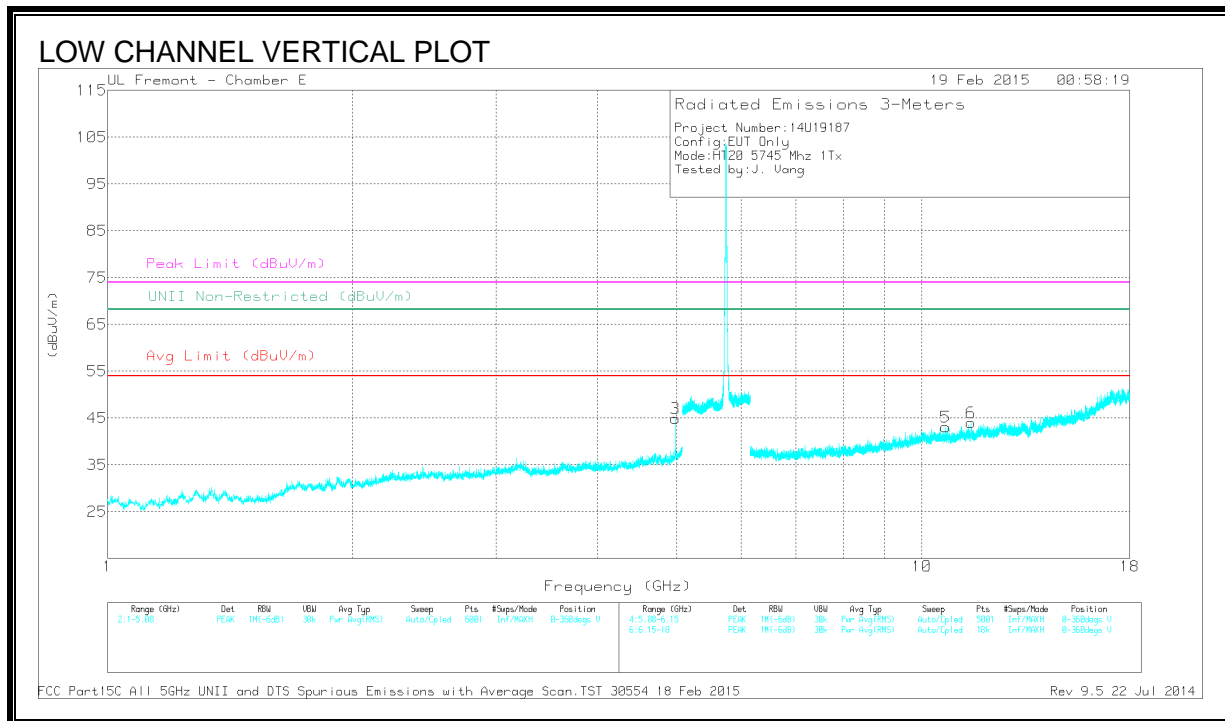
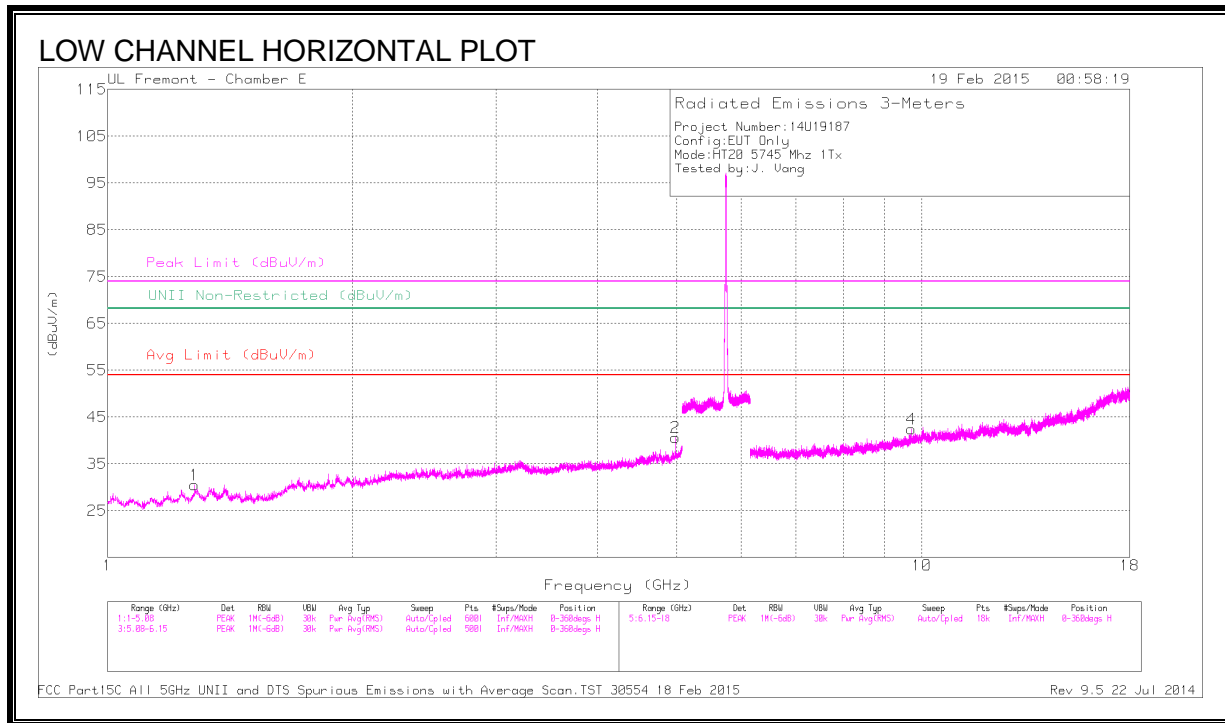


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-53.73	PK	34.7	-20.3	11.8	-27.53	-17	-10.53	149	175	V
2	5.86	-58.76	PK	34.7	-20.3	11.8	-32.56	-27	-5.56	149	175	V

PK - Peak detector

LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

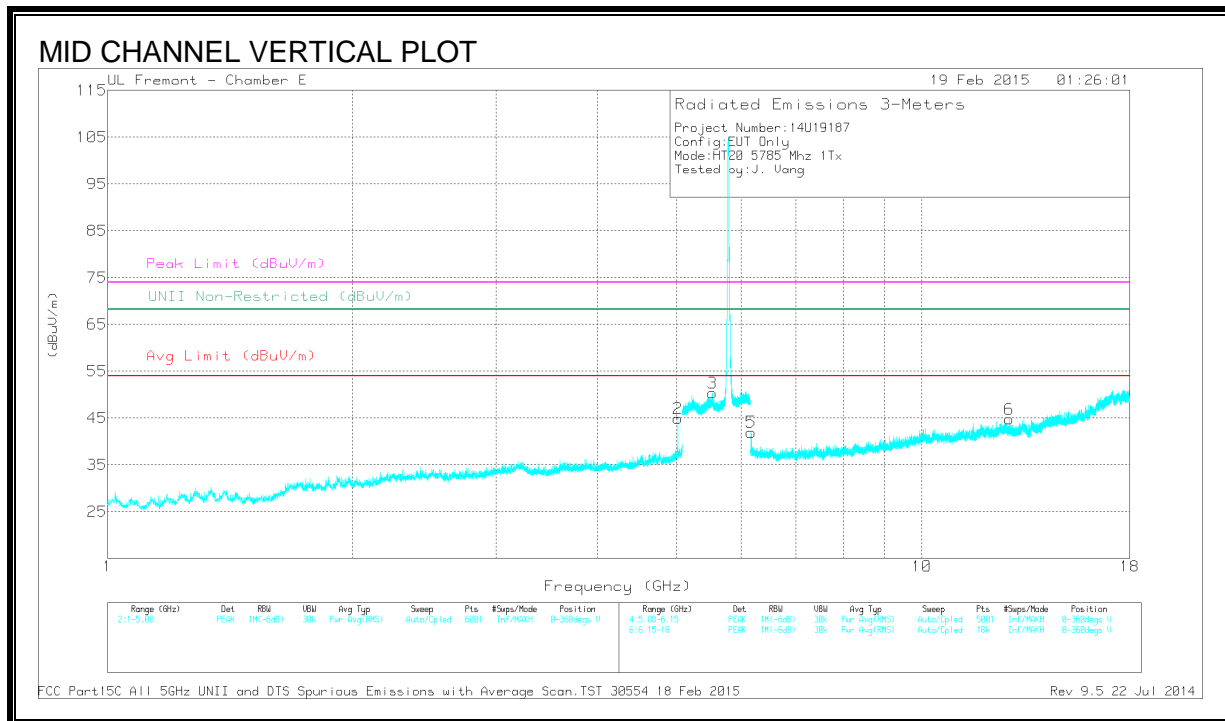
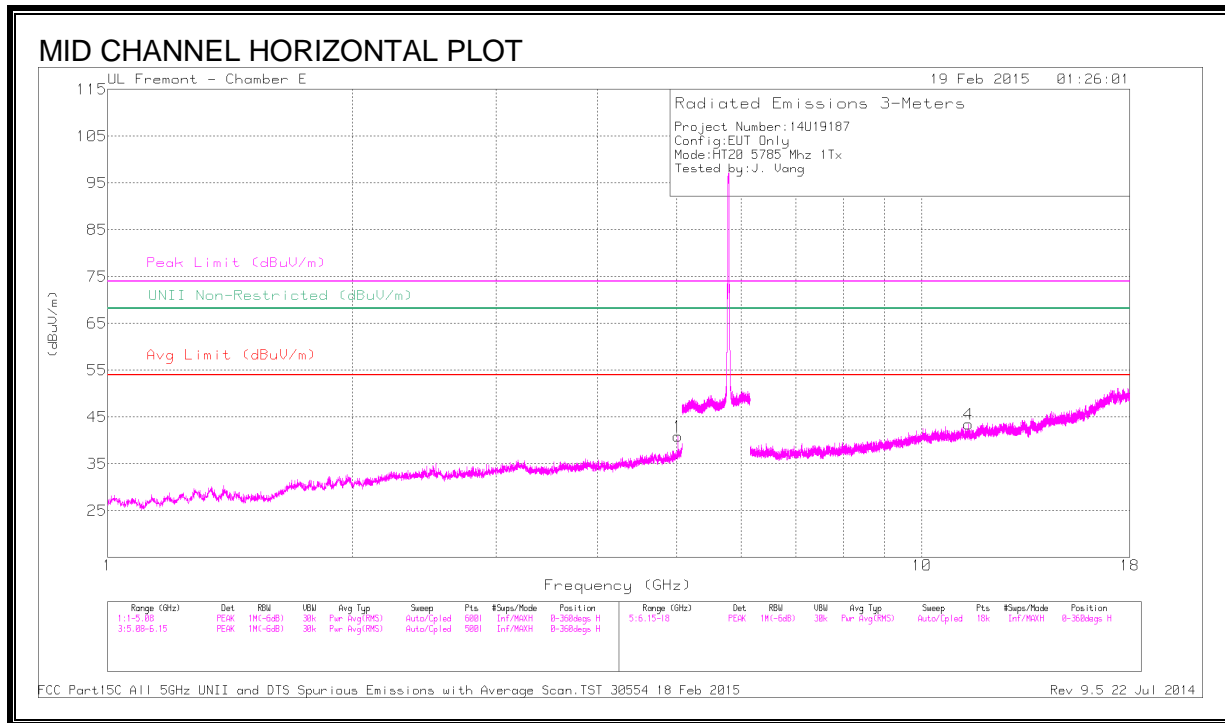
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.279	42.92	PK1	28.3	-34.2	37.02	-	-	74	-36.98	-	-	67	101	H
	* 1.28	30.71	AD1	28.4	-34.3	24.81	54	-29.19	-	-	-	-	67	101	H
2	* 4.979	42.95	PK1	33.9	-29.3	47.55	-	-	74	-26.45	-	-	254	200	H
	* 4.979	34.17	AD1	33.9	-29.3	38.77	54	-15.23	-	-	-	-	254	200	H
3	* 4.979	46.14	PK1	33.9	-29.3	50.74	-	-	74	-23.26	-	-	302	212	V
	* 4.979	40.04	AD1	33.9	-29.3	44.64	54	-9.36	-	-	-	-	302	212	V
5	* 10.698	36.26	PK1	37.2	-23.7	49.76	-	-	74	-24.24	-	-	336	200	H
	* 10.695	24.96	AD1	37.2	-23.7	38.46	54	-15.54	-	-	-	-	336	200	H
6	* 11.491	36.96	PK1	37.5	-24.5	49.96	-	-	74	-24.04	-	-	351	101	V
	* 11.489	25.19	AD1	37.5	-24.6	38.09	54	-15.91	-	-	-	-	351	101	V
4	9.7	36.75	PK1	36.9	-24.7	48.95	-	-	-	-	68.2	-19.25	329	100	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

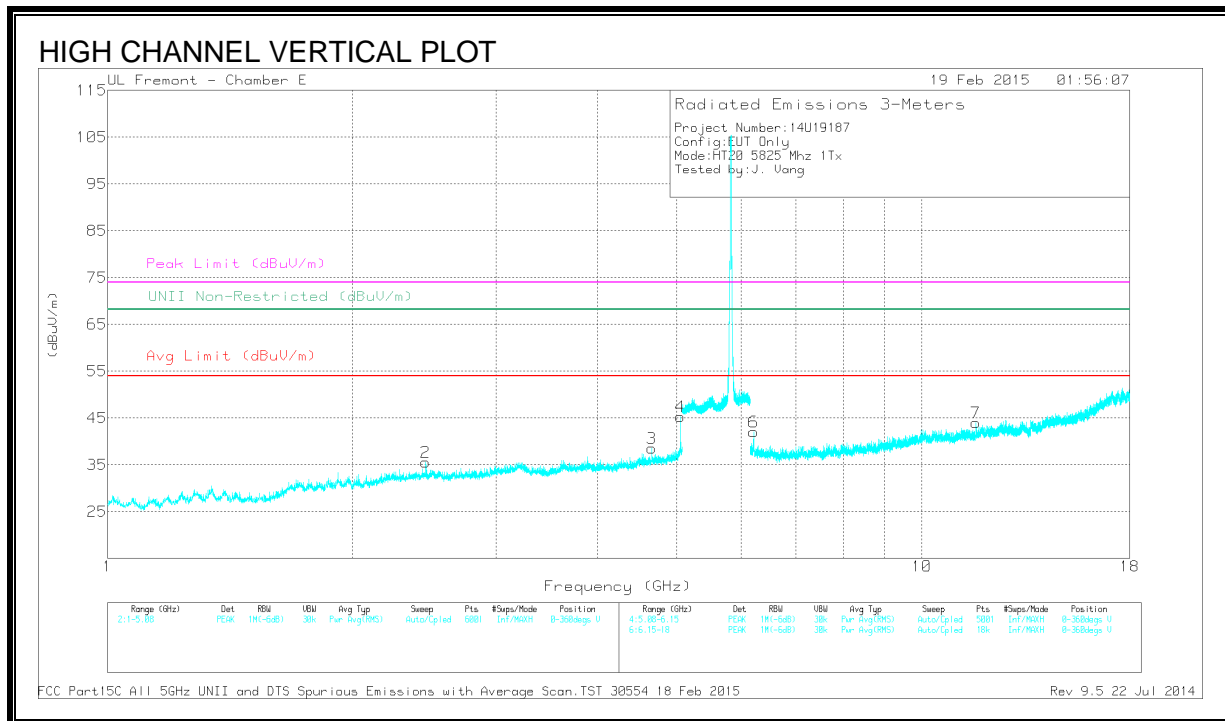
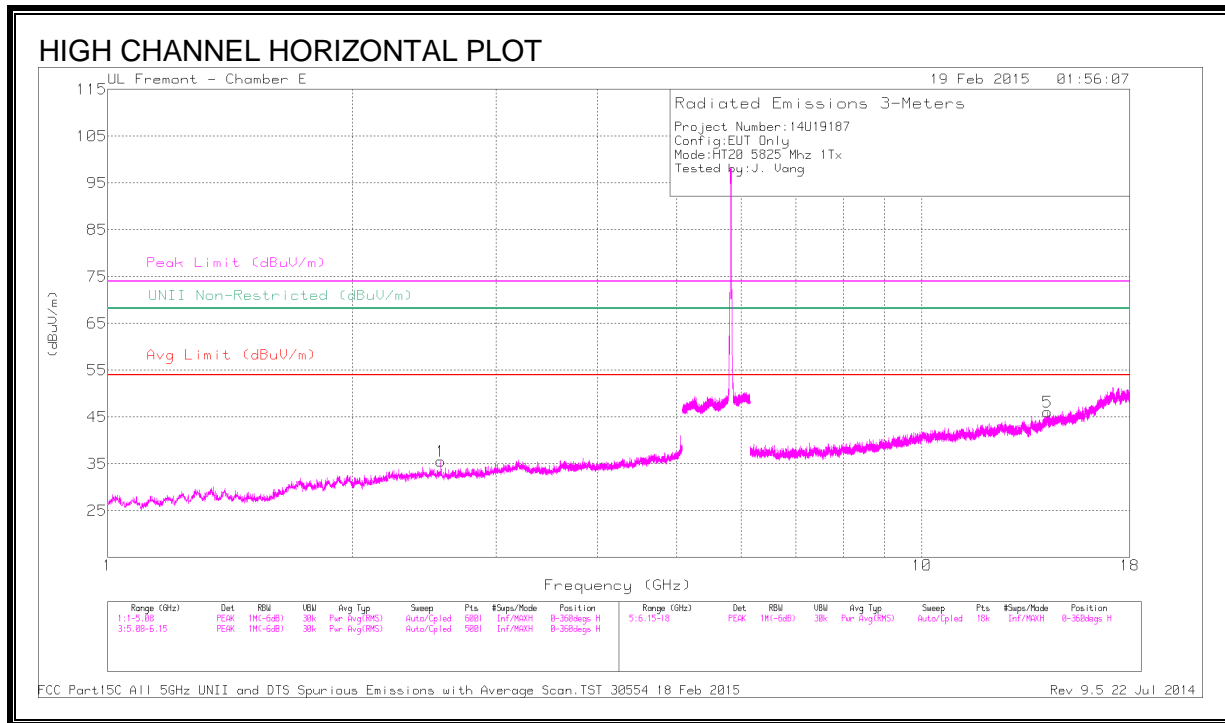
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.014	44.12	PK1	33.9	-29	49.02	-	-	74	-24.98	-	-	253	310	H
	* 5.014	36.74	AD1	33.9	-29	41.64	54	-12.36	-	-	-	-	253	310	H
2	* 5.014	46.09	PK1	33.9	-29	50.99	-	-	74	-23.01	-	-	303	210	V
	* 5.014	40.08	AD1	33.9	-29	44.98	54	-9.02	-	-	-	-	303	210	V
4	* 11.41	36.83	PK1	37.5	-23.8	50.53	-	-	74	-23.47	-	-	241	102	H
	* 11.408	25.18	AD1	37.5	-23.8	38.88	54	-15.12	-	-	-	-	241	102	H
3	5.533	44.71	PK1	34.4	-20.5	58.61	-	-	-	-	68.2	-9.59	350	102	V
5	6.169	41.23	PK1	35.2	-29.4	47.03	-	-	-	-	68.2	-21.17	241	102	V
6	12.809	36.58	PK1	38.8	-24.9	50.48	-	-	-	-	68.2	-17.72	299	102	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.66	41.87	PK1	33.9	-29.7	46.07	-	-	74	-27.93	-	-	320	257	V
	* 4.66	32.54	AD1	33.9	-29.7	36.74	54	-17.26	-	-	-	-	320	257	V
4	* 5.048	45.69	PK1	33.9	-28.7	50.89	-	-	74	-23.11	-	-	305	208	V
	* 5.048	39.62	AD1	33.9	-28.7	44.82	54	-9.18	-	-	-	-	305	208	V
7	* 11.648	36.59	PK1	37.7	-24.3	49.99	-	-	74	-24.01	-	-	266	200	V
	* 11.645	25.05	AD1	37.7	-24.3	38.45	54	-15.55	-	-	-	-	266	200	V
2	2.458	42.92	PK1	32.1	-32.8	42.22	-	-	-	-	68.2	-25.98	360	200	V
1	2.566	42.89	PK1	32	-32.7	42.19	-	-	-	-	68.2	-26.01	318	101	H
6	6.214	44.28	PK1	35.3	-29.5	50.08	-	-	-	-	68.2	-18.12	318	200	V
5	14.275	38.25	PK1	39.3	-24.9	52.65	-	-	-	-	68.2	-15.55	240	101	H

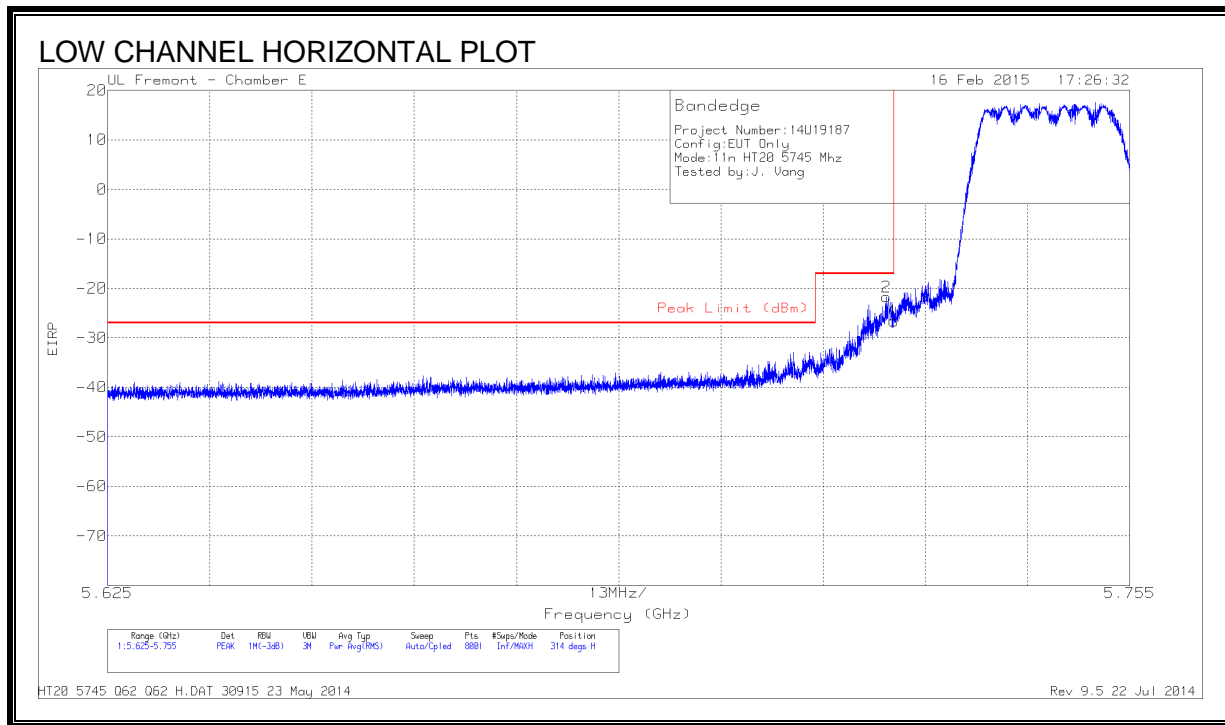
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

9.21. 802.11n HT20 2Tx CDD MODE IN THE 5.8 GHz BAND

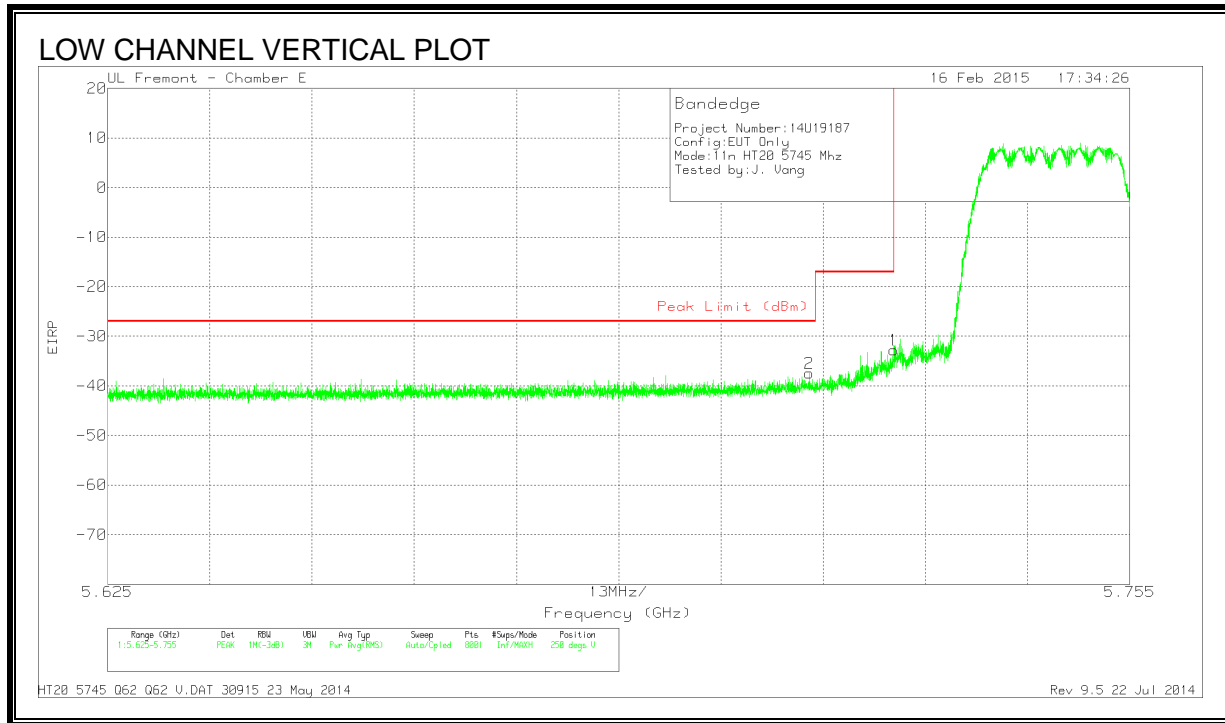
RESTRICTED BANDEGE (LOW CHANNEL)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cb/Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.724	-47.27	PK	34.6	-20.8	11.8	-21.67	-17	-4.67	314	102	H
1	5.725	-52.17	PK	34.6	-20.8	11.8	-26.57	-17	-9.57	314	102	H

PK - Peak detector

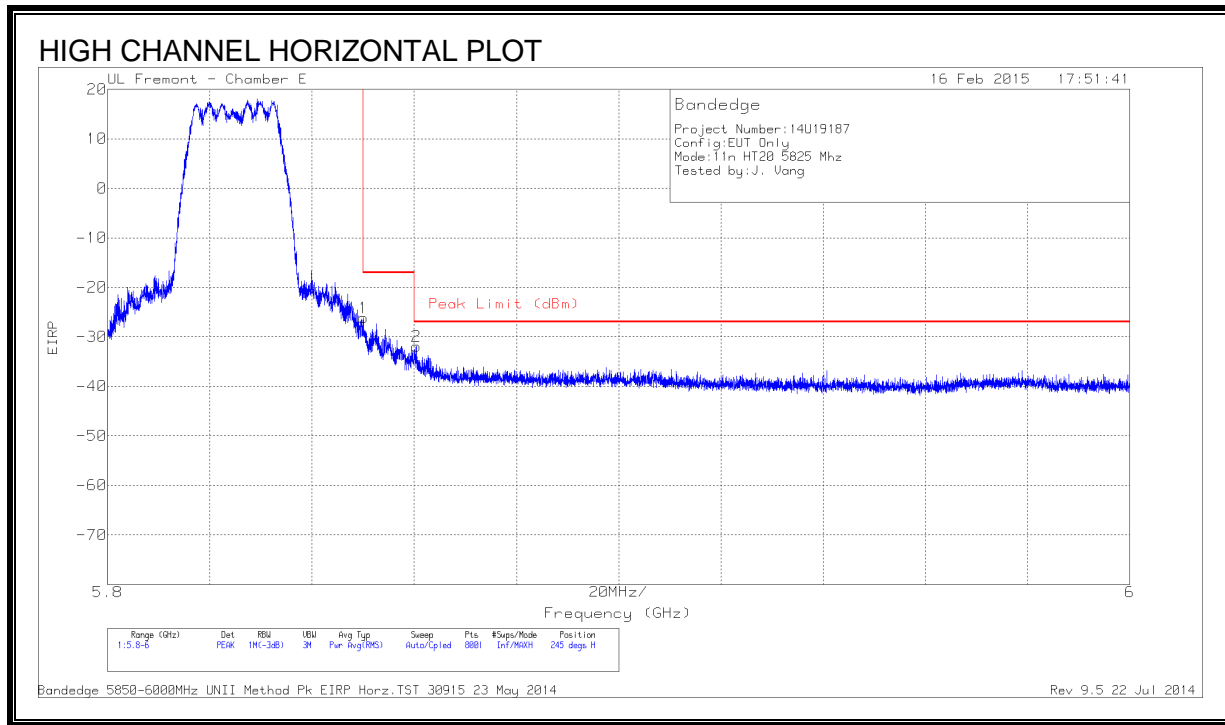


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-62.71	PK	34.5	-21	11.8	0	-37.41	-27	-10.41	250	118	V
1	5.725	-58.39	PK	34.6	-20.8	11.8	0	-32.79	-17	-15.79	250	118	V

PK - Peak detector

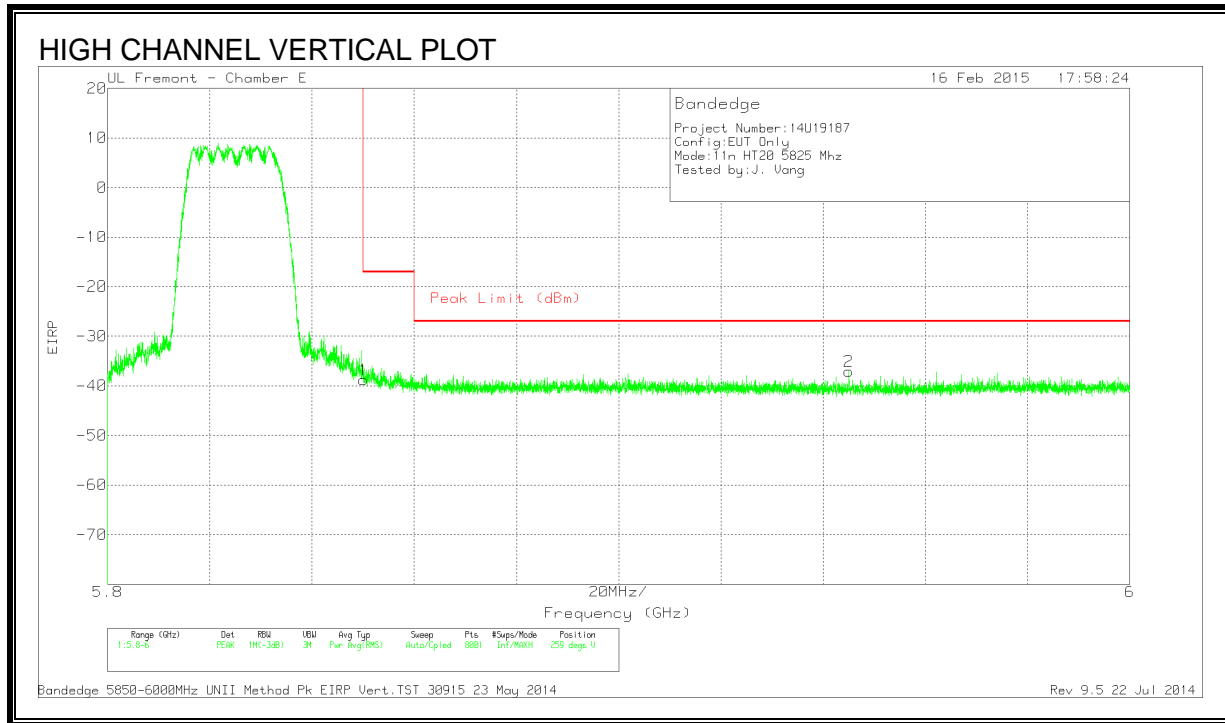
RESTRICTED BANDEDGE (HIGH CHANNEL)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-52.34	PK	34.7	-20.3	11.8	-26.14	-17	-9.14	245	136	H
2	5.86	-58.15	PK	34.7	-20.3	11.8	-31.95	-27	-4.95	245	136	H

