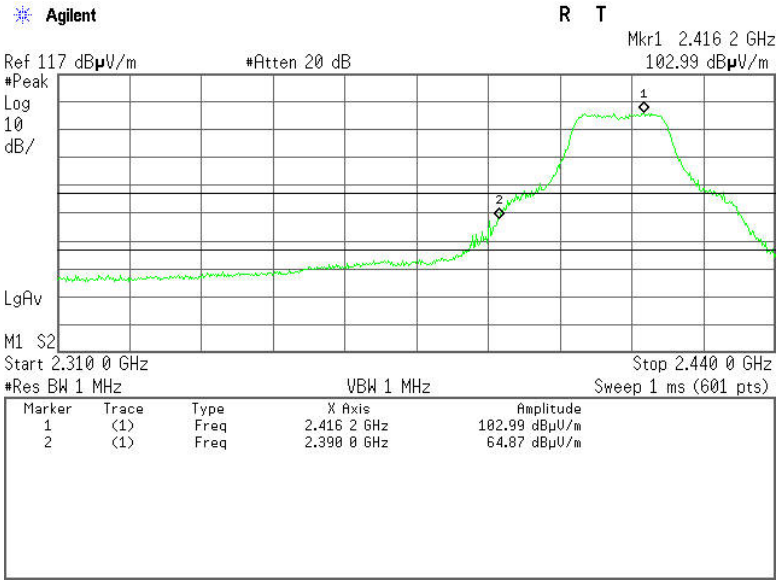
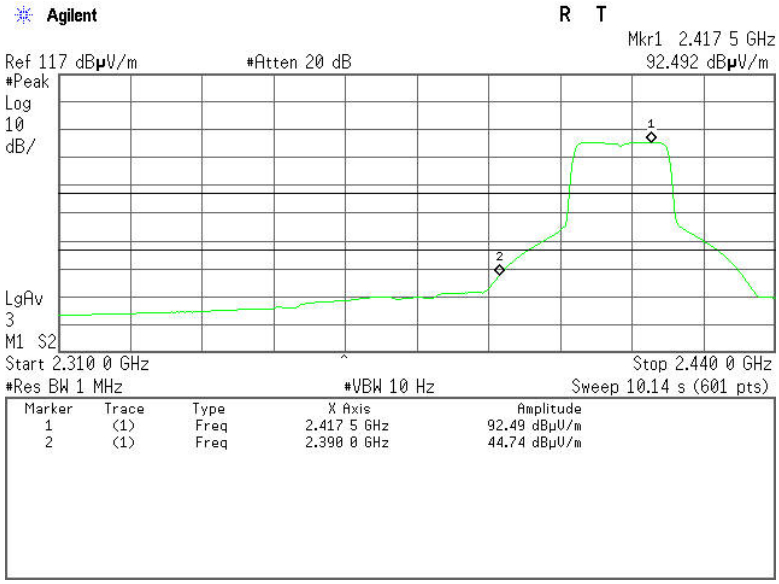
Detector mode: Peak **Polarity: Horizontal**



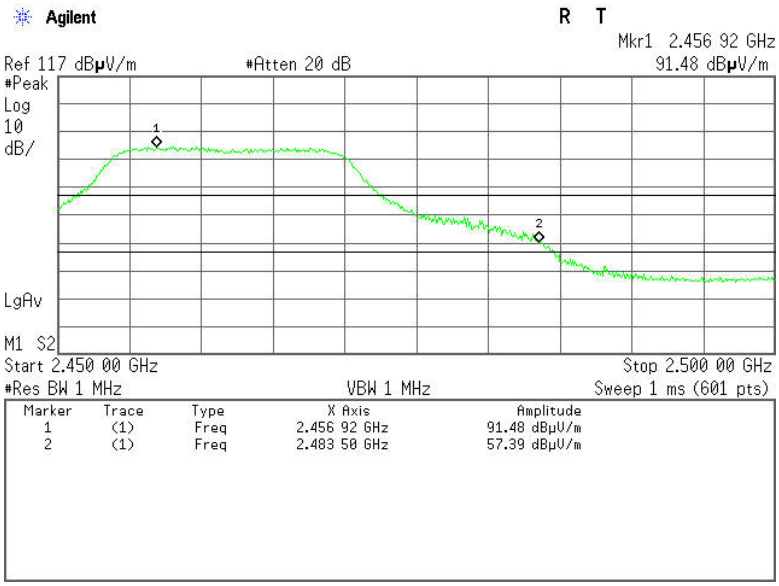
Detector mode: Average **Polarity: Horizontal**



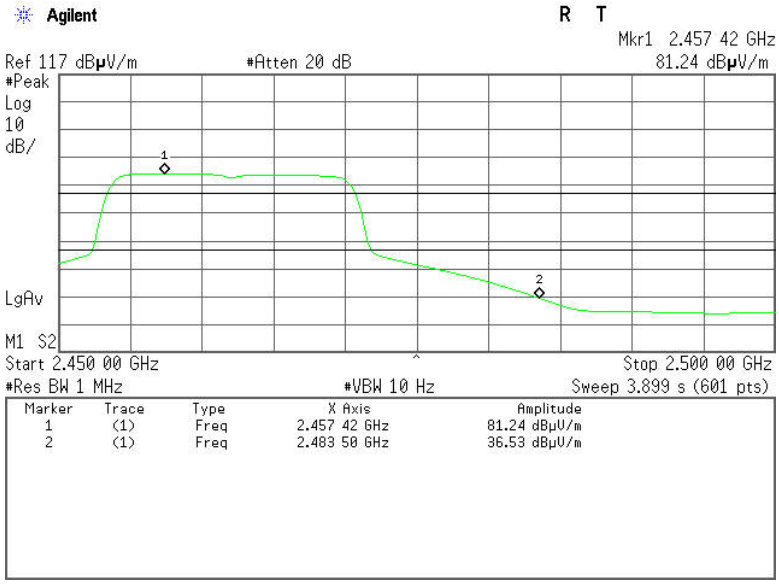
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	58.27	-6.60	64.87	74.00	-9.13	Peak	Horizontal
2	2390.0000	38.14	-6.60	44.74	54.00	-9.26	AVG	Horizontal

Band Edges (CH High)

Detector mode: Peak Polarity: Vertical

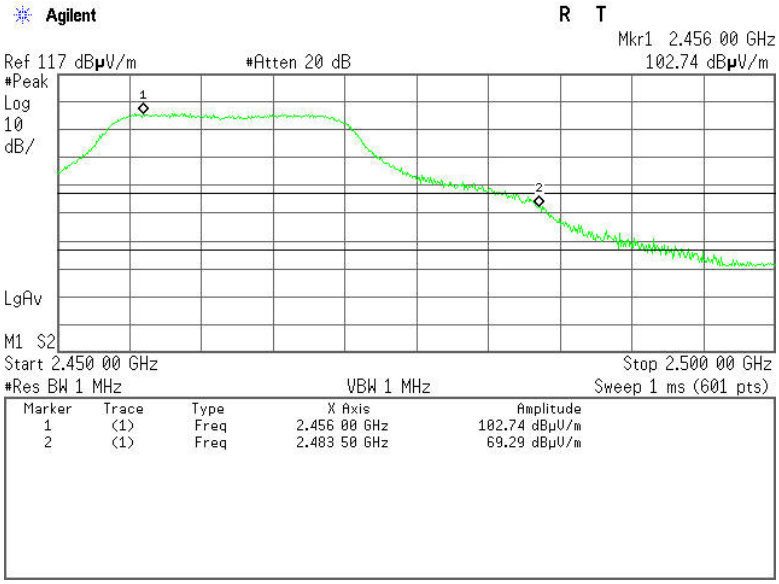


Detector mode: Average Polarity: Vertical

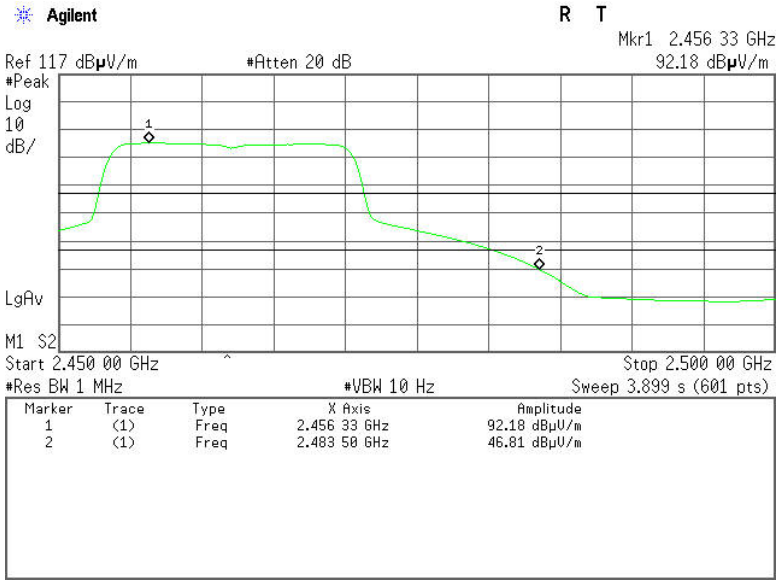


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	51.15	-6.24	57.39	74.00	-16.61	Peak	Vertical
2	2483.5000	30.29	-6.24	36.53	54.00	-17.47	AVG	Vertical

