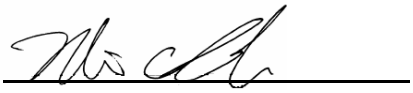
FCC RADIO TEST REPORT

Applicant	: Zhejiang Xinzailing Technology Co.,LTD
Address	: 5F BuildingA,No.1805 Dongliu Road.Changhe Street,Binjiang District,Hangzhou,Zhejiang.310053
Equipment	: S-1V Smart Wireless Router Set
Model No.	: INFi-RO200M-US
Trade Name	: INFi
FCC ID	: 2ALOJ-INFIRO200M

I HEREBY CERTIFY THAT :

The sample was received on Mar. 20, 2017 and the testing was carried out on Mar. 31, 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:



Miro Chueh

EMC/RF B.U. Manager

Laboratory Accreditation:

☐

Cerpass Technology Corporation Test Laboratory

TAF LAB Code:	**1439**

☒ Cerpass Technology(SuZhou) Co., Ltd.

NVLAP LAB Code:	**200814-0**
CNAS LAB Code:	**L5515**

CONTENTS

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

Equipment	S-1V Smart Wireless Router Set
Model No.	INFi-RO200M-US
Frequency Range	802.11b/g/n(20MHz): 2412-2462MHz 802.11n(40MHz): 2422-2452MHz
Modulation Type	802.11b:DSSS(CCK,QPSK, BPSK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate	802.11b: 11Mbps(CCK) with fall back rates of 5.5/2/1Mbps 802.11g: 54Mbps with fall back rates of 48/36/24/18/12/11 /6Mbps 802.11n: up to 150Mbps
Number of Channels	IEEE 802.11b/g/n (20MHz):11 IEEE 802.11n HT40 MHz mode: 7 Channels
Antenna Type	Chip Antenna 3.52dBi

2.2 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**	---	---

802.11n HT-40(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.

2.3 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 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

2.4 Description of Test System

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

Cable:

No.	Cable	Quantity	Description
A	RJ45 Cable	1	1.2m Non Shielding
B	USB Mouse Cable	1	1.8m Non Shielding

2.5 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	4934B-1, 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
☒	Test Site	**Cerpass Technology (Suzhou) Co.,Ltd** Address: No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China Tel: +86-512-6917-5888 Fax: +86-512-6917-5666
	FCC	916572, 331395
	IC	7290A-1, 7290A-2
	VCCI	T-343 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test G-227 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.

2.6 Measurement Uncertainty

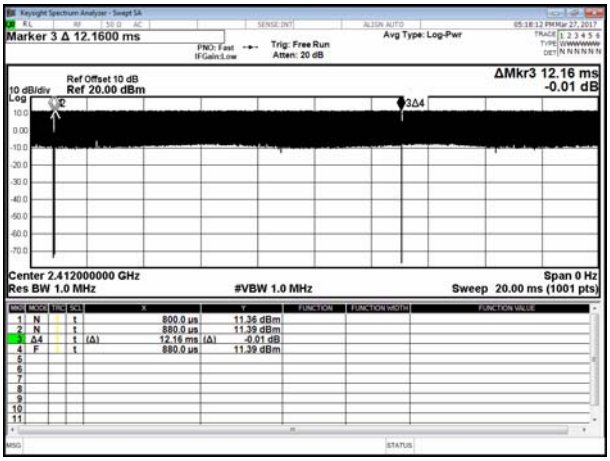
Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	LINE/NEUTRAL	±2.71 dB
Radiated Emission	30 MHz ~ 25GHz	Vertical	±4.11 dB
		Horizontal	±4.10 dB
Occupied Bandwidth	---	---	±7500 Hz
Maximum Peak Output Power	---	---	±1.4 dB
Power Spectral Density	---	---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

2.7 Duty cycle

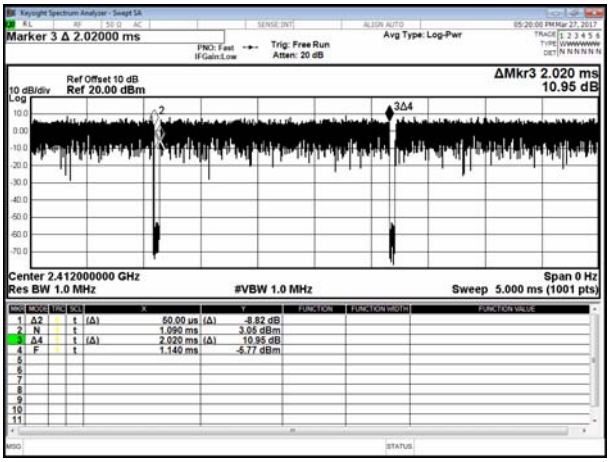
Test Item	Duty cycle
Test Date	2017-03-29

Mode	Frequency (MHz)	Measurement (%)
802.11b	2412	99.3
802.11g	2412	99.8
802.11n(20MHz)	2412	97.4
802.11n(40MHz)	2422	96.3

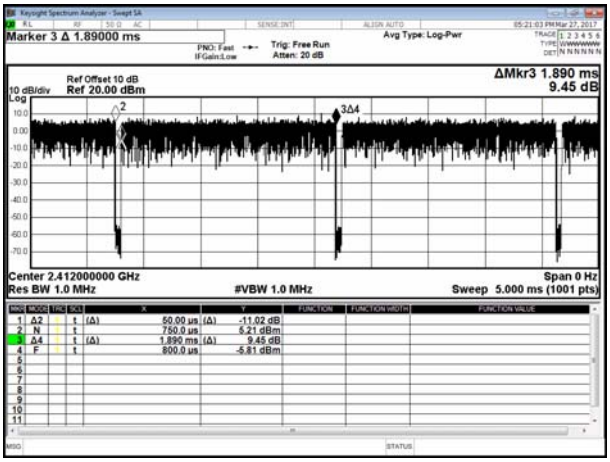
Transmit at channel 1 by 802.11b



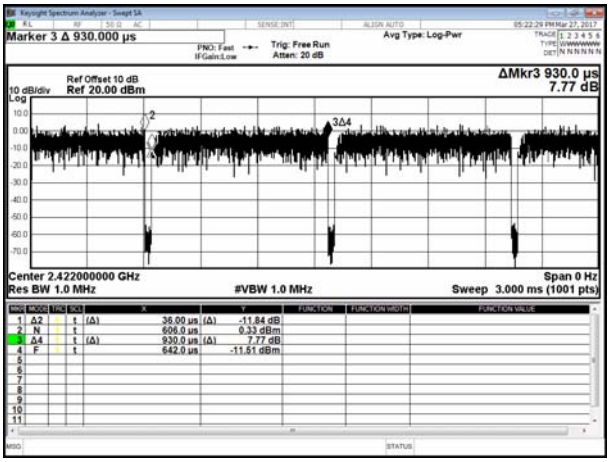
Transmit at channel 1 by 802.11g



Transmit at channel 1 by 802.11n(20MHz)



Transmit at channel 1 by 802.11n(40MHz)



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	2016.04.16	2017.04.15
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	2016.04.16	2017.04.15
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	2016.06.06	2017.06.05
MXG VECTOR SIGNAL GENERATOR	Agilent	N5182B	MY53050127	2016.06.06	2017.06.05
EXA Signal Analyzer	Agilent	N9020A	US46220290	2016.06.06	2017.06.05
Power sensor	e-channel	ERS-180T-24	TW5451026	2016.06.25	2017.06.24
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

No.	Antenna Type	Antenna Gain
1	Chip Antenna	3.52dBi

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.

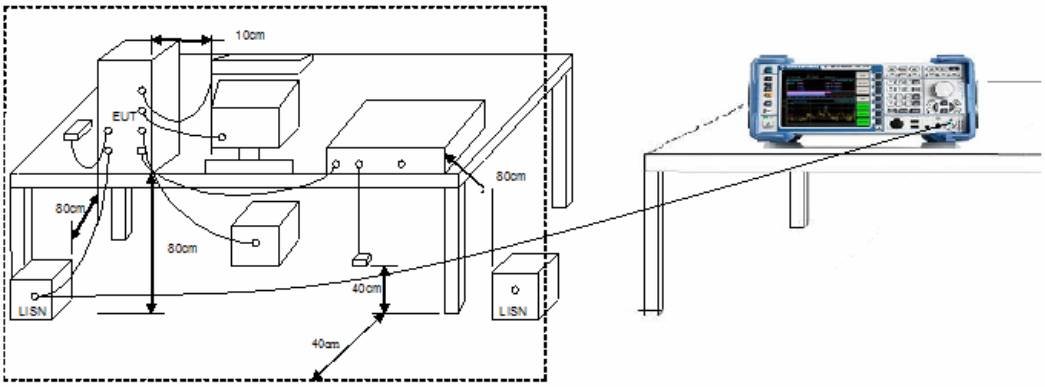
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

5.2 Test Procedures

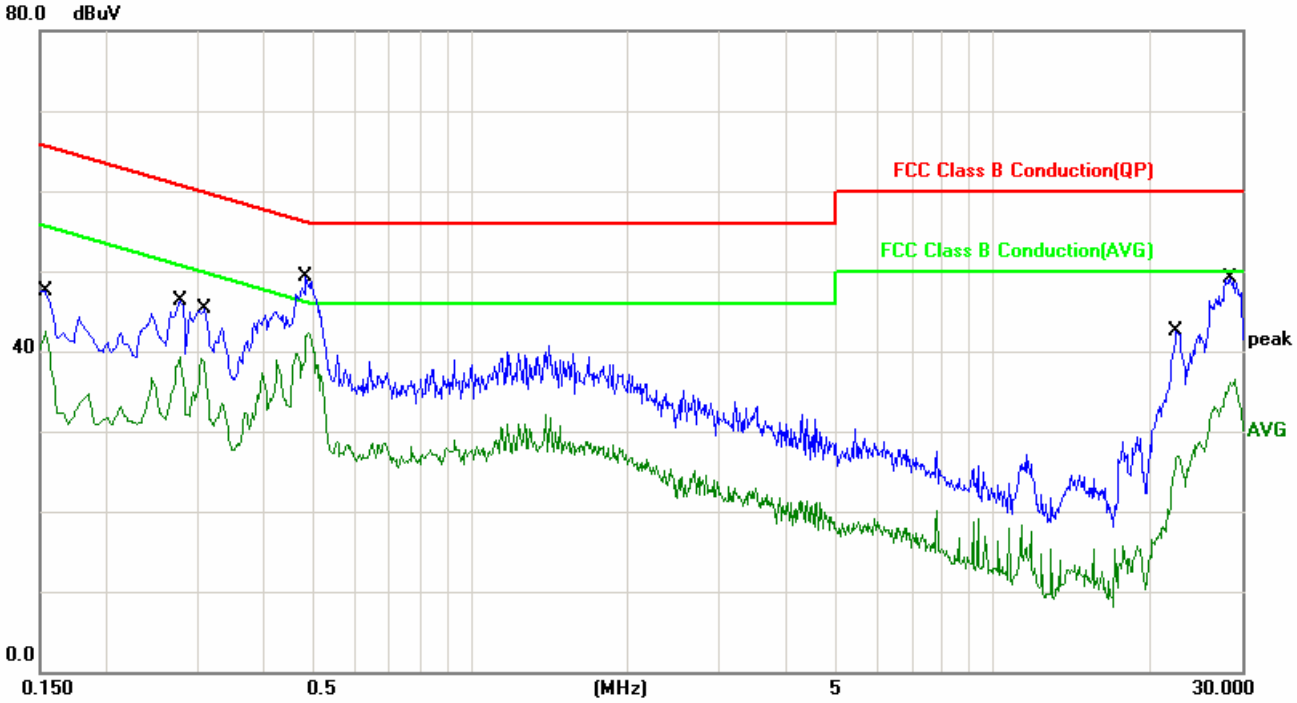
The EUT was setup according to ANSI C63.10, 2013 and tested according to DTS test procedure of Oct 2014 KDB558074 for compliance to FCC 47CFR 15.247 requirements. The EUT was placed on a platform of nominal size, 1 m by 1.5 m, raised 80 cm above the conducting ground plane. The vertical conducting plane 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

