



FCC TEST REPORT

According to

FCC CFR Title 47 Part 15 Subpart C

Applicant	: Suzhou innaso Intelligent Technology Co ., Ltd
Address	: 318, West of SuZhou Avenue, Jiangsu, China
Equipment	: inSona Wireless Relay
Model No.	: IN-C01-WR-4
Brand Name	: inSona [™]
FCC ID	: 2ACRFC01WR4

- The test result refers exclusively to the test presented test model / sample.
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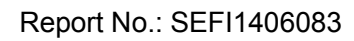


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I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 – 2009** and the energy emitted by this equipment was **passed** **CISPR PUB. 22 and FCC Part 15** in both radiated and conducted emission class B limits. Testing was carried out on Jul 15, 2014 at **CerpPASS Technology(Suzhou) Corp.**

Signature

Miro Chueh/ Technical director



1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.203	. Antenna Requirement	Pass
15.207	. Conducted Emission	Pass
15.209 15.247(d)	. Radiated Emission	Pass
15.247(a)(2)	. 6dB Bandwidth	Pass
15.247(b)	. Maximum Peak Output Power	Pass
15.247(d)	. 100kHz Bandwidth of Frequency Band Edges	Pass
15.247(e)	. Power Spectral Density	Pass
1.1307 1.1310 2.1091 2.1093	. RF Exposure Compliance	Pass



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Product name	Model No.
inSona Wireless Relay	IN-C01-WR-4

WLAN	inSona/EM3571406A003FL
Modulation	DSSS(O-QPSK)
Frequency Range	2405~~2475MHz
Number of Channels	15
Data Rate	DSSS(250kbps)
Antenna	Ceramic Chip (0.5 dBi)



2.2 Carrier Frequency of Channels

Channel	Frequency(MHz)	Channel	Frequency(MHz)
11	2405	19	2445
12	2410	20	2450
13	2415	21	2455
14	2420	22	2460
15	2425	23	2465
16	2430	24	2470
17	2435	25	2475
18	2440		



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. The following test modes was performed for RF test:
CH11: 2405MHz, CH19: 2445MHz, CH25: 2475MHz

**2.4 Description of Test System**

No	Device	Manufacturer	Model No.	Description
N/A	N/A	N/A	N/A	N/A

Use Cable:

No.	Cable	Quantity	Description
N/A	N/A	N/A	N/A



2.5 General Information of Test

Test Site:	CerpPASS Technology Corp.
Performand Location :	No.66,Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China
NVLAP LAB Code :	200814-0
FCC Registration Number :	916572, 331395
IC Registration Number :	7290A-1, 7290A-2
VCCI Registration Number :	T-343 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test below 1GHz G-227 for Radiated emission test above 1GHz

Laboratory accreditation



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
Band Edges	---	---	±2.2 dB
Power Spectral Density	---	---	±2.2 dB



3. Antenna Requirements

3.1 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.

3.2 Antenna Construction and Directional Gain

Antenna	Ceramic Chip (0.5 dBi)
---------	------------------------



4. Test of Conducted Emission

4.1 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 C63.4-2009 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 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

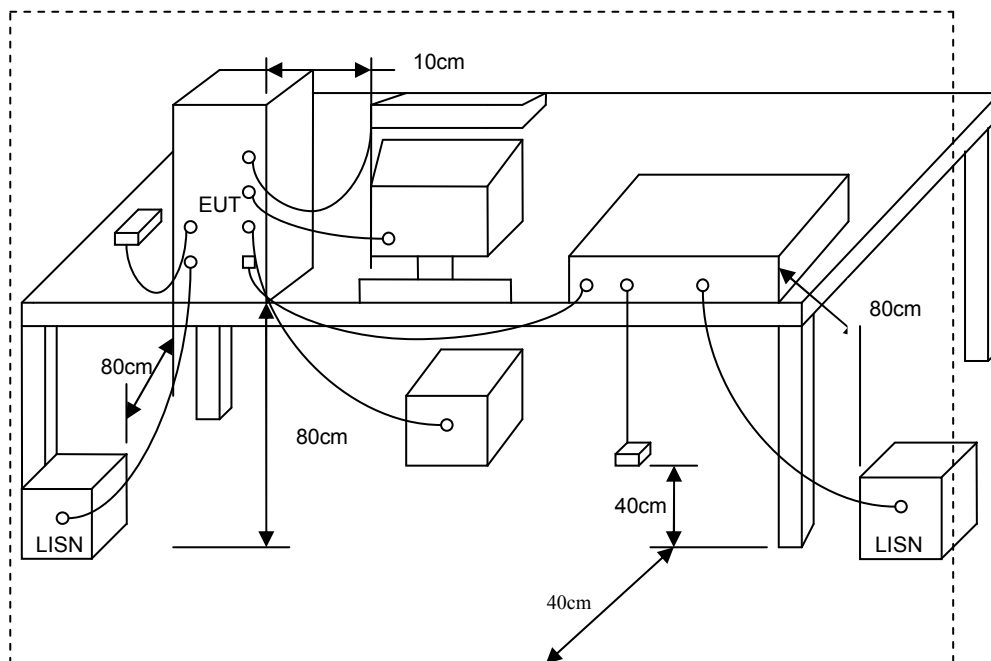
*Decreases with the logarithm of the frequency.

4.2 Test Procedures

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



4.3 Typical Test Setup



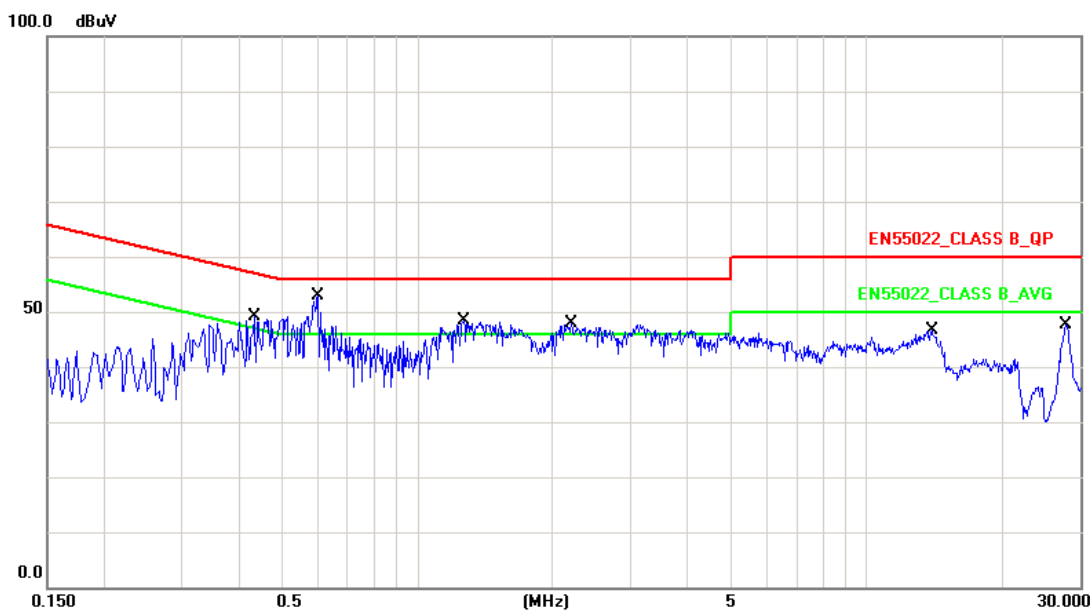
4.4 Measurement Equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Test Receiver	R&S	ESCI	100565	2014.03.24	2015.03.23
AMN	R&S	ESH2-Z5	100182	2013.09.11	2014.09.10
Two-Line V-Network	R&S	ENV216	100325	2013.12.04	2014.12.03
ISN	FCC	FCC-TLISN-T 2-02	20379	2014.03.24	2015.03.23
ISN	FCC	FCC-TLISN-T 4-02	20380	2014.03.24	2015.03.23
ISN	FCC	FCC-TLISN-T 8-02	20381	2014.03.24	2015.03.23
ISN	TESEQ	ISN ST08	30175	2014.03.24	2015.03.23
Current Probe	R&S	EZ-17	100303	2014.04.04	2015.04.03
Passive Voltage Probe	R&S	ESH2-Z3	100026	2014.03.24	2015.03.23
Pulse Limiter	R&S	ESH3-Z2	100529	2014.03.24	2015.03.23
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-004	2014.03.31	2015.03.30



4.5 Test Result and Data

Test Mode :	CH11 2405MHz		
AC Power :	AC 230V/50Hz	Phase :	LINE
Temperature :	24℃	Humidity :	50%
Pressure(mbar) :	1002	Date :	2014/07/14

