FCC 47 CFR PART 15 SUBPART C

Product Type	:	Sensation 3.0
Applicant	:	One Media Partners Inc.
Address	:	1701 E. Woodfield Road, Suite 315, Schaumburg, IL 60173, USA
Trade Name	:	OneMedia
Model Number	:	W01
Test Specification	:	FCC 47 CFR PART 15 SUBPART C: Oct., 2012 ANSI C63.4:2009
Receive Date	:	July 08, 2015
Test Period	:	July 09, 2015 to July 29, 2015
Issue Date	:	July 30, 2015

Issue by

A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.
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Taiwan Accreditation Foundation accreditation number: 1330

Revision History

Rev.	Issue Date	Revisions	Revised By
00	July 30, 2015	Initial Issue	

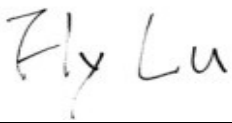
Verification of Compliance

Issued Date: 07/30/2015

Product Type	:	Sensation 3.0
Applicant	:	One Media Partners Inc.
Address	:	1701 E. Woodfield Road, Suite 315, Schaumburg, IL 60173, USA
Trade Name	:	OneMedia
Model Number	:	W01
FCC ID	:	2AFF5W01
EUT Rated Voltage	:	3.7V/360mAh
Test Voltage	:	120 Vac / 60 Hz
Applicable Standard	:	FCC 47 CFR PART 15 SUBPART C: Oct., 2012 ANSI C63.4:2009
Test Result	:	Complied
Performing Lab.	:	A Test Lab Techno Corp. No. 140-1, Changan Street, Bade City, Taoyuan County 334, Taiwan R.O.C. Tel：+886-3-2710188 / Fax：+886-3-2710190 Taiwan Accreditation Foundation accreditation number: 1330 http://www.atl-lab.com.tw/e-index.htm

The above equipment was tested by A Test Lab Techno Corp. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2009 and the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247 .

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

Approved By	:		Reviewed By	:	
(Manager)		(Murphy Wang)	(Testing Engineer)		(Fly Lu)

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1 General Information

1.1. Summary of Test Result

Standard	Item	Result	Remark
15.207	AC Power Conducted Emission	PASS	-----
15.247(b)(1)	Max. Output Power	PASS	-----
15.247(c)	Transmitter Radiated Emissions	PASS	-----
15.247(a)(1)	20dB RF Bandwidth	PASS	-----
15.247(a)(1)(iii)	Carrier Frequency Separation	PASS	-----
15.247(a)(1)(iii)	Number of Hopping	PASS	-----
15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	PASS	-----
15.247(c)	Out of Band Conducted Spurious Emission	PASS	-----
15.247(c)	Band Edge Measurement	PASS	-----
15.247(c)	Occupied Bandwidth Measurement	PASS	-----
15.203	Antenna Requirement	PASS	-----

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2. Measurement Uncertainty

Test Item	Frequency Range		Uncertainty (dB)
Conducted Emission	9kHz ~ 30MHz		± 2.02
Radiated Emission	9kHz ~ 30MHz		± 3.49
	30MHz ~ 1000MHz	Horizontal	± 3.98
		Vertical	± 3.62
	1000MHz ~ 18000MHz	Horizontal	± 3.11
		Vertical	± 3.07
	18000MHz ~ 40000MHz	Horizontal	± 3.66
		Vertical	± 3.54

2 EUT Description

Product	Sensation 3.0				
Trade Name	OneMedia				
Model Number	W01				
Applicant	One Media Partners Inc.				
Applicant Address	1701 E. Woodfield Road, Suite 315, Schaumburg, IL 60173, USA				
Manufacturer	Yinuo Technologies, Ltd.				
Manufacturer Address	Rm 409-410, Building A, Pengnian University City Area Honghualing Industrial District 1213 Liuxian Avenue，Xili, Nanshan District, Shenzhen, China				
FCC ID	2AFF5W01				
Frequency Range	2402 ~ 2480 MHz				
Bluetooth version	BT3.0+EDR				
Modulation Type	GFSK for 1Mbps				
	π/4-DQPSK for 2Mbps				
	8DPSK for 3Mbps				
Antenna Type	Internal Antenna				
Antenna Gain	1.0 dBi				
IMEI No.	865621452863597				
Hardware Version	V2.0				
Software Version	V1.0.13				
PK Output Power (Conducted)	GFSK for 1Mbps	8.03	dBm /	0.00635	W
	π/4-DQPSK for 2Mbps	7.32	dBm /	0.00540	W
	8DPSK for 3Mbps	7.33	dBm /	0.00541	W
Emission Bandwidth	GFSK: 1.106MHz				
	8DPSK: 1.278MHz				
Emission Designator	GFSK: 1M11F1D				
	8DPSK: 1M28G1D				

3 Test Methodology

3.1. Mode of Operation

Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Normal Operation Mode
Mode 2: GFSK Mode with No-hopping
Mode 3: π/4-DQPSK Mode with No-hopping
Mode 4: 8DPSK Mode with No-hopping
Mode 5: GFSK Mode with hopping
Mode 6: π/4-DQPSK Mode with hopping
Mode 7: 8DPSK Mode with hopping
--

By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Z axis” position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

Description of Test Modes

Preliminary tests were performed in different modulation to find the worst case. The modulation has shown the worst-case in section 6.5. Investigation has been done on all the possible configurations for searching the worst cases.

The temporary antenna connector is soldered on the PCB board in order to perform conducted tests.

Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model Number	Serial Number	Power Cord
1.	Bluetooth Tester	R & S	CBT	100350	NA

3.2. EUT Exercise Software

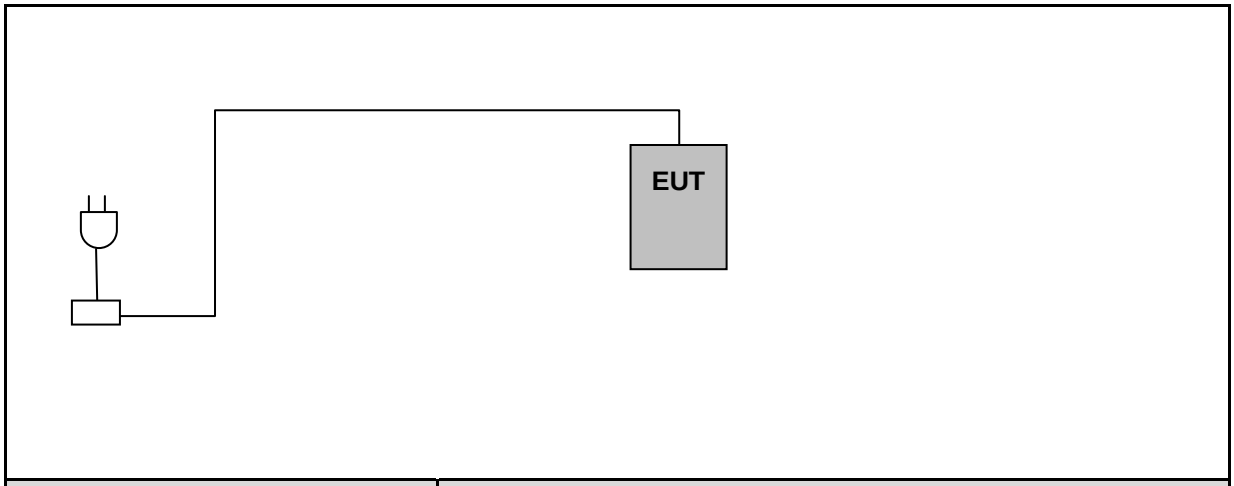
1	Setup the EUT and Bluetooth Tester (CBT) as shown on 3.3.
2	Turn on the power of all equipment.
3	EUT run test program.
4	Open Bluetooth function link to CBT.
5	The test program is MTK engineering model.

Note：We used fully-charged battery during the test.

3.3. power supply

power supply	Model Number	Manufacturer
BATTERY	353232 （3.7V/360mAh）	SHENZHEN JIAYUAN TONGDA TECHNOLOGY CO.,LTD

3.4. Configuration of Test System Details



Signal Cable Type		Signal Cable Description
A	Power Cable	Shielded, 1.0 m
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Auxiliary equipment description				
Product		Manufacturer	Model Number	S/N
(1)	Power Adapter	Sony	--	3513W51304150
--	--	--	--	--

3.5. Test Site Environment

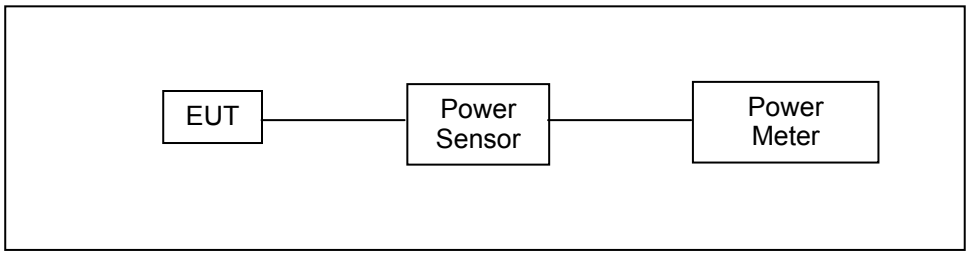
Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

4 Maximum Conducted Output Power Measurement

4.1. Limit

For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels < 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band < 0.125 watts.

4.2. Test Setup



4.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	12/15/2014	(1)
Wideband Power Meter	Agilent	N1921A	MY45241957	12/15/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----
RF cable	WOKEN	---	C.10-07-02	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-03	10/24/2014	(1)
Temporary antenna connector	---	---	A01-224	05/24/2015	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
NOTE: N.C.R. = No Calibration Request.
All the RF cables apply to 9 KHz to 40GHz.

4.4. Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor. The maximum peak output power shall not exceed 1 watt.
Use a direct connection between the antenna port of transmitter and the power sensor, for prevent the power sensor input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode.
For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to (GAIN - 6)/3 dBm.
The antenna port of the EUT was connected to the input of a power sensor. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

4.5. Test Result

Model Number	W01					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 2					
Date of Test	07/09/2015			Test Site	TE02	
Frequency (MHz)	Packet Type	Average Power		Peak Power		Limit (W)
		(dBm)	(W)	(dBm)	(W)	
2402	DH1	1.53	0.00142	7.05	0.00507	< 1
	DH3	4.75	0.00299	7.08	0.00511	< 1
	DH5	5.39	0.00346	7.11	0.00514	< 1
2441	DH1	1.52	0.00142	7.18	0.00522	< 1
	DH3	4.89	0.00308	7.16	0.00520	< 1
	DH5	6.01	0.00399	7.22	0.00527	< 1
2480	DH1	2.18	0.00165	7.98	0.00628	< 1
	DH3	5.59	0.00362	8.01	0.00632	< 1
	DH5	6.33	0.00430	8.03	0.00635	< 1

Model Number	W01					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 3					
Date of Test	07/09/2015			Test Site	TE02	
Frequency (MHz)	Packet Type	Average Power		Peak Power		Limit (W)
		(dBm)	(W)	(dBm)	(W)	
2402	2DH1	0.12	0.00103	6.35	0.00432	< 0.125
	2DH3	2.64	0.00184	6.36	0.00433	< 0.125
	2DH5	3.56	0.00227	6.4	0.00437	< 0.125
2441	2DH1	-0.24	0.00095	6.38	0.00435	< 0.125
	2DH3	2.76	0.00189	6.43	0.00440	< 0.125
	2DH5	3.75	0.00237	6.49	0.00446	< 0.125
2480	2DH1	0.11	0.00103	7.26	0.00532	< 0.125
	2DH3	3.24	0.00211	7.29	0.00536	< 0.125
	2DH5	3.95	0.00248	7.32	0.00540	< 0.125

Model Number	W01					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 4					
Date of Test	07/09/2015			Test Site	TE02	
Frequency (MHz)	Packet Type	Average Power		Peak Power		Limit (W)
		(dBm)	(W)	(dBm)	(W)	
2402	3DH1	0.19	0.00104	6.24	0.00421	< 0.125
	3DH3	2.67	0.00185	6.23	0.00420	< 0.125
	3DH5	3.78	0.00239	6.27	0.00424	< 0.125
2441	3DH1	-0.38	0.00092	6.24	0.00421	< 0.125
	3DH3	2.87	0.00194	6.29	0.00426	< 0.125
	3DH5	3.45	0.00221	6.31	0.00428	< 0.125
2480	3DH1	0.28	0.00107	7.15	0.00519	< 0.125
	3DH3	3.46	0.00222	7.17	0.00521	< 0.125
	3DH5	3.92	0.00247	7.33	0.00541	< 0.125

5 Conducted Emission Measurement

5.1. Limit

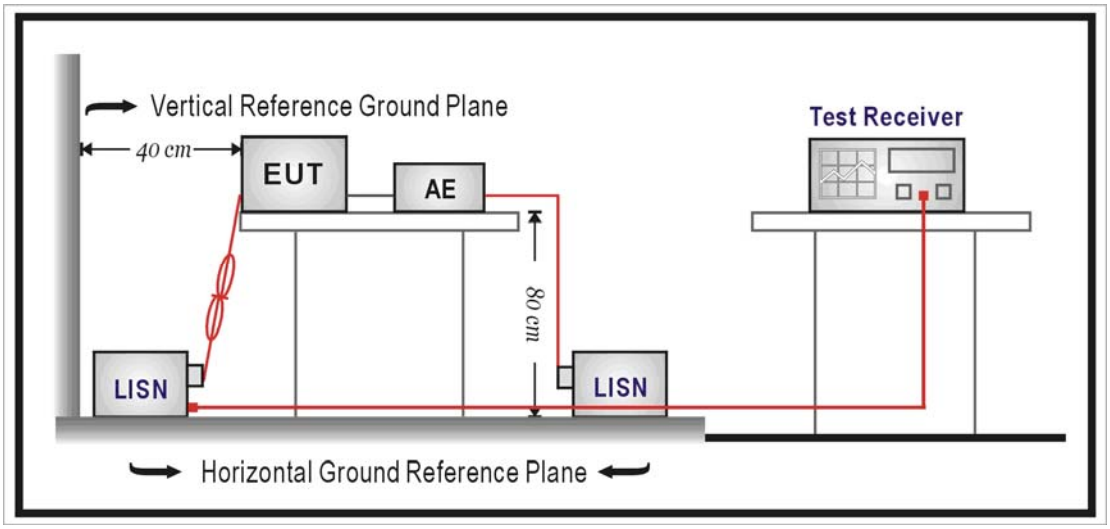
Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

5.2. Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	06/06/2015	(1)
LISN	R&S	ENV216	101040	03/07/2015	(1)
LISN	R&S	ENV216	101041	03/07/2015	(1)
Test Site	ATL	TE05	TE05	N.C.R.	-----
RF cable	WOKEN	---	C.10-07-04	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-05	10/24/2014	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
NOTE: N.C.R. = No Calibration Request.
All the RF cables apply to 9 KHz to 40GHz.

5.3. Test Setup



5.4. Test Procedure

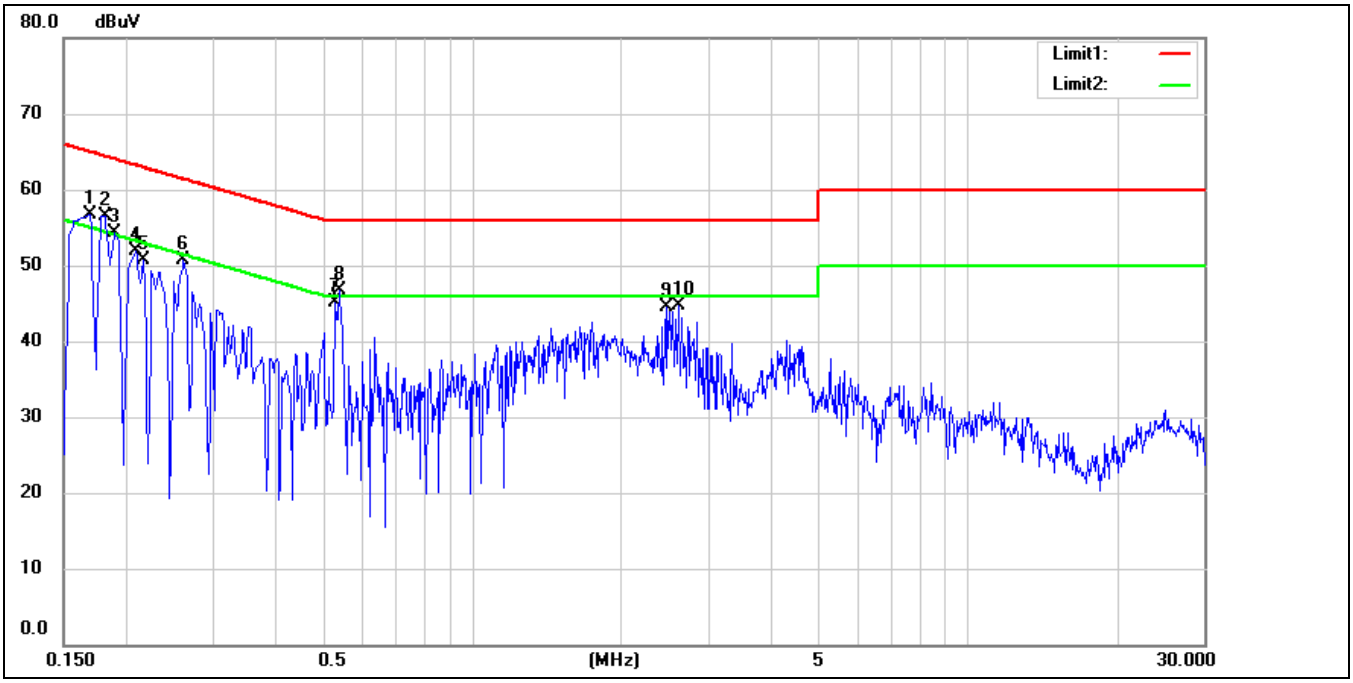
The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and EMCO Model 3162/2 SH Line Impedance Stabilization Networks (LISN). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 4.1.

