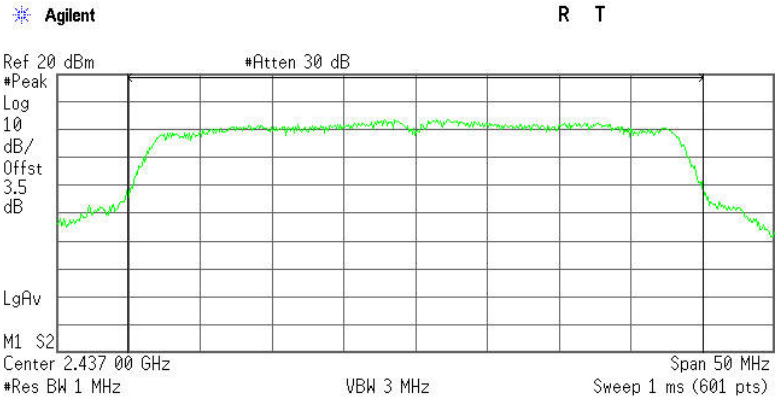
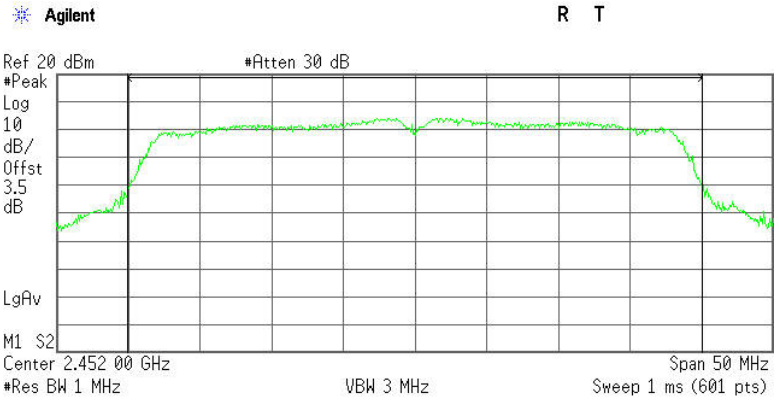
Peak power (CH Mid)



Channel Power	Power Spectral Density
12.24 dBm /40.0000 MHz	-63.78 dBm/Hz

Peak power (CH High)



Channel Power	Power Spectral Density
12.36 dBm /40.0000 MHz	-63.66 dBm/Hz

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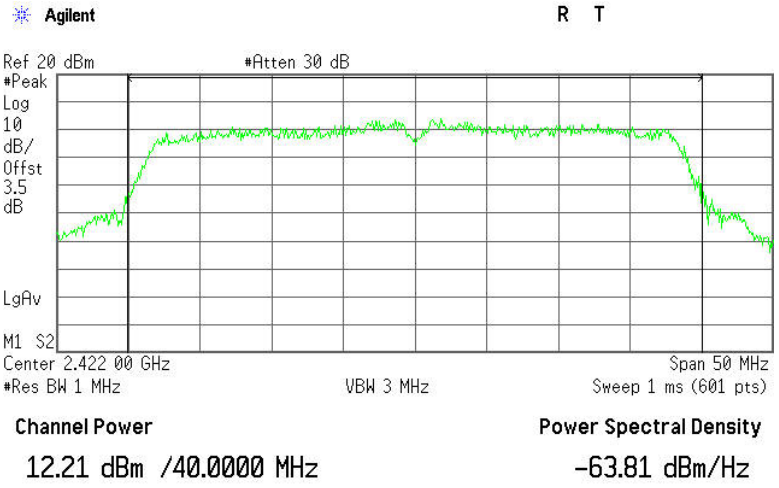
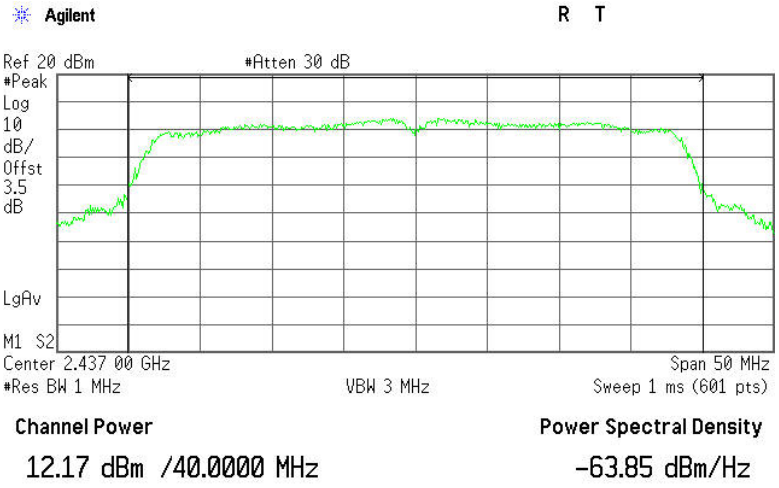
IEEE 802.11n HT40 MHz (Antenna 2)mode

Peak power (CH Low)



Peak power (CH Mid)



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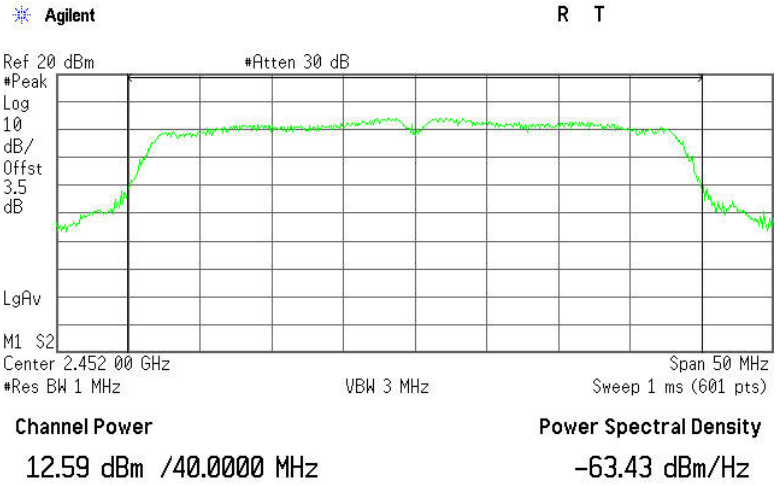
Peak power (CH High)



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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	06/21/2012	06/21/2013
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
966(2)	中宇电子	N/A	N/A	03/10/2013	03/09/2014
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.

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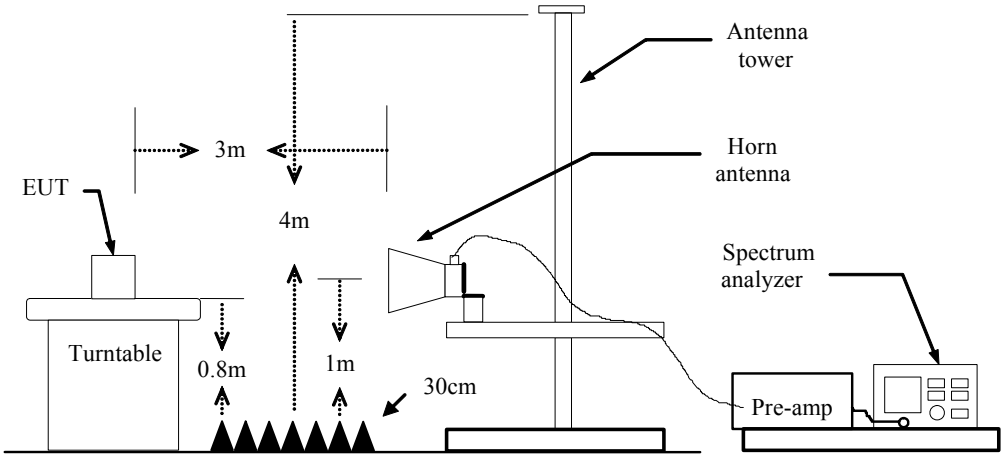
7.5.3. TEST PROCEDURES (please refer to measurement standard)

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



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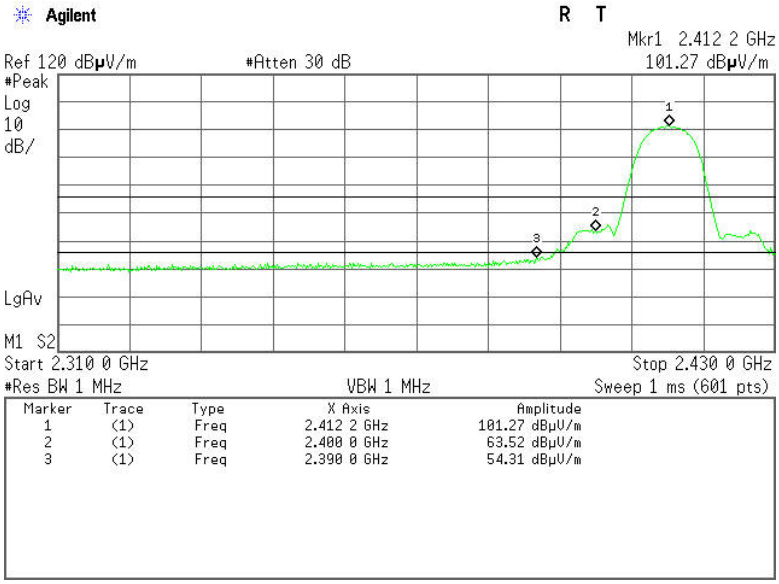
7.5.5. TEST RESULTS

Test Plot

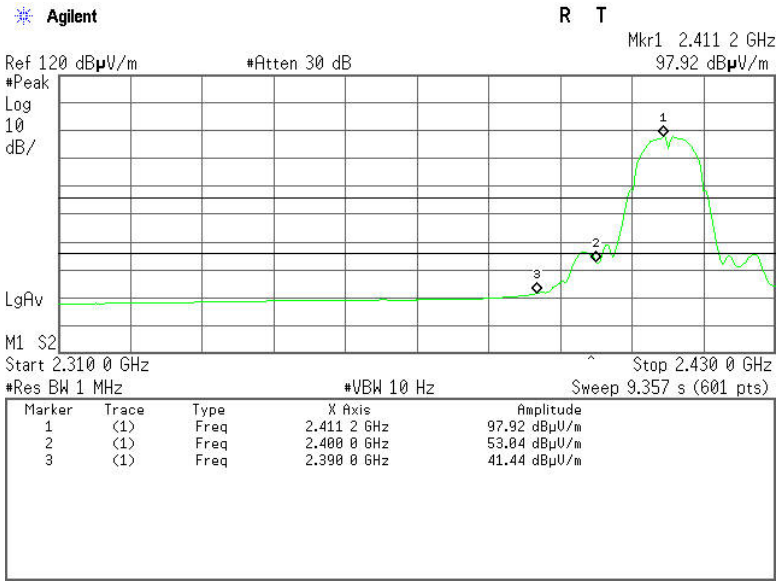
IEEE 802.11b (Antenna 2)mode

Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**

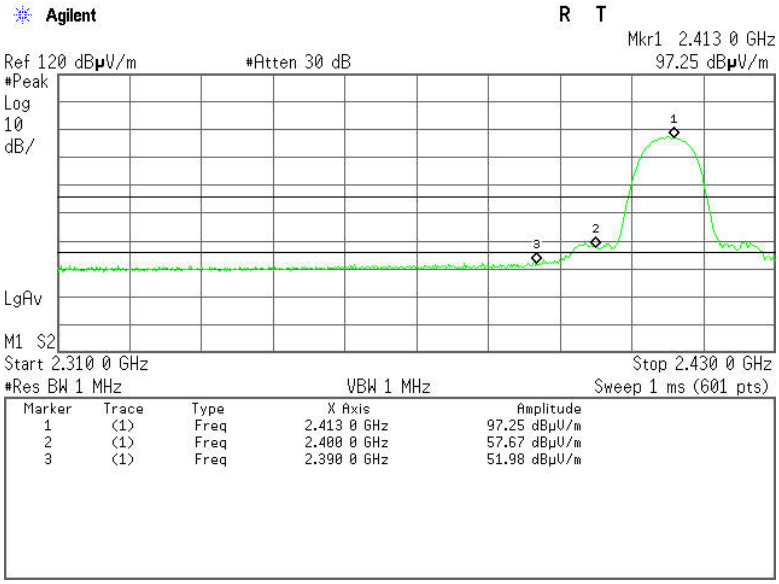


Detector mode: Average **Polarity: Vertical**

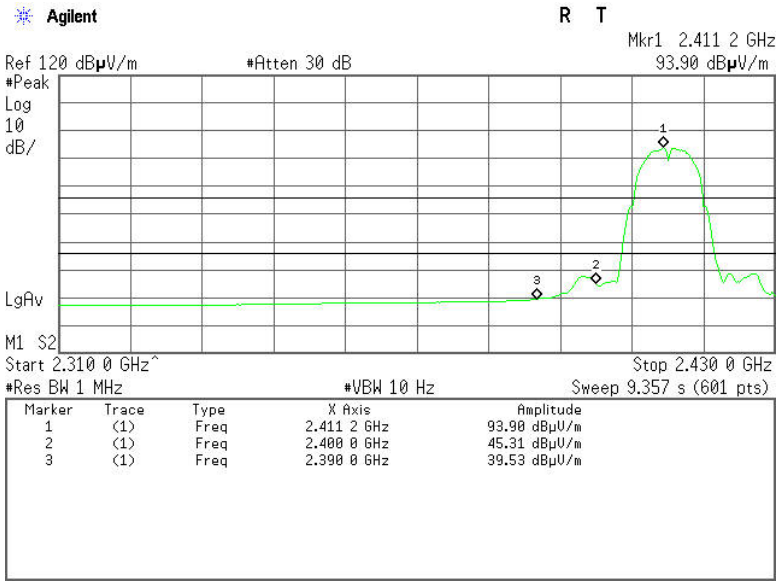


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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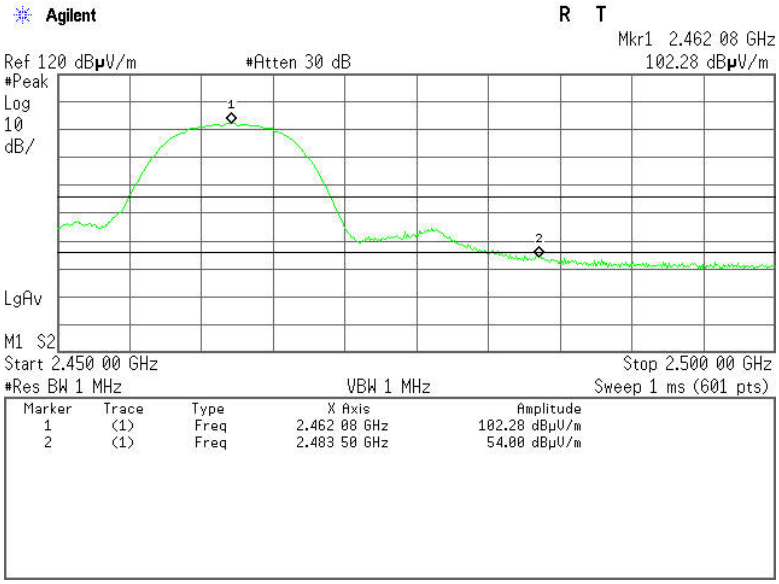
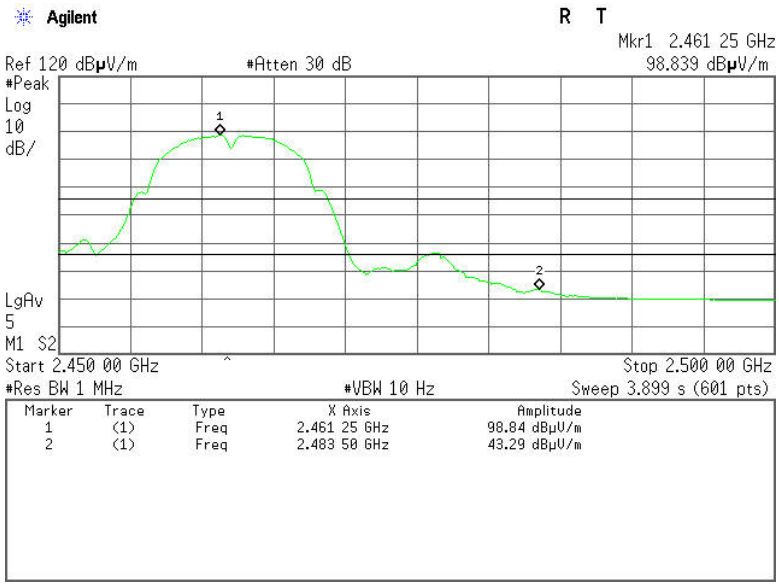
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical

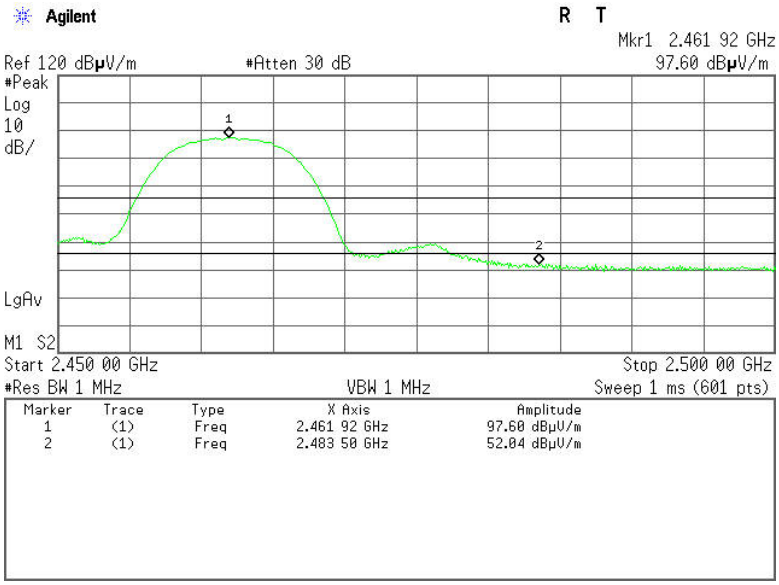


Detector mode: Average Polarity: Vertical

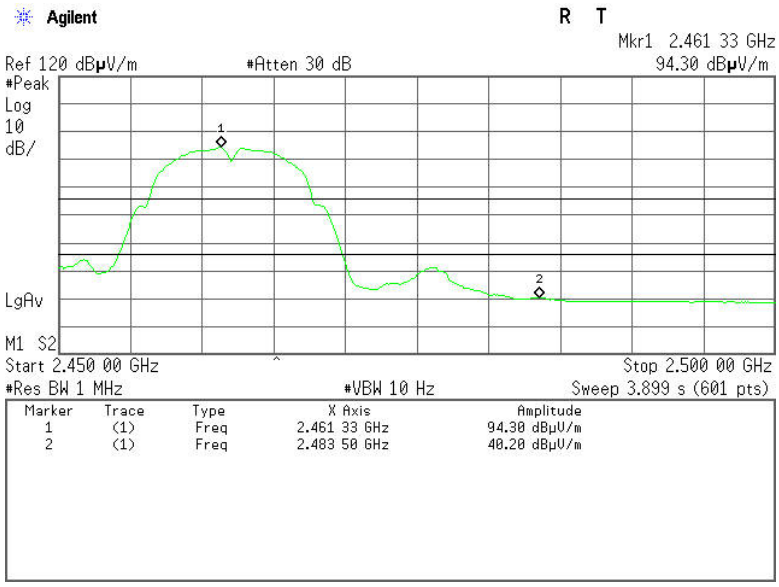


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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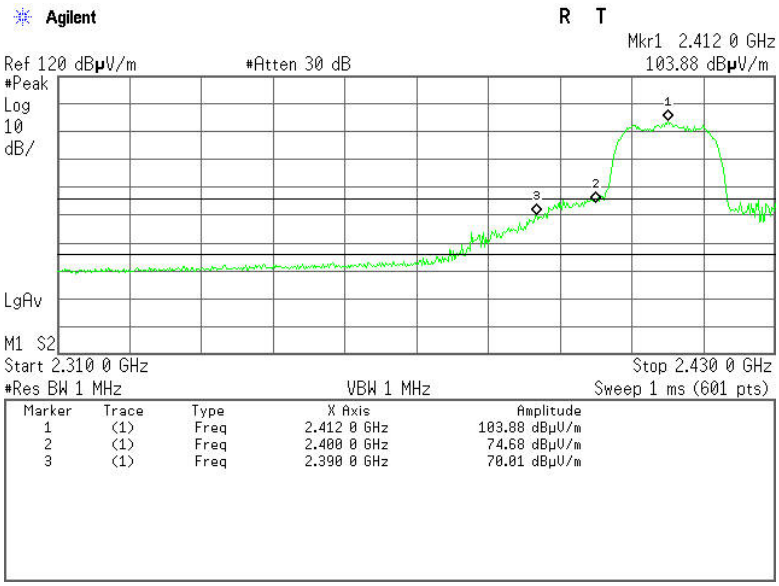
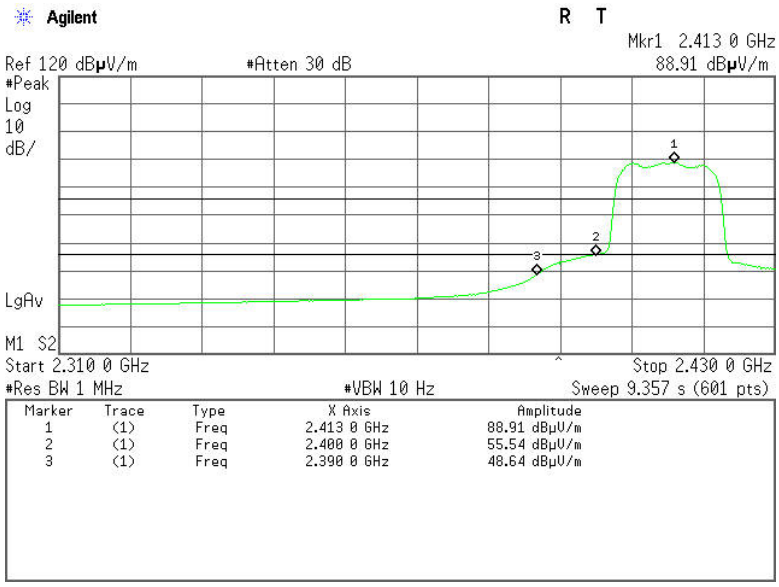
IEEE 802.11g (Antenna 1)mode

Band Edges (CH Low)

Detector mode: Peak Polarity: Vertical

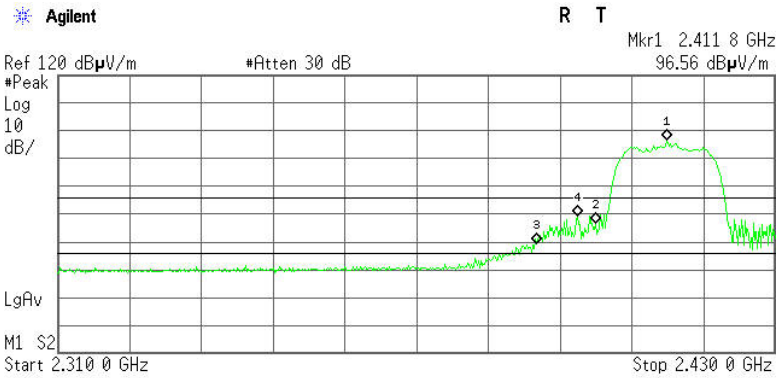


Detector mode: Average Polarity: Vertical



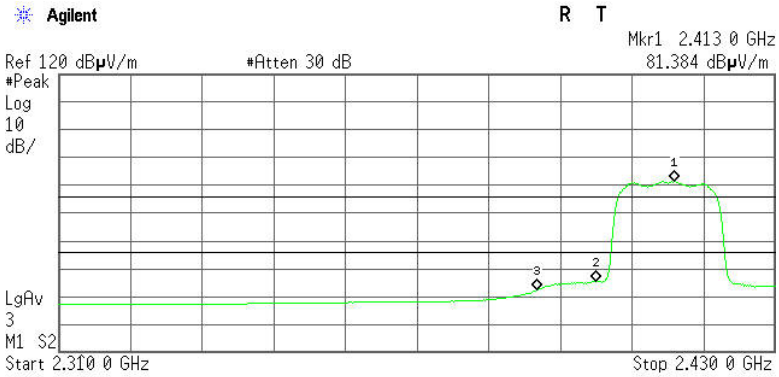
This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.411 8 GHz	96.56 dBµV/m
2	(1)	Freq	2.400 0 GHz	66.83 dBµV/m
3	(1)	Freq	2.390 0 GHz	59.52 dBµV/m
4	(1)	Freq	2.397 0 GHz	69.31 dBµV/m

Detector mode: Average **Polarity: Horizontal**



Marker	Trace	Type	X Axis	Amplitude
1	(1)	Freq	2.413 0 GHz	81.38 dBµV/m
2	(1)	Freq	2.400 0 GHz	45.60 dBµV/m
3	(1)	Freq	2.390 0 GHz	42.37 dBµV/m

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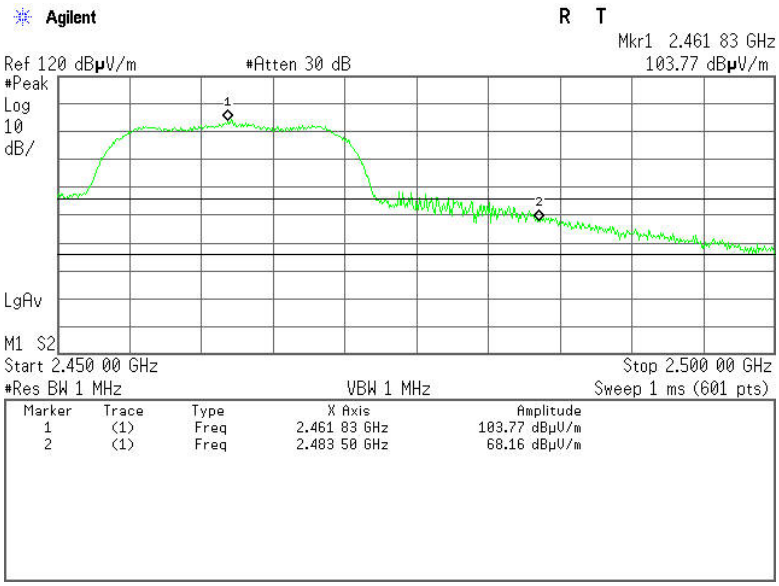
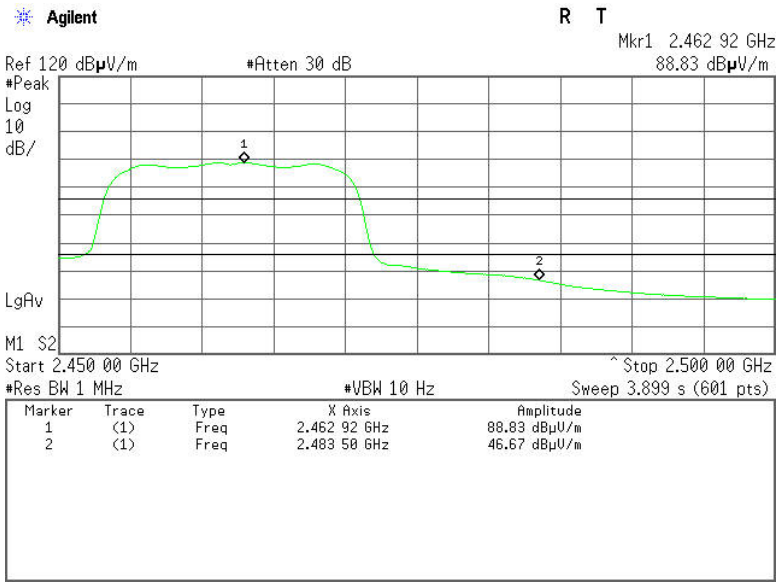
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical



Detector mode: Average Polarity: Vertical



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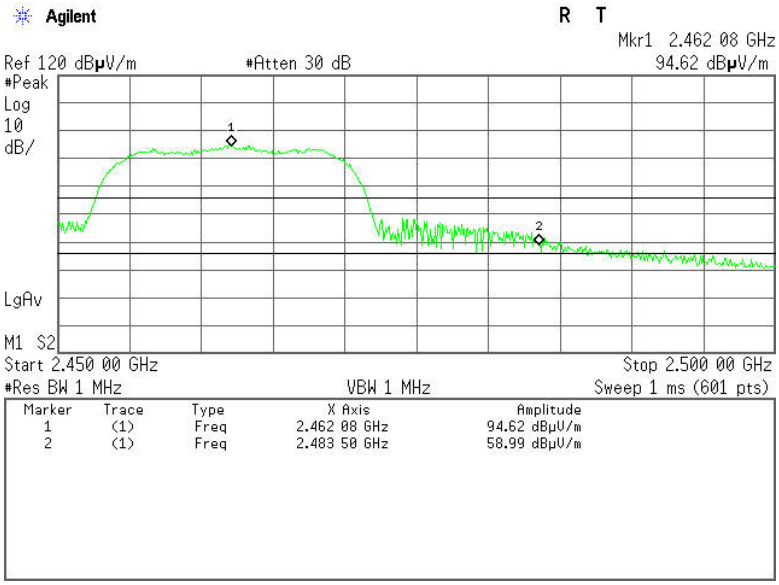
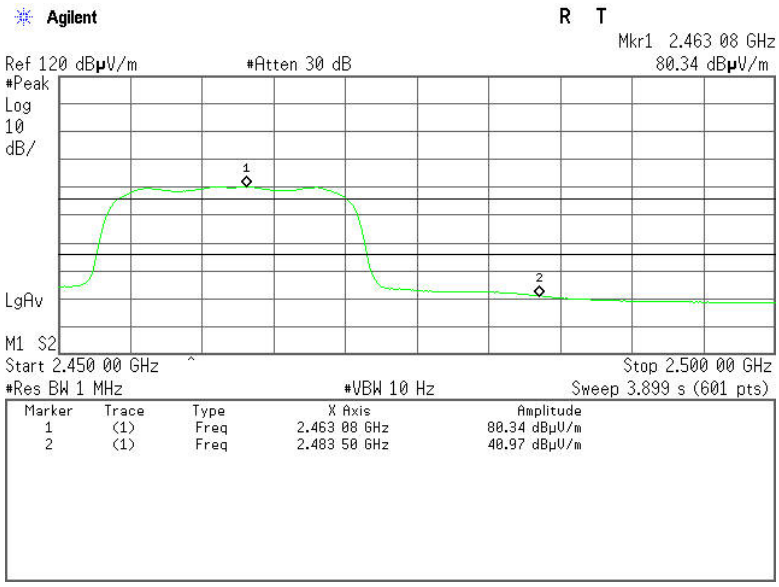
Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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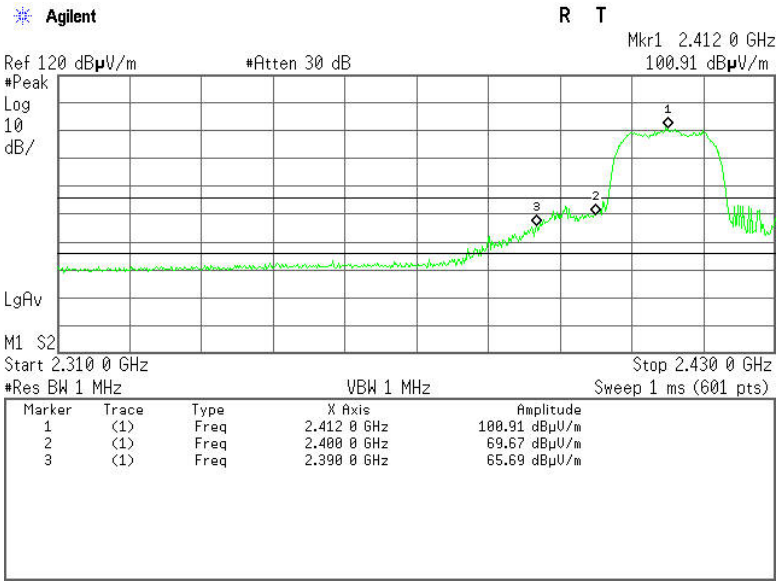
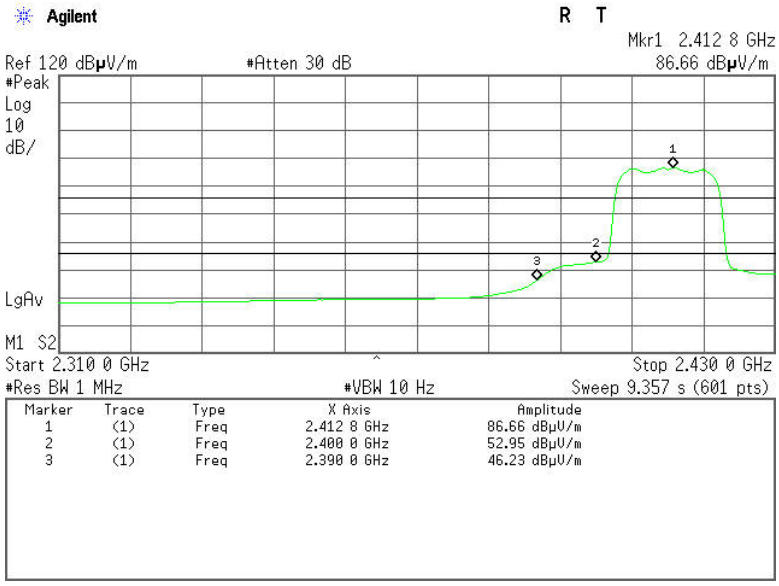
IEEE 802.11g (Antenna 2)mode

Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**

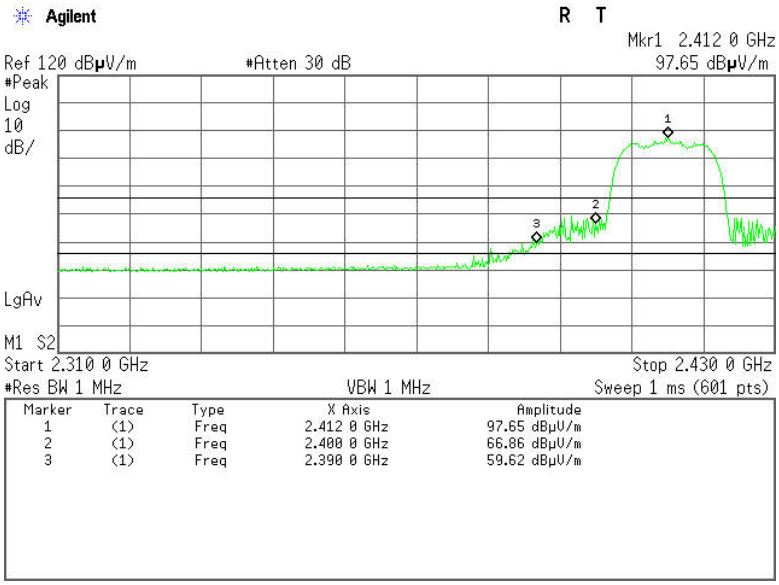


Detector mode: Average **Polarity: Vertical**

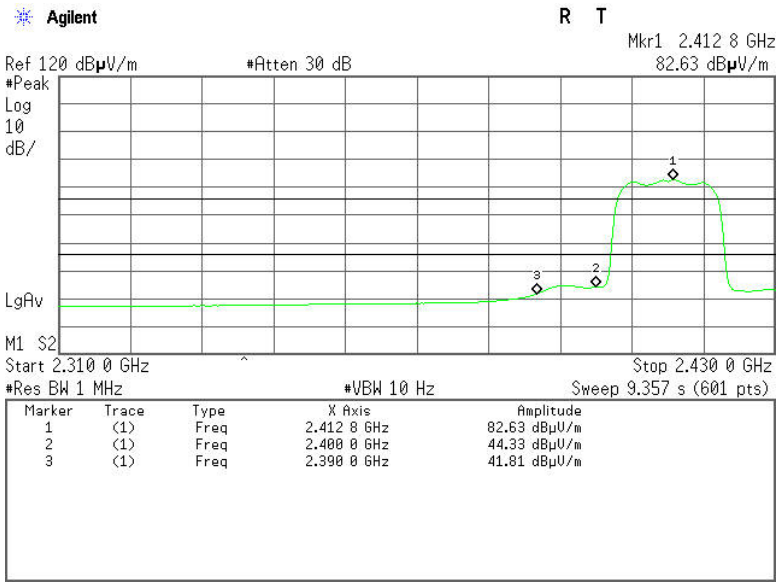


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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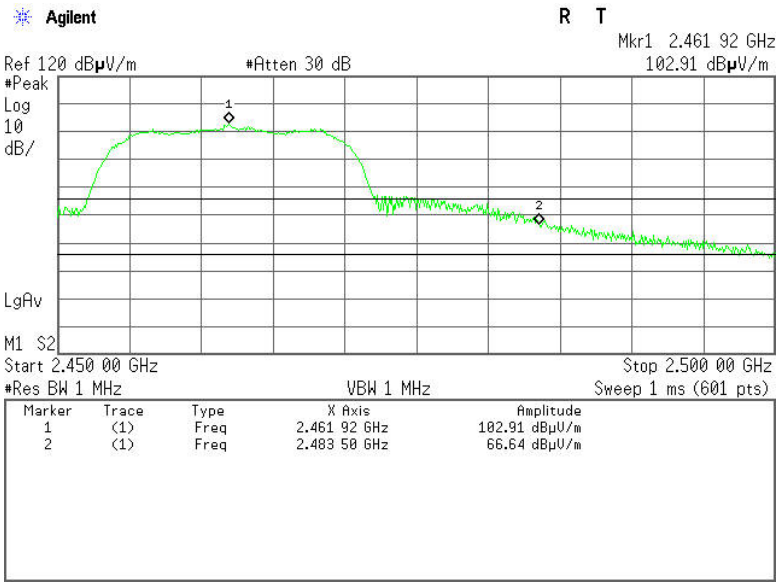
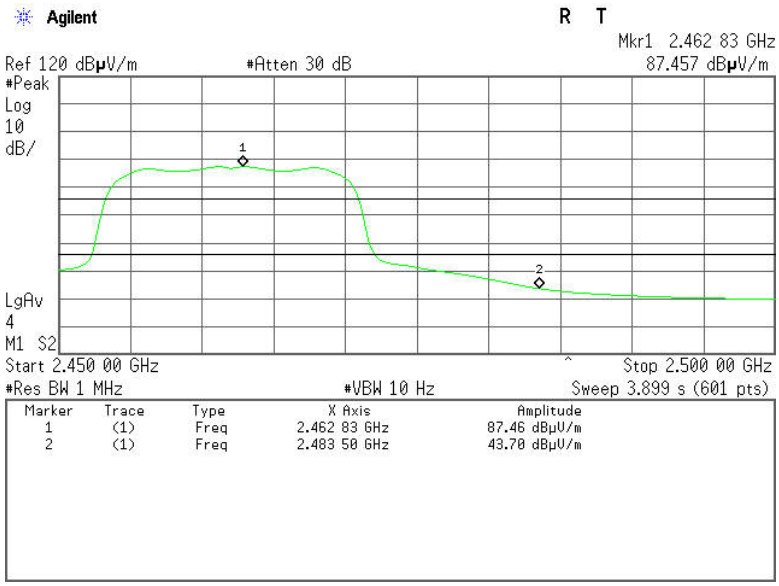
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical

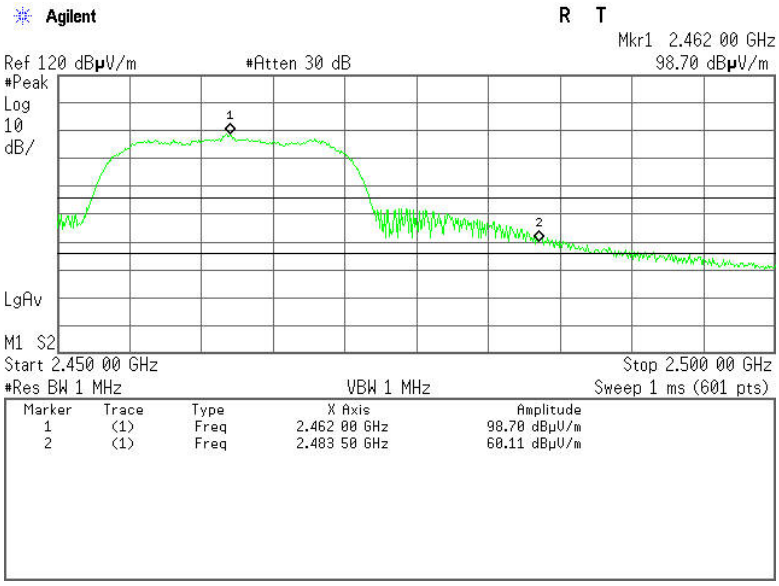


Detector mode: Average Polarity: Vertical

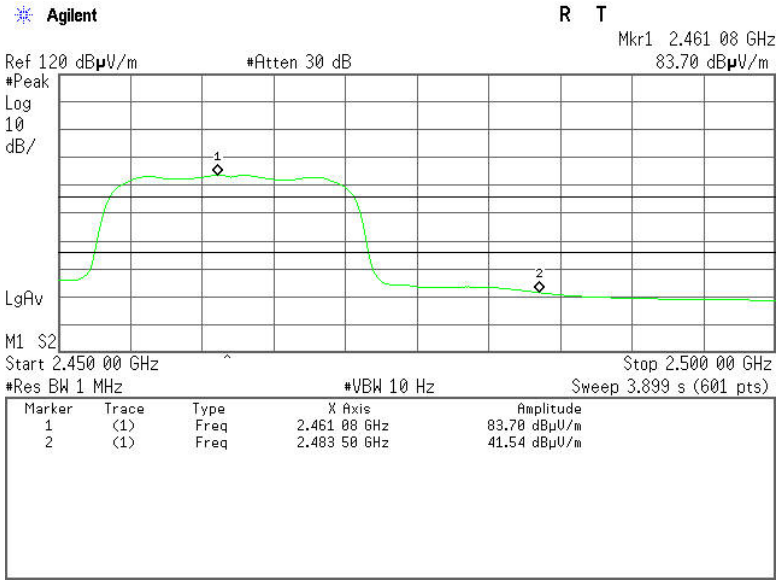


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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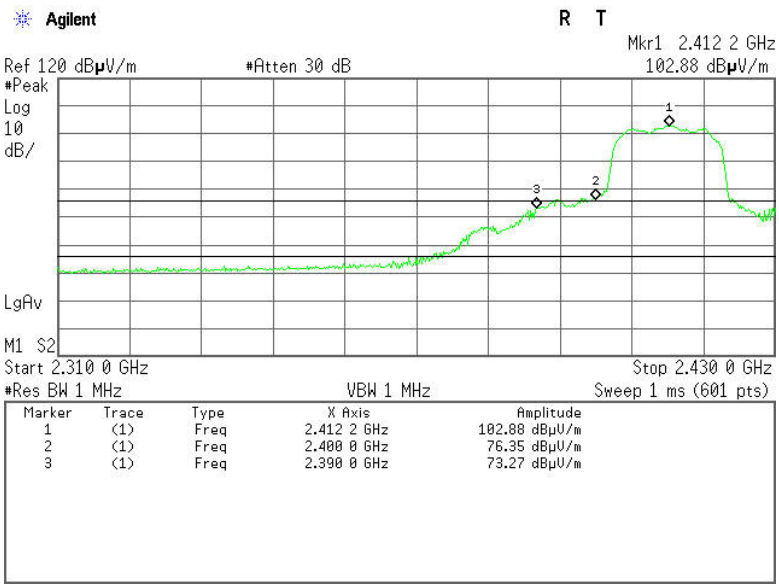
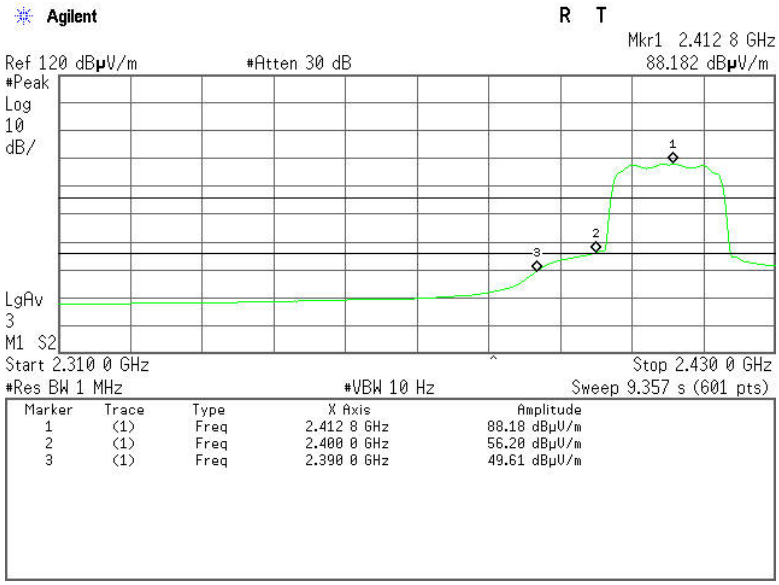
IEEE 802.11n HT20 MHz (Antenna 1) mode

Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**

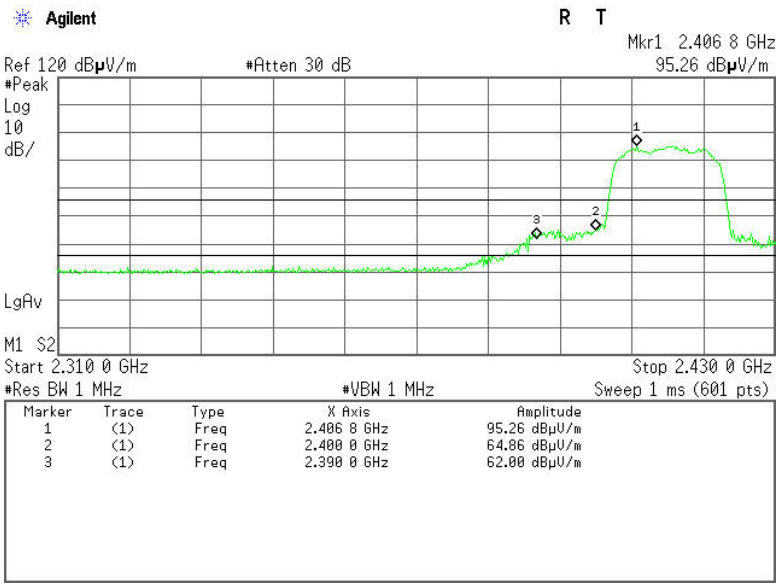


Detector mode: Average **Polarity: Vertical**

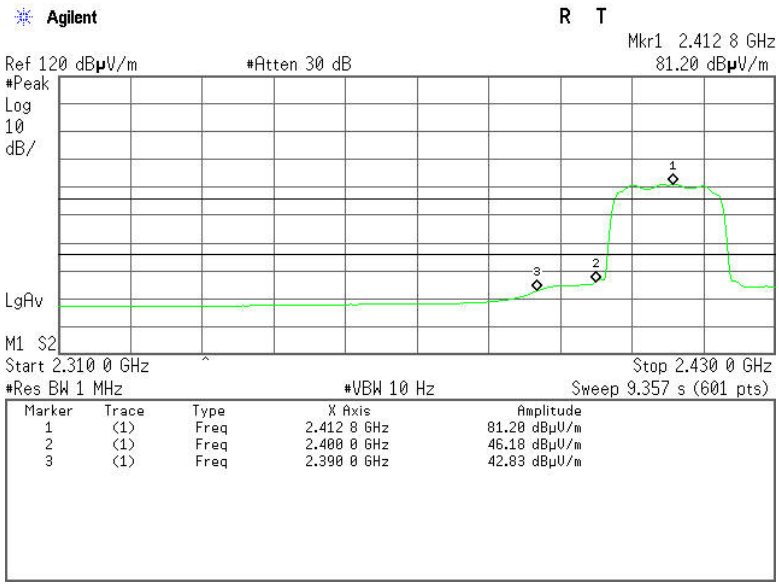


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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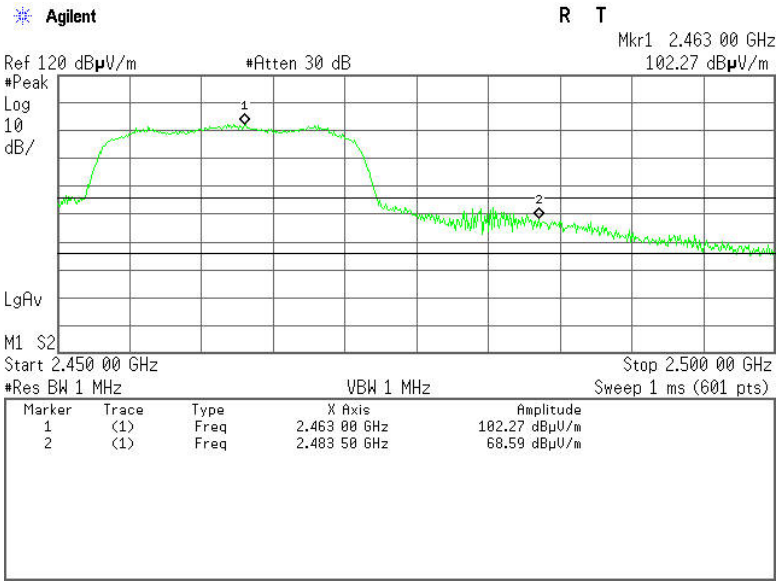
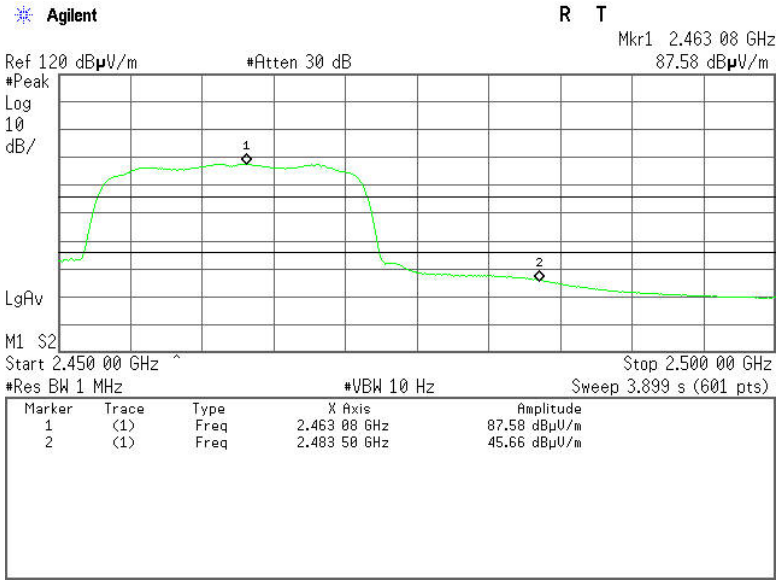
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical

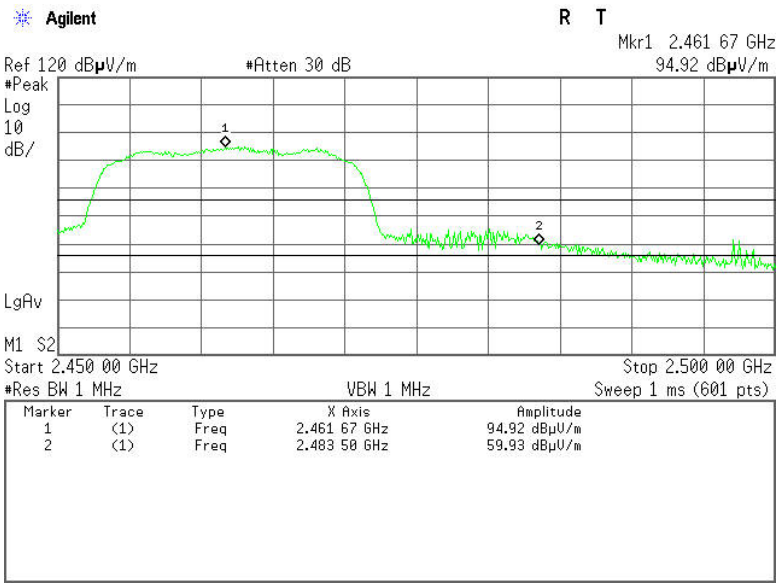


Detector mode: Average Polarity: Vertical

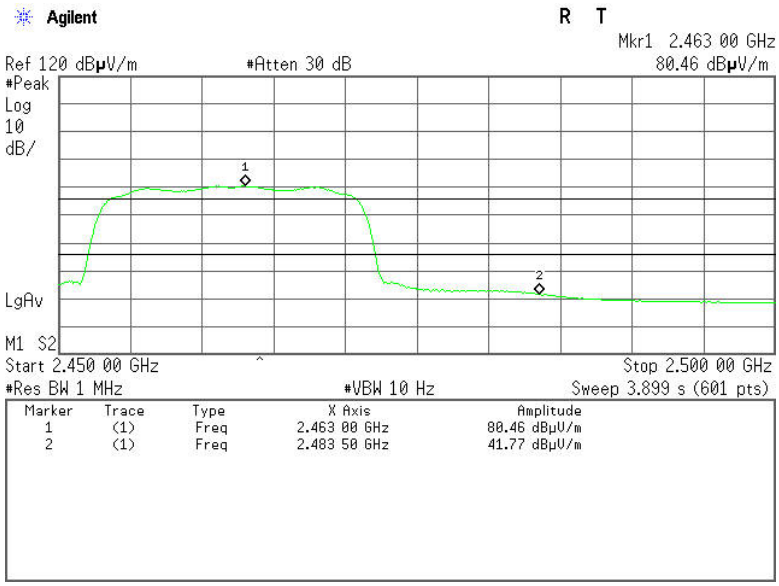


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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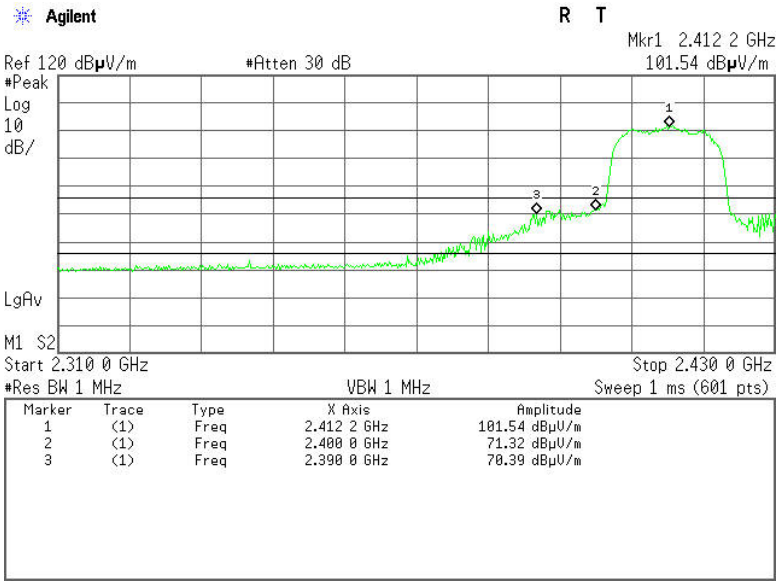
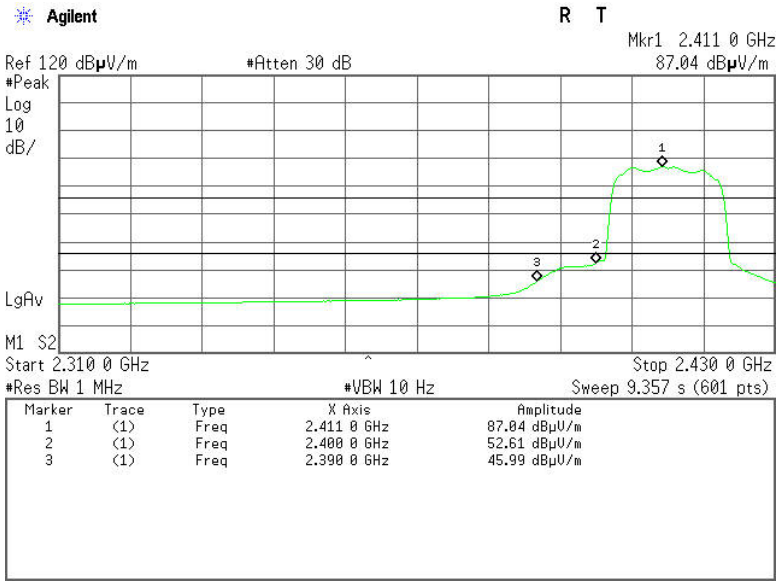
IEEE 802.11n HT20 MHz (Antenna 2) mode

Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**

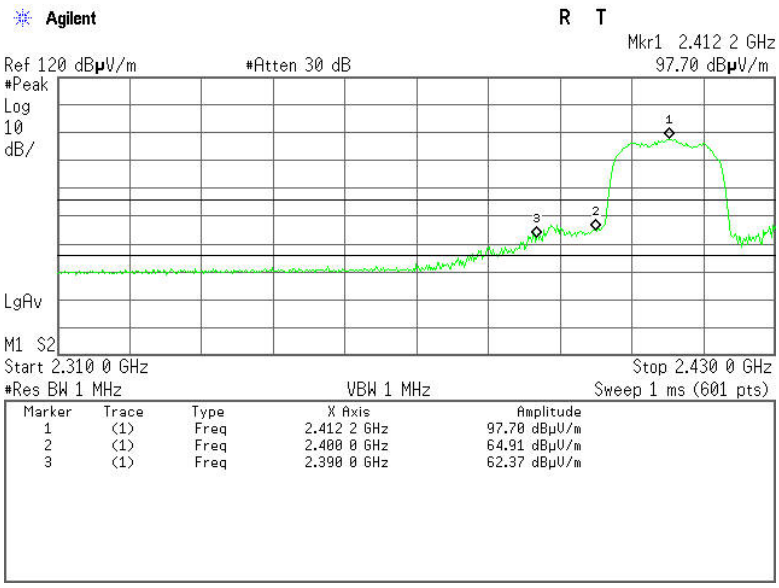


Detector mode: Average **Polarity: Vertical**

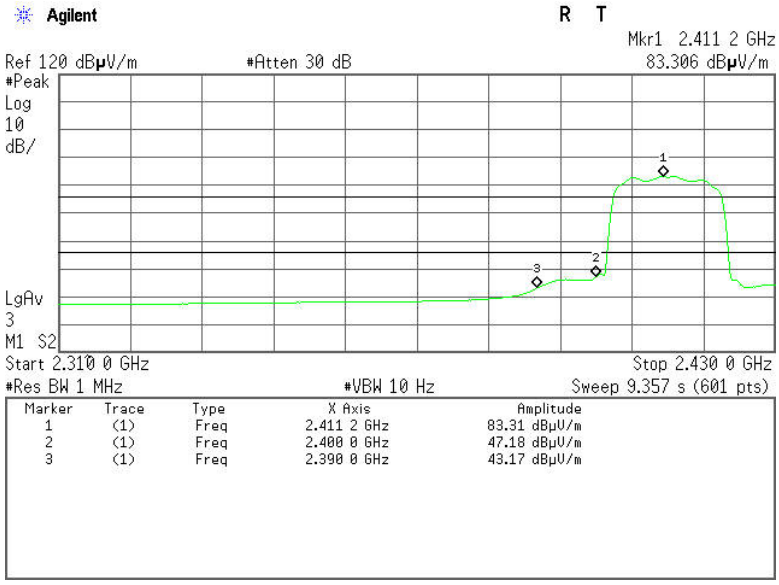


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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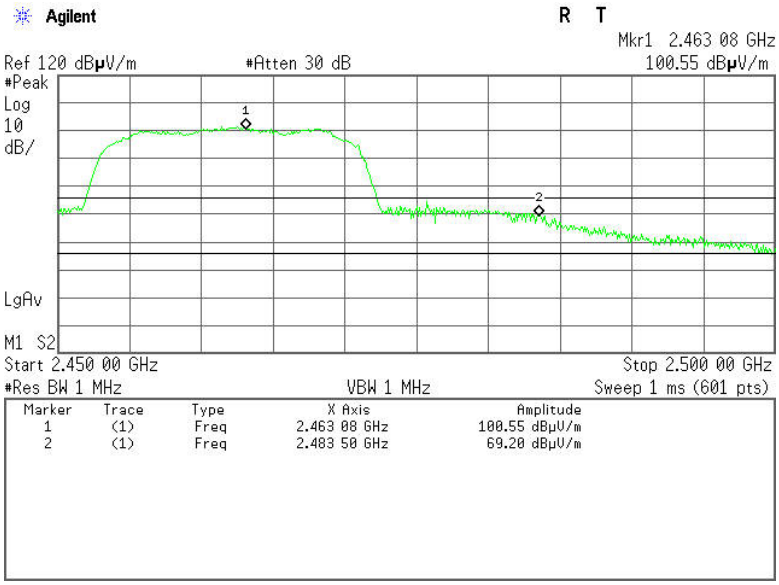
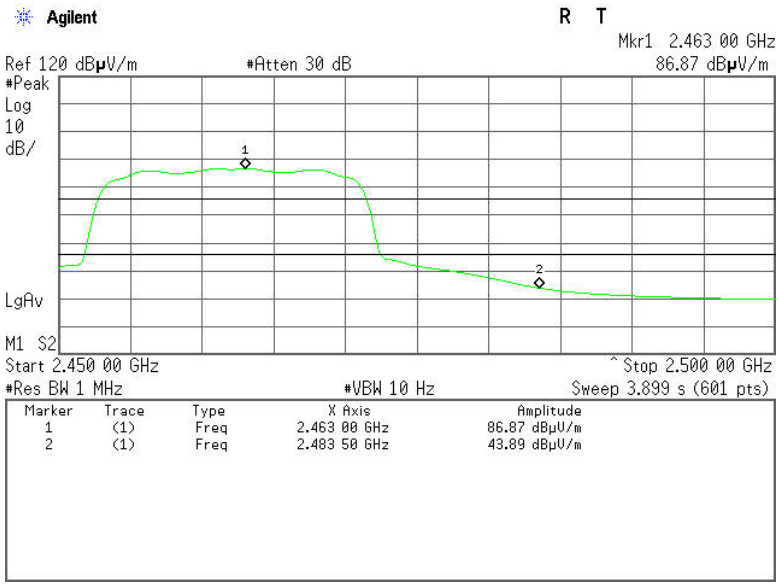
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical



Detector mode: Average Polarity: Vertical



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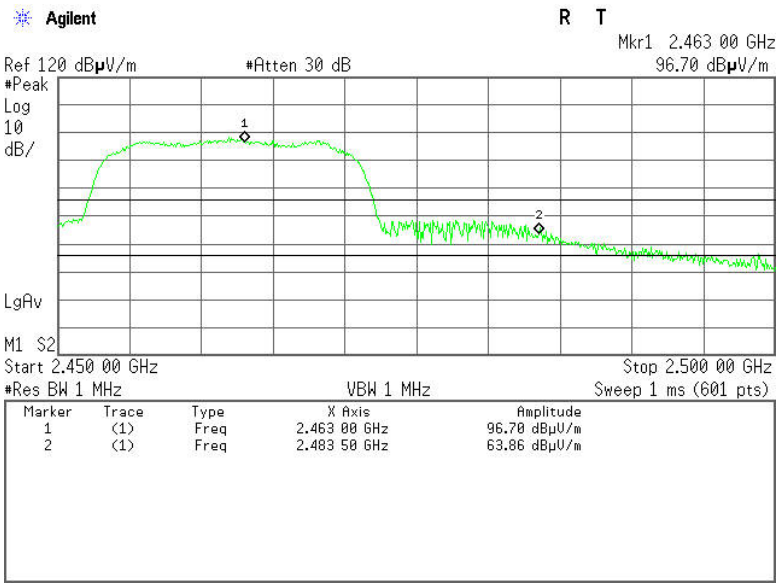
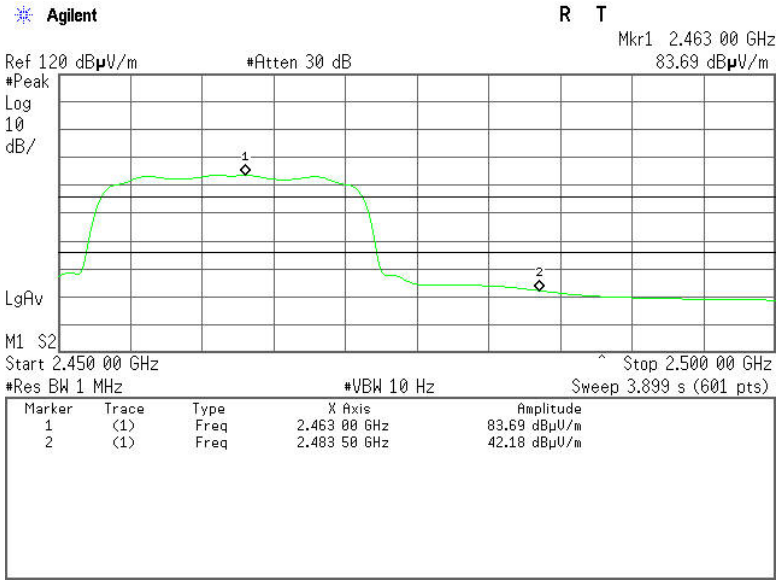
Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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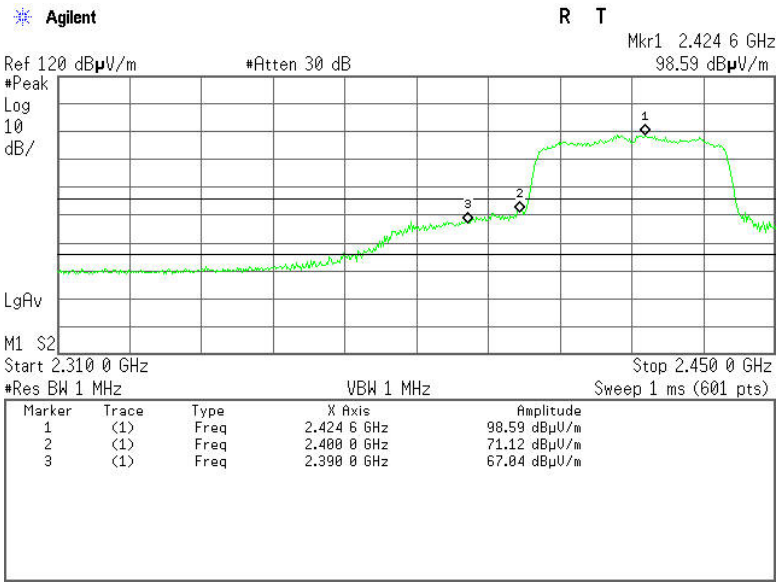
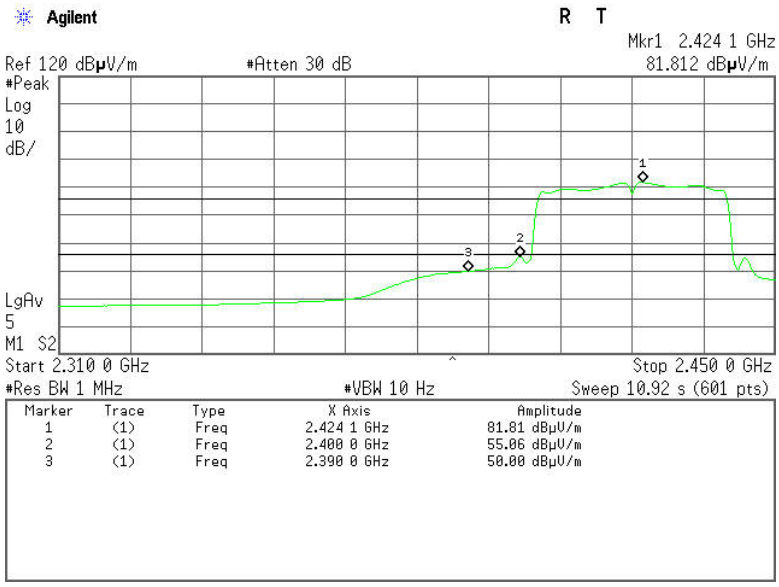
IEEE 802.11n HT40 MHz (Antenna 1) mode

Band Edges (CH Low)

Detector mode: Peak Polarity: Vertical



Detector mode: Average Polarity: Vertical



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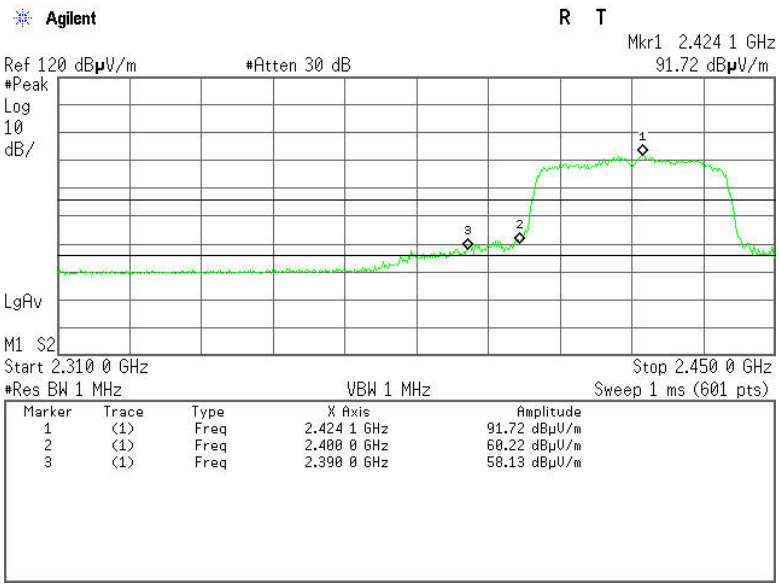
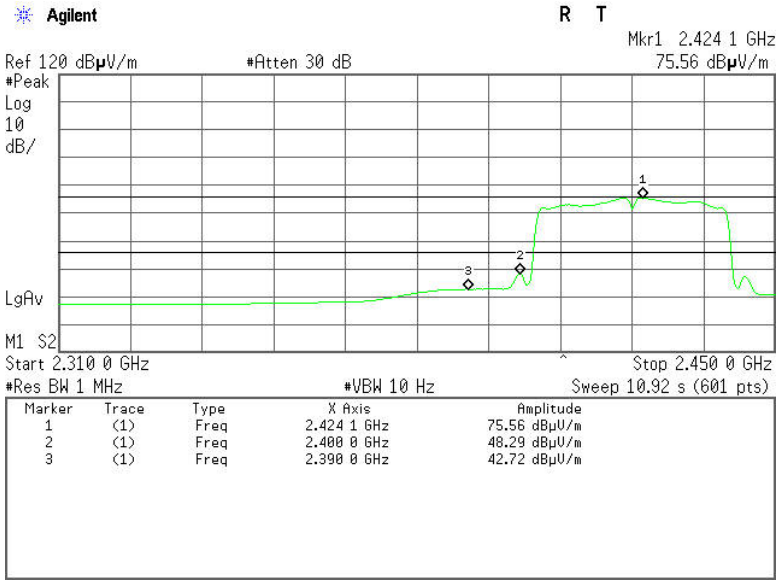
Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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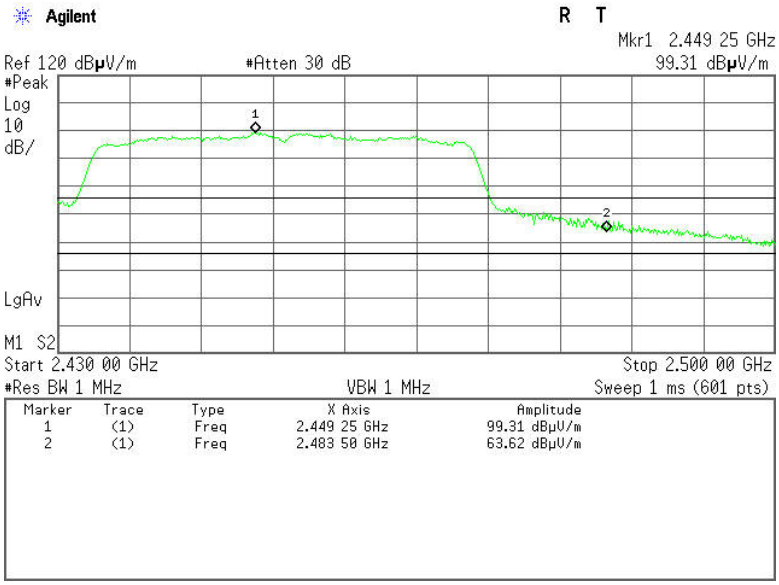
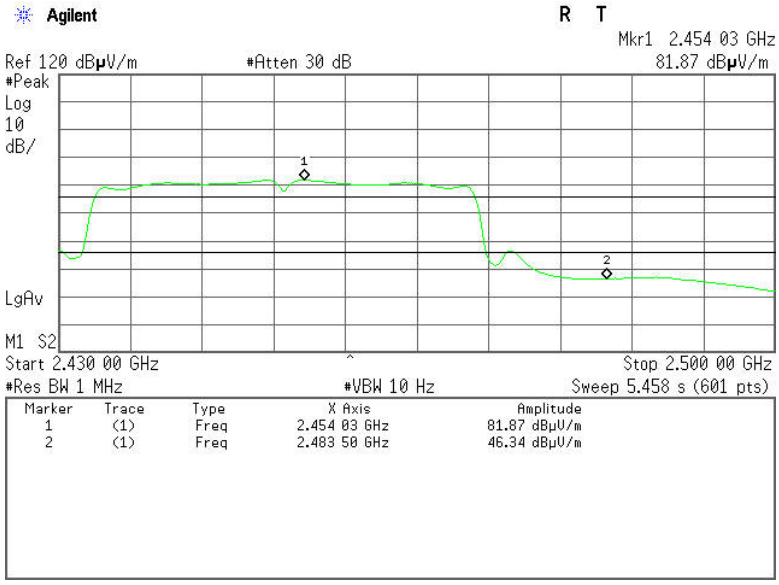
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical

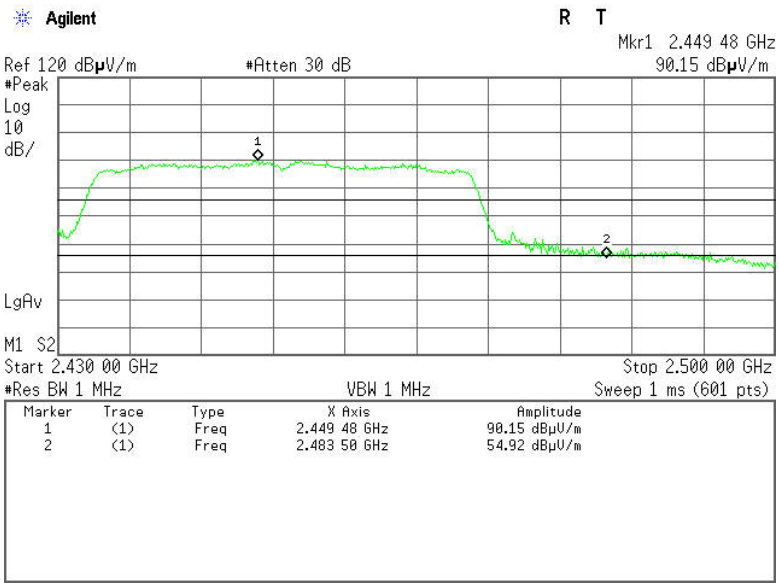


Detector mode: Average Polarity: Vertical

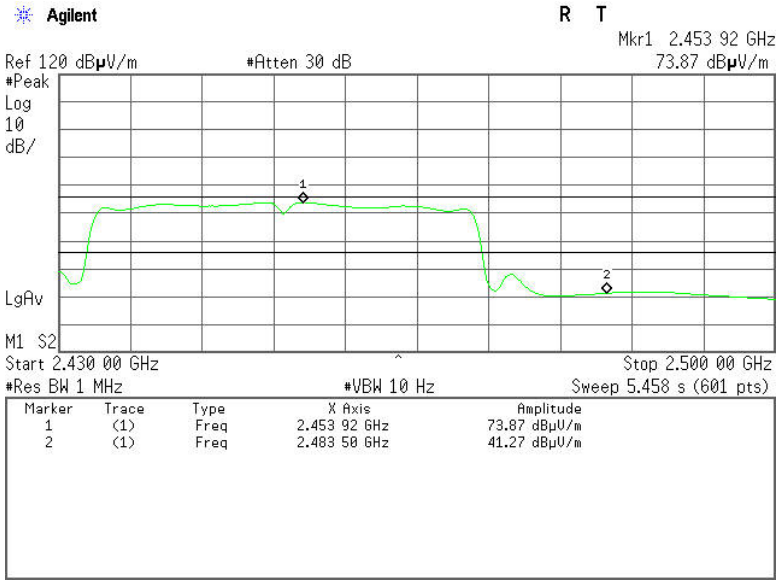


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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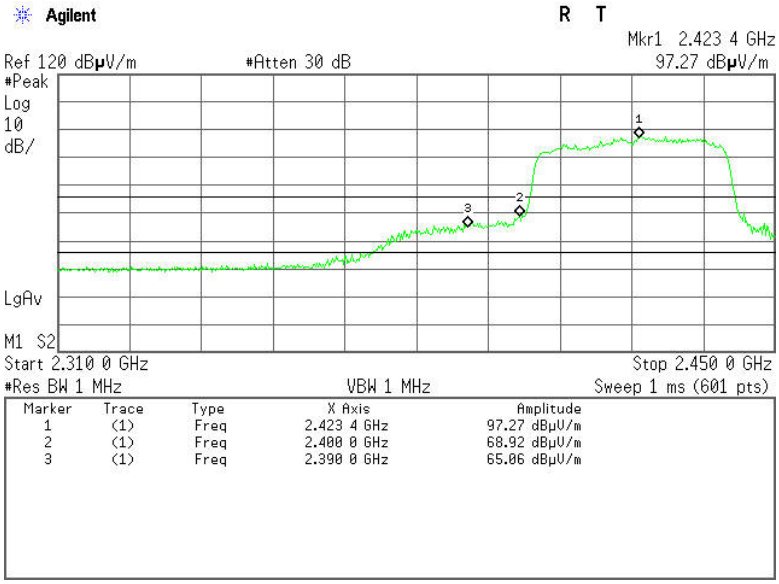
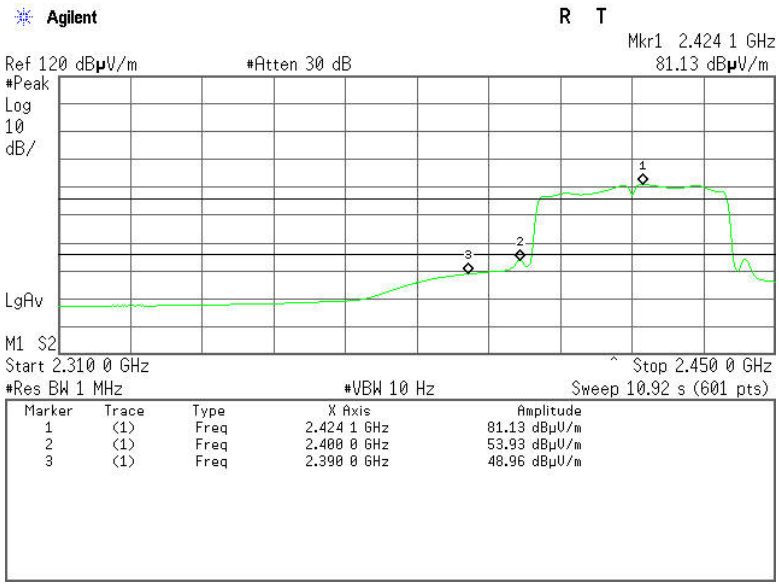
IEEE 802.11n HT40 MHz (Antenna 2) mode

Band Edges (CH Low)

Detector mode: Peak **Polarity: Vertical**

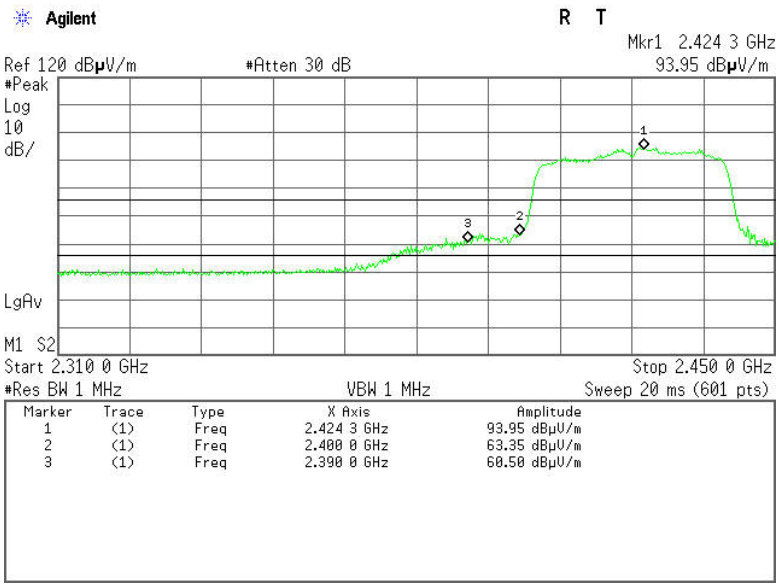


Detector mode: Average **Polarity: Vertical**

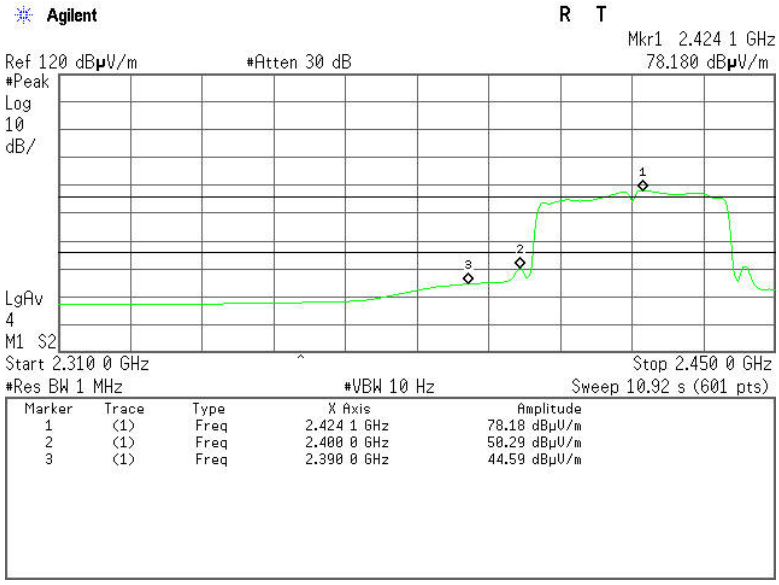


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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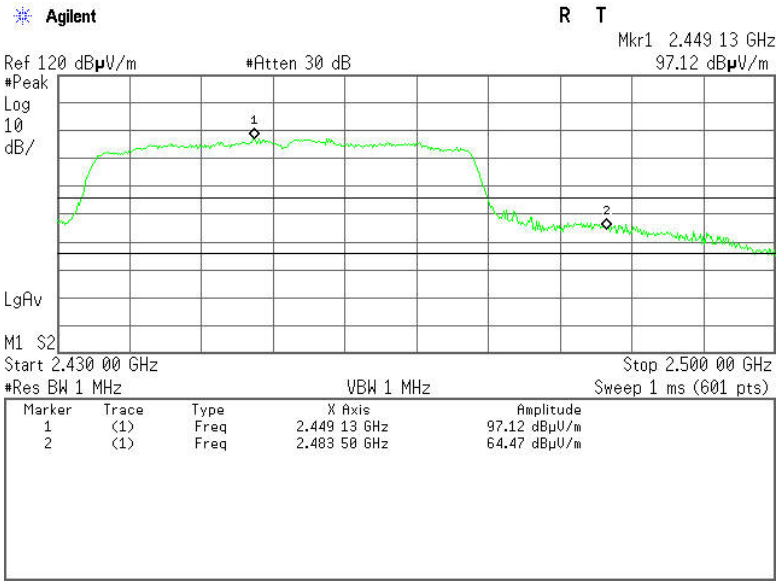
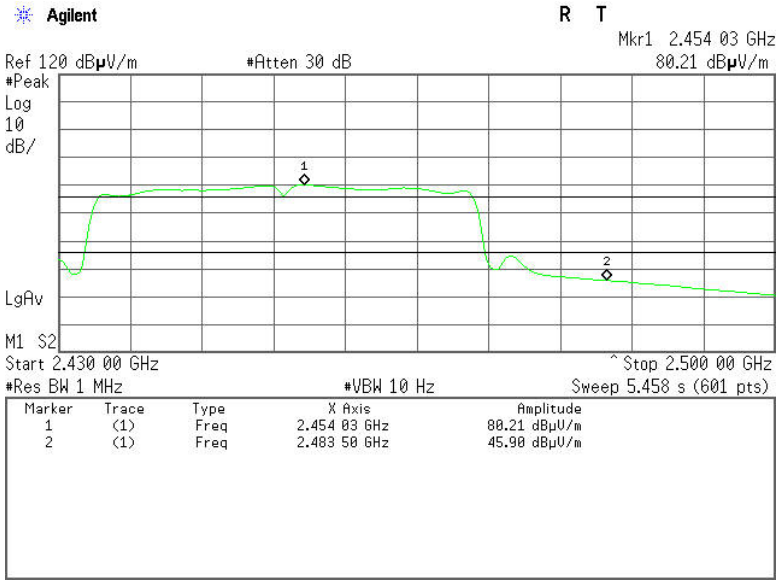
Band Edges (CH High)

Detector mode: Peak Polarity: Vertical

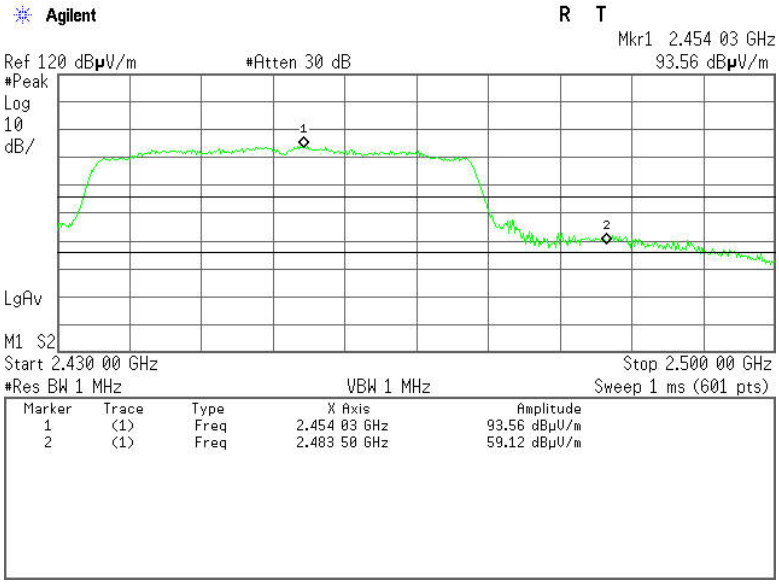


Detector mode: Average Polarity: Vertical

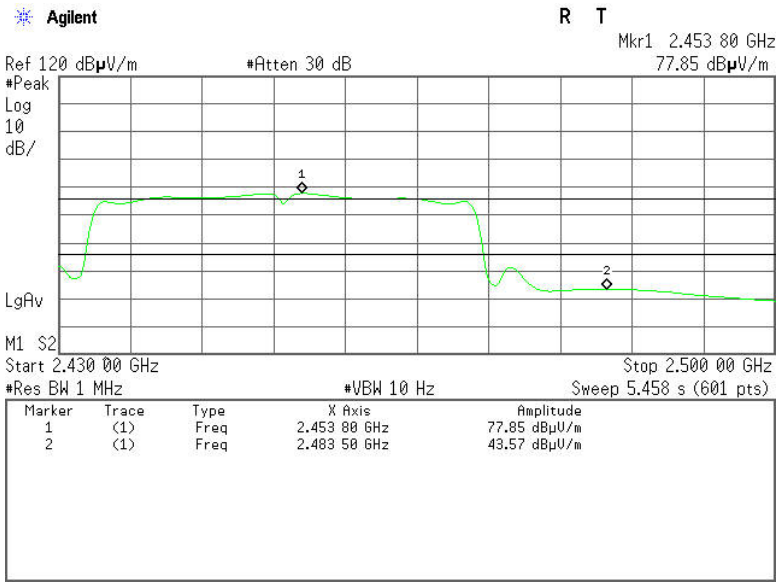


This report shall not be reproduced except in full, without the written approval of Compliance Certification Services.

