



FCC 47 CFR PART 15 SUBPART C

TEST REPORT

For

**802.11n Wireless ADSL2+ 4-port
Gateway**

MODEL: P-660HN-T1A, P-660HN-T3A

Trade Name: ZyXEL

**Test Report Number:
KS100623B03-RP**

Issued to

**ZyXEL Communications Corporation
No. 6, Innovation Rd.II Science Based Industrial
Park,Hsin-Chu,Taiwan**

Prepared by

**Compliance Certification Services Inc.
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Issued Date: July 16, 2010



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Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Revision History

Rev.	IssueDate	Revisions	Effect Page	Revised By
00	July 16, 2010	Initial Issue	ALL	Miro Chueh



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1. TEST RESULT CERTIFICATION

Product name: 802.11n Wireless ADSL2+ 4-port Gateway

Model Number: P-660HN-T1A,P-660HN-T3A

Model discrepancy: They are identical product except for their differential market

Trade Name: ZyXEL

FCC ID: I88P660HNT1A

Device Category: Production unit

Date of Test: June 23, 2010~July 16, 2010

Applicant: ZyXEL Communications Corporation
No. 6, Innovation Rd.II Science Based Industrial Park,Hsin-Chu,Taiwan

Manufacturer: ZyXEL Communications (WuXi) CO., Ltd
Wuxi 60#-E,Minshan Road,New District,Wuxi Jiangsu, PRC

APPLICABLE STANDARDS	
STANDARD	STANDARD
FCC 47 CFR Part 15 Subpart C	No non-compliance noted
Deviation from Applicable Standard	
None	

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

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

Approved by:

Reviewed by:

Miro Chueh
RF Manager
Compliance Certification Service Inc.

Spring Zhou
RF Section Manager
Compliance Certification Service Inc.



2. EUT DESCRIPTION

Product name	802.11n Wireless ADSL2+ 4-port Gateway
Model Number	P-660HN-T1A,P-660HN-T3A
Trade Name	ZyXEL
FCC ID	I88P660HNT1A
Tx/Rx Frequency Range	2400 MHz ~ 2483.5 MHz
Maximum Output Power to Antenna	IEEE 802.11b mode: 15.70dBm(37.2mW) IEEE 802.11g mode: 14.21dBm(26.4mW) IEEE 802.11gn Standard-20 MHz Channel mode: 14.20dBm (26.3mW) IEEE 802.11gn Wide-40 MHz Channel mode: 14.33dBm(27.1mW)
Modulation Technique	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) IEEE 802.11n Standard-20 MHz Channel mode: OFDM (MCS 0~15) IEEE 802.11n Wide-40 MHz Channel mode: OFDM (MCS 0~15)
Number of Channels	IEEE 802.11b/g mode: 11 Channels IEEE 802.11n Standard-20 MHz Channel mode: 11 Channels IEEE 802.11n Wide-40 MHz Channel mode: 7 Channels
Antenna Specification	Antenna for 2.4GHz Gain 3.5dBi

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: **I88P660HNT1A** filing to comply with Section 15.207, 15.209 and 15.247 of the FCC Part 15, Subpart C Rules.*



3. TEST METHODOLOGY

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

3.1 EUT CONFIGURATION

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

3.2 EUT EXERCISE

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

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

3.3 GENERAL TEST PROCEDURES

Conducted Emissions

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

Radiated Emissions

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



3.4 FCC PART 15.205 RESTRICTED BANDS OF OPERATIONS

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

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

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

² Above 38.6

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



3.5 DESCRIPTION OF TEST MODES

The EUT transmitting and receiving with one (chain 0) antenna working at b/g/n mode, so one antenna working configuration was used for b/g/n mode testing in this report.

The EUT transmitting and receiving with one antenna simultaneously working at n mode, so 1x1 configuration was used for all testing in this report.

The worst-case data rates are determined to be as follows for each mode based on investigation by measuring the average power, peak power and PPSD across all data rates, bandwidths, and modulations.

The worst-case data rates:

IEEE802.11b mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 1Mbps data rate were chosen for full testing.

IEEE802.11g mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

IEEE 802.11gn Standard-20 MHz Channel mode: Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with MCS7 data rate were chosen for full testing.

IEEE 802.11gn Wide-40 MHz Channel mode: Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with MCS7 data rate were chosen for full testing.

The following test mode was scanned during the preliminary test:

Mode 1: Set the EUT vertically on the table top.

Then, the EUT configuration and cable configuration of the above highest emission mode was recorded for all final test items.



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.

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	MY44020154	11/12/2010
Peak and Avg Power Sensor	Agilent	E9327A	US40441788	09/11/2010
EPM-P Series Power Meter	Agilent	E4416A	QB41292714	09/11/2010

3M Semi Anechoic Chamber				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY44020154	11/12/2010
Pre-Amplifier	Miteq	NSP4000-NF	870731	01/21/2011
Horn Antenna	Austriah	BBHA9120D	D267	05/09/2011
SHF-EHF Horn Antenna	Schwarzbeck	BBHA9170	BBHA9170171	04/12/2011
Turn Table	CT	CT123	4162	N.C.R
Antenna Tower	CT	CTERG23	3253	N.C.R
Controller	CT	CT100	95635	N.C.R
Coax Switch	Anitsu	MP 598	M 80094	N/A
Site NSA	CCS Lab.	N/A	N/A	12/11/2010
ESPI3 EMI RECEIVER	R&S	ESPI3	101026	05/06/2022
Pre-Amplifier	MINI	ZFL-1000VH2	d041703	02/28/2022
Bilog Antenna	Sunol Sciences	JB1	A110204-2	11/22/2010
Loop Antenna	ARA	PLA-1030/B	1029	02/24/2011

Remark: The measurement uncertainty is less than +/-2.0065dB (30MHz ~ 1GHz), +/-3.0958dB (Above 1GHz) which is evaluated as per the NAMAS NIS 81 and CISPR/A/291/CDV. The measurement uncertainty is less than +/-2.50dB (30MHz ~ 1GHz), +/-3.169dB (Above 1GHz)

Power Line Conducted Emission Test Site A				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	SCHAFFNER	SCR3501	343	04/22/2011
V (V-LISN)	Schwarzbeck	NNLK 8129	8129-143	04/11/2011
LISN (EUT)	FCC	FCC-LISN-50/25 0-50-2-02	SN:05012	04/11/2011
TRANSIENT LIMITER	SCHAFFNER	CFL9206	1710	04/06/2011

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



5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at
 No.10 Weiye Rd., Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

The sites are constructed in conformance with the requirements of ANSI C63.4:2003 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

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 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	A2LA, FCC
Japan	VCCI
Canada	INDUSTRY CANADA,
Taiwan	TAF
China	CNAS

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada	Industry Canada
Japan	VCCI
Taiwan	BSMI
USA	FCC

Copies of granted accreditation certificates are available for downloading from our web site, <http://www.ccsrf.com>



6. SETUP OF EQUIPMENT UNDER TEST

6.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix 1 for the actual connections between EUT and support equipment.

6.2 SUPPORT EQUIPMENT

No.	Device Type	Brand	Model	Series No.	FCC ID	Data Cable	Power Cord
1.	Notebook pc	IBM	X31	NA	NA	NA	NA

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.*



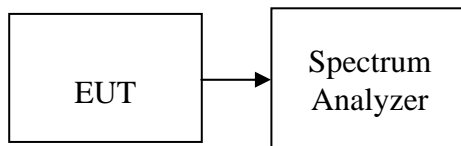
7. FCC PART 15.247 REQUIREMENTS

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

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the selected span. The VBW is set to 3 times the RBW. The sweep time is occupied.



TEST RESULTS

No non-compliance noted

Test Data

IEEE 802.11b mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	12.151	>500	PASS
Mid	2437	12.126		PASS
High	2462	12.149		PASS

IEEE 802.11g mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.584	>500	PASS
Mid	2437	16.612		PASS
High	2462	16.602		PASS

IEEE 802.11n Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.779	>500	PASS
Mid	2437	17.783		PASS
High	2462	17.776		PASS

IEEE 802.11n Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.445	>500	PASS
Mid	2437	36.448		PASS
High	2452	36.454		PASS



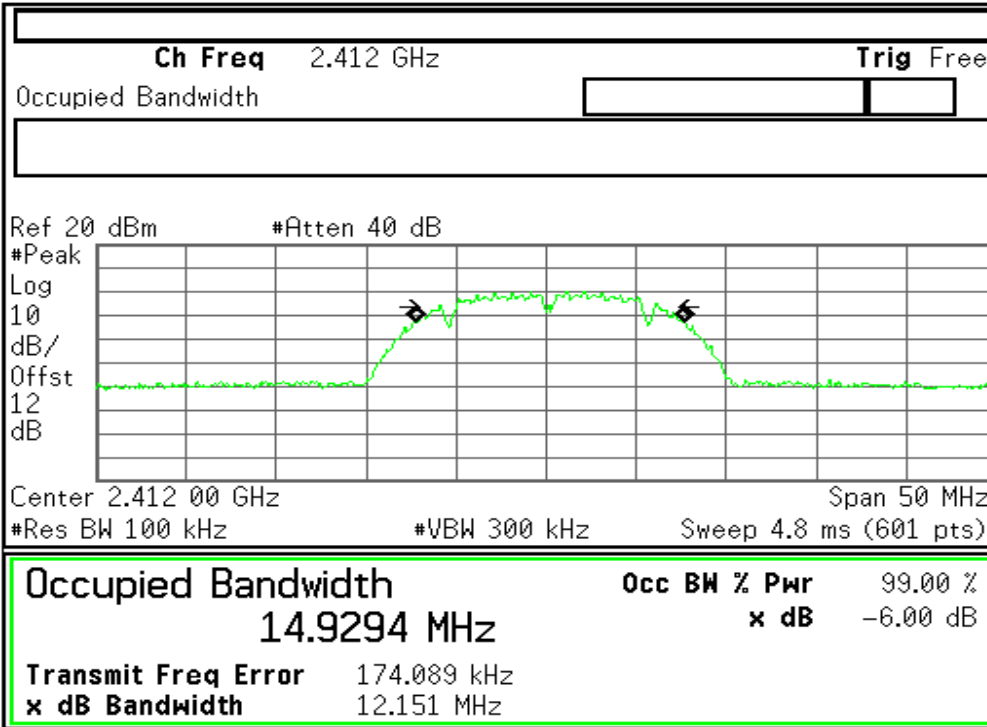
Test Plot

IEEE 802.11b MODE

6dB Bandwidth (CH Low)

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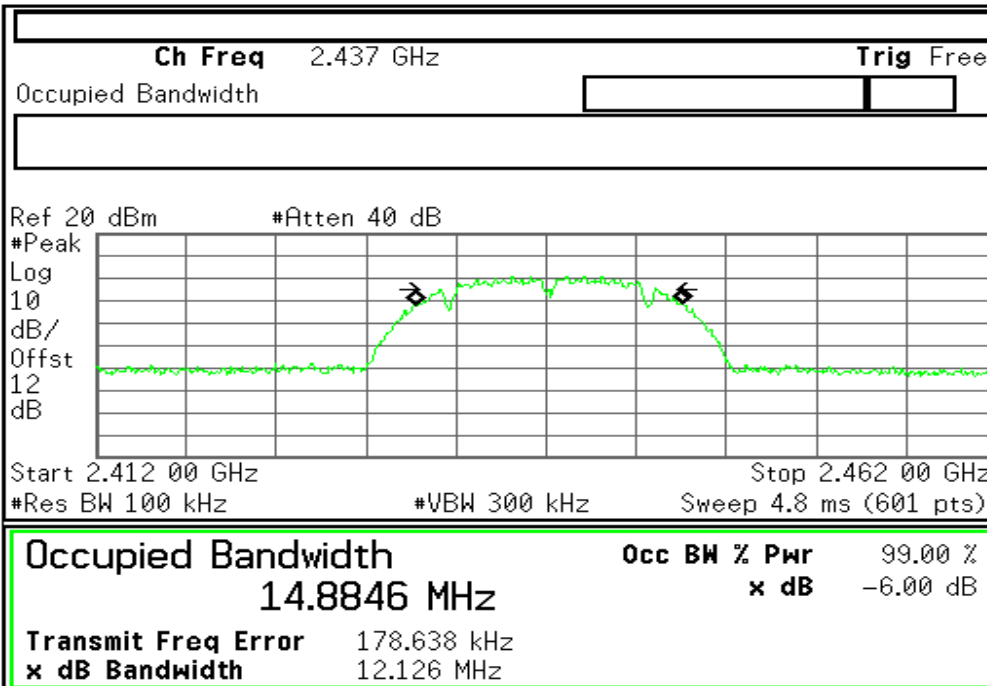
Freq/Channel	
Center Freq	2.41200000 GHz
Start Freq	2.38700000 GHz
Stop Freq	2.43700000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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6dB Bandwidth (CH Mid)

Agilent

R T



Freq/Channel	
Center Freq	2.43700000 GHz
Start Freq	2.41200000 GHz
Stop Freq	2.46200000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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6dB Bandwidth (CH High)

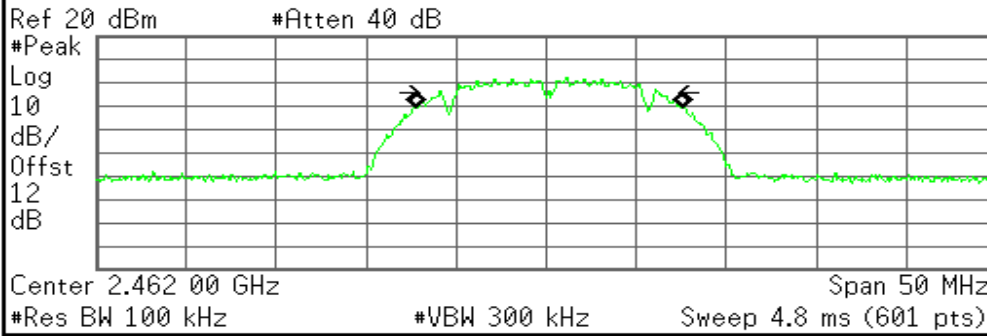
Agilent

R T

Freq/Channel

Ch Freq 2.462 GHz	Trig Free
Occupied Bandwidth	

Center Freq 2.46200000 GHz
Start Freq 2.43700000 GHz
Stop Freq 2.48700000 GHz



CF Step 5.00000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

Occupied Bandwidth	Occ BW % Pwr	99.00 %
14.8617 MHz	x dB	-6.00 dB
Transmit Freq Error	176.263 kHz	
x dB Bandwidth	12.149 MHz	

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IEEE 802.11g MODE

6dB Bandwidth (CH Low)

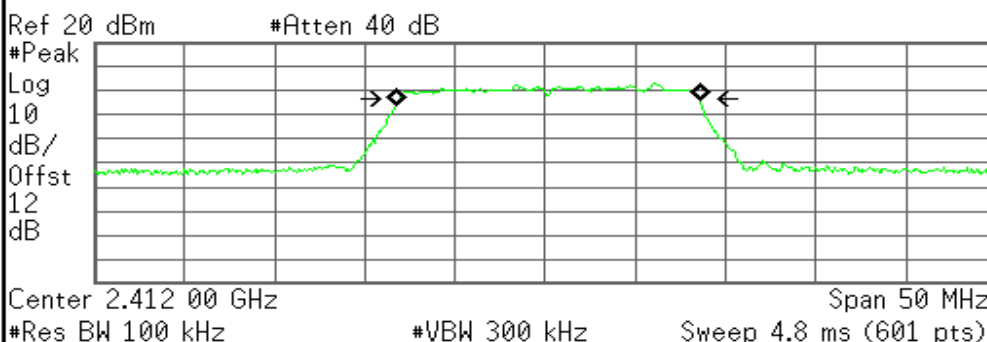
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R T

Freq/Channel

Ch Freq 2.412 GHz	Trig Free
Occupied Bandwidth	

Center Freq 2.41200000 GHz
Start Freq 2.38700000 GHz
Stop Freq 2.43700000 GHz



CF Step 5.00000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

Occupied Bandwidth	Occ BW % Pwr	99.00 %
16.8256 MHz	x dB	-6.00 dB
Transmit Freq Error	132.353 kHz	
x dB Bandwidth	16.584 MHz	

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6dB Bandwidth (CH Mid)

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Ch Freq 2.437 GHz	Trig Free
Occupied Bandwidth	

Freq/Channel

Center Freq
2.43700000 GHz

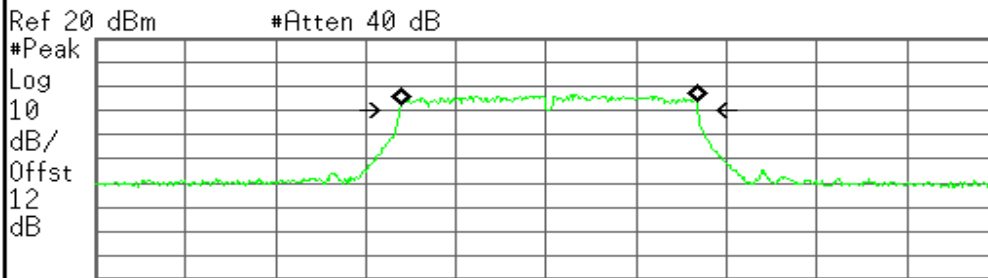
Start Freq
2.41200000 GHz

Stop Freq
2.46200000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Center 2.437 00 GHz Span 50 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Occupied Bandwidth	Occ BW % Pwr	99.00 %
16.4405 MHz	x dB	-6.00 dB
Transmit Freq Error	140.064 kHz	
x dB Bandwidth	16.612 MHz	

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6dB Bandwidth (CH High)

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Ch Freq 2.462 GHz	Trig Free
Occupied Bandwidth	

Freq/Channel

Center Freq
2.46200000 GHz

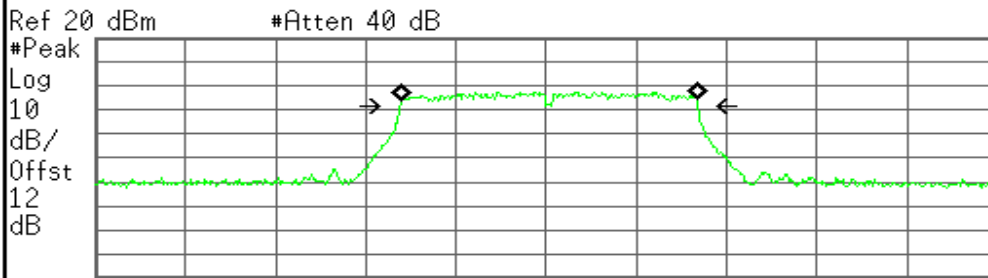
Start Freq
2.43700000 GHz

Stop Freq
2.48700000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Center 2.462 00 GHz Span 50 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Occupied Bandwidth	Occ BW % Pwr	99.00 %
16.4330 MHz	x dB	-6.00 dB
Transmit Freq Error	142.793 kHz	
x dB Bandwidth	16.602 MHz	

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IEEE 802.11n Standard-20 MHz Channel mode

6dB Bandwidth (CH Low)

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Freq/Channel

Ch Freq 2.412 GHz	Trig Free
Occupied Bandwidth	

Center Freq
2.41200000 GHz

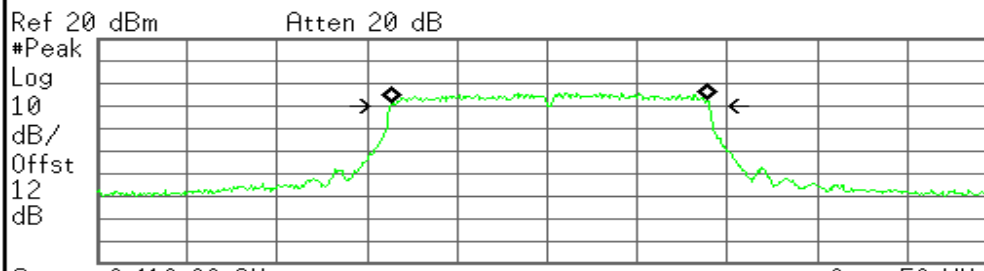
Start Freq
2.38700000 GHz

Stop Freq
2.43700000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Center 2.412 00 GHz Span 50 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Occupied Bandwidth	Occ BW % Pwr	99.00 %
17.5776 MHz	x dB	-6.00 dB
Transmit Freq Error	138.026 kHz	
x dB Bandwidth	17.779 MHz	

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6dB Bandwidth (CH Mid)

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Freq/Channel

Ch Freq 2.437 GHz	Trig Free
Occupied Bandwidth	

Center Freq
2.43700000 GHz

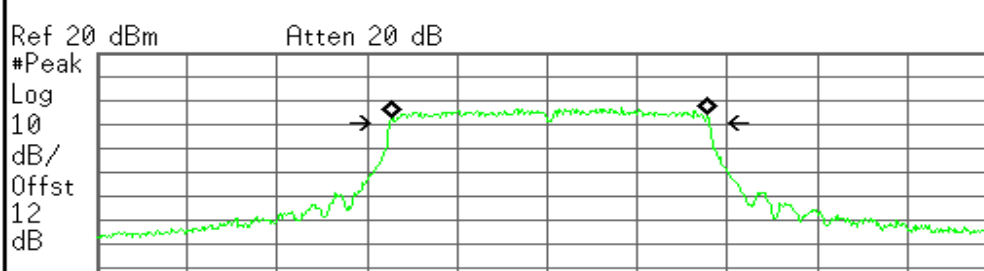
Start Freq
2.41200000 GHz

Stop Freq
2.46200000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Start 2.412 00 GHz Stop 2.462 00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Occupied Bandwidth	Occ BW % Pwr	99.00 %
17.5744 MHz	x dB	-6.00 dB
Transmit Freq Error	138.711 kHz	
x dB Bandwidth	17.783 MHz	

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6dB Bandwidth (CH High)

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Ch Freq 2.462 GHz	Trig Free
Occupied Bandwidth	

Freq/Channel

Center Freq
2.46200000 GHz

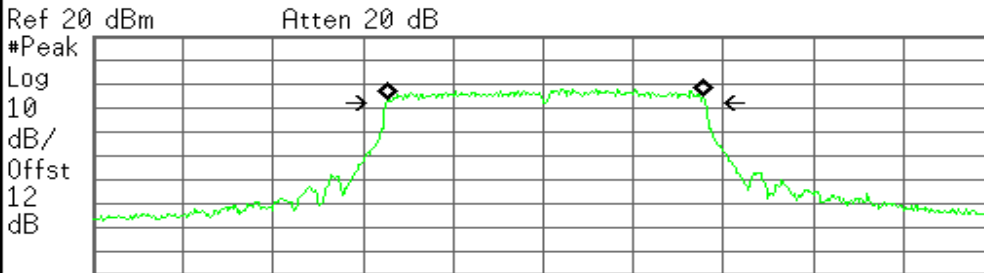
Start Freq
2.43700000 GHz

Stop Freq
2.48700000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Center 2.462 00 GHz Span 50 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Occupied Bandwidth	Occ BW % Pwr	99.00 %
17.5759 MHz	x dB	-6.00 dB
Transmit Freq Error	142.492 kHz	
x dB Bandwidth	17.776 MHz	

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IEEE 802.11n Wide-40 MHz Channel mode

6dB Bandwidth (CH Low)

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Ch Freq 2.422 GHz	Trig Free
Occupied Bandwidth	

Freq/Channel

Center Freq
2.42200000 GHz

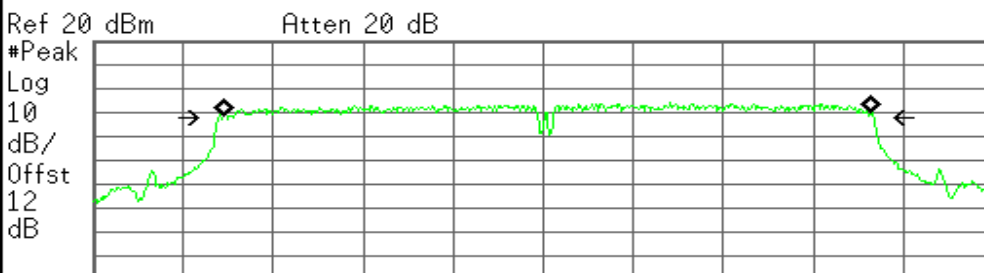
Start Freq
2.39700000 GHz

Stop Freq
2.44700000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Center 2.422 00 GHz Span 50 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Occupied Bandwidth	Occ BW % Pwr	99.00 %
35.9341 MHz	x dB	-6.00 dB
Transmit Freq Error	193.778 kHz	
x dB Bandwidth	36.445 MHz	

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6dB Bandwidth (CH Mid)

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Ch Freq 2.437 GHz Trig Free

Occupied Bandwidth

Freq/Channel

Center Freq
2.43700000 GHz

Start Freq
2.41200000 GHz

Stop Freq
2.46200000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Ref 20 dBm

Atten 20 dB

#Peak

Log

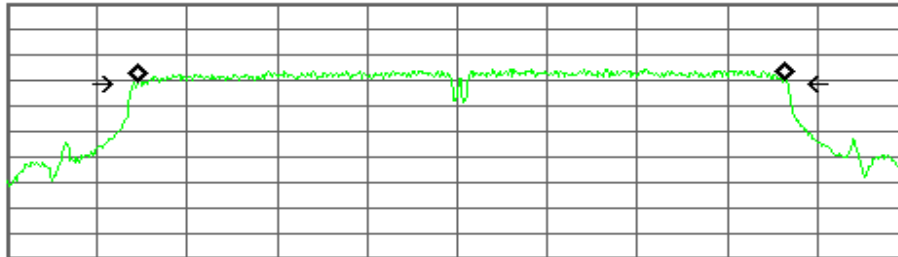
10

dB/

Offst

12

dB



Center 2.437 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 4.8 ms (601 pts)

Occupied Bandwidth

35.9261 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 197.426 kHz

x dB Bandwidth 36.448 MHz

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6dB Bandwidth (CH High)

Agilent

R T

Ch Freq 2.452 GHz Trig Free

Occupied Bandwidth

Freq/Channel

Center Freq
2.45200000 GHz

Start Freq
2.42700000 GHz

Stop Freq
2.47700000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Ref 20 dBm

Atten 20 dB

#Peak

Log

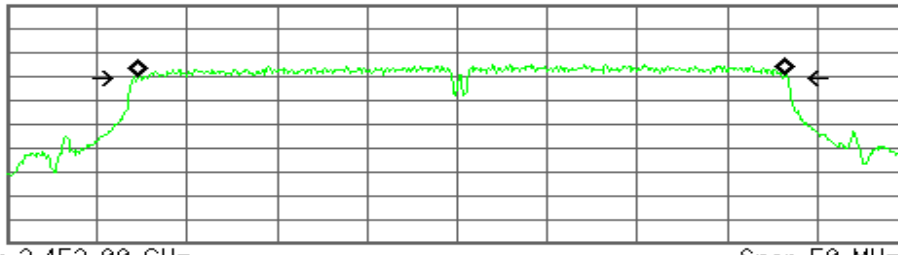
10

dB/

Offst

12

dB



Center 2.452 00 GHz

Span 50 MHz

#Res BW 100 kHz

#VBW 300 kHz

Sweep 4.8 ms (601 pts)

Occupied Bandwidth

35.9474 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 195.803 kHz

x dB Bandwidth 36.454 MHz

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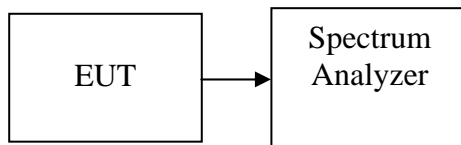
7.2 PEAK POWER

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

- 1 Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2 Set RBW = 1 MHz.
- 3 Set VBW \geq 3 MHz.
- 4 Use sample detector mode if bin width (i.e., span/number of points in spectrum display) $<$ 0.5 RBW. Otherwise use peak detector mode.
- 5 Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power intervals, the trigger may be set to δ hichfree run δ hich.
- 6 Trace average 100 traces in power averaging mode.
- 7 Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.