PK - Peak detector

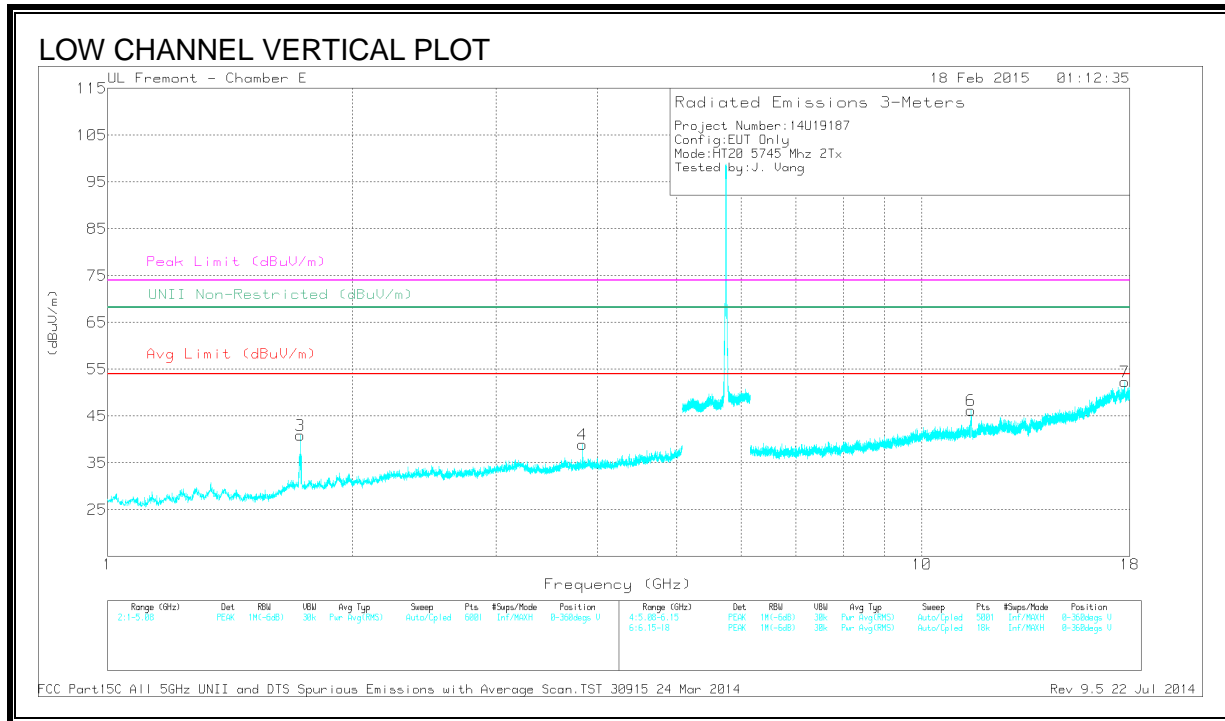
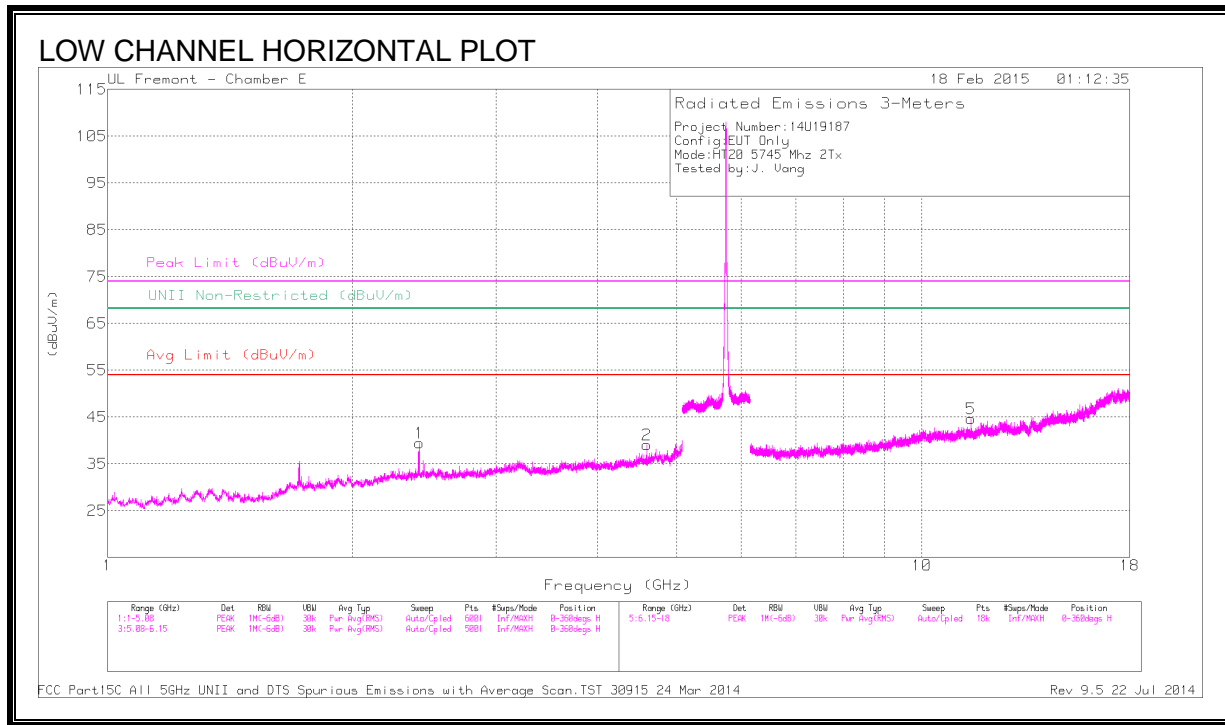


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cb/Filtr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-64.99	PK	34.7	-20.3	11.8	0	-38.79	-17	-21.79	259	156	V
2	5.945	-62.99	PK	34.8	-20.7	11.8	0	-37.09	-27	-10.09	259	156	V

PK - Peak detector

LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

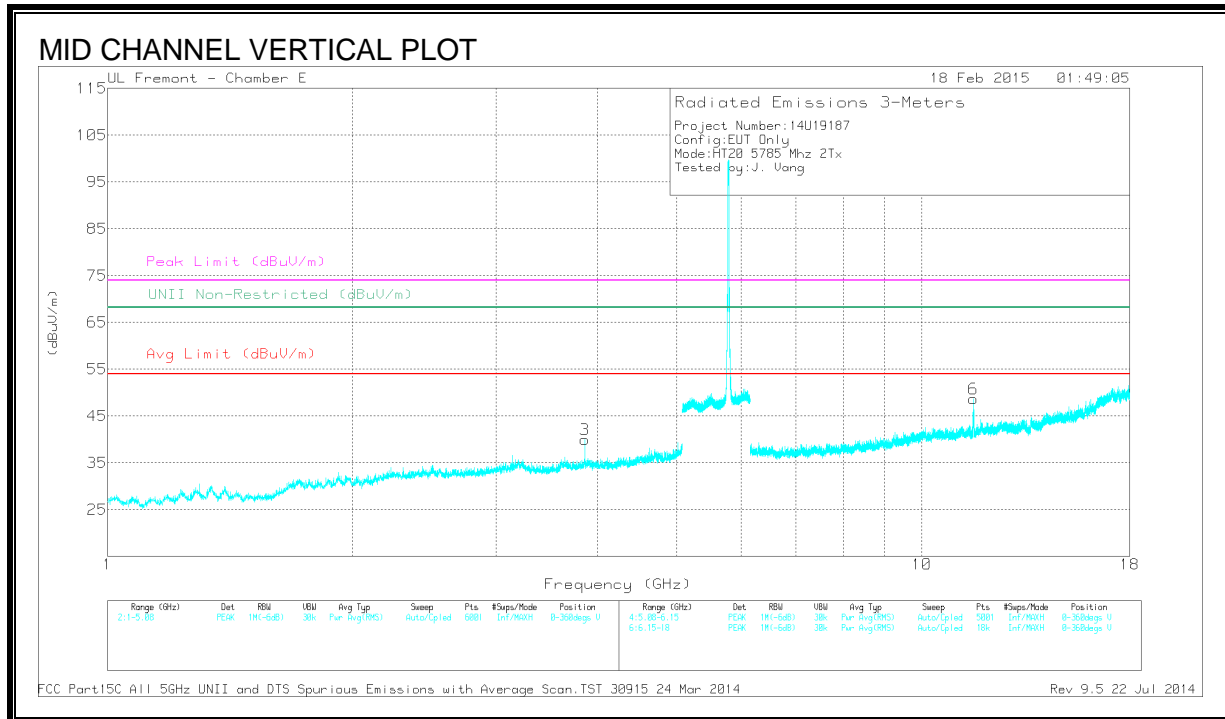
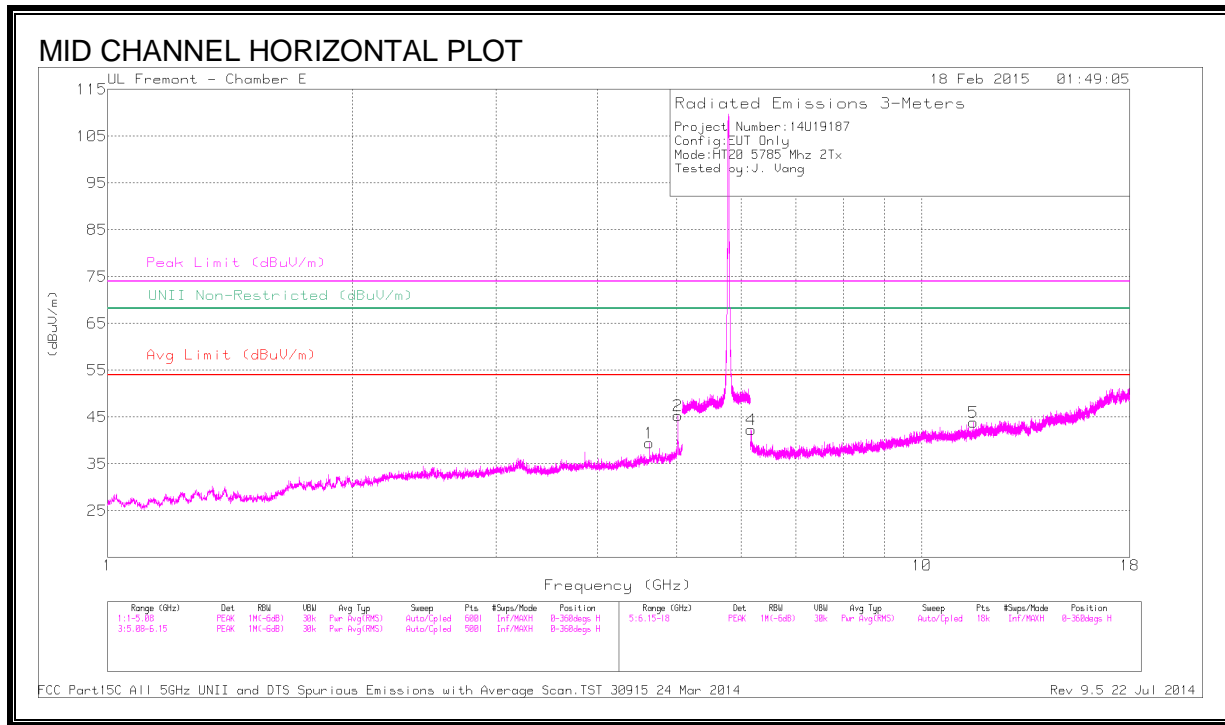
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.596	42.95	PK1	33.8	-30.8	45.95	-	-	74	-28.05	-	-	259	118	H
	* 4.596	33.96	AD1	33.8	-30.8	36.96	54	-17.04	-	-	-	-	259	118	H
4	* 3.83	43.89	PK1	33.1	-31.6	45.39	-	-	74	-28.61	-	-	292	232	V
	* 3.83	36.11	AD1	33.1	-31.6	37.61	54	-16.39	-	-	-	-	292	232	V
5	* 11.492	39.82	PK1	37.5	-24.5	52.82	-	-	74	-21.18	-	-	261	225	H
	* 11.489	28.05	AD1	37.5	-24.6	40.95	54	-13.05	-	-	-	-	261	225	H
6	* 11.486	44.62	PK1	37.5	-24.6	57.52	-	-	74	-16.48	-	-	292	281	V
	* 11.489	31.87	AD1	37.5	-24.6	44.77	54	-9.23	-	-	-	-	292	281	V
7	* 17.748	35.87	PK1	42.2	-19.7	58.37	-	-	74	-15.63	-	-	357	200	V
	* 17.749	24.47	AD1	42.2	-19.7	46.97	54	-7.03	-	-	-	-	357	200	V
3	1.724	43.11	PK1	30.2	-33.7	39.61	-	-	-	-	68.2	-28.59	259	200	V
1	2.416	42.73	PK1	32.2	-33.1	41.83	-	-	-	-	68.2	-26.37	360	200	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

MID CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

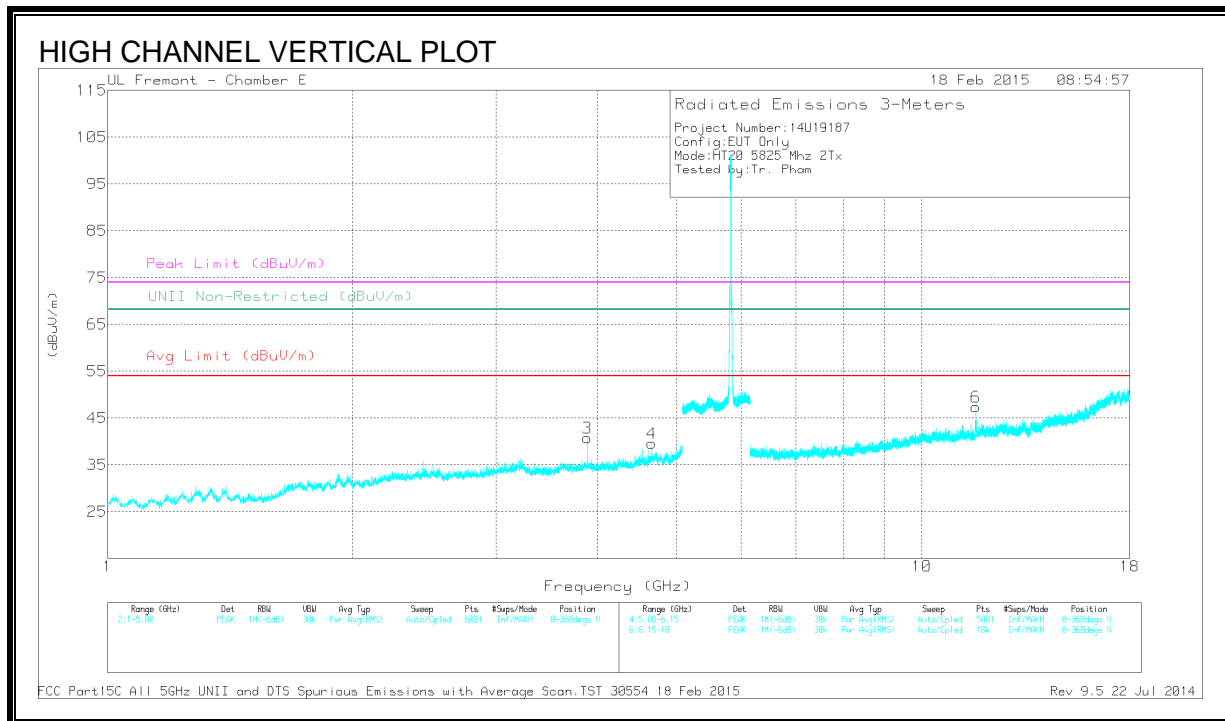
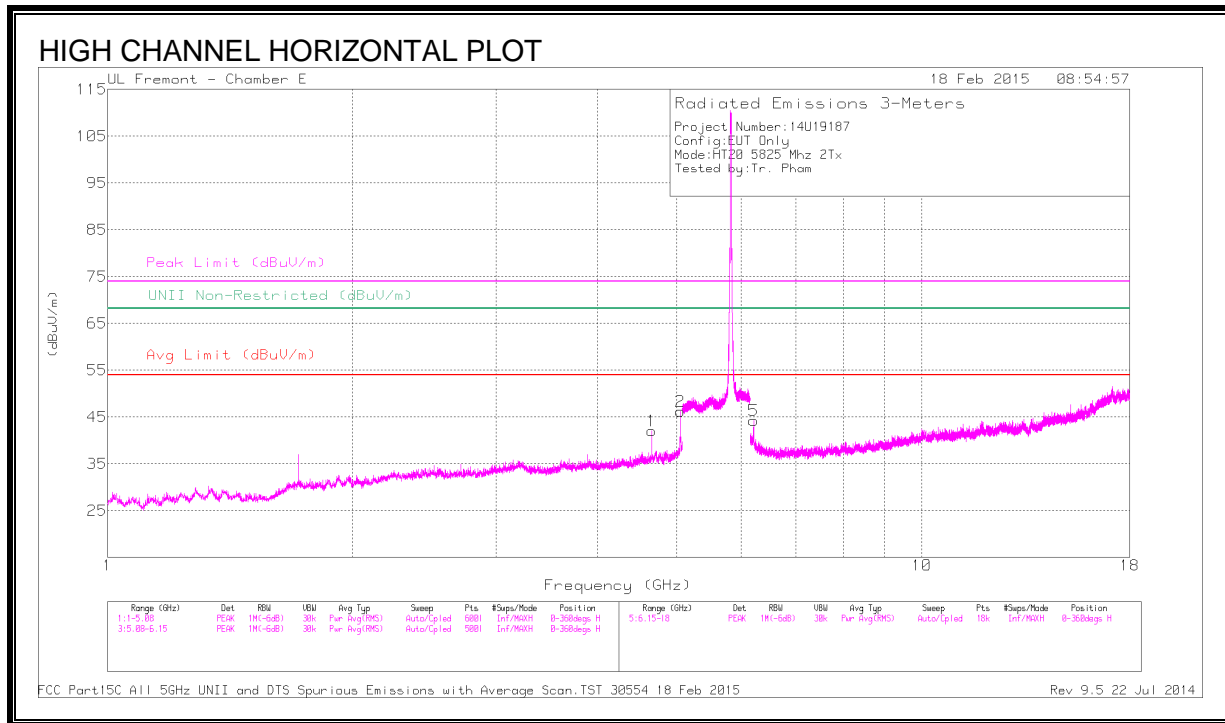
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.628	42.12	PK1	33.9	-30.3	45.72	-	-	74	-28.28	-	-	325	273	H
	* 4.628	34.14	AD1	33.9	-30.3	37.74	54	-16.26	-	-	-	-	325	273	H
2	* 5.014	45.83	PK1	33.9	-29	50.73	-	-	74	-23.27	-	-	255	172	H
	* 5.014	39.6	AD1	33.9	-29	44.5	54	-9.5	-	-	-	-	255	172	H
3	* 3.856	43.89	PK1	33.1	-31	45.99	-	-	74	-28.01	-	-	330	209	V
	* 3.857	35.99	AD1	33.1	-31	38.09	54	-15.91	-	-	-	-	330	209	V
5	* 11.57	42.13	PK1	37.6	-24.6	55.13	-	-	74	-18.87	-	-	244	334	H
	* 11.57	30.74	AD1	37.6	-24.6	43.74	54	-10.26	-	-	-	-	244	334	H
6	* 11.568	45.17	PK1	37.6	-24.5	58.27	-	-	74	-15.73	-	-	292	200	V
	* 11.57	33.52	AD1	37.6	-24.6	46.52	54	-7.48	-	-	-	-	292	200	V
4	6.171	44.8	PK1	35.2	-29.4	50.6	-	-	-	-	68.2	-17.6	321	201	H

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cb/FI tr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.66	44.53	PK1	33.9	-29.7	48.73	-	-	74	-25.27	-	-	289	304	H
	* 4.66	37.31	AD1	33.9	-29.7	41.51	54	-12.49	-	-	-	-	289	304	H
2	* 5.048	47.28	PK1	33.9	-28.7	52.48	-	-	74	-21.52	-	-	260	177	H
	* 5.048	40.32	AD1	33.9	-28.7	45.52	54	-8.48	-	-	-	-	260	177	H
3	* 3.883	44.42	PK1	33.1	-30.5	47.02	-	-	74	-26.98	-	-	332	190	V
	* 3.883	36.94	AD1	33.1	-30.5	39.54	54	-14.46	-	-	-	-	332	190	V
4	* 4.66	43.51	PK1	33.9	-29.7	47.71	-	-	74	-26.29	-	-	317	154	V
	* 4.66	33.93	AD1	33.9	-29.7	38.13	54	-15.87	-	-	-	-	317	154	V
5	* 11.647	43.87	PK1	37.7	-24.3	57.27	-	-	74	-16.73	-	-	282	285	V
	* 11.65	32.3	AD1	37.7	-24.3	45.7	54	-8.3	-	-	-	-	282	285	V
6	6.213	46.41	PK1	35.3	-29.5	52.21	-	-	-	-	68.2	-15.99	326	182	H

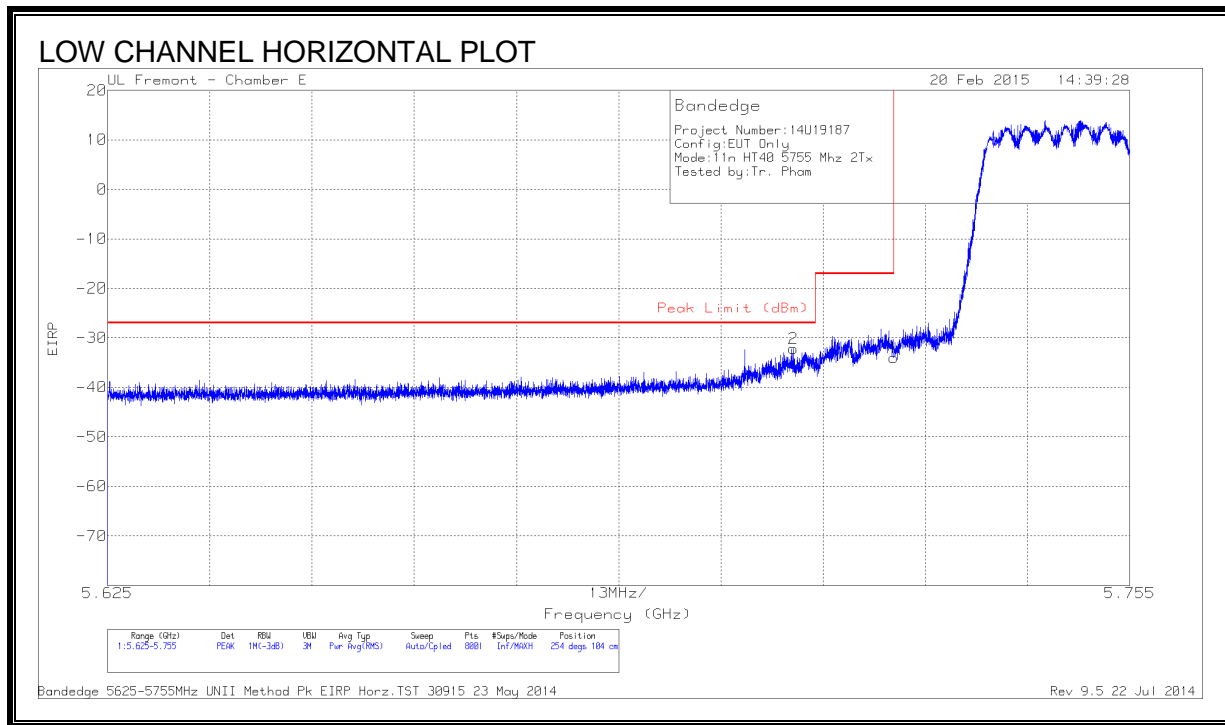
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

9.22. 802.11n HT40 SISO MODE IN THE 5.8 GHz BAND

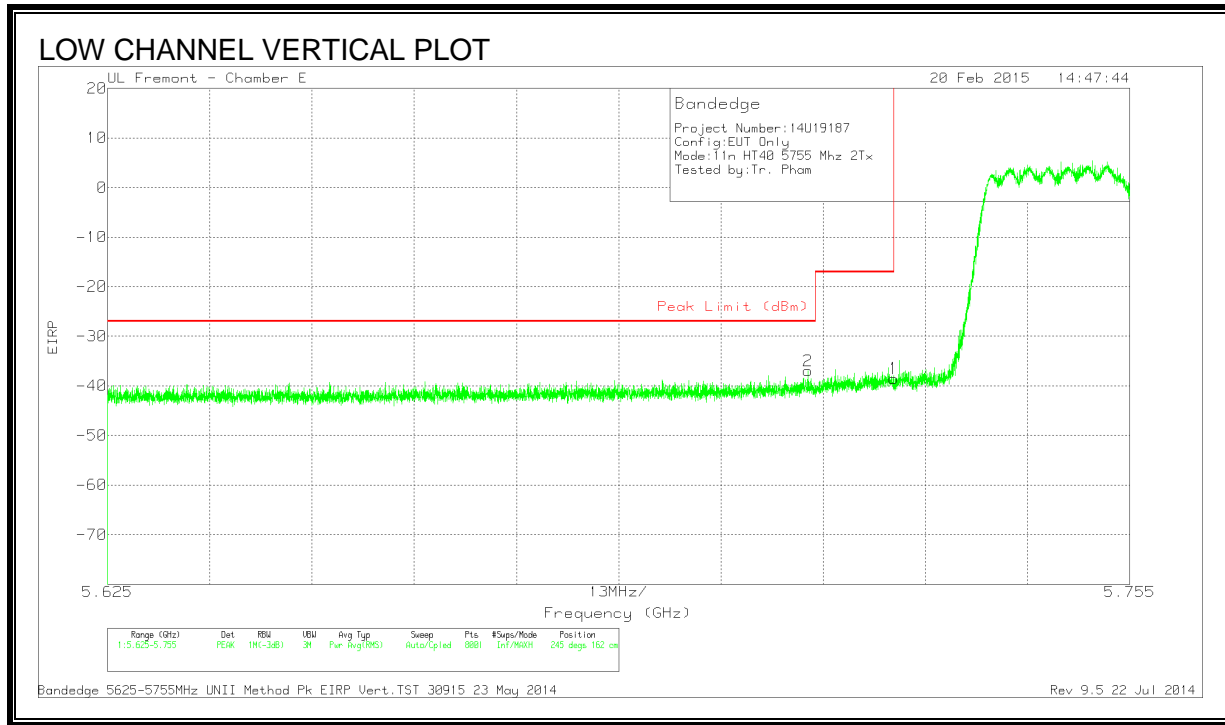
RESTRICTED BANDEGE (LOW CHANNEL)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.712	-57.65	PK	34.7	-21	11.8	-32.15	-27	-5.15	254	104	H
1	5.725	-59.72	PK	34.7	-20.8	11.8	-34.02	-17	-17.02	254	104	H

PK - Peak detector

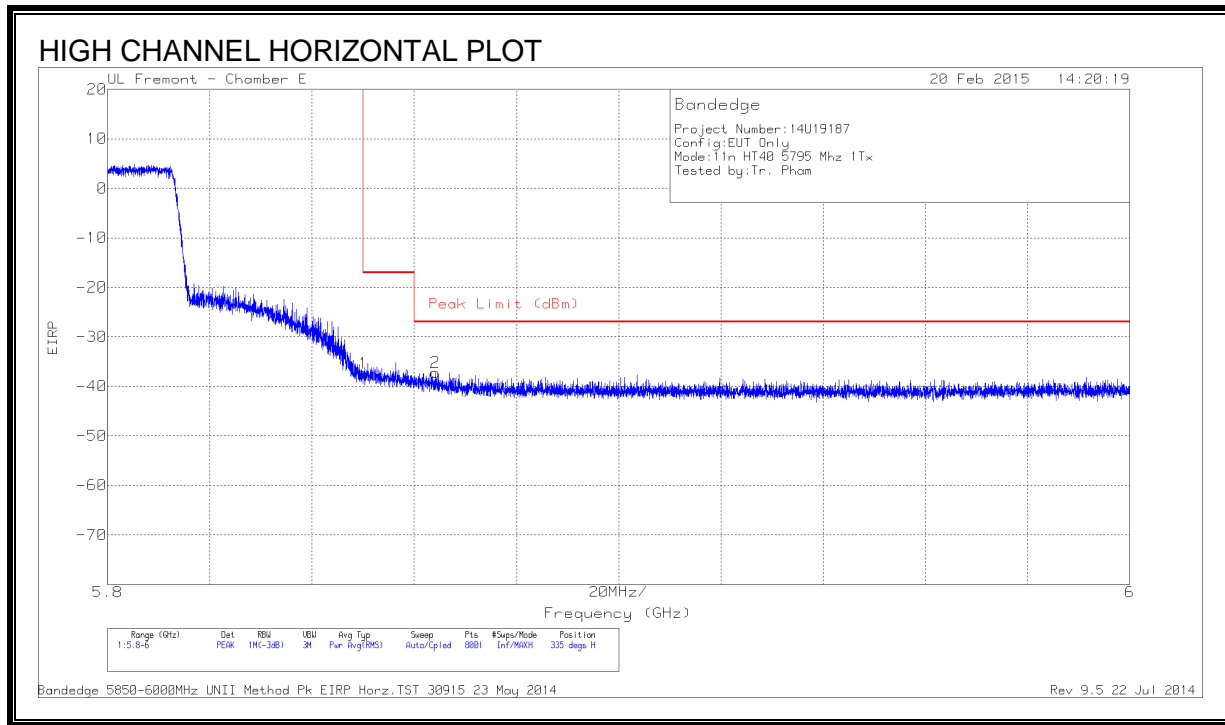


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-62.47	PK	34.7	-21	11.8	-36.97	-27	-9.97	245	162	V
1	5.725	-64.19	PK	34.7	-20.8	11.8	-38.49	-17	-21.49	245	162	V

PK - Peak detector

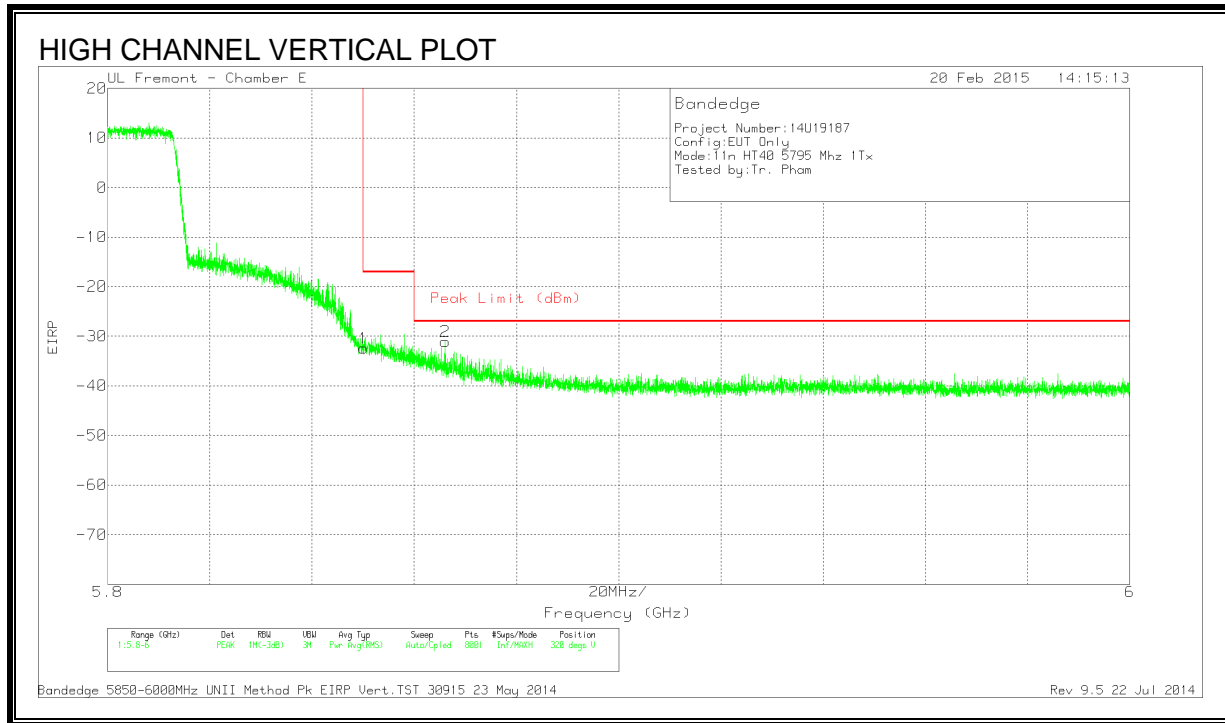
RESTRICTED BANDEDGE (HIGH CHANNEL)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cb/Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-63.47	PK	34.7	-20.3	11.8	-37.27	-17	-20.27	335	176	H
2	5.864	-63.29	PK	34.7	-20.4	11.8	-37.19	-27	-10.19	335	176	H

PK - Peak detector

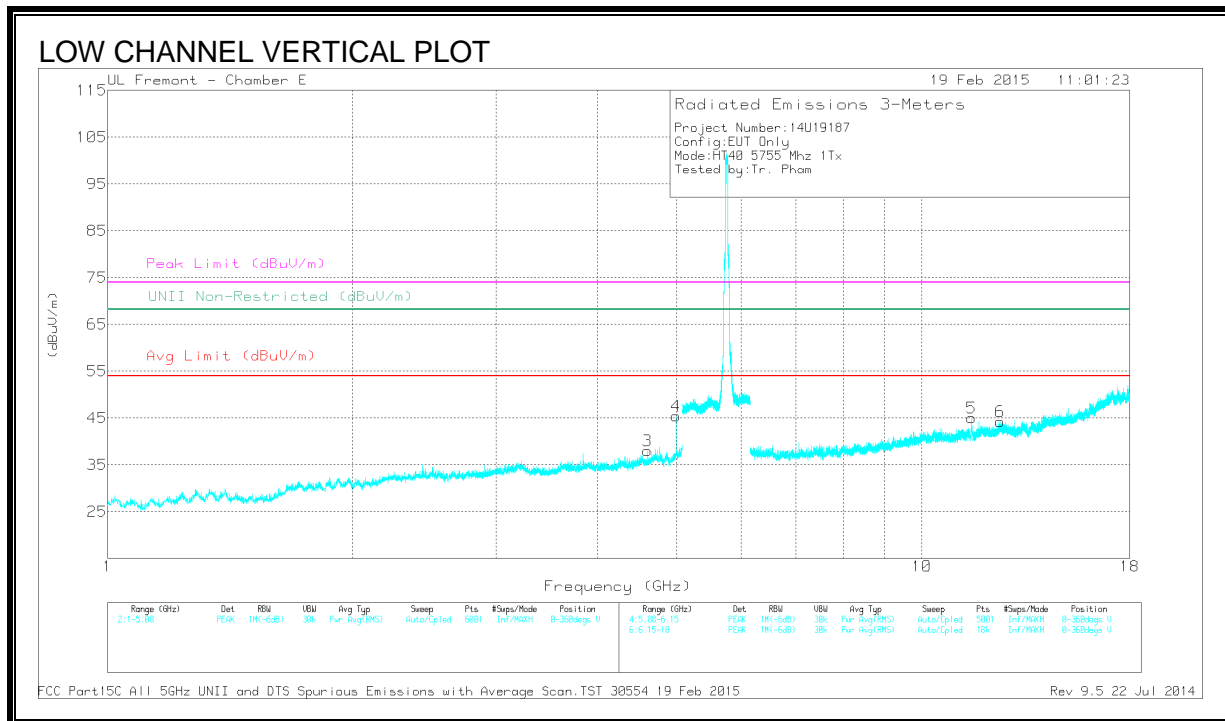
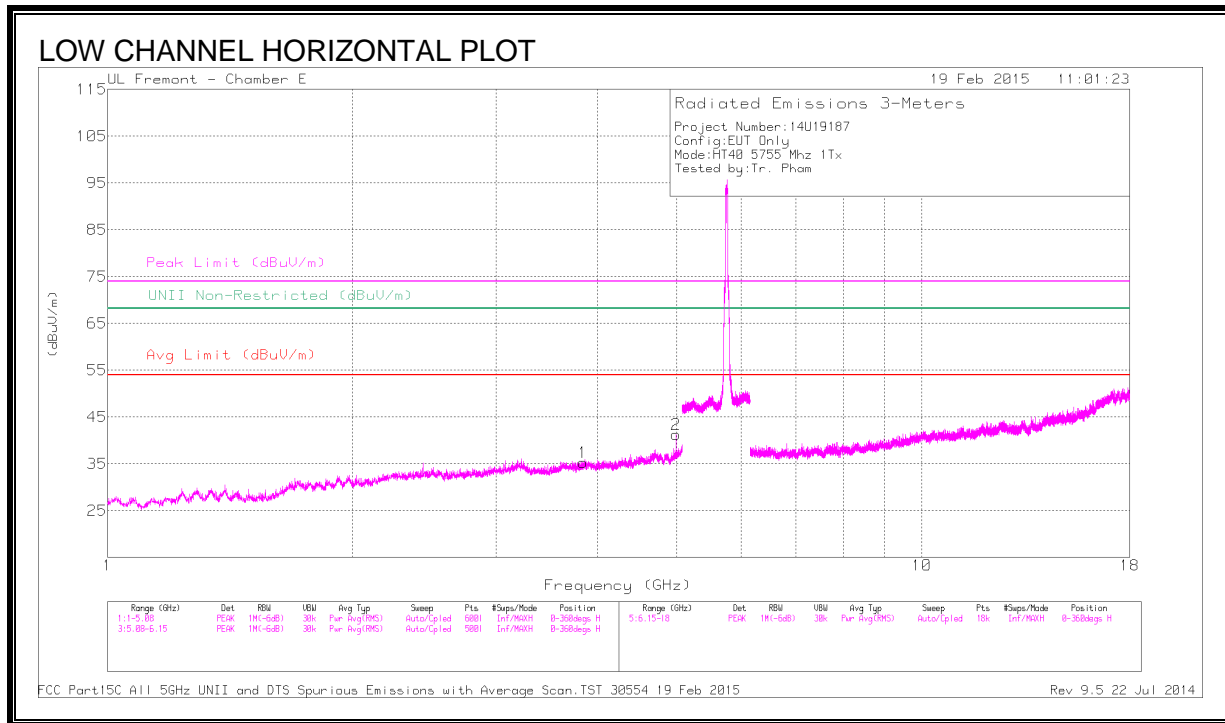


