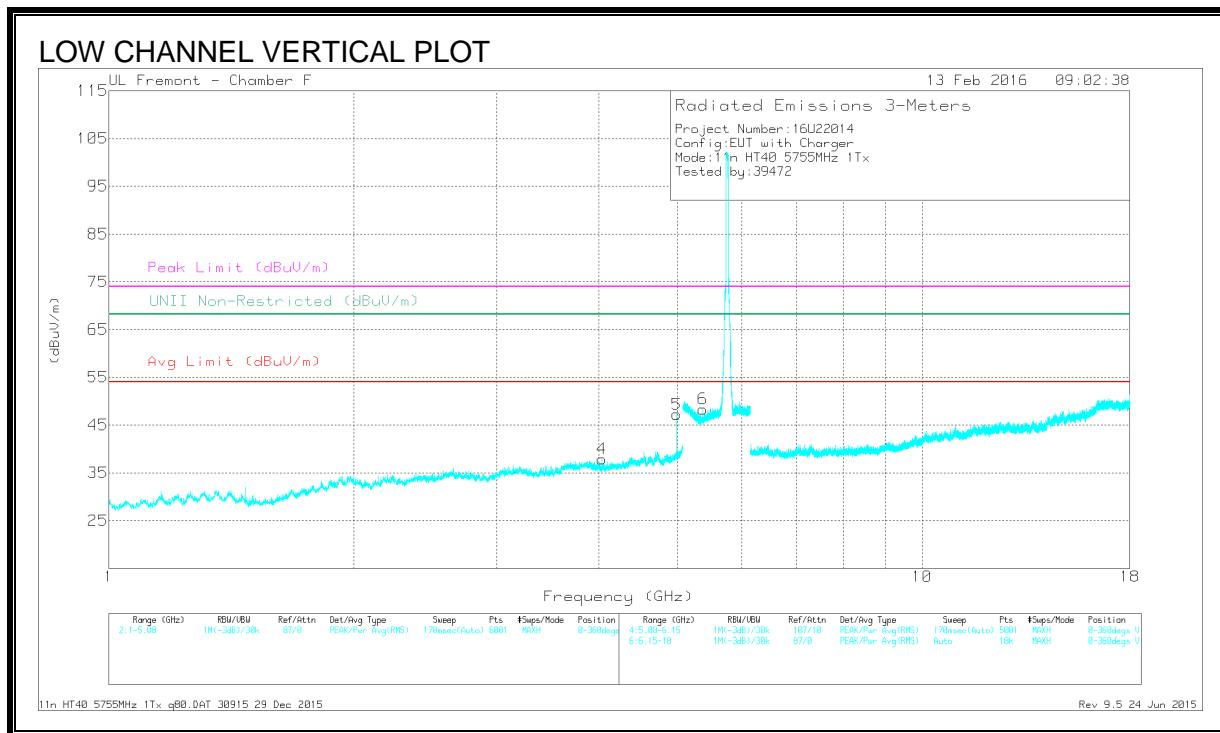
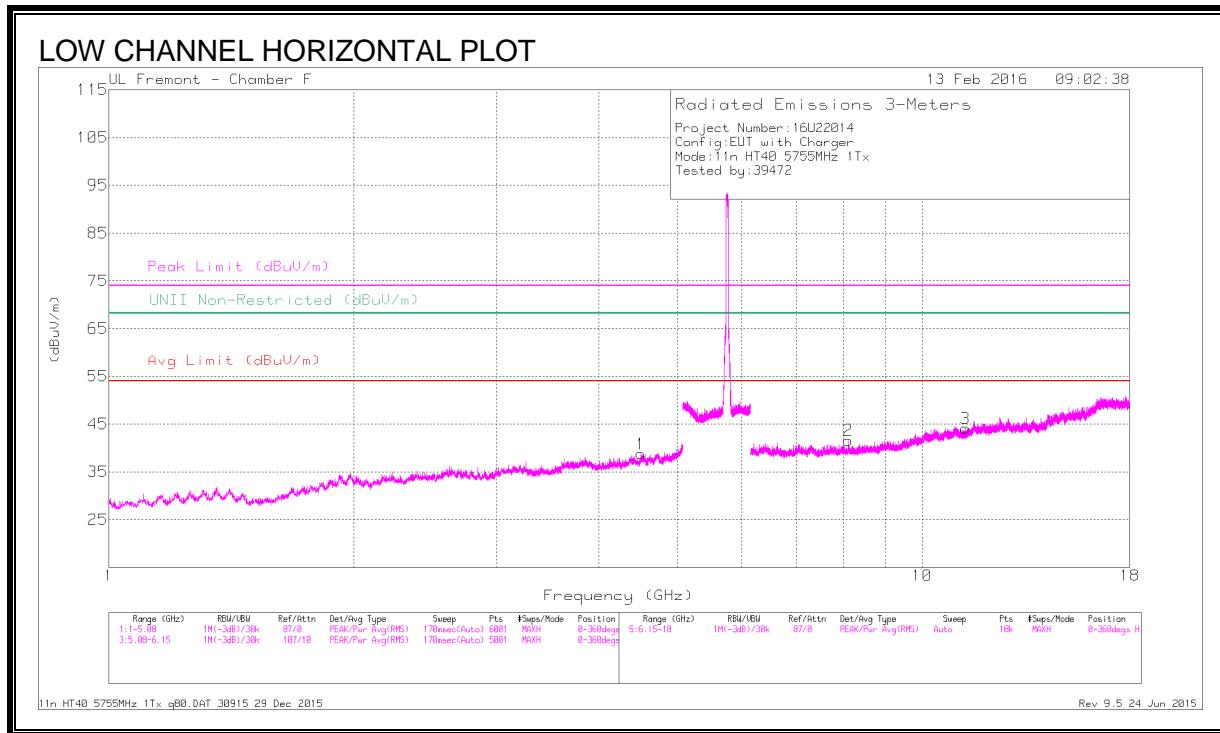


**LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS**



**DATA**

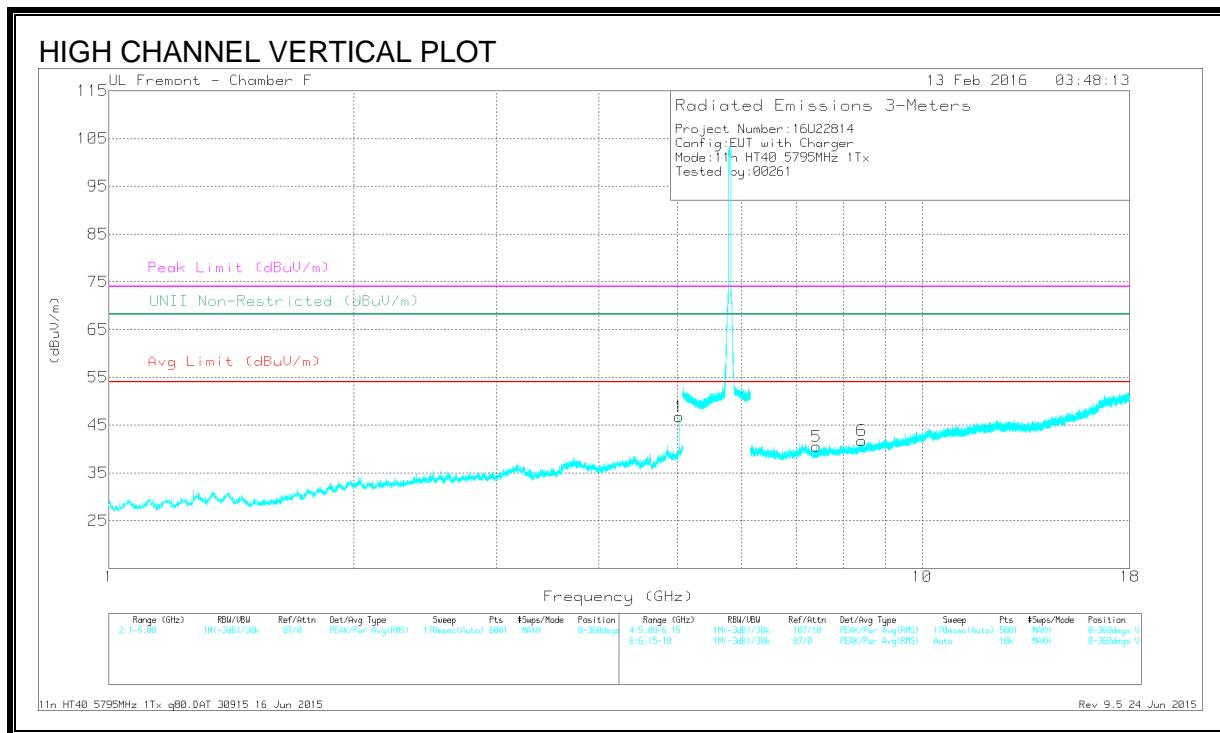
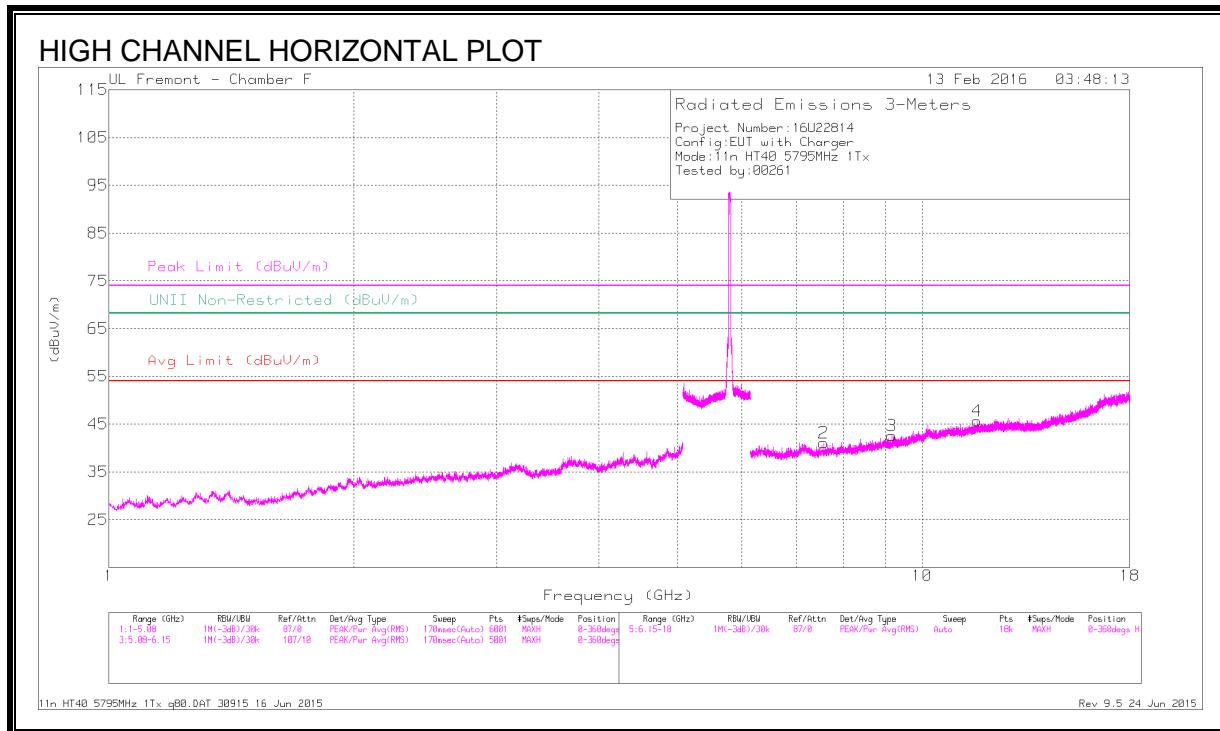
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.507	41.75	PK-U	33.7	-29.9	45.55	-	-	74	-28.45	-	-	168	215	H
	* 4.508	29.71	ADR	33.7	-29.9	33.51	54	-20.49	-	-	-	-	168	215	H
2	* 8.113	38.02	PK-U	35.7	-26.9	46.82	-	-	74	-27.18	-	-	200	325	H
	* 8.109	26.58	ADR	35.6	-26.9	35.28	54	-18.72	-	-	-	-	200	325	H
3	* 11.312	36.76	PK-U	38.2	-24.2	50.76	-	-	74	-23.24	-	-	245	244	H
	* 11.309	24.81	ADR	38.2	-24.2	38.81	54	-15.19	-	-	-	-	245	244	H
4	* 4.034	40.53	PK-U	33.2	-29.7	44.03	-	-	74	-29.97	-	-	188	131	V
	* 4.038	28.61	ADR	33.2	-29.7	32.11	54	-21.89	-	-	-	-	188	131	V
5	* 4.988	47.53	PK-U	33.9	-29.3	52.13	-	-	74	-21.87	-	-	104	239	V
	* 4.988	42.69	ADR	33.9	-29.3	47.29	54	-6.71	-	-	-	-	104	239	V
6	* 5.371	40.98	PK-U	34.4	-19.5	55.88	-	-	74	-18.12	-	-	120	209	V
	* 5.371	31.41	ADR	34.4	-19.5	46.31	54	-7.69	-	-	-	-	120	209	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS



**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T712 (dB/m)	Amp/Cbl/F Impad (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	
1	* 5.022	43.01	PK-U	34	-25.7	0	51.31	-	-	74	-22.69	-	-	-	198	215	V
	* 5.022	37.02	ADR	34	-25.7	0	45.32	54	-8.68	-	-	-	-	-	198	215	V
2	* 7.563	35.51	PK-U	35.8	-24.8	0	46.51	-	-	74	-27.49	-	-	-	210	185	H
	* 7.564	24.67	ADR	35.8	-24.9	0	35.57	54	-18.43	-	-	-	-	-	210	185	H
3	* 9.175	35.2	PK-U	36.3	-22.5	0	49	-	-	74	-25	-	-	-	182	225	H
	* 9.175	23.79	ADR	36.3	-22.5	0	37.59	54	-16.41	-	-	-	-	-	182	225	H
4	* 11.677	33.84	PK-U	38.6	-20.5	0	51.94	-	-	74	-22.06	-	-	-	192	122	H
	* 11.676	23.01	ADR	38.6	-20.5	0	41.11	54	-12.89	-	-	-	-	-	192	122	H
5	* 7.415	36.05	PK-U	35.6	-24.6	0	47.05	-	-	74	-26.95	-	-	-	230	187	V
	* 7.415	24.83	ADR	35.6	-24.6	0	35.83	54	-18.17	-	-	-	-	-	230	187	V
6	* 8.429	35.71	PK-U	35.8	-23.8	0	47.71	-	-	74	-26.29	-	-	-	360	170	V
	* 8.431	24.17	ADR	35.8	-23.8	0	36.17	54	-17.83	-	-	-	-	-	360	170	V

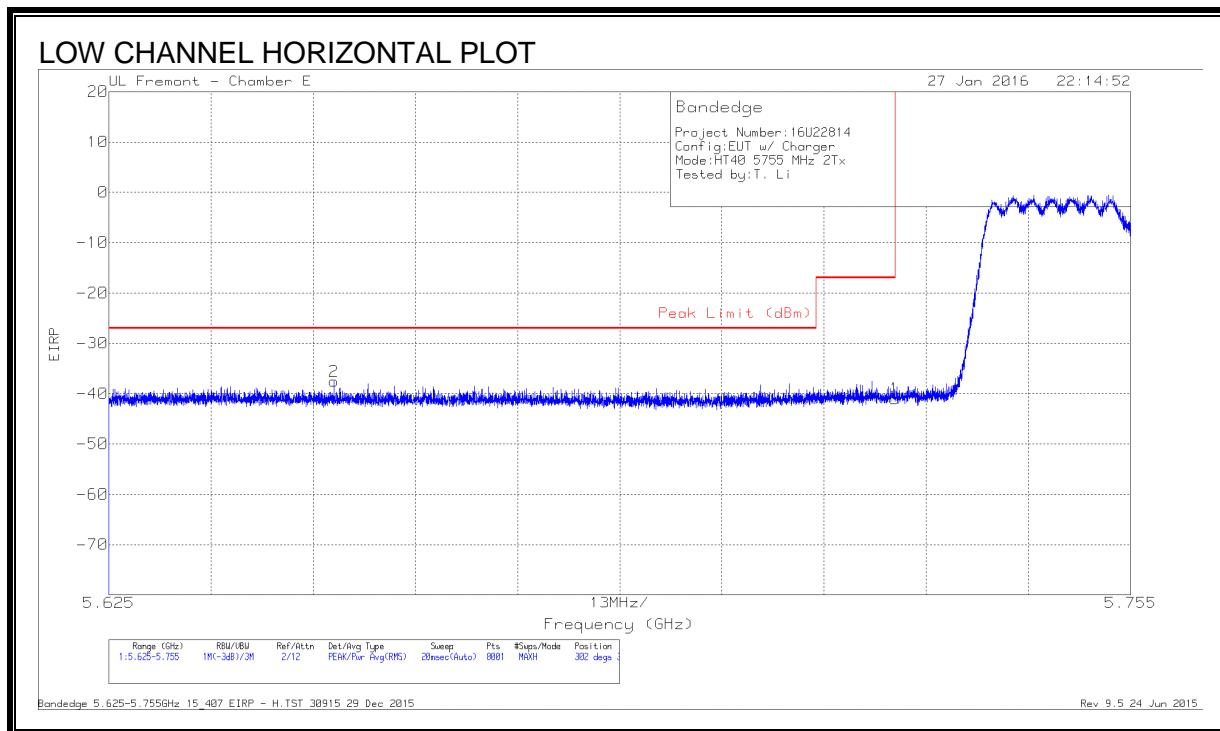
\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.48. 802.11n HT40 2Tx CDD MODE IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)

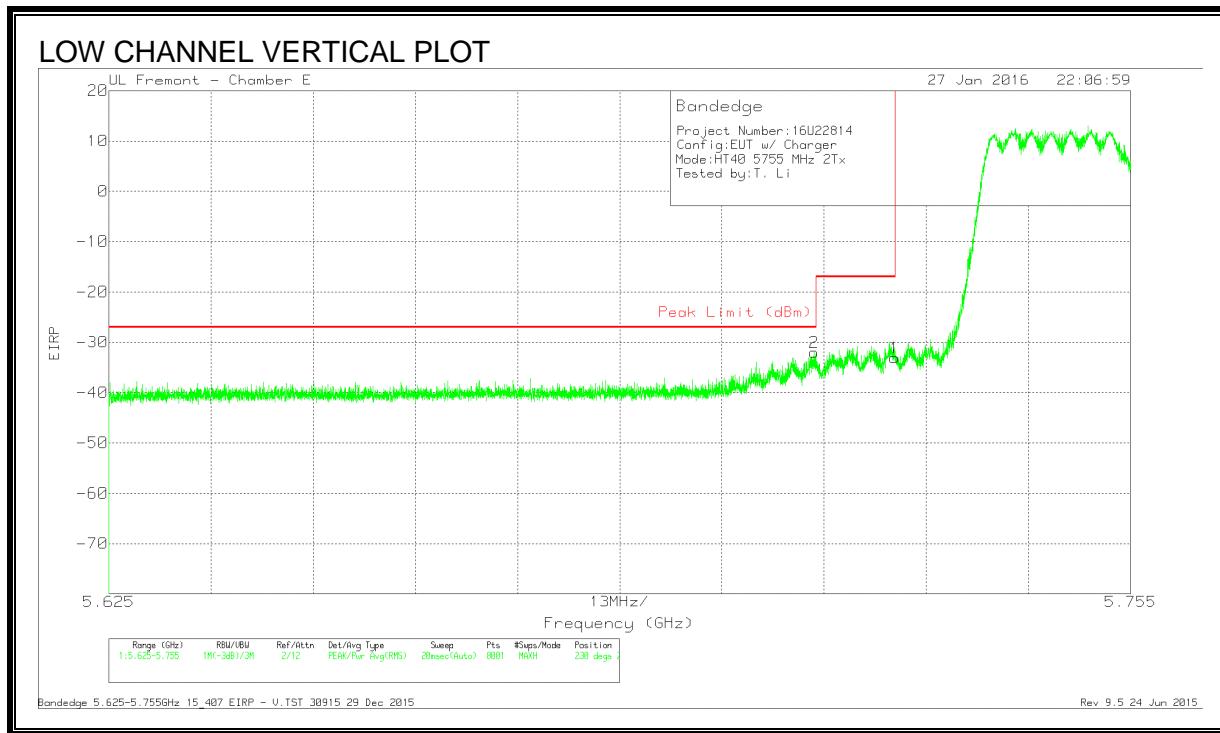


### DATA

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	5.654	-64.18	Pk	34.6	-19.8	11.8	-37.58	-27	-10.58	302	342	H
1	5.725	-67.71	Pk	34.7	-19.8	11.8	-41.01	-17	-24.01	302	342	H

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

Pk - Peak detector



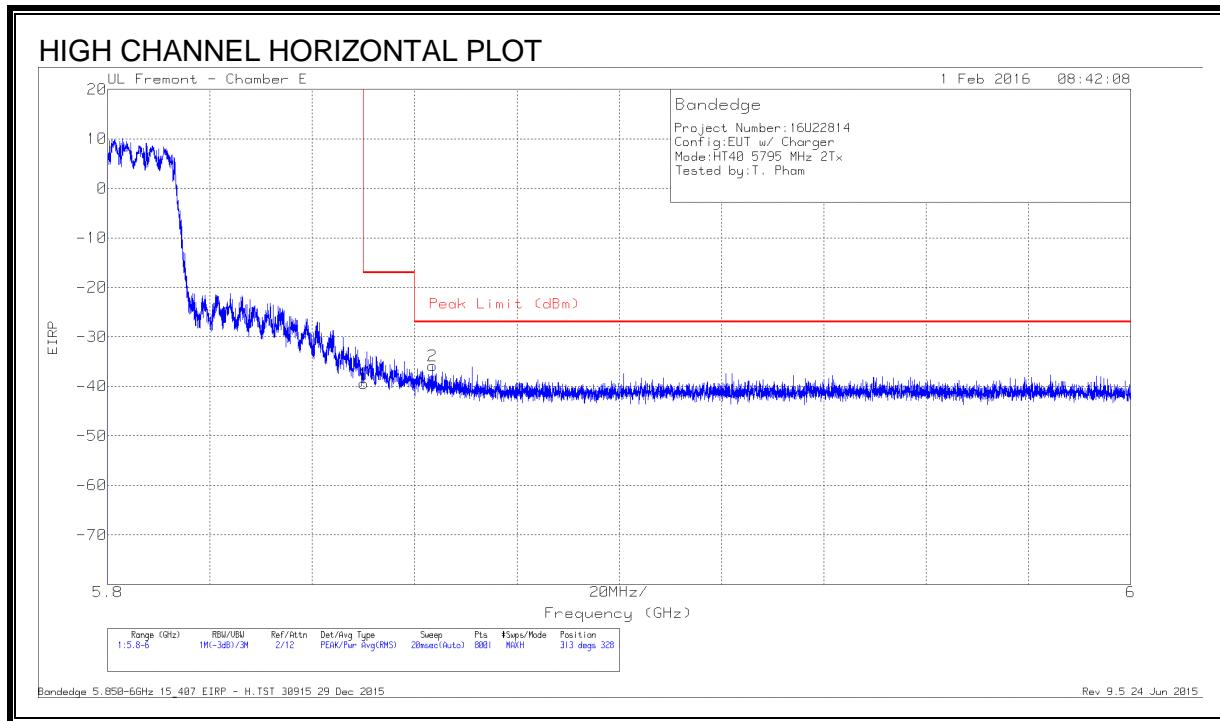
## DATA

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	5.715	-58.68	Pk	34.7	-19.8	11.8	-31.98	-27	-4.98	230	267	V
1	5.725	-59.8	Pk	34.7	-19.8	11.8	-33.1	-17	-16.1	230	267	V