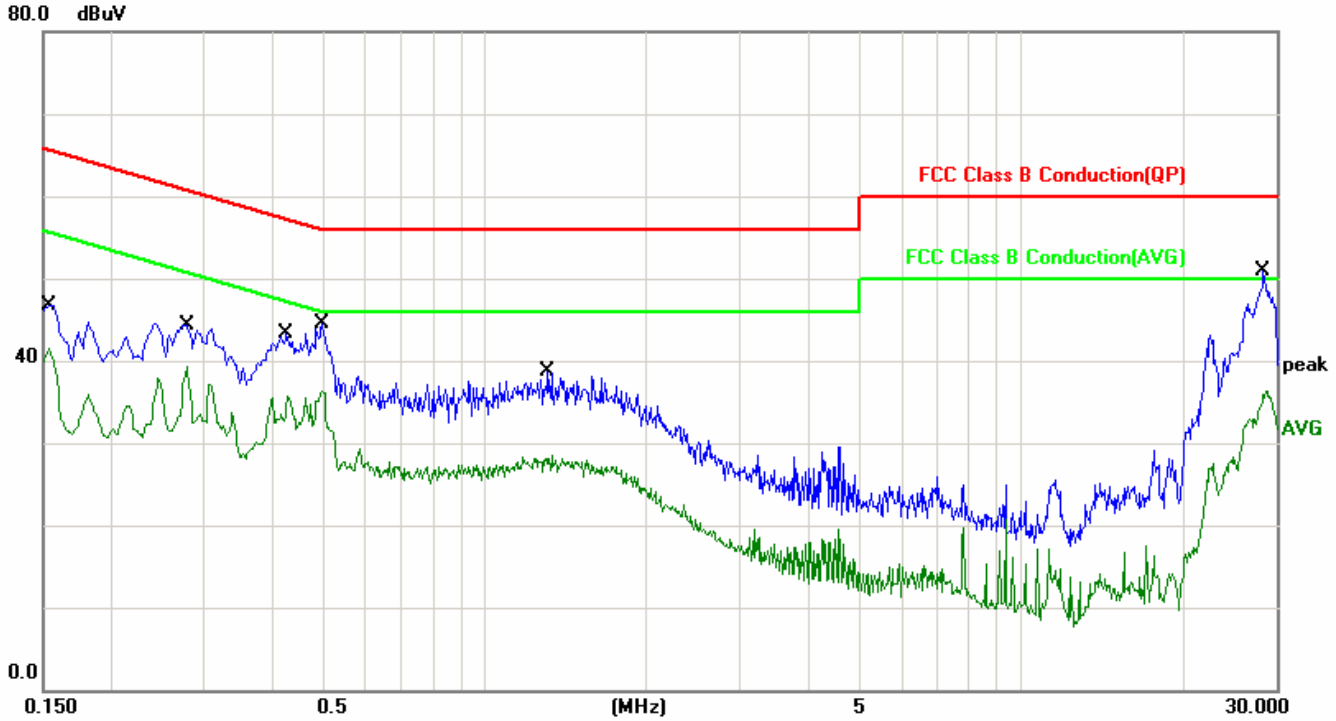
Test Mode :	Normal	Phase :	Line
Temperature :	20°C	Humidity:	51%
Pressur(mbar) :	1002	Date:	Mar. 29, 2017



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	10.06	34.39	44.45	65.78	-21.33	QP
2	0.1539	10.06	30.91	40.97	55.78	-14.81	AVG
3	0.2779	10.02	32.97	42.99	60.88	-17.89	QP
4	0.2779	10.02	29.11	39.13	50.88	-11.75	AVG
5	0.3100	10.00	32.20	42.20	59.97	-17.77	QP
6	0.3100	10.00	27.72	37.72	49.97	-12.25	AVG
7	0.4860	9.90	37.67	47.57	56.24	-8.67	QP
8	0.4860	9.90	30.48	40.38	46.24	-5.86	AVG
9	22.5220	10.58	26.58	37.16	60.00	-22.84	QP
10	22.5220	10.58	15.48	26.06	50.00	-23.94	AVG
11	28.5180	10.63	32.02	42.65	60.00	-17.35	QP
12	28.5180	10.63	24.33	34.96	50.00	-15.04	AVG

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

Test Mode :	Normal	Phase :	Neutral
Temperature :	20°C	Humidity :	51%
Pressur(mbar) :	1002	Date :	Mar. 29, 2017



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	10.06	34.93	44.99	65.78	-20.79	QP
2	0.1539	10.06	31.45	41.51	55.78	-14.27	AVG
3	0.2779	10.02	32.38	42.40	60.88	-18.48	QP
4	0.2779	10.02	28.84	38.86	50.88	-12.02	AVG
5	0.4260	9.93	31.02	40.95	57.33	-16.38	QP
6	0.4260	9.93	24.22	34.15	47.33	-13.18	AVG
7	0.4980	9.89	32.26	42.15	56.03	-13.88	QP
8	0.4980	9.89	26.38	36.27	46.03	-9.76	AVG
9	1.3099	10.14	22.50	32.64	56.00	-23.36	QP
10	1.3099	10.14	17.33	27.47	46.00	-18.53	AVG
11	28.4060	10.63	31.11	41.74	60.00	-18.26	QP
12	28.4060	10.63	22.85	33.48	50.00	-16.52	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.

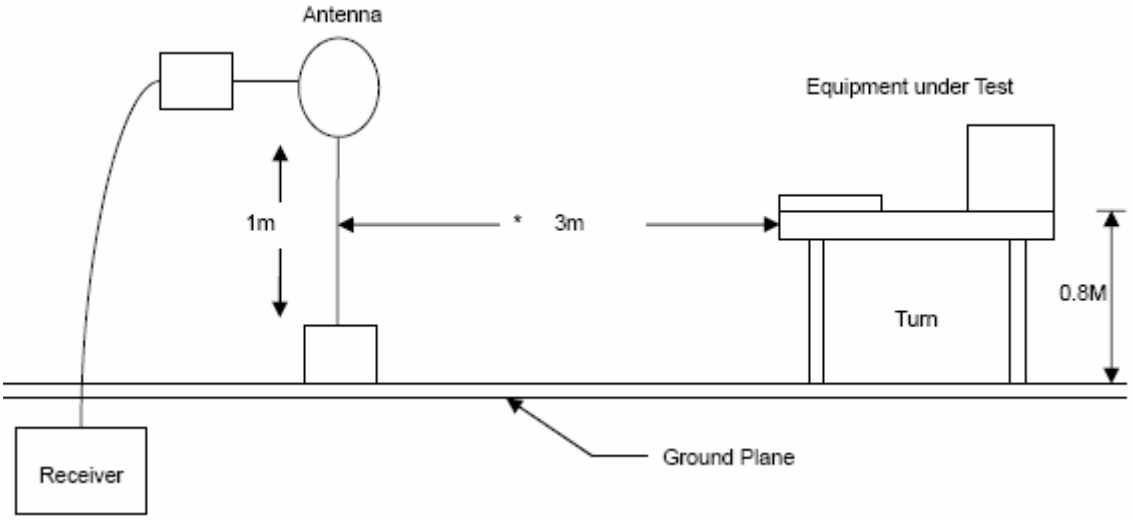
f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.

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.

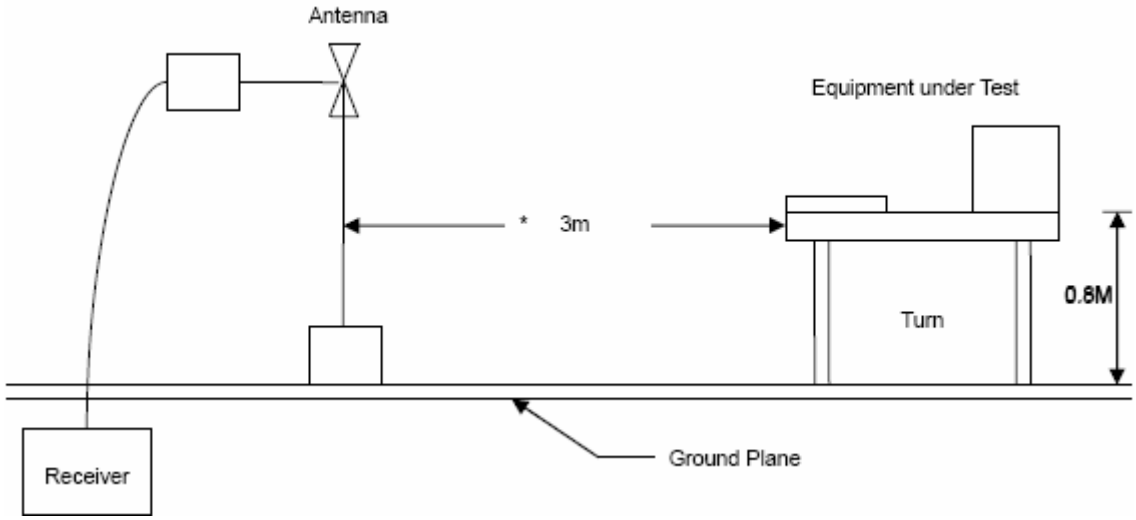
h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than AVG limit (that means the emission level in peak mode also complies with the limit in AVG mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in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

6.3 Typical Test Setup

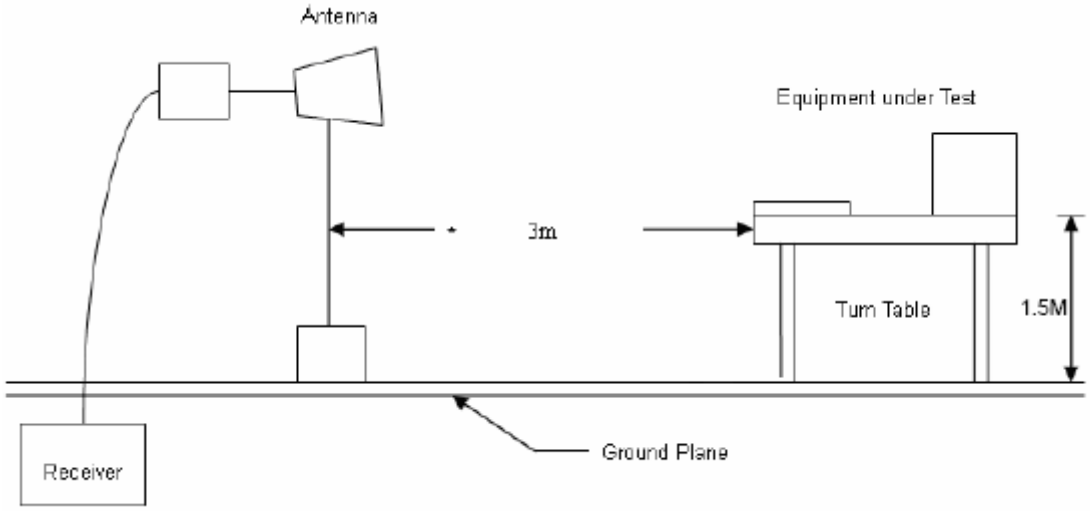
Below 30MHz Test Setup



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	:	AC 120V	Temperature	:	24 °C
Test Mode	:	Normal Link	Humidity	:	54 %
Test date	:	Mar. 29, 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)
101.7800	H	-9.46	48.32	38.86	43.50	-4.64	QP
125.0600	H	-8.36	46.11	37.75	43.50	-5.75	QP
277.3500	H	-8.71	51.07	42.36	46.00	-3.64	QP
375.3199	H	-4.95	44.60	39.65	46.00	-6.35	QP
750.7100	H	1.49	39.20	40.69	46.00	-5.31	QP
875.8400	H	2.31	40.37	42.68	46.00	-3.32	QP
53.2800	V	-14.73	52.00	37.27	40.00	-2.73	QP
147.3700	V	-10.85	44.76	33.91	43.50	-9.59	QP
275.4100	V	-8.94	42.35	33.41	46.00	-12.59	QP
500.4500	V	-2.20	36.04	33.84	46.00	-12.16	QP
750.7100	V	1.49	35.63	37.12	46.00	-8.88	QP
875.8400	V	2.31	38.03	40.34	46.00	-5.66	QP

