

FCC/IC DTS REPORT

FCC/IC Certification

Applicant Name:
SAMSUNG Electronics Co.,Ltd.

Address:
129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 16677, Rep. of Korea

Date of Issue:

March 09, 2016

Test Site/Location:

HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea

Report No.: HCT-R-1603-F043

HCT FRN: 0005866421

IC Recognition No.: 5944A-5

FCC ID	: A3LWEA403SI
IC	: 649E-WEA403SI
APPLICANT	: SAMSUNG Electronics Co.,Ltd.

FCC/ IC Model(s): WEA403Si

EUT Type: WLAN Access Point

Max. RF Output Power(Peak):

Port	Mode	Ant.0 (SISO)	Ant.1 (SISO)	Ant.2 (SISO)	Ant.0 & 1&2 (MIMO)
Monitoring	802.11b	25.12 dBm	-	-	-
	802.11g	19.47 dBm	18.98 dBm	19.80 dBm	24.15 dBm
	802.11n_20 MHz BW	-	-	-	-
Service	802.11b	22.65 dBm	-	-	-
	802.11g	19.56 dBm	18.98 dBm	19.39 dBm	24.08 dBm
	802.11n_20 MHz BW	20.16 dBm	19.42 dBm	19.76 dBm	24.47 dBm

Frequency Range: 2412 MHz - 2462 MHz (2.4 GHz Band)

Modulation type: CCK/DSSS/OFDM

FCC Classification: Digital Transmission System(DTS)

FCC Rule Part(s): Part 15.247

IC Rule : RSS-GEN Issue 4 (November 2014), RSS-247 Issue 1 (May 2015)

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998,21 U.S. C.853(a)



Report prepared by
:Seul Ki Lee
Test engineer of RF Team



Approved by
: Sang Jun Lee
Manager of RF Team

This report only responds to the tested sample and may not be reproduced, except in full, without written approval of the HCT Co., Ltd.

Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-R-1603-F043	March 09, 2016	- First Approval Report

Table of Contents

1. GENERAL INFORMATION	4
2. EUT DESCRIPTION	4
2.1 EUT OPERATING MODE	5
3. TEST METHODOLOGY	6
3.1 EUT CONFIGURATION	6
3.2 EUT EXERCISE	6
3.3 GENERAL TEST PROCEDURES	6
3.4 DESCRIPTION OF TEST MODES	6
4. INSTRUMENT CALIBRATION.....	7
5. FACILITIES AND ACCREDITATIONS	7
5.1 FACILITIES	7
5.2 EQUIPMENT	7
6. ANTENNA REQUIREMENTS	8
7. SUMMARY TEST OF RESULTS	9
7.1 FCC Part	9
7.2 IC Part	10
8. TEST RESULT	11
8.1 DUTY CYCLE.....	11
8.2 6dB BANDWIDTH.....	14
8.3 99% BANDWIDTH	22
8.4 OUTPUT POWER(802.11b/g/n)	30
8.5 POWER SPECTRAL DENSITY (802.11a/b/g/n) / RSS-247(Issue 1) Section 5.2.	64
8.6 OUT OF BAND EMISSIONS AT THE BAND EDGE/ CONDUCTED SPURIOUS EMISSIONS ...	74
8.7 RADIATED MEASUREMENT	113
8.7.1 RADIATED SPURIOUS EMISSIONS.....	113
8.7.2 RECEIVER SPURIOUS EMISSIONS.....	136
8.7.3 RADIATED RESTRICTED BAND EDGES	137
8.8 POWERLINE CONDUCTED EMISSIONS	146
9. LIST OF TEST EQUIPMENT	151
9.1 LIST OF TEST EQUIPMENT(Conducted Test)	151
9.2 LIST OF TEST EQUIPMENT(Radiated Test).....	152

1. GENERAL INFORMATION

Applicant: SAMSUNG Electronics Co.,Ltd.
Address: 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID: A3LWEA403SI
IC: 649E-WEA403SI
EUT Type: WLAN Access Point
FCC/ IC Model name(s): WEA403Si
Date(s) of Tests: January 15, 2016 ~ February 22, 2016
Place of Tests: HCT Co., Ltd.
 74,Seoicheon-ro 578beon-gil,Majang-myeon, Icheon-si, Gyeonggi-do, Korea.
 (IC Recognition No. : 5944A-5)

2. EUT DESCRIPTION

FCC Model Name	WEA403Si					
EUT Type	WLAN Access Point					
Power Supply	AC adaptor : 100 V ~ 240 V, POE : DC 48 V					
Frequency Range	TX: 2412 MHz ~ 2462 MHz RX: 2412 MHz ~ 2462 MHz					
Max. RF Output Power	Port	Mode	Ant.0 (SISO)	Ant.1 (SISO)	Ant.2 (SISO)	Ant.0 & 1&2 (MIMO)
	Monitoring	802.11b	25.12 dBm	-	-	-
		802.11g	19.47 dBm	18.98 dBm	19.80 dBm	24.15 dBm
		802.11n_20 MHz BW	-	-	-	-
	Service	802.11b	22.65 dBm	-	-	-
		802.11g	19.56 dBm	18.98 dBm	19.39 dBm	24.08 dBm
802.11n_20 MHz BW		20.16 dBm	19.42 dBm	19.76 dBm	24.47 dBm	
Modulation Type	DSSS/CCK(802.11b), OFDM(802.11g, 802.11n)					
Antenna Specification	Antenna type: INTERNAL ANTENNA Peak Gain : cf. Section 6					

2.1 EUT OPERATING MODE

■ Operating mode

Port	Operating Mode	Mode	Operating Ant.
Monitoring	802.11b	SISO	Ant 0
	802.11g	MIMO	Ant 0 & 1 & 2
Service	802.11b/g/n	SISO	Ant 0
			Ant 1
			Ant 2
	802.11g/n	MIMO	Ant 0 & 1
			Ant 0 & 1 & 2

Note :

1. This EUT is supported the AC adaptor and POE. Because worst case is AC adaptor, so we attached only the results for AC adaptor.
2. In case of radiation test, we have done all test case. Worst case is Ant 0 & 1 & 2 for 802.11g/n. And in case of 802.11b, worst case is only Ant 0. So, we attached the results of only worst case.

3. TEST METHODOLOGY

FCC KDB 558074 D01 DTS Meas Guidance v03r04 dated January 07, 2016 entitled "Guidance for Performing Compliance Measurements on Digital Transmission Systems(DTS) and the measurement procedure described in the American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices (ANSI C63.10-2013) Operating Under §15.247" were used in the measurement.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 6.2 of ANSI C63.10. (Version :2013) Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane below 1GHz. Above 1GHz with 1.5m using absorbers between the EUT and receive antenna. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3 m away from the receiving antenna, which varied from 1 m to 4 m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 8 of ANSI C63.10. (Version: 2013)

Conducted Antenna Terminal

See Section from 9.1 to 9.2.(KDB 558074)

3.4 DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition. Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel low, mid and high with highest data rate (worst case) is chosen for full testing.

4. INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipments, which is traceable to recognized national standards.

All equipments(spectrum, antenna, accessory, etc.) for measurement is calibrated in accordance with the requirements of C63.5 (Version: 2006).

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

The SAC(Semi-Anechoic Chamber) and conducted measurement facility used to collect the radiated data are located at the 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, Korea. The site is constructed in conformance with the requirements of ANSI C63.4. (Version :2014) and CISPR Publication 22. Detailed description of test facility was submitted to the Commission and accepted dated July 07, 2015 (Registration Number: 90661)

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of Linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak Measurement Typeors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers. Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6. ANTENNA REQUIREMENTS

According to FCC 47 CFR §15.203, §15.407

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 antennas of this E.U.T are permanently attached.

* The E.U.T Complies with the requirement of §15.203, §15.407

▣ Directional Gain Calculations

- If any transmit signals are correlated with each other(802.11b/g/n_HT20),

$$\text{Directional gain} = 10 \cdot \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N] \text{ dBi}$$

- If all transmit signals are completely uncorrelated with each other(802.11n_HT20)

$$\text{Directional gain} = 10 \cdot \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N] \text{ dBi}$$

▣ Antenna Gain

2.4 GHz Band

Service	Antenna Gain	802.11b/g/n	Ant 0	4.11 dBi
			Ant 1	2.74 dBi
			Ant 2	3.01 dBi
	Directional Antenna Gain	802.11g/n	Ant 0 & 1	6.46 dBi
			Ant 0 & 1 & 2	8.08 dBi
Monitor	Antenna Gain	802.11b/g	Ant 0	6.38 dBi
			Ant 1	5.78 dBi
			Ant 2	5.72 dBi
	Directional Antenna Gain	802.11g	Ant 0 & 1 & 2	10.74 dBi

7. SUMMARY TEST OF RESULTS

7.1 FCC Part

Test Description	FCC Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth	§15.247(a)(2)	> 500 kHz	CONDUCTED	PASS
Conducted Maximum Peak Output Power	§15.247(b)(3)	< 1 Watt		PASS
Power Spectral Density	§15.247(e)	< 8 dBm / 3 kHz Band		PASS
Band Edge(Out of Band Emissions)	§15.247(d)	Conducted > 20 dBc		PASS
AC Power line Conducted Emissions	§15.207	cf. Section 8.8		PASS
Radiated Spurious Emissions	§15.205, 15.209	cf. Section 8.7.1	RADIATED	PASS
Radiated Restricted Band Edge	§15.247(d), 15.205, 15.209	cf. Section 8.7.3		PASS

7.2 IC Part

Test Description	IC Part Section(s)	Test Limit	Test Condition	Test Result
6 dB Bandwidth	RSS-210 [A8.2]	> 500 kHz	CONDUCTED	PASS
99% Bandwidth	RSS-GEN [4.6.1]	NA		NA
Conducted Maximum Peak Output Power And e.i.r.p.	RSS-210 [A8.4]	< 1 Watt <4 Watt(e.i.r.p.)		PASS
Power Spectral Density	RSS-210 [A8.2]	< 8 dBm / 3 kHz Band		PASS
Band Edge(Out of Band Emissions)	RSS-210 [A8.5]	Conducted > 20 dBc		PASS
AC Power line Conducted Emissions	RSS-GEN [7.2.2]	cf. Section 8.8		PASS
Radiated Spurious Emissions	RSS-210 [A8.5]	cf. Section 8.7.1	RADIATED	PASS
Receiver Spurious Emissions	RSS-GEN, Section 7.2.3	cf. Section 8.7.2		PASS
Radiated Restricted Band Edge	RSS-210 [A8.5]	cf. Section 8.7.3		PASS

8. TEST RESULT

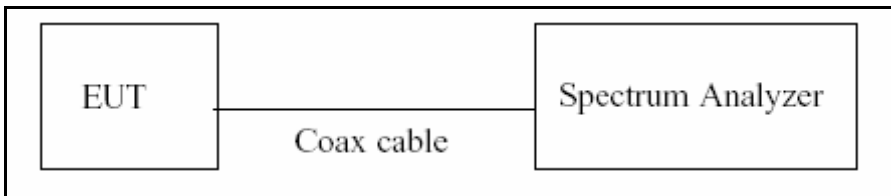
8.1 DUTY CYCLE

■ TEST PROCEDURE

According to KDB 558074(6)b), issued 01/07/2016)

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set $RBW \geq OBW$ if possible; otherwise, set RBW to the largest available value. Set $VBW \geq RBW$. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are $> 50/T$ and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if $T \leq 16.7$ microseconds.)

■ TEST CONFIGURATION



■ TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer. We tested according to the zero-span measurement method, 6.0)b) in KDB 558074(issued 01/07/2016)

The largest available value of RBW is 8 MHz and VBW is 50 MHz. The zero-span method of measuring duty cycle shall not be used if $T \leq 6.25$ microseconds. ($50/6.25 = 8$)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are $> 50/T$.

