ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT
INTENTIONAL RADIATOR CERTIFICATION TO
FCC PART 15 SUBPART C
REQUIREMENTS

OF

SPORTS CAM

MODEL No.: DV555

FCC ID: 2ADTF-DV555

Trade Mark: N/A

REPORT NO.: ES141024310E

ISSUE DATE: January 05, 2014

Prepared for

SPRITE LIMITED
2nd Floor A building, South Gate, Hongpengfei Industry Area
NO.219 Guihua Road, Guanlan, Baoan, Shenzhen, China.

Prepared by

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VERIFICATION OF COMPLIANCE

Applicant:	SPRITE LIMITED 2nd Floor A building, South Gate, Hongpengfei Industry Area NO.219 Guihua Road, Guanlan, Baoan, Shenzhen, China.
Manufacturer:	SPRITE LIMITED 2nd Floor A building, South Gate, Hongpengfei Industry Area NO.219 Guihua Road, Guanlan, Baoan, Shenzhen, China.
Product Description:	SPORTS CAM
Model Number:	DV555
File Number:	ES141024310E
Date of Test:	October 24, 2014 to January 05, 2014

We hereby certify that:

The above equipment was tested by SHENZHEN EMTEK CO., LTD.
The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247

The test results of this report relate only to the tested sample identified in this report.

Date of Test : October 24, 2014 to January 05, 2014

Tested by : King Kong/Tester

Prepared by : Yaping Shen/Editor

Approve & Authorized Signer : Lisa Wang/Manager

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1. General Information

1.1 Product Description

A major technical descriptions of EUT is described as following:

A). Operation Frequency:
2.4G 802.11b/g/n(HT20):2412MHz-2462MHz; 802.11n(HT40): 2422MHz-2452MHz
B). Modulation: OFDM with BPSK/QPSK/16QAM/64QAM for 802.11g/n,
DSSS with DBPSK/DQPSK/CCK for 802.11b;
C). Number of Channel: 802.11b/g/n(HT20): 11channels; 802.11n(HT40): 7channels
D). Max Peak Conducted Power: 16.19dBm
E) .Antenna Gain: 2.0dBi
F). Antenna Type: Outside welds antenna
G). Power Supply: DC 3.7V Li-ion Battery or DC 5V by external power.

Note:
1. This device is included 802.11b, 802.11g, 802.11n 2.4GHz and 802.11a/n 5GHz transceiver function.
2. Test of channel was included the lowest middle and highest frequency in lowest data rate and to perform the test, then record on this report.

1.2 Related Submittal(s) / Grant(s)

This submittal(s) (test report) is intended for FCC ID: 2ADTF-DV555 filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

1.3 Test Methodology

All the test program has follow FCC new test procedure KDB558074 D01 v03r02, Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2009). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4 Special Accessories

Not available for this EUT intended for grant.

1.5 Equipment Modifications

Not available for this EUT intended for grant.

1.6 Test Facility

Site Description

EMC Lab.	:	Accredited by CNAS, 2013.10.29 The certificate is valid until 2016.10.28 The Laboratory has been assessed and proved to be in compliance with CNAS/CL01: 2006(identical to ISO/IEC17025: 2005) The Certificate Registration Number is L2291 Accredited by TUV Rheinland Shenzhen 2010.5.25 The Laboratory has been assessed according to the requirements ISO/IEC 17025 Accredited by FCC, April 17, 2013 The Certificate Registration Number is 406365. Accredited by Industry Canada, March 05, 2010 The Certificate Registration Number is 4480A-2.
Name of Firm	:	SHENZHEN EMTEK CO., LTD.
Site Location	:	Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

2. System Test Configuration

2.1 EUT Configuration

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

2.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2009 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

2.3.2 Radiated Emissions

The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m 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 13.1.4.1 of ANSI C63.4-2009.

2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

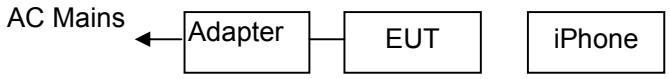


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
1.	SPORTS CAM	N/A	DV555	2ADTF-DV555	N/A	EUT
2.	Adapter	N/A	HB18-0502501SPA	N/A	N/A	Support equipment
3.	iPhone 5C	Apple	A1387	BCG-E2430A	N/A	Support equipment

Note:
(1) Unless otherwise denoted as EUT in『Remark』column, device(s) used in tested system is a support equipment.

3. Description of Test Modes

The Transmitter of EUT is an wireless amplifier and powered by host equipment; these is Digital Transmission system (DTS) and have modulation OFDM, DSSS, DBPSK, DQPSK, CCK, 16QAM, 64QAM. According exploratory test, EUT will have maximum output power in those data rate (802.11b: 1 Mbps; 802.11g: 6 Mbps; 802.11n: MCS0), so those data rate were used for all test.
The equipment enables high-speed access without wires to network assets. This adapter uses the IEEE 802.11 protocol to enable wireless communications between the host and Wireless rooter.

For 802.11b/g/n(HT20):
1. For lowest channel : 2412MHz (Channel 1)
2. For middle channel : 2437MHz (Channel 6)
3. For highest channel : 2462MHz (Channel 11)

For 802.11n(HT40)
4. For lowest channel : 2422MHz (Channel 3)
5. For middle channel : 2437MHz (Channel 6)
6. For highest channel : 2452MHz (Channel 9)

4. Summary of Test Results

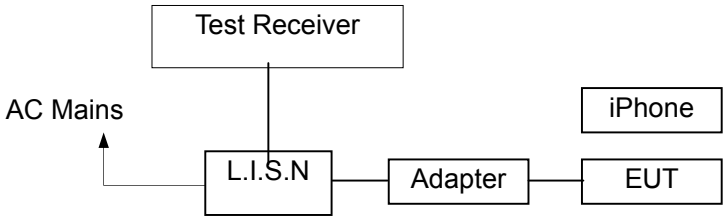
FCC Rules	Description Of Test	Result
§15.247(a)(2)	6dB bandwidth	Pass
§15.247(b)(3)	Max Peak output Power test	Pass
§15.247(e)	Power density	Pass
§15.247(d)	Band edge test	Pass
§15.207	AC Power Conducted Emission	Pass
§15.247(d), §15.209	Radiated Emission	Pass
§15.247(d)	Antenna Port Emission	Pass
§15.247(b)&§15.203	Antenna Application	Pass

5. Conducted Emissions Test

5.1 Measurement Procedure

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

5.2 Test SET-UP (Block Diagram of Configuration)



5.3 Measurement Equipment Used

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/17/2014	05/16/2015
L.I.S.N.	Schwarzbeck	NNLK8129	8129203	05/17/2014	05/16/2015
50Ω Coaxial Switch	Anritsu	MP59B	M20531	N/A	N/A
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	05/17/2014	05/16/2015
Voltage Probe	Rohde & Schwarz	TK9416	N/A	05/17/2014	05/16/2015
I.S.N	Rohde & Schwarz	ENY22	1109.9508.02	05/17/2014	05/16/2015

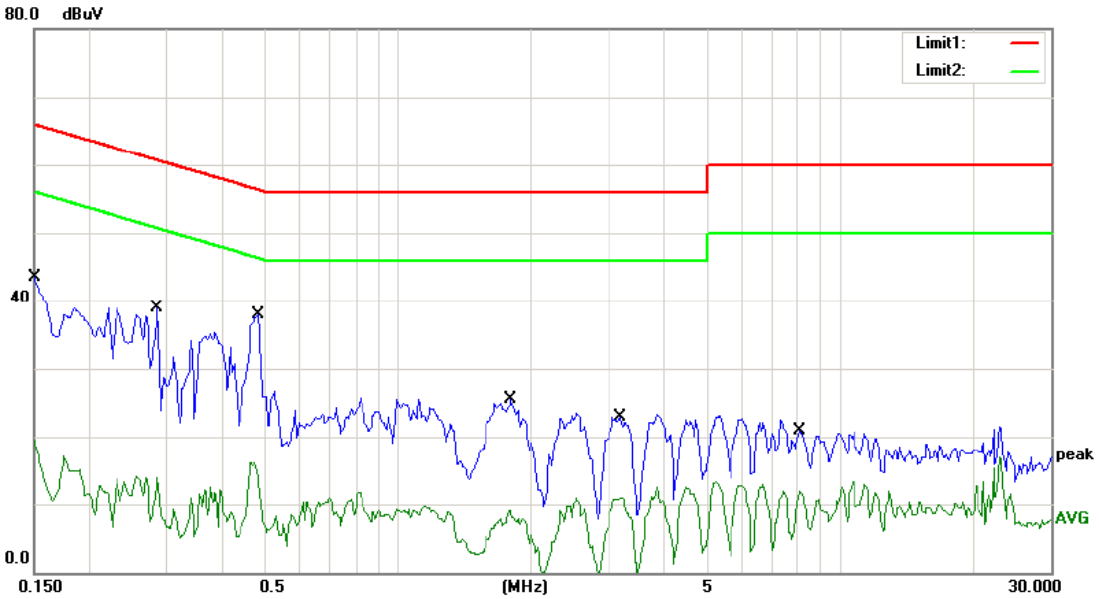
5.4 Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

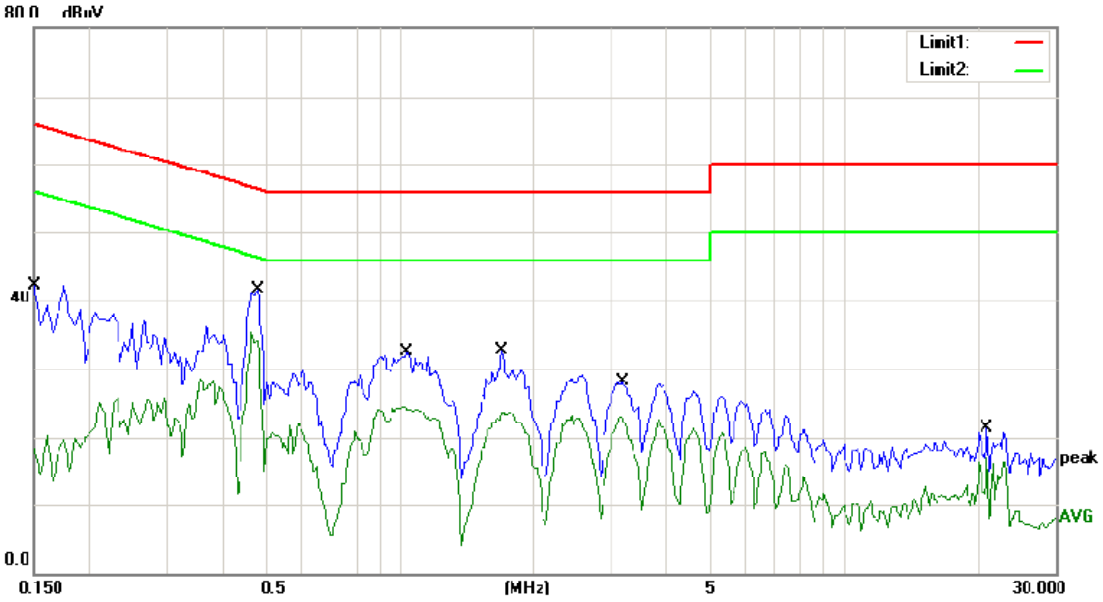
5.5 Measurement Result



Site Conduction #1 Phase: L1 Temperature: 24
Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode: TX 802.11b
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	43.49	0.00	43.49	66.00	-22.51	QP	
2		0.1500	19.49	0.00	19.49	56.00	-36.51	AVG	
3		0.2850	38.95	0.00	38.95	60.67	-21.72	QP	
4		0.2850	13.98	0.00	13.98	50.67	-36.69	AVG	
5	*	0.4850	37.91	0.00	37.91	56.25	-18.34	QP	
6		0.4850	16.12	0.00	16.12	46.25	-30.13	AVG	
7		1.8050	25.44	0.00	25.44	56.00	-30.56	QP	
8		1.8050	9.19	0.00	9.19	46.00	-36.81	AVG	
9		3.1800	22.91	0.00	22.91	56.00	-33.09	QP	
10		3.1800	10.98	0.00	10.98	46.00	-35.02	AVG	
11		8.1000	20.98	0.00	20.98	60.00	-39.02	QP	
12		8.1000	11.84	0.00	11.84	50.00	-38.16	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XLX



Site Conduction #1 Phase: N Temperature: 24

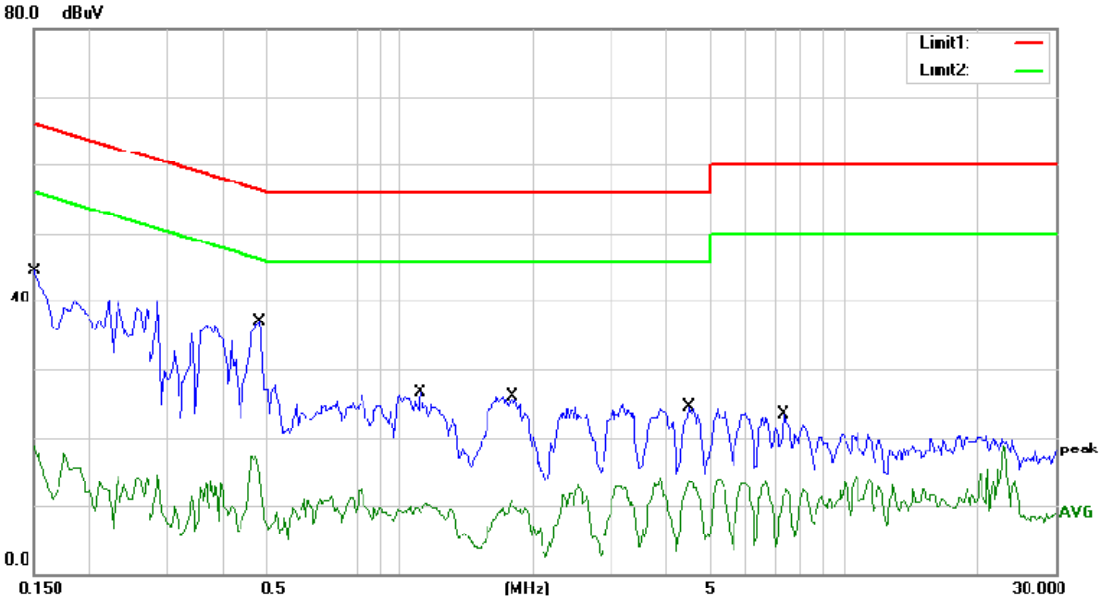
Limit: (CE)FCC PART 15 class B_QP Power: AC 120V/60Hz Humidity: 53 %

Mode: TX 802.11b

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	42.29	0.00	42.29	66.00	-23.71	QP	
2		0.1500	20.24	0.00	20.24	56.00	-35.76	AVG	
3		0.4800	41.74	0.00	41.74	56.34	-14.60	QP	
4	*	0.4800	35.21	0.00	35.21	46.34	-11.13	AVG	
5		1.0400	32.45	0.00	32.45	56.00	-23.55	QP	
6		1.0400	24.52	0.00	24.52	46.00	-21.48	AVG	
7		1.7000	32.79	0.00	32.79	56.00	-23.21	QP	
8		1.7000	23.72	0.00	23.72	46.00	-22.28	AVG	
9		3.1800	28.15	0.00	28.15	56.00	-27.85	QP	
10		3.1800	22.97	0.00	22.97	46.00	-23.03	AVG	
11		21.0500	21.37	0.00	21.37	60.00	-38.63	QP	
12		21.0500	16.84	0.00	16.84	50.00	-33.16	AVG	

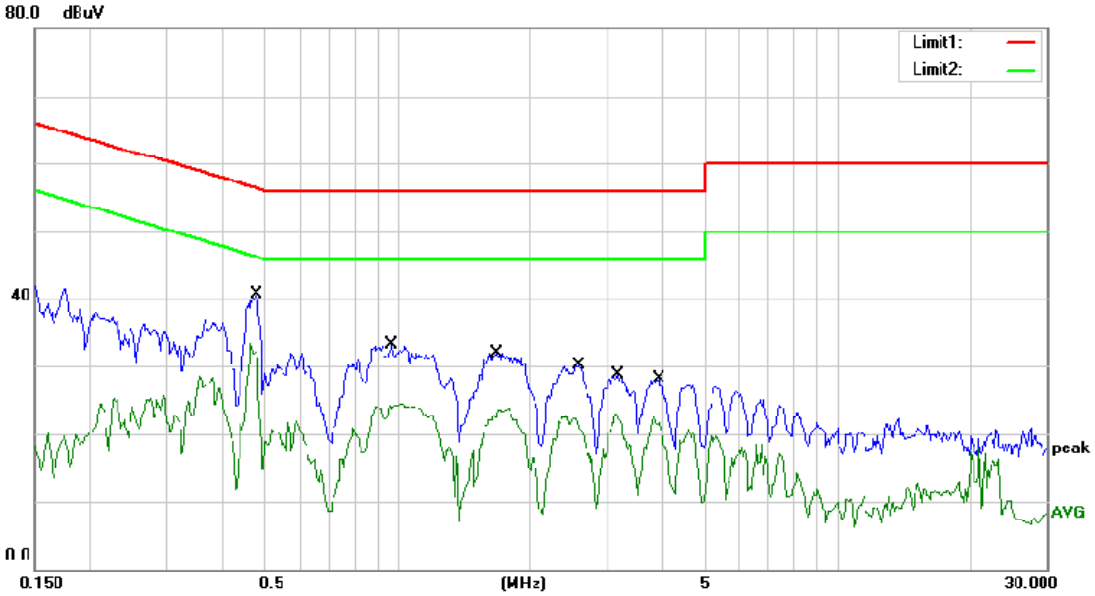
*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XLX



