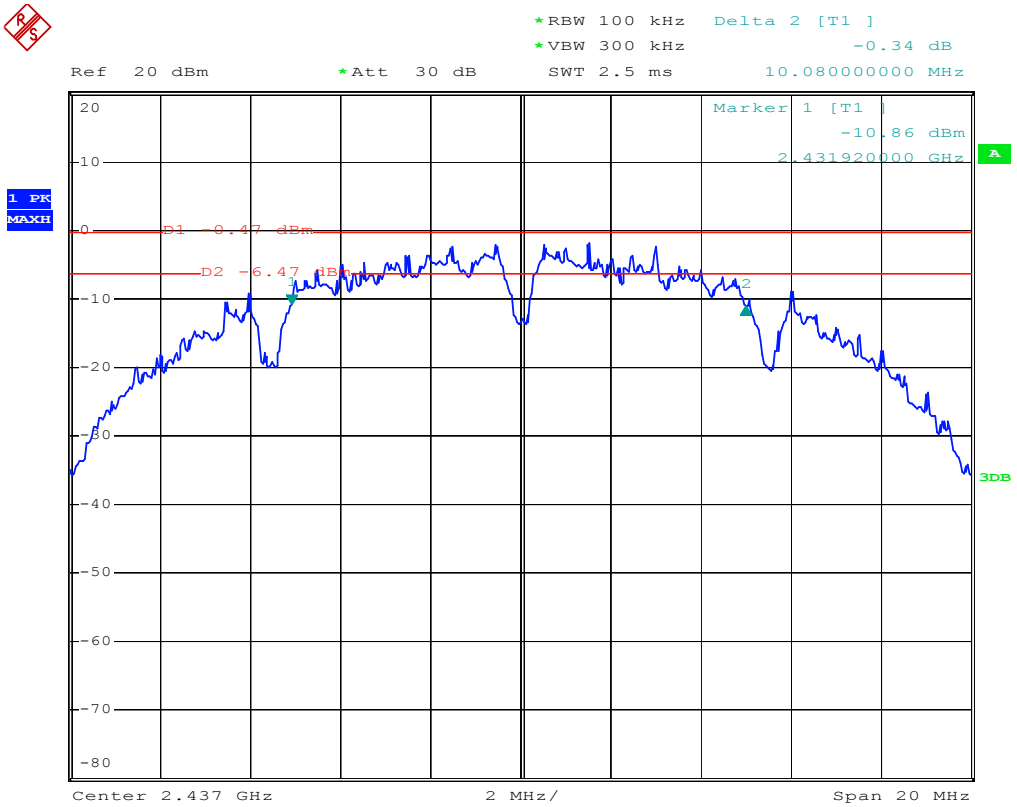
Test Mode	Test Channel MHz	6 dB Bandwidth MHz	Limit kHz
802.11b	2412	10.08	≥500
	2437	10.08	≥500
	2462	10.08	≥500
802.11g	2412	16.44	≥500
	2437	16.52	≥500
	2462	16.44	≥500
802.11n-HT20	2412	17.56	≥500
	2437	17.68	≥500
	2462	17.68	≥500

Please refer to the following test plots:

