



FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

Notebook PC

Model: TB120

Trade Name: Gateway

Issued to

**Arima Computer Corp
No. 758, Sec. 4, Bade Road,
Taipei, Taiwan, R.O.C.**

Issued by

**Compliance Certification Services Inc.
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Taoyuan Hsien, (338) Taiwan, R.O.C.
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1. TEST RESULT CERTIFICATION

Applicant: Arima Computer Corp
No. 758, Sec. 4, Bade Road,
Taipei, Taiwan, R.O.C.

Equipment Under Test: Notebook PC

Trade Name: Gateway

Model: TB120

Date of Test: July 30 ~ August 23, 2007

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 15 Subpart C	No non-compliance noted

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:

Johnny Liu
Section Manager
Compliance Certification Services Inc.

Reviewed by:

Amanda Wu
Section Manager
Compliance Certification Services Inc.



2. EUT DESCRIPTION

Product	Notebook PC
Trade Name	Gateway
Model Number	TB120
Model Discrepancy	N/A
Power Supply	Gateway / 0335A1965 I/P: AC 100-240V, 1.7A, 50-60Hz O/P: DC 19V, 3.42A
Frequency Range	IEEE 802.11a mode: 5.745~5.825 GHz IEEE 802.11b/g mode: 2.412~2.462 GHz
Transmit Power	IEEE 802.11a mode: 18.58 dBm draft 802.11n Standard-20 MHz Channel mode: 19.05 dBm draft 802.11n Wide-40 MHz Channel mode: 20.54 dBm IEEE 802.11b mode: 22.02 dBm IEEE 802.11g mode: 20.76 dBm draft 802.11n Standard-20 MHz Channel mode: 21.87 dBm draft 802.11n Wide-40 MHz Channel mode: 19.81 dBm
Modulation Technique	IEEE 802.11a: OFDM (QPSK, BPSK, 16-QAM, 64-QAM) draft 802.11n Standard-20 MHz Channel mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps) draft 802.11n Wide-40 MHz Channel mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps) IEEE 802.11b mode: DSSS (1, 2, 5.5 and 11 Mbps) IEEE 802.11g mode: OFDM (6, 9, 12, 18, 24, 36, 48 and 54 Mbps) draft 802.11n Standard-20 MHz Channel mode: OFDM (6.5, 7.2, 13, 14.4, 14.44, 19.5, 21.7, 26, 28.89, 28.9, 39, 43.3, 43.33 52, 57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67, 104, 115.56, 117, 130, 144.44 Mbps) draft 802.11n Wide-40 MHz Channel mode: OFDM (13.5, 15, 27, 30, 40.5, 45, 54, 60, 81, 90, 108, 120, 121.5, 135, 150, 162, 180, 216, 240, 243, 270, 300 Mbps)
Number of Channels	IEEE 802.11a mode: 5 Channels draft 802.11n Standard-20 MHz Channel mode : 5 Channels draft 802.11n Wide-40 MHz Channel mode: 3 Channels IEEE 802.11b/g mode: 11 Channels draft 802.11n Standard-20 MHz Channel mode: 11 Channels draft 802.11n Wide-40 MHz Channel mode: 7 Channels
Antenna Specification	Antenna Type: PIFA Antenna Antenna Gain: IEEE 802.11a: -0.55dBi IEEE 802.11b/g mode: -0.47dBi

Remark:

1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.
2. This submittal(s) (test report) is intended for FCC ID: **ID4TB1204965** 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 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41			

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: TB120) had been tested under operating condition.

The EUT is a 2x3 configuration spatial MIMO (2Tx & 3Rx) without beam forming function but with cyclic delay diversity function that operate in double TX chains and triple RX chains. The 2x3 configuration is implemented with two outside TX & RX chains (Chain 1 and the middle RX chain (chain 0)).

Software used to control the EUT for staying in continuous transmitting mode was programmed. The worst case data rate is determined as the data rate with highest output power.

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 802.11a mode:

Channel Low(5745MHz), Channel Mid(5785MHz) and Channel High(5825MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Standard-20 MHz Channel mode:

Channel Low(5745MHz), Channel Mid(5785MHz) and Channel High(5825MHz) with 6.5Mbps data rate were chosen for full testing.

draft 802.11n Wide-40 MHz Channel mode:

Channel Low(5755MHz) and Channel High(5795MHz) with 13.5Mbps data rate were chosen for full testing.

IEEE 802.11b mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 1Mbps data rate and cyclic delay diversity were chosen for full testing.

IEEE 802.11g mode:

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

draft 802.11n Standard-20 MHz Channel mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6.5Mbps data rate were chosen for full testing.

draft 802.11n Wide-40 MHz Channel mode:

Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 13.5Mbps 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	MY43360131	01/30/2008

3M Semi Anechoic Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US42510252	08/01/2008
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	07/09/2008
Horn-Antenna	TRC	HA-1301A	01	07/17/2008
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 $\pm 2.0065\text{dB}$ (30MHz ~ 1GHz), $\pm 3.0958\text{dB}$ (Above 1GHz) 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 $\pm 2.81\text{dB}$, 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

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	 ACCREDITED No. 0824-01
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	 Testing Laboratory 0363
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.	Super a/g 108Mbps Wireless Lan Router (Remote)	PLANEX	BLW-04SAG	40DDA0421	SJ9-BLW54SAG	N/A	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.*



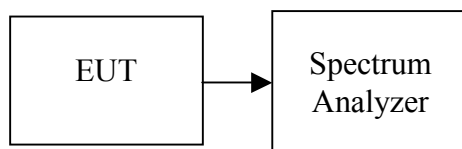
7. FCC PART 15.247 REQUIREMENTS

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 = 100kHz, VBW = RBW, 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 mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	11.85	>500	PASS
Mid	2437	12.58		PASS
High	2462	12.58		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.50	>500	PASS
Mid	2437	16.50		PASS
High	2462	16.50		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.67	>500	PASS
Mid	2437	17.58		PASS
High	2462	17.75		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.50	>500	PASS
Mid	2437	17.67		PASS
High	2462	17.67		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	35.17	>500	PASS
Mid	2437	35.17		PASS
High	2452	35.25		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	34.33	>500	PASS
Mid	2437	35.08		PASS
High	2452	34.17		PASS

**Test mode: IEEE 802.11a mode**

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Test Result
Low	5745	16.42	>500	PASS
Mid	5785	16.50		PASS
High	5825	16.50		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.33	>500	PASS
Mid	5785	17.67		PASS
High	5825	17.58		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5745	17.25	>500	PASS
Mid	5785	17.67		PASS
High	5825	17.50		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / Chain 0

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	34.58	>500	PASS
High	5795	34.17		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode / Chain 1

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	5755	34.00	>500	PASS
High	5795	35.00		PASS



Test Plot

IEEE 802.11b mode:

6dB Bandwidth (CH Low)

Agilent 13:06:01 Jul 31, 2007

R T

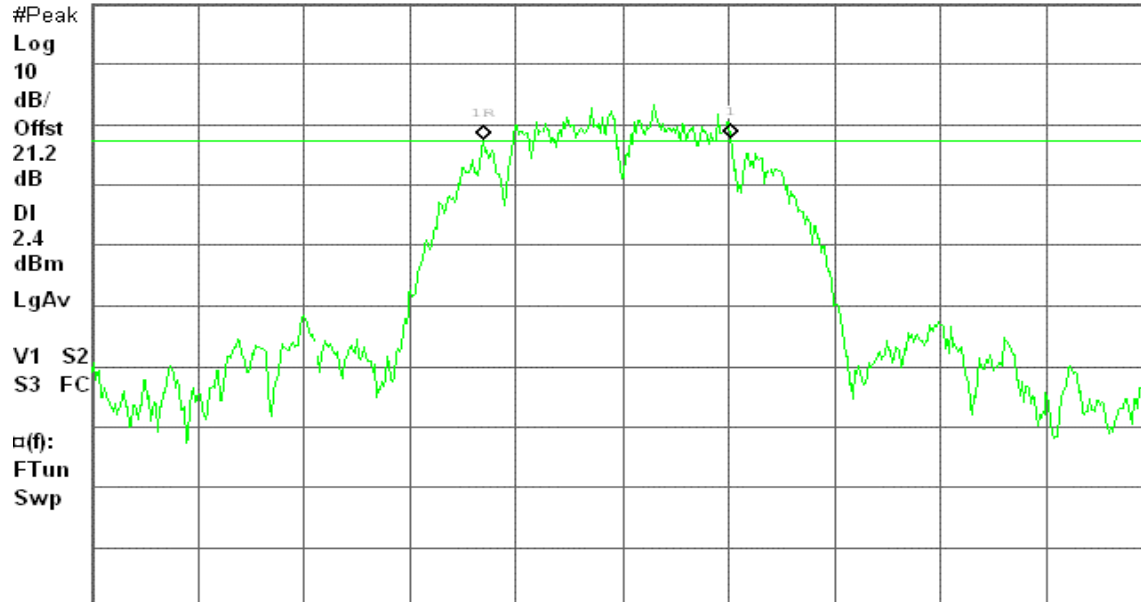
6dB BW, b Mode Low Ch.

Δ Mkr1 11.58 MHz

Ref 25 dBm

Atten 20 dB

0.09 dB



Center 2.412 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.8 ms (601 pts)

6dB Bandwidth (CH Mid)

Agilent 13:16:47 Jul 31, 2007

R T

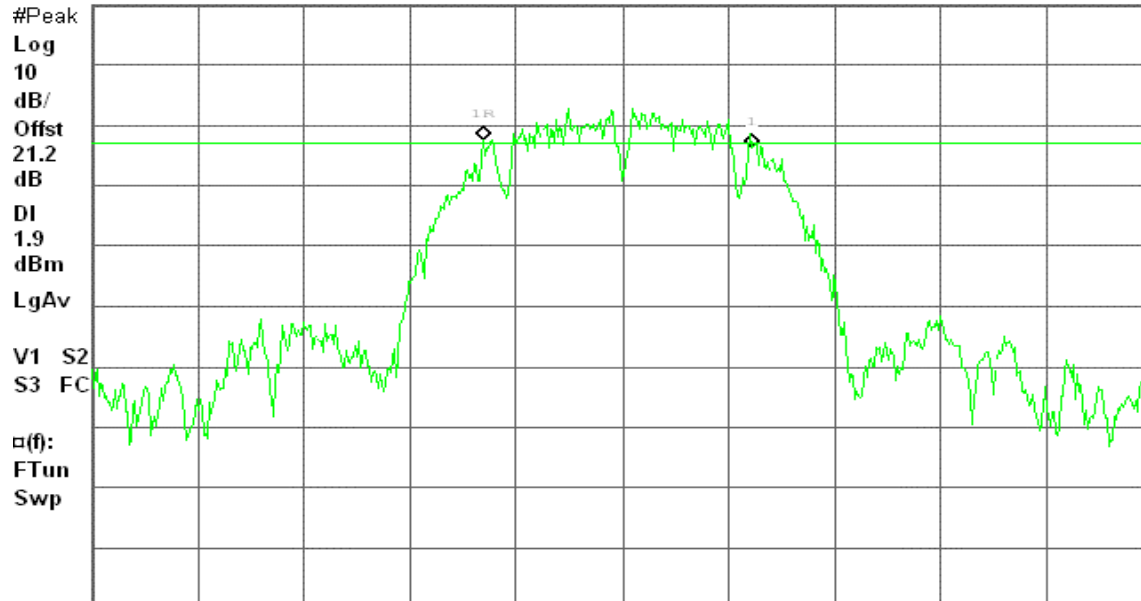
6dB BW, b Mode Mid Ch.

Δ Mkr1 12.58 MHz

Ref 25 dBm

Atten 20 dB

-1.39 dB



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.8 ms (601 pts)



6dB Bandwidth (CH High)

Agilent 13:24:56 Jul 31, 2007

R T

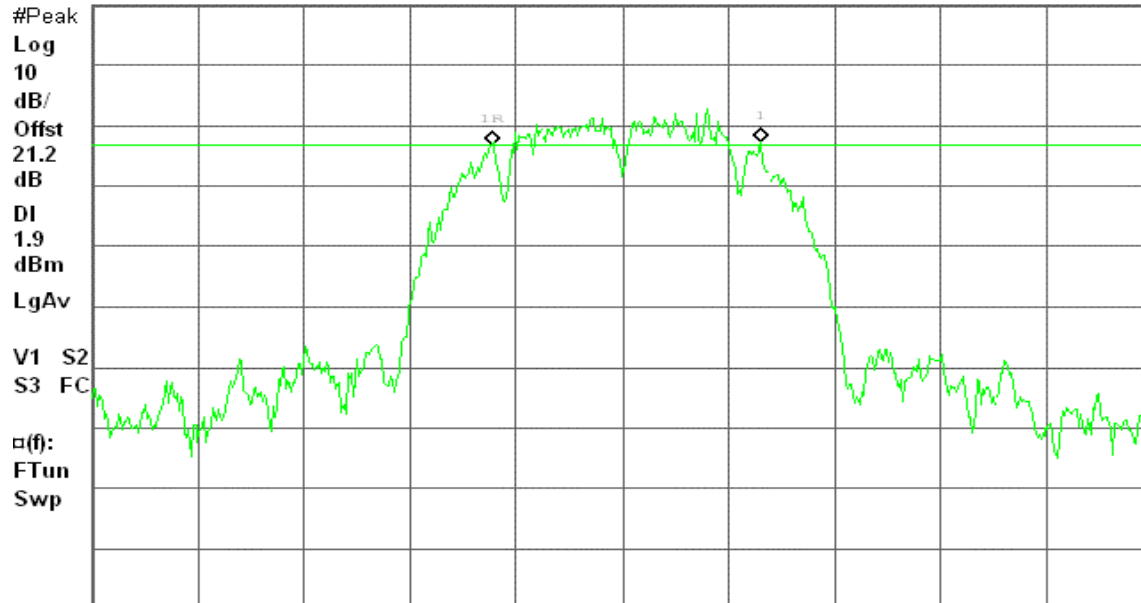
6dB BW, b Mode High Ch.

Δ Mkr1 12.58 MHz

Ref 25 dBm

Atten 20 dB

0.45 dB



Center 2.462 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.8 ms (601 pts)

IEEE 802.11g mode:

6dB Bandwidth (CH Low)

Agilent 13:32:01 Jul 31, 2007

R T

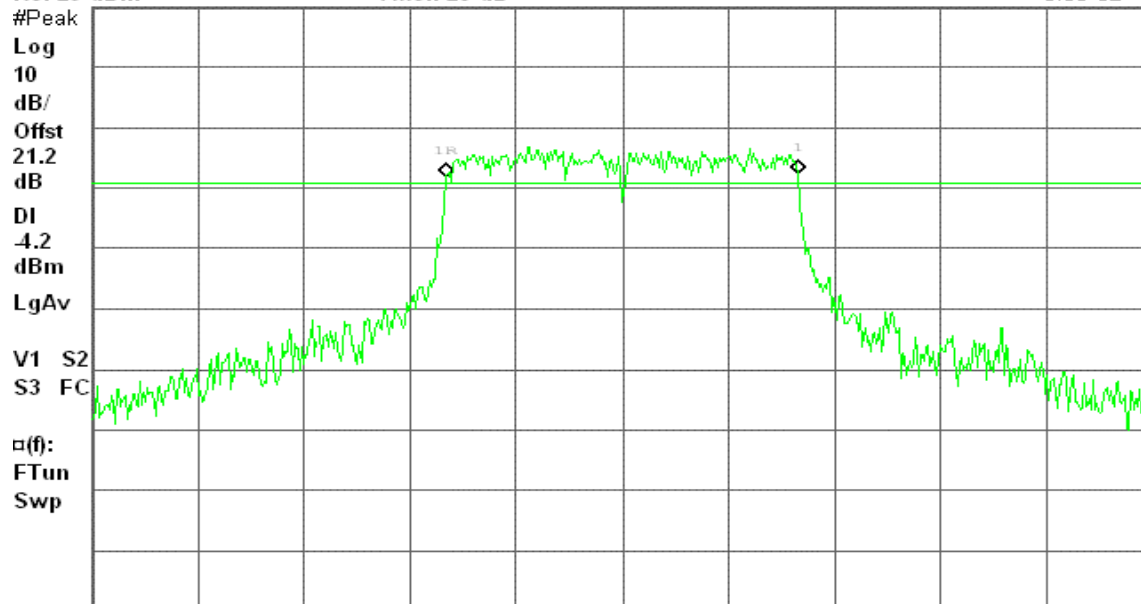
6dB BW, g Mode Low Ch.

Δ Mkr1 16.50 MHz

Ref 25 dBm

Atten 20 dB

0.53 dB



Center 2.412 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.8 ms (601 pts)



6dB Bandwidth (CH Mid)

Agilent 13:37:40 Jul 31, 2007

R T

6dB BW, g Mode Mid Ch.

Δ Mkr1 16.50 MHz

Ref 25 dBm

Atten 20 dB

-0.35 dB

#Peak

Log

10

dB/

Offst

21.2

dB

DI

-2.6

dBm

LgAv

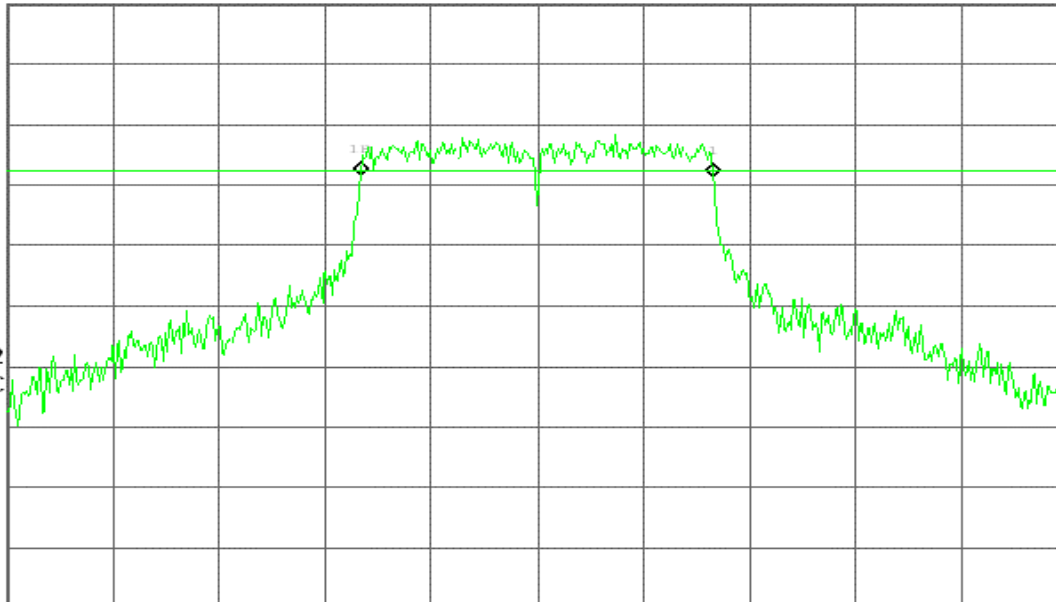
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.8 ms (601 pts)

6dB Bandwidth (CH High)

Agilent 13:44:55 Jul 31, 2007

R T

6dB BW, g Mode High Ch.

Δ Mkr1 16.50 MHz

Ref 25 dBm

Atten 20 dB

0.06 dB

#Peak

Log

10

dB/

Offst

21.2

dB

DI

-3.4

dBm

LgAv

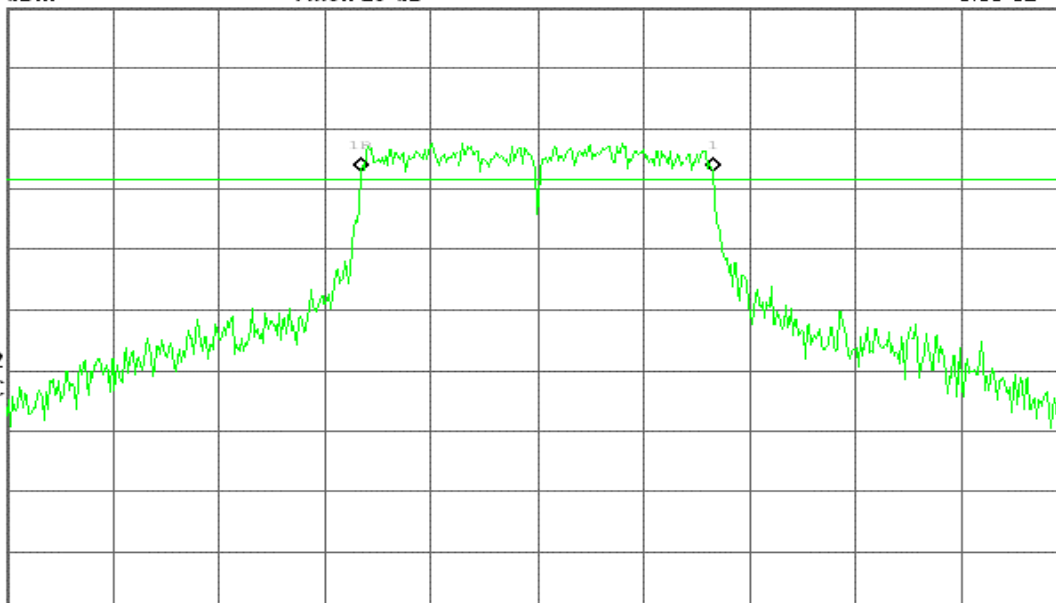
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 2.462 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.8 ms (601 pts)

**draft 802.11n Standard-20 MHz Channel mode / Chain 0****6dB Bandwidth (CH Low)**

Agilent 13:41:09 Aug 6, 2007

R T

6dB BW, g Mode Low Ch.

 Δ Mkr1 17.67 MHz

Ref 20 dBm

Atten 20 dB

0.27 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-2.8

dBm

LgAv

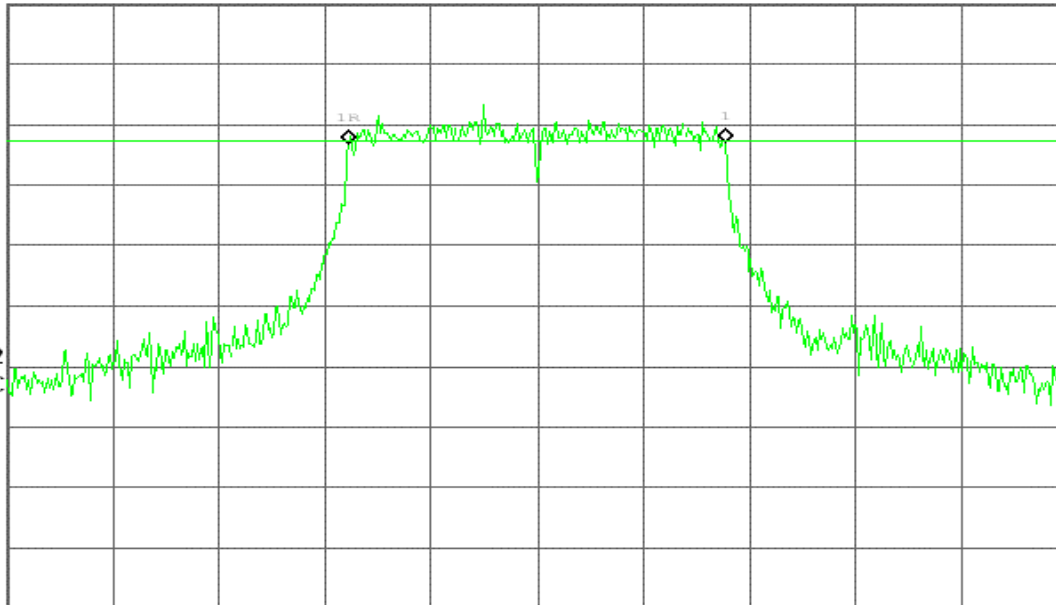
V1 S2

S3 FC

 $\square(f)$:

FTun

Swp



Center 2.412 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

6dB Bandwidth (CH Mid)

Agilent 14:26:25 Aug 6, 2007

R T

6dB BW, g Mode Mid Ch.

 Δ Mkr1 17.58 MHz

Ref 20 dBm

Atten 20 dB

0.56 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-2.6

dBm

LgAv

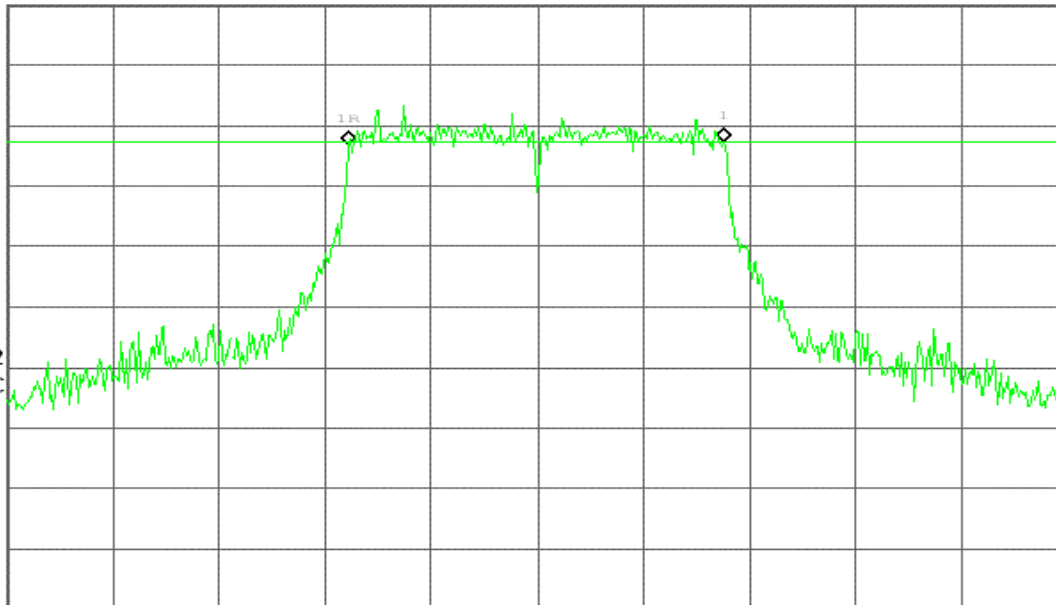
V1 S2

S3 FC

 $\square(f)$:

FTun

Swp



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



6dB Bandwidth (CH High)

Agilent 14:38:21 Aug 6, 2007

R T

6dB BW, g Mode High Ch.

Δ Mkr1 17.75 MHz

Ref 20 dBm

Atten 20 dB

0.62 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-5.1

dBm

LgAv

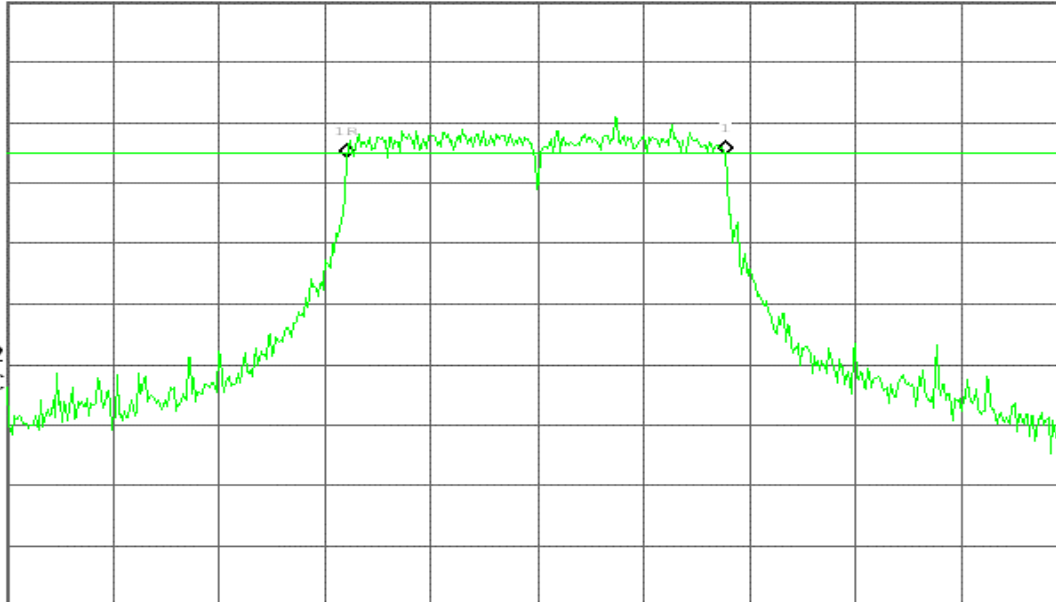
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 2.462 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

draft 802.11n Standard-20 MHz Channel mode / Chain 1

6dB Bandwidth (CH Low)

Agilent 15:01:40 Aug 6, 2007

R T

6dB BW, g Mode Low Ch.

Δ Mkr1 17.50 MHz

Ref 20 dBm

Atten 20 dB

0.19 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-2.6

dBm

LgAv

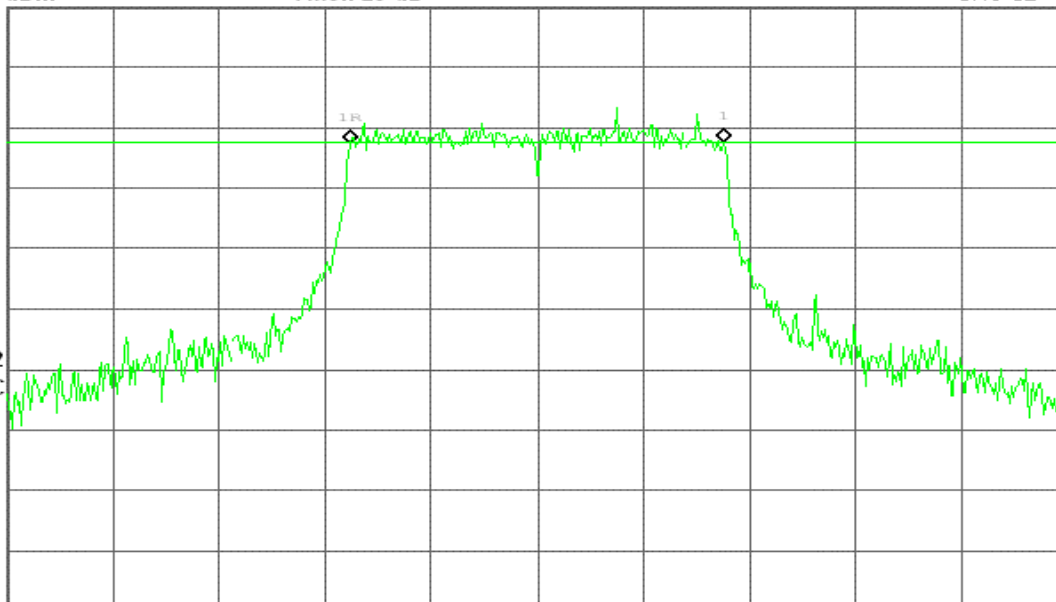
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 2.412 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



6dB Bandwidth (CH Mid)

Agilent 14:55:37 Aug 6, 2007

R T

6dB BW, g Mode Mid Ch.

Δ Mkr1 17.67 MHz

Ref 20 dBm

Atten 20 dB

-0.90 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-2.6

dBm

LgAv

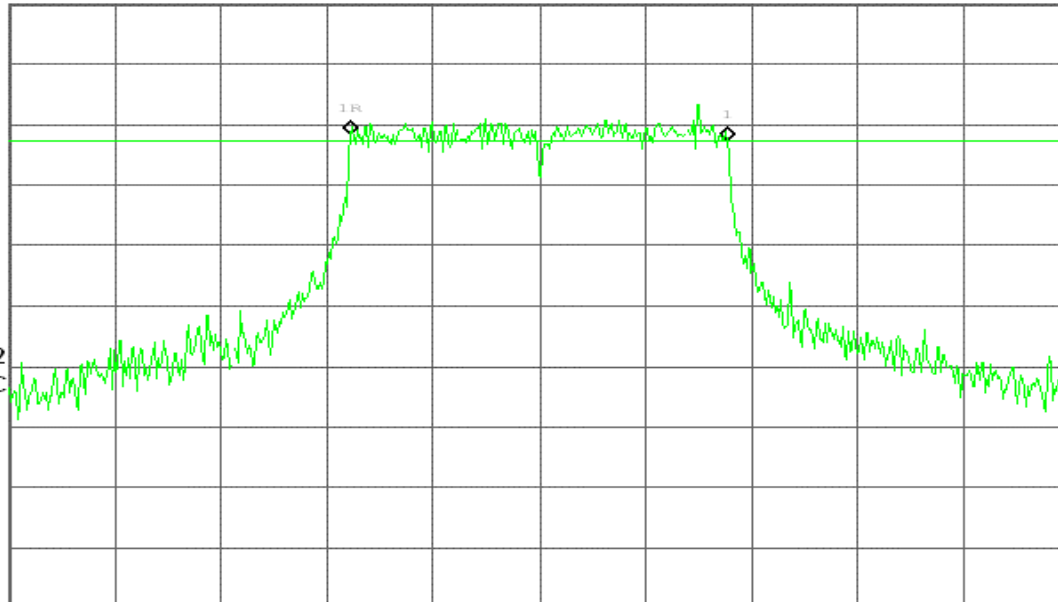
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

6dB Bandwidth (CH High)

Agilent 14:46:52 Aug 6, 2007

R T

6dB BW, g Mode High Ch.

Δ Mkr1 17.67 MHz

Ref 20 dBm

Atten 20 dB

-0.74 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-6.1

dBm

LgAv

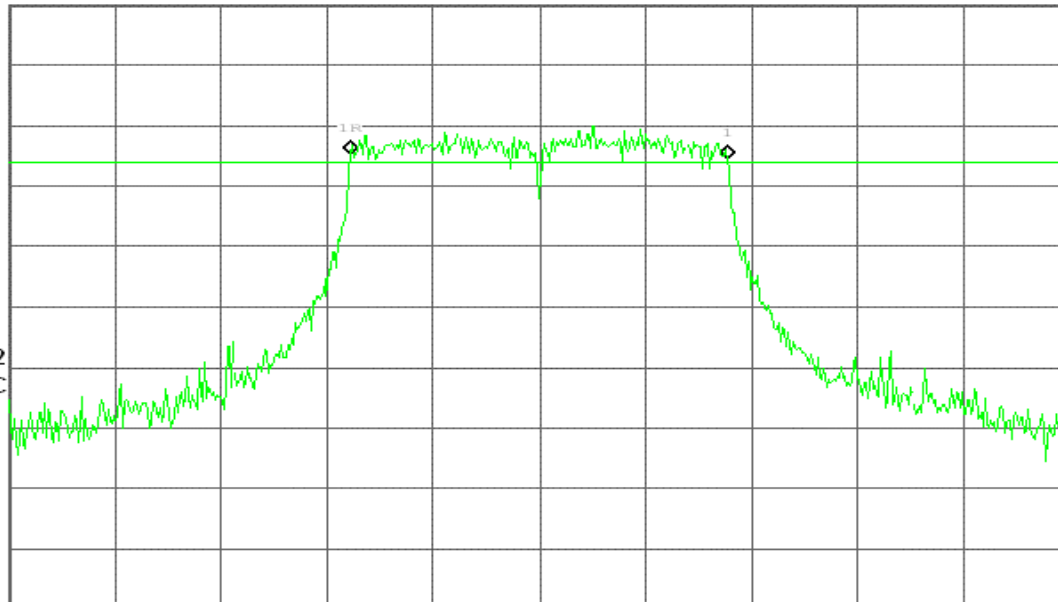
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 2.462 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



draft 802.11n Wide-40 MHz Channel mode / Chain 0

6dB Bandwidth (CH Low)

Agilent 16:24:24 Aug 6, 2007

R T

6dB BW, 40 Mode Low Ch.

Δ Mkr1 35.17 MHz

Ref 20 dBm

Atten 20 dB

0.30 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-5.9

dBm

LgAv

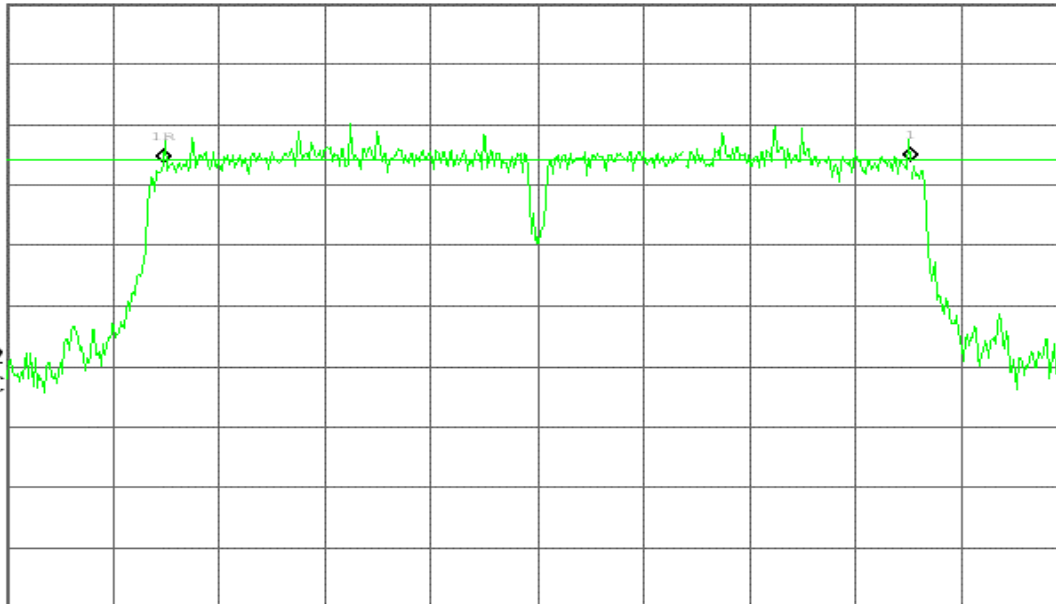
V1 S2

S3 FC

□(f):

FTun

Swp



Center 2.422 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

6dB Bandwidth (CH Mid)

Agilent 16:17:59 Aug 6, 2007

R T

6dB BW, 40 Mode Mid Ch.

Δ Mkr1 35.17 MHz

Ref 20 dBm

Atten 20 dB

-0.20 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-6.5

dBm

LgAv

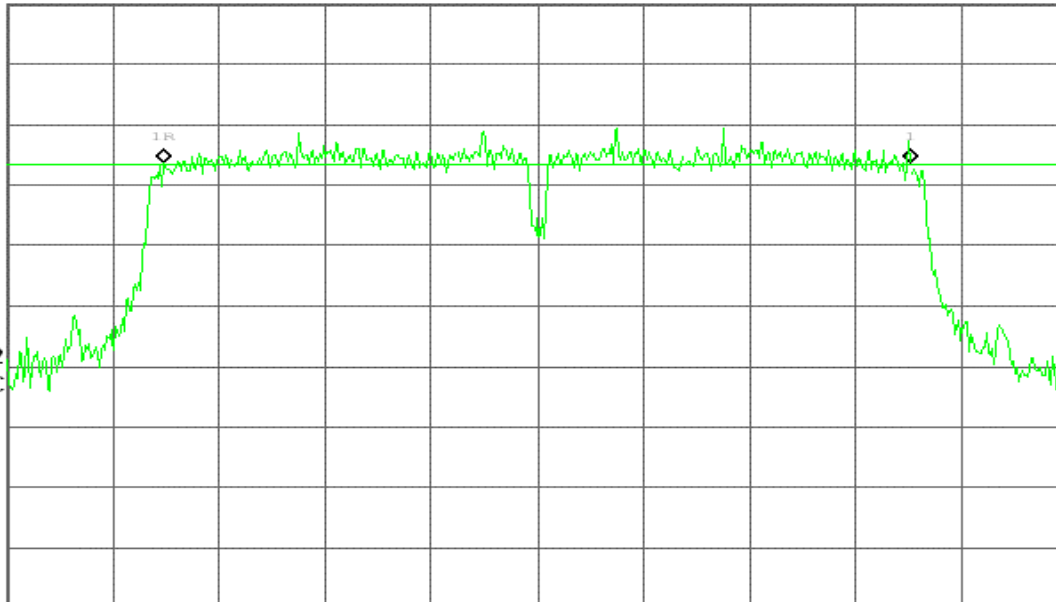
V1 S2

S3 FC

□(f):

FTun

Swp



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

**6dB Bandwidth (CH High)**

* Agilent 16:10:05 Aug 6, 2007

R T

6dB BW, 40 Mode High Ch.

 Δ Mkr1 35.25 MHz

Ref 20 dBm

Atten 20 dB

-0.23 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-6.0

dBm

LgAv

V1 S2

S3 FC

 $\alpha(f)$:

FTun

Swp



Center 2.452 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 1**6dB Bandwidth (CH Low)**

* Agilent 16:38:34 Aug 6, 2007

R T

6dB BW, 40 Mode Low Ch.

 Δ Mkr1 34.33 MHz

Ref 20 dBm

Atten 20 dB

-0.51 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-5.5

dBm

LgAv

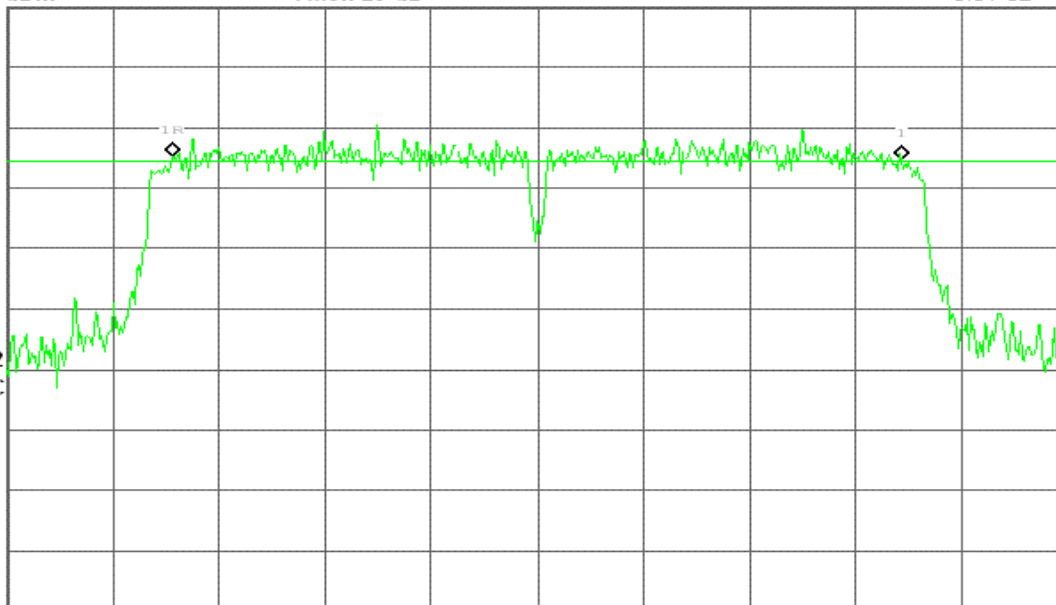
V1 S2

S3 FC

 $\alpha(f)$:

FTun

Swp



Center 2.422 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



6dB Bandwidth (CH Mid)

Agilent 16:46:56 Aug 6, 2007

R T

6dB BW, 40 Mode Mid Ch.

Δ Mkr1 35.08 MHz

Ref 20 dBm

Atten 20 dB

-2.58 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-6.4

dBm

LgAv

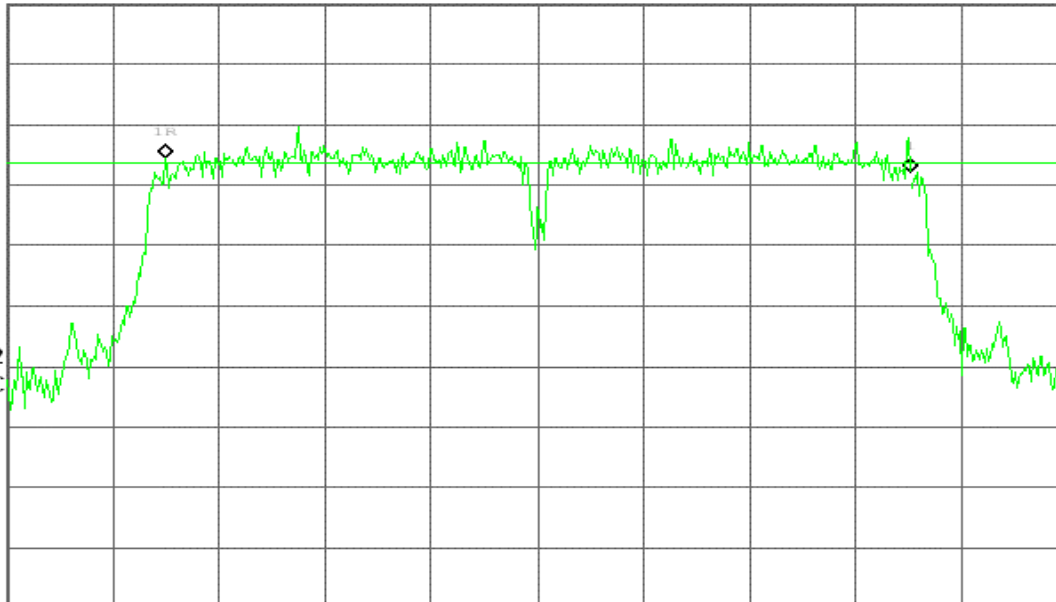
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

6dB Bandwidth (CH High)

Agilent 16:53:30 Aug 6, 2007

R T

6dB BW, 40 Mode High Ch.

Δ Mkr1 34.17 MHz

Ref 20 dBm

Atten 20 dB

-1.31 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-6.2

dBm

LgAv

V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 2.452 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

**IEEE 802.11a mode:****6dB Bandwidth (CH Low)**

Agilent 13:27:00 Aug 7, 2007

R T

6dB BW, a Mode Low Ch.

 Δ Mkr1 16.42 MHz

Ref 20 dBm

Atten 20 dB

1.70 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-5.3

dBm

LgAv

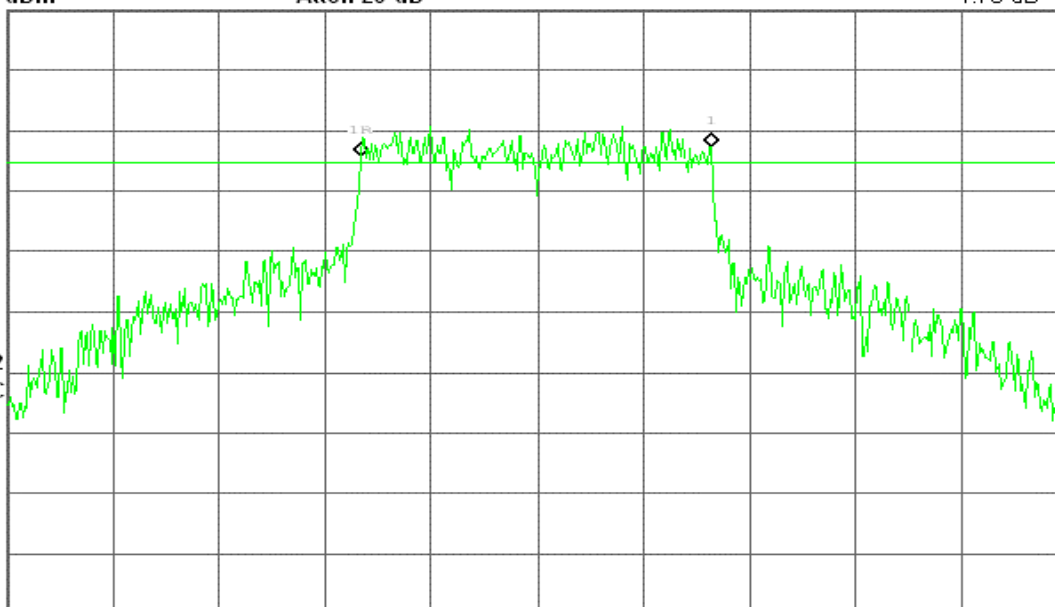
V1 S2

S3 FC

 $\square(f)$:

FTun

Swp



Center 5.745 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

6dB Bandwidth (CH Mid)

Agilent 13:34:19 Aug 7, 2007

R T

6dB BW, a Mode Mid Ch.

 Δ Mkr1 16.50 MHz

Ref 20 dBm

Atten 20 dB

-1.24 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-6.2

dBm

LgAv

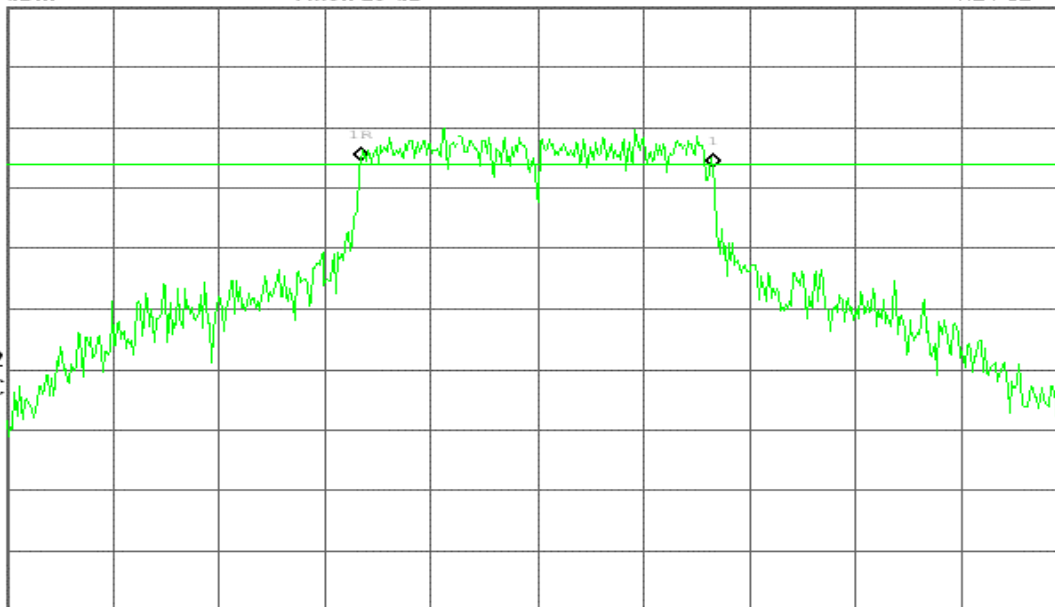
V1 S2

S3 FC

 $\square(f)$:

FTun

Swp



Center 5.785 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



6dB Bandwidth (CH High)

Agilent 13:40:07 Aug 7, 2007

R T

6dB BW, a Mode High Ch.

Δ Mkr1 16.50 MHz

Ref 20 dBm

Atten 20 dB

1.64 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-5.9

dBm

LgAv

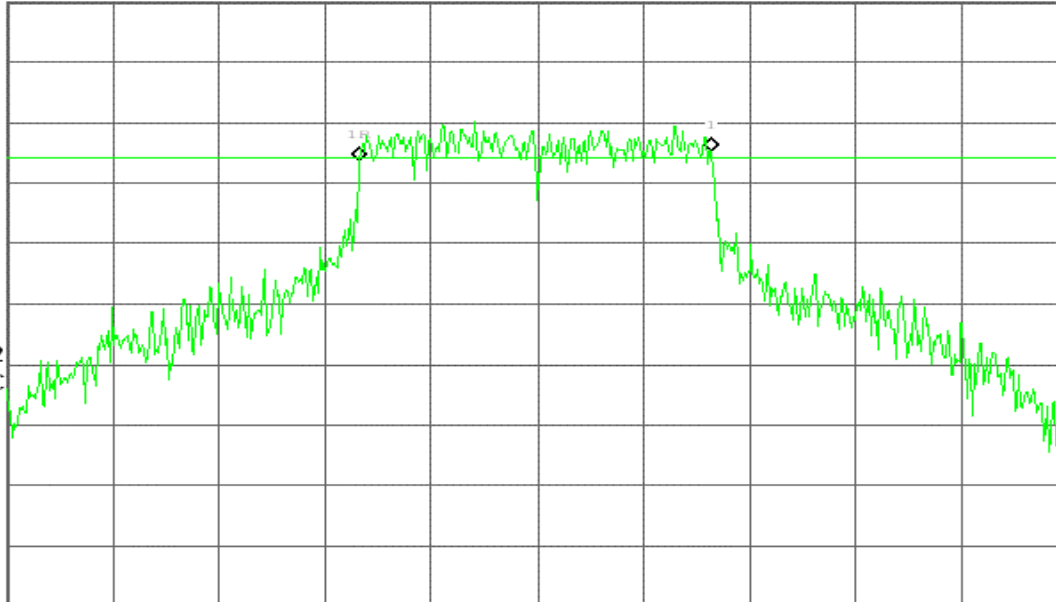
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 5.825 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

draft 802.11n Standard-20 MHz Channel mode / Chain 0

6dB Bandwidth (CH Low)

Agilent 14:16:24 Aug 7, 2007

R T

6dB BW, a Mode Low Ch.

Δ Mkr1 17.33 MHz

Ref 20 dBm

Atten 20 dB

0.27 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-6.0

dBm

LgAv

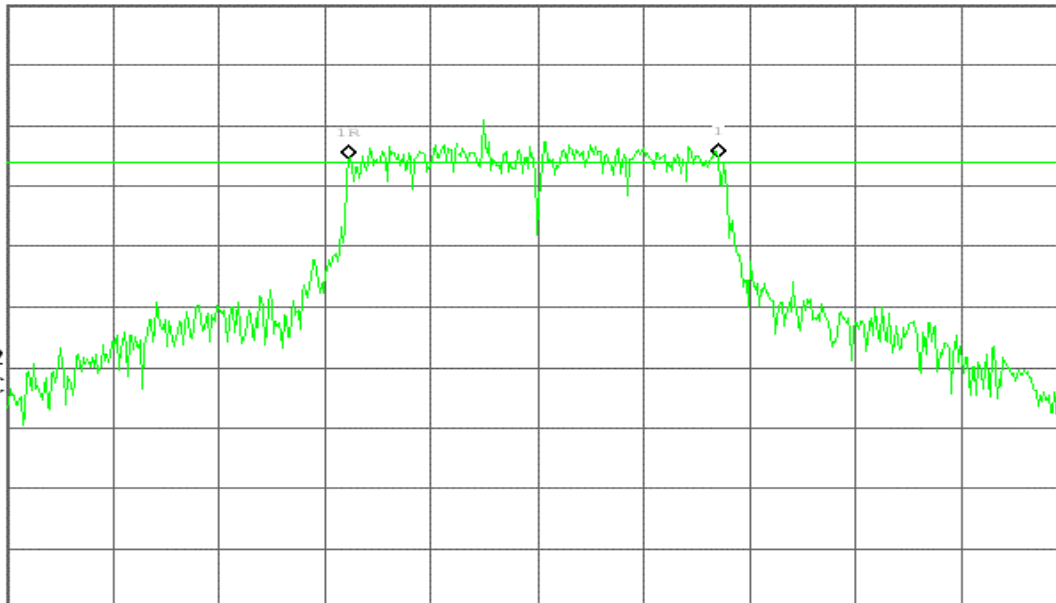
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 5.745 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



6dB Bandwidth (CH Mid)

Agilent 14:23:02 Aug 7, 2007

R T

6dB BW, a Mode Mid Ch.

Δ Mkr1 17.67 MHz

Ref 20 dBm

Atten 20 dB

-1.75 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-9.3

dBm

LgAv

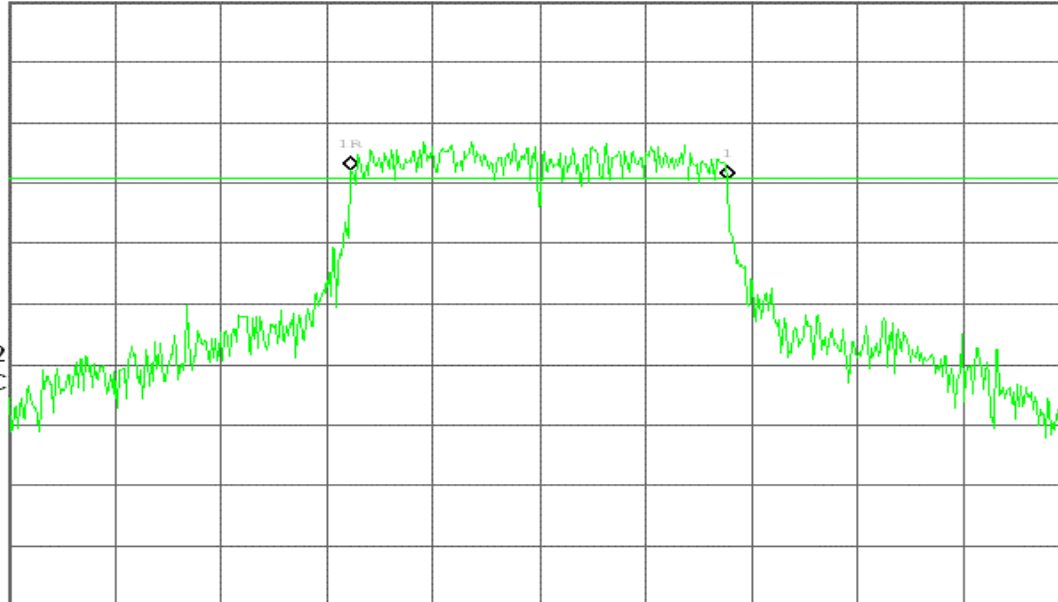
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 5.785 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

6dB Bandwidth (CH High)

Agilent 14:28:21 Aug 7, 2007

R T

6dB BW, a Mode High Ch.

Δ Mkr1 17.58 MHz

Ref 20 dBm

Atten 20 dB

-0.37 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-9.4

dBm

LgAv

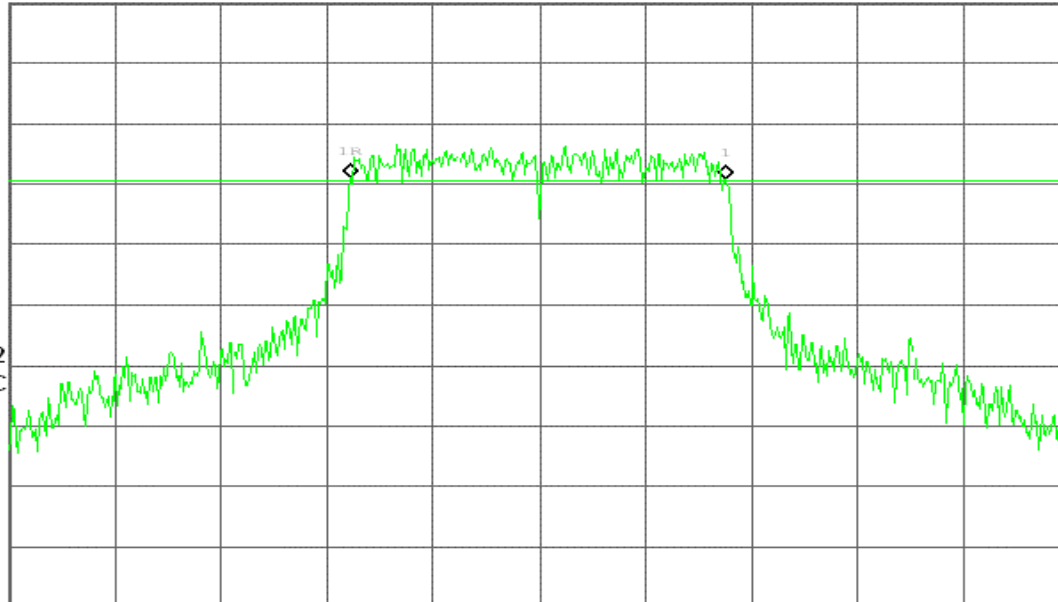
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 5.825 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



draft 802.11n Standard-20 MHz Channel mode / Chain 1

6dB Bandwidth (CH Low)

Agilent 15:39:02 Aug 7, 2007

R T

6dB BW, a Mode Low Ch.

Δ Mkr1 17.25 MHz

Ref 20 dBm

Atten 20 dB

-1.40 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-7.5

dBm

LgAv

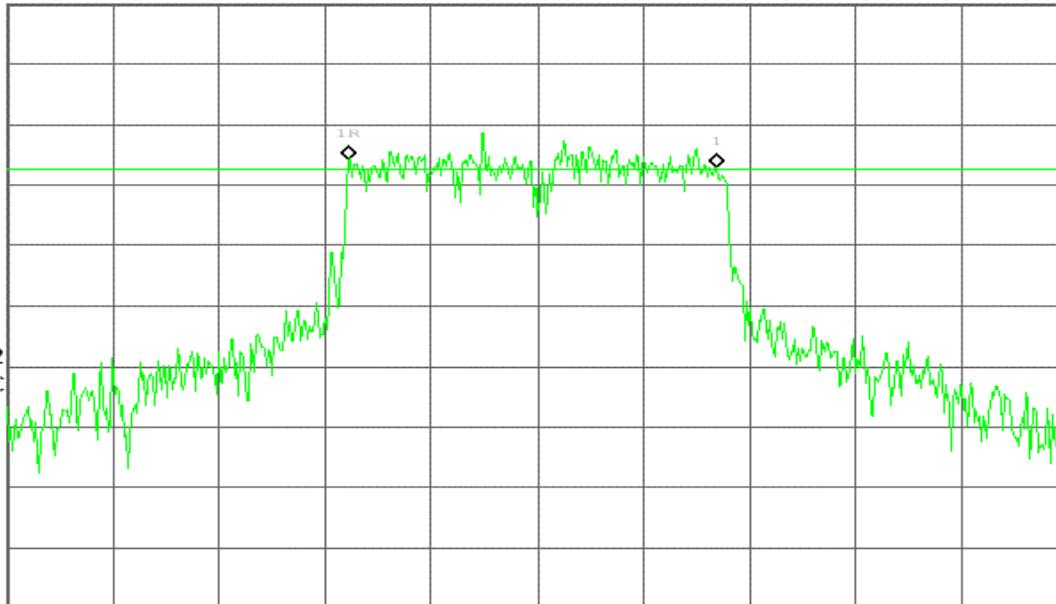
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 5.745 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

6dB Bandwidth (CH Mid)

Agilent 15:45:54 Aug 7, 2007

R T

6dB BW, a Mode Mid Ch.

Δ Mkr1 17.67 MHz

Ref 20 dBm

Atten 20 dB

0.09 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-9.9

dBm

LgAv

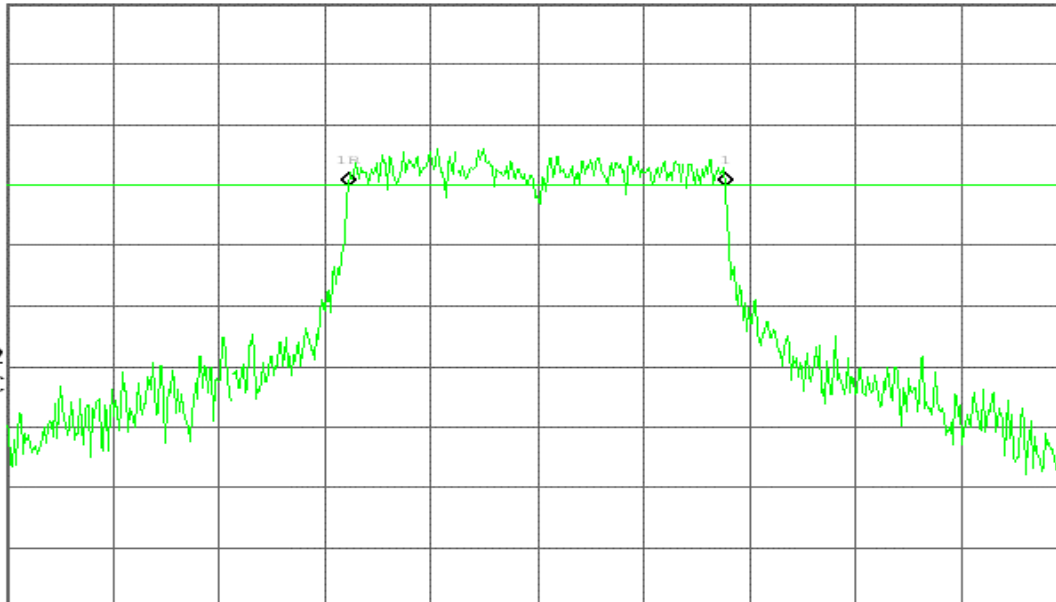
V1 S2

S3 FC

$\alpha(f)$:

FTun

Swp



Center 5.785 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



6dB Bandwidth (CH High)

Agilent 15:51:43 Aug 7, 2007

R T

6dB BW, a Mode High Ch.

Δ Mkr1 17.50 MHz

Ref 20 dBm

Atten 20 dB

-0.68 dB

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-11.4

dBm

LgAv

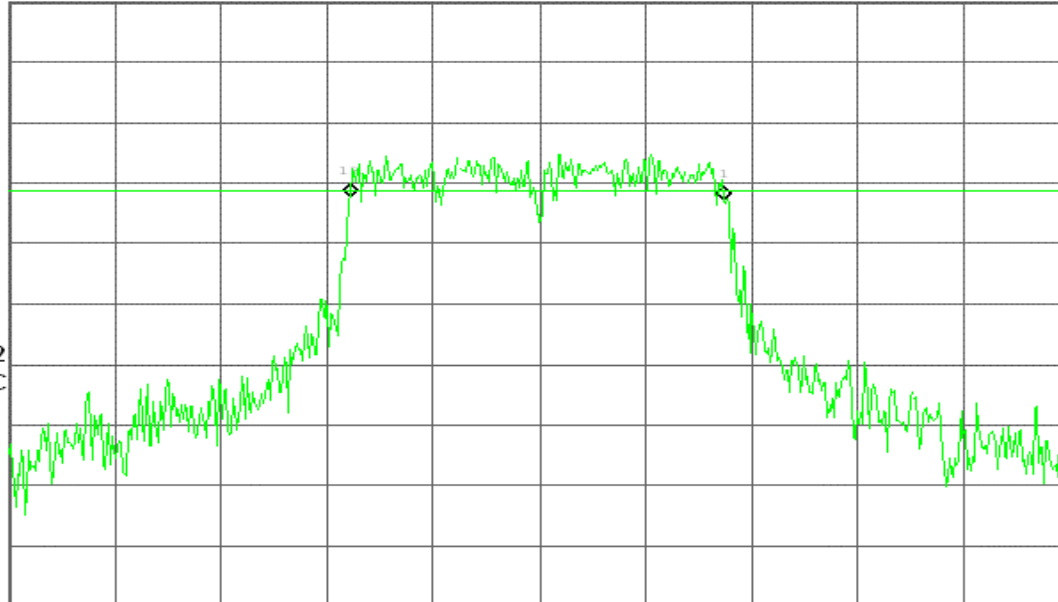
V1 S2

S3 FC

α(f):

FTun

Swp



Center 5.825 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 0

6dB Bandwidth (CH Low)

Agilent 18:01:44 Aug 23, 2007

R T

Δ Mkr1 34.58 MHz

Ref 20 dBm

Atten 20 dB

-1.21 dB

#Peak

Log

10

dB/

Offst

11

dB

DI

-5.4

dBm

LgAv

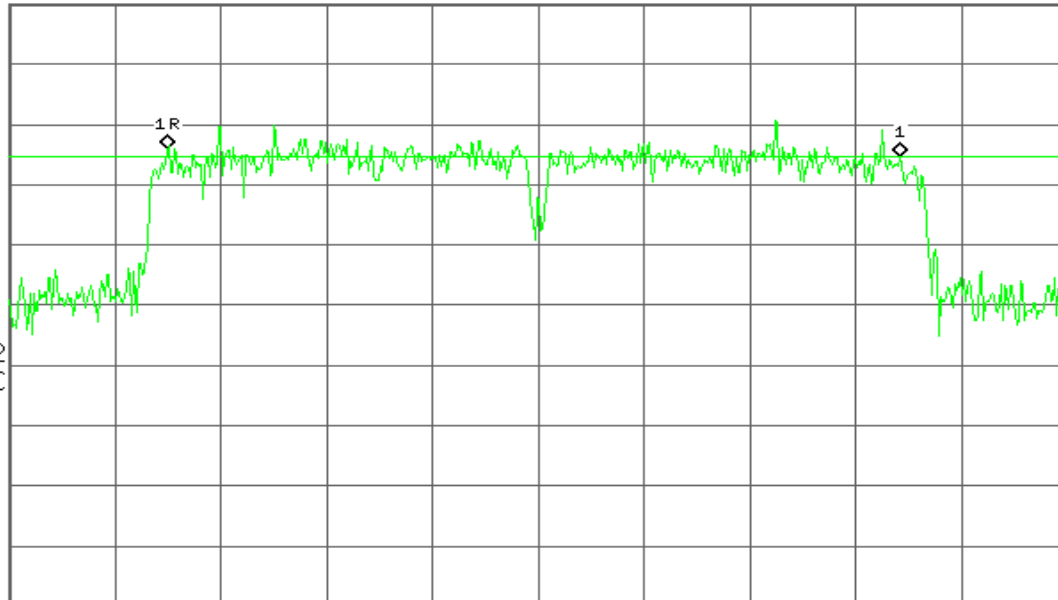
V1 S2

S3 FC

£(f):

FTun

Swp



Center 5.755 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



6dB Bandwidth (CH High)

Agilent 17:56:09 Aug 23, 2007

R T

6dB BW, a Mode High Ch.

▲ Mkr1 34.17 MHz
-0.58 dB

Ref 20 dBm

Atten 20 dB

#Peak

Log

10

dB/

Offst

11

dB

DI

-6.5

dBm

LgAv

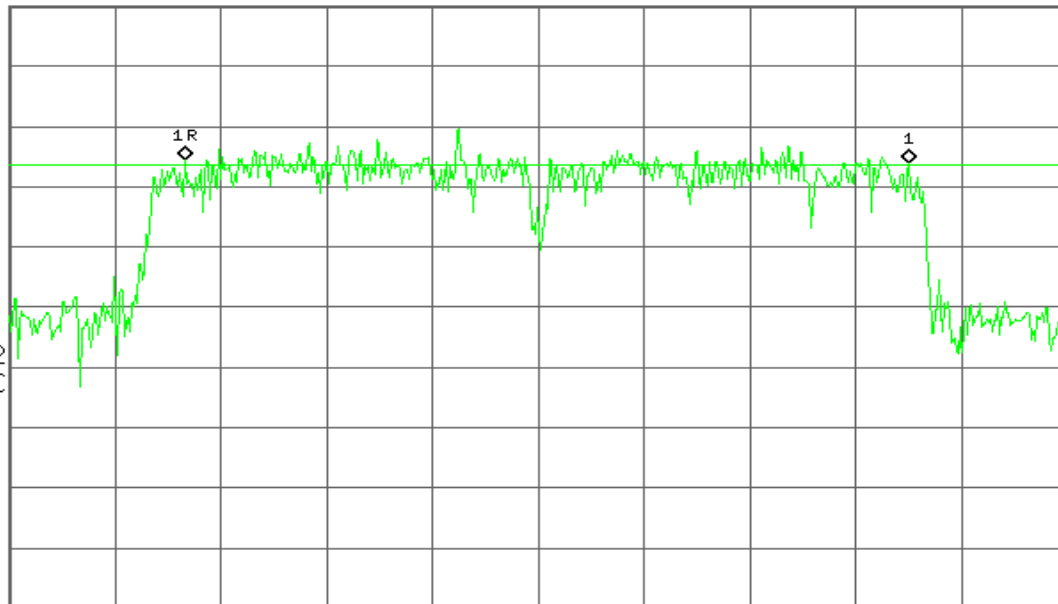
V1 S2

S3 FC

£(f):

FTun

Swp



Center 5.795 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 1

6dB Bandwidth (CH Low)

Agilent 17:46:31 Aug 23, 2007

R T

6dB BW, a Mode Low Ch.

▲ Mkr1 34.00 MHz
1.20 dB

Ref 20 dBm

Atten 20 dB

#Peak

Log

10

dB/

Offst

11

dB

DI

-6.9

dBm

LgAv

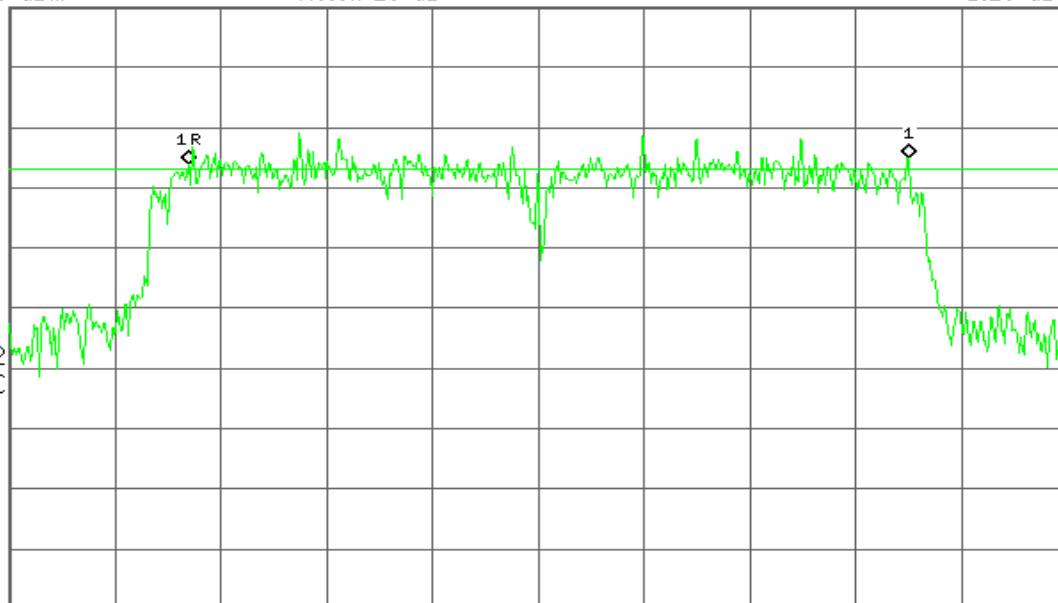
V1 S2

S3 FC

£(f):

FTun

Swp



Center 5.755 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



6dB Bandwidth (CH High)

Agilent 17:54:35 Aug 23, 2007

R L

6dB BW, a Mode High Ch.

Mkr1 35.00 MHz

Ref 20 dBm

Atten 20 dB

1.29 dB

#Peak

Log

10

dB/

Offst

11

dB

DI

-8.8

dBm

LgAv

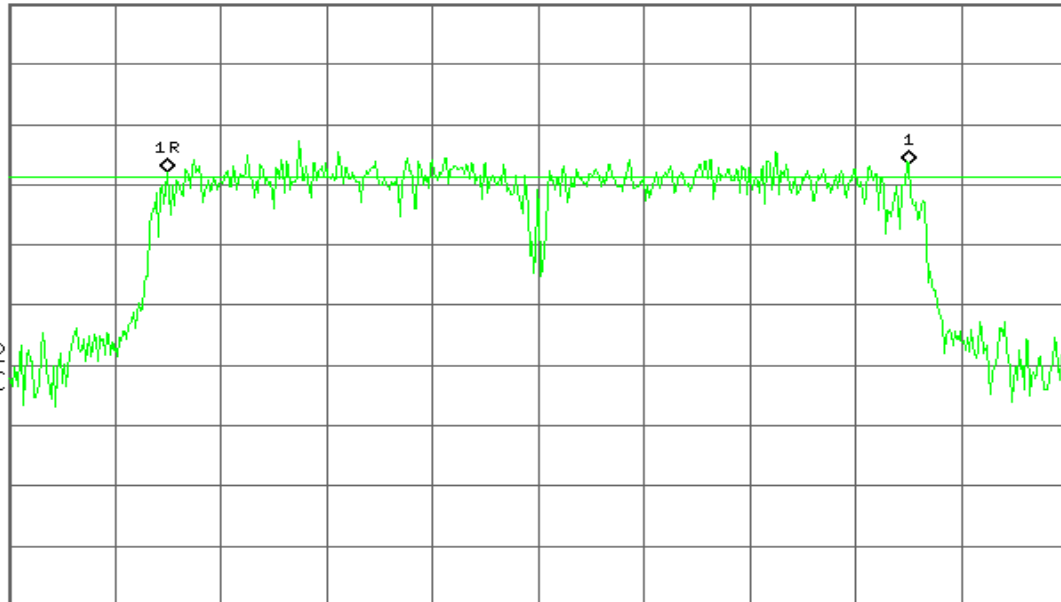
V1 S2

S3 FC

£(f):

FTun

Swp



Center 5.795 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 6.04 ms (601 pts)



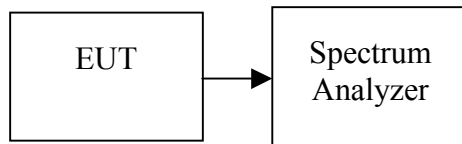
7.2 PEAK POWER

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 mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	22.01	0.1589	1.00	PASS
Mid	2437	22.02	0.1592		PASS
High	2462	21.39	0.1377		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	19.77	0.0948	1.00	PASS
Mid	2437	20.76	0.1191		PASS
High	2462	20.61	0.1151		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	18.85	18.64	21.76	0.1499	1.00	PASS
Mid	2437	18.69	19.02	21.87	0.1538		PASS
High	2462	17.34	17.31	20.34	0.1080		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2422	16.68	16.92	19.81	0.0958	1.00	PASS
Mid	2437	16.44	16.40	19.43	0.0877		PASS
High	2452	16.45	16.52	19.50	0.0890		PASS

**Test mode: IEEE 802.11a mode**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	5745	18.58	0.0721	1.00	PASS
Mid	5785	17.74	0.0594		PASS
High	5825	17.99	0.0630		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	5745	16.82	15.08	19.05	0.0803	1.00	PASS
Mid	5785	16.21	14.44	18.42	0.0696		PASS
High	5825	15.94	14.13	18.14	0.0651		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Total Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	5755	18.54	16.22	20.54	0.1133	1.00	PASS
High	5795	17.64	15.43	19.68	0.0930		PASS

Remark: Total Output Power (w) = Chain 0 ($10^{(Output\ Power / 10) / 1000}$) + Chain 1 ($10^{(Output\ Power / 10) / 1000}$)



Test Plot

IEEE 802.11b mode:

Peak Power (CH Low)

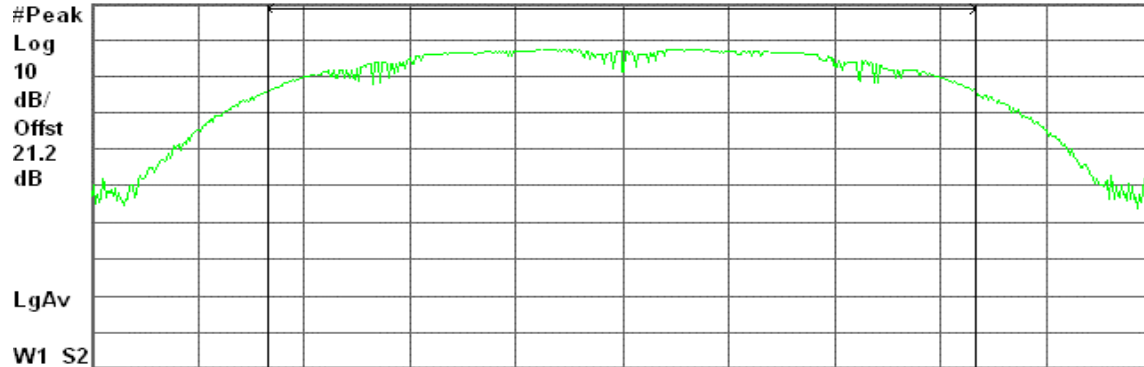
Agilent 13:06:53 Jul 31, 2007

R T

Peak Output Power, b Mode Low Ch.

Ref 25 dBm

Atten 20 dB



Center 2.412 00 GHz

Span 23.94 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

22.01 dBm / 15.9600 MHz

-50.02 dBm/Hz

Peak Power (CH Mid)

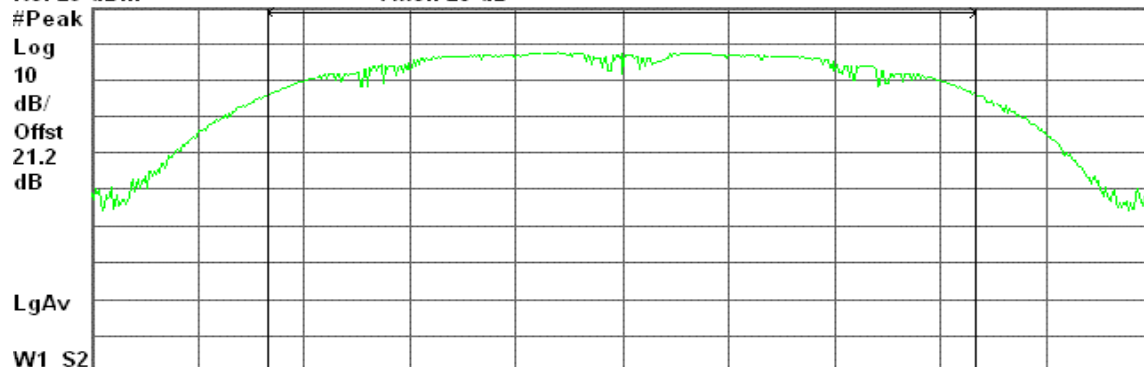
Agilent 13:18:00 Jul 31, 2007

R T

Peak Output Power, b Mode Mid Ch.

Ref 25 dBm

Atten 20 dB



Center 2.437 00 GHz

Span 23.94 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

22.02 dBm / 15.9630 MHz

-50.01 dBm/Hz



Peak Power (CH High)

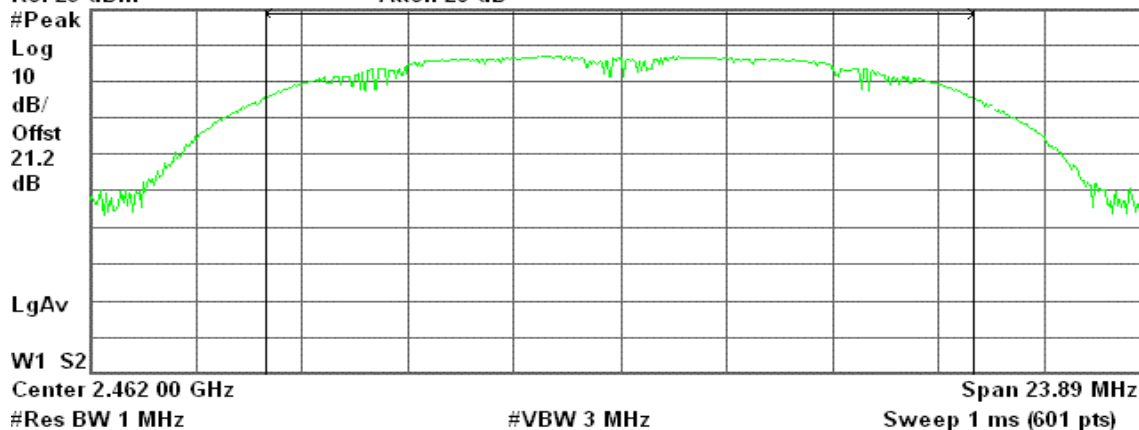
Agilent 13:25:43 Jul 31, 2007

R T

Peak Output Power , b Mode High Ch.

Ref 25 dBm

Atten 20 dB



Channel Power

Power Spectral Density

21.39 dBm / 15.9290 MHz

-50.63 dBm/Hz

IEEE 802.11g mode:

Peak Power (CH Low)

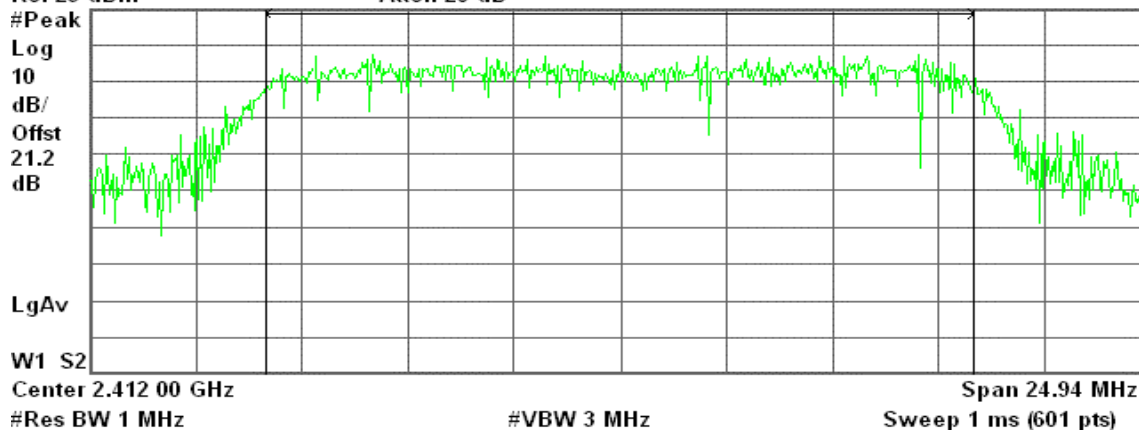
Agilent 13:32:41 Jul 31, 2007

R T

Peak Output Power , g Mode Low Ch.

Ref 25 dBm

Atten 20 dB



Channel Power

Power Spectral Density

19.77 dBm / 16.6250 MHz

-52.43 dBm/Hz



Peak Power (CH Mid)

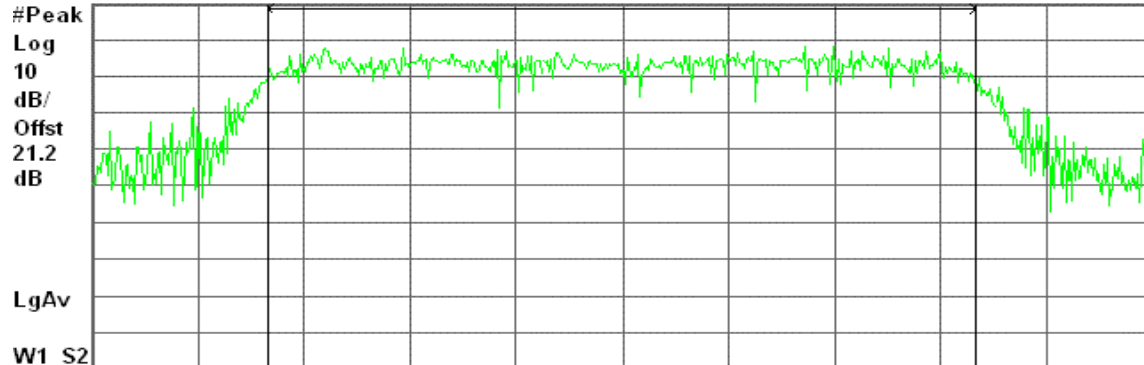
Agilent 13:39:11 Jul 31, 2007

R T

Peak Output Power , g Mode Mid Ch.

Ref 25 dBm

Atten 20 dB



Center 2.437 00 GHz

Span 25.06 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

20.76 dBm / 16.7040 MHz

-51.47 dBm/Hz

Peak Power (CH High)

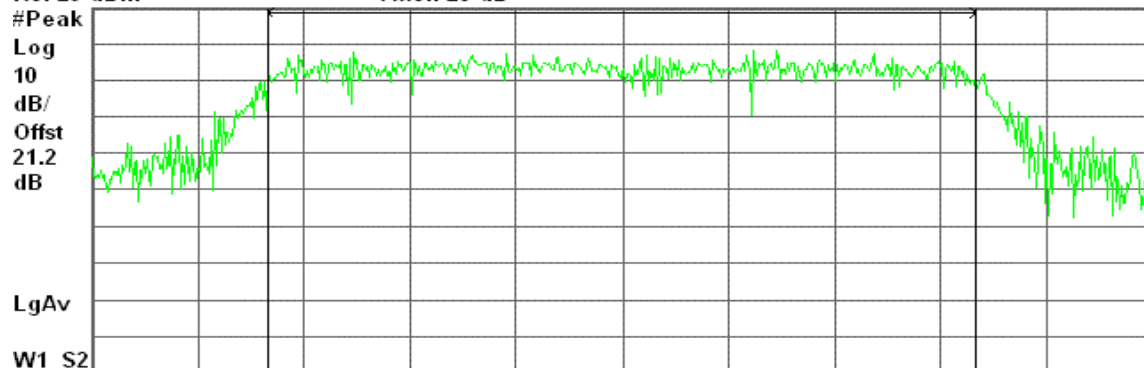
Agilent 13:45:49 Jul 31, 2007

R T

Peak Output Power , g Mode High Ch.

Ref 25 dBm

Atten 20 dB



Center 2.462 00 GHz

Span 24.8 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

20.61 dBm / 16.5310 MHz

-51.57 dBm/Hz



draft 802.11n Standard-20 MHz Channel mode / Chain 0

Peak Power (CH Low)

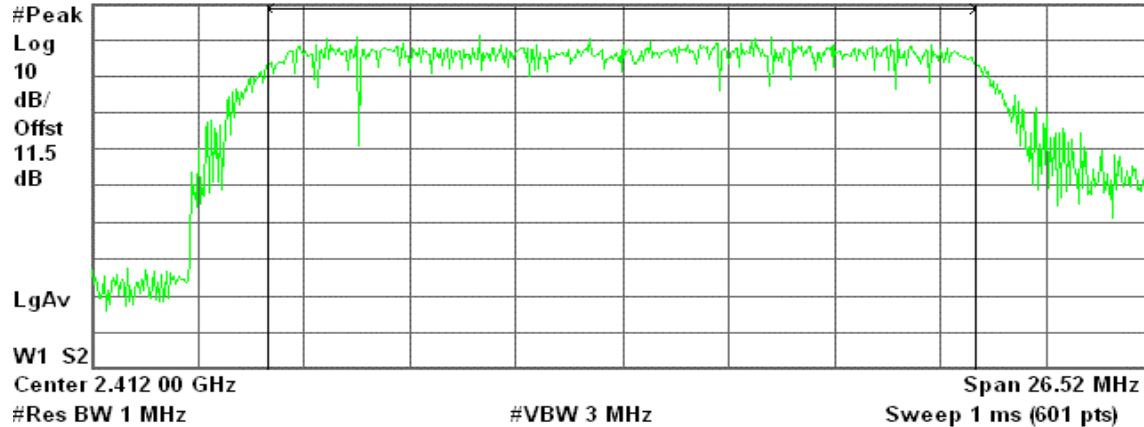
Agilent 13:42:27 Aug 6, 2007

R T

Peak Output Power , g Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

18.85 dBm / 17.6800 MHz

-53.63 dBm/Hz

Peak Power (CH Mid)

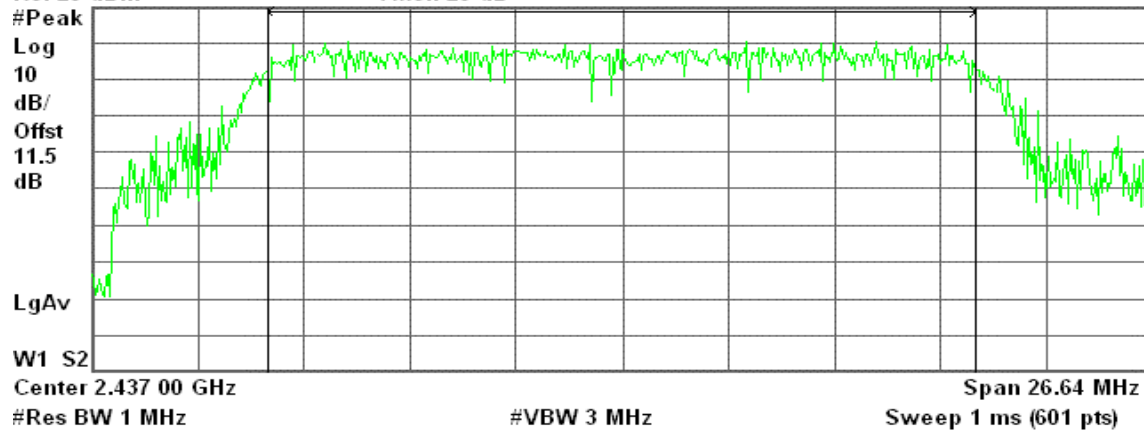
Agilent 14:27:44 Aug 6, 2007

R T

Peak Output Power , g Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

18.69 dBm / 17.7590 MHz

-53.80 dBm/Hz



Peak Power (CH High)

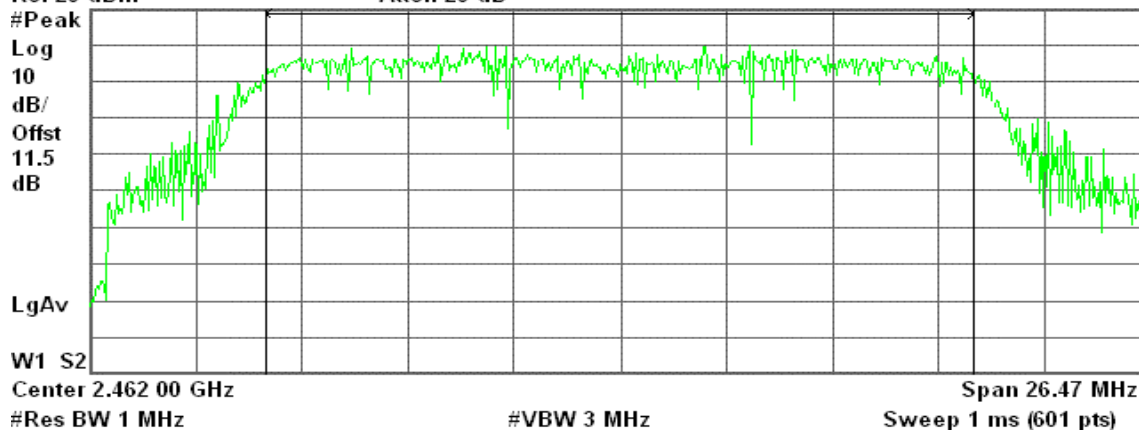
Agilent 14:39:04 Aug 6, 2007

R T

Peak Output Power, g Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

17.34 dBm / 17.6490 MHz

-55.13 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / Chain 1

Peak Power (CH Low)

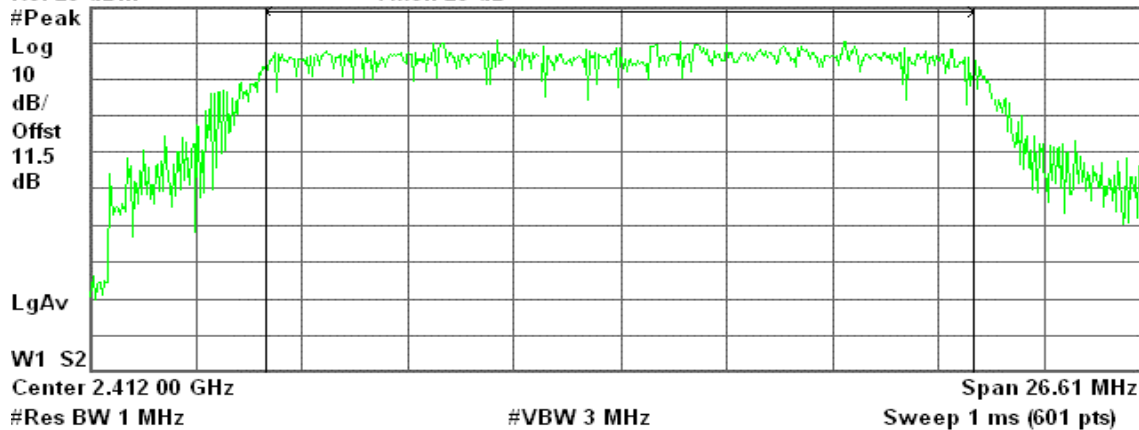
Agilent 15:02:29 Aug 6, 2007

R T

Peak Output Power, g Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

18.64 dBm / 17.7410 MHz

-53.85 dBm/Hz



Peak Power (CH Mid)

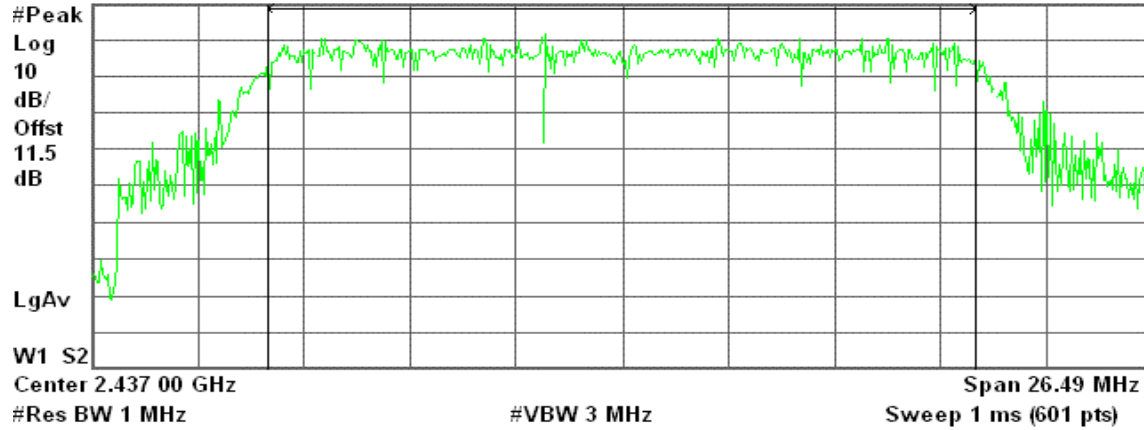
Agilent 14:56:37 Aug 6, 2007

R T

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

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

19.02 dBm / 17.6570 MHz

-53.44 dBm/Hz

Peak Power (CH High)

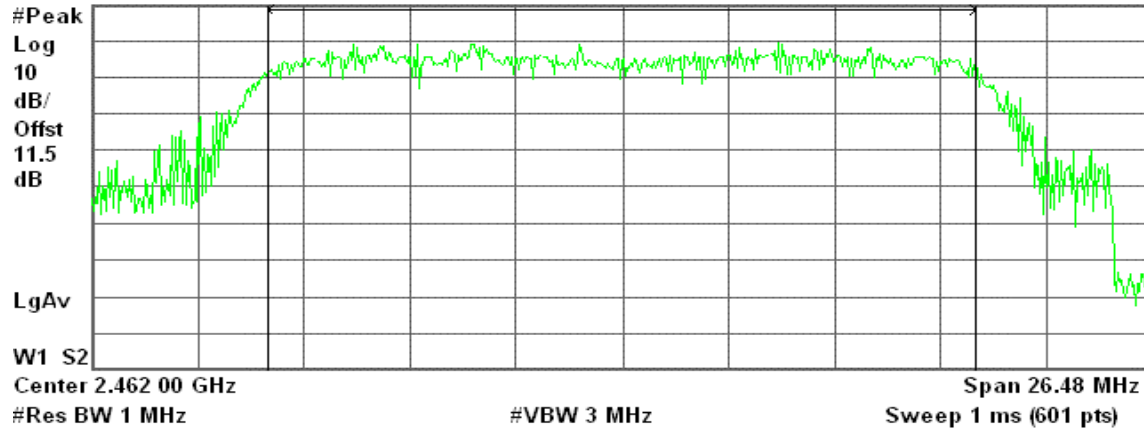
Agilent 14:54:42 Aug 6, 2007

R T

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

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

17.31 dBm / 17.6500 MHz

-55.16 dBm/Hz



draft 802.11n Wide-40 MHz Channel mode / Chain 0

Peak Power (CH Low)

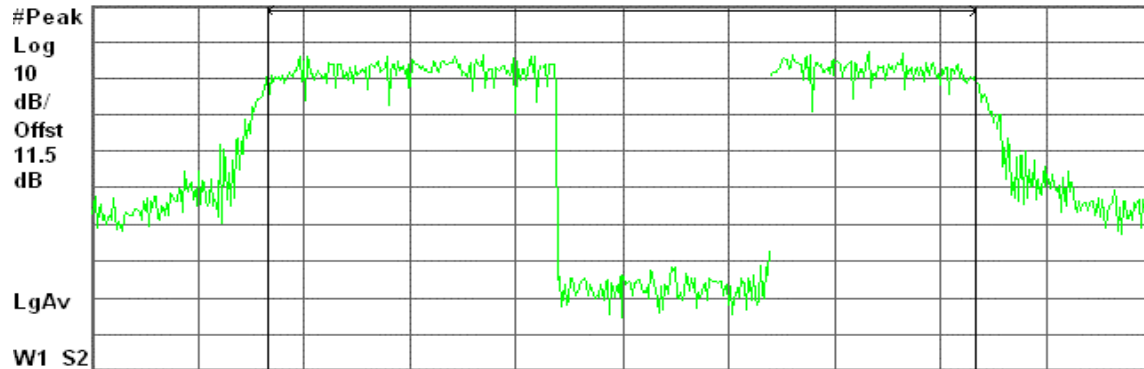
Agilent 16:25:24 Aug 6, 2007

R T

Peak Output Power , 40 Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Center 2.422 00 GHz

Span 53.74 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

16.68 dBm / 35.8260 MHz

-58.86 dBm/Hz

Peak Power (CH Mid)

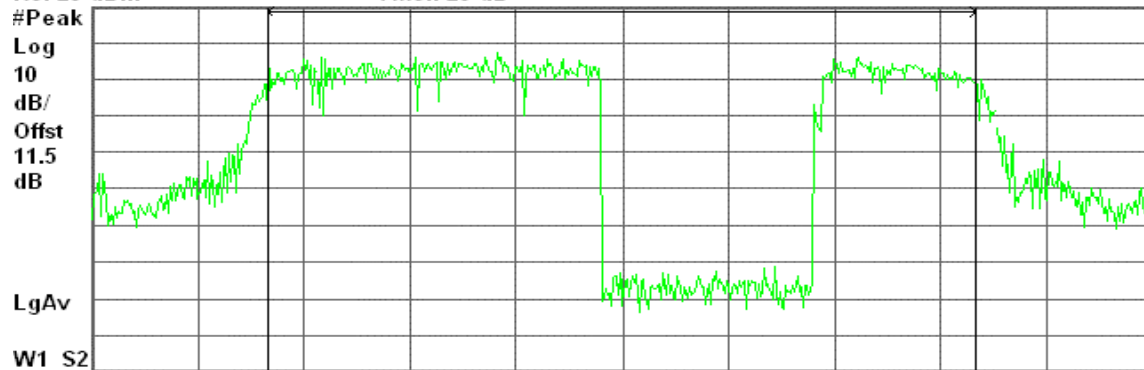
Agilent 16:19:06 Aug 6, 2007

R T

Peak Output Power , 40 Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Center 2.437 00 GHz

Span 53.67 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

16.44 dBm / 35.7790 MHz

-59.09 dBm/Hz



Peak Power (CH High)

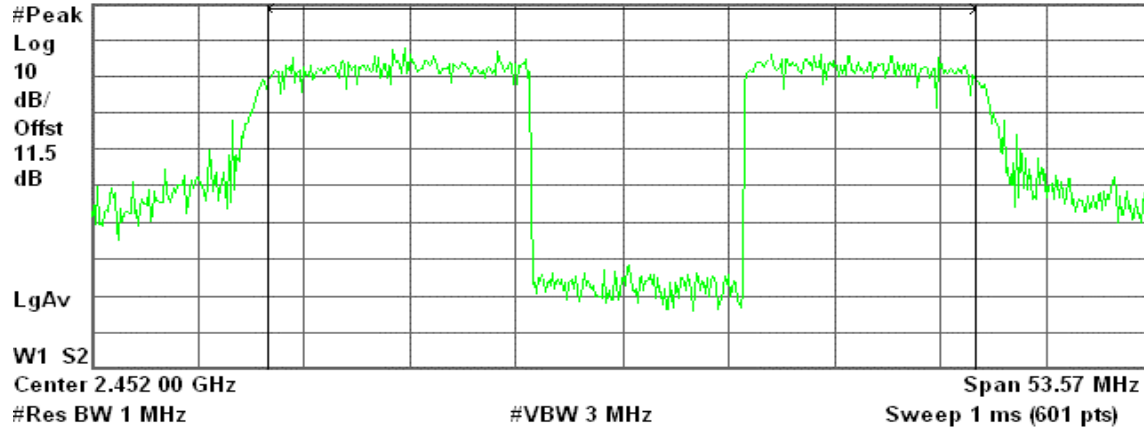
Agilent 16:11:04 Aug 6, 2007

R T

Peak Output Power , 40 Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

16.45 dBm / 35.7140 MHz

-59.08 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / Chain 1

Peak Power (CH Low)

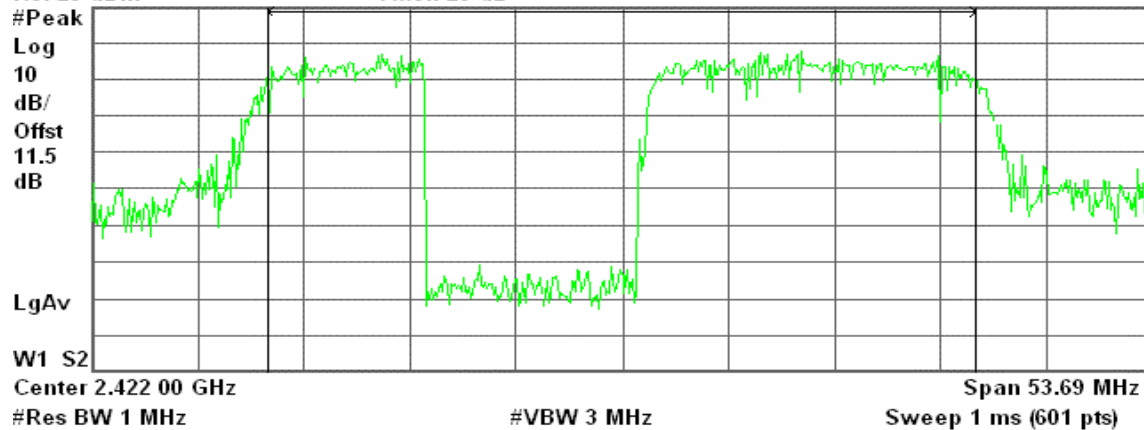
Agilent 16:39:46 Aug 6, 2007

R T

Peak Output Power , 40 Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

16.92 dBm / 35.7930 MHz

-58.61 dBm/Hz



Peak Power (CH Mid)

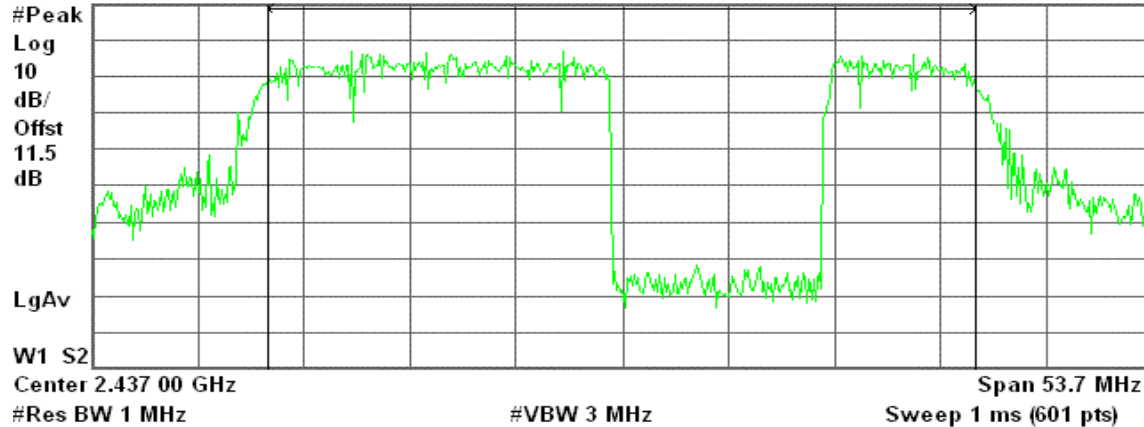
Agilent 16:48:07 Aug 6, 2007

R T

Peak Output Power , 40 Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

16.40 dBm / 35.8030 MHz

-59.14 dBm/Hz

Peak Power (CH High)

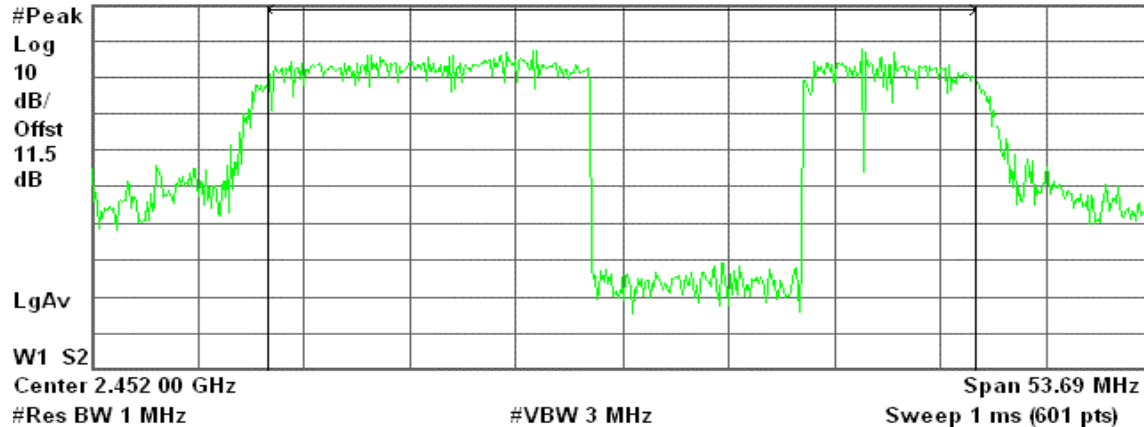
Agilent 16:54:22 Aug 6, 2007

R T

Peak Output Power , 40 Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

16.52 dBm / 35.7930 MHz

-59.02 dBm/Hz



IEEE 802.11a mode:

CH Low

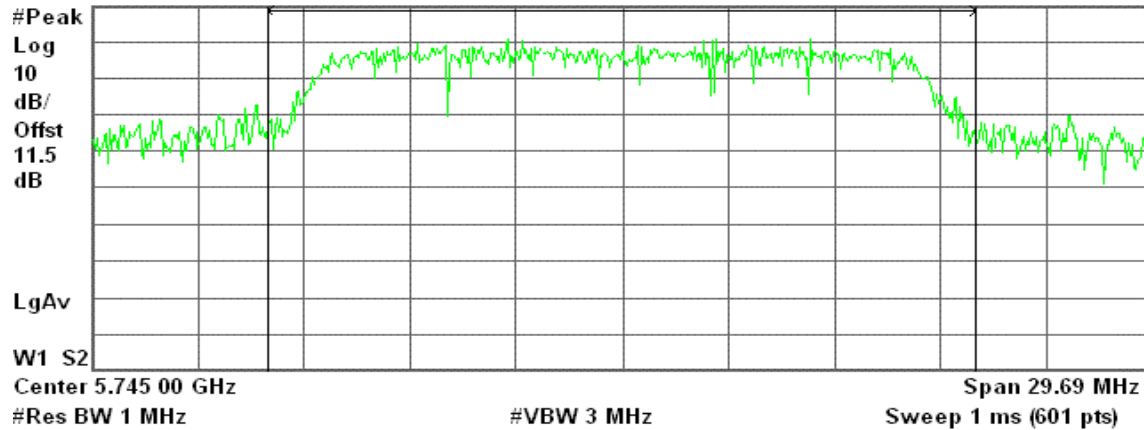
Agilent 13:27:59 Aug 7, 2007

R T

Peak Output Power , a Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

18.58 dBm / 19.7930 MHz

-54.38 dBm/Hz

CH Mid

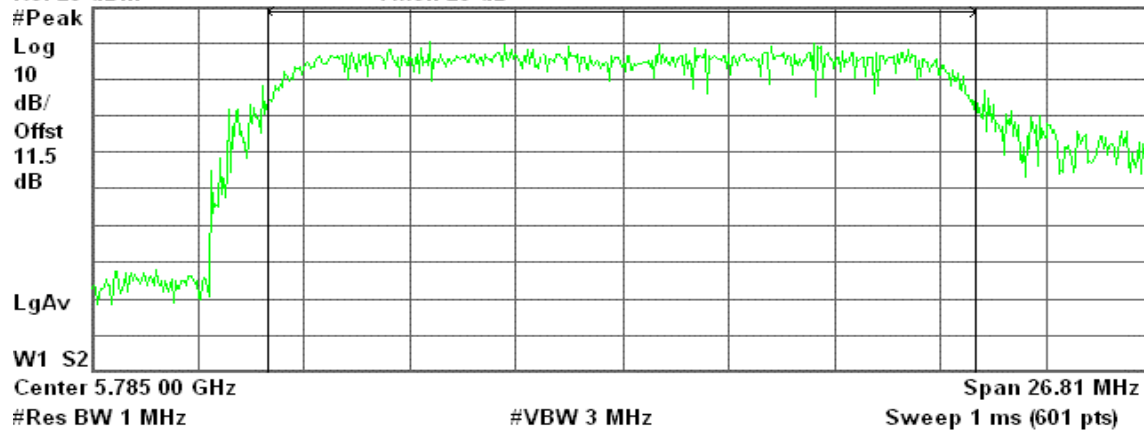
Agilent 13:35:03 Aug 7, 2007

R T

Peak Output Power , a Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

17.74 dBm / 17.8740 MHz

-54.78 dBm/Hz



CH High

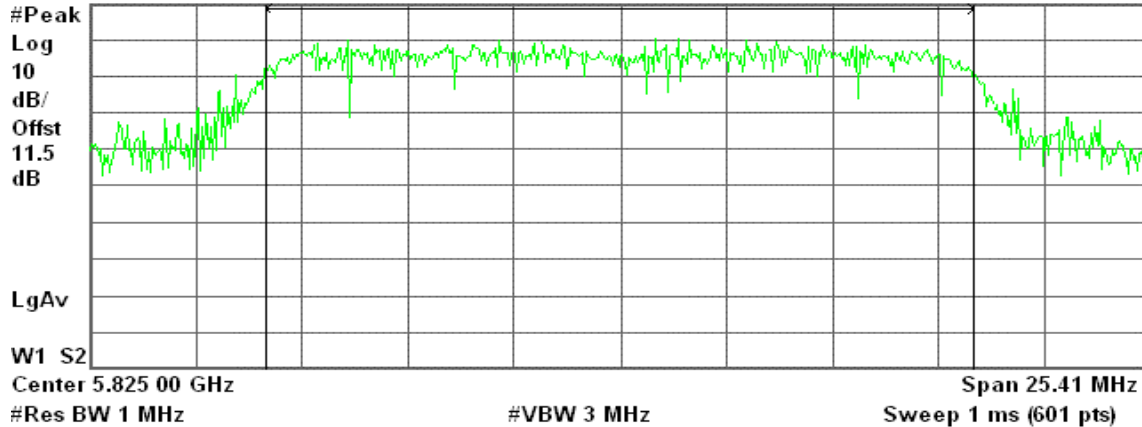
Agilent 13:41:01 Aug 7, 2007

R T

Peak Output Power , a Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

17.99 dBm / 16.9420 MHz

-54.29 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / Chain 0

Peak Power (CH Low)

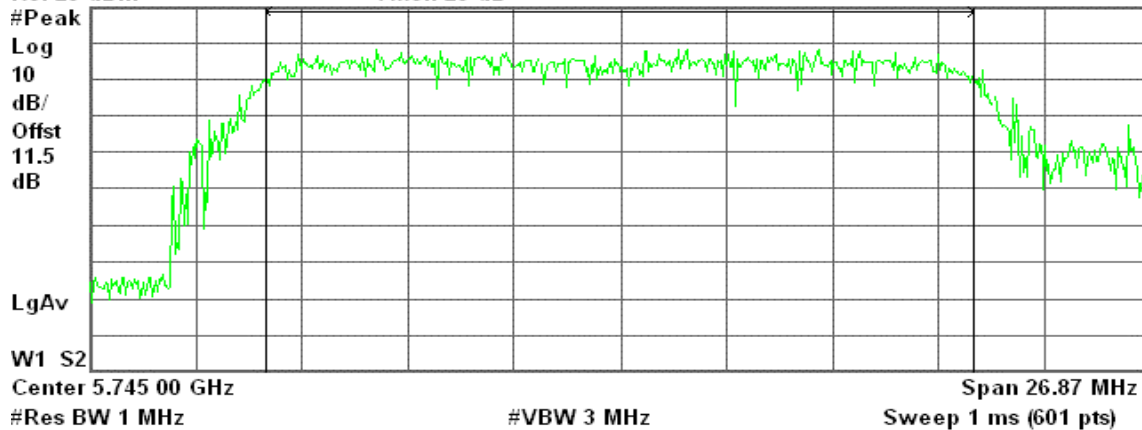
Agilent 14:17:14 Aug 7, 2007

R T

Peak Output Power , a Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

16.82 dBm / 17.9140 MHz

-55.72 dBm/Hz



Peak Power (CH Mid)

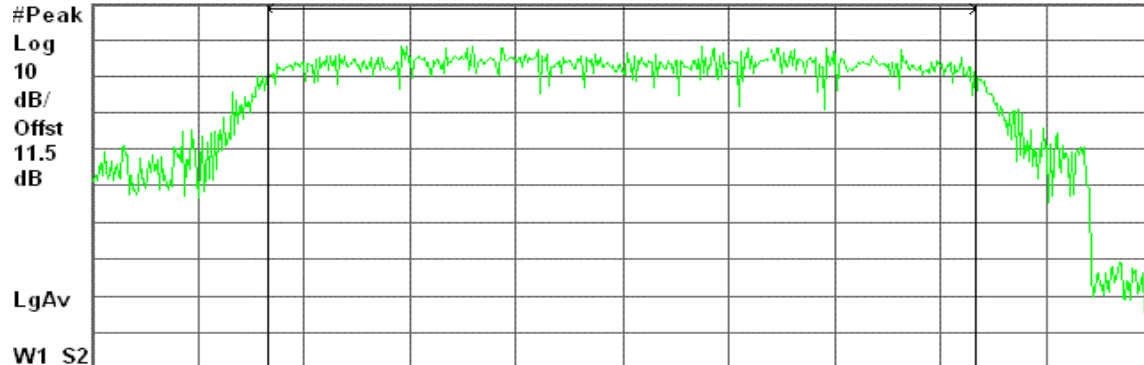
Agilent 14:23:49 Aug 7, 2007

R T

Peak Output Power , a Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Center 5.785 00 GHz

Span 26.8 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

16.21 dBm / 17.8650 MHz

-56.31 dBm/Hz

Peak Power (CH High)

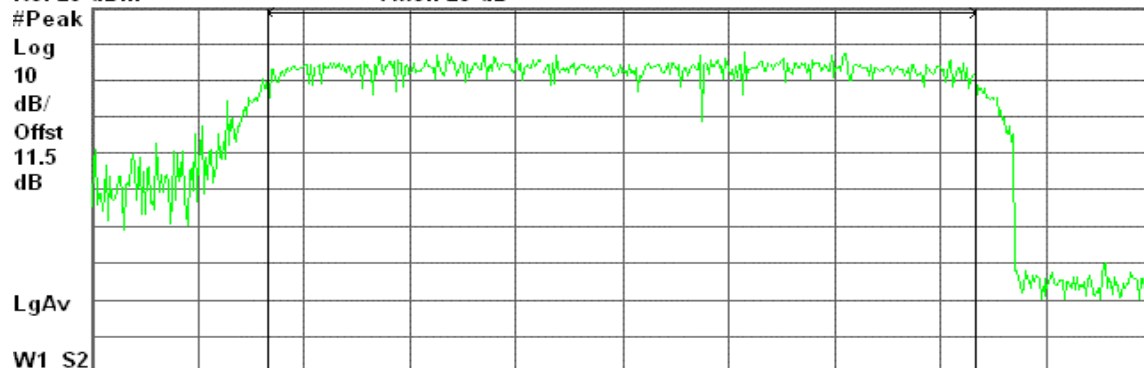
Agilent 14:28:59 Aug 7, 2007

R T

Peak Output Power , a Mode High Ch.

Ref 20 dBm

Atten 20 dB



Center 5.825 00 GHz

Span 26.68 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.94 dBm / 17.7900 MHz

-56.56 dBm/Hz



draft 802.11n Standard-20 MHz Channel mode / Chain 1

Peak Power (CH Low)

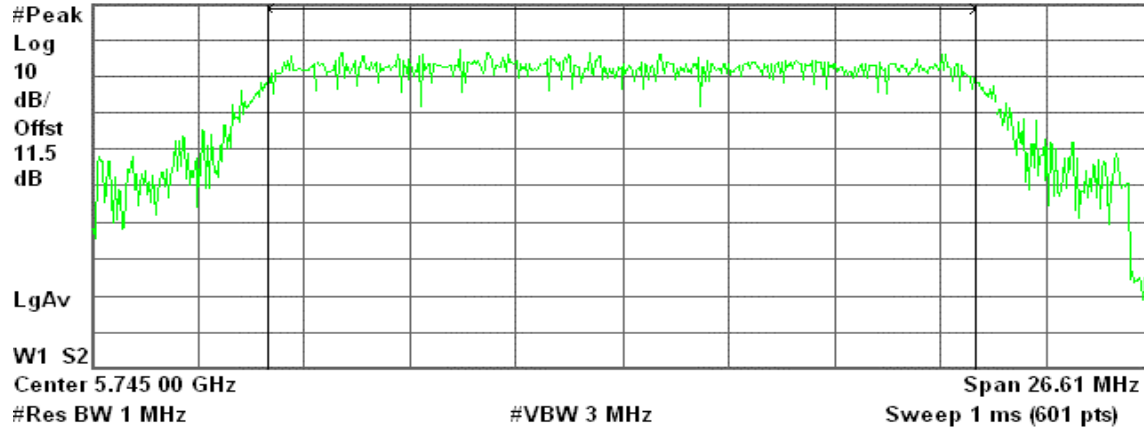
Agilent 15:44:59 Aug 7, 2007

R T

Peak Output Power , a Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

15.08 dBm / 17.7420 MHz

-57.41 dBm/Hz

Peak Power (CH Mid)

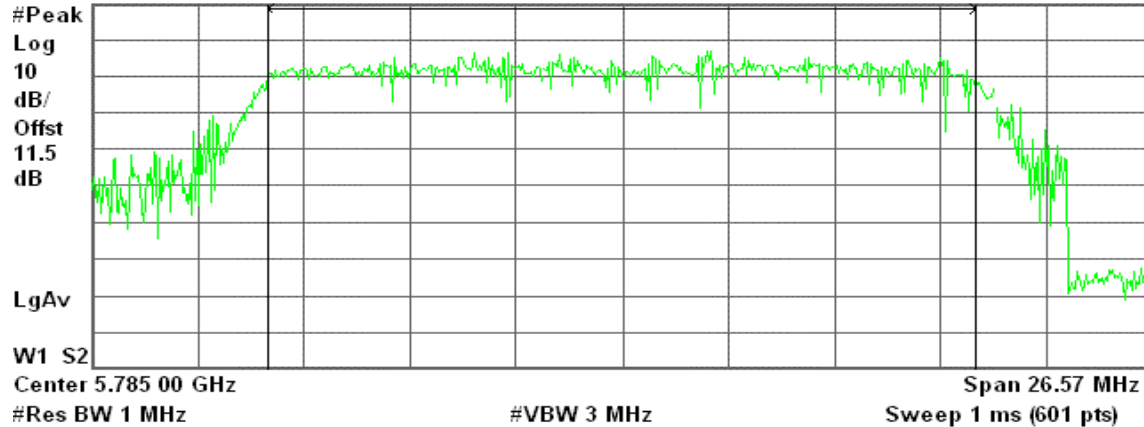
Agilent 15:46:51 Aug 7, 2007

R T

Peak Output Power , a Mode Mid Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

Power Spectral Density

14.44 dBm / 17.7130 MHz

-58.04 dBm/Hz



Peak Power (CH High)

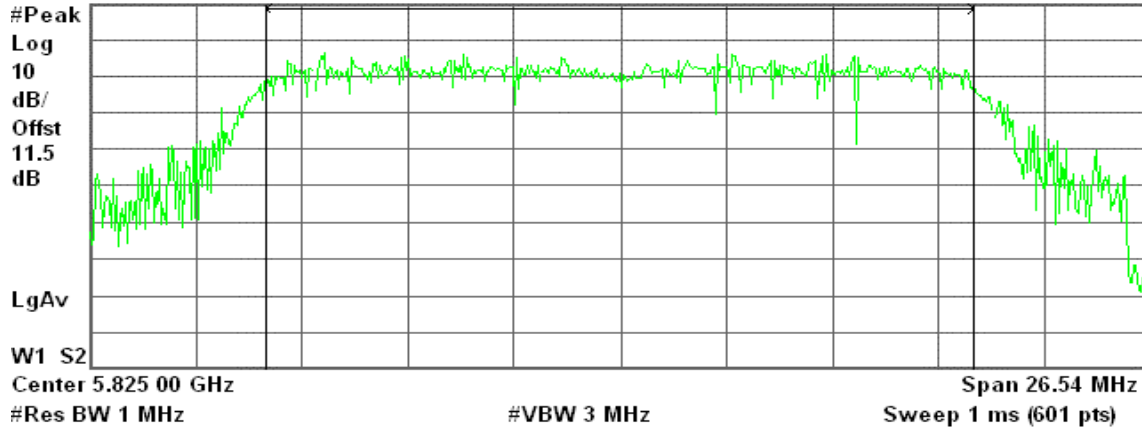
Agilent 15:52:56 Aug 7, 2007

R T

Peak Output Power , a Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

14.13 dBm / 17.6940 MHz

Power Spectral Density

-58.35 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / Chain 0

Peak Power (CH Low)

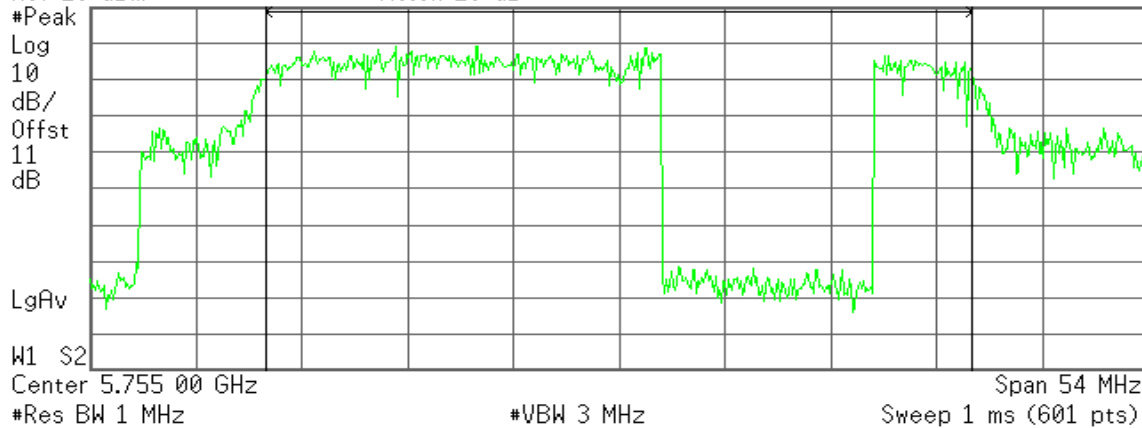
Agilent 17:17:10 Aug 23, 2007

R T

Peak Output Power , a Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

18.54 dBm / 36.0000 MHz

Power Spectral Density

-57.02 dBm/Hz



Peak Power (CH High)

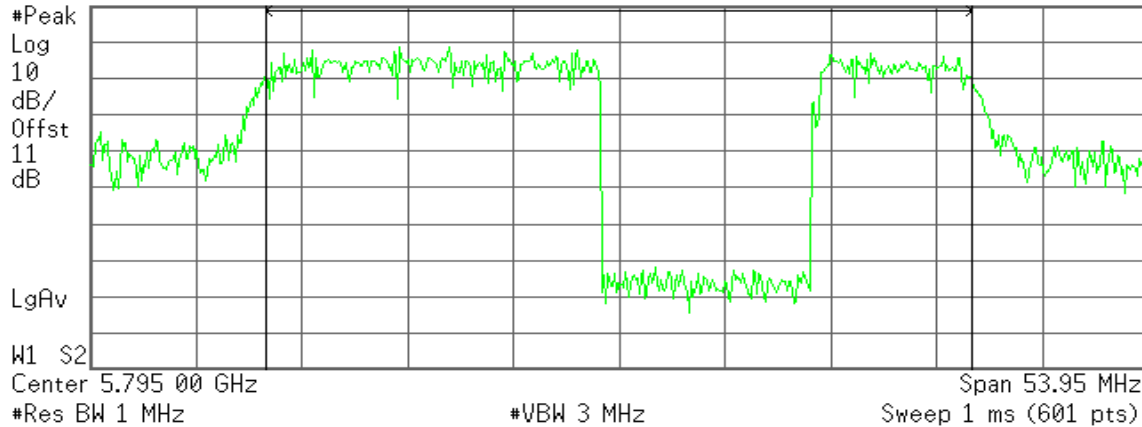
Agilent 17:30:24 Aug 23, 2007

R T

Peak Output Power , a Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

17.64 dBm /35.9650 MHz

Power Spectral Density

-57.92 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / Chain 1

Peak Power (CH Low)

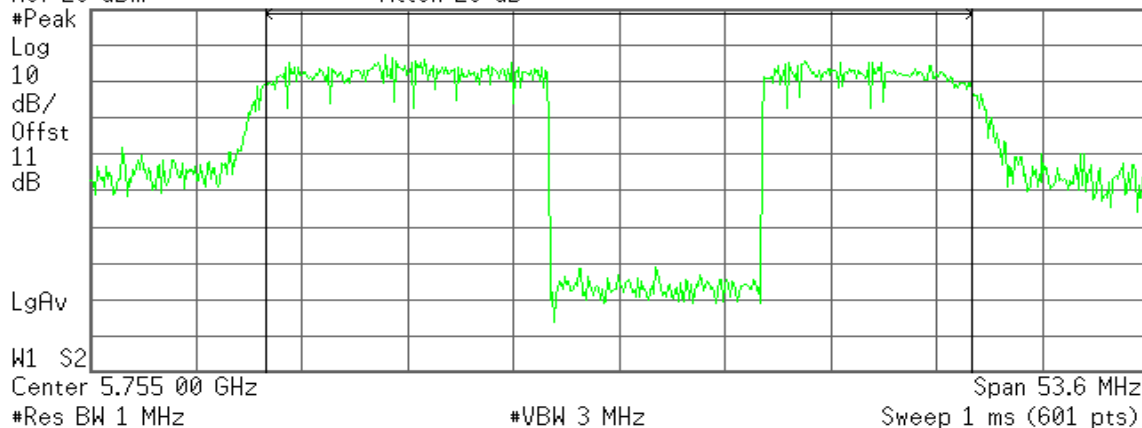
Agilent 17:47:56 Aug 23, 2007

R T

Peak Output Power , a Mode Low Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

16.22 dBm /35.7310 MHz

Power Spectral Density

-59.31 dBm/Hz



Peak Power (CH High)

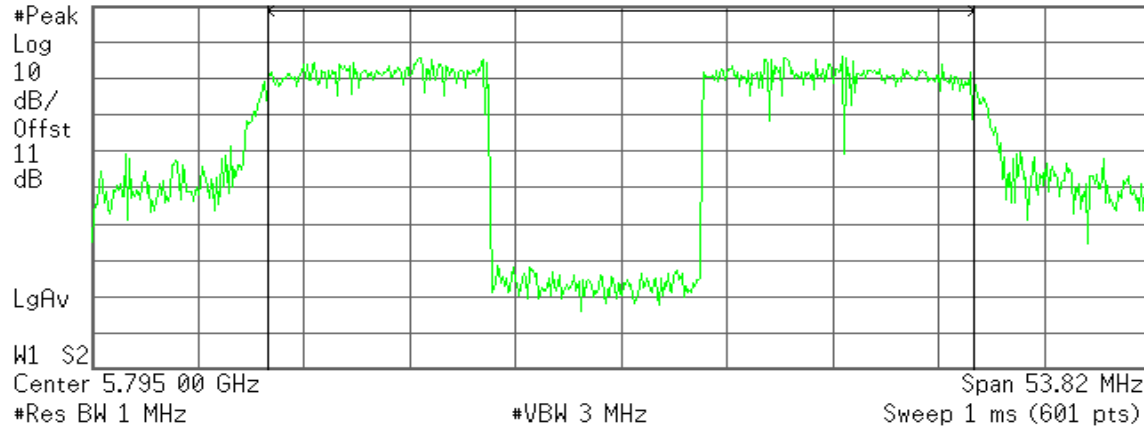
Agilent 17:40:43 Aug 23, 2007

R T

Peak Output Power , a Mode High Ch.

Ref 20 dBm

Atten 20 dB



Channel Power

15.43 dBm /35.8770 MHz

Power Spectral Density

-60.12 dBm/Hz

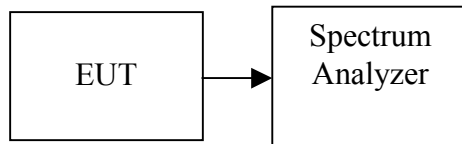


7.3 AVERAGE POWER

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)	Output Power (W)
Low	2412	19.47	0.0885
Mid	2437	19.37	0.0865
High	2462	18.76	0.0752

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)
Low	2412	16.29	0.0426
Mid	2437	16.94	0.0494
High	2462	16.88	0.0488

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Output Power (dBm)	Output Power (W)
Low	2412	15.47	15.13	18.31	0.0678
Mid	2437	14.65	13.75	17.23	0.0529
High	2462	13.79	11.86	15.94	0.0393

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Output Power (dBm)	Output Power (W)
Low	2422	13.61	13.32	16.48	0.0444
Mid	2437	13.53	13.38	16.47	0.0443
High	2452	13.88	13.49	16.70	0.0468

**Test mode: IEEE 802.11a mode**

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)
Low	5745	15.04	0.0319
Mid	5785	14.45	0.0279
High	5825	14.80	0.0302

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Output Power (dBm)	Output Power (W)
Low	5745	13.51	11.52	15.64	0.0366
Mid	5785	12.24	10.62	14.52	0.0283
High	5825	12.12	10.58	14.43	0.0277

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 Output Power (dBm)	Chain 1 Output Power (dBm)	Output Power (dBm)	Output Power (W)
Low	5755	16.03	12.80	17.72	0.0591
High	5795	14.93	12.20	16.79	0.0477



Test Plot

IEEE 802.11b mode:

Average Power (CH Low)

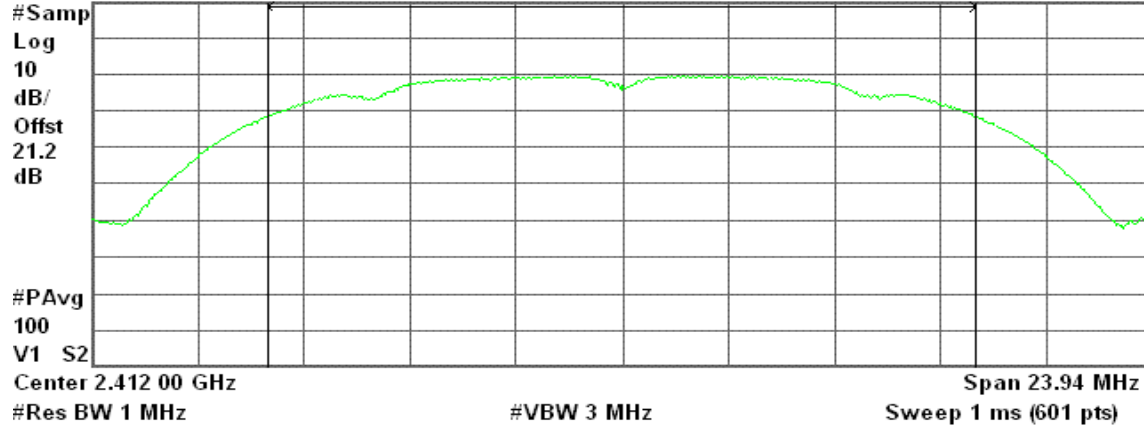
Agilent 13:10:08 Jul 31, 2007

R T

AVG Output Power , b Mode Low Ch.

Ref 30 dBm

Atten 20 dB



Channel Power

Power Spectral Density

19.47 dBm / 15.9600 MHz

-52.56 dBm/Hz

Average Power (CH Mid)

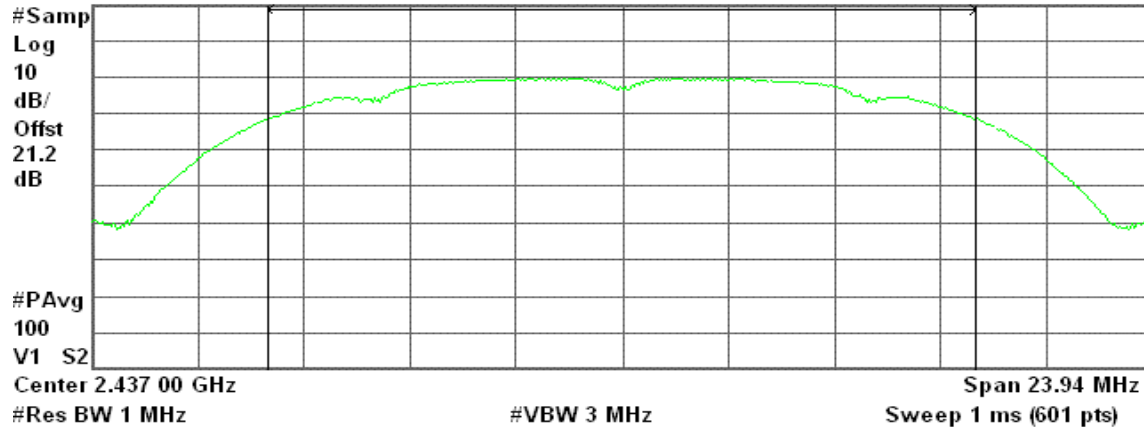
Agilent 13:18:50 Jul 31, 2007

R T

AVG Output Power , b Mode Mid Ch.

Ref 30 dBm

Atten 20 dB



Channel Power

Power Spectral Density

19.37 dBm / 15.9630 MHz

-52.66 dBm/Hz



Average Power (CH High)

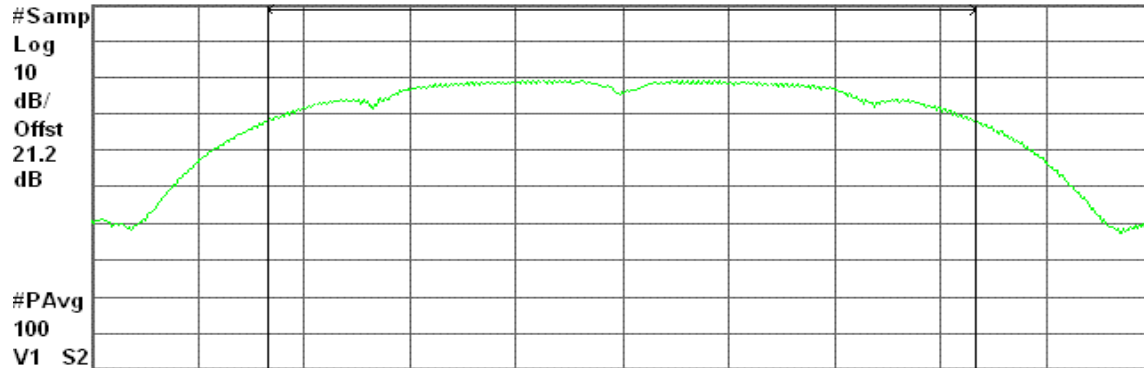
Agilent 13:26:35 Jul 31, 2007

R T

AVG Output Power , b Mode High Ch.

Ref 30 dBm

Atten 20 dB



Center 2.462 00 GHz

Span 23.89 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

18.76 dBm / 15.9290 MHz

-53.26 dBm/Hz

IEEE 802.11g mode:

Average Power (CH Low)

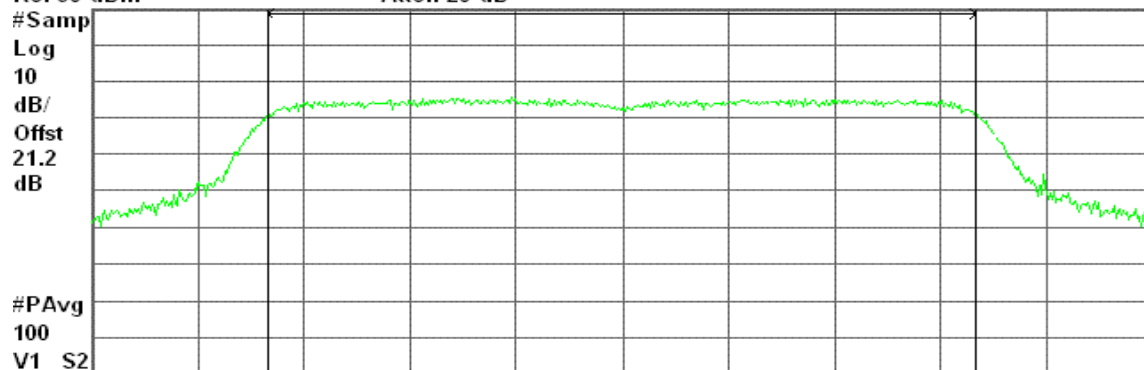
Agilent 13:33:21 Jul 31, 2007

R T

AVG Output Power , g Mode Low Ch.

Ref 30 dBm

Atten 20 dB



Center 2.412 00 GHz

Span 24.94 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

16.29 dBm / 16.6250 MHz

-55.92 dBm/Hz



Average Power (CH Mid)

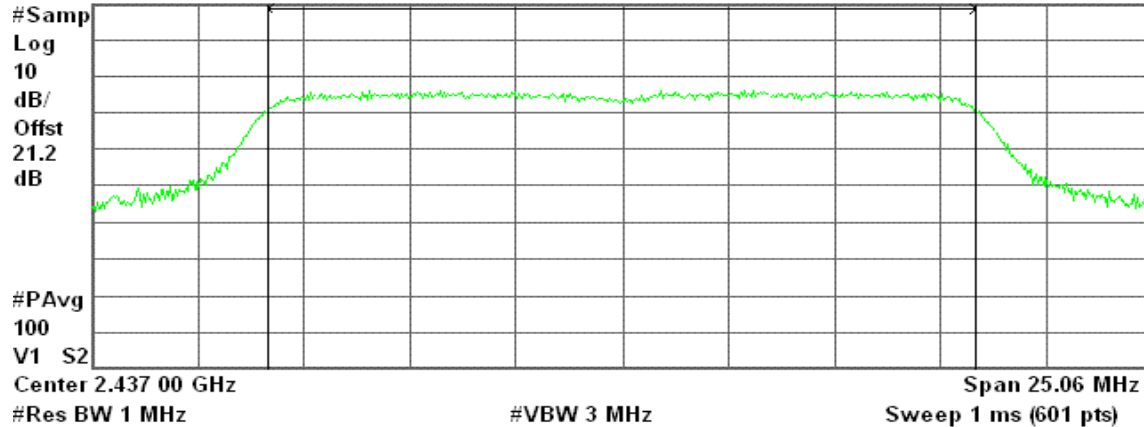
Agilent 13:40:24 Jul 31, 2007

R T

AVG Output Power , g Mode Mid Ch.

Ref 30 dBm

Atten 20 dB



Channel Power

16.94 dBm / 16.7040 MHz

Power Spectral Density

-55.29 dBm/Hz

Average Power (CH High)

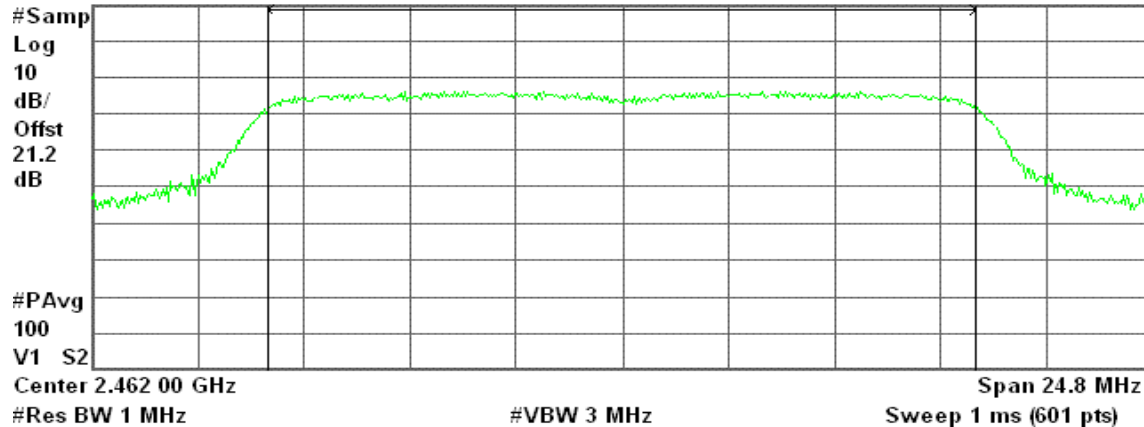
Agilent 13:46:49 Jul 31, 2007

R T

AVG Output Power , g Mode High Ch.

Ref 30 dBm

Atten 20 dB



Channel Power

16.88 dBm / 16.5310 MHz

Power Spectral Density

-55.30 dBm/Hz



draft 802.11n Standard-20 MHz Channel mode / Chain 0

Average Power (CH Low)

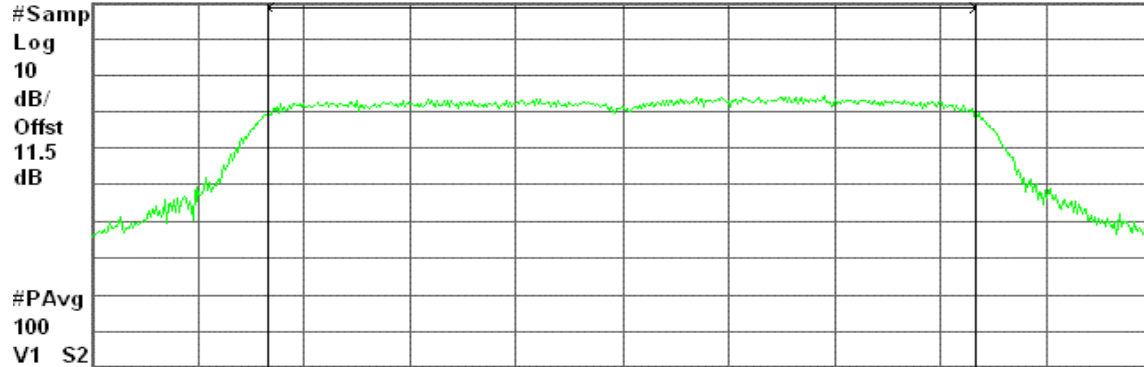
Agilent 13:44:09 Aug 6, 2007

R T

AVG Output Power , g Mode Low Ch.

Ref 30 dBm

Atten 30 dB



Center 2.412 00 GHz

Span 26.52 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.47 dBm / 17.6800 MHz

-57.01 dBm/Hz

Average Power (CH Mid)

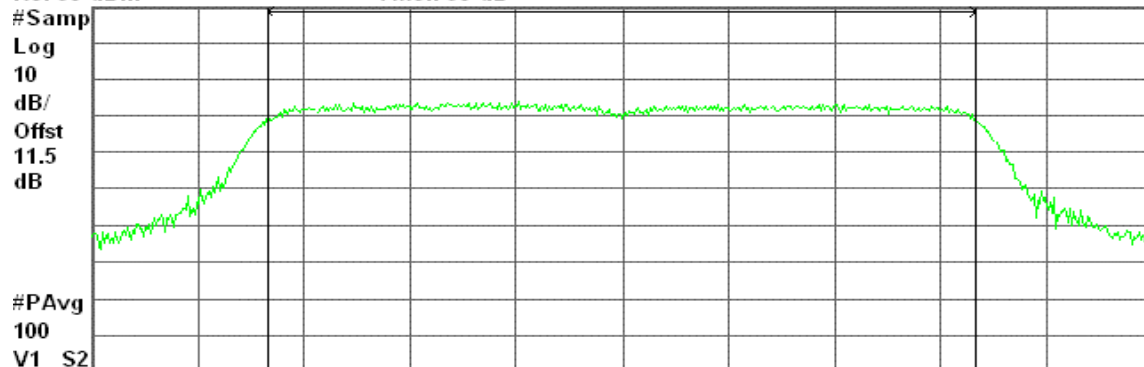
Agilent 14:36:58 Aug 6, 2007

R T

AVG Output Power , g Mode Mid Ch.

Ref 30 dBm

Atten 30 dB



Center 2.437 00 GHz

Span 26.64 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

14.65 dBm / 17.7590 MHz

-57.84 dBm/Hz

**Average Power (CH High)**

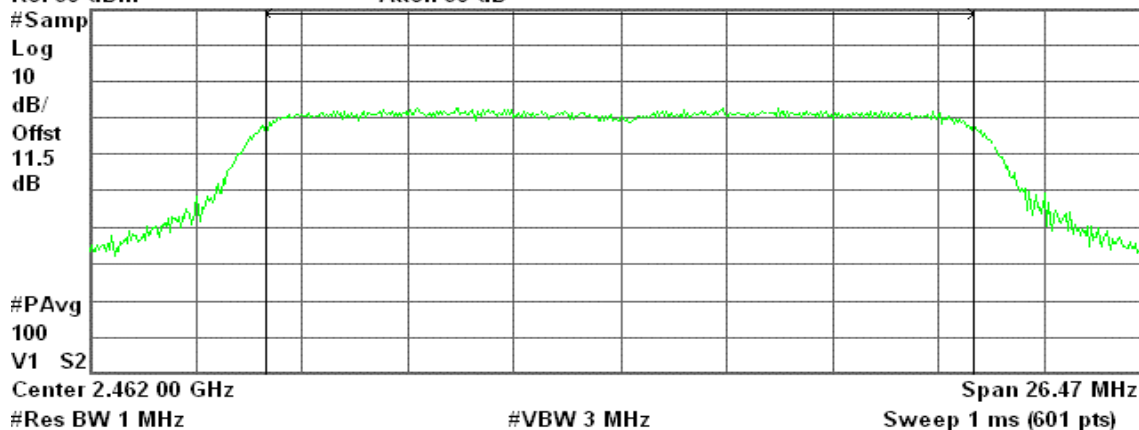
* Agilent 14:40:15 Aug 6, 2007

R T

AVG Output Power , g Mode High Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

13.79 dBm / 17.6490 MHz

Power Spectral Density

-58.68 dBm/Hz

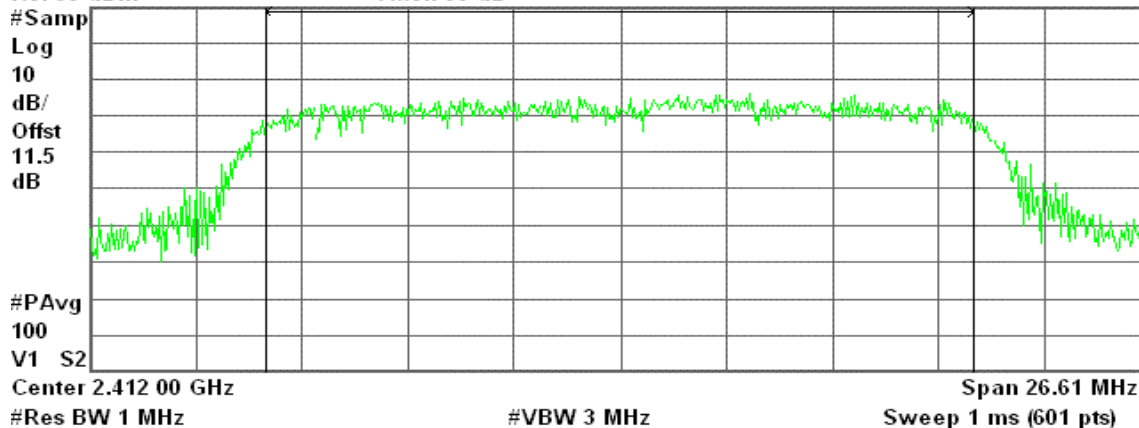
draft 802.11n Standard-20 MHz Channel mode / Chain 1**Average Power (CH Low)**

* Agilent 15:03:17 Aug 6, 2007

R T

Ref 30 dBm

Atten 30 dB



Channel Power

15.13 dBm / 17.7410 MHz

Power Spectral Density

-57.36 dBm/Hz



Average Power (CH Mid)

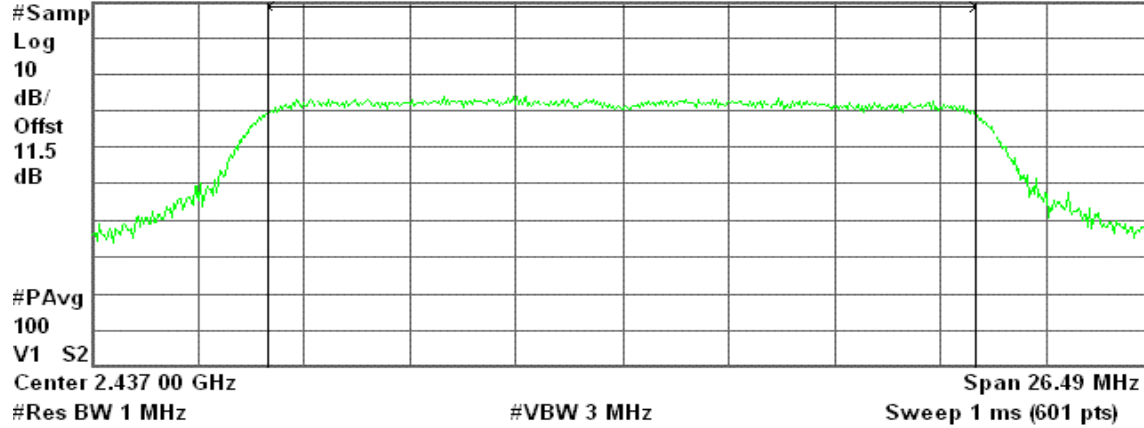
Agilent 14:57:20 Aug 6, 2007

R T

AVG Output Power g Mode Mid Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

13.75 dBm / 17.6570 MHz

Power Spectral Density

-58.72 dBm/Hz

Average Power (CH High)

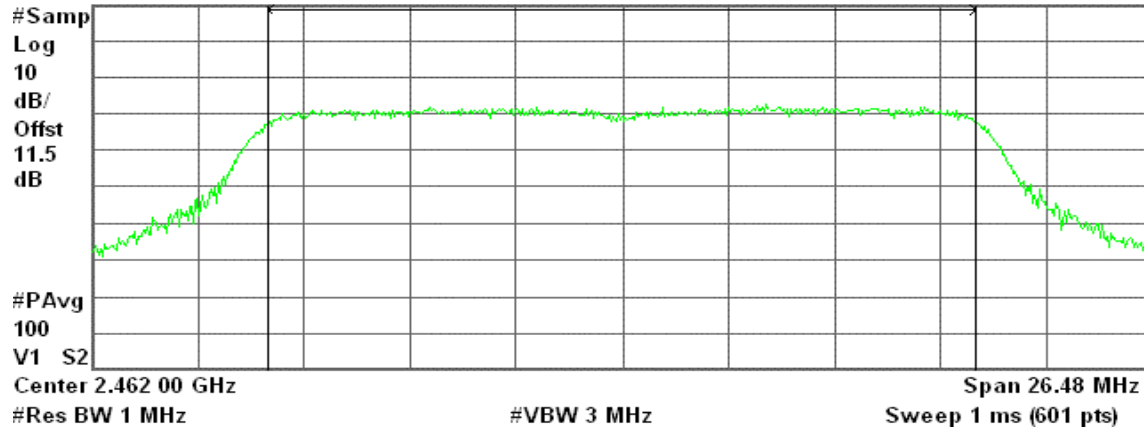
Agilent 14:48:22 Aug 6, 2007

R T

AVG Output Power , g Mode High Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

11.86 dBm / 17.6500 MHz

Power Spectral Density

-60.61 dBm/Hz



draft 802.11n Wide-40 MHz Channel mode / Chain 0

Average Power (CH Low)

Agilent 16:26:31 Aug 6, 2007

R T

AVG Output Power , 40 Mode Low Ch.

Ref 30 dBm

Atten 30 dB

#Samp

Log

10

dB/

Offst

11.5

dB

#PAvg

91

V1 S2

Center 2.422 00 GHz

Span 53.74 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

13.61 dBm / 35.8260 MHz

-61.93 dBm/Hz

Average Power (CH Mid)

Agilent 16:20:05 Aug 6, 2007

R T

AVG Output Power , 40 Mode Mid Ch.

Ref 30 dBm

Atten 30 dB

#Samp

Log

10

dB/

Offst

11.5

dB

#PAvg

100

V1 S2

Center 2.437 00 GHz

Span 53.67 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

13.53 dBm / 35.7790 MHz

-62.01 dBm/Hz



Average Power (CH High)

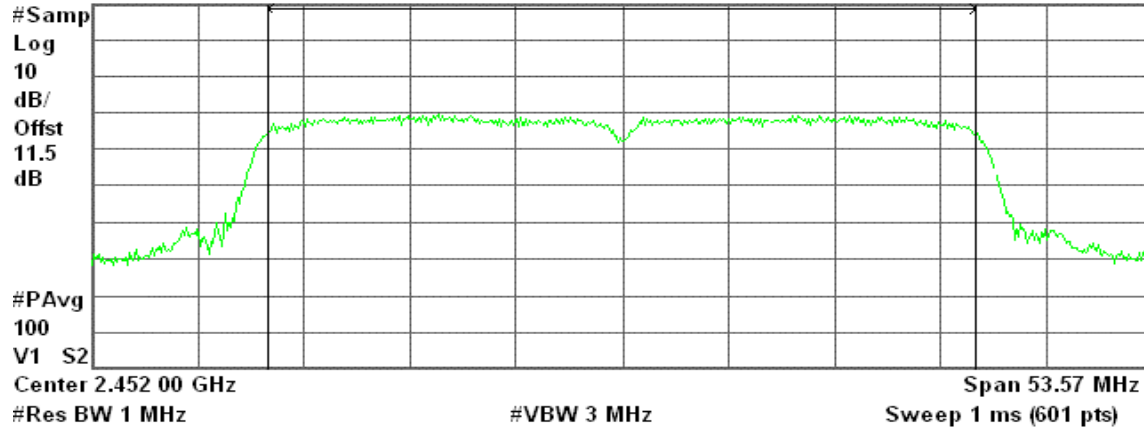
Agilent 16:11:57 Aug 6, 2007

R T

AVG Output Power , 40 Mode High Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

Power Spectral Density

13.88 dBm / 35.7140 MHz

-61.65 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / Chain 1

Average Power (CH Low)

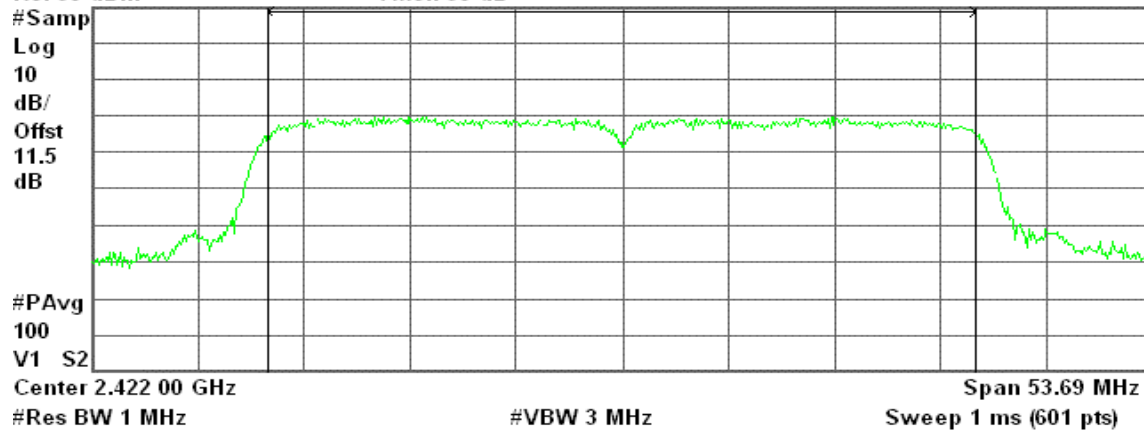
Agilent 16:42:20 Aug 6, 2007

R T

AVG Output Power , 40 Mode Low Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

Power Spectral Density

13.32 dBm / 35.7930 MHz

-62.22 dBm/Hz



Average Power (CH Mid)

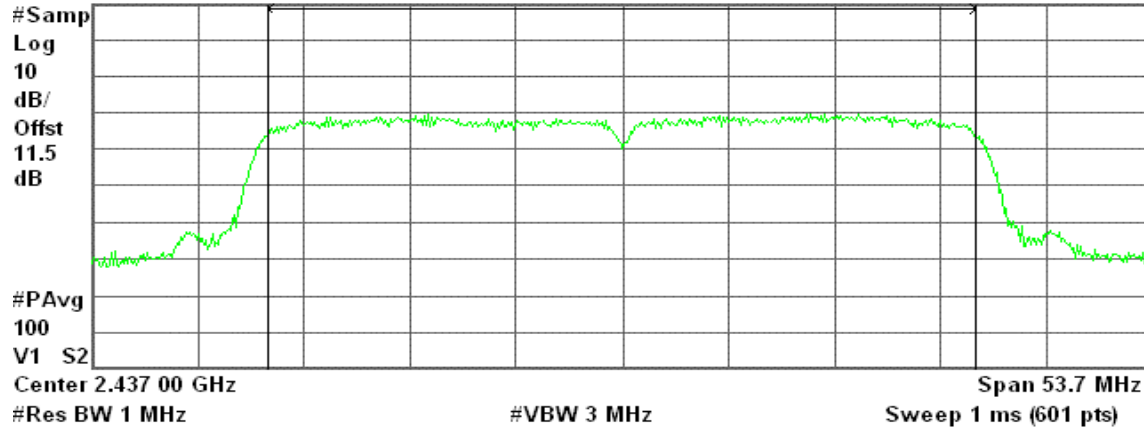
Agilent 16:49:33 Aug 6, 2007

R T

AVG Output Power , 40 Mode Mid Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

13.38 dBm / 35.8030 MHz

Power Spectral Density

-62.16 dBm/Hz

Average Power (CH High)

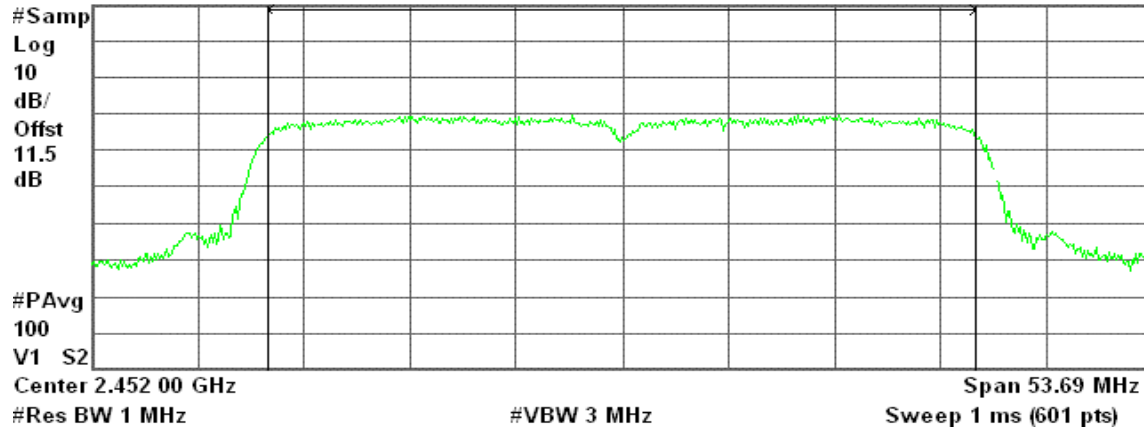
Agilent 16:55:08 Aug 6, 2007

R T

AVG Output Power , 40 Mode High Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

13.49 dBm / 35.7930 MHz

Power Spectral Density

-62.04 dBm/Hz



IEEE 802.11a mode:

Average Power (CH Low)

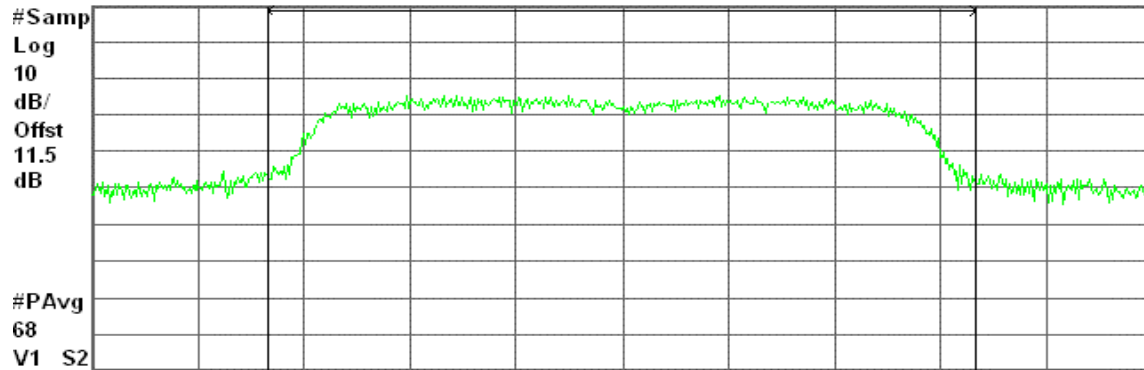
Agilent 13:28:58 Aug 7, 2007

R T

AVG Output Power , a Mode Low Ch.

Ref 30 dBm

Atten 30 dB



Center 5.745 00 GHz

Span 29.69 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

15.04 dBm / 19.7930 MHz

-57.92 dBm/Hz

Average Power (CH Mid)

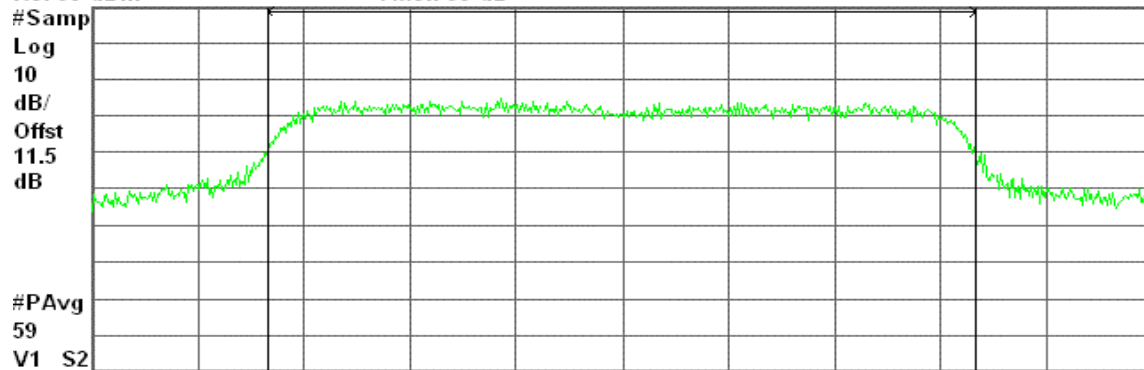
Agilent 13:35:41 Aug 7, 2007

R T

AVG Output Power , a Mode Mid Ch.

Ref 30 dBm

Atten 30 dB



Center 5.785 00 GHz

Span 26.81 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

14.45 dBm / 17.8740 MHz

-58.07 dBm/Hz



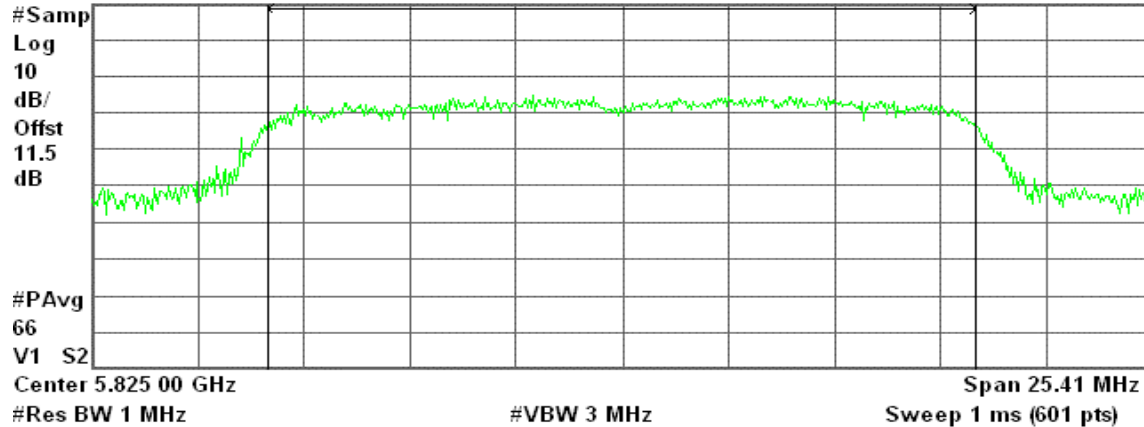
Average Power (CH High)

Agilent 13:41:41 Aug 7, 2007
AVG Output Power , a Mode High Ch.

R T

Ref 30 dBm

Atten 30 dB



Channel Power

14.80 dBm / 16.9420 MHz

Power Spectral Density

-57.49 dBm/Hz

draft 802.11n Standard-20 MHz Channel mode / Chain 0

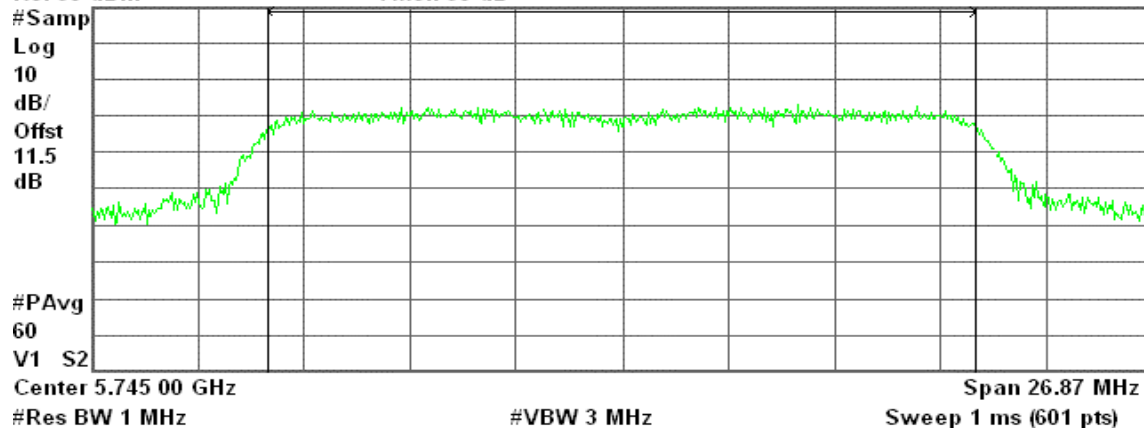
Average Power (CH Low)

Agilent 14:17:56 Aug 7, 2007
AVG Output Power , a Mode Low Ch.

R T

Ref 30 dBm

Atten 30 dB



Channel Power

13.51 dBm / 17.9140 MHz

Power Spectral Density

-59.02 dBm/Hz



Average Power (CH Mid)

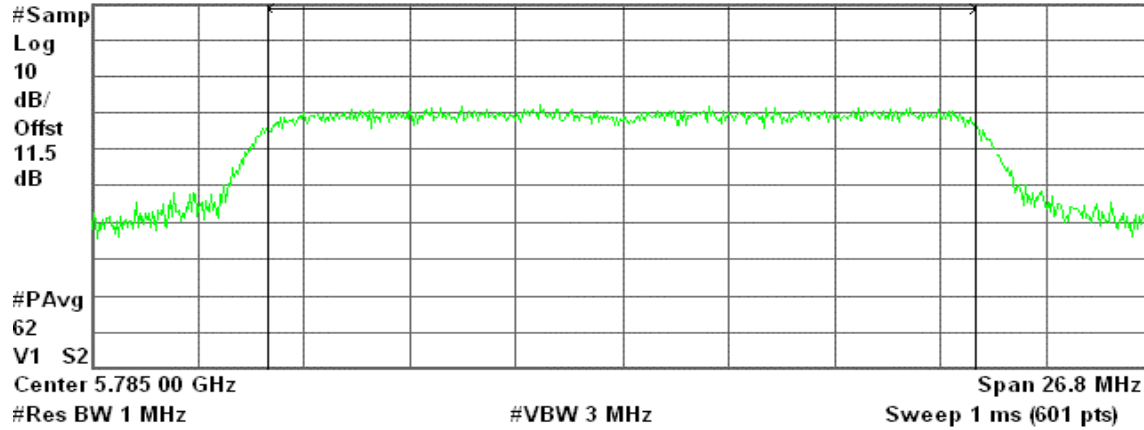
Agilent 14:24:27 Aug 7, 2007

R T

AVG Output Power , a Mode Mid Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

Power Spectral Density

12.24 dBm / 17.8650 MHz

-60.28 dBm/Hz

Average Power (CH High)

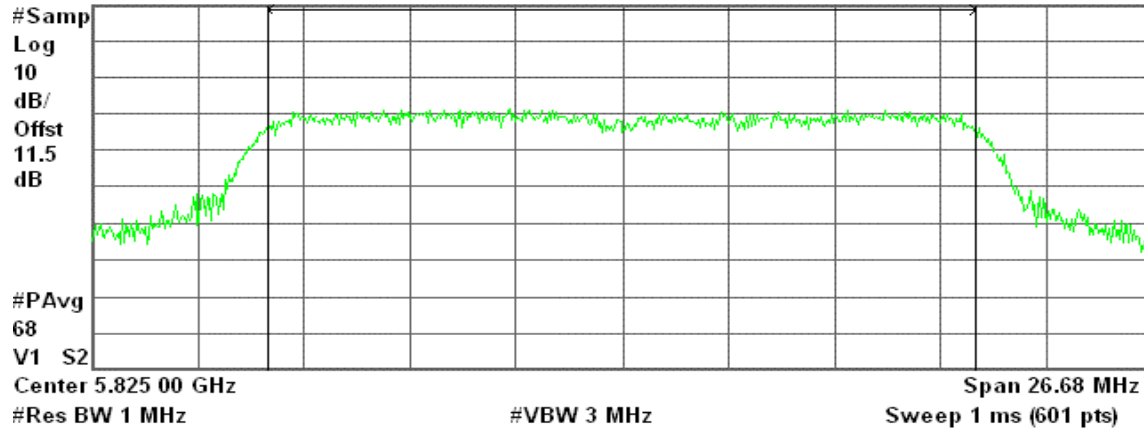
Agilent 14:29:44 Aug 7, 2007

R L

AVG Output Power , a Mode High Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

Power Spectral Density

12.12 dBm / 17.7900 MHz

-60.38 dBm/Hz



draft 802.11n Standard-20 MHz Channel mode / Chain 1

Average Power (CH Low)

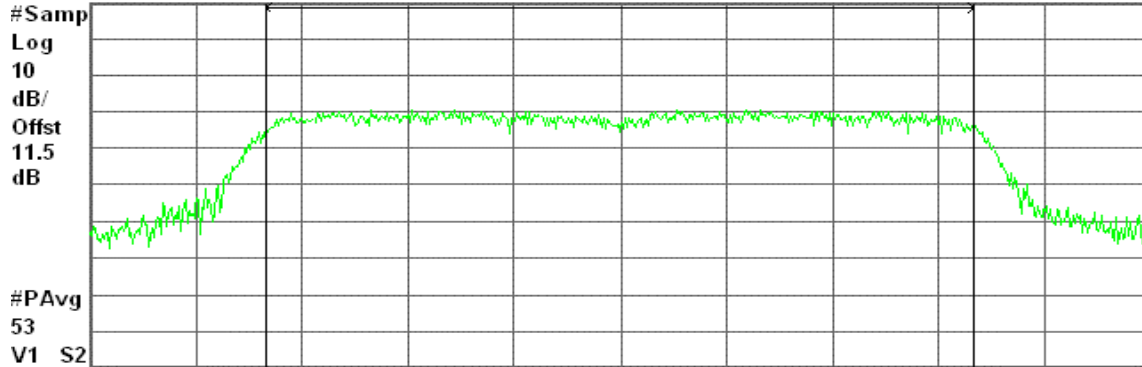
Agilent 15:40:56 Aug 7, 2007

R T

AVG Output Power , a Mode Low Ch.

Ref 30 dBm

Atten 30 dB



Center 5.745 00 GHz

Span 26.61 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

11.52 dBm / 17.7420 MHz

-60.97 dBm/Hz

Average Power (CH Mid)

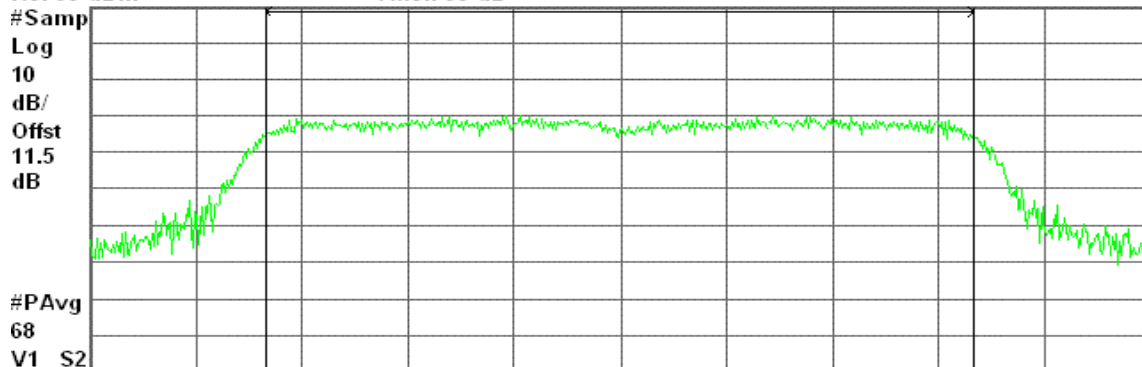
Agilent 15:47:32 Aug 7, 2007

R T

AVG Output Power , a Mode Mid Ch.

Ref 30 dBm

Atten 30 dB



Center 5.785 00 GHz

Span 26.57 MHz

#Res BW 1 MHz

#VBW 3 MHz

Sweep 1 ms (601 pts)

Channel Power

Power Spectral Density

10.62 dBm / 17.7130 MHz

-61.86 dBm/Hz



Average Power (CH High)

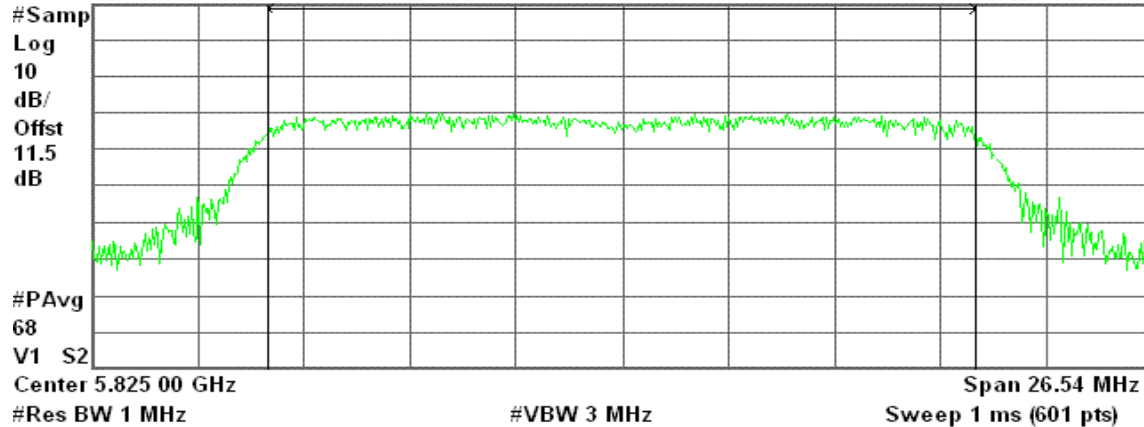
Agilent 15:53:55 Aug 7, 2007

R T

AVG Output Power , a Mode High Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

10.58 dBm / 17.6940 MHz

Power Spectral Density

-61.90 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / Chain 0

Average Power (CH Low)

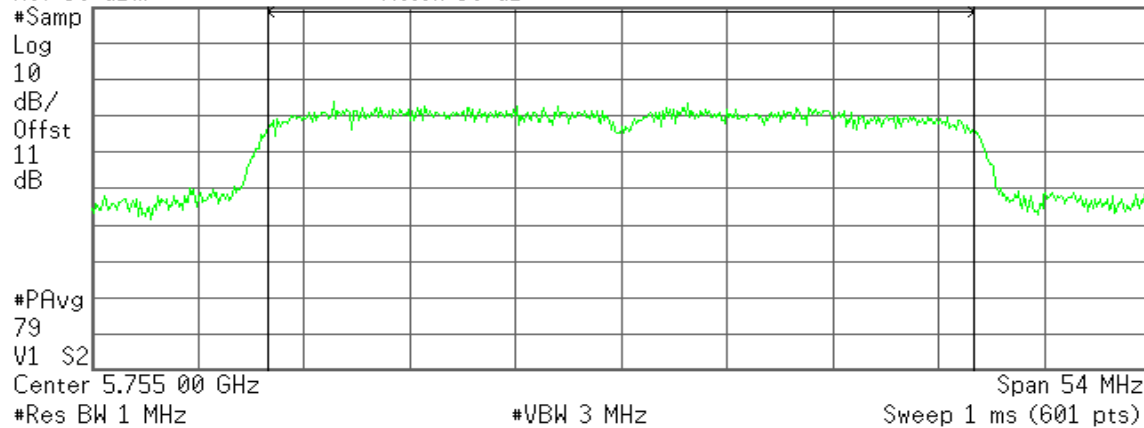
Agilent 17:18:01 Aug 23, 2007

R T

AVG Output Power , a Mode Low Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

16.03 dBm / 36.0000 MHz

Power Spectral Density

-59.53 dBm/Hz



Average Power (CH High)

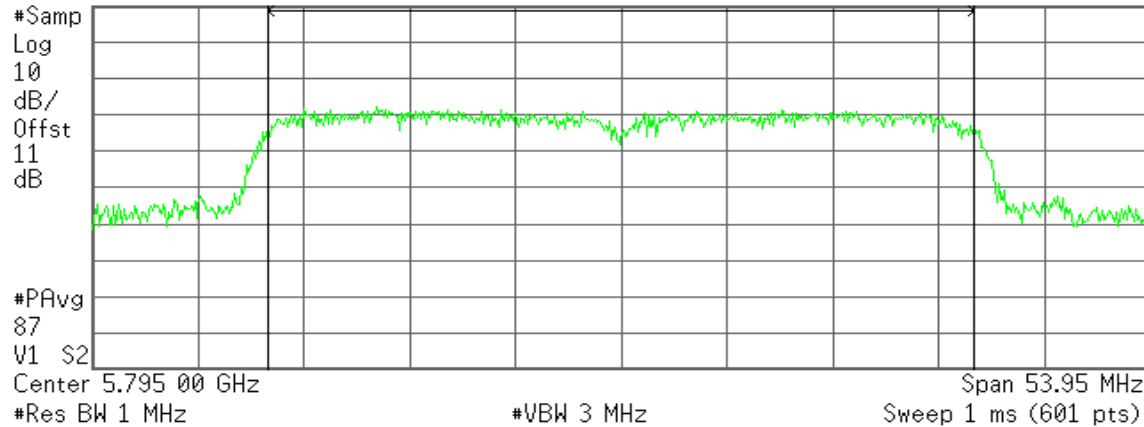
Agilent 17:36:09 Aug 23, 2007

R T

AVG Output Power , a Mode High Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

14.93 dBm /35.9650 MHz

Power Spectral Density

-60.63 dBm/Hz

draft 802.11n Wide-40 MHz Channel mode / Chain 1

Average Power (CH Low)

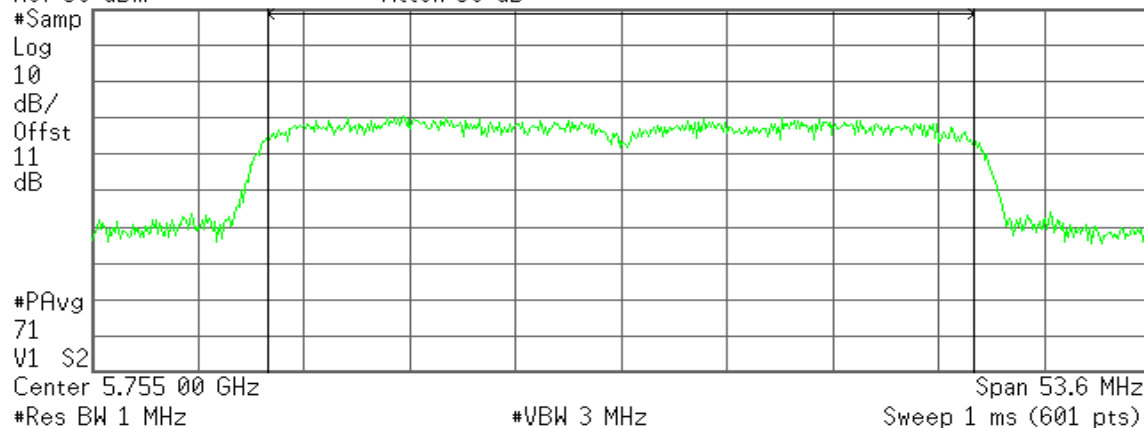
Agilent 17:48:41 Aug 23, 2007

R T

AVG Output Power , a Mode Low Ch.

Ref 30 dBm

Atten 30 dB



Channel Power

12.80 dBm /35.7310 MHz

Power Spectral Density

-62.73 dBm/Hz



Average Power (CH High)

Agilent 17:41:42 Aug 23, 2007

R T

AVG Output Power , a Mode High Ch.

Ref 30 dBm

Atten 30 dB

#Samp

Log

10

dB/

Offst

11

dB

#PAvg

76

V1 S2

Center 5.795 00 GHz

#Res BW 1 MHz

#VBW 3 MHz

Span 53.82 MHz

Sweep 1 ms (601 pts)

Channel Power

12.20 dBm /35.8770 MHz

Power Spectral Density

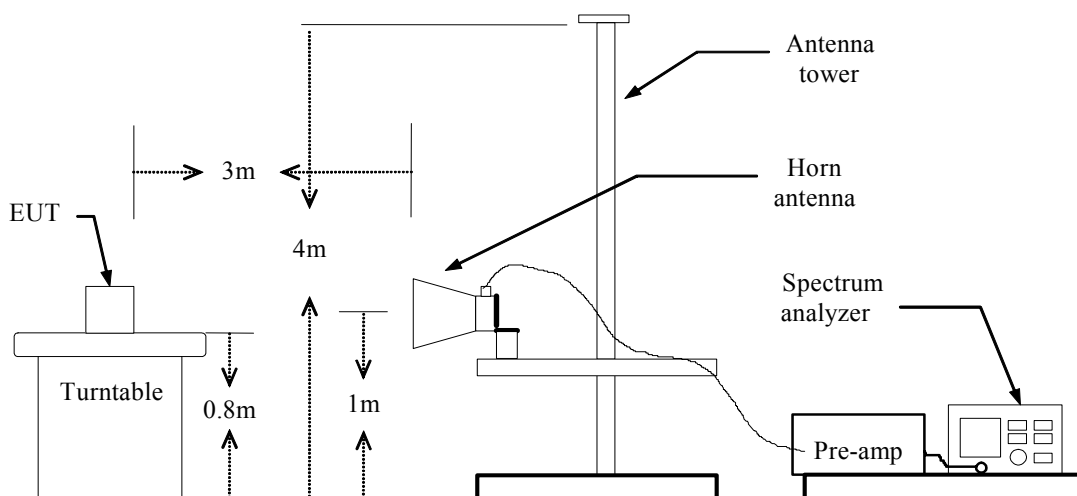
-63.35 dBm/Hz

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

Agilent 17:44:08 Jul 27, 2007

R T

Mkr1 2.386 2 GHz
60.88 dB μ V

Ref 121 dB μ V

#Atten 14 dB

#Peak

Log

10

dB/

Offst

10

dB

DI

74.0

dB μ V

LgAv

M1 S2

S3 FC

A AA

E(f):

FTun

Swp

Start 2.310 0 GHz

#Res BW 1 MHz

#VBW 1 MHz

Stop 2.420 0 GHz

#Sweep 100 ms (601 pts)

Detector mode: Average

Polarity: Vertical

Agilent 17:43:35 Jul 27, 2007

R T

Mkr1 2.386 2 GHz
51.41 dB μ V

Ref 121 dB μ V

#Atten 14 dB

#Peak

Log

10

dB/

Offst

10

dB

DI

54.0

dB μ V

LgAv

M1 S2

S3 FC

A AA

E(f):

FTun

Swp

Start 2.310 0 GHz

#Res BW 1 MHz

#VBW 10 Hz

Stop 2.420 0 GHz

Sweep 8.577 s (601 pts)

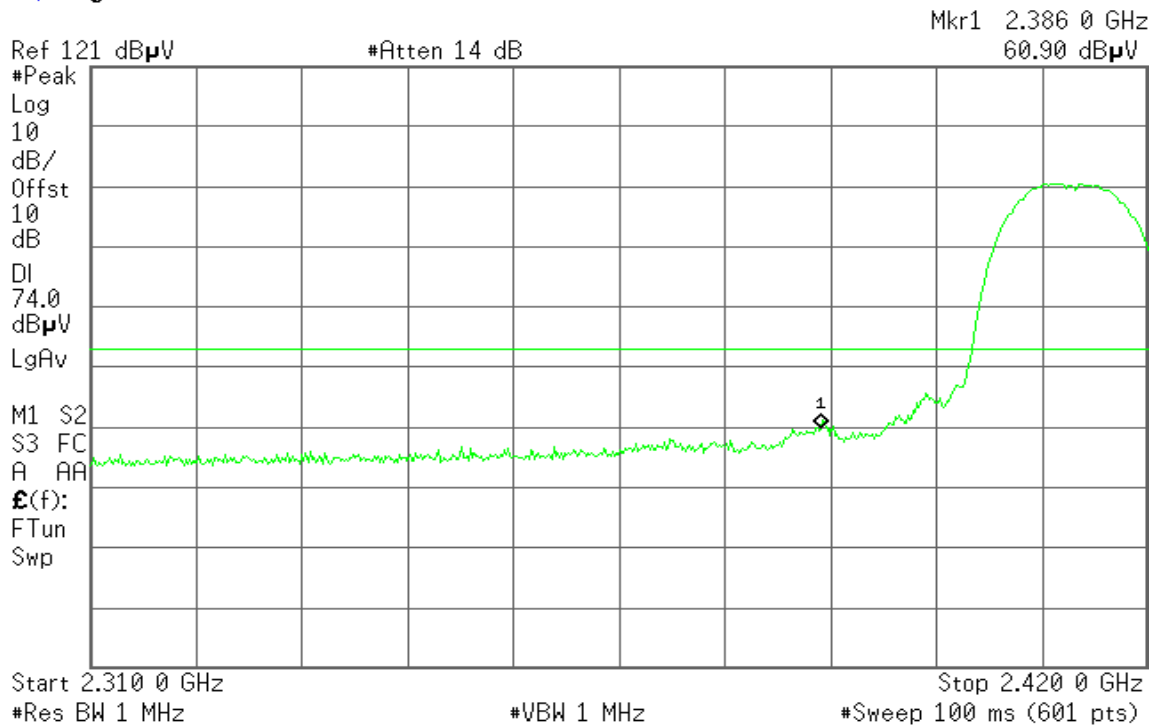


Detector mode: Peak

Polarity: Horizontal

Agilent 17:49:54 Jul 27, 2007

R T

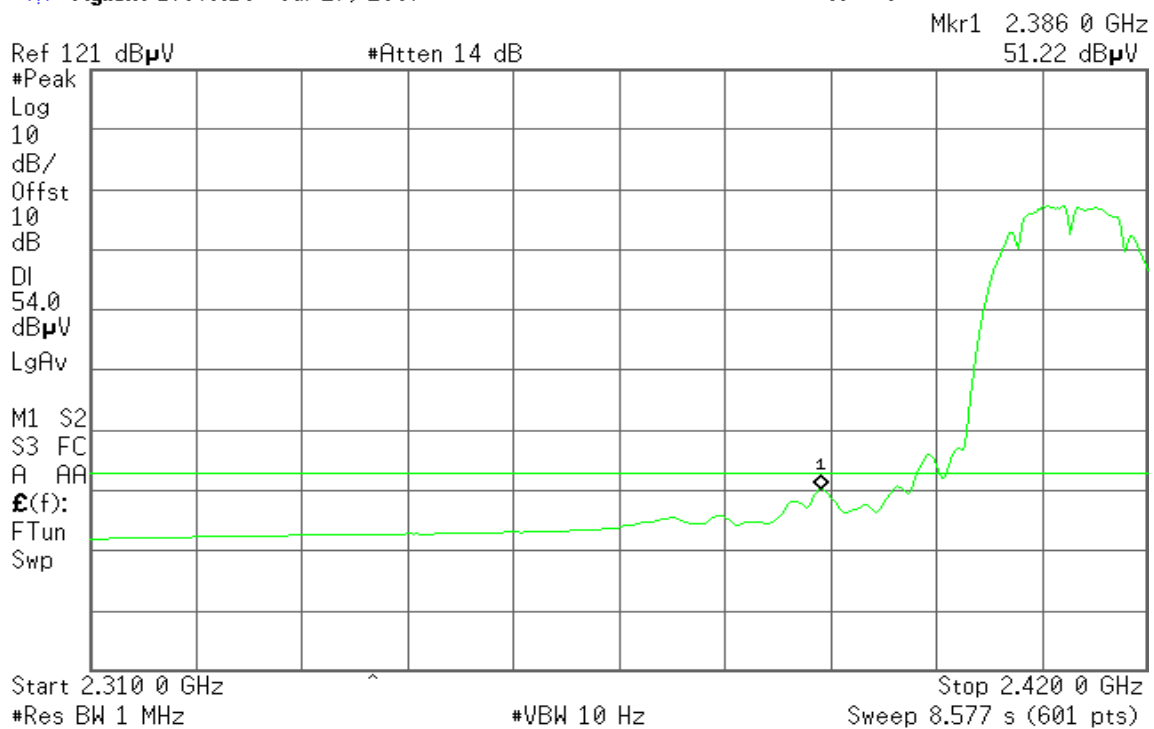


Detector mode: Average

Polarity: Horizontal

Agilent 17:49:18 Jul 27, 2007

R T





Band Edges (IEEE 802.11b mode/ CH High)

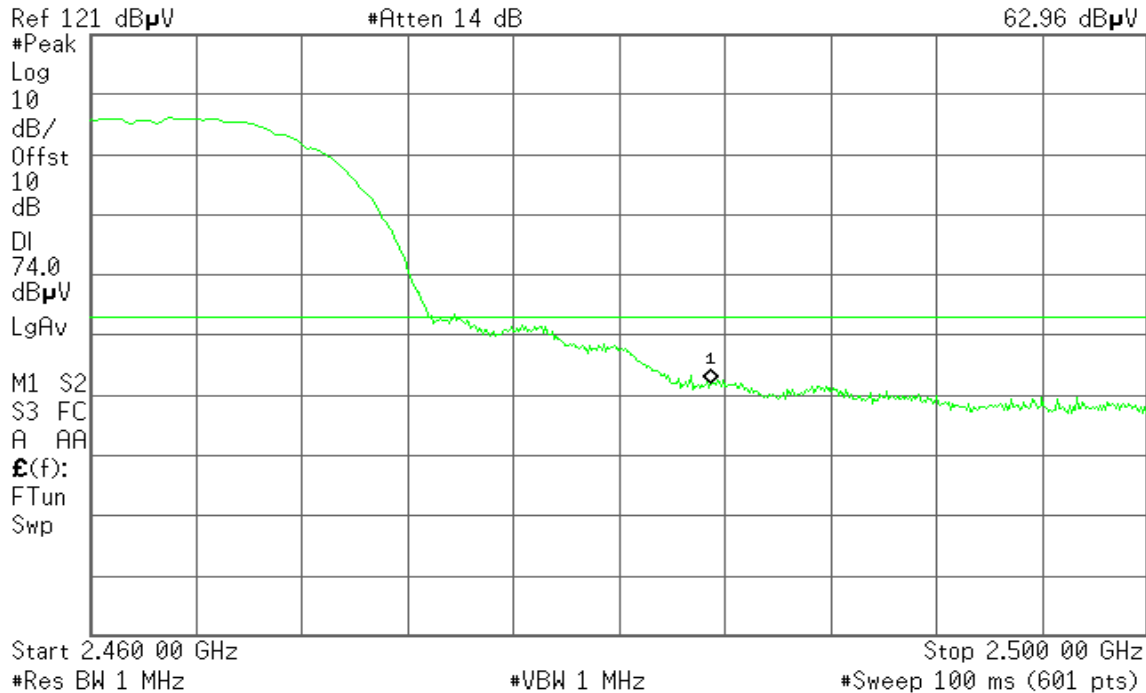
Detector mode: Peak

Polarity: Vertical

Agilent 17:28:11 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
62.96 dB μ V



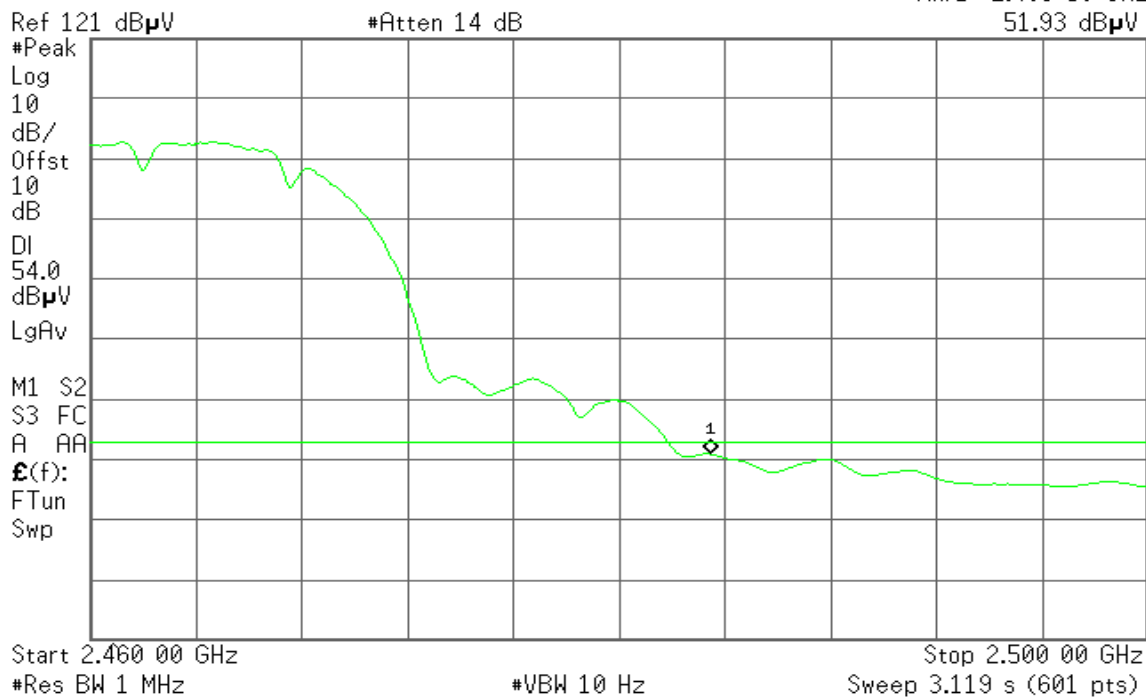
Detector mode: Average

Polarity: Vertical

Agilent 17:27:36 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
51.93 dB μ V





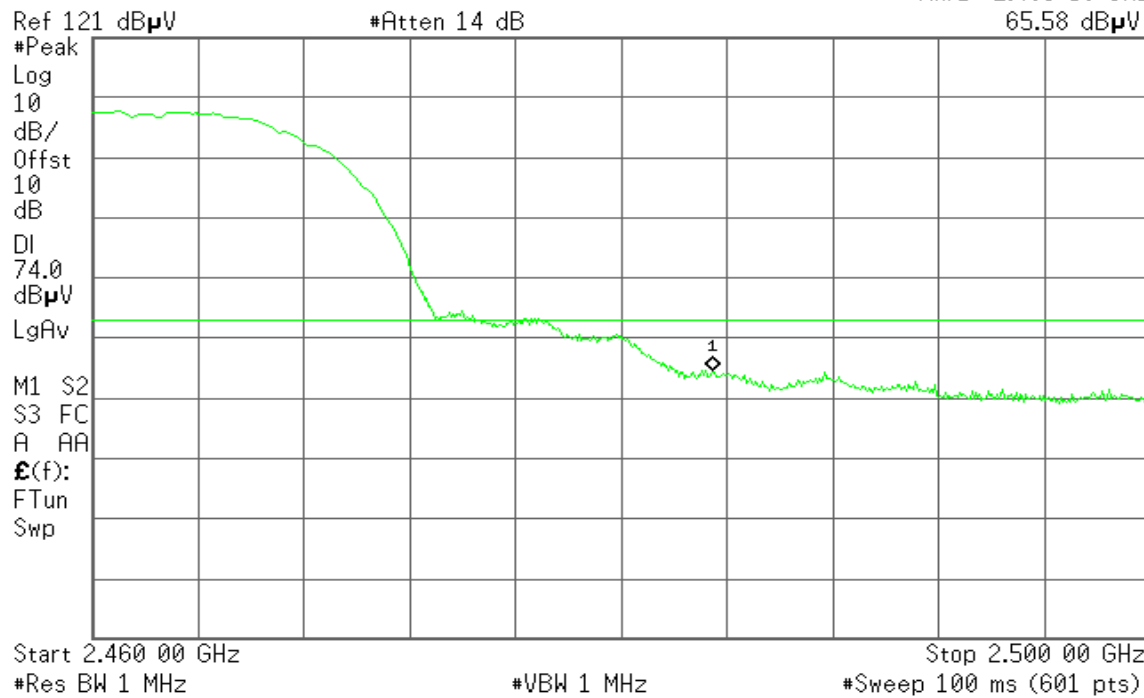
Detector mode: Peak

Polarity: Horizontal

Agilent 17:32:16 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
65.58 dB μ V



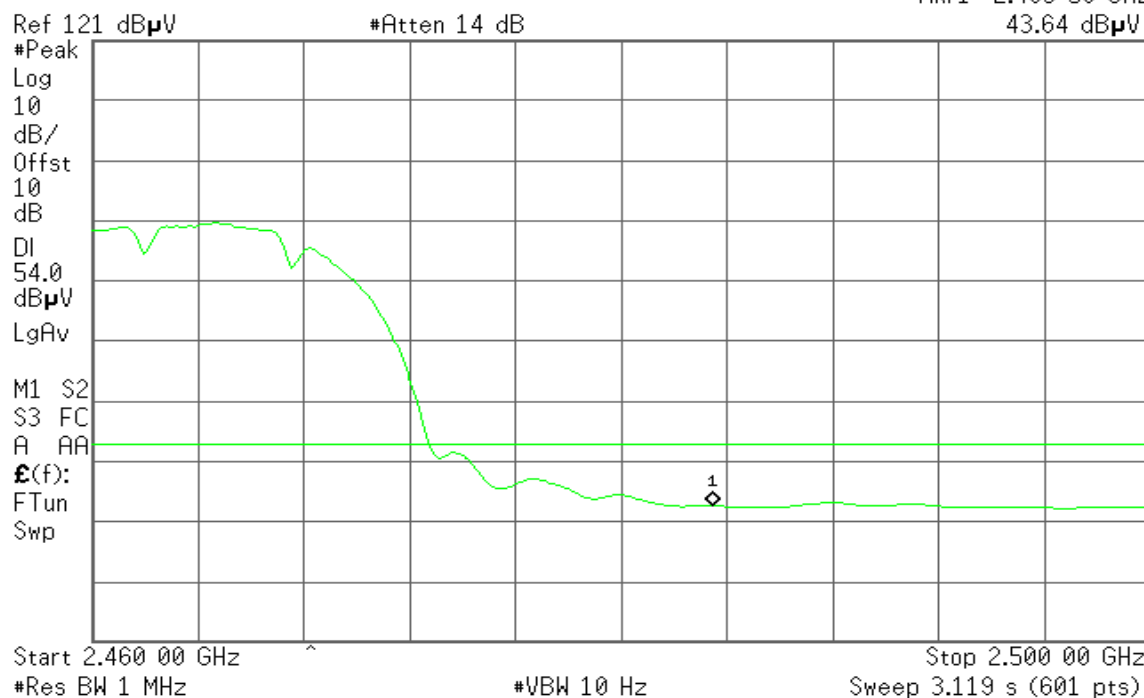
Detector mode: Average

Polarity: Horizontal

Agilent 17:34:55 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
43.64 dB μ V





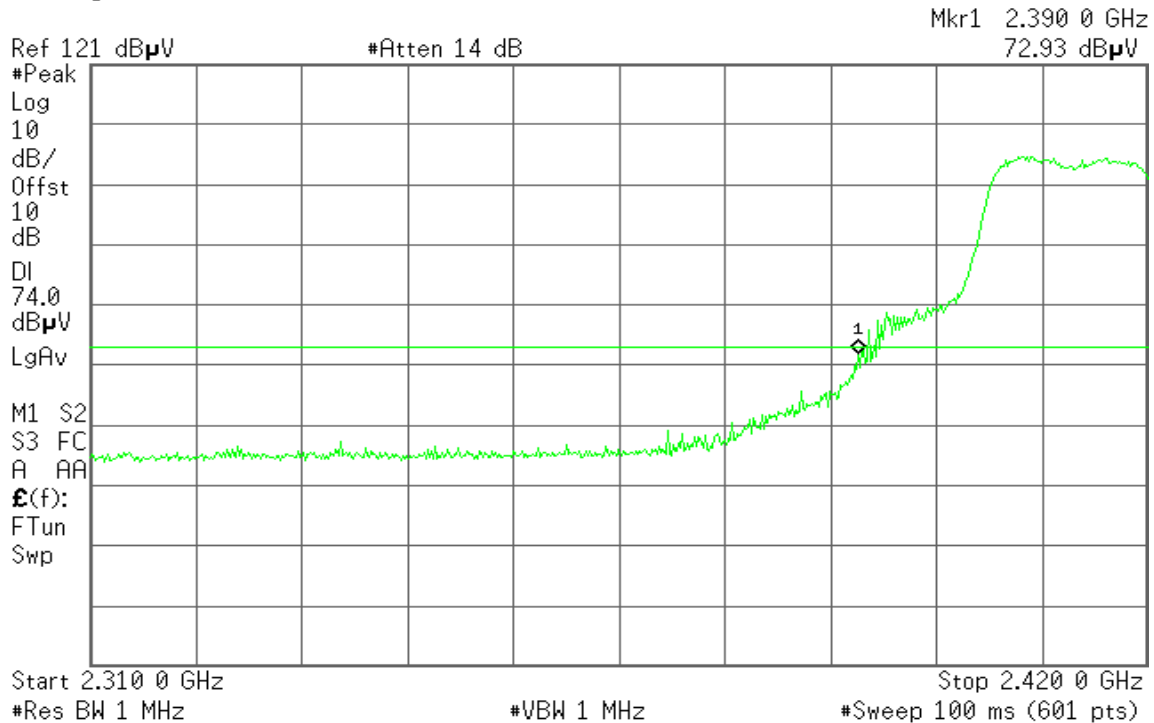
Band Edges (IEEE 802.11g mode/ CH Low)

Detector mode: Peak

Polarity: Vertical

Agilent 16:10:49 Jul 27, 2007

R T

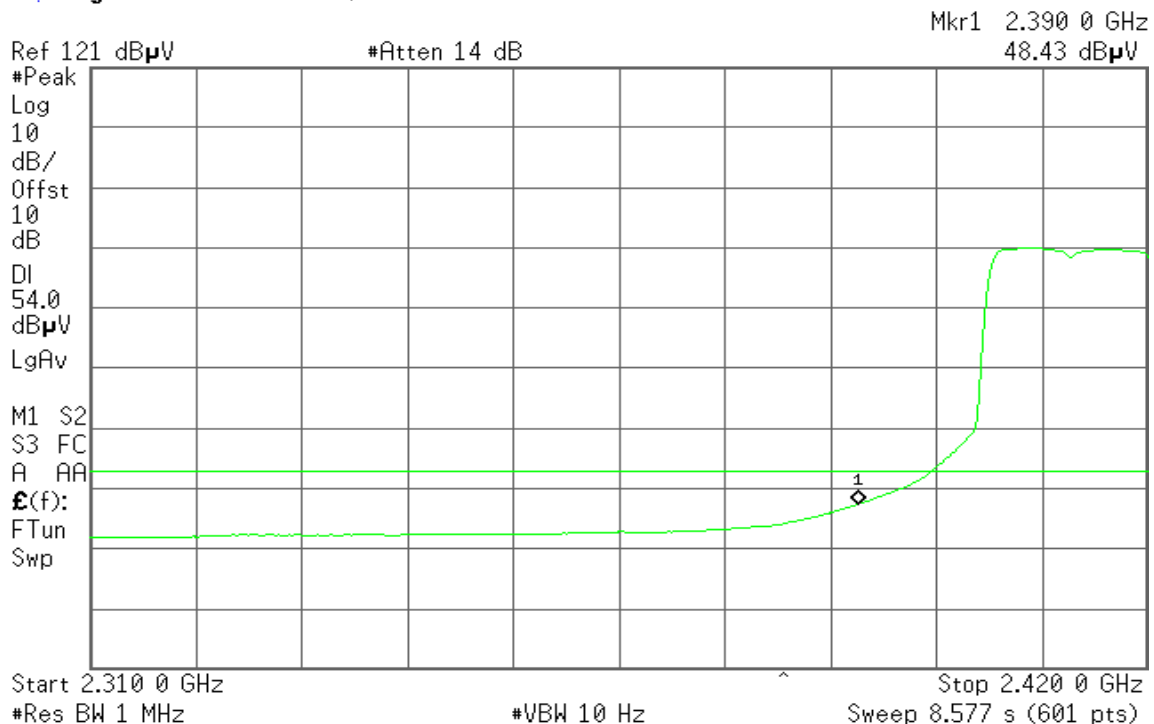


Detector mode: Average

Polarity: Vertical

Agilent 16:12:20 Jul 27, 2007

R T



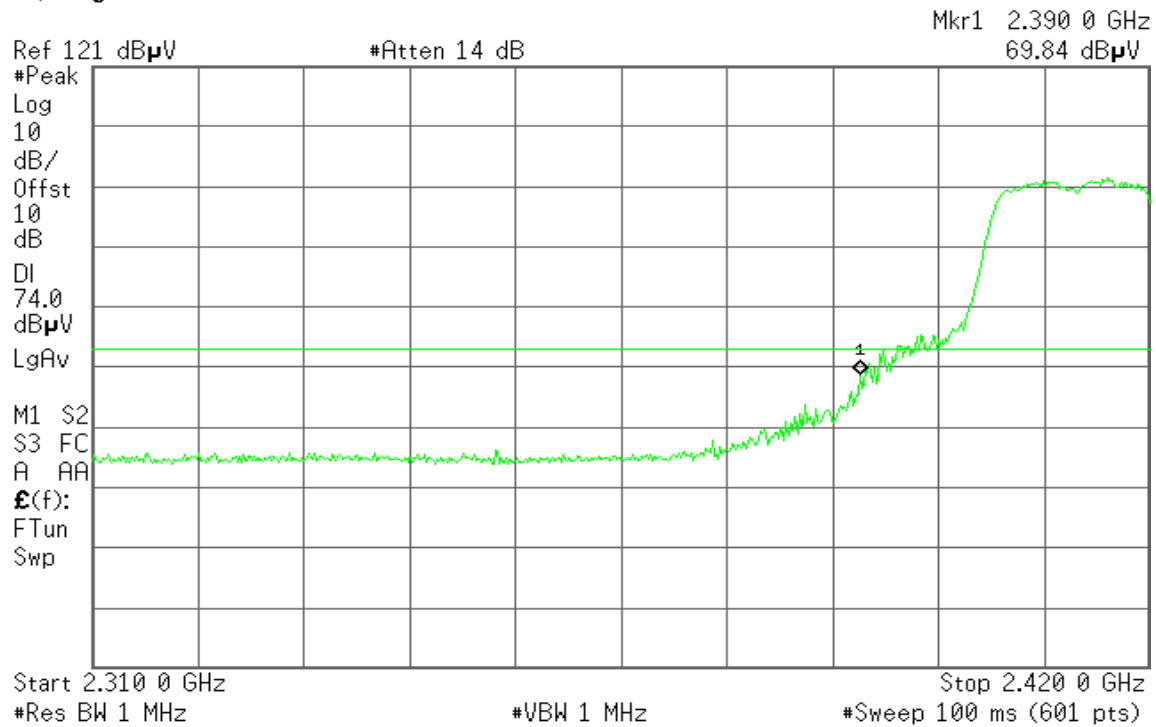


Detector mode: Peak

Polarity: Horizontal

Agilent 16:15:55 Jul 27, 2007

R T

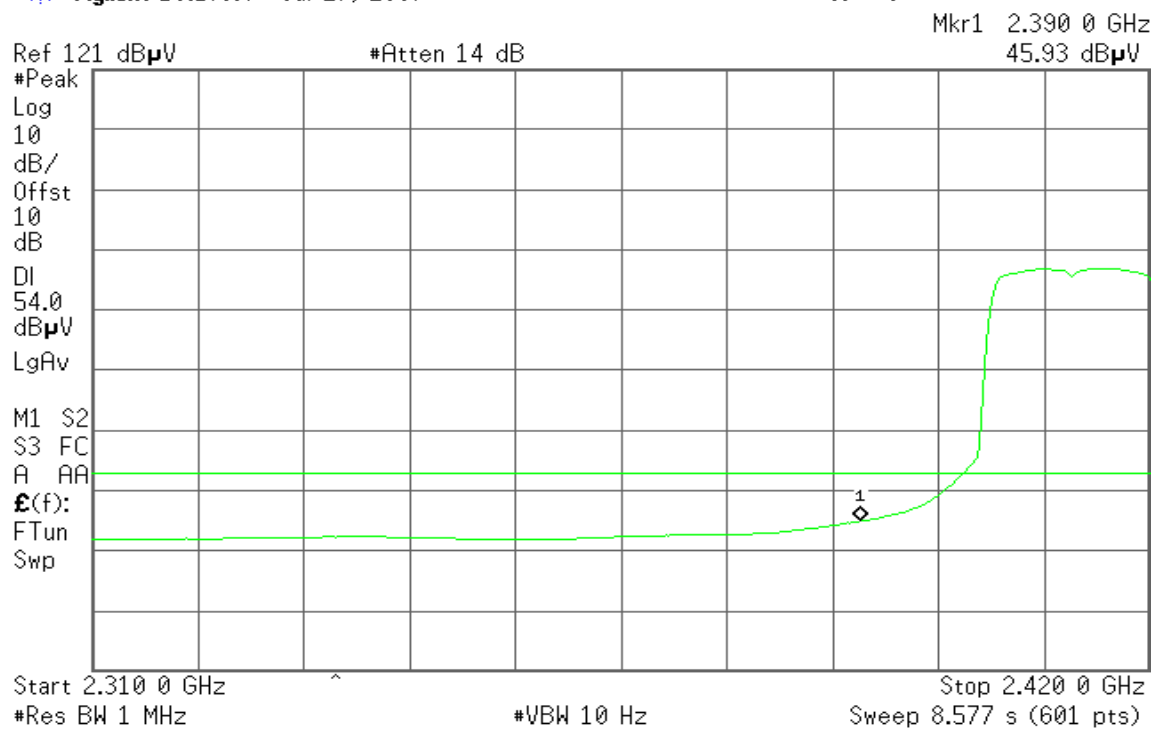


Detector mode: Average

Polarity: Horizontal

Agilent 16:17:07 Jul 27, 2007

R T





Band Edges (IEEE 802.11g mode/ CH High)

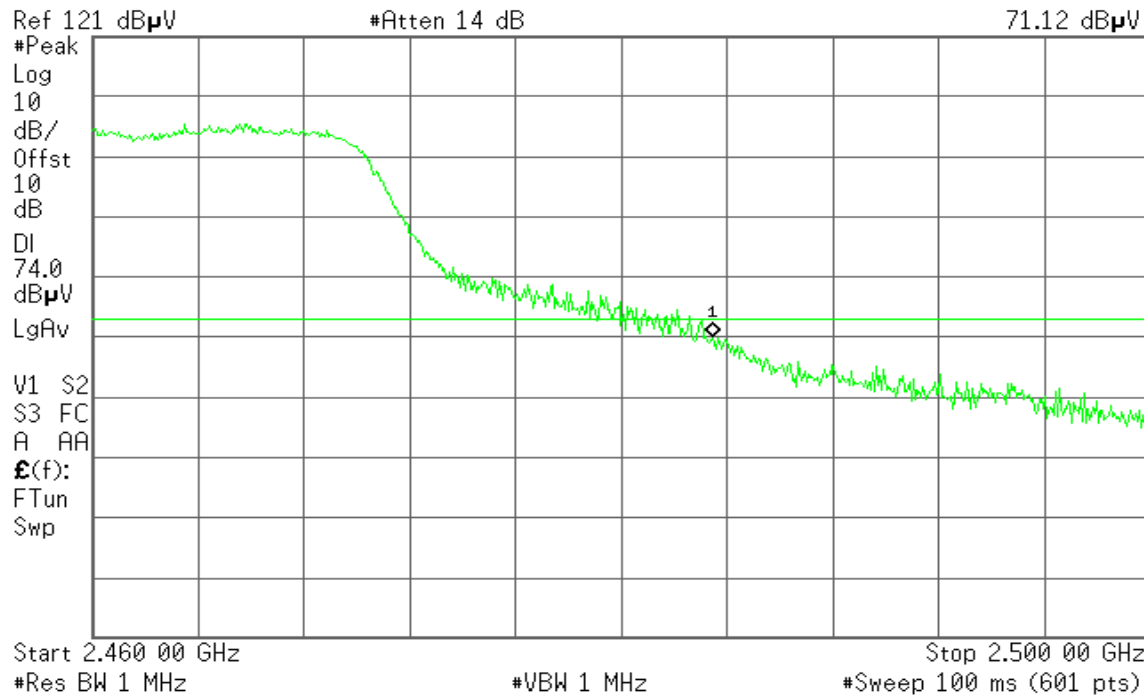
Detector mode: Peak

Polarity: Vertical

Agilent 16:24:30 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
71.12 dB μ V



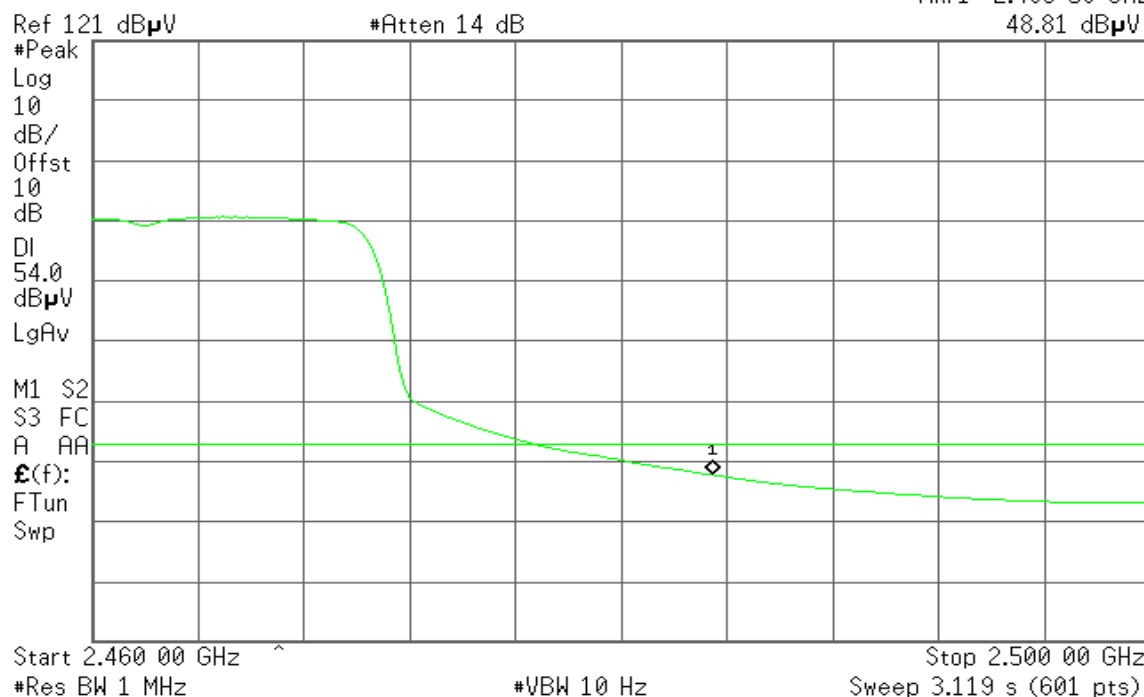
Detector mode: Average

Polarity: Vertical

Agilent 16:27:51 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
48.81 dB μ V





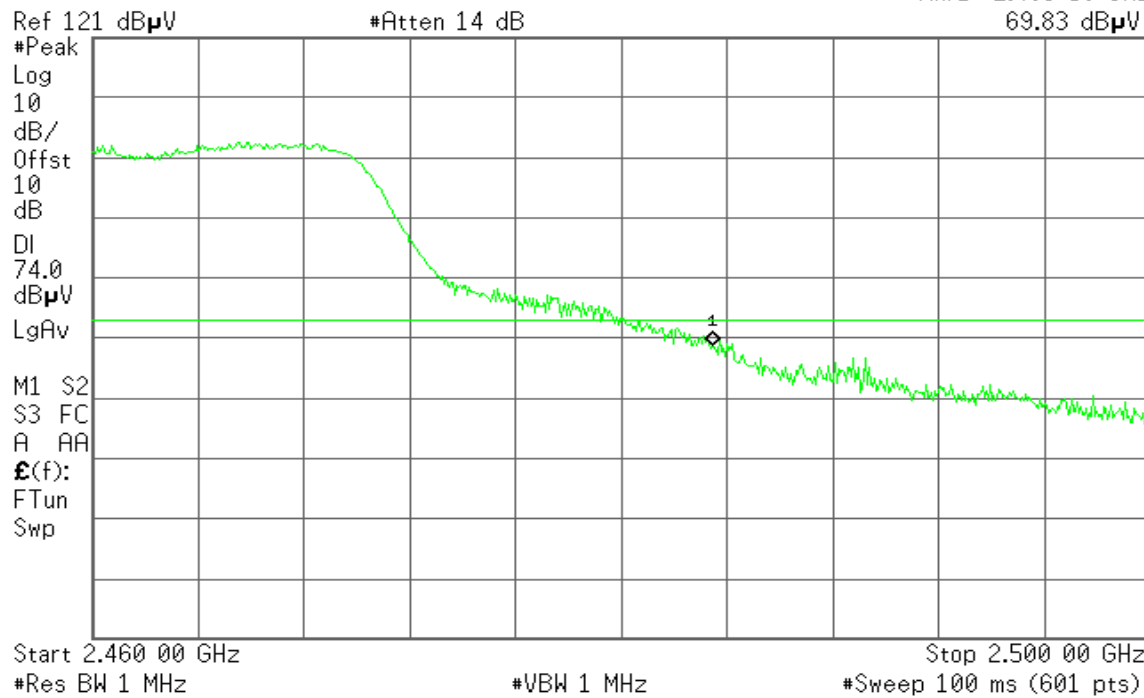
Detector mode: Peak

Polarity: Horizontal

Agilent 16:32:07 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
69.83 dB μ V



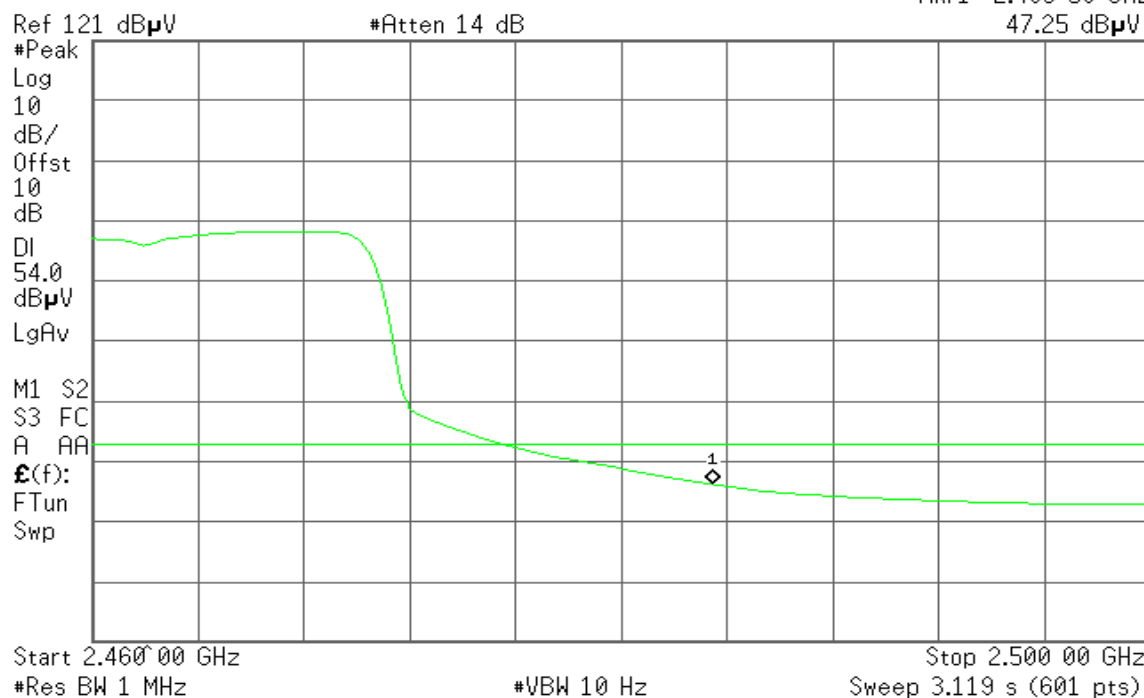
Detector mode: Average

Polarity: Horizontal

Agilent 16:32:59 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
47.25 dB μ V





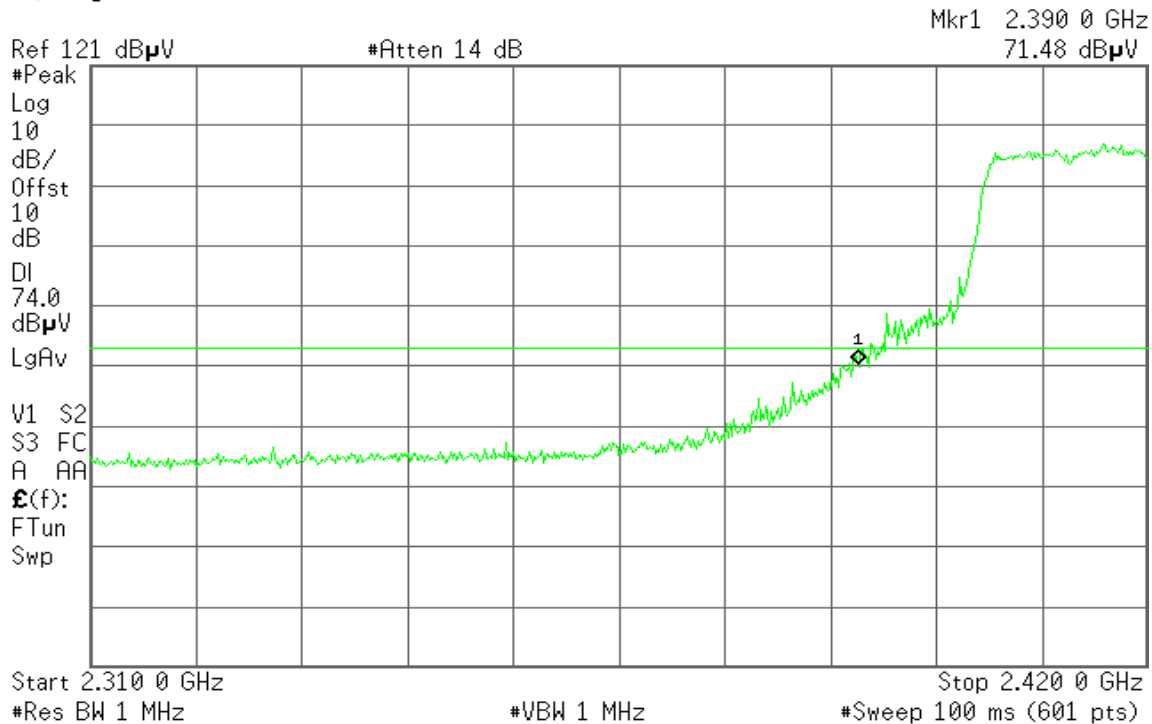
Band Edges (draft 802.11n Standard-20 MHz Channel mode / CH Low)

Detector mode: Peak

Polarity: Vertical

Agilent 18:01:33 Jul 27, 2007

R T

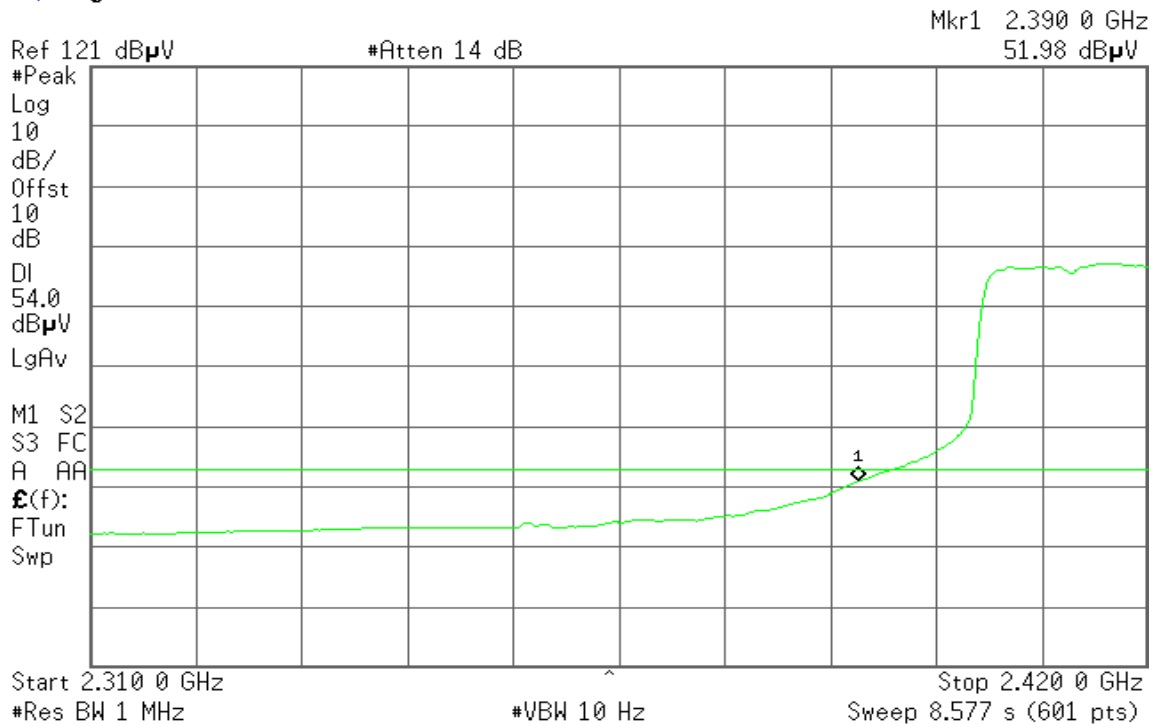


Detector mode: Average

Polarity: Vertical

Agilent 18:00:36 Jul 27, 2007

R T



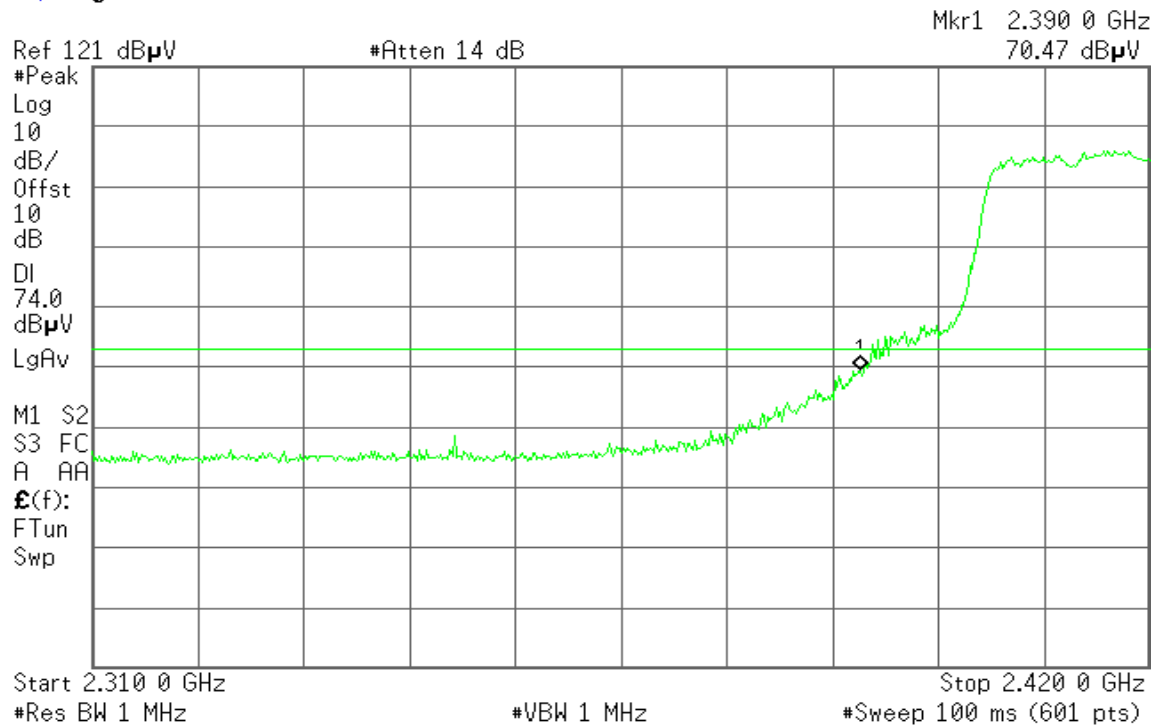


Detector mode: Peak

Polarity: Horizontal

Agilent 18:05:30 Jul 27, 2007

R T

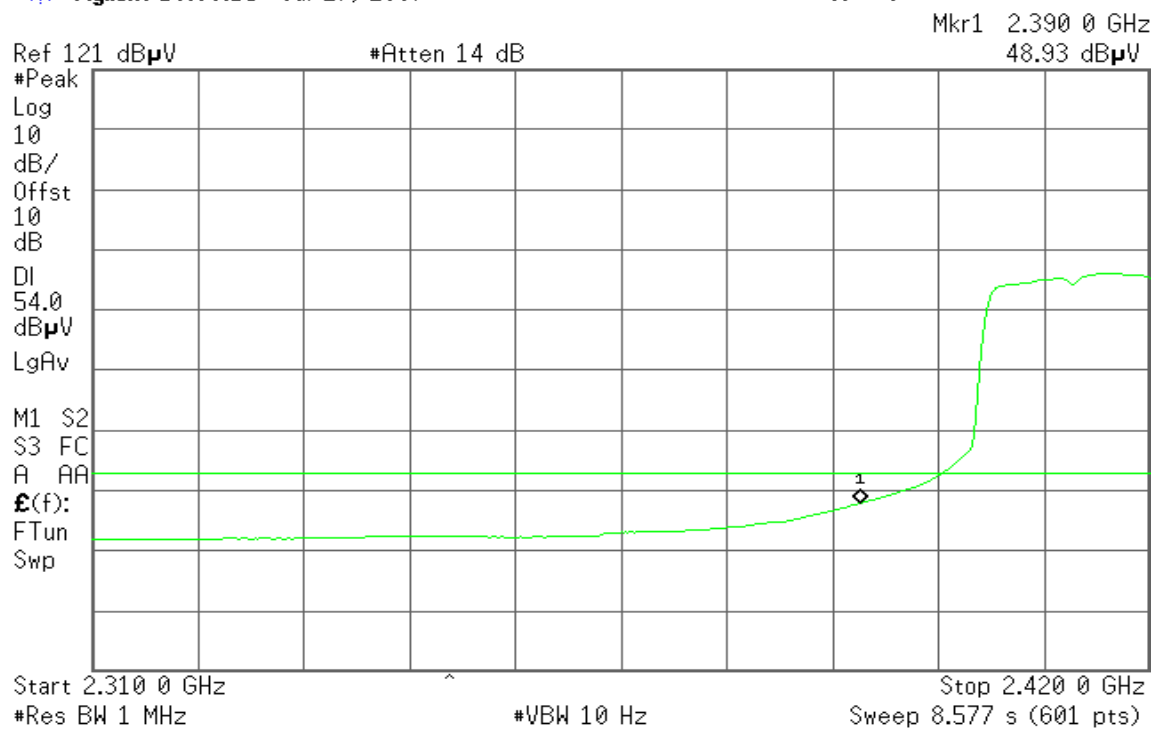


Detector mode: Average

Polarity: Horizontal

Agilent 18:06:15 Jul 27, 2007

R T





Band Edges (draft 802.11n Standard-20 MHz Channel mode / CH High)

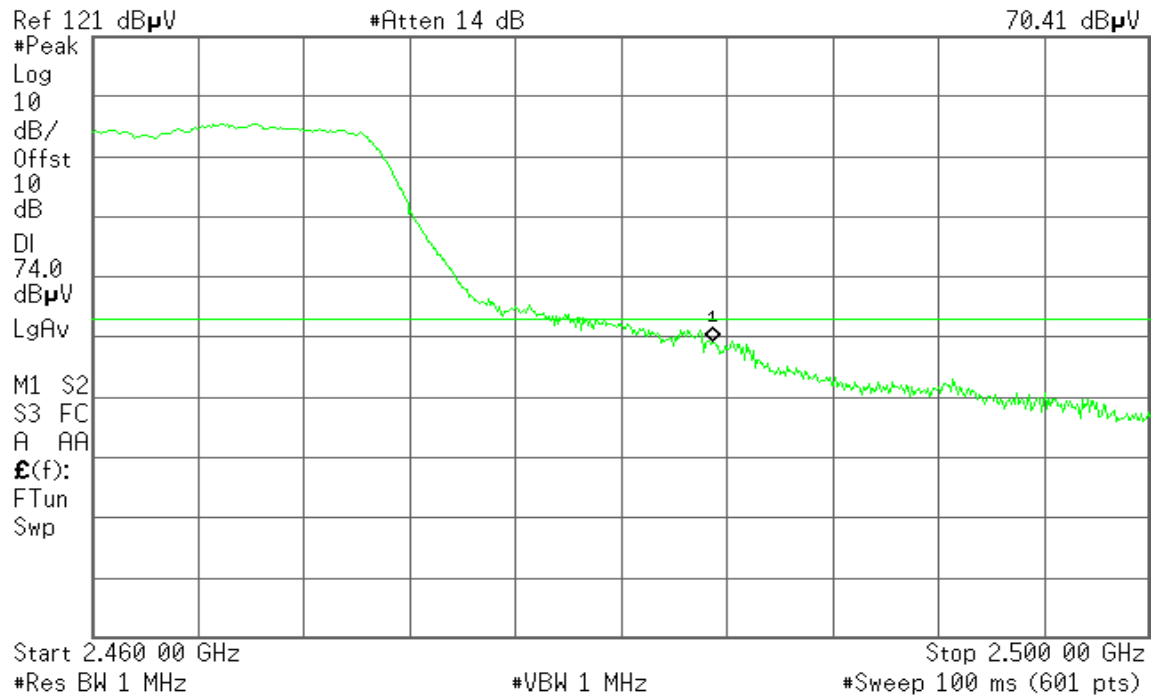
Detector mode: Peak

Polarity: Vertical

Agilent 20:02:59 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
70.41 dB μ V



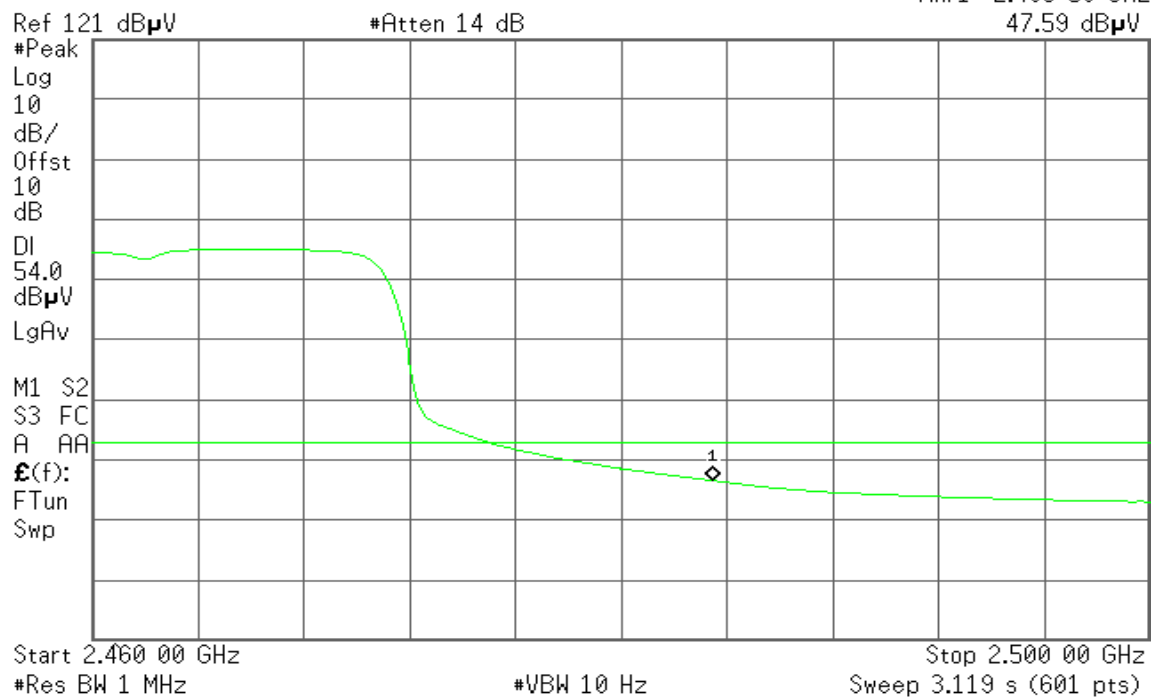
Detector mode: Average

Polarity: Vertical

Agilent 20:04:03 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
47.59 dB μ V





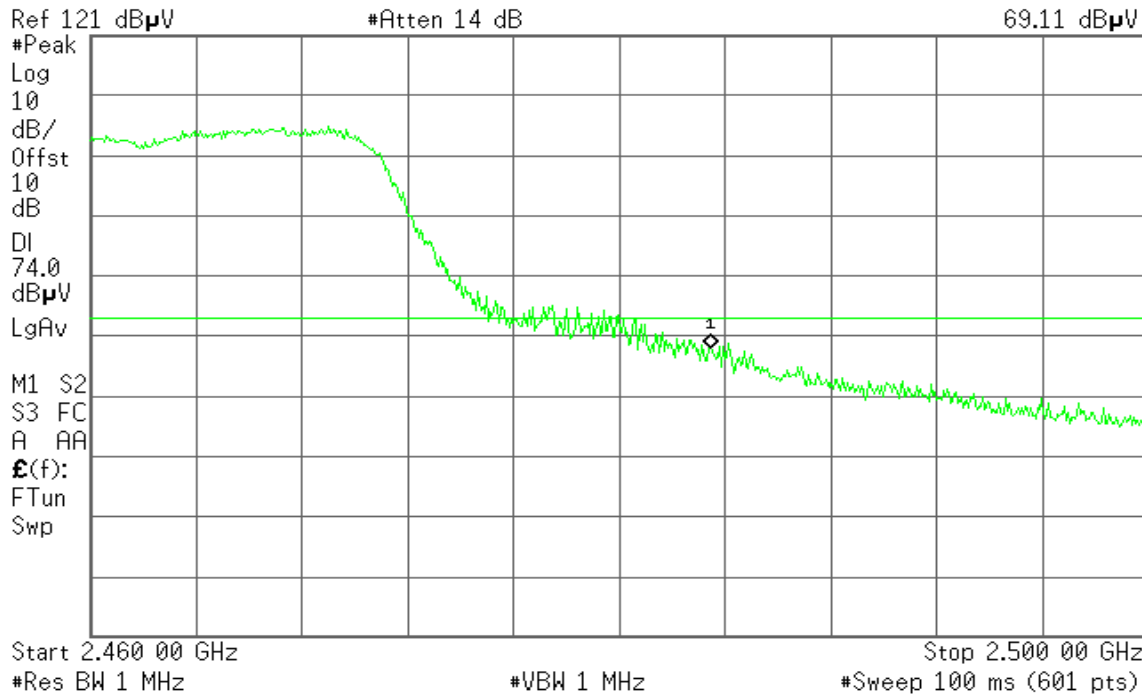
Detector mode: Peak

Polarity: Horizontal

Agilent 20:08:35 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
69.11 dB μ V



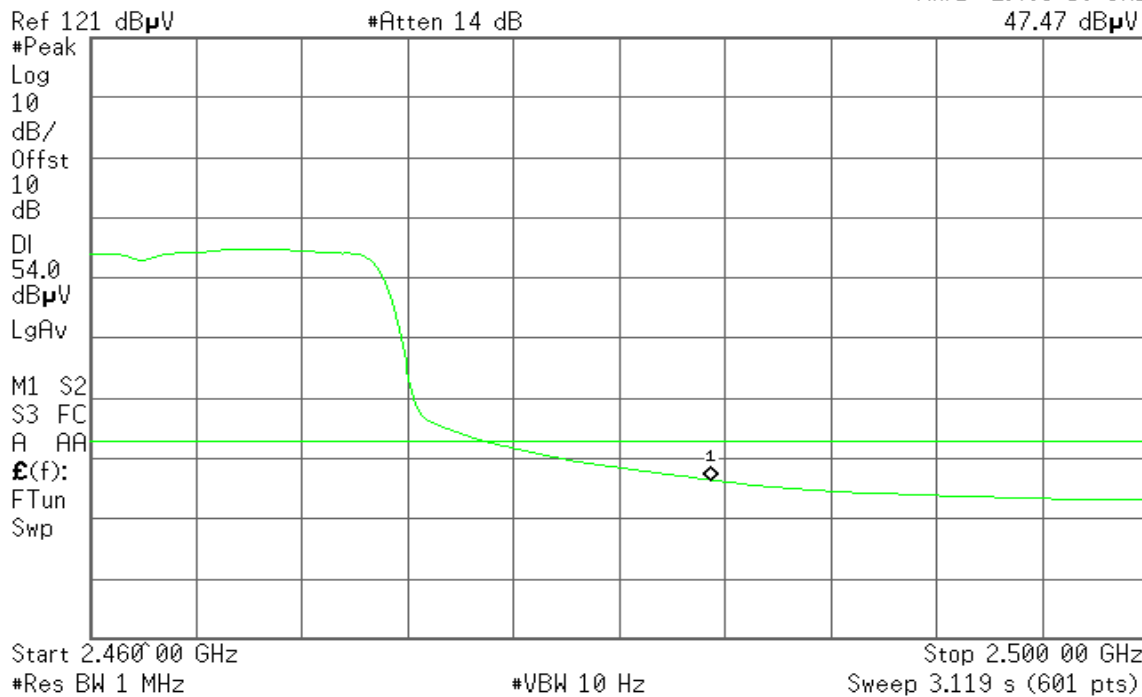
Detector mode: Average

Polarity: Horizontal

Agilent 20:09:10 Jul 27, 2007

R T

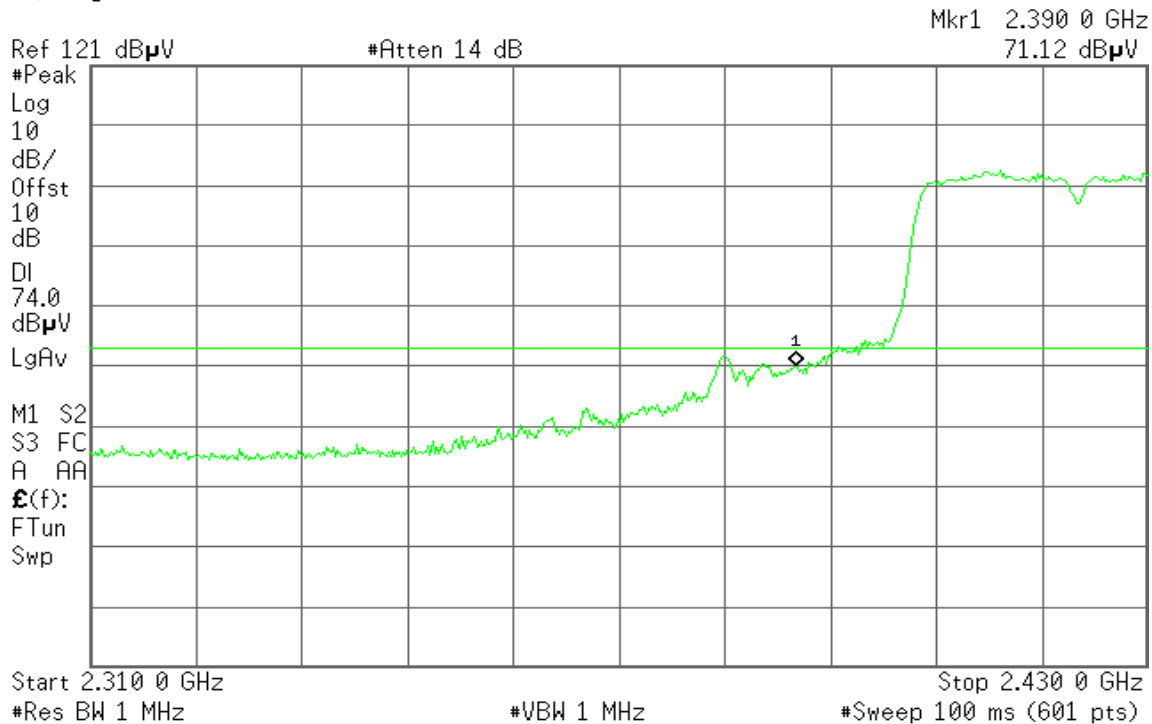
Mkr1 2.483 50 GHz
47.47 dB μ V



**Band Edges (draft 802.11n Wide-40 MHz Channel mode / CH Low)****Detector mode: Peak****Polarity: Vertical**

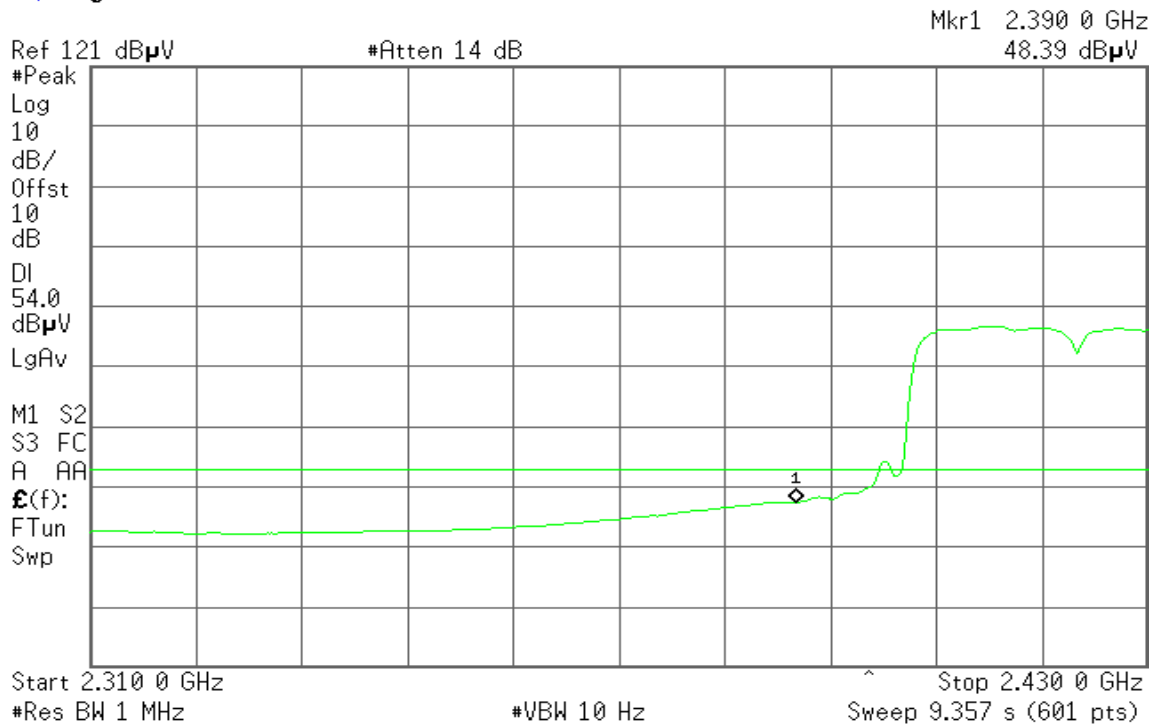
* Agilent 20:24:16 Jul 27, 2007

R T

**Detector mode: Average****Polarity: Vertical**

* Agilent 20:29:41 Jul 27, 2007

R T



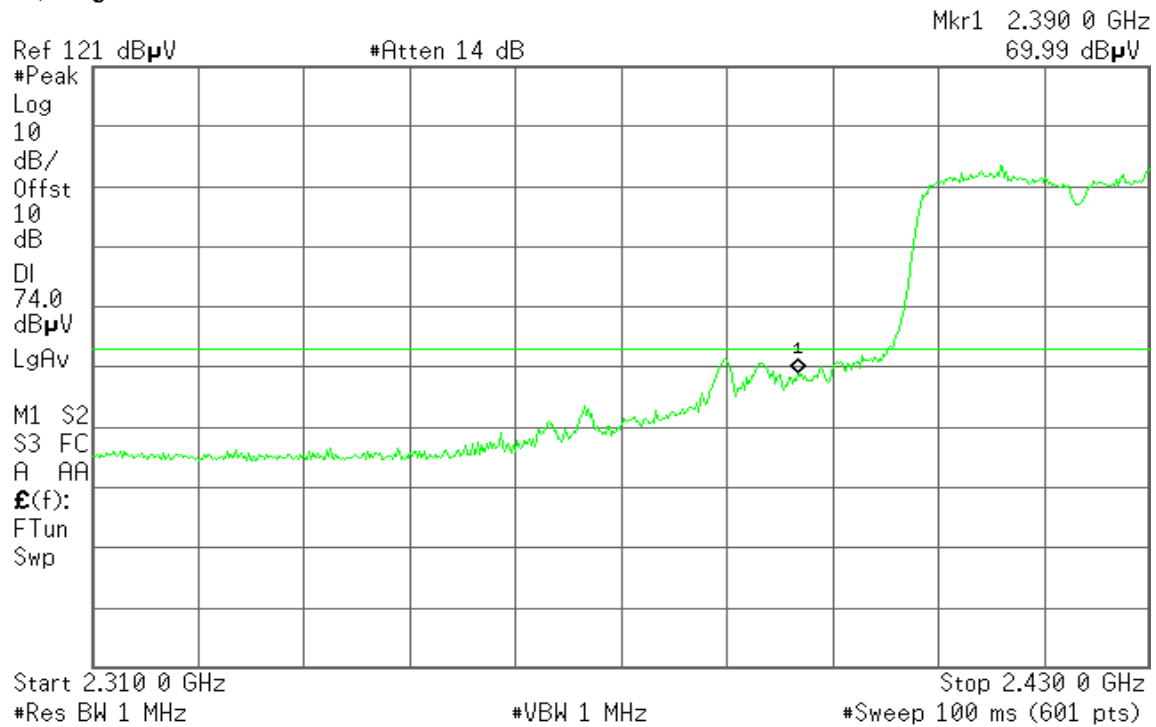


Detector mode: Peak

Polarity: Horizontal

Agilent 20:34:09 Jul 27, 2007

R T

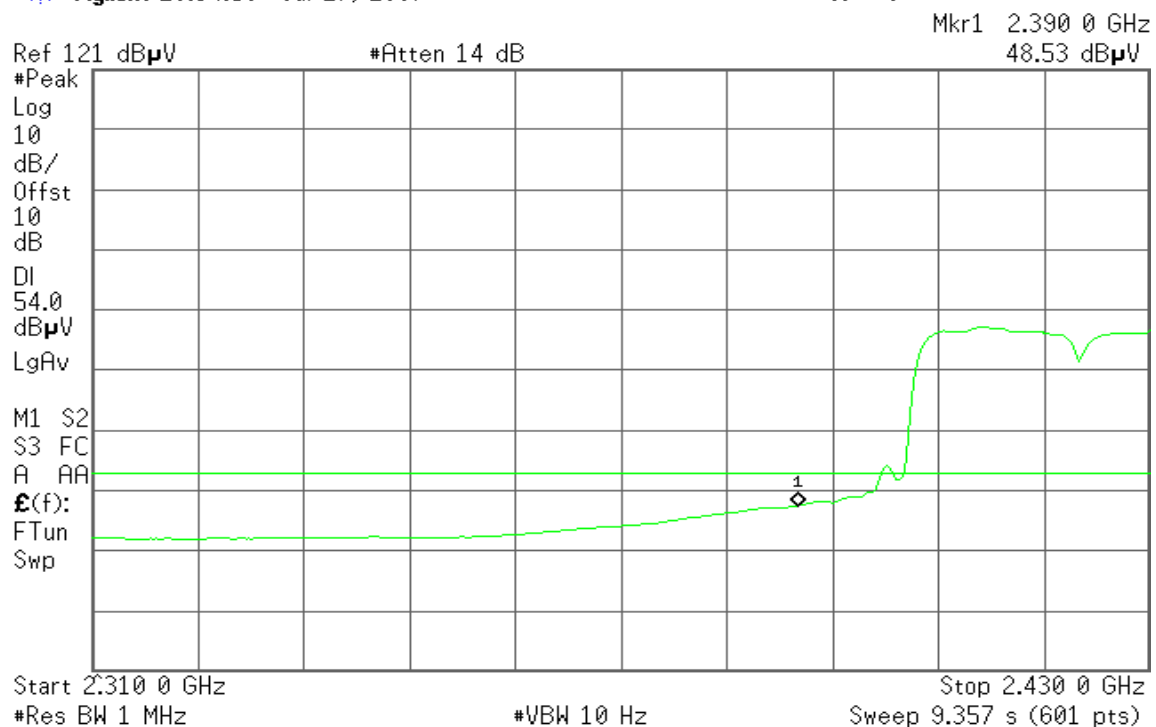


Detector mode: Average

Polarity: Horizontal

Agilent 20:34:56 Jul 27, 2007

R T





Band Edges (draft 802.11n Wide-40 MHz Channel mode / CH High)

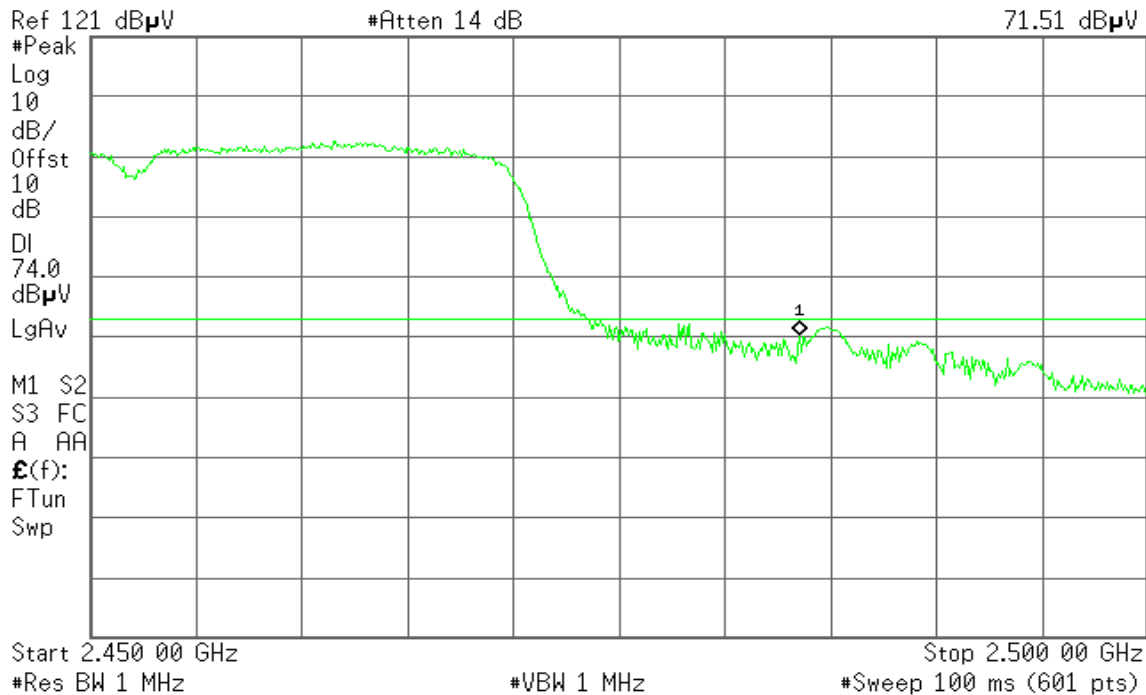
Detector mode: Peak

Polarity: Vertical

Agilent 20:44:43 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
71.51 dB μ V



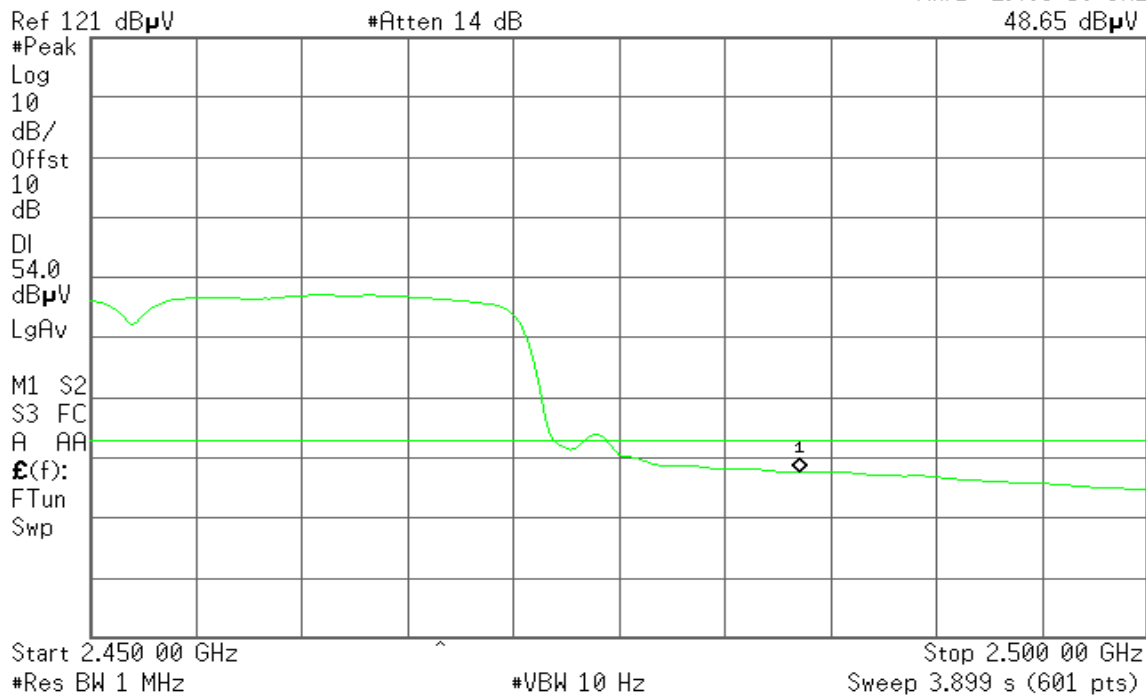
Detector mode: Average

Polarity: Vertical

Agilent 20:45:28 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
48.65 dB μ V





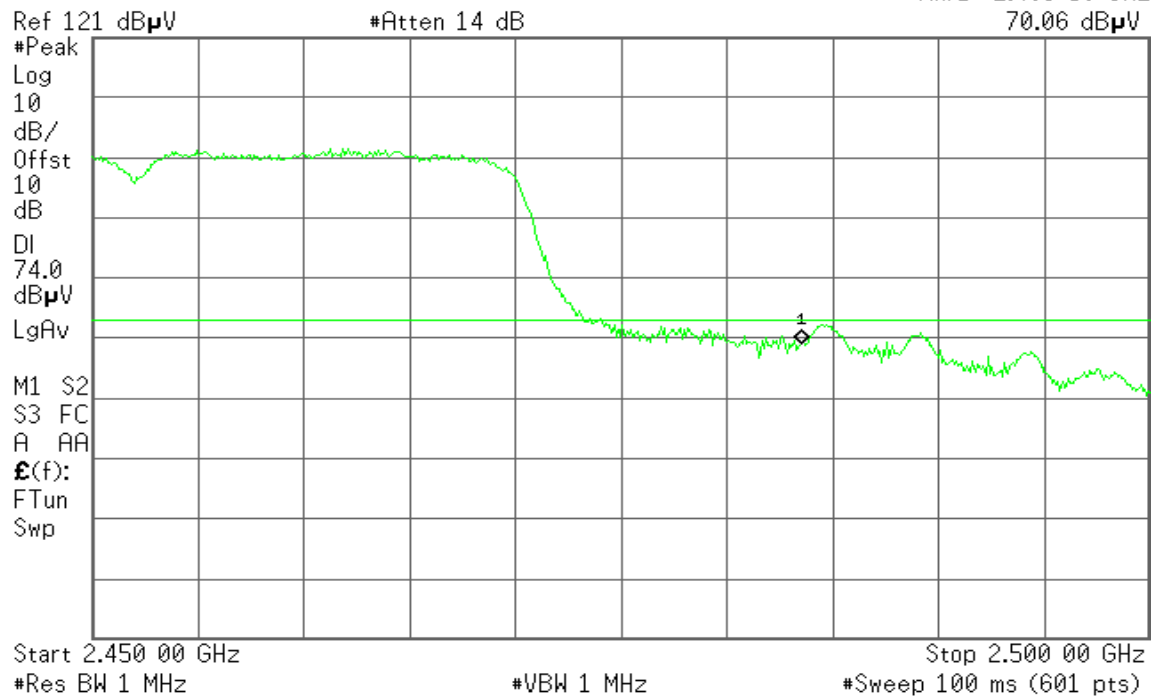
Detector mode: Peak

Polarity: Horizontal

Agilent 20:49:12 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
70.06 dB μ V



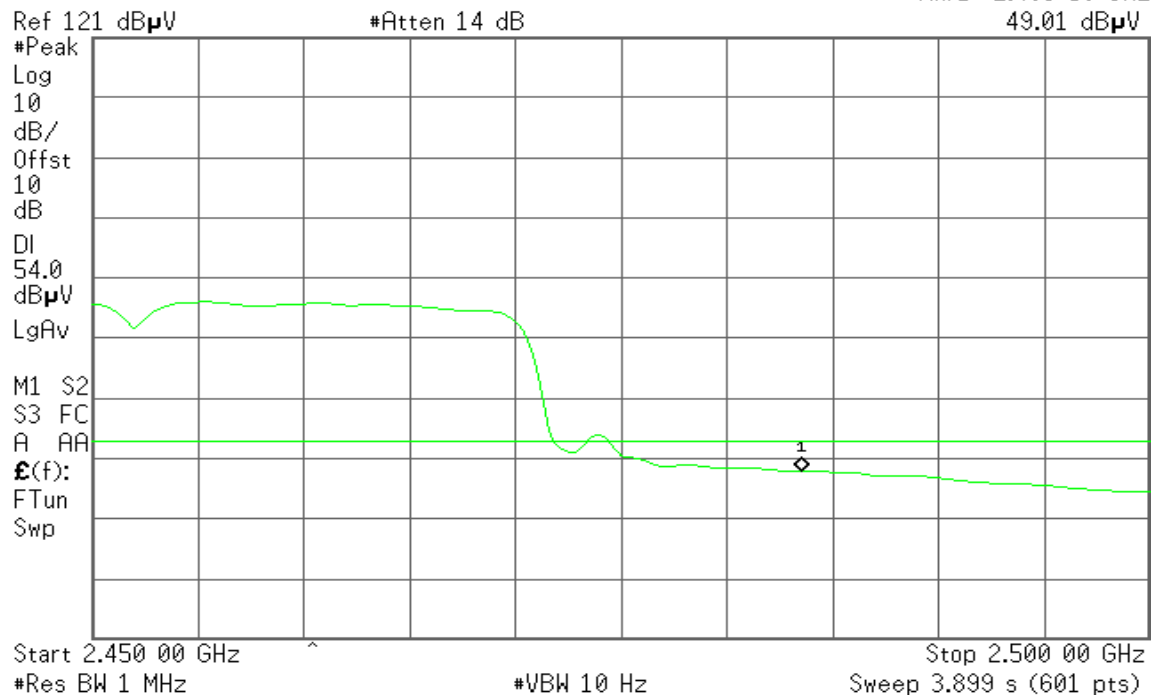
Detector mode: Average

Polarity: Horizontal

Agilent 20:49:53 Jul 27, 2007

R T

Mkr1 2.483 50 GHz
49.01 dB μ V



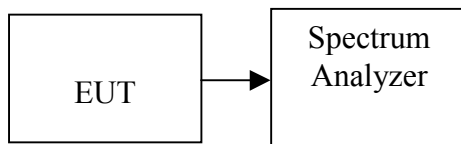


7.5 PEAK POWER SPECTRAL DENSITY

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 = 3kHz, VBW = 10kHz, Span = 300kHz, Sweep=100s.
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 mode**

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-3.57	8.00	PASS
Mid	2437	-7.72		PASS
High	2462	-4.73		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-8.60	8.00	PASS
Mid	2437	-7.55		PASS
High	2462	-7.84		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PSD (dBm)	Chain 1 PSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-9.31	-10.44	-6.83	8.00	PASS
Mid	2437	-10.77	-9.92	-7.31		PASS
High	2462	-10.75	-11.31	-8.01		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PSD (dBm)	Chain 1 PSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	2422	-10.8	-13.17	-8.81	8.00	PASS
Mid	2437	-14.35	-14.14	-11.23		PASS
High	2452	-14.10	-15.36	-11.67		PASS

**Test mode: draft 802.11n Standard-20 MHz Channel mode with combiner**

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-9.00	8.00	PASS
Mid	2437	-9.35		PASS
High	2462	-10.20		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-12.74	8.00	PASS
Mid	2437	-12.03		PASS
High	2462	-11.29		PASS

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	5745	-9.70	8.00	PASS
Mid	5785	-10.75		PASS
High	5825	-10.39		PASS

Test mode: draft 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PSD (dBm)	Chain 1 PSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5745	-12.23	-15.28	-10.48	8.00	PASS
Mid	5785	-13.20	-14.01	-10.58		PASS
High	5825	-13.18	-15.36	-11.12		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Chain 0 PSD (dBm)	Chain 1 PSD (dBm)	PPSD (dBm)	Limit (dBm)	Result
Low	5755	-10.12	-8.83	-6.42	8.00	PASS
High	5795	-12.47	-10.18	-8.17		PASS

**Test mode: draft 802.11n Standard-20 MHz Channel mode with combiner**

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-8.49	8.00	PASS
Mid	2437	-10.41		PASS
High	2462	-11.76		PASS

Test mode: draft 802.11n Wide-40 MHz Channel mode with combiner

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	5755	-13.67	8.00	PASS
High	5795	-14.19		PASS

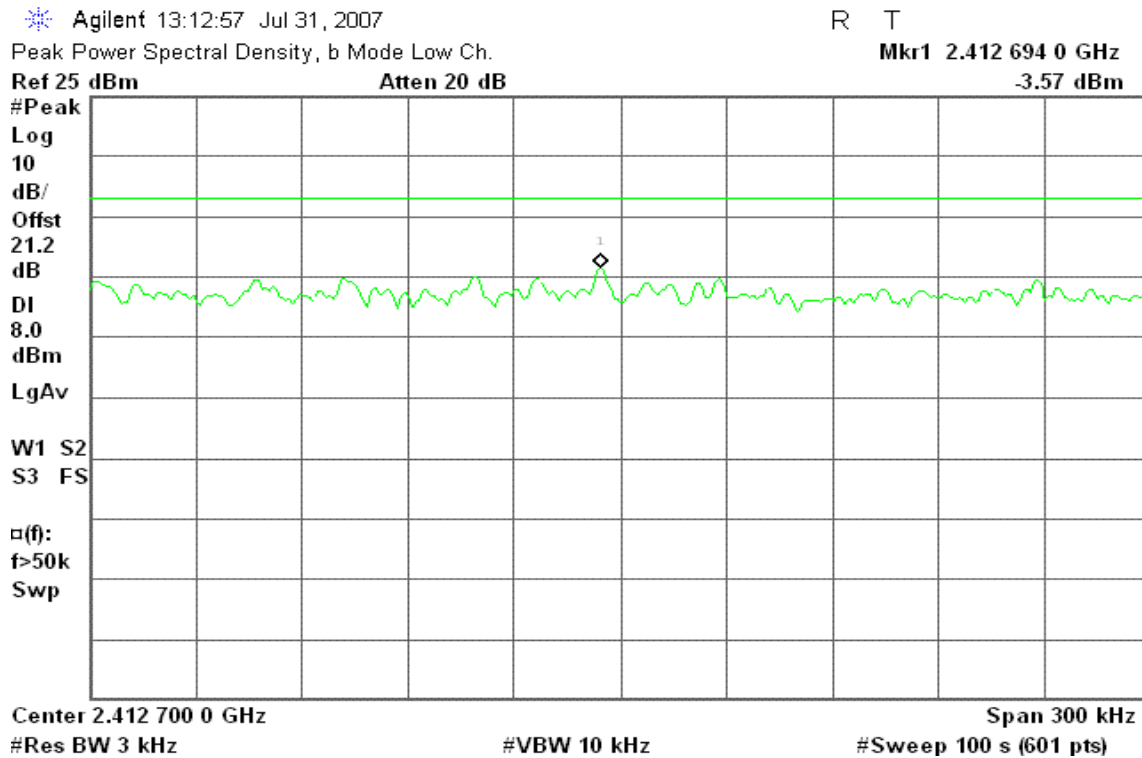
Remark: Total PPSD (dBm) = $10 * \text{LOG}(10^{(\text{Chain 0 PPSD} / 10)} + 10^{(\text{Chain 1 PPSD} / 10)})$



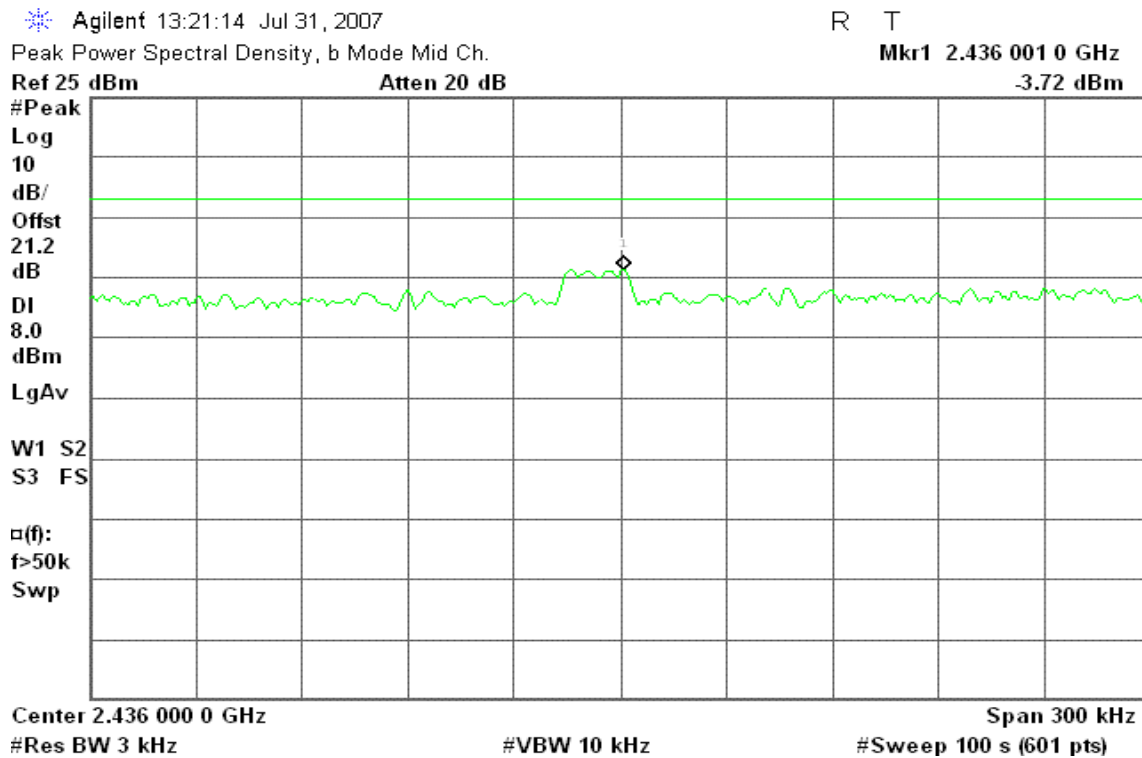
Test Plot

IEEE 802.11b mode

PPSD (CH Low)



PPSD (CH Mid)





PPSD (CH High)

Agilent 13:29:25 Jul 31, 2007

R T

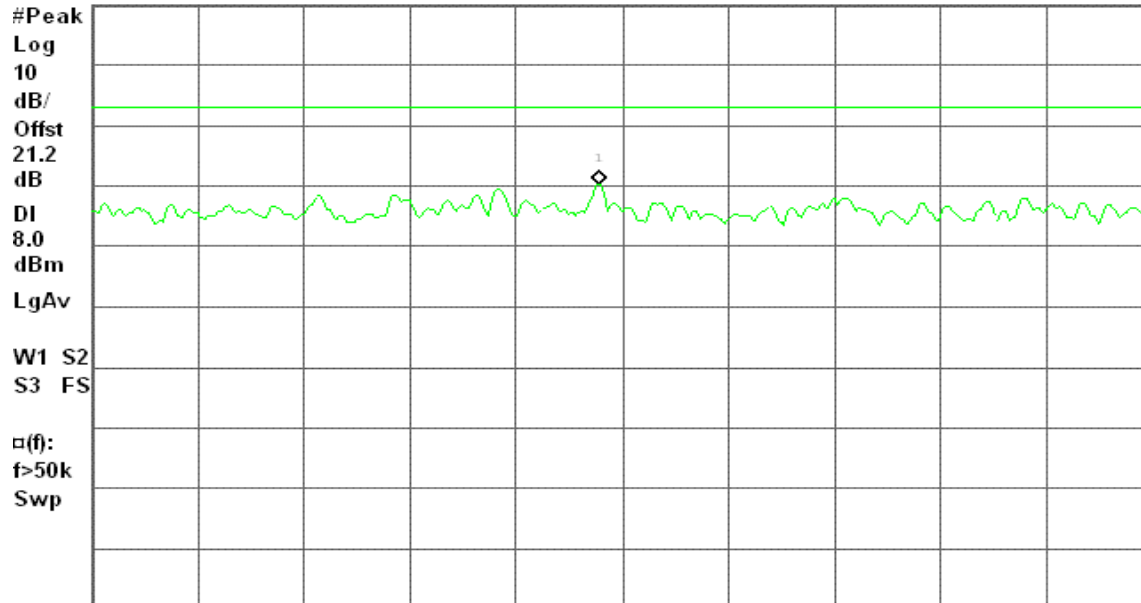
Peak Power Spectral Density, b Mode High Ch.

Mkr1 2.460 293 0 GHz

Ref 25 dBm

Atten 20 dB

-4.73 dBm



Center 2.460 300 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

IEEE 802.11g mode

PPSD (CH Low)

Agilent 13:35:39 Jul 31, 2007

R T

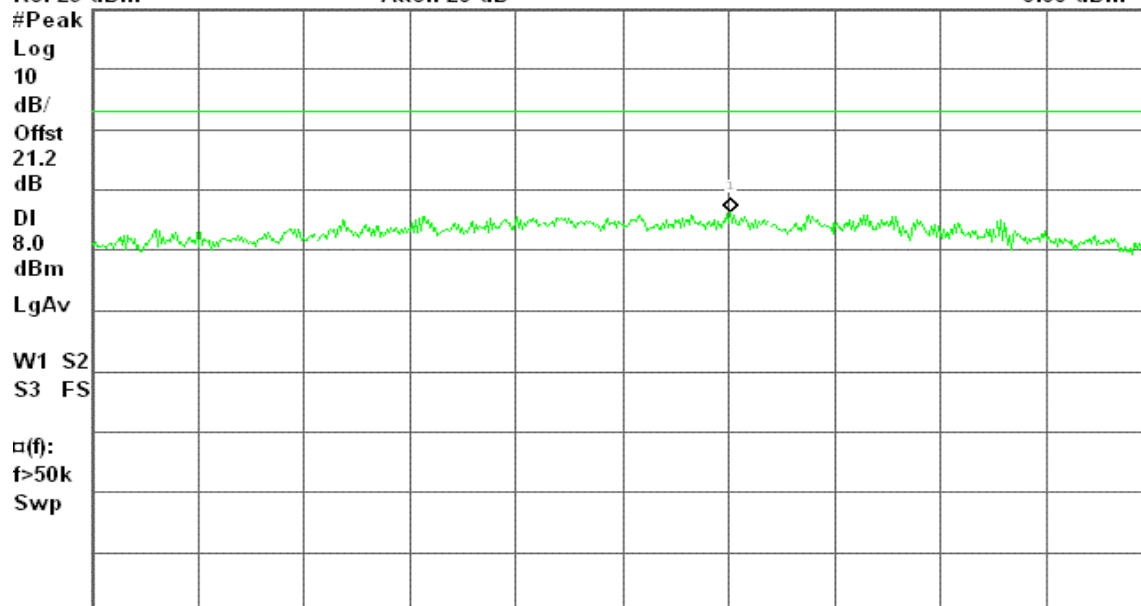
Peak Power Spectral Density, g Mode Low Ch.

Mkr1 2.417 330 7 GHz

Ref 25 dBm

Atten 20 dB

-8.60 dBm



Center 2.417 300 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH Mid)

Agilent 13:42:37 Jul 31, 2007

R T

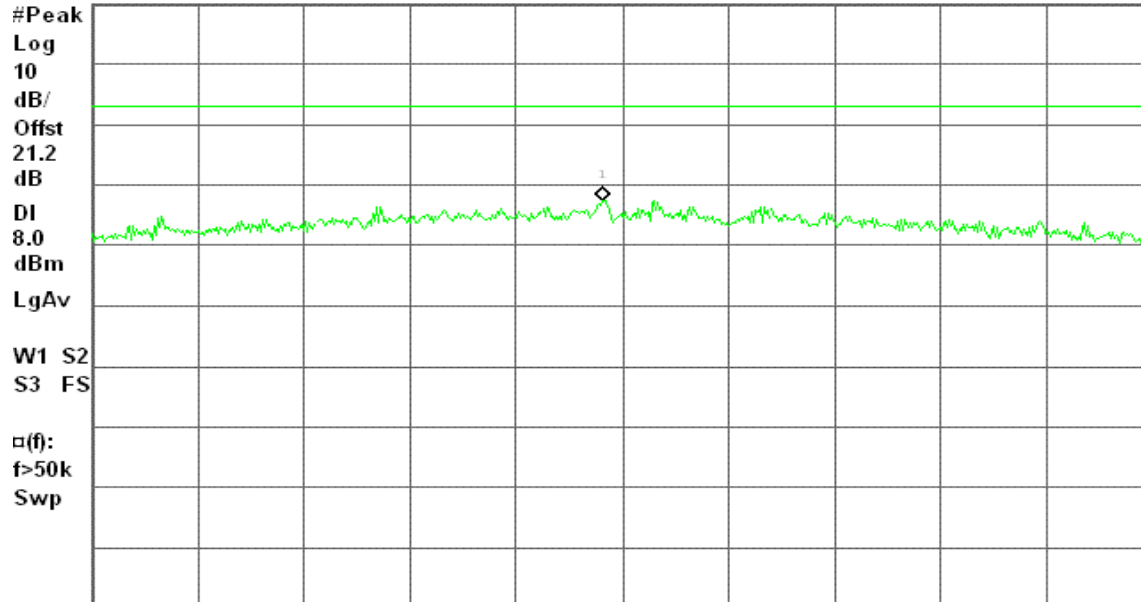
Peak Power Spectral Density, g Mode Mid Ch.

Mkr1 2.441 994 0 GHz

Ref 25 dBm

Atten 20 dB

-7.55 dBm



Center 2.442 000 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH High)

Agilent 13:52:30 Jul 31, 2007

R T

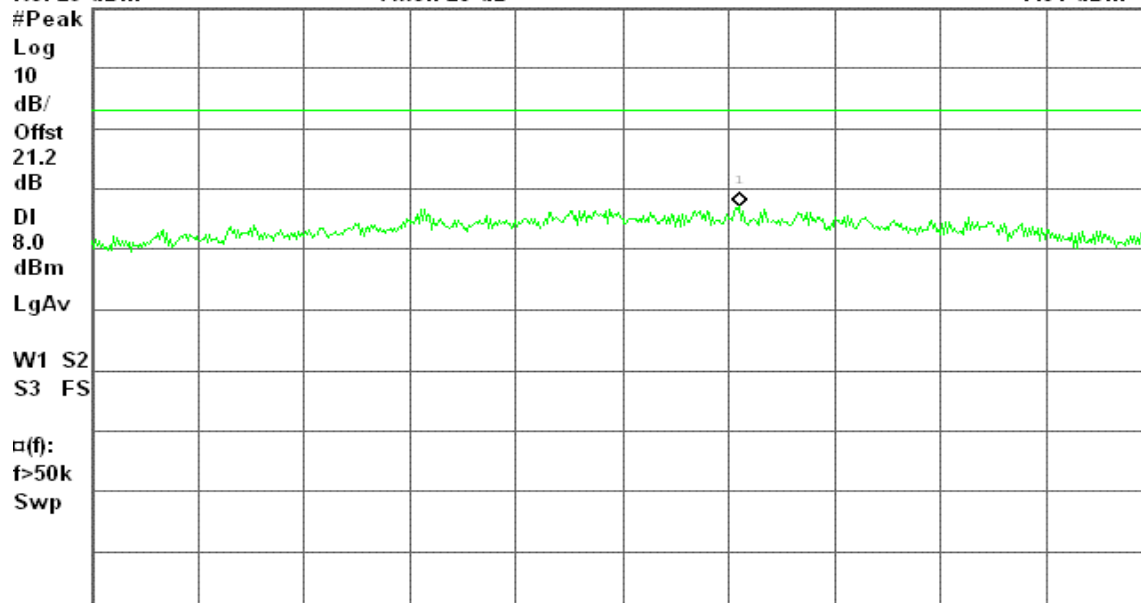
Peak Power Spectral Density, g Mode High Ch.

Mkr1 2.457 333 1 GHz

Ref 25 dBm

Atten 20 dB

-7.84 dBm



Center 2.457 300 0 GHz

Span 300 kHz

#Res BW 3 kHz

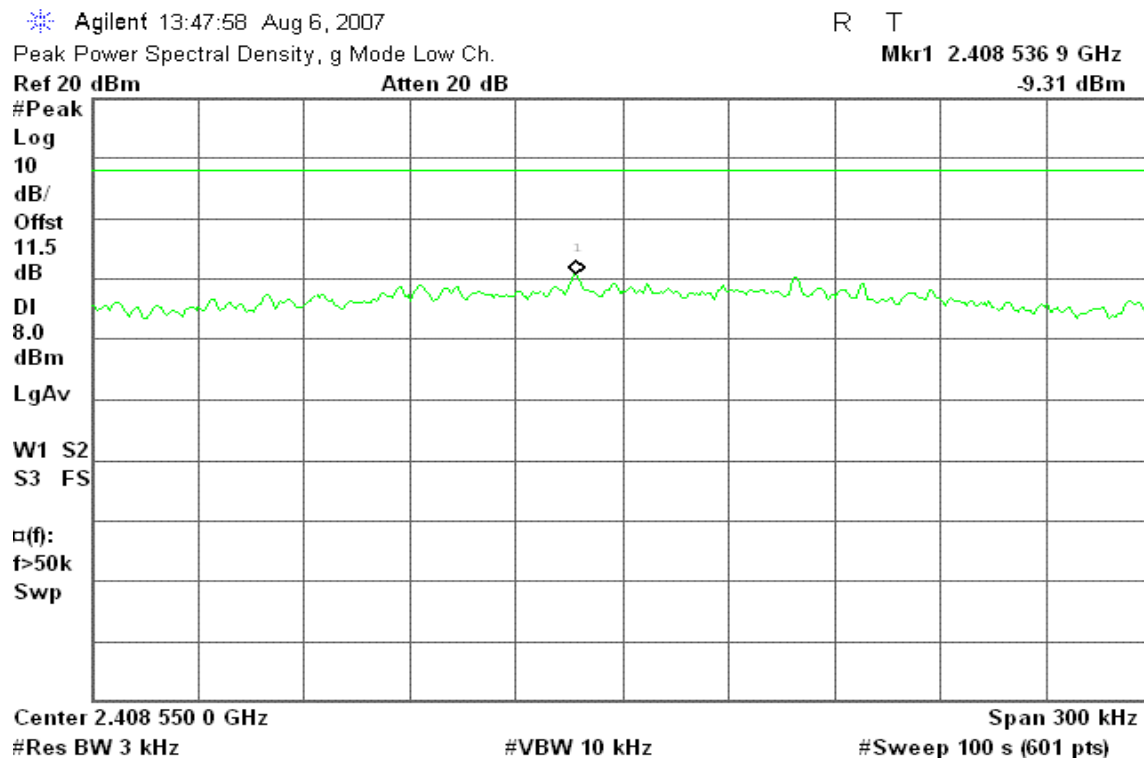
#VBW 10 kHz

#Sweep 100 s (601 pts)

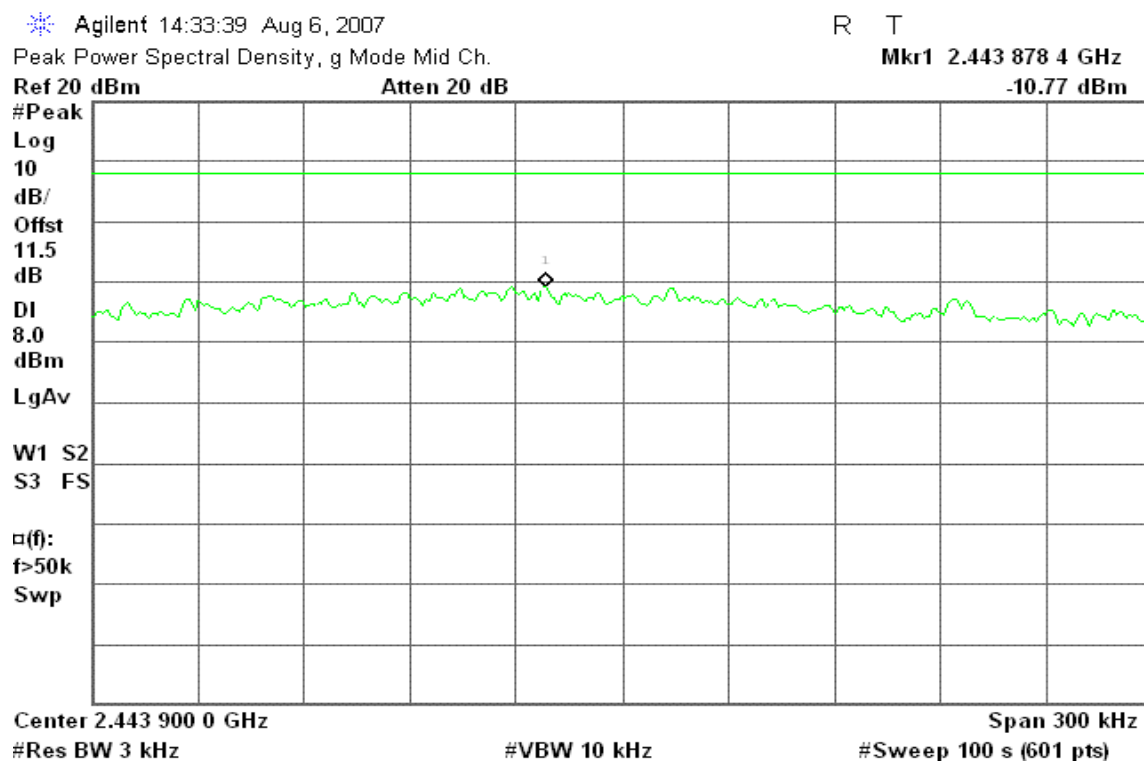


draft 802.11n Standard-20 MHz Channel mode / Chain 0

PPSD (CH Low)



PPSD (CH Mid)





PPSD (CH High)

* Agilent 14:42:35 Aug 6, 2007

Peak Power Spectral Density, g Mode High Ch.

R T

Mkr1 2.465 433 4 GHz

Ref 20 dBm

Atten 20 dB

-10.75 dBm

#Peak

Log

10

dB/

Offst

11.5

dB

DI

8.0

dBm

LgAv

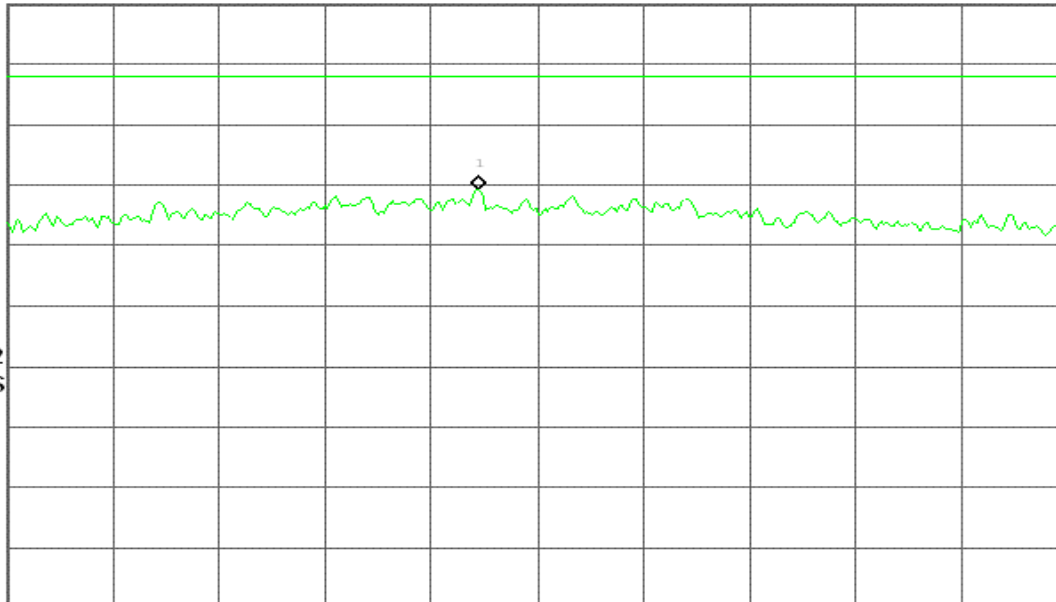
W1 S2

S3 FS

□(f):

f>50k

Swp



Center 2.465 450 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

draft 802.11n Standard-20 MHz Channel mode / Chain 1

PPSD (CH Low)

* Agilent 15:05:42 Aug 6, 2007

Peak Power Spectral Density, g Mode Low Ch.

R T

Mkr1 2.406 672 4 GHz

Ref 20 dBm

Atten 20 dB

-10.44 dBm

#Peak

Log

10

dB/

Offst

11.5

dB

DI

8.0

dBm

LgAv

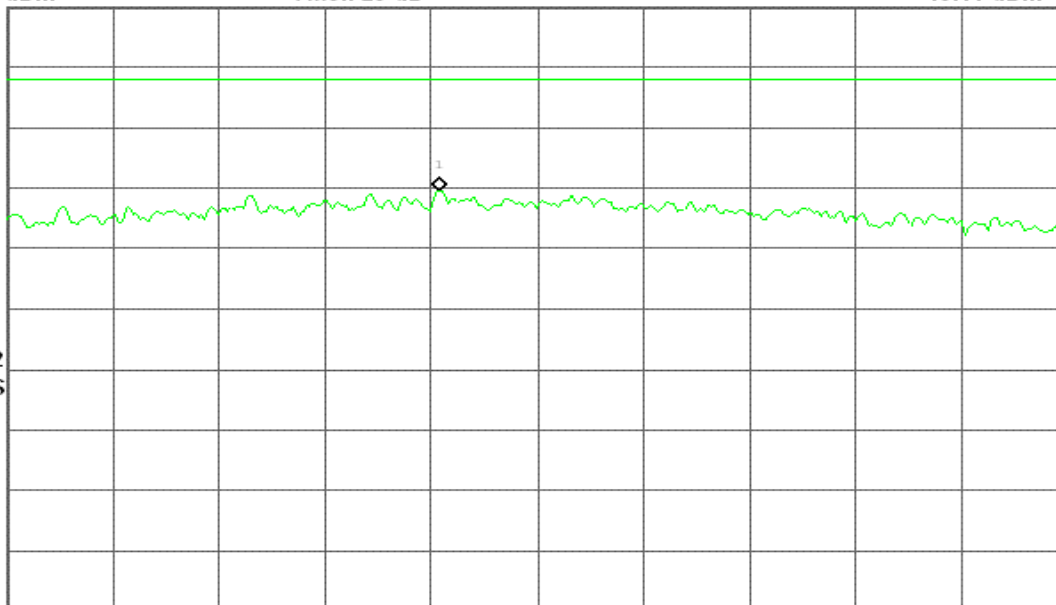
W1 S2

S3 FS

□(f):

f>50k

Swp



Center 2.406 700 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH Mid)

Agilent 14:59:46 Aug 6, 2007

R T

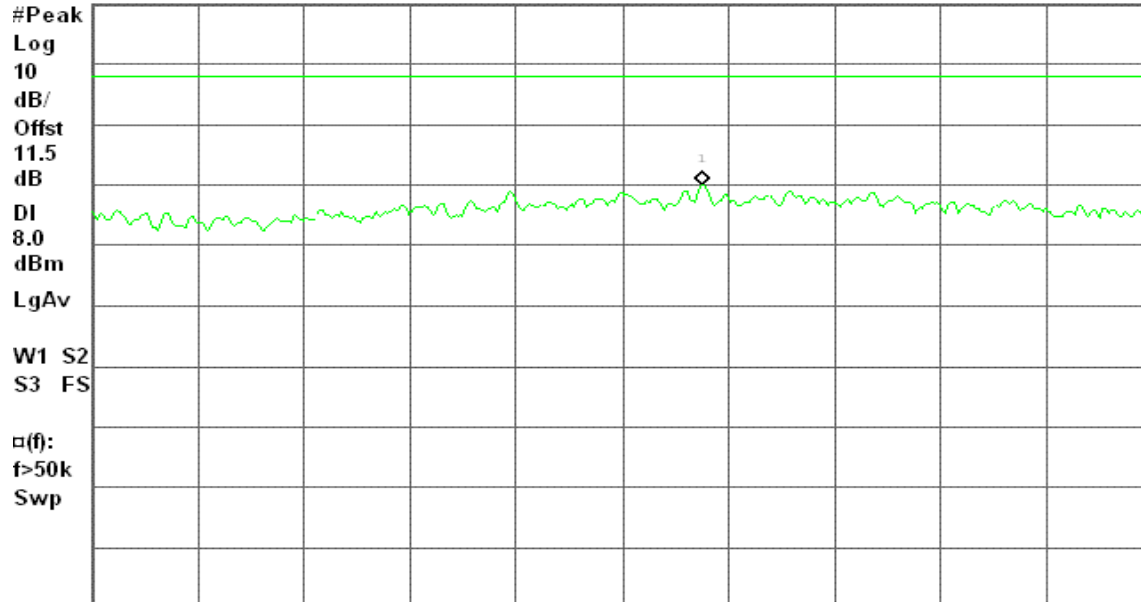
Peak Power Spectral Density, g Mode Mid Ch.

Mkr1 2.435 422 6 GHz

Ref 20 dBm

Atten 20 dB

-9.92 dBm



Center 2.435 400 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH High)

Agilent 14:51:56 Aug 6, 2007

R T

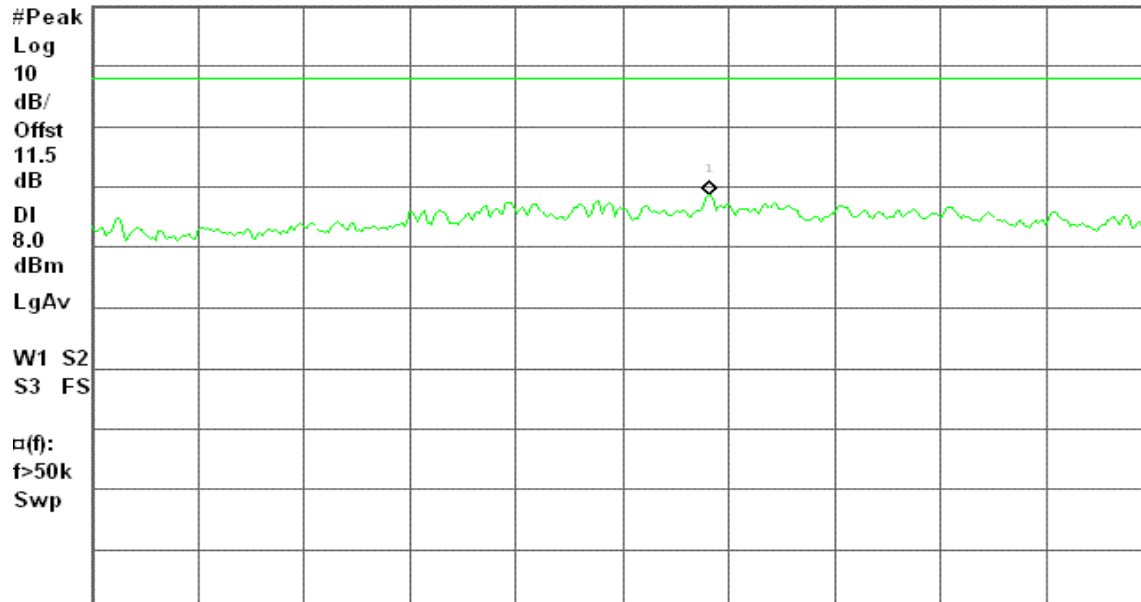
Peak Power Spectral Density, g Mode High Ch.

Mkr1 2.466 674 6 GHz

Ref 20 dBm

Atten 20 dB

-11.31 dBm



Center 2.466 650 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



draft 802.11n Wide-40 MHz Channel mode / Chain 0

PPSD (CH Low)

Agilent 16:28:50 Aug 6, 2007

R T

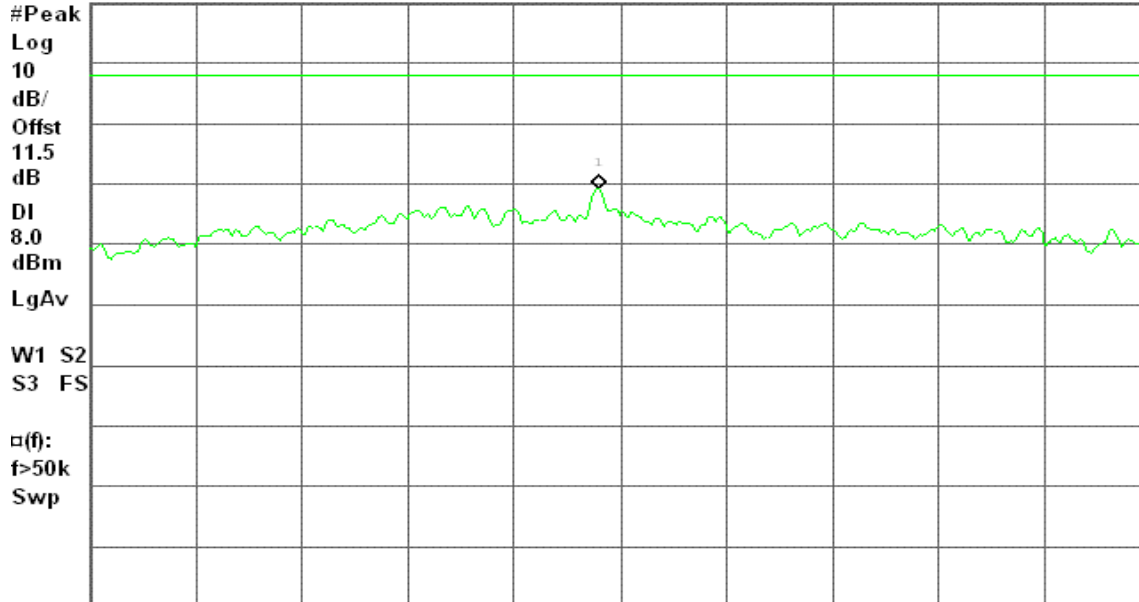
Peak Power Spectral Density, 40 Mode Low Ch.

Mkr1 2.430 743 5 GHz

Ref 20 dBm

Atten 20 dB

-10.80 dBm



Center 2.430 750 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH Mid)

Agilent 16:22:32 Aug 6, 2007

R T

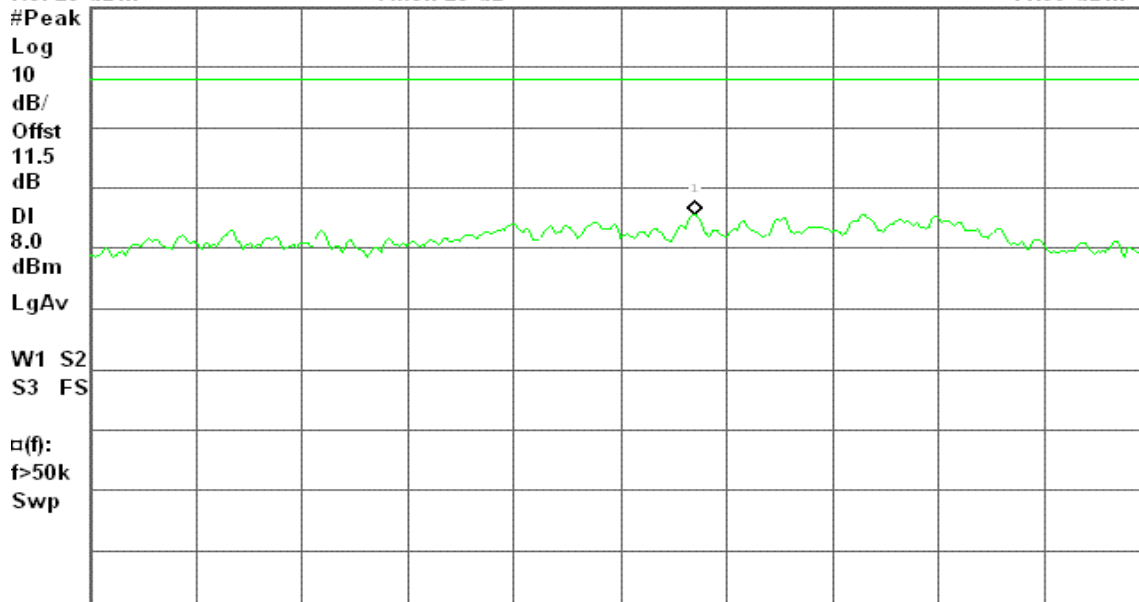
Peak Power Spectral Density, 40 Mode Mid Ch.

Mkr1 2.422 921 1 GHz

Ref 20 dBm

Atten 20 dB

-14.35 dBm



Center 2.422 900 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH High)

Agilent 16:16:04 Aug 6, 2007

R T

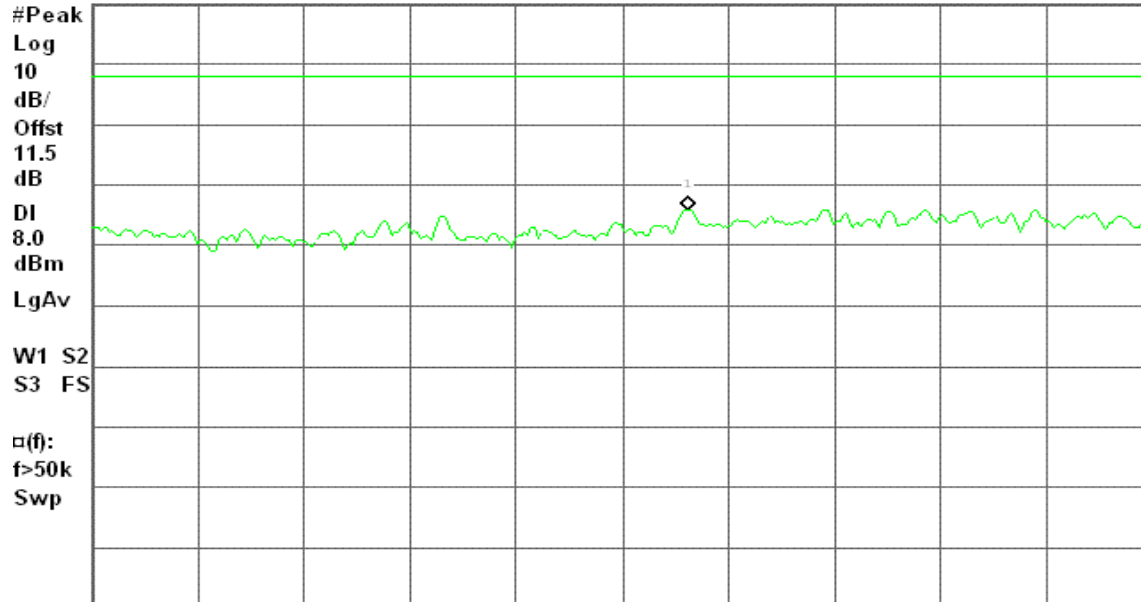
Peak Power Spectral Density, 40 Mode High Ch

Mkr1 2.441 618 6 GHz

Ref 20 dBm

Atten 20 dB

-14.10 dBm



Center 2.441 600 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 1

PPSD (CH Low)

Agilent 16:44:35 Aug 6, 2007

R T

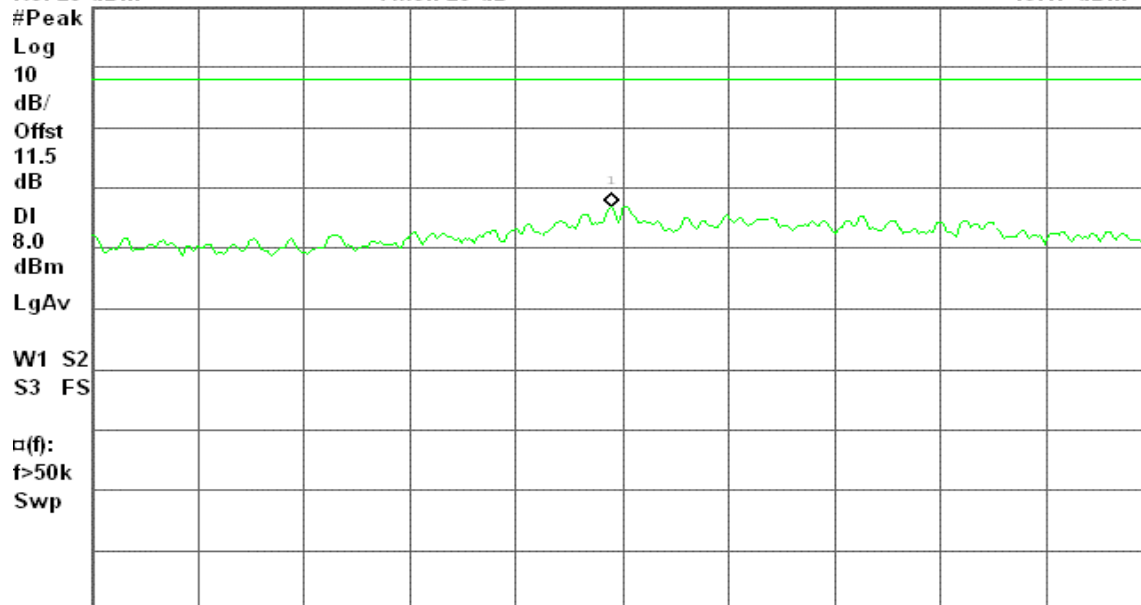
Peak Power Spectral Density, 40 Mode Low Ch.

Mkr1 2.430 696 5 GHz

Ref 20 dBm

Atten 20 dB

-13.17 dBm



Center 2.430 700 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH Mid)

Agilent 16:51:52 Aug 6, 2007

R T

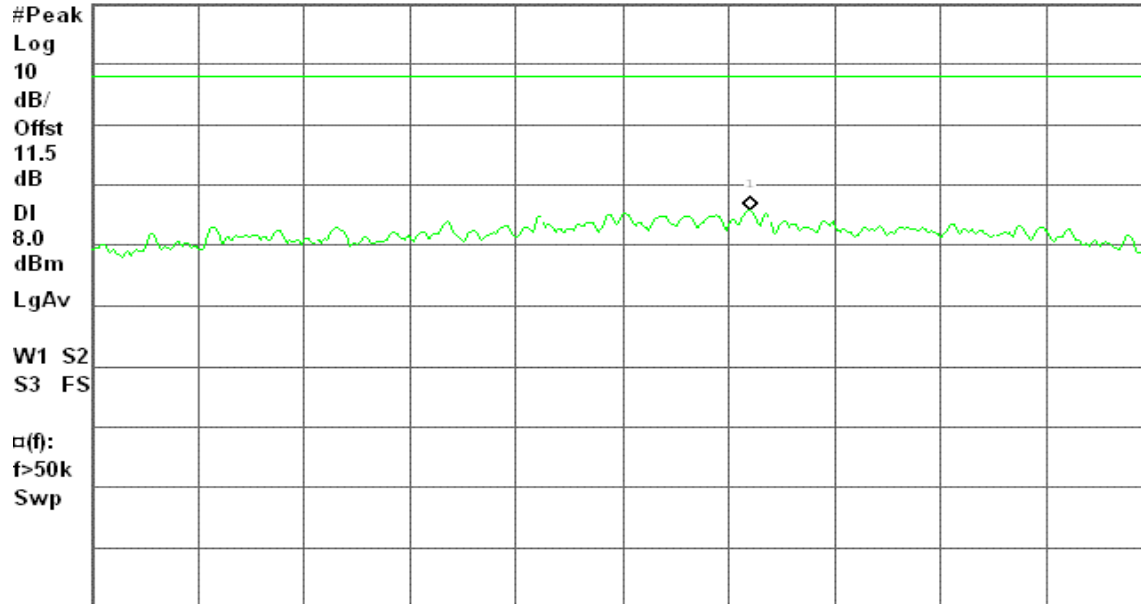
Peak Power Spectral Density, 40 Mode Mid Ch.

Mkr1 2.425 136 1 GHz

Ref 20 dBm

Atten 20 dB

-14.14 dBm



Center 2.425 100 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH High)

Agilent 16:58:10 Aug 6, 2007

R T

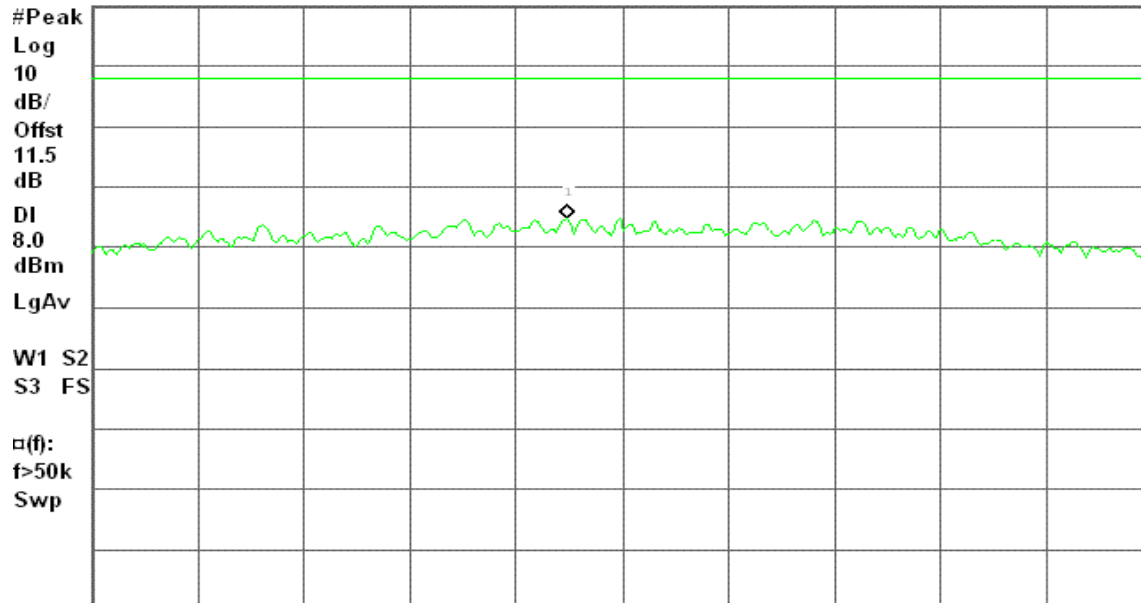
Peak Power Spectral Density, 40 Mode High Ch

Mkr1 2.457 284 4 GHz

Ref 20 dBm

Atten 20 dB

-15.36 dBm



Center 2.457 300 0 GHz

Span 300 kHz

#Res BW 3 kHz

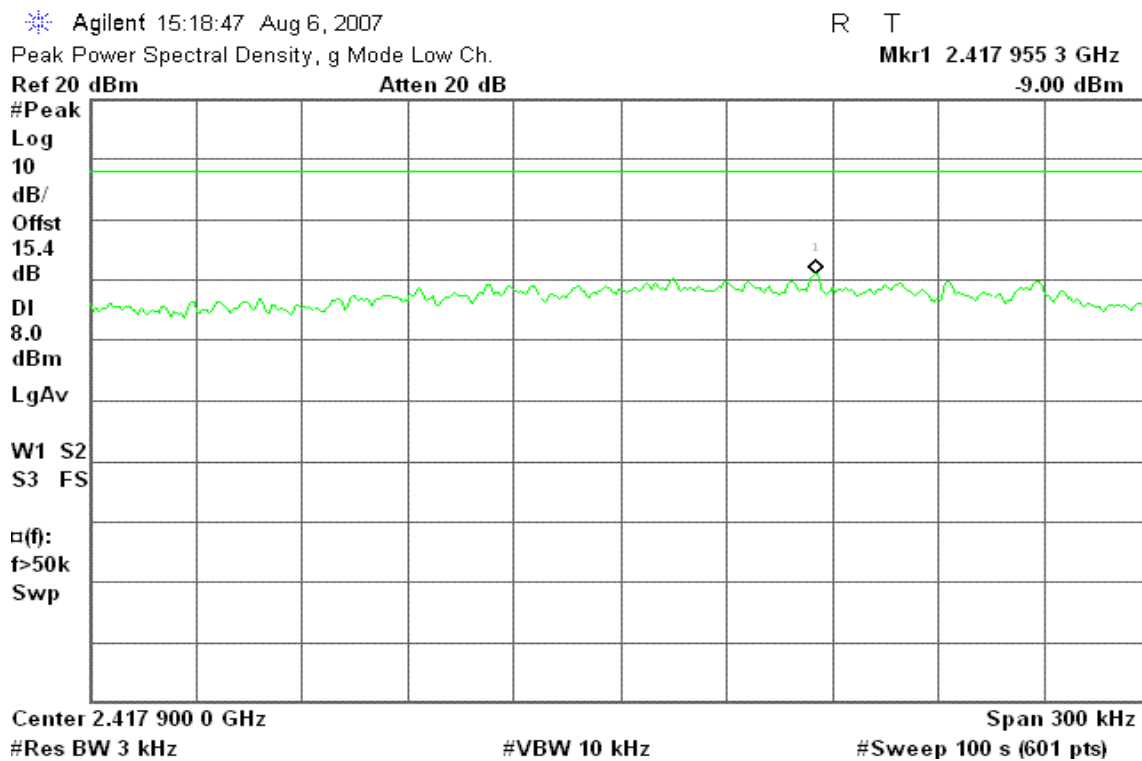
#VBW 10 kHz

#Sweep 100 s (601 pts)

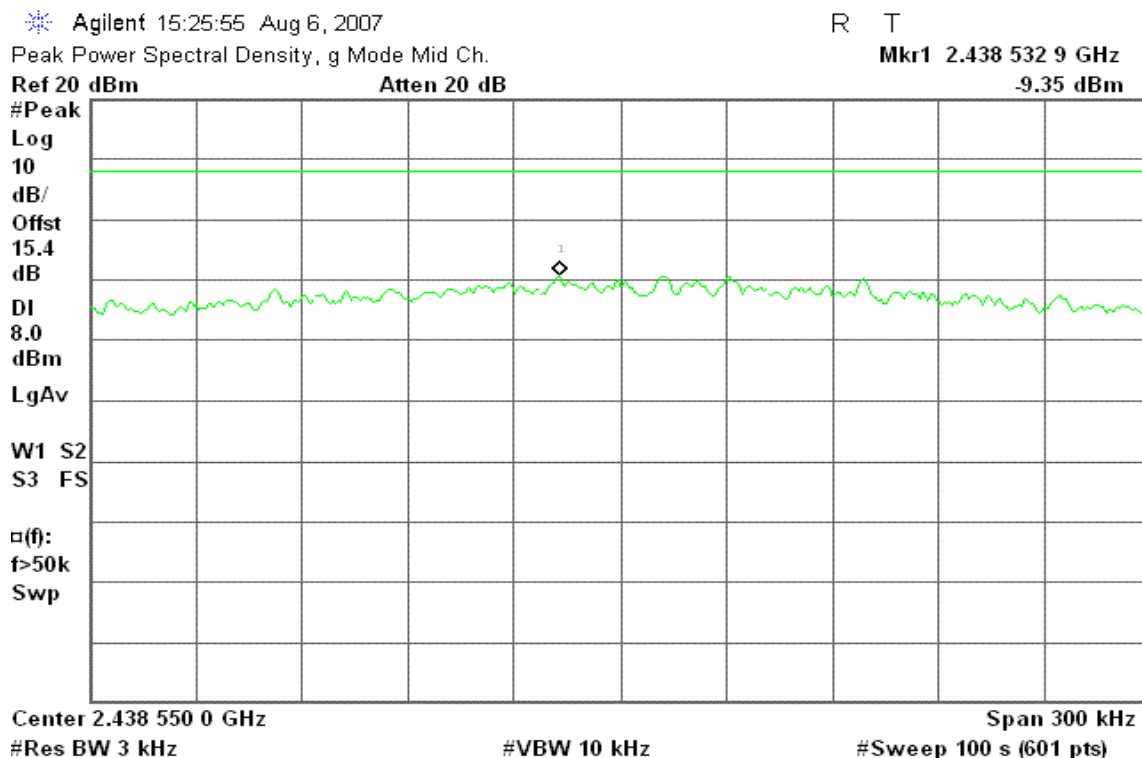


draft 802.11n Standard-20 MHz Channel mode with combiner

PPSD (CH Low)

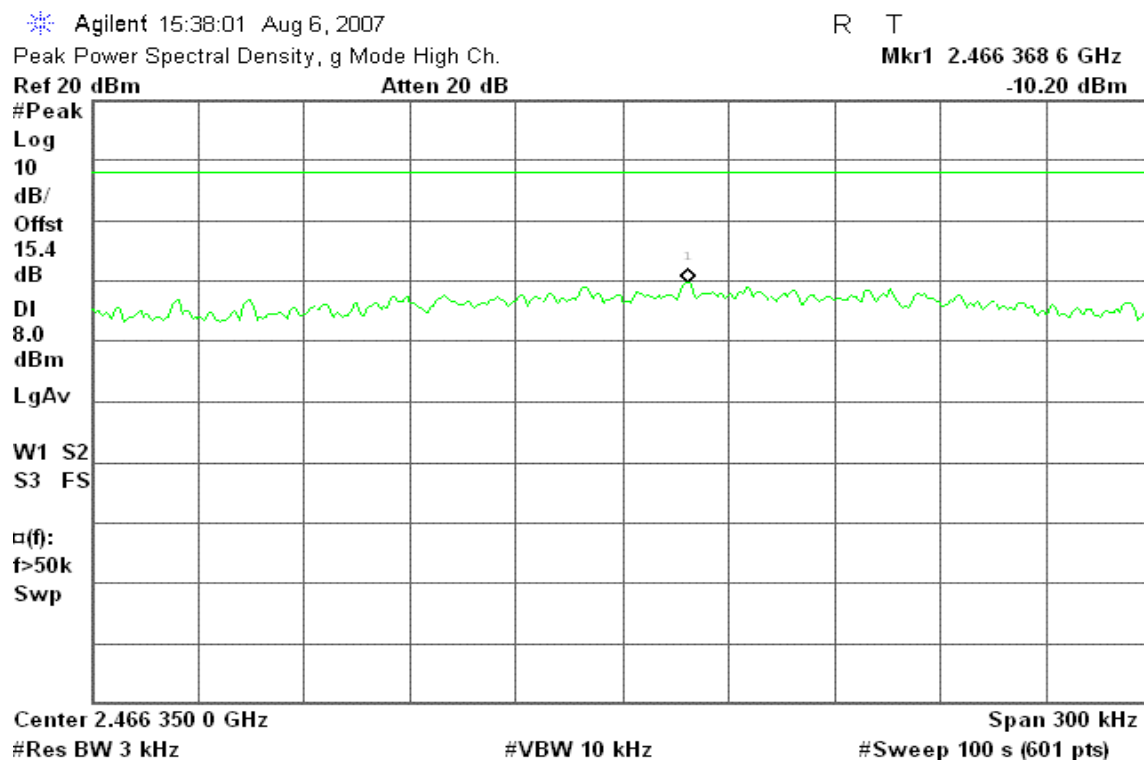


PPSD (CH Mid)

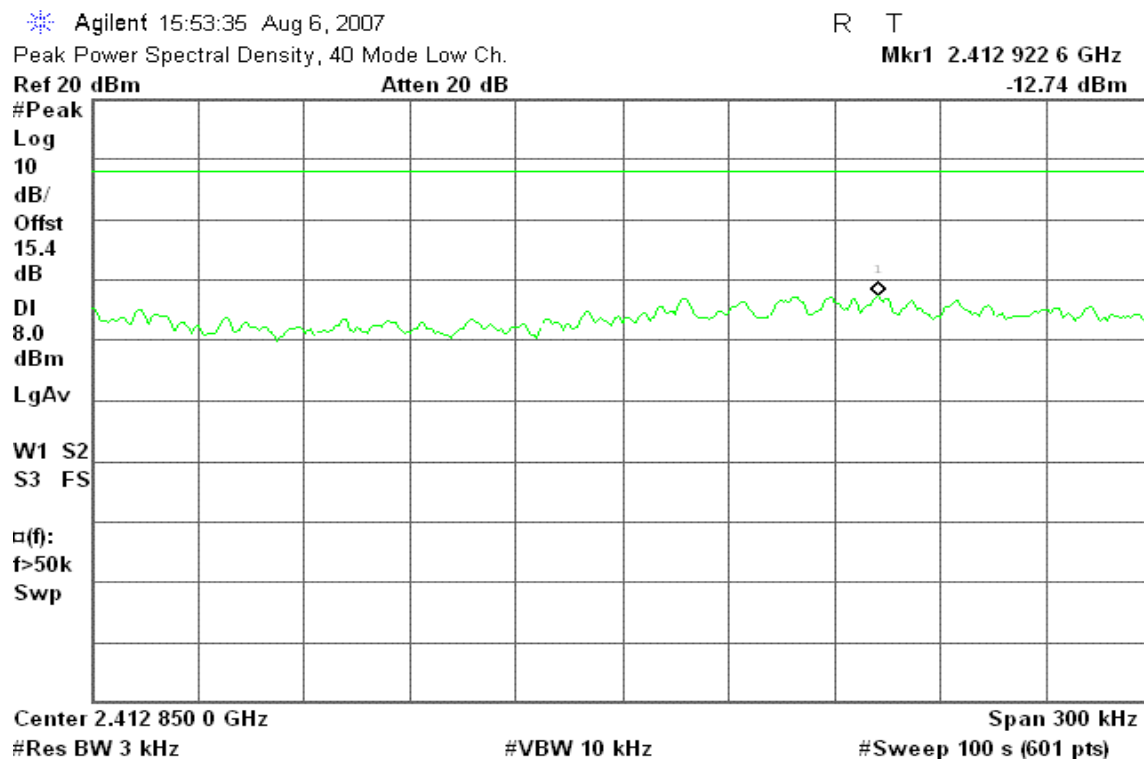




PPSD (CH High)

draft 802.11n Wide-40 MHz Channel mode with combiner

PPSD (CH Low)





PPSD (CH Mid)

Agilent 16:00:40 Aug 6, 2007

R T

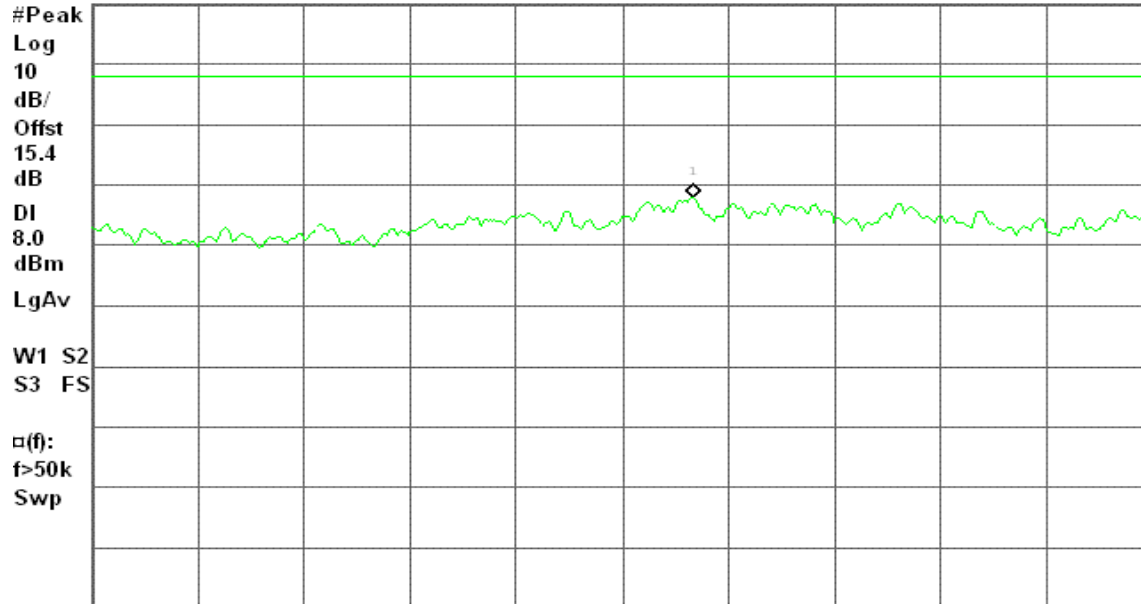
Peak Power Spectral Density, 40 Mode Mid Ch.

Mkr1 2.449 470 1 GHz

Ref 20 dBm

Atten 20 dB

-12.03 dBm



Center 2.449 450 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH High)

Agilent 16:06:35 Aug 6, 2007

R T

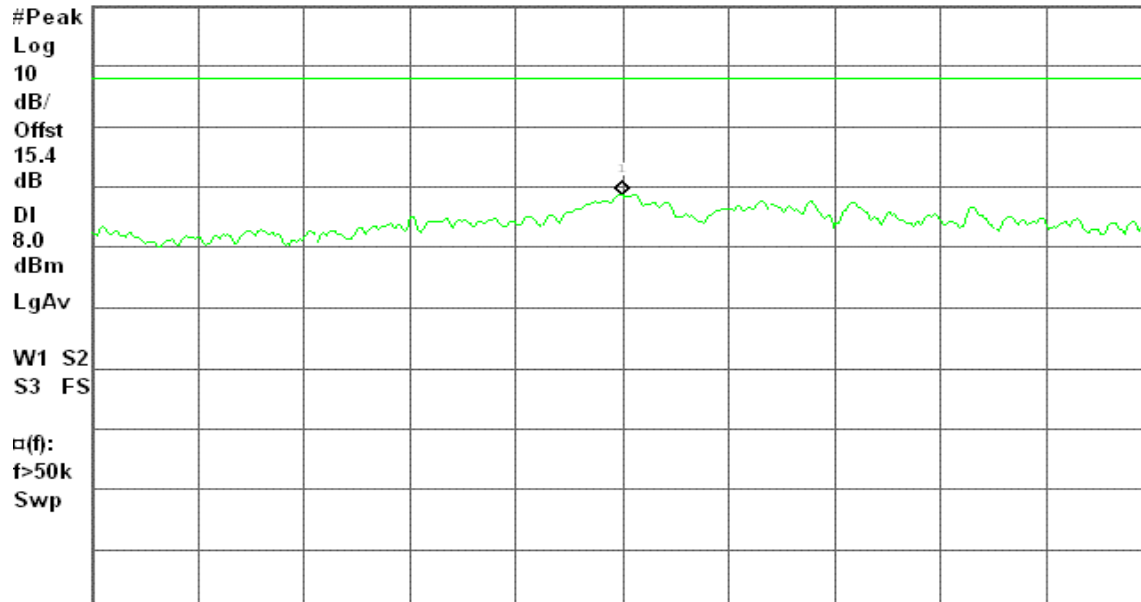
Peak Power Spectral Density, 40 Mode High Ch

Mkr1 2.440 699 5 GHz

Ref 20 dBm

Atten 20 dB

-11.29 dBm



Center 2.440 700 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

**IEEE 802.11a mode:****PPSD (CH Low)**

Agilent 13:31:16 Aug 7, 2007

R T

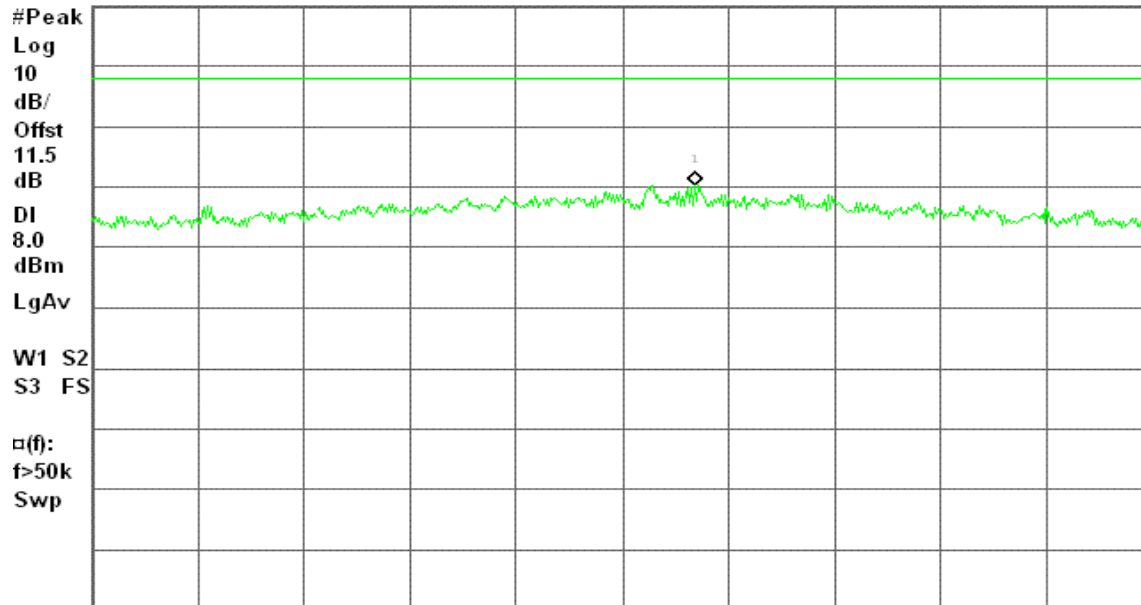
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.748 120 6 GHz

Ref 20 dBm

Atten 20 dB

-9.70 dBm



Center 5.748 100 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH Mid)

Agilent 13:38:15 Aug 7, 2007

R T

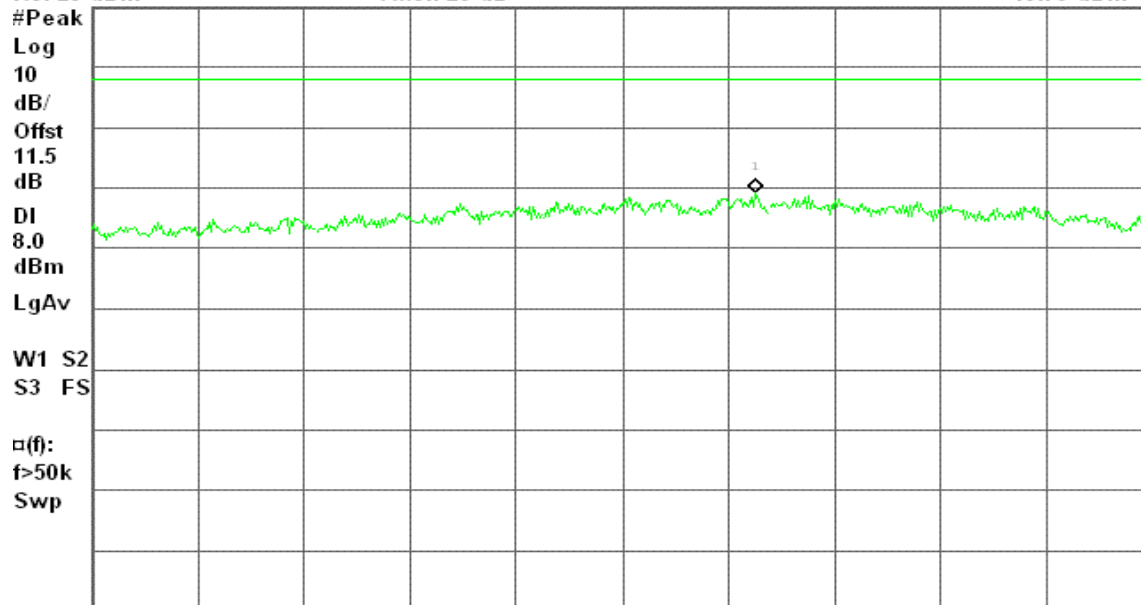
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.778 737 6 GHz

Ref 20 dBm

Atten 20 dB

-10.75 dBm



Center 5.778 700 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH High)

Agilent 13:44:11 Aug 7, 2007

R T

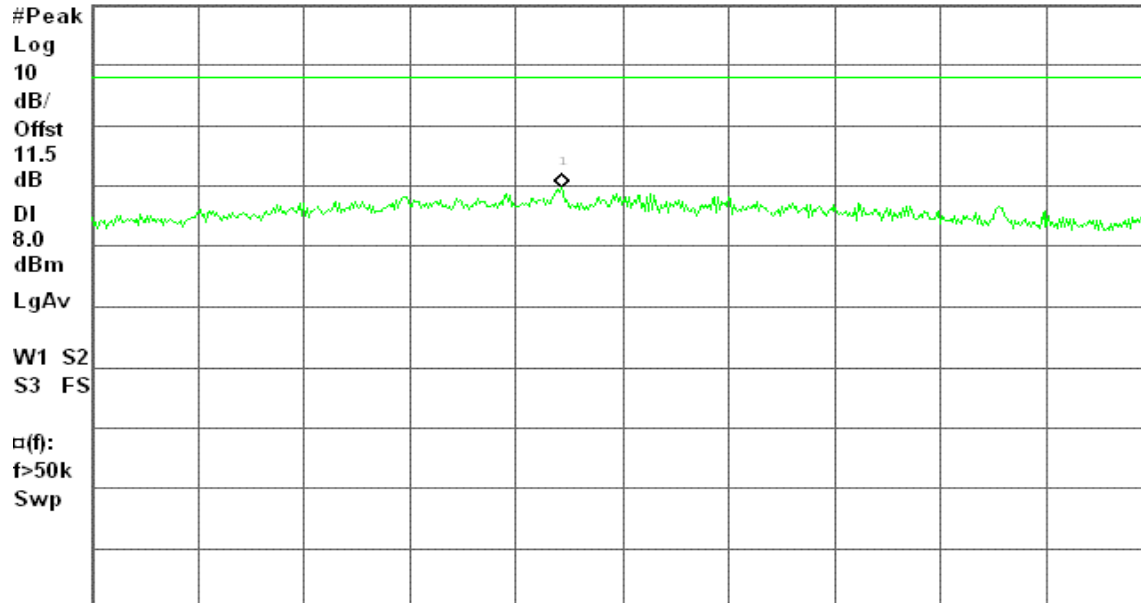
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.829 982 9 GHz

Ref 20 dBm

Atten 20 dB

-10.39 dBm



Center 5.830 000 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

draft 802.11n Standard-20 MHz Channel mode / Chain 0

PPSD (CH Low)

Agilent 14:20:58 Aug 7, 2007

R T

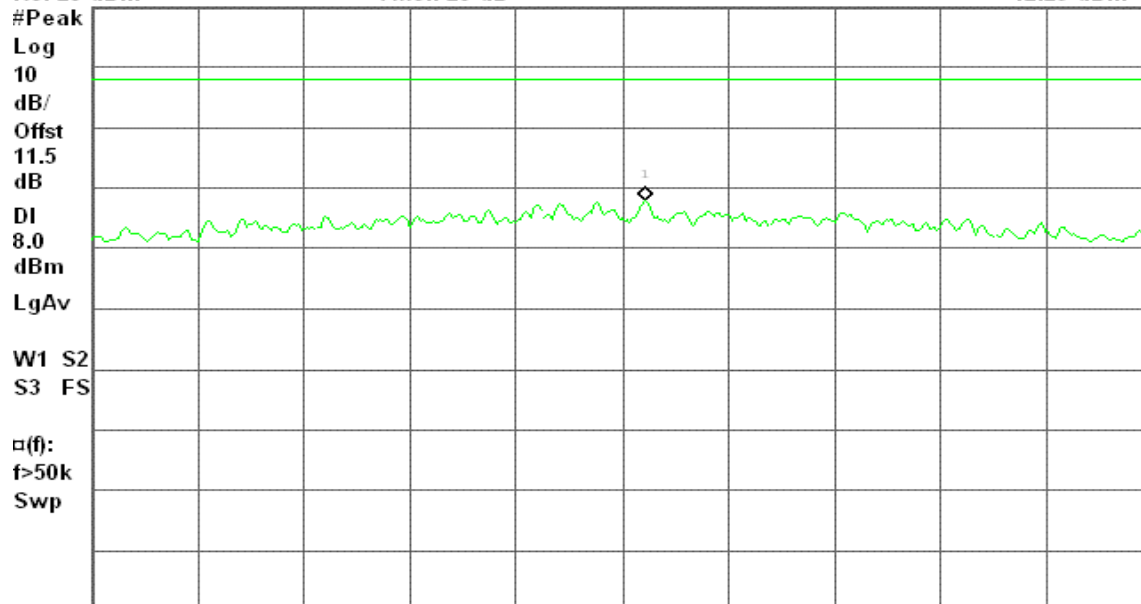
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.746 556 5 GHz

Ref 20 dBm

Atten 20 dB

-12.23 dBm



Center 5.746 550 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH Mid)

* Agilent 14:26:44 Aug 7, 2007

R T

Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.779 006 4 GHz

Ref 20 dBm

Atten 20 dB

-13.20 dBm

#Peak

Log

10

dB/

Offst

11.5

dB

DI

8.0

dBm

LgAv

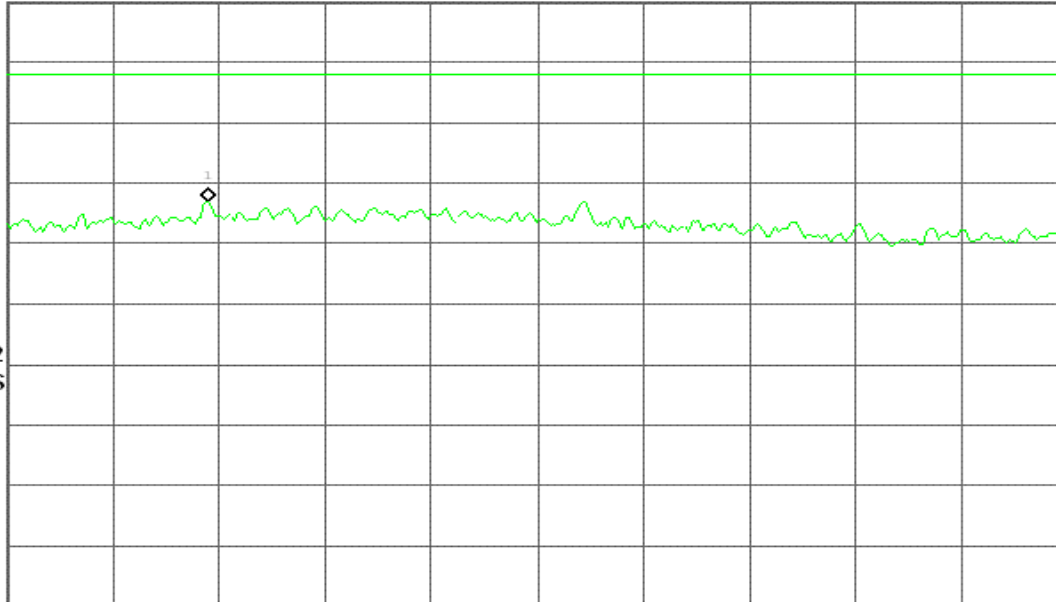
W1 S2

S3 FS

 $\alpha(f)$:

f>50k

Swp



Center 5.779 100 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH High)

* Agilent 14:32:03 Aug 7, 2007

R T

Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.826 557 0 GHz

Ref 20 dBm

Atten 20 dB

-13.18 dBm

#Peak

Log

10

dB/

Offst

11.5

dB

DI

8.0

dBm

LgAv

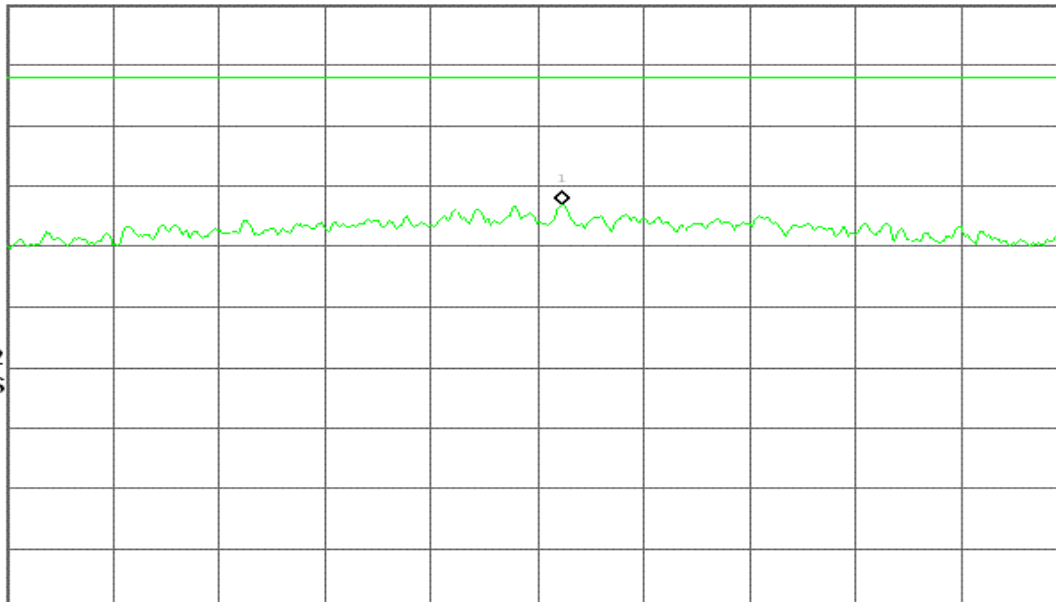
W1 S2

S3 FS

 $\alpha(f)$:

f>50k

Swp



Center 5.826 550 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



draft 802.11n Standard-20 MHz Channel mode / Chain 1

PPSD (CH Low)

Agilent 15:43:10 Aug 7, 2007

R T

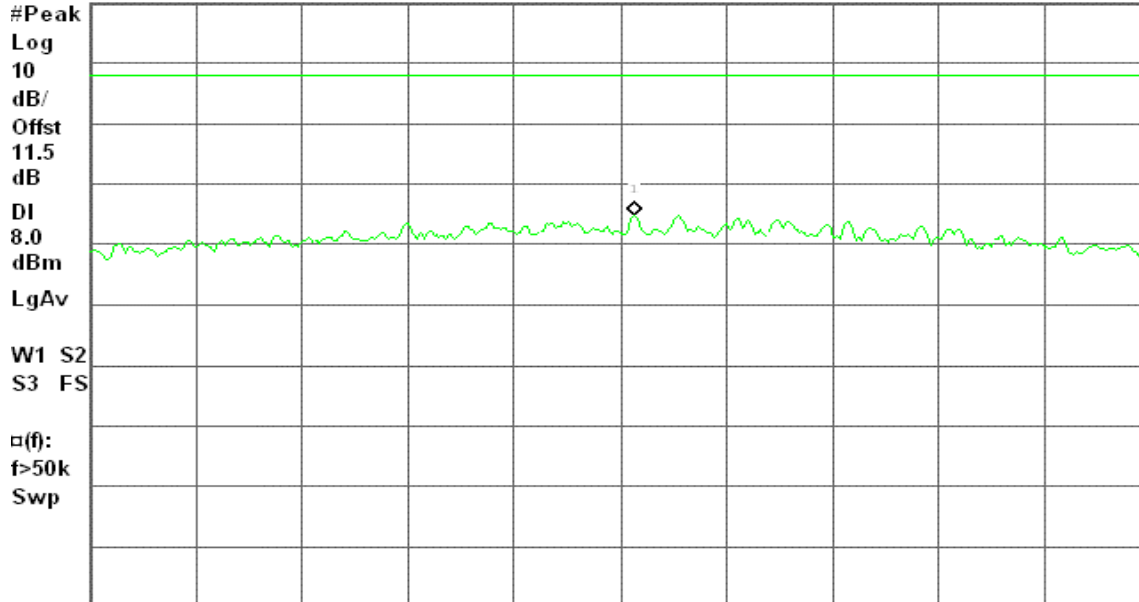
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.737 804 0 GHz

Ref 20 dBm

Atten 20 dB

-15.28 dBm



Center 5.737 800 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH Mid)

Agilent 15:49:46 Aug 7, 2007

R T

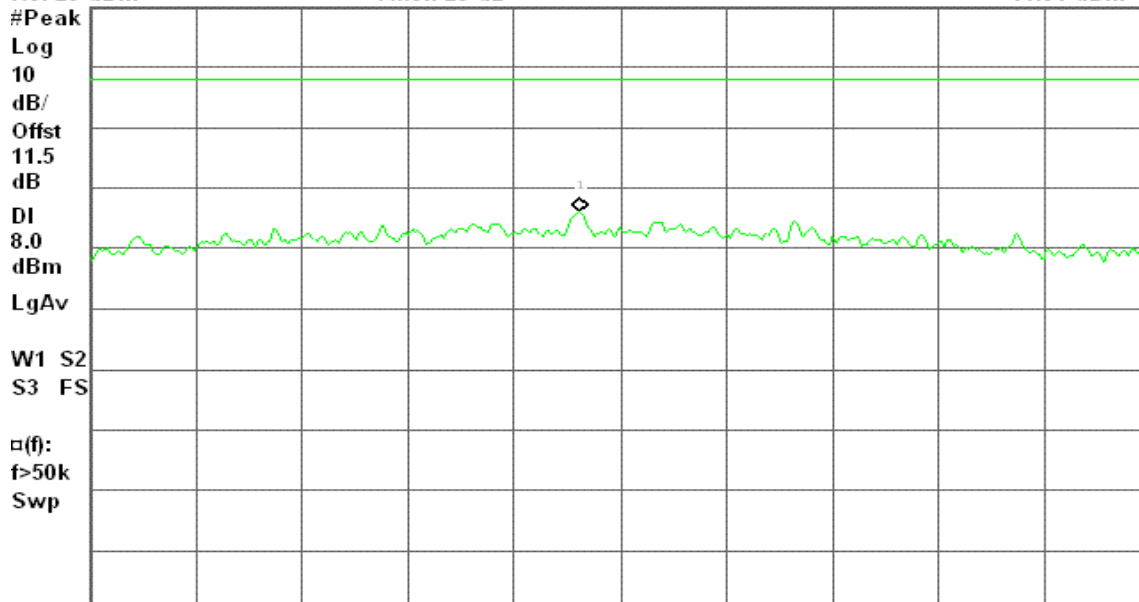
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.788 738 5 GHz

Ref 20 dBm

Atten 20 dB

-14.01 dBm



Center 5.788 750 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH High)

Agilent 15:56:09 Aug 7, 2007

R T

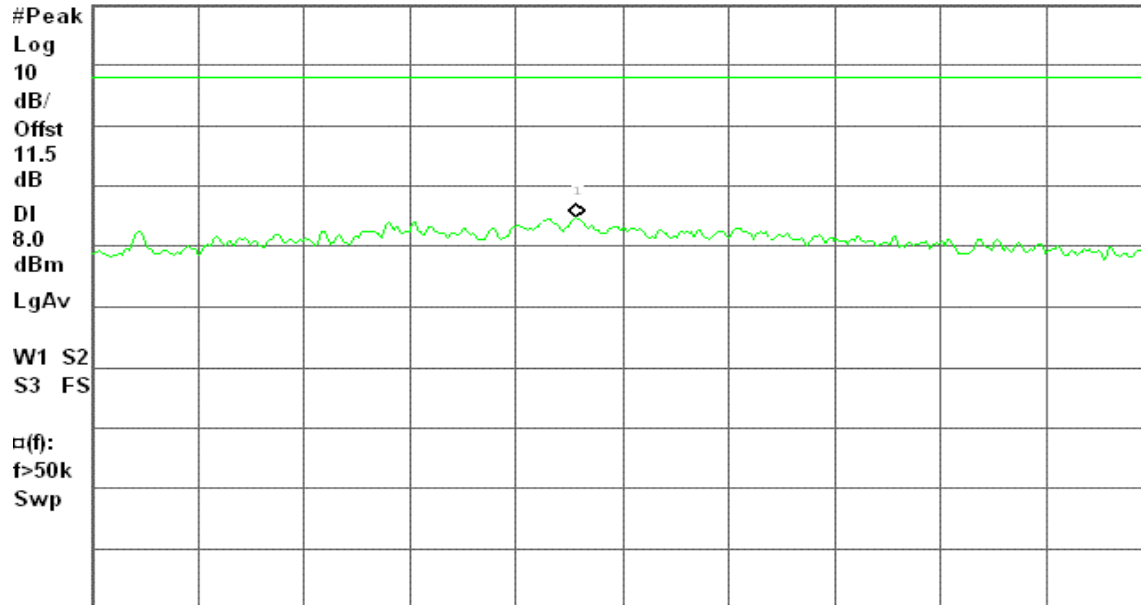
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.823 736 9 GHz

Ref 20 dBm

Atten 20 dB

-15.36 dBm



Center 5.823 750 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 0

PPSD (CH Low)

Agilent 17:21:07 Aug 23, 2007

R T

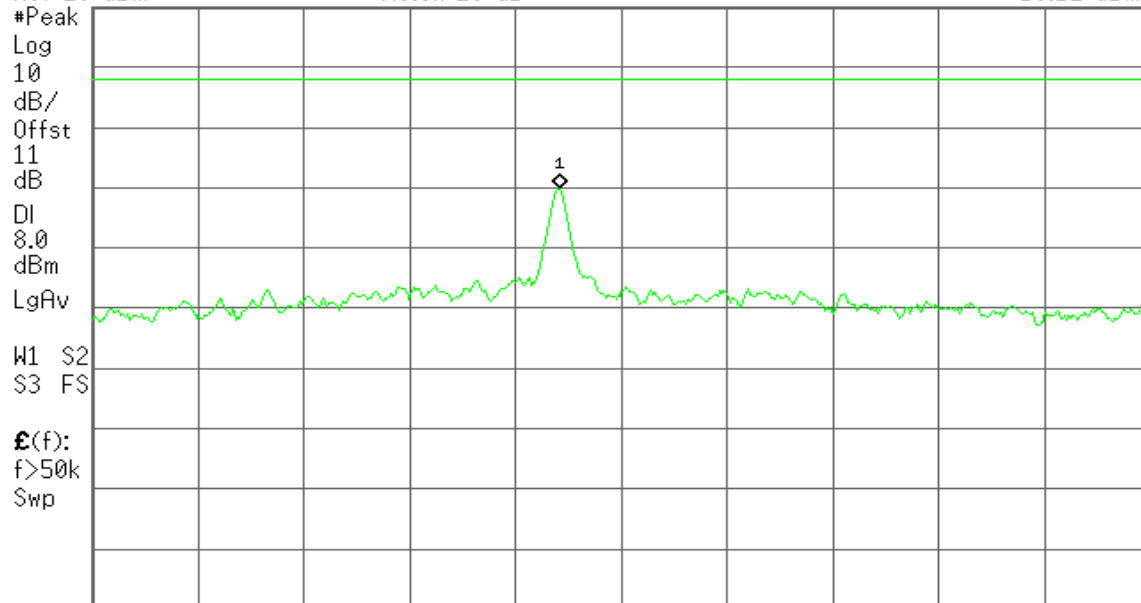
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.754 982 4 GHz

Ref 20 dBm

Atten 20 dB

-10.12 dBm



Center 5.755 000 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

**PPSD (CH High)**

* Agilent 17:33:51 Aug 23, 2007

R L

Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.785 291 3 GHz

Ref 20 dBm

Atten 20 dB

-12.47 dBm

#Peak

Log

10

dB/

Offst

11

dB

DI

8.0

dBm

LgAv

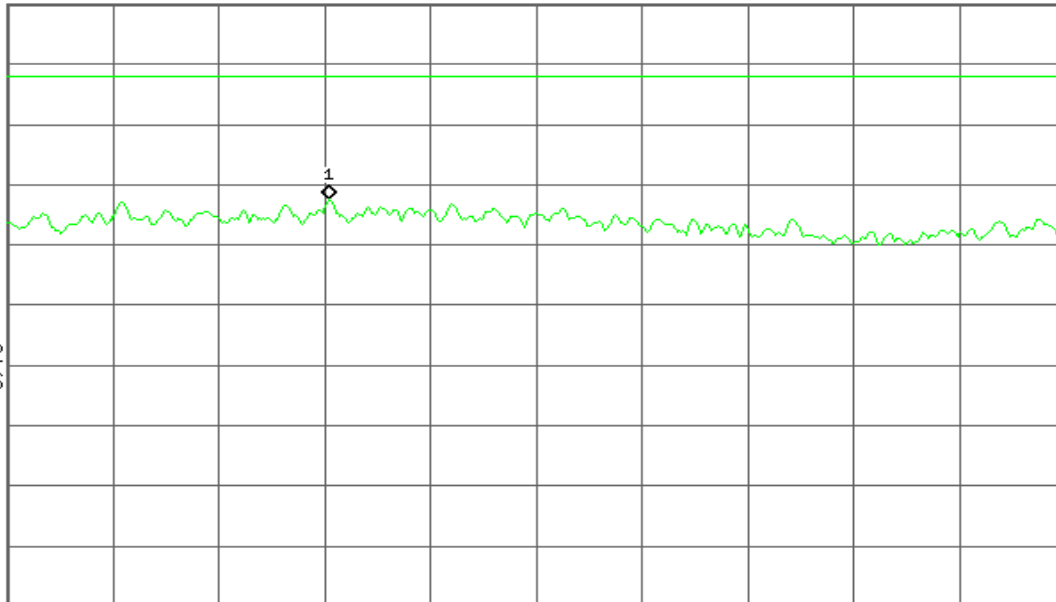
W1 S2

S3 FS

£(f):

f>50k

Swp



Center 5.785 350 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 1**PPSD (CH Low)**

* Agilent 17:51:02 Aug 23, 2007

R T

Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.754 983 4 GHz

Ref 20 dBm

Atten 20 dB

-8.83 dBm

#Peak

Log

10

dB/

Offst

11

dB

DI

8.0

dBm

LgAv

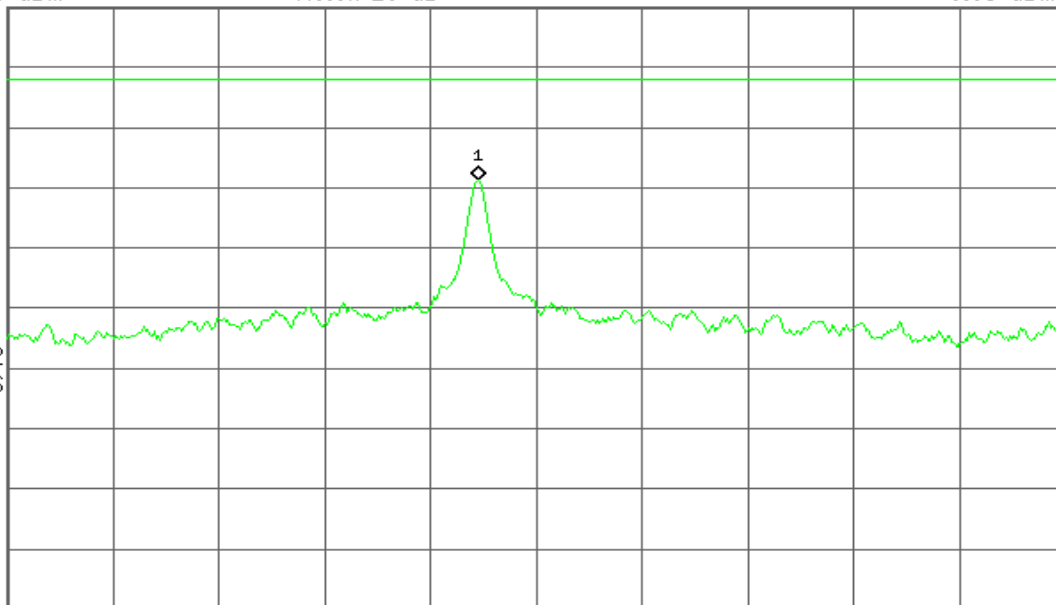
W1 S2

S3 FS

£(f):

f>50k

Swp



Center 5.755 000 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH High)

Agilent 17:44:13 Aug 23, 2007

R T

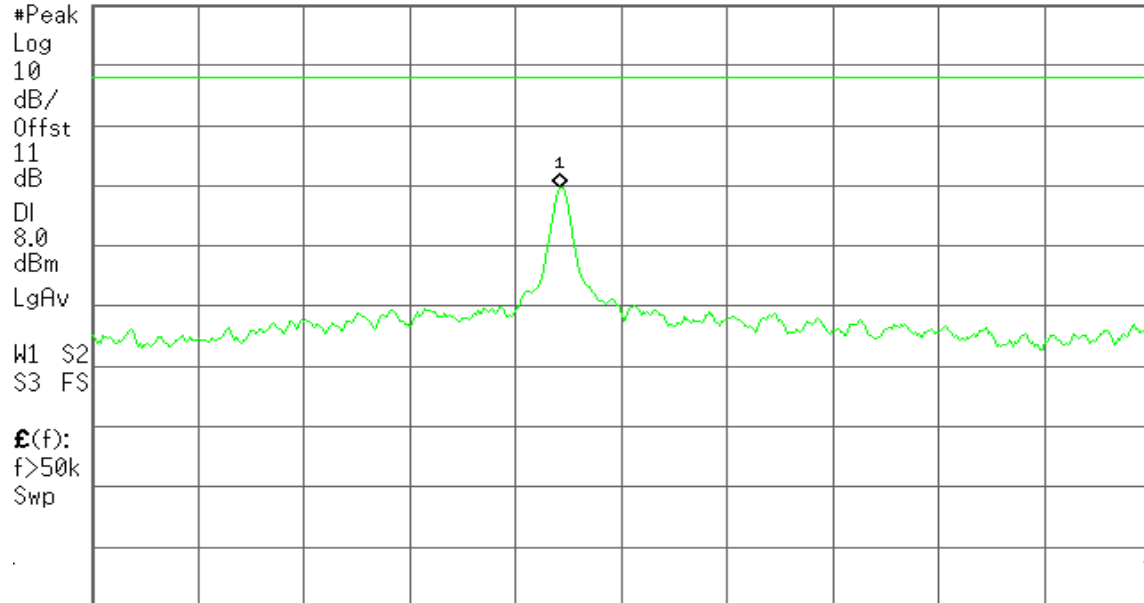
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.794 982 4 GHz

Ref 20 dBm

Atten 20 dB

-10.18 dBm



Center 5.795 000 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

draft 802.11n Standard-20 MHz Channel mode with combiner

PPSD (CH Low)

Agilent 11:38:57 Aug 8, 2007

R T

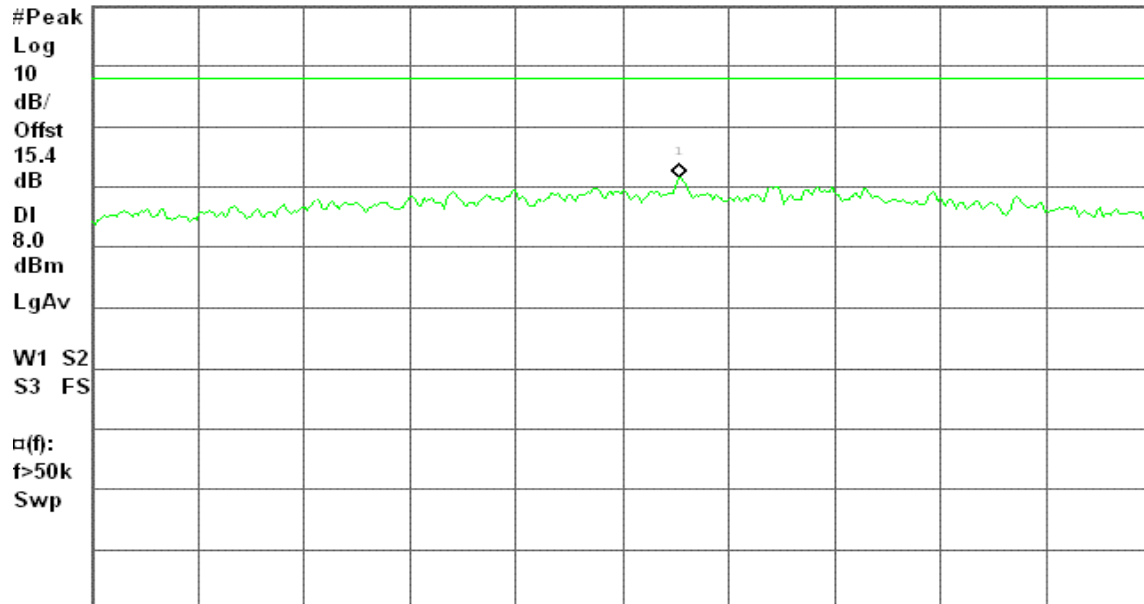
Peak Power Spectral Density, a Mode Low Ch.

Mkr1 5.748 116 1 GHz

Ref 20 dBm

Atten 20 dB

-8.49 dBm



Center 5.748 100 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)



PPSD (CH Mid)

Agilent 11:33:33 Aug 8, 2007

R T

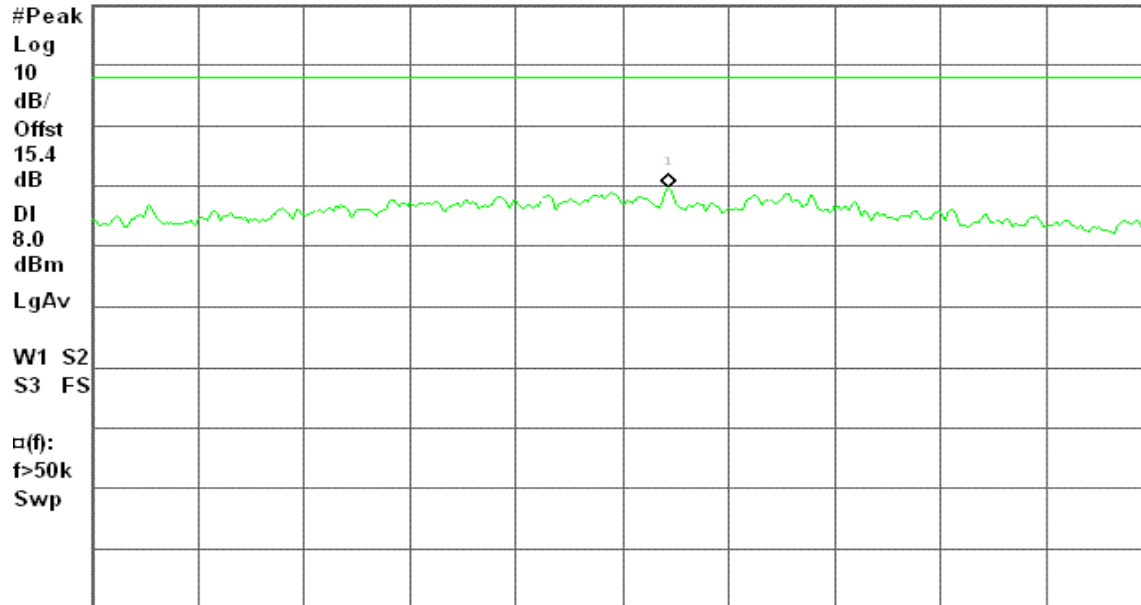
Peak Power Spectral Density, a Mode Mid Ch.

Mkr1 5.782 513 0 GHz

Ref 20 dBm

Atten 20 dB

-10.41 dBm



Center 5.782 500 0 GHz

Span 300 kHz

#Res BW 3 kHz

#VBW 10 kHz

#Sweep 100 s (601 pts)

PPSD (CH High)

Agilent 11:28:30 Aug 8, 2007

R T

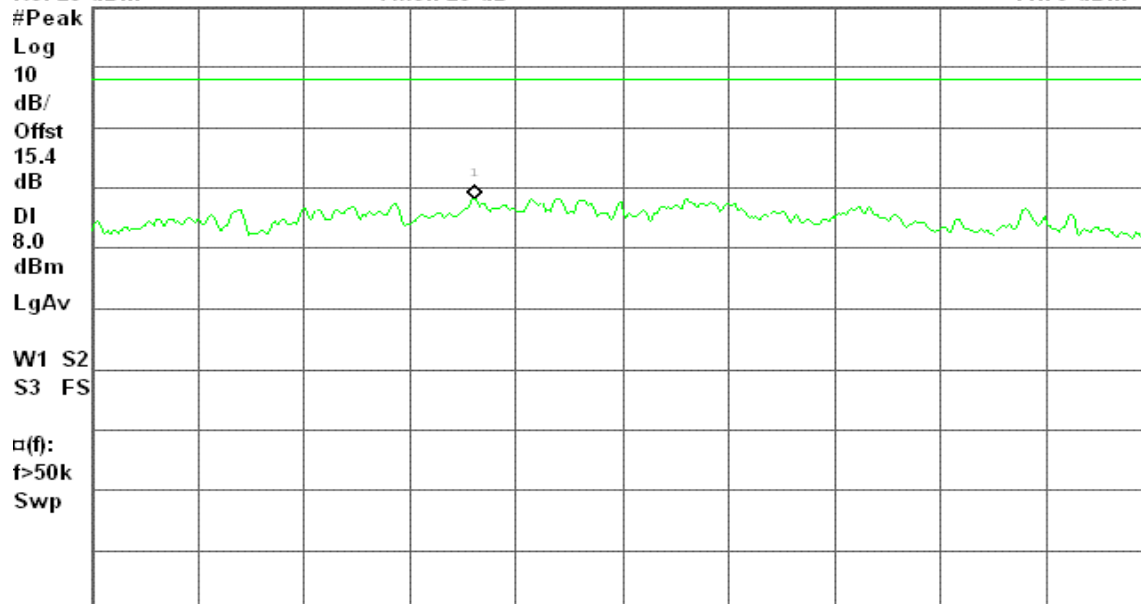
Peak Power Spectral Density, a Mode High Ch.

Mkr1 5.829 958 4 GHz

Ref 20 dBm

Atten 20 dB

-11.76 dBm



Center 5.830 000 0 GHz

Span 300 kHz

#Res BW 3 kHz

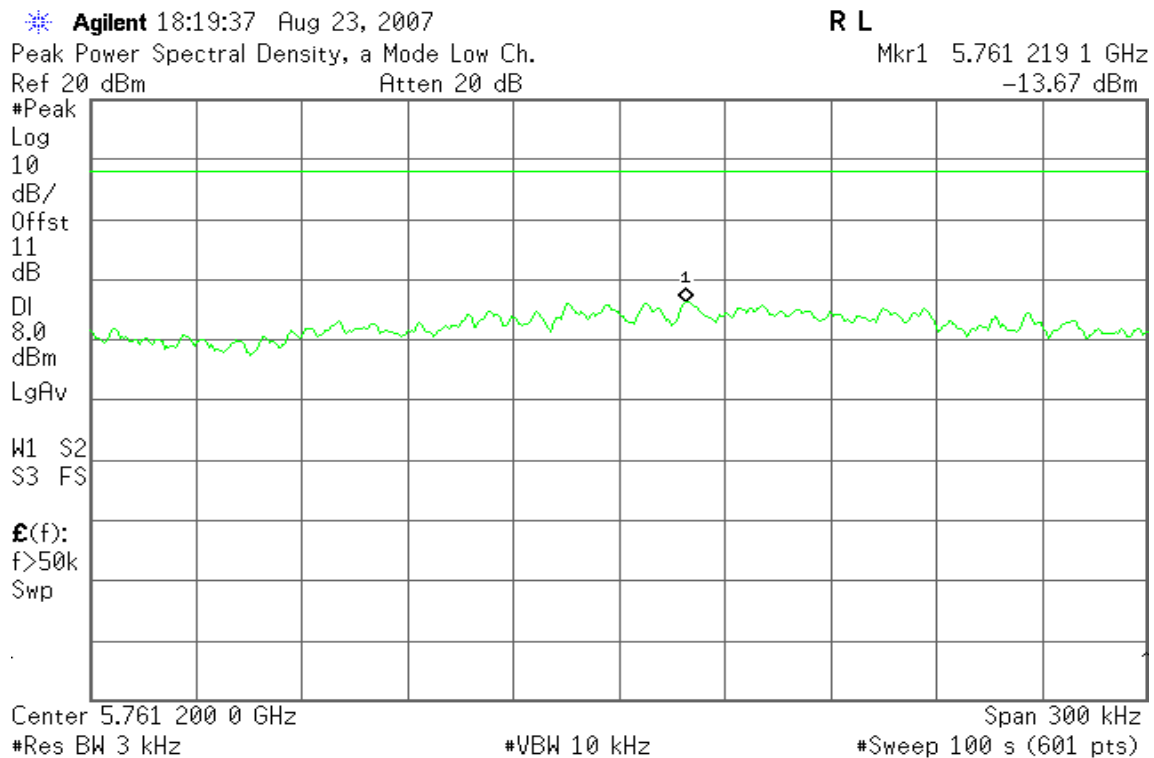
#VBW 10 kHz

#Sweep 100 s (601 pts)

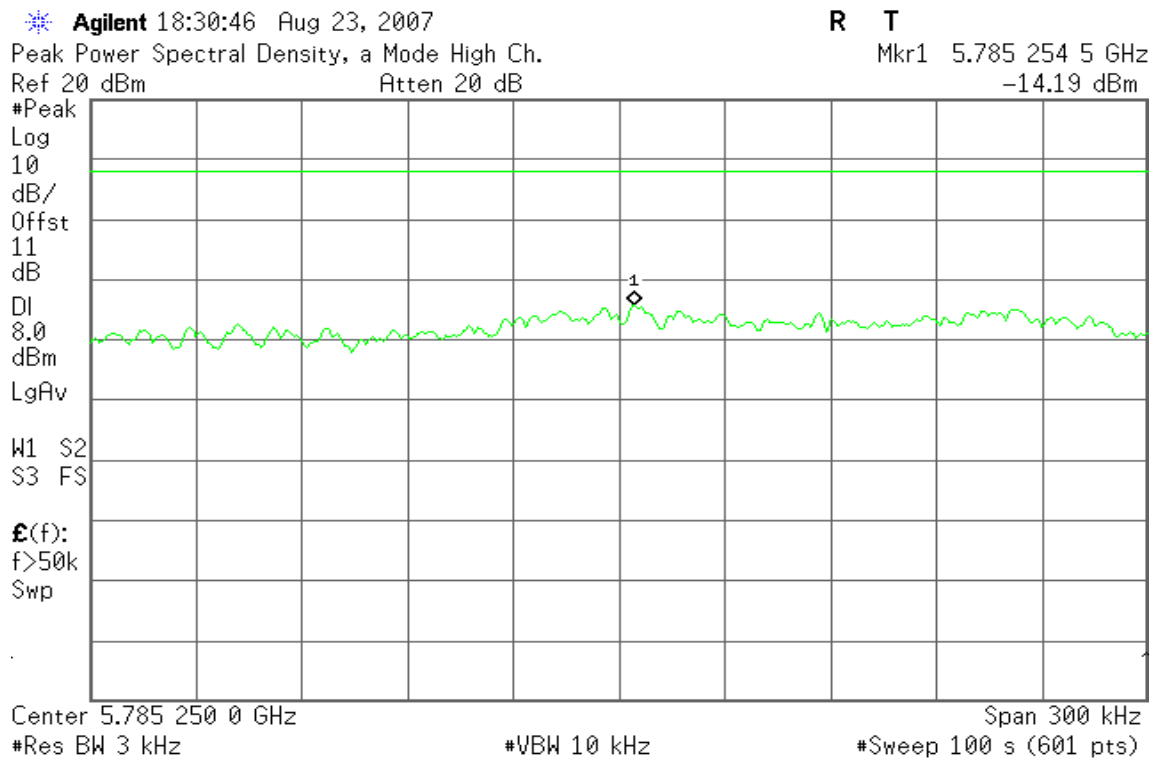


draft 802.11n Wide-40 MHz Channel mode with combiner

PPSD (CH Low)



PPSD (CH High)





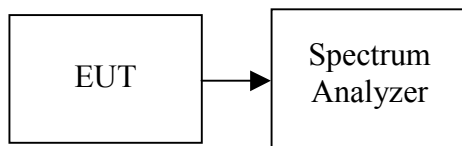
7.6 SPURIOUS EMISSIONS

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 100 & 300kHz.

Measurements are made over the 30MHz to 26GHz range for IEEE 802.11b/g, 30MHz to 40GHz range for IEEE 802.11a with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

No non-compliance noted.



Test Plot

IEEE 802.11b mode

CH Low

Agilent 13:14:17 Jul 31, 2007

R T

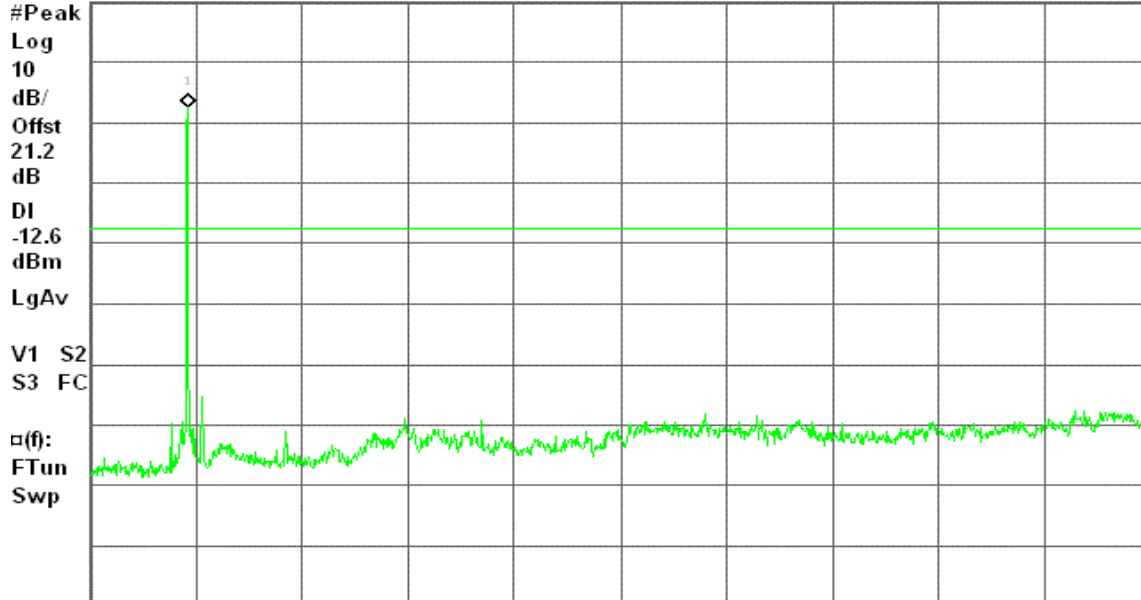
Spurious, b Mode Low Ch.

Mkr1 2.42 GHz

Ref 25 dBm

Atten 20 dB

7.38 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

CH Mid

Agilent 13:22:51 Jul 31, 2007

R T

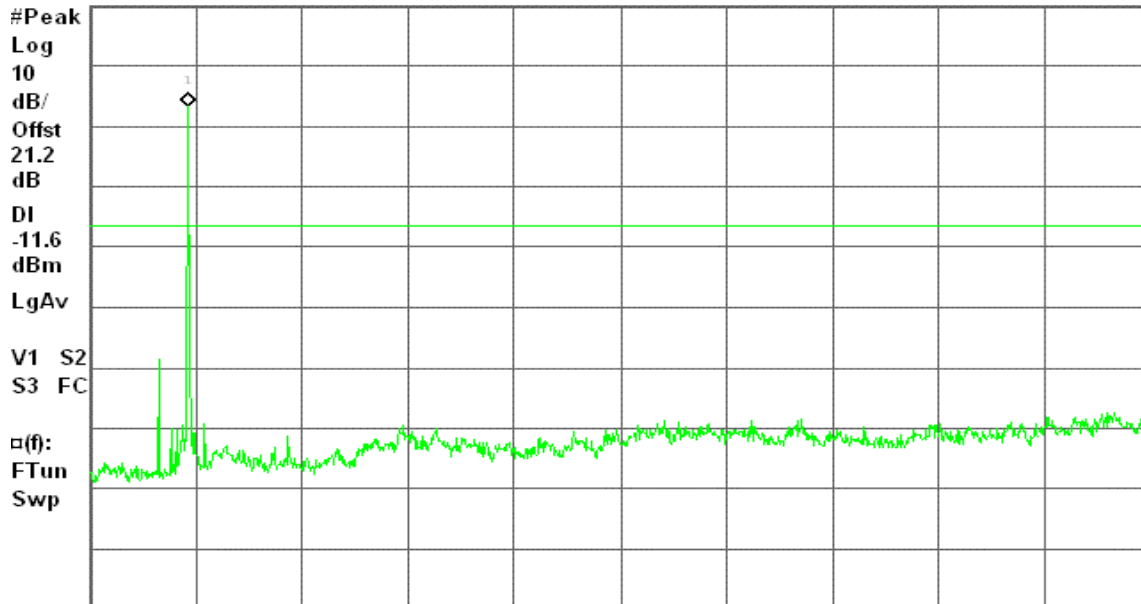
Spurious, b Mode Mid Ch.

Mkr1 2.45 GHz

Ref 25 dBm

Atten 20 dB

8.40 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)



CH High

Agilent 13:30:13 Jul 31, 2007

R T

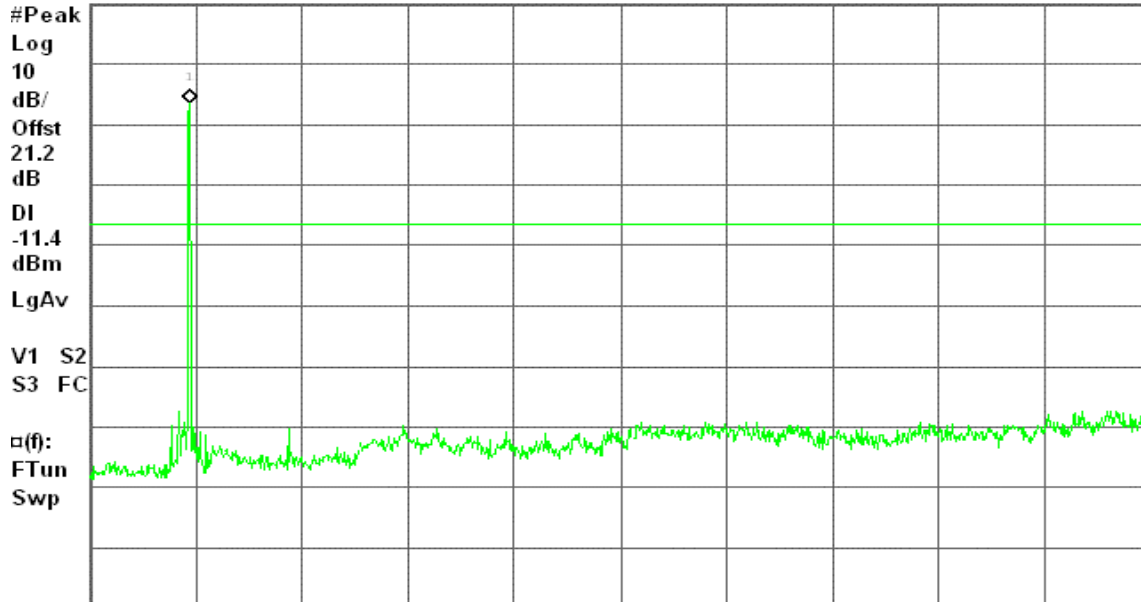
Spurious, b Mode High Ch.

Mkr1 2.47 GHz

Ref 25 dBm

Atten 20 dB

8.57 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

IEEE 802.11g mode

CH Low

Agilent 13:36:26 Jul 31, 2007

R T

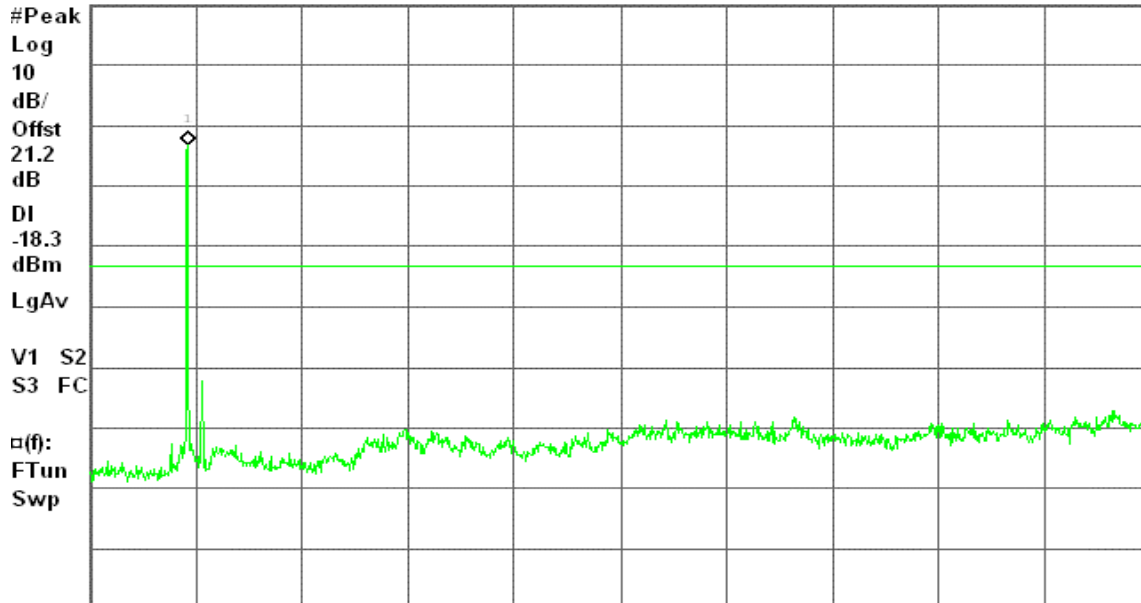
Spurious, g Mode Low Ch.

Mkr1 2.42 GHz

Ref 25 dBm

Atten 20 dB

1.68 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)



CH Mid

Agilent 13:43:26 Jul 31, 2007

R T

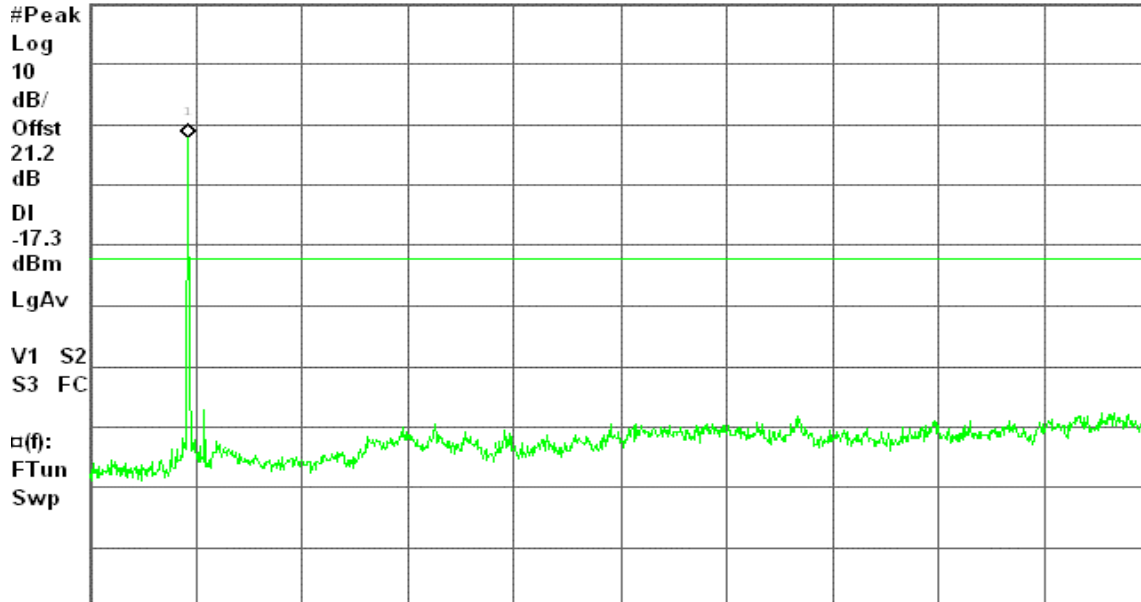
Spurious, g Mode Mid Ch.

Mkr1 2.45 GHz

Ref 25 dBm

Atten 20 dB

2.71 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

CH High

Agilent 13:49:48 Jul 31, 2007

R T

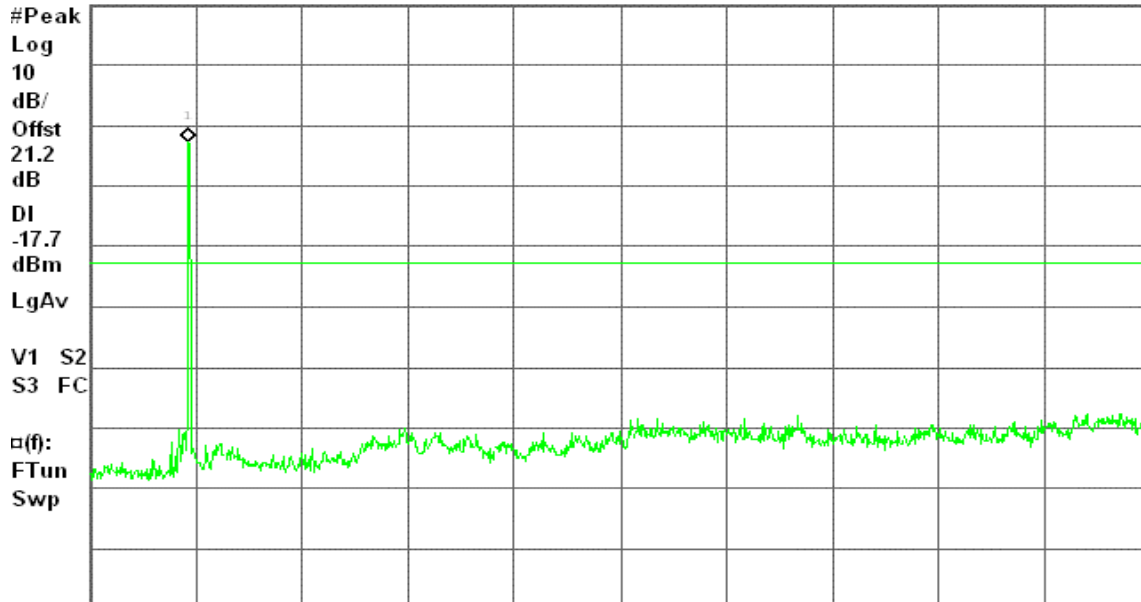
Spurious, g Mode High Ch.

Mkr1 2.45 GHz

Ref 25 dBm

Atten 20 dB

2.28 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 2.482 s (1001 pts)

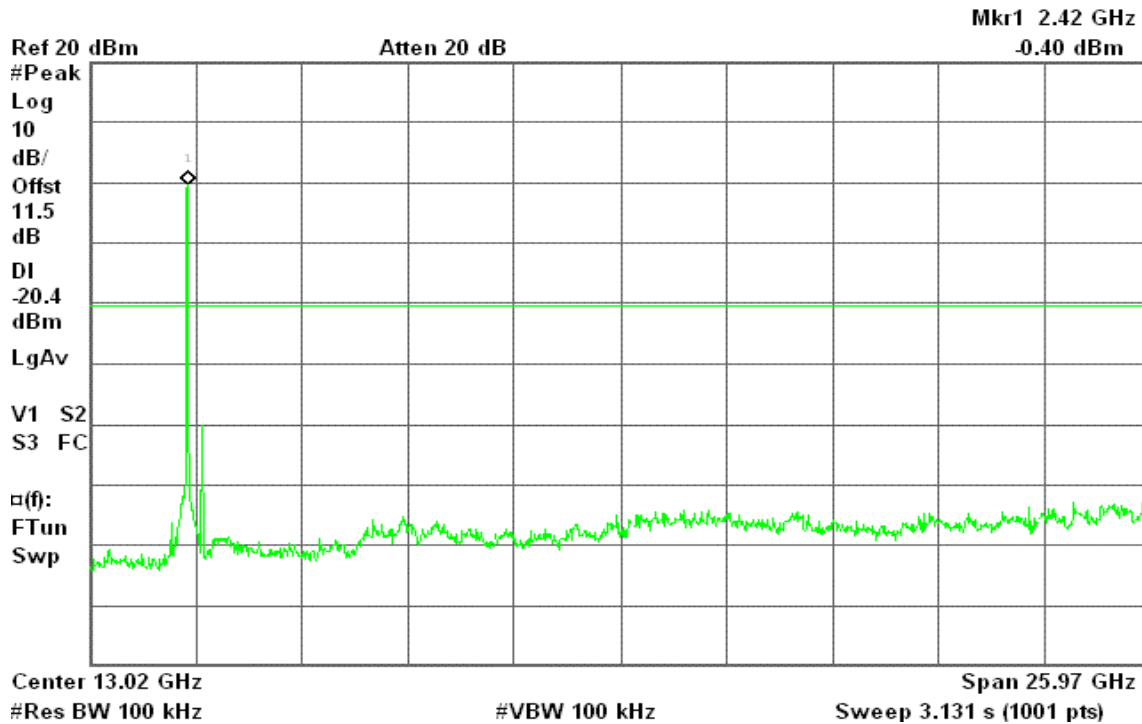


draft 802.11n Standard-20 MHz Channel mode / Chain 0

CH Low

Agilent 13:49:02 Aug 6, 2007

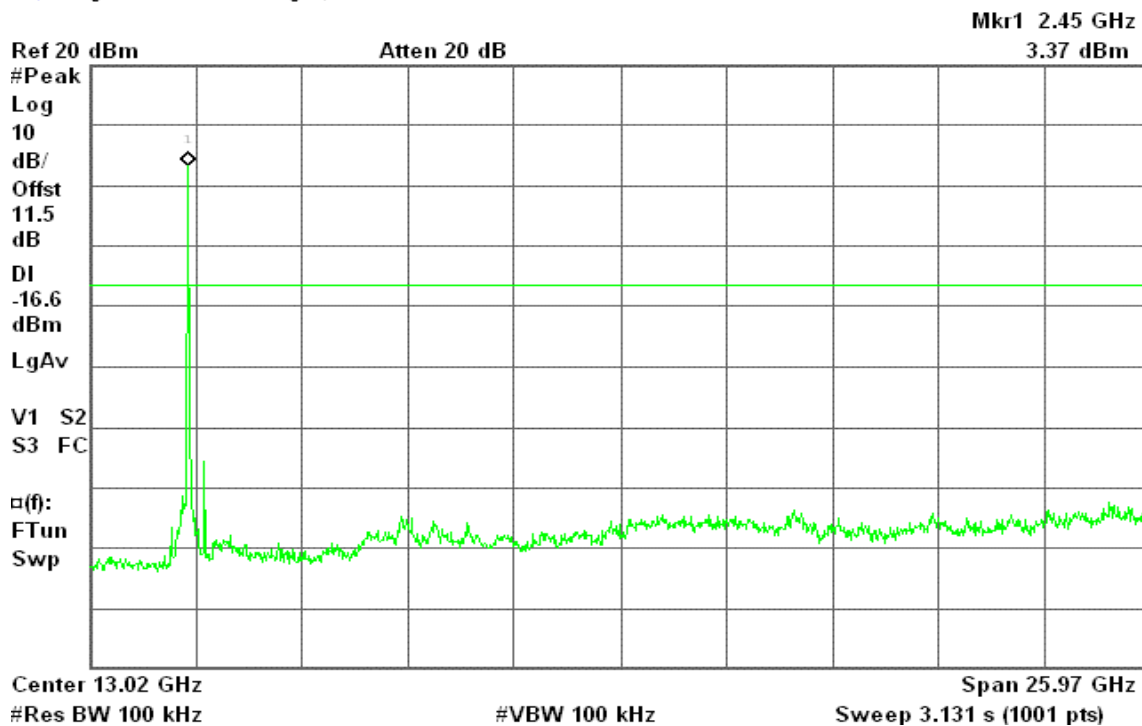
R T



CH Mid

Agilent 14:34:37 Aug 6, 2007

R T

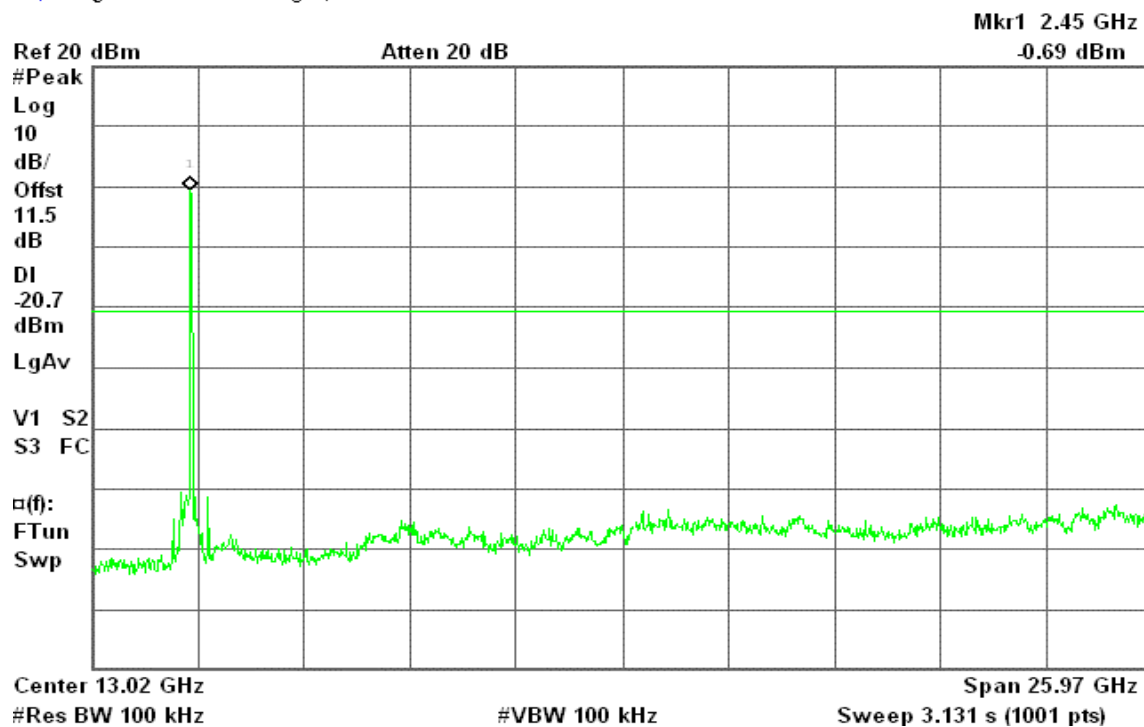




CH High

Agilent 14:43:51 Aug 6, 2007

R T

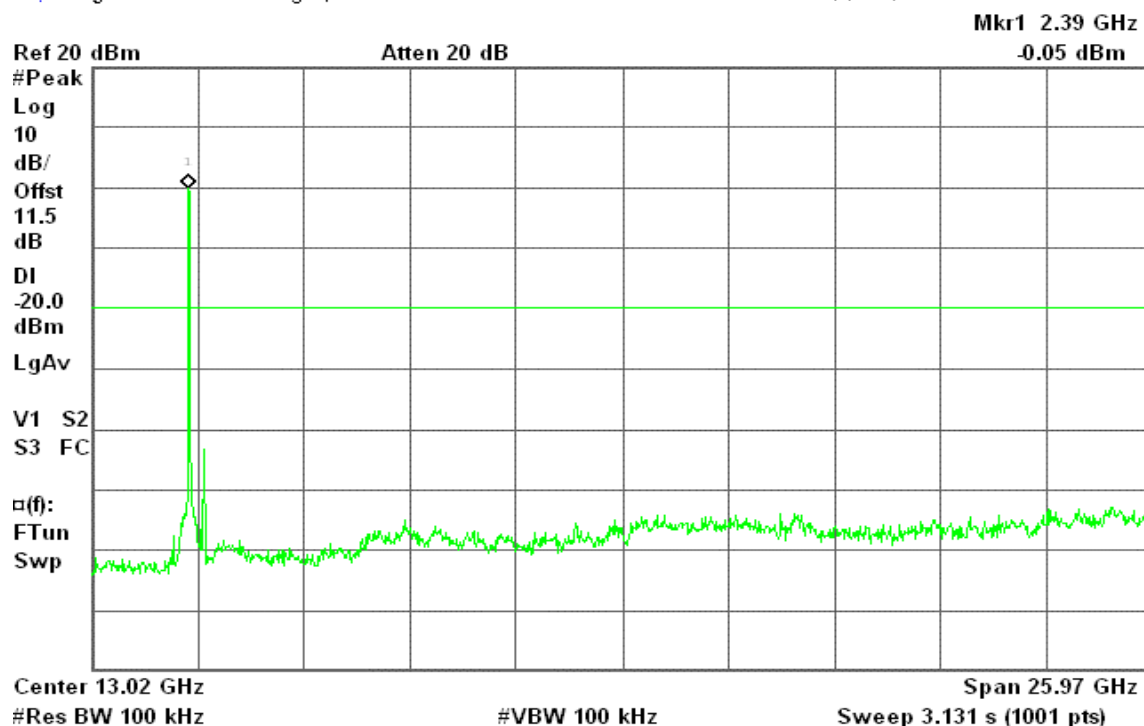


draft 802.11n Standard-20 MHz Channel mode / Chain 1

CH Low

Agilent 15:06:36 Aug 6, 2007

R T

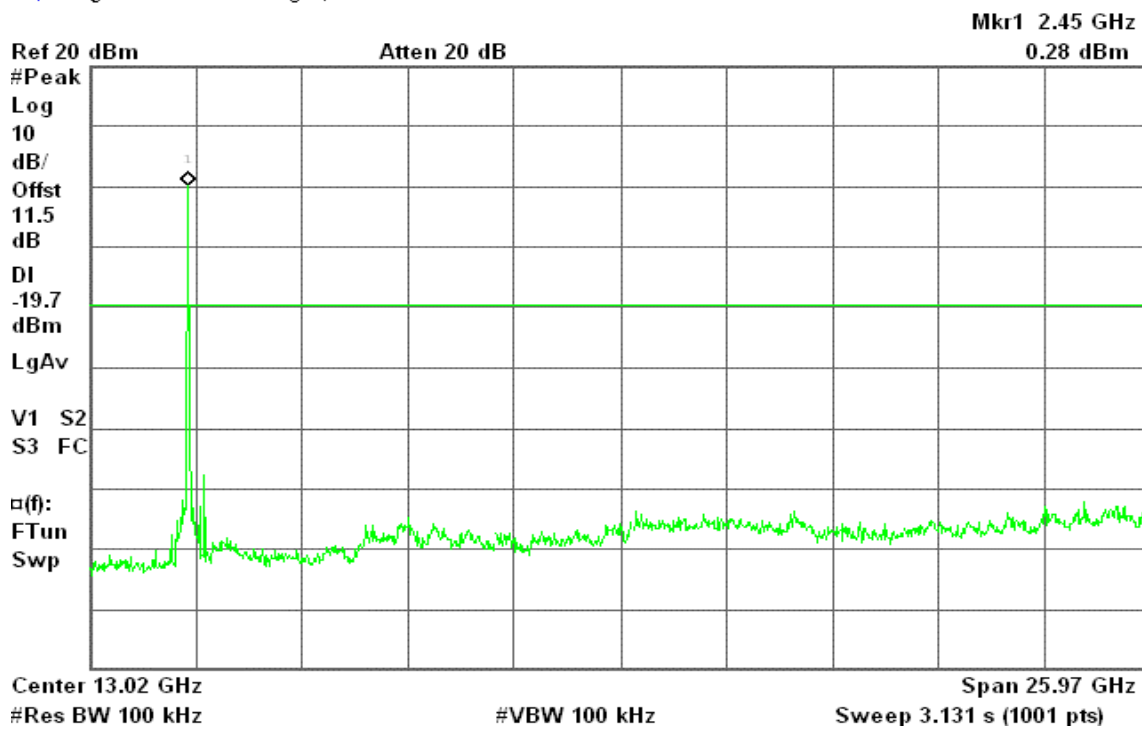




CH Mid

Agilent 15:00:29 Aug 6, 2007

R T

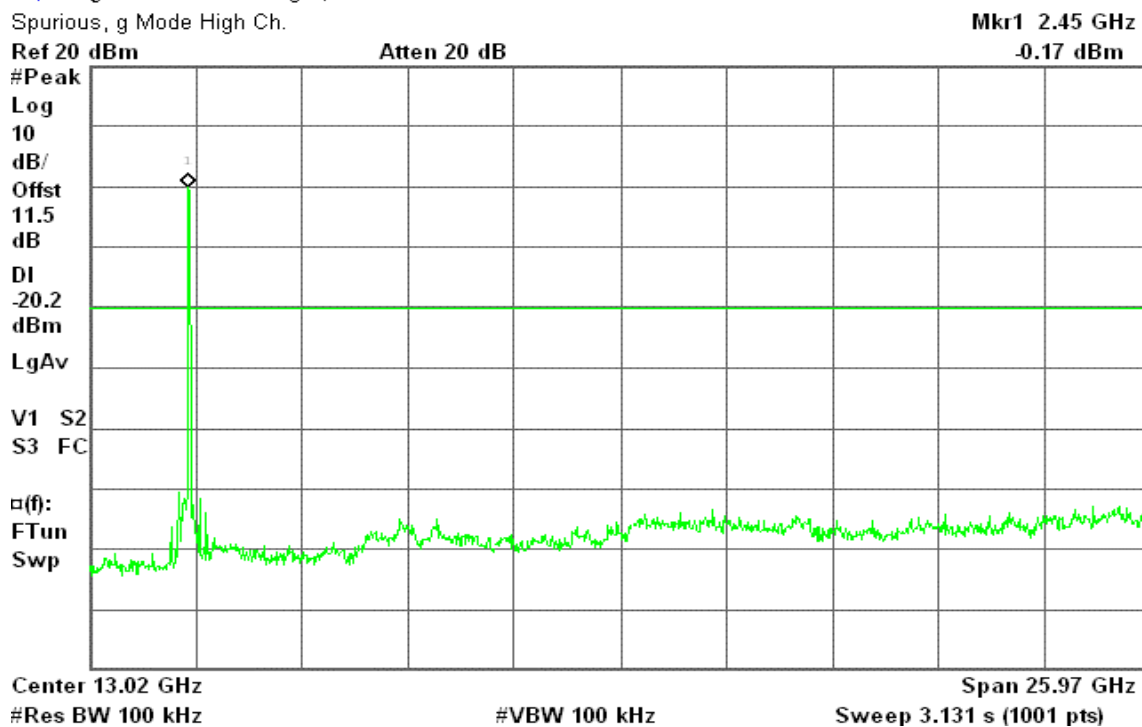


CH High

Agilent 14:53:05 Aug 6, 2007

R T

Spurious, g Mode High Ch.





draft 802.11n Wide-40 MHz Channel mode / Chain 0

CH Low

Agilent 16:29:41 Aug 6, 2007

R T

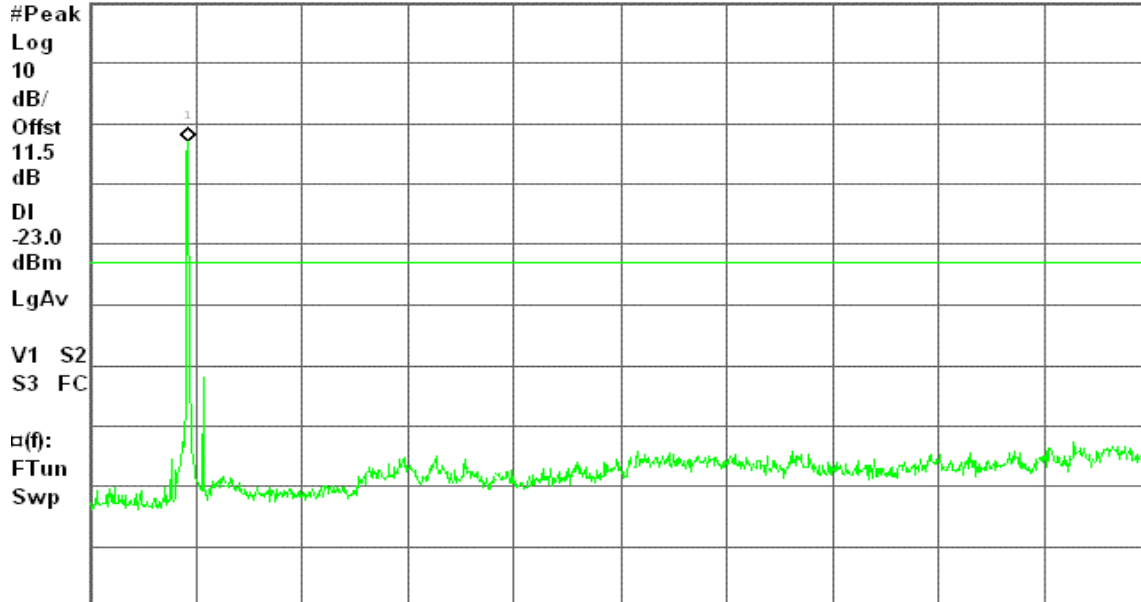
Spurious, 40 Mode Low Ch.

Mkr1 2.42 GHz

Ref 20 dBm

Atten 20 dB

-3.04 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)

CH Mid

Agilent 16:23:33 Aug 6, 2007

R T

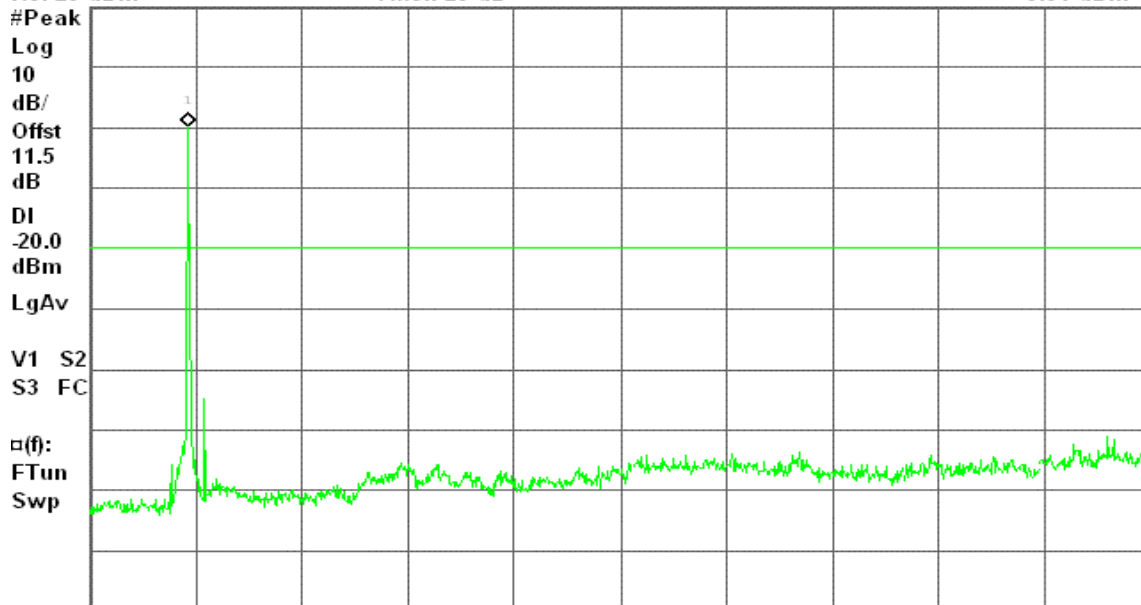
Spurious, 40 Mode Mid Ch.

Mkr1 2.45 GHz

Ref 20 dBm

Atten 20 dB

0.04 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)

**CH High**

* Agilent 16:17:10 Aug 6, 2007

R T

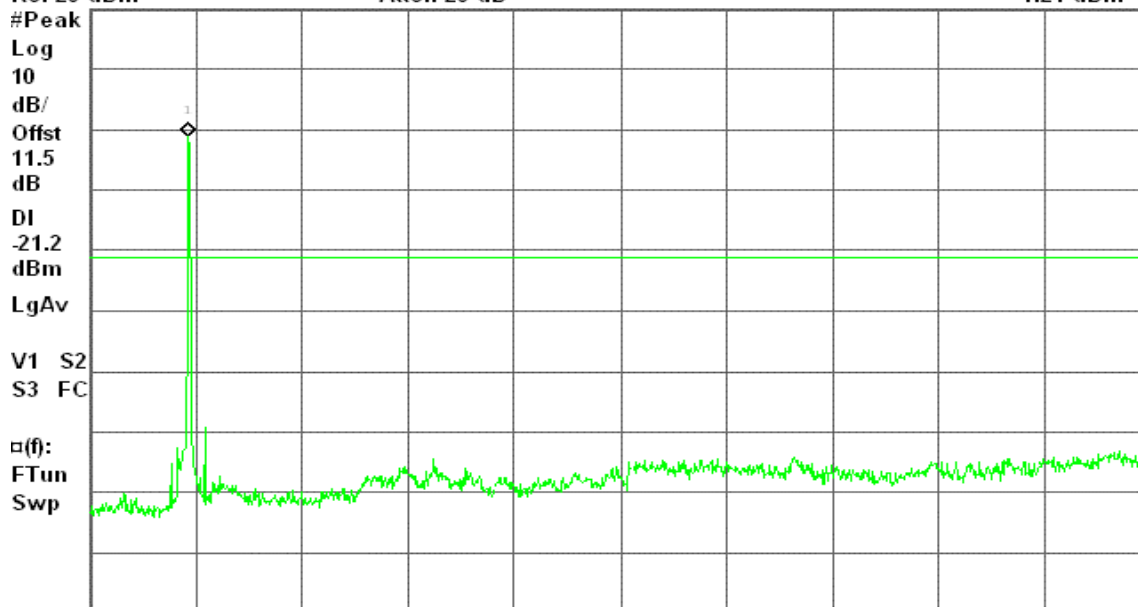
Spurious, 40 Mode High Ch.

Mkr1 2.45 GHz

Ref 20 dBm

Atten 20 dB

-1.21 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 1**CH Low**

* Agilent 16:46:12 Aug 6, 2007

R T

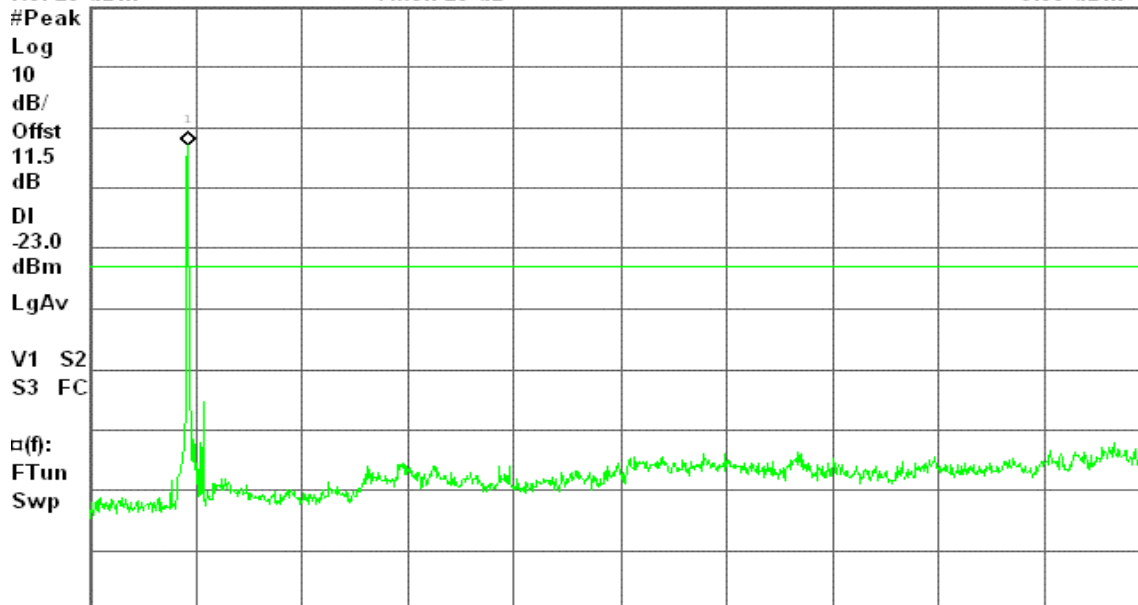
Spurious, 40 Mode Low Ch.

Mkr1 2.42 GHz

Ref 20 dBm

Atten 20 dB

-3.00 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)



CH Mid

Agilent 16:52:39 Aug 6, 2007

R T

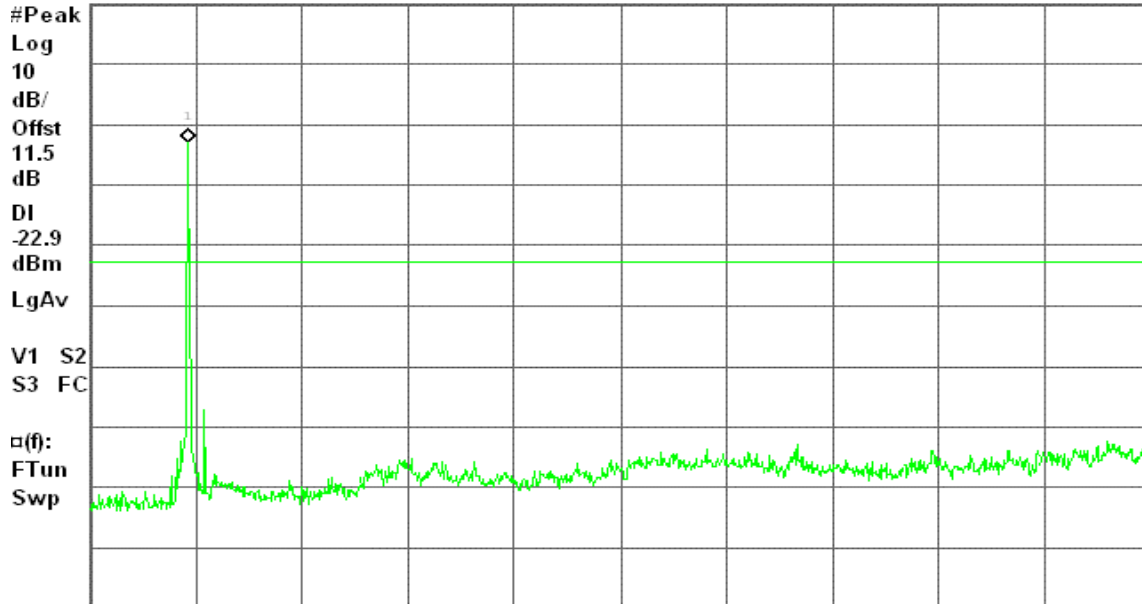
Spurious, 40 Mode Mid Ch.

Mkr1 2.45 GHz

Ref 20 dBm

Atten 20 dB

-2.87 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)

CH High

Agilent 16:58:58 Aug 6, 2007

R T

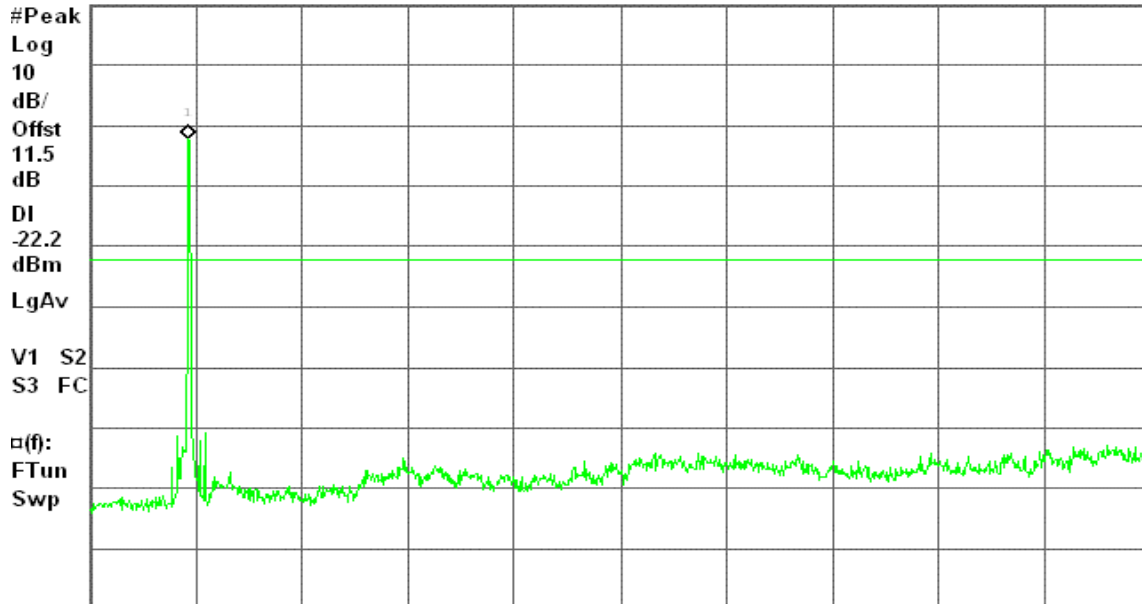
Spurious, 40 Mode High Ch.

Mkr1 2.45 GHz

Ref 20 dBm

Atten 20 dB

-2.17 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)

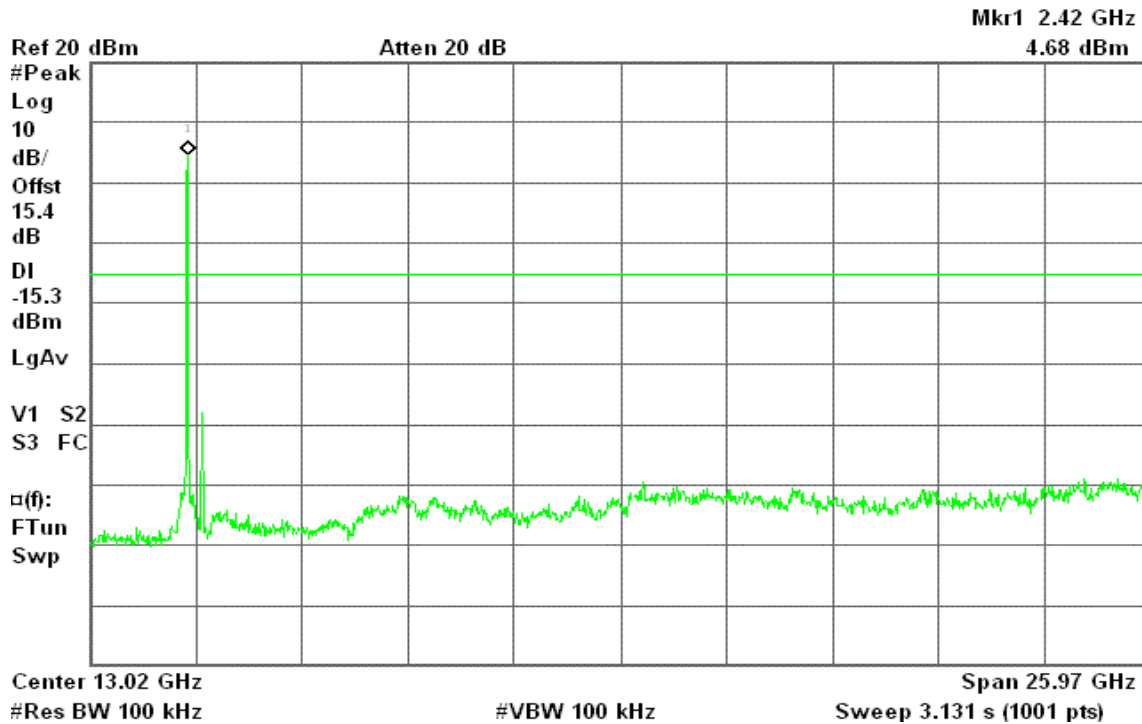


draft 802.11n Standard-20 MHz Channel mode with combiner

CH Low

Agilent 15:19:41 Aug 6, 2007

R T

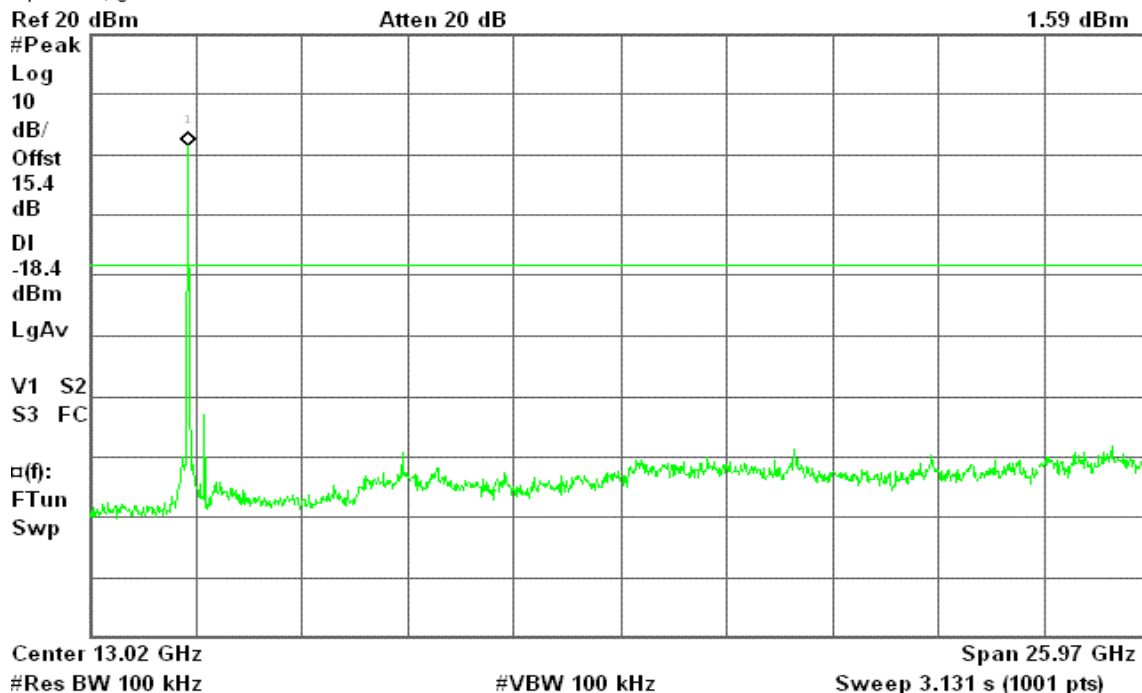


CH Mid

Agilent 15:26:45 Aug 6, 2007

R T

Spurious, g Mode Mid Ch.





CH High

Agilent 15:39:27 Aug 6, 2007

R T

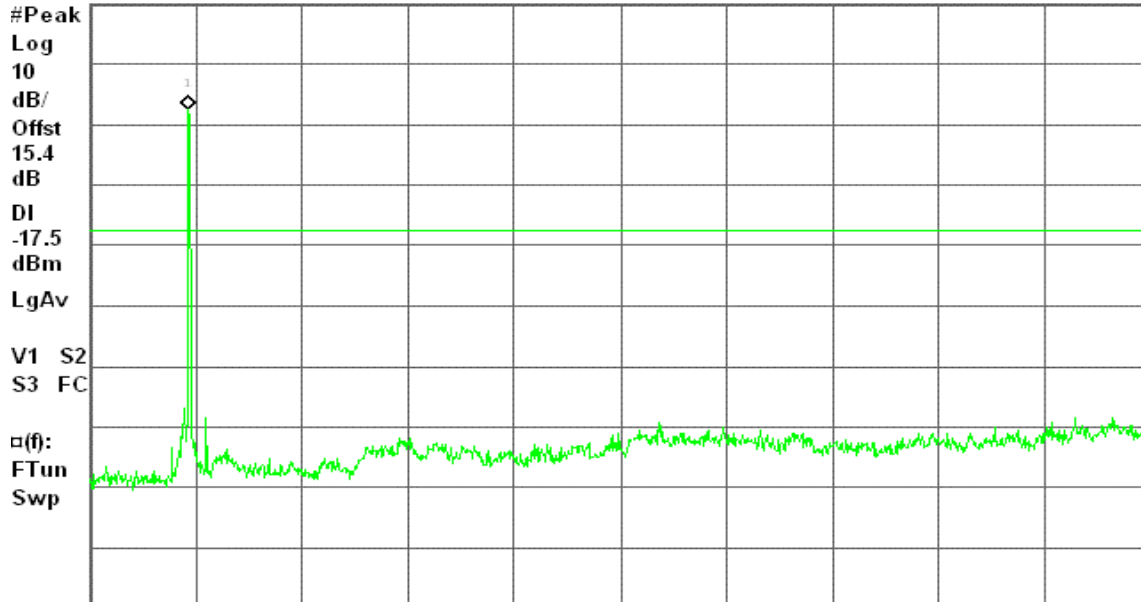
Spurious, g Mode High Ch.

Mkr1 2.45 GHz

Ref 20 dBm

Atten 20 dB

2.53 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)

draft 802.11n Wide-40 MHz Channel mode with combiner

CH Low

Agilent 15:54:44 Aug 6, 2007

R T

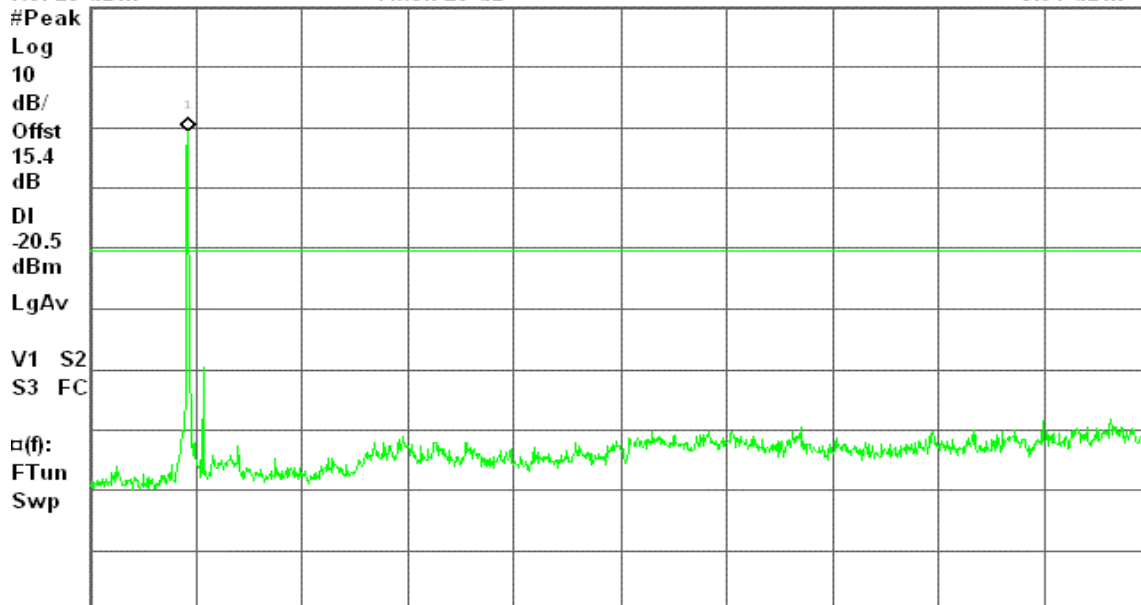
Spurious, 40 Mode Low Ch.

Mkr1 2.42 GHz

Ref 20 dBm

Atten 20 dB

-0.51 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)



CH Mid

Agilent 16:01:33 Aug 6, 2007

R T

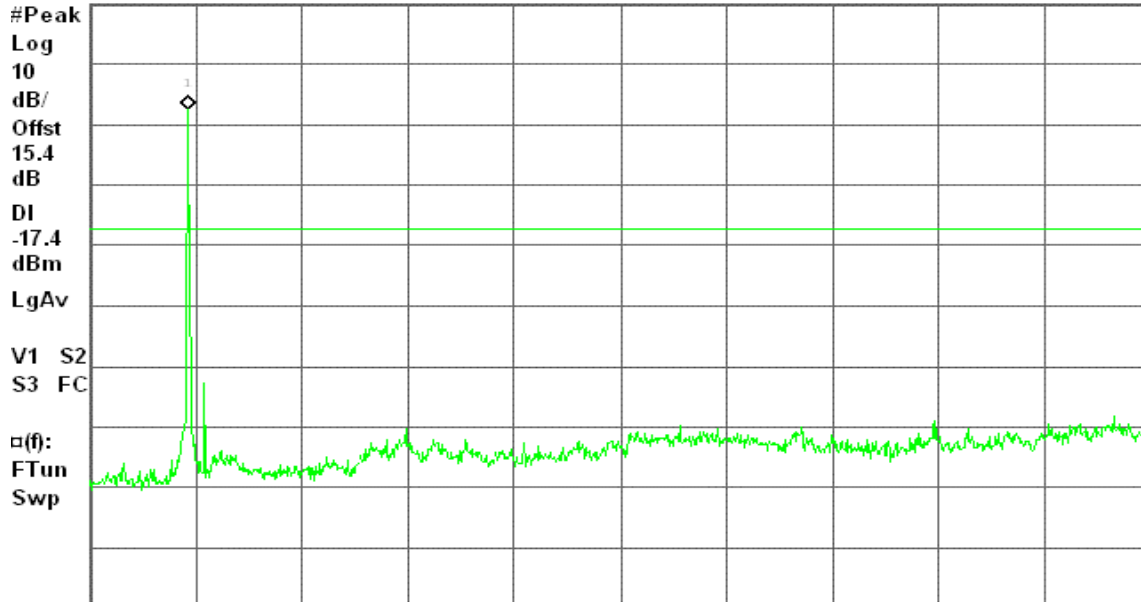
Spurious, 40 Mode Mid Ch.

Mkr1 2.45 GHz

Ref 20 dBm

Atten 20 dB

2.61 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)

CH High

Agilent 16:07:28 Aug 6, 2007

R T

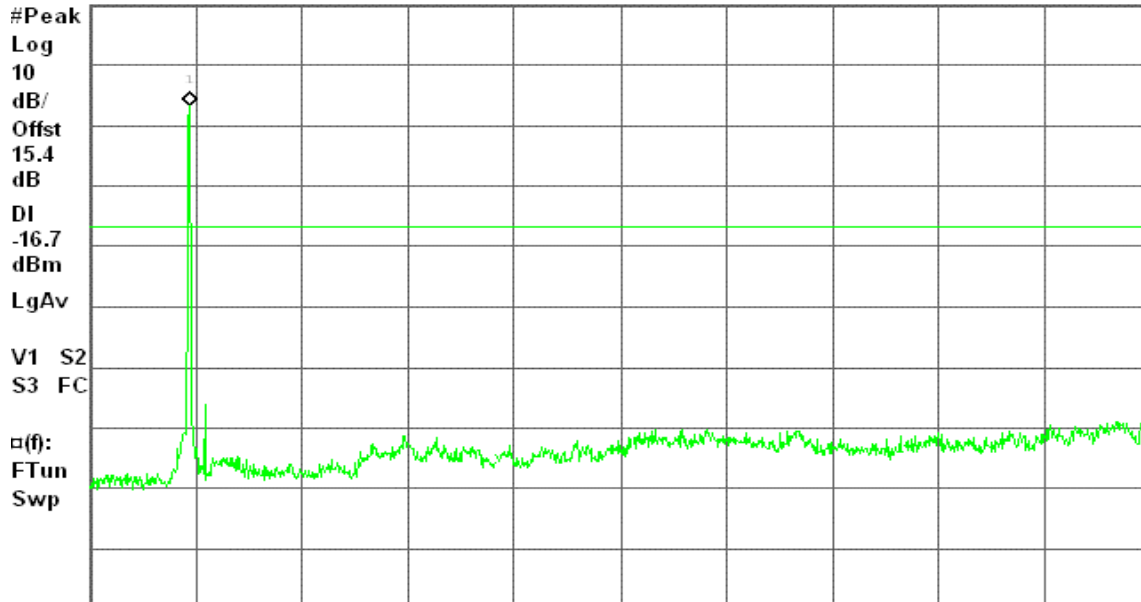
Spurious, 40 Mode High Ch.

Mkr1 2.47 GHz

Ref 20 dBm

Atten 20 dB

3.29 dBm



Center 13.02 GHz

Span 25.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 3.131 s (1001 pts)



IEEE 802.11a mode

CH Low

Agilent 13:33:19 Aug 7, 2007

R T

Spurious, a Mode Low Ch.

Mkr1 5.75 GHz

Ref 20 dBm

Atten 20 dB

-1.79 dBm

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-21.8

dBm

LgAv

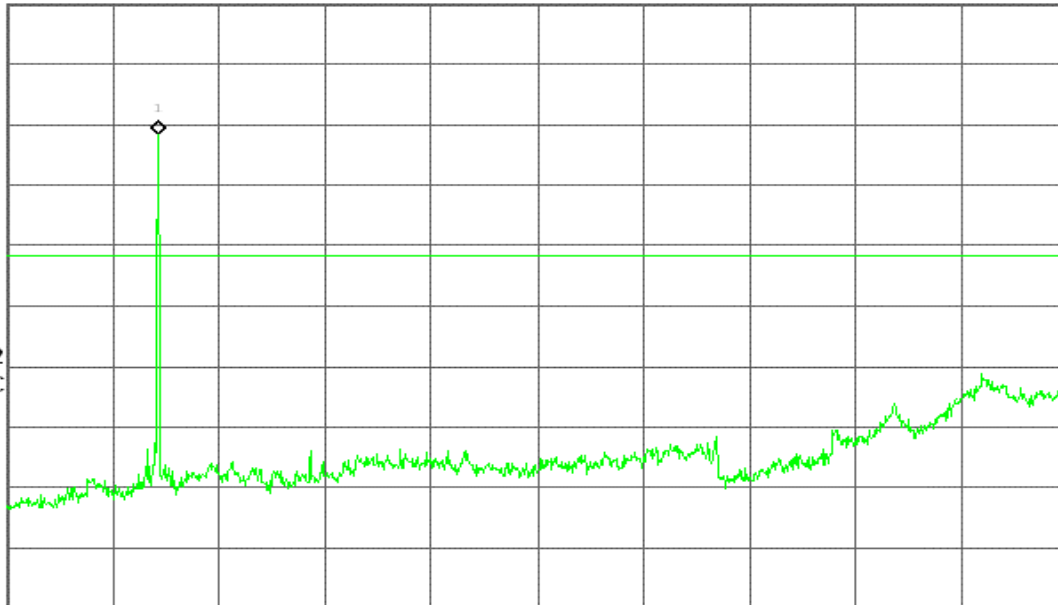
V1 S2

S3 FC

□(f):

FTun

Swp



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

CH Mid

Agilent 13:39:16 Aug 7, 2007

R T

Spurious, a Mode Mid Ch.

Mkr1 5.79 GHz

Ref 20 dBm

Atten 20 dB

-1.35 dBm

#Peak

Log

10

dB/

Offst

11.5

dB

DI

-21.4

dBm

LgAv

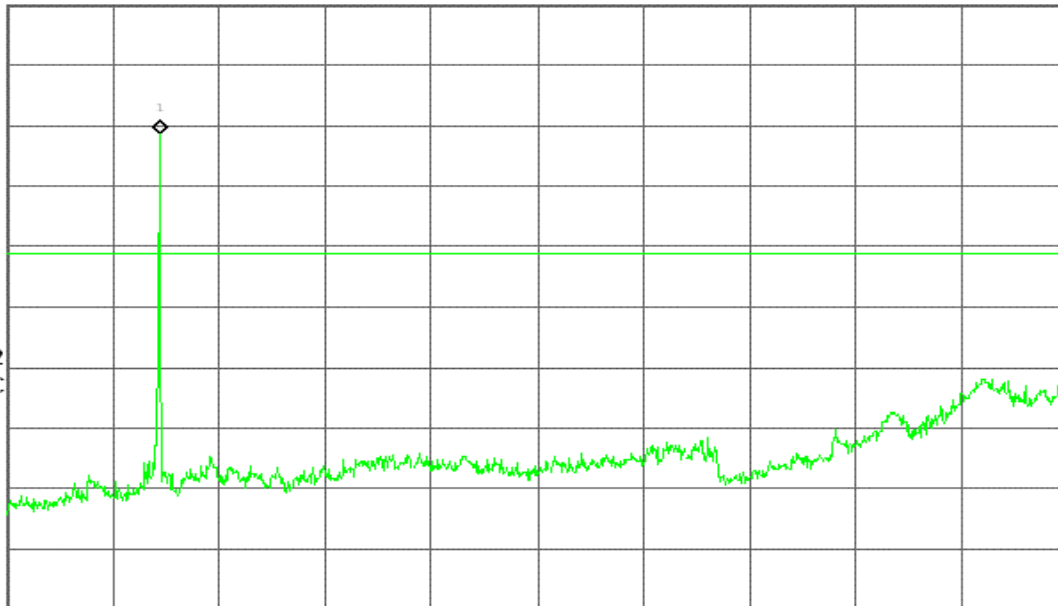
V1 S2

S3 FC

□(f):

FTun

Swp



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



CH High

Agilent 13:45:07 Aug 7, 2007

R T

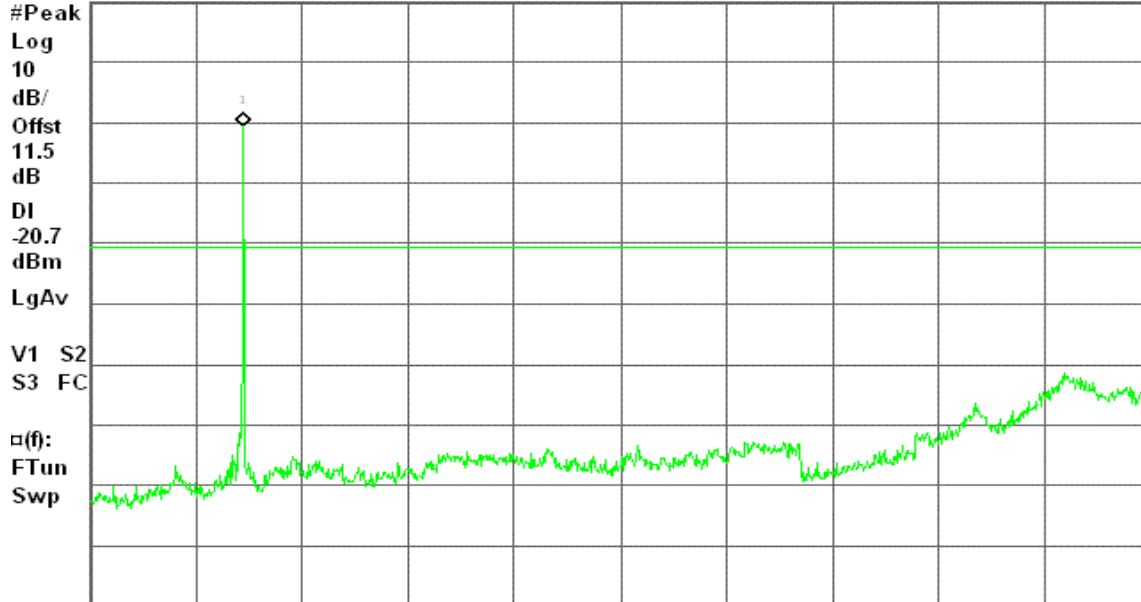
Spurious, a Mode High Ch.

Mkr1 5.83 GHz

Ref 20 dBm

Atten 20 dB

-0.70 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

draft 802.11n Standard-20 MHz Channel mode / Chain 0

CH Low

Agilent 14:22:20 Aug 7, 2007

R T

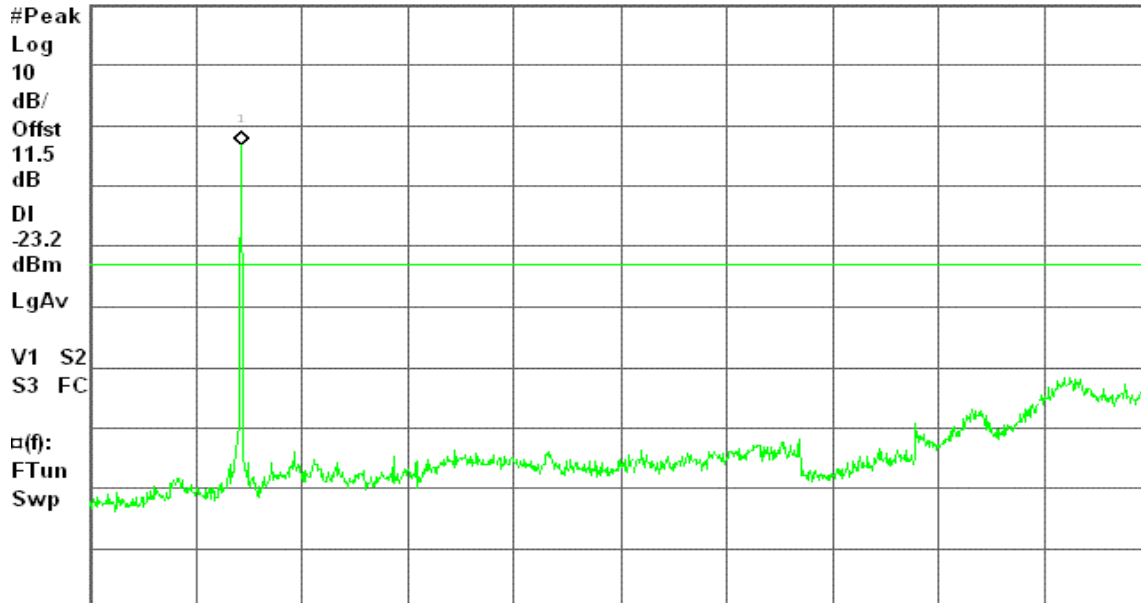
Spurious, a Mode Low Ch.

Mkr1 5.75 GHz

Ref 20 dBm

Atten 20 dB

-3.17 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



CH Mid

Agilent 14:27:44 Aug 7, 2007

R T

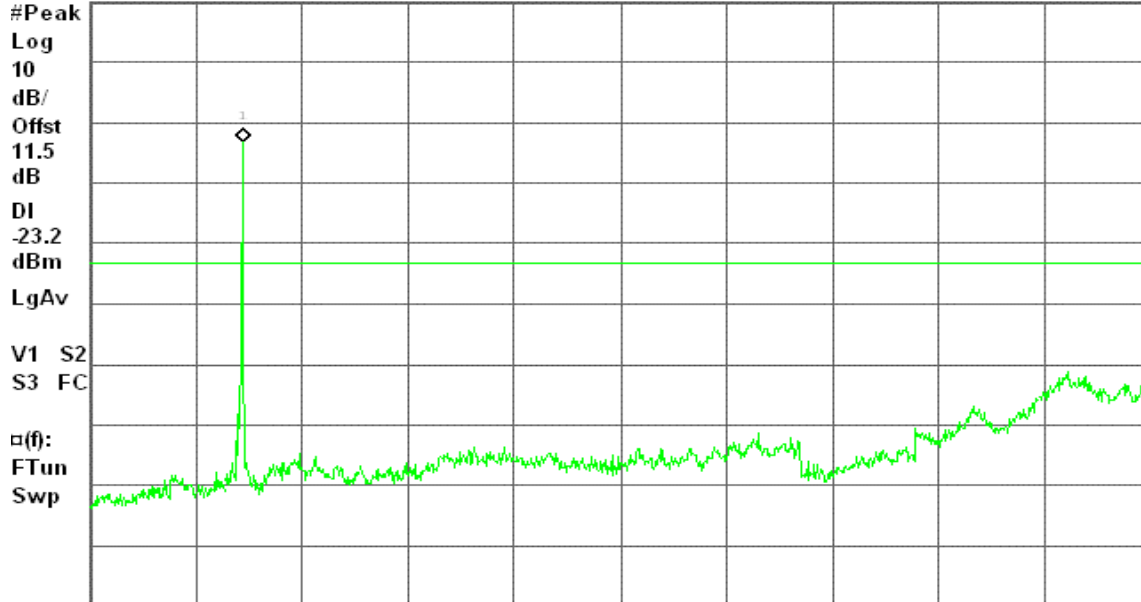
Spurious, a Mode Mid Ch.

Mkr1 5.79 GHz

Ref 20 dBm

Atten 20 dB

-3.24 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

CH High

Agilent 14:32:58 Aug 7, 2007

R T

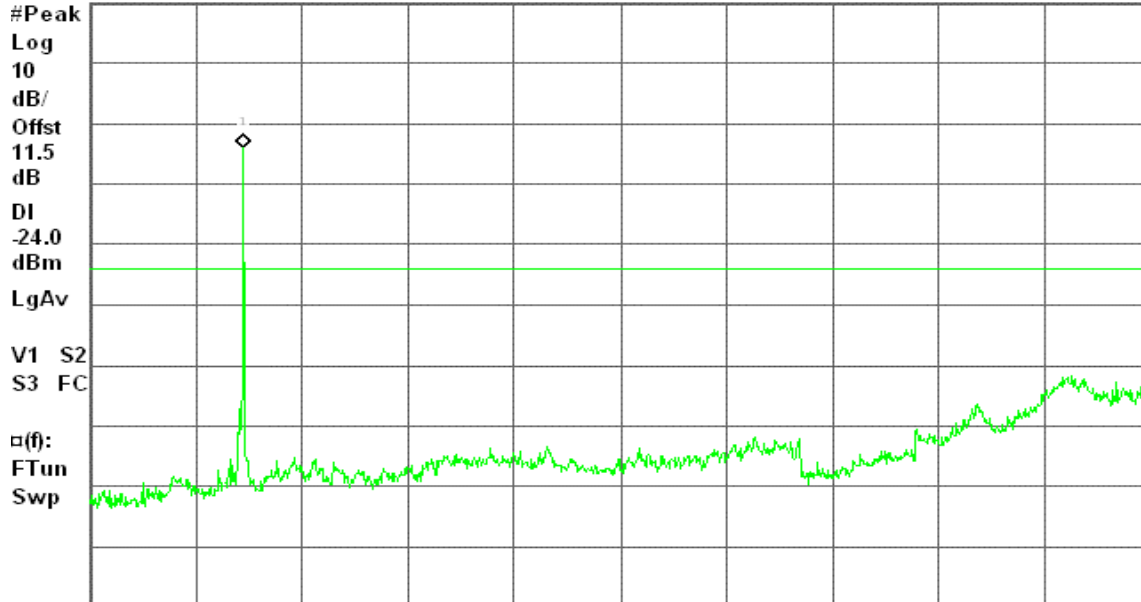
Spurious, a Mode High Ch.

Mkr1 5.83 GHz

Ref 20 dBm

Atten 20 dB

-4.02 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



draft 802.11n Standard-20 MHz Channel mode / Chain 1

CH Low

Agilent 15:44:05 Aug 7, 2007

R T

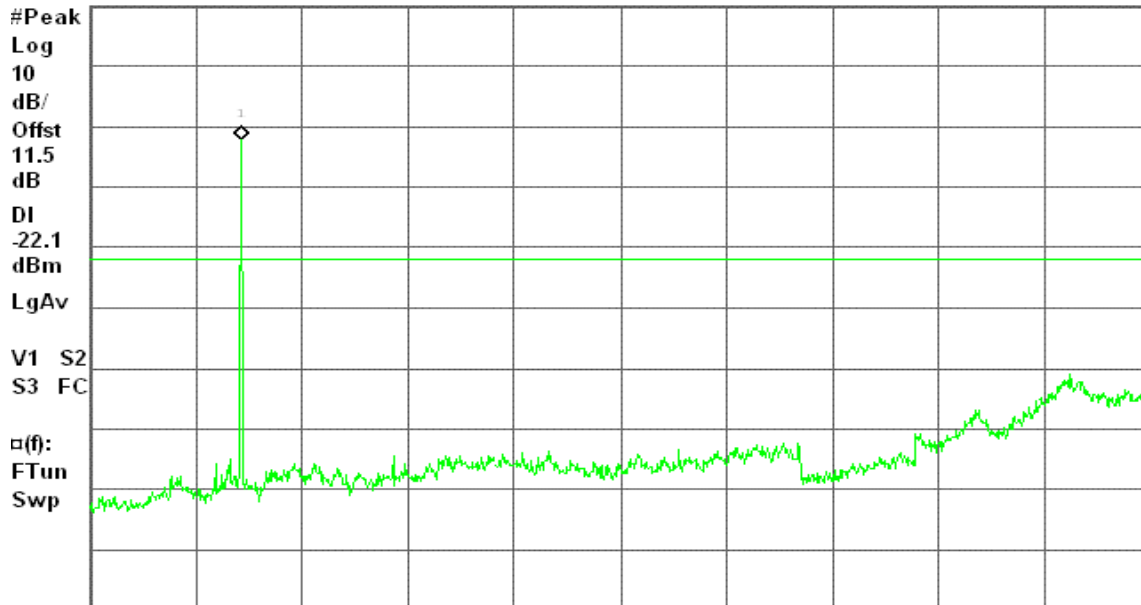
Spurious, a Mode Low Ch.

Mkr1 5.75 GHz

Ref 20 dBm

Atten 20 dB

-2.14 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

CH Mid

Agilent 15:50:43 Aug 7, 2007

R T

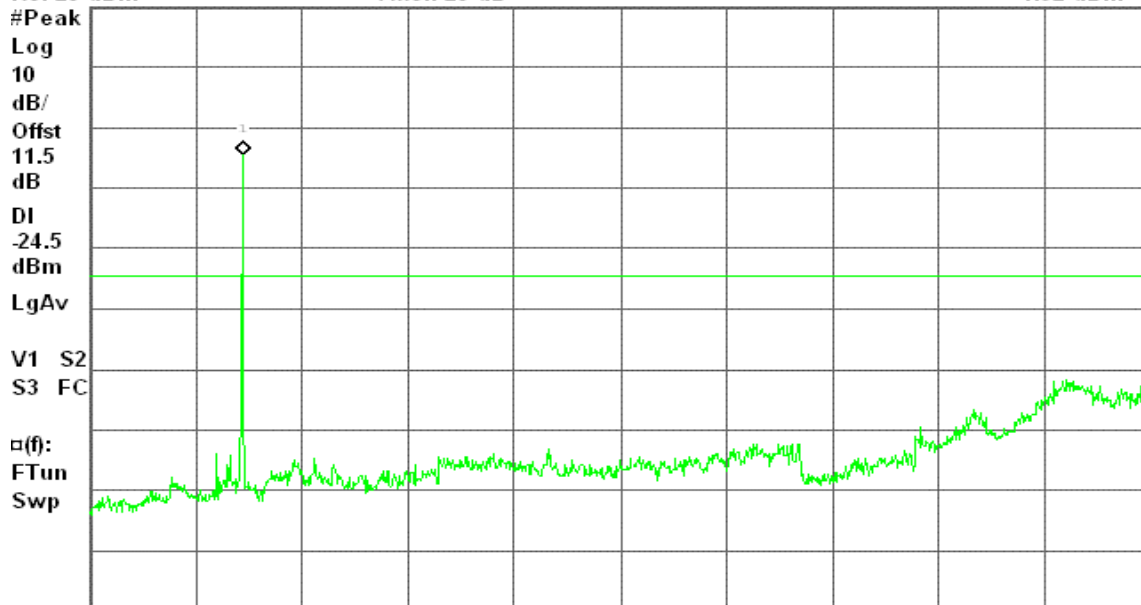
Spurious, a Mode Mid Ch.

Mkr1 5.79 GHz

Ref 20 dBm

Atten 20 dB

-4.52 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



CH High

Agilent 15:57:02 Aug 7, 2007

R T

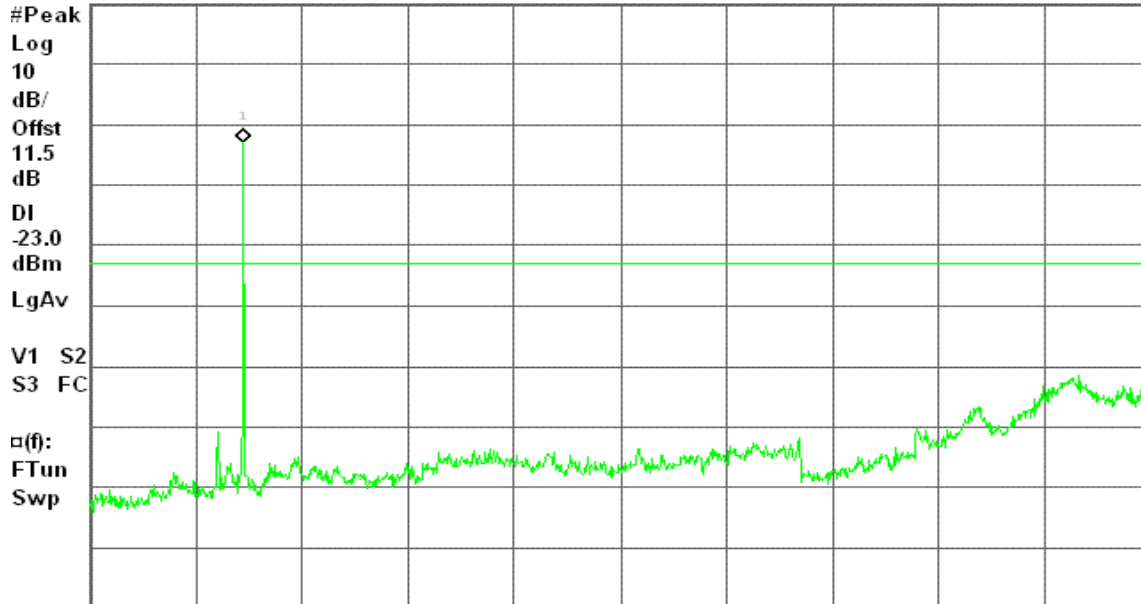
Spurious, a Mode High Ch.

Mkr1 5.83 GHz

Ref 20 dBm

Atten 20 dB

-2.95 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 0

CH Low

Agilent 17:25:20 Aug 23, 2007

R T

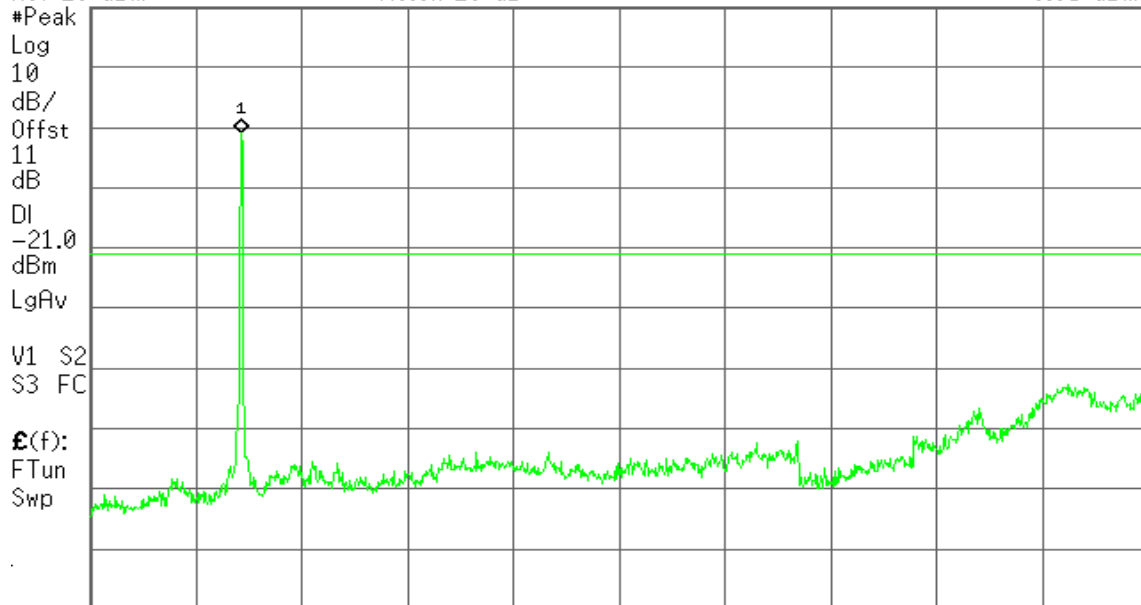
Spurious, a Mode Low Ch.

Mkr1 5.75 GHz

Ref 20 dBm

Atten 20 dB

-0.95 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



CH High

Agilent 17:35:06 Aug 23, 2007

R T

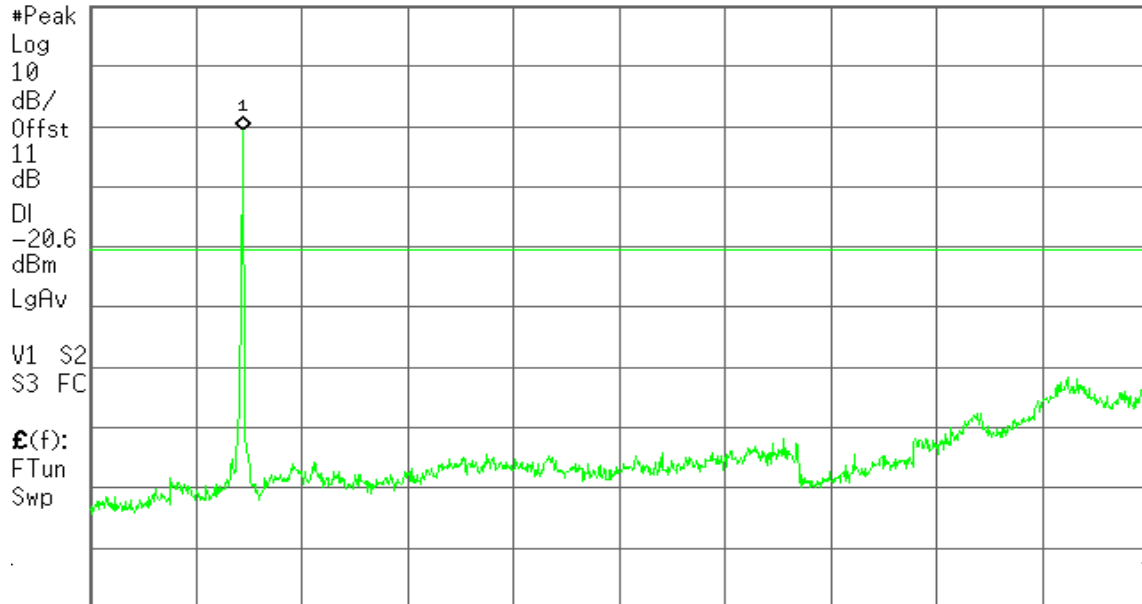
Spurious, a Mode High Ch.

Mkr1 5.79 GHz

Ref 20 dBm

Atten 20 dB

-0.58 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

draft 802.11n Wide-40 MHz Channel mode / Chain 1

CH Low

Agilent 17:52:20 Aug 23, 2007

R T

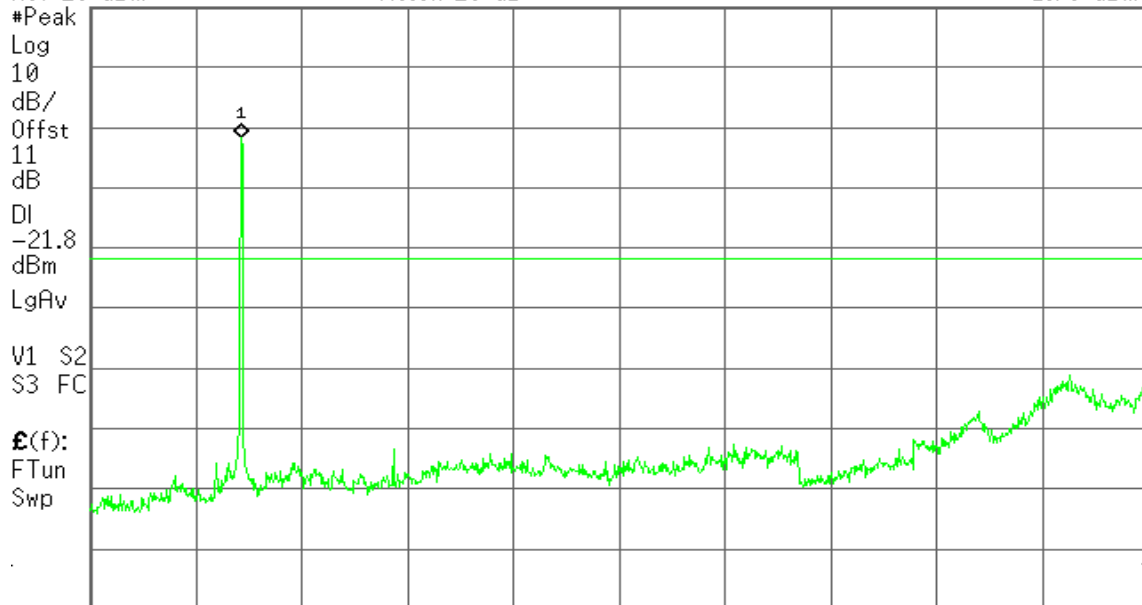
Spurious, a Mode Low Ch.

Mkr1 5.75 GHz

Ref 20 dBm

Atten 20 dB

-1.76 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



CH High

Agilent 17:45:38 Aug 23, 2007

R T

Spurious, a Mode High Ch.

Mkr1 5.79 GHz

Ref 20 dBm

Atten 20 dB

-3.09 dBm

#Peak

Log

10

dB/

Offst

11

dB

DI

-23.1

dBm

LgAv

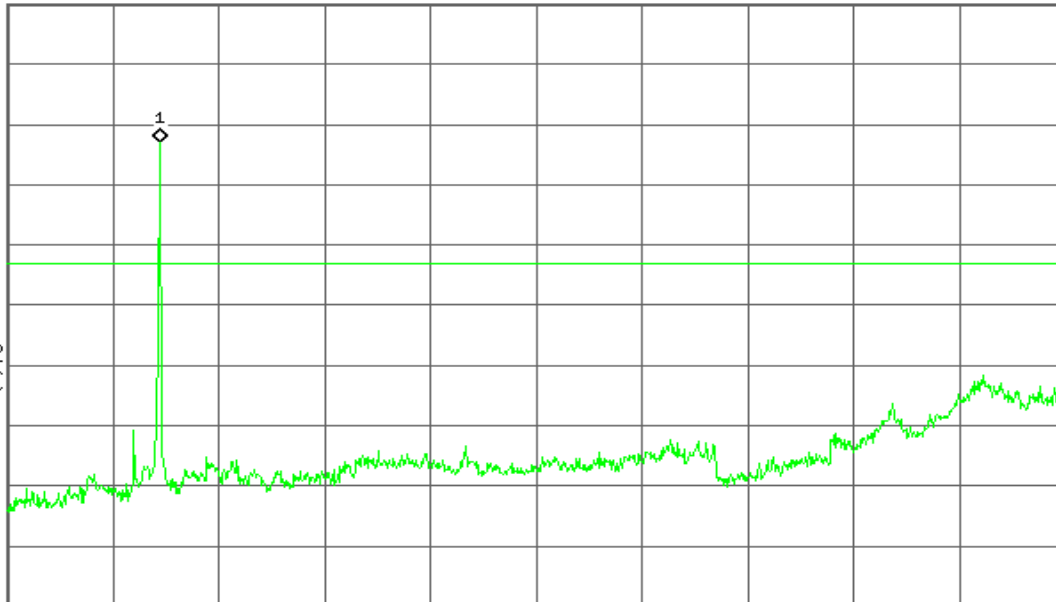
V1 S2

S3 FC

£(f):

FTun

Swp



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

draft 802.11n Standard-20 MHz Channel mode with combiner

CH Low

Agilent 11:40:18 Aug 8, 2007

R T

Spurious, a Mode Low Ch.

Mkr1 5.75 GHz

Ref 20 dBm

Atten 20 dB

3.29 dBm

#Peak

Log

10

dB/

Offst

15.4

dB

DI

-16.7

dBm

LgAv

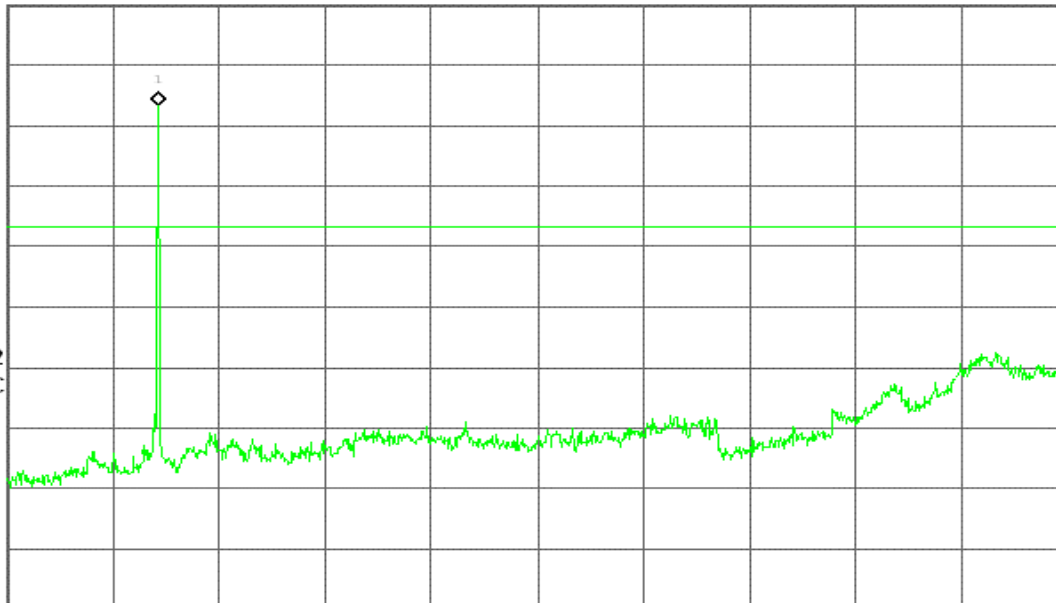
V1 S2

S3 FC

£(f):

FTun

Swp



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



CH Mid

Agilent 11:34:25 Aug 8, 2007

R T

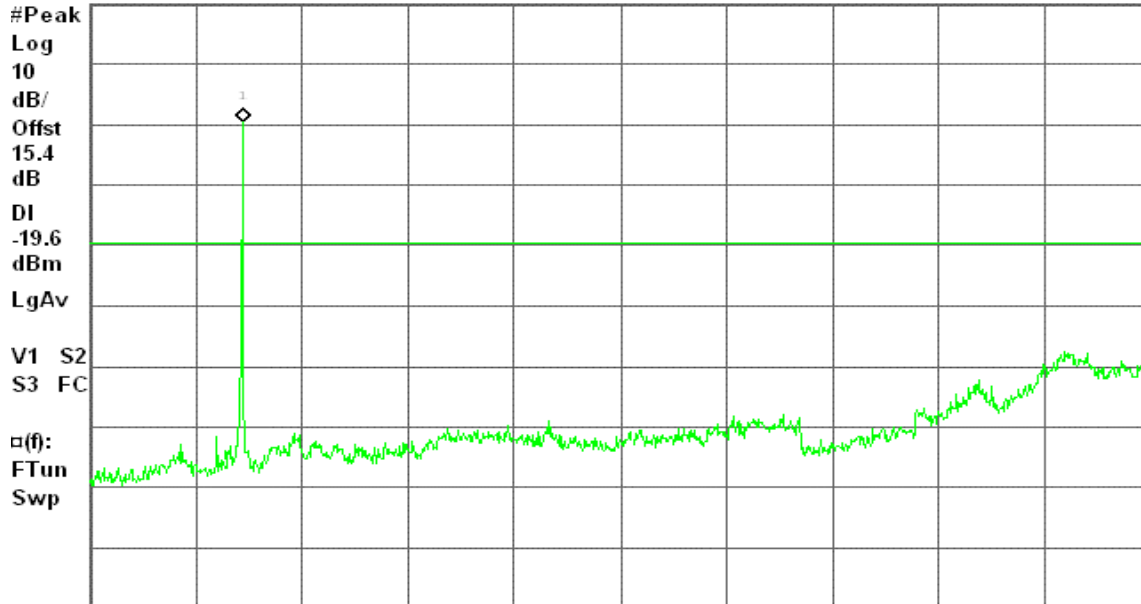
Spurious, a Mode Mid Ch.

Mkr1 5.79 GHz

Ref 20 dBm

Atten 20 dB

0.43 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

CH High

Agilent 11:29:23 Aug 8, 2007

R L

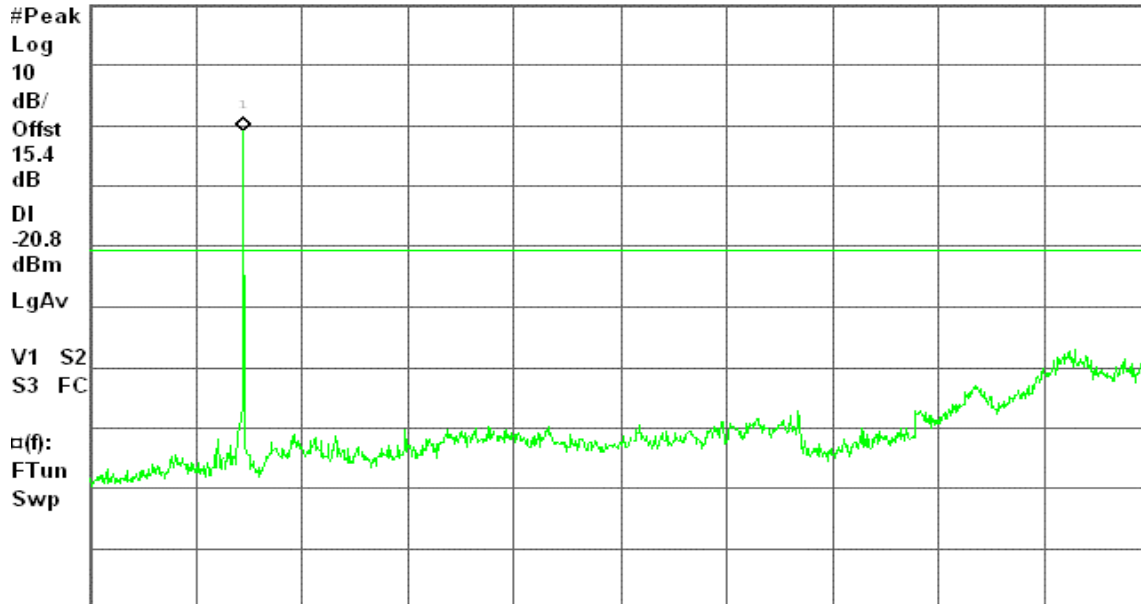
Spurious, a Mode High Ch.

Mkr1 5.83 GHz

Ref 20 dBm

Atten 20 dB

-0.82 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



draft 802.11n Wide-40 MHz Channel mode with combiner

CH Low

Agilent 18:21:40 Aug 23, 2007

R L

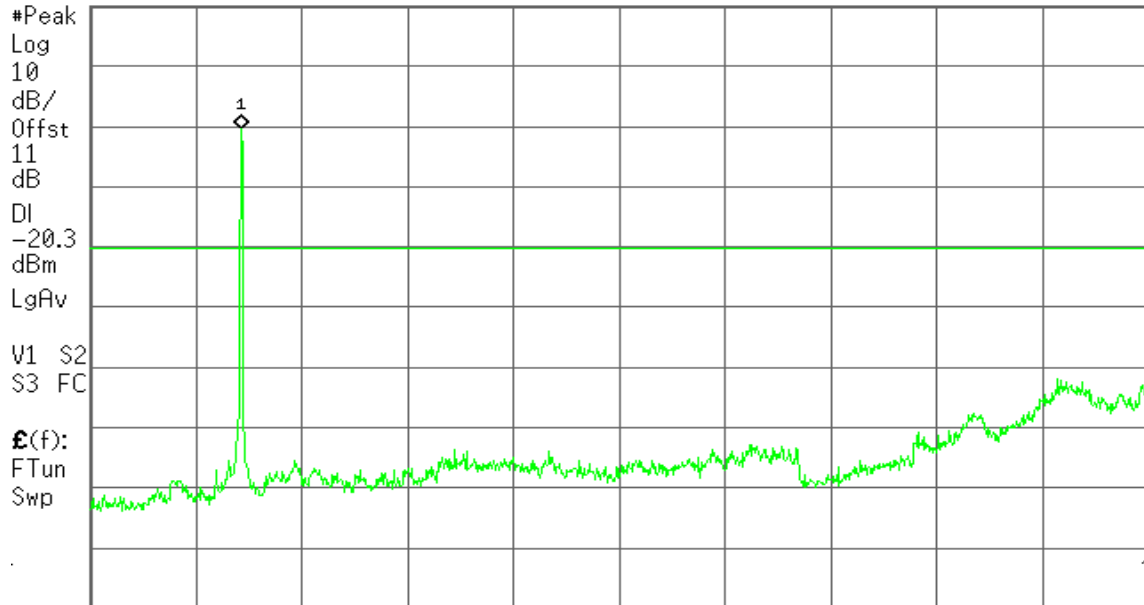
Spurious, a Mode Low Ch.

Mkr1 5.75 GHz

Ref 20 dBm

Atten 20 dB

-0.33 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)

CH High

Agilent 18:33:04 Aug 23, 2007

R T

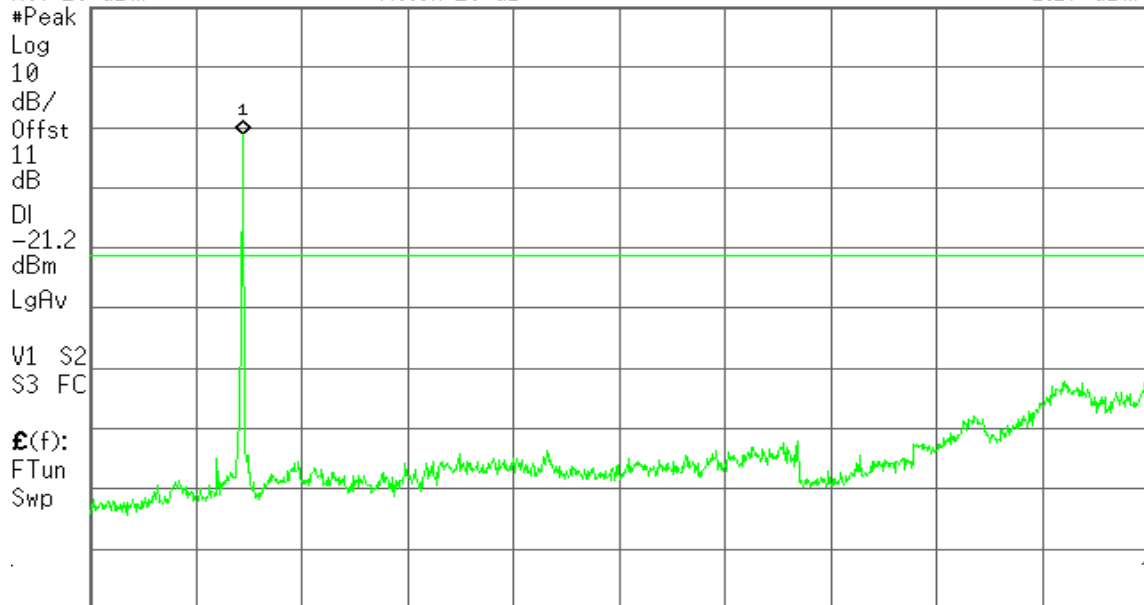
Spurious, a Mode High Ch.

Mkr1 5.79 GHz

Ref 20 dBm

Atten 20 dB

-1.17 dBm



Center 20.02 GHz

Span 39.97 GHz

#Res BW 100 kHz

#VBW 100 kHz

Sweep 4.819 s (1001 pts)



7.6.2 Radiated Emissions

LIMIT

1. 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

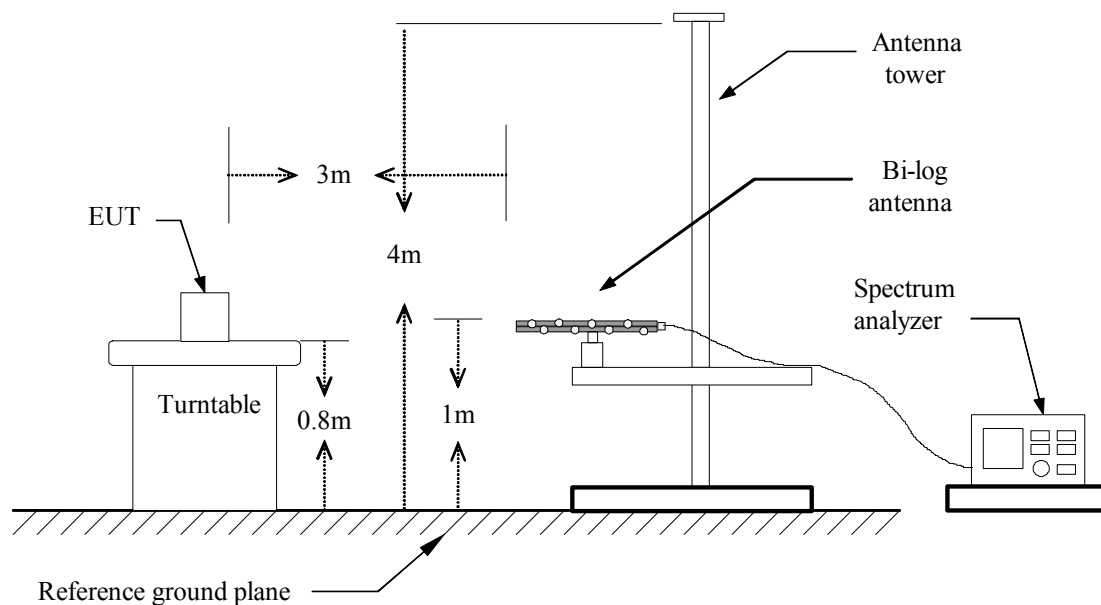
Remark: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of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

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

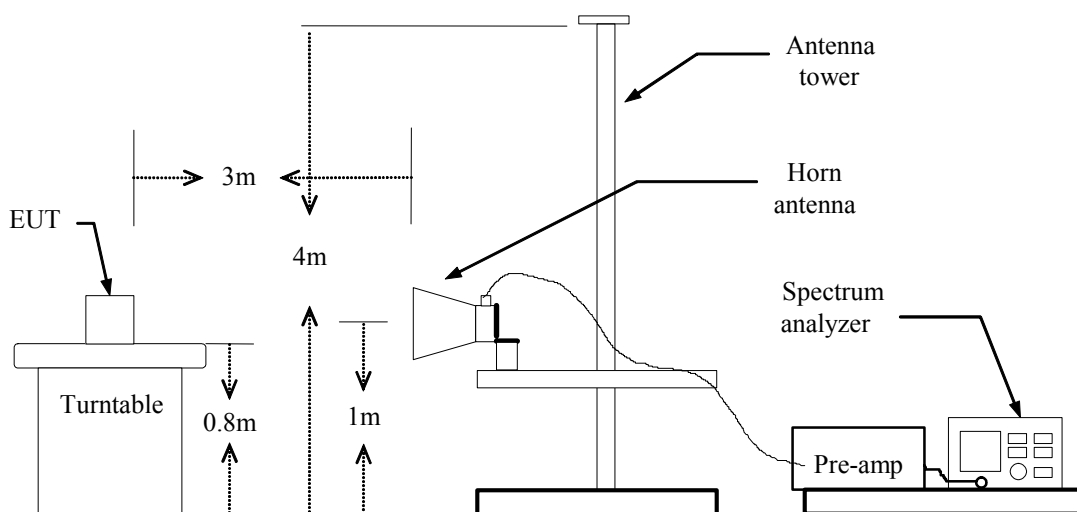
Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 3-meter)	Field Strength (dB $\mu\text{V/m}$ at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

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 1 GHz****Operation Mode:** Normal Link**Test Date:** August 13, 2007**Temperature:** 25°C**Tested by:** Nan Tsai**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
167.42	V	43.13	-14.59	28.55	43.50	-14.95	Peak
240.17	V	51.64	-14.62	37.02	46.00	-8.98	Peak
264.42	V	48.01	-13.46	34.55	46.00	-11.45	Peak
377.58	V	44.06	-10.16	33.91	46.00	-12.09	Peak
477.82	V	40.21	-7.70	32.52	46.00	-13.48	Peak
678.28	V	33.76	-4.75	29.01	46.00	-16.99	Peak
167.42	H	41.26	-14.59	26.68	43.50	-16.82	Peak
240.17	H	51.21	-14.62	36.59	46.00	-9.41	Peak
264.42	H	49.84	-13.46	36.37	46.00	-9.63	Peak
288.67	H	49.07	-12.69	36.38	46.00	-9.62	Peak
379.20	H	41.73	-10.13	31.60	46.00	-14.40	Peak
532.78	H	34.24	-7.03	27.20	46.00	-18.80	Peak

Remark:

- Measuring frequencies from 30 MHz to the 1GHz.*
- Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using peak/quasi-peak detector mode.*
- Quasi-peak test would be performed if the peak result were greater than the quasi-peak limit or as required by the applicant.*
- 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.*
- Margin (dB) = Remark result (dBuV/m) – Quasi-peak limit (dBuV/m).*

**Above 1 GHz****Operation Mode:** Tx / IEEE 802.11b mode / CH Low**Test Date:** July 30, 2007**Temperature:** 25°C**Tested by:** Wolf Huang**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
4941.67	V	45.06	---	0.67	45.73	---	74.00	54.00	-8.27	Peak
6833.33	V	44.36	---	3.66	48.02	---	74.00	54.00	-5.98	Peak
N/A										
4825.00	H	48.66	---	0.55	49.22	---	74.00	54.00	-4.78	Peak
7066.67	H	44.04	---	3.87	47.91	---	74.00	54.00	-6.09	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** Tx / IEEE 802.11b mode / CH Mid**Test Date:** July 30, 2007**Temperature:** 25°C**Tested by:** Wolf Huang**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
4783.33	V	44.88	---	0.51	45.39	---	74.00	54.00	-8.61	Peak
6450.00	V	45.48	---	2.90	48.37	---	74.00	54.00	-5.63	Peak
7183.33	V	44.70	---	3.65	48.35	---	74.00	54.00	-5.65	Peak
N/A										
4875.00	H	49.00	---	0.60	49.61	---	74.00	54.00	-4.39	Peak
6741.67	H	44.71	---	3.47	48.18	---	74.00	54.00	-5.82	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. $\text{Margin (dB)} = \text{Remark result (dBuV/m)} - \text{Average limit (dBuV/m)}$.

**Operation Mode:** Tx / IEEE 802.11b mode / CH High**Test Date:** July 30, 2007**Temperature:** 25°C**Tested by:** Wolf Huang**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
4925.00	V	45.50	---	0.65	46.15	---	74.00	54.00	-7.85	Peak
6958.33	V	44.24	---	3.91	48.15	---	74.00	54.00	-5.85	Peak
N/A										
4925.00	H	48.49	---	0.65	49.14	---	74.00	54.00	-4.86	Peak
6966.67	H	44.12	---	3.93	48.05	---	74.00	54.00	-5.95	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. $\text{Margin (dB)} = \text{Remark result (dBuV/m)} - \text{Average limit (dBuV/m)}$.

**Operation Mode:** Tx / IEEE 802.11g mode / CH Low**Test Date:** July 30, 2007**Temperature:** 25°C**Tested by:** Wolf Huang**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
7025.00	V	44.49	---	3.95	48.44	---	74.00	54.00	-5.56	Peak
N/A										
6950.00	H	44.04	---	3.89	47.94	---	74.00	54.00	-6.06	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. $\text{Margin (dB)} = \text{Remark result (dBuV/m)} - \text{Average limit (dBuV/m)}$.

**Operation Mode:** Tx / IEEE 802.11g mode/ CH Mid**Test Date:** July 30, 2007**Temperature:** 25°C**Tested by:** Wolf Huang**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
7125.00	V	44.36	---	3.76	48.12	---	74.00	54.00	-5.88	Peak
N/A										
6925.00	H	43.97	---	3.84	47.81	---	74.00	54.00	-6.19	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. $\text{Margin (dB)} = \text{Remark result (dBuV/m)} - \text{Average limit (dBuV/m)}$.

**Operation Mode:** Tx / IEEE 802.11g mode/ CH High**Test Date:** July 30, 2007**Temperature:** 25°C**Tested by:** Wolf Huang**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
6350.00	V	45.26	---	2.72	47.98	---	74.00	54.00	-6.02	Peak
N/A										
4925.00	H	45.11	---	0.65	45.76	---	74.00	54.00	-8.24	Peak
6375.00	H	45.44	---	2.76	48.20	---	74.00	54.00	-5.80	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. $\text{Margin (dB)} = \text{Remark result (dBuV/m)} - \text{Average limit (dBuV/m)}$.



Operation Mode: TX / draft 802.11n Standard-20 MHz Channel mode / CH Low

Test Date: July 27, 2007

Temperature: 26°C

Tested by: Wolf Huang

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
4150.00	V	45.23	---	-0.36	44.87	---	74.00	54.00	-9.13	Peak
5225.00	V	45.50	---	1.03	46.53	---	74.00	54.00	-7.47	Peak
6450.00	V	45.23	---	2.90	48.13	---	74.00	54.00	-5.87	Peak
6700.00	V	45.87	---	3.39	49.26	---	74.00	54.00	-4.74	Peak
N/A										
3441.67	H	45.29	---	-1.89	43.40	---	74.00	54.00	-10.60	AVG
5208.33	H	45.52	---	1.01	46.53	---	74.00	54.00	-7.47	
6666.67	H	44.46	---	3.32	47.78	---	74.00	54.00	-6.22	
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Standard-20 MHz Channel mode / CH Mid

Test Date: July 27, 2007

Temperature: 26°C

Tested by: Wolf Huang

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
1830.00	V	59.22	---	-6.69	52.52	---	74.00	54.00	-1.48	Peak
5591.67	V	45.78	---	1.53	47.31	---	74.00	54.00	-6.69	Peak
7766.67	V	44.28	---	4.46	48.74	---	74.00	54.00	-5.26	Peak
N/A										
5950.00	H	45.39	---	2.02	47.41	---	74.00	54.00	-6.59	Peak
6575.00	H	45.28	---	3.14	48.42	---	74.00	54.00	-5.58	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Standard-20 MHz Channel mode / CH High

Test Date: July 27, 2007

Temperature: 26°C

Tested by: Wolf Huang

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
5158.33	V	45.59	---	0.94	46.53	---	74.00	54.00	-7.47	Peak
6708.33	V	45.18	---	3.41	48.59	---	74.00	54.00	-5.41	Peak
N/A										
6333.33	H	45.35	---	2.69	48.04	---	74.00	54.00	-5.96	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode
/ CH Low

Test Date: July 27, 2007

Temperature: 26°C

Tested by: Wolf Huang

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
4150.00	V	45.21	---	-0.36	44.85	---	74.00	54.00	-9.15	Peak
7416.67	V	44.01	---	3.21	47.22	---	74.00	54.00	-6.78	Peak
N/A										
4133.33	H	44.60	---	-0.39	44.21	---	74.00	54.00	-9.79	Peak
5933.33	H	45.57	---	2.00	47.57	---	74.00	54.00	-6.43	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode
/ CH Mid

Test Date: July 27, 2007

Temperature: 26°C

Tested by: Wolf Huang

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
5200.00	V	45.74	---	1.00	46.74	---	74.00	54.00	-7.26	Peak
6208.33	V	45.97	---	2.47	48.44	---	74.00	54.00	-5.56	Peak
6458.33	V	45.75	---	2.91	48.67	---	74.00	54.00	-5.33	Peak
6641.67	V	46.40	---	3.27	49.67	---	74.00	54.00	-4.33	Peak
N/A										
3716.67	H	44.60	---	-1.30	43.30	---	74.00	54.00	-10.70	Peak
7758.33	H	43.88	---	4.42	48.29	---	74.00	54.00	-5.71	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode
/ CH High

Test Date: July 27, 2007

Temperature: 26°C

Tested by: Wolf Huang

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
5925.00	V	45.35	---	1.99	47.34	---	74.00	54.00	-6.66	Peak
7025.00	V	44.09	---	3.95	48.03	---	74.00	54.00	-5.97	Peak
N/A										
3916.67	H	44.35	---	-0.82	43.53	---	74.00	54.00	-10.47	Peak
6958.33	H	44.03	---	3.91	47.94	---	74.00	54.00	-6.06	Peak
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** Tx / IEEE 802.11a mode/ CH Low**Test Date:** August 2, 2007**Temperature:** 25°C**Tested by:** Steven Young**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
11483.33	V	40.97	36.69	15.31	56.28	52.00	74.00	54.00	-2.00	AVG
N/A										
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. $\text{Margin (dB)} = \text{Remark result (dBuV/m)} - \text{Average limit (dBuV/m)}$.

**Operation Mode:** Tx / IEEE 802.11a mode/ CH Mid**Test Date:** August 2, 2007**Temperature:** 25°C**Tested by:** Steven Young**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
N/A										
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. $\text{Margin (dB)} = \text{Remark result (dBuV/m)} - \text{Average limit (dBuV/m)}$.

**Operation Mode:** Tx / IEEE 802.11a mode/ CH High**Test Date:** August 2, 2007**Temperature:** 25°C**Tested by:** Steven Young**Humidity:** 55% RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant.Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
N/A										
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. $\text{Margin (dB)} = \text{Remark result (dBuV/m)} - \text{Average limit (dBuV/m)}$.

**Operation Mode:** TX / draft 802.11n Standard-20 MHz Channel mode / CH Low**Test Date:** July 27, 2007**Temperature:** 25°C**Tested by:** Steven Young**Humidity:** 55 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
11500.00	V	46.87	37.17	15.31	62.18	52.48	74.00	54.00	-1.52	AVG
N/A										
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Standard-20 MHz Channel mode / CH Mid

Test Date: August 11, 2007

Temperature: 25°C

Tested by: Steven Young

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
5631.67	V	57.22	45.31	1.59	58.81	46.90	74.00	54.00	-7.10	AVG
11566.67	V	43.21	36.62	15.31	58.52	51.93	74.00	54.00	-2.07	AVG
N/A										
4826.67	H	54.21	42.17	0.56	54.77	42.73	74.00	54.00	-11.27	AVG
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Standard-20 MHz Channel mode / CH High

Test Date: July 27, 2007

Temperature: 25°C

Tested by: Steven Young

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
11650.00	V	40.55	34.24	15.30	55.85	49.54	74.00	54.00	-4.46	AVG
N/A										
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / draft 802.11n Wide-40 MHz Channel mode
/ CH Low

Test Date: August 2, 2007

Temperature: 25°C

Tested by: Steven Young

Humidity: 55 % RH

Polarity: Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
11500.00	V	42.31	34.54	15.31	57.62	49.85	74.00	54.00	-4.15	AVG
N/A										
11500.00	H	39.87	32.14	15.31	55.17	47.45	74.00	54.00	-6.55	AVG
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).

**Operation Mode:** TX / draft 802.11n Wide-40 MHz Channel mode
/ CH High**Test Date:** August 2, 2007**Temperature:** 25°C**Tested by:** Steven Young**Humidity:** 55 % RH**Polarity:** Ver. / Hor.

Frequency (MHz)	Ant. Pol. (H/V)	Reading (Peak) (dBuV)	Reading (Average) (dBuV)	Correction Factor (dB/m)	Result (Peak) (dBuV/m)	Result (Average) (dBuV/m)	Limit (Peak) (dBuV/m)	Limit (Average) (dBuV/m)	Margin (dB)	Remark
11600.00	V	40.29	34.00	15.31	55.59	49.31	74.00	54.00	-4.69	AVG
N/A										
N/A										

Remark:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. 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.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



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 μ H/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 (dB μ V)	
	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 1 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:** August 13, 2007
Temperature: 25°C **Tested by:** Eddy Chung
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
0.152	49.100	42.380	0.153	49.253	42.533	65.890	55.890	-16.637	-13.357	L1
0.223	40.170	33.580	0.102	40.272	33.682	62.706	52.706	-22.435	-19.025	L1
0.458	33.770	25.580	0.015	33.785	25.595	56.729	46.729	-22.943	-21.133	L1
4.505	30.710	27.630	0.085	30.795	27.715	56.000	46.000	-25.205	-18.285	L1
10.824	34.330	31.490	0.319	34.649	31.809	60.000	50.000	-25.351	-18.191	L1
18.609	37.220	32.630	0.470	37.690	33.100	60.000	50.000	-22.310	-16.900	L1
0.154	46.840	40.410	0.151	46.991	40.561	65.781	55.781	-18.790	-15.220	L2
0.238	36.820	30.170	0.096	36.916	30.266	62.166	52.166	-25.250	-21.900	L2
0.375	37.820	30.460	0.046	37.866	30.506	58.389	48.389	-20.524	-17.884	L2
0.512	36.530	26.590	0.000	36.530	26.590	56.000	46.000	-19.470	-19.410	L2
0.984	34.170	26.930	0.000	34.170	26.930	56.000	46.000	-21.830	-19.070	L2
4.329	32.130	29.070	0.080	32.210	29.150	56.000	46.000	-23.790	-16.850	L2
18.908	37.200	34.420	0.475	37.675	34.895	60.000	50.000	-22.325	-15.105	

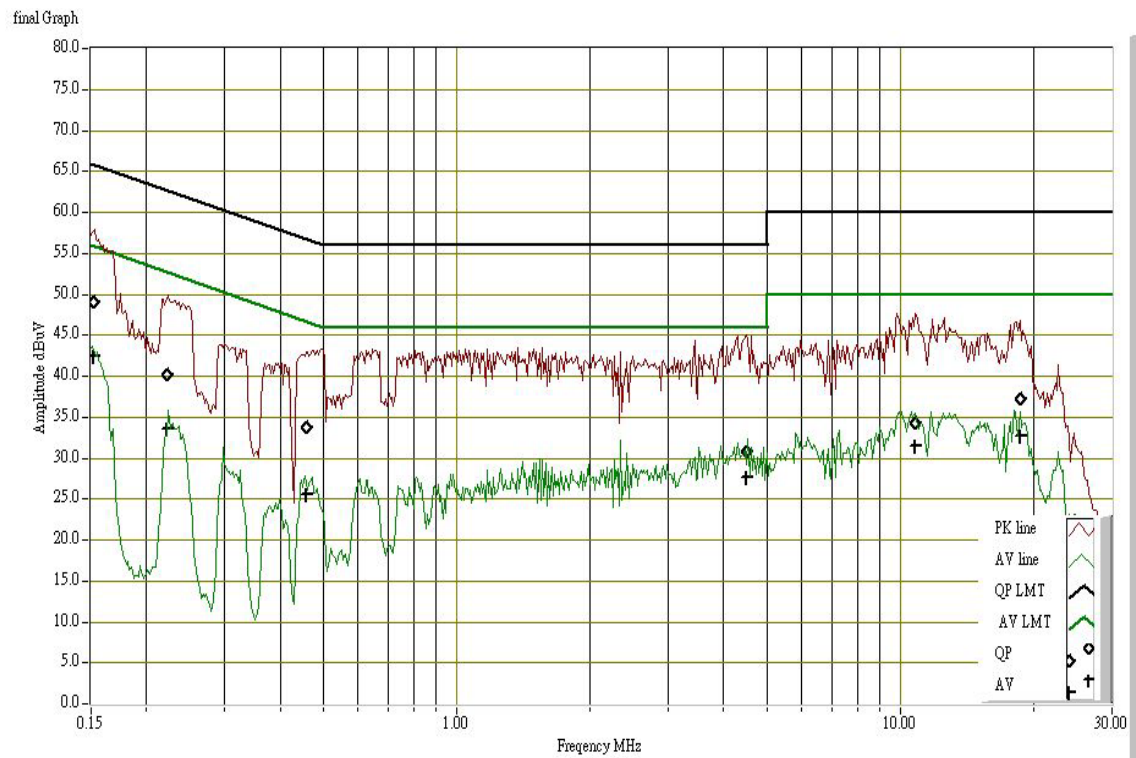
Remark:

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 to 30MHz was 10kHz; the IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9kHz.
4. L1 = Line One (Live Line) / L2 = Line Two (Neutral Line)

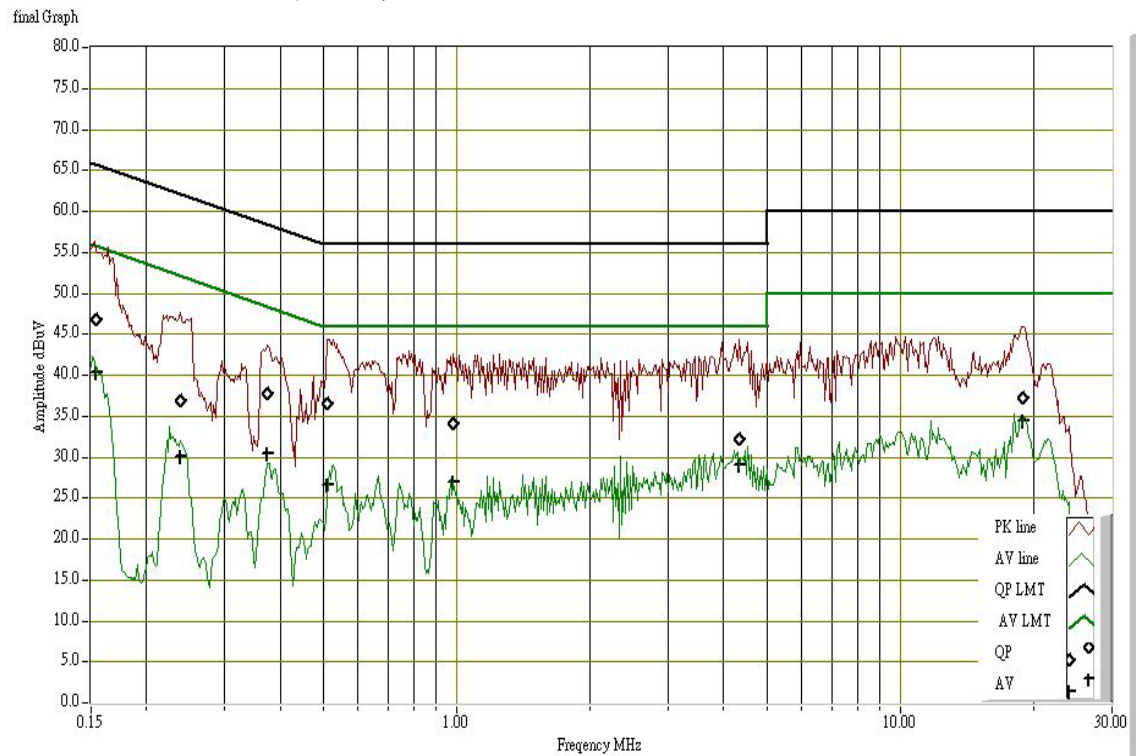


Test Plots

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	Notebook PC
Frequency band (Operating)	☒ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 5.745GHz ~ 5.825GHz ☐ Others: <u>Bluetooth: 2.402GHz ~ 2.480GHz</u>
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity
Max. output power	IEEE 802.11b mode: 22.02 dBm (159.22mW) IEEE 802.11g mode: 20.76 dBm (119.12mW) draft 802.11n Standard-20 MHz Channel mode: 21.87 dBm (153.82mW) draft 802.11n Wide-40 MHz Channel mode: 19.81 dBm (95.72mW)
Antenna gain (Max)	-0.47 dBi (Numeric gain: 0.90)
Evaluation applied	☐ MPE Evaluation ☒ SAR Evaluation ☐ N/A

Remark:

1. The maximum output power is 22.02dBm (159.22mW) at 2412MHz (with 0.90 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.

Remark: Please refer to the separated SAR report.



EUT	Notebook PC
Frequency band (Operating)	☐ WLAN: 2.412GHz ~ 2.462GHz ☒ WLAN: 5.745GHz ~ 5.825GHz ☐ Others: <u>Bluetooth: 2.402GHz ~ 2.480GHz</u>
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm ²) ☒ General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☒ Tx/Rx diversity
Max. output power	IEEE 802.11a mode: 18.58 dBm (72.11mW) draft 802.11n Standard-20 MHz Channel mode: 19.05 dBm (80.35mW) draft 802.11n Wide-40 MHz Channel mode: 20.54 dBm (113.24mW)
Antenna gain (Max)	-0.55 dBi (Numeric gain: 0.88)
Evaluation applied	☐ MPE Evaluation ☒ SAR Evaluation ☐ N/A

Remark:

1. The maximum output power is 20.54dBm (113.24mW) at 5755MHz (with 0.88 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.

Remark: Please refer to the separated SAR report.