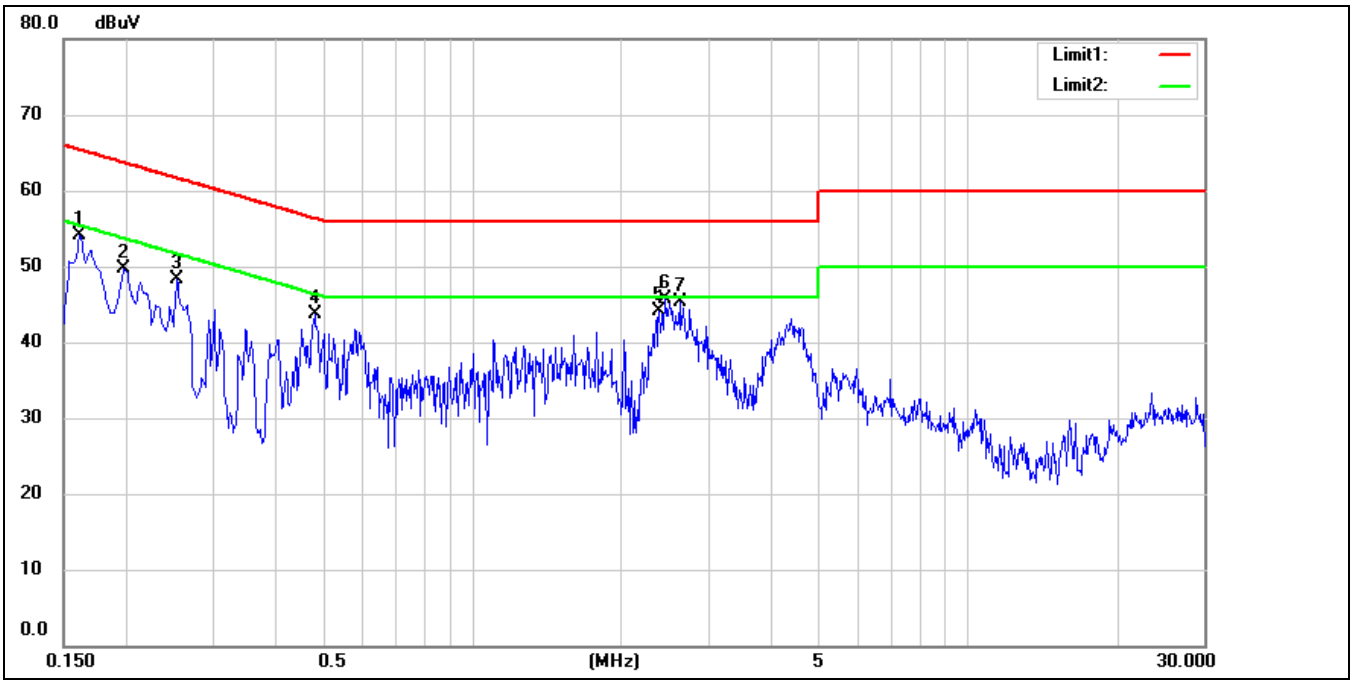
5.5. Test Result

Standard:	FCC Class B Conduction(QP)	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	2015/7/22
Description:			



No.	Frequency (MHz)	QP Reading (dBuV)	AVG Reading (dBuV)	Correction Factor (dB)	QP Result (dBuV)	AVG Result (dBuV)	QP Limit (dBuV)	AVG Limit (dBuV)	QP Margin (dB)	AVG Margin (dB)	Remark
1	0.1700	42.14	27.36	9.58	51.72	36.94	64.96	54.96	-13.24	-18.02	Pass
2	0.1820	40.77	25.50	9.58	50.35	35.08	64.39	54.39	-14.04	-19.31	Pass
3	0.1904	39.05	23.58	9.58	48.63	33.16	64.02	54.02	-15.39	-20.86	Pass
4	0.2100	35.80	20.58	9.58	45.38	30.16	63.21	53.21	-17.83	-23.05	Pass
5	0.2180	36.66	21.40	9.58	46.24	30.98	62.89	52.89	-16.65	-21.91	Pass
6	0.2620	33.33	18.29	9.59	42.92	27.88	61.37	51.37	-18.45	-23.49	Pass
7	0.5300	30.64	15.20	9.60	40.24	24.80	56.00	46.00	-15.76	-21.20	Pass
8	0.5420	30.67	14.54	9.60	40.27	24.14	56.00	46.00	-15.73	-21.86	Pass
9	2.4700	27.29	14.84	9.67	36.96	24.51	56.00	46.00	-19.04	-21.49	Pass
10	2.6180	27.35	14.01	9.68	37.03	23.69	56.00	46.00	-18.97	-22.31	Pass

Standard:	FCC Class B Conduction(QP)	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	2015/7/22
Description:			



No.	Frequency (MHz)	QP Reading (dBuV)	AVG Reading (dBuV)	Correction Factor (dB)	QP Result (dBuV)	AVG Result (dBuV)	QP Limit (dBuV)	AVG Limit (dBuV)	QP Margin (dB)	AVG Margin (dB)	Remark
1	0.1620	38.34	25.05	9.58	47.92	34.63	65.36	55.36	-17.44	-20.73	Pass
2	0.1980	34.15	20.15	9.58	43.73	29.73	63.69	53.69	-19.96	-23.96	Pass
3	0.2540	30.65	17.39	9.59	40.24	26.98	61.63	51.63	-21.39	-24.65	Pass
4	0.4820	29.66	19.88	9.60	39.26	29.48	56.30	46.30	-17.04	-16.82	Pass
5	2.3940	30.17	19.98	9.69	39.86	29.67	56.00	46.00	-16.14	-16.33	Pass
6	2.4580	30.97	20.99	9.69	40.66	30.68	56.00	46.00	-15.34	-15.32	Pass
7	2.6260	29.79	20.10	9.70	39.49	29.80	56.00	46.00	-16.51	-16.20	Pass

Note:1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

6 Radiated Interference Measurement

6.1. Limit

According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m at 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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

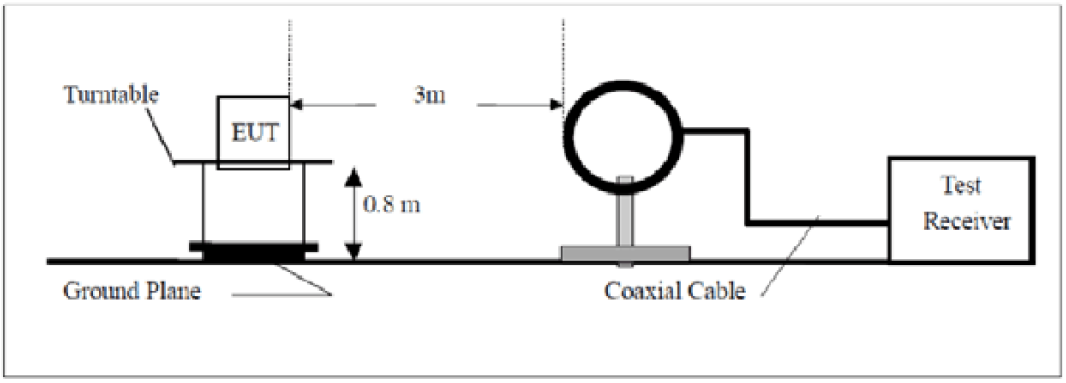
6.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2015	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/18/2015	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/11/2015	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	07/02/2015	(1)
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	08/14/2014	(3)
Test Site	ATL	TE01	888001	08/28/2014	(1)
RF cable	WOKEN	---	C.10-07-07	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-08	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-09	10/24/2014	(1)

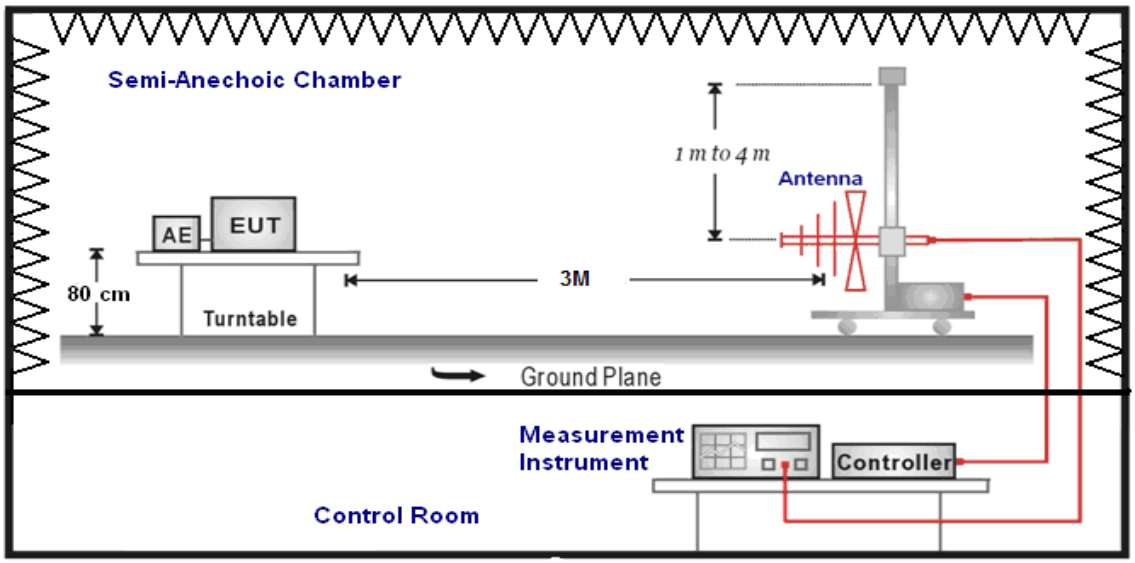
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years. (3) Calibration period 3 years.
NOTE: N.C.R. = No Calibration Request. All the RF cables apply to 9 KHz to 40GHz.

6.3. Setup

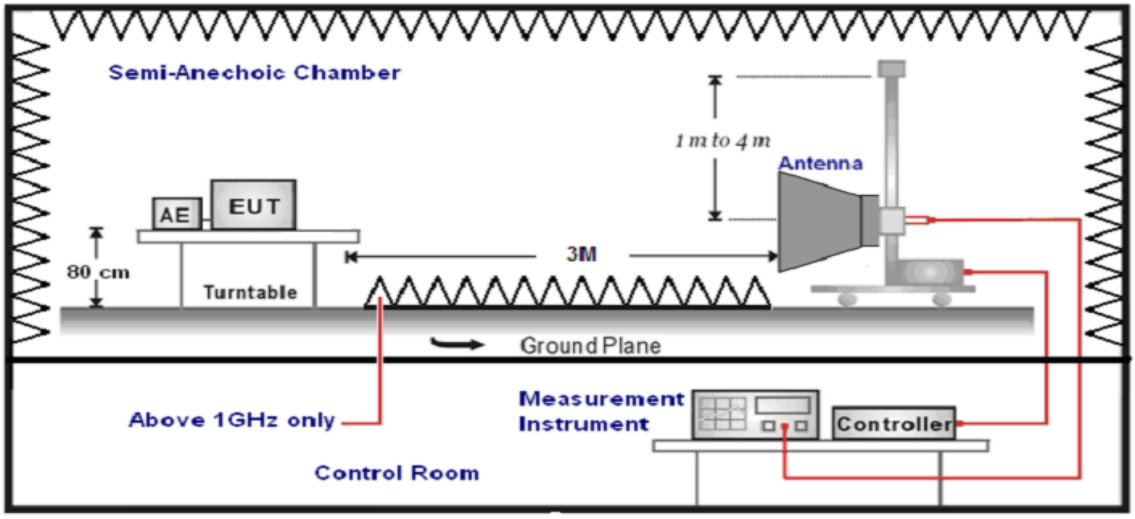
9KHz-30MHz



30MHz- 1GHz



Above 1GHz



6.4. Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

For the radiated emission test above 1GHz:
Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

A nonconductive material surrounded the EUT to supporting the EUT for standing on tree orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna (mode VULB9163) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

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

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.
The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.
The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts pre meter (uV/m).
The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro colts per meter (dBuV/m).

The actual field is intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding

the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

(1) Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)
FI= Reading of the field intensity.
AF= Antenna factor.
CL= Cable loss.
P.S Amplitude is auto calculate in spectrum analyzer.

(2) Actual Amplitude (dBuV/m) = Amplitude (dBuV)-Dis(dB)
The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:
(a) For fundamental frequency : Transmitter Output < +30dBm
(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

Data of measurement within this frequency range without mark in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

Note: We tests were performed in different modulation to find the worst case. And show the worst-case here.

6.5. Test Result

Below 1GHz

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2015/7/29
Frequency:	2402 MHz	Test By:	Louis

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
150.5000	27.01	-11.40	15.61	43.50	-27.89	QP	H
407.5000	27.50	-7.20	20.30	46.00	-25.70	QP	H
515.5000	30.36	-5.13	25.23	46.00	-20.77	QP	H
661.5000	27.83	-2.29	25.54	46.00	-20.46	QP	H
874.0000	30.28	1.97	32.25	46.00	-13.75	QP	H
949.0000	28.18	3.18	31.36	46.00	-14.64	QP	H
156.0000	27.38	-11.39	15.99	43.50	-27.51	QP	V
361.0000	26.68	-8.23	18.45	46.00	-27.55	QP	V
545.5000	27.34	-4.57	22.77	46.00	-23.23	QP	V
666.5000	27.67	-2.18	25.49	46.00	-20.51	QP	V
737.5000	27.93	-0.56	27.37	46.00	-18.63	QP	V
872.0000	28.51	1.92	30.43	46.00	-15.57	QP	V

Note: No emission found between lowest internal used/generated frequencies to 30MHz (9 kHz~30MHz).