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



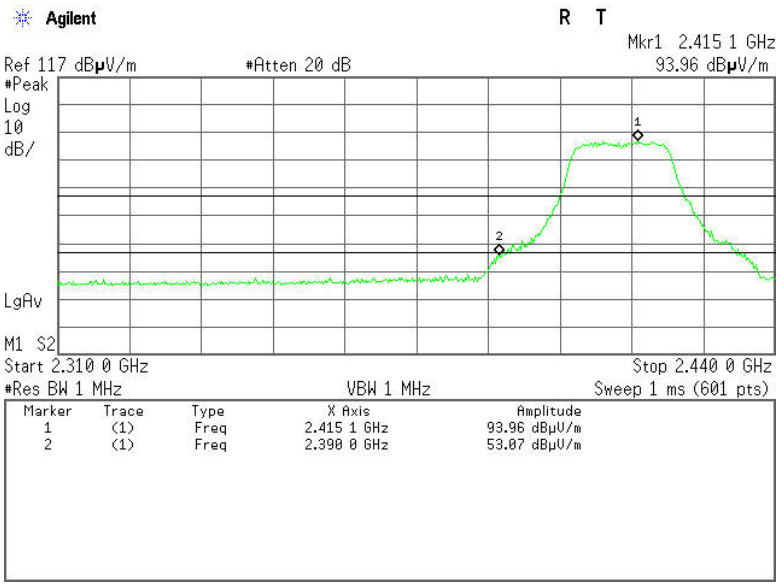
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	63.05	-6.24	69.29	74.00	-4.71	Peak	Horizontal
2	2483.5000	40.57	-6.24	46.81	54.00	-7.19	AVG	Horizontal

Antenna 0 + Antenna 1

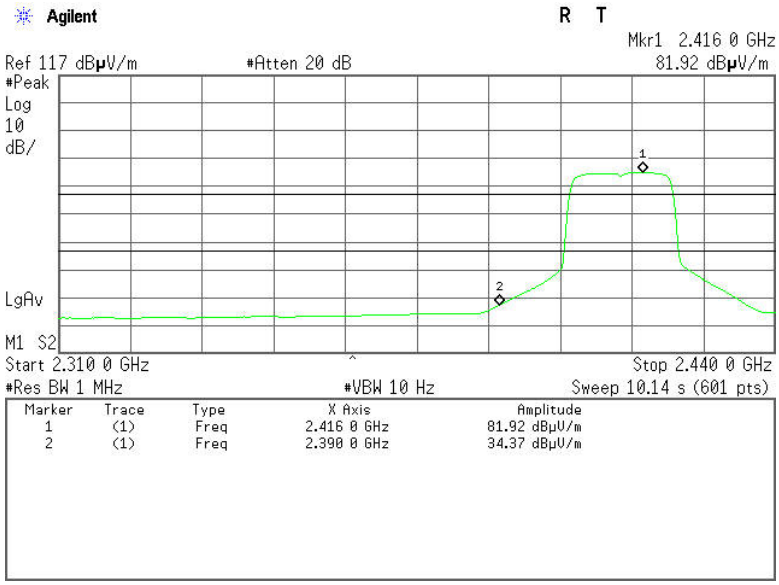
IEEE 802.11n HT20 MHz mode

Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**

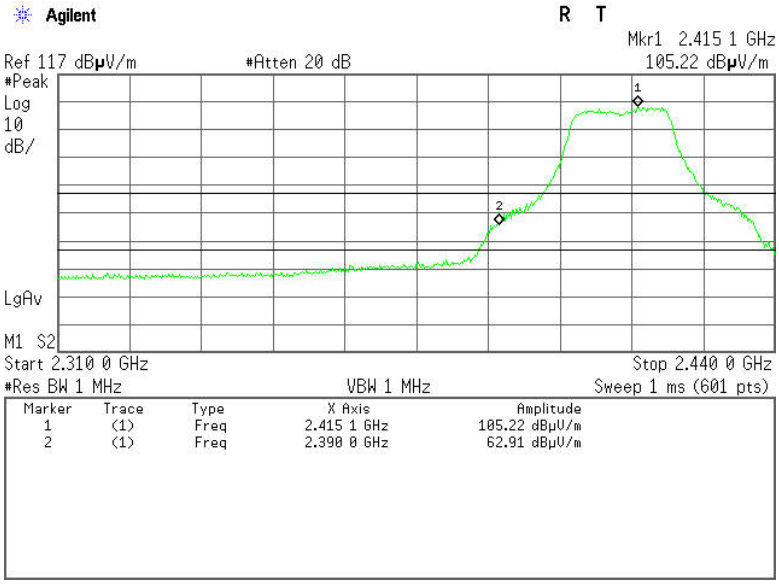


Detector mode: Average **Polarity: Vertical**

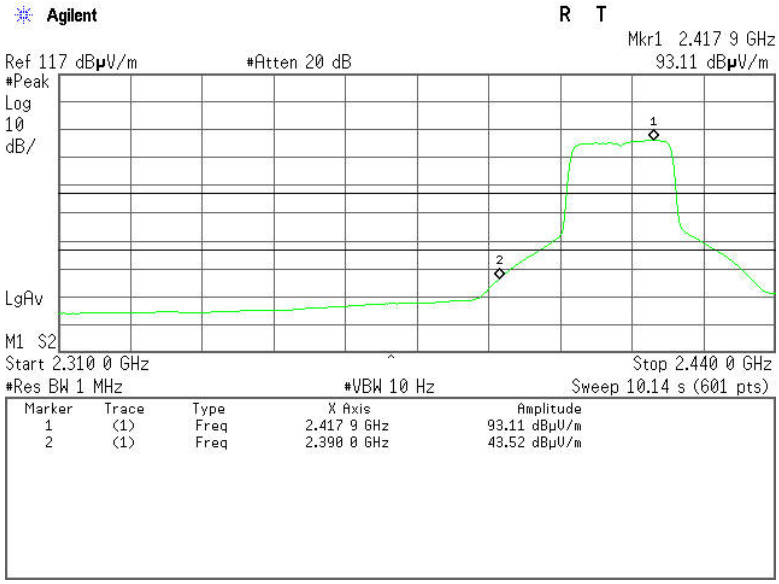


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	46.47	-6.60	53.07	74.00	-20.93	Peak	Vertical
2	2390.0000	27.77	-6.60	34.37	54.00	-19.63	AVG	Vertical

Detector mode: Peak **Polarity: Horizontal**



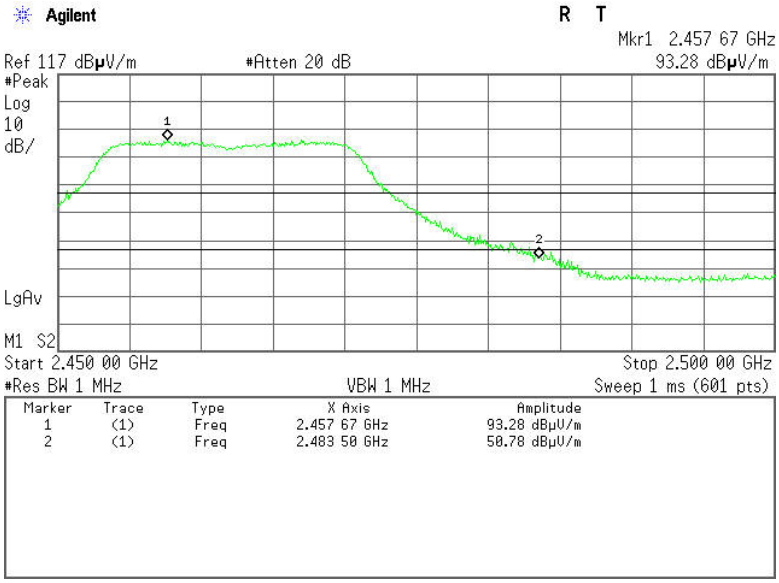
Detector mode: Average **Polarity: Horizontal**



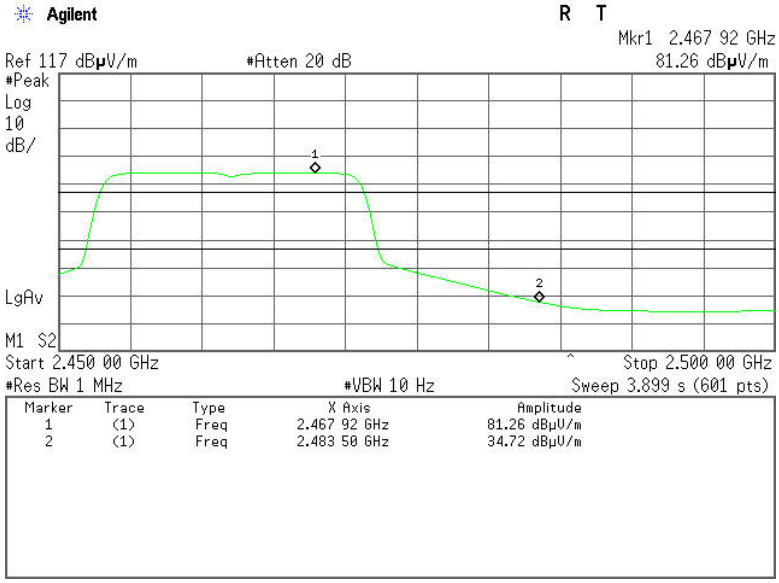
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	56.31	-6.60	62.91	74.00	-11.09	Peak	Horizontal
2	2390.0000	36.92	-6.60	43.52	54.00	-10.48	AVG	Horizontal

