Antenna 1

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	15144	>500	PASS
Mid	2437	15125		PASS
High	2462	15132		PASS

Antenna 1

Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2412	16086	>500	PASS
Mid	2437	15721		PASS
High	2462	15723		PASS

Antenna 1

Test mode: IEEE 802.11n HT40 MHz

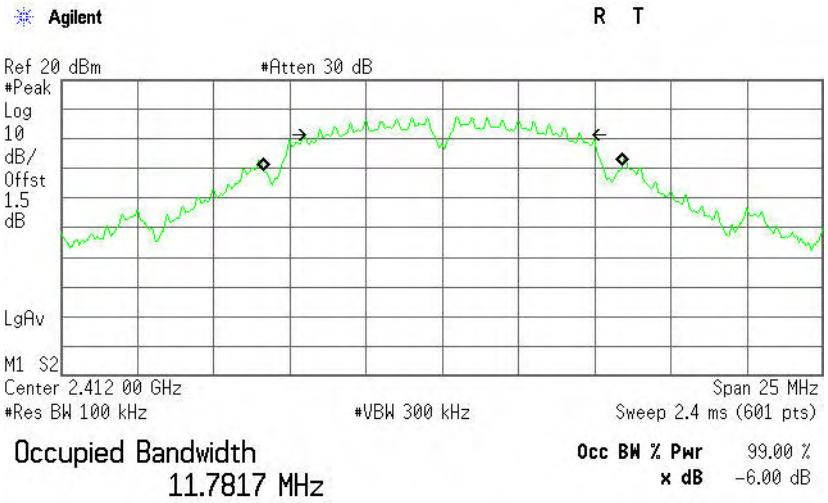
Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Low	2422	35186	>500	PASS
Mid	2437	35788		PASS
High	2452	35806		PASS

Test Plot

Antenna 0

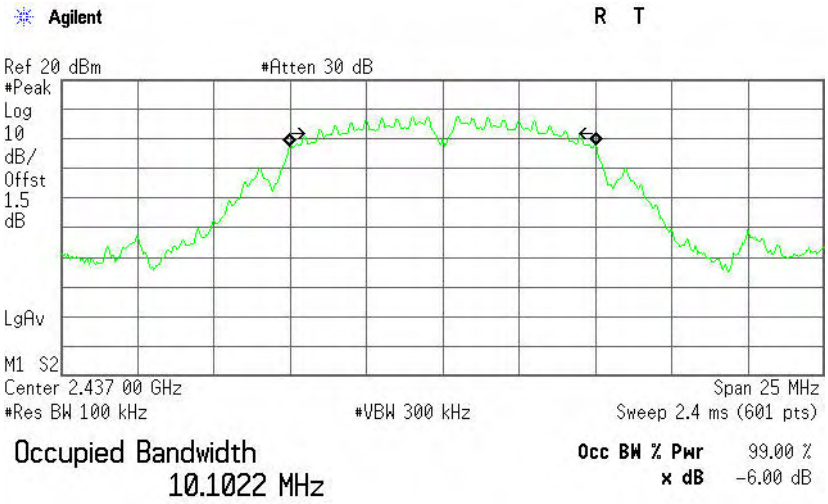
IEEE 802.11b mode

6dB Bandwidth (CH Low)



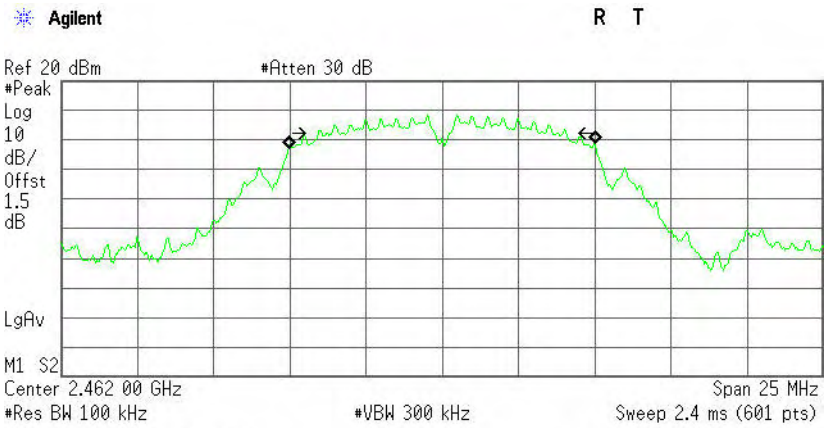
Transmit Freq Error	15.276 kHz
x dB Bandwidth	8.560 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	-6.298 kHz
x dB Bandwidth	8.125 MHz

6dB Bandwidth (CH High)