Site: Conduction #1 Phase: L1 Temperature: 24
Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode: 802.11g
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure-ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1500	44.49	0.00	44.49	66.00	-21.51	QP	
2		0.1500	18.99	0.00	18.99	56.00	-37.01	AVG	
3	*	0.4850	36.91	0.00	36.91	56.25	-19.34	QP	
4		0.4850	17.05	0.00	17.05	46.25	-29.20	AVG	
5		1.1150	26.48	0.00	26.48	56.00	-29.52	QP	
6		1.1150	9.65	0.00	9.65	46.00	-36.35	AVG	
7		1.8050	25.94	0.00	25.94	56.00	-30.06	QP	
8		1.8050	10.69	0.00	10.69	46.00	-35.31	AVG	
9		4.4700	24.43	0.00	24.43	56.00	-31.57	QP	
10		4.4700	13.41	0.00	13.41	46.00	-32.59	AVG	
11		7.3500	23.43	0.00	23.43	60.00	-36.57	QP	
12		7.3500	12.34	0.00	12.34	50.00	-37.66	AVG	

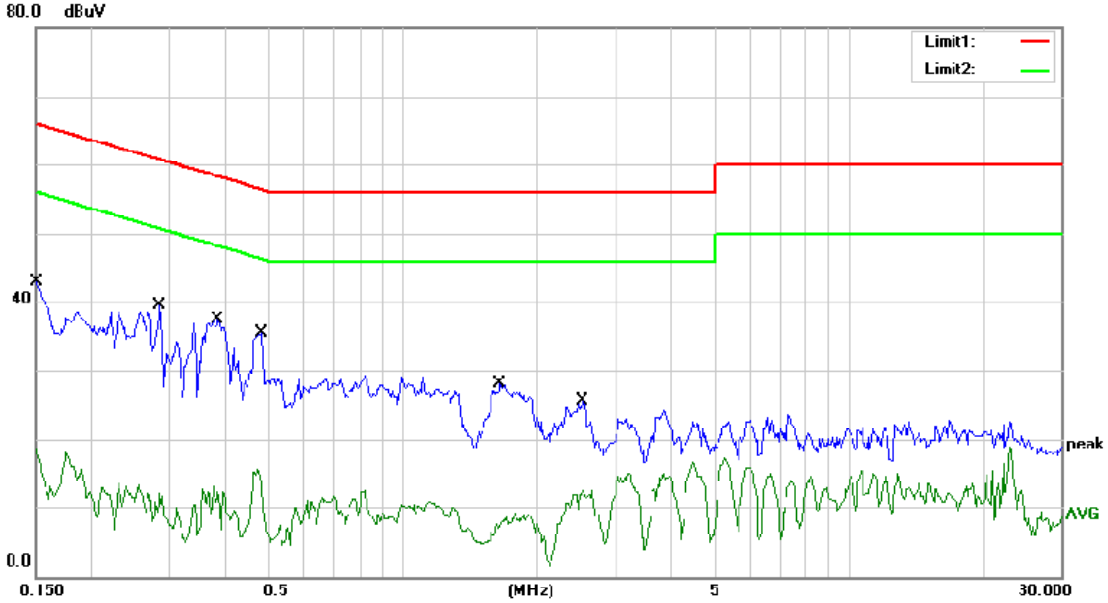
*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XLX



Site Conduction #1 Phase: N Temperature: 24
Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode: 802.11g
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4800	40.74	0.00	40.74	56.34	-15.60	QP	
2	*	0.4800	33.21	0.00	33.21	46.34	-13.13	AVG	
3		0.9750	33.01	0.00	33.01	56.00	-22.99	QP	
4		0.9750	24.26	0.00	24.26	46.00	-21.74	AVG	
5		1.6891	31.86	0.00	31.86	56.00	-24.14	QP	
6		1.6891	23.51	0.00	23.51	46.00	-22.49	AVG	
7		2.5700	30.04	0.00	30.04	56.00	-25.96	QP	
8		2.5700	21.02	0.00	21.02	46.00	-24.98	AVG	
9		3.1800	28.65	0.00	28.65	56.00	-27.35	QP	
10		3.1800	22.91	0.00	22.91	46.00	-23.09	AVG	
11		3.9300	28.17	0.00	28.17	56.00	-27.83	QP	
12		3.9300	21.73	0.00	21.73	46.00	-24.27	AVG	

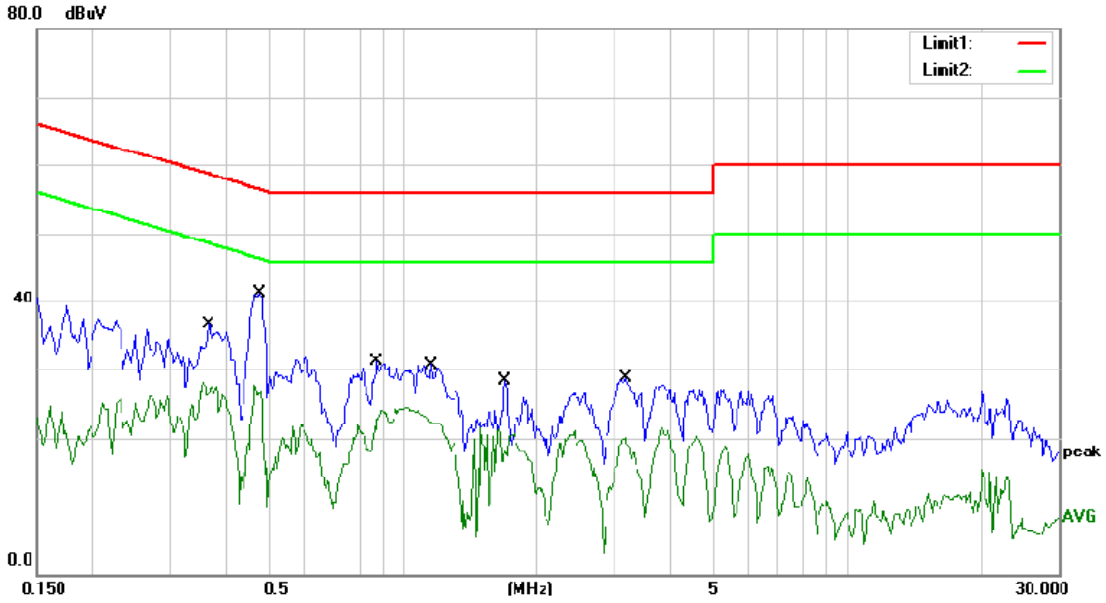
*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XLX



Site: Conduction #1 Phase: L1 Temperature: 24
Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode: 802.11n-20
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	42.99	0.00	42.99	66.00	-23.01	QP	
2		0.1500	18.49	0.00	18.49	56.00	-37.51	AVG	
3		0.2850	39.45	0.00	39.45	60.67	-21.22	QP	
4		0.2850	11.98	0.00	11.98	50.67	-38.69	AVG	
5	*	0.3850	37.21	0.00	37.21	58.17	-20.96	QP	
6		0.3850	12.13	0.00	12.13	48.17	-36.04	AVG	
7		0.4812	35.24	0.00	35.24	56.32	-21.08	QP	
8		0.4812	14.41	0.00	14.41	46.32	-31.91	AVG	
9		1.6600	27.84	0.00	27.84	56.00	-28.16	QP	
10		1.6600	7.81	0.00	7.81	46.00	-38.19	AVG	
11		2.5300	25.50	0.00	25.50	56.00	-30.50	QP	
12		2.5300	12.33	0.00	12.33	46.00	-33.67	AVG	

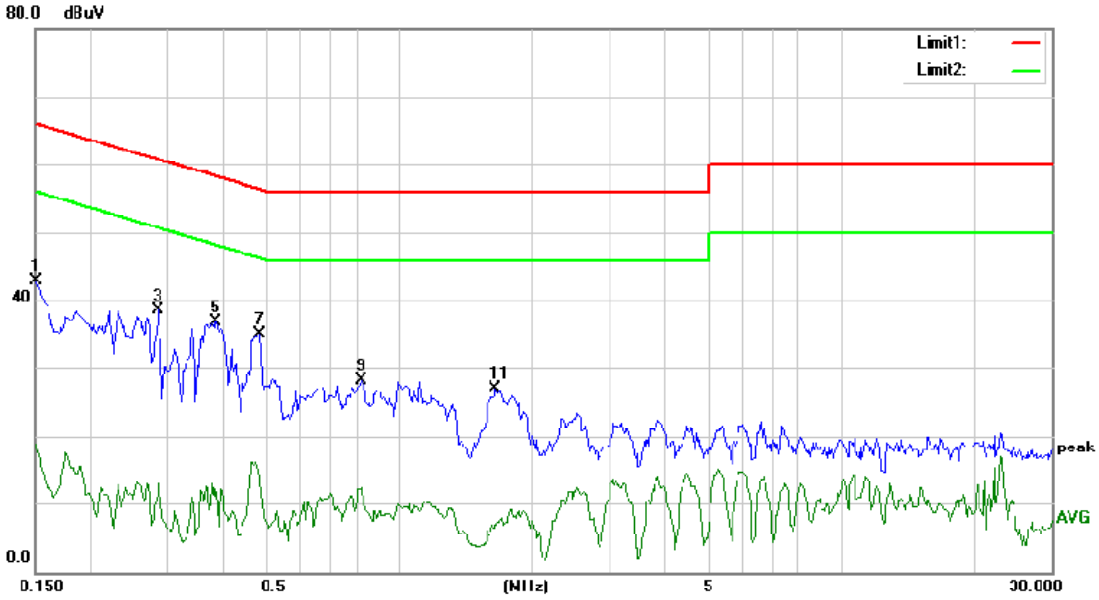
*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XLX



Site Conduction #1 Phase: N Temperature: 24
Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity. 53 %
Mode: 802.11n-20
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3650	36.60	0.00	36.60	58.61	-22.01	QP	
2		0.3650	27.79	0.00	27.79	48.61	-20.82	AVG	
3	*	0.4761	41.38	0.00	41.38	56.41	-15.03	QP	
4		0.4761	27.71	0.00	27.71	46.41	-18.70	AVG	
5		0.8800	31.08	0.00	31.08	56.00	-24.92	QP	
6		0.8800	24.10	0.00	24.10	46.00	-21.90	AVG	
7		1.1650	30.60	0.00	30.60	56.00	-25.40	QP	
8		1.1650	22.66	0.00	22.66	46.00	-23.34	AVG	
9		1.7000	28.29	0.00	28.29	56.00	-27.71	QP	
10		1.7000	20.63	0.00	20.63	46.00	-25.37	AVG	
11		3.1800	28.65	0.00	28.65	56.00	-27.35	QP	
12		3.1800	20.17	0.00	20.17	46.00	-25.83	AVG	

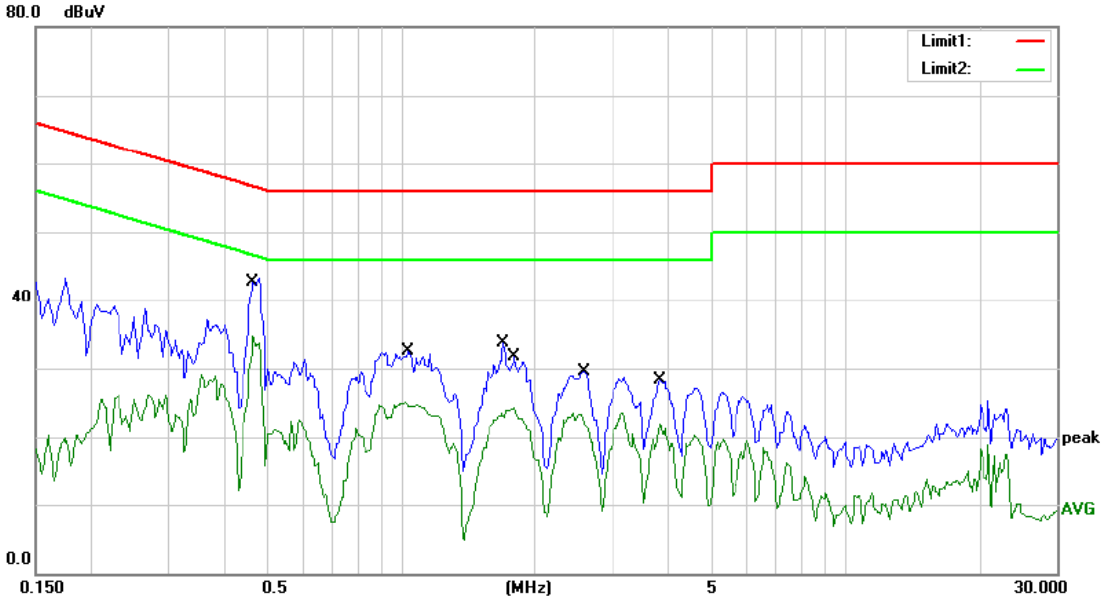
*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XLX



Site Conduction #1 Phase: L1 Temperature: 24
Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode: 802.11n-40
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	42.99	0.00	42.99	66.00	-23.01	peak	
2		0.1500	18.99	0.00	18.99	56.00	-37.01	AVG	
3		0.2850	38.45	0.00	38.45	60.67	-22.22	peak	
4		0.2850	12.98	0.00	12.98	50.67	-37.69	AVG	
5		0.3850	36.71	0.00	36.71	58.17	-21.46	peak	
6		0.3850	12.13	0.00	12.13	48.17	-36.04	AVG	
7	*	0.4850	34.91	0.00	34.91	56.25	-21.34	peak	
8		0.4850	16.05	0.00	16.05	46.25	-30.20	AVG	
9		0.8200	28.13	0.00	28.13	56.00	-27.87	peak	
10		0.8200	12.25	0.00	12.25	46.00	-33.75	AVG	
11		1.6600	26.84	0.00	26.84	56.00	-29.16	peak	
12		1.6600	7.67	0.00	7.67	46.00	-38.33	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XLX



Site Conduction #1 Phase: N Temperature: 24
Limit: (CE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode: 802.11n-40
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4650	42.66	0.00	42.66	56.60	-13.94	QP	
2	*	0.4650	34.71	0.00	34.71	46.60	-11.89	AVG	
3		1.0400	32.45	0.00	32.45	56.00	-23.55	QP	
4		1.0400	24.58	0.00	24.58	46.00	-21.42	AVG	
5		1.7000	33.79	0.00	33.79	56.00	-22.21	QP	
6		1.7000	23.92	0.00	23.92	46.00	-22.08	AVG	
7		1.8050	31.73	0.00	31.73	56.00	-24.27	QP	
8		1.8050	24.22	0.00	24.22	46.00	-21.78	AVG	
9		2.5700	29.54	0.00	29.54	56.00	-26.46	QP	
10		2.5700	22.02	0.00	22.02	46.00	-23.98	AVG	
11		3.8200	28.25	0.00	28.25	56.00	-27.75	QP	
12		3.8200	21.95	0.00	21.95	46.00	-24.05	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: XLX

6. Radiated Emission Test

6.1 Measurement Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measured was complete.

When spectrum scanned from 30 MHz to 1GHz setting resolution bandwidth 120 kHz and video bandwidth 300kHz.

EMI Test Receiver	Setting
Attenuation	Auto
RB	120kHz
VB	300kHz
Detector	QP
Trace	Max hold

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 3MHz.

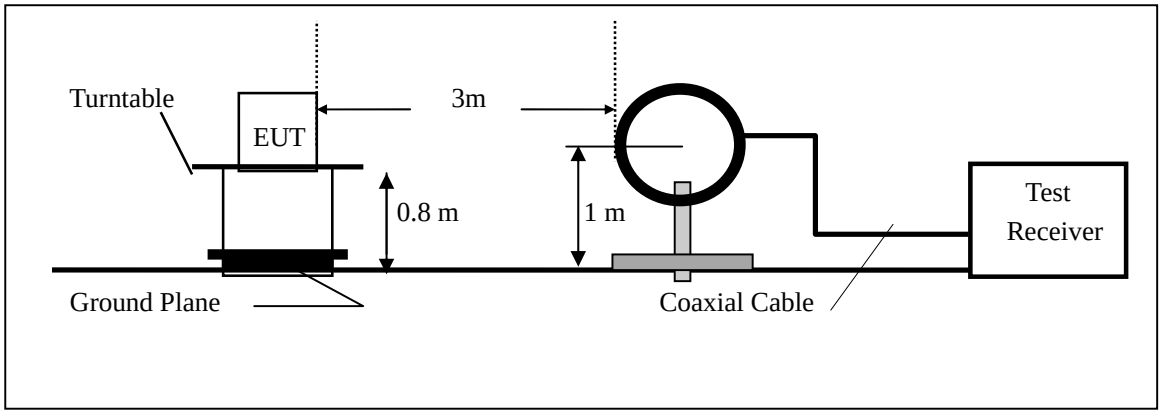
EMI Test Receiver	Setting
Attenuation	Auto
RB	1MHz
VB	3MHz
Detector	Peak
Trace	Max hold

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 10Hz.