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

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11b (2412MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
2020.000	H	-4.64	46.30	41.66	74.00	-32.34	peak
4102.500	H	5.63	38.92	44.55	74.00	-29.45	peak
4485.000	H	7.58	37.18	44.76	74.00	-29.24	peak
4825.000	H	8.27	54.31	62.58	74.00	-11.42	peak
4825.000	H	8.27	43.98	52.25	54.00	-1.75	AVG
5590.000	H	9.24	37.76	47.00	74.00	-27.00	peak
6270.000	H	10.37	37.41	47.78	74.00	-26.22	peak
1595.000	V	-7.06	50.47	43.41	74.00	-30.59	peak
1892.500	V	-5.35	49.04	43.69	74.00	-30.31	peak
3592.500	V	3.72	38.85	42.57	74.00	-31.43	peak
4485.000	V	7.58	37.74	45.32	74.00	-28.68	peak
4825.000	V	8.27	54.37	62.64	74.00	-11.36	peak
4825.000	V	8.27	44.24	52.51	54.00	-1.49	AVG
5930.000	V	10.09	37.02	47.11	74.00	-26.89	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11b (2437MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1595.000	H	-7.06	48.28	41.22	74.00	-32.78	peak
2190.000	H	-3.91	46.29	42.38	74.00	-31.62	peak
4145.000	H	5.85	38.29	44.14	74.00	-29.86	peak
4910.000	H	8.43	53.24	61.67	74.00	-12.33	peak
4910.000	H	8.43	43.68	52.11	54.00	-1.89	AVG
5632.500	H	9.35	38.09	47.44	74.00	-26.56	peak
6440.000	H	10.44	37.64	48.08	74.00	-25.92	peak
1892.500	V	-5.35	51.75	46.40	74.00	-27.60	peak
3890.000	V	4.73	39.21	43.94	74.00	-30.06	peak
4910.000	V	8.43	53.25	61.68	74.00	-12.32	peak
4910.000	V	8.43	43.78	52.21	54.00	-1.79	AVG
5590.000	V	9.24	37.76	47.00	74.00	-27.00	peak
6312.500	V	10.38	37.78	48.16	74.00	-25.84	peak
6950.000	V	11.92	38.59	50.51	74.00	-23.49	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11b (2462MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1637.500	H	-6.82	48.34	41.52	74.00	-32.48	peak
4145.000	H	5.85	37.44	43.29	74.00	-30.71	peak
4952.500	H	8.51	54.23	62.74	74.00	-11.26	peak
4952.500	H	8.51	43.64	52.15	54.00	-1.85	AVG
6015.000	H	10.27	37.64	47.91	74.00	-26.09	peak
6312.500	H	10.38	37.88	48.26	74.00	-25.74	peak
6822.500	H	11.50	37.81	49.31	74.00	-24.69	peak
1807.500	V	-5.84	55.20	49.36	74.00	-24.64	peak
4442.500	V	7.37	37.28	44.65	74.00	-29.35	peak
4952.500	V	8.51	54.22	62.73	74.00	-11.27	peak
4952.500	V	8.51	43.68	52.19	54.00	-1.81	AVG
6015.000	V	10.27	38.07	48.34	74.00	-25.66	peak
6397.500	V	10.42	37.68	48.10	74.00	-25.90	peak
6737.500	V	11.23	37.23	48.46	74.00	-25.54	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11g (2412MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1977.500	H	-4.86	47.49	42.63	74.00	-31.37	peak
3677.500	H	4.01	38.37	42.38	74.00	-31.62	peak
4825.000	H	8.27	53.56	61.83	74.00	-12.17	peak
4825.000	H	8.27	43.21	51.48	54.00	-2.52	AVG
5462.500	H	8.99	37.53	46.52	74.00	-27.48	peak
5845.000	H	9.88	37.42	47.30	74.00	-26.70	peak
6270.000	H	10.37	38.62	48.99	74.00	-25.01	peak
1892.500	V	-5.35	51.58	46.23	74.00	-27.77	peak
4102.500	V	5.63	38.22	43.85	74.00	-30.15	peak
4825.000	V	8.27	54.13	62.40	74.00	-11.60	peak
4825.000	V	8.27	42.35	50.62	54.00	-3.38	AVG
5632.500	V	9.35	37.21	46.56	74.00	-27.44	peak
6227.500	V	10.35	37.71	48.06	74.00	-25.94	peak
6907.500	V	11.78	38.72	50.50	74.00	-23.50	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11g (2437MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1637.500	H	-6.82	49.69	42.87	74.00	-31.13	peak
1892.500	H	-5.35	48.55	43.20	74.00	-30.80	peak
4485.000	H	7.58	37.29	44.87	74.00	-29.13	peak
4910.000	H	8.43	55.55	63.98	74.00	-10.02	peak
4910.000	H	8.43	42.67	51.10	54.00	-2.90	AVG
5802.500	H	9.77	36.57	46.34	74.00	-27.66	peak
6312.500	H	10.38	37.50	47.88	74.00	-26.12	peak
1807.500	V	-5.84	50.34	44.50	74.00	-29.50	peak
3677.500	V	4.01	38.71	42.72	74.00	-31.28	peak
4655.000	V	7.95	37.97	45.92	74.00	-28.08	peak
4910.000	V	8.43	52.77	61.20	74.00	-12.80	peak
4910.000	V	8.43	42.23	50.66	54.00	-3.34	AVG
5122.500	V	8.70	37.28	45.98	74.00	-28.02	peak
6312.500	V	10.38	37.93	48.31	74.00	-25.69	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11g (2462MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1850.000	H	-5.59	47.00	41.41	74.00	-32.59	peak
4272.500	H	6.50	38.02	44.52	74.00	-29.48	peak
4952.500	H	8.51	45.32	53.83	74.00	-20.17	peak
5547.500	H	9.14	37.72	46.86	74.00	-27.14	peak
5972.500	H	10.19	37.94	48.13	74.00	-25.87	peak
6780.000	H	11.37	38.56	49.93	74.00	-24.07	peak
1722.500	V	-6.33	53.60	47.27	74.00	-26.73	peak
1892.500	V	-5.35	51.14	45.79	74.00	-28.21	peak
4442.500	V	7.37	37.78	45.15	74.00	-28.85	peak
4952.500	V	8.51	49.06	57.57	74.00	-16.43	peak
4952.500	V	8.51	38.24	46.75	54.00	-7.25	AVG
5760.000	V	9.66	37.68	47.34	74.00	-26.66	peak
6737.500	V	11.23	38.04	49.27	74.00	-24.73	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11n HT20 (2412MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1637.500	H	-6.82	48.82	42.00	74.00	-32.00	peak
2232.500	H	-3.73	46.31	42.58	74.00	-31.42	peak
2870.000	H	-0.10	47.51	47.41	74.00	-26.59	peak
4060.000	H	5.42	38.89	44.31	74.00	-29.69	peak
4825.000	H	8.27	51.83	60.10	74.00	-13.90	peak
4825.000	H	8.27	40.88	49.15	54.00	-4.85	AVG
6440.000	H	10.44	37.13	47.57	74.00	-26.43	peak
1680.000	V	-6.57	54.77	48.20	74.00	-25.80	peak
2870.000	V	-0.10	46.64	46.54	74.00	-27.46	peak
4102.500	V	5.63	38.24	43.87	74.00	-30.13	peak
4867.500	V	8.35	53.61	61.96	74.00	-12.04	peak
4867.500	V	8.35	42.53	50.88	54.00	-3.12	AVG
5632.500	V	9.35	37.64	46.99	74.00	-27.01	peak
6397.500	V	10.42	37.82	48.24	74.00	-25.76	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11n HT20 (2437MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1637.500	H	-6.82	48.99	42.17	74.00	-31.83	peak
4017.500	H	5.20	38.57	43.77	74.00	-30.23	peak
4910.000	H	8.43	52.74	61.17	74.00	-12.83	peak
4910.000	H	8.43	41.28	49.71	54.00	-4.29	AVG
5590.000	H	9.24	37.38	46.62	74.00	-27.38	peak
6185.000	H	10.33	37.51	47.84	74.00	-26.16	peak
6312.500	H	10.38	37.58	47.96	74.00	-26.04	peak
1850.000	V	-5.59	53.64	48.05	74.00	-25.95	peak
4102.500	V	5.63	37.65	43.28	74.00	-30.72	peak
4485.000	V	7.58	37.85	45.43	74.00	-28.57	peak
4910.000	V	8.43	54.05	62.48	74.00	-11.52	peak
4910.000	V	8.43	42.52	50.95	54.00	-3.05	AVG
5845.000	V	9.88	37.07	46.95	74.00	-27.05	peak
6397.500	V	10.42	37.99	48.41	74.00	-25.59	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11n HT20(2462MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1637.500	H	-6.82	50.12	43.30	74.00	-30.70	peak
3592.500	H	3.72	39.19	42.91	74.00	-31.09	peak
4442.500	H	7.37	37.04	44.41	74.00	-29.59	peak
4952.500	H	8.51	47.47	55.98	74.00	-18.02	peak
4952.500	H	8.51	36.57	45.08	54.00	-8.92	AVG
6015.000	H	10.27	36.80	47.07	74.00	-26.93	peak
6270.000	H	10.37	37.93	48.30	74.00	-25.70	peak
1807.500	V	-5.84	53.15	47.31	74.00	-26.69	peak
4102.500	V	5.63	37.61	43.24	74.00	-30.76	peak
4442.500	V	7.37	37.67	45.04	74.00	-28.96	peak
4952.500	V	8.51	50.65	59.16	74.00	-14.84	peak
4952.500	V	8.51	39.12	47.63	54.00	-6.37	AVG
6057.500	V	10.28	36.74	47.02	74.00	-26.98	peak
6270.000	V	10.37	37.68	48.05	74.00	-25.95	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11n HT40 (2422MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
2020.000	H	-4.64	47.70	43.06	74.00	-30.94	peak
2870.000	H	-0.10	46.87	46.77	74.00	-27.23	peak
4272.500	H	6.50	38.48	44.98	74.00	-29.02	peak
4867.500	H	8.35	49.54	57.89	74.00	-16.11	peak
4867.500	H	8.35	38.12	46.47	54.00	-7.53	AVG
5972.500	H	10.19	37.26	47.45	74.00	-26.55	peak
6950.000	H	11.92	38.10	50.02	74.00	-23.98	peak
1680.000	V	-6.57	51.17	44.60	74.00	-29.40	peak
2020.000	V	-4.64	51.37	46.73	74.00	-27.27	peak
4867.500	V	8.35	50.29	58.64	74.00	-15.36	peak
4867.500	V	8.35	38.67	47.02	54.00	-6.98	AVG
5972.500	V	10.19	37.29	47.48	74.00	-26.52	peak
6482.500	V	10.45	37.36	47.81	74.00	-26.19	peak
6865.000	V	11.64	37.51	49.15	74.00	-24.85	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11n HT40 (2437MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
2020.000	H	-4.64	49.21	44.57	74.00	-29.43	peak
4017.500	H	5.20	37.42	42.62	74.00	-31.38	peak
4910.000	H	8.43	48.00	56.43	74.00	-17.57	peak
4910.000	H	8.43	36.24	44.67	54.00	-9.33	AVG
5505.000	H	9.03	38.06	47.09	74.00	-26.91	peak
5845.000	H	9.88	37.71	47.59	74.00	-26.41	peak
6822.500	H	11.50	38.58	50.08	74.00	-23.92	peak
1595.000	V	-7.06	54.39	47.33	74.00	-26.67	peak
1935.000	V	-5.10	50.94	45.84	74.00	-28.16	peak
4442.500	V	7.37	37.97	45.34	74.00	-28.66	peak
4910.000	V	8.43	49.35	57.78	74.00	-16.22	peak
4910.000	V	8.43	38.61	47.04	54.00	-6.96	AVG
5632.500	V	9.35	37.92	47.27	74.00	-26.73	peak
6312.500	V	10.38	37.36	47.74	74.00	-26.26	peak

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

Power :	AC 120V	Temperature :	24 °C
Test Mode	802.11n HT40(2452MHz)	Humidity :	54 %
Test date :	Mar. 29, 2017	Atmospheric Pressure :	1010 hpa

Frequency (MHz)	AntPol. H/V	Correct Factor (dB)	Reading level (dBuV)	Measure Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Detector mode (PK/QP)
1637.500	H	-6.82	50.90	44.08	74.00	-29.92	peak
2955.000	H	0.47	47.17	47.64	74.00	-26.36	peak
4442.500	H	7.37	37.53	44.90	74.00	-29.10	peak
4910.000	H	8.43	47.99	56.42	74.00	-17.58	peak
4910.000	H	8.43	35.12	43.55	54.00	-10.45	AVG
6227.500	H	10.35	37.29	47.64	74.00	-26.36	peak
6865.000	H	11.64	38.48	50.12	74.00	-23.88	peak
1680.000	V	-6.57	56.57	50.00	74.00	-24.00	peak
2020.000	V	-4.64	52.45	47.81	74.00	-26.19	peak
3550.000	V	3.57	39.01	42.58	74.00	-31.42	peak
4357.500	V	6.93	37.23	44.16	74.00	-29.84	peak
4910.000	V	8.43	48.35	56.78	74.00	-17.22	peak
4910.000	V	8.43	37.21	45.64	54.00	-8.36	AVG
5590.000	V	9.24	38.14	47.38	74.00	-26.62	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: Mar. 29, 2017 Temperature: 26℃

Atmospheric pressure: 1018 hPa Humidity: 47%

Modulation Standard: 802.11b

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	56.60	53.55	74.00	-20.45	peak	H
2390.000	-3.05	42.35	39.30	54.00	-14.70	AVG	H
2390.000	-3.05	58.07	55.02	74.00	-18.98	peak	V
2390.000	-3.05	43.13	40.08	54.00	-13.92	AVG	V
Channel 11				Fundamental Frequency: 2462 MHz			
2483.500	-2.65	56.56	53.91	74.00	-20.09	peak	H
2483.500	-2.65	42.22	39.57	54.00	-14.43	AVG	H
2483.500	-2.65	58.30	55.65	74.00	-18.35	peak	V
2483.500	-2.65	43.27	40.62	54.00	-13.38	AVG	V

Modulation Standard: 802.11g

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	56.11	53.06	74.00	-20.94	peak	H
2390.000	-3.05	41.38	38.33	54.00	-15.67	AVG	H
2390.000	-3.05	59.25	56.20	74.00	-17.80	peak	V
2390.000	-3.05	44.67	41.62	54.00	-12.38	AVG	V
Channel 11				Fundamental Frequency: 2462 MHz			
2390.000	-3.05	56.11	53.06	74.00	-20.94	peak	H
2390.000	-3.05	41.38	38.33	54.00	-15.67	AVG	H
2483.500	-2.65	61.06	58.41	74.00	2483.500	peak	V
2483.500	-2.65	45.77	43.12	54.00	2483.500	AVG	V

Modulation Standard: 802.11n HT20

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	57.97	54.92	74.00	-19.08	peak	H
2390.000	-3.05	43.21	40.16	54.00	-13.84	AVG	H
2390.000	-3.05	58.47	55.42	74.00	-18.58	peak	V
2390.000	-3.05	44.31	41.26	54.00	-12.74	AVG	V
Channel 11			Fundamental Frequency: 2462 MHz				
2483.500	-2.65	56.01	53.36	74.00	-20.64	peak	H
2483.500	-2.65	42.57	39.92	54.00	-14.08	AVG	H
2483.500	-2.65	56.01	53.36	74.00	-20.64	peak	V
2483.500	-2.65	41.39	38.74	54.00	-15.26	AVG	V