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

Pk - Peak detector

**RESTRICTED BANDEDGE (HIGH CHANNEL)**

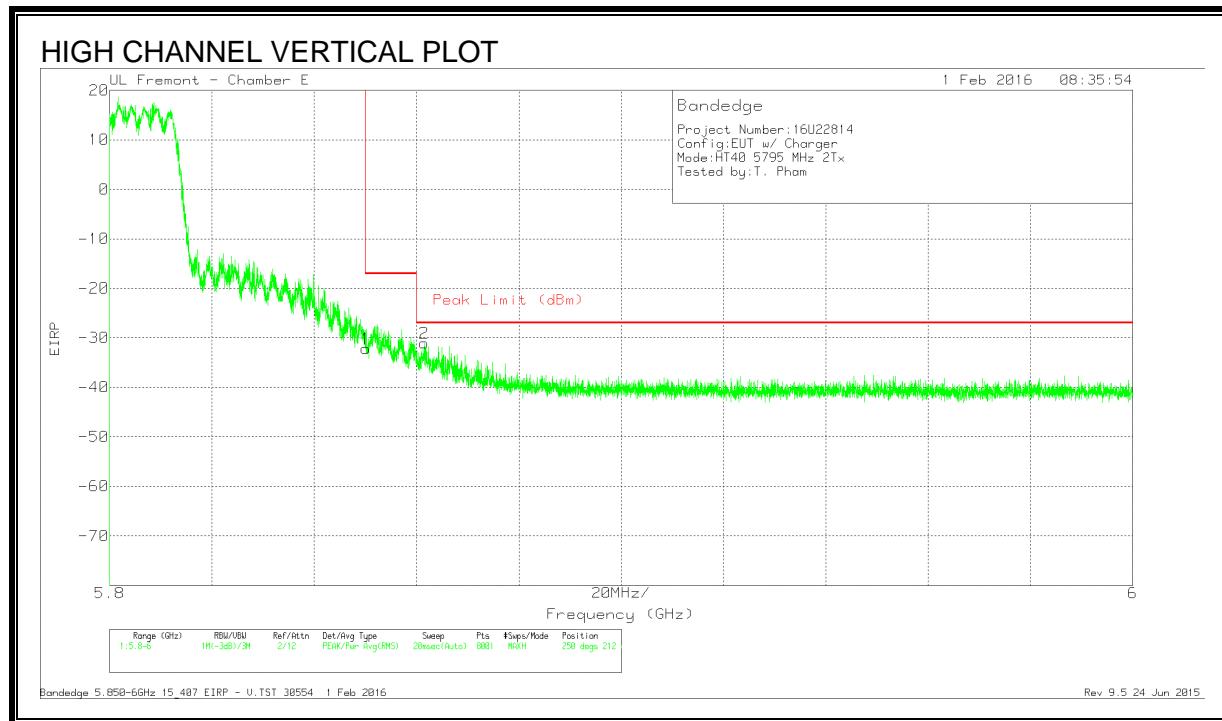


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.08	Pk	34.9	-20	11.8	-39.38	-17	-22.38	313	328	H
2	5.864	-62.77	Pk	34.9	-19.8	11.8	-35.87	-27	-8.87	313	328	H

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

Pk - Peak detector



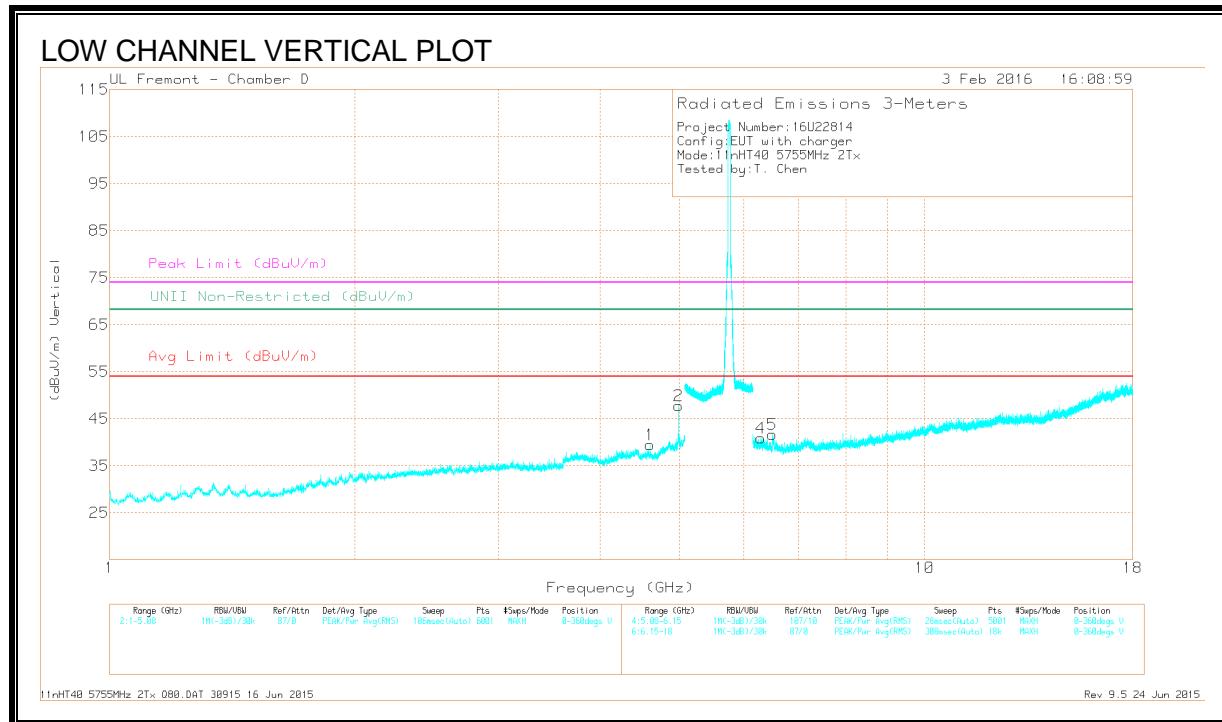
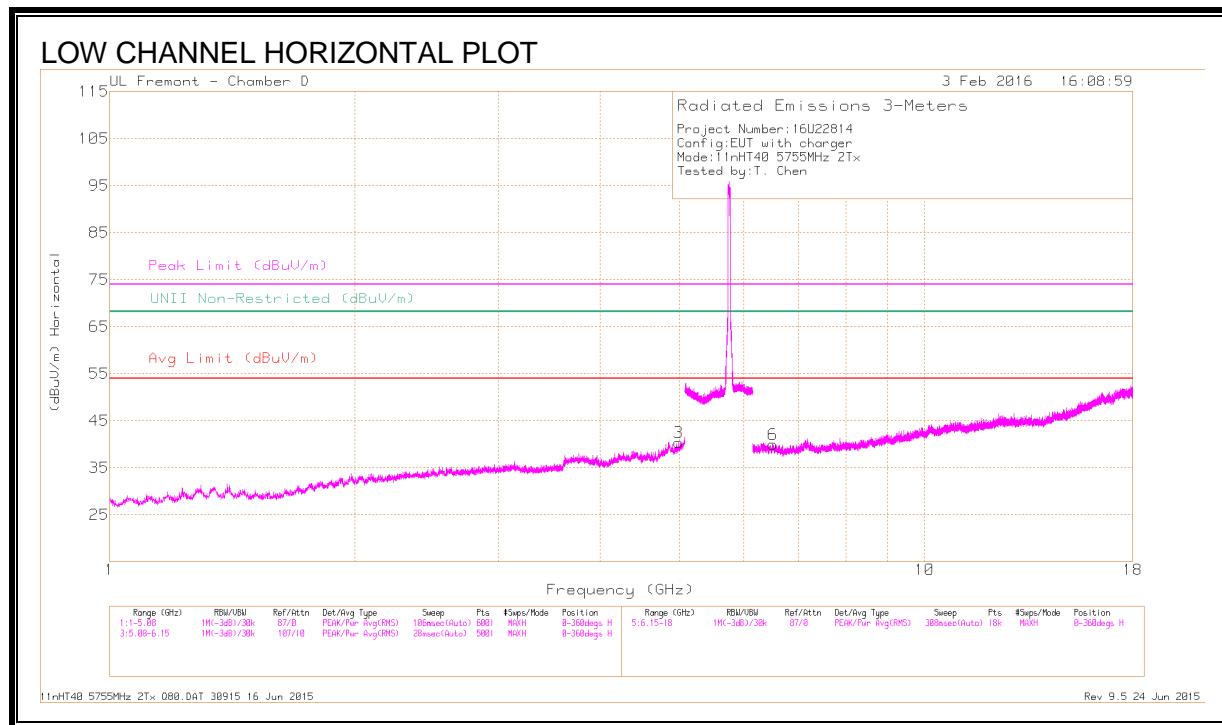
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-58.89	Pk	34.9	-20	11.8	-32.19	-17	-15.19	250	212	V
2	5.862	-57.98	Pk	34.9	-19.8	11.8	-31.08	-27	-4.08	250	212	V

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

Pk - Peak detector

**LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS**



**DATA**

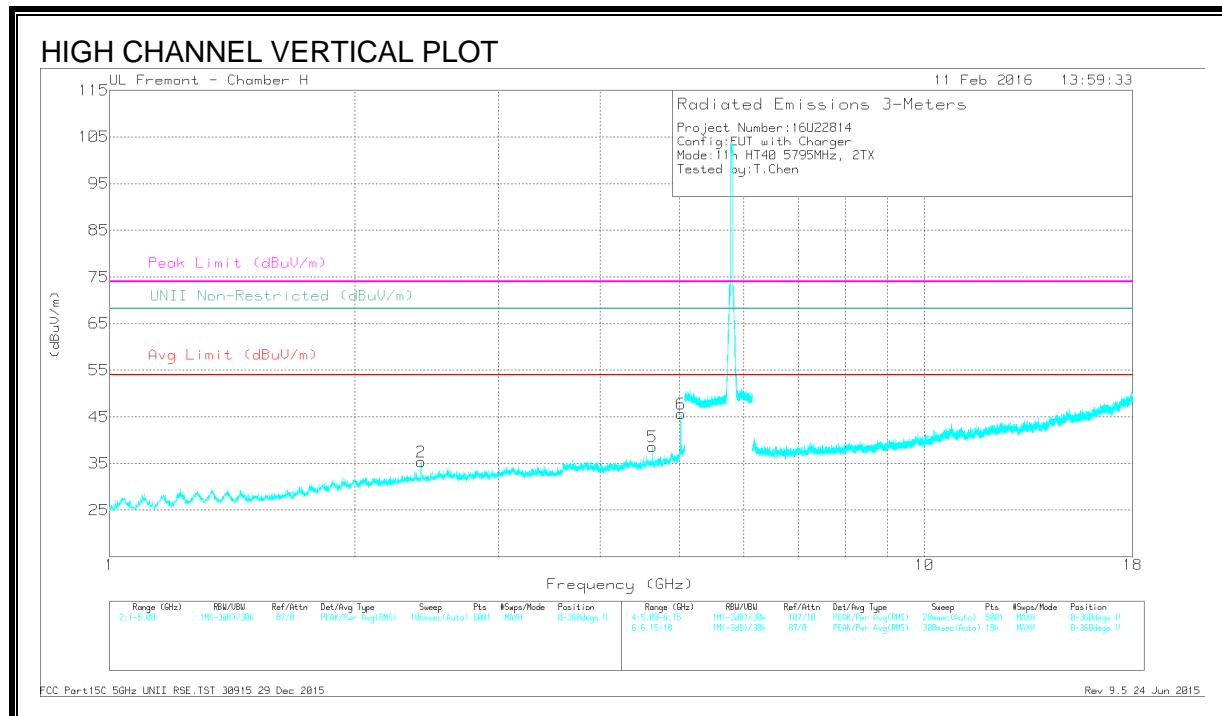
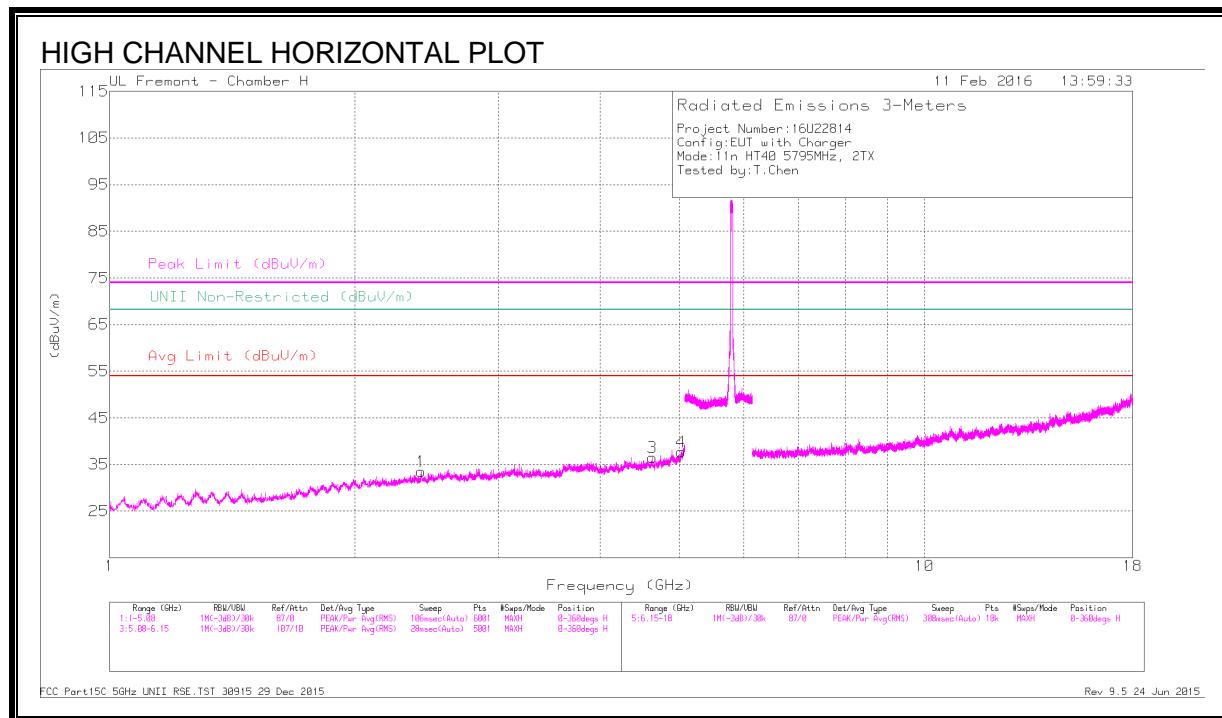
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filt Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.988	43.54	PK-U	34.2	-26.6	51.14	-	-	74	-22.86	-	-	178	390	H
	* 4.988	36.7	ADR	34.2	-26.6	44.3	54	-9.7	-	-	-	-	178	390	H
1	* 4.604	38.81	PK-U	34.1	-26.7	46.21	-	-	74	-27.79	-	-	283	203	V
	* 4.604	29.83	ADR	34.1	-26.7	37.23	54	-16.77	-	-	-	-	283	203	V
2	* 4.987	44.36	PK-U	34.2	-26.6	51.96	-	-	74	-22.04	-	-	212	206	V
	* 4.988	38.75	ADR	34.2	-26.6	46.35	54	-7.65	-	-	-	-	212	206	V
4	6.293	38.17	PK-U	35.4	-25.6	47.97	-	-	-	-	68.2	-20.23	293	261	V
5	6.506	38.17	PK-U	35.5	-25.2	48.47	-	-	-	-	68.2	-19.73	228	242	V
6	6.51	37.25	PK-U	35.5	-25.2	47.55	-	-	-	-	68.2	-20.65	139	201	H

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS



**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/F ltr/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	* 4.636	40.1	PK-U	34.1	-29.8	44.4	-	-	74	-29.6	-	-	4	376	H
	* 4.636	29.85	ADR	34.1	-29.8	34.15	54	-19.85	-	-	-	-	4	376	H
4	* 5.022	43.07	PK-U	34.3	-29.1	48.27	-	-	74	-25.73	-	-	353	399	H
	* 5.022	36.21	ADR	34.3	-29.1	41.41	54	-12.59	-	-	-	-	353	399	H
5	* 4.636	41.77	PK-U	34.1	-29.8	46.07	-	-	74	-27.93	-	-	18	275	V
	* 4.636	34.44	ADR	34.1	-29.8	38.74	54	-15.26	-	-	-	-	18	275	V
6	* 5.022	45.57	PK-U	34.3	-29.1	50.77	-	-	74	-23.23	-	-	24	241	V
	* 5.022	40.96	ADR	34.3	-29.1	46.16	54	-7.84	-	-	-	-	24	241	V
2	2.412	43.51	PK-U	32.1	-33.3	42.31	-	-	-	-	68.2	-25.89	216	205	V
1	2.414	42.08	PK-U	32.1	-33.3	40.88	-	-	-	-	68.2	-27.32	334	340	H

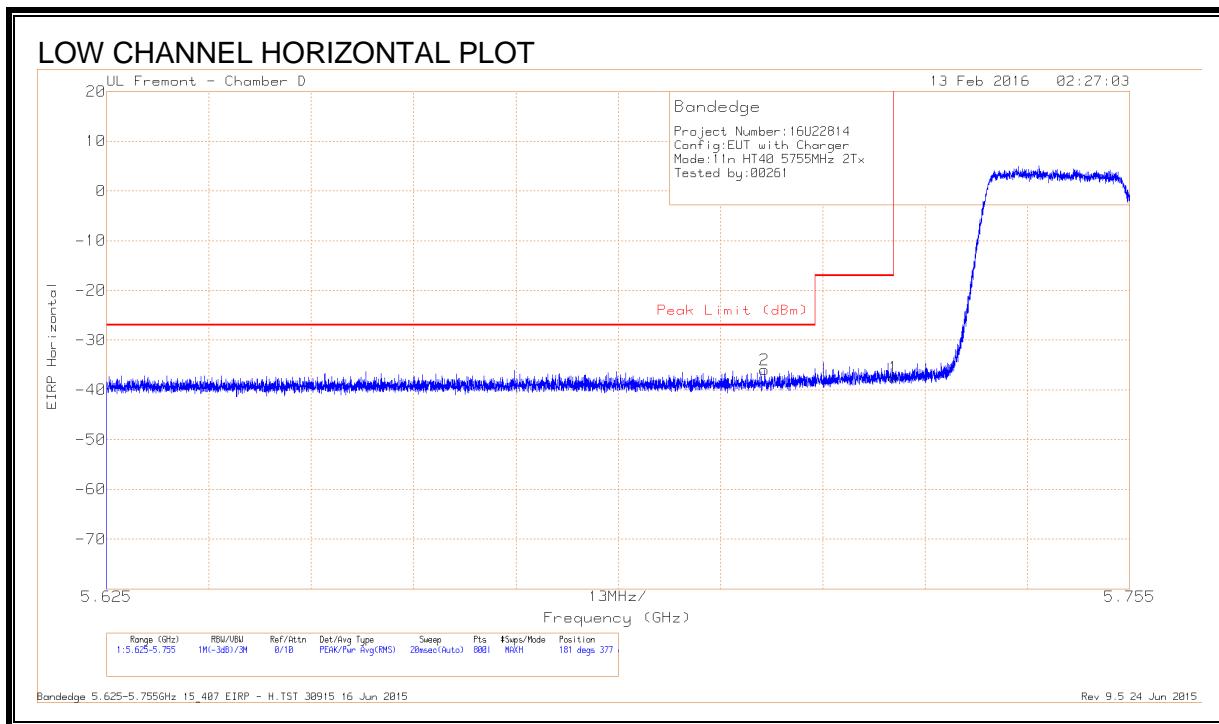
\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.49. 802.11n HT40 2Tx STBC MODE IN THE 5.8 GHz BAND

### RESTRICTED BANEDGE (LOW CHANNEL)

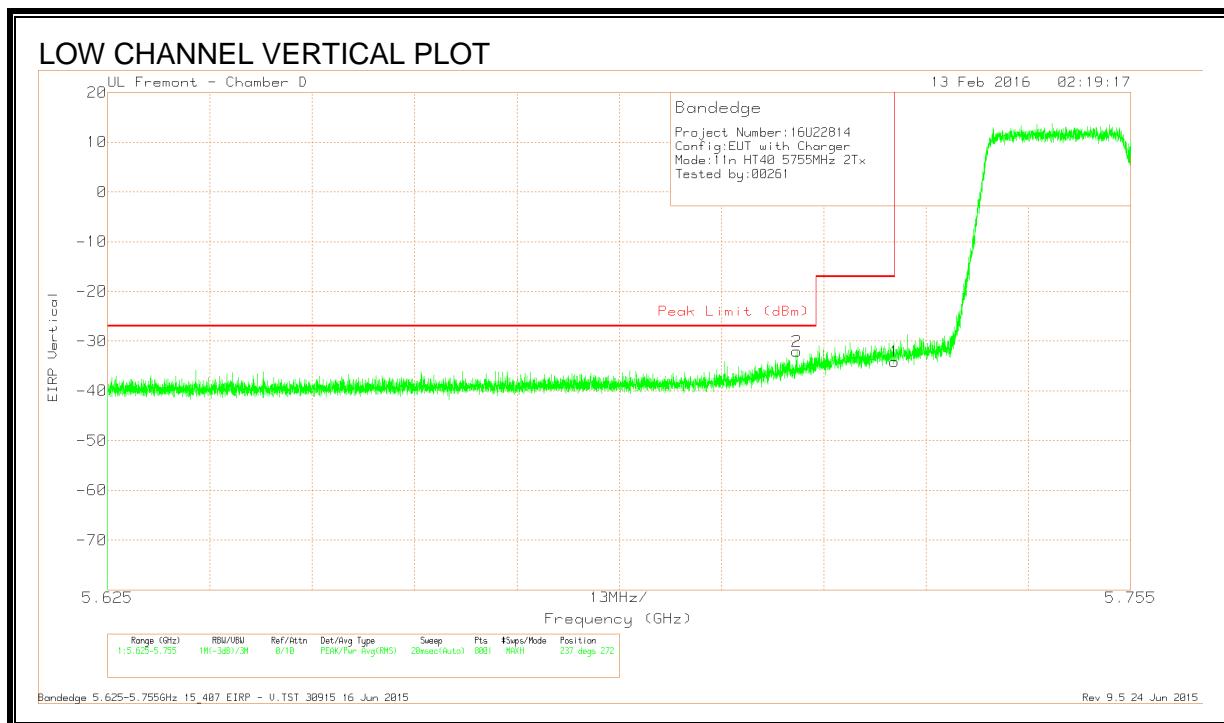


### DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.709	-65.31	Pk	34.8	-17.3	11.8	-36.01	-27	-9.01	181	377	H
1	5.725	-66.76	Pk	34.8	-17.3	11.8	-37.46	-17	-20.46	181	377	H

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

Pk - Peak detector



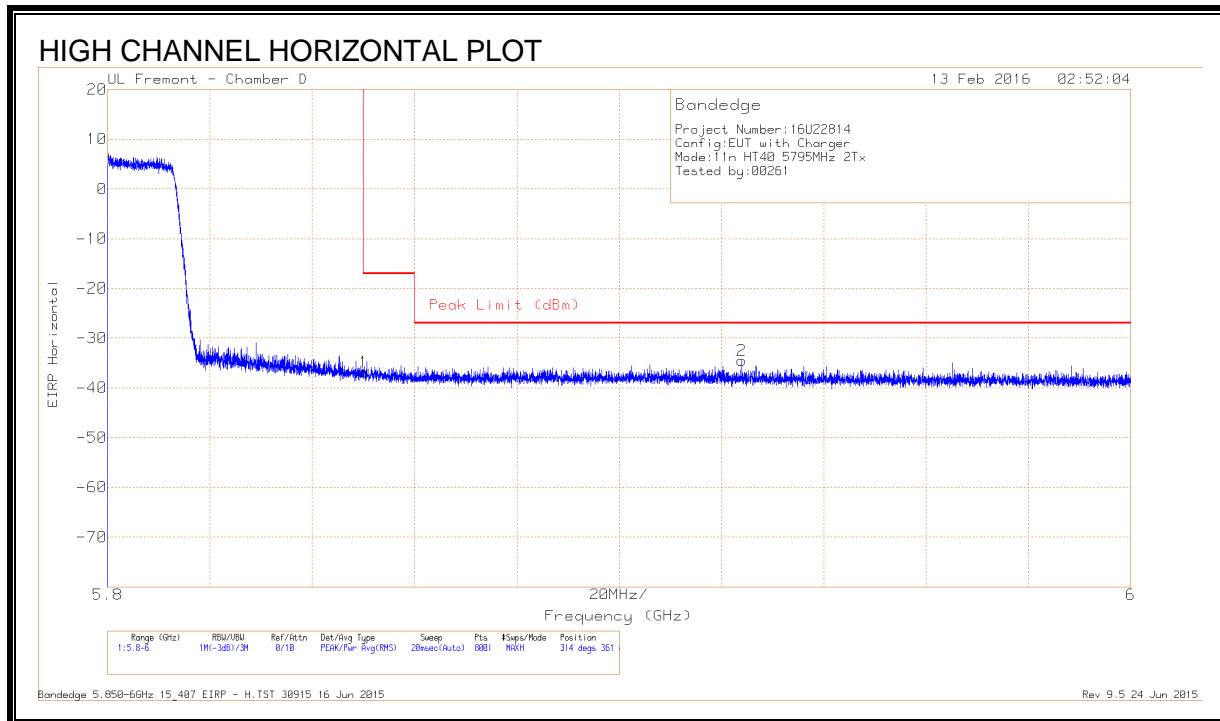
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.713	-61.48	Pk	34.8	-17.2	11.8	-32.08	-27	-5.08	237	272	V
1	5.725	-63.48	Pk	34.8	-17.3	11.8	-34.18	-17	-17.18	237	272	V