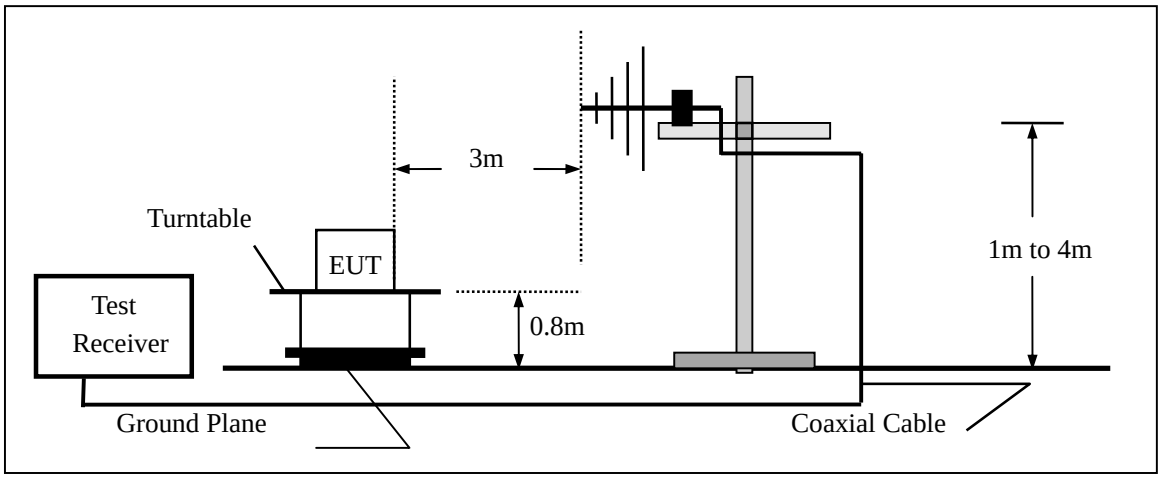
EMI Test Receiver	Setting
Attenuation	Auto
RB	1MHz
VB	10Hz
Detector	Peak
Trace	Max hold

6.2 Test SET-UP (Block Diagram of Configuration)

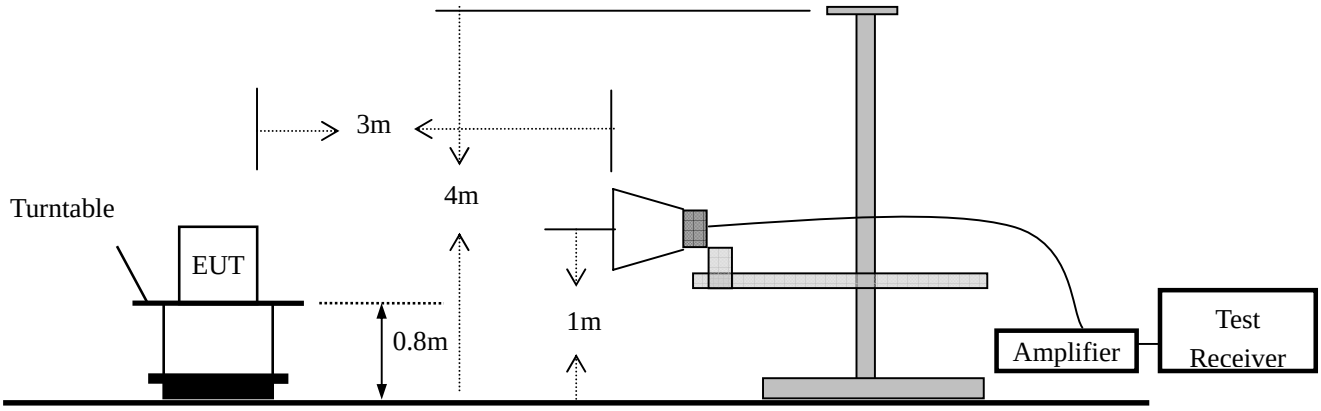
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



6.3 Measurement Equipment Used

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	05/17/2014	05/16/2015
Pre-Amplifier	HP	8447D	2944A07999	05/17/2014	05/16/2015
Bilog Antenna	Schwarzbeck	VULB9163	142	05/17/2014	05/16/2015
Loop Antenna	ARA	PLA-1030/B	1029	05/17/2014	05/16/2015
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	05/17/2014	05/16/2015
Horn Antenna	Schwarzbeck	BBHA 9120	D143	05/17/2014	05/16/2015
Cable	Schwarzbeck	AK9513	ACRX1	05/17/2014	05/16/2015
Cable	Rosenberger	N/A	FP2RX2	05/17/2014	05/16/2015
Cable	Schwarzbeck	AK9513	CRPX1	05/17/2014	05/16/2015
Cable	Schwarzbeck	AK9513	CRRX2	05/17/2014	05/16/2015

6.4 Radiated Emission Limit

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table 15.209(a):

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

15.205 Restricted bands of operation

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

Remark: 1. Emission level in dBuV/m=20 log (uV/m)
2. Measurement was performed at an antenna to the closed point of EUT distance of meters.
3. Only spurious frequency is permitted to locate within the Restricted Bands specified in provision of ξ 15.205, and the emissions located in restricted bands also comply with 15.209 limit.

6.5 Measurement Result

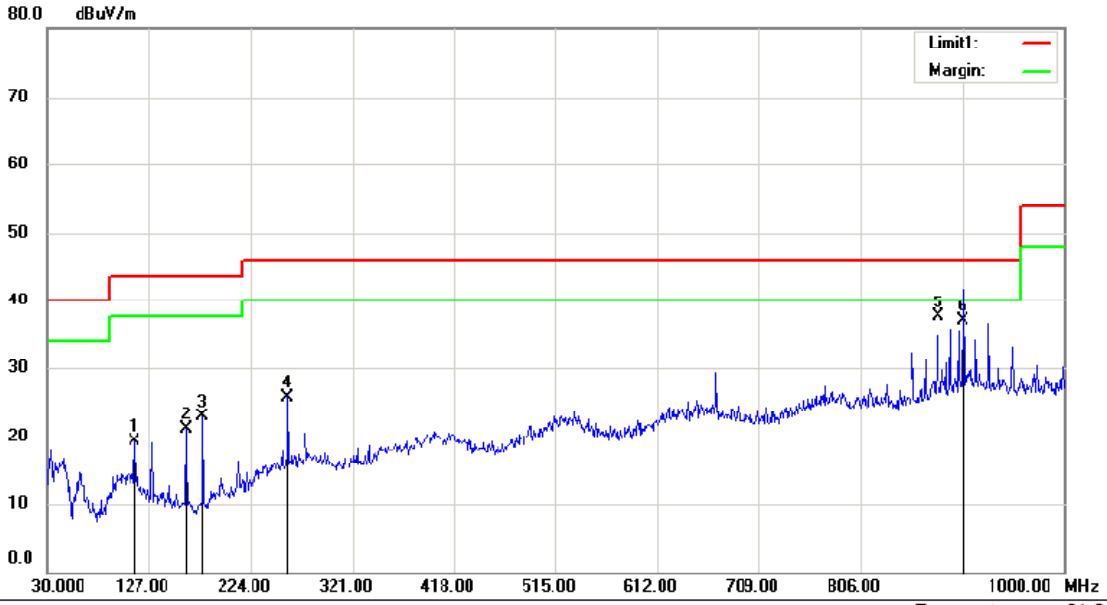
All modes 2.4G 802.11b/g/n have been tested, and the worst result 802.11b recorded as below:

Operation Mode:	TX Mode	Test Date :	December 04, 2014
Frequency Range:	9KHz~30MHz	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Measured Distance:	3m	Test By:	King Kong
Note:			

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.
Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
Limit line=Specific limits(dBuV) + distance extrapolation factor.

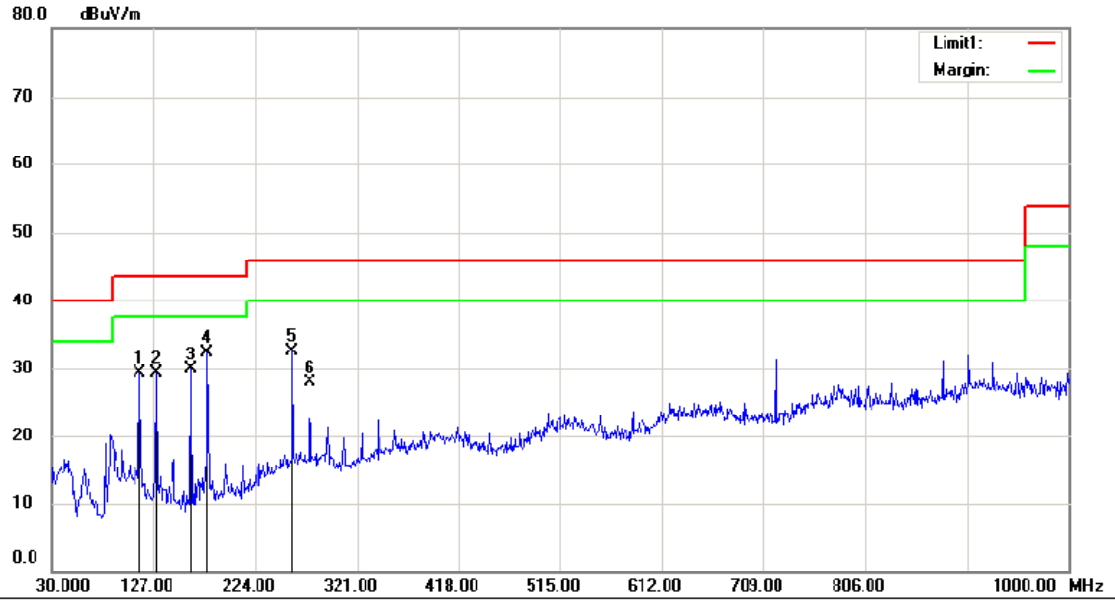
Operation Mode:	TX 2412	Test Date :	December 04, 2014
Frequency Range:	30MHz-1GHz	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Measured Distance:	3m	Test By:	KING KONG
Note:			



Site 3m Chamber #1 Polarization: **Horizontal** Temperature: 24 C
Limit: (RE)FCC PART 15 C Power: AC 120V/60Hz Humicity: 53 %
Mode:TX 2412
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		113.4200	33.60	-14.35	19.25	43.50	-24.25	QP			
2		161.9200	38.99	-17.93	21.06	43.50	-22.44	QP			
3		178.4100	40.73	-17.77	22.96	43.50	-20.54	QP			
4		259.8900	37.13	-11.33	25.80	46.00	-20.20	QP			
5	*	879.7200	39.77	-2.27	37.50	46.00	-8.50	QP			
6		903.9700	38.19	-1.29	36.90	46.00	-9.10	QP			

*.Maximum data x.Over limit !.over margin Operator. KK

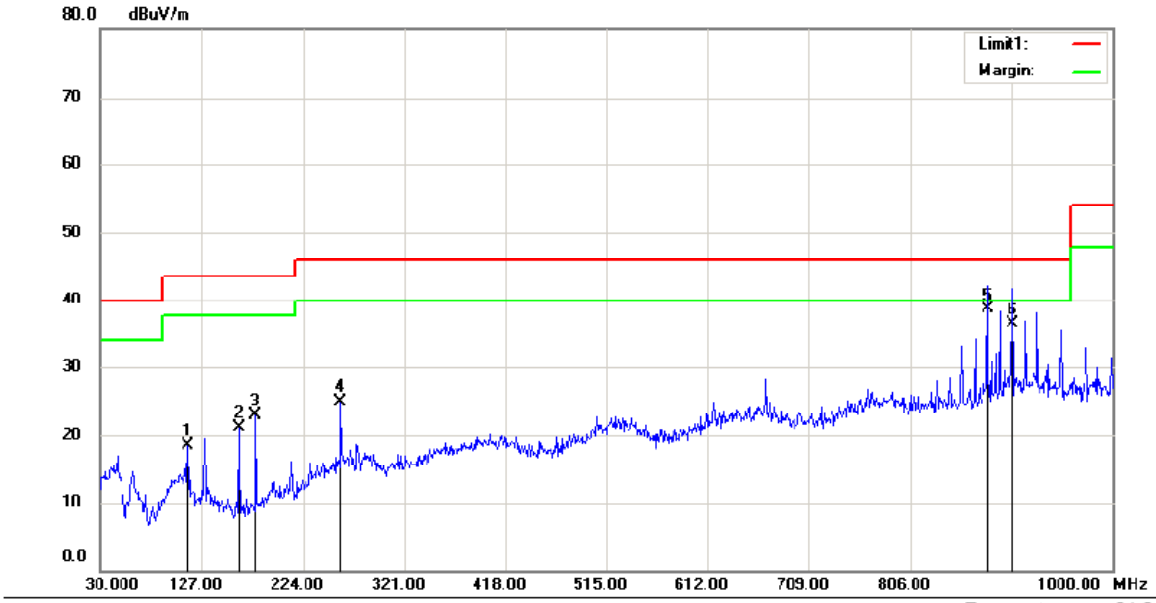


Site 3m Chamber #1 Polarization: *Vertical* Temperature: 24 C
Limit: (RE)FCC PART 15 C Powor: AC 120V/60Hz Humidity: 53 %
Mode:TX 2412
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		113.4200	43.64	14.35	29.29	43.50	14.21	QP			
2		129.9100	45.72	-16.37	29.35	43.50	-14.15	QP			
3		161.9200	47.80	-17.93	29.87	43.50	-13.63	QP			
4	*	178.4100	50.17	17.77	32.40	43.50	11.10	QP			
5		259.8900	43.79	-11.33	32.46	46.00	-13.54	QP			
6		276.3800	38.74	-10.75	27.99	46.00	-18.01	QP			

*:Maximum data x:Over limit l:over margin Operator: KK

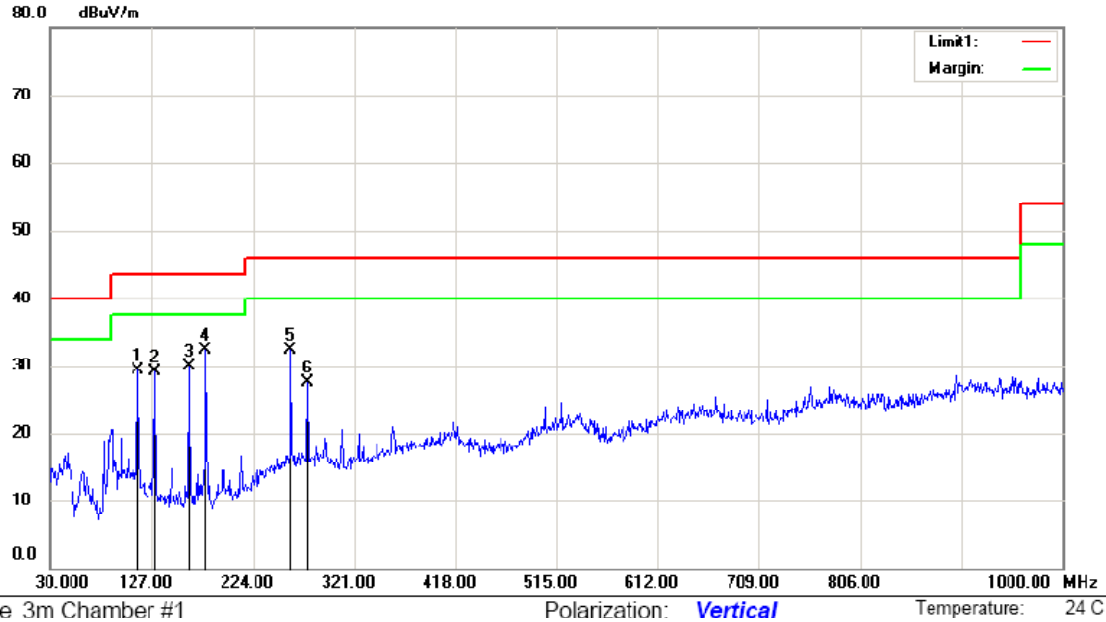
Operation Mode:	TX 2437	Test Date :	December 04, 2014
Frequency Range:	30MHz-1GHz	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Measured Distance:	3m	Test By:	KING KONG
Note:			



Site 3m Chamber #1 Polarization: Horizontal Temperature. 24 C
Limit: (RE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode:TX 2437
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		113.4200	32.81	-14.35	18.46	43.50	-25.04	QP			
2		161.9200	39.01	-17.93	21.08	43.50	-22.42	QP			
3		178.4100	40.68	-17.77	22.91	43.50	-20.59	QP			
4		259.8900	36.28	-11.33	24.95	46.00	-21.05	QP			
5	*	879.7200	40.77	-2.27	38.50	46.00	-7.50	QP			
6		903.9700	37.59	-1.29	36.30	46.00	-9.70	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

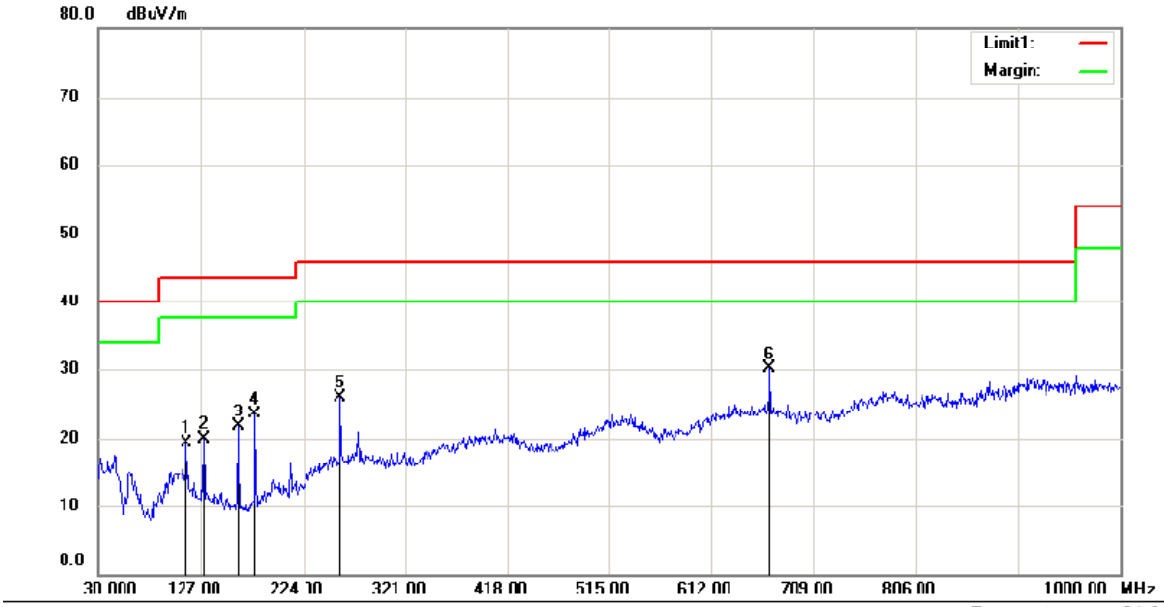


Site 3m Chamber #1 Polarization: *Vertical* Temperature: 24 C
Limit: (RE)FCC PART 15 C Powor: AC 120V/60Hz Humidity: 53 %
Mode:TX 2437
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		113.4200	43.56	-14.35	29.21	43.50	-14.29	QP			
2		129.9100	45.38	-16.37	29.01	43.50	-14.49	QP			
3		161.9200	47.81	-17.93	29.88	43.50	-13.62	QP			
4	*	178.4100	50.13	-17.77	32.36	43.50	-11.14	QP			
5		259.8900	43.62	-11.33	32.29	46.00	-13.71	QP			
6		276.3800	38.32	-10.75	27.57	46.00	-18.43	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