1. RBW = 8 MHz (the largest available value)
2. VBW = 8 MHz (\geq RBW)
3. SPAN = 0 Hz
4. Detector = Peak
5. Number of points in sweep > 100
6. Trace mode = Clear write
7. Measure T_{total} and T_{on}
8. Calculate Duty Cycle = T_{on} / T_{total} and Duty Cycle Factor = $10 \cdot \log(1/\text{Duty Cycle})$

■ Duty Cycle Factor

Monitoring Port

Mode	Data Rate	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
2.4 GHz Band 802.11b	1	12.420	13.050	0.95172414	0.215
	2	6.300	6.630	0.95022624	0.222
	5.5	2.410	2.530	0.95256917	0.211
	11	1.310	1.370	0.95620438	0.194
2.4 GHz Band 802.11g	6	2.060	2.170	0.94930876	0.226
	9	1.390	1.460	0.95205479	0.213
	12	1.045	1.095	0.95433790	0.203
	18	0.705	0.740	0.95270270	0.210
	24	0.532	0.558	0.95340502	0.207
	36	0.364	0.388	0.93814433	0.277
	48	0.276	0.300	0.92000000	0.362
	54	0.248	0.272	0.91176471	0.401

Service Port

Mode	Data Rate	T _{on} (ms)	T _{total} (ms)	Duty Cycle	Duty Cycle Factor (dB)
b	1 Mbps	12.420	13.050	0.95172414	0.215
	2 Mbps	6.180	6.510	0.94930876	0.226
	5.5 Mbps	2.320	2.440	0.95081967	0.219
	11 Mbps	1.200	1.260	0.95238095	0.212
g	6 Mbs	2.070	2.180	0.94954128	0.225
	9 Mbs	1.380	1.450	0.95172414	0.215
	12 Mbs	1.040	1.090	0.95412844	0.204
	18 Mbs	0.705	0.738	0.95528455	0.199
	24 Mbs	0.531	0.558	0.95161290	0.215
	36 Mbs	0.363	0.387	0.93798450	0.278
	48 Mbs	0.276	0.300	0.92000000	0.362
	54 Mbs	0.248	0.271	0.91512915	0.385
n_20 MHz BW	MCS 0	1.921	2.019	0.95146112	0.216
	MCS 1	0.979	1.025	0.95512195	0.199
	MCS 2	0.664	0.698	0.95128940	0.217
	MCS 3	0.508	0.530	0.95849057	0.184
	MCS 4	0.352	0.376	0.93617021	0.286
	MCS 5	0.272	0.294	0.92517007	0.338
	MCS 6	0.248	0.272	0.91176471	0.401
	MCS 7	0.228	0.250	0.91200000	0.400

Note : Duty Cycle Factor = $10 \cdot \log(1/\text{Duty Cycle})$. where, Duty Cycle = T_{on} / T_{total}

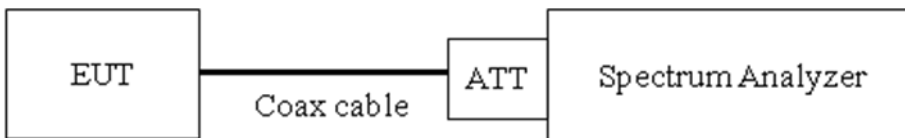
8.2 6dB BANDWIDTH

Test Requirements and limit, §15.247(a)(2)

The bandwidth at 6dB down from the highest in-band spectral density is measured with a spectrum analyzer connected to the receive antenna while the EUT is operating in transmission mode at the appropriate frequencies.

The minimum permissible 6dB bandwidth is 500 kHz.

■ TEST CONFIGURATION



■ TEST PROCEDURE

The transmitter output is connected to the Spectrum Analyzer.

The Spectrum Analyzer is set to (Procedure 8.1 in KDB 558074, issued 01/07/2016)

RBW = 100 kHz

VBW $\geq 3 \times$ RBW

Detector = Peak

Trace mode = max hold

Sweep = auto couple

Allow the trace to stabilize

Note : We tested 6 dB bandwidth using the automatic bandwidth measurement capability of a spectrum analyzer. X dB is set 6 dB.

Monitoring Port Ant.0

TEST RESULTS_Ant.0

Conducted 6dB Bandwidth Measurements for 802.11b

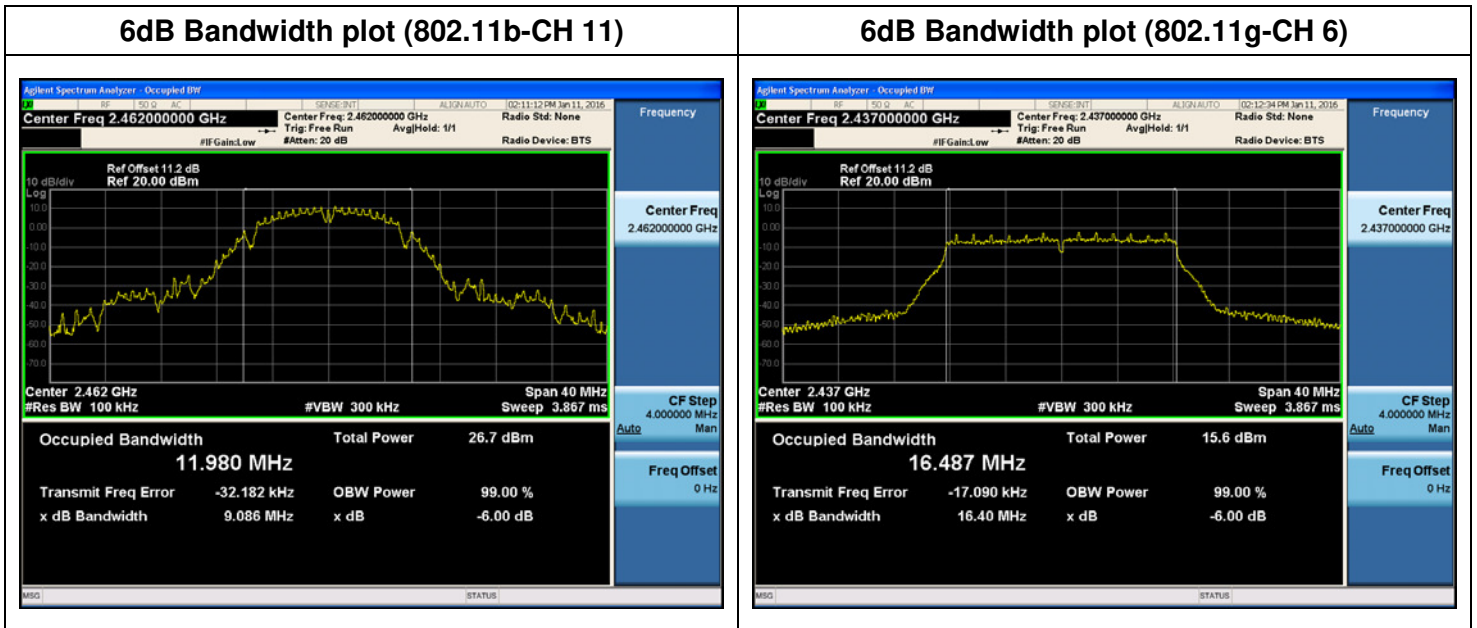
802.11b Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	8.592	0.500	Pass
2437	6	8.609	0.500	Pass
2462	11	9.086	0.500	Pass

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.380	0.500	Pass
2437	6	16.400	0.500	Pass
2462	11	16.350	0.500	Pass

Note : In order to simplify the report, attached plots were only the most wide 6 dB BW channel.

RESULT PLOTS_Ant.0



Monitoring Port Ant.1

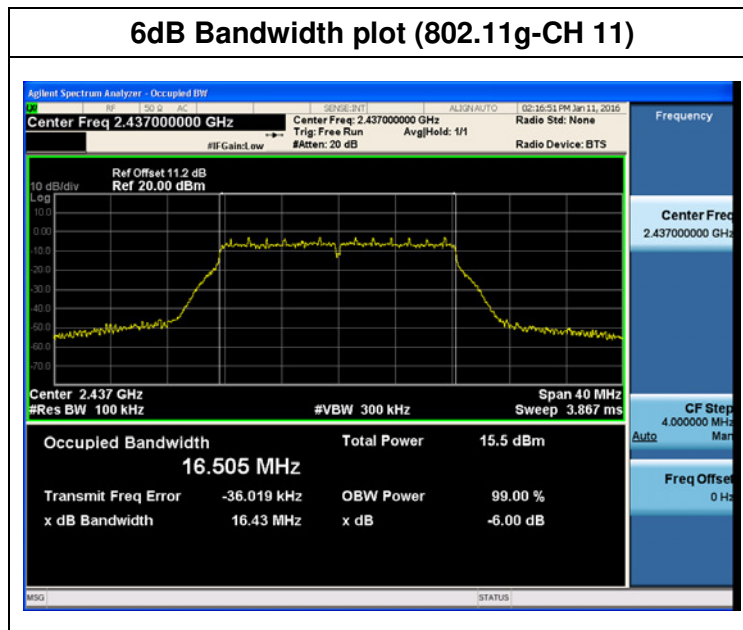
■ TEST RESULTS_Ant.1

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.360	0.500	Pass
2437	6	16.430	0.500	Pass
2462	11	15.780	0.500	Pass

Note : In order to simplify the report, attached plots were only the most wide 6 dB BW channel.

■ RESULT PLOTS_Ant.1



Monitoring Port Ant.2

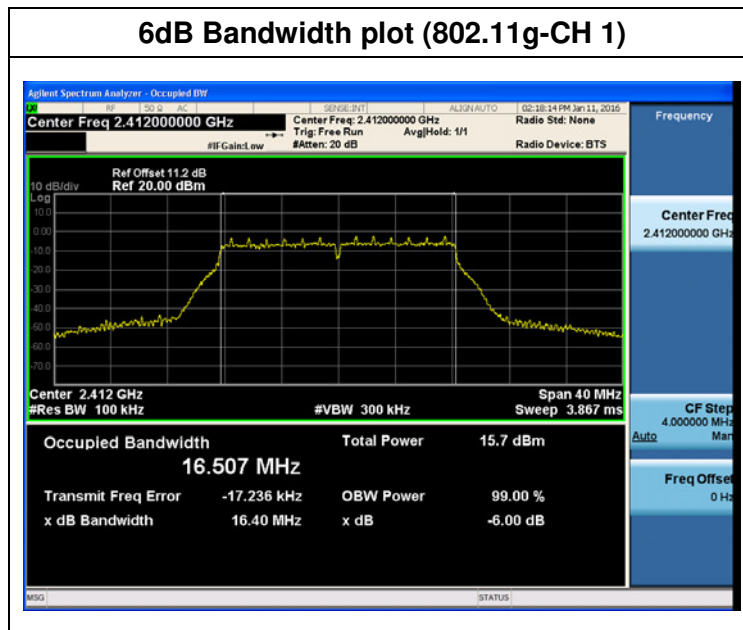
TEST RESULTS_Ant.2

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.400	0.500	Pass
2437	6	16.120	0.500	Pass
2462	11	16.330	0.500	Pass

Note : In order to simplify the report, attached plots were only the most wide 6 dB BW channel.

RESULT PLOTS_Ant.2



Service Port Ant.0

■ TEST RESULTS_Ant.0

Conducted 6dB Bandwidth Measurements for 802.11b

802.11b Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	9.067	0.500	Pass
2437	6	9.094	0.500	Pass
2462	11	8.600	0.500	Pass

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.370	0.500	Pass
2437	6	16.410	0.500	Pass
2462	11	16.090	0.500	Pass

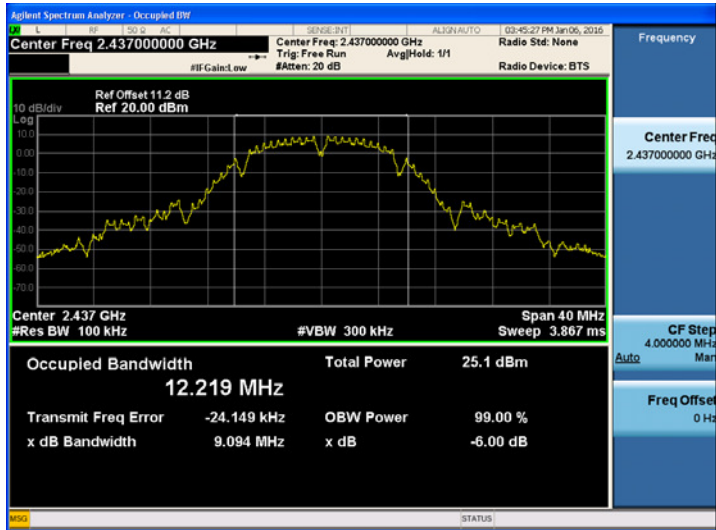
Conducted 6dB Bandwidth Measurements for 802.11n_20 MHz

802.11n Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	17.350	0.500	Pass
2437	6	17.630	0.500	Pass
2462	11	16.400	0.500	Pass

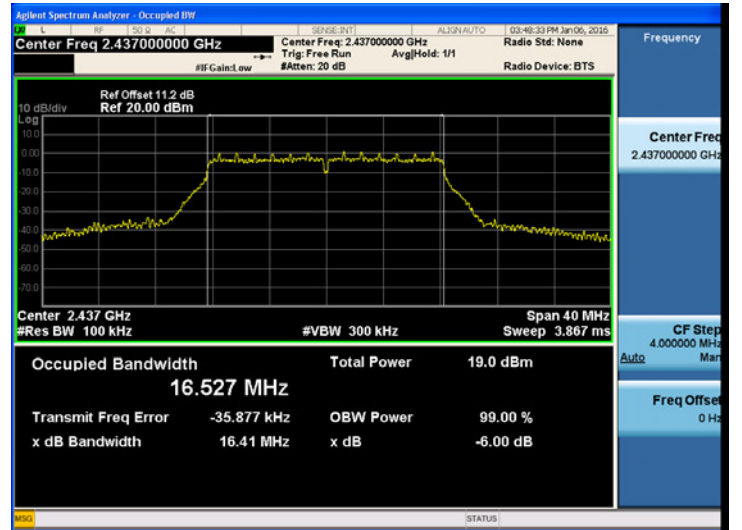
Note : In order to simplify the report, attached plots were only the most wide 6 dB BW channel.

