



FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

802.11g Wireless Cable/DSL Internet Gateway w/USB Printer Port

Model: DIR-320

Trade Name: D-Link

Issued to

D-Link Corporation
No.289, Shinhu 3rd Rd., Neihu District,
Taipei City 114, Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.
No. 81-1, Lane 210, Bade Rd. 2, Luchu Hsiang,
Taoyuan Hsien, (338) Taiwan, R.O.C.
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1. TEST RESULT CERTIFICATION

Applicant: D-Link Corporation
 No.289, Shinhu 3rd Rd., Neihu District,
 Taipei City 114, Taiwan, R.O.C.

Equipment Under Test: 802.11g Wireless Cable/DSL Internet Gateway w/USB Printer Port

Trade Name: D-Link

Model: DIR-320

Date of Test: August 15 ~ October 5, 2007

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart C	No non-compliance noted
Deviation from Applicable Standard	
The 6dB Bandwidth, Peak Power, Average Power, Band Edges Measurement, Peak Power Spectral Density, Spurious Emissions (Above 1 GHz) tests were performed at Compliance Certification Services Inc. (Hsinchu Lab.) The test equipments were listed in page 8 to 9 and test data were listed in page 13 to 43 and 48 to 53.	

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. 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 EUT 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 EUT identified in this report.

Approved by:

Reviewed by:

Rex Lai
 Section Manager
 Compliance Certification Services Inc.

Amanda Wu
 Section Manager
 Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	802.11g Wireless Cable/DSL Internet Gateway w/USB Printer Port
Trade Name	D-Link
Model Number	DIR-320
Model Discrepancy	N/A
Power Supply	<p>Adapter 1: Trade name / Model number: D-Link / JTA0302D-C I/P: AC 100-240V, 0.5A, 50-60Hz O/P: DC 5.0V, 2A</p> <p>Adapter 2: Trade name / Model number: D-Link / JTA0302D-E I/P: AC 100-240V, 0.5A, 50-60Hz O/P: DC 5.0V, 2A</p> <p>Adapter 3: Trade name / Model number: D-Link / AF1205-B I/P: AC 100-120V, 0.3A, 50-60Hz O/P: DC 5.0V, 2.0A</p> <p>Adapter 4: Trade name / Model number: D-Link / AF1205-D I/P: AC 100-240V, 0.3A, 50-60Hz O/P: DC 5.0V, 2A</p>
Frequency Range	2412 ~ 2462 MHz
Transmit Power	IEEE 802.11b: 22.96 dBm IEEE 802.11g: 18.58 dBm
Modulation Technique	IEEE 802.11b: DSSS (CCK, DQPSK, DBPSK) IEEE 802.11g: DSSS (CCK, DQPSK, DBPSK) + OFDM (QPSK, BPSK, 16-QAM, 64-QAM)
Transmit Data Rate	IEEE 802.11b: 11, 5.5, 2, 1 Mbps IEEE 802.11g: 54, 48, 36, 24, 18, 12, 11, 9, 6, 5.5, 2, 1 Mbps
Number of Channels	11 Channels
Antenna Specification	Gain: 1.8 dBi
Antenna Designation	Dipole Antenna

Remark:

1. The sample selected for test was production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC ID: **KA2DIR320A1** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.



3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.247.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

3.2 EUT EXERCISE

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.207, 15.209 and 15.247 under the FCC Rules Part 15 Subpart C.

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4.



3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	(²)
13.36 - 13.41	322 - 335.4		

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

² Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



3.5 DESCRIPTION OF TEST MODES

The EUT (model: DIR-320) comes with four types of power adapters (JTA0302D-C & JTA0302D-E & AF1205-B & AF1205-D) for sale. After the preliminary test, the power adapter with model number AF1205-D was found to emit the worst emissions and therefore had been tested under operating condition.

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

IEEE 802.11b mode:

Channel Low(2412MHz), Channel Mid(2437MHz) and Channel High(2462MHz) with 11Mbps data rate were chosen for full testing.

IEEE 802.11g mode:

Channel Low(2412MHz), Channel Mid(2437MHz) and Channel High(2462MHz) with 6Mbps data rate were chosen for full testing.



4. INSTRUMENT CALIBRATION

4.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

4.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: Each piece of equipment is scheduled for calibration once a year.

Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY433601.32	06/05/2008

3M Semi Anechoic Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510252	09/11/2008
Test Receiver	Rohde&Schwarz	ESCI	100064	11/13/2007
Switch Controller	TRC	Switch Controller	SC94050010	05/04/2008
4 Port Switch	TRC	4 Port Switch	SC94050020	05/04/2008
Horn-Antenna	TRC	HA-0502	06	06/05/2008
Horn-Antenna	TRC	HA-0801	04	06/20/2008
Horn-Antenna	TRC	HA-1201A	01	08/12/2008
Horn-Antenna	TRC	HA-1301A	01	08/12/2008
Bilog- Antenna	Sunol Sciences	JB3	A030205	03/29/2008
Turn Table	Max-Full	MFT-120S	T120S940302	N.C.R.
Antenna Tower	Max-Full	MFA-430	A440940302	N.C.R.
Controller	Max-Full	MF-CM886	CC-C-1F-13	N.C.R.
Site NSA	CCS	N/A	FCC: 965860 IC: IC 6106	09/25/2008
Test S/W	LABVIEW (V 6.1)			

Remark: The measurement uncertainty is less than +/-2.0065dB (30MHz ~ 1GHz), +/-3.0958dB (Above 1GHz) which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.



Open Area Test Site # 2				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
BILOG ANTENNA	CHASE	CBL6112B	2817	08/26/2008
SPECTRUM ANALYZER	R&S	FSEK30	835253/002	10/16/2008
EMI TEST RECEIVER	R&S	ESCS30	835418/008	08/31/2008
OPEN SITE	CCS	N/A	No.2	05/06/2008
N-TYPE COAXIAL CABLE	DELDEN	9913-30M	001	08/19/2008
Horn Antenna	N/A	AH-118	10089	08/28/2008
Horn Antenna	N/A	AH-840	03077	02/23/2008
Pre-amplifier	Agilent	8449B	3008A01471	12/24/2007
Amplifier	HP	8447D	1937A02748	12/24/2007
High pass filter	HP	84300/80038	002	N.C.R.
High pass filter	HP	84300/80039	003	N.C.R.
Loop Antenna	ETS-LINDGREN	6502	2356	06/13/2008

Remark: The measurement uncertainty is less than +/- 3.2dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.

Powerline Conducted Emissions Test Site				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver 9kHz-30MHz	Rohde & Schwarz	ESHS30	828144/003	10/31/2007
Two-Line V-Network 9kHz-30MHz	Schaffner	NNB41	03/10013	06/12/2008
LISN 10kHz-100MHz	EMCO	3825/2	9106-1809	04/01/2008
Test S/W	LABVIEW (V 6.1)			

Remark: The measurement uncertainty is less than +/- 2.81dB, which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV.



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

- No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.
Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029
- No.11, Wugong 6th Rd., Wugu Industrial Park, Taipei Hsien 248, Taiwan
Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045
- No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, Taiwan
Tel: 886-3-324-0332 / Fax: 886-3-324-5235
- Rm.258, Bldg.17, NO.195, Sec. 4, Chung Hsing Rd., Chu-Tung Chen. Hsin-Chu,
Taiwan 310 R.O.C.
Tel: 886-3-591-0068 / Fax: 886-3-582-5720

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

5.2 EQUIPMENT







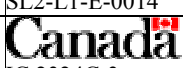
Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

5.3 TABLE OF ACCREDITATIONS AND LISTINGS

Country	Agency	Scope of Accreditation	Logo
USA	A2LA	EN 55011, EN 55014-1/2, CISPR 11, CISPR 14-1/2, EN 55022, EN 55015, CISPR 22, CISPR 15, AS/NZS 3548, VCCI V3 (2001), CFR 47, FCC Part 15/18, CNS 13783-1, CNS 13439, CNS 13438, CNS 13803, CNS 14115, EN 55024, IEC 801-2, IEC 801-3, IEC 801-4, IEC/EN 61000-3-2, IEC/EN 61000-3-3, IEC/EN 61000-4-2/3/4/5/6/8/11, EN 50081-1/ EN 61000-6-3, EN 50081-2/EN 61000-6-4, EN 50081-2/EN 61000-6-1: 2001	
USA	FCC	3/10 meter Open Area Test Sites (93105, 90471) / 3M Semi Anechoic Chamber (965860) to perform FCC Part 15/18 measurements	 93105, 90471 965860
Japan	VCCI	3/10 meter Open Area Test Sites to perform conducted/radiated measurements	 R-393/1066/725/879 C-402/747/912
Norway	NEMKO	EN 50081-1/2, EN 50082-1/2, IEC 61000-6-1/2, EN 50091-2, EN 50130-4, EN 55011, EN 55013, EN 55014-1/2, EN 55015, EN 55022, EN 55024, EN 61000-3-2/3, EN 61326-1, IEC 61000-4-2/3/4/5/6/8/11, EN 60601-1-2, EN 300 328, EN 300 422-2, EN 301 419-1, EN 301 489-01/03/07/08/09/17, EN 301 419-2/3, EN 300 454-2, EN 301 357-2	 ELA 124a ELA 124b ELA 124c
Taiwan	TAF	EN 300 328, EN 300 220-1, EN 300 220-2, EN 300 220-3, 47 CFR FCC Part 15 Subpart C, EN 61000-3-2, EN 61000-3-3, CNS 13439, CNS 13783-1, CNS 14115, CNS 13438, AS/NZS CISPR 22, CNS 13022-1, IEC 61000-4-2/3/4/5/6/8/11, CNS 13022-2/3	
Taiwan	BSMI	CNS 13438, CNS 13783-1, CNS 13439, CNS 14115	 SL2-IS-E-0014 SL2-IN-E-0014 SL2-A1-E-0014 SL2-R1-E-0014 SL2-R2-E-0014 SL2-L1-E-0014
Canada	Industry Canada	3/10 meter Open Area Test Sites (IC 2324C-3, IC 2324C-5) / 3M Semi Anechoic Chamber (IC 6106)	 IC 2324C-3 IC 2324C-5 IC 6106

* No part of this report may be used to claim or imply product endorsement by A2LA or any agency of the US Government.



6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	Notebook PC	DELL	Latitude D610	CN-0XD762-48643-637-1743	E2K24BNHM	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
2.	Notebook PC	Sony	PCG-6GFP	00045-578-554-578	WLAN: ETC094LPD0155 Bluetooth: ETC094LPD0156	N/A	AC I/P: Unshielded, 1.8m DC O/P: Unshielded, 1.8m with a core
3.	Modem	ACEEX	DM-1414	304012269	IFAXDM1414	Shielded, 1.8m	Unshielded, 1.8m

Remark:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



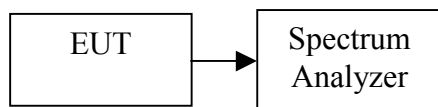
7. FCC PART 15.247 REQUIREMENTS

7.1 6DB BANDWIDTH

LIMIT

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

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100 kHz, VBW = 300 kHz, Span = 50 MHz, Sweep = auto.
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated.



TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Result
Low	2412	9550	>500	PASS
Mid	2437	10050		PASS
High	2462	9950		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Result
Low	2412	16350	>500	PASS
Mid	2437	16300		PASS
High	2462	16350		PASS



Test Plot

IEEE 802.11b

6dB Bandwidth (CH Low)

Agilent 23:37:29 Aug 25, 2007

R T

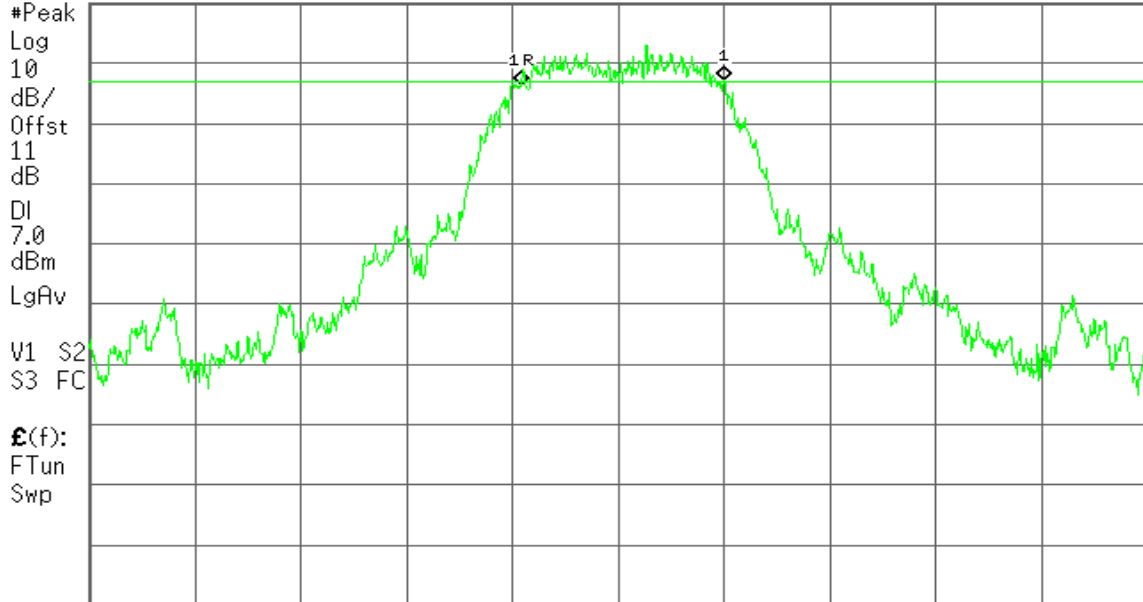
6dB BW, b Mode Low Ch.

Mkr1 9.55 MHz

Ref 20 dBm

Atten 20 dB

0.85 dB



Center 2.412 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 20 ms (1001 pts)

6dB Bandwidth (CH Mid)

Agilent 23:24:20 Aug 25, 2007

R T

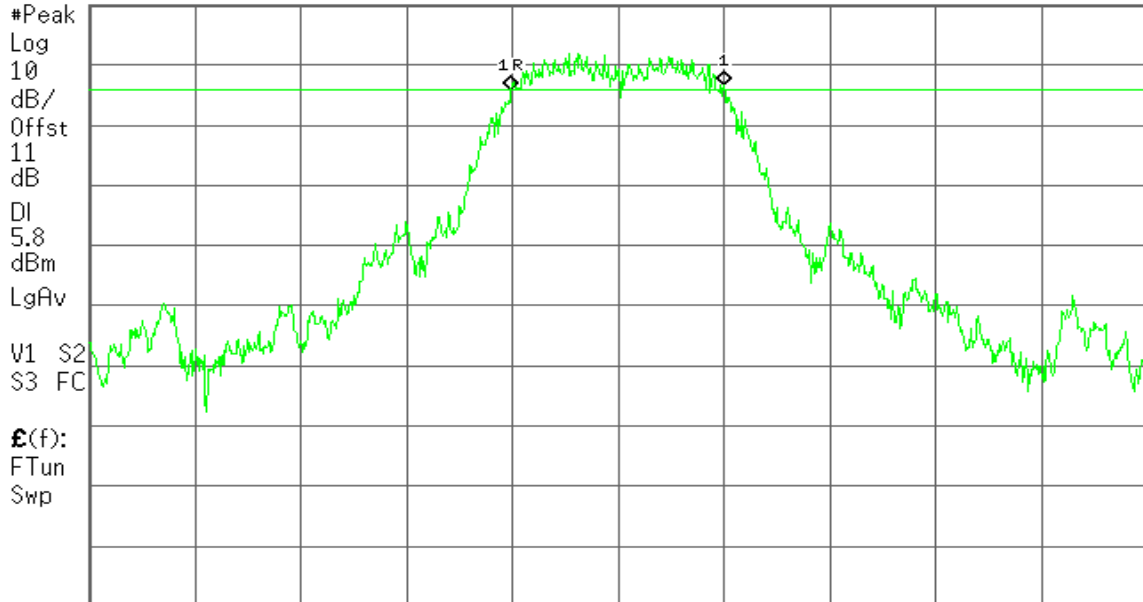
6dB BW, b Mode Mid Ch.

Mkr1 10.05 MHz

Ref 20 dBm

Atten 20 dB

0.63 dB



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 20 ms (1001 pts)



6dB Bandwidth (CH High)

Agilent 23:12:09 Aug 25, 2007

R T

6dB BW, b Mode High Ch.

Mkr1 9.95 MHz

Ref 20 dBm

Atten 20 dB

-0.20 dB

#Peak

Log

10

dB/

Offst

11

dB

DI

5.0

dBm

LgAv

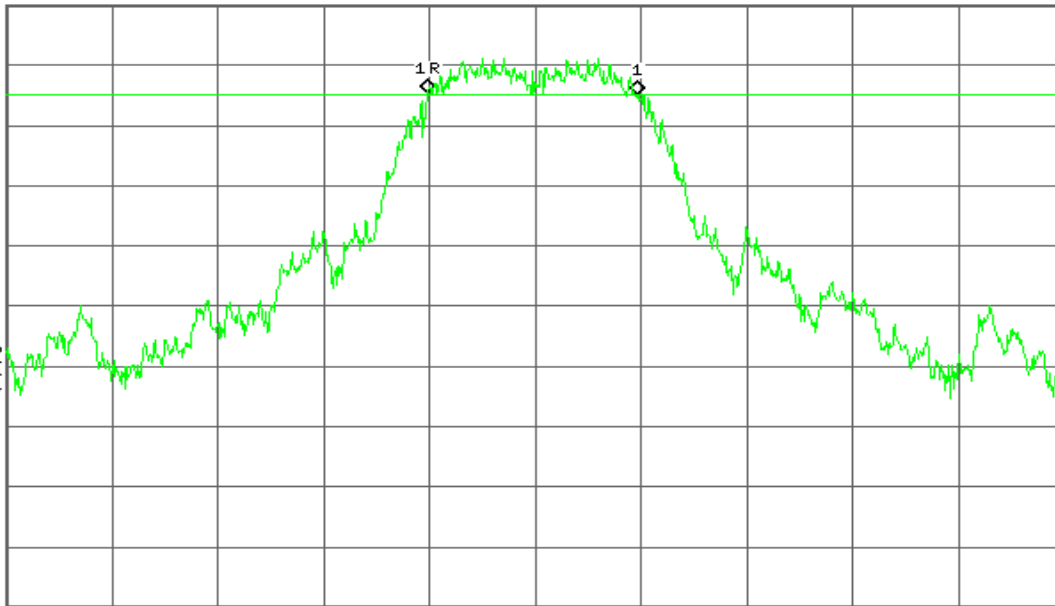
V1 S2

S3 FC

£(f):

FTun

Swp



Center 2.462 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 20 ms (1001 pts)

IEEE 802.11g mode

6dB Bandwidth (CH Low)

Agilent 22:29:47 Aug 25, 2007

R T

6dB BW, g Mode Low Ch.