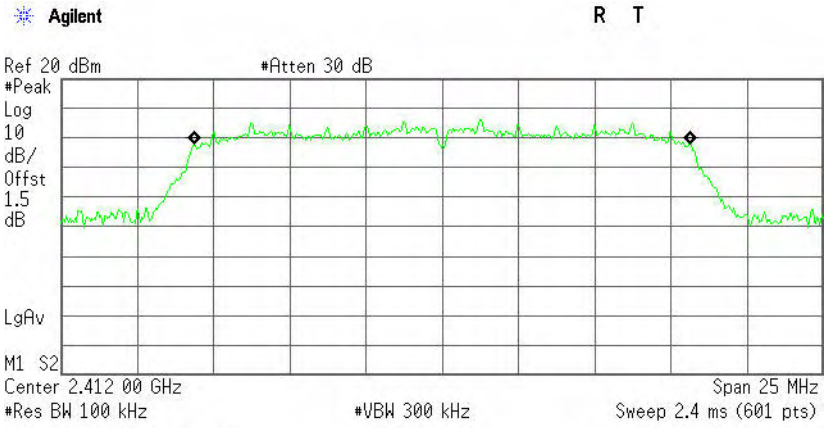


Transmit Freq Error -4.539 kHz
x dB Bandwidth 8.124 MHz

Antenna 0

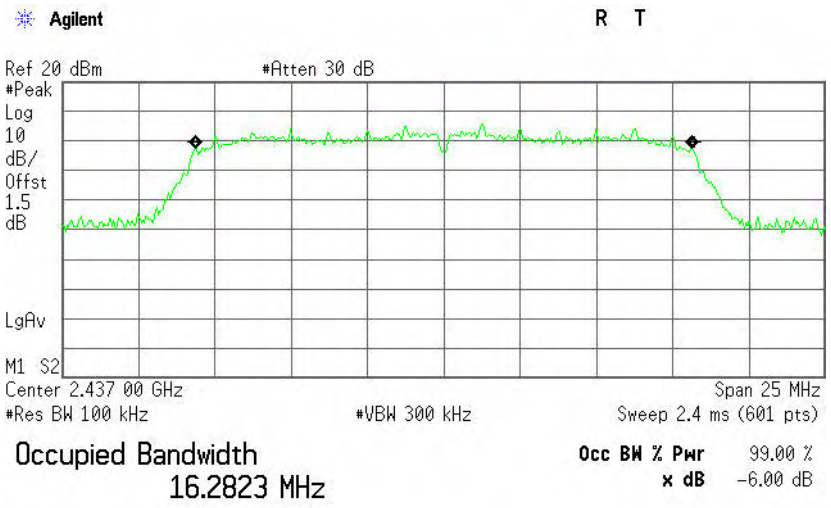
IEEE 802.11g mode

6dB Bandwidth (CH Low)



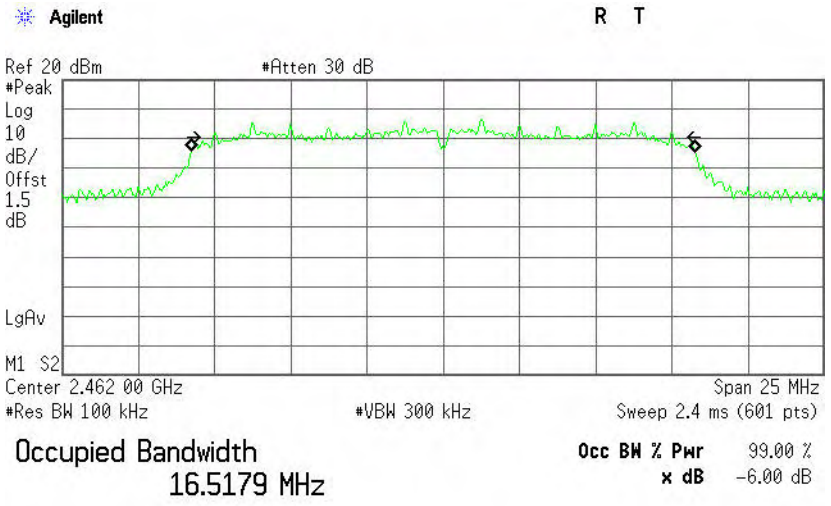
Transmit Freq Error 7.863 kHz
x dB Bandwidth 15.084 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error 422.372 Hz
x dB Bandwidth 15.103 MHz

6dB Bandwidth (CH High)