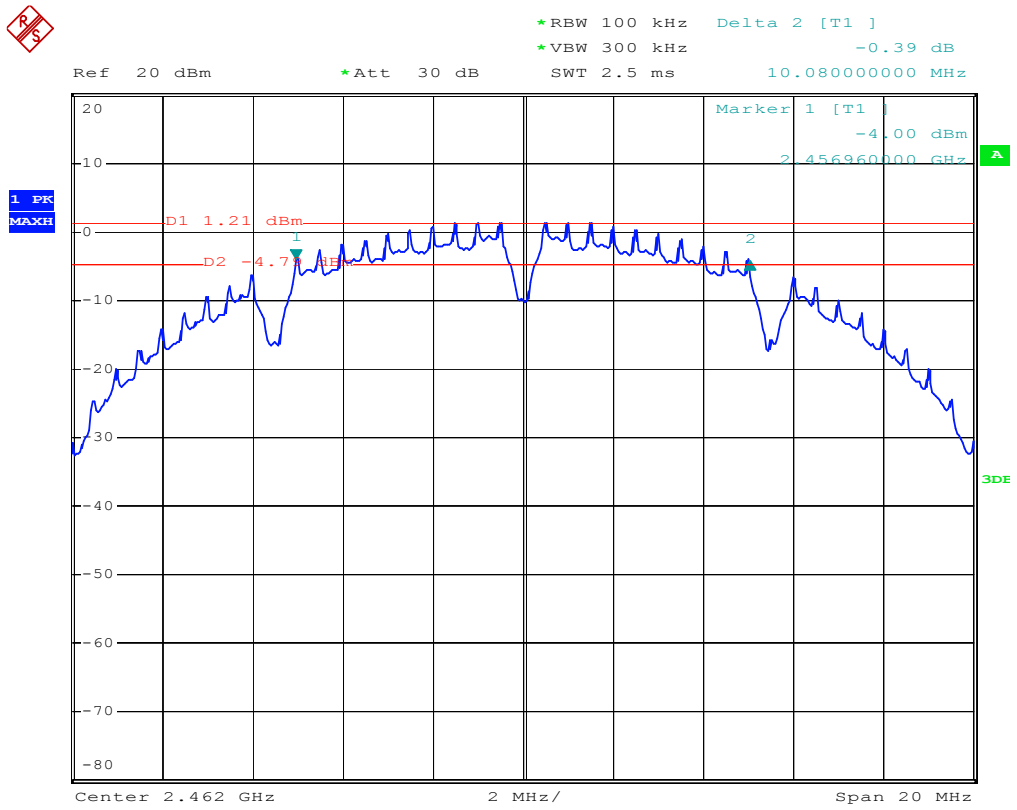
802.11b-Low Channel



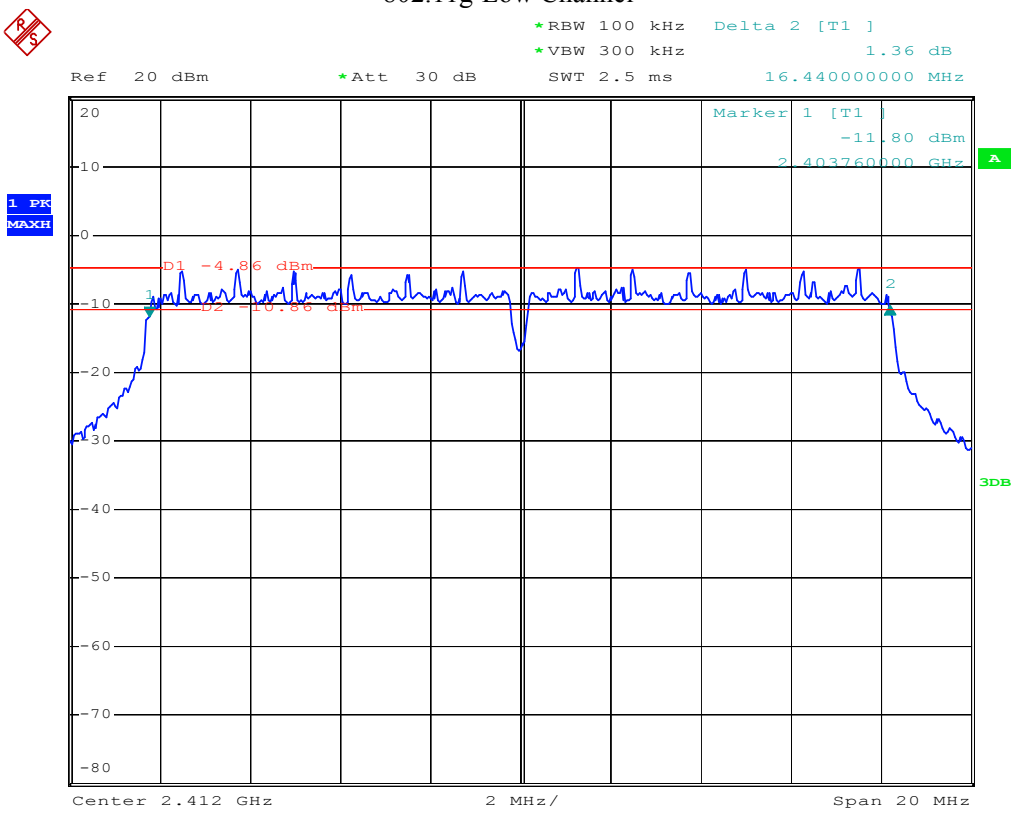
802.11b-Middle Channel



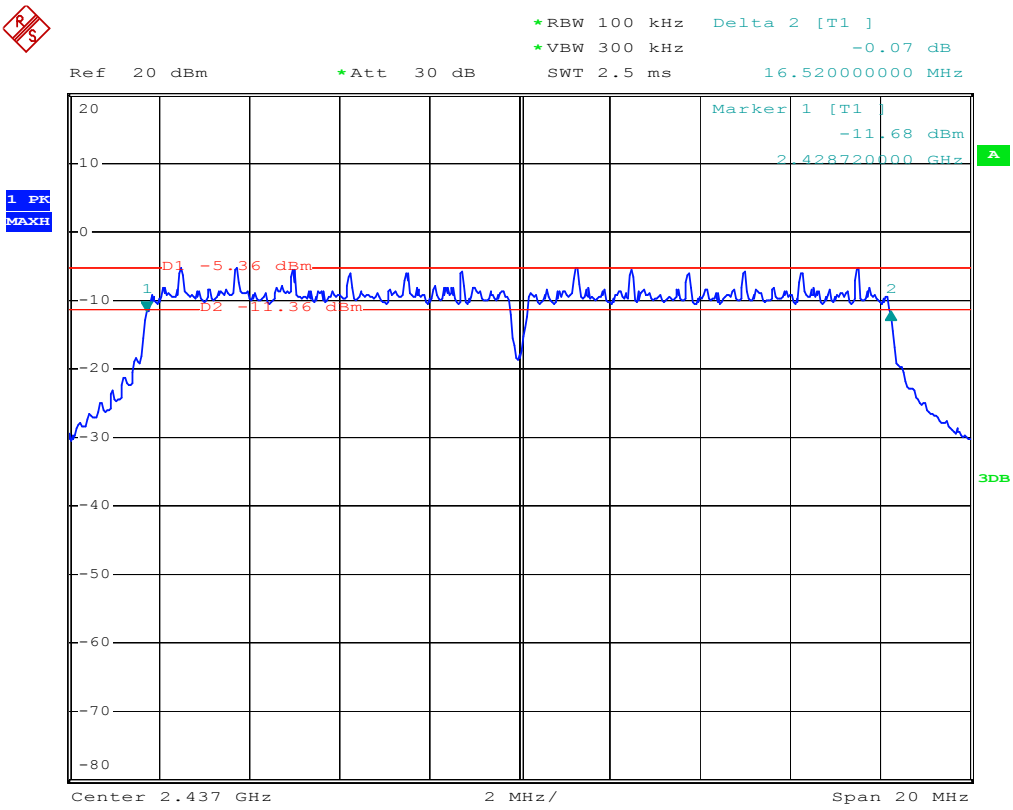
802.11b-High Channel



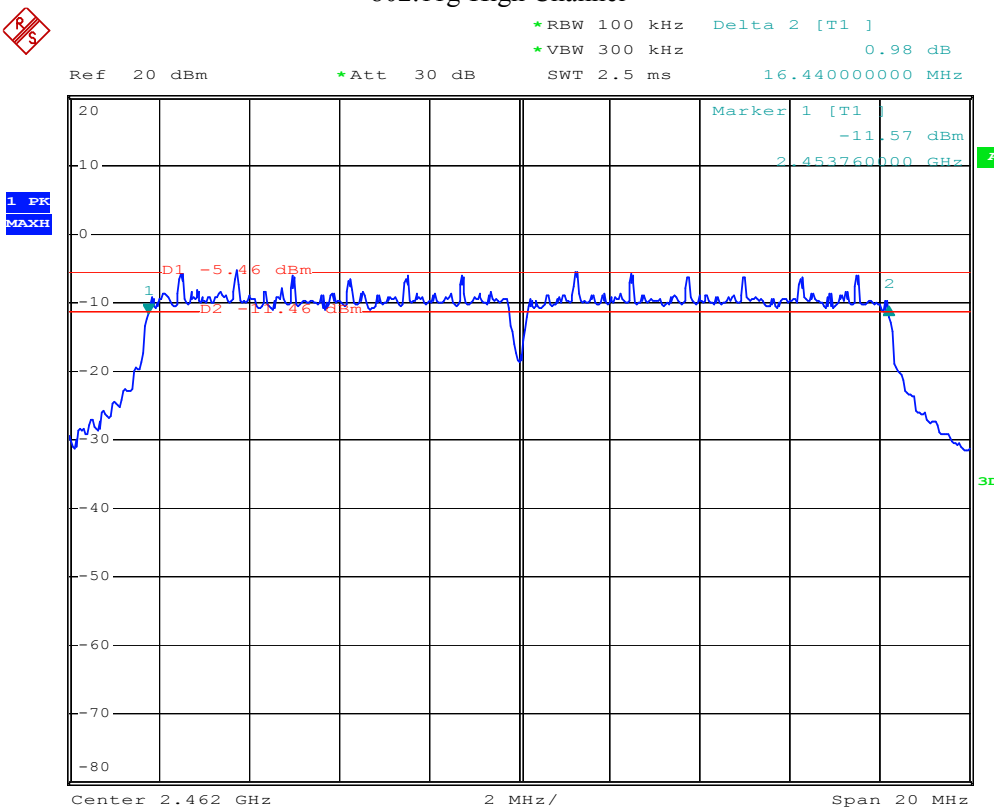
802.11g-Low Channel



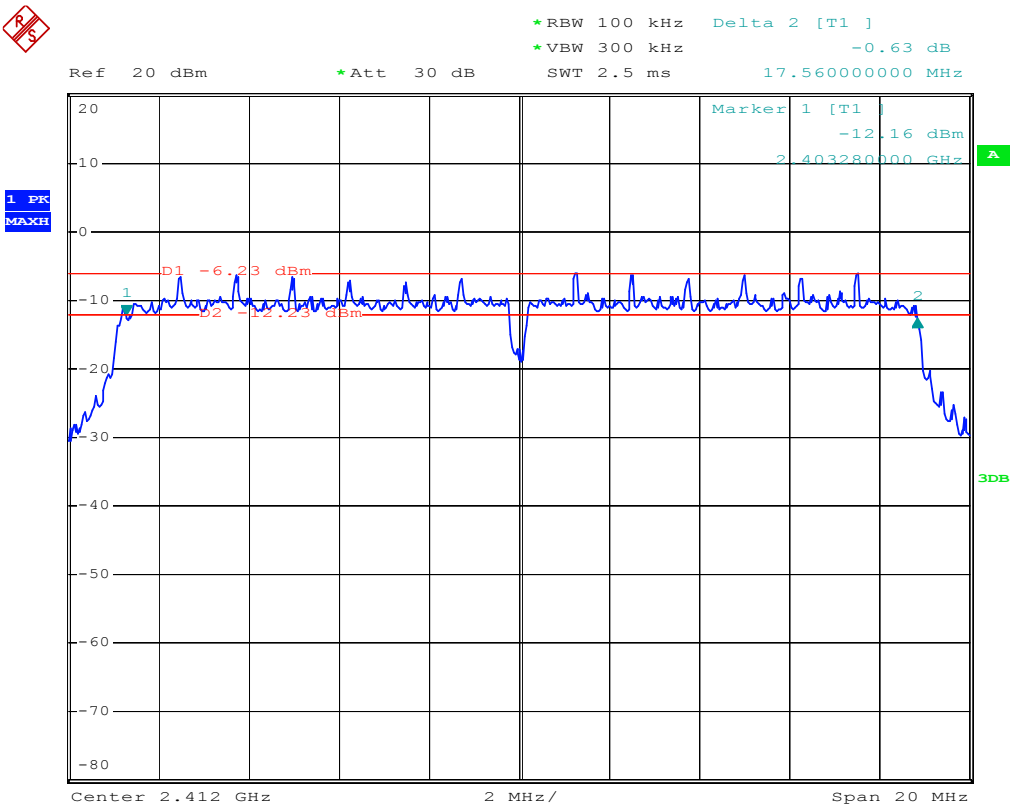
802.11g-Middle Channel



802.11g-High Channel

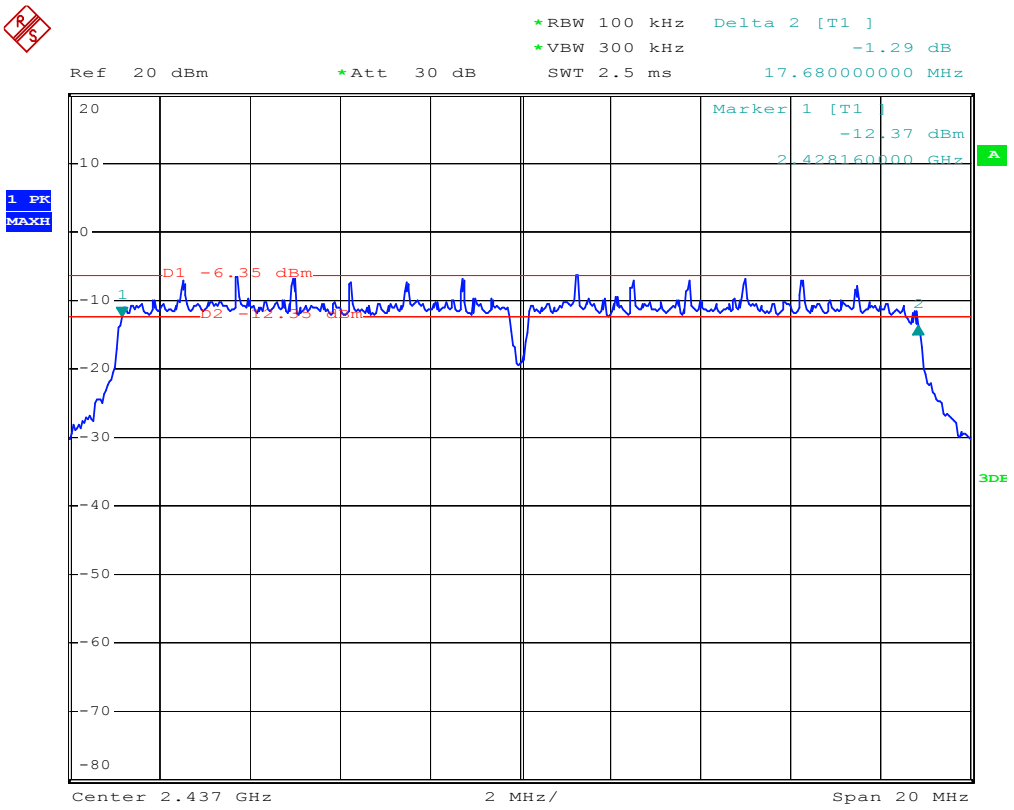


802.11n-HT20-Low Channel

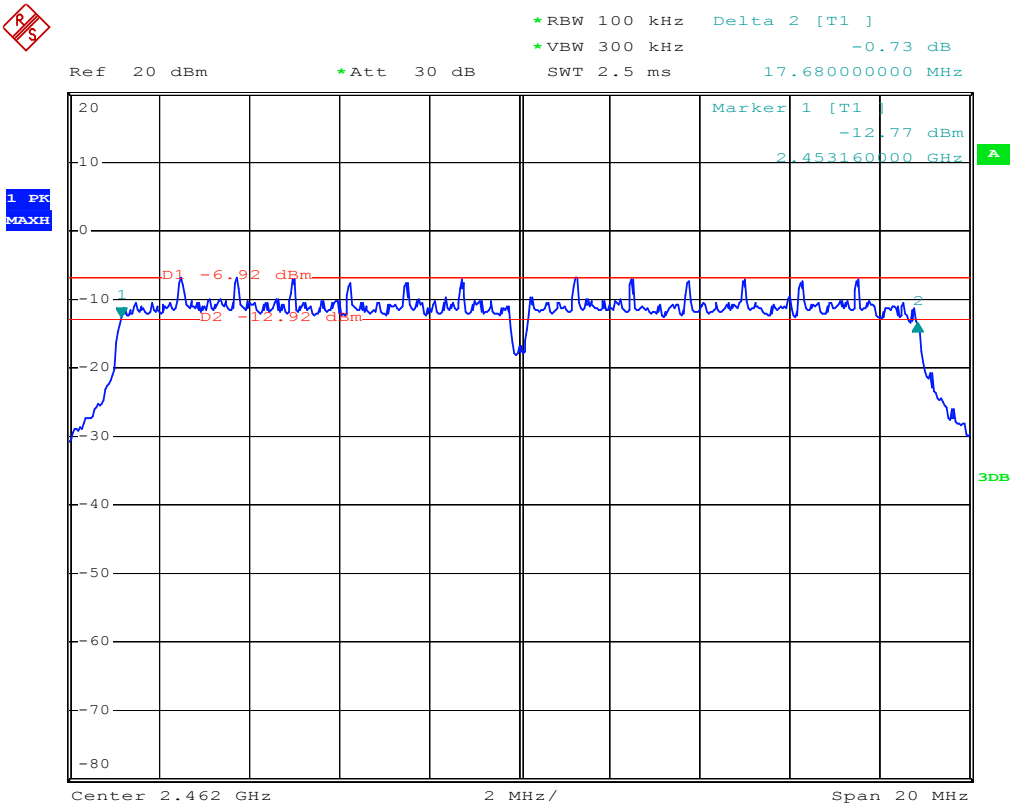


Date: 17.JAN.2018 01:52:57

802.11n-HT20-Middle Channel



802.11n-HT20-High Channel



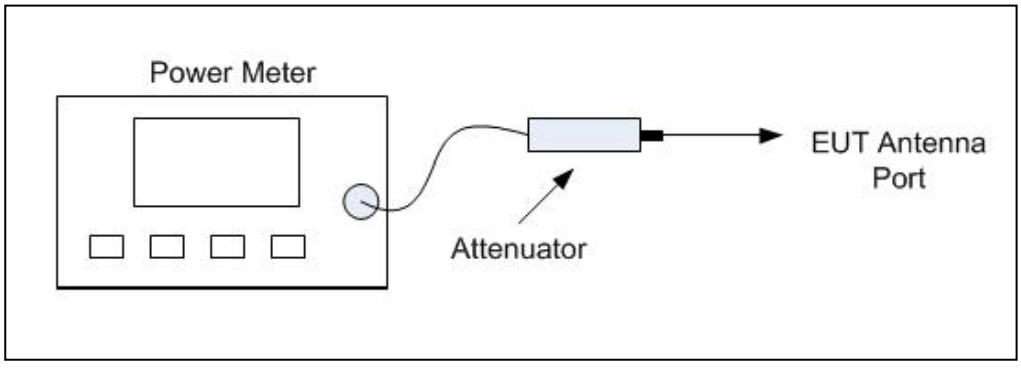
7. RF Output Power

7.1 Standard Applicable

According to 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.