Band Edges (CH High)

Detector mode: Peak Polarity: Vertical

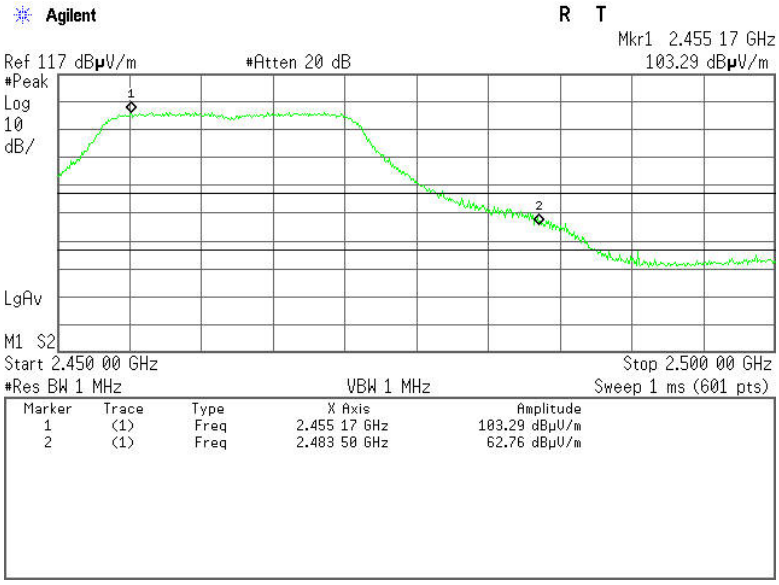


Detector mode: Average Polarity: Vertical

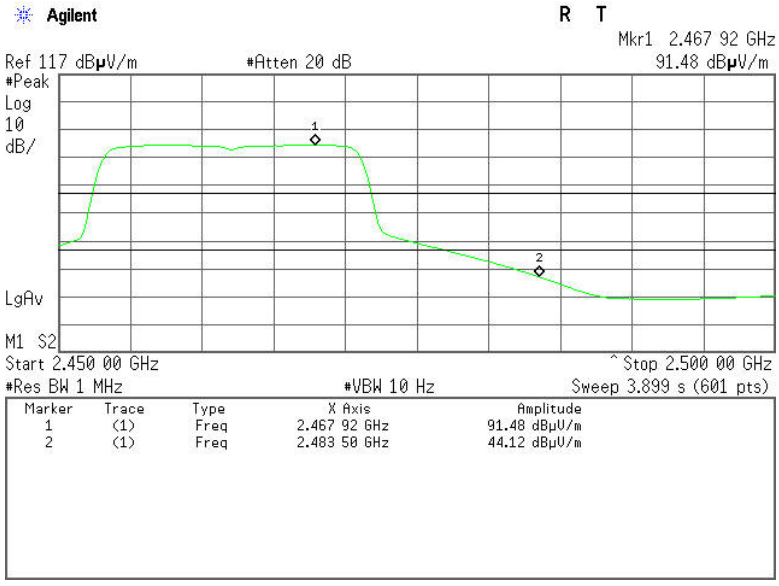


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	44.54	-6.24	50.78	74.00	-23.22	Peak	Vertical
2	2483.5000	28.48	-6.24	34.72	54.00	-19.28	AVG	Vertical

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



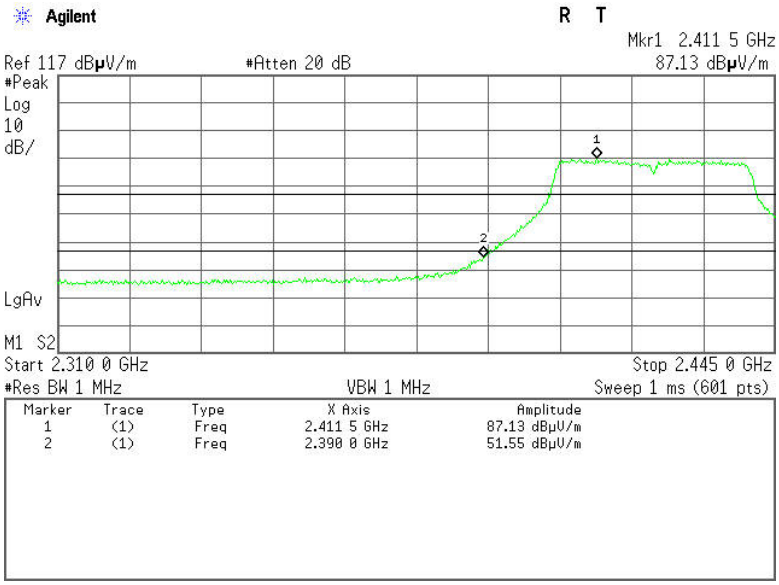
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	56.52	-6.24	62.76	74.00	-11.24	Peak	Horizontal
2	2483.5000	37.88	-6.24	44.12	54.00	-9.88	AVG	Horizontal

Antenna 0 + Antenna 1

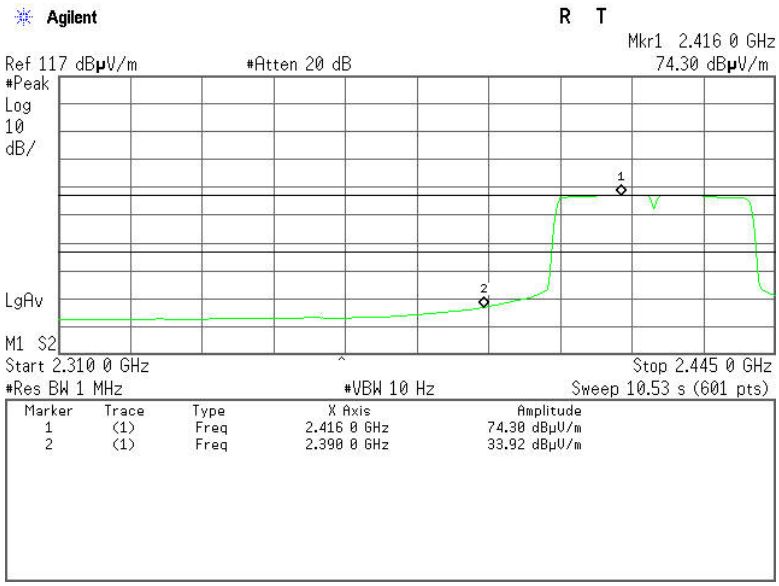
IEEE 802.11n HT40 MHz mode

Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**

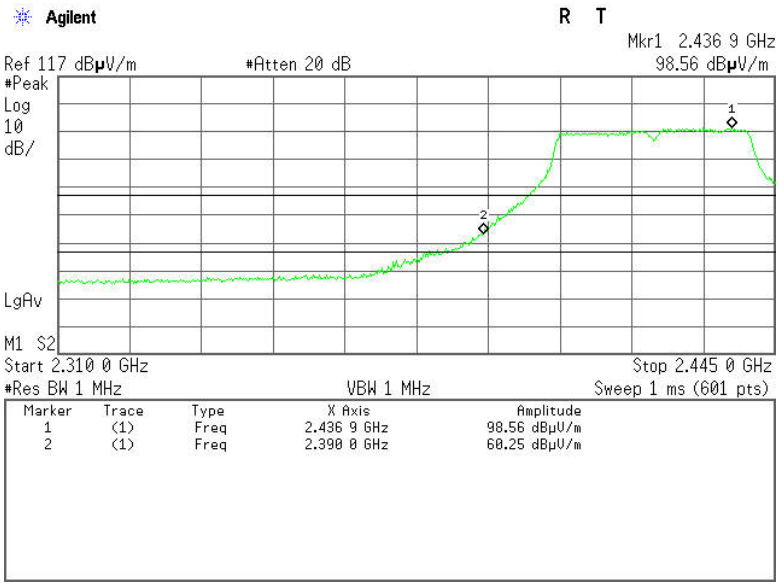


Detector mode: Average **Polarity: Vertical**

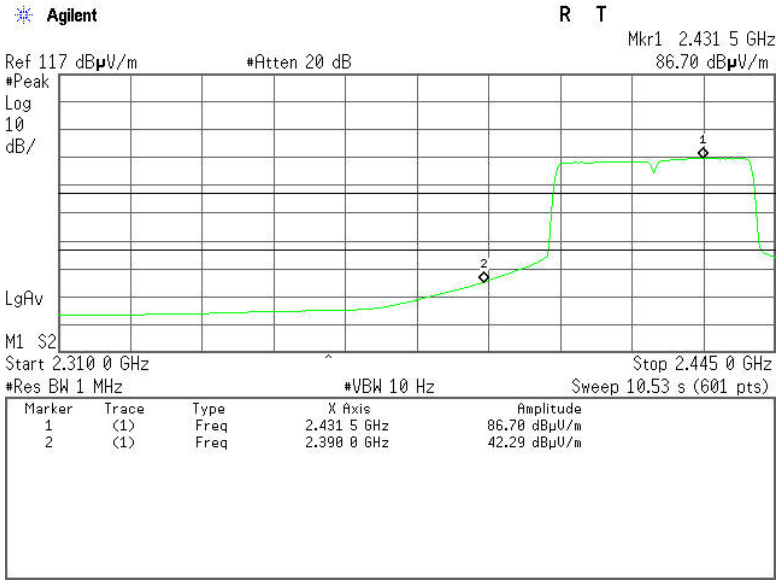


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	44.95	-6.60	51.55	74.00	-22.45	Peak	Vertical
2	2390.0000	27.32	-6.60	33.92	54.00	-20.08	AVG	Vertical

