



Operation Mode: TX / IEEE 802.11n HT40 MHz / CH Mid Test Date: September 29, 2014

Temperature: 24°C

Tested by: Sun Guo

Humidity: 52% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1990.000	48.75	-8.32	40.43	74.00	-33.57	V	Peak
3250.000	47.76	-3.34	44.42	74.00	-29.58	V	Peak
4870.000	41.69	1.97	43.66	74.00	-30.34	V	Peak
5851.000	40.64	3.14	43.78	74.00	-30.22	V	Peak
6481.000	38.97	5.46	44.43	74.00	-29.57	V	Peak
7489.000	39.57	8.65	48.22	74.00	-25.78	V	Peak
1927.000	49.39	-8.42	40.97	74.00	-33.03	H	Peak
3250.000	44.47	-3.34	41.13	74.00	-32.87	H	Peak
4798.000	41.81	1.67	43.48	74.00	-30.52	H	Peak
6409.000	40.98	5.15	46.13	74.00	-27.87	H	Peak
7066.000	40.96	7.83	48.79	74.00	-25.21	H	Peak
8236.000	39.46	9.52	48.98	74.00	-25.02	H	Peak

REMARKS:

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.
2. Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
3. Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
4. Data of measurement within this frequency range shown " --- " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
5. Measurements above show only up to 6 maximum emissions noted, or would be lesser, with " N/A " remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.
6. Margin (dB) = Remark result (dBuV/m) – Average limit (dBuV/m).



Operation Mode: TX / IEEE 802.11n HT40 MHz / CH High Test Date: September 29, 2014

Temperature: 24°C

Tested by: Sun Guo

Humidity: 52% RH

Polarity: Ver. / Hor.

Frequency (MHz)	Reading (dBuV)	Correction Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Pole (V/H)	Remark
1999.000	49.07	-8.31	40.76	74.00	-33.24	V	Peak
3268.000	46.97	-3.31	43.66	74.00	-30.34	V	Peak
4996.000	41.21	2.49	43.70	74.00	-30.30	V	Peak
6067.000	39.96	3.68	43.64	74.00	-30.36	V	Peak
6931.000	39.90	7.40	47.30	74.00	-26.70	V	Peak
7633.000	40.94	8.93	49.87	74.00	-24.13	V	Peak
1729.000	48.04	-9.22	38.82	74.00	-35.18	H	Peak
3268.000	44.12	-3.31	40.81	74.00	-33.19	H	Peak
3862.000	42.75	-1.55	41.20	74.00	-32.80	H	Peak
4942.000	40.43	2.27	42.70	74.00	-31.30	H	Peak
6571.000	39.47	5.85	45.32	74.00	-28.68	H	Peak
8326.000	39.96	9.47	49.43	74.00	-24.57	H	Peak

REMARKS:

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).



7.3. 6dB BANDWIDTH MEASUREMENT

7.3.1. LIMITS

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 6 dB bandwidth shall be at least 500 kHz.

7.3.2. TEST INSTRUMENTS

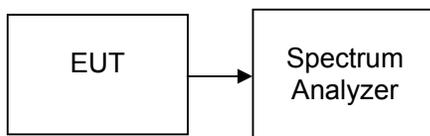
Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/09/2013	03/08/2014

7.3.3. TEST PROCEDURES (please refer to measurement standard)

8.1 Option 1:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.3.4. TEST SETUP





7.3.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	8107	>500	PASS
Mid	2437	8600		PASS
High	2462	8112		PASS

Test mode: IEEE 802.11g (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	14446	>500	PASS
Mid	2437	15064		PASS
High	2462	15096		PASS

Test mode: IEEE 802.11n HT20 MHz (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15108	>500	PASS
Mid	2437	15085		PASS
High	2462	15115		PASS

Test mode: IEEE 802.11n HT20 MHz (Antenna 2)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15090	>500	PASS
Mid	2437	15125		PASS
High	2462	15136		PASS



Test mode: IEEE 802.11n HT40 MHz (Antenna 1)

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	36835	>500	PASS
Mid	2437	35788		PASS
High	2452	35831		PASS

Test mode: IEEE 802.11n HT40 MHz (Antenna 2)

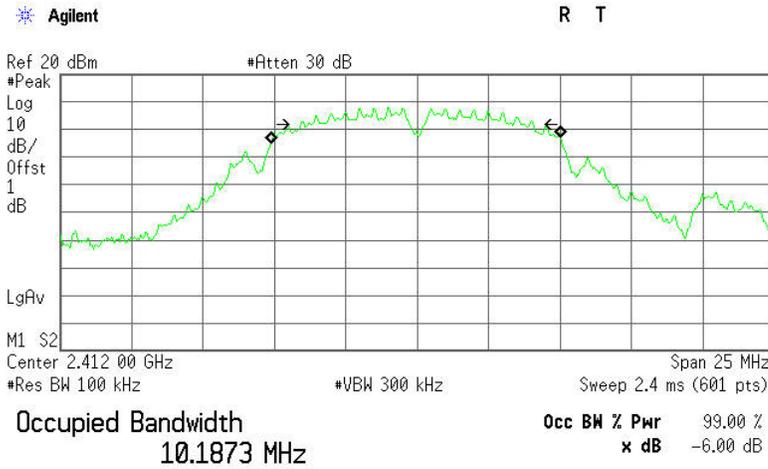
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	36434	>500	PASS
Mid	2437	36417		PASS
High	2452	36405		PASS



Test Plot

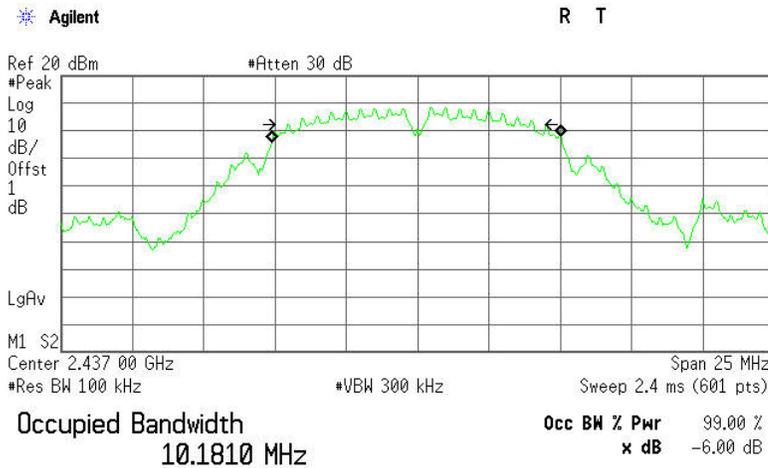
IEEE 802.11b (Antenna 1)mode

6dB Bandwidth (CH Low)



Transmit Freq Error -48.503 kHz
x dB Bandwidth 8.107 MHz

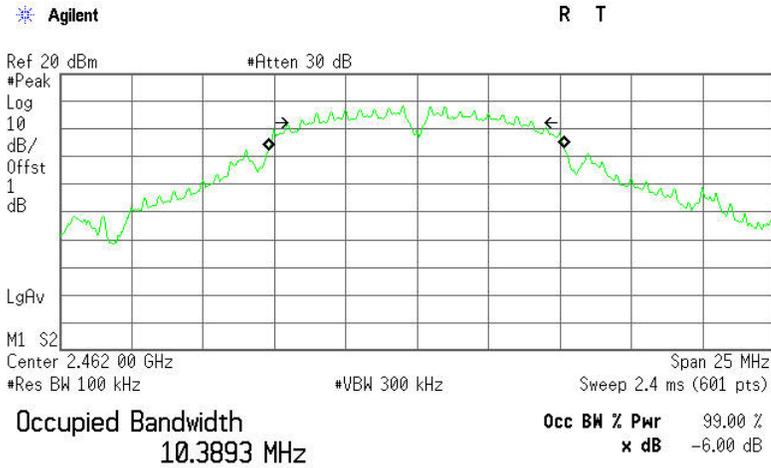
6dB Bandwidth (CH Mid)



Transmit Freq Error -36.973 kHz
x dB Bandwidth 8.600 MHz



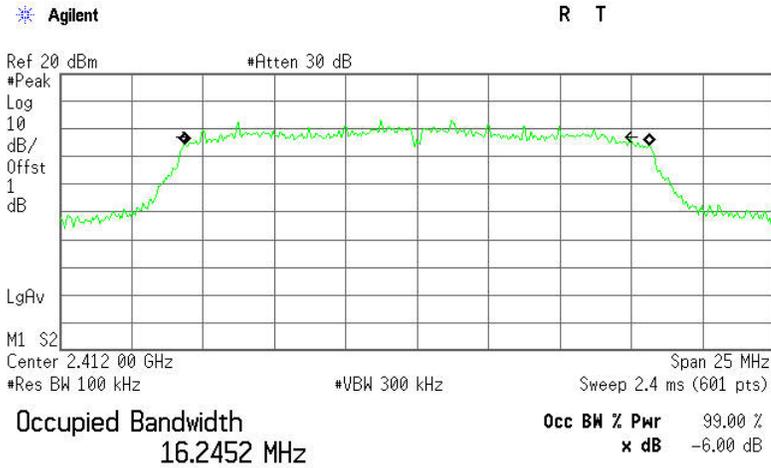
6dB Bandwidth (CH High)



Transmit Freq Error -28.909 kHz
x dB Bandwidth 8.112 MHz

IEEE 802.11g (Antenna 1) mode

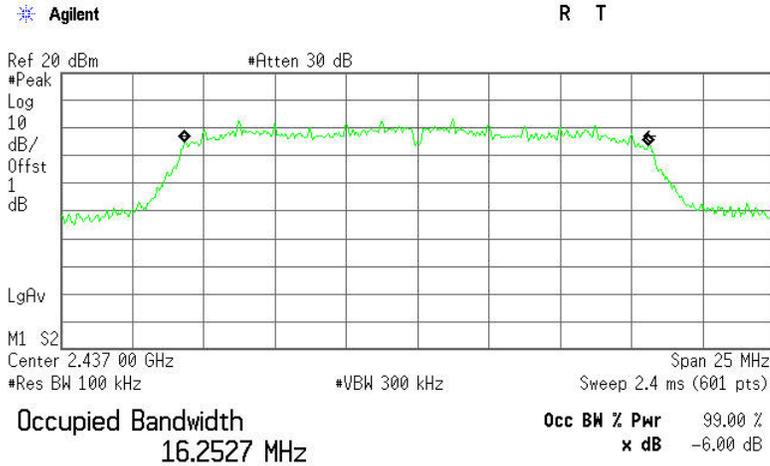
6dB Bandwidth (CH Low)



Transmit Freq Error -16.857 kHz
x dB Bandwidth 14.446 MHz

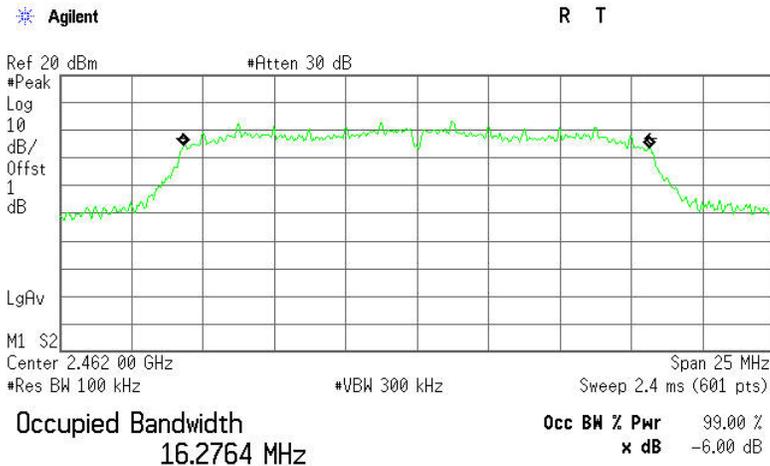


6dB Bandwidth (CH Mid)



Transmit Freq Error -30.548 kHz
x dB Bandwidth 15.064 MHz

6dB Bandwidth (CH High)