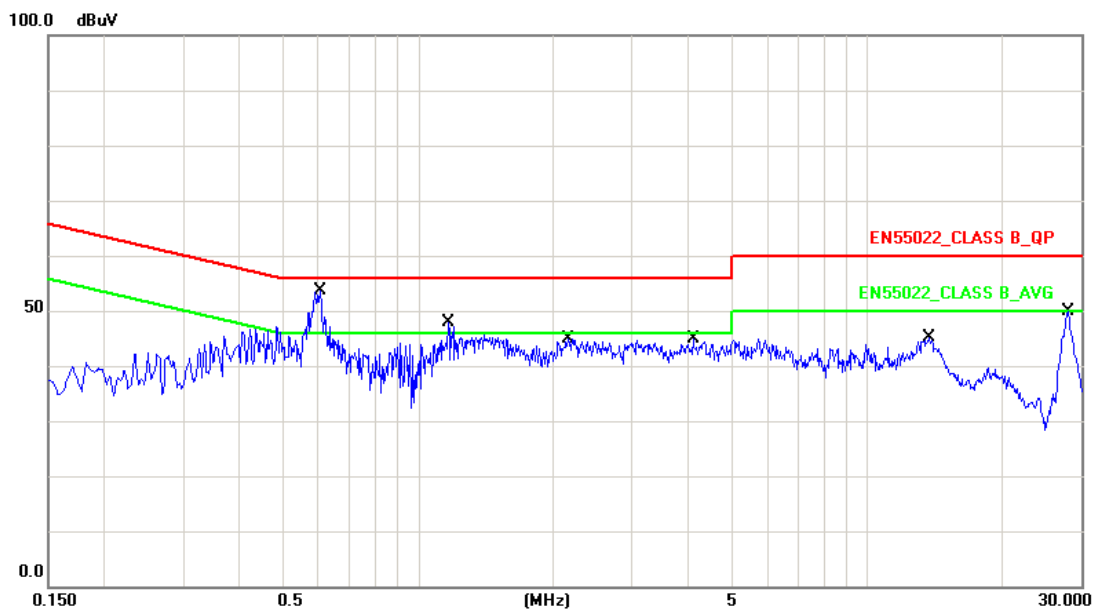


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4340	10.15	32.45	42.60	57.18	-14.58	QP
2	0.4340	10.15	11.27	21.42	47.18	-25.76	AVG
3	0.6020	10.15	36.58	46.73	56.00	-9.27	QP
4	0.6020	10.15	16.08	26.23	46.00	-19.77	AVG
5	1.2700	10.16	31.51	41.67	56.00	-14.33	QP
6	1.2700	10.16	10.41	20.57	46.00	-25.43	AVG
7	2.2020	10.17	30.78	40.95	56.00	-15.05	QP
8	2.2020	10.17	10.13	20.30	46.00	-25.70	AVG
9	14.0020	10.48	29.88	40.36	60.00	-19.64	QP
10	14.0020	10.48	11.42	21.90	50.00	-28.10	AVG
11	27.9300	10.44	32.92	43.36	60.00	-16.64	QP
12	27.9300	10.44	17.40	27.84	50.00	-22.16	AVG

Note: Measurement Level = Reading Level + Correct Factor



Test Mode :	CH11 2405MHz		
AC Power :	AC 230V/50Hz	Phase :	NEUTRAL
Temperature :	24°C	Humidity :	50%
Pressure(mbar) :	1002	Date :	2014/07/14



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.6060	10.16	37.24	47.40	56.00	-8.60	QP
2	0.6060	10.16	20.90	31.06	46.00	-14.94	AVG
3	1.1700	10.18	28.87	39.05	56.00	-16.95	QP
4	1.1700	10.18	12.12	22.30	46.00	-23.70	AVG
5	2.1580	10.18	28.27	38.45	56.00	-17.55	QP
6	2.1580	10.18	12.67	22.85	46.00	-23.15	AVG
7	4.1100	10.22	26.49	36.71	56.00	-19.29	QP
8	4.1100	10.22	12.45	22.67	46.00	-23.33	AVG
9	13.7300	10.46	26.19	36.65	60.00	-23.35	QP
10	13.7300	10.46	12.78	23.24	50.00	-26.76	AVG
11	28.0140	10.30	34.93	45.23	60.00	-14.77	QP
12	28.0140	10.30	19.55	29.85	50.00	-20.15	AVG

Note: Measurement Level = Reading Level + Correct Factor



5. Test of Radiated Emission

5.1 Test Limit

Radiated emissions from 9 KHz to 25 GHz were measured according to the methods defines in ANSI C63.4-2009. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions

For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

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

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the below table.

Frequency (MHz)	Distance Meters	Radiated (dB μ V/ m)
30-230	10	30
230-1000	10	37

5.2 Test Procedures

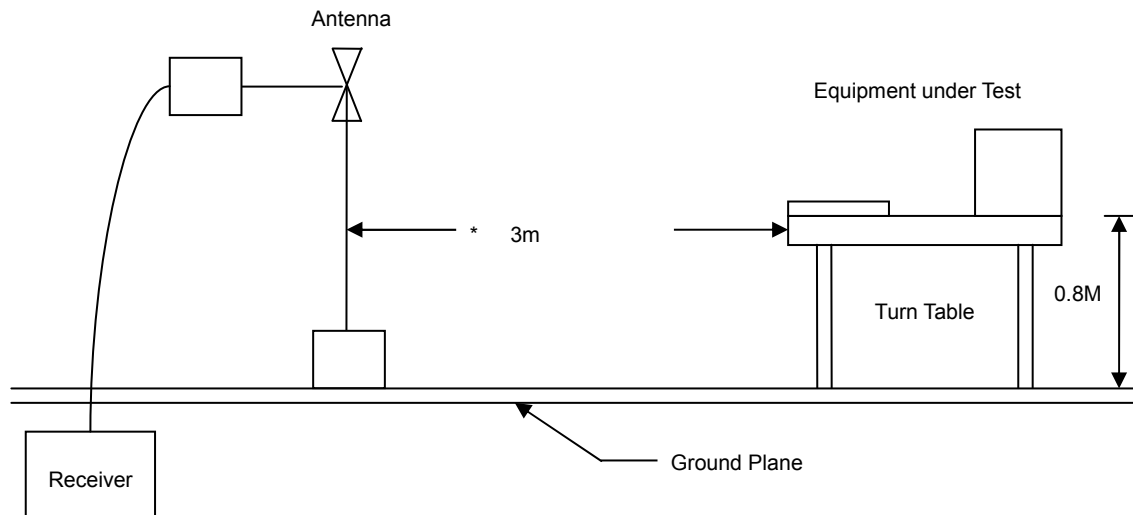
- The EUT was placed on a rotatable table top 0.8 meter above ground.
- The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna 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.
- 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.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- 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.



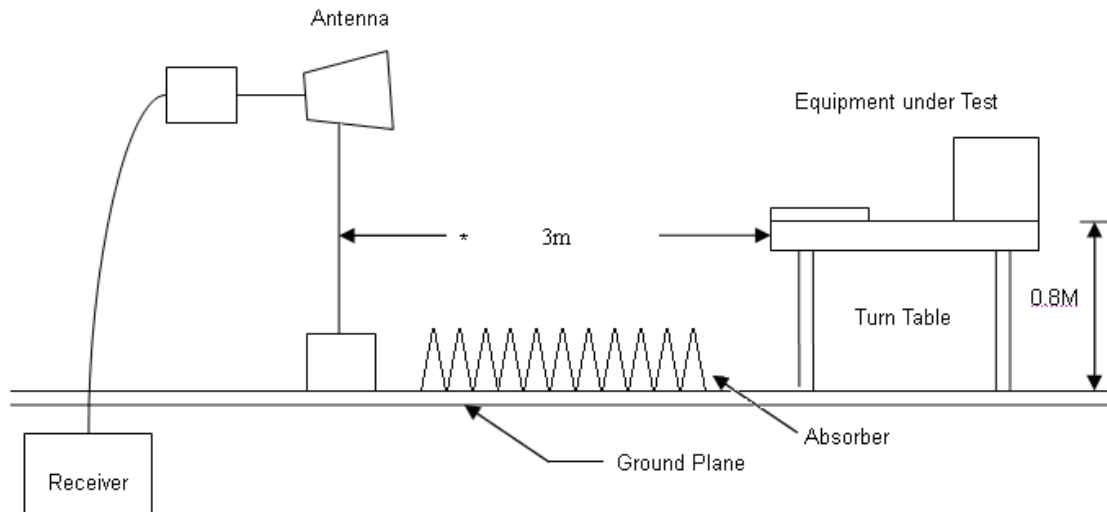
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured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