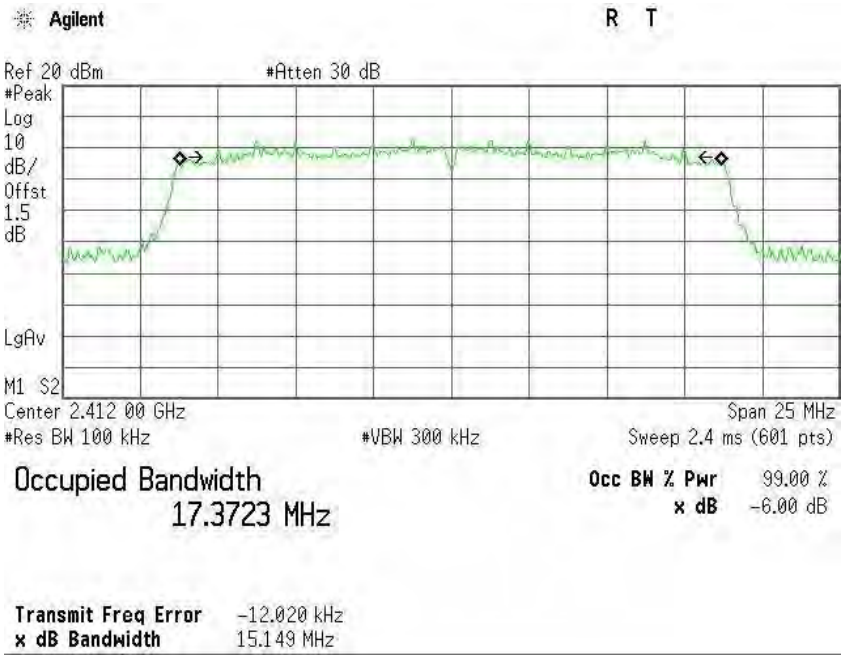


Transmit Freq Error -1.711 kHz
x dB Bandwidth 15.117 MHz

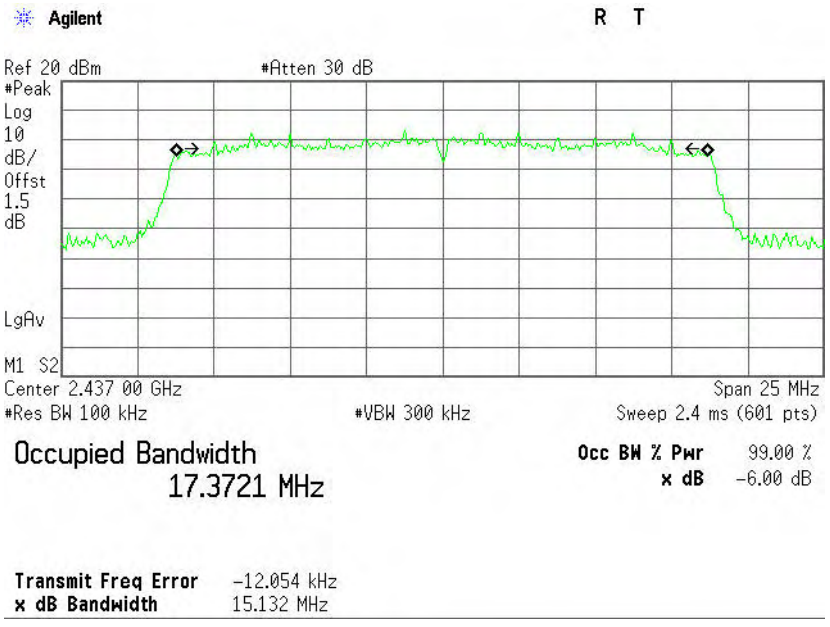
Antenna 0

IEEE 802.11n HT20 MHz mode

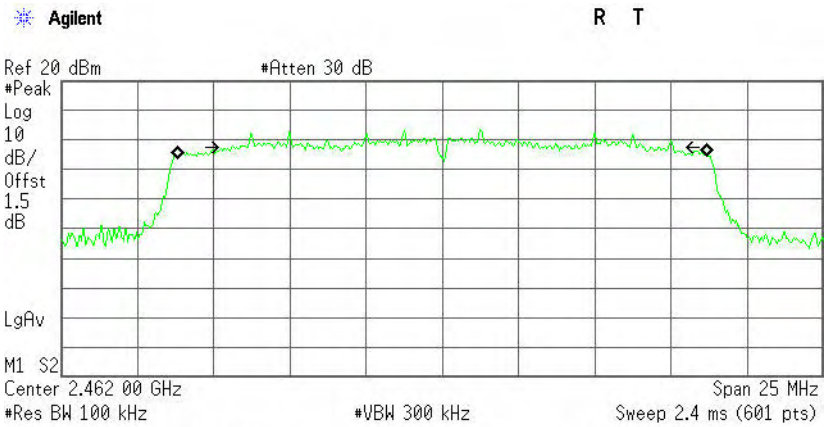
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



6dB Bandwidth (CH High)

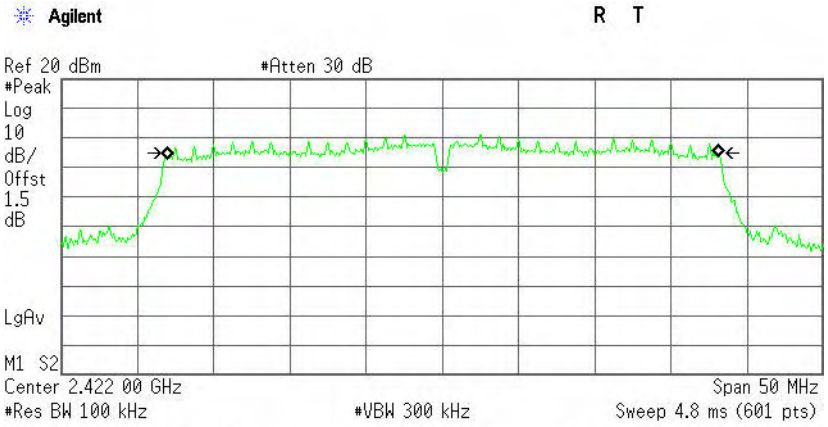


Transmit Freq Error -5.465 kHz
x dB Bandwidth 14.504 MHz

Antenna 0

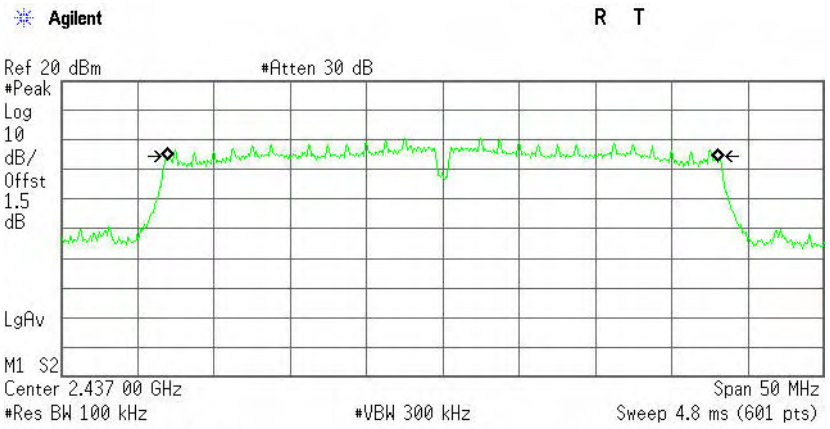
IEEE 802.11n HT40 MHz mode

6dB Bandwidth (CH Low)