RESULT PLOTS_Ant.0

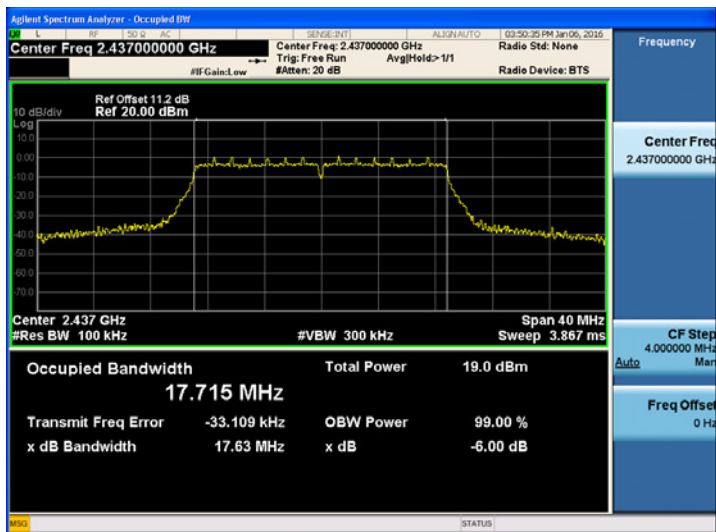
6dB Bandwidth plot (802.11b-CH 6)



6dB Bandwidth plot (802.11g-CH 6)



6dB Bandwidth plot (802.11n-CH 6)



Service Port Ant.1

TEST RESULTS_Ant.1

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.370	0.500	Pass
2437	6	16.420	0.500	Pass
2462	11	15.790	0.500	Pass

Conducted 6dB Bandwidth Measurements for 802.11n_20 MHz

802.11n Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	17.570	0.500	Pass
2437	6	17.650	0.500	Pass
2462	11	16.400	0.500	Pass

Note : In order to simplify the report, attached plots were only the most wide 6 dB BW channel.

RESULT PLOTS_Ant.1

6dB Bandwidth plot (802.11b-CH 6)



6dB Bandwidth plot (802.11n-CH 6)



Service Port Ant.2

TEST RESULTS_Ant.2

Conducted 6dB Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.360	0.500	Pass
2437	6	16.400	0.500	Pass
2462	11	16.050	0.500	Pass

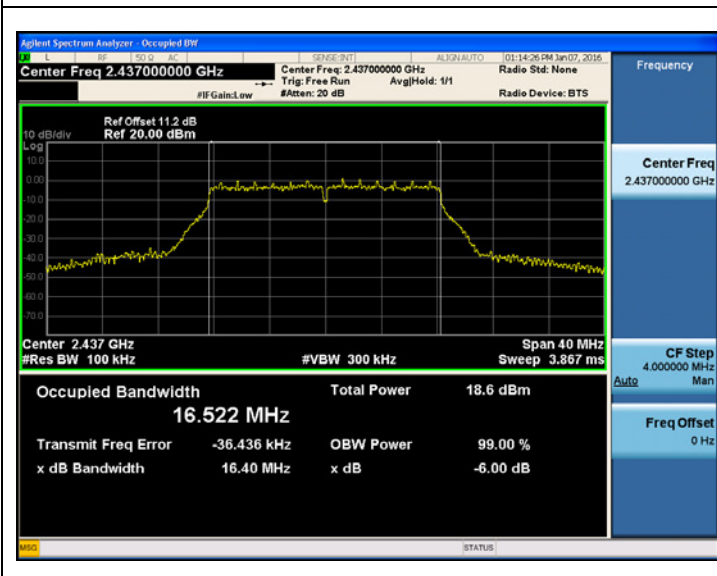
Conducted 6dB Bandwidth Measurements for 802.11n_20 MHz

802.11n Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	17.580	0.500	Pass
2437	6	17.630	0.500	Pass
2462	11	16.390	0.500	Pass

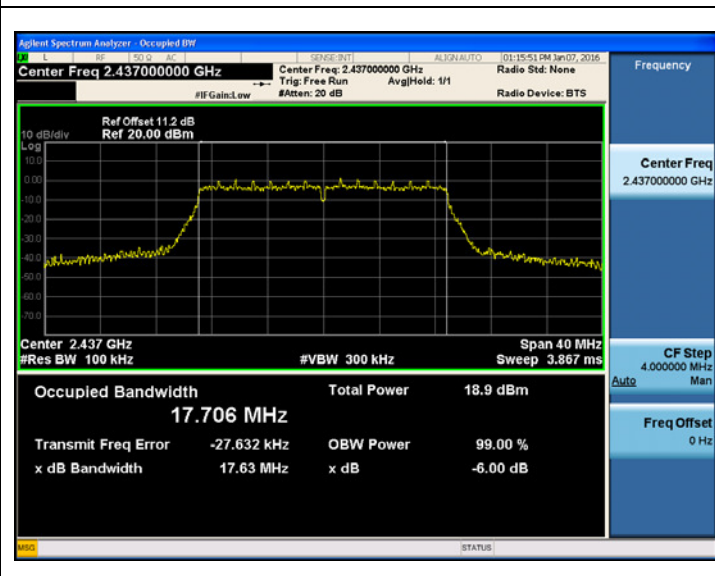
Note : In order to simplify the report, attached plots were only the most wide 6 dB BW channel.

RESULT PLOTS_Ant.2

6dB Bandwidth plot (802.11b-CH 6)



6dB Bandwidth plot (802.11n-CH 6)

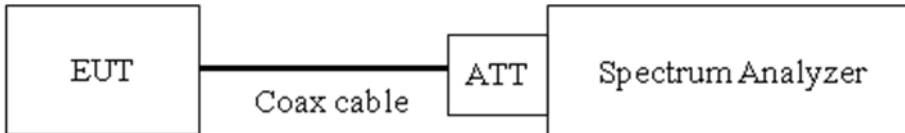


8.3 99% BANDWIDTH

Limit

The 99 % bandwidth is used to determine the conducted power limits.

▣ TEST CONFIGURATION



▣ TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer.

RBW = 1% ~ 5% of the occupied bandwidth

VBW = 3 x RBW

Detector = Peak

Trace mode = max hold

Sweep = auto couple

Allow the trace to stabilize

Note : We tested OBW using the automatic bandwidth measurement capability of a spectrum analyzer.

Monitoring Port Ant.0

■ TEST RESULTS_Ant.0

Conducted 99% Bandwidth Measurements for 802.11b

802.11b Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	11.879
2437	6	11.980
2462	11	11.980

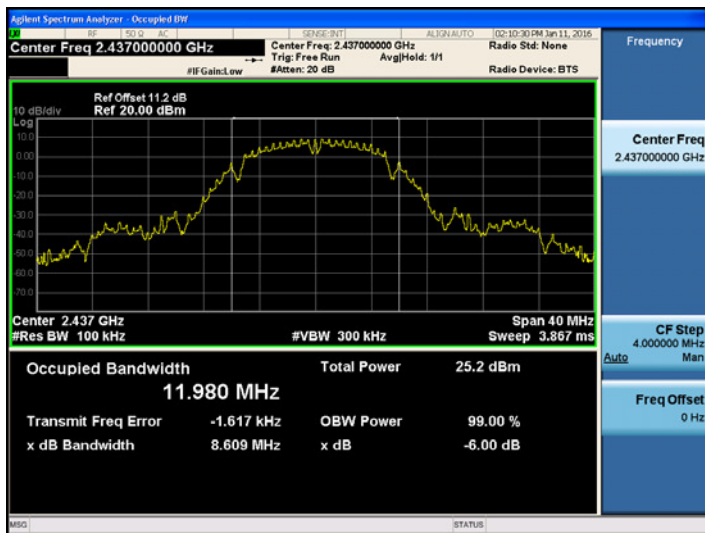
Conducted 99% Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	16.478
2437	6	16.487
2462	11	16.450

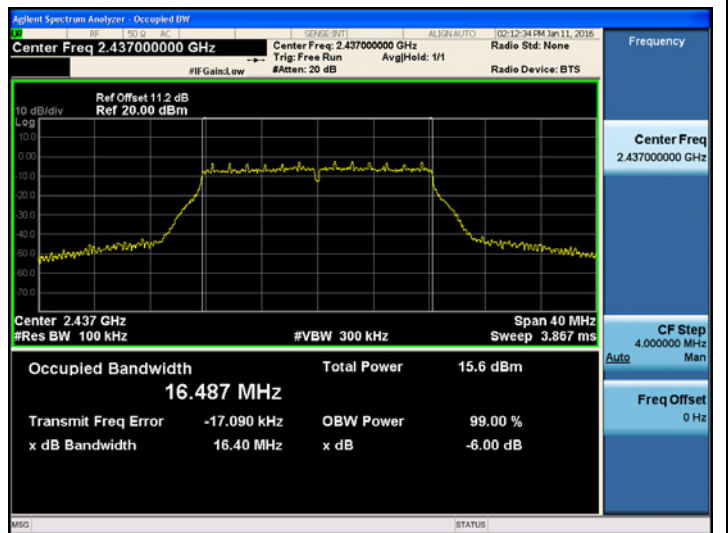
Note : In order to simplify the report, attached plots were only the most wide 99% BW channel.

■ RESULT PLOTS_Ant.0

99% Bandwidth plot (802.11b-CH 6)



99% Bandwidth plot (802.11g-CH 6)



Monitoring Port Ant.2

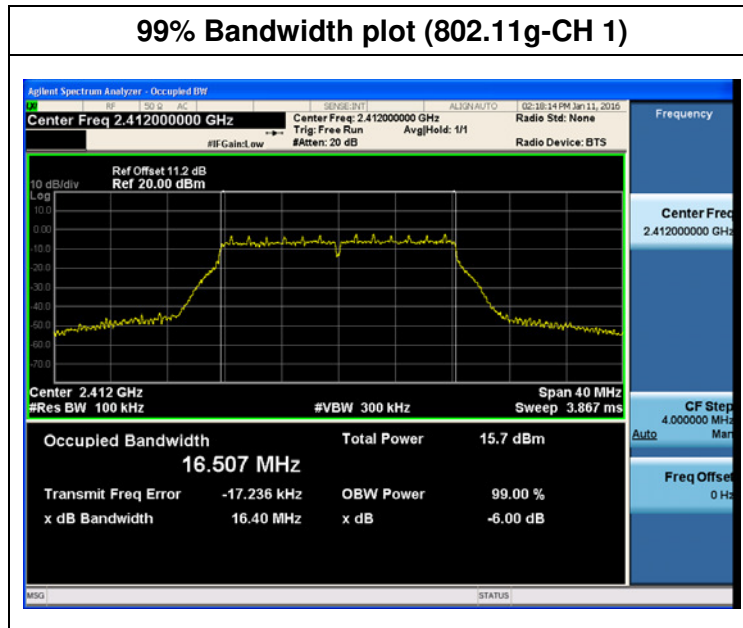
TEST RESULTS_Ant.2

Conducted 99% Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]	Minimum Bandwidth [MHz]	Pass / Fail
Frequency [MHz]	Channel No.			
2412	1	16.507	0.500	Pass
2437	6	16.495	0.500	Pass
2462	11	16.443	0.500	Pass

Note : In order to simplify the report, attached plots were only the most wide 99% BW channel.

RESULT PLOTS_Ant.1



Service Port Ant.0

▣ TEST RESULTS_Ant.0

Conducted 99% Bandwidth Measurements for 802.11b

802.11b Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	11.947
2437	6	12.219
2462	11	11.476

Conducted 99% Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	16.467
2437	6	16.527
2462	11	16.444

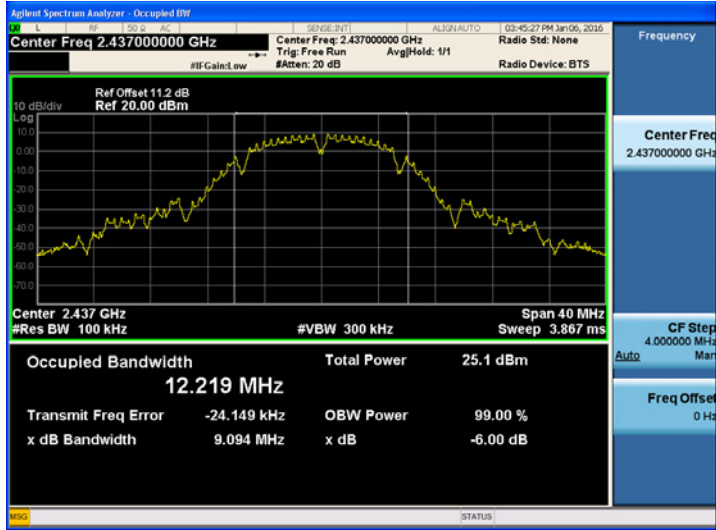
Conducted 99% Bandwidth Measurements for 802.11n_20 MHz

802.11n Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	17.641
2437	6	17.715
2462	11	17.617

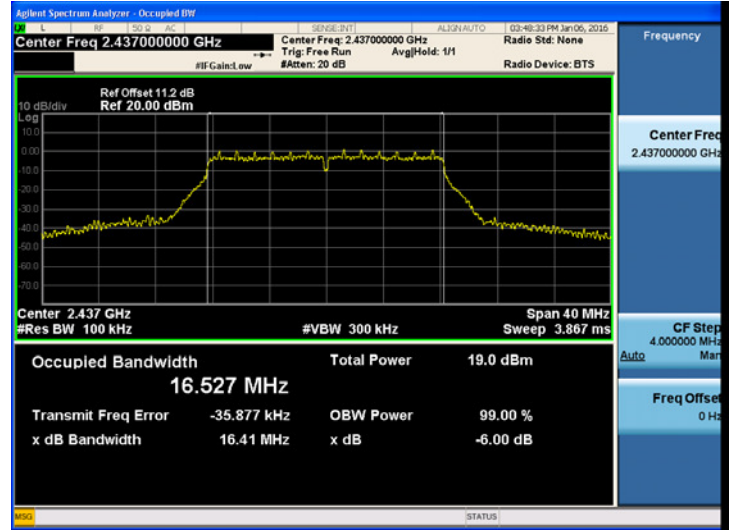
Note : In order to simplify the report, attached plots were only the most wide 99% BW channel.