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	13.56	0.0227	1.00	PASS
Mid	2437	14.61	0.0289		PASS
High	2462	15.70	0.0372		PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	12.04	0.0160	1.00	PASS
Mid	2437	13.18	0.0208		PASS
High	2462	14.21	0.0264		PASS

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

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	11.93	0.0156	1.00	PASS
Mid	2437	13.07	0.0203		PASS
High	2462	14.20	0.0263		PASS

Test mode: IEEE 802.11gn Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2422	13.05	0.0202	1.00	PASS
Mid	2437	13.66	0.0232		PASS
High	2452	14.33	0.0271		PASS



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Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Test Plot

IEEE 802.11b mode

Peak Power (CH Low)

Agilent

R T

Ch Freq 2.412 GHz	Trig Free
Channel Power	Averages: 100

Freq/Channel

Center Freq
2.41200000 GHz

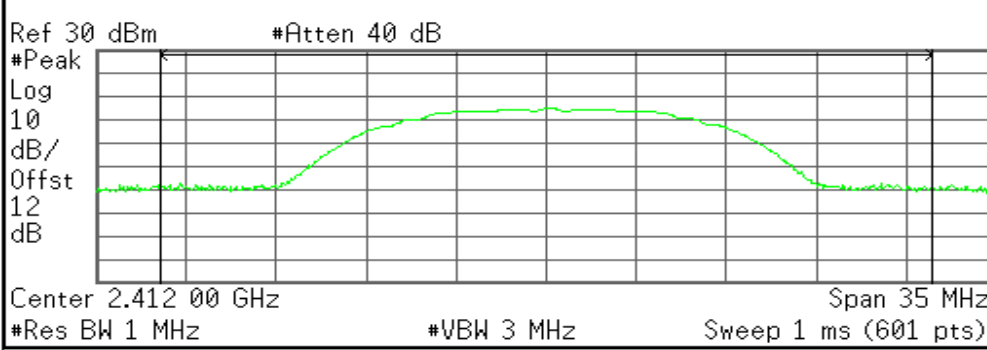
Start Freq
2.39450000 GHz

Stop Freq
2.42950000 GHz

CF Step
3.50000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Channel Power	Power Spectral Density
13.56 dBm /30.0000 MHz	-61.21 dBm/Hz

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Peak Power (CH Mid)

Agilent

R T

Ch Freq 2.437 GHz	Trig Free
Channel Power	Averages: 100

Freq/Channel

Center Freq
2.43700000 GHz

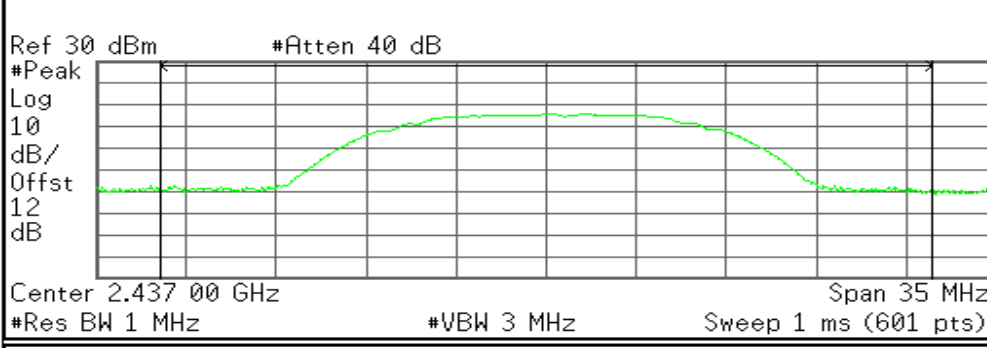
Start Freq
2.41950000 GHz

Stop Freq
2.45450000 GHz

CF Step
3.50000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Channel Power	Power Spectral Density
14.61 dBm /30.0000 MHz	-60.16 dBm/Hz

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Peak Power (CH High)

Agilent R T

Ch Freq 2.462 GHz	Trig Free	Freq/Channel
Channel Power	Averages: 100	Center Freq 2.46200000 GHz
		Start Freq 2.44450000 GHz
		Stop Freq 2.47950000 GHz
		CF Step 3.50000000 MHz Auto Man
		Freq Offset 0.00000000 Hz
		Signal Track On Off

Ref 30 dBm #Atten 40 dB

#Peak Log 10 dB/ Offst 12 dB

Center 2.462 00 GHz Span 35 MHz

#Res BW 1 MHz #VBW 3 MHz Sweep 1 ms (601 pts)

Channel Power 15.70 dBm /30.0000 MHz	Power Spectral Density -59.08 dBm/Hz
--	--

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IEEE 802.11g mode

Peak Power (CH Low)

Agilent R T

Ch Freq 2.412 GHz	Trig Free	Freq/Channel
Channel Power	Averages: 100	Center Freq 2.41200000 GHz
		Start Freq 2.39450000 GHz
		Stop Freq 2.42950000 GHz
		CF Step 3.50000000 MHz Auto Man
		Freq Offset 0.00000000 Hz
		Signal Track On Off

Ref 20 dBm #Atten 40 dB

#Peak Log 10 dB/ Offst 12 dB

Center 2.412 00 GHz Span 35 MHz

#Res BW 1 MHz #VBW 3 MHz Sweep 1 ms (601 pts)

Channel Power 12.04 dBm /30.0000 MHz	Power Spectral Density -62.73 dBm/Hz
--	--

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Peak Power (CH Mid)

Agilent

R T

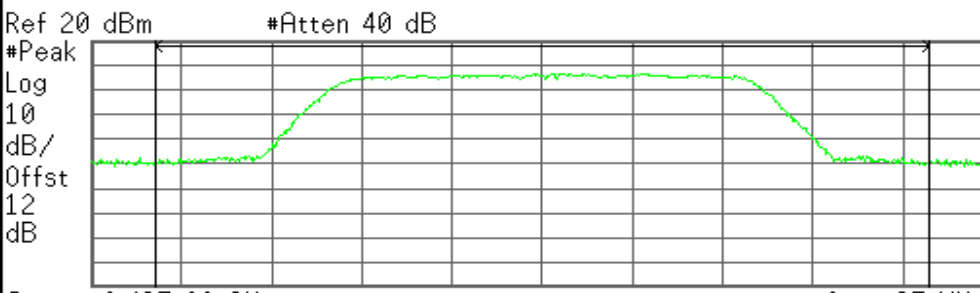
Freq/Channel

Ch Freq 2.437 GHz Trig Free

Center Freq 2.43700000 GHz

Channel Power Averages: 100

Start Freq 2.41950000 GHz



Stop Freq 2.45450000 GHz

CF Step 3.50000000 MHz Auto Man

Freq Offset 0.00000000 Hz

Channel Power Power Spectral Density

13.18 dBm /30.0000 MHz -61.59 dBm/Hz

Signal Track On Off

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Peak Power (CH High)

Agilent

R T

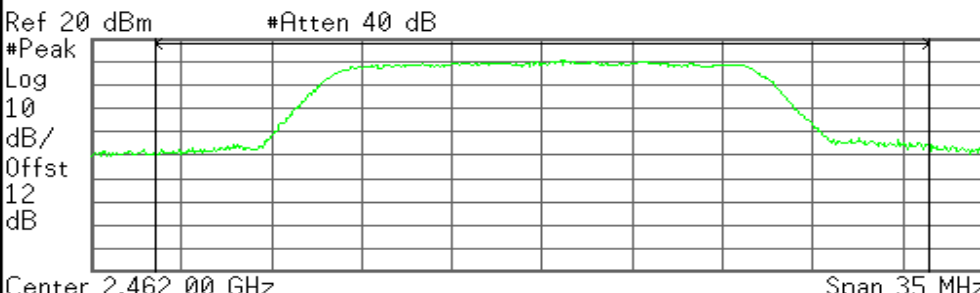
Freq/Channel

Ch Freq 2.462 GHz Trig Free

Center Freq 2.46200000 GHz

Channel Power Averages: 100

Start Freq 2.44450000 GHz



Stop Freq 2.47950000 GHz

CF Step 3.50000000 MHz Auto Man

Freq Offset 0.00000000 Hz

Channel Power Power Spectral Density

14.21 dBm /30.0000 MHz -60.56 dBm/Hz

Signal Track On Off

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IEEE 802.11n Standard-20 MHz Channel mode

Peak Power (CH Low)

Agilent

R T

Freq/Channel

Ch Freq 2.412 GHz Trig Free

Channel Power Averages: 100

Center Freq 2.41200000 GHz

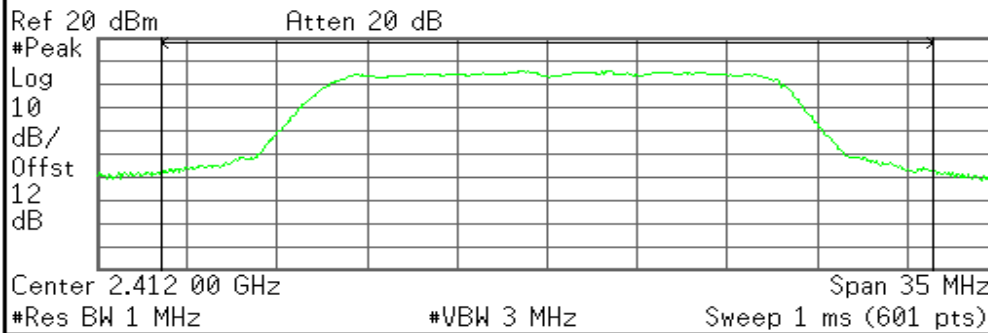
Start Freq 2.39450000 GHz

Stop Freq 2.42950000 GHz

CF Step 3.50000000 MHz
Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off



Channel Power 11.93 dBm /30.0000 MHz

Power Spectral Density -62.84 dBm/Hz

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Peak Power (CH Mid)

Agilent

R T

Freq/Channel

Ch Freq 2.437 GHz Trig Free

Channel Power Averages: 100

Center Freq 2.43700000 GHz

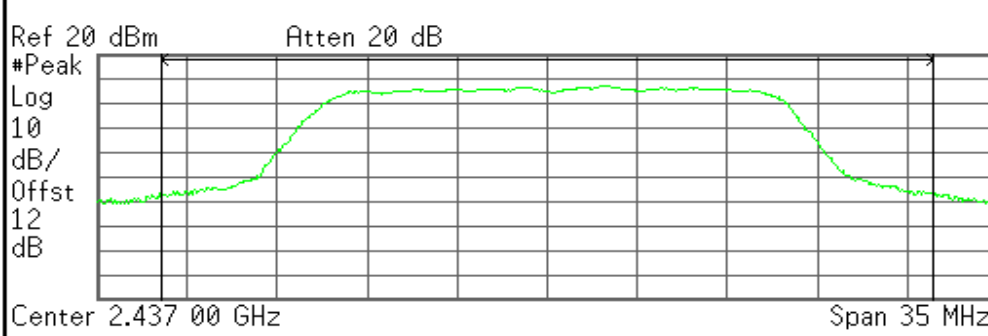
Start Freq 2.41950000 GHz

Stop Freq 2.45450000 GHz

CF Step 3.50000000 MHz
Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off



Channel Power 13.07 dBm /30.0000 MHz

Power Spectral Density -61.70 dBm/Hz

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Peak Power (CH High)

Agilent

R T

Ch Freq 2.462 GHz	Trig Free
Channel Power	Averages: 100

Freq/Channel

Center Freq
2.46200000 GHz

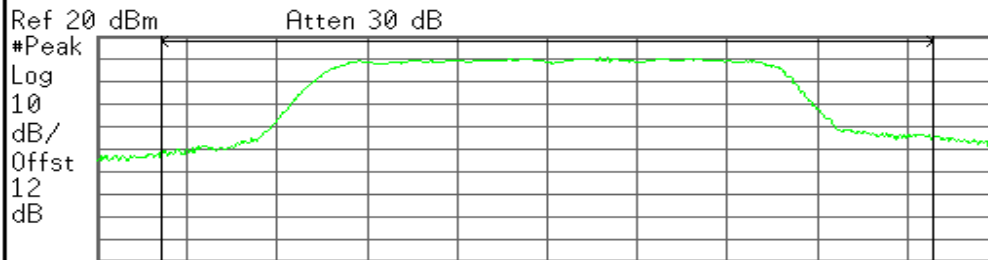
Start Freq
2.44450000 GHz

Stop Freq
2.47950000 GHz

CF Step
3.50000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Center 2.462 00 GHz Span 35 MHz
#Res BW 1 MHz #VBW 3 MHz Sweep 1 ms (601 pts)

Channel Power	Power Spectral Density
14.20 dBm /30.0000 MHz	-60.57 dBm/Hz

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IEEE 802.11n Wide-40 MHz Channel mode

Peak Power (CH Low)

Agilent

R T

Ch Freq 2.422 GHz	Trig Free
Channel Power	Averages: 100

Freq/Channel

Center Freq
2.42200000 GHz

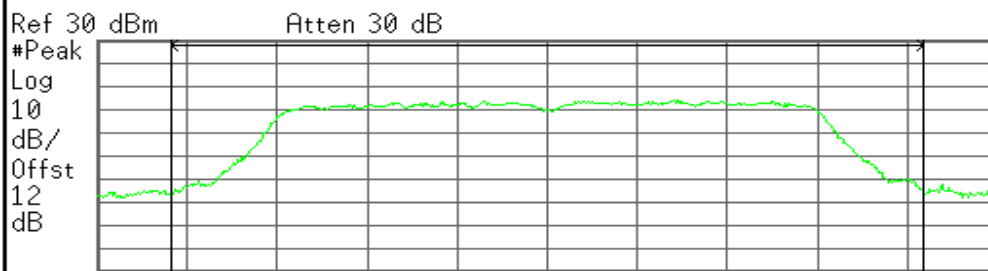
Start Freq
2.39200000 GHz

Stop Freq
2.45200000 GHz

CF Step
6.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off



Center 2.422 0 GHz Span 60 MHz
#Res BW 1 MHz #VBW 3 MHz Sweep 1 ms (601 pts)

Channel Power	Power Spectral Density
13.05 dBm /50.0000 MHz	-63.94 dBm/Hz

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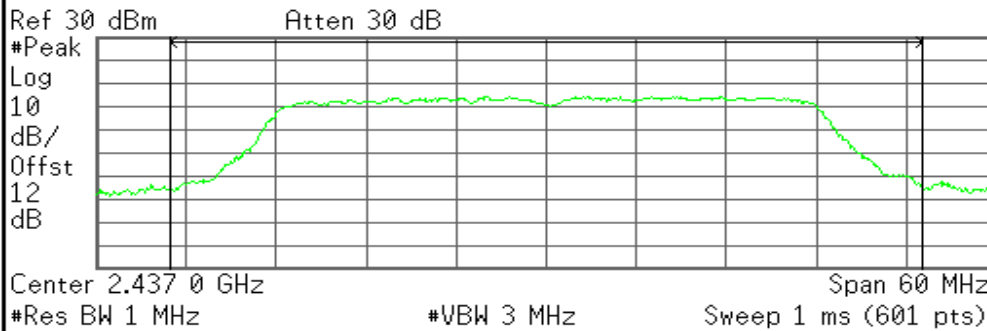
Peak Power (CH Mid)

Agilent

R T

Ch Freq 2.437 GHz Trig Free

Channel Power Averages: 100



Channel Power	Power Spectral Density
13.66 dBm /50.0000 MHz	-63.33 dBm/Hz

Freq/Channel	
Center Freq	2.43700000 GHz
Start Freq	2.40700000 GHz
Stop Freq	2.46700000 GHz
CF Step	6.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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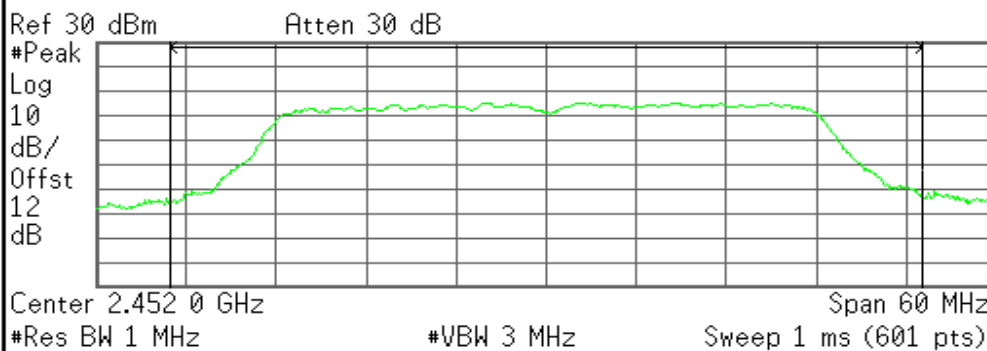
Peak Power (CH High)

Agilent

R T

Ch Freq 2.452 GHz Trig Free

Channel Power Averages: 100



Channel Power	Power Spectral Density
14.33 dBm /50.0000 MHz	-62.66 dBm/Hz

Freq/Channel	
Center Freq	2.45200000 GHz
Start Freq	2.42200000 GHz
Stop Freq	2.48200000 GHz
CF Step	6.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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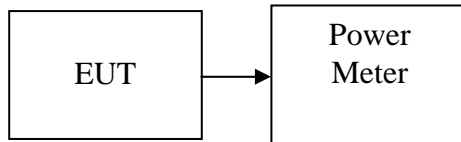


7.3 AVERAGE POWER

LIMIT

None; for reporting purposes only.

Test Configuration



TEST PROCEDURE

The transmitter output is connected to the Power meter.



TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	Output Power (dBm)
Low	2412	11.21
Mid	2437	12.42
High	2462	13.07

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	Output Power (dBm)
Low	2412	10.10
Mid	2437	11.02
High	2462	12.11

Test mode: IEEE 802.11gn Standard-20 MHz Channel mode

Channel	Frequency (MHz)	Output Power (dBm)
Low	2412	9.96
Mid	2437	11.00
High	2462	12.19

Test mode: IEEE 802.11gn Wide-40 MHz Channel mode

Channel	Frequency (MHz)	Output Power (dBm)
Low	2422	11.12
Mid	2437	11.54
High	2452	12.21

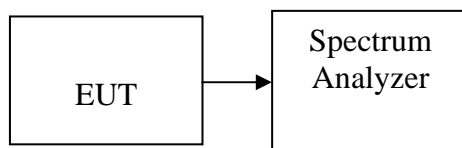


7.4 PEAK POWER SPECTRAL DENSITY

LIMIT

1. According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.
2. According to §15.247(f), the digital modulation operation of the hybrid system, with the frequency hopping turned off, shall comply with the power density requirements of paragraph (d) of this section.

Test Configuration



TEST PROCEDURE

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



TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-13.65	8.00	PASS
Mid	2437	-12.61	8.00	PASS
High	2462	-11.55	8.00	PASS

Test mode: IEEE 802.11g mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-13.75	8.00	PASS
Mid	2437	-12.60	8.00	PASS
High	2462	-11.58	8.00	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2412	-13.24	8.00	PASS
Mid	2437	-12.17	8.00	PASS
High	2462	-13.05	8.00	PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
Low	2422	-13.05	8.00	PASS
Mid	2437	-12.40	8.00	PASS
High	2452	-11.67	8.00	PASS



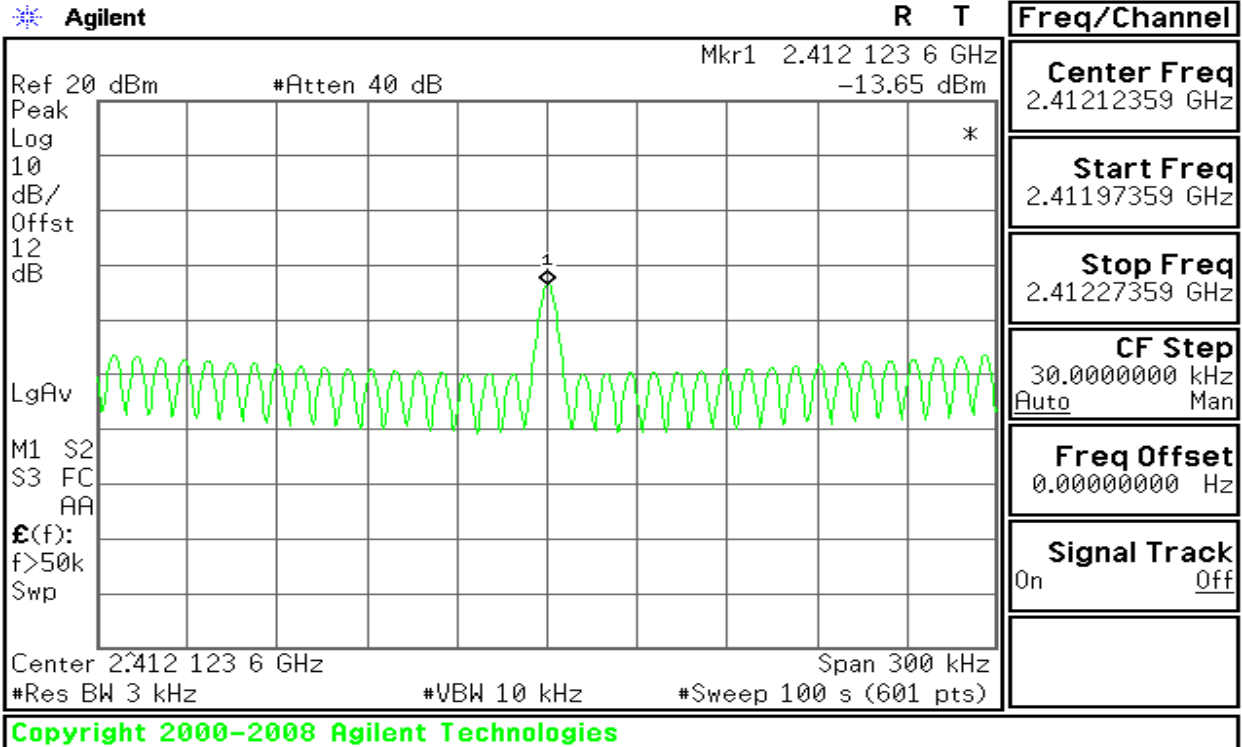
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

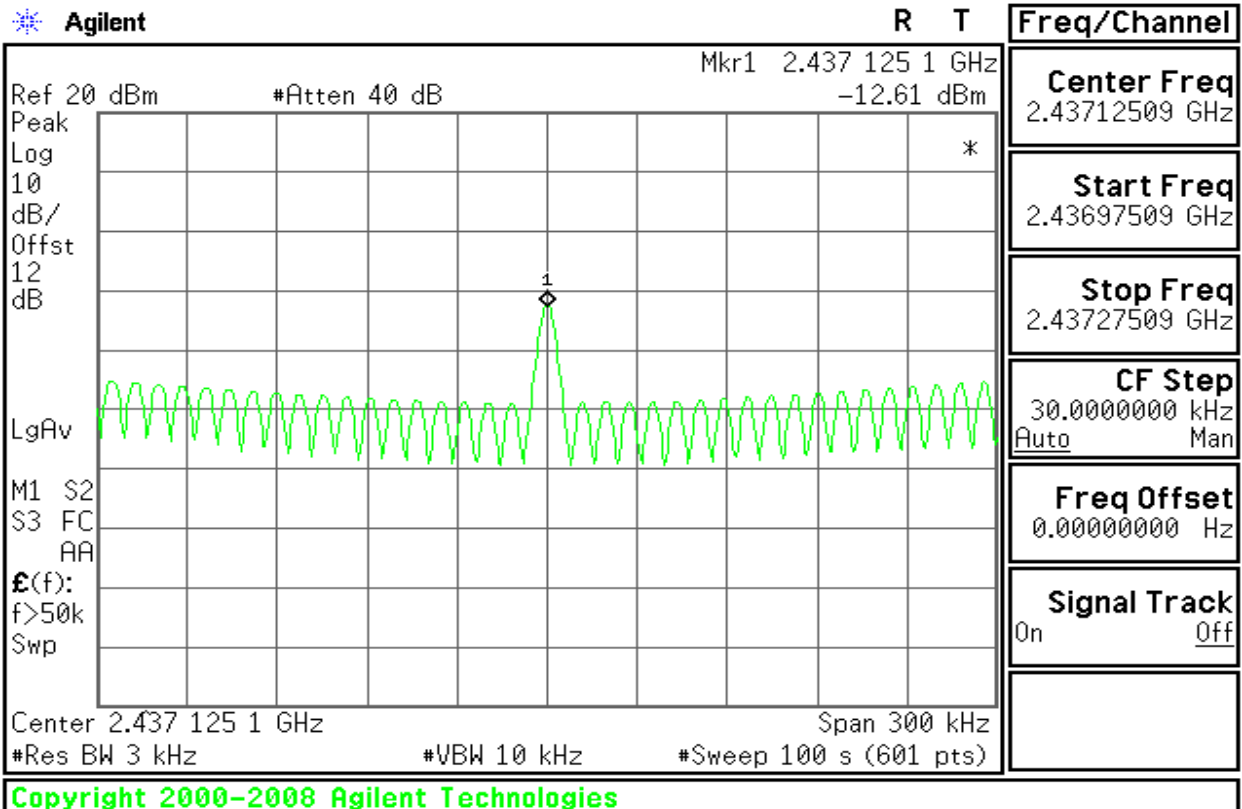
Test Plot

IEEE 802.11b mode

PPSD (CH Low)



PPSD (CH Mid)





Compliance Certification Services Inc.

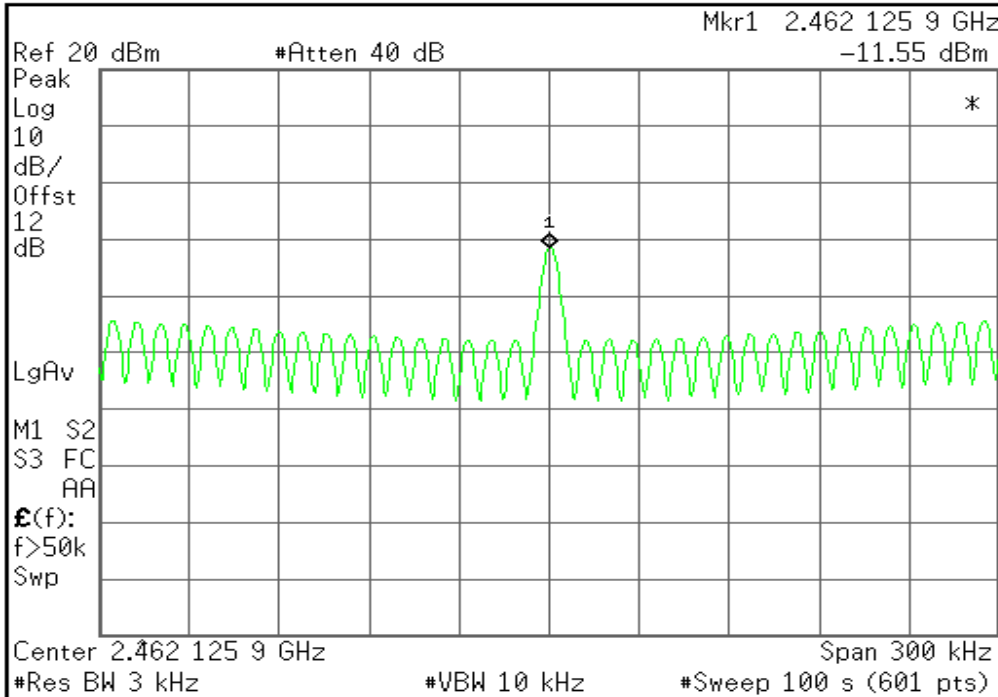
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

PPSD (CH High)

Agilent

R T

Freq/Channel



Center Freq 2.46212593 GHz

Start Freq 2.46197593 GHz

Stop Freq 2.46227593 GHz

CF Step 30.0000000 kHz Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

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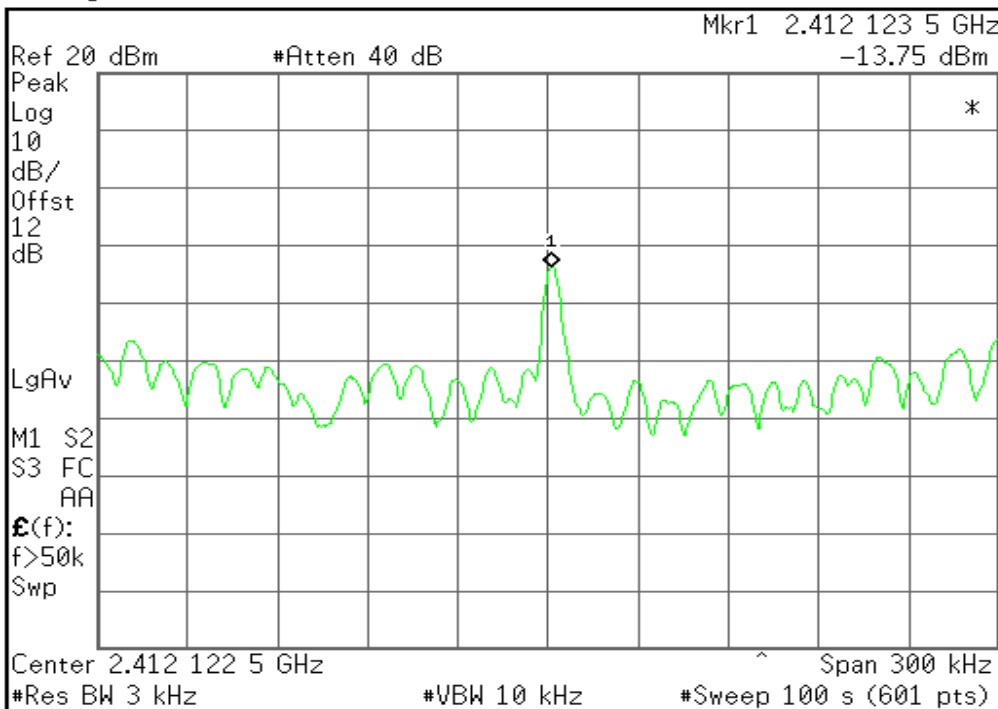
IEEE 802.11g mode

PPSD (CH Low)

Agilent

R T

Freq/Channel



Center Freq 2.41212252 GHz

Start Freq 2.41197252 GHz

Stop Freq 2.41227252 GHz

CF Step 30.0000000 kHz Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

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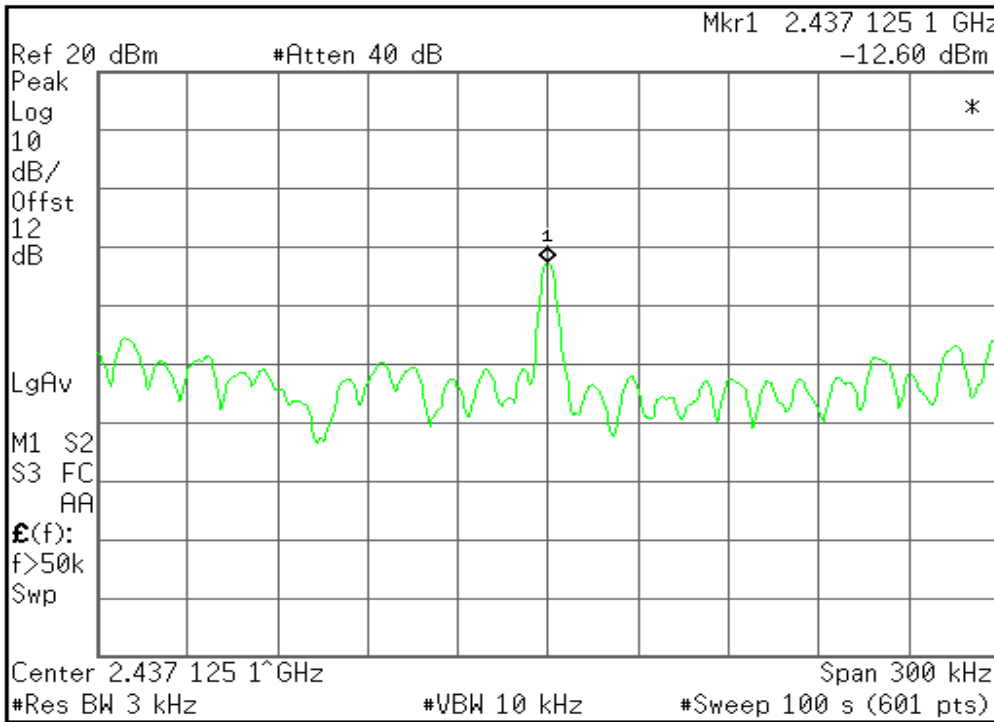
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

PPSD (CH Mid)

Agilent

R T

Freq/Channel



Center Freq	2.43712509 GHz
Start Freq	2.43697509 GHz
Stop Freq	2.43727509 GHz
CF Step	30.0000000 kHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

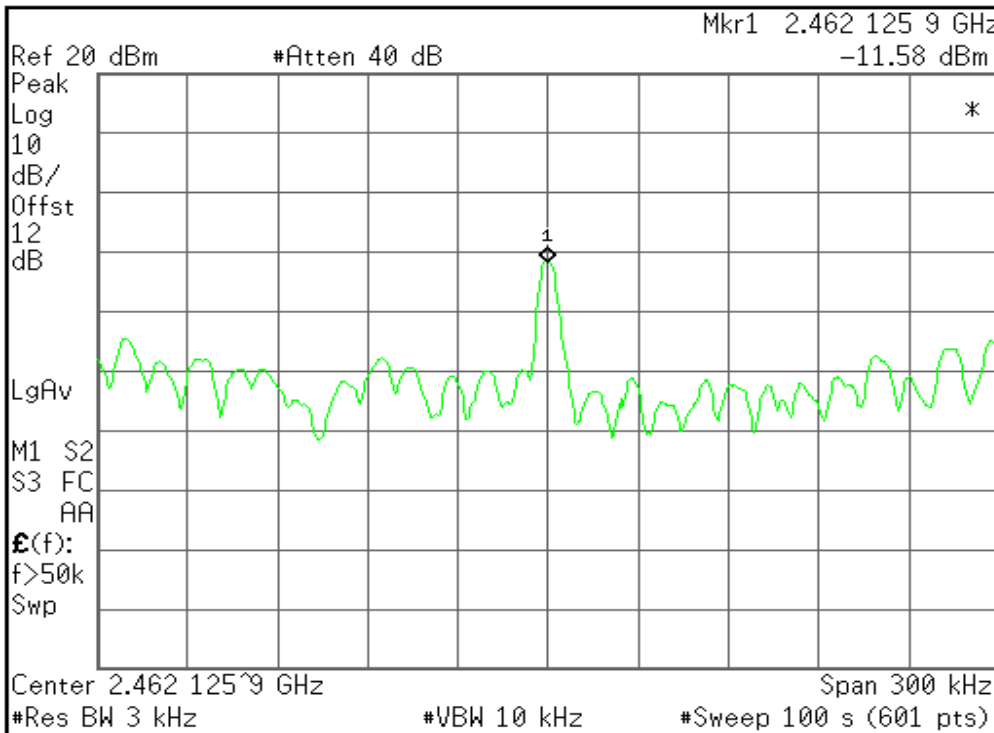
Copyright 2000-2008 Agilent Technologies