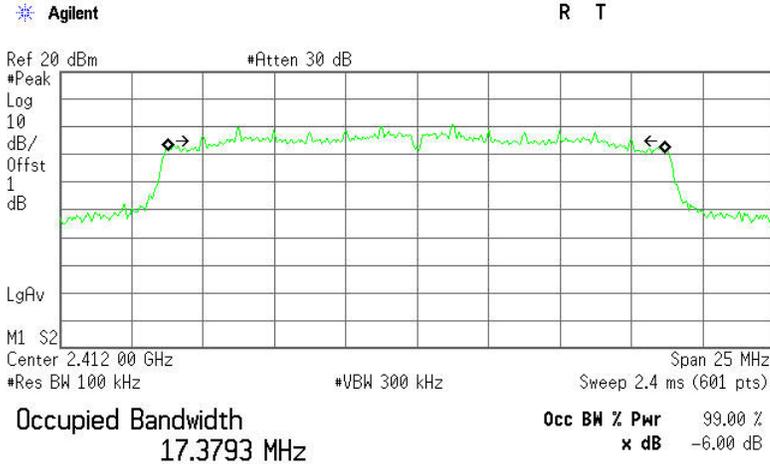


Transmit Freq Error -23.279 kHz
x dB Bandwidth 15.096 MHz



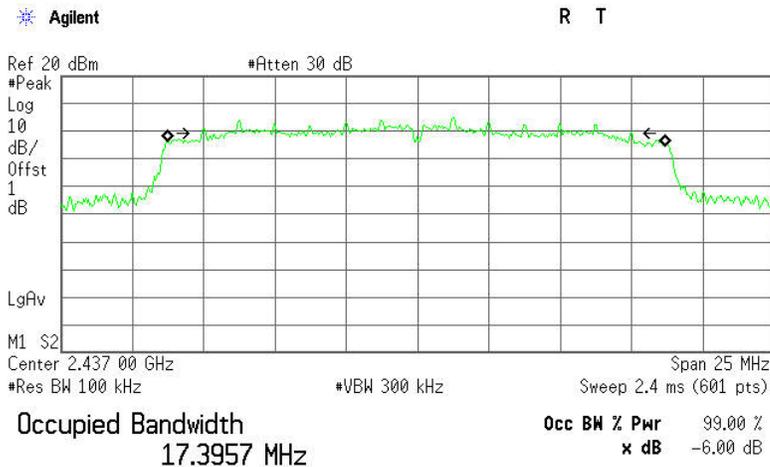
IEEE 802.11n HT20 MHz (Antenna 1)mode

6dB Bandwidth (CH Low)



Transmit Freq Error -23.597 kHz
x dB Bandwidth 15.108 MHz

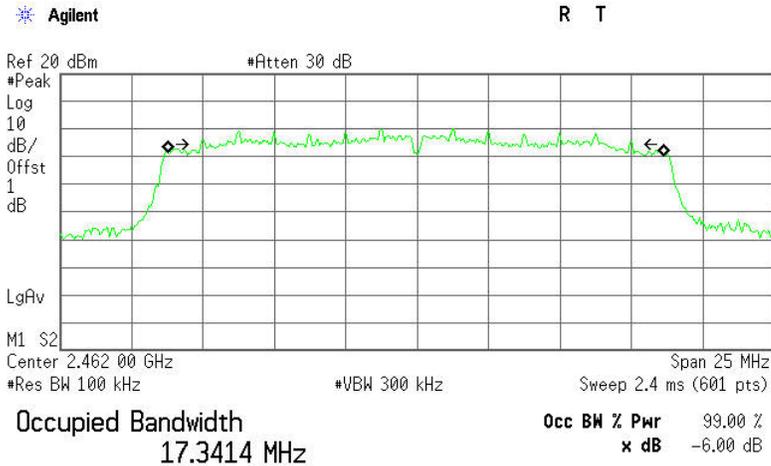
6dB Bandwidth (CH Mid)



Transmit Freq Error -33.261 kHz
x dB Bandwidth 15.085 MHz



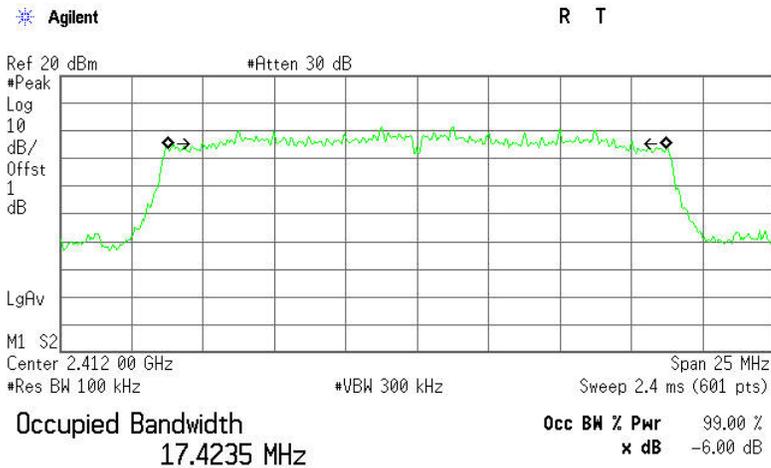
6dB Bandwidth (CH High)



Transmit Freq Error -25.843 kHz
x dB Bandwidth 15.115 MHz

IEEE 802.11n HT20 MHz (Antenna 2)mode

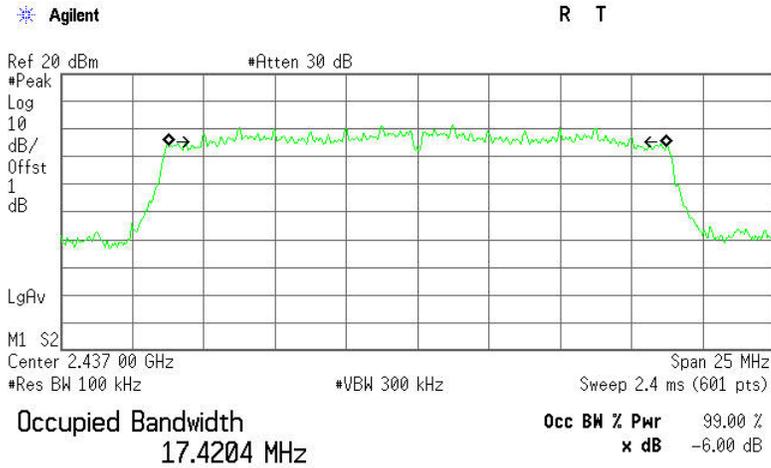
6dB Bandwidth (CH Low)



Transmit Freq Error -10.073 kHz
x dB Bandwidth 15.090 MHz

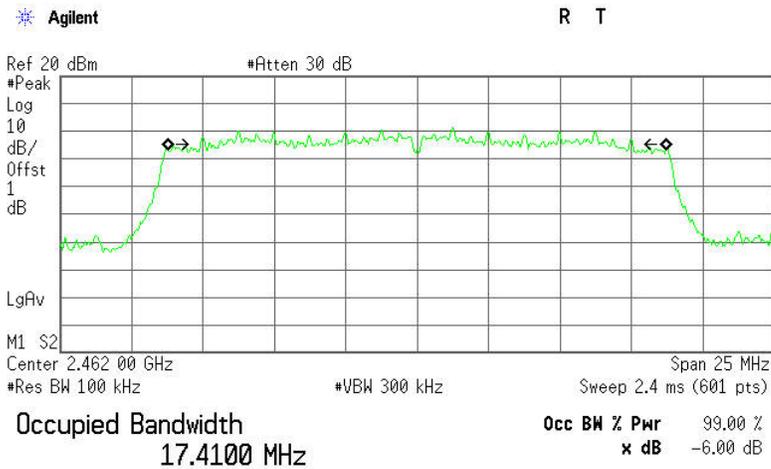


6dB Bandwidth (CH Mid)



Transmit Freq Error -11.294 kHz
x dB Bandwidth 15.125 MHz

6dB Bandwidth (CH High)



Transmit Freq Error -11.492 kHz
x dB Bandwidth 15.136 MHz

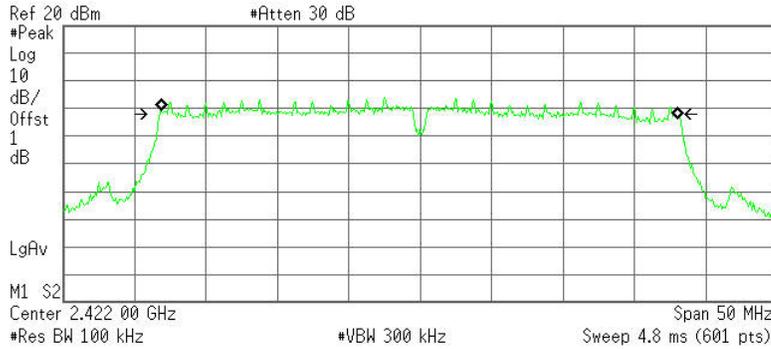


IEEE 802.11n HT40 MHz (Antenna 1) mode

6dB Bandwidth (CH Low)

Agilent

R T



Occupied Bandwidth
36.1369 MHz

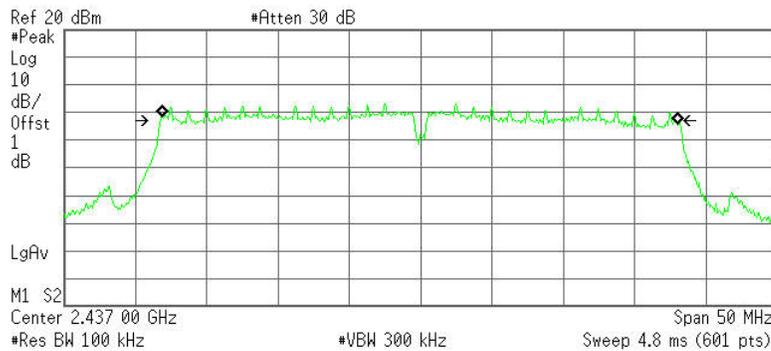
Occ BW % PWR 99.00 %
x dB -6.00 dB

Transmit Freq Error -51.114 kHz
x dB Bandwidth 35.835 MHz

6dB Bandwidth (CH Mid)

Agilent

R T



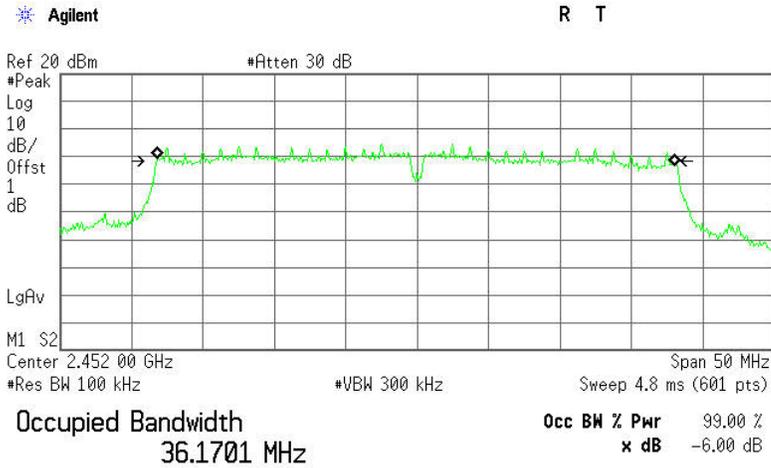
Occupied Bandwidth
36.1092 MHz

Occ BW % PWR 99.00 %
x dB -6.00 dB

Transmit Freq Error -59.363 kHz
x dB Bandwidth 35.788 MHz



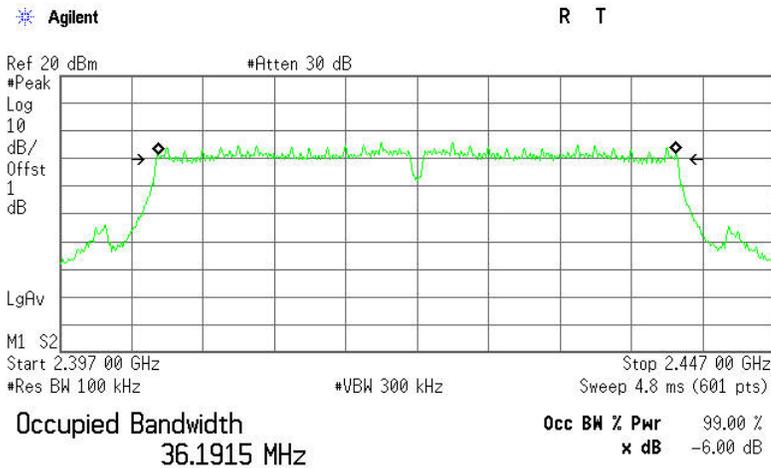
6dB Bandwidth (CH High)