Detector mode: Peak **Polarity: Horizontal**



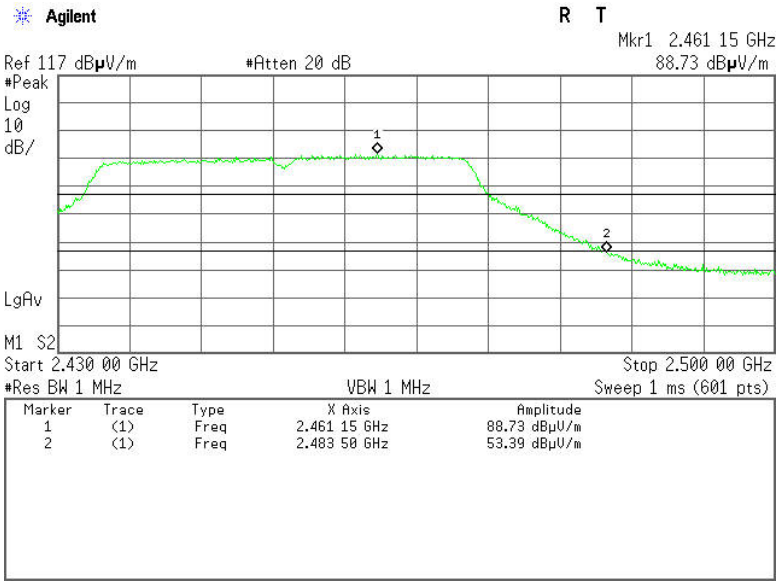
Detector mode: Average **Polarity: Horizontal**



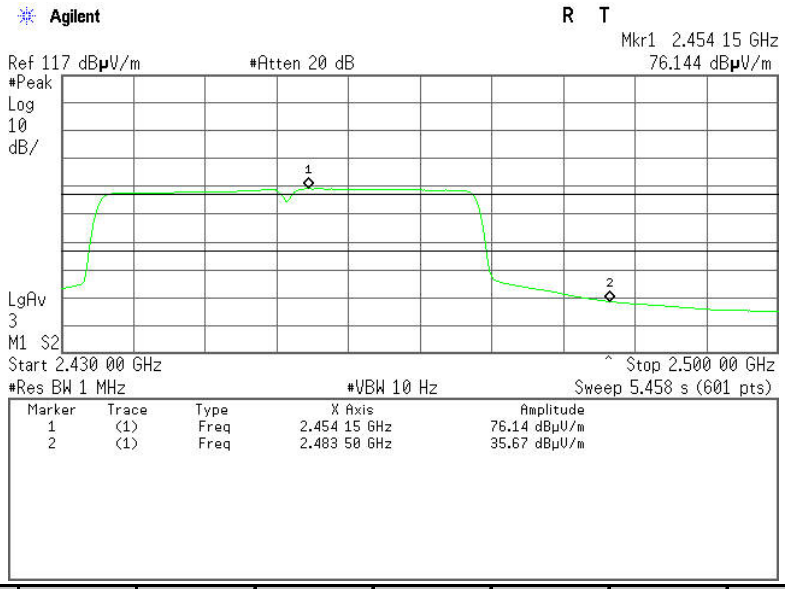
No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2390.0000	53.65	-6.60	60.25	74.00	-13.75	Peak	Horizontal
2	2390.0000	35.69	-6.60	42.29	54.00	-11.71	AVG	Horizontal

Band Edges (CH High)

Detector mode: Peak Polarity: Vertical

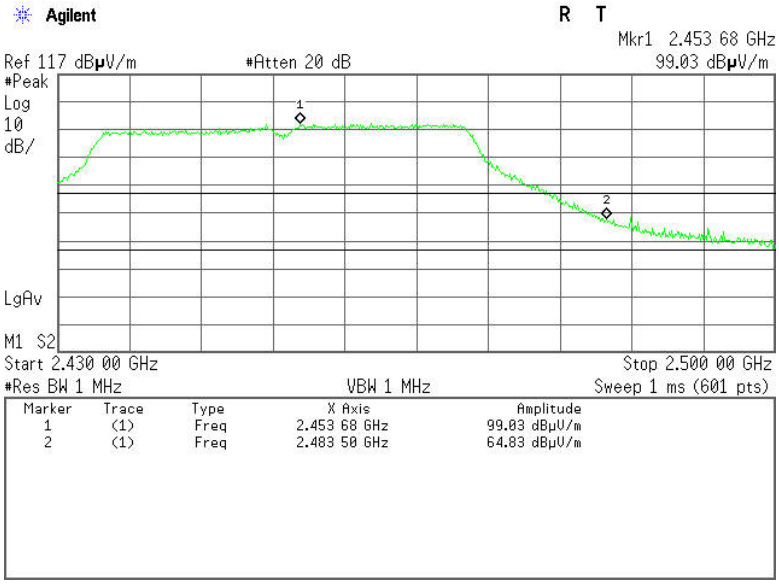


Detector mode: Average Polarity: Vertical

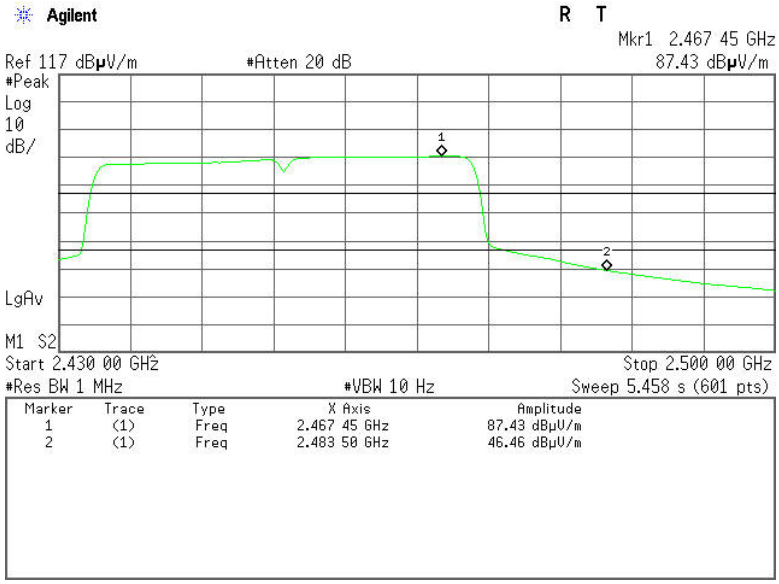


No.	Frequency (MHz)	Reading (dBuV)	Corrected (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Antenna Pole
1	2483.5000	47.15	-6.24	53.39	74.00	-20.61	Peak	Vertical
2	2483.5000	29.43	-6.24	35.67	54.00	-18.33	AVG	Vertical

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	58.59	-6.24	64.83	74.00	-9.17	Peak	Horizontal
2	2483.5000	40.22	-6.24	46.46	54.00	-7.54	AVG	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

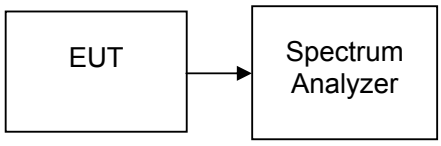
Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/09/2013	03/08/2014

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).

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW = 100 kHz.
3. Set the VBW ≥ 300 kHz.
4. Set the span to 5-30 % greater than the EBW.
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 power level in any 100 kHz band segment within the fundamental EBW.
10. Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log(3 kHz/100 kHz= -15.2 dB).
11. The resulting peak PSD level must be ≤ 8 dBm.