7.2 Test Procedure

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.



7.3 Environmental Conditions

Temperature:	21℃
Relative Humidity:	50%
ATM Pressure:	101.2

7.4 Summary of Test Results/Plots

pass

Test Mode	Frequency MHz	Reading dBm	Output Power mW	Limit mW
802.11b_11Mbps	2412	11.25	13.34	1000
	2437	9.89	9.75	1000
	2462	10.25	10.59	1000
802.11g_54Mbps	2412	10.32	10.76	1000
	2437	9.64	9.20	1000
	2462	9.87	9.71	1000
802.11n HT20_MCS7	2412	8.62	7.28	1000
	2437	8.46	7.01	1000
	2462	10.25	10.59	1000

8. Field Strength of Spurious Emissions

8.1 Standard Applicable

According to §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

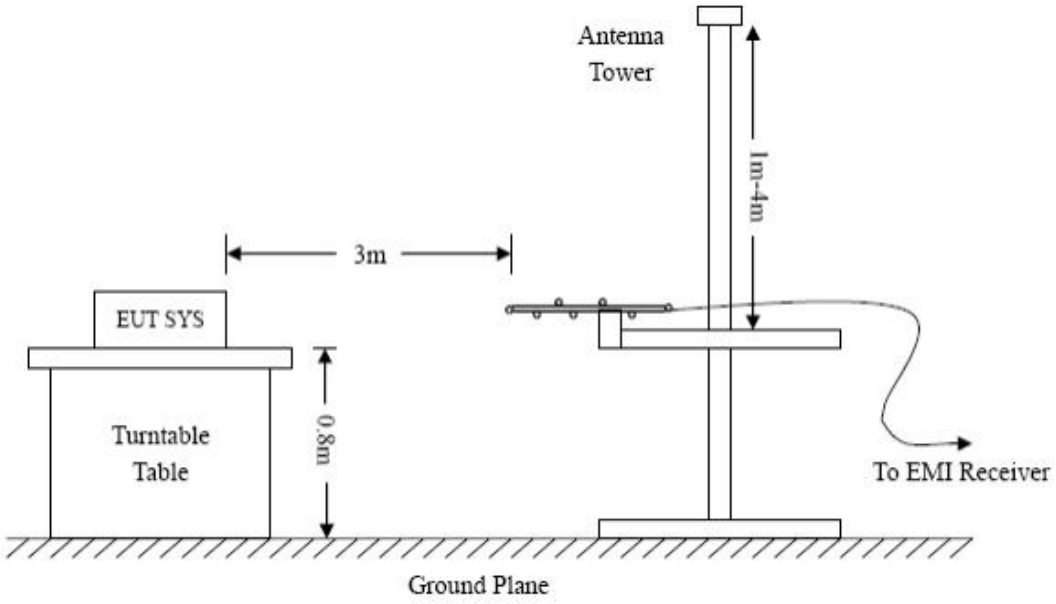
specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

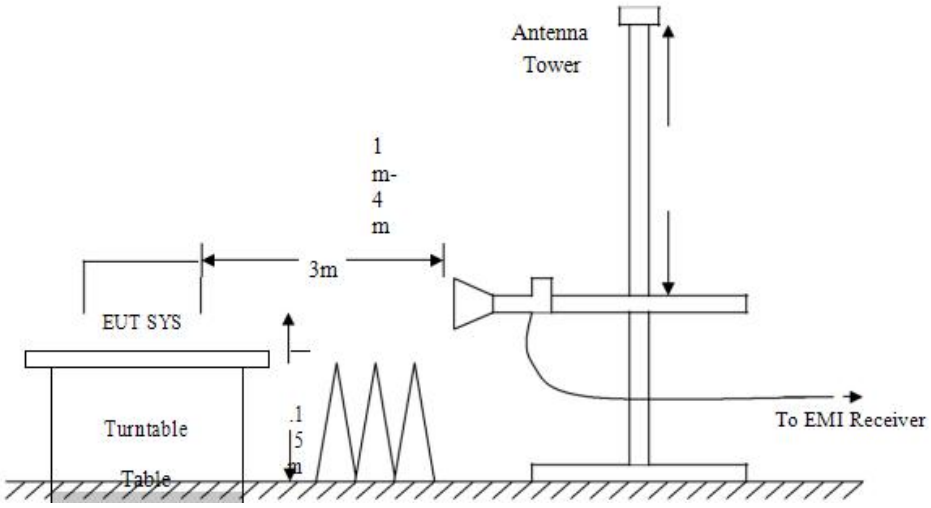
The emission limit in this paragraph is based on measurement instrumentation employing an average detector. The provisions in §15.35 for limiting peak emissions apply. Spurious Radiated Emissions measurements starting below or at the lowest crystal frequency.

8.2 Test Procedure

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.205 15.247(a) and FCC Part 15.209 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.





Ground Plane

Frequency :9kHz-30MHz	Frequency :30MHz-1GHz	Frequency :Above 1GHz
RBW=10KHz,	RBW=120KHz,	RBW=1MHz,
VBW =30KHz	VBW=300KHz	VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto	Sweep time= Auto	Sweep time= Auto
Trace = max hold	Trace = max hold	Trace = max hold
Detector function = peak	Detector function = peak, QP	Detector function = peak, AV

8.3 Corrected Amplitude & Margin Calculation

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

Corr. Ampl. = Indicated Reading + Ant. Factor + Cable Loss – Ampl. Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dBμV means the emission is 6dBμV below the maximum limit. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – FCC Part 15 Limit

8.4 Environmental Conditions

Temperature:	21℃
Relative Humidity:	50%
ATM Pressure:	101.2

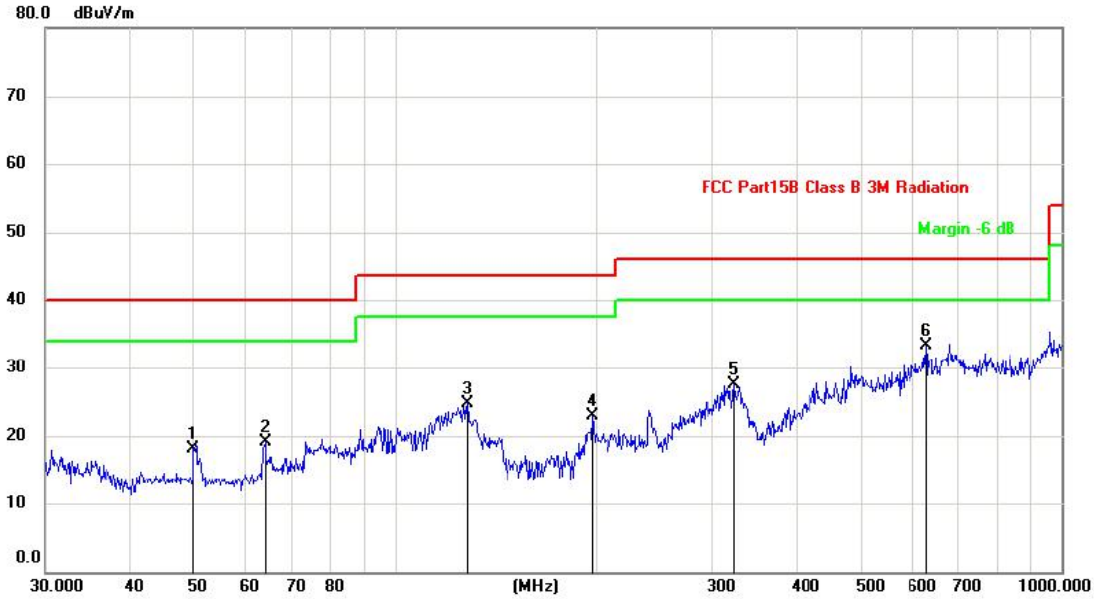
8.5 Summary of Test Results/Plots

According to the data below, the FCC Part 15.205, 15.209 and 15.247 standards, and had the worst cases:

pass

Plot of Radiated Emissions Test Data (30MHz to 1GHz)

Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		49.8813	19.53	-1.33	18.20	40.00	-21.80	peak			
2		63.9827	21.44	-2.43	19.01	40.00	-20.99	peak			
3		128.5629	18.59	6.21	24.80	43.50	-18.70	peak			
4		197.8927	16.69	6.26	22.95	43.50	-20.55	peak			
5		323.3204	13.53	14.04	27.57	46.00	-18.43	peak			
6	*	627.2738	16.79	16.60	33.39	46.00	-12.61	peak			

Horizontal

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dBuV/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		37.5479	18.48	0.72	19.20	40.00	-20.80	peak			
2		63.3132	21.61	-2.29	19.32	40.00	-20.68	peak			
3		78.4133	18.53	-0.13	18.40	40.00	-21.60	peak			
4		396.2415	17.59	9.69	27.28	46.00	-18.72	peak			
5		495.9344	16.28	14.24	30.52	46.00	-15.48	peak			
6	*	684.7454	16.07	17.31	33.38	46.00	-12.62	peak			