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

Pk - Peak detector

**RESTRICTED BANDEDGE (HIGH CHANNEL)**

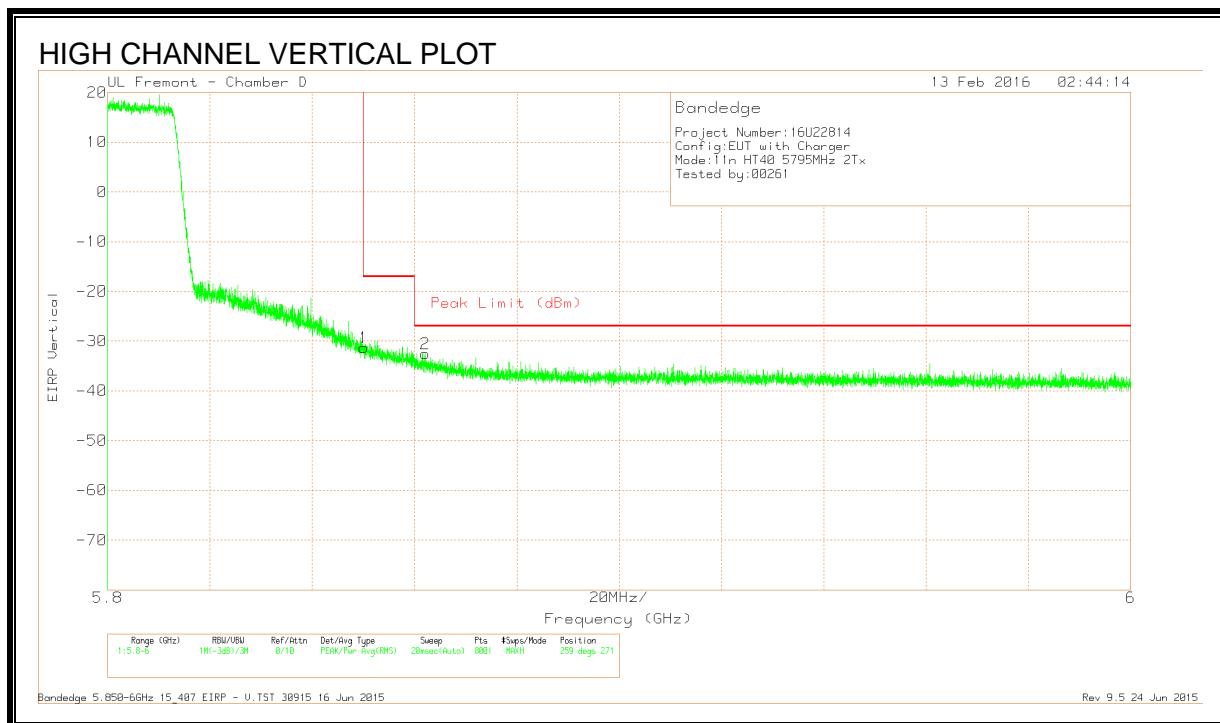


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.24	Pk	34.9	-17.3	11.8	-36.84	-17	-19.84	314	361	H
2	5.924	-64.16	Pk	35	-17.1	11.8	-34.46	-27	-7.46	314	361	H

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

Pk - Peak detector



## DATA

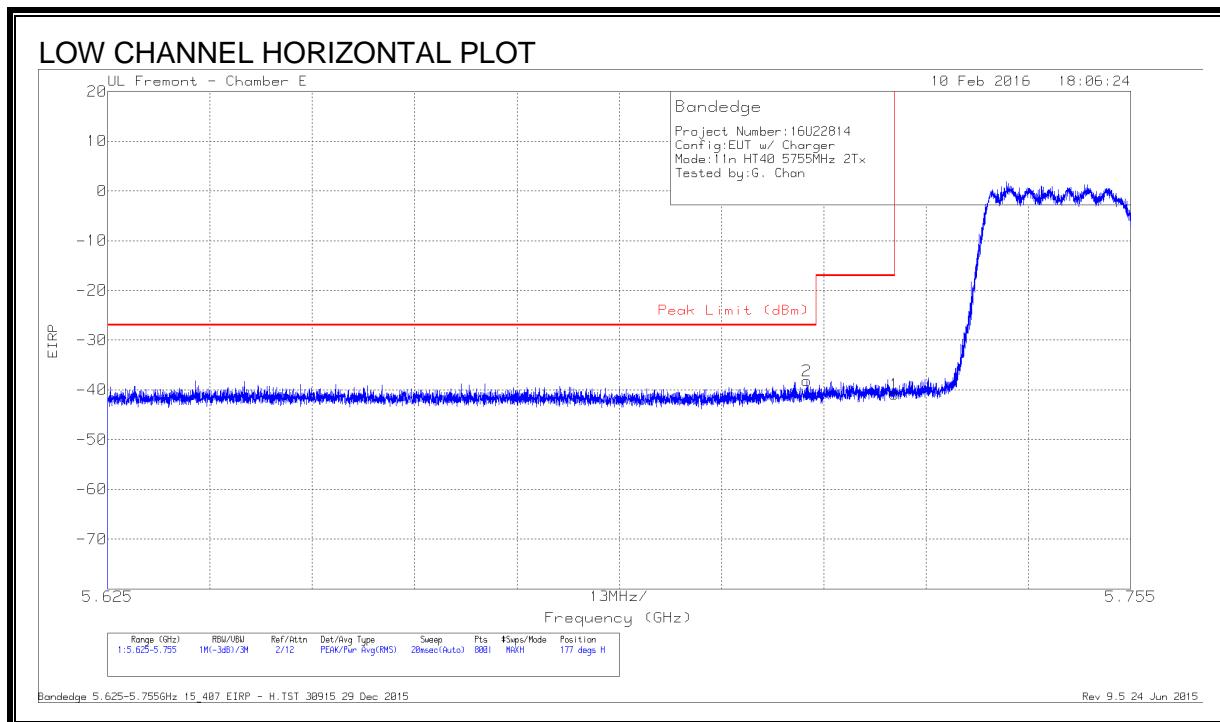
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-60.69	Pk	34.9	-17.3	11.8	-31.29	-17	-14.29	259	271	V
2	5.862	-61.88	Pk	34.9	-17.3	11.8	-32.48	-27	-5.48	259	271	V

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

Pk - Peak detector

## 9.50. 802.11ac VHT40 2Tx BEAM FORMING MODE IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)

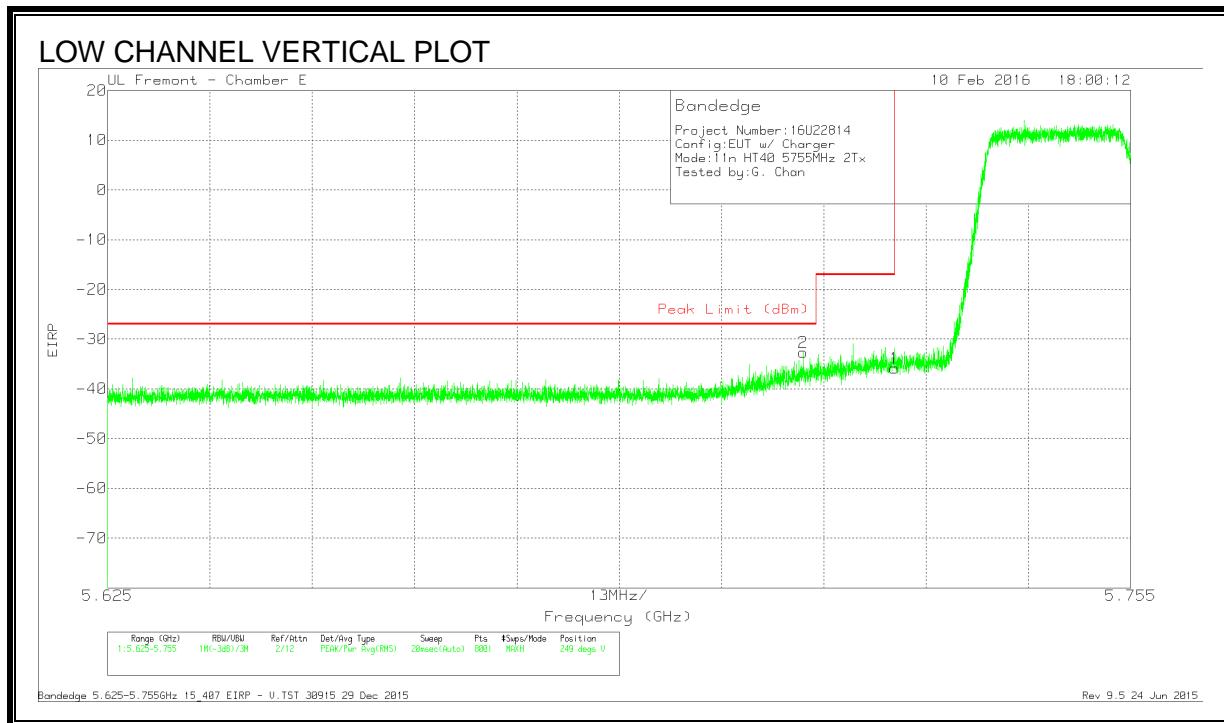


### DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/F Itr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-64.9	Pk	34.7	-19.8	11.8	-38.2	-27	-11.2	177	383	H
1	5.725	-67.55	Pk	34.7	-19.8	11.8	-40.85	-17	-23.85	177	383	H

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

Pk - Peak detector



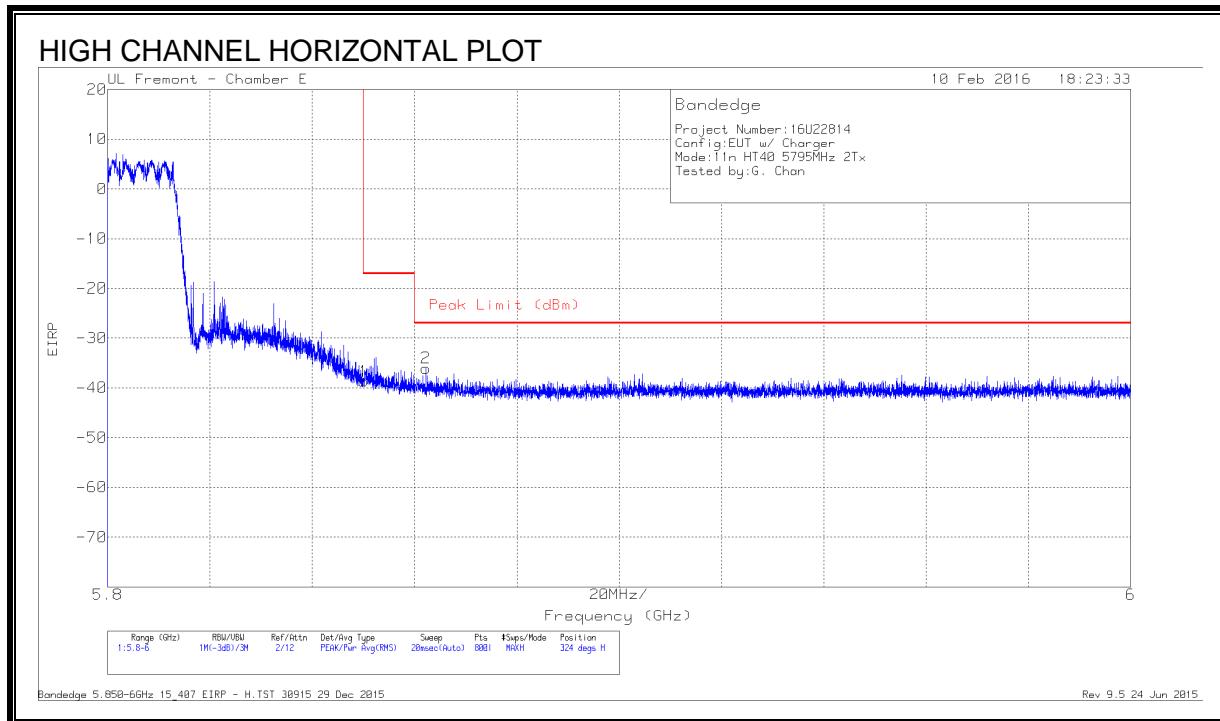
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.713	-59.36	Pk	34.7	-19.8	11.8	0	-32.66	-27	-5.66	249	260	V
1	5.725	-62.59	Pk	34.7	-19.8	11.8	0	-35.89	-17	-18.89	249	260	V

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

Pk - Peak detector

**RESTRICTED BANDEDGE (HIGH CHANNEL)**

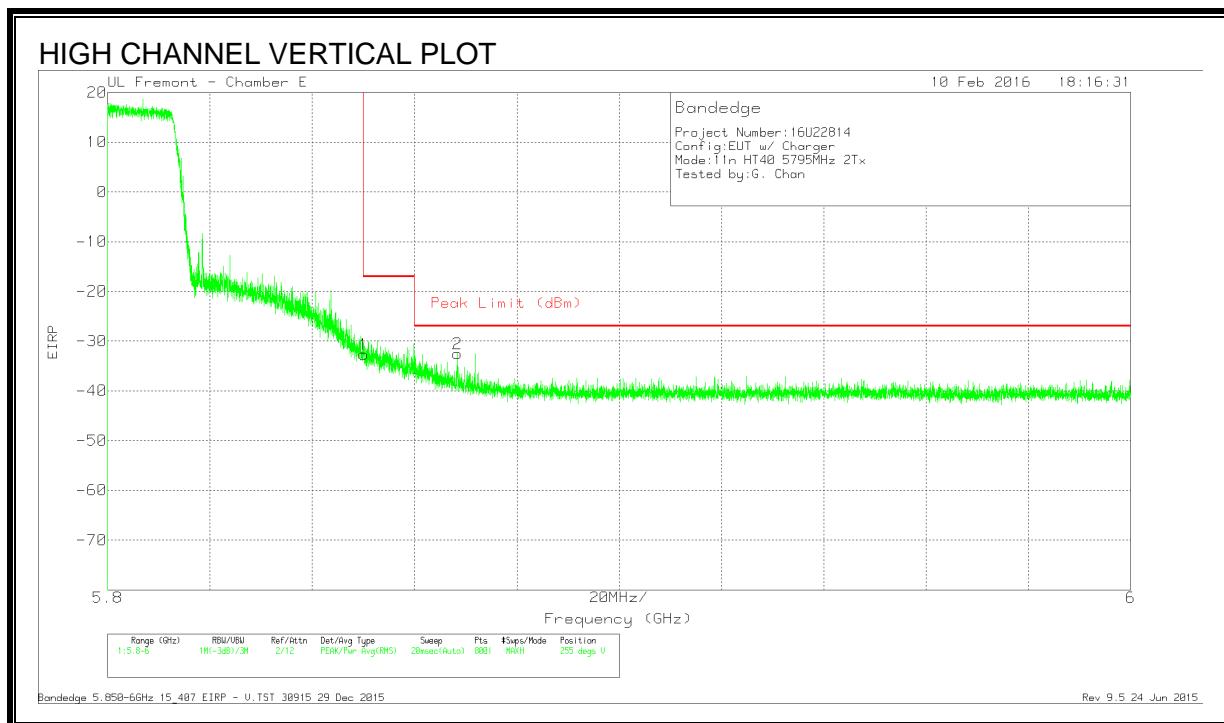


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.39	Pk	34.9	-20	11.8	-38.69	-17	-21.69	324	313	H
2	5.862	-62.93	Pk	34.9	-19.8	11.8	-36.03	-27	-9.03	324	313	H

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

Pk - Peak detector



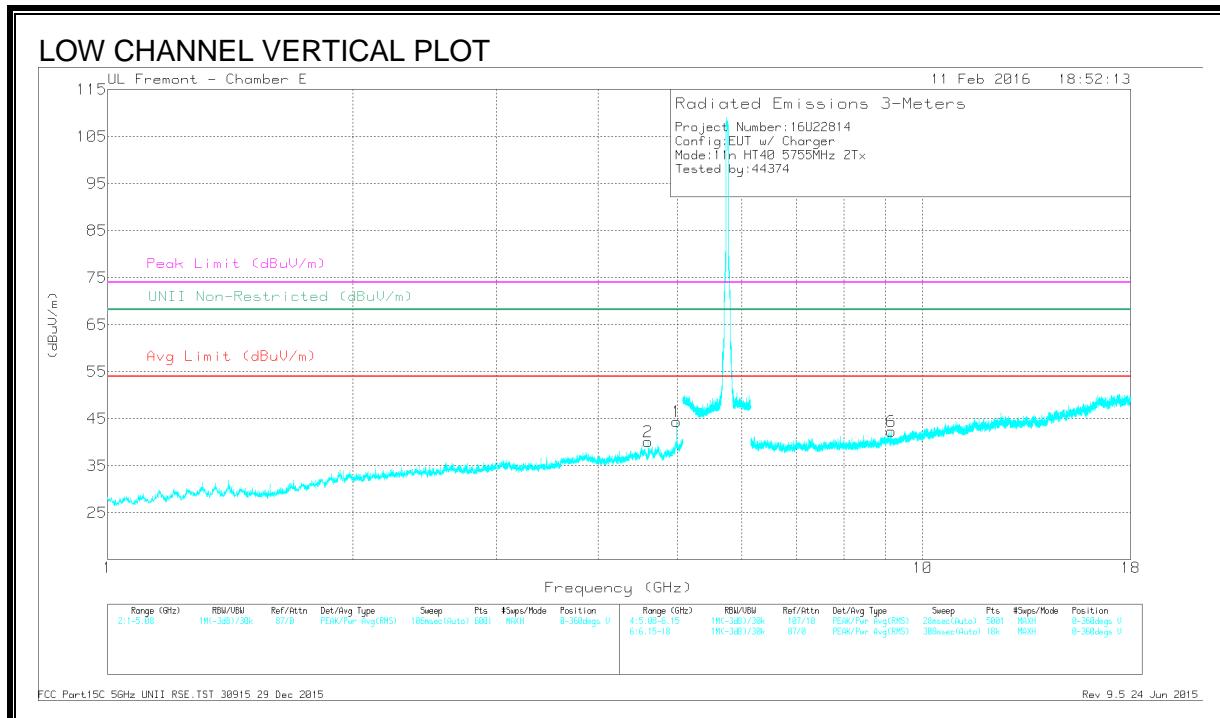
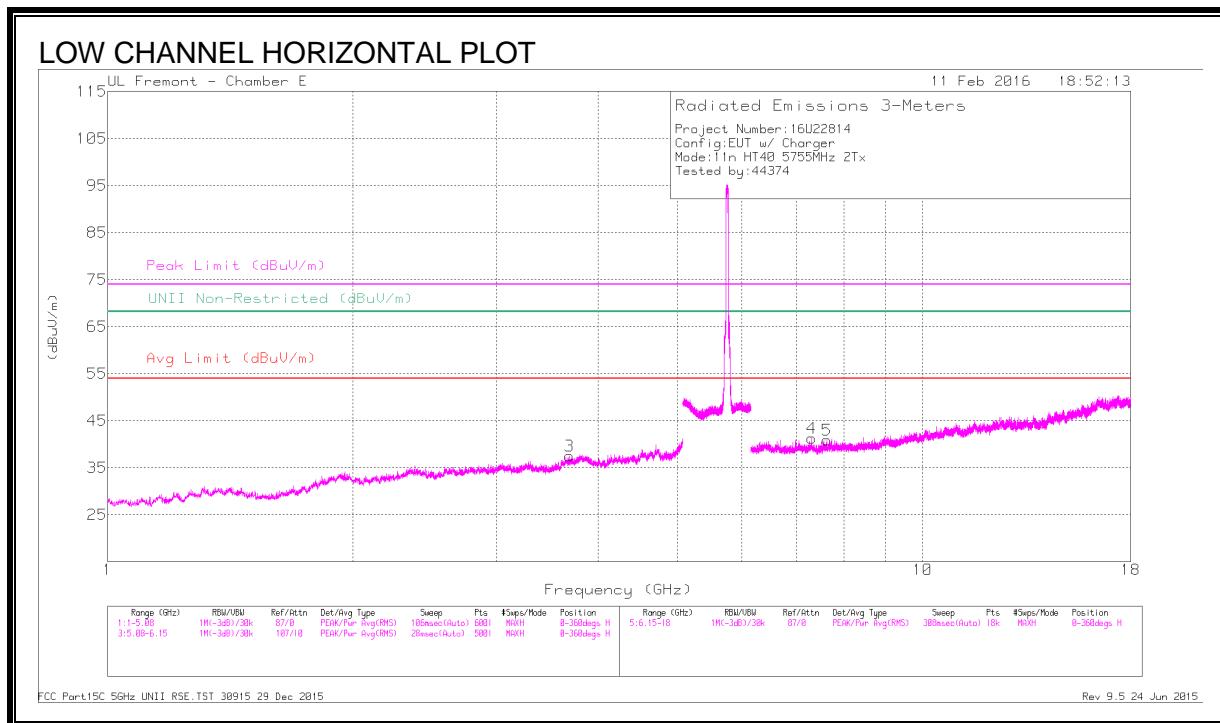
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-59.34	Pk	34.9	-20	11.8	-32.64	-17	-15.64	255	247	V
2	5.868	-59.43	Pk	34.9	-19.8	11.8	-32.53	-27	-5.53	255	247	V

