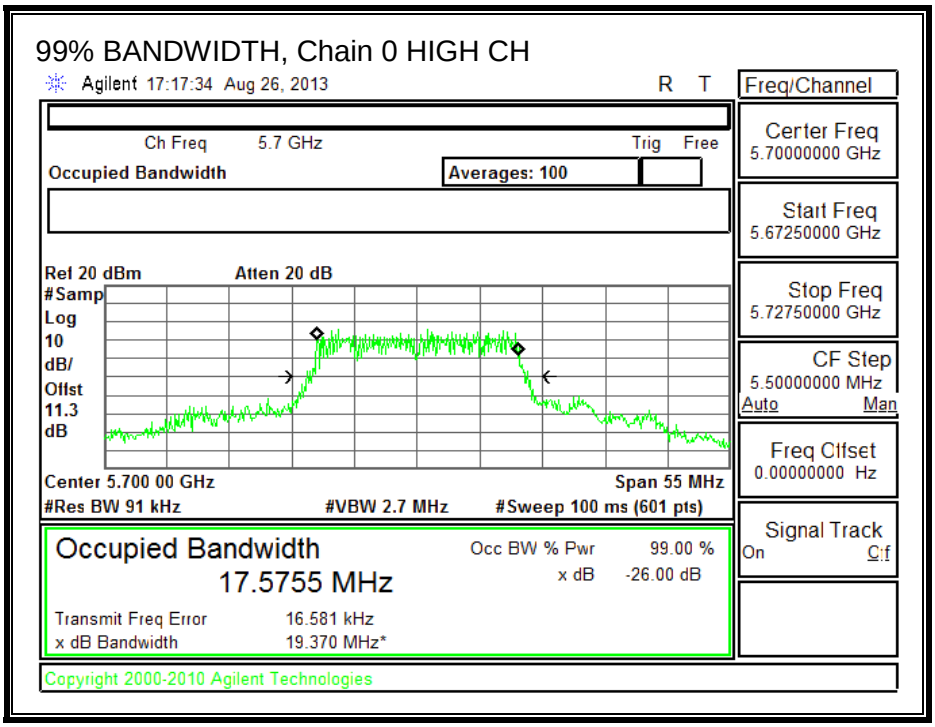
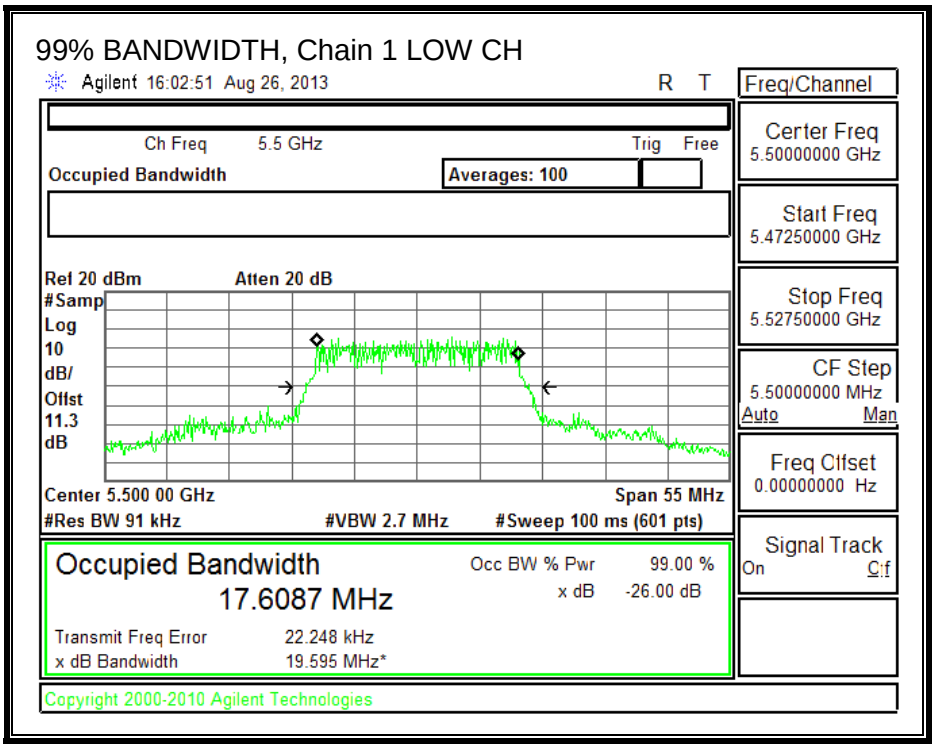
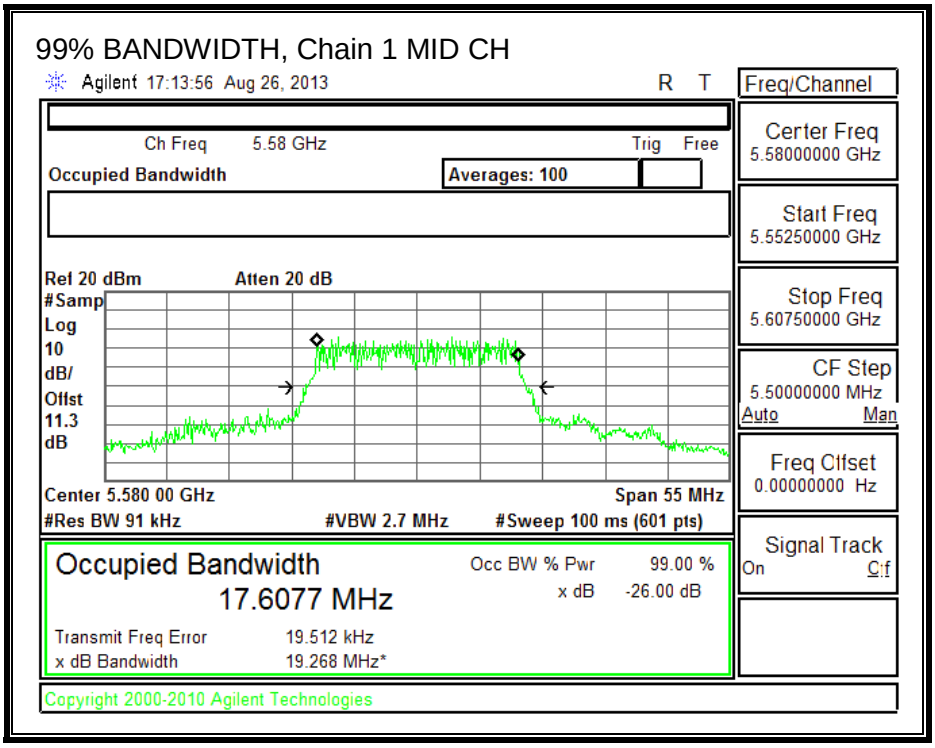


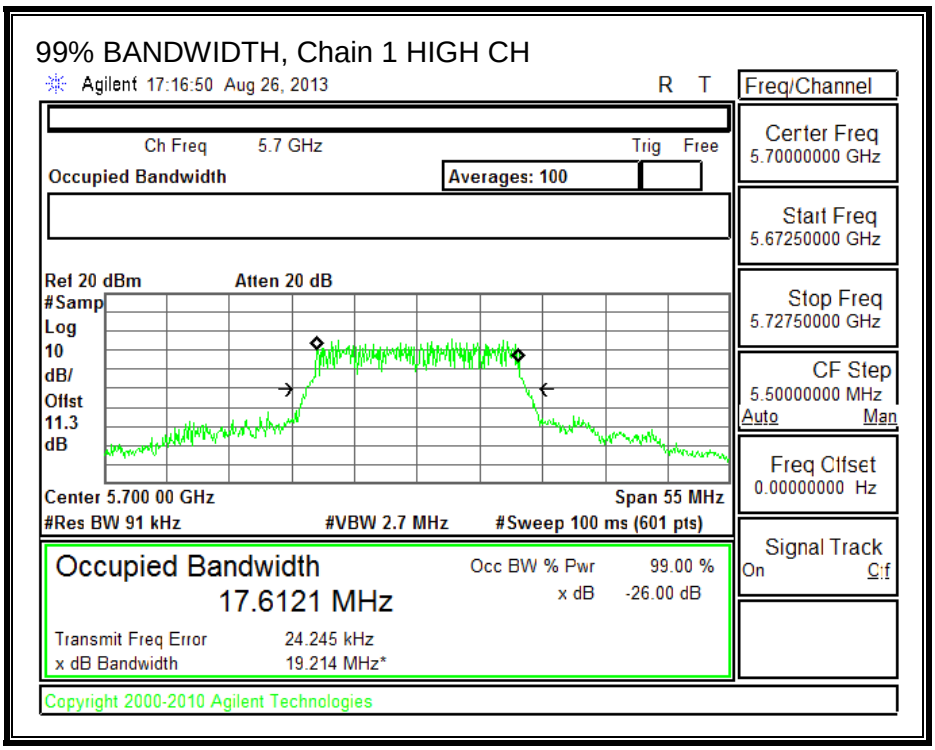
99% BANDWIDTH, Chain 1



99% BANDWIDTH, Chain 1 MID CH



99% BANDWIDTH, Chain 1 HIGH CH



8.8.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.3 dB (including 10 dB pad and 1.3 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5500	10.01	10.98	13.53
Mid	5580	9.48	10.35	12.95
High	5700	9.16	10.78	13.06

8.8.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.5–5.7 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.90	3.20	3.56

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5500	20.90	17.59	3.56
Mid	5580	20.90	17.58	3.56
High	5700	20.85	17.57	3.56

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5500	24.00	23.45	29.45	23.45	11.00	11.00	11.00
Mid	5580	24.00	23.45	29.45	23.45	11.00	11.00	11.00
High	5700	24.00	23.45	29.45	23.45	11.00	11.00	11.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PPSD

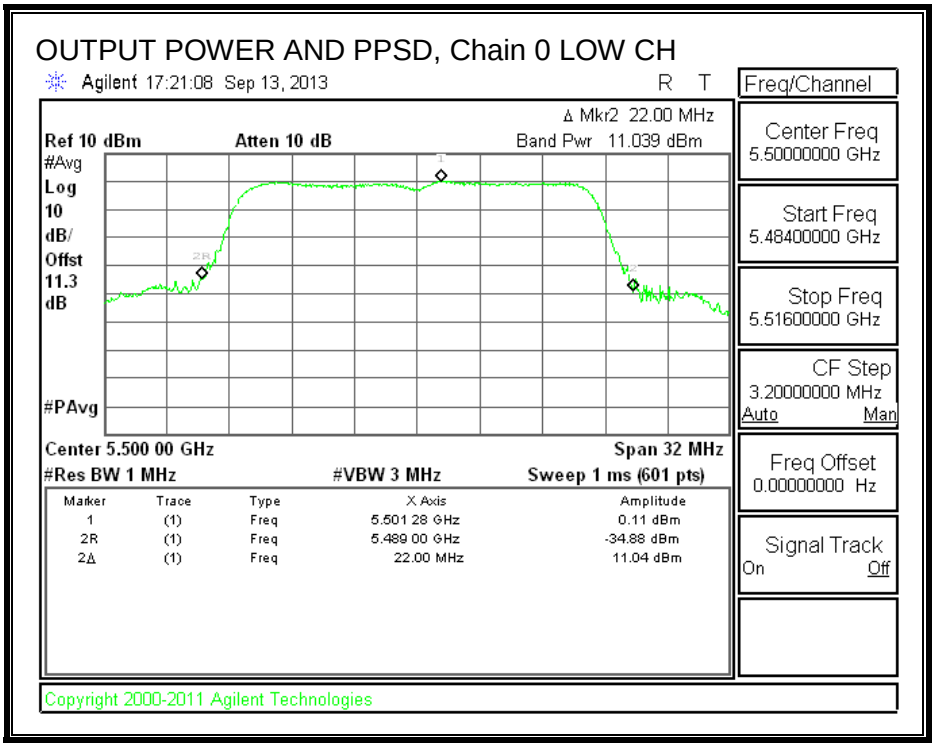
Output Power Results

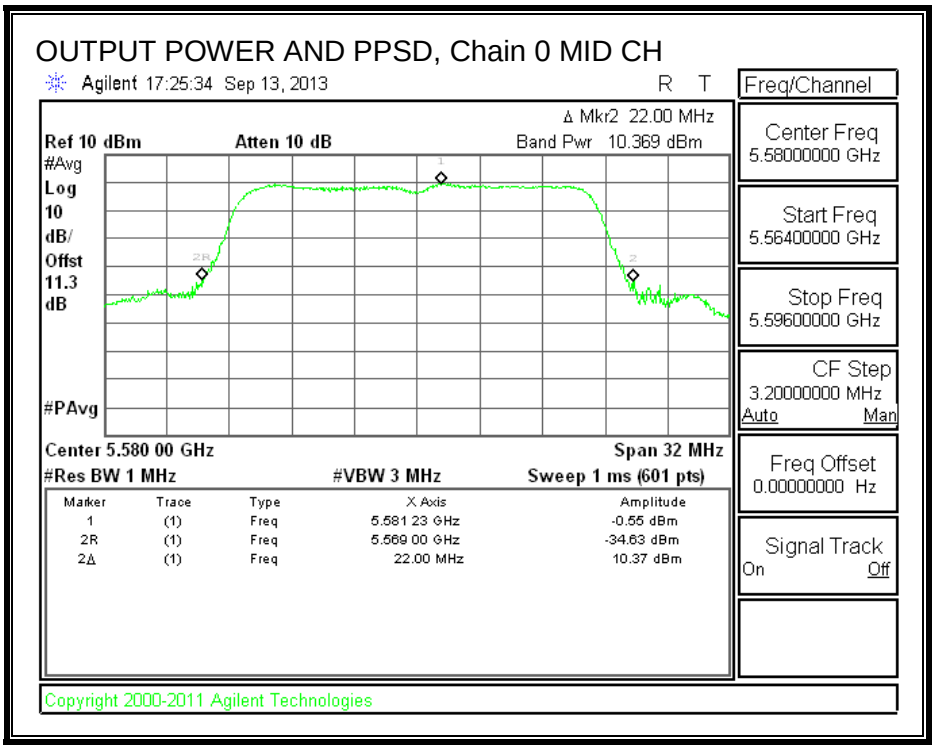
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5500	11.04	11.91	14.51	23.45	-8.95
Mid	5580	10.37	10.99	13.70	23.45	-9.75
High	5700	9.62	11.45	13.64	23.45	-9.81

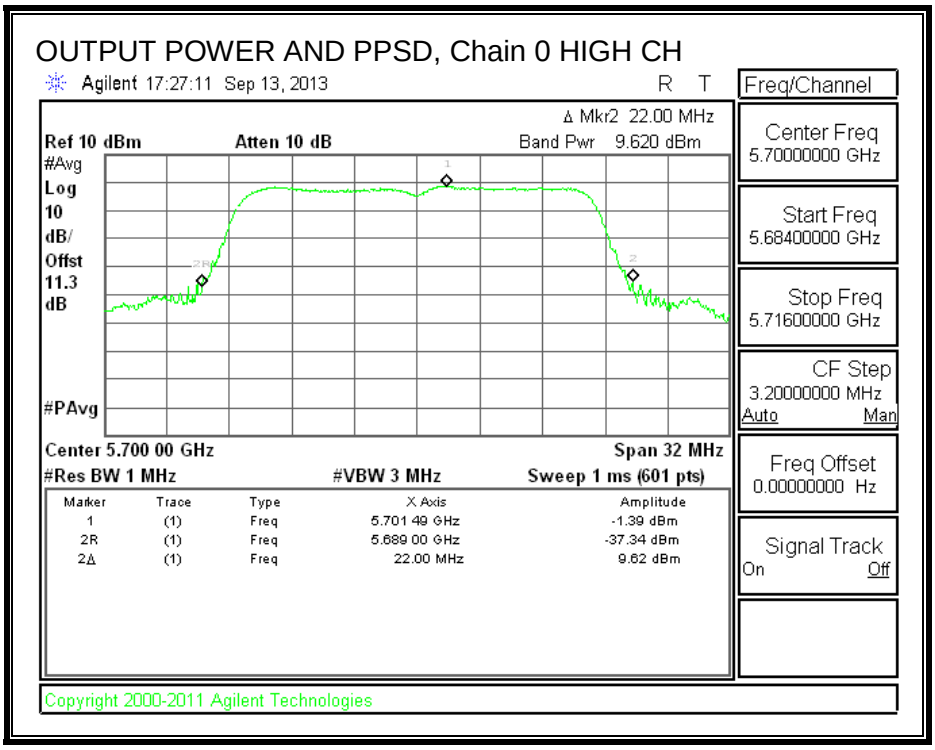
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5500	0.11	0.75	3.45	11.00	-7.55
Mid	5580	-0.55	-0.42	2.53	11.00	-8.47
High	5700	-1.39	0.51	2.67	11.00	-8.33

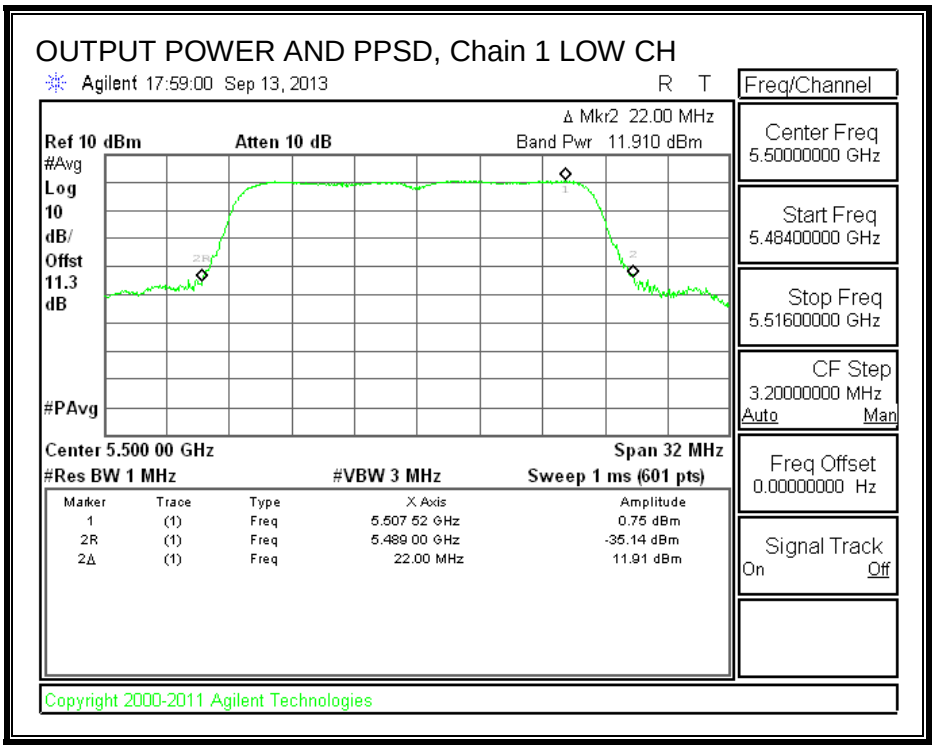
OUTPUT POWER AND PPSD, Chain 0



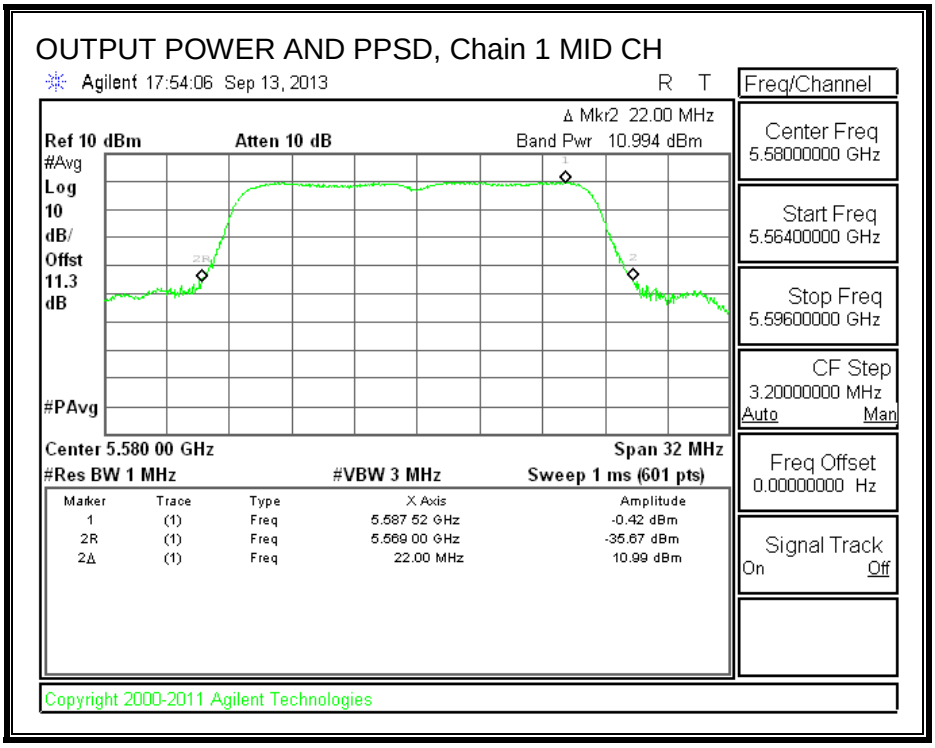




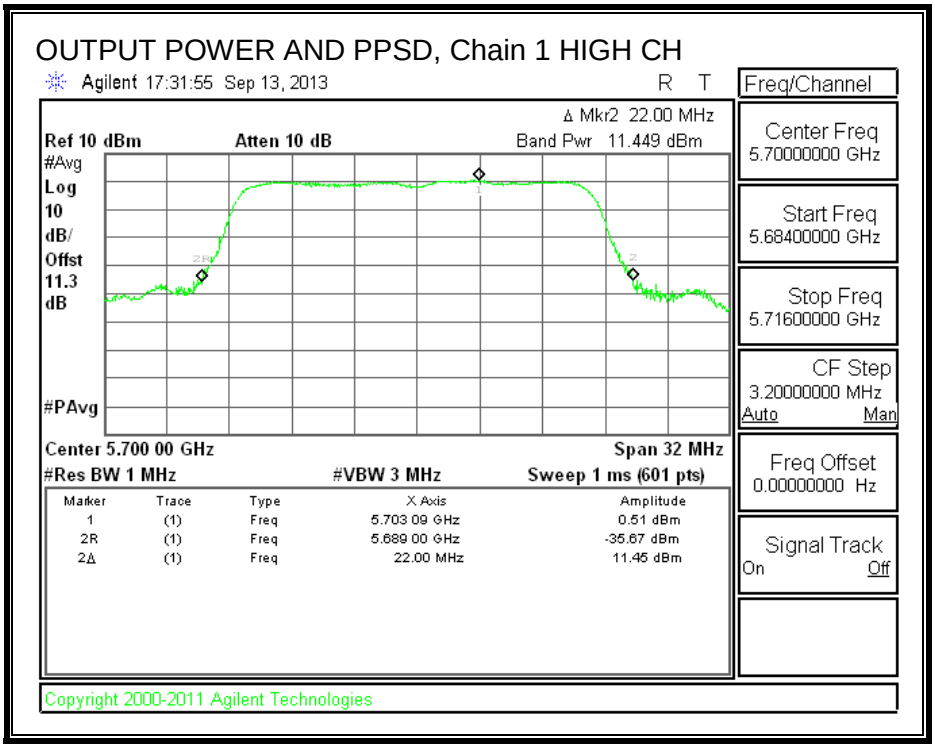
OUTPUT POWER AND PPSD, Chain 1



OUTPUT POWER AND PPSD, Chain 1 MID CH



OUTPUT POWER AND PPSD, Chain 1 HIGH CH



8.8.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

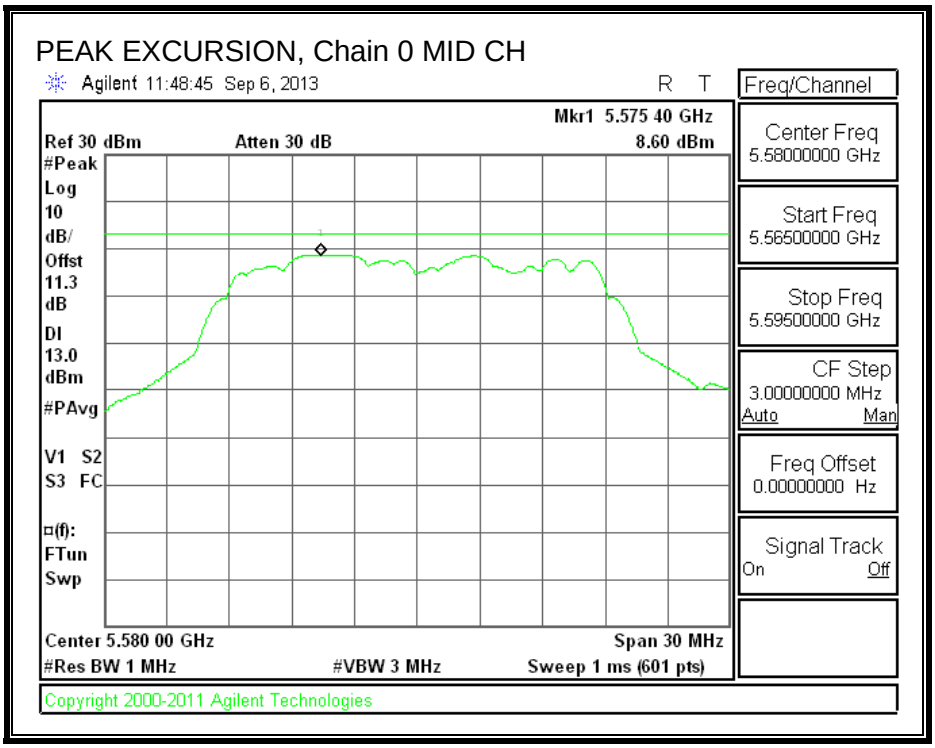
Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	8.60	1.90	0.00	6.70	13	-6.30

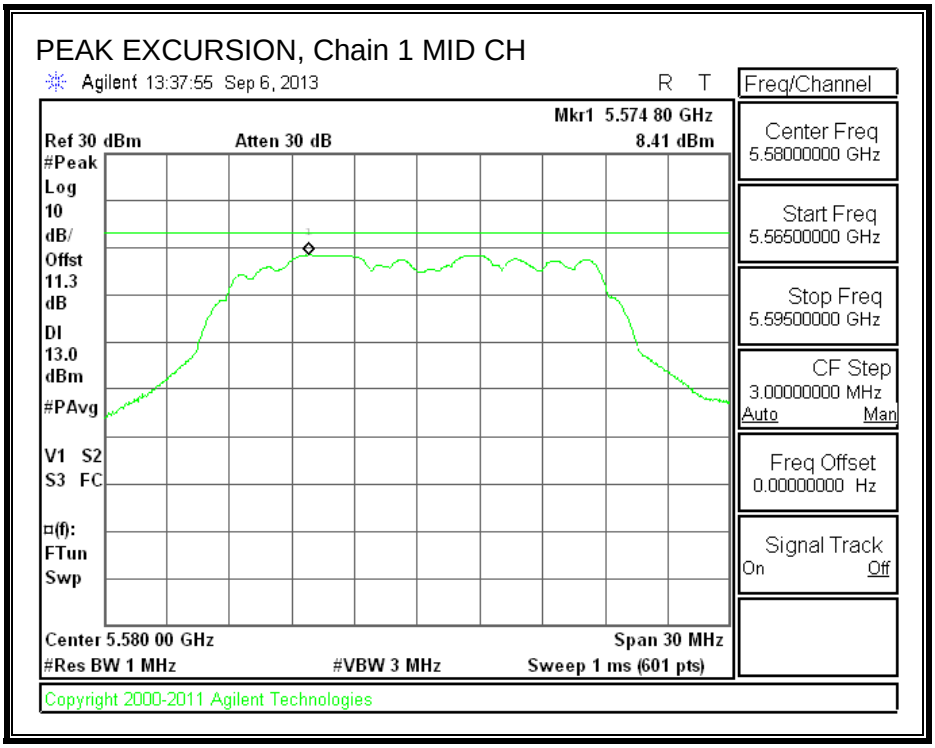
Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5580	8.41	1.07	0.00	7.34	13	-5.66

PEAK EXCURSION, Chain 0



PEAK EXCURSION, Chain 1



8.9. 802.11n HT40 MODE IN THE 5.6 GHz BAND

8.9.1. 26 dB BANDWIDTH

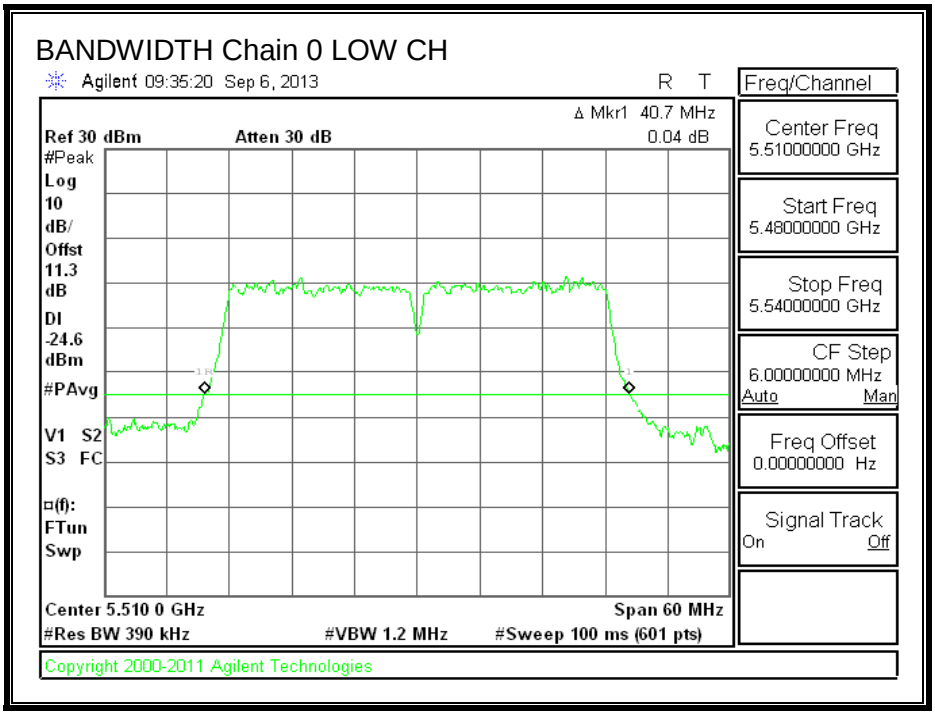
LIMITS

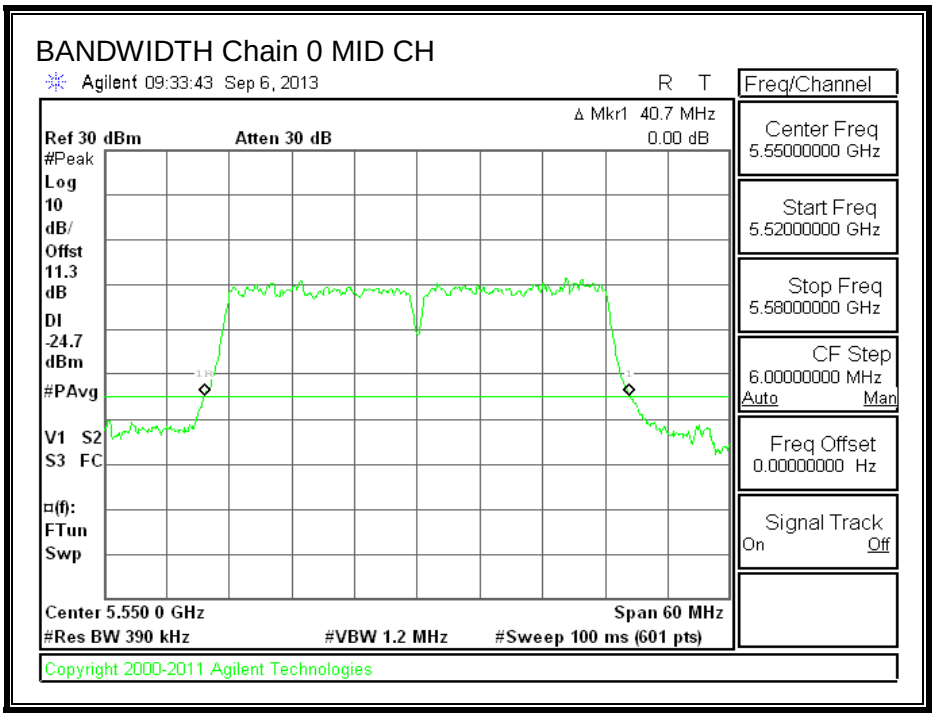
None; for reporting purposes only.

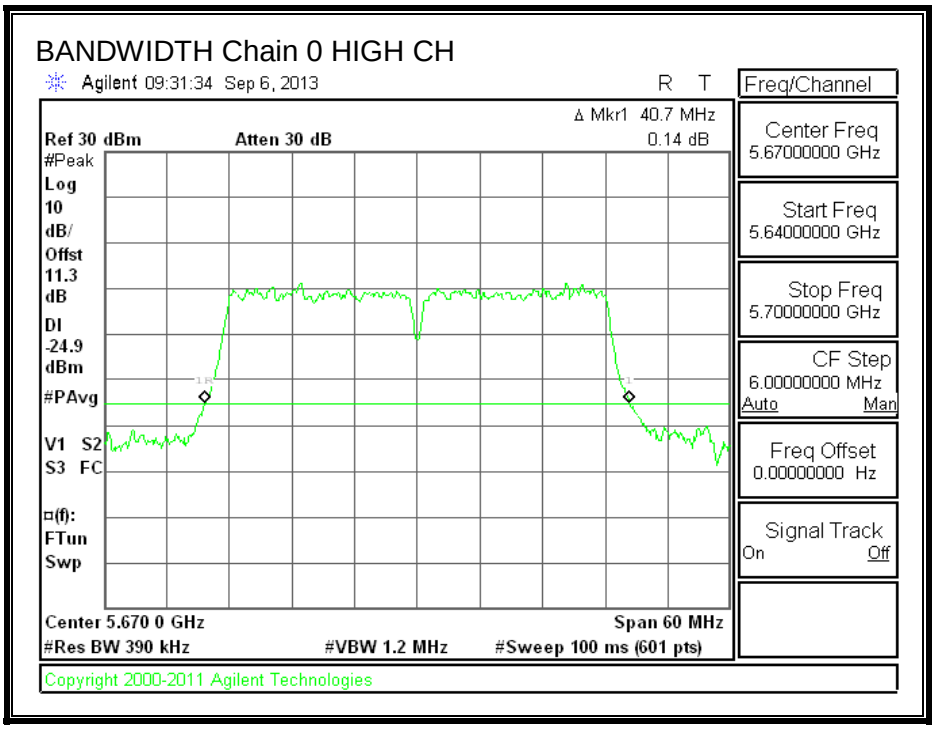
RESULTS

Channel	Frequency (MHz)	26 dB BW Chain 0 (MHz)	26 dB BW Chain 1 (MHz)
Low	5510	40.7	41.6
Mid	5550	40.7	41.6
High	5670	40.7	41.4

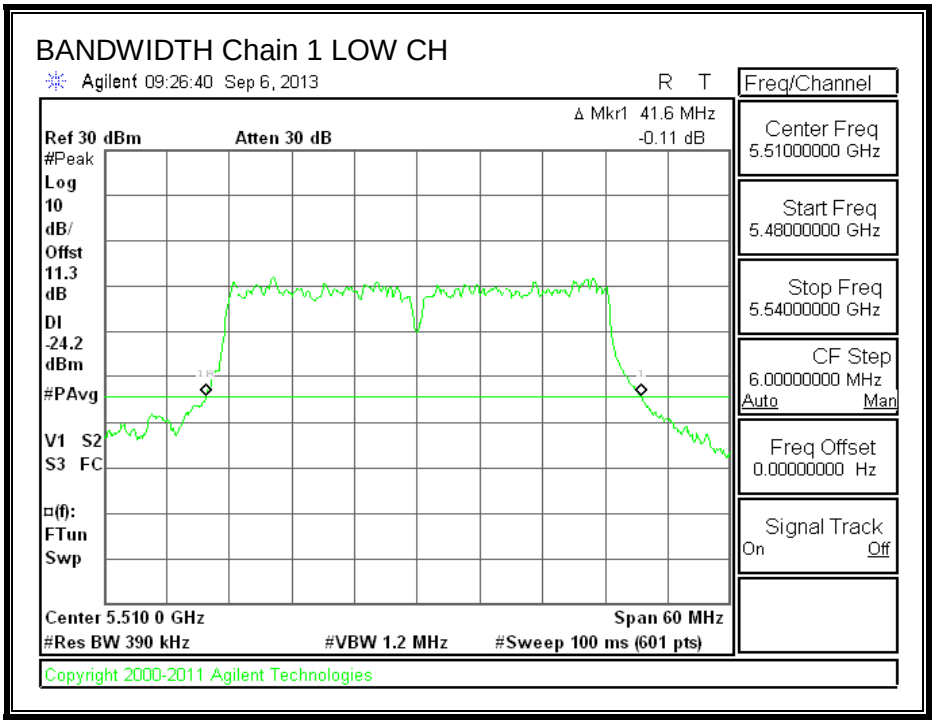
26 dB BANDWIDTH, Chain 0



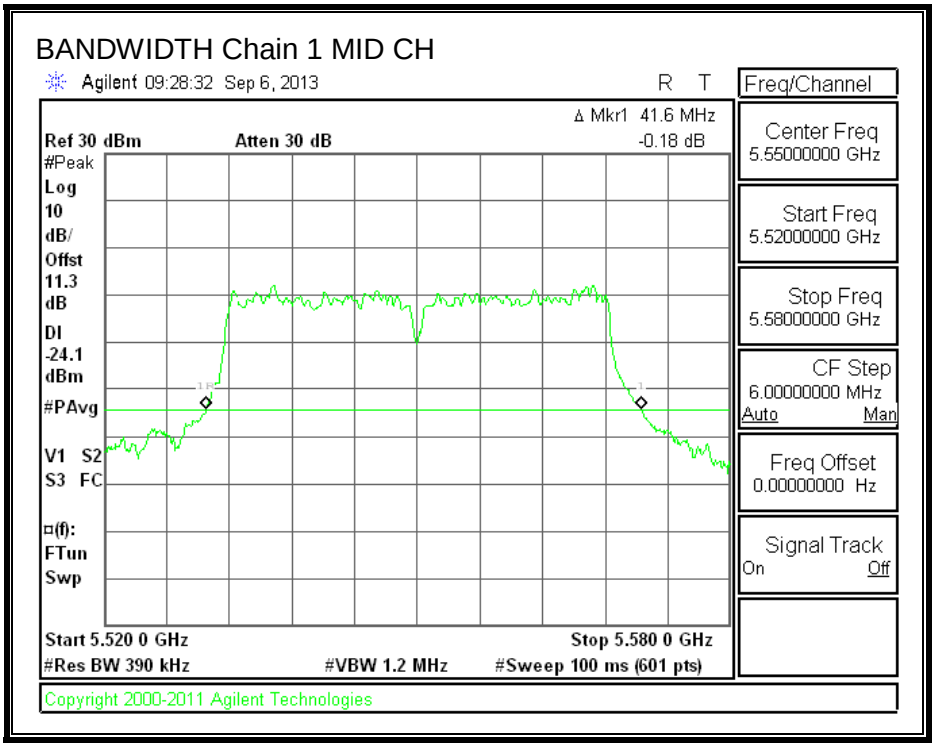




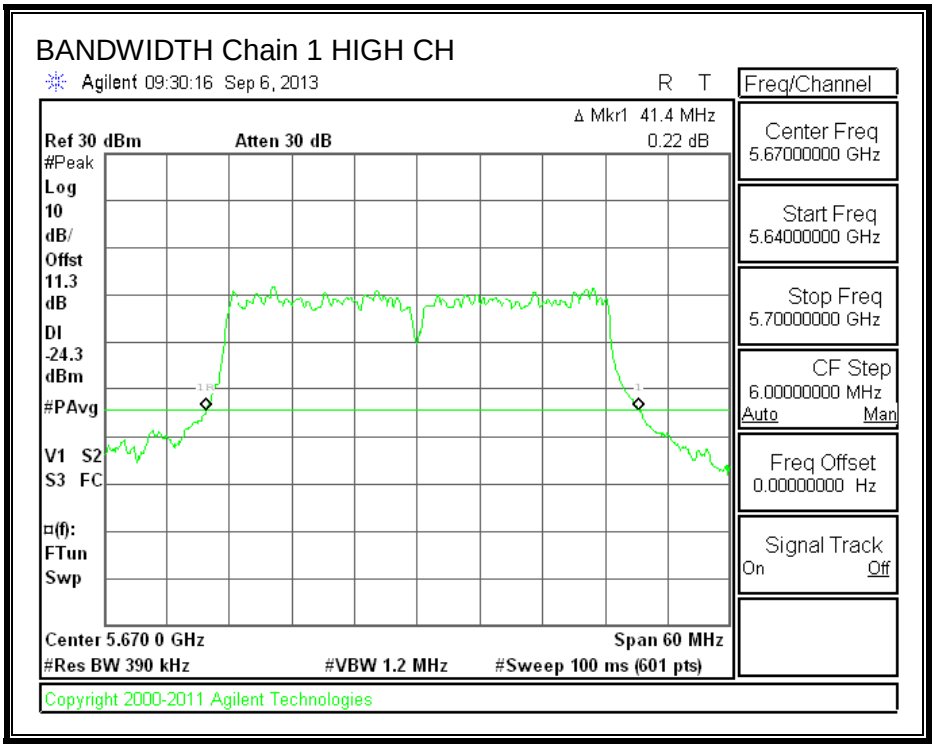
26 dB BANDWIDTH, Chain 1



BANDWIDTH Chain 1 MID CH



BANDWIDTH Chain 1 HIGH CH



8.9.2. 99% BANDWIDTH

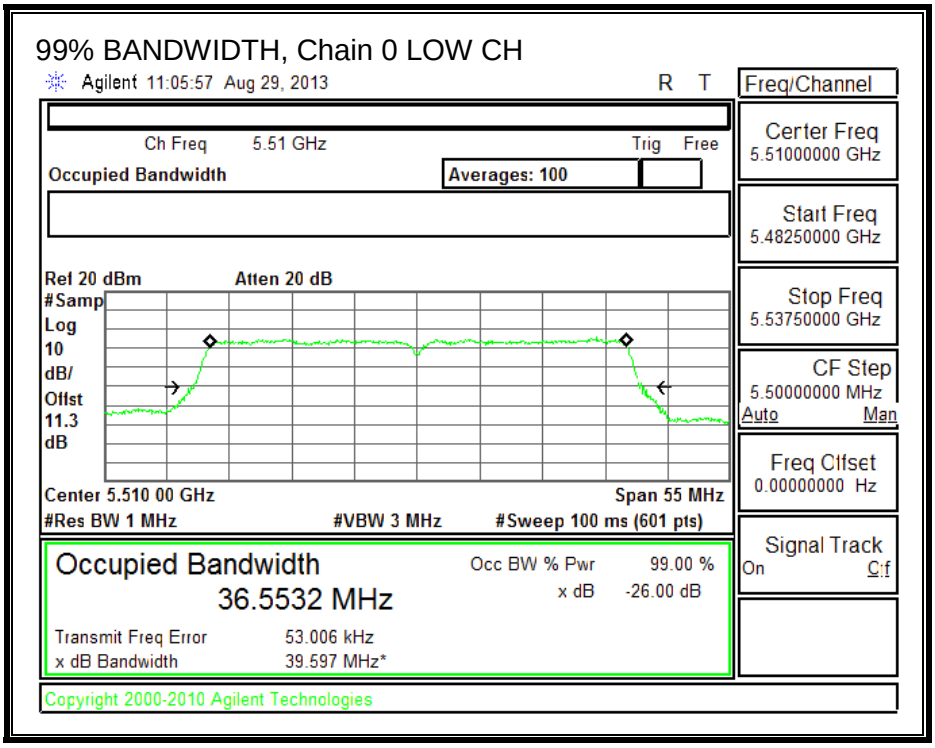
LIMITS

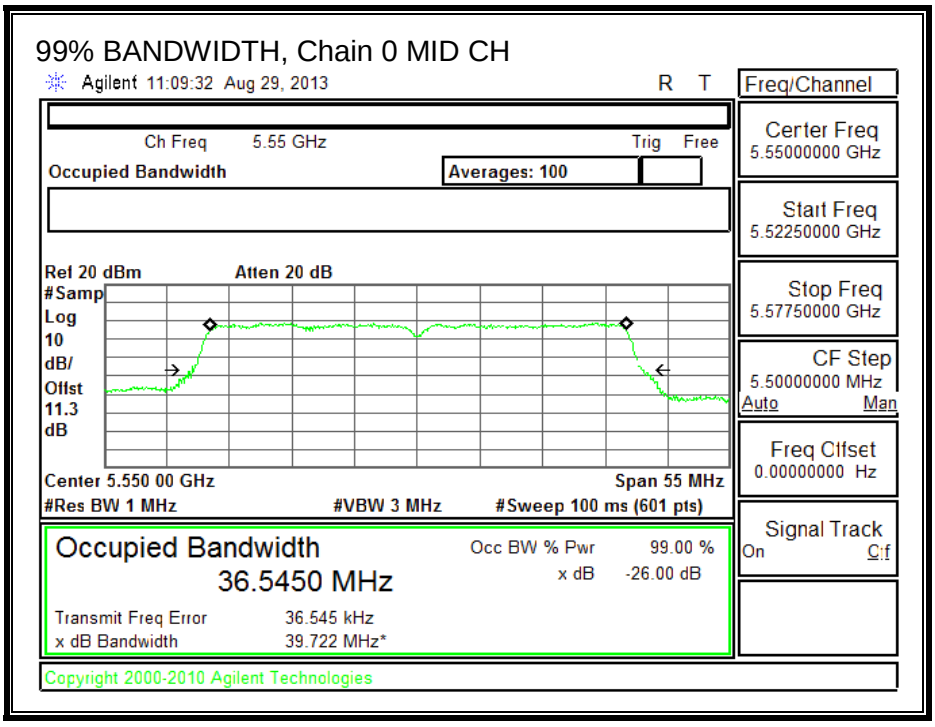
None; for reporting purposes only.