PPSD (CH High)

Agilent

R T

Freq/Channel



Center Freq	2.46212593 GHz
Start Freq	2.46197593 GHz
Stop Freq	2.46227593 GHz
CF Step	30.0000000 kHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

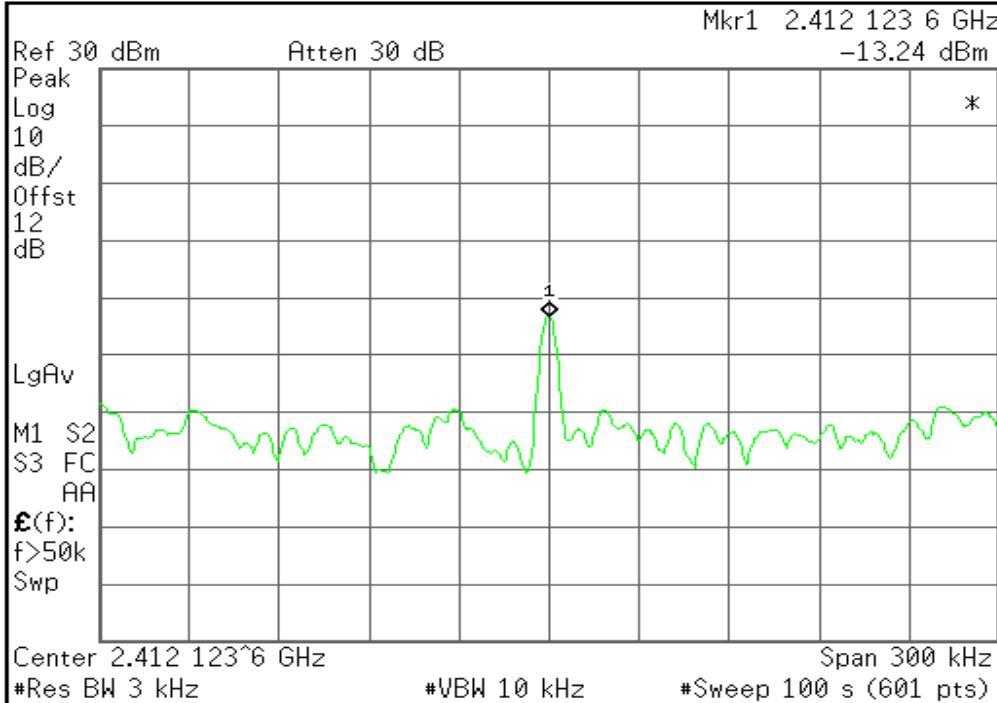
IEEE 802.11n Standard-20 MHz Channel mode

PPSD (CH Low)

Agilent

R T

Freq/Channel



Center Freq	2.41212359 GHz
Start Freq	2.41197359 GHz
Stop Freq	2.41227359 GHz
CF Step	30.00000000 kHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

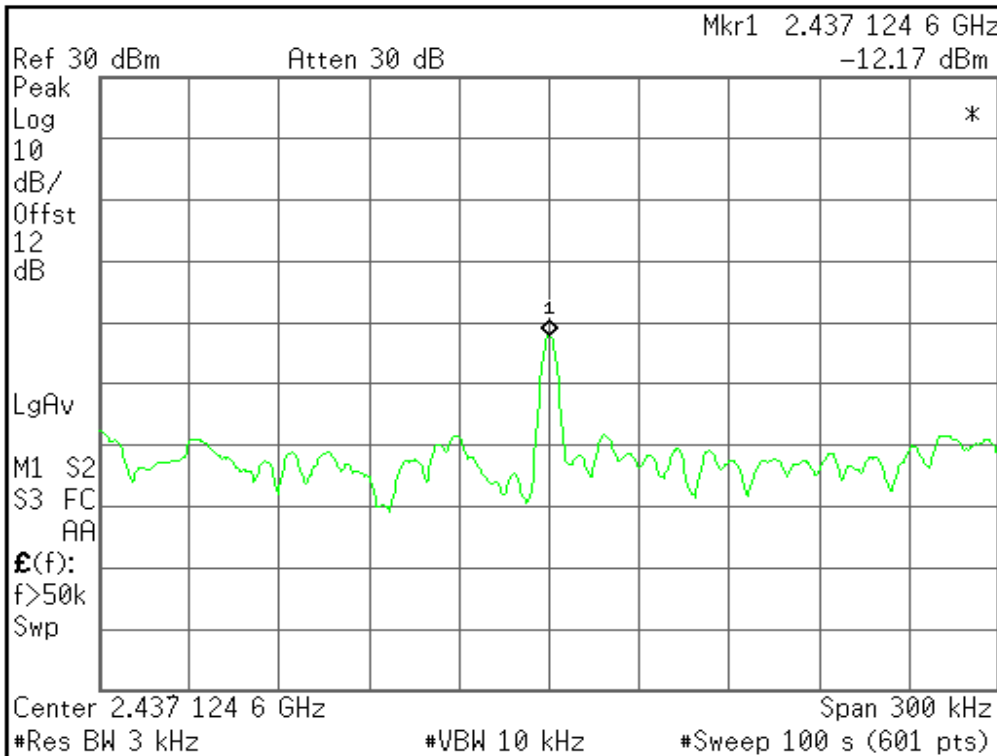
Copyright 2000-2008 Agilent Technologies

PPSD (CH Mid)

Agilent

R T

Freq/Channel



Center Freq	2.43712459 GHz
Start Freq	2.43697459 GHz
Stop Freq	2.43727459 GHz
CF Step	30.00000000 kHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Compliance Certification Services Inc.

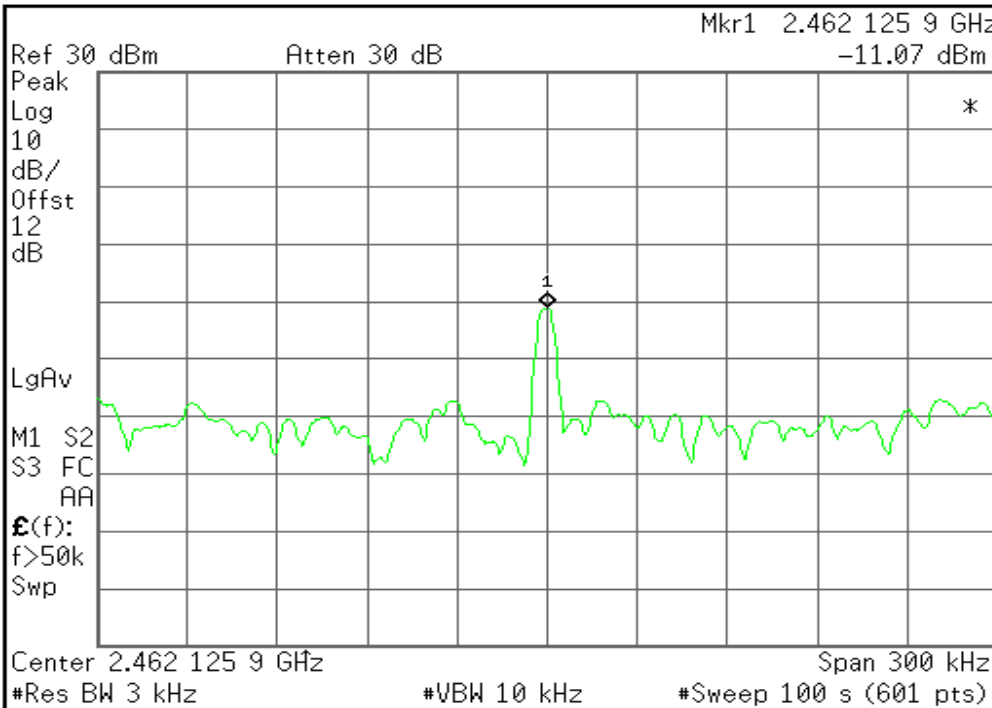
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

PPSD (CH High)

Agilent

R T

Freq/Channel



Center Freq 2.46212593 GHz

Start Freq 2.46197593 GHz

Stop Freq 2.46227593 GHz

CF Step 30.00000000 kHz Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

Copyright 2000-2008 Agilent Technologies

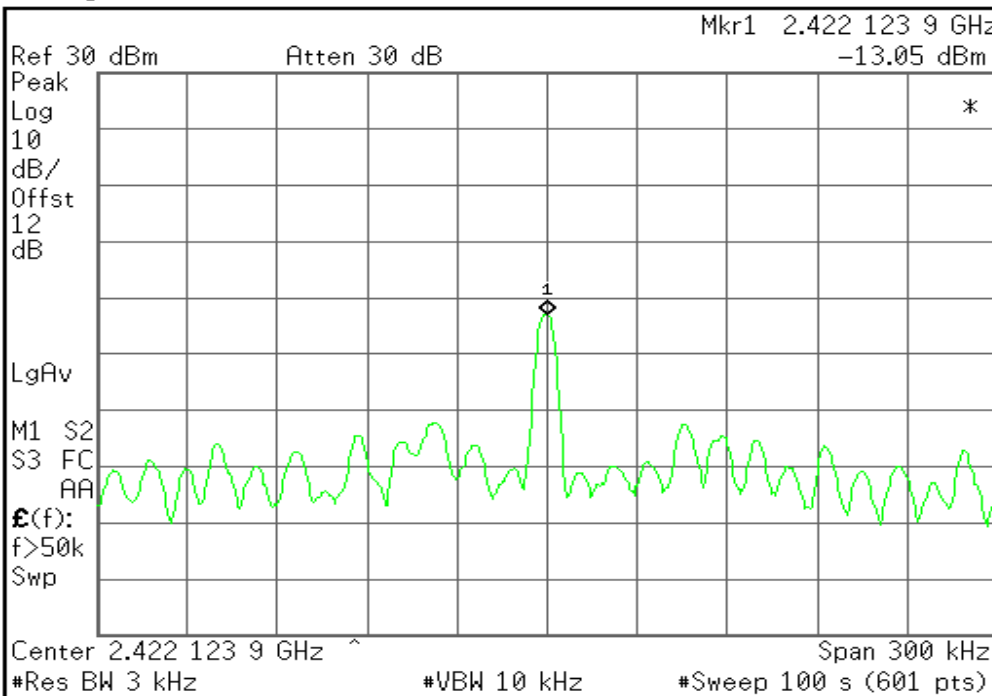
IEEE 802.11n Wide-40 MHz Channel mode

PPSD (CH Low)

Agilent

R T

Freq/Channel



Center Freq 2.42212388 GHz

Start Freq 2.42197388 GHz

Stop Freq 2.42227388 GHz

CF Step 30.00000000 kHz Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

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Compliance Certification Services Inc.

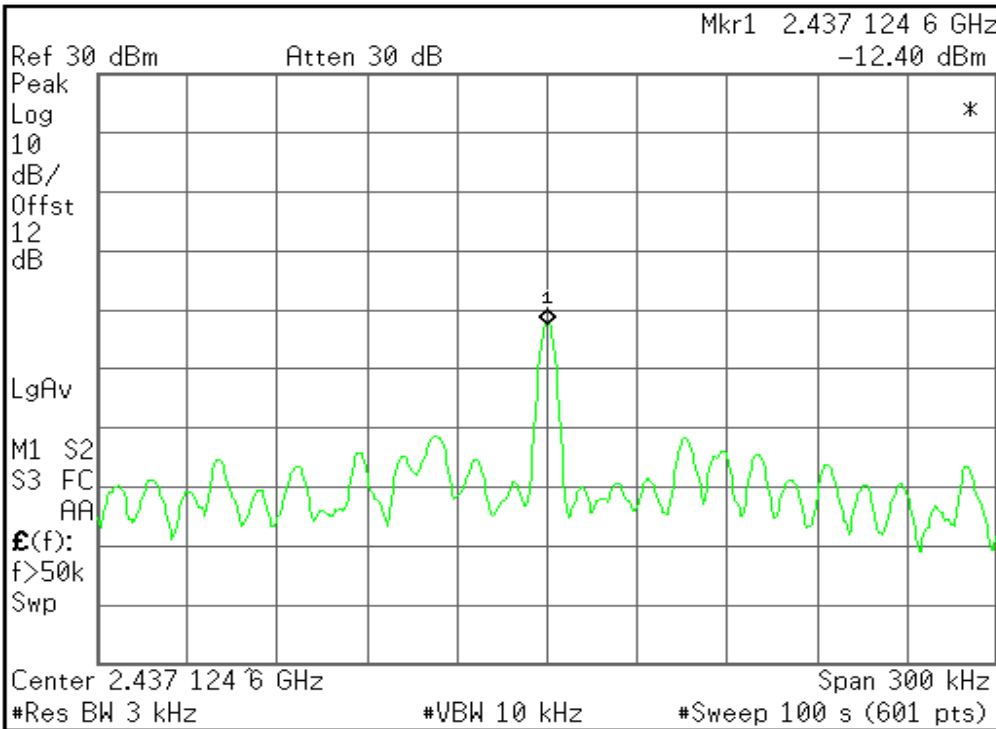
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

PPSD (CH Mid)

Agilent

R T

Freq/Channel



Center Freq 2.43712459 GHz
Start Freq 2.43697459 GHz
Stop Freq 2.43727459 GHz
CF Step 30.0000000 kHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

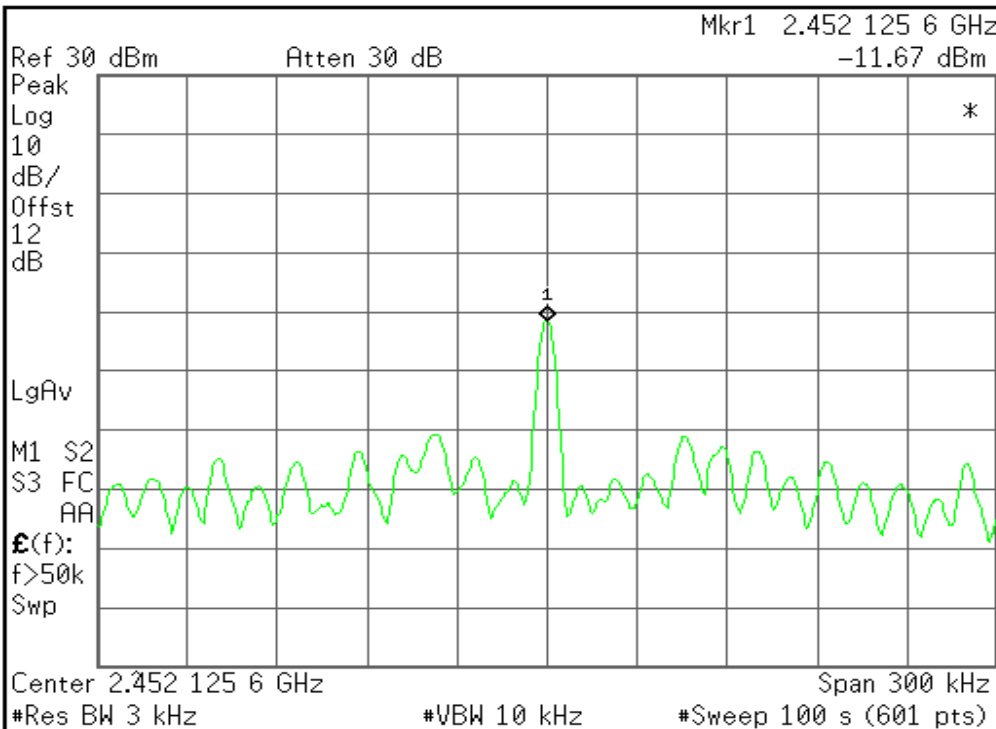
Copyright 2000-2008 Agilent Technologies

PPSD (CH High)

Agilent

R T

Freq/Channel



Center Freq 2.45212558 GHz
Start Freq 2.45197558 GHz
Stop Freq 2.45227558 GHz
CF Step 30.0000000 kHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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7.5 SPURIOUS EMISSIONS

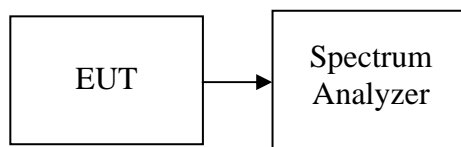
7.5.1 CONDUCTED MEASUREMENT

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)).

Conducted power was measured based on the use of RMS averaging over a time interval, therefore the required attenuation is 30 dB.

Test Configuration



TEST PROCEDURE

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

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

Measurements are made over the 30MHz to 40GHz range with the transmitter set to the lowest, middle, and highest channels.

TEST RESULTS

No non-compliance noted



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

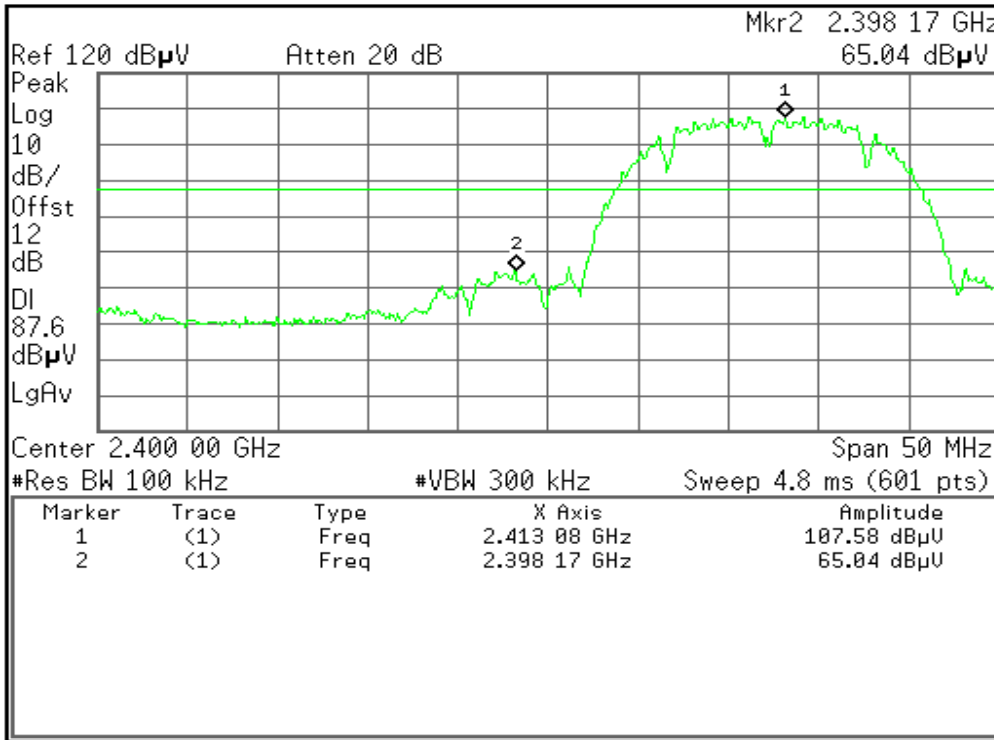
Test Plot

IEEE 802.11b mode

CH Low

Agilent

R T

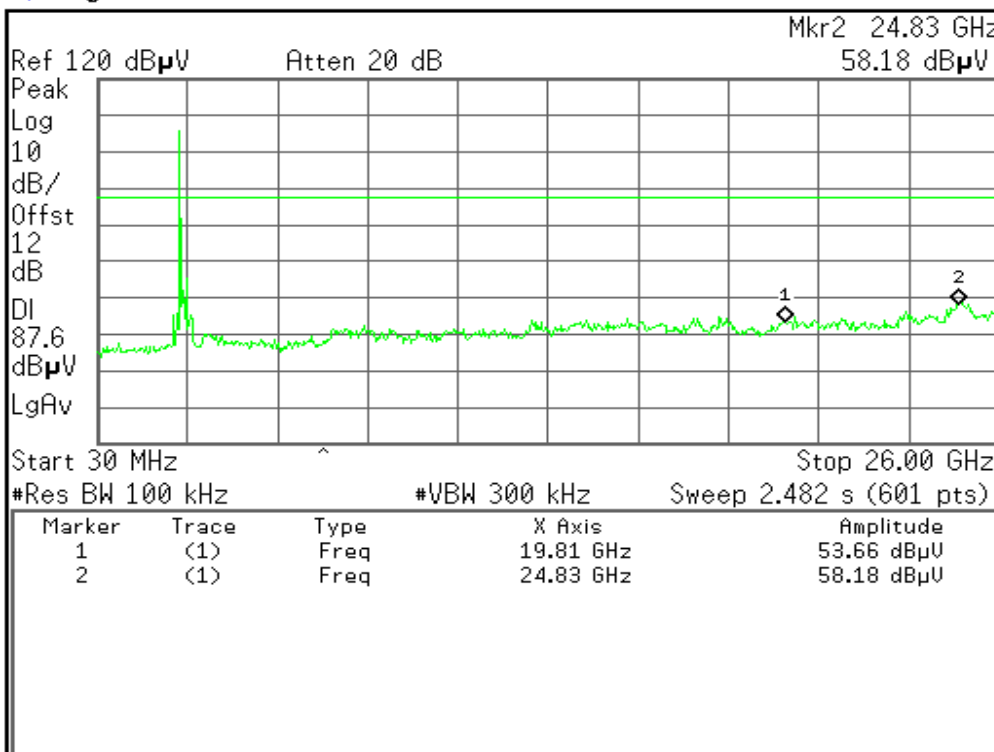


Freq/Channel	
Center Freq	2.40000000 GHz
Start Freq	2.37500000 GHz
Stop Freq	2.42500000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Agilent

R T



Freq/Channel	
Center Freq	13.0150000 GHz
Start Freq	30.0000000 MHz
Stop Freq	26.0000000 GHz
CF Step	2.59700000 GHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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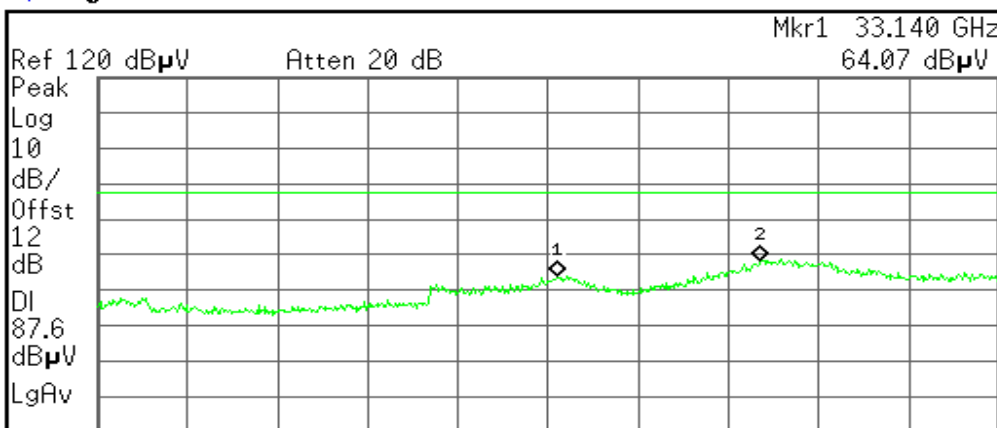
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

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Freq/Channel



Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 26.000 GHz Stop 40.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.140 GHz	64.07 dB μ V
2	(1)	Freq	36.290 GHz	68.49 dB μ V

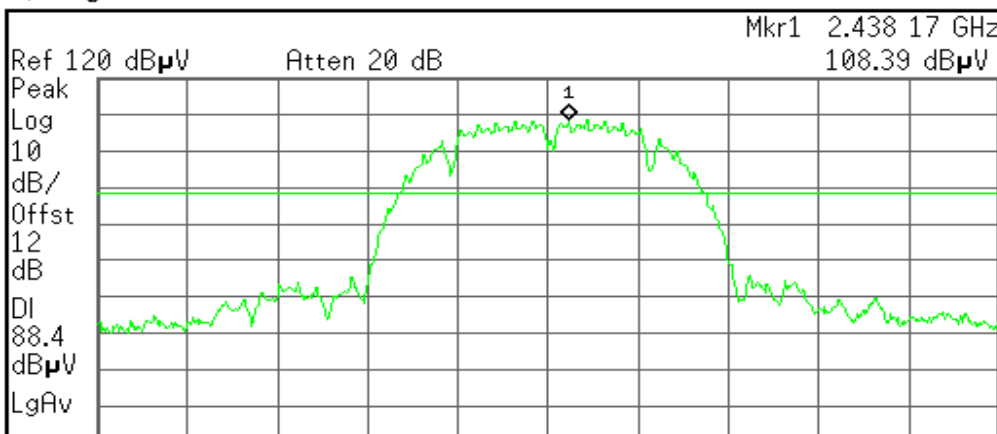
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CH Mid

Agilent

R T

Freq/Channel



Center Freq
2.43700000 GHz

Start Freq
2.41200000 GHz

Stop Freq
2.46200000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Center 2.437 00 GHz Span 50 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.438 17 GHz	108.39 dB μ V

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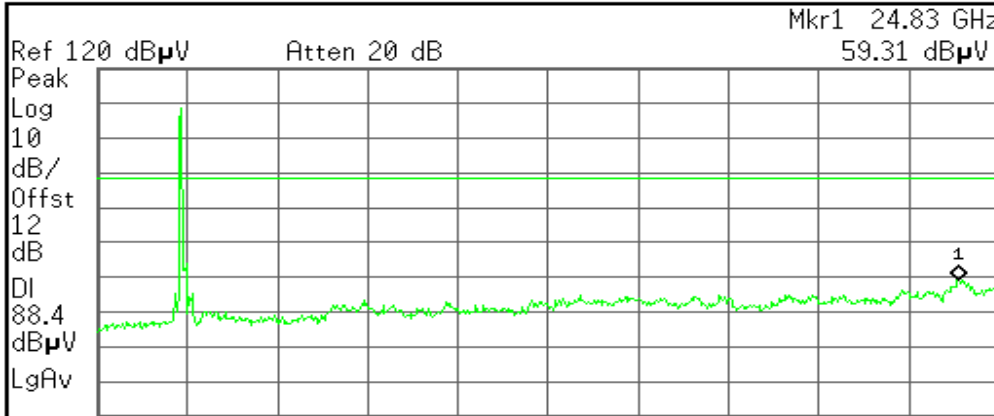
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

R T

Freq/Channel



Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

Start 30 MHz Stop 26.00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (601 pts)

Freq Offset
0.00000000 Hz

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	24.83 GHz	59.31 dBµV

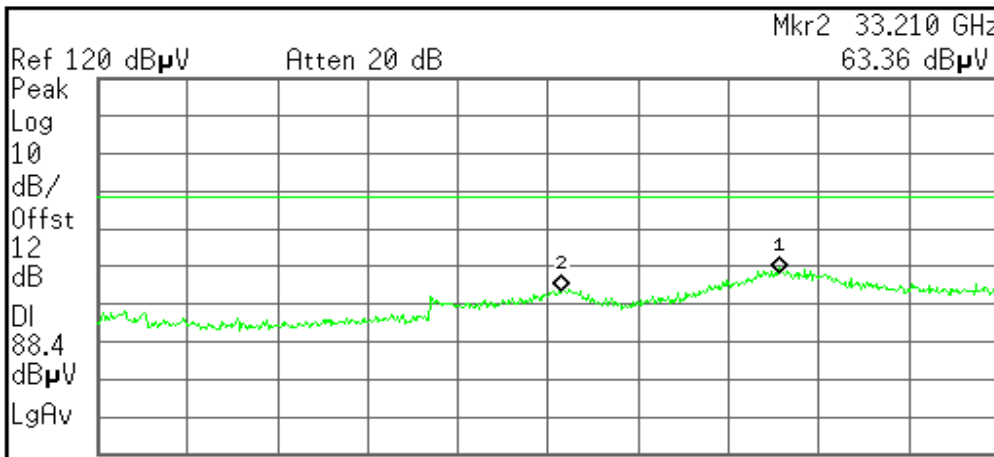
Signal Track
On Off

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Agilent

R T

Freq/Channel



Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Start 26.000 GHz Stop 40.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Freq Offset
0.00000000 Hz

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	36.570 GHz	68.49 dBµV
2	(1)	Freq	33.210 GHz	63.36 dBµV

Signal Track
On Off

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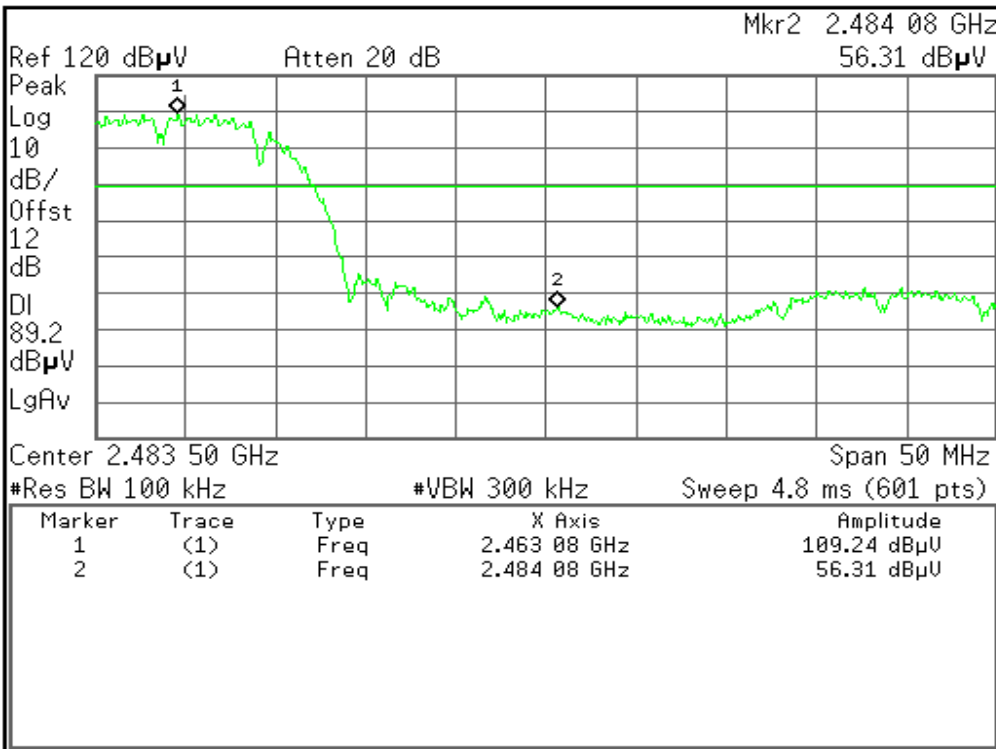
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