Spurious Emissions Above 1GHz

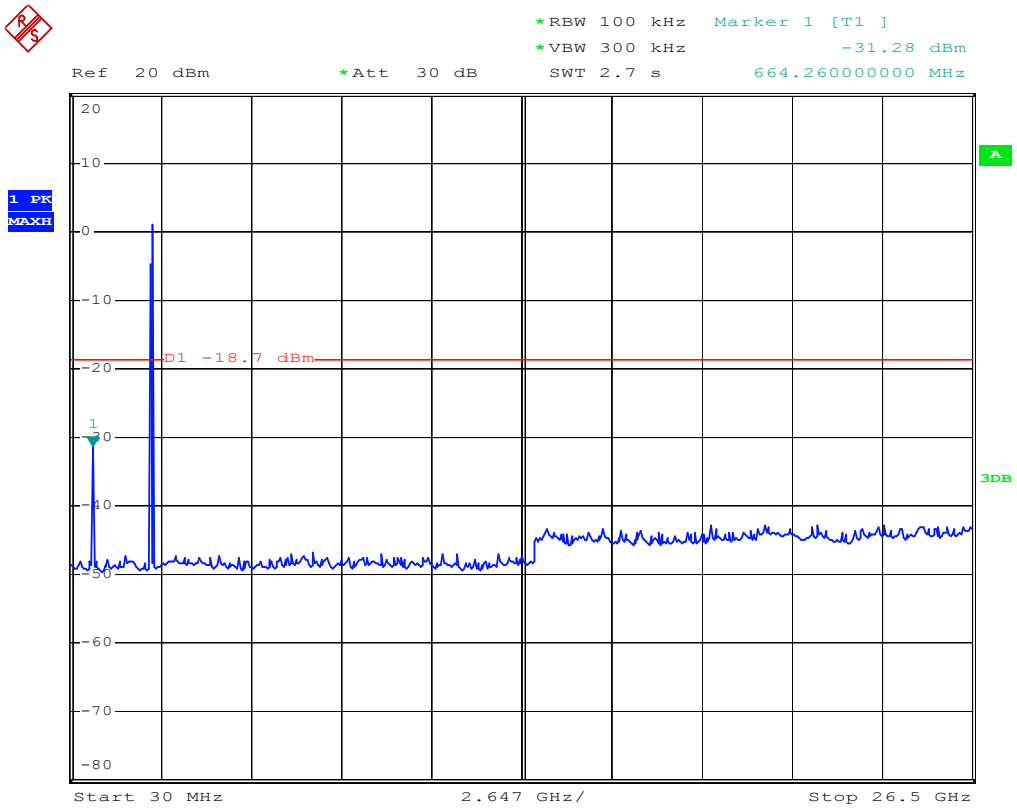
Test Mode: 802.11b (worst case)

Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar H/V	Detector
Low Channel-2412MHz					
4824.000	57.11	74	-16.86	H	PK
4824.000	37.13	54	-16.87	H	AV
7236.000	59.13	74	-14.87	H	PK
7236.000	48.42	54	-5.58	H	AV
4824.000	55.51	74	-18.49	V	PK
4824.000	40.24	54	-13.76	V	AV
7236.000	61.75	74	-12.25	V	PK
7236.000	51.93	54	-2.07	V	AV
Middle Channel-2437MHz					
4874.000	51.72	74	-22.28	H	PK
4874.000	43.51	54	-10.49	H	AV
7311.000	56.95	74	-17.05	H	PK
7311.000	42.76	54	-11.24	H	AV
4874.000	52.64	74	-21.36	V	PK
4874.000	42.68	54	-11.32	V	AV
7311.000	56.34	74	-17.66	V	PK
7311.000	46.56	54	-7.44	V	AV
High Channel-2462MHz					
4924.000	52.66	74	-21.34	H	PK
4924.000	44.77	54	-9.23	H	AV
7386.000	53.23	74	-20.77	H	PK
7386.000	40.56	54	-13.44	H	AV
4924.000	60.12	74	-13.88	V	PK
4924.000	45.23	54	-8.77	V	AV
7386.000	56.34	74	-17.66	V	PK
7386.000	42.35	54	-11.65	V	AV

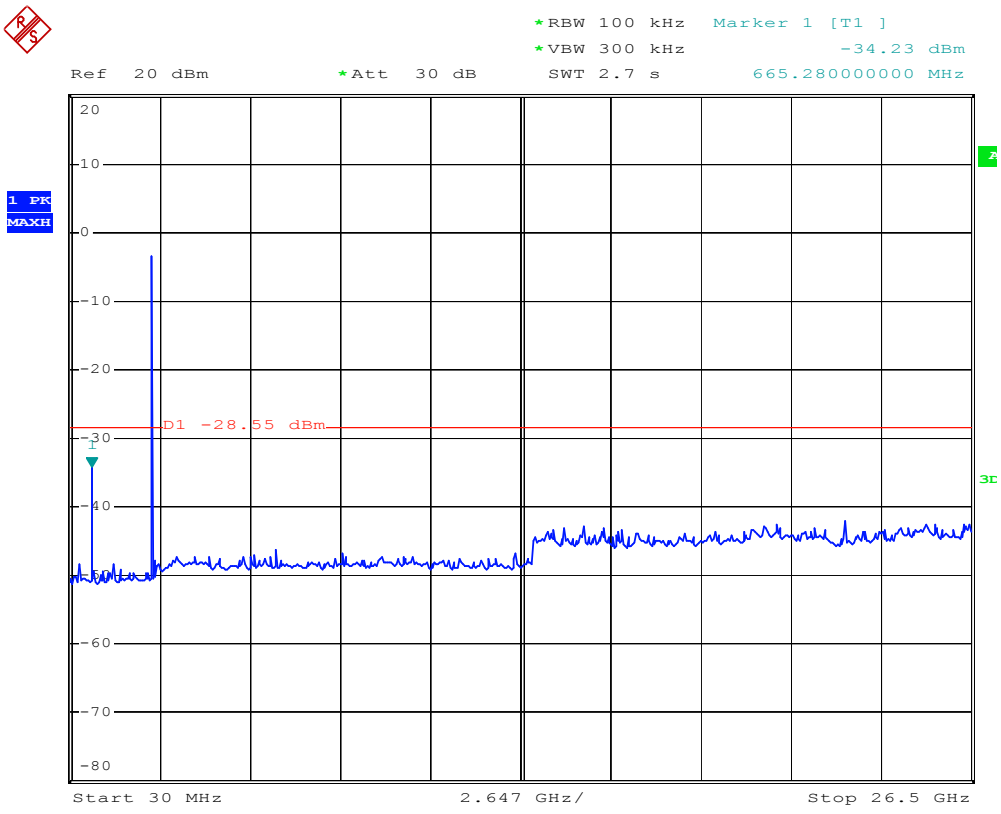
Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength istoo small to be measured.

Spurious (Conducted)

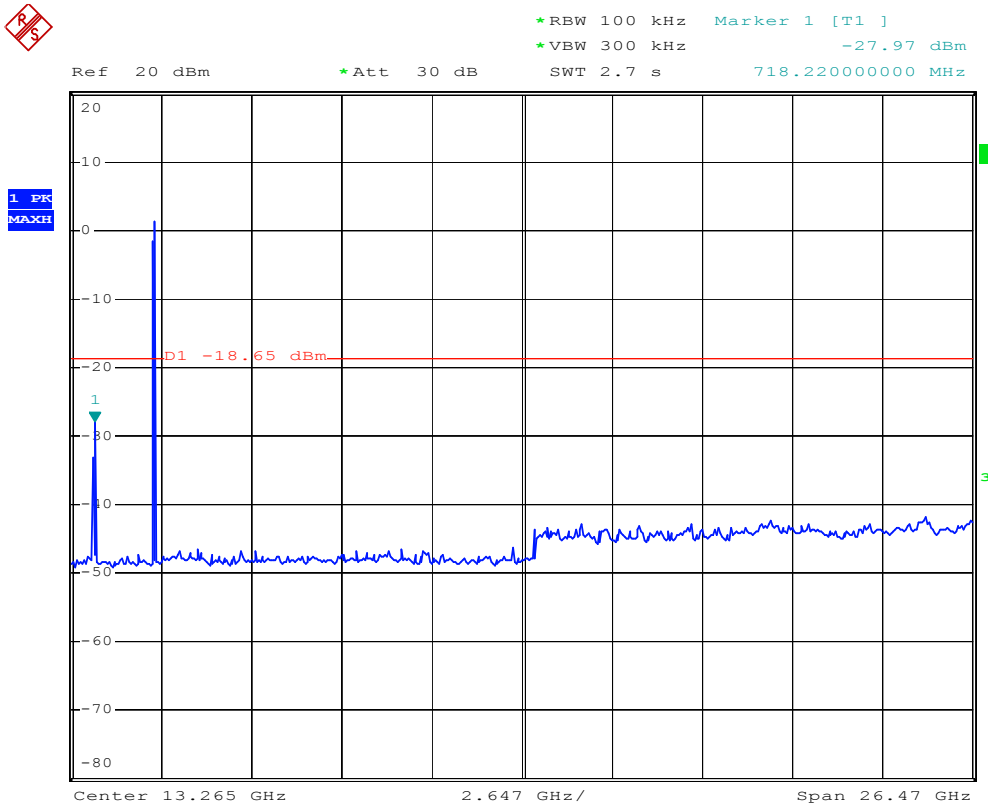
802.11b Lowest



Middle

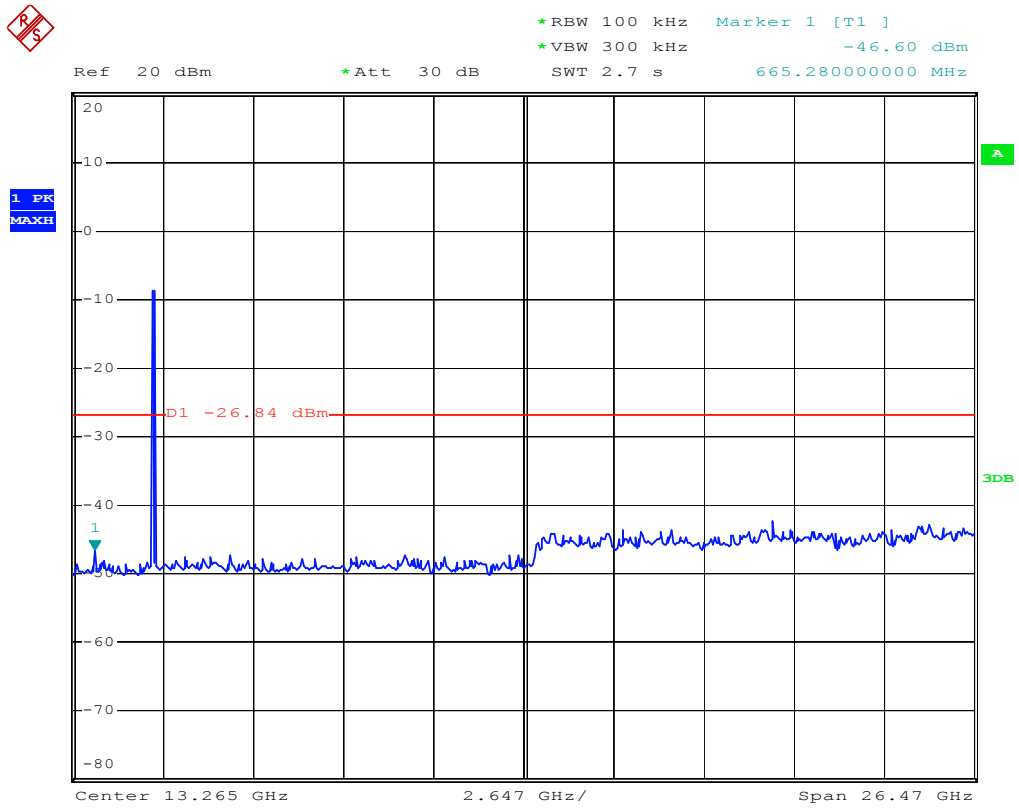

*RBW 100 kHz
Marker 1 [T1]
*VBW 300 kHz
-34.23 dBm
Ref 20 dBm
*Att 30 dB
SWT 2.7 s
665.280000000 MHz
1 PK
MAXH
D1 -28.55 dBm
Start 30 MHz
2.647 GHz/
Stop 26.5 GHz

