

FCC 47 CFR PART 15 SUBPART C

Product Type : Handheld Terminal

Applicant : Partner Tech Corp.

Address : 10F, NO.233-2. PAO CHIAO ROAD, HSIN TIEN, TAIPEI,
TAIWAN, R. O. C.

Trade Name : PARTNER

Model Number : OT-200

Test Specification : FCC 47 CFR PART 15 SUBPART C: Oct, 2009
Canada RSS-210 ISSUE 7: Jun., 2007
Canada RSS-Gen ISSUE 2: Jun., 2007
ANSI C63.4-2003

Issue Date : Nov. 18, 2010

Issue by

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Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Nov. 18, 2010	Initial Issue	

Verification

Issued Date: 2010/11/18

Product Type : Handheld Terminal
Applicant : Partner Tech Corp.
Address : 10F, NO.233-2. PAO CHIAO ROAD, HSIN TIEN,TAIPEI,
TAIWAN, R. O. C.
Trade Name : PARTNER
Model Number : OT-200
FCC ID : NDPOT-200
EUT Rated Voltage : DC 5.0V, 2.0A
Test Voltage : 120 Vac / 60 Hz
Applicable : FCC 47 CFR PART 15 SUBPART C: Oct, 2009
Standard : Canada RSS-210 ISSUE 7: Jun., 2007
Canada RSS-Gen ISSUE 2: Jun., 2007
ANSI C63.4-2003
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 : +86-3-2710188 / Fax : +86-3-2710190

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: 2003 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.

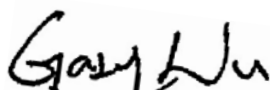
Approved By : 
(Manager) (Miller Lee)
Reviewed By : 
(Testing Engineer) (Gary Wu)

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1 General Information

1.1 Summary of Test Result

Standard		Item	Result	Remark
15.247	RSS-GEN			
15.207	7.2.2	AC Power Conducted Emission	PASS	-----
-----	6	Receiver Radiated Emissions	PASS	-----
Standard		Item	Result	Remark
15.247	RSS-210			
15.247(d)	A8.5	Transmitter Radiated Emissions	PASS	-----
15.247(b)(3)	A8.4	Max. Output Power	PASS	-----
15.247(a)(2)	A8.2 (a)	6dB RF Bandwidth	PASS	-----
15.247(e)	A8.2 (b)	Power Spectral Density	PASS	-----
15.247(c)	A8.5	Out of Band Conducted Spurious Emission	PASS	-----
15.247(d)	A8.5	Band Edge Measurement	PASS	-----
15.247(c)	A8.5	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

Conducted Emission

The measurement uncertainty is evaluated as ± 2.24 dB.

Radiated Emission

The measurement uncertainty of 30 MHz - 1GHz is evaluated as ± 3.072 dB.

2 EUT Description

Product	:	Handheld Terminal
Trade Name	:	PARTNER
Model No.	:	OT-200
Applicant	:	Partner Tech Corp. 10F, NO.233-2. PAO CHIAO ROAD, HSIN TIEN,TAIPEI, TAIWAN, R. O. C.
Manufacturer	:	Partner Tech Corp. 10F, NO.233-2. PAO CHIAO ROAD, HSIN TIEN,TAIPEI, TAIWAN, R. O. C.
FCC ID	:	NDPOT-200
Serial No.	:	T90310700206
Frequency Range	:	2412 ~ 2462 MHz
Modulation Type	:	IEEE 802.11b:DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g:DSSS(CCK, DQPSK, DBPSK)+ OFDM(QPSK, BPSK, 16-QAM, 64-QAM)
Antenna Type	:	Internal Type
Antenna Gain	:	1.0 dBi
RF Output Power	:	IEEE 802.11b: 0.051 W / 17.10 dBm IEEE 802.11g: 0.132 W / 21.19 dBm
Component		
Battery	:	PARTNER, OT Series Battery DC 3.7V, 2300mAh
Power Adapter	:	Touch Electronic Co., Ltd., M8-10US05R Input:100-240Vac, 50-60Hz, 0.5A Output: 5.0 Vdc, 2.0A Cable out: Shielded, 1.8 m
Power Adapter (2)	:	CWT, KPC-010B Input:100-240Vac, 50/60Hz, 0.8A Output: 5.0 Vdc, 2.0A Cable out: Shielded, 1.45 m
Handheld Terminal Cradle	:	PARTNER, OT-100 Cradle Rating: 5.0 Vdc, 2.0A

3 Test Methodology

3.1. Mode of Operation

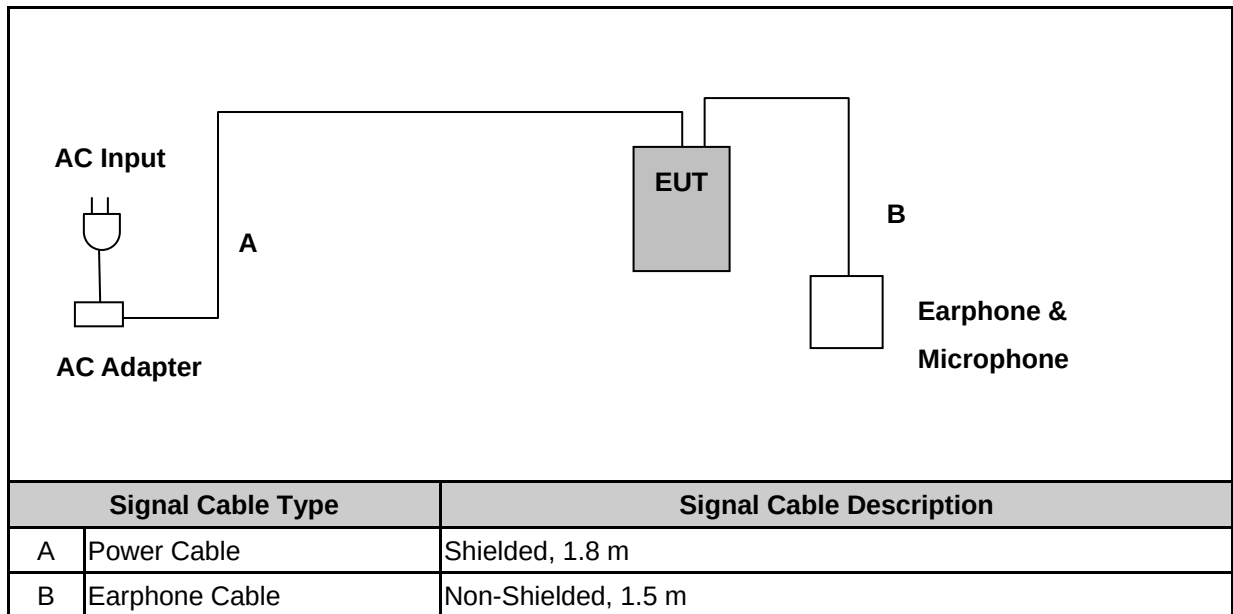
Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: IDLE Mode
Mode 2: Normal Operation Mode
Mode 3: IEEE 802.11b Link Mode
Mode 4: IEEE 802.11g Link Mode
Mode 5: Receiver Mode

3.2. EUT Exercise Software

1.	Setup the EUT shown on 3.3.
2.	Turn on the power of all equipment.
3.	Turn on Wi-Fi function link to AP.
4.	EUT run test program.

3.3. Configuration of Test System Details



Devices Description					
	Product	Manufacturer	Model Number	Serial Number	Power Cord
1.	-----	-----	-----	-----	-----

3.4. Test Site Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	25
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950

4 Conducted Emission Measurement

4.1. 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

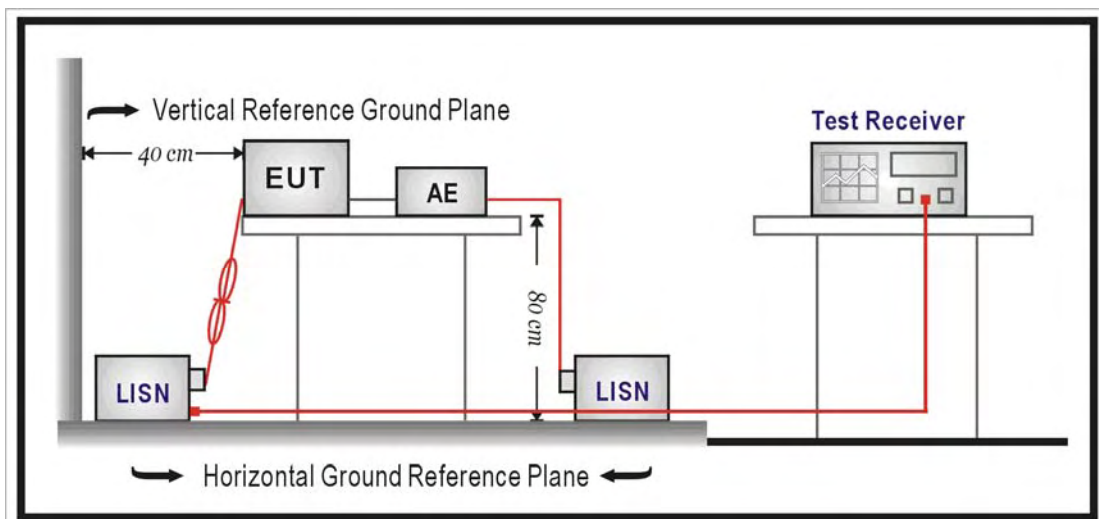
4.2. Test Instruments

Describe	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	07/01/2009	(1)
LISN	R&S	ENV216	101040	03/02/2010	(1)
LISN	R&S	ENV216	101041	03/02/2010	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

4.3. Test Setup



4.4. Test Procedure

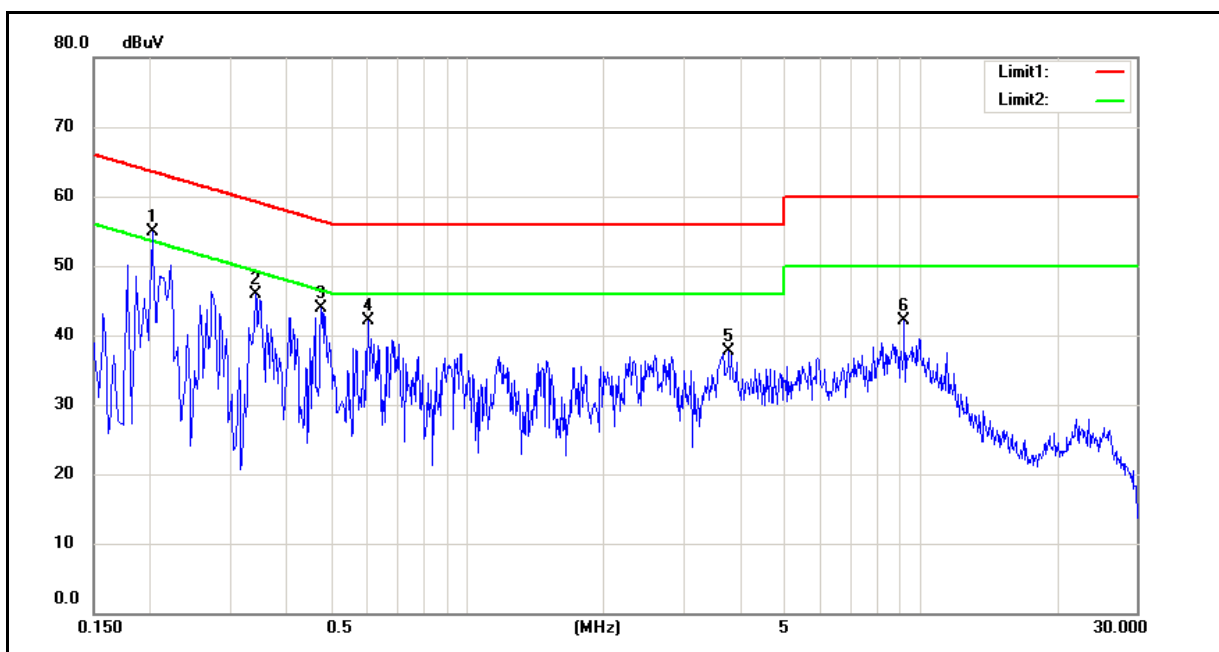
The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

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.

