FCC 47 CFR PART 15 SUBPART C: 2008 AND ANSI C63.4: 2003

TEST REPORT

For

WiFi Broadband Router

Model Number: CDW571AM-U02

Data Applies To: CDE570AM-U02; CDE570AM-002; WGR-6013; 4000-R2; CDW571AM-002

Brand Name: AMIT ; ZALiP

Issued for

Advance Multimedia Internet Technology Inc.

No. 28, Lane 31, Sec. 1, Huandong Rd., Sinshih District, Tainan City 74146, Taiwan

Issued by

Compliance Certification Services Inc.
Tainan Lab.
No.8,Jiucengling, Xinhua Dist., Tainan City 712, Taiwan (R.O.C.)

TEL: 886-6-580-2201
FAX: 886-6-580-2202

Date of Issue: August 30, 2011

Testing Laboratory
1109

REVISION HISTORY

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	August 30, 2011	Initial Issue	ALL	Sunny Chang

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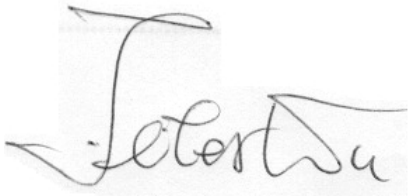
1. TEST REPORT CERTIFICATION

Applicant	：Advance Multimedia Internet Technology Inc.
Address	：No. 28, Lane 31, Sec. 1, Huandong Rd., Sinshih District, Tainan City 74146, Taiwan
Manufacture	：Advance Multimedia Internet Technology Inc.
Address	：No. 28, Lane 31, Sec. 1, Huandong Rd., Sinshih District, Tainan City 74146, Taiwan
Equipment Under Test	：WiFi Broadband Router
Model Number	：CDW571AM-U02
Data Applies To	：CDE570AM-U02; CDE570AM-002; WGR-6013; 4000-R2; CDW571AM-002
Brand Name	：AMIT ; ZALiP
Date of Test	：August 16, 2011 ~ August 22, 2011

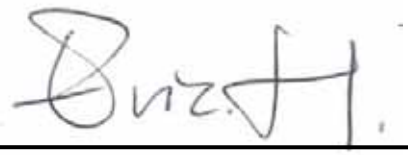
APPLICABLE STANDARD	
STANDARD	**TEST RESULT**
FCC Part 15 Subpart C : 2008 AND ANSI C63.4 : 2003	No non-compliance noted

Approved by:



Jeter Wu
Assistant Manager

Reviewed by:



Eric Huang
Assistant Section Manager

2. EUT DESCRIPTION

Product Name	WiFi Broadband Router
Model Number	CDW571AM-U02
Data Applies To	CDE570AM-U02; CDE570AM-002; WGR-6013; 4000-R2; CDW571AM-002
Brand Name	AMIT ; ZALiP
Received Date	August 12, 2011
Frequency Range	IEEE 802.11b/g, 802.11n HT20 (DTS Band):2412MHz～2462MHz IEEE 802.11n HT40 (DTS Band):2422MHz～2452MHz
Transmit Power	IEEE 802.11b Mode : 14.35dBm (DTS Band) (27.22701mW) IEEE 802.11g Mode : 18.02dBm (DTS Band) (63.38697mW) IEEE 802.11n HT20 Mode : 19.22dBm (DTS Band) (83.52456mW) IEEE 802.11n HT40 Mode : 18.99dBm (DTS Band) (79.33931mW)
Channel Spacing	IEEE 802.11b/g, 802.11n HT20/HT40: 5MHz
Channel Number	IEEE 802.11b/g, 802.11n HT20:11 Channels IEEE 802.11n HT40 :7 Channels
Transmit Data Rate	IEEE 802.11b：11, 5.5, 2, 1 Mbps IEEE 802.11g：54, 48 ,36, 24, 18, 12, 9, 6 Mbps IEEE 802.11n HT20 : 130 , 117 , 104 , 78 , 52 , 39 , 26 , 13 Mbps IEEE 802.11n HT40 : 300 , 270 , 243 , 216 , 162 , 108 , 81 , 54 , 27 Mbps
Type of Modulation	IEEE 802.11b：DSSS (CCK, DQPSK, DBPSK)
	IEEE 802.11g：OFDM (64QAM, 16QAM, QPSK, BPSK)
	IEEE 802.11n HT20/40：OFDM (64QAM, 16QAM, QPSK, BPSK)
Frequency Selection	By software / firmware
Antenna Type	**Replace antenna*2** **1.Dipole antenna 1 (2T2R)** Type: Dipole Antenna Model: GY111HT467-012 Gain: 2.35 dBi **2.Dipole antenna 2 (2T2R)** Type: Dipole Antenna Model: C381-510150-A Gain: 2 dBi
Power Source	**Powered from adapter** **Adapter 1:** Brand: AMIGO Model: AMS9-0502000FU2 Input: 100-240Vac, 50/60Hz, 0.5A Output: 5Vdc, 2.0A **Adapter 2:** Brand: AMIGO Model: AMS1-0501200FU Input: 100-240Vac, 50/60Hz, 0.5A Output: 5Vdc, 1.2A

Temperature Range	0 ~ +55°C

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: **PBLCDW571AM002** filing to comply with Section 15.207,15.209 and 15.247 of the FCC Part 15, Subpart C Rules.
3. For more details, please refer to the User's manual of the EUT.
4. To add a series model is for business necessary. The different of the each model is shown as below:

NO.	**1**		**2**		**3**		**4**	
Model	CDW571AM-U02		CDE570AM-U02		CDE570AM-002; WGR-6013; 4000-R2		CDW571AM-002	
External	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 1	Case 2
USB *1	Yes, Connect 3G dongle; Connect storage; With NAS function		Yes, Connect storage; With NAS function		No		Yes, Connect 3G dongle;	
Antenna	2.35dBi	2dBi	2.35dBi	2dBi	2.35dBi	2dBi	2.35dBi	2dBi
Adapter	**Adapter 1** 5V, 2A				**Adapter 2** 5V, 1.2A		**Adapter 1** 5V, 2A	

Note: *To add a series model is for business necessary, for more details, please refer to the EUT photos.*

3. DESCRIPTION OF TEST MODES

The EUT is a 11n router. It has two transmitter chains and two receive chains (2x2 configurations). The 2x2 configuration is implemented with two outside chains (Chain 0 and Chain 1).

The RF chipset is manufactured by Ralink Technology, Corp.

The antenna peak gain 2.35dBi (highest gain) were chosen for full testing.

IEEE 802.11 b ,802.11g ,802.11n HT20 mode (DTS Band)

The EUT had been tested under operating condition.

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2412
Middle	2437
High	2462

IEEE 802.11b mode: 1Mbps long data rate (worst case) were chosen for full testing.

IEEE 802.11g mode: 6Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT20 mode: 13Mbps data rate (worst case) were chosen for full testing.

IEEE 802.11n HT40 mode (DTS Band)

The EUT had been tested under operating condition.

There are three channels have been tested as following:

Channel	Frequency (MHz)
Low	2422
Middle	2437
High	2452

IEEE 802.11n HT40 mode: 27Mbps data rate (worst case) were chosen for full testing.

The worst-case data rates are determined according to the description above, based on the investigations by measuring the PSD, peak power and average power across all the data rates, bandwidths, modulations and spatial stream modes.

The worst-case channel is determined as the channel with the highest output power. The highest measured output power was at 2452 MHz.

4. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4 and FCC CFR 47 2.1046, 2046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, 15.207, 15.209 and 15.247.

5. FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

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

No.8,Jiucengling, Xinhua Dist., Tainan City 712, Taiwan (R.O.C.)

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

5.2 EQUIPMENT

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with preselectors 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 LABORATORY ACCREDITATIONS LISTINGS

The test facilities used to perform radiated and conducted emissions tests are accredited by Taiwan Accreditation Foundation for the specific scope of accreditation under Lab Code: 1109 to perform Electromagnetic Interference tests according to FCC PART 15 AND CISPR 22 requirements. No part of this report may be used to claim or imply product endorsement by TAF or any agency of the Government. In addition, the test facilities are listed with Federal Communications Commission (registration no: TW-1037).

5.4 TABLE OF ACCREDITATIONS AND LISTINGS

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

Taiwan	TAF

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

Canada	Industry Canada
Germany	TUV NORD
Taiwan	BSMI
USA	FCC

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

6. CALIBRATION AND UNCERTAINTY

6.1 MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

6.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

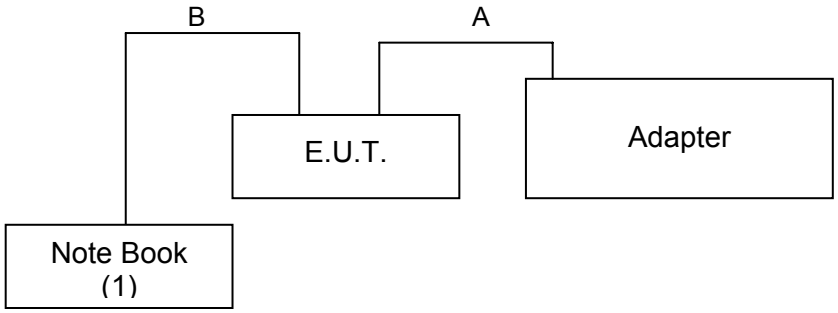
PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz Test Site : OATS-6	±3.59dB
Radiated Emission, 200 to 1000 MHz Test Site : OATS-6	±3.27dB
Radiated Emission, 1 to 26.5 GHz	± 3.20dB
Power Line Conducted Emission	± 2.90dB

Uncertainty figures are valid to a confidence level of 95%, K=2

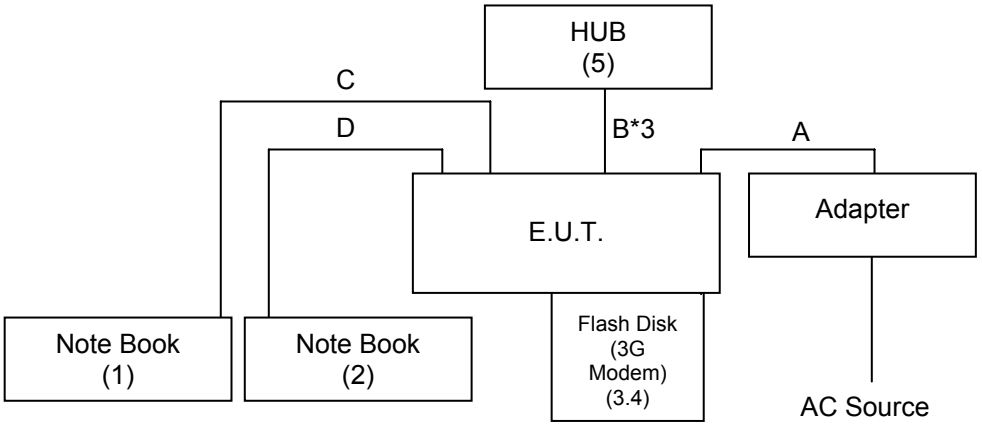
7. SETUP OF EQUIPMENT UNDER TEST

7.1 SETUP CONFIGURATION OF EUT

For RF test



For EMI test



7.2 SUPPORT EQUIPMENT

RF test

No.	Product	Manufacturer	Model No.	Certify No.	Signal cable
1.	Note Book	IBM	T43	DoC	Power cable, unshd, 1.6m

No.	Signal cable description	
A	DC	Unshielded, 1.5m, 1pcs.
B	LAN	Unshielded, 10m, 1pcs.

EMI test

No.	Product	Manufacturer	Model No.	Certify No.	Signal cable
1.	Note Book	IBM	R51	R33026	Power cable, unshd, 1.6m
2.	Note Book	IBM	T43	DoC	Power cable, unshd, 1.6m
3.	Flash Disk	Kingston	DTI/512	DoC	N/A
4.	3G Modem	NOVATEL	Qualcomm 3G CDMA	PKRNVW MC727	N/A
5.	HUB	BARRICAD	SMC7008BR	DoC	Power cable, unshd, 1.6m

No.	Signal cable description	
A	Power	Unshielded, 1.2m, 1pcs.
B	LAN	Unshielded, 5m, 3pcs.
C	LAN	Unshielded, 10m, 1pcs.
D	LAN	Unshielded, 10m, 1pcs.

REMARK:

1. All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.
2. Grounding was established in accordance with the manufacturer’s requirements and conditions for the intended use.

7.3 EUT OPERATING CONDITION

RF Setup

1. Set up all computers like the setup diagram.
2. The “Ralink QA Test Program for RT3352F” software was used for testing
   The EUT driver software installed in the host support equipment during testing was Ralink QA Test Program for RT3352F Drive

TX Mode:

- ⇨ **Tx Mode:CCK 、OFDM、 HT MixMode** (Bandwidth: 20、40)
- ⇨ **Tx Data Rate: 1Mbps long** (IEEE 802.11b mode , TX)
  6Mbps (IEEE 802.11g mode , TX)
  13Mbps (IEEE 802.11n HT20 mode ,Chain 0, Chain 1 TX)
  27Mbps (IEEE 802.11n HT40 mode, Chain 0, Chain 1 TX**)**

Power control mode

Target Power: IEEE 802.11b Channel Low (2412MHz) = 0E
IEEE 802.11b Channel Middle (2437MHz) = 11
IEEE 802.11b Channel High (2462MHz) = 13
Target Power: IEEE 802.11g Channel Low (2412MHz) = 0E
IEEE 802.11g Channel Middle (2437MHz) = 11
IEEE 802.11g Channel High (2462MHz) = 13
Target Power: IEEE 802.11n HT20 Channel Low (2412MHz) = 0E **(Chain 0)**
IEEE 802.11 n HT20 Channel Middle (2437MHz) = 11 **(Chain 0)**
IEEE 802.11 n HT20 Channel High (2462MHz) = 13 **(Chain 0)**
IEEE 802.11n HT20 Channel Low (2412MHz) = 0D **(Chain 1)**
IEEE 802.11 n HT20 Channel Middle (2437MHz) = 0F **(Chain 1)**
IEEE 802.11 n HT20 Channel High (2462MHz) = 12 **(Chain 1)**
Target Power: IEEE 802.11n HT40 Channel Low (2422MHz) = 10 **(Chain 0)**
IEEE 802.11 n HT40 Channel Middle (2437MHz) = 11 **(Chain 0)**
IEEE 802.11 n HT40 Channel High (2452MHz) = 12 **(Chain 0)**
IEEE 802.11n HT40 Channel Low (2422MHz) = 0D **(Chain 1)**
IEEE 802.11 n HT40 Channel Middle (2437MHz) = 0F **(Chain 1)**
IEEE 802.11 n HT40 Channel High (2452MHz) = 10 **(Chain 1)**

(2) **RX Mode：**

MAC Address: FFFFFFFFFFFF

Start RX

3. All of the function are under run.
4. Start test.

Normal Link Setup

1. Set up all computers like the setup diagram.
2. All of the function are under run.
3. Notebook PC (2) ping 192.168.0.10 –t to Notebook PC (1).
4. Notebook PC (1) ping 192.168.0.20 –t to Notebook PC (2).
5. Notebook PC (1) ping 192.168.0.50 –t to Wireless Access Point (3).

Start test

8. APPLICABLE LIMITS AND TEST RESULTS

8.1 6DB BANDWIDTH

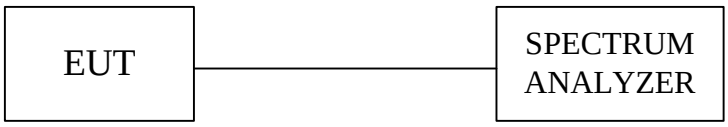
LIMIT

§ 15.247(a) (2) For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

TEST EQUIPMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	R&S	FSEK 30	835253/002	JUL. 14, 2012

TEST SETUP



TEST PROCEDURE

The transmitter output was connected to a spectrum analyzer. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 100 KHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

TEST RESULTS

No non-compliance noted.

IEEE 802.11b mode (One TX)

Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)	Minimum Limit (kHz)	Pass / Fail
Low	2412	12325	500	PASS
Middle	2437	12325	500	PASS
High	2462	12325	500	PASS

NOTE : 1. At finial test to get the worst-case emission at 1Mbps long.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11g mode (One TX)

Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)	Minimum Limit (kHz)	Pass / Fail
Low	2412	16533	500	PASS
Middle	2437	16533	500	PASS
High	2462	16533	500	PASS

NOTE : 1. At finial test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 mode (Two TX)

Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain1		
Low	2412	17535	17034	500	PASS
Middle	2437	17535	17034	500	PASS
High	2462	17535	17034	500	PASS

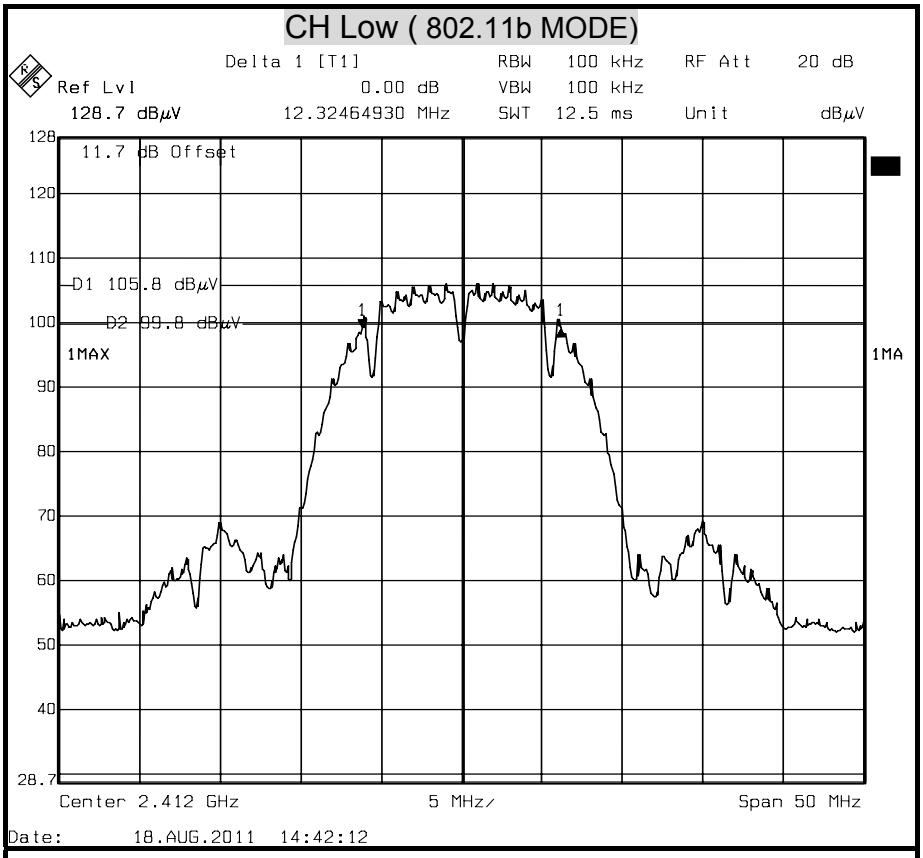
NOTE : 1. At finial test to get the worst-case emission at 13Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

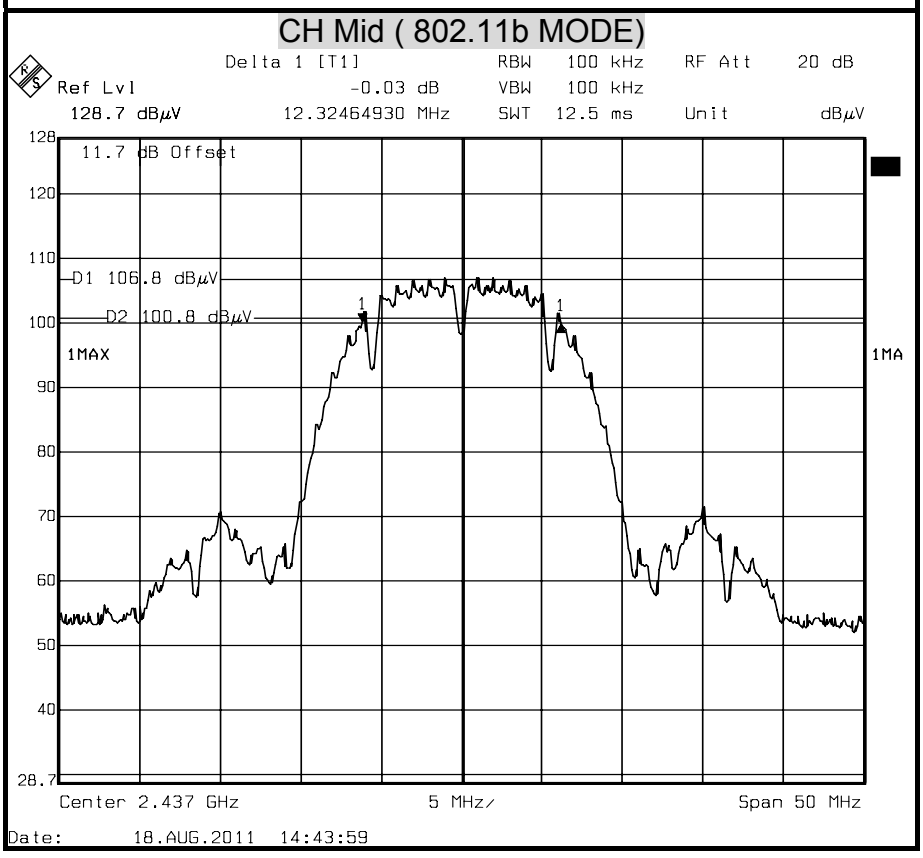
IEEE 802.11n HT40 mode (Two TX)

Channel	Channel Frequency (MHz)	6dB Bandwidth (kHz)		Minimum Limit (kHz)	Pass / Fail
		Chain 0	Chain1		
Low	2422	35671	35471	500	PASS
Middle	2437	35671	35471	500	PASS
High	2452	35671	35471	500	PASS

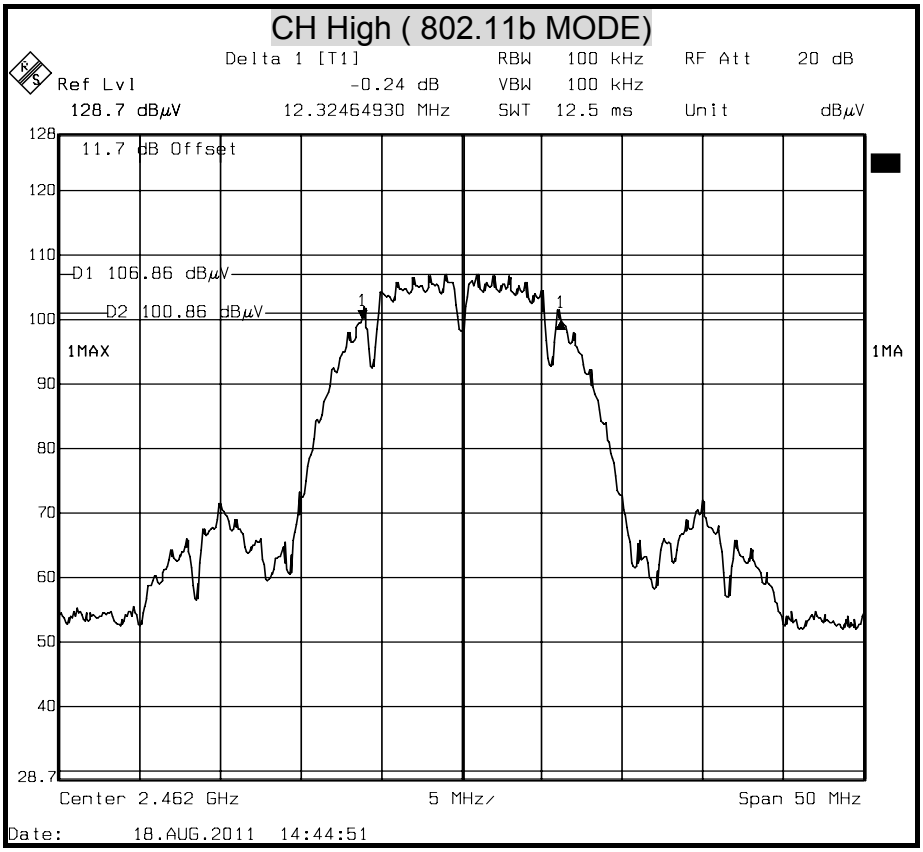
NOTE : 1. At finial test to get the worst-case emission at 27Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

6dB BANDWIDTH (802.11b MODE)

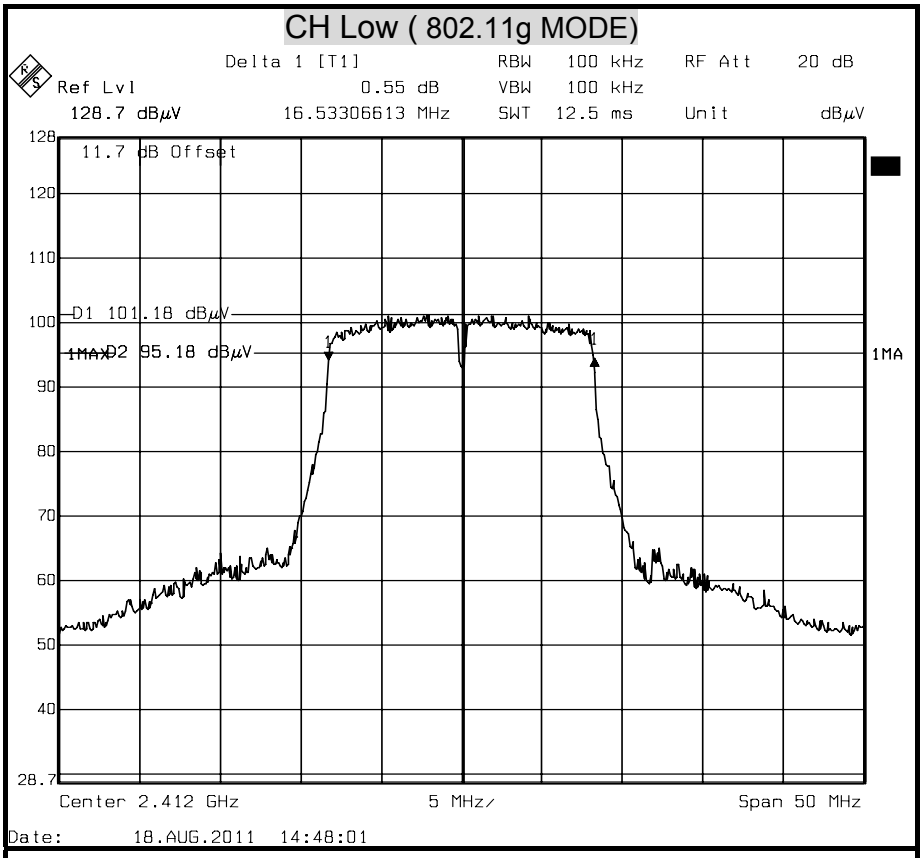


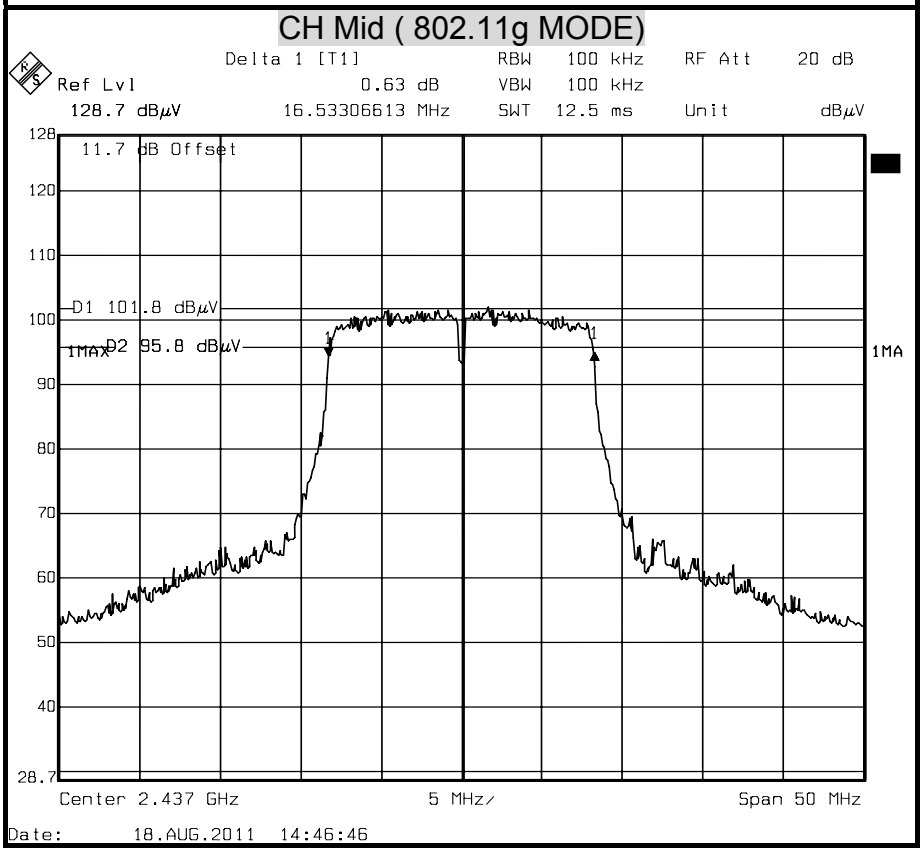


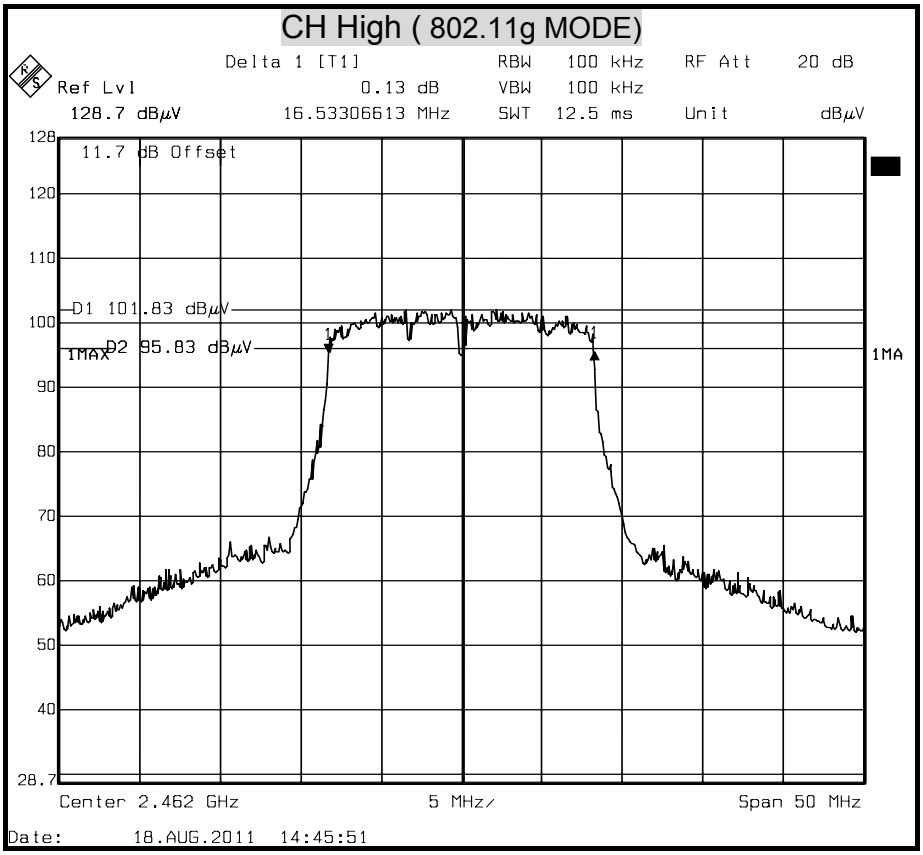
CH High (802.11b MODE)