Highest

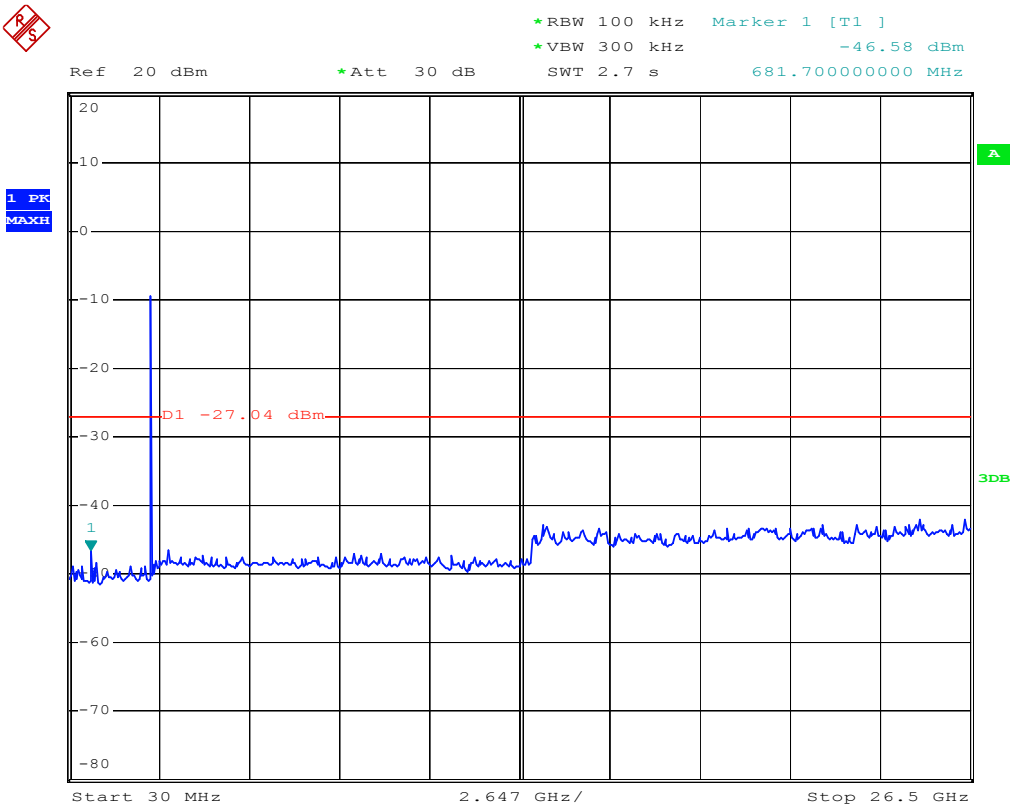

*RBW 100 kHz
Marker 1 [T1]
*VBW 300 kHz
-27.97 dBm
Ref 20 dBm
*Att 30 dB
SWT 2.7 s
718.220000000 MHz
1 PK
MAXH
D1 -18.65 dBm
Center 13.265 GHz
2.647 GHz/
Span 26.47 GHz

802.11g

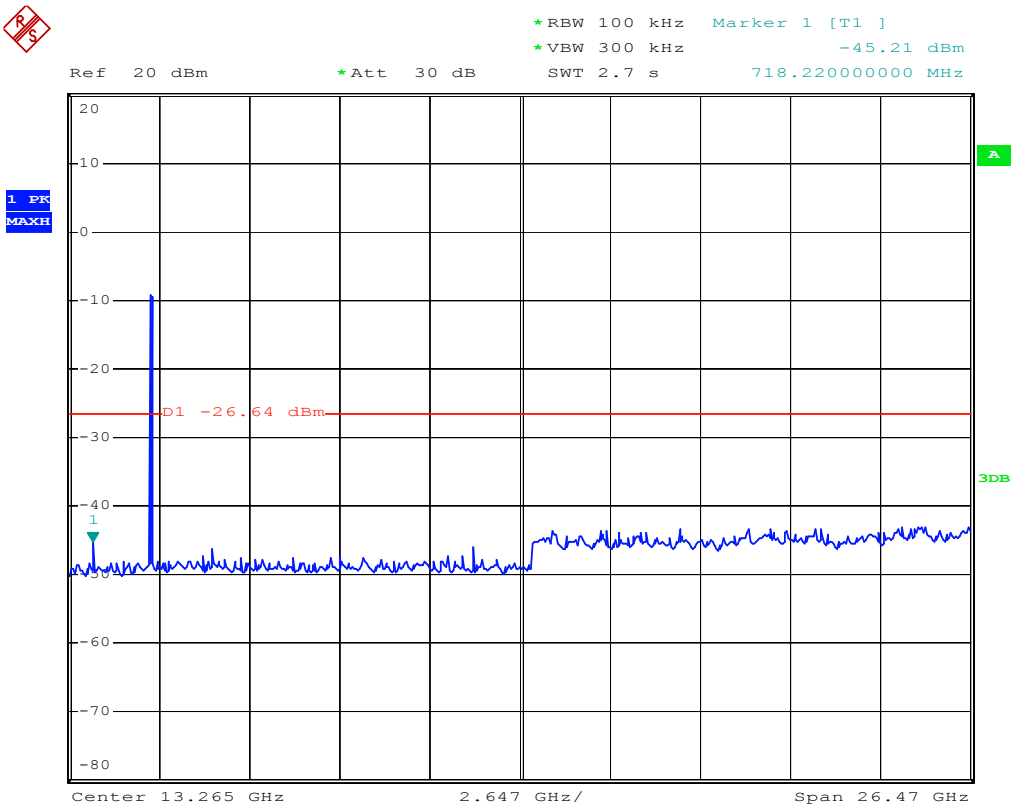
Lowest



Middle

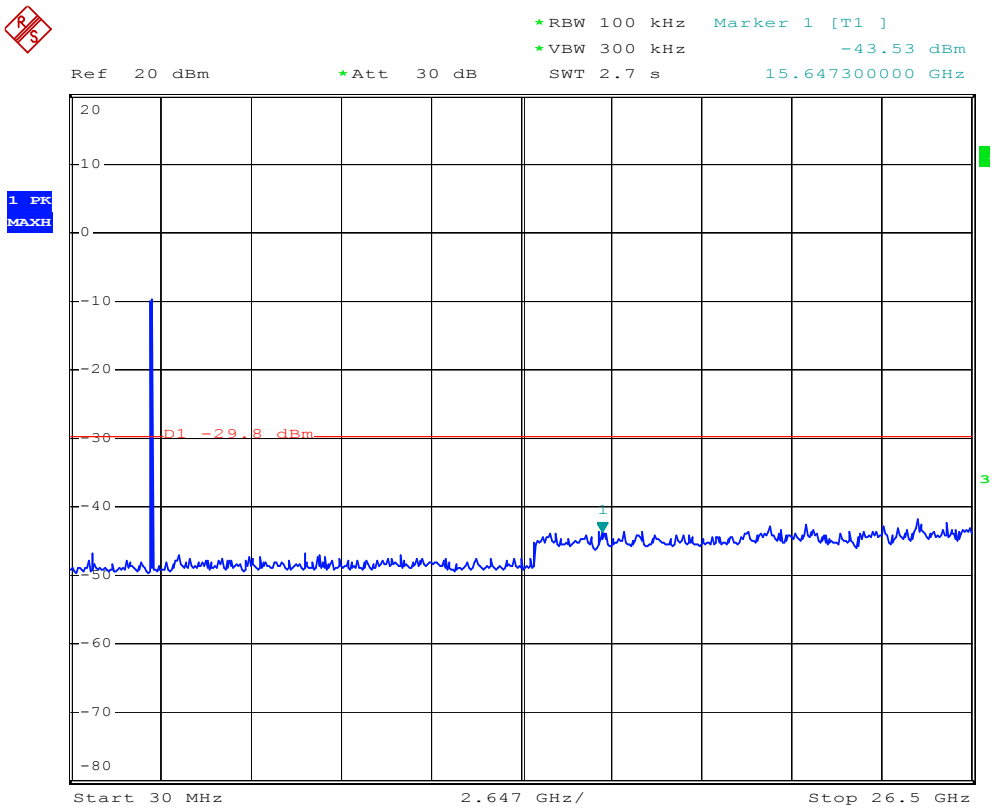

*RBW 100 kHz
Marker 1 [T1]
*VBW 300 kHz
-46.58 dBm
Ref 20 dBm
*Att 30 dB
SWT 2.7 s
681.700000000 MHz
1 PK
MAXH
A
3DB
D1 -27.04 dBm
Start 30 MHz
2.647 GHz/
Stop 26.5 GHz