7.6.4. TEST SETUP



7.6.5. TEST RESULTS

No non-compliance noted

Test Data

Antenna 0

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-12.85	8	PASS
Mid	2437	-12.68		PASS
High	2462	-13.97		PASS

Antenna 1

Test mode: IEEE 802.11b

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-12.86	8	PASS
Mid	2437	-11.75		PASS
High	2462	-10.75		PASS

Antenna 0

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-15.25	8	PASS
Mid	2437	-11.00		PASS
High	2462	-16.17		PASS

Antenna 1

Test mode: IEEE 802.11g

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-16.49	8	PASS
Mid	2437	-11.68		PASS
High	2462	-15.30		PASS

Antenna 0 + Antenna 1

Test mode: IEEE 802.11n HT20 MHz

Channel	Frequency (MHz)	PPSD (dBm)			Limit (dBm)	Test Result
		(Chain 0)	(Chain 1)	(Total)		
Low	2412	-17.85	-19.11	-15.42	8	PASS
Mid	2437	-13.55	-12.30	-9.87		PASS
High	2462	-20.55	-18.27	-16.25		PASS

Antenna 0 + Antenna 1

Test mode: IEEE 802.11n HT40 MHz

Channel	Frequency (MHz)	PPSD (dBm)			Limit (dBm)	Test Result
		(Chain 0)	(Chain 1)	(Total)		
Low	2422	-22.14	-23.42	-19.72	8	PASS
Mid	2437	-23.96	-25.53	-21.66		PASS
High	2452	-22.86	-25.08	-20.82		PASS

Note : Combine Power Calculation :

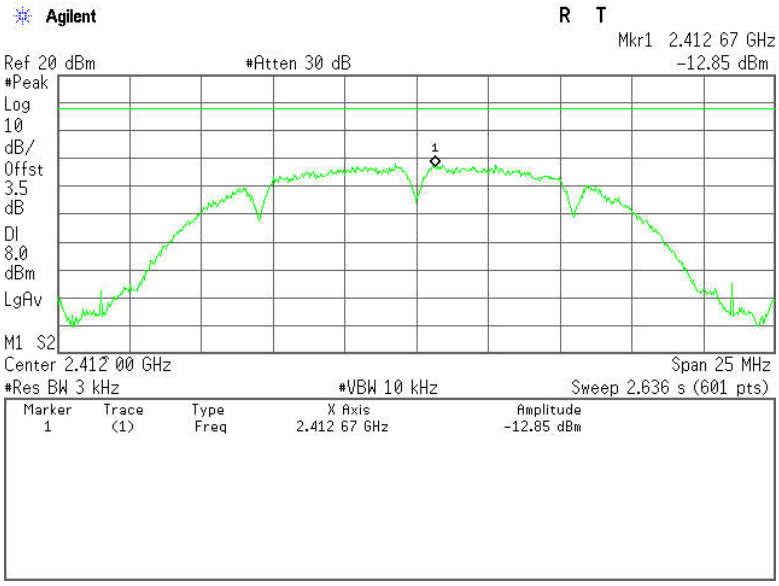
Total PPSD(dBm) =log (10 $^{(\text{chain 0 PPSD/10})}$+10 $^{(\text{chain 1 PPSD/10})}$)*10

Test Plot

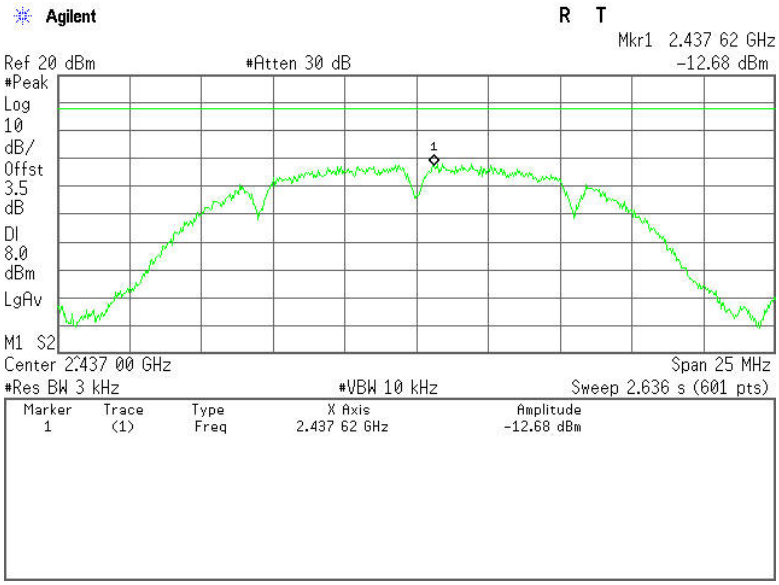
Antenna 0

IEEE 802.11b mode

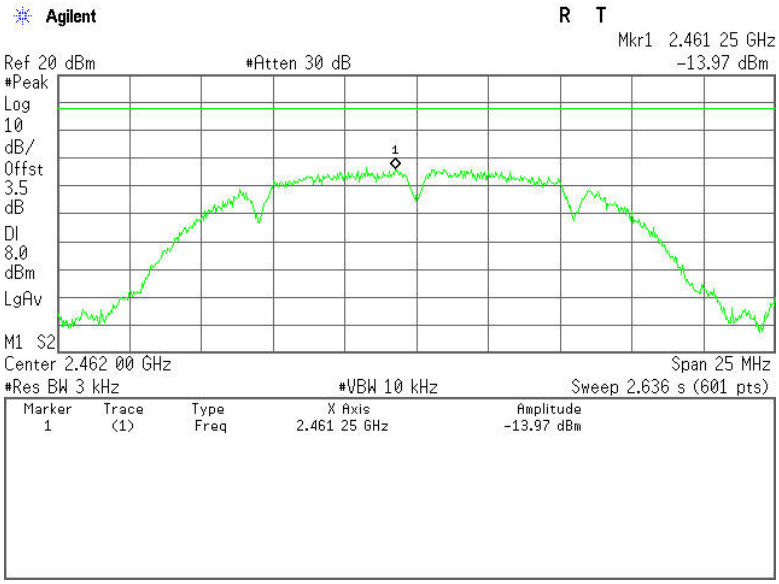
PPSD (CH Low)



PPSD (CH Mid)



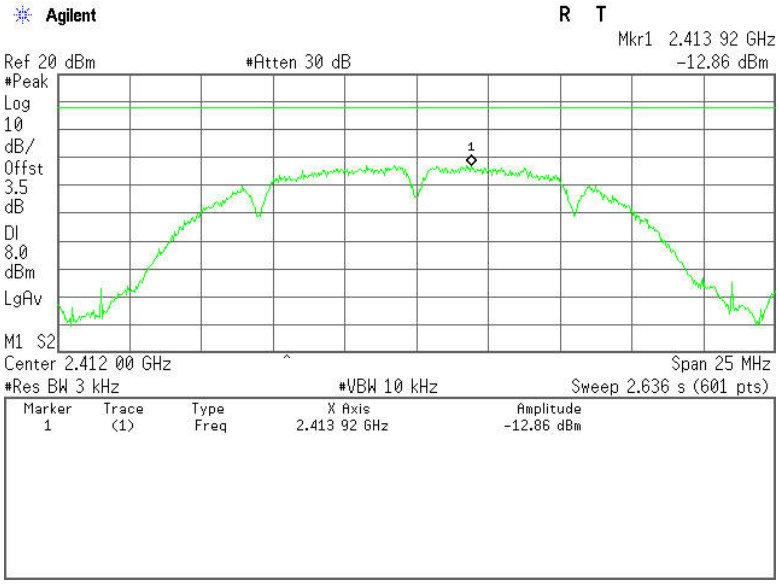
PPSD (CH High)



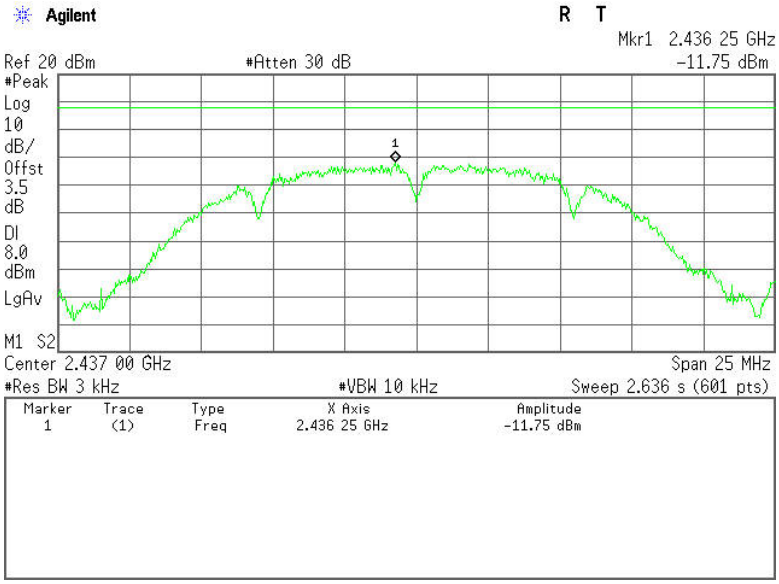
Antenna 1

IEEE 802.11b mode

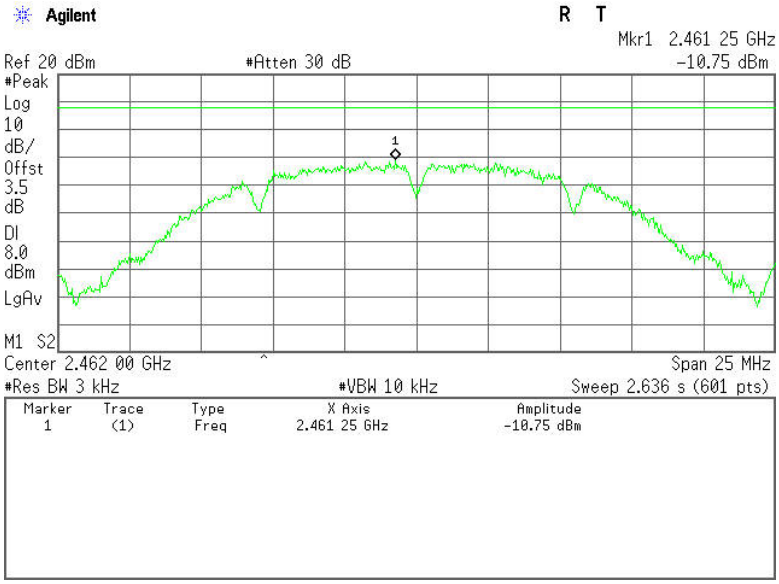
PPSD (CH Low)



