FCC RADIO TEST REPORT

Applicant	:	Guangzhou Shirui Electronics Co., Ltd
Address	:	No.192, KeZhu Road, Science Park, Economic -Technological Development Area, Guangzhou,Guangdong,China
Equipment	:	WIFI and Bluetooth module
Model No.	:	WIFI-2-R821USA1A
Trade Name	:	N/A
FCC ID	:	2AFG6-R821USA1A

I HEREBY CERTIFY THAT :

The sample was received on Jul. 17, 2017 and the testing was carried out on Aug. 11, 2017 at Cerpass Technology Corp. The test result refers exclusively to the test presented test model / sample. Without written approval of Cerpass Technology Corp., the test report shall not be reproduced except in full.

Approved by:

Mark Liao

Mark Liao

Assistant Manager

Laboratory Accreditation:

☒ Cerpass Technology Corporation Test Laboratory

TAF LAB Code:	**1439**

CONTENTS

1. Summary of Test Procedure and Test Results 5
1.1 Applicable Standards 5
2. Test Configuration of Equipment under Test 6
2.1 Feature of Equipment under Test 6
2.2 The EUT does not support a MIMO function. 7
2.3 Carrier Frequency of Channels 8
2.4 Test Mode and Test Software 8
2.5 Description of Test System 8
2.6 General Information of Test 9
2.7 Measurement Uncertainty 10
2.8 Duty cycle 11
3. Test Equipment and Ancillaries Used for Tests 12
4. Antenna Requirements 13
4.1 Standard Applicable 13
4.2 Antenna Construction and Directional Gain 13
5. Test of AC Power Line Conducted Emission 14
5.1 Test Limit 14
5.2 Test Procedures 14
5.3 Typical Test Setup 14
5.4 Test Result and Data 15
6. Test of Spurious Emission (Radiated) 17
6.1 Test Limit 17
6.2 Test Procedures 17
6.3 Typical Test Setup 18
6.4 Test Result and Data (9KHz ~ 30MHz) 19
6.5 Test Result and Data (30MHz ~ 1GHz) 19
6.6 Test Result and Data (1GHz ~ 25GHz) 20
6.7 Restricted Bands of Operation 44
6.8 Restrict Band Emission Measurement Data 45
7. Test of Spurious Emission (Conducted) 53
7.1 Test Limit 53
7.2 Test Procedure 53
7.3 Test Setup Layout 53
7.4 Test Result and Data 54
8. 6dB Bandwidth Measurement Data 63
8.1 Test Limit 63
8.2 Test Procedures 63
8.3 Test Setup Layout 63
8.4 Test Result and Data 63
9. Maximum Peak Output Power 69
9.1 Test Limit 69
9.2 Test Procedures 69
9.3 Test Setup Layout 69
9.4 Test Result and Data 70

10.Power Spectral Density 71
10.1 Test Limit 71
10.2 Test Procedures 71
10.3 Test Setup Layout 71
10.4 Test Result and Data 72

History of this test report

■ ORIGINAL

☐ Additional attachment as following record:

Attachment No.	Issue Date	Description

1. Summary of Test Procedure and Test Results

1.1 Applicable Standards

ANSI C63.10: 2013
KDB 558074 D01 DTS Meas Guidance v03r05

FCC Rules and Regulations Part 15 Subpart C §15.247

FCC Rule	. Description of Test	Result
FCC CFR Title 47 Part 15 Subpart C: Section 15.203/15.247 (b)	. Antenna Requirement	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.207	. AC Power Line Conducted Emission	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.205/15.209; Part2 section 2.1051, 2.1053, 2.1057	. Spurious Emission(Radiated)	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.247(d); Part2 section 2.1051 and 2.1057	. Spurious Emission(Conducted)	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.247(a)(2); Part2 section 2.1049	. 6dB Bandwidth	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.247(b); Part2 section 2.1046	. Maximum Peak Output Power	Pass
FCC CFR Title 47 Part 15 Subpart C: Section 15.247(e)	. Power Spectral Density	Pass

2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Product	WIFI and Bluetooth module
Test Model	WIFI-2-R821USA1A
Status of EUT	ENGINEERING SAMPLE
Power Supply Rating	DC 3.3V from host equipment
Frequency Range	2.4 GHz ISM radio band / 5 GHz Unlicensed National Information Infrastructure (U-NII) band
Number of Channels	2.4G: 802.11b, 802.11g, 802.11n(HT20):11 802.11n(HT40):7 Bluetooth:78 Bluetooth Low Energy:39 5G: 802.11a, 802.11n(HT20), 802.11ac(VHT20):19 802.11n(HT40), 802.11ac(VHT40):9 802.11ac (VHT80):4
Modulation	DSSS, OFDM, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM and 256-QAM for WLAN GFSK (1Mbps), Π/4 DQPSK (2Mbps) and 8DPSK (3Mbps) for Bluetooth GFSK (Bluetooth low energy)
Data Rates	802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11Mbps 802.11n: MCS0~MCS7 802.11ac: MCS0NSS1~ MCS8NSS1 Bluetooth: 1, 2, 3Mbps Bluetooth Low Energy: 1Mbps

Note: for more details, please refer to the User's manual of the EUT.

Antenna List

Antenna	Manufacturer	Peak Gain
FPCB Antenna	South Star	Chain 1: 3.21dBi for 2400~2500MHz band, 3.41dBi for 5150~5850MHz band. Chain 2: 2.52dBi for 2400~2500MHz band, 3.28dBi for 5150~5850MHz band.

Note: Bluetooth is only applicable to Chain 1

2.2 The EUT does not support a MIMO function.

2.4GHz Band			
MODULATION MODE	**DATE RATE(MCS)**	**TX&RX CONFIGURATION**	
802.11b	1~11Mbps	1TX	1RX
802.11g	6~54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX
802.11n (HT40)	MCS 0~7	1TX	1RX
5GHz Band			
MODULATION MODE	**DATE RATE(MCS)**	**TX&RX CONFIGURATION**	
802.11a	6~54Mbps	1TX	1RX
802.11n (HT20)	MCS 0~7	1TX	1RX
802.11n (HT40)	MCS 0~7	1TX	1RX
802.11ac (VHT20)	MCS0NSS1~ MCS8NSS1	1TX	1RX
802.11ac (VHT40)	MCS0NSS1~ MCS8NSS1	1TX	1RX
802.11ac (VHT80)	MCS0NSS1~ MCS8NSS1	1TX	1RX

Note：1.The modulation and bandwidth are similar for 80211n mode for 20MHz(40MHz) and 802.11ac mode for 20MHz(40MHz),therefore investigated worse case to representative mode in test report.(Final test mode refer section 2.4)

2.The EUT contains two antennas,but it only supports the SISO function.

2.3 Carrier Frequency of Channels

802.11b, 802.11g, 802.11n HT 20 (2412MHz~2462MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
***01**	**2412**	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	***11**	**2462**
***06**	**2437**	---	---

802.11an HT40(2422-2452MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
---	---	07	2442
---	---	08	2447
***03**	**2422**	***09**	**2452**
04	2427	---	---
05	2432	---	---
***06**	**2437**	---	---

Note: Channels remarked * are selected to perform test.

2.4 Test Mode and Test Software

a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
b. The complete test system included support units and EUT for the RF test.
c. An executive program, “artgui.exe” which transmits and receives data through Wireless.
d. The EUT had been tested under operating condition
. After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.
EUT staying in continuous transmitting mode was programmed.
e. Test modes:
Mode 1: IEEE 802.11b
Mode 2: IEEE 802.11g
Mode 3: IEEE 802.11n 20
Mode 4: IEEE 802.11n 40

2.5 Description of Test System

No	Device	Manufacturer	Model No.	Description
1	Notebook	SONY	PCG-71811P	R33021
2	USB Mouse	DELL	OXN967	R41108

Cable:

No.	Cable	Quantity	Description
A	USB Cable	1	0.8m Shielding
B	USB Mouse Cable	1	1.8m Non Shielding
C	DC Cable	1	1.7m Non Shielding

2.6 General Information of Test

☒	Test Site	**Cerpass Technology Corporation Test Laboratory** Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel:+886-3-3226-888 Fax:+886-3-3226-881 Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C. Tel: +886-2-2663-8582
	FCC	TW1079, TW1061,390316, 228391, 641184
	IC	4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication Test C-4663 for Conducted emission test R-3428, R-4218 for Radiated emission test G-812, G-813 for radiated disturbance above 1GHz
Frequency Range Investigated:		Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 25000MHz
Test Distance:		The test distance of radiated emission from antenna to EUT is 3 M.

2.7 Measurement Uncertainty

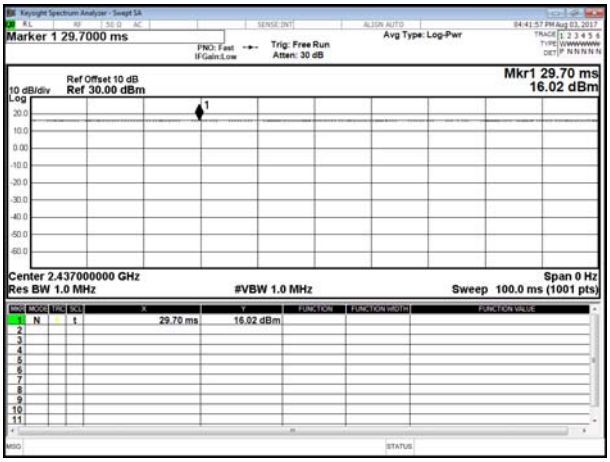
Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	LINE/NEUTRAL	±2.71 dB
Radiated Emission	9 kHz ~ 30 MHz	Vertical	±3.65dB
		Horizontal	±3.89dB
Radiated Emission	30 MHz ~ 25GHz	Vertical	±4.11 dB
		Horizontal	±4.10 dB
Occupied Bandwidth	---	---	±7500 Hz
Maximum Peak Output Power	---	---	±1.4 dB
Power Spectral Density	---	---	±2.2 dB

2.8 Duty cycle

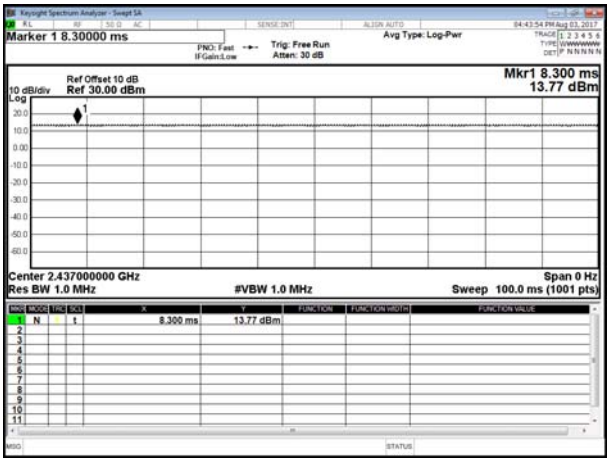
Test Item	Duty cycle
Test Date	Aug. 03, 2017

Mode	Frequency (MHz)	Measurement (%)
802.11b	2412	100
802.11g	2412	100
802.11n(20MHz)	2412	100
802.11n(40MHz)	2412	100

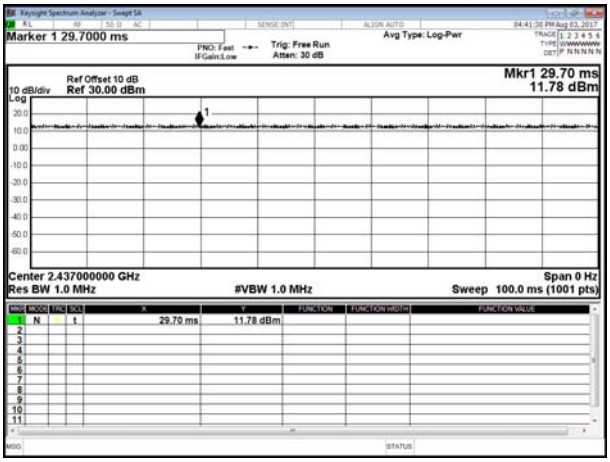
Transmit at channel 1 by 802.11b



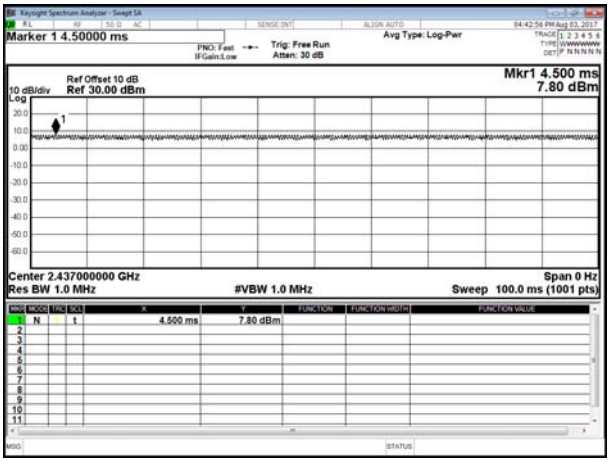
Transmit at channel 1 by 802.11g



Transmit at channel 1 by 802.11n(20MHz)



Transmit at channel 1 by 802.11n(20MHz)



3. Test Equipment and Ancillaries Used for Tests

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Test Receiver	R&S	ESCI	100564	2017.02.14	2018.02.13
LISN	SCHWARZBECK	NSLK 8127	8127748	2017.02.14	2018.02.13
LISN	SCHWARZBECK	NSLK 8127	8127749	2017.02.14	2018.02.13
Pulse Limiter with 10dB Attenuation	SCHWARZBECK	VTSD 9561-F	9561-F106	2017.02.14	2018.02.13
Temperature/ Humidity Meter	mingle	ETH529	N/A	2017.02.14	2018.02.13
AMPLIFIER	HP	8447F	3113A05915	2017.02.14	2018.02.13
Loop Antenna	R&S	HFH2-Z2	100150	2016.10.24	2017.10.23
BILOG Antenna	SCHAFFNER	CBL6112D	22241	2017.02.14	2018.02.13
Horn Antenna	Sunol	DRH-118	A072913	2016.10.12	2017.10.11
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-347	2017.05.26	2018.05.25
Preamplifier	COM-POWER	PA-840	711885	2017.02.14	2018.02.13
Temp&Humidity& barometer	mingle	ETH529	N/A	2017.02.14	2018.02.13
Preamplifier	Fleld	AFS44-00101800-25-10P-44	1579008	2016.09.30	2017.09.29
ESG VECTOR SIGNAL GENERATOR	Agilent	E4438C	MY45092582	2017.05.26	2018.05.25
MXG VECTOR SIGNAL GENERATOR	Agilent	N5182B	MY53050127	2017.05.26	2018.05.25
EXA Signal Analyzer	Agilent	N9020A	US46220290	2017.05.26	2018.05.25
Power sensor	e-channel	ERS-180T-24	TW5451026	2017.05.26	2018.05.25
Series Power Meter	ANRITSU	ML24958A	1224005	2017.02.14	2018.02.13

4. Antenna Requirements

4.1 Standard Applicable

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.

4.2 Antenna Construction and Directional Gain

Antenna	Manufacturer	Peak Gain
FPCB Antenna	South Star	Chain 1: 3.21dBi for 2400~2500MHz band, 3.41dBi for 5150~5850MHz band. Chain 2: 2.52dBi for 2400~2500MHz band, 3.28dBi for 5150~5850MHz band.

5. Test of AC Power Line Conducted Emission

5.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.10-2013. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 6.2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

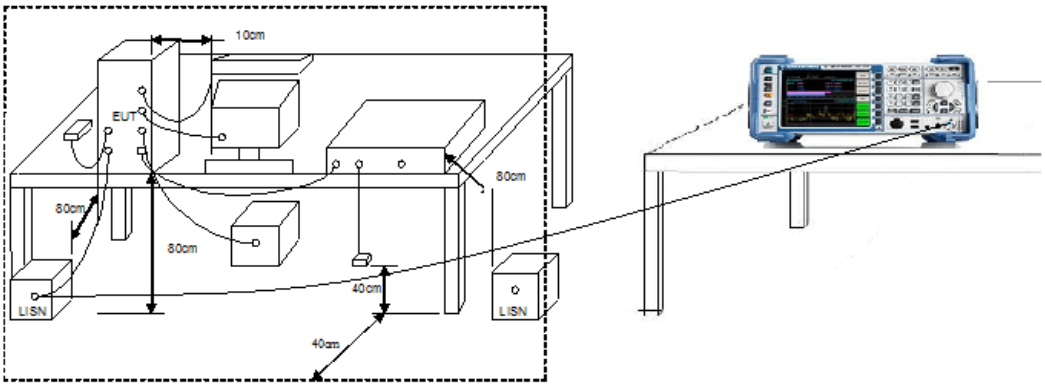
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2 Test Procedures

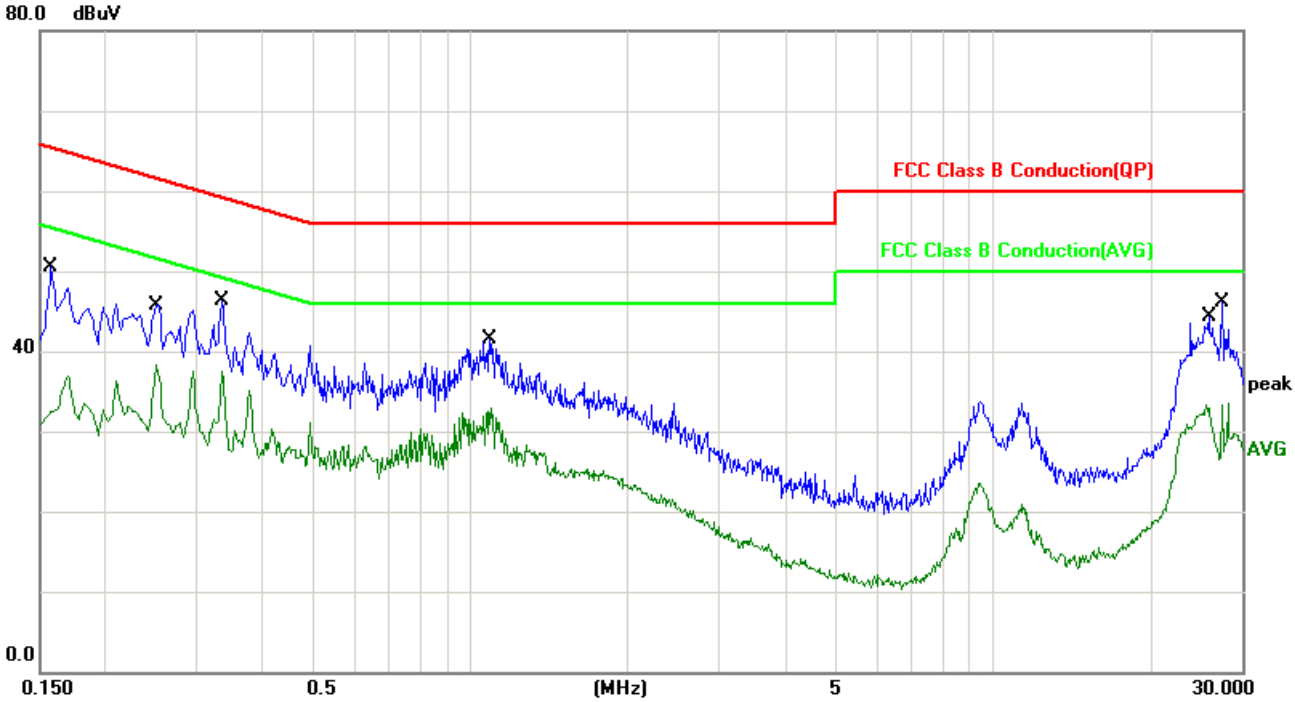
The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of Oct 2014 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane was located 40 cm to the rear of the EUT. All other surfaces of EUT were at least 80 cm from any other grounded conducting surface. The EUT and simulators are connected to the main power through a line impedance stabilization network (LISN). The LISN provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN. (Please refer to the block diagram of the test setup and photographs) Each current-carrying conductor of the EUT power cord, except the ground (safety) conductor, was individually connected through a LISN to the input power source. The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