CH High

Agilent

R T

Freq/Channel



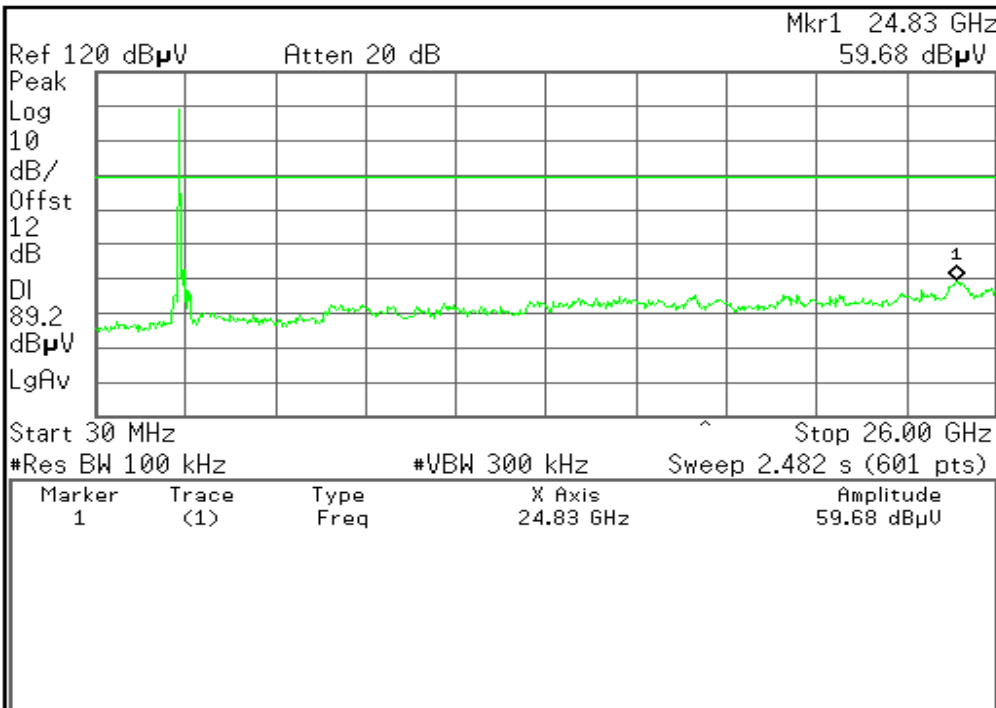
Center Freq	2.48350000 GHz
Start Freq	2.45850000 GHz
Stop Freq	2.50850000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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R T

Freq/Channel



Center Freq	13.01500000 GHz
Start Freq	30.00000000 MHz
Stop Freq	26.00000000 GHz
CF Step	2.59700000 GHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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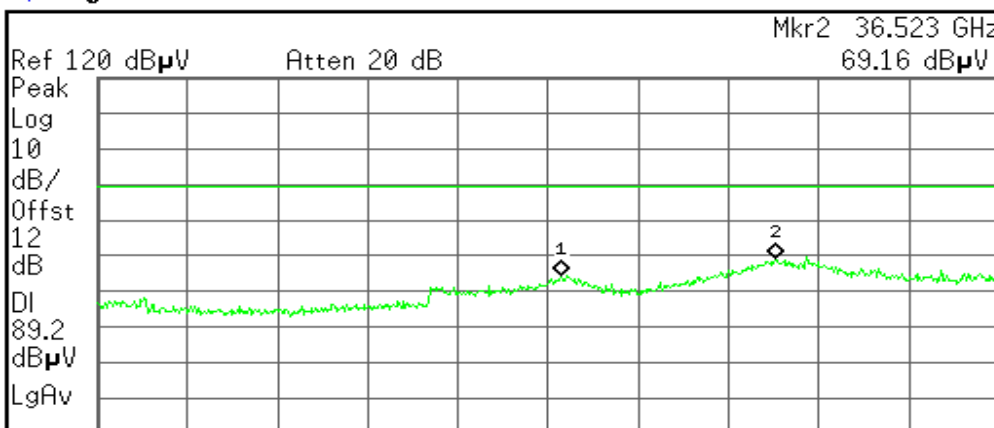
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

R T

Freq/Channel



Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Start 26.000 GHz Stop 40.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Freq Offset
0.00000000 Hz

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.210 GHz	64.32 dBµV
2	(1)	Freq	36.523 GHz	69.16 dBµV

Signal Track
On Off

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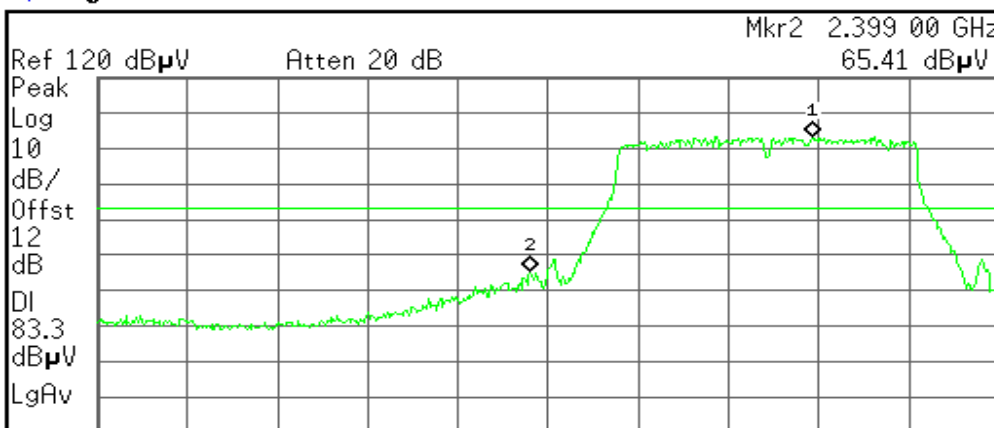
IEEE 802.11g mode

CH Low

Agilent

R T

Freq/Channel



Center Freq
2.40000000 GHz

Start Freq
2.37500000 GHz

Stop Freq
2.42500000 GHz

CF Step
5.00000000 MHz
Auto Man

Center 2.400 00 GHz Span 50 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Freq Offset
0.00000000 Hz

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.414 67 GHz	103.27 dBµV
2	(1)	Freq	2.399 00 GHz	65.41 dBµV

Signal Track
On Off

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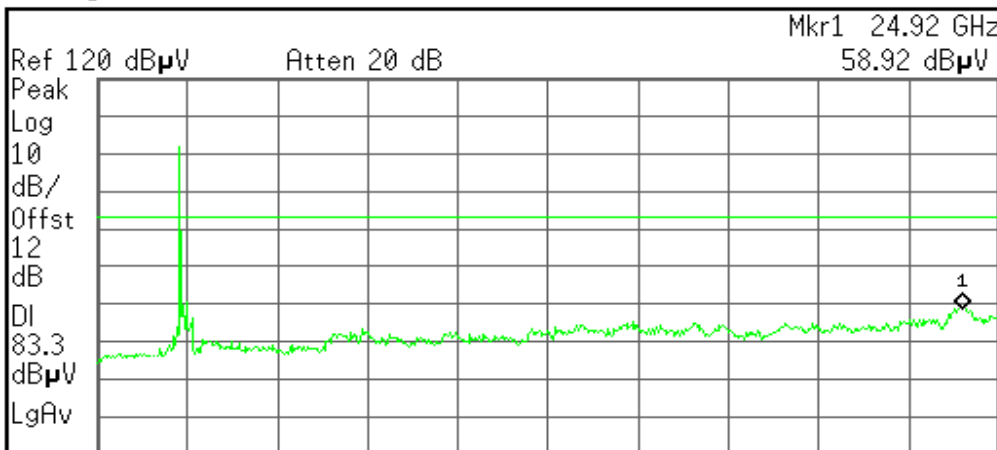
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

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Peak Search



Next Peak

Next Pk Right

Next Pk Left

Min Search

Pk-Pk Search

Start 30 MHz Stop 26.00 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	24.92 GHz	58.92 dBμV

Mkr → CF

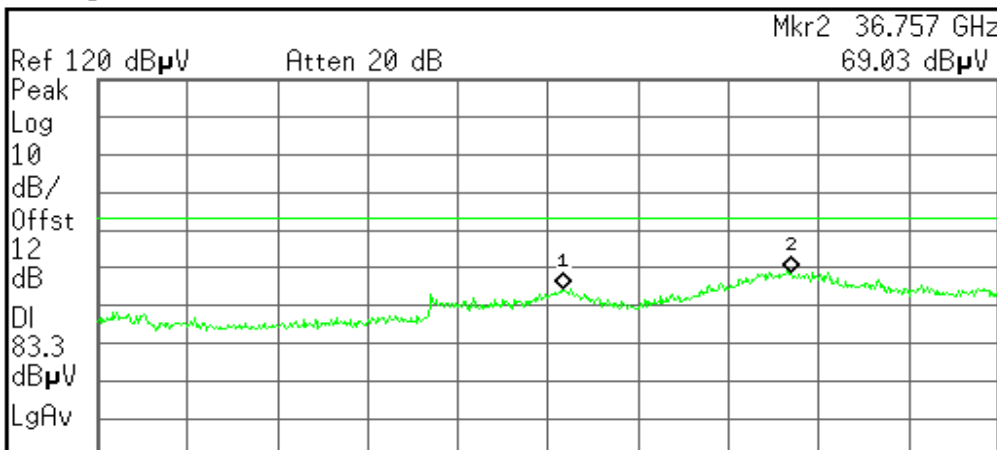
More
1 of 2

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R T

Freq/Channel



Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Start 26.000 GHz Stop 40.000 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.233 GHz	64.26 dBμV
2	(1)	Freq	36.757 GHz	69.03 dBμV

Freq Offset
0.00000000 Hz

Signal Track
On Off

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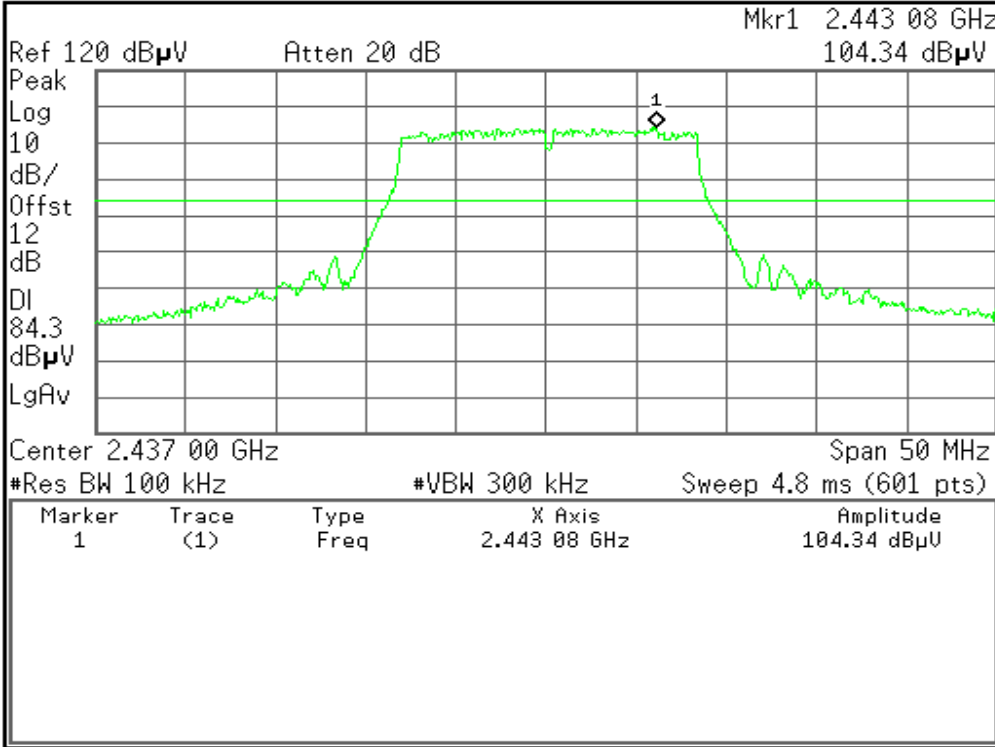
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

CH Mid

Agilent

R T

Freq/Channel



Center Freq
2.43700000 GHz

Start Freq
2.41200000 GHz

Stop Freq
2.46200000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

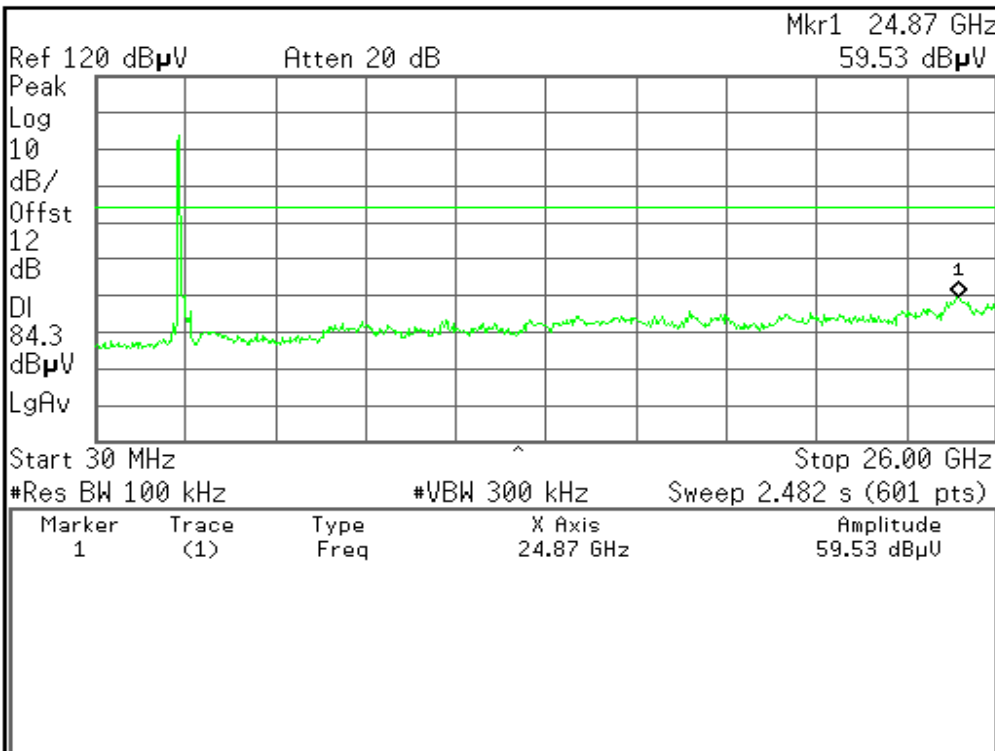
Signal Track
On Off

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R T

Freq/Channel



Center Freq
13.01500000 GHz

Start Freq
30.00000000 MHz

Stop Freq
26.00000000 GHz

CF Step
2.59700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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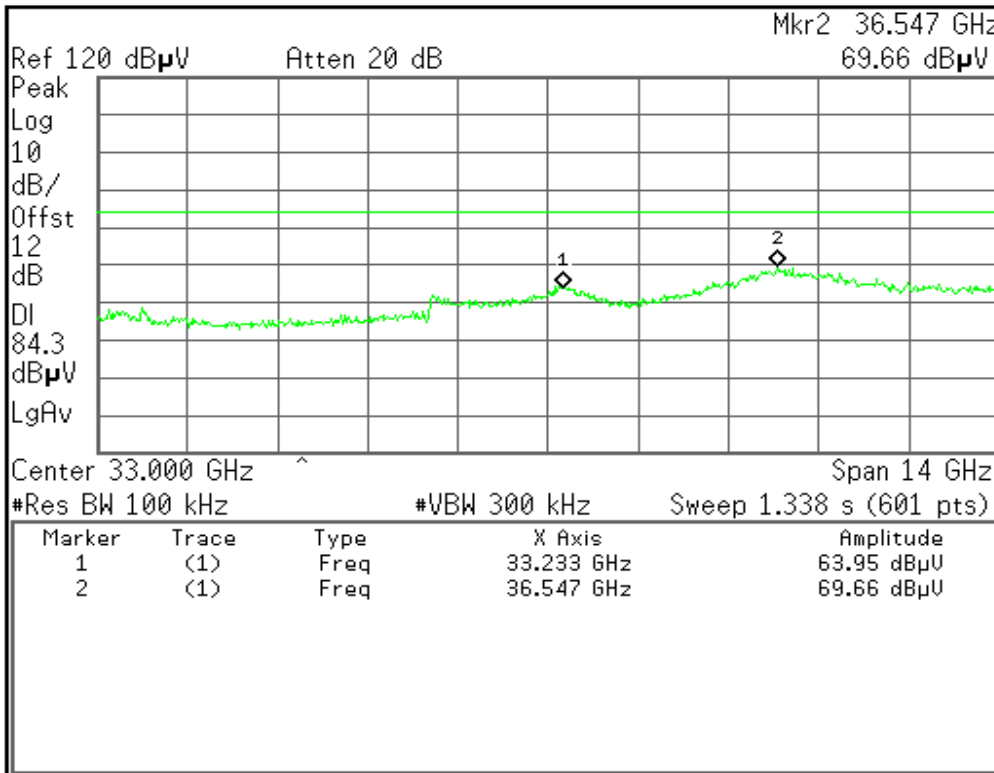
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

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R T

Freq/Channel



Center Freq	33.0000000 GHz
Start Freq	26.0000000 GHz
Stop Freq	40.0000000 GHz
CF Step	1.40000000 GHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

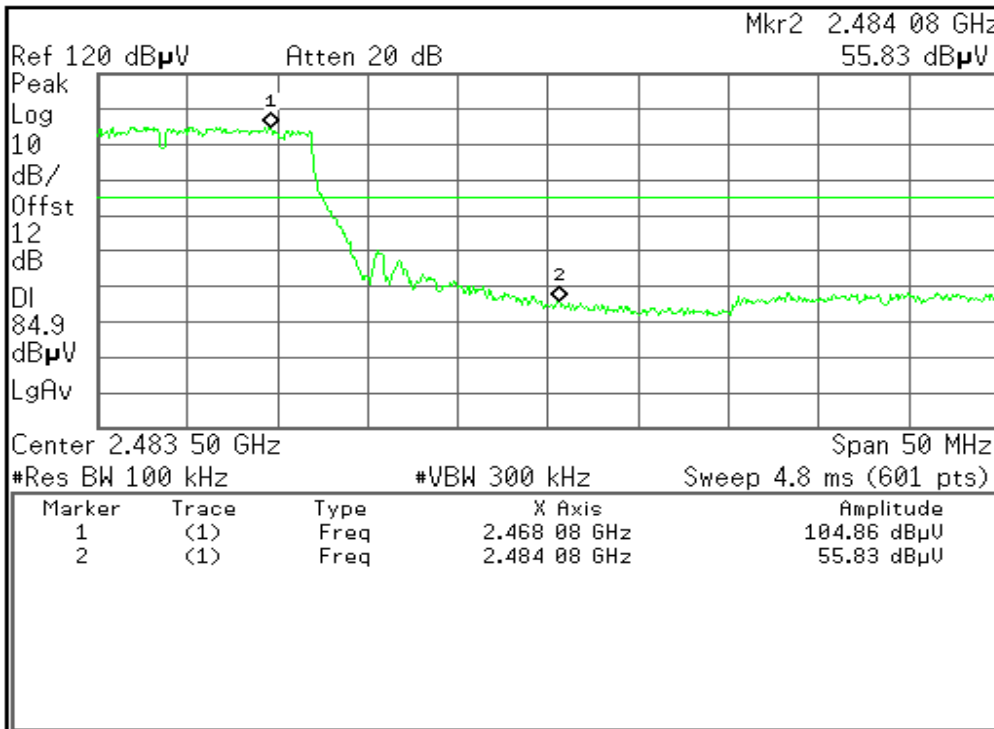
Copyright 2000-2008 Agilent Technologies

CH High

Agilent

R T

Freq/Channel



Center Freq	2.48350000 GHz
Start Freq	2.45850000 GHz
Stop Freq	2.50850000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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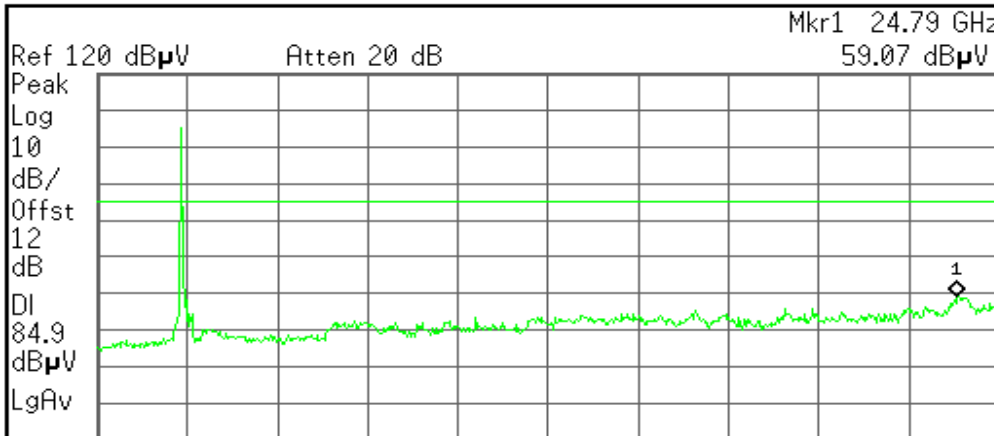
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

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R T

Freq/Channel



Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 30 MHz Stop 26.00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (601 pts)

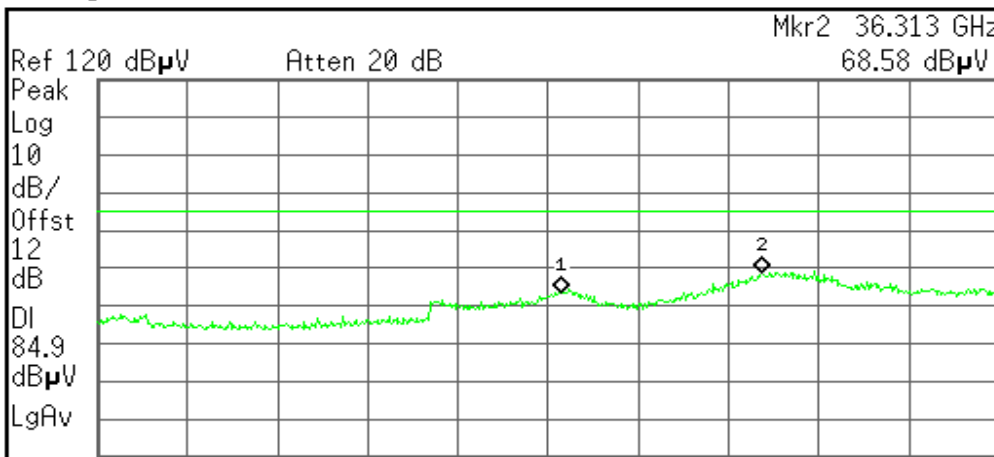
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	24.79 GHz	59.07 dB μ V

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R T

Freq/Channel



Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 26.000 GHz Stop 40.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.210 GHz	63.57 dB μ V
2	(1)	Freq	36.313 GHz	68.58 dB μ V

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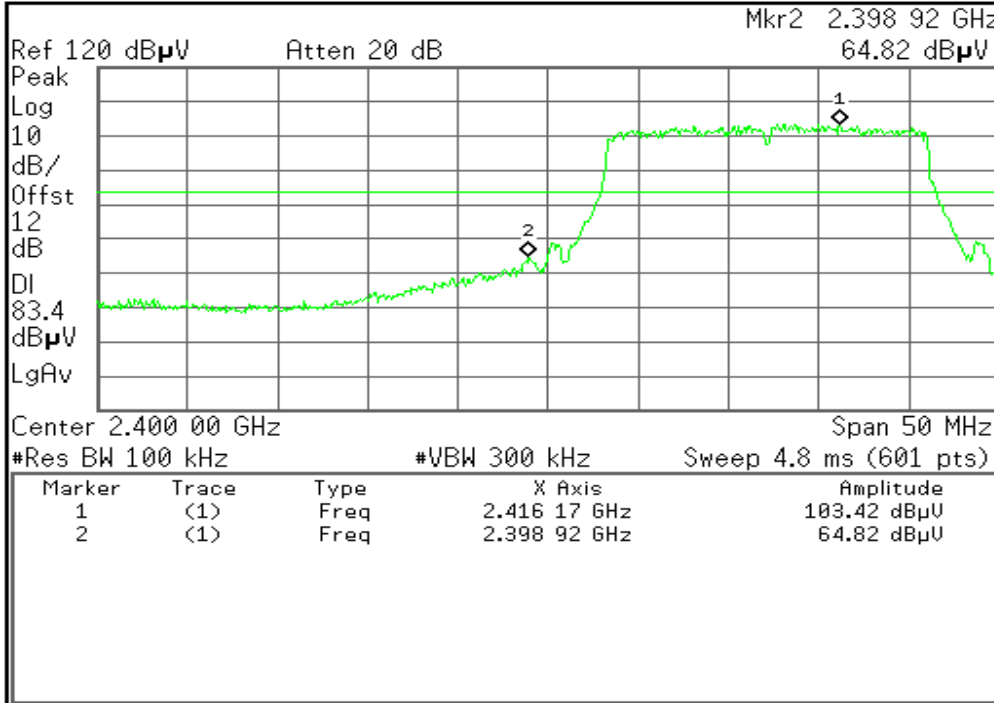
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

IEEE 802.11n Standard-20 MHz Channel mode

CH Low

Agilent

R T

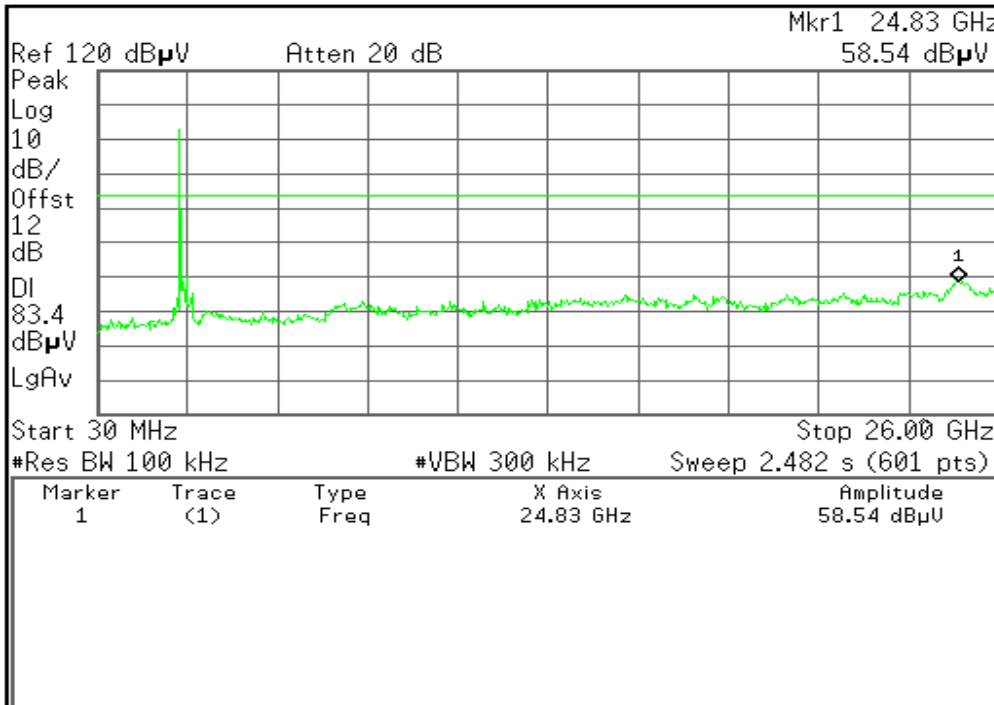


Freq/Channel
Center Freq 2.40000000 GHz
Start Freq 2.37500000 GHz
Stop Freq 2.42500000 GHz
CF Step 5.00000000 MHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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Agilent

R T



Freq/Channel
Center Freq 13.0150000 GHz
Start Freq 30.0000000 MHz
Stop Freq 26.0000000 GHz
CF Step 2.59700000 GHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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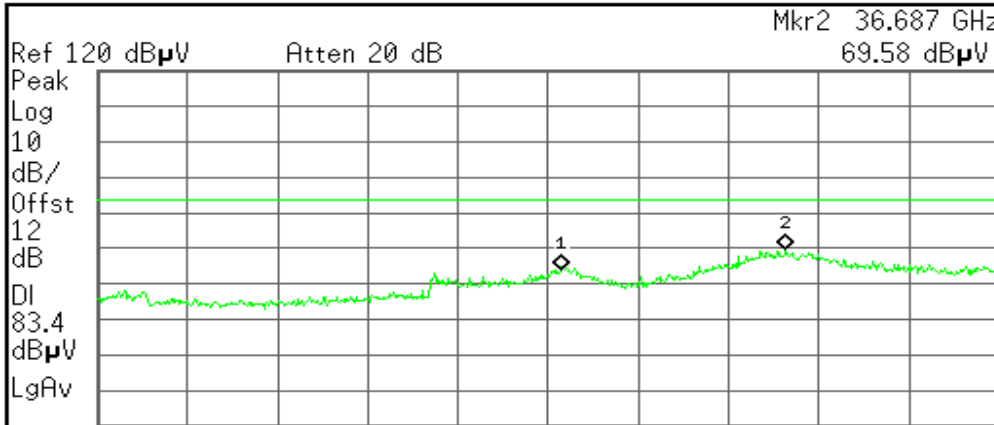
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

R T

Freq/Channel



Start 26.000 GHz Stop 40.000 GHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.187 GHz	64.09 dBµV
2	(1)	Freq	36.687 GHz	69.58 dBµV

Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

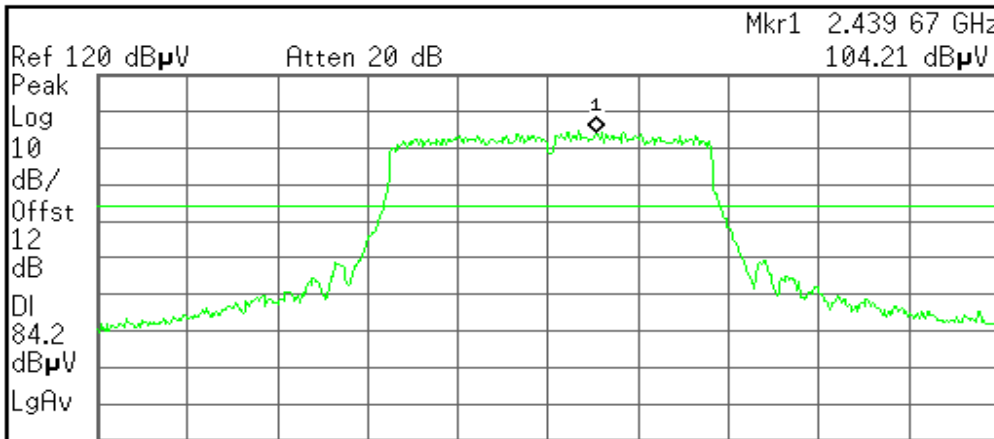
Copyright 2000-2008 Agilent Technologies

CH Mid

Agilent

R T

Freq/Channel



Center 2.437 00 GHz Span 50 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 4.8 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.439 67 GHz	104.21 dBµV