PPSD (CH Mid)



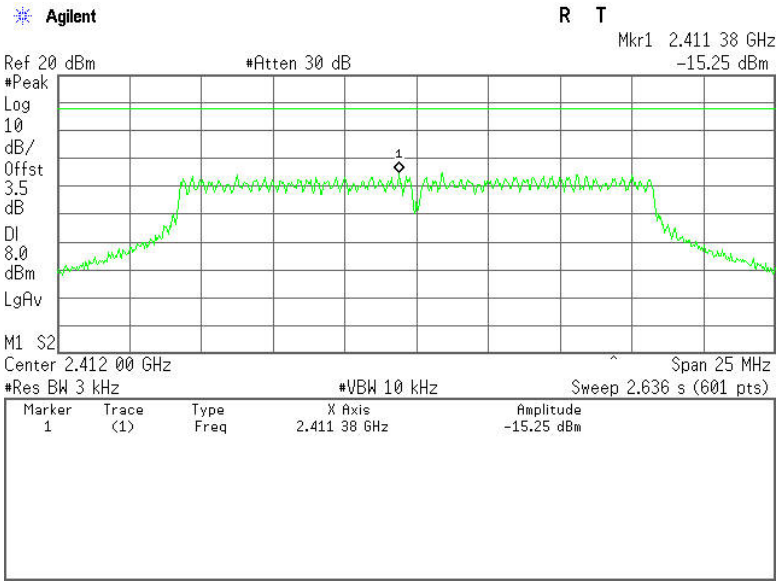
PPSD (CH High)



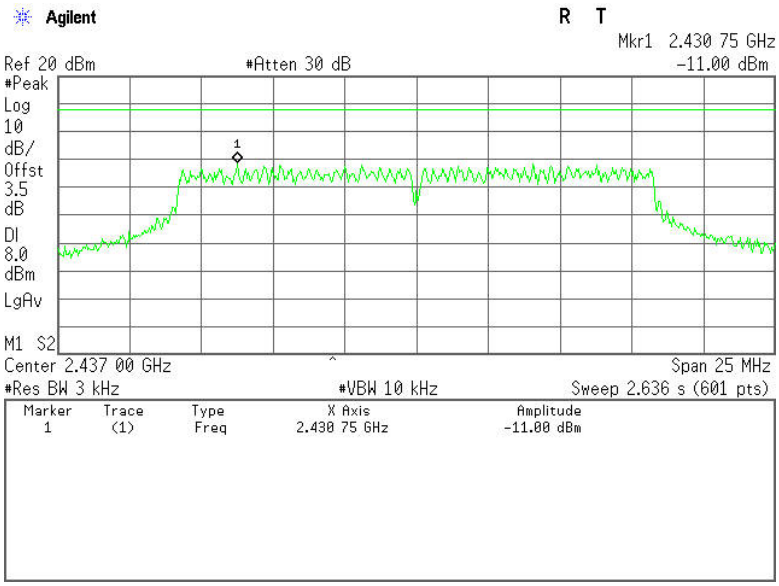
Antenna 0

IEEE 802.11g mode

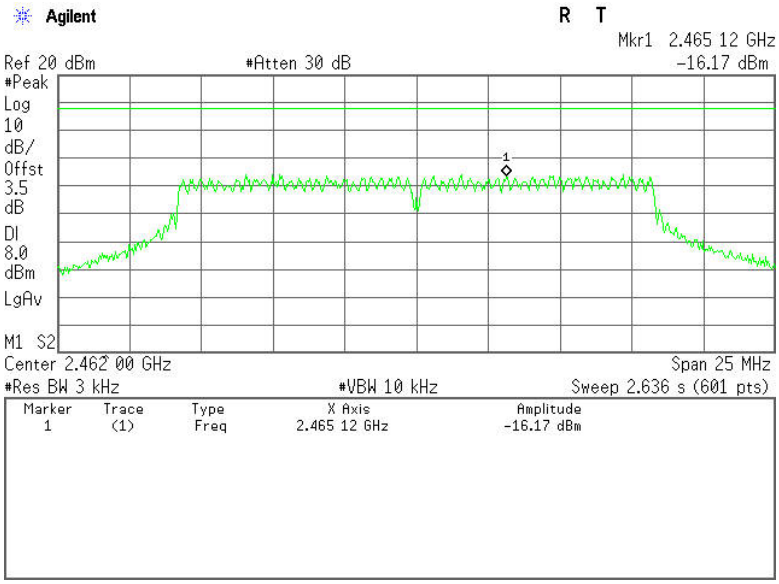
PPSD (CH Low)



PPSD (CH Mid)



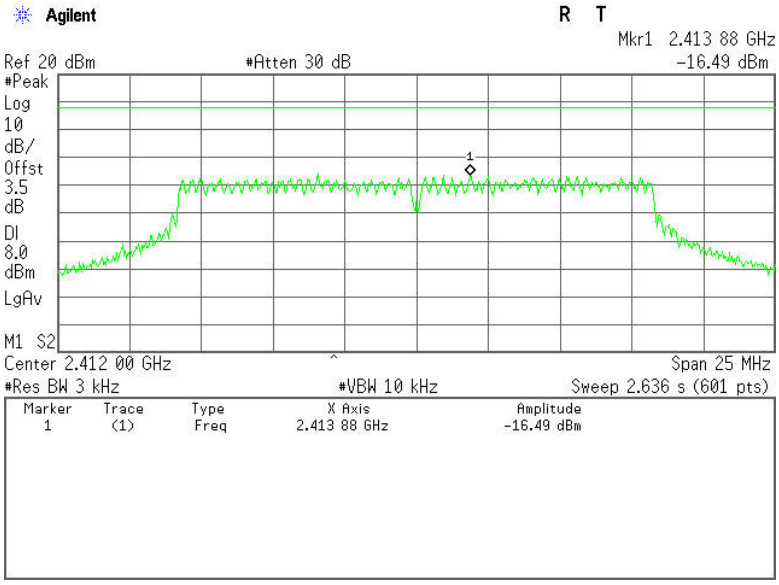
PPSD (CH High)



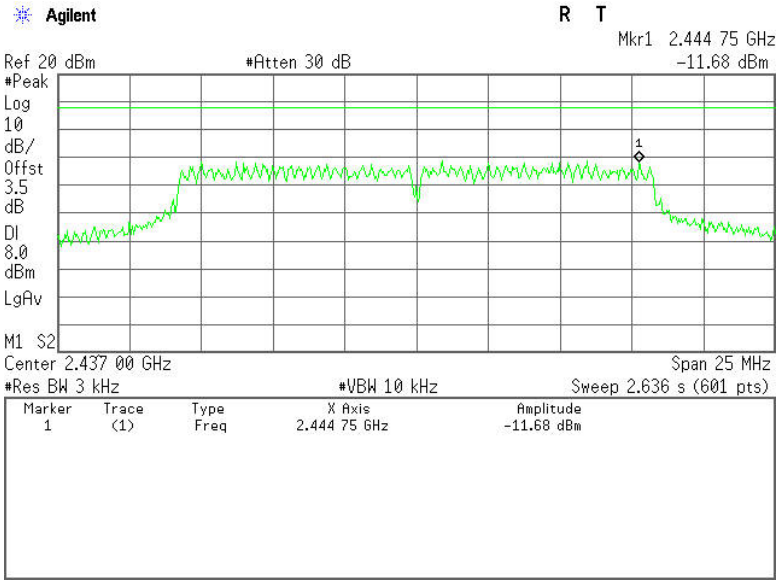
Antenna 1

IEEE 802.11g mode

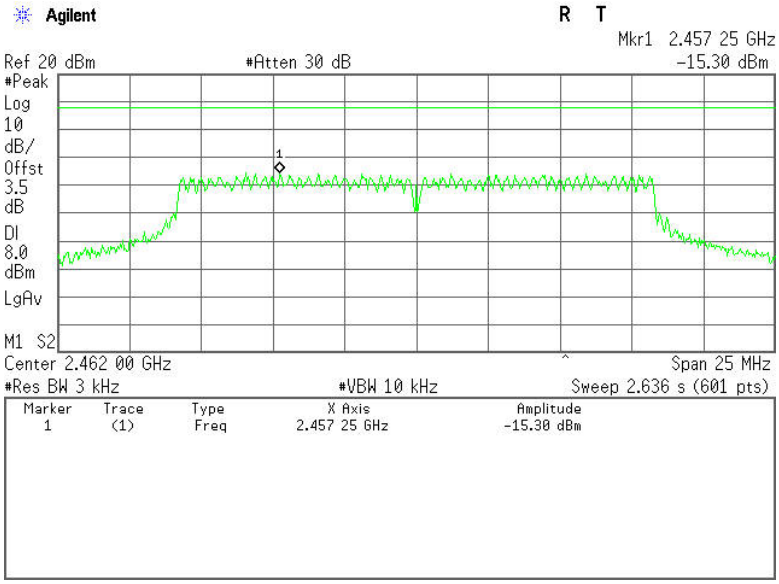
PPSD (CH Low)