Modulation Standard: 802.11n HT40

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	56.70	53.65	74.00	-20.35	peak	H
2390.000	-3.05	42.13	39.08	54.00	-14.92	AVG	H
2390.000	-3.05	57.42	54.37	74.00	-19.63	peak	V
2390.000	-3.05	43.16	40.11	54.00	-13.89	AVG	V
Channel 11			Fundamental Frequency: 2452 MHz				
2483.500	-2.65	59.67	57.02	74.00	-16.98	peak	H
2483.500	-2.65	44.38	41.73	54.00	-12.27	AVG	H
2483.500	-2.65	59.60	56.95	74.00	-17.05	peak	V
2483.500	-2.65	43.67	41.02	54.00	-12.98	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

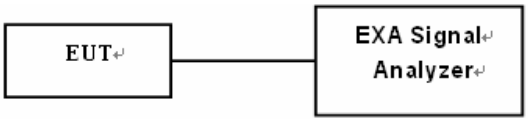
(d) Detector = Peak

(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: Mar. 29, 2017 Temperature: 24℃

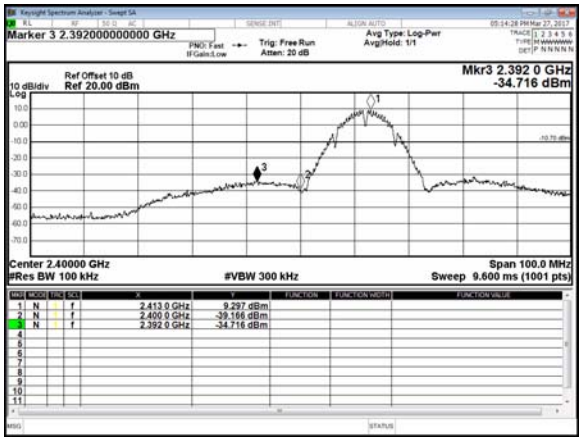
Atmospheric pressure: 1014 hPa Humidity: 47%

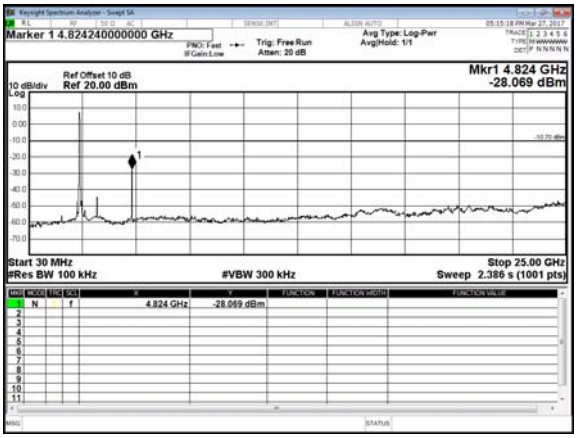
Modulation Standard	Frequency (MHz)	Test Result
802.11b	2412	Pass
	2437	Pass
	2462	Pass
802.11g	2412	Pass
	2437	Pass
	2462	Pass
802.11n HT20	2412	Pass
	2437	Pass
	2462	Pass
802.11n HT40	2422	Pass
	2437	Pass
	2452	Pass

Note: Test plots refer to the following pages.