Transmit Freq Error -64.727 kHz
 x dB Bandwidth 35.831 MHz

IEEE 802.11n HT40 MHz (Antenna 2) mode

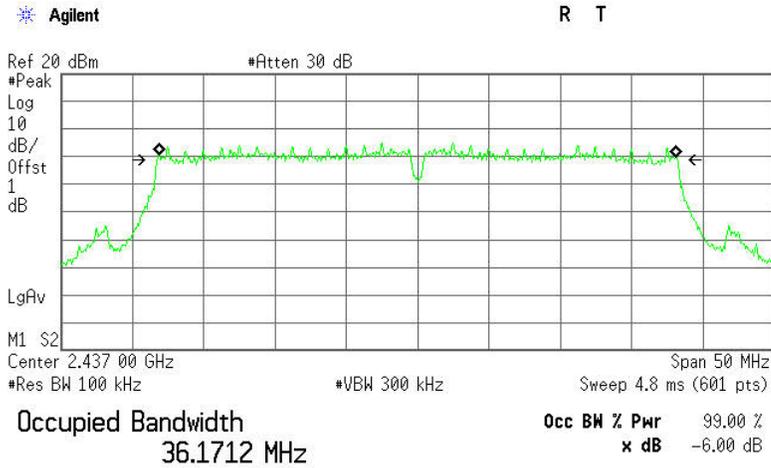
6dB Bandwidth (CH Low)



Transmit Freq Error -9.158 kHz
 x dB Bandwidth 36.434 MHz

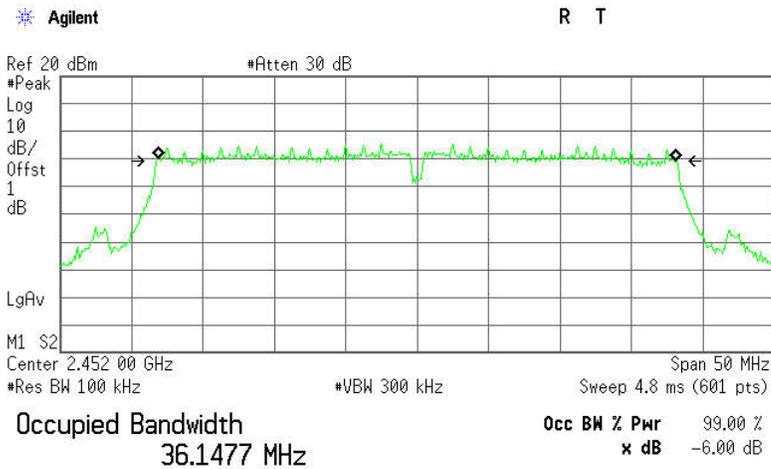


6dB Bandwidth (CH Mid)



Transmit Freq Error -18.286 kHz
x dB Bandwidth 36.417 MHz

6dB Bandwidth (CH High)



Transmit Freq Error -23.064 kHz
x dB Bandwidth 36.405 MHz



7.4. PEAK OUTPUT POWER

7.4.1. LIMITS

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.

7.4.2. TEST INSTRUMENTS

Table with 6 columns: Name of Equipment, Manufacturer, Model, Serial Number, Last Calibration, Calibration Due. Rows include Spectrum Analyzer, Power Sensor, and Power Meter.

7.4.3. TEST PROCEDURES (please refer to measurement standard)

9.1.1 RBW ≥ DTS bandwidth

This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater than the DTS bandwidth.

- a) Set the RBW ≥ DTS bandwidth.
b) Set VBW ≥ 3 RBW.
c) Set span ≥ 3 x RBW
d) Sweep time = auto couple.
e) Detector = peak.
f) Trace mode = max hold.
g) Allow trace to fully stabilize.
h) Use peak marker function to determine the peak amplitude level.



9.1.2 Integrated band power method

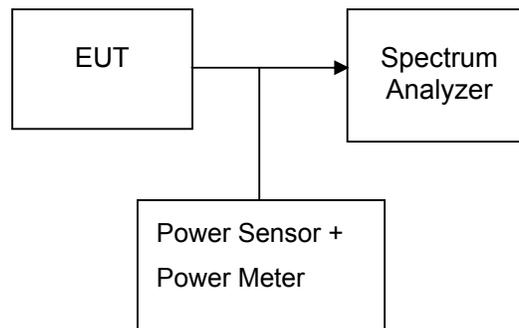
This procedure may be used when the maximum available RBW of the measurement instrument is less than the *DTS bandwidth*.

- a) Set the RBW = 1 MHz.
- b) Set the VBW ≥ 3 RBW
- c) Set the span $\geq 1.5 \times$ DTS bandwidth.
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select peak detector). If the instrument does not have a band power function, sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS bandwidth.

9.1.3 PKPM1 Peak power meter method

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall utilize a fast-responding diode detector.

7.4.4. TEST SETUP





7.4.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b (Antenna 1)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Remark	Result
Low	2412	19.38	0.08670	1	peak	PASS
Mid	2437	20.27	0.10641			PASS
High	2462	18.94	0.07834			PASS
Low	2412	15.44	0.03499	1	AVG	PASS
Mid	2437	16.43	0.04395			PASS
High	2462	15.02	0.03177			PASS

Test mode: IEEE 802.11g (Antenna 1)

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Remark	Result
Low	2412	23.23	0.21038	1	peak	PASS
Mid	2437	23.57	0.22751			PASS
High	2462	21.95	0.15668			PASS
Low	2412	12.93	0.01963	1	AVG	PASS
Mid	2437	15.28	0.03373			PASS
High	2462	11.55	0.01429			PASS

Test mode: IEEE 802.11n HT20 MHz (Combine with Antenna 1 and Antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)		Output Power Total(dBm)	Output Power (W)	Limit (W)	Remark	Result
		Chain 1	Chain 2					
Low	2412	21.33	20.72	24.05	0.25386	1	peak	PASS
Mid	2437	23.17	22.51	25.86	0.38573			PASS
High	2462	20.89	20.32	23.62	0.23039			PASS
Low	2412	10.72	10.07	13.42	0.02197	1	AVG	PASS
Mid	2437	13.96	13.38	16.69	0.04667			PASS
High	2462	10.53	9.85	13.21	0.02096			PASS

Test mode: IEEE 802.11n HT40 MHz (Combine with Antenna 1 and Antenna 2)

Channel	Frequency (MHz)	Output Power (dBm)		Output Power Total(dBm)	Output Power (W)	Limit (W)	Remark	Result
		Chain 1	Chain 2					
Low	2422	18.71	18.95	21.84	0.15283	1	peak	PASS
Mid	2437	21.17	21.08	24.14	0.25915			PASS
High	2452	18.03	18.16	21.11	0.12900			PASS
Low	2422	7.54	7.72	10.64	0.01159	1	AVG	PASS
Mid	2437	11.65	11.33	14.50	0.02820			PASS
High	2452	7.79	7.57	10.69	0.01173			PASS

Note : Combine Power Calculation :

$$\text{Total Power(dBm)} = \log(10^{(\text{chain 0 power}/10)} + 10^{(\text{chain 1 power}/10)}) * 10$$



7.5. BAND EDGES MEASUREMENT

7.5.1. LIMITS

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)).

7.5.2. TEST INSTRUMENTS

Radiated Emission Test Site 966(2)					
Name of Equipment	Manufacturer	Model Number	Serial Number	Last Calibration	Due Calibration
PSA Series Spectrum Analyzer	Agilent	E4446A	US44300399	03/01/2014	03/01/2015
Spectrum Analyzer	Agilent	N9010A	MY52221469	10/25/2014	10/24/2015
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI	100783	03/09/2014	03/08/2015
Amplifier	MITEQ	AM-1604-3000	1123808	03/18/2015	03/18/2015
High Noise Amplifier	Agilent	8449B	3008A01838	03/18/2015	03/18/2015
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	07/10/2014	07/09/2015
Bilog Antenna	SCHAFFNER	CBL6143	5082	03/01/2014	03/01/2015
Horn Antenna	SCHWARZBECK	BBHA9120	D286	03/01/2014	03/01/2015
Loop Antenna	A, R, A	PLA-1030/B	1029	09/27/2014	09/26/2015
Turn Table	N/A	N/A	N/A	N.C.R	N.C.R
Controller	Sunol Sciences	SC104V	022310-1	N.C.R	N.C.R
Controller	CT	N/A	N/A	N.C.R	N.C.R
Temp. / Humidity Meter	Anymetre	JR913	N/A	02/28/2014	02/28/2015
Antenna Tower	SUNOL	TLT2	N/A	N.C.R	N.C.R
Test S/W	FARAD	LZ-RF / CCS-SZ-3A2			

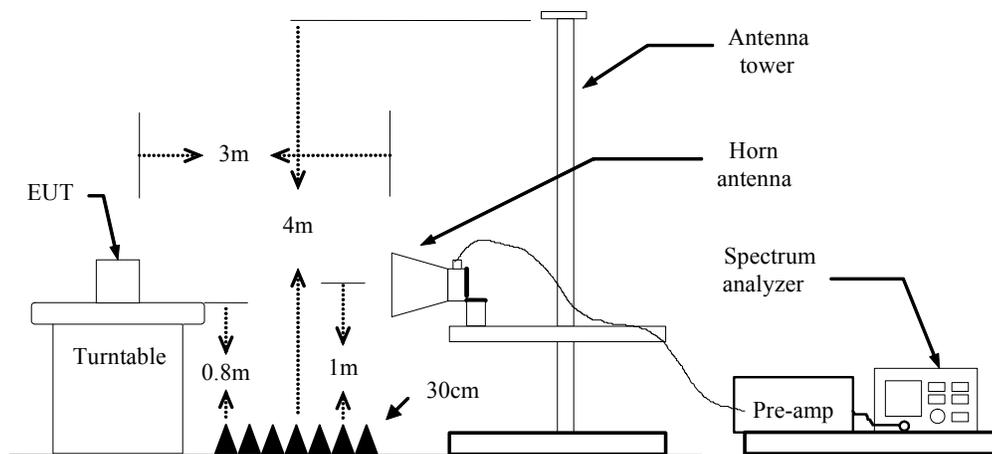
- NOTE:**
1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
 2. The FCC Site Registration number is 101879.
 3. N.C.R = No Calibration Required.