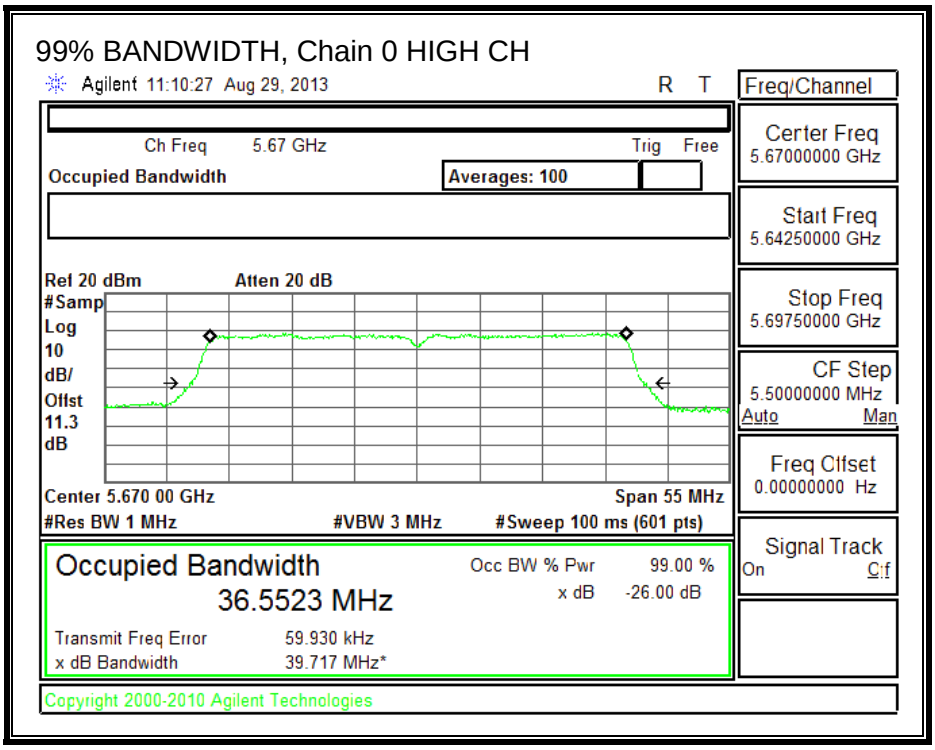
RESULTS

Channel	Frequency (MHz)	99% BW Chain 0 (MHz)	99% BW Chain 1 (MHz)
Low	5500	36.553	36.666
Mid	5580	36.545	36.658
High	5700	36.552	36.663

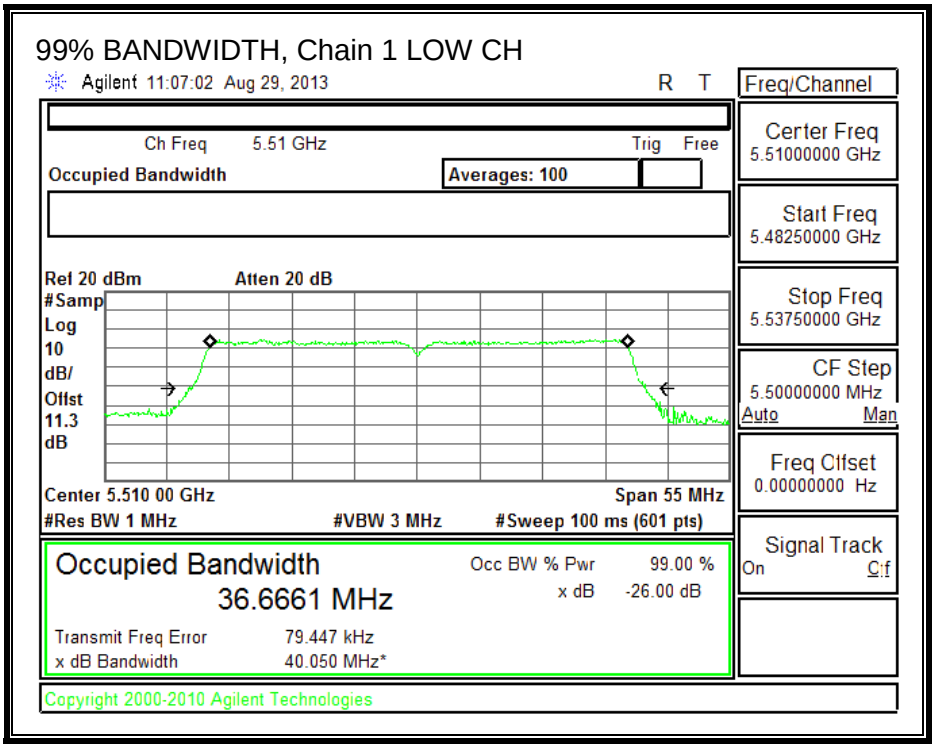
99% BANDWIDTH, Chain 0

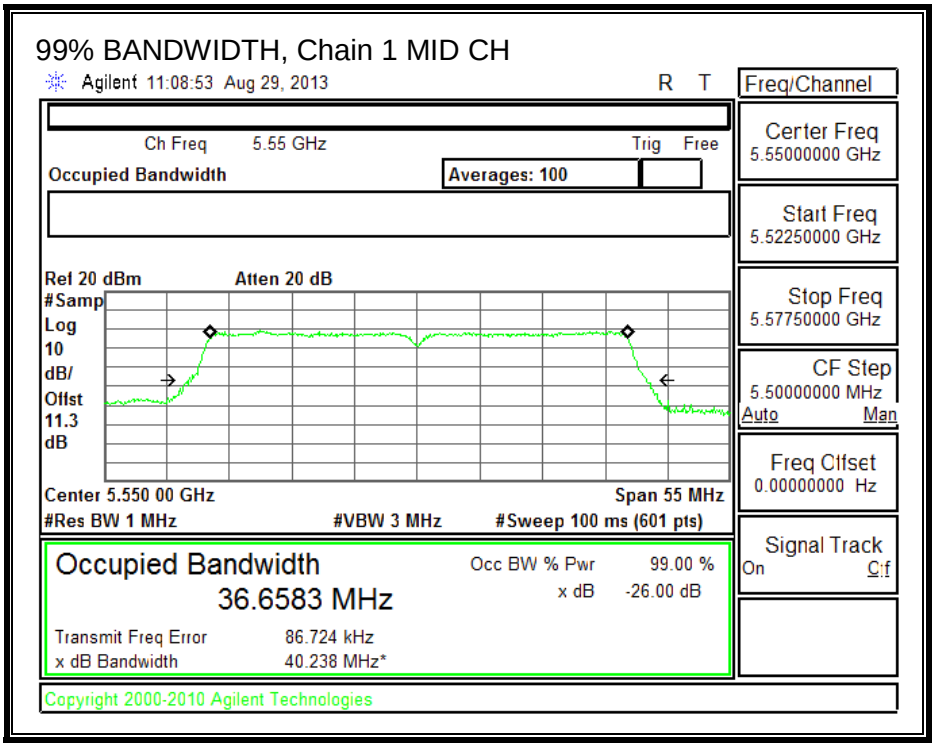


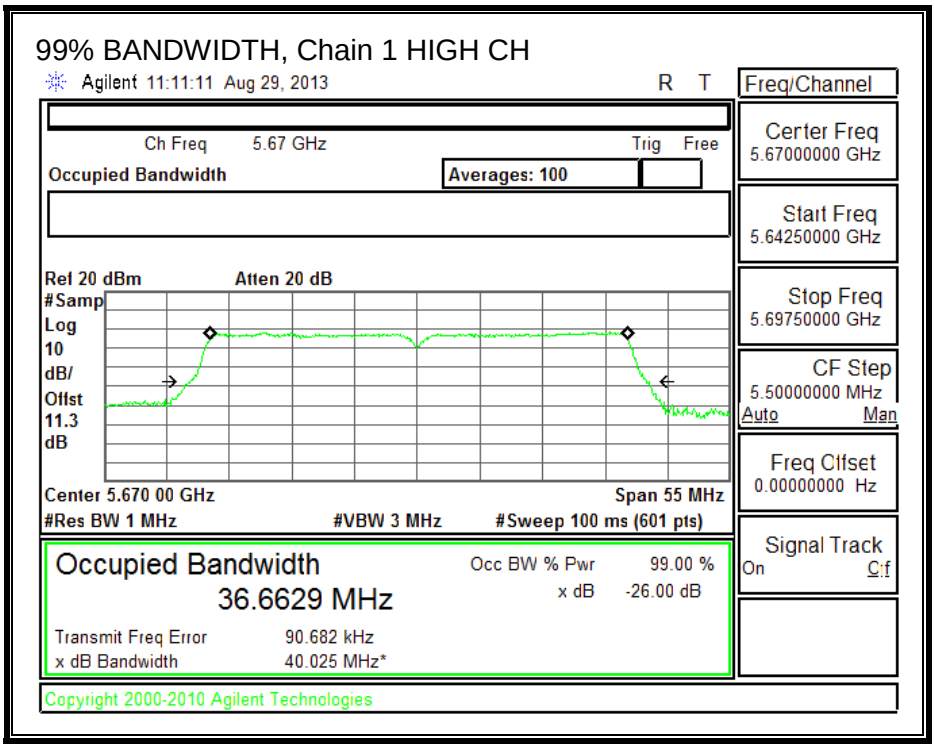




99% BANDWIDTH, Chain 1







8.9.3. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11.3 dB (including 10 dB pad and 1.3 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

Average Power Results

Channel	Frequency (MHz)	Chain 0 Power (dBm)	Chain 1 Power (dBm)	Total Power (dBm)
Low	5510	8.00	7.70	10.86
Mid	5550	11.77	11.82	14.81
High	5670	11.99	11.95	14.98

8.9.4. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a) (1)

For the band 5.5–5.7 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26–dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 11 dBm in any 1–MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

IC RSS-210 A9.2 (1)

The maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10 B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

DIRECTIONAL ANTENNA GAIN

The TX chains are uncorrelated and the antenna gain is unequal among the chains. The directional gain is:

Chain 0 Antenna Gain (dBi)	Chain 1 Antenna Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)
3.90	3.20	3.56

RESULTS

Bandwidth and Antenna Gain

Channel	Frequency (MHz)	Min 26 dB BW (MHz)	Min 99% BW (MHz)	Directional Gain (dBi)
Low	5510	40.7	36.6	3.56
Mid	5550	40.7	36.5	3.56
High	5670	40.7	36.6	3.56

Limits

Channel	Frequency (MHz)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Power Limit (dBm)	FCC PPSD Limit (dBm)	IC PSD Limit (dBm)	PPSD Limit (dBm)
Low	5510	24.00	24.00	30.00	24.00	11.00	11.00	11.00
Mid	5550	24.00	24.00	30.00	24.00	11.00	11.00	11.00
High	5670	24.00	24.00	30.00	24.00	11.00	11.00	11.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power & PPSD

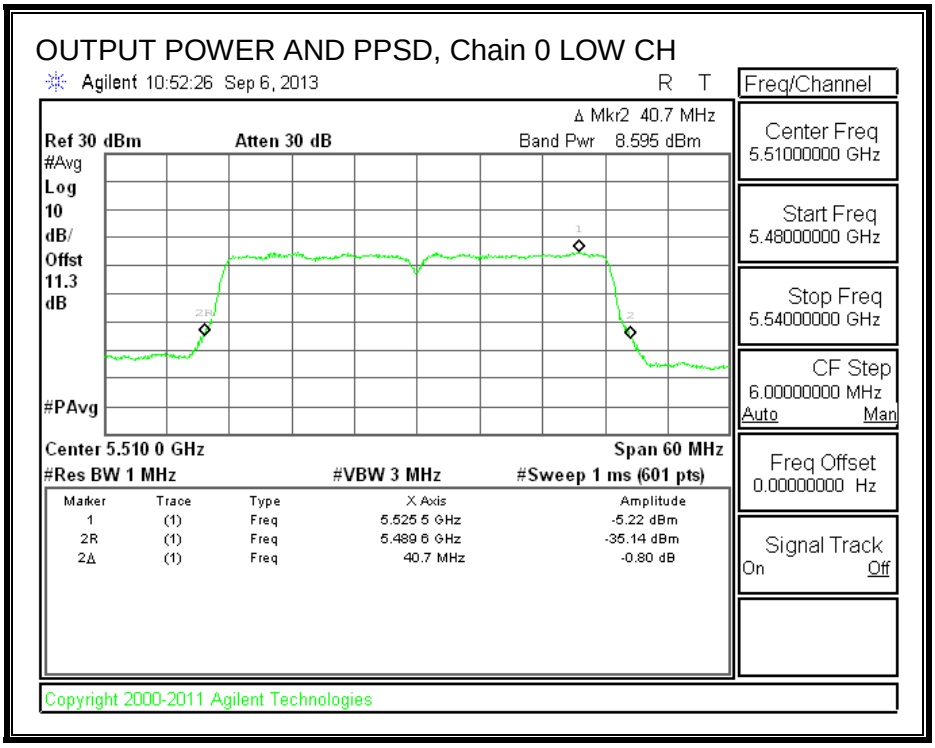
Output Power Results

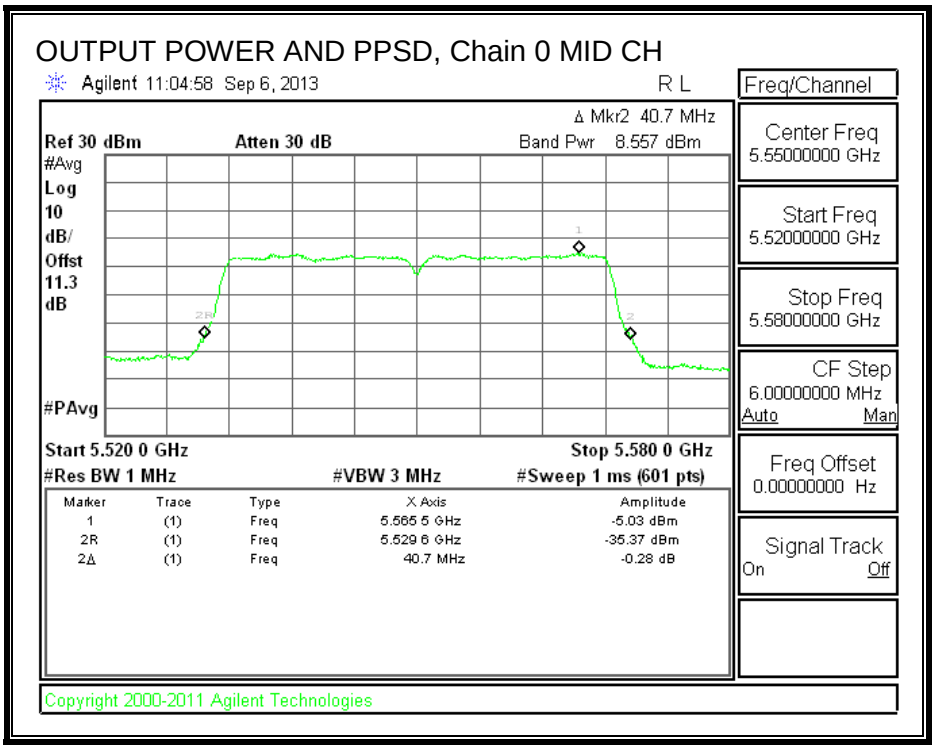
Channel	Frequency (MHz)	Chain 0 Meas Power (dBm)	Chain 1 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Power Margin (dB)
Low	5510	8.60	8.23	11.43	24.00	-12.57
Mid	5550	8.56	8.34	11.46	24.00	-12.54
High	5670	8.77	8.48	11.64	24.00	-12.36

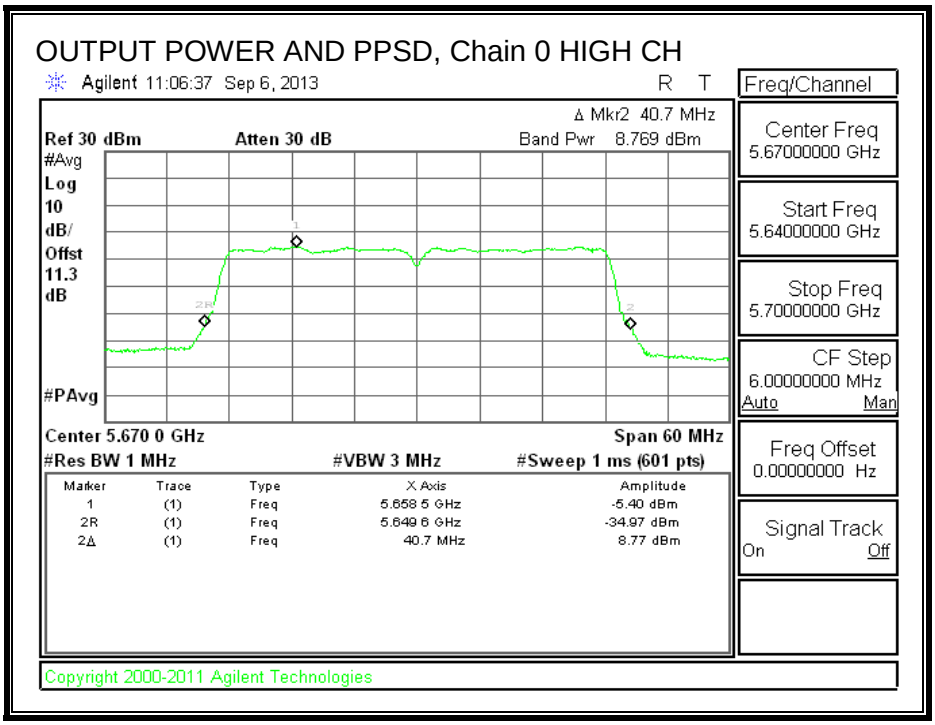
PPSD Results

Channel	Frequency (MHz)	Chain 0 Meas PPSD (dBm)	Chain 1 Meas PPSD (dBm)	Total Corr'd PPSD (dBm)	PPSD Limit (dBm)	PPSD Margin (dB)
Low	5510	-5.22	-5.62	-2.41	11.00	-13.41
Mid	5550	-5.03	-5.33	-2.17	11.00	-13.17
High	5670	-5.40	-4.99	-2.18	11.00	-13.18

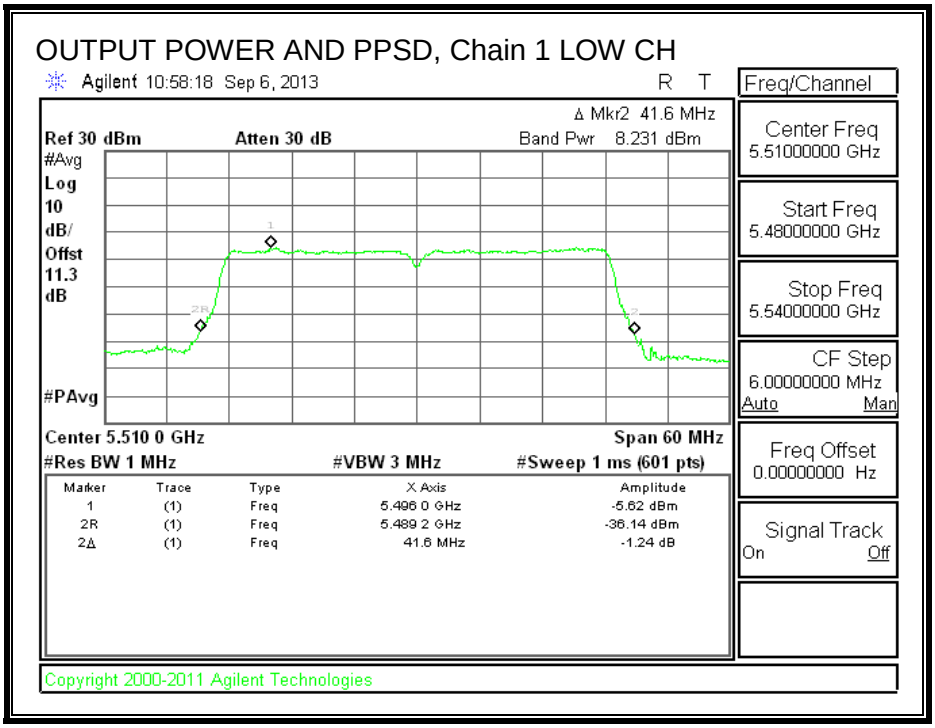
OUTPUT POWER AND PPSD, Chain 0



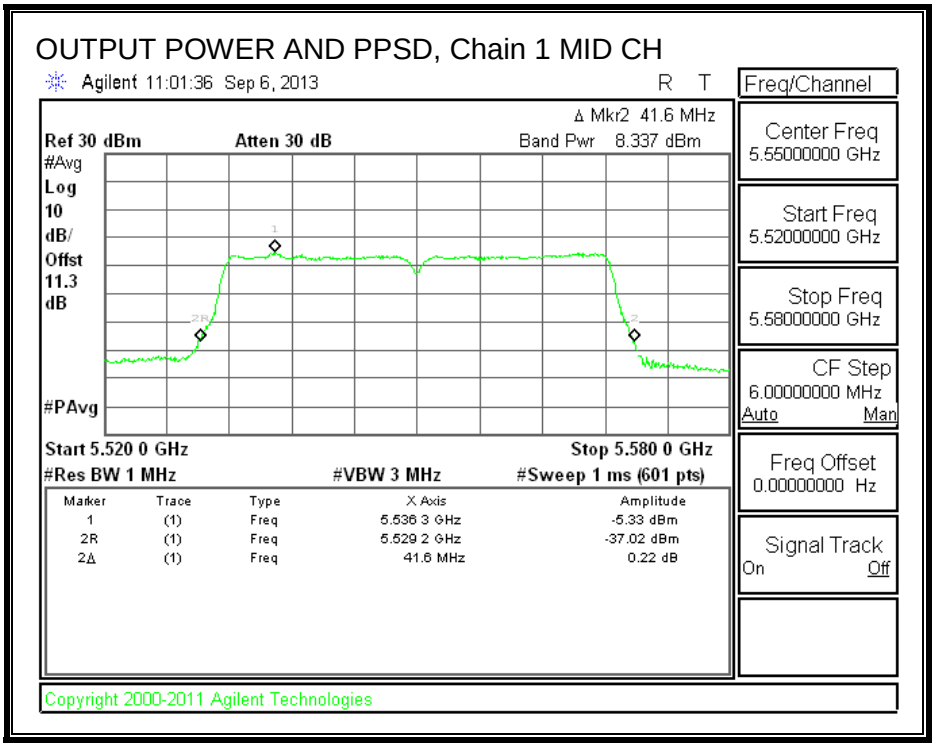




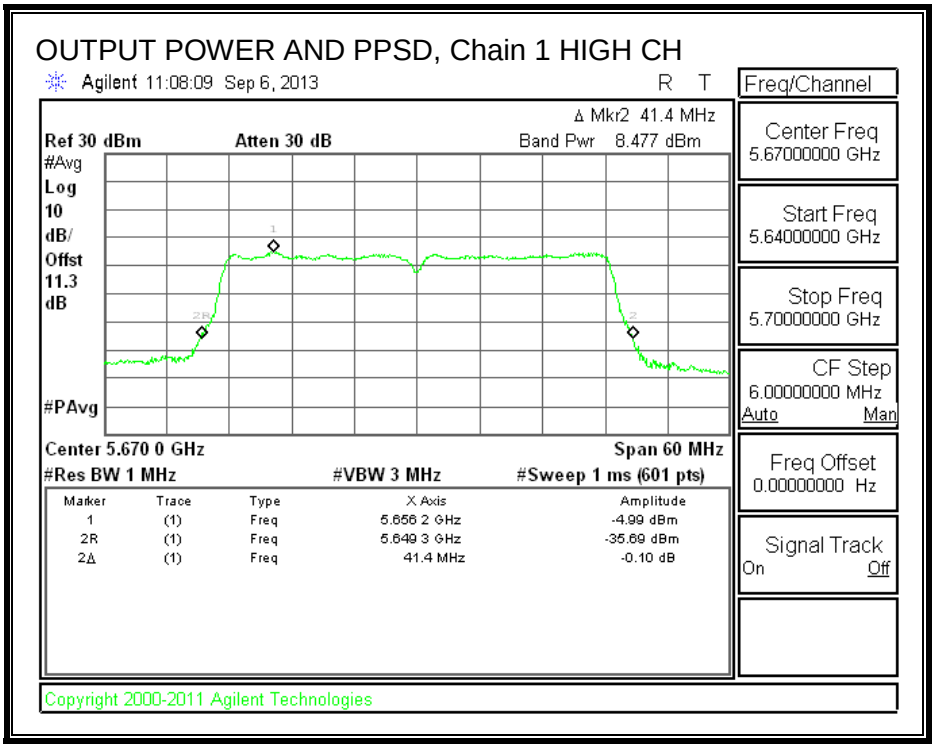
OUTPUT POWER AND PPSD, Chain 1



OUTPUT POWER AND PPSD, Chain 1 MID CH



OUTPUT POWER AND PPSD, Chain 1 HIGH CH



8.9.5. PEAK EXCURSION

LIMITS

FCC §15.407 (a) (6)

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

RESULTS

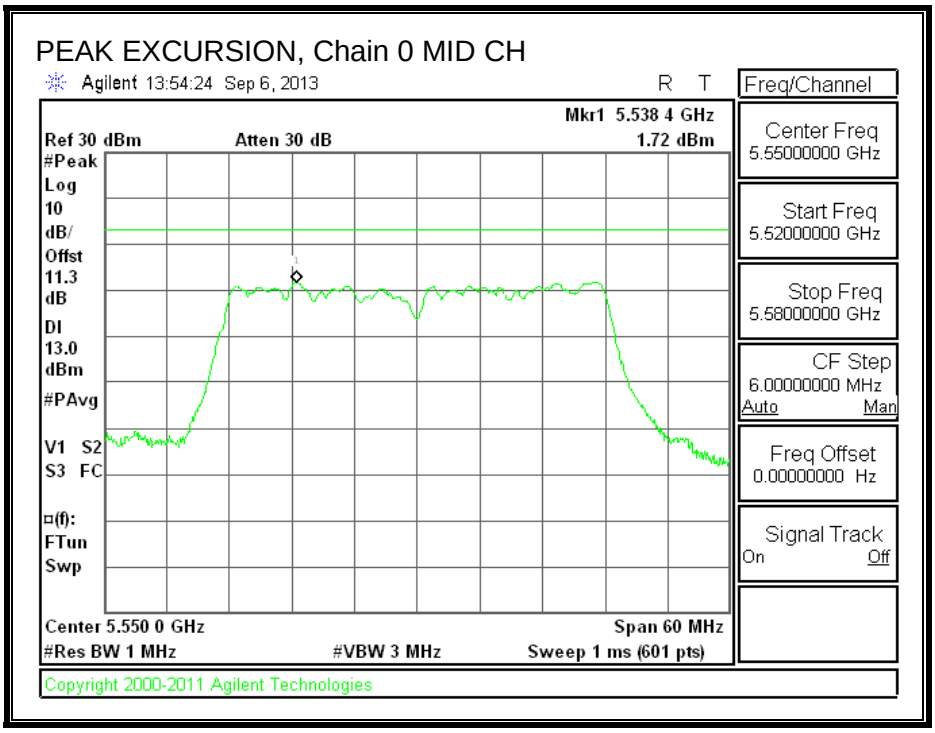
Chain 0

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5550	1.72	-5.03	0.00	6.75	13	-6.25

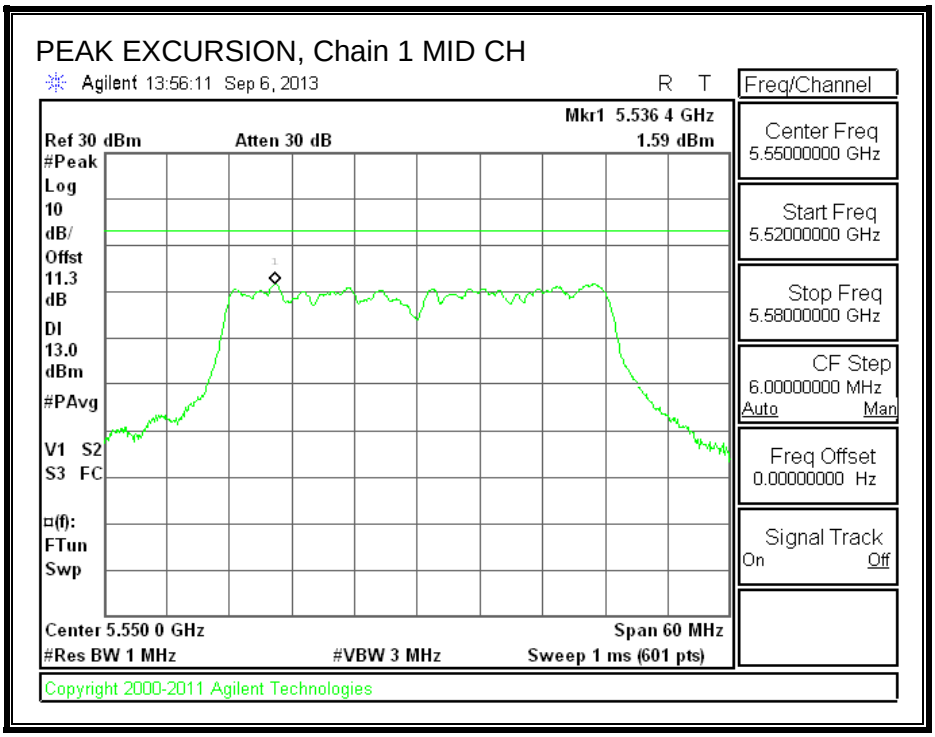
Chain 1

Channel	Frequency (MHz)	PK Level (dBm)	PSD (dBm)	DCCF (dB)	Peak Excursion (dB)	Limit (dB)	Margin (dB)
Mid	5550	1.59	-5.33	0.00	6.92	13	-6.08

PEAK EXCURSION, Chain 0



PEAK EXCURSION, Chain 1



9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

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.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, video bandwidth is set to 3 MHz, then Peak detection mode is set for peak measurements and Avg detection mode is used 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.

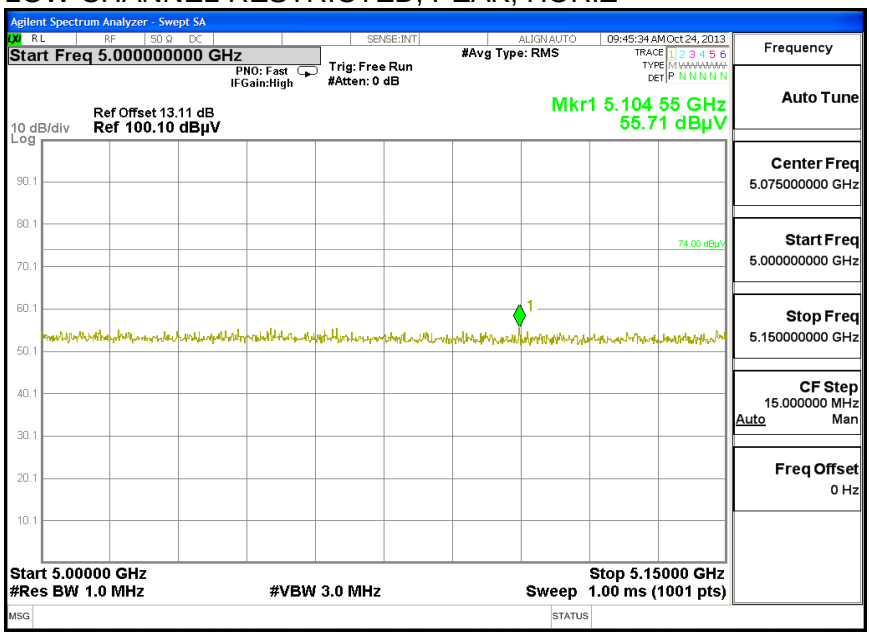
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

9.2. TRANSMITTER ABOVE 1 GHz

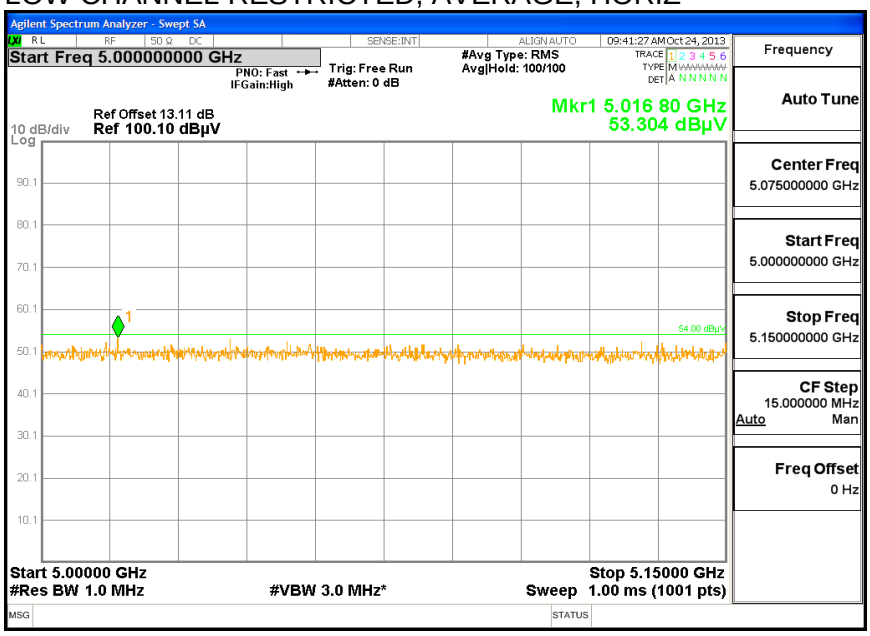
9.3. TX ABOVE 1 GHz 802.11a MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

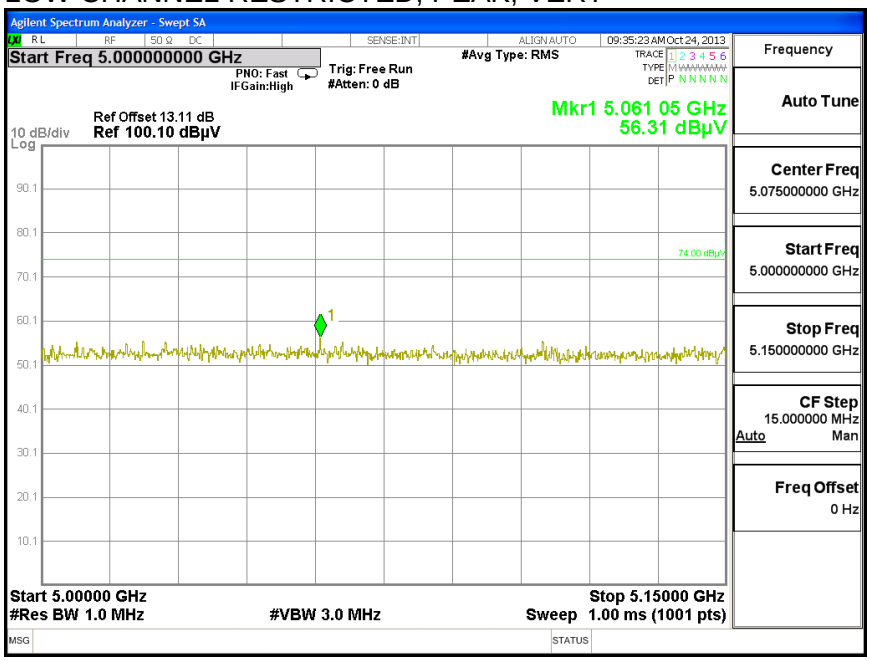
LOW CHANNEL RESTRICTED, PEAK, HORIZ



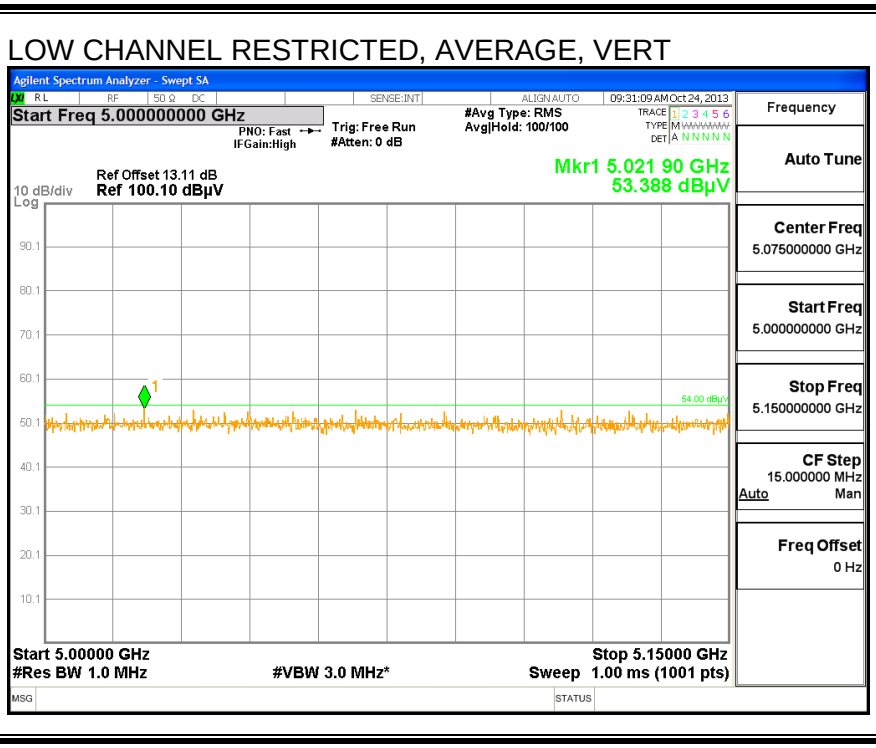
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT



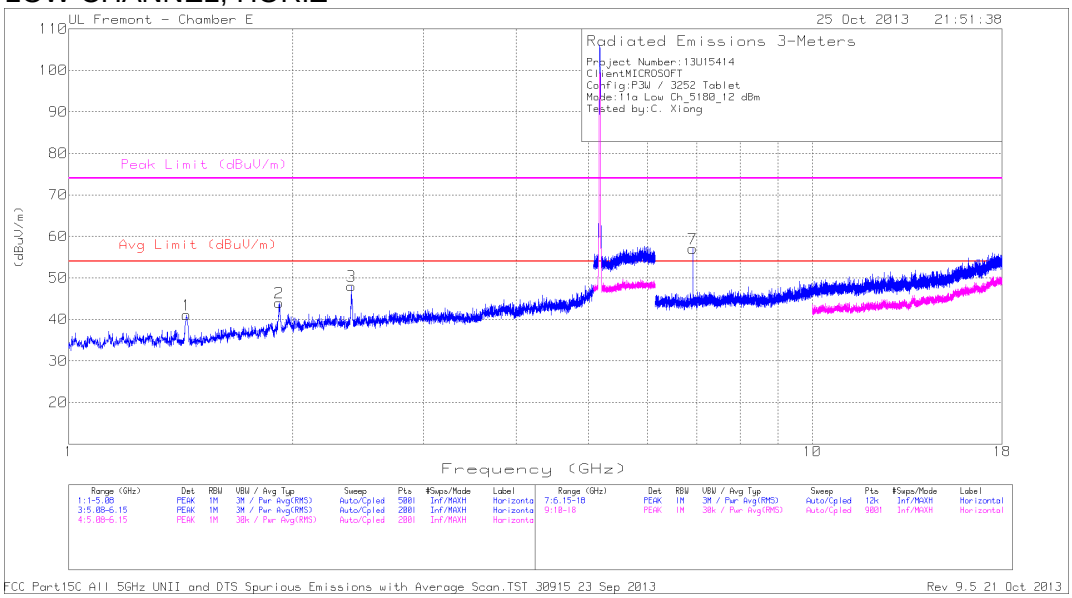
LOW CHANNEL RESTRICTED, AVERAGE, VERT



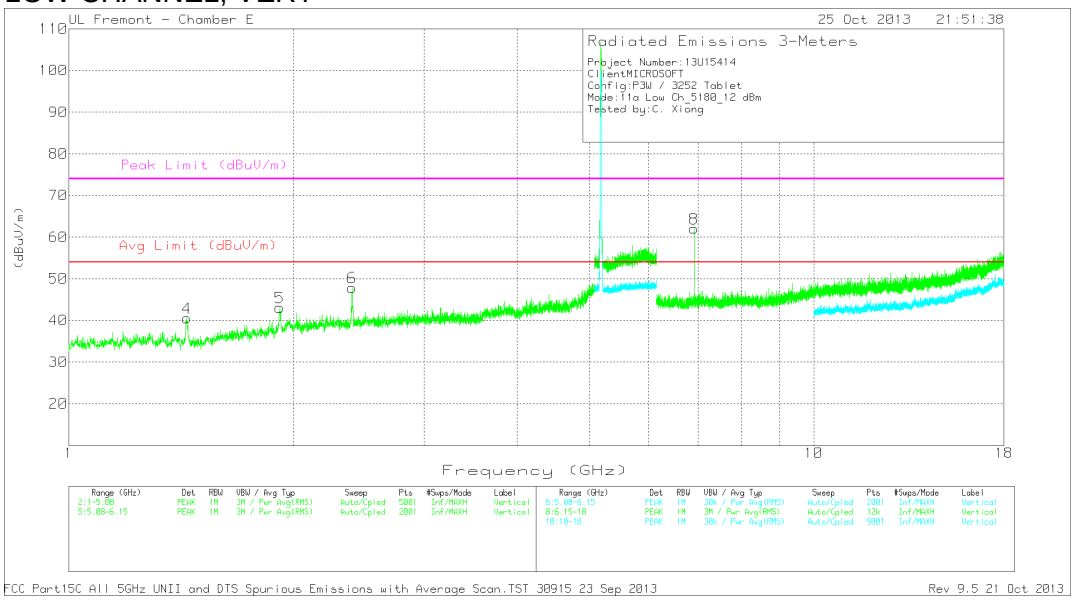
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW Channel DATA

Radiated Emissions

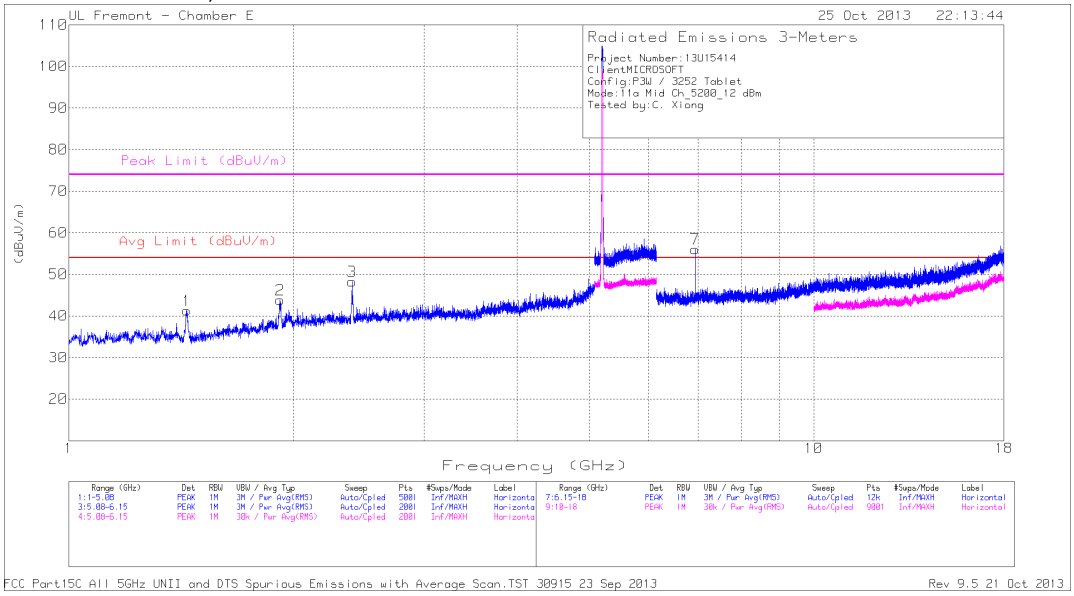
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.441	46.79	PK	28.9	-34.6	41.09	53.97	-12.88	74	-32.91	0-360	100	H
2	1.919	45.51	PK	31.6	-33.1	44.01	53.97	-9.96	74	-29.99	0-360	100	H
3	2.401	48.81	PK	32.6	-33.4	48.01	53.97	-5.96	74	-25.99	0-360	100	H
4	1.441	46.27	PK	28.9	-34.6	40.57	53.97	-13.4	74	-33.43	0-360	199	V
5	1.92	44.51	PK	31.6	-33	43.11	53.97	-10.86	74	-30.89	0-360	100	V
6	2.401	48.69	PK	32.6	-33.4	47.89	53.97	-6.08	74	-26.11	0-360	100	V
7	*6.907	50.28	PK	35.9	-29.1	57.08	-	-	68.2	-11.12	0-360	199	H
8	*6.907	55.25	PK	35.9	-29.1	62.05	-	-	68.2	-6.14	0-360	100	V

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

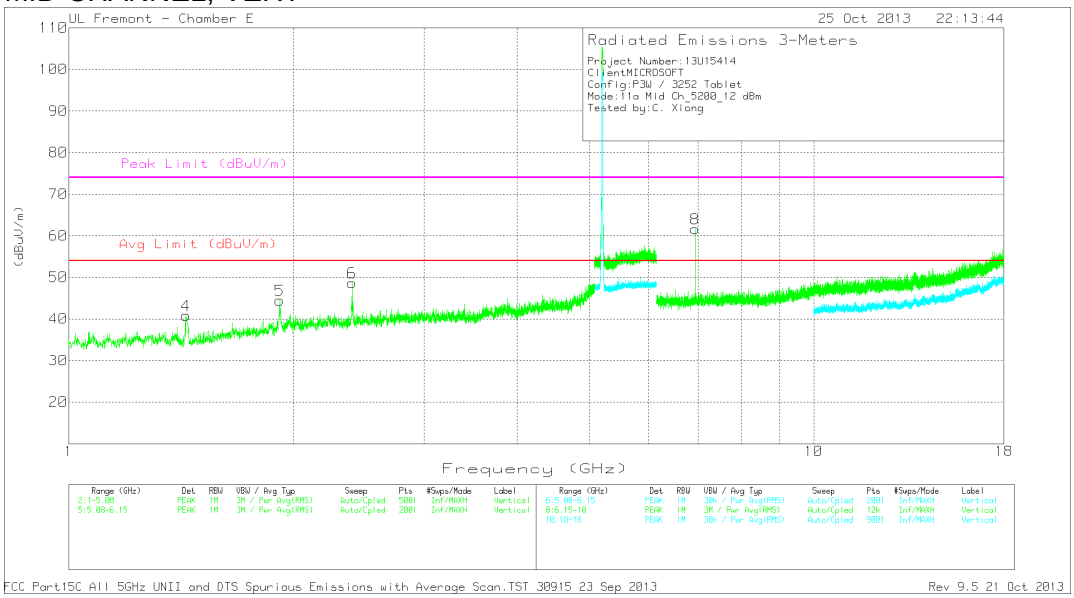
PK - Peak detector

MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



MID Channel DATA

Radiated Emissions

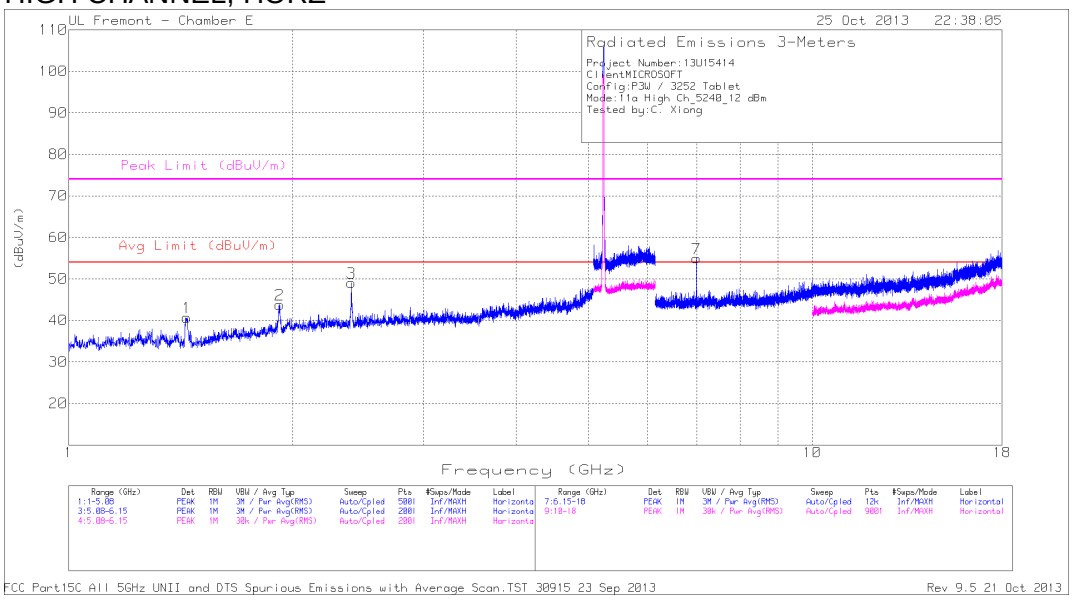
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.441	47.04	PK	28.9	-34.6	41.34	53.97	-12.63	74	-32.66	0-360	199	H
2	1.922	45.26	PK	31.6	-33	43.86	53.97	-10.11	74	-30.14	0-360	100	H
3	2.401	49.09	PK	32.6	-33.4	48.29	53.97	-5.68	74	-25.71	0-360	199	H
4	1.437	46.44	PK	28.9	-34.5	40.84	53.97	-13.13	74	-33.16	0-360	199	V
5	1.919	46	PK	31.6	-33.1	44.5	53.97	-9.47	74	-29.5	0-360	199	V
6	2.4	49.51	PK	32.6	-33.4	48.71	-53.97	-5.26	74	-25.29	0-360	199	V
7	*6.934	48.86	PK	35.9	-28.7	56.06	-	-	68.2	-12.14	0-360	199	H
8	*6.934	54.47	PK	35.9	-28.7	61.67	-	-	68.2	-6.53	0-360	101	V

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

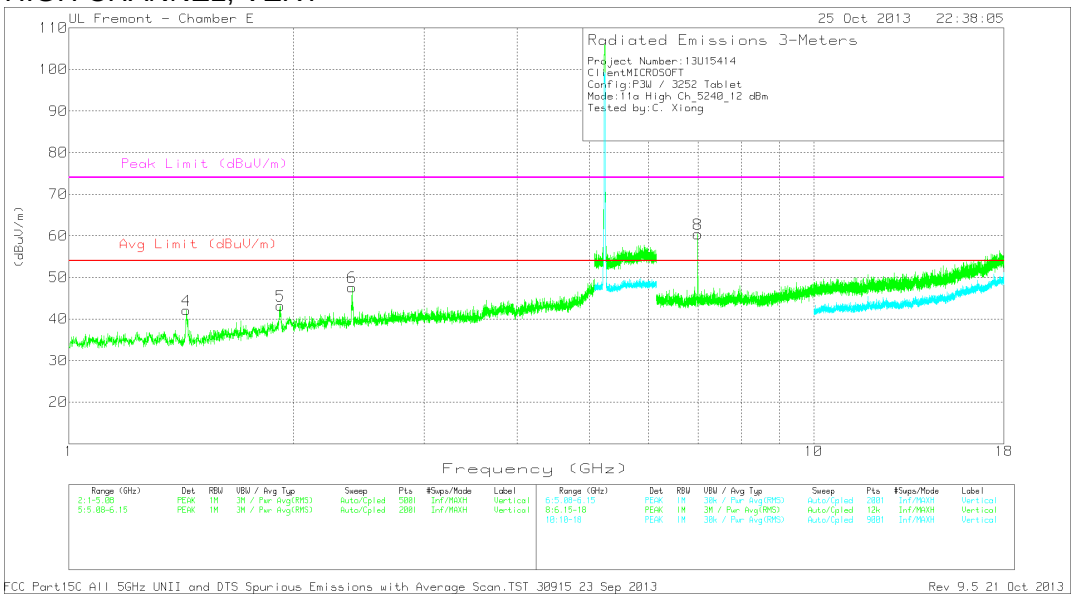
PK - Peak detector

HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.442	46.39	PK	28.9	-34.6	40.69	53.97	-13.28	74	-33.31	0-360	100	H
2	1.922	45.19	PK	31.6	-33	43.79	53.97	-10.18	74	-30.21	0-360	100	H
3	2.401	49.86	PK	32.6	-33.4	49.06	53.97	-4.91	74	-24.94	0-360	199	H
4	1.438	47.7	PK	28.9	-34.5	42.1	53.97	-11.87	74	-31.9	0-360	199	V
5	1.924	44.58	PK	31.6	-33	43.18	53.97	-10.79	74	-30.82	0-360	199	V
6	2.401	48.42	PK	32.6	-33.4	47.62	53.97	-6.35	74	-26.38	0-360	199	V
7	*6.987	47.76	PK	36	-28.8	54.96	-	-	68.2	-13.24	0-360	199	H
8	*6.987	53.18	PK	36	-28.8	60.38	-	-	68.2	-7.82	0-360	199	V

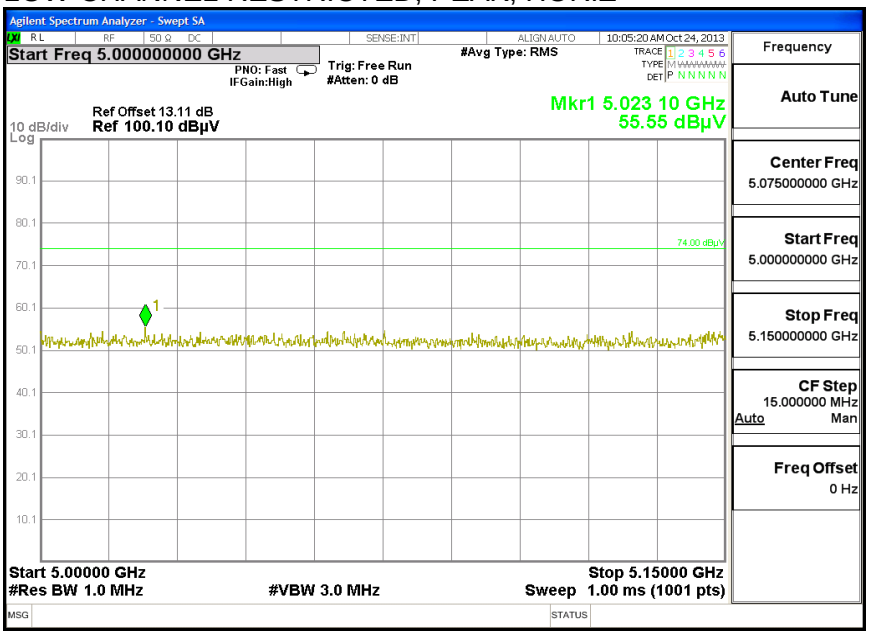
* - indicates frequency in CFR15.205/IC7.2.2 Non-Restricted Band

PK - Peak detector

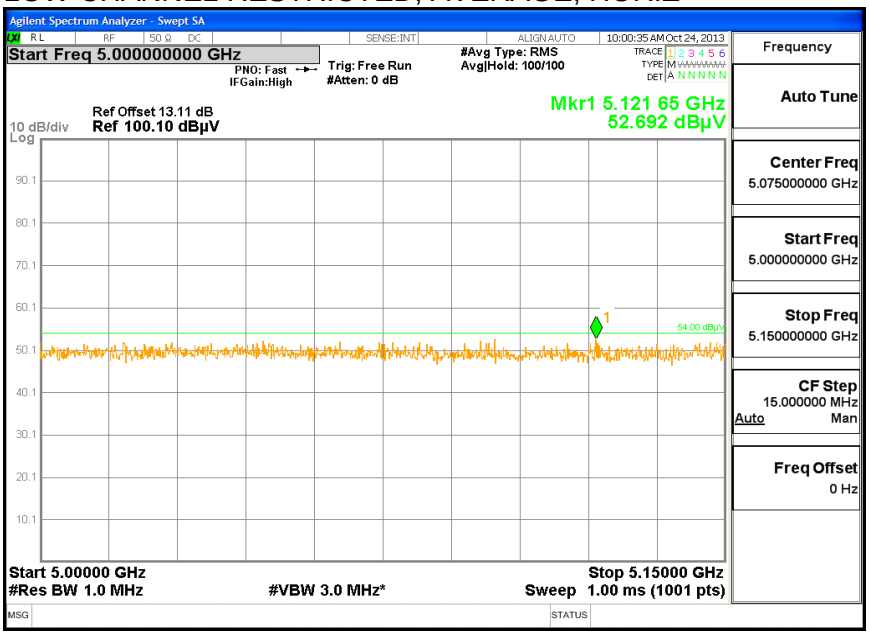
9.4. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

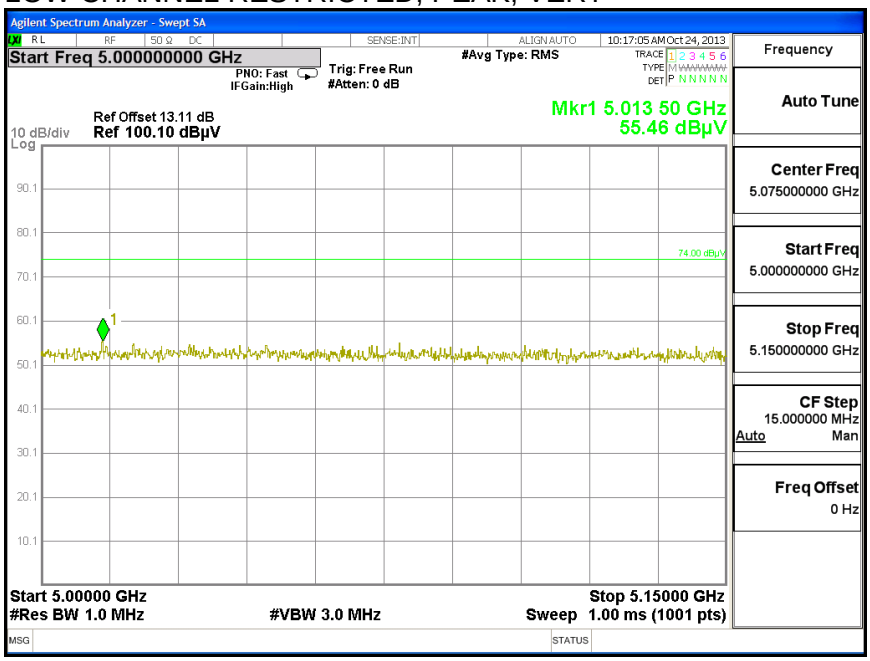
LOW CHANNEL RESTRICTED, PEAK, HORIZ



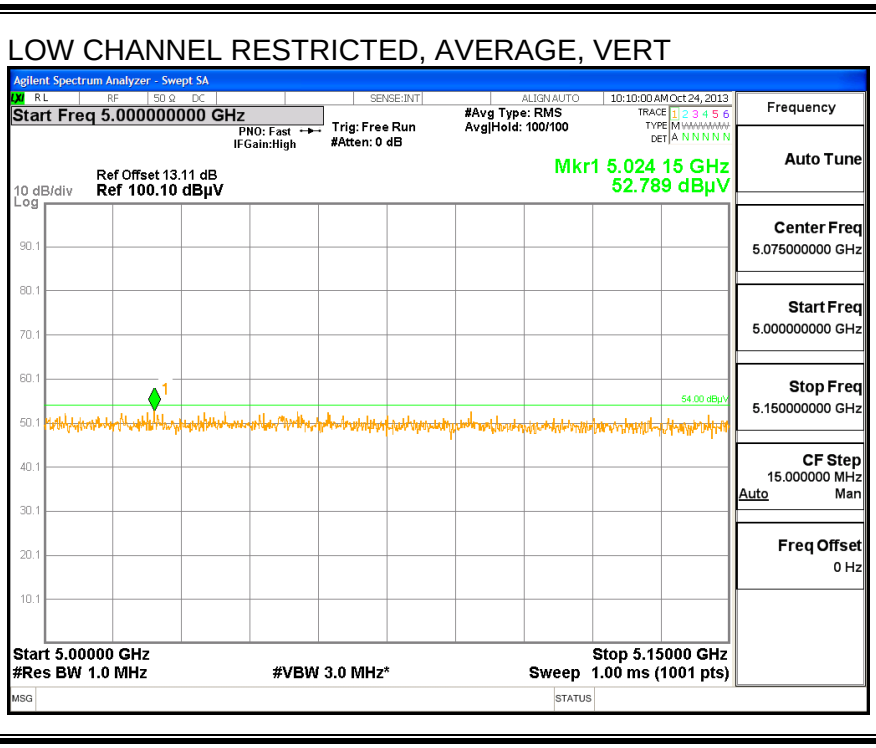
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT



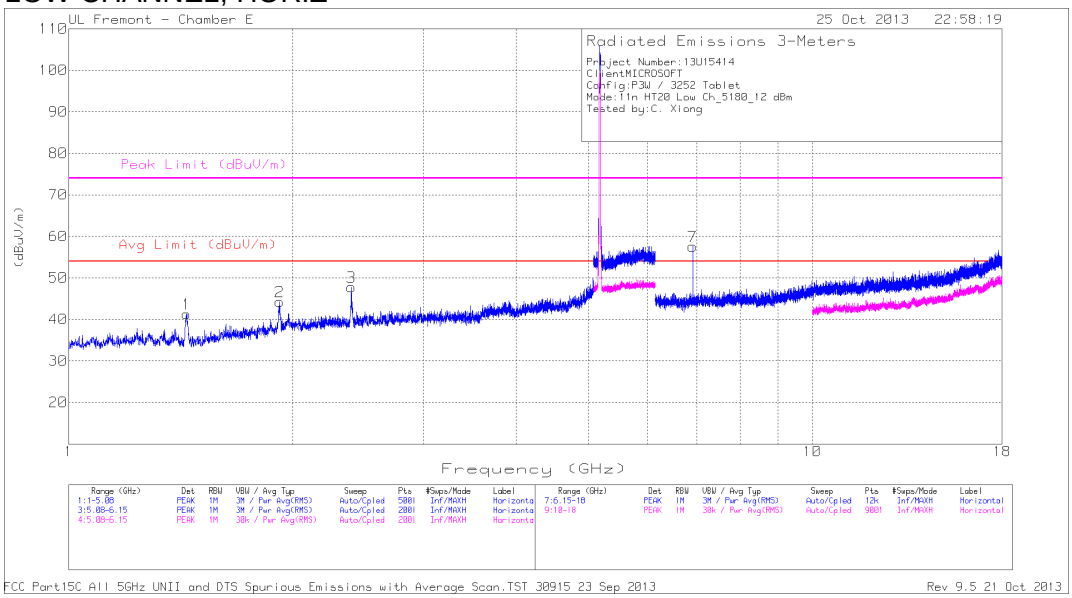
LOW CHANNEL RESTRICTED, AVERAGE, VERT



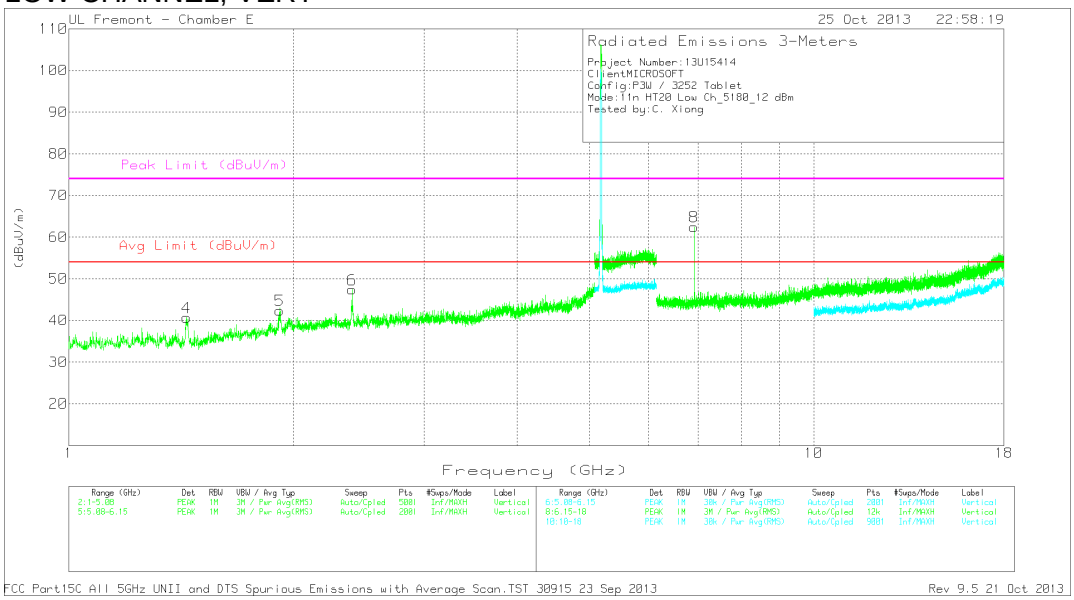
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW Channel DATA

Radiated Emissions

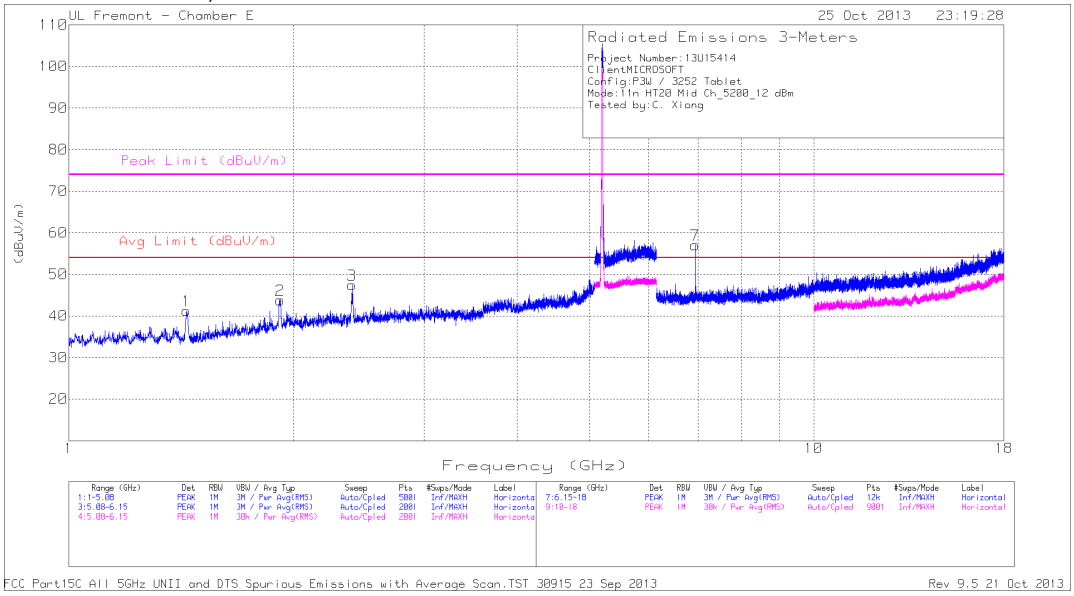
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.441	47.04	PK	28.9	-34.6	41.34	53.97	-12.63	74	-32.66	0-360	100	H
2	1.922	45.67	PK	31.6	-33	44.27	53.97	-9.7	74	-29.73	0-360	199	H
3	2.401	48.58	PK	32.6	-33.4	47.78	53.97	-6.19	74	-26.22	0-360	100	H
4	1.439	46.4	PK	28.9	-34.6	40.7	53.97	-13.27	74	-33.3	0-360	199	V
5	1.92	43.81	PK	31.6	-33	42.41	53.97	-11.56	74	-31.59	0-360	199	V
6	2.401	48.25	PK	32.6	-33.4	47.45	53.97	-6.52	74	-26.55	0-360	199	V
7	*6.907	50.79	PK	35.9	-29.1	57.59	-	-	68.2	-10.61	0-360	199	H
8	*6.907	55.69	PK	35.9	-29.1	62.49	-	-	68.2	-5.71	0-360	100	V

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

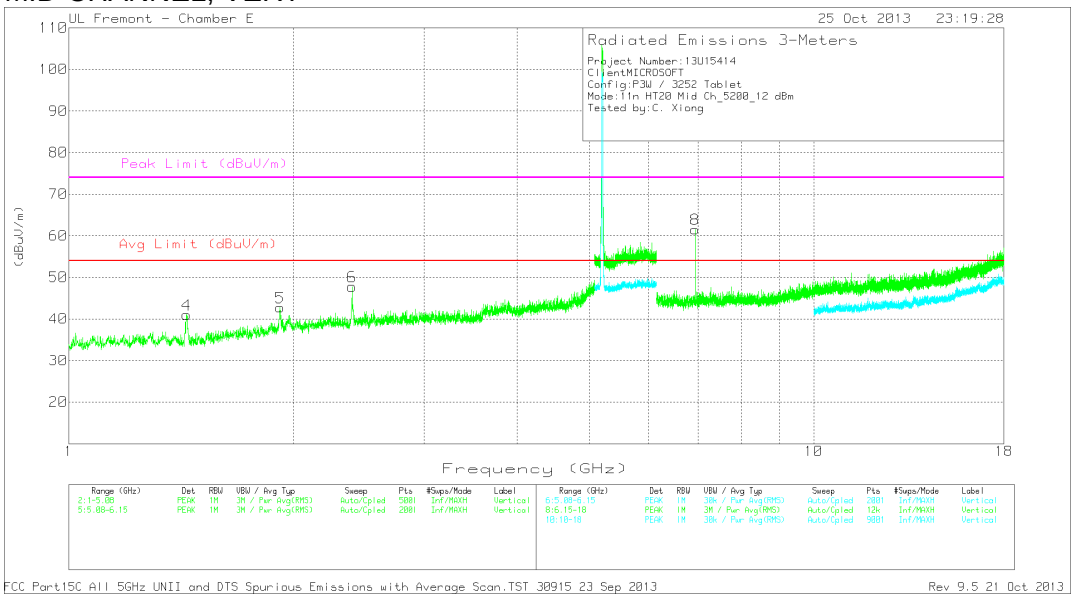
PK - Peak detector

MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



MID Channel DATA

Radiated Emissions

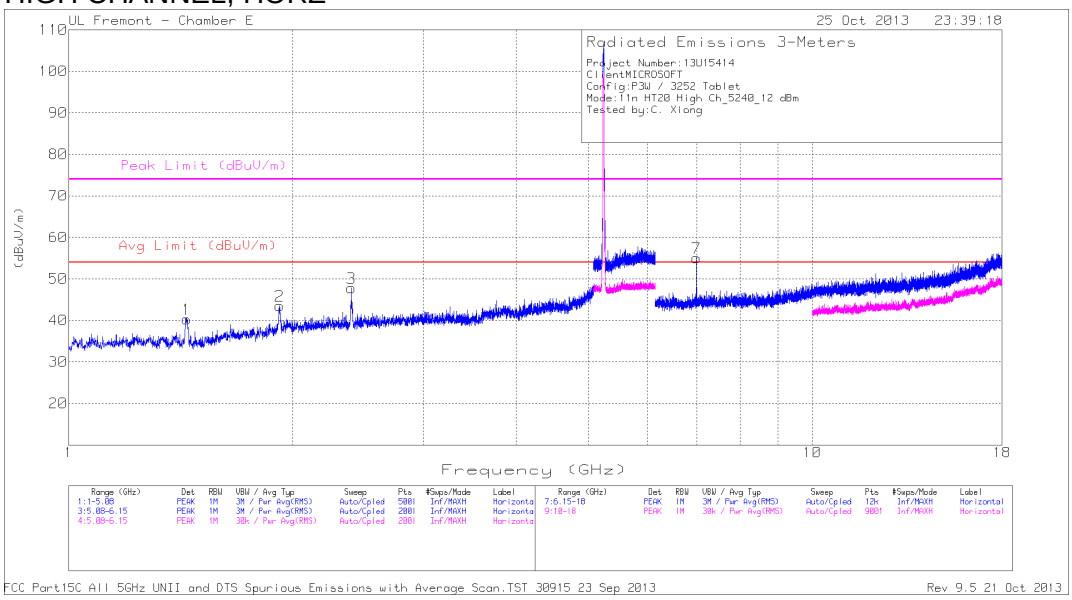
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.438	46.82	PK	28.9	-34.5	41.22	53.97	-12.75	74	-32.78	0-360	100	H
2	1.923	45.22	PK	31.6	-33	43.82	53.97	-10.15	74	-30.18	0-360	100	H
3	2.401	48.26	PK	32.6	-33.4	47.46	53.97	-6.51	74	-26.54	0-360	199	H
4	1.439	46.72	PK	28.9	-34.6	41.02	53.97	-12.95	74	-32.98	0-360	200	V
5	1.922	44.17	PK	31.6	-33	42.77	53.97	-11.2	74	-31.23	0-360	200	V
6	2.4	48.59	PK	32.6	-33.4	47.79	53.97	-6.18	74	-26.21	0-360	200	V
7	*6.934	49.84	PK	35.9	-28.7	57.04	-	-	68.2	-11.16	0-360	199	H
8	*6.934	54.34	PK	35.9	-28.7	61.54	-	-	68.2	-7.16	0-360	100	V

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

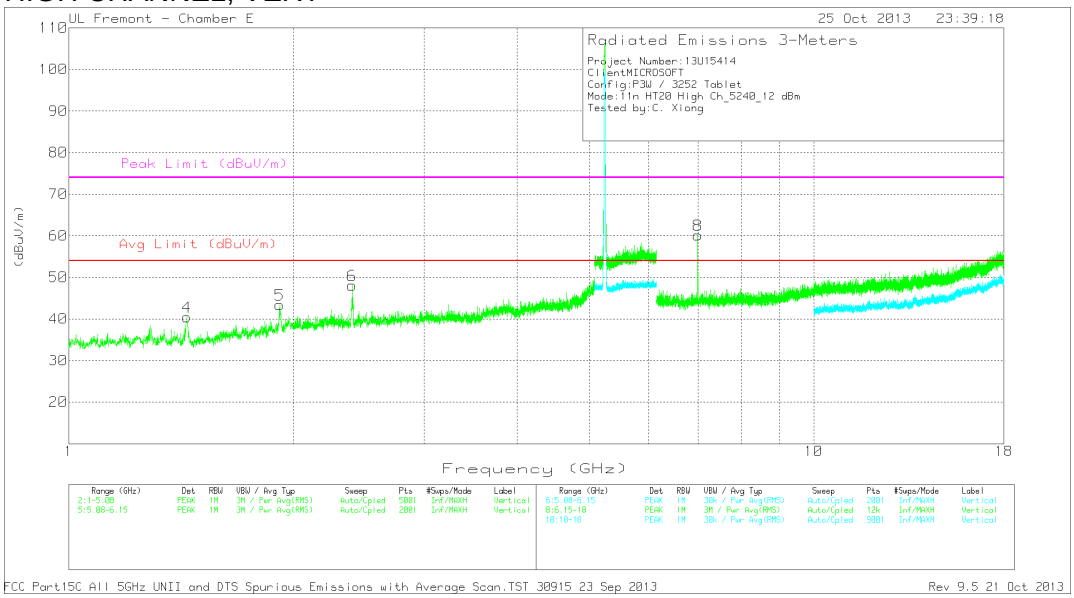
PK - Peak detector

HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbl/5GHz LPF	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.441	45.98	PK	28.9	-34.6	40.28	53.97	-13.69	74	-33.72	0-360	100	H
2	1.922	44.91	PK	31.6	-33	43.51	53.97	-10.46	74	-30.49	0-360	100	H
3	2.401	48.62	PK	32.6	-33.4	47.82	53.97	-6.15	74	-26.18	0-360	100	H
4	1.441	46.18	PK	28.9	-34.6	40.48	53.97	-13.49	74	-33.52	0-360	200	V
5	1.919	44.91	PK	31.6	-33.1	43.41	53.97	-10.56	74	-30.59	0-360	200	V
6	2.401	48.86	PK	32.6	-33.4	48.06	53.97	-5.91	74	-25.94	0-360	200	V
7	*6.987	47.84	PK	36	-28.8	55.04	-	-	68.2	-13.16	0-360	199	H
8	*6.987	52.93	PK	36	-28.8	60.13	-	-	68.2	-8.07	0-360	199	V

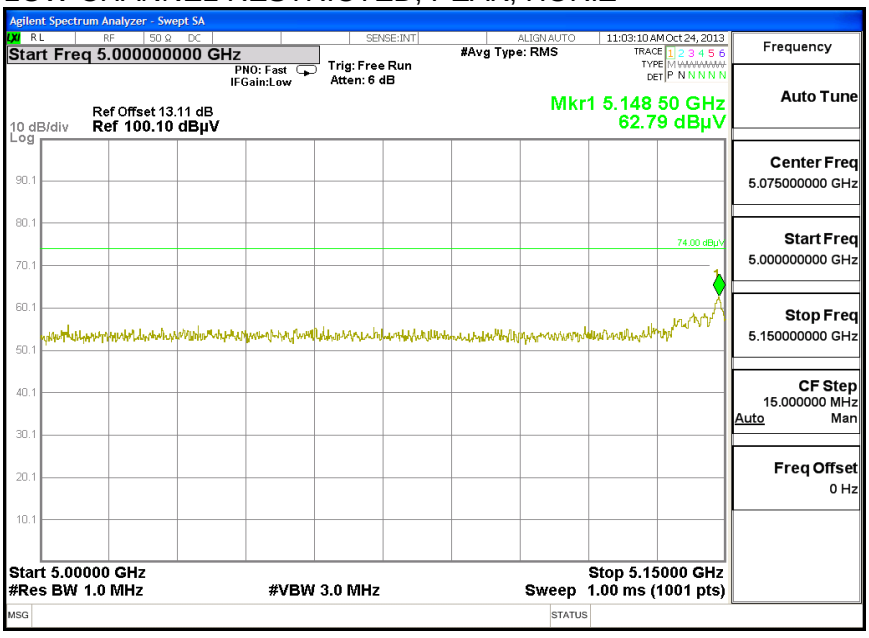
* - indicates frequency in CFR15.205/IC7.2.2 Non-Restricted Band

PK - Peak detector

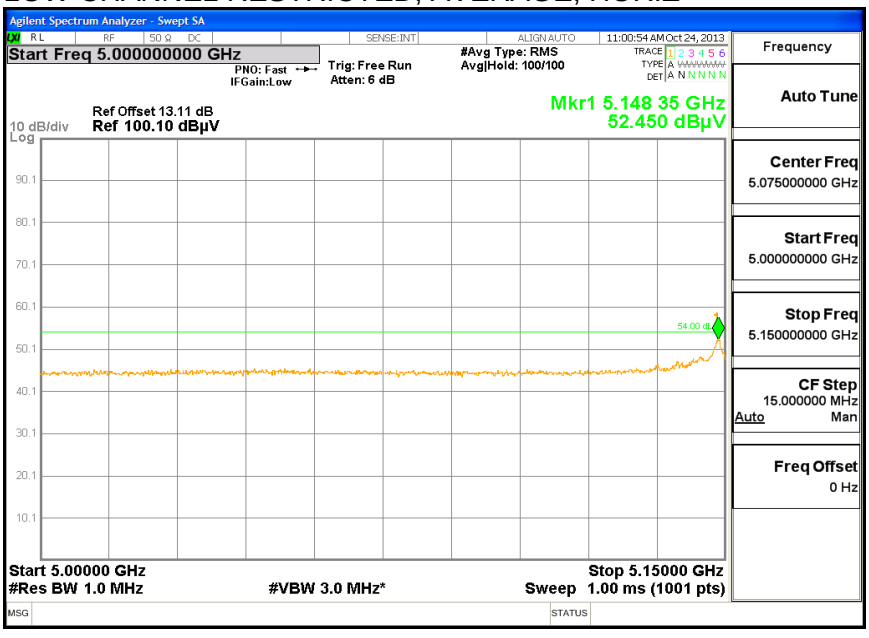
9.5. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.2 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