Highest

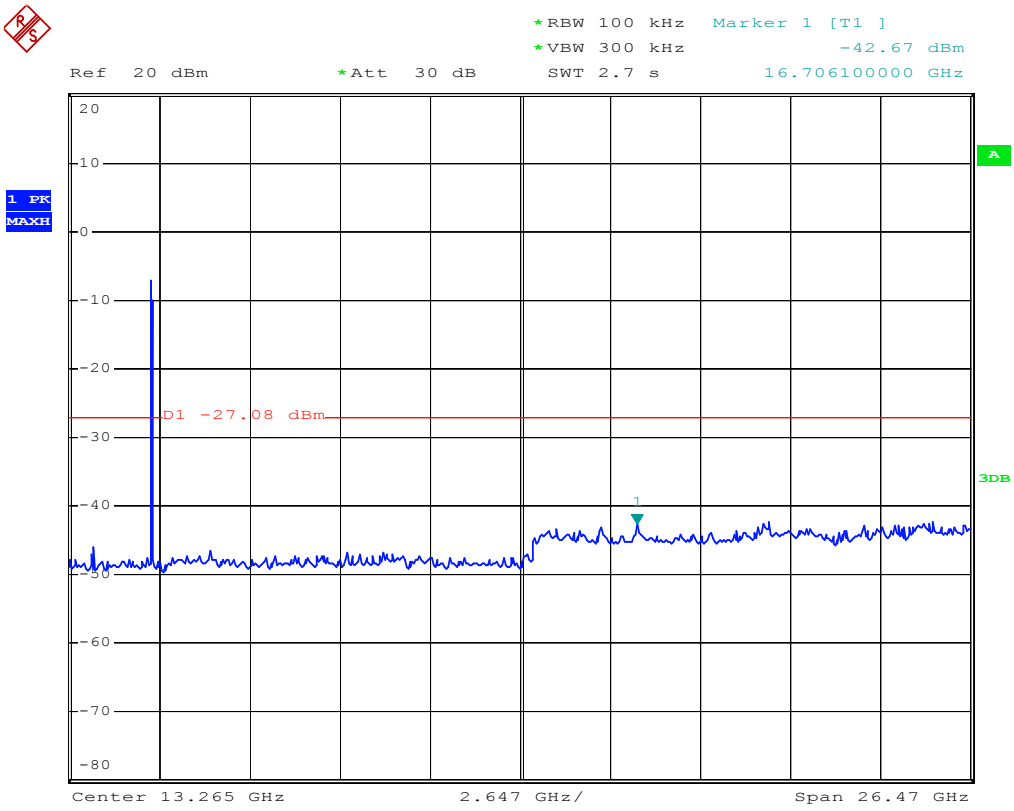


802.11n20

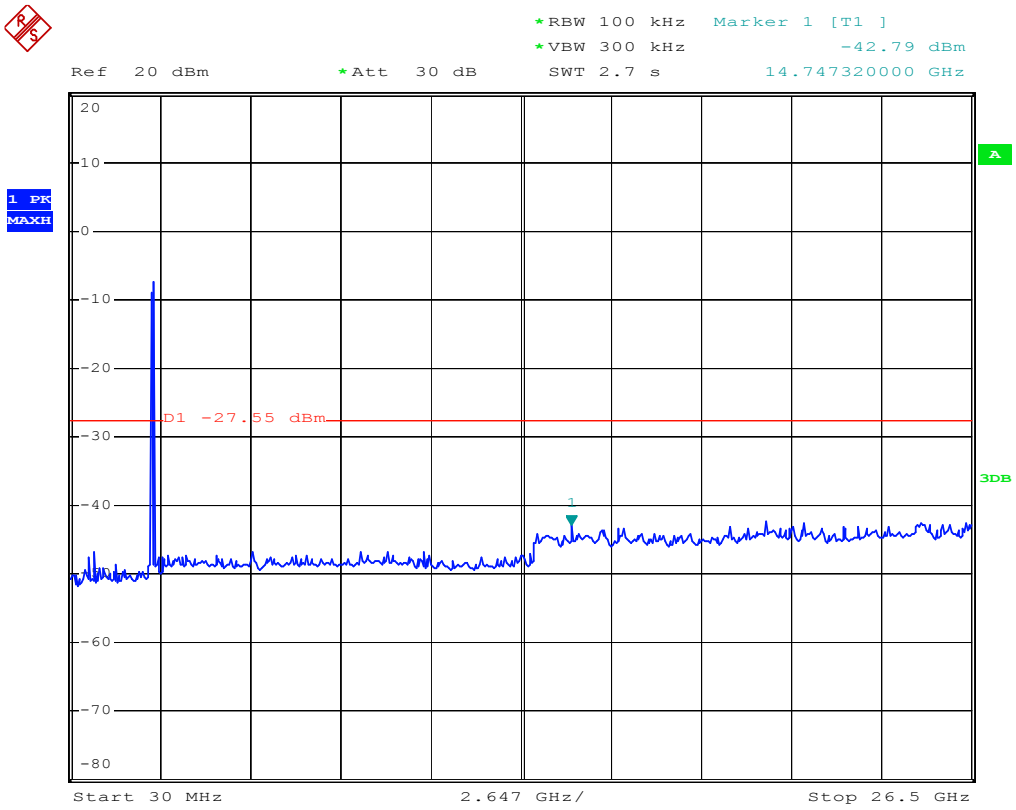
Lowest


RBW 100 kHz
Marker 1 [T1]
VBW 300 kHz
-43.53 dBm
Ref 20 dBm
Att 30 dB
SWT 2.7 s
15.647300000 GHz
1 PK
MAXH
D1 -29.8 dBm
3
Start 30 MHz
2.647 GHz/
Stop 26.5 GHz

Middle


RBW 100 kHz
Marker 1 [T1]
VBW 300 kHz
-42.67 dBm
Ref 20 dBm
Att 30 dB
SWT 2.7 s
16.706100000 GHz
1 PK
MAXH
D1 -27.08 dBm
A
3DB
Center 13.265 GHz
2.647 GHz/
Span 26.47 GHz

Highest



Date: 17.JAN.2018 01:44:10

9. Out of Band Emissions

9.1 Standard Applicable

According to §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).

9.2 Test Procedure

According to the KDB 558074D01 v04, the band-edge radiated test method as follows:

Set span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation (2310MHz to 2420MHz for low bandedge, 2460MHz to 2500MHz for the high bandedge)
RBW = 1MHz, VBW = 1MHz for peak value
measured RBW = 1MHz, VBW = 10Hz for
average value measured
Sweep = auto; Detector function = peak; Trace = max hold
All the trace to stabilize, set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. Those emission must comply with the 15.209 limit for fall in the restricted bands listed in section 15.205. Note that the method of measurement KDB publication number: 913591 may be used for the radiated bandedge measurements.

According to the KDB 558074 D01 v04, the conducted spurious emissions test method as follows:
1. Set start frequency to DTS channel edge frequency.
2. Set stop frequency so as to encompass the spectrum to be examined.
3. Set RBW = 100 kHz.
4. Set VBW ≥ 300 kHz.
5. Detector = peak.
6. Trace Mode = max hold.

7. Sweep = auto couple.
8. Allow the trace to stabilize (this may take some time, depending on the extent of the span).
9. Use peak marker function to determine maximum amplitude of all unwanted emissions within any 100 kHz bandwidth.

Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) are attenuated by at least the minimum requirements specified in section 8.1. Report the three highest emissions relative to the limit.

9.3 Environmental Conditions

Temperature:	21℃
Relative Humidity:	50%
ATM Pressure:	101.2

9.4 Summary of Test Results/Plots

pass

Radiated Test Result

Note: We pre-scan all mode, the worst data is 802.11b,802.11n20

802.11b

Channel	Freq.(MHz)	Level(dBuV)	Limit(dBuV)	Margin(dB)	Detector
LOW	2400	43.55	74	-30.45	Peak
	2400	35.65	54	-18.35	Average
HIGH	2483.5	42.58	74	-31.42	Peak
	2483.5	37.65	54	-16.35	Average

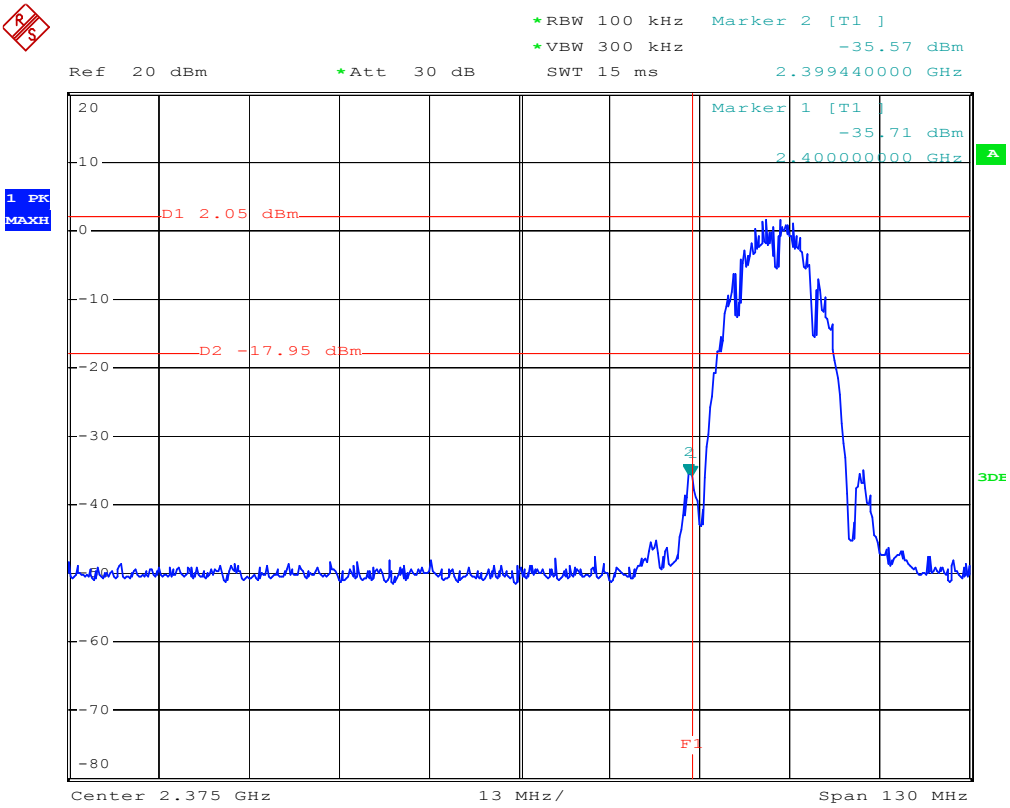
802.11n20

Channel	Freq.(MHz)	Level(dBuV)	Limit(dBuV)	Margin(dB)	Detector
LOW	2400	45.62	74	-28.38	Peak
	2400	34.32	54	-19.68	Average
HIGH	2483.5	46.32	74	-27.68	Peak
	2483.5	35.64	54	-18.36	Average

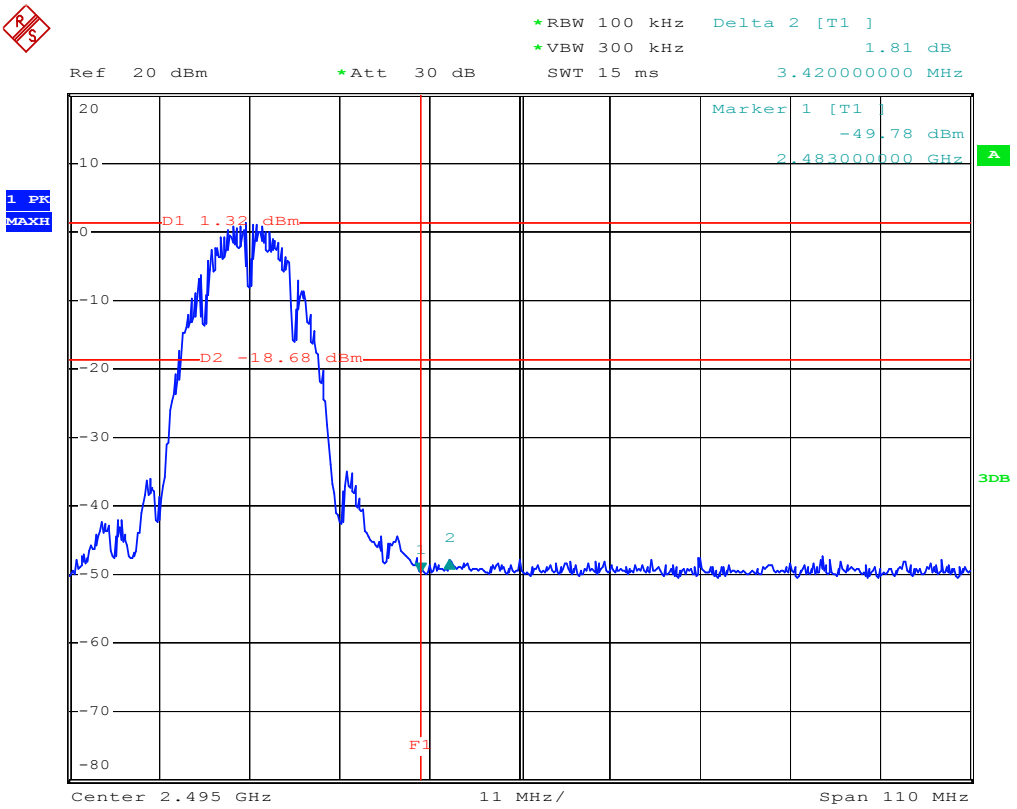
Bandedge (Conducted)