5.3 Typical Test Setup



5.4 Test Result and Data

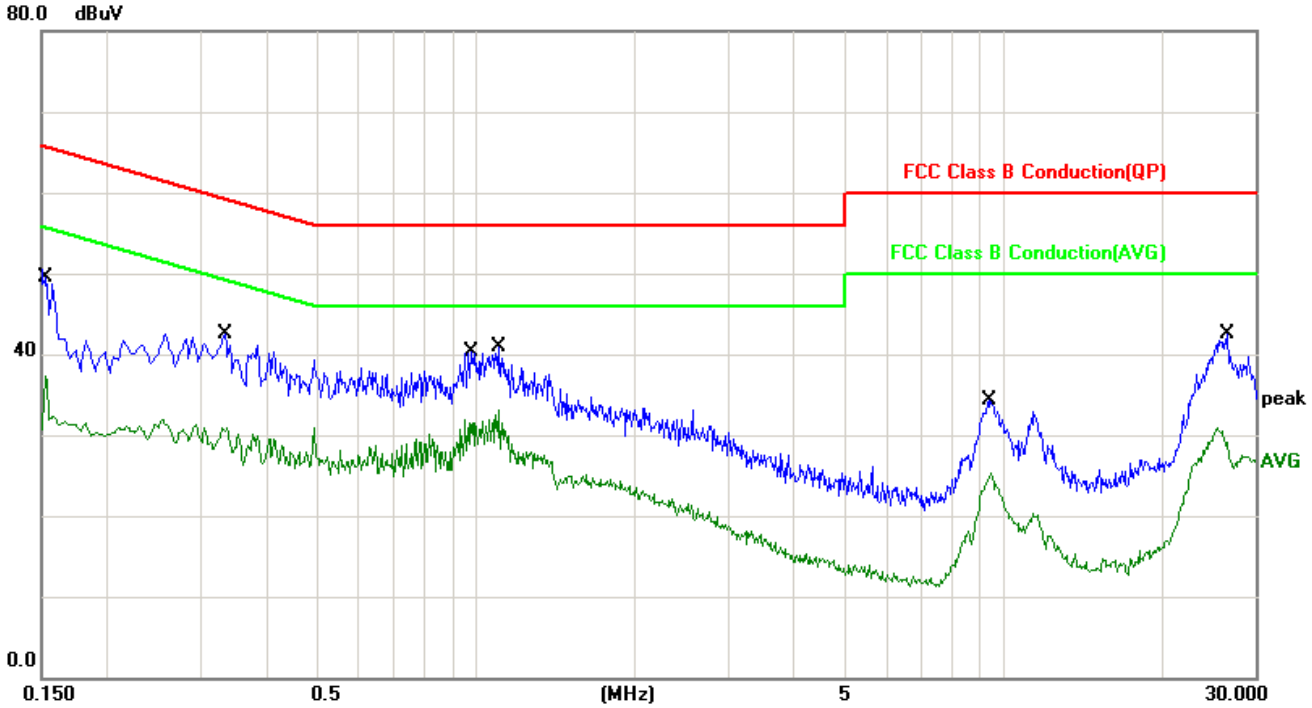
Test Mode :	Normal Link	Phase :	Line
Temperature :	20°C	Humidity:	51%
Pressur(mbar) :	1002	Date:	Aug. 10, 2017



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1580	10.06	34.98	45.04	65.56	-20.52	QP
2	0.1580	10.06	21.91	31.97	55.56	-23.59	AVG
3	0.2500	10.03	33.95	43.98	61.75	-17.77	QP
4	0.2500	10.03	28.31	38.34	51.75	-13.41	AVG
5	0.3339	9.98	32.68	42.66	59.35	-16.69	QP
6	0.3339	9.98	27.20	37.18	49.35	-12.17	AVG
7	1.0900	10.21	27.56	37.77	56.00	-18.23	QP
8	1.0900	10.21	23.04	33.25	46.00	-12.75	AVG
9	25.9020	10.61	26.92	37.53	60.00	-22.47	QP
10	25.9020	10.61	20.13	30.74	50.00	-19.26	AVG
11	27.4660	10.62	21.87	32.49	60.00	-27.51	QP
12	27.4660	10.62	15.14	25.76	50.00	-24.24	AVG

Note: Measurement Level = Reading Level + Correct Factor+ Attenuator

Test Mode :	Normal Link	Phase :	Neutral
Temperature :	20°C	Humidity :	51%
Pressur(mbar) :	1002	Date :	Aug. 10, 2017



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1524	10.06	37.97	48.03	65.86	-17.83	QP
2	0.1524	10.06	22.73	32.79	55.86	-23.07	AVG
3	0.3339	9.98	30.82	40.80	59.35	-18.55	QP
4	0.3339	9.98	25.20	35.18	49.35	-14.17	AVG
5	0.9820	10.13	26.32	36.45	56.00	-19.55	QP
6	0.9820	10.13	21.33	31.46	46.00	-14.54	AVG
7	1.1060	10.13	27.10	37.23	56.00	-18.77	QP
8	1.1060	10.13	22.19	32.32	46.00	-13.68	AVG
9	9.4220	10.26	18.92	29.18	60.00	-30.82	QP
10	9.4220	10.26	11.78	22.04	50.00	-27.96	AVG
11	26.6660	10.61	23.46	34.07	60.00	-25.93	QP
12	26.6660	10.61	15.79	26.40	50.00	-23.60	AVG

Note: Measurement Level = Reading Level + Correct Factor+ Attenuator

6. Test of Spurious Emission (Radiated)

6.1 Test Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

FREQUENCIES(MHz)	FIELD STRENGTH (microvolts/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

6.2 Test Procedures

a. The EUT was placed on a rotatable table top 0.8 meter for frequency below 1GHz and 1.5meter for frequency above 1GHz above ground.

b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.

c. The table was rotated 360 degrees to determine the position of the highest radiation.

d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.

e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.

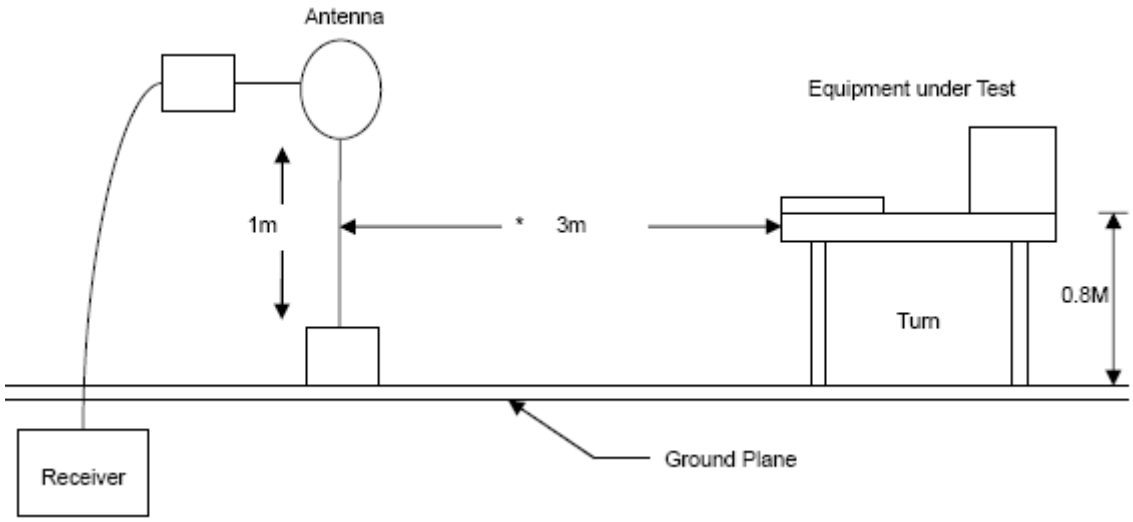
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.

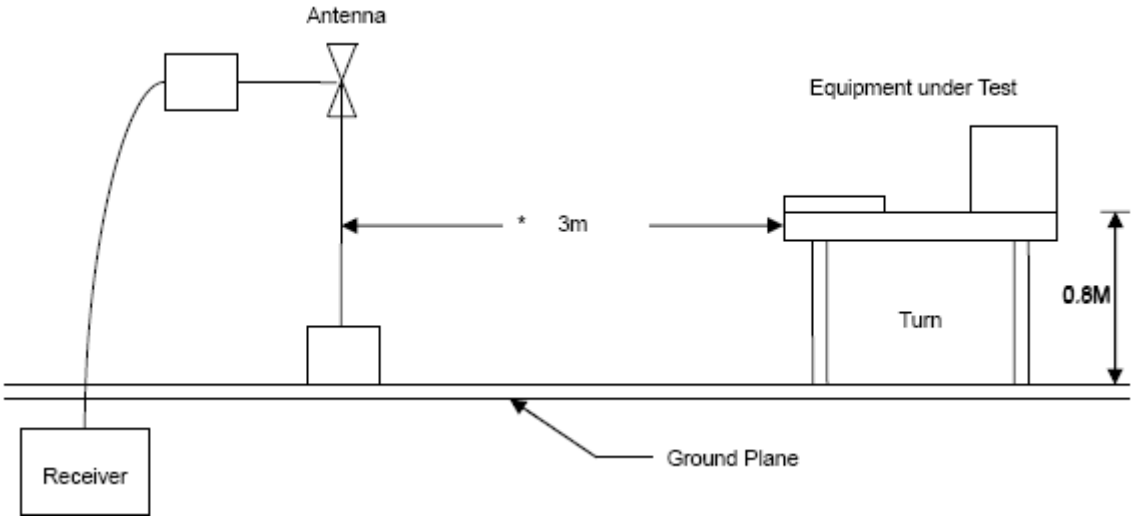
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than AVG limit (that means the emission level in peak mode also complies with the limit in AVG mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in AVG mode again and reported.

6.3 Typical Test Setup

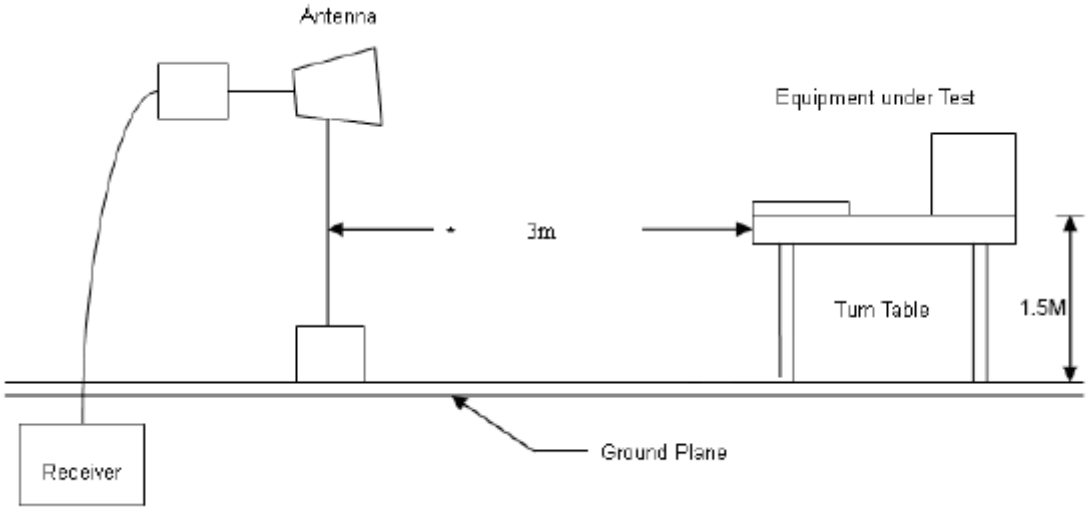
Below 30MHz Test Setup



30M - 1GHz Test Setup



Above 1GHz Test Setup



6.4 Test Result and Data (9KHz ~ 30MHz)

The 9kHz-30MHz spurious emission is under limit 20dB more.

6.5 Test Result and Data (30MHz ~ 1GHz)

Power :	DC3.3V	Temperature :	24 °C
Test Mode :	Normal Link	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/QP)
58.1300	H	-15.58	43.85	28.27	40.00	-11.73	QP
144.4600	H	-10.87	44.42	33.55	43.50	-9.95	QP
216.2400	H	-9.58	44.47	34.89	46.00	-11.11	QP
254.0699	H	-8.20	44.08	35.88	46.00	-10.12	QP
326.8199	H	-4.93	43.49	38.56	46.00	-7.44	QP
482.9900	H	-1.28	35.68	34.40	46.00	-11.60	QP
43.5800	V	-11.77	44.21	32.44	40.00	-7.56	QP
101.7800	V	-9.46	44.25	34.79	43.50	-8.71	QP
184.2300	V	-10.96	45.12	34.16	43.50	-9.34	QP
276.3800	V	-8.82	40.41	31.59	46.00	-14.41	QP
482.0200	V	-1.22	31.30	30.08	46.00	-15.92	QP
691.5400	V	-1.21	37.25	36.04	46.00	-9.96	QP