RESULT PLOTS_Ant.0

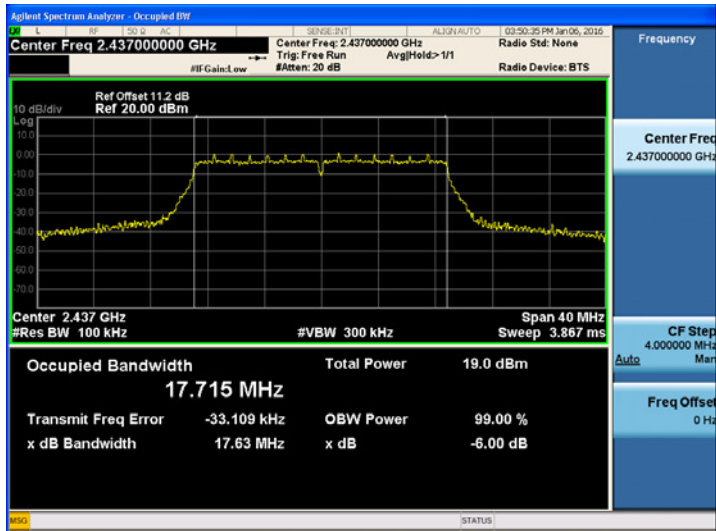
99% Bandwidth plot (802.11b-CH 6)



99% Bandwidth plot (802.11g-CH 6)



99% Bandwidth plot (802.11n-CH 6)



Service Port Ant.1

TEST RESULTS_Ant.1

Conducted 99% Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	16.439
2437	6	16.517
2462	11	16.463

Conducted 99% Measurements for 802.11n_20 MHz

802.11n Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	17.612
2437	6	17.689
2462	11	17.641

Note : In order to simplify the report, attached plots were only the most wide 99% channel.

RESULT PLOTS_Ant.1

99% Bandwidth plot (802.11g-CH 6)



99% Bandwidth plot (802.11n-CH 6)



Service Port Ant.2

TEST RESULTS_Ant.2

Conducted 99% Bandwidth Measurements for 802.11g

802.11g Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	16.480
2437	6	16.522
2462	11	16.443

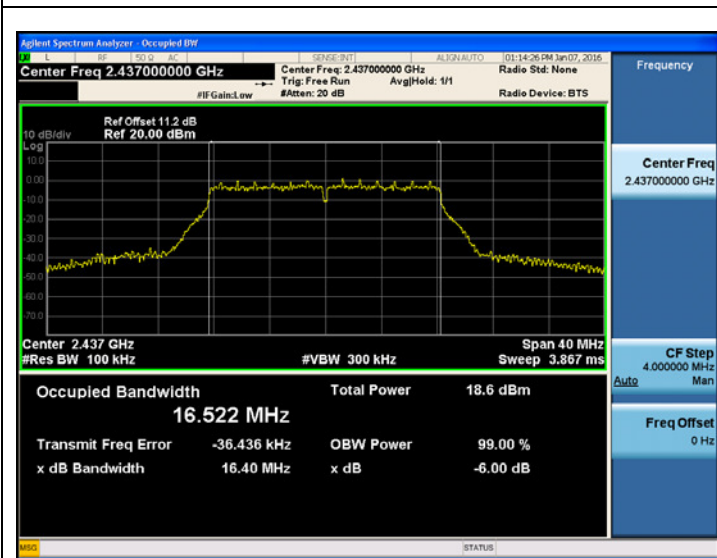
Conducted 99% Bandwidth Measurements for 802.11n_20 MHz

802.11n Mode		Measured Bandwidth [MHz]
Frequency [MHz]	Channel No.	
2412	1	17.643
2437	6	17.706
2462	11	17.620

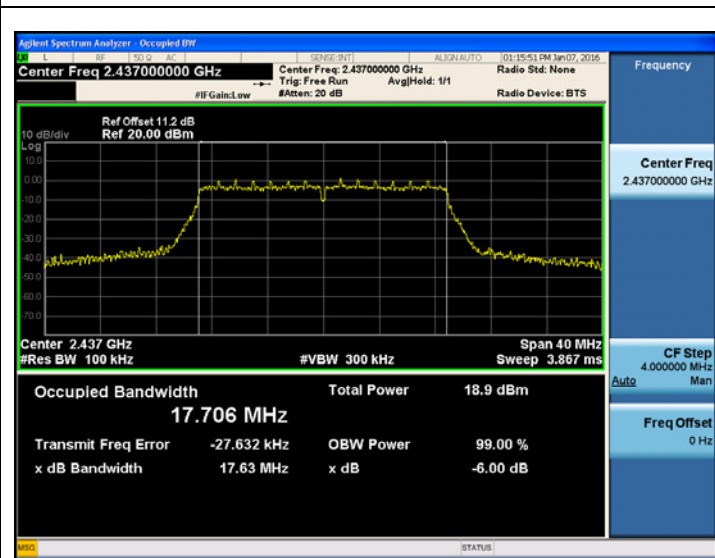
Note : In order to simplify the report, attached plots were only the most wide 99% BW channel.

RESULT PLOTS_Ant.2

99% Bandwidth plot (802.11g-CH 6)



99% Bandwidth plot (802.11n-CH 6)



8.4 OUTPUT POWER(802.11b/g/n)

Test Requirements and limit, §15.247(b)(3) / RSS-247(Issue 1) Section 5.4.4.

The transmitter output is connected to the input of an RF power sensor. Measurement is made using a broadband power meter capable of making peak and average measurements while the EUT is operating at its maximum duty cycle, at maximum power, and at the appropriate frequencies.

The maximum permissible conducted output power is 1 Watt.

■ Limit(CDD)

Operating Mode		Mode	Antenna	Ant. Gain(dBi)	Limit(dBm)
Monitoring	SISO	802.11b/g	Ant.0	6.38	29.62
		802.11g	Ant.1	5.78	30.00
			Ant.2	5.72	30.00
	MIMO(3 TX)	802.11g	Ant.0 & 1 & 2	10.74	25.26
Service	SISO	802.11b/g/n	Ant.0	4.11	30.00
		802.11g/n	Ant.1	2.74	30.00
			Ant.2	3.01	30.00
	MIMO(2 TX)	802.11g/n	Ant.0 & 1	6.46	29.54
	MIMO(3 TX)	802.11g/n	Ant.0 & 1 & 2	8.08	27.92

Note : 1. If all antenna gains are not equal,

$$\text{Directional gain} = 10 \cdot \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N] \text{ dBi (802.11b/g/n_HT20)}$$

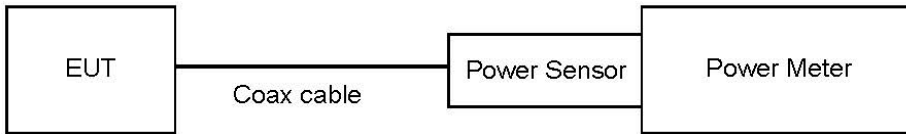
(according to KDB662911 D01 v02r01)

2. Limit is calculated by antenna gain.

1. Maximum EIRP(for IC) : 4 W

Note : The antenna gain is lower than 6 dBi. Therefore, if conducted power is pass, EIRP is also pass. So, we attached only conducted power table.

■ **TEST CONFIGURATION(20 MHz BW)**



■ **TEST PROCEDURE(20 MHz BW)**

- Peak Power (Procedure 9.1.2 in KDB 558074, issued 01/07/2016)
 1. Measure the peak power of the transmitter.
- Average Power (Procedure 9.2.3.1 in KDB 558074, issued 01/07/2016)
 1. Measure the duty cycle.
 2. Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.
 3. Add $10 \log (1/x)$, where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times.

Note :

1. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB. So, 10.7 dB is offset for 2.4 GHz Band.

Actual value of loss for the attenuator and cable combination is below table.

Band	Frequency(MHz)	Loss(dB)
2.4 GHz	2412	10.65
	2437	10.65
	2462	10.66

(Actual value of loss for the attenuator and cable combination)

Monitoring Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.0

Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	1 Mbps	20.30	29.62
		2 Mbps	21.81	29.62
		5.5 Mbps	22.09	29.62
		11 Mbps	23.31	29.62
2437	6	1 Mbps	22.94	29.62
		2 Mbps	22.88	29.62
		5.5 Mbps	22.63	29.62
		11 Mbps	23.72	29.62
2462	11	1 Mbps	21.62	29.62
		2 Mbps	22.41	29.62
		5.5 Mbps	22.41	29.62
		11 Mbps	25.12	29.62

Monitoring Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.0

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	19.14	29.62
		9 Mbps	19.10	29.62
		12 Mbps	18.93	29.62
		18 Mbps	19.00	29.62
		24 Mbps	19.10	29.62
		36 Mbps	19.23	29.62
		48 Mbps	19.33	29.62
		54 Mbps	19.29	29.62
2437	6	6 Mbps	19.25	29.62
		9 Mbps	19.03	29.62
		12 Mbps	18.93	29.62
		18 Mbps	18.98	29.62
		24 Mbps	19.20	29.62
		36 Mbps	19.33	29.62
		48 Mbps	19.38	29.62
		54 Mbps	19.31	29.62
2462	11	6 Mbps	19.30	29.62
		9 Mbps	19.29	29.62
		12 Mbps	18.99	29.62
		18 Mbps	19.08	29.62
		24 Mbps	19.29	29.62
		36 Mbps	19.27	29.62
		48 Mbps	19.44	29.62
		54 Mbps	19.47	29.62

Monitoring Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.1

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	18.81	30
		9 Mbps	18.69	30
		12 Mbps	18.53	30
		18 Mbps	18.58	30
		24 Mbps	18.74	30
		36 Mbps	18.88	30
		48 Mbps	18.86	30
		54 Mbps	18.92	30
2437	6	6 Mbps	18.78	30
		9 Mbps	18.69	30
		12 Mbps	18.51	30
		18 Mbps	18.45	30
		24 Mbps	18.91	30
		36 Mbps	18.80	30
		48 Mbps	18.98	30
		54 Mbps	18.80	30
2462	11	6 Mbps	18.61	30
		9 Mbps	18.73	30
		12 Mbps	18.51	30
		18 Mbps	18.45	30
		24 Mbps	18.72	30
		36 Mbps	18.93	30
		48 Mbps	18.96	30
		54 Mbps	18.87	30

Monitoring Port

TEST RESULTS-Peak

TEST RESULTS-Ant.2

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	19.52	30
		9 Mbps	19.29	30
		12 Mbps	19.18	30
		18 Mbps	19.19	30
		24 Mbps	19.53	30
		36 Mbps	19.63	30
		48 Mbps	19.59	30
		54 Mbps	19.62	30
2437	6	6 Mbps	19.51	30
		9 Mbps	19.43	30
		12 Mbps	19.09	30
		18 Mbps	19.19	30
		24 Mbps	19.39	30
		36 Mbps	19.52	30
		48 Mbps	19.57	30
		54 Mbps	19.50	30
2462	11	6 Mbps	19.48	30
		9 Mbps	19.43	30
		12 Mbps	19.49	30
		18 Mbps	19.31	30
		24 Mbps	19.67	30
		36 Mbps	19.80	30
		48 Mbps	19.69	30
		54 Mbps	19.62	30

Monitoring Port

- TEST RESULTS-Peak
- TEST RESULTS_ Sum Data of Ant.0, Ant.1 and Ant.2

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Sum Power of Ant.0, 1 & 2 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	23.93	25.26
		9 Mbps	23.80	25.26
		12 Mbps	23.66	25.26
		18 Mbps	23.70	25.26
		24 Mbps	23.90	25.26
		36 Mbps	24.02	25.26
		48 Mbps	24.04	25.26
		54 Mbps	24.05	25.26
2437	6	6 Mbps	23.96	25.26
		9 Mbps	23.83	25.26
		12 Mbps	23.62	25.26
		18 Mbps	23.65	25.26
		24 Mbps	23.94	25.26
		36 Mbps	23.99	25.26
		48 Mbps	24.08	25.26
		54 Mbps	23.98	25.26
2462	11	6 Mbps	23.91	25.26
		9 Mbps	23.93	25.26
		12 Mbps	23.78	25.26
		18 Mbps	23.73	25.26
		24 Mbps	24.01	25.26
		36 Mbps	24.11	25.26
		48 Mbps	24.14	25.26
		54 Mbps	24.10	25.26