Mkr1 16.35 MHz

Ref 20 dBm

Atten 20 dB

-0.85 dB

#Peak

Log

10

dB/

Offst

11

dB

DI

-0.3

dBm

LgAv

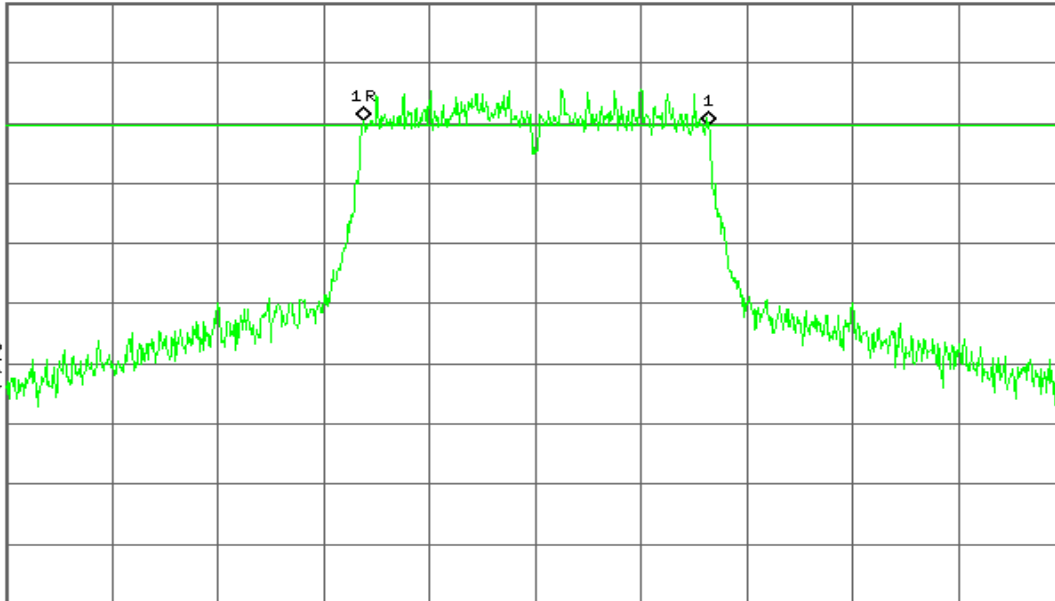
V1 S2

S3 FC

£(f):

FTun

Swp



Center 2.412 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 20 ms (1001 pts)



6dB Bandwidth (CH Mid)

Agilent 22:48:23 Aug 25, 2007

R T

6dB BW, g Mode Mid Ch.

Mkr1 16.30 MHz

Ref 20 dBm

Atten 20 dB

0.17 dB

#Peak

Log

10

dB/

Offst

11

dB

DI

-0.2

dBm

LgAv

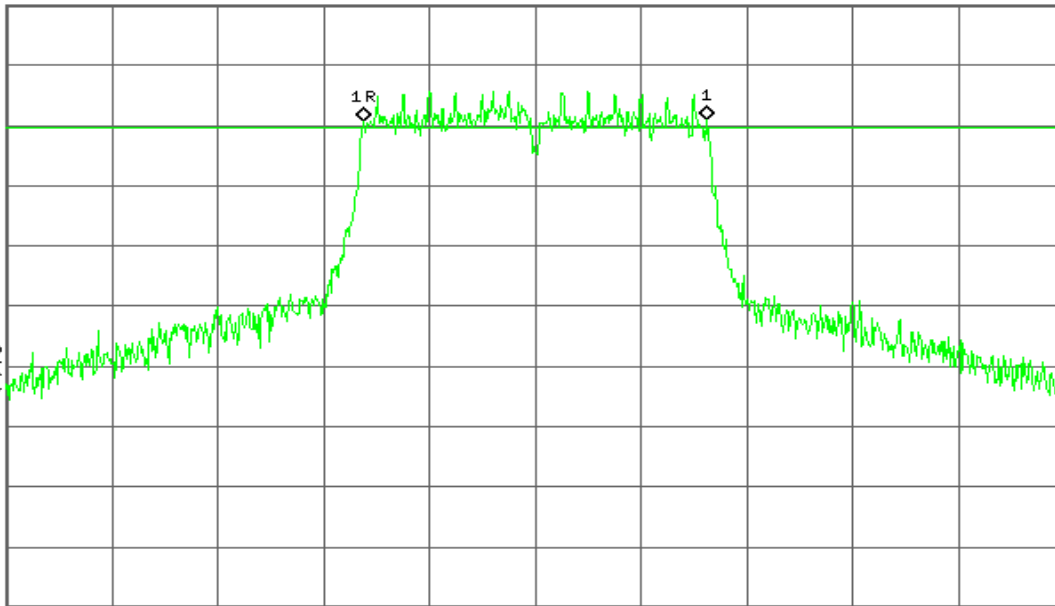
V1 S2

S3 FC

£(f):

FTun

Swp



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 20 ms (1001 pts)

6dB Bandwidth (CH High)

Agilent 22:57:55 Aug 25, 2007

R T

6dB BW, g Mode High Ch.

Mkr1 16.35 MHz

Ref 20 dBm

Atten 20 dB

1.51 dB

#Peak

Log

10

dB/

Offst

11

dB

DI

-1.5

dBm

LgAv

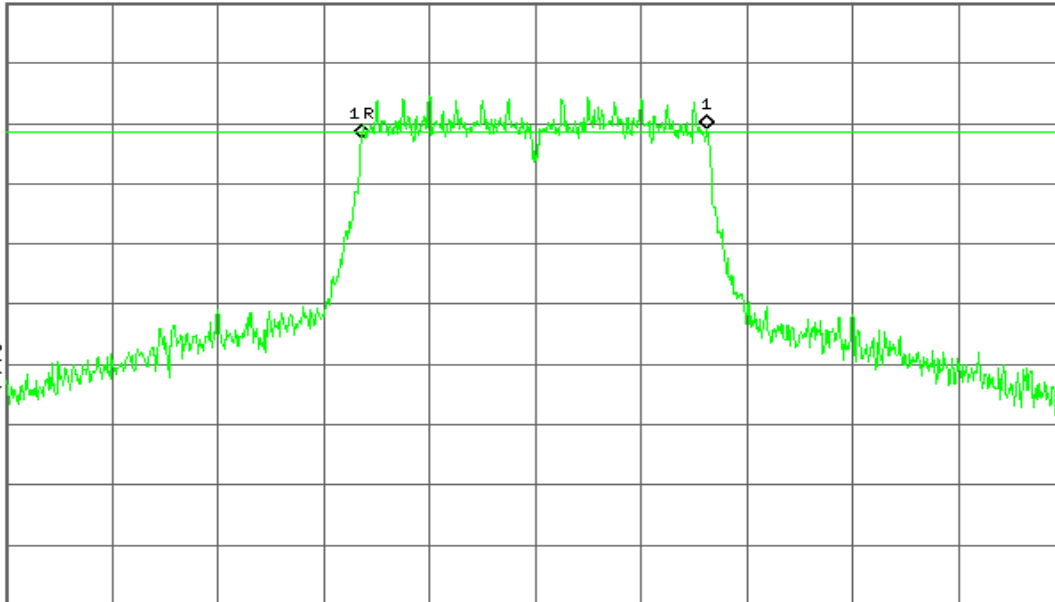
V1 S2

S3 FC

£(f):

FTun

Swp



Center 2.462 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 20 ms (1001 pts)



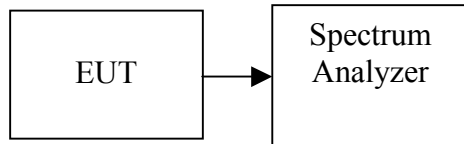
7.2 PEAK POWER

LIMIT

The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the peak power detection.

TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	22.96	0.1977	1.00	PASS
Mid	2437	22.57	0.1807		PASS
High	2462	22.64	0.1837		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	18.58	0.0721	1.00	PASS
Mid	2437	17.83	0.0607		PASS
High	2462	16.65	0.0462		PASS



Test Plot

IEEE 802.11b

Peak Power (CH Low)

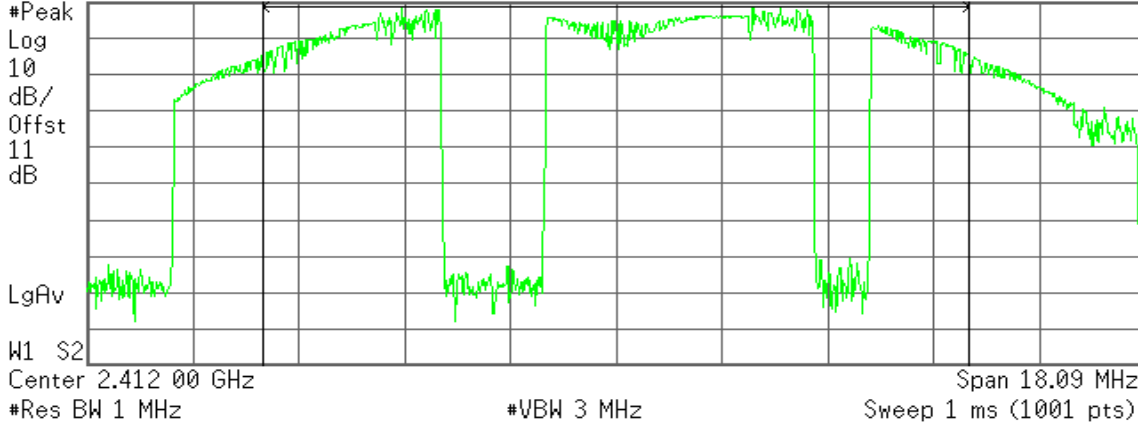
Agilent 23:39:03 Aug 25, 2007

R T

Peak Output Power (DTS), b Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

22.96 dBm /12.0600 MHz

Power Spectral Density

-47.85 dBm/Hz

Peak Power (CH Mid)

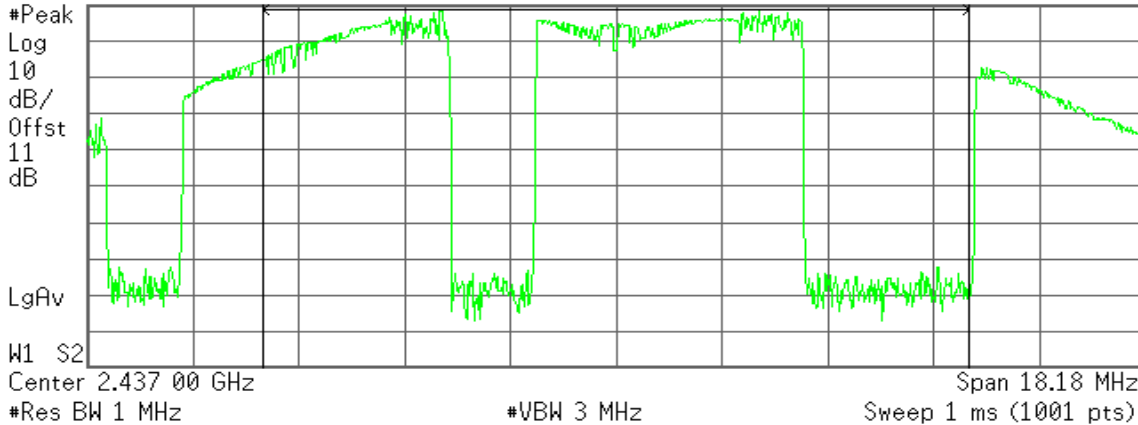
Agilent 23:25:20 Aug 25, 2007

R T

Peak Output Power (DTS), b Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

22.57 dBm /12.1170 MHz

Power Spectral Density

-48.26 dBm/Hz



Peak Power (CH High)

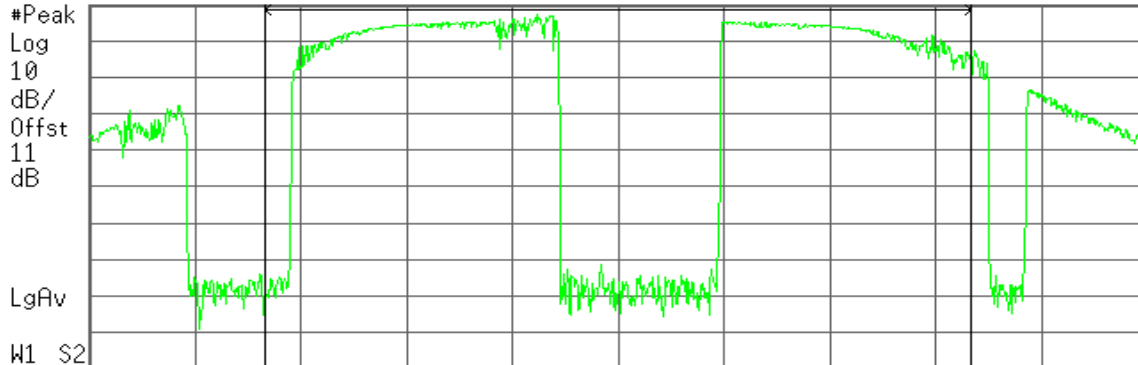
Agilent 23:13:20 Aug 25, 2007

R T

Peak Output Power (DTS), b Mode High Ch.

Ref 20 dBm

Atten 20 dB



Center 2.462 00 GHz

Span 18.15 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (1001 pts)

Channel Power

22.64 dBm /12.0990 MHz

Power Spectral Density

-48.19 dBm/Hz

IEEE 802.11g mode

Peak Power (CH Low)

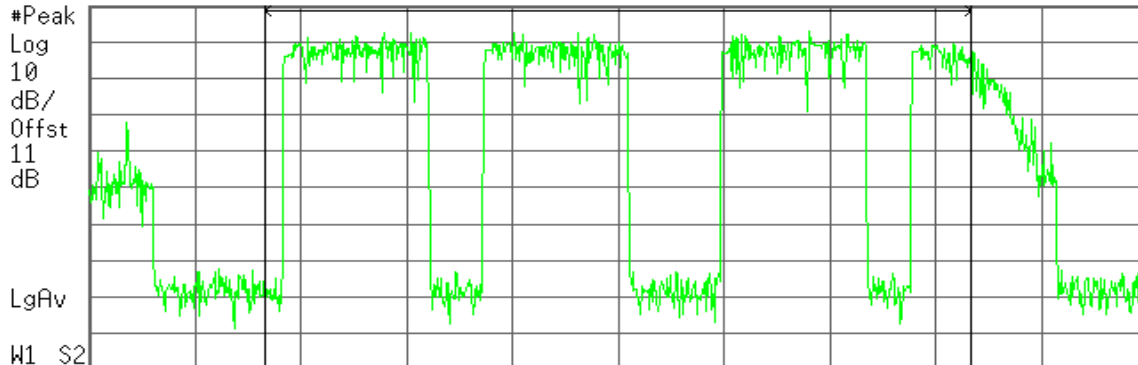
Agilent 22:34:44 Aug 25, 2007

R T

Peak Output Power (DTS), g Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Center 2.412 00 GHz

Span 24.57 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (1001 pts)

Channel Power

18.58 dBm /16.3790 MHz

Power Spectral Density

-53.56 dBm/Hz



Peak Power (CH Mid)

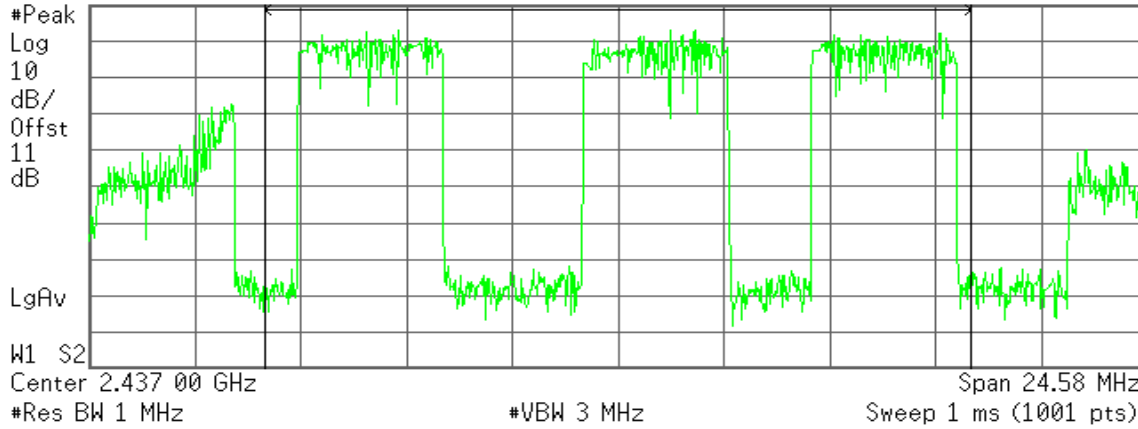
Agilent 22:50:12 Aug 25, 2007

R T

Peak Output Power (DTS), g Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

17.83 dBm /16.3870 MHz

Power Spectral Density

-54.32 dBm/Hz

Peak Power (CH High)

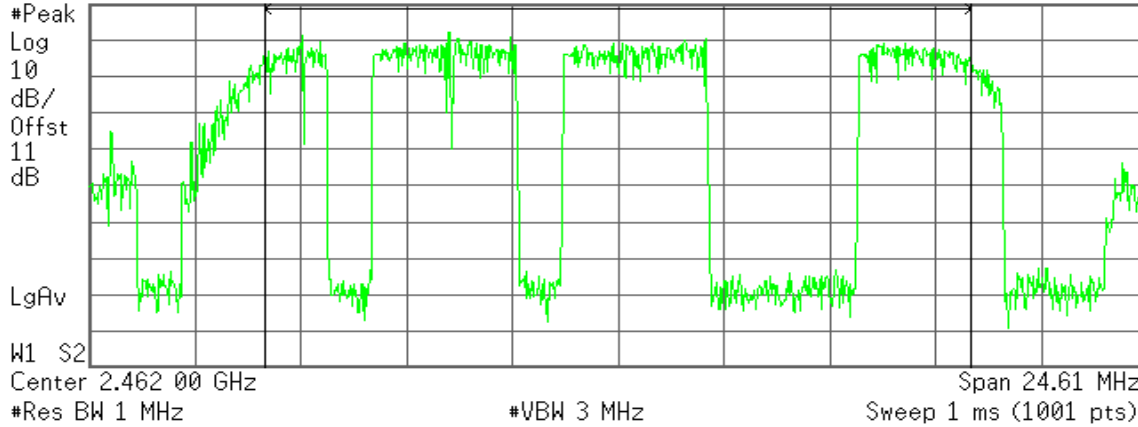
Agilent 22:59:08 Aug 25, 2007

R T

Peak Output Power (DTS), g Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

16.65 dBm /16.4040 MHz

Power Spectral Density

-55.50 dBm/Hz

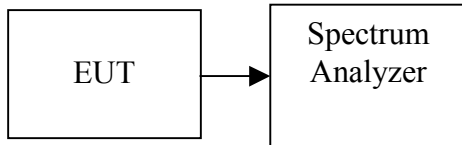


7.3 AVERAGE POWER

LIMIT

None; for reporting purposes only.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the average power detection.

TEST RESULTS

No non-compliance noted.

