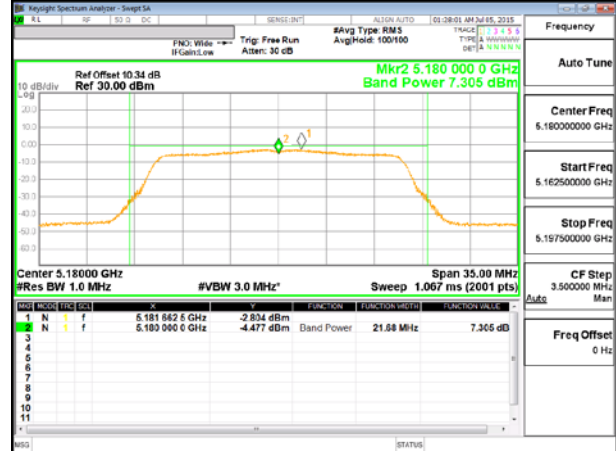


UNII 5.2 GHz IEEE 802.11n HT20 mode

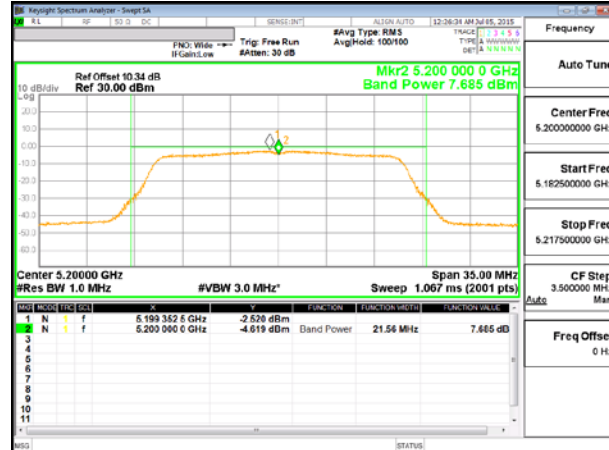
11n HT20 Mode Low Channel Chain 0



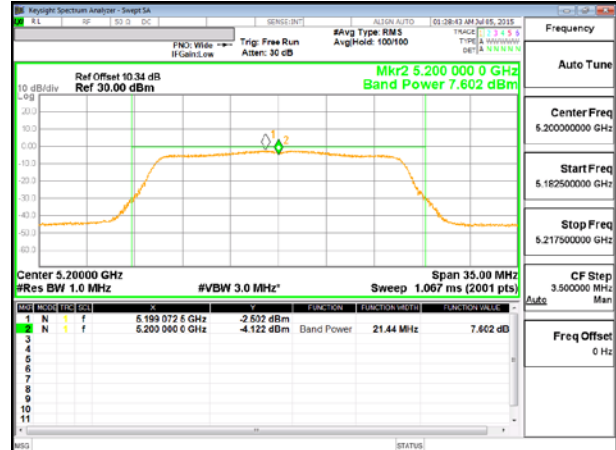
11n HT20 Mode Low Channel Chain 1



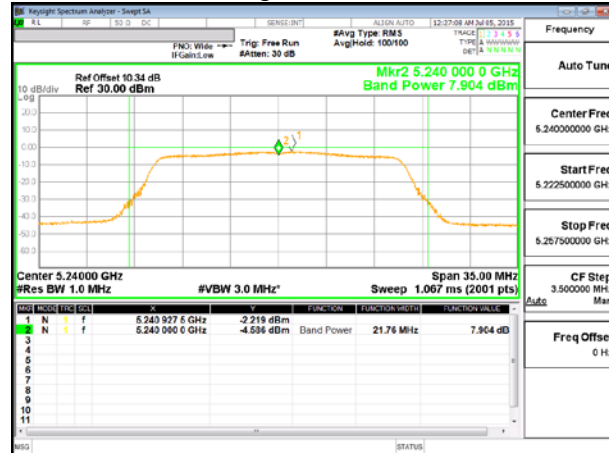
11n HT20 Mode Middle Channel Chain 0



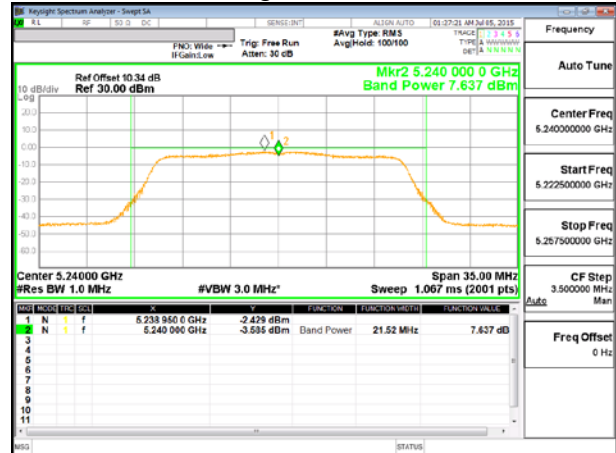
11n HT20 Mode Middle Channel Chain 1



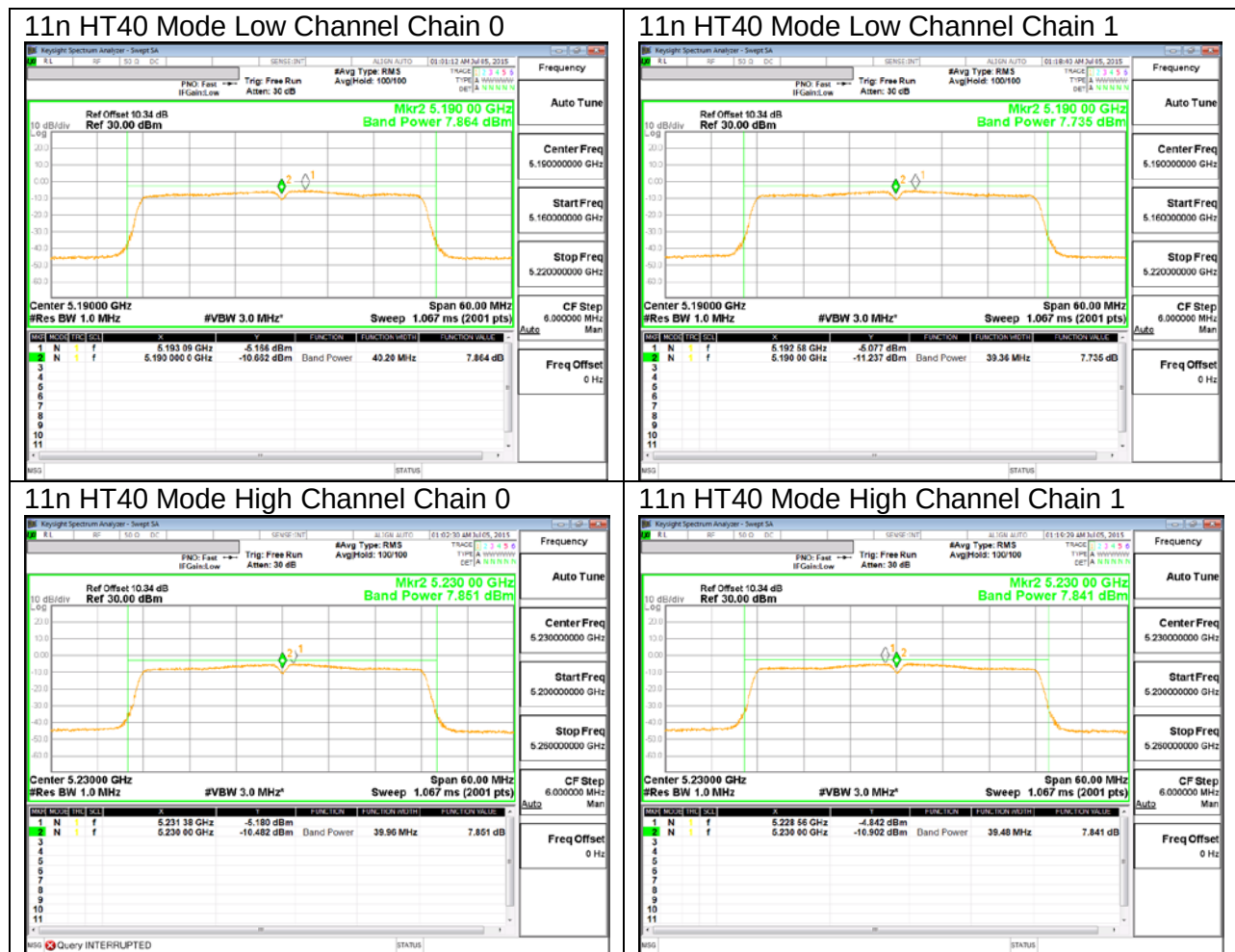
11n HT20 Mode High Channel Chain 0



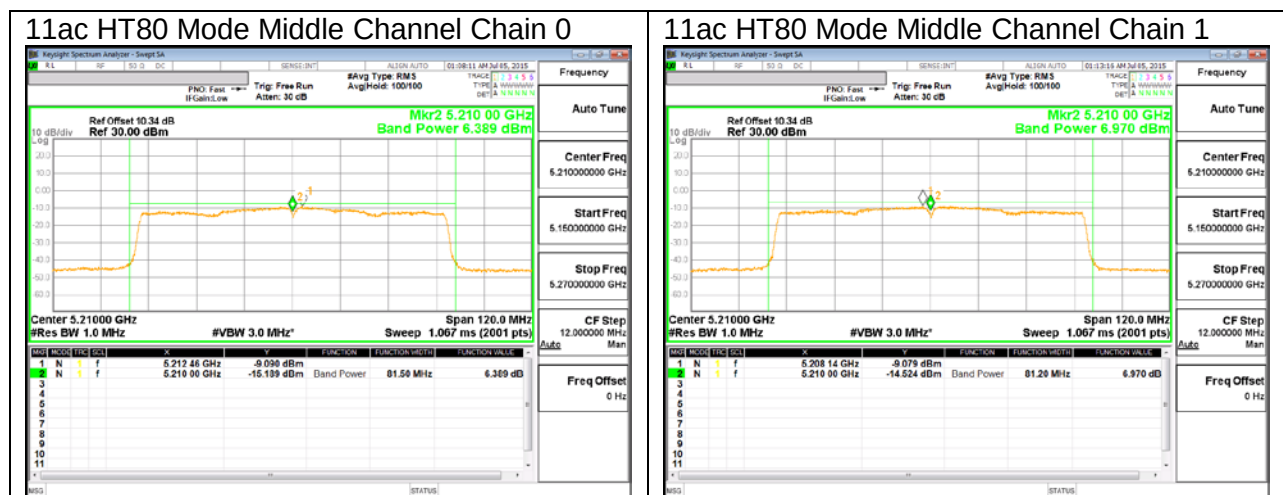
11n HT20 Mode High Channel Chain 1



UNII 5.2 GHz IEEE 802.11n HT40 mode

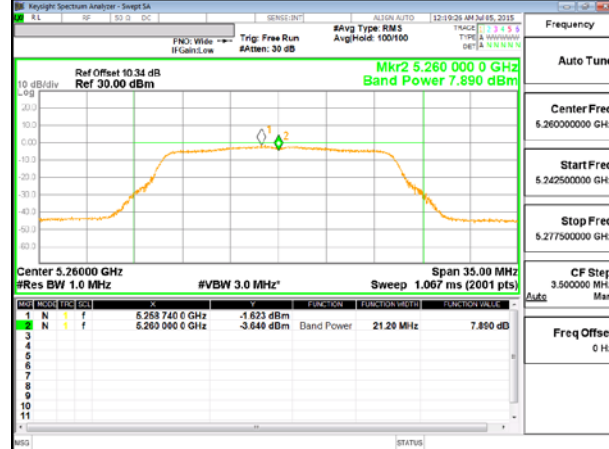


UNII 5.2 GHz IEEE 802.11ac VHT80 mode

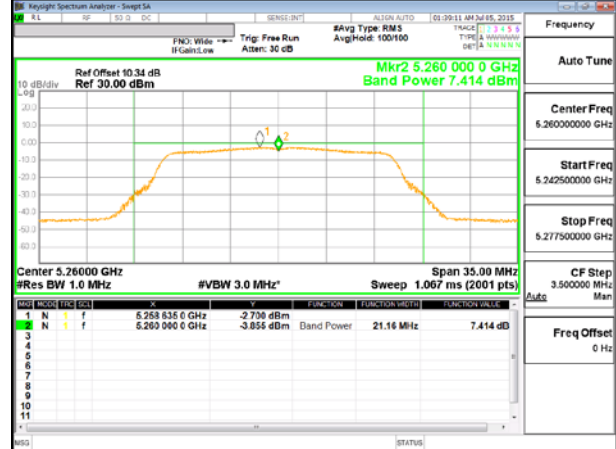


UNII 5.3 GHz IEEE 802.11a mode

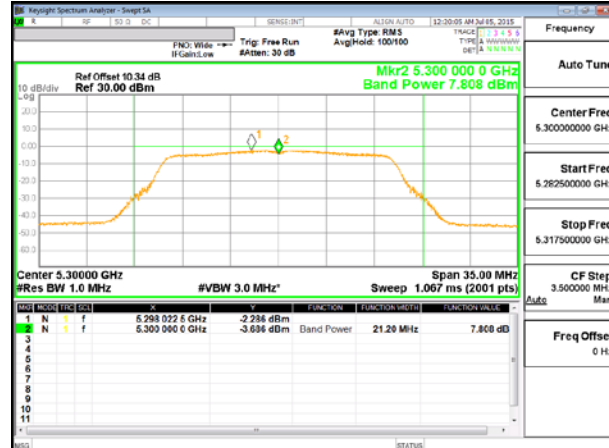
11a Mode Low Channel Primary



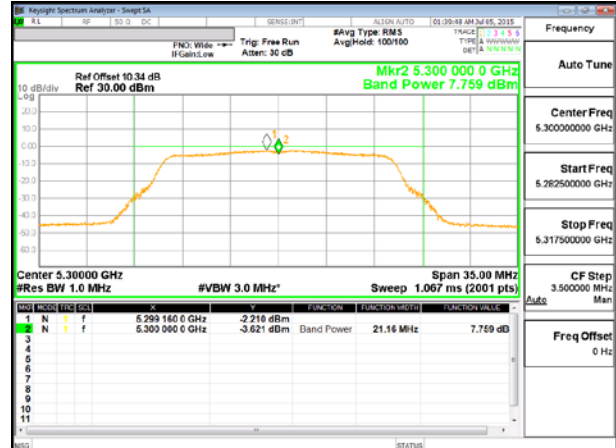
11a Mode Low Channel Secondary



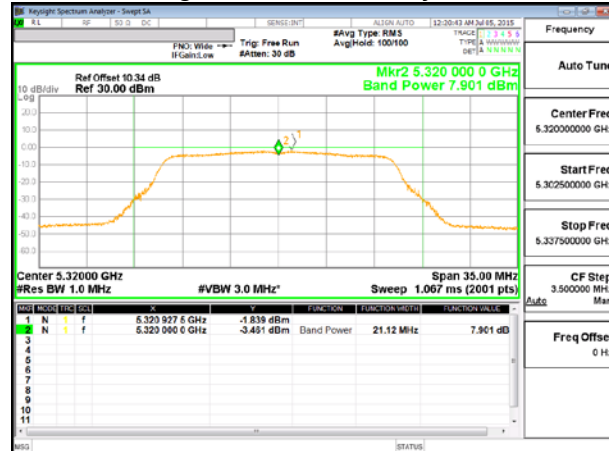
11a Mode Middle Channel Primary



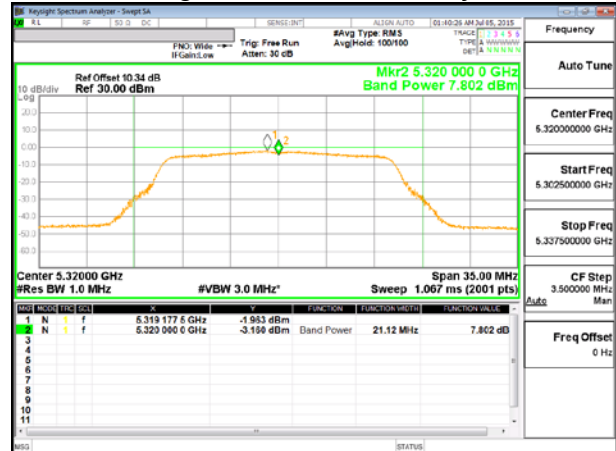
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary

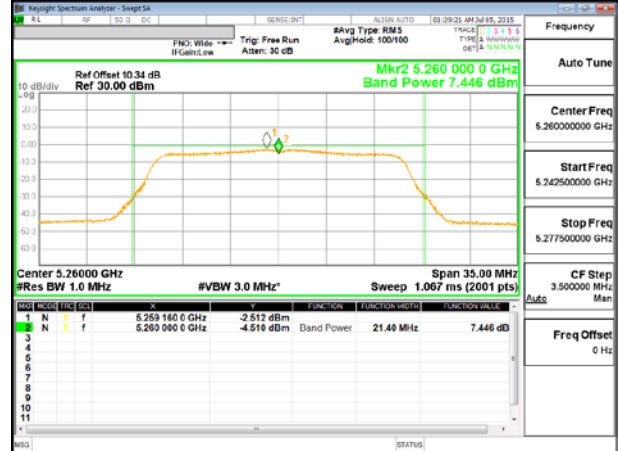


UNII 5.3 GHz IEEE 802.11n HT20 mode

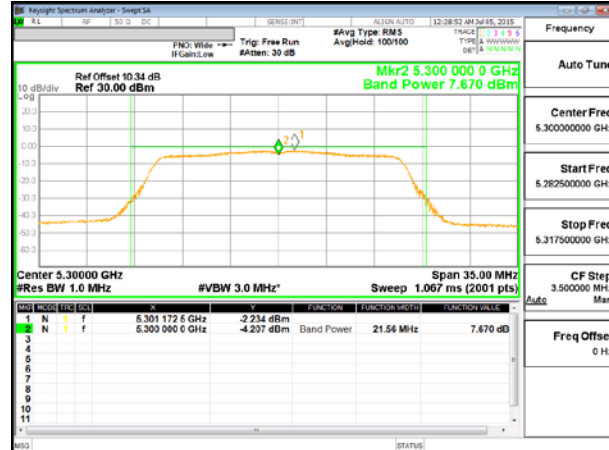
11n HT20 Mode Low Channel Chain 0



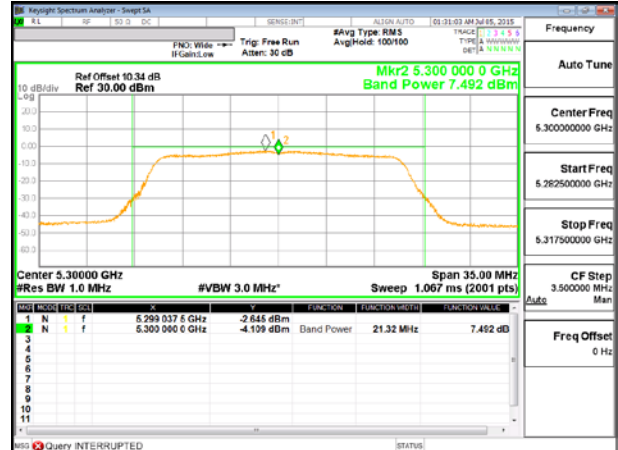
11n HT20 Mode Low Channel Chain 1



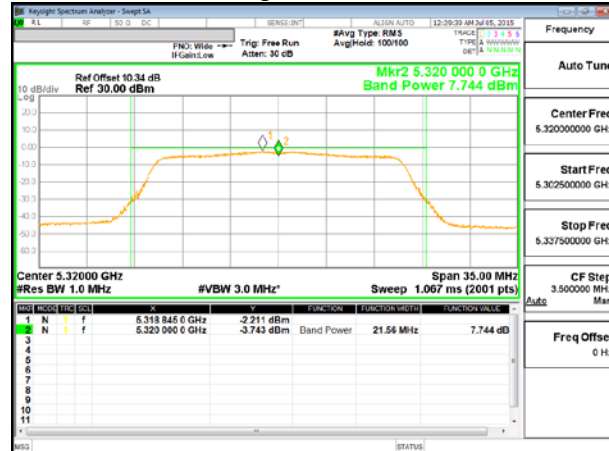
11n HT20 Mode Middle Channel Chain 0



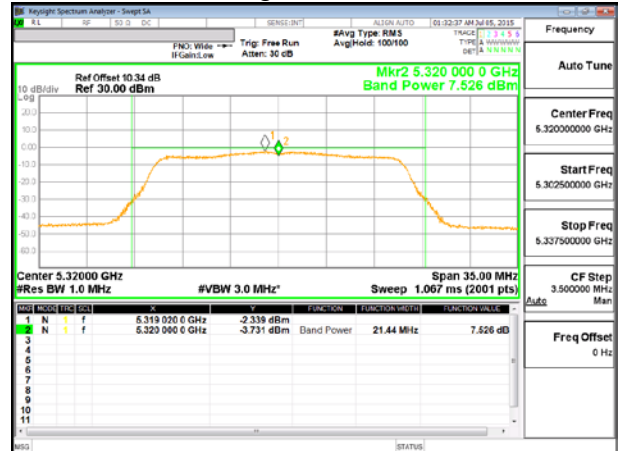
11n HT20 Mode Middle Channel Chain 1



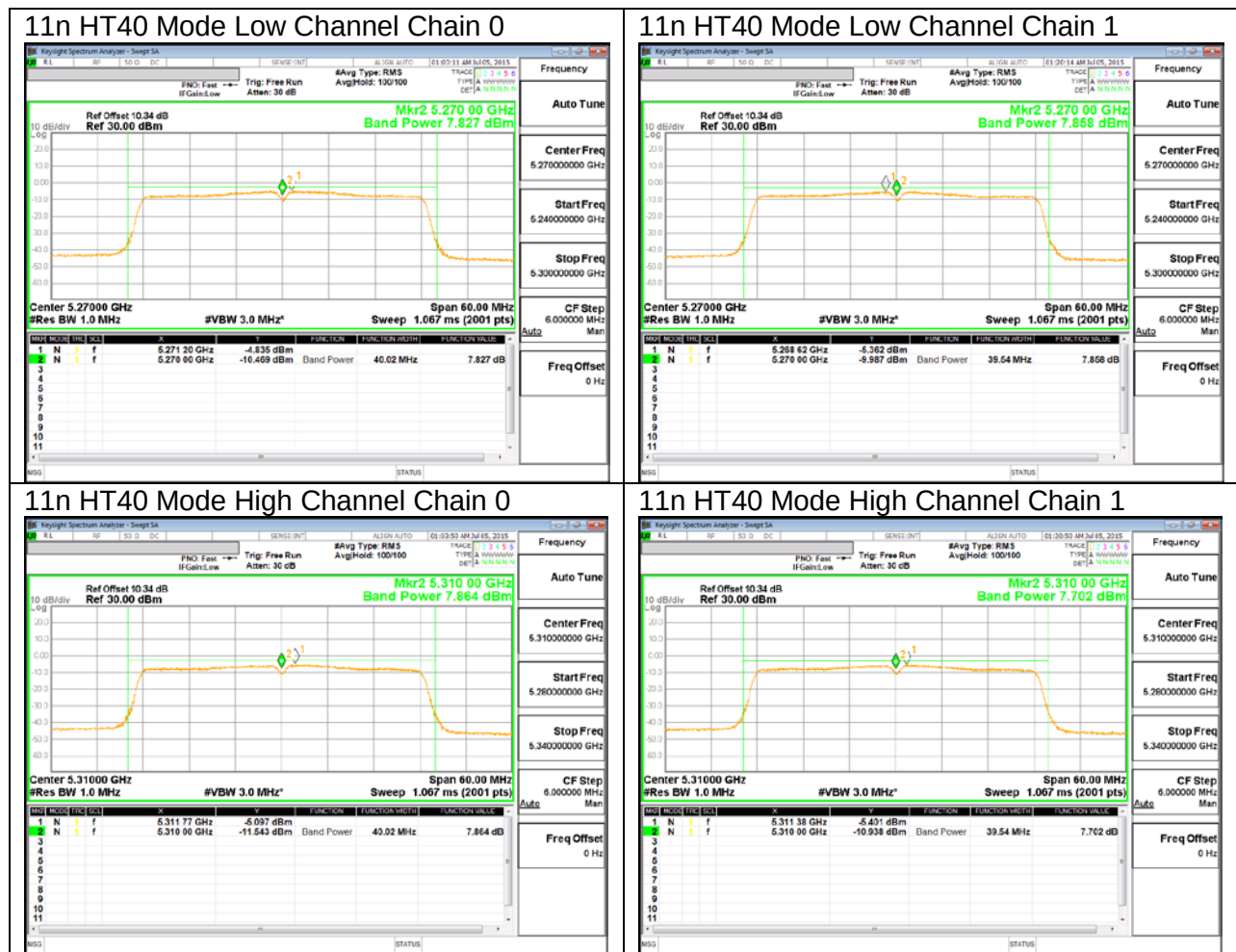
11n HT20 Mode High Channel Chain 0



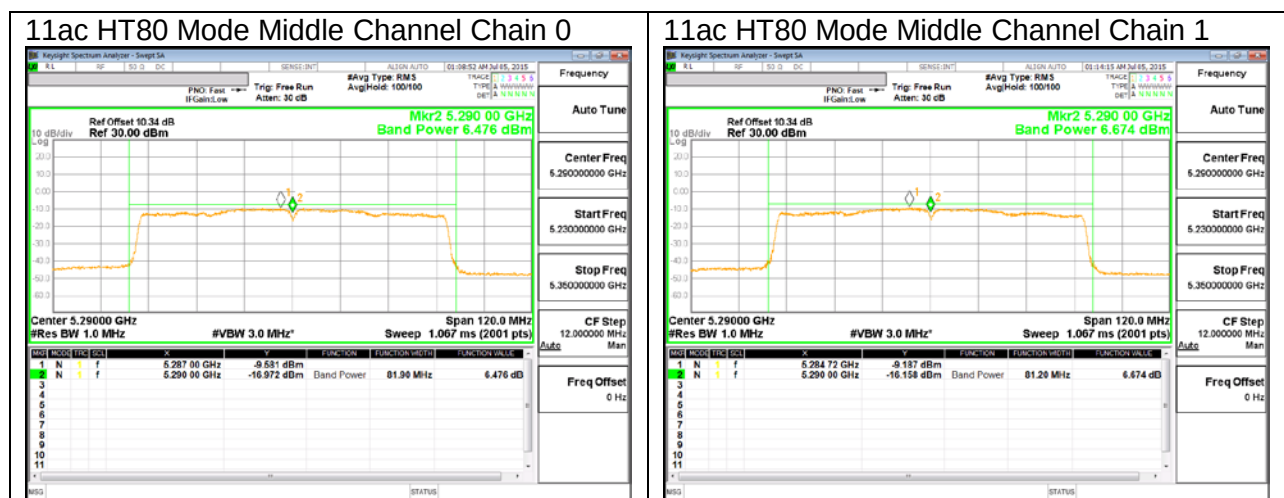
11n HT20 Mode High Channel Chain 1



UNII 5.3 GHz IEEE 802.11n HT40 mode



UNII 5.3 GHz IEEE 802.11ac VHT80 mode

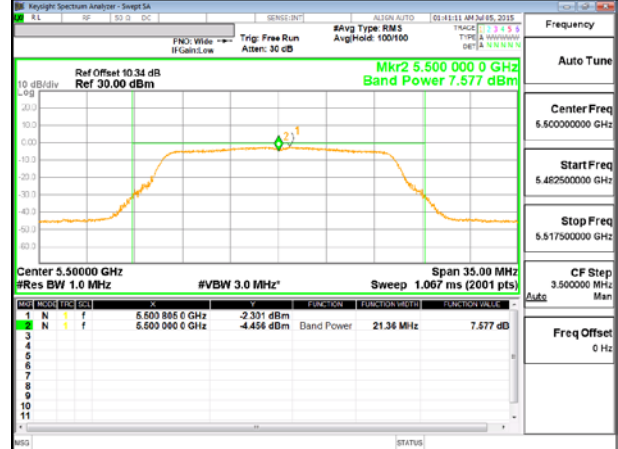


UNII 5.5 GHz IEEE 802.11a mode

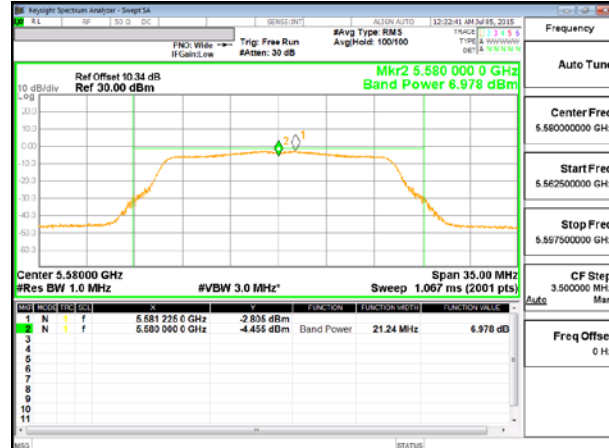
11a Mode Low Channel Primary



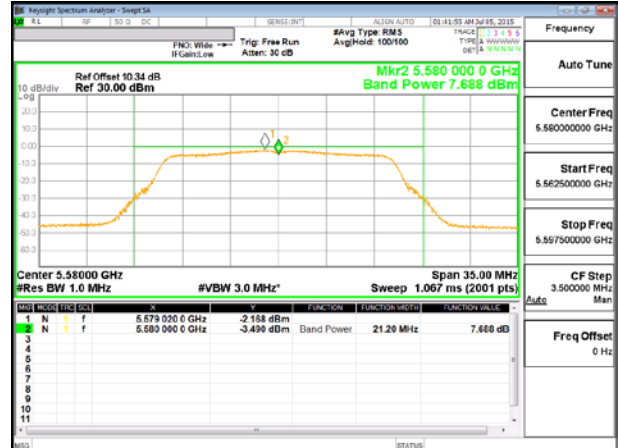
11a Mode Low Channel Secondary



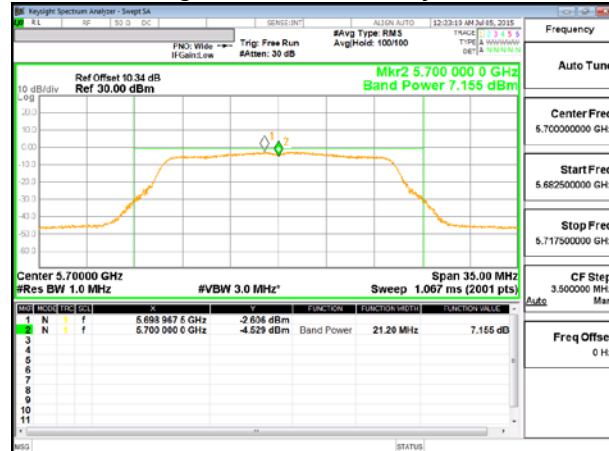