PPSD (CH Mid)



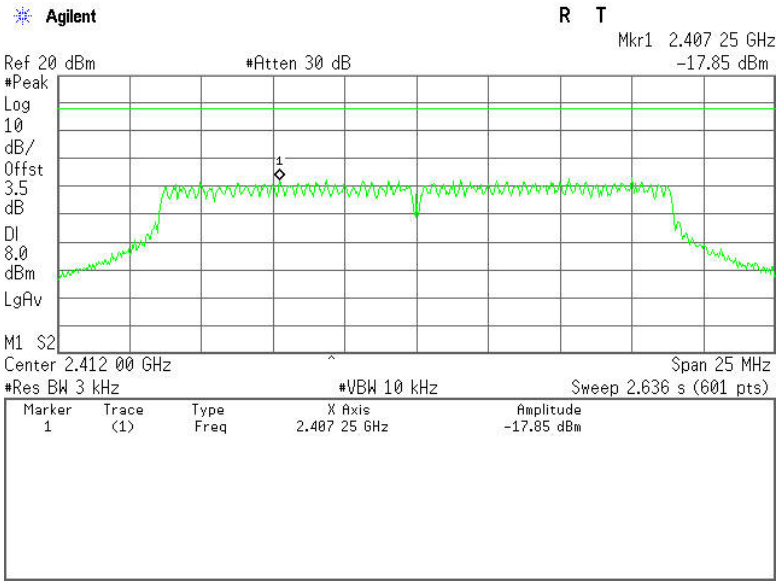
PPSD (CH High)



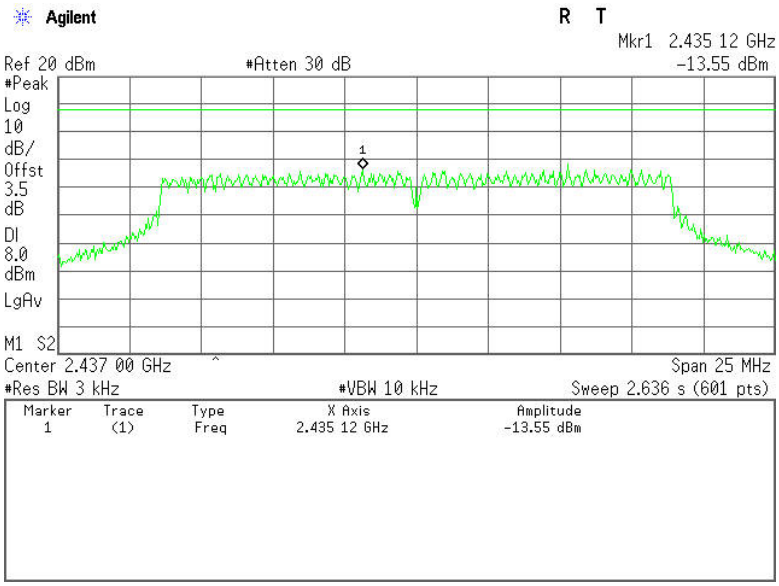
Antenna 0

IEEE 802.11n HT20 MHz mode

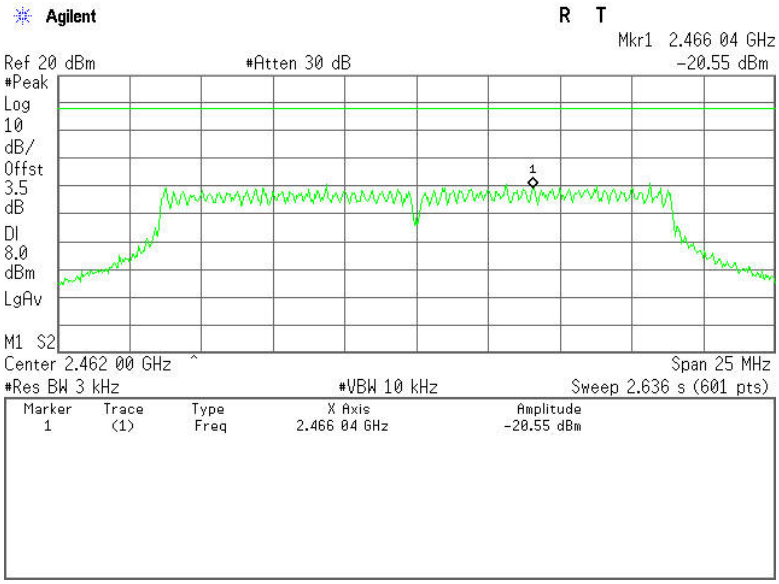
PPSD (CH Low)



PPSD (CH Mid)



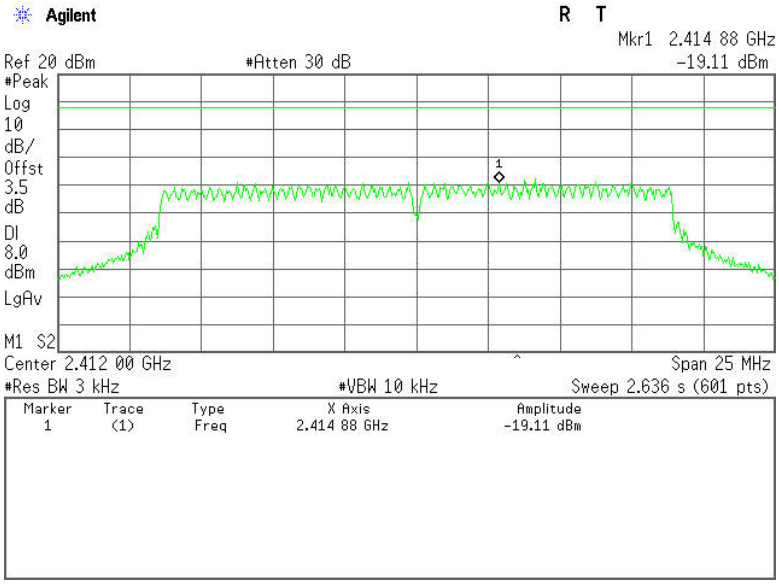
PPSD (CH High)