Detector mode: Peak **Polarity: Horizontal**



Detector mode: Average **Polarity: Horizontal**



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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

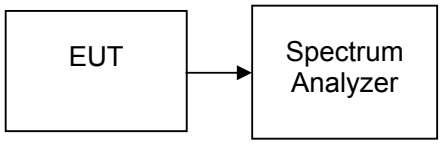
Name of Equipment	Manufacturer	Model	Serial Number	Last Calibration	Calibration Due
Spectrum Analyzer	Agilent	E4446A	US44300399	03/09/2013	03/08/2014

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



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7.6.5. TEST RESULTS

No non-compliance noted

Test Data

Test mode: IEEE 802.11b (Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-10.20	8	PASS
Mid	2437	-8.77		PASS
High	2462	-11.54		PASS

Test mode: IEEE 802.11g (Antenna 1)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-13.75	8	PASS
Mid	2437	-14.10		PASS
High	2462	-14.02		PASS

Test mode: IEEE 802.11g (Antenna 2)

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-13.51	8	PASS
Mid	2437	-14.04		PASS
High	2462	-14.93		PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-14.05	8	PASS
Mid	2437	-13.86		PASS
High	2462	-14.11		PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-13.41	8	PASS
Mid	2437	-14.76		PASS
High	2462	-14.85		PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-16.40	8	PASS
Mid	2437	-17.82		PASS
High	2462	-17.55		PASS

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

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Test Result
Low	2412	-18.21	8	PASS
Mid	2437	-16.75		PASS
High	2462	-19.40		PASS

Test Plot IEEE 802.11b (Antenna 2)mode

PPSD (CH Low)

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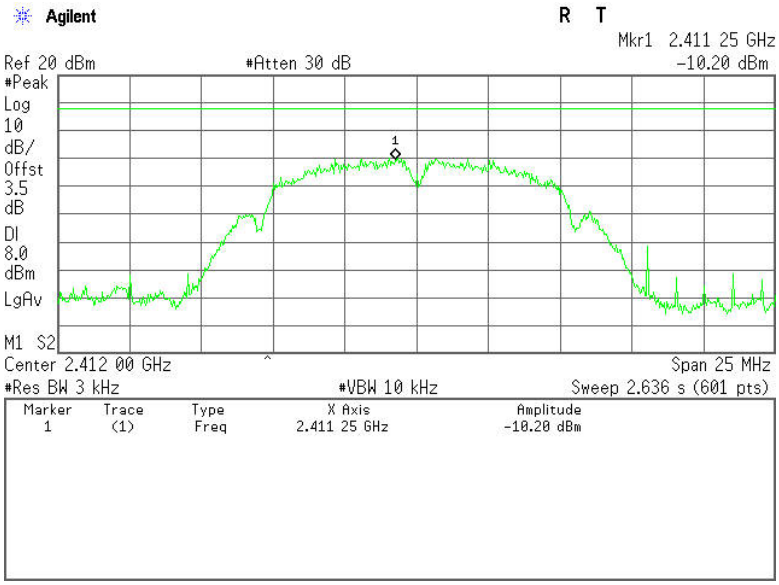
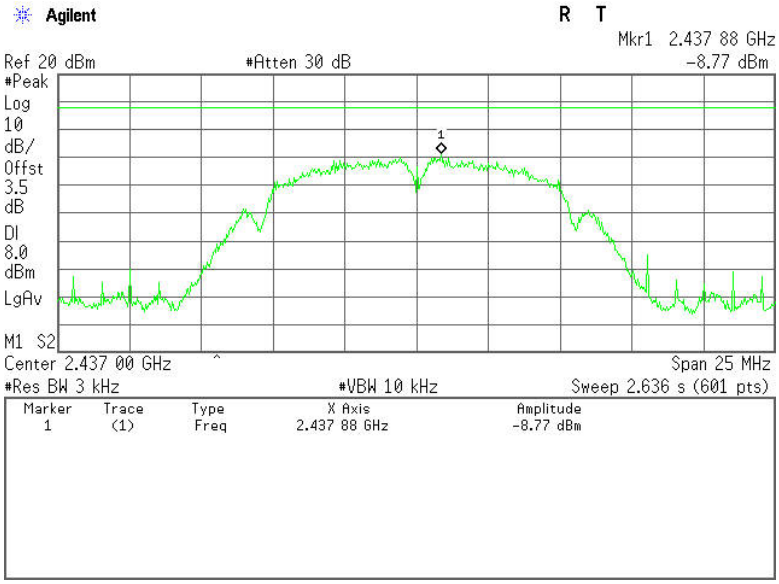


PPSD (CH Mid)



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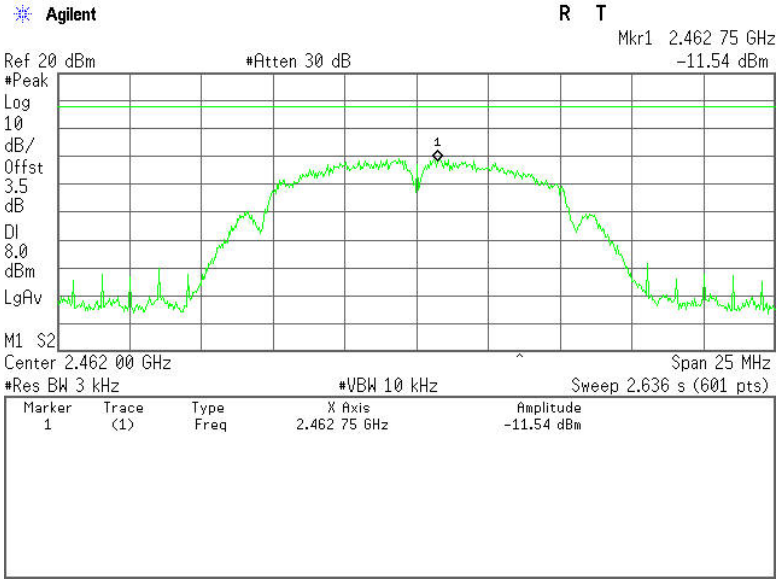
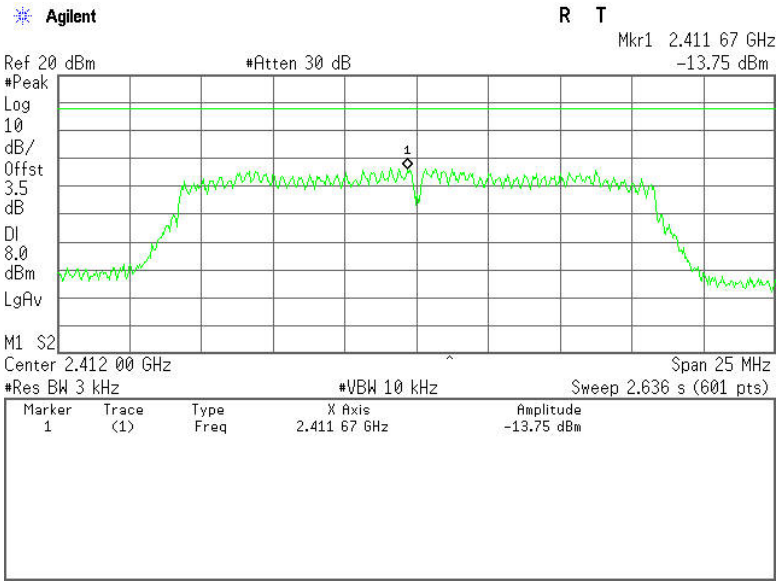
PPSD (CH High)



IEEE 802.11g (Antenna 1)mode

PPSD (CH Low)



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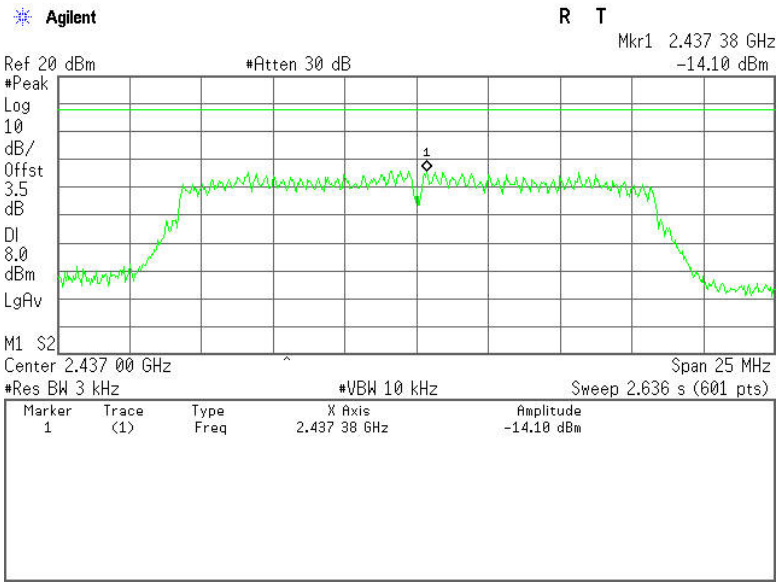
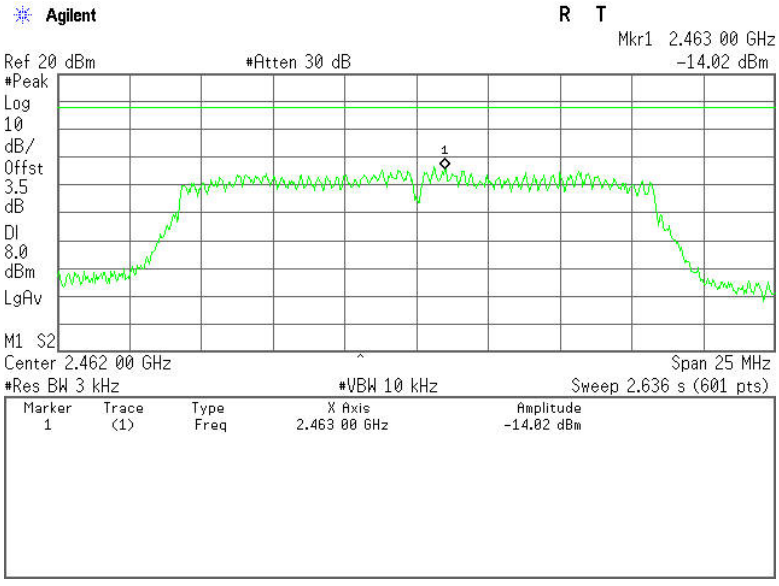
PPSD (CH Mid)



PPSD (CH High)



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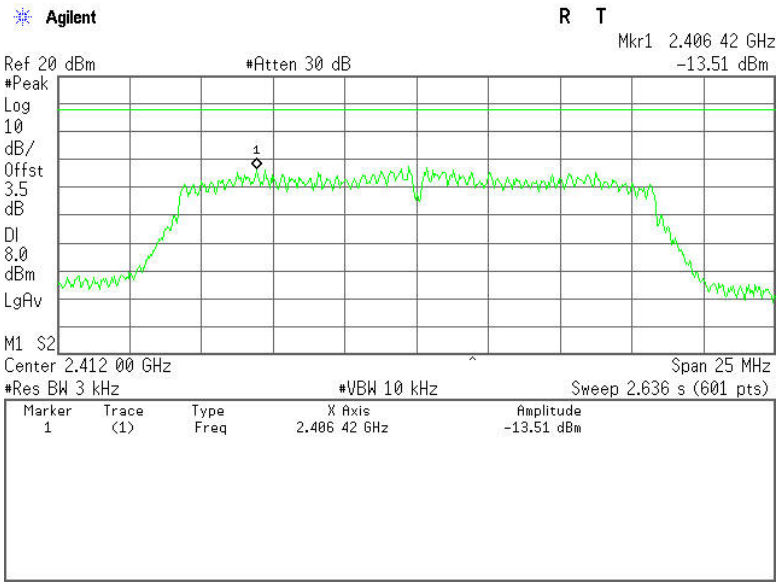
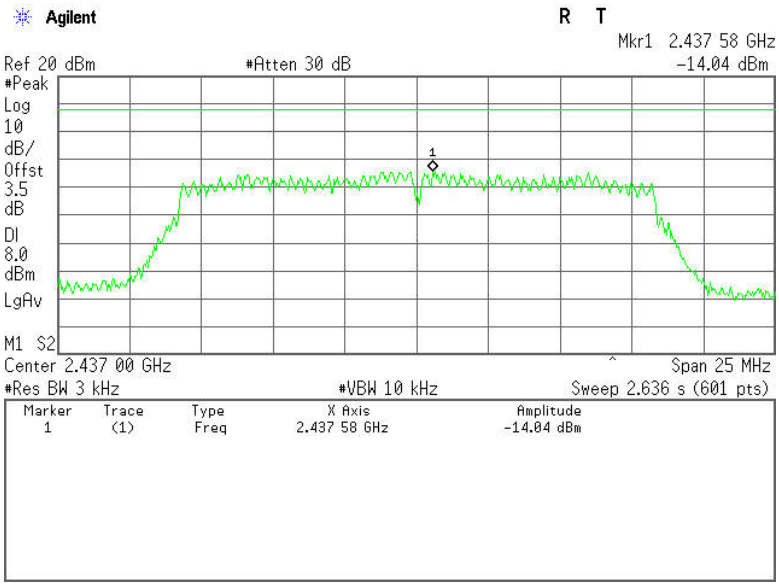
IEEE 802.11g (Antenna 2)mode

PPSD (CH Low)



PPSD (CH Mid)



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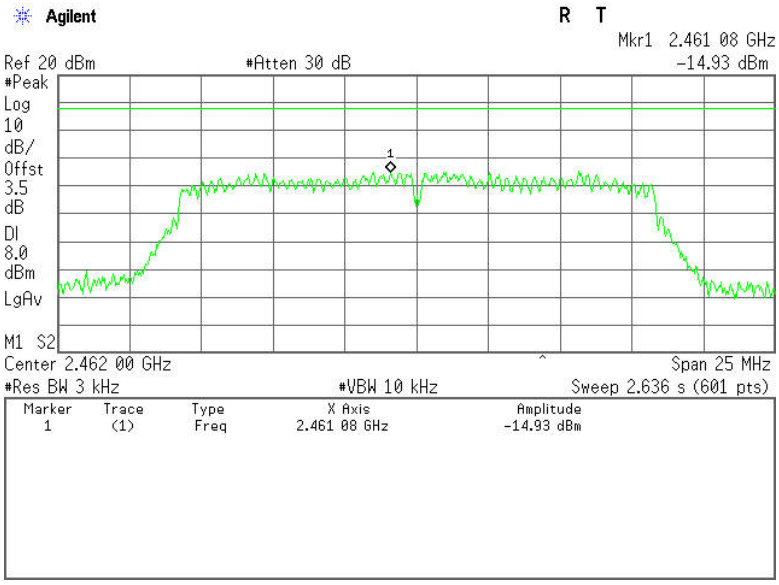
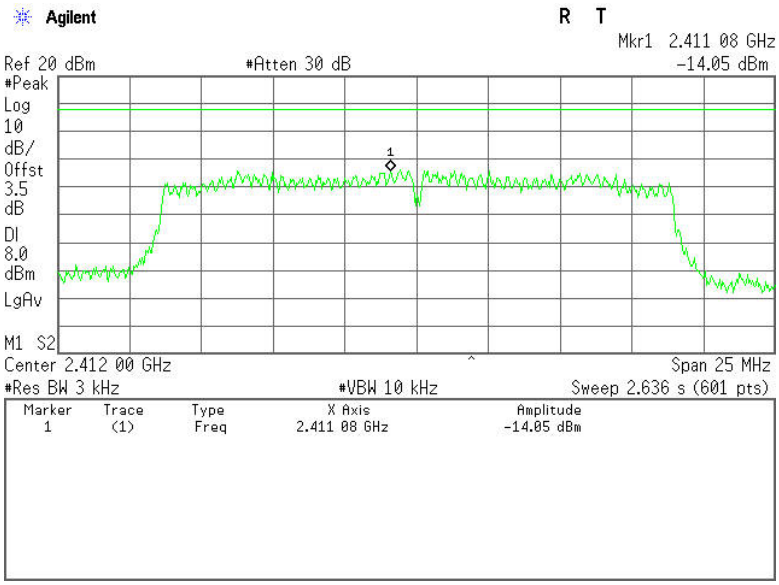
PPSD (CH High)



IEEE 802.11n HT20 MHz(Antenna 1)mode

PPSD (CH Low)