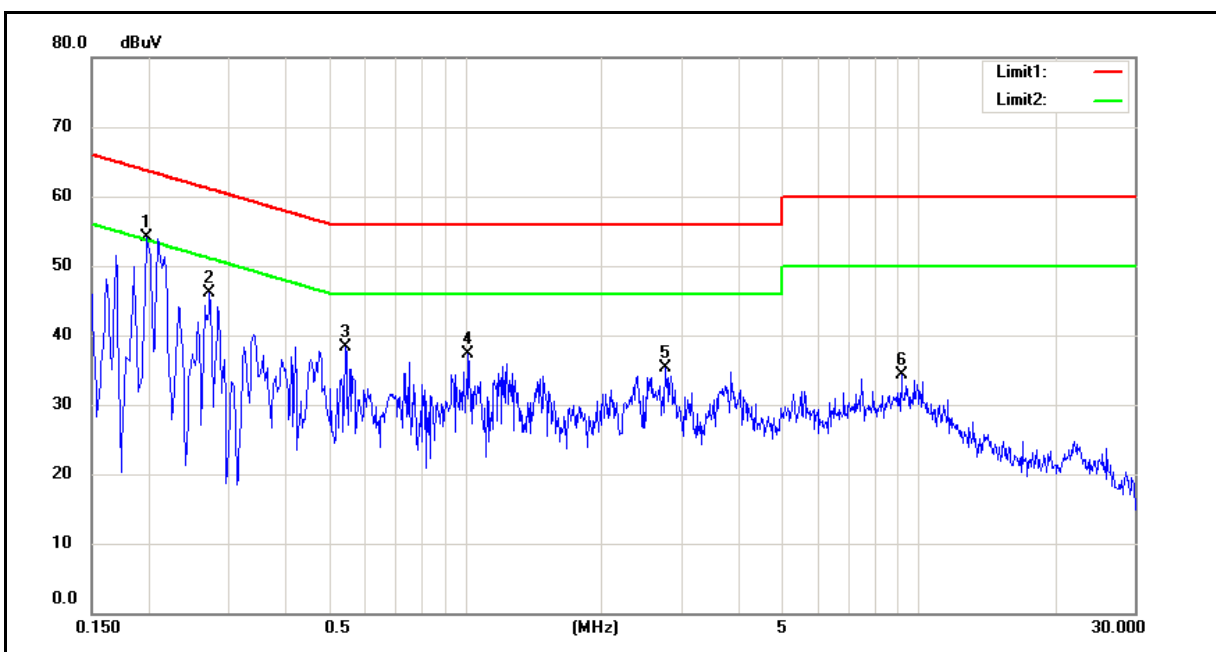
4.5. Test Result

Standard:	FCC Part 15C	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	2010/06/17
		Test By:	Gary Wu
Description:			



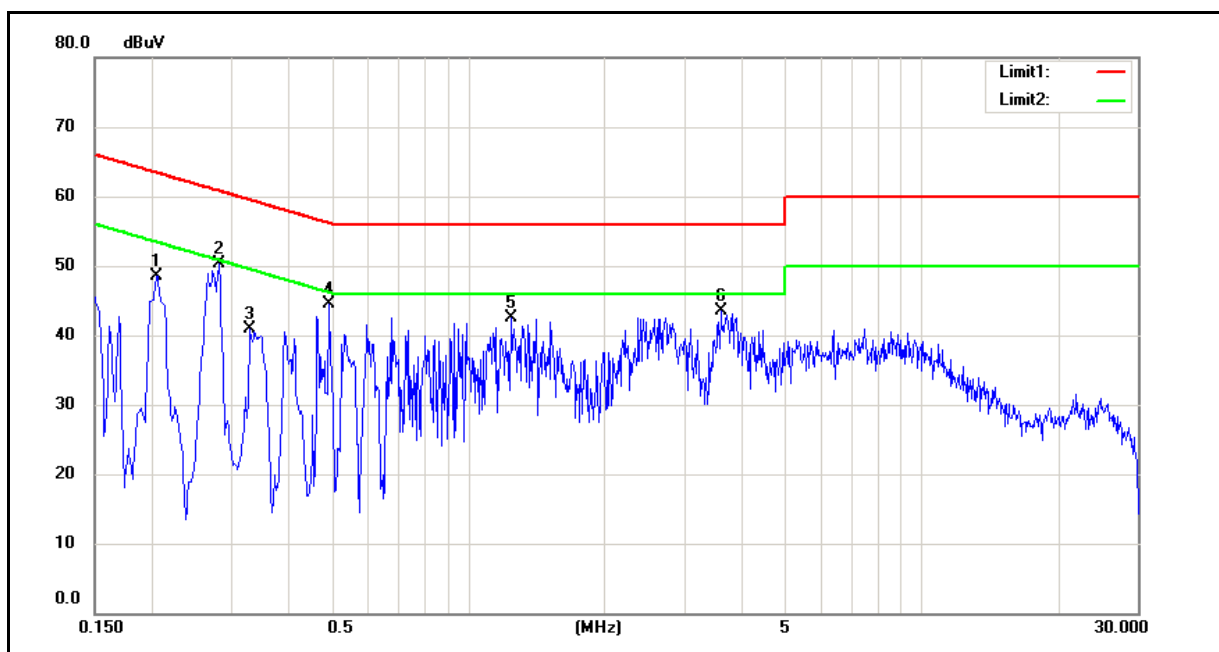
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.2020	42.59	29.15	10.08	52.67	39.23	63.53	53.53	-10.86	-14.30	Pass
2	0.3420	32.30	19.43	10.02	42.32	29.45	59.15	49.15	-16.83	-19.70	Pass
3	0.4780	30.22	19.48	9.97	40.19	29.45	56.37	46.37	-16.18	-16.92	Pass
4	0.6060	25.49	14.20	9.91	35.40	24.11	56.00	46.00	-20.60	-21.89	Pass
5	3.7860	21.04	11.42	9.84	30.88	21.26	56.00	46.00	-25.12	-24.74	Pass
6	9.2420	21.42	12.02	10.13	31.55	22.15	60.00	50.00	-28.45	-27.85	Pass

Standard:	FCC Part 15C	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	2010/06/17
		Test By:	Gary Wu
Description:			



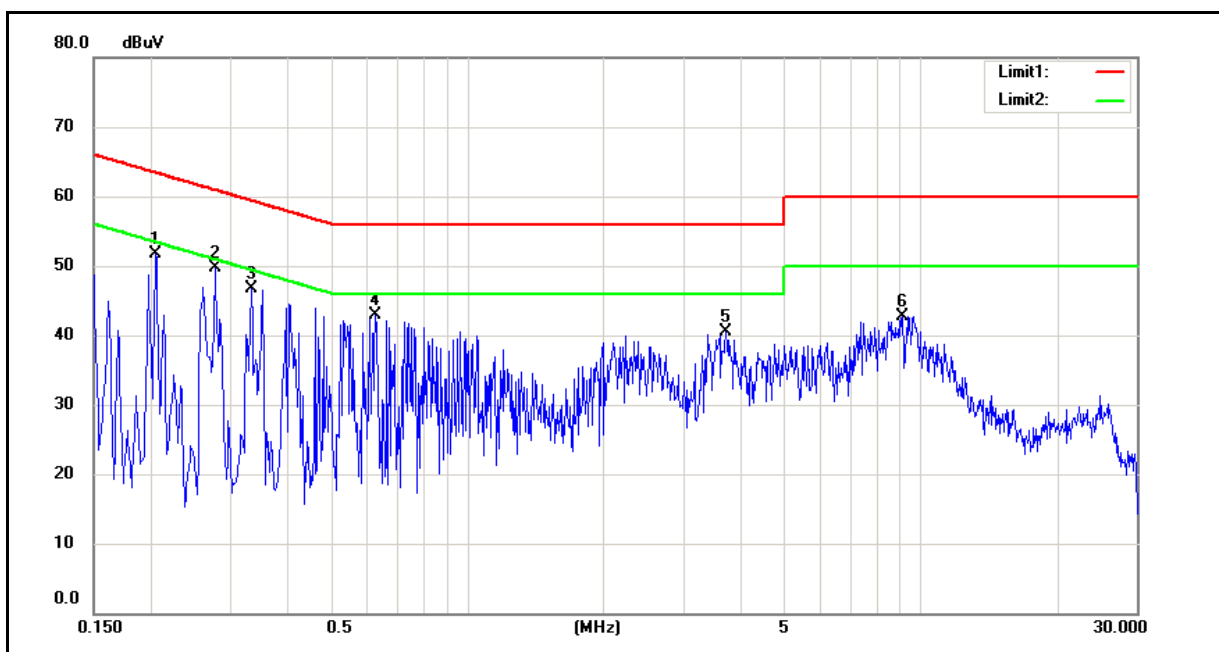
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1980	38.29	24.76	10.07	48.36	34.83	63.69	53.69	-15.33	-18.86	Pass
2	0.2740	32.59	18.62	10.04	42.63	28.66	61.00	51.00	-18.37	-22.34	Pass
3	0.5460	24.53	10.76	9.94	34.47	20.70	56.00	46.00	-21.53	-25.30	Pass
4	1.0180	22.74	10.62	9.74	32.48	20.36	56.00	46.00	-23.52	-25.64	Pass
5	2.7740	17.45	9.42	9.80	27.25	19.22	56.00	46.00	-28.75	-26.78	Pass
6	9.1700	16.33	9.72	10.12	26.45	19.84	60.00	50.00	-33.55	-30.16	Pass

Standard:	FCC Part 15C	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	2010/06/17
		Test By:	Gary Wu
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	0.2060	36.88	24.45	10.08	46.96	34.53	63.37	53.37	-16.41	-18.84	Pass
2	0.2820	37.08	23.50	10.05	47.13	33.55	60.76	50.76	-13.63	-17.21	Pass
3	0.3300	29.62	16.74	10.03	39.65	26.77	59.45	49.45	-19.80	-22.68	Pass
4	0.4940	29.52	13.44	9.96	39.48	23.40	56.10	46.10	-16.62	-22.70	Pass
5	1.2460	24.42	11.66	9.65	34.07	21.31	56.00	46.00	-21.93	-24.69	Pass
6	3.6140	28.36	15.67	9.84	38.20	25.51	56.00	46.00	-17.80	-20.49	Pass

Standard:	FCC Part 15C	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	2010/06/17
		Test By:	Gary Wu
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	0.2060	39.23	22.26	10.07	49.30	32.33	63.37	53.37	-14.07	-21.04	Pass
2	0.2780	36.79	21.75	10.04	46.83	31.79	60.88	50.88	-14.05	-19.09	Pass
3	0.3340	33.54	16.71	10.03	43.57	26.74	59.35	49.35	-15.78	-22.61	Pass
4	0.6300	28.07	12.04	9.90	37.97	21.94	56.00	46.00	-18.03	-24.06	Pass
5	3.7340	23.50	10.63	9.83	33.33	20.46	56.00	46.00	-22.67	-25.54	Pass
6	9.1180	24.43	10.95	10.11	34.54	21.06	60.00	50.00	-25.46	-28.94	Pass

5 Radiated Interference Measurement

5.1. Limit

Frequency Range (MHz)	Peak (dBuV)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54

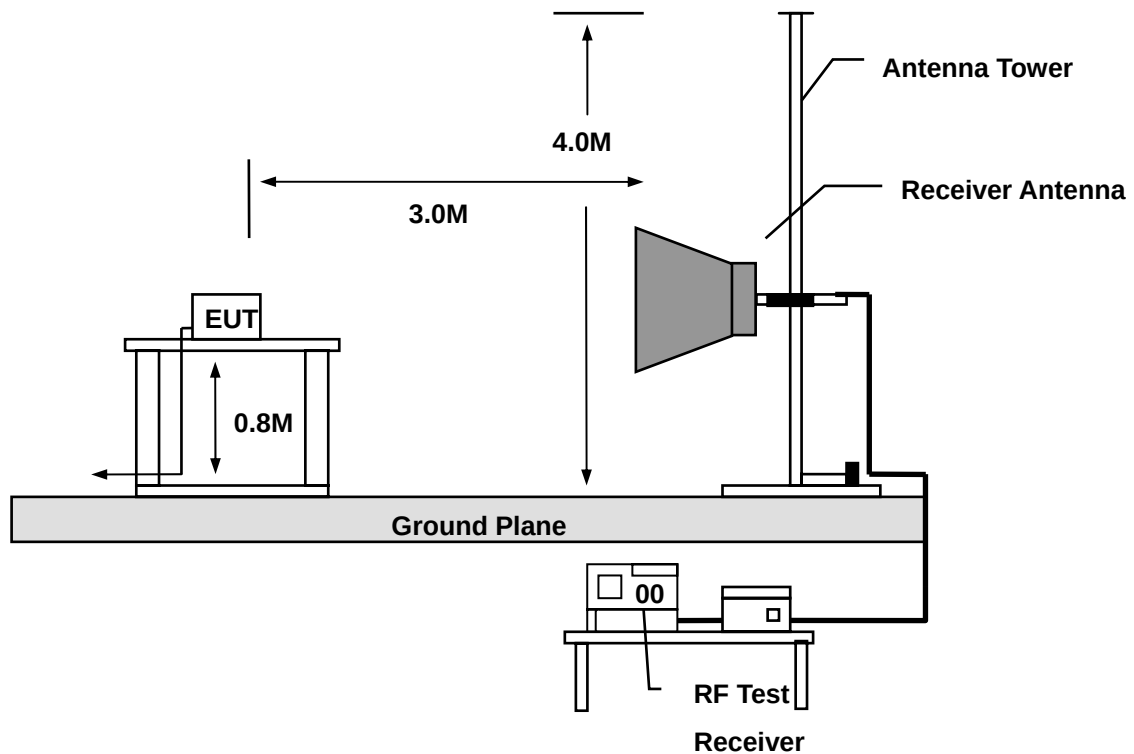
5.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/27/2009	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/20/2009	(2)
Pre Amplifier	Agilent	8449B	3008A02237	07/01/2009	(1)
Pre Amplifier	Agilent	8447D	2944A10961	06/30/2009	(1)
Bi-log Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	06/23/2009	(2)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	07/01/2009	(2)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/30/2009	(2)
Test Site	ATL	TE01	888001	08/06/2009	(1)