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

Pk - Peak detector

**LOW CHANNEL HARMONICS AND SPURIOUS EMISSIONS**



**DATA**

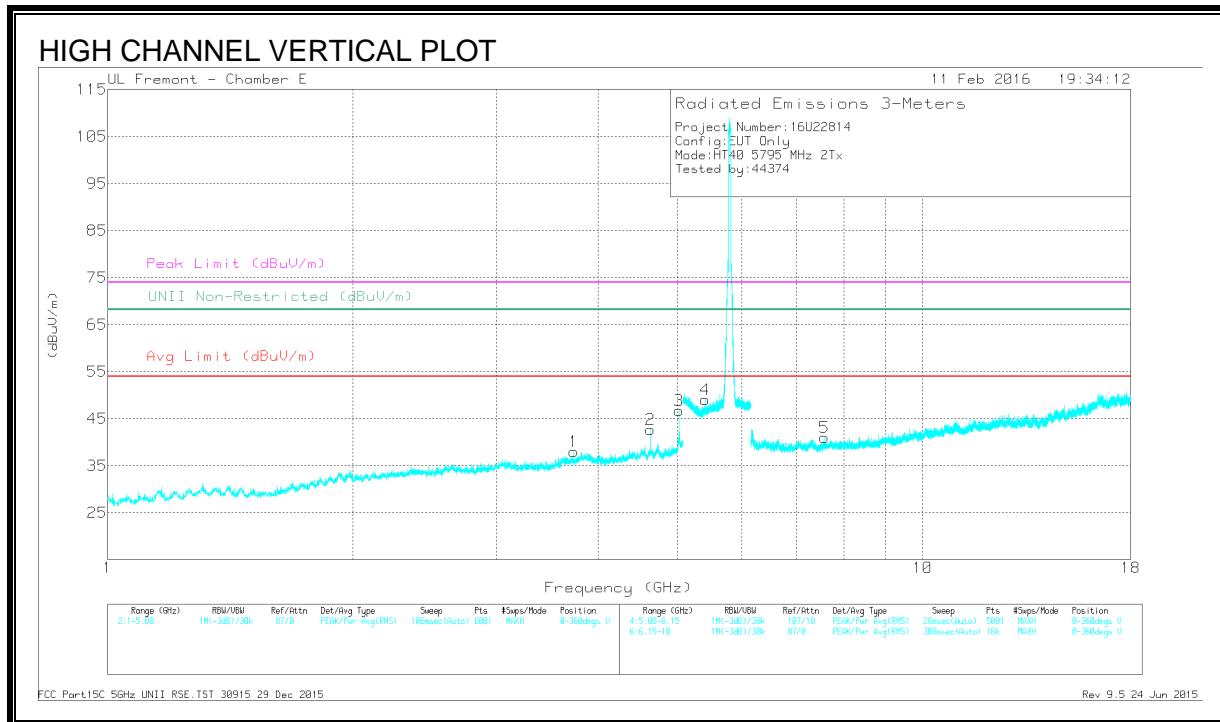
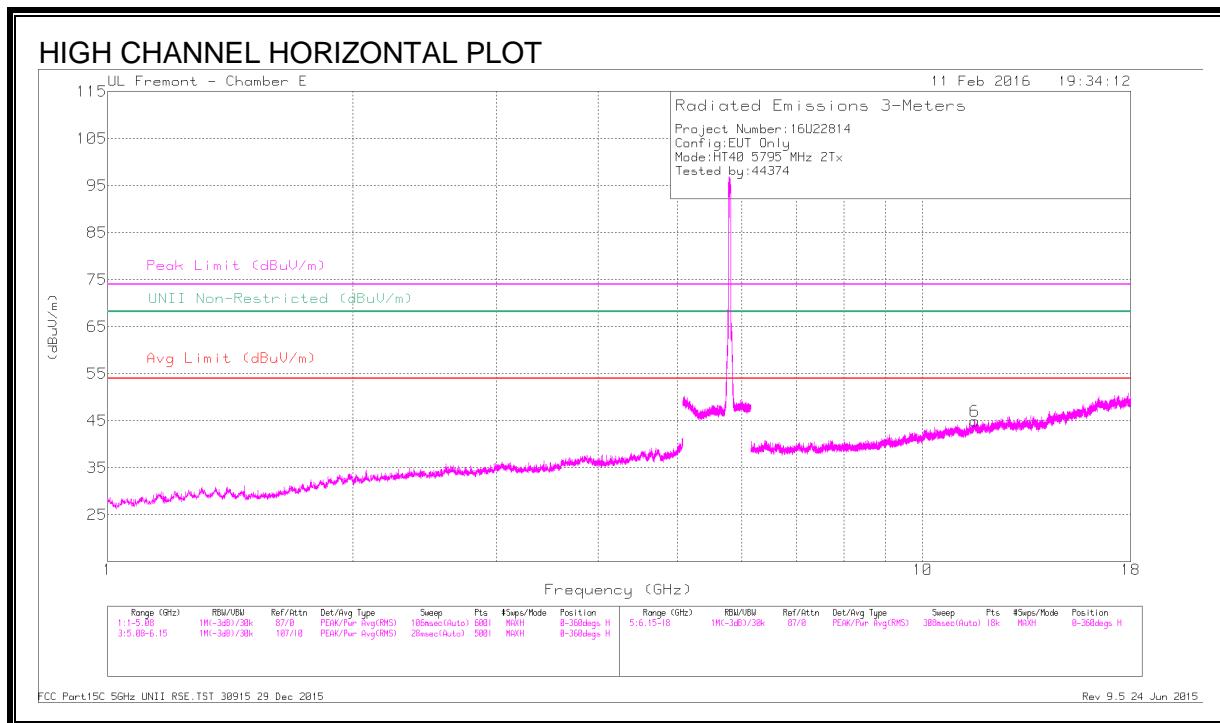
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbi/Fl tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 3.686	41.71	PK-U	33.2	-30.7	0	44.21	-	-	74	-29.79	-	-	286	308	H
	* 3.685	29.35	ADR	33.2	-30.7	.09	32.01	54	-21.99	-	-	-	-	286	308	H
2	* 4.988	45.61	PK-U	34.2	-29.3	0	50.51	-	-	74	-23.49	-	-	229	237	V
	* 4.988	38.93	ADR	34.2	-29.3	.09	43.99	54	-10.01	-	-	-	-	229	237	V
1	* 4.604	43.66	PK-U	34.1	-29.5	0	48.26	-	-	74	-25.74	-	-	234	333	V
	* 4.604	35.14	ADR	34.1	-29.5	.09	39.9	54	-14.1	-	-	-	-	234	333	V
4	* 7.311	37.71	PK-U	35.5	-26.1	0	47.11	-	-	74	-26.89	-	-	114	263	H
	* 7.311	26.88	ADR	35.5	-26.1	.09	36.44	54	-17.56	-	-	-	-	114	263	H
5	* 7.626	38.52	PK-U	35.7	-27.2	0	47.02	-	-	74	-26.98	-	-	98	137	H
	* 7.623	26.69	ADR	35.7	-27.1	.09	35.45	54	-18.55	-	-	-	-	98	137	H
6	* 9.151	37.28	PK-U	36.4	-26	0	47.68	-	-	74	-26.32	-	-	60	193	V
	* 9.148	26.25	ADR	36.4	-26	.09	36.81	54	-17.19	-	-	-	-	60	193	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## HIGH CHANNEL HARMONICS AND SPURIOUS EMISSIONS



**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T346 (dB/m)	Amp/Cbi/Fl 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
1	* 3.733	41.41	PK-U	33.3	-31.4	0	43.31	-	-	74	-30.69	-	-	95	148	V
	* 3.733	30.09	ADR	33.3	-31.4	.09	32.15	54	-21.85	-	-	-	-	95	148	V
2	* 4.636	45.7	PK-U	34.1	-29.9	0	49.9	-	-	74	-24.1	-	-	295	300	V
	* 4.636	37.48	ADR	34.1	-29.9	.09	41.84	54	-12.16	-	-	-	-	295	300	V
3	* 5.022	47.01	PK-U	34.2	-28.5	0	52.71	-	-	74	-21.29	-	-	219	267	V
	* 5.022	40.02	ADR	34.2	-28.5	.09	45.88	54	-8.12	-	-	-	-	219	267	V
4	* 5.409	41.54	PK-U	34.6	-19.4	0	56.74	-	-	74	-17.26	-	-	259	288	V
	* 5.409	32.04	ADR	34.6	-19.4	.09	47.4	54	-6.6	-	-	-	-	259	288	V
6	* 11.581	35.7	PK-U	38.1	-22.3	0	51.5	-	-	74	-22.5	-	-	185	250	H
	* 11.583	24.66	ADR	38.1	-22.3	.09	40.62	54	-13.38	-	-	-	-	185	250	H
5	* 7.571	37.84	PK-U	35.7	-26.3	0	47.24	-	-	74	-26.76	-	-	323	206	V
	* 7.573	26.56	ADR	35.7	-26.4	.09	36.02	54	-17.98	-	-	-	-	323	206	V

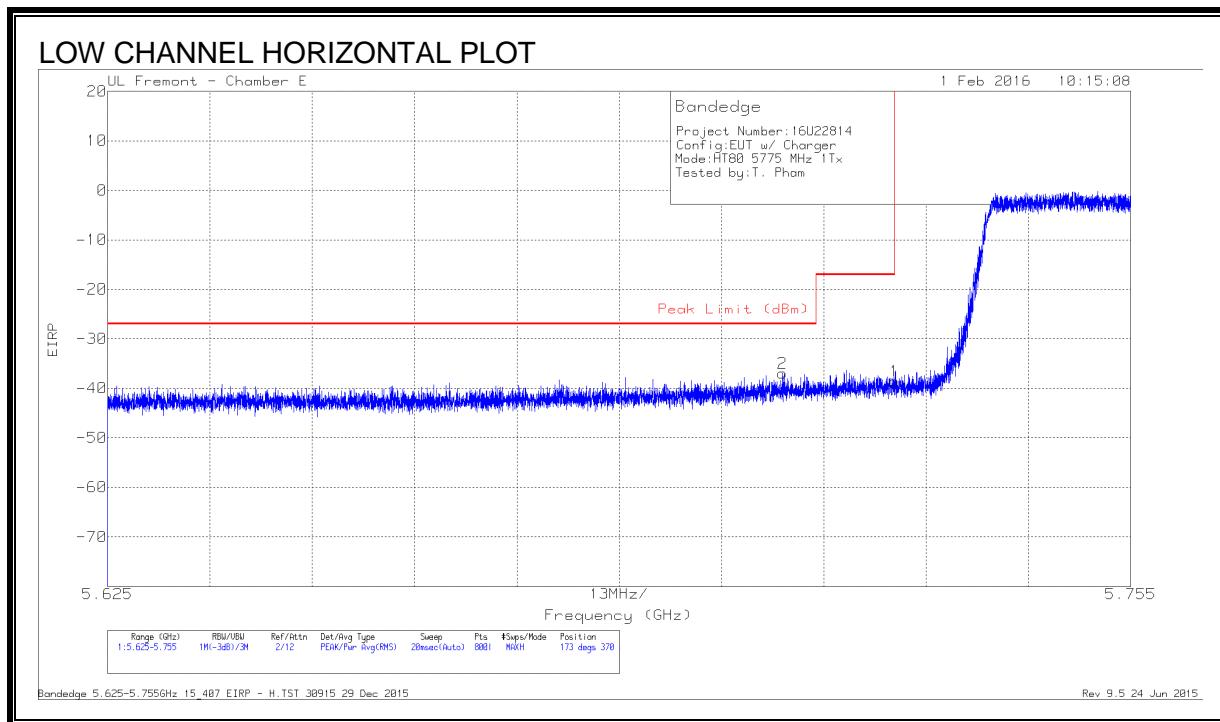
\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.51. 802.11ac VHT80 1Tx MODE IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE, CHAIN 0 (LOW)

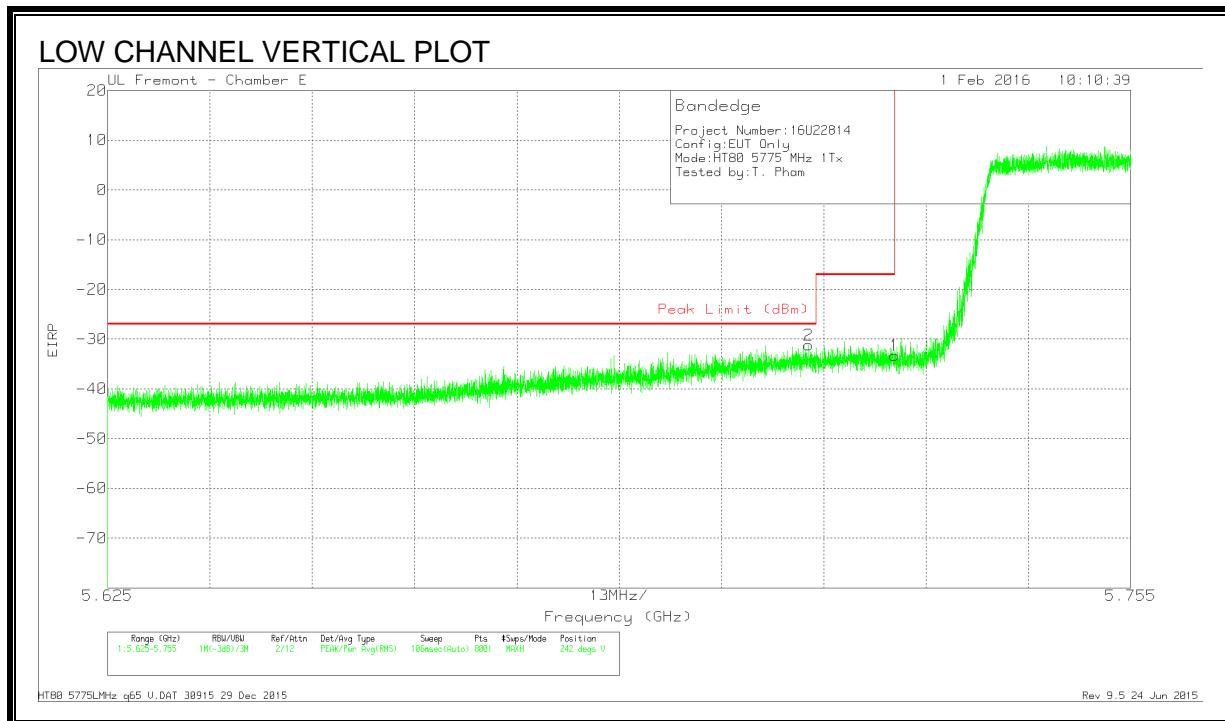


### **DATA**

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	5.711	-63.63	Pk	34.7	-19.8	11.8	-36.93	-27	-9.93	173	370	H
1	5.725	-65.27	Pk	34.7	-19.8	11.8	-38.57	-17	-21.57	173	370	H

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

Pk - Peak detector



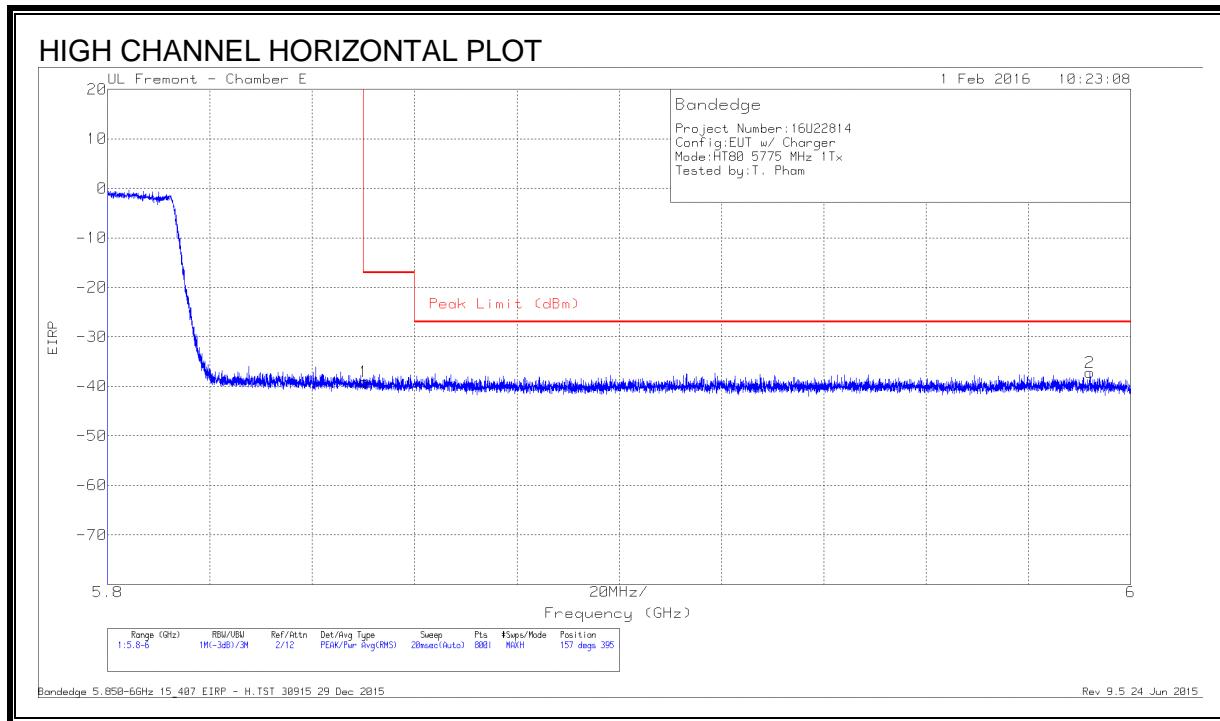
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.714	-57.91	Pk	34.7	-19.8	11.8	-31.21	-27	-4.21	242	236	V
1	5.725	-59.91	Pk	34.7	-19.8	11.8	-33.21	-17	-16.21	242	236	V

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

Pk - Peak detector

**RESTRICTED BANDEDGE, CHAIN 0 (HIGH)**

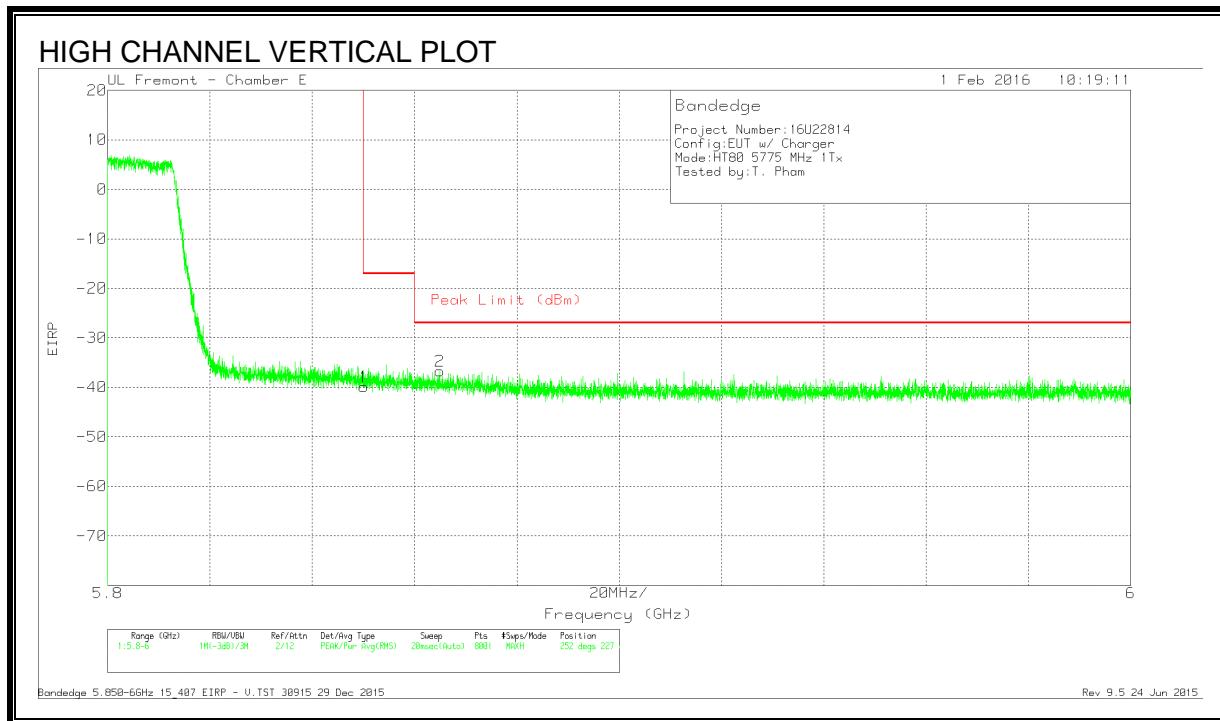


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.77	Pk	34.9	-20	11.8	-39.07	-17	-22.07	157	395	H
2	5.992	-64.76	Pk	35.1	-19.3	11.8	-37.16	-27	-10.16	157	395	H

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

Pk - Peak detector



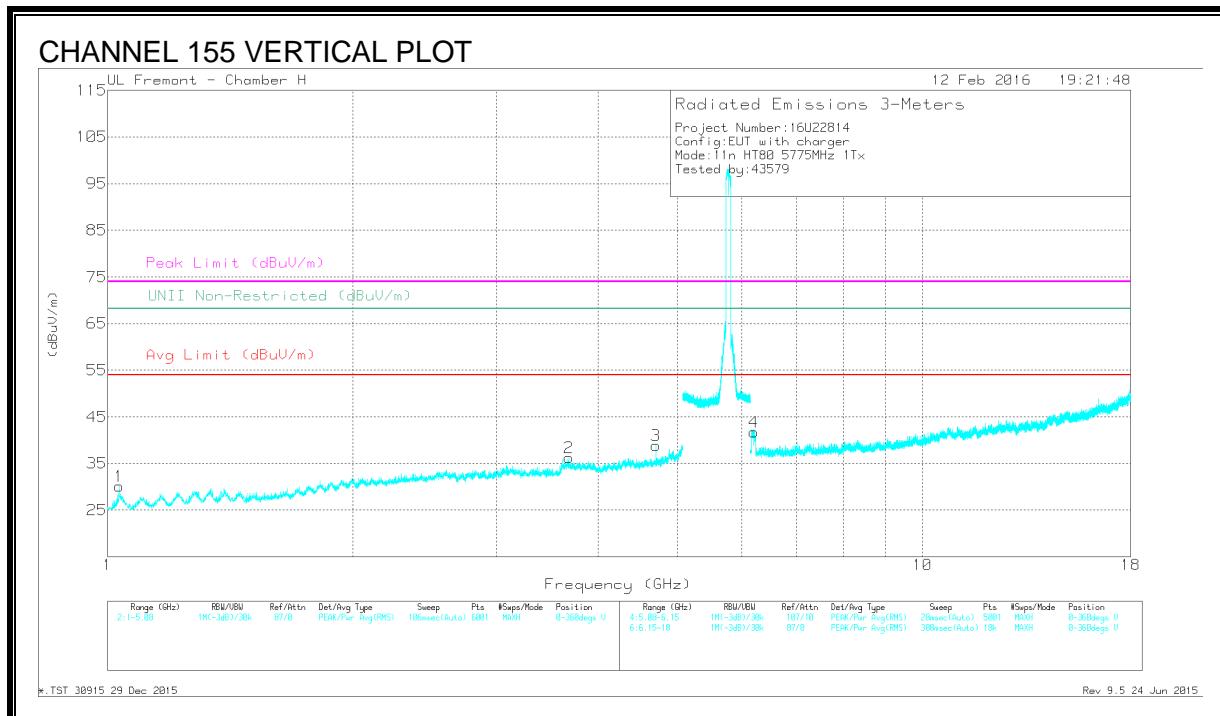
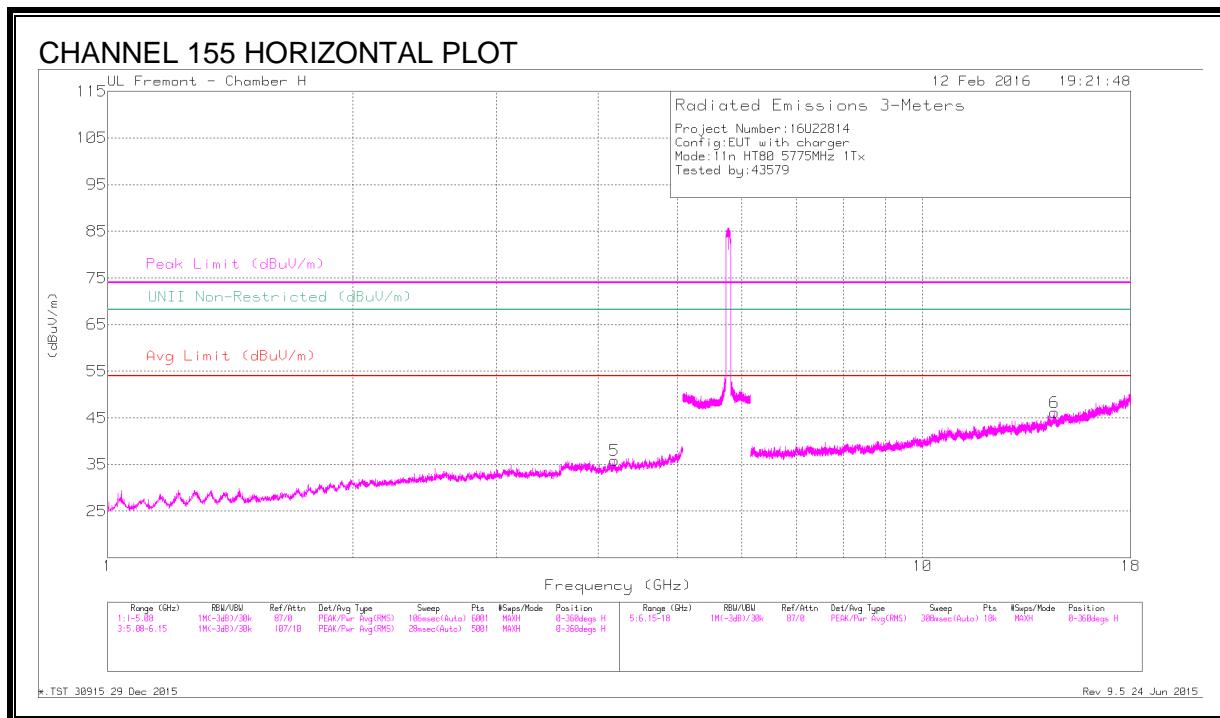
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.57	Pk	34.9	-20	11.8	-39.87	-17	-22.87	252	227	V
2	5.865	-63.64	Pk	34.9	-19.8	11.8	-36.74	-27	-9.74	252	227	V