5.3 Typical Test Setup

Below 1GHz Test Setup



Above 1GHz Test Setup





5.4 Measurement Equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EMI Test Receiver	R&S	ESCI	100563	2014.02.10	2015.02.09
H64 Preamplifier	HP	8447F	3113A05582	2014.03.24	2015.03.23
Preamplifier	Agilent	8449B	3008A02342	2014.03.24	2015.03.23
Ultra Broadband Antenna	R&S	HL562	100362	2014.05.24	2015.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2014.05.24	2015.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-348	2013.11.04	2014.11.03
Spectrum Analyzer	R&S	FSP40	100324	2014.03.23	2015.03.24
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2014.03.31	2015.03.30



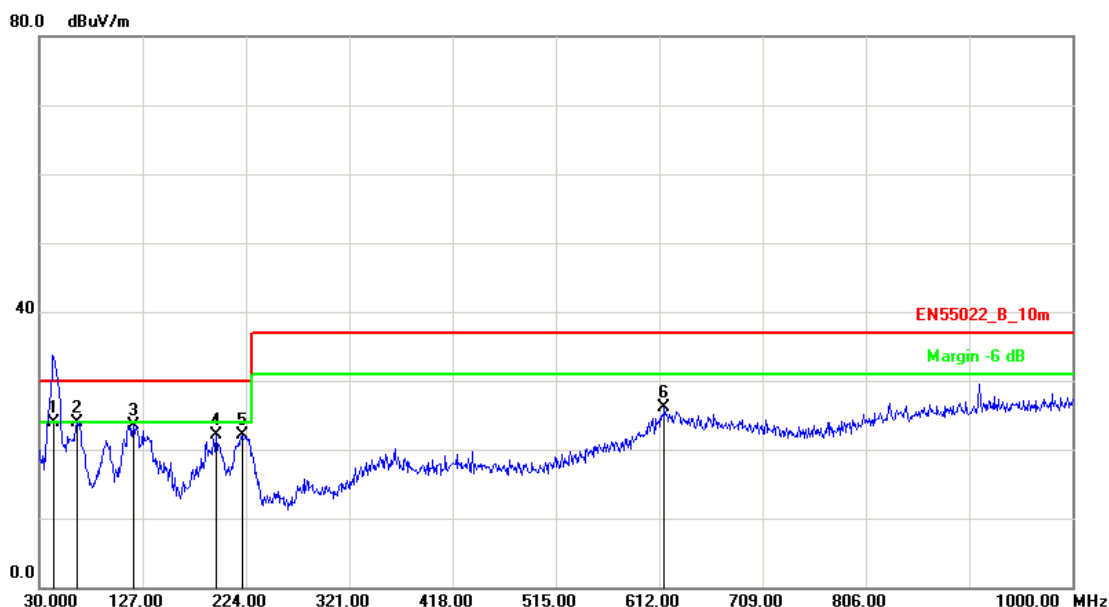
5.5 Test Result and Data

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

5.5.1 Test Result and Data of Transmitter

Under 1G:

Test Mode :	CH11: 2405MHz		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Horizontal
Temp :	24℃	Humidity :	49%
Pressure(mbar) :	1002	Date :	2014/07/21

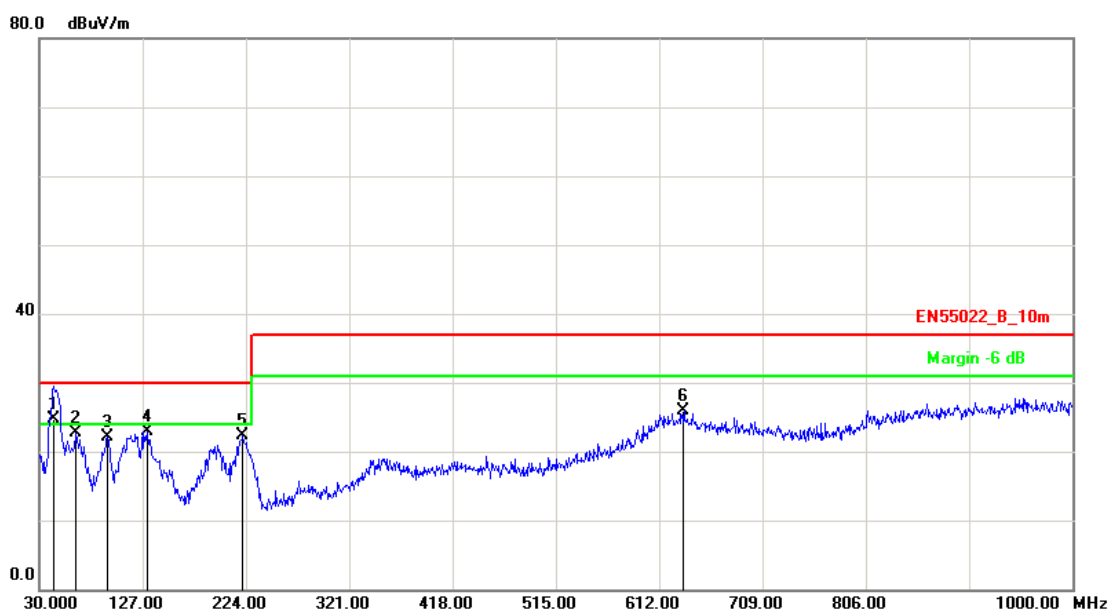


No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	43.7599	-9.28	33.15	23.87	30.00	-6.13	QP	100	359
2	65.8900	-14.42	38.40	23.98	30.00	-6.02	QP	200	262
3	118.2699	-10.08	33.60	23.52	30.00	-6.48	QP	100	1
4	195.8700	-10.53	32.55	22.02	30.00	-7.98	QP	200	25
5	220.1200	-12.19	34.30	22.11	30.00	-7.89	QP	100	85
6	616.8500	1.12	24.91	26.03	37.00	-10.97	QP	400	157

Note: Measurement Level = Reading Level + Correct Factor



Test Mode :	CH11: 2405MHz		
AC Power :	AC 230V/50Hz	Ant. Polarization:	Vertical
Temp :	24°C	Humidity :	49%
Pressure(mbar) :	1002	Date :	2014/07/21



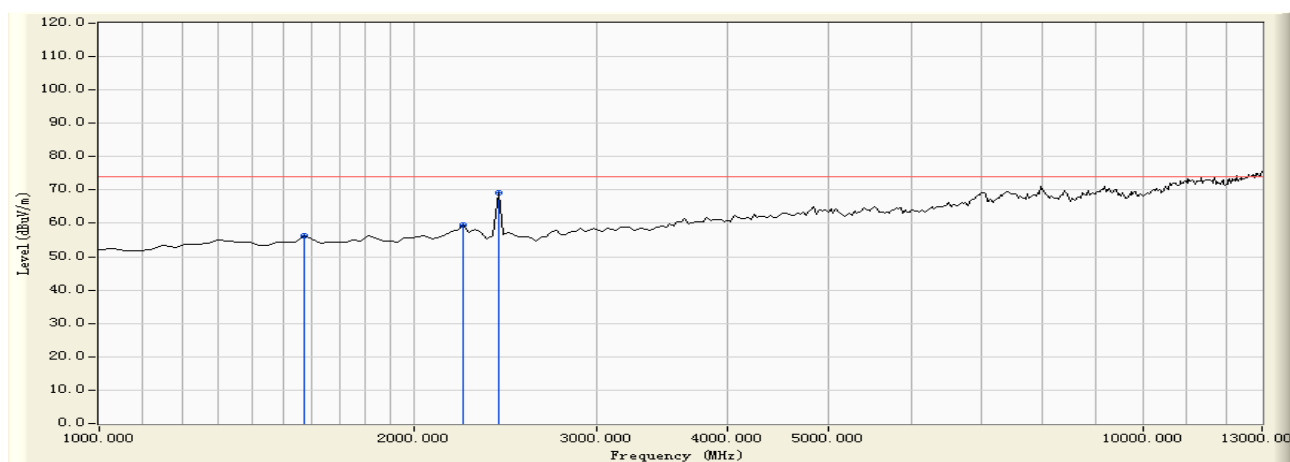
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	44.0600	-9.36	34.16	24.80	30.00	-5.20	QP	100	310
2	63.9500	-13.84	36.45	22.61	30.00	-7.39	QP	100	87
3	94.0199	-14.24	36.28	22.04	30.00	-7.96	QP	200	56
4	130.8800	-9.83	32.81	22.98	30.00	-7.02	QP	100	84
5	221.0900	-12.17	34.43	22.26	30.00	-7.74	QP	100	75
6	635.2798	1.01	24.84	25.85	37.00	-11.15	QP	200	114

Note: Measurement Level = Reading Level + Correct Factor



Above 1G:

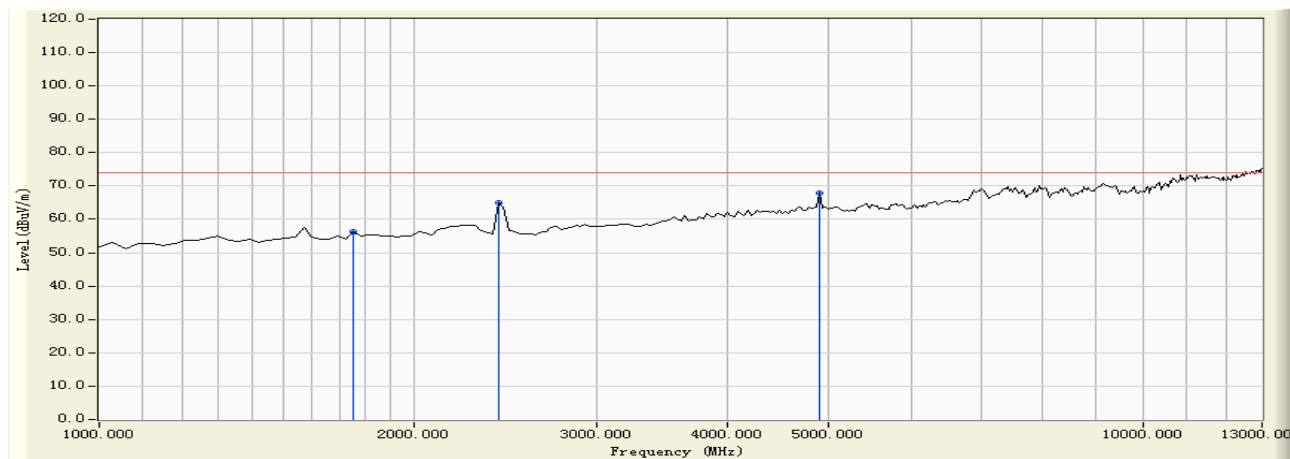
Engineer : matt	
Site : EMC Lab AC102	Time : 2014/07/17 - 15:13
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 0
EUT :	Probe : - HORIZONTAL
Power :	Note : relay zigbee 2405



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1570.000	6.763	49.492	56.255	-17.745	74.000	PEAK
2		2230.000	11.369	48.113	59.482	-14.518	74.000	PEAK
3	*	2410.000	10.661	58.467	69.128	-4.872	74.000	PEAK



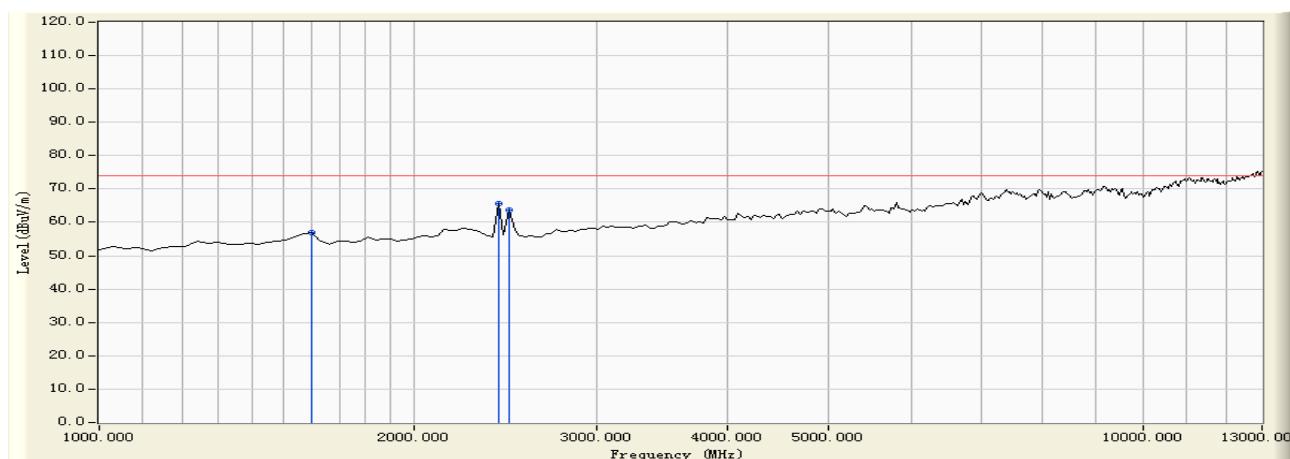
Engineer : matt	
Site : EMC Lab AC102	Time : 2014/07/17 - 15:16
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 0
EUT :	Probe : - HORIZONTAL
Power :	Note : relay zigbee 2445



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1750.000	7.275	49.145	56.420	-17.580	74.000	PEAK
2		2410.000	10.661	54.439	65.100	-8.900	74.000	PEAK
3	*	4900.000	19.108	48.805	67.913	-6.087	74.000	PEAK



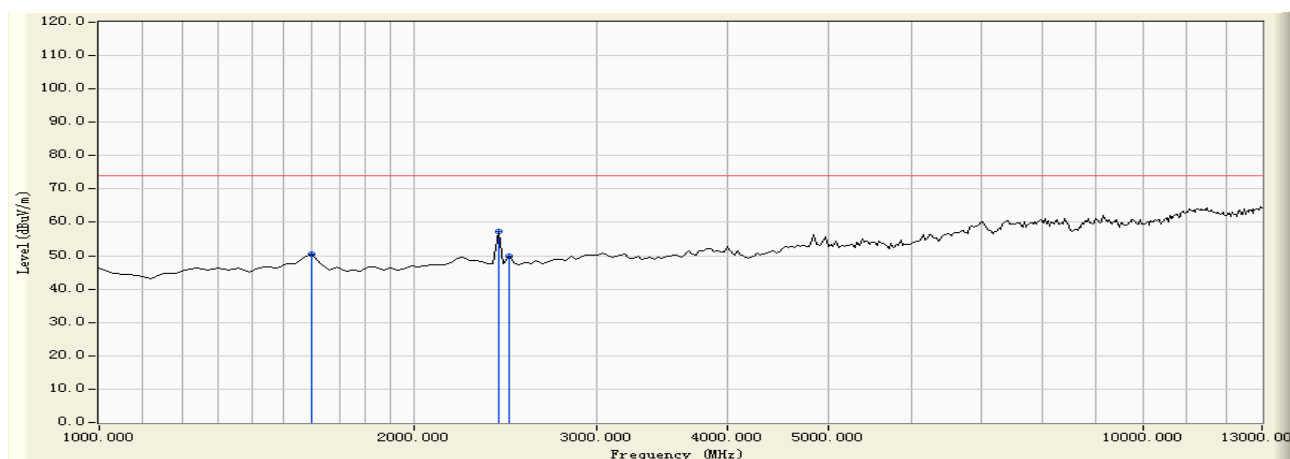
Engineer : matt	
Site : EMC Lab AC102	Time : 2014/07/17 - 15:19
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 0
EUT :	Probe : - HORIZONTAL
Power :	Note : relay zigbee 2475



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1600.000	6.672	50.175	56.847	-17.153	74.000	PEAK
2	*	2410.000	10.661	54.831	65.492	-8.508	74.000	PEAK
3		2470.000	10.744	52.898	63.642	-10.358	74.000	PEAK



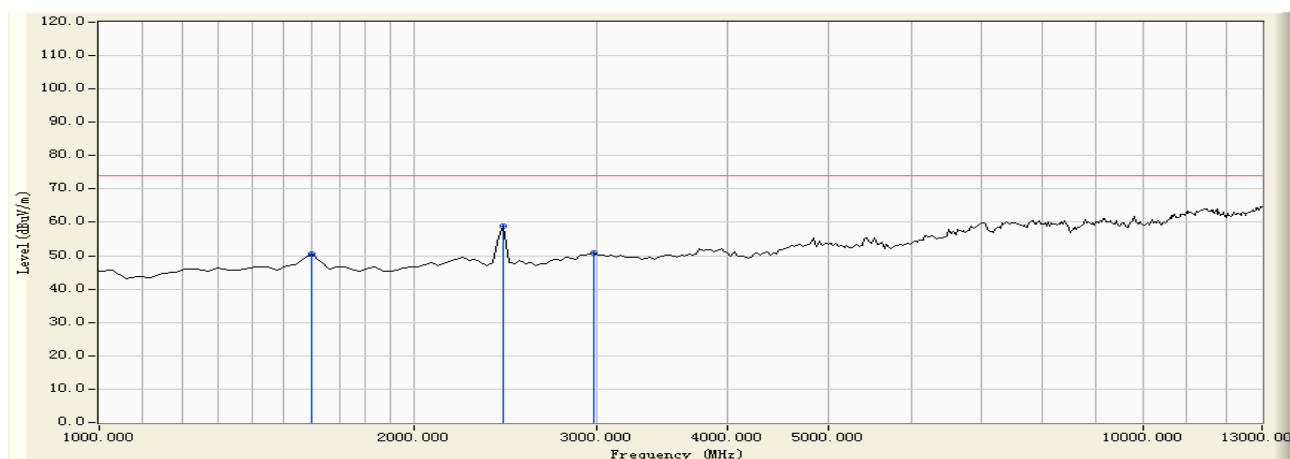
Engineer : matt	
Site : EMC Lab AC102	Time : 2014/07/17 - 15:22
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 0
EUT :	Probe : - VERTICAL
Power :	Note : relay zigbee 2475