7.5.3. TEST PROCEDURES (please refer to measurement standard)

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

7.5.4. TEST SETUP





7.5.5. TEST RESULTS

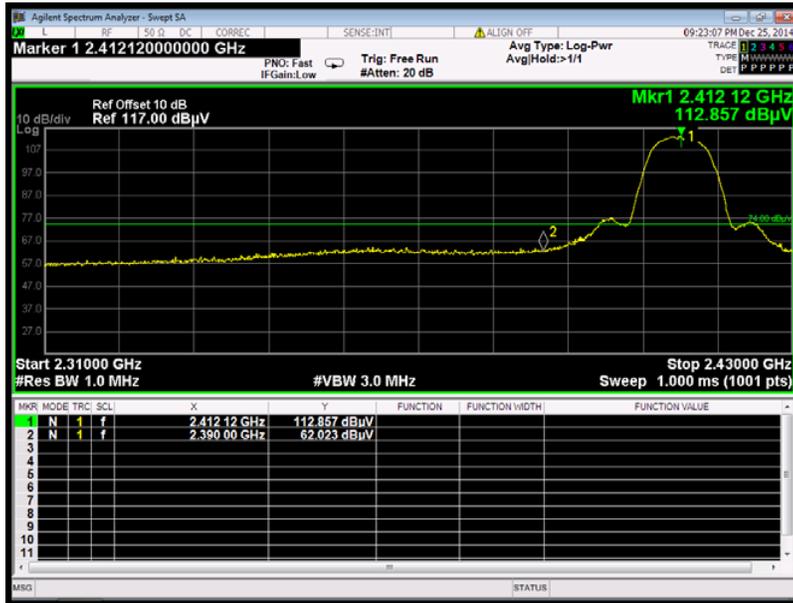
Test Plot

IEEE 802.11b (Antenna 1)mode

Band Edges (CH Low)

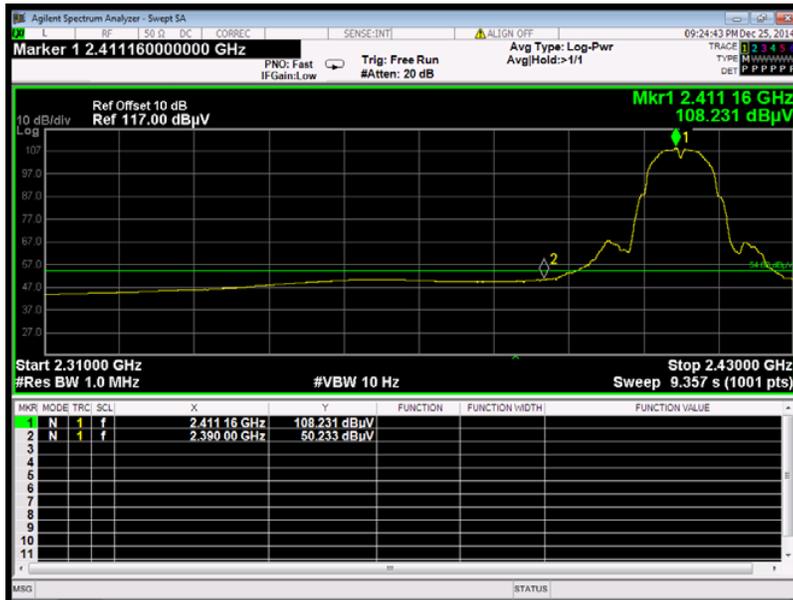
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical

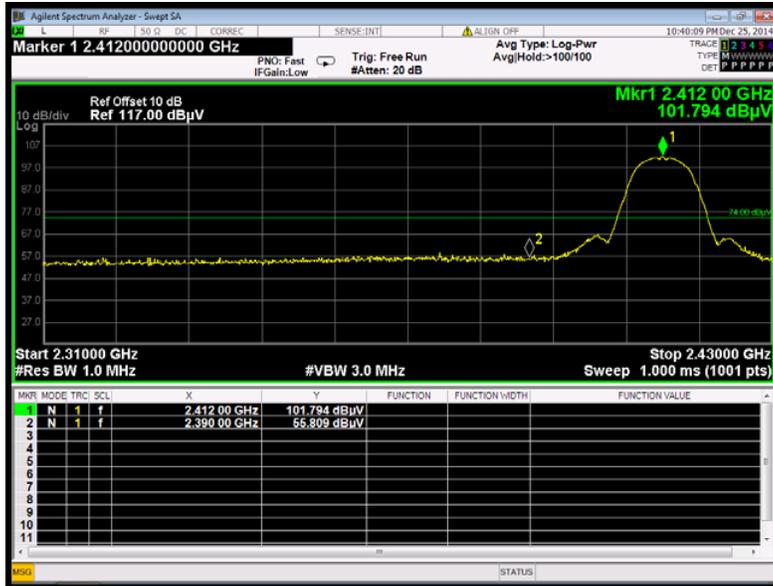


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	55.42	-6.60	62.02	74.00	-11.98	Peak	Vertical
2	2390.0000	43.63	-6.60	50.23	54.00	-3.77	Average	Vertical



Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal



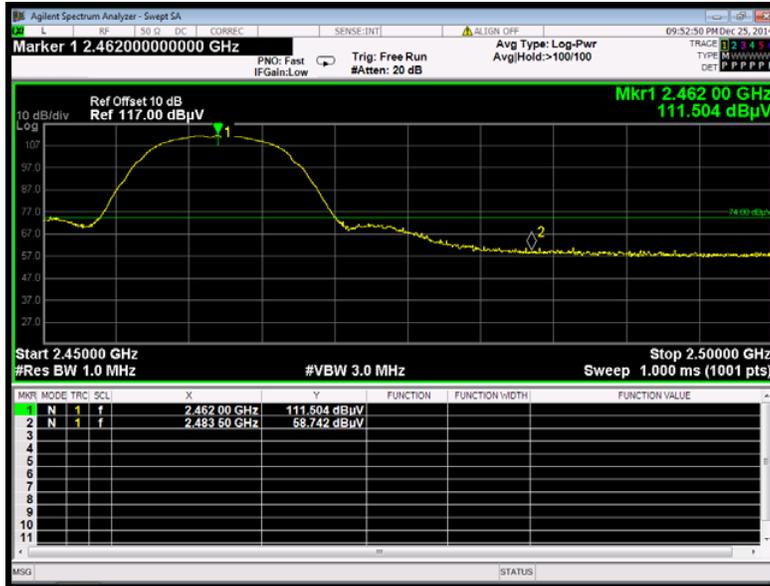
No.	Frequency (MHz)	Reading (dBµV)	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	49.21	-6.60	55.81	74.00	-18.19	Peak	Horizontal
2	2390.0000	37.14	-6.60	43.74	54.00	-10.26	Average	Horizontal



Band Edges (CH High)

Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical

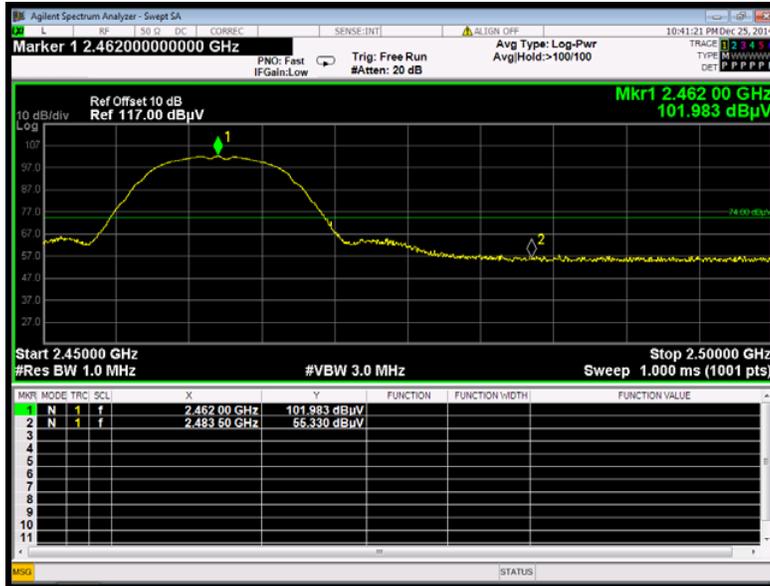


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	52.50	-6.24	58.74	74.00	-15.26	Peak	Vertical
2	2483.5000	40.68	-6.24	46.92	54.00	-7.08	Average	Vertical



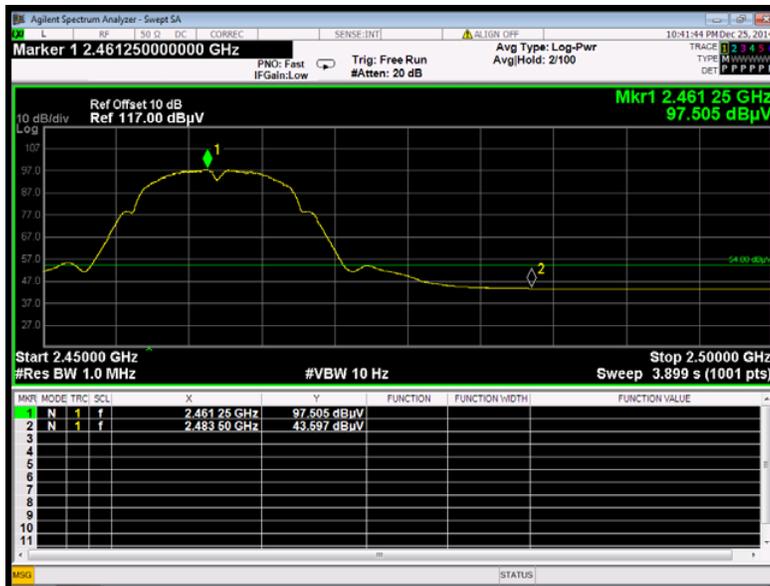
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBµV)	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	49.09	-6.24	55.33	74.00	-18.67	Peak	Horizontal
2	2483.5000	37.36	-6.24	43.60	54.00	-10.40	Average	Horizontal

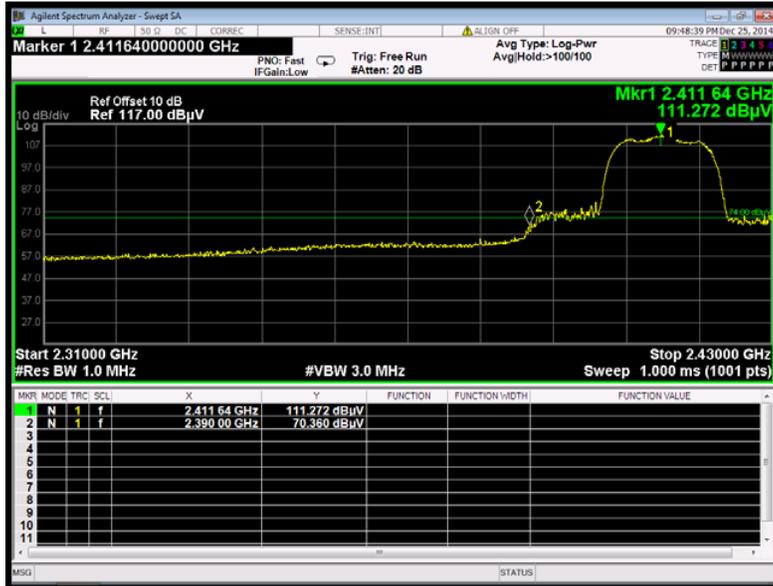


IEEE 802.11g (Antenna 1)mode

Band Edges (CH Low)

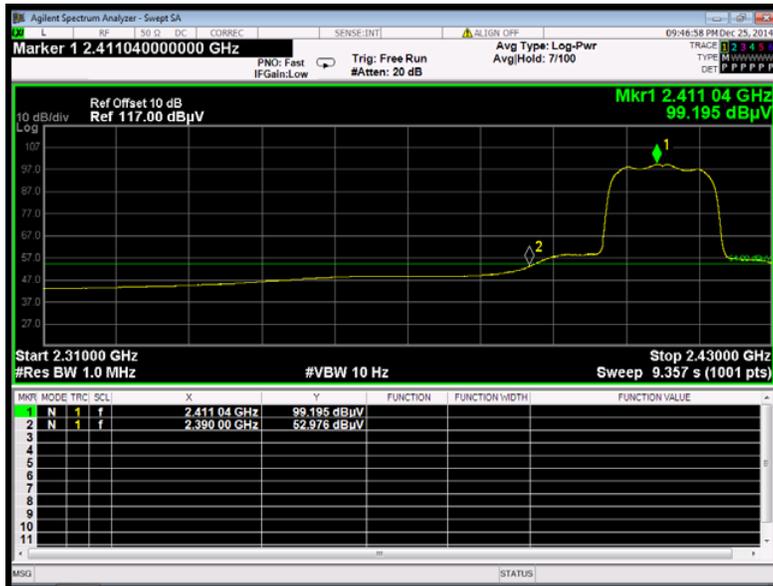
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	63.76	-6.60	70.36	74.00	-3.64	Peak	Vertical
2	2390.0000	46.38	-6.60	52.98	54.00	-1.02	Average	Vertical