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

Pk - Peak detector

**CHANNEL 155 HARMONICS AND SPURIOUS EMISSIONS**



**DATA**

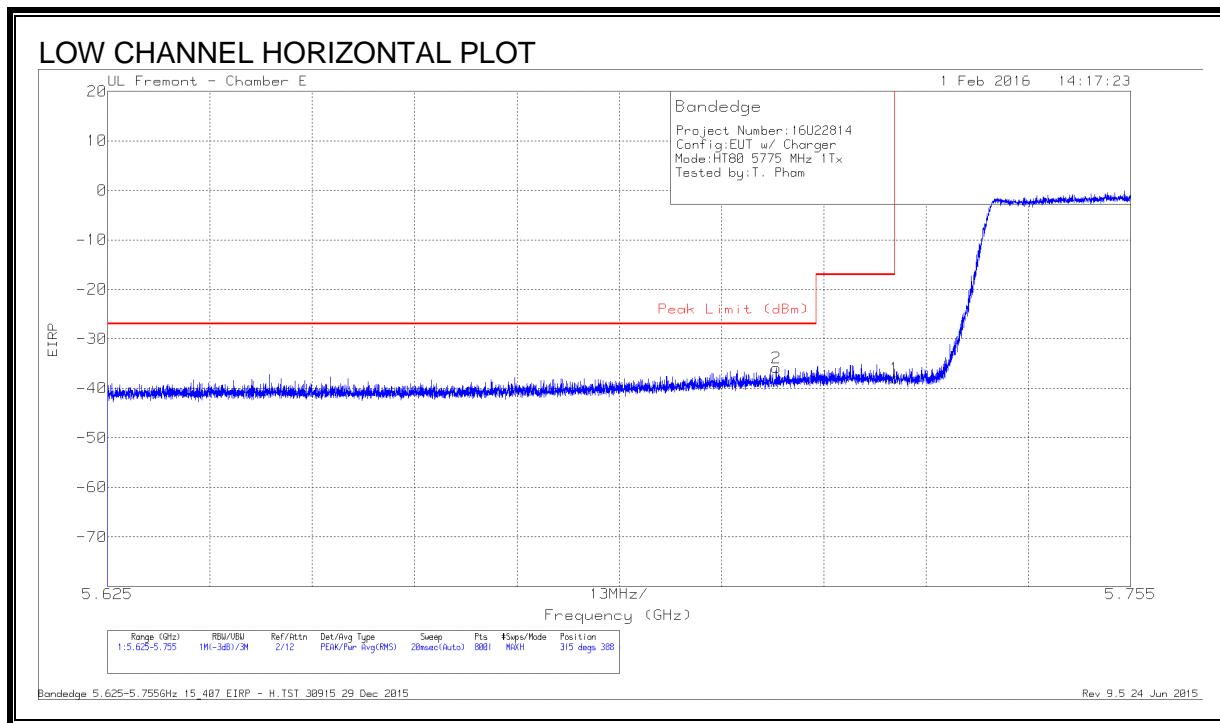
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbi/Fl tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 4.19	38.62	PK-U	33.4	-30.1	0	41.92	-	-	74	-32.08	-	-	335	100	H
	* 4.188	27.19	ADR	33.4	-30	.16	30.8	54	-23.2	-	-	-	-	335	100	H
1	* 1.035	49.01	PK-U	27	-34.2	0	41.81	-	-	74	-32.19	-	-	81	201	V
	* 1.035	30.6	ADR	27	-34.2	.16	23.61	54	-30.39	-	-	-	-	81	201	V
2	* 3.679	38.73	PK-U	33.2	-30	0	41.93	-	-	74	-32.07	-	-	153	201	V
	* 3.681	27.21	ADR	33.2	-30	.16	30.62	54	-23.38	-	-	-	-	153	201	V
3	* 4.705	41.35	PK-U	34.2	-29.5	0	46.05	-	-	74	-27.95	-	-	184	222	V
	* 4.705	32.76	ADR	34.2	-29.5	.16	37.67	54	-16.33	-	-	-	-	184	222	V
4	6.17	43.7	PK-U	35.4	-28	0	51.1	-	-	-	-	68.2	-17.1	118	244	V
6	14.505	34.75	PK-U	39.9	-22.1	0	52.55	-	-	-	-	68.2	-15.65	250	100	H

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

**RESTRICTED BANDEDGE, CHAIN 1 (LOW)**

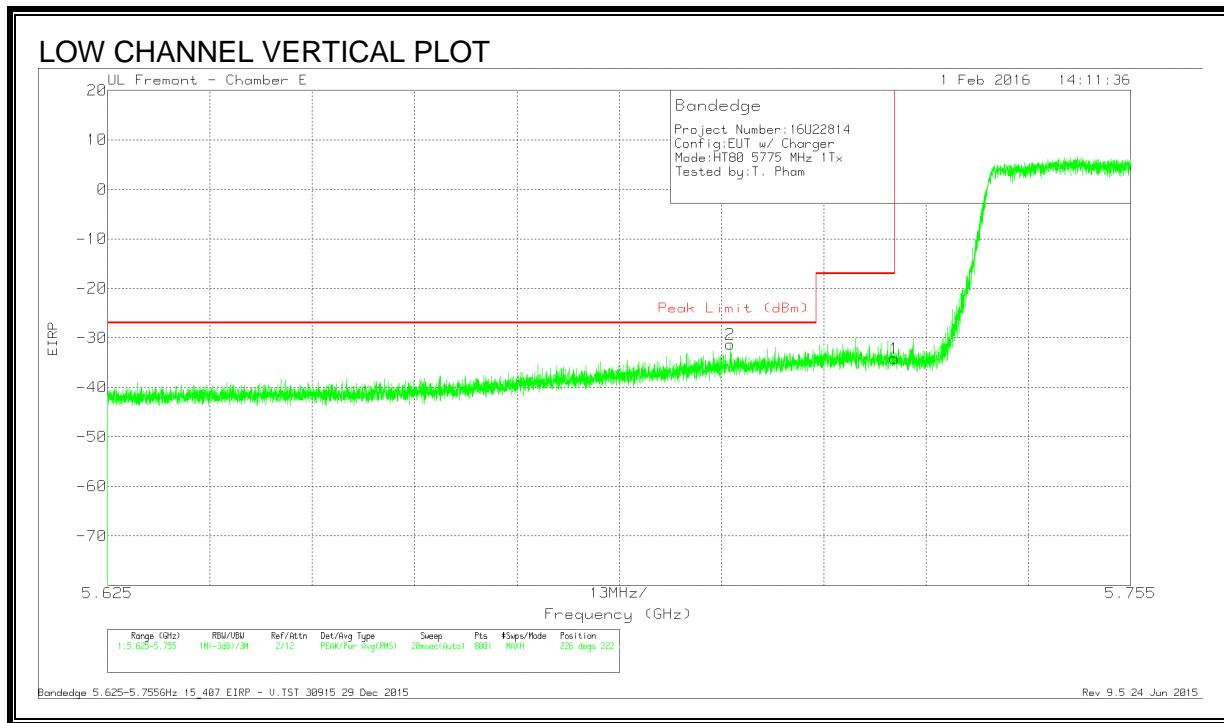


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.71	-62.6	Pk	34.7	-19.8	11.8	-35.9	-27	-8.9	315	388	H
1	5.725	-64.59	Pk	34.7	-19.8	11.8	-37.89	-17	-20.89	315	388	H

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

Pk - Peak detector



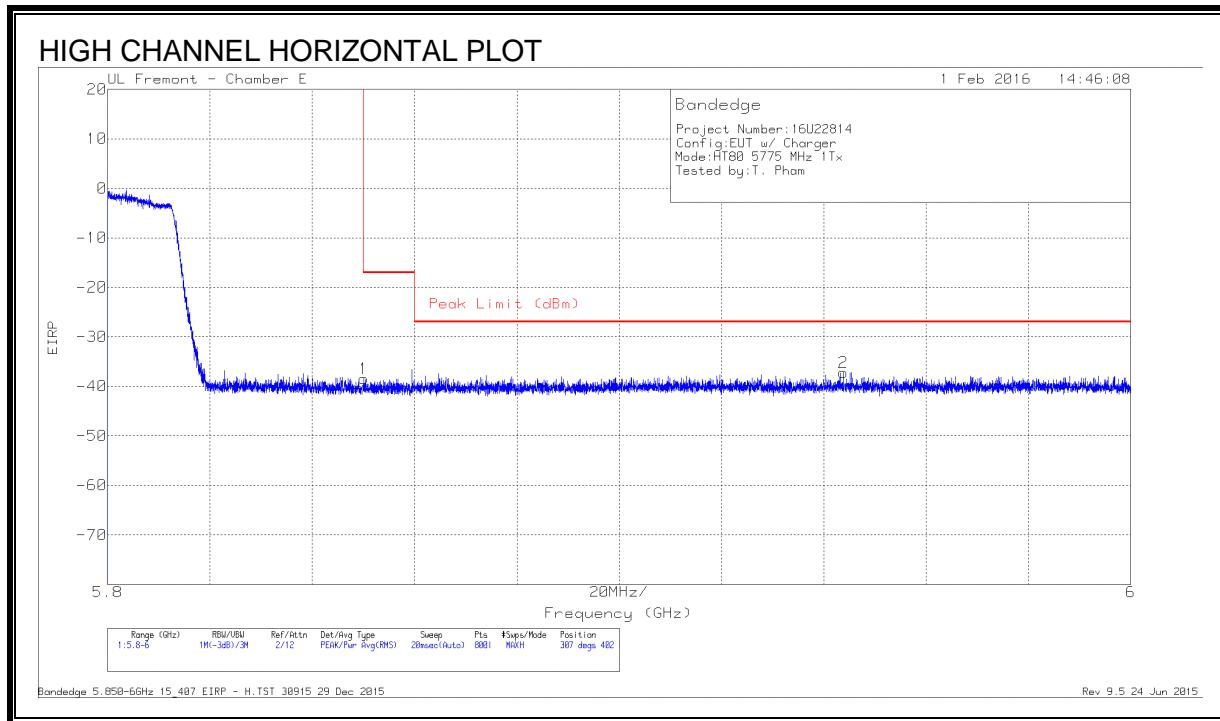
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.704	-57.8	Pk	34.7	-20	11.8	-31.3	-27	-4.3	226	222	V
1	5.725	-60.88	Pk	34.7	-19.8	11.8	-34.18	-17	-17.18	226	222	V

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

Pk - Peak detector

**RESTRICTED BANDEDGE, CHAIN 1 (HIGH)**

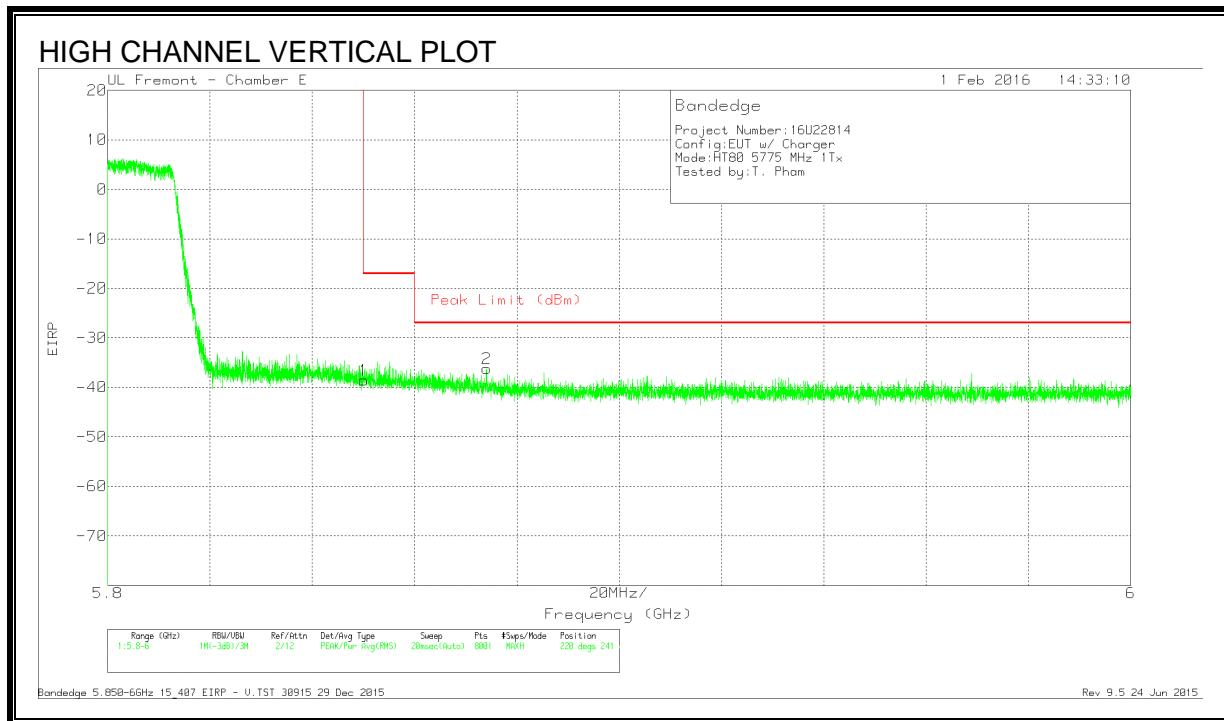


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.13	Pk	34.9	-20	11.8	-38.43	-17	-21.43	307	402	H
2	5.944	-64.54	Pk	35	-19.5	11.8	-37.24	-27	-10.24	307	402	H

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

Pk - Peak detector



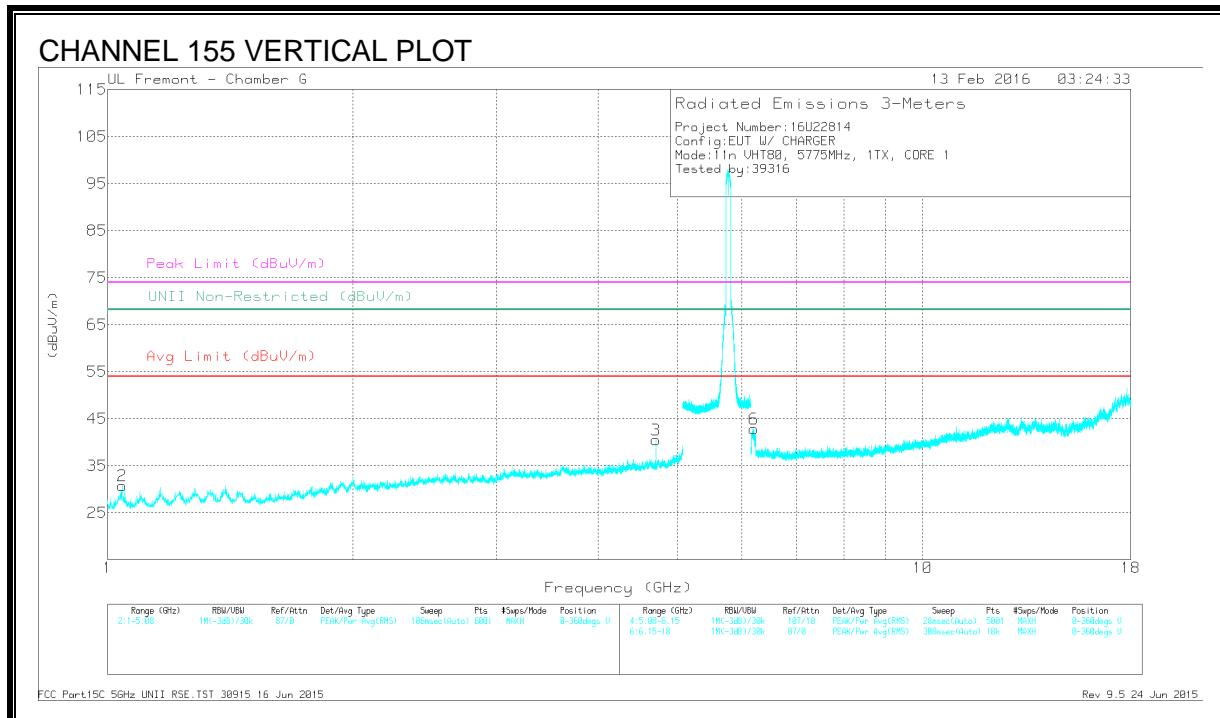
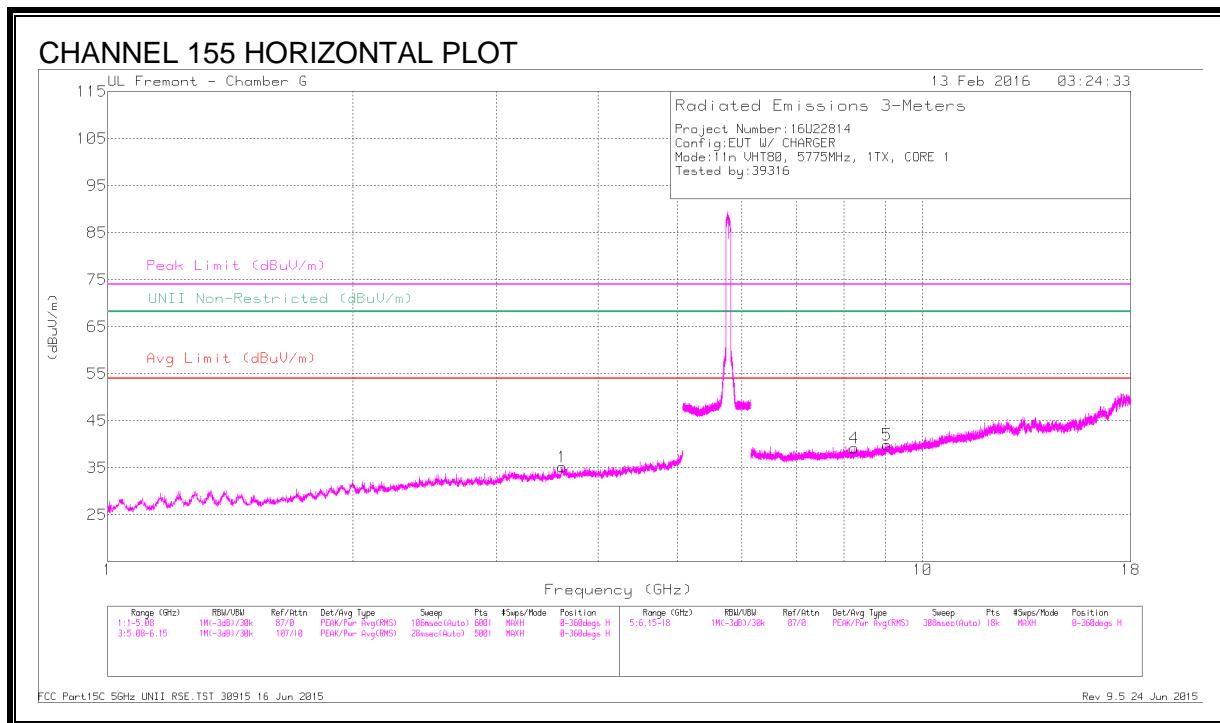
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.3	Pk	34.9	-20	11.8	-38.6	-17	-21.6	220	241	V
2	5.874	-63.26	Pk	34.9	-19.7	11.8	-36.26	-27	-9.26	220	241	V

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

Pk - Peak detector

**CHANNEL 155 HARMONICS AND SPURIOUS EMISSIONS**



**DATA**

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ft tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	U-NII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.613	42.18	PK-U	33.1	-32.8	0	42.48	-	-	74	-31.52	-	-	312	174	H
* 3.614	30.17	ADR	33.1	-32.8	.16	30.63	54	-23.37	-	-	-	-	312	174	H
* 1.041	45.19	PK-U	27.3	-35.4	0	37.09	-	-	74	-36.91	-	-	219	225	V
* 1.042	32.83	ADR	27.3	-35.4	.16	24.89	54	-29.11	-	-	-	-	219	225	V
* 4.706	45.55	PK-U	33.9	-32.1	0	47.35	-	-	74	-26.65	-	-	257	290	V
* 4.706	37.91	ADR	33.9	-32.1	.16	39.87	54	-14.13	-	-	-	-	257	290	V
* 8.247	39.91	PK-U	35.7	-29.7	0	45.91	-	-	74	-28.09	-	-	144	249	H
* 8.243	28.65	ADR	35.7	-29.8	.16	34.71	54	-19.29	-	-	-	-	144	249	H
* 9.046	39.31	PK-U	36.2	-28.2	0	47.31	-	-	74	-26.69	-	-	163	325	H
* 9.046	27.7	ADR	36.2	-28.2	.16	35.86	54	-18.14	-	-	-	-	163	325	H
6.205	47.79	PK-U	35.5	-31.8	0	51.49	-	-	-	-	68.2	-16.71	257	258	V

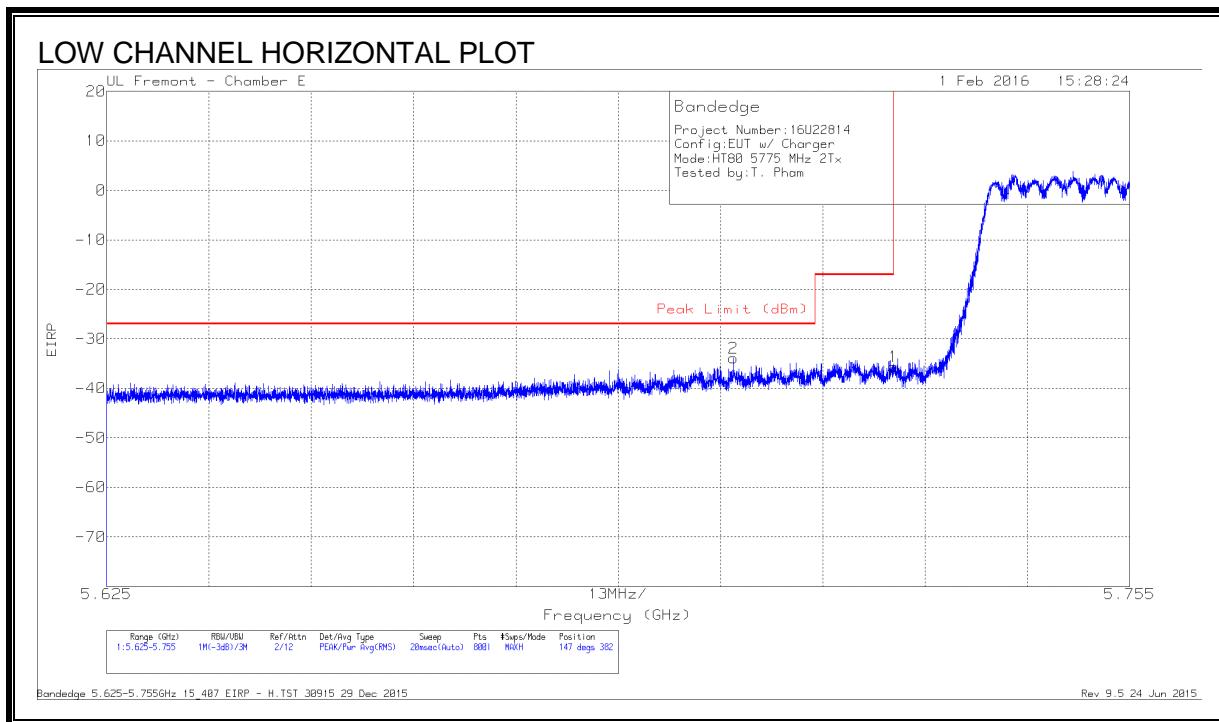
\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.52. 802.11ac VHT80 2Tx CDD MODE IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW)

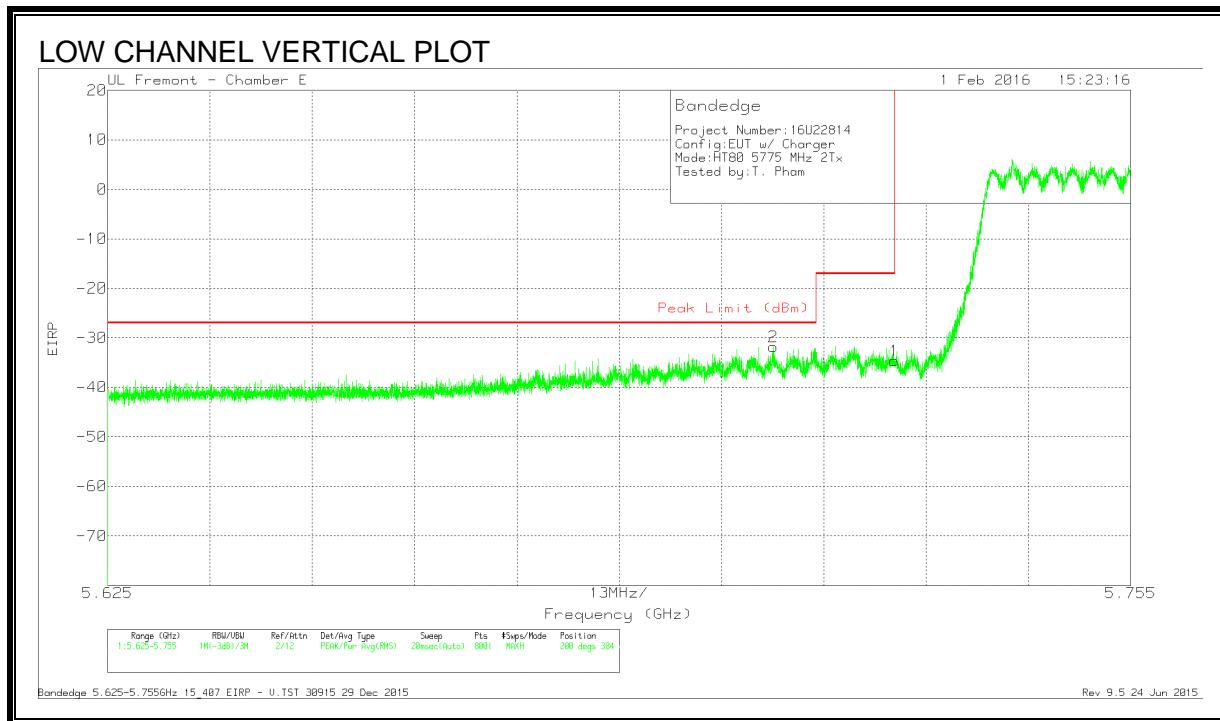


### DATA

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	5.705	-60.35	Pk	34.7	-20	11.8	-33.85	-27	-6.85	147	382	H
1	5.725	-62.25	Pk	34.7	-19.8	11.8	-35.55	-17	-18.55	147	382	H