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-58.66	PK	34.7	-20.3	11.8	-32.46	-17	-15.46	320	175	V
2	5.866	-57.19	PK	34.8	-20.5	11.8	-31.09	-27	-4.09	320	175	V

PK - Peak detector

LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

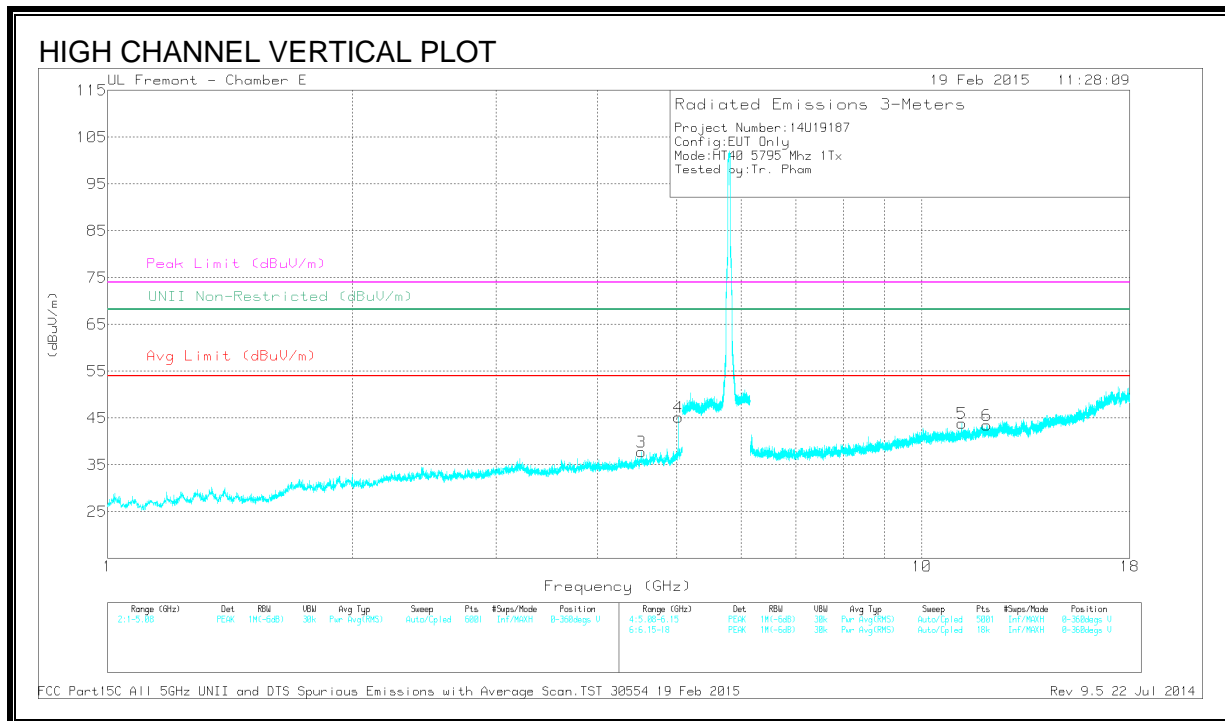
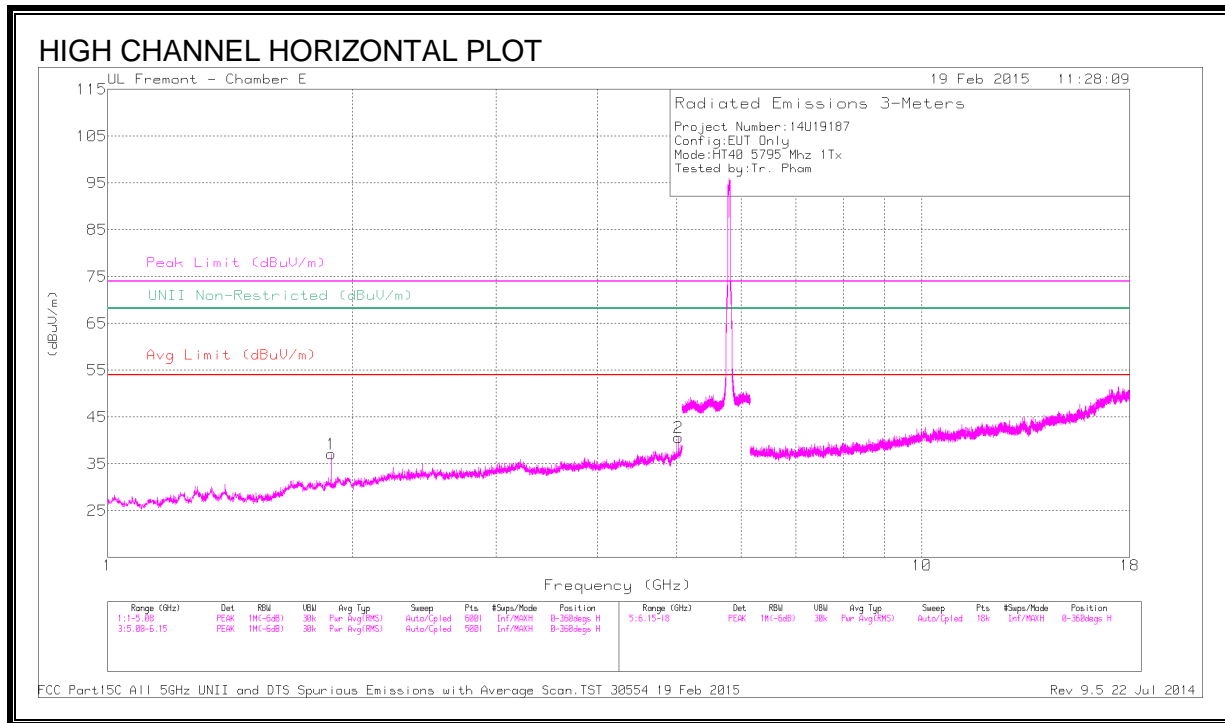
Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.837	42.47	PK1	33.1	-31.6	43.97	-	-	74	-30.03	360	101	H
	* 3.837	30.77	AD1	33.1	-31.6	32.27	54	-21.73	-	-	360	101	H
2	* 4.988	44.37	PK1	33.9	-29.2	49.07	-	-	74	-24.93	75	345	H
	* 4.988	37.2	AD1	33.9	-29.2	41.9	54	-12.1	-	-	75	345	H
3	* 4.604	41.06	PK1	33.8	-30.8	44.06	-	-	74	-29.94	75	345	V
	* 4.603	29.96	AD1	33.8	-30.8	32.96	54	-21.04	-	-	75	345	V
4	* 4.987	46.67	PK1	33.9	-29.2	51.37	-	-	74	-22.63	134	213	V
	* 4.988	41.12	AD1	33.9	-29.2	45.82	54	-8.18	-	-	134	213	V
5	* 11.513	40.95	PK1	37.5	-24.3	54.15	-	-	74	-19.85	269	225	V
	* 11.511	29.08	AD1	37.5	-24.4	42.18	54	-11.82	-	-	269	225	V
6	* 12.471	36.76	PK1	38.6	-23.5	51.86	-	-	74	-22.14	269	225	V
	* 12.473	25.63	AD1	38.6	-23.5	40.73	54	-13.27	-	-	269	225	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 5.023	44.62	PK1	33.9	-28.9	49.62	-	-	74	-24.38	-	-	81	339	H
	* 5.022	37.33	AD1	33.9	-28.9	42.33	54	-11.67	-	-	-	-	81	339	H
3	* 4.522	41.38	PK1	33.7	-30.3	44.78	-	-	74	-29.22	-	-	81	339	V
	* 4.524	30.05	AD1	33.7	-30.3	33.45	54	-20.55	-	-	-	-	81	339	V
4	* 5.022	46.56	PK1	33.9	-28.9	51.56	-	-	74	-22.44	-	-	133	208	V
	* 5.022	40.85	AD1	33.9	-28.9	45.85	54	-8.15	-	-	-	-	133	208	V
5	* 11.19	36.78	PK1	37.4	-23.3	50.88	-	-	74	-23.12	-	-	193	201	V
	* 11.189	25.16	AD1	37.4	-23.3	39.26	54	-14.74	-	-	-	-	193	201	V
6	* 12.009	37.08	PK1	38.1	-23.8	51.38	-	-	74	-22.62	-	-	193	201	V
	* 12.008	25.81	AD1	38.1	-23.8	40.11	54	-13.89	-	-	-	-	193	201	V
1	1.882	42.7	PK1	30.4	-33.5	39.6	-	-	-	-	68.2	-28.6	44	200	H

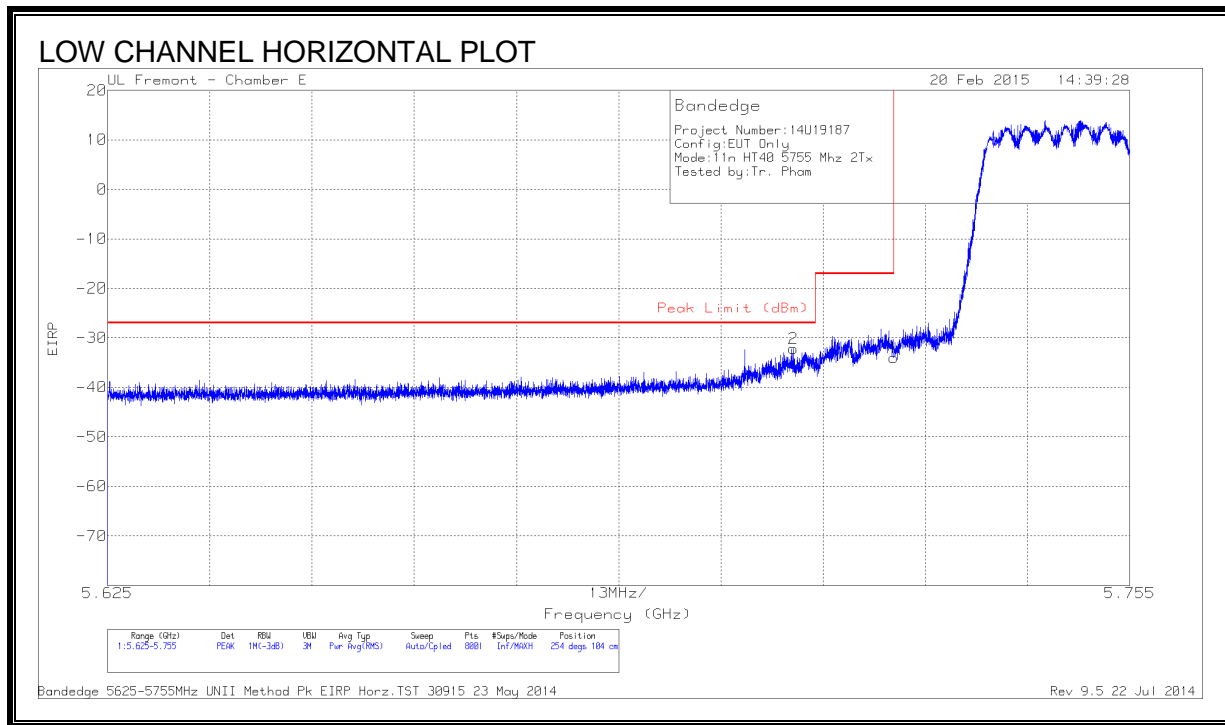
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

9.23. 802.11n HT40 2Tx CDD MODE IN THE 5.8 GHz BAND

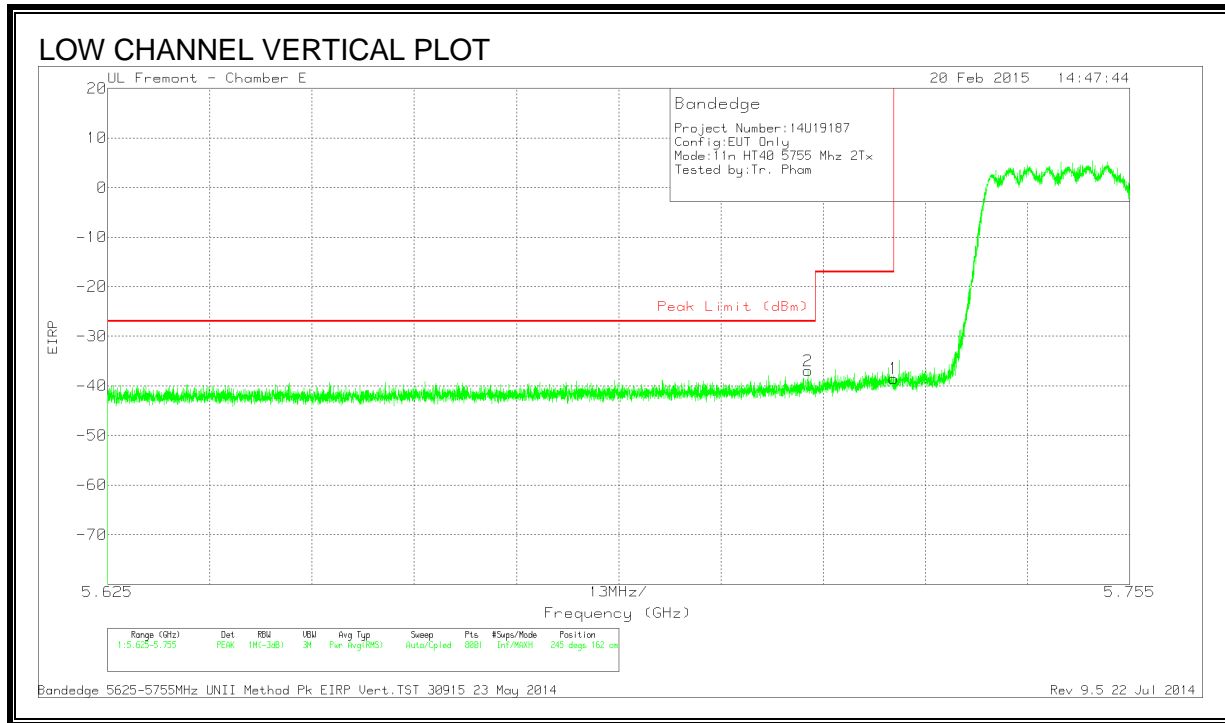
RESTRICTED BANDEGE (LOW CHANNEL)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.712	-57.65	PK	34.7	-21	11.8	-32.15	-27	-5.15	254	104	H
1	5.725	-59.72	PK	34.7	-20.8	11.8	-34.02	-17	-17.02	254	104	H

PK - Peak detector

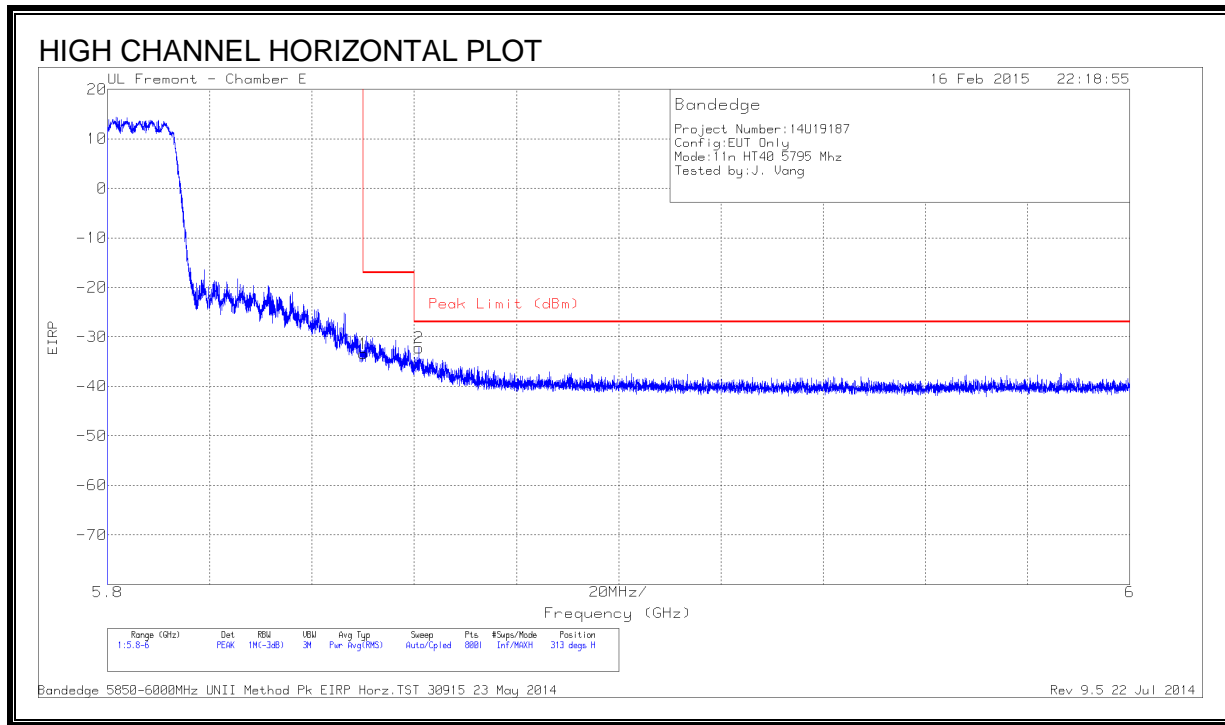


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-62.47	PK	34.7	-21	11.8	-36.97	-27	-9.97	245	162	V
1	5.725	-64.19	PK	34.7	-20.8	11.8	-38.49	-17	-21.49	245	162	V

PK - Peak detector

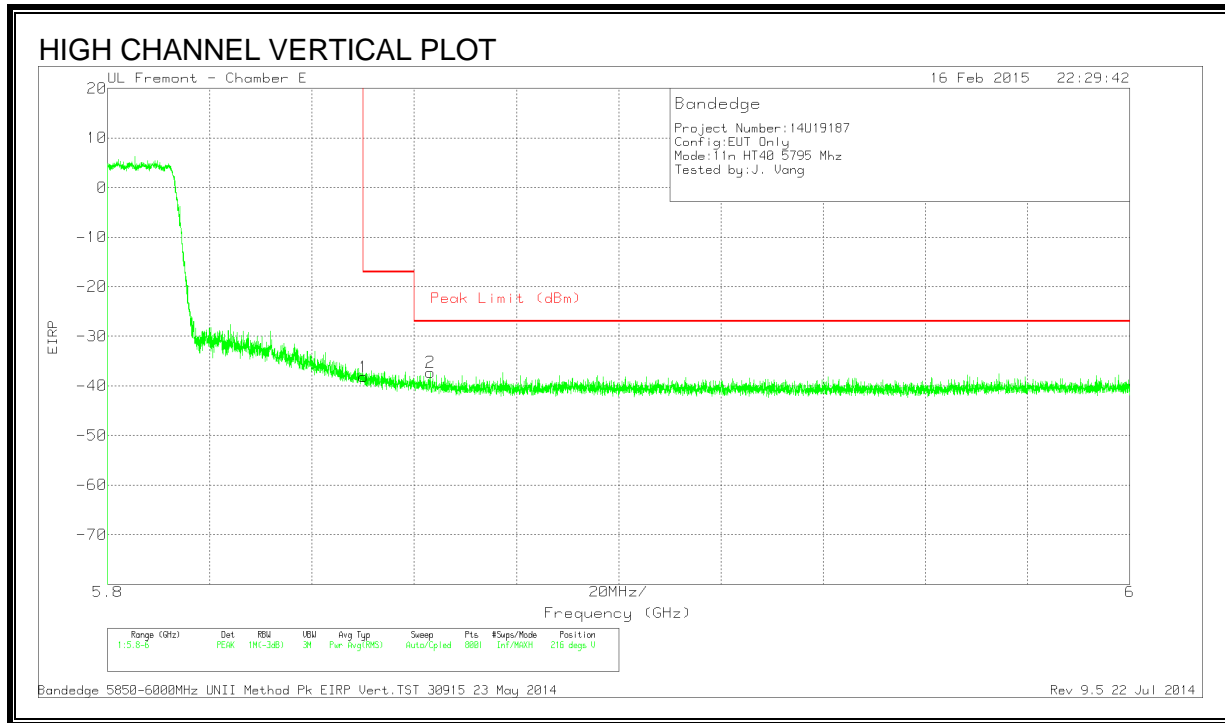
RESTRICTED BANDEDGE (HIGH CHANNEL)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cb/Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-59.59	PK	34.7	-20.3	11.8	-33.39	-17	-16.39	313	108	H
2	5.861	-58.32	PK	34.7	-20.4	11.8	-32.22	-27	-5.22	313	108	H

PK - Peak detector

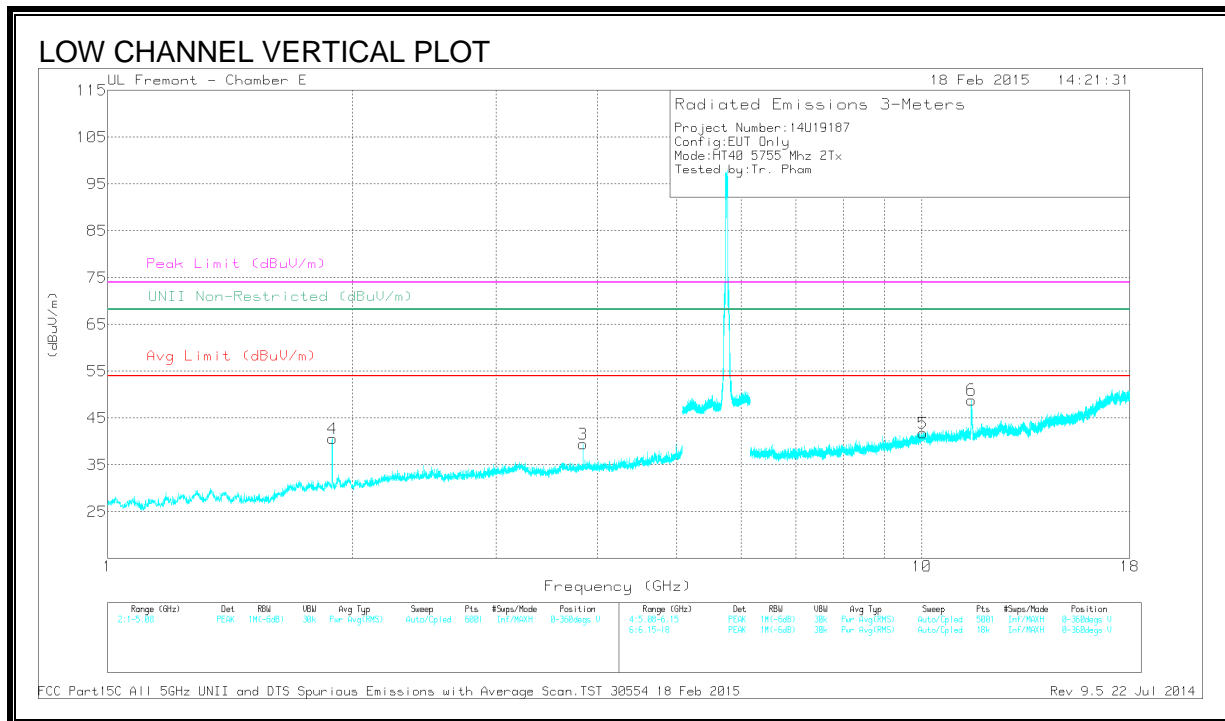
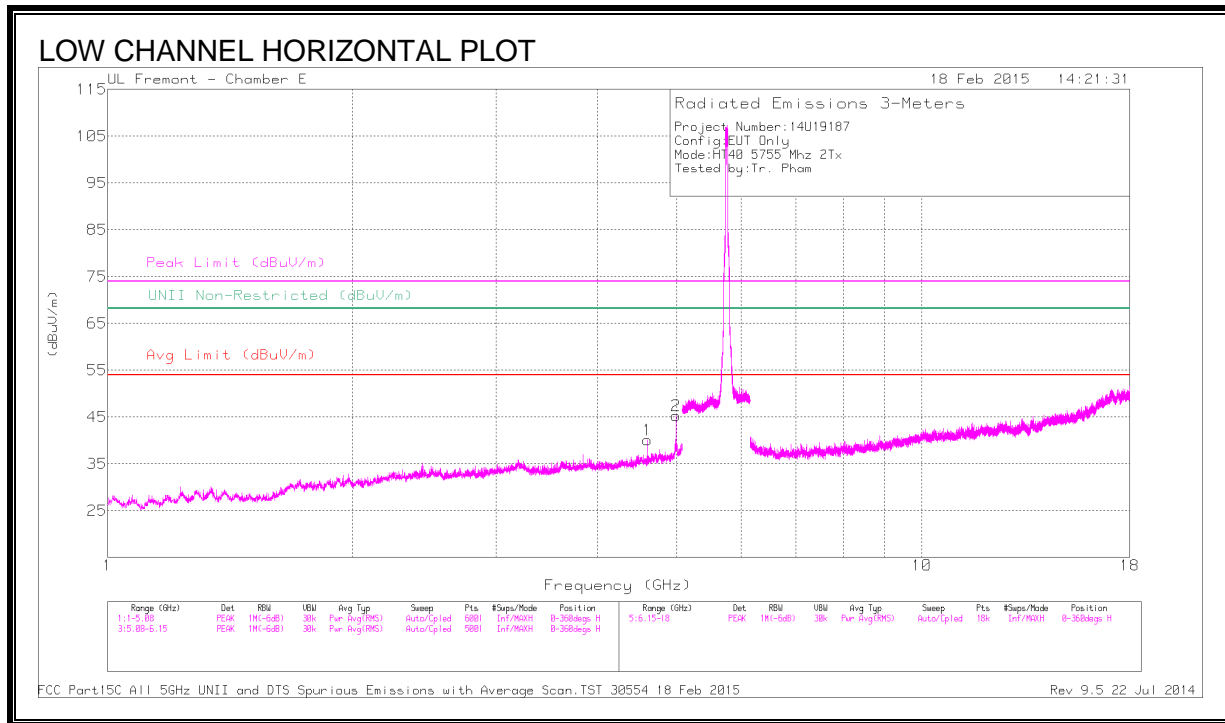


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-64.37	PK	34.7	-20.3	11.8	-38.17	-17	-21.17	216	172	V
2	5.863	-63.36	PK	34.7	-20.4	11.8	-37.26	-27	-10.26	216	172	V

PK - Peak detector

LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

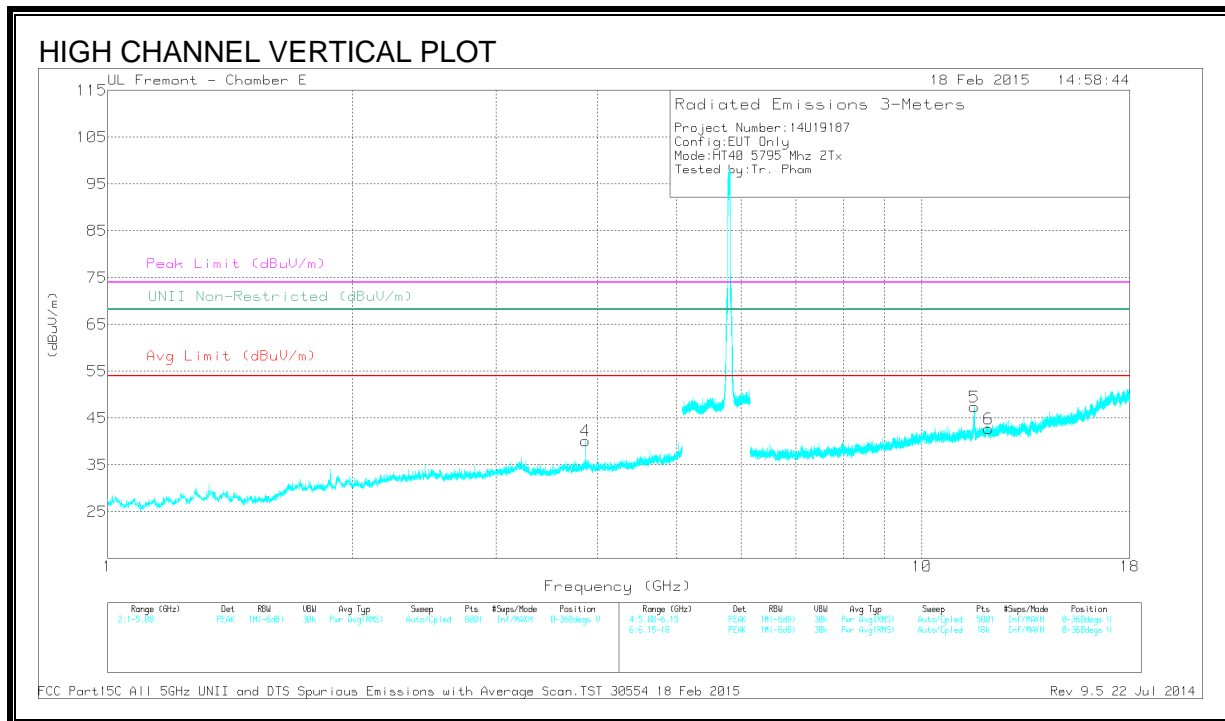
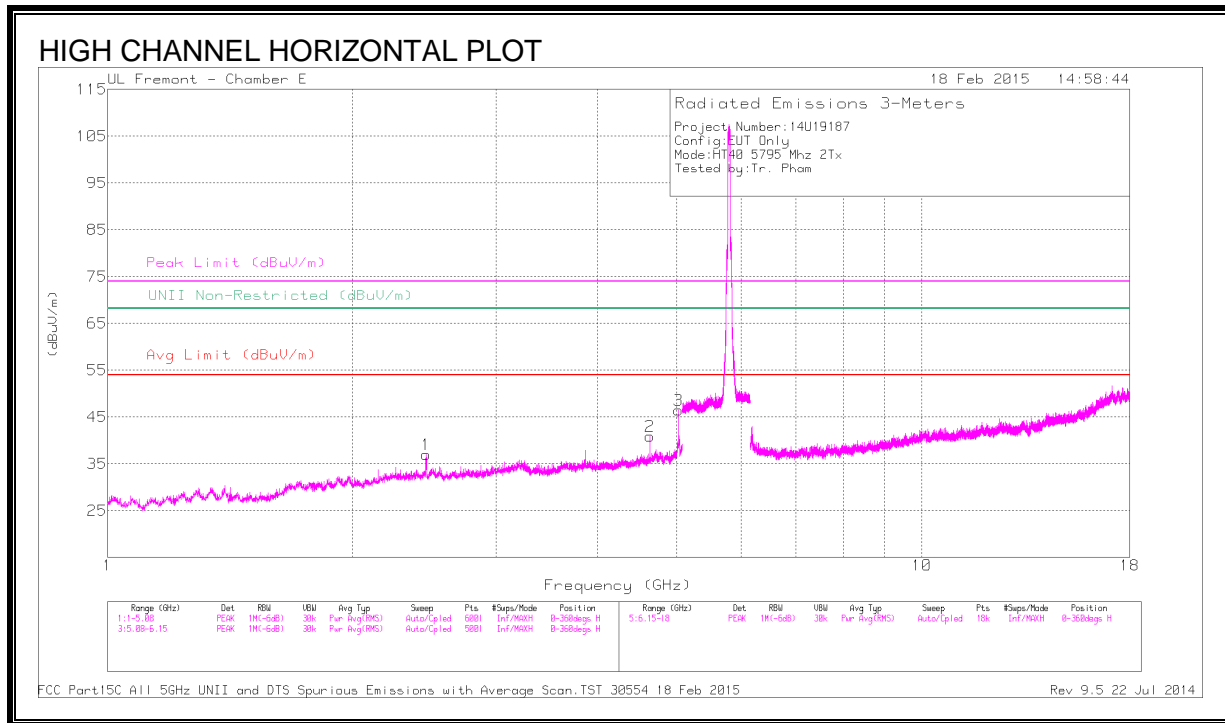
Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl /Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.604	43.61	PK1	33.8	-30.8	46.61	-	-	74	-27.39	-	-	312	305	H
	* 4.604	35.76	AD1	33.8	-30.8	38.76	54	-15.24	-	-	-	-	312	305	H
2	* 4.988	46.86	PK1	33.9	-29.2	51.56	-	-	74	-22.44	-	-	256	106	H
	* 4.988	40.19	AD1	33.9	-29.2	44.89	54	-9.11	-	-	-	-	256	106	H
3	* 3.837	45.39	PK1	33.1	-31.6	46.89	-	-	74	-27.11	-	-	301	203	V
	* 3.837	37.82	AD1	33.1	-31.6	39.32	54	-14.68	-	-	-	-	301	203	V
6	* 11.508	44.84	PK1	37.5	-24.4	57.94	-	-	74	-16.06	-	-	290	136	V
	* 11.51	33.7	AD1	37.5	-24.4	46.8	54	-7.2	-	-	-	-	290	136	V
4	1.886	42.31	PK1	30.4	-33.4	39.31	-	-	-	-	68.2	-28.89	251	203	V
5	10.041	37.11	PK1	37.4	-24.2	50.31	-	-	-	-	68.2	-17.89	275	102	V

* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS



DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl /Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.636	43.41	PK1	33.9	-30.1	47.21	-	-	74	-26.79	-	-	293	311	H
	* 4.636	35.86	AD1	33.9	-30.1	39.66	54	-14.34	-	-	-	-	293	311	H
3	* 5.022	47.37	PK1	33.9	-28.9	52.37	-	-	74	-21.63	-	-	258	180	H
	* 5.022	41.44	AD1	33.9	-28.9	46.44	54	-7.56	-	-	-	-	258	180	H
4	* 3.863	44.61	PK1	33.1	-30.8	46.91	-	-	74	-27.09	-	-	330	189	V
	* 3.863	36.93	AD1	33.1	-30.8	39.23	54	-14.77	-	-	-	-	330	189	V
5	* 11.593	43.4	PK1	37.6	-24.8	56.2	-	-	74	-17.8	-	-	286	150	V
	* 11.59	32.18	AD1	37.6	-24.8	44.98	54	-9.02	-	-	-	-	286	150	V
6	* 12.072	37.26	PK1	38.2	-24.5	50.96	-	-	74	-23.04	-	-	286	150	V
	* 12.072	25.94	AD1	38.2	-24.5	39.64	54	-14.36	-	-	-	-	286	150	V
1	2.462	42.84	PK1	32.1	-32.8	42.14	-	-	-	-	68.2	-26.06	360	101	H

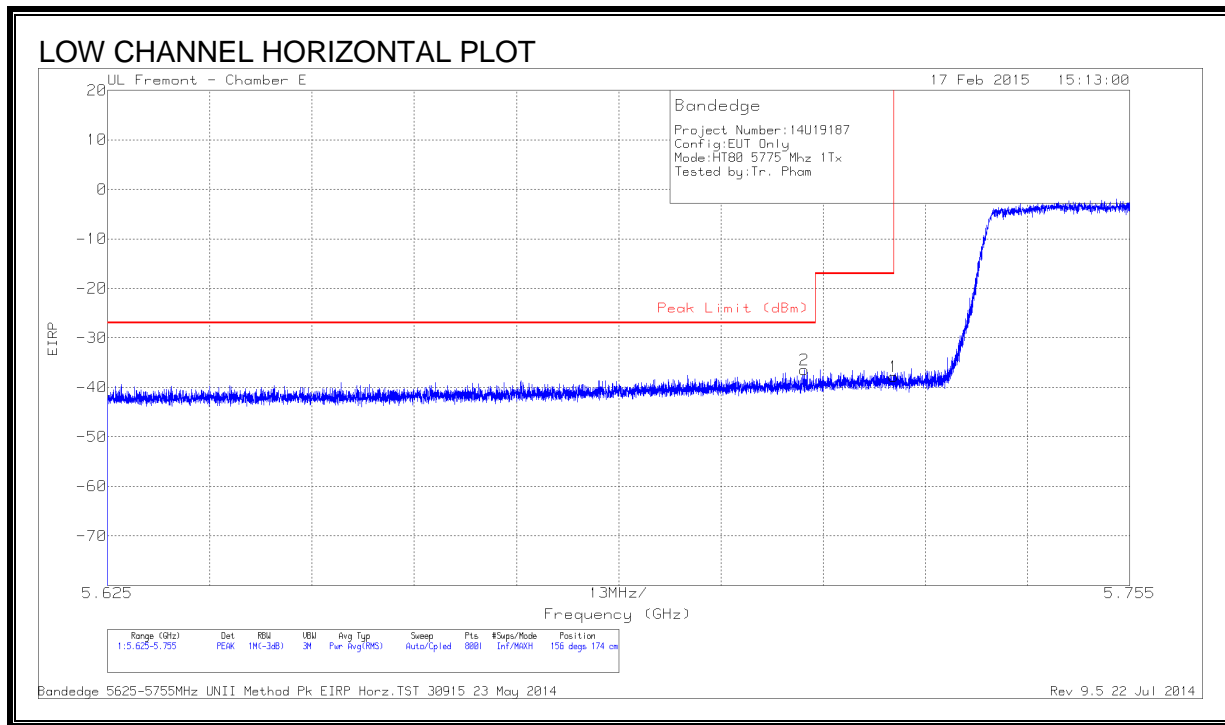
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

9.24. 802.11ac 80Mhz 1Tx SISO MODE IN THE 5.8 GHz BAND

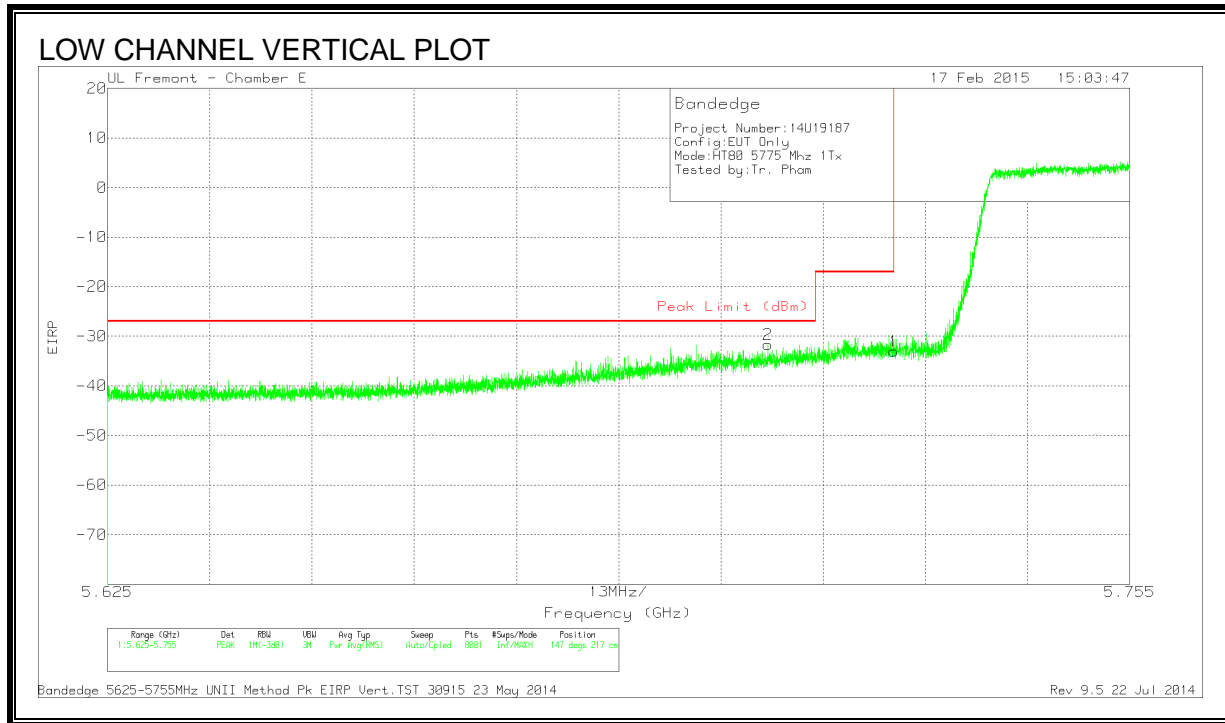
RESTRICTED BANDEGE (LOW)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-61.77	PK	34.5	-21	11.8	-36.47	-27	-9.47	156	174	H
1	5.725	-63.42	PK	34.6	-20.8	11.8	-37.82	-17	-20.82	156	174	H

PK - Peak detector

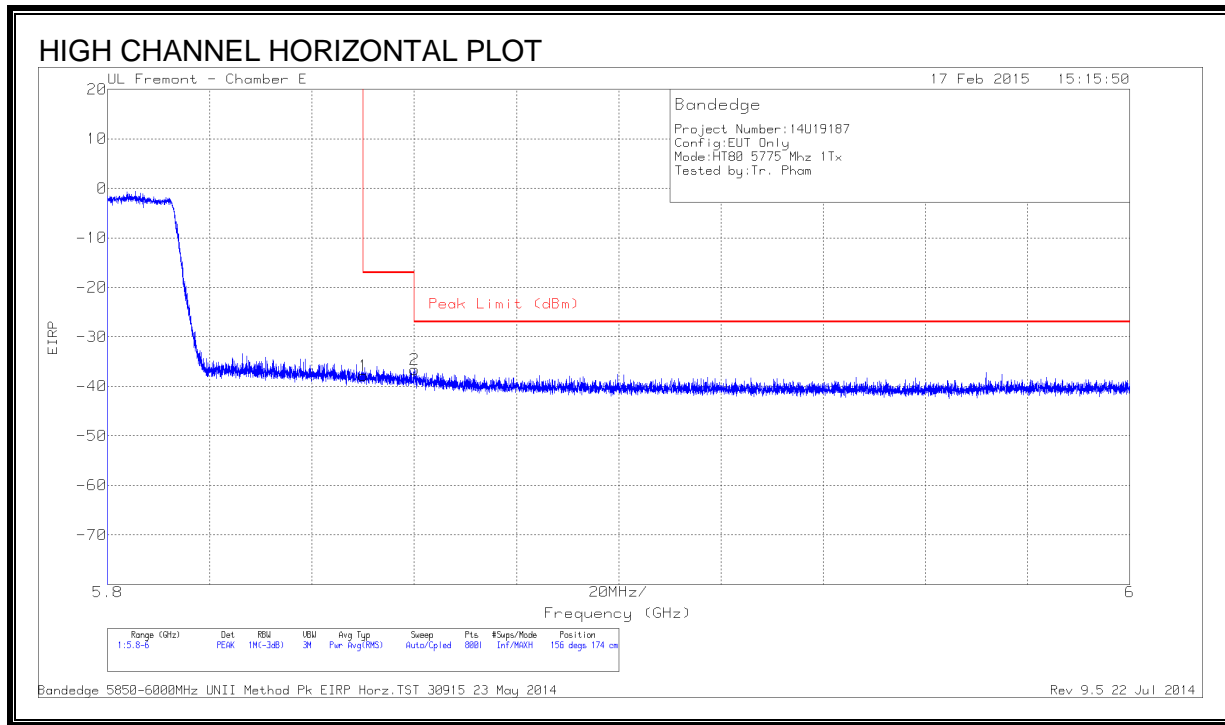


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.709	-56.93	PK	34.5	-21	11.8	-31.63	-27	-4.63	147	217	V
1	5.725	-58.62	PK	34.6	-20.8	11.8	-33.02	-17	-16.02	147	217	V

PK - Peak detector

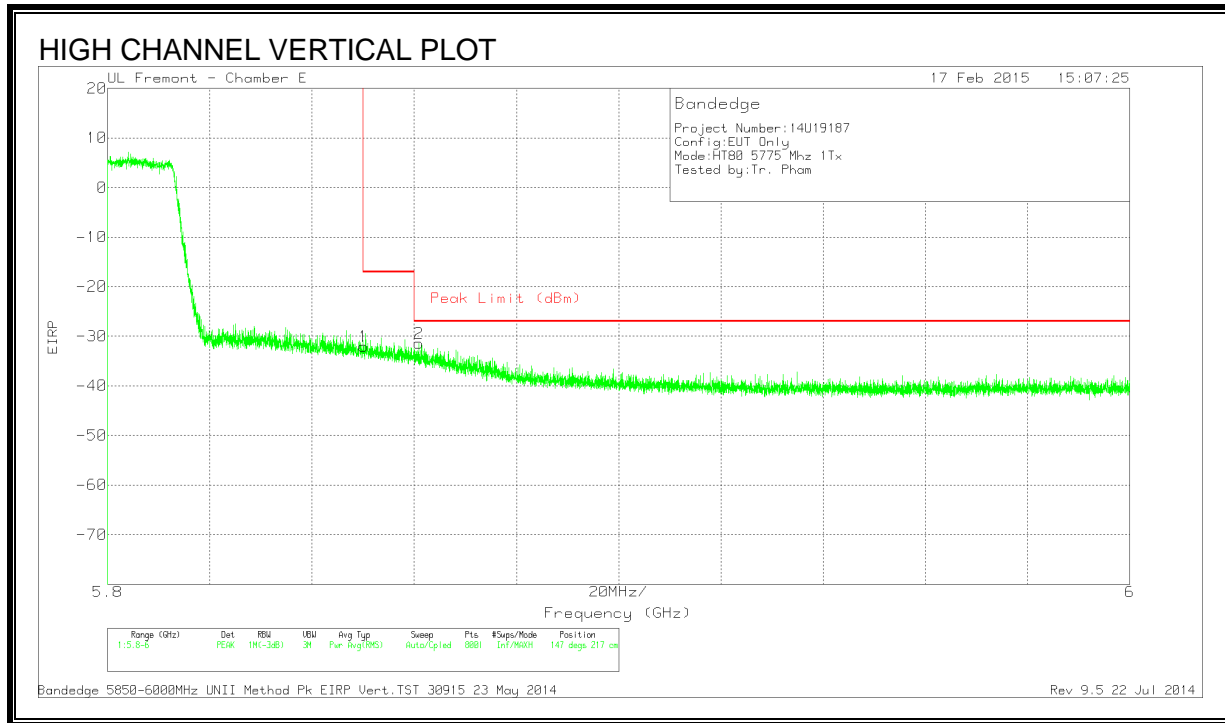
RESTRICTED BANDEDGE (HIGH)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-64.04	PK	34.7	-20.3	11.8	-37.84	-17	-20.84	156	174	H
2	5.86	-62.8	PK	34.7	-20.3	11.8	-36.6	-27	-9.6	156	174	H

PK - Peak detector

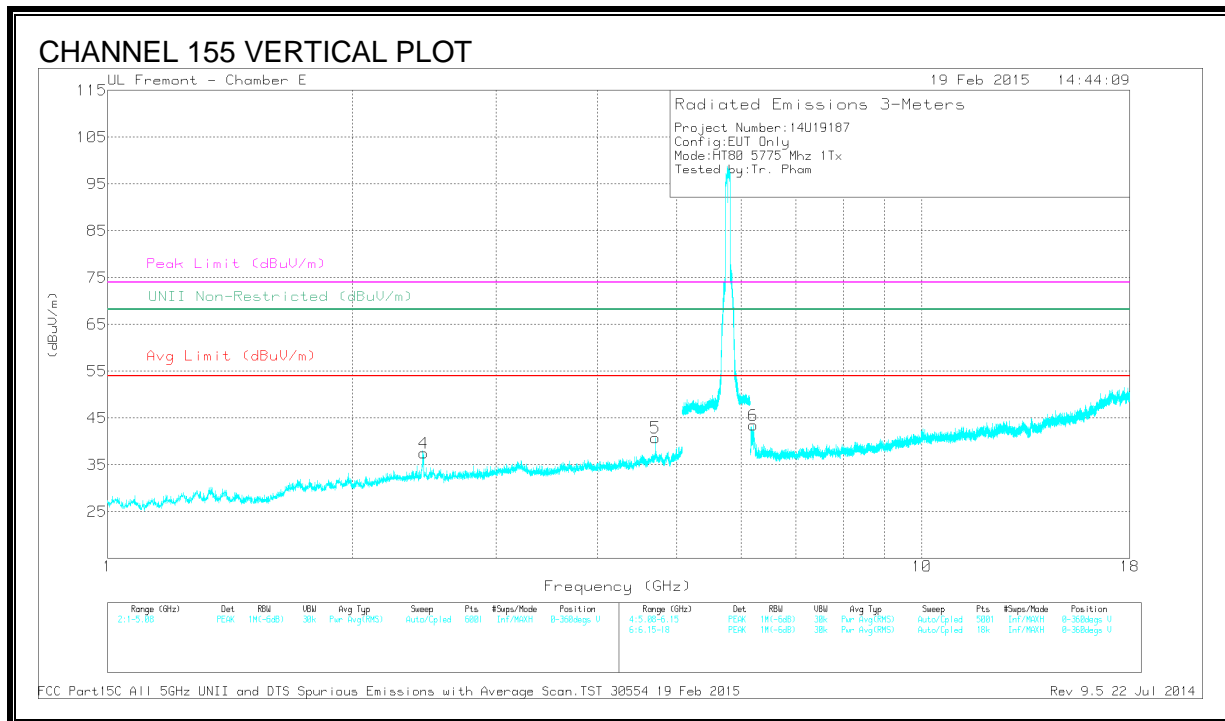
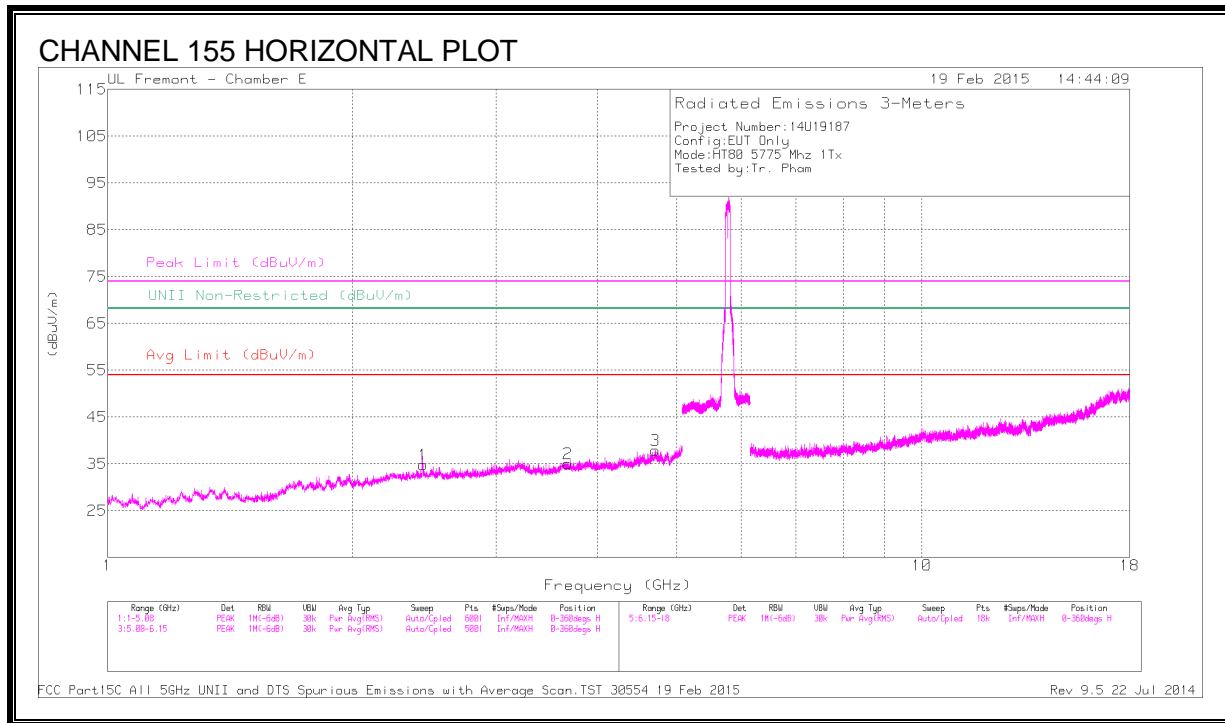


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-58.23	PK	34.7	-20.3	11.8	-32.03	-17	-15.03	147	217	V
2	5.861	-57.52	PK	34.7	-20.4	11.8	-31.42	-27	-4.42	147	217	V

PK - Peak detector

CHANNEL 155 HARMONICS AND SPURIOUS EMISSIONS



DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.671	41.65	PK1	33	-31	0	43.65	-	-	74	-30.35	-	-	1	100	H
	* 3.672	29.78	AD1	33	-31.1	.21	31.89	54	-22.11	-	-	-	-	1	100	H
3	* 4.709	42.92	PK1	34	-30.2	0	46.72	-	-	74	-27.28	-	-	1	100	H
	* 4.71	31.08	AD1	34	-30.2	.21	35.09	54	-18.91	-	-	-	-	1	100	H
5	* 4.705	44.82	PK1	34	-30.1	0	48.72	-	-	74	-25.28	-	-	135	214	V
	* 4.706	36.17	AD1	34	-30.1	.21	40.28	54	-13.72	-	-	-	-	135	214	V
1	2.44	42.92	PK1	32.1	-33.1	0	41.92	-	-	-	-	68.2	-26.28	1	100	H
4	2.441	42.31	PK1	32.1	-33	0	41.41	-	-	-	-	68.2	-26.79	45	126	V
6	6.198	45.2	PK1	35.3	-29.3	0	51.2	-	-	-	-	68.2	-17	146	198	V

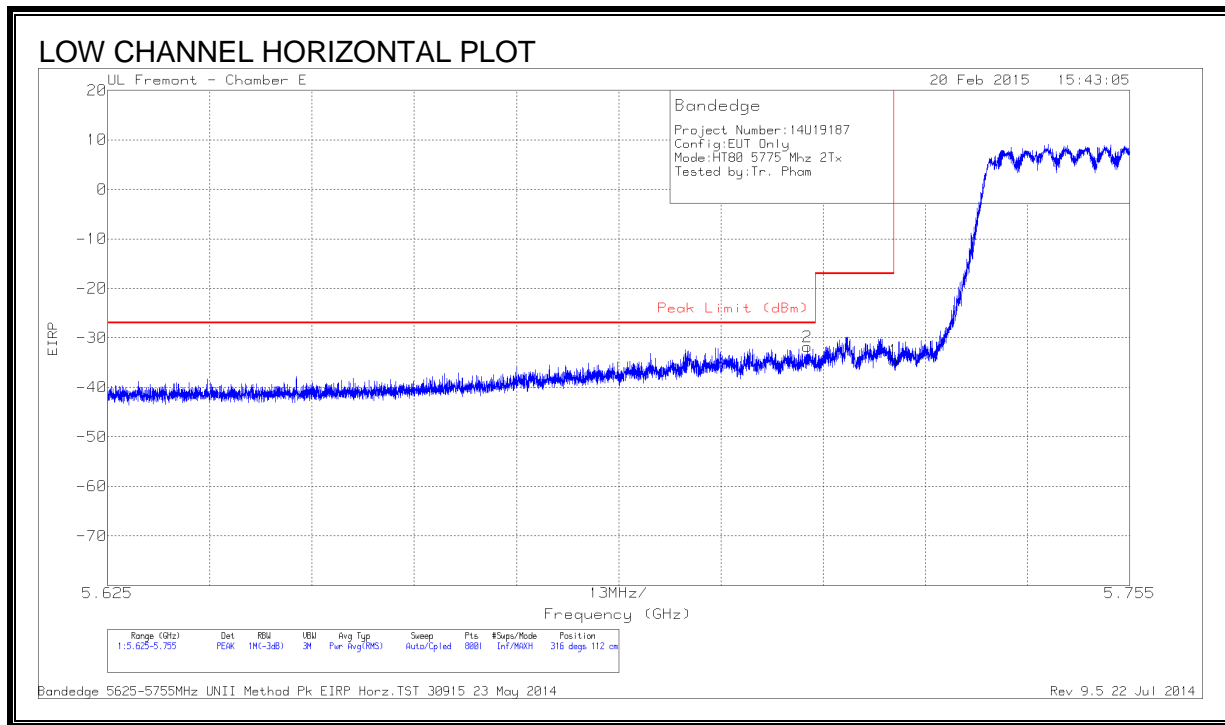
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

9.25. 802.11ac 80Mhz 2Tx CDD MODE IN THE 5.8 GHz BAND

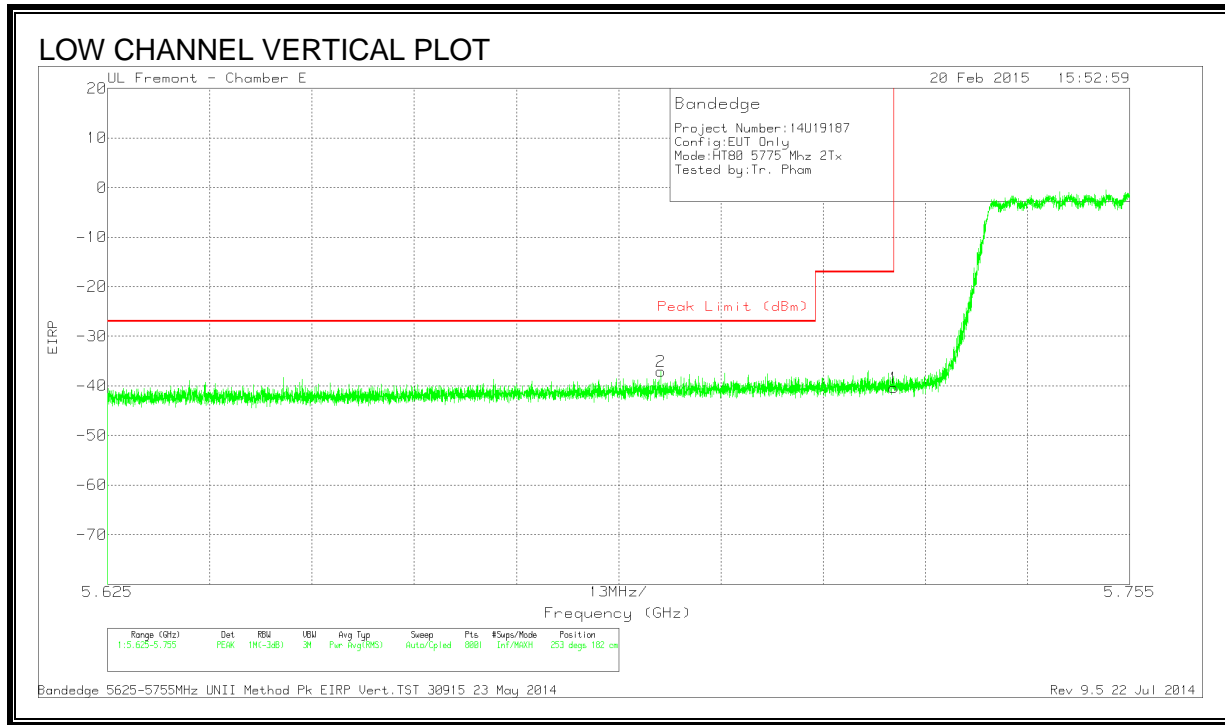
RESTRICTED BANDEGE (LOW)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-57.28	PK	34.7	-21	11.8	-31.78	-27	-4.78	316	112	H
1	5.725	-60.24	PK	34.7	-20.8	11.8	-34.54	-17	-17.54	316	112	H

PK - Peak detector

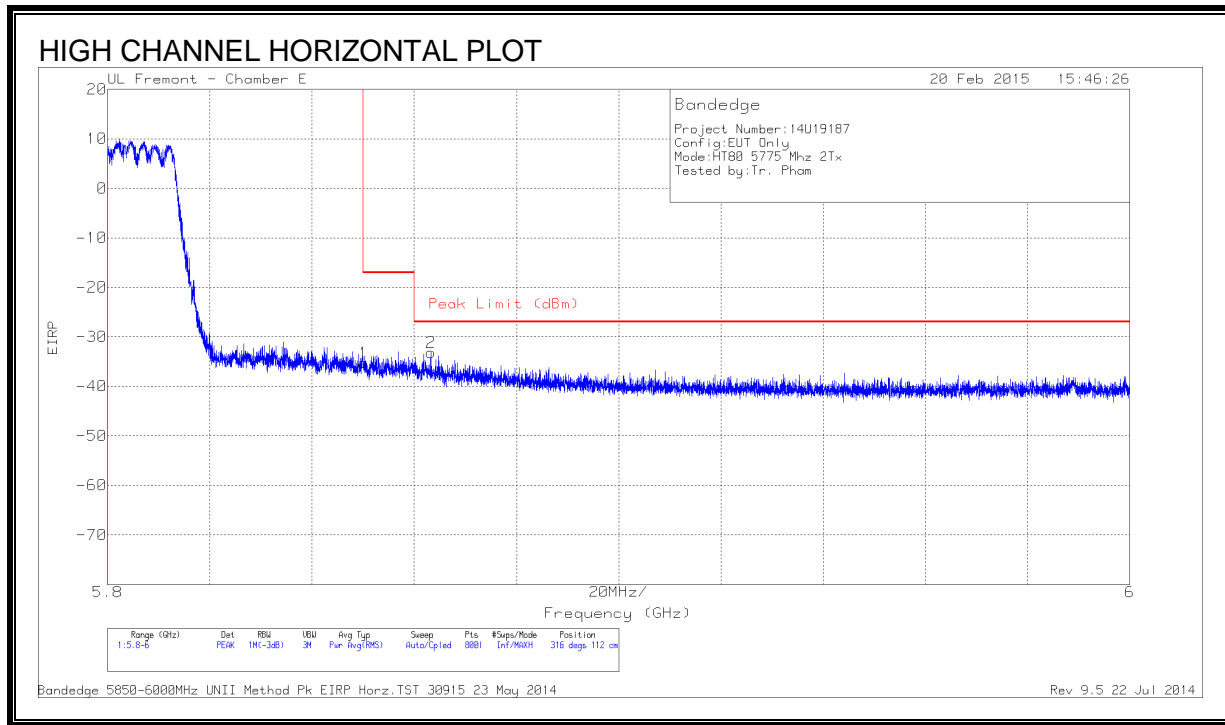


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.695	-62.57	PK	34.7	-21	11.8	-37.07	-27	-10.07	253	182	V
1	5.725	-66.09	PK	34.7	-20.8	11.8	-40.39	-17	-23.39	253	182	V

PK - Peak detector

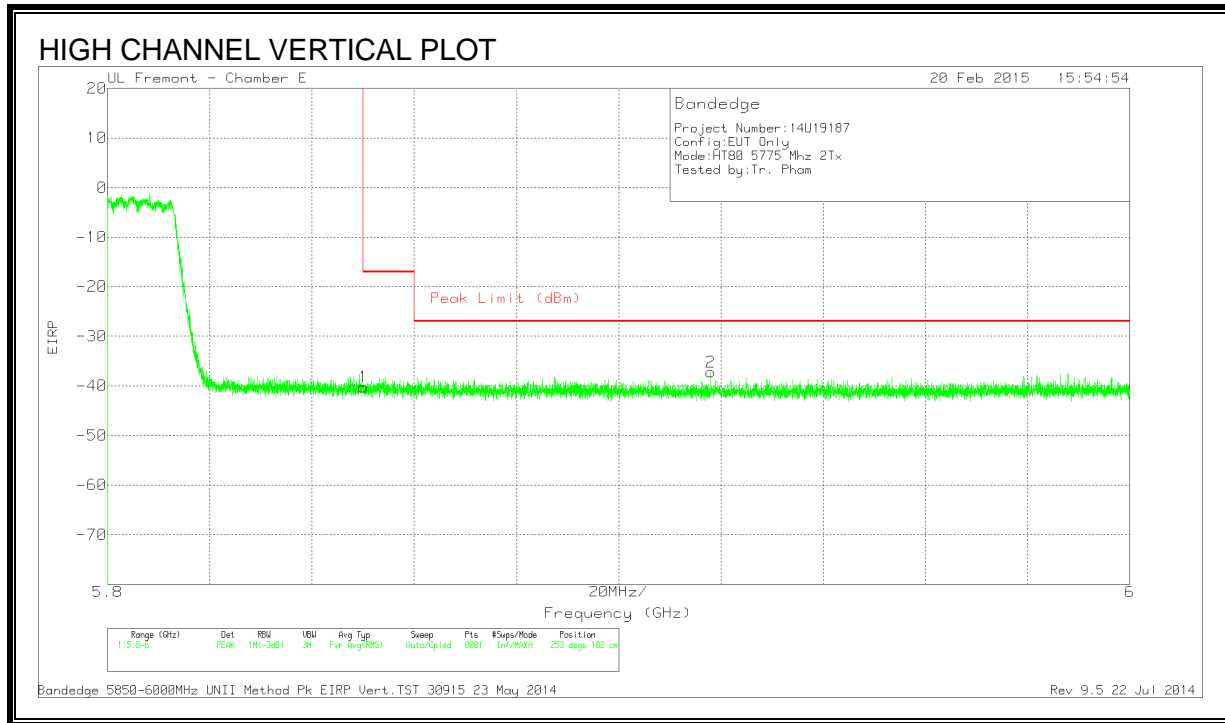
RESTRICTED BANDEDGE (HIGH)



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-61.6	PK	34.9	-20.3	11.8	-35.2	-17	-18.2	316	112	H
2	5.863	-59.41	PK	34.9	-20.4	11.8	-33.11	-27	-6.11	316	112	H