11a Mode Middle Channel Primary



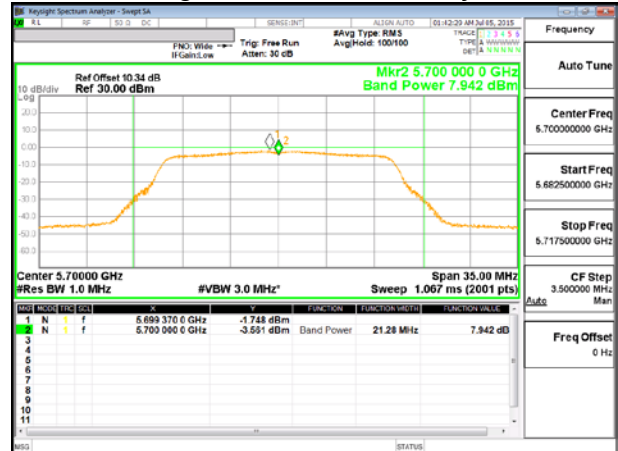
11a Mode Middle Channel Secondary



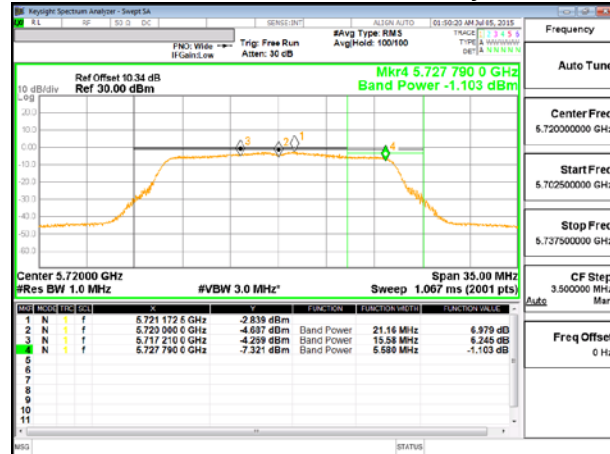
11a Mode High Channel Primary



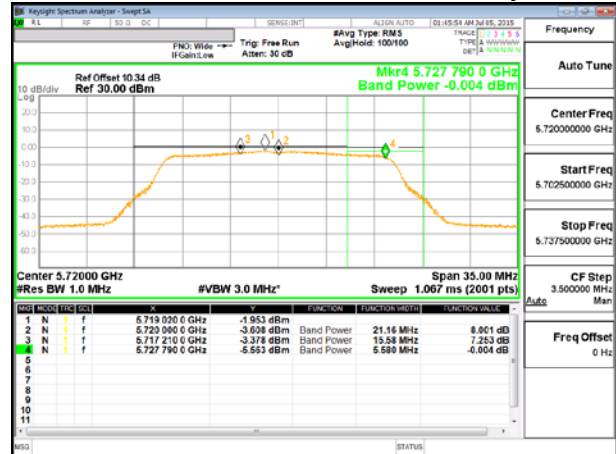
11a Mode High Channel Secondary



11a Mode Straddle Channel Primary

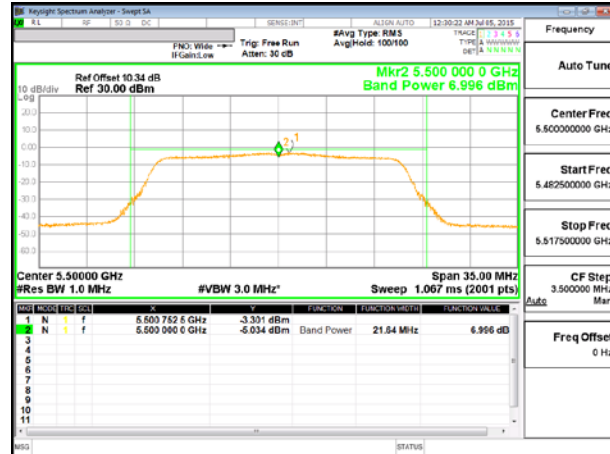


11a Mode Straddle Channel Secondary

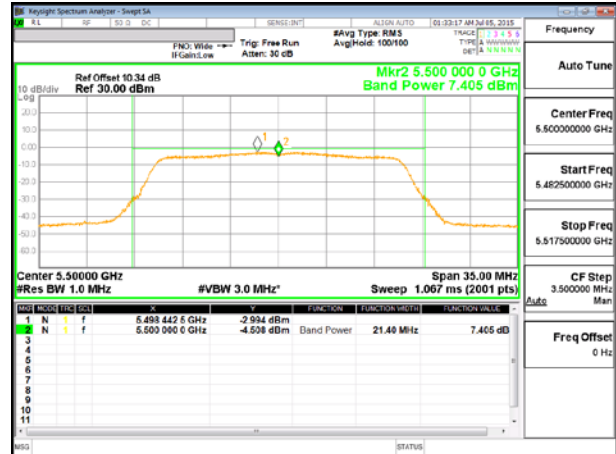


UNII 5.5 GHz IEEE 802.11n HT20 mode

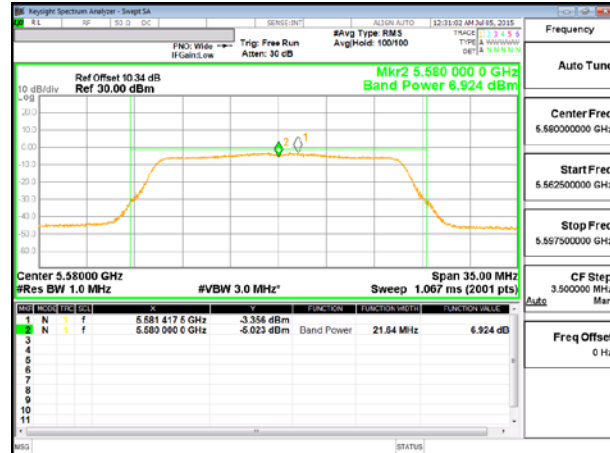
11n HT20 Mode Low Channel Chain 0



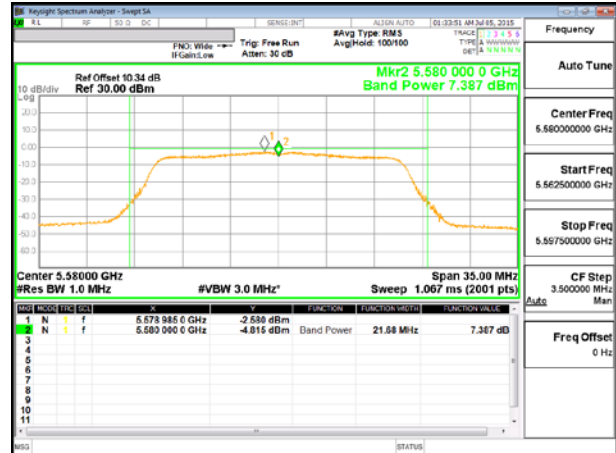
11n HT20 Mode Low Channel Chain 1



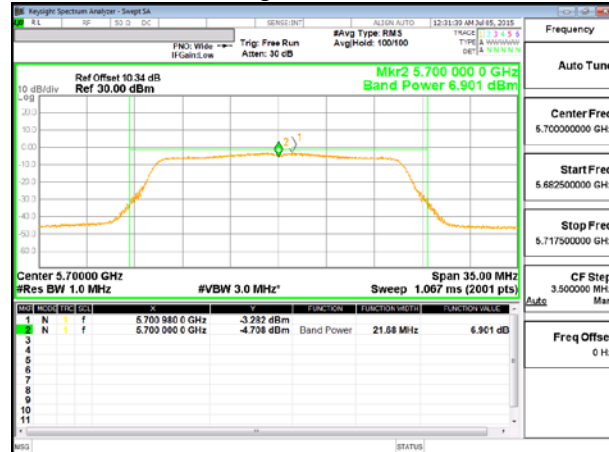
11n HT20 Mode Middle Channel Chain 0



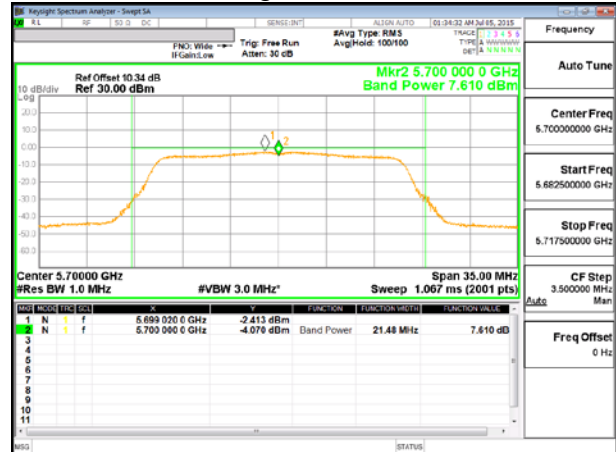
11n HT20 Mode Middle Channel Chain 1



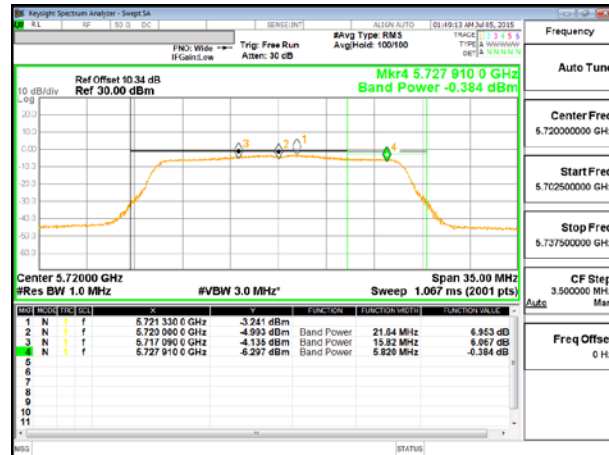
11n HT20 Mode High Channel Chain 0