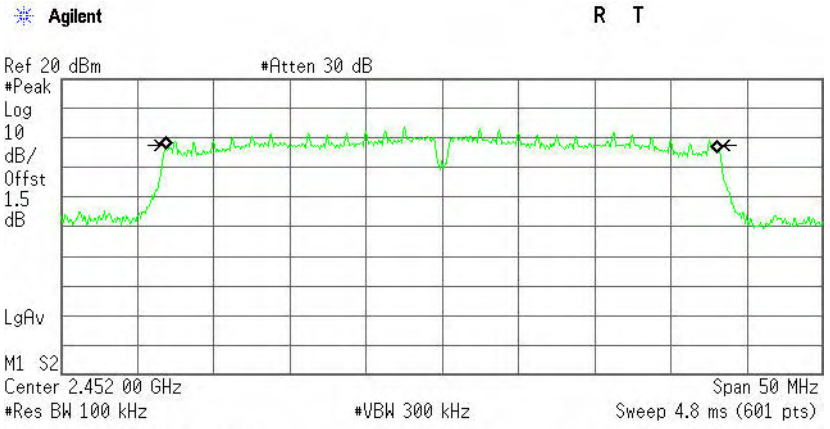
Transmit Freq Error 33.870 kHz
x dB Bandwidth 35.349 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	-2.334 kHz
x dB Bandwidth	35.244 MHz

6dB Bandwidth (CH High)



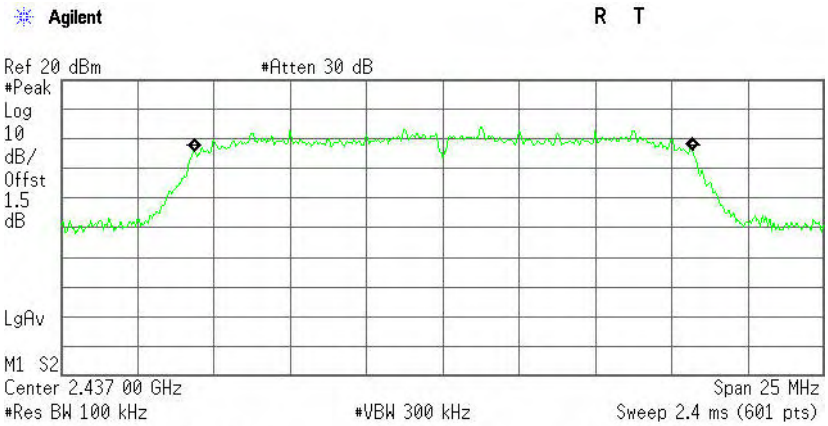
Transmit Freq Error	-28.142 kHz
x dB Bandwidth	35.200 MHz

Antenna 1

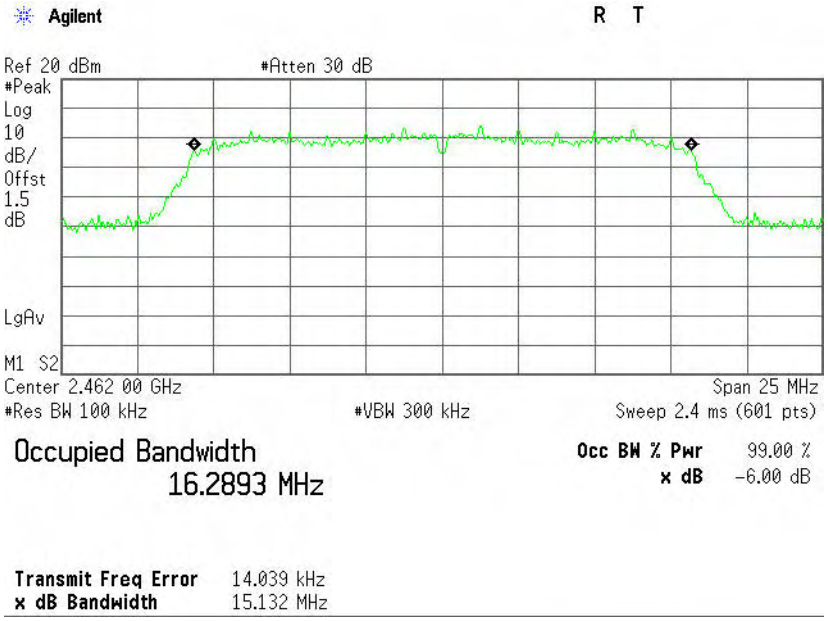
IEEE 802.11g mode

6dB Bandwidth (CH Low)

6dB Bandwidth (CH Mid)