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/ m)	Detector Type
1		1600.000	-2.093	52.720	50.627	-23.373	74.000	PEAK
2	*	2410.000	2.019	55.302	57.321	-16.679	74.000	PEAK
3		2470.000	2.030	47.956	49.986	-24.014	74.000	PEAK



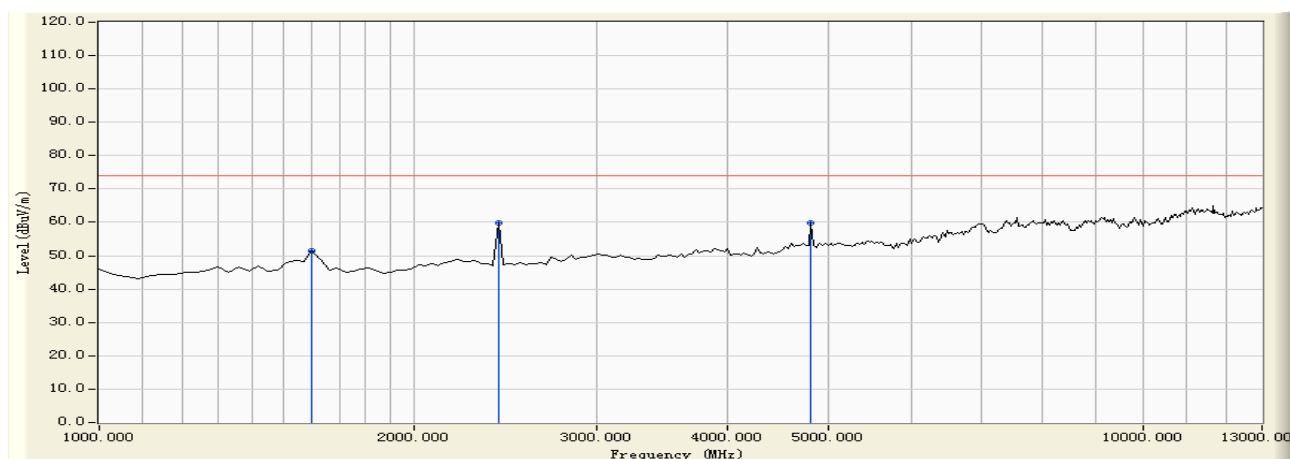
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Site : EMC Lab AC102	Time : 2014/07/17 - 15:24
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 0
EUT :	Probe : - VERTICAL
Power :	Note : relay zigbee 2445



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1600.000	-2.093	52.632	50.539	-23.461	74.000	PEAK
2	*	2440.000	2.020	56.729	58.749	-15.251	74.000	PEAK
3		2980.000	3.882	46.907	50.789	-23.211	74.000	PEAK



Engineer : matt	
Site : EMC Lab AC102	Time : 2014/07/17 - 15:26
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 0
EUT :	Probe : - VERTICAL
Power :	Note : relay zigbee 2405



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1600.000	-2.093	53.603	51.510	-22.490	74.000	PEAK
2		2410.000	2.019	57.821	59.840	-14.160	74.000	PEAK
3	*	4810.000	9.039	50.948	59.987	-14.013	74.000	PEAK



6. 6dB Bandwidth Measurement Data

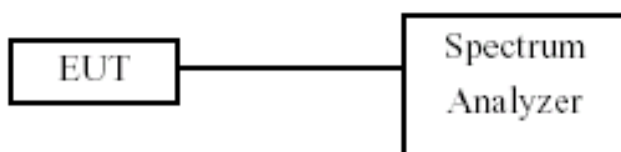
6.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

6.2 Test Procedures

- The transmitter output was connected to the spectrum analyzer.
- Set RBW of spectrum analyzer to 1~5% of the emission bandwidth and $VBW \geq 3 \times RBW$.
- The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.
- The 6dB Bandwidth was measured and recorded.

6.3 Test Setup Layout



6.4 Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	N9010A	Agilent	MY51350515	2013.09.29	2014.09.29

**6.5 Test Result and Data**

Test Date: Jul 15, 2014

Temperature: 24℃

Atmospheric pressure: 1016 hPa

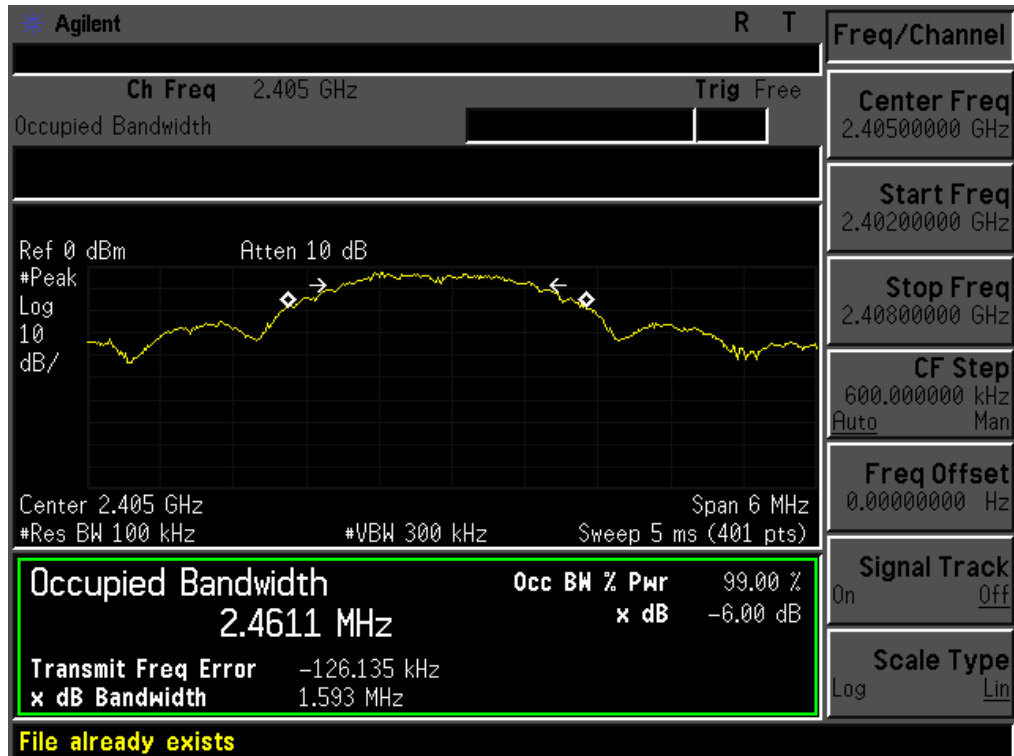
Humidity: 46%

Modulation Standard	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Min. Limit (kHz)	Test Result
O-QPSK	11	2405	1.593	500.00	Complies
	19	2445	1.576	500.00	Complies
	25	2475	1.575	500.00	Complies