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

6.6 Test Result and Data (1GHz ~ 25GHz)

Power :	DC3.3V	Temperature :	24 °C
Test Mode1	802.11b (2412MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2657.500	H	-1.52	45.45	43.93	74.00	-30.07	peak
3677.500	H	4.01	36.43	40.44	74.00	-33.56	peak
4357.500	H	6.93	36.72	43.65	74.00	-30.35	peak
4825.000	H	8.27	38.03	46.30	74.00	-27.70	peak
5802.500	H	9.77	35.63	45.40	74.00	-28.60	peak
7375.000	H	13.54	34.06	47.60	74.00	-26.40	peak
2657.500	V	-1.52	44.47	42.95	74.00	-31.05	peak
4017.500	V	5.20	36.76	41.96	74.00	-32.04	peak
4612.500	V	7.87	36.65	44.52	74.00	-29.48	peak
5377.500	V	8.92	36.40	45.32	74.00	-28.68	peak
6015.000	V	10.27	35.75	46.02	74.00	-27.98	peak
7417.500	V	13.71	33.63	47.34	74.00	-26.66	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode1	802.11b (2437MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2530.000	H	-2.38	44.90	42.52	74.00	-31.48	peak
3762.500	H	4.30	37.46	41.76	74.00	-32.24	peak
4910.000	H	8.43	35.57	44.00	74.00	-30.00	peak
5887.500	H	9.98	35.61	45.59	74.00	-28.41	peak
6737.500	H	11.23	36.90	48.13	74.00	-25.87	peak
7290.000	H	13.21	35.11	48.32	74.00	-25.68	peak
2785.000	V	-0.67	44.43	43.76	74.00	-30.24	peak
3635.000	V	3.86	35.38	39.24	74.00	-34.76	peak
4230.000	V	6.28	36.53	42.81	74.00	-31.19	peak
5165.000	V	8.74	35.01	43.75	74.00	-30.25	peak
6312.500	V	10.38	35.50	45.88	74.00	-28.12	peak
7290.000	V	13.21	34.34	47.55	74.00	-26.45	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode1	802.11b (2462MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2785.000	H	-0.67	45.56	44.89	74.00	-29.11	peak
4017.500	H	5.20	36.49	41.69	74.00	-32.31	peak
4570.000	H	7.79	35.94	43.73	74.00	-30.27	peak
5122.500	H	8.70	36.12	44.82	74.00	-29.18	peak
6185.000	H	10.33	36.26	46.59	74.00	-27.41	peak
7162.500	H	12.71	34.47	47.18	74.00	-26.82	peak
2827.500	V	-0.39	46.19	45.80	74.00	-28.20	peak
3762.500	V	4.30	36.86	41.16	74.00	-32.84	peak
4570.000	V	7.79	36.97	44.76	74.00	-29.24	peak
5590.000	V	9.24	36.13	45.37	74.00	-28.63	peak
6567.500	V	10.68	35.61	46.29	74.00	-27.71	peak
7290.000	V	13.21	35.10	48.31	74.00	-25.69	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode2	802.11g (2412MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2615.000	H	-1.81	44.54	42.73	74.00	-31.27	peak
4145.000	H	5.85	37.15	43.00	74.00	-31.00	peak
4697.500	H	8.03	36.44	44.47	74.00	-29.53	peak
5292.500	H	8.85	35.28	44.13	74.00	-29.87	peak
6355.000	H	10.40	35.16	45.56	74.00	-28.44	peak
7375.000	H	13.54	34.06	47.60	74.00	-26.40	peak
2827.500	V	-0.39	45.02	44.63	74.00	-29.37	peak
3805.000	V	4.44	36.35	40.79	74.00	-33.21	peak
4442.500	V	7.37	37.23	44.60	74.00	-29.40	peak
5250.000	V	8.81	35.25	44.06	74.00	-29.94	peak
5675.000	V	9.45	35.60	45.05	74.00	-28.95	peak
6525.000	V	10.54	35.50	46.04	74.00	-27.96	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode2	802.11g (2437MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2657.500	H	-1.52	45.45	43.93	74.00	-30.07	peak
3422.500	H	2.99	38.20	41.19	74.00	-32.81	peak
4612.500	H	7.87	36.32	44.19	74.00	-29.81	peak
5632.500	H	9.35	36.82	46.17	74.00	-27.83	peak
6397.500	H	10.42	35.32	45.74	74.00	-28.26	peak
7162.500	H	12.71	34.48	47.19	74.00	-26.81	peak
2657.500	V	-1.52	44.47	42.95	74.00	-31.05	peak
3550.000	V	3.57	37.86	41.43	74.00	-32.57	peak
4272.500	V	6.50	36.68	43.18	74.00	-30.82	peak
5717.500	V	9.56	35.96	45.52	74.00	-28.48	peak
6525.000	V	10.54	35.50	46.04	74.00	-27.96	peak
7375.000	V	13.54	33.46	47.00	74.00	-27.00	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode2	802.11g (2462MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2657.500	H	-1.52	45.45	43.93	74.00	-30.07	peak
3550.000	H	3.57	36.82	40.39	74.00	-33.61	peak
4357.500	H	6.93	36.72	43.65	74.00	-30.35	peak
5122.500	H	8.70	35.68	44.38	74.00	-29.62	peak
6185.000	H	10.33	35.85	46.18	74.00	-27.82	peak
6950.000	H	11.92	35.46	47.38	74.00	-26.62	peak
2402.500	V	-3.00	45.13	42.13	74.00	-31.87	peak
3465.000	V	3.22	37.65	40.87	74.00	-33.13	peak
4697.500	V	8.03	35.76	43.79	74.00	-30.21	peak
5547.500	V	9.14	35.44	44.58	74.00	-29.42	peak
6227.500	V	10.35	36.26	46.61	74.00	-27.39	peak
7120.000	V	12.55	35.41	47.96	74.00	-26.04	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode3	802.11n HT20 (2412MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2317.500	H	-3.36	44.50	41.14	74.00	-32.86	peak
3762.500	H	4.30	36.42	40.72	74.00	-33.28	peak
4697.500	H	8.03	36.44	44.47	74.00	-29.53	peak
5037.500	H	8.63	36.04	44.67	74.00	-29.33	peak
5675.000	H	9.45	36.05	45.50	74.00	-28.50	peak
7162.500	H	12.71	34.48	47.19	74.00	-26.81	peak
2657.500	V	-1.52	43.97	42.45	74.00	-31.55	peak
3890.000	V	4.73	36.40	41.13	74.00	-32.87	peak
4825.000	V	8.27	38.62	46.89	74.00	-27.11	peak
5760.000	V	9.66	35.54	45.20	74.00	-28.80	peak
6355.000	V	10.40	35.93	46.33	74.00	-27.67	peak
6992.500	V	12.06	34.80	46.86	74.00	-27.14	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode3	802.11n HT20 (2437MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2657.500	H	-1.52	45.45	43.93	74.00	-30.07	peak
4017.500	H	5.20	37.19	42.39	74.00	-31.61	peak
4910.000	H	8.43	36.19	44.62	74.00	-29.38	peak
5930.000	H	10.09	35.14	45.23	74.00	-28.77	peak
6482.500	H	10.45	35.80	46.25	74.00	-27.75	peak
6907.500	H	11.78	35.48	47.26	74.00	-26.74	peak
2700.000	V	-1.24	44.46	43.22	74.00	-30.78	peak
3975.000	V	5.02	37.22	42.24	74.00	-31.76	peak
4230.000	V	6.28	37.45	43.73	74.00	-30.27	peak
4995.000	V	8.59	36.27	44.86	74.00	-29.14	peak
5845.000	V	9.88	35.46	45.34	74.00	-28.66	peak
7205.000	V	12.88	34.48	47.36	74.00	-26.64	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode3	802.11n HT20 (2462MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2317.500	H	-3.36	47.00	43.64	74.00	-30.36	peak
2615.000	H	-1.81	45.04	43.23	74.00	-30.77	peak
3847.500	H	4.59	37.37	41.96	74.00	-32.04	peak
4782.500	H	8.19	35.80	43.99	74.00	-30.01	peak
6227.500	H	10.35	36.25	46.60	74.00	-27.40	peak
7502.500	H	14.03	33.29	47.32	74.00	-26.68	peak
2360.000	V	-3.18	46.94	43.76	74.00	-30.24	peak
3762.500	V	4.30	36.97	41.27	74.00	-32.73	peak
4357.500	V	6.93	36.88	43.81	74.00	-30.19	peak
5207.500	V	8.77	35.65	44.42	74.00	-29.58	peak
6355.000	V	10.40	35.93	46.33	74.00	-27.67	peak
6992.500	V	12.06	34.80	46.86	74.00	-27.14	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode4	802.11n HT40 (2422MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2190.000	H	-3.91	48.42	44.51	74.00	-29.49	peak
2402.500	H	-3.00	47.51	44.51	74.00	-29.49	peak
4017.500	H	5.20	37.19	42.39	74.00	-31.61	peak
4655.000	H	7.95	34.87	42.82	74.00	-31.18	peak
5887.500	H	9.98	34.96	44.94	74.00	-29.06	peak
7332.500	H	13.38	34.69	48.07	74.00	-25.93	peak
2445.000	V	-2.82	46.63	43.81	74.00	-30.19	peak
3082.500	V	1.20	39.28	40.48	74.00	-33.52	peak
4187.500	V	6.07	36.52	42.59	74.00	-31.41	peak
5632.500	V	9.35	37.01	46.36	74.00	-27.64	peak
6100.000	V	10.30	35.17	45.47	74.00	-28.53	peak
6652.500	V	10.95	34.65	45.60	74.00	-28.40	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode4	802.11n HT40 (2437MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2572.500	H	-2.09	44.39	42.30	74.00	-31.70	peak
3550.000	H	3.57	36.82	40.39	74.00	-33.61	peak
4315.000	H	6.72	36.77	43.49	74.00	-30.51	peak
4910.000	H	8.43	35.69	44.12	74.00	-29.88	peak
5760.000	H	9.66	35.08	44.74	74.00	-29.26	peak
6907.500	H	11.78	34.98	46.76	74.00	-27.24	peak
2105.000	V	-4.28	45.83	41.55	74.00	-32.45	peak
2572.500	V	-2.09	44.88	42.79	74.00	-31.21	peak
4187.500	V	6.07	36.02	42.09	74.00	-31.91	peak
5292.500	V	8.85	35.11	43.96	74.00	-30.04	peak
5930.000	V	10.09	36.50	46.59	74.00	-27.41	peak
6822.500	V	11.50	34.83	46.33	74.00	-27.67	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode4	802.11n HT40 (2452MHz) Ant1	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2615.000	H	-1.81	45.04	43.23	74.00	-30.77	peak
3890.000	H	4.73	37.14	41.87	74.00	-32.13	peak
4697.500	H	8.03	35.94	43.97	74.00	-30.03	peak
5972.500	H	10.19	35.19	45.38	74.00	-28.62	peak
6567.500	H	10.68	34.38	45.06	74.00	-28.94	peak
7247.500	H	13.05	34.79	47.84	74.00	-26.16	peak
2275.000	V	-3.55	45.50	41.95	74.00	-32.05	peak
2572.500	V	-2.09	44.88	42.79	74.00	-31.21	peak
3677.500	V	4.01	36.53	40.54	74.00	-33.46	peak
4740.000	V	8.11	35.46	43.57	74.00	-30.43	peak
5590.000	V	9.24	36.46	45.70	74.00	-28.30	peak
6907.500	V	11.78	34.43	46.21	74.00	-27.79	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode5	802.11b (2412MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2275.000	H	-3.55	47.43	43.88	74.00	-30.12	peak
2615.000	H	-1.81	45.04	43.23	74.00	-30.77	peak
2912.500	H	0.18	42.47	42.65	74.00	-31.35	peak
4060.000	H	5.42	36.66	42.08	74.00	-31.92	peak
4825.000	H	8.27	38.03	46.30	74.00	-27.70	peak
7417.500	H	13.71	35.00	48.71	74.00	-25.29	peak
1935.000	V	-5.10	46.03	40.93	74.00	-33.07	peak
2657.500	V	-1.52	45.97	44.45	74.00	-29.55	peak
4272.500	V	6.50	36.68	43.18	74.00	-30.82	peak
4910.000	V	8.43	36.13	44.56	74.00	-29.44	peak
5632.500	V	9.35	37.01	46.36	74.00	-27.64	peak
6822.500	V	11.50	35.83	47.33	74.00	-26.67	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode5	802.11b (2437MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2147.500	H	-4.10	50.20	46.10	74.00	-27.90	peak
2572.500	H	-2.09	47.89	45.80	74.00	-28.20	peak
4145.000	H	5.85	36.65	42.50	74.00	-31.50	peak
5292.500	H	8.85	34.78	43.63	74.00	-30.37	peak
6015.000	H	10.27	36.18	46.45	74.00	-27.55	peak
7077.500	H	12.38	33.04	45.42	74.00	-28.58	peak
1892.500	V	-5.35	48.52	43.17	74.00	-30.83	peak
2105.000	V	-4.28	48.33	44.05	74.00	-29.95	peak
4060.000	V	5.42	37.05	42.47	74.00	-31.53	peak
4697.500	V	8.03	35.76	43.79	74.00	-30.21	peak
5887.500	V	9.98	35.90	45.88	74.00	-28.12	peak
7205.000	V	12.88	34.48	47.36	74.00	-26.64	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode5	802.11b (2462MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2232.500	H	-3.73	47.04	43.31	74.00	-30.69	peak
2700.000	H	-1.24	42.38	41.14	74.00	-32.86	peak
3125.000	H	1.43	39.13	40.56	74.00	-33.44	peak
4272.500	H	6.50	37.13	43.63	74.00	-30.37	peak
5972.500	H	10.19	34.69	44.88	74.00	-29.12	peak
7120.000	H	12.55	34.84	47.39	74.00	-26.61	peak
1892.500	V	-5.35	49.52	44.17	74.00	-29.83	peak
2615.000	V	-1.81	43.72	41.91	74.00	-32.09	peak
3975.000	V	5.02	37.22	42.24	74.00	-31.76	peak
4400.000	V	7.15	36.52	43.67	74.00	-30.33	peak
5802.500	V	9.77	34.88	44.65	74.00	-29.35	peak
7077.500	V	12.38	36.00	48.38	74.00	-25.62	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode6	802.11g (2412MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2232.500	H	-3.73	47.04	43.31	74.00	-30.69	peak
3465.000	H	3.22	38.58	41.80	74.00	-32.20	peak
3805.000	H	4.44	37.22	41.66	74.00	-32.34	peak
4825.000	H	8.27	38.03	46.30	74.00	-27.70	peak
5250.000	H	8.81	35.49	44.30	74.00	-29.70	peak
7077.500	H	12.38	34.54	46.92	74.00	-27.08	peak
1892.500	V	-5.35	48.52	43.17	74.00	-30.83	peak
2275.000	V	-3.55	47.00	43.45	74.00	-30.55	peak
4570.000	V	7.79	36.66	44.45	74.00	-29.55	peak
5335.000	V	8.88	35.63	44.51	74.00	-29.49	peak
5930.000	V	10.09	36.50	46.59	74.00	-27.41	peak
6950.000	V	11.92	36.78	48.70	74.00	-25.30	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode6	802.11g (2437MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
1977.500	H	-4.86	46.73	41.87	74.00	-32.13	peak
2360.000	H	-3.18	46.67	43.49	74.00	-30.51	peak
2870.000	H	-0.10	43.39	43.29	74.00	-30.71	peak
4187.500	H	6.07	37.95	44.02	74.00	-29.98	peak
6142.500	H	10.32	34.49	44.81	74.00	-29.19	peak
7205.000	H	12.88	34.08	46.96	74.00	-27.04	peak
1977.500	V	-4.86	49.42	44.56	74.00	-29.44	peak
4017.500	V	5.20	36.76	41.96	74.00	-32.04	peak
5122.500	V	8.70	36.80	45.50	74.00	-28.50	peak
5930.000	V	10.09	36.50	46.59	74.00	-27.41	peak
6482.500	V	10.45	37.02	47.47	74.00	-26.53	peak
7077.500	V	12.38	34.50	46.88	74.00	-27.12	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode6	802.11g (2462MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
1765.000	H	-6.08	50.84	44.76	74.00	-29.24	peak
2530.000	H	-2.38	46.69	44.31	74.00	-29.69	peak
3762.500	H	4.30	36.92	41.22	74.00	-32.78	peak
5165.000	H	8.74	36.14	44.88	74.00	-29.12	peak
5845.000	H	9.88	34.17	44.05	74.00	-29.95	peak
7205.000	H	12.88	34.08	46.96	74.00	-27.04	peak
2147.500	V	-4.10	47.36	43.26	74.00	-30.74	peak
2700.000	V	-1.24	44.96	43.72	74.00	-30.28	peak
2912.500	V	0.18	44.04	44.22	74.00	-29.78	peak
3465.000	V	3.22	38.65	41.87	74.00	-32.13	peak
4995.000	V	8.59	37.27	45.86	74.00	-28.14	peak
6525.000	V	10.54	35.00	45.54	74.00	-28.46	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode7	802.11n HT20 (2412MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2020.000	H	-4.64	48.34	43.70	74.00	-30.30	peak
2657.500	H	-1.52	45.45	43.93	74.00	-30.07	peak
4272.500	H	6.50	37.63	44.13	74.00	-29.87	peak
4910.000	H	8.43	37.69	46.12	74.00	-27.88	peak
5845.000	H	9.88	33.67	43.55	74.00	-30.45	peak
6695.000	H	11.09	34.99	46.08	74.00	-27.92	peak
2445.000	V	-2.82	50.13	47.31	74.00	-26.69	peak
2870.000	V	-0.10	46.11	46.01	74.00	-27.99	peak
3762.500	V	4.30	36.97	41.27	74.00	-32.73	peak
4570.000	V	7.79	35.16	42.95	74.00	-31.05	peak
5037.500	V	8.63	34.22	42.85	74.00	-31.15	peak
7077.500	V	12.38	34.00	46.38	74.00	-27.62	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode7	802.11n HT20 (2437MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
1977.500	H	-4.86	52.23	47.37	74.00	-26.63	peak
2785.000	H	-0.67	42.84	42.17	74.00	-31.83	peak
4315.000	H	6.72	36.77	43.49	74.00	-30.51	peak
5377.500	H	8.92	36.07	44.99	74.00	-29.01	peak
5717.500	H	9.56	36.23	45.79	74.00	-28.21	peak
7460.000	H	13.87	33.85	47.72	74.00	-26.28	peak
1850.000	V	-5.59	47.50	41.91	74.00	-32.09	peak
3677.500	V	4.01	36.53	40.54	74.00	-33.46	peak
4102.500	V	5.63	37.13	42.76	74.00	-31.24	peak
4442.500	V	7.37	37.23	44.60	74.00	-29.40	peak
5590.000	V	9.24	36.96	46.20	74.00	-27.80	peak
6950.000	V	11.92	35.28	47.20	74.00	-26.80	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode7	802.11n HT20 (2462MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2062.500	H	-4.46	48.25	43.79	74.00	-30.21	peak
2317.500	H	-3.36	47.50	44.14	74.00	-29.86	peak
3805.000	H	4.44	36.22	40.66	74.00	-33.34	peak
4230.000	H	6.28	37.53	43.81	74.00	-30.19	peak
5250.000	H	8.81	35.49	44.30	74.00	-29.70	peak
6652.500	H	10.95	34.11	45.06	74.00	-28.94	peak
1935.000	V	-5.10	46.53	41.43	74.00	-32.57	peak
2445.000	V	-2.82	48.13	45.31	74.00	-28.69	peak
3720.000	V	4.15	38.81	42.96	74.00	-31.04	peak
5250.000	V	8.81	35.25	44.06	74.00	-29.94	peak
5845.000	V	9.88	35.46	45.34	74.00	-28.66	peak
7417.500	V	13.71	35.63	49.34	74.00	-24.66	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode8	802.11n HT40 (2422MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2445.000	H	-2.82	47.66	44.84	74.00	-29.16	peak
2657.500	H	-1.52	44.95	43.43	74.00	-30.57	peak
4102.500	H	5.63	34.92	40.55	74.00	-33.45	peak
4655.000	H	7.95	35.87	43.82	74.00	-30.18	peak
5845.000	H	9.88	34.67	44.55	74.00	-29.45	peak
6907.500	H	11.78	35.48	47.26	74.00	-26.74	peak
2615.000	V	-1.81	45.22	43.41	74.00	-30.59	peak
3635.000	V	3.86	39.61	43.47	74.00	-30.53	peak
4187.500	V	6.07	39.02	45.09	74.00	-28.91	peak
5292.500	V	8.85	36.11	44.96	74.00	-29.04	peak
5887.500	V	9.98	34.90	44.88	74.00	-29.12	peak
7077.500	V	12.38	36.00	48.38	74.00	-25.62	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode8	802.11n HT40 (2437MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2360.000	H	-3.18	49.67	46.49	74.00	-27.51	peak
3805.000	H	4.44	36.22	40.66	74.00	-33.34	peak
4187.500	H	6.07	39.45	45.52	74.00	-28.48	peak
4655.000	H	7.95	37.37	45.32	74.00	-28.68	peak
5632.500	H	9.35	37.82	47.17	74.00	-26.83	peak
6950.000	H	11.92	35.96	47.88	74.00	-26.12	peak
2275.000	V	-3.55	48.00	44.45	74.00	-29.55	peak
2530.000	V	-2.38	46.65	44.27	74.00	-29.73	peak
4145.000	V	5.85	36.19	42.04	74.00	-31.96	peak
5377.500	V	8.92	35.40	44.32	74.00	-29.68	peak
6142.500	V	10.32	35.39	45.71	74.00	-28.29	peak
7205.000	V	12.88	34.98	47.86	74.00	-26.14	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

Power :	DC3.3V	Temperature :	24 °C
Test Mode8	802.11n HT40 (2452MHz) Ant2	Humidity :	54 %
Test date :	Aug. 10, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Safe Margin (dB)	Detector mode (PK/AV)
2147.500	H	-4.10	46.70	42.60	74.00	-31.40	peak
2615.000	H	-1.81	43.54	41.73	74.00	-32.27	peak
3380.000	H	2.77	37.27	40.04	74.00	-33.96	peak
5122.500	H	8.70	35.18	43.88	74.00	-30.12	peak
5802.500	H	9.77	35.63	45.40	74.00	-28.60	peak
7035.000	H	12.22	35.26	47.48	74.00	-26.52	peak
2445.000	V	-2.82	47.63	44.81	74.00	-29.19	peak
3125.000	V	1.43	41.86	43.29	74.00	-30.71	peak
3932.500	V	4.88	38.51	43.39	74.00	-30.61	peak
4612.500	V	7.87	38.65	46.52	74.00	-27.48	peak
6015.000	V	10.27	35.25	45.52	74.00	-28.48	peak
6355.000	V	10.40	35.43	45.83	74.00	-28.17	peak