Above 1GHz

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2015/7/28
Frequency:	2402 MHz	Test By:	Louis

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3002.000	38.60	1.01	39.61	74.00	-34.39	peak	H
4804.000	52.22	6.24	58.46	74.00	-15.54	peak	H
4804.000	44.19	6.24	50.43	54.00	-3.57	AVG	H
7206.000	39.09	12.30	51.39	74.00	-22.61	peak	H
3086.000	39.02	1.24	40.26	74.00	-33.74	peak	V
4804.000	52.91	6.24	59.15	74.00	-14.85	peak	V
4804.000	45.04	6.24	51.28	54.00	-2.72	AVG	V
7206.000	40.74	12.30	53.04	74.00	-20.96	peak	V
7206.000	33.52	12.30	45.82	54.00	-8.18	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2015/7/28
Frequency:	2441 MHz	Test By:	Louis

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3114.000	38.24	1.33	39.57	74.00	-34.43	peak	H
4882.000	51.04	6.58	57.62	74.00	-16.38	peak	H
4882.000	44.11	6.58	50.69	54.00	-3.31	AVG	H
7323.000	42.16	12.73	54.89	74.00	-19.11	peak	H
7323.000	36.95	12.73	49.68	54.00	-4.32	AVG	H
3058.000	39.24	1.17	40.41	74.00	-33.59	peak	V
4882.000	53.69	6.58	60.27	74.00	-13.73	peak	V
4882.000	45.58	6.58	52.16	54.00	-1.84	AVG	V
7323.000	41.27	12.73	54.00	74.00	-20.00	peak	V
7323.000	35.29	12.73	48.02	54.00	-5.98	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2015/7/28
Frequency:	2480 MHz	Test By:	Louis

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3086.000	38.70	1.24	39.94	74.00	-34.06	peak	H
4960.000	50.93	6.92	57.85	74.00	-16.15	peak	H
4960.000	43.57	6.92	50.49	54.00	-3.51	AVG	H
7440.000	42.91	13.15	56.06	74.00	-17.94	peak	H
7440.000	37.84	13.15	50.99	54.00	-3.01	AVG	H
3149.000	38.23	1.42	39.65	74.00	-34.35	peak	V
4960.000	54.28	6.92	61.20	74.00	-12.80	peak	V
4960.000	46.21	6.92	53.13	54.00	-0.87	AVG	V
7440.000	45.80	13.15	58.95	74.00	-15.05	peak	V
7440.000	39.29	13.15	52.44	54.00	-1.56	AVG	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 4	Date:	2015/7/28
Frequency:	2402 MHz	Test By:	Louis

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3100.000	39.14	1.29	40.43	74.00	-33.57	peak	H
4804.000	46.92	6.24	53.16	74.00	-20.84	peak	H
4804.000	39.87	6.24	46.11	54.00	-7.89	AVG	H
7206.000	36.44	12.30	48.74	74.00	-25.26	peak	H
3093.000	38.67	1.27	39.94	74.00	-34.06	peak	V
4804.000	48.64	6.24	54.88	74.00	-19.12	peak	V
4804.000	40.55	6.24	46.79	54.00	-7.21	AVG	V
7206.000	39.68	12.30	51.98	74.00	-22.02	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 4	Date:	2015/7/28
Frequency:	2441 MHz	Test By:	Louis

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3107.000	38.58	1.31	39.89	74.00	-34.11	peak	H
4882.000	46.88	6.58	53.46	74.00	-20.54	peak	H
4882.000	39.77	6.58	46.35	54.00	-7.65	AVG	H
7321.000	39.25	12.72	51.97	74.00	-22.03	peak	H
3149.000	39.13	1.42	40.55	74.00	-33.45	peak	V
4882.000	50.39	6.58	56.97	74.00	-17.03	peak	V
4882.000	40.89	6.58	47.47	54.00	-6.53	AVG	V
7323.000	39.24	12.73	51.97	74.00	-22.03	peak	V

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 4	Date:	2015/7/28
Frequency:	2480 MHz	Test By:	Louis

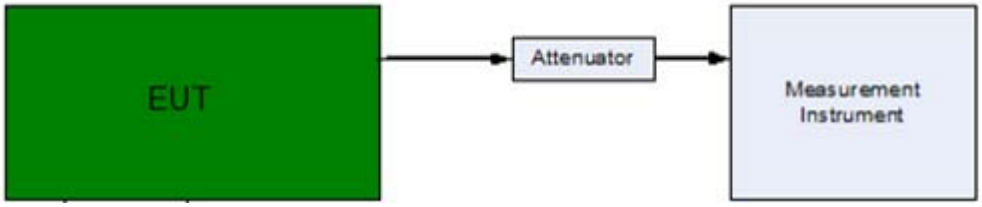
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
3107.000	38.58	1.31	39.89	74.00	-34.11	peak	H
4960.000	46.54	6.92	53.46	74.00	-20.54	peak	H
4960.000	39.20	6.92	46.12	54.00	-7.88	AVG	H
7440.000	38.19	13.15	51.34	74.00	-22.66	peak	H
3737.000	35.54	3.16	38.70	74.00	-35.30	peak	V
4960.000	48.26	6.92	55.18	74.00	-18.82	peak	V
4960.000	38.49	6.92	45.41	54.00	-8.59	AVG	V
7440.000	38.18	13.15	51.33	74.00	-22.67	peak	V

7 20dB RF Bandwidth and 99 % Occupied Bandwidth Measurement

7.1. Limit

N/A

7.2. Test Setup



7.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	N9020A	MY46181842	11/05/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----
RF cable	WOKEN	---	C.10-07-02	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-03	10/24/2014	(1)
Temporary antenna connector	---	---	A01-224	05/24/2015	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
NOTE: N.C.R. = No Calibration Request. All the RF cables apply to 9 KHz to 40GHz.

7.4. Test Procedure

20dB RF Bandwidth

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = approx. 2 to 3 times the 20dB bandwidth, centered on a hopping frequency
2. RBW ≥ 1% of the 20dB span, VBW ≥ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize. The EUT was transmitting at its maximum data rate. The marker-to-peak function was used to set the marker to the peak of the emission. The marker-delta function was used to measure 20dB down one side of the emission. The marker-delta function and marker was moved to the other side of the

emission until it was even with the reference marker. The marker-delta reading at this point was the 20dB bandwidth of the emission.

99 % Occupied Bandwidth
The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual. The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.

Note: We tests were performed in different modulation to find the worst case. And show the worst-case here.

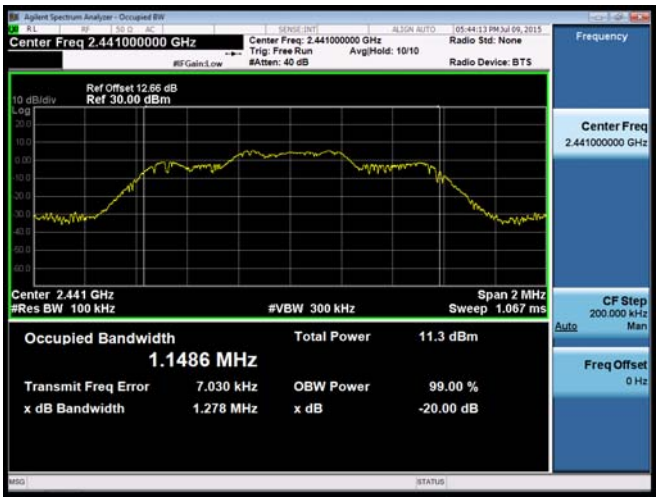
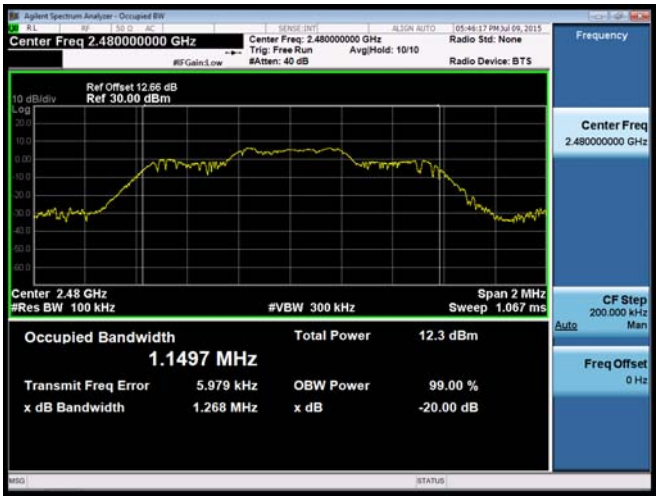
7.5. Test Result

Model Number	W01			
Test Item	20dB RF Bandwidth and 99 % Occupied Bandwidth			
Test Mode	Mode 2			
Date of Test	07/09/2015		Test Site	TE02
Frequency (MHz)	20dB RF Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Limit (MHz)	
2402	1.105	0.949	-----	
2441	1.106	0.940	-----	
2480	1.106	0.943	-----	

Model Number	W01			
Test Item	20dB RF Bandwidth and 99 % Occupied Bandwidth			
Test Mode	Mode 4			
Date of Test	07/09/2015		Test Site	TE02
Frequency (MHz)	20dB RF Bandwidth (MHz)	99 % Occupied Bandwidth (MHz)	Limit (MHz)	
2402	1.263	1.153	-----	
2441	1.278	1.149	-----	
2480	1.268	1.150	-----	

7.6. Test Graphs

Mode 2: GFSK Link Mode	
2402	
2441	
2480	

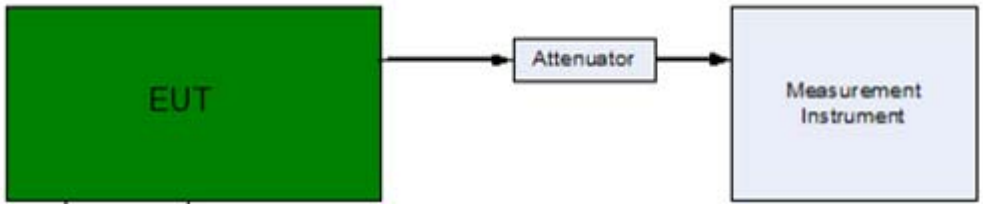
Mode 4: 8DPSK Mode	
2402	
2441	
2480	

8 Carrier Frequency Separation Measurement

8.1. Limit

Title 47 of the CFR, Part 15 Subpart (c) 15.247(a)(1)(i) requires the measurement of the bandwidth of the transmission between the -20 dB points on the transmitted spectrum. The results of this test determine the limits for channel spacing. The channel spacing shall be a minimum of 25 kHz or the 20 dB bandwidth.

8.2. Test Setup



8.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	N9020A	MY46181842	11/05/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----
RF cable	WOKEN	---	C.10-07-02	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-03	10/24/2014	(1)
Temporary antenna connector	---	---	A01-224	05/24/2015	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
NOTE: N.C.R. = No Calibration Request.

8.4. Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth transmitter of the V6 had its hopping function enabled. The following spectrum analyzer settings were used:

1. Span = wide enough to capture the peaks of two adjacent channels
2. Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span
3. Video (or Average) Bandwidth (VBW) ≥ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize. The marker-delta function was used to determine the separation between the peaks of the adjacent channels.

Note: We tests were performed in different modulation to find the worst case. And show the worst-case here.

8.5. Test Result

Model Number	W01		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 5		
Date of Test	07/09/2015	Test Site	TE02

Frequency (MHz)	Measurement (MHz)	Limit (MHz)
2402	0.999	>0.737
2441	0.999	>0.737
2480	1.00	>0.737

Model Number	W01		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 7		
Date of Test	07/09/2015	Test Site	TE02

Frequency (MHz)	Measurement (MHz)	Limit (MHz)
2402	1.035	>0.842
2441	1.297	>0.852
2480	1.176	>0.845

8.6. Test Graphs

Mode 5	
2402	
2441	
2480	

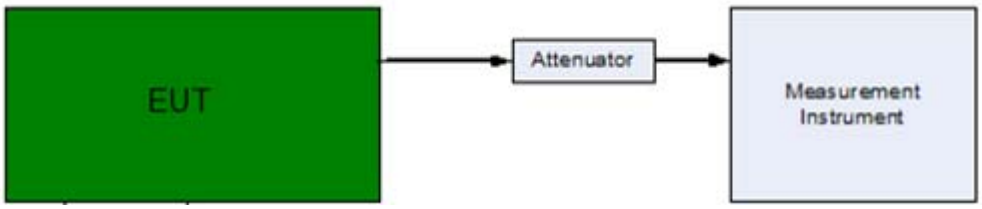
Mode 7	
2402	
2441	
2480	

9 Number of Hopping Measurement

9.1. Limit

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels.

9.2. Test Setup



9.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	N9020A	MY46181842	11/05/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----
RF cable	WOKEN	---	C.10-07-02	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-03	10/24/2014	(1)
Temporary antenna connector	---	---	A01-224	05/24/2015	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
NOTE: N.C.R. = No Calibration Request. All the RF cables apply to 9 KHz to 40GHz.

9.4. Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = the frequency band of operation
2. RBW ≥ 1% of the span
3. VBW ≥ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

The trace was allowed to stabilize.

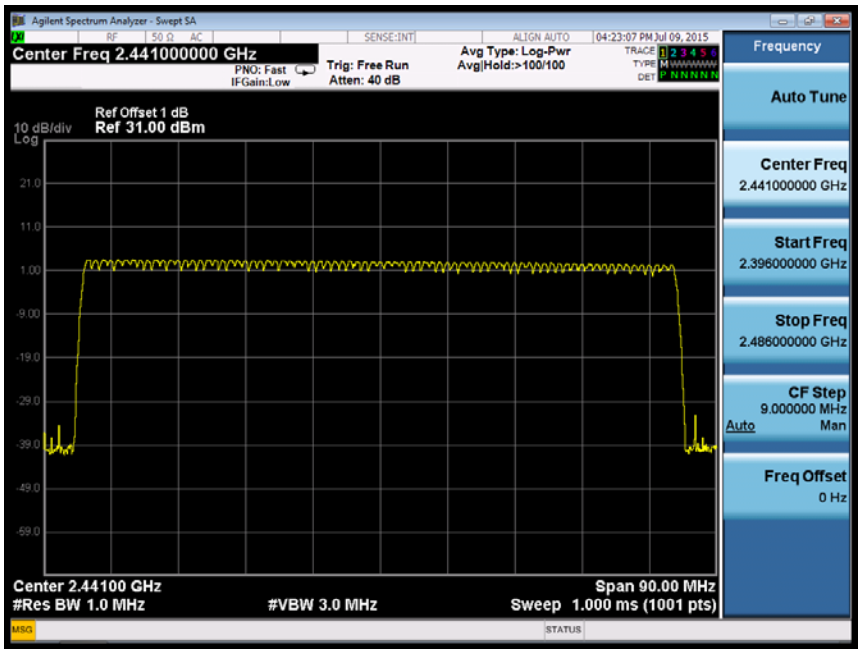
Note: We tests were performed in different modulation to find the worst case. And show the worst-case here.

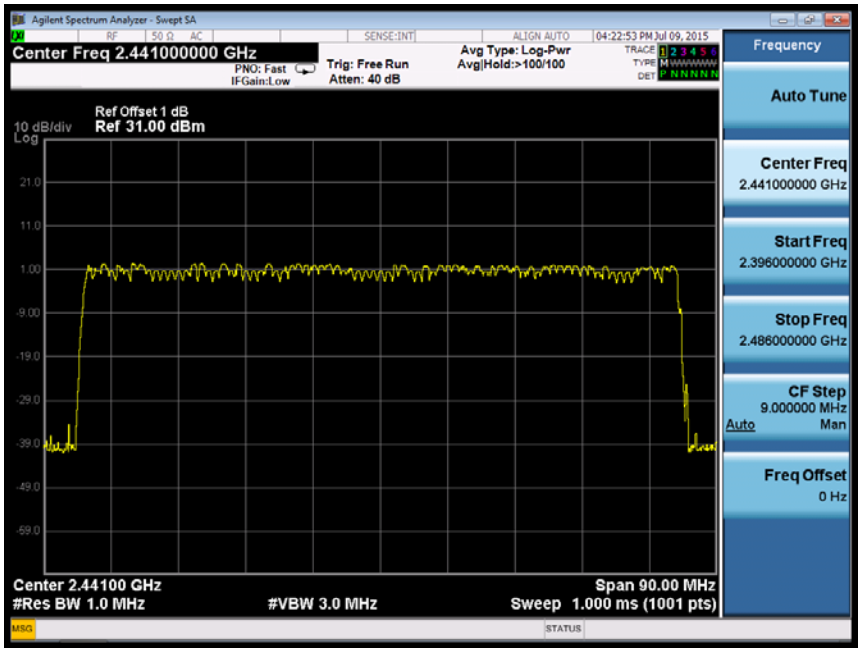
9.5. Test Result

Model Number	W01		
Test Item	Number of Hopping		
Test Mode	Mode 5-DH5		
Date of Test	07/09/2015	Test Site	TE02
Frequency Range (MHz)	Measurement (ch)	Limit (ch)	
2402 - 2480	79	> 15	

Model Number	W01		
Test Item	Number of Hopping		
Test Mode	Mode 7-DH5		
Date of Test	07/09/2015	Test Site	TE02
Frequency Range (MHz)	Measurement (ch)	Limit (ch)	
2402 - 2480	79	> 15	

9.6. Test Graphs

Mode 5	
CH0~CH78	

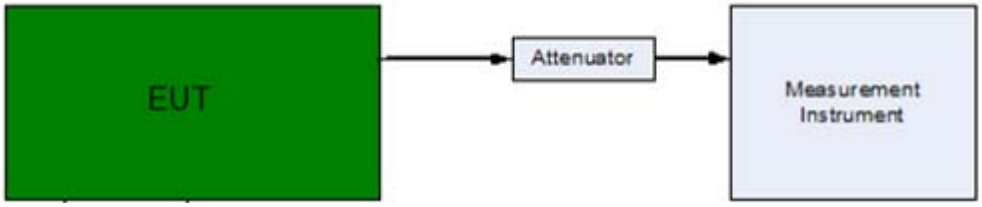
Mode 7	
CH0~CH78	

10 Time of Occupancy (Dwell Time) Measurement

10.1. Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

10.2. Test Setup



10.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	N9020A	MY46181842	11/05/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----
RF cable	WOKEN	---	C.10-07-02	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-03	10/24/2014	(1)
Temporary antenna connector	---	---	A01-224	05/24/2015	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
NOTE: N.C.R. = No Calibration Request. All the RF cables apply to 9 KHz to 40GHz.