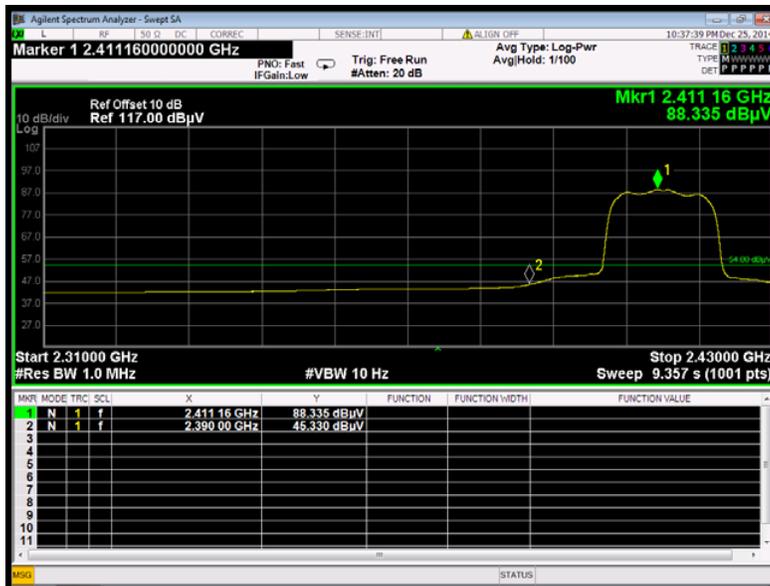
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	51.23	-6.60	57.83	74.00	-16.17	Peak	Horizontal
2	2390.0000	38.73	-6.60	45.33	54.00	-8.67	Average	Horizontal



Band Edges (CH High)

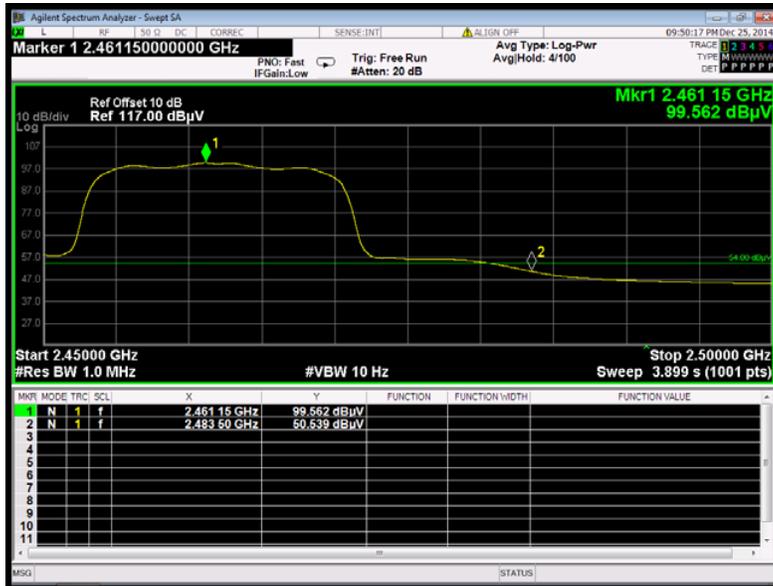
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	62.89	-6.24	69.13	74.00	-4.87	Peak	Vertical
2	2483.5000	44.30	-6.24	50.54	54.00	-3.46	Average	Vertical



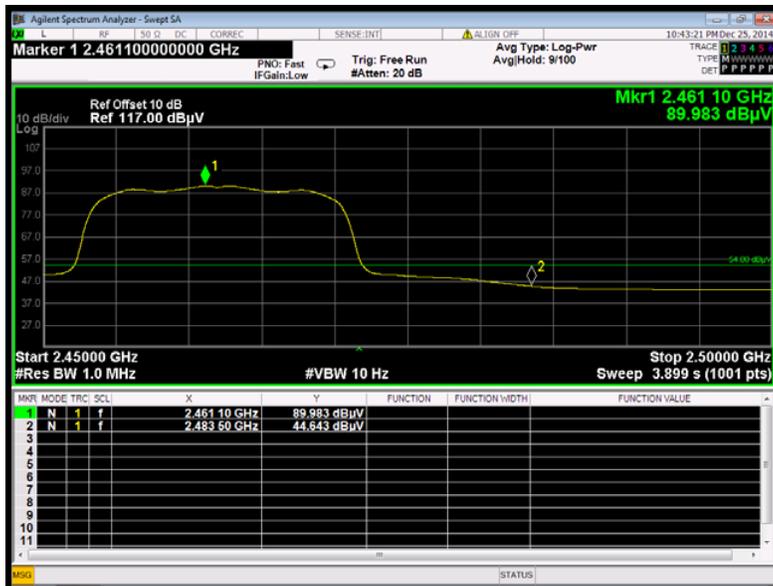
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBµV)	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	50.70	-6.24	56.94	74.00	-17.06	Peak	Horizontal
2	2483.5000	38.40	-6.24	44.64	54.00	-9.36	Average	Horizontal

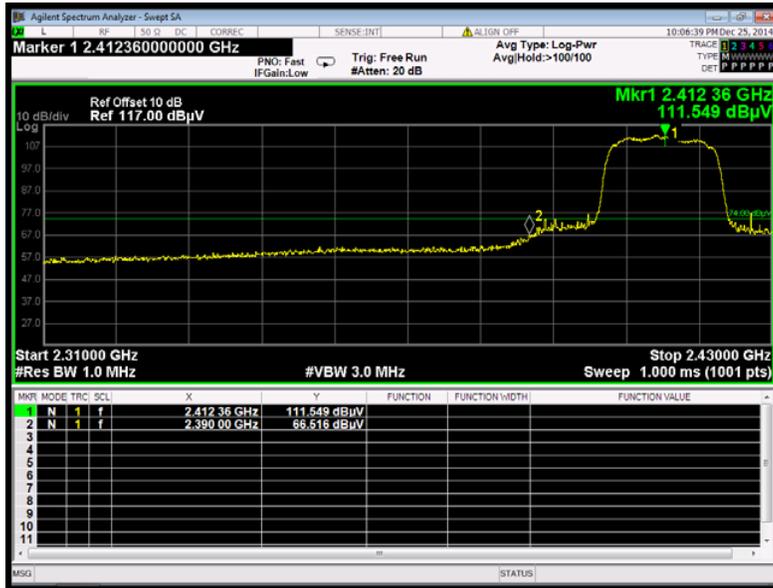


IEEE 802.11n HT20 MHz (Combine with Antenna 1 and Antenna 2) mode

Band Edges (CH Low)

Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical

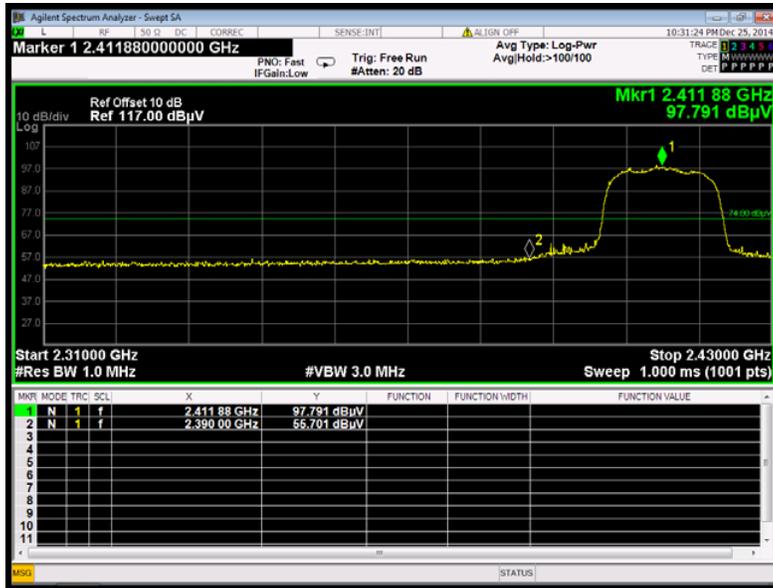


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	59.92	-6.60	66.52	74.00	-7.48	Peak	Vertical
2	2390.0000	45.99	-6.60	52.59	54.00	-1.41	Average	Vertical



Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal



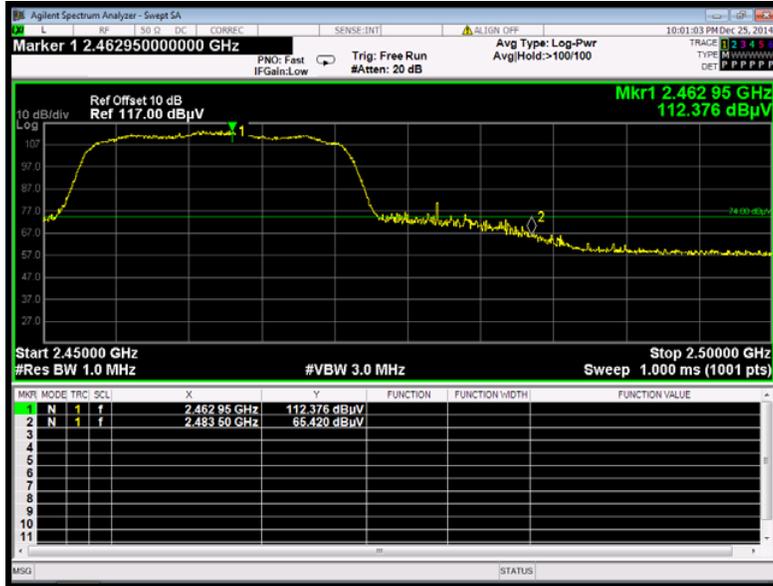
No.	Frequency (MHz)	Reading (dBµV)	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	49.10	-6.60	55.70	74.00	-18.30	Peak	Horizontal
2	2390.0000	37.66	-6.60	44.26	54.00	-9.74	Average	Horizontal



Band Edges (CH High)

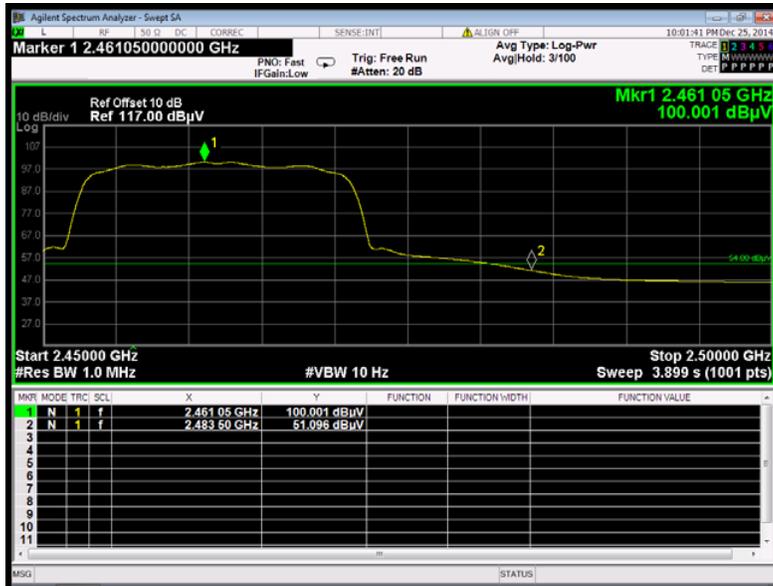
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	59.18	-6.24	65.42	74.00	-8.58	Peak	Vertical
2	2483.5000	44.86	-6.24	51.10	54.00	-2.90	Average	Vertical



Detector mode: Peak

Polarity: Horizontal



sDetector mode: Average

Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	50.93	-6.24	57.17	74.00	-16.83	Peak	Horizontal
2	2483.5000	38.33	-6.24	44.57	54.00	-9.44	Average	Horizontal

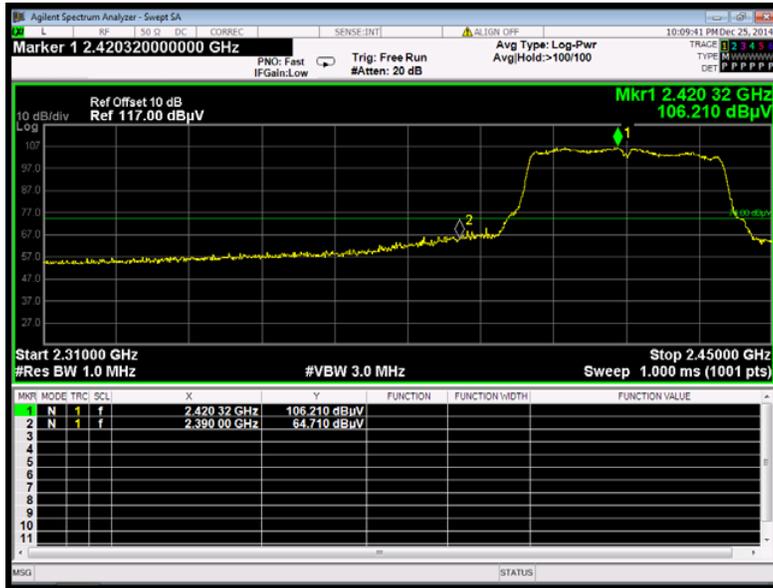


IEEE 802.11n HT40 MHz (Combine with Antenna 1 and Antenna 2) mode

Band Edges (CH Low)