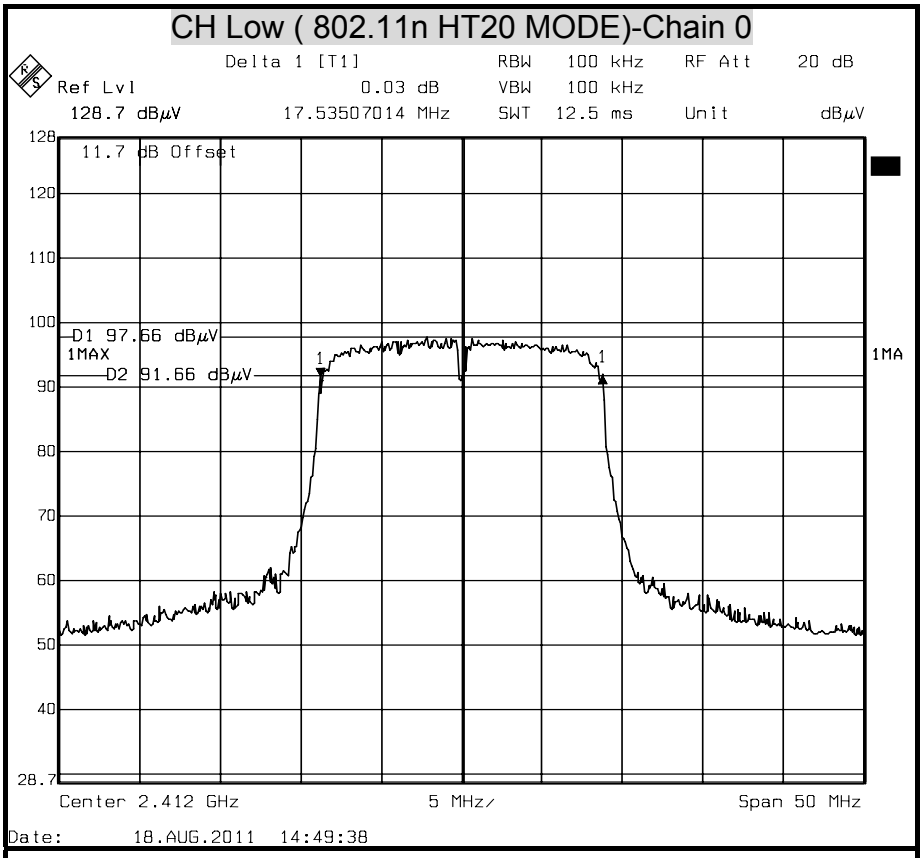
6dB BANDWIDTH (802.11g MODE)

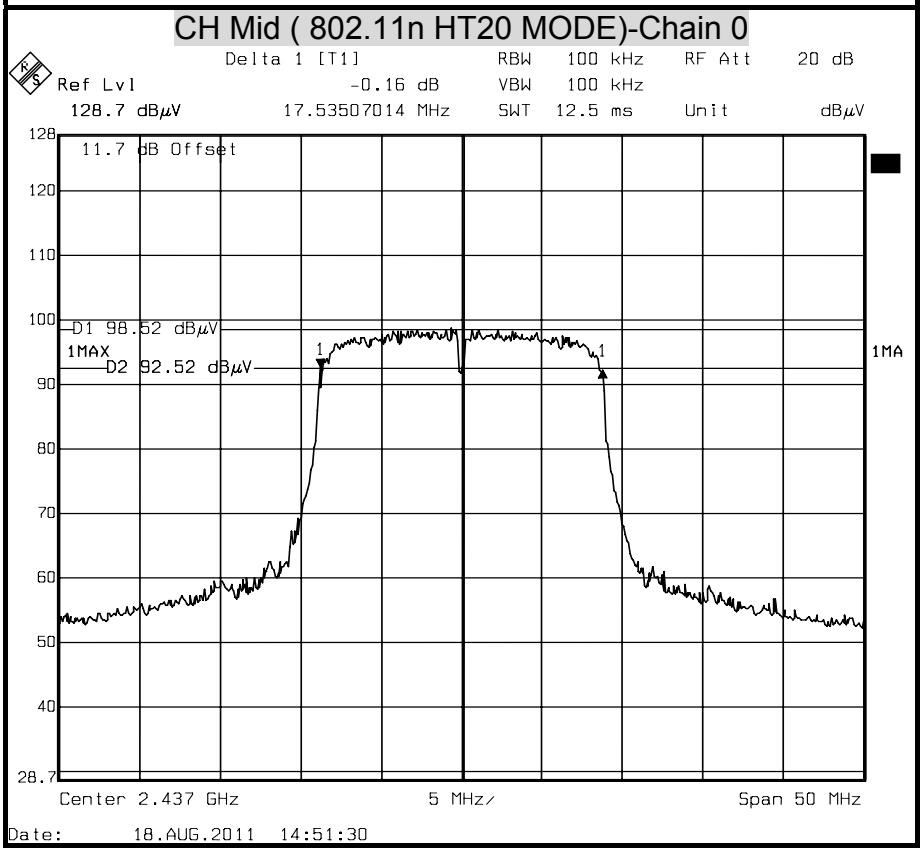


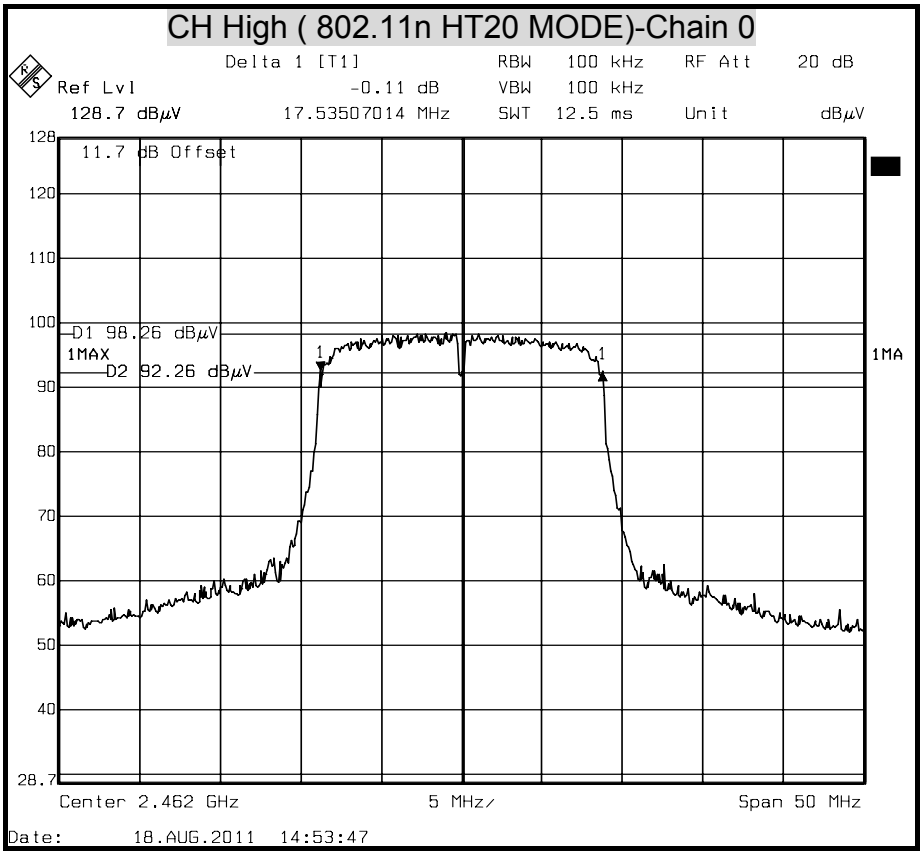



CH High (802.11g MODE)
Delta 1 [T1]
RBW 100 kHz
RF Att 20 dB
Ref Lvl
0.13 dB
VBW 100 kHz
128.7 dBµV
16.53306613 MHz
SWT 12.5 ms
Unit dBµV
11.7 dB Offset
D1 101.83 dBµV
1MAX D2 95.83 dBµV
1MA
128
120
110
100
90
80
70
60
50
40
28.7
Center 2.462 GHz
5 MHz/
Span 50 MHz
Date: 18.AUG.2011 14:45:51

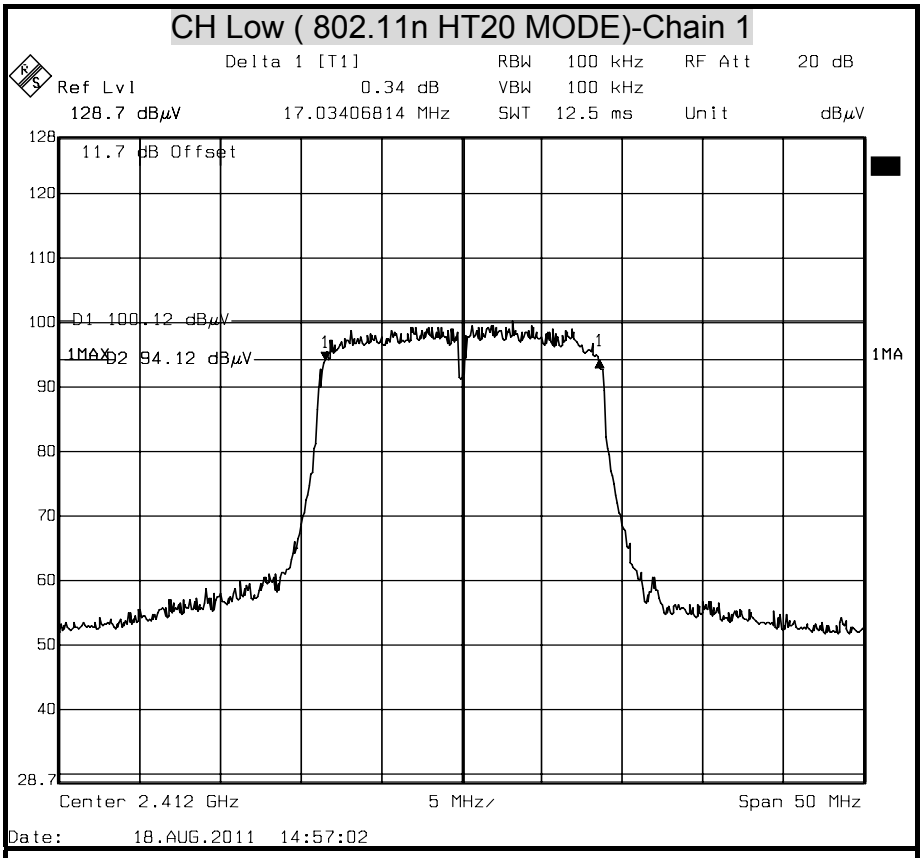
6dB BANDWIDTH (802.11n HT20 MODE) Chain 0

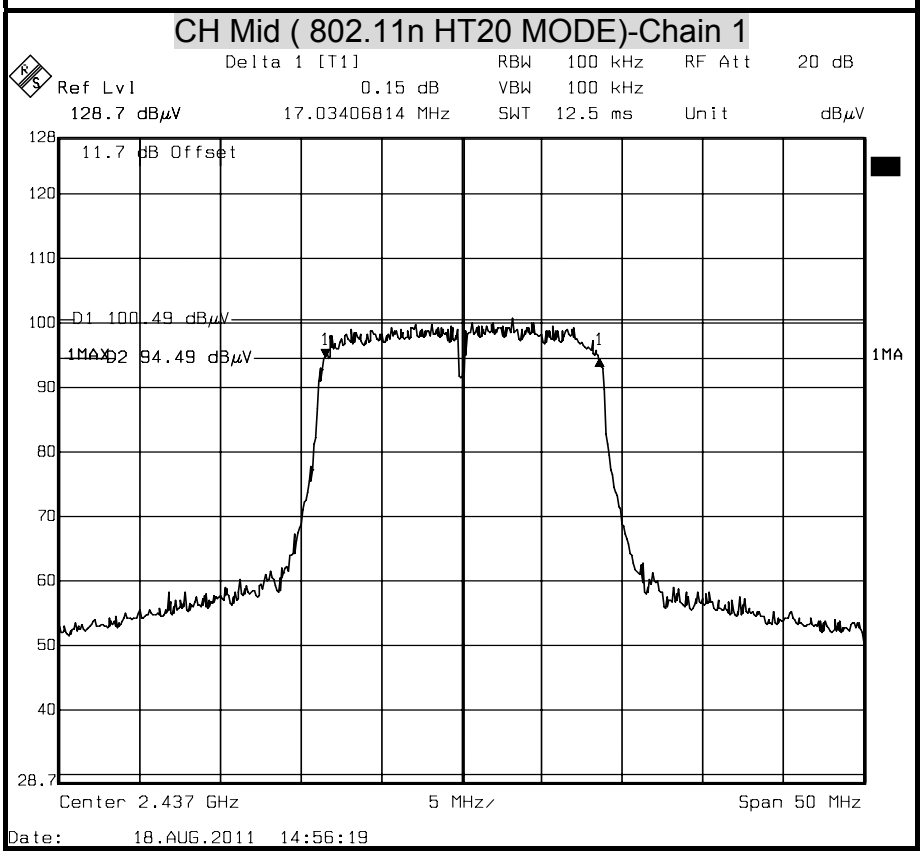


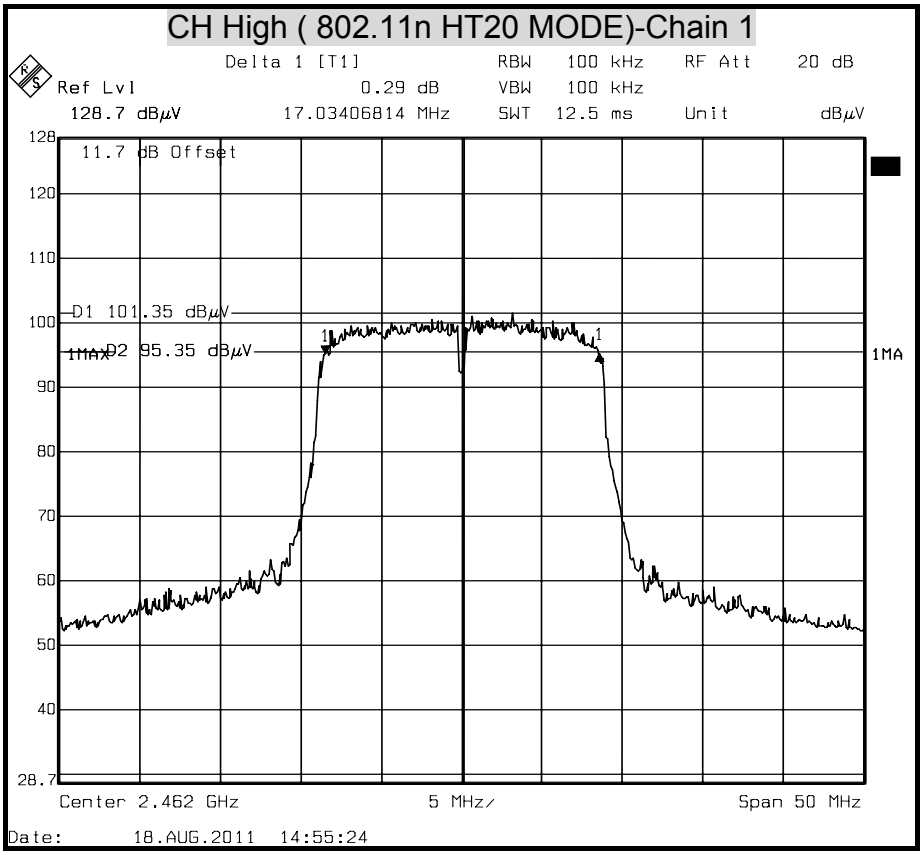



CH High (802.11n HT20 MODE)-Chain 0
Delta 1 [T1]
RBW 100 kHz
RF Att 20 dB
Ref Lvl
-0.11 dB
VBW 100 kHz
128.7 dBµV
17.53507014 MHz
SWT 12.5 ms
Unit dBµV
11.7 dB Offset
D1 98.26 dBµV
1MAX
D2 92.26 dBµV
1MA
128
120
110
100
90
80
70
60
50
40
28.7
Center 2.462 GHz
5 MHz/
Span 50 MHz
Date: 18.AUG.2011 14:53:47

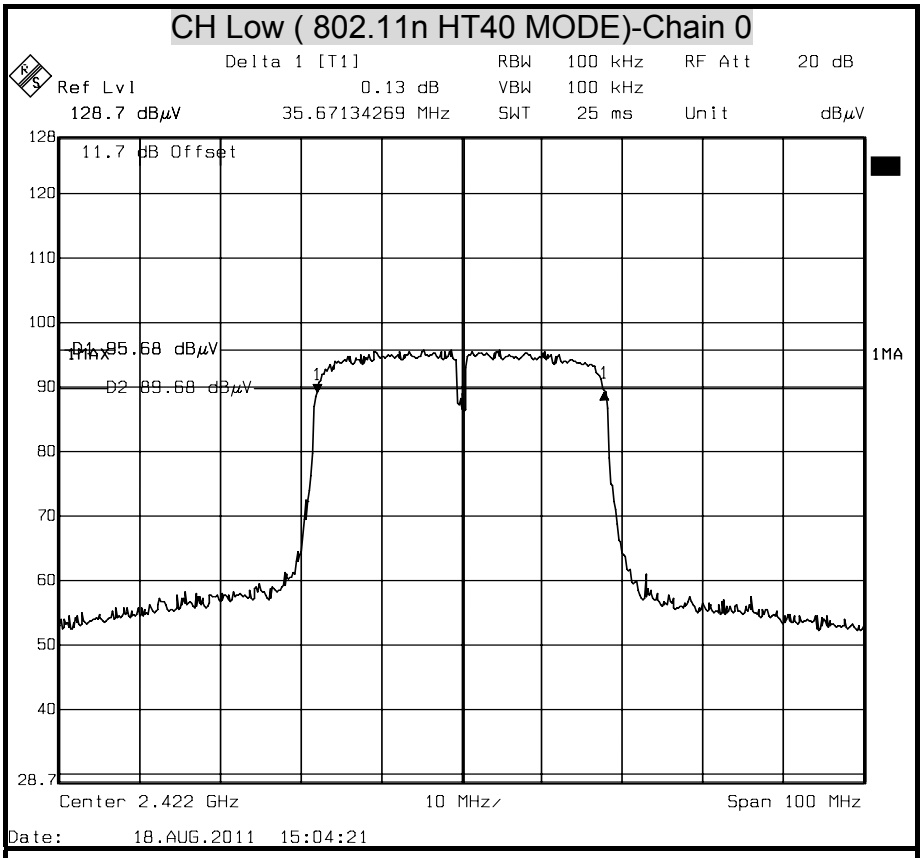
6dB BANDWIDTH (802.11n HT20 MODE) Chain 1

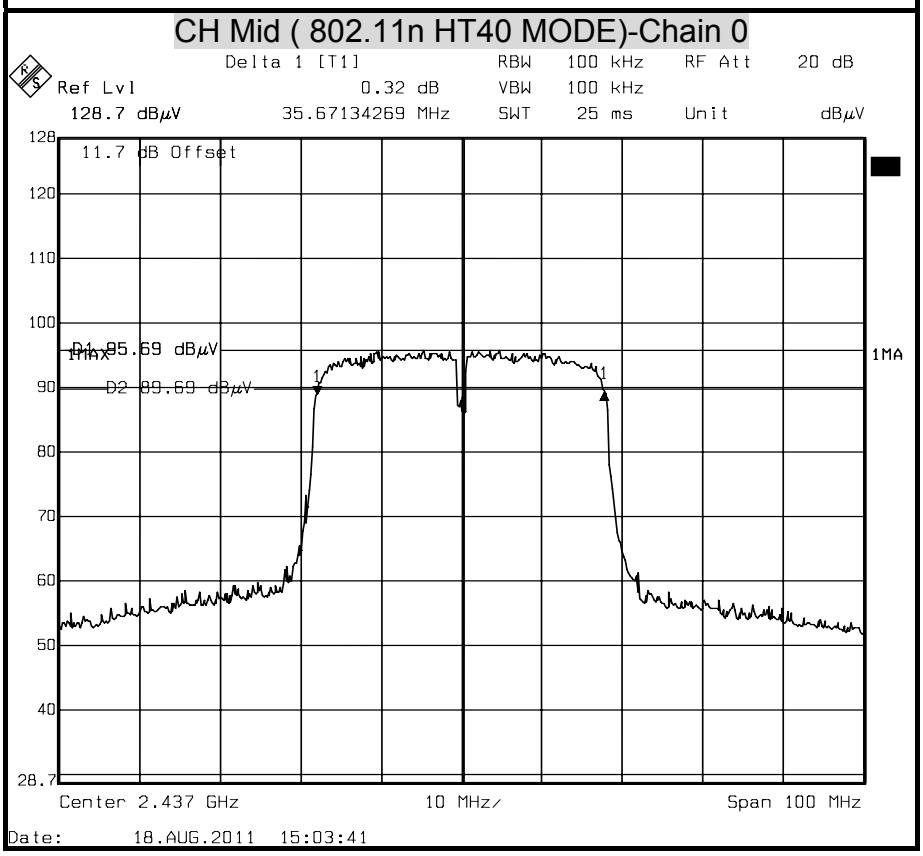


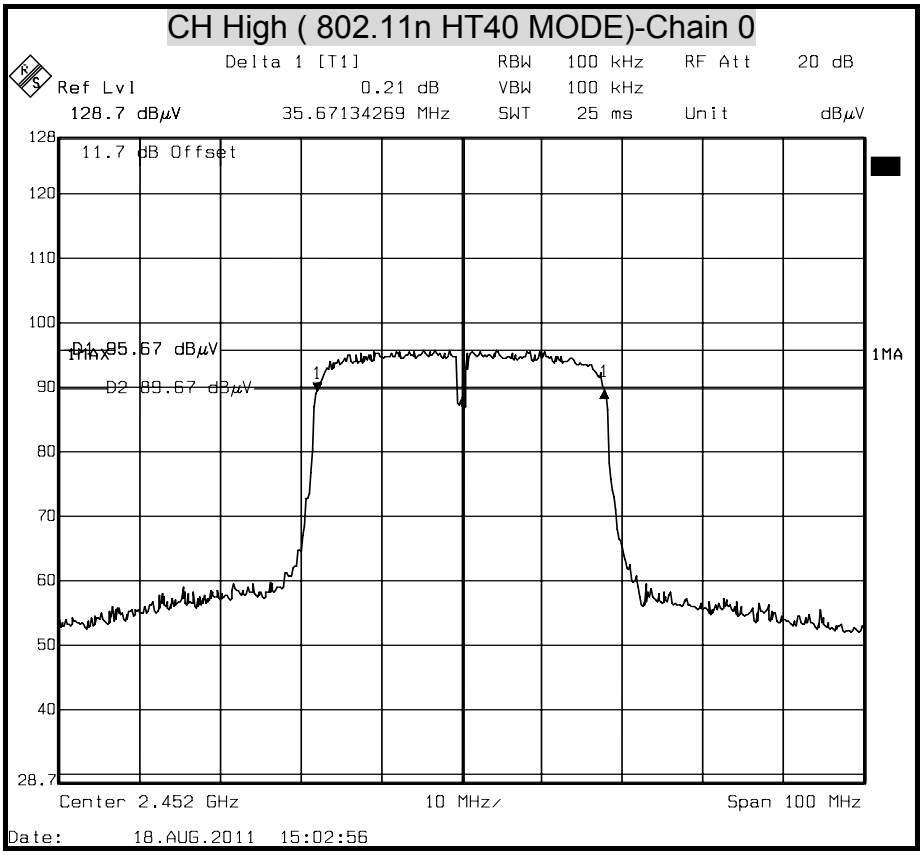



CH High (802.11n HT20 MODE)-Chain 1
Delta 1 [T1]
0.29 dB
17.03406814 MHz
RBW 100 kHz
VBW 100 kHz
SWT 12.5 ms
RF Att 20 dB
Unit dBµV
Ref Lvl
128.7 dBµV
11.7 dB Offset
D1 101.35 dBµV
1MAX D2 95.35 dBµV
1MA
128
120
110
100
90
80
70
60
50
40
28.7
Center 2.462 GHz
5 MHz/
Span 50 MHz
Date: 18.AUG.2011 14:55:24

6dB BANDWIDTH (802.11n HT40 MODE) Chain 0

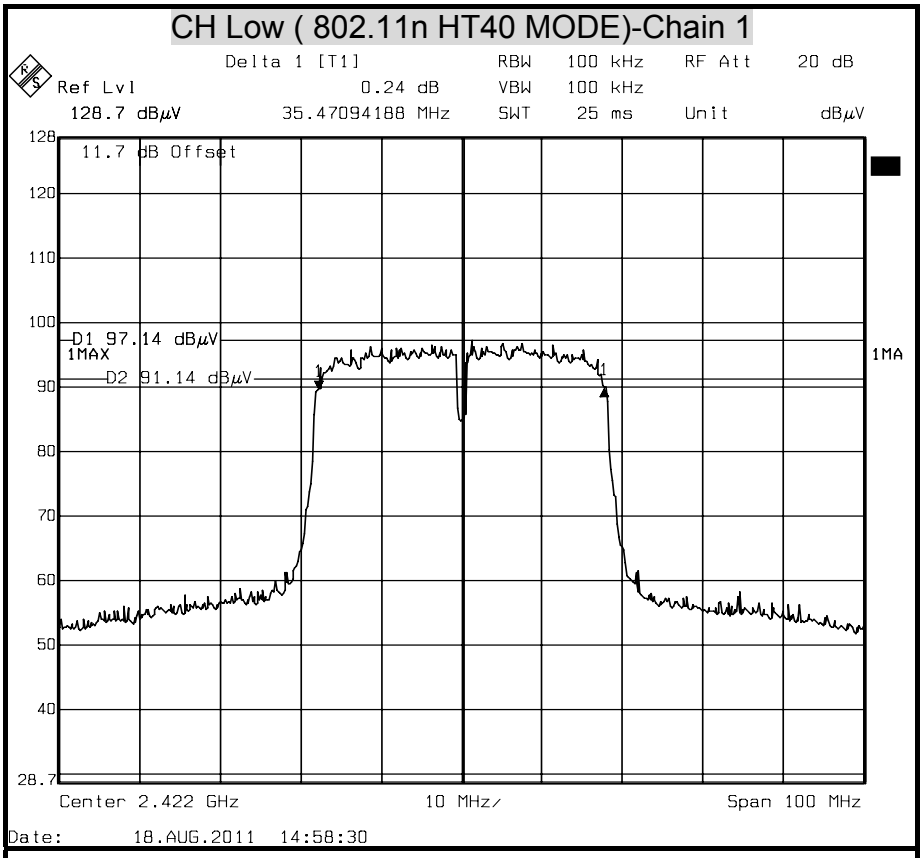




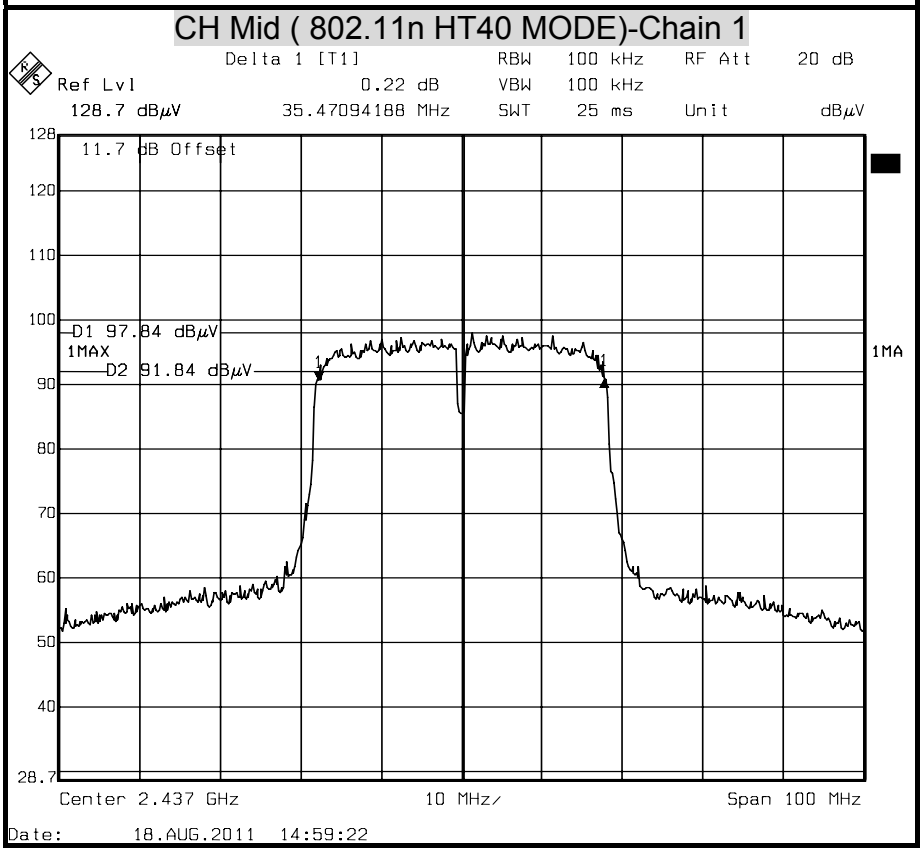

CH High (802.11n HT40 MODE)-Chain 0
Delta 1 [T1] RBW 100 kHz RF Att 20 dB
Ref Lvl 0.21 dB VBW 100 kHz
128.7 dBµV 35.67134269 MHz SWT 25 ms Unit dBµV
11.7 dB Offset
D1 95.67 dBµV
D2 89.67 dBµV
1MAX
1MA
128
120
110
100
90
80
70
60
50
40
28.7
Center 2.452 GHz
10 MHz/
Span 100 MHz
Date: 18.AUG.2011 15:02:56

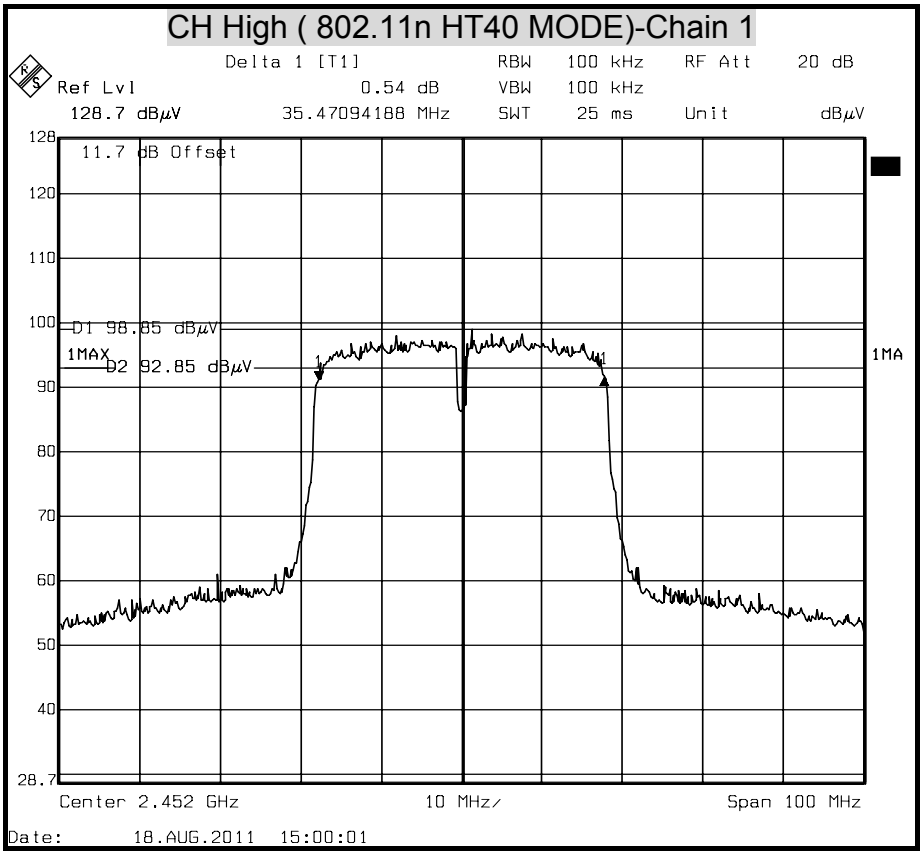
6dB BANDWIDTH (802.11n HT40 MODE) Chain 1

CH Low (802.11n HT40 MODE)-Chain 1



CH Mid (802.11n HT40 MODE)-Chain 1




CH High (802.11n HT40 MODE)-Chain 1
Delta 1 [T1]
0.54 dB
35.47094188 MHz
RBW 100 kHz
VBW 100 kHz
SWT 25 ms
RF Att 20 dB
Unit dBµV
Ref Lvl
128.7 dBµV
11.7 dB Offset
D1 98.85 dBµV
D2 92.85 dBµV
1MAX
1MA
128
120
110
100
90
80
70
60
50
40
28.7
Center 2.452 GHz
10 MHz/
Span 100 MHz
Date: 18.AUG.2011 15:00:01

8.2 MAXIMUM PEAK OUTPUT POWER

LIMIT

§ 15.247(b) The maximum peak output power of the intentional radiator shall not exceed the following :

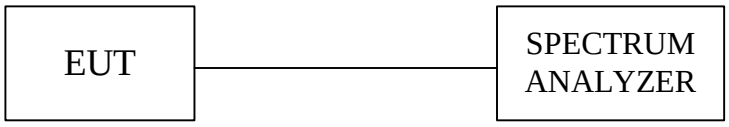
§ 15.247(b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands : 1 watt.

§ 15.247(b) (4) Except as shown in paragraphs (c) of this section , if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (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 EQUIPMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	R&S	FSEK 30	835253/002	JUL. 14, 2012

TEST SETUP



TEST PROCEDURE

Connect the EUT to spectrum analyzer, set the center frequency of the spectrum analyzer to the channel center frequency. Set the RBW to 1MHz and VBW to 3MHz.