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

5.3. Setup



5.4. 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 30 MHz 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.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three 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 per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in decibels 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.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV)-Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

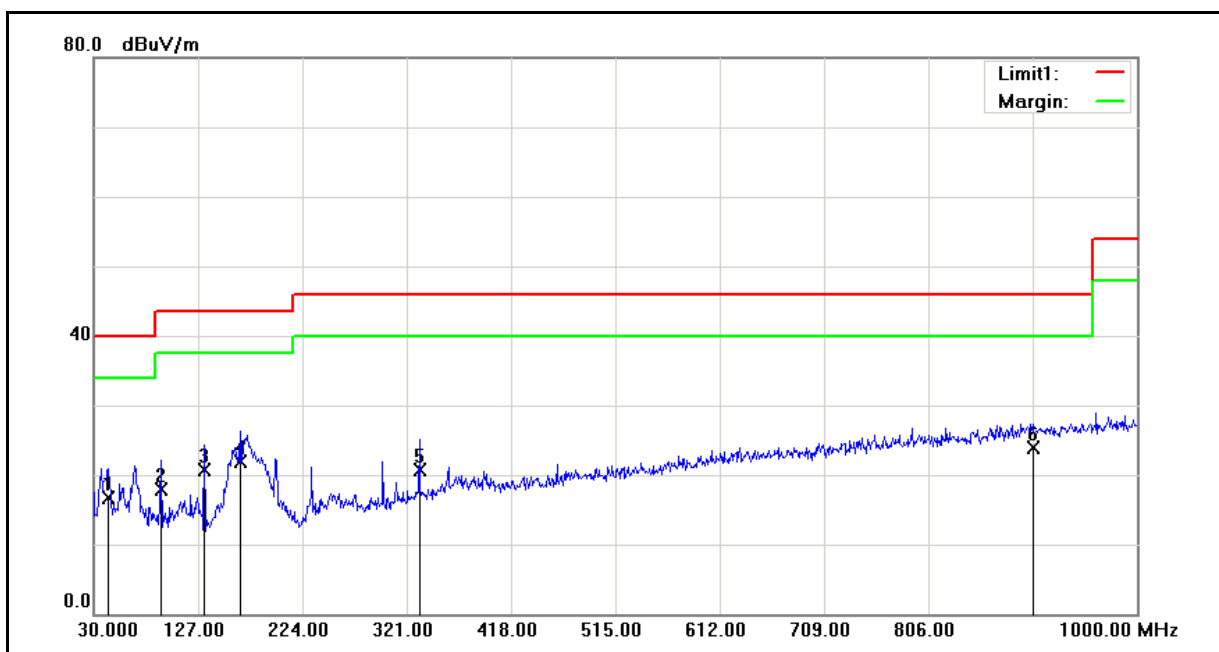
(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

5.5. Test Result

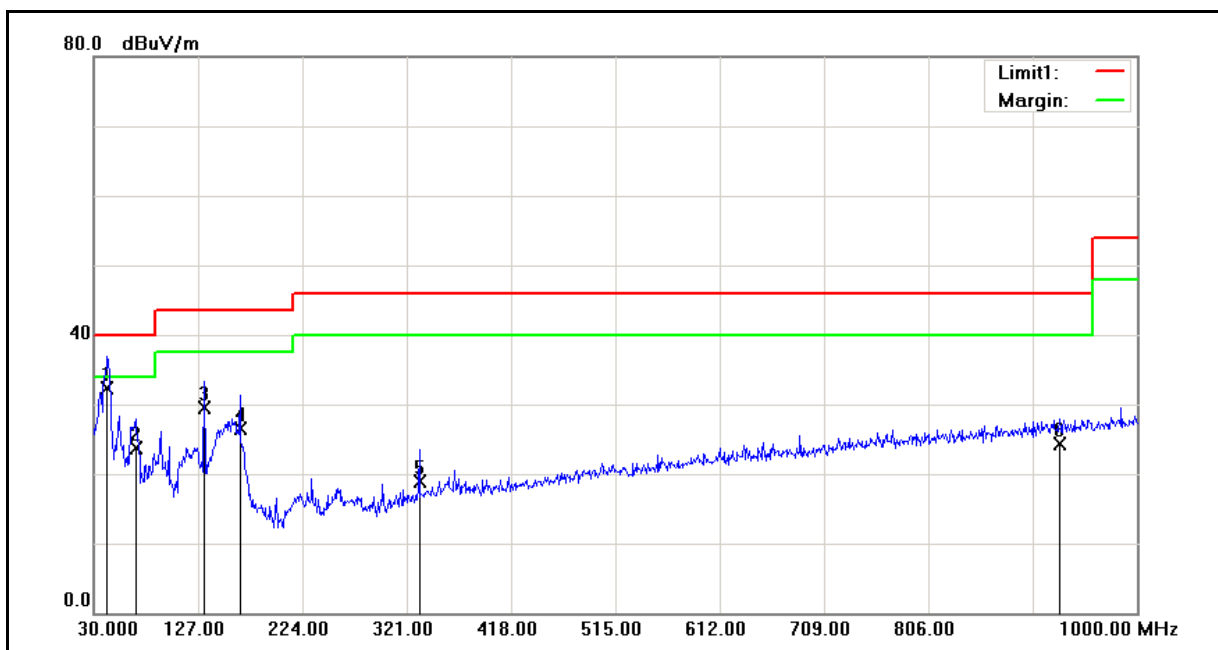
5.5.1. Below 1GHz

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	2010/06/20
Ant.Polar.:	Horizontal	Test By:	Gary Wu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	43.5800	28.36	-11.74	16.62	40.00	-23.38	QP
2	92.5650	33.15	-15.29	17.86	43.50	-25.64	QP
3	132.8200	37.56	-16.84	20.72	43.50	-22.78	QP
4	166.2850	37.45	-15.60	21.85	43.50	-21.65	QP
5	332.6400	30.12	-9.37	20.75	46.00	-25.25	QP
6	903.4850	23.64	0.36	24.00	46.00	-22.00	QP

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	2010/06/20
Ant.Polar.:	Vertical	Test By:	Gary Wu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	42.6100	44.21	-11.83	32.38	40.00	-7.62	QP
2	68.8000	39.36	-15.68	23.68	40.00	-16.32	QP
3	132.8200	46.25	-16.84	29.41	43.50	-14.09	QP
4	166.2850	42.12	-15.60	26.52	43.50	-16.98	QP
5	332.6400	28.34	-9.37	18.97	46.00	-27.03	QP
6	928.7050	23.64	0.65	24.29	46.00	-21.71	QP

5.5.2. Above 1GHz

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model:		OT-200		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 3		Date:		2010/06/20	
Frequency:		2412MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1609.000	47.70	-3.35	44.35	74.00	-29.65	peak	H
3215.500	47.47	2.54	50.01	74.00	-23.99	peak	H
1609.000	52.13	-3.35	48.78	74.00	-25.22	peak	V
3215.500	47.90	2.54	50.44	74.00	-23.56	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model:		OT-200		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 3		Date:		2010/06/20	
Frequency:		2437MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1626.500	50.22	-3.28	46.94	74.00	-27.06	peak	H
3250.500	49.09	2.61	51.70	74.00	-22.30	peak	H
1626.500	55.55	-3.28	52.27	74.00	-21.73	peak	V
3250.500	46.88	2.61	49.49	74.00	-24.51	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model:		OT-200		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 3		Date:		2010/06/20	
Frequency:		2462MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1640.500	51.64	-3.24	48.40	74.00	-25.60	peak	H
3282.000	49.64	2.66	52.30	74.00	-21.70	peak	H
1640.500	55.17	-3.24	51.93	74.00	-22.07	peak	V
3282.000	47.93	2.66	50.59	74.00	-23.41	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model:		OT-200		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 4		Date:		2010/06/20	
Frequency:		2412MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1619.500	48.55	-3.32	45.23	74.00	-28.77	peak	H
3215.500	49.57	2.54	52.11	74.00	-21.89	peak	H
1609.000	54.92	-3.35	51.57	74.00	-22.43	peak	V
3215.500	50.22	2.54	52.76	74.00	-21.24	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model:		OT-200		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 4		Date:		2010/06/20	
Frequency:		2437MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1619.500	50.38	-3.32	47.06	74.00	-26.94	peak	H
3250.500	49.94	2.61	52.55	74.00	-21.45	peak	H
1626.500	55.44	-3.28	52.16	74.00	-21.84	peak	V
3250.500	50.14	2.61	52.75	74.00	-21.25	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model:		OT-200		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 4		Date:		2010/06/20	
Frequency:		2462MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1633.500	53.62	-3.26	50.36	74.00	-23.64	peak	H
3282.000	49.62	2.66	52.28	74.00	-21.72	peak	H
1640.500	55.67	-3.24	52.43	74.00	-21.57	peak	V
3282.000	49.14	2.66	51.80	74.00	-22.20	peak	V

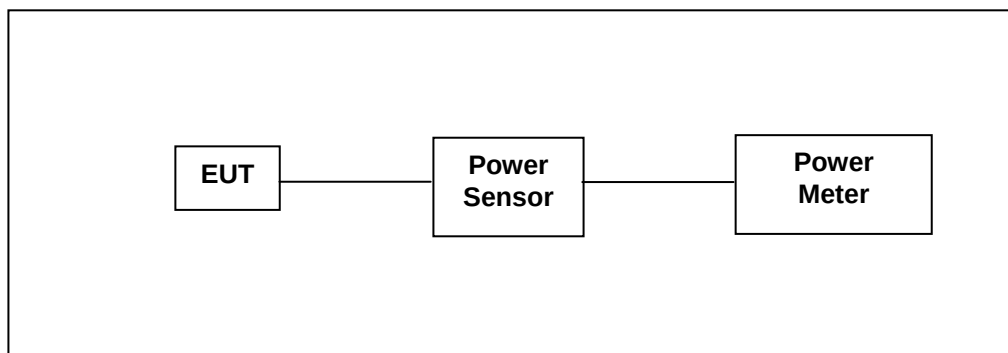
Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model:		OT-200		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 5		Date:		2010/06/20	
Frequency:		2437 MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2725.500	40.06	1.07	41.13	74.00	-32.87	peak	H
6600.000	35.37	13.26	48.63	74.00	-25.37	peak	H
2736.000	41.30	1.11	42.41	74.00	-31.59	peak	V
6729.500	35.64	13.73	49.37	74.00	-24.63	peak	V

6 Maximum Conducted Output Power Measurement

6.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm.

6.2. Test Setup



6.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Single Channel PK Power Sensor	Agilent	N1911A	MY15101619	07/14/2009	(1)
Wideband Power Meter	Agilent	N1921A	MY45241957	07/25/2009	(1)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

6.4. Test Procedure

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.

6.5. Test Result

Model	OT-200					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 3: IEEE 802.11b Link Mode					
Date of Test	06/22/2010			Test Site	TE06	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)
		(dBm)	(W)	(dBm)	(W)	
2412	1	12.06	0.016	15.80	0.038	< 30
2437		13.22	0.021	16.75	0.047	< 30
2462		13.55	0.023	17.10	0.051	< 30
2412	11	11.97	0.016	15.52	0.036	< 30
2437		13.00	0.020	16.67	0.046	< 30
2462		13.23	0.021	16.96	0.050	< 30

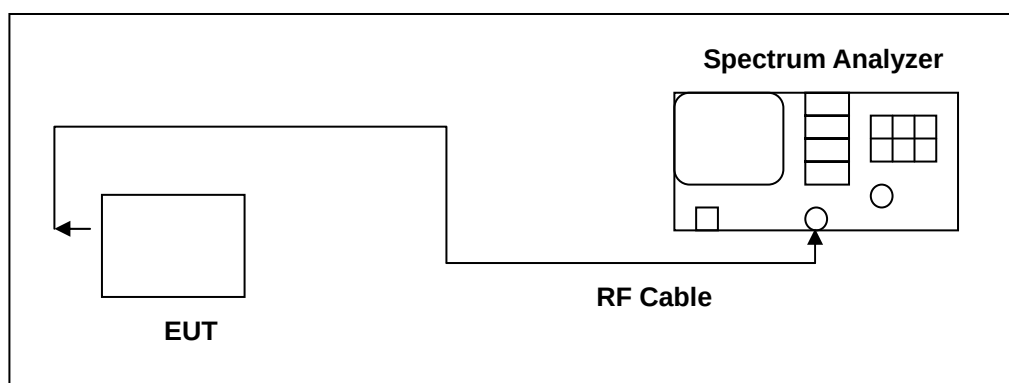
Model	OT-200					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 4: IEEE 802.11g Link Mode					
Date of Test	06/22/2010			Test Site	TE06	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)
		(dBm)	(W)	(dBm)	(W)	
2412	6	12.28	0.017	20.71	0.118	< 30
2437		13.28	0.021	20.89	0.123	< 30
2462		13.83	0.024	21.19	0.132	< 30
2412	54	12.13	0.016	20.84	0.121	< 30
2437		13.04	0.020	20.99	0.126	< 30
2462		13.43	0.022	21.18	0.131	< 30

7 6dB RF Bandwidth Measurement

7.1. Limit

Systems using digital modulation techniques may operate in the 2400–2483.5 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz.