Note: Level = Reading + Factor
Margin = Level – Limit
Factor= Antenna Factor + Cable Loss - Amplifier Factor

6.7 Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

**: Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

6.8 Restrict Band Emission Measurement Data

Test Date: Aug. 10, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11b Ant1

Channel 1				Fundamental Frequency: 2412 MHz			
Frequency (MHz)	**Factor (dB/m)**	**Reading (dBuV)**	**Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Det.**	**Ant-Pol H/V**
2386.250	-3.07	55.38	52.31	74.00	-21.69	peak	H
2386.250	-3.07	38.62	35.55	54.00	-18.45	AVG	H
2390.000	-3.05	50.98	47.93	74.00	-26.07	peak	H
2390.000	-3.05	34.69	31.64	54.00	-22.36	AVG	H
2386.250	-3.07	55.94	52.87	74.00	-21.13	peak	V
2386.250	-3.07	38.98	35.91	54.00	-18.09	AVG	V
2390.000	-3.05	50.93	47.88	74.00	-26.12	peak	V
2390.000	-3.05	33.67	30.62	54.00	-23.38	AVG	V
Channel 11				Fundamental Frequency: 2462 MHz			
2483.500	-2.65	49.16	46.51	74.00	-27.49	peak	H
2483.500	-2.65	33.26	30.61	54.00	-23.39	AVG	H
2488.400	-2.63	52.98	50.35	74.00	-23.65	peak	H
2488.400	-2.63	34.19	31.56	54.00	-22.44	AVG	H
2483.500	-2.65	48.56	45.91	74.00	-28.09	peak	V
2483.500	-2.65	33.49	30.84	54.00	-23.16	AVG	V
2487.950	-2.63	52.20	49.57	74.00	-24.43	peak	V
2487.950	-2.63	34.95	32.32	54.00	-21.68	AVG	V

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

Test Date: Aug. 10, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11g Ant1

Channel 1				Fundamental Frequency: 2412 MHz			
Frequency (MHz)	**Factor (dB/m)**	**Reading (dBuV)**	**Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Det.**	**Ant-Pol H/V**
2390.000	-3.05	64.76	61.71	74.00	-12.29	peak	H
2390.000	-3.05	46.69	43.64	54.00	-10.36	AVG	H
2390.000	-3.05	65.10	62.05	74.00	-11.95	peak	V
2390.000	-3.05	47.31	44.26	54.00	-9.74	AVG	V
Channel 11				Fundamental Frequency: 2462 MHz			
2483.500	-2.65	57.54	54.89	74.00	-19.11	peak	H
2483.500	-2.65	39.76	37.11	54.00	-16.89	AVG	H
2483.500	-2.65	60.98	58.33	74.00	-15.67	peak	V
2483.500	-2.65	42.74	40.09	54.00	-13.91	AVG	V

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

Test Date: Aug. 10, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11n HT20 Ant1

Channel 1				Fundamental Frequency: 2412 MHz			
Frequency (MHz)	**Factor (dB/m)**	**Reading (dBuV)**	**Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Det.**	**Ant-Pol H/V**
2390.000	-3.05	63.64	60.59	74.00	-13.41	peak	H
2390.000	-3.05	44.89	41.84	54.00	-12.16	AVG	H
2390.000	-3.05	71.19	68.14	74.00	-5.86	peak	V
2390.000	-3.05	51.22	48.17	54.00	-5.83	AVG	V
Channel 11				Fundamental Frequency: 2462 MHz			
2483.500	-2.65	58.09	55.44	74.00	-18.56	peak	H
2483.500	-2.65	40.12	37.47	54.00	-16.53	AVG	H
2483.500	-2.65	61.52	58.87	74.00	-15.13	peak	V
2483.500	-2.65	43.51	40.86	54.00	-13.14	AVG	V

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

Test Date: Aug. 10, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11n HT40 Ant1

Channel 1				Fundamental Frequency: 2422 MHz			
Frequency (MHz)	**Factor (dB/m)**	**Reading (dBuV)**	**Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Det.**	**Ant-Pol H/V**
2390.000	-3.05	63.39	60.34	74.00	-13.66	peak	H
2390.000	-3.05	45.48	42.43	54.00	-11.57	AVG	H
2390.000	-3.05	64.70	61.65	74.00	-12.35	peak	V
2390.000	-3.05	46.37	43.32	54.00	-10.68	AVG	V
Channel 11				Fundamental Frequency: 2452 MHz			
2483.500	-2.65	57.07	54.42	74.00	-19.58	peak	H
2483.500	-2.65	39.21	36.56	54.00	-17.44	AVG	H
2483.500	-2.65	59.70	57.05	74.00	-16.95	peak	V
2483.500	-2.65	42.21	39.56	54.00	-14.44	AVG	V

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

Test Date: Aug. 10, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11b Ant2

Channel 3				Fundamental Frequency: 2412 MHz			
Frequency (MHz)	**Factor (dB/m)**	**Reading (dBuV)**	**Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Det.**	**Ant-Pol H/V**
2386.625	-3.07	54.30	51.23	74.00	-22.77	peak	H
2386.625	-3.07	36.47	33.40	54.00	-20.60	AVG	H
2390.000	-3.05	48.26	45.21	74.00	-28.79	peak	H
2390.000	-3.05	32.69	29.64	54.00	-24.36	AVG	H
2386.625	-3.07	56.90	53.83	74.00	-20.17	peak	V
2386.625	-3.07	38.56	35.49	54.00	-18.51	AVG	V
2390.000	-3.05	53.85	50.80	74.00	-23.20	peak	V
2390.000	-3.05	37.51	34.46	54.00	-19.54	AVG	V
Channel 9				Fundamental Frequency: 2462 MHz			
2483.500	-2.65	48.92	46.27	74.00	-27.73	peak	H
2483.500	-2.65	32.71	30.06	54.00	-23.94	AVG	H
2488.400	-2.63	51.40	48.77	74.00	-25.23	peak	H
2488.400	-2.63	35.43	32.80	54.00	-21.20	AVG	H
2483.500	-2.65	51.59	48.94	74.00	-25.06	peak	V
2483.500	-2.65	35.48	32.83	54.00	-21.17	AVG	V
2487.950	-2.63	54.23	51.60	74.00	-22.40	peak	V
2487.950	-2.63	38.46	35.83	54.00	-18.17	AVG	V

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

Test Date: Aug. 10, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11g Ant2

Channel 1				Fundamental Frequency: 2412 MHz			
Frequency (MHz)	**Factor (dB/m)**	**Reading (dBuV)**	**Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Det.**	**Ant-Pol H/V**
2390.000	-3.05	61.98	58.93	74.00	-15.07	peak	H
2390.000	-3.05	43.61	40.56	54.00	-13.44	AVG	H
2390.000	-3.05	74.92	71.87	74.00	-2.13	peak	V
2390.000	-3.05	53.67	50.62	54.00	-3.38	AVG	V
Channel 11				Fundamental Frequency: 2462 MHz			
2483.500	-2.65	56.13	53.48	74.00	-20.52	peak	H
2483.500	-2.65	39.72	37.07	54.00	-16.93	AVG	H
2483.500	-2.65	59.05	56.40	74.00	-17.60	peak	V
2483.500	-2.65	42.18	39.53	54.00	-14.47	AVG	V

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

Test Date: Aug. 10, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11n HT20 Ant2

Channel 1				Fundamental Frequency: 2412 MHz			
Frequency (MHz)	**Factor (dB/m)**	**Reading (dBuV)**	**Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Det.**	**Ant-Pol H/V**
2390.000	-3.05	60.93	57.88	74.00	-16.12	peak	H
2390.000	-3.05	42.54	39.49	54.00	-14.51	AVG	H
2390.000	-3.05	76.63	73.58	74.00	-0.42	peak	V
2390.000	-3.05	54.31	51.26	54.00	-2.74	AVG	V
Channel 11				Fundamental Frequency: 2462 MHz			
2483.500	-2.65	56.04	53.39	74.00	-20.61	peak	H
2483.500	-2.65	38.79	36.14	54.00	-17.86	AVG	H
2483.500	-2.65	63.35	60.70	74.00	-13.30	peak	V
2483.500	-2.65	46.71	44.06	54.00	-9.94	AVG	V

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

Test Date: Aug. 10, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11n HT40 Ant2

Channel 1				Fundamental Frequency: 2412 MHz			
Frequency (MHz)	**Factor (dB/m)**	**Reading (dBuV)**	**Level (dBuV/m)**	**Limit (dBuV/m)**	**Margin (dB)**	**Det.**	**Ant-Pol H/V**
2390.000	-3.05	56.78	53.73	74.00	-20.27	peak	H
2390.000	-3.05	40.03	36.98	54.00	-17.02	AVG	H
2390.000	-3.05	68.78	65.73	74.00	-8.27	peak	V
2390.000	-3.05	49.67	46.62	54.00	-7.38	AVG	V
Channel 11				Fundamental Frequency: 2462 MHz			
2483.500	-2.65	56.62	53.97	74.00	-20.03	peak	H
2483.500	-2.65	38.79	36.14	54.00	-17.86	AVG	H
2483.500	-2.65	65.72	63.07	74.00	-10.93	peak	V
2483.500	-2.65	48.31	45.66	54.00	-8.34	AVG	V

Notes:

1. Result = Meter Reading + Factor
2. Factor = Antenna Factor + Cable Loss – Amplifier
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector peak mode) for Peak detection at frequency above 1GHz.
4. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3 MHz (detector sample mode) for Average detection at frequency above 1GHz.

7. Test of Spurious Emission (Conducted)

7.1 Test Limit

Below 30dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

7.2 Test Procedure

KDB 558074 D01v03r02 - Section 11.2 & Section 11.3

1. Reference level measurement

(a) Set instrument center frequency to DTS channel center frequency

(b) Set the span to ≥ 1.5 times the DTS bandwidth

(c) Set the RBW = 100 kHz

(d) 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

2. Emission level measurement

(a) Set the center frequency and span to encompass frequency range to be measured

(b) RBW = 100kHz

(c) VBW = 300kHz

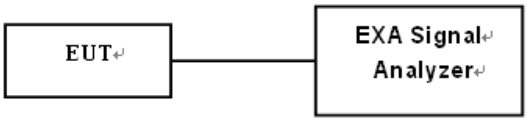
(d) Detector = Peak

(e) Trace mode = max hold

(f) Sweep time = auto couple

(g) The trace was allowed to stabilize

7.3 Test Setup Layout



7.4 Test Result and Data

Test Date: Aug. 10, 2017 Temperature: 24℃

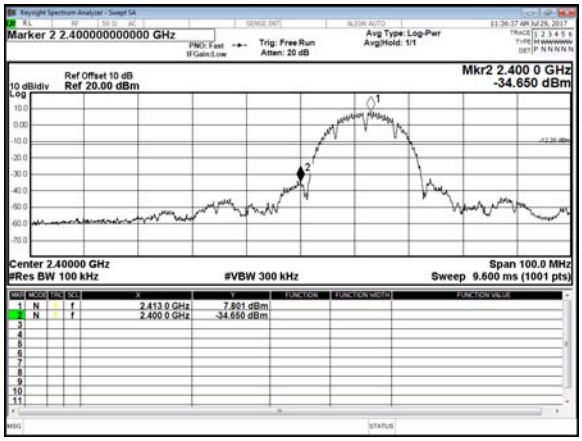
Atmospheric pressure: 1014 hPa Humidity: 47%

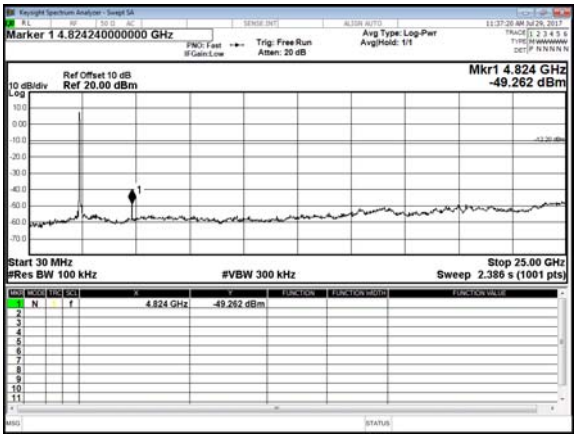
Antenna 1/ Antenna 2

Modulation Standard	Frequency (MHz)	Test Result
802.11b	2412	Pass
	2437	Pass
	2462	Pass
802.11g	2412	Pass
	2437	Pass
	2462	Pass
802.11n HT20	2412	Pass
	2437	Pass
	2462	Pass
802.11n HT40	2422	Pass
	2437	Pass
	2452	Pass

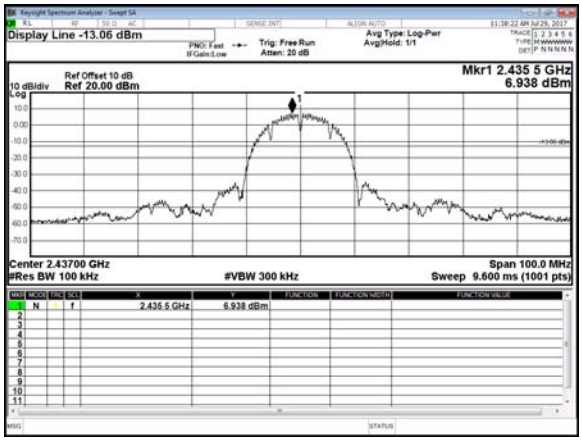
Note: Test plots refer to the following pages.