802.11b

Lowest

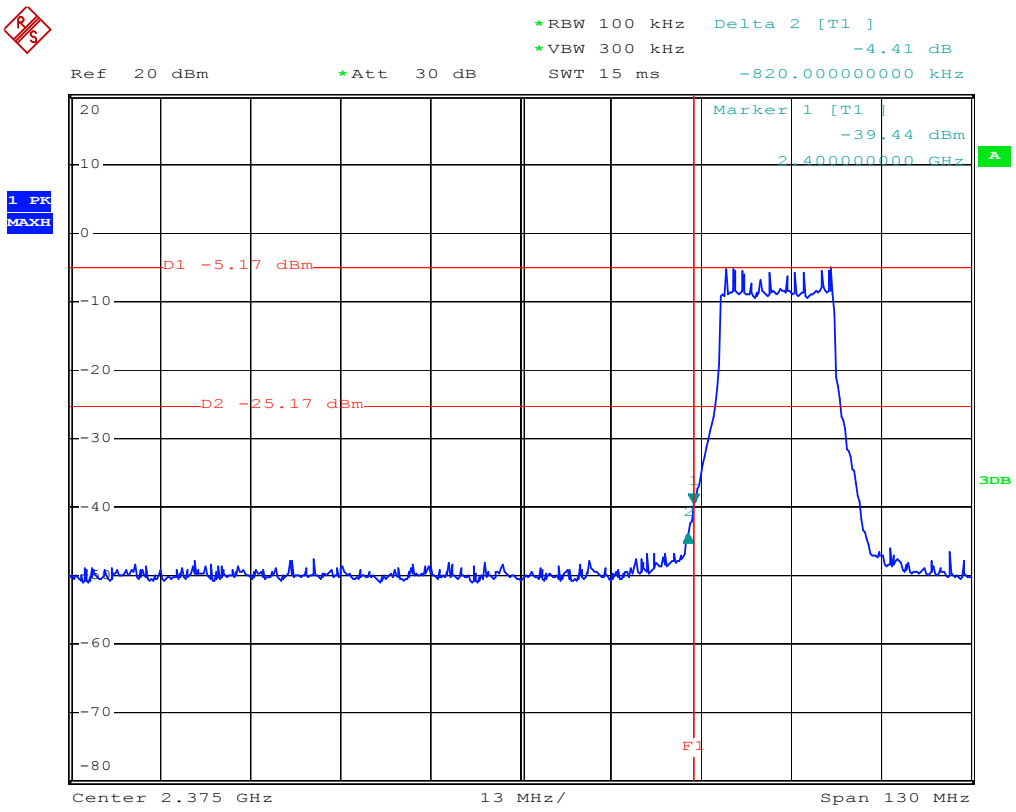


HIG

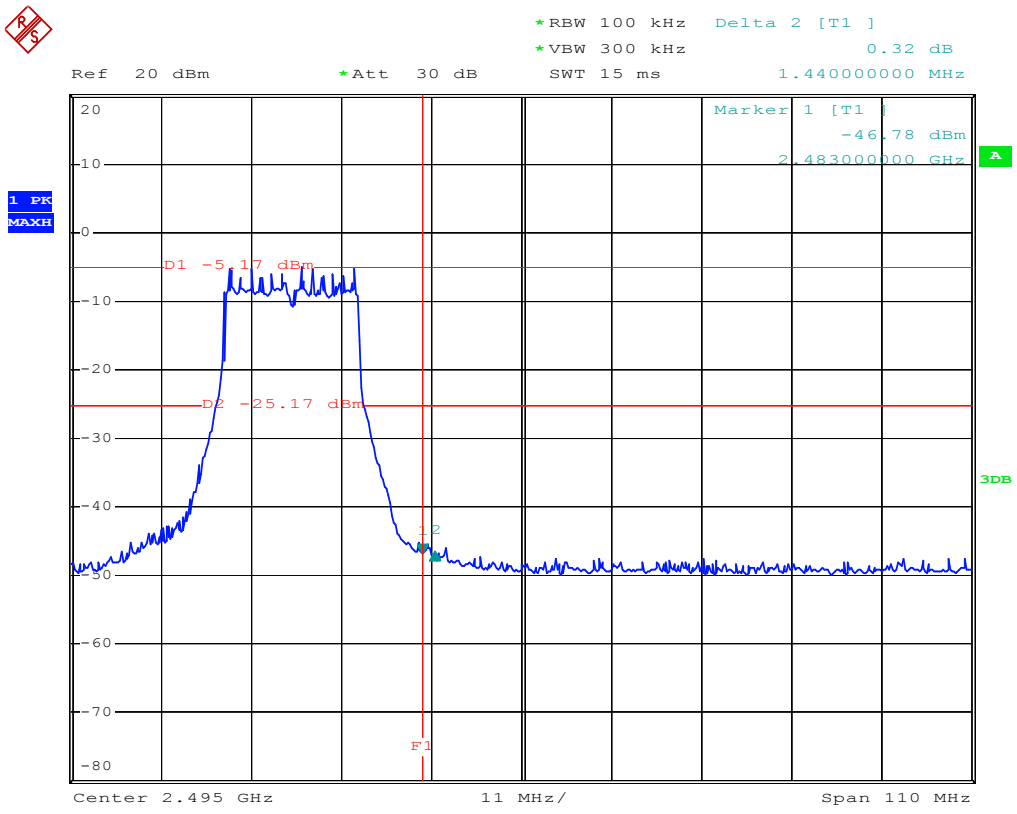


802.11g

Lowest

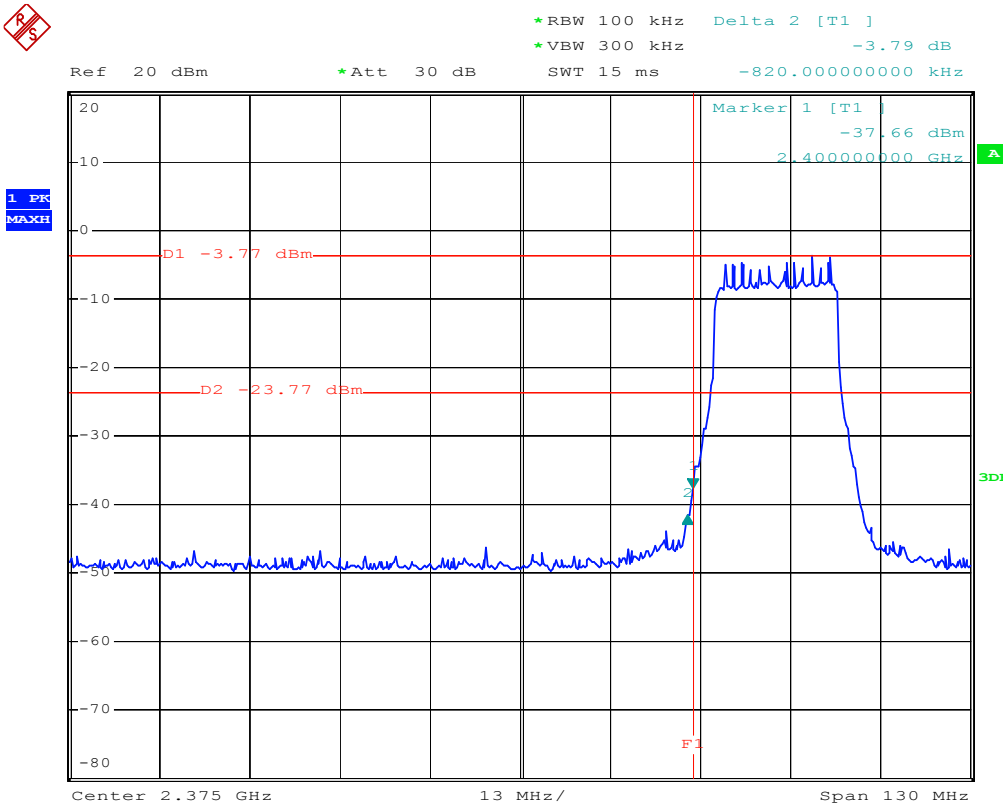

RBW 100 kHz
VBW 300 kHz
Delta 2 [T1]
-4.41 dB
-820.000000000 kHz
Ref 20 dBm
Att 30 dB
SWT 15 ms
Marker 1 [T1]
-39.44 dBm
2.400000000 GHz
1 PK
MAXH
A
3DB
D1 -5.17 dBm
D2 -25.17 dBm
20
10
0
-10
-20
-30
-40
-60
-70
-80
Center 2.375 GHz
13 MHz/
Span 130 MHz

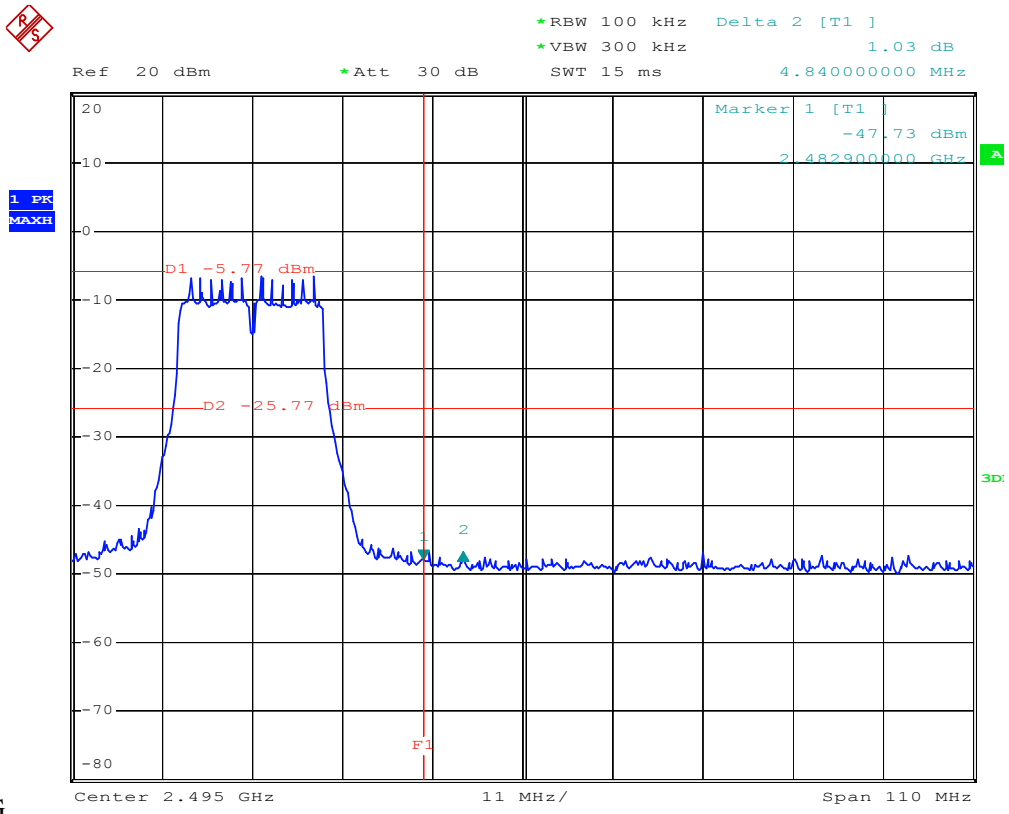
HIG



802.11n20

Lowest


RBW 100 kHz
VBW 300 kHz
Delta 2 [T1]
-3.79 dB
-820.000000000 kHz
Ref 20 dBm
Att 30 dB
SWT 15 ms
Marker 1 [T1]
-37.66 dBm
2.400000000 GHz
1 PK
MAXH
D1 -3.77 dBm
D2 -23.77 dBm
F1
Center 2.375 GHz
13 MHz/
Span 130 MHz