7.2. Test Setup



7.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	⁽²⁾
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

7.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The antenna port of the EUT was connected to the input of a spectrum analyzer. Analyzer RES BW was set to 100 kHz. For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A peak output reading was taken, a DISPLAY line was drawn 6 dB lower than peak level. The 6 dB bandwidth was determined from where the channel output spectrum intersected the display line.

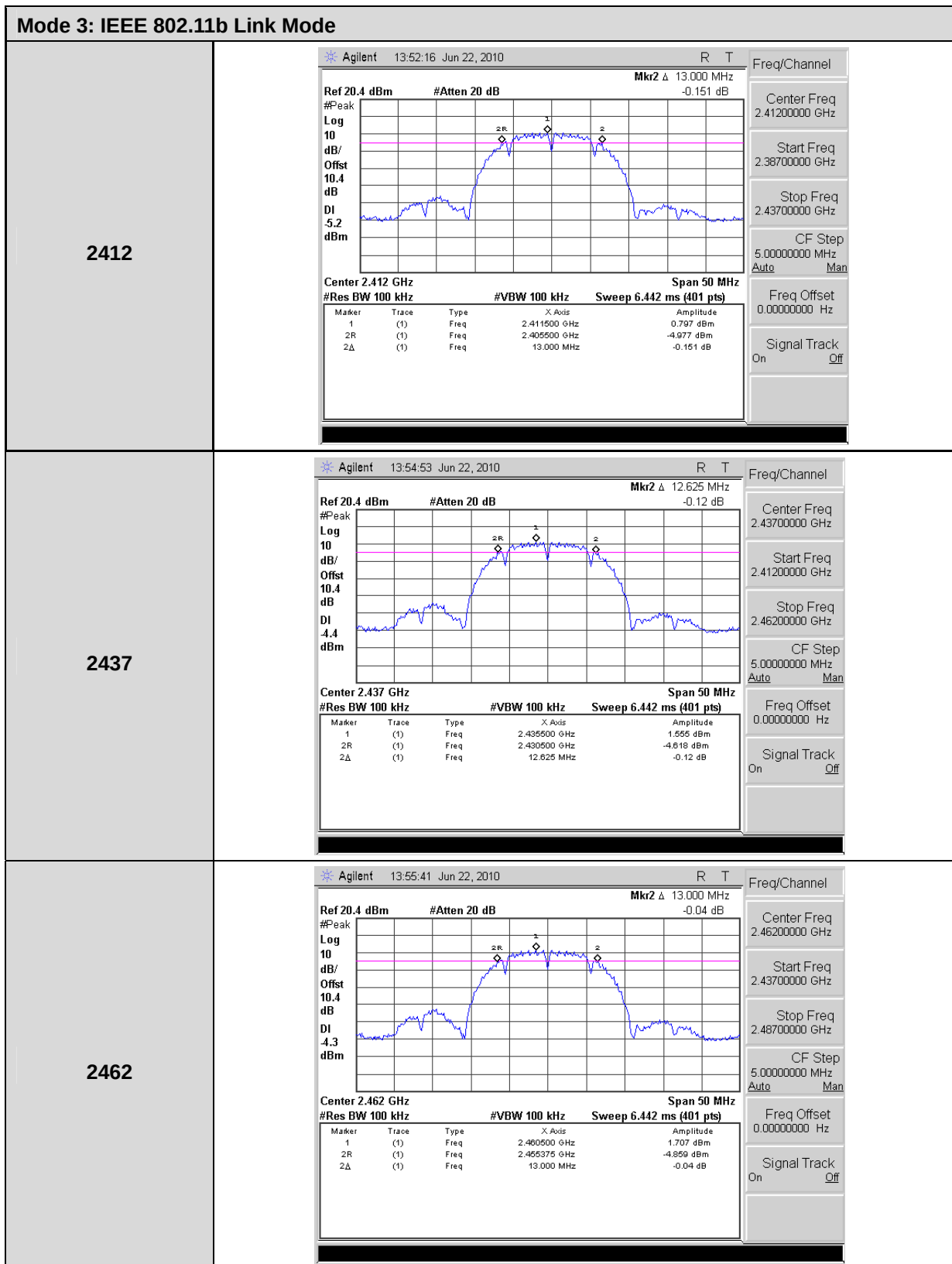
The test was performed at 3 channels (Channel 1, 6, 11)

7.5. Test Result

Model	OT-200		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 3: IEEE 802.11b Link Mode		
Date of Test	06/22/2010	Test Site	TE06
Frequency (MHz)	Measurement (kHz)	Limit (kHz)	
2412	13000	> 500	
2437	12625	> 500	
2462	13000	> 500	

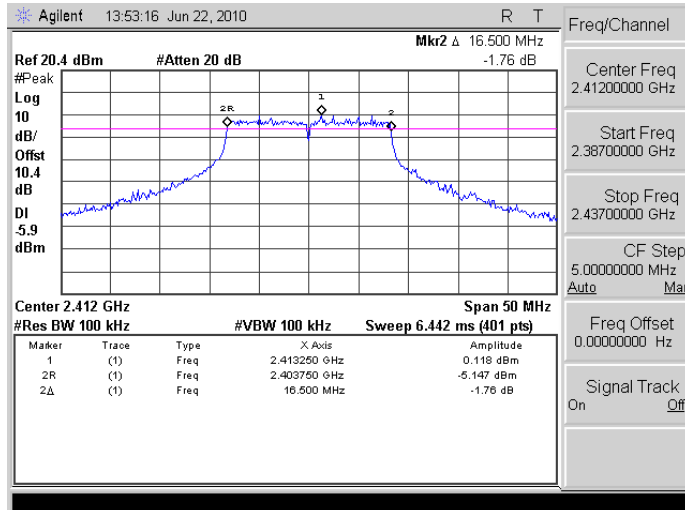
Model	OT-200		
Test Item	6dB RF Bandwidth		
Test Mode	Mode 4: IEEE 802.11g Link Mode		
Date of Test	06/22/2010	Test Site	TE06
Frequency (MHz)	Measurement (kHz)	Limit (kHz)	
2412	16500	> 500	
2437	16500	> 500	
2462	16500	> 500	

7.6. Test Graphs

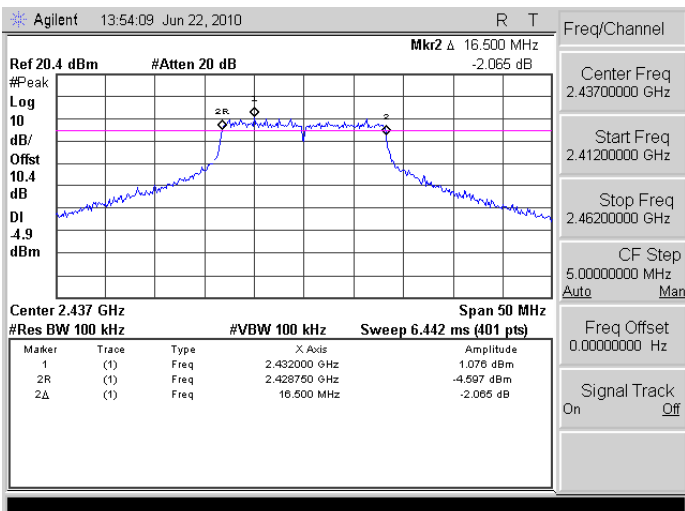


Mode 4: IEEE 802.11g Link Mode

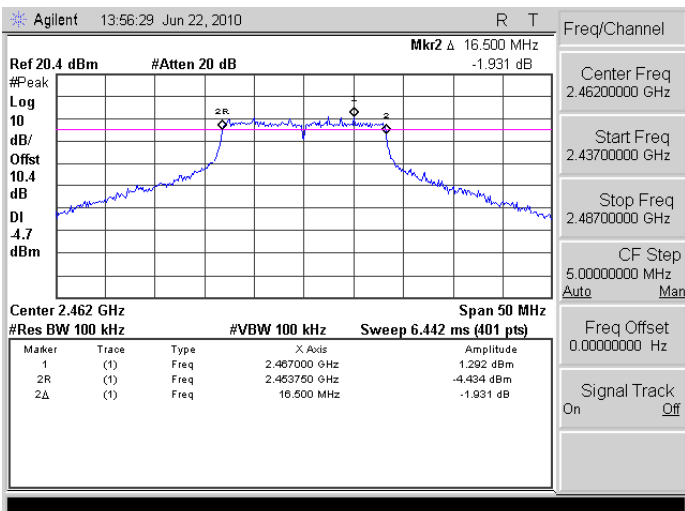
2412



2437



2462

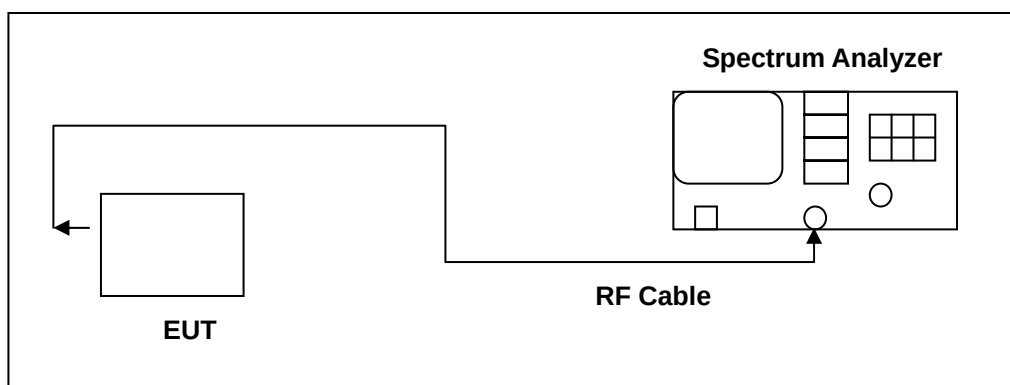


8 Maximum Power Density Measurement

8.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.2. Test Setup



8.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	⁽²⁾
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

8.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The spectrum analyzer RES BW was set to 3 kHz. The START and STOP frequencies were set to the band edges of the maximum output pass band. If there is no clear maximum amplitude in any given portion of the band, it may be necessary to make measurements at a number of bands defined by several START and STOP frequency pairs. The specification calls for a 1 second interval at each 3 kHz bandwidth; total SWEEP TIME is calculated as follows:

SWEEP TIME (SEC) = (Fstop, kHz - Fstart, kHz)/3 kHz

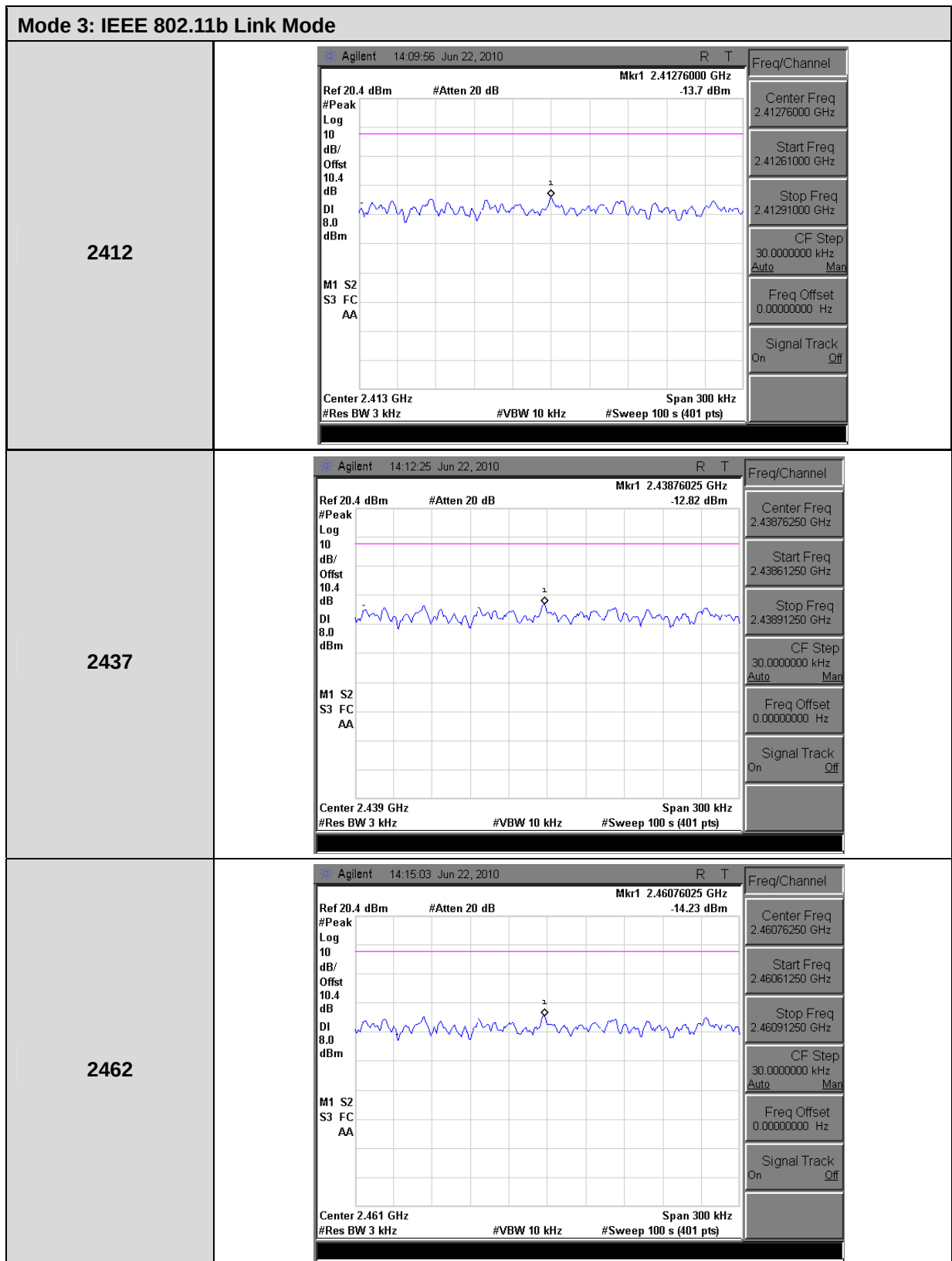
Antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function.

8.5. Test Result

Model	OT-200		
Test Item	Maximum Power Density		
Test Mode	Mode 3: IEEE 802.11b Link Mode		
Date of Test	06/22/2010	Test Site	TE06
Frequency (MHz)	Measurement (dBm)	Limit (dBm)	
2412	-13.70	< 8	
2437	-12.82	< 8	
2462	-14.23	< 8	

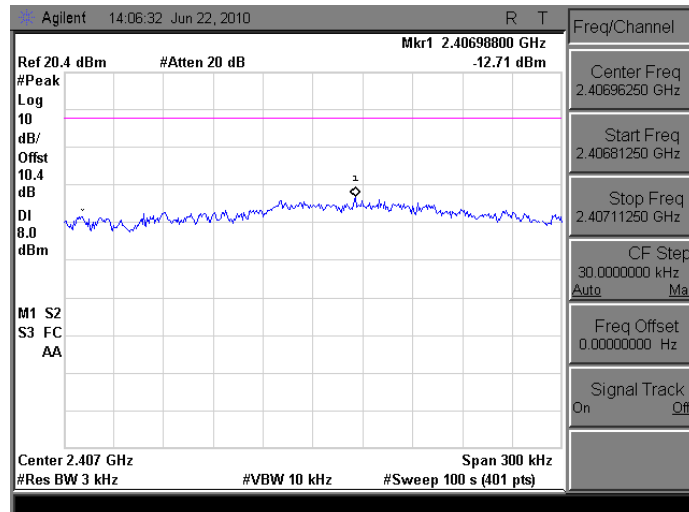
Model	OT-200		
Test Item	Maximum Power Density		
Test Mode	Mode 4: IEEE 802.11g Link Mode		
Date of Test	06/22/2010	Test Site	TE06
Frequency (MHz)	Measurement (dBm)	Limit (dBm)	
2412	-12.71	< 8	
2437	-12.28	< 8	
2462	-11.82	< 8	

8.6. Test Graphs

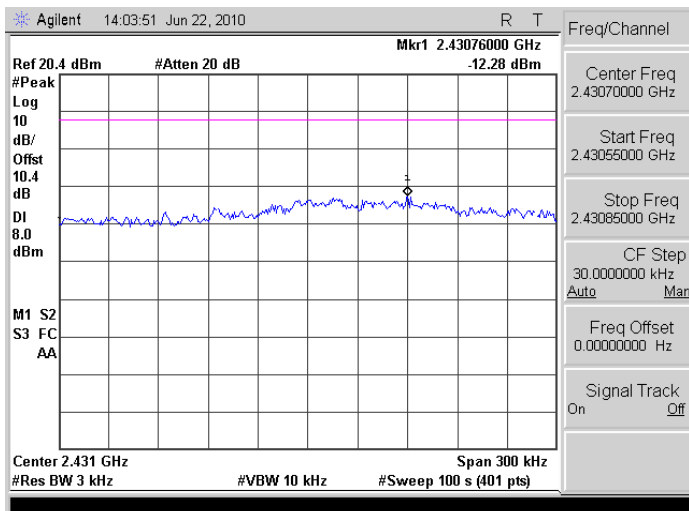


Mode 4: IEEE 802.11g Link Mode

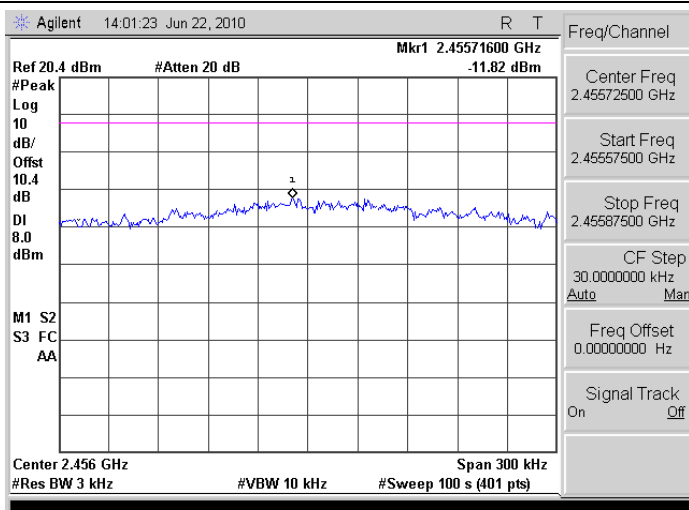
2412



2437



2462

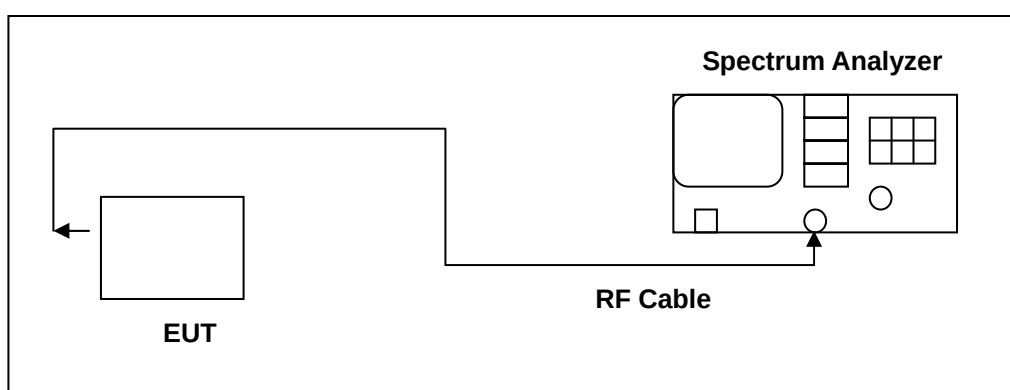


9 Out of Band Conducted Emissions Measurement

9.1. 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

9.2. Test Setup



9.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	⁽²⁾
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

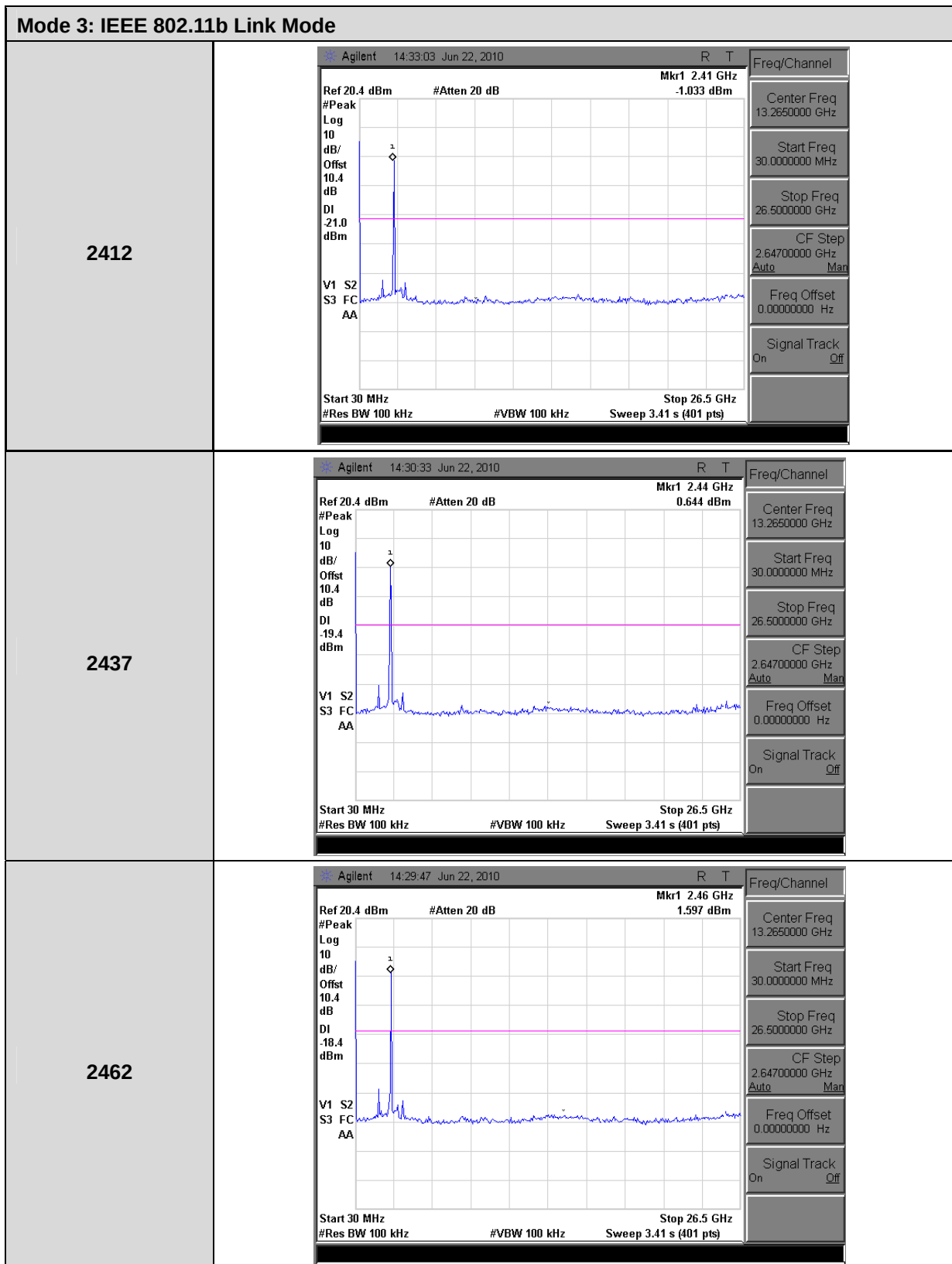
NOTE: N.C.R. = No Calibration Request.

9.4. Test Procedure

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.