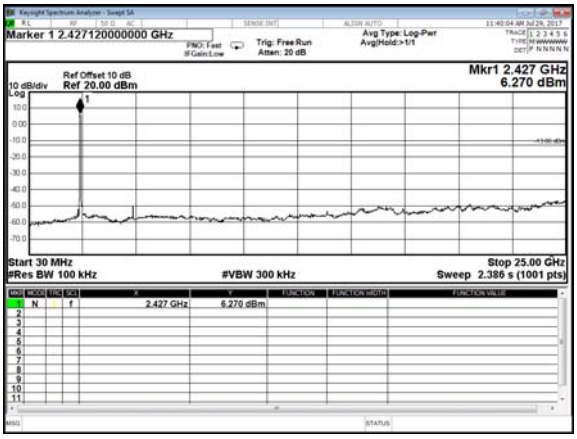
Antenna 1
Modulation Type: 802.11b
CH01



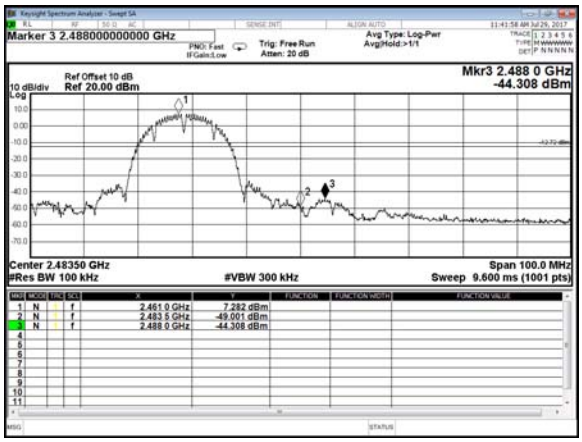


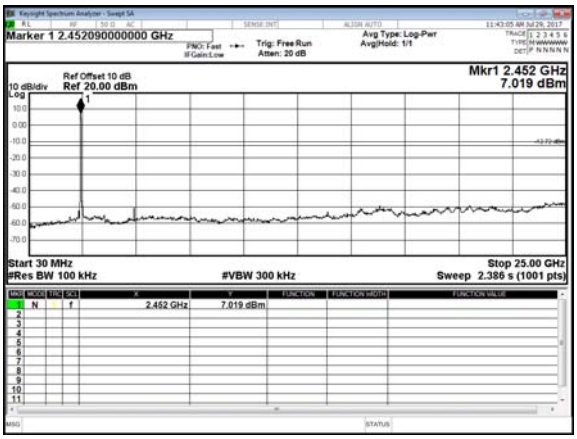
CH06





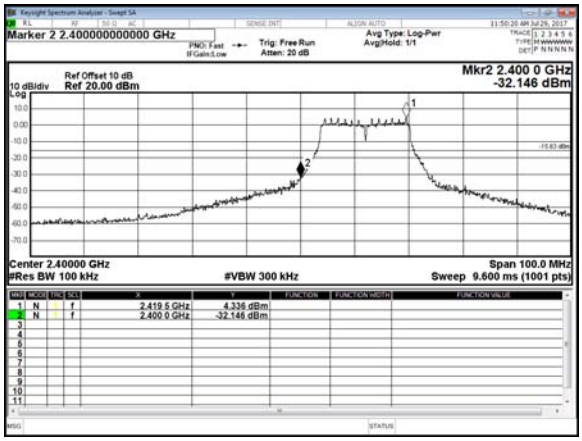
CH11

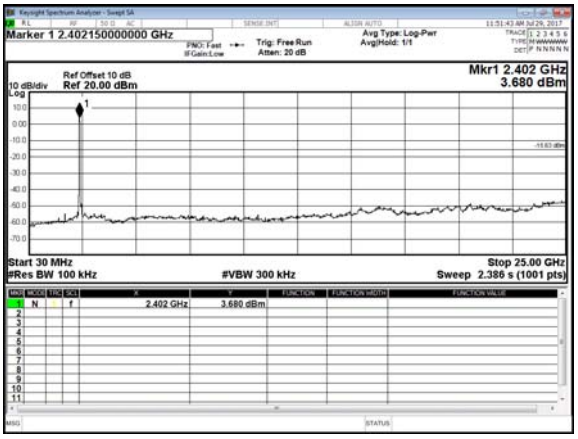




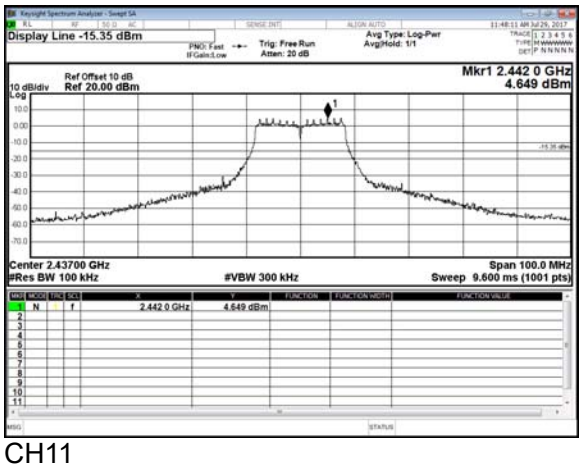
Modulation Type: 802.11g

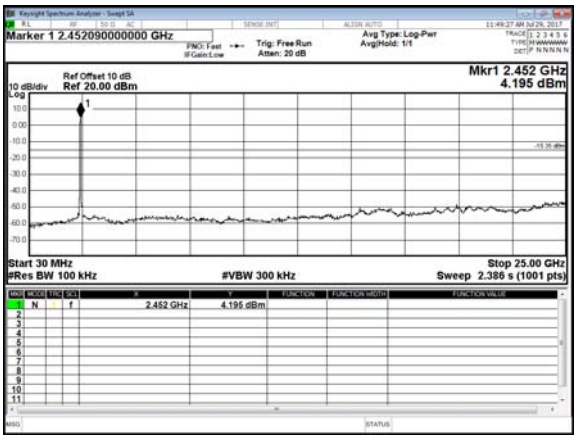
CH01



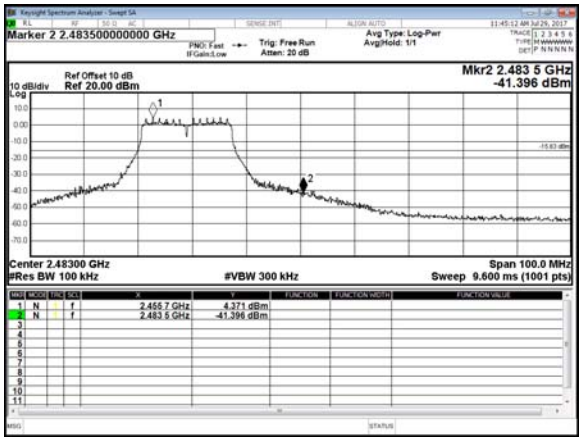


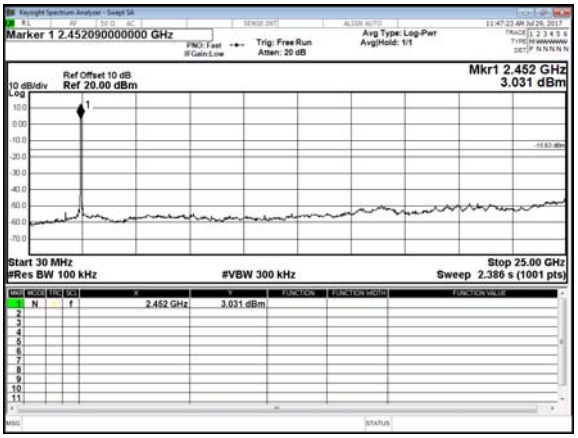
CH06





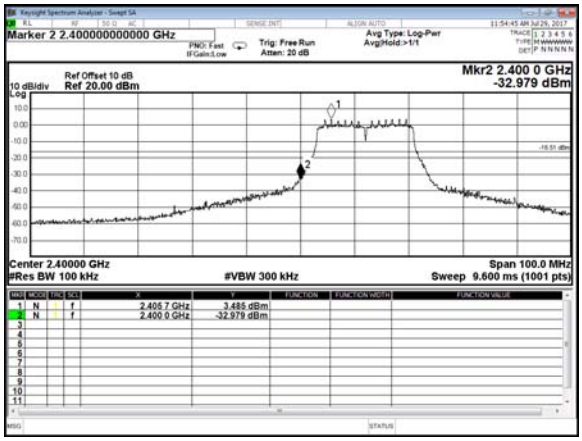
CH11

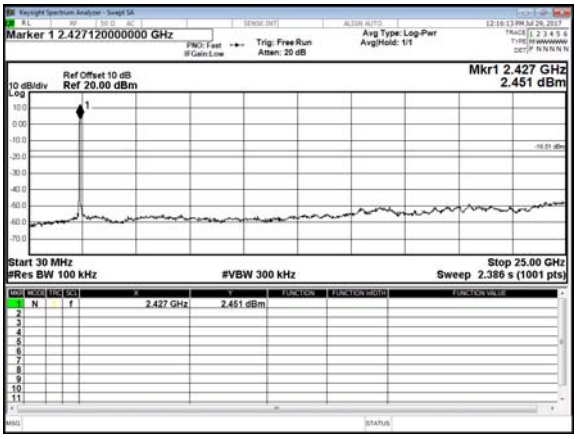




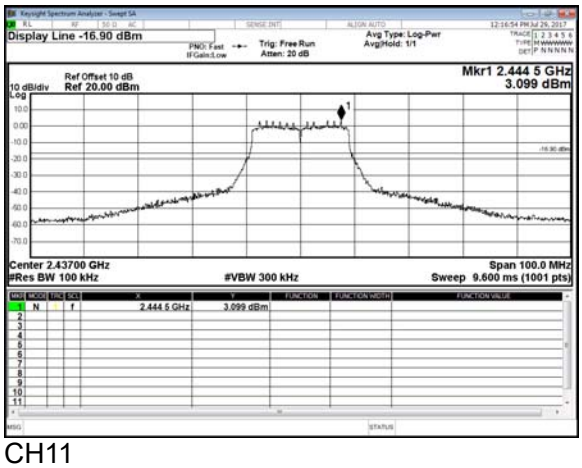
Modulation Type: 802.11n HT20

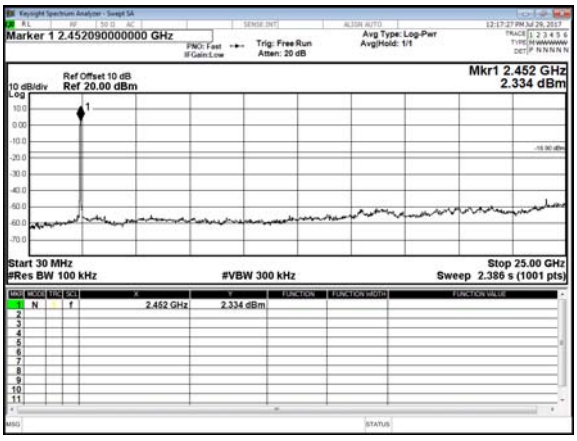
CH01



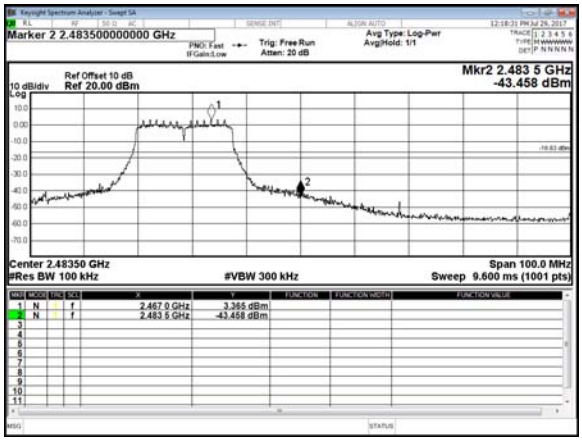


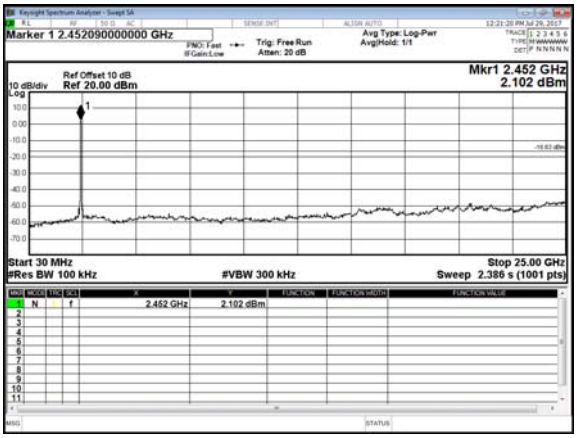
CH06





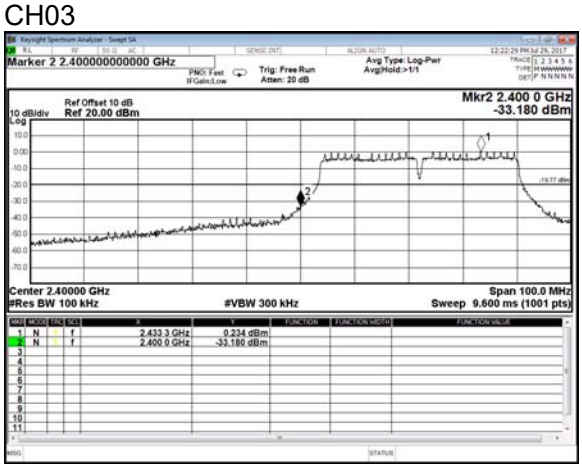
CH11

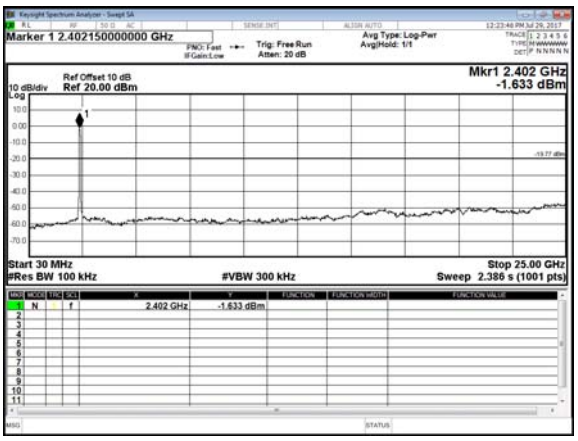




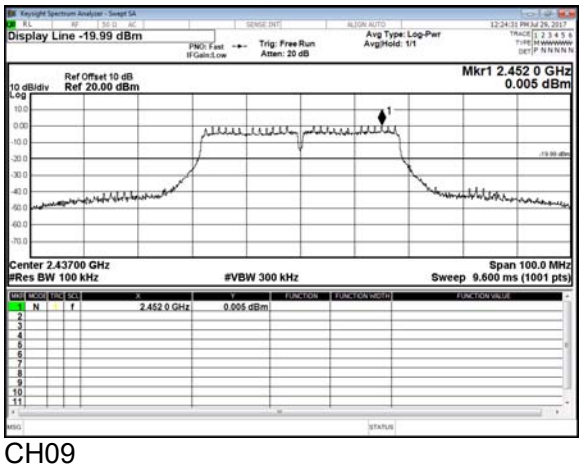
Modulation Type: 802.11n HT40

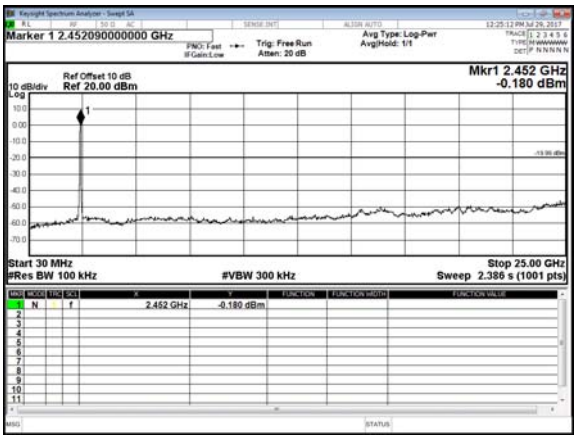
CH03



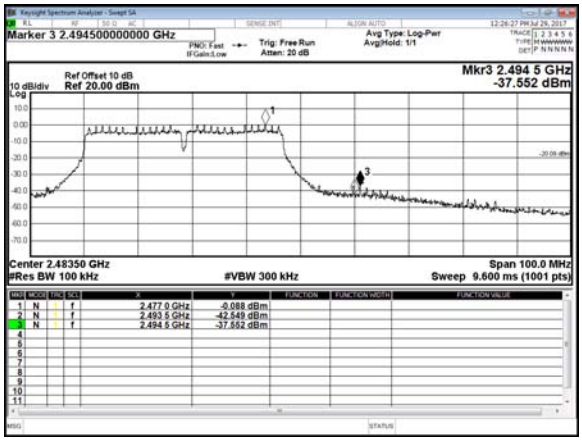


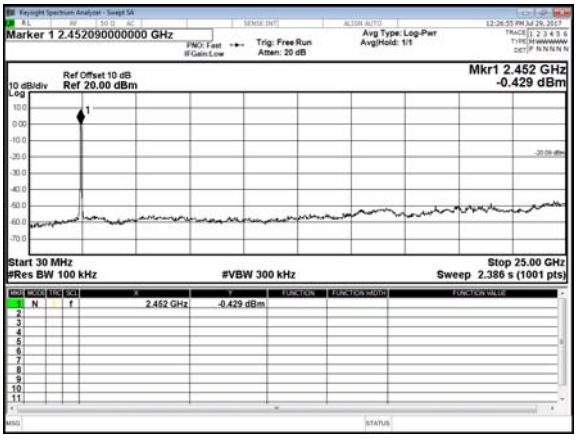
CH06



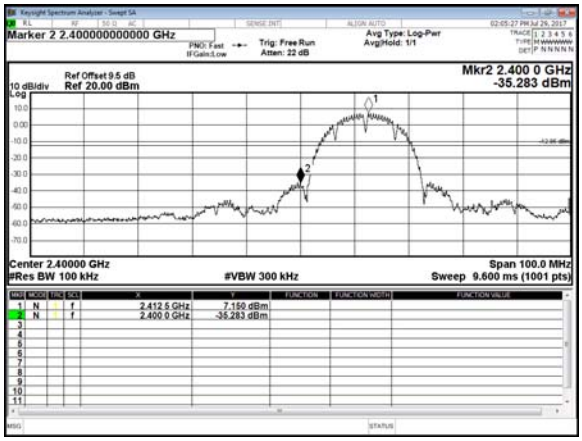


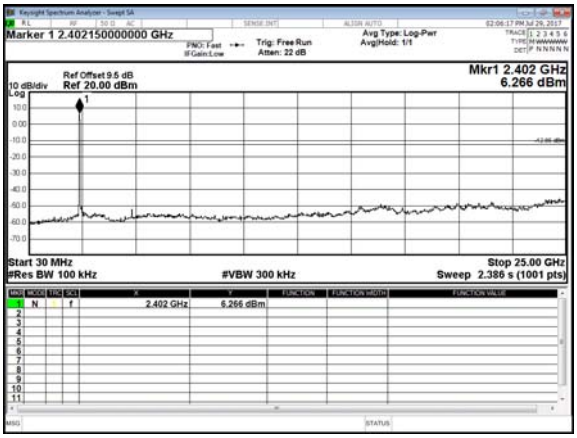
CH09



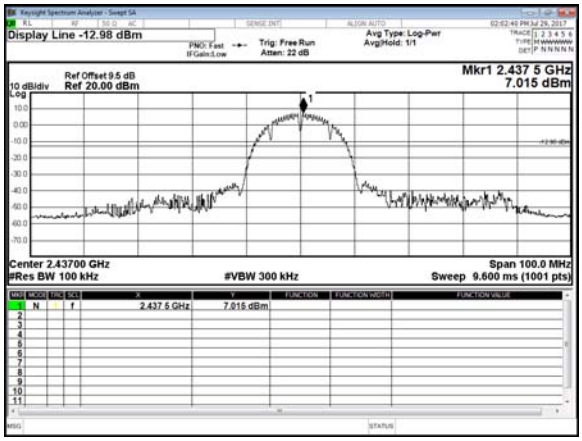


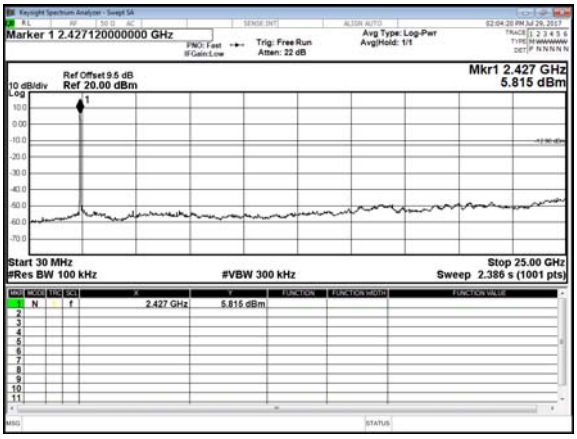
Antenna 2
Modulation Type: 802.11b
CH01



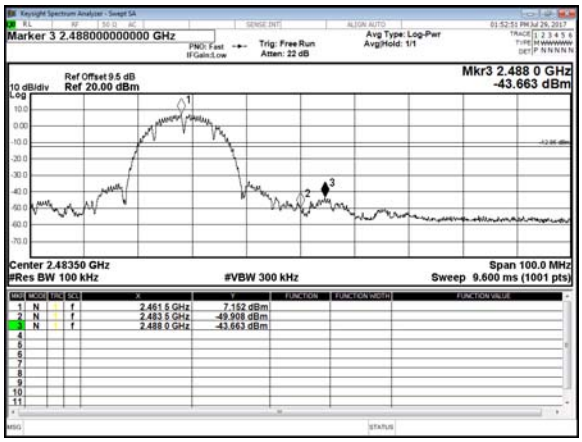


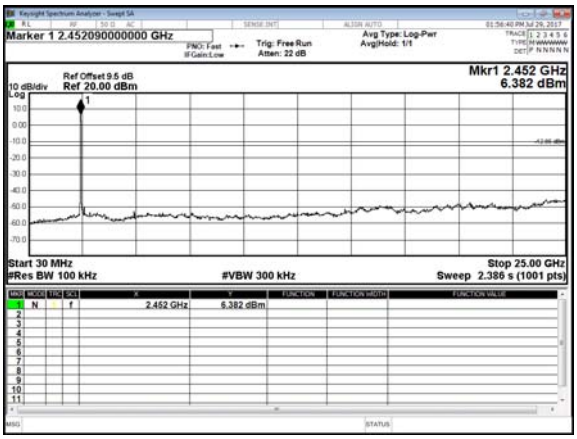
CH06





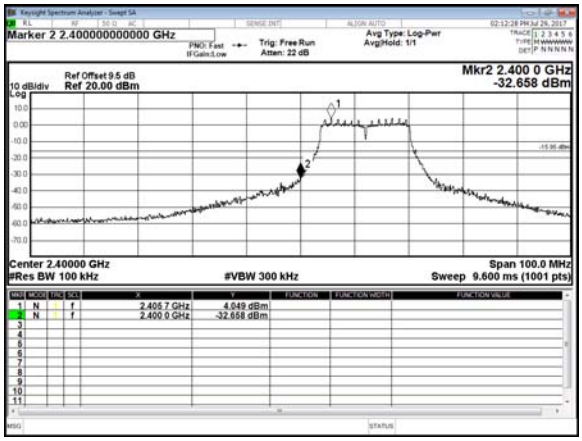
CH11

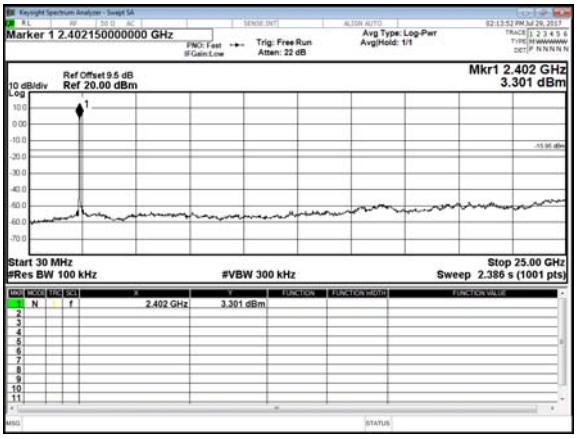




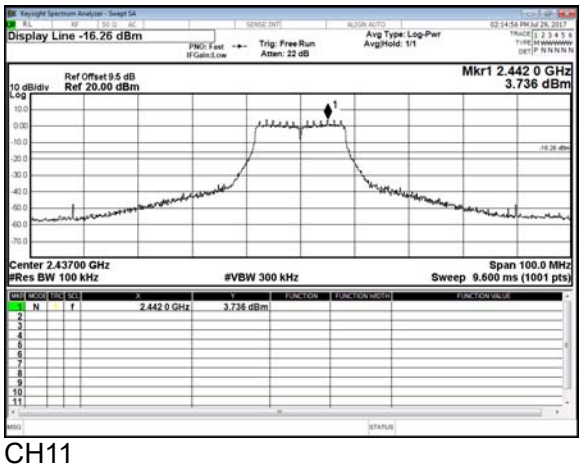
Modulation Type: 802.11g

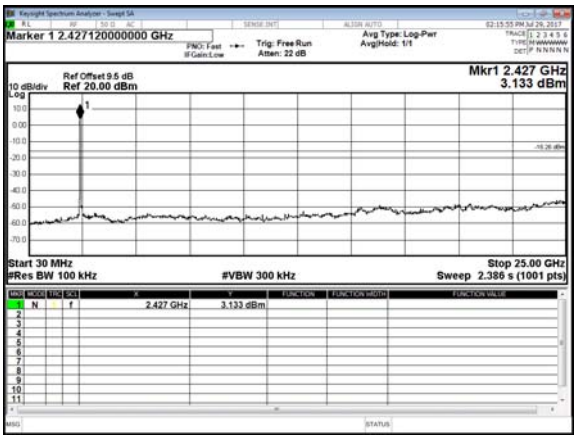
CH01



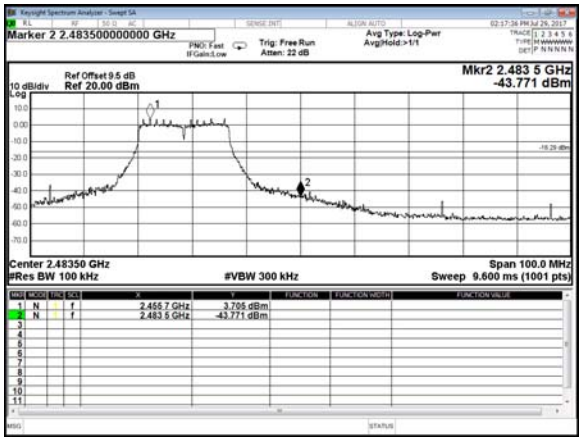


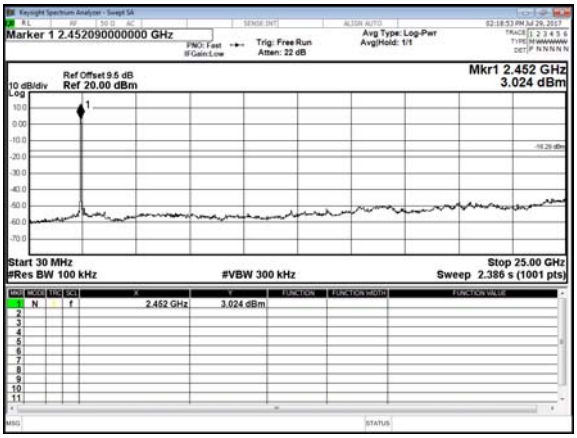
CH06