Center Freq
2.43700000 GHz

Start Freq
2.41200000 GHz

Stop Freq
2.46200000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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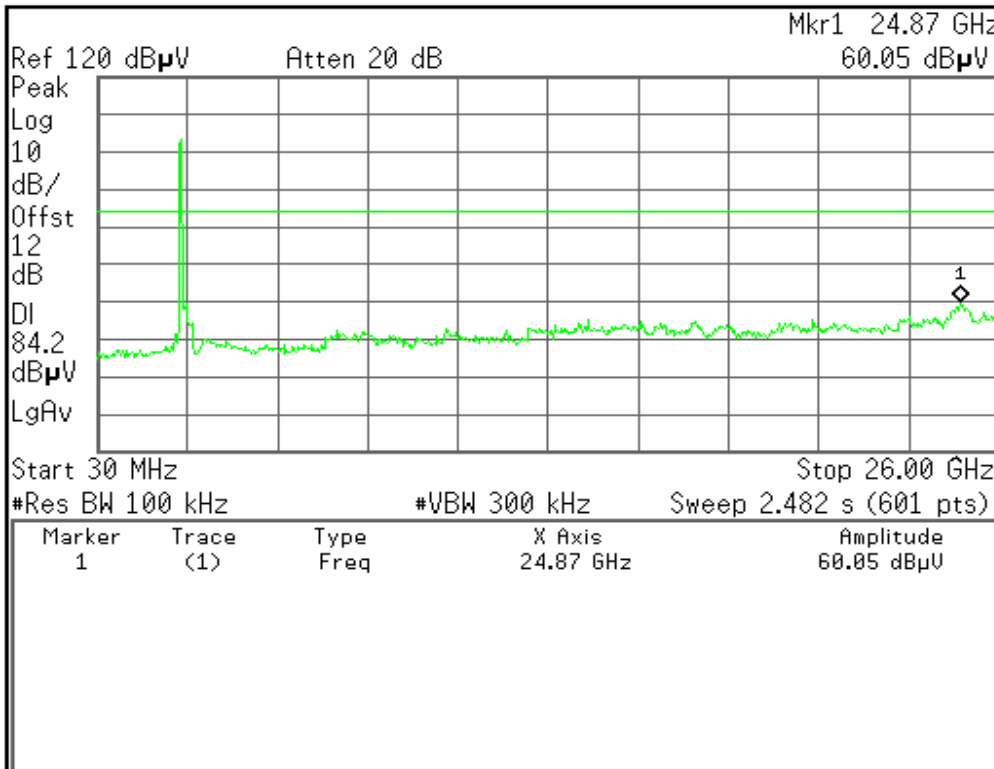
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

R T

Freq/Channel



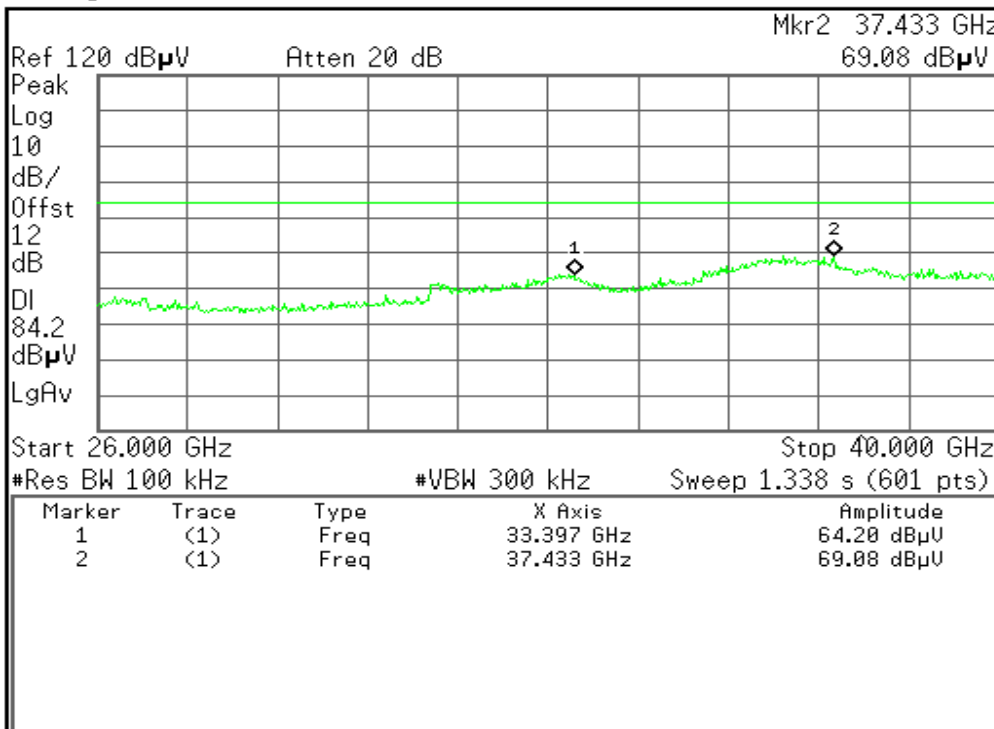
Center Freq 13.0150000 GHz
Start Freq 30.0000000 MHz
Stop Freq 26.0000000 GHz
CF Step 2.59700000 GHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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Agilent

R T

Freq/Channel



Center Freq 33.0000000 GHz
Start Freq 26.0000000 GHz
Stop Freq 40.0000000 GHz
CF Step 1.40000000 GHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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Compliance Certification Services Inc.

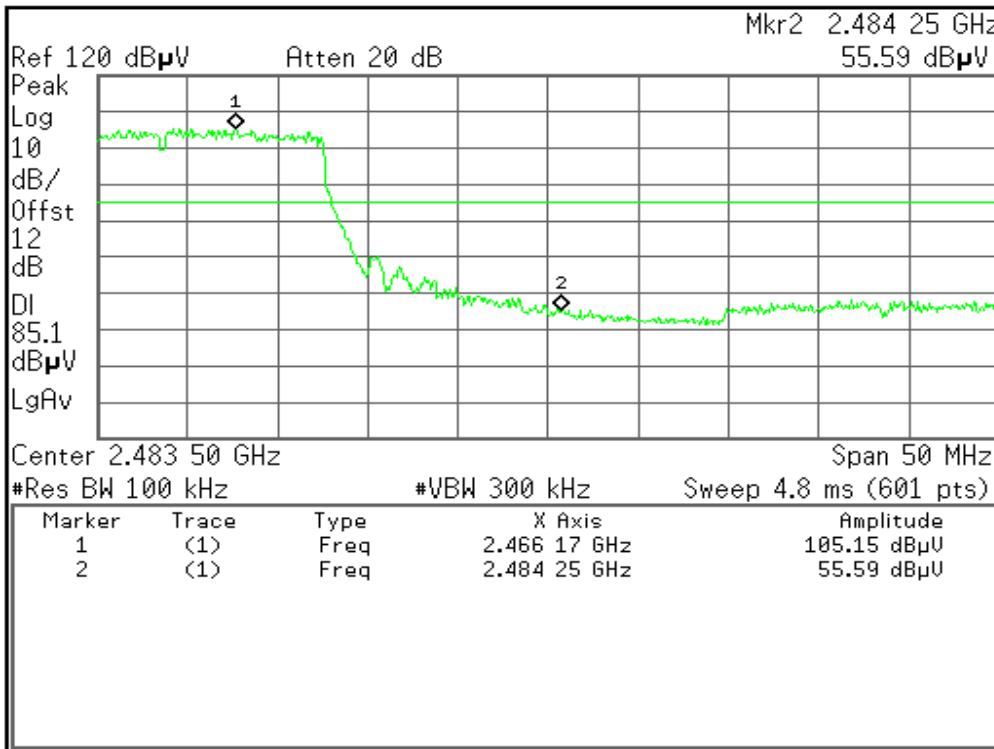
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

CH High

Agilent

R T

Freq/Channel



Center Freq
2.48350000 GHz

Start Freq
2.45850000 GHz

Stop Freq
2.50850000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

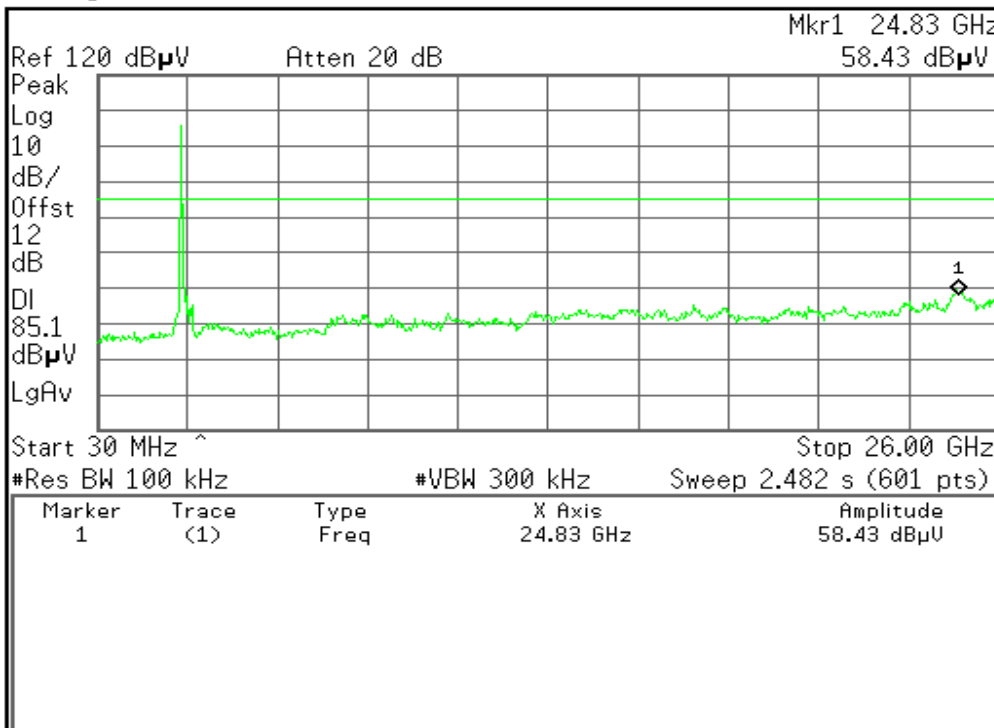
Signal Track
On Off

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Agilent

R T

Freq/Channel



Center Freq
13.01500000 GHz

Start Freq
30.00000000 MHz

Stop Freq
26.00000000 GHz

CF Step
2.59700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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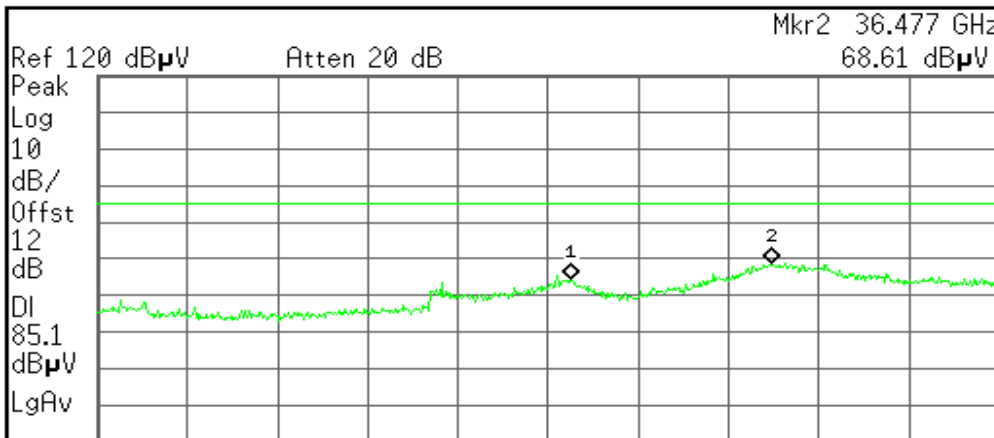
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

R T

Freq/Channel



Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 26.000 GHz Stop 40.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.350 GHz	64.53 dBµU
2	(1)	Freq	36.477 GHz	68.61 dBµU

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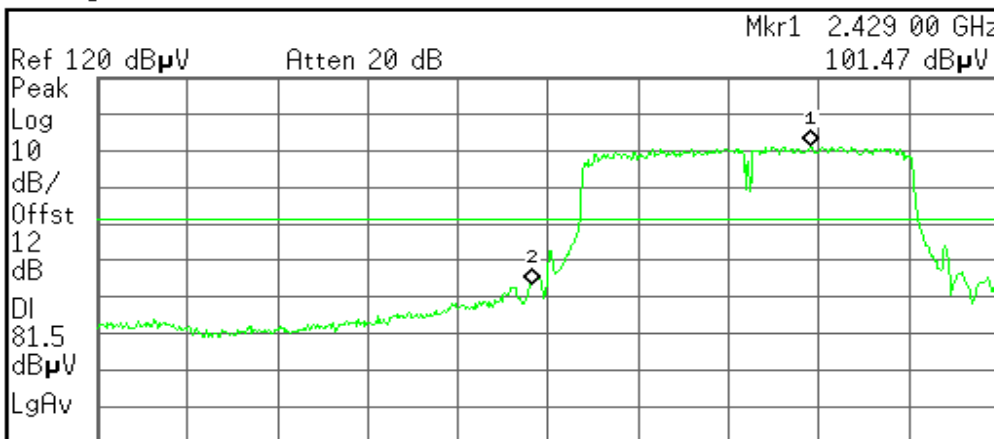
IEEE 802.11n Wide-40 MHz Channel mode

CH Low

Agilent

R T

Freq/Channel



Center Freq
2.4000000 GHz

Start Freq
2.3500000 GHz

Stop Freq
2.4500000 GHz

CF Step
10.0000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Center 2.400 00 GHz Span 100 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 9.56 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.429 00 GHz	101.47 dBµU
2	(1)	Freq	2.398 17 GHz	63.62 dBµU

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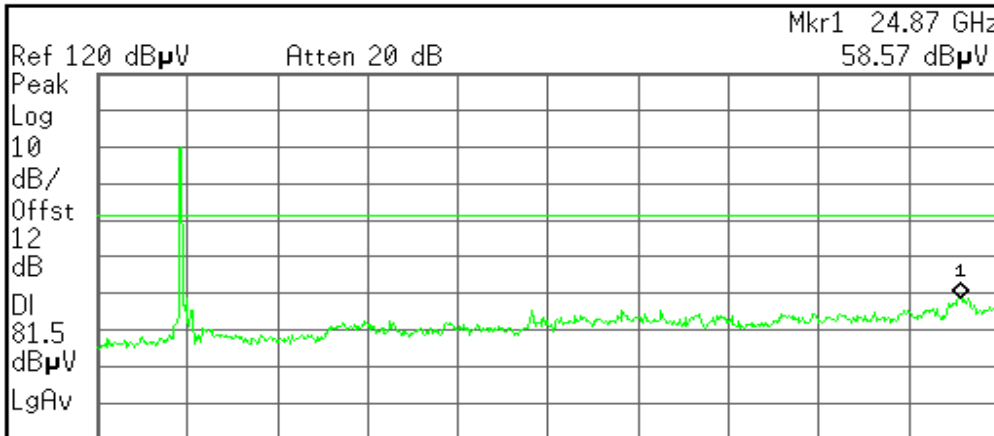


Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

R T



Center 13.02 GHz Span 25.97 GHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (601 pts)

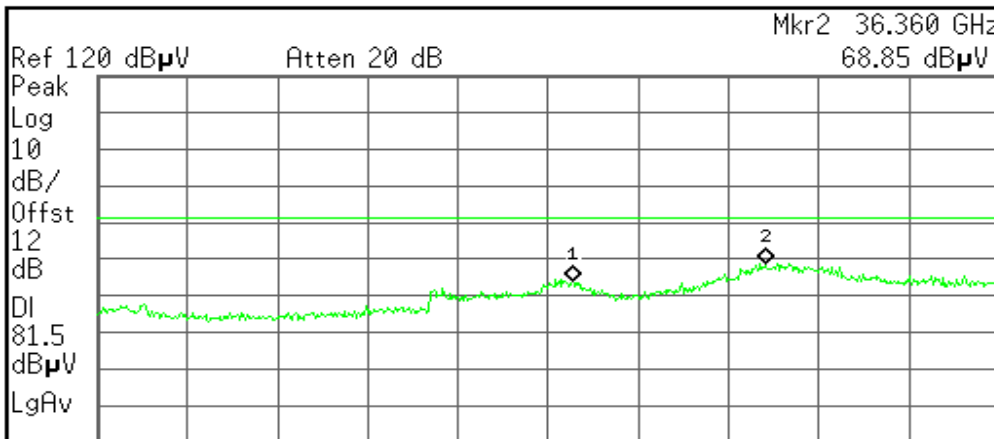
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	24.87 GHz	58.57 dBμU

Freq/Channel
Center Freq 13.0150000 GHz
Start Freq 30.0000000 MHz
Stop Freq 26.0000000 GHz
CF Step 2.59700000 GHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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Agilent

R T



Start 26.000 GHz Stop 40.000 GHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.373 GHz	63.83 dBμU
2	(1)	Freq	36.360 GHz	68.85 dBμU

Freq/Channel
Center Freq 33.0000000 GHz
Start Freq 26.0000000 GHz
Stop Freq 40.0000000 GHz
CF Step 1.40000000 GHz Auto Man
Freq Offset 0.00000000 Hz
Signal Track On Off

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Compliance Certification Services Inc.

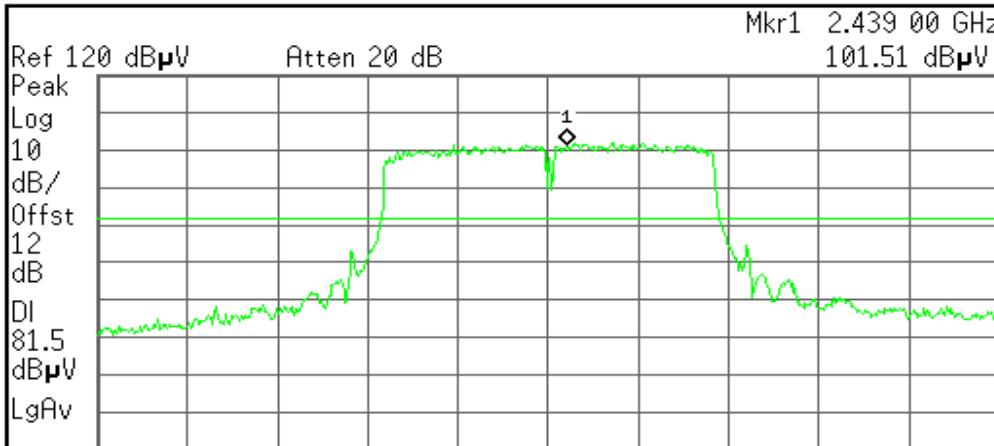
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

CH Mid

Agilent

R T

Freq/Channel



Center Freq
2.43700000 GHz

Start Freq
2.38700000 GHz

Stop Freq
2.48700000 GHz

CF Step
10.0000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Center 2.437 00 GHz Span 100 MHz
#Res BW 100 kHz #VBW 300 kHz Sweep 9.56 ms (601 pts)

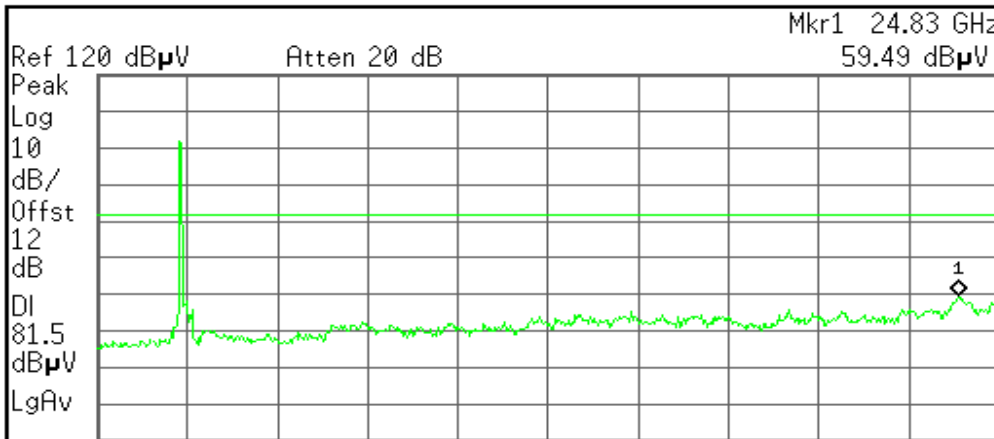
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.439 00 GHz	101.51 dB μ V

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Agilent

R T

Freq/Channel



Center Freq
13.01500000 GHz

Start Freq
30.00000000 MHz

Stop Freq
26.00000000 GHz

CF Step
2.597000000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 30 MHz Stop 26.00 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	24.83 GHz	59.49 dB μ V

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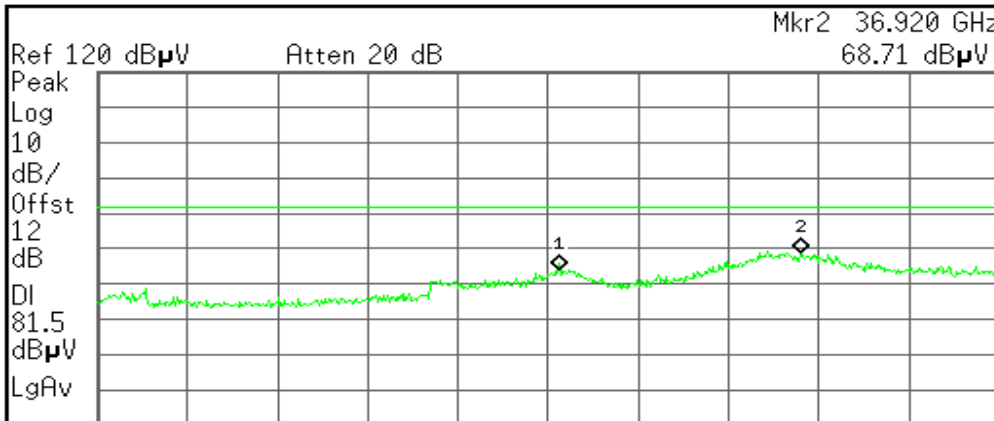
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

R T

Freq/Channel



Start 26.000 GHz Stop 40.000 GHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.163 GHz	64.23 dBµV
2	(1)	Freq	36.920 GHz	68.71 dBµV

Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

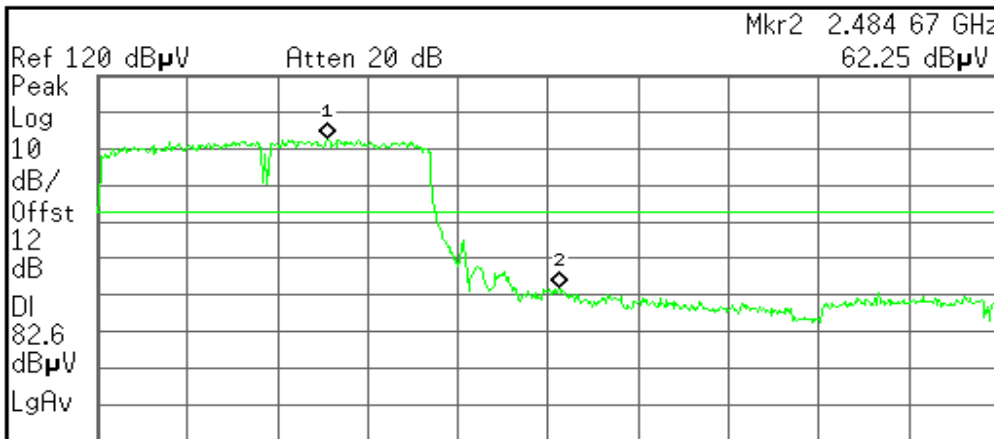
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CH High

Agilent

R T

Freq/Channel



Center 2.483 50 GHz Span 100 MHz
 #Res BW 100 kHz #VBW 300 kHz Sweep 9.56 ms (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.459 00 GHz	102.65 dBµV
2	(1)	Freq	2.484 67 GHz	62.25 dBµV

Center Freq
2.48350000 GHz

Start Freq
2.43350000 GHz

Stop Freq
2.53350000 GHz

CF Step
10.0000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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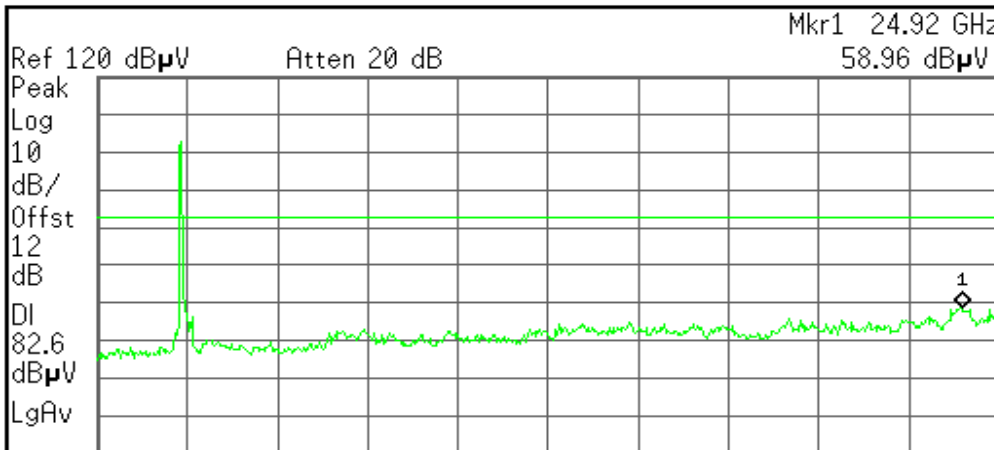
Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Agilent

R T

Freq/Channel



Center Freq
13.0150000 GHz

Start Freq
30.0000000 MHz

Stop Freq
26.0000000 GHz

CF Step
2.59700000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Center 13.02 GHz Span 25.97 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 2.482 s (601 pts)

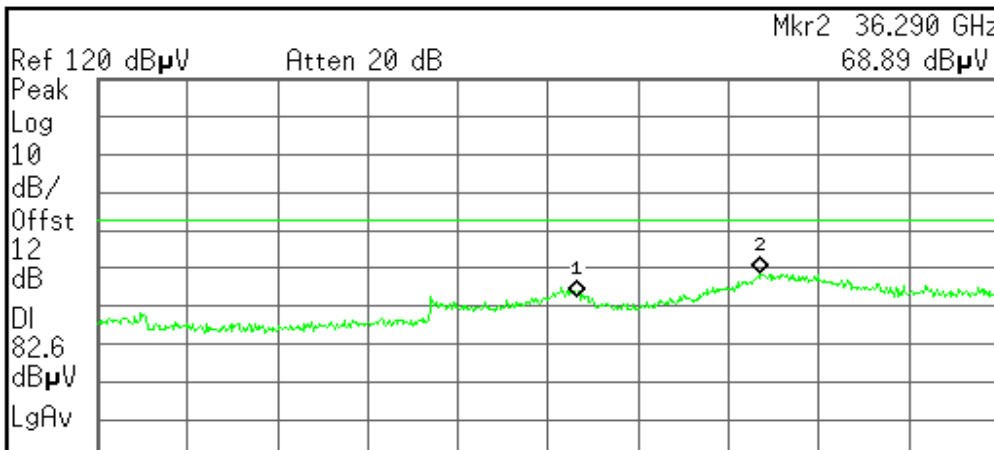
Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	24.92 GHz	58.96 dBµV

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R T

Freq/Channel



Center Freq
33.0000000 GHz

Start Freq
26.0000000 GHz

Stop Freq
40.0000000 GHz

CF Step
1.40000000 GHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Start 26.000 GHz Stop 40.000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 1.338 s (601 pts)

Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	33.443 GHz	62.74 dBµV
2	(1)	Freq	36.290 GHz	68.89 dBµV

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7.5.2 RADIATED EMISSIONS

LIMIT

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

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

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

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

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



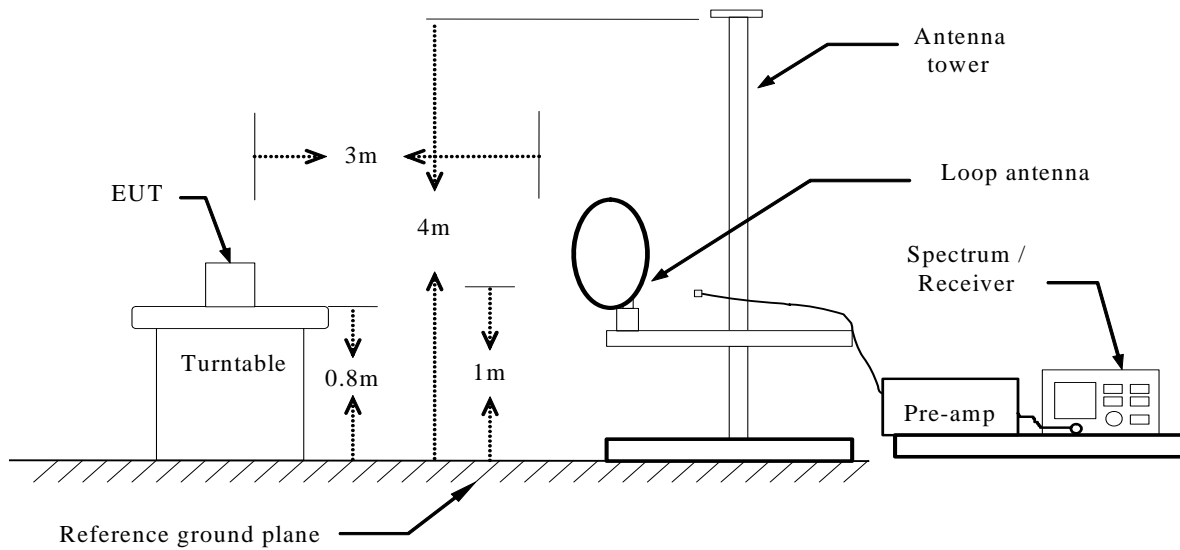
MEASUREMENT EQUIPMENT USED

3M Semi Anechoic Chamber (977)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	E4446A	MY44020154	11/16/2010
EMI Test Receiver	R&S	ESPI3	101026	04/28/2011
Pre-Amplifier	MINI	ZFL-1000VH2	d041703	02/28/2011
Pre-Amplifier	Miteq	NSP4000-NF	870731	02/28/2011
Bilog Antenna	Sunol	JB1	A110204-2	11/22/2010
Horn-antenna	SCHWARZBECK	BBHA9120D	D:266	12/04/2010
PSG Analog Signal Generator	Agilent	E8257C	MY43321570	04/28/2011
Turn Table	CT	CT123	4165	N.C.R
Antenna Tower	CT	CTERG23	3256	N.C.R
Controller	CT	CT100	95637	N.C.R
Site NSA	CCS	N/A	N/A	04/06/2011
Loop Antenna	ARA	PLA-1030/B	1029	02/24/2011