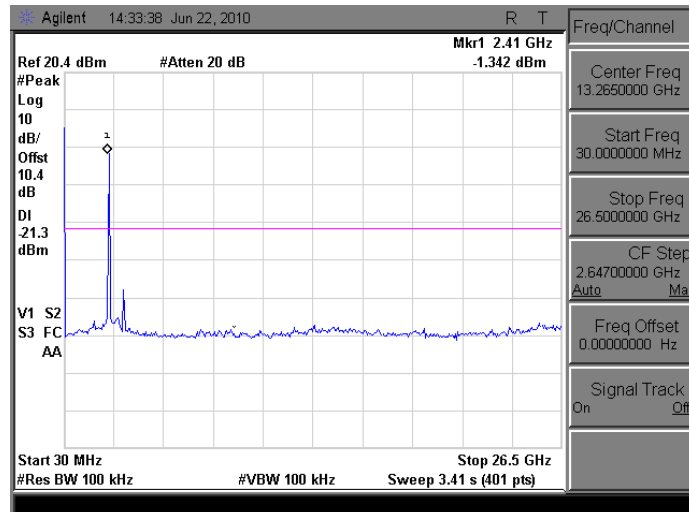
All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels (Channel 1, 6, 11)

9.5. Test Graphs

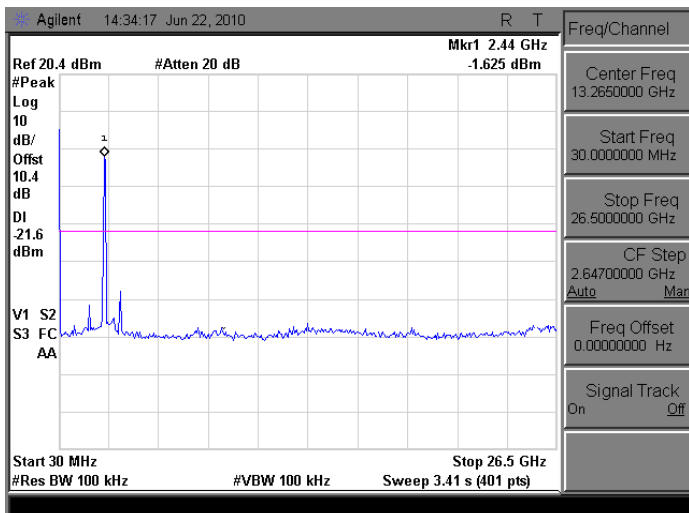


Mode 4: IEEE 802.11g Link Mode

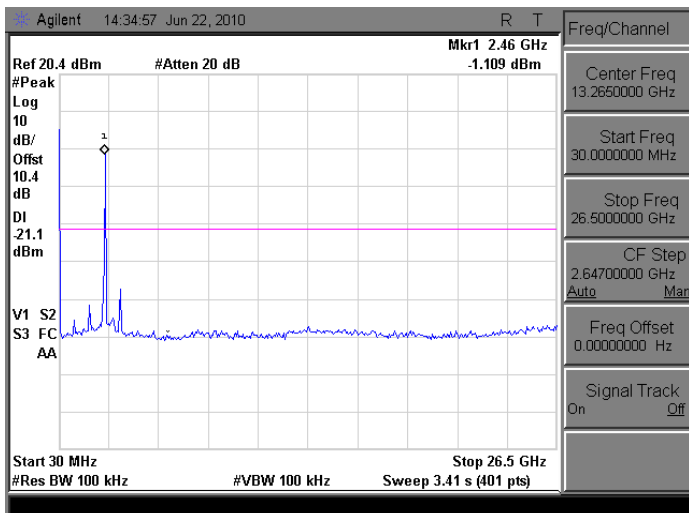
2412



2437



2462

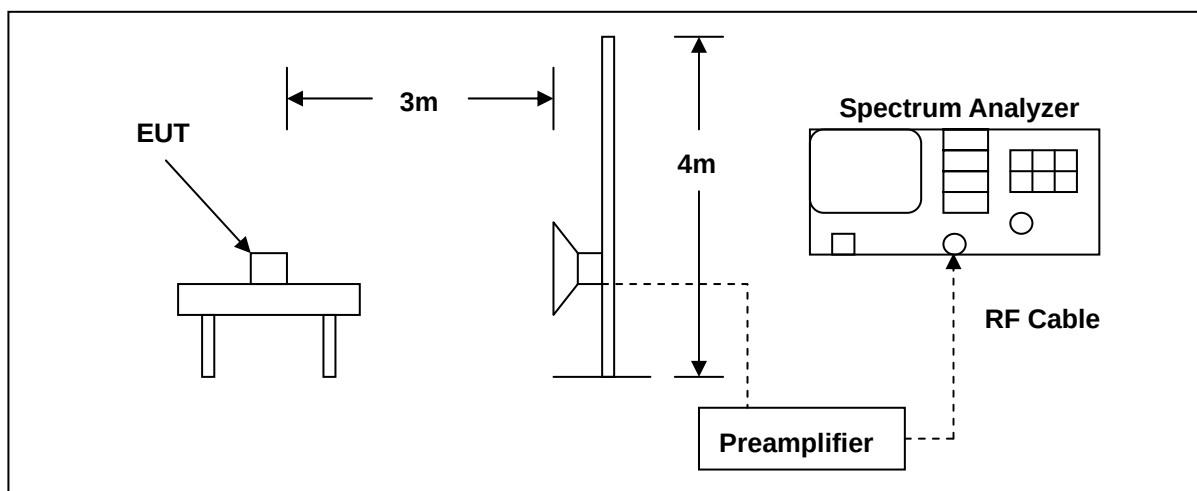


10 Band Edges Measurement

10.1. Limit

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

10.2. Test Setup



10.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	06/23/2009	(2)
Pre Amplifier	Agilent	8449B	3008A02237	07/01/2009	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	9120D	9120D-550	07/01/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

10.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

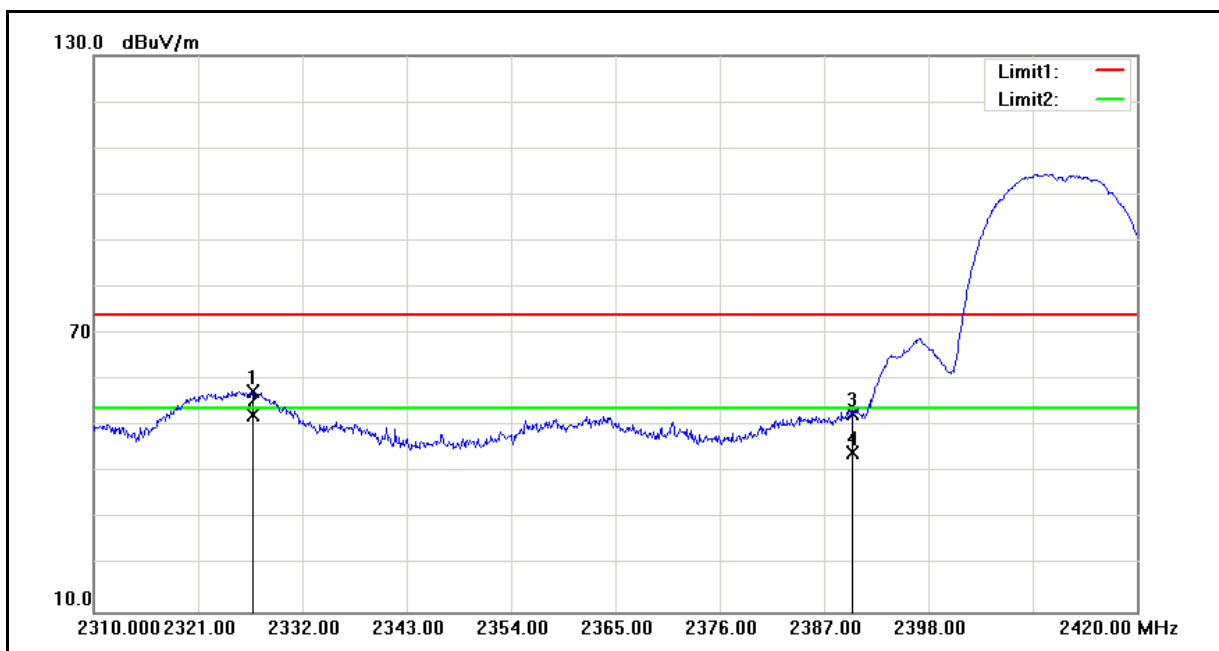
The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz 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.

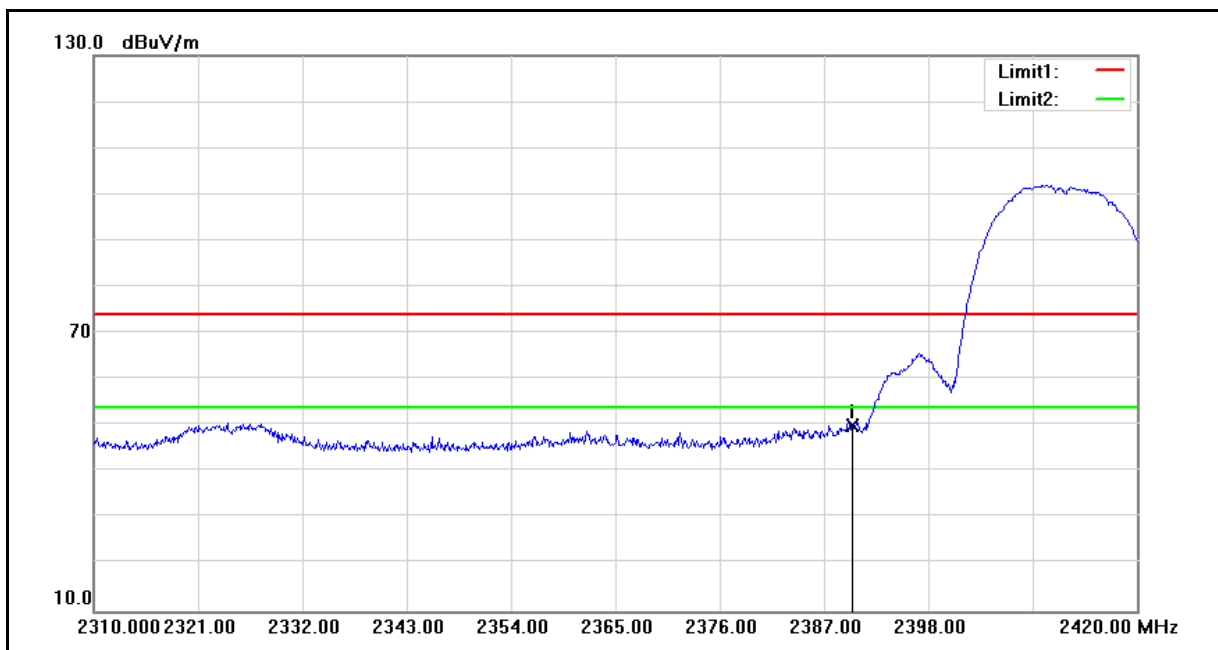
10.5. Test Result

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	2010/06/20
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



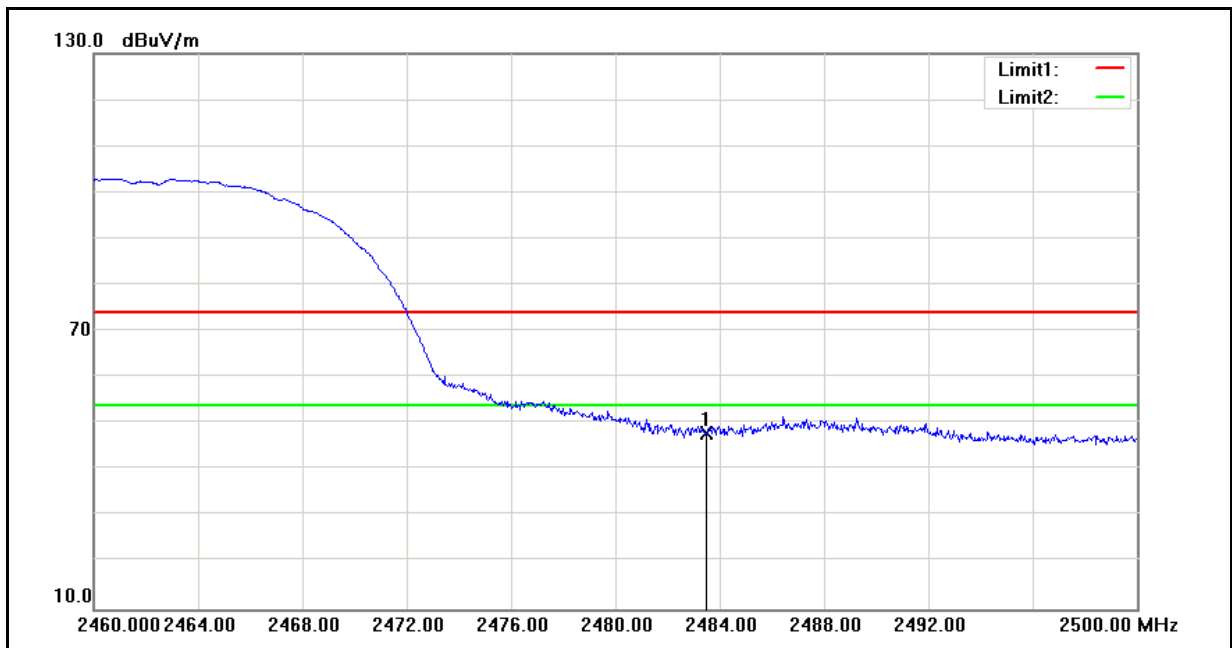
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2326.720	58.17	-0.51	57.66	74.00	-16.34	peak
2	2326.720	53.10	-0.51	52.59	54.00	-1.41	AVG
3	2390.000	52.90	-0.24	52.66	74.00	-21.34	peak
4	2390.000	44.72	-0.24	44.48	54.00	-9.52	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	2010/06/20
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