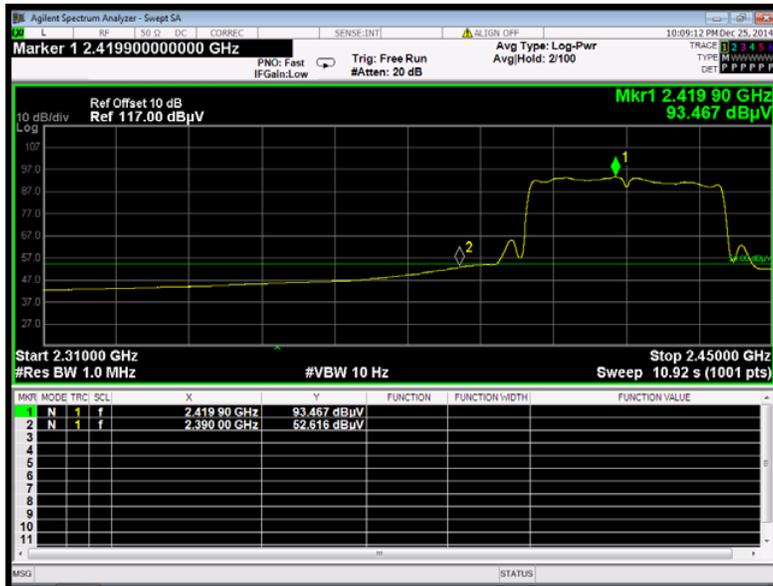
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical

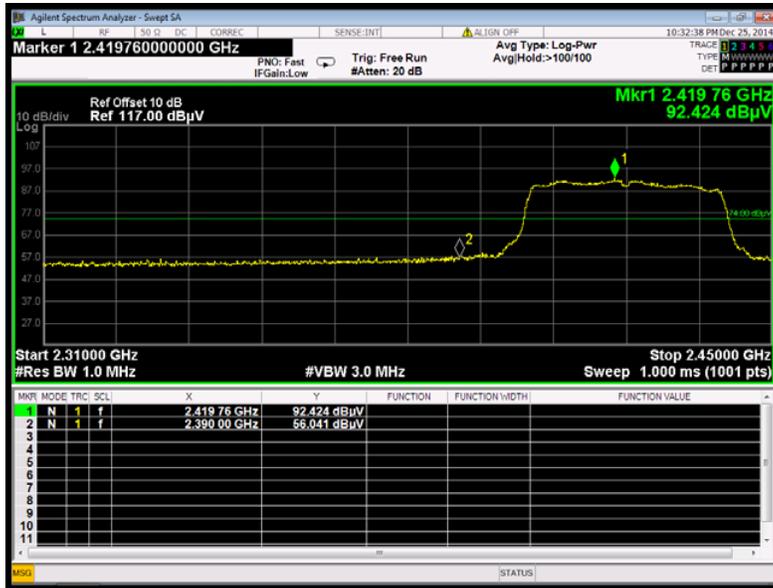


No.	Frequency (MHz)	Reading (dBµV)	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	58.11	-6.60	64.71	74.00	-9.29	Peak	Vertical
2	2390.0000	46.02	-6.60	52.62	54.00	-1.38	Average	Vertical



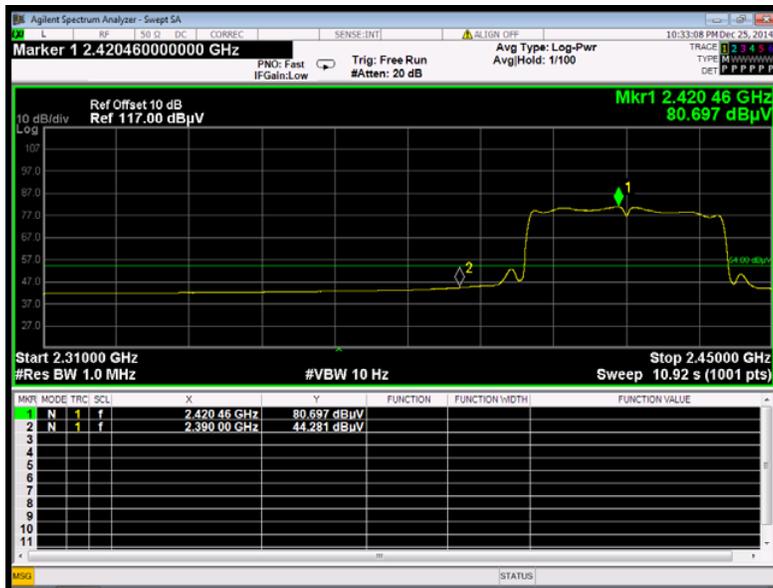
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBµV)	Corrected (dB)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	49.44	-6.60	56.04	74.00	-17.96	Peak	Horizontal
2	2390.0000	37.68	-6.60	44.28	54.00	-9.72	Average	Horizontal



Band Edges (CH High)

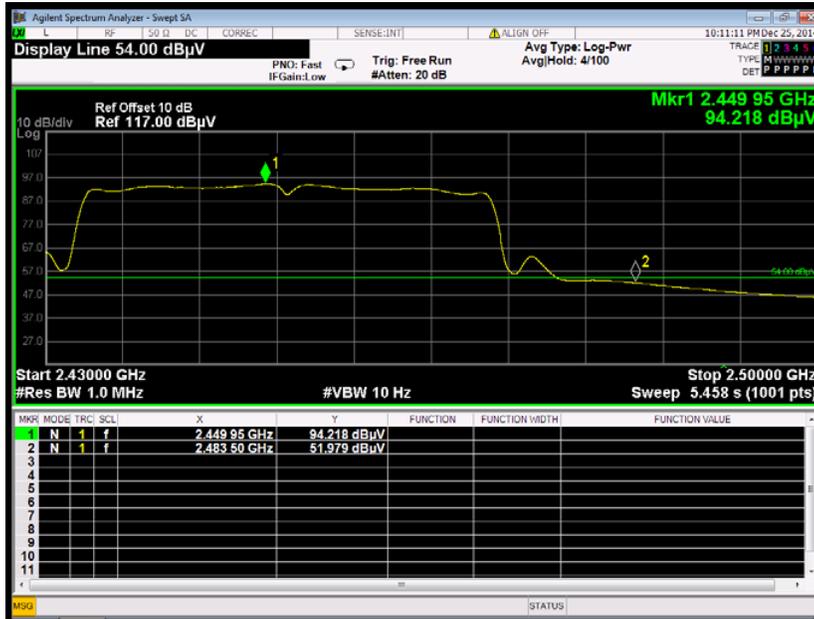
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

Polarity: Vertical

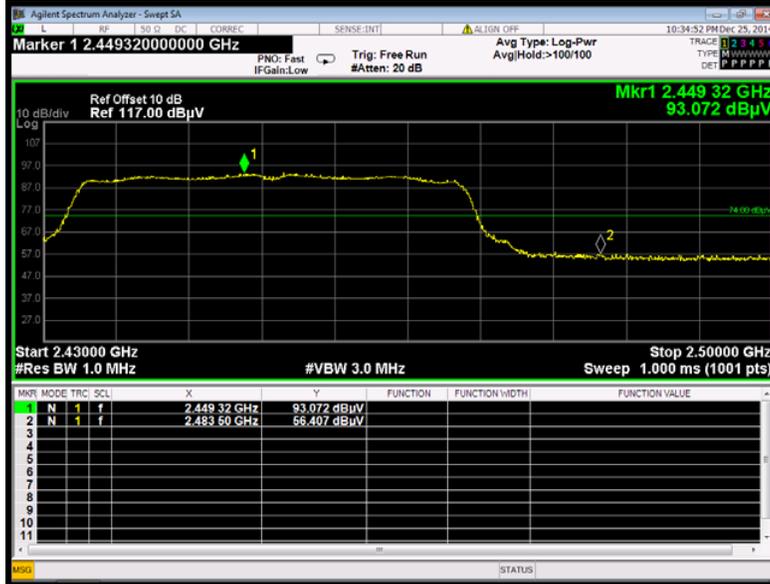


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	57.06	-6.24	63.30	74.00	-10.70	Peak	Vertical
2	2483.5000	45.74	-6.24	51.98	54.00	-2.02	Average	Vertical



Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	50.17	-6.24	56.41	74.00	-17.59	Peak	Horizontal
2	2483.5000	37.34	-6.24	43.58	54.00	-10.42	Average	Horizontal



7.6. PEAK POWER SPECTRAL DENSITY MEASUREMENT

7.6.1. LIMITS

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.

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.

7.6.2. TEST INSTRUMENTS

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	ROHDE&SCHWARZ	FSU	200409	09/23/2013	09/22/2014

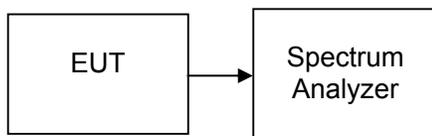
7.6.3. TEST PROCEDURES (please refer to measurement standard)

§15.247(e) specifies a conducted power spectral density (PSD) limit of 8 dBm in any 3 kHz band segment within the fundamental EBW during any time interval of continuous transmission. The same method as used to determine the conducted output power shall be used to determine the power spectral density (i.e., if peak-detected fundamental power was measured then use the peak PSD procedure and if average fundamental power was measured then use the average PSD procedure).

10.2 Method PKPSD (peak PSD)

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq 3 \times \text{RBW}$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.6.4. TEST SETUP





7.6.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b (Antenna 1)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-5.39	8	PASS
Mid	2437	-3.97		PASS
High	2462	-6.89		PASS

Test mode: IEEE 802.11g (Antenna 1)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-10.38	8	PASS
Mid	2437	-8.43		PASS
High	2462	-11.63		PASS

Test mode: IEEE 802.11n HT20 MHz (Combine with Antenna 1 and Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Limit (W)	Result
		Antenna 1	Antenna 2			
Low	2412	-12.94	-12.71	-9.81	8	PASS
Mid	2437	-8.30	-8.91	-5.58		PASS
High	2462	-13.57	-13.11	-10.32		PASS

Test mode: IEEE 802.11n HT40 MHz (Combine with Antenna 1 and Antenna 2)

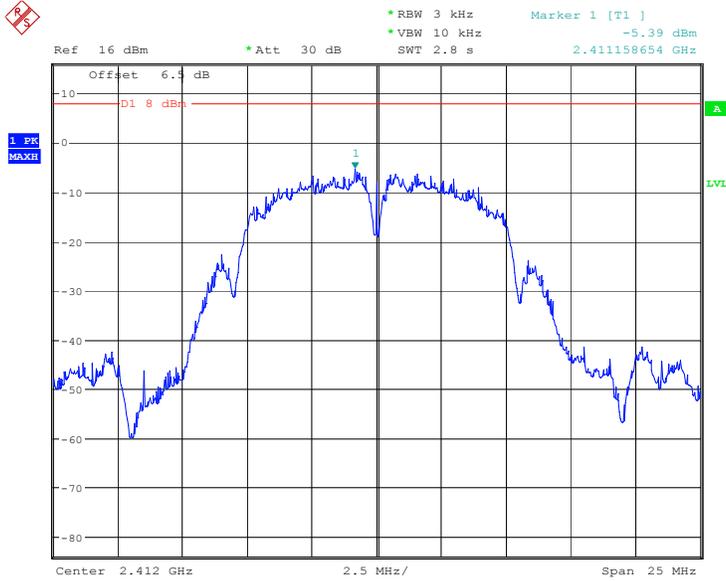
Channel	Frequency (MHz)	PPSD (dBm)		PPSD Total (dBm)	Limit (W)	Result
		Antenna 1	Antenna 2			
Low	2422	-17.82	-20.13	-15.81	8	PASS
Mid	2437	-13.47	-12.03	-9.68		PASS
High	2452	-19.39	-20.63	-16.96		PASS