Service Port

TEST RESULTS-Peak

TEST RESULTS-Ant.0

Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	1 Mbps	18.37	30
		2 Mbps	19.13	30
		5.5 Mbps	20.74	30
		11 Mbps	22.56	30
2437	6	1 Mbps	18.36	30
		2 Mbps	19.34	30
		5.5 Mbps	20.85	30
		11 Mbps	22.65	30
2462	11	1 Mbps	17.37	30
		2 Mbps	18.12	30
		5.5 Mbps	19.62	30
		11 Mbps	21.49	30

Service Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.0

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	19.24	30
		9 Mbps	19.18	30
		12 Mbps	18.98	30
		18 Mbps	19.08	30
		24 Mbps	19.12	30
		36 Mbps	19.27	30
		48 Mbps	19.28	30
		54 Mbps	19.46	30
2437	6	6 Mbps	19.49	30
		9 Mbps	19.15	30
		12 Mbps	19.12	30
		18 Mbps	19.08	30
		24 Mbps	19.31	30
		36 Mbps	19.34	30
		48 Mbps	19.41	30
		54 Mbps	19.36	30
2462	11	6 Mbps	19.40	30
		9 Mbps	19.31	30
		12 Mbps	19.22	30
		18 Mbps	19.31	30
		24 Mbps	19.41	30
		36 Mbps	19.50	30
		48 Mbps	19.56	30
		54 Mbps	19.48	30

Service Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.1

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	18.92	30
		9 Mbps	18.78	30
		12 Mbps	18.58	30
		18 Mbps	18.68	30
		24 Mbps	18.88	30
		36 Mbps	18.97	30
		48 Mbps	18.93	30
		54 Mbps	18.89	30
2437	6	6 Mbps	18.81	30
		9 Mbps	18.70	30
		12 Mbps	18.52	30
		18 Mbps	18.64	30
		24 Mbps	18.86	30
		36 Mbps	18.87	30
		48 Mbps	18.98	30
		54 Mbps	18.98	30
2462	11	6 Mbps	18.85	30
		9 Mbps	18.75	30
		12 Mbps	18.59	30
		18 Mbps	18.65	30
		24 Mbps	18.81	30
		36 Mbps	18.95	30
		48 Mbps	18.97	30
		54 Mbps	18.96	30

Service Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.2

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	19.08	30
		9 Mbps	19.02	30
		12 Mbps	18.89	30
		18 Mbps	18.90	30
		24 Mbps	19.11	30
		36 Mbps	19.23	30
		48 Mbps	19.29	30
		54 Mbps	19.27	30
2437	6	6 Mbps	19.13	30
		9 Mbps	19.03	30
		12 Mbps	18.89	30
		18 Mbps	18.97	30
		24 Mbps	19.19	30
		36 Mbps	19.27	30
		48 Mbps	19.35	30
		54 Mbps	19.32	30
2462	11	6 Mbps	19.14	30
		9 Mbps	18.99	30
		12 Mbps	18.95	30
		18 Mbps	18.88	30
		24 Mbps	19.09	30
		36 Mbps	19.34	30
		48 Mbps	19.39	30
		54 Mbps	19.32	30

Service Port

- TEST RESULTS-Peak
- TEST RESULTS_ Sum Data of Ant.0 and Ant.1

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Sum Power of Ant.0 & 1 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	22.09	29.54
		9 Mbps	21.99	29.54
		12 Mbps	21.79	29.54
		18 Mbps	21.89	29.54
		24 Mbps	22.01	29.54
		36 Mbps	22.13	29.54
		48 Mbps	22.12	29.54
		54 Mbps	22.19	29.54
2437	6	6 Mbps	22.17	29.54
		9 Mbps	21.94	29.54
		12 Mbps	21.84	29.54
		18 Mbps	21.87	29.54
		24 Mbps	22.10	29.54
		36 Mbps	22.12	29.54
		48 Mbps	22.21	29.54
		54 Mbps	22.18	29.54
2462	11	6 Mbps	22.14	29.54
		9 Mbps	22.04	29.54
		12 Mbps	21.92	29.54
		18 Mbps	22.00	29.54
		24 Mbps	22.13	29.54
		36 Mbps	22.24	29.54
		48 Mbps	22.28	29.54
		54 Mbps	22.23	29.54

Service Port

TEST RESULTS-Peak

TEST RESULTS_ Sum Data of Ant.0, Ant.1 and Ant.2

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Sum Power of Ant.0, 1 & 2 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	23.85	27.92
		9 Mbps	23.77	27.92
		12 Mbps	23.59	27.92
		18 Mbps	23.66	27.92
		24 Mbps	23.81	27.92
		36 Mbps	23.93	27.92
		48 Mbps	23.94	27.92
		54 Mbps	23.98	27.92
2437	6	6 Mbps	23.92	27.92
		9 Mbps	23.73	27.92
		12 Mbps	23.62	27.92
		18 Mbps	23.67	27.92
		24 Mbps	23.89	27.92
		36 Mbps	23.93	27.92
		48 Mbps	24.02	27.92
		54 Mbps	23.99	27.92
2462	11	6 Mbps	23.90	27.92
		9 Mbps	23.79	27.92
		12 Mbps	23.70	27.92
		18 Mbps	23.72	27.92
		24 Mbps	23.88	27.92
		36 Mbps	24.04	27.92
		48 Mbps	24.08	27.92
		54 Mbps	24.03	27.92

Service Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.0

Conducted Output Power Measurements (802.11n Mode)_20 MHz

802.11n Mode		MCS Index	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	0	19.54	30
		1	19.49	30
		2	19.46	30
		3	20.14	30
		4	20.09	30
		5	20.16	30
		6	19.90	30
		7	20.01	30
2437	6	0	19.27	30
		1	19.18	30
		2	19.28	30
		3	19.75	30
		4	19.77	30
		5	19.78	30
		6	19.86	30
		7	19.84	30
2462	11	0	19.26	30
		1	19.02	30
		2	19.10	30
		3	19.48	30
		4	19.43	30
		5	19.71	30
		6	19.78	30
		7	19.76	30

Service Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.1

Conducted Output Power Measurements (802.11n Mode)_20 MHz

802.11n Mode		MCS Index	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	0	18.77	30
		1	18.78	30
		2	18.60	30
		3	19.26	30
		4	19.31	30
		5	19.28	30
		6	19.22	30
		7	19.32	30
2437	6	0	18.86	30
		1	18.72	30
		2	18.85	30
		3	19.26	30
		4	19.34	30
		5	19.42	30
		6	19.41	30
		7	19.40	30
2462	11	0	18.80	30
		1	18.76	30
		2	18.72	30
		3	19.22	30
		4	19.03	30
		5	19.36	30
		6	19.28	30
		7	19.09	30

Service Port

- TEST RESULTS-Peak
- TEST RESULTS-Ant.2

Conducted Output Power Measurements (802.11n Mode)_20 MHz

802.11n Mode		MCS Index	Measured Power(dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	0	19.02	30
		1	18.94	30
		2	19.06	30
		3	19.60	30
		4	19.55	30
		5	19.63	30
		6	19.65	30
		7	19.57	30
2437	6	0	19.23	30
		1	19.11	30
		2	19.08	30
		3	19.48	30
		4	19.49	30
		5	19.76	30
		6	19.70	30
		7	19.58	30
2462	11	0	19.01	30
		1	18.92	30
		2	18.91	30
		3	19.42	30
		4	19.43	30
		5	19.57	30
		6	19.60	30
		7	19.52	30

Service Port

- TEST RESULTS-Peak
- TEST RESULTS- _ Sum Data of Ant.0 and Ant.1

Conducted Output Power Measurements (802.11n Mode)_20 MHz

802.11n Mode		MCS Index	Sum Power of Ant.0 & 1 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	0	22.17	29.54
		1	22.15	29.54
		2	22.05	29.54
		3	22.72	29.54
		4	22.72	29.54
		5	22.74	29.54
		6	22.58	29.54
		7	22.68	29.54
2437	6	0	22.08	29.54
		1	21.96	29.54
		2	22.08	29.54
		3	22.52	29.54
		4	22.57	29.54
		5	22.61	29.54
		6	22.65	29.54
		7	22.63	29.54
2462	11	0	22.04	29.54
		1	21.90	29.54
		2	21.92	29.54
		3	22.36	29.54
		4	22.24	29.54
		5	22.55	29.54
		6	22.54	29.54
		7	22.44	29.54

Service Port

TEST RESULTS-Peak

TEST RESULTS-_ Sum Data of Ant.0, Ant.1 and Ant.2

Conducted Output Power Measurements (802.11n Mode)_20 MHz

802.11n Mode		MCS Index	Sum Power of Ant.0, 1 & 2 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	0	23.89	27.92
		1	23.85	27.92
		2	23.82	27.92
		3	24.45	27.92
		4	24.43	27.92
		5	24.47	27.92
		6	24.37	27.92
		7	24.41	27.92
2437	6	0	23.89	27.92
		1	23.78	27.92
		2	23.84	27.92
		3	24.27	27.92
		4	24.31	27.92
		5	24.43	27.92
		6	24.43	27.92
		7	24.38	27.92
2462	11	0	23.80	27.92
		1	23.67	27.92
		2	23.68	27.92
		3	24.15	27.92
		4	24.07	27.92
		5	24.32	27.92
		6	24.33	27.92
		7	24.23	27.92

Monitoring Port

TEST RESULTS-Average

TEST RESULTS_Ant.0

Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	1 Mbps	17.39	0.215	17.60	29.62
		2 Mbps	17.65	0.222	17.87	29.62
		5.5 Mbps	17.53	0.211	17.74	29.62
		11 Mbps	16.96	0.194	17.15	29.62
2437	6	1 Mbps	18.56	0.215	18.77	29.62
		2 Mbps	18.78	0.222	19.00	29.62
		5.5 Mbps	17.29	0.211	17.50	29.62
		11 Mbps	17.84	0.194	18.03	29.62
2462	11	1 Mbps	18.09	0.215	18.30	29.62
		2 Mbps	18.41	0.222	18.64	29.62
		5.5 Mbps	17.66	0.211	17.87	29.62
		11 Mbps	18.42	0.194	18.61	29.62

Monitoring Port

TEST RESULTS-Average

TEST RESULTS_Ant.0

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	6 Mbps	11.12	0.226	11.35	29.62
		9 Mbps	11.18	0.213	11.39	29.62
		12 Mbps	11.19	0.203	11.40	29.62
		18 Mbps	11.20	0.210	11.41	29.62
		24 Mbps	11.10	0.207	11.31	29.62
		36 Mbps	11.02	0.277	11.30	29.62
		48 Mbps	11.14	0.362	11.50	29.62
		54 Mbps	11.02	0.401	11.42	29.62
2437	6	6 Mbps	11.22	0.226	11.45	29.62
		9 Mbps	11.09	0.213	11.30	29.62
		12 Mbps	11.21	0.203	11.41	29.62
		18 Mbps	11.26	0.210	11.47	29.62
		24 Mbps	11.18	0.207	11.39	29.62
		36 Mbps	11.15	0.277	11.43	29.62
		48 Mbps	11.17	0.362	11.54	29.62
		54 Mbps	11.06	0.401	11.46	29.62
2462	11	6 Mbps	11.32	0.226	11.55	29.62
		9 Mbps	11.35	0.213	11.57	29.62
		12 Mbps	11.27	0.203	11.47	29.62
		18 Mbps	11.33	0.210	11.54	29.62
		24 Mbps	11.23	0.207	11.44	29.62
		36 Mbps	11.19	0.277	11.47	29.62
		48 Mbps	11.21	0.362	11.58	29.62
		54 Mbps	11.22	0.401	11.62	29.62

Monitoring Port

- TEST RESULTS-Average
- TEST RESULTS_Ant.1

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	6 Mbps	10.78	0.215	10.99	30
		9 Mbps	10.75	0.215	10.97	30
		12 Mbps	10.76	0.203	10.96	30
		18 Mbps	10.79	0.210	11.00	30
		24 Mbps	10.75	0.239	10.99	30
		36 Mbps	10.73	0.255	10.98	30
		48 Mbps	10.62	0.362	10.98	30
		54 Mbps	10.64	0.369	11.01	30
2437	6	6 Mbps	10.77	0.215	10.98	30
		9 Mbps	10.84	0.215	11.05	30
		12 Mbps	10.78	0.203	10.99	30
		18 Mbps	10.70	0.210	10.91	30
		24 Mbps	10.85	0.239	11.09	30
		36 Mbps	10.56	0.255	10.81	30
		48 Mbps	10.77	0.362	11.13	30
		54 Mbps	10.49	0.369	10.86	30
2462	11	6 Mbps	10.79	0.215	11.01	30
		9 Mbps	10.82	0.215	11.04	30
		12 Mbps	10.82	0.203	11.02	30
		18 Mbps	10.83	0.210	11.04	30
		24 Mbps	10.79	0.239	11.03	30
		36 Mbps	10.80	0.255	11.06	30
		48 Mbps	10.81	0.362	11.17	30
		54 Mbps	10.70	0.369	11.07	30