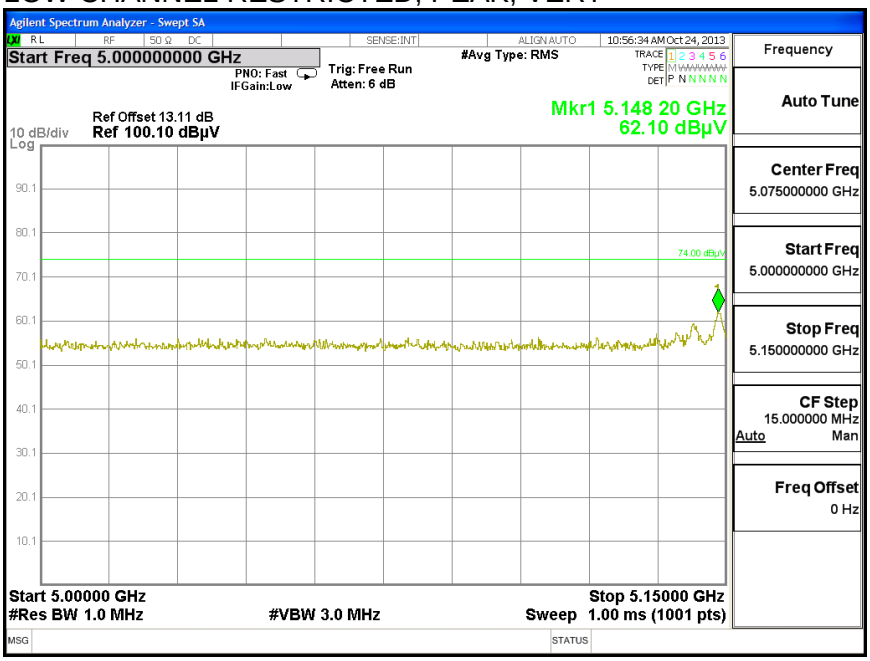
LOW CHANNEL RESTRICTED, PEAK, HORIZ



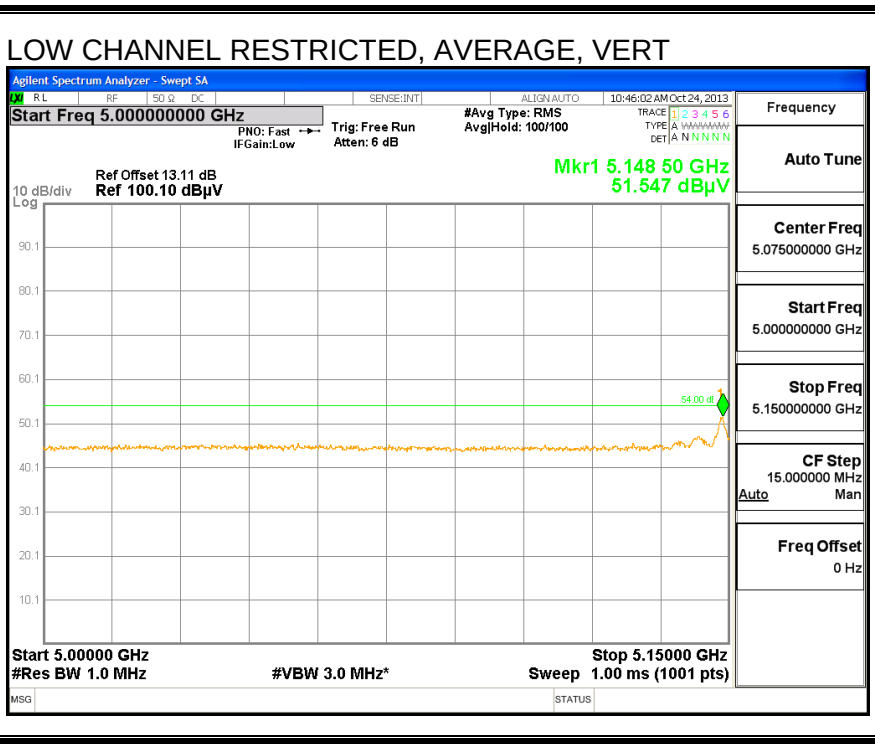
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED, PEAK, VERT



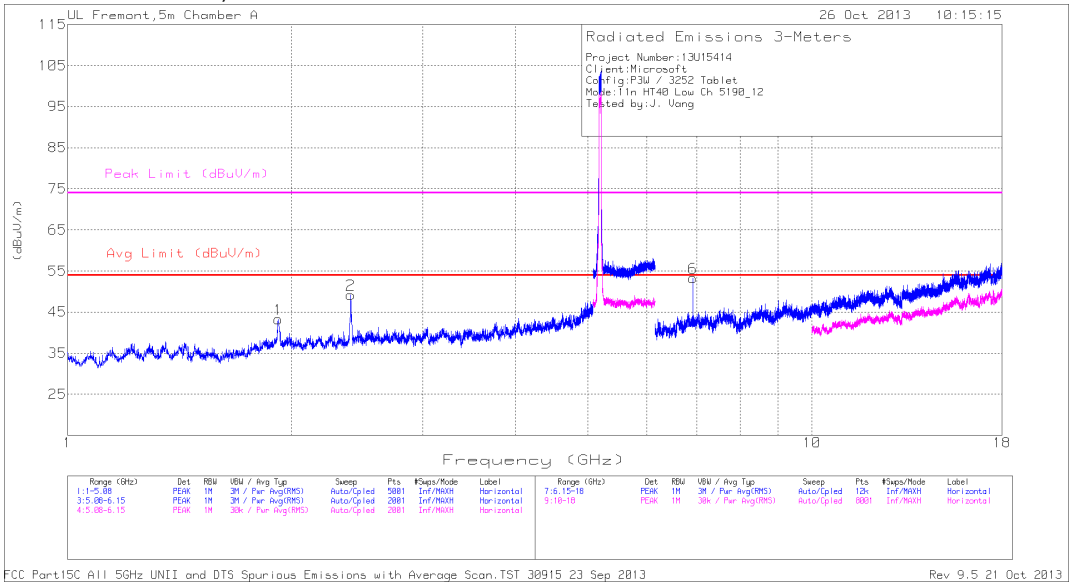
LOW CHANNEL RESTRICTED, AVERAGE, VERT



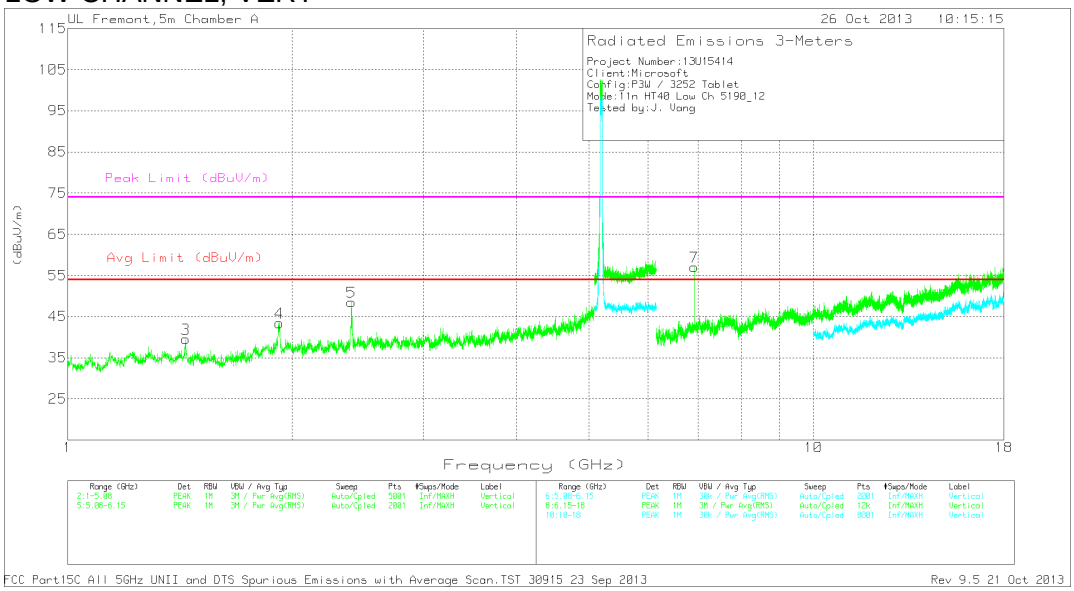
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



HARMONICS AND SPURIOUS EMISSIONS

LOW Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.918	44.98	PK	31.7	-33.4	43.28	53.97	-10.69	74	-30.72	0-360	100	H
2	2.4	49.91	PK	32.1	-32.8	49.21	53.97	-4.76	74	-24.79	0-360	100	H
3	1.44	44.65	PK	29.4	-34.5	39.55	53.97	-14.42	74	-34.45	0-360	200	V
4	1.921	45.25	PK	31.7	-33.5	43.45	53.97	-10.52	74	-30.55	0-360	100	V
5	2.4	49.25	PK	32.1	-32.8	48.55	53.97	-5.42	74	-25.45	0-360	200	V
6	*6.92	45.01	PK	35.4	-27.1	53.31	-	-	68.2	-14.89	0-360	100	H
7	*6.92	48.79	PK	35.4	-27.1	57.09	-	-	68.2	-11.11	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.4	Av	32.1	-32.8	47.7	53.97	-6.27	-	-	195	121	H
2.4	46.04	Av	32.1	-32.8	45.34	53.97	-8.63	-	-	77	194	V

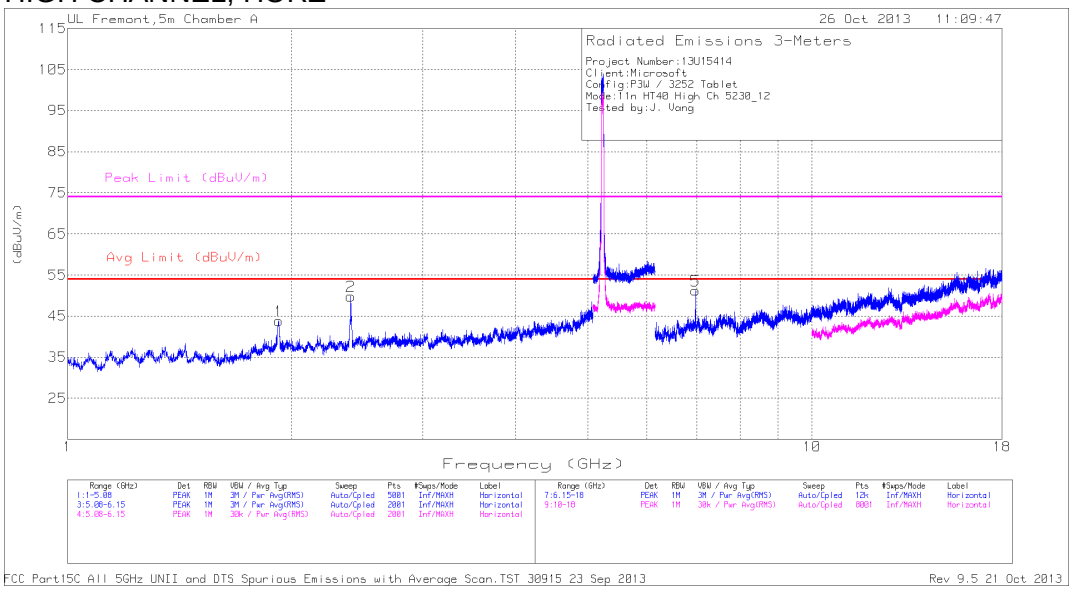
* - indicates frequency in CFR15.205/IC7.2.2 Non-Restricted Band

PK - Peak detector

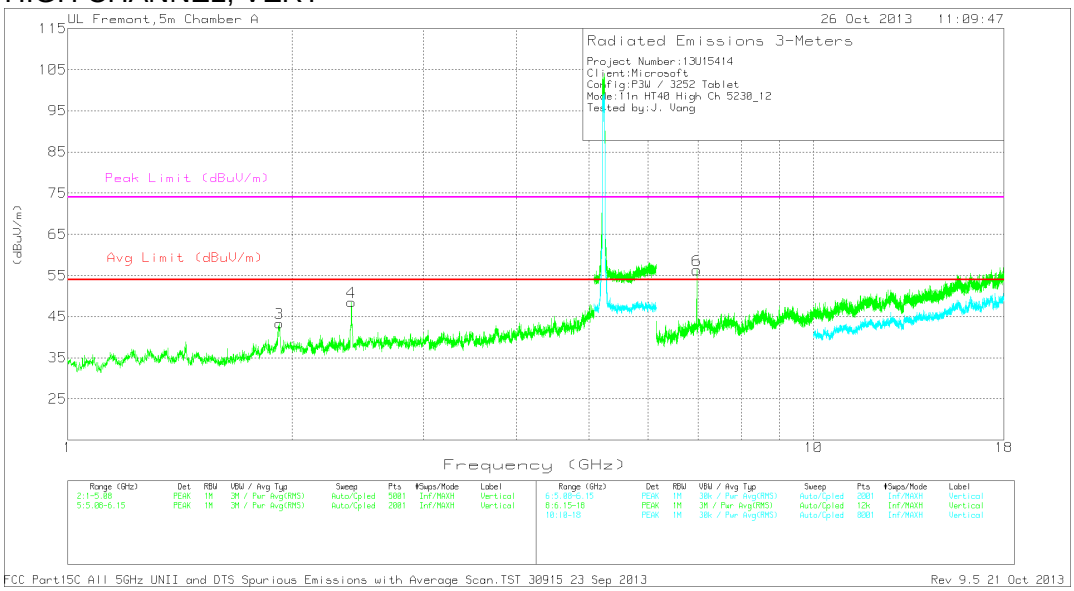
Av - average detection

HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.921	45.64	PK	31.7	-33.5	43.84	53.97	-10.13	74	-30.16	0-360	200	H
2	2.4	50.51	PK	32.1	-32.8	49.81	53.97	-4.16	74	-24.19	0-360	100	H
3	1.921	45.2	PK	31.7	-33.5	43.4	53.97	-10.57	74	-30.6	0-360	100	V
4	2.4	49.2	PK	32.1	-32.8	48.5	53.97	-5.47	74	-25.5	0-360	200	V
5	*6.974	42.21	PK	35.4	-26.4	51.21	-	-	68.2	-16.99	0-360	100	H
6	*6.974	47.3	PK	35.4	-26.4	56.3	-	-	68.2	-11.9	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	47.65	Av	32.1	-32.8	46.95	53.97	-7.02	-	-	190	116	H
2.4	45.51	Av	32.1	-32.8	44.81	53.97	-9.16	-	-	77	124	V

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

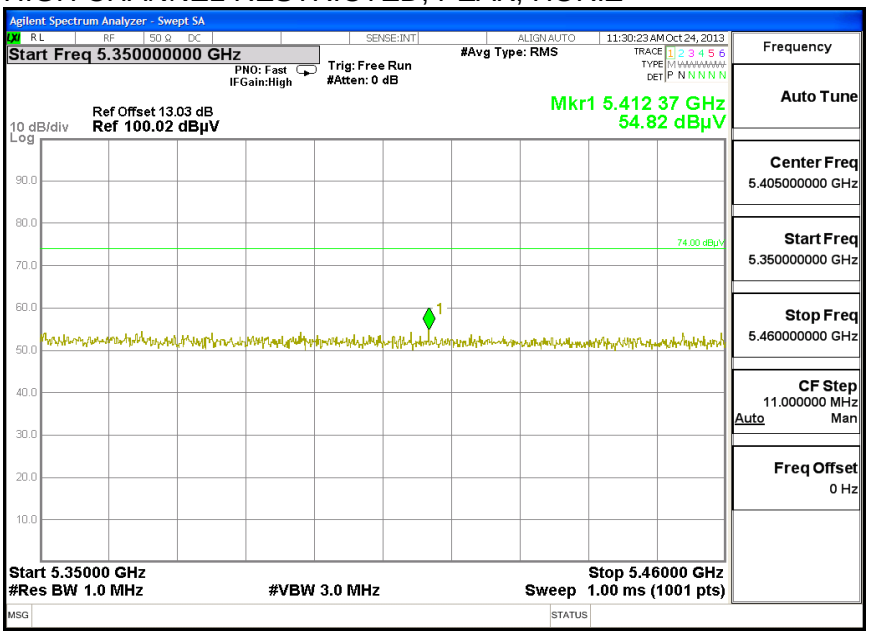
PK - Peak detector

Av - average detection

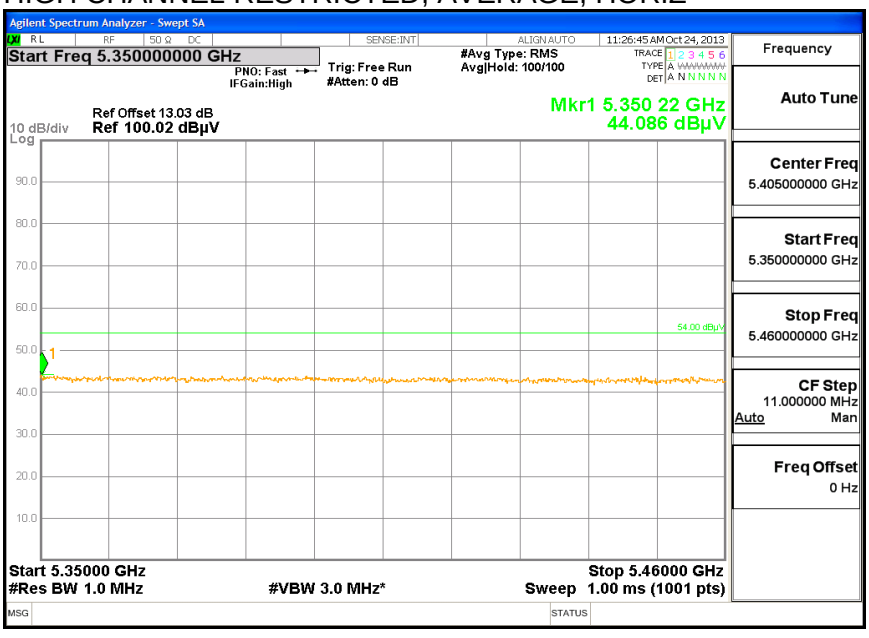
9.6. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

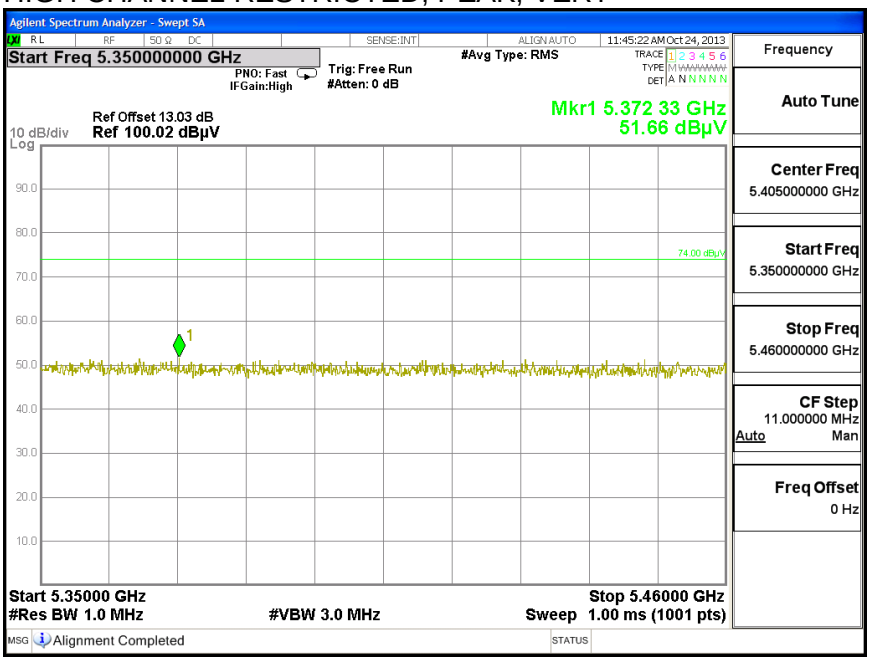
HIGH CHANNEL RESTRICTED, PEAK, HORIZ



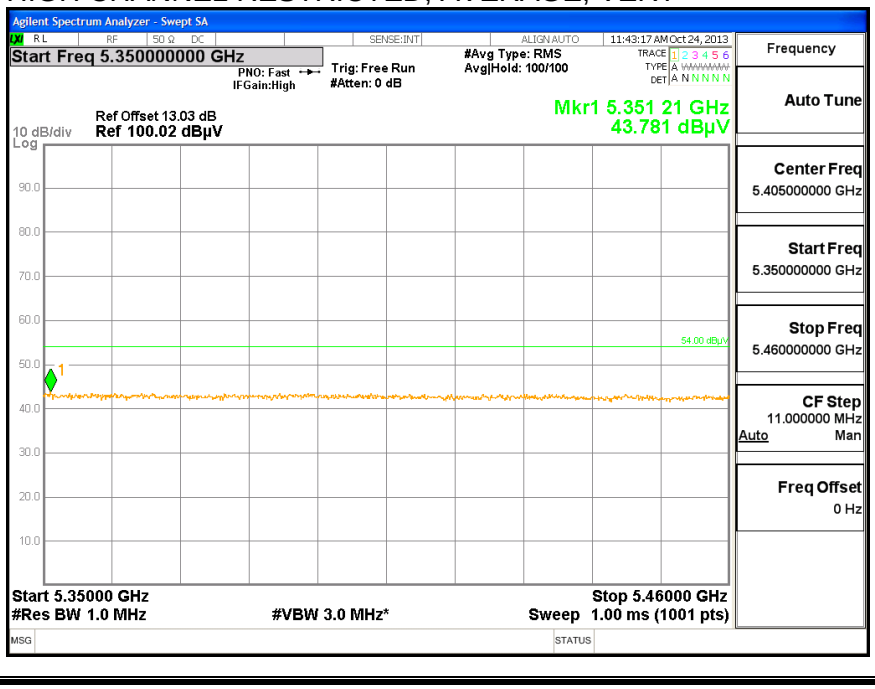
HIGH CHANNEL RESTRICTED, AVERAGE, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



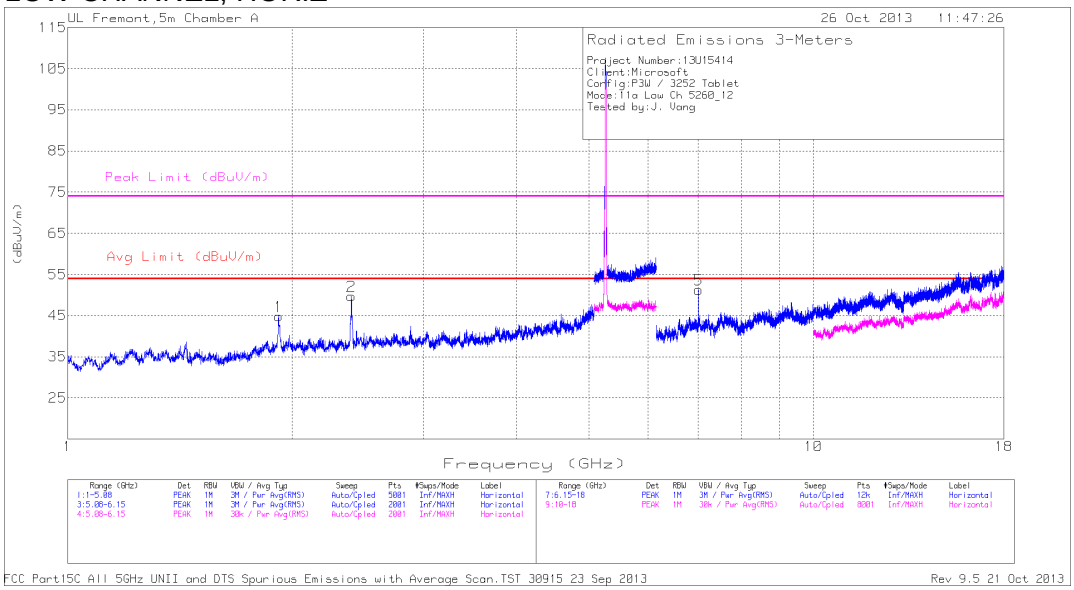
HIGH CHANNEL RESTRICTED, AVERAGE, VERT



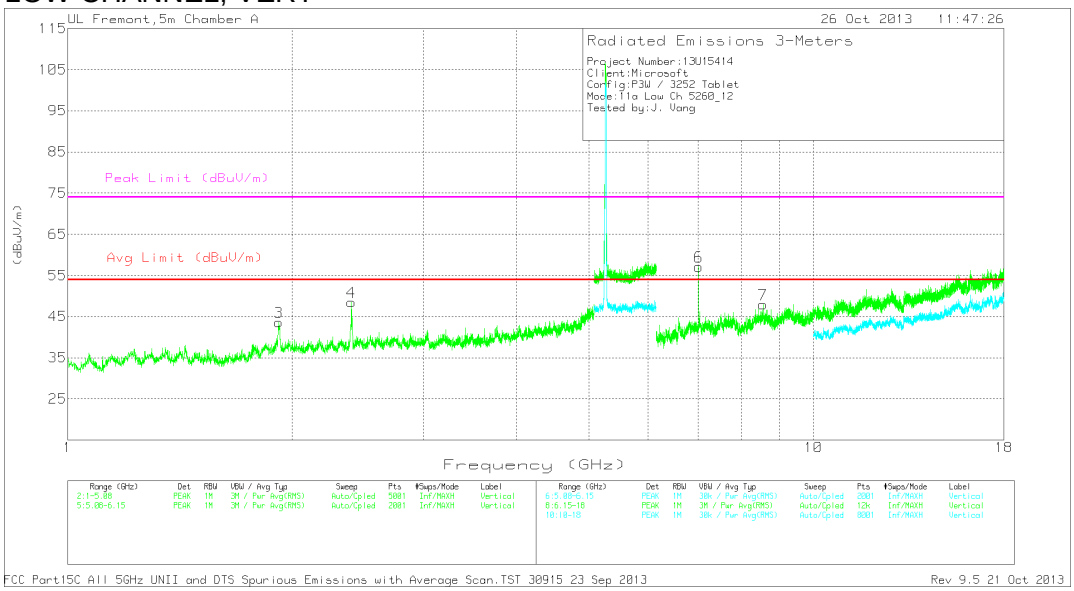
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



LOW Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.919	46.67	PK	31.7	-33.5	44.87	53.97	-9.1	74	-29.13	0-360	100	H
2	2.4	50.42	PK	32.1	-32.8	49.72	53.97	-4.25	74	-24.28	0-360	100	H
3	1.918	45.38	PK	31.7	-33.4	43.68	53.97	-10.29	74	-30.32	0-360	200	V
4	2.4	49.23	PK	32.1	-32.8	48.53	53.97	-5.44	74	-25.47	0-360	200	V
5	*7.013	41.7	PK	35.4	-25.8	51.3	-	-	68.2	-16.9	0-360	100	H
6	*7.013	47.52	PK	35.4	-25.8	57.12	-	-	68.2	-11.08	0-360	100	V
7	8.556	37.67	PK	35.7	-25.4	47.97	53.97	-6	74	-26.03	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.61	Av	32.1	-32.8	47.91	53.97	-6.06	-	-	192	122	H
2.4	45.9	Av	32.1	-32.8	45.2	53.97	-8.77	-	-	78	190	V

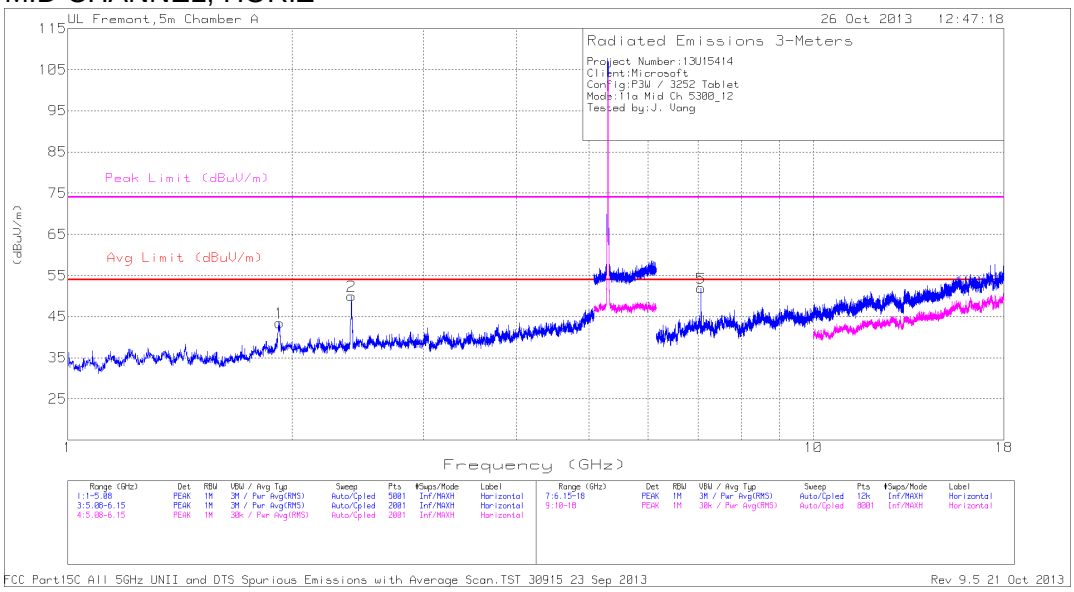
* - indicates frequency in CFR15.205/IC7.2.2 Non-Restricted Band

PK - Peak detector

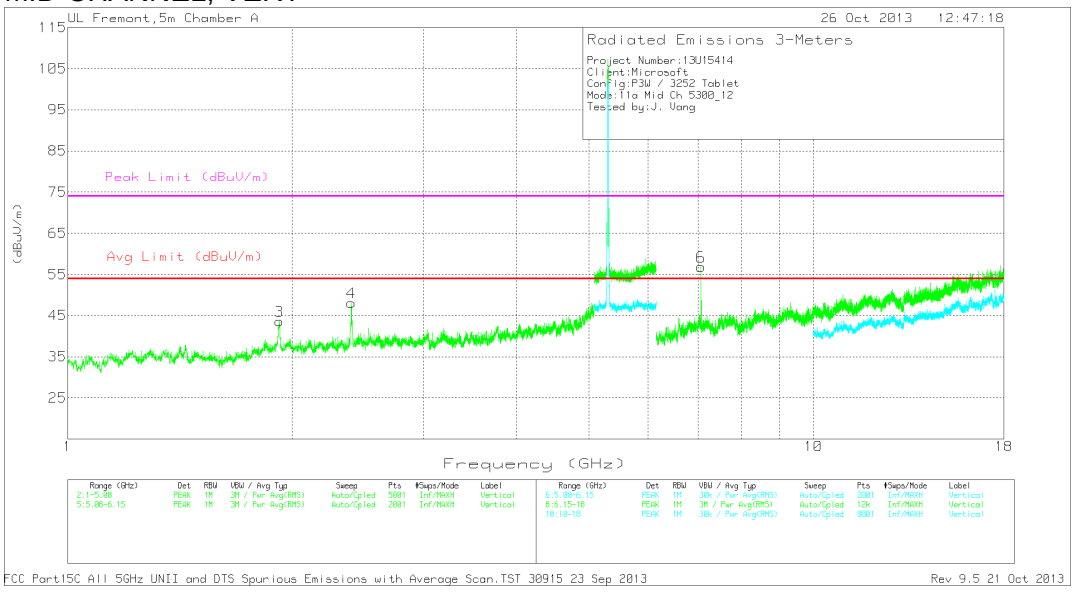
Av - average detection

MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



MID Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.923	45.26	PK	31.7	-33.5	43.46	53.97	-10.51	74	-30.54	0-360	200	H
2	2.4	50.67	PK	32.1	-32.8	49.97	53.97	-4	74	-24.03	0-360	100	H
3	1.922	45.48	PK	31.7	-33.5	43.68	53.97	-10.29	74	-30.32	0-360	100	V
4	2.4	48.83	PK	32.1	-32.8	48.13	53.97	-5.84	74	-25.87	0-360	200	V
5	*7.066	43.76	PK	35.4	-27.2	51.96	-	-	68.2	-16.24	0-360	100	H
6	*7.066	48.68	PK	35.4	-27.2	56.88	-	-	68.2	-11.32	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.6	Av	32.1	-32.8	47.9	53.97	-6.07	-	-	192	111	H
2.4	45.89	Av	32.1	-32.8	45.19	53.97	-8.78	-	-	75	115	V

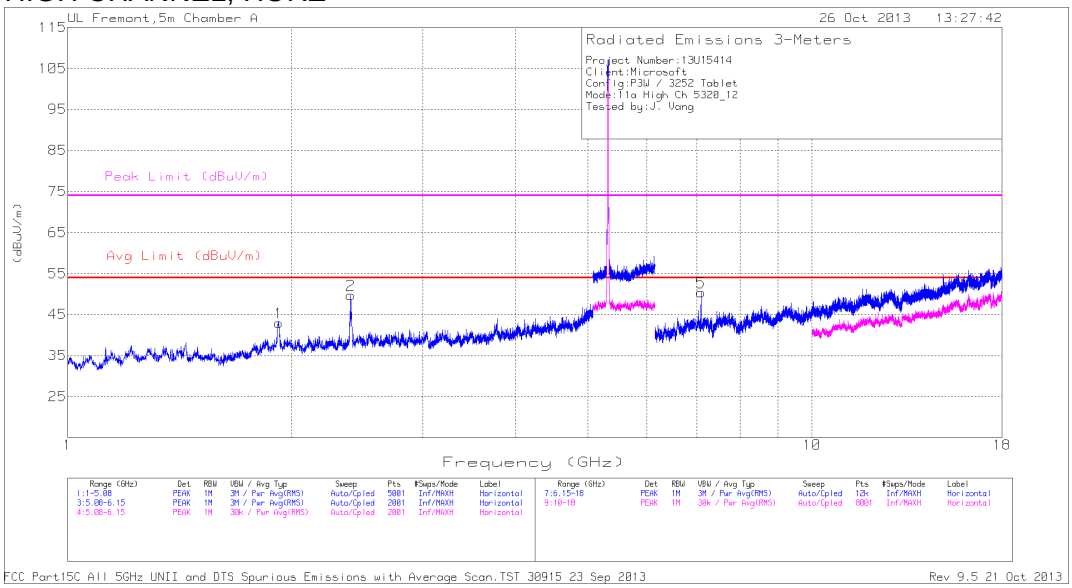
* - indicates frequency in CFR15.205/IC7.2.2 Non-Restricted Band

PK - Peak detector

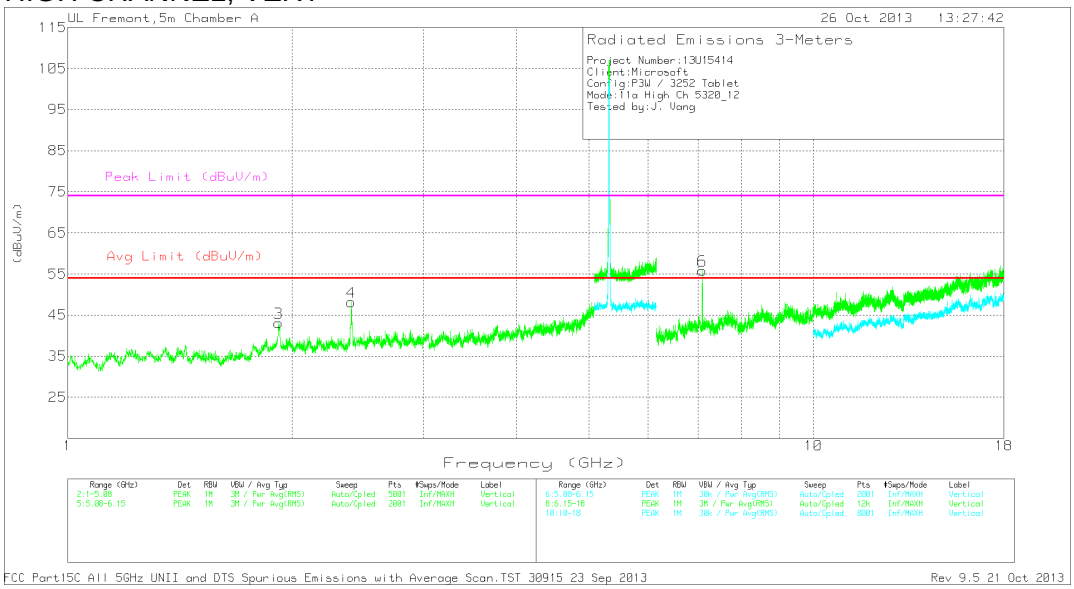
Av - average detection

HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.921	44.79	PK	31.7	-33.5	42.99	53.97	-10.98	74	-31.01	0-360	100	H
2	2.4	50.41	PK	32.1	-32.8	49.71	53.97	-4.26	74	-24.29	0-360	100	H
3	1.917	44.78	PK	31.7	-33.4	43.08	53.97	-10.89	74	-30.92	0-360	100	V
4	2.399	48.87	PK	32.1	-32.8	48.17	53.97	-5.8	74	-25.83	0-360	100	V
5	*7.093	41.93	PK	35.4	-26.9	50.43	-	-	68.2	-17.77	0-360	100	H
6	*7.093	47.31	PK	35.4	-26.9	55.81	-	-	68.2	-12.39	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.34	Av	32.1	-32.8	47.64	53.97	-6.33	-	-	192	121	H
2.4	45.32	Av	32.1	-32.8	44.62	53.97	-9.35	-	-	90	117	V

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

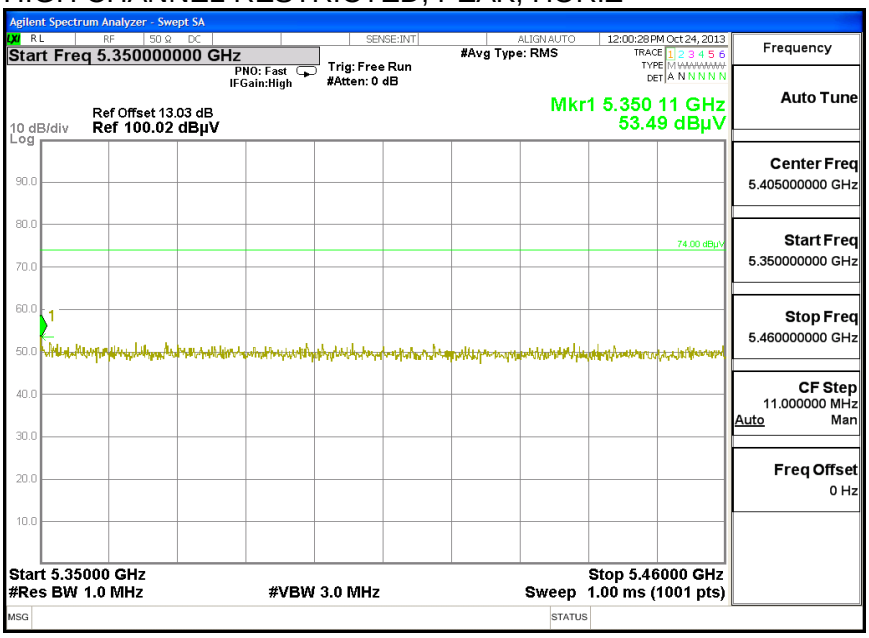
PK - Peak detector

Av - average detection

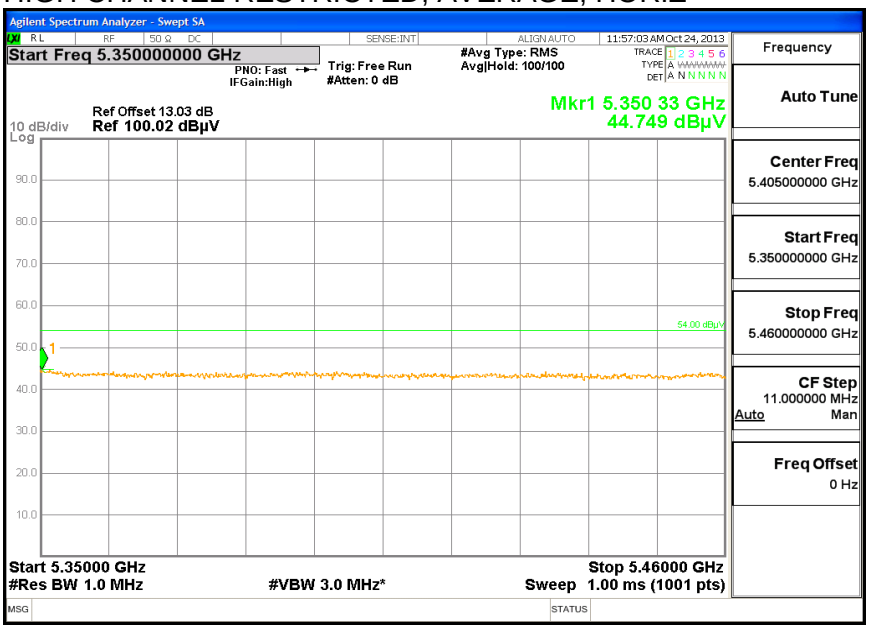
9.7. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

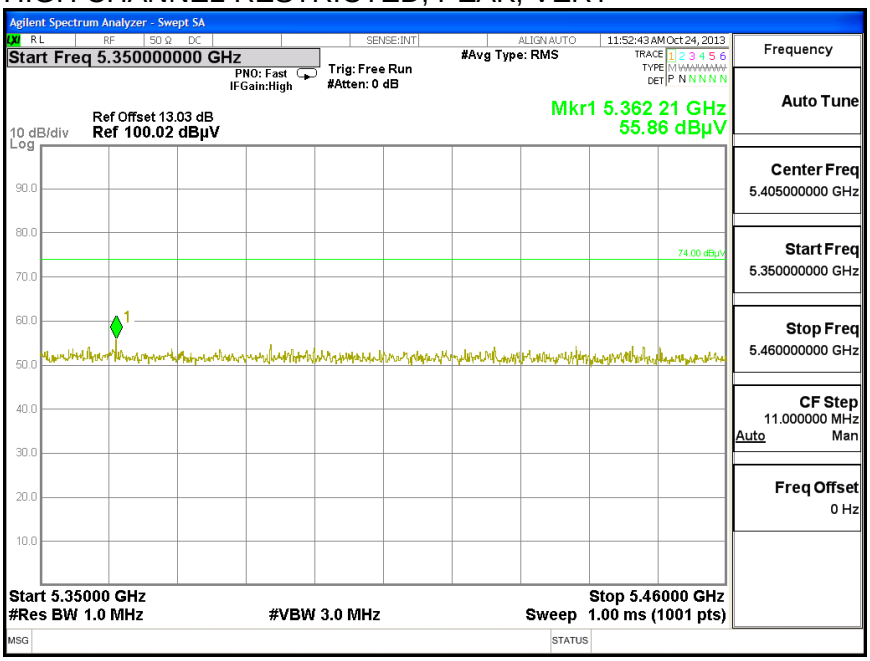
HIGH CHANNEL RESTRICTED, PEAK, HORIZ



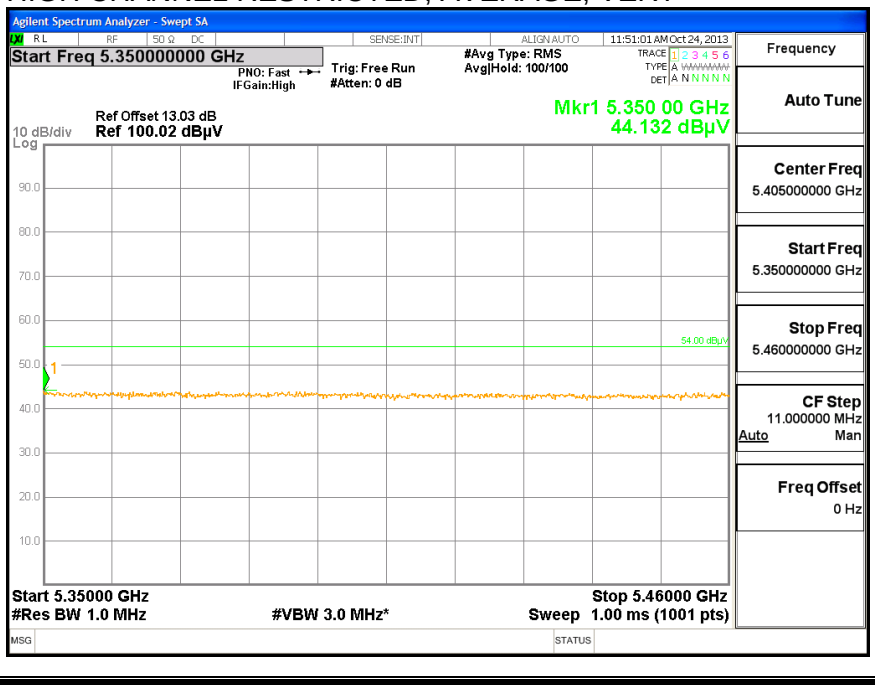
HIGH CHANNEL RESTRICTED, AVERAGE, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