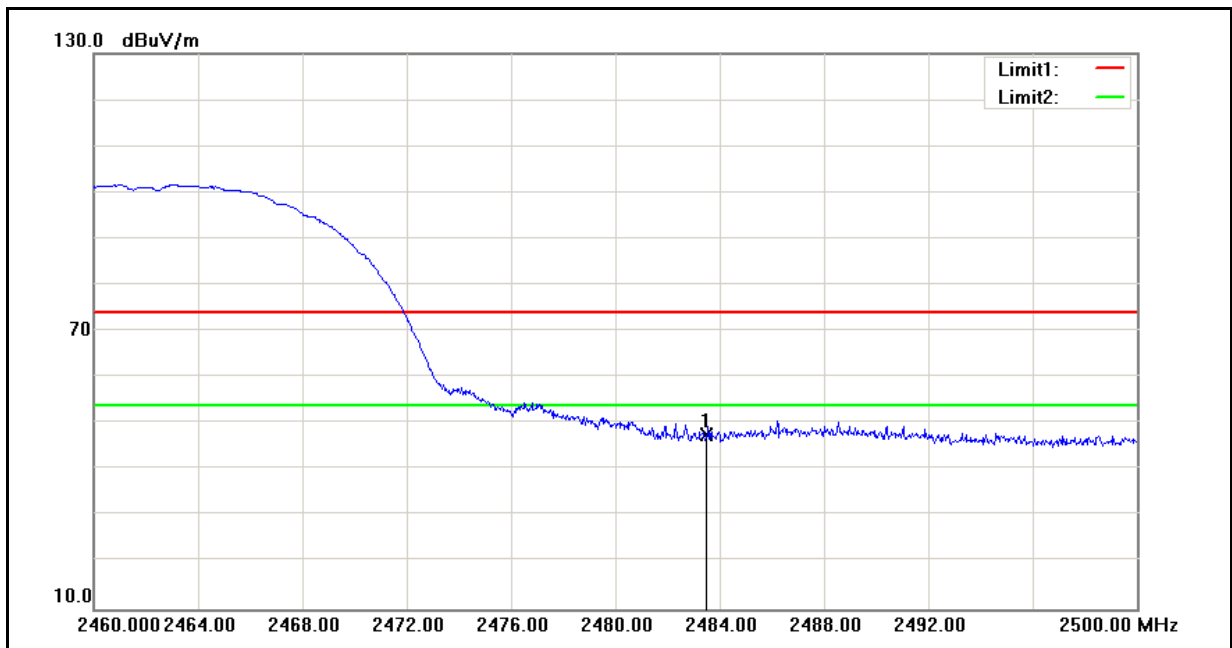
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	50.40	-0.24	50.16	74.00	-23.84	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	2010/06/20
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



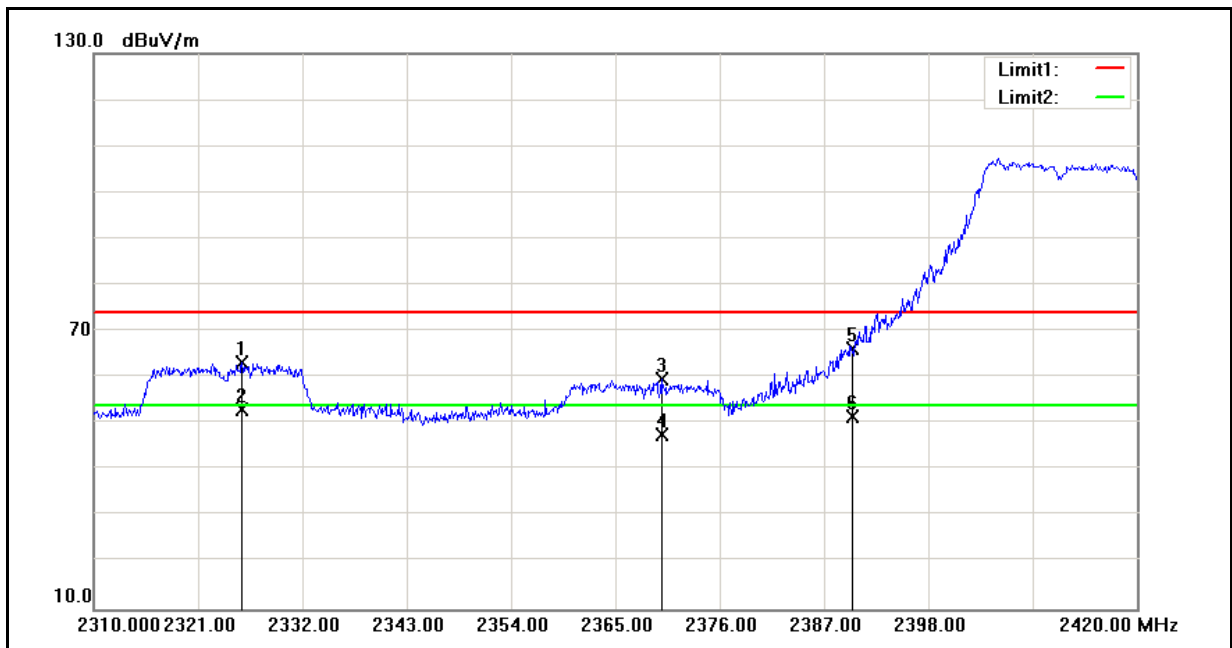
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	47.87	0.15	48.02	74.00	-25.98	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	2010/06/20
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



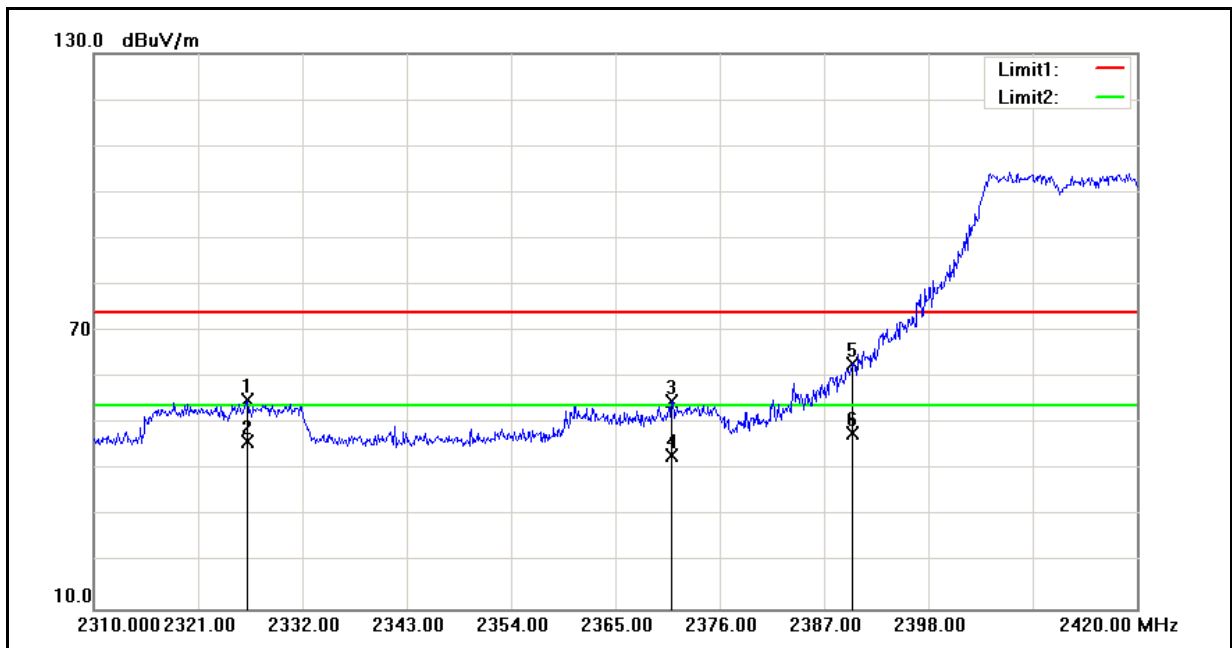
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	47.41	0.15	47.56	74.00	-26.44	peak

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	2010/06/20
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



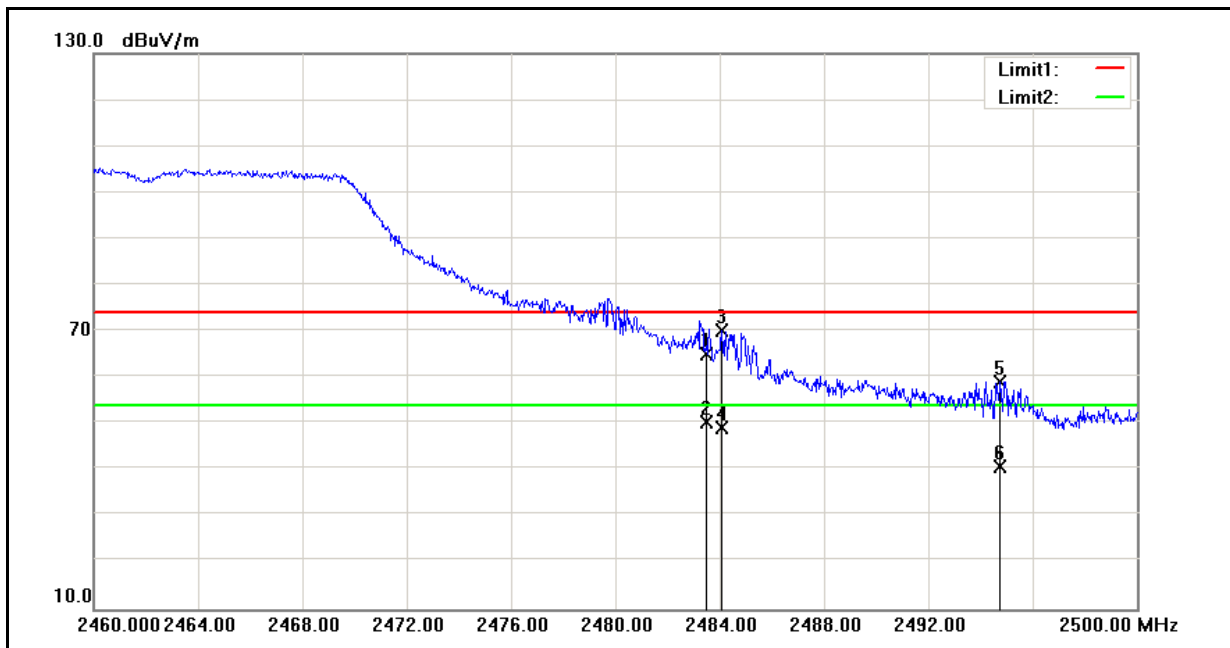
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2325.675	63.71	-0.51	63.20	74.00	-10.80	peak
2	2325.675	53.46	-0.51	52.95	54.00	-1.05	AVG
3	2369.895	59.82	-0.31	59.51	74.00	-14.49	peak
4	2369.895	47.87	-0.31	47.56	54.00	-6.44	AVG
5	2390.000	66.48	-0.24	66.24	74.00	-7.76	peak
6	2390.000	51.84	-0.24	51.60	54.00	-2.40	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	2010/06/20
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



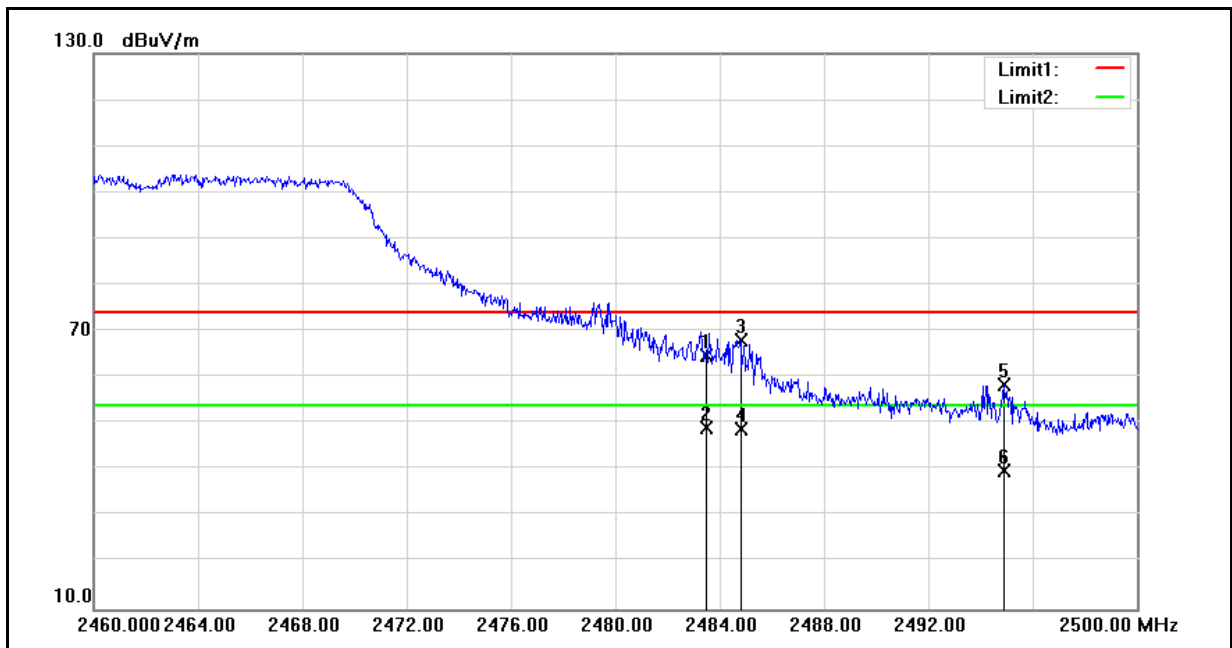
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2326.225	55.68	-0.51	55.17	74.00	-18.83	peak
2	2326.225	46.64	-0.51	46.13	54.00	-7.87	AVG
3	2370.995	55.26	-0.31	54.95	74.00	-19.05	peak
4	2370.995	43.57	-0.31	43.26	54.00	-10.74	AVG
5	2390.000	63.33	-0.24	63.09	74.00	-10.91	peak
6	2390.000	48.25	-0.24	48.01	54.00	-5.99	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	2010/06/20
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	64.82	0.15	64.97	74.00	-9.03	peak
2	2483.500	50.19	0.15	50.34	54.00	-3.66	AVG
3	2484.080	70.09	0.16	70.25	74.00	-3.75	peak
4	2484.080	49.14	0.16	49.30	54.00	-4.70	AVG
5	2494.780	58.93	0.21	59.14	74.00	-14.86	peak
6	2494.780	40.44	0.21	40.65	54.00	-13.35	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	OT-200	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	2010/06/20
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