PK - Peak detector

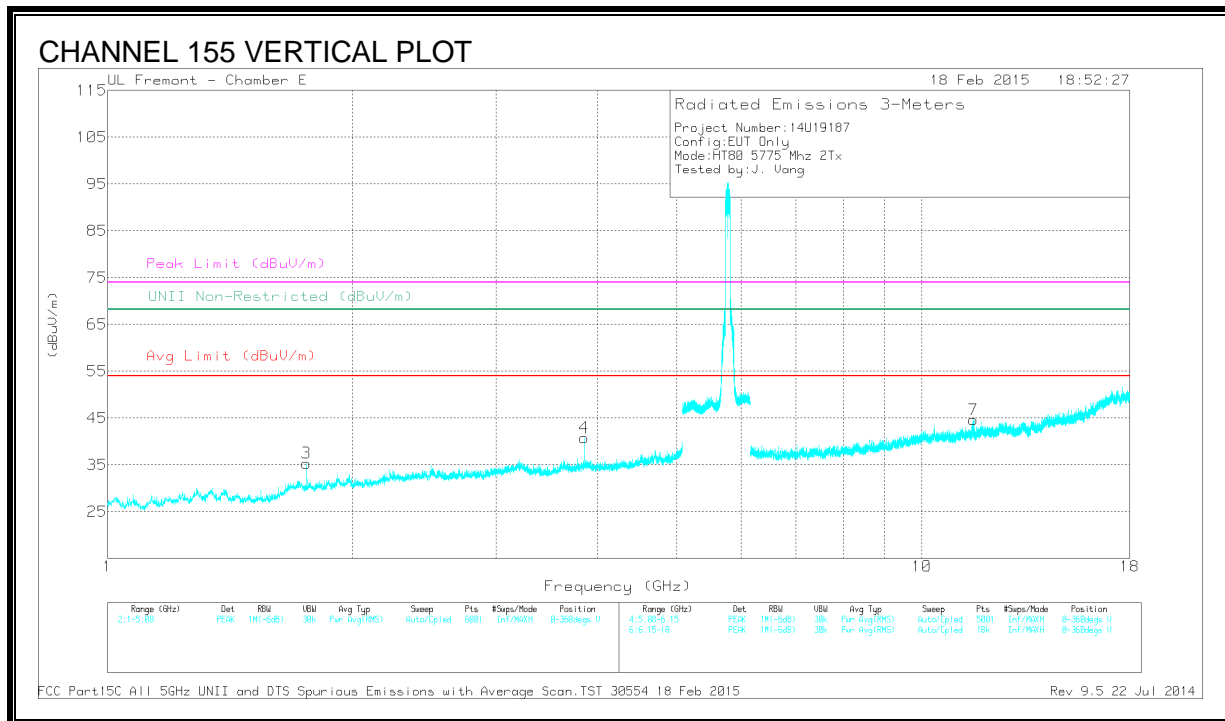
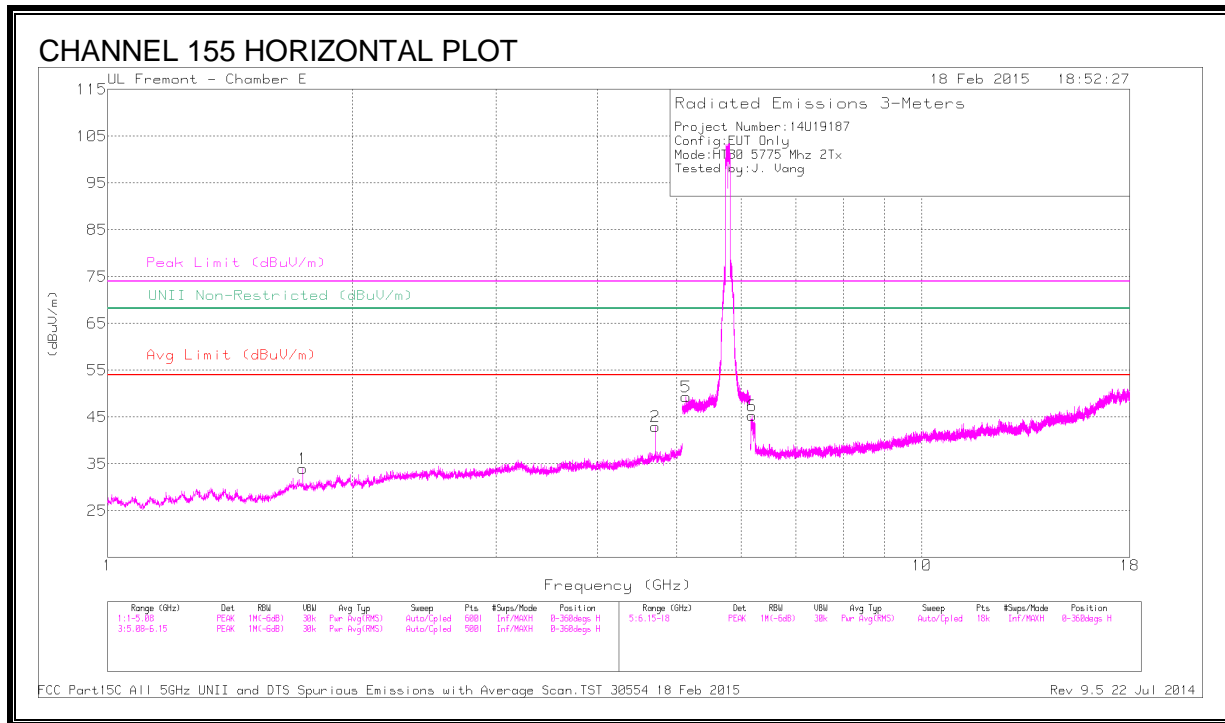


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.61	PK	34.9	-20.3	11.8	-40.21	-17	-23.21	253	182	V
2	5.918	-63.58	PK	35	-20.4	11.8	-37.18	-27	-10.18	253	182	V

PK - Peak detector

CHANNEL 155 HARMONICS AND SPURIOUS EMISSIONS



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 4.705	44.95	PK1	34	-30.1	0	48.85	-	-	74	-25.15	-	-	253	109	H
	* 4.706	37.77	AD1	34	-30.1	.21	41.88	54	-12.12	-	-	-	-	253	109	H
4	* 3.85	44.49	PK1	33.1	-31.1	0	46.49	-	-	74	-27.51	-	-	322	201	V
	* 3.85	37.76	AD1	33.1	-31.1	.21	39.97	54	-14.03	-	-	-	-	322	201	V
5	* 5.133	43.84	PK1	34	-21.6	0	56.24	-	-	74	-17.76	-	-	336	165	H
	* 5.133	33.96	AD1	34	-21.6	.21	46.57	54	-7.43	-	-	-	-	336	165	H
7	* 11.57	38.82	PK1	37.6	-24.6	0	51.82	-	-	74	-22.18	-	-	168	380	V
	* 11.568	27	AD1	37.6	-24.6	.21	40.21	54	-13.79	-	-	-	-	168	380	V
1	1.734	42.45	PK1	30.2	-33.9	0	38.75	-	-	-	-	68.2	-29.45	360	101	H
3	1.755	42.74	PK1	30.2	-34.1	0	38.84	-	-	-	-	68.2	-29.36	187	200	V
6	6.19	39.66	PK1	35.2	-29.2	0	45.66	-	-	-	-	68.2	-22.54	187	200	H

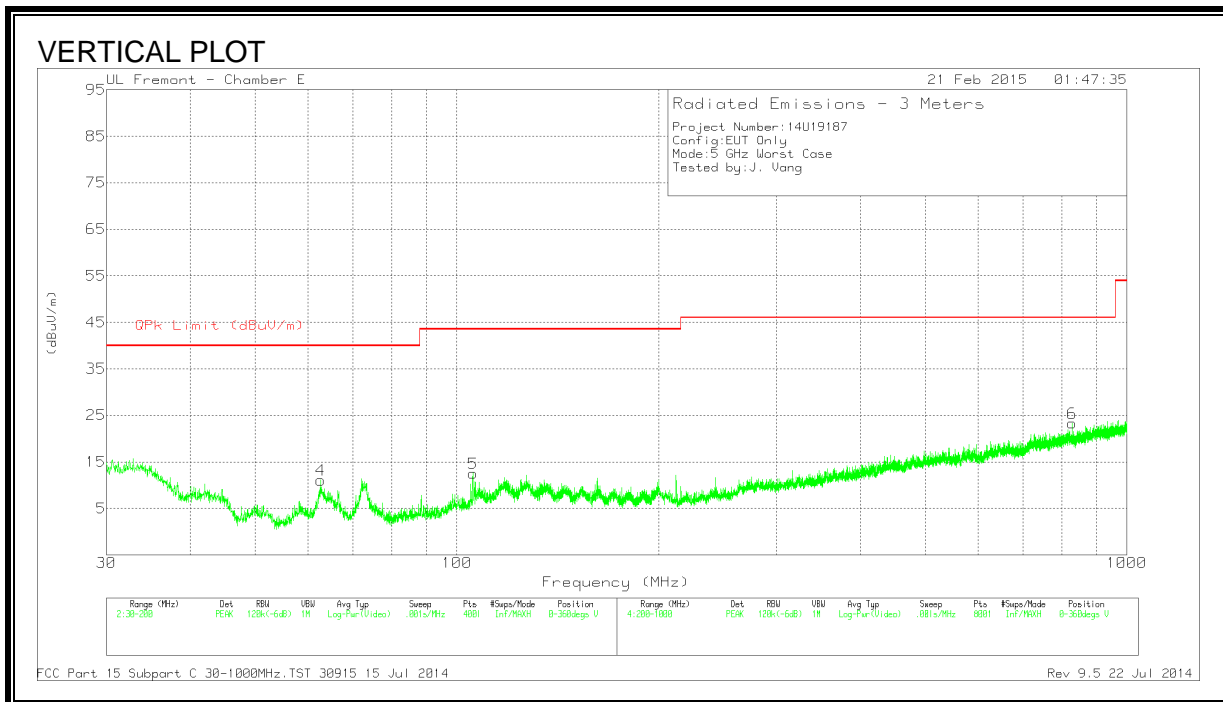
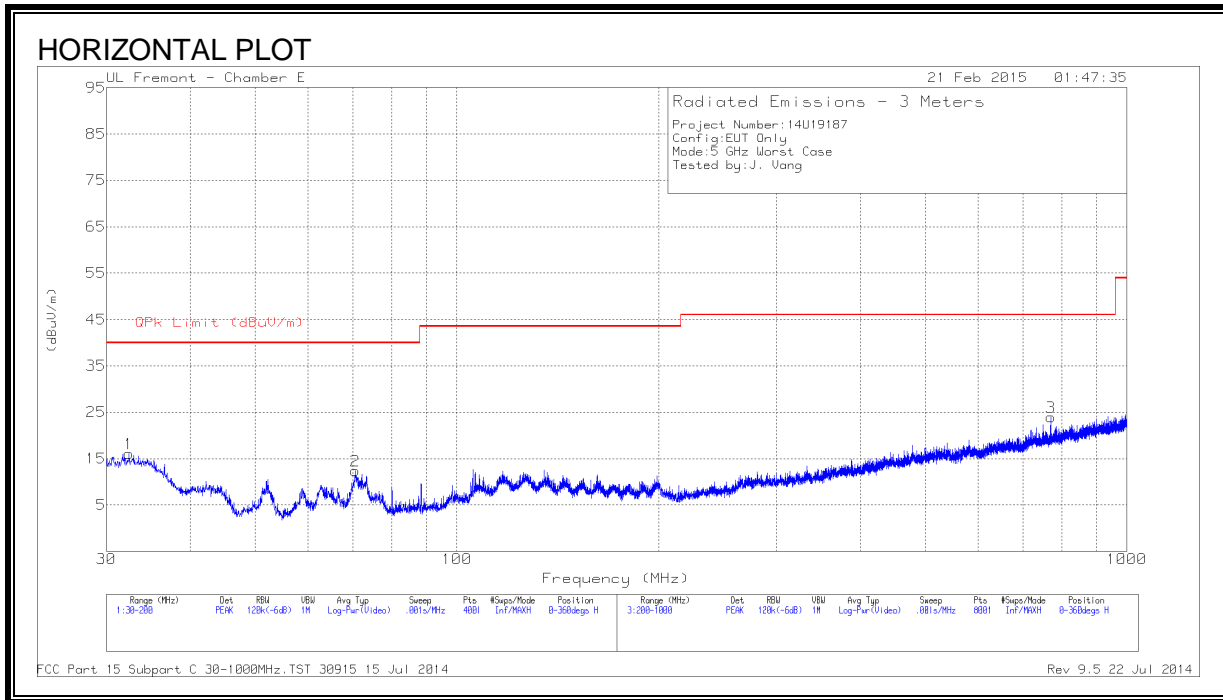
* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK1 - KDB789033 Method: Peak

AD1 - KDB789033 Method: AD Primary Power Average

9.26. WORST-CASE BELOW 1 GHz

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



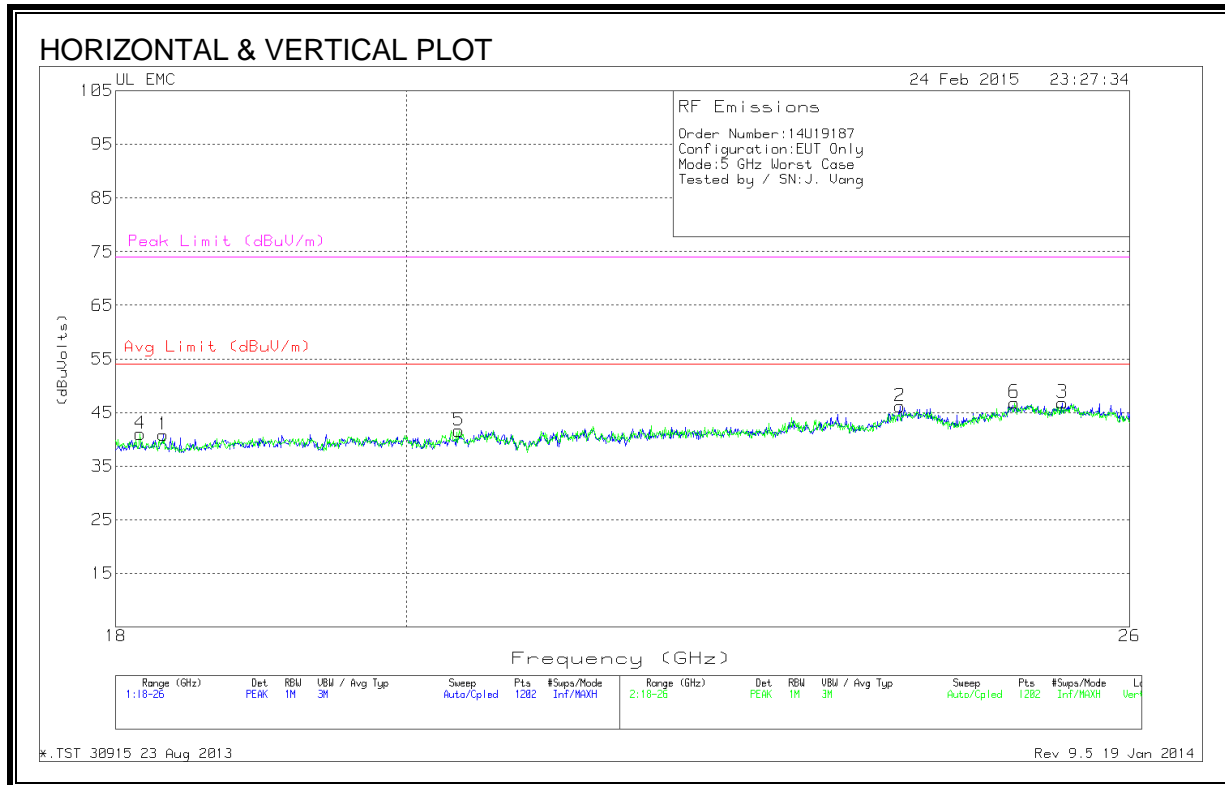
HORIZONTAL AND VERTICAL DATA

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	32.4225	28.04	PK	19.8	-31.8	16.04	40	-23.96	0-360	301	H
4	62.5975	34.67	PK	8	-31.6	11.07	40	-28.93	0-360	100	V
2	70.5025	35.43	PK	8.5	-31.5	12.43	40	-27.57	0-360	401	H
5	105.735	32.29	PK	11.5	-31.3	12.49	43.52	-31.03	0-360	100	V
3	769.5	32.58	PK	20.4	-29	23.98	46.02	-22.04	0-360	99	H
6	827.9	30.63	PK	21.3	-28.6	23.33	46.02	-22.69	0-360	201	V

PK - Peak detector

9.27. WORST-CASE ABOVE 18 GHz

SPURIOUS EMISSIONS 18000 TO 26000 MHz (WORST-CASE CONFIGURATION)

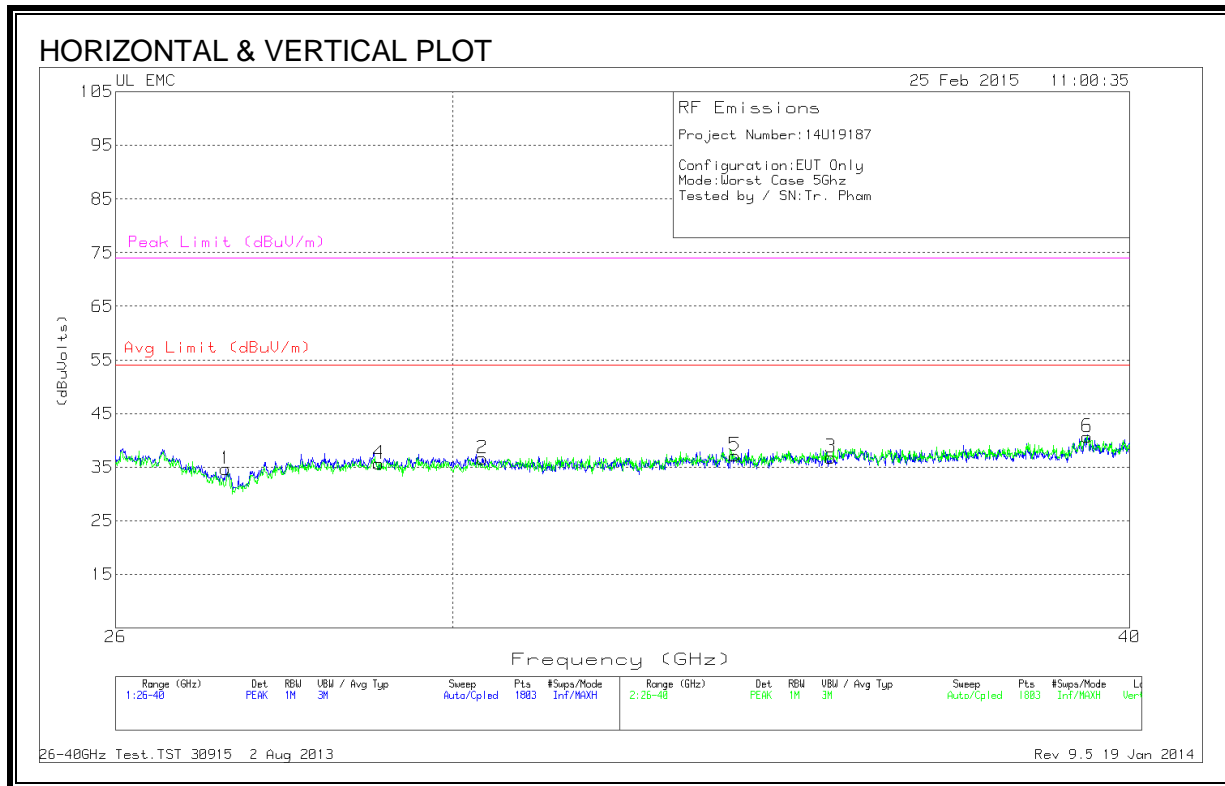


HORIZONTAL AND VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.313	42.43	PK	32.5	-24.6	-9.5	40.8	54	-13.1	74	-33.1
2	23.922	44.17	PK	34.2	-22.7	-9.5	46.1	54	-7.8	74	-27.8
3	25.374	44.93	PK	34.6	-23.2	-9.5	46.8	54	-7.1	74	-27.1
4	18.16	42.8	PK	32.6	-24.9	-9.5	41	54	-13	74	-33
5	20.385	42.17	PK	32.9	-23.9	-9.5	41.6	54	-12.3	74	-32.3
6	24.934	44.43	PK	34.5	-22.6	-9.5	46.8	54	-7.1	74	-27.1

PK - Peak detector

SPURIOUS EMISSIONS 26000 TO 40000 MHz (WORST-CASE CONFIGURATION,)



HORIZONTAL AND VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	27.243	43.67	PK	35.6	-35.1	-9.5	34.66	54	-19.33	74	-39.33
2	30.382	47.27	PK	35.9	-37	-9.5	36.66	54	-17.33	74	-37.33
3	35.23	47.43	PK	37.7	-38.8	-9.5	36.83	54	-17.166	74	-37.16
4	29.077	45.77	PK	35.9	-36.5	-9.5	35.66	54	-18.33	74	-38.33
5	33.824	47.07	PK	36.9	-37.3	-9.5	37.16	54	-16.83	74	-36.83
6	39.285	47.87	PK	38.4	-36.1	-9.5	40.66	54	-13.33	74	-33.33

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

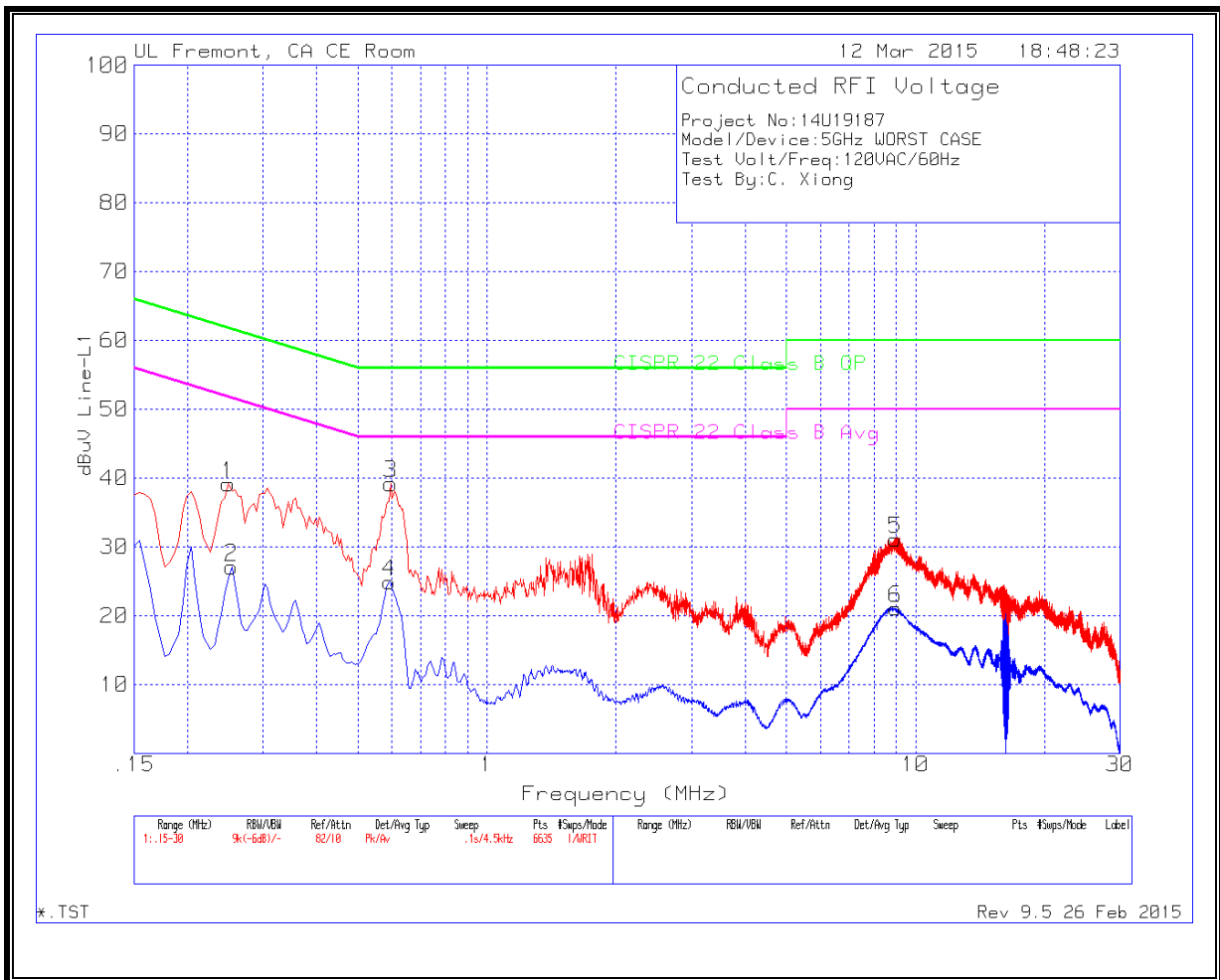
The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

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

LINE 1 RESULTS



WORST EMISSIONS

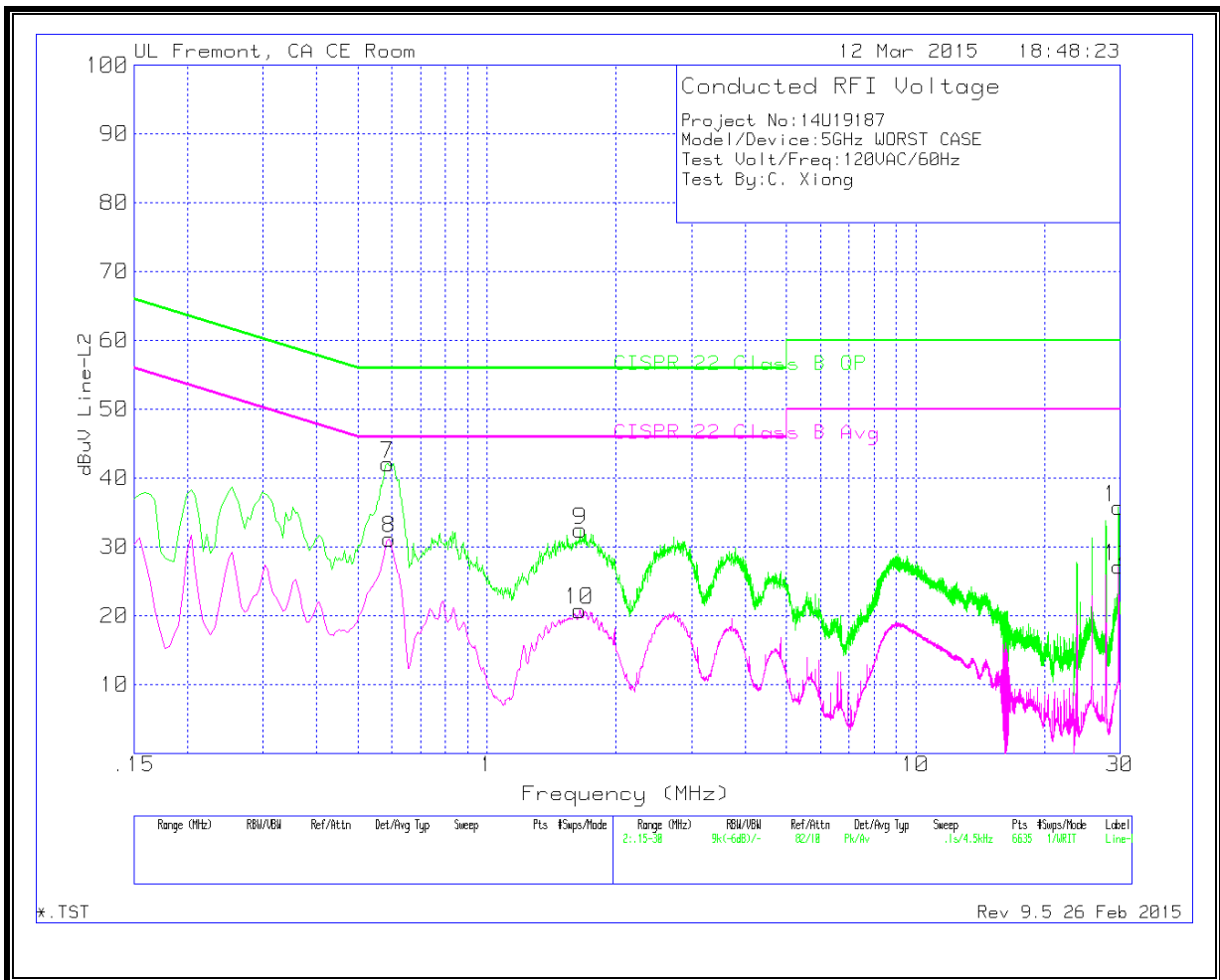
Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables 1&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.249	38.47	Pk	.7	0	39.17	61.79	-22.62	51.79	-12.62
2	.2535	26.4	Av	.7	0	27.1	61.64	-34.54	51.64	-24.54
3	.5955	38.92	Pk	.3	0	39.22	56	-16.78	46	-6.78
4	.591	24.61	Av	.3	0	24.91	56	-31.09	46	-21.09
5	8.988	30.84	Pk	.2	.1	31.14	60	-28.86	50	-18.86
6	8.988	20.8	Av	.2	.1	21.1	60	-38.9	50	-28.9

Pk - Peak detector

Av - Average detection

LINE 2 RESULTS



WORST EMISSIONS

Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables 2&3	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
7	.5865	41.78	Pk	.3	0	42.08	56	-13.92	46	-3.92
8	.591	30.9	Av	.3	0	31.2	56	-24.8	46	-14.8
9	1.6485	32.16	Pk	.2	.1	32.46	56	-23.54	46	-13.54
10	1.644	20.5	Av	.2	.1	20.8	56	-35.2	46	-25.2
11	29.751	35.15	Pk	.3	.3	35.75	60	-24.25	50	-14.25
12	29.7735	26.57	Av	.3	.3	27.17	60	-32.83	50	-22.83

Pk - Peak detector

Av - Average detection

11. DYNAMIC FREQUENCY SELECTION

11.1. OVERVIEW

11.1.1. LIMITS

INDUSTRY CANADA

IC RSS-247 is closely harmonized with FCC Part 15 DFS rules. The deviations are as follows:

RSS-247 Issue 1

Note: For the band 5600–5650 MHz, no operation is permitted.

Until further notice, devices subject to this annex shall not be capable of transmitting in the band 5600–5650 MHz. This restriction is for the protection of Environment Canada weather radars operating in this band.

FCC

§15.407 (h), FCC KDB 905462 D02 “COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION” and KDB 905462 D03 “U-NII CLIENT DEVICES WITHOUT RADAR DETECTION CAPABILITY”.

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
U-NII Detection Bandwidth	Yes	Not required	Yes

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
U-NII Detection Bandwidth	Yes	Not required	Yes

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar DFS	Client (without DFS)
<i>U-NII Detection Bandwidth and Statistical Performance Check</i>	All BW modes must be tested	Not required
<i>Channel Move Time and Channel Closing Transmission Time</i>	Test using widest BW mode available	Test using the widest BW mode available for the link
<i>All other tests</i>	Any single BW mode	Not required

Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in all 20 MHz channel blocks and a null frequency between the bonded 20 MHz channel blocks.

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

Maximum Transmit Power	Value (see notes)
E.I.R.P. ≥ 200 milliwatt	-64 dBm
E.I.R.P. < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
E.I.R.P. < 200 milliwatt that do not meet power spectral density requirement	-64 dBm
<p>Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna</p> <p>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.</p> <p>Note 3: E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.</p>	

Table 4: DFS Response requirement values

Parameter	Value
<i>Non-occupancy period</i>	30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds (See Note 1)
<i>Channel Closing Transmission Time</i>	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)
<i>U-NII Detection Bandwidth</i>	Minimum 100% of the U-NII 99% transmission power bandwidth. (See Note 3)
<p>Note 1: <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.</p> <p>Note 2: The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel</i> move (an aggregate of 60 milliseconds) during the remainder of the 10-second period. The aggregate duration of control signals will not count quiet periods in between transmissions.</p> <p>Note 3: During the <i>U-NII Detection Bandwidth</i> detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.</p>	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (usec)	PRI (usec)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in table 5a	Roundup: $\{(1/360) \times (19 \times 10^6 \text{ PRI}_{\text{usec}})\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 usec. With a minimum increment of 1 usec, excluding PRI values selected in Test A			
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
Note 1: Short Pulse Radar Type 0 should be used for the <i>Detection Bandwidth</i> test, <i>Channel Move Time</i> , and <i>Channel Closing Time</i> tests.					