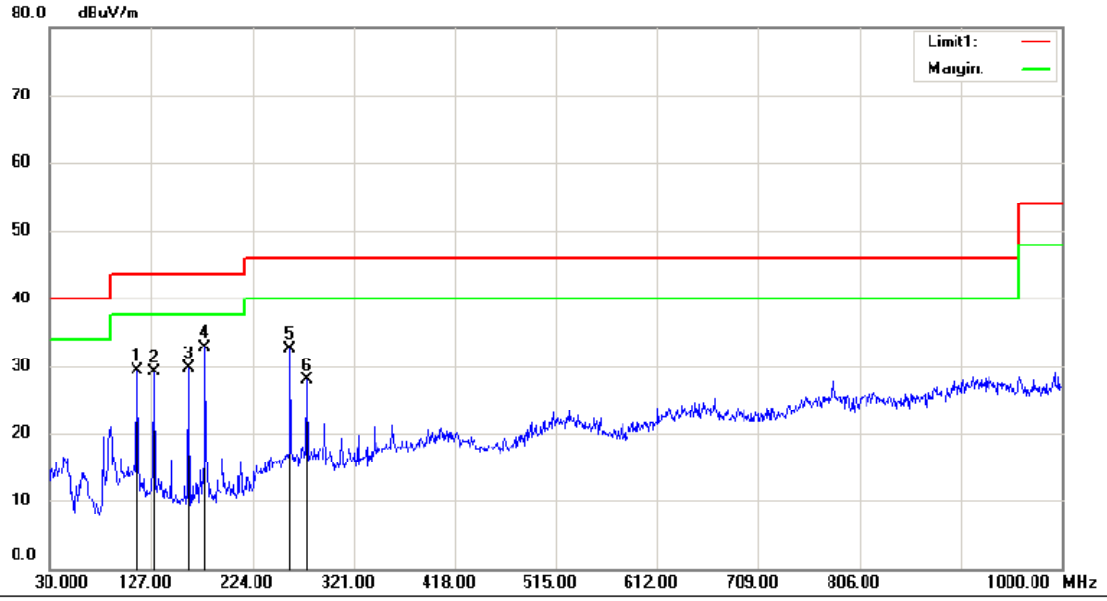
Operation Mode:	TX 2462	Test Date :	December 04, 2014
Frequency Range:	30MHz-1GHz	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Measured Distance:	3m	Test By:	KING KONG
Note:			



Site: 3m Chamber #1 Polarization: Horizontal Temperature: 24 C
Limit: (RE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode:TX 2462
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		113.4200	33.64	-14.35	19.29	43.50	-24.21	QP			
2		129.9100	36.22	-16.37	19.85	43.50	-23.65	QP			
3		161.9200	39.68	-17.93	21.75	43.50	-21.75	QP			
4		178.4100	41.36	-17.77	23.59	43.50	-19.91	QP			
5		259.8900	37.17	-11.33	25.84	46.00	-20.16	QP			
6	*	667.2900	35.21	-5.02	30.19	46.00	-15.81	QP			

*:Maximum data x:Over limit !:over margin Operator: KK



Site 3m Chamber #1 Polarization: *Vertical* Temperature: 24 C
Limit: (RE)FCC PART 15 C Power: AC 120V/60Hz Humidity: 53 %
Mode:TX 2462
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		113.4200	43.58	-14.35	29.23	43.50	-14.27	QP			
2		129.9100	45.46	-16.37	29.09	43.50	-14.41	QP			
3		161.9200	47.70	-17.93	29.77	43.50	-13.73	QP			
4	*	178.4100	50.44	-17.77	32.67	43.50	-10.83	QP			
5		259.8900	43.91	-11.33	32.58	46.00	-13.42	QP			
6		276.3800	38.63	-10.75	27.88	46.00	-18.12	QP			

*:Maximum data x:Over limit !:over margin Operator: KK

Operation Mode:	802.11b TX Channel 1	Test Date :	December 04, 2014
Frequency Range:	1GHz-25GHz	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Measured Distance:	3m	Test By:	KING KONG

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
3902.25	V	63.88	44.65	74.00	54.00	-10.12	-9.35
4642.50	V	60.14	44.57	74.00	54.00	-13.86	-9.43
7392.00	V	58.65	41.36	74.00	54.00	-15.35	-12.64
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2455.13	H	56.99	44.25	74.00	54.00	-17.01	-9.75
3876.88	H	54.78	41.35	74.00	54.00	-19.22	-12.65
4617.13	H	60.33	40.28	74.00	54.00	-13.67	-13.72

All emissions not reported were more than 20dB below the specified limit or in the noise floor.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Operation Mode:	802.11b TX Channel 6	Test Date :	December 04, 2014
Frequency Range:	1GHz-25GHz	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Measured Distance:	3m	Test By:	KING KONG

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
2809.50	V	61.28	42.65	74.00	54.00	-12.72	-11.35
4607.25	V	59.35	42.65	74.00	54.00	-14.65	-11.35
5324.00	V	60.78	45.98	74.00	54.00	-13.22	-8.02
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4581.88	H	65.44	49.47	74.00	54.00	-8.56	-4.53
5298.63	H	60.35	43.12	74.00	54.00	-13.65	-10.88
7296.13	H	58.45	43.19	74.00	54.00	-15.55	-10.81

All emissions not reported were more than 20dB below the specified limit or in the noise floor.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Operation Mode:	802.11b TX (Channel 11)	Test Date :	December 04, 2014
Frequency Range:	1GHz-25GHz	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Measured Distance:	3m	Test By:	KING KONG

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
(MHz)	H/V	PK	AV	PK	AV	PK	AV
3382.38	V	65.45	46.48	74.00	54.00	-8.55	-7.52
4157.88	V	60.54	45.78	74.00	54.00	-13.46	-8.22
4627.88	V	59.01	41.25	74.00	54.00	-14.99	-12.75
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
1713.88	H	61.54	43.05	74.00	54.00	-12.46	-10.95
3382.38	H	66.54	44.87	74.00	54.00	-7.46	-9.13
4451.63	H	60.15	42.95	74.00	54.00	-13.85	-11.05

No others harmonics emissions are higher than 20dB below the limits of 47 CFR Part 15.247.

Note: (1) All Readings are Peak Value and AV.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss.
(3) Data of measurement within this frequency range shown " -- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

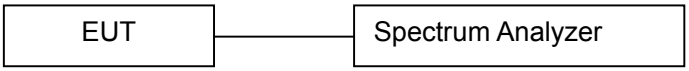
7. 6dB Bandwidth Test

7.1 Measurement Procedure

The EUT was operating in IEEE 802.11b/g/n mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

1. The testing follows FCC KDB Publication No. 558074 DTS 001 Meas. Guidance v03r02
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously
4. Make the measurement with the spectrum analyzer 's resolution bandwidth (RBW) = 100 kHz.Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement The 6dB bandwidth must be greater than 500 kHz
5. Measure and record the results in the test report.

7.2 Test SET-UP (Block Diagram of Configuration)



7.3 Measurement Equipment Used

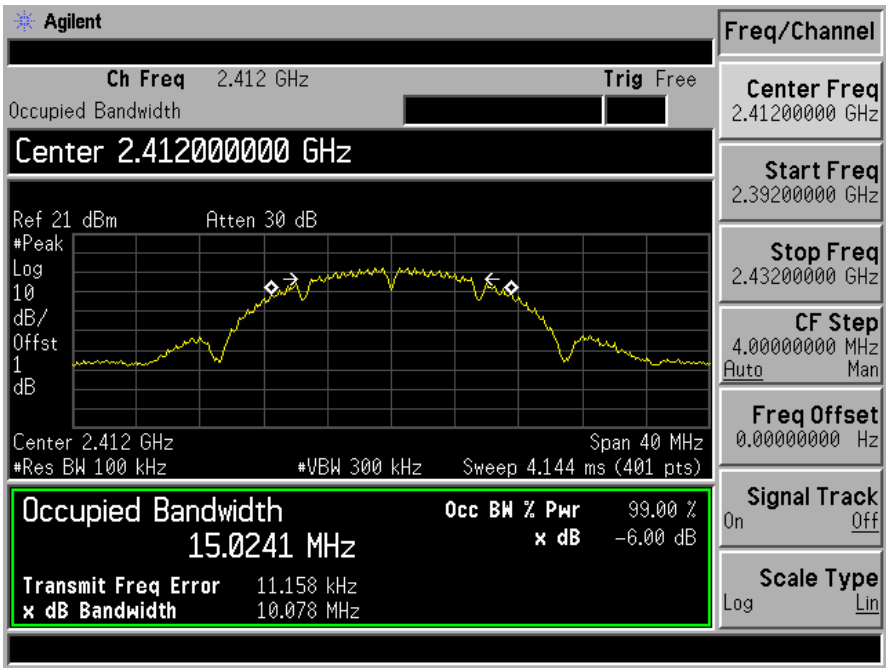
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4407B	88156318	05/17/2014	05/16/2015

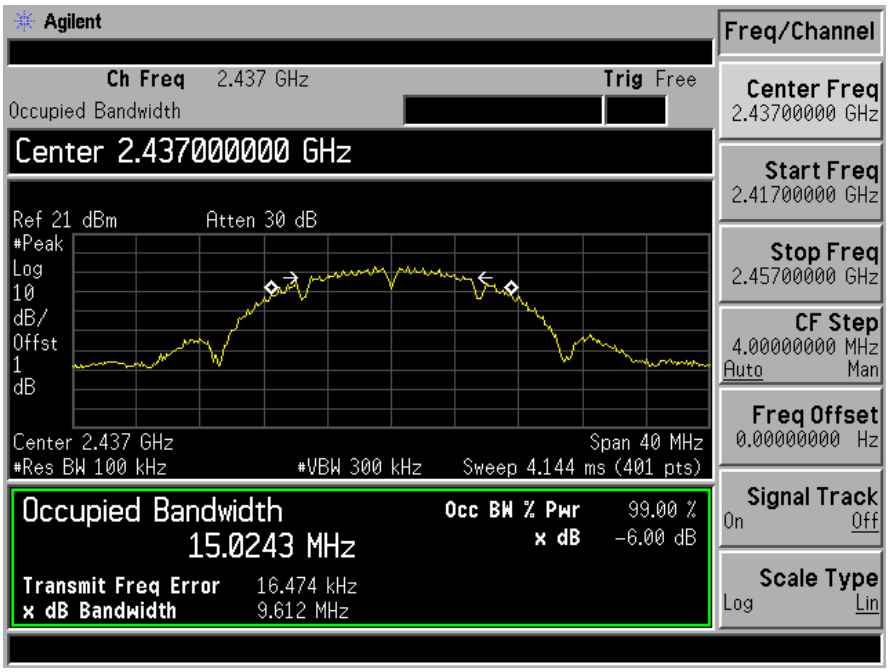
7.4 Measurement Results

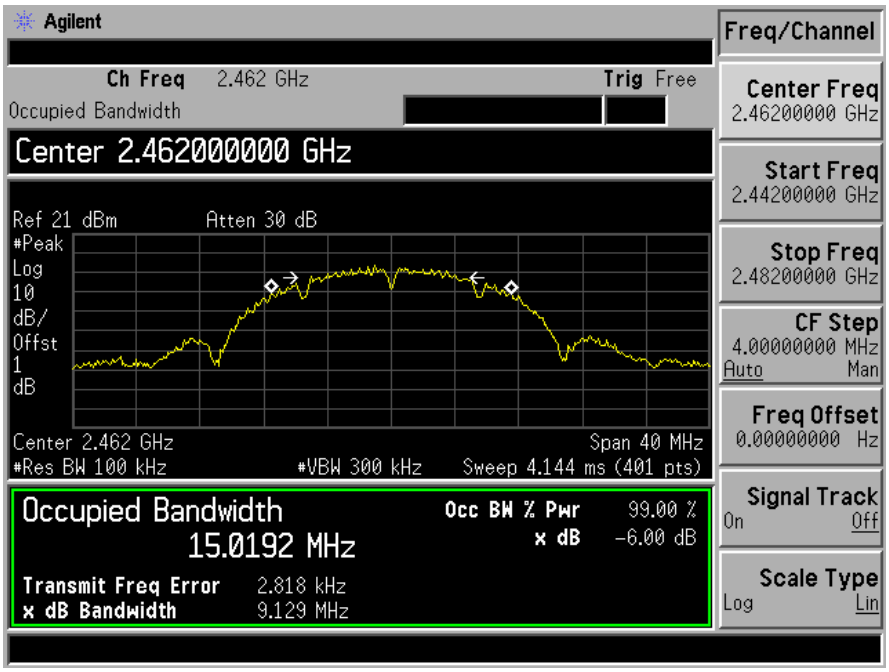
6db Bandwidth Test Data Chart:
Refer to attached data chart.

Spectrum Detector:	PK	Test Date:	December 04, 2014
Test By:	KING KONG	Temperature:	24℃
Test Result:	PASS	Humidity:	53 %
Operation Mode: 802.11b			

Channel number	Channel frequency (MHz)	Measurement level (MHz)	Mode
1	2412	10.078	6db Bandwidth
6	2437	9.612	6db Bandwidth
11	2462	9.129	6db Bandwidth

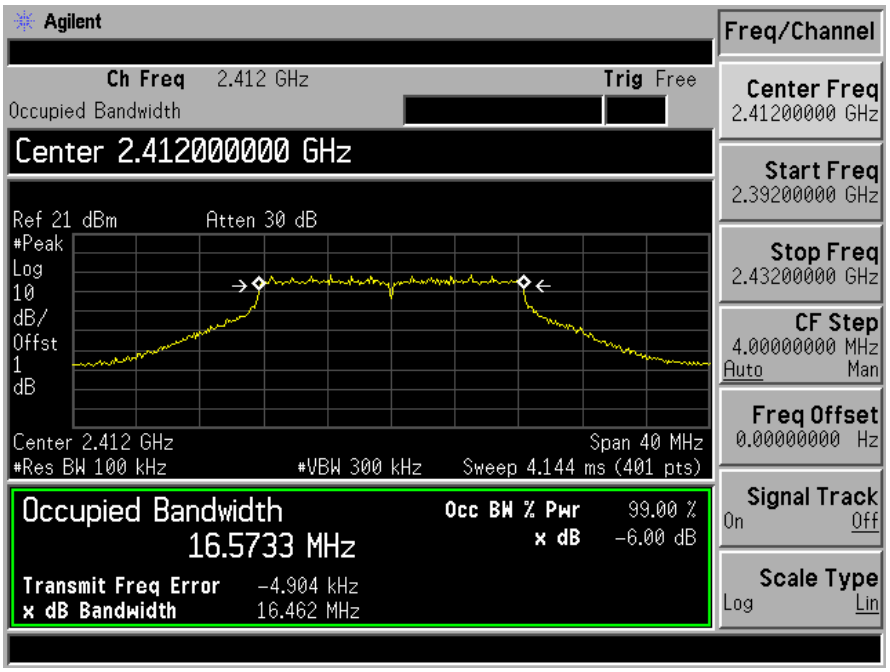


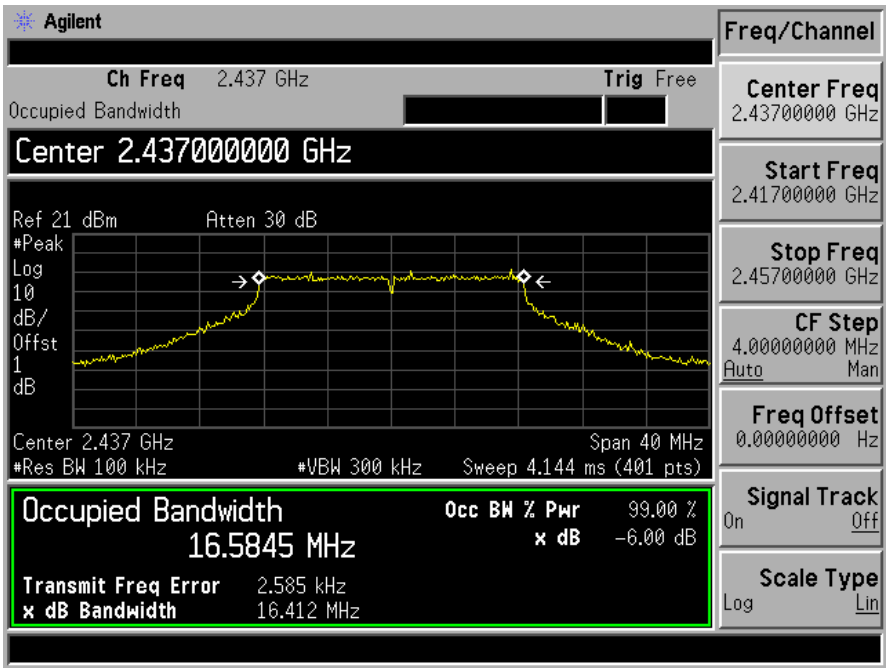


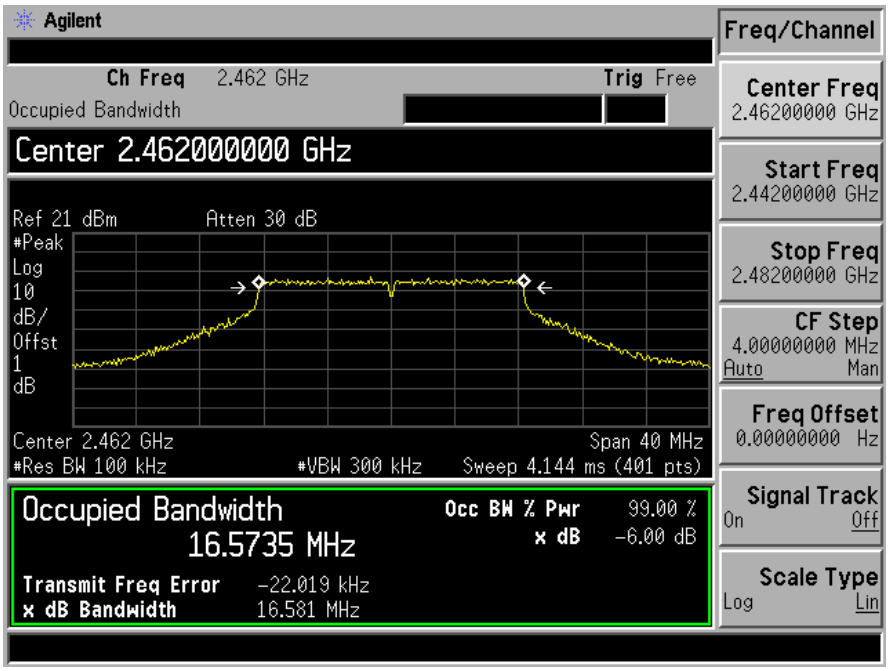

Agilent
Ch Freq 2.462 GHz
Trig Free
Occupied Bandwidth
Center 2.462000000 GHz
Ref 21 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.462 GHz
Span 40 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 4.144 ms (401 pts)
Occupied Bandwidth
15.0192 MHz
Occ BW % Pwr 99.00 %
x dB -6.00 dB
Transmit Freq Error 2.818 kHz
x dB Bandwidth 9.129 MHz
Freq/Channel
Center Freq
2.46200000 GHz
Start Freq
2.44200000 GHz
Stop Freq
2.48200000 GHz
CF Step
4.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Scale Type
Log Lin