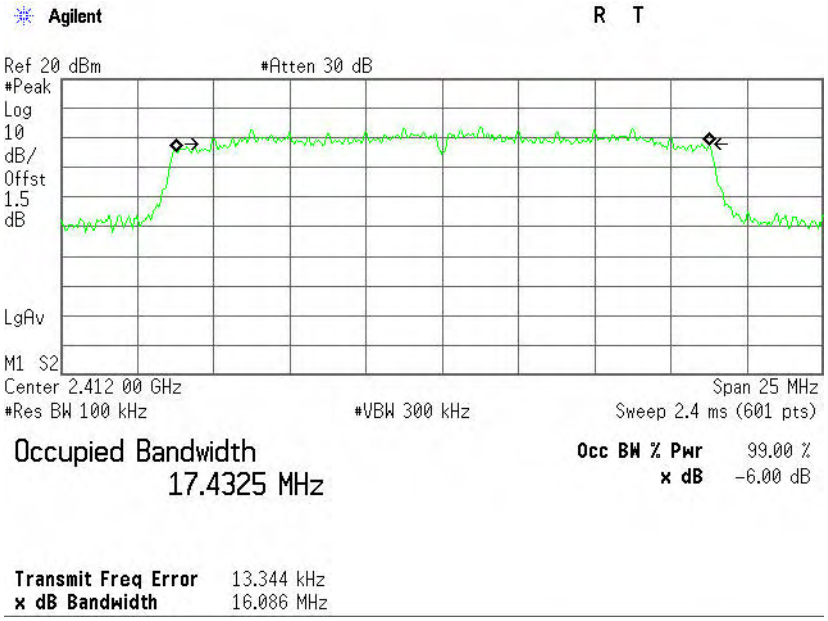
6dB Bandwidth (CH High)



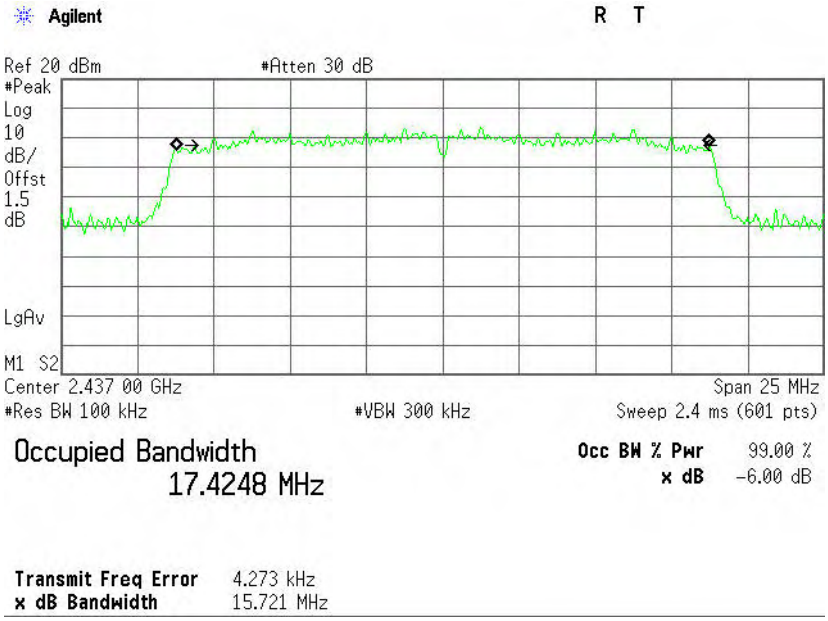
Antenna 1

IEEE 802.11n HT20 MHz mode

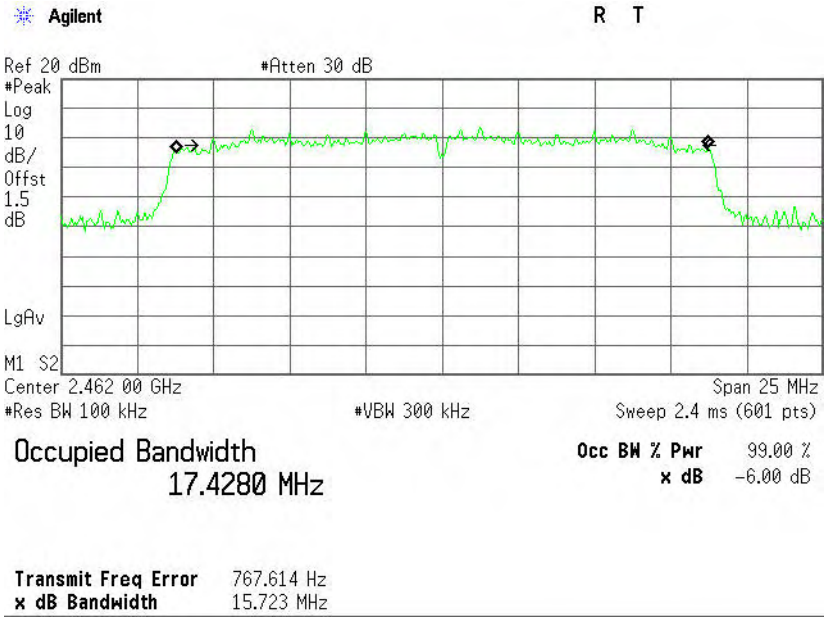
6dB Bandwidth (CH Low)



6dB Bandwidth (CH Mid)



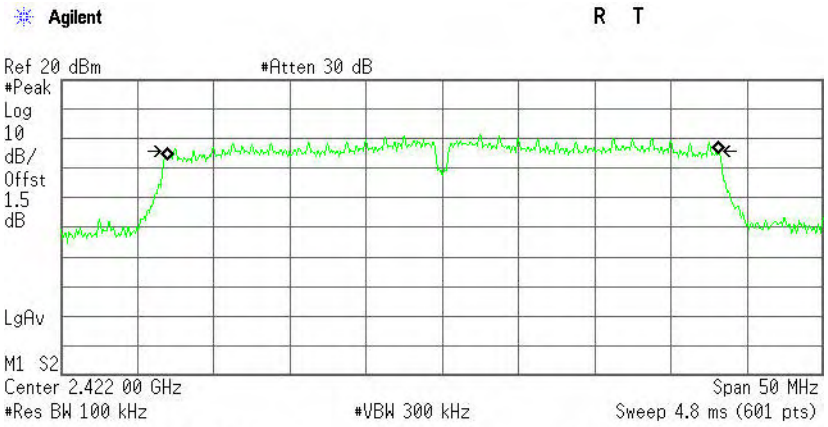
6dB Bandwidth (CH High)