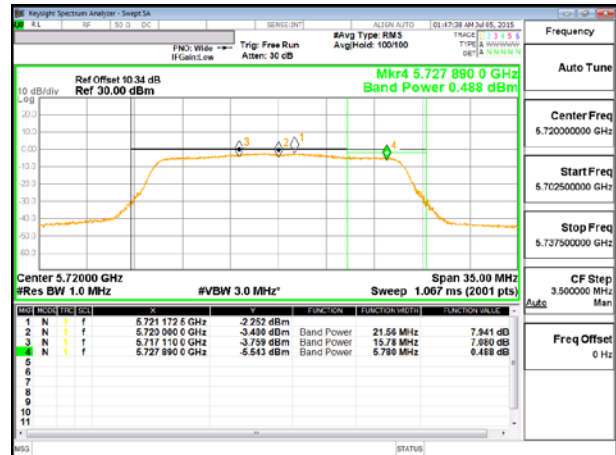
11n HT20 Mode High Channel Chain 1



11n HT20 Mode Straddle Channel Chain 0

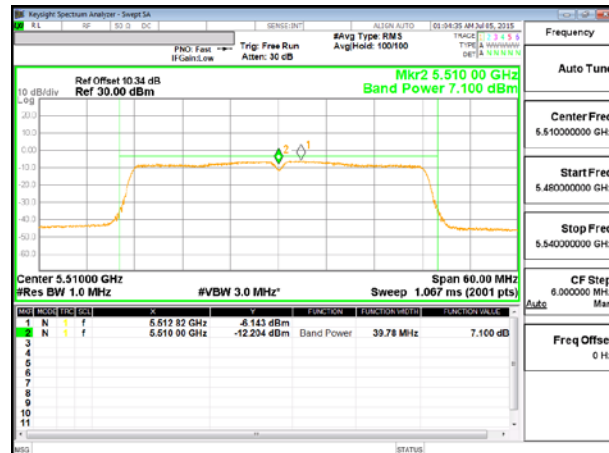


11n HT20 Mode Straddle Channel Chain 1

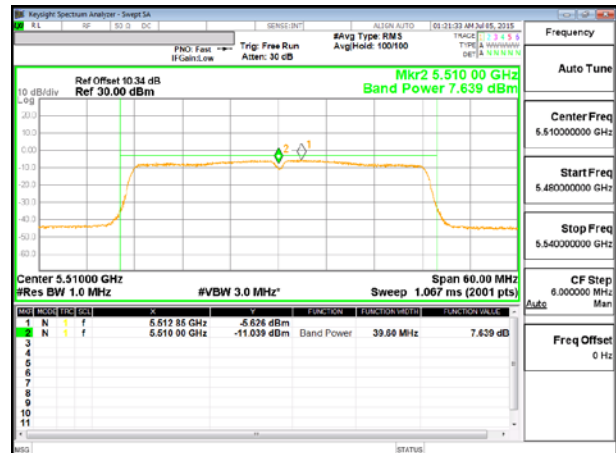


UNII 5.5 GHz IEEE 802.11n HT40 mode

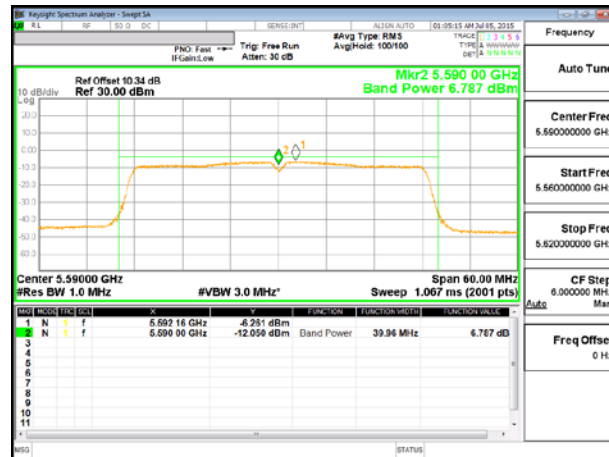
11n HT40 Mode Low Channel Chain 0



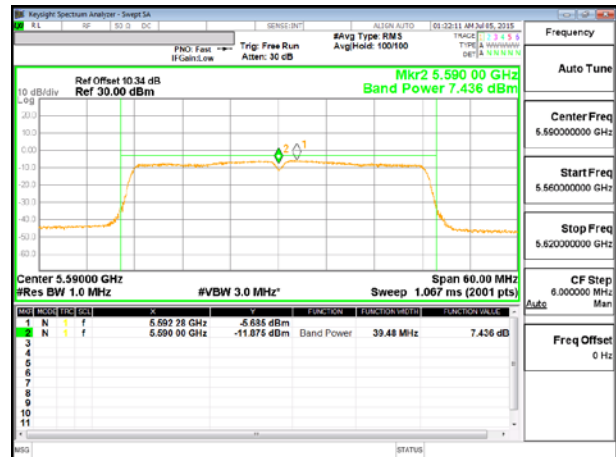
11n HT40 Mode Low Channel Chain 1



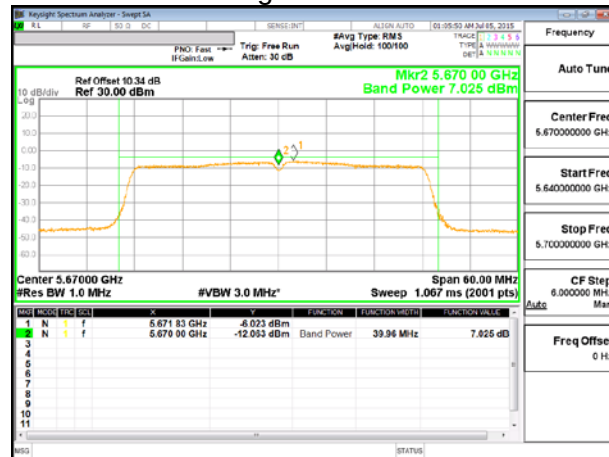
11n HT40 Mode Middle Channel Chain 0



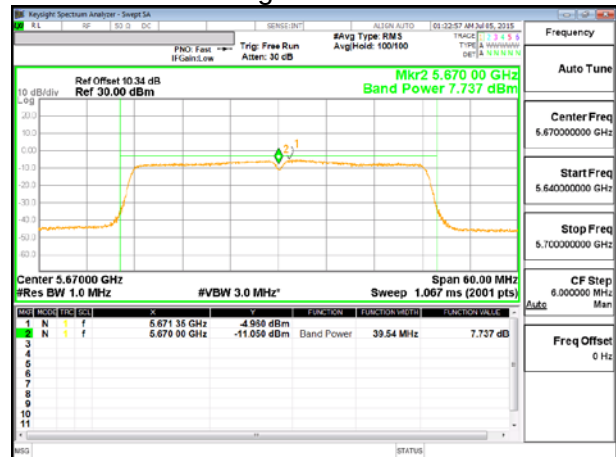
11n HT40 Mode Middle Channel Chain 1



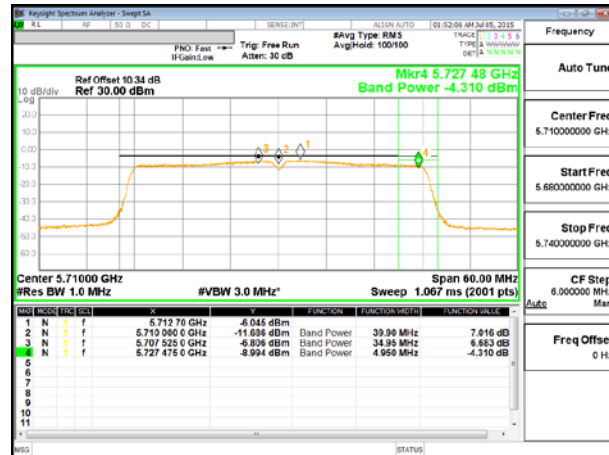
11n HT40 Mode High Channel Chain 0



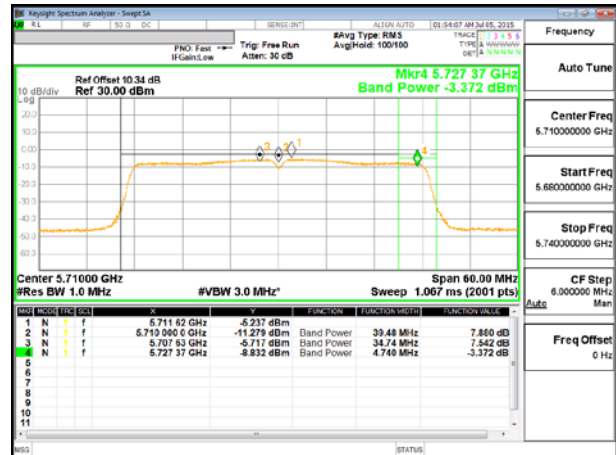
11n HT40 Mode High Channel Chain 1



11n HT40 Mode Straddle Channel Chain 0



11n HT40 Mode Straddle Channel Chain 1

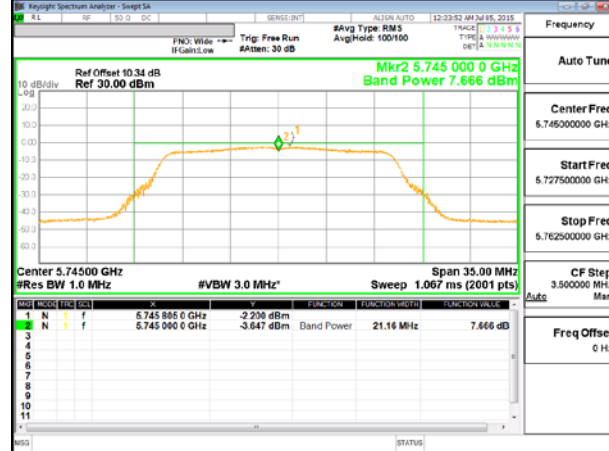