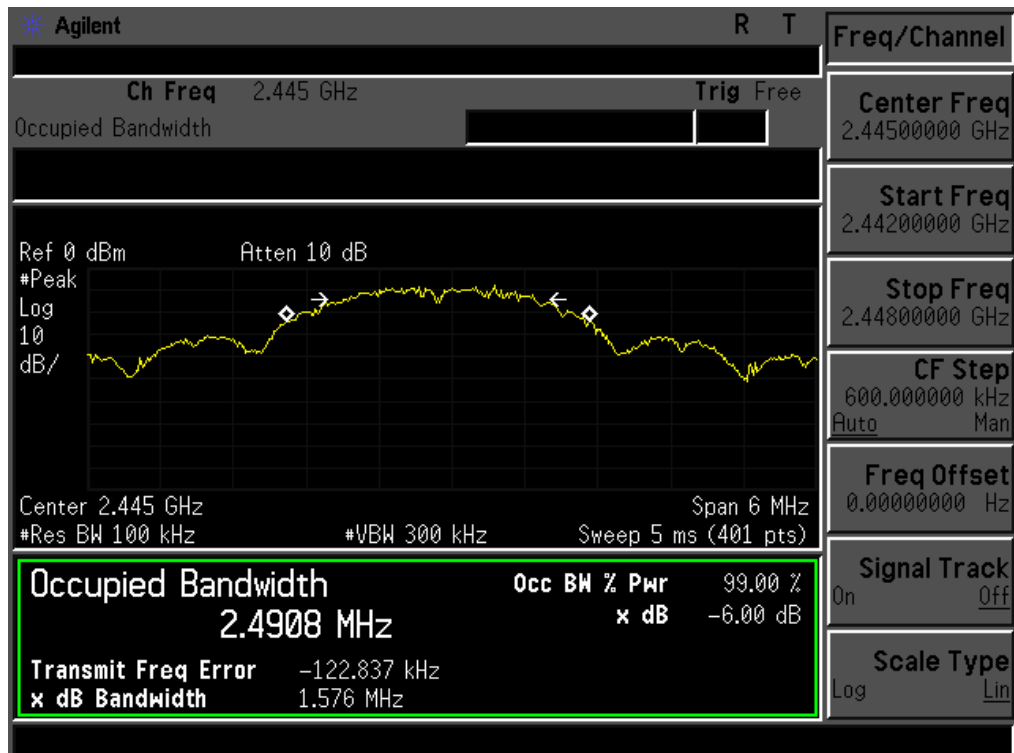
Modulation Standard: O-QPSK

Channel: 11



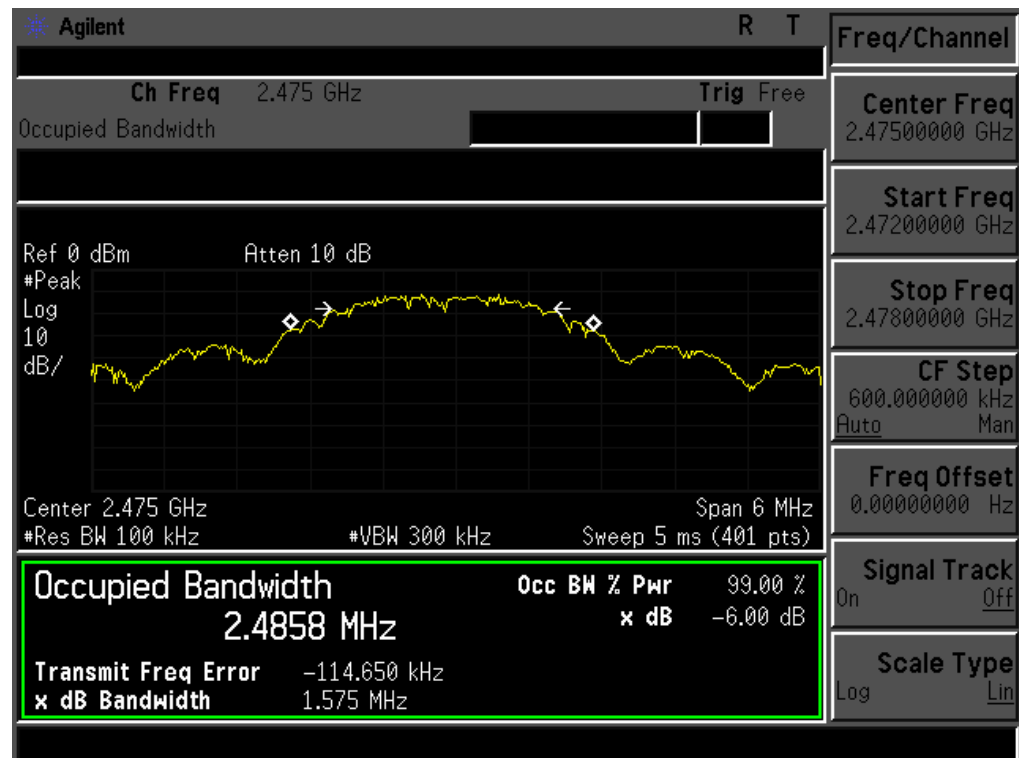
Modulation Standard: O-QPSK

Channel: 19





Modulation Standard: O-QPSK
Channel: 25





7. Maximum Peak Output Power

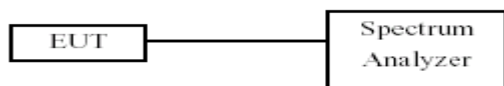
7.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.

7.2 Test Procedure

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.

7.3 Test Setup Layout



7.4 Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	N9010A	Agilent	MY51350515	2013.09.29	2014.09.29
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2013.09.25	2014.09.25

**7.5 Test Result and Data**

Test Date: Jul 15, 2014

Temperature: 24℃

Atmospheric pressure: 1016 hPa

Humidity: 46%

Modulation Standard	Channel	Frequency (MHz)	Peak Power Output (dBm)	Max. Limit (dBm)	Result
O-QPSK	11	2405	2.5	30	Complies
	19	2445	-2.32	30	Complies
	25	2475	-5.22	30	Complies



8. Band Edges Measurement

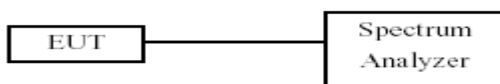
8.1 Test Limit

Below -20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

8.2 Test Procedure

- The transmitter output was connected to the spectrum analyzer via a low lose cable.
- Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- The band edges was measured and recorded.

8.3 Test Setup Layout



8.4 Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	N9010A	Agilent	MY51350515	2013.09.29	2014.09.29