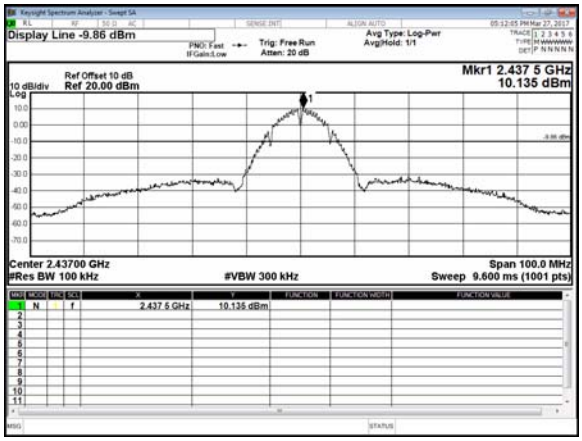
Modulation Type: 802.11b

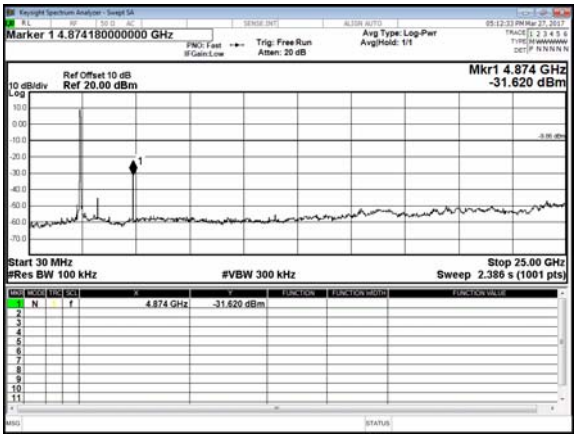
CH01



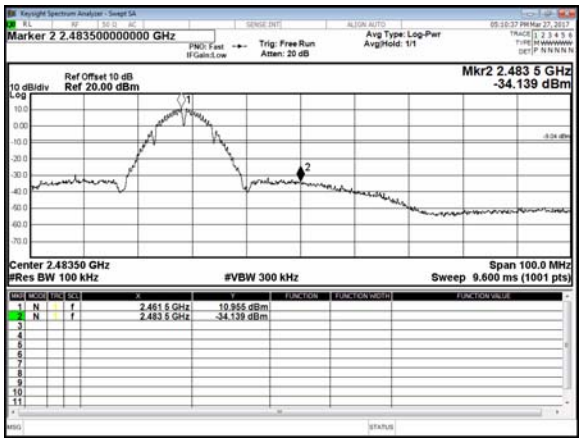


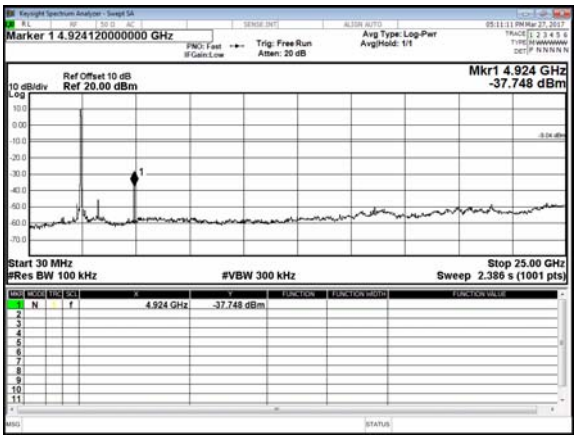
CH06





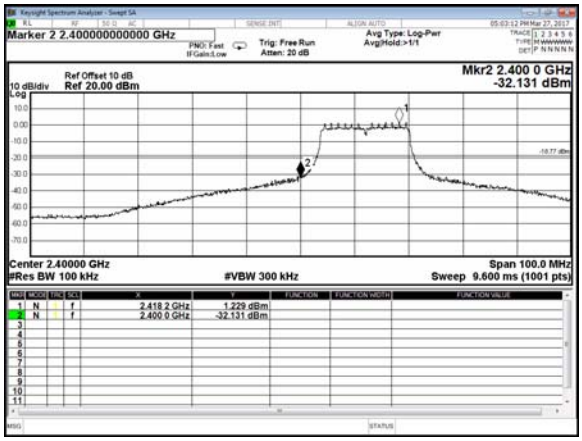
CH11

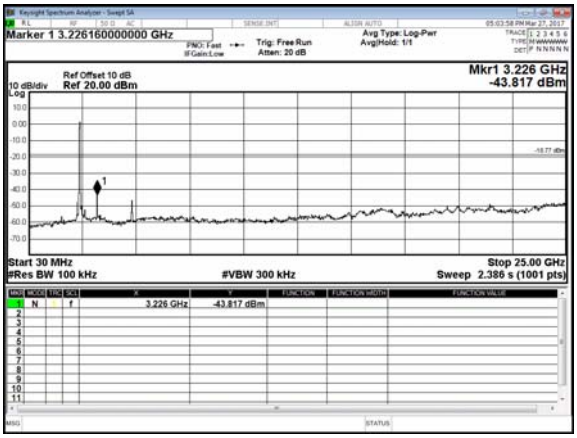




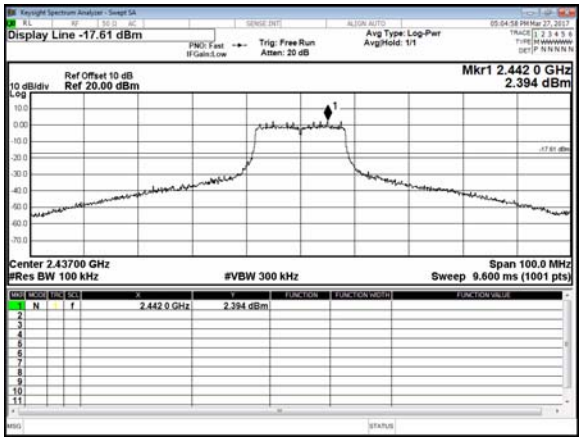
Modulation Type: 802.11g

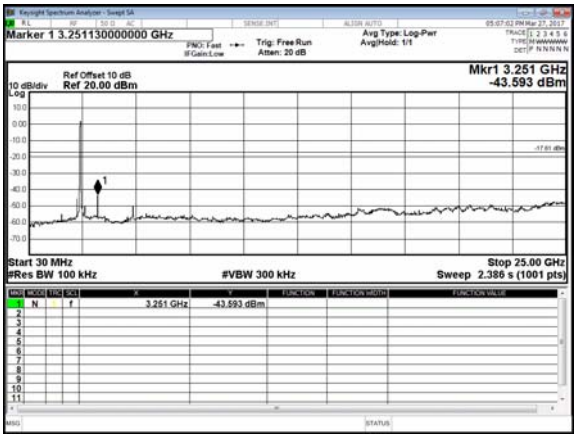
CH01



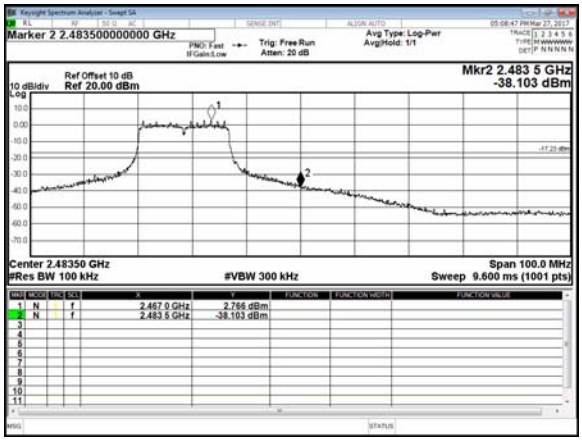


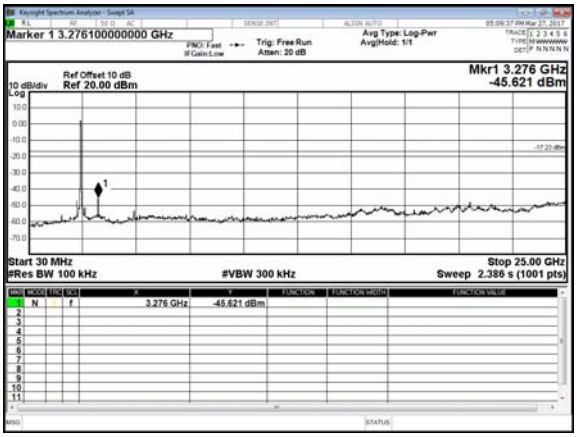
CH06





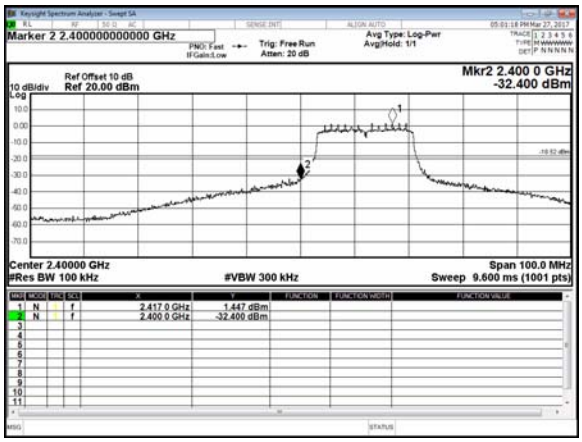
CH11

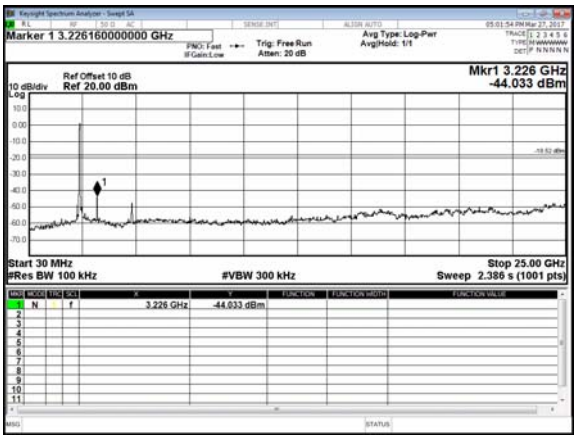




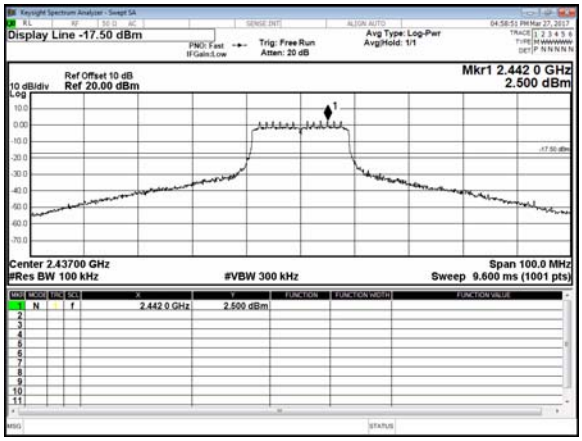
Modulation Type: 802.11n HT20

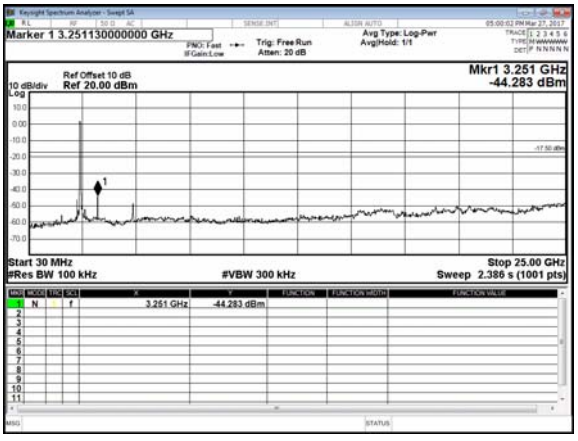
CH01



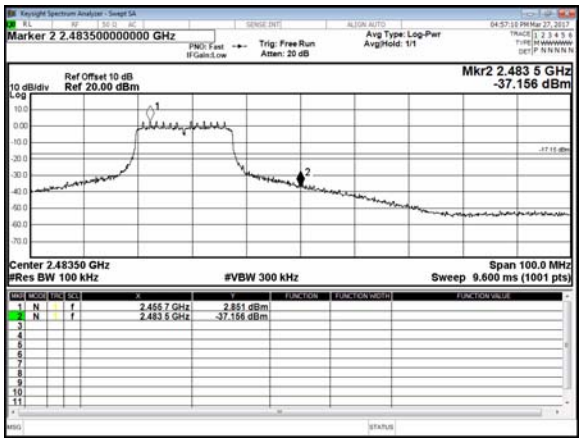


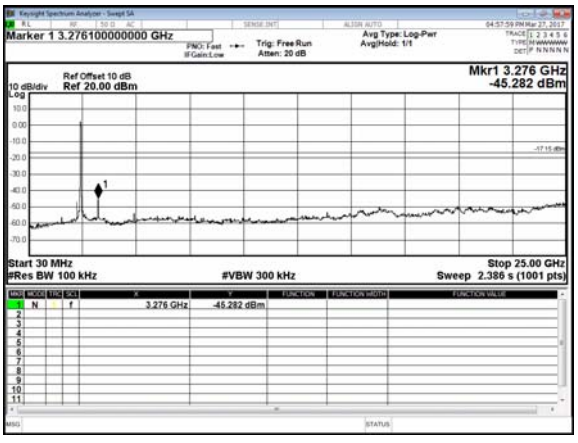
CH06





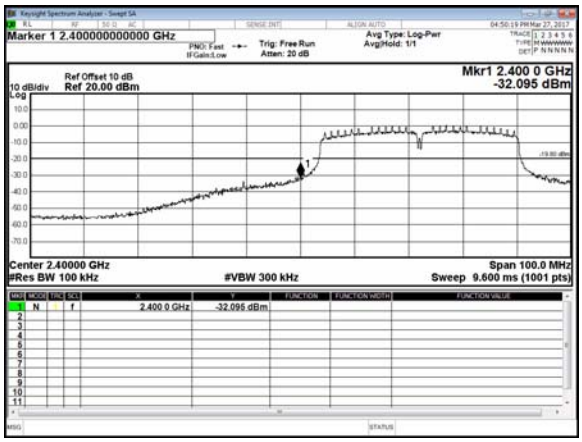
CH11

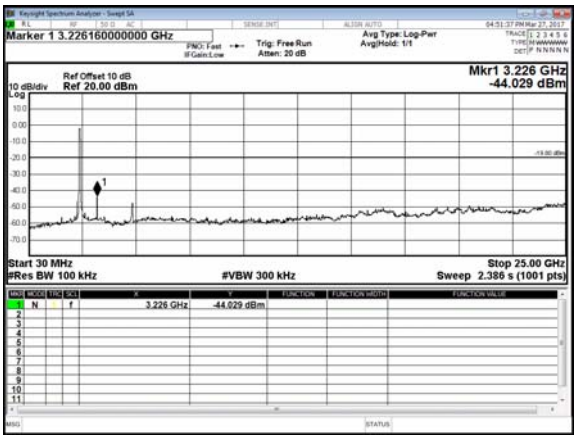




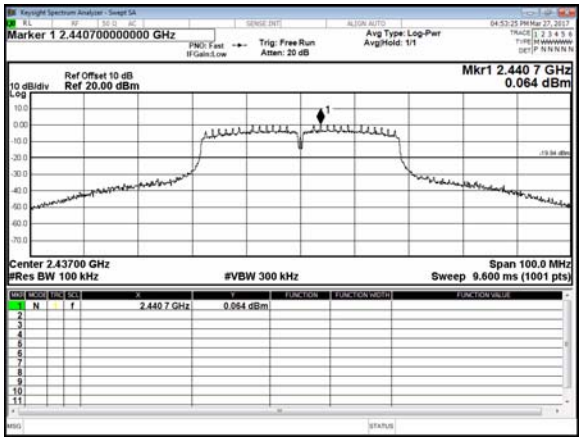
Modulation Type: 802.11n HT40

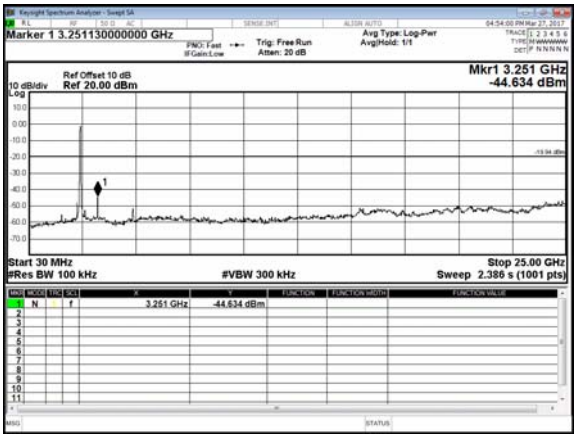
CH03



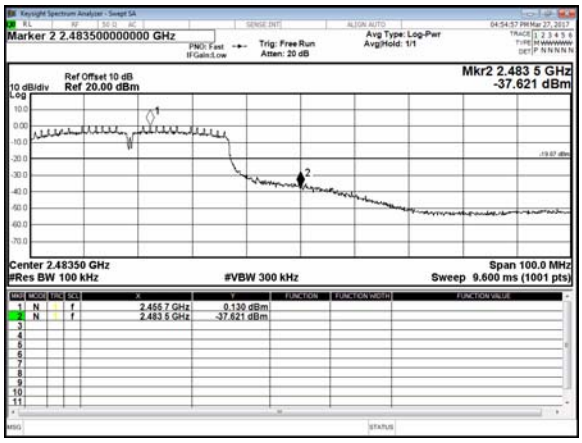


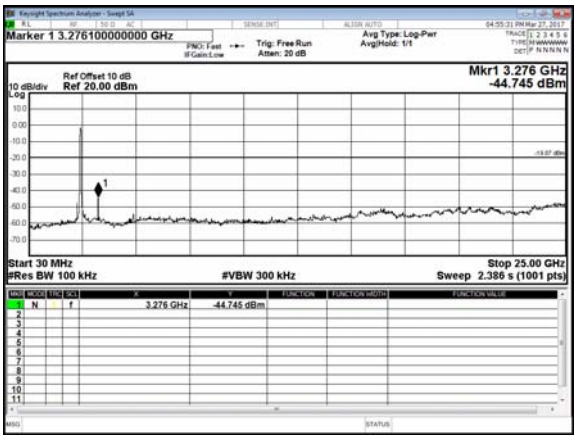
CH06





CH09





8. 6dB Bandwidth

8.1 Test Limit

According to §15.247(a)(2), Systems using digital modulation techniques may operate in the 902 - 928 MHz,2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500kHz.

8.2 Test Procedures

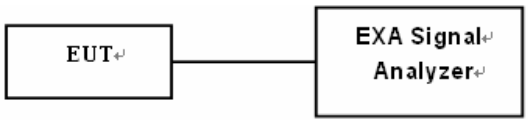
a. The transmitter output was connected to the spectrum analyzer.

b. Set RBW of spectrum analyzer to 100KHz and VBW ≥ 3x RBW.

c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

d. The 6dB Bandwidth was measured and recorded.

8.3 Test Setup Layout

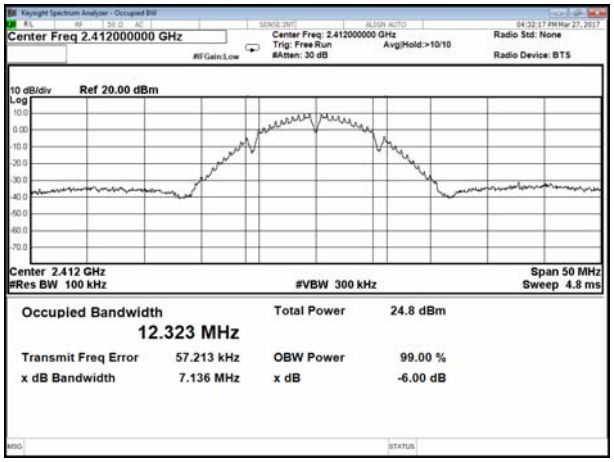


8.4 Test Result and Data

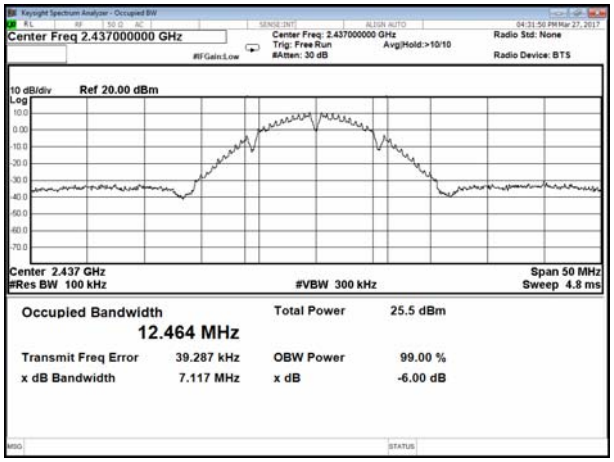
Test Mode	Transmit by 802.11b
Test Date	2017-03-27

Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Result
01	2412	7.14	Pass
06	2437	7.12	Pass
11	2462	7.14	Pass

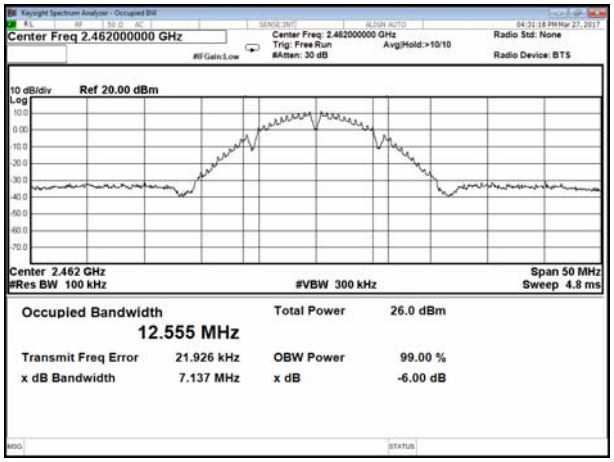
Channel 01 (2412MHz)



Channel 06 (2437MHz)



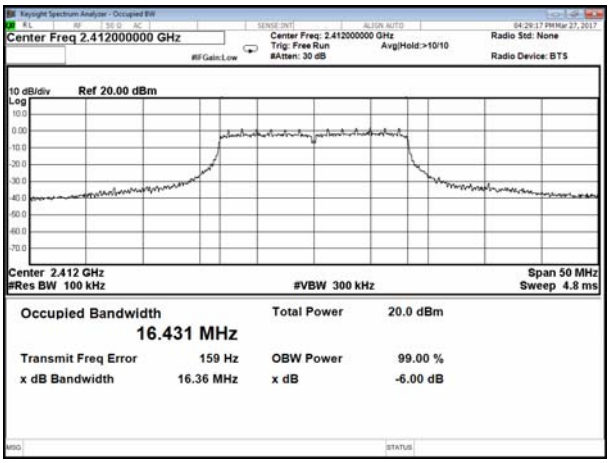
Channel11(2462MHz)