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

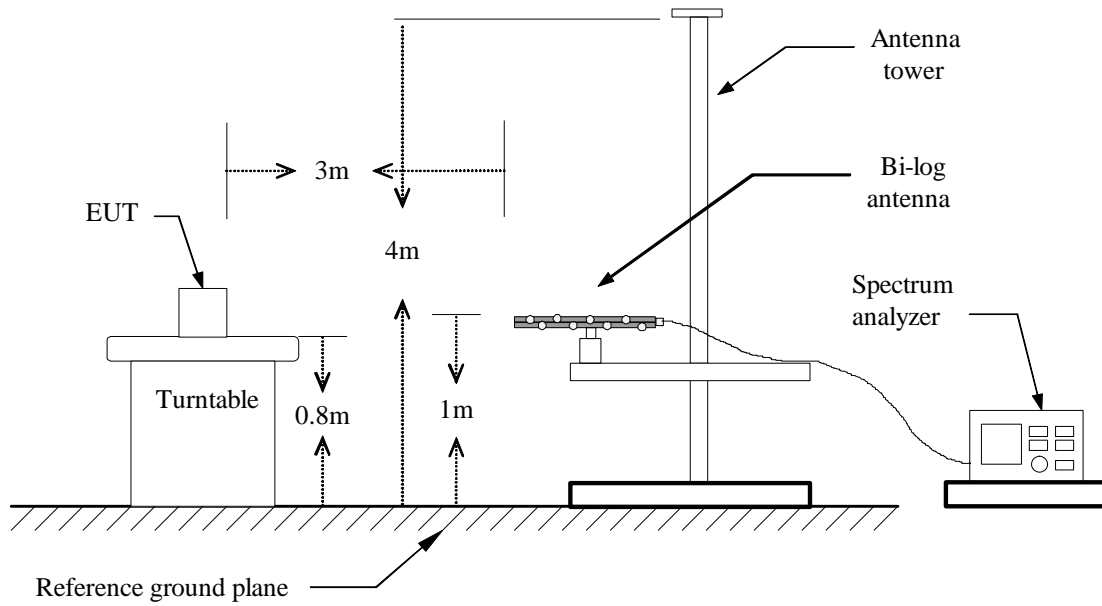
Test Configuration

Below 30MHz

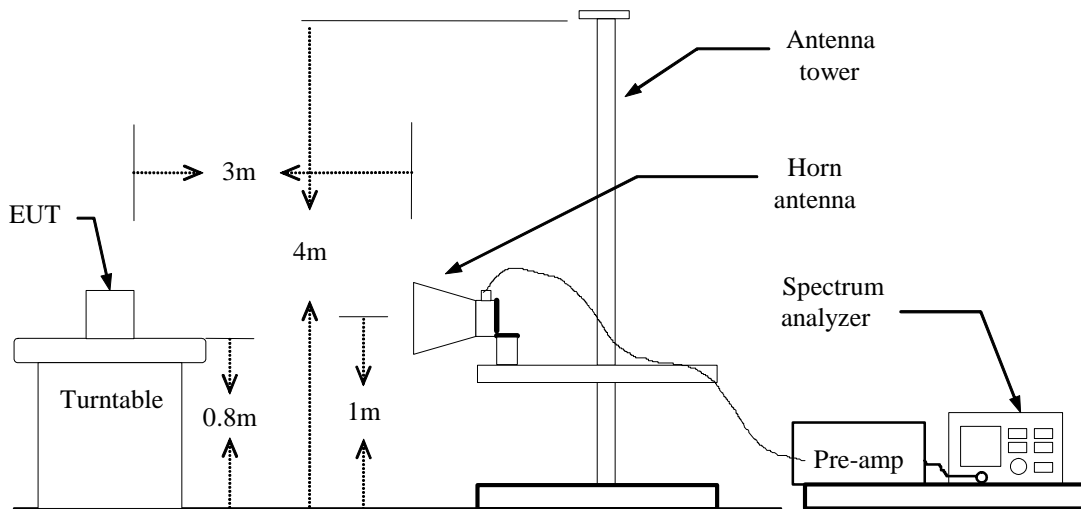




Below 1 GHz



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

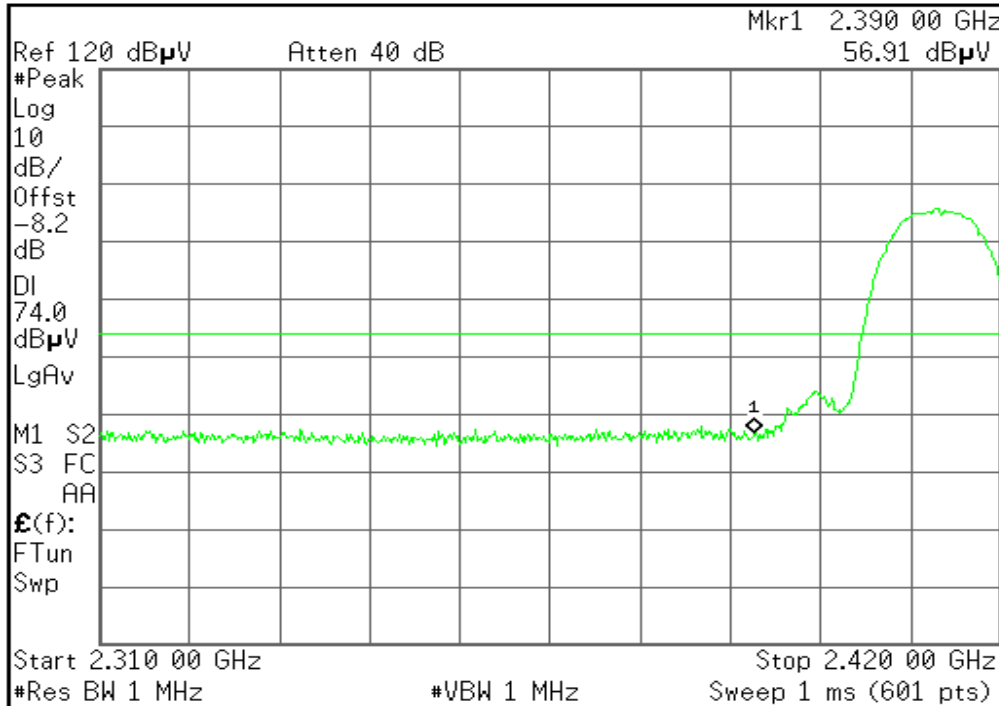
RESTRICTED BANDEDGE (b Mode, Low Channel, Horizontal)

PEAK

Agilent

R T

Freq/Channel



Center Freq
2.36500000 GHz

Start Freq
2.31000000 GHz

Stop Freq
2.42000000 GHz

CF Step
11.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

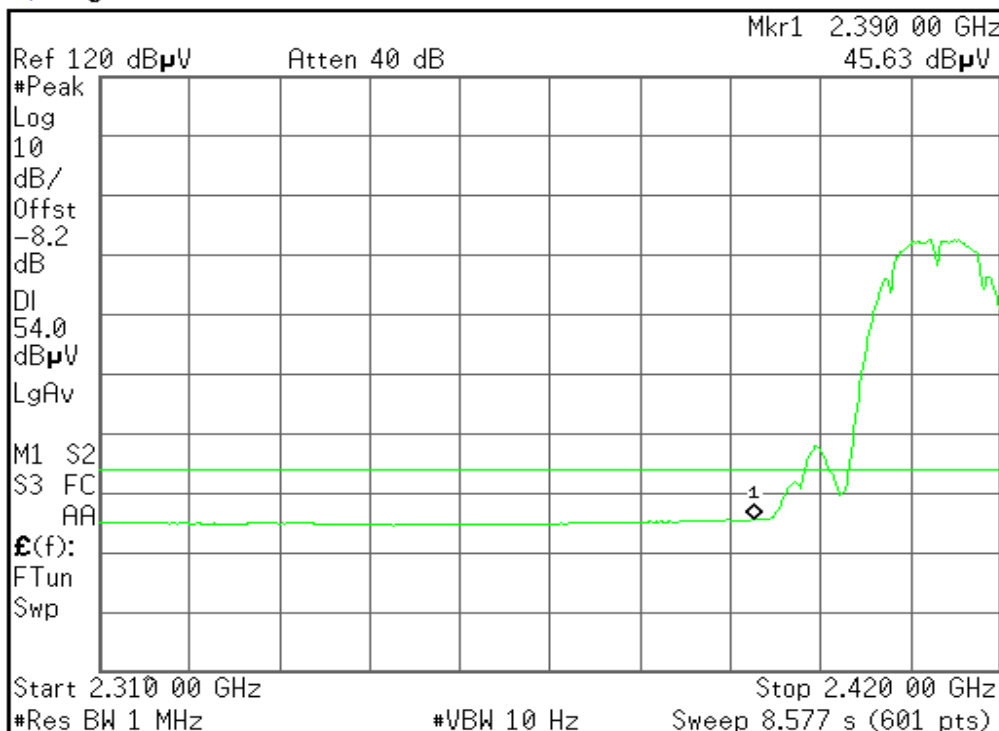
Copyright 2000-2008 Agilent Technologies

AVG

Agilent

R T

Freq/Channel



Center Freq
2.36500000 GHz

Start Freq
2.31000000 GHz

Stop Freq
2.42000000 GHz

CF Step
11.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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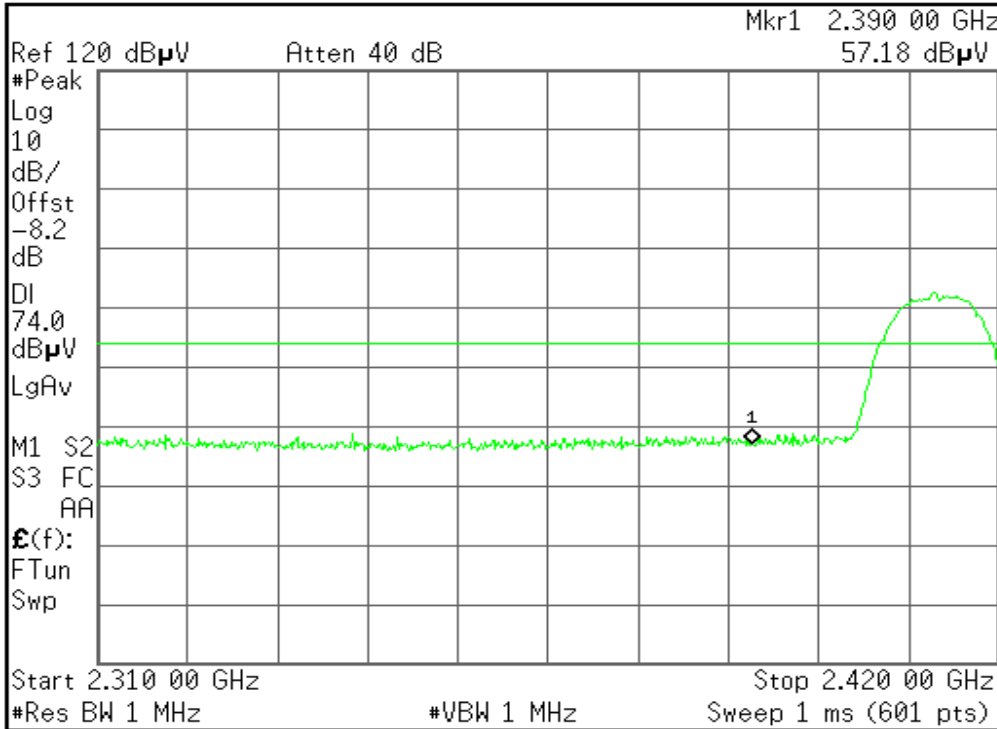
RESTRICTED BANDEDGE (b Mode, Low Channel, Vertical)

PEAK

Agilent

R T

Freq/Channel



Center Freq	2.36500000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42000000 GHz
CF Step	11.00000000 MHz
Auto	Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

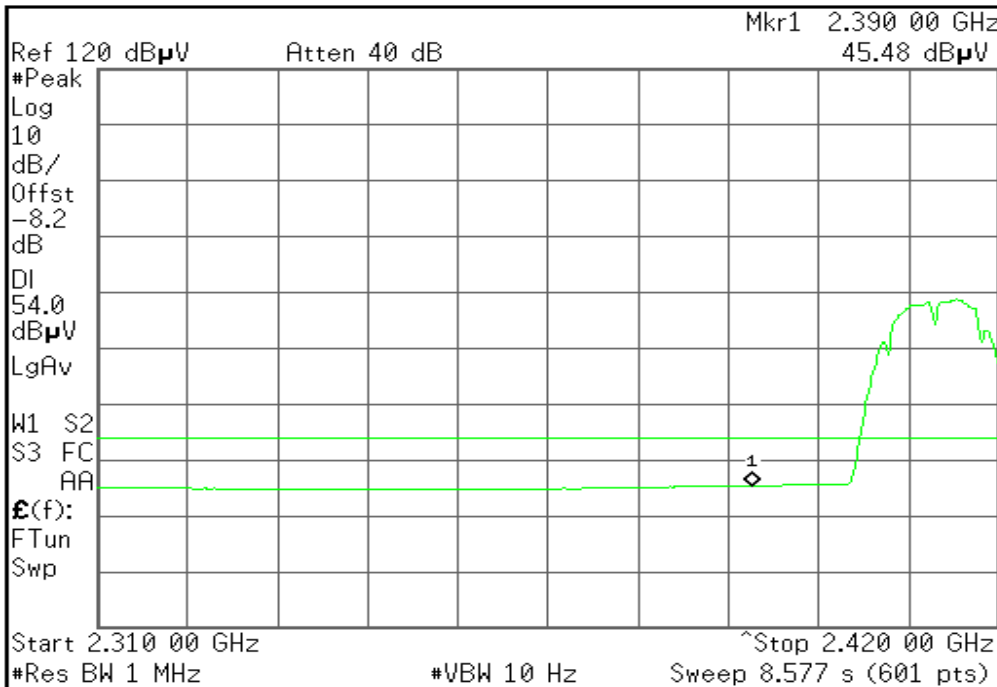
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R T

Trace



Trace	1 2 3
Clear Write	
Max Hold	
Min Hold	
View	
Blank	
More	1 of 2

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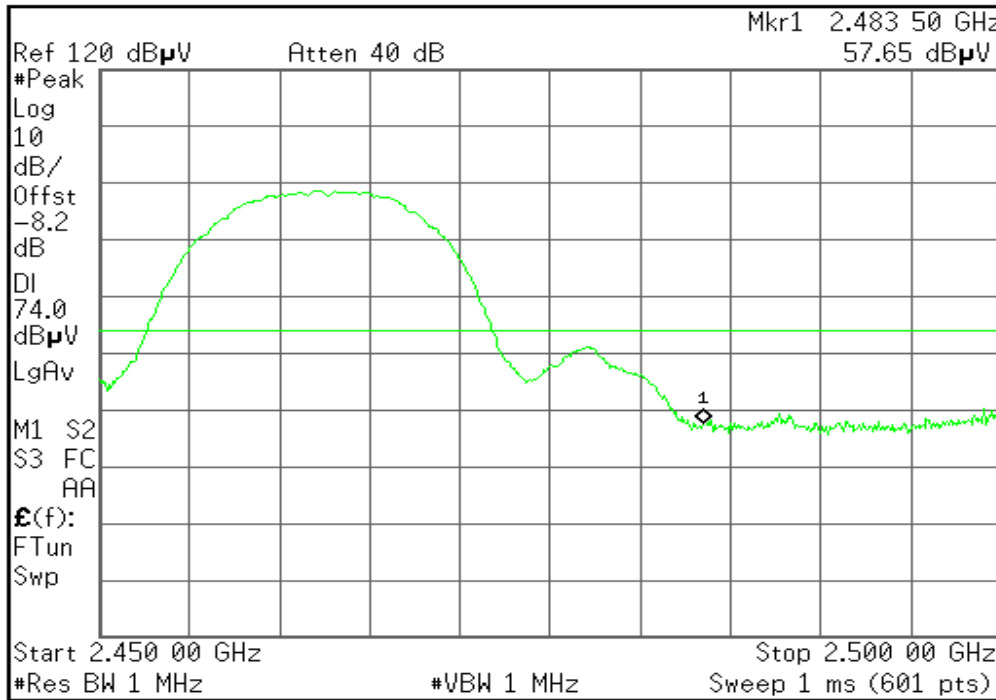
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

RESTRICTED BANDEDGE (b Mode, High Channel, Horizontal)

PEAK

Agilent

R T



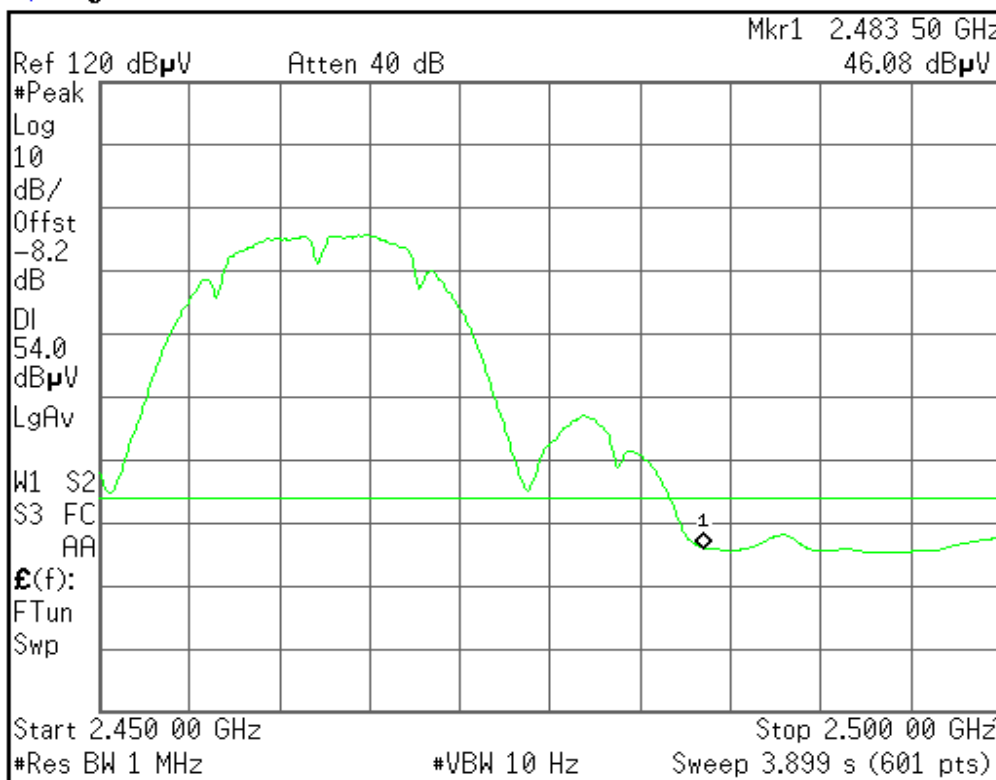
Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Agilent

R T



Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

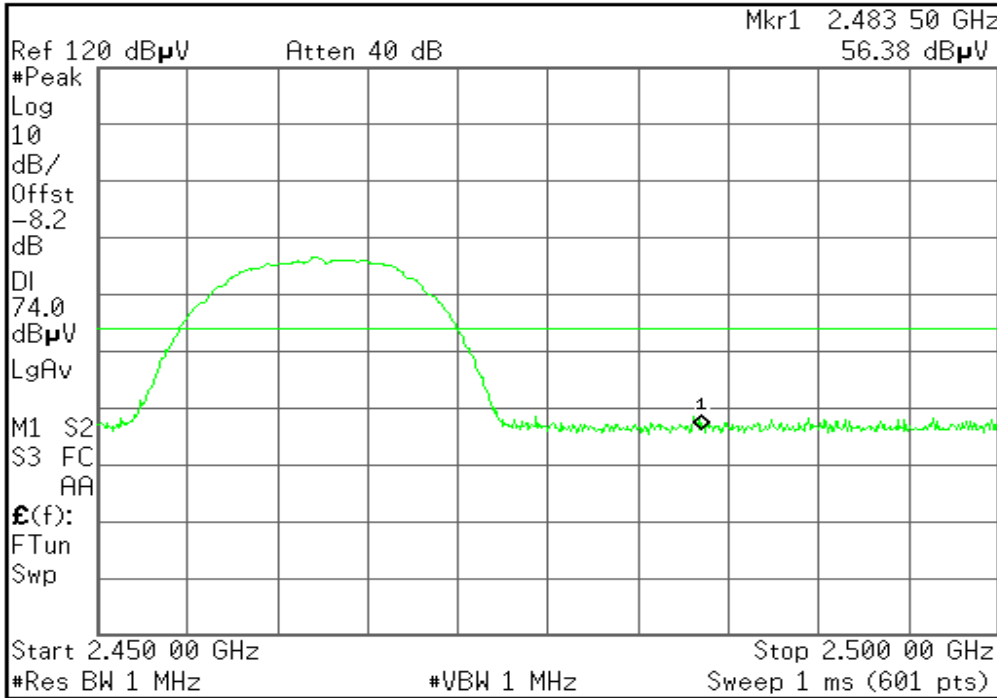
RESTRICTED BANDEDGE (b Mode, High Channel, Vertical)

PEAK

Agilent

R T

Freq/Channel



Center Freq 2.47500000 GHz

Start Freq 2.45000000 GHz

Stop Freq 2.50000000 GHz

CF Step 5.00000000 MHz Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

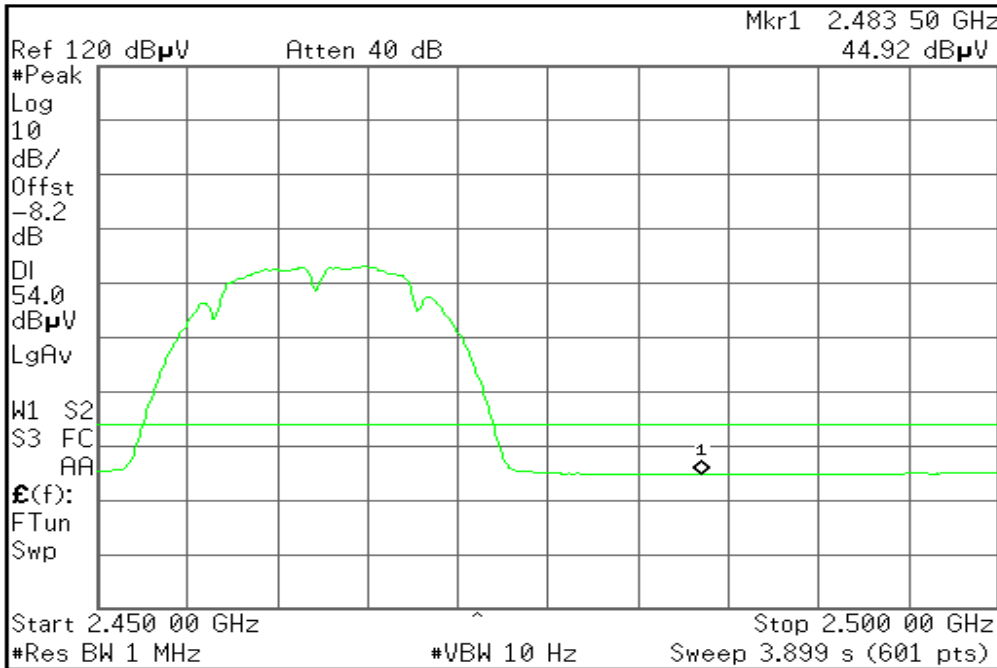
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AVG

Agilent

R T

Freq/Channel



Center Freq 2.47500000 GHz

Start Freq 2.45000000 GHz

Stop Freq 2.50000000 GHz

CF Step 5.00000000 MHz Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

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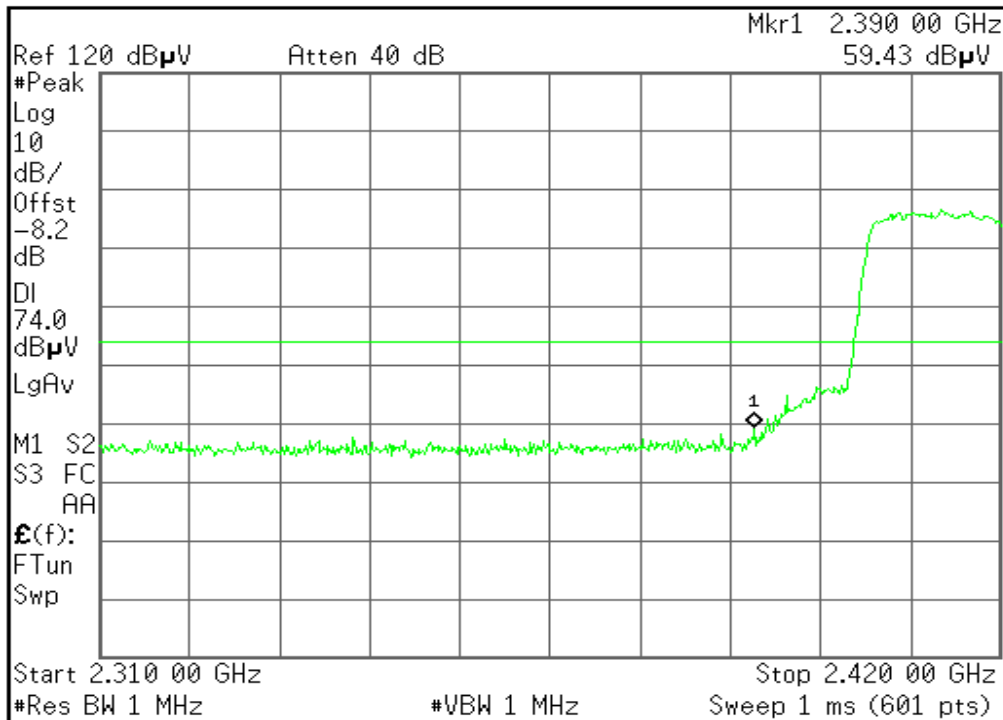
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

RESTRICTED BANDEDGE (g Mode, low Channel, Horizontal)

PEAK

Agilent

R T



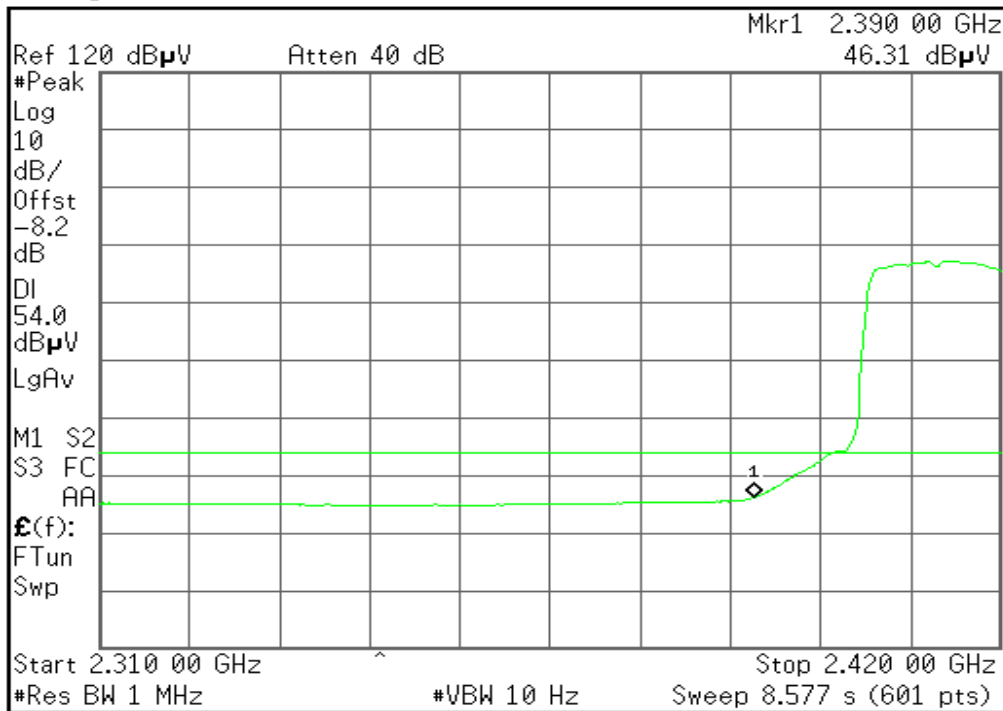
Freq/Channel	
Center Freq	2.36500000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42000000 GHz
CF Step	11.0000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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AVG

Agilent

R T



Freq/Channel	
Center Freq	2.36500000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42000000 GHz
CF Step	11.0000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

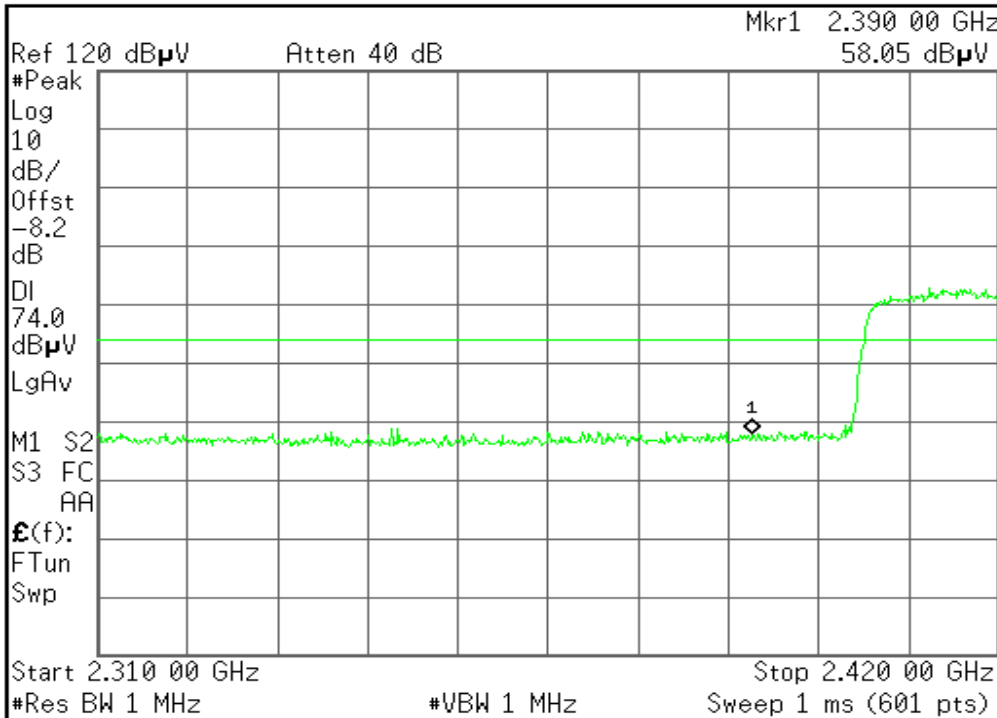
RESTRICTED BANDEDGE (g Mode, low Channel, Vertical)