Spectrum Detector:	PK	Test Date:	December 04, 2014
Test By:	KING KONG	Temperature:	24℃
Test Result:	PASS	Humidity:	53 %
Operation Mode: 802.11g			

Channel number	Channel frequency (MHz)	Measurement level (MHz)	Mode
1	2412	16.462	6db Bandwidth
6	2437	16.412	6db Bandwidth
11	2462	16.581	6db Bandwidth



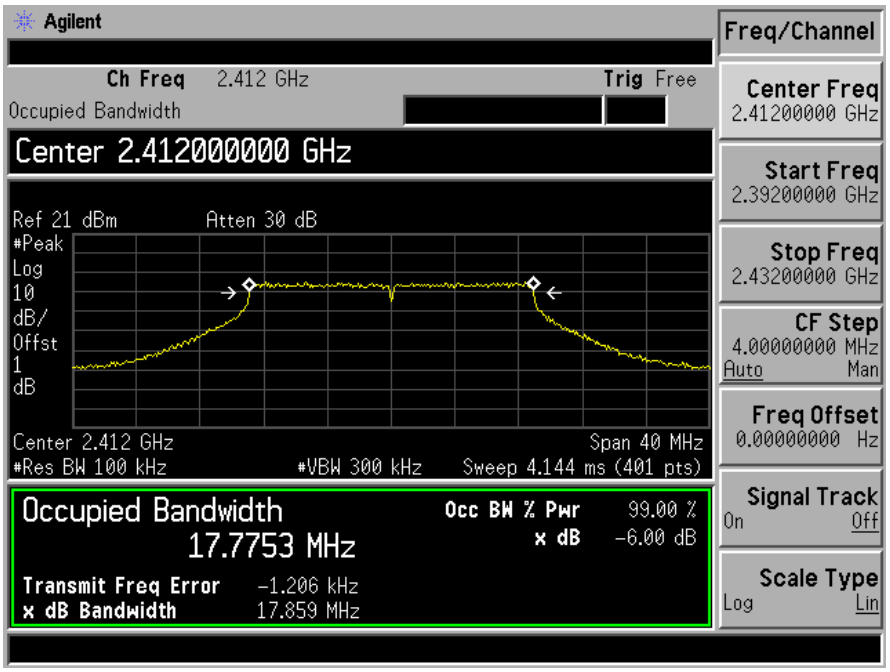


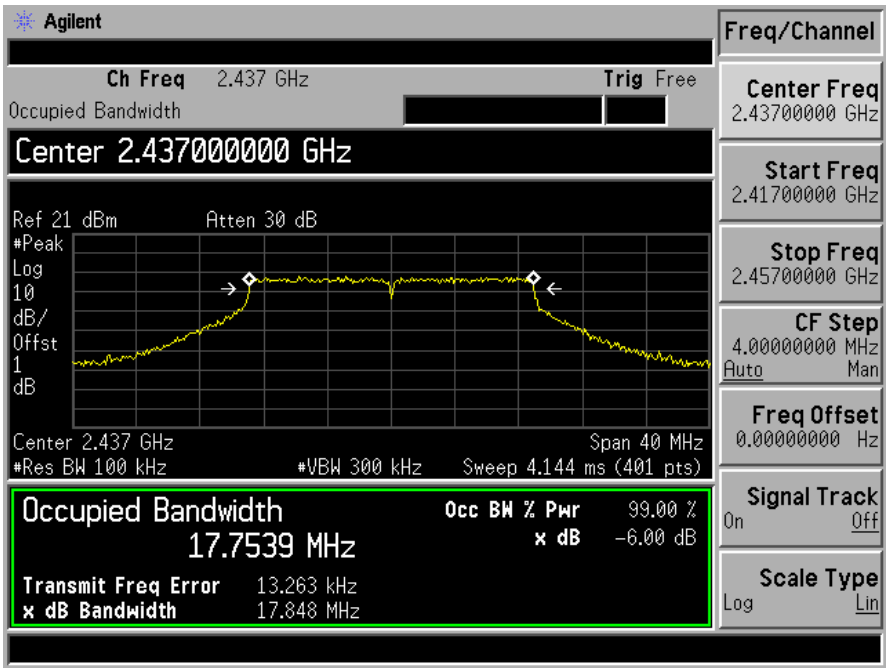

Agilent
Ch Freq 2.462 GHz
Trig Free
Occupied Bandwidth
Center 2.462000000 GHz
Ref 21 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.462 GHz
Span 40 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 4.144 ms (401 pts)
Occupied Bandwidth
16.5735 MHz
Occ BW % Pwr 99.00 %
x dB -6.00 dB
Transmit Freq Error -22.019 kHz
x dB Bandwidth 16.581 MHz
Freq/Channel
Center Freq
2.46200000 GHz
Start Freq
2.44200000 GHz
Stop Freq
2.48200000 GHz
CF Step
4.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Scale Type
Log Lin

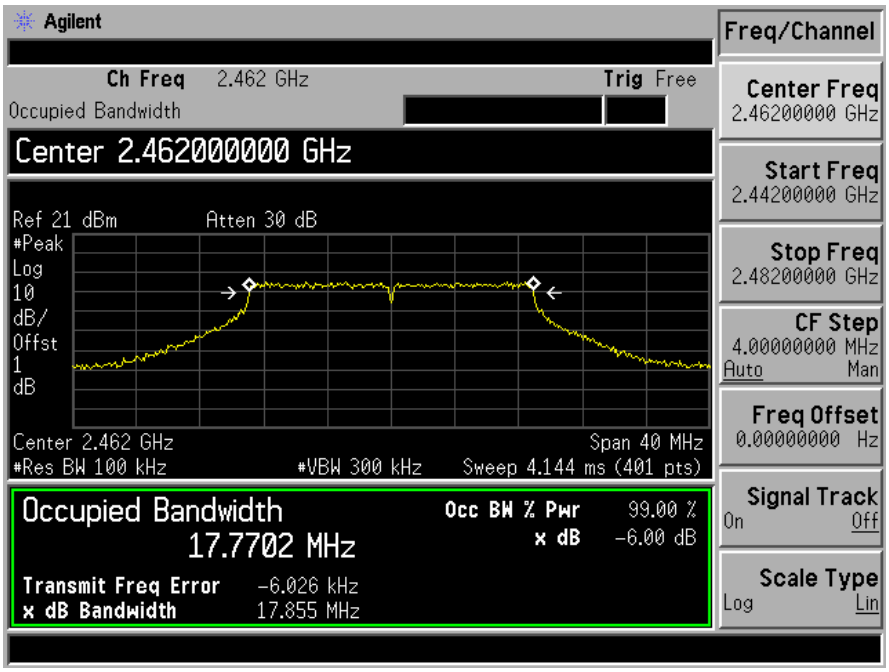
Spectrum Detector:	PK	Test Date:	December 04, 2014
Test By:	KING KONG	Temperature:	24℃
Test Result:	PASS	Humidity:	53 %

Operation Mode: 802.11n (HT20)

Channel number	Channel frequency (MHz)	Measurement level (MHz)	Mode
1	2412	17.859	6db Bandwidth
6	2437	17.848	6db Bandwidth
11	2462	17.855	6db Bandwidth



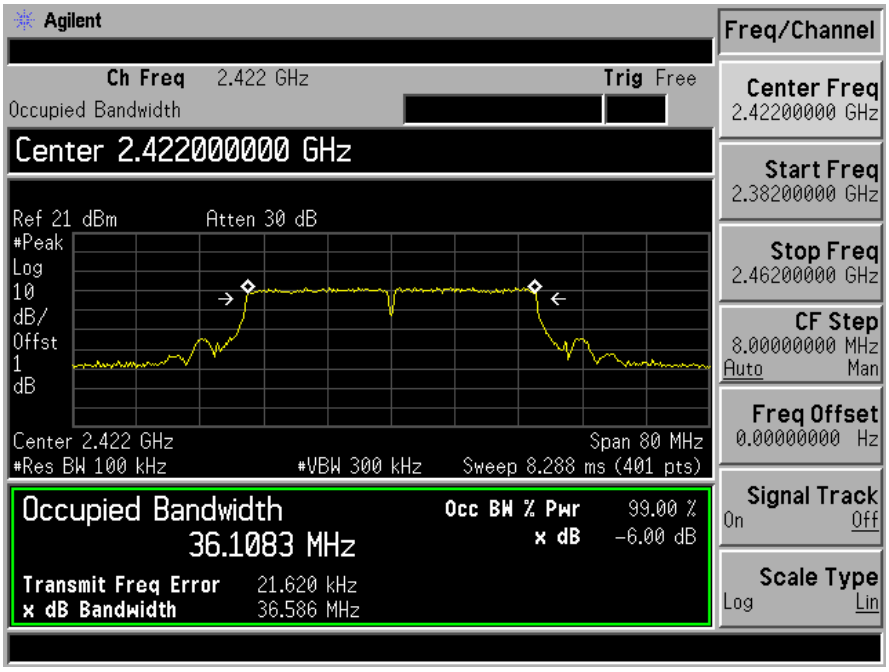


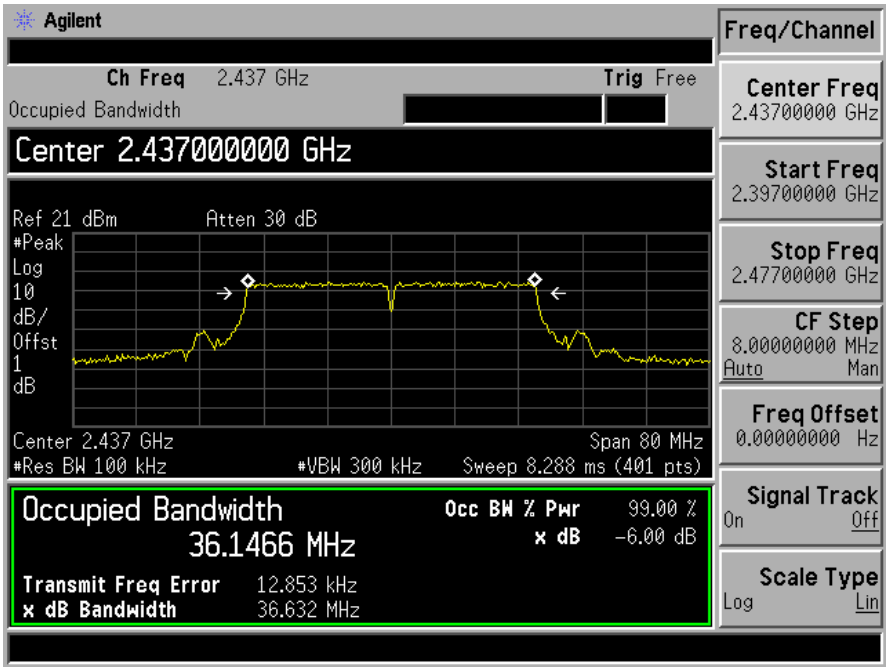

Agilent
Ch Freq 2.462 GHz
Trig Free
Occupied Bandwidth
Center 2.462000000 GHz
Ref 21 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.462 GHz
Span 40 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 4.144 ms (401 pts)
Occupied Bandwidth
17.7702 MHz
Occ BW % Pwr 99.00 %
x dB -6.00 dB
Transmit Freq Error -6.026 kHz
x dB Bandwidth 17.855 MHz
Freq/Channel
Center Freq
2.46200000 GHz
Start Freq
2.44200000 GHz
Stop Freq
2.48200000 GHz
CF Step
4.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Scale Type
Log Lin

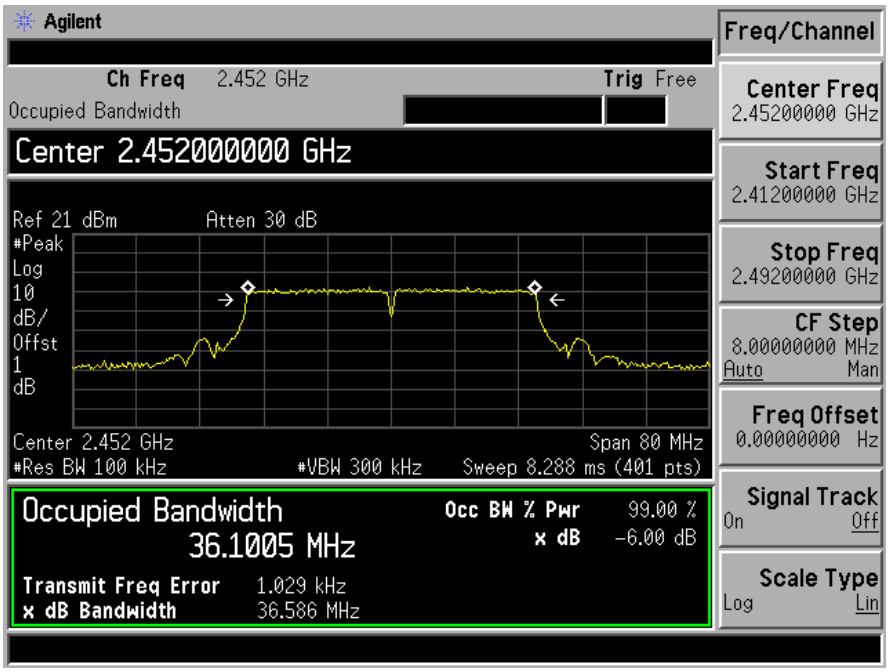
Spectrum Detector:	PK	Test Date:	December 04, 2014
Test By:	KING KONG	Temperature:	24℃
Test Result:	PASS	Humidity:	53 %

Operation Mode: 802.11 n (HT40)

Channel number	Channel frequency (MHz)	Measurement level (MHz)	Mode
3	2422	36.586	6db Bandwidth
6	2437	36.632	6db Bandwidth
9	2452	36.586	6db Bandwidth






Agilent
Ch Freq 2.452 GHz
Trig Free
Occupied Bandwidth
Center 2.452000000 GHz
Ref 21 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
1
dB
Center 2.452 GHz
Span 80 MHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 8.288 ms (401 pts)
Occupied Bandwidth
36.1005 MHz
Occ BW % Pwr 99.00 %
x dB -6.00 dB
Transmit Freq Error 1.029 kHz
x dB Bandwidth 36.586 MHz
Freq/Channel
Center Freq
2.45200000 GHz
Start Freq
2.41200000 GHz
Stop Freq
2.49200000 GHz
CF Step
8.00000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Scale Type
Log Lin

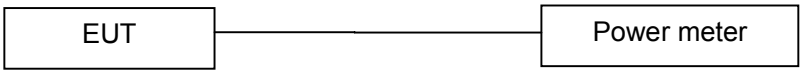
8. Maximum Peak Output Power Test

8.1 Measurement Procedure

The maximum peak conducted output power can be measured using a broadband peak RF power meter. The power meter must have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast, average-responding diode type sensor.

a. The Transmitter output (antenna port) was connected to the power meter.
b. Turn on the EUT and power meter and then record the peak power value.
c. Repeat above procedures on all channels needed to be tested.

8.2 Test SET-UP (Block Diagram of Configuration)



8.3 Measurement Equipment Used

EQUIPMENT TYPE	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Power meter	ML2495A	0824006	05/17/2014	05/16/2015
Power sensor	MA2411B	0738172	05/17/2014	05/16/2015

8.4 Peak Power output limit

The maximum peak power shall be less 1Watt.

8.5 Measurement Results

Spectrum Detector:	PK	Test Date:	December 04, 2014
Test By:	KING KONG	Temperature:	24℃
Test Result:	PASS	Humidity:	53 %
Operation Mode:	802.11b		

Channel number	Channel Frequency(MHz)	Peak Power output(dBm)	Peak Power Limit(W)	Pass/Fail
1	2412	15.41	1W(30dBm)	PASS
6	2437	16.01	1W(30dBm)	PASS
11	2462	16.19	1W(30dBm)	PASS

Spectrum Detector:	PK	Test Date:	December 04, 2014
Test By:	KING KONG	Temperature:	24℃
Test Result:	PASS	Humidity:	53 %
Operation Mode:	802.11g		

Channel number	Channel Frequency (MHz)	Peak Power output(dBm)	Peak Power Limit(W)	Pass/Fail
1	2412.00	12.81	1W(30dBm)	PASS
6	2437.00	12.17	1W(30dBm)	PASS
11	2462.00	12.49	1W(30dBm)	PASS

Spectrum Detector:	PK	Test Date:	December 04, 2014
Test By:	KING KONG	Temperature:	24℃
Test Result:	PASS	Humidity:	53 %
Operation Mode:	802.11n H20		

Channel number	Channel Frequency (MHz)	Peak Power output(dBm)	Peak Power Limit(W)	Pass/Fail
1	2412.00	12.40	1W(30dBm)	PASS
6	2437.00	11.79	1W(30dBm)	PASS
11	2462.00	11.88	1W(30dBm)	PASS

Spectrum Detector:	PK	Test Date:	December 04, 2014
Test By:	KING KONG	Temperature:	24℃
Test Result:	PASS	Humidity:	53 %
Operation Mode:	802.11n H40		

Channel number	Channel Frequency (MHz)	Peak Power output(dBm)	Peak Power Limit(W)	Pass/Fail
3	2422.00	9.38	1W(30dBm)	PASS
6	2437.00	10.28	1W(30dBm)	PASS
9	2452.00	10.11	1W(30dBm)	PASS

9. Band Edge Test

9.1 Measurement Procedure

1. The EUT was Operating in could be controlled its channel. Printed out test result from the spectrum by hard copy function.
2. The EUT was placed on a turn table which is 0.8m above ground plane.
3. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
4. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5. Repeat above procedures until all frequency measured were complete.