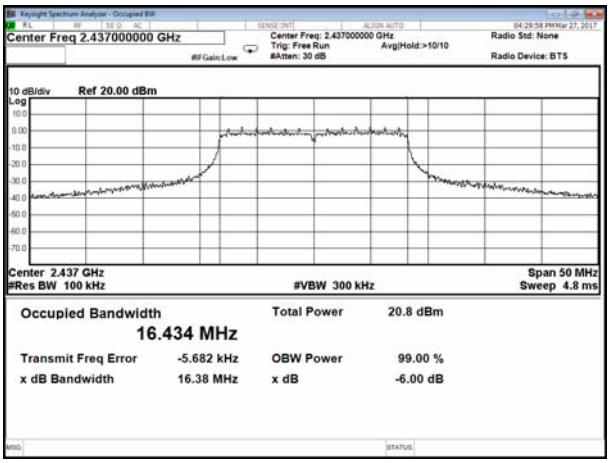
Test Mode	Transmit by 802.11g
Test Date	2017-03-27

Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Result
01	2412	16.36	Pass
06	2437	16.28	Pass
11	2462	16.41	Pass

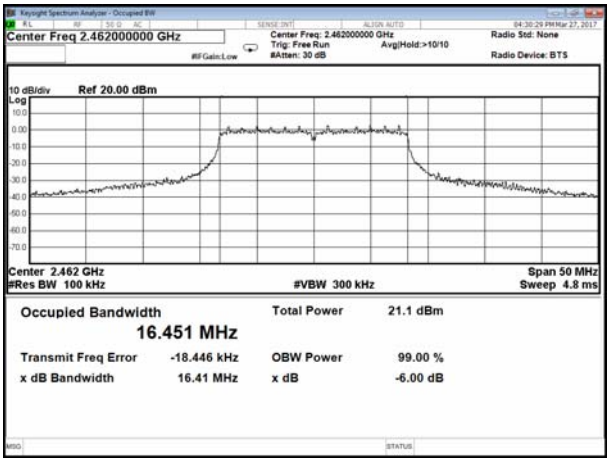
Channel 01 (2412MHz)



Channel 06 (2437MHz)



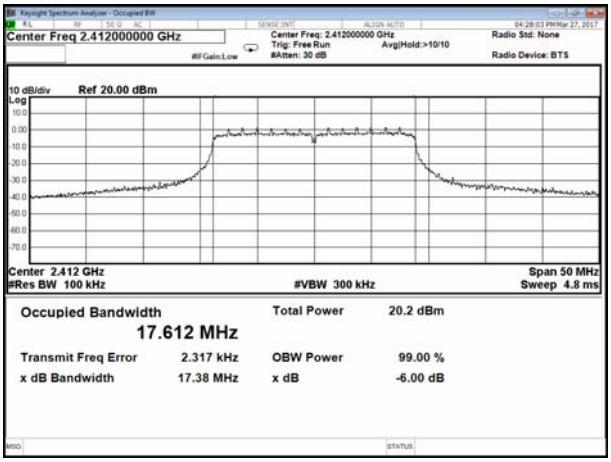
Channel11(2462MHz)



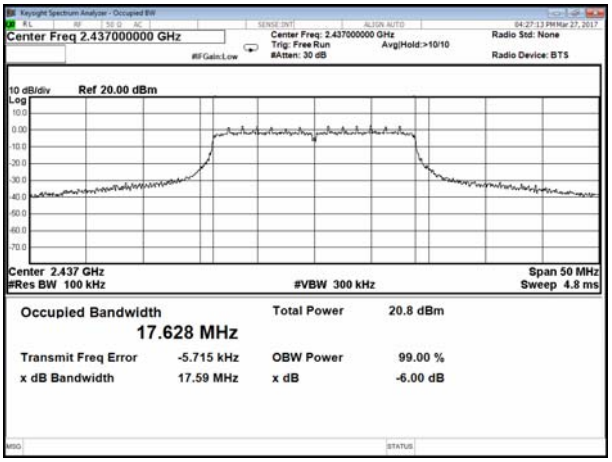
Test Mode	Transmit by 802.11n (20MHz)
Test Date	2017-03-27

Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Result
01	2412	17.38	Pass
06	2437	17.59	Pass
11	2462	17.59	Pass

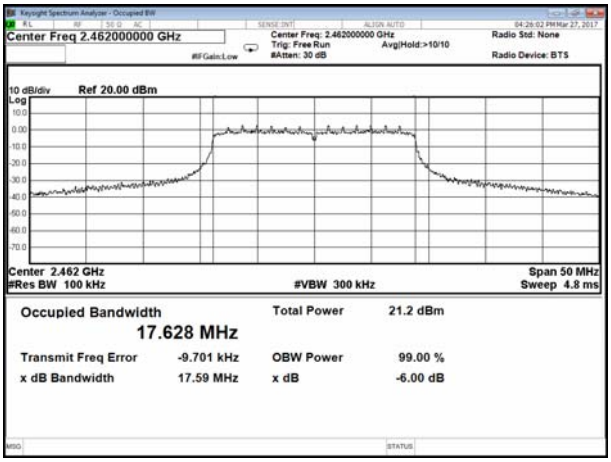
Channel 01 (2412MHz)



Channel 06 (2437MHz)



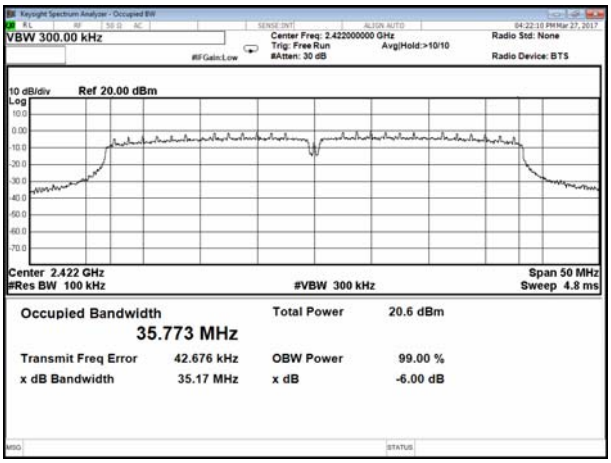
Channel11(2462MHz)



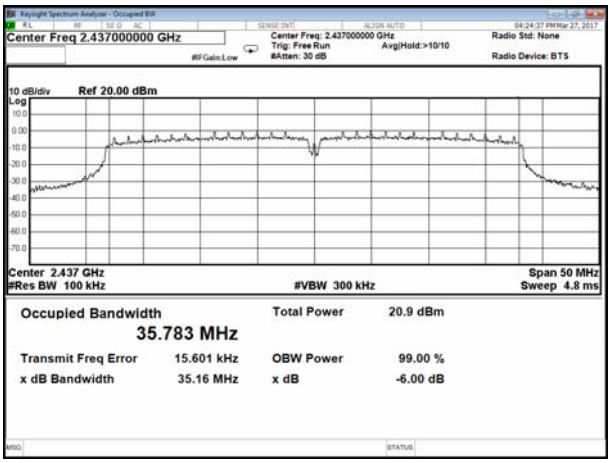
Test Mode	Transmit by 802.11n (40MHz)
Test Date	2017-03-27

Channel No.	Frequency (MHz)	6dB Bandwidth (MHz)	Result
01	2422	35.17	Pass
06	2437	35.16	Pass
11	2452	35.17	Pass

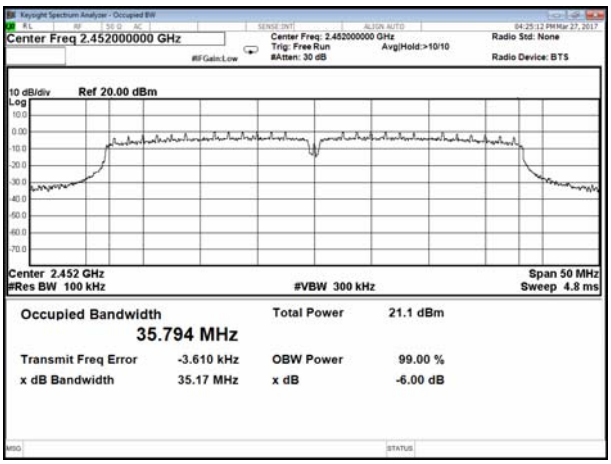
Channel 01 (2422MHz)



Channel 06 (2437MHz)



Channel11(2452MHz)



9. Maximum Peak Output Power

9.1 Test Limit

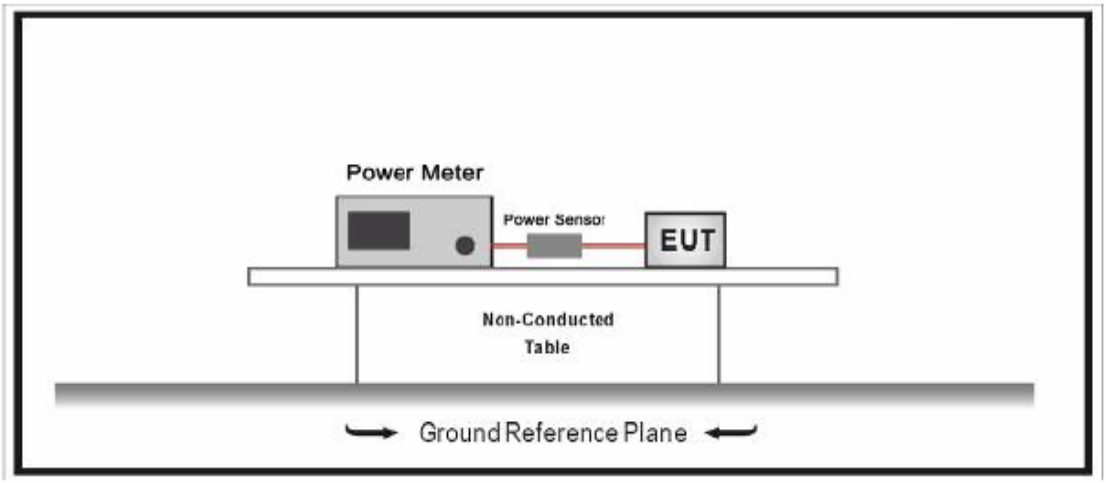
The Maximum Peak Output Power Measurement is 30dBm.

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: Mar. 29, 2017 Temperature: 24℃

Atmospheric pressure: 1016 hPa Humidity: 46%

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Output (mW)
IEEE 802.11b	01	2412	20.71	117.761
	06	2437	21.60	144.544
	11	2462	21.63	145.546
IEEE 802.11g	01	2412	21.06	127.644
	06	2437	22.02	159.221
	11	2462	22.28	169.044
IEEE 802.11n HT20	01	2412	20.89	122.744
	06	2437	21.66	146.555
	11	2462	22.51	178.238
IEEE 802.11n HT40	03	2422	21.40	138.038
	06	2437	21.96	157.036
	09	2452	22.31	170.216

10. Power Spectral Density

10.1 Test Limit

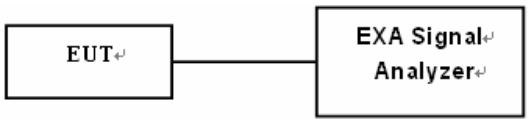
The Maximum of Power Spectral Density Measurement is 8dBm.