Set sweep time=auto

Use detector max peak mode

Measurement of Digital Transmission Systems Operating under Section 15.247

TEST RESULTS

No non-compliance noted

IEEE 802.11b mode (One TX)

Channel	Channel Frequency (MHz)	Peak Power (dBm)	Peak Power Limit (dBm)	Pass / Fail
Low	2412	13.75	30.00	PASS
Middle	2437	14.35	30.00	PASS
High	2462	14.25	30.00	PASS

NOTE : 1. At finial test to get the worst-case emission at 1Mbps long.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11g mode (One TX)

Channel	Channel Frequency (MHz)	Peak Power (dBm)	Peak Power Limit (dBm)	Pass / Fail
Low	2412	17.35	30.00	PASS
Middle	2437	18.02	30.00	PASS
High	2462	17.98	30.00	PASS

NOTE : 1.At finial test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 mode(Two TX)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	2412	14.68	15.82	18.30	30.00	PASS
Middle	2437	15.14	16.24	18.74	30.00	PASS
High	2462	14.97	17.17	19.22	30.00	PASS

NOTE : 1. At finial test to get the worst-case emission at 13Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 mode (Two TX)

Channel	Channel Frequency (MHz)	Peak Power (dBm)		Peak Power Total (dBm)	Peak Power Limit (dBm)	Pass / Fail
		Chain 0	Chain 1			
Low	2422	15.04	15.84	18.47	30.00	PASS
Middle	2437	14.93	16.32	18.69	30.00	PASS
High	2452	15.24	16.62	18.99	30.00	PASS

NOTE : 1. At finial test to get the worst-case emission at 27Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was entered as an offset in the spectrum analyzer to allow for direct reading of power.

Average Power Data

IEEE 802.11b mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2412	11.62
Middle	2437	12.28
High	2462	12.18

IEEE 802.11g mode

Channel	Channel Frequency (MHz)	Average Power (dBm)
Low	2412	7.82
Middle	2437	8.35
High	2462	8.38

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	Average Power (dBm)	Average Power (dBm)
		Chain 0	Chain 1
Low	2412	5.02	6.74
Middle	2437	5.52	7.35
High	2462	5.36	8.12

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	Average Power (dBm)	Average Power (dBm)
		Chain 0	Chain 1
Low	2422	6.12	6.35
Middle	2437	5.94	7.18
High	2452	6.38	7.34

8.3 MAXIMUM PERMISSIBLE EXPOSURE

According to FCC 1.1310 : The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Average Time
(A) Limits for Occupational / Control Exposures				
300-1,500	--	--	F/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Population / Uncontrol Exposures				
300-1,500	--	--	F/1500	6
1,500-100,000	--	--	1	30

CALCULATIONS

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

Where *E = Field strength in Volts / meter*

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

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

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

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

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

Where *d = Distance in cm*

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

LIMIT

Power Density Limit, S=1.0mW/cm^2

TEST RESULTS

No non-compliance noted.

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

G=2.35dBi=1.7179084mW

IEEE 802.11b	=	0.0796 *	27.2270	*	1.71790839	÷ 400 =	0.00931
IEEE 802.11g	=	0.0796 *	63.3870	*	1.71790839	÷ 400 =	0.02167
IEEE 802.11n HT20	=	0.0796 *	83.5246	*	1.71790839	÷ 400 =	0.02855
IEEE 802.11n HT40	=	0.0796 *	79.3393	*	1.71790839	÷ 400 =	0.02712

Mode	Minimum separation distance (cm)	Output Power (dBm)	Output Power (mw)	Antenna Gain (dBi)	Power Density Limit (mW/cm^2)	Power Density at 20cm (mW/cm^2)
IEEE 802.11b	20.0	14.35	27.23	2.35	1.00	0.009308
IEEE 802.11g	20.0	18.02	63.39	2.35	1.00	0.021670
IEEE 802.11n HT20	20.0	19.22	83.52	2.35	1.00	0.028554
IEEE 802.11n HT40	20.0	18.99	79.34	2.35	1.00	0.027123

REMARK: For mobile or fixed location transmitters, the maximum power density is 1.0 mW/cm^2 even if the calculation indicates that the power density would be larger.

8.4 POWER SPECTRAL DENSITY

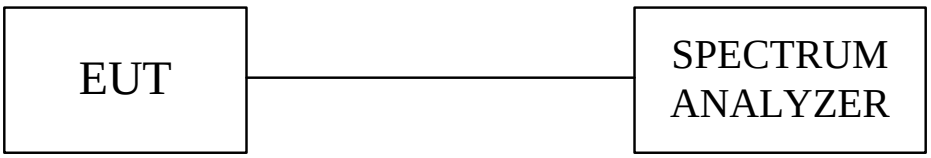
LIMIT

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

TEST EQUIPMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Spectrum Analyzer	R&S	FSEK 30	835253/002	JUL. 14, 2012

TEST SETUP



TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using RBW=3KHz and VBW≧RBW, set sweep time=span / 3KHz.

The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span / 3KHz for a full response of the mixer in the spectrum analyzer.

TEST RESULTS

Total peak power calculation formula:
10 log (10^ (Chain 0 PPSD / 10)).

No non-compliance noted.

IEEE 802.11b mode

Channel	Channel Frequency (MHz)	PPSD Chain 0 (dBm)	Maximum Limit (dBm)	Pass / Fail
Low	2412	-18.32	8	PASS
Middle	2437	-17.42	8	PASS
High	2462	-17.51	8	PASS

NOTE : 1. At finial test to get the worst-case emission at 1Mbps long.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11g mode

Channel	Channel Frequency (MHz)	PPSD Chain 0 (dBm)	Maximum Limit (dBm)	Pass / Fail
Low	2412	-20.38	8	PASS
Middle	2437	-19.75	8	PASS
High	2462	-18.97	8	PASS

NOTE : 1. At finial test to get the worst-case emission at 6Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT20 mode

Channel	Channel Frequency (MHz)	PPSD(dBm)			Maximum Limit	Pass / Fail
		Chain 0	Chain 1	Total	(dBm)	
Low	2412	-21.90	-20.65	-18.22	8	PASS
Middle	2437	-21.25	-20.52	-17.86	8	PASS
High	2462	-21.35	-19.38	-17.24	8	PASS

NOTE : 1. At finial test to get the worst-case emission at 13Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

IEEE 802.11n HT40 mode

Channel	Channel Frequency (MHz)	PPSD(dBm)			Maximum Limit (dBm)	Pass / Fail
		Chain 0	Chain 1	Total		
Low	2422	-25.25	-24.51	-21.85	8	PASS
Middle	2437	-25.60	-23.85	-21.63	8	PASS
High	2452	-25.60	-23.54	-21.44	8	PASS

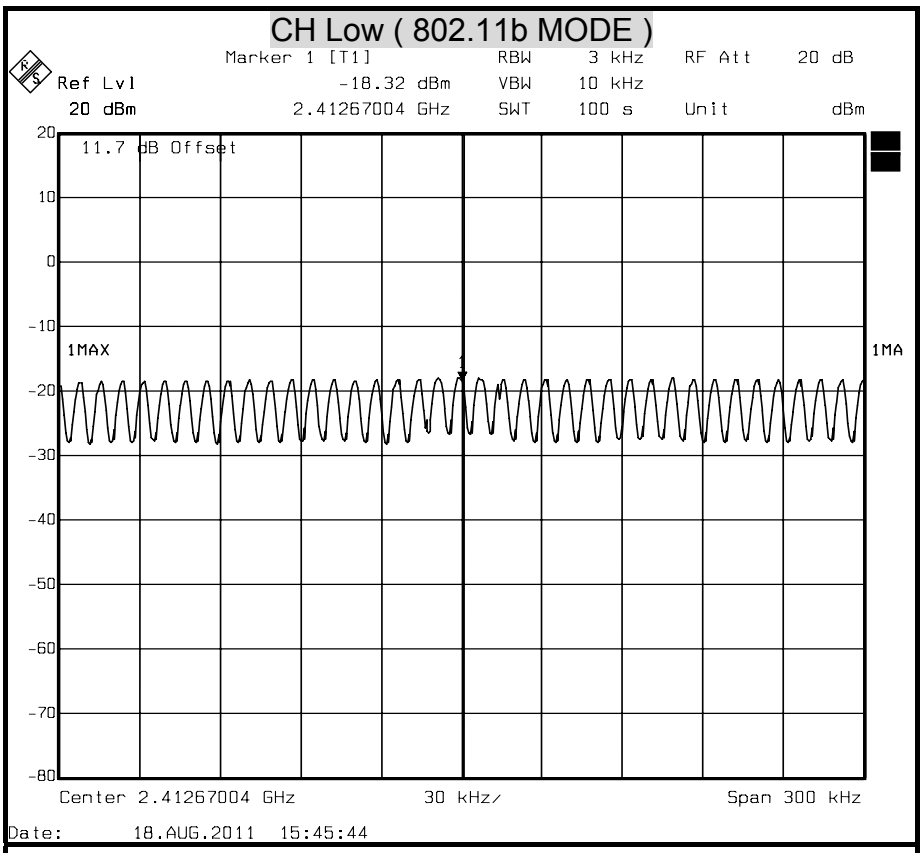
NOTE : 1. At finial test to get the worst-case emission at 27Mbps.
2. The cable assembly insertion loss of 11.7dB (including 10 dB pad and 1.7 dB cable) was Entered as an offset in the spectrum analyzer to allow for direct reading of power.

Combined mode

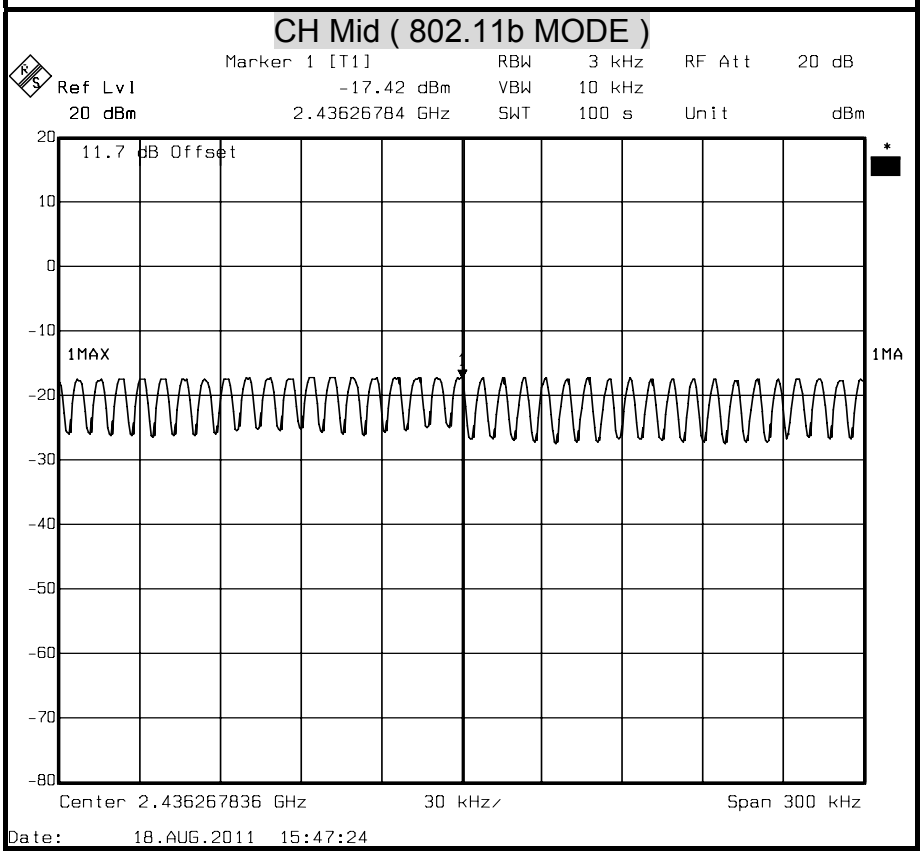
Channel		Channel Frequency (MHz)	PPSD(dBm)	Maximum Limit (dBm)	Pass / Fail
802.11n HT20 Combined mode	CH Low	2412	-18.16	8	PASS
	CH Middle	2437	-17.72		
	CH High	2462	-16.86		
802.11n HT40 Combined mode	CH Low	2422	-21.60	8	PASS
	CH Middle	2437	-21.55		
	CH High	2452	-21.23		

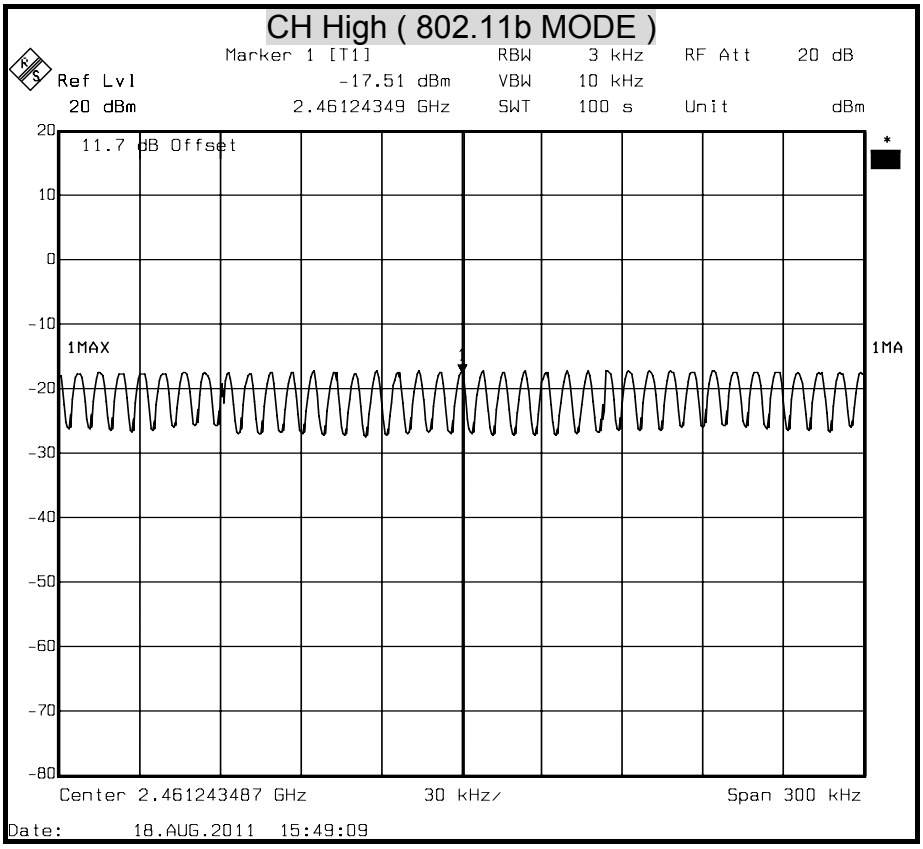
POWER SPECTRAL DENSITY (IEEE 802.11b MODE)

CH Low (802.11b MODE)



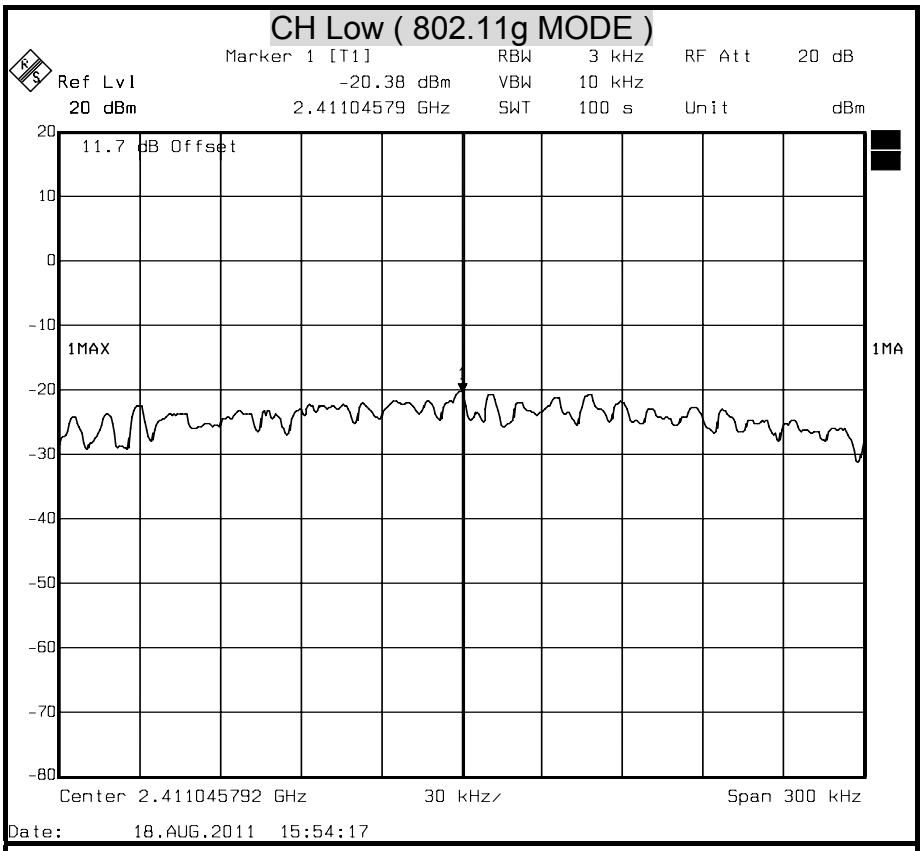
CH Mid (802.11b MODE)



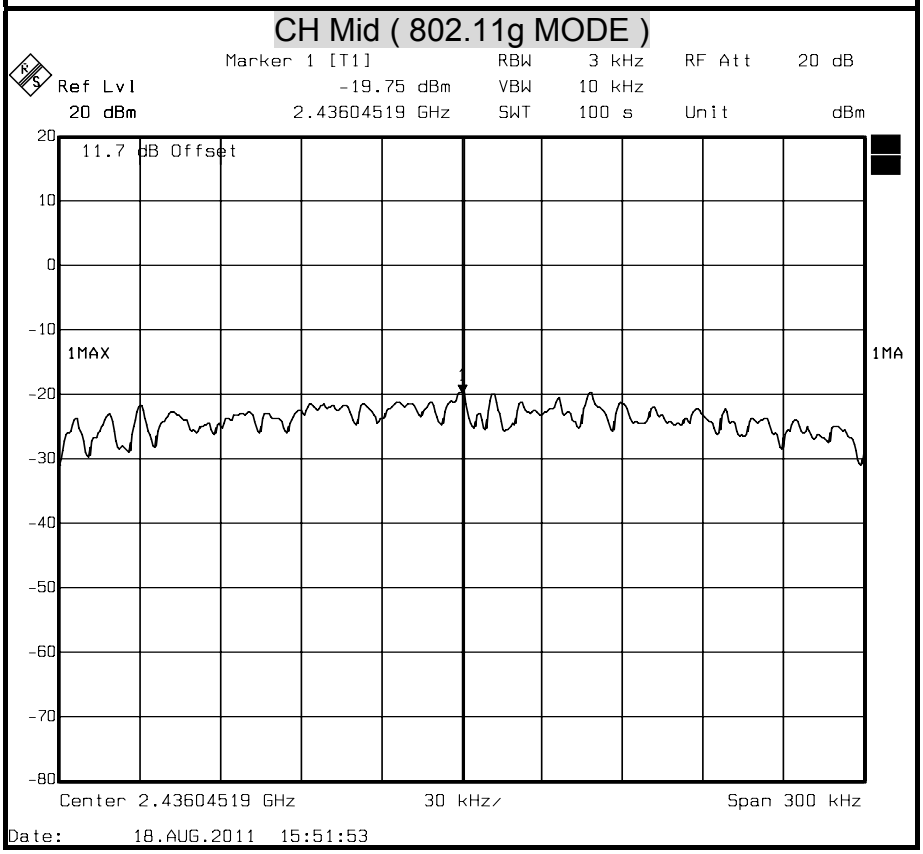

CH High (802.11b MODE)
Marker 1 [T1]
RBW 3 kHz
RF Att 20 dB
Ref Lvl
-17.51 dBm
VBW 10 kHz
20 dBm
2.46124349 GHz
SWT 100 s
Unit dBm
11.7 dB Offset
1MAX
1MA
Center 2.461243487 GHz
30 kHz/
Span 300 kHz
Date: 18.AUG.2011 15:49:09

POWER SPECTRAL DENSITY (IEEE 802.11g MODE)

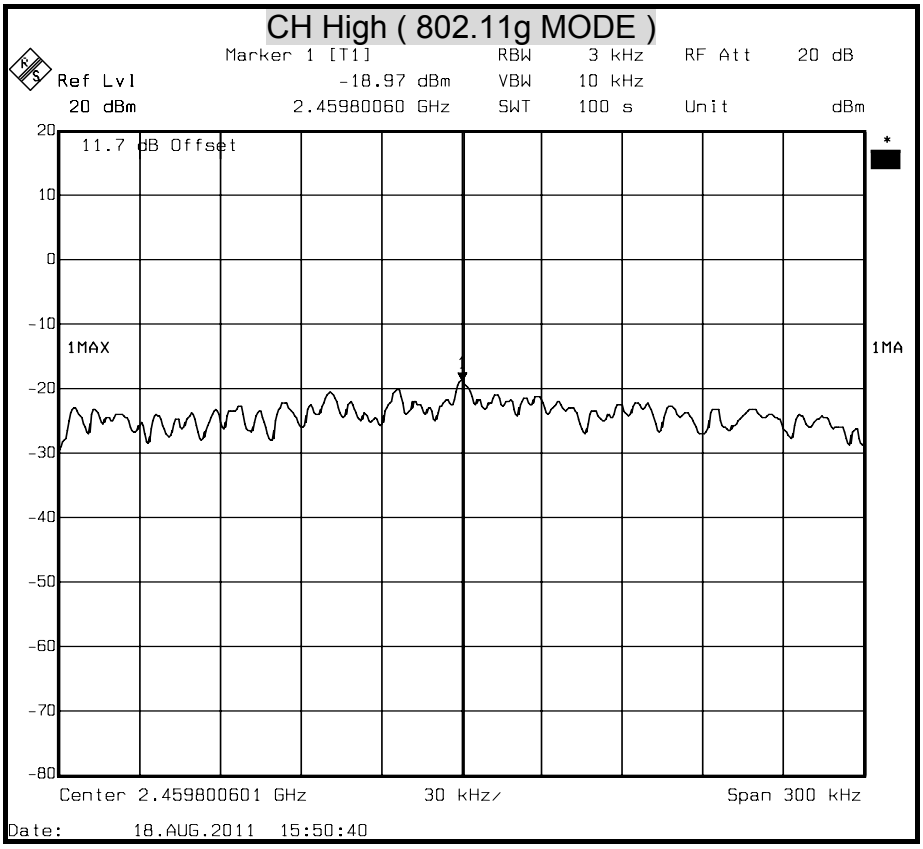
CH Low (802.11g MODE)



CH Mid (802.11g MODE)

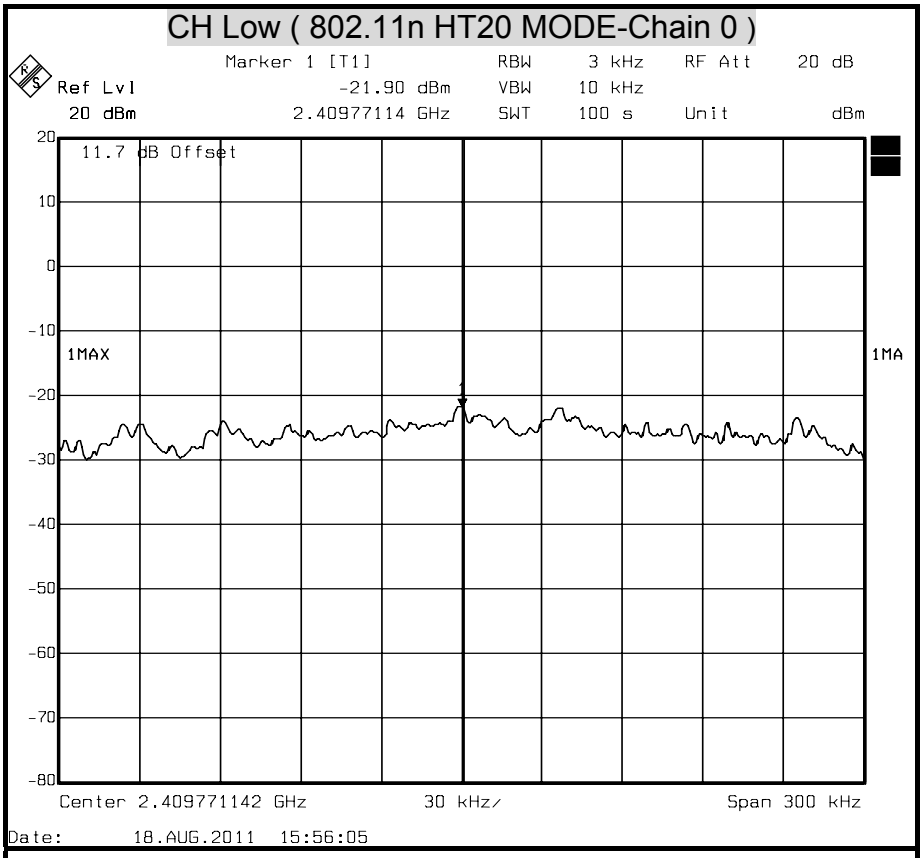


CH High (802.11g MODE)

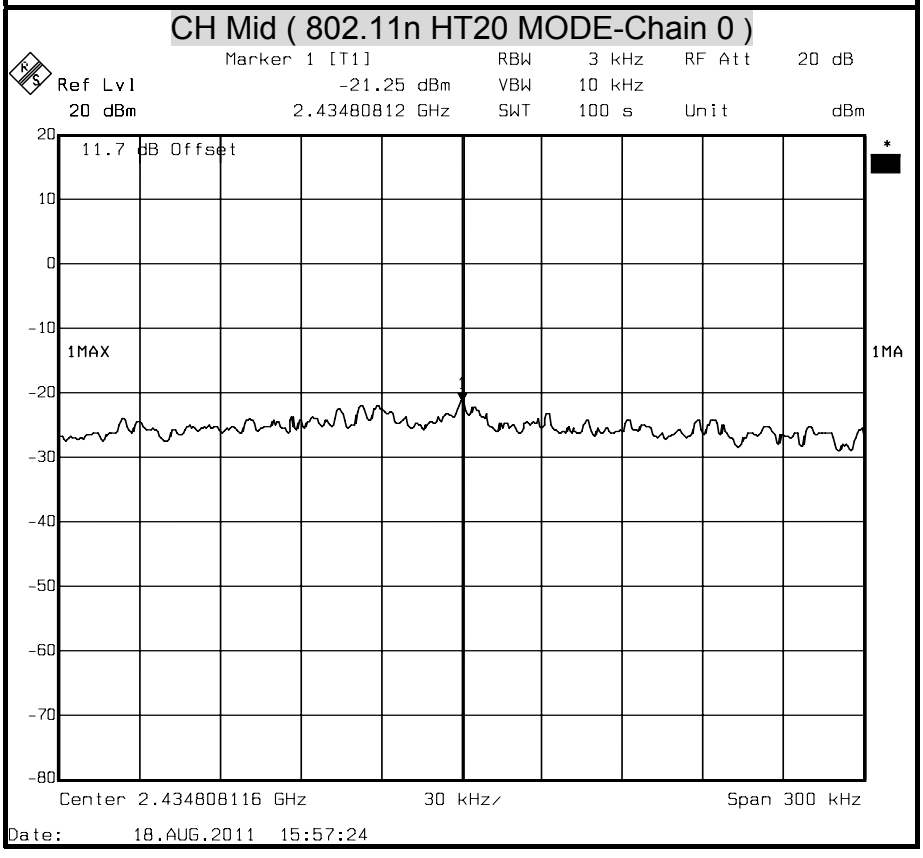


POWER SPECTRAL DENSITY (802.11n HT20 MODE)

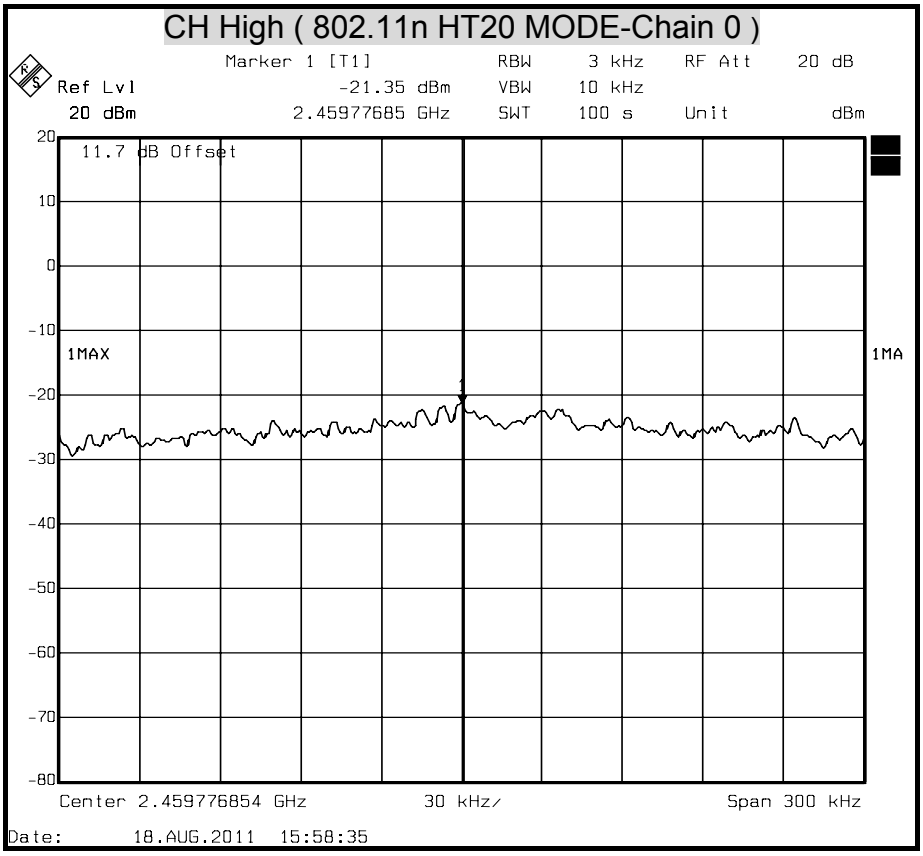
CH Low (802.11n HT20 MODE-Chain 0)



CH Mid (802.11n HT20 MODE-Chain 0)

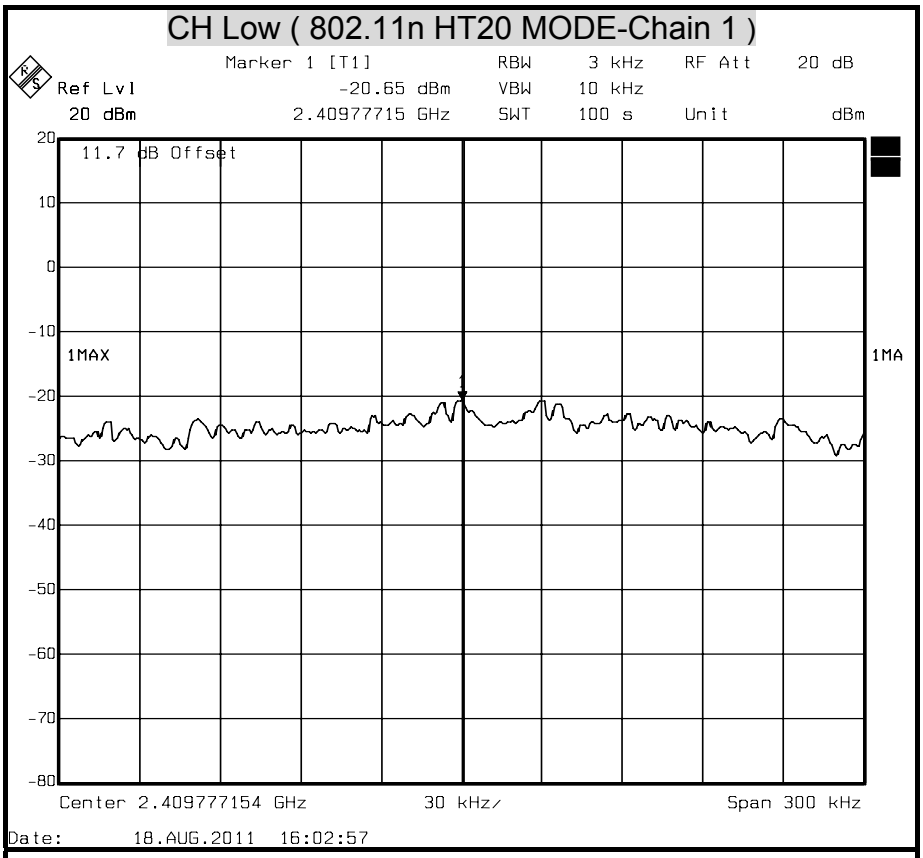


CH High (802.11n HT20 MODE-Chain 0)