Monitoring Port

- TEST RESULTS-Average
- TEST RESULTS_Ant.2

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	6 Mbps	11.52	0.205	11.73	30
		9 Mbps	11.33	0.205	11.53	30
		12 Mbps	11.51	0.204	11.71	30
		18 Mbps	11.41	0.205	11.62	30
		24 Mbps	11.50	0.207	11.71	30
		36 Mbps	11.44	0.277	11.72	30
		48 Mbps	11.34	0.362	11.70	30
		54 Mbps	11.35	0.401	11.75	30
2437	6	6 Mbps	11.52	0.205	11.73	30
		9 Mbps	11.54	0.205	11.75	30
		12 Mbps	11.51	0.204	11.72	30
		18 Mbps	11.45	0.205	11.66	30
		24 Mbps	11.40	0.207	11.61	30
		36 Mbps	11.35	0.277	11.63	30
		48 Mbps	11.39	0.362	11.75	30
		54 Mbps	11.27	0.401	11.68	30
2462	11	6 Mbps	11.47	0.205	11.68	30
		9 Mbps	11.53	0.205	11.74	30
		12 Mbps	11.72	0.204	11.93	30
		18 Mbps	11.70	0.205	11.91	30
		24 Mbps	11.64	0.207	11.85	30
		36 Mbps	11.61	0.277	11.89	30
		48 Mbps	11.62	0.362	11.98	30
		54 Mbps	11.54	0.401	11.94	30

Monitoring Port

TEST RESULTS-Average

TEST RESULTS_ Sum Data of Ant.0, Ant.1 and Ant.2

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Sum Power of Ant.0, 1 & 2 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	16.13	25.26
		9 Mbps	16.07	25.26
		12 Mbps	16.13	25.26
		18 Mbps	16.12	25.26
		24 Mbps	16.11	25.26
		36 Mbps	16.11	25.26
		48 Mbps	16.17	25.26
		54 Mbps	16.17	25.26
2437	6	6 Mbps	16.16	25.26
		9 Mbps	16.14	25.26
		12 Mbps	16.15	25.26
		18 Mbps	16.12	25.26
		24 Mbps	16.14	25.26
		36 Mbps	16.07	25.26
		48 Mbps	16.25	25.26
		54 Mbps	16.11	25.26
2462	11	6 Mbps	16.19	25.26
		9 Mbps	16.23	25.26
		12 Mbps	16.25	25.26
		18 Mbps	16.28	25.26
		24 Mbps	16.22	25.26
		36 Mbps	16.25	25.26
		48 Mbps	16.35	25.26
		54 Mbps	16.32	25.26

Service Port

TEST RESULTS-Average

TEST RESULTS_Ant.0

Conducted Output Power Measurements (802.11b Mode)

802.11b Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	1 Mbps	15.39	0.215	15.60	30
		2 Mbps	15.92	0.226	16.15	30
		5.5 Mbps	16.05	0.219	16.27	30
		11 Mbps	15.97	0.212	16.18	30
2437	6	1 Mbps	15.41	0.215	15.62	30
		2 Mbps	16.06	0.226	16.29	30
		5.5 Mbps	16.15	0.219	16.37	30
		11 Mbps	16.03	0.212	16.24	30
2462	11	1 Mbps	14.48	0.215	14.69	30
		2 Mbps	15.20	0.226	15.43	30
		5.5 Mbps	15.07	0.219	15.29	30
		11 Mbps	14.99	0.212	15.20	30

Service Port

TEST RESULTS-Average

TEST RESULTS_Ant.0

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	6 Mbps	11.26	0.225	11.49	30
		9 Mbps	11.24	0.215	11.45	30
		12 Mbps	11.29	0.204	11.49	30
		18 Mbps	11.33	0.199	11.52	30
		24 Mbps	11.22	0.215	11.44	30
		36 Mbps	11.23	0.278	11.51	30
		48 Mbps	11.25	0.362	11.61	30
		54 Mbps	11.10	0.385	11.49	30
2437	6	6 Mbps	11.36	0.225	11.58	30
		9 Mbps	11.19	0.215	11.40	30
		12 Mbps	11.20	0.204	11.40	30
		18 Mbps	11.27	0.199	11.47	30
		24 Mbps	11.18	0.215	11.40	30
		36 Mbps	11.18	0.278	11.46	30
		48 Mbps	11.26	0.362	11.62	30
		54 Mbps	11.05	0.385	11.44	30
2462	11	6 Mbps	11.38	0.225	11.60	30
		9 Mbps	11.37	0.215	11.58	30
		12 Mbps	11.42	0.204	11.62	30
		18 Mbps	11.45	0.199	11.65	30
		24 Mbps	11.40	0.215	11.62	30
		36 Mbps	11.38	0.278	11.66	30
		48 Mbps	11.40	0.362	11.76	30
		54 Mbps	11.32	0.385	11.71	30

Service Port

- TEST RESULTS-Average
- TEST RESULTS_Ant.1

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	6 Mbps	10.70	0.221	10.92	30
		9 Mbps	10.81	0.229	11.04	30
		12 Mbps	10.86	0.204	11.07	30
		18 Mbps	10.85	0.199	11.05	30
		24 Mbps	10.82	0.215	11.04	30
		36 Mbps	10.78	0.278	11.06	30
		48 Mbps	10.70	0.348	11.05	30
		54 Mbps	10.59	0.385	10.97	30
2437	6	6 Mbps	10.81	0.221	11.03	30
		9 Mbps	10.81	0.229	11.04	30
		12 Mbps	10.80	0.204	11.00	30
		18 Mbps	10.84	0.199	11.04	30
		24 Mbps	10.79	0.215	11.00	30
		36 Mbps	10.72	0.278	11.00	30
		48 Mbps	10.79	0.348	11.14	30
		54 Mbps	10.67	0.385	11.06	30
2462	11	6 Mbps	10.99	0.221	11.21	30
		9 Mbps	10.90	0.229	11.13	30
		12 Mbps	10.95	0.204	11.16	30
		18 Mbps	10.97	0.199	11.16	30
		24 Mbps	10.91	0.215	11.12	30
		36 Mbps	10.87	0.278	11.14	30
		48 Mbps	10.87	0.348	11.22	30
		54 Mbps	10.78	0.385	11.17	30

Service Port

- TEST RESULTS-Average
- TEST RESULTS_Ant.2

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	6 Mbps	11.15	0.224	11.38	30
		9 Mbps	11.08	0.205	11.29	30
		12 Mbps	11.14	0.235	11.38	30
		18 Mbps	11.17	0.217	11.39	30
		24 Mbps	11.09	0.207	11.30	30
		36 Mbps	11.08	0.277	11.36	30
		48 Mbps	11.06	0.333	11.40	30
		54 Mbps	10.98	0.401	11.38	30
2437	6	6 Mbps	11.16	0.224	11.39	30
		9 Mbps	11.13	0.205	11.33	30
		12 Mbps	11.15	0.235	11.39	30
		18 Mbps	11.20	0.217	11.42	30
		24 Mbps	11.19	0.207	11.40	30
		36 Mbps	11.13	0.277	11.40	30
		48 Mbps	11.16	0.333	11.49	30
		54 Mbps	11.03	0.401	11.43	30
2462	11	6 Mbps	11.24	0.224	11.47	30
		9 Mbps	11.30	0.205	11.51	30
		12 Mbps	11.26	0.235	11.50	30
		18 Mbps	11.17	0.217	11.39	30
		24 Mbps	11.13	0.207	11.34	30
		36 Mbps	11.21	0.277	11.49	30
		48 Mbps	11.23	0.333	11.57	30
		54 Mbps	11.12	0.401	11.52	30

Service Port

- TEST RESULTS-Average
- TEST RESULTS_ Sum Data of Ant.0 and Ant.1

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Sum Power of Ant.0 & 1 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	14.22	29.54
		9 Mbps	14.26	29.54
		12 Mbps	14.29	29.54
		18 Mbps	14.30	29.54
		24 Mbps	14.25	29.54
		36 Mbps	14.30	29.54
		48 Mbps	14.34	29.54
		54 Mbps	14.24	29.54
2437	6	6 Mbps	14.32	29.54
		9 Mbps	14.23	29.54
		12 Mbps	14.21	29.54
		18 Mbps	14.27	29.54
		24 Mbps	14.21	29.54
		36 Mbps	14.24	29.54
		48 Mbps	14.39	29.54
		54 Mbps	14.26	29.54
2462	11	6 Mbps	14.42	29.54
		9 Mbps	14.37	29.54
		12 Mbps	14.40	29.54
		18 Mbps	14.42	29.54
		24 Mbps	14.38	29.54
		36 Mbps	14.41	29.54
		48 Mbps	14.50	29.54
		54 Mbps	14.45	29.54

Service Port

TEST RESULTS-Average

TEST RESULTS_ Sum Data of Ant.0, Ant.1 and Ant.2

Conducted Output Power Measurements (802.11g Mode)

802.11g Mode		Rate (Mbps)	Sum Power of Ant.0, 1 & 2 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	6 Mbps	16.04	27.92
		9 Mbps	16.03	27.92
		12 Mbps	16.09	27.92
		18 Mbps	16.09	27.92
		24 Mbps	16.03	27.92
		36 Mbps	16.08	27.92
		48 Mbps	16.13	27.92
		54 Mbps	16.05	27.92
2437	6	6 Mbps	16.11	27.92
		9 Mbps	16.03	27.92
		12 Mbps	16.04	27.92
		18 Mbps	16.08	27.92
		24 Mbps	16.04	27.92
		36 Mbps	16.06	27.92
		48 Mbps	16.19	27.92
		54 Mbps	16.08	27.92
2462	11	6 Mbps	16.20	27.92
		9 Mbps	16.18	27.92
		12 Mbps	16.20	27.92
		18 Mbps	16.17	27.92
		24 Mbps	16.13	27.92
		36 Mbps	16.20	27.92
		48 Mbps	16.29	27.92
		54 Mbps	16.24	27.92

Service Port

TEST RESULTS-Average

TEST RESULTS_Ant.0

Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	0	11.29	0.216	11.50	30
		1	11.31	0.199	11.51	30
		2	11.37	0.217	11.58	30
		3	11.14	0.184	11.32	30
		4	11.09	0.286	11.37	30
		5	11.24	0.338	11.57	30
		6	11.24	0.401	11.64	30
		7	11.17	0.400	11.57	30
2437	6	0	11.31	0.216	11.53	30
		1	11.29	0.199	11.49	30
		2	11.33	0.217	11.55	30
		3	11.35	0.184	11.53	30
		4	11.28	0.286	11.57	30
		5	11.22	0.338	11.56	30
		6	11.16	0.401	11.56	30
		7	11.17	0.400	11.57	30
2462	11	0	11.39	0.216	11.60	30
		1	11.37	0.199	11.57	30
		2	11.35	0.217	11.57	30
		3	11.42	0.184	11.60	30
		4	11.30	0.286	11.59	30
		5	11.34	0.338	11.68	30
		6	11.38	0.401	11.78	30
		7	11.36	0.400	11.76	30

Service Port

TEST RESULTS-Average

TEST RESULTS_Ant.1

Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	0	10.81	0.221	11.03	30
		1	10.85	0.216	11.06	30
		2	10.68	0.217	10.90	30
		3	10.90	0.184	11.08	30
		4	10.84	0.286	11.13	30
		5	10.60	0.367	10.97	30
		6	10.56	0.401	10.96	30
		7	10.71	0.400	11.11	30
2437	6	0	10.85	0.221	11.07	30
		1	10.85	0.216	11.07	30
		2	10.86	0.217	11.07	30
		3	10.92	0.184	11.10	30
		4	10.85	0.286	11.14	30
		5	10.79	0.367	11.16	30
		6	10.82	0.401	11.22	30
		7	10.76	0.400	11.16	30
2462	11	0	11.00	0.221	11.22	30
		1	11.01	0.216	11.22	30
		2	11.02	0.217	11.24	30
		3	11.06	0.184	11.25	30
		4	10.78	0.286	11.07	30
		5	10.97	0.367	11.34	30
		6	10.91	0.401	11.31	30
		7	10.78	0.400	11.18	30

Service Port

- TEST RESULTS-Average
- TEST RESULTS_Ant.2

Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		MCS Index	Measured Power(dBm)	Duty Cycle Factor (dB)	Measured Power(dBm) + Duty Cycle Factor(dB)	Limit (dBm)
Frequency [MHz]	Channel No.					
2412	1	0	11.00	0.216	11.22	30
		1	11.08	0.199	11.28	30
		2	11.11	0.211	11.32	30
		3	11.16	0.201	11.37	30
		4	11.07	0.287	11.36	30
		5	11.07	0.338	11.41	30
		6	11.04	0.401	11.44	30
		7	10.97	0.417	11.39	30
2437	6	0	11.23	0.216	11.45	30
		1	11.26	0.199	11.46	30
		2	11.28	0.211	11.49	30
		3	11.19	0.201	11.39	30
		4	11.14	0.287	11.43	30
		5	11.25	0.338	11.59	30
		6	11.08	0.401	11.48	30
		7	10.98	0.417	11.40	30
2462	11	0	11.17	0.216	11.38	30
		1	11.22	0.199	11.42	30
		2	11.20	0.211	11.41	30
		3	11.29	0.201	11.49	30
		4	11.25	0.287	11.53	30
		5	11.17	0.338	11.51	30
		6	11.22	0.401	11.62	30
		7	11.17	0.417	11.59	30

Service Port

- TEST RESULTS-Average
- TEST RESULTS_ Sum Data of Ant.0 and Ant.1

Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		MCS Index	Sum Power of Ant.0 & 1 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	0	14.28	29.54
		1	14.30	29.54
		2	14.26	29.54
		3	14.21	29.54
		4	14.26	29.54
		5	14.29	29.54
		6	14.32	29.54
		7	14.35	29.54
2437	6	0	14.31	29.54
		1	14.29	29.54
		2	14.32	29.54
		3	14.33	29.54
		4	14.37	29.54
		5	14.37	29.54
		6	14.40	29.54
		7	14.38	29.54
2462	11	0	14.42	29.54
		1	14.41	29.54
		2	14.42	29.54
		3	14.44	29.54
		4	14.34	29.54
		5	14.52	29.54
		6	14.56	29.54
		7	14.49	29.54

Service Port

TEST RESULTS-Average

TEST RESULTS_ Sum Data of Ant.0, Ant.1 and Ant.2

Conducted Output Power Measurements (802.11n Mode)

802.11n Mode		MCS Index	Sum Power of Ant.0, 1 & 2 (dBm)	Limit (dBm)
Frequency[MHz]	Channel No.			
2412	1	0	16.02	27.92
		1	16.06	27.92
		2	16.04	27.92
		3	16.03	27.92
		4	16.06	27.92
		5	16.09	27.92
		6	16.12	27.92
		7	16.13	27.92
2437	6	0	16.12	27.92
		1	16.11	27.92
		2	16.14	27.92
		3	16.11	27.92
		4	16.15	27.92
		5	16.21	27.92
		6	16.19	27.92
		7	16.15	27.92
2462	11	0	16.17	27.92
		1	16.18	27.92
		2	16.18	27.92
		3	16.22	27.92
		4	16.17	27.92
		5	16.28	27.92
		6	16.34	27.92
		7	16.28	27.92

8.5 POWER SPECTRAL DENSITY (802.11a/b/g/n) / RSS-247(Issue 1) Section 5.2.

The peak power spectral density is measured with a spectrum analyzer connected to the antenna terminal while the EUT is operating in transmission mode at the appropriate frequencies.