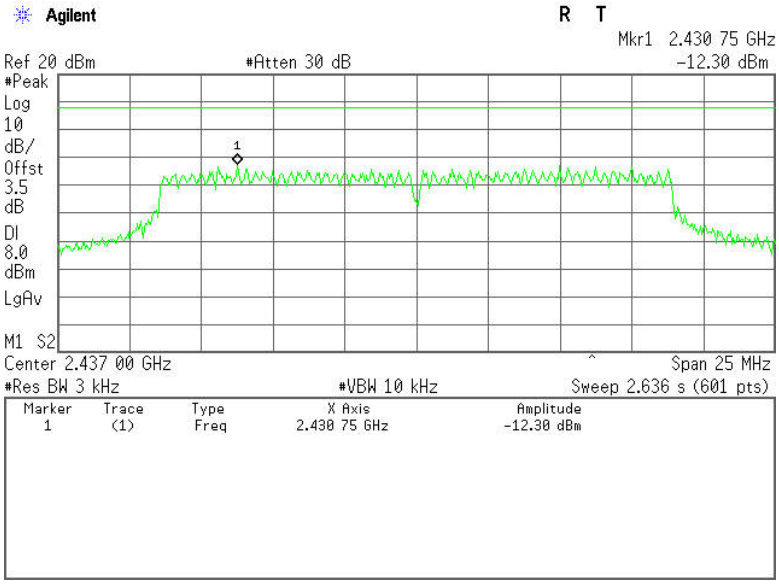
Antenna 1

IEEE 802.11n HT20 MHz mode

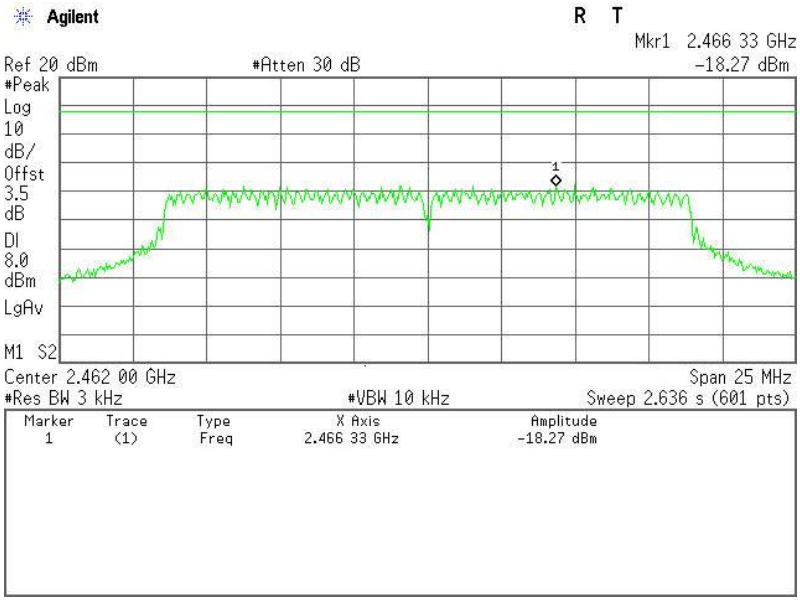
PPSD (CH Low)



PPSD (CH Mid)



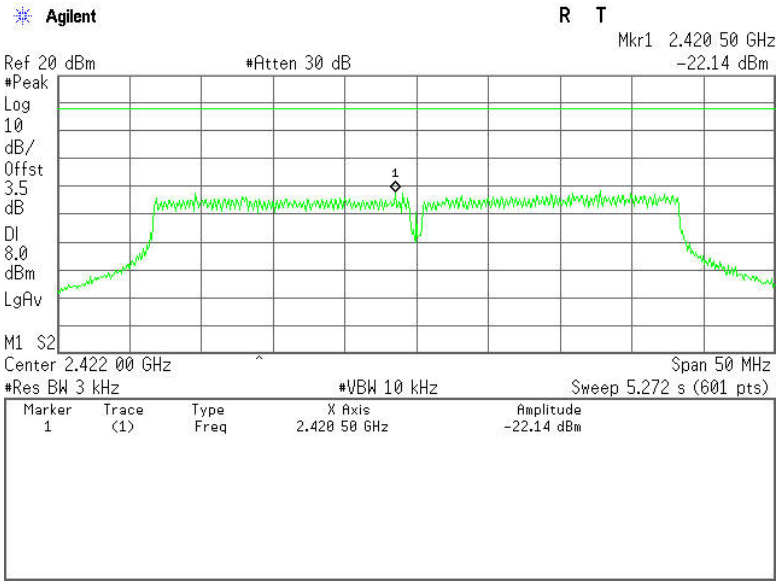
PPSD (CH High)



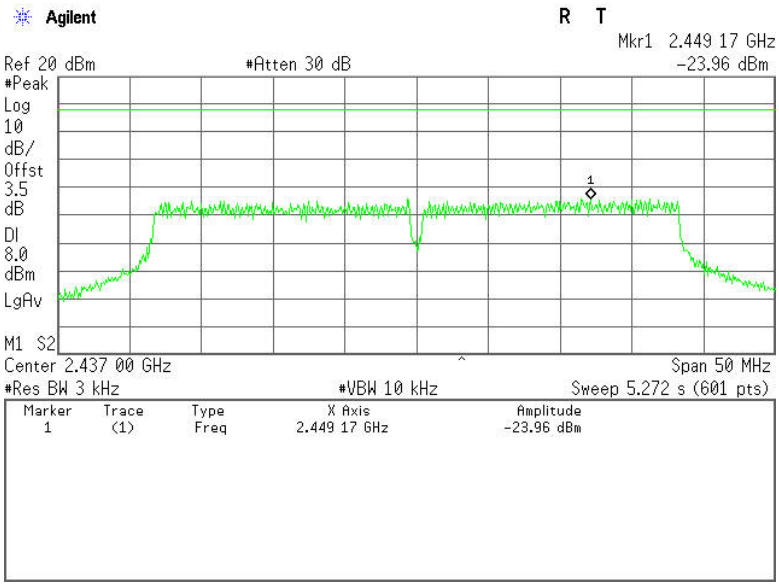
Antenna 0

IEEE 802.11n HT40 MHz mode

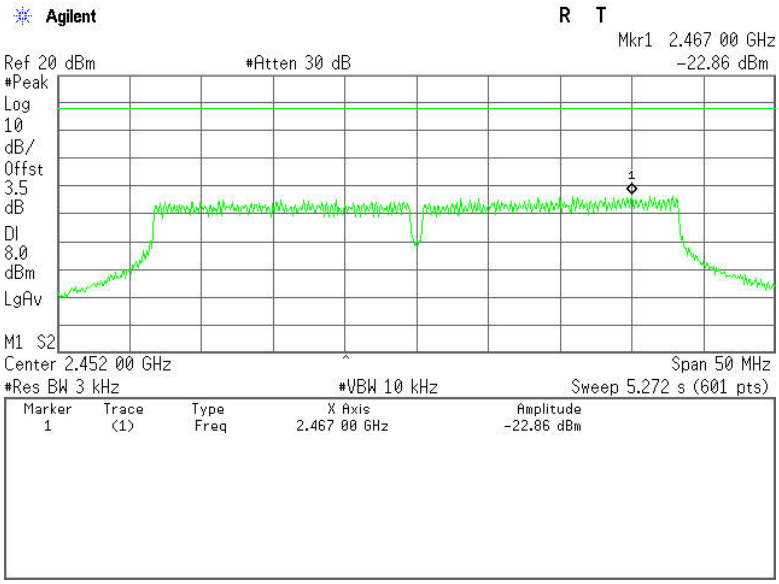
PPSD (CH Low)



PPSD (CH Mid)



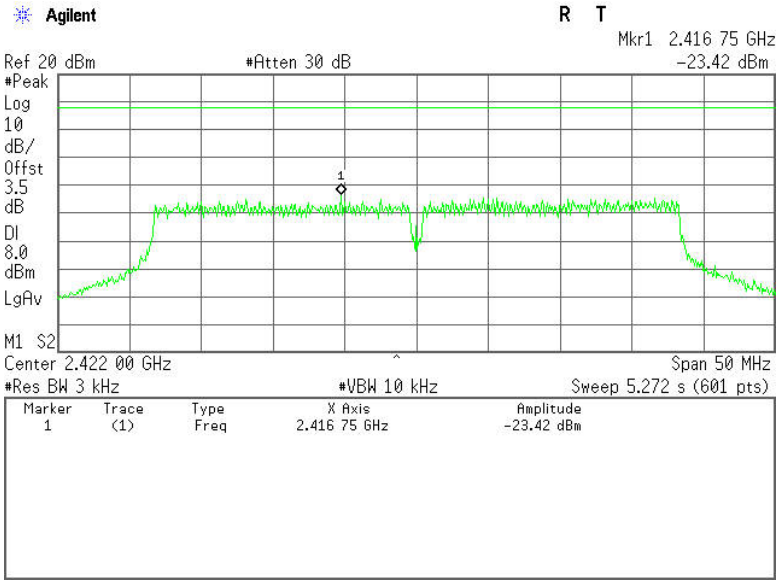
PPSD (CH High)



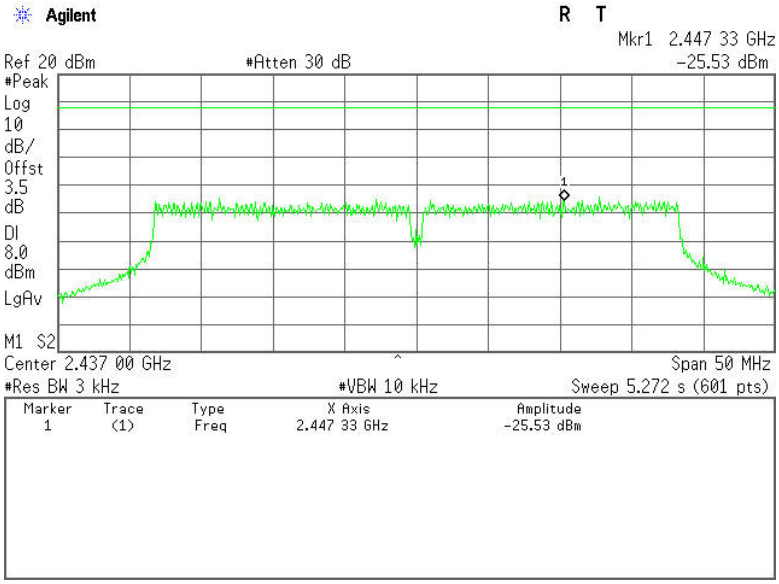
Antenna 1

IEEE 802.11n HT40 MHz mode

PPSD (CH Low)



PPSD (CH Mid)



PPSD (CH High)