10.4. Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth hopping function of the EUT was enabled. The following spectrum analyzer settings were used:

1. Span = zero span, centered on a hopping channel
2. RBW = 1 MHz
3. VBW ≥ RBW
4. Sweep = as necessary to capture the entire dwell time per hopping channel
5. Detector function = peak
6. Trace = max hold

The marker-delta function was used to determine the dwell time.

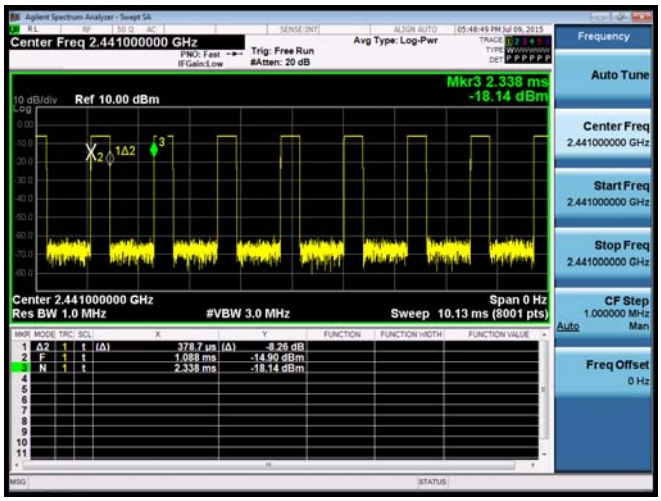
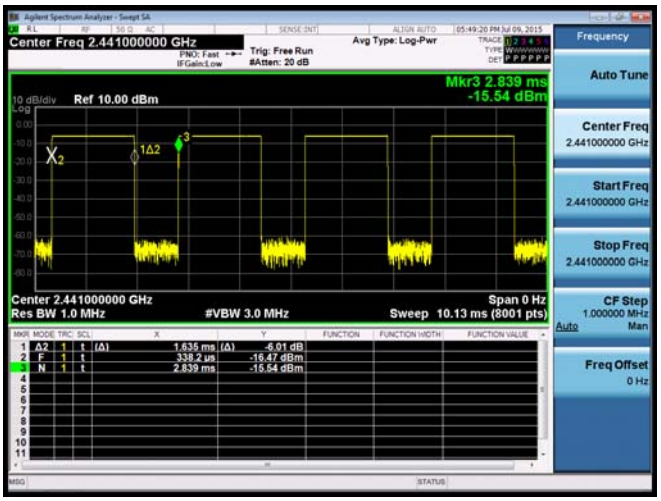
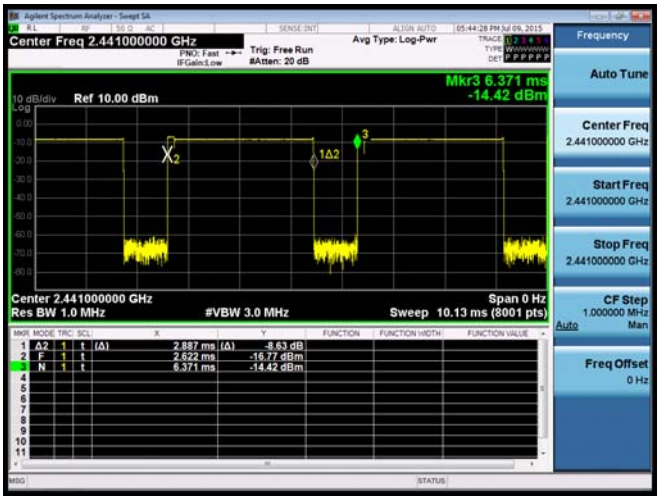
Note: We tests were performed in different modulation to find the worst case. And show the worst-case here.

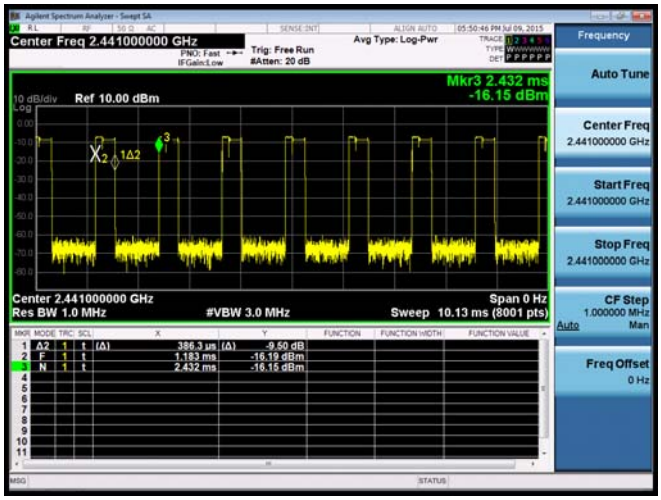
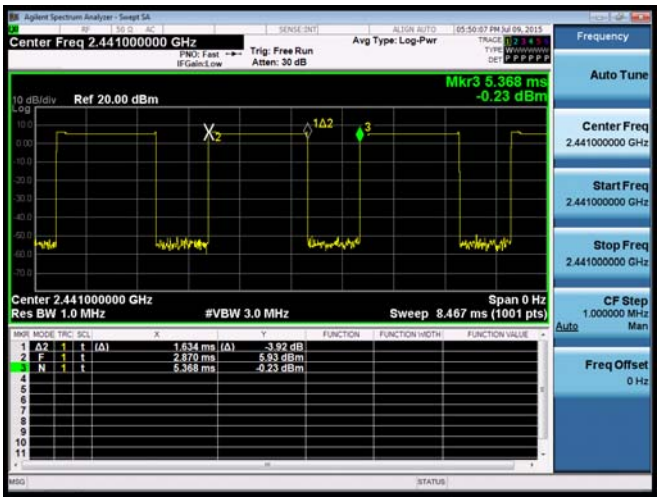
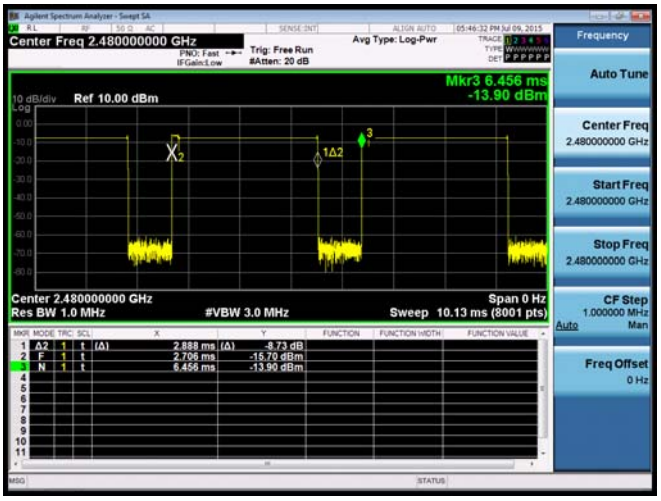
10.5. Test Result

Model Number	W01		
Test Item	Time of Occupancy (Dwell Time)		
Test Mode	Mode 2		
Date of Test	07/09/2015	Test Site	TE02
DH1			
Frequency	2441 MHz		
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	800/79CH = 10.13(times/sec)		
Each Channel Dwell Times (1)	0.379 ms (sec)		
Each Channel Dwell Times on Cycle(2)	31.6 * 10.13 = 320.108(times)		
Dwell Times on Cycle (1) * (2)	121.3209 ms (sec)		
LIMIT(msec)	< = 400		
DH3			
Frequency	2441 MHz		
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	400/79CH = 5.06(times/sec)		
Each Channel Dwell Times (1)	1.635 ms (sec)		
Each Channel Dwell Times on Cycle(2)	31.6 * 5.1 = 159.896(times)		
Dwell Times on Cycle (1) * (2)	261.4300 ms (sec)		
LIMIT(msec)	< = 400		
DH5			
Frequency	2441 MHz		
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	266.7/79CH = 3.38(times/sec)		
Each Channel Dwell Times (1)	2.887 ms (sec)		
Each Channel Dwell Times on Cycle(2)	31.6 * 3.38 = 106.808(times)		
Dwell Times on Cycle (1) * (2)	308.3547 ms (sec)		
LIMIT(msec)	< = 400		

Model Number	W01		
Test Item	Time of Occupancy (Dwell Time)		
Test Mode	Mode 4		
Date of Test	07/09/2015	Test Site	TE02
3DH1			
Frequency	2441 MHz		
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	800/79CH = 10.13(times/sec)		
Each Channel Dwell Times (1)	0.386 ms (sec)		
Each Channel Dwell Times on Cycle(2)	31.6 * 10.13 = 320.108(times)		
Dwell Times on Cycle (1) * (2)	1323.5617 ms (sec)		
LIMIT(msec)	< = 400		
3DH3			
Frequency	2441 MHz		
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	400/79CH = 5.06(times/sec)		
Each Channel Dwell Times (1)	1.634 ms (sec)		
Each Channel Dwell Times on Cycle(2)	31.6 * 5.06 = 159.896(times)		
Dwell Times on Cycle (1) * (2)	261.2701 ms (sec)		
LIMIT(msec)	< = 400		
3DH5			
Frequency	2480 MHz		
Cycle Calculate	79CH * 0.4 = 31.6 (sec)		
The EUT Hopping Number per Sec	1600 times/sec		
Each Channel Dwell Times per Sec	266.7/79CH = 3.38(times/sec)		
Each Channel Dwell Times (1)	2.888 ms (sec)		
Each Channel Dwell Times on Cycle(2)	31.6 * 3.38 = 106.808(times)		
Dwell Times on Cycle (1) * (2)	308.4615 ms (sec)		
LIMIT(msec)	< = 400		

10.6. Test Graphs

Mode 2: GFSK Link Mode	
DH1	
DH3	
DH5	

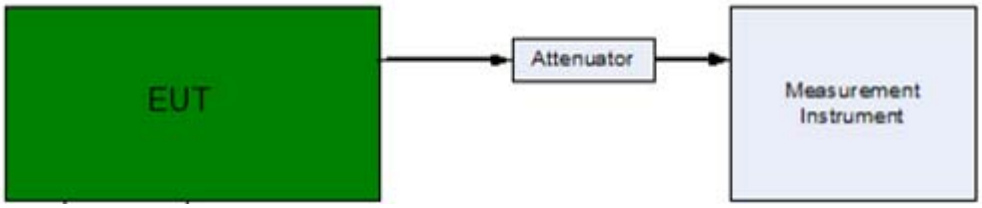
Mode 4: 8DPSK Mode	
3DH1	
3DH3	
3DH5	

11 Out of Band Conducted Emissions Measurement

11.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

11.2. Test Setup



11.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	N9020A	MY46181842	11/05/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----
RF cable	WOKEN	---	C.10-07-02	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-03	10/24/2014	(1)
Temporary antenna connector	---	---	A01-224	05/24/2015	(1)

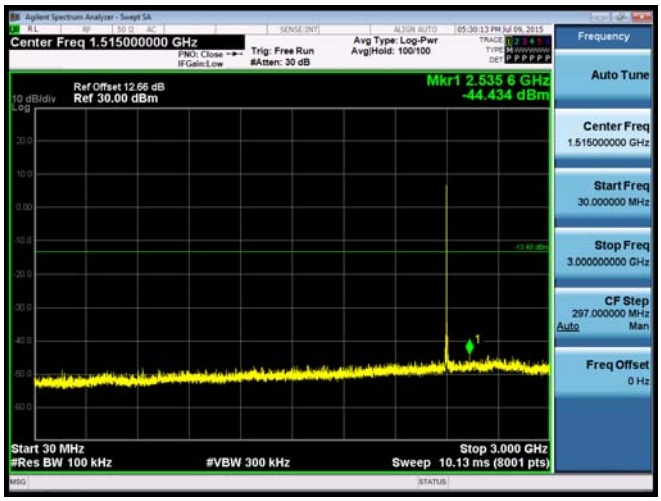
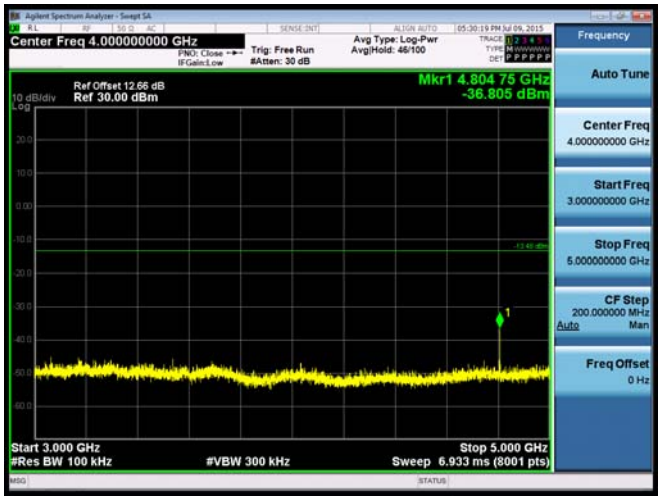
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
NOTE: N.C.R. = No Calibration Request. All the RF cables apply to 9 KHz to 40GHz.

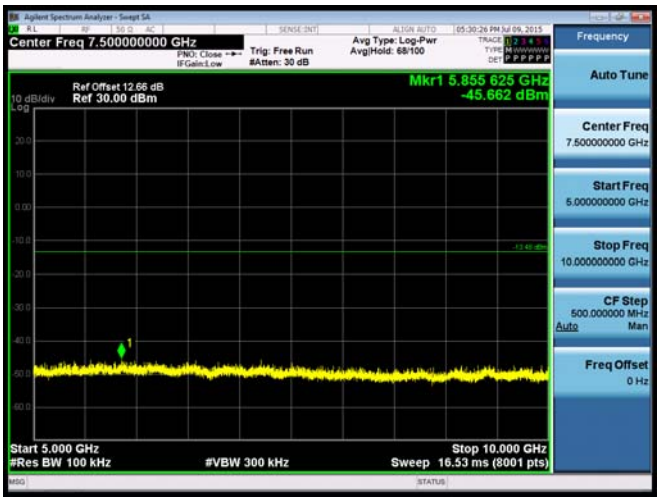
11.4. Test Procedure

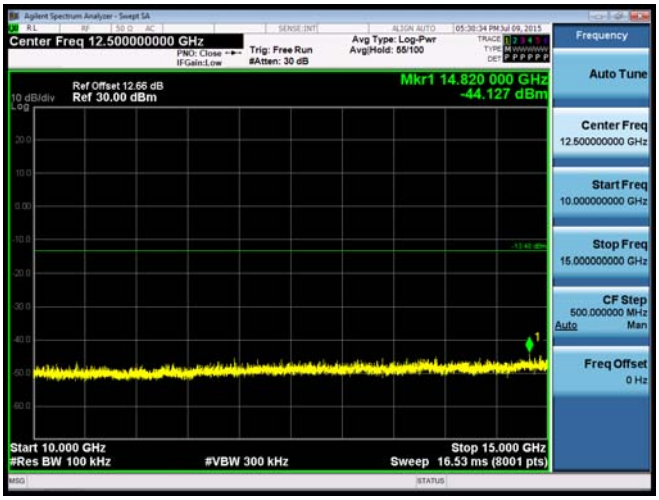
Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function. All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels (Channel 0, 39, 78), and the setting value of instrument are as below: Decetor=Peak, RBW=100kHz, VBW=300kHz

Note: We tests were performed in different modulation to find the worst case. And show the worst-case here.