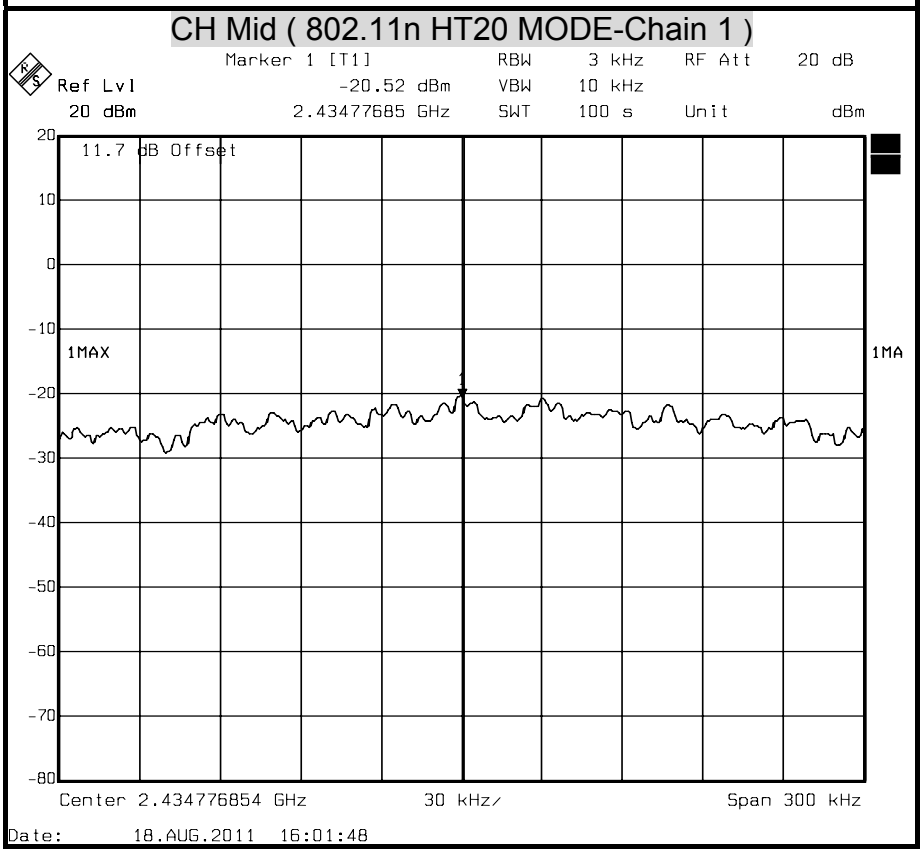


POWER SPECTRAL DENSITY (802.11n HT20 MODE)

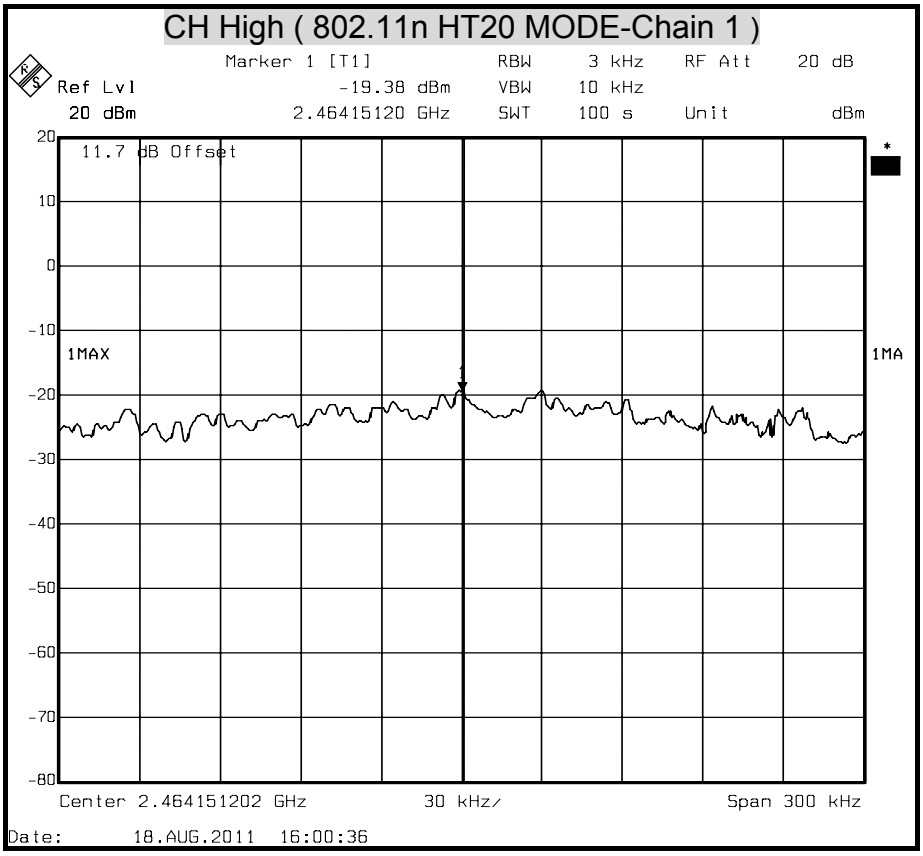
CH Low (802.11n HT20 MODE-Chain 1)



CH Mid (802.11n HT20 MODE-Chain 1)

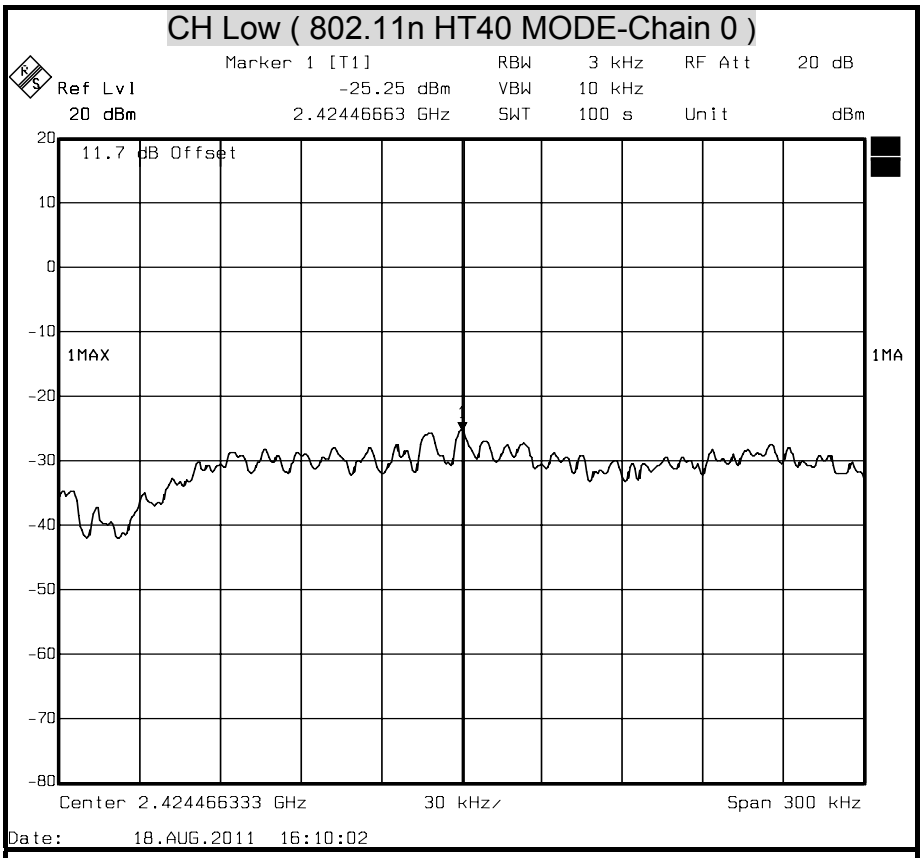


CH High (802.11n HT20 MODE-Chain 1)

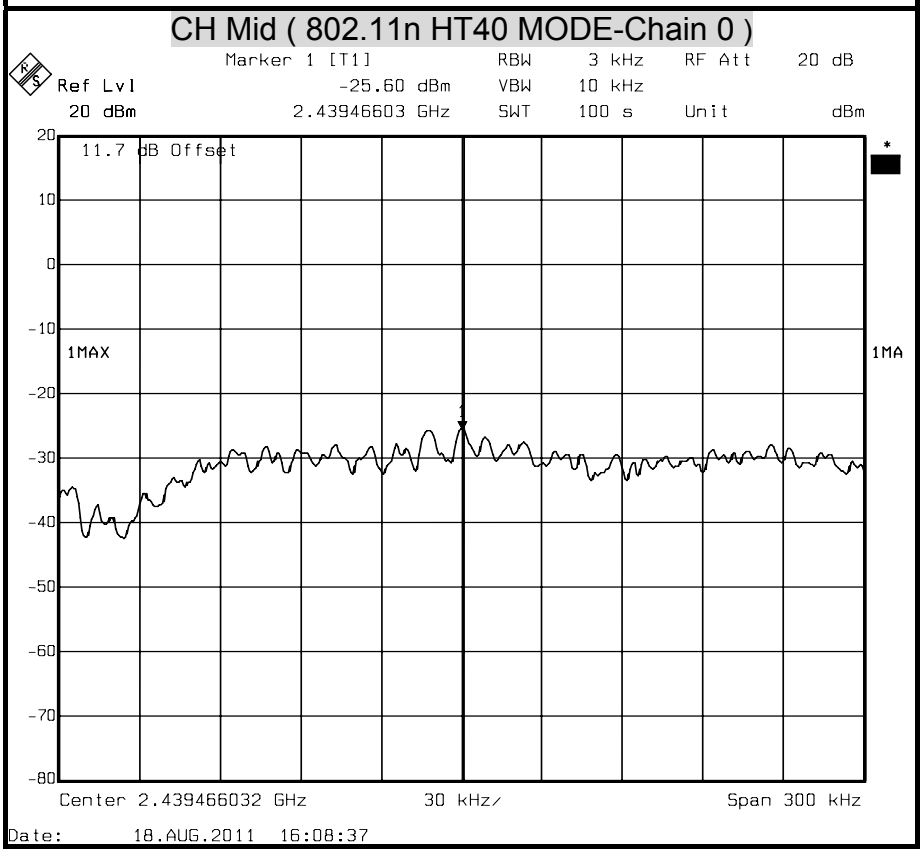


POWER SPECTRAL DENSITY (802.11n HT40 MODE)

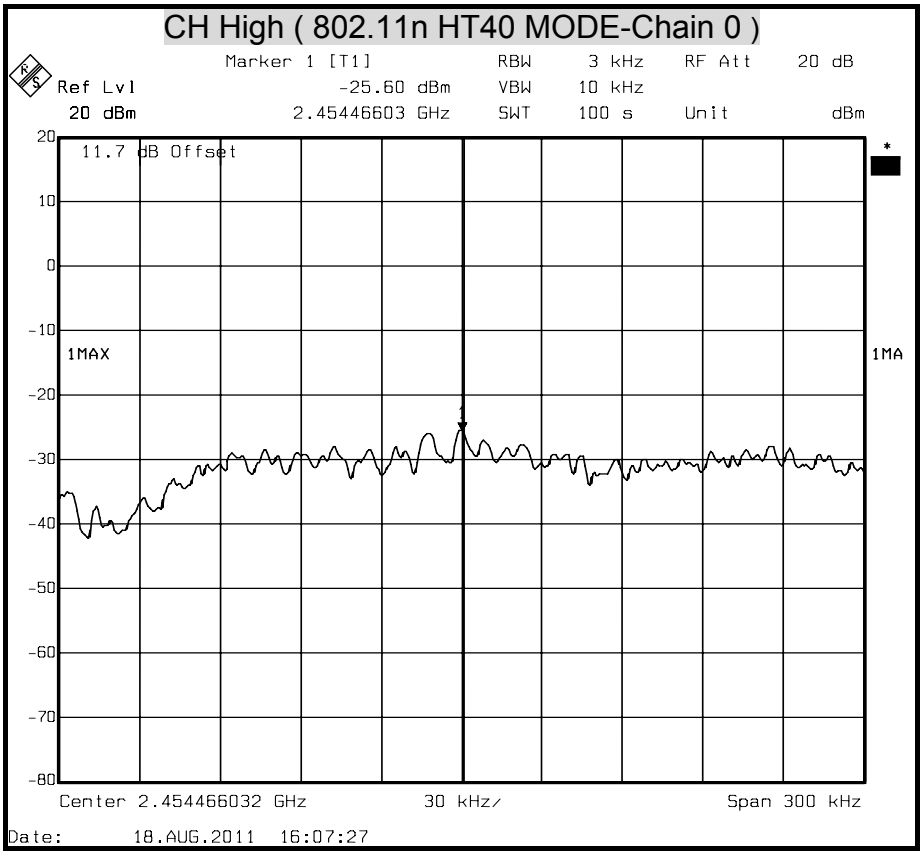
CH Low (802.11n HT40 MODE-Chain 0)



CH Mid (802.11n HT40 MODE-Chain 0)

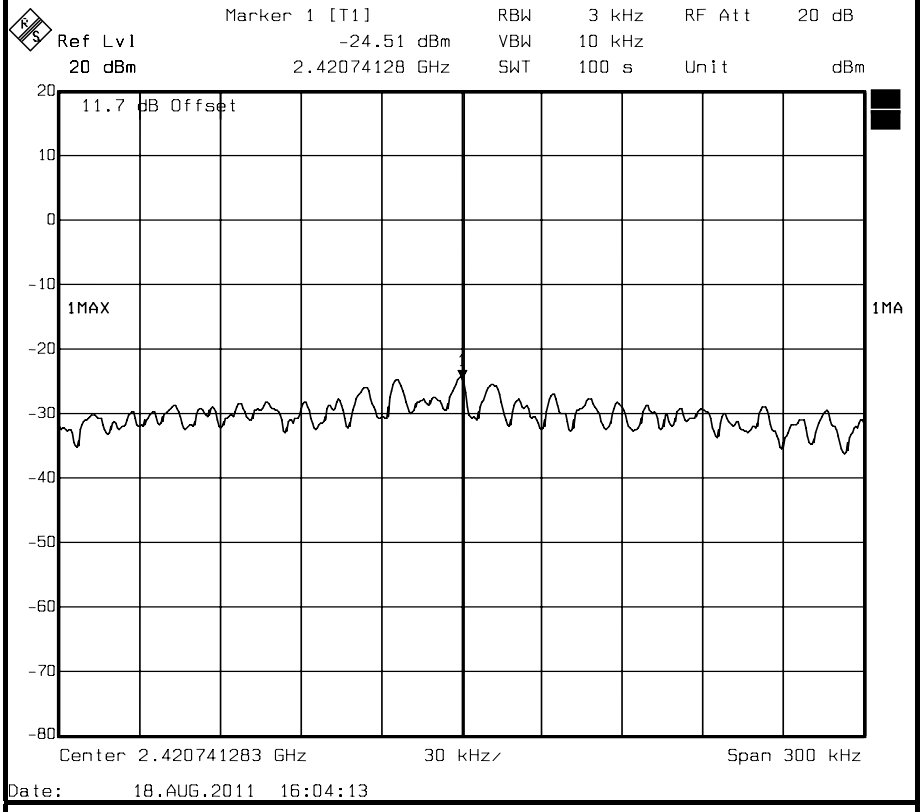


CH High (802.11n HT40 MODE-Chain 0)

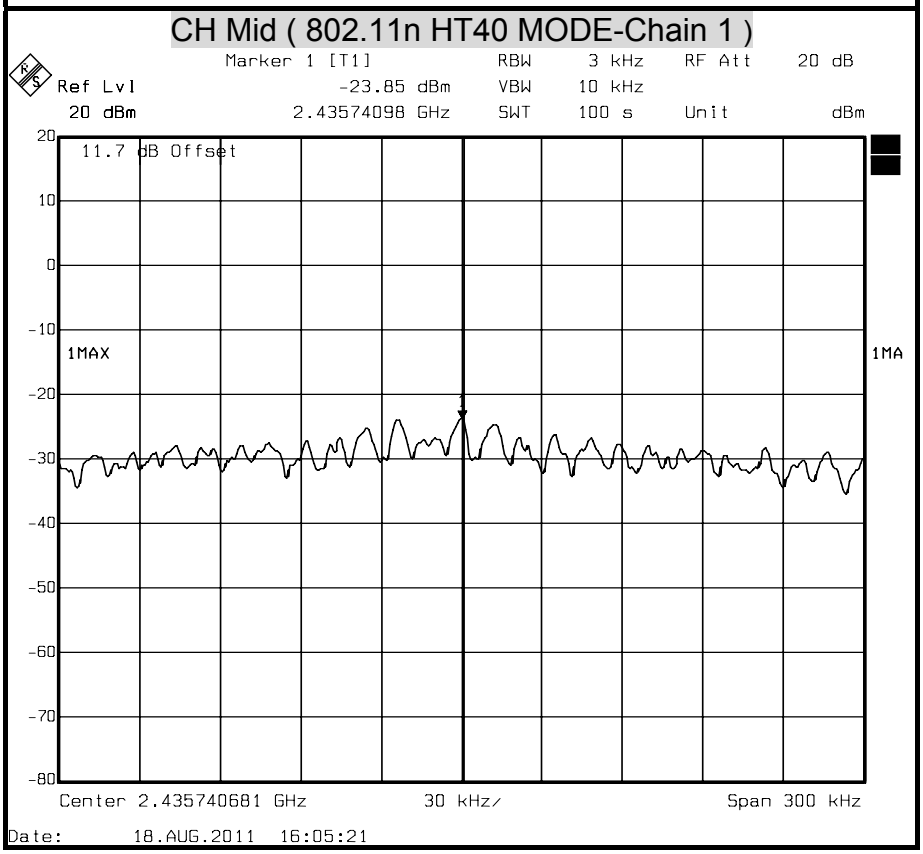


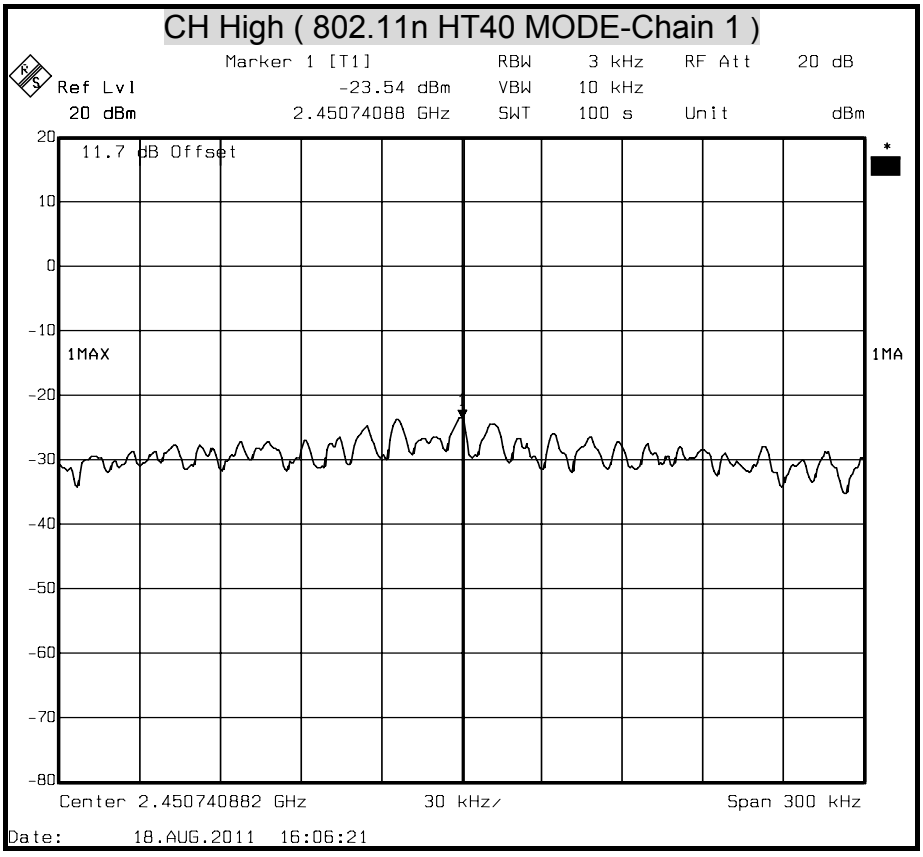
POWER SPECTRAL DENSITY (802.11n HT40 MODE)

CH Low (802.11n HT40 MODE-Chain 1)



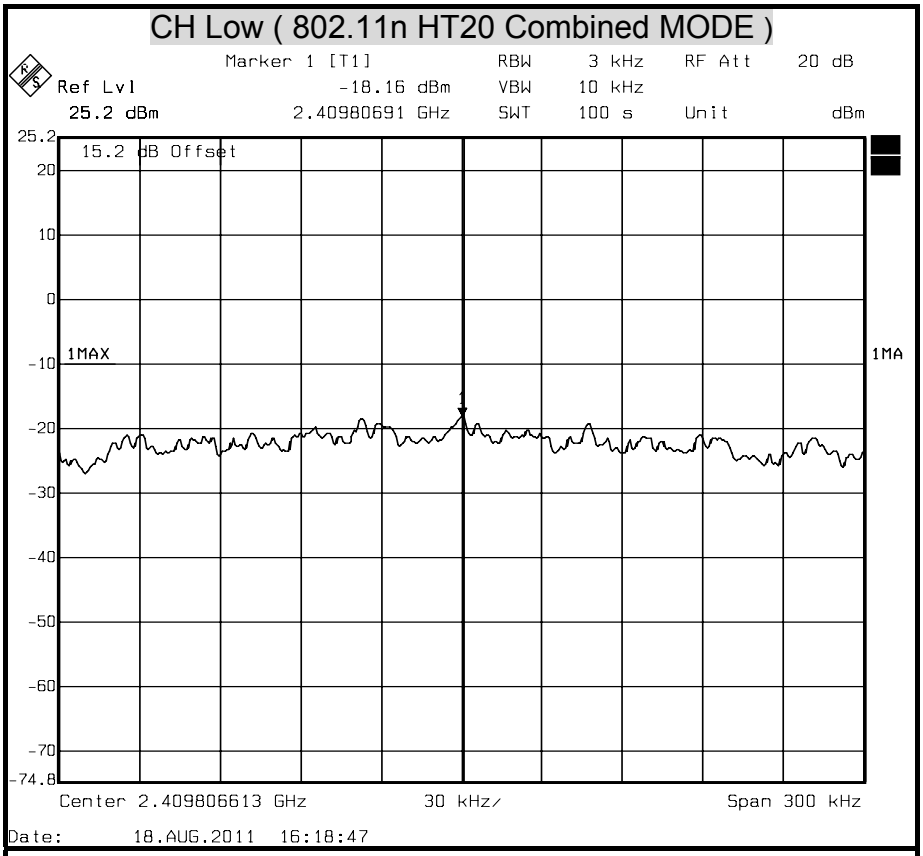
CH Mid (802.11n HT40 MODE-Chain 1)



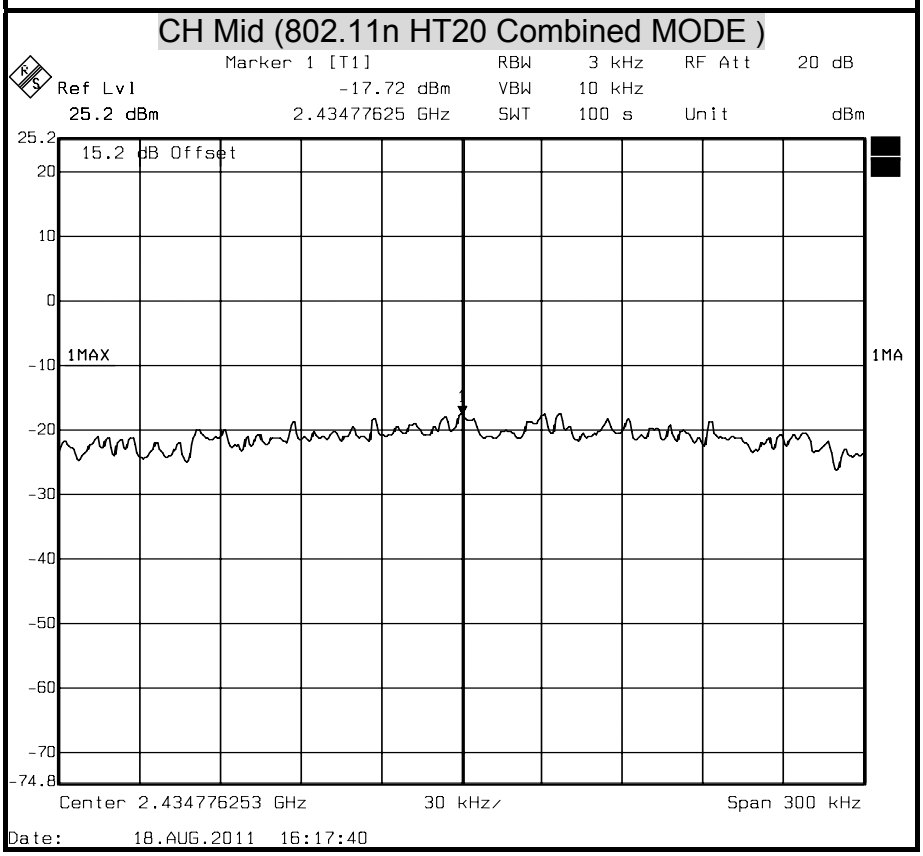

CH High (802.11n HT40 MODE-Chain 1)
Marker 1 [T1]
Ref Lvl
20 dBm
-23.54 dBm
2.45074088 GHz
RBW 3 kHz
VBW 10 kHz
SWT 100 s
RF Att 20 dB
Unit dBm
11.7 dB Offset
1MAX
1MA
Center 2.450740882 GHz
30 kHz/
Span 300 kHz
Date: 18.AUG.2011 16:06:21

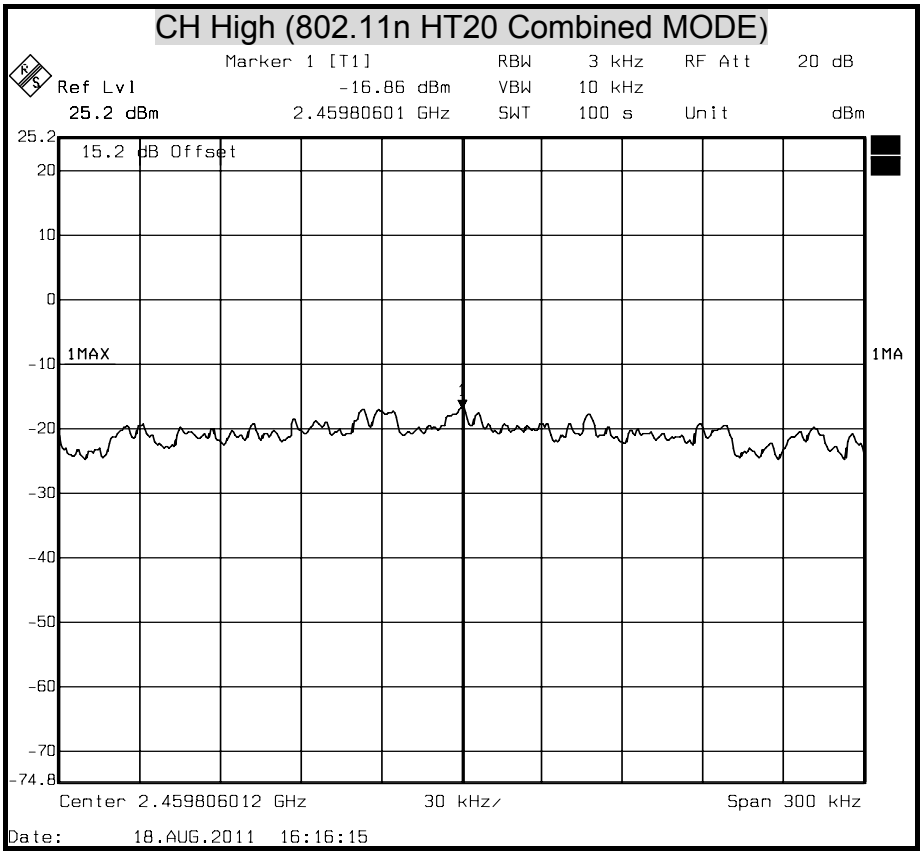
POWER SPECTRAL DENSITY (802.11n HT20 Combined MODE)

CH Low (802.11n HT20 Combined MODE)



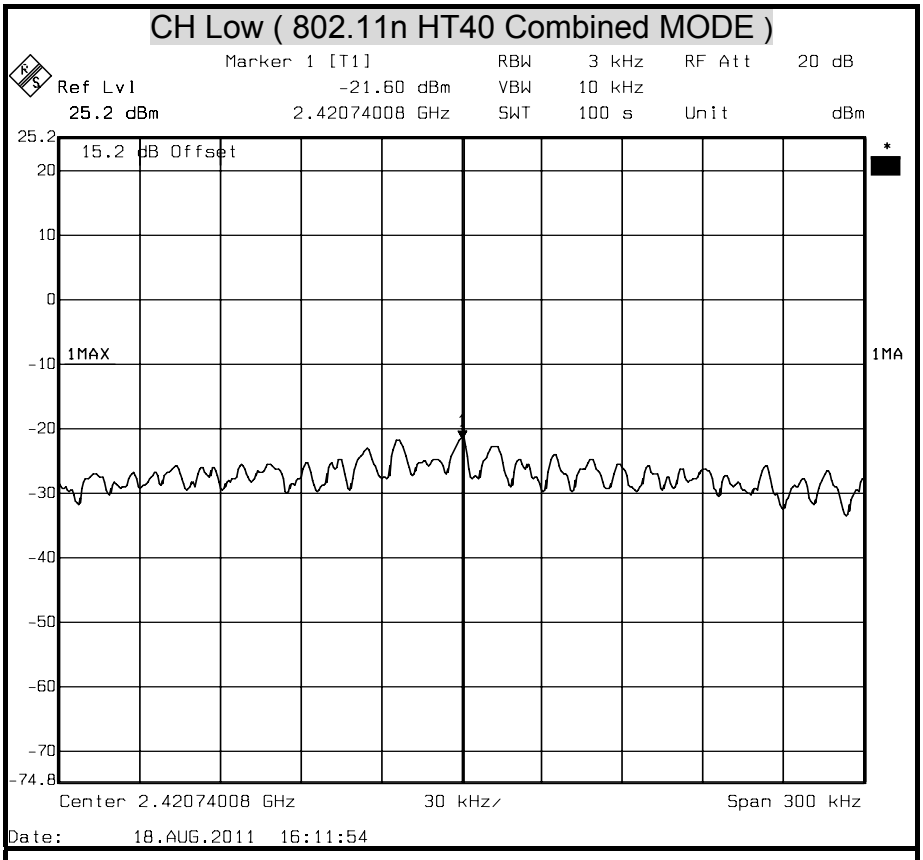
CH Mid (802.11n HT20 Combined MODE)



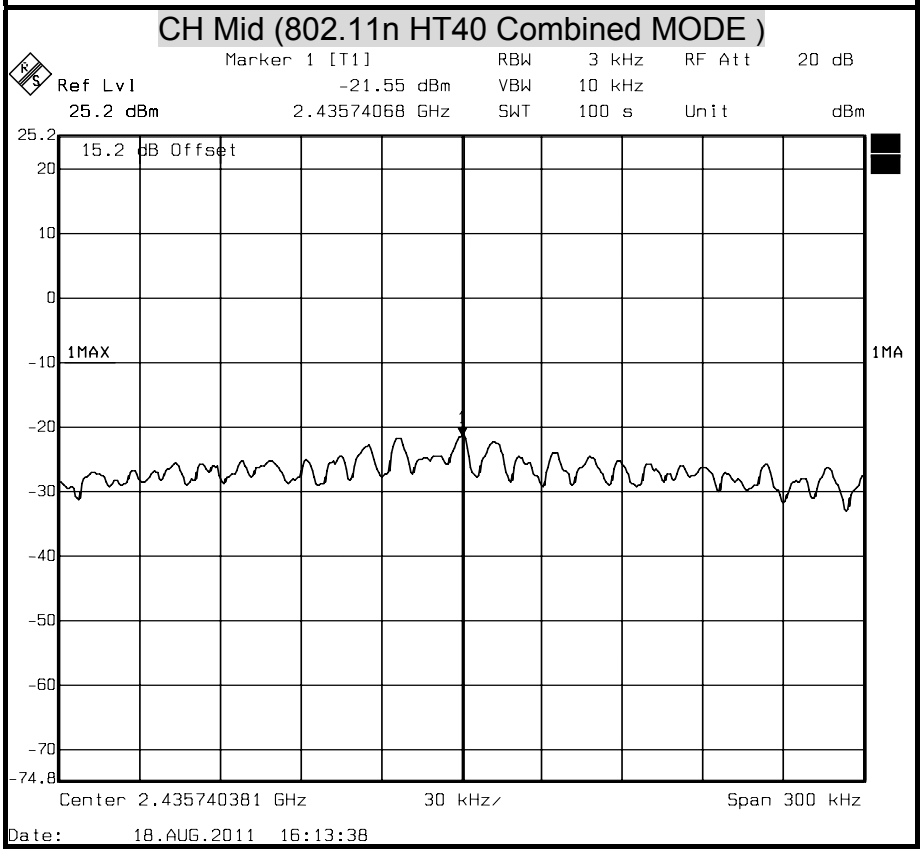

CH High (802.11n HT20 Combined MODE)
Marker 1 [T1]
RBW 3 kHz
RF Att 20 dB
Ref Lvl
-16.86 dBm
VBW 10 kHz
25.2 dBm
2.45980601 GHz
SWT 100 s
Unit dBm
15.2 dB Offset
1MAX
1MA
Center 2.459806012 GHz
30 kHz/
Span 300 kHz
Date: 18.AUG.2011 16:16:15

POWER SPECTRAL DENSITY (802.11n HT40 Combined MODE)

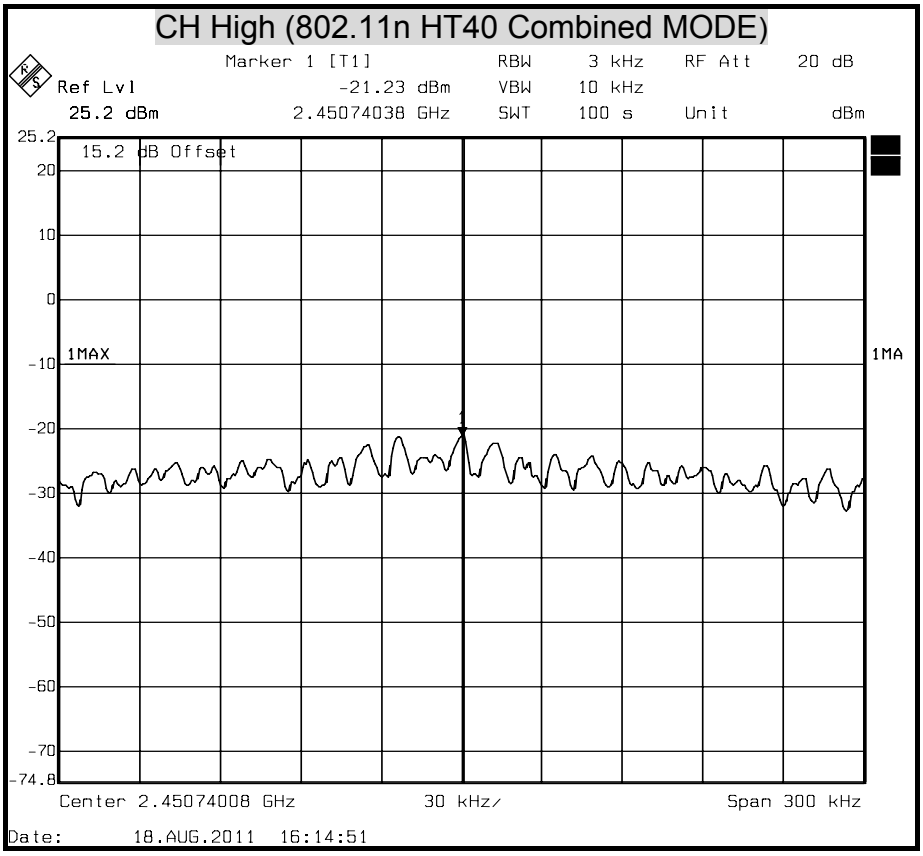
CH Low (802.11n HT40 Combined MODE)



CH Mid (802.11n HT40 Combined MODE)



CH High (802.11n HT40 Combined MODE)



8.5 CONDUCTED SPURIOUS EMISSION

LIMITS

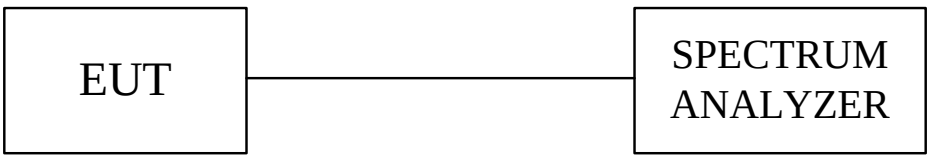
§ 15.247(d) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the and that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in § 15.209(a) is not required. 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 § 15.205(c)).