Table 6 – Long Pulse Radar Test Signal

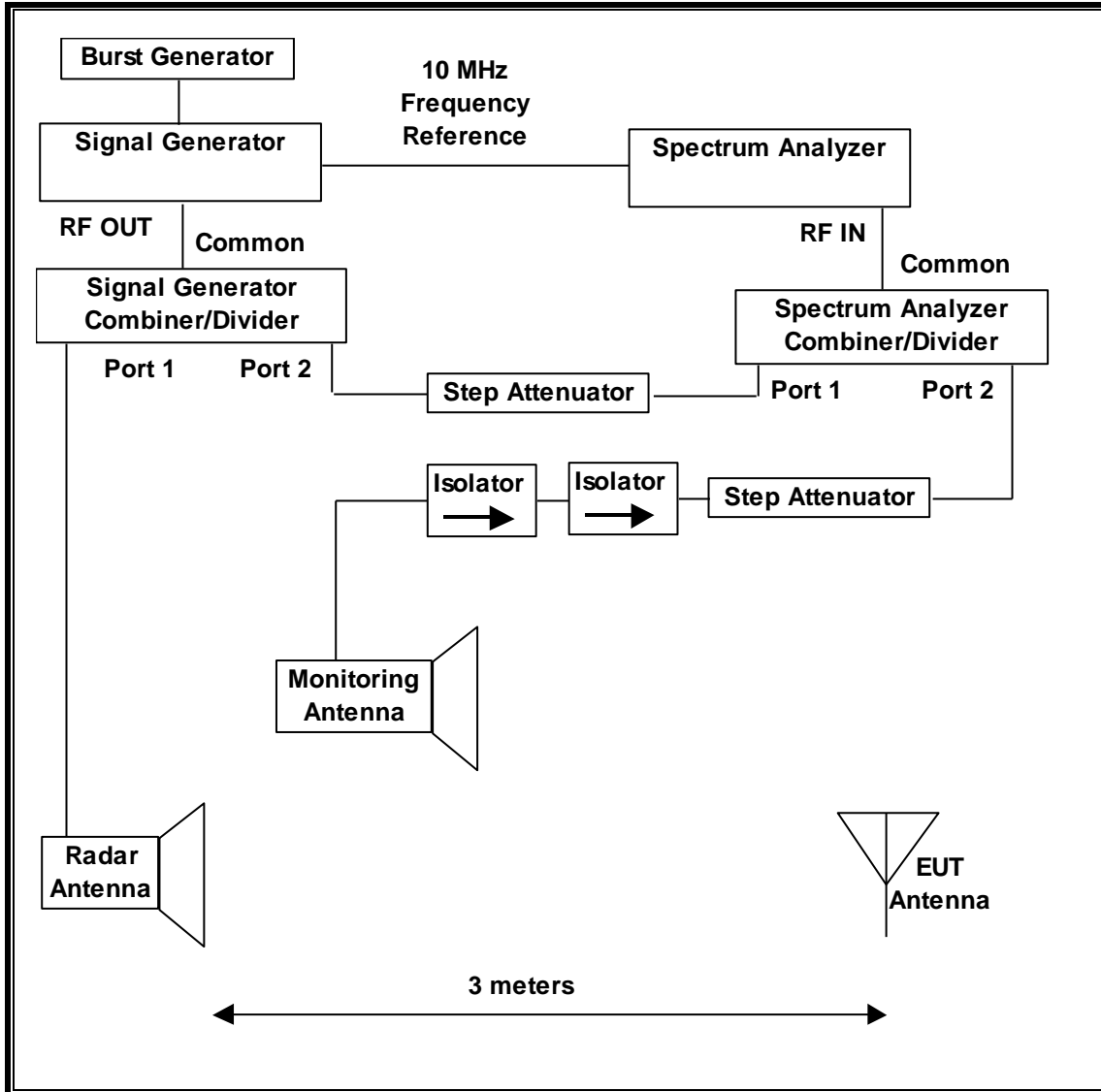
Radar Waveform Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform Type	Pulse Width (µsec)	PRI (µsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

11.1.1. 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 Frequency Hopping Radar Waveform Generating Subsystem of KDB 905462 D02. 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.

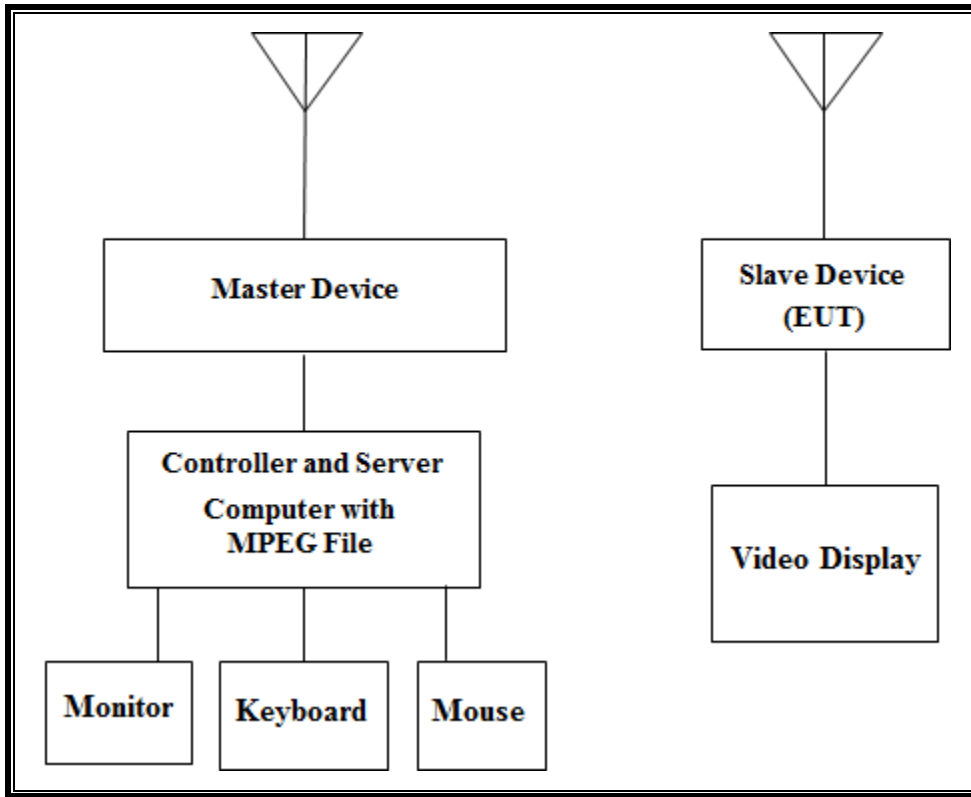
TEST AND MEASUREMENT EQUIPMENT

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	09/05/15
Vector Signal Generator, 20GHz	Agilent / HP	E8267C	C01066	09/03/15

11.1.2. SETUP OF EUT (CLIENT MODE)

RADIATED METHOD EUT TEST SETUP



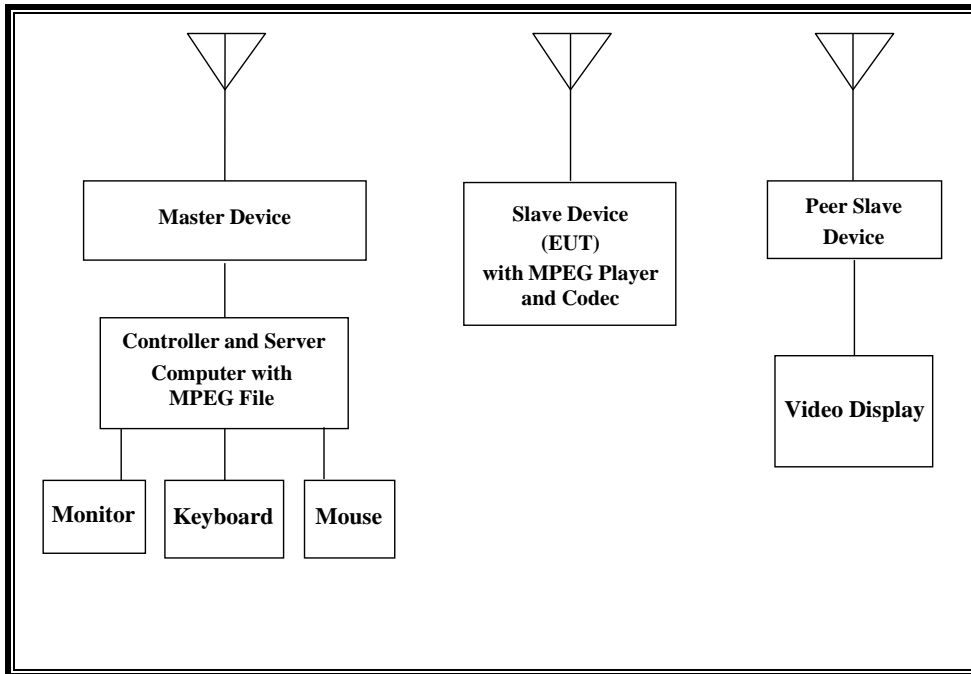
SUPPORT EQUIPMENT

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
802.11a/b/g/n/ac Wireless Access Point (Master Device)	Apple	A1521	CB6KX6B5FJIR	BCGA1521
Personal Computer (Controller/Server)	Apple	Mac Mini A1347	DZHJV02WDTCL	DoC
Monitor (Controller/Server PC)	Samsung	LN19B360C5D	AZA134NS302514T	DoC
Keyboard (Controller/Server PC)	Apple	A1243	CC232520MQQDPQVAL	DoC
Mouse (Controller/Server PC)	Apple	A1152	CC2251307MQDNYA3	DoC
Video Display	Dell	U2410f	CN-0FJ525N-72872-1B5-AGAL	DoC

11.1.3. SETUP OF EUT (CLIENT-TO-CLIENT COMMUNICATIONS MODE)

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
802.11a/b/g/n/ac Wireless Access Point (Master Device)	Apple	A1521	CB6KX6B5FJIR	BCGA1521
Personal Computer (Controller/Server)	Apple	A1347	DZHJV02WDTCL	DoC
Monitor (Controller/Server PC)	Samsung	LN19B360C5D	AZA134NS302514T	DoC
Keyboard (Controller/Server PC)	Apple	A1243	CC232520MQQDPQVAL	DoC
Mouse (Controller/Server PC)	Apple	A1152	CC2251307MQDNYA3	DoC
Apple TV (Peer Slave Device)	Apple	A1469	C07JVIZ7FF54	BCGA1469
Video Display	Dell	U2410f	CN-0FJ525N-72872-1B5-AGAL	DoC

11.1.4. DESCRIPTION OF EUT

For FCC 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 22.55 dBm EIRP in the 5250-5350 MHz band and 21.97 dBm EIRP in the 5470-5725 MHz band.

The highest gain ANTENNA Assembly utilized with the EUT has a gain of 4.3 dBi in the 5250-5350 MHz band and 4.9 dBi in the 5470-5725 MHz band. The lowest gain ANTENNA Assembly utilized with the EUT has a gain of 4.1 dBi in the 5250-5350 MHz band and 4.2 dBi in the 5470-5725 MHz band.

Two antennas are utilized to meet the diversity and MIMO operational requirements.

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 a 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 streaming the compressed video file TestFile.mp2 "6 ½ Magic Hours" from the Master to the Slave in full motion video mode using OPlayerHD Lite media player.

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

The EUT utilizes the 802.11ac architecture. Three nominal channel bandwidths are implemented: 20 MHz, 40 MHz and 80 MHz.

The software installed in the EUT is 12H49.

The software installed in the Master Device is 7.7.2C0 dev.

UNIFORM CHANNEL SPREADING

This function is not required per KDB 905462.

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

The Master Device is an Apple, Inc. Access Point, FCC ID: BCGA1521. The minimum antenna gain for the Master Device is 1.4 dBi.

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

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

The software installed in the access point is 7.7.2C0 dev.

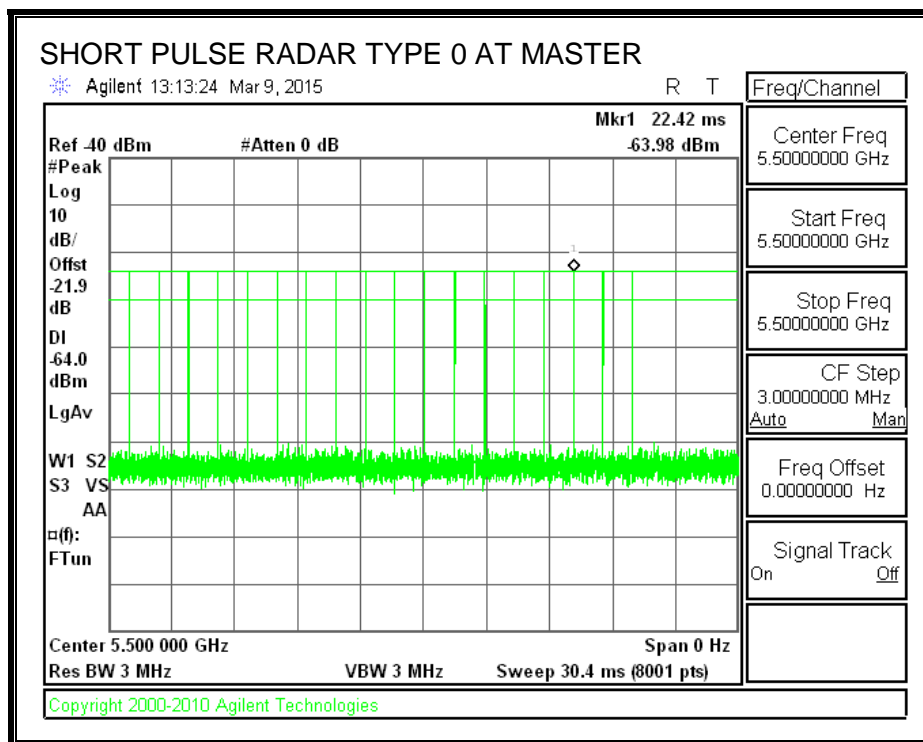
11.2. CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH

11.2.1. TEST CHANNEL

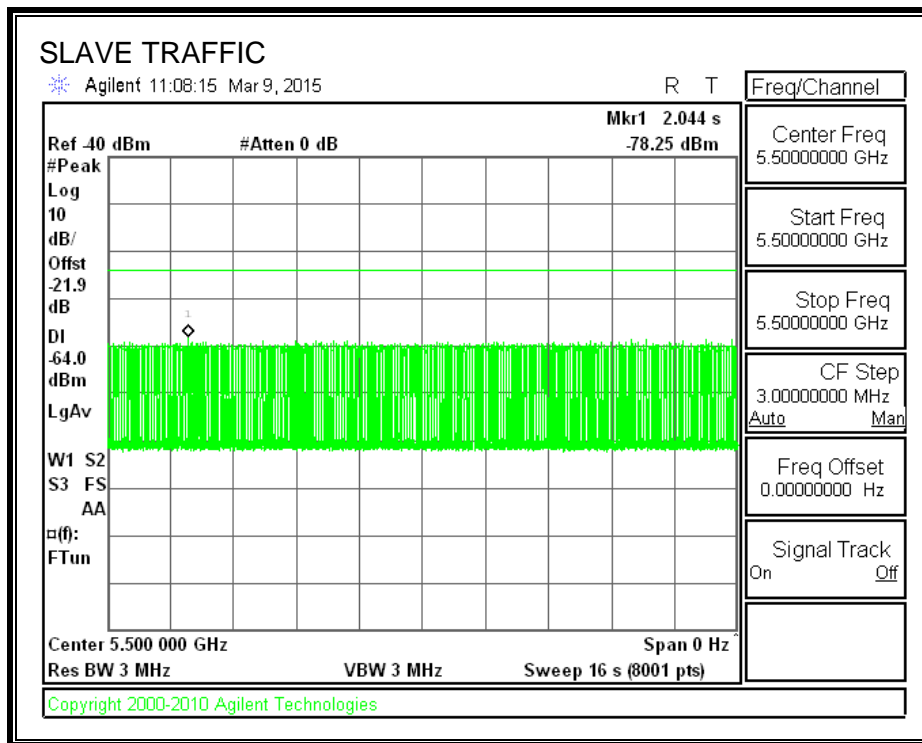
All tests were performed at a channel center frequency of 5500 MHz.

11.2.2. RADAR WAVEFORM AND TRAFFIC

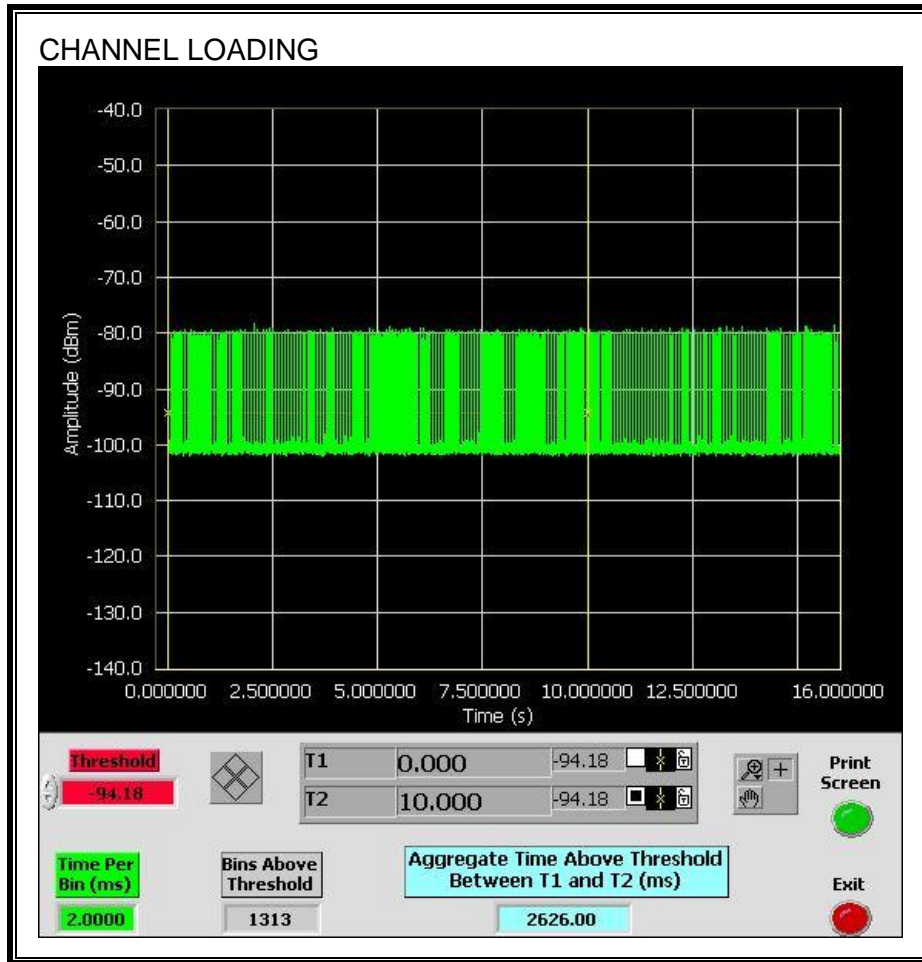
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 26.26%

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)

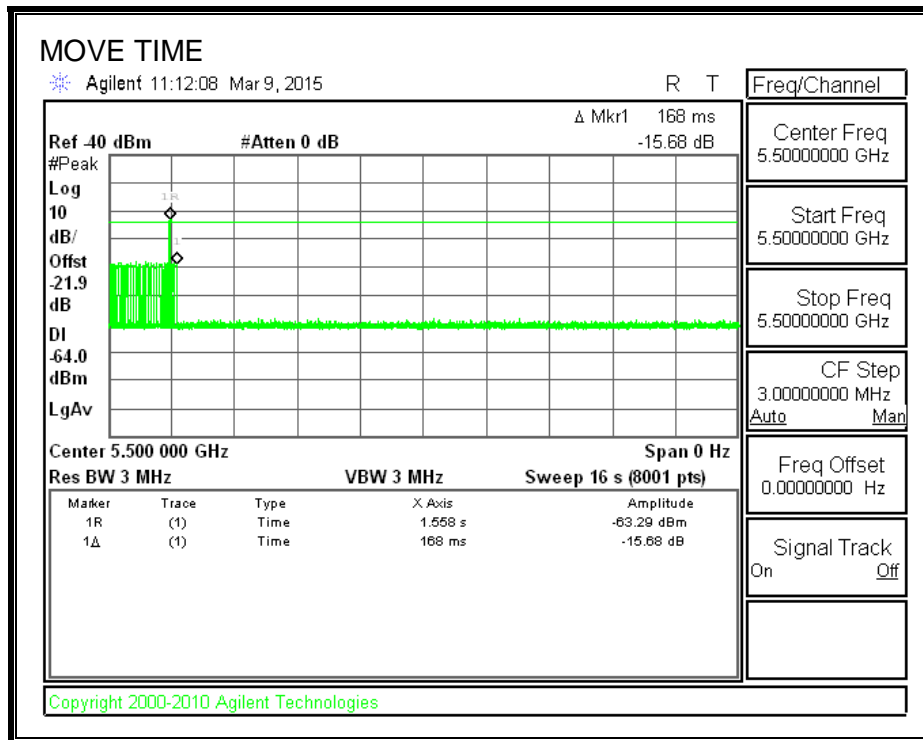
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

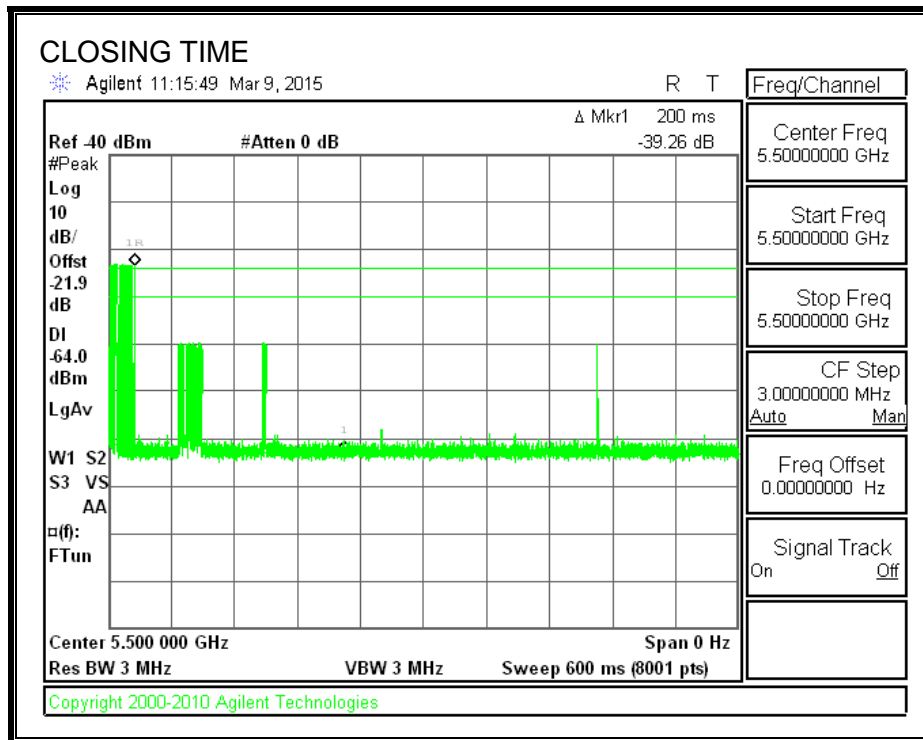
Channel Move Time (sec)	Limit (sec)
0.158	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

MOVE TIME

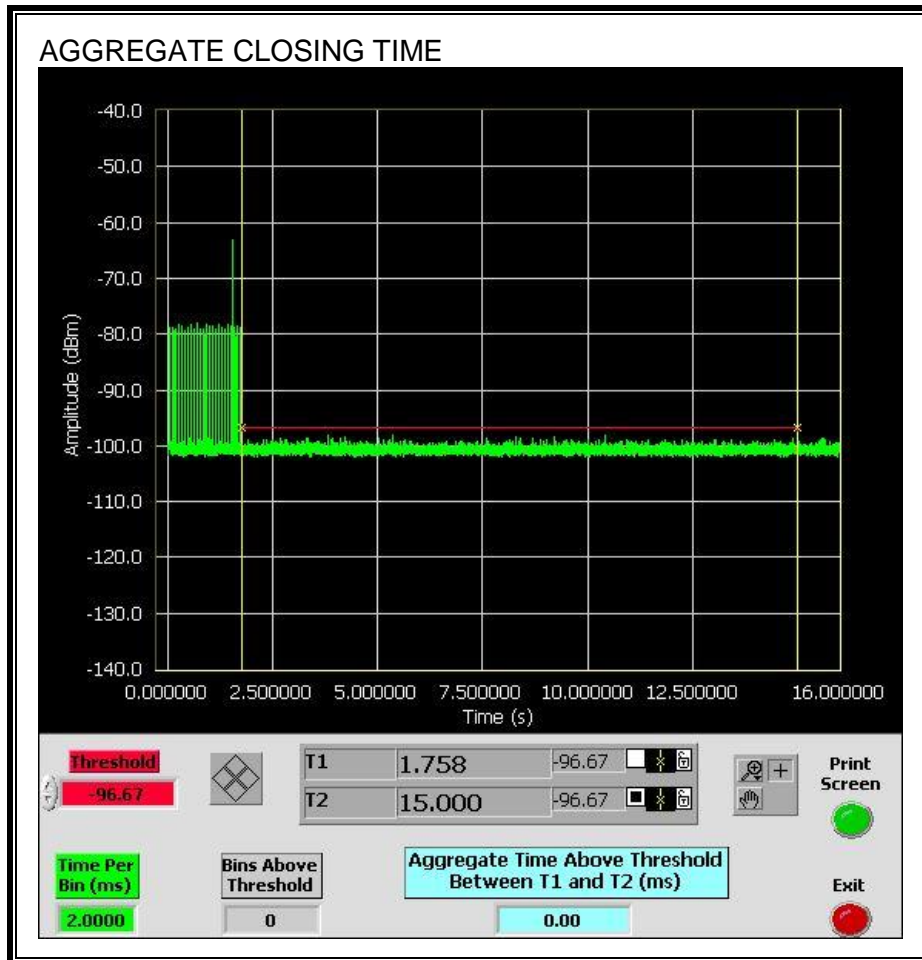


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



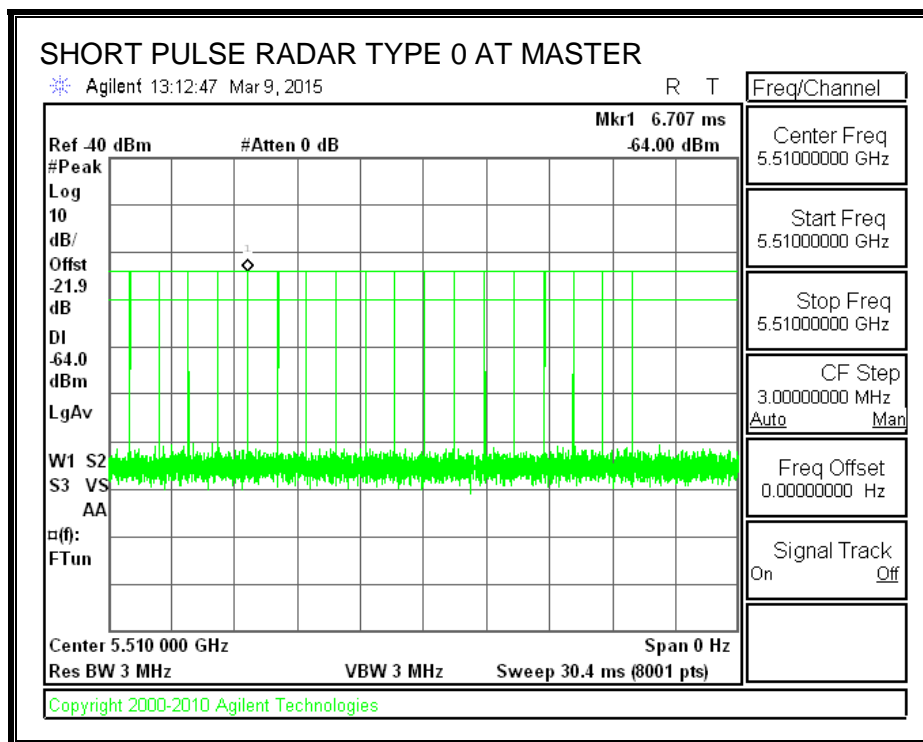
11.3. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH

11.3.1. TEST CHANNEL

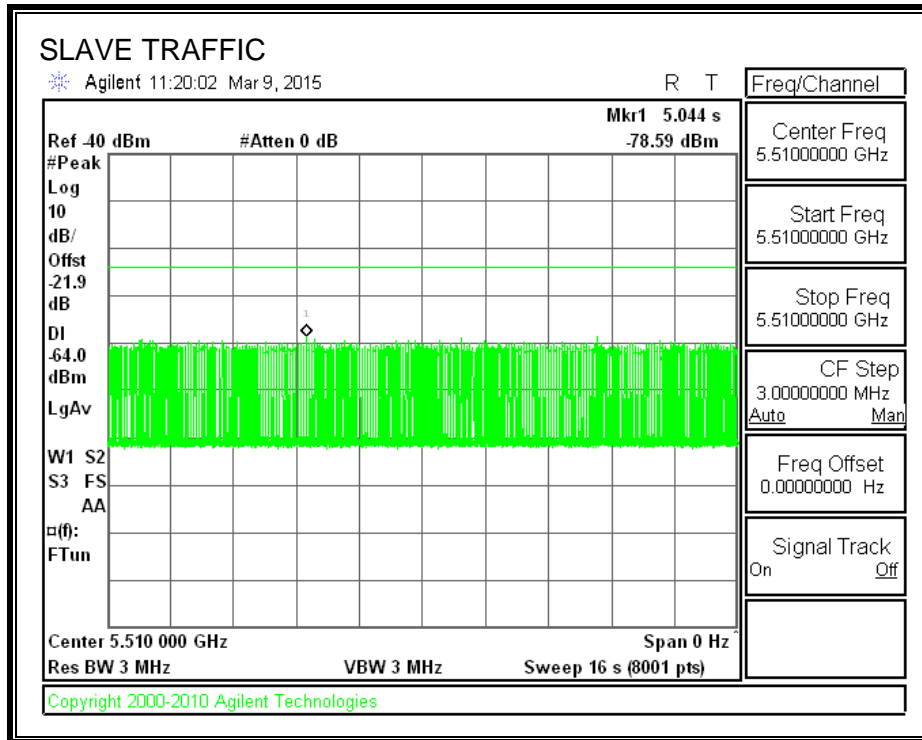
All tests were performed at a channel center frequency of 5510 MHz.