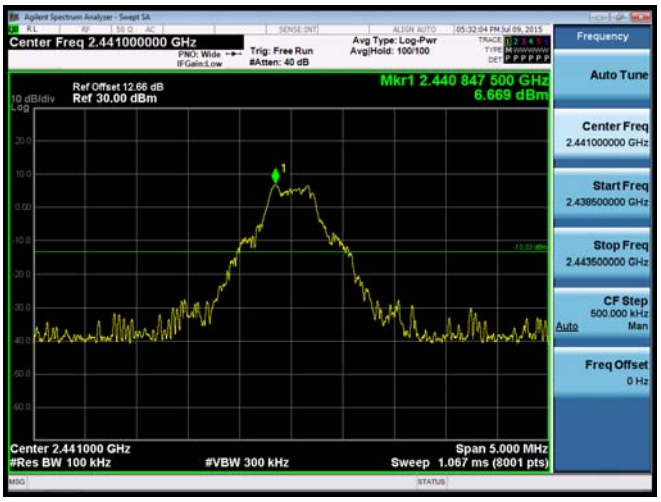
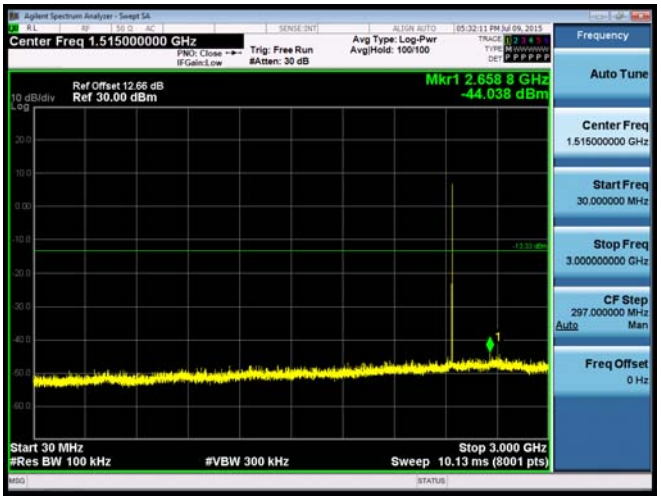
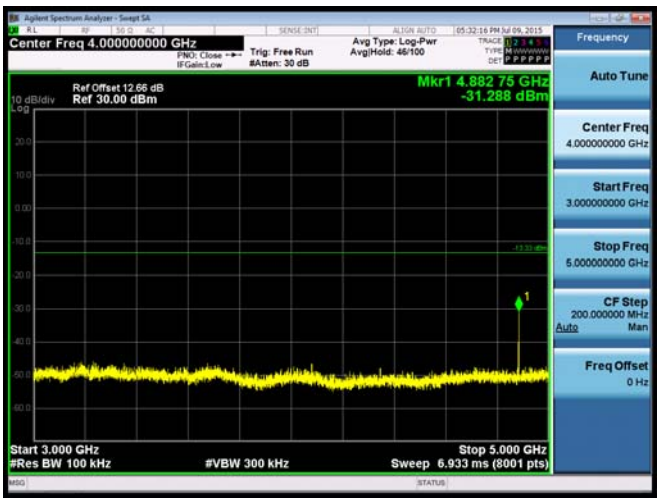
11.5. Test Graphs

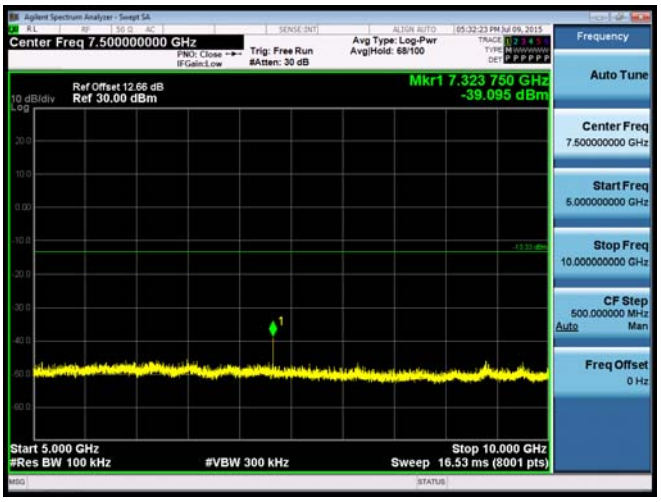
Mode 2	
2402	
	
	

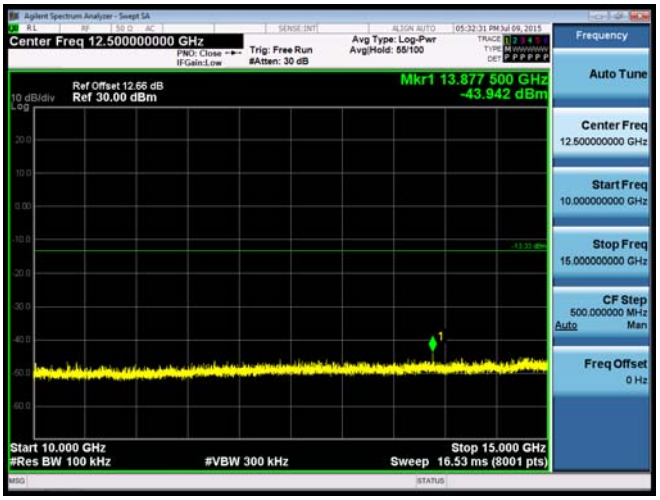

Agilent Spectrum Analyzer - Swept SA
Center Freq 7.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 68/100
05:30:26 PM Jul 09, 2015
Frequency
Mkr1 5.855 625 GHz
-45.662 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
7.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 16.53 ms (8001 pts)


Agilent Spectrum Analyzer - Swept SA
Center Freq 12.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 55/100
05:30:34 PM Jul 09, 2015
Frequency
Mkr1 14.820 000 GHz
-44.127 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
15.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 16.53 ms (8001 pts)

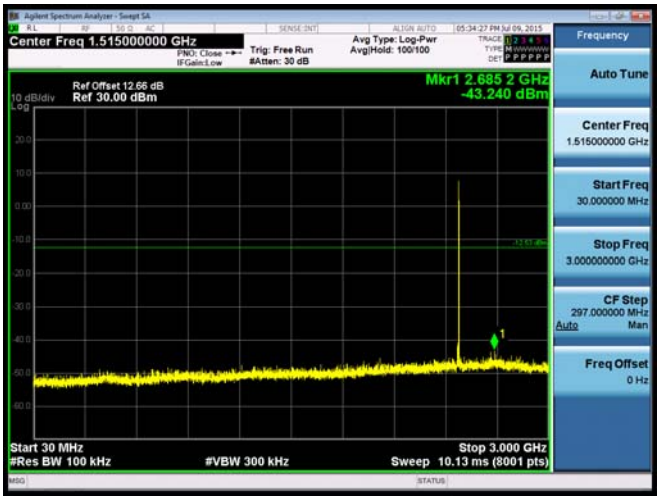
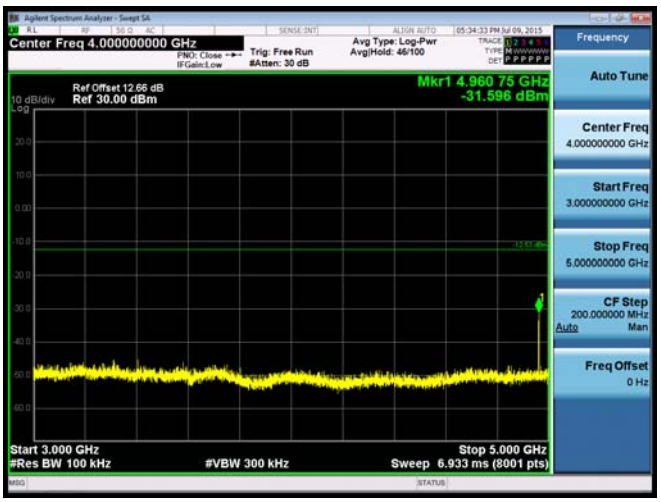

Agilent Spectrum Analyzer - Swept SA
Center Freq 20.000000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 32 dB
Avg Type: Log-Pwr
Avg|Hold: 41/100
05:30:42 PM Jul 09, 2015
Frequency
Mkr1 24.961 25 GHz
-34.033 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
20.000000000 GHz
Start Freq
15.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.000000000 GHz
Auto
Man
Freq Offset
0 Hz
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 32.53 ms (8001 pts)

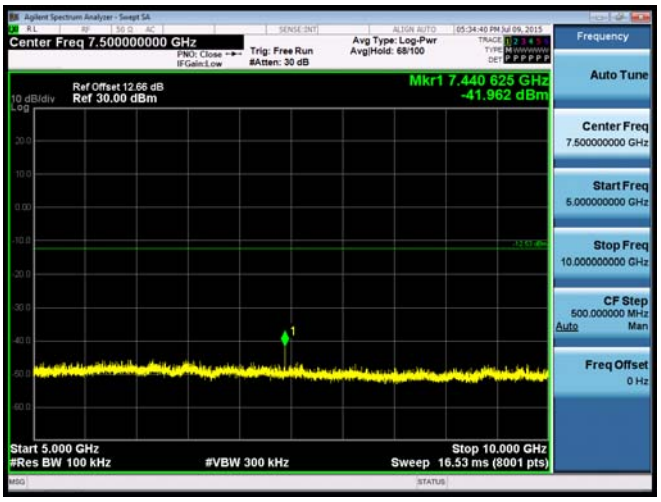
2441	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.441000000 GHz PNO: Wide IFGain:Low Trig: Free Run #Atten: 40 dB Avg Type: Log-Pwr Avg|Hold: 100/100 05:32:04 PM Jul 09, 2015 Frequency Auto Tune Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Mkr1 2.440 847 500 GHz 6.669 dBm Center Freq 2.441000000 GHz Start Freq 2.438500000 GHz Stop Freq 2.443500000 GHz CF Step 500.000 kHz Auto Man Freq Offset 0 Hz Center 2.441000 GHz #Res BW 100 kHz #VBW 300 kHz Span 5.000 MHz Sweep 1.067 ms (8001 pts) MSG STATUS  Agilent Spectrum Analyzer - Swept SA Center Freq 1.515000000 GHz PNO: Close IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 100/100 05:32:11 PM Jul 09, 2015 Frequency Auto Tune Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Mkr1 2.658 8 GHz -44.038 dBm Center Freq 1.515000000 GHz Start Freq 30.000000 MHz Stop Freq 3.000000000 GHz CF Step 297.000000 MHz Auto Man Freq Offset 0 Hz Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 3.000 GHz Sweep 10.13 ms (8001 pts) MSG STATUS  Agilent Spectrum Analyzer - Swept SA Center Freq 4.000000000 GHz PNO: Close IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 46/100 05:32:16 PM Jul 09, 2015 Frequency Auto Tune Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Mkr1 4.882 75 GHz -31.288 dBm Center Freq 4.000000000 GHz Start Freq 3.000000000 GHz Stop Freq 5.000000000 GHz CF Step 200.000000 MHz Auto Man Freq Offset 0 Hz Start 3.000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 5.000 GHz Sweep 6.933 ms (8001 pts) MSG STATUS

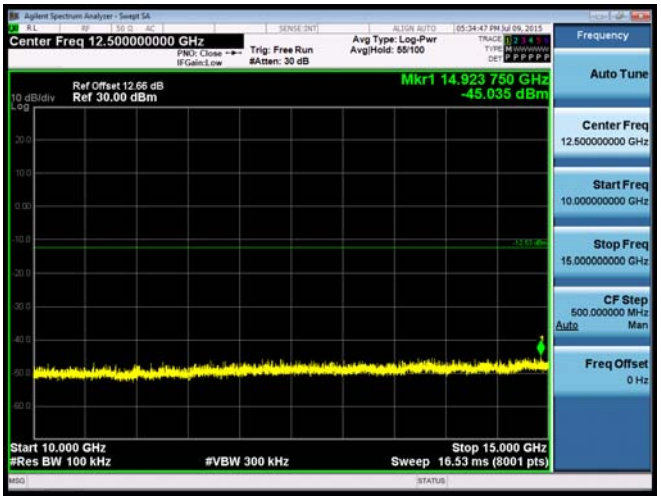

Agilent Spectrum Analyzer - Swept SA
Center Freq 7.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 68/100
05:32:23 PM Jul 09, 2015
Frequency
Mkr1 7.323 750 GHz
-39.095 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
7.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 16.53 ms (8001 pts)


Agilent Spectrum Analyzer - Swept SA
Center Freq 12.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 55/100
05:32:31 PM Jul 09, 2015
Frequency
Mkr1 13.877 500 GHz
-43.942 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
15.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 16.53 ms (8001 pts)

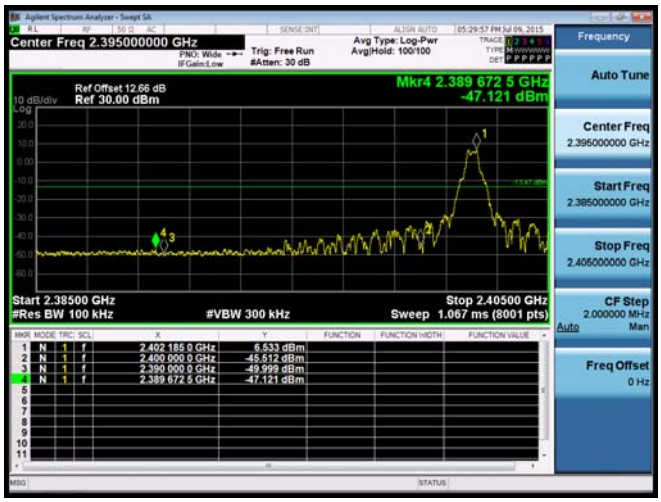
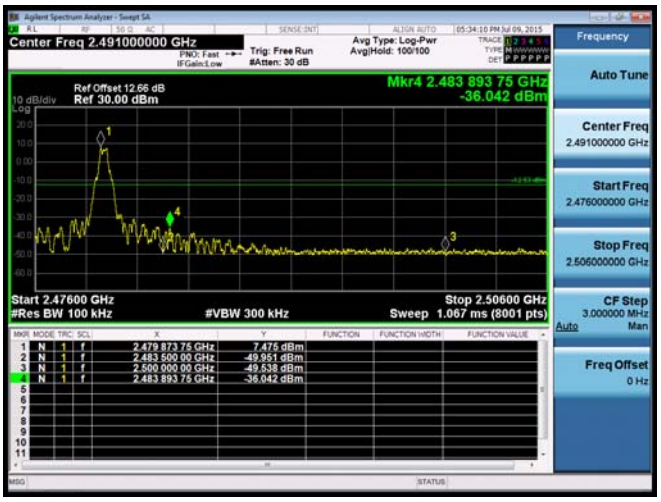

Agilent Spectrum Analyzer - Swept SA
Center Freq 20.000000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 32 dB
Avg Type: Log-Pwr
Avg|Hold: 41/100
05:32:38 PM Jul 09, 2015
Frequency
Mkr1 24.948 75 GHz
-33.797 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
20.000000000 GHz
Start Freq
15.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
1.000000000 GHz
Auto
Man
Freq Offset
0 Hz
Start 15.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 32.53 ms (8001 pts)

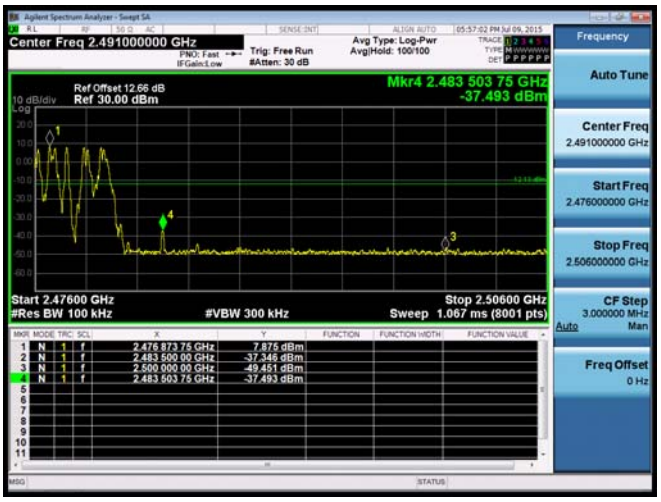
2480	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.480000000 GHz PNO: Wide IFGain:Low Trig: Free Run #Atten: 40 dB Avg Type: Log-Pwr Avg|Hold: 100/100 05:34:21 PM Jul 09, 2015 Frequency Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Mkr1 2.479 846 250 GHz 7.467 dBm Auto Tune Center Freq 2.480000000 GHz Start Freq 2.477500000 GHz Stop Freq 2.482500000 GHz CF Step 500.000 kHz Auto Man Freq Offset 0 Hz Center 2.480000 GHz #Res BW 100 kHz #VBW 300 kHz Span 5.000 MHz Sweep 1.067 ms (8001 pts)  Agilent Spectrum Analyzer - Swept SA Center Freq 1.515000000 GHz PNO: Close IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 100/100 05:34:27 PM Jul 09, 2015 Frequency Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Mkr1 2.685 2 GHz -43.240 dBm Auto Tune Center Freq 1.515000000 GHz Start Freq 30.000000 MHz Stop Freq 3.000000000 GHz CF Step 297.000000 MHz Auto Man Freq Offset 0 Hz Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 3.000 GHz Sweep 10.13 ms (8001 pts)  Agilent Spectrum Analyzer - Swept SA Center Freq 4.000000000 GHz PNO: Close IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 46/100 05:34:33 PM Jul 09, 2015 Frequency Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Mkr1 4.960 75 GHz -31.596 dBm Auto Tune Center Freq 4.000000000 GHz Start Freq 3.000000000 GHz Stop Freq 5.000000000 GHz CF Step 200.000000 MHz Auto Man Freq Offset 0 Hz Start 3.000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 5.000 GHz Sweep 6.933 ms (8001 pts)