TEST PROCEDURE

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

The spectrum from 30 MHz to 26.5 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

TEST SETUP



TEST RESULTS

No non-compliance noted.

802.11b Mode

CH Low

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2412	11.7	93.78	105.48	N/A	N/A
2400	11.7	56.74	68.44	85.48	-17.04
1607.25451	11.7	45.36	57.06	85.48	-28.42
6767.53507	11.7	44.39	56.09	85.48	-29.39

CH Mid

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2437	11.7	94.08	105.78	N/A	N/A
2400	11.7	41.84	53.54	85.78	-32.24
1625.11022	11.7	47.86	59.56	85.78	-26.22
6579.15832	11.7	44.05	55.75	85.78	-30.03

CH High

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2462	11.7	94.57	106.27	N/A	N/A
2400	11.7	41.63	53.33	86.27	-32.94
1642.96593	11.7	48.22	59.92	86.27	-26.35
6955.91182	11.7	45.01	56.71	86.27	-29.56

802.11g Mode

CH Low

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2412	11.7	87.68	99.38	N/A	N/A
2400	11.7	52.15	63.85	79.38	-15.53
1607.25451	11.7	47.36	59.06	79.38	-20.32
6955.91182	11.7	44.51	56.21	79.38	-23.17

CH Mid

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2437	11.7	88.43	100.13	N/A	N/A
2400	11.7	41.63	53.33	80.13	-26.80
1625.11022	11.7	49.32	61.02	80.13	-19.11
6955.91182	11.7	44.82	56.52	80.13	-23.61

CH High

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2462	11.7	88.69	100.39	N/A	N/A
2400	11.7	40.39	52.09	80.39	-28.30
1642.96593	11.7	48.91	60.61	80.39	-19.78
6908.81764	11.7	44.14	55.84	80.39	-24.55

802.11n HT20 Mode Chain 0

CH Low

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2412	11.7	84.72	96.42	N/A	N/A
2400	11.7	46.57	58.27	76.42	-18.15
1607.25451	11.7	48.76	60.46	76.42	-15.96
6955.91182	11.7	44.17	55.87	76.42	-20.55

CH Mid

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2437	11.7	85.41	97.11	N/A	N/A
2400	11.7	42.50	54.2	77.11	-22.91
1625.11022	11.7	50.21	61.91	77.11	-15.20
6626.25251	11.7	44.90	56.6	77.11	-20.51

CH High

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2462	11.7	85.33	97.03	N/A	N/A
2400	11.7	40.94	52.64	77.03	-24.39
1642.96593	11.7	46.99	58.69	77.03	-18.34
6955.91182	11.7	45.51	57.21	77.03	-19.82

802.11n HT20 Mode Chain 1

CH Low

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2412	11.7	86.57	98.27	N/A	N/A
2400	11.7	46.95	58.65	78.27	-19.62
1607.25451	11.7	51.97	63.67	78.27	-14.60
6955.91182	11.7	44.77	56.47	78.27	-21.80

CH Mid

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2437	11.7	87.15	98.85	N/A	N/A
2400	11.7	39.94	51.64	78.85	-27.21
1625.11022	11.7	51.81	63.51	78.85	-15.34
6955.91182	11.7	44.31	56.01	78.85	-22.84

CH High

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2462	11.7	88.28	99.98	N/A	N/A
2400	11.7	41.36	53.06	79.98	-26.92
1642.96593	11.7	52.97	64.67	79.98	-15.31
6955.91182	11.7	45.44	57.14	79.98	-22.84

802.11n HT40 Mode Chain 0

CH Low

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2422	11.7	82.43	94.13	N/A	N/A
2400	11.7	46.53	58.23	74.13	-15.90
1613.20641	11.7	47.62	59.32	74.13	-14.81
6955.91182	11.7	44.55	56.25	74.13	-17.88

CH Mid

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2437	11.7	82.42	94.12	N/A	N/A
2400	11.7	43.55	55.25	74.12	-18.87
1625.11022	11.7	49.60	61.3	35.25	26.05
6814.62926	11.7	44.18	55.88	74.12	-18.24

CH High

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2452	11.7	82.20	93.9	N/A	N/A
2400	11.7	41.72	53.42	73.90	-20.48
1637.01403	11.7	47.87	59.57	73.90	-14.33
6955.91182	11.7	44.30	56	73.90	-17.90

802.11n HT40 Mode Chain 1

CH Low

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2422	11.7	83.74	95.44	N/A	N/A
2400	11.7	46.81	58.51	75.44	-16.93
1613.20641	11.7	52.63	64.33	75.44	-11.11
6814.62926	11.7	44.57	56.27	75.44	-19.17

CH Mid

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2437	11.7	84.46	96.16	N/A	N/A
2400	11.7	45.52	57.22	76.16	-18.94
1625.11022	11.7	51.60	63.3	76.16	-12.86
6955.91182	11.7	45.36	57.06	76.16	-19.10

CH High

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2452	11.7	85.47	97.17	N/A	N/A
2400	11.7	42.01	53.71	77.17	-23.46
1637.01403	11.7	53.31	65.01	77.17	-12.16
6955.91182	11.7	44.44	56.14	77.17	-21.03

802.11n HT20 Combined Mode

CH Low

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2412	15.2	86.11	101.31	N/A	N/A
2400	15.2	46.35	61.55	81.31	-19.76
1607.25451	15.2	52.39	67.59	81.31	-13.72
6955.91182	15.2	44.00	59.2	81.31	-22.11

CH Mid

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2437	15.2	86.64	101.84	N/A	N/A
2400	15.2	40.31	55.51	81.84	-26.33
1625.11022	15.2	51.95	67.15	81.84	-14.69
6955.91182	15.2	44.58	59.78	81.84	-22.06

CH High

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2462	15.2	88.12	103.32	N/A	N/A
2400	15.2	40.39	55.59	83.32	-27.73
1642.96593	15.2	52.86	68.06	83.32	-15.26
6955.91182	15.2	44.63	59.83	83.32	-23.49

802.11n HT40 Combined Mode

CH Low

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2422	15.2	83.26	98.46	N/A	N/A
2400	15.2	44.80	60	78.46	-18.46
1613.20641	15.2	51.79	66.99	78.46	-11.47
6908.81764	15.2	44.84	60.04	78.46	-18.42

CH Mid

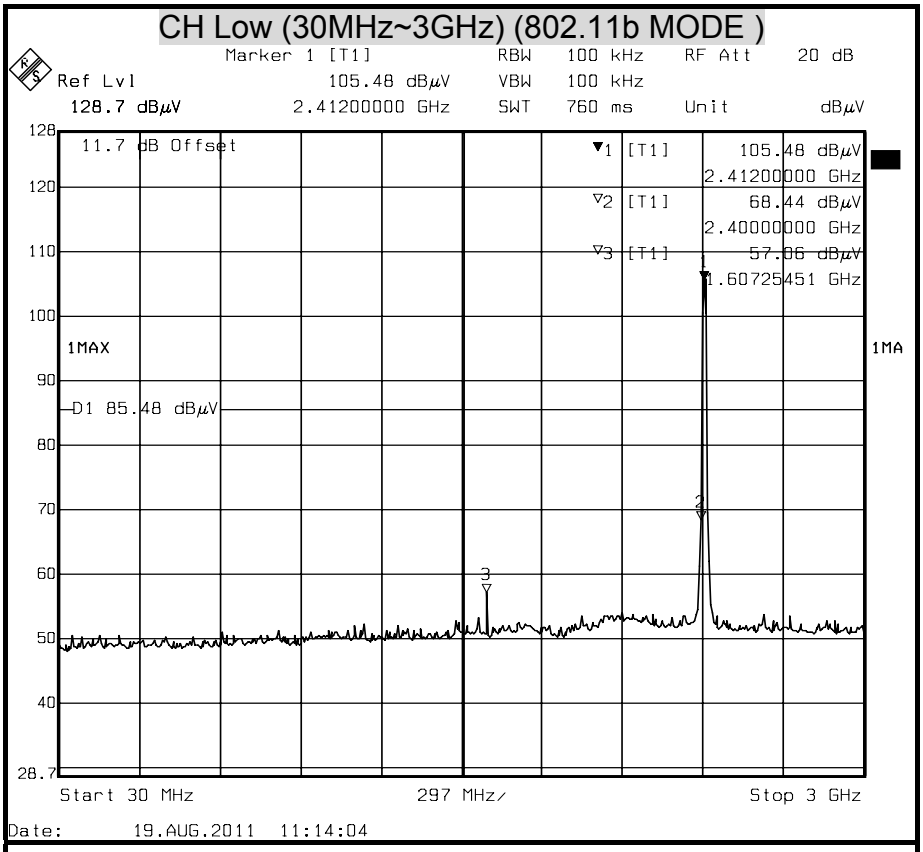
Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2437	15.2	83.91	99.11	N/A	N/A
2400	15.2	43.70	58.9	79.11	-20.21
1625.11022	15.2	51.63	66.83	79.11	-12.28
6579.15832	15.2	44.37	59.57	79.11	-19.54

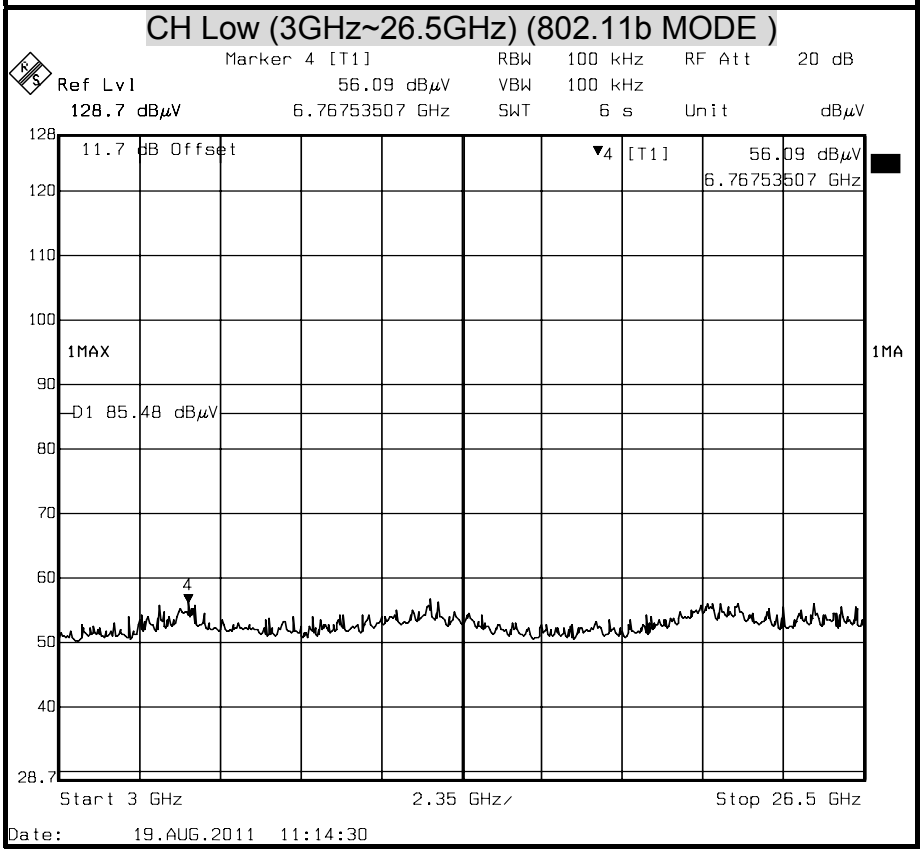
CH High

Frequency (MHz)	Offset (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)
2452	15.2	84.95	100.15	N/A	N/A
2400	15.2	40.58	55.78	80.15	-24.37
1637.01403	15.2	51.92	67.12	80.15	-13.03
6908.81764	15.2	45.24	60.44	80.15	-19.71

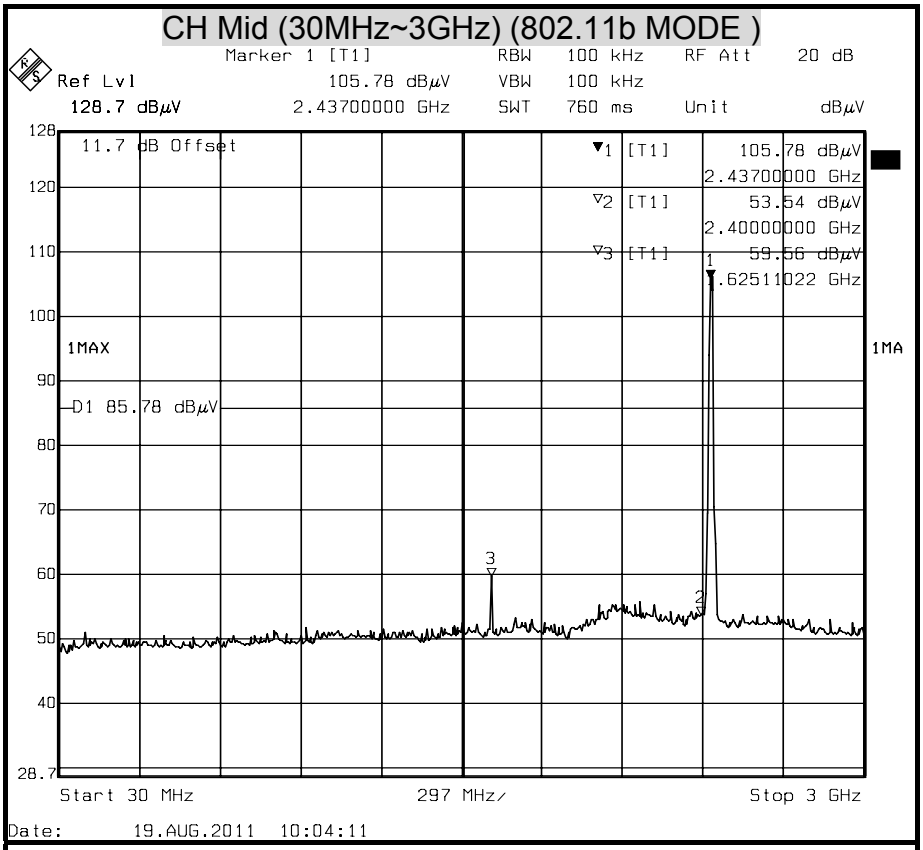
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(IEEE 802.11b MODE)

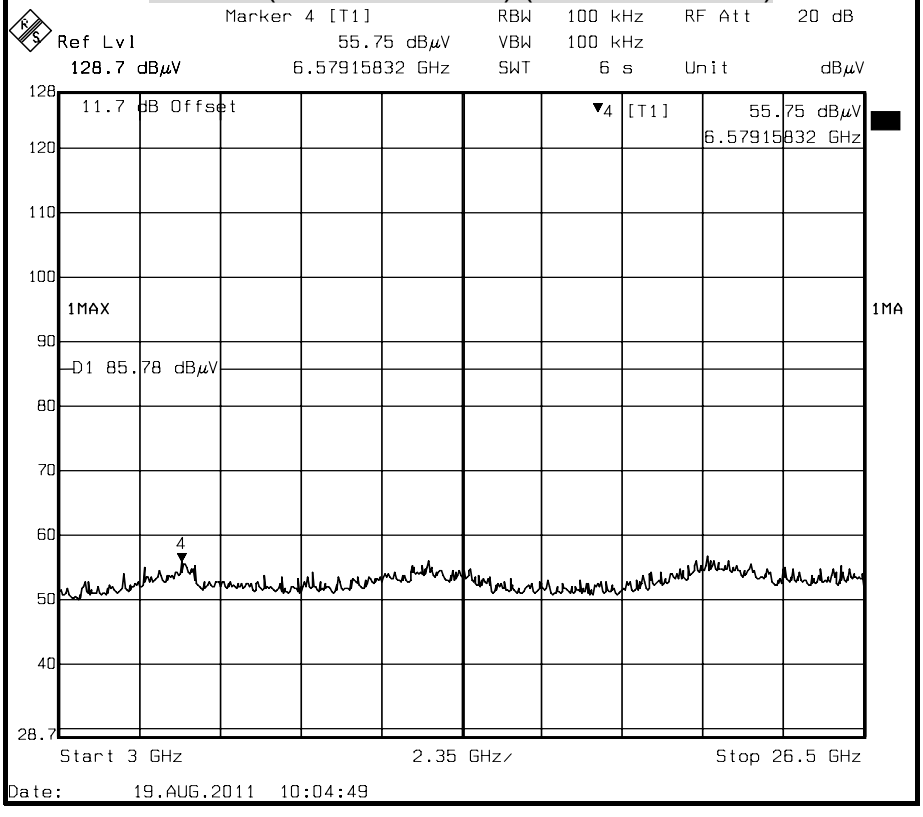




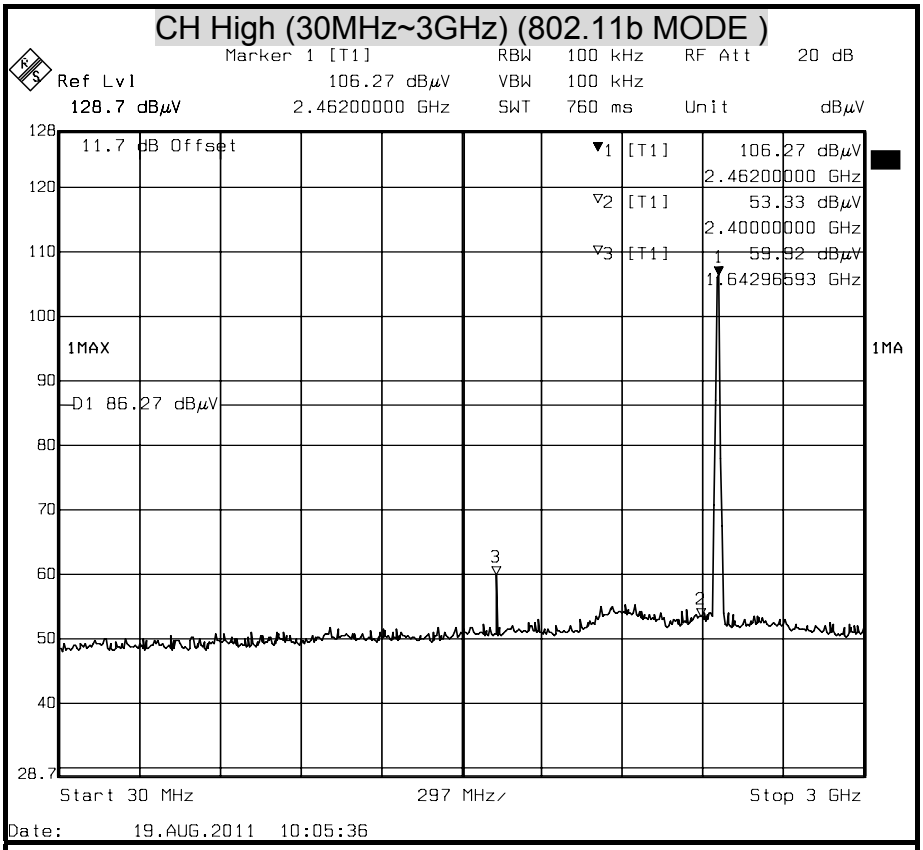
CH Mid (30MHz~3GHz) (802.11b MODE)



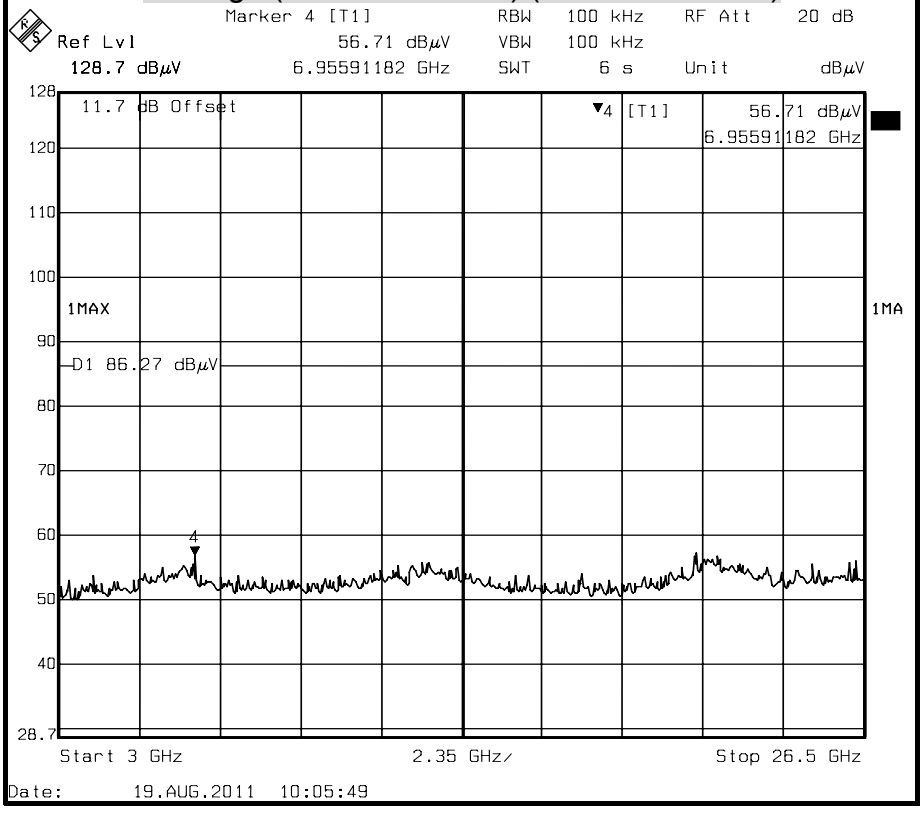
CH Mid (3GHz~26.5GHz) (802.11b MODE)



CH High (30MHz~3GHz) (802.11b MODE)



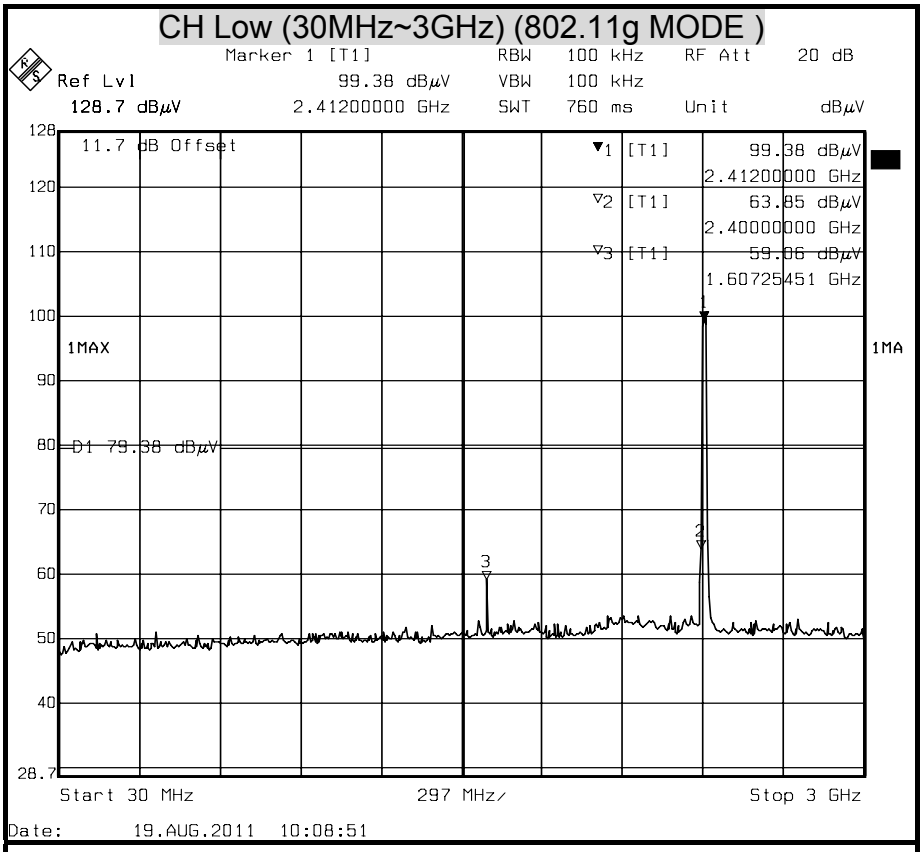
CH High (3GHz~26.5GHz) (802.11b MODE)



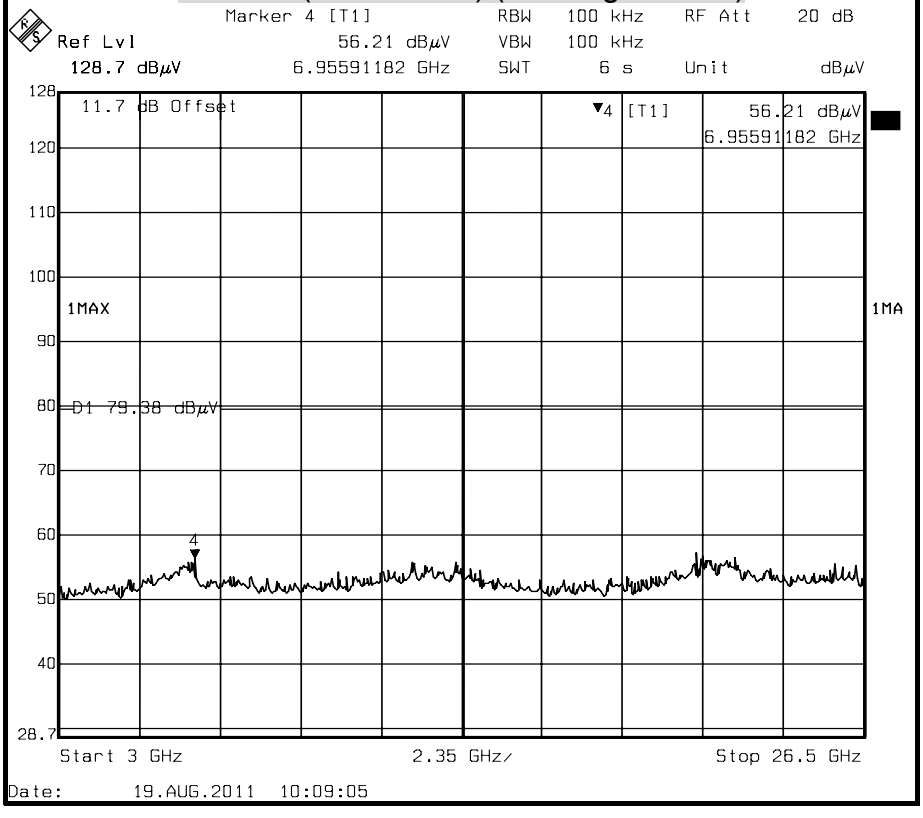
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(802.11g MODE)

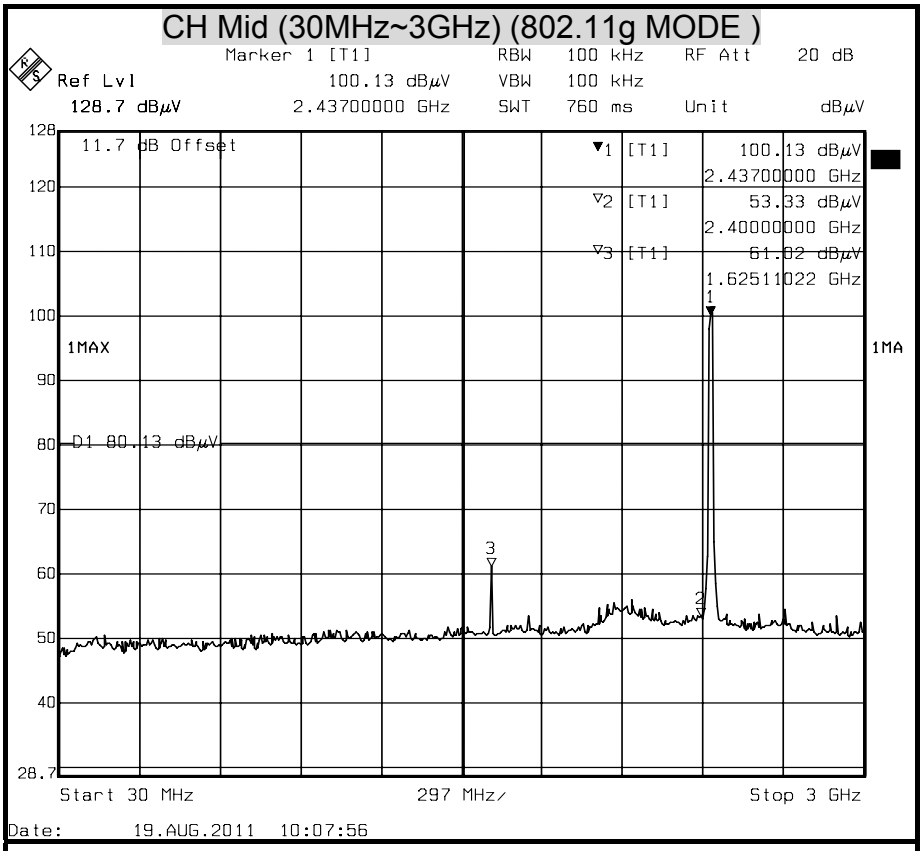
CH Low (30MHz~3GHz) (802.11g MODE)