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 3MHz.

EMI Test Receiver	Setting
Attenuation	Auto
RB	1MHz
VB	3MHz
Detector	Peak
Trace	Max hold

When spectrum scanned above 1GHz setting resolution bandwidth 1MHz, video bandwidth 10Hz.

EMI Test Receiver	Setting
Attenuation	Auto
RB	1MHz
VB	10Hz
Detector	Peak
Trace	Max hold

9.2 Test SET-UP (Block Diagram of Configuration)

As 6.2 Test set up (B) and (C)

9.3 Measurement Equipment Used

Same as 6.3 Radiated Emission Measurement.

9.4 Measurement Results

Test mode: 802.11b

Spectrum Detector:	PK/AV	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test channel:	01	Humidity :	53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2388.54	H	50.21	44.24	74	54
2396.35	V	55.04	47.45	74	54

Spectrum Detector:	PK/AV	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test channel:	11	Humidity :	53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2484.50	H	52.14	40.91	74	54
2485.95	V	50.47	40.58	74	54

Test mode: 802.11g

Spectrum Detector:	PK/AV	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test channel:	01	Humidity :	53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2367.81	H	55.54	40.74	74	54
2395.45	V	57.45	44.64	74	54

Spectrum Detector:	PK/AV	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test channel:	11	Humidity :	53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2486.18	H	51.16	42.09	74	54
2490.47	V	51.74	40.46	74	54

Test mode: 802.11n HT20

Spectrum Detector:	PK/AV	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test channel:	01	Humidity :	53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2391.16	H	53.95	41.32	74	54
2394.78	V	52.47	44.14	74	54

Spectrum Detector:	PK/AV	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test channel:	11	Humidity :	53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2485.16	H	53.16	41.35	74	54
2484.33	V	54.47	44.16	74	54

Test mode: 802.11n HT40

Spectrum Detector:	PK/AV	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test channel:	01	Humidity :	53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2383.65	H	50.66	40.78	74	54
2391.45	V	52.46	38.62	74	54

Spectrum Detector:	PK/AV	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test channel:	11	Humidity :	53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2485.69	H	53.14	40.32	74	54
2484.64	V	50.44	42.16	74	54

10. Power Density

10.1 Test Equipment

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4407B	88156318	05/17/2014	05/16/2015

10.2 Measuring Instruments and Setting

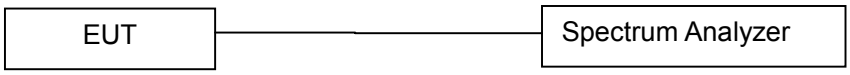
The following table is the setting of spectrum analyzer.

Spectrum analyzer	Setting
Attenuation	Auto
Span Frequency	Set the span to 1.5 times the DTS bandwidth.
RB	3kHz ≤RBW ≤100KHz
VB	3 x RBW
Detector	Peak
Trace	Max hold
Sweep Time	Automatic

10.3 Test Procedures

a. The transmitter output (antenna port) was connected to the spectrum analyzer.
b. Set analyzer center frequency to DTS channel center frequency.
c. Set the analyzer span to a minimum of 1.5 times the DTS bandwidth.
d. Set the RBW ≥ 3 kHz. Set the VBW ≥ 3 x RBW.
e. Detector = peak.
f. Sweep time = auto couple.
g. Trace mode = max hold.
h. Allow trace to fully stabilize.
i. Use the peak marker function to determine the maximum amplitude level within the RBW.

10.4 Block Diagram of Test Setup



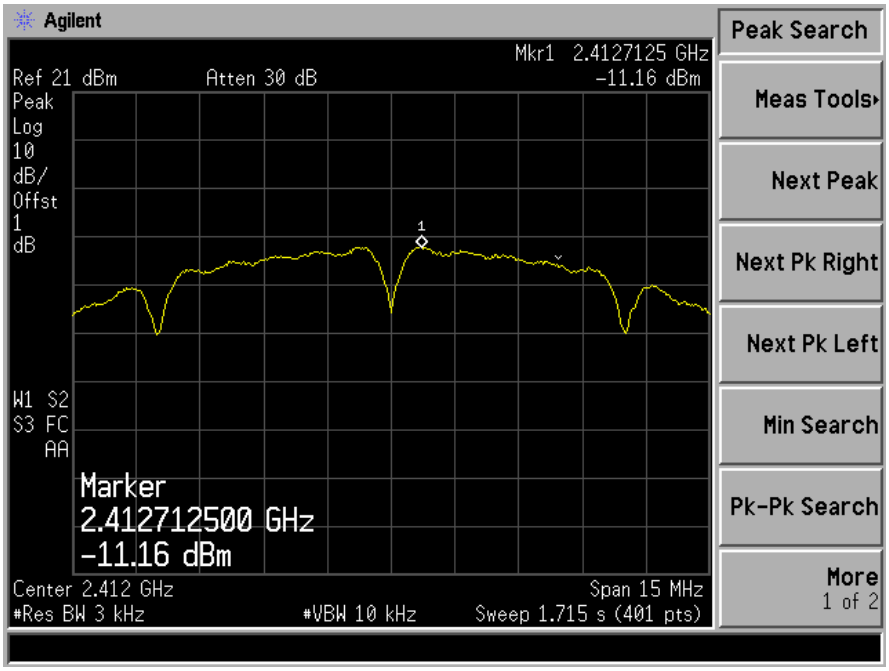
10.5 Limit

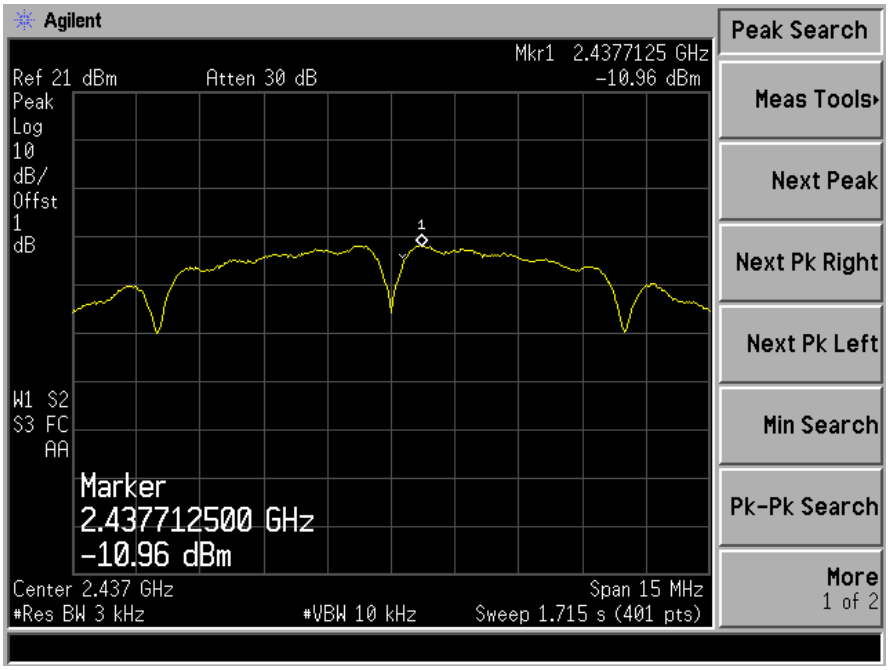
The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3 kHz bandwidth.

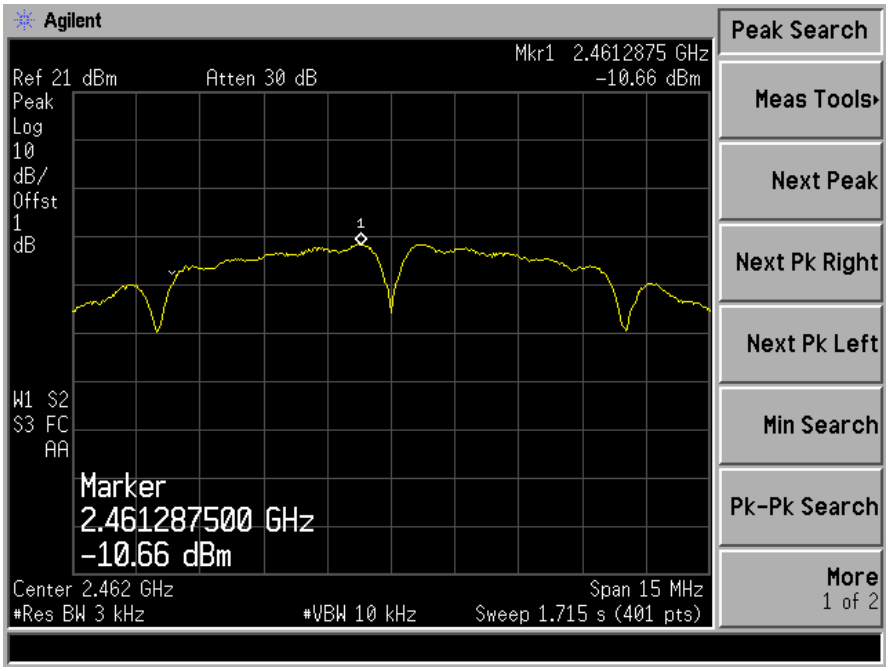
10.6 Test Result

Spectrum Detector:	PK	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Operation Mode:	802.11 b		

Channel	Measurement Level (dBm)	Required Limit (dBm)	Result
1	-11.16	<8dBm	PASS
6	-10.96	<8dBm	PASS
11	-10.66	<8dBm	PASS

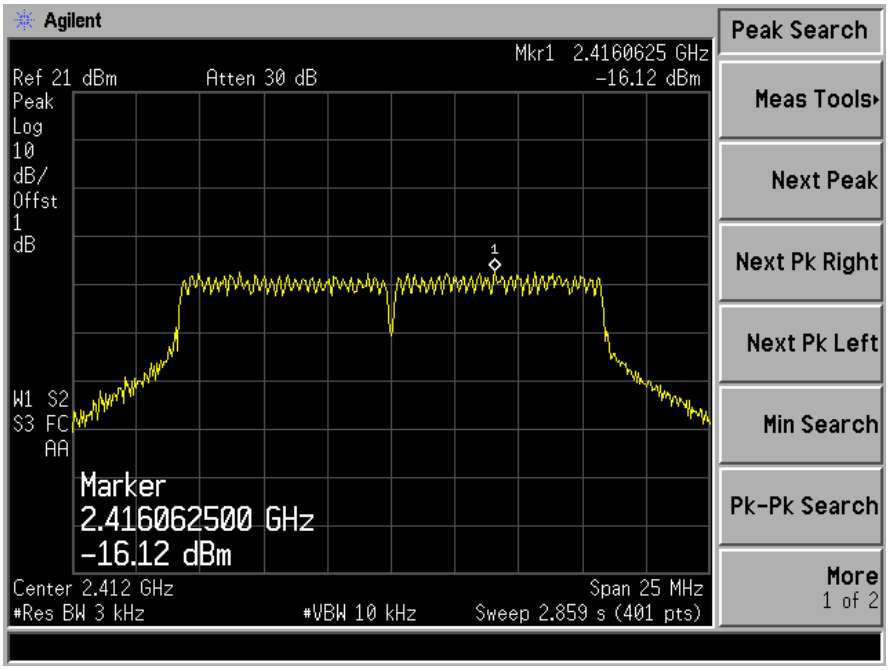


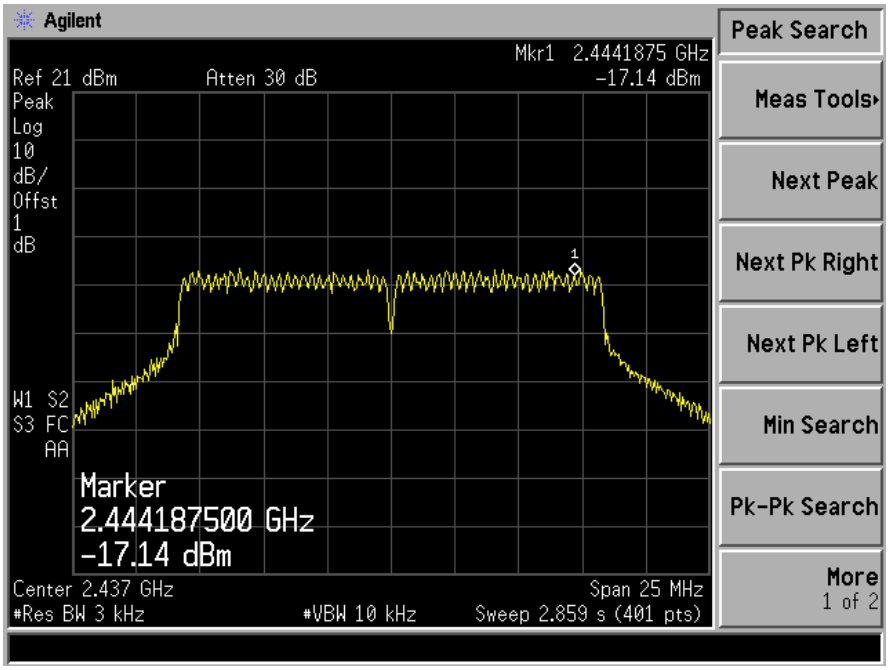

Agilent
Mkr1 2.4377125 GHz
Ref 21 dBm
Atten 30 dB
-10.96 dBm
Peak
Log
10
dB/
Offst
1
dB
W1 S2
S3 FC
AA
Marker
2.437712500 GHz
-10.96 dBm
Center 2.437 GHz
Span 15 MHz
#Res BW 3 kHz
#VBW 10 kHz
Sweep 1.715 s (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

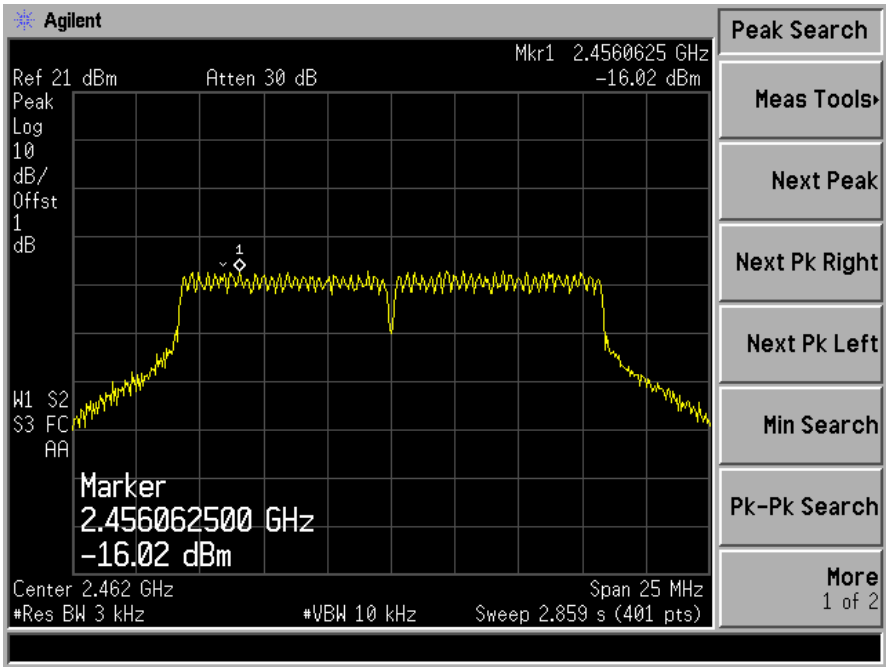

Agilent
Mkr1 2.4612875 GHz
Ref 21 dBm
Atten 30 dB
-10.66 dBm
Peak
Log
10
dB/
Offst
1
dB
W1 S2
S3 FC
AA
Marker
2.461287500 GHz
-10.66 dBm
Center 2.462 GHz
Span 15 MHz
#Res BW 3 kHz
#VBW 10 kHz
Sweep 1.715 s (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

Spectrum Detector:	PK	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Operation Mode:	802.11 g		

Channel	Measurement Level (dBm)	Required Limit (dBm)	Result
1	-16.12	<8dBm	PASS
6	-17.14	<8dBm	PASS
11	-16.02	<8dBm	PASS