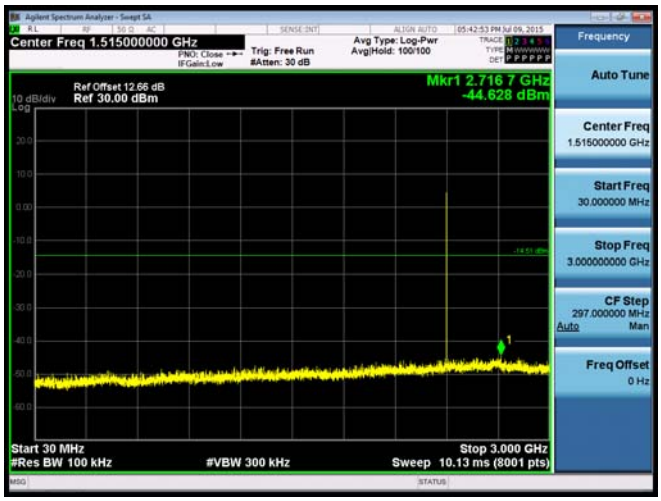


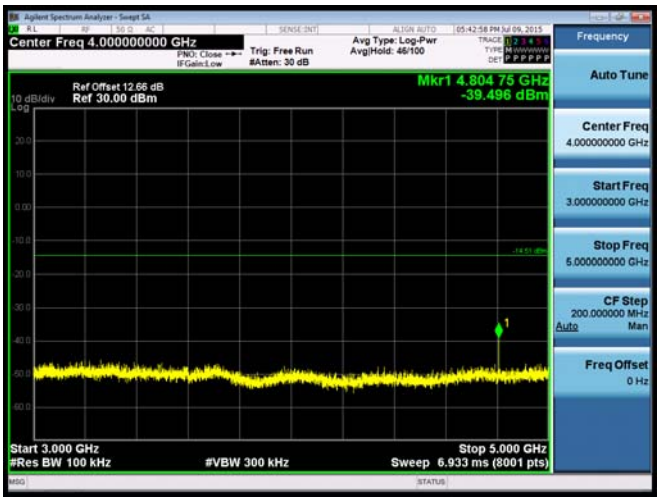


Note:No emissions was found between 9kHz to 30MHz.

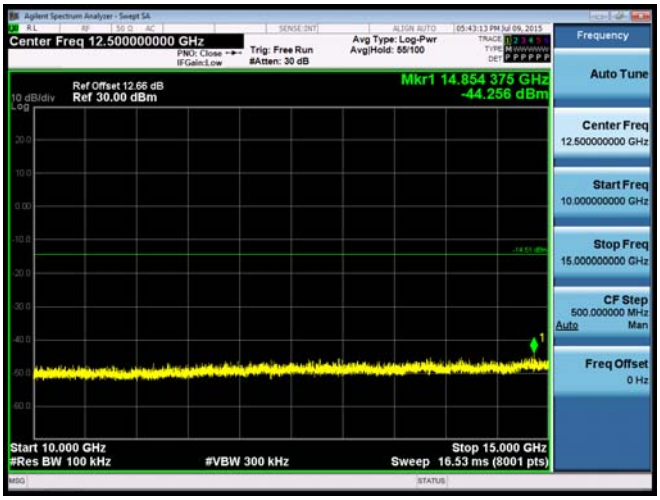
Mode 2/2402	
Mode 2/2480	
Mode 5/Hopping-2402	

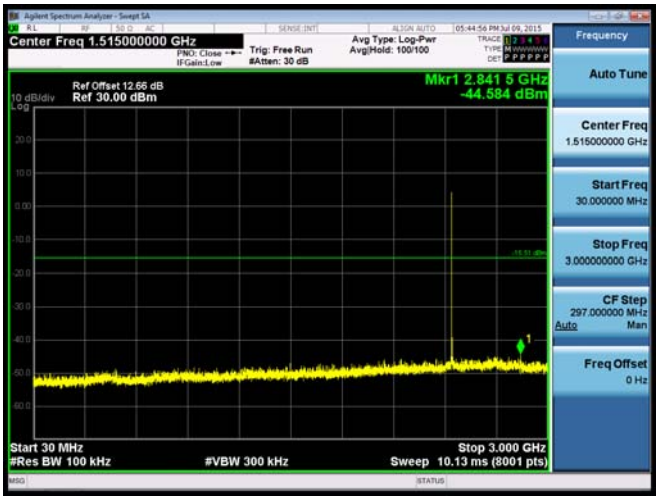
Mode 5/Hopping-2480	

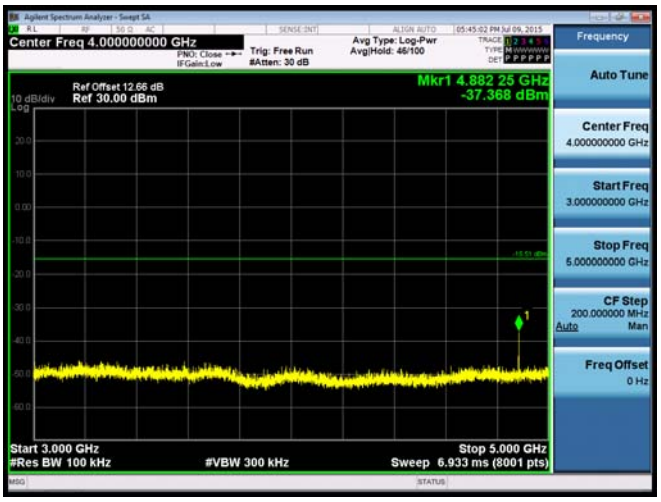
Mode 4: 8DPSK Mode	
2402	
	

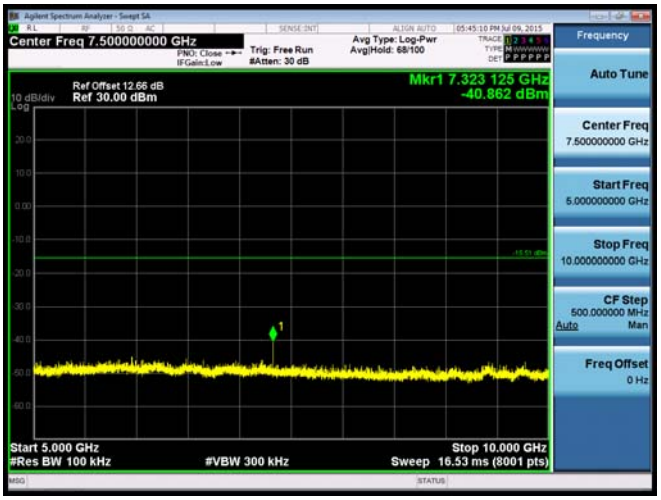

Agilent Spectrum Analyzer - Swept SA
Center Freq 4.000000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 46/100
05:42:58 PM Jul 09, 2015
Frequency
Mkr1 4.804 75 GHz
-39.496 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
4.000000000 GHz
Start Freq
3.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
200.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 3.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 6.933 ms (8001 pts)
MSG
STATUS

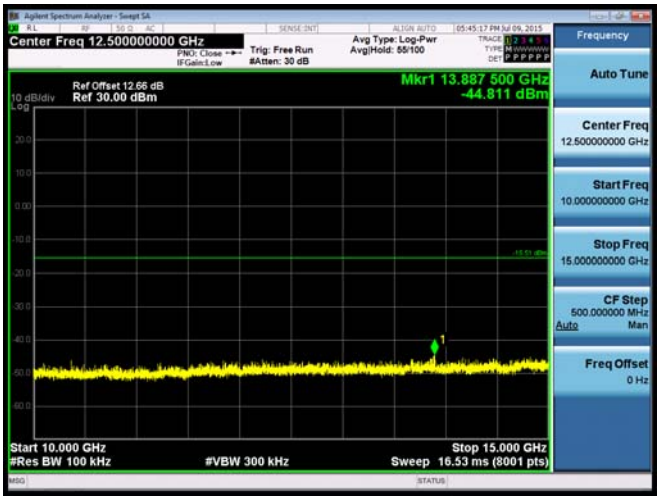

Agilent Spectrum Analyzer - Swept SA
Center Freq 7.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 68/100
05:43:06 PM Jul 09, 2015
Frequency
Mkr1 6.179 375 GHz
-45.211 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
7.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 16.53 ms (8001 pts)
MSG
STATUS

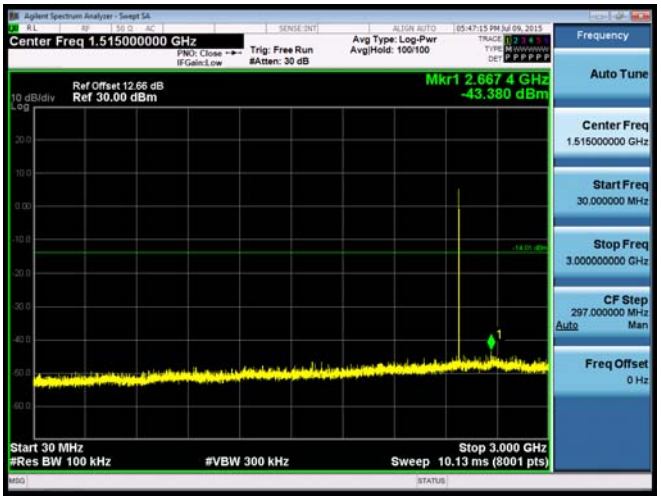

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 55/100
05:43:13 PM Jul 09, 2015
Frequency
Mkr1 14.854 375 GHz
-44.256 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
15.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 16.53 ms (8001 pts)
MSG
STATUS

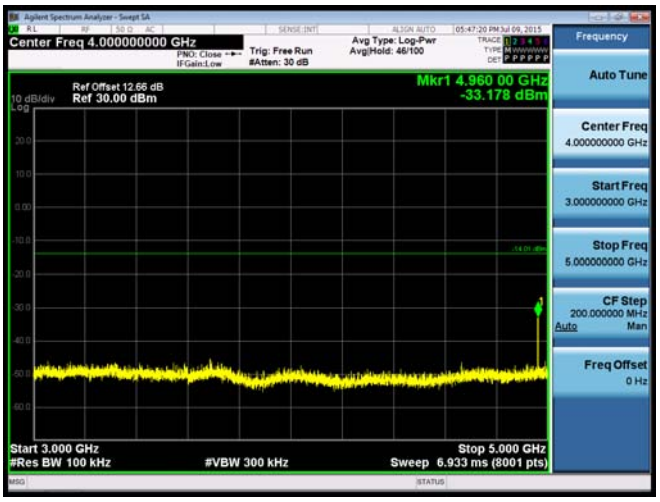
	 Agilent Spectrum Analyzer - Swept SA Center Freq 20.000000000 GHz PNO: Close IFGain:Low Trig: Free Run #Atten: 32 dB Avg Type: Log-Pwr Avg|Hold: 41/100 05:43:20 PM Jul 09, 2015 Frequency Mkr1 24.311 25 GHz -33.905 dBm Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Auto Tune Center Freq 20.000000000 GHz Start Freq 15.000000000 GHz Stop Freq 25.000000000 GHz CF Step 1.000000000 GHz Auto Man Freq Offset 0 Hz Start 15.000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 25.000 GHz Sweep 32.53 ms (8001 pts) MSG STATUS
2441	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.441000000 GHz PNO: Wide IFGain:Low Trig: Free Run #Atten: 40 dB Avg Type: Log-Pwr Avg|Hold: 100/100 05:44:50 PM Jul 09, 2015 Frequency Mkr1 2.441 080 625 GHz 4.494 dBm Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Auto Tune Center Freq 2.441000000 GHz Start Freq 2.438500000 GHz Stop Freq 2.443500000 GHz CF Step 500.000 kHz Auto Man Freq Offset 0 Hz Center 2.441000 GHz #Res BW 100 kHz #VBW 300 kHz Span 5.000 MHz Sweep 1.067 ms (8001 pts) MSG STATUS
	 Agilent Spectrum Analyzer - Swept SA Center Freq 1.515000000 GHz PNO: Close IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 100/100 05:44:56 PM Jul 09, 2015 Frequency Mkr1 2.841 5 GHz -44.584 dBm Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Auto Tune Center Freq 1.515000000 GHz Start Freq 30.000000 MHz Stop Freq 3.000000000 GHz CF Step 297.000000 MHz Auto Man Freq Offset 0 Hz Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 3.000 GHz Sweep 10.13 ms (8001 pts) MSG STATUS

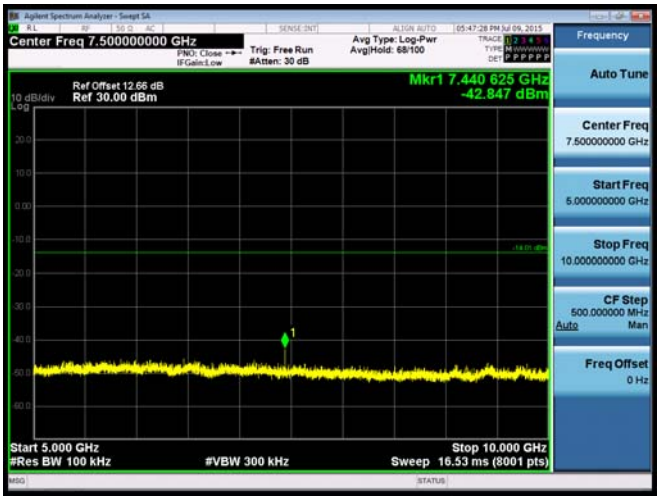

Agilent Spectrum Analyzer - Swept SA
Center Freq 4.000000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 46/100
05:45:02 PM Jul 09, 2015
Frequency
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr1 4.882 25 GHz
-37.368 dBm
Auto Tune
Center Freq
4.000000000 GHz
Start Freq
3.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
200.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 3.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 6.933 ms (8001 pts)
MSG
STATUS

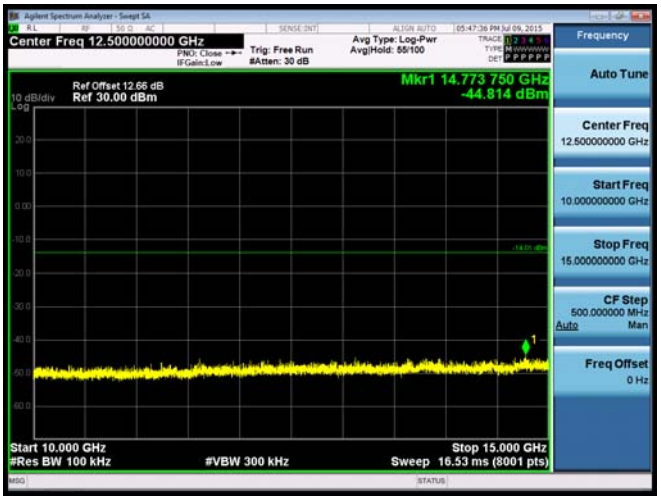

Agilent Spectrum Analyzer - Swept SA
Center Freq 7.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 68/100
05:45:10 PM Jul 09, 2015
Frequency
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr1 7.323 125 GHz
-40.862 dBm
Auto Tune
Center Freq
7.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 16.53 ms (8001 pts)
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
Center Freq 12.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 55/100
05:45:17 PM Jul 09, 2015
Frequency
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Mkr1 13.887 500 GHz
-44.811 dBm
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
15.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 16.53 ms (8001 pts)
MSG
STATUS