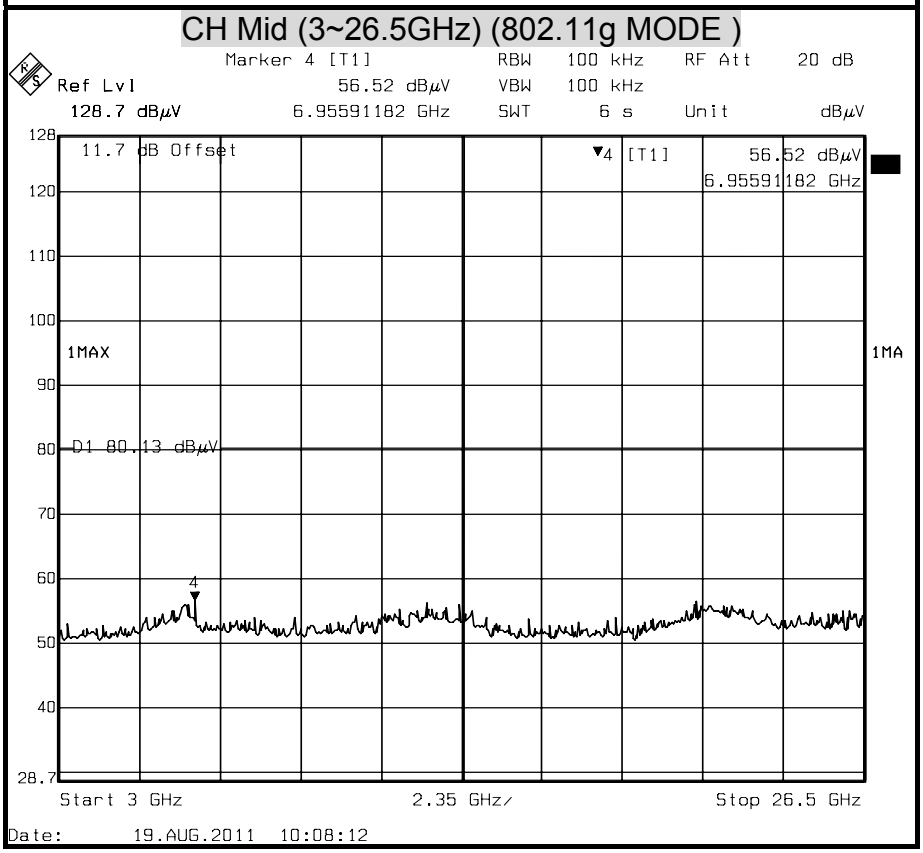
CH Low (3~26.5GHz) (802.11g MODE)



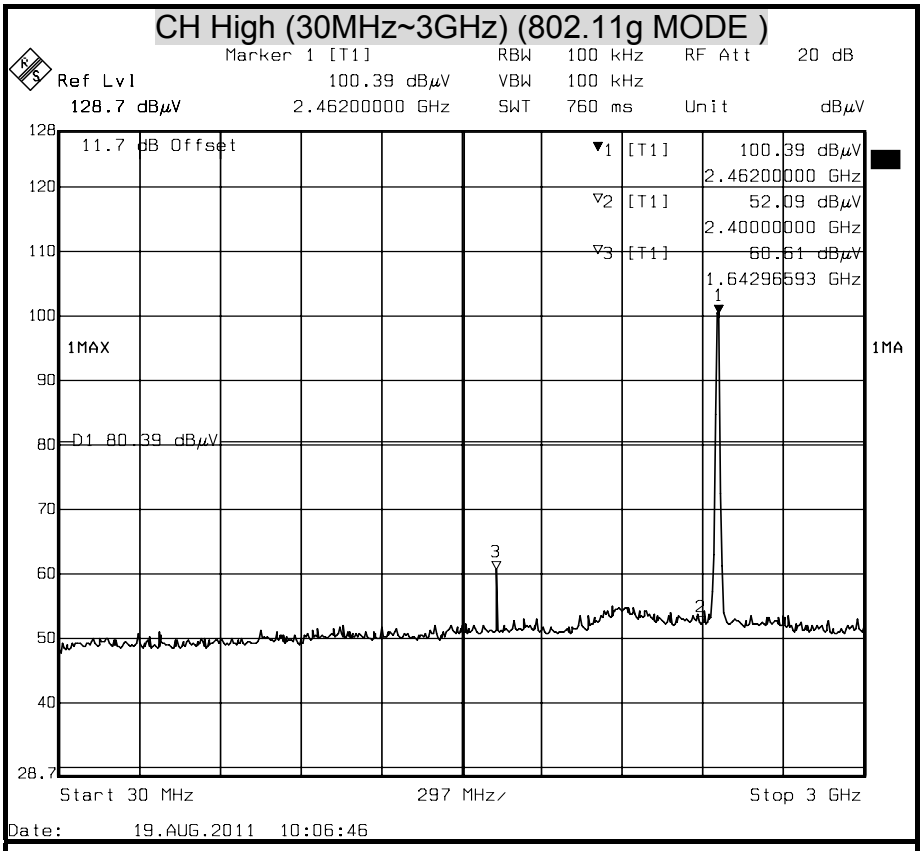
CH Mid (30MHz~3GHz) (802.11g MODE)



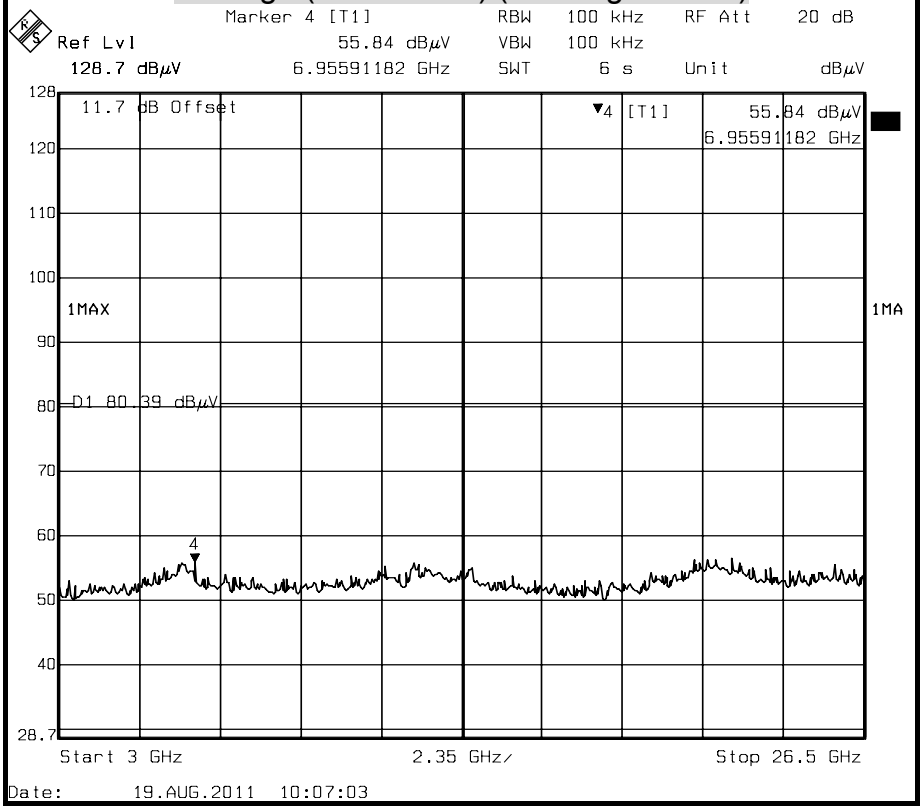
CH Mid (3~26.5GHz) (802.11g MODE)



CH High (30MHz~3GHz) (802.11g MODE)



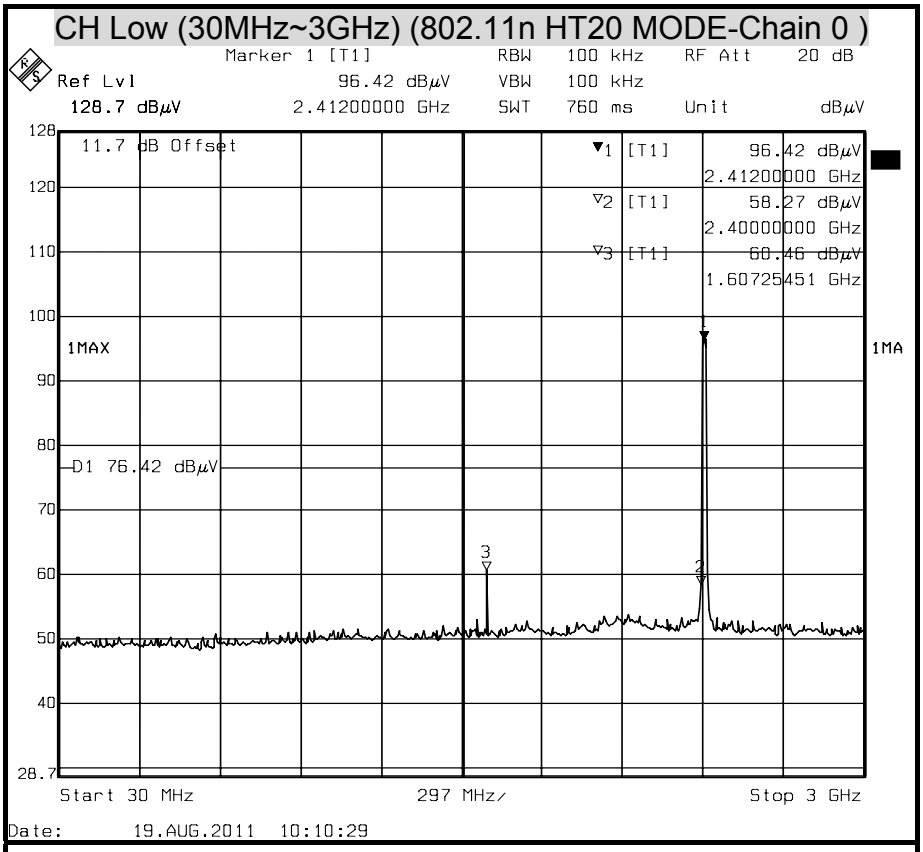
CH High (3~26.5GHz) (802.11g MODE)



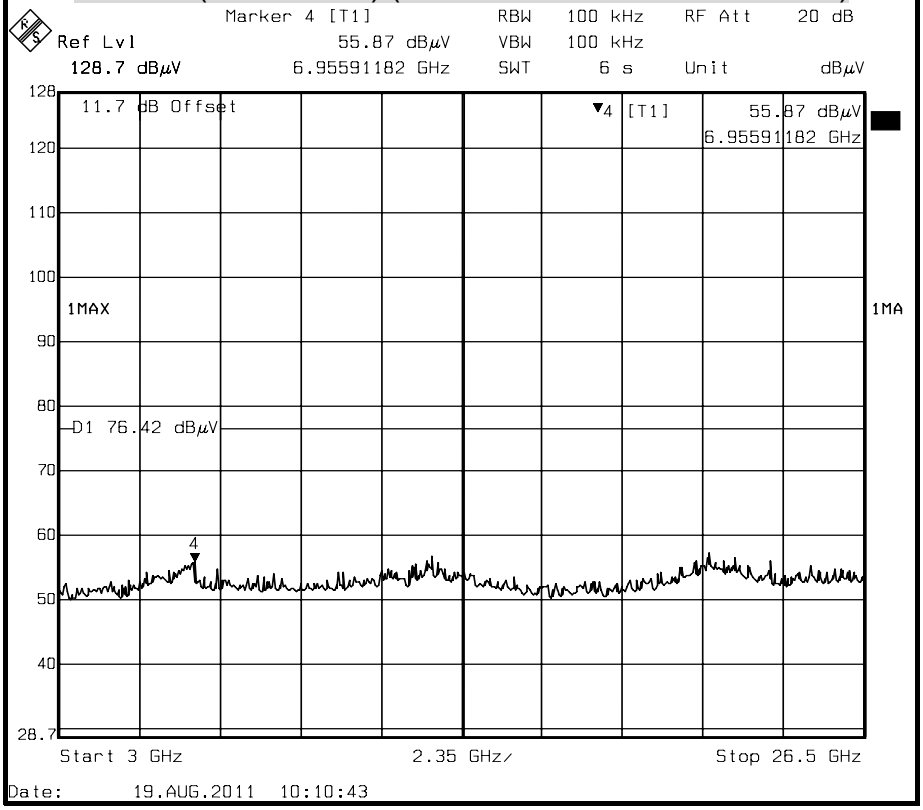
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(802.11n HT20 MODE)

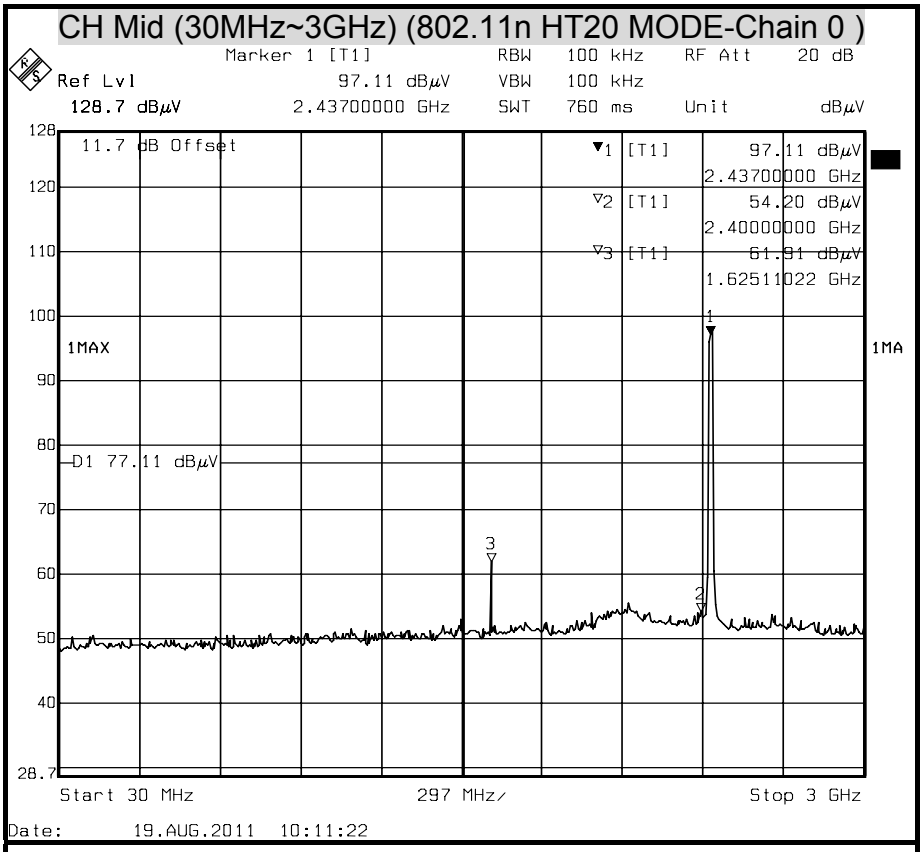
CH Low (30MHz~3GHz) (802.11n HT20 MODE-Chain 0)



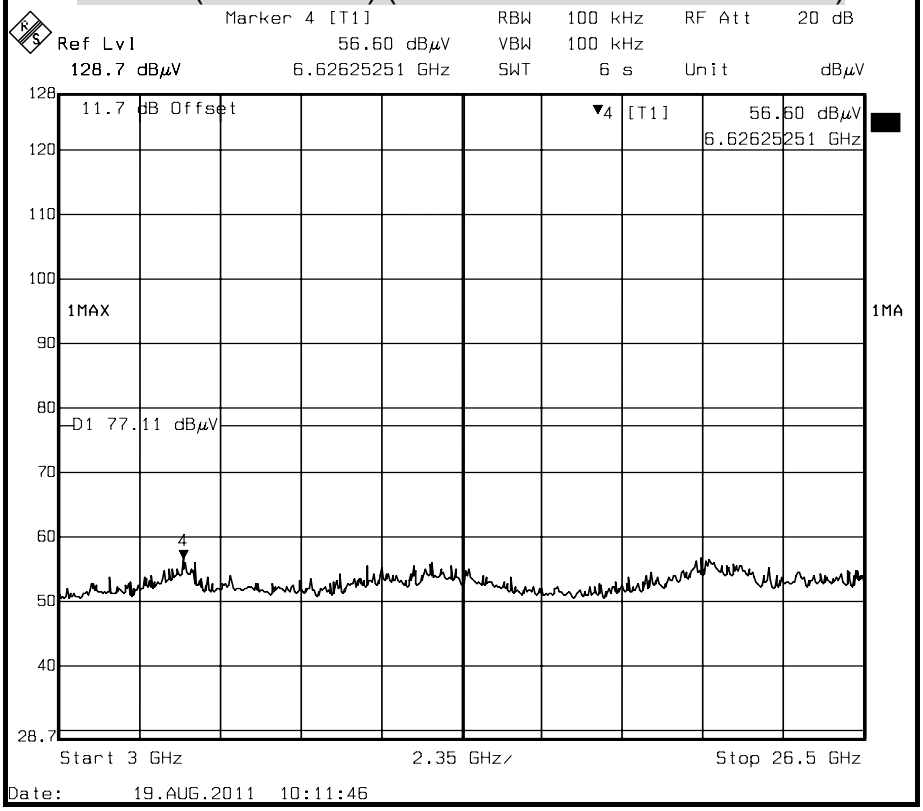
CH Low (3~26.5GHz) (802.11n HT20 MODE-Chain 0)



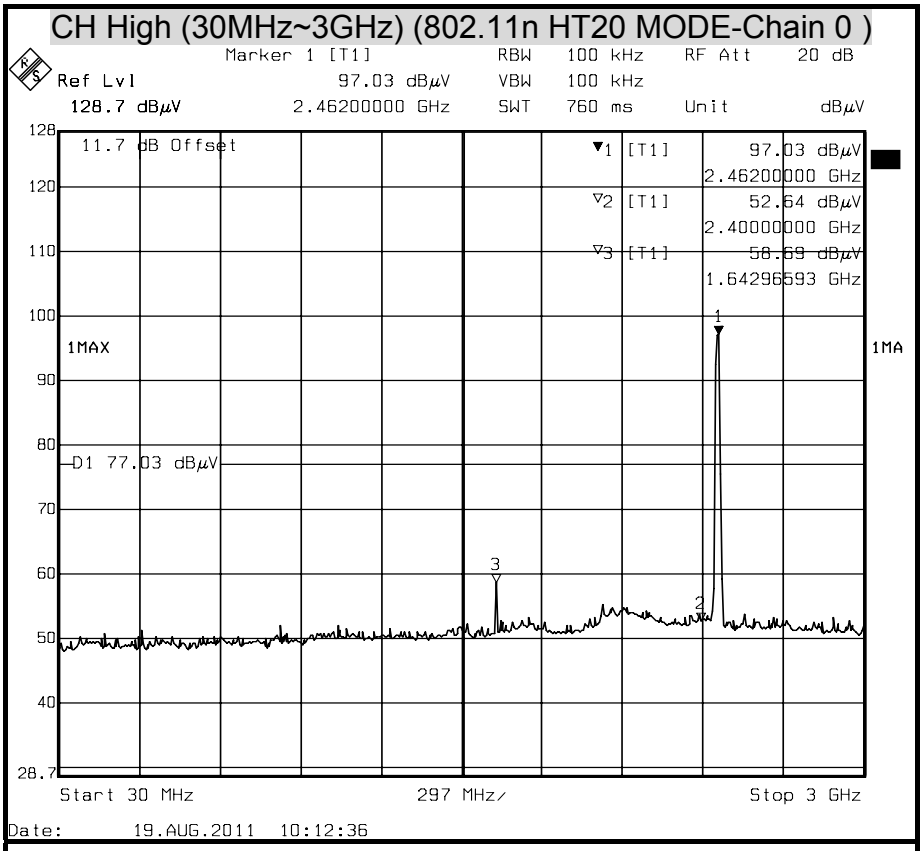
CH Mid (30MHz~3GHz) (802.11n HT20 MODE-Chain 0)



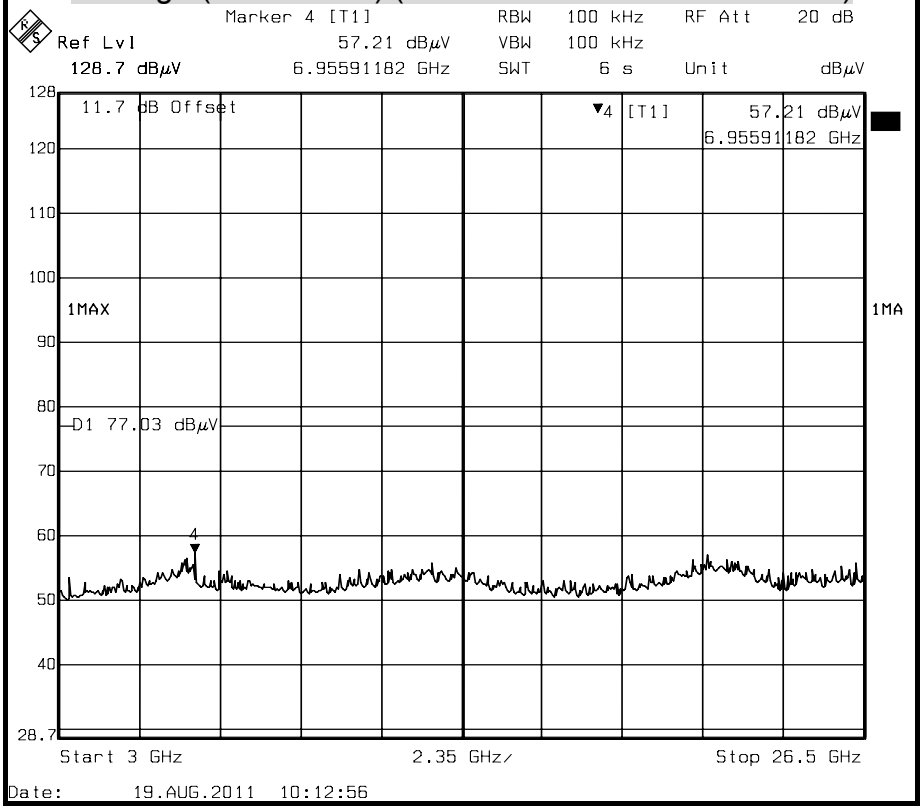
CH Mid (3~26.5GHz) (802.11n HT20 MODE-Chain 0)



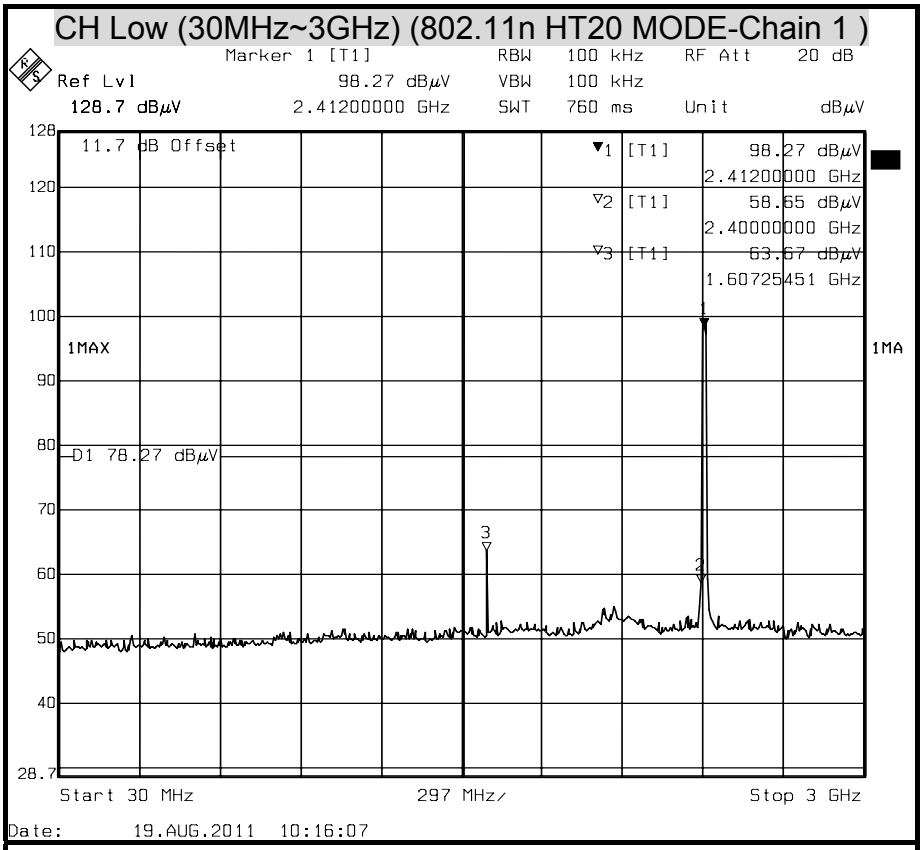
CH High (30MHz~3GHz) (802.11n HT20 MODE-Chain 0)



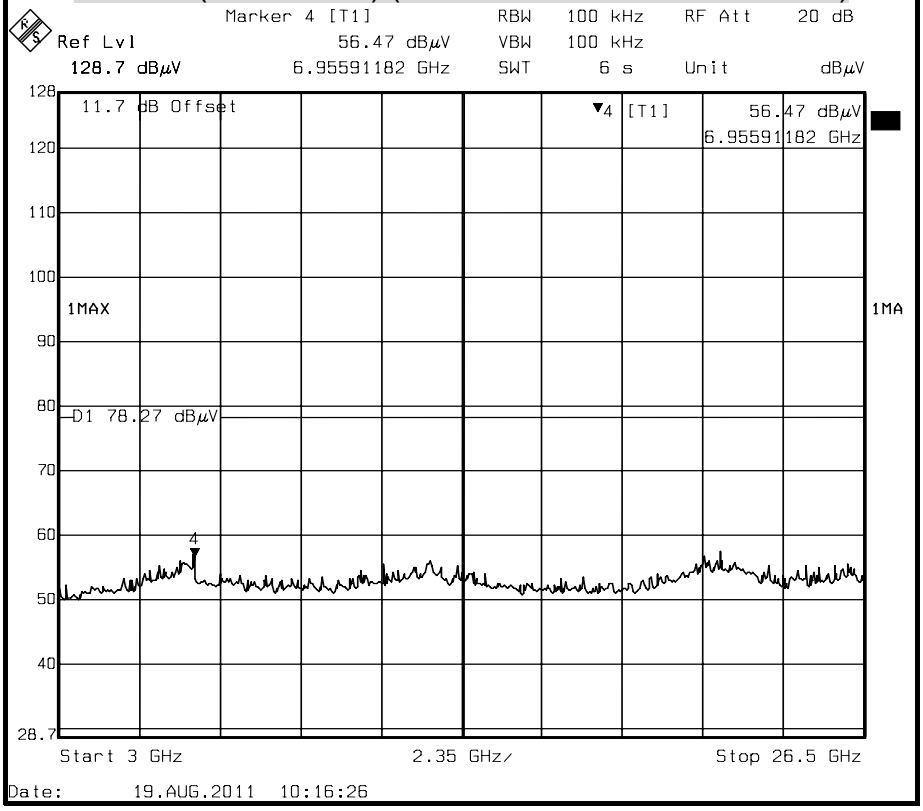
CH High (3~26.5GHz) (802.11n HT20 MODE-Chain 0)



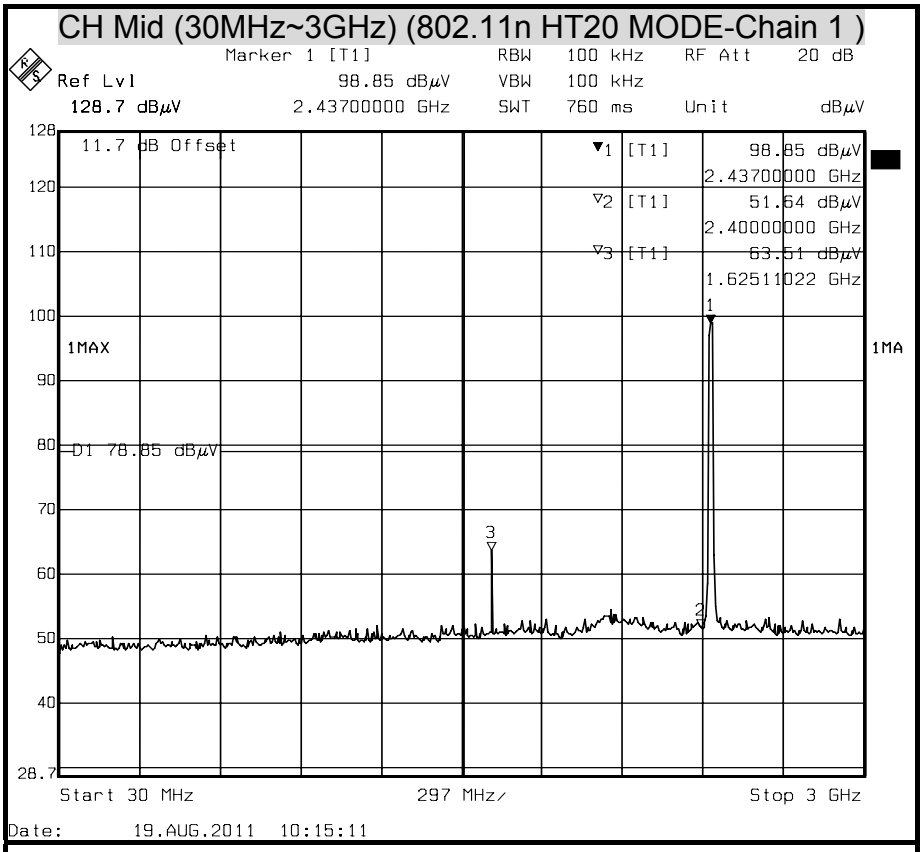
CH Low (30MHz~3GHz) (802.11n HT20 MODE-Chain 1)



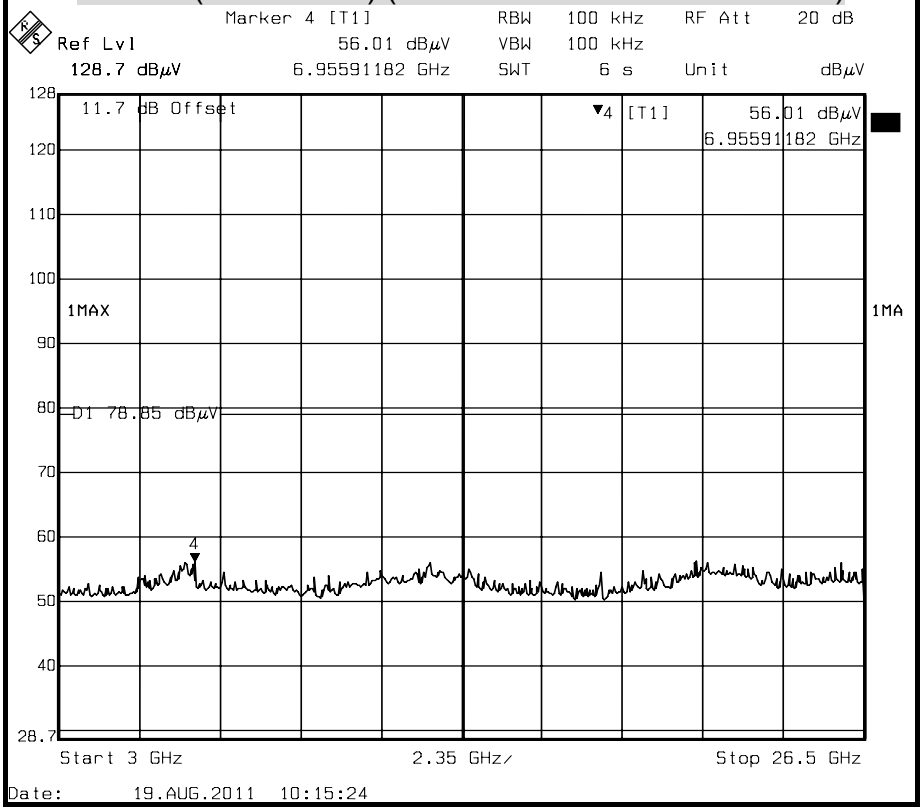
CH Low (3~26.5GHz) (802.11n HT20 MODE-Chain 1)