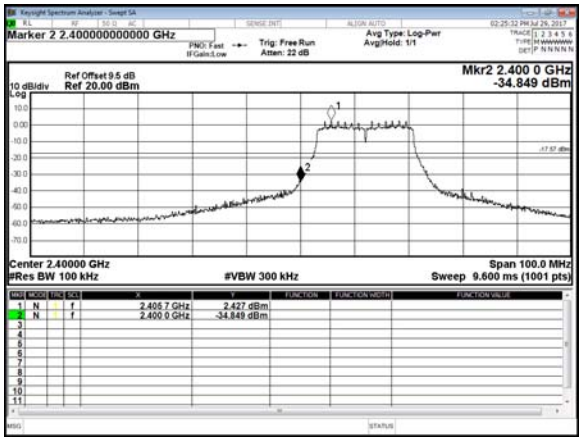
CH11

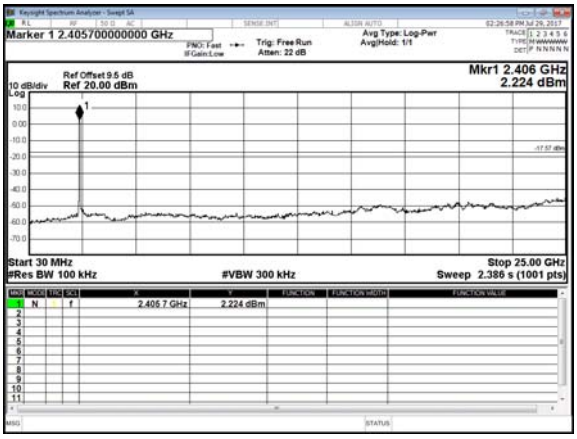




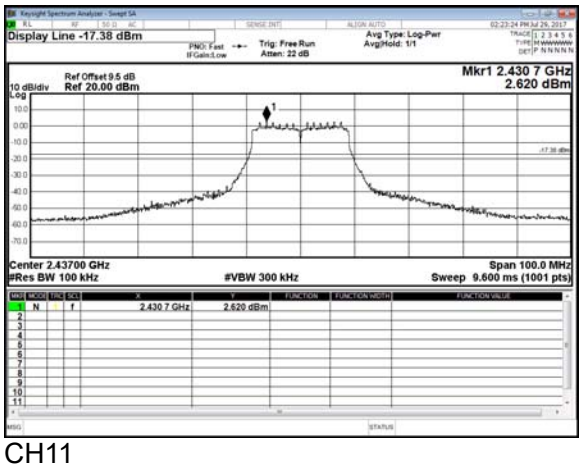
Modulation Type: 802.11n HT20

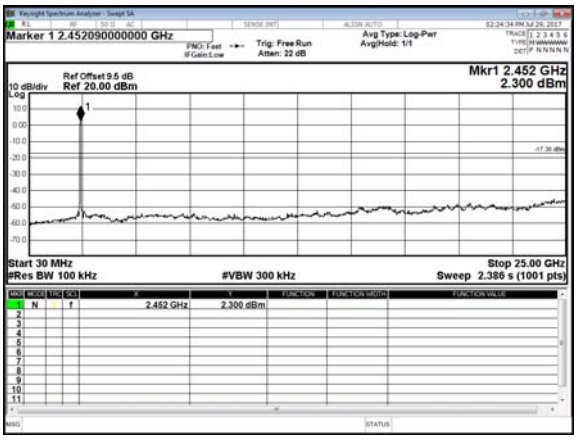
CH01



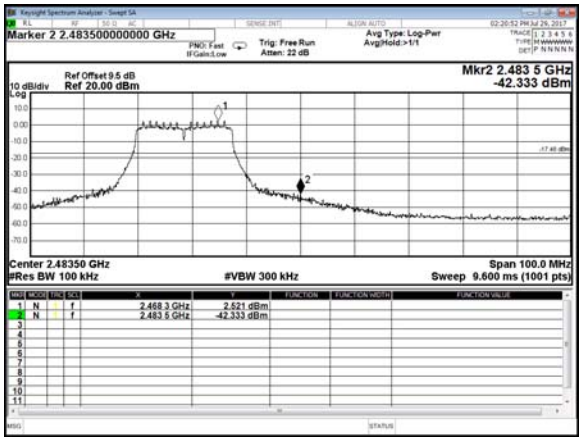


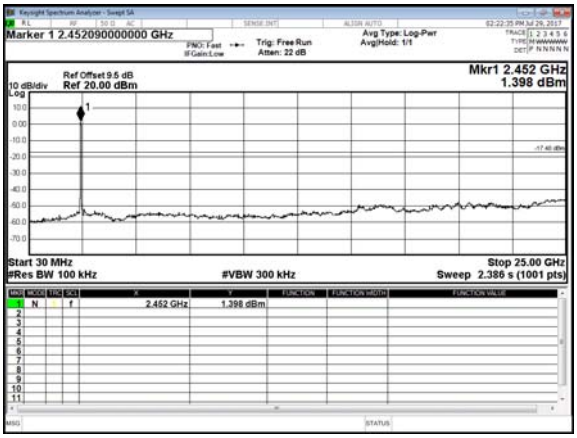
CH06





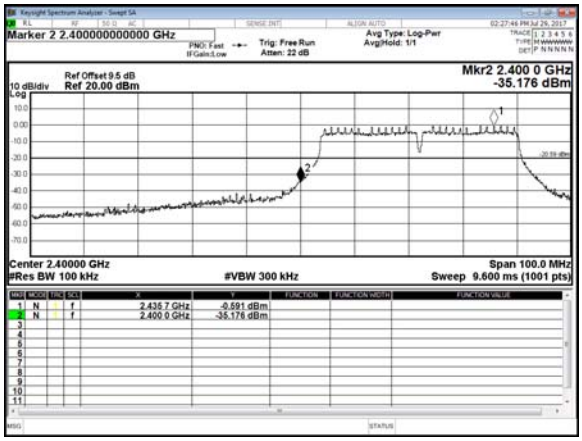
CH11

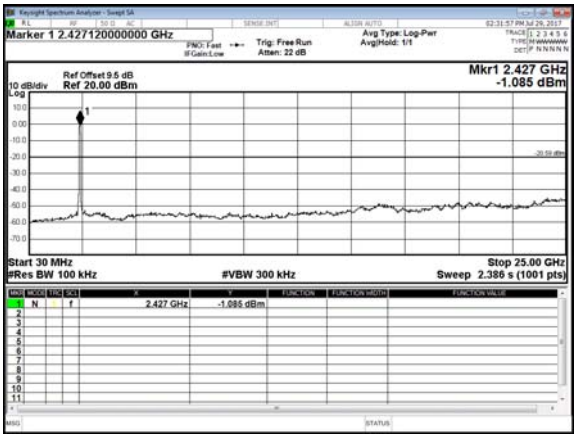




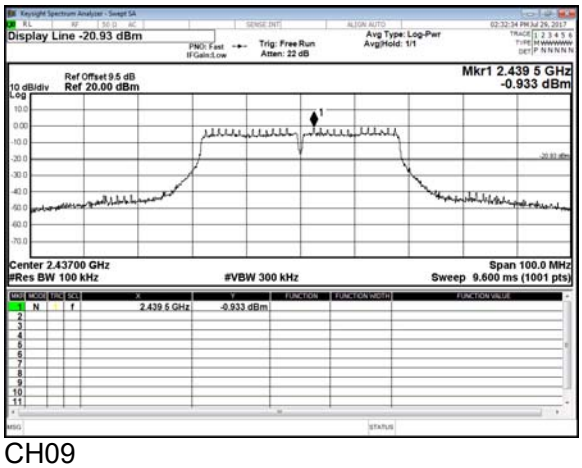
Modulation Type: 802.11n HT40

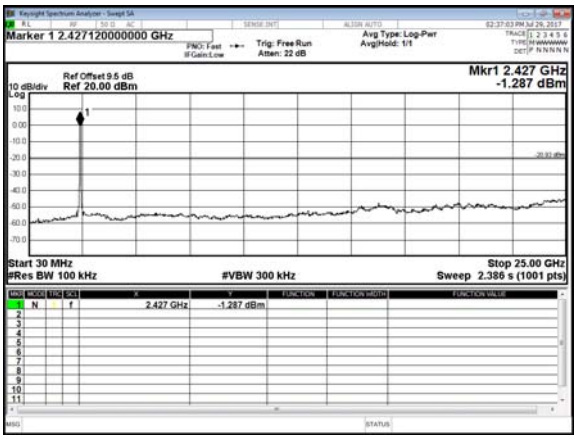
CH03



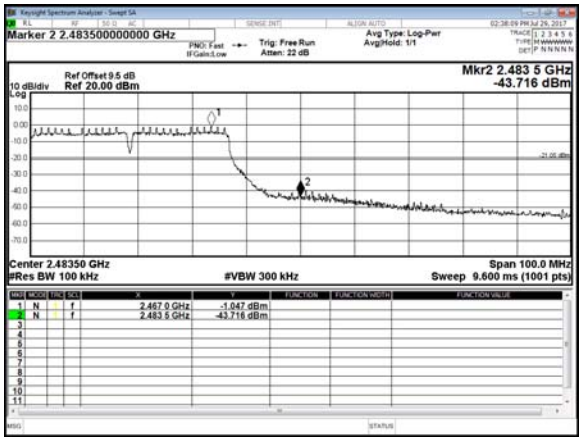


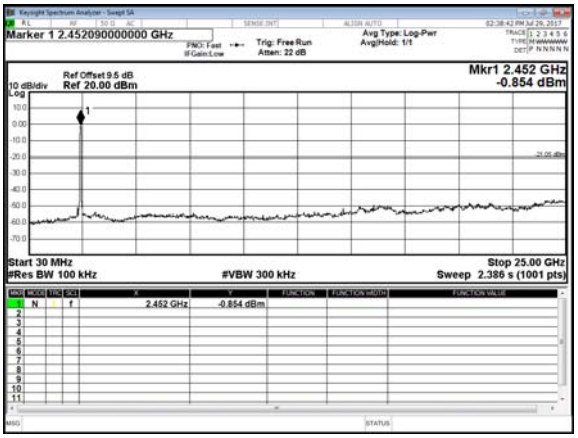
CH06





CH09





8. 6dB Bandwidth Measurement Data

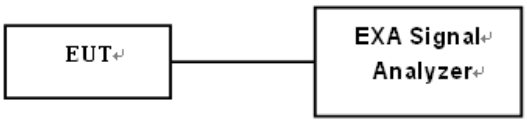
8.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

8.2 Test Procedures

a. The transmitter output was connected to the spectrum analyzer.
b. Set RBW of spectrum analyzer to 100 KHz and VBW to 300 KHz.
c. Set spectrum analyzer X dB to 6 dB.
d. Set spectrum analyzer peak detector with maximum hold.

8.3 Test Setup Layout



8.4 Test Result and Data

Test Date: Jul. 29, 2017 Temperature: 24℃

Atmospheric pressure: 1016 hPa Humidity: 46%

Ant 1

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)
IEEE 802.11b	01	2412	10.14
	06	2437	10.13
	11	2462	10.15
IEEE 802.11g	01	2412	16.39
	06	2437	16.40
	11	2462	16.39
IEEE 802.11n HT20	01	2412	17.39
	06	2437	17.58
	11	2462	17.57
IEEE 802.11n HT40	03	2422	36.10
	06	2437	36.10
	09	2452	36.11

Ant 2

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)
IEEE 802.11b	01	2412	10.14
	06	2437	10.15
	11	2462	10.13
IEEE 802.11g	01	2412	16.41
	06	2437	16.39
	11	2462	16.40
IEEE 802.11n HT20	01	2412	17.55
	06	2437	17.64
	11	2462	17.64
IEEE 802.11n HT40	03	2422	36.11
	06	2437	36.12
	09	2452	36.11