RBW 100 kHz
VBW 300 kHz
Delta 2 [T1]
1.03 dB
4.840000000 MHz
Ref 20 dBm
Att 30 dB
SWT 15 ms
Marker 1 [T1]
-47.73 dBm
2.482900000 GHz
1 PK
MAXH
D1 -5.77 dBm
D2 -25.77 dBm
F1
Center 2.495 GHz
11 MHz/
Span 110 MHz

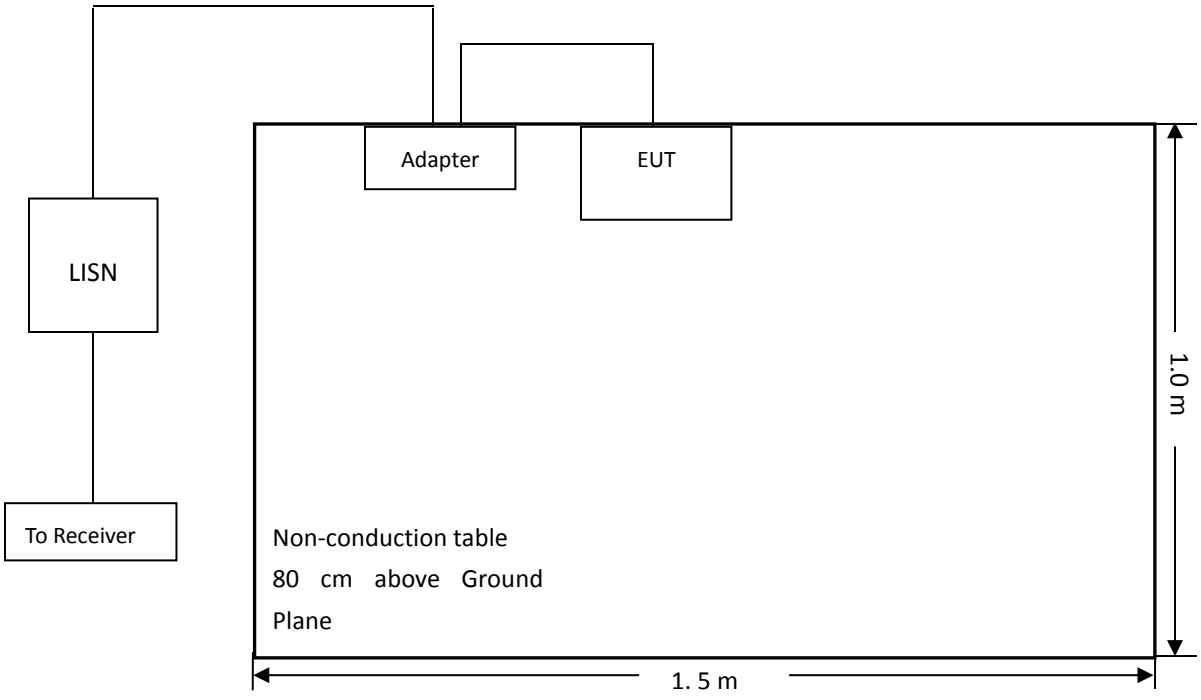
HIG

10. Conducted Emissions

10.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.207 Limit.
The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.
The spacing between the peripherals was 10 cm.

10.2 Basic Test Setup Block Diagram



10.3 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

10.4 Test Receiver Setup

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

Start Frequency.....150 kHz
Stop Frequency..... 30 MHz
Sweep Speed.....Auto
IF Bandwidth..... 10 kHz
Quasi-Peak Adapter Bandwidth..... 9 kHz
Quasi-Peak Adapter Mode.....Normal

10.5 Summary of Test Results/Plots

pass

According to the data in section 10.6, the EUT complied with the FCC Part 15.207 Conducted margin for this device, with the *worst* margin reading of:

-6.72 dB at 0.154 MHz in the **Line** mode**, Peak** detector, **0.15-30MHz**

10.6 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

EUT:

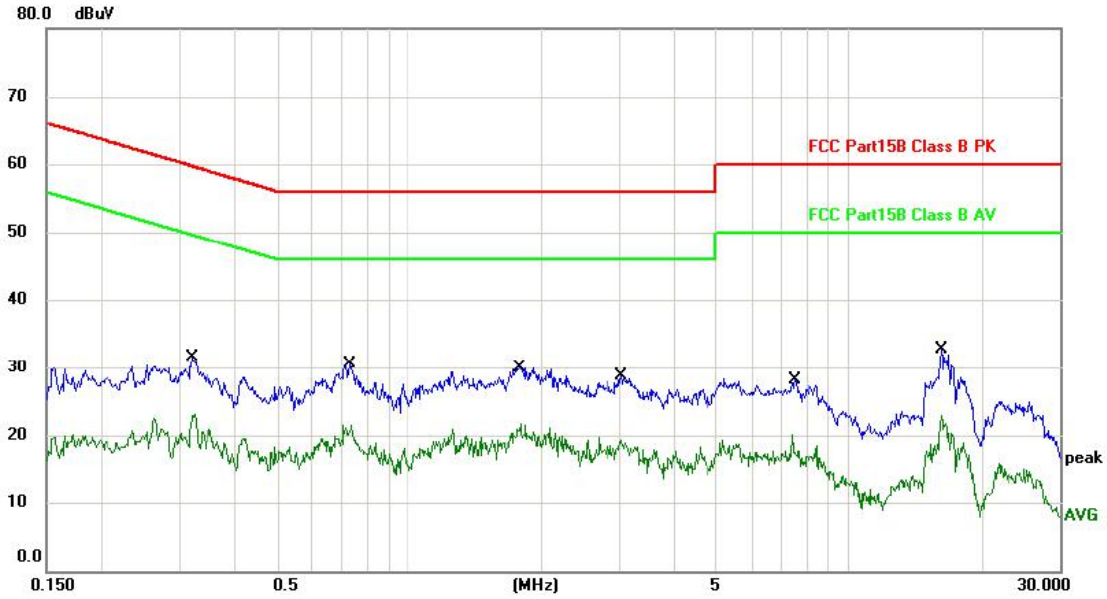
Tested Model:

Operating Condition: *Transmitting(Wi-Fi)*

Comment:

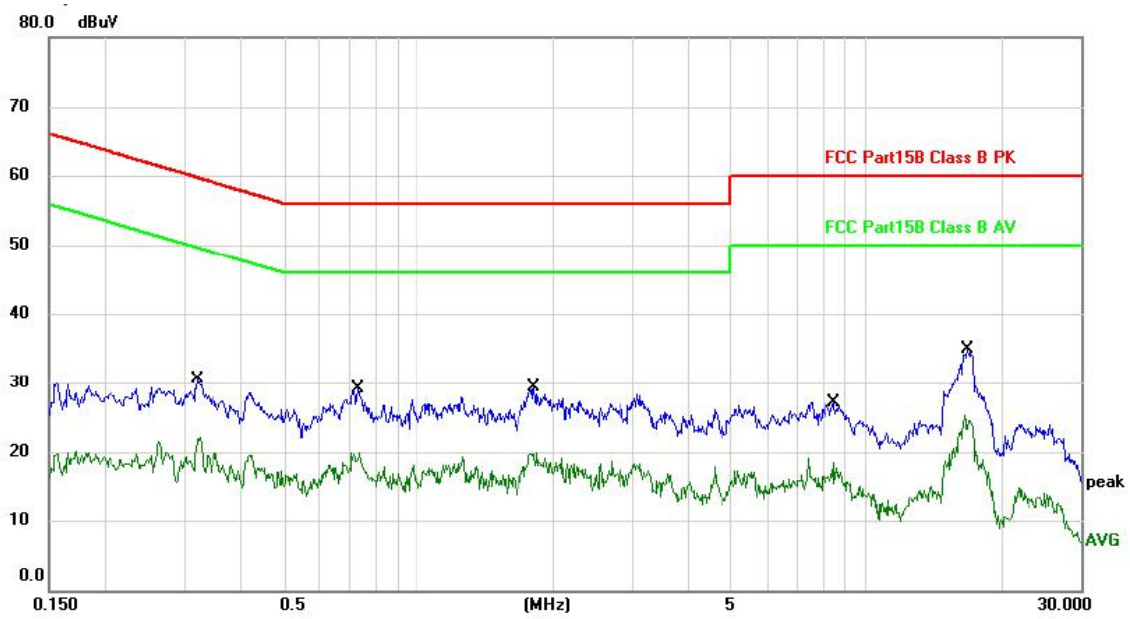
Test Specification: *Neutral*

N



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3200	31.59	0.00	31.59	59.70	-28.11	QP	
2		0.3200	20.12	0.00	20.12	49.70	-29.58	AVG	
3	*	0.7340	30.56	0.00	30.56	56.00	-25.44	QP	
4		0.7340	18.55	0.00	18.55	46.00	-27.45	AVG	
5		1.7860	29.90	0.00	29.90	56.00	-26.10	QP	
6		1.7860	20.55	0.00	20.55	46.00	-25.45	AVG	
7		3.0300	28.74	0.00	28.74	56.00	-27.26	QP	
8		3.0300	18.22	0.00	18.22	46.00	-27.78	AVG	
9		7.4899	28.11	0.00	28.11	60.00	-31.89	QP	
10		7.4899	16.27	0.00	16.27	50.00	-33.73	AVG	
11		16.1779	54.18	-21.48	32.70	60.00	-27.30	QP	
12					12.98	50.00	-37.02	AVG	

L



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3200	30.59	0.00	30.59	59.70	-29.11	QP	
2		0.3200	19.58	0.00	19.58	49.70	-30.12	AVG	
3		0.7340	29.06	0.00	29.06	56.00	-26.94	QP	
4		0.7340	16.28	0.00	16.28	46.00	-29.72	AVG	
5		1.8140	29.22	0.00	29.22	56.00	-26.78	QP	
6		1.8140	16.87	0.00	16.87	46.00	-29.13	AVG	
7		8.4140	27.09	0.00	27.09	60.00	-32.91	QP	
8		8.4140	15.05	0.00	15.05	50.00	-34.95	AVG	
9	*	16.8260	56.44	-21.48	34.96	60.00	-25.04	QP	
10		16.8260	38.95	-21.48	17.47	50.00	-32.53	AVG	

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