8.5 Test Result and Data

Test Date: Jul 15, 2014

Temperature: 24℃

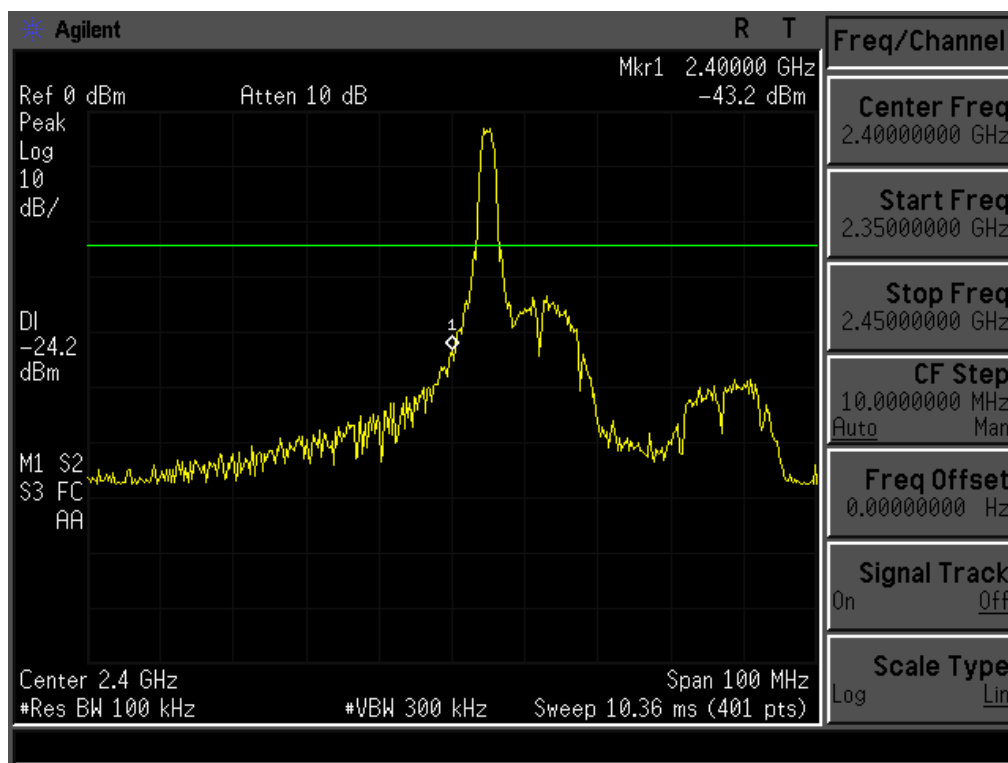
Atmospheric pressure: 1014 hPa

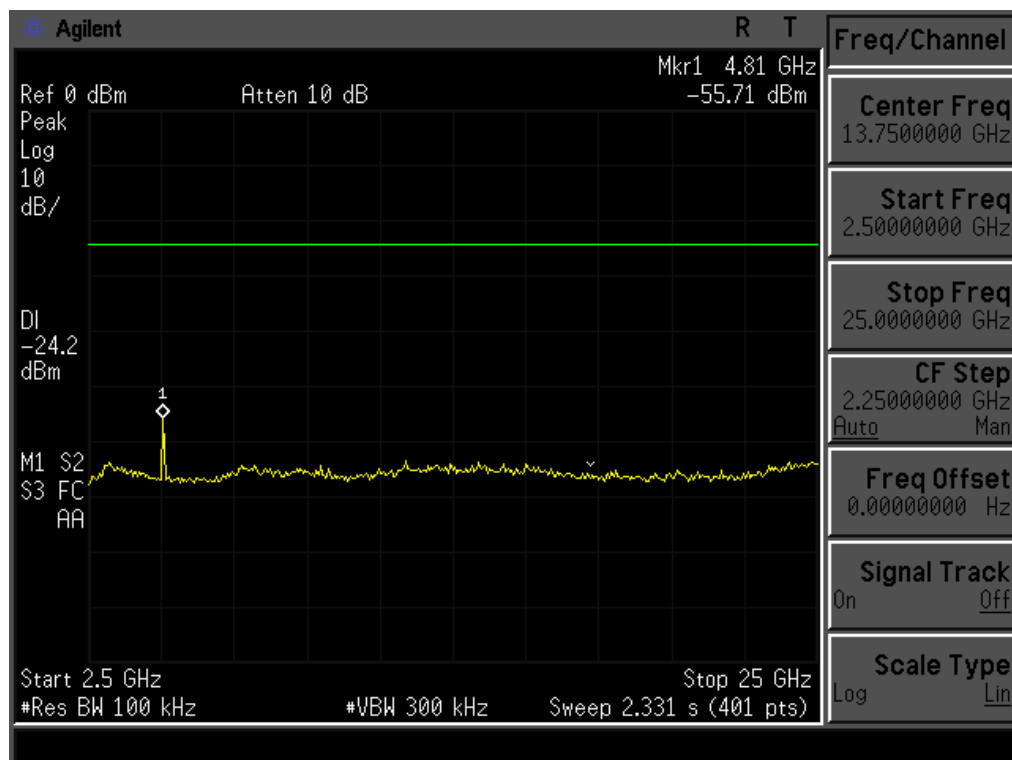
Humidity: 47%

Modulation Standard	Channel	Frequency (MHz)	maximum value in frequency (MHz)	maximum value (dBm)	Limit (dBm)
O-QPSK	11	2405	2400.00	-43.2	-24.2
	25	2475	2483.50	-62.83	-32.5

Modulation Standard: O-QPSK

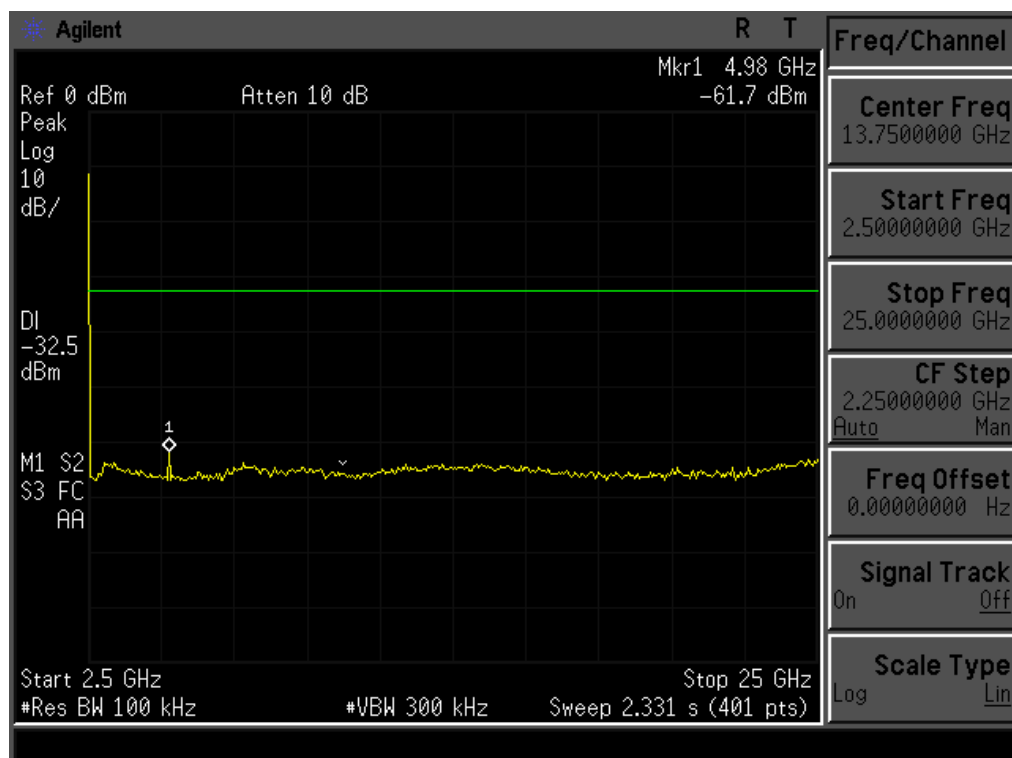
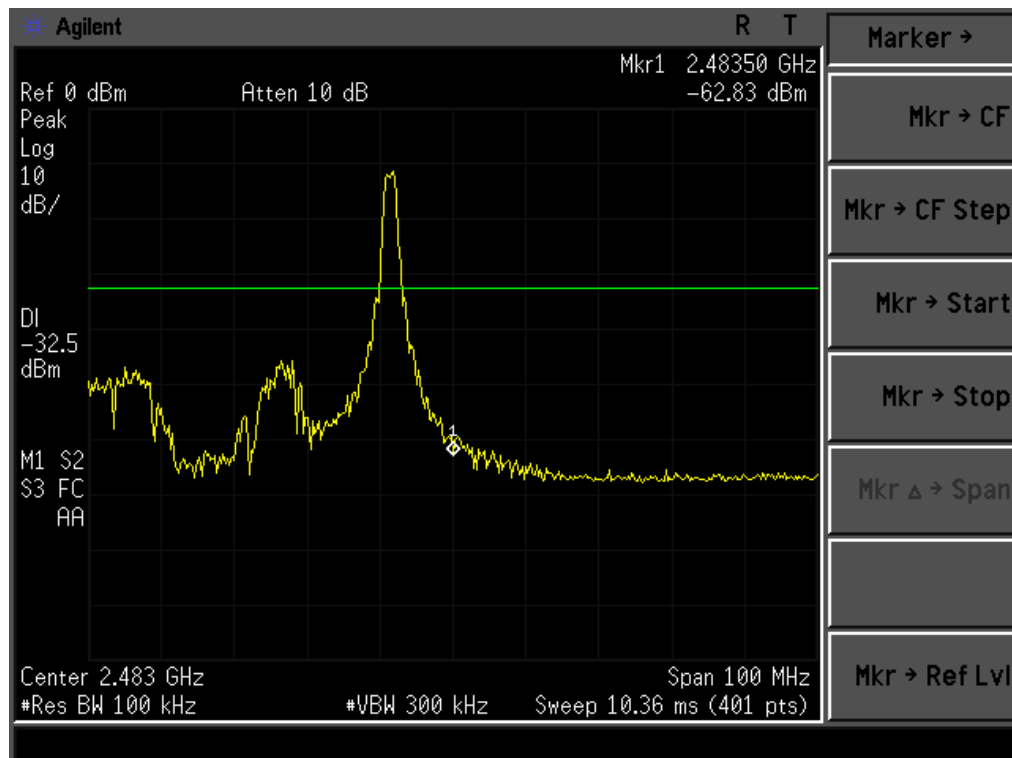
Channel: 11







Modulation Standard: O-QPSK
Channel: 25





8.6 Restrict Band Emission Measurement Data

Test Date: Jul. 15, 2014

Temperature: 25°C

Atmospheric pressure: 1012 hPa

Humidity: 57%

Modulation Standard: O-QPSK

Channel 11						Fundamental Frequency: 2405 MHz				
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2389.99	H	38.19	1.62	39.81	Peak	74	54	-34.19	209	1
-----	H	-----	-----	-----	Ave	74	54	-----	-----	-----
2389.04	V	39.35	2.27	41.62	Peak	74	54	-32.38	275	1
-----	V	-----	-----	-----	Ave	74	54	-----	-----	-----
Channel 25						Fundamental Frequency: 2475 MHz				
Frequency (MHz)	Ant-Pol H/V	Meter Reading (dBuV)	Corrected Factor (dB)	Result (dBuV/m)	Remark	Limit (dBuV/m)		Margin (dB)	Table Deg.	Ant High (m)
						Peak	Ave			
2483.90	H	51.36	0.29	51.65	Peak	74	54	-22.35	203	1
-----	H	-----	-----	-----	Ave	74	54	-----	-----	-----
2483.90	V	66.84	-2.37	64.47	Peak	74	54	-9.53	274	1
2483.85	V	50.15	-2.37	47.78	Ave	74	54	-6.22	274	1

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.