Antenna 1

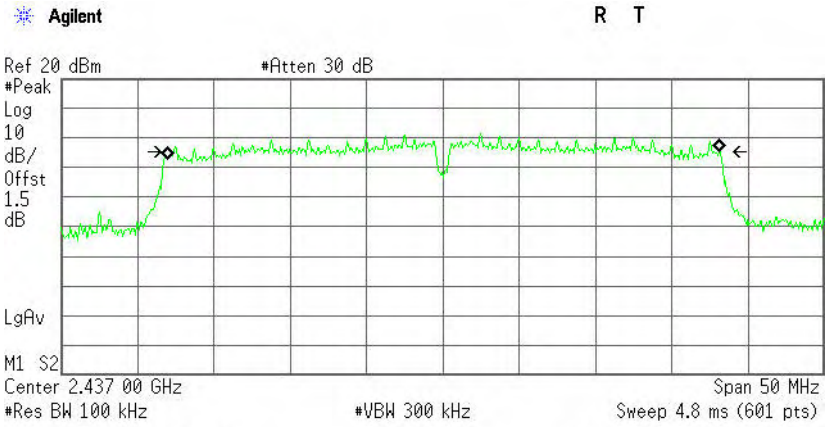
IEEE 802.11n HT40 MHz mode

6dB Bandwidth (CH Low)



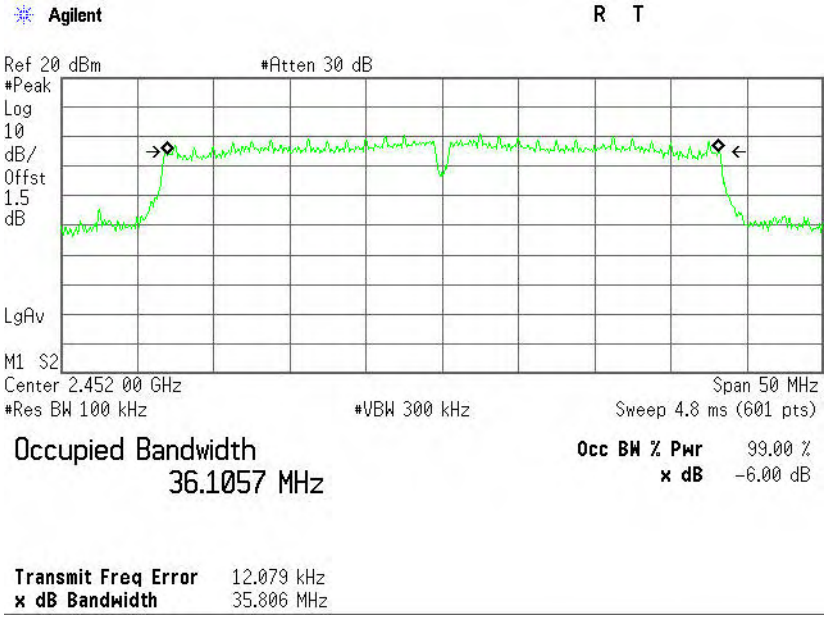
Transmit Freq Error	36.811 kHz
x dB Bandwidth	35.186 MHz

6dB Bandwidth (CH Mid)



Transmit Freq Error	30.335 kHz
x dB Bandwidth	35.788 MHz

6dB Bandwidth (CH High)



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

Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/09/2013	03/08/2014
Power Meter	Anritsu	ML2495A	1204003	03/09/2013	03/08/2014
Power Sensor	Anritsu	MA2411B	1126150	03/09/2013	03/08/2014

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.

1. Set the RBW ⩾ DTS bandwidth.
2. Set VBW ⩾ 3 RBW.
3. Set span ⩾ 3 x RBW
4. Sweep time = auto couple.
5. Detector = peak.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. 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.

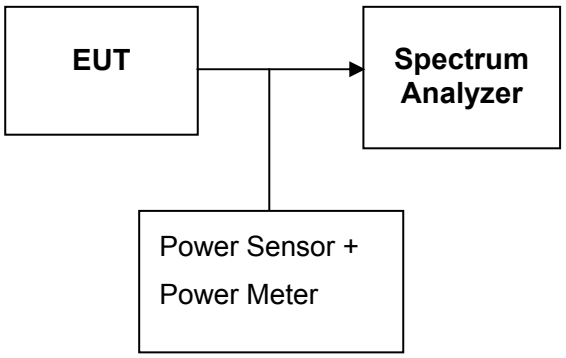
1. Set the RBW = 1 MHz.
2. Set the VBW ⩾ 3 RBW
3. Set the span ⩾ 1.5 x DTS bandwidth.
4. Detector = peak.
5. Sweep time = auto couple.