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

Pk - Peak detector



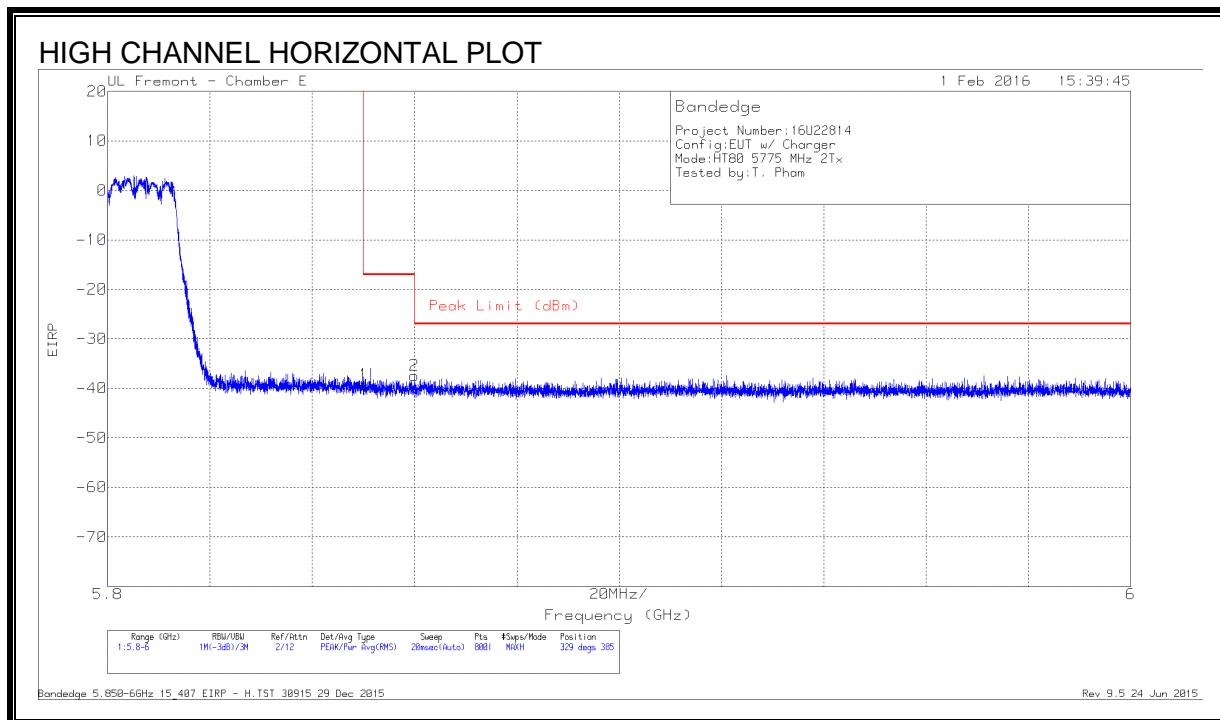
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.71	-58.52	Pk	34.7	-19.8	11.8	-31.82	-27	-4.82	200	384	V
1	5.725	-61.37	Pk	34.7	-19.8	11.8	-34.67	-17	-17.67	200	384	V

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

Pk - Peak detector

**RESTRICTED BANDEDGE (HIGH)**

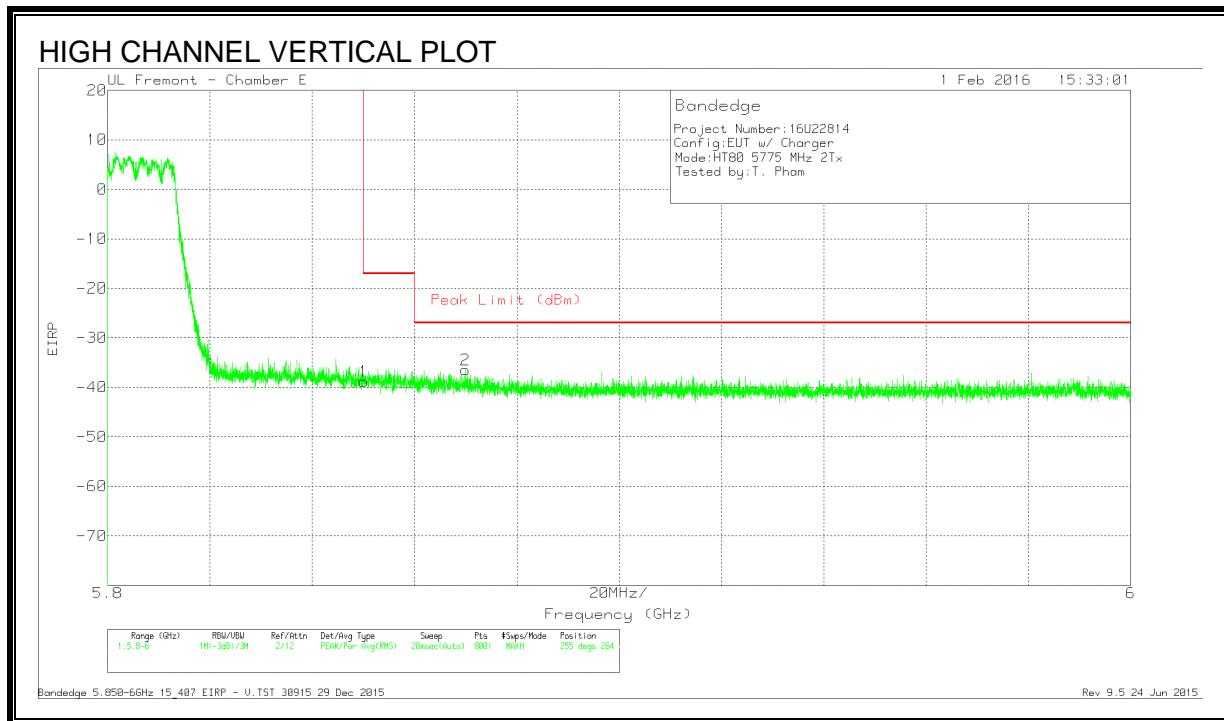


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.87	Pk	34.9	-20	11.8	-39.17	-17	-22.17	329	385	H
2	5.86	-64.28	Pk	34.9	-19.8	11.8	-37.38	-27	-10.38	329	385	H

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

Pk - Peak detector



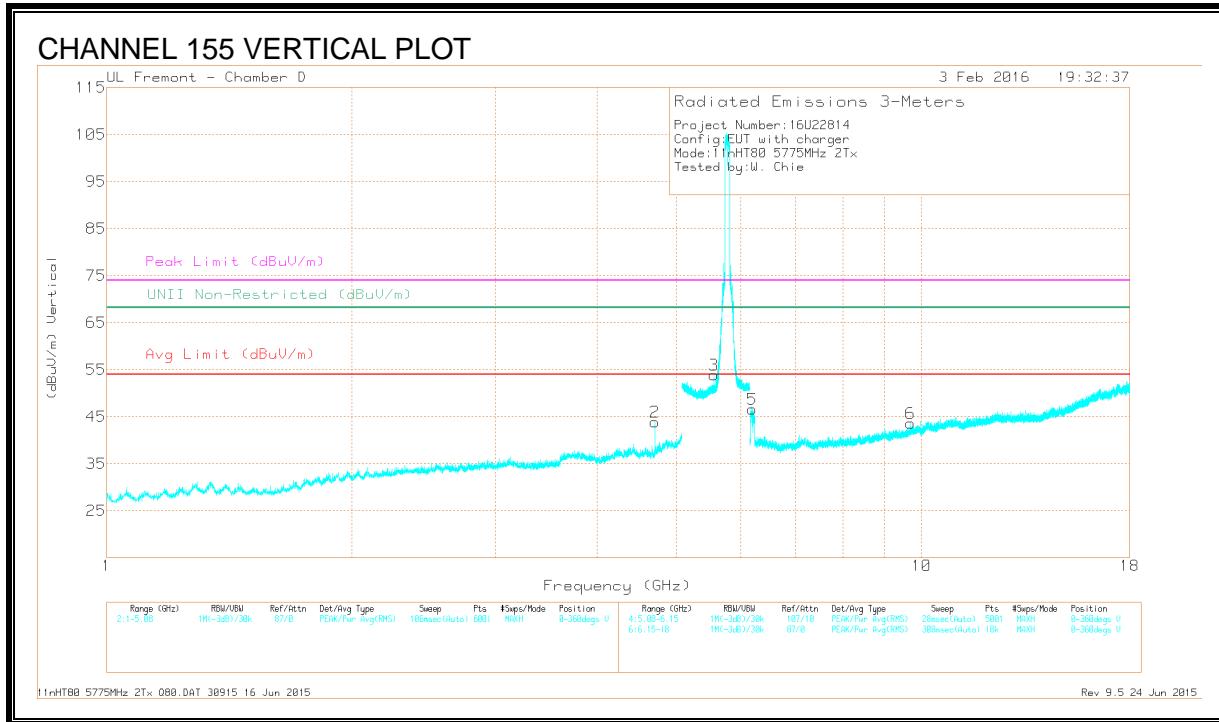
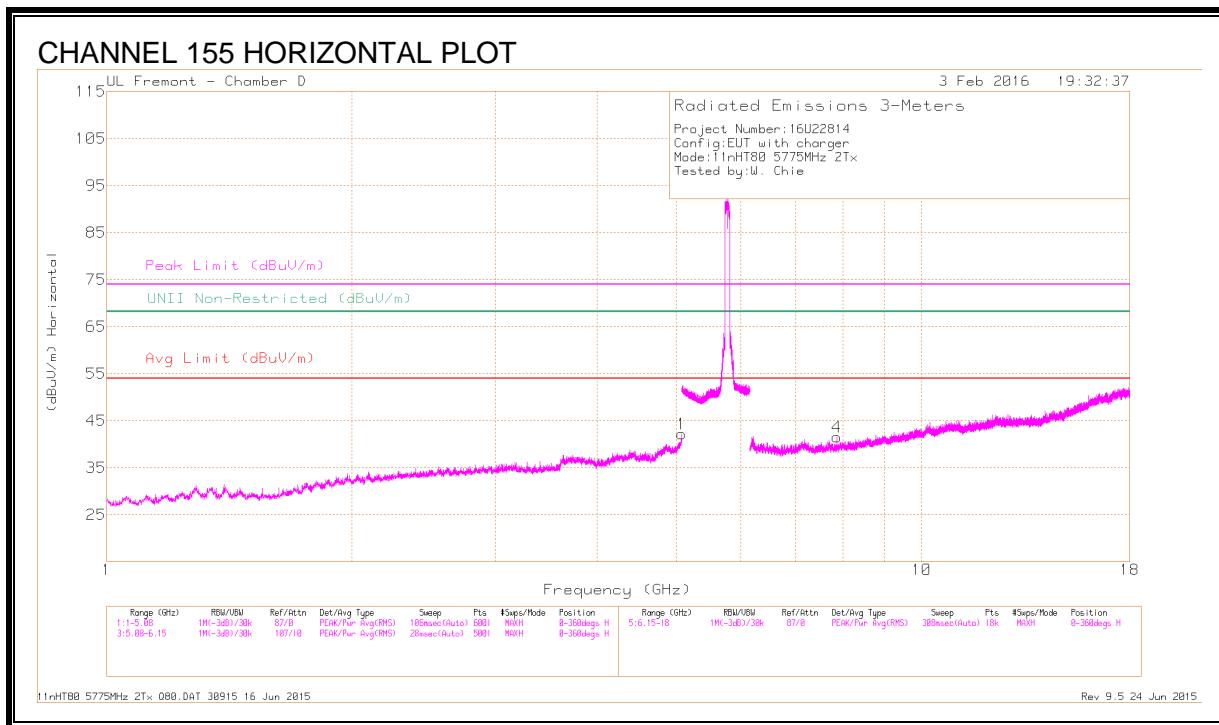
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.52	Pk	34.9	-20	11.8	-38.82	-17	-21.82	255	264	V
2	5.87	-63.46	Pk	34.9	-19.7	11.8	-36.46	-27	-9.46	255	264	V

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

Pk - Peak detector

## CHANNEL 155 HARMONICS AND SPURIOUS EMISSIONS



**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/F Impad (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
1	* 5.079	38.29	PK-U	34.2	-24.1	0	48.39	-	-	74	-25.61	-	-	350	308	H
	* 5.078	26.5	ADR	34.2	-24.2	.21	36.71	54	-17.29	-	-	-	-	350	308	H
2	* 4.706	43.34	PK-U	34.2	-27.9	0	49.64	-	-	74	-24.36	-	-	212	230	V
	* 4.706	36.94	ADR	34.2	-27.9	.21	43.45	54	-10.55	-	-	-	-	212	230	V
3	5.561	43.57	PK-U	34.4	-17.7	0	60.27	-	-	-	-	68.2	-7.93	241	196	V
5	6.201	40.09	PK-U	35.5	-26.2	0	49.39	-	-	-	-	68.2	-18.81	251	208	V
4	7.874	36.01	PK-U	35.7	-24.3	0	47.41	-	-	-	-	68.2	-20.79	208	221	H
6	9.693	34.63	PK-U	36.8	-21.8	0	49.63	-	-	-	-	68.2	-18.57	218	171	V

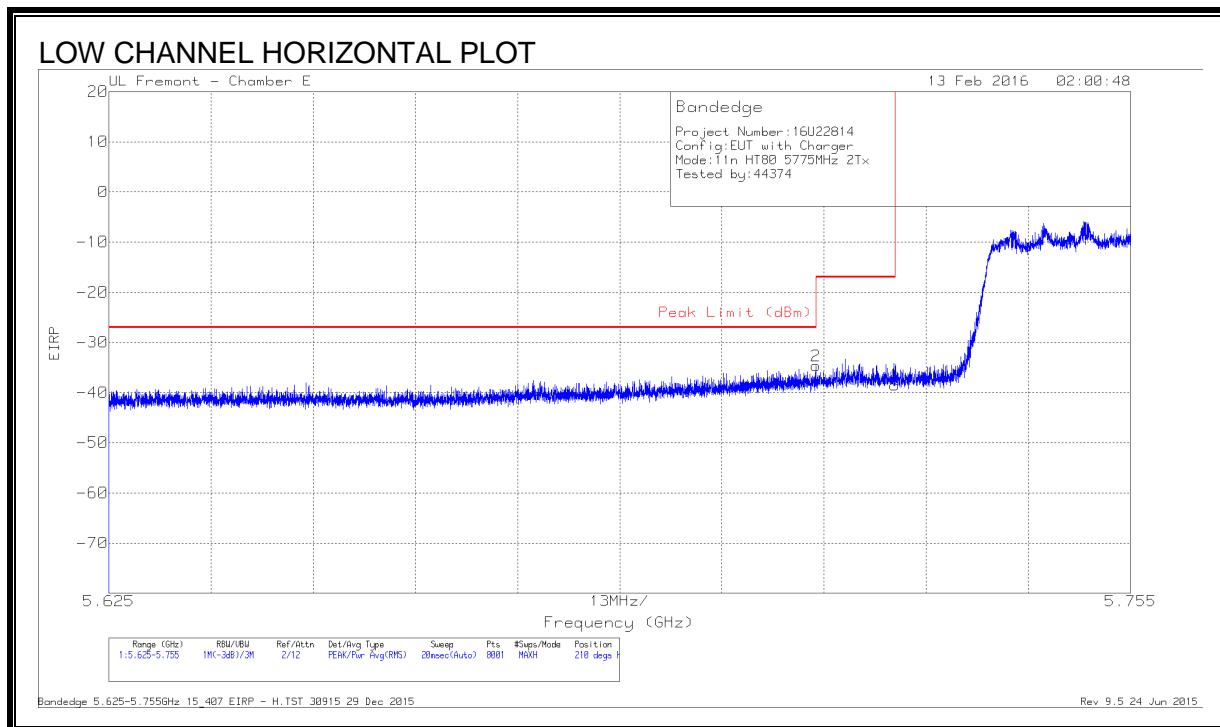
\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.53. 802.11ac VHT80 2Tx STBC MODE IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW)

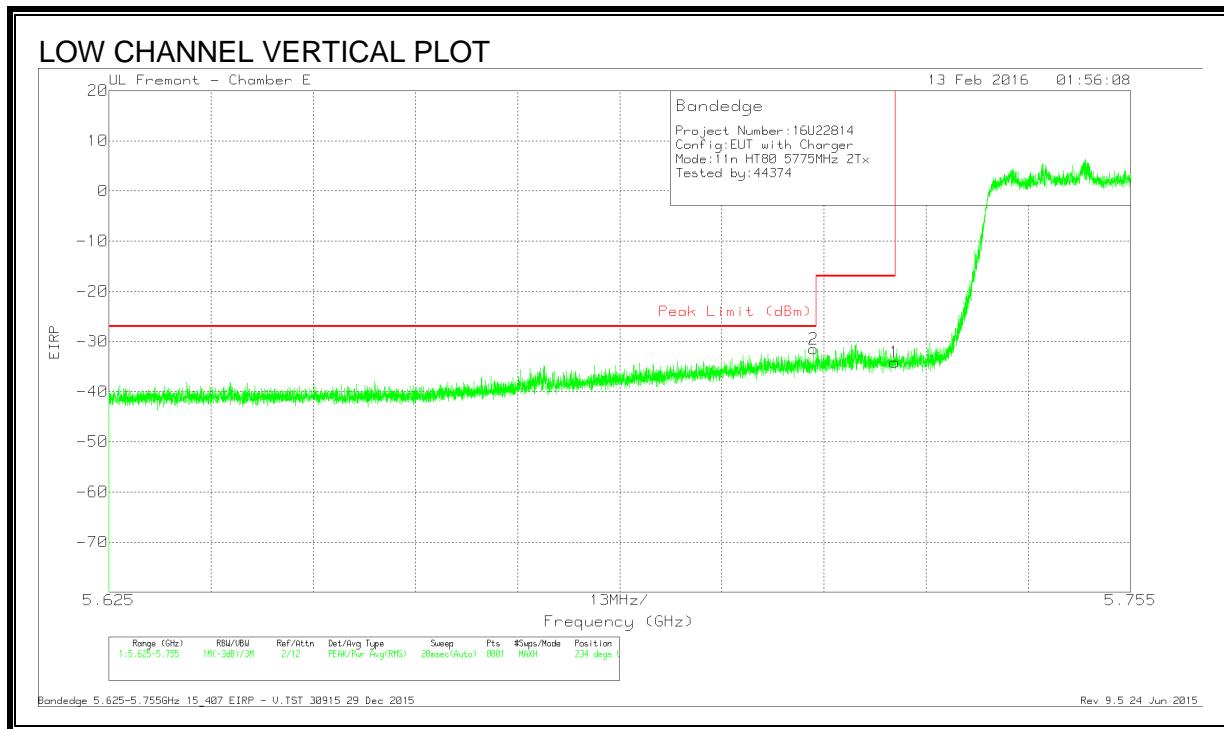


### DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.715	-61.55	Pk	34.9	-19.8	11.8	-34.65	-27	-7.65	210	223	H
1	5.725	-65.38	Pk	34.9	-19.8	11.8	-38.48	-17	-21.48	210	223	H

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

Pk - Peak detector



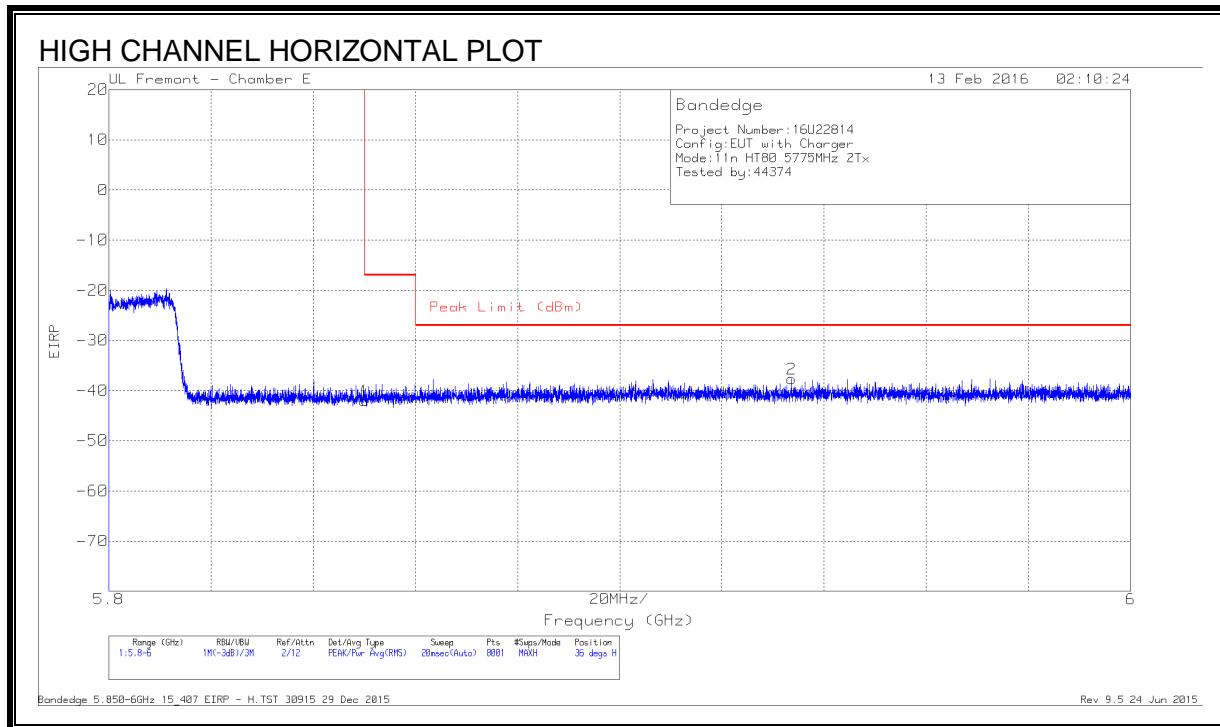
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.715	-58.38	Pk	34.9	-19.8	11.8	-31.48	-27	-4.48	234	251	V
1	5.725	-61.01	Pk	34.9	-19.8	11.8	-34.11	-17	-17.11	234	251	V

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

Pk - Peak detector

**RESTRICTED BANDEDGE (HIGH)**

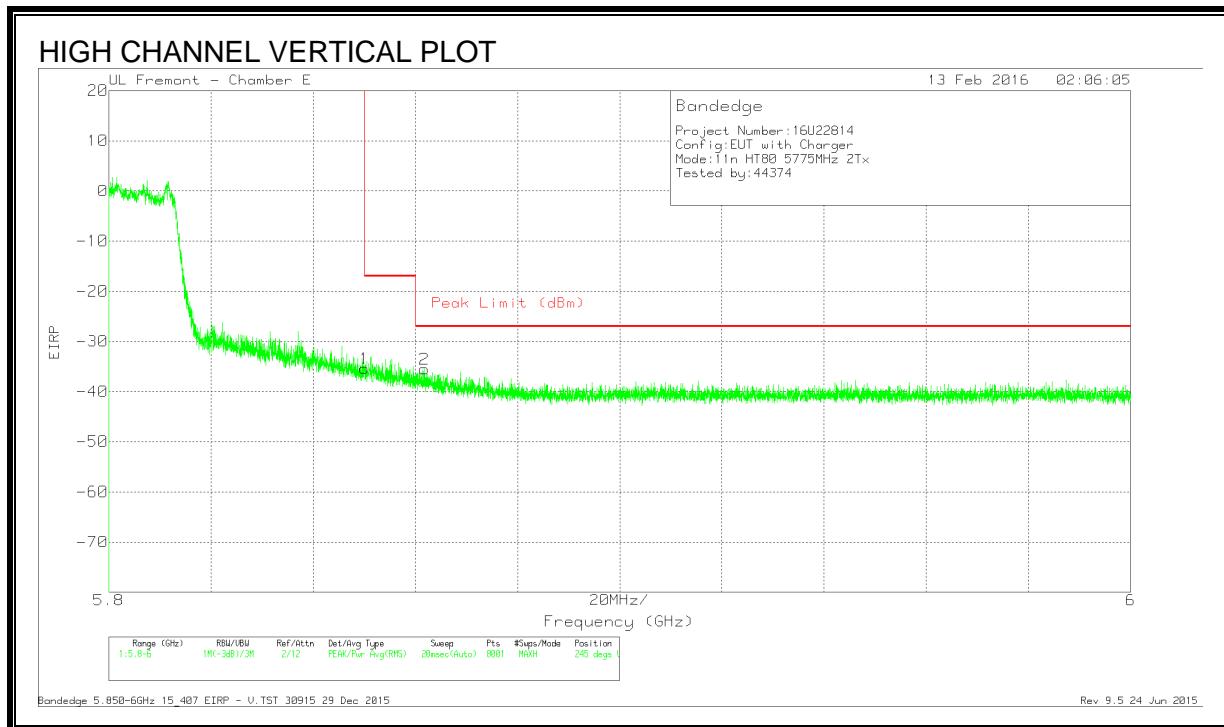


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-68.72	Pk	34.9	-20	11.8	-42.02	-17	-25.02	36	395	H
2	5.934	-64.77	Pk	35	-19.7	11.8	-37.67	-27	-10.67	36	395	H