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Output Power (dBm)
Low	2412	19.72
Mid	2437	19.55
High	2462	19.80

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)
Low	2412	15.52
Mid	2437	15.16
High	2462	14.06



Test Plot

IEEE 802.11b

CH Low

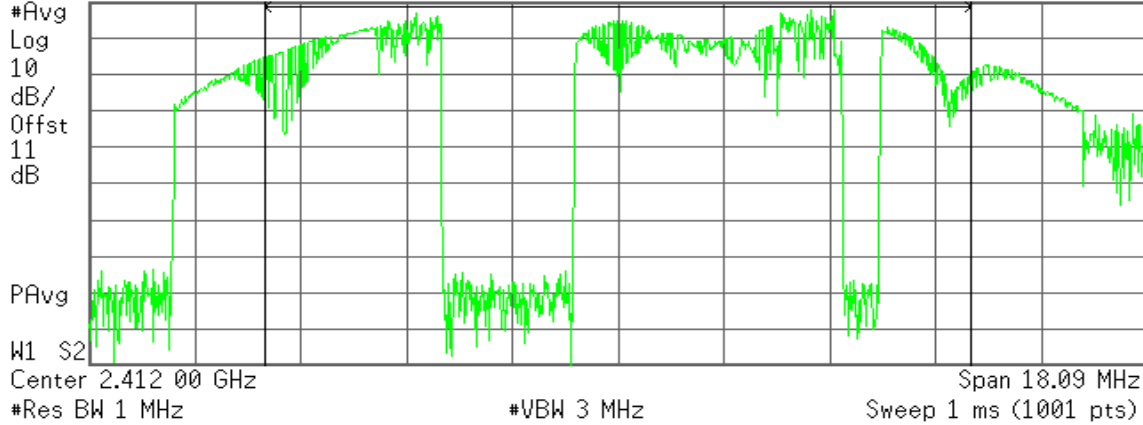
Agilent 23:39:46 Aug 25, 2007

R T

Peak Output Power (DTS), b Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

19.72 dBm /12.0600 MHz

Power Spectral Density

-51.09 dBm/Hz

CH Mid

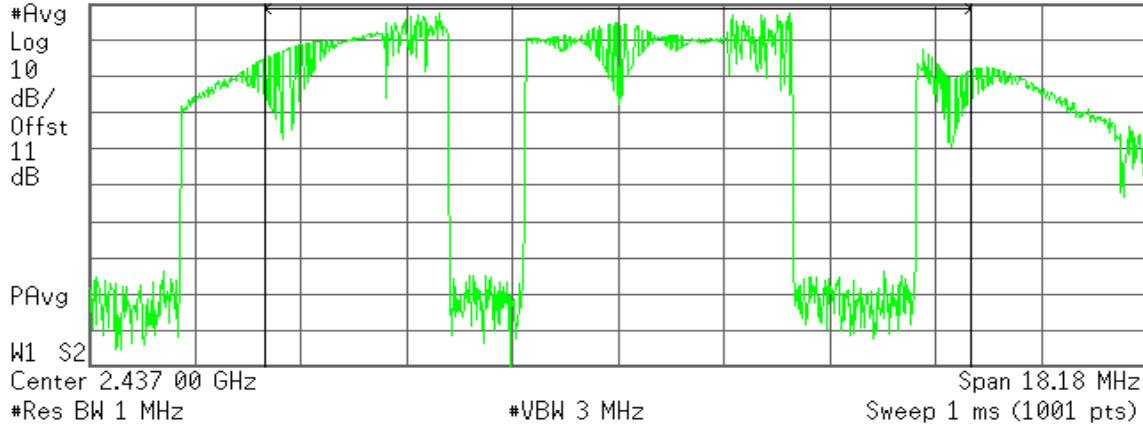
Agilent 23:26:50 Aug 25, 2007

R T

Peak Output Power (DTS), b Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

19.55 dBm /12.1170 MHz

Power Spectral Density

-51.28 dBm/Hz



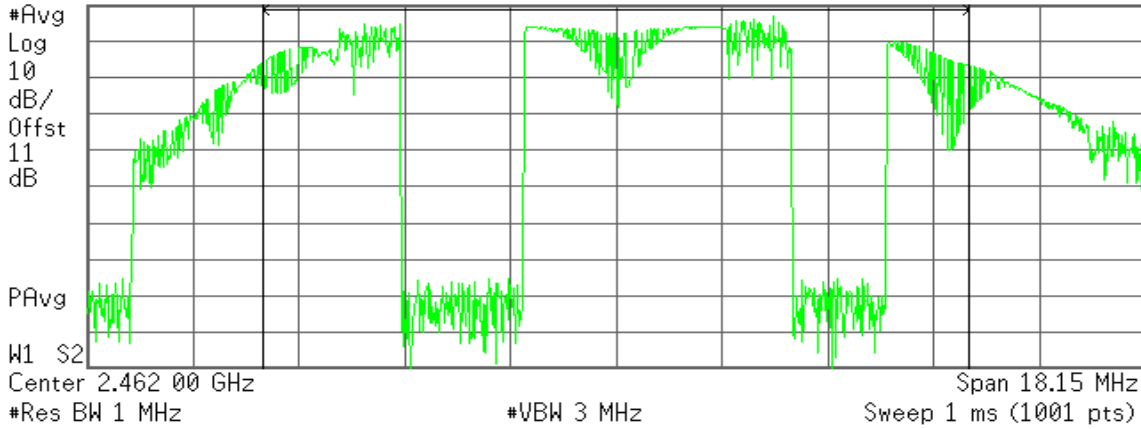
CH High

Agilent 23:14:00 Aug 25, 2007

R T

Peak Output Power (DTS), b Mode High Ch.

Ref 20 dBm Atten 20 dB



Channel Power

19.80 dBm /12.0990 MHz

Power Spectral Density

-51.02 dBm/Hz

IEEE 802.11g

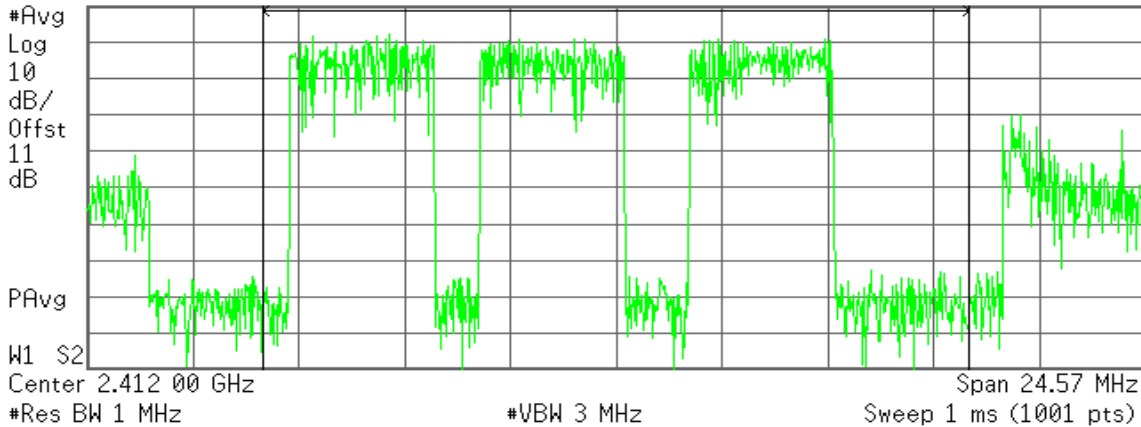
CH Low

Agilent 22:35:44 Aug 25, 2007

R T

Peak Output Power (DTS), g Mode Low Ch.

Ref 20 dBm Atten 20 dB



Channel Power

15.52 dBm /16.3790 MHz

Power Spectral Density

-56.63 dBm/Hz



CH Mid

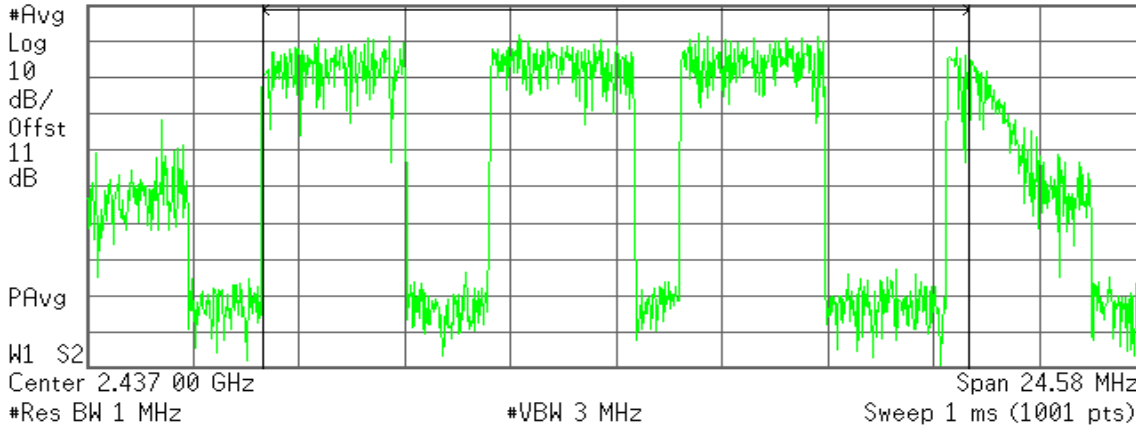
Agilent 22:50:30 Aug 25, 2007

R T

Peak Output Power (DTS), g Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

15.16 dBm /16.3870 MHz

Power Spectral Density

-56.98 dBm/Hz

CH High

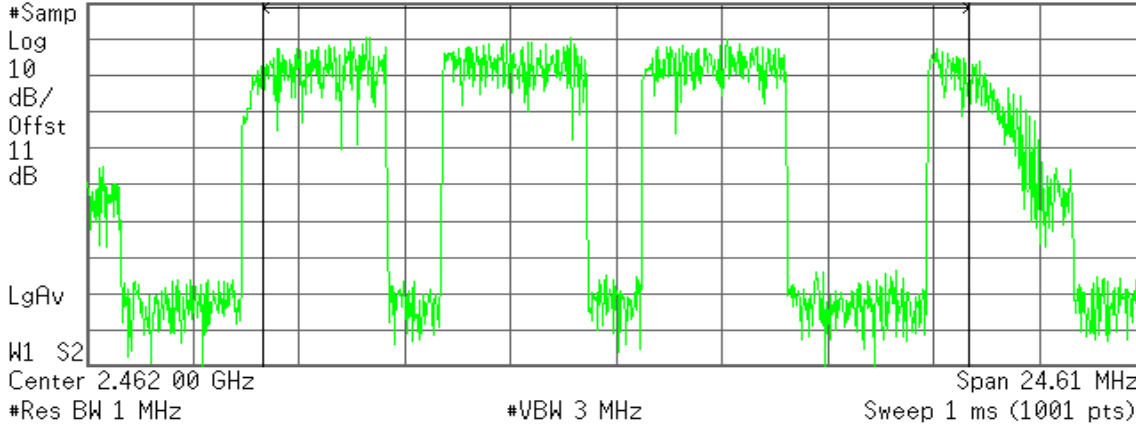
Agilent 23:00:00 Aug 25, 2007

R T

Peak Output Power (DTS), g Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

14.06 dBm /16.4040 MHz

Power Spectral Density

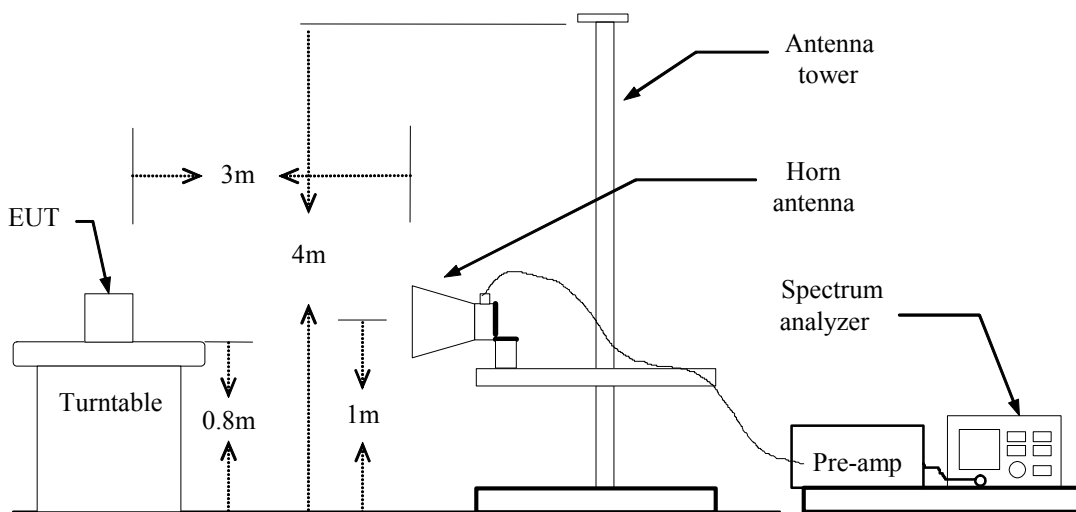
-58.09 dBm/Hz

7.4 BAND EDGES MEASUREMENT

LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum 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, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Test Configuration



TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above the ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
 - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

TEST RESULTS

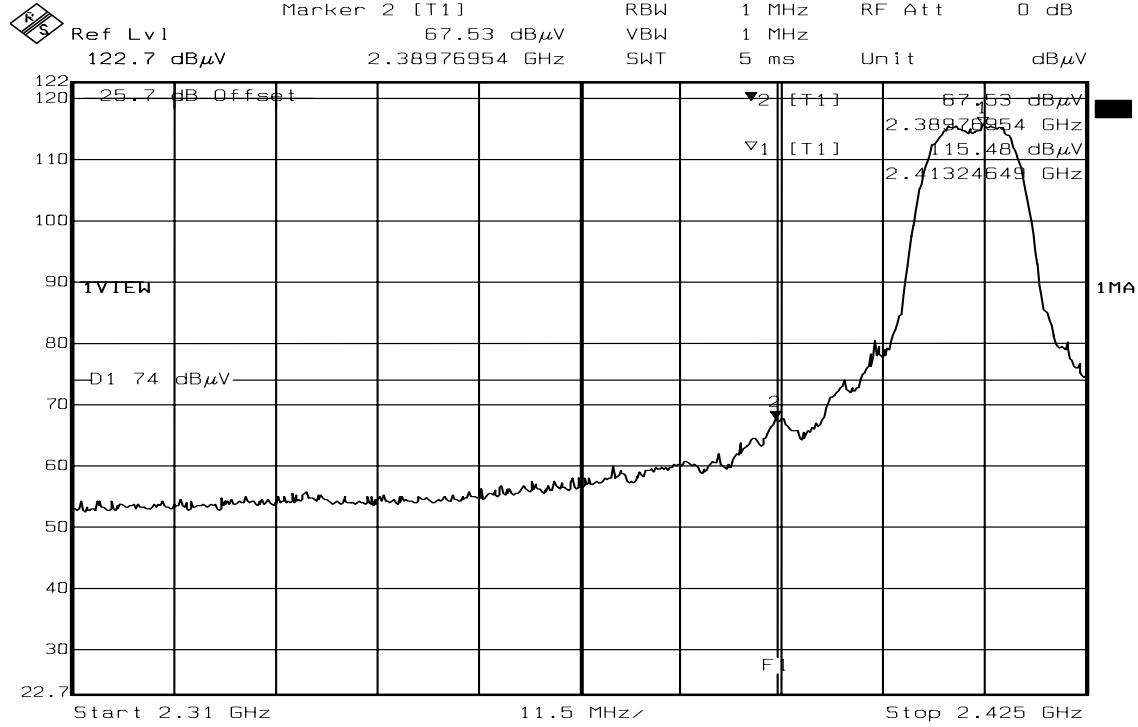
Refer to attach spectrum analyzer data chart.



Band Edges (IEEE 802.11b mode / CH Low)

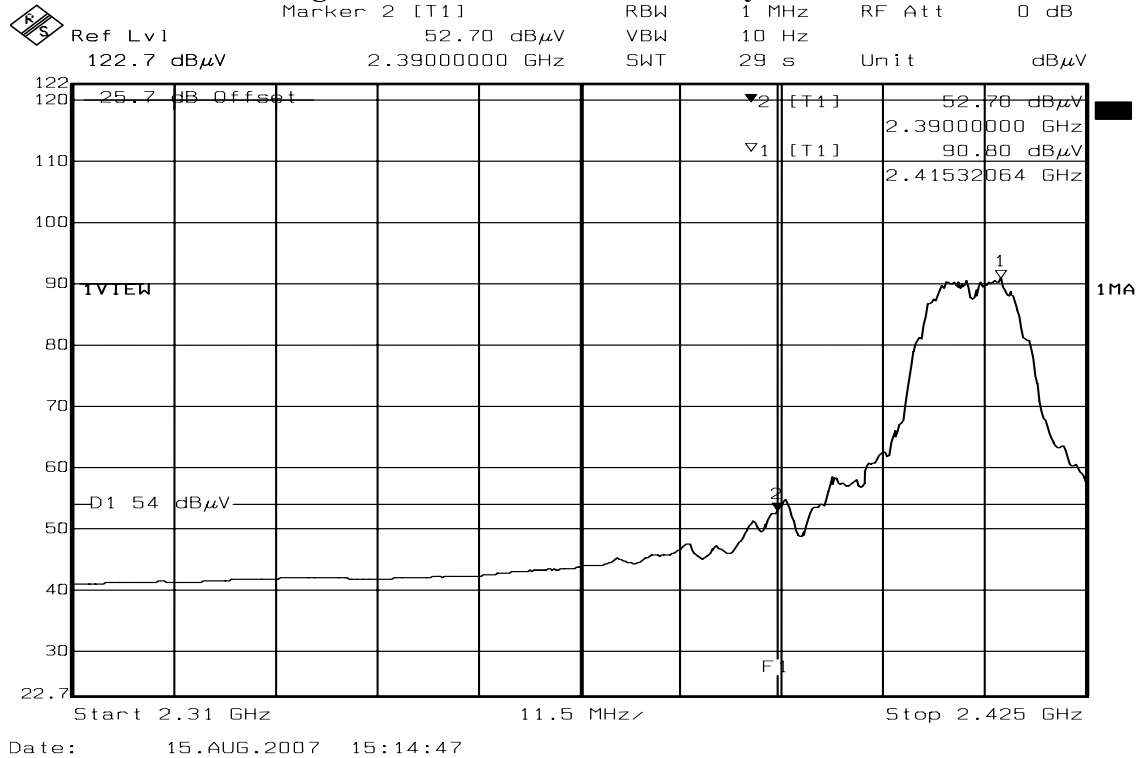
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