	 Agilent Spectrum Analyzer - Swept SA Center Freq 20.000000000 GHz PNO: Close IFGain:Low Trig: Free Run #Atten: 32 dB Avg Type: Log-Pwr Avg|Hold: 41/100 05:45:25 PM Jul 09, 2015 Mkr1 24.867 50 GHz -33.939 dBm Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Start 15.000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 25.000 GHz Sweep 32.53 ms (8001 pts) Frequency Auto Tune Center Freq 20.000000000 GHz Start Freq 15.000000000 GHz Stop Freq 25.000000000 GHz CF Step 1.000000000 GHz Auto Man Freq Offset 0 Hz
2480	 Agilent Spectrum Analyzer - Swept SA Center Freq 2.480000000 GHz PNO: Wide IFGain:Low Trig: Free Run #Atten: 40 dB Avg Type: Log-Pwr Avg|Hold: 100/100 05:47:08 PM Jul 09, 2015 Mkr1 2.480 153 125 GHz 5.990 dBm Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Center 2.480000 GHz #Res BW 100 kHz #VBW 300 kHz Span 5.000 MHz Sweep 1.067 ms (8001 pts) Frequency Auto Tune Center Freq 2.480000000 GHz Start Freq 2.477500000 GHz Stop Freq 2.482500000 GHz CF Step 500.000 kHz Auto Man Freq Offset 0 Hz
	 Agilent Spectrum Analyzer - Swept SA Center Freq 1.515000000 GHz PNO: Close IFGain:Low Trig: Free Run #Atten: 30 dB Avg Type: Log-Pwr Avg|Hold: 100/100 05:47:15 PM Jul 09, 2015 Mkr1 2.667 4 GHz -43.380 dBm Ref Offset 12.66 dB 10 dB/div Ref 30.00 dBm Log Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 3.000 GHz Sweep 10.13 ms (8001 pts) Frequency Auto Tune Center Freq 1.515000000 GHz Start Freq 30.000000 MHz Stop Freq 3.000000000 GHz CF Step 297.000000 MHz Auto Man Freq Offset 0 Hz

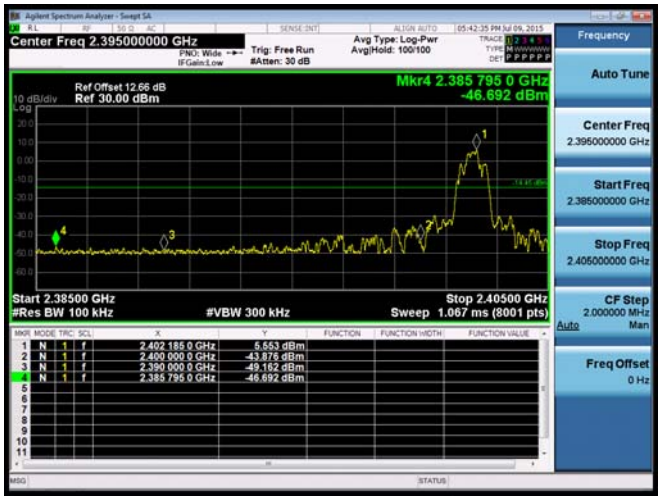

Agilent Spectrum Analyzer - Swept SA
Center Freq 4.000000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 46/100
05:47:20 PM Jul 09, 2015
Frequency
Mkr1 4.960 00 GHz
-33.178 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
4.000000000 GHz
Start Freq
3.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
200.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 3.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 6.933 ms (8001 pts)
MSG
STATUS

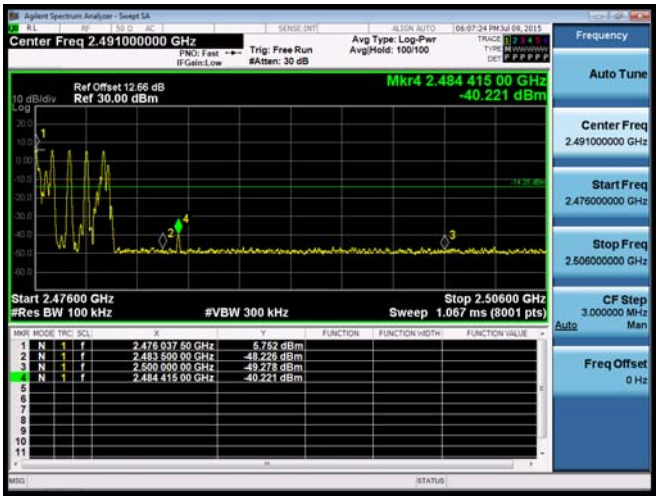

Agilent Spectrum Analyzer - Swept SA
Center Freq 7.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 68/100
05:47:28 PM Jul 09, 2015
Frequency
Mkr1 7.440 625 GHz
-42.847 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
7.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
Sweep 16.53 ms (8001 pts)
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
Center Freq 12.500000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold: 55/100
05:47:36 PM Jul 09, 2015
Frequency
Mkr1 14.773 750 GHz
-44.814 dBm
Ref Offset 12.66 dB
10 dB/div
Ref 30.00 dBm
Log
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
10.000000000 GHz
Stop Freq
15.000000000 GHz
CF Step
500.000000 MHz
Auto
Man
Freq Offset
0 Hz
Start 10.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 15.000 GHz
Sweep 16.53 ms (8001 pts)
MSG
STATUS

Note:No emissions was found between 9kHz to 30MHz.

8DPSK Mode (Bandedge)	
Mode 4/2402	
Mode 4/2480	

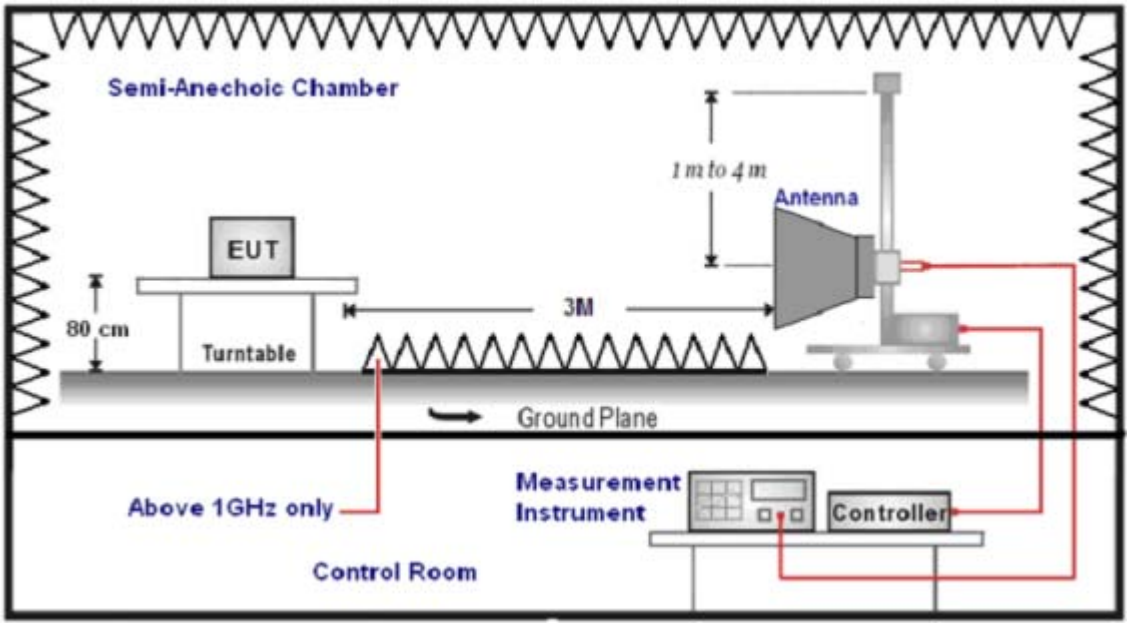
Mode 7/Hopping-2402	
Mode 7/Hopping-2480	

12 Band Edges Measurement

12.1. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

12.2. Test Setup



12.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	07/14/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2015	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	9120D	9120D-550	06/11/2015	(1)
Test Site	ATL	TE01	888001	08/28/2014	(1)
RF cable	WOKEN	---	C.10-07-07	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-08	10/24/2014	(1)
RF cable	WOKEN	---	C.10-07-09	10/24/2014	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
NOTE: N.C.R. = No Calibration Request. All the RF cables apply to 9 KHz to 40GHz.

12.4. Test Procedure

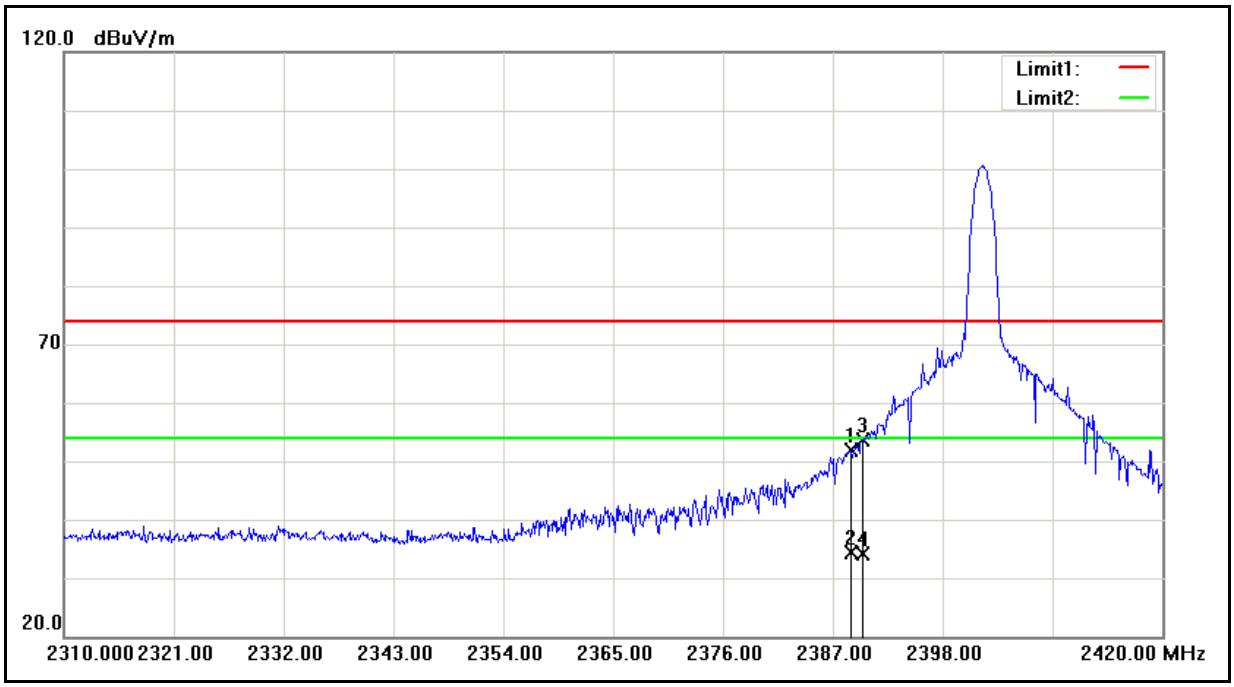
Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.
The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.
The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.
For measurements the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

Note: We tests were performed in different modulation to find the worst case. And show the worst-case here.

12.5. Test Result

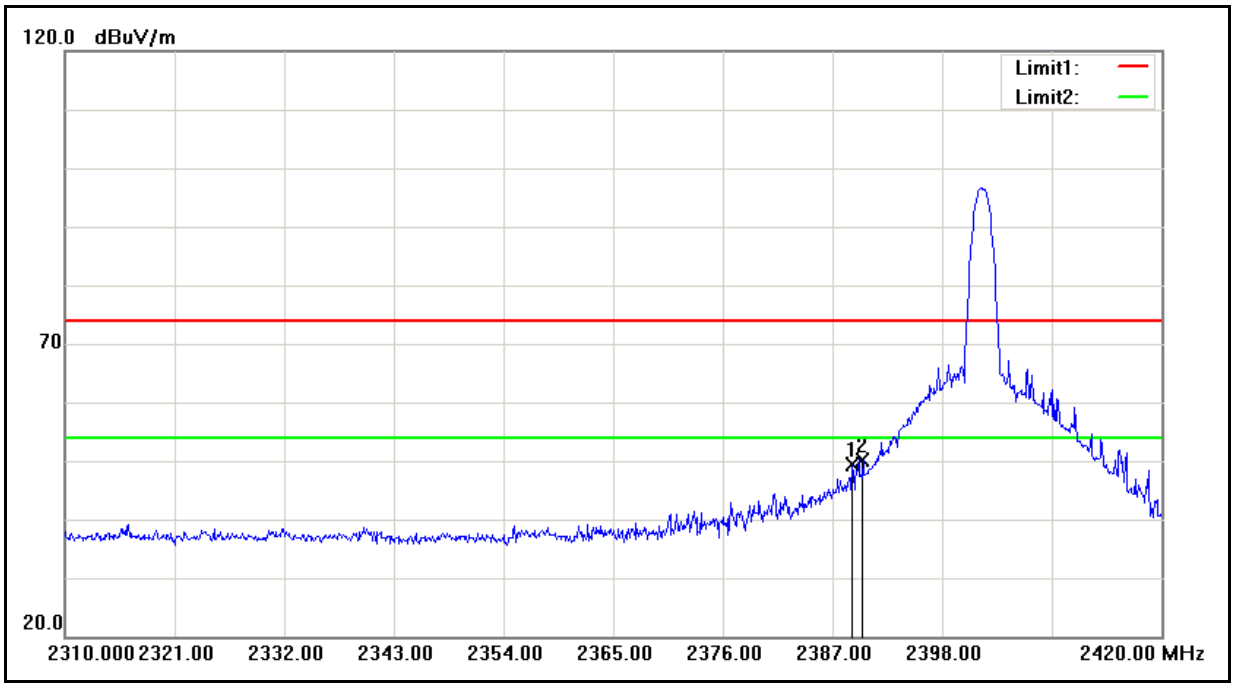
Note：We have test both un-hopping and hopping mode for the radiated bandedge test, and the un-hopping mode is worse case.

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2015/7/24
Frequency:	2402 MHz	Test By:	Louis
Ant.Polar.:	Horizontal		



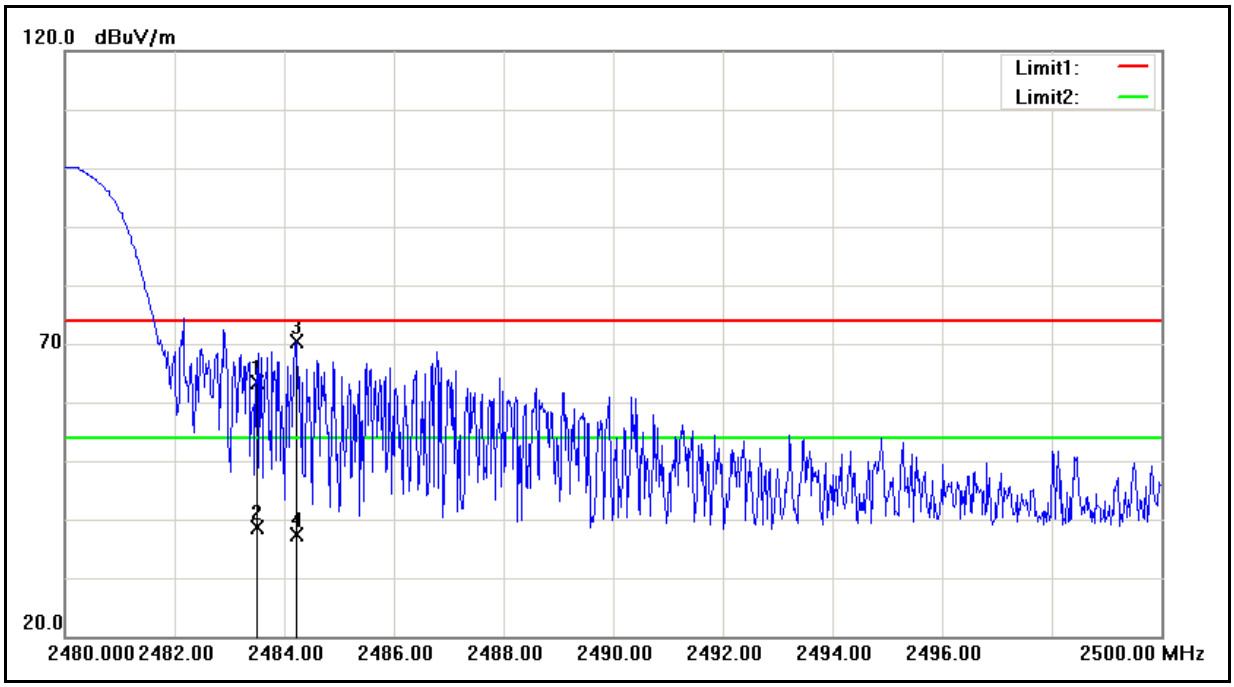
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.760	53.27	-1.33	51.94	74.00	-22.06	peak
2	2388.760	35.79	-1.33	34.46	54.00	-19.54	AVG
3	2390.000	54.97	-1.32	53.65	74.00	-20.35	peak
4	2390.000	35.52	-1.32	34.20	54.00	-19.80	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2015/7/24
Frequency:	2402 MHz	Test By:	Louis
Ant.Polar.:	Vertical		