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

Pk - Peak detector



## DATA

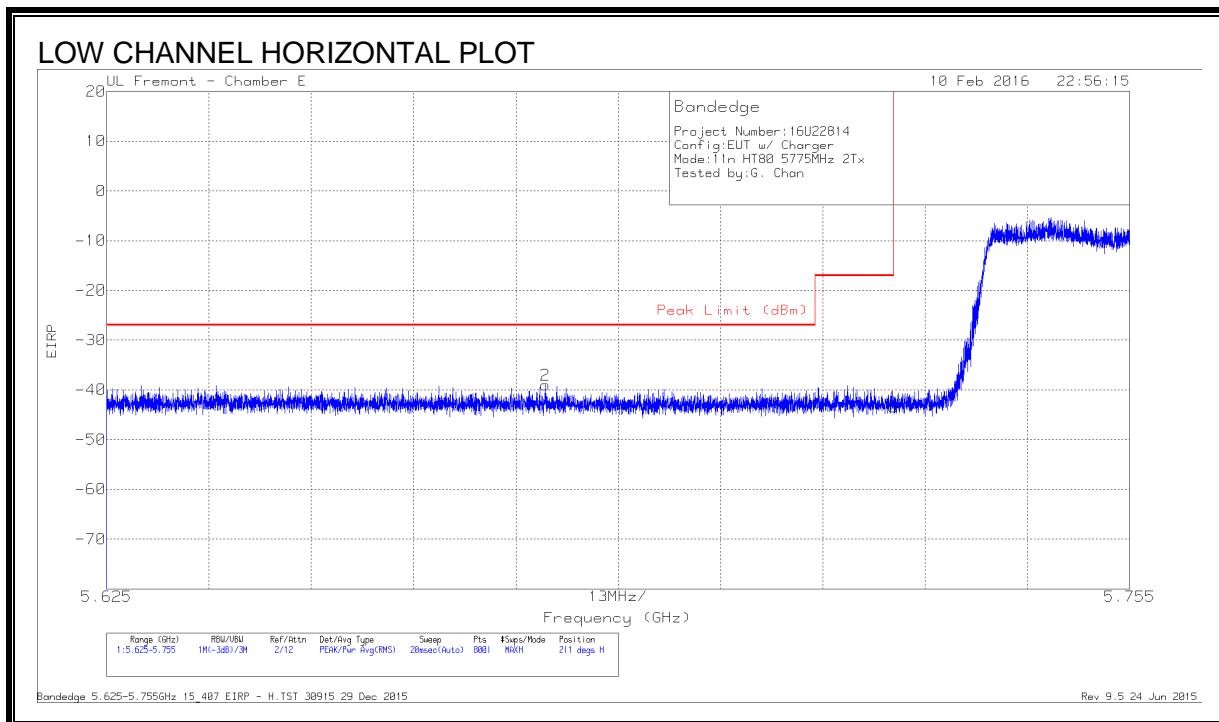
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-62.08	Pk	34.9	-20	11.8	-35.38	-17	-18.38	245	192	V
2	5.862	-62.4	Pk	34.9	-19.8	11.8	-35.5	-27	-8.5	245	192	V

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

Pk - Peak detector

## 9.54. 802.11ac VHT80 2Tx BEAM FORMING MODE IN THE 5.8 GHz BAND

### RESTRICTED BANDEDGE (LOW)

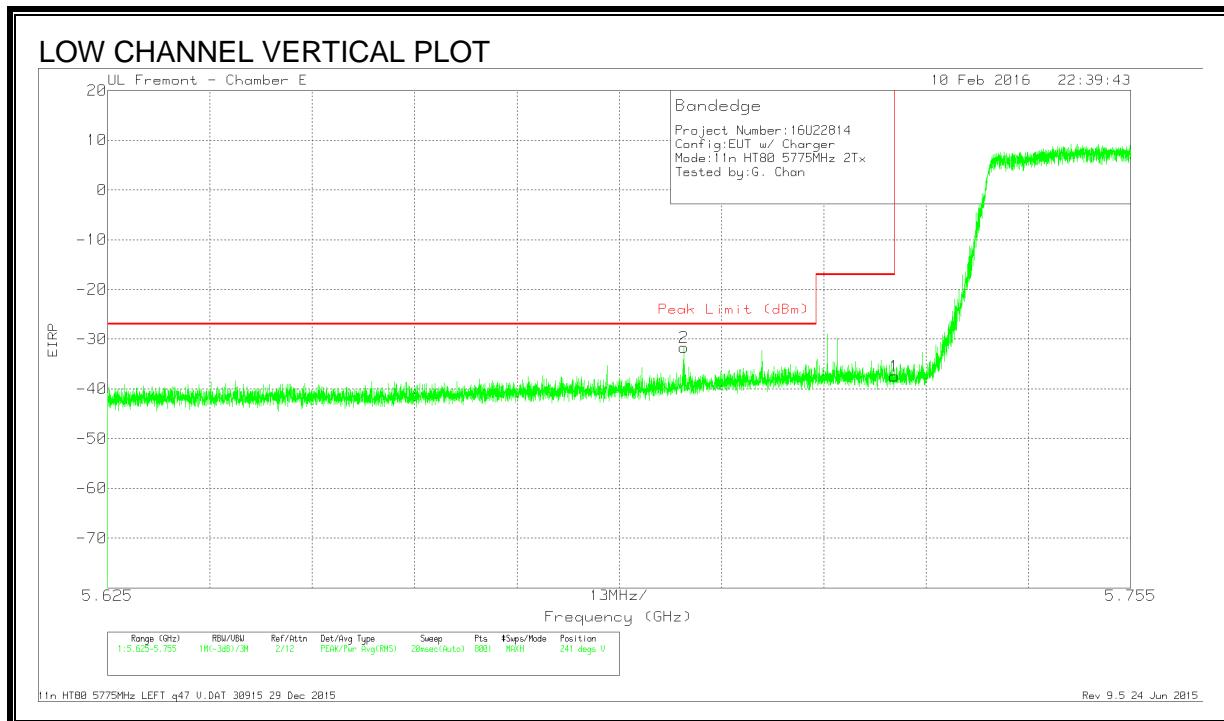


### DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/F Itr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.681	-65.66	Pk	34.6	-19.8	11.8	-39.06	-27	-12.06	211	233	H
1	5.725	-70.18	Pk	34.7	-19.8	11.8	-43.48	-17	-26.48	211	233	H

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

Pk - Peak detector



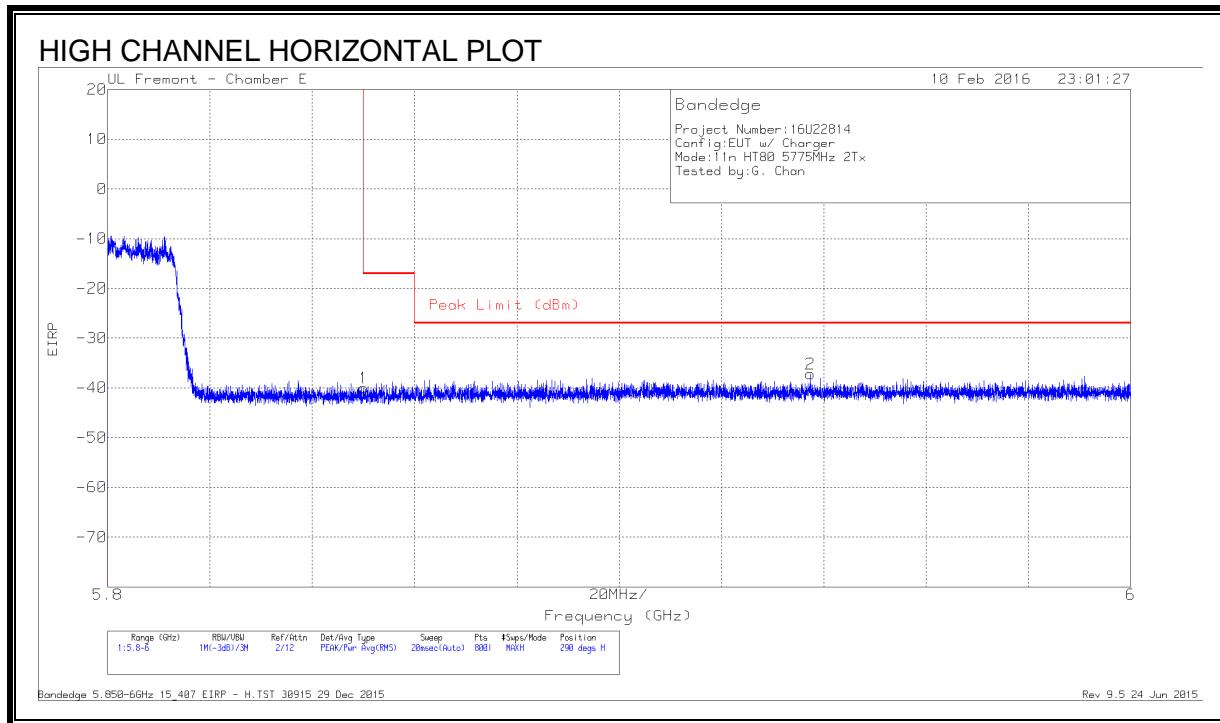
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.698	-58.21	Pk	34.7	-20	11.8	-31.71	-27	-4.71	241	248	V
1	5.725	-64.18	Pk	34.7	-19.8	11.8	-37.48	-17	-20.48	241	248	V

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

Pk - Peak detector

**RESTRICTED BANDEDGE (HIGH)**

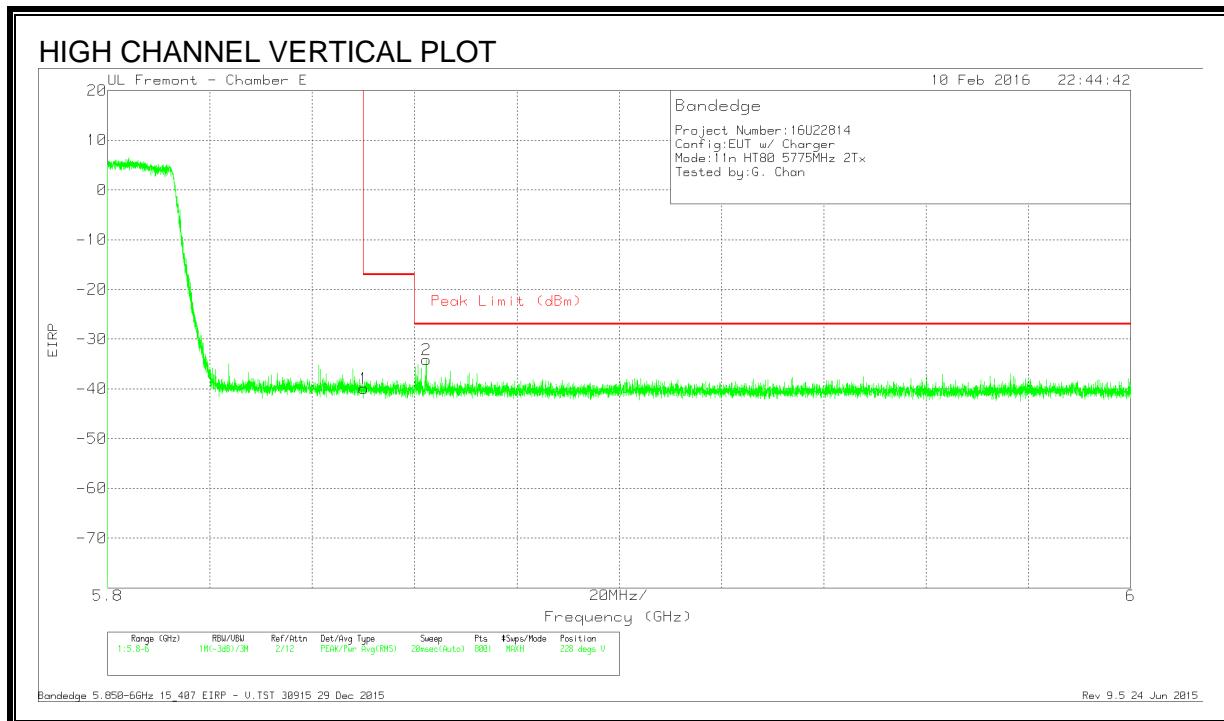


**DATA**

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.67	Pk	34.9	-20	11.8	-39.97	-17	-22.97	290	322	H
2	5.937	-64.36	Pk	35	-19.6	11.8	-37.16	-27	-10.16	290	322	H

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

Pk - Peak detector



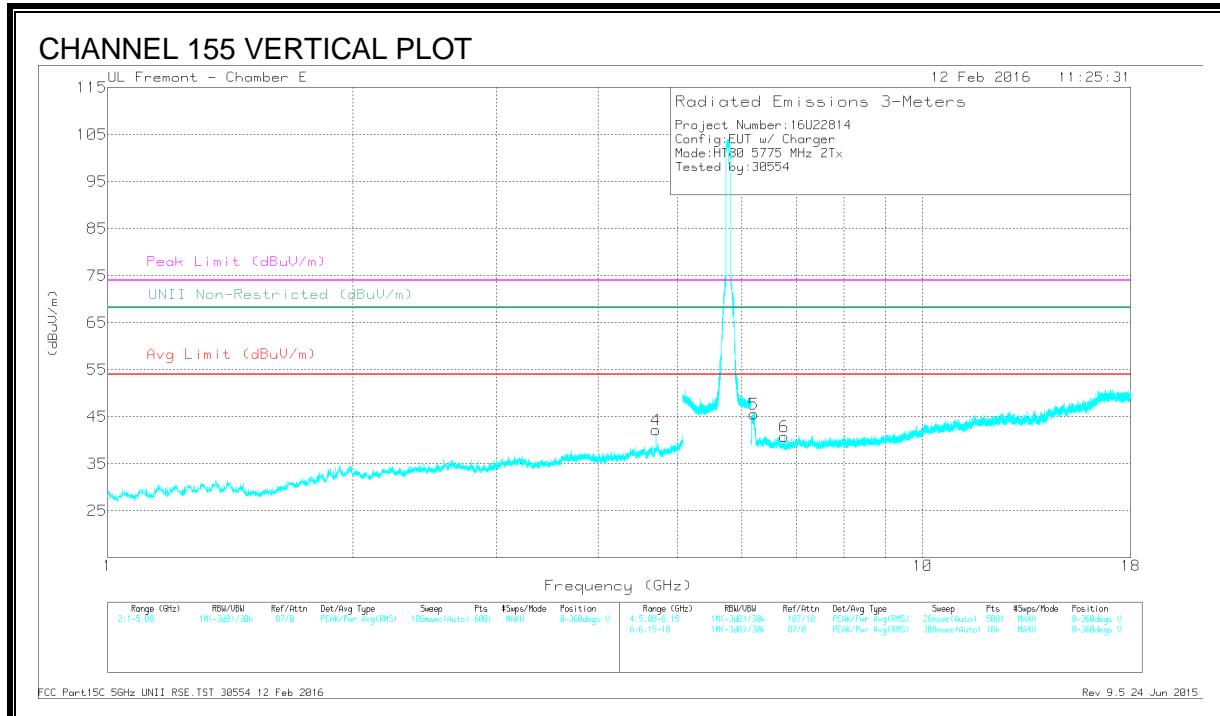
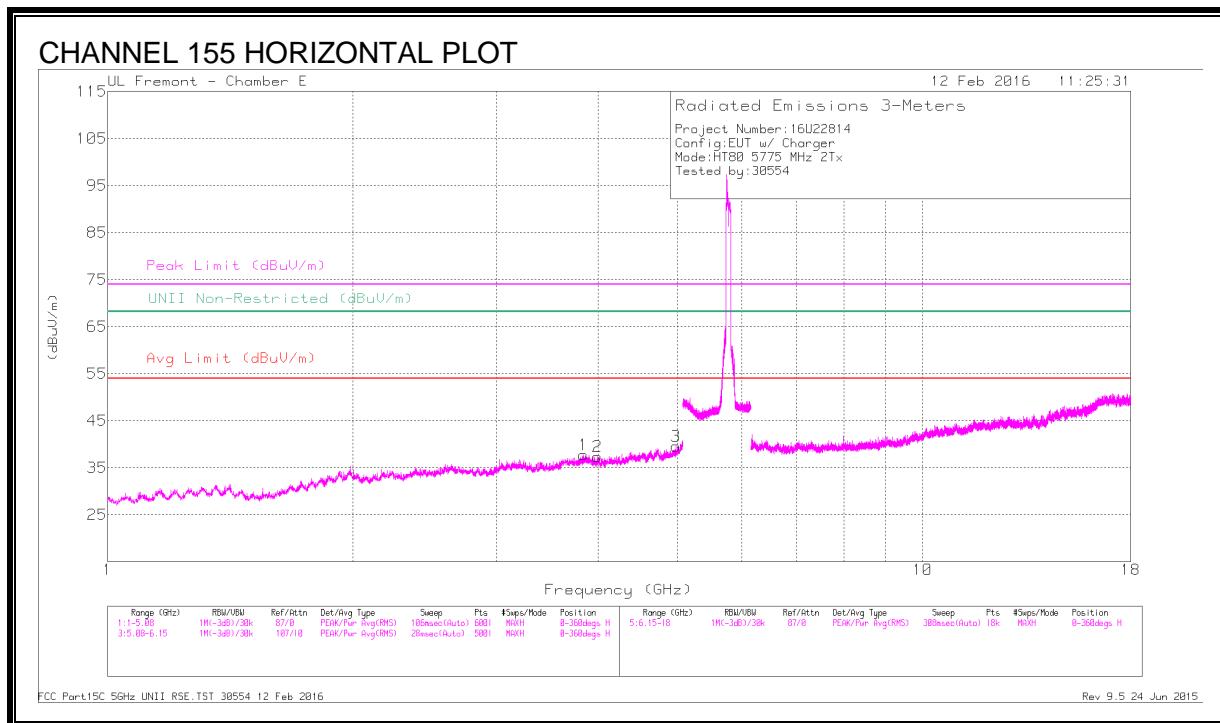
## DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T346 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.65	Pk	34.9	-20	11.8	-39.95	-17	-22.95	228	233	V
2	5.862	-60.99	Pk	34.9	-19.8	11.8	-34.09	-27	-7.09	228	233	V

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

Pk - Peak detector

**CHANNEL 155 HARMONICS AND SPURIOUS EMISSIONS**



**DATA**

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Ft tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	U-NII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 3.839	42.14	PK-U	33.2	-29.9	0	45.44	-	-	74	-28.56	-	-	36	337	H
* 3.84	29.5	ADR	33.2	-29.9	.10	33.03	54	-20.97	-	-	-	-	36	337	H
* 3.987	41.17	PK-U	33.2	-30.3	0	44.07	-	-	74	-29.93	-	-	167	311	H
* 3.987	29.68	ADR	33.2	-30.3	.10	32.81	54	-21.19	-	-	-	-	167	311	H
* 4.98	41.46	PK-U	34	-29.4	0	46.06	-	-	74	-27.94	-	-	264	118	H
* 4.978	29.98	ADR	34	-29.4	.10	34.81	54	-19.19	-	-	-	-	264	118	H
* 4.706	44.17	PK-U	34	-29.3	0	48.87	-	-	74	-25.13	-	-	230	285	V
* 4.706	36.04	ADR	34	-29.3	.10	40.97	54	-13.03	-	-	-	-	230	285	V
6.166	49.18	PK-U	35.5	-28.3	0	56.38	-	-	-	-	68.2	-11.82	68	198	V
6.767	38.82	PK-U	35.5	-28.4	0	45.92	-	-	-	-	68.2	-22.28	51	324	V

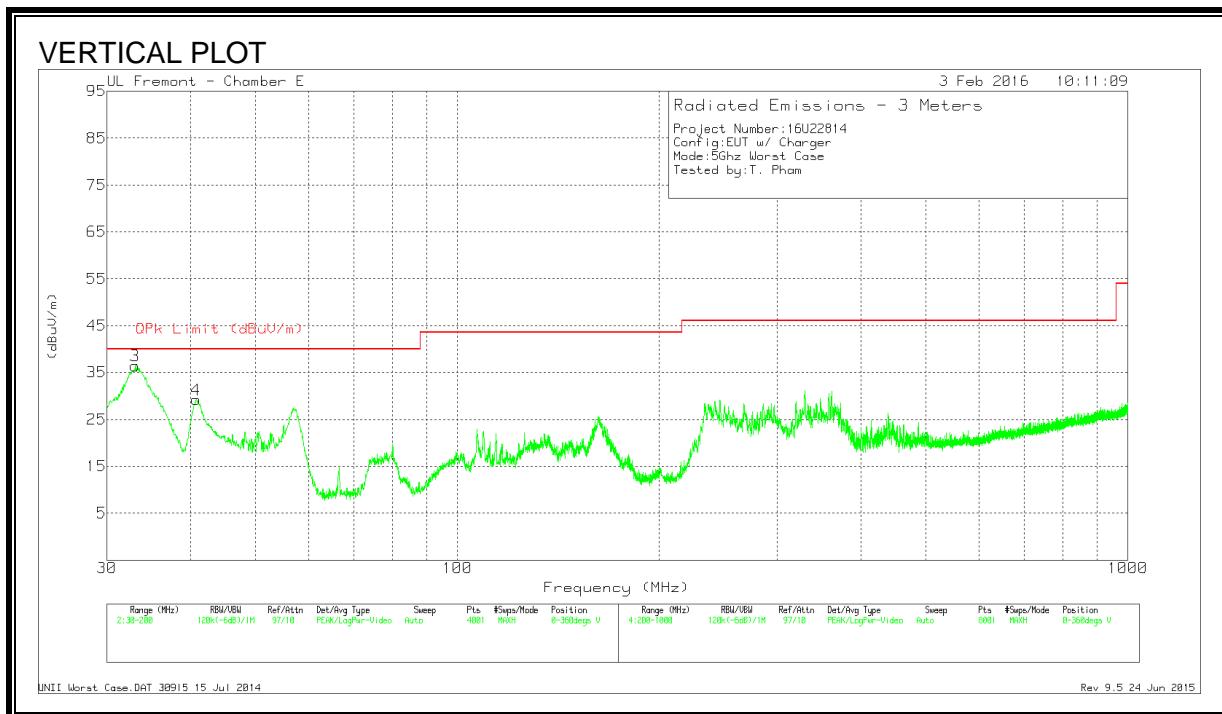
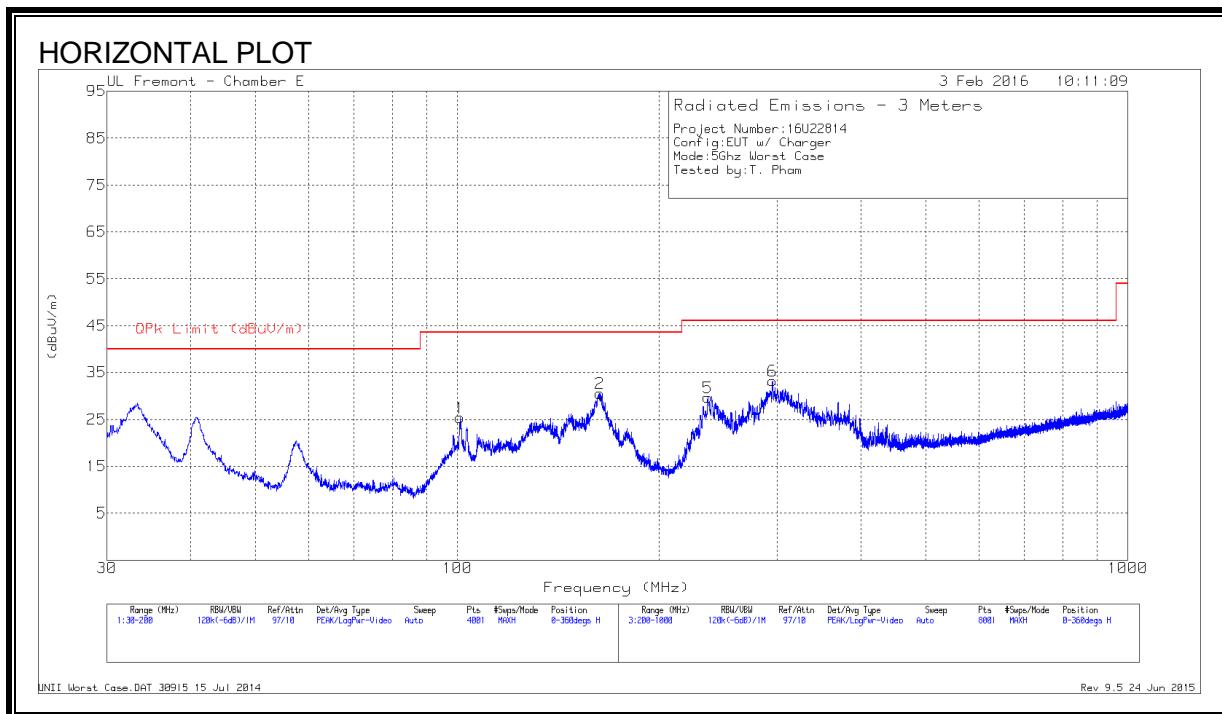
\* - indicates frequency in CFR15.205/IC8.10 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## 9.55. WORST-CASE BELOW 1 GHz