UNII 5.5 GHz IEEE 802.11ac VHT80 mode

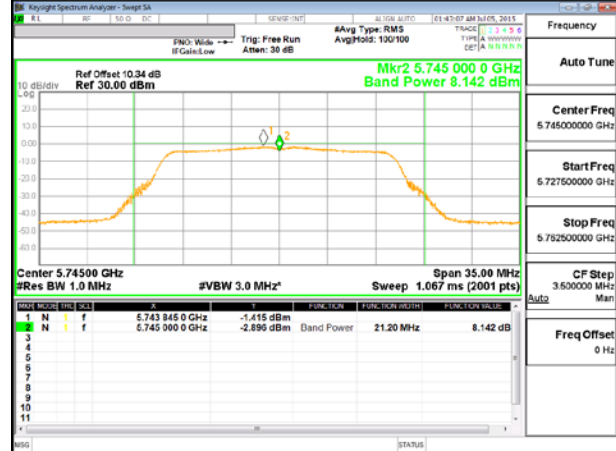


UNII 5.8 GHz IEEE 802.11a mode

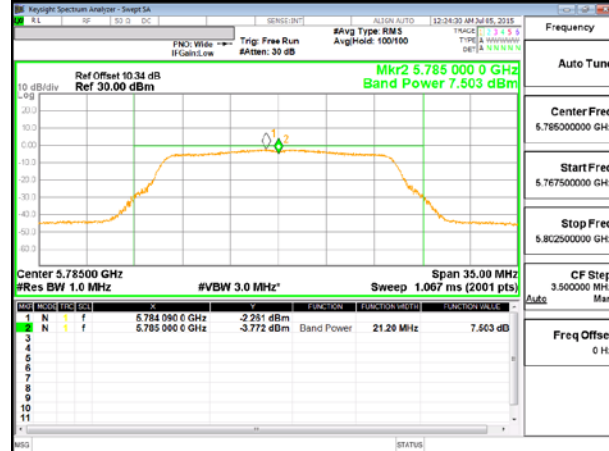
11a Mode Low Channel Primary



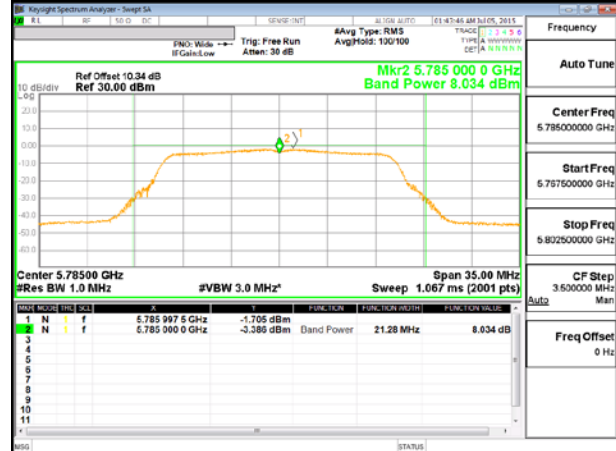
11a Mode Low Channel Secondary



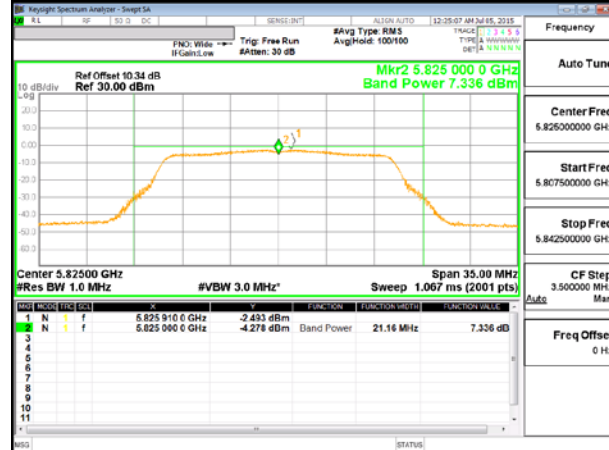
11a Mode Middle Channel Primary



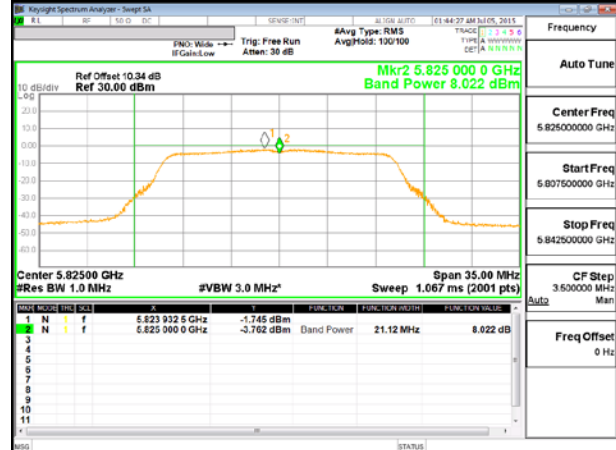
11a Mode Middle Channel Secondary



11a Mode High Channel Primary



11a Mode High Channel Secondary

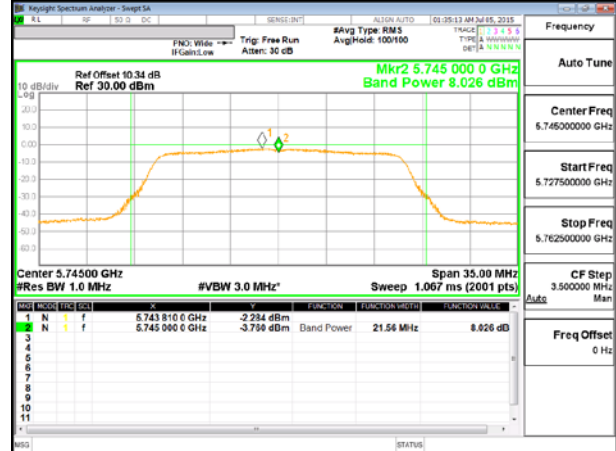


UNII 5.8 GHz IEEE 802.11n HT20 mode

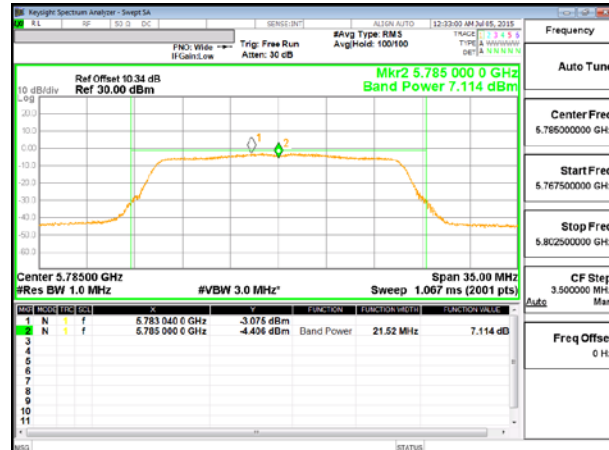
11n HT20 Mode Low Channel Chain 0



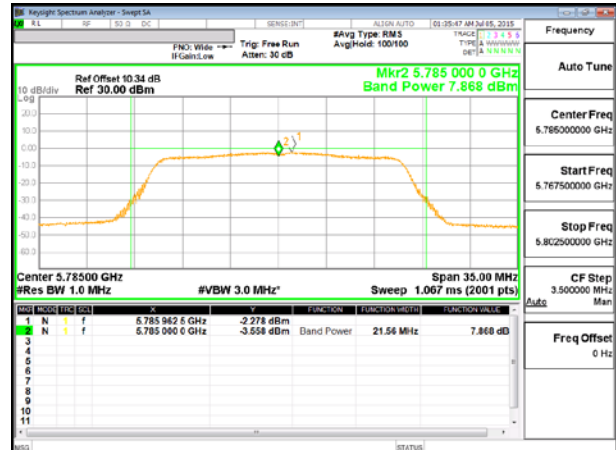
11n HT20 Mode Low Channel Chain 1



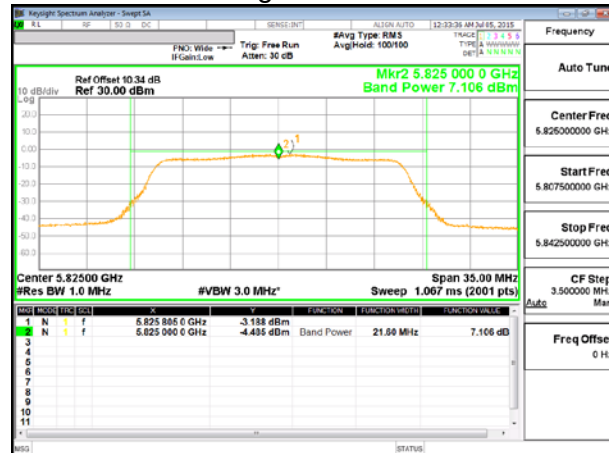
11n HT20 Mode Middle Channel Chain 0



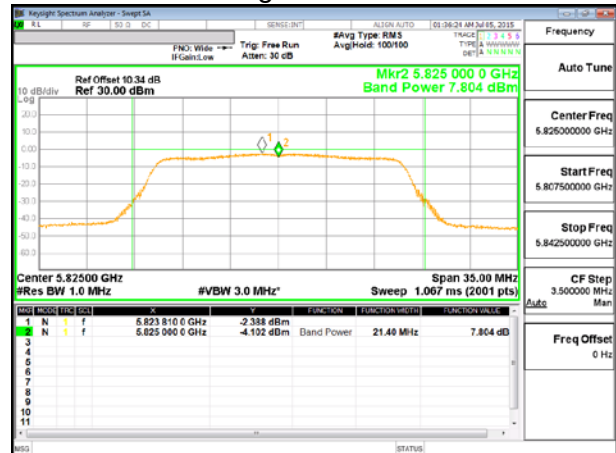
11n HT20 Mode Middle Channel Chain 1