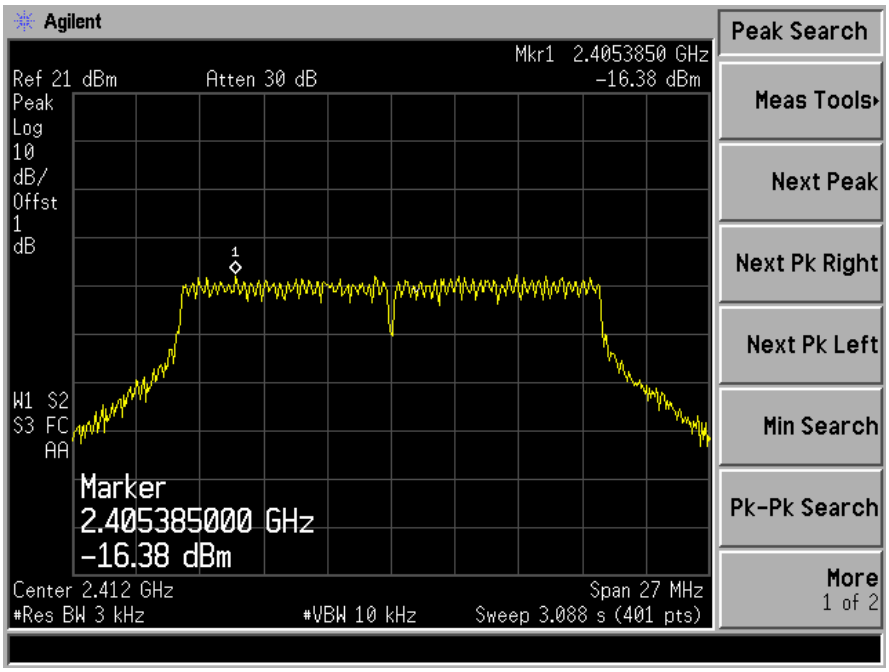


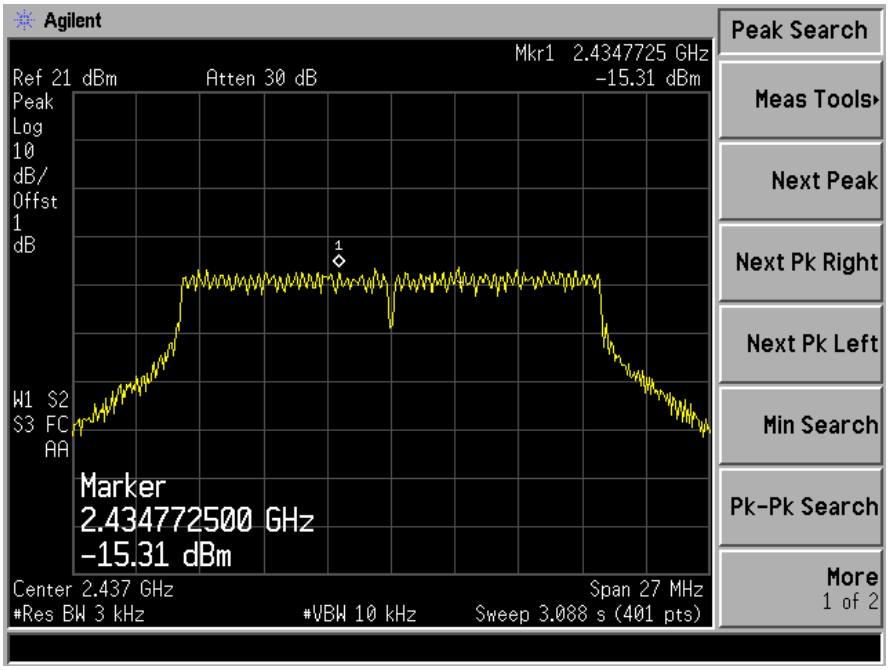

Agilent
Mkr1 2.4441875 GHz
Ref 21 dBm
Atten 30 dB
-17.14 dBm
Peak
Log
10
dB/
Offst
1
dB
W1 S2
S3 FC
AA
Marker
2.444187500 GHz
-17.14 dBm
Center 2.437 GHz
Span 25 MHz
#Res BW 3 kHz
#VBW 10 kHz
Sweep 2.859 s (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

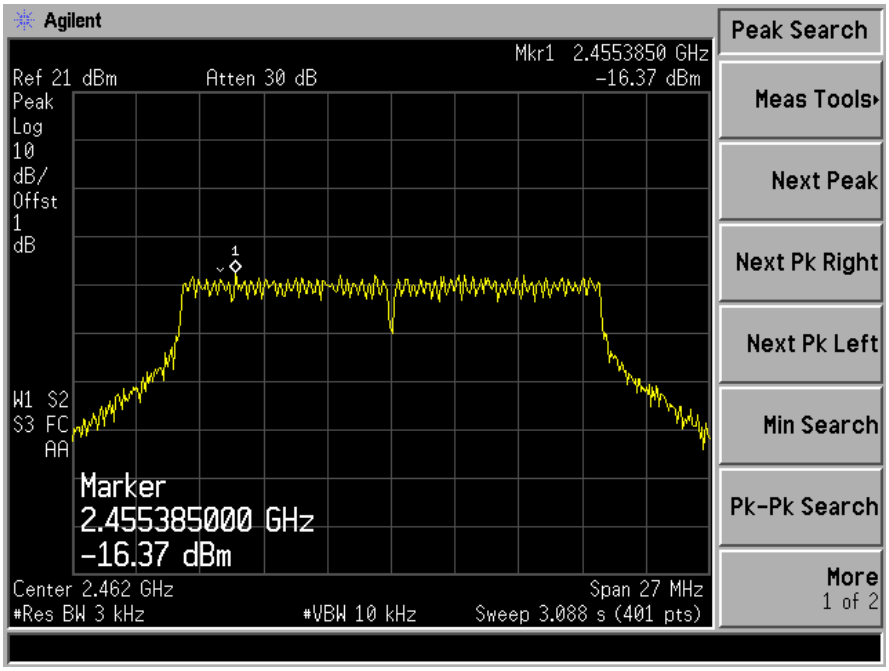

Agilent
Mkr1 2.4560625 GHz
Ref 21 dBm
Atten 30 dB
-16.02 dBm
Peak
Log
10
dB/
Offst
1
dB
W1 S2
S3 FC
AA
Marker
2.456062500 GHz
-16.02 dBm
Center 2.462 GHz
Span 25 MHz
#Res BW 3 kHz
#VBW 10 kHz
Sweep 2.859 s (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

Spectrum Detector:	PK	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Operation Mode:	802.11n HT20		

Channel	Measurement Level (dBm)	Required Limit (dBm)	Result
1	-16.38	<8dBm	PASS
6	-15.31	<8dBm	PASS
11	-16.37	<8dBm	PASS

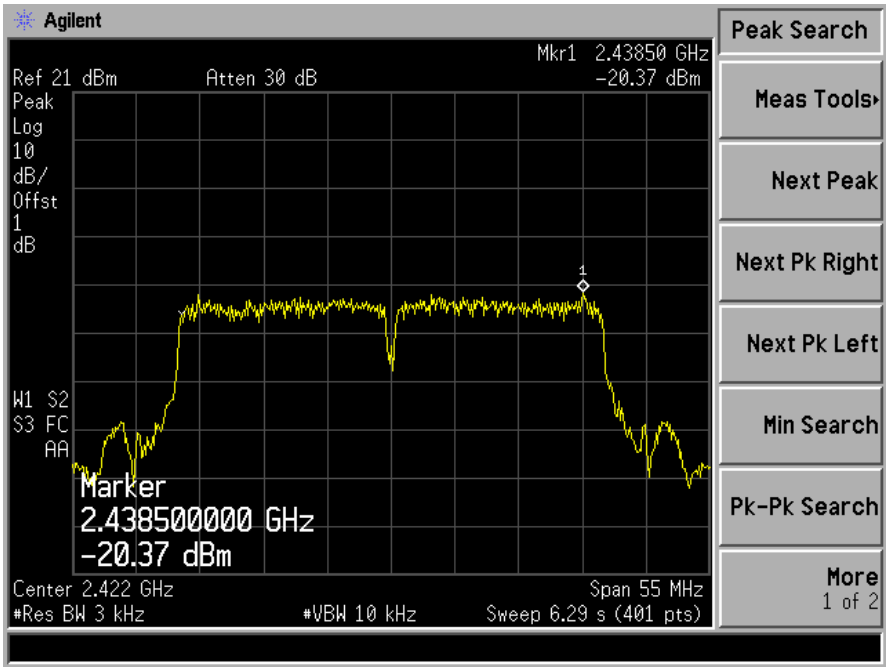


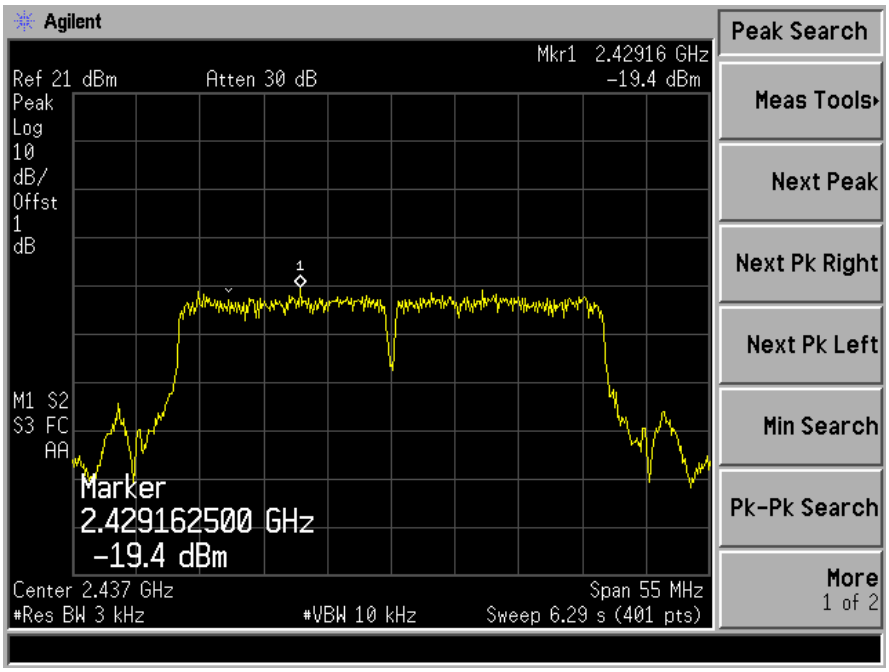

Agilent
Mkr1 2.4347725 GHz
Ref 21 dBm
Atten 30 dB
-15.31 dBm
Peak
Log
10
dB/
Offst
1
dB
W1 S2
S3 FC
AA
Marker
2.434772500 GHz
-15.31 dBm
Center 2.437 GHz
Span 27 MHz
#Res BW 3 kHz
#VBW 10 kHz
Sweep 3.088 s (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

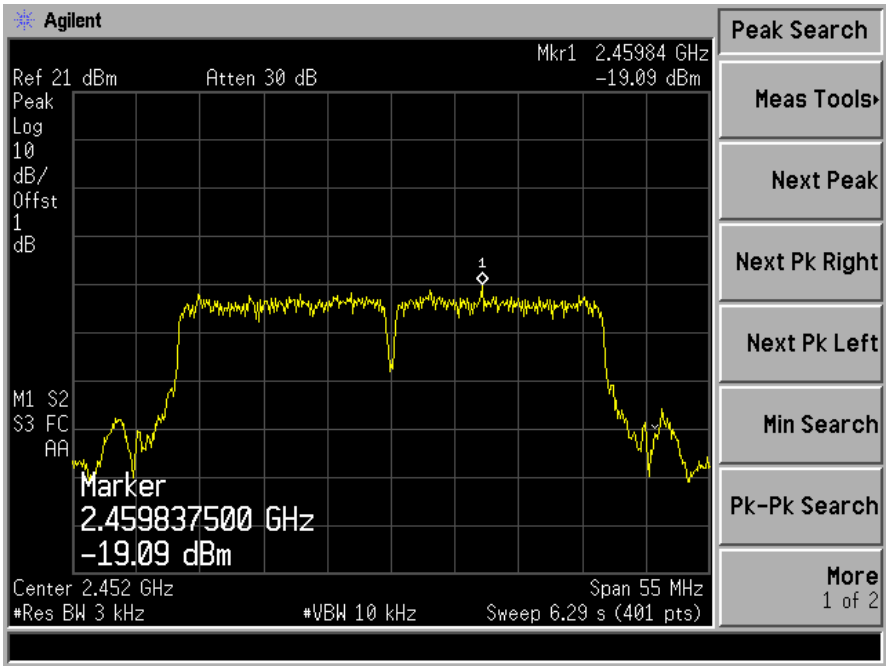

Agilent
Mkr1 2.4553850 GHz
Ref 21 dBm
Atten 30 dB
-16.37 dBm
Peak
Log
10
dB/
Offst
1
dB
W1 S2
S3 FC
AA
Marker
2.455385000 GHz
-16.37 dBm
Center 2.462 GHz
Span 27 MHz
#Res BW 3 kHz
#VBW 10 kHz
Sweep 3.088 s (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

Spectrum Detector:	PK	Test Date :	December 04, 2014
Test By:	KING KONG	Temperature :	24℃
Test Result:	PASS	Humidity :	53 %
Operation Mode:	802.11n HT40		

Channel	Measurement Level (dBm)	Required Limit (dBm)	Result
1	-20.37	<8dBm	PASS
6	-19.40	<8dBm	PASS
11	-19.09	<8dBm	PASS






Agilent
Mkr1 2.45984 GHz
Ref 21 dBm
Atten 30 dB
-19.09 dBm
Peak
Log
10
dB/
Offst
1
dB
M1 S2
S3 FC
AA
Marker
2.459837500 GHz
-19.09 dBm
Center 2.452 GHz
Span 55 MHz
#Res BW 3 kHz
#VBW 10 kHz
Sweep 6.29 s (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

11. Antenna Port Emission

11.1 Test Equipment

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Signal Analyzer	Agilent	N9010A	My53470879	05/17/2014	05/16/2015

11.2 Measuring Instruments and Setting

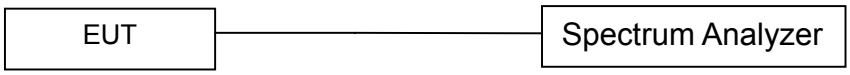
The following table is the setting of spectrum analyzer.

Spectrum analyzer	Setting
Attenuation	Auto
RB	100kHz
VB	300KHz
Detector	Peak
Trace	Max hold

11.3 Test Procedures

The conducted spurious emissions were measured conducted using a spectrum analyzer at low, Middle, and high channels, the limit was determined by attenuation 20dB of the RF peak power output.

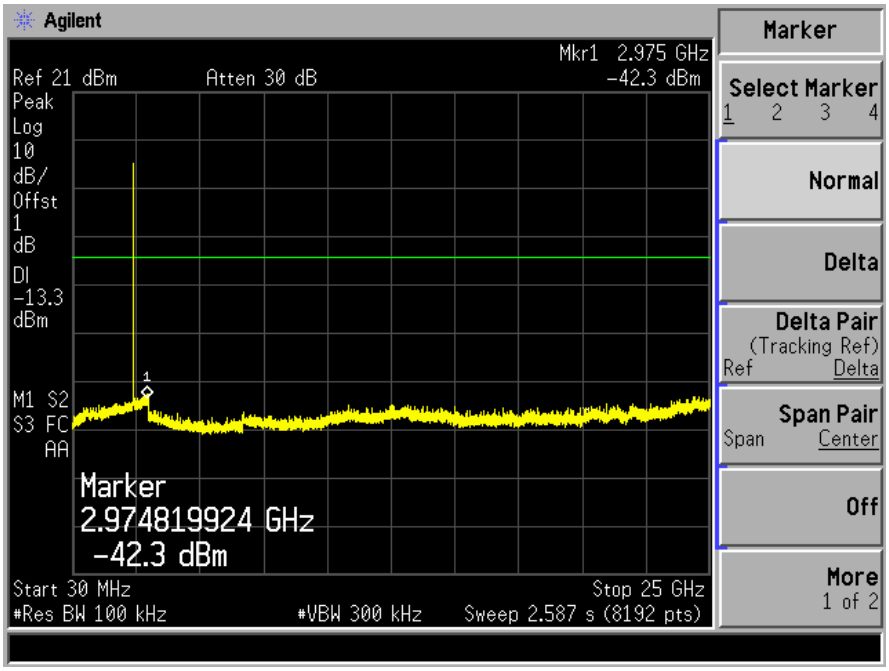
11.4 Block Diagram of Test setup



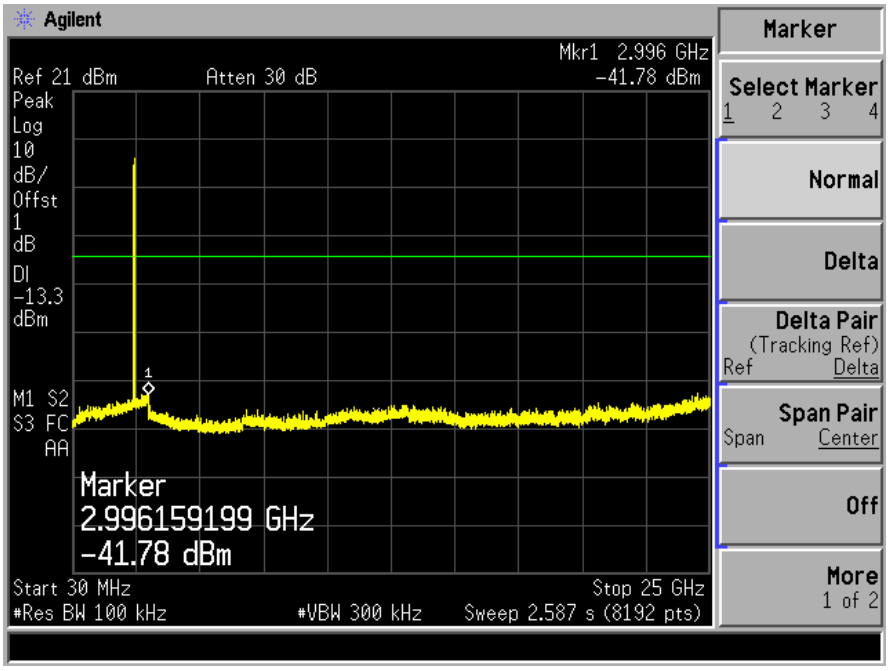
11.5 Test Result

PASS.