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



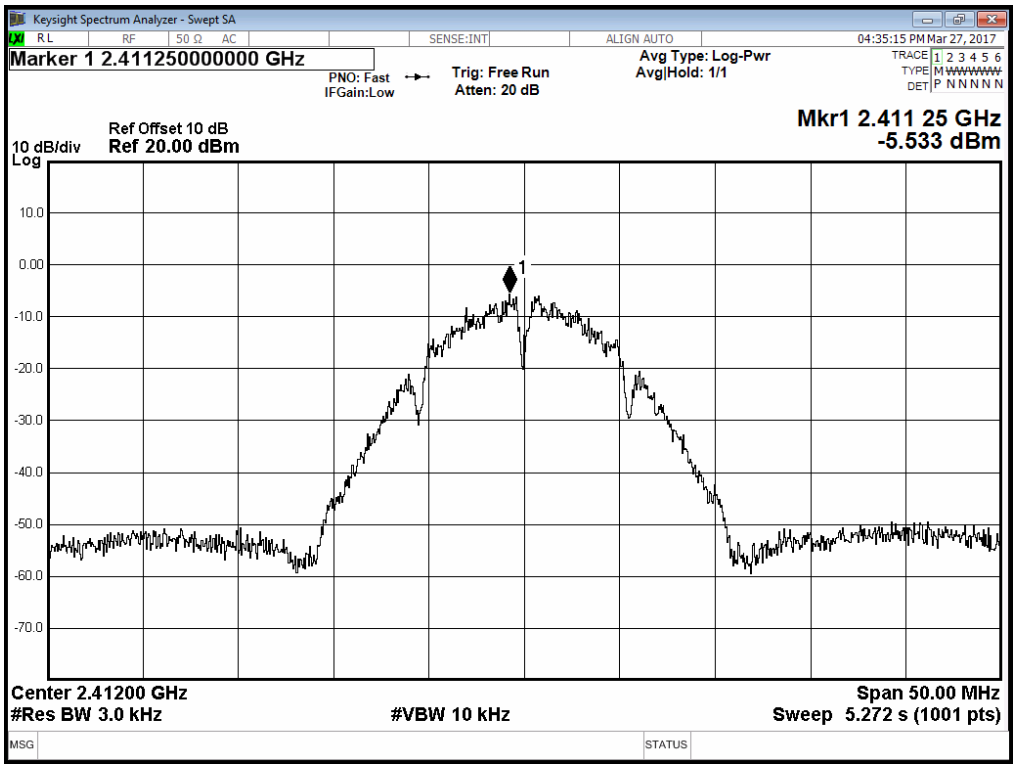
10.4 Test Result and Data

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

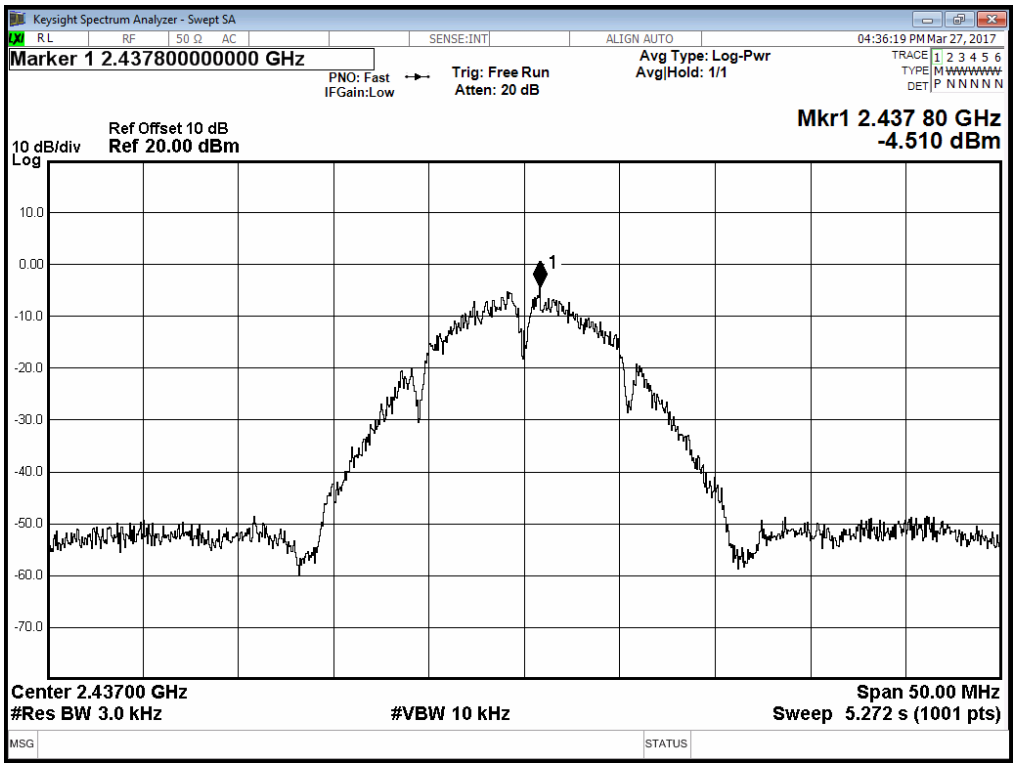
Atmospheric pressure: 1014 hPa Humidity: 47%

Modulation Type	Frequency (MHz)	Power Spectral Density (dBm)
IEEE 802.11b	2412	-5.533
	2437	-4.510
	2462	-3.728
IEEE 802.11g	2412	-11.335
	2437	-10.399
	2462	-10.997
IEEE 802.11n HT20	2412	-11.460
	2437	-11.839
	2462	-10.346
IEEE 802.11n HT40	2422	-11.341
	2437	-11.512
	2452	-12.516

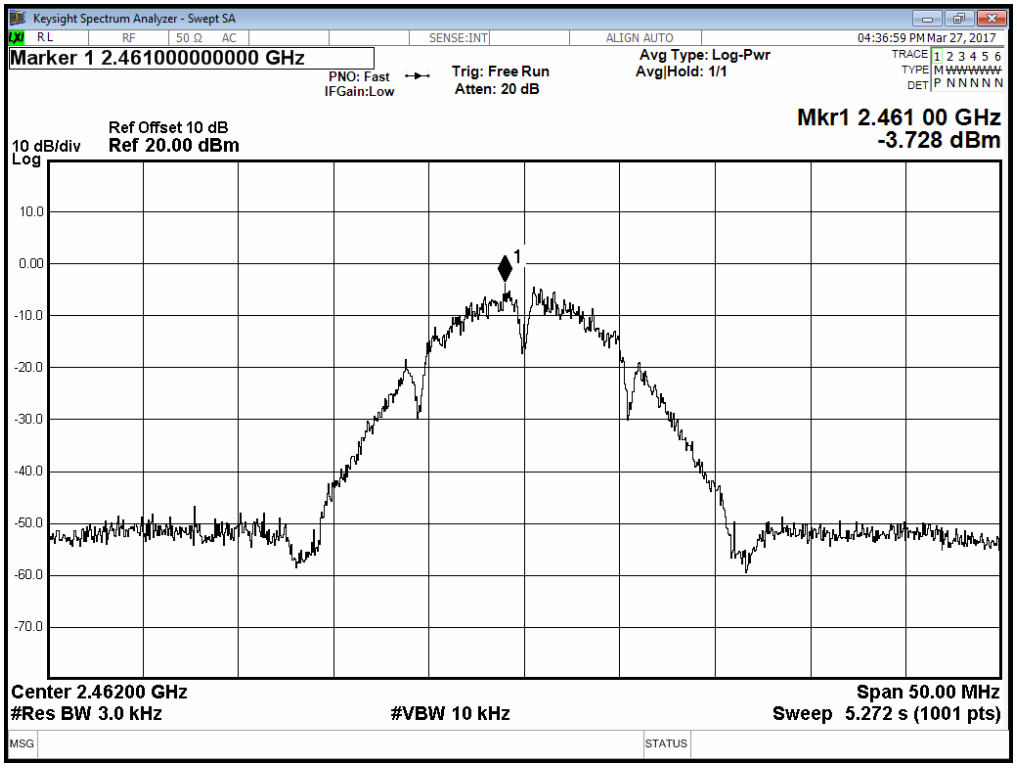
Modulation Standard: 802.11b
Channel: 01



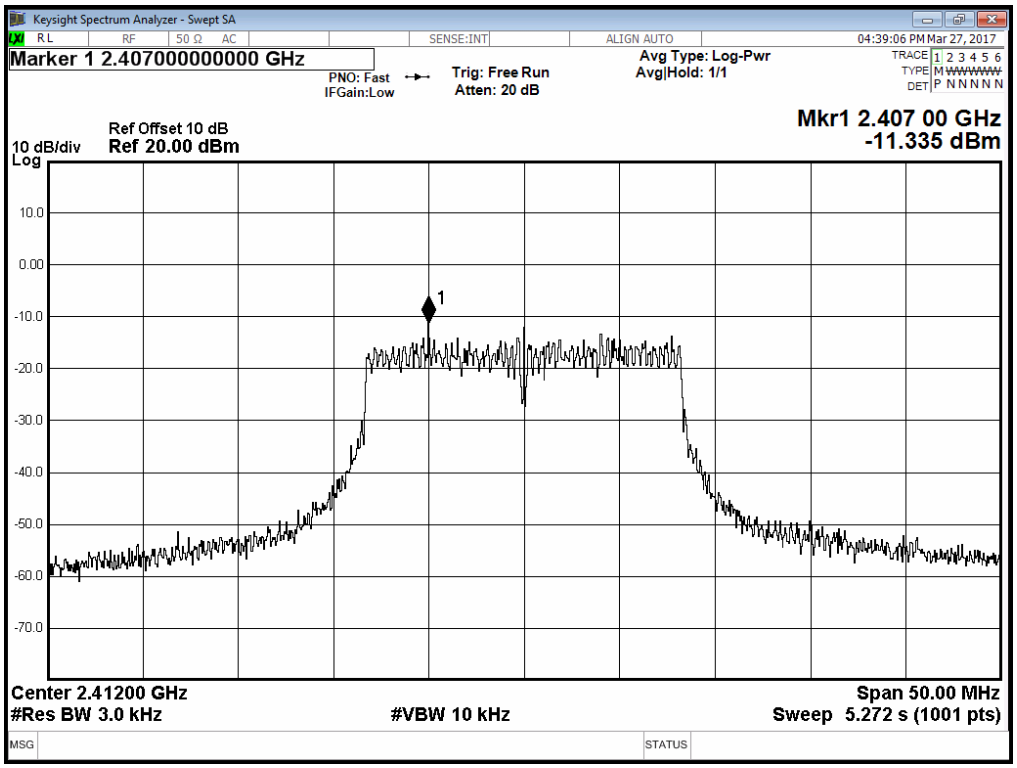
Modulation Standard: 802.11b
Channel: 06



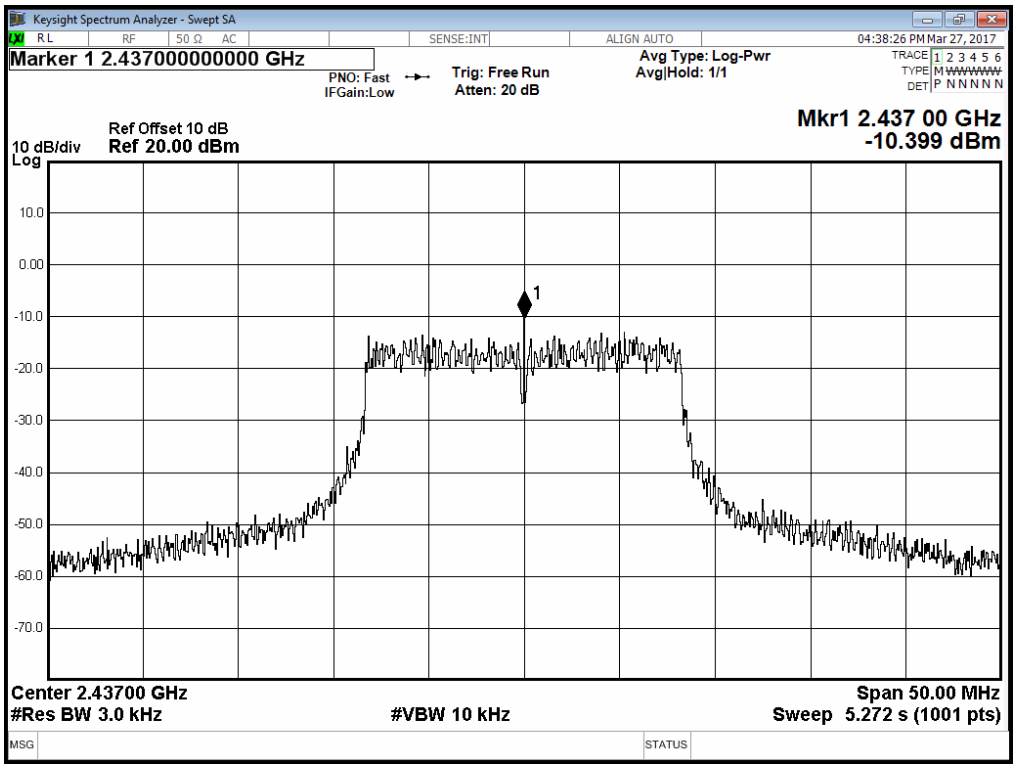
Modulation Standard: 802.11b
Channel: 11



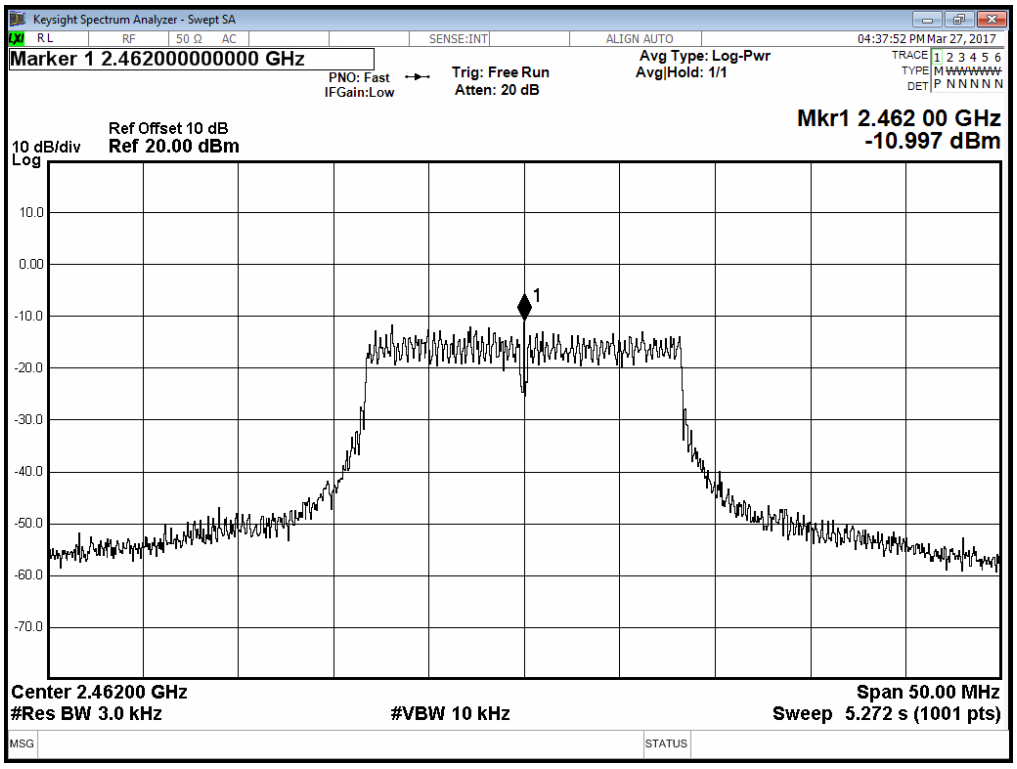
Modulation Standard: 802.11g
Channel: 01