6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. 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

Antenna 0

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	17.59	0.05741	1	PASS
Mid	2437	17.52	0.05649		PASS
High	2462	17.88	0.06138		PASS

Antenna 0

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	23.60	0.22909	1	PASS
Mid	2437	23.03	0.20091		PASS
High	2462	22.75	0.18836		PASS

Antenna 1

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (W)	Limit (W)	Result
Low	2412	21.67	0.14689	1	PASS
Mid	2437	23.06	0.20230		PASS
High	2462	21.16	0.13062		PASS

Antenna 0+ Antenna 1

Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency (MHz)	Output Power (dBm)			Output Power (W)	Limit (W)	Result
		Chain 0	Chain 1	Total			
Low	2412	21.80	18.24	23.38530	0.21804	1	PASS
Mid	2437	19.82	22.83	24.59101	0.28781		PASS
High	2462	17.89	17.02	20.48705	0.11187		PASS

Antenna 0 + Antenna 1
Test mode: IEEE 802.11n HT40 MHz

Channel	Frequency (MHz)	Output Power (dBm)			Output Power	Limit (W)	Result
		Chain 0	Chain 1	Total			
Low	2422	20.53	19.00	22.84233	0.19241	1	PASS
Mid	2437	21.80	20.38	24.15808	0.26050		PASS
High	2452	18.25	14.80	19.86924	0.09703		PASS

Note : Combine Power Calculation :

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 in 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	03/09/2013	03/08/2014
ESCI EMI TEST RECEIVER.ESCI	ROHDE&SCHWARZ	ESCI	100783	03/09/2013	03/08/2014
Amplifier	MITEQ	AM-1604-3000	1123808	03/18/2013	03/18/2014
High Noise Amplifier	Agilent	8449B	3008A01838	03/18/2013	03/18/2014
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170-497	06/21/2013	06/21/2014
Bilog Antenna	SCHAFFNER	CBL6143	5082	03/02/2013	03/01/2014
Horn Antenna	SCHWARZBECK	BBHA9120	D286	03/02/2013	03/01/2014
Loop Antenna	A、R、A	PLA-1030/B	1029	03/23/2013	03/23/2014
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	03/04/2013	03/03/2014
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.

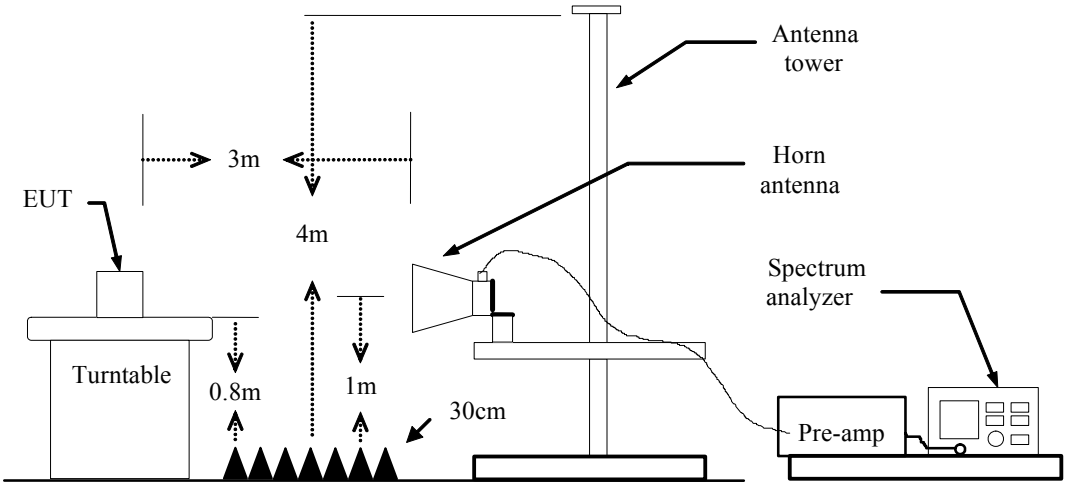
2. The FCC Site Registration number is 101879.

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=VBW=1MHz / Sweep=AUTO
   (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are