Minimum Standard – 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.

■ Limit

Operating Mode		Mode	Antenna	Ant. Gain(dBi)	Limit(dBm)
Monitoring	SISO	802.11b/g	Ant.0	6.38	7.62
		802.11g	Ant.1	5.78	8.00
			Ant.2	5.72	8.00
	MIMO(3 TX)	802.11g	Ant.0 & 1 & 2	10.74	3.26
Service	SISO	802.11b/g/n	Ant.0	4.11	8.00
		802.11g/n	Ant.1	2.74	8.00
			Ant.2	3.01	8.00
	MIMO(2 TX)	802.11g/n	Ant.0 & 1	6.46	7.54
	MIMO(3 TX)	802.11g/n	Ant.0 & 1 & 2	8.08	5.92

Note : 1. If all antenna gains are not equal,

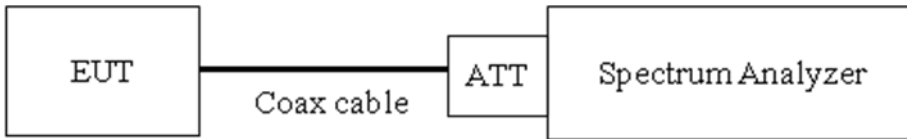
$$\text{Directional gain} = 10 \cdot \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N] \text{ dBi}$$

$$\text{Directional gain} = 10 \cdot \log[(10^{G1/10} + 10^{G2/10} + \dots + 10^{GN/10}) / N] \text{ dBi}$$

(according to KDB662911 D01 v02r01)

2. Limit is calculated by antenna gain.

■ **TEST CONFIGURATION**



■ **TEST PROCEDURE**

We tested according to Procedure 10.2 in KDB 558074, issued 01/07/2016

The spectrum analyzer is set to :

Set analyzer center frequency to DTS channel center frequency.

Span = 1.5 times the DTS channel bandwidth.

RBW = 3 kHz ≤ RBW ≤ 100 kHz.

VBW ≥ 3 x RBW.

Sweep = auto couple

Detector = peak

Trace Mode = max hold

Allow trace to fully stabilize.

Use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

■ **Sample Calculation**

PSD = Reading Value + ATT loss + Cable loss(1 ea)

Note :

1. Spectrum reading values are not plot data. The PSD results in plot is already including the actual values of loss for the attenuator and cable combination.
2. Spectrum offset = Attenuator loss + Cable loss
3. We apply to the offset in the 2.4 GHz range that was rounded off to the closest tenth dB. So, 10.7 dB is offset for 2.4 GHz Band.

Actual value of loss for the attenuator and cable combination is below table.

Band	Frequency(MHz)	Loss(dB)
2.4 GHz	2412	10.65
	2437	10.65
	2462	10.66

(Actual value of loss for the attenuator and cable combination)

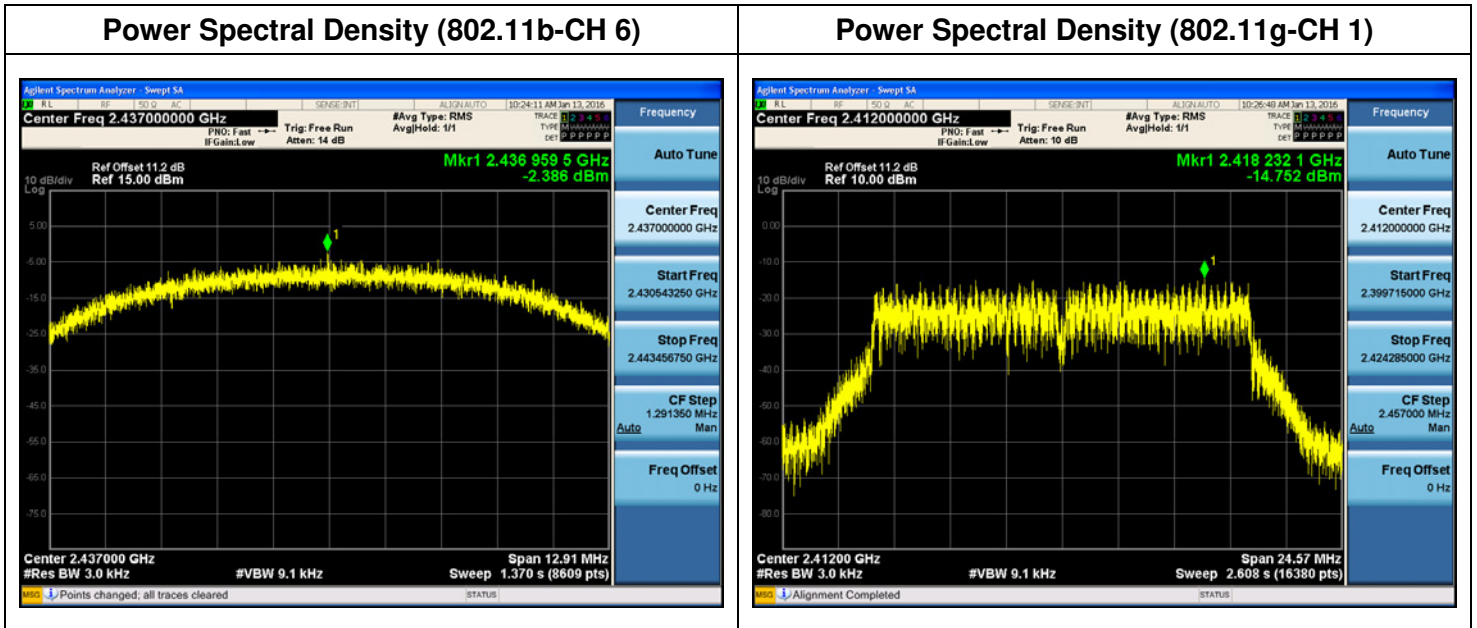
Monitoring Port

TEST RESULTS_Ant.0

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11b	-4.408	7.62	Pass
2437	6		-2.386	7.62	Pass
2462	11		-3.552	7.62	Pass
2412	1	802.11g	-14.752	7.62	Pass
2437	6		-14.810	7.62	Pass
2462	11		-15.270	7.62	Pass

RESULT PLOTS_Ant.0



Note : In order to simplify the report, attached plots were only the highest PSD channel.

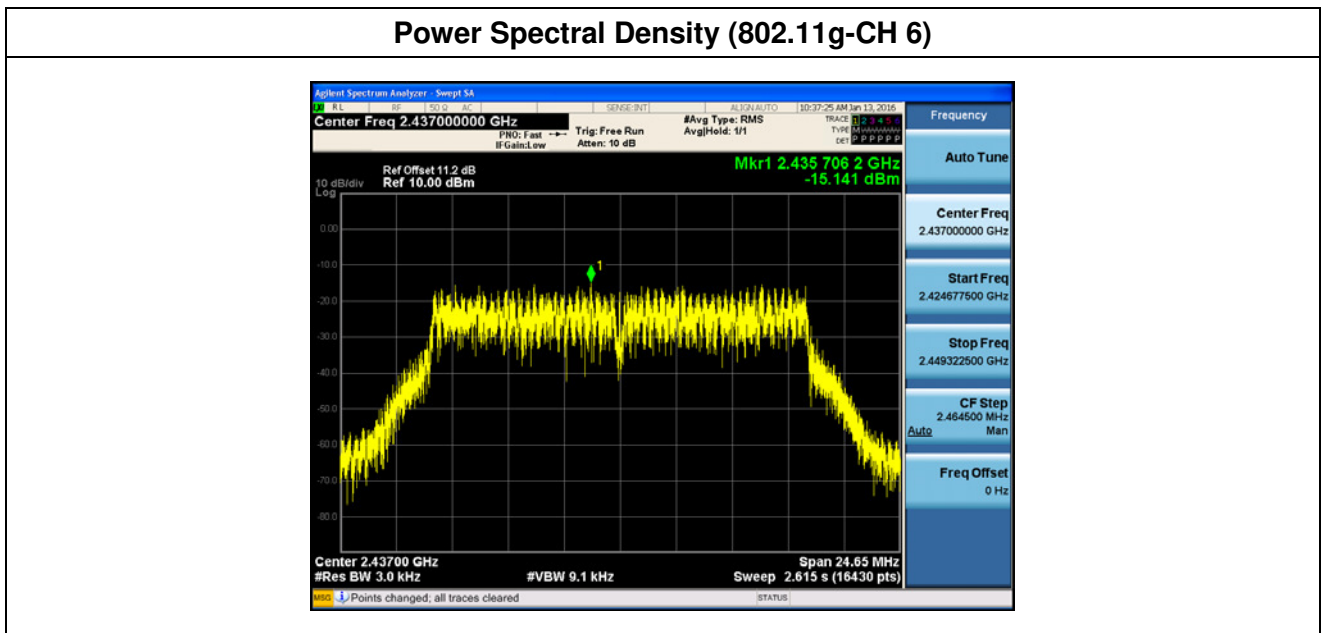
Monitoring Port

TEST RESULTS_Ant.1

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11g	-15.576	8	Pass
2437	6		-15.141	8	Pass
2462	11		-15.203	8	Pass

RESULT PLOTS_Ant.1



Note : In order to simplify the report, attached plots were only the highest PSD channel.

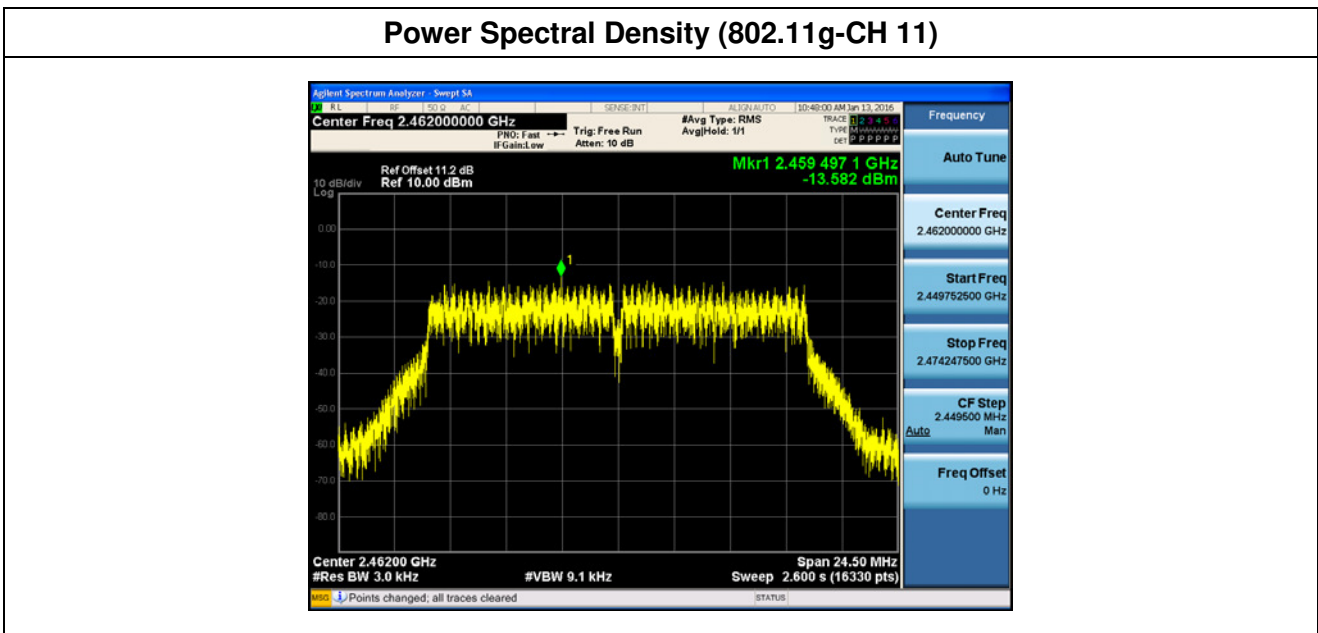
Monitoring Port

TEST RESULTS_Ant.2

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11g	-14.072	8	Pass
2437	6		-14.362	8	Pass
2462	11		-13.582	8	Pass

RESULT PLOTS_Ant.2



Note : In order to simplify the report, attached plots were only the highest PSD channel.