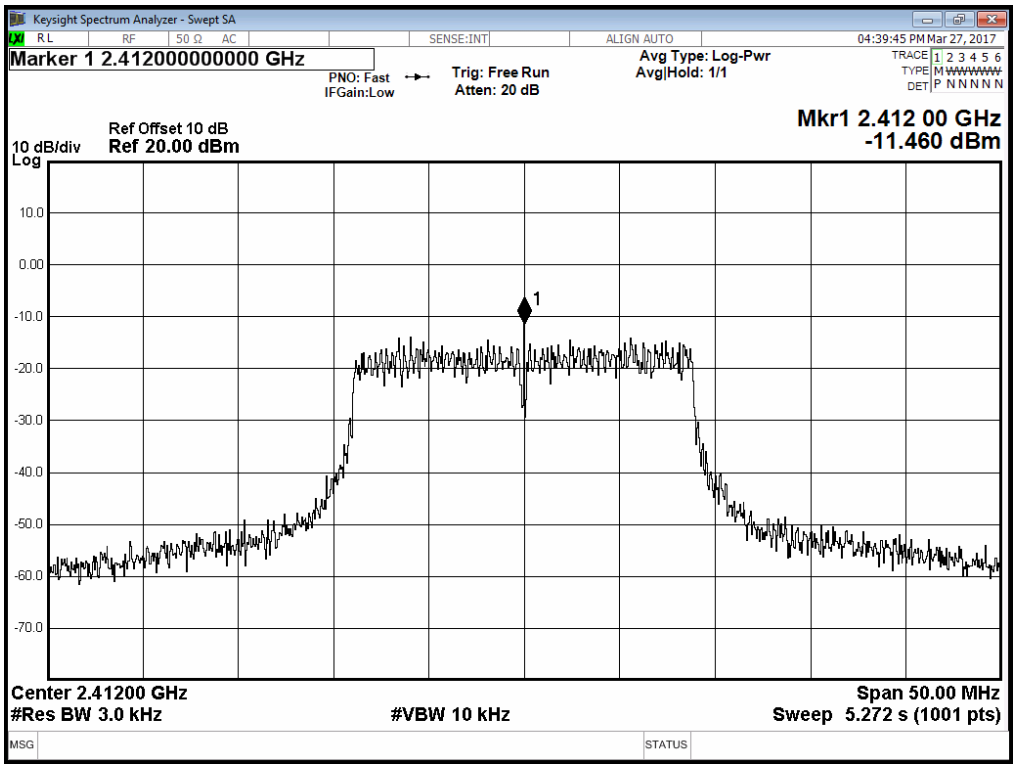
Modulation Standard: 802.11g
Channel: 06



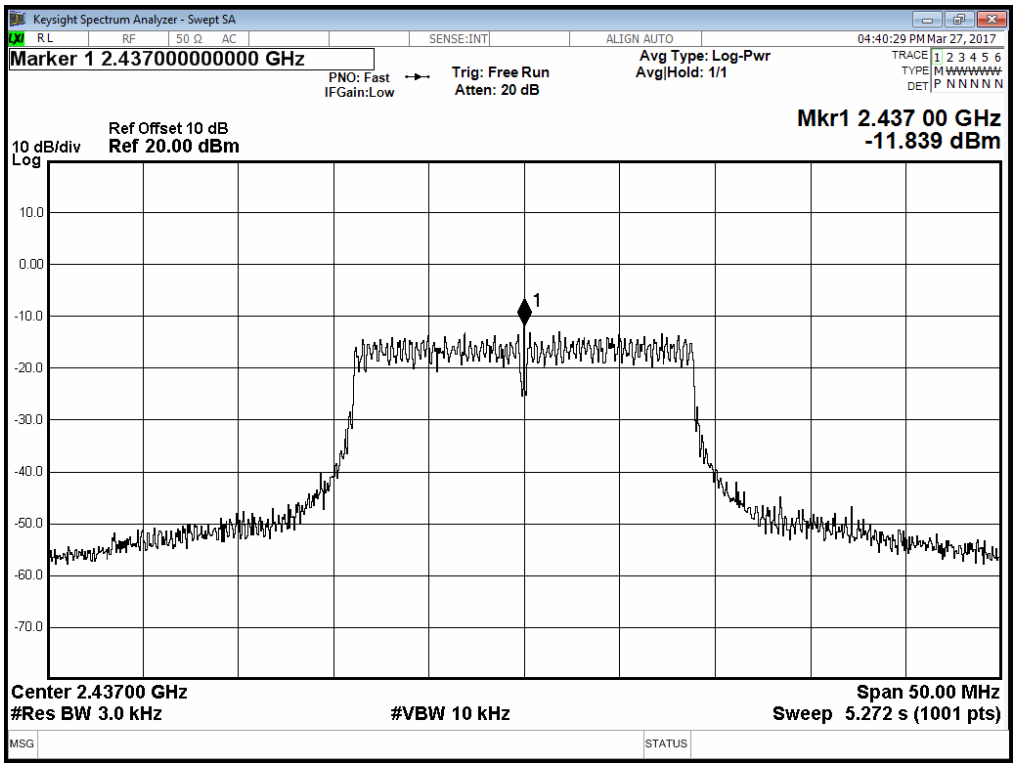
Modulation Standard: 802.11g
Channel: 11



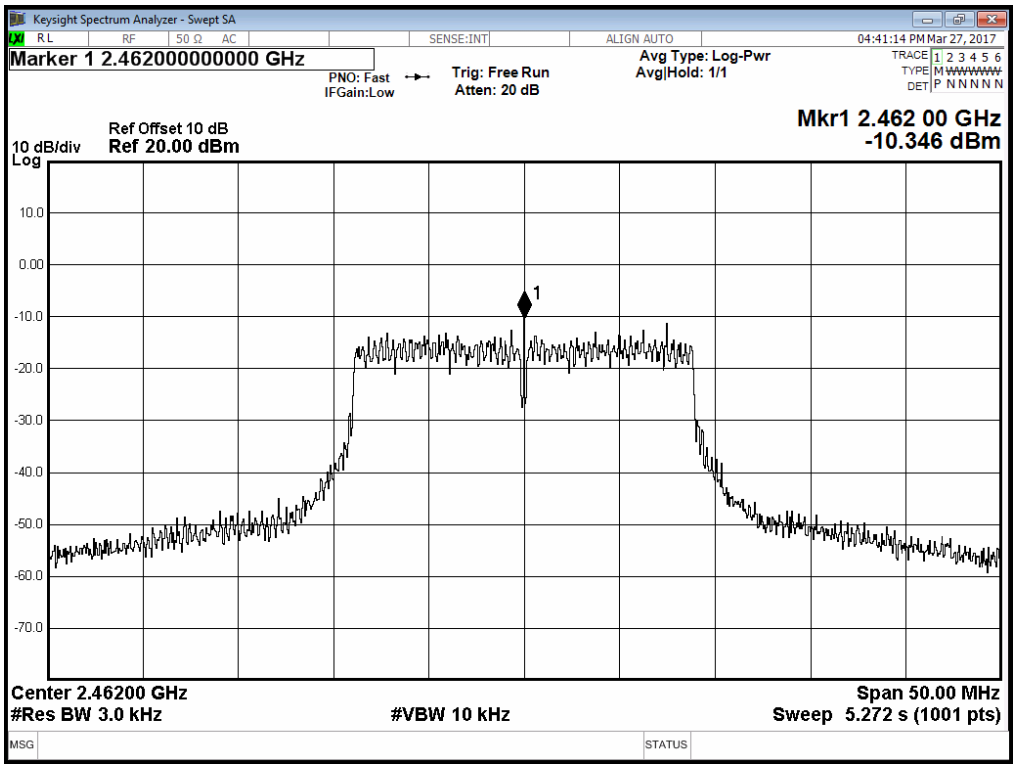
Modulation Standard: 802.11n HT20
Channel: 01



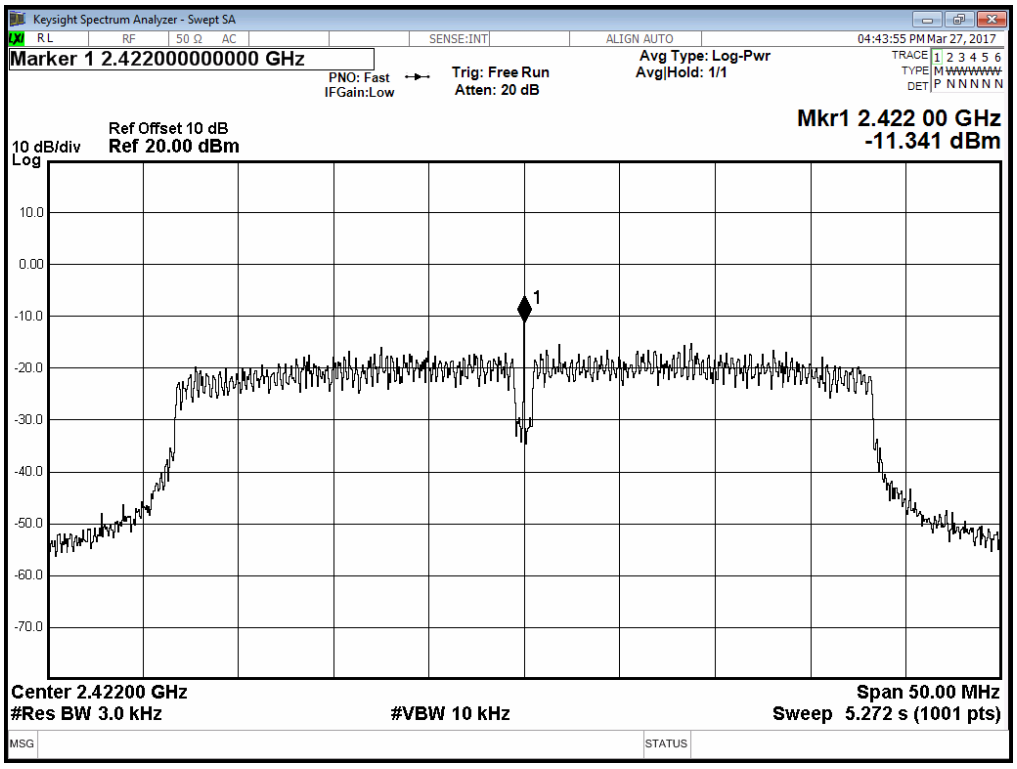
Modulation Standard: 802.11n HT20
Channel: 06



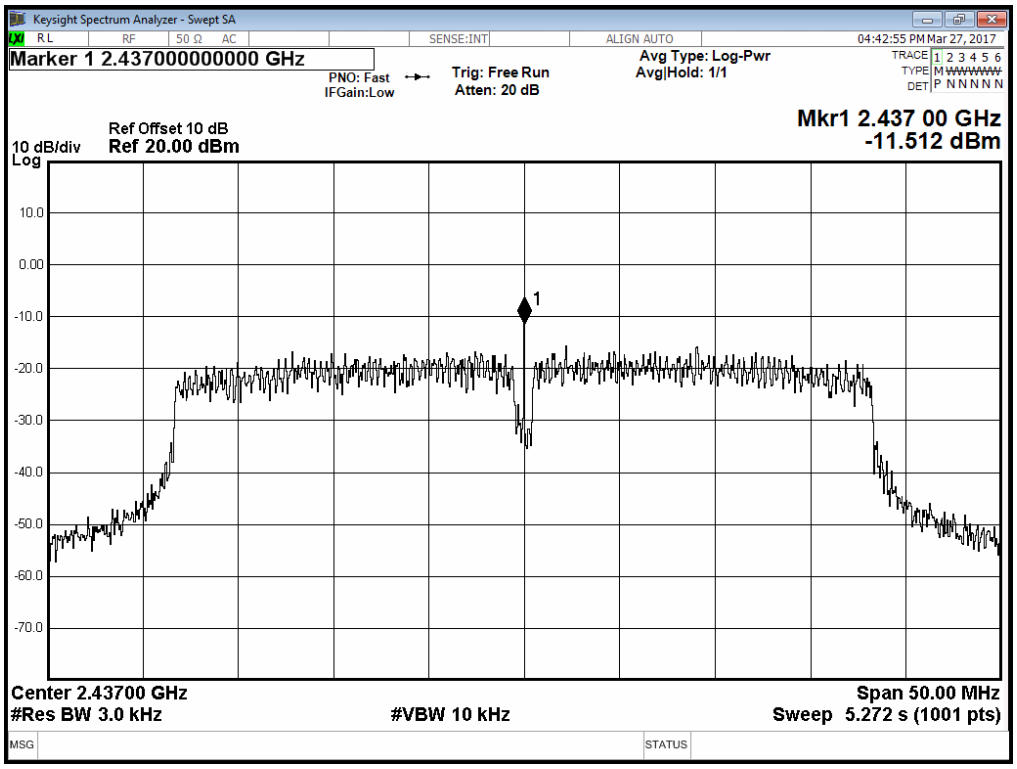
Modulation Standard: 802.11n HT20
Channel: 11



Modulation Standard: 802.11n HT40
Channel: 03



Modulation Standard: 802.11n HT40
Channel: 06



Modulation Standard: 802.11n HT40
Channel: 09