11n HT20 Mode High Channel Chain 0

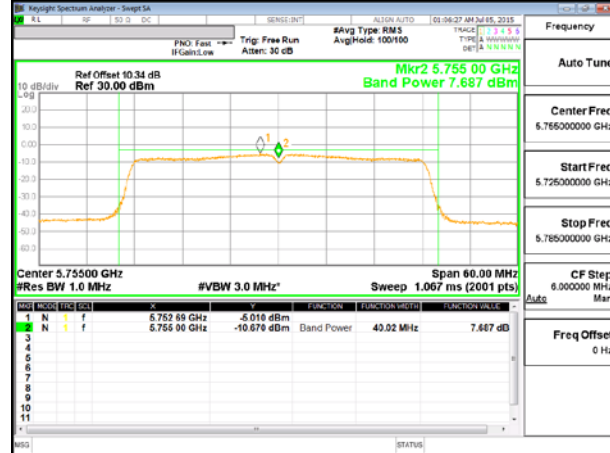


11n HT20 Mode High Channel Chain 1

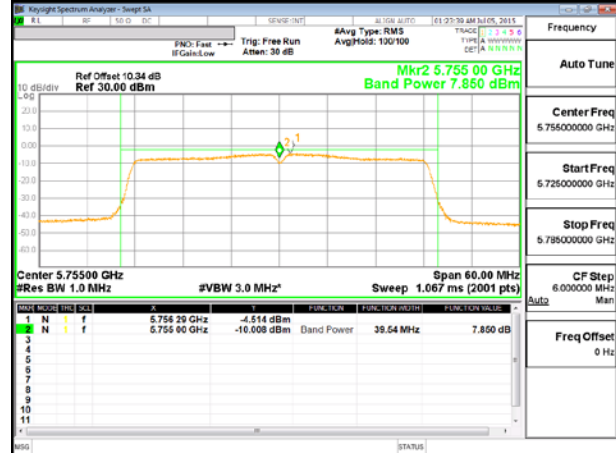


UNII 5.8 GHz IEEE 802.11n HT40 mode

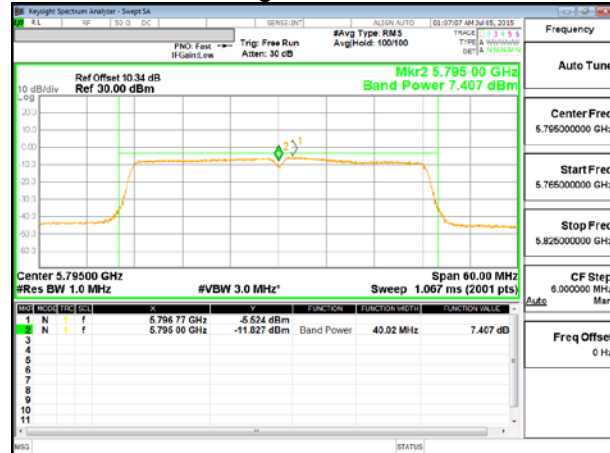
11n HT40 Mode Low Channel Chain 0



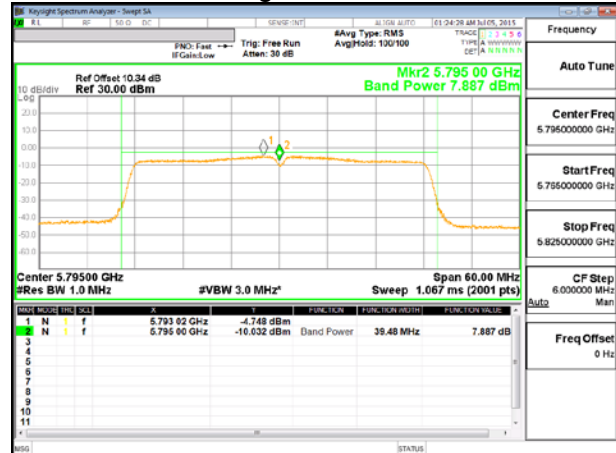
11n HT40 Mode Low Channel Chain 1



11n HT40 Mode High Channel Chain 0

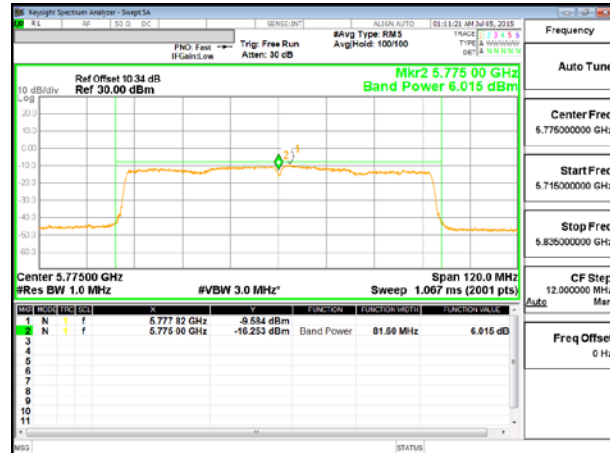


11n HT40 Mode High Channel Chain 1

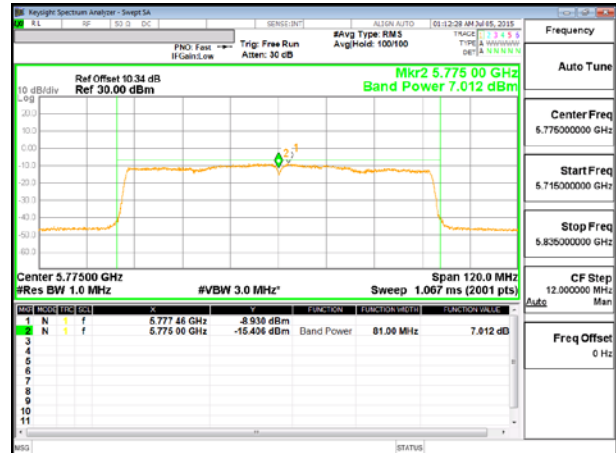


UNII 5.8 GHz IEEE 802.11ac VHT80 mode

11ac HT80 Mode Middle Channel Chain 0



11ac HT80 Mode Middle Channel Chain 1



11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Reference to KDB 789033 D02 UNII part G) 6) c) Method AD:

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

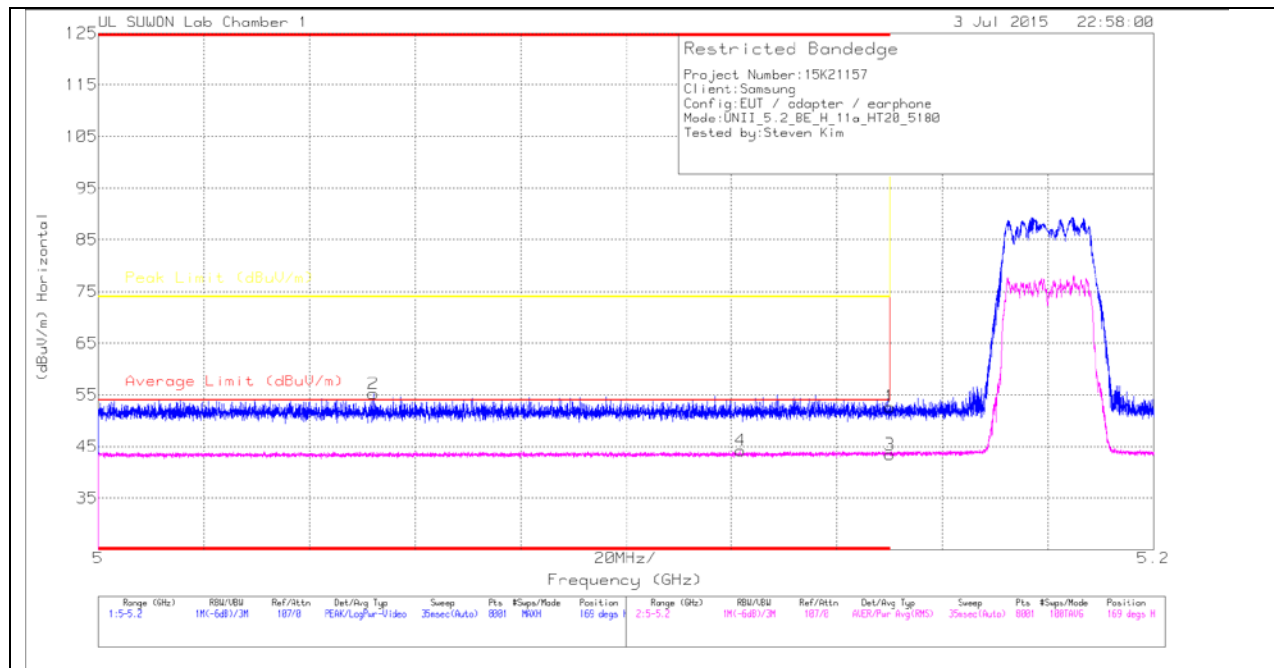
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