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



**DATA**

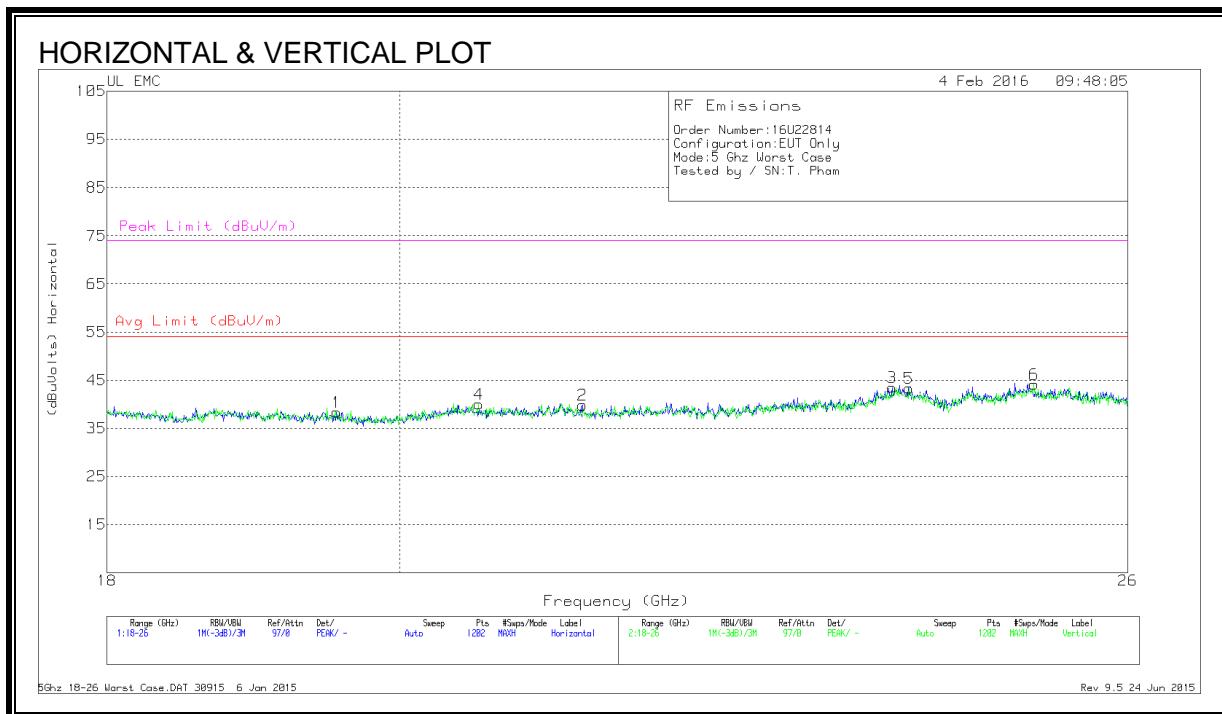
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T243 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 163.0675	45.44	Pk	16	-30.9	30.54	43.52	-12.98	0-360	201	H
3	33.06	45.44	Pk	22.9	-31.9	36.44	40	-3.56	0-360	100	V
4	40.7525	43.85	Pk	17.2	-31.8	29.25	40	-10.75	0-360	100	V
1	100.8475	42.17	Pk	14.5	-31.3	25.37	43.52	-18.15	0-360	301	H
5	236.2	44.97	Pk	15.3	-30.6	29.67	46.02	-16.35	0-360	100	H
6	295	46.29	Pk	17.2	-30.3	33.19	46.02	-12.83	0-360	100	H

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

Pk - Peak detector

## 9.56. WORST-CASE ABOVE 18 GHz

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



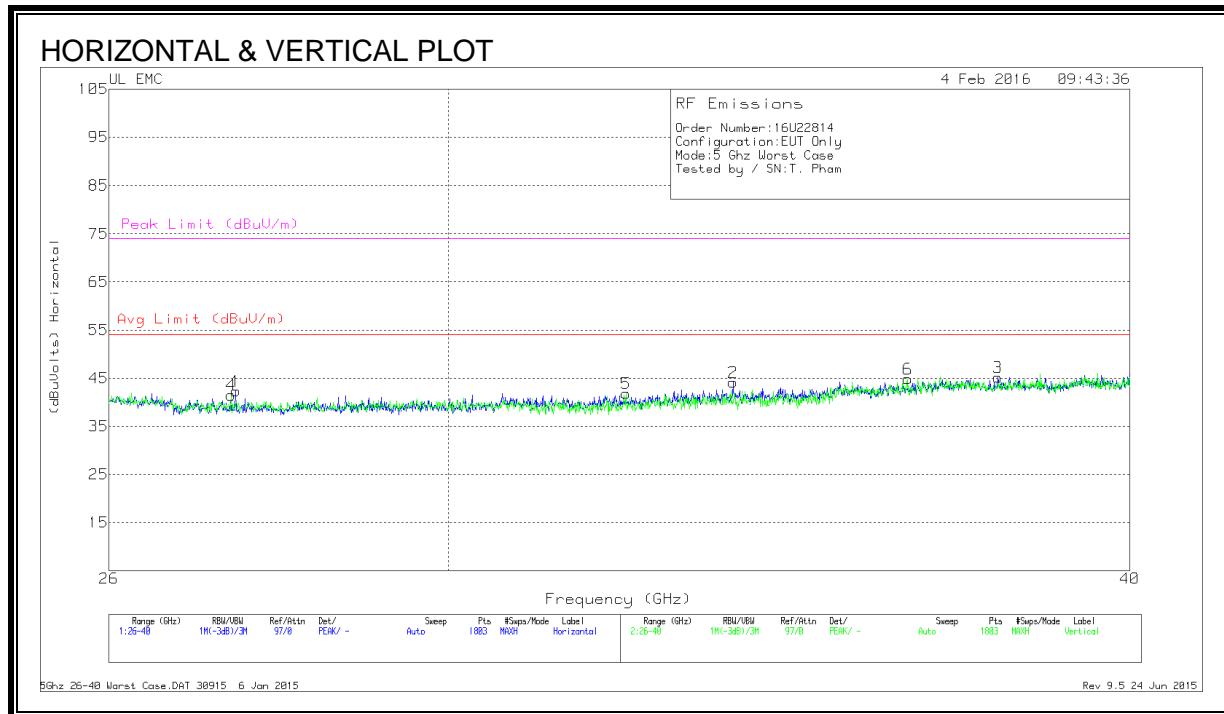
## DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T477 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	19.552	40.23	Pk	32.7	-25.1	-9.5	38.33	54	-15.67	74	-35.67
2	21.364	41.63	Pk	33.1	-25.4	-9.5	39.83	54	-14.17	74	-34.17
3	23.882	43.4	Pk	33.7	-24.1	-9.5	43.5	54	-10.5	74	-30.5
4	20.578	41.8	Pk	33.1	-25.4	-9.5	40	54	-14	74	-34
5	24.028	43.33	Pk	33.6	-24.1	-9.5	43.33	54	-10.67	74	-30.67
6	25.134	44.17	Pk	34.2	-24.7	-9.5	44.17	54	-9.83	74	-29.83

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

Pk - Peak detector

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



**DATA**

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T90 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuV/Volt s)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	27.43	47.53	Pk	35.7	-31.4	-9.5	42.33	54	-11.67	74	-31.67
2	33.831	49.87	Pk	36.9	-33.1	-9.5	44.17	54	-9.83	74	-29.83
3	37.832	50.17	Pk	37.1	-32.6	-9.5	45.17	54	-8.83	74	-28.83
4	27.375	46.6	Pk	35.7	-31.3	-9.5	41.5	54	-12.5	74	-32.5
5	32.34	47.73	Pk	36.3	-32.7	-9.5	41.83	54	-12.17	74	-32.17
6	36.418	50.33	Pk	37.2	-33.2	-9.5	44.83	54	-9.17	74	-29.17

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

Pk - Peak detector

## 10. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

FCC §15.207 (a)

Frequency of Emission (MHz)	Conducted Limit (dB $\mu$ V)	
	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.

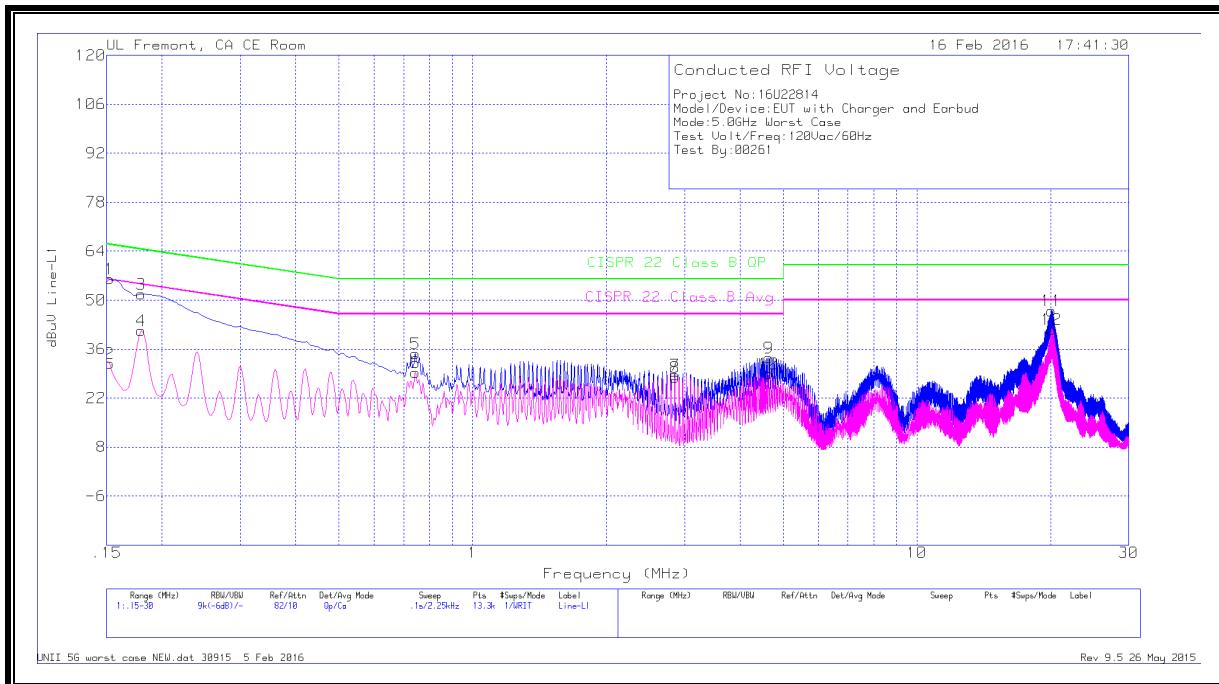
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

### RESULTS

## 10.1. EUT POWERED BY AC/DC ADAPTER

### LINE 1 RESULTS



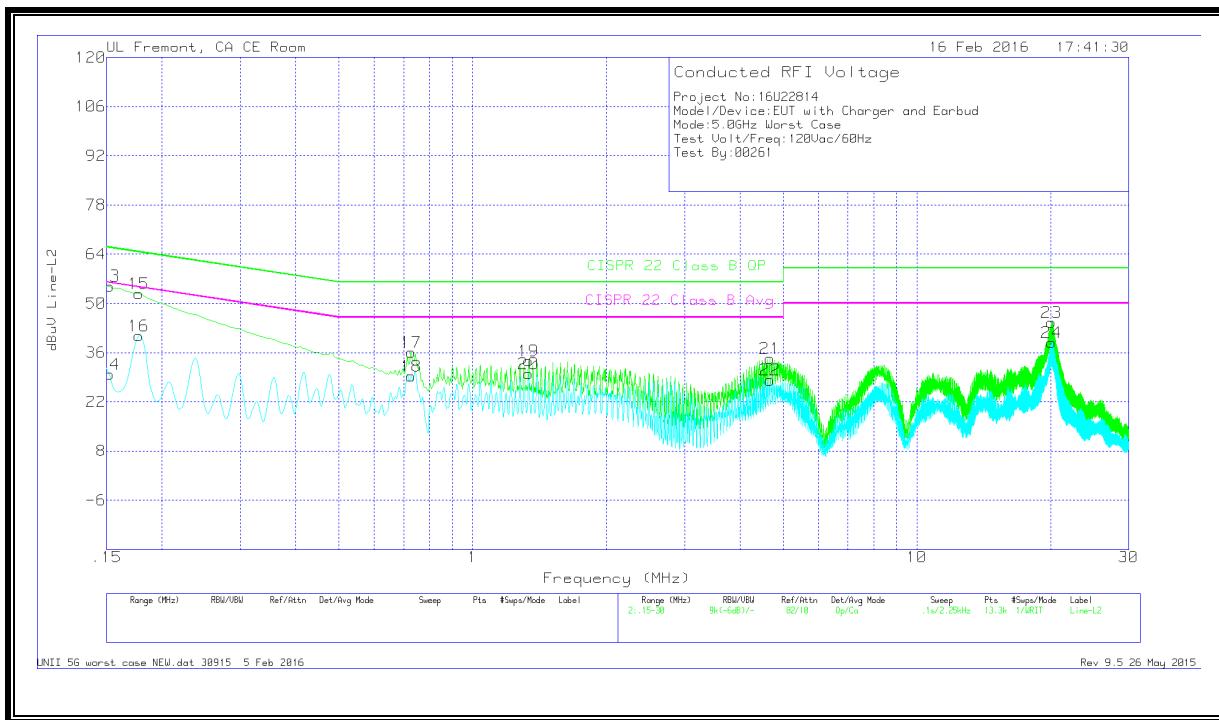
### WORST EMISSIONS

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T1310 IL L1	LC Cables 1&3	10dB Pad	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
1	.15225	45.93	Qp	.1	0	10	56.03	65.88	-9.85	-	-
2	.15225	21.9	Ca	.1	0	10	32	-	-	55.88	-23.88
3	.17925	41.74	Qp	0	0	10	51.74	64.52	-12.78	-	-
4	.17925	31.38	Ca	0	0	10	41.38	-	-	54.52	-13.14
5	.744	24.65	Qp	0	0	10	34.65	56	-21.35	-	-
6	.744	19.38	Ca	0	0	10	29.38	-	-	46	-16.62
7	2.8545	18.53	Qp	0	.1	10	28.63	56	-27.37	-	-
8	2.8545	17.87	Ca	0	.1	10	27.97	-	-	46	-18.03
9	4.641	23.31	Qp	0	.1	10	33.41	56	-22.59	-	-
10	4.641	18.82	Ca	0	.1	10	28.92	-	-	46	-17.08
11	20.0895	36.76	Qp	0	.2	10	46.96	60	-13.04	-	-
12	20.0895	31.46	Ca	0	.2	10	41.66	-	-	50	-8.34

Qp - Quasi-Peak detector

Ca - CISPR average detection

**LINE 2 RESULTS**



**WORST EMISSIONS**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T1310 IL L2	LC Cables 2&3	10dB Pad	Corrected Reading dBuV	CISPR 22 Class B QP	Margin (dB)	CISPR 22 Class B Avg	Margin (dB)
13	.15225	44.95	Qp	0	0	10	54.95	65.88	-10.93	-	-
14	.15225	19.79	Ca	0	0	10	29.79	-	-	55.88	-26.09
15	.177	42.75	Qp	0	0	10	52.75	64.63	-11.88	-	-
16	.177	30.83	Ca	0	0	10	40.83	-	-	54.63	-13.8
17	.72825	26.08	Qp	0	0	10	36.08	56	-19.92	-	-
18	.72825	19.36	Ca	0	0	10	29.36	-	-	46	-16.64
19	1.338	23.6	Qp	0	.1	10	33.7	56	-22.3	-	-
20	1.338	19.91	Ca	0	.1	10	30.01	-	-	46	-15.99
21	4.66575	24.19	Qp	0	.1	10	34.29	56	-21.71	-	-
22	4.66575	18.09	Ca	0	.1	10	28.19	-	-	46	-17.81
23	20.09175	34.39	Qp	0	.2	10	44.59	60	-15.41	-	-
24	20.09175	28.67	Ca	0	.2	10	38.87	-	-	50	-11.13

Qp - Quasi-Peak detector

Ca - CISPR average detection

## 11. DYNAMIC FREQUENCY SELECTION

### 11.1. OVERVIEW

#### 11.1.1. LIMITS

##### 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. $\geq$ 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

**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.  
**Note 3:** E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.

**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)

**Note 1:** *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.

**Note 2:** 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 a *Channel 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.

**Note 3:** During the *U-NII Detection Bandwidth* 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.

**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
<b>Note 1:</b> 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**

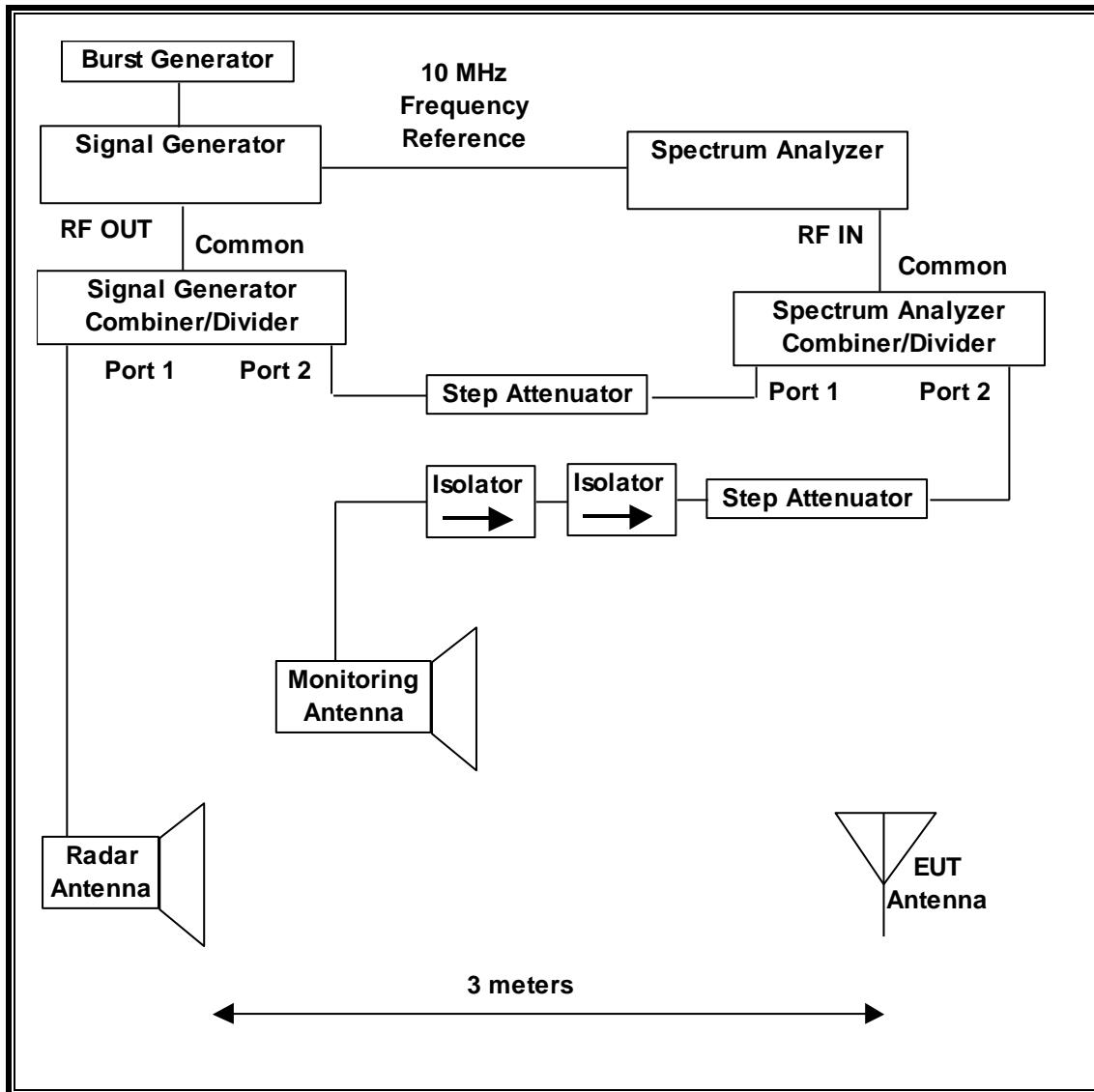
Radar Waveform Type	Pulse Width (usec)	Chirp Width (MHz)	PRI (usec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

**Table 7 – Frequency Hopping Radar Test Signal**

Radar Waveform Type	Pulse Width (usec)	PRI (usec)	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

### 11.1.2. 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 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.

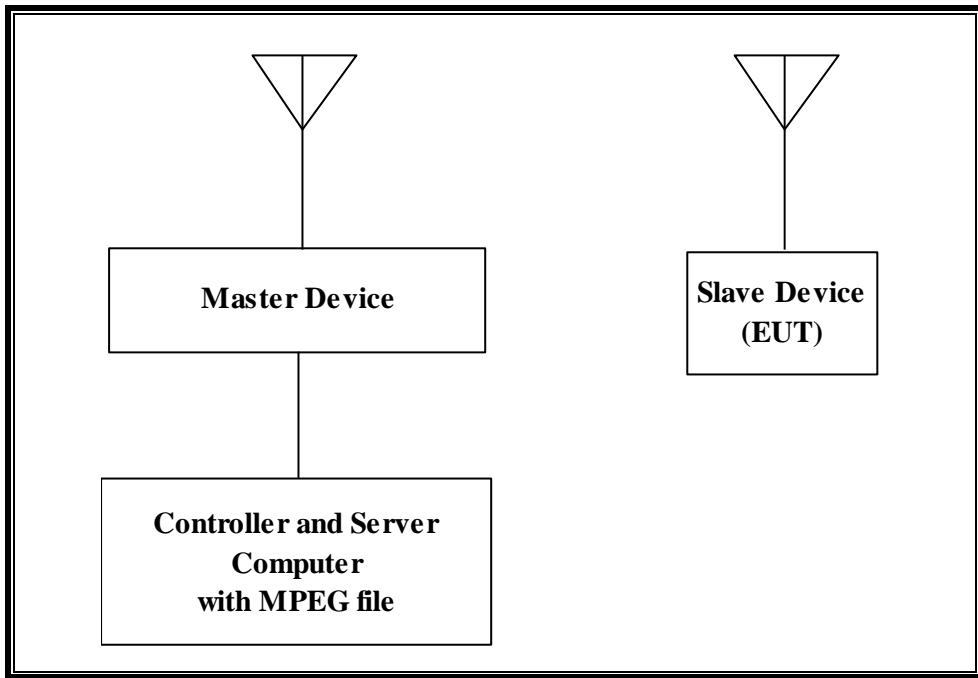
### TEST AND MEASUREMENT EQUIPMENT

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

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
3x3 MIMO Base Station (Master Device)	Apple	A1521	C86PJ60JFJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1278	C02HJ0A7DTY4	DoC
AC Adapter (Controller/Server PC)	Dongguan Samsung Electro Mechanics	A1344	RR008012YAL3A	DoC
Apple TV (Peer Slave Device)	Apple	A1469	C07K202CFFF1	BCGA1469
Video Display	Upstar	240A2	ZH157E000M00318	DoC
AC Adapter (Display)	ShenZhen SOY Technology Co., Ltd.	DC12030013A	No Serial Number	DoC

### 11.1.3. SETUP OF EUT (CLIENT MODE)

#### RADIATED METHOD EUT TEST SETUP