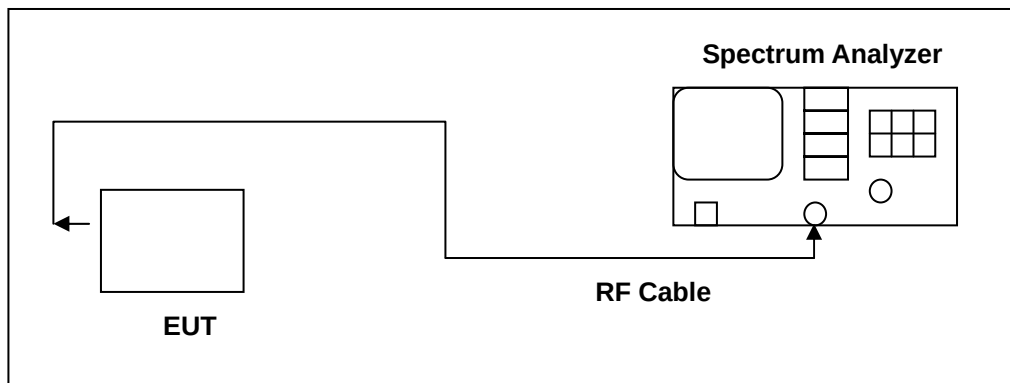
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	64.47	0.15	64.62	74.00	-9.38	peak
2	2483.500	49.15	0.15	49.30	54.00	-4.70	AVG
3	2484.800	67.89	0.16	68.05	74.00	-5.95	peak
4	2484.800	48.75	0.16	48.91	54.00	-5.09	AVG
5	2494.900	58.32	0.21	58.53	74.00	-15.47	peak
6	2494.900	39.54	0.21	39.75	54.00	-14.25	AVG

11 99 % Occupied Bandwidth Measurement

11.1. Limit

N/A

11.2. Test Setup



11.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

11.4. Test Procedure

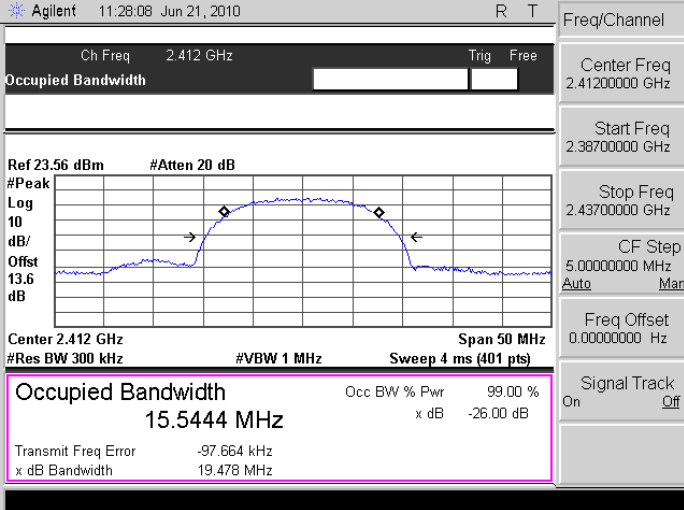
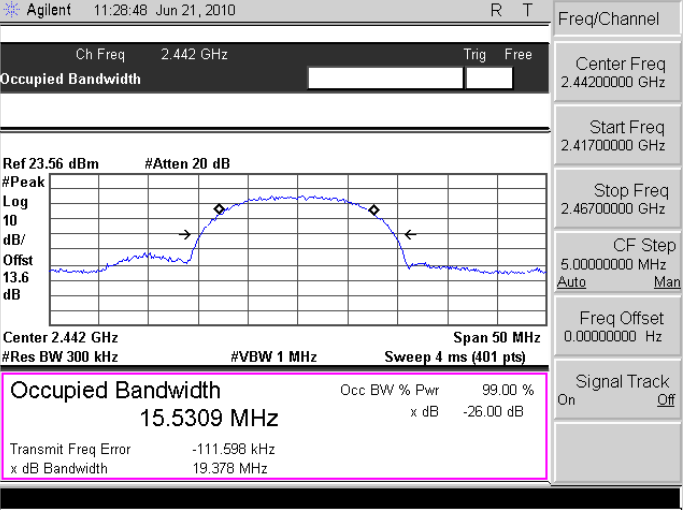
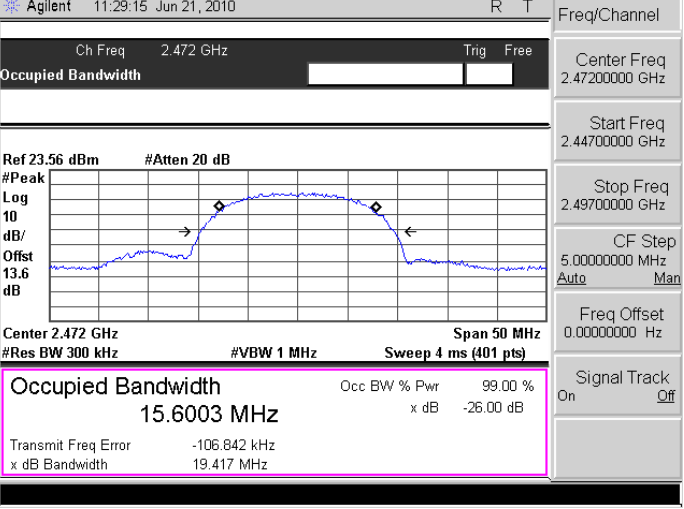
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled.

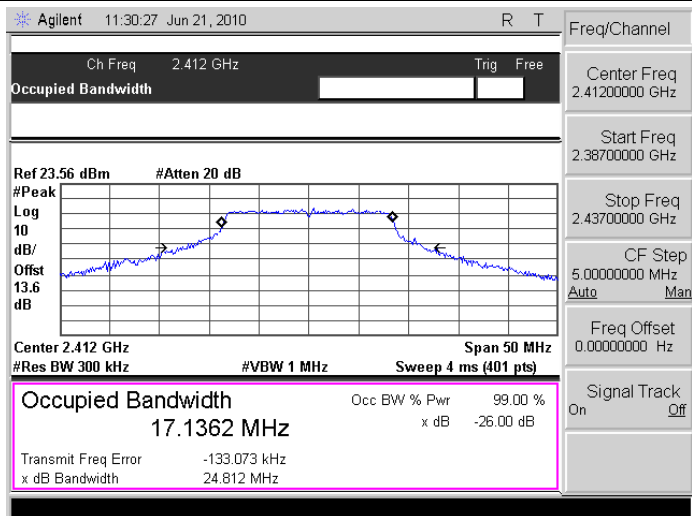
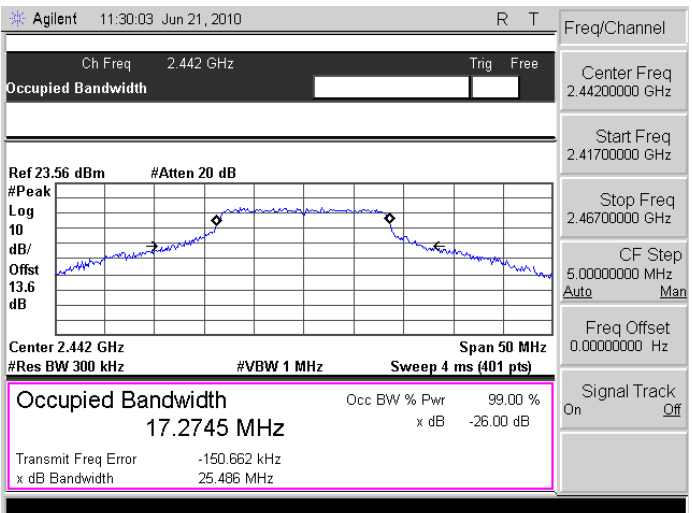
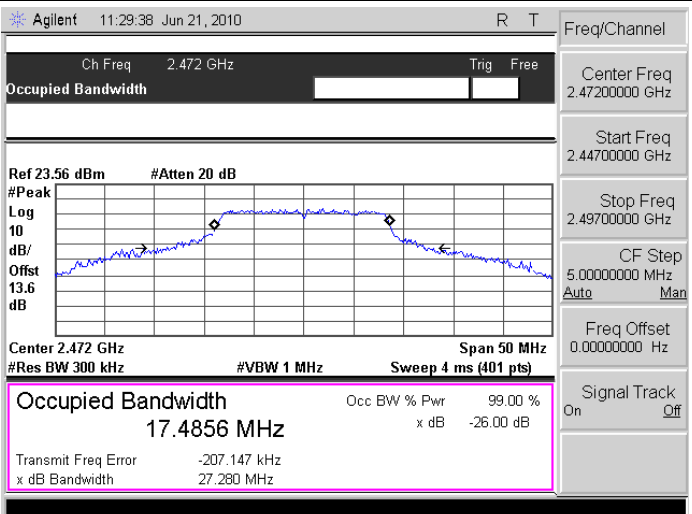
11.5. Test Result

Model	OT-200		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 3: IEEE 802.11b Link Mode		
Date of Test	06/21/2010	Test Site	TE06
Frequency (MHz)	Measurement (kHz)	Limit (kHz)	
2412	15544.4	-----	
2437	15530.9	-----	
2462	15600.3	-----	

Model	OT-200		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 4: IEEE 802.11g Link Mode		
Date of Test	06/21/2010	Test Site	TE06
Frequency (MHz)	Measurement (kHz)	Limit (kHz)	
2412	17136.2	-----	
2437	17274.5	-----	
2462	17485.6	-----	

11.6. Test Graphs

Mode 3: IEEE 802.11b Link Mode	
2412	 Agilent 11:28:08 Jun 21, 2010 R T Ch Freq 2.412 GHz Trng Free Occupied Bandwidth Ref 23.56 dBm #Atten 20 dB #Peak Log 10 dB/ Offst 13.6 dB Center 2.412 GHz Span 50 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts) Occupied Bandwidth 15.5444 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -97.664 kHz x dB Bandwidth 19.478 MHz Freq/Channel Center Freq 2.41200000 GHz Start Freq 2.38700000 GHz Stop Freq 2.43700000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
2437	 Agilent 11:28:48 Jun 21, 2010 R T Ch Freq 2.442 GHz Trng Free Occupied Bandwidth Ref 23.56 dBm #Atten 20 dB #Peak Log 10 dB/ Offst 13.6 dB Center 2.442 GHz Span 50 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts) Occupied Bandwidth 15.5309 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -111.598 kHz x dB Bandwidth 19.378 MHz Freq/Channel Center Freq 2.44200000 GHz Start Freq 2.41700000 GHz Stop Freq 2.46700000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
2462	 Agilent 11:29:15 Jun 21, 2010 R T Ch Freq 2.472 GHz Trng Free Occupied Bandwidth Ref 23.56 dBm #Atten 20 dB #Peak Log 10 dB/ Offst 13.6 dB Center 2.472 GHz Span 50 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts) Occupied Bandwidth 15.6003 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -106.842 kHz x dB Bandwidth 19.417 MHz Freq/Channel Center Freq 2.47200000 GHz Start Freq 2.44700000 GHz Stop Freq 2.49700000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

Mode 4: IEEE 802.11g Link Mode
2412

2437

2462


12 Antenna Measurement

12.1. 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.

12.2. Antenna Connector Construction

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