11.1. 5.2 GHz

11.1.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

TRACE MARKERS

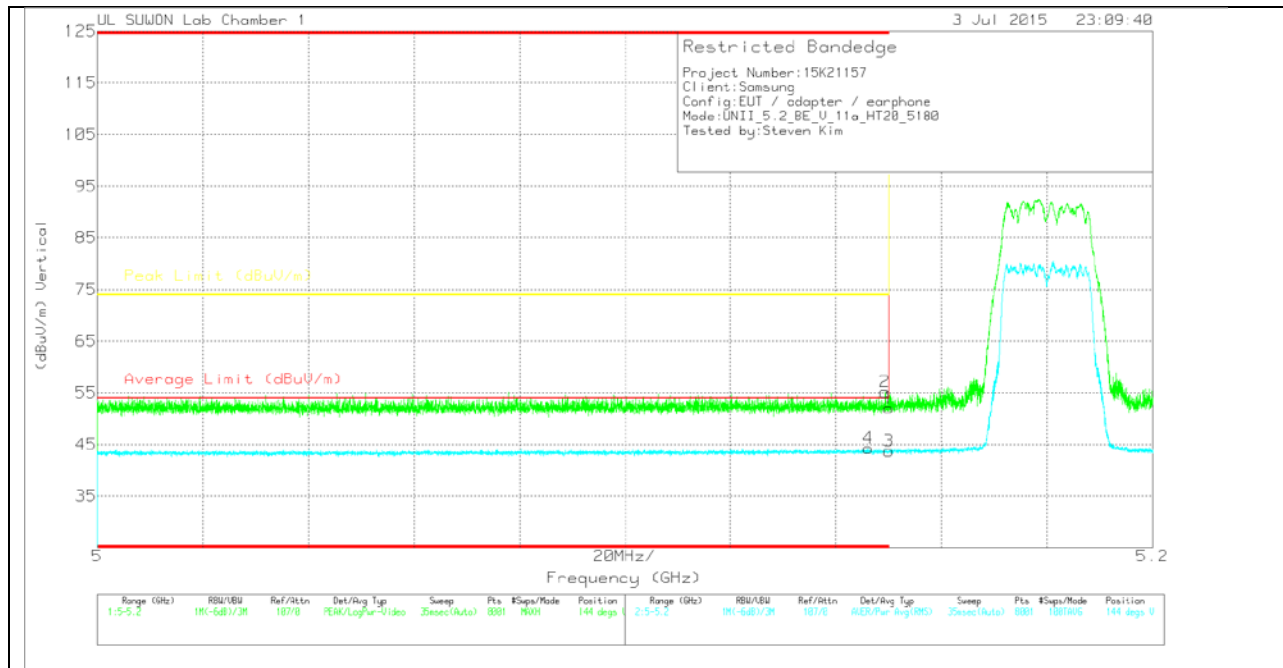
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168 717)_15061 9	Path_2_10d B	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	37.92	Pk	34.2	-19.4	0	52.72	-	-	74	-21.28	169	106	H
2	* 5.052	40.63	Pk	34.1	-19.5	0	55.23	-	-	74	-18.77	169	106	H
3	* 5.15	28.34	RMS	34.2	-19.4	.3	43.44	54	-10.56	-	-	169	106	H
4	* 5.122	29.23	RMS	34.2	-19.5	.3	44.23	54	-9.77	-	-	169	106	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168 717)_15061 9	Path_2_10d B	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.15	37.29	PK		-19.4	0	52.09	-	-	74	-21.91	144	104	V
2	* 5.149	40.39	PK		-19.4	0	55.19	-	-	74	-18.81	144	104	V
3	* 5.15	28.64	RMS		-19.4	.3	43.74	54	-10.26	-	-	144	104	V
4	* 5.146	29.21	RMS		-19.4	.3	44.31	54	-9.69	-	-	144	104	V

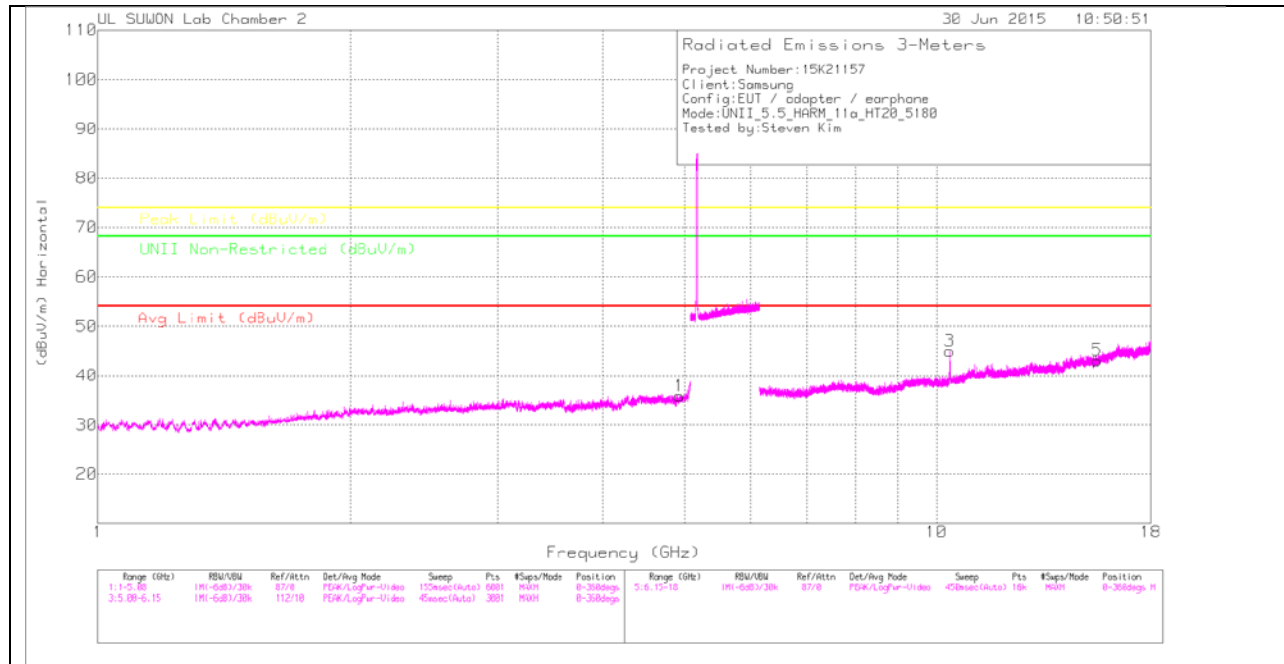
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

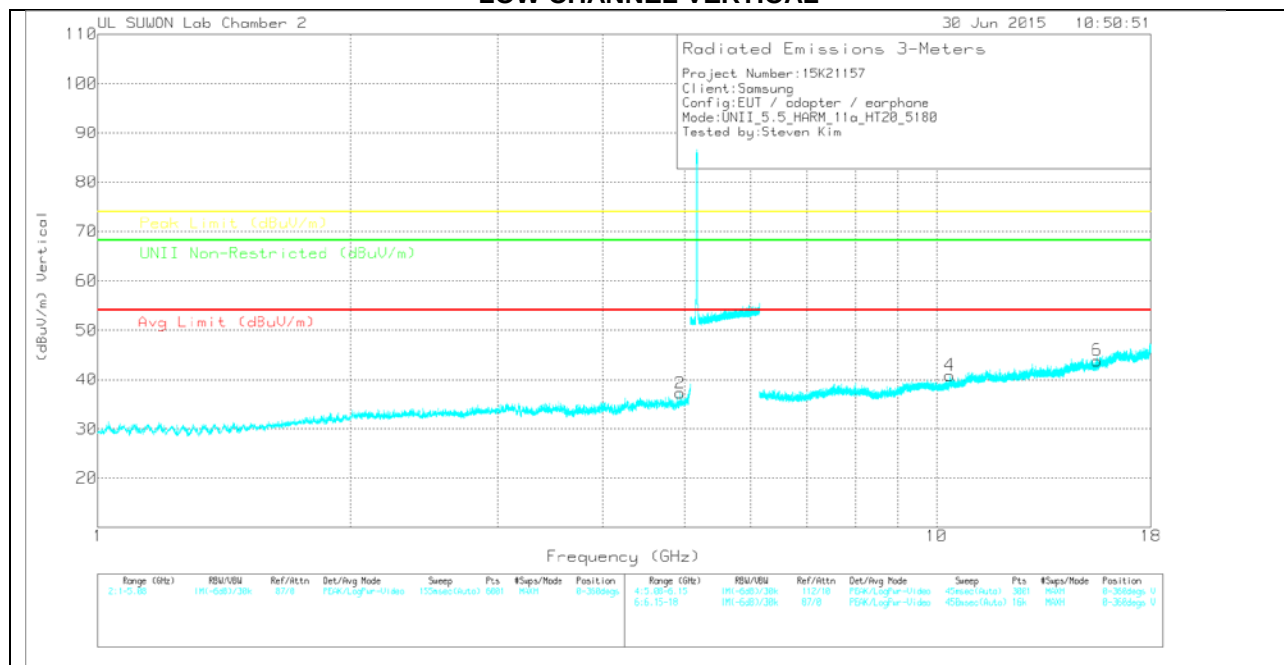
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

LOW CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Asimuth (Degs)	Height (cm)	Polarity
1	* 4.938	26.52	PK	33.9	-24.6	0	35.82	-	-	74	-38.18	-	-	0-360	100	H
2	* 4.94	28.03	PK	33.9	-24.7	0	37.23	-	-	74	-36.77	-	-	0-360	100	V
3	10.36	25.57	PK	37.6	-18.2	0	44.97	-	-	-	-	68.2	-23.23	0-360	200	H
5	* 15.538	19.26	PK	39.9	-16.1	0	43.06	-	-	74	-30.94	-	-	0-360	200	H
4	10.362	21.36	PK	37.6	-18.1	0	40.86	-	-	-	-	68.2	-27.34	0-360	100	V
6	* 15.541	20.03	PK	39.9	-16.1	0	43.83	-	-	74	-30.17	-	-	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Radiated Emissions

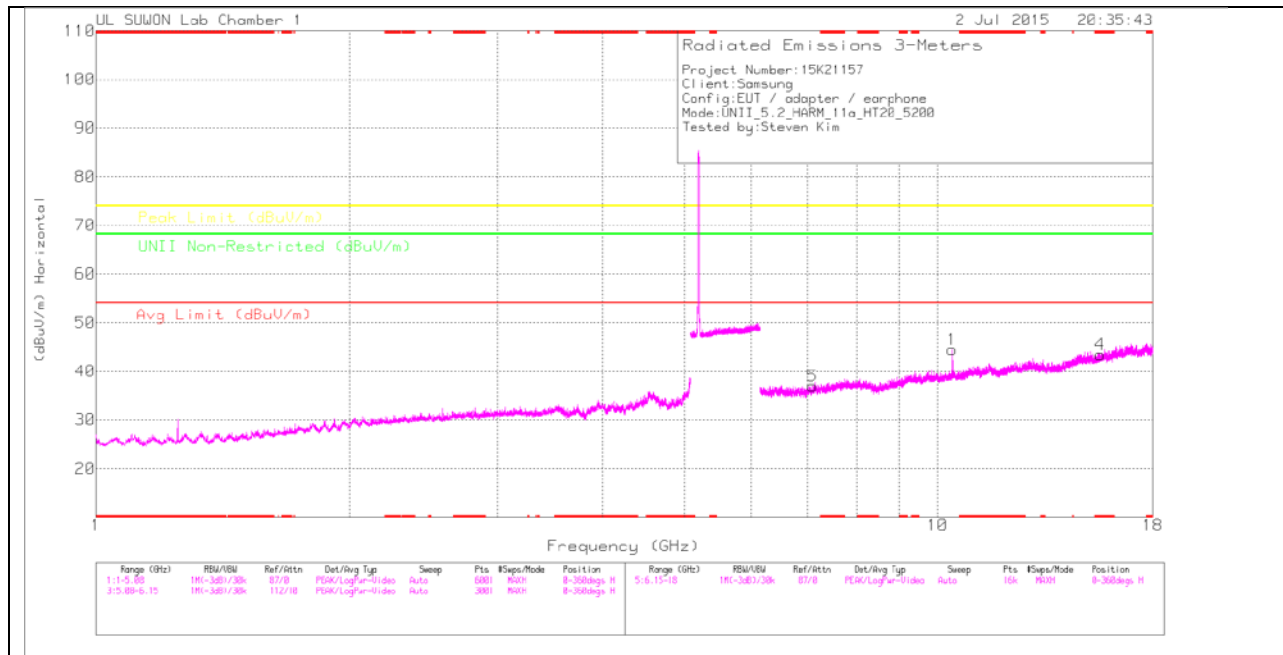
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Asimuth (Degs)	Height (cm)	Polarity
10.361	37.05	PK-U	37.6	-18.1	0	56.55	-	-	-	-	68.2	-11.65	146	149	H
10.36	24.56	ADR	37.6	-18.2	.3	44.26	-	-	-	-	-	-	146	149	H
10.359	34.84	PK-U	37.6	-18.2	0	54.24	-	-	-	-	68.2	-13.96	235	146	V
10.363	21.49	ADR	37.6	-18.1	.3	41.29	-	-	-	-	-	-	235	146	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