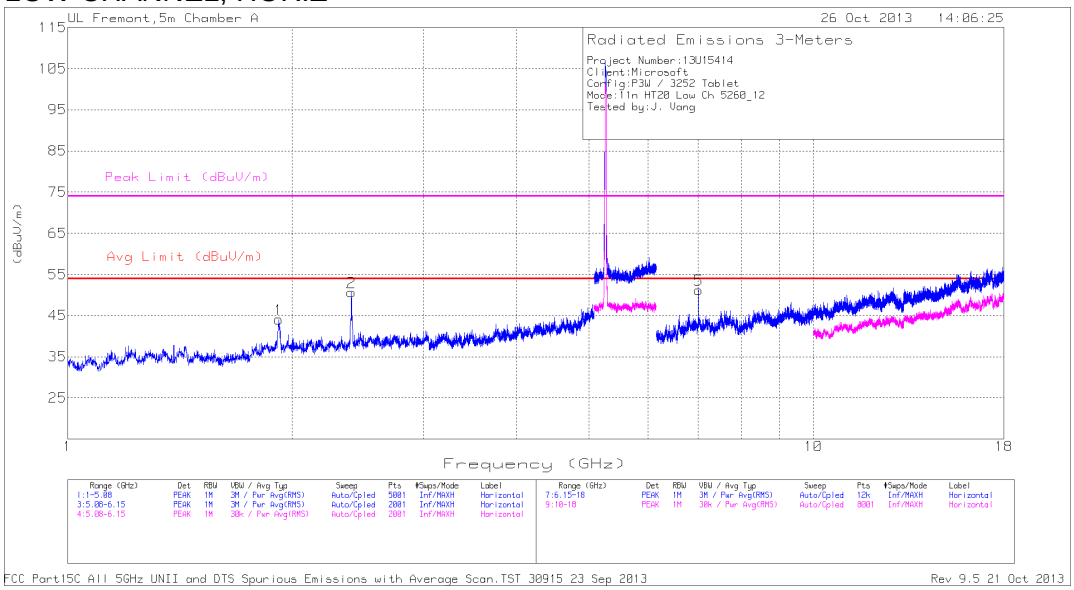
HIGH CHANNEL RESTRICTED, AVERAGE, VERT



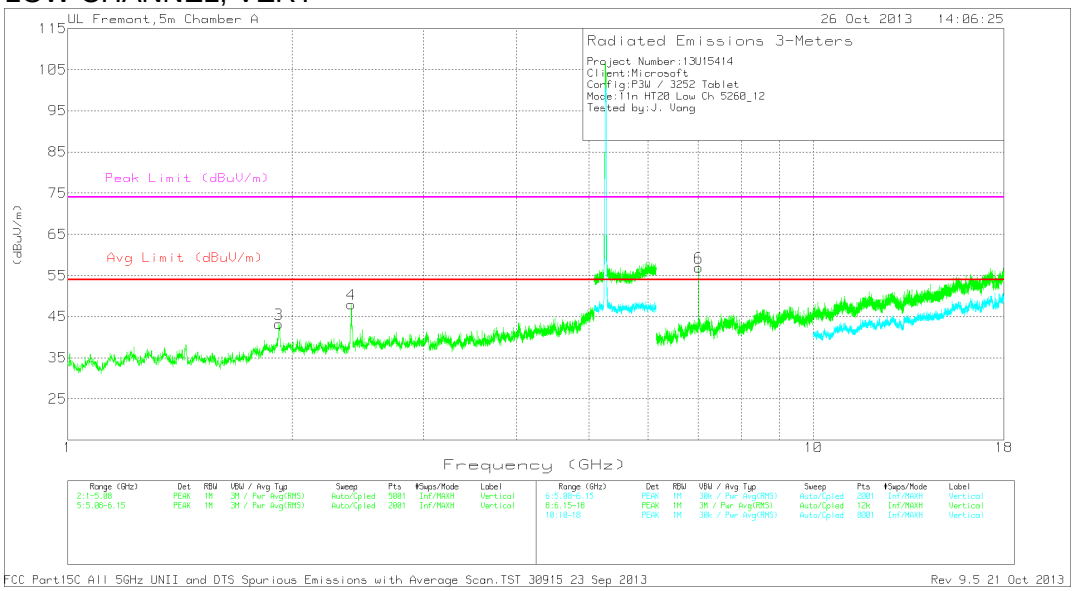
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



LOW Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.919	45.9	PK	31.7	-33.5	44.1	53.97	-9.87	74	-29.9	0-360	100	H
2	2.4	51.37	PK	32.1	-32.8	50.67	53.97	-3.3	74	-23.33	0-360	100	H
3	1.919	45.01	PK	31.7	-33.5	43.21	53.97	-10.76	74	-30.79	0-360	100	V
4	2.399	48.7	PK	32.1	-32.8	48	53.97	-5.97	74	-26	0-360	100	V
5	*7.013	41.62	PK	35.4	-25.8	51.22	-	-	68.2	-16.98	0-360	100	H
6	*7.013	47.31	PK	35.4	-25.8	56.91	-	-	68.2	-11.29	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	47.81	Av	32.1	-32.8	47.11	53.97	-6.86	-	-	0	241	H

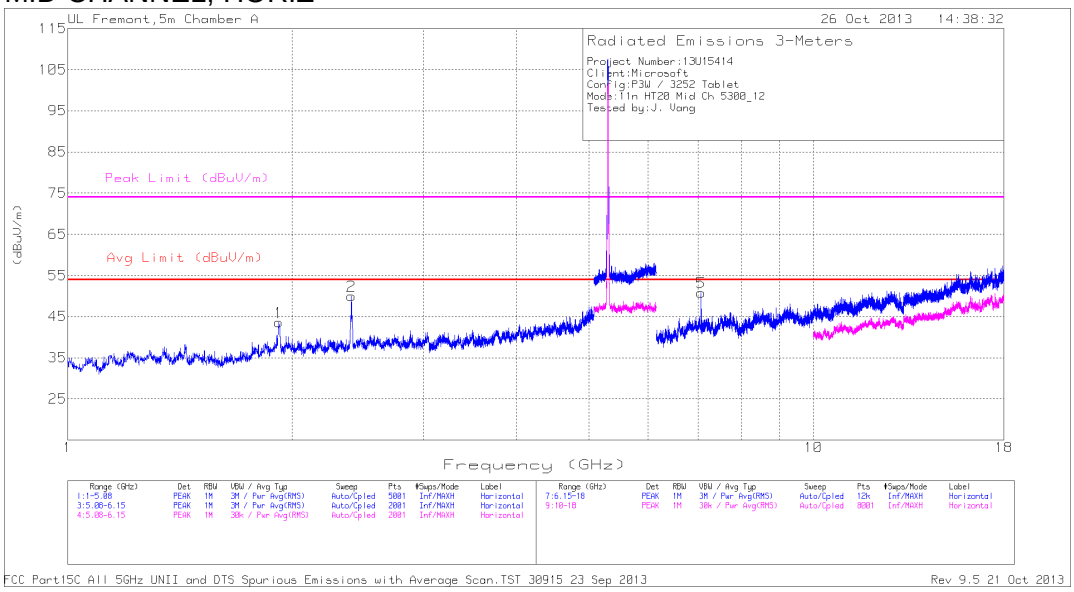
* - indicates frequency in CFR15.205/IC7.2.2 Non-Restricted Band

PK - Peak detector

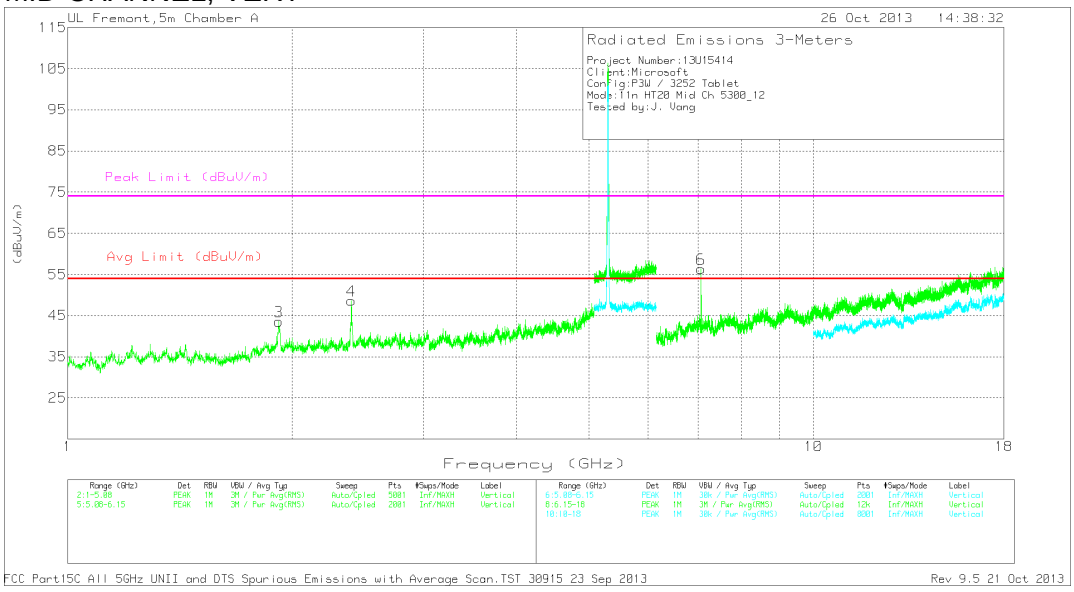
Av - average detection

MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



MID Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.918	45.35	PK	31.7	-33.4	43.65	53.97	-10.32	74	-30.35	0-360	200	H
2	2.4	50.69	PK	32.1	-32.8	49.99	53.97	-3.98	74	-24.01	0-360	100	H
3	1.918	45.3	PK	31.7	-33.4	43.6	53.97	-10.37	74	-30.4	0-360	100	V
4	2.4	49.32	PK	32.1	-32.8	48.62	53.97	-5.35	74	-25.38	0-360	200	V
5	*7.066	42.64	PK	35.4	-27.2	50.84	-	-	68.2	-17.36	0-360	100	H
6	*7.066	48.14	PK	35.4	-27.2	56.34	-	-	68.2	-11.8	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.19	Av	32.1	-32.8	47.49	53.97	-6.48	-	-	192	111	H
2.4	44.95	Av	32.1	-32.8	44.25	53.97	-9.72	-	-	77	107	V

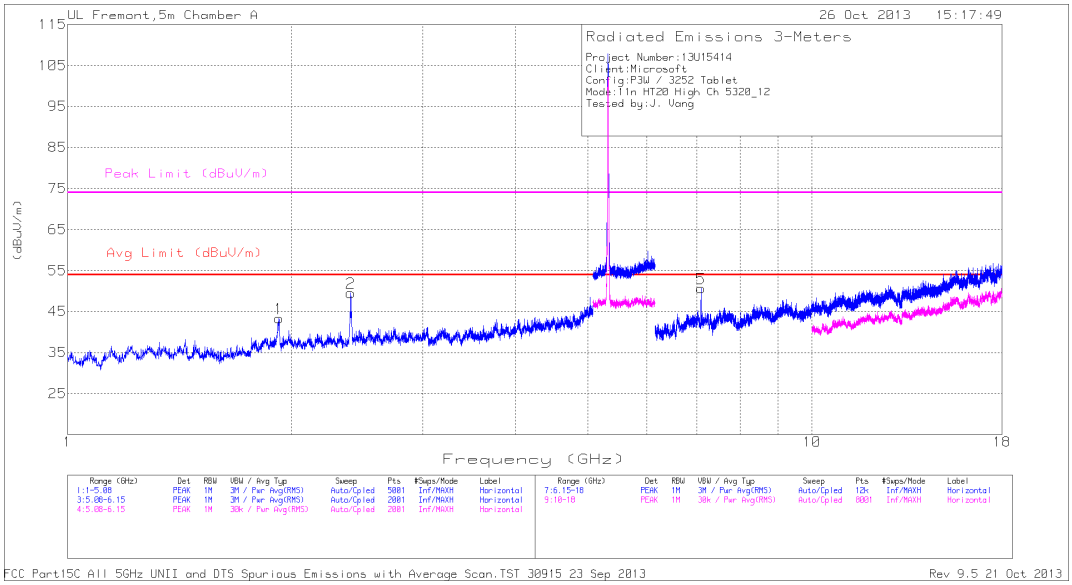
* - indicates frequency in CFR15.205/IC7.2.2 Non-Restricted Band

PK - Peak detector

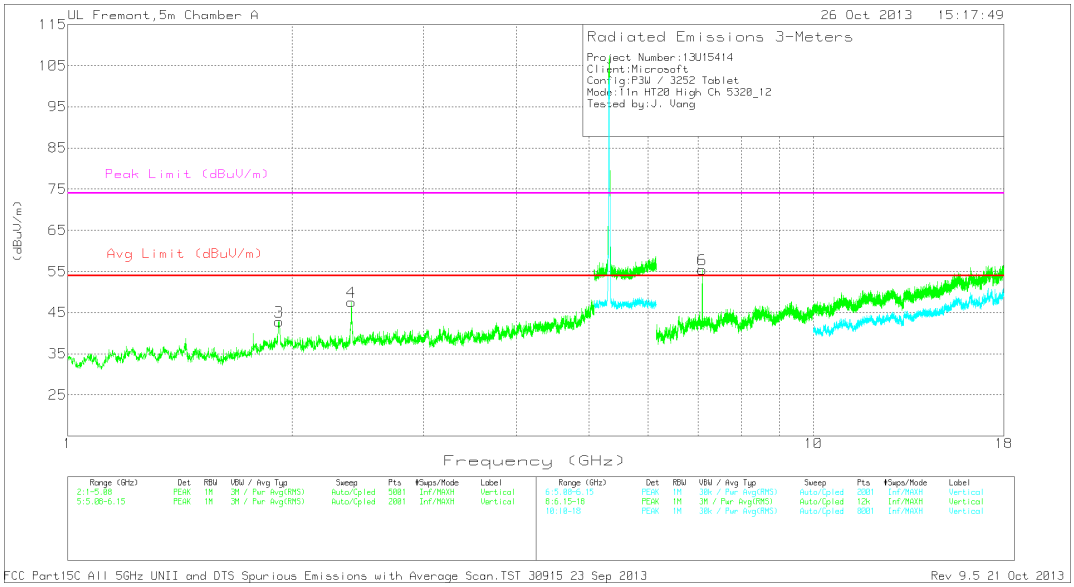
Av - average detection

HIGH CHANNEL

HIGH CHANNEL, HORIZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.923	45.18	PK	31.7	-33.5	43.38	53.97	-10.59	74	-30.62	0-360	200	H
2	2.4	50.23	PK	32.1	-32.8	49.53	53.97	-4.44	74	-24.47	0-360	100	H
3	1.92	44.64	PK	31.7	-33.5	42.84	53.97	-11.13	74	-31.16	0-360	100	V
4	2.4	48.27	PK	32.1	-32.8	47.57	53.97	-6.4	74	-26.43	0-360	200	V
5	*7.093	42.16	PK	35.4	-26.9	50.66	-	-	68.2	-17.54	0-360	100	H
6	*7.093	46.96	PK	35.4	-26.9	55.46	-	-	68.2	-12.74	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.24	Av	32.1	-32.8	47.54	53.97	-6.43	-	-	194	111	H

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

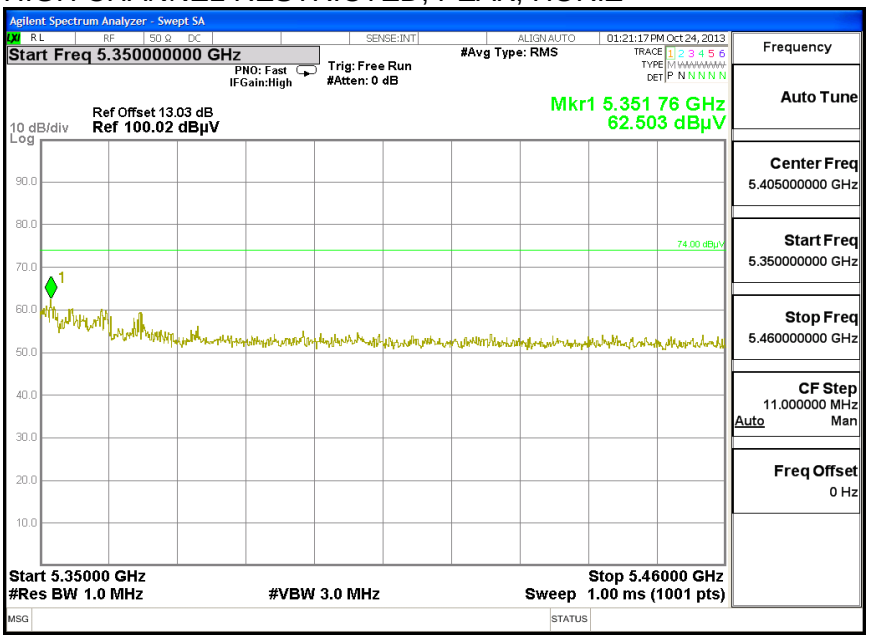
PK - Peak detector

Av - average detection

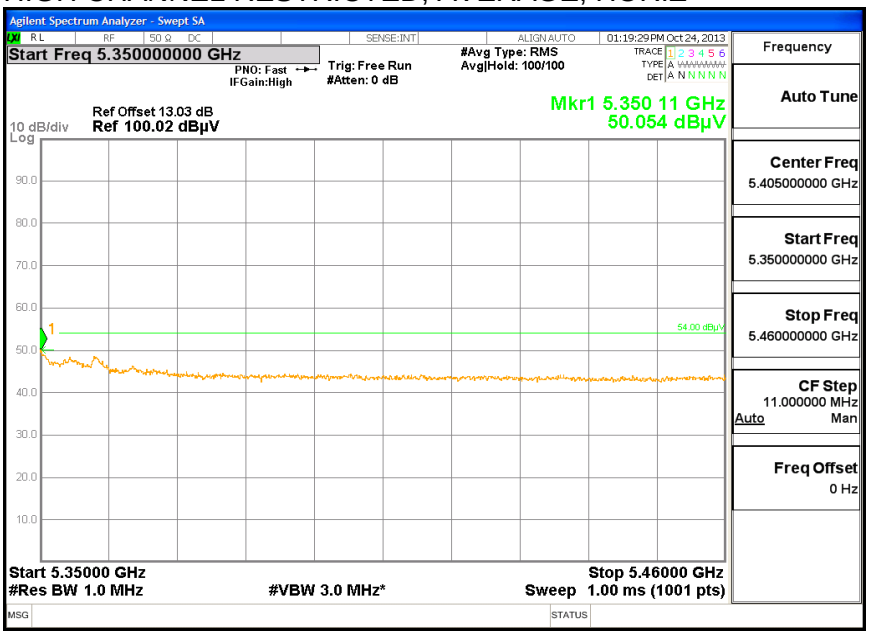
9.8. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.3 GHz BAND

RESTRICTED BANDEDGE (HIGH CHANNEL)

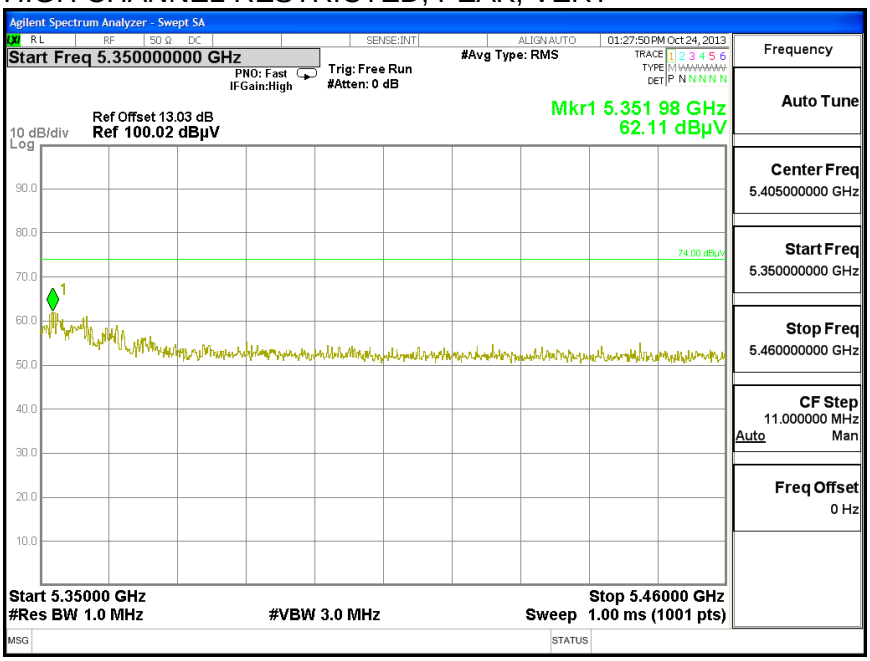
HIGH CHANNEL RESTRICTED, PEAK, HORIZ



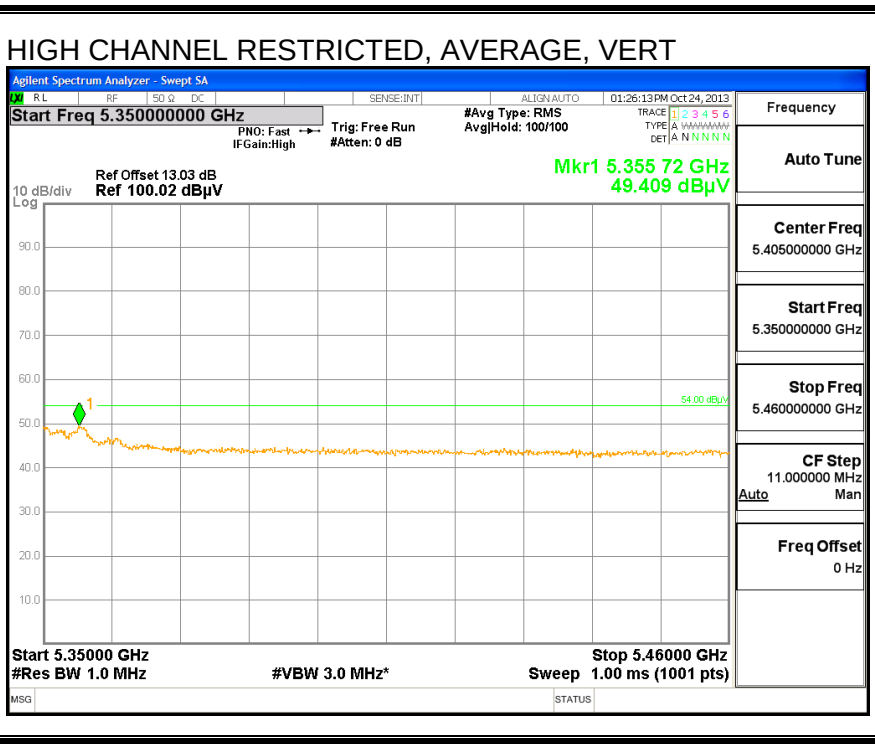
HIGH CHANNEL RESTRICTED, AVERAGE, HORIZ



HIGH CHANNEL RESTRICTED, PEAK, VERT



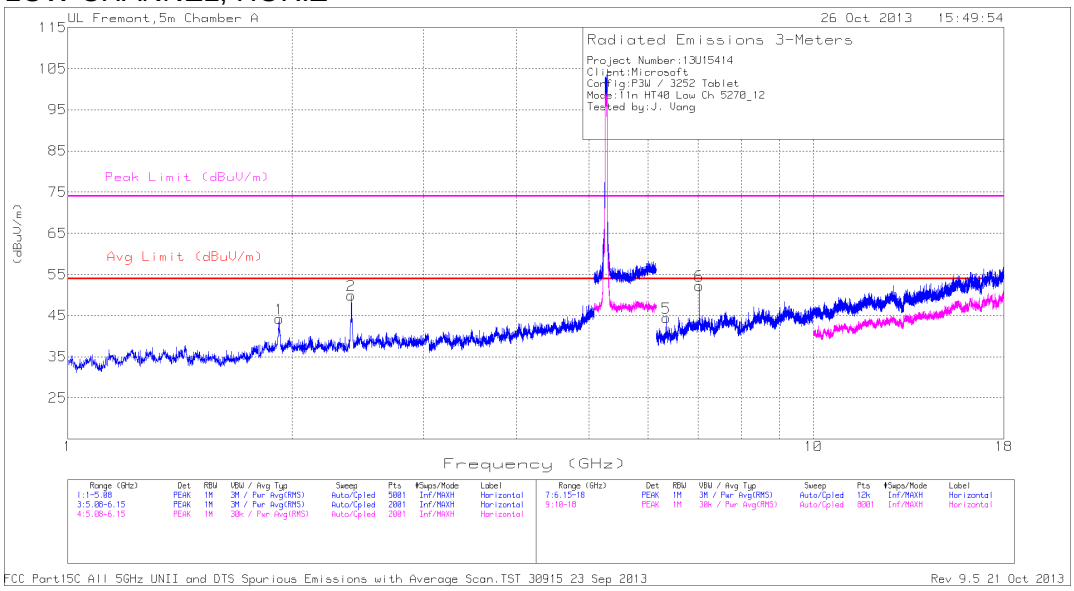
HIGH CHANNEL RESTRICTED, AVERAGE, VERT



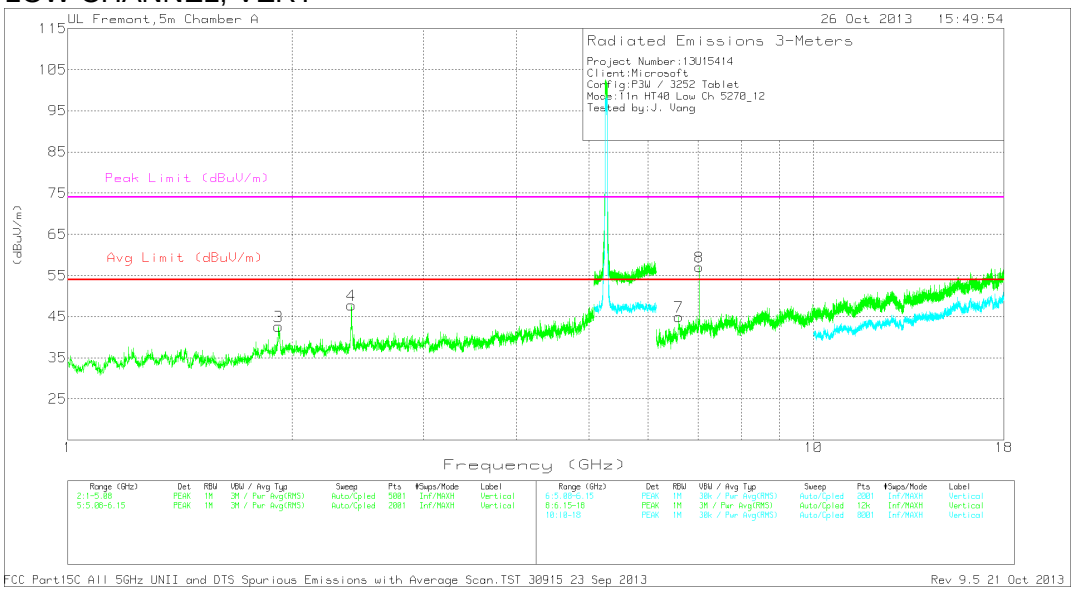
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



LOW Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.921	46.04	PK	31.7	-33.5	44.24	53.97	-9.73	74	-29.76	0-360	100	H
2	2.399	50.62	PK	32.1	-32.8	49.92	53.97	-4.05	74	-24.08	0-360	100	H
3	1.917	44.32	PK	31.7	-33.4	42.62	53.97	-11.35	74	-31.38	0-360	200	V
4	2.4	48.48	PK	32.1	-32.8	47.78	53.97	-6.19	74	-26.22	0-360	200	V
5	6.35	35.52	PK	35.5	-26.6	44.42	53.97	-9.55	74	-29.58	0-360	100	H
6	*7.027	42.24	PK	35.4	-25.4	52.24	-	-	68.2	-15.96	0-360	100	H
7	6.597	34.25	PK	35.5	-24.8	44.95	53.97	-9.02	74	-29.05	0-360	100	V
8	*7.027	47.1	PK	35.4	-25.4	57.1	-	-	68.2	-11.1	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	47.52	Av	32.1	-32.8	46.82	53.97	-7.15	-	-	192	125	H

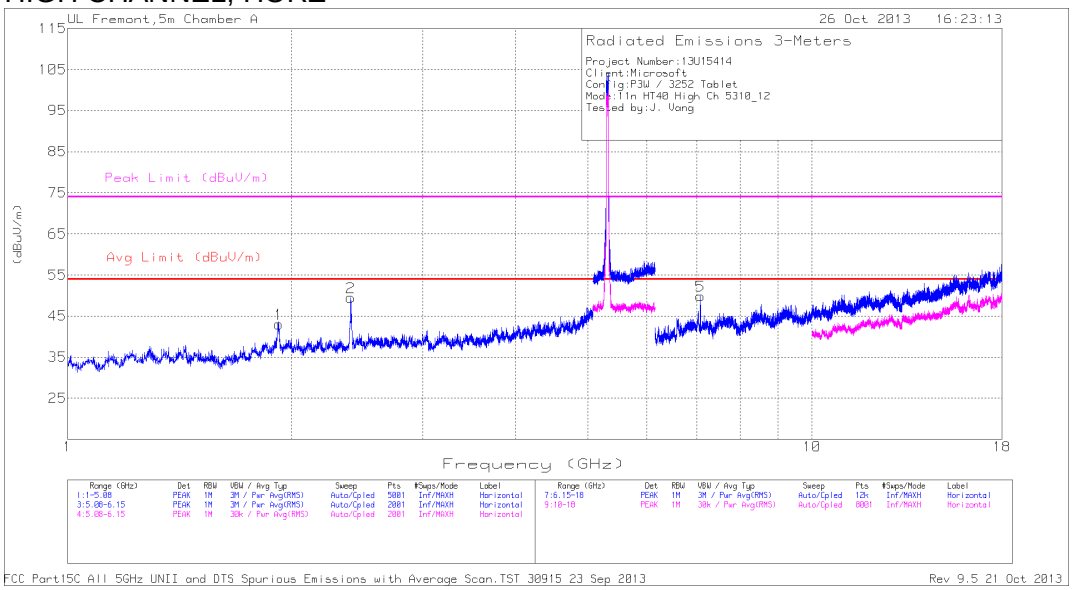
* - indicates frequency in CFR15.205/IC7.2.2 Non-Restricted Band

PK - Peak detector

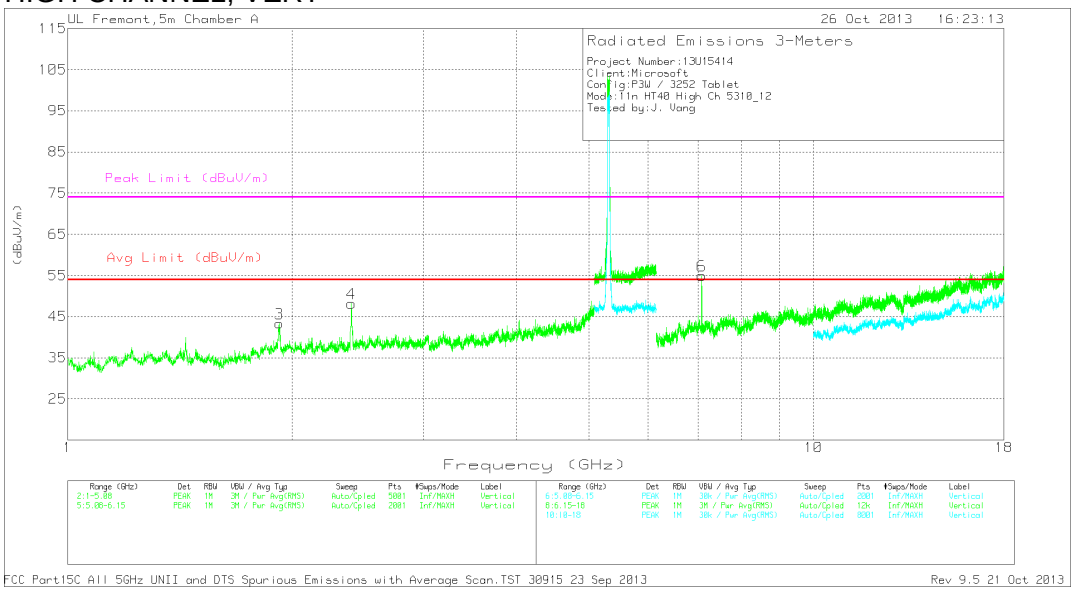
Av - average detection

HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.921	44.83	PK	31.7	-33.5	43.03	53.97	-10.94	74	-30.97	0-360	200	H
2	2.4	50.22	PK	32.1	-32.8	49.52	53.97	-4.45	74	-24.48	0-360	100	H
3	1.922	45.16	PK	31.7	-33.5	43.36	53.97	-10.61	74	-30.64	0-360	100	V
4	2.4	48.89	PK	32.1	-32.8	48.19	53.97	-5.78	74	-25.81	0-360	200	V
5	*7.08	41.71	PK	35.4	-27.2	49.91	-	-	68.2	-18.29	0-360	100	H
6	*7.08	46.78	PK	35.4	-27.2	54.98	-	-	68.2	-13.22	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.5	Av	32.1	-32.8	47.8	53.97	-6.17	-	-	195	110	H
2.4	42.22	Av	32.1	-32.8	41.52	53.97	-12.45	-	-	0	157	V

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

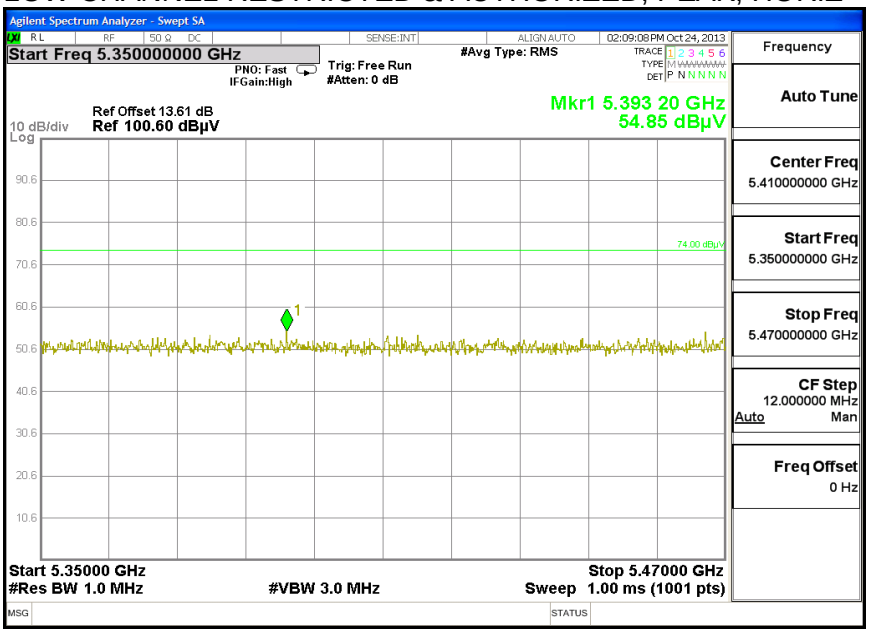
PK - Peak detector

Av - average detection

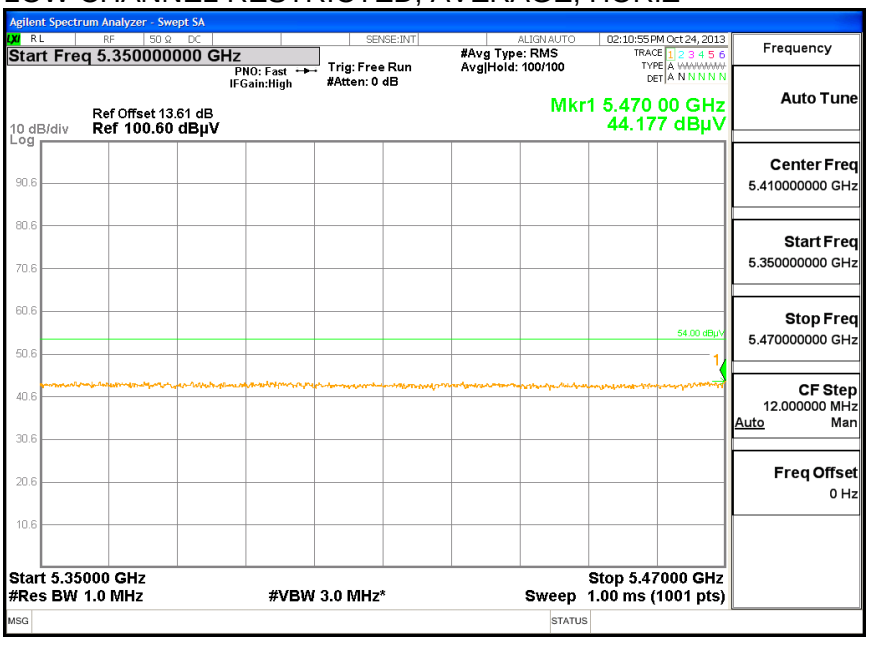
9.9. TX ABOVE 1 GHz 802.11a MODE IN THE 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)

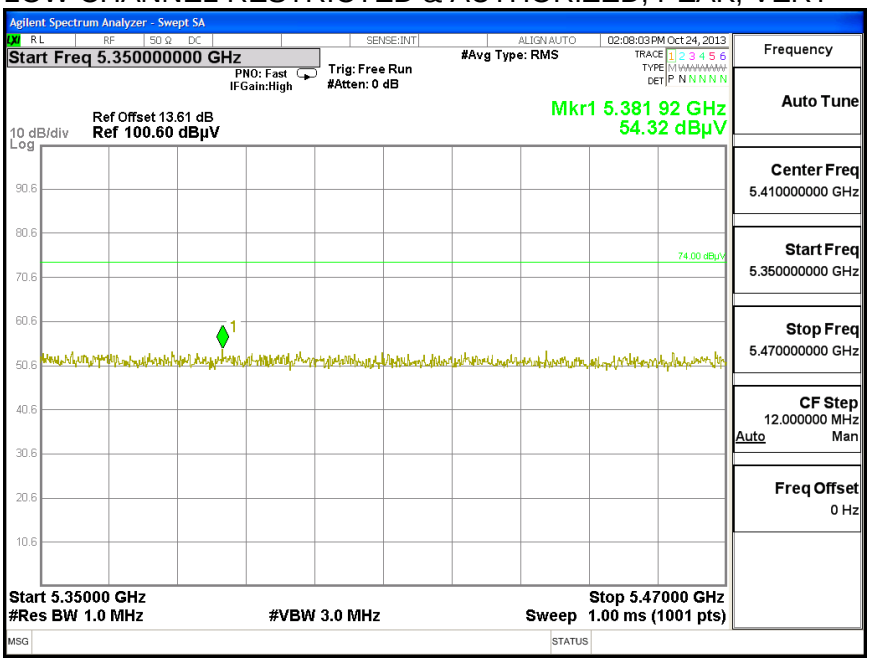
LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK, HORIZ



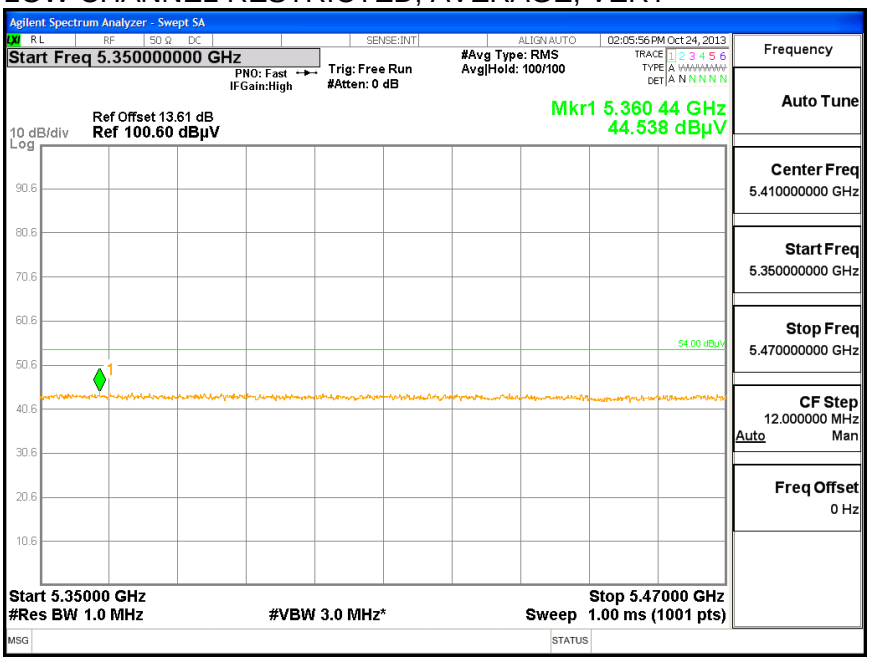
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK, VERT