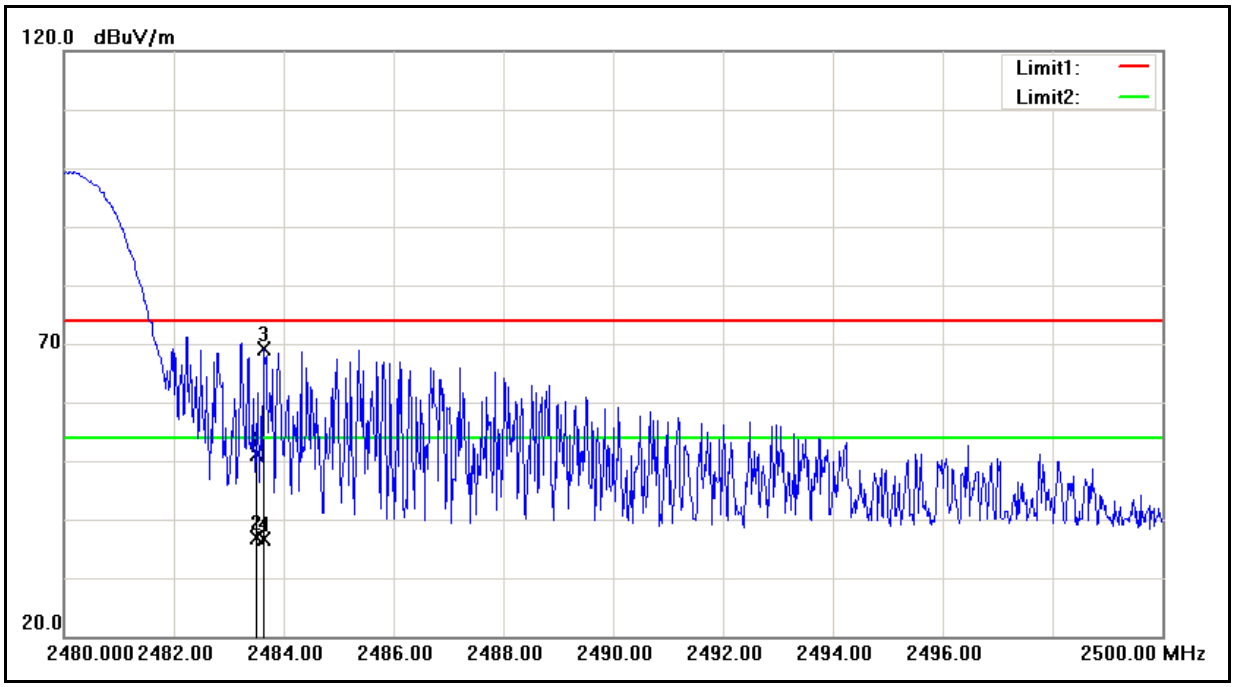
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.980	50.72	-1.33	49.39	74.00	-24.61	peak
2	2390.000	51.41	-1.32	50.09	74.00	-23.91	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2015/7/24
Frequency:	2480 MHz	Test By:	Louis
Ant.Polar.:	Horizontal		



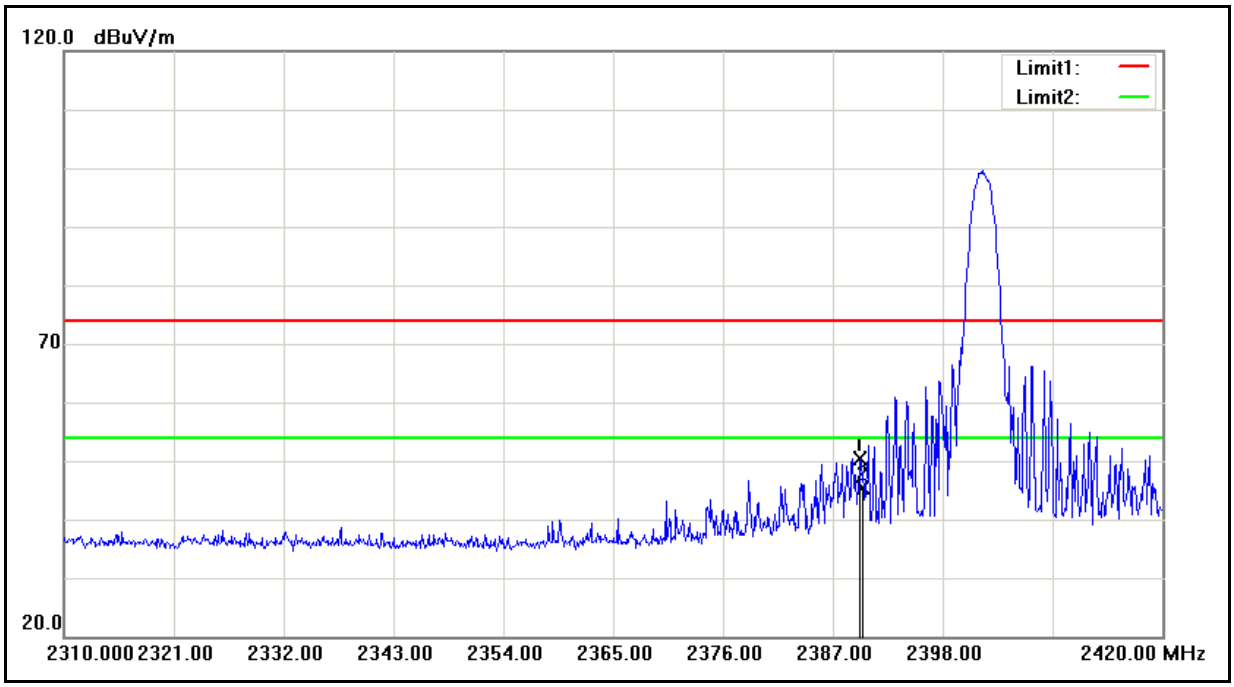
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	64.23	-0.92	63.31	74.00	-10.69	peak
2	2483.500	39.53	-0.92	38.61	54.00	-15.39	AVG
3	2484.220	71.36	-0.92	70.44	74.00	-3.56	peak
4	2484.220	38.39	-0.92	37.47	54.00	-16.53	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2015/7/24
Frequency:	2480 MHz	Test By:	Louis
Ant.Polar.:	Vertical		



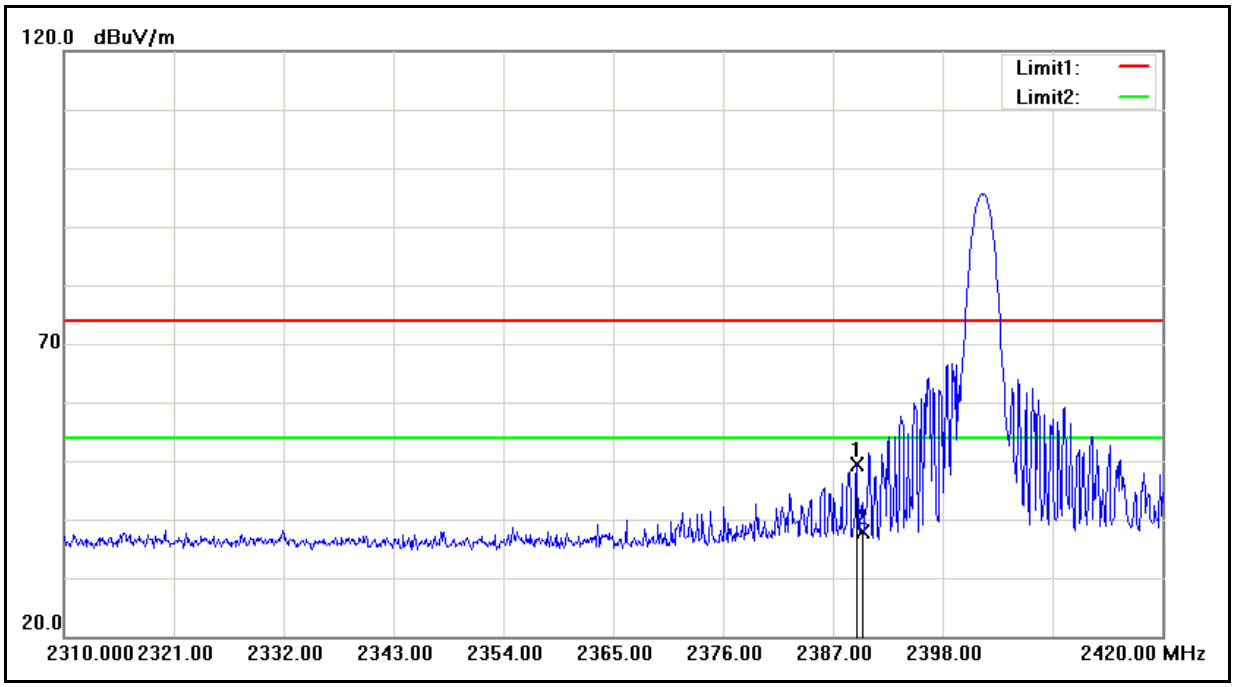
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	52.17	-0.92	51.25	74.00	-22.75	peak
2	2483.500	37.73	-0.92	36.81	54.00	-17.19	AVG
3	2483.640	69.98	-0.92	69.06	74.00	-4.94	Peak
4	2483.640	37.56	-0.92	36.64	54.00	-17.36	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 4	Date:	2015/7/24
Frequency:	2402 MHz	Test By:	Louis
Ant.Polar.:	Horizontal		



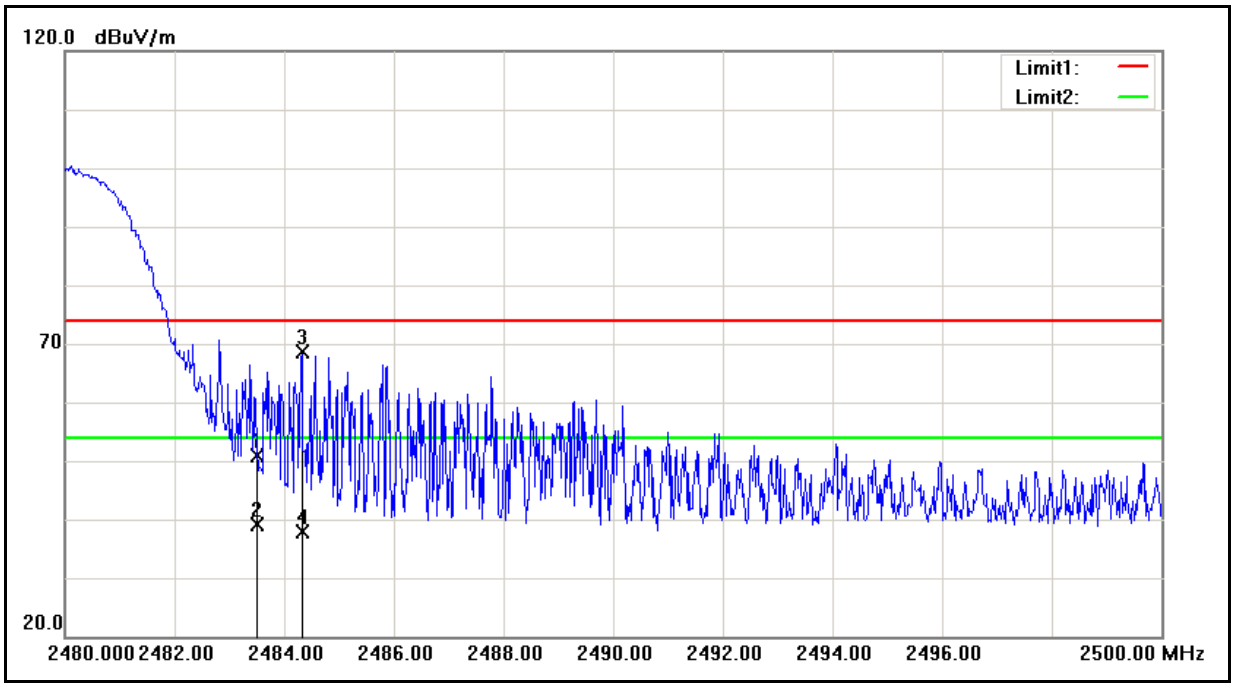
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.750	51.79	-1.32	50.47	74.00	-23.53	peak
2	2390.000	46.63	-1.32	45.31	74.00	-28.69	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 4	Date:	2015/7/24
Frequency:	2402 MHz	Test By:	Louis
Ant.Polar.:	Vertical		



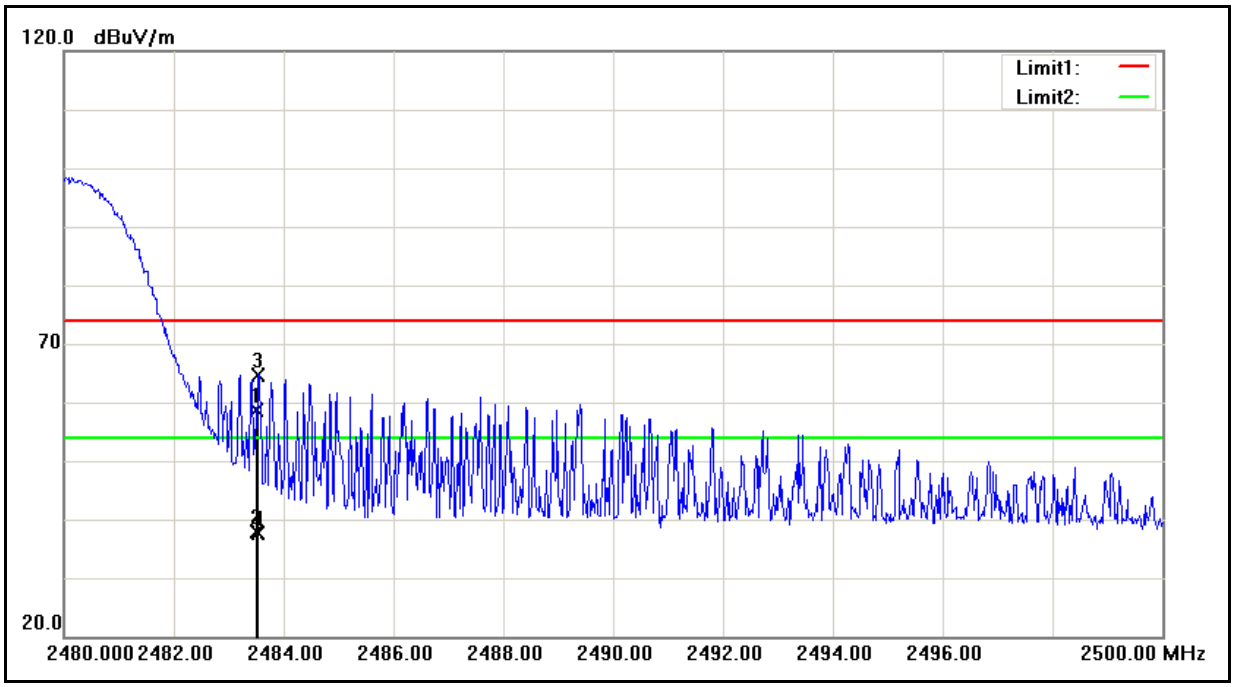
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.420	50.66	-1.33	49.33	74.00	-24.67	peak
2	2390.000	39.29	-1.32	37.97	74.00	-36.03	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 4	Date:	2015/7/24
Frequency:	2480 MHz	Test By:	Louis
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	51.73	-0.92	50.81	74.00	-23.19	peak
2	2483.500	40.05	-0.92	39.13	54.00	-14.87	AVG
3	2484.320	69.55	-0.92	68.63	74.00	-5.37	peak
4	2484.320	38.72	-0.92	37.80	54.00	-16.20	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.7V
Model Number:	W01	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 4	Date:	2015/7/24
Frequency:	2480 MHz	Test By:	Louis
Ant.Polar.:	Vertical		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	59.61	-0.92	58.69	74.00	-15.31	Peak
2	2483.500	38.91	-0.92	37.99	54.00	-16.01	AVG
3	2483.540	65.67	-0.92	64.75	74.00	-9.25	peak
4	2483.540	38.62	-0.92	37.70	54.00	-16.30	AVG

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).
2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

13 Antenna Measurement

13.1. Limit

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

13.2. Antenna Connector Construction

The antenna used in this product is internal antenna. And the maximum Gain of this antenna is only 1.0 dBi.

13.3. Antenna Gain

Mode 2: DH5	Low channel	Middle channel	High channel
Conducted power（dBm）	7.11	7.22	8.03
Radiated Power（dBm）	7.90	8.22	8.90
Gain（dBi）	0.79	1.00	0.87
Measurement uncertainty	±1.5dB(Cond.)/3dB(Rad.)		

--END OF REPORT--