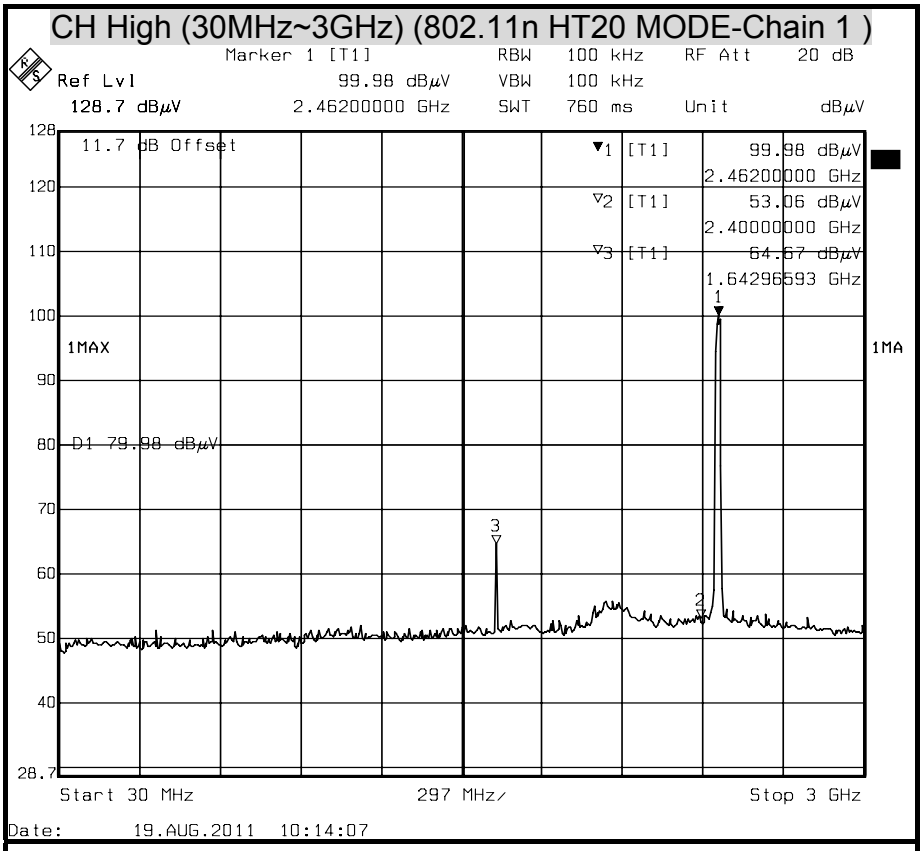
CH Mid (30MHz~3GHz) (802.11n HT20 MODE-Chain 1)



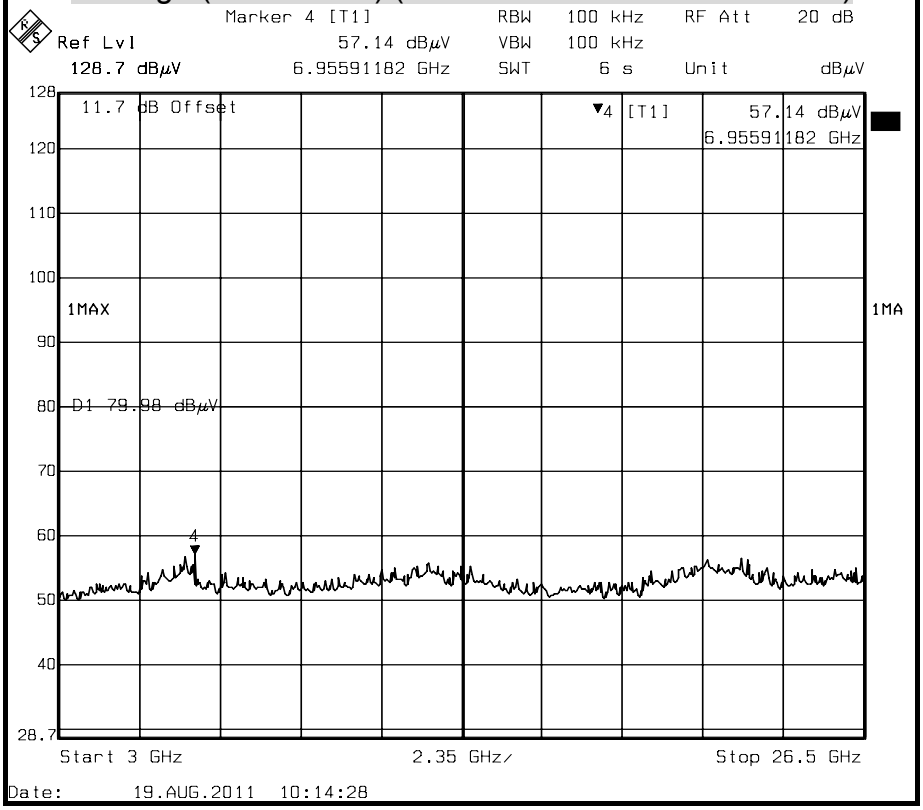
CH Mid (3~26.5GHz) (802.11n HT20 MODE-Chain 1)



CH High (30MHz~3GHz) (802.11n HT20 MODE-Chain 1)



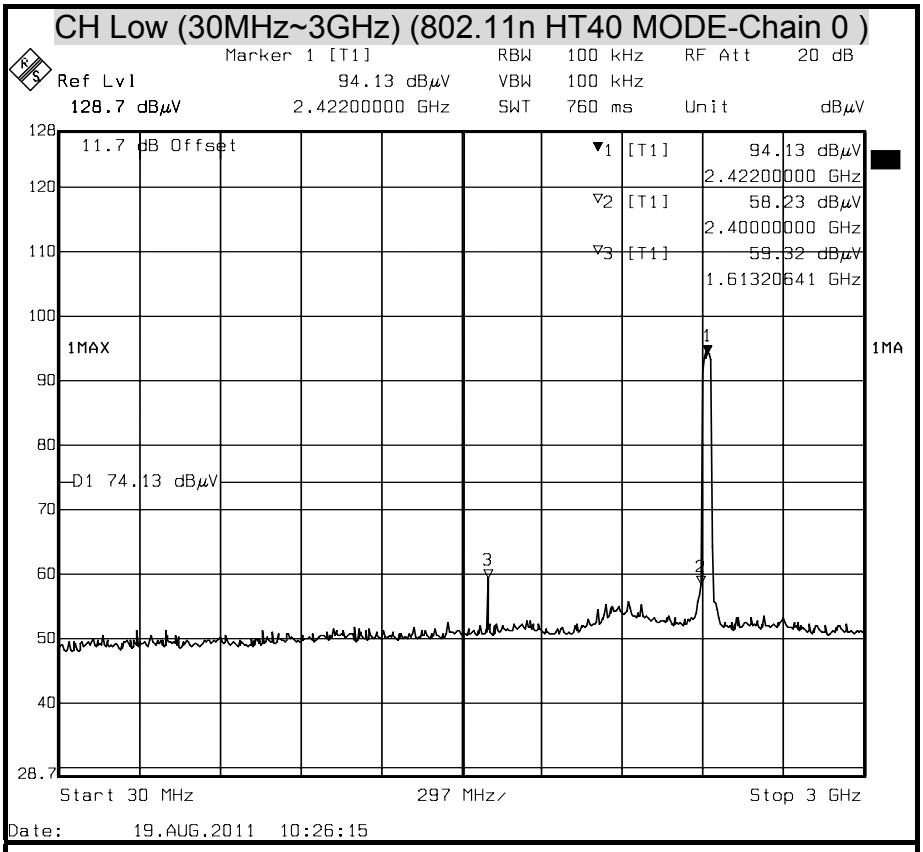
CH High (3~26.5GHz) (802.11n HT20 MODE-Chain 1)



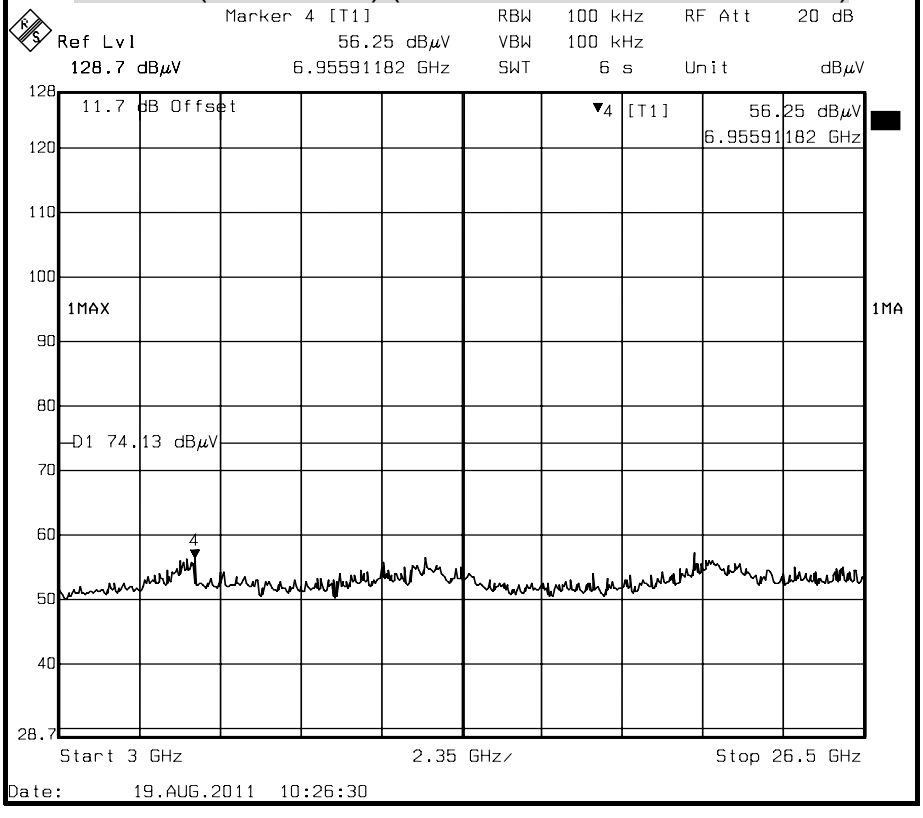
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(802.11n HT40 MODE)

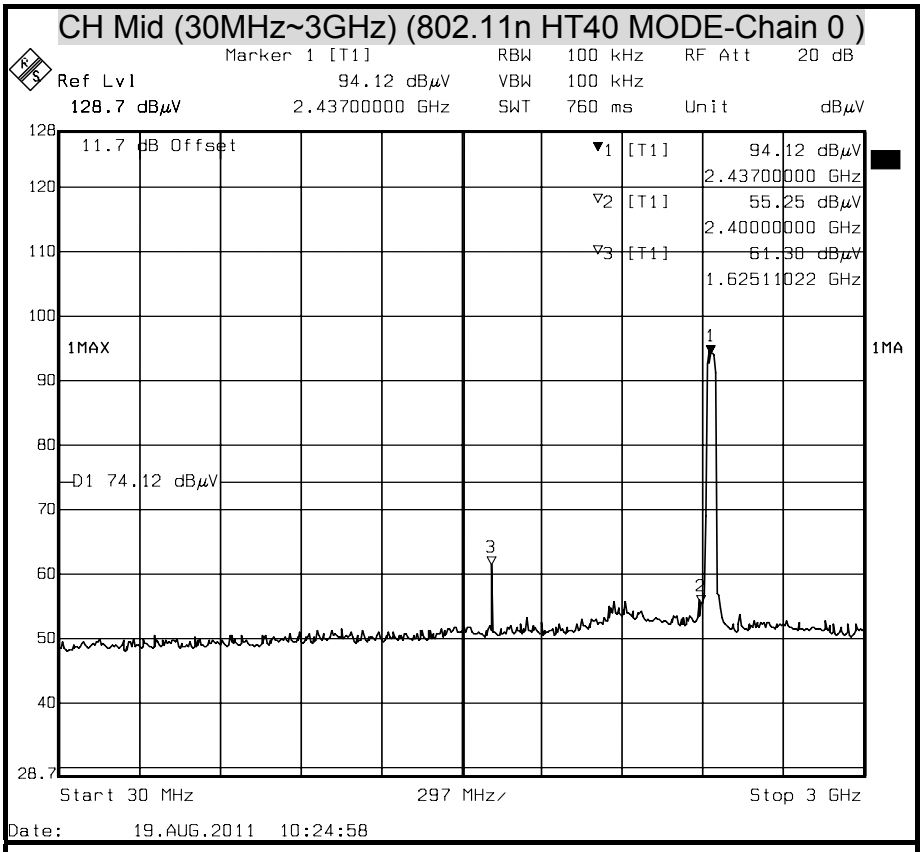
CH Low (30MHz~3GHz) (802.11n HT40 MODE-Chain 0)



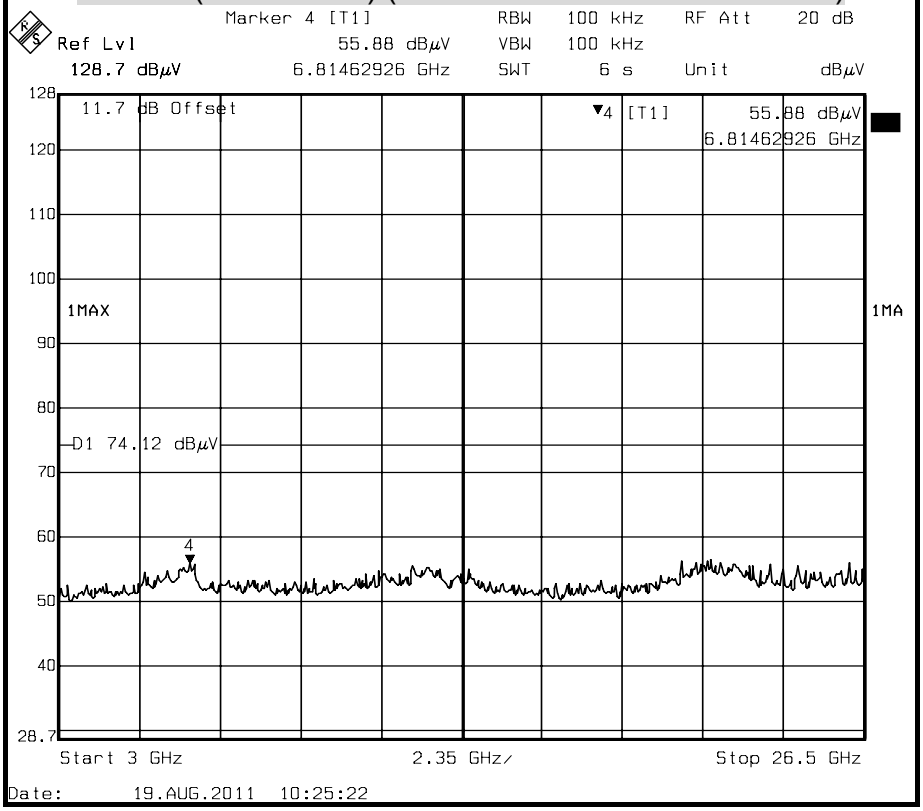
CH Low (3~26.5GHz) (802.11n HT40 MODE-Chain 0)



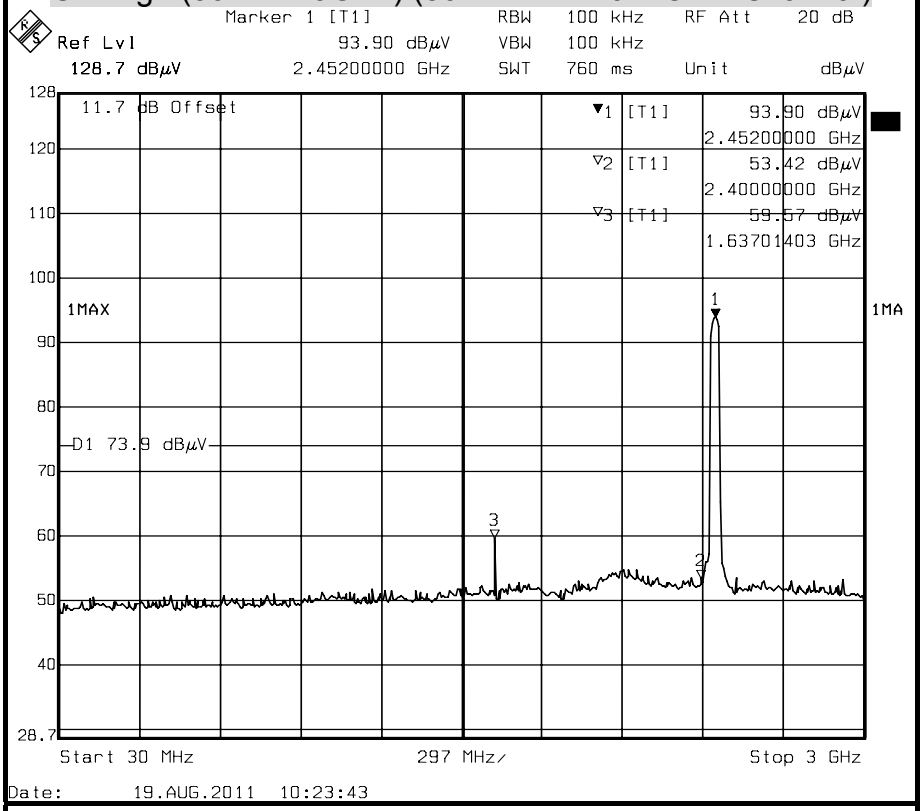
CH Mid (30MHz~3GHz) (802.11n HT40 MODE-Chain 0)



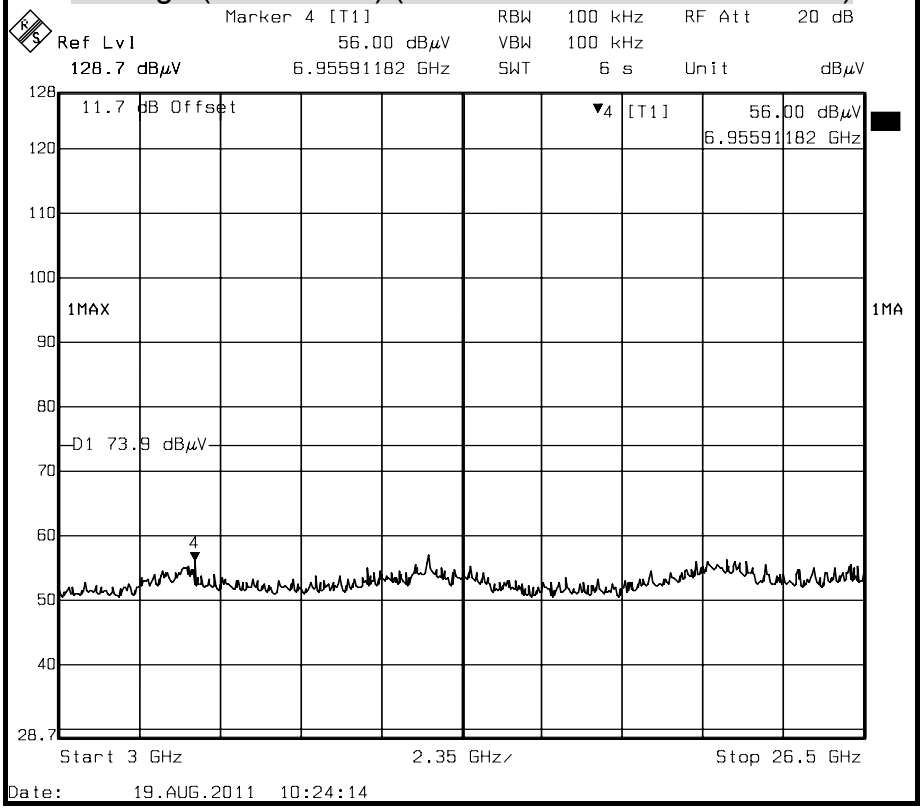
CH Mid (3~26.5GHz) (802.11n HT40 MODE-Chain 0)



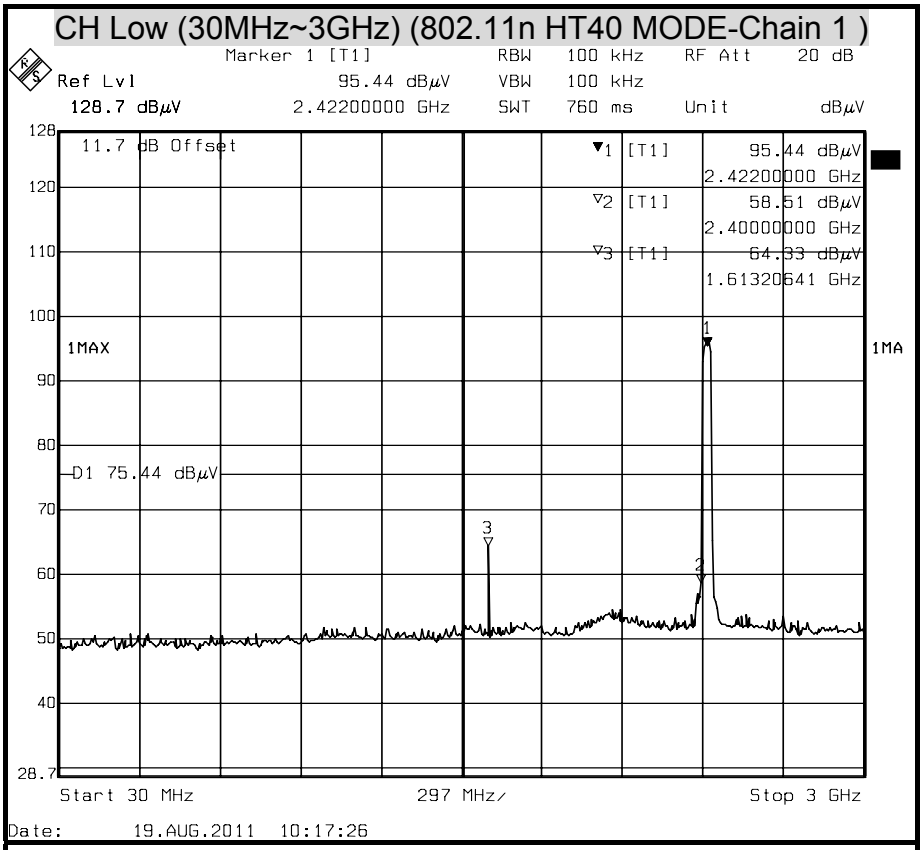
CH High (30MHz~3GHz) (802.11n HT40 MODE-Chain 0)



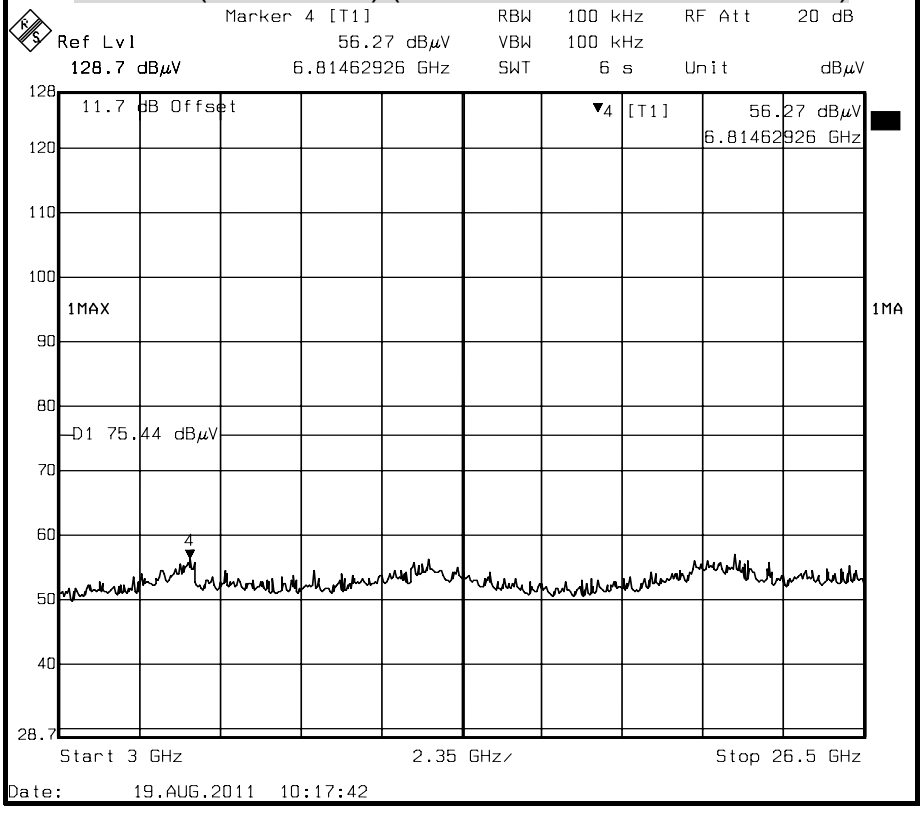
CH High (3~26.5GHz) (802.11n HT40 MODE-Chain 0)



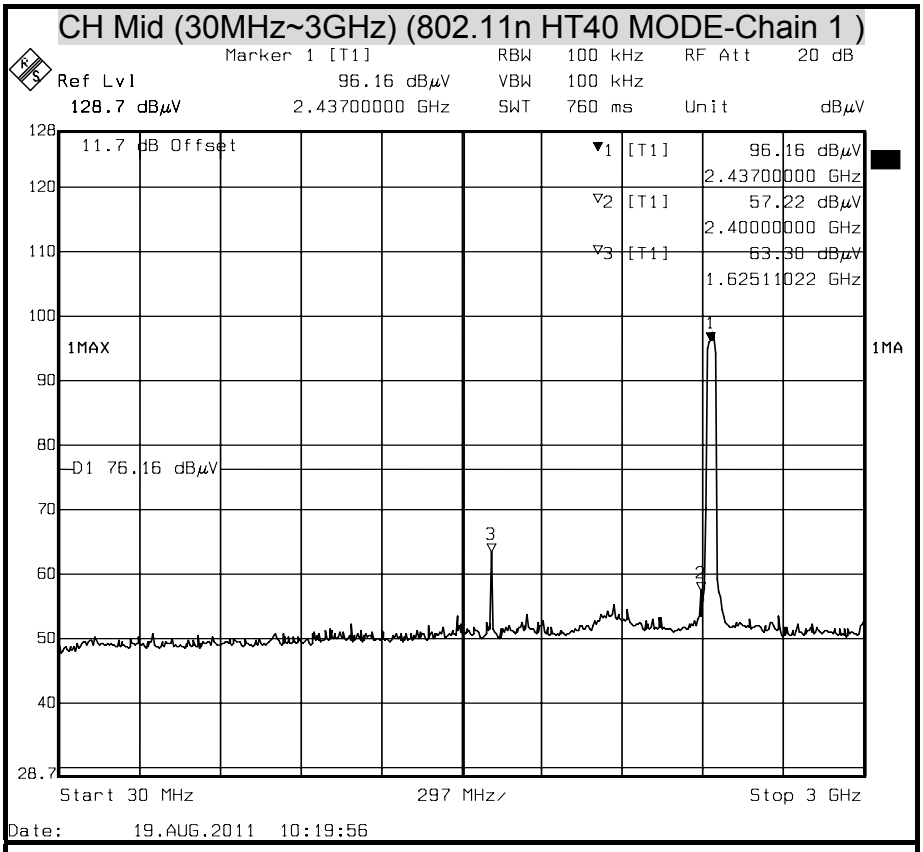
CH Low (30MHz~3GHz) (802.11n HT40 MODE-Chain 1)



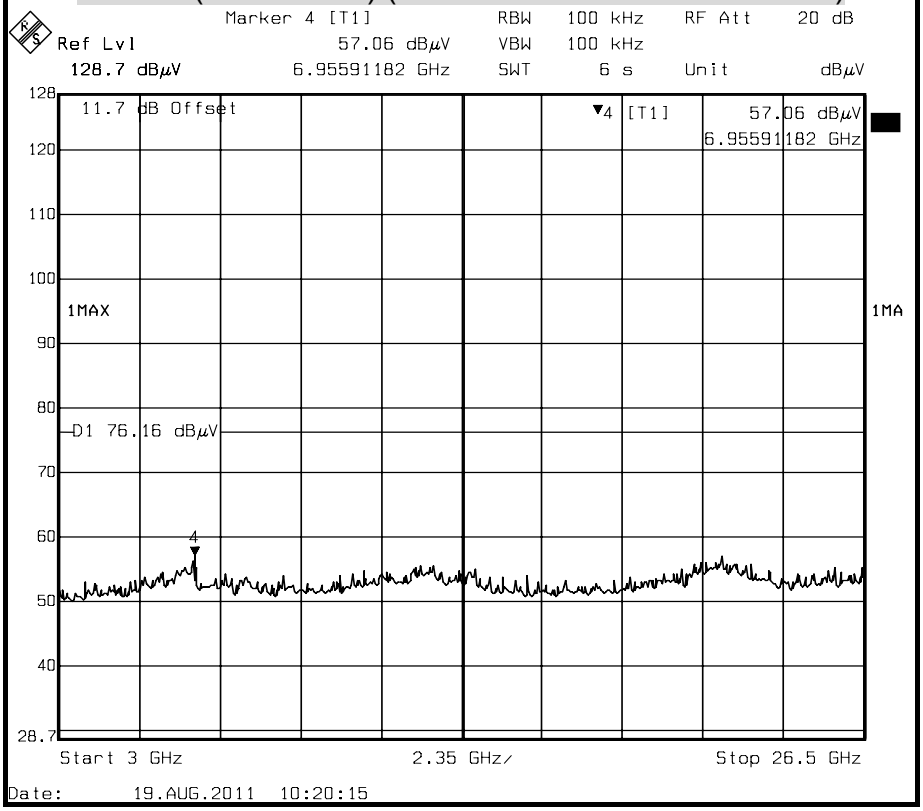
CH Low (3~26.5GHz) (802.11n HT40 MODE-Chain 1)



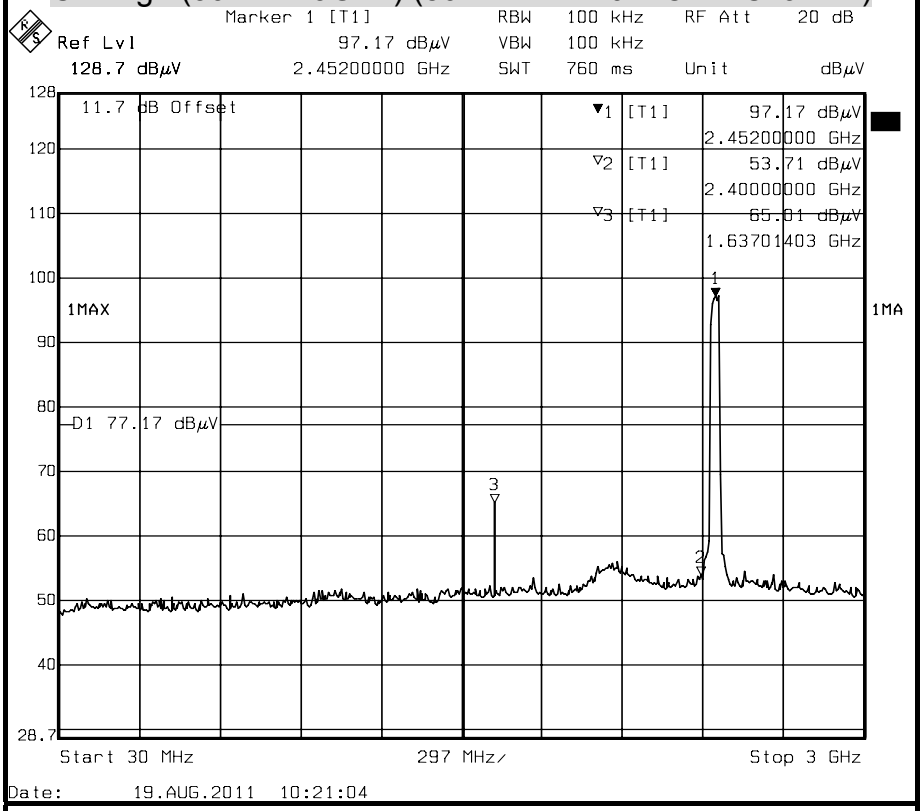
CH Mid (30MHz~3GHz) (802.11n HT40 MODE-Chain 1)