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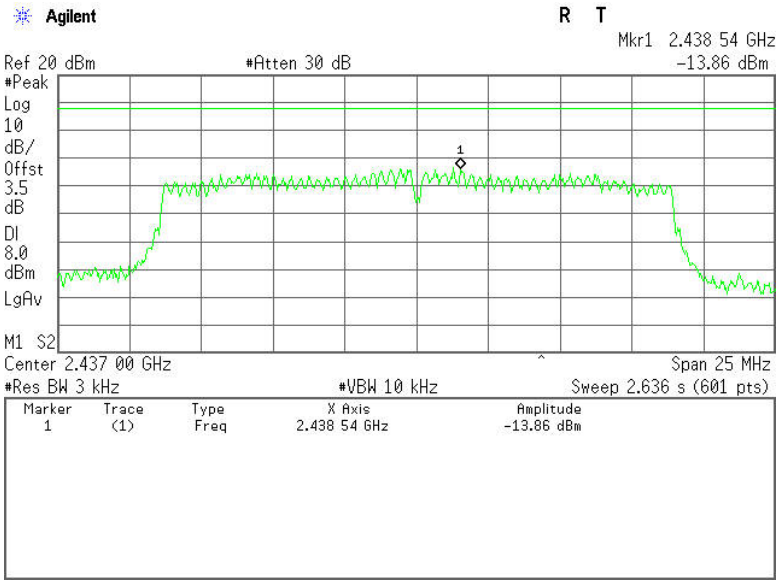
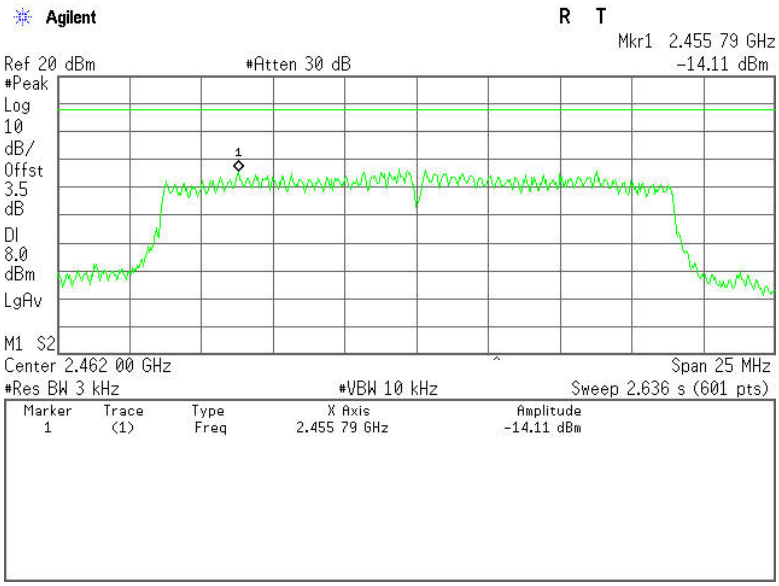
PPSD (CH Mid)



PPSD (CH High)



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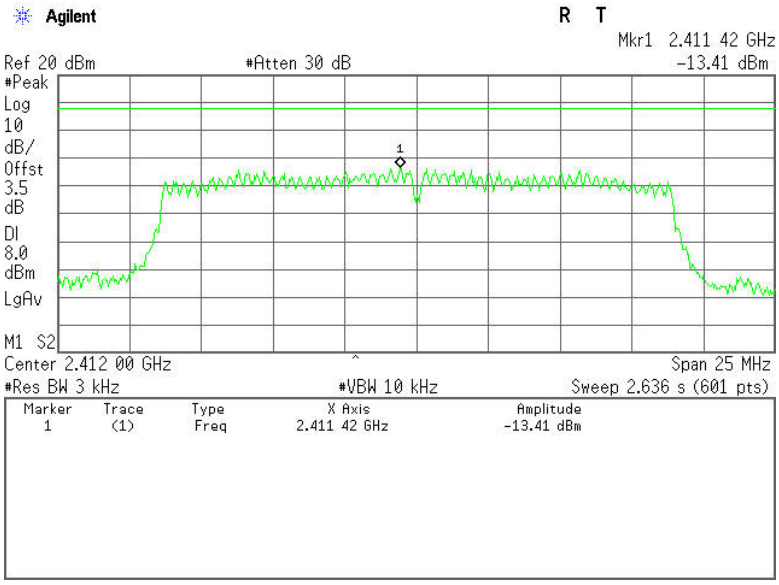
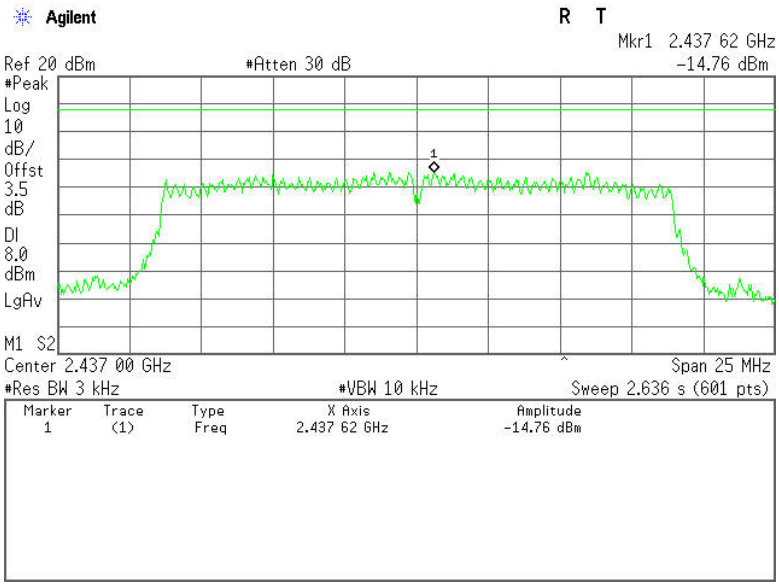
IEEE 802.11n HT20 MHz(Antenna 2)mode

PPSD (CH Low)



PPSD (CH Mid)



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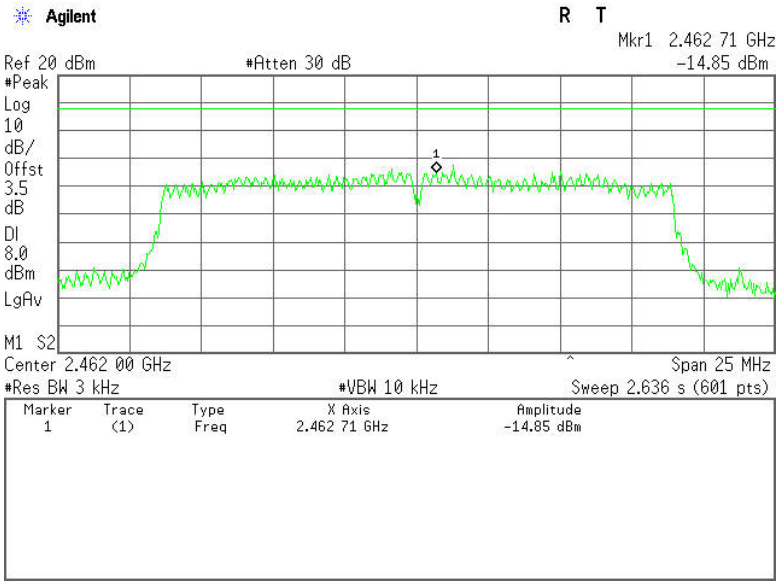
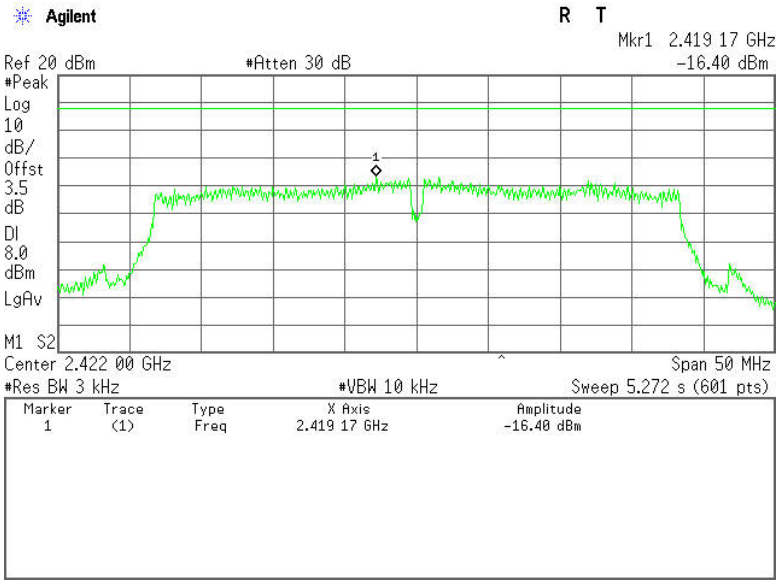
PPSD (CH High)



IEEE 802.11n HT40 MHz(Antenna 1)mode

PPSD (CH Low)



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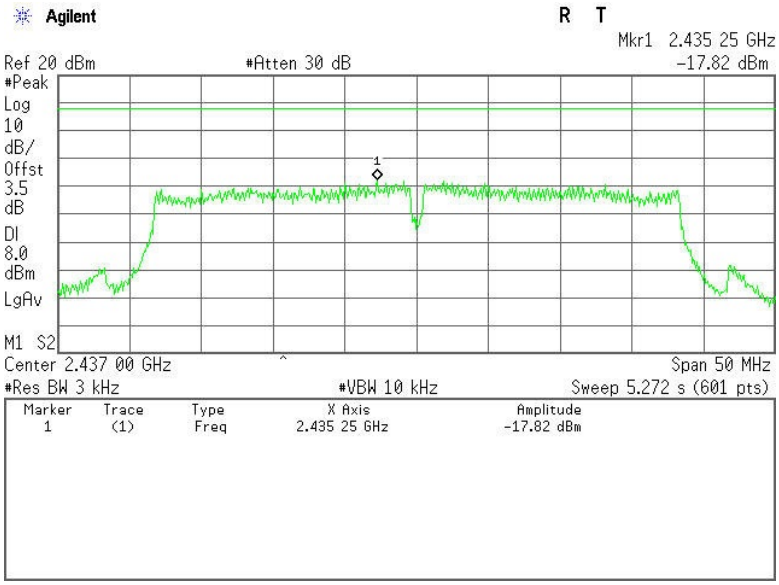
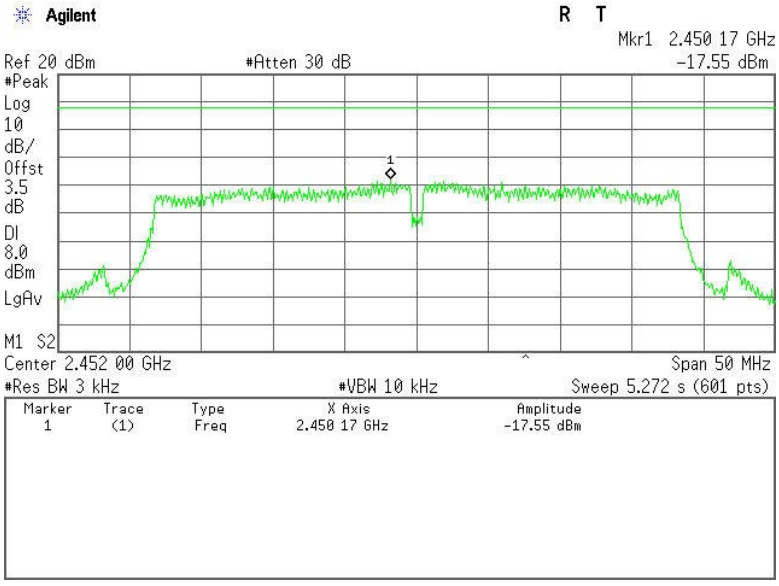
PPSD (CH Mid)



PPSD (CH High)



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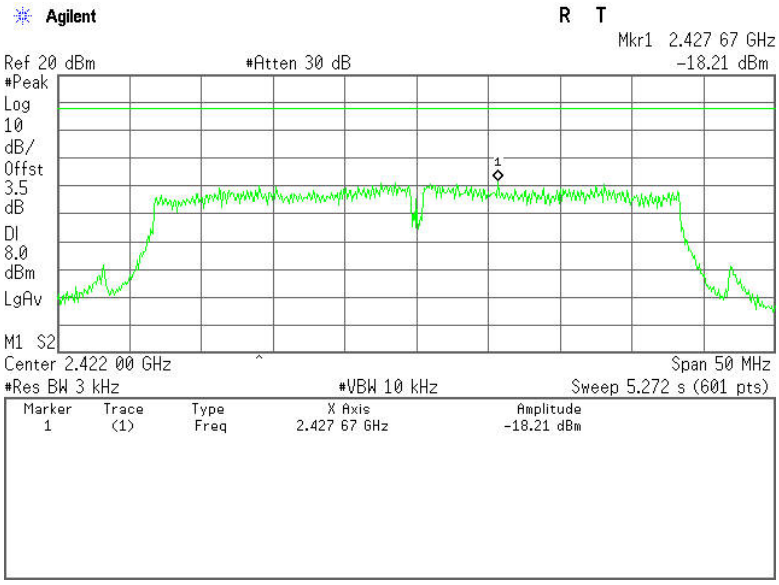
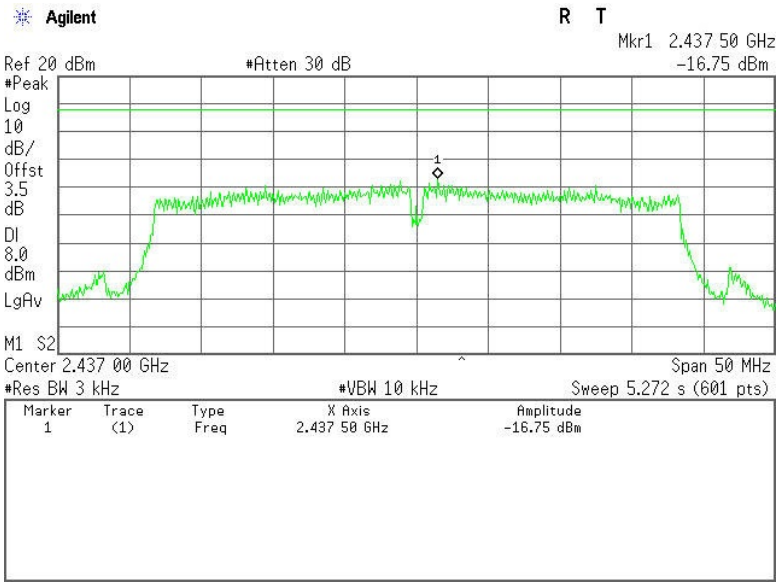
IEEE 802.11n HT40 MHz (Antenna 2)mode

PPSD (CH Low)



PPSD (CH Mid)



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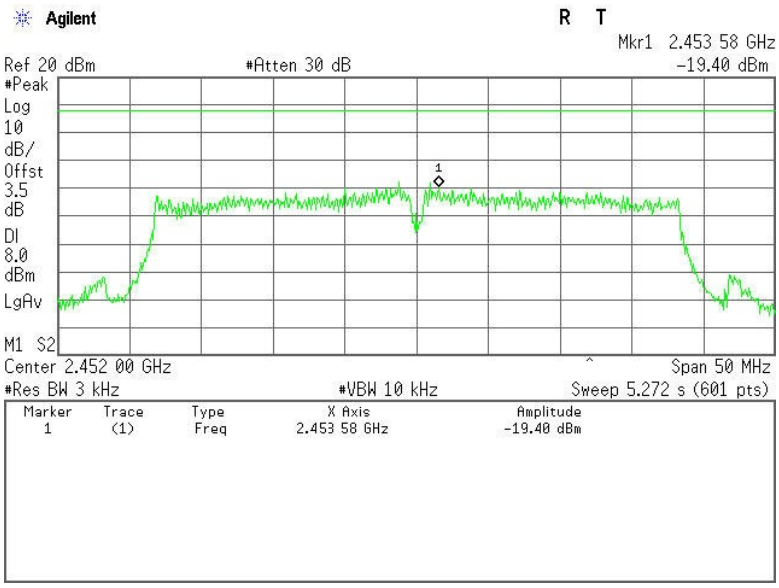
PPSD (CH High)



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