Test Plot

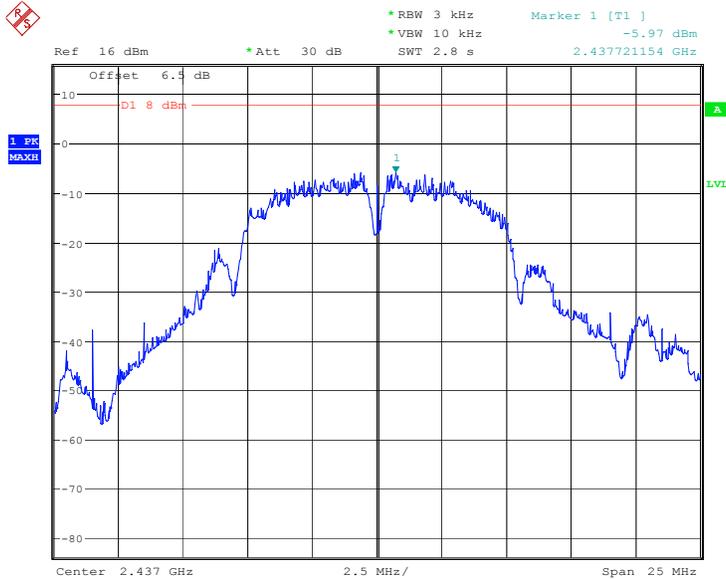
IEEE 802.11b (Antenna 1)mode

PPSD (CH Low)



Date: 28.SEP.2013 09:22:00

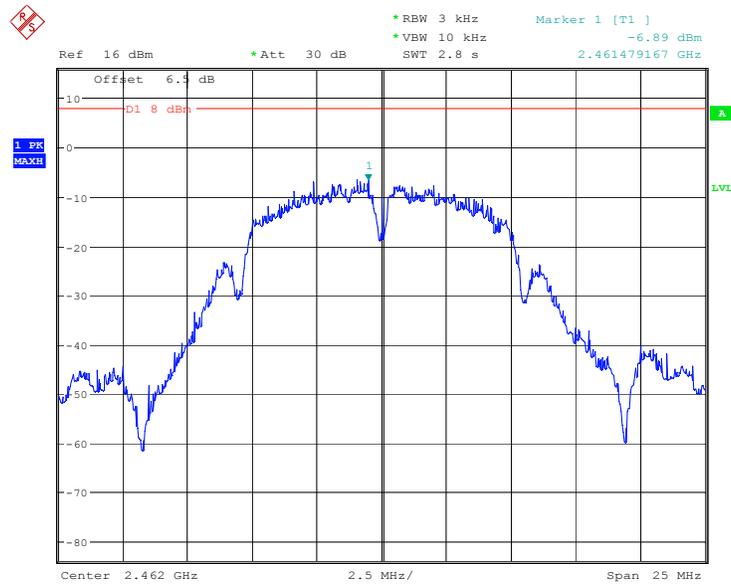
PPSD (CH Mid)



Date: 28.SEP.2013 09:23:48



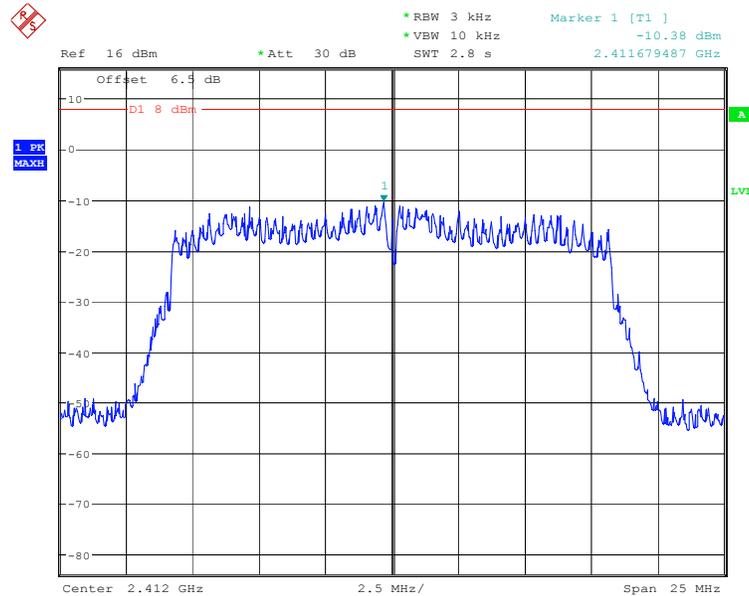
PPSD (CH High)



Date: 28.SEP.2013 09:23:06

IEEE 802.11g (Antenna 1)mode

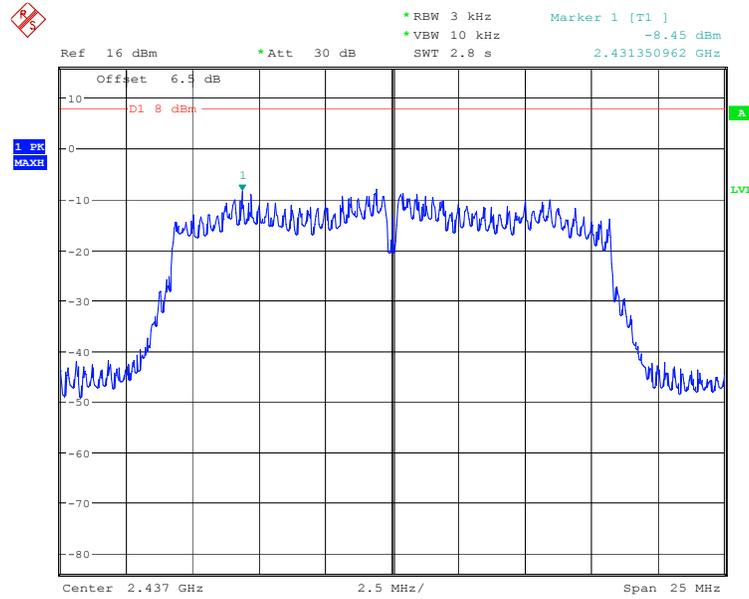
PPSD (CH Low)



Date: 28.SEP.2013 09:19:18

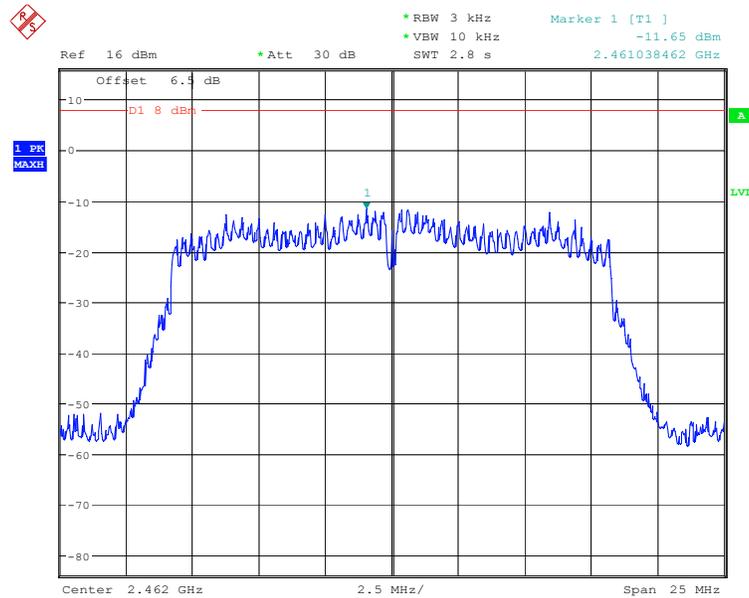


PPSD (CH Mid)



Date: 28.SEP.2013 09:20:50

PPSD (CH High)

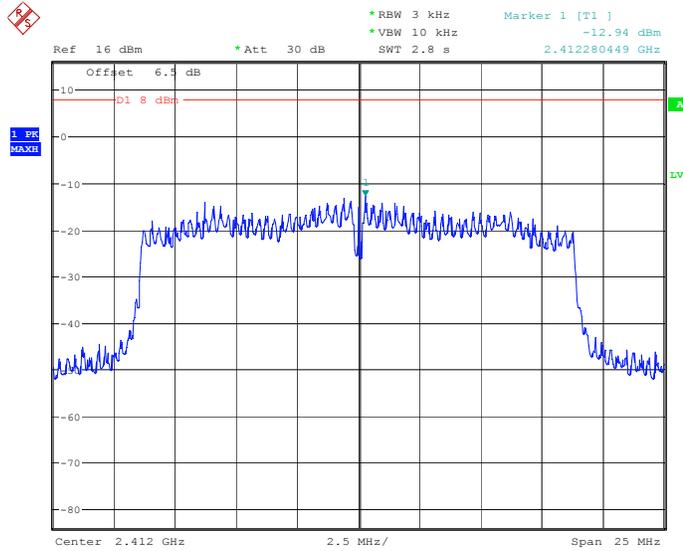


Date: 28.SEP.2013 09:20:05



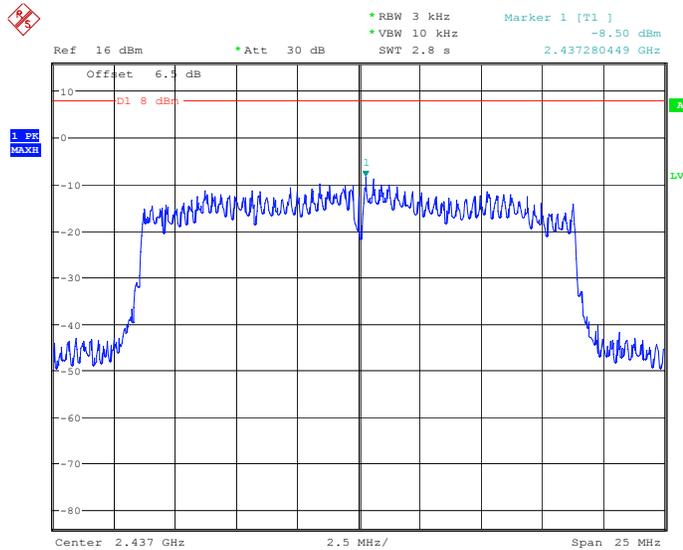
IEEE 802.11n HT20 MHz(Antenna 1)mode

PPSD (CH Low)



Date: 28.SEP.2013 09:36:40

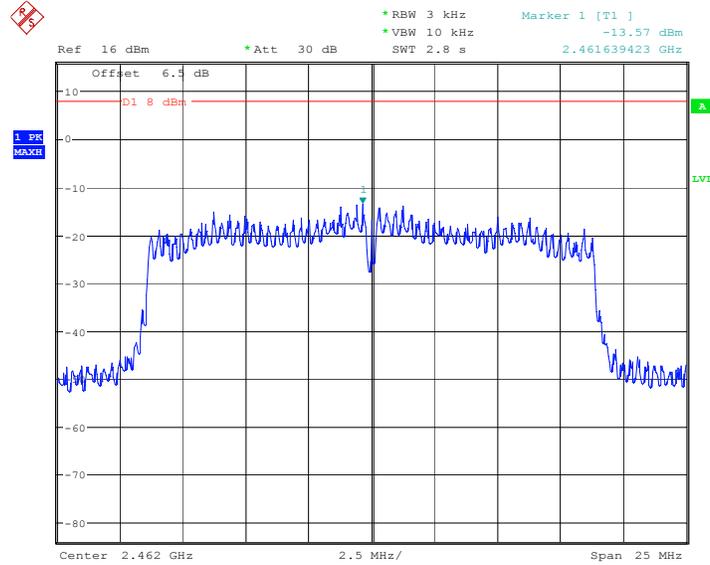
PPSD (CH Mid)



Date: 28.SEP.2013 09:25:18



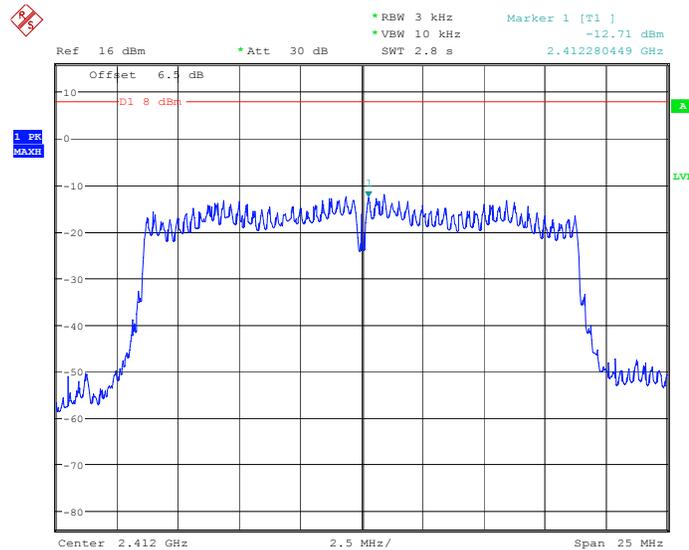
PPSD (CH High)