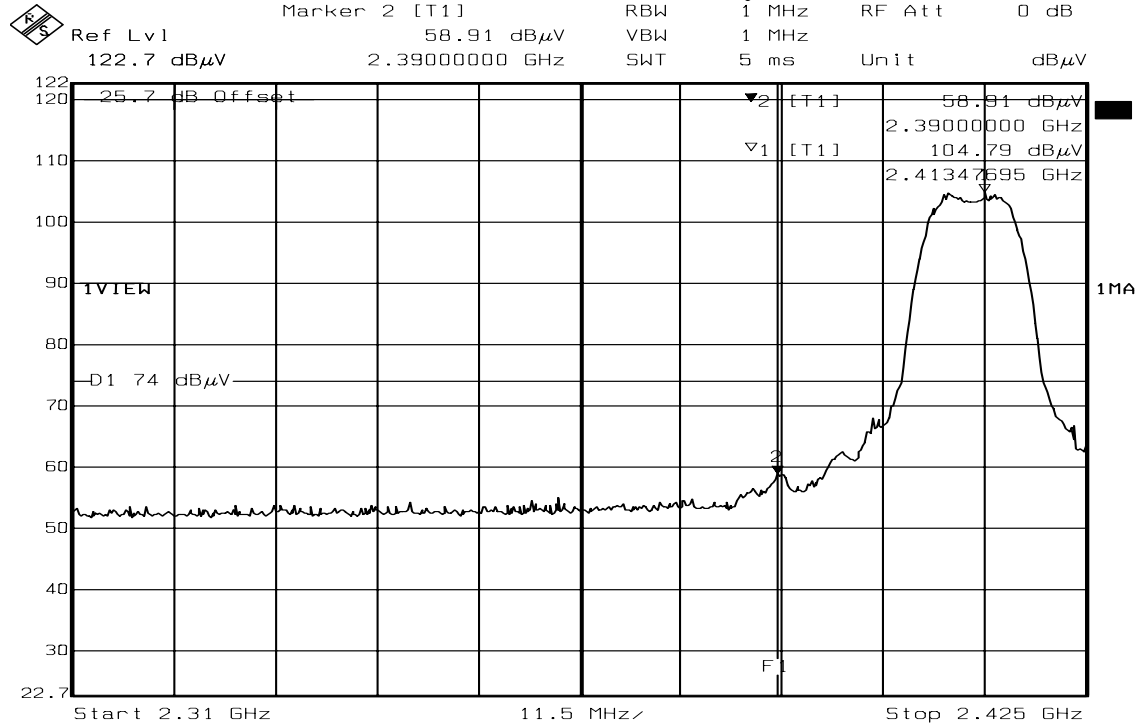
Polarity: Vertical





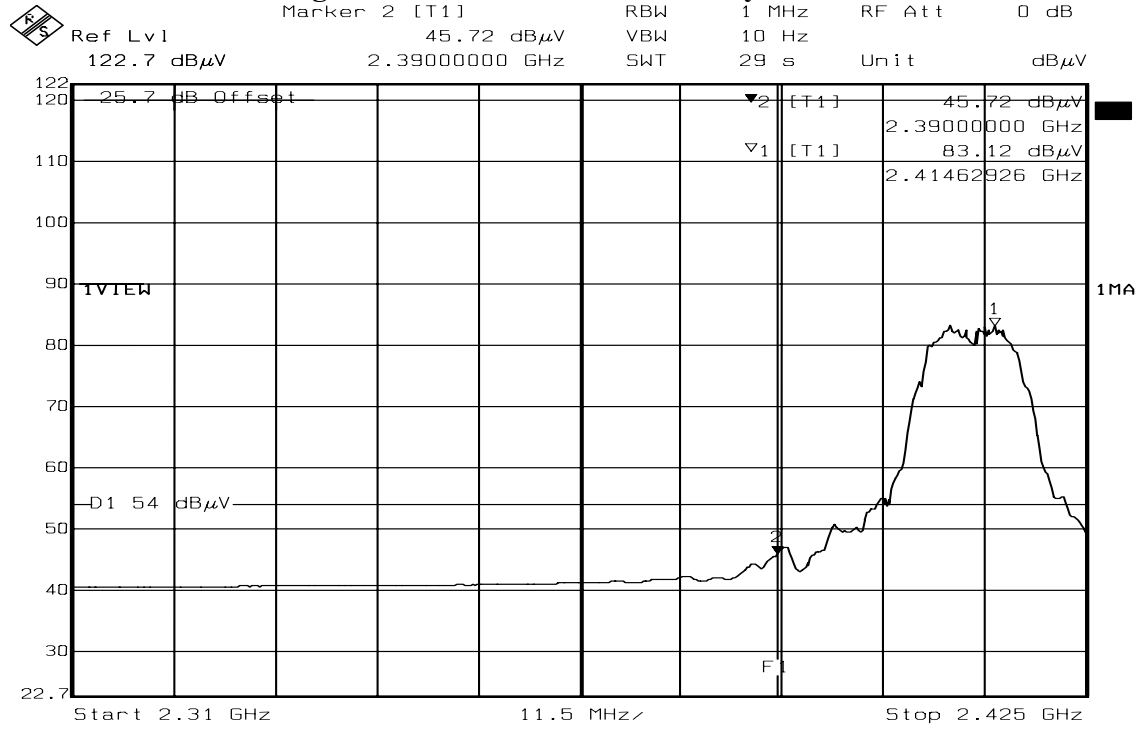
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal

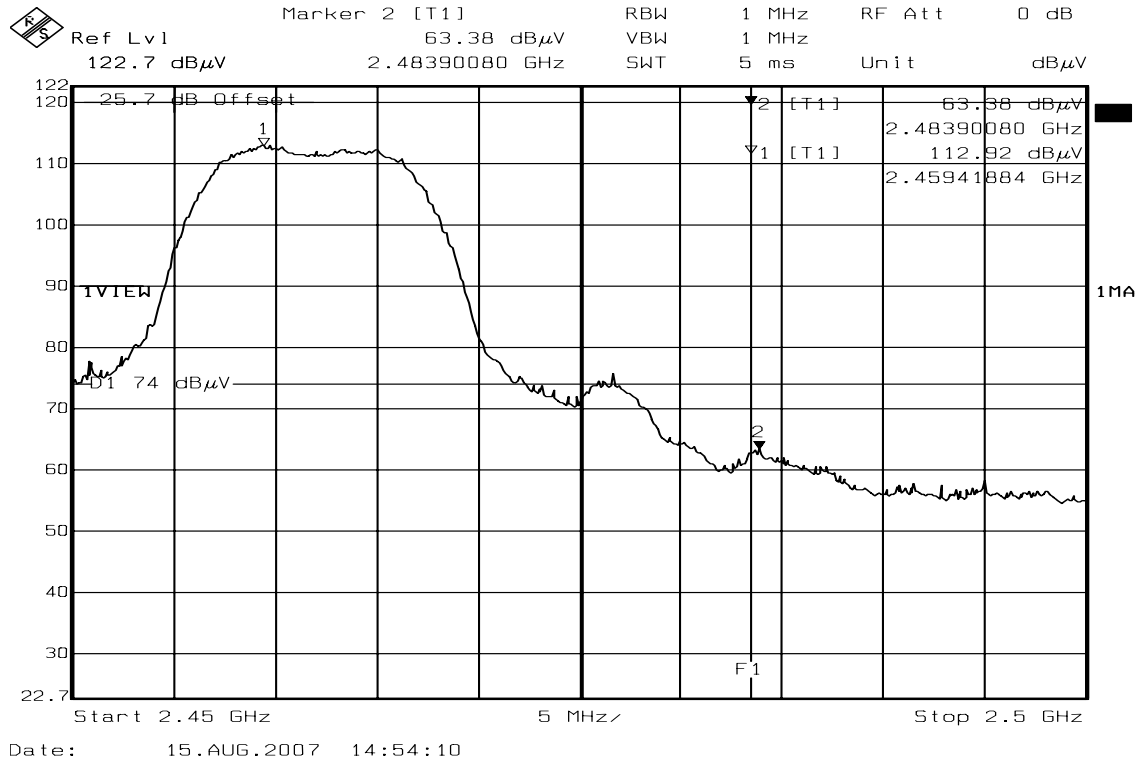




Band Edges (IEEE 802.11b mode / CH High)

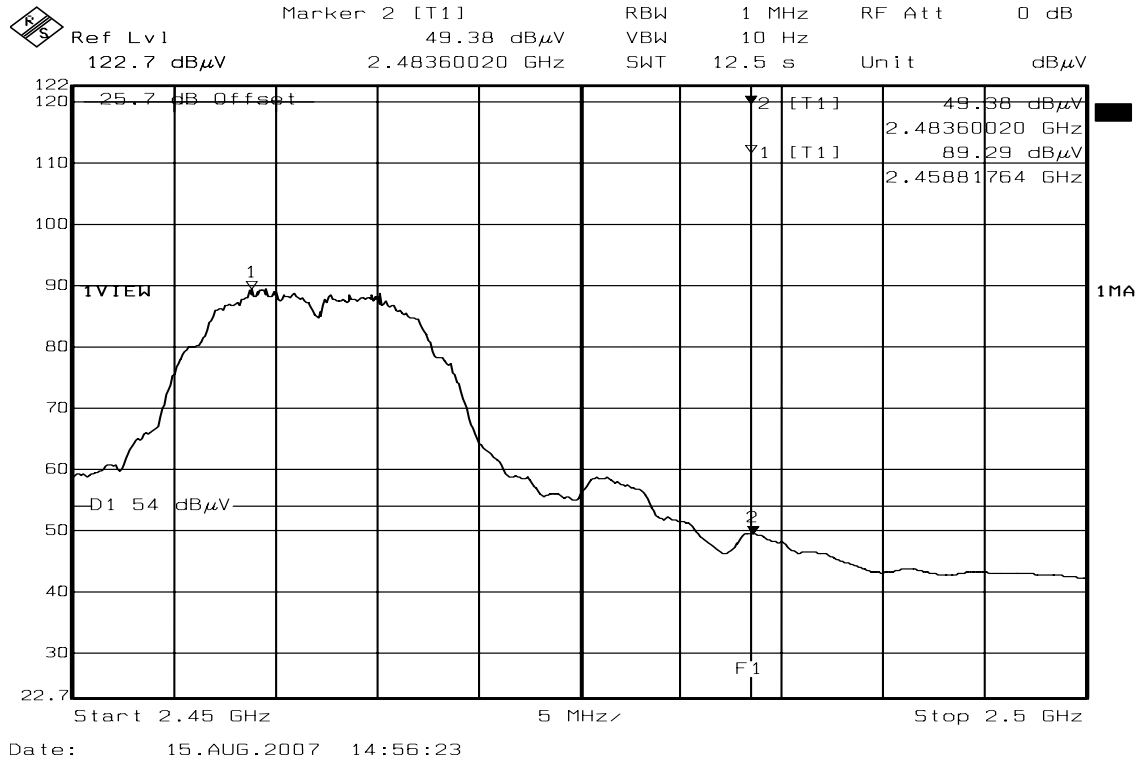
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

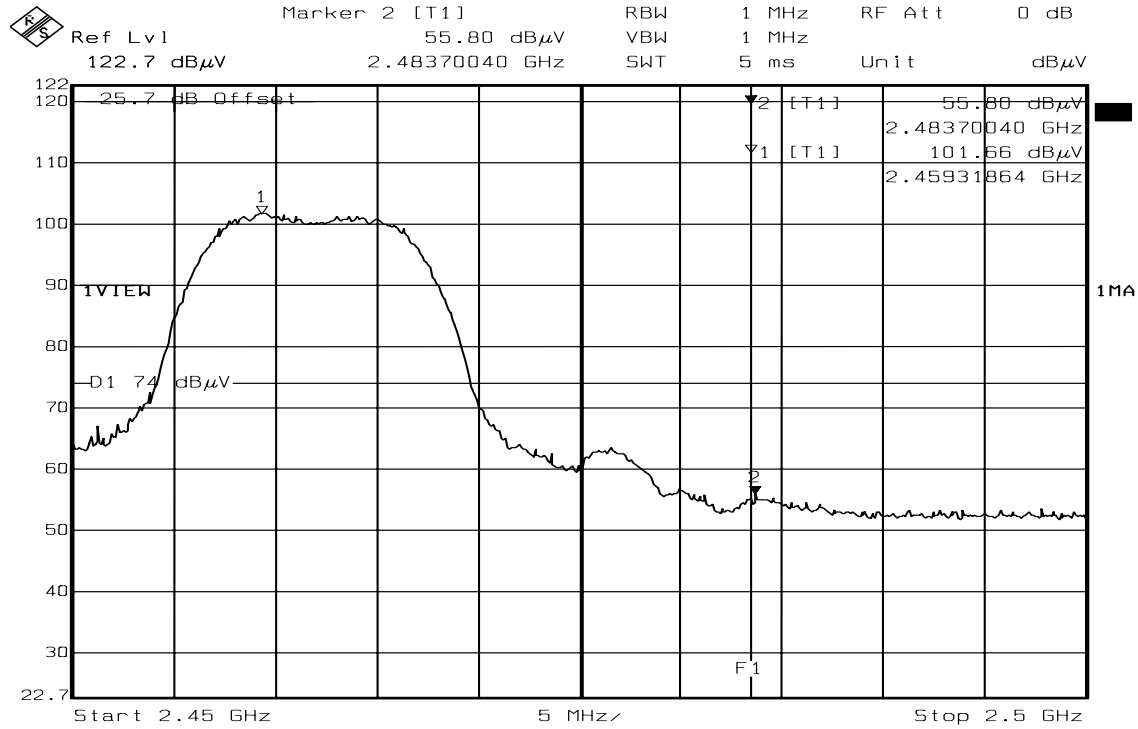
Polarity: Vertical





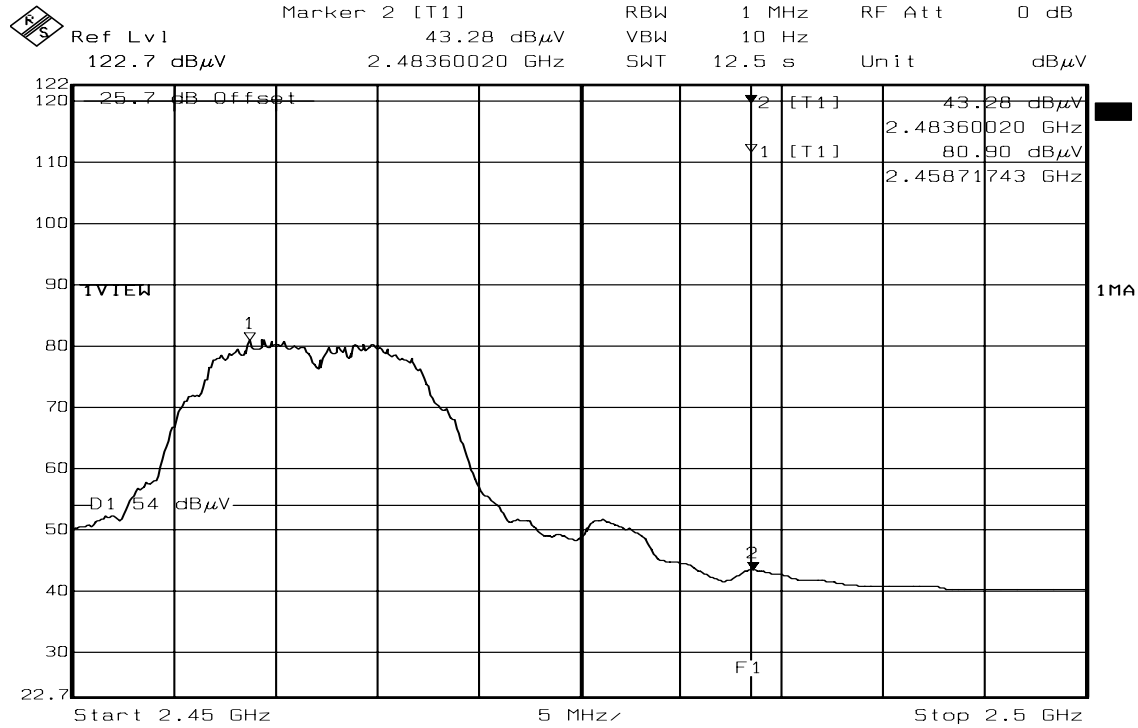
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal

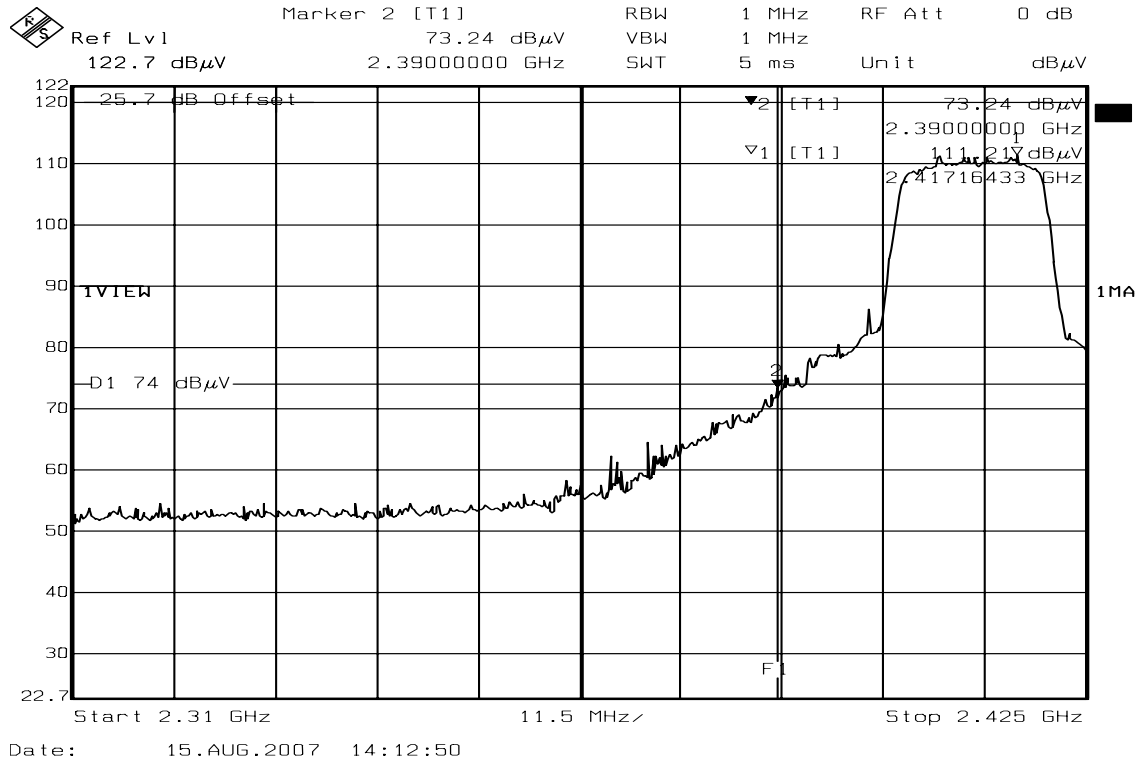




Band Edges (IEEE 802.11g mode / CH Low)