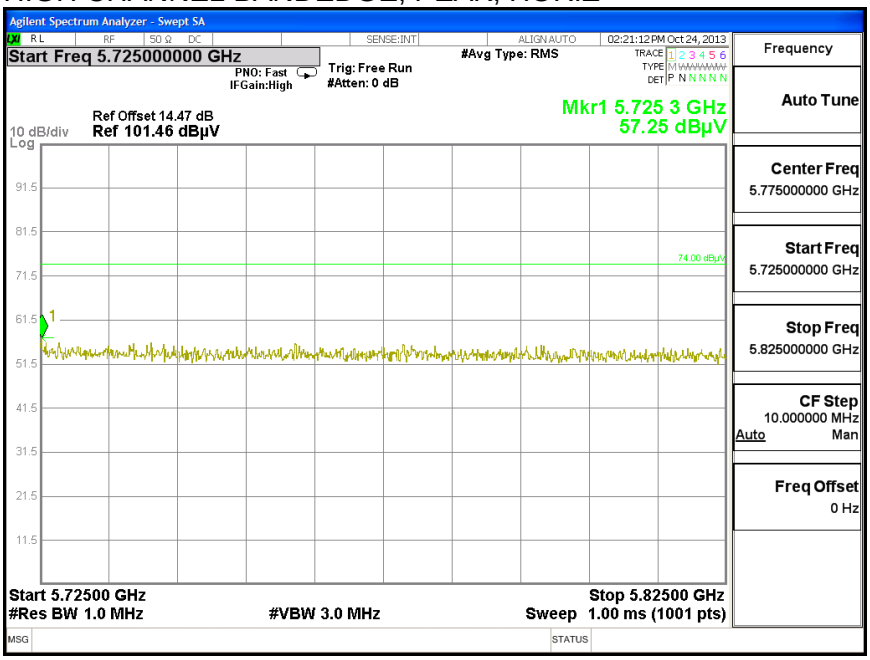


LOW CHANNEL RESTRICTED, AVERAGE, VERT

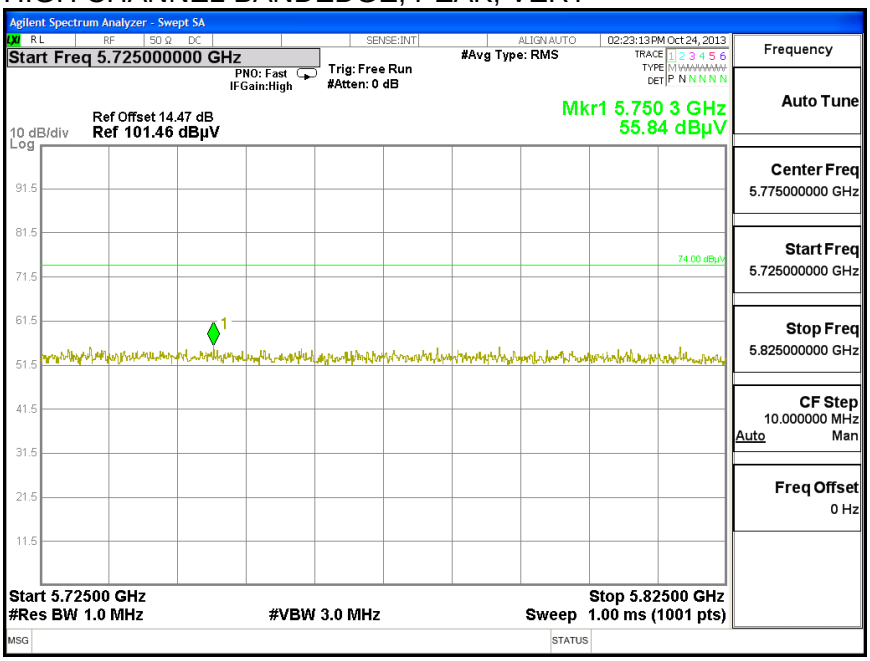


AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ



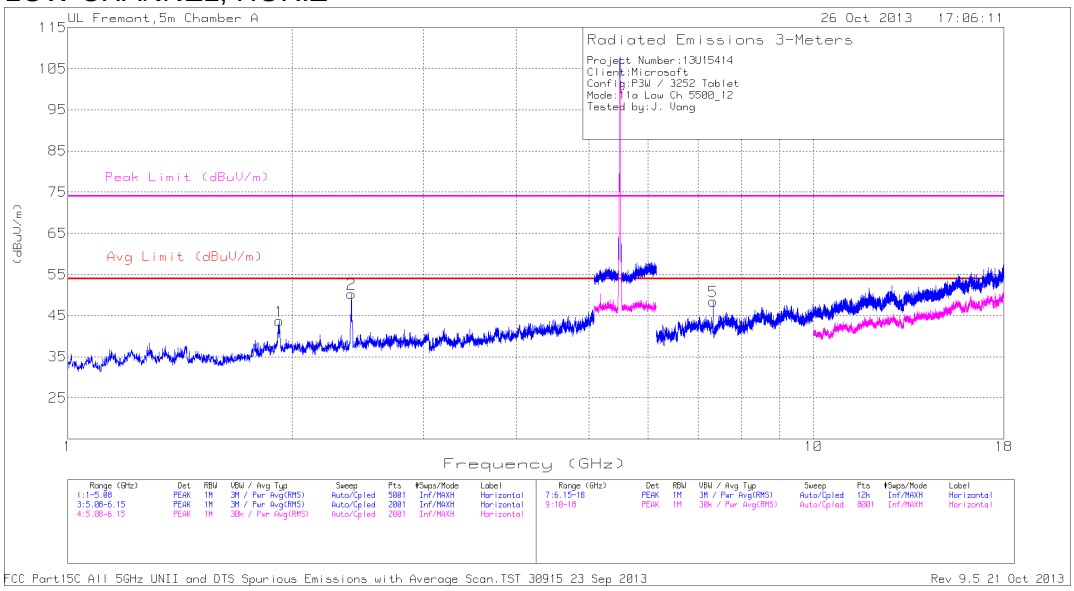
HIGH CHANNEL BANDEDGE, PEAK, VERT



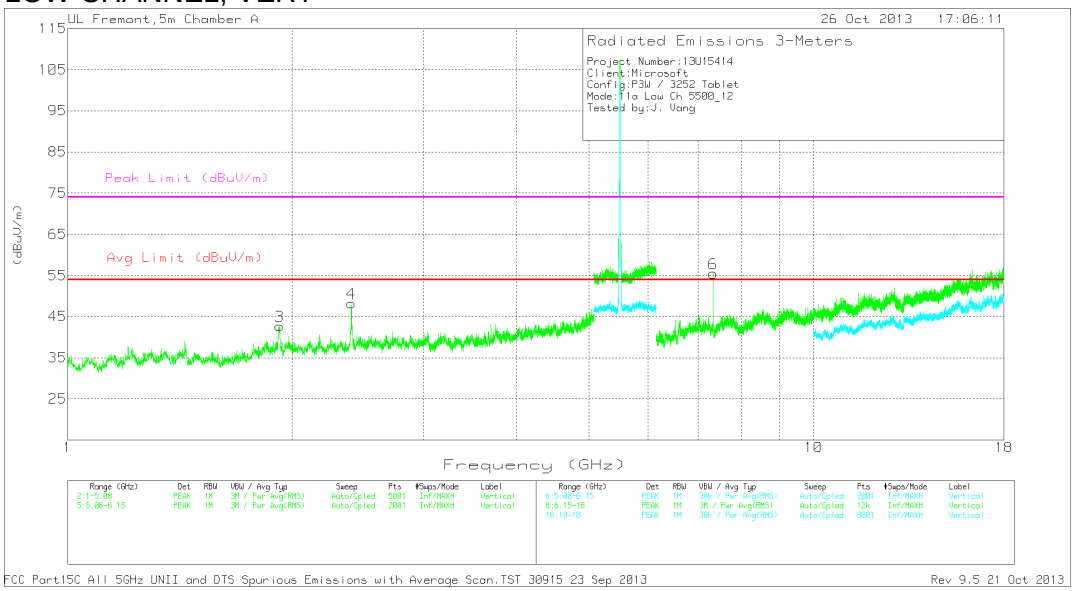
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



LOW Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.921	45.5	PK	31.7	-33.5	43.7	53.97	-10.27	74	-30.3	0-360	100	H
2	2.4	50.98	PK	32.1	-32.8	50.28	53.97	-3.69	74	-23.72	0-360	100	H
3	1.923	44.5	PK	31.7	-33.5	42.7	53.97	-11.27	74	-31.3	0-360	100	V
4	2.4	48.94	PK	32.1	-32.8	48.24	53.97	-5.73	74	-25.76	0-360	200	V
5	7.333	39.87	PK	35.3	-26.7	48.47	53.97	-5.5	74	-25.53	0-360	100	H
6	7.333	46.89	PK	35.3	-26.7	55.49	53.97	1.52	74	-18.51	0-360	100	V

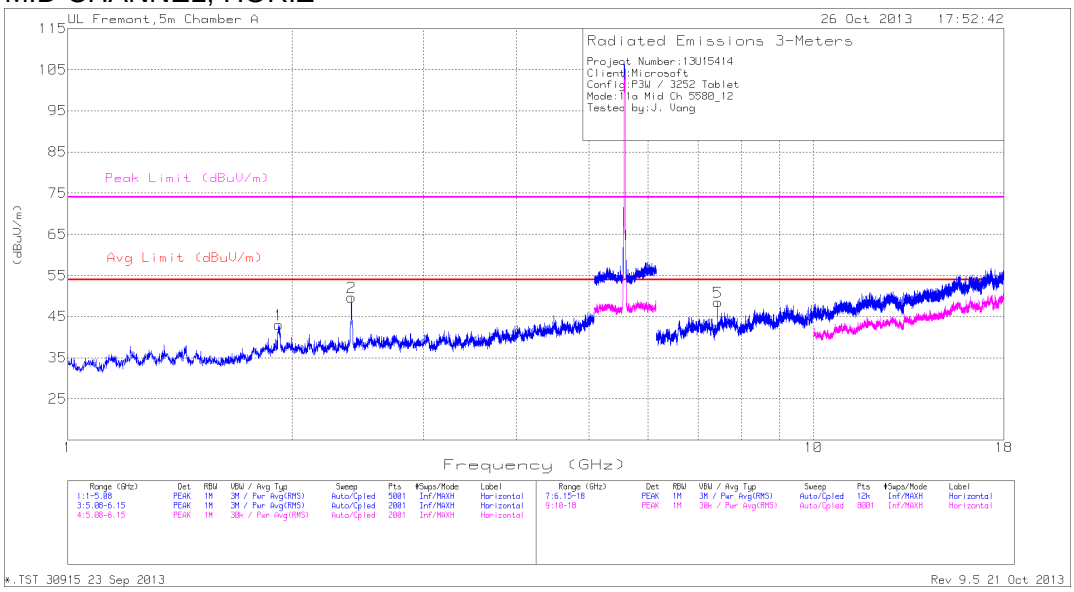
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.06	Av	32.1	-32.8	47.36	53.97	-6.61	-	-	191	122	H
2.398	30.8	Av	32.1	-32.8	30.1	53.97	-23.87	-	-	0	195	V
7.333	31.2	Av	35.3	-26.7	39.8	53.97	-14.17	-	-	254	281	H
7.333	28.17	Av	35.3	-26.7	36.77	53.97	-17.2	-	-	0	346	V

PK - Peak detector

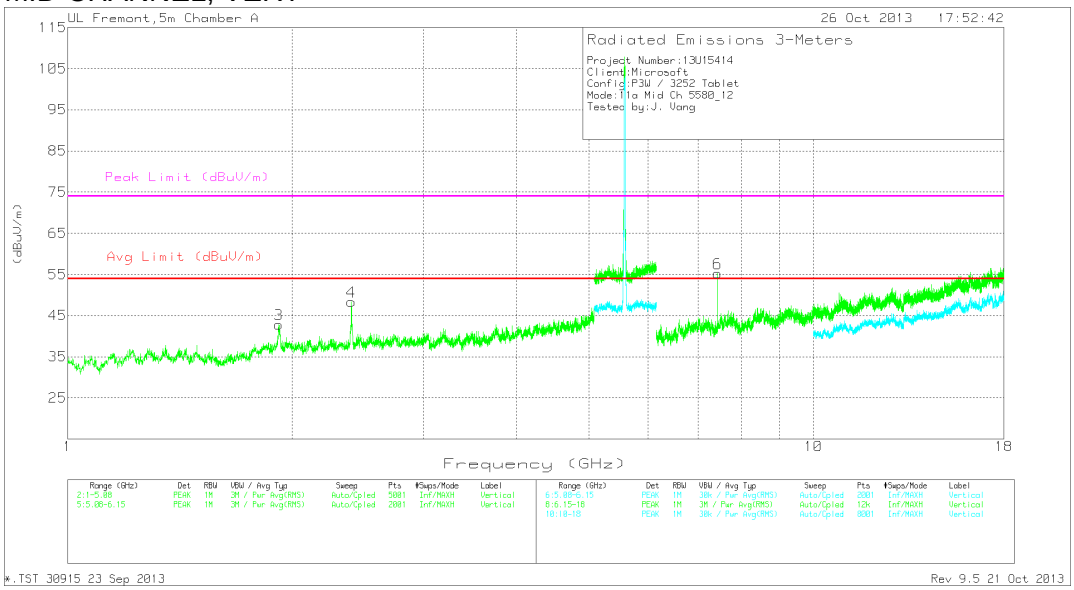
Av - average detection

MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



MID Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.919	44.84	PK	31.7	-33.5	43.04	53.97	-10.93	74	-30.96	0-360	100	H
2	2.4	50.39	PK	32.1	-32.8	49.69	53.97	-4.28	74	-24.31	0-360	100	H
3	1.919	44.67	PK	31.7	-33.5	42.87	53.97	-11.1	74	-31.13	0-360	100	V
4	2.4	49.06	PK	32.1	-32.8	48.36	53.97	-5.61	74	-25.64	0-360	200	V
5	7.441	39.79	PK	35.4	-26.7	48.49	53.97	-5.48	74	-25.51	0-360	100	H
6	7.44	46.57	PK	35.4	-26.7	55.27	53.97	1.3	74	-18.73	0-360	100	V

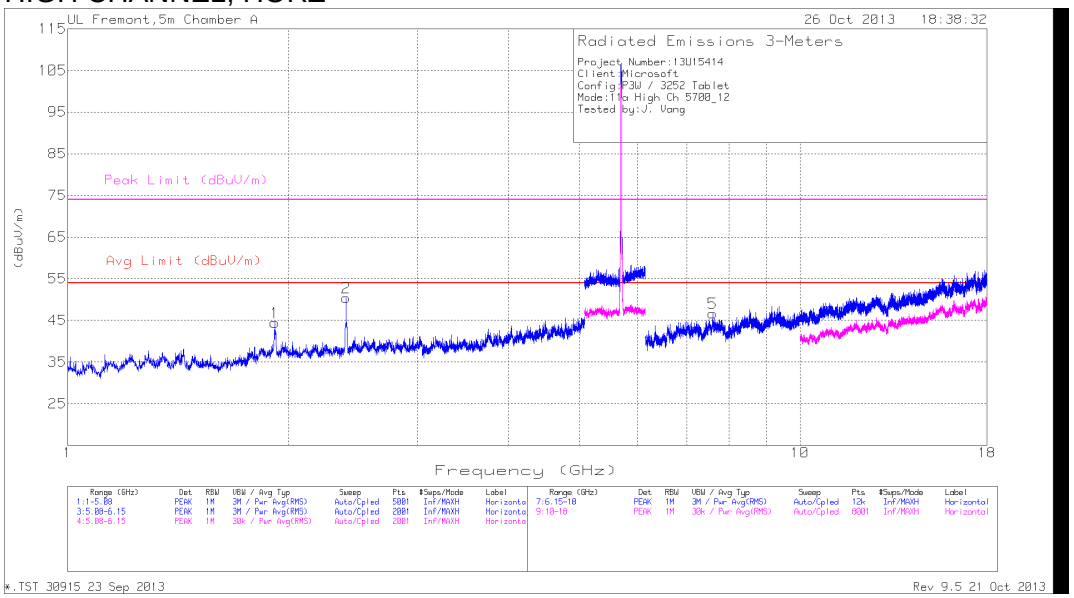
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	48.49	Av	32.1	-32.8	47.79	53.97	-6.18	-	-	195	110	H
2.4	45	Av	32.1	-32.8	44.3	53.97	-9.67	-	-	74	109	V
7.44	29.36	Av	35.4	-26.7	38.06	53.97	-15.91	-	-	89	208	H
7.44	39.57	Av	35.4	-26.7	48.27	53.97	-5.7	-	-	307	164	V

PK - Peak detector

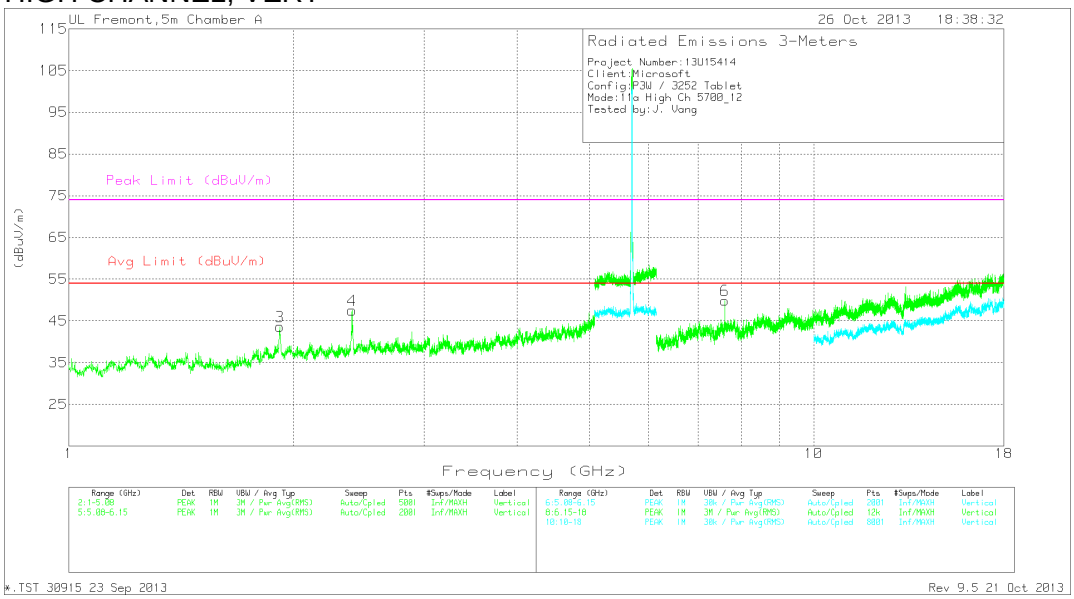
Av - average detection

HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.918	46.16	PK	31.7	-33.4	44.46	53.97	-9.51	74	-29.54	0-360	200	H
2	2.4	51.13	PK	32.1	-32.8	50.43	53.97	-3.54	74	-23.57	0-360	100	H
3	1.92	45.45	PK	31.7	-33.5	43.65	53.97	-10.32	74	-30.35	0-360	100	V
4	2.4	48.23	PK	32.1	-32.8	47.53	53.97	-6.44	74	-26.47	0-360	200	V
5	7.601	36.98	PK	35.5	-25.8	46.68	53.97	-7.29	74	-27.32	0-360	100	H
6	7.6	40.2	PK	35.5	-25.8	49.9	53.97	-4.07	74	-24.1	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	46.85	Av	32.1	-32.8	46.15	53.97	-7.82	-	-	194	127	H
7.6	32.02	Av	35.5	-25.8	41.72	53.97	-12.25	-	-	66	143	V

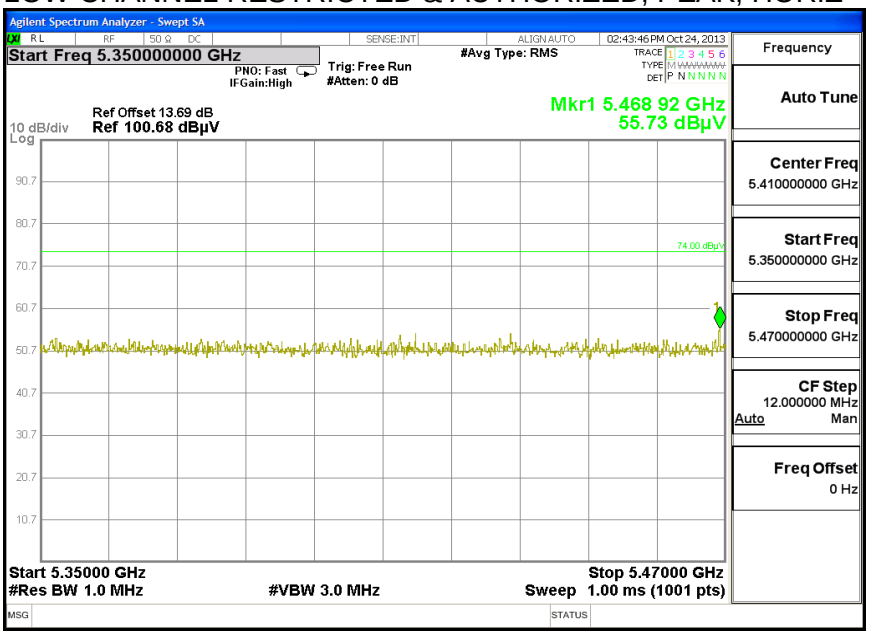
PK - Peak detector

Av - average detection

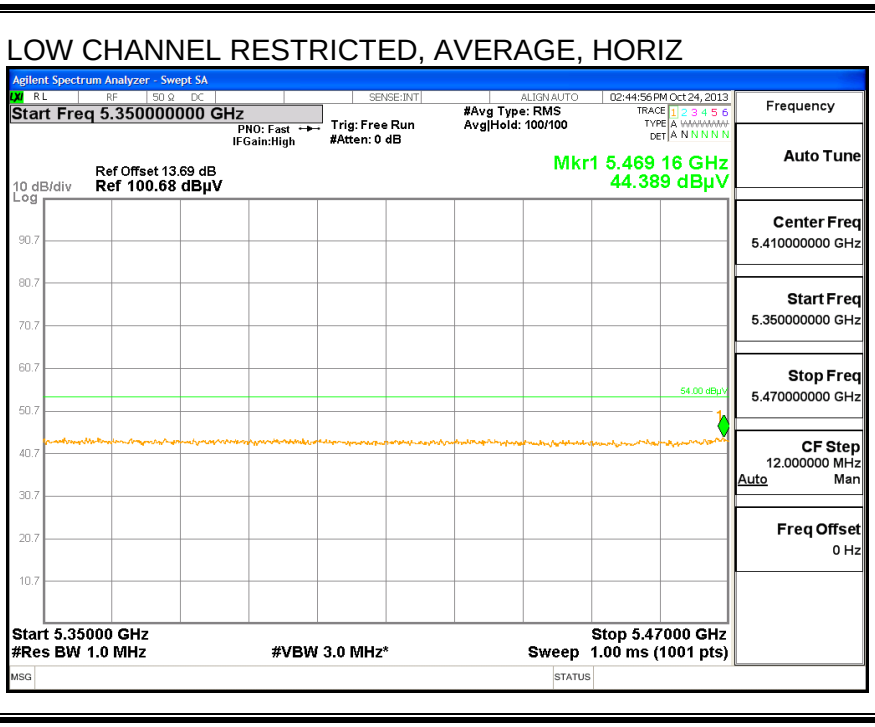
9.10. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)

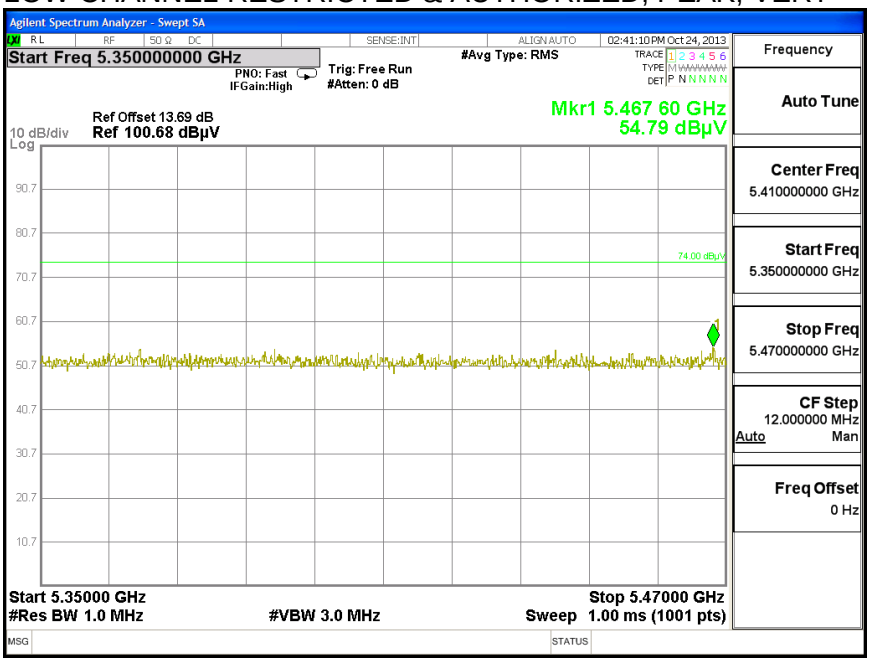
LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK, HORIZ



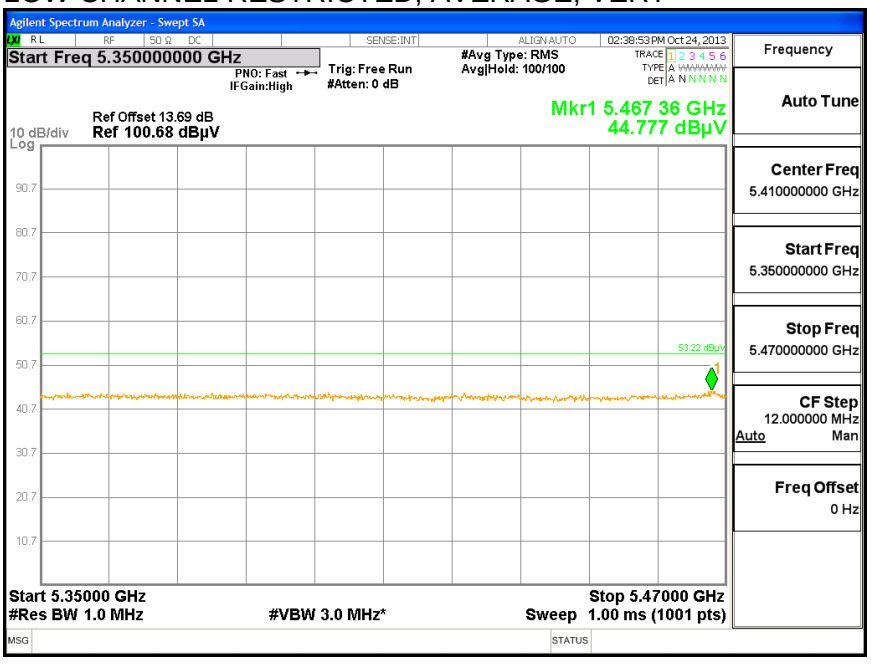
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK, VERT

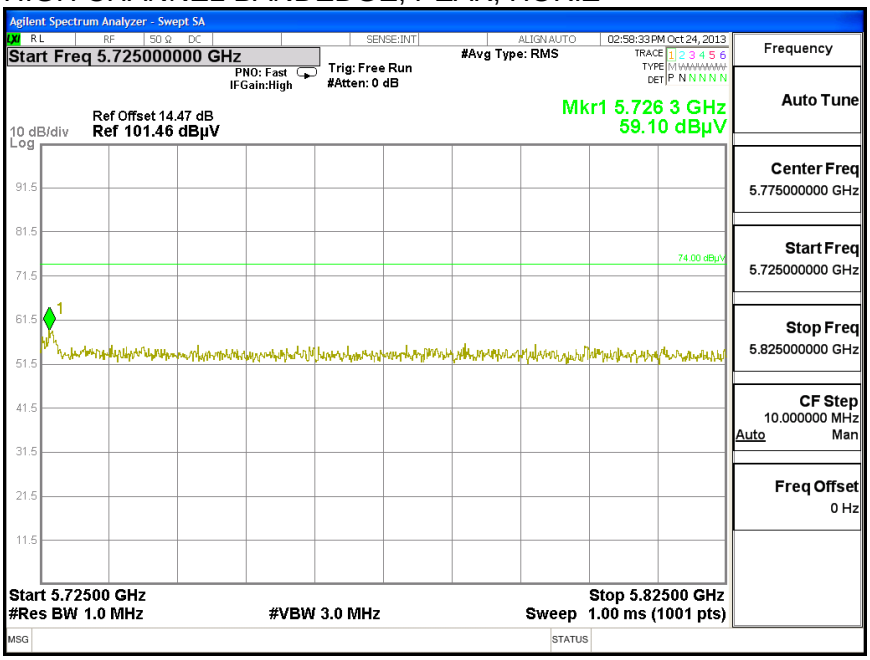


LOW CHANNEL RESTRICTED, AVERAGE, VERT

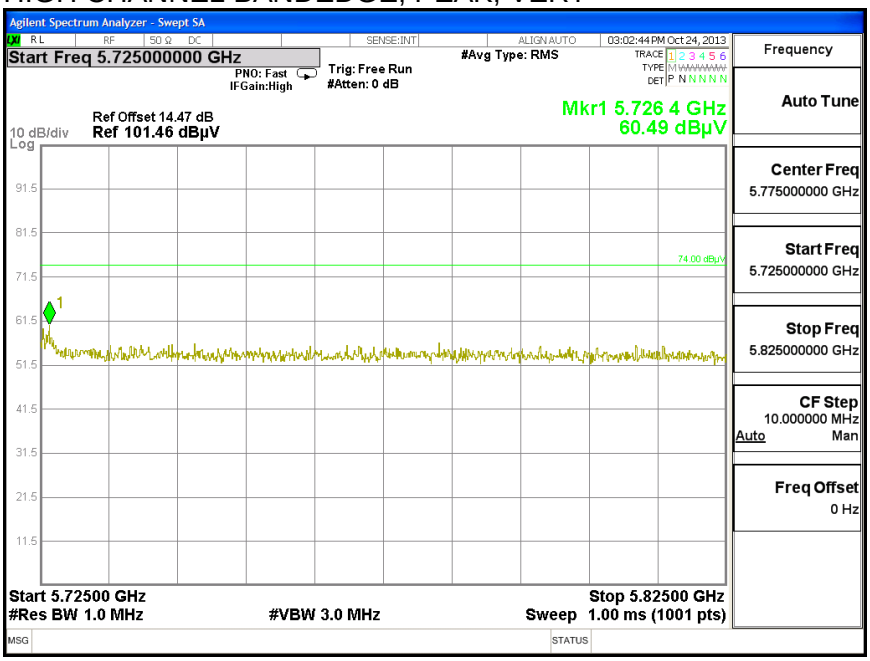


AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ



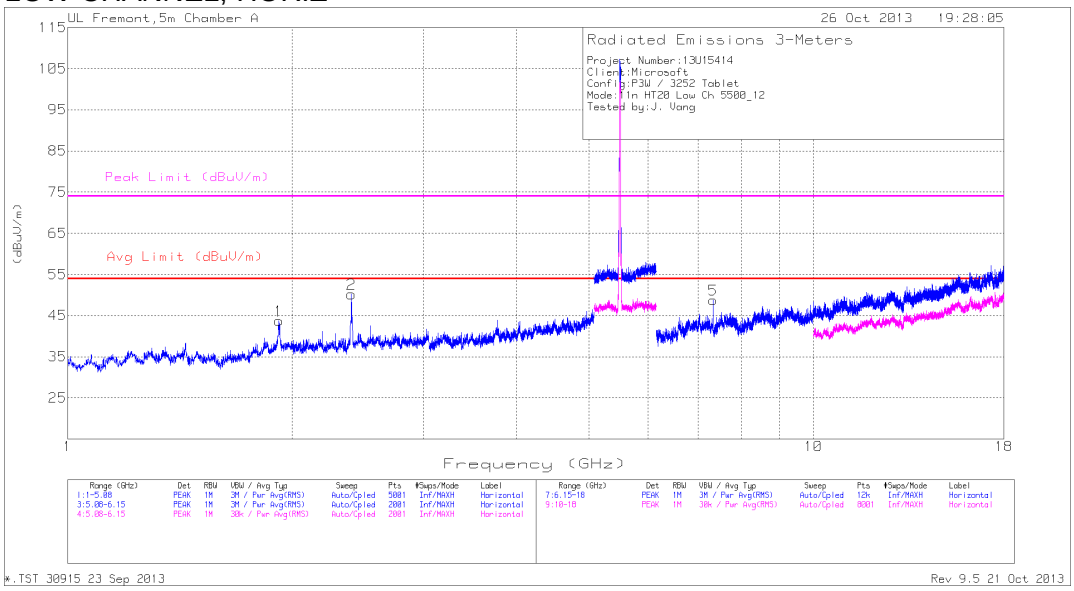
HIGH CHANNEL BANDEDGE, PEAK, VERT



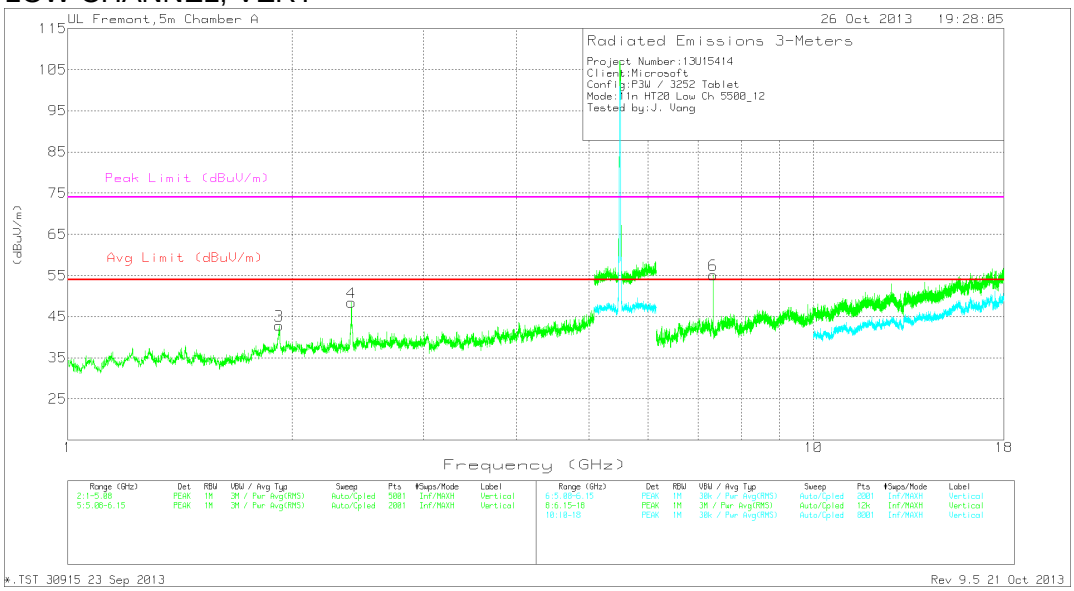
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



LOW Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.92	45.56	PK	31.7	-33.5	43.76	53.97	-10.21	74	-30.24	0-360	100	H
2	2.4	50.91	PK	32.1	-32.8	50.21	53.97	-3.76	74	-23.79	0-360	100	H
3	1.92	44.64	PK	31.7	-33.5	42.84	53.97	-11.13	74	-31.16	0-360	100	V
4	2.4	49.14	PK	32.1	-32.8	48.44	53.97	-5.53	74	-25.56	0-360	200	V
5	7.333	40.22	PK	35.3	-26.7	48.82	53.97	-5.15	74	-25.18	0-360	100	H
6	7.333	46.51	PK	35.3	-26.7	55.11	53.97	1.14	74	-18.89	0-360	100	V

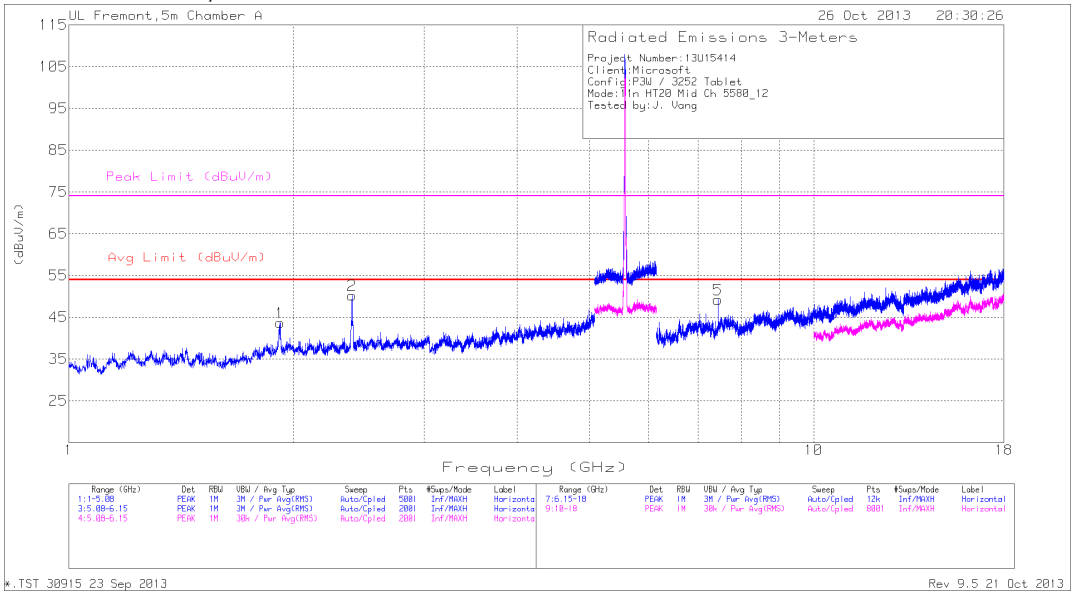
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	47.12	Av	32.1	-32.8	46.42	53.97	-7.55	-	-	0	241	H
2.4	36.38	Av	32.1	-32.8	35.68	53.97	-18.29	-	-	315	400	V
7.333	21.9	Av	35.3	-26.7	30.5	53.97	-23.47	-	-	340	400	H
7.333	35.37	Av	35.3	-26.7	43.97	53.97	-10	-	-	54	255	V

PK - Peak detector

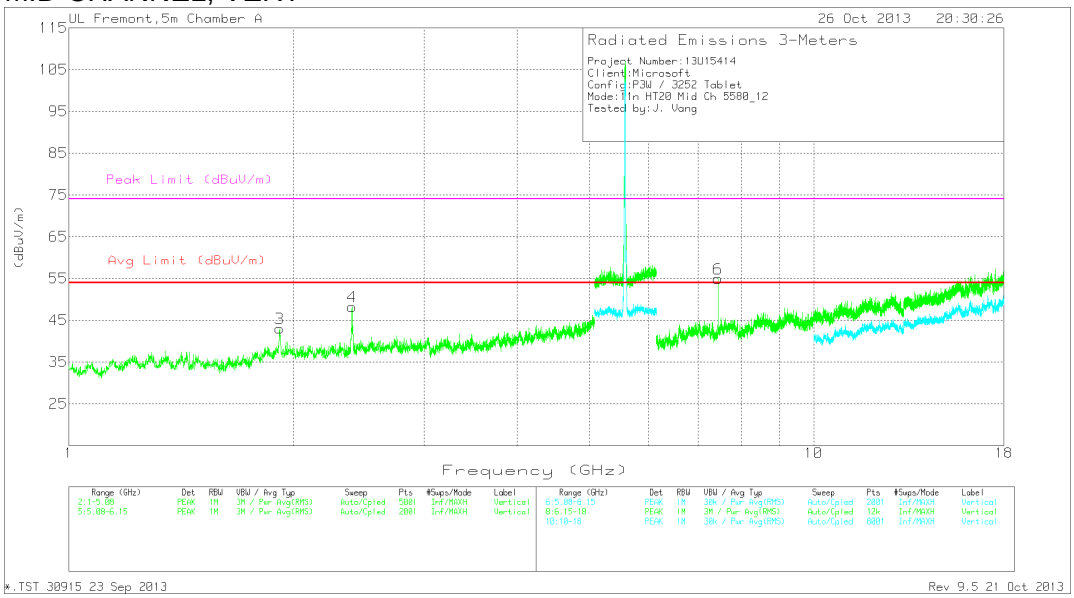
Av - average detection

MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



MID Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.922	45.48	PK	31.7	-33.5	43.68	53.97	-10.29	74	-30.32	0-360	100	H
2	2.4	50.9	PK	32.1	-32.8	50.2	53.97	-3.77	74	-23.8	0-360	100	H
3	1.919	44.81	PK	31.7	-33.5	43.01	53.97	-10.96	74	-30.99	0-360	100	V
4	2.4	48.92	PK	32.1	-32.8	48.22	53.97	-5.75	74	-25.78	0-360	100	V
5	7.44	40.53	PK	35.4	-26.7	49.23	53.97	-4.74	74	-24.77	0-360	100	H
6	7.44	46.26	PK	35.4	-26.7	54.96	53.97	.99	74	-19.04	0-360	100	V

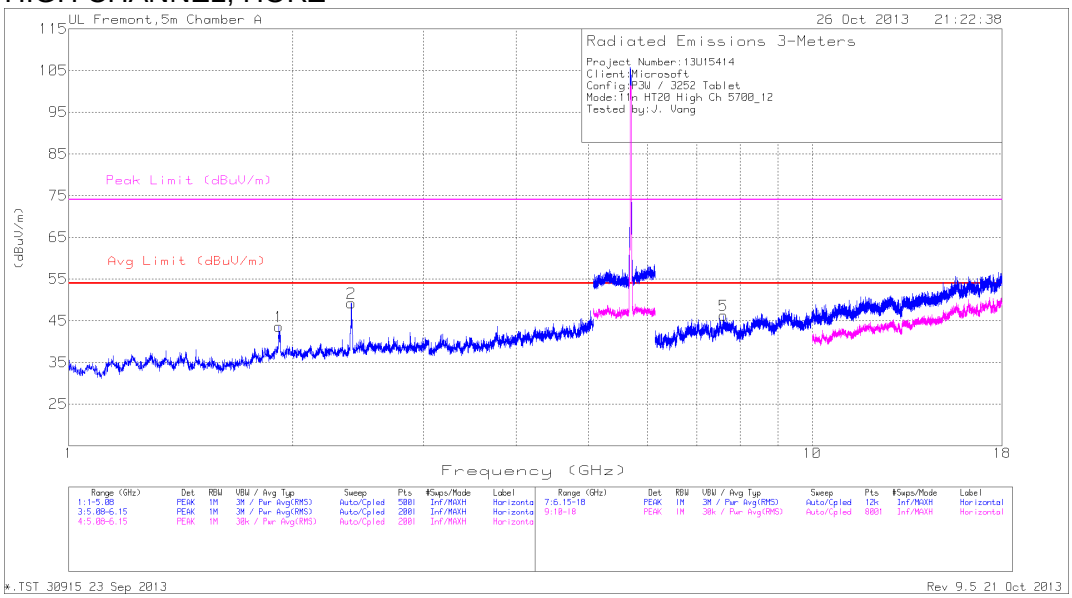
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	47.76	Av	32.1	-32.8	47.06	53.97	-6.91	-	-	191	112	H
2.4	44.12	Av	32.1	-32.8	43.42	53.97	-10.55	-	-	84	104	V
7.44	27.74	Av	35.4	-26.7	36.44	53.97	-17.53	-	-	279	217	H
7.44	30.79	Av	35.4	-26.7	39.49	53.97	-14.48	-	-	137	171	V