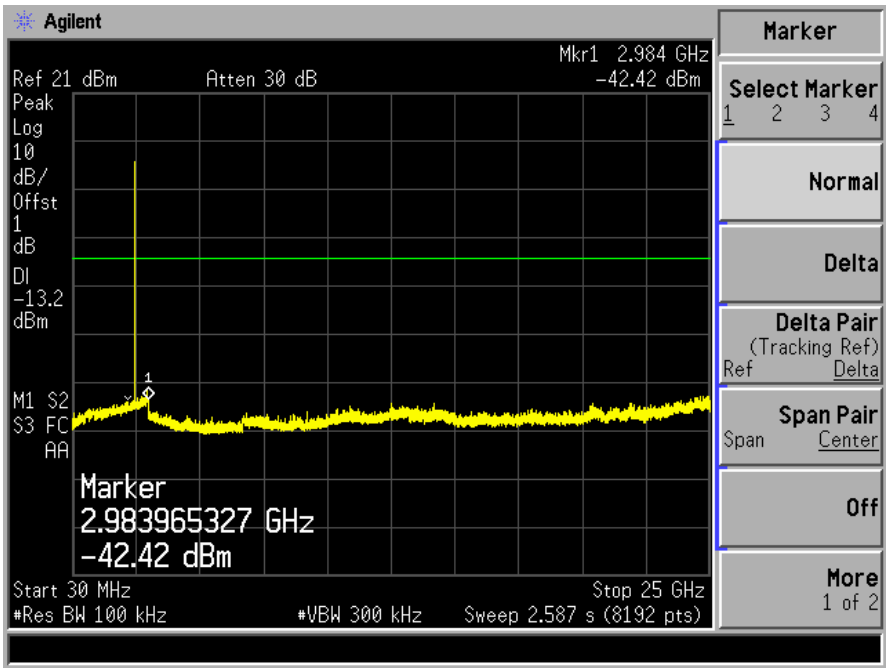
802.11b Low Channel 1



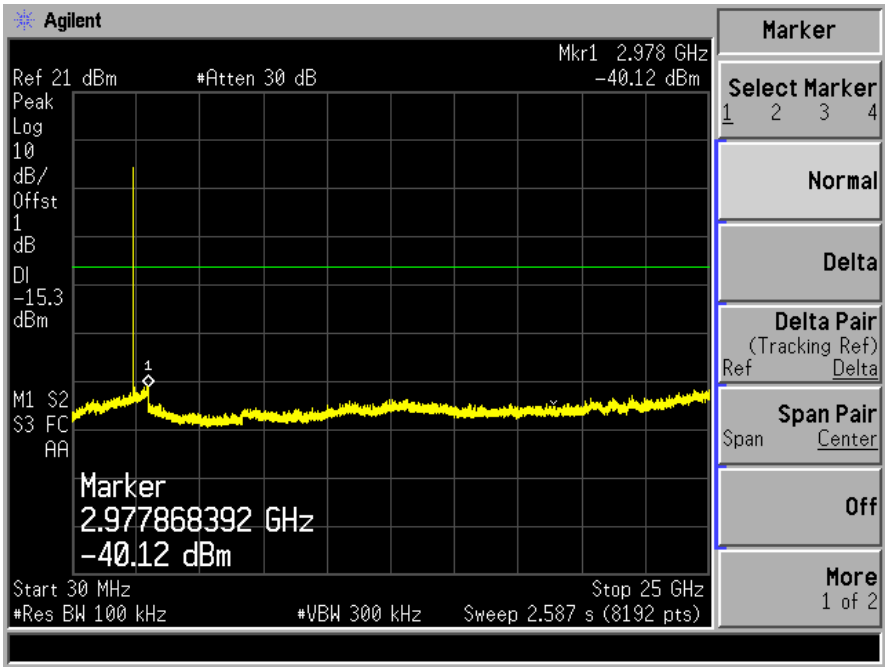
802.11b Mid Channel 6



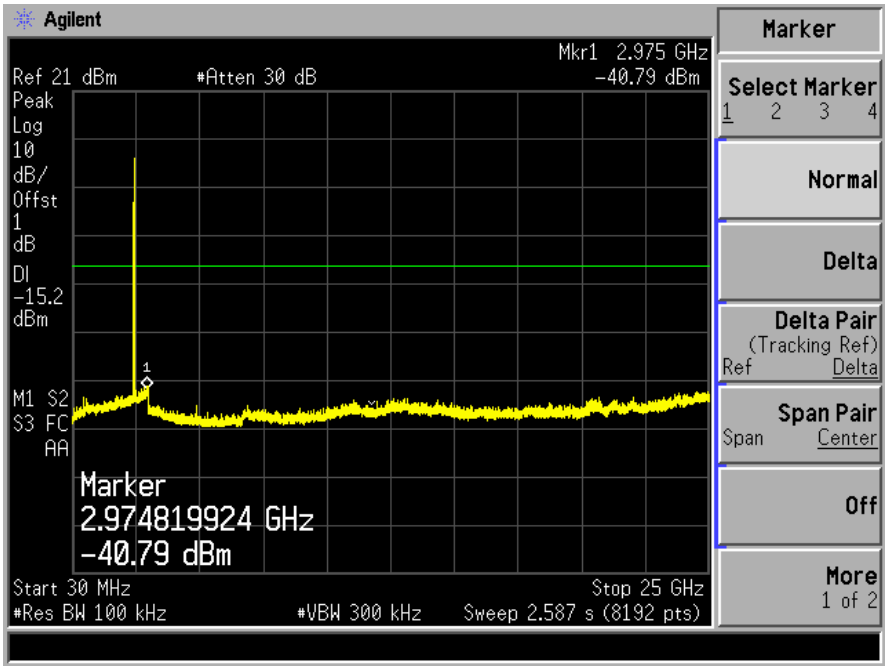
802.11b High Channel 11



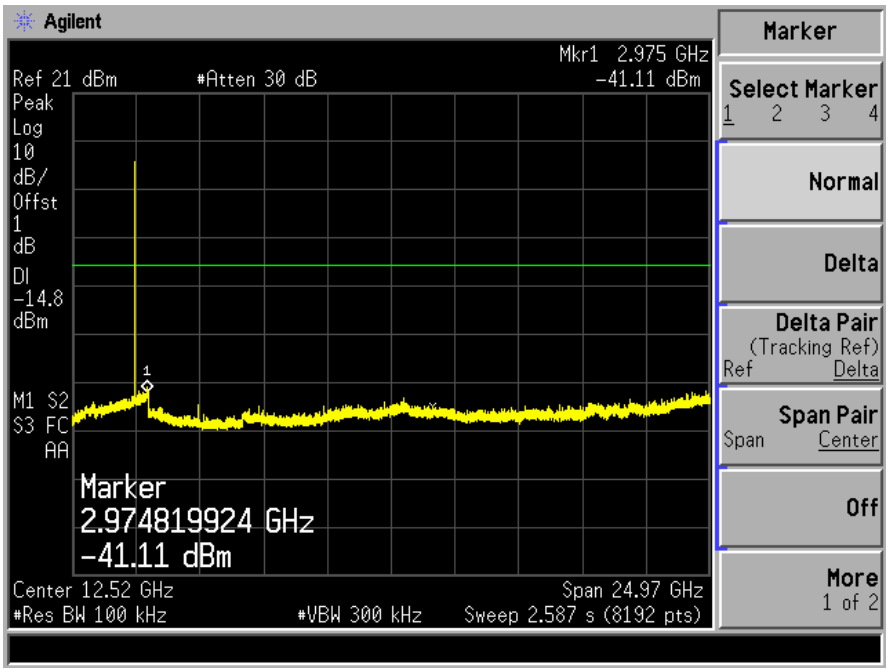
802.11g Low Channel 1



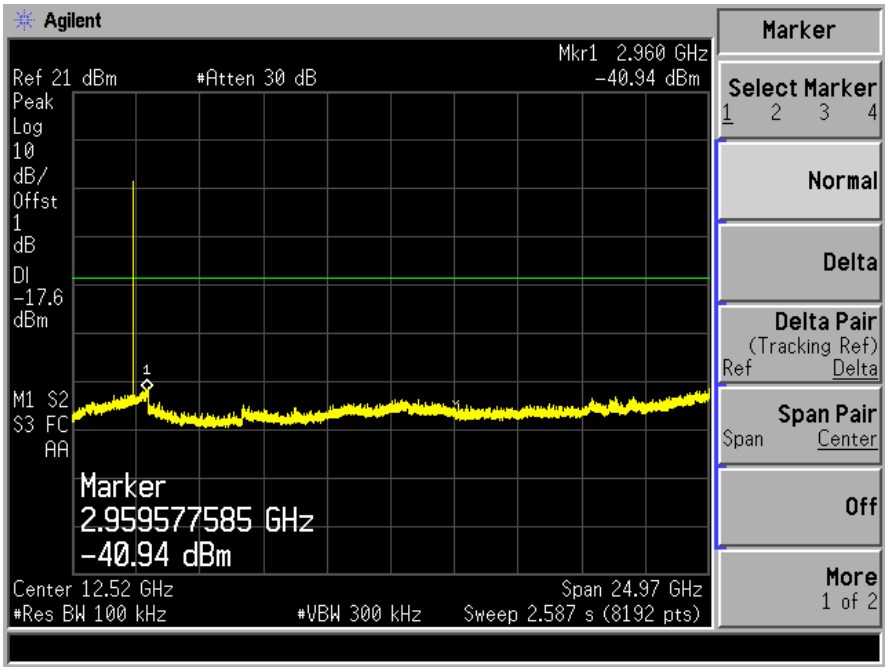
802.11g Mid Channel 6



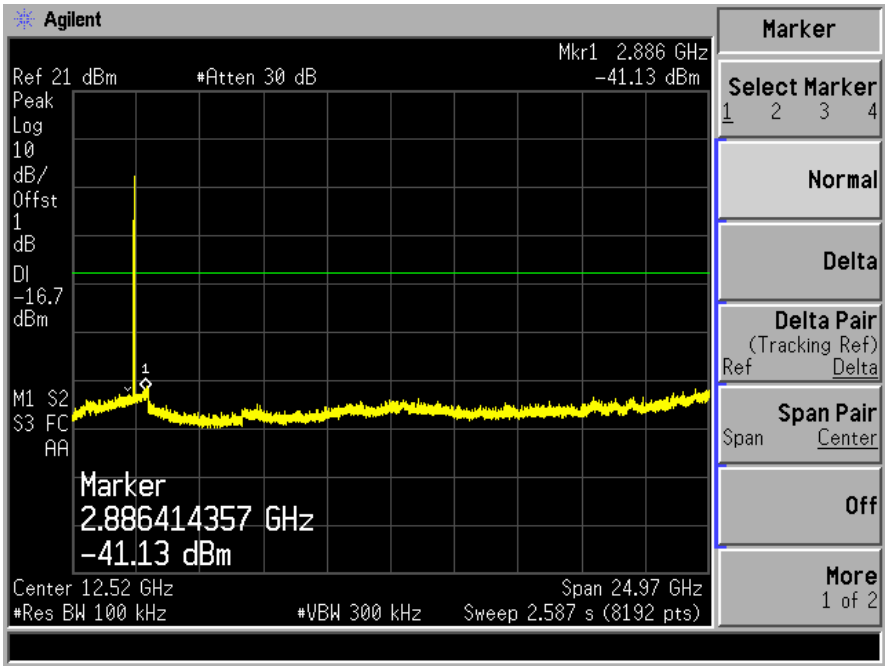
802.11g High Channel 11



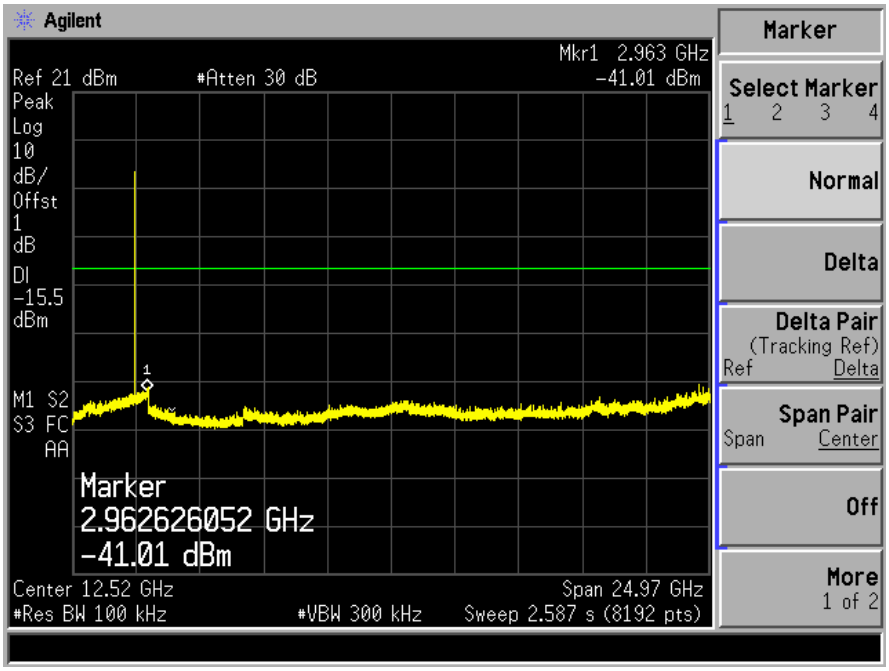
802.11n 20 Low Channel 1



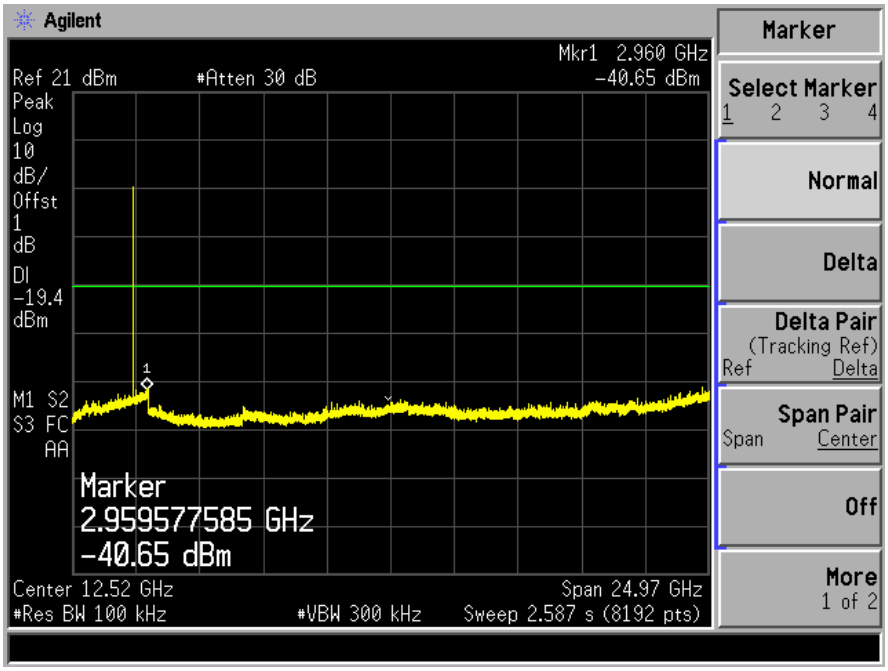
802.11n 20 Mid Channel 6



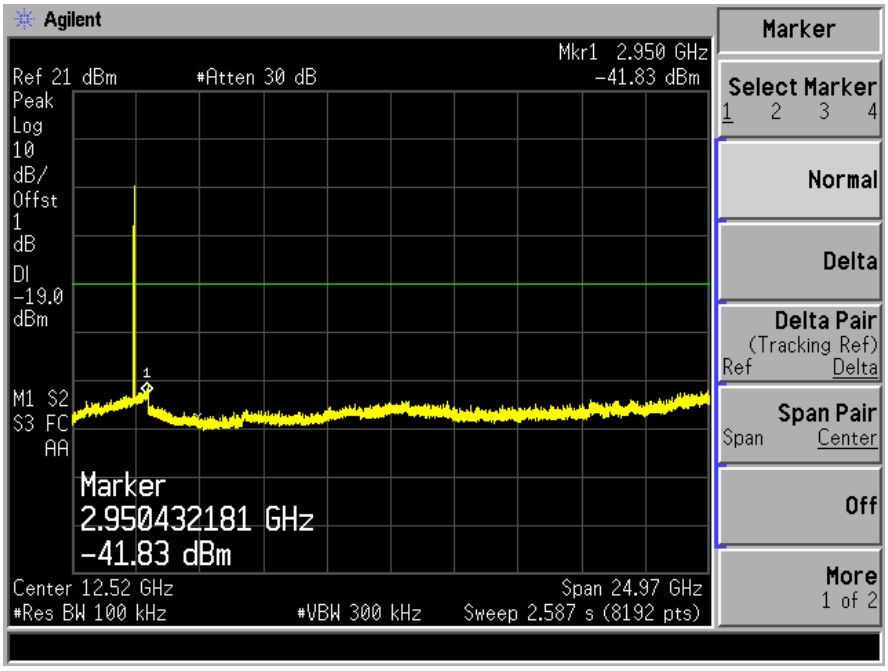
802.11n 20 High Channel 11



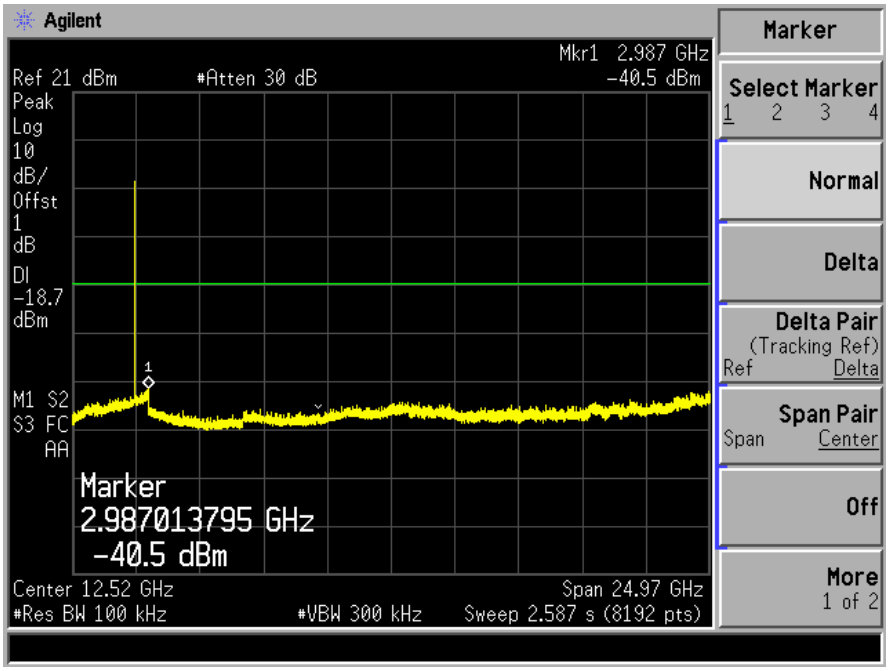
802.11n 40 Low Channel 1



802.11n 40 Mid Channel 6



802.11n 40 High Channel 11



12. Antenna Application

12.1 Antenna Requirement

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

12.2 Result

The EUT'S antenna is outside welds antenna, and the antenna can't be replaced by the user, which in accordance to section 15.203, please refer to the internal photos. The antenna's gain is 2.0dBi and meets the requirement.