Monitoring Port

TEST RESULTS_Sum Data of Ant.0, Ant 1 and Ant.2

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11g	-10.01	3.26	Pass
2437	6		-9.99		Pass
2462	11		-9.88		Pass

Service Port

TEST RESULTS_Ant.0

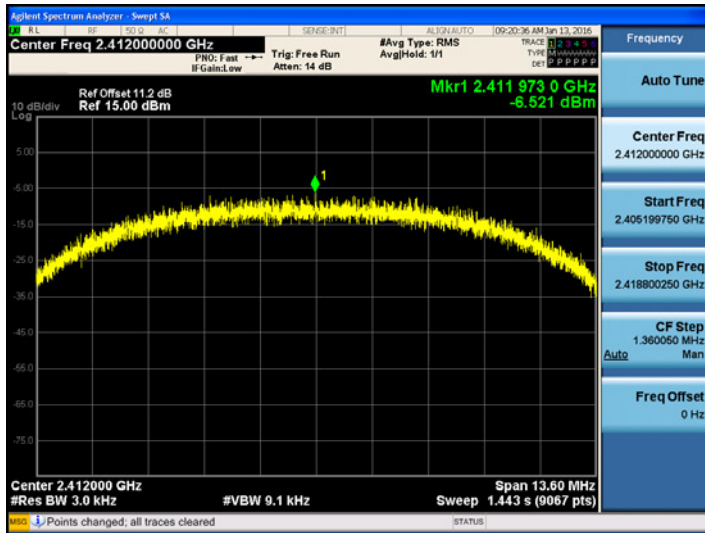
Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11b	-6.521	8	Pass
2437	6		-6.527	8	Pass
2462	11		-6.541	8	Pass
2412	1	802.11g	-14.538	8	Pass
2437	6		-12.839	8	Pass
2462	11		-13.606	8	Pass
2412	1	802.11n	-13.719	8	Pass
2437	6		-14.009	8	Pass
2462	11		-11.963	8	Pass

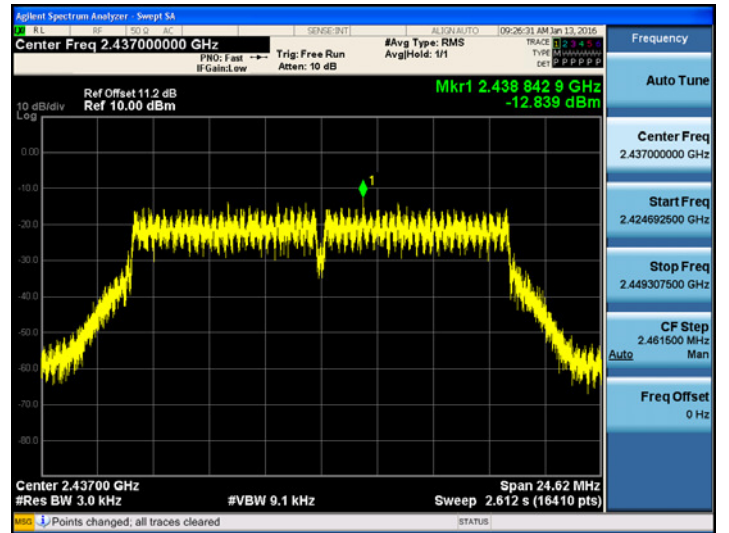
Service Port

RESULT PLOTS_Ant.0

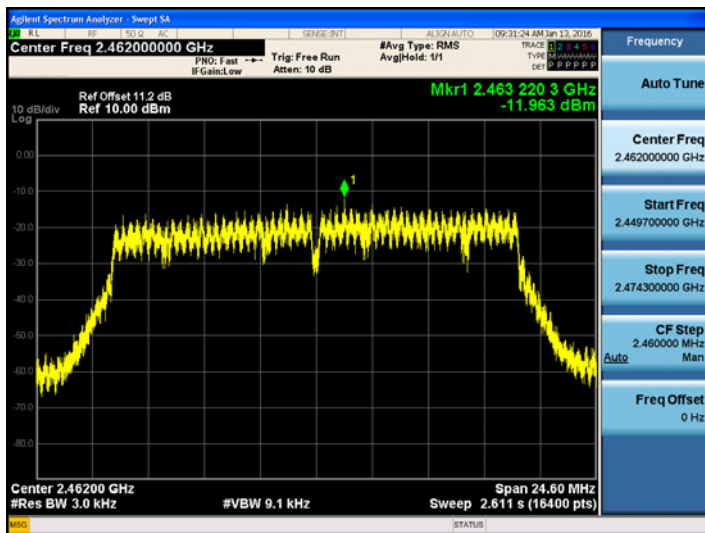
Power Spectral Density (802.11b-CH 1)



Power Spectral Density (802.11g-CH 6)



Power Spectral Density (802.11n-CH 11)



Note : In order to simplify the report, attached plots were only the highest PSD channel.

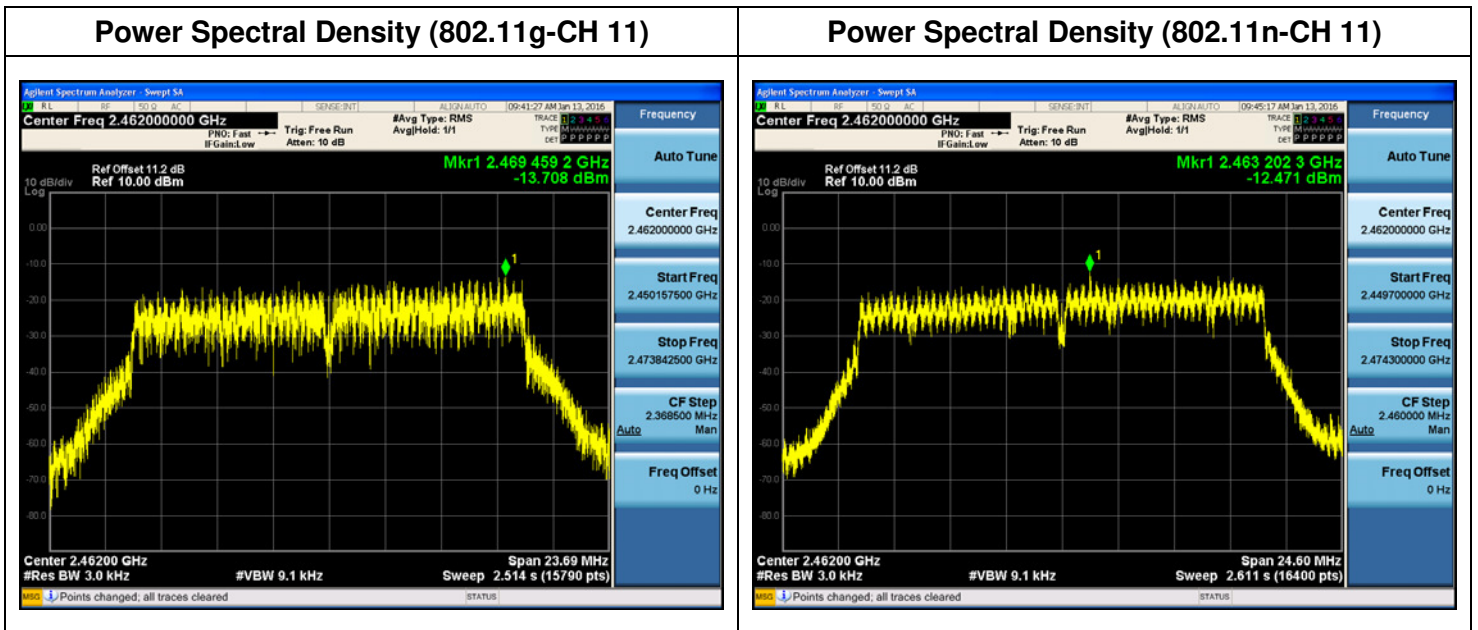
Service Port

TEST RESULTS_Ant.1

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11g	-13.793	8	Pass
2437	6		-14.810	8	Pass
2462	11		-13.708	8	Pass
2412	1	802.11n	-13.912	8	Pass
2437	6		-14.422	8	Pass
2462	11		-12.471	8	Pass

RESULT PLOTS_Ant.1



Note : In order to simplify the report, attached plots were only the highest PSD channel.

Service Port

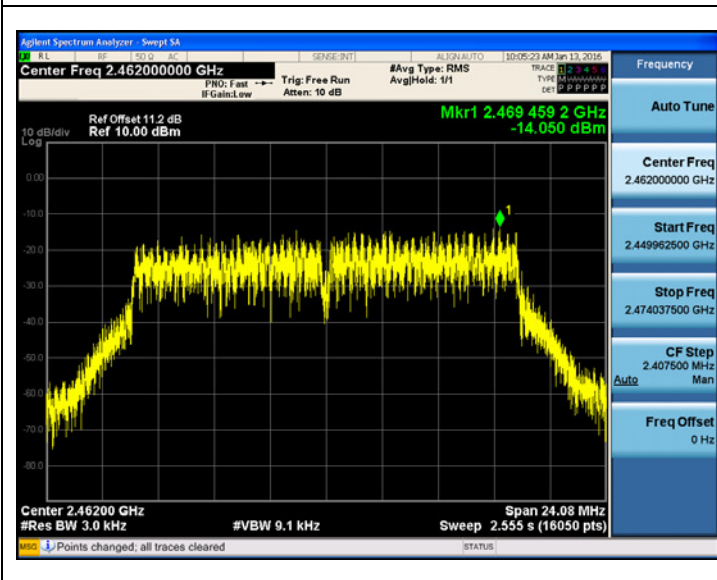
TEST RESULTS_Ant.2

Conducted Power Density Measurements

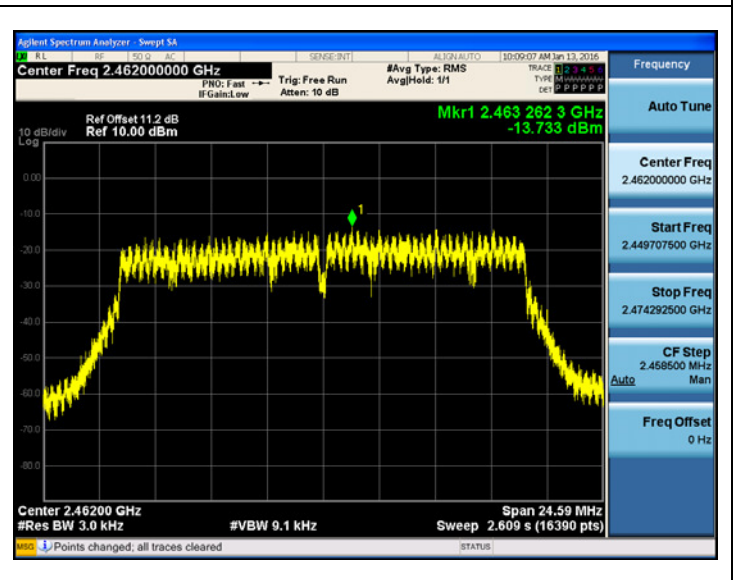
Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11g	-14.265	8	Pass
2437	6		-14.509	8	Pass
2462	11		-14.050	8	Pass
2412	1	802.11n	-14.152	8	Pass
2437	6		-13.957	8	Pass
2462	11		-13.733	8	Pass

RESULT PLOTS_Ant.2

Power Spectral Density (802.11g-CH 11)



Power Spectral Density (802.11n-CH 11)



Note : In order to simplify the report, attached plots were only the highest PSD channel.

Service Port

▣ TEST RESULTS_Sum Data of Ant.0 and Ant 1

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11g	-11.15	7.54	Pass
2437	6		-10.76	7.54	Pass
2462	11		-10.65	7.54	Pass
2412	1	802.11n	-10.80	7.54	Pass
2437	6		-11.20	7.54	Pass
2462	11		-9.20	7.54	Pass

Service Port

▣ TEST RESULTS_Sum Data of Ant.0, Ant 1 and Ant.2

Conducted Power Density Measurements

Frequency (MHz)	Channel No.	Mode	Test Result		
			PSD (dBm)	Limit (dBm)	Pass/Fail
2412	1	802.11g	-9.42	5.92	Pass
2437	6		-9.24	5.92	Pass
2462	11		-9.01	5.92	Pass
2412	1	802.11n	-9.15	5.92	Pass
2437	6		-9.36	5.92	Pass
2462	11		-7.92	5.92	Pass