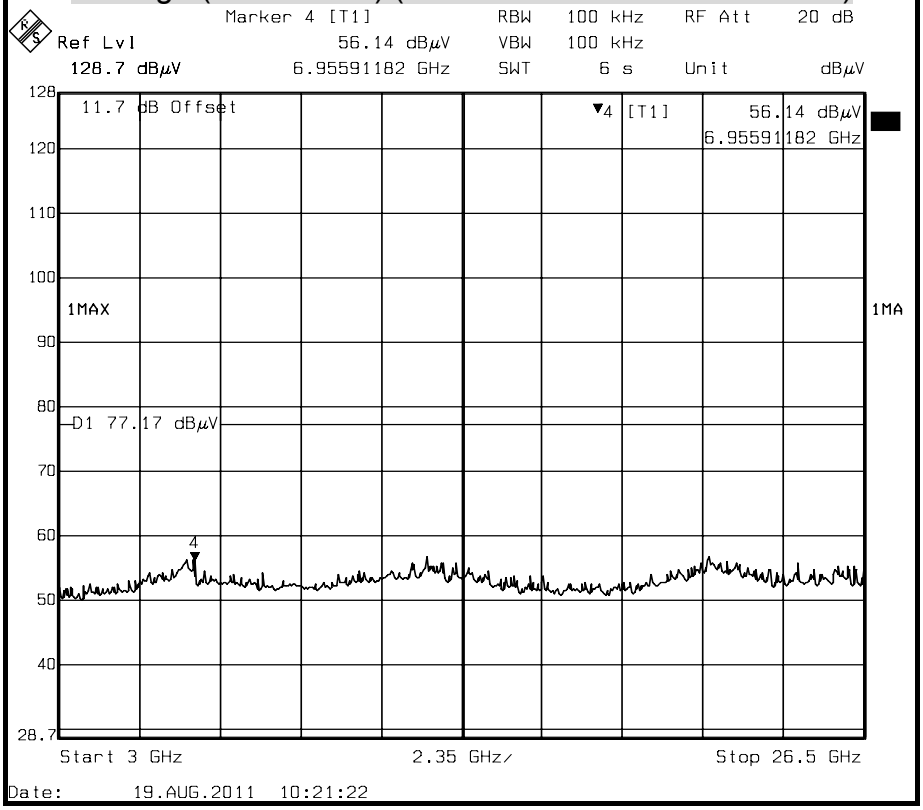
CH Mid (3~26.5GHz) (802.11n HT40 MODE-Chain 1)



CH High (30MHz~3GHz) (802.11n HT40 MODE-Chain 1)



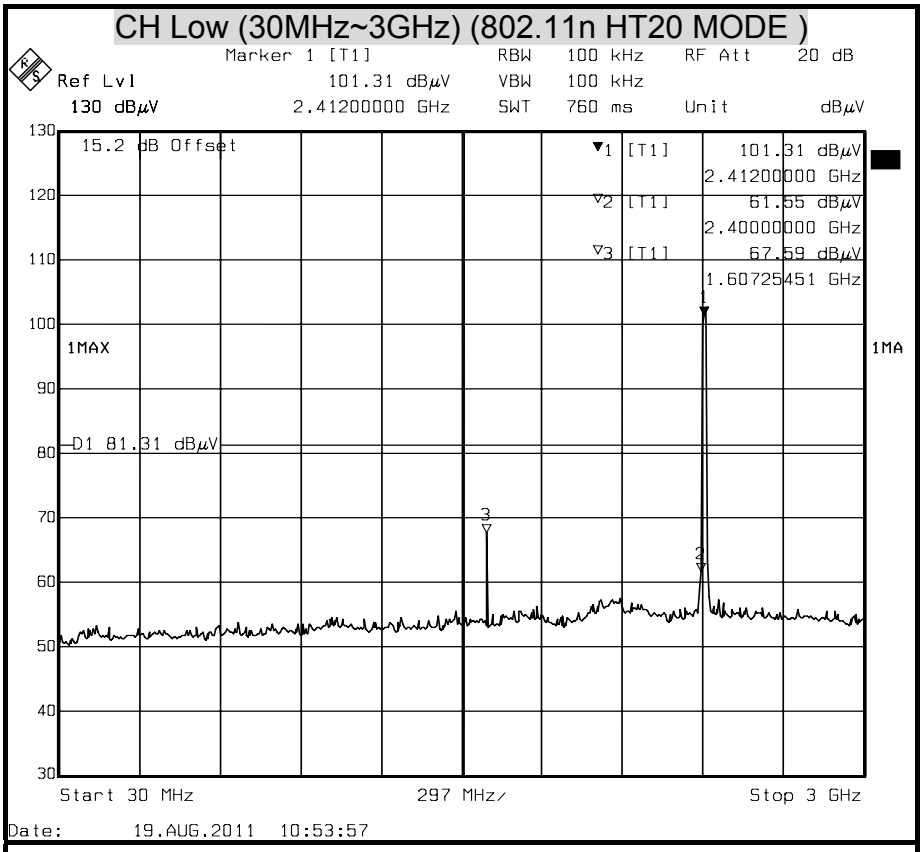
CH High (3~26.5GHz) (802.11n HT40 MODE-Chain 1)



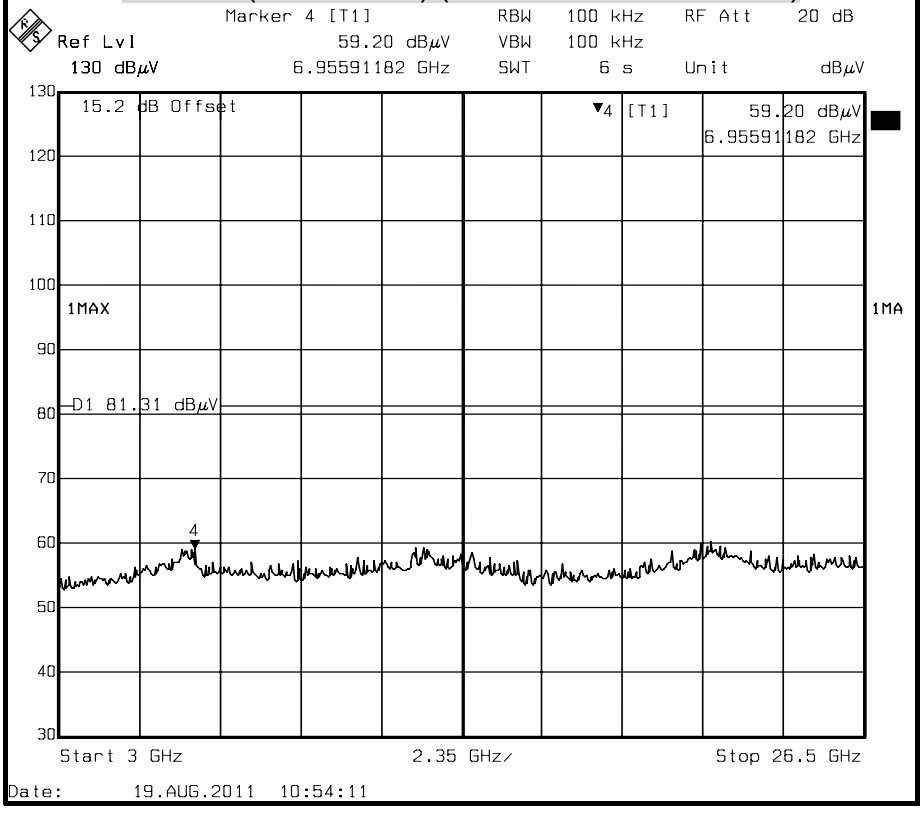
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(802.11n HT20 Combined Mode)

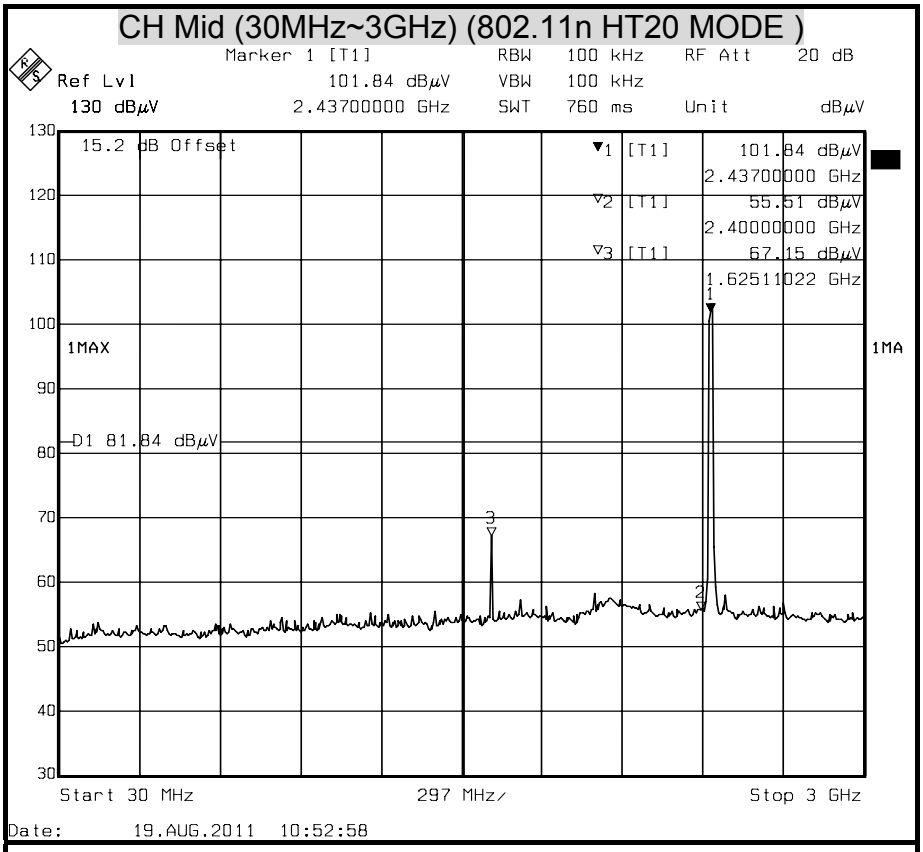
CH Low (30MHz~3GHz) (802.11n HT20 MODE)



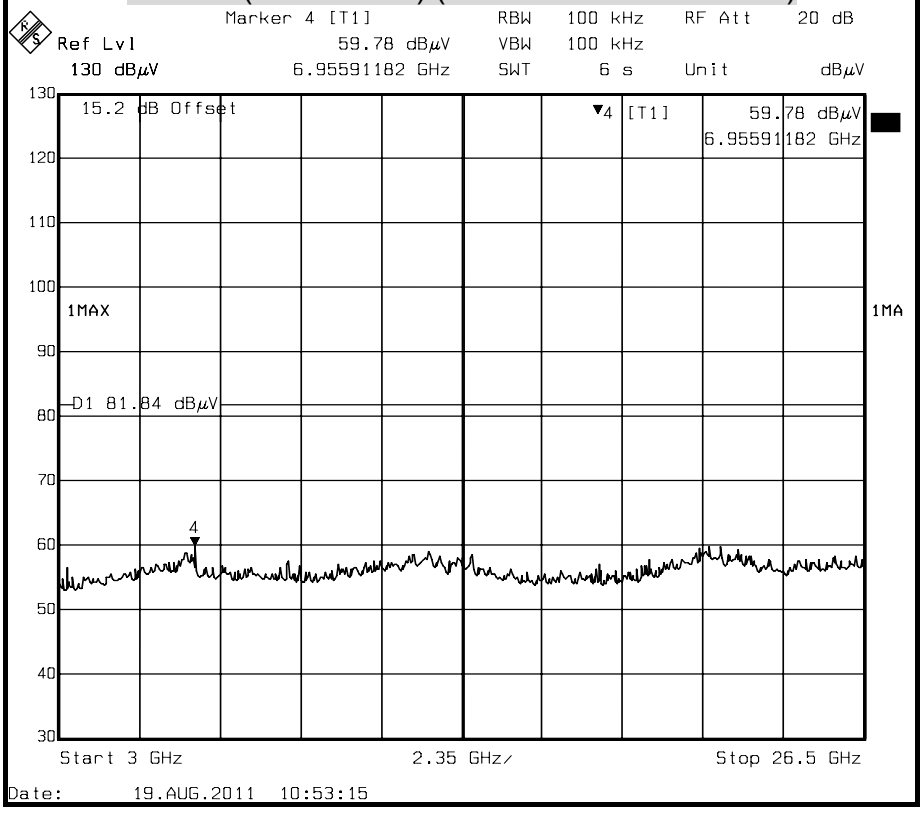
CH Low (3~26.5GHz) (802.11n HT20 MODE)



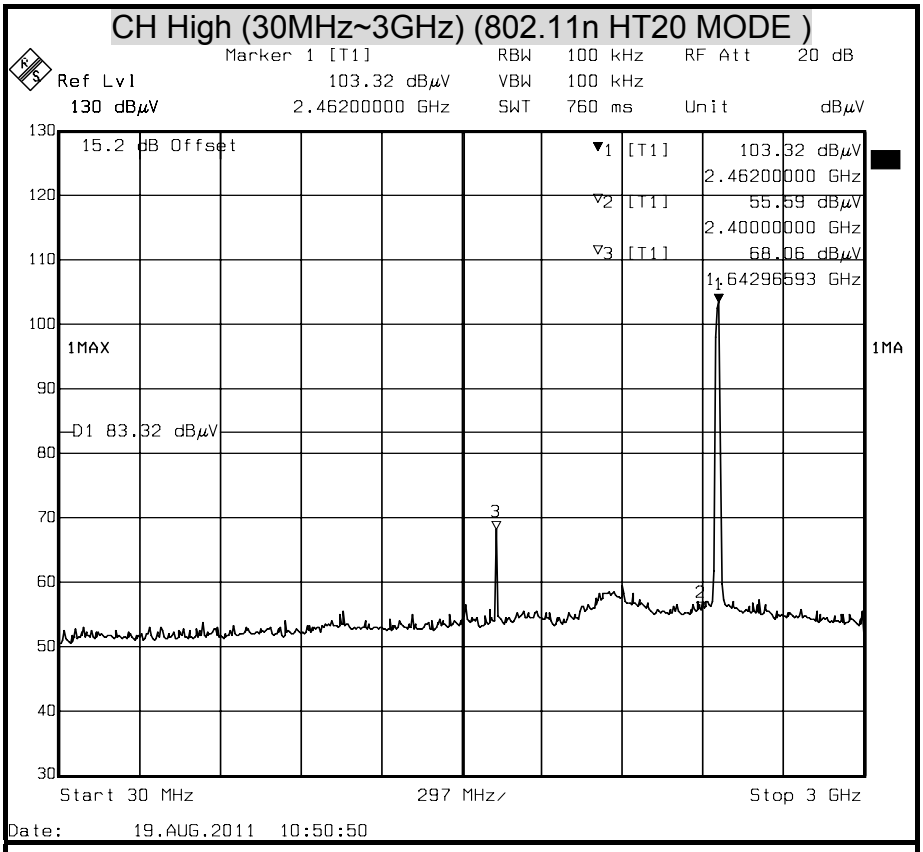
CH Mid (30MHz~3GHz) (802.11n HT20 MODE)



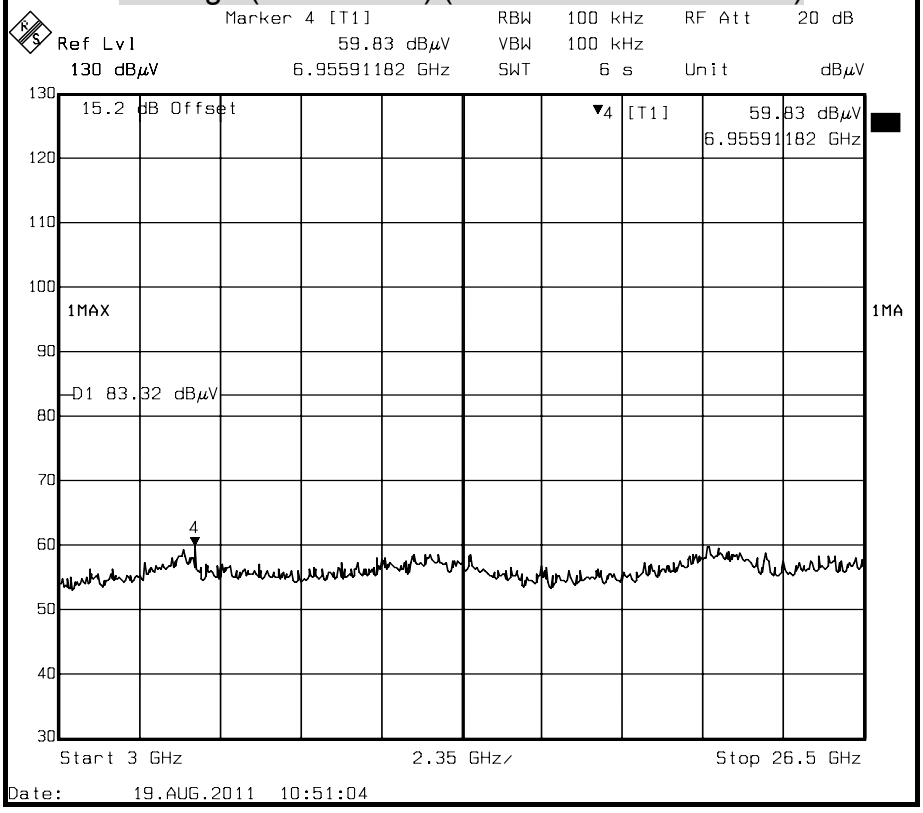
CH Mid (3~26.5GHz) (802.11n HT20 MODE)



CH High (30MHz~3GHz) (802.11n HT20 MODE)



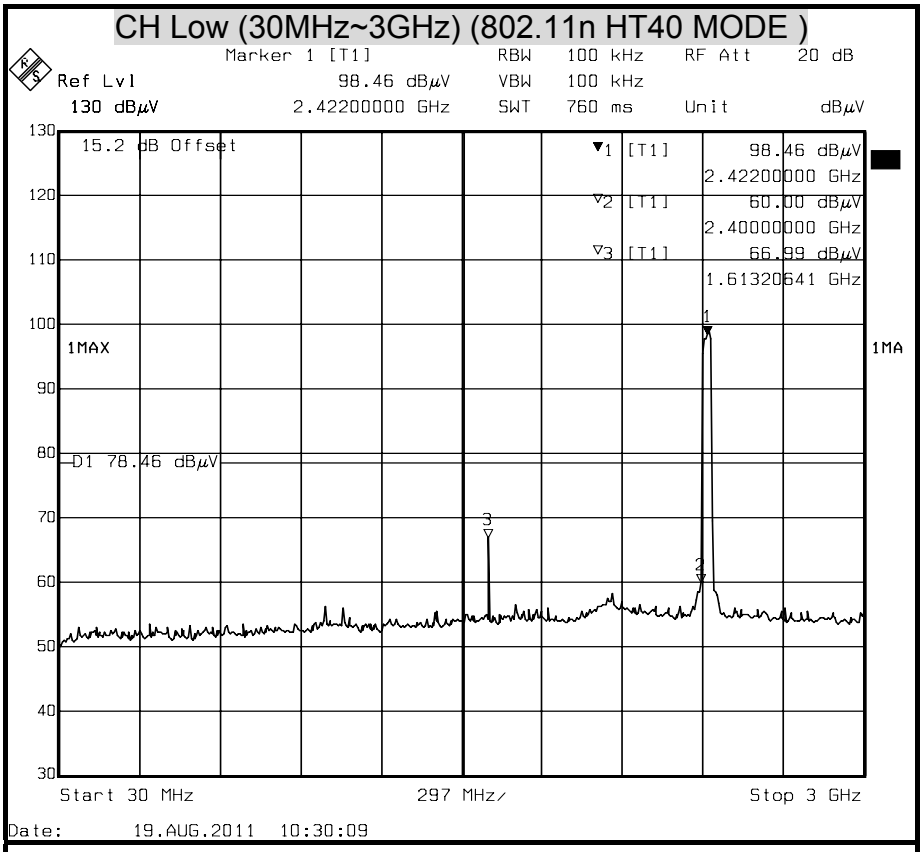
CH High (3~26.5GHz) (802.11n HT20 MODE)



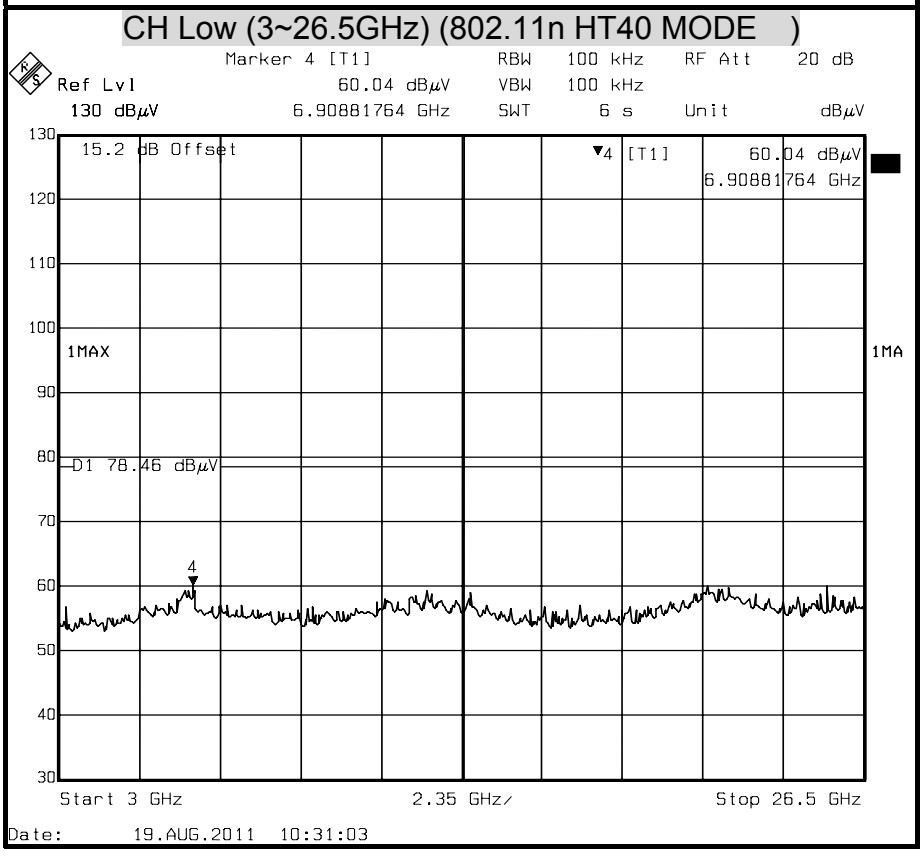
OUT-OF-BAND SPURIOUS EMISSIONS-CONDUCTED MEASUREMENT

(802.11n HT40 Combined Mode)

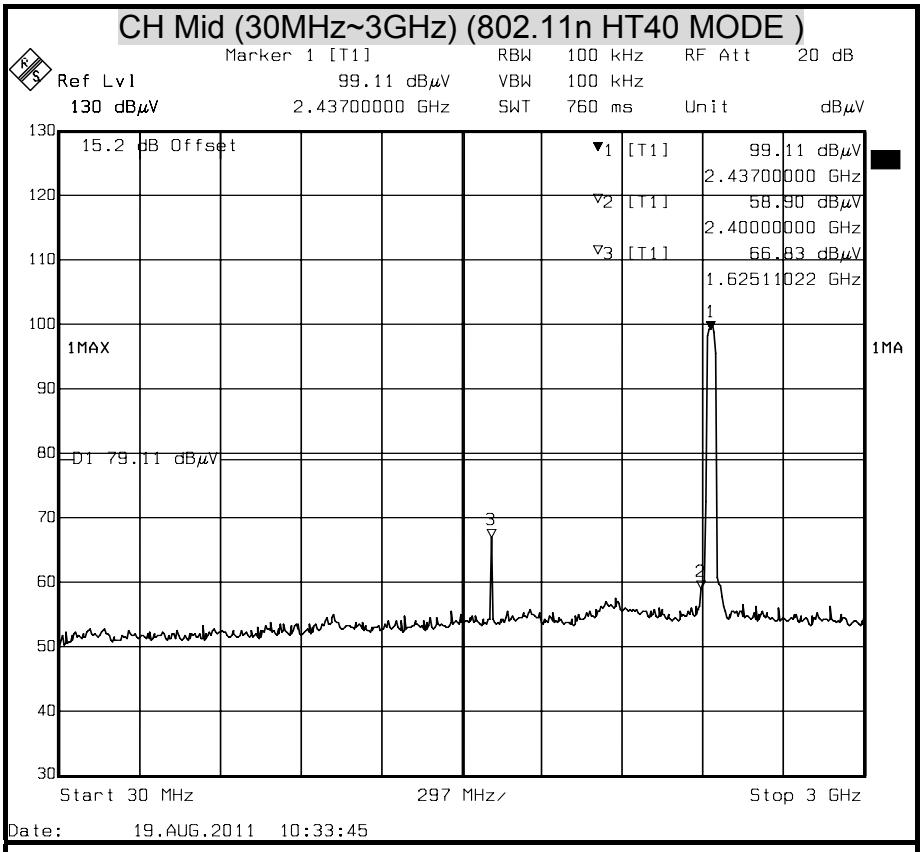
CH Low (30MHz~3GHz) (802.11n HT40 MODE)



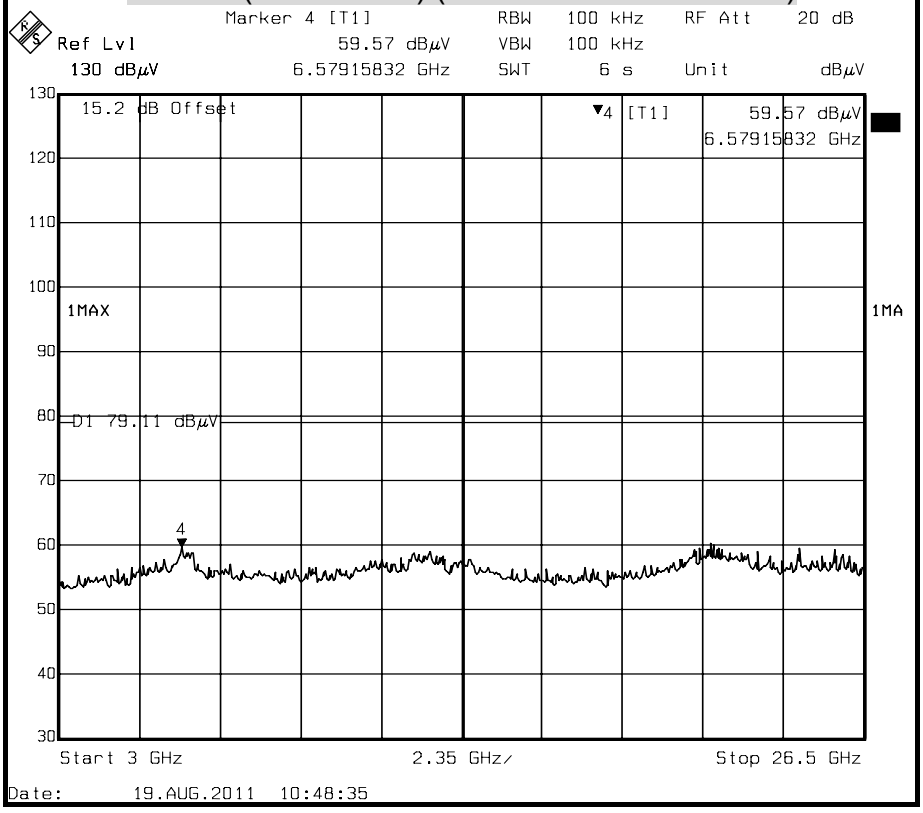
CH Low (3~26.5GHz) (802.11n HT40 MODE)



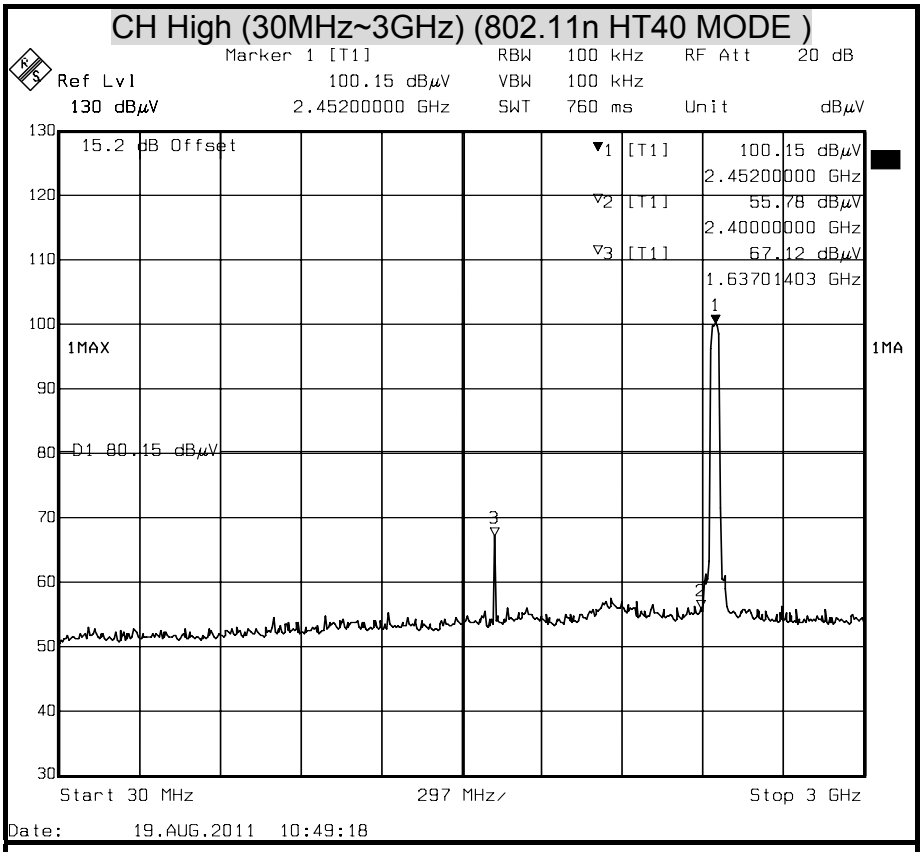
CH Mid (30MHz~3GHz) (802.11n HT40 MODE)



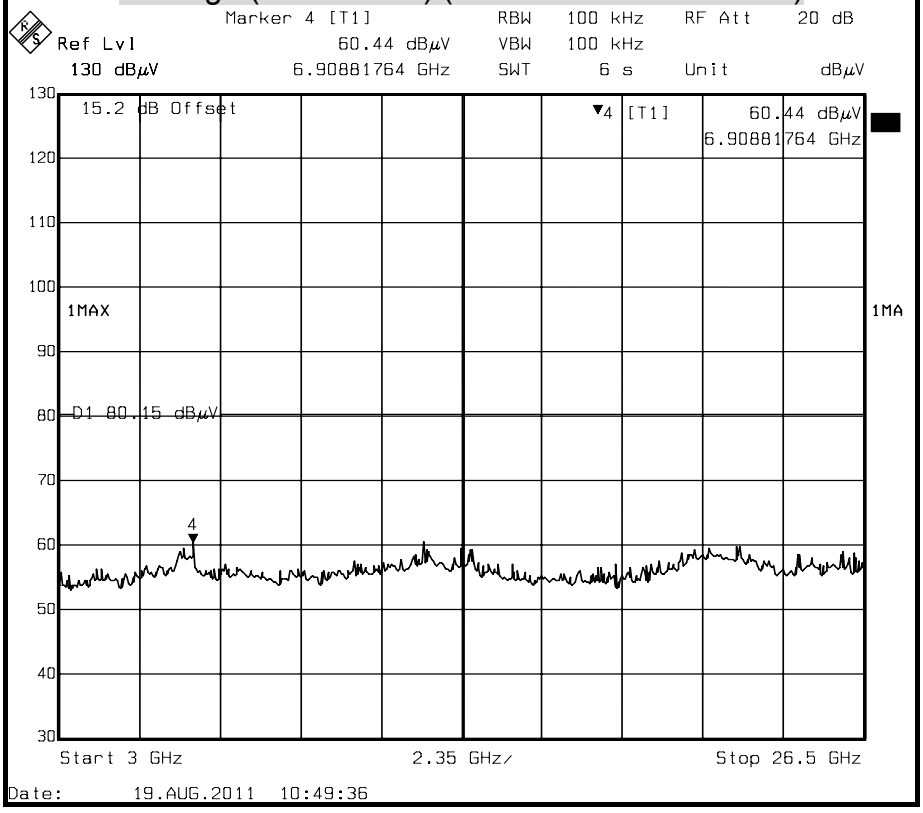
CH Mid (3~26.5GHz) (802.11n HT40 MODE)



CH High (30MHz~3GHz) (802.11n HT40 MODE)



CH High (3~26.5GHz) (802.11n HT40 MODE)



8.6 RADIATED EMISSIONS

8.6.1 TRANSMITTER RADIATED SUPURIOUS EMSSIONS

LIMITS

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

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 -1710	10.6 -12.7
6.26775 - 6.26825	108 -121.94	1718.8 - 1722.2	13.25 -13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 – 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 -16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3338	36.43 - 36.5
12.57675 - 12.57725	322 -335.4	3600 - 4400	([2])
13.36 - 13.41			

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

[2] Above 38.6

§ 15.205 (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 is 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.