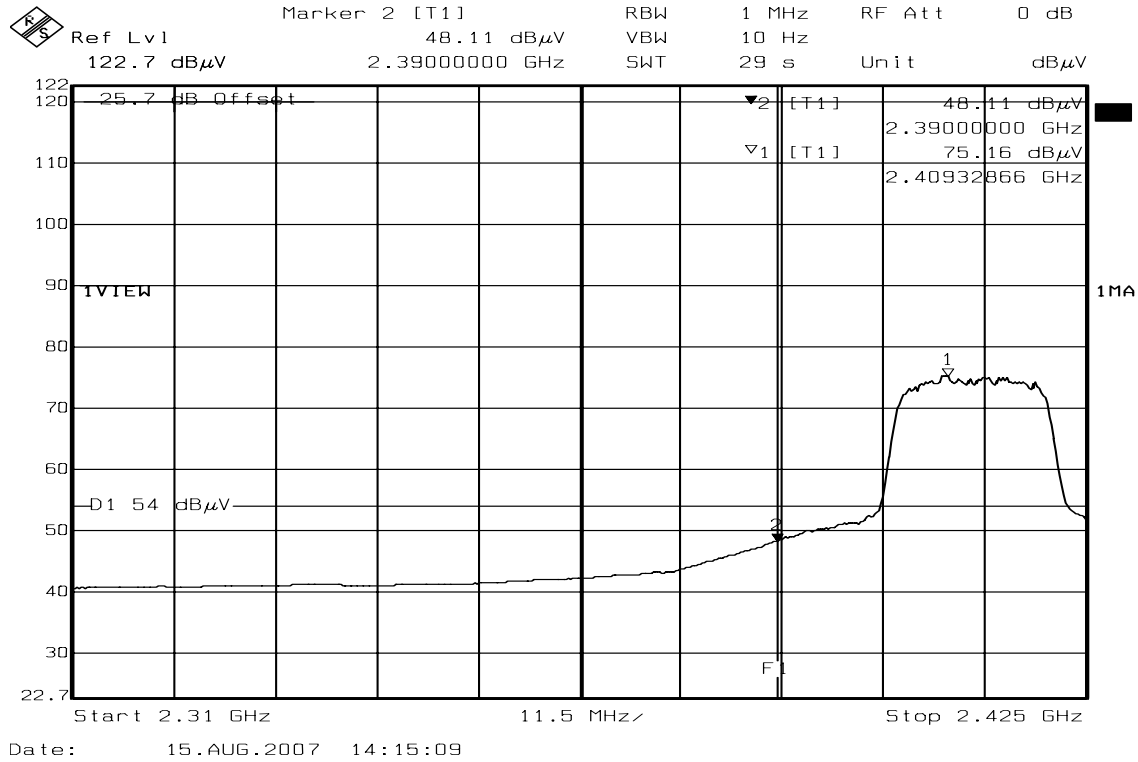
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

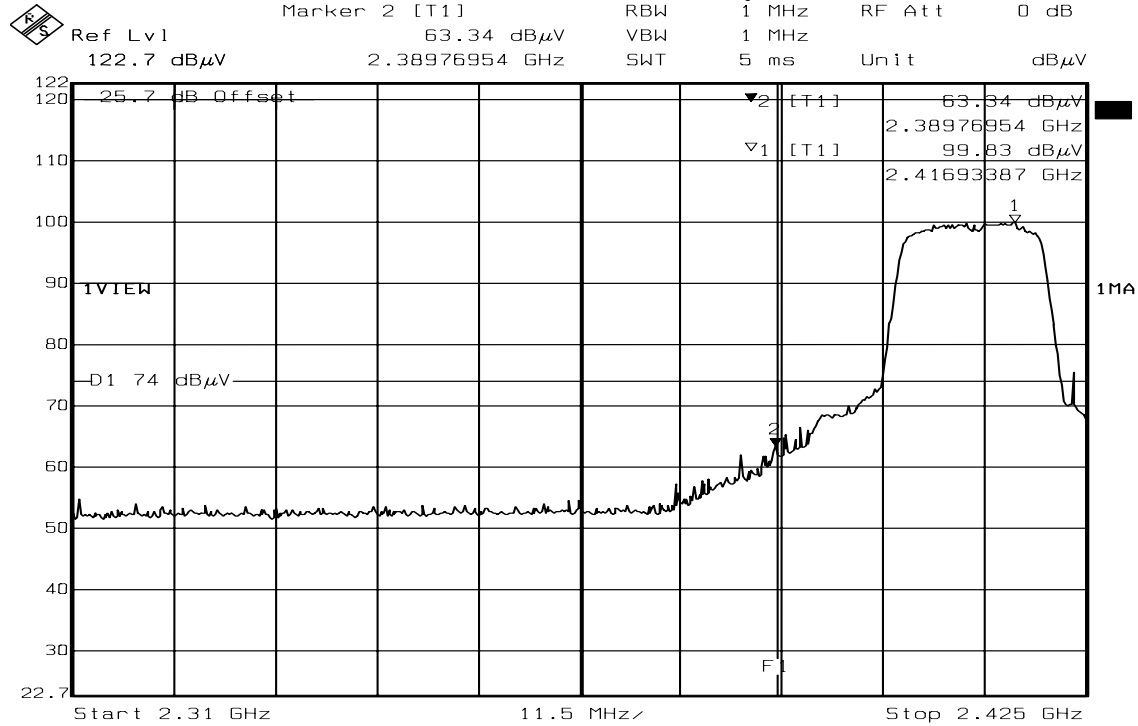
Polarity: Vertical





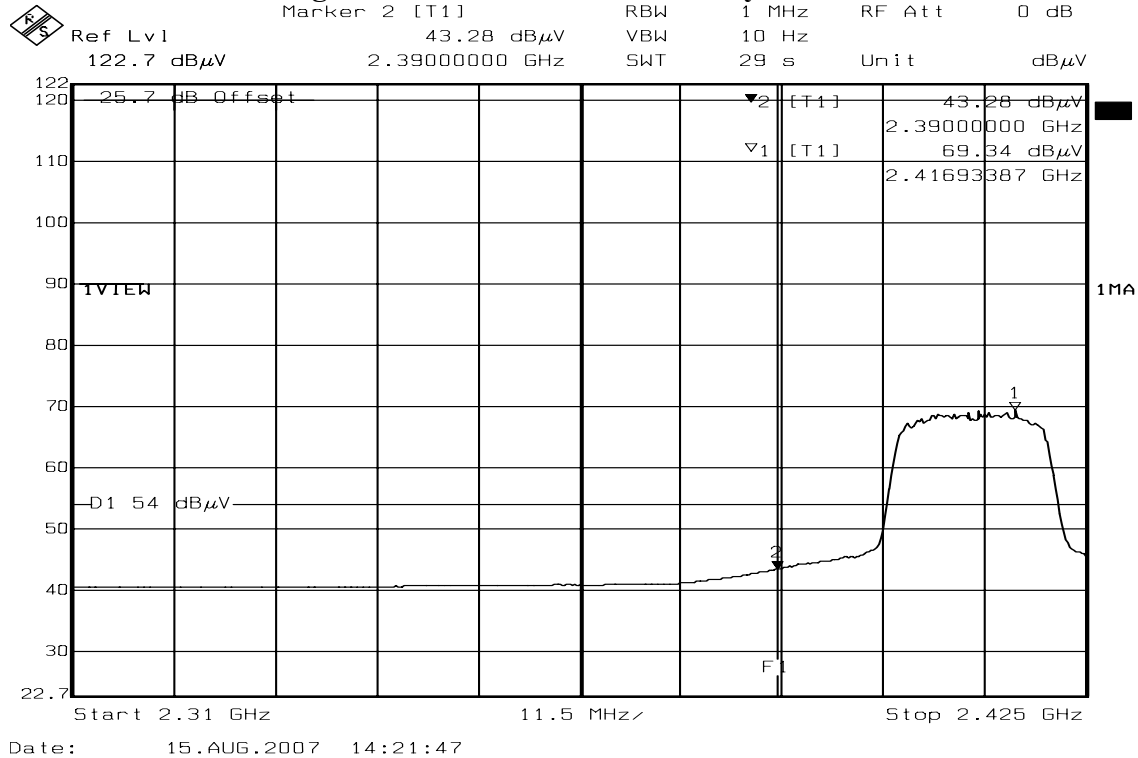
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal

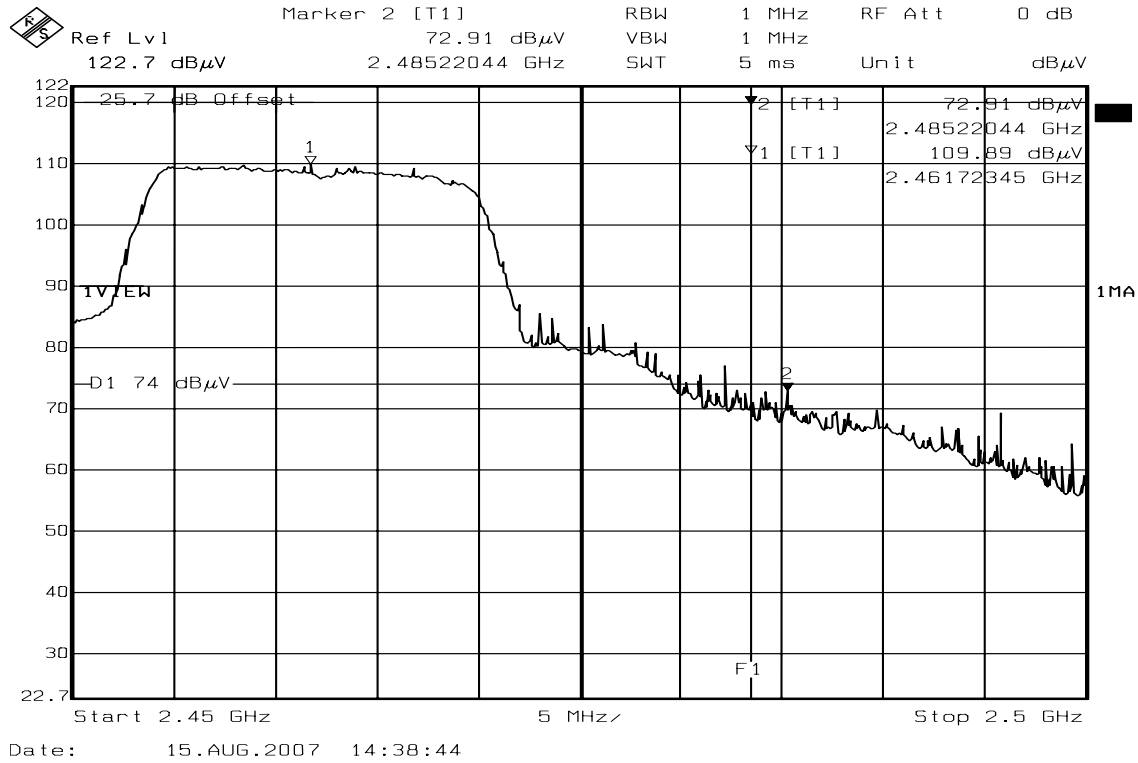




Band Edges (IEEE 802.11g mode / CH High)

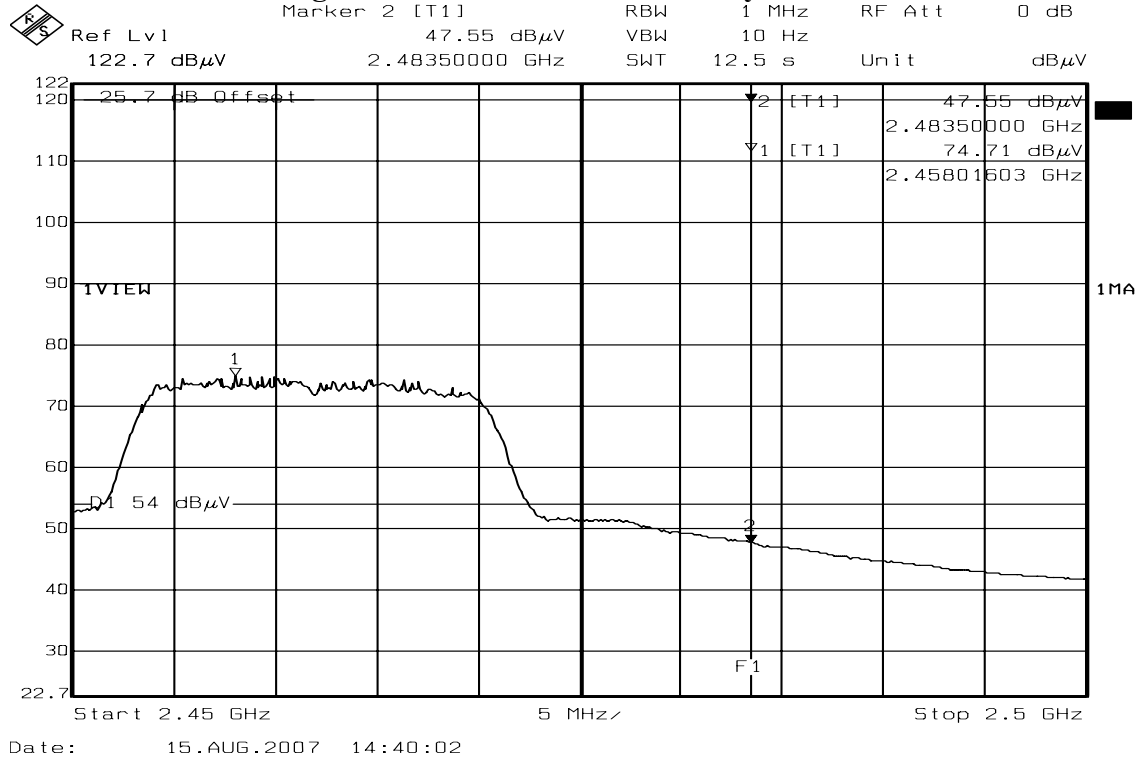
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

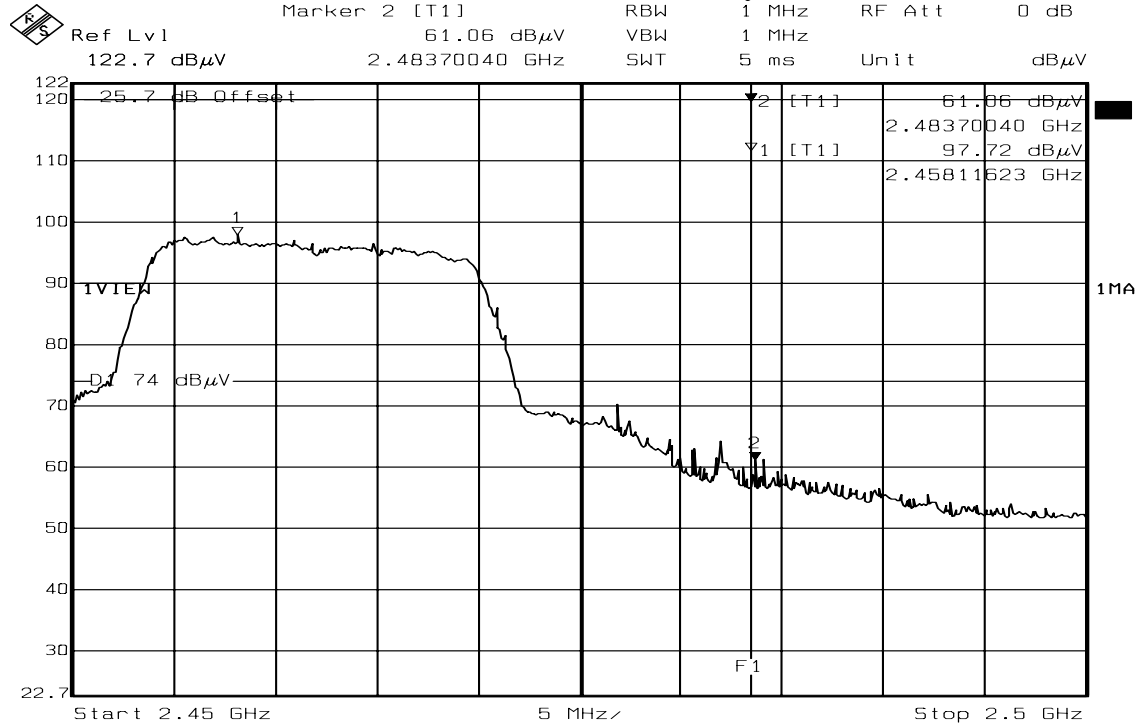
Polarity: Vertical





Detector mode: Peak

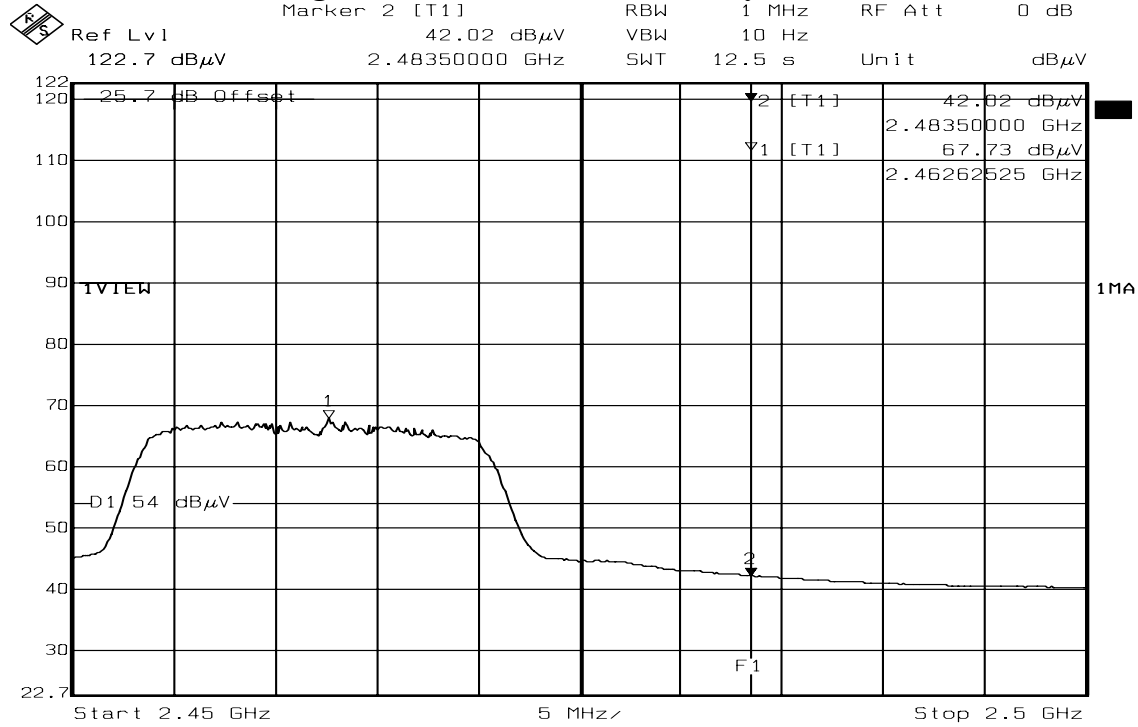
Polarity: Horizontal



Date: 15.AUG.2007 14:44:45

Detector mode: Average

Polarity: Horizontal



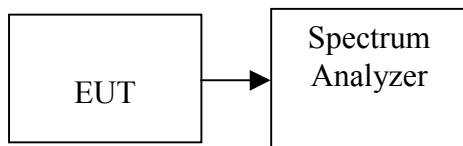
Date: 15.AUG.2007 14:46:17

7.5 PEAK POWER SPECTRAL DENSITY

LIMIT

1. According to §15.247(e), 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.
2. According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

Test Configuration



TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
2. Set the spectrum analyzer as RBW = 3 kHz, VBW = 10 kHz, Span = 300 kHz, Sweep = 100 s
3. Record the max reading.
4. Repeat the above procedure until the measurements for all frequencies are completed.



TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-1.46	8.00	PASS
Mid	2437	-1.79		PASS
High	2462	-2.46		PASS

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-6.98	8.00	PASS
Mid	2437	-7.49		PASS
High	2462	-6.57		PASS



Test Plot

IEEE 802.11b

PPSD (CH Low)

Agilent 23:43:48 Aug 25, 2007

R T

Peak Power Spectral Density, b Mode Low Ch.

Mkr1 2.410 006 8 GHz

Ref 20 dBm

Atten 20 dB

-1.46 dBm

#Peak

Log

10

dB/

Offst

11

dB

DI

8.0

dBm

LgAv

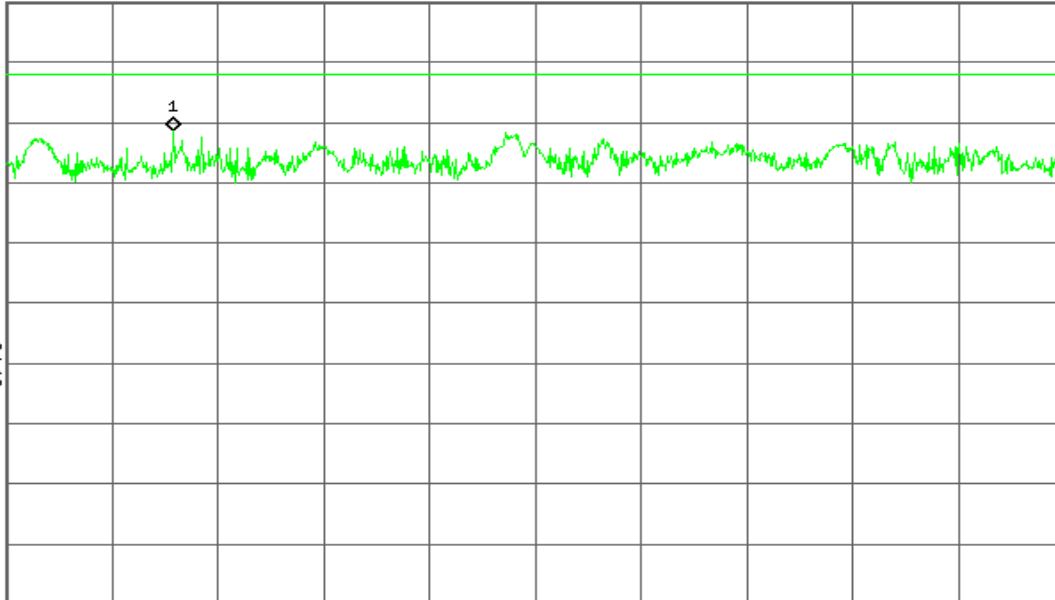
W1 S2

S3 FS

£(f):

f>50k

Swp



Center 2.410 110 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (1001 pts)

PPSD (CH Mid)

Agilent 23:31:58 Aug 25, 2007

R T

Peak Power Spectral Density, b Mode Mid Ch.

Mkr1 2.435 102 8 GHz

Ref 20 dBm

Atten 20 dB

-1.79 dBm

#Peak

Log

10

dB/

Offst

11

dB

DI

8.0

dBm

LgAv

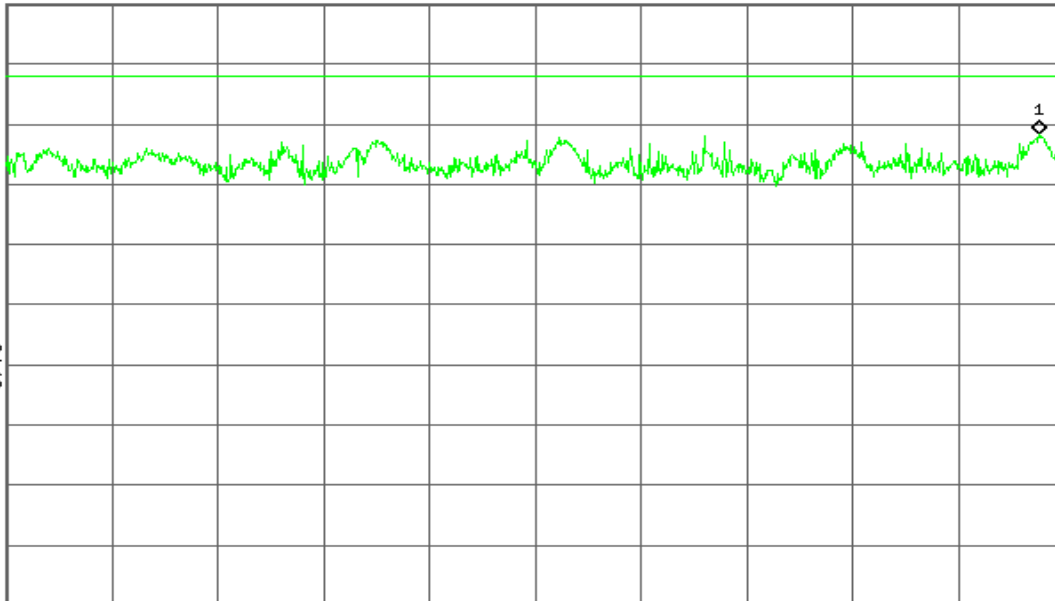
W1 S2

S3 FS

£(f):

f>50k

Swp



Center 2.434 960 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (1001 pts)



PPSD (CH High)

Agilent 23:18:00 Aug 25, 2007

R T

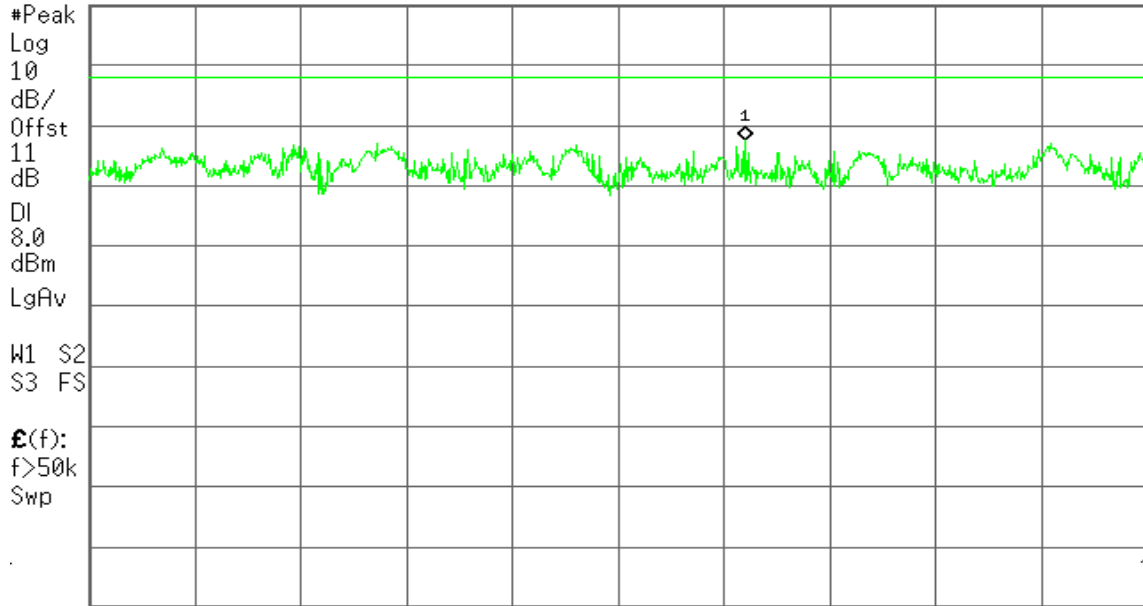
Peak Power Spectral Density, b Mode High Ch.

Mkr1 2.464 016 5 GHz

Ref 20 dBm

Atten 20 dB

-2.46 dBm



Center 2.463 980 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (1001 pts)

IEEE 802.11g mode

PPSD (CH Low)

Agilent 22:42:21 Aug 25, 2007

R T

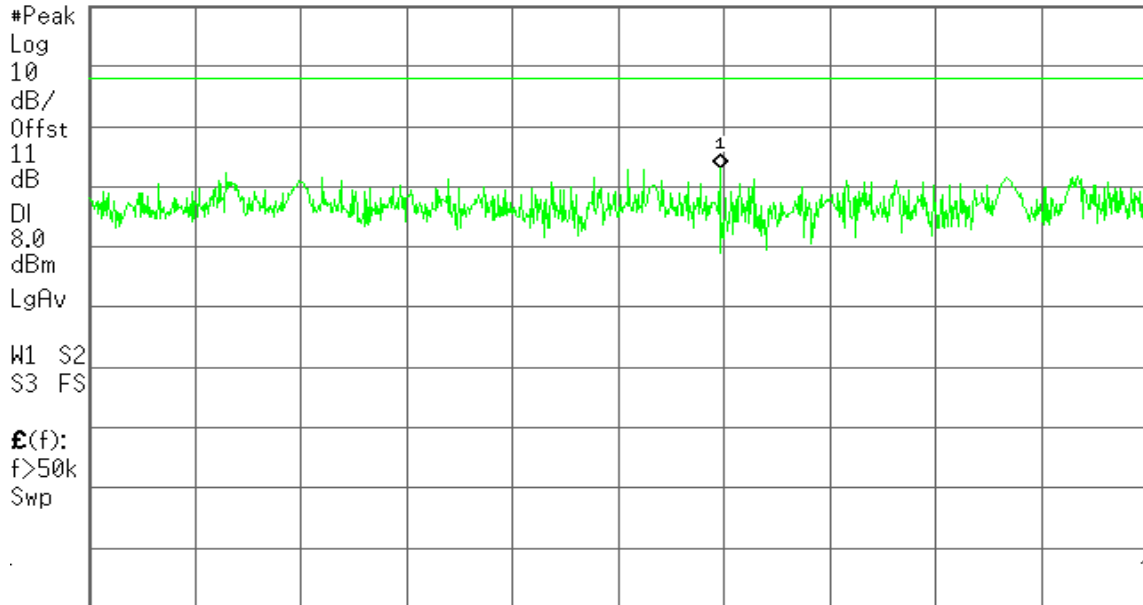
Peak Power Spectral Density, g Mode Low Ch.

Mkr1 2.409 028 9 GHz

Ref 20 dBm

Atten 20 dB

-6.98 dBm



Center 2.409 000 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (1001 pts)



PPSD (CH Mid)

Agilent 22:54:06 Aug 25, 2007

R T

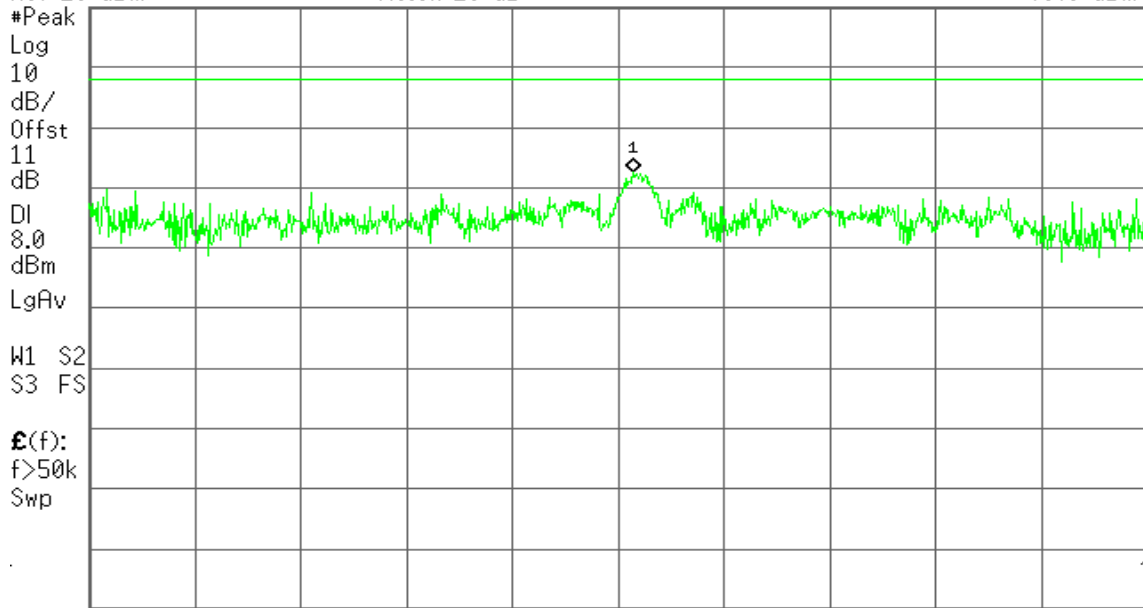
Peak Power Spectral Density, g Mode Mid Ch.

Mkr1 2.441 384 5 GHz

Ref 20 dBm

Atten 20 dB

-7.49 dBm



Center 2.441 380 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (1001 pts)

PPSD (CH High)

Agilent 23:04:46 Aug 25, 2007

R T

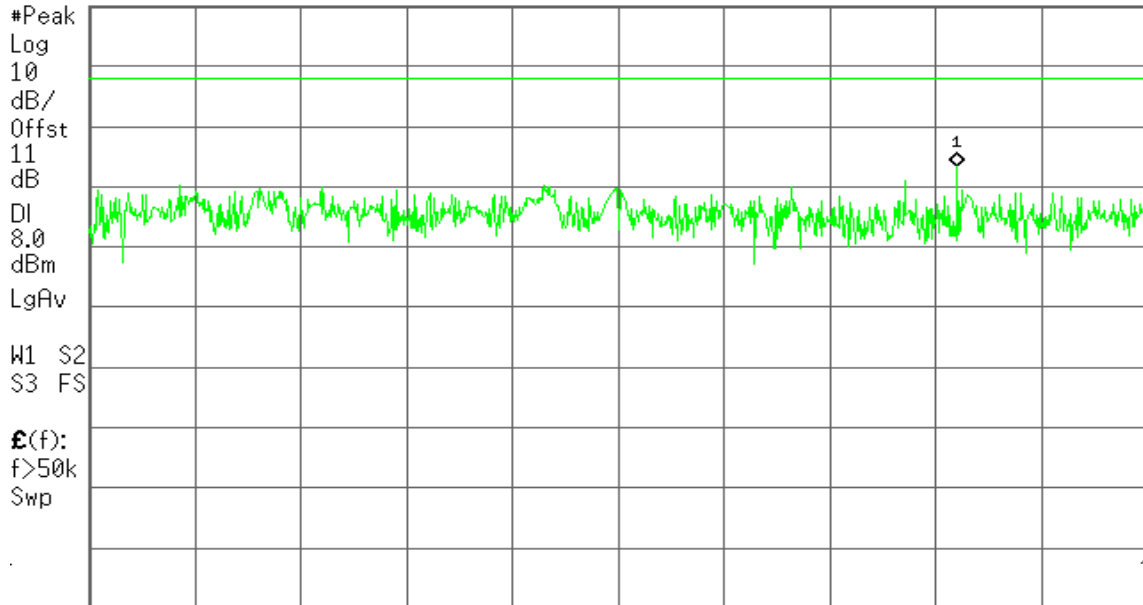
Peak Power Spectral Density, g Mode High Ch.

Mkr1 2.465 006 9 GHz

Ref 20 dBm

Atten 20 dB

-6.57 dBm



Center 2.464 910 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (1001 pts)



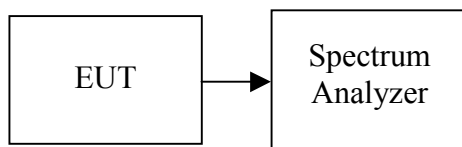
7.6 SPURIOUS EMISSIONS

7.6.1 Conducted Measurement

LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum 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, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Test Configuration



TEST PROCEDURE

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

Measurements are made over the 30MHz to 26GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

No non-compliance noted



Test Plot

IEEE 802.11b

CH Low

Agilent 23:45:25 Aug 25, 2007

R T

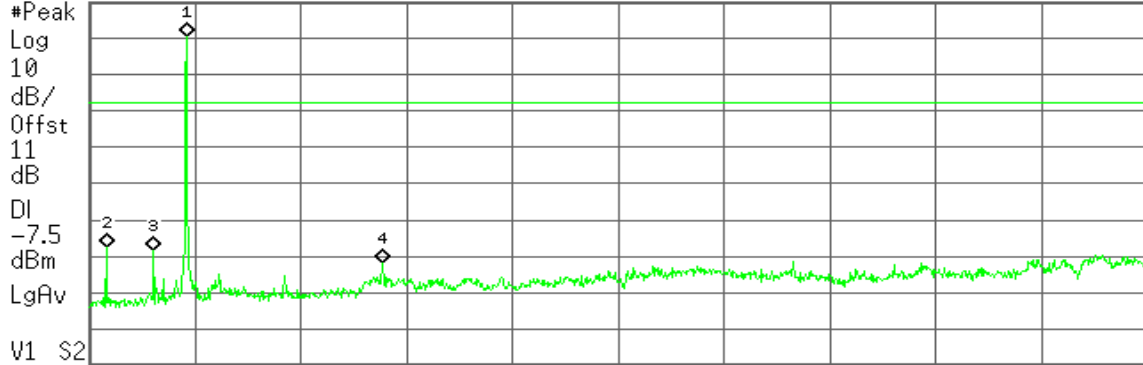
Spurious, b Mode Low Ch.

Mkr1 2.41 GHz

Ref 20 dBm

Atten 20 dB

10.67 dBm



Start 30 MHz

Stop 26.00 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.41 GHz	10.67 dBm
2	(1)	Freq	450 MHz	-47.70 dBm
3	(1)	Freq	1.61 GHz	-48.40 dBm
4	(1)	Freq	7.25 GHz	-51.66 dBm

CH Mid

Agilent 23:33:41 Aug 25, 2007

R T

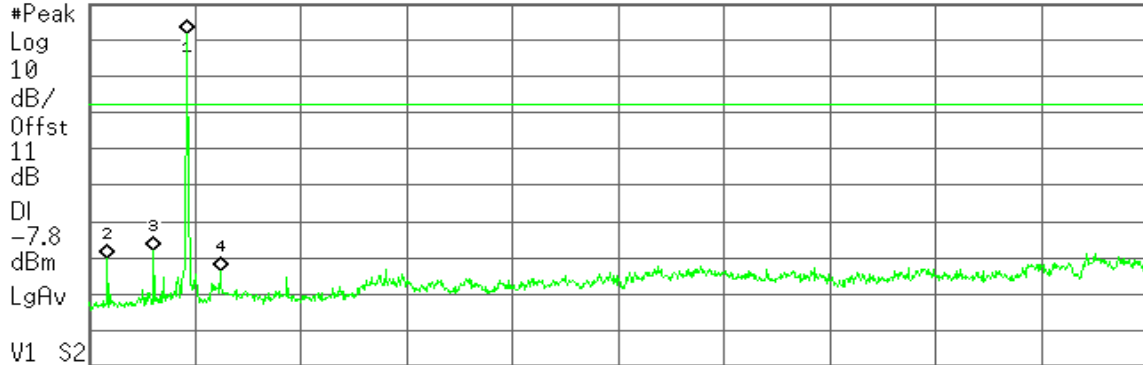
Spurious, b Mode Mid Ch.