11.3.2. RADAR WAVEFORM AND TRAFFIC

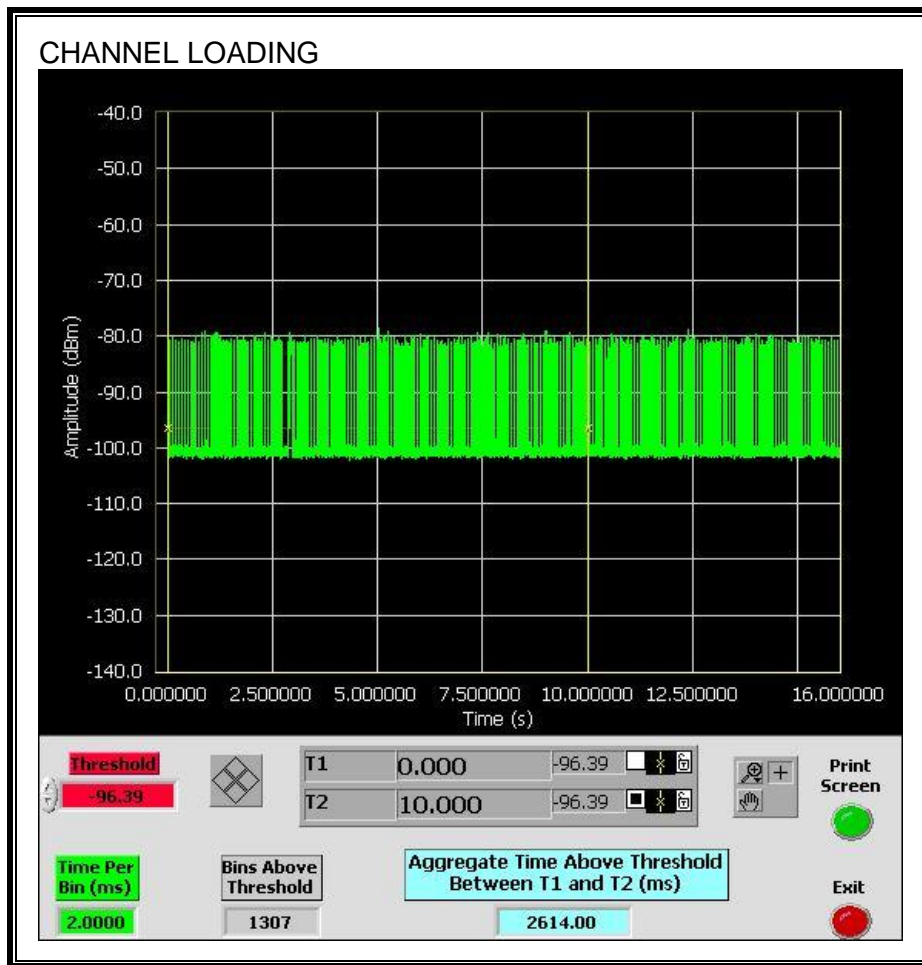
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 26.14%

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)

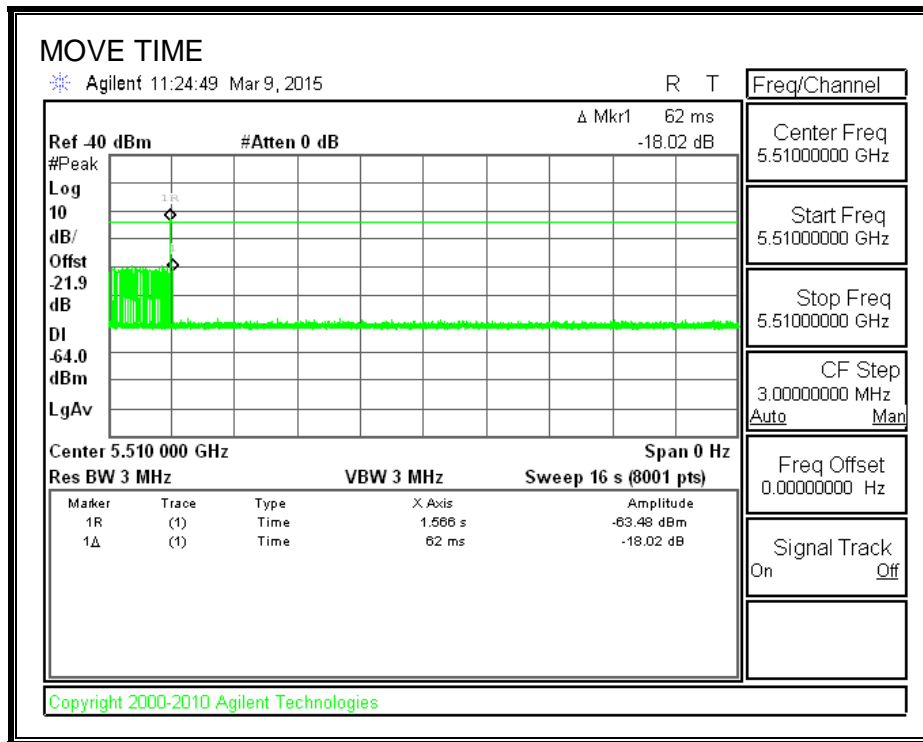
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

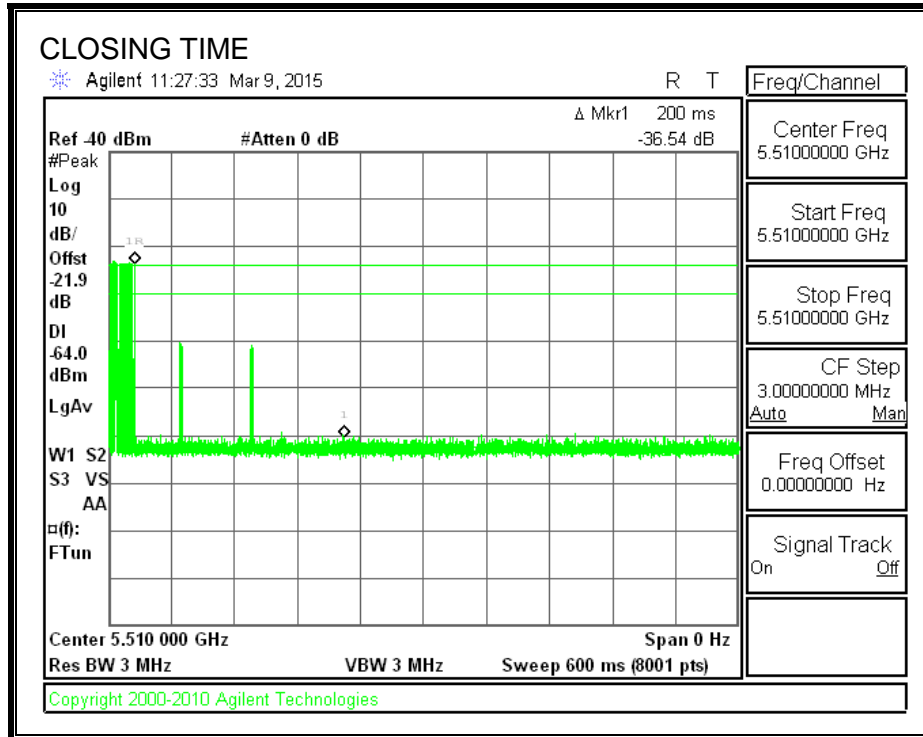
Channel Move Time (sec)	Limit (sec)
0.062	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

MOVE TIME

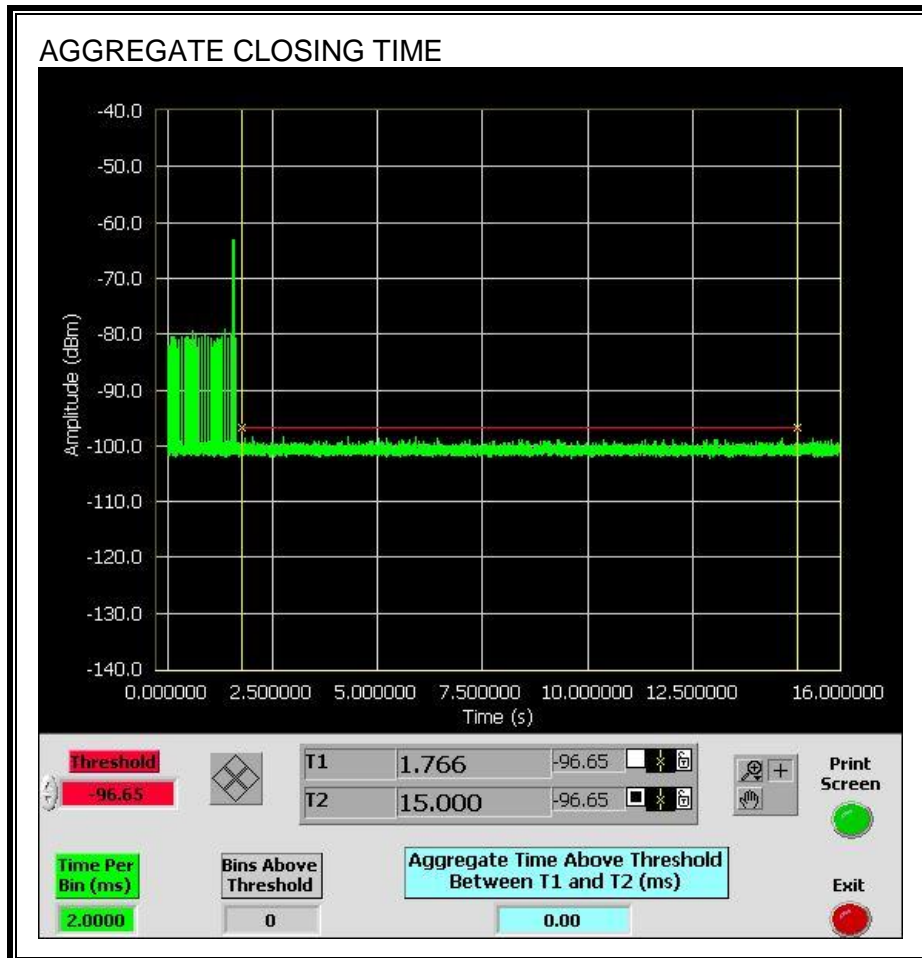


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



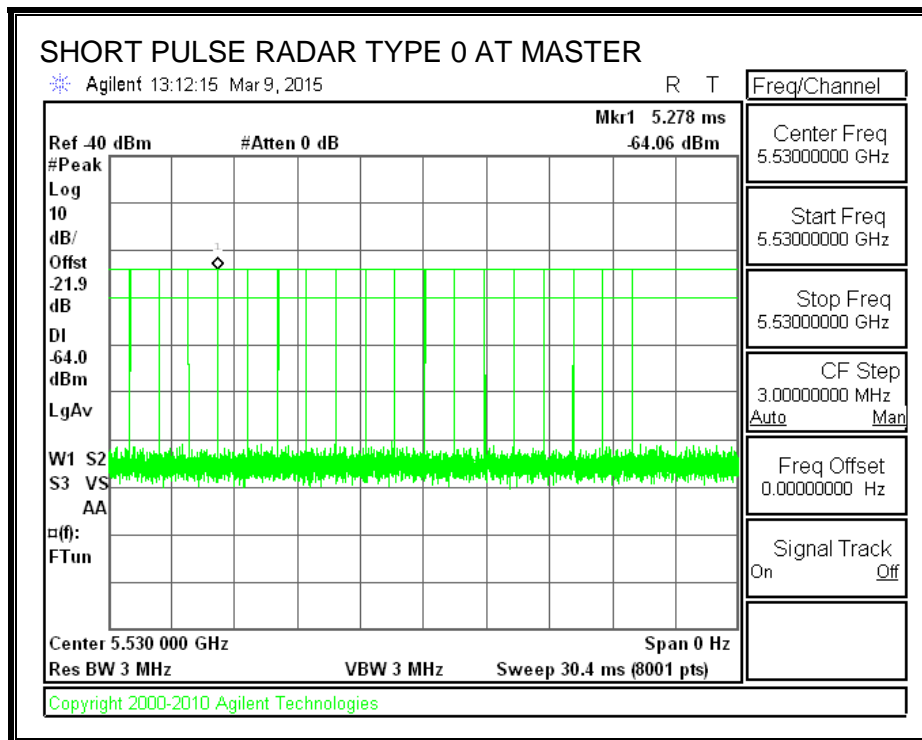
11.4. CLIENT MODE RESULTS FOR 80 MHz BANDWIDTH

11.4.1. TEST CHANNEL

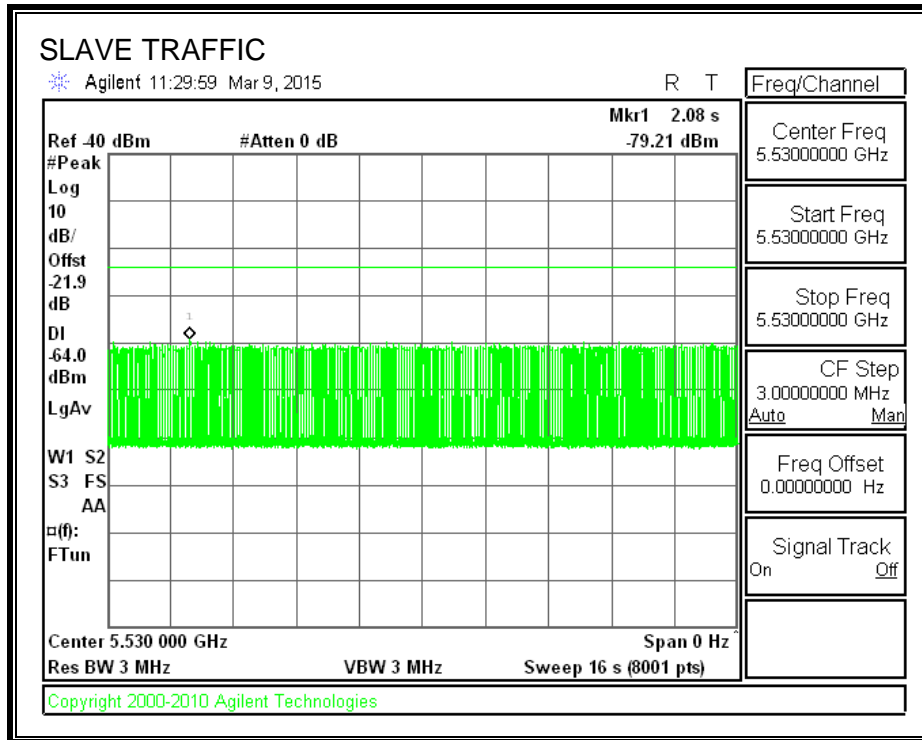
All tests were performed at a channel center frequency of 5530 MHz.

11.4.2. RADAR WAVEFORM AND TRAFFIC

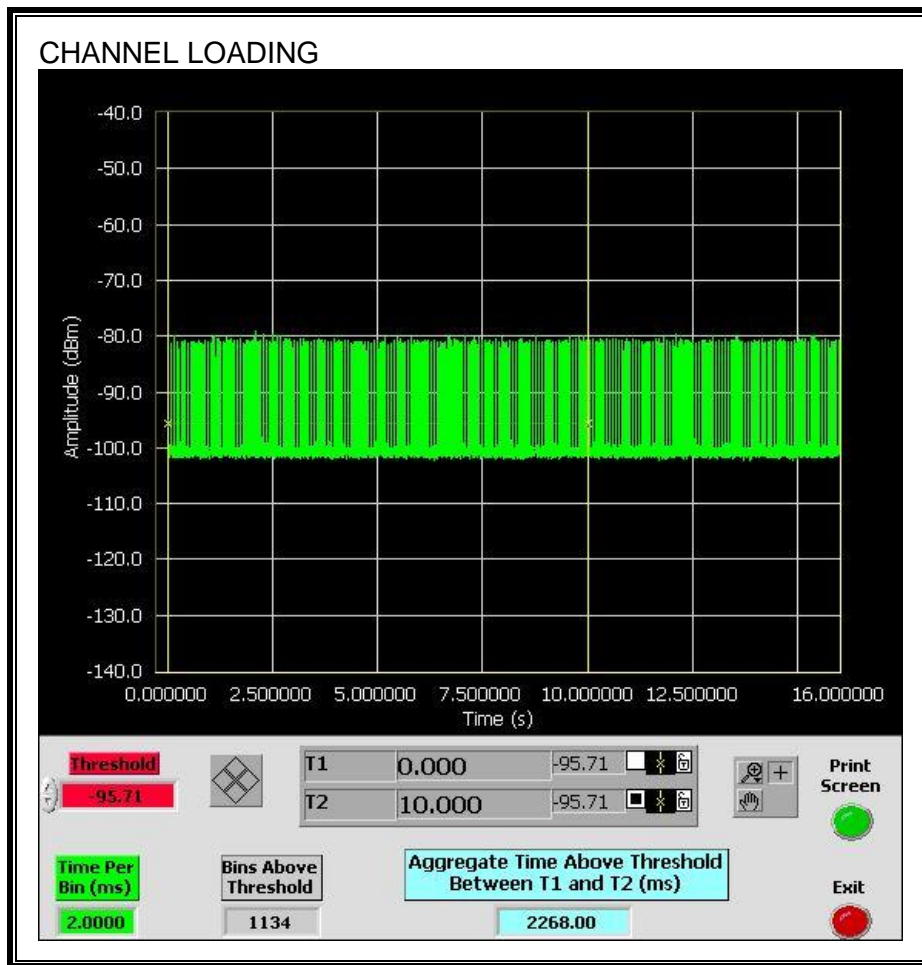
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 22.68%

11.4.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.4.4. 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)

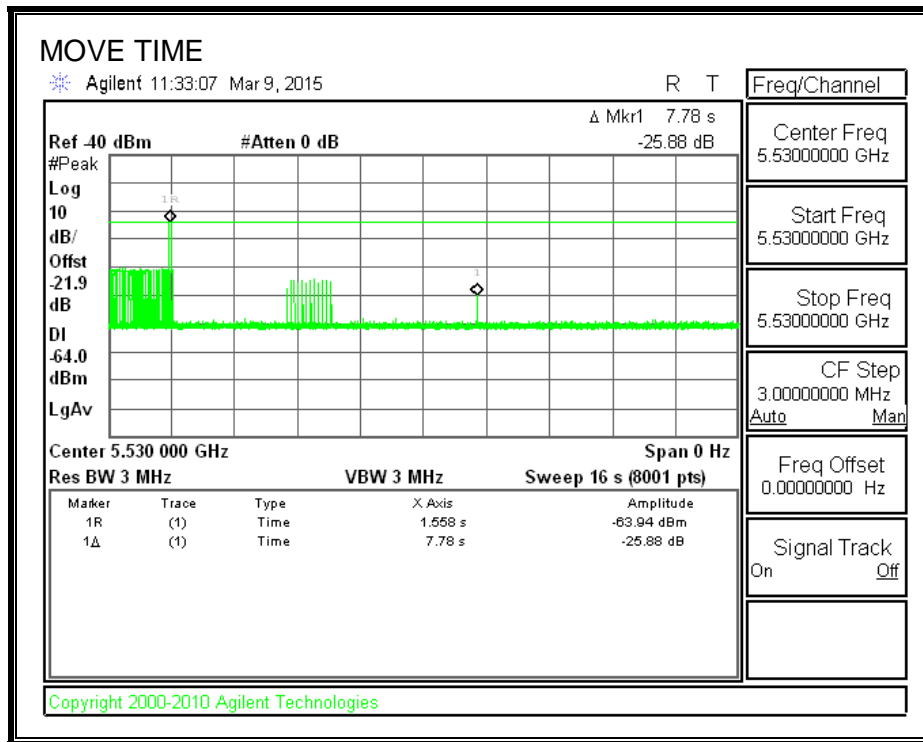
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

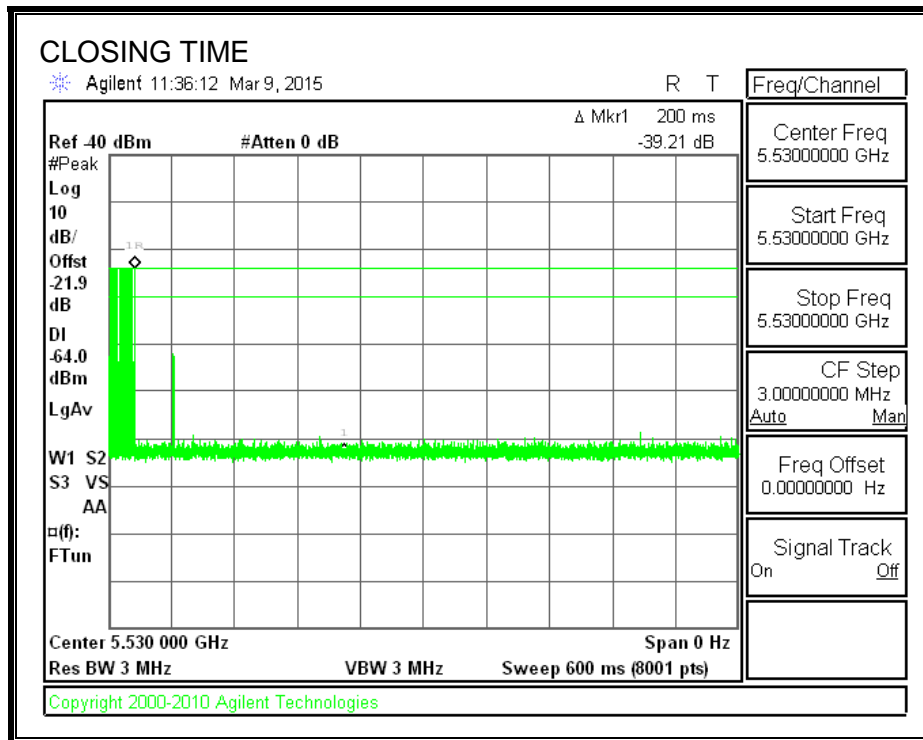
Channel Move Time (sec)	Limit (sec)
7.780	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
26.0	60

MOVE TIME

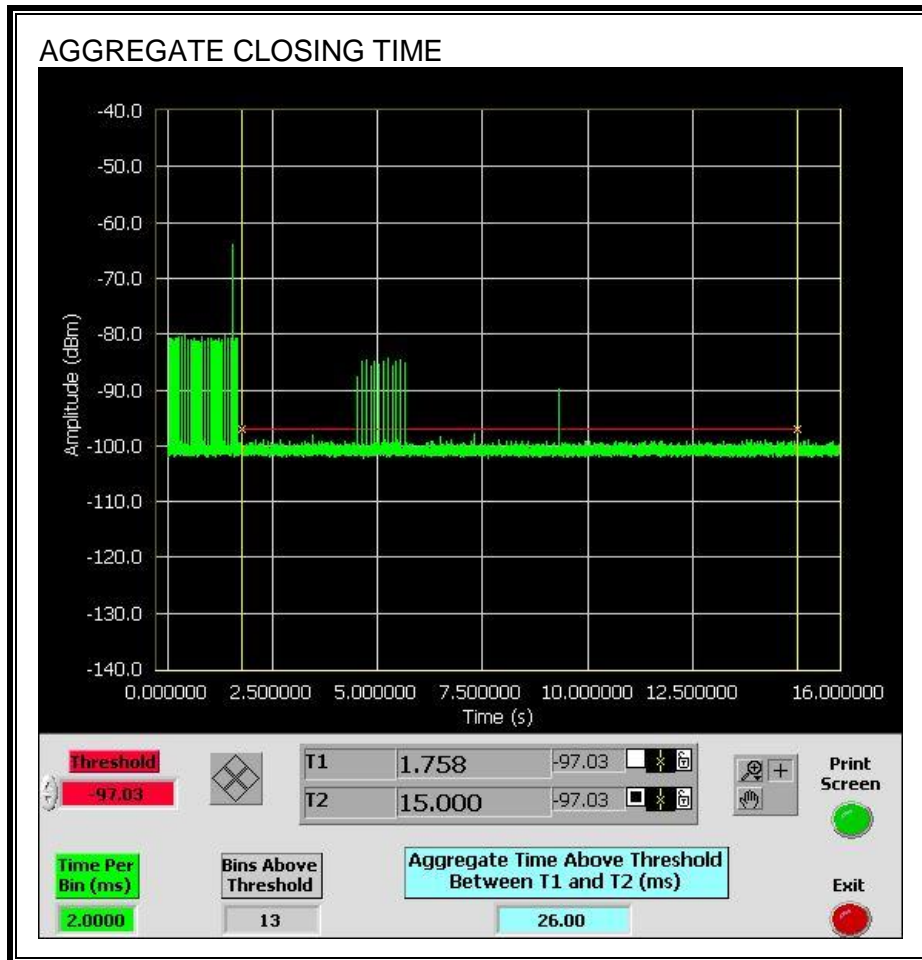


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

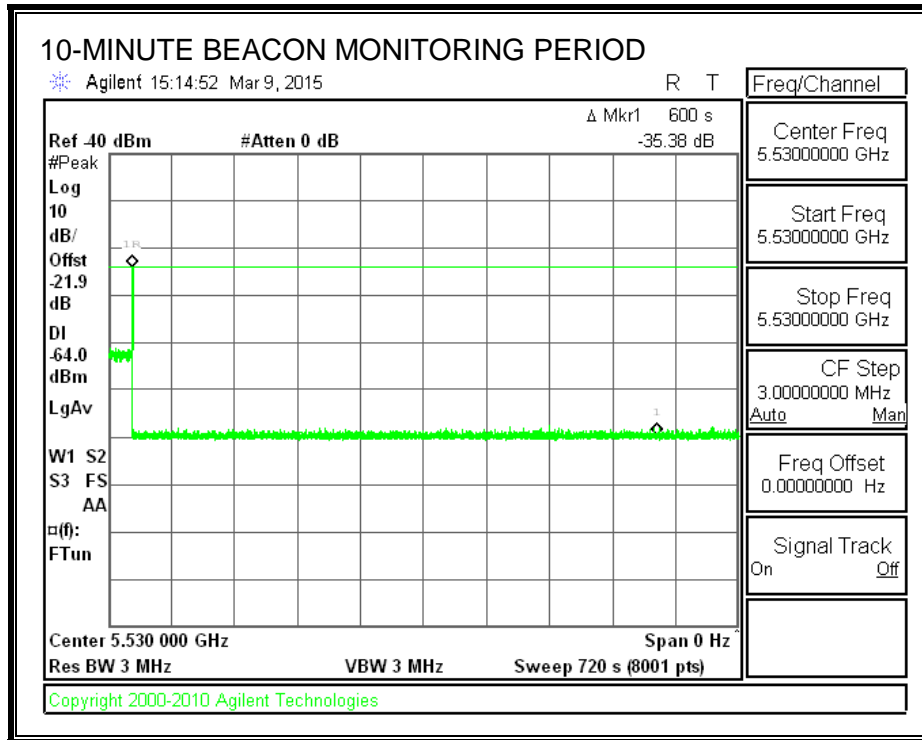
Only intermittent transmissions are observed during the aggregate monitoring period.



11.4.5. 10-MINUTE BEACON MONITORING PERIOD

RESULTS

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



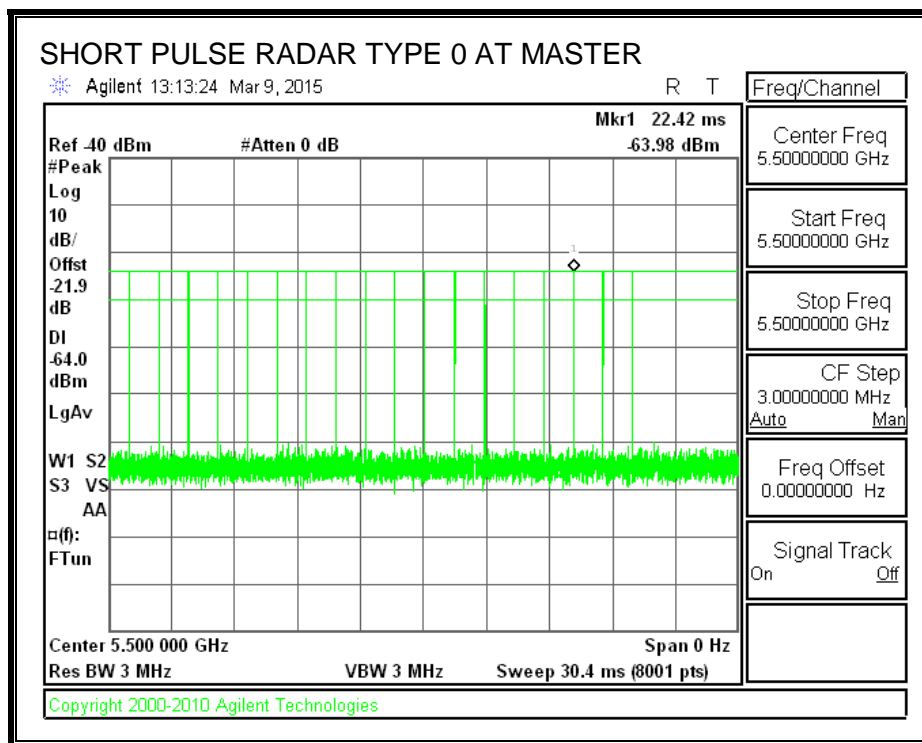
11.5. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 20 MHz BANDWIDTH

11.5.1. TEST CHANNEL

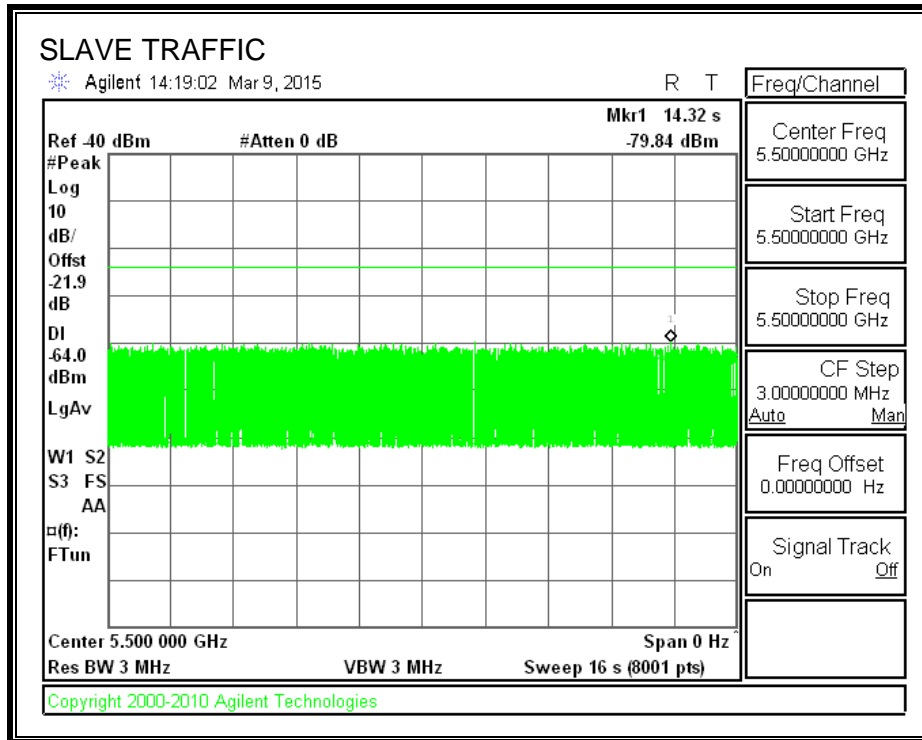
All tests were performed at a channel center frequency of 5500 MHz.

11.5.2. RADAR WAVEFORM AND TRAFFIC

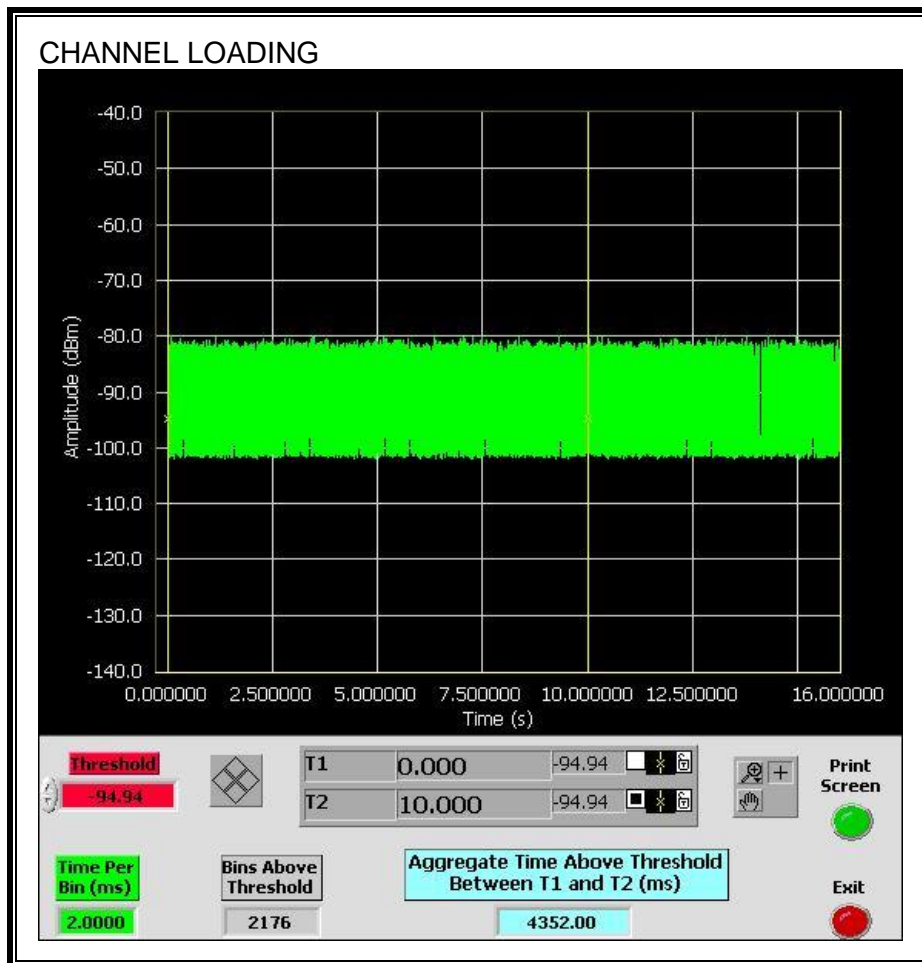
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 43.52%

11.5.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.5.4. 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)

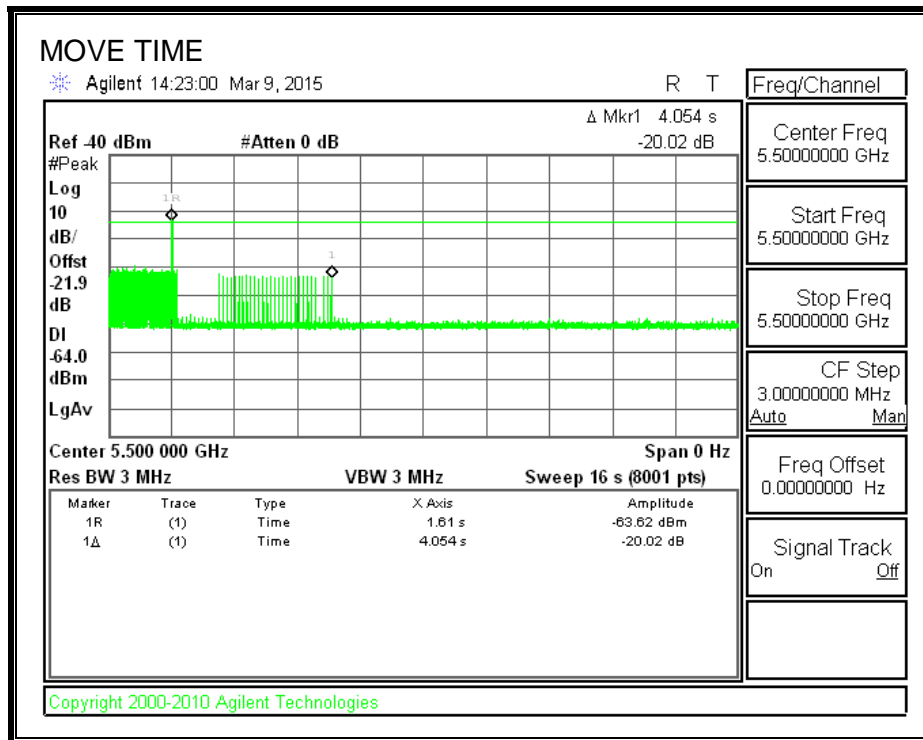
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

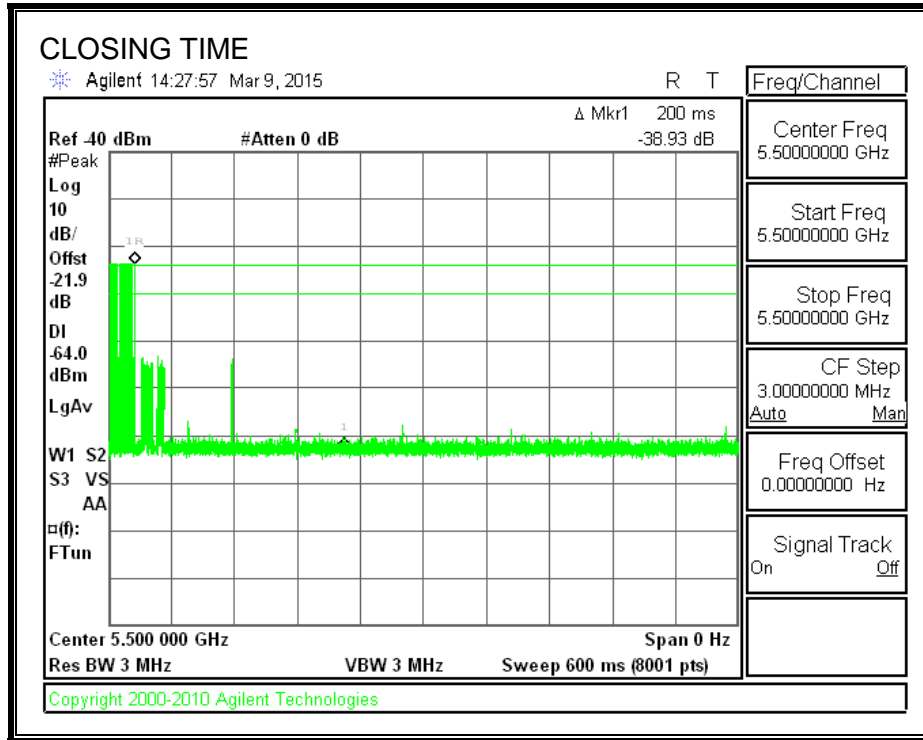
Channel Move Time (sec)	Limit (sec)
4.054	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
56.0	60