7.5.4. TEST SETUP



7.5.5. TEST RESULTS

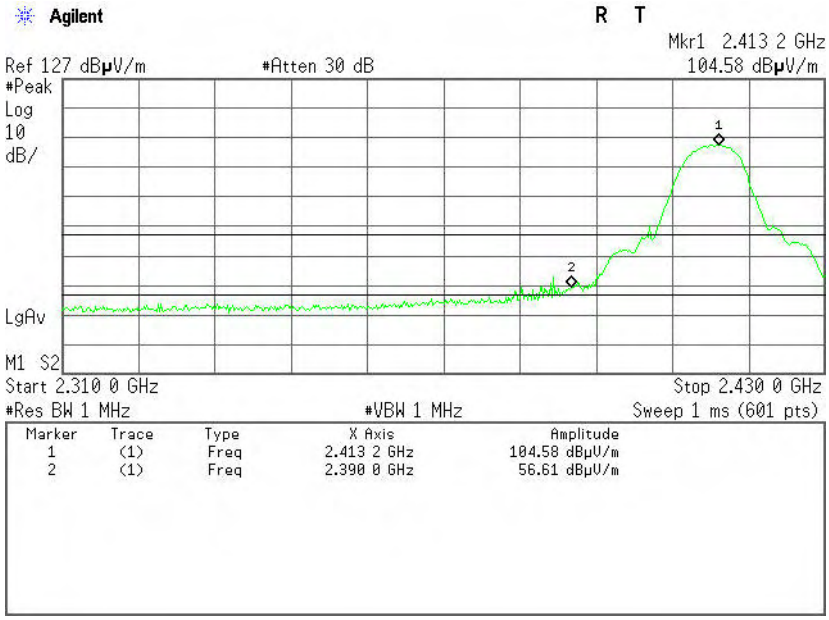
Test Plot

Antenna 0+ Antenna 1

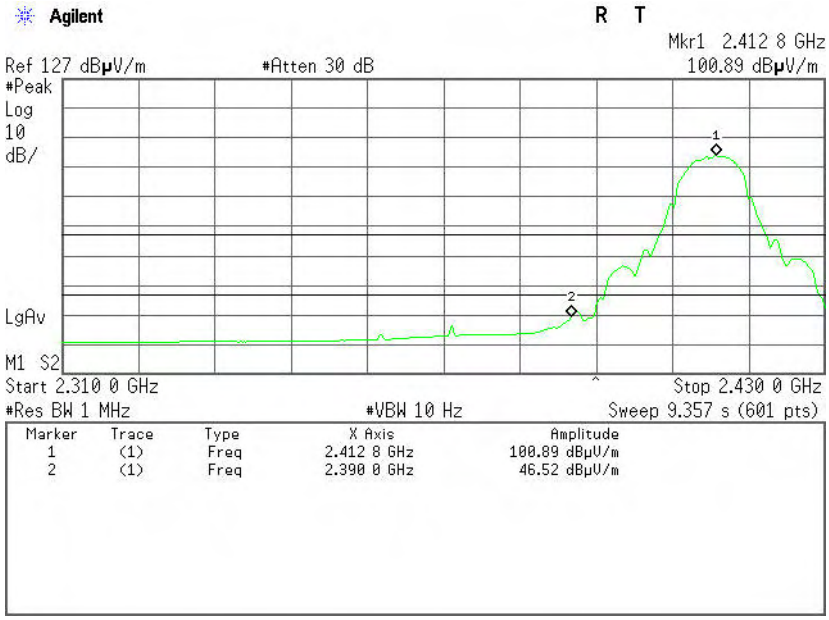
IEEE 802.11b mode

Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**

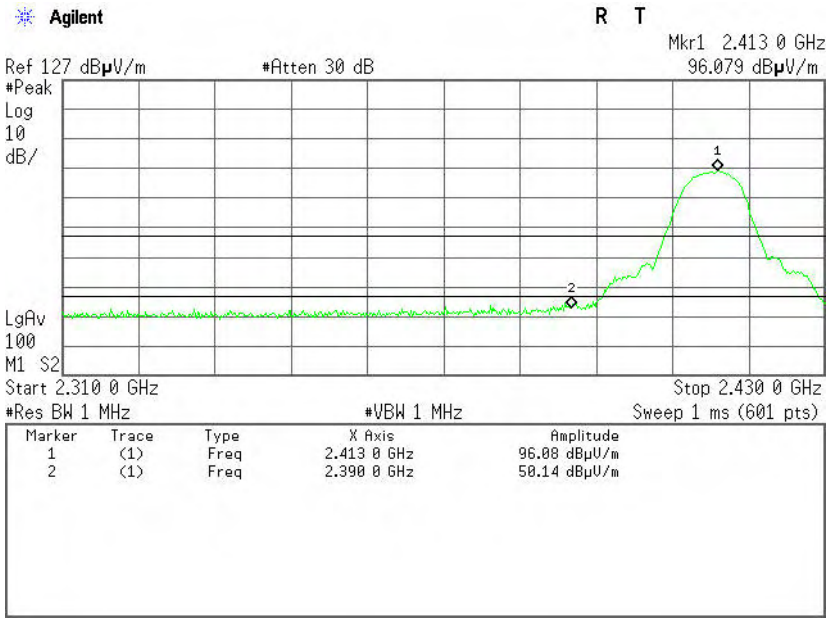


Detector mode: Average **Polarity: Vertical**

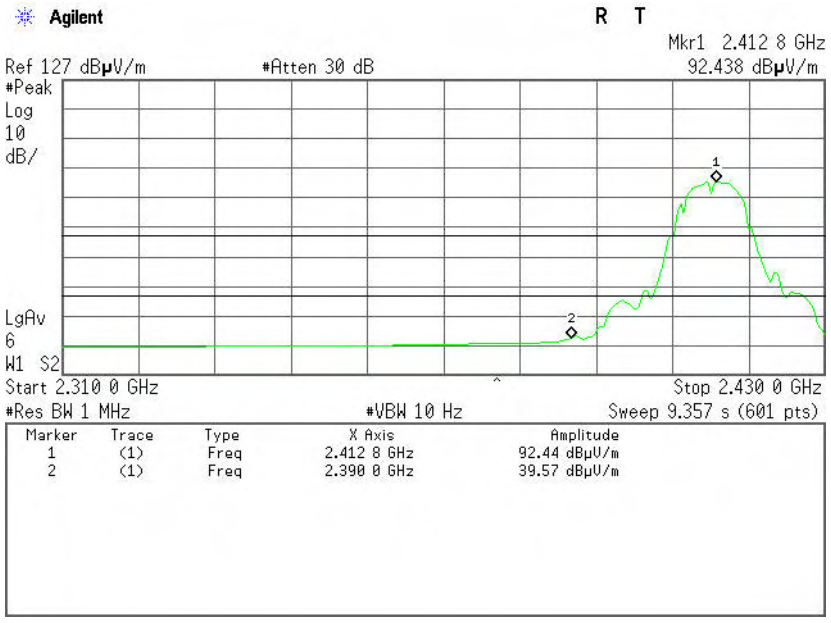


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	50.01	-6.60	56.61	74.00	-17.39	Peak	Vertical
2	2390.0000	39.92	-6.60	46.52	54.00	-7.48	Average	Vertical

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	43.54	-6.60	50.14	74.00	-23.86	Peak	Horizontal
2	2390.0000	32.97	-6.60	39.57	54.00	-14.43	Average	Horizontal