PK - Peak detector

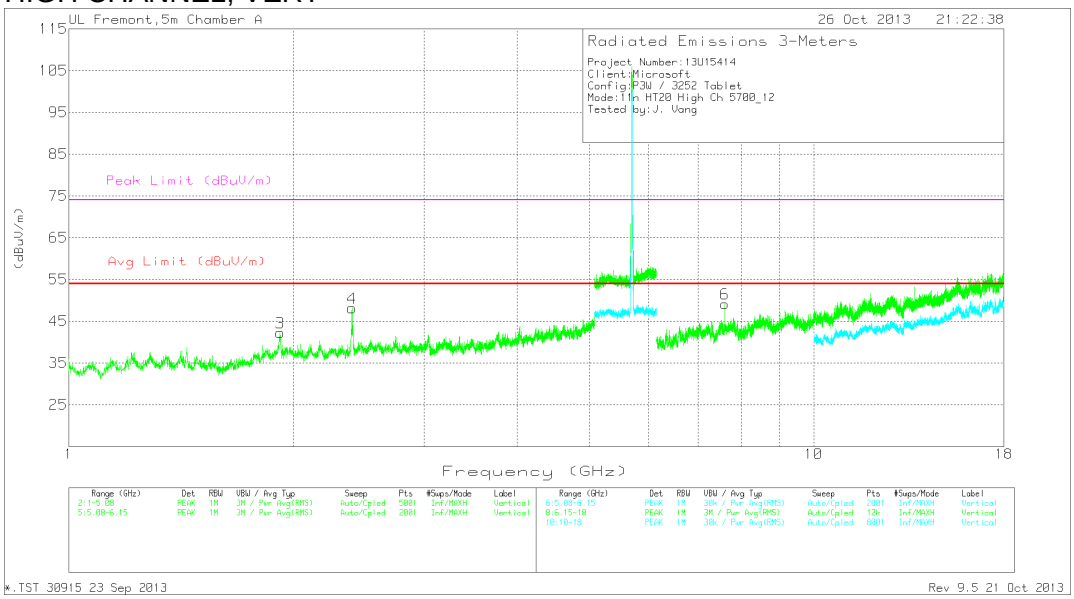
Av - average detection

HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.917	45.31	PK	31.7	-33.4	43.61	53.97	-10.36	74	-30.39	0-360	200	H
2	2.4	49.89	PK	32.1	-32.8	49.19	53.97	-4.78	74	-24.81	0-360	100	H
3	1.922	44.04	PK	31.7	-33.5	42.24	53.97	-11.73	74	-31.76	0-360	100	V
4	2.4	48.84	PK	32.1	-32.8	48.14	53.97	-5.83	74	-25.86	0-360	200	V
5	7.6	36.54	PK	35.5	-25.8	46.24	53.97	-7.73	74	-27.76	0-360	200	H
6	7.6	39.46	PK	35.5	-25.8	49.16	53.97	-4.81	74	-24.84	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	46.7	Av	32.1	-32.8	46	53.97	-7.97	-	-	1	243	H
2.4	42.59	Av	32.1	-32.8	41.89	53.97	-12.08	-	-	284	277	V
7.6	15.85	Av	35.5	-25.8	25.55	53.97	-28.42	-	-	146	252	V

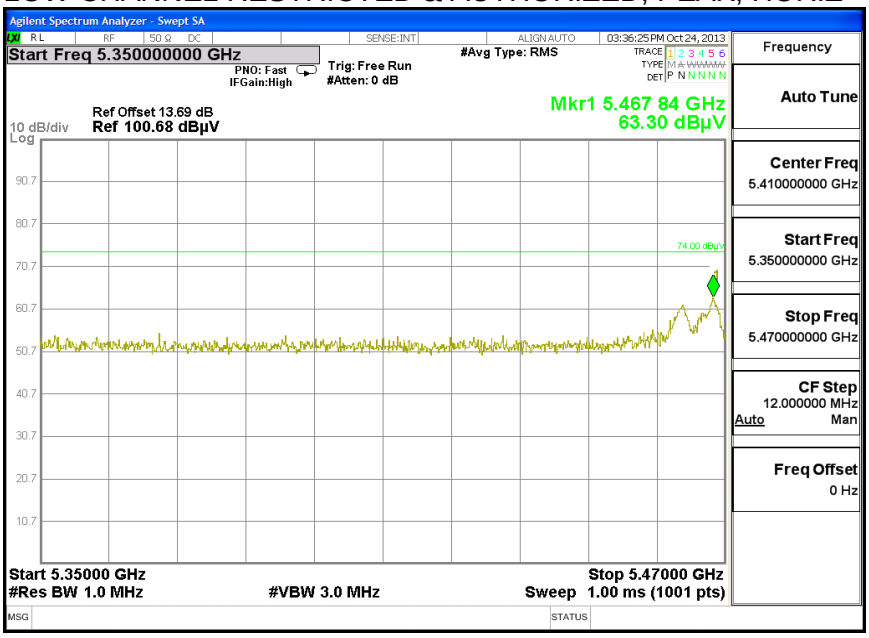
PK - Peak detector

Av - average detection

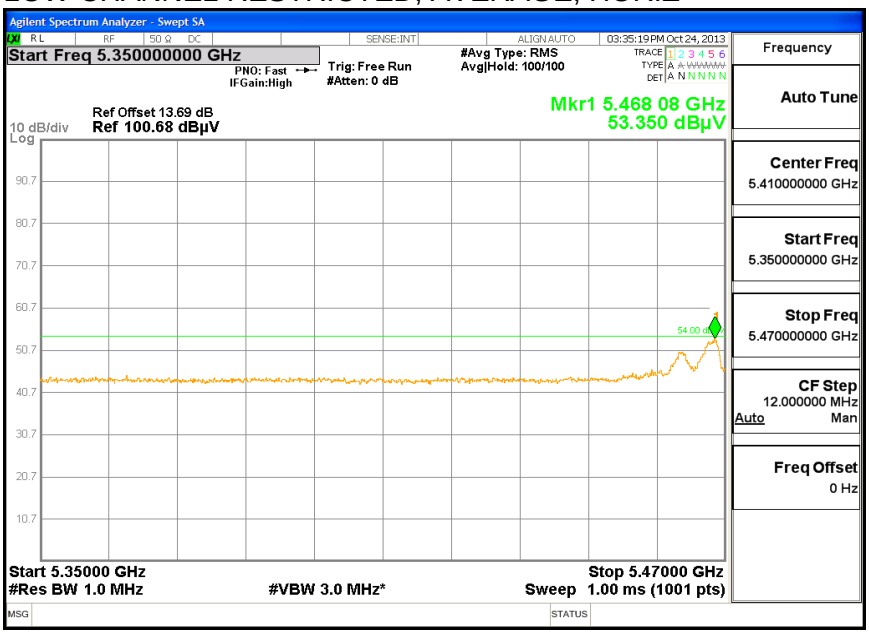
9.11. TX ABOVE 1 GHz 802.11n HT40 MODE IN THE 5.6 GHz BAND

RESTRICTED & AUTHORIZED BANDEDGE (LOW CHANNEL)

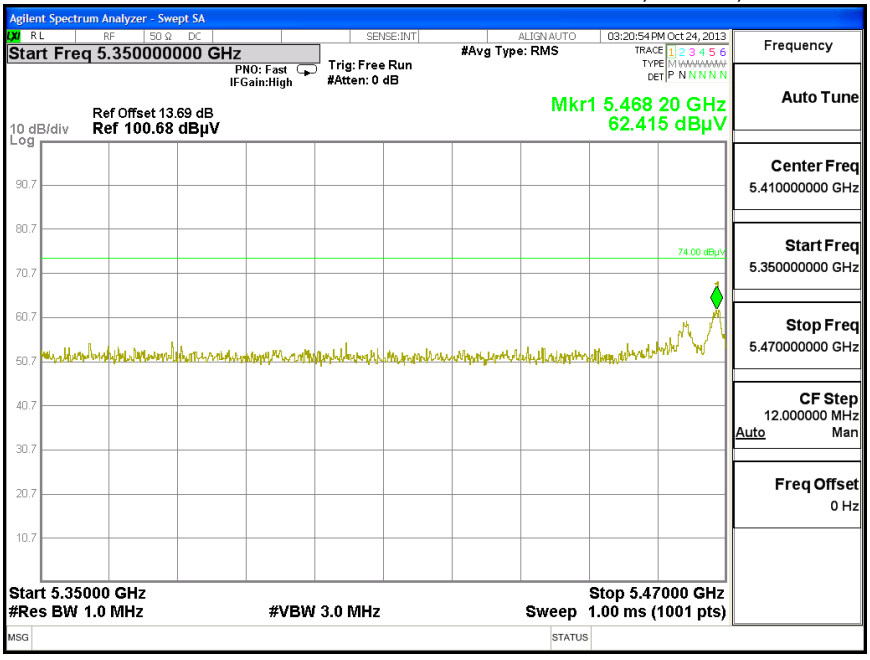
LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK, HORIZ



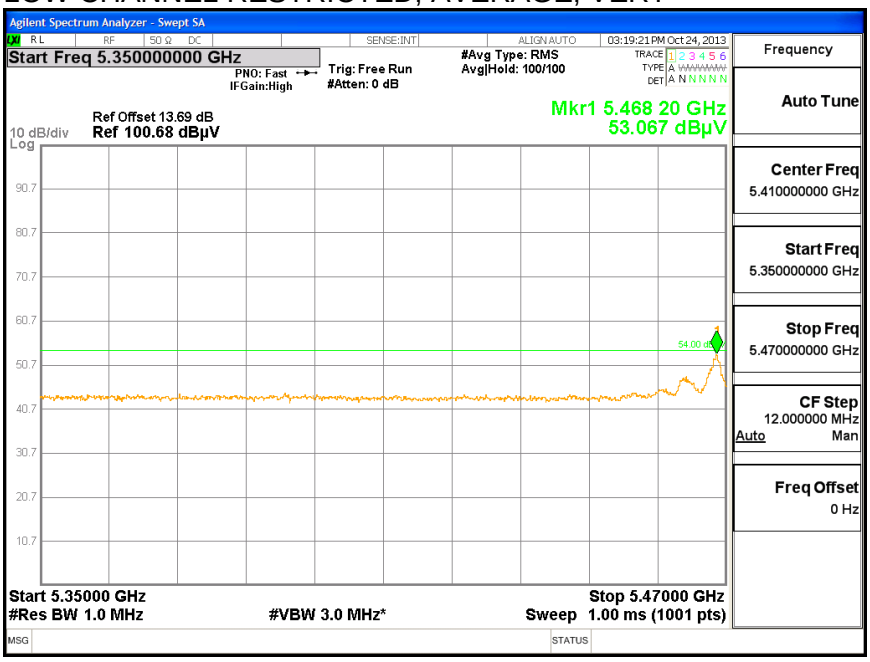
LOW CHANNEL RESTRICTED, AVERAGE, HORIZ



LOW CHANNEL RESTRICTED & AUTHORIZED, PEAK, VERT

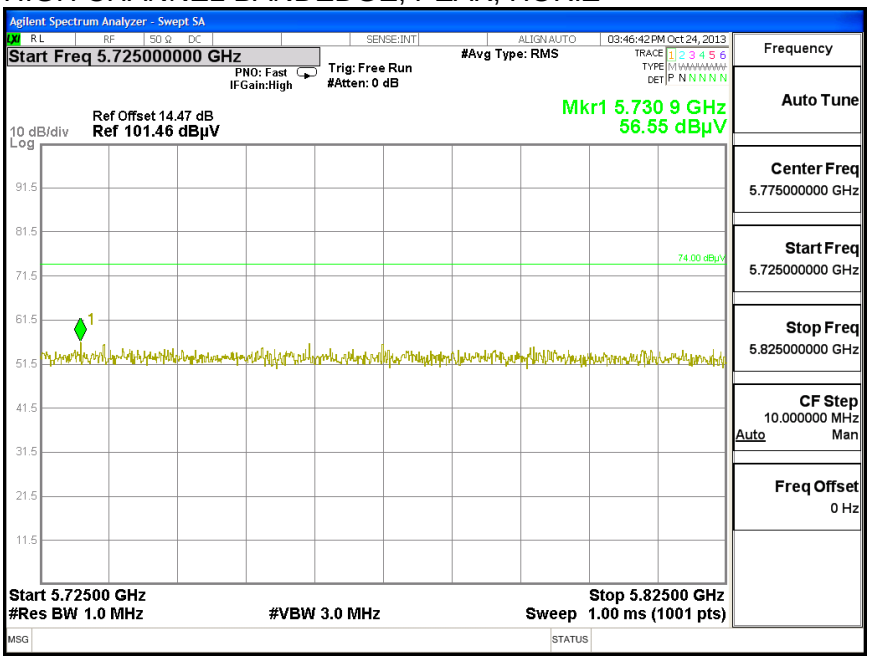


LOW CHANNEL RESTRICTED, AVERAGE, VERT

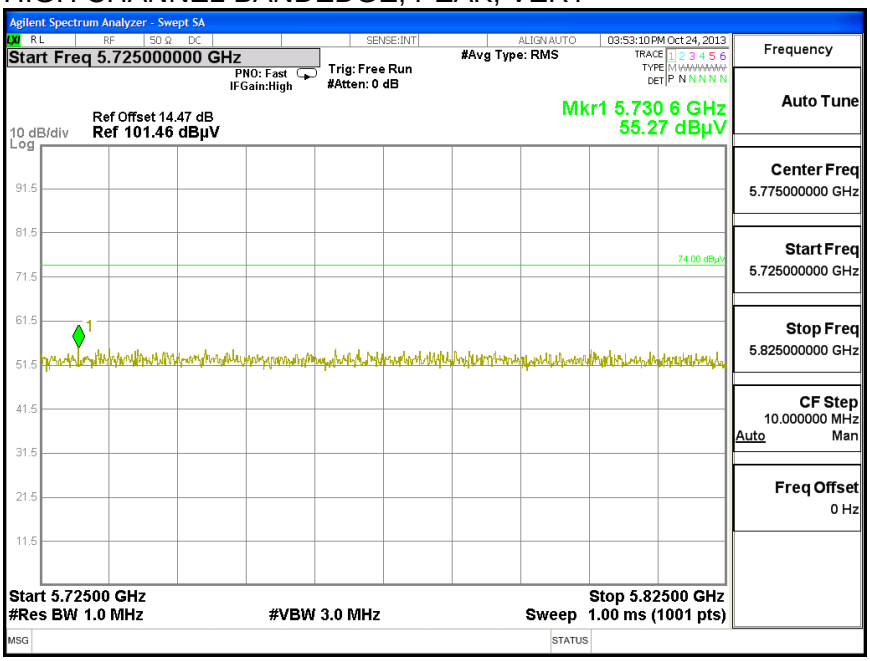


AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ



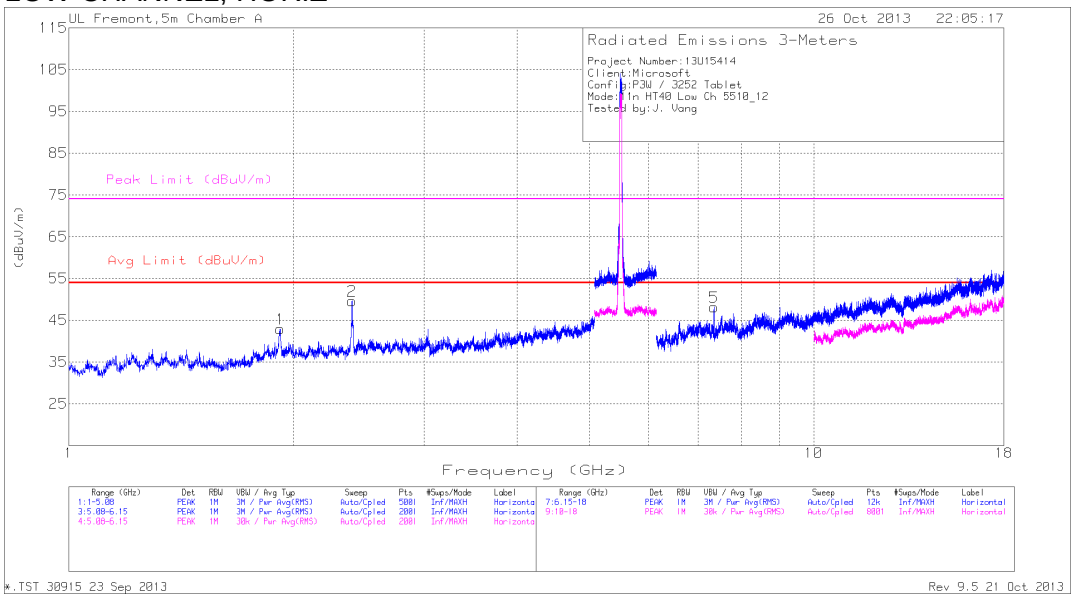
HIGH CHANNEL BANDEDGE, PEAK, VERT



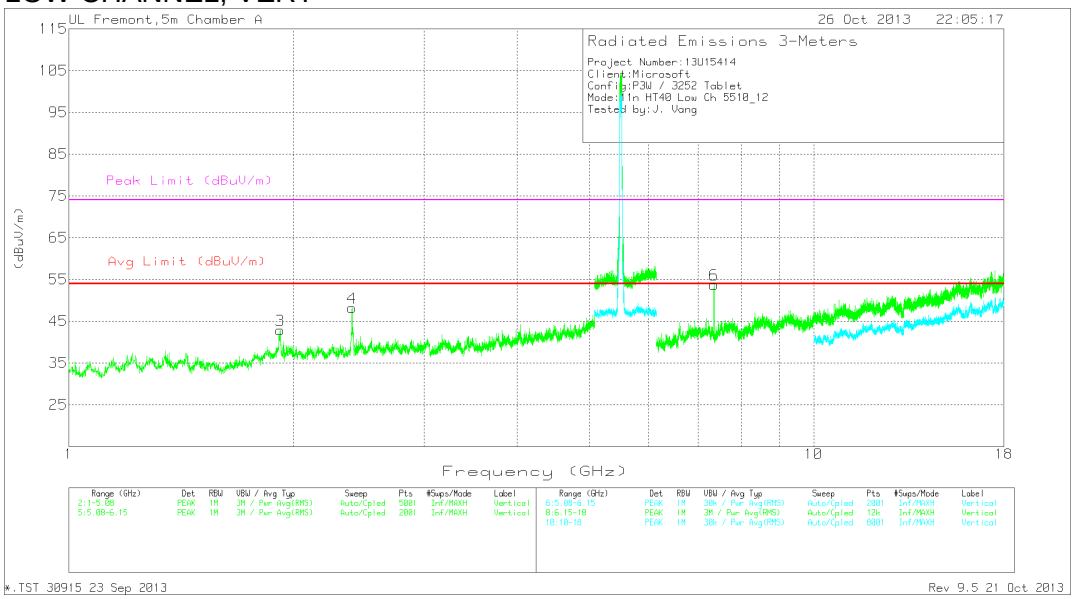
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL

LOW CHANNEL, HORIZ



LOW CHANNEL, VERT



LOW Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.923	44.7	PK	31.7	-33.5	42.9	53.97	-11.07	74	-31.1	0-360	100	H
2	2.4	50.3	PK	32.1	-32.8	49.6	53.97	-4.37	74	-24.4	0-360	100	H
3	1.923	44.64	PK	31.7	-33.5	42.84	53.97	-11.13	74	-31.16	0-360	100	V
4	2.4	48.88	PK	32.1	-32.8	48.18	53.97	-5.79	74	-25.82	0-360	200	V
5	7.347	39.94	PK	35.3	-27.1	48.14	53.97	-5.83	74	-25.86	0-360	100	H
6	7.347	45.52	PK	35.3	-27.1	53.72	53.97	-.25	74	-20.28	0-360	100	V

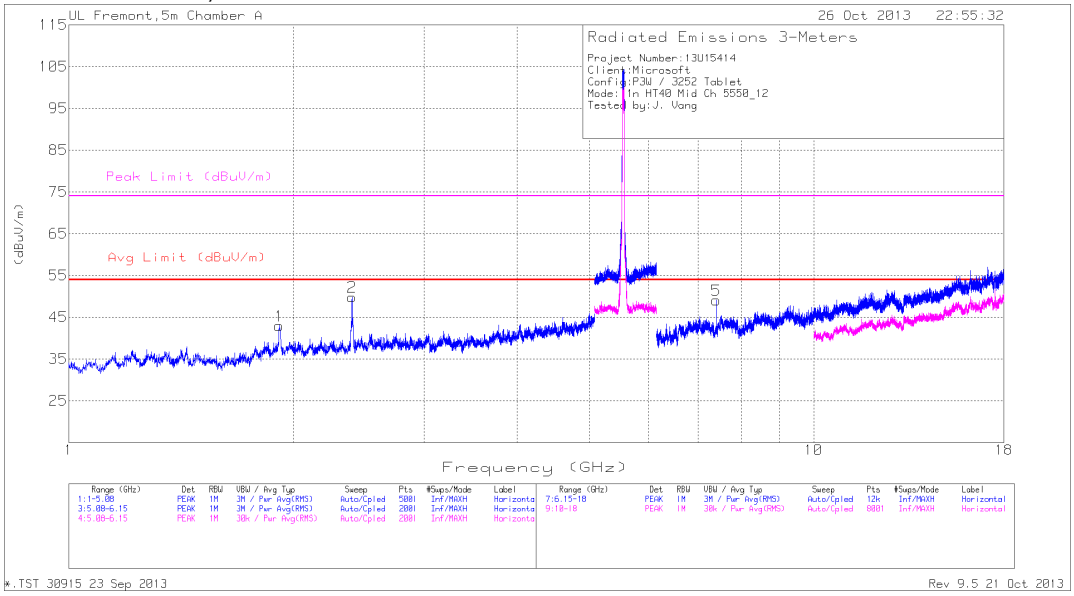
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	46.85	Av	32.1	-32.8	46.15	53.97	-7.82	-	-	17	233	H
2.4	35.42	Av	32.1	-32.8	34.72	53.97	-19.25	-	-	286	380	V
7.347	27.07	Av	35.3	-27.1	35.27	53.97	-18.7	-	-	79	137	H
7.347	35.31	Av	35.3	-27.1	43.51	53.97	-10.46	-	-	345	332	V

PK - Peak detector

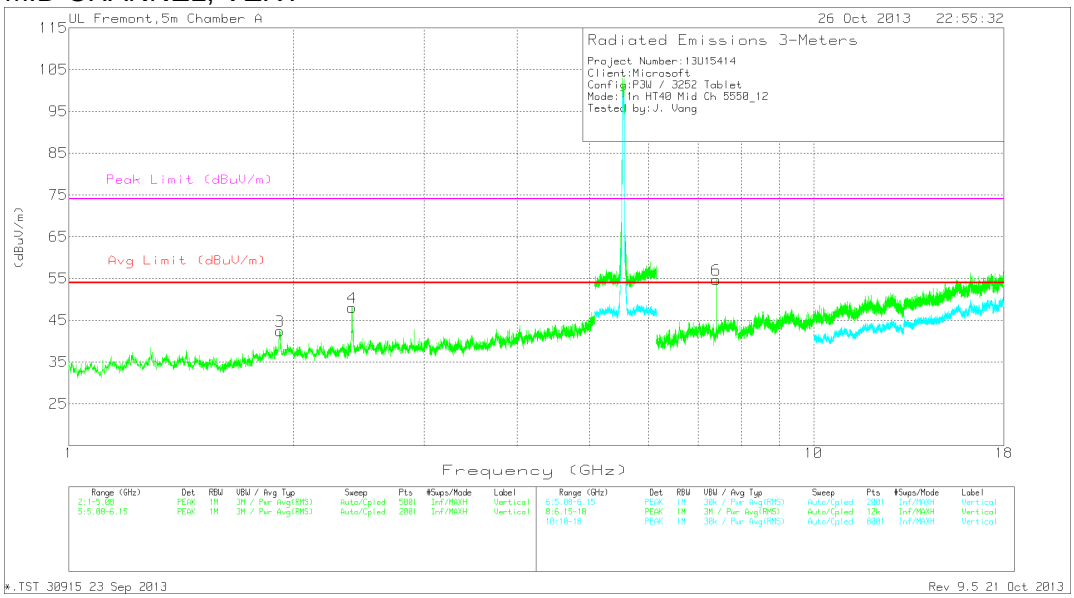
Av - average detection

MID CHANNEL

MID CHANNEL, HORIZ



MID CHANNEL, VERT



MID Channel DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.916	44.63	PK	31.7	-33.4	42.93	53.97	-11.04	74	-31.07	0-360	100	H
2	2.4	50.53	PK	32.1	-32.8	49.83	53.97	-4.14	74	-24.17	0-360	100	H
3	1.921	44.21	PK	31.7	-33.5	42.41	53.97	-11.56	74	-31.59	0-360	100	V
4	2.4	48.73	PK	32.1	-32.8	48.03	53.97	-5.94	74	-25.97	0-360	100	V
5	7.4	40.57	PK	35.4	-26.9	49.07	53.97	-4.9	74	-24.93	0-360	100	H
6	7.4	46.18	PK	35.4	-26.9	54.68	53.97	.71	74	-19.32	0-360	100	V

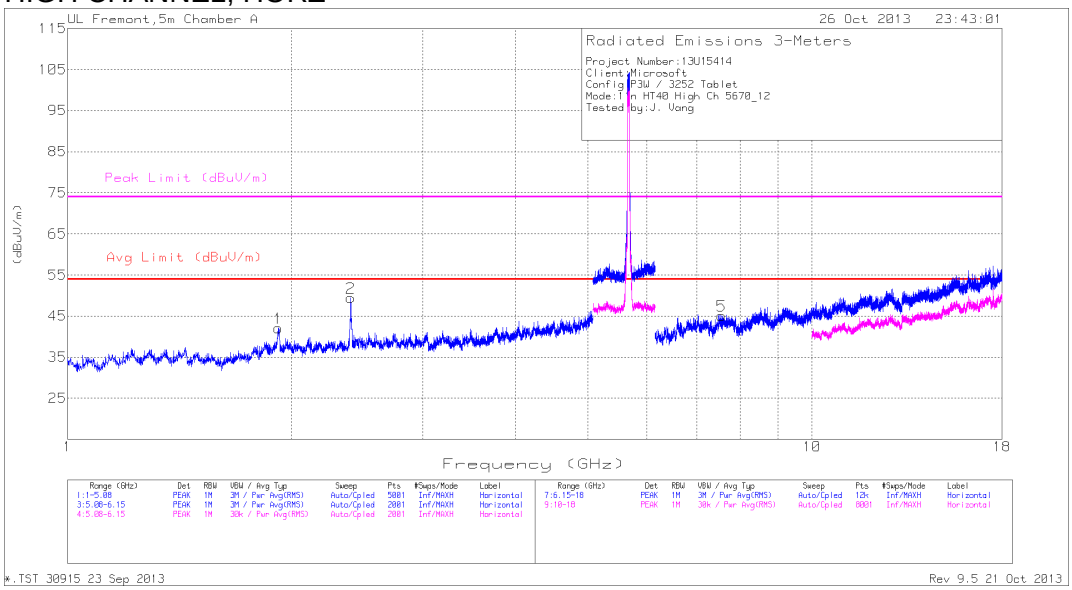
Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	47.36	Av	32.1	-32.8	46.66	53.97	-7.31	-	-	190	111	H
7.4	35.04	Av	35.4	-26.9	43.54	53.97	-10.43	-	-	280	127	H
7.4	32.28	Av	35.4	-26.9	40.78	53.97	-13.19	-	-	145	133	V

PK - Peak detector

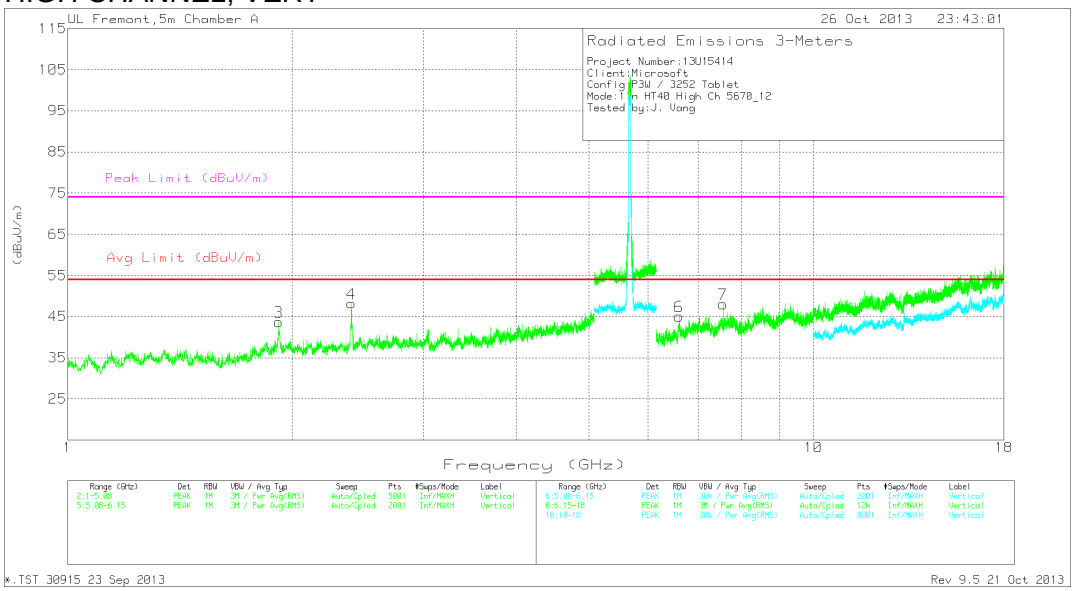
Av - average detection

HIGH CHANNEL

HIGH CHANNEL, HORZ



HIGH CHANNEL, VERT



HIGH CHANNEL DATA

Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	1.919	43.88	PK	31.7	-33.5	42.08	53.97	-11.89	74	-31.92	0-360	100	H
2	2.4	50.13	PK	32.1	-32.8	49.43	53.97	-4.54	74	-24.57	0-360	100	H
3	1.918	45.41	PK	31.7	-33.4	43.71	53.97	-10.26	74	-30.29	0-360	100	V
4	2.4	48.91	PK	32.1	-32.8	48.21	53.97	-5.76	74	-25.79	0-360	100	V
5	7.56	35.39	PK	35.5	-25.8	45.09	53.97	-8.88	74	-28.91	0-360	100	H
6	6.6	34.29	PK	35.5	-24.7	45.09	53.97	-8.88	74	-28.91	0-360	100	V
7	7.56	38.34	PK	35.5	-25.8	48.04	53.97	-5.93	74	-25.96	0-360	100	V

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2.4	47.01	Av	32.1	-32.8	46.31	53.97	-7.66	-	-	190	125	H
2.4	45.56	Av	32.1	-32.8	44.86	53.97	-9.11	-	-	80	129	V

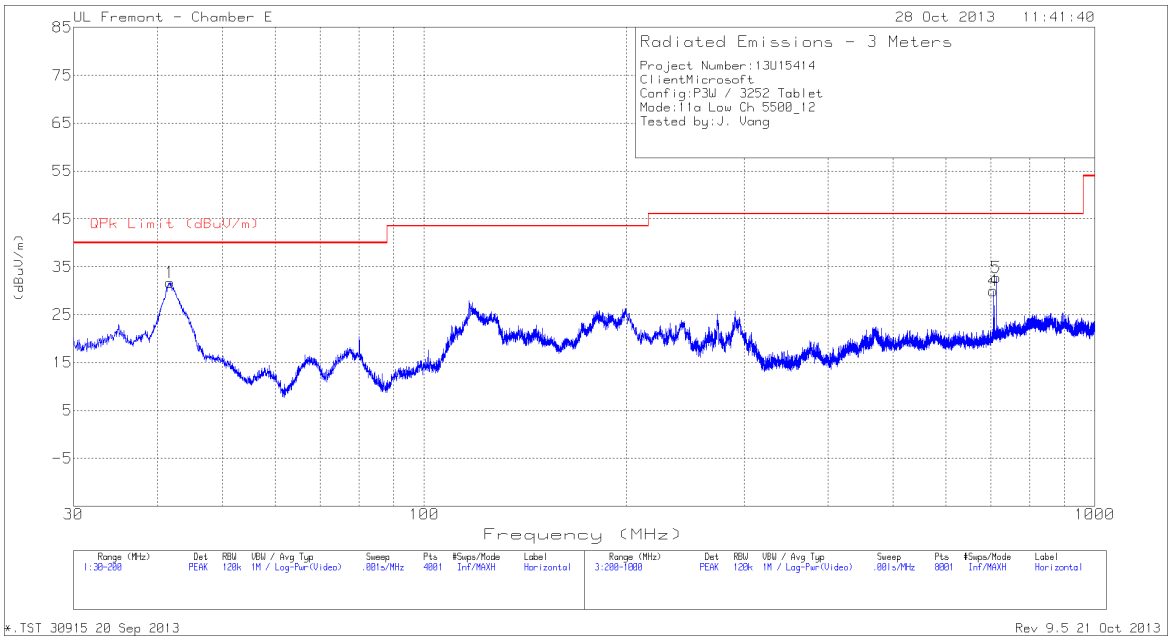
PK - Peak detector

Av - average detection

9.12. WORST-CASE BELOW 1 GHz

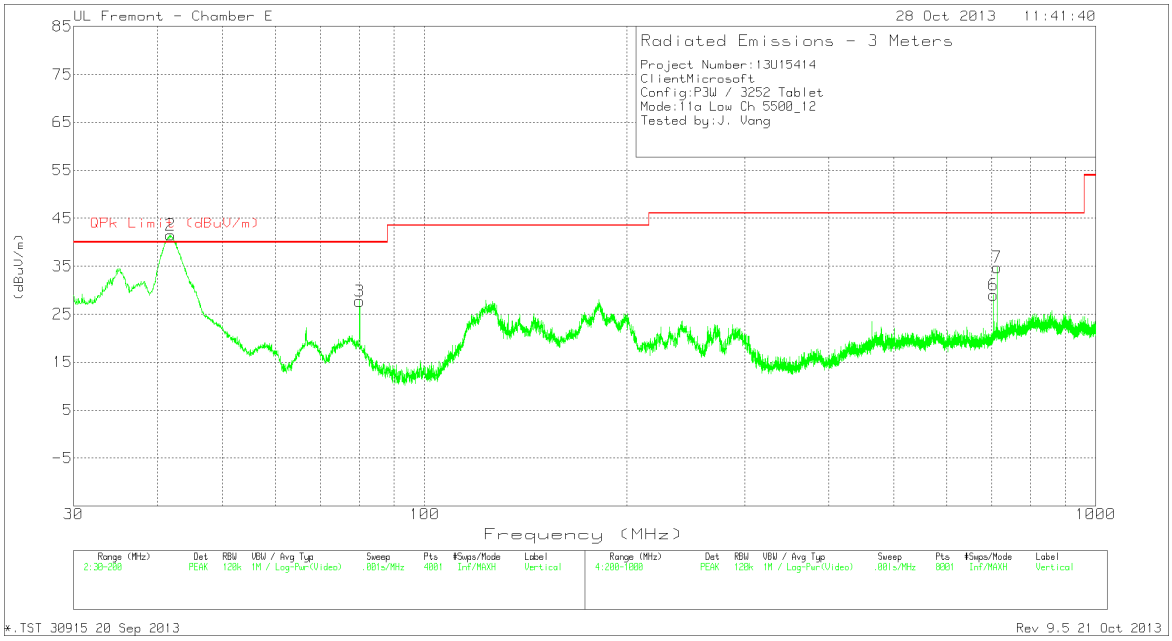
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



HORIZONTAL & VERTICAL DATA

Radiated Emissions

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T408 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	41.7725	46.44	PK	12.6	-27.3	31.74	40	-8.26	0-360	300	H
2	41.8575	56.18	PK	12.6	-27.3	41.48	40	1.48	0-360	100	V
3	80.0225	47.73	PK	7.7	-27.7	27.73	40	-12.27	0-360	100	V
4	705.6	36.81	PK	20.1	-26.9	30.01	46.02	-16.01	0-360	400	H
5	713.2	39.16	PK	20.4	-26.8	32.76	46.02	-13.26	0-360	99	H
6	704.6	35.81	PK	20.1	-26.9	29.01	46.02	-17.01	0-360	200	V
7	713.2	41.14	PK	20.4	-26.8	34.74	46.02	-11.28	0-360	99	V

Frequency (MHz)	Meter Reading (dBuV)	Det	AF T408 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
41.819	51.1	QP	12.6	-27.3	36.4	40	-3.6	25	107	V

PK - Peak detector

QP - Quasi-Peak detector

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

WORST EMISSIONS

Line-L1 .15 - 30MHz

Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1 (dB)	LC Cables 1&3 (dB)	Corrected Reading dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin to Limit (dB)	CISPR 11/22 Class B Average	Margin to Limit (dB)
1	.186	56.59	PK	.1	0	56.69	64.2	-7.51	-	-
2	.186	31.73	Av	.1	0	31.83	-	-	54.2	-22.37
3	.2445	49.14	PK	.1	0	49.24	61.9	-12.66	-	-
4	.2445	19.35	Av	.1	0	19.45	-	-	51.9	-32.45
5	4.623	42.57	PK	.1	.1	42.77	56	-13.23	-	-
6	4.623	24.37	Av	.1	.1	24.57	-	-	46	-21.43
7	13.929	50.8	PK	.2	.2	51.2	60	-8.8	-	-
8	13.929	32.44	Av	.2	.2	32.84	-	-	50	-17.16

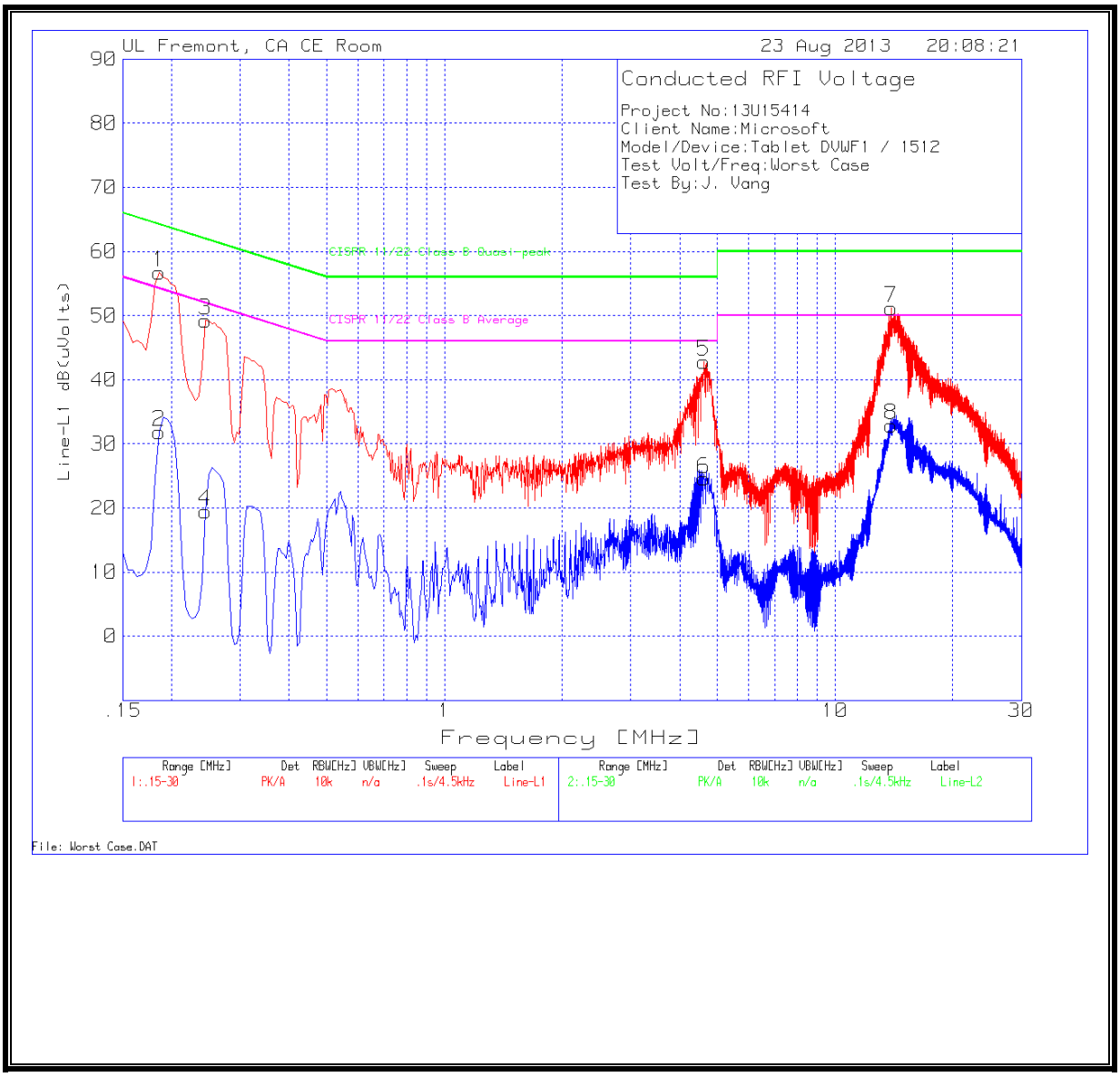
Line-L2 .15 - 30MHz

Trace Markers										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2 (dB)	LC Cables 2&3 (dB)	Corrected Reading dB(uVolts)	CISPR 11/22 Class B Quasi-peak	Margin to Limit (dB)	CISPR 11/22 Class B Average	Margin to Limit (dB)
9	.186	57.17	PK	.1	0	57.27	64.2	-6.93	-	-
10	.186	33.42	Av	.1	0	33.52	-	-	54.2	-20.68
11	.249	50.1	PK	.1	0	50.2	61.8	-11.6	-	-
12	.249	26.02	Av	.1	0	26.12	-	-	51.8	-25.68
13	14.2755	49.55	PK	.2	.2	49.95	60	-10.05	-	-
14	14.2755	30.37	Av	.2	.2	30.77	-	-	50	-19.23

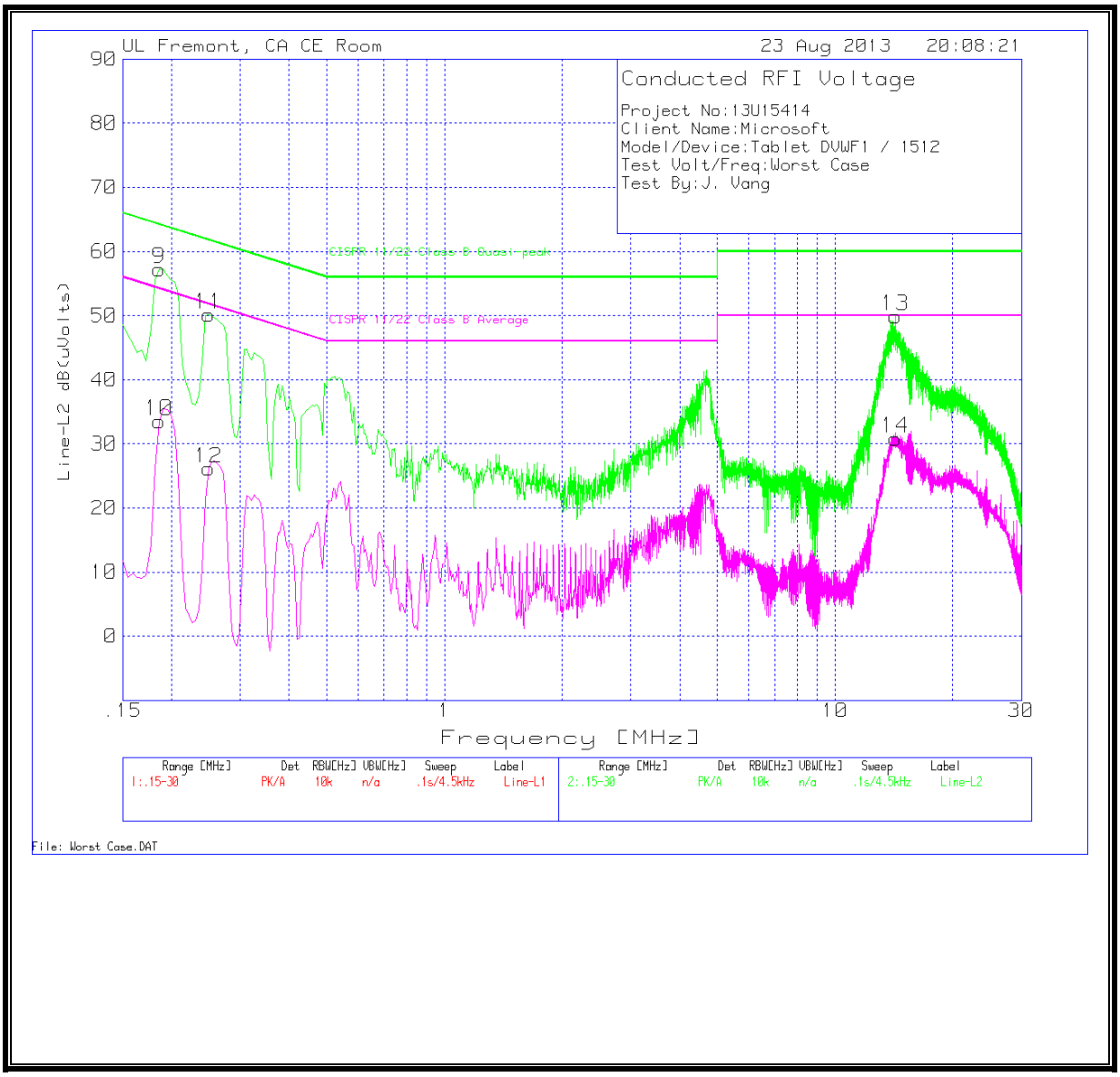
PK - Peak detector

Av - average detection

LINE 1 RESULTS



LINE 2 RESULTS



11. DYNAMIC FREQUENCY SELECTION

11.1. OVERVIEW

11.1.1. LIMITS

INDUSTRY CANADA

IC RSS-210 is closely harmonized with FCC Part 15 DFS rules. The deviations are as follows:

RSS-210 Issue 7 A9.4 (b) (ii) **Channel Availability Check Time:** …

Additional requirements for the band 5600-5650 MHz: Until further notice, devices subject to this Section shall not be capable of transmitting in the band 5600-5650 MHz, so that Environment Canada weather radars operating in this band are protected.