Antenna 1
Modulation Type: 802.11b

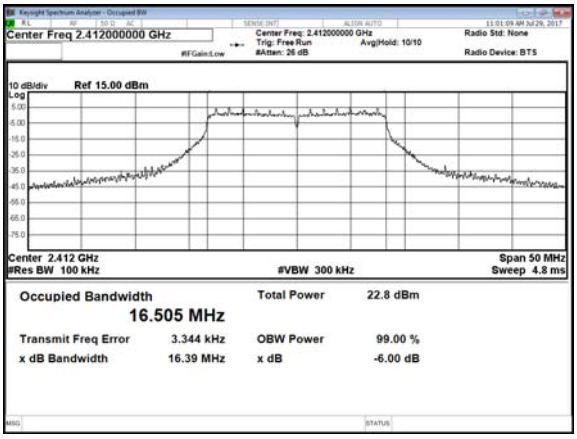
CH01

CH06

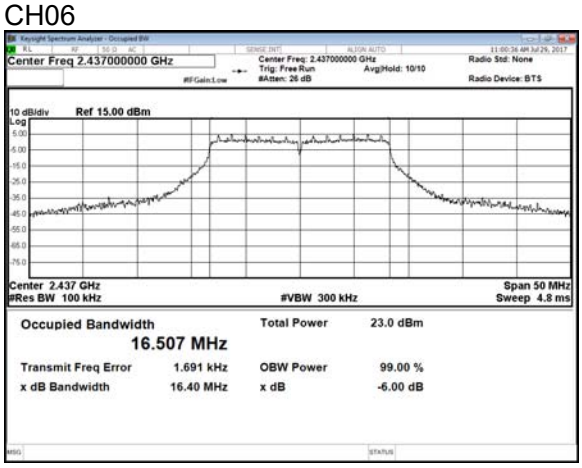
CH11

Modulation Type: 802.11g

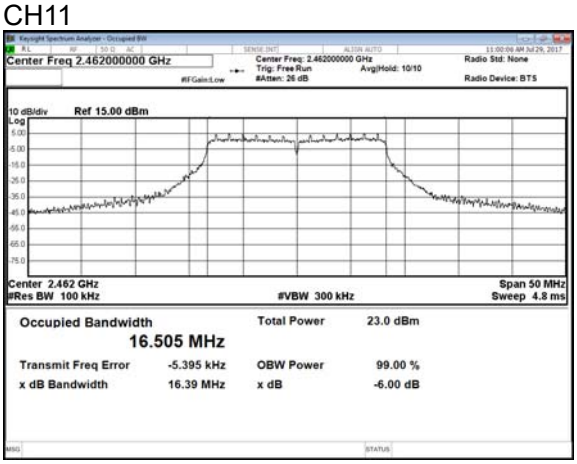
CH01



CH06

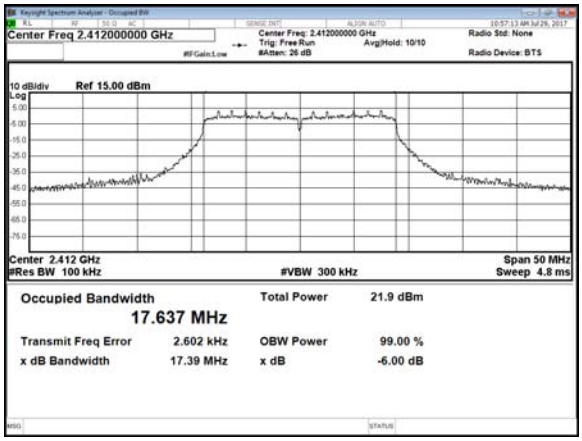


CH11

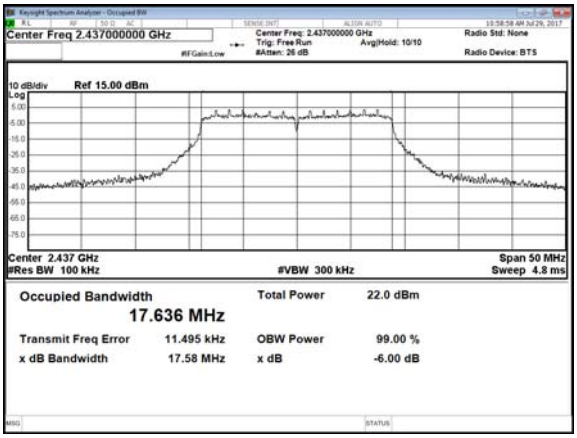


Modulation Type: 802.11n HT20

CH01

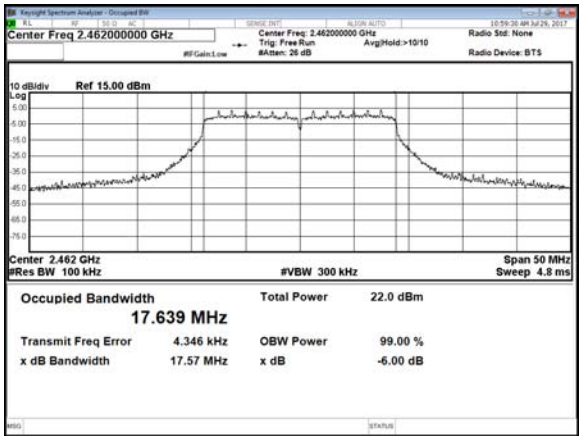


CH06

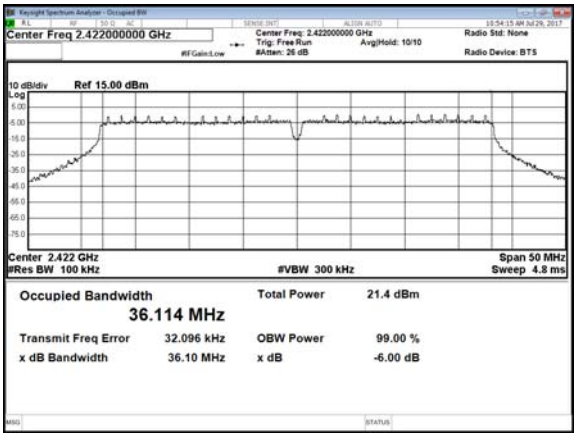


Modulation Type: 802.11n HT40

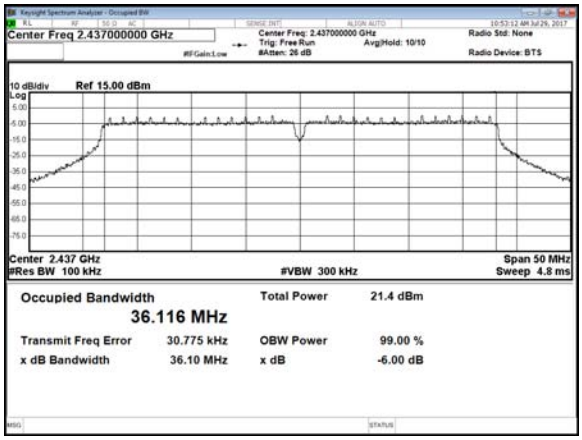
CH11



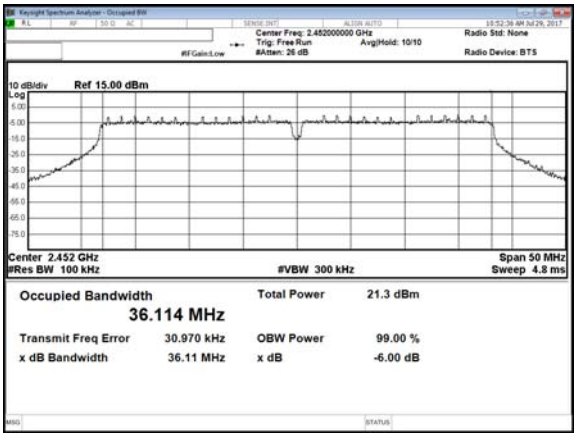
CH03



CH06



CH09



Antenna 2
Modulation Type: 802.11b

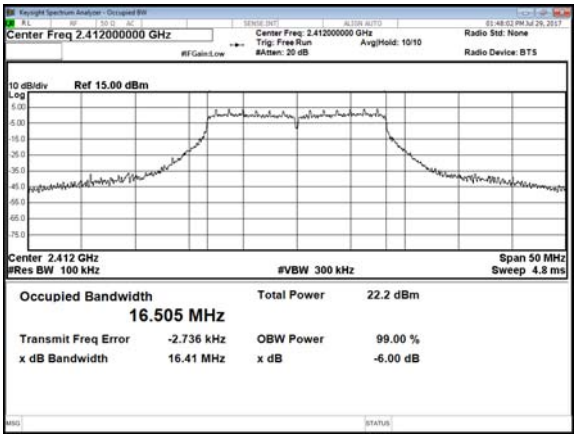
CH01

CH06

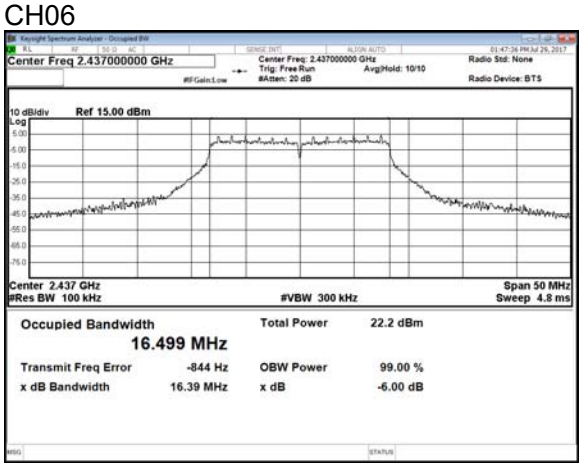
CH11

Modulation Type: 802.11g

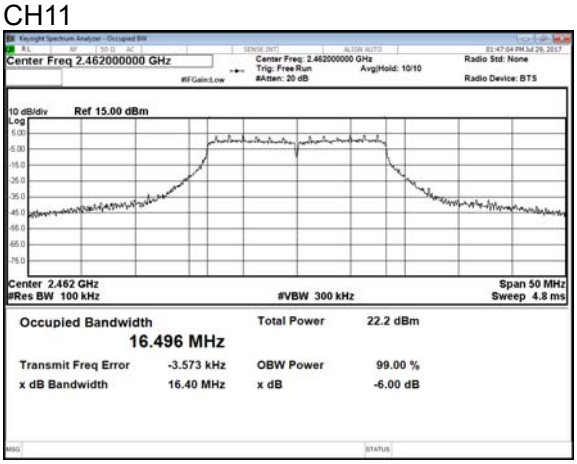
CH01



CH06

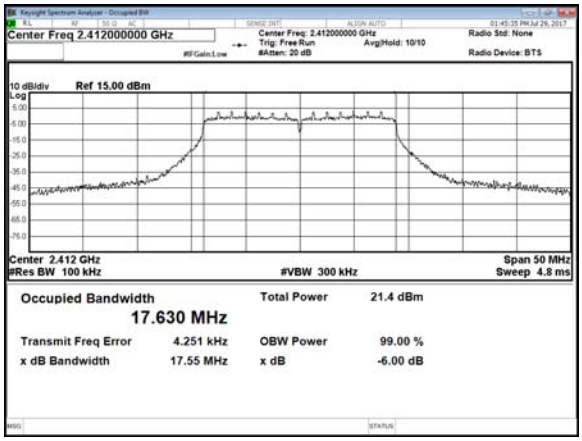


CH11

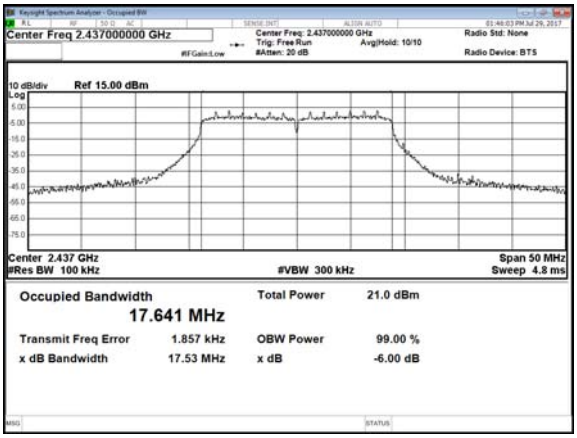


Modulation Type: 802.11n HT20

CH01

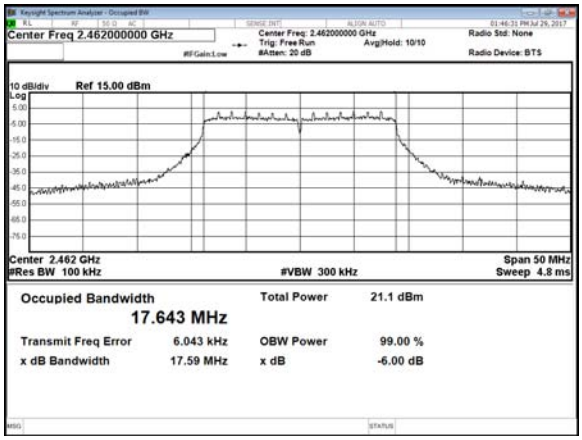


CH06

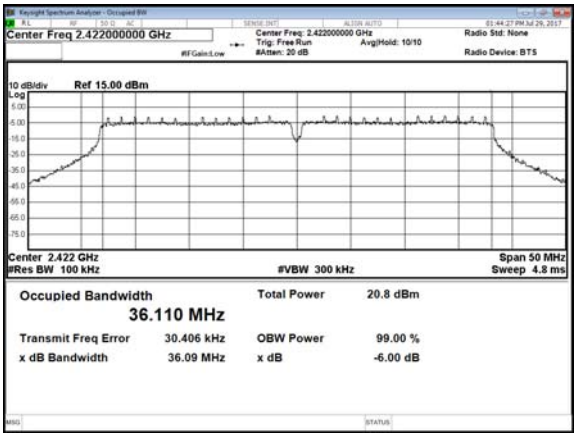


Modulation Type: 802.11n HT40

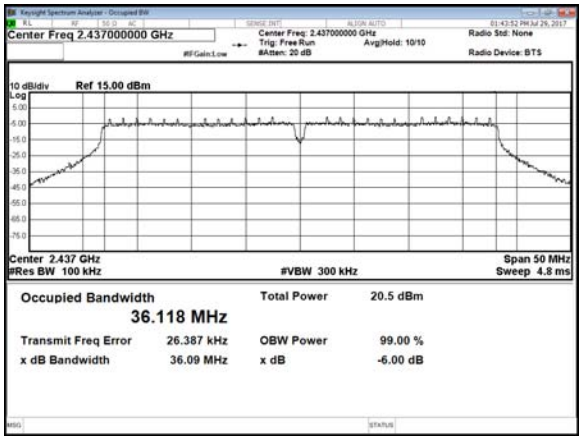
CH11



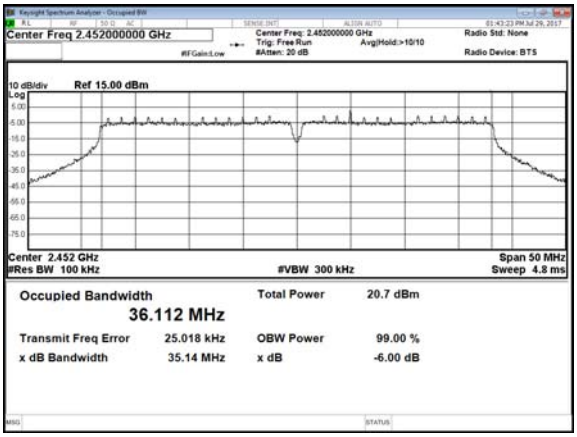
CH03



CH06



CH09



9. Maximum Peak Output Power

9.1 Test Limit

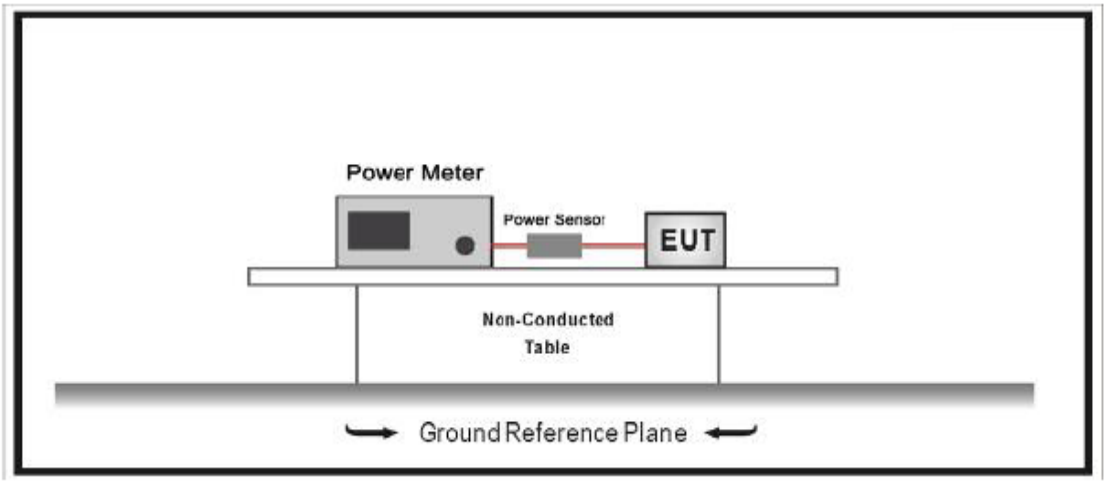
The Maximum Peak Output Power Measurement is 30dBm.

9.2 Test Procedures

Test procedure refers to KDB558074 D01v03r05, section9.1.2 PKPM1 Peak power meter method.

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

9.3 Test Setup Layout



9.4 Test Result and Data

Test Date: Aug. 10, 2017 Temperature: 24℃

Atmospheric pressure: 1016 hPa Humidity: 46%

Chain 1

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Output (mW)
IEEE 802.11b	01	2412	18.94	78.343
	06	2437	18.73	74.645
	11	2462	19.41	87.297
IEEE 802.11g	01	2412	22.56	180.302
	06	2437	22.65	184.077
	11	2462	22.74	187.932
IEEE 802.11n HT20	01	2412	21.55	142.889
	06	2437	21.56	143.219
	11	2462	21.74	149.279
IEEE 802.11n HT40	03	2422	21.43	138.995
	06	2437	21.04	127.057
	09	2452	21.11	129.122

Chain 2

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Output (mW)
IEEE 802.11b	01	2412	18.94	78.343
	06	2437	18.43	69.663
	11	2462	18.86	76.913
IEEE 802.11g	01	2412	22.04	159.956
	06	2437	22.21	166.341
	11	2462	22.06	160.694
IEEE 802.11n HT20	01	2412	21.10	128.825
	06	2437	21.22	132.434
	11	2462	21.01	126.183
IEEE 802.11n HT40	03	2422	20.71	117.761
	06	2437	20.44	110.662
	09	2452	20.17	103.992

10. Power Spectral Density

10.1 Test Limit

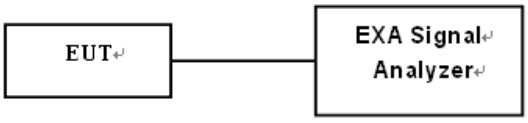
The Maximum of Power Spectral Density Measurement is 8dBm.

10.2 Test Procedures

Test procedure refers to section 10.3 Method AVGPSD-1.

a) Set instrument center frequency to DTS channel center frequency.
b) Set span to at least 1.5 times the OBW.
c) Set RBW to: 3 kHz ≤ RBW ≤ 100 kHz. .
d) Set VBW ≥3 x RBW.
e) Detector = power averaging (RMS) or sample detector (when RMS not available).
f) Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW.
g) Sweep time = auto couple.
h) Employ trace averaging (RMS) mode over a minimum of 100 traces.
j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat (note that this may require zooming in on the emission of interest and reducing the span in order to meet the minimum measurement point requirement as the RBW is reduced).