Mkr1 2.44 GHz

Ref 20 dBm

Atten 20 dB

11.76 dBm



Start 30 MHz

Stop 26.00 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.44 GHz	11.76 dBm
2	(1)	Freq	470 MHz	-50.05 dBm
3	(1)	Freq	1.61 GHz	-48.12 dBm
4	(1)	Freq	3.25 GHz	-53.60 dBm



CH High

Agilent 23:20:47 Aug 25, 2007

R T

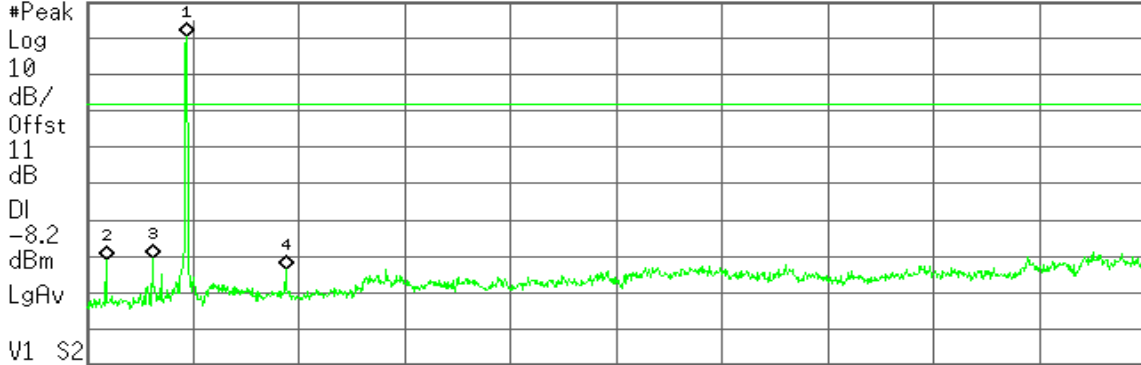
Spurious, b Mode High Ch.

Mkr1 2.46 GHz

Ref 20 dBm

Atten 20 dB

10.30 dBm



Start 30 MHz

Stop 26.00 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.46 GHz	10.30 dBm
2	(1)	Freq	500 MHz	-51.20 dBm
3	(1)	Freq	1.64 GHz	-50.36 dBm
4	(1)	Freq	4.91 GHz	-53.75 dBm

IEEE 802.11g

CH Low

Agilent 22:45:08 Aug 25, 2007

R T

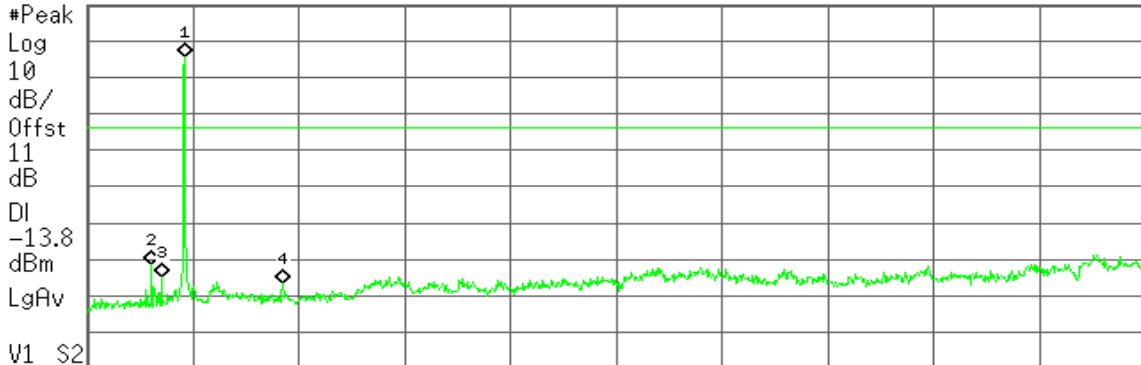
Spurious, g Mode Low Ch.

Mkr1 2.41 GHz

Ref 20 dBm

Atten 20 dB

5.80 dBm



Start 30 MHz

Stop 26.00 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.41 GHz	5.80 dBm
2	(1)	Freq	1.61 GHz	-51.37 dBm
3	(1)	Freq	1.85 GHz	-54.94 dBm
4	(1)	Freq	4.83 GHz	-56.49 dBm



CH Mid

Agilent 22:55:25 Aug 25, 2007

R T

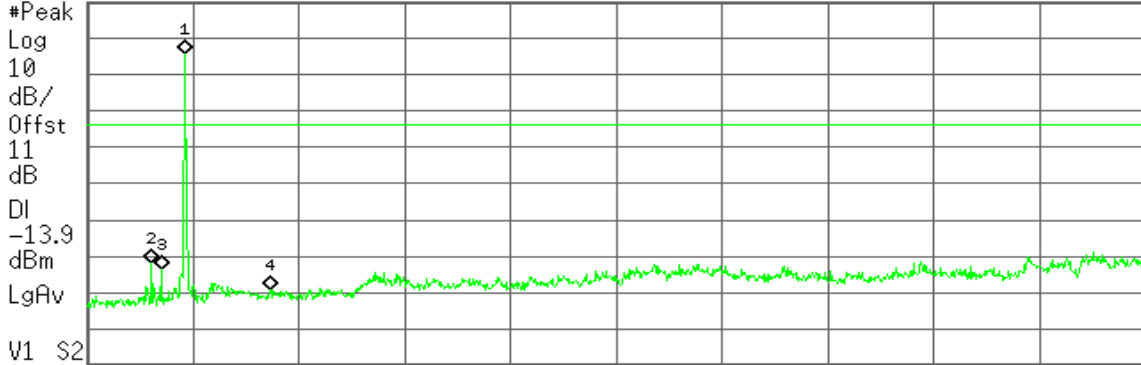
Spurious, g Mode Mid Ch.

Mkr1 2.44 GHz

Ref 20 dBm

Atten 20 dB

5.81 dBm



V1 S2

Start 30 MHz

Stop 26.00 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.44 GHz	5.81 dBm
2	(1)	Freq	1.61 GHz	-51.80 dBm
3	(1)	Freq	1.85 GHz	-53.76 dBm
4	(1)	Freq	4.52 GHz	-59.09 dBm

CH High

Agilent 23:06:18 Aug 25, 2007

R T

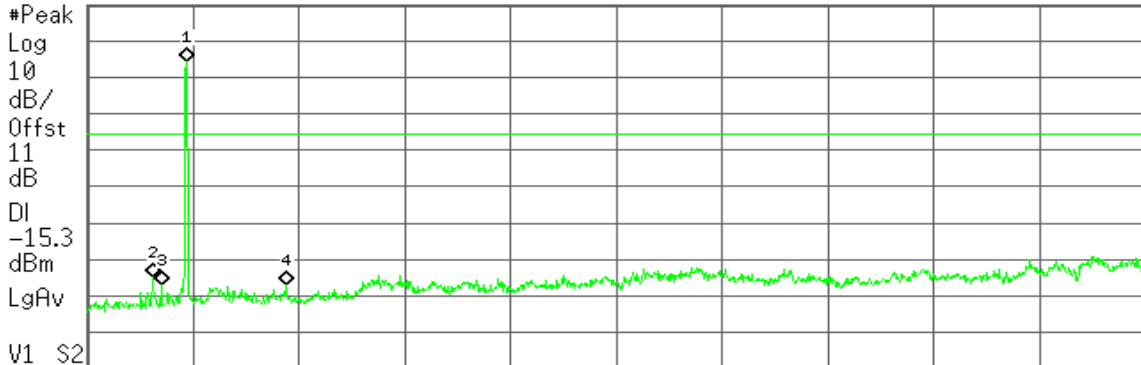
Spurious, g Mode High Ch.

Mkr1 2.46 GHz

Ref 20 dBm

Atten 20 dB

4.21 dBm



V1 S2

Start 30 MHz

Stop 26.00 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.46 GHz	4.21 dBm
2	(1)	Freq	1.64 GHz	-55.04 dBm
3	(1)	Freq	1.85 GHz	-57.03 dBm
4	(1)	Freq	4.91 GHz	-57.18 dBm



7.6.2 RADIATED EMISSIONS

LIMIT

1. 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 ($\mu\text{V/m}$)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

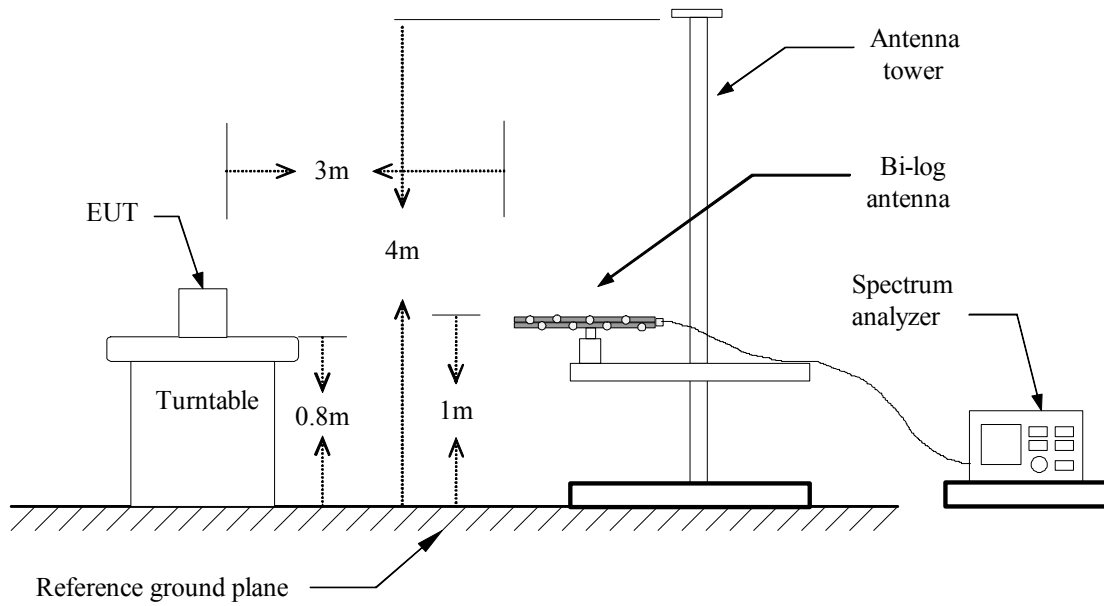
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

2. In the emission table above, the tighter limit applies at the band edges.

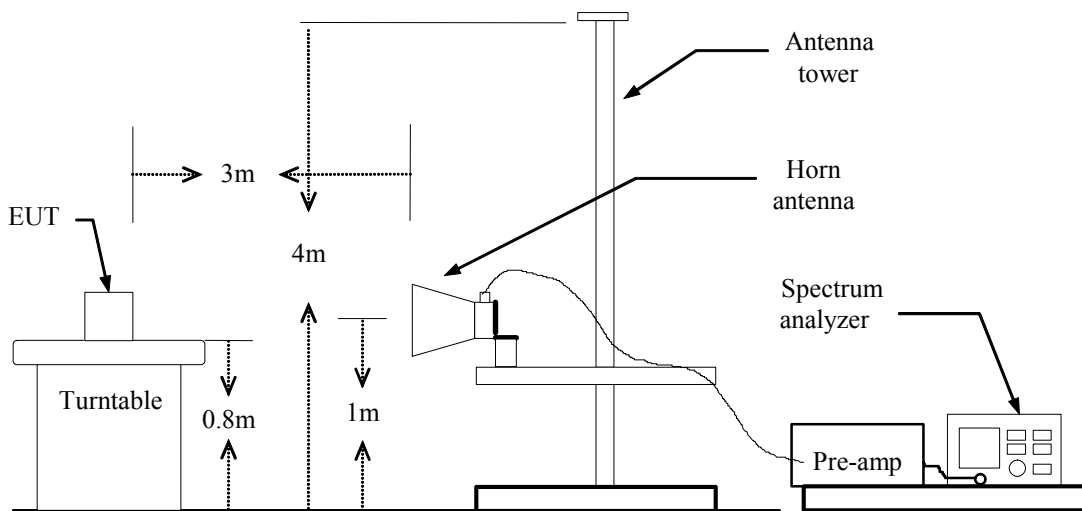
Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 3-meter)	Field Strength (dB $\mu\text{V/m}$ at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Test Configuration

Below 1 GHz



Above 1 GHz





TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Set the spectrum analyzer in the following setting as:
Below 1GHz:
RBW=100kHz / VBW=300kHz / Sweep=AUTO
Above 1GHz:
(a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
7. Repeat above procedures until the measurements for all frequencies are complete.



TEST RESULTS

No non-compliance noted

Below 1GHz

Operation Mode: Normal Link

Test Date: October 3, 2007

Temperature: 25°C

Tested by: Steven Young

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
68.80	V	57.45	-19.15	38.30	40.00	-1.70	Peak
107.60	V	50.19	-14.67	35.51	43.50	-7.99	Peak
125.38	V	46.92	-13.09	33.83	43.50	-9.67	Peak
151.25	V	48.82	-14.15	34.67	43.50	-8.83	Peak
240.17	V	52.29	-14.62	37.67	46.00	-8.33	Peak
374.35	V	45.05	-10.20	34.85	46.00	-11.15	Peak
70.42	H	45.84	-19.07	26.77	40.00	-13.23	Peak
144.78	H	42.47	-13.88	28.60	43.50	-14.90	Peak
240.17	H	47.62	-14.62	33.00	46.00	-13.00	Peak
374.35	H	41.81	-10.20	31.61	46.00	-14.39	Peak
500.45	H	39.70	-7.86	31.84	46.00	-14.16	Peak
959.58	H	35.91	-1.04	34.87	46.00	-11.13	Peak

Remark:

1. Measuring frequencies from 30 MHz to the 1GHz.
2. Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.
3. Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.
4. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin > 20dB from the applicable limit) and considered that's already beyond the background noise floor.
5. Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).

**Above 1 GHz****Operation Mode:** TX / IEEE 802.11b / CH Low**Test Date:** August 15, 2007**Temperature:** 30°C**Tested by:** Alan Fan**Humidity:** 79% RH**Polarity:** Ver. / Hor.

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1199.98	54.26	25.30	3.18	37.31	9.50	0.00	35.93	74.00	-38.07	P	1.00
1199.98	42.90	25.30	3.18	37.31	9.50	0.00	24.57	54.00	-29.43	A	1.00
1607.85	52.45	27.34	3.77	36.86	9.50	0.00	37.20	74.00	-36.80	P	1.00
1607.85	43.00	27.34	3.77	36.86	9.50	0.00	27.75	54.00	-26.25	A	1.00
4824.07	66.75	34.52	6.32	36.60	9.50	0.35	61.84	74.00	-12.16	P	1.00
4824.07	54.36	34.52	6.32	36.60	9.50	0.35	49.45	54.00	-4.55	A	1.00
12058.78	48.00	41.79	10.56	36.55	9.50	0.43	54.74	74.00	-19.26	P	1.00
12058.78	34.17	41.79	10.56	36.55	9.50	0.43	40.91	54.00	-13.09	A	1.00
Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.00	55.65	25.30	3.18	37.31	9.50	0.00	37.32	74.00	-36.68	P	1.00
1200.00	46.78	25.30	3.18	37.31	9.50	0.00	28.45	54.00	-25.55	A	1.00
1608.15	53.33	27.34	3.77	36.86	9.50	0.00	38.08	74.00	-35.92	P	1.00
1608.15	43.55	27.34	3.77	36.86	9.50	0.00	28.30	54.00	-25.70	A	1.00
4823.98	69.85	34.52	6.32	36.60	9.50	0.35	64.94	74.00	-9.06	P	1.00
4823.98	57.52	34.52	6.32	36.60	9.50	0.35	52.61	54.00	-1.39	A	1.00
12058.31	51.56	41.79	10.56	36.55	9.50	0.43	58.30	74.00	-15.70	P	1.00
12058.31	38.27	41.79	10.56	36.55	9.50	0.43	45.01	54.00	-8.99	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist: correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

**Operation Mode:** TX / IEEE 802.11b / CH Mid**Test Date:** August 19, 2007**Temperature:** 31°C**Tested by:** Alan Fan**Humidity:** 85 % RH**Polarity:** Ver. / Hor.

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.38	56.02	25.30	3.18	37.31	9.50	0.00	37.69	74.00	-36.31	P	1.00
1200.38	48.33	25.30	3.18	37.31	9.50	0.00	30.00	54.00	-24.00	A	1.00
1624.85	53.40	27.47	3.80	36.85	9.50	0.00	38.32	74.00	-35.68	P	1.00
1624.85	43.87	27.47	3.80	36.85	9.50	0.00	28.79	54.00	-25.21	A	1.00
4874.07	66.78	34.60	6.32	36.61	9.50	0.30	61.88	74.00	-12.12	P	1.00
4874.07	55.59	34.60	6.32	36.61	9.50	0.30	50.69	54.00	-3.31	A	1.00
7302.88	50.43	39.60	8.30	36.92	9.50	0.84	52.75	74.00	-21.25	P	1.00
7302.88	39.20	39.60	8.30	36.92	9.50	0.84	41.52	54.00	-12.48	A	1.00
12184.21	46.85	41.99	10.52	36.49	9.50	0.39	53.77	74.00	-20.23	P	1.00
12184.21	34.06	41.99	10.52	36.49	9.50	0.39	40.98	54.00	-13.02	A	1.00
Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.38	59.53	25.30	3.18	37.31	9.50	0.00	41.20	74.00	-32.80	P	1.00
1200.38	52.68	25.30	3.18	37.31	9.50	0.00	34.35	54.00	-19.65	A	1.00
1624.85	53.52	27.47	3.80	36.85	9.50	0.00	38.44	74.00	-35.56	P	1.00
1624.85	44.35	27.47	3.80	36.85	9.50	0.00	29.27	54.00	-24.73	A	1.00
4874.07	69.36	34.60	6.32	36.61	9.50	0.30	64.46	74.00	-9.54	P	1.00
4874.07	56.05	34.60	6.32	36.61	9.50	0.30	51.15	54.00	-2.85	A	1.00
7302.43	59.60	39.60	8.29	36.92	9.50	0.84	61.92	74.00	-12.08	P	1.00
7302.43	45.84	39.60	8.29	36.92	9.50	0.84	48.16	54.00	-5.84	A	1.00
12184.21	49.39	41.99	10.52	36.49	9.50	0.39	56.31	74.00	-17.69	P	1.00
12184.21	36.79	41.99	10.52	36.49	9.50	0.39	43.71	54.00	-10.29	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist: correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

**Operation Mode:** TX / IEEE 802.11b / CH High**Test Date:** August 15, 2007**Temperature:** 30°C**Tested by:** Alan Fan**Humidity:** 79 % RH**Polarity:** Ver. / Hor.