RSS-210 Issue 7 A9.4 (b) (iv) **Channel closing time:** the maximum channel closing time is 260 ms.

FCC

§15.407 (h) and FCC 06-96 APPENDIX “COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVCIES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION”.

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
Uniform Spreading	Yes	Not required	Not required

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client **(without DFS)**	Client **(with DFS)**
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes

Table 3: Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see note)
≥ 200 milliwatt	-64 dBm
< 200 milliwatt	-62 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.		

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period
The instant that the *Channel Move Time* and the *Channel Closing Transmission Time* begins is as follows: For the Short pulse radar Test Signals this instant is the end of the *Burst*. For the Frequency Hopping radar Test Signal, this instant is the end of the last radar burst generated. For the Long Pulse radar Test Signal this instant is the end of the 12 second period defining the radar transmission. The Channel Closing Transmission Time is comprised of 200 milliseconds starting at the beginning of the Channel Move Time plus any additional intermittent control signals required to facilitate channel changes (an aggregate of approximately 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions.	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (Microseconds)	PRI (Microseconds)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
1	1	1428	18	60%	30
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Table 6 – Long Pulse Radar Test Signal

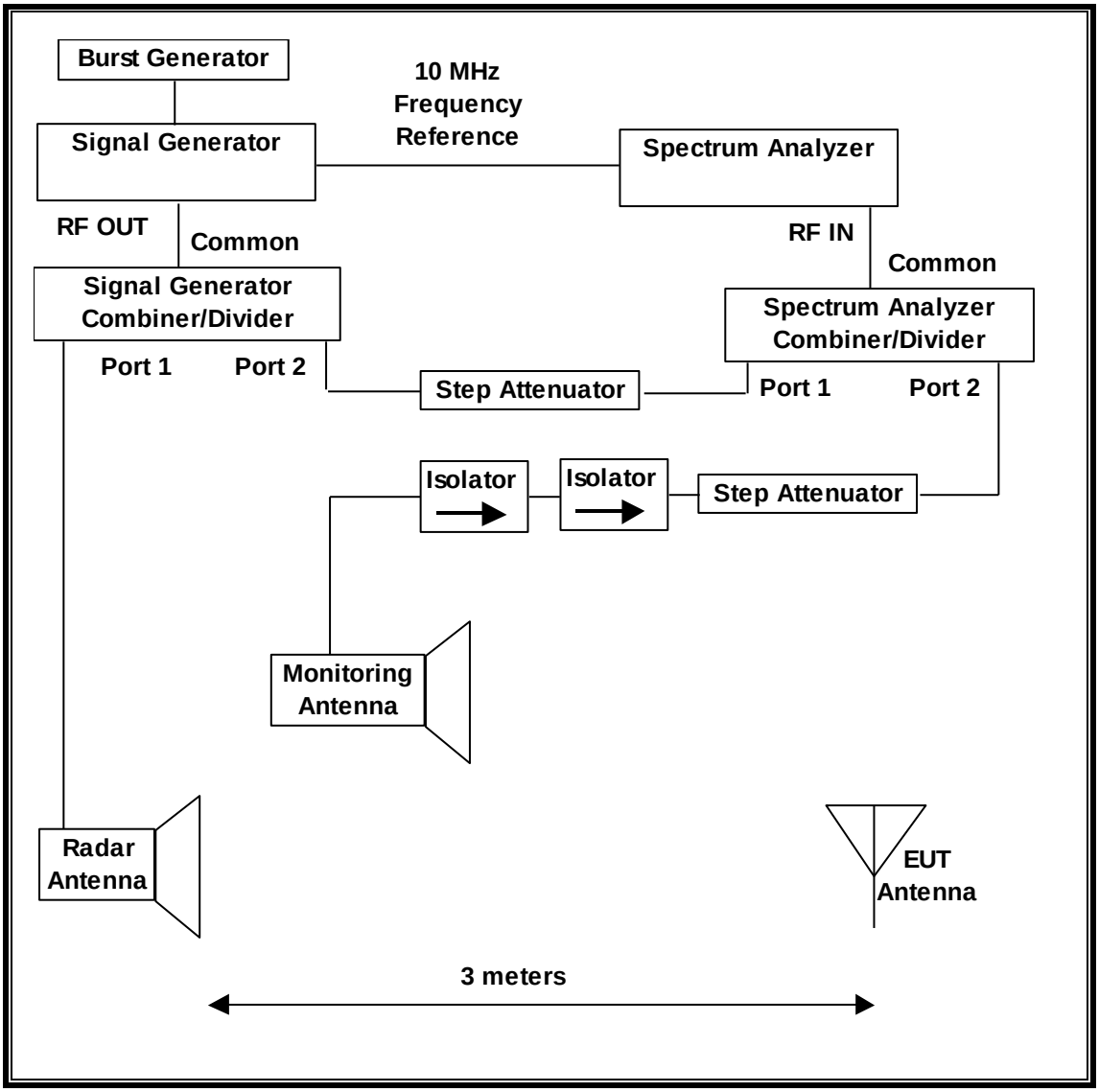
Radar Waveform	Bursts	Pulses per Burst	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Minimum Percentage of Successful Detection	Minimum Trials
5	8-20	1-3	50-100	5-20	1000-2000	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform	Pulse Width (µsec)	PRI (µsec)	Burst Length (ms)	Pulses per Hop	Hopping Rate (kHz)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	300	9	.333	70%	30

11.1.2. TEST AND MEASUREMENT SYSTEM

RADIATED METHOD SYSTEM BLOCK DIAGRAM



SYSTEM OVERVIEW

The short pulse and long pulse signal generating system utilizes the NTIA software. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Freqeuncy Hopping Radar Waveform Generating Subsystem of FCC 06-96 APPENDIX. The frequency of the signal generator is incremented in 1 MHz steps from F_L to F_H for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold.

SYSTEM CALIBRATION

A 50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a horn antenna via a coaxial cable, with the reference level offset set to (horn antenna gain – coaxial cable loss). The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –64 dBm as measured on the spectrum analyzer.

Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. The Reference Level Offset of the spectrum analyzer is adjusted so that the displayed amplitude of the signal is –64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

A link is established between the Master and Slave and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Slave devices. The video test file is streamed to generate WLAN traffic. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

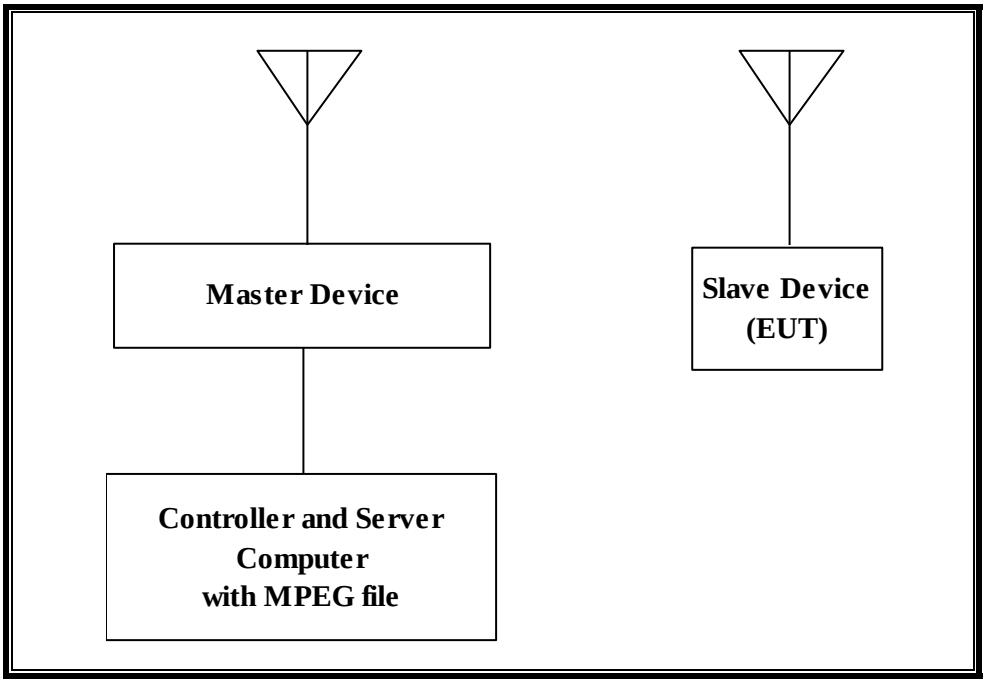
TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the DFS tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset Number**	**Cal Due**
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01178	09/18/13
Vector Signal Generator, 20GHz	Agilent / HP	E8267C	C01066	11/20/13

11.1.3. SETUP OF EUT

RADIATED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

The following support equipment was utilized for the DFS tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Wireless Access Point (Master Device)	Cisco	AIR-AP1252AG-A-K9	FTX130390D9	LDK102061
AC Adapter (AP)	Delta Electronics	EADP-45BB B	DTH1049902N	DoC
Notebook PC (Controller/Server)	Apple	MacBook Pro A1150	AOU257941	DoC
AC Adapter (Controller/Server PC)	Delta Electronics	A1330	MV952157KAGKA	DoC

11.1.4. DESCRIPTION OF EUT

The EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges.

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 18.51 dBm EIRP in the 5250-5350 MHz band and 19.5 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT has a gain of 3.2 dBi and 3.9 dBi in the 5250-5350 MHz band and 3.2 dBi and 3.9 dBi in the 5470-5725 MHz band.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is –64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is –64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides margin to the limit.

The EUT uses two transmitter/receiver chains, each connected to an antenna to perform radiated tests.

WLAN traffic is generated by generating simulated packets from the Master to the Slave.

TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

The EUT utilizes the 802.11a/n architecture. Two nominal channel bandwidths are implemented: 20 MHz and 40 MHz.

The software installed in the access point is 12.4(25d)JA1.

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Slave radio devices.

OVERVIEW OF MASTER DEVICE WITH RESPECT TO §15.407 (h) REQUIREMENTS

The Master Device is a Cisco Access Point, FCC ID: LDK102061. The minimum antenna gain for the Master Device is 3.5 dBi.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is –64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is –64 + 1 = -63 dBm.

The calibrated radiated DFS Detection Threshold level is set to –64 dBm. The tested level is lower than the required level hence it provides margin to the limit.

The software installed in the access point is 12.4(25d)JA1.

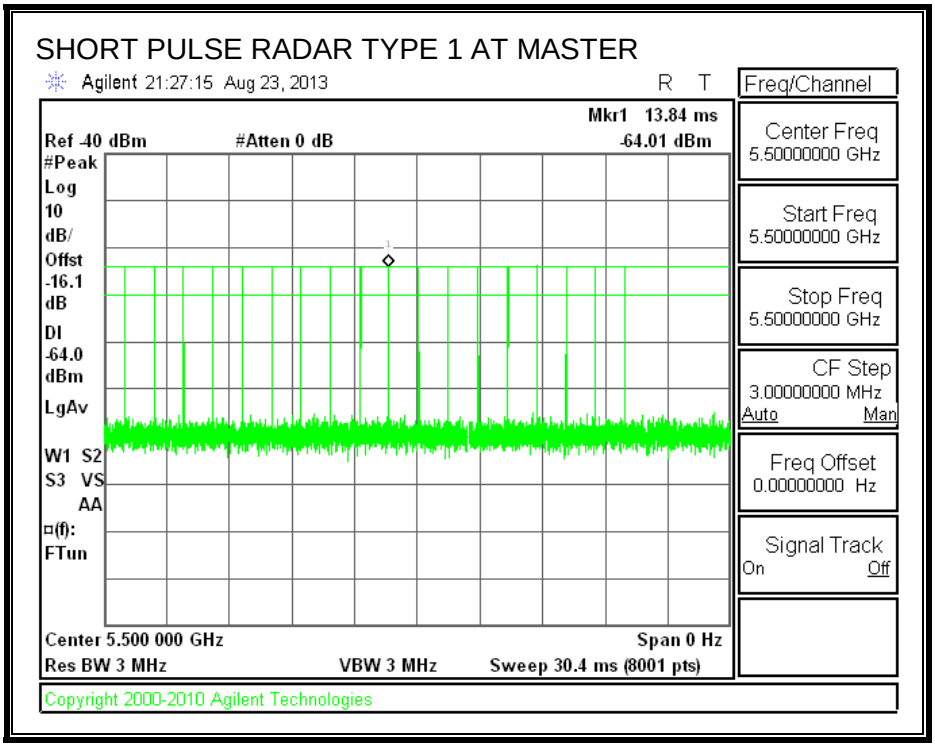
11.2. RESULTS FOR 20 MHz BANDWIDTH

11.2.1. TEST CHANNEL

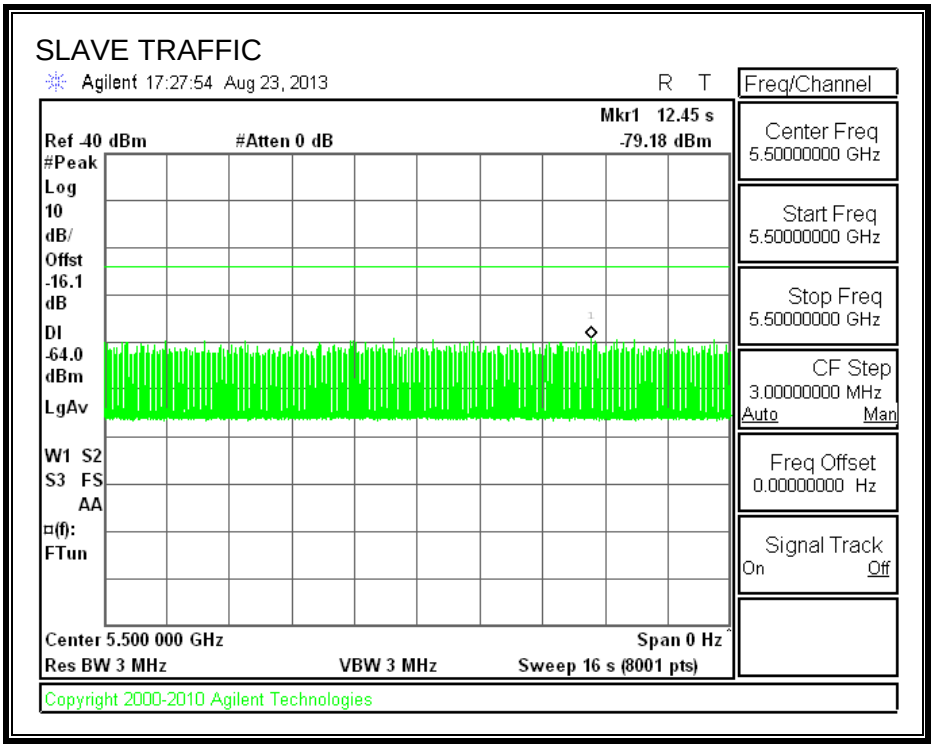
All tests were performed at a channel center frequency of 5500 MHz.

11.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC



11.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =
(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the FCC aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

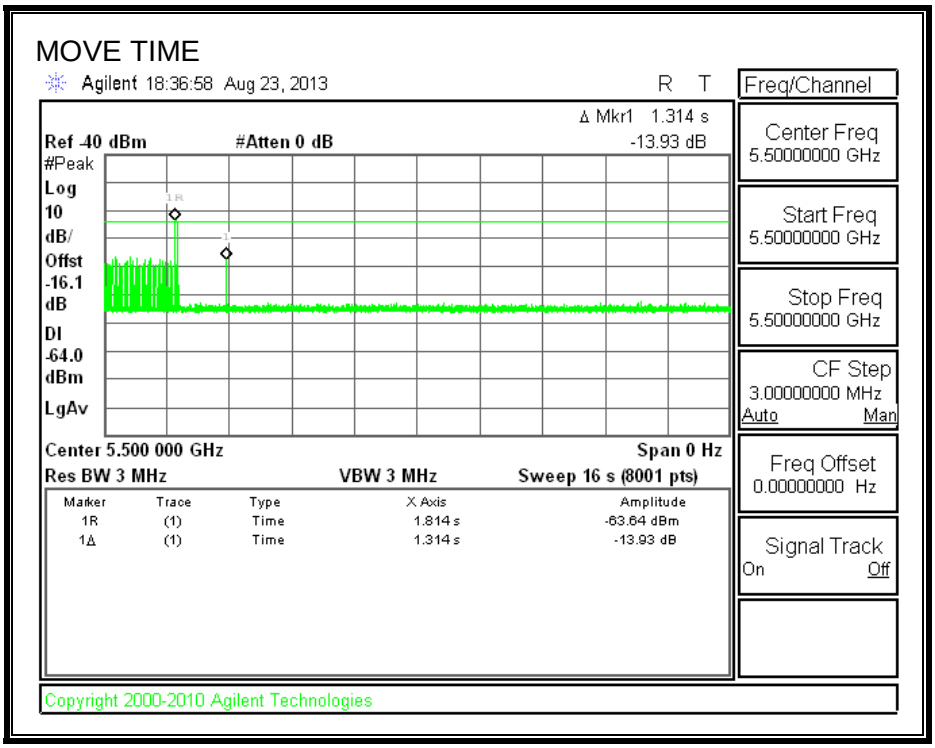
The observation period over which the IC aggregate time is calculated begins at (Reference Marker) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

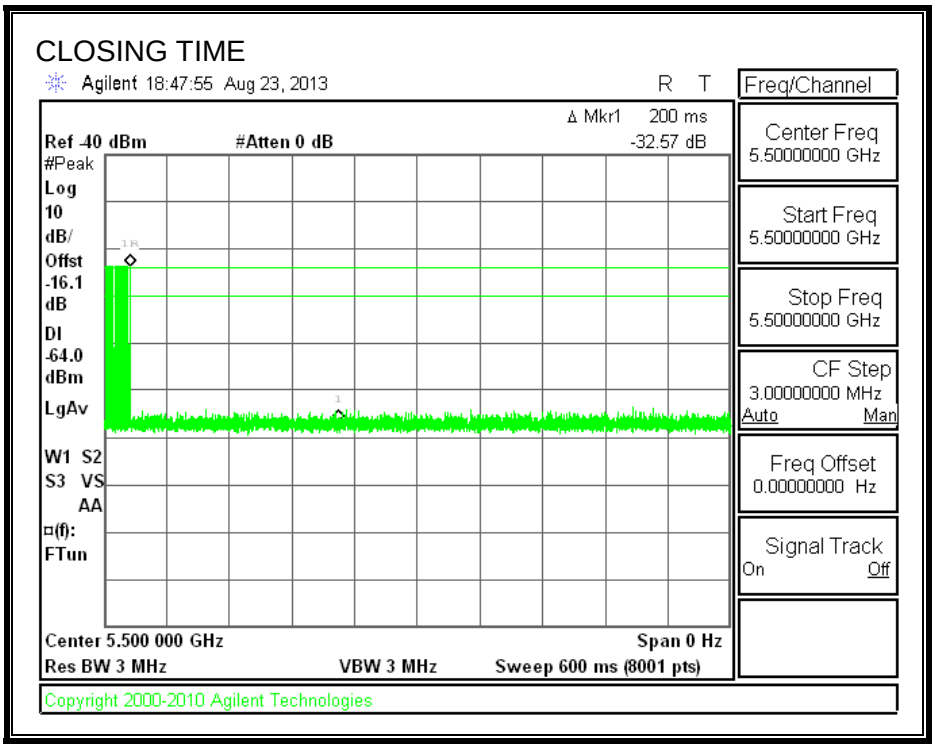
Agency	Channel Move Time (sec)	Limit (sec)
FCC / IC	1.314	10

Agency	Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
FCC	8.0	60
IC	24.0	260

MOVE TIME



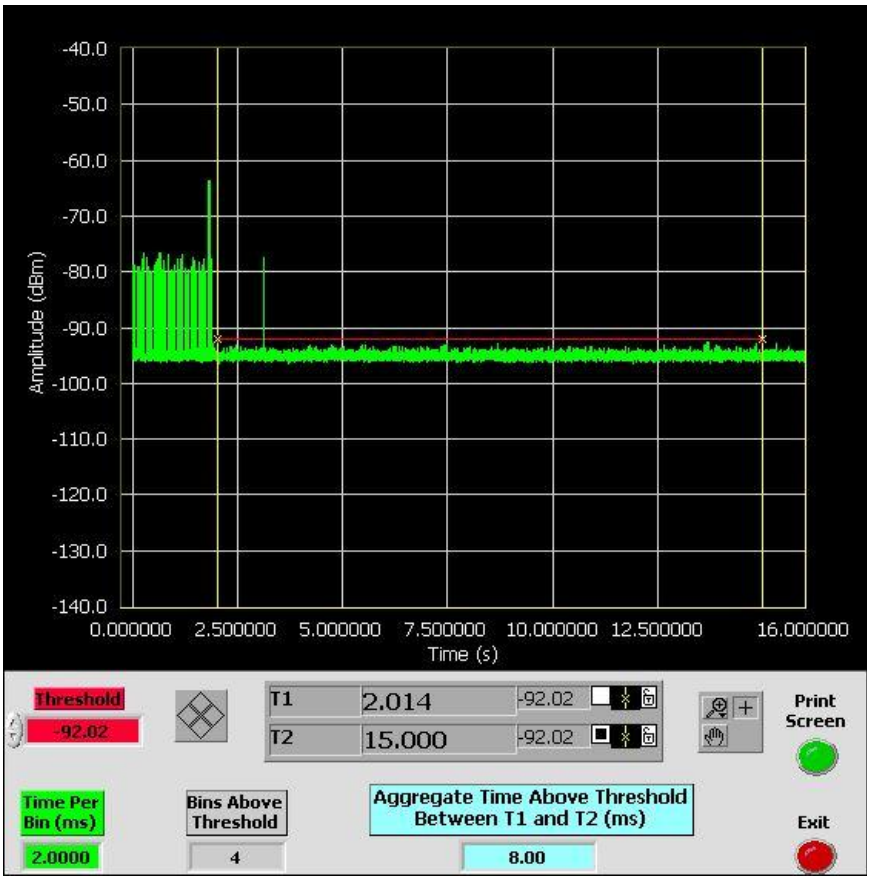
CHANNEL CLOSING TIME



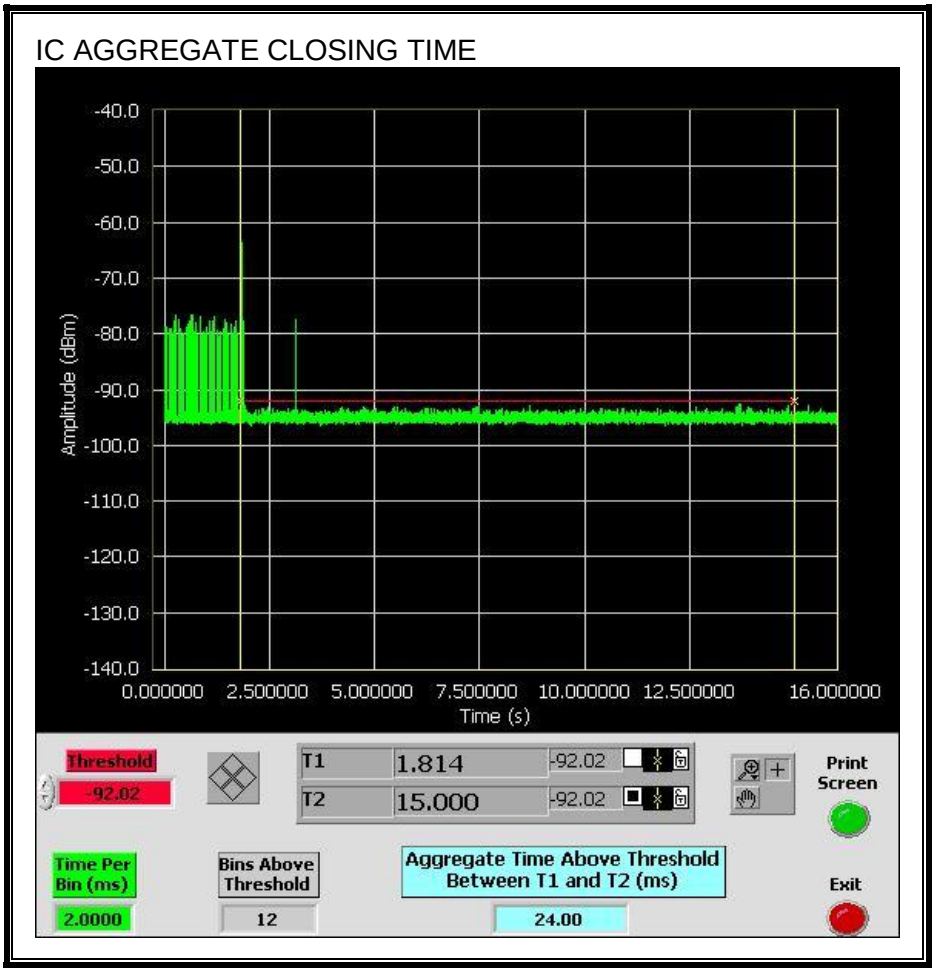
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the FCC aggregate monitoring period.

FCC AGGREGATE CLOSING TIME



Only intermittent transmissions are observed during the IC aggregate monitoring period.



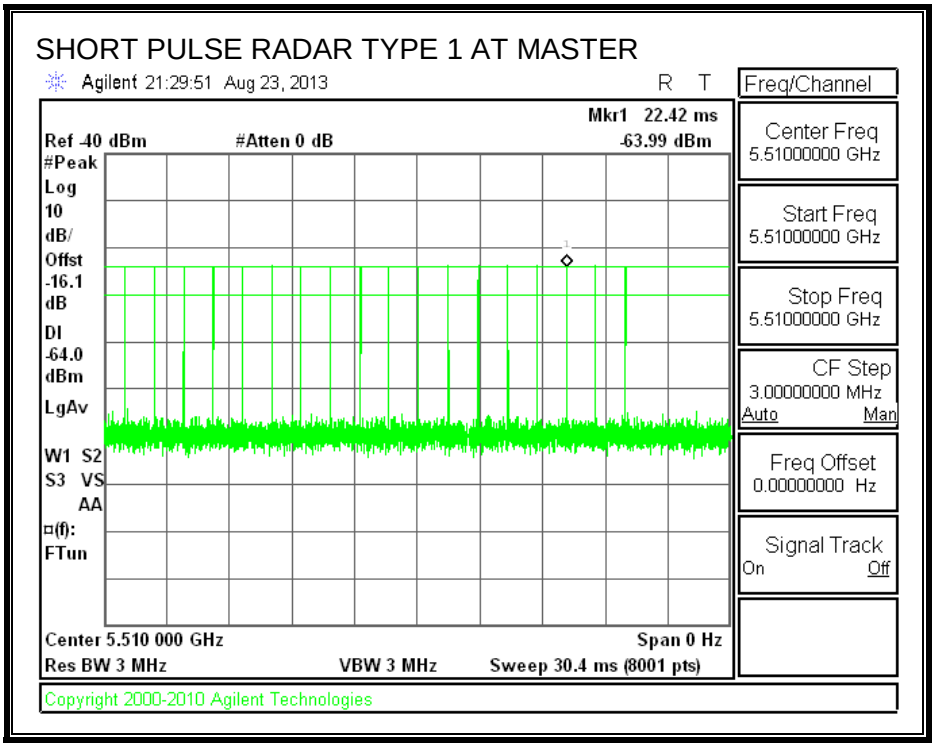
11.3. RESULTS FOR 40 MHz BANDWIDTH

11.3.1. TEST CHANNEL

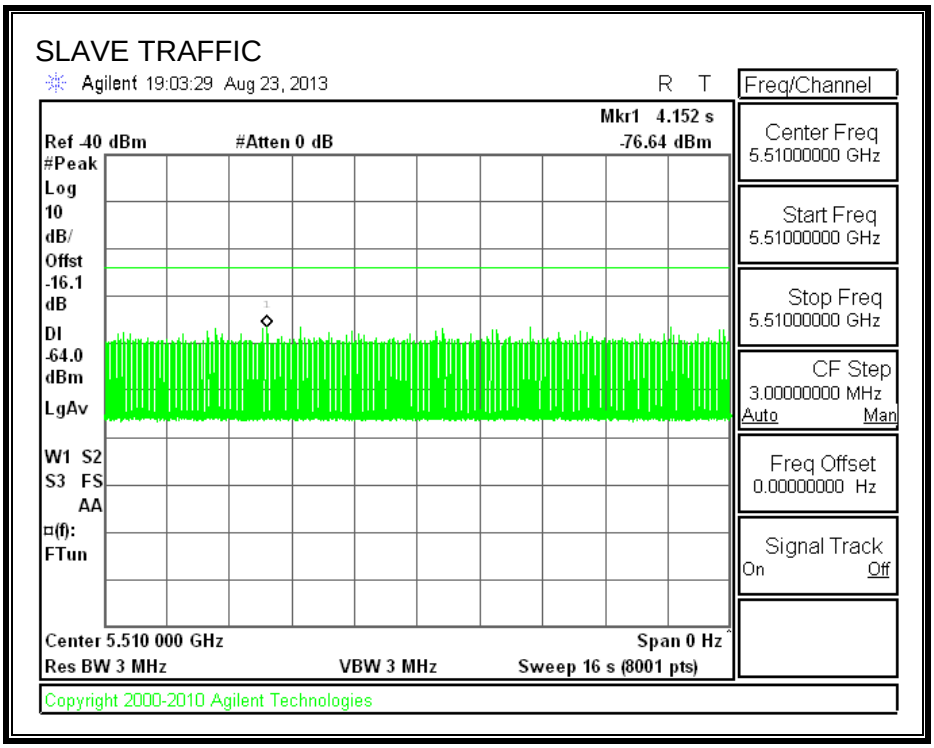
All tests were performed at a channel center frequency of 5510 MHz.

11.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



TRAFFIC



11.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.3.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =
(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the FCC aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

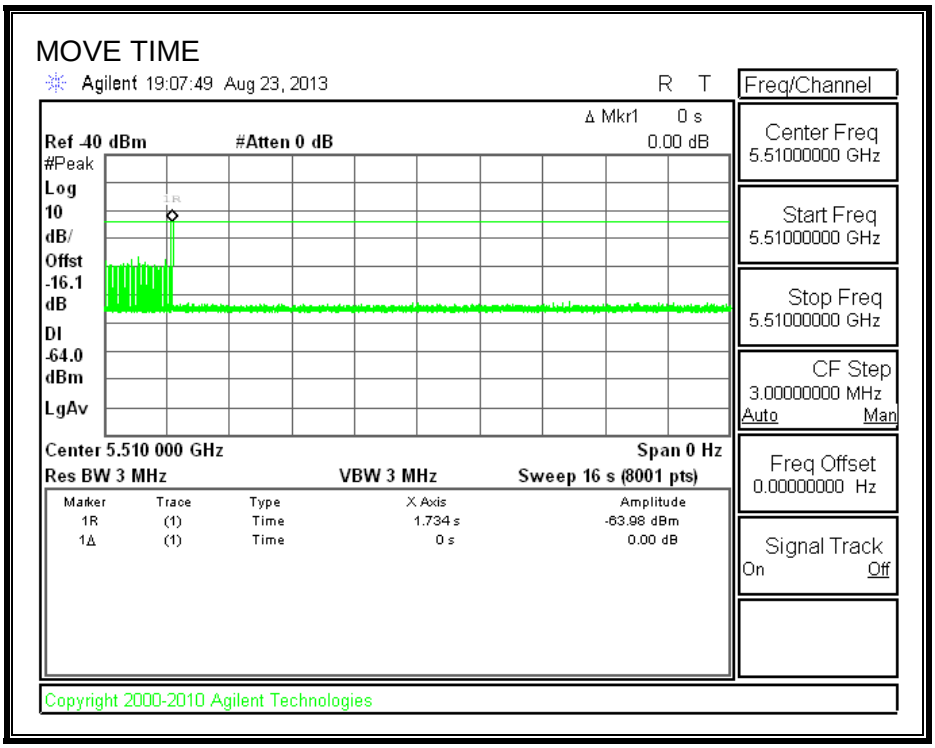
The observation period over which the IC aggregate time is calculated begins at (Reference Marker) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

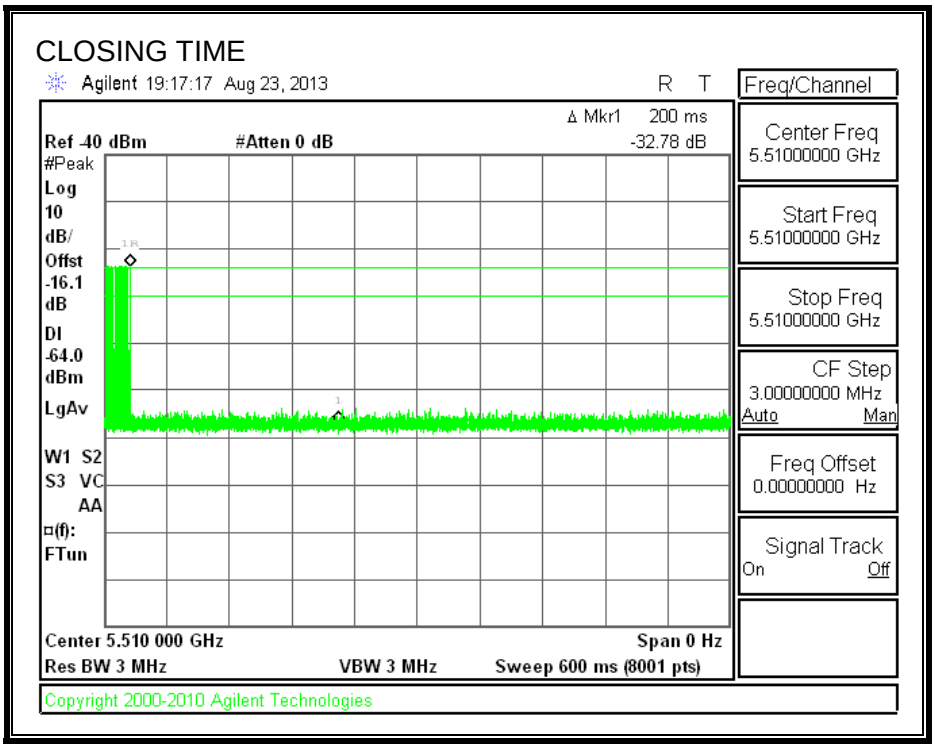
Agency	Channel Move Time (sec)	Limit (sec)
FCC / IC	0.000	10

Agency	Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
FCC	0.0	60
IC	0.0	260

MOVE TIME



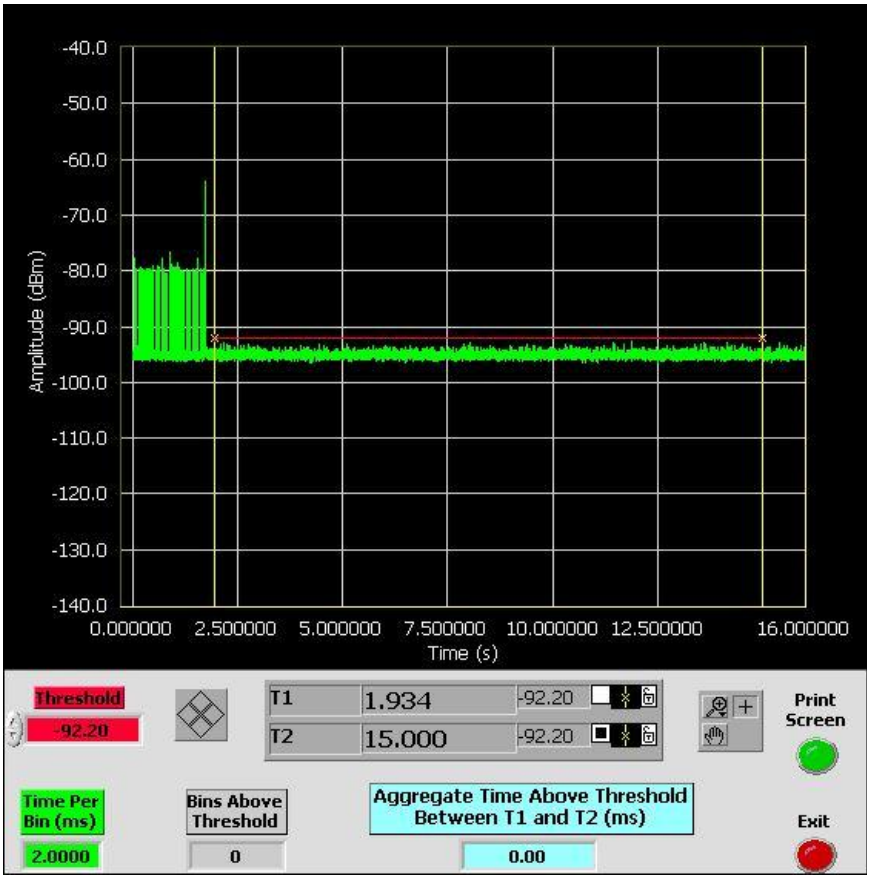
CHANNEL CLOSING TIME



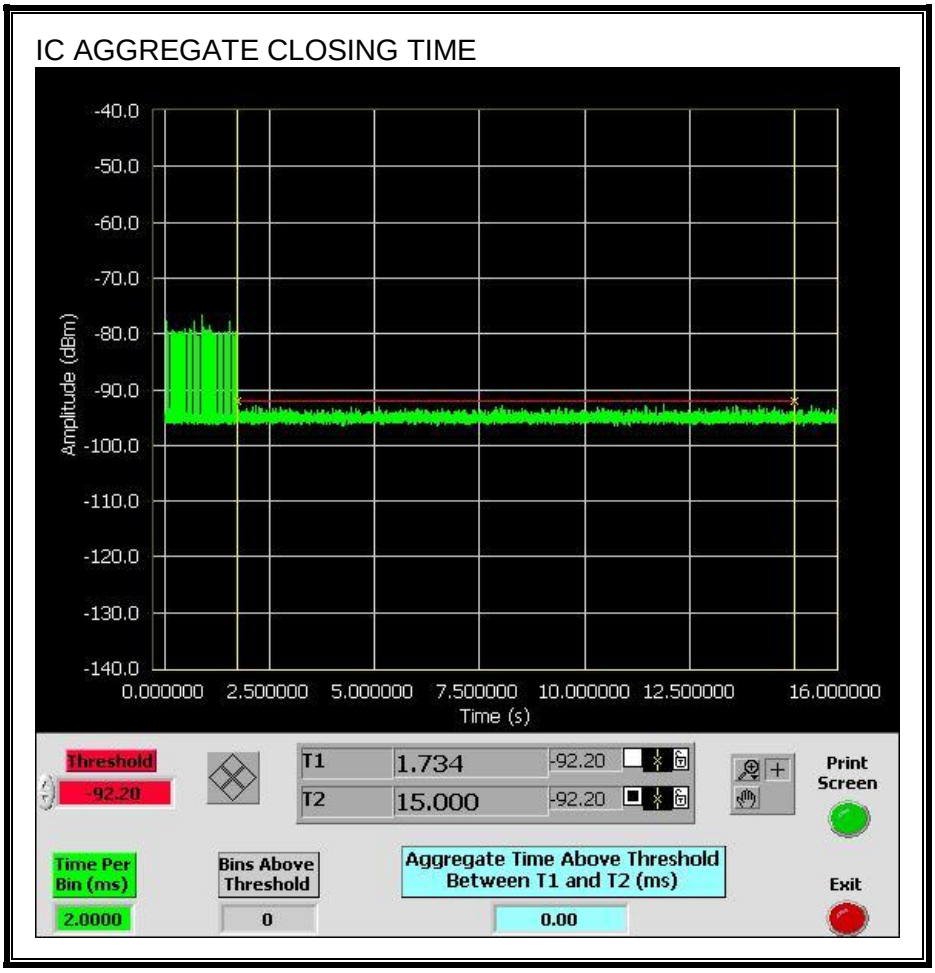
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Non transmissions are observed during the FCC aggregate monitoring period.

FCC AGGREGATE CLOSING TIME



Non transmissions are observed during the IC aggregate monitoring period.



11.3.5. NON-OCCUPANCY PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 30-minute observation time.