9. Power Spectral Density

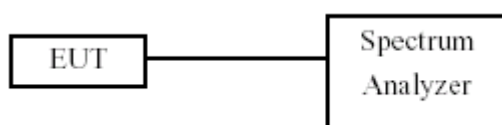
9.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

9.2 Test Procedure

- The transmitter output was connected to spectrum analyzer.
- The spectrum analyzer's resolution bandwidth were set at 3KHz RBW and 30KHz VBW as that of the fundamental frequency. Set the sweep time=span/3KHz.
- The power spectral density was measured and recorded.
- The Sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

9.3 Test Setup Layout



9.4 Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	N9010A	Agilent	MY51350515	2013.09.29	2014.09.29

**9.5 Test Result and Data**

Test Date: Jul 15, 2014

Temperature: 24℃

Atmospheric pressure: 1014 hPa

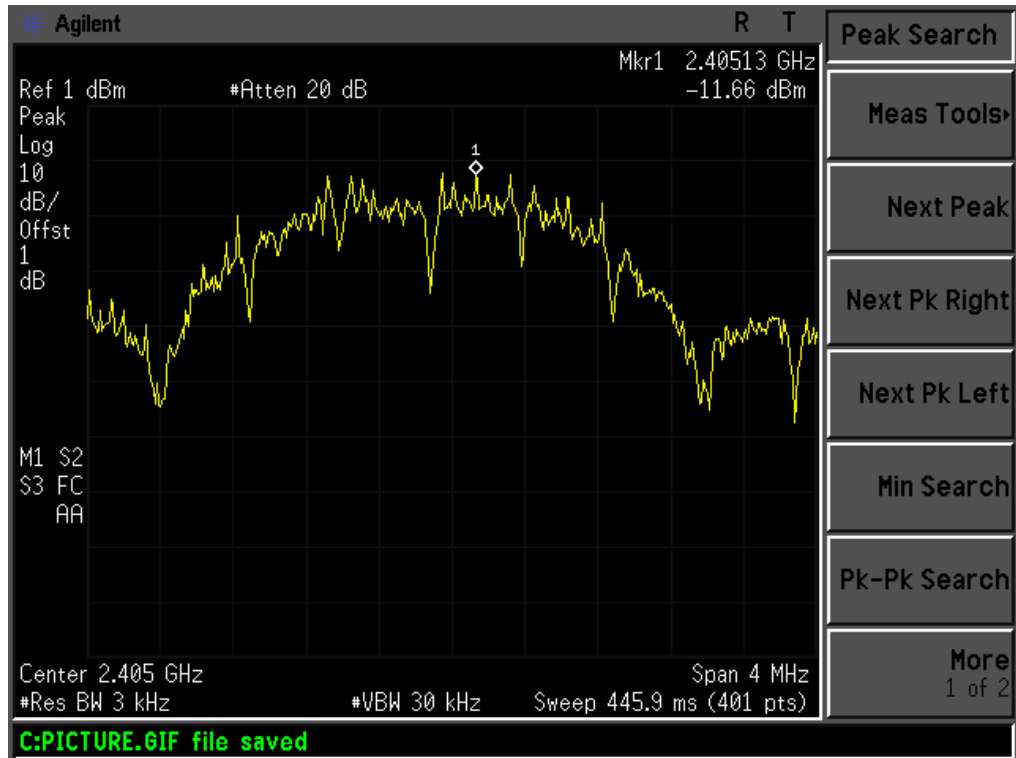
Humidity: 47%

Modulation Standard	Channel	Frequency (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)
O-QPSK	11	2405	-11.66
	19	2445	-15.48
	25	2475	-19.35



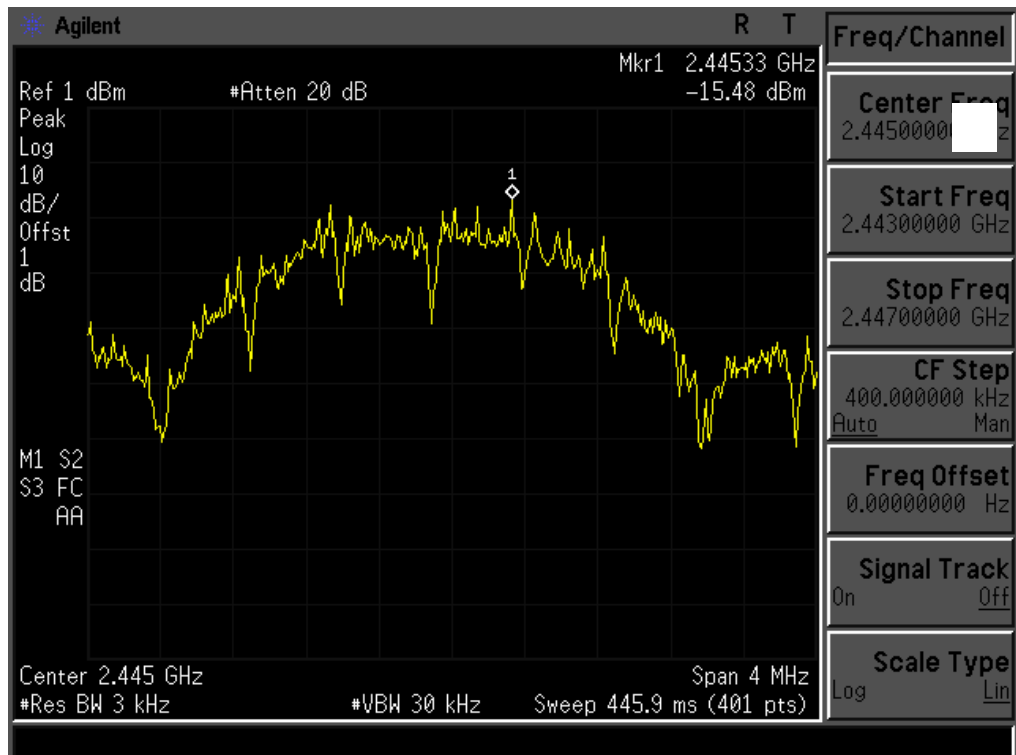
Modulation Standard: O-QPSK

Channel: 11



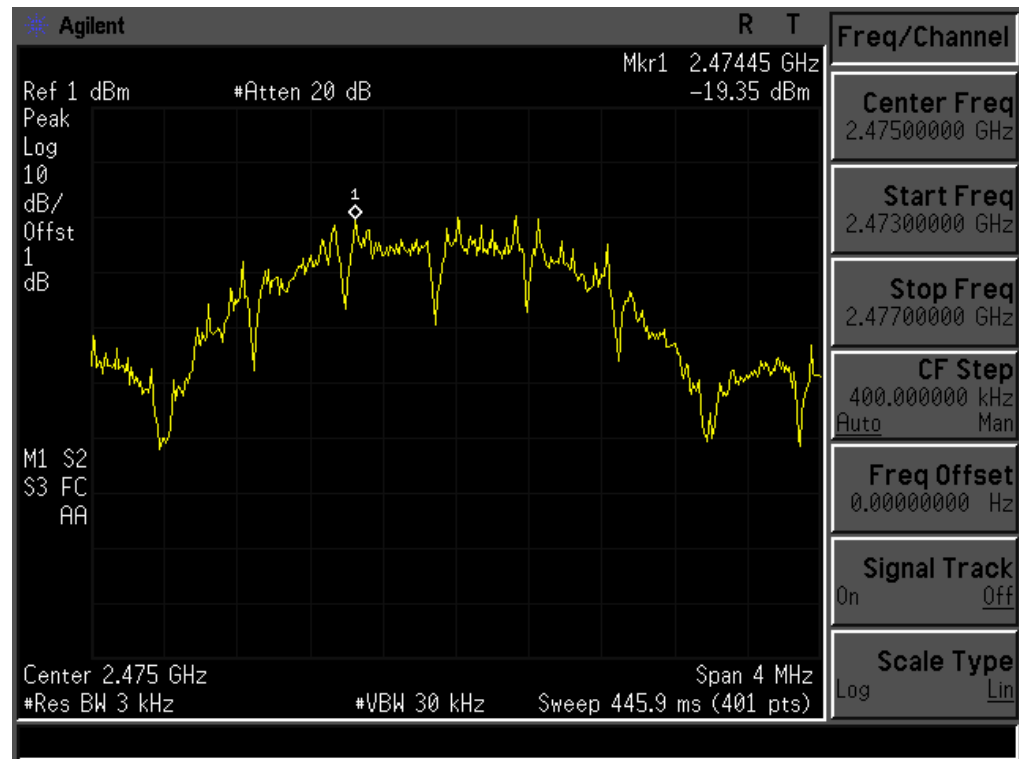
Modulation Standard: O-QPSK

Channel: 19





Modulation Standard: O-QPSK
Channel: 25





10. 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

10.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.