PEAK

Agilent

R T

Freq/Channel



Center Freq
2.36500000 GHz

Start Freq
2.31000000 GHz

Stop Freq
2.42000000 GHz

CF Step
11.0000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

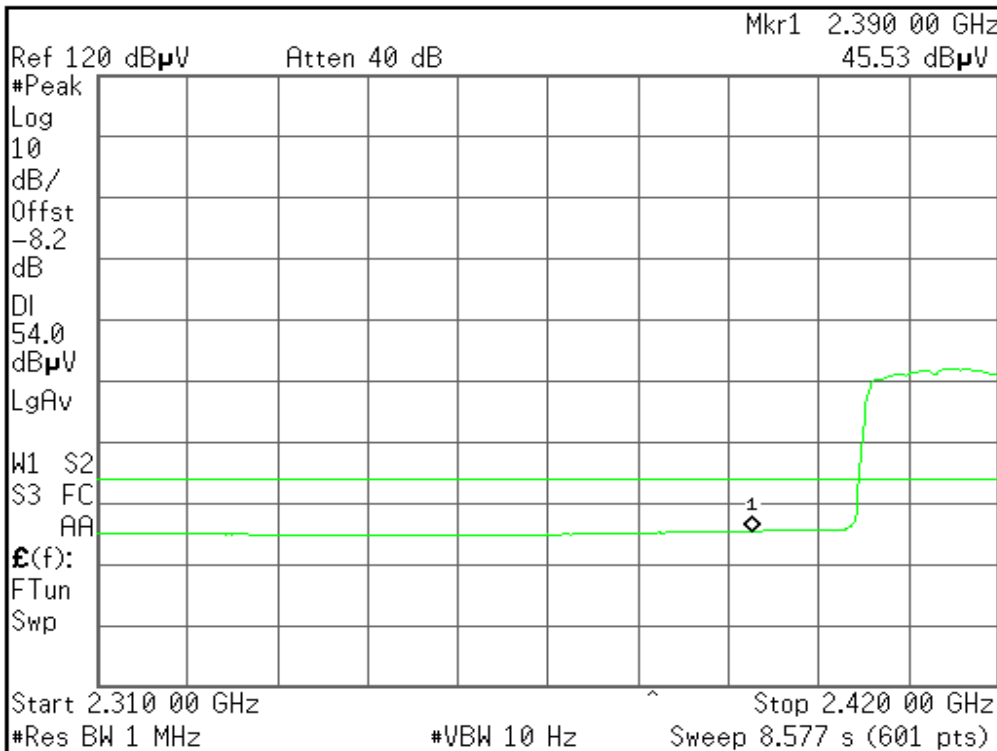
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AVG

Agilent

R T

Freq/Channel



Center Freq
2.36500000 GHz

Start Freq
2.31000000 GHz

Stop Freq
2.42000000 GHz

CF Step
11.0000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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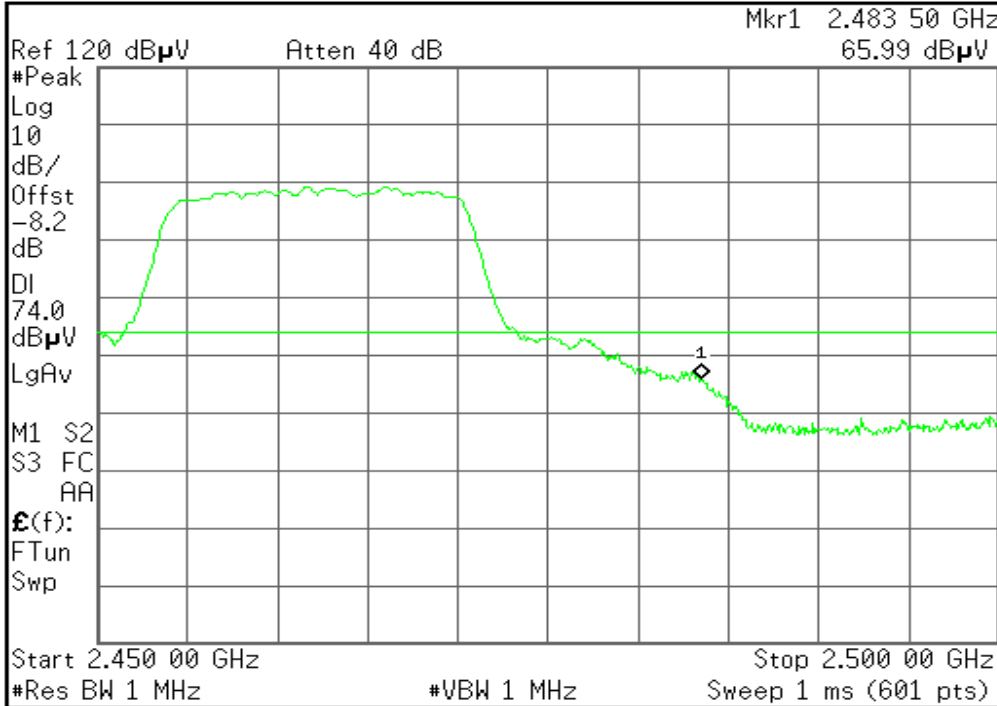
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

RESTRICTED BANDEDGE (g Mode, High Channel, Horizontal)

PEAK

Agilent

R T



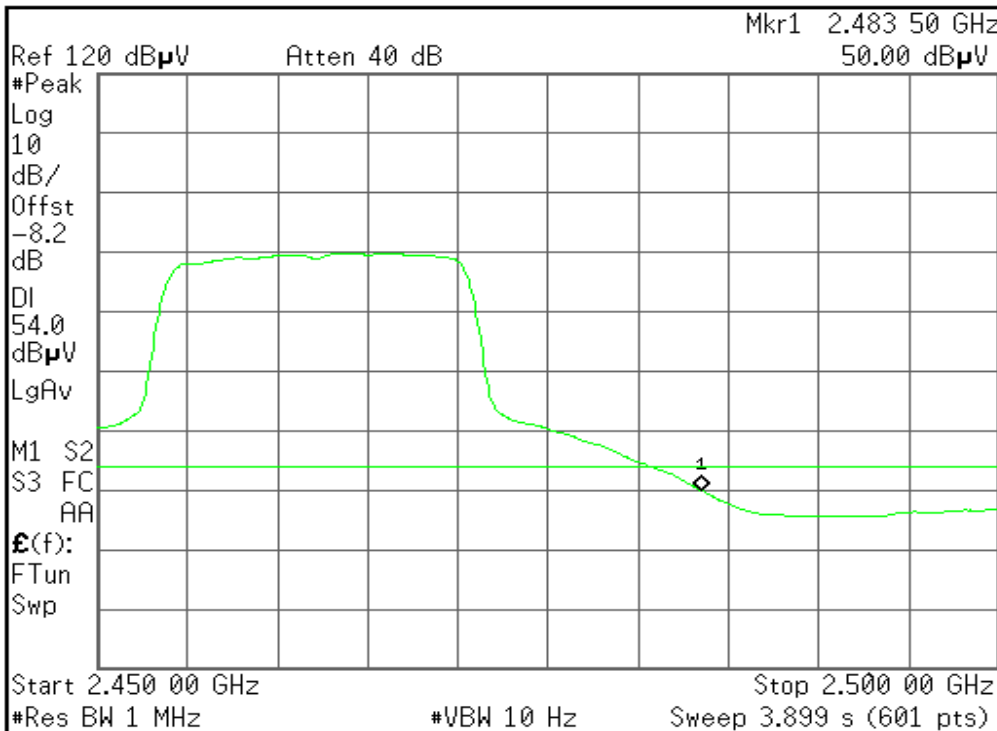
Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Agilent

R T



Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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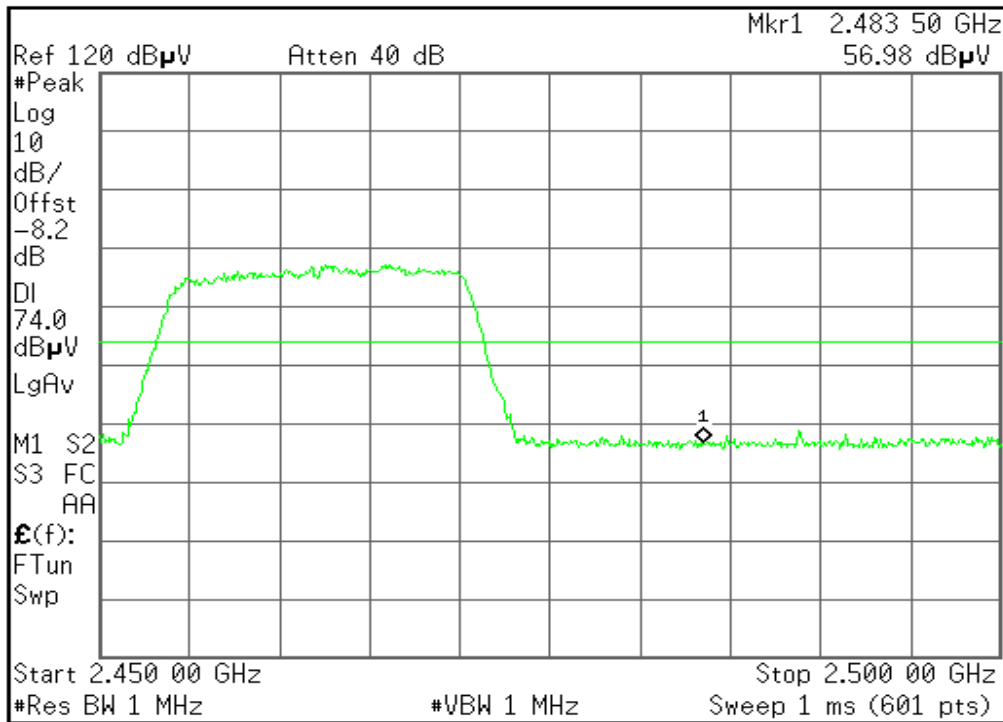
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

RESTRICTED BANDEDGE (g Mode, High Channel, Vertical)

PEAK

Agilent

R T



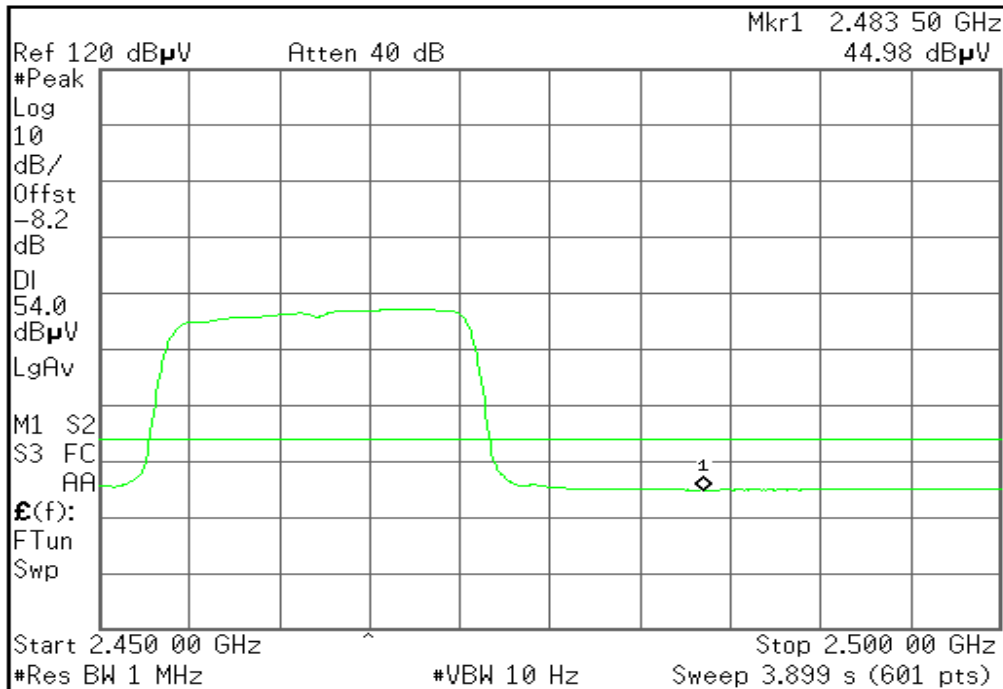
Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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R T



Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

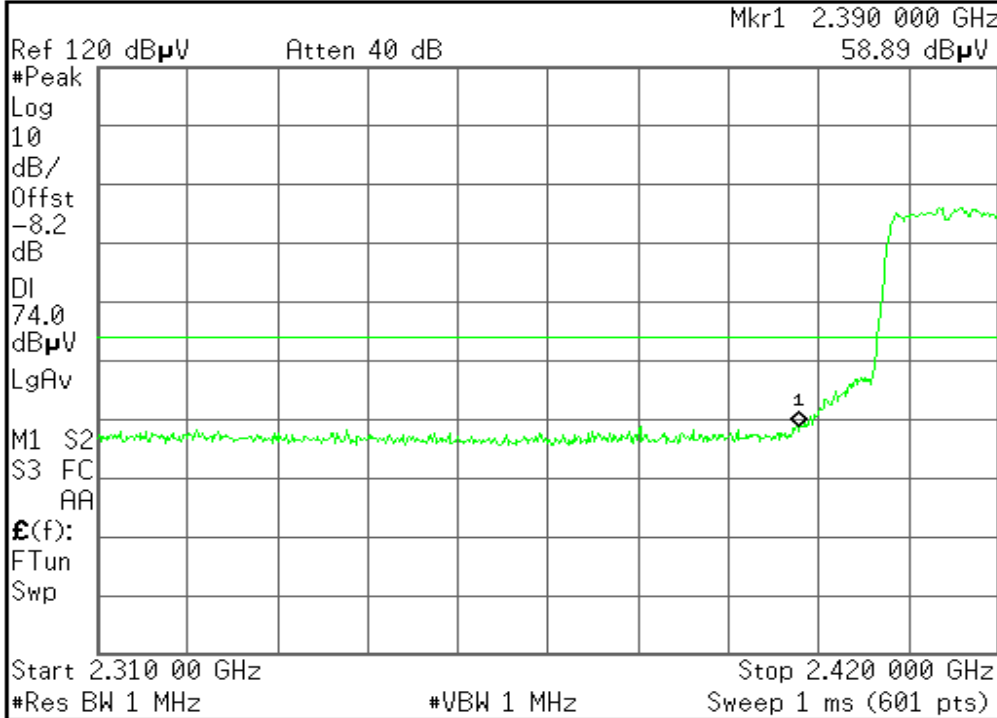
RESTRICTED BANDEDGE (802.11n Standard-20 MHz Channel mode, Low Channel, Horizontal)

PEAK

Agilent

R T

Freq/Channel



Center Freq
2.35250000 GHz

Start Freq
2.28500000 GHz

Stop Freq
2.42000000 GHz

CF Step
13.5000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

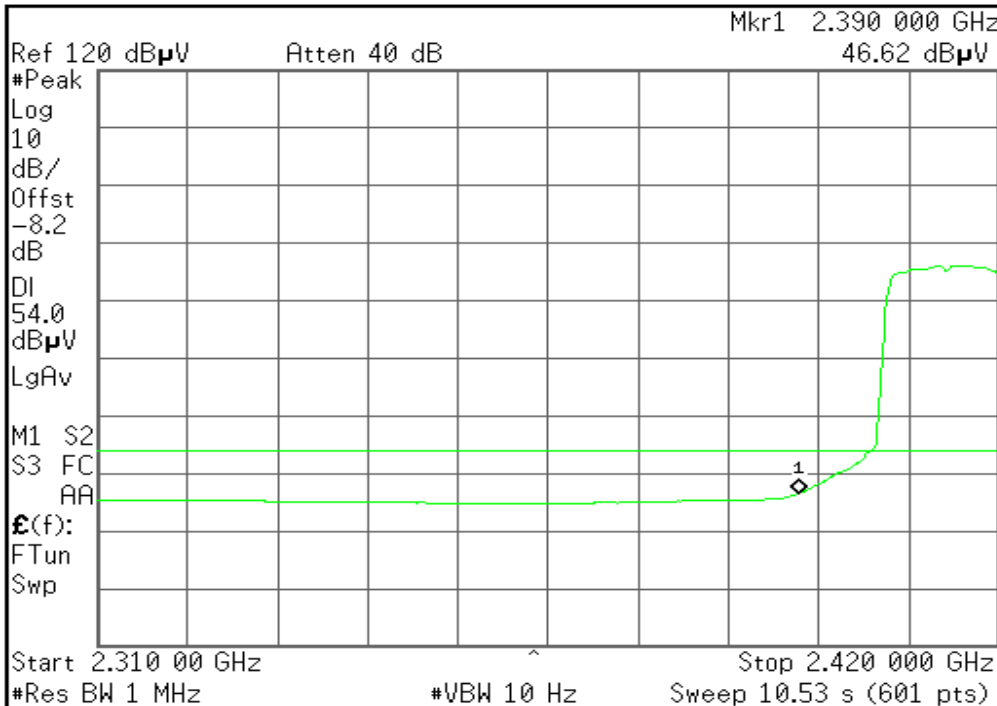
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AVG

Agilent

R T

Freq/Channel



Center Freq
2.35250000 GHz

Start Freq
2.28500000 GHz

Stop Freq
2.42000000 GHz

CF Step
13.5000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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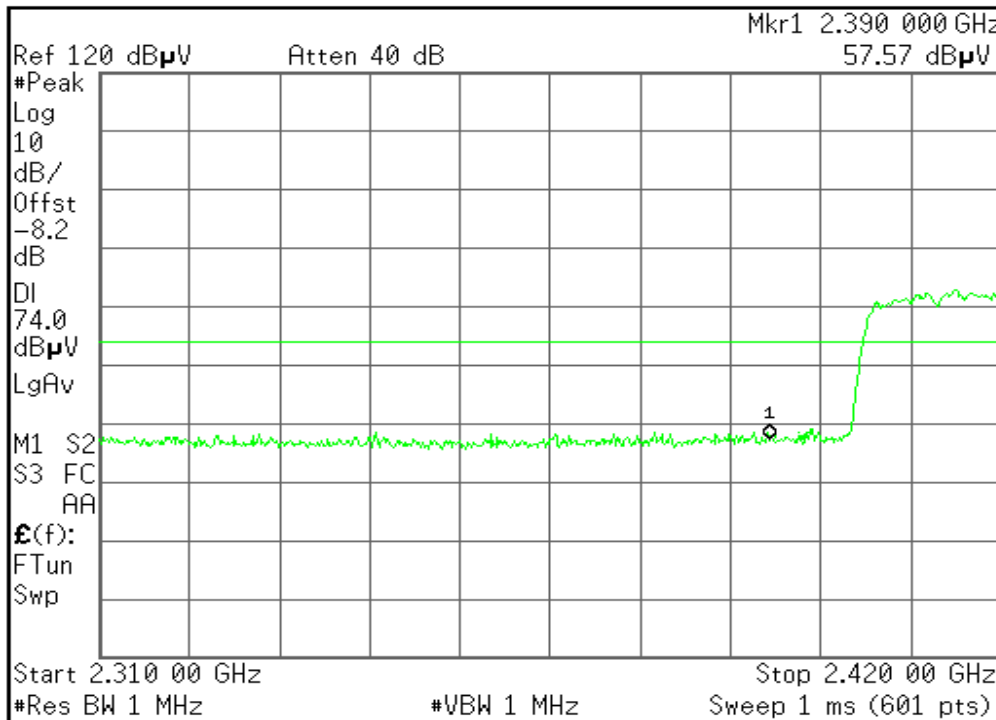
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

RESTRICTED BANDEDGE (IEEE 802.11n Standard-20 MHz Channel mode, Low Channel, Vertical)

PEAK

Agilent

R T



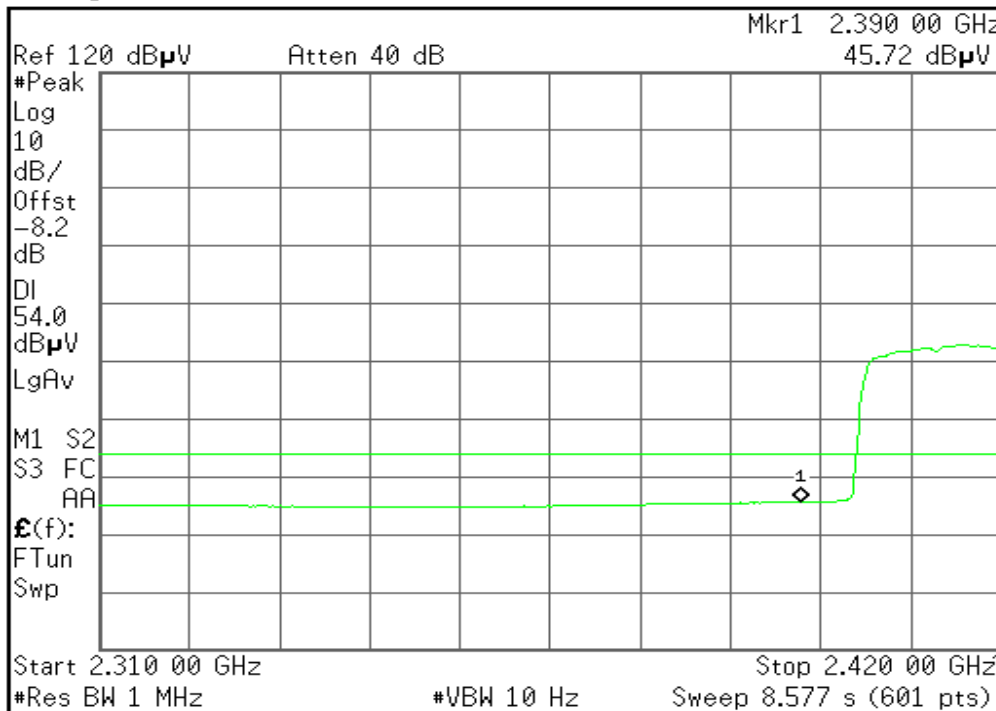
Freq/Channel	
Center Freq	2.36500000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42000000 GHz
CF Step	11.0000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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AVG

Agilent

R T



Freq/Channel	
Center Freq	2.36500000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42000000 GHz
CF Step	11.0000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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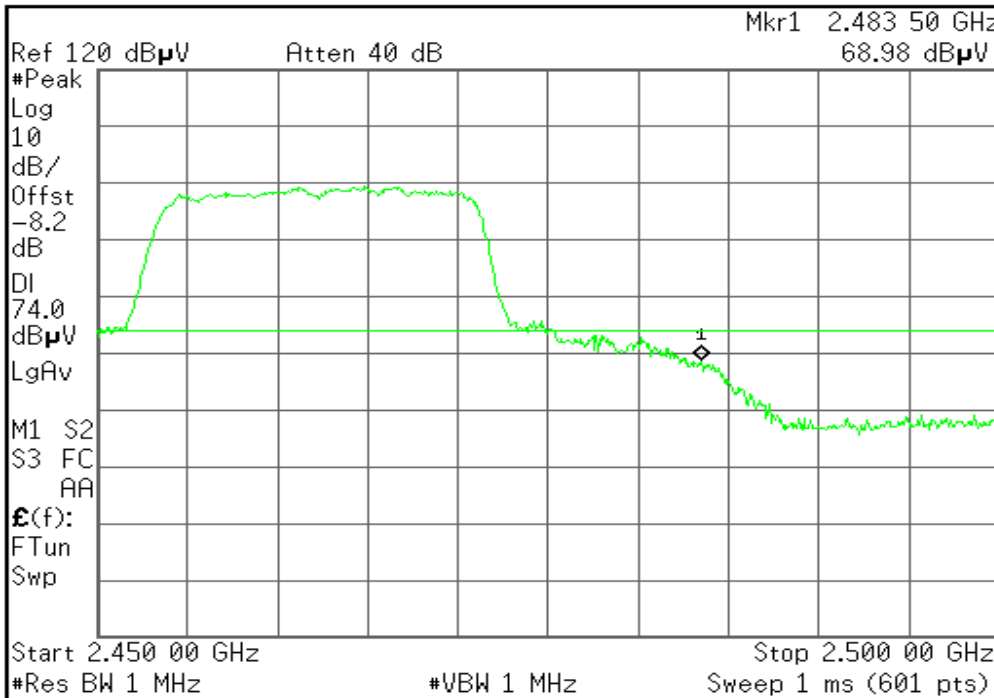
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

RESTRICTED BANDEDGE (802.11n Standard-20 MHz Channel mode, High Channel, Horizontal)

PEAK

Agilent

R T



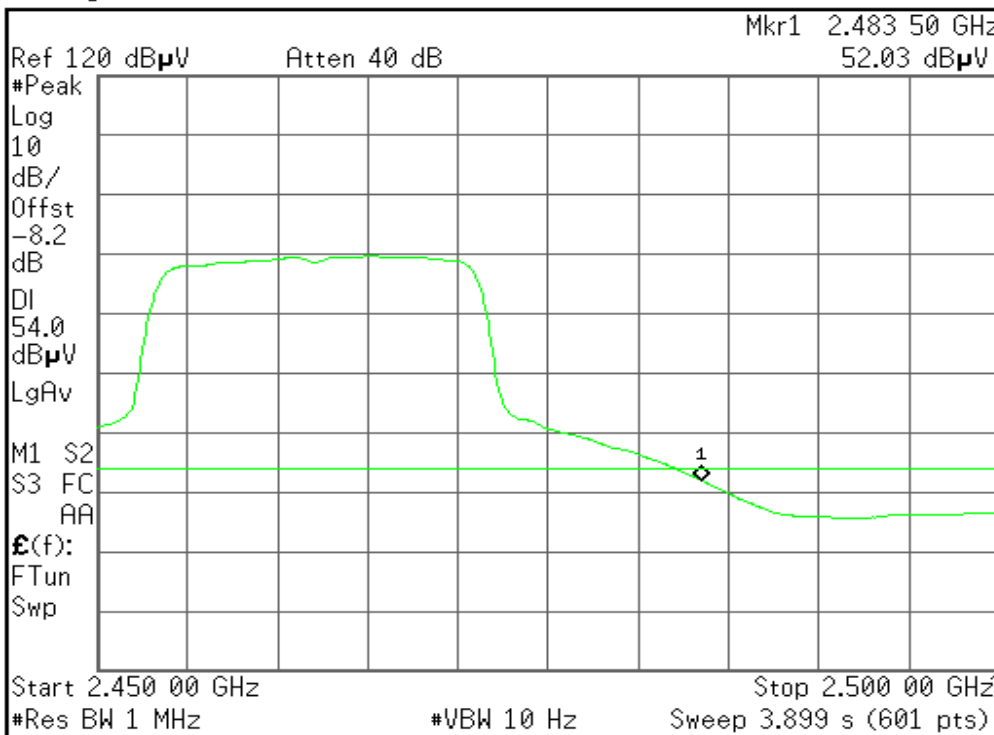
Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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R T



Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

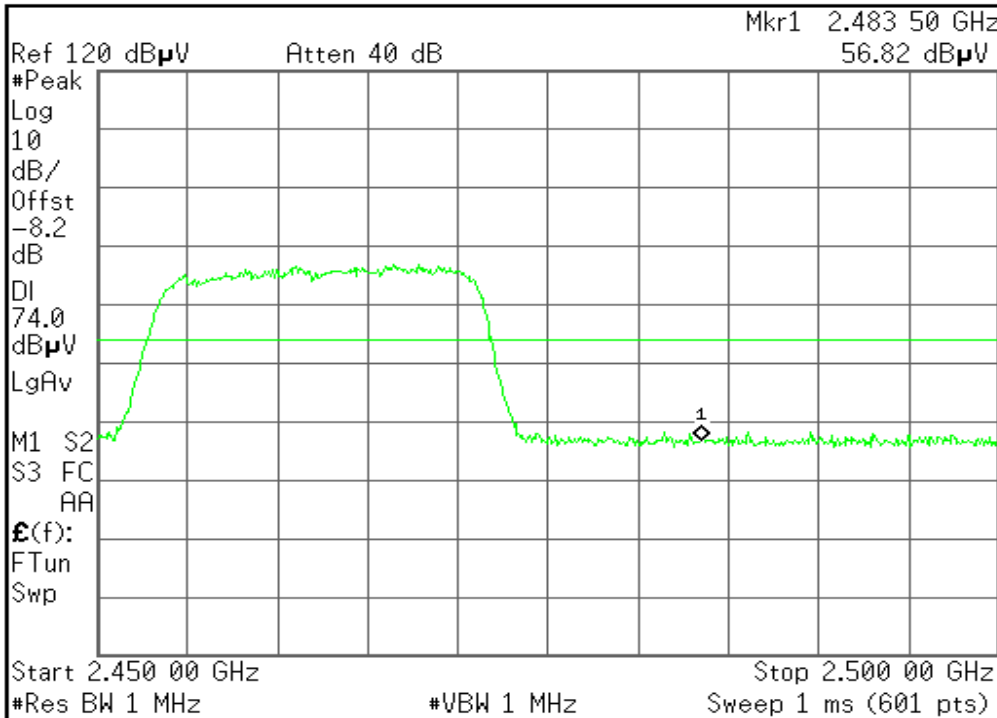
RESTRICTED BANDEDGE (802.11n Standard-20 MHz Channel mode, High Channel, Vertical)

PEAK

Agilent

R T

Freq/Channel



Center Freq
2.47500000 GHz

Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

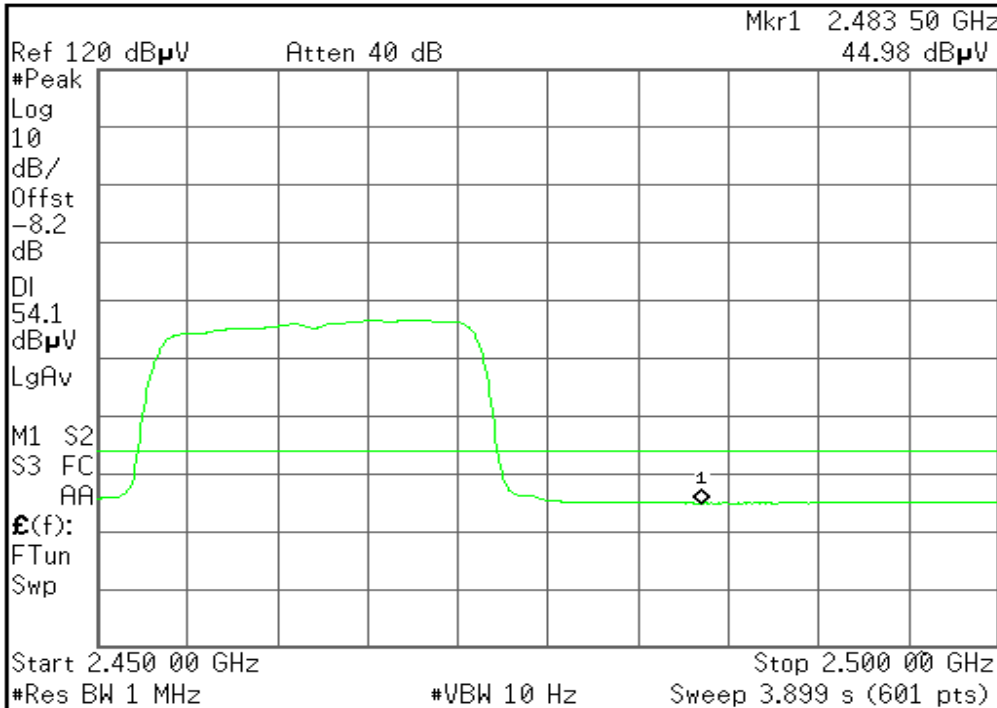
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AVG