MOVE TIME

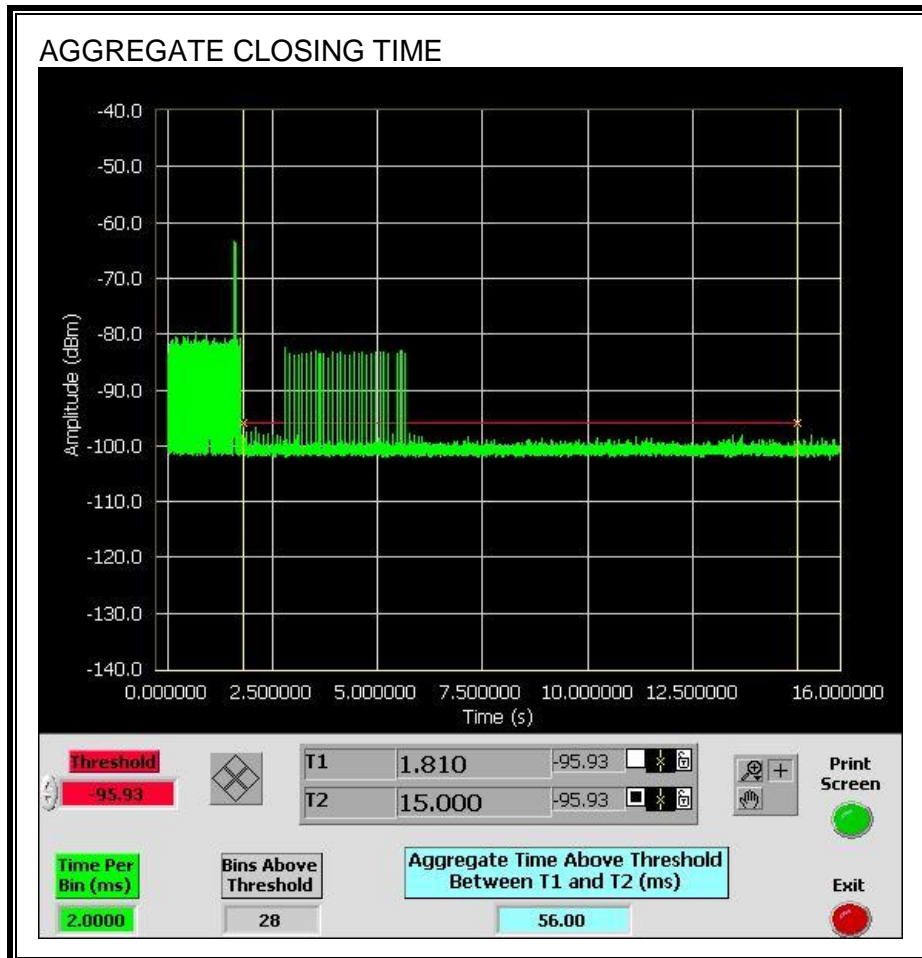


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



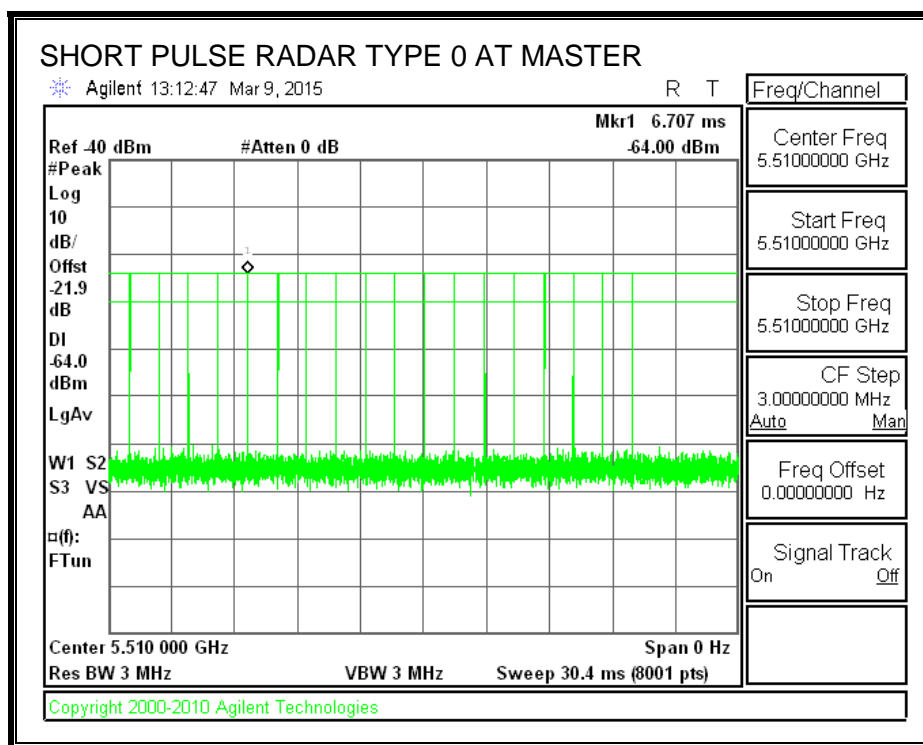
11.6. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 40 MHz BANDWIDTH

11.6.1. TEST CHANNEL

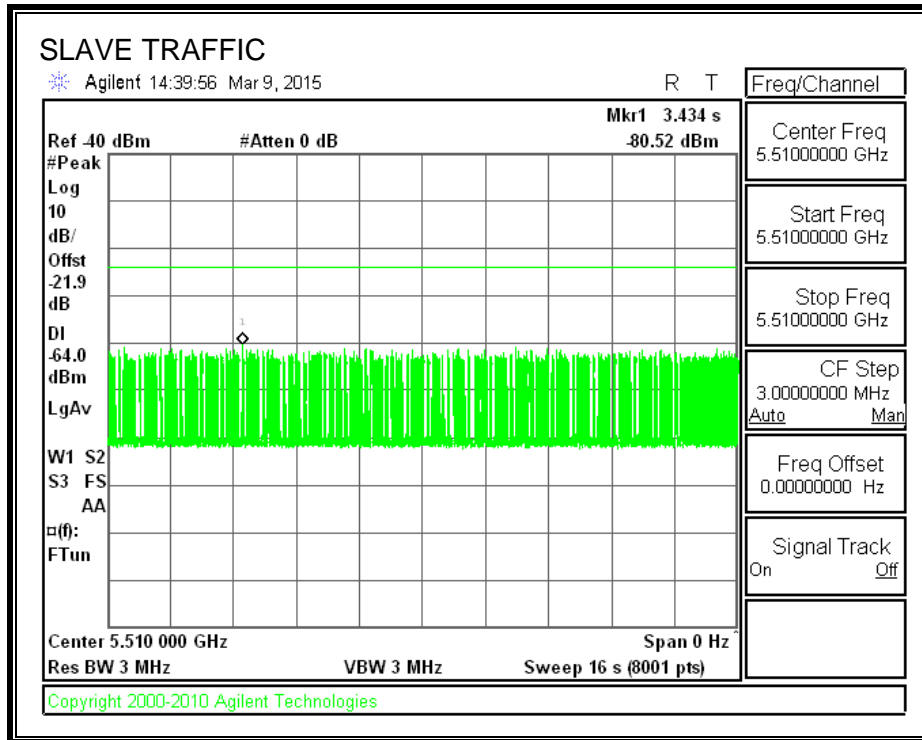
All tests were performed at a channel center frequency of 5510 MHz.

11.6.2. RADAR WAVEFORM AND TRAFFIC

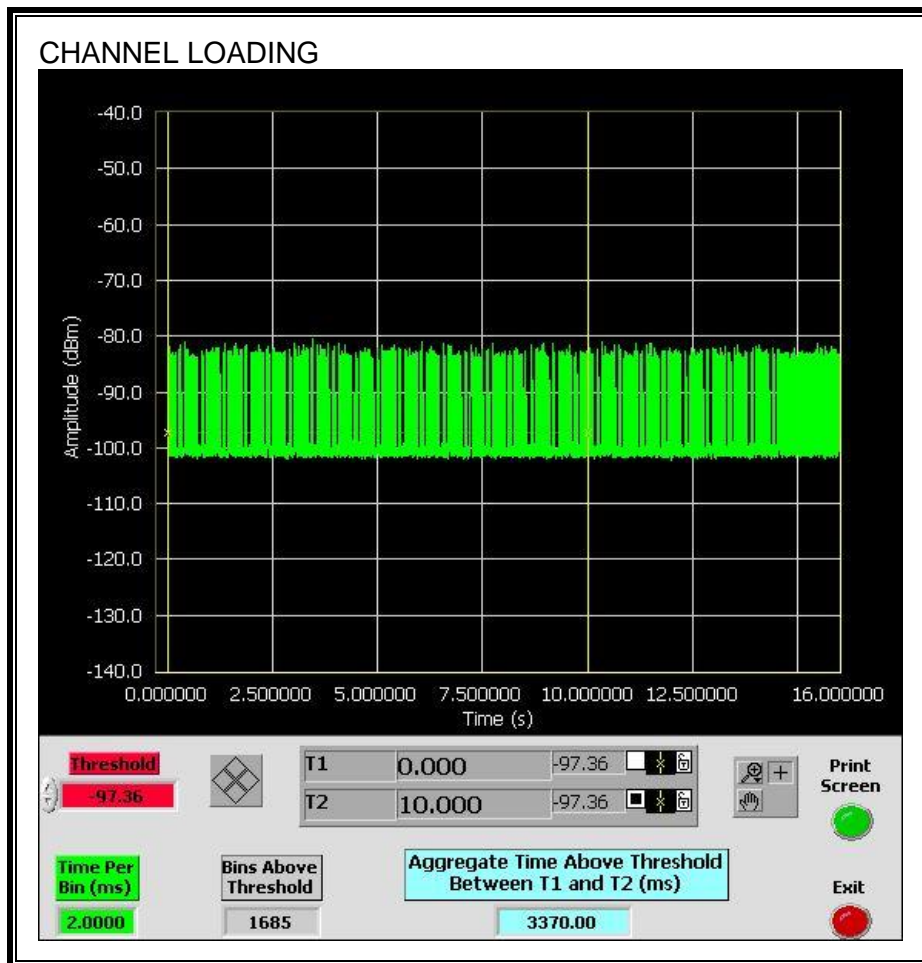
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 33.7%

11.6.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.6.4. 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 aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

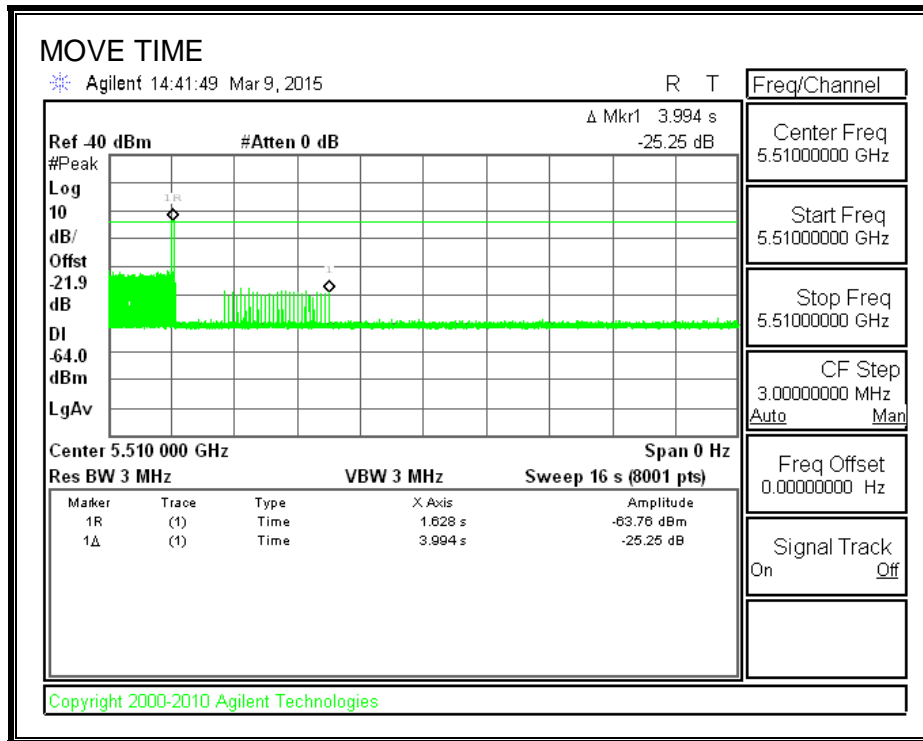
RESULTS

Channel Move Time (sec)	Limit (sec)
3.673	10

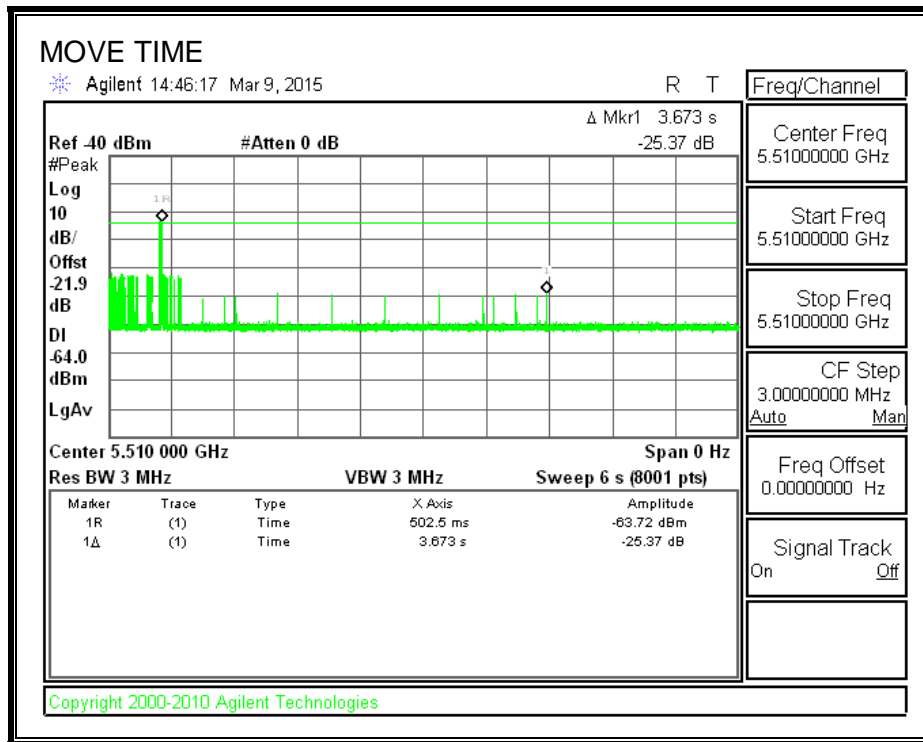
Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
9.0	60

MOVE TIME

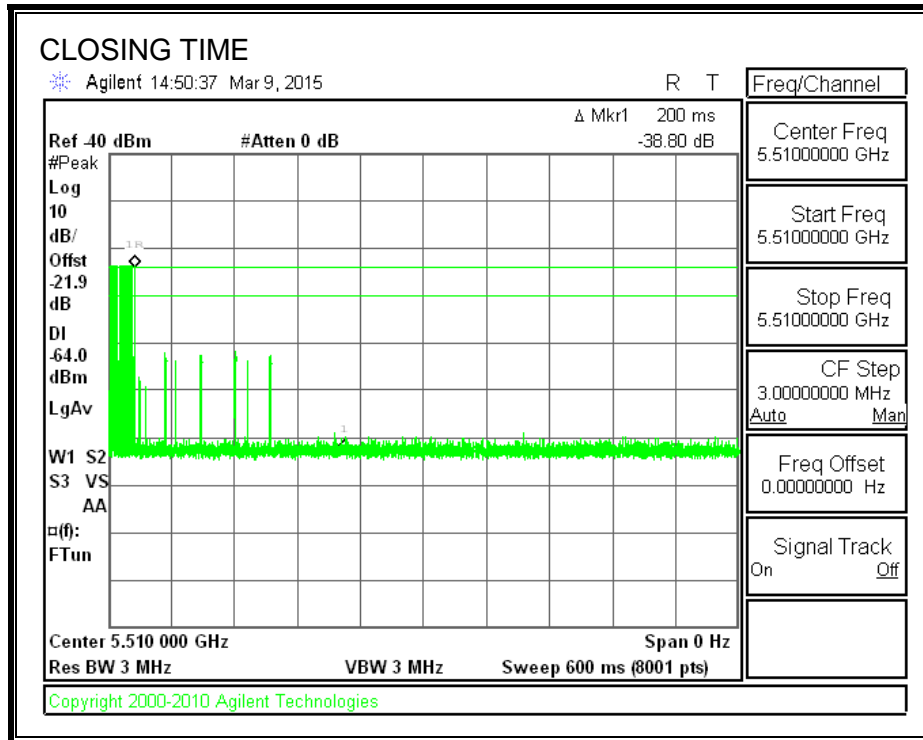
16 SECOND SWEEP:



6 SECOND SWEEP:

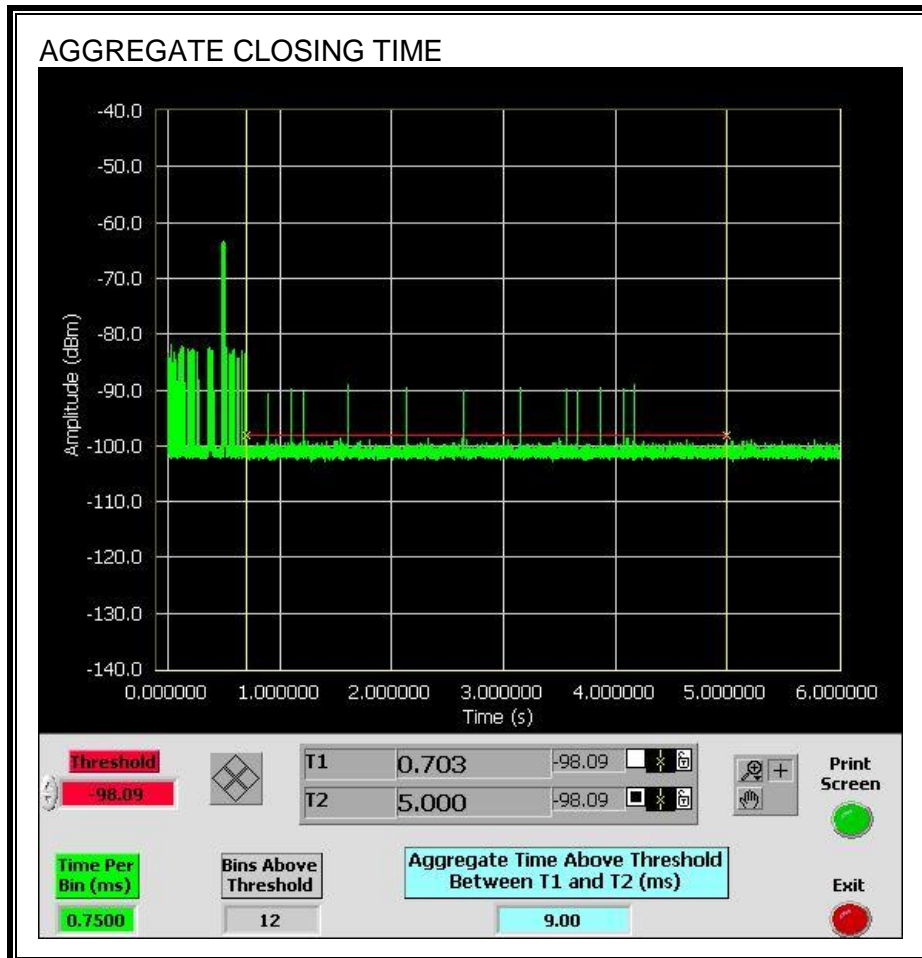


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



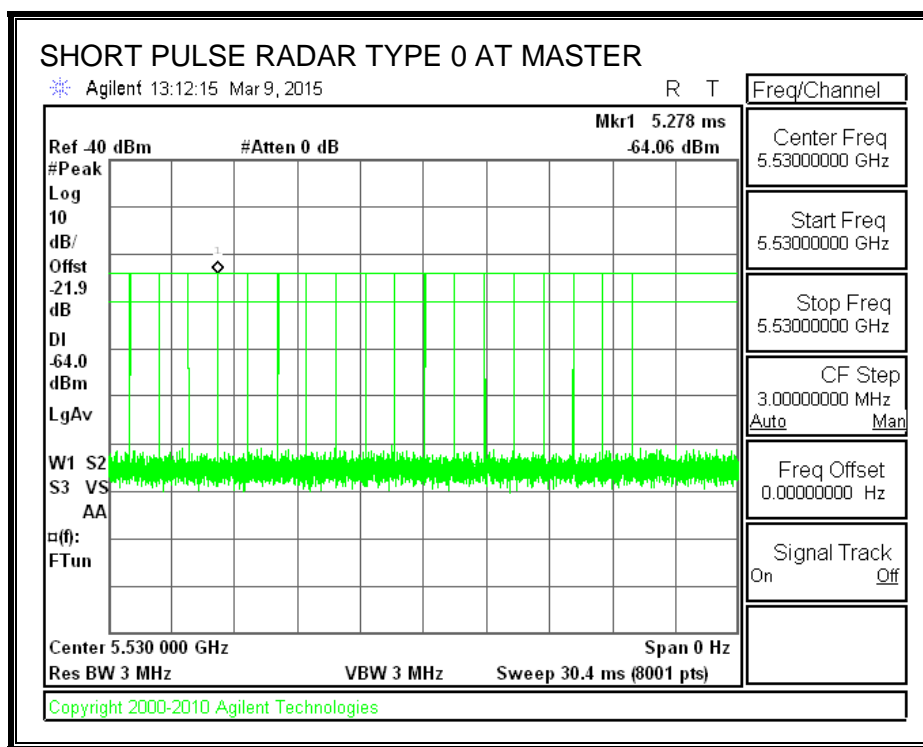
11.7. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 80 MHz BANDWIDTH

11.7.1. TEST CHANNEL

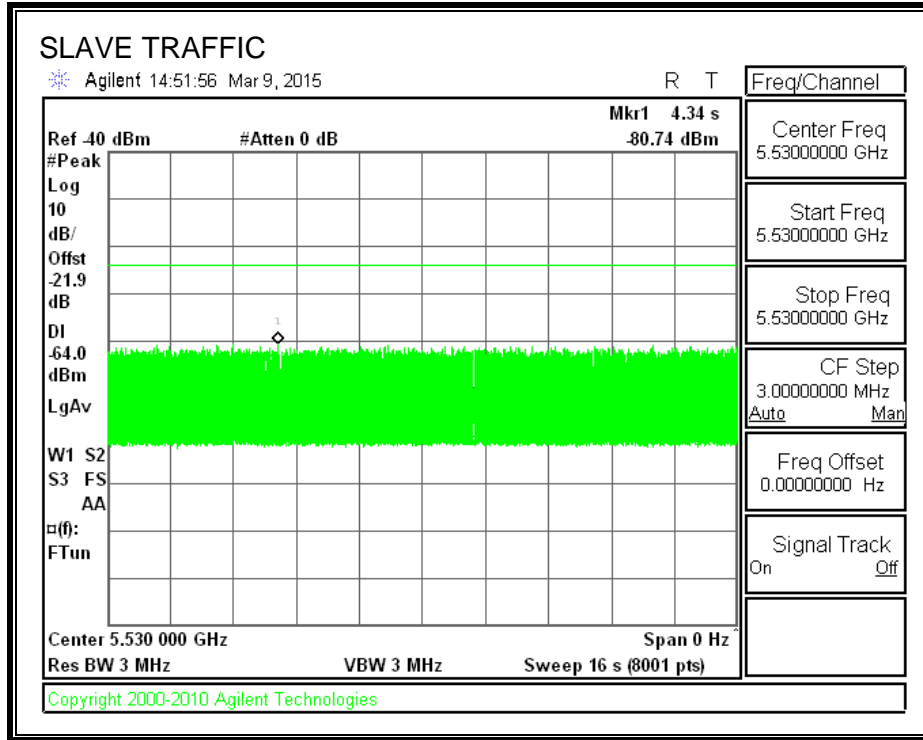
All tests were performed at a channel center frequency of 5530 MHz.

11.7.2. RADAR WAVEFORM AND TRAFFIC

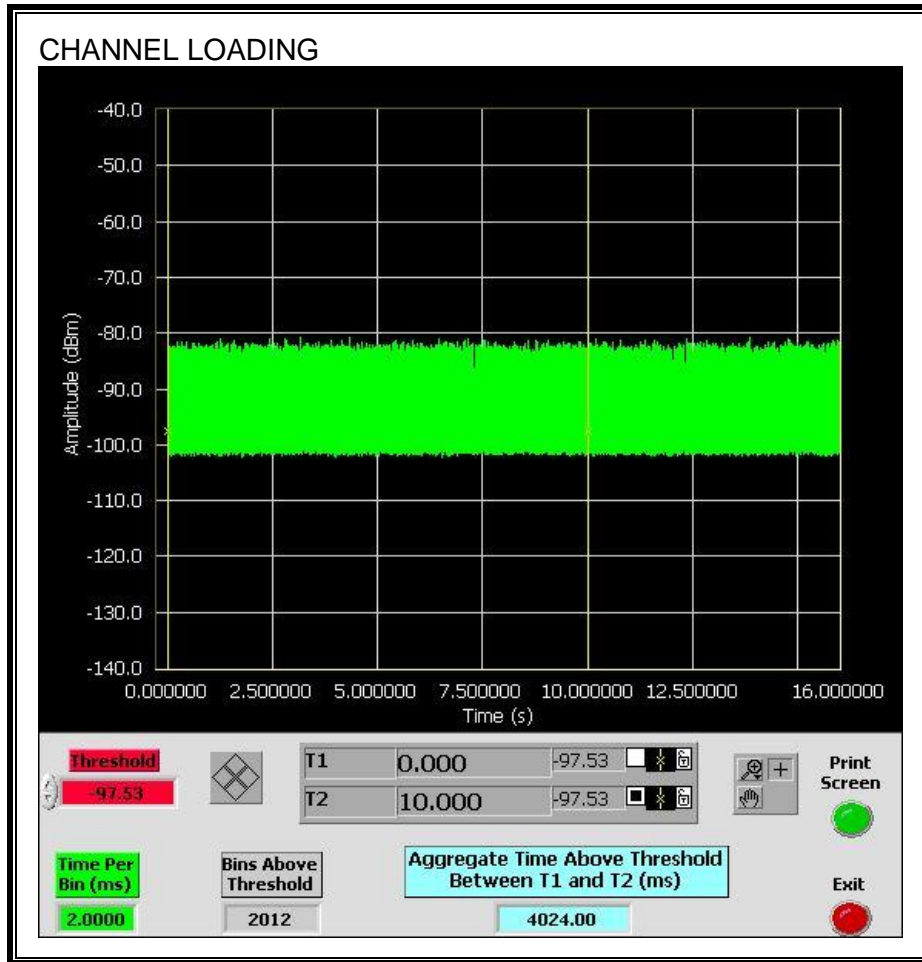
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 40.24%

11.7.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.7.4. 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)

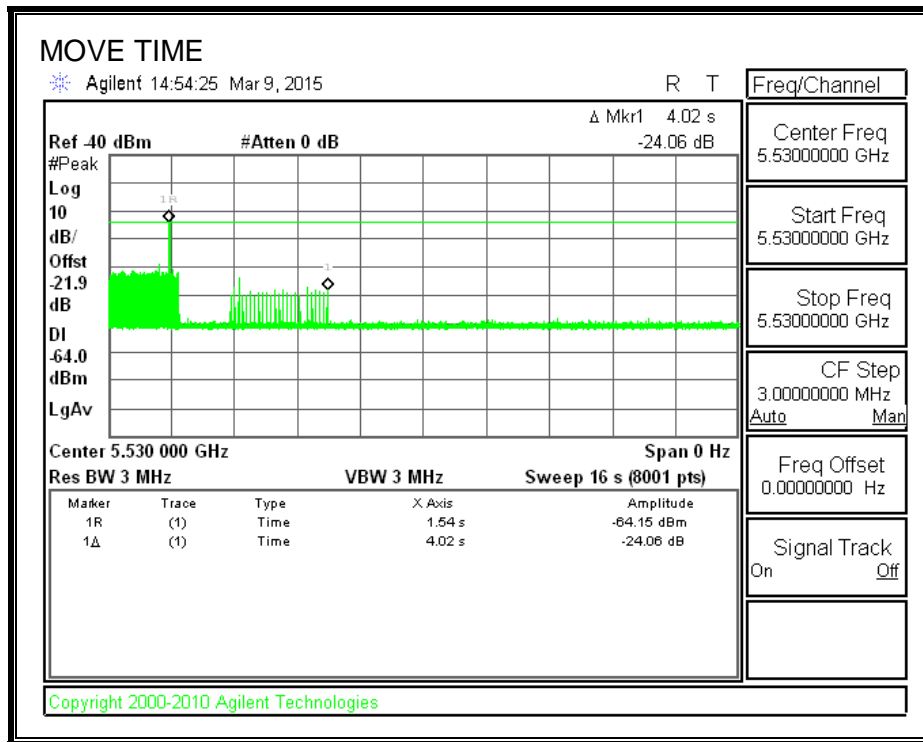
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

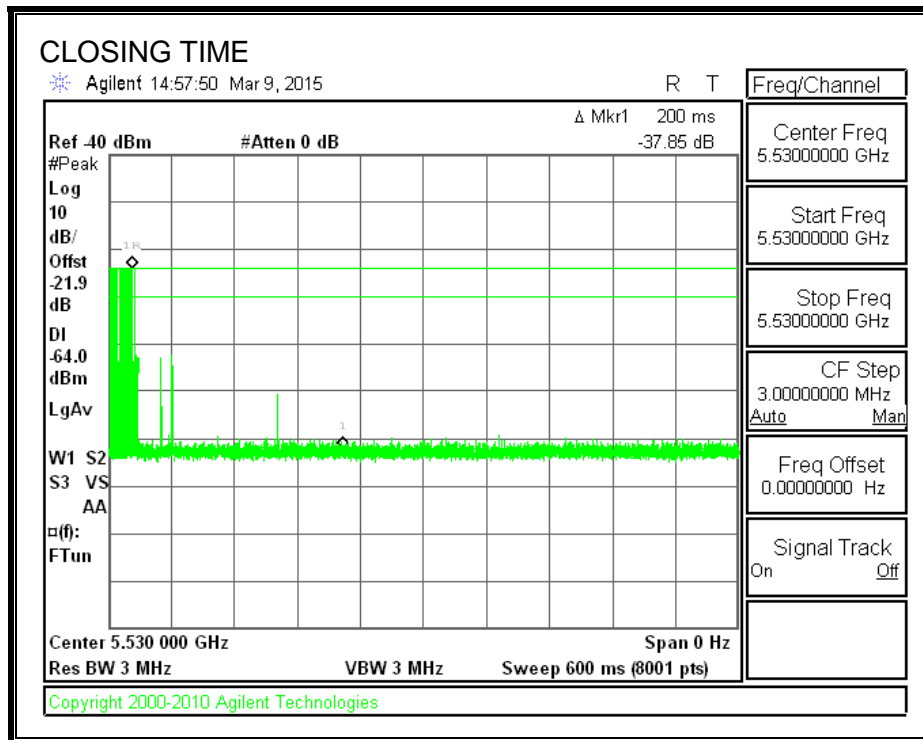
Channel Move Time (sec)	Limit (sec)
4.020	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
54.0	60

MOVE TIME

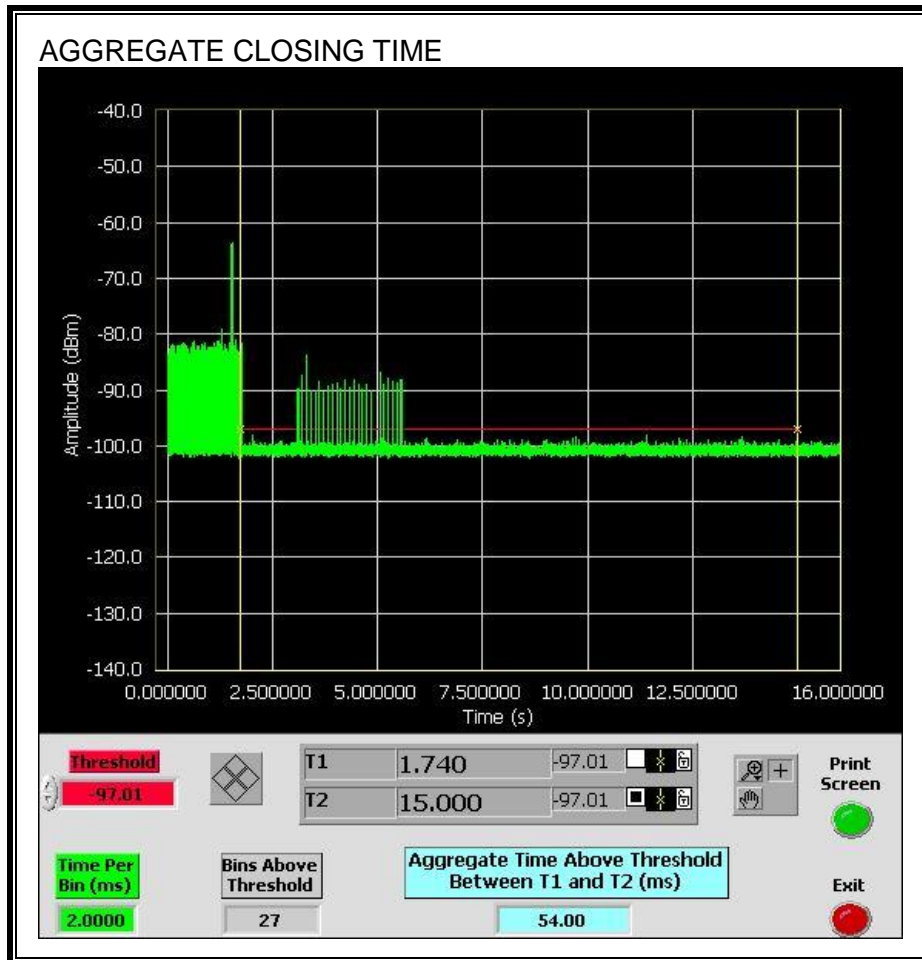


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



11.7.5. 10-MINUTE BEACON MONITORING PERIOD

RESULTS

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