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.11	55.86	25.30	3.18	37.31	9.50	0.00	37.53	74.00	-36.47	P	1.00
1200.11	48.00	25.30	3.18	37.31	9.50	0.00	29.67	54.00	-24.33	A	1.00
4924.00	65.00	34.68	6.32	36.62	9.50	0.25	60.12	74.00	-13.88	P	1.00
4924.00	52.67	34.68	6.32	36.62	9.50	0.25	47.79	54.00	-6.21	A	1.00
7377.90	52.27	39.68	8.32	37.00	9.50	0.77	54.54	74.00	-19.46	P	1.00
7377.90	39.83	39.68	8.32	37.00	9.50	0.77	42.10	54.00	-11.90	A	1.00
12310.00	45.61	42.20	10.49	36.43	9.50	0.35	52.71	74.00	-21.29	P	1.00
12310.00	32.85	42.20	10.49	36.43	9.50	0.35	39.95	54.00	-14.05	A	1.00
Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.11	60.09	25.30	3.18	37.31	9.50	0.00	41.76	74.00	-32.24	P	1.00
1200.11	52.80	25.30	3.18	37.31	9.50	0.00	34.47	54.00	-19.53	A	1.00
4924.08	69.35	34.68	6.32	36.62	9.50	0.25	64.47	74.00	-9.53	P	1.00
4924.08	56.12	34.68	6.32	36.62	9.50	0.25	51.24	54.00	-2.76	A	1.00
7377.69	59.68	39.68	8.32	37.00	9.50	0.77	61.95	74.00	-12.05	P	1.00
7377.69	45.86	39.68	8.32	37.00	9.50	0.77	48.13	54.00	-5.87	A	1.00
12310.00	47.00	42.20	10.49	36.43	9.50	0.35	54.10	74.00	-19.90	P	1.00
12310.00	33.58	42.20	10.49	36.43	9.50	0.35	40.68	54.00	-13.32	A	1.00

Remark:

1. AF: Antenna Factor; Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist: correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

**Operation Mode:** TX / IEEE 802.11g / CH Low**Test Date:** August 17, 2007**Temperature:** 33°C**Tested by:** Alan Fan**Humidity:** 59 % RH**Polarity:** Ver. / Hor.

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.00	55.82	25.30	3.18	37.31	9.50	0.00	37.49	74.00	-36.51	P	1.00
1200.00	47.00	25.30	3.18	37.31	9.50	0.00	28.67	54.00	-25.33	A	1.00
1607.91	50.75	27.34	3.77	36.86	9.50	0.00	35.50	74.00	-38.50	P	1.00
1607.91	38.80	27.34	3.77	36.86	9.50	0.00	23.55	54.00	-30.45	A	1.00
4825.85	59.29	34.52	6.32	36.60	9.50	0.34	54.38	74.00	-19.62	P	1.00
4825.85	40.17	34.52	6.32	36.60	9.50	0.34	35.26	54.00	-18.74	A	1.00
12060.00	44.50	41.80	10.56	36.55	9.50	0.43	51.24	74.00	-22.76	P	1.00
12060.00	32.41	41.80	10.56	36.55	9.50	0.43	39.15	54.00	-14.85	A	1.00
Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.00	60.29	25.30	3.18	37.31	9.50	0.00	41.96	74.00	-32.04	P	1.00
1200.00	54.04	25.30	3.18	37.31	9.50	0.00	35.71	54.00	-18.29	A	1.00
1608.23	50.70	27.34	3.77	36.86	9.50	0.00	35.45	74.00	-38.55	P	1.00
1608.23	38.97	27.34	3.77	36.86	9.50	0.00	23.72	54.00	-30.28	A	1.00
4824.00	64.67	34.52	6.32	36.60	9.50	0.35	59.76	74.00	-14.24	P	1.00
4824.00	43.35	34.52	6.32	36.60	9.50	0.35	38.44	54.00	-15.56	A	1.00
12060.00	45.32	41.80	10.56	36.55	9.50	0.43	52.06	74.00	-21.94	P	1.00
12060.00	32.84	41.80	10.56	36.55	9.50	0.43	39.58	54.00	-14.42	A	1.00

Remark:

1. AF: Antenna Factor; Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist: correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

**Operation Mode:** TX / IEEE 802.11g / CH Mid**Test Date:** August 19, 2007**Temperature:** 31°C**Tested by:** Alan Fan**Humidity:** 85 % RH**Polarity:** Ver. / Hor.

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.38	55.95	25.30	3.18	37.31	9.50	0.00	37.62	74.00	-36.38	P	1.00
1200.38	48.60	25.30	3.18	37.31	9.50	0.00	30.27	54.00	-23.73	A	1.00
1624.60	51.00	27.47	3.80	36.85	9.50	0.00	35.92	74.00	-38.08	P	1.00
1624.60	40.30	27.47	3.80	36.85	9.50	0.00	25.22	54.00	-28.78	A	1.00
4869.71	58.50	34.59	6.32	36.61	9.50	0.30	53.60	74.00	-20.40	P	1.00
4869.71	39.92	34.59	6.32	36.61	9.50	0.30	35.02	54.00	-18.98	A	1.00
7303.99	50.23	39.60	8.30	36.92	9.50	0.84	52.55	74.00	-21.45	P	1.00
7303.99	35.45	39.60	8.30	36.92	9.50	0.84	37.77	54.00	-16.23	A	1.00
12185.00	44.74	42.00	10.52	36.49	9.50	0.39	51.66	74.00	-22.34	P	1.00
12185.00	33.69	42.00	10.52	36.49	9.50	0.39	40.61	54.00	-13.39	A	1.00
Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.38	60.23	25.30	3.18	37.31	9.50	0.00	41.90	74.00	-32.10	P	1.00
1200.38	54.37	25.30	3.18	37.31	9.50	0.00	36.04	54.00	-17.96	A	1.00
1624.60	53.45	27.47	3.80	36.85	9.50	0.00	38.37	74.00	-35.63	P	1.00
1624.60	41.85	27.47	3.80	36.85	9.50	0.00	26.77	54.00	-27.23	A	1.00
4876.05	63.21	34.60	6.32	36.61	9.50	0.29	58.32	74.00	-15.68	P	1.00
4876.05	42.46	34.60	6.32	36.61	9.50	0.29	37.57	54.00	-16.43	A	1.00
7318.27	54.83	39.62	8.30	36.94	9.50	0.83	57.14	74.00	-16.86	P	1.00
7318.27	38.13	39.62	8.30	36.94	9.50	0.83	40.44	54.00	-13.56	A	1.00
12185.00	45.91	42.00	10.52	36.49	9.50	0.39	52.83	74.00	-21.17	P	1.00
12185.00	32.85	42.00	10.52	36.49	9.50	0.39	39.77	54.00	-14.23	A	1.00

Remark:

1. AF: Antenna Factor, Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist: correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.

**Operation Mode:** TX / IEEE 802.11g / CH High**Test Date:** August 19, 2007**Temperature:** 31°C**Tested by:** Alan Fan**Humidity:** 85 % RH**Polarity:** Ver. / Hor.

Measurement Distance at 1m Horizontal polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.34	55.60	25.30	3.18	37.31	9.50	0.00	37.27	74.00	-36.73	P	1.00
1200.34	48.24	25.30	3.18	37.31	9.50	0.00	29.91	54.00	-24.09	A	1.00
4926.00	57.57	34.68	6.32	36.62	9.50	0.24	52.69	74.00	-21.31	P	1.00
4926.00	39.13	34.68	6.32	36.62	9.50	0.24	34.25	54.00	-19.75	A	1.00
7379.79	49.20	39.68	8.32	37.00	9.50	0.77	51.47	74.00	-22.53	P	1.00
7379.79	34.52	39.68	8.32	37.00	9.50	0.77	36.79	54.00	-17.21	A	1.00
12310.00	44.25	42.20	10.49	36.43	9.50	0.35	51.35	74.00	-22.65	P	1.00
12310.00	33.01	42.20	10.49	36.43	9.50	0.35	40.11	54.00	-13.89	A	1.00
Measurement Distance at 1m Vertical polarity											
Freq. (MHz)	Reading (dBμV)	AF (dBμV)	Cable (dB)	Pre-amp (dB)	Dist (dB)	Filter (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Mark (P/Q/A)	Height (Meter)
1200.34	60.35	25.30	3.18	37.31	9.50	0.00	42.02	74.00	-31.98	P	1.00
1200.34	53.53	25.30	3.18	37.31	9.50	0.00	35.20	54.00	-18.80	A	1.00
4926.10	62.77	34.68	6.32	36.62	9.50	0.24	57.89	74.00	-16.11	P	1.00
4926.10	43.52	34.68	6.32	36.62	9.50	0.24	38.64	54.00	-15.36	A	1.00
7377.37	53.81	39.68	8.32	37.00	9.50	0.77	56.08	74.00	-17.92	P	1.00
7377.37	38.65	39.68	8.32	37.00	9.50	0.77	40.92	54.00	-13.08	A	1.00
12310.00	45.05	42.20	10.49	36.43	9.50	0.35	52.15	74.00	-21.85	P	1.00
12310.00	32.84	42.20	10.49	36.43	9.50	0.35	39.94	54.00	-14.06	A	1.00

Remark:

1. AF: Antenna Factor; Cable: Cable Loss, Pre-Amp: Preamplifier gain, Filter: High Pass Filter Insertion Loss (3.5GHz)
2. Spectrum analyzer setting P(Peak): RBW=1MHz, VBW=1MHz, A(Average): RBW=1MHz, VBW=10Hz
3. Dist: correction to extra plate reading to 3m specification distance 1m measurement distance = -9.5dB
4. The result basic equation calculation is as follow:
Level = Reading + AF + Cable – Preamp + Filter – Dist, Margin = Level-Limit
5. The other emission levels were 20dB below the limit
6. The test limit distance is 3M limit.



7.7 POWERLINE CONDUCTED EMISSIONS

LIMIT

According to §15.207(a), except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

* Decreases with the logarithm of the frequency.

Test Configuration

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

TEST PROCEDURE

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.



TEST RESULTS

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

Test Data

Operation Mode: Normal Link **Test Date:** October 5, 2007
Temperature: 25°C **Tested by:** Snake Shan
Humidity: 55% RH

Freq. (MHz)	QP Reading (dBuV)	AV Reading (dBuV)	Corr. factor (dB)	QP Result (dBuV)	AV Result (dBuV)	QP Limit (dBuV)	AV Limit (dBuV)	QP Margin (dB)	AV Margin (dB)	Note
0.195	39.660	37.620	0.115	39.775	37.735	63.821	53.821	-24.046	-16.086	L1
0.325	38.480	36.780	0.064	38.544	36.844	59.578	49.578	-21.034	-12.734	L1
0.458	36.160	34.600	0.015	36.175	34.615	56.729	46.729	-20.553	-12.113	L1
0.655	33.540	31.600	0.000	33.540	31.600	56.000	46.000	-22.460	-14.400	L1
0.915	31.950	29.580	0.000	31.950	29.580	56.000	46.000	-24.050	-16.420	L1
1.704	37.030	34.440	0.007	37.037	34.447	56.000	46.000	-18.963	-11.553	L1
0.328	34.170	32.860	0.063	34.233	32.923	59.502	49.502	-25.269	-16.579	L2
0.458	33.130	31.780	0.015	33.145	31.795	56.729	46.729	-23.583	-14.933	L2
0.722	31.520	30.250	0.000	31.520	30.250	56.000	46.000	-24.480	-15.750	L2
0.915	31.030	29.740	0.000	31.030	29.740	56.000	46.000	-24.970	-16.260	L2
1.704	34.080	32.710	0.007	34.087	32.717	56.000	46.000	-21.913	-13.283	L2
2.289	32.430	27.810	0.019	32.449	27.829	56.000	46.000	-23.551	-18.171	L2

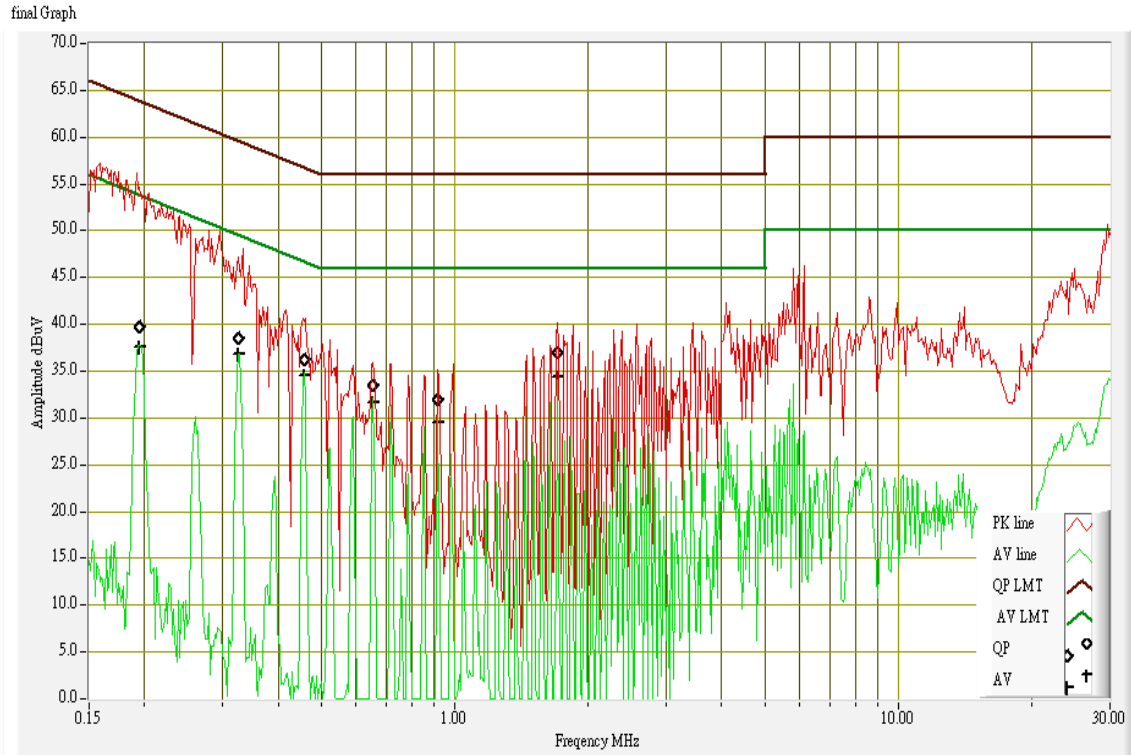
Remark:

1. Measuring frequencies from 0.15 MHz to 30MHz.
2. The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Quasi-peak detector and average detector.
3. The IF bandwidth of SPA between 0.15MHz and 30MHz was 10 kHz; the IF bandwidth of Test Receiver between 0.15MHz and 30MHz was 9 kHz;
4. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)

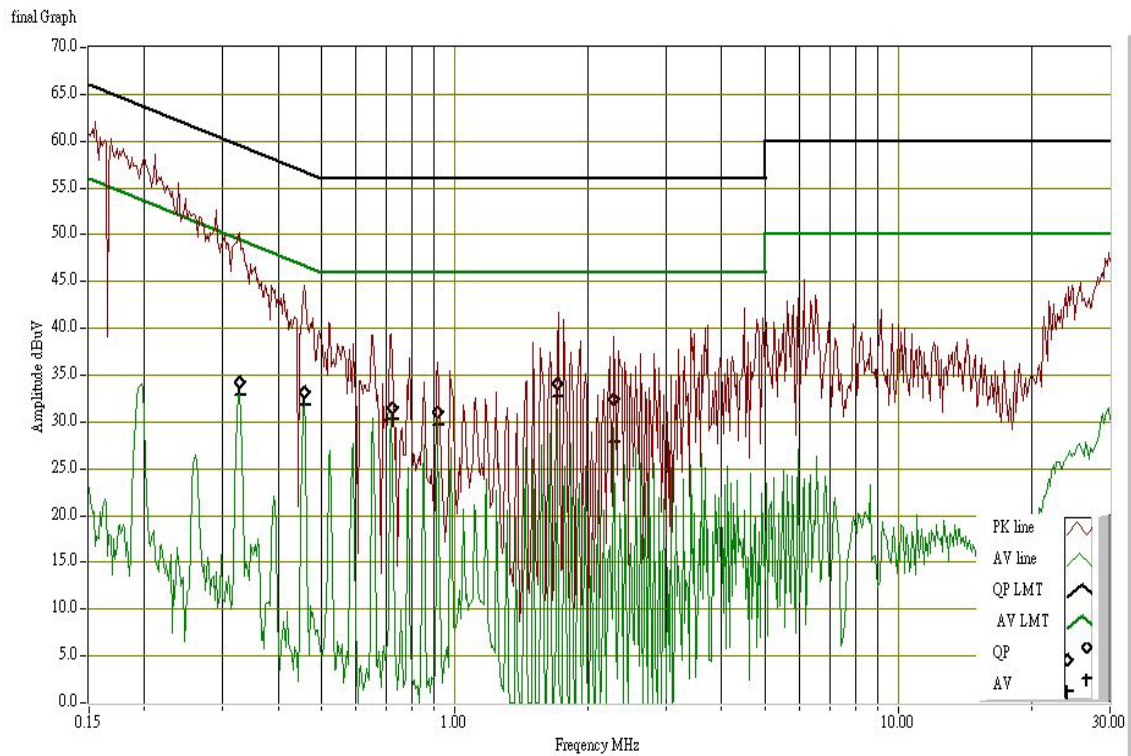


Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)





APPENDIX I RADIO FREQUENCY EXPOSURE

LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

EUT Specification

EUT	802.11g Wireless Cable/DSL Internet Gateway w/USB Printer Port
Frequency band (Operating)	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz <input type="checkbox"/> Others
Device category	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
Max. output power	IEEE 802.11b: 22.96 dBm (197.70mW) IEEE 802.11g: 18.58 dBm (72.11mW)
Antenna gain (Max)	1.8 dBi (Numeric gain: 1.51)
Evaluation applied	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A

Remark:

1. The maximum output power is 22.96dBm (197.70mW) at 2412Hz (with 1.51 numeric antenna gain.)
2. DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.
3. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm² even if the calculation indicates that the power density would be larger.

TEST RESULTS

No non-compliance noted.



Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where $E =$ Field strength in Volts / meter

$P =$ Power in Watts

$G =$ Numeric antenna gain

$d =$ Distance in meters

$S =$ Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{3770d^2}$$

Changing to units of mW and cm, using:

$$P (mW) = P (W) / 1000 \text{ and}$$

$$d (cm) = d(m) / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where $d =$ Distance in cm

$P =$ Power in mW

$G =$ Numeric antenna gain

$S =$ Power density in mW / cm²

Maximum Permissible Exposure

EUT output power = 197.70mW

Numeric antenna gain = 1.51

Substituting the MPE safe distance using d = 20 cm into Equation 1:

Yields

$$S = 0.000199 \times P \times G$$

Where $P =$ Power in mW

$G =$ Numeric antenna gain

$S =$ Power density in mW / cm²

→ Power density = 0.0594 mW / cm²

(For mobile or fixed location transmitters, the maximum power density is 1.0 mW/cm² even if the calculation indicates that the power density would be larger.)