Date: 28.SEP.2013 09:27:19

IEEE 802.11n HT20 MHz(Antenna 2)mode

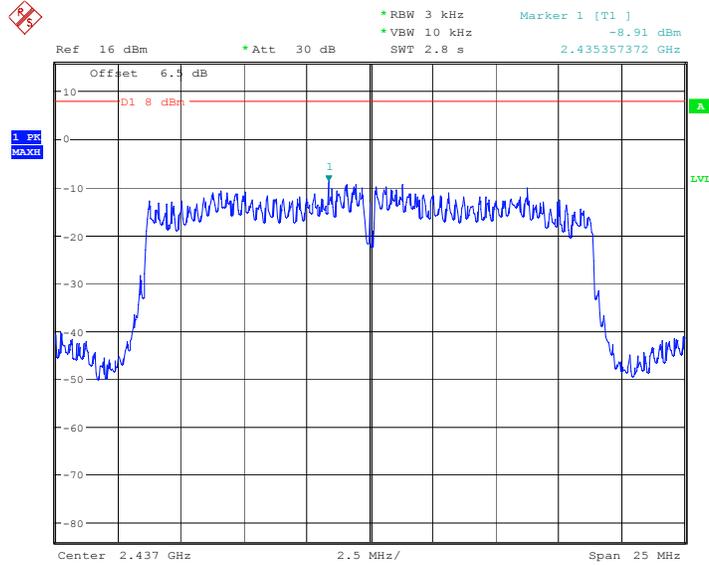
PPSD (CH Low)



Date: 28.SEP.2013 09:42:01

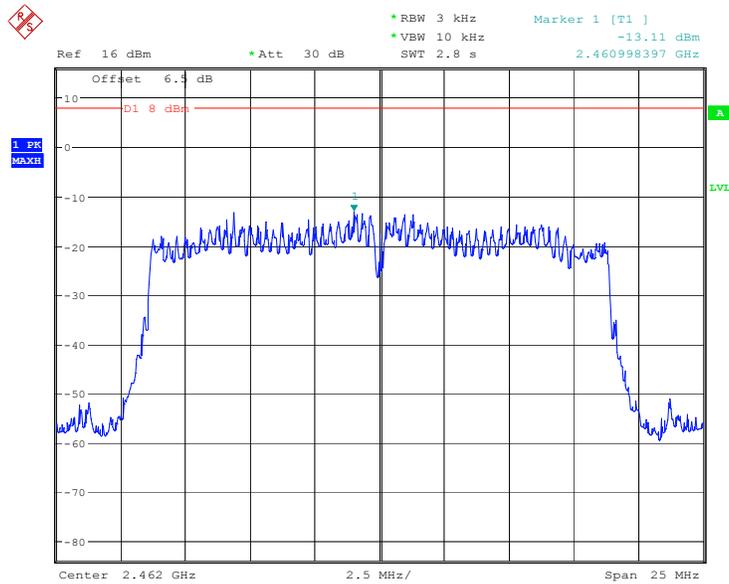


PPSD (CH Mid)



Date: 28.SEP.2013 09:44:06

PPSD (CH High)

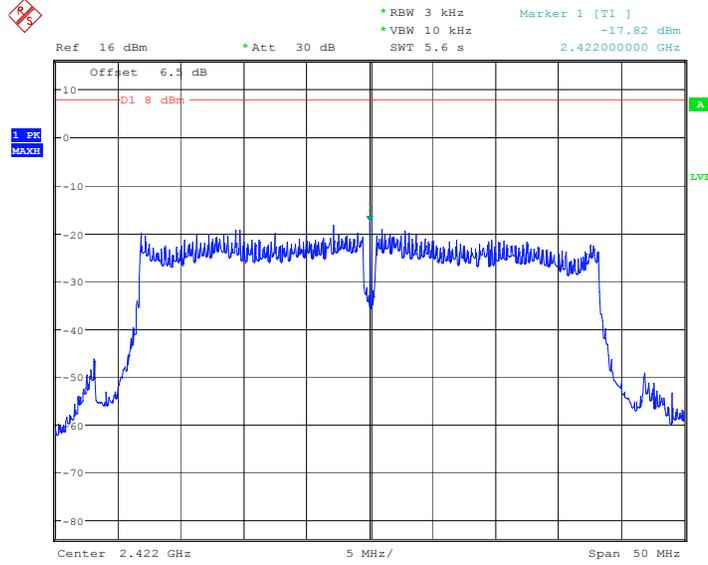


Date: 28.SEP.2013 09:42:56



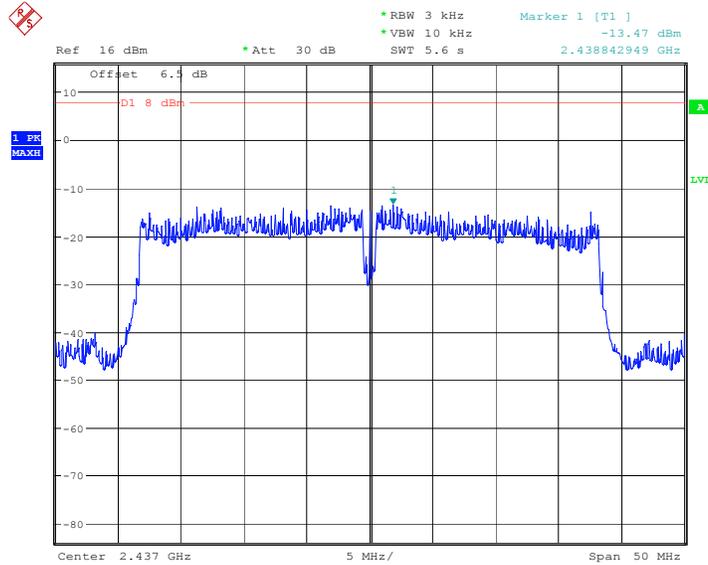
IEEE 802.11n HT40 MHz(Antenna 1)mode

PPSD (CH Low)



Date: 28.SEP.2013 09:34:08

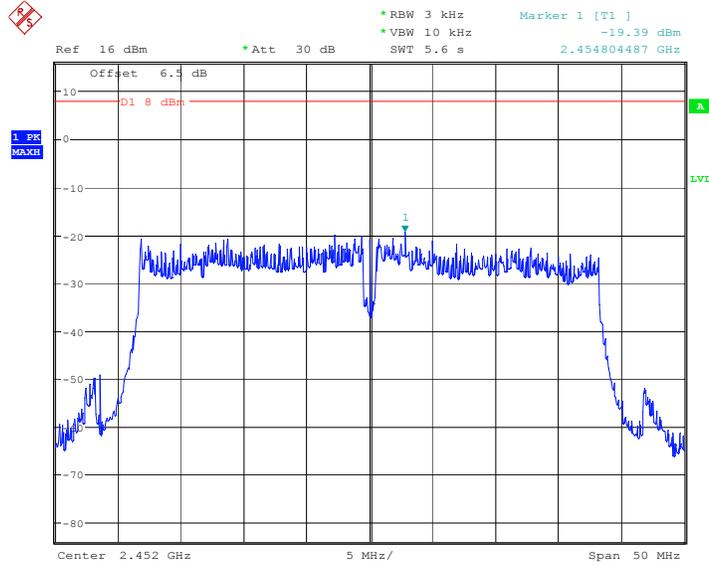
PPSD (CH Mid)



Date: 28.SEP.2013 09:31:57



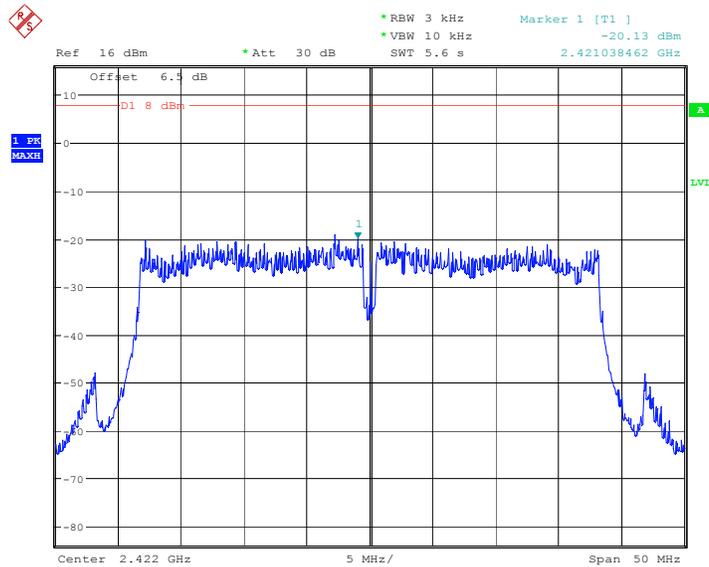
PPSD (CH High)



Date: 28.SEP.2013 09:34:52

IEEE 802.11n HT40 MHz (Antenna 2)mode

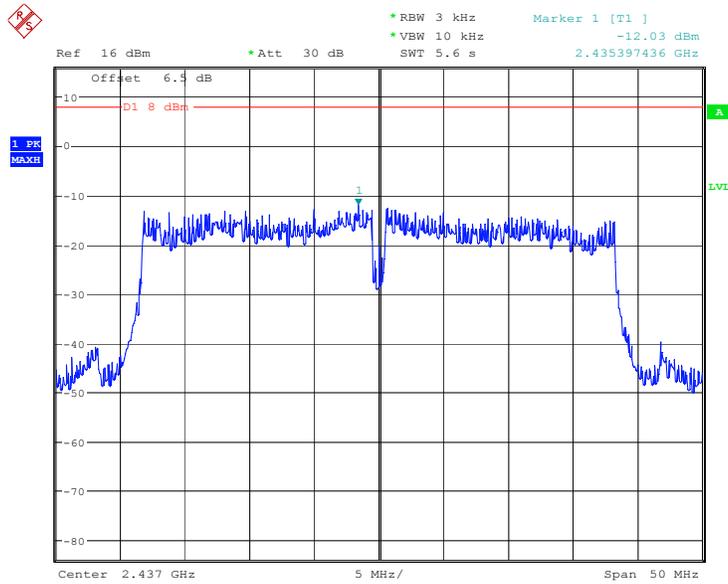
PPSD (CH Low)



Date: 28.SEP.2013 09:47:32

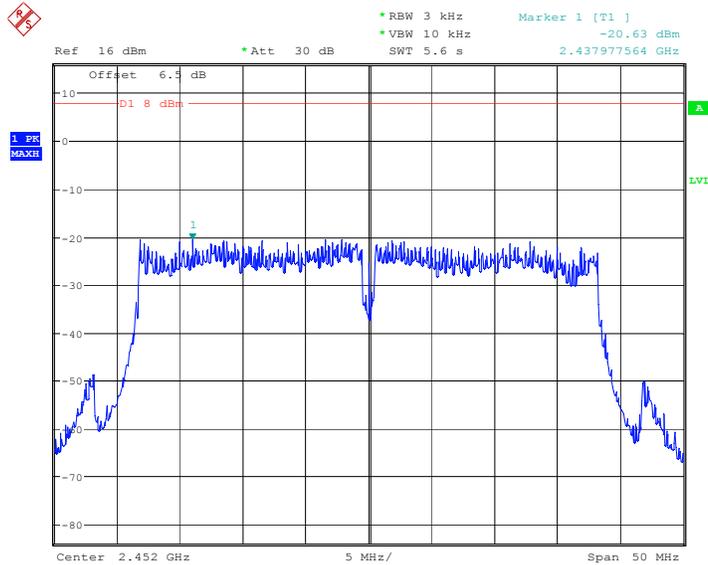


PPSD (CH Mid)



Date: 28.SEP.2013 09:46:05

PPSD (CH High)



Date: 28.SEP.2013 09:48:07