10.3 Test Setup Layout



10.4 Test Result and Data

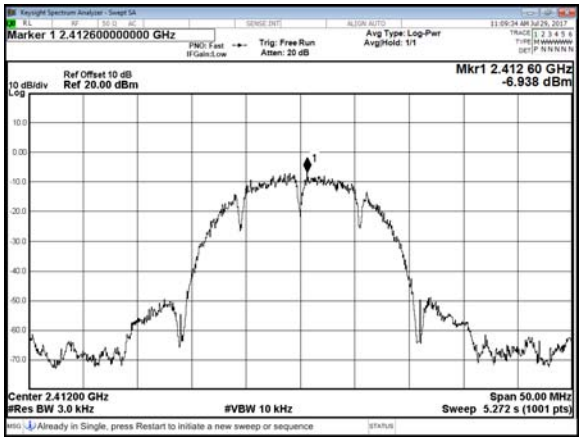
Test Date: Aug. 10, 2017 Temperature: 24℃

Atmospheric pressure: 1014 hPa Humidity: 47%

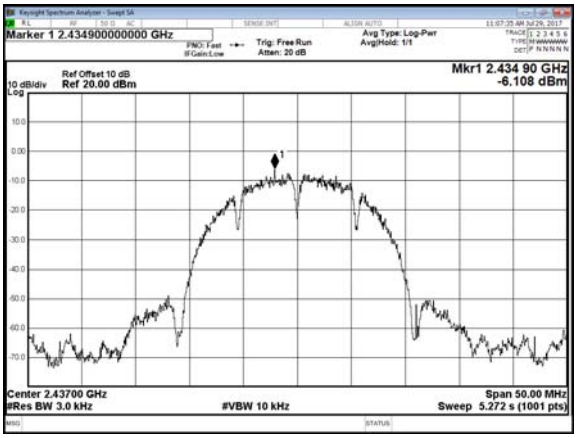
Modulation Type	Frequency (MHz)	Power Spectral Density (dBm)	
		Antenna 1	Antenna 2
IEEE 802.11b	2412	-6.938	-8.032
	2437	-6.108	-7.837
	2462	-6.660	-7.582
IEEE 802.11g	2412	-10.232	-10.71
	2437	-9.670	-11.233
	2462	-7.983	-10.239
IEEE 802.11n HT20	2412	-11.048	-10.961
	2437	-12.011	-12.593
	2462	-11.212	-12.144
IEEE 802.11n HT40	2422	-13.327	-15.644
	2437	-14.230	-16.302
	2452	-14.832	-15.569

Antenna 1
Modulation Type: 802.11b

CH01



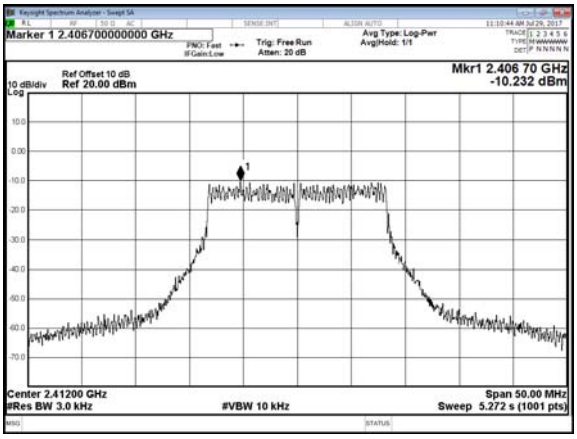
CH06



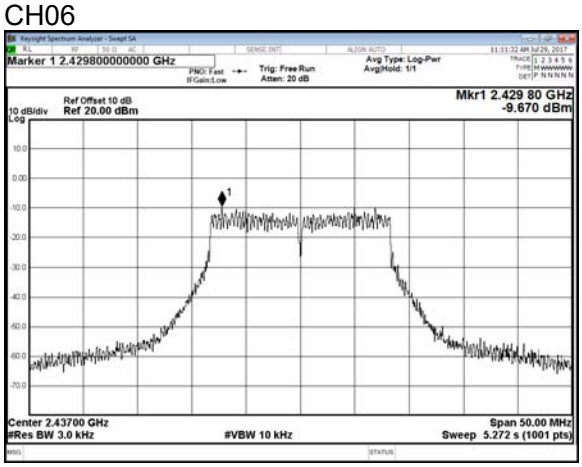
CH11

Modulation Type: 802.11g

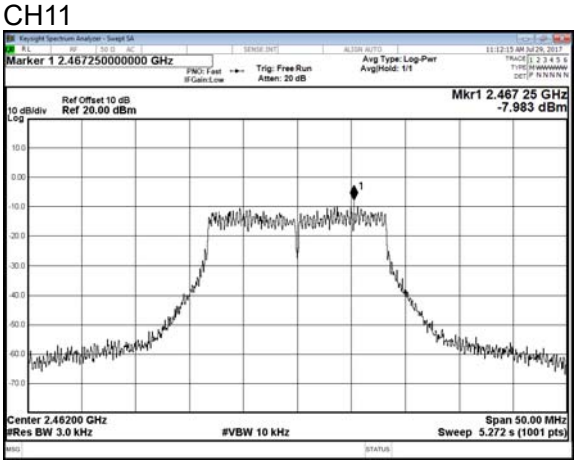
CH01



CH06

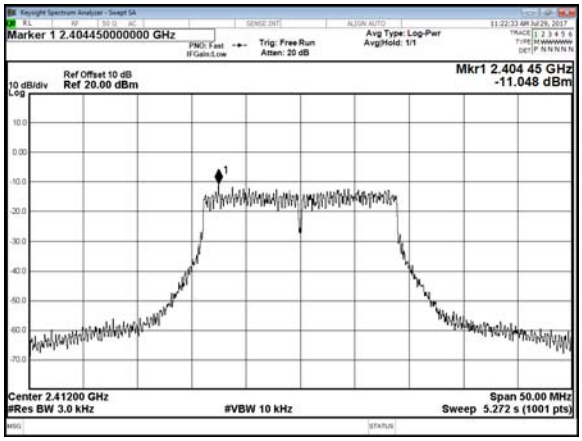


CH11

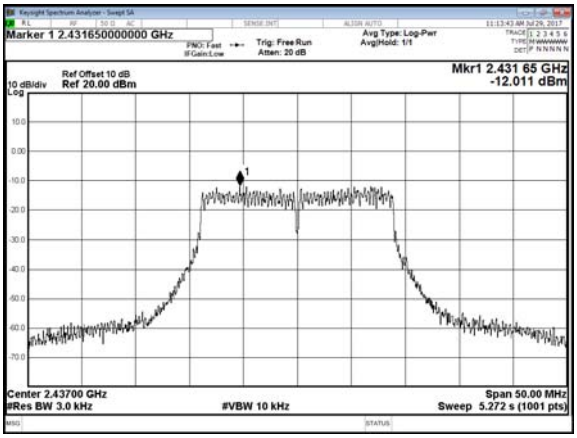


Modulation Type: 802.11n HT20

CH01

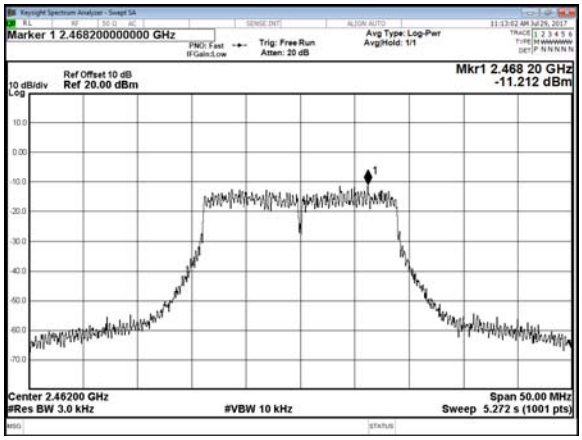


CH06

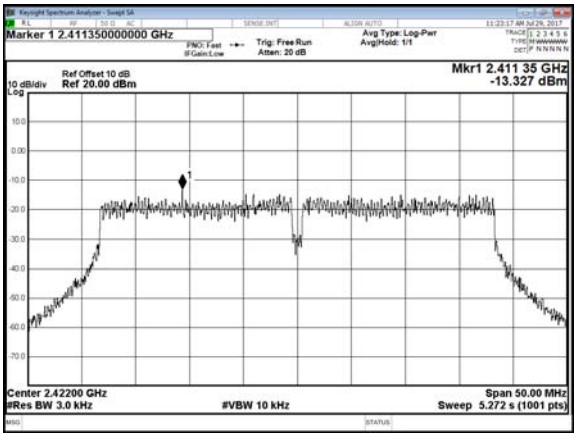


Modulation Type: 802.11n HT40

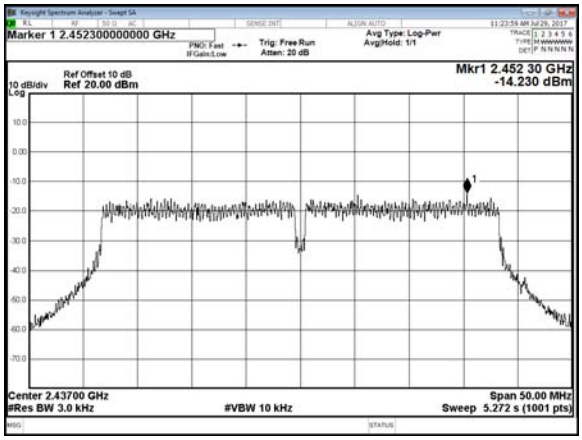
CH11



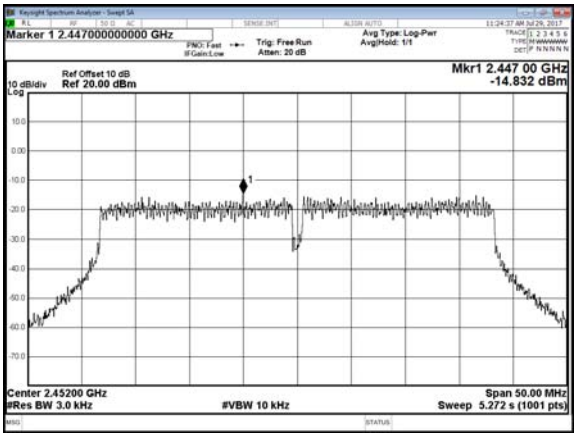
CH03



CH06

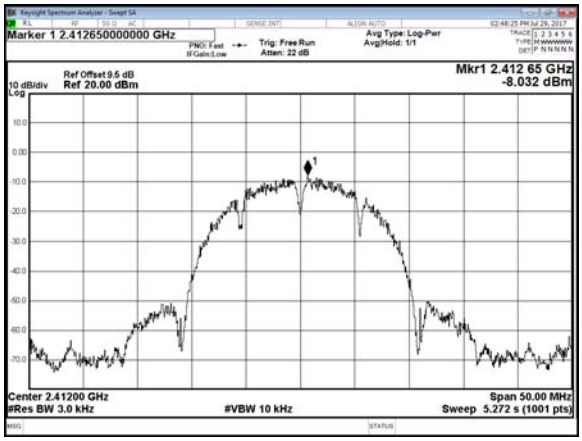


CH09

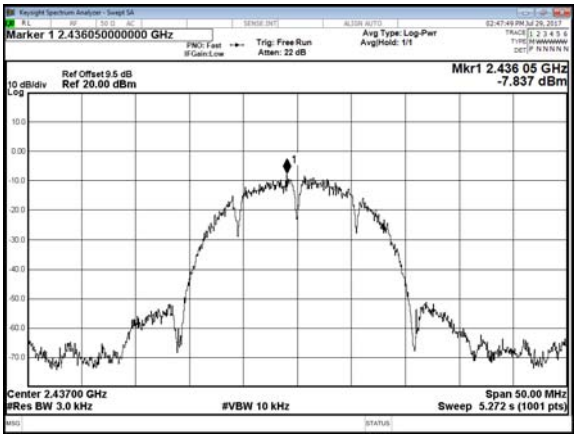


Antenna 2
Modulation Type: 802.11b

CH01



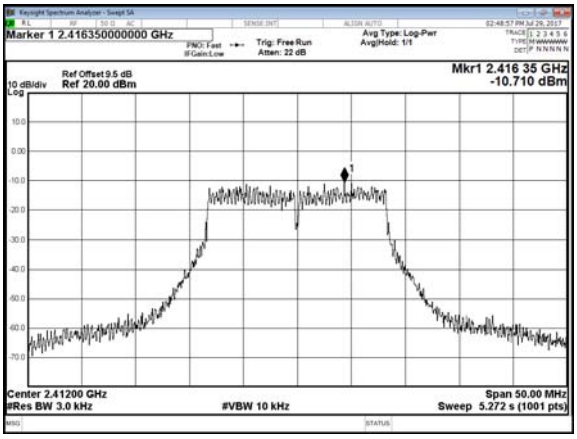
CH06



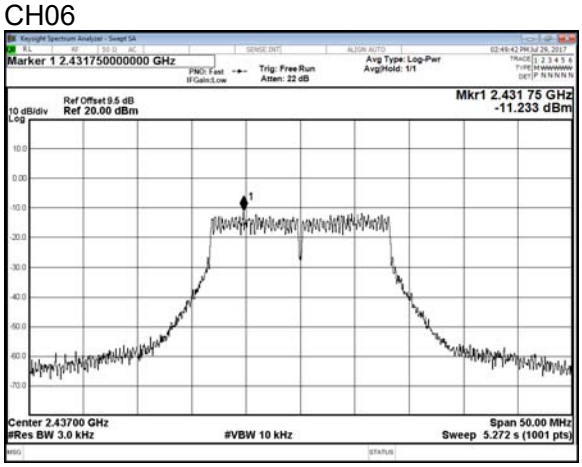
CH11

Modulation Type: 802.11g

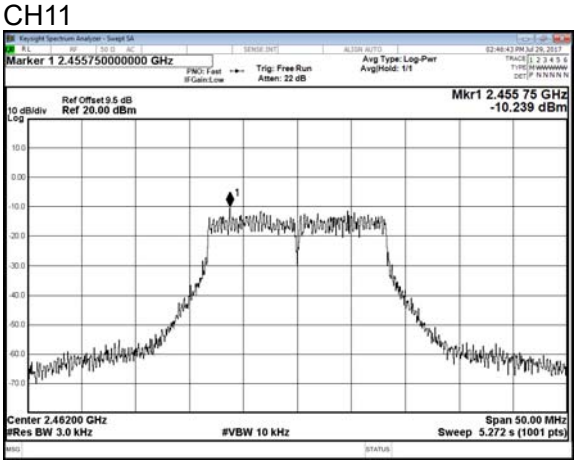
CH01



CH06

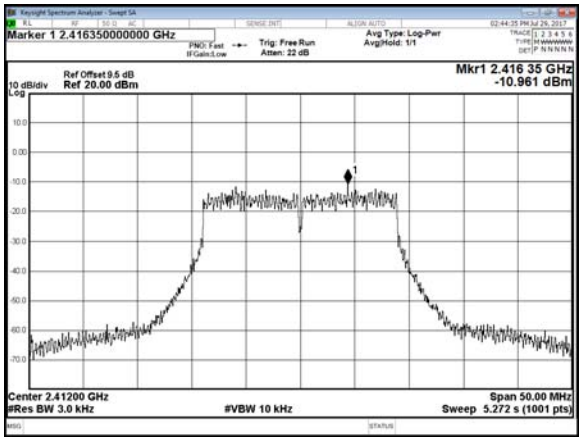


CH11

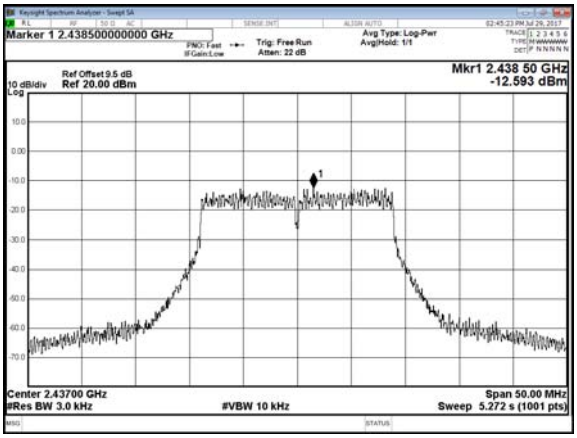


Modulation Type: 802.11n HT20

CH01

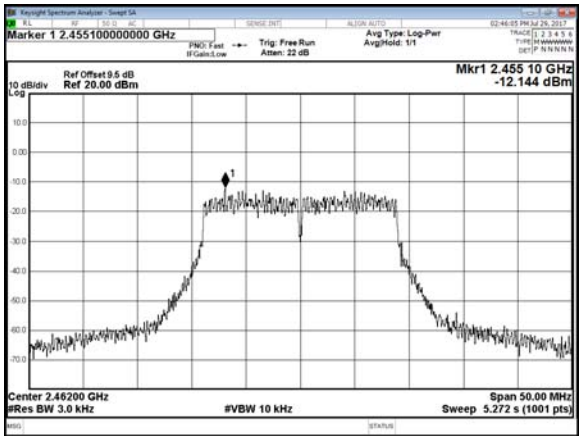


CH06

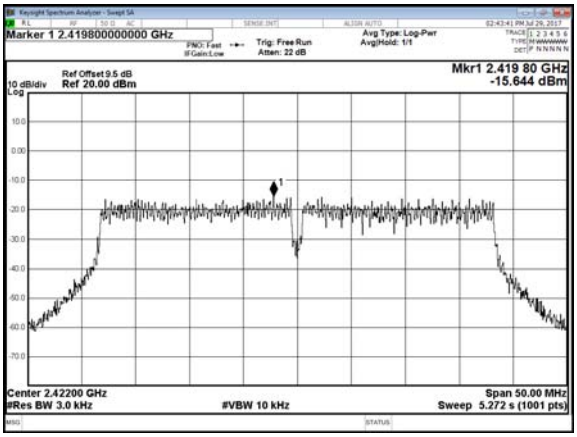


Modulation Type: 802.11n HT40

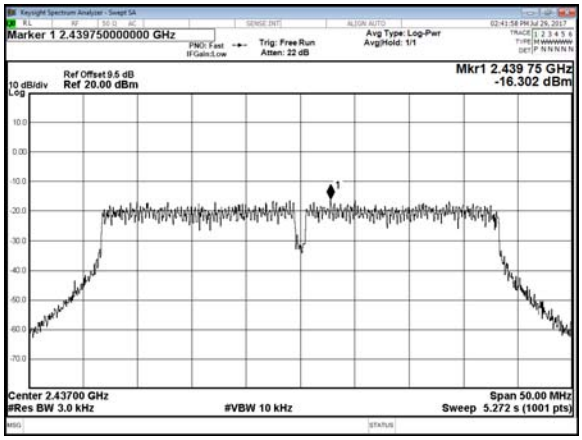
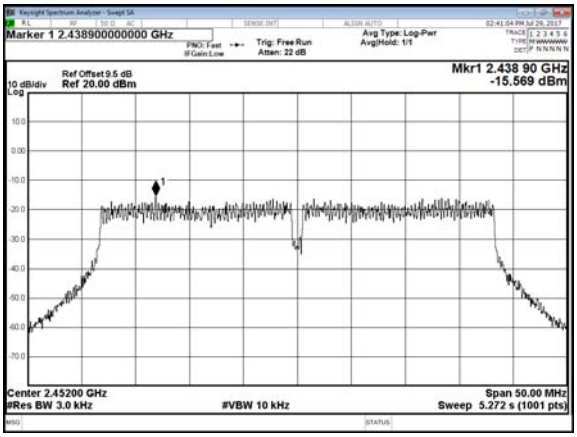
CH11



CH03



CH06



CH09