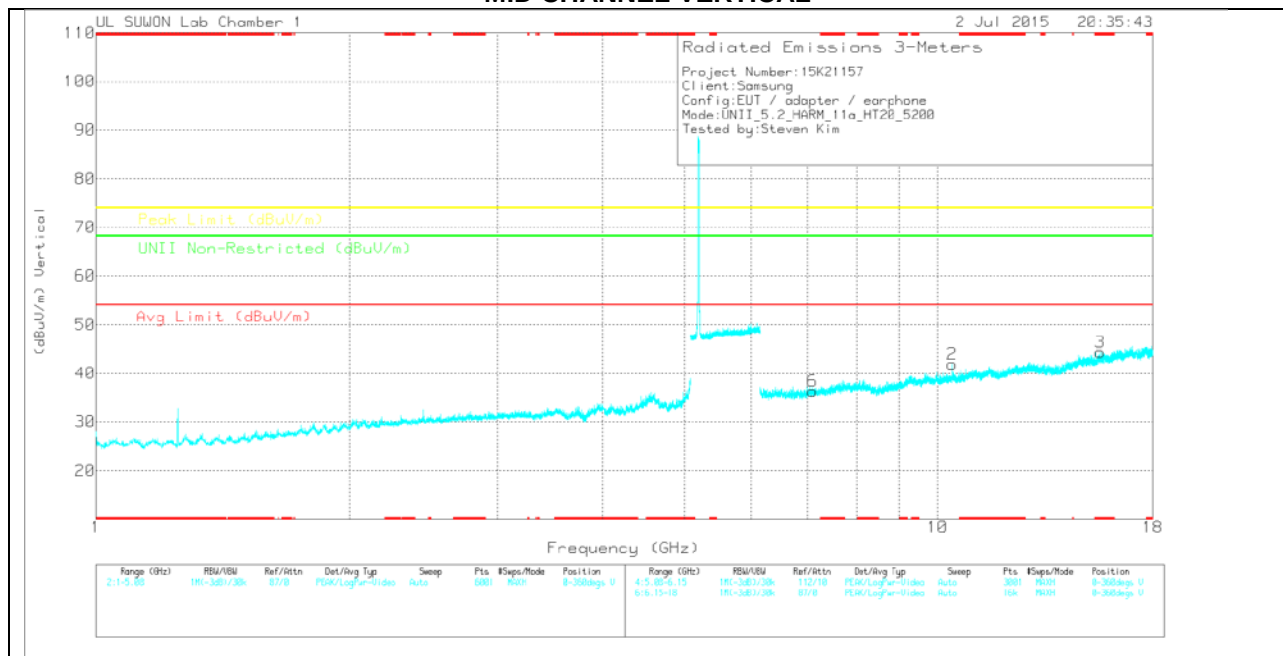
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

MID CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117/0016 8717_150 619	Path_5_6G HP	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	10.402	27.31	PK	37.8	-20.6	0	44.51	-	-	-	-	68.2	-23.69	0-360	200	H
4	* 15.6	22.92	PK	40.3	-19.8	0	43.42	-	-	74	-30.58	-	-	0-360	200	H
5	7.1	26.2	PK	35.7	-24.9	0	37	-	-	-	-	68.2	-31.2	0-360	200	H
2	10.402	24.72	PK	37.8	-20.6	0	41.92	-	-	-	-	68.2	-26.28	0-360	200	V
3	* 15.598	23.81	PK	40.3	-19.8	0	44.31	-	-	74	-29.69	-	-	0-360	200	V
6	7.097	25.52	PK	35.7	-24.9	0	36.32	-	-	-	-	68.2	-31.88	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Radiated Emissions

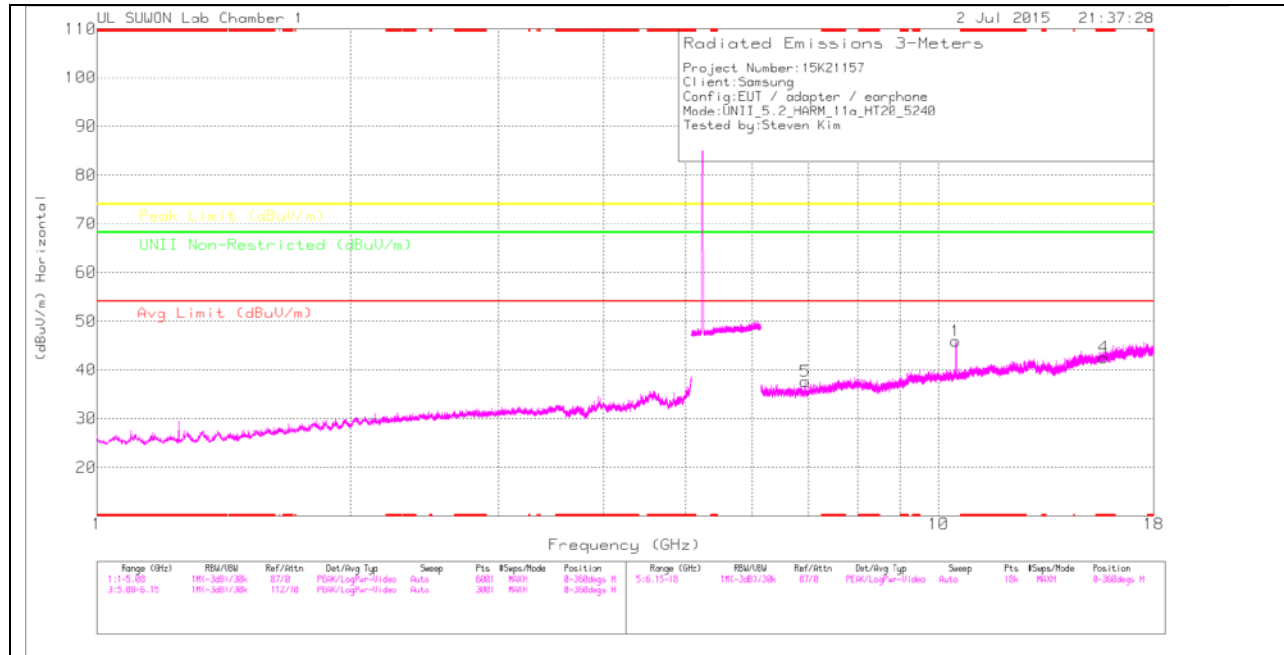
Frequency (GHz)	Meter Reading (dBuV)	Det	3117/001687 17_150619	Path_5_6GHP	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.402	37.53	PK1	37.8	-20.6	0	54.73	-	-	-	-	68.2	-13.47	135	326	H
10.4	25.48	AD1	37.8	-20.6	.3	42.98	-	-	-	-	-	-	135	326	H
10.402	35.35	PK1	37.8	-20.6	0	52.55	-	-	-	-	68.2	-15.65	247	216	V
10.402	21.71	AD1	37.8	-20.6	.3	39.21	-	-	-	-	-	-	247	216	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

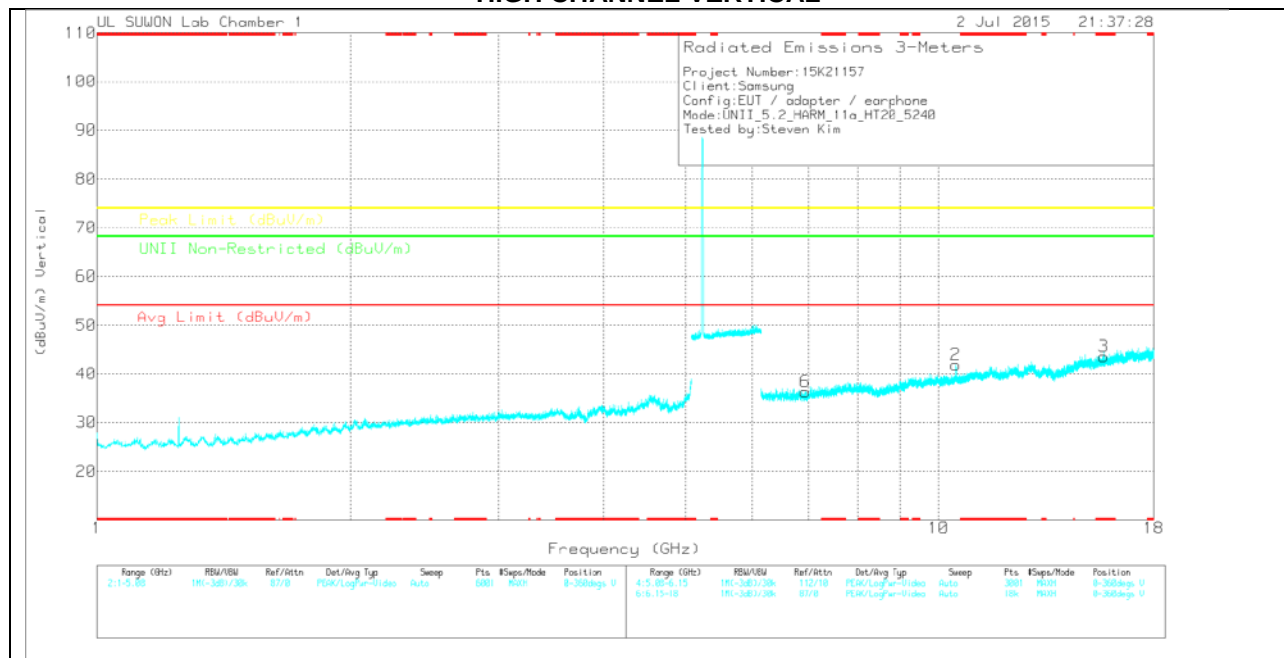
PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

HIGH CHANNEL DATA

TRACE MARKERS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117/0016 8717_150 619	Path_5_6G HP	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	10.476	29.43	PK	37.8	-21.3	0	45.93	-	-	-	-	68.2	-22.27	0-360	200	H
4	* 15.716	21.98	PK	40.4	-19.8	0	42.58	-	-	74	-31.42	-	-	0-360	200	H
5	6.939	27.54	PK	35.7	-25.6	0	37.64	-	-	-	-	68.2	-30.56	0-360	100	H
2	10.478	25.43	PK	37.8	-21.3	0	41.93	-	-	-	-	68.2	-26.27	0-360	100	V
3	* 15.72	23.01	PK	40.4	-19.8	0	43.61	-	-	74	-30.39	-	-	0-360	200	V
6	6.939	26.24	PK	35.7	-25.6	0	36.34	-	-	-	-	68.2	-31.86	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117/001687 17_150619	Path_5_6GHP	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
10.482	40.94	PK1	37.8	-21.3	0	57.44	-	-	-	-	68.2	-10.76	150	275	H
10.482	28.18	AD1	37.8	-21.3	0	44.68	-	-	-	-	-	-	150	275	H
10.482	34.15	PK1	37.8	-21.3	0	50.65	-	-	-	-	68.2	-17.55	150	345	V
10.48	22.67	AD1	37.8	-21.3	0	39.17	-	-	-	-	-	-	150	345	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average