Agilent

R T

Freq/Channel



Center Freq
2.47500000 GHz

Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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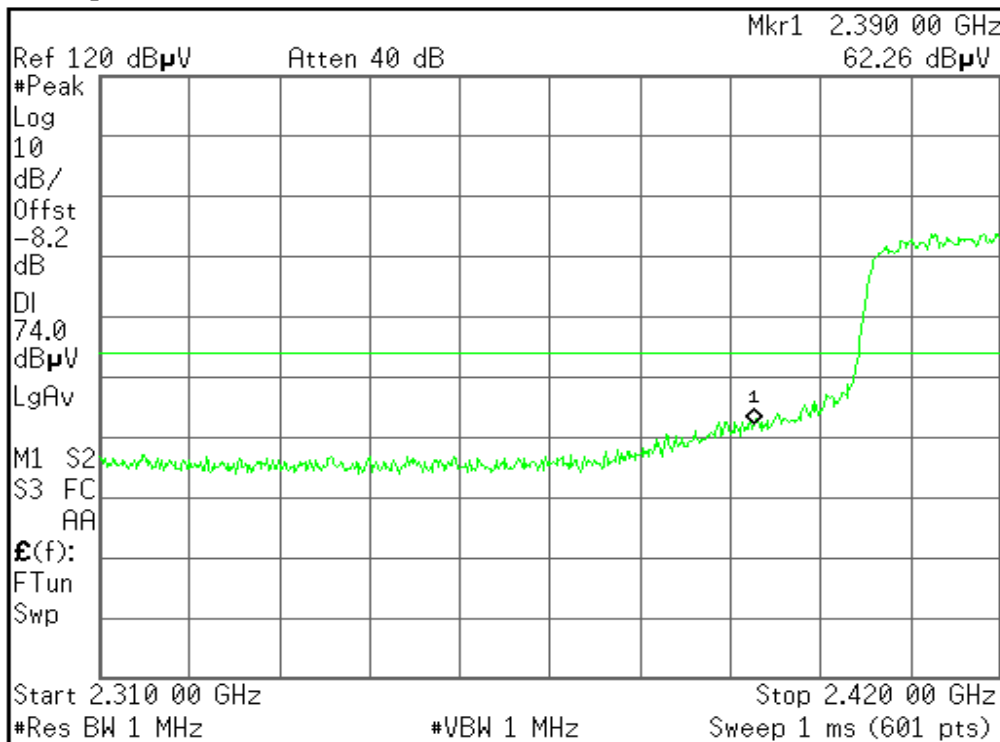
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

RESTRICTED BANDEDGE (802.11n Wide -40 MHz Channel mode, Low Channel, Horizontal)

PEAK

Agilent

R T



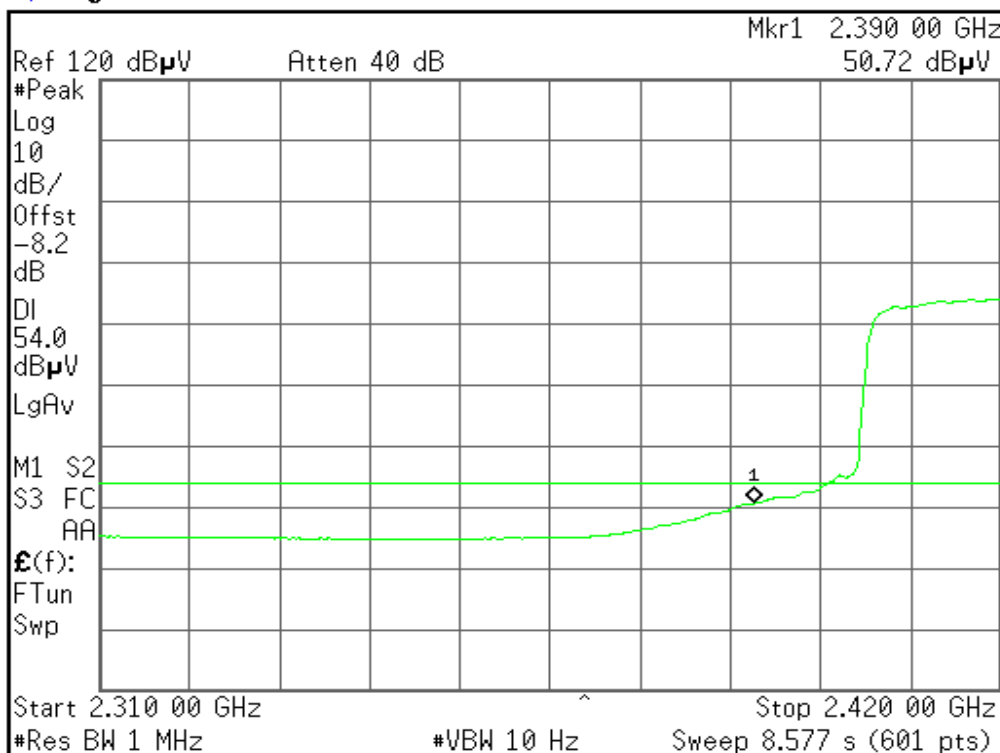
Freq/Channel	
Center Freq	2.36500000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42000000 GHz
CF Step	11.0000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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AVG

Agilent

R T



Freq/Channel	
Center Freq	2.36500000 GHz
Start Freq	2.31000000 GHz
Stop Freq	2.42000000 GHz
CF Step	11.0000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

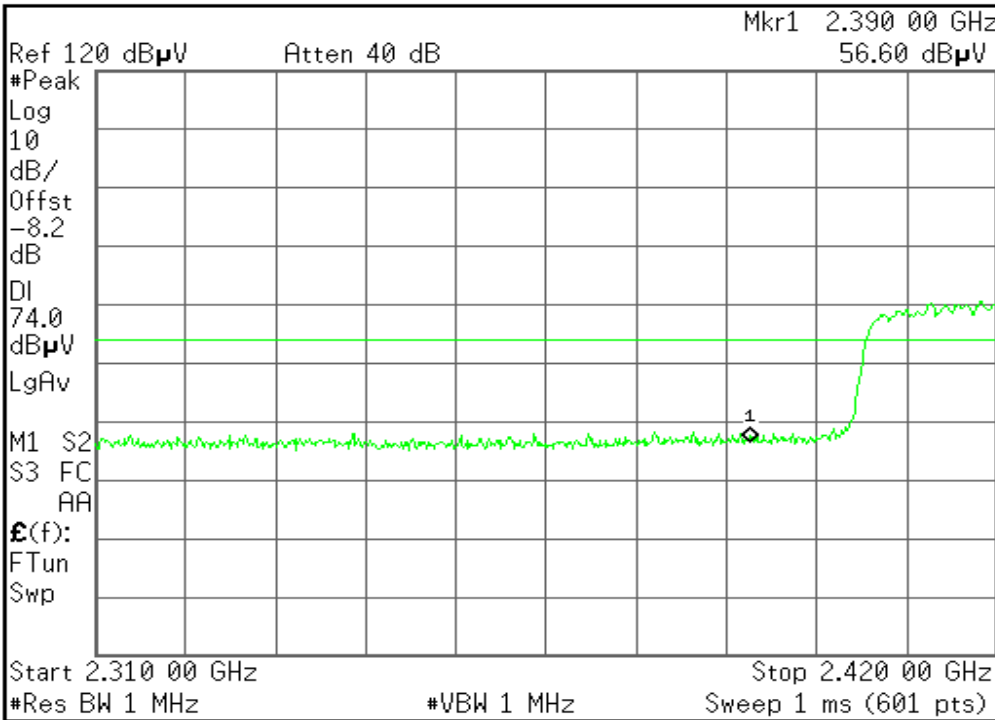
RESTRICTED BANDEDGE (802.11n Wide -40 MHz Channel mode, Low Channel, Vertical)

PEAK

Agilent

R T

Freq/Channel



Center Freq
2.36500000 GHz

Start Freq
2.31000000 GHz

Stop Freq
2.42000000 GHz

CF Step
11.0000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

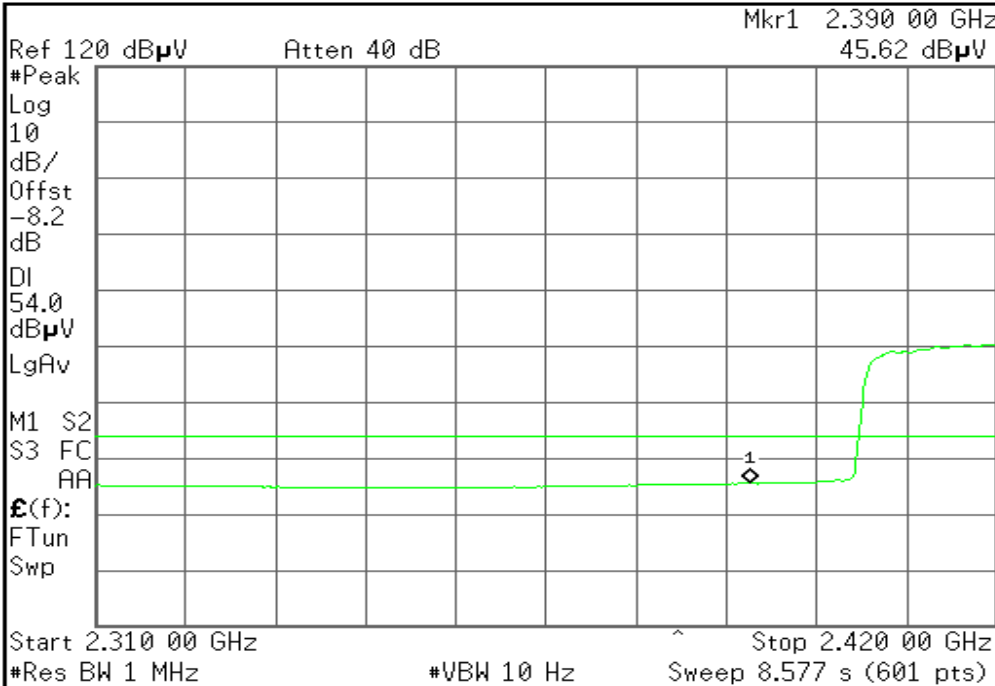
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AVG

Agilent

R T

Freq/Channel



Center Freq
2.36500000 GHz

Start Freq
2.31000000 GHz

Stop Freq
2.42000000 GHz

CF Step
11.0000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

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Compliance Certification Services Inc.

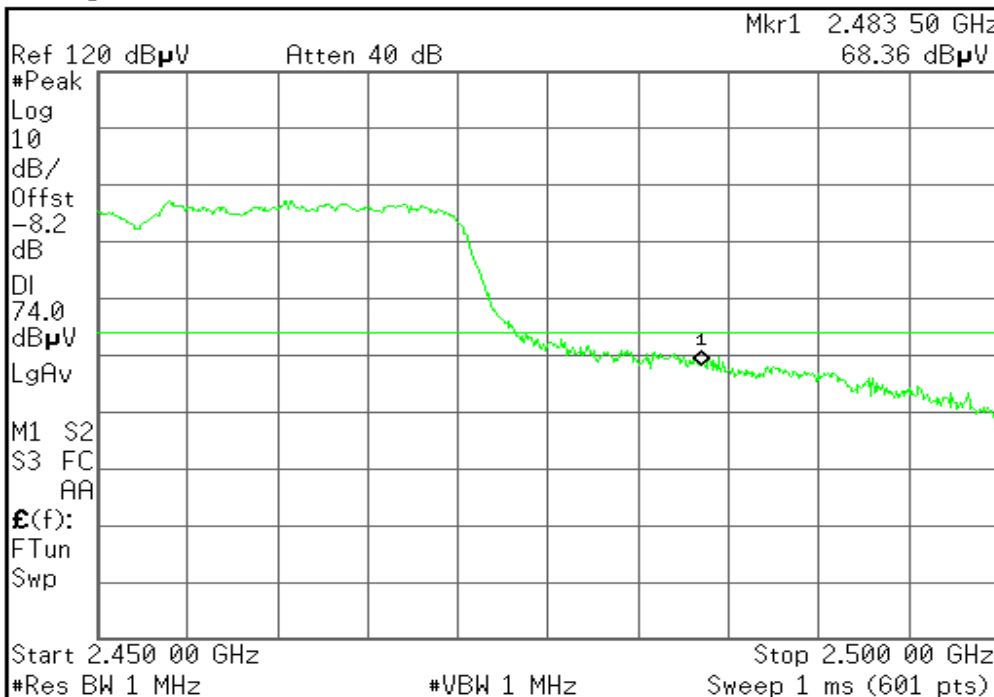
Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

RESTRICTED BANDEDGE (802.11n Wide -40 MHz Channel mode, High Channel, Horizontal)

PEAK

Agilent

R T



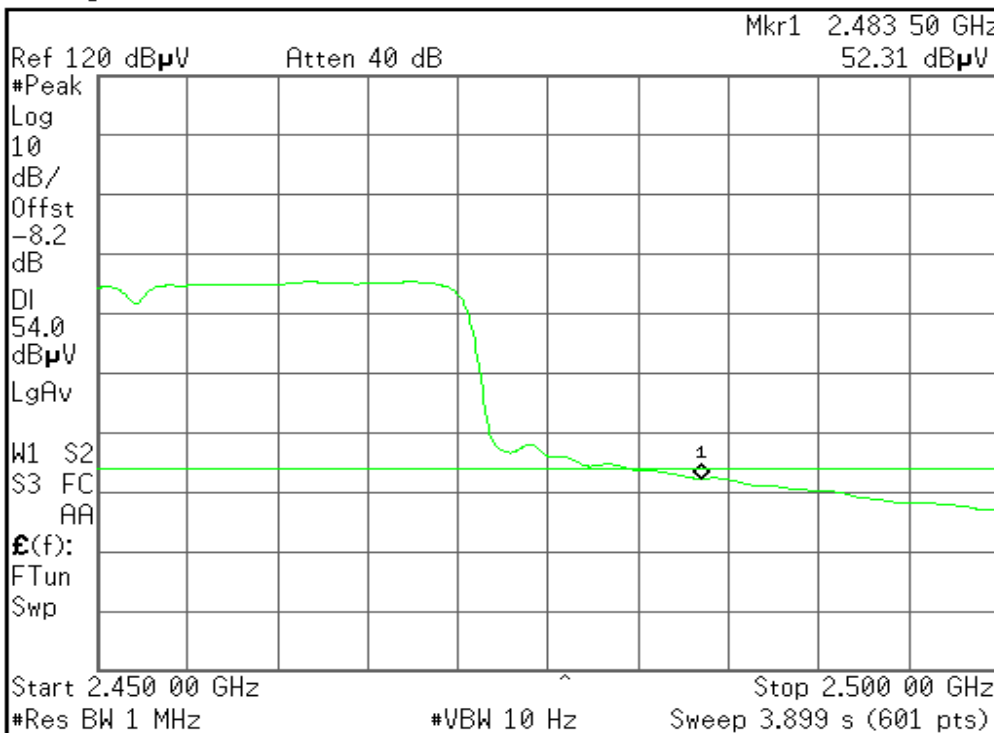
Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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AVG

Agilent

R T



Freq/Channel	
Center Freq	2.47500000 GHz
Start Freq	2.45000000 GHz
Stop Freq	2.50000000 GHz
CF Step	5.00000000 MHz Auto Man
Freq Offset	0.00000000 Hz
Signal Track	On Off

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Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

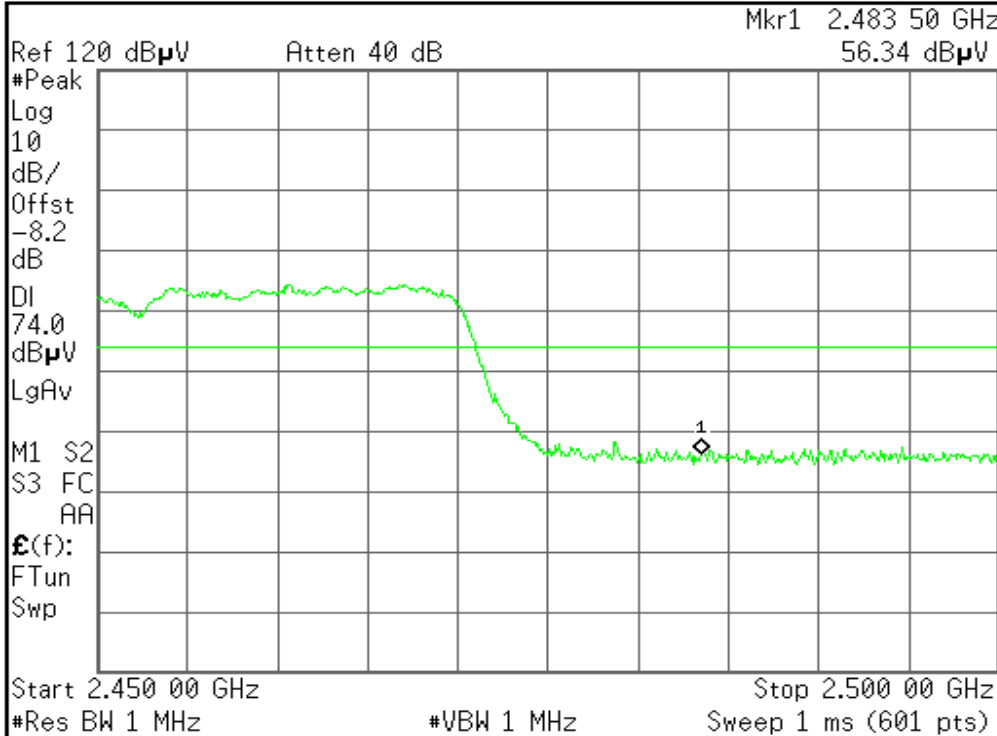
RESTRICTED BANDEDGE (802.11n Wide -40 MHz Channel mode, High Channel, Vertical)

PEAK

Agilent

R T

Freq/Channel



Center Freq
2.47500000 GHz

Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

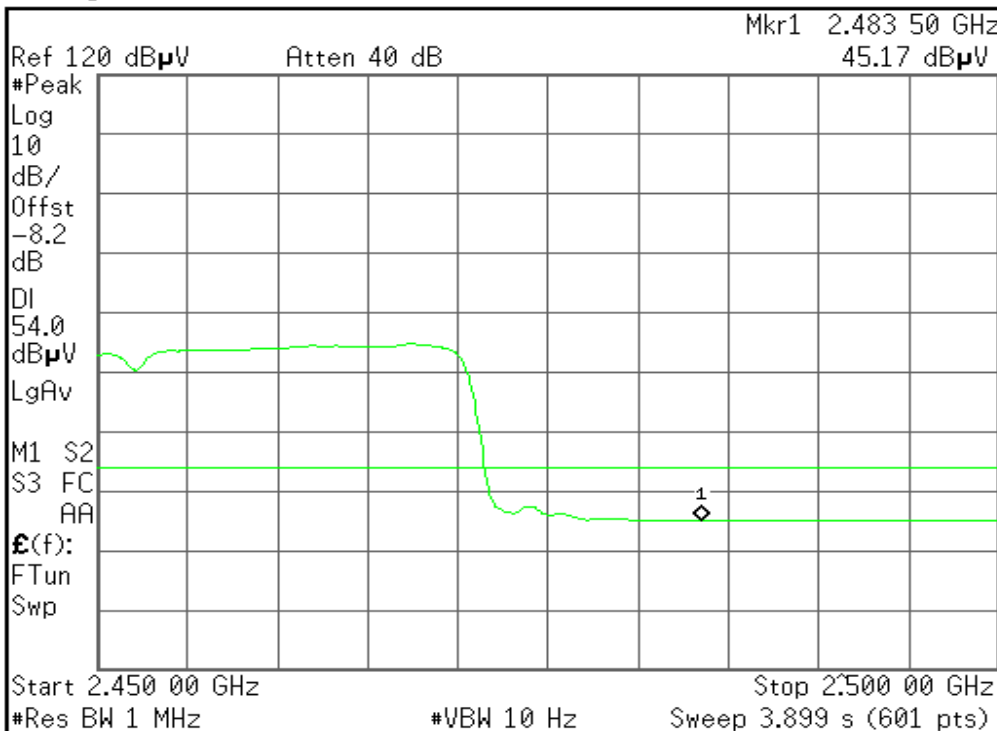
Copyright 2000-2008 Agilent Technologies

AVG

Agilent

R T

Freq/Channel



Center Freq
2.47500000 GHz

Start Freq
2.45000000 GHz

Stop Freq
2.50000000 GHz

CF Step
5.00000000 MHz
Auto Man

Freq Offset
0.00000000 Hz

Signal Track
On Off

Copyright 2000-2008 Agilent Technologies



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Below 1GHz

Operation Mode:

Normal Link

Test Date: July 10,2010

Temperature: 22°C

Tested by: Star Yao

Humidity: 48% 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
72.5874	V	40.22	-10.82	29.4	40	-10.6	Peak
142.3681	V	32.83	-5.31	27.52	43.5	-15.98	Peak
170.3565	V	35.06	-7.32	27.74	43.5	-15.76	Peak
212.3614	V	37.11	-5.73	31.38	43.5	-12.12	Peak
503.3684	V	36.13	1.19	37.32	46	-8.68	Peak
915.3691	V	24.69	7.31	32	46	-14	Peak
31.6232	H	22.03	1.87	23.9	40	-16.1	Peak
170.3641	H	36.32	-7.32	29	43.5	-14.5	Peak
211.8036	H	29.36	-5.73	23.63	46	-22.37	Peak
499.1984	H	32.24	-0.04	32.2	46	-13.8	Peak
911.2584	H	24.06	7.31	31.37	46	-14.63	Peak
985.9719	H	23.6	7.89	31.49	54	-22.51	QP

Remark:

1. Measuring frequencies from 9 KHz to the 1GHz, No emission found between lowest internal used/generated frequency to 30 MHz.
2. Radiated emissions measured in frequency range from 9 KHz to 1000MHz were made with an instrument using Peak detector mode.
3. 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.
4. The IF bandwidth of SPA between 30MHz to 1GHz was 100kHz.



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Above 1 GHz

Operation Mode: TX / IEEE 802.11b / CH Low

Test Date: July 10,2010

Temperature: 22°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4180.36	V	44.01	30.04	12.35	56.36	42.39	74	54	-11.61	Avg
7210.33	V	35.12	19.01	19.16	54.28	38.17	74	54	-15.83	Avg
4182.39	H	45.51	30.92	12.36	57.87	43.28	74	54	-10.72	Avg
7211.69	H	36.09	21.77	19.19	55.28	40.96	74	54	-13.04	Avg

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.

Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11b / CH Mid

Test Date: July 10,2010

Temperature: 22°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4189.36	V	43.61	30.93	12.35	55.96	43.28	74	54	-10.72	Avg
7230.36	V	34.12	19.61	19.16	53.28	38.77	74	54	-15.23	Avg
4186.69	H	46.33	31.92	12.36	58.69	44.28	74	54	-9.72	Avg
7236.36	H	35.79	22.66	19.19	54.98	41.85	74	54	-12.15	Avg

Remark:

6. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
7. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
8. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
9. 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.
10. 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.
11. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11b / CH High

Test Date: July 10,2010

Temperature: 22°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4189.36	V	43.61	30.93	12.35	55.96	43.28	74	54	-10.72	Avg
7213.25	V	34.12	19.61	19.16	53.28	38.77	74	54	-15.23	Avg
4186.39	H	46	33.38	12.36	58.36	45.74	74	54	-8.26	Avg
7236.28	H	36.03	24.06	19.19	55.22	43.25	74	54	-10.75	Avg

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).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11g / CH Low

Test Date: July 10, 2010

Temperature: 24°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4186.36	V	43.9	30.04	12.35	56.25	42.39	74	54	-11.61	Avg
7261.20	V	35.05	22.69	19.16	54.21	41.85	74	54	-12.15	Avg
4191.02	H	46.63	33.85	12.36	58.99	46.21	74	54	-7.79	Avg
7259.25	H	35.52	24.96	19.19	54.71	44.15	74	54	-9.85	Avg

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).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11g / CH Mid

Test Date: July 10, 2010

Temperature: 24°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4188.69	V	44.79	30.86	12.35	57.14	43.21	74	54	-10.79	Avg
7231.25	V	34.09	21.69	19.16	53.25	40.85	74	54	-13.15	Avg
4193.69	H	44.65	32.86	12.36	57.01	45.22	74	54	-8.78	Avg
7235.25	H	33.83	24.06	19.19	53.02	43.25	74	54	-10.75	Avg

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).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11g / CH High

Test Date: July 10, 2010

Temperature: 24°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4186.36	V	45.92	30.01	12.35	58.27	42.36	74	54	-11.64	Avg
7231.25	V	32.23	20.42	19.16	51.39	39.58	74	54	-14.42	Avg
4187.25	H	44.41	32.21	12.36	56.77	44.57	74	54	-9.43	Avg
7234.25	H	33.45	23.55	19.19	52.64	42.74	74	54	-11.26	Avg

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).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11gn Standard-20 MHz
Channel mode CH Low

Test Date: July 10,2010

Temperature: 24°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4180.36	V	46.89	30.52	12.35	59.24	42.87	74	54	-11.13	Avg
7230.58	V	31.15	19.68	19.16	50.31	38.84	74	54	-15.16	Avg
4184.69	H	42.51	32.89	12.36	54.87	45.25	74	54	-8.75	Avg
7239.25	H	32.98	23.11	19.19	52.17	42.3	74	54	-11.7	Avg

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).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11gn Standard-20 MHz
Channel mode CH Mid

Test Date: July 10,2010

Temperature: 24°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4182.26	V	46.42	32.87	12.35	58.77	45.22	74	54	-8.78	Avg
7236.25	V	32.8	22.2	19.16	51.96	41.36	74	54	-12.64	Avg
4184.69	H	43.38	34.42	12.36	55.74	46.78	74	54	-7.22	Avg
7239.25	H	33.17	23.16	19.19	52.36	42.35	74	54	-11.65	Avg

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).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11gn Standard-20 MHz
Channel mode CH High

Test Date: July 10,2010

Temperature: 24°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4191.25	V	46.2	29.82	12.35	58.55	42.17	74	54	-11.83	Avg
7238.22	V	32.2	19.31	19.16	51.36	38.47	74	54	-15.53	Avg
4195.02	H	43	34.51	12.36	55.36	46.87	74	54	-7.13	Avg
7241.25	H	34.05	23.82	19.19	53.24	43.01	74	54	-10.99	Avg

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).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11gn Wide-40 MHz Channel mode CH Low

Test Date: July 10,2010

Temperature: 24°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4189.36	V	46.2	31.52	12.35	58.55	43.87	74	54	-10.13	Avg
7242.36	V	33.23	23.2	19.16	52.39	42.36	74	54	-11.64	Avg
4189.21	H	44.12	32.81	12.36	56.48	45.17	74	54	-8.83	Avg
7243.22	H	35.77	25.36	19.19	54.96	44.55	74	54	-9.45	Avg

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).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11gn Wide-40 MHz Channel mode CH Mid
Temperature: 24°C
Humidity: 48 % RH

Test Date: July 10,2010
Tested by: Star Yao
Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4199.6	V	45.34	32.97	12.35	57.69	45.32	74	54	-8.68	Avg
7245.25	V	32.86	22.42	19.16	52.02	41.58	74	54	-12.42	Avg
4198.25	H	43.85	31	12.36	56.21	43.36	74	54	-10.64	Avg
7242.39	H	32.83	22.03	19.19	52.02	41.22	74	54	-12.78	Avg

Remark:

7. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
8. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
9. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
10. 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.
11. 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.
12. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

Operation Mode: TX / IEEE 802.11gn Wide-40 MHz Channel mode CH High

Test Date: July 10,2010

Temperature: 24°C

Tested by: Star Yao

Humidity: 48 % RH

Polarity: Ver. / Hor.

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
4185.36	V	47.22	33.9	12.35	59.57	46.25	74	54	-7.75	Avg
7235.02	V	33.86	24.2	19.16	53.02	43.36	74	54	-10.64	Avg
4186.24	H	43.65	33.19	12.36	56.01	45.55	74	54	-8.45	Avg
7243.02	H	33.28	23.83	19.19	52.47	43.02	74	54	-10.98	Avg

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).



7.6 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.



Compliance Certification Services Inc.

Report No: KS100623B03-RP FCC ID: I88P660HNT1A Date of Issue: July 16, 2010

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:** June 23,2010
Temperature: 23°C **Tested by:** Star Yao
Humidity: 50% RH

Freq. (MHz)	PEAK. Raw (dBuV)	Q.P. Raw (dBuV)	AVG Raw (dBuV)	Q.P. Limit (dBuV)	AVG Limit (dBuV)	Margin (dB)	Factor (dB)	Remark
0.150	54.99	33.99	23.85	66.00	56.00	-32.15	10.04	Line
2.232	41.49	35.43	25.80	56.00	46.00	-20.20	11.10	Line
3.392	40.81	36.46	29.17	56.00	46.00	-16.83	11.16	Line
7.760	45.41	38.99	31.97	60.00	50.00	-18.03	11.20	Line
9.664	43.78	37.73	31.19	60.00	50.00	-18.81	11.20	Line
26.496	37.02	33.77	28.00	60.00	50.00	-22.00	12.21	Line
0.150	53.95	32.67	20.32	66.00	56.00	-35.68	10.15	Neutral
2.232	41.09	35.32	24.61	56.00	46.00	-21.39	10.61	Neutral
3.360	40.44	35.80	28.67	56.00	46.00	-17.33	10.79	Neutral
7.792	44.27	38.32	31.10	60.00	50.00	-18.90	11.09	Neutral
9.568	42.81	36.43	29.80	60.00	50.00	-20.20	11.19	Neutral
26.560	37.62	29.57	19.34	60.00	50.00	-30.66	12.28	Neutral

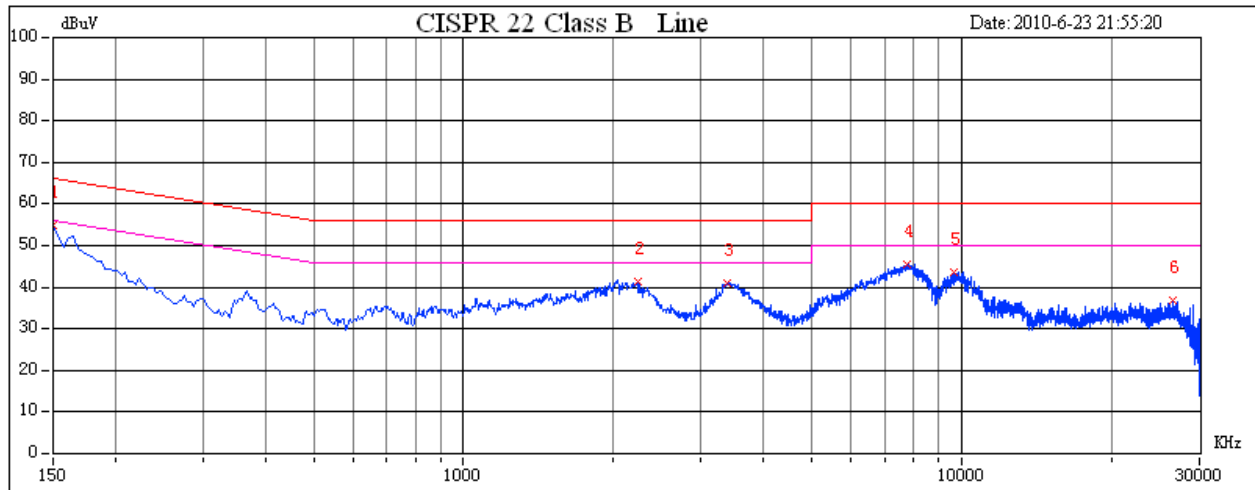
Remark:

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



Test Plots

Conducted emissions (Line 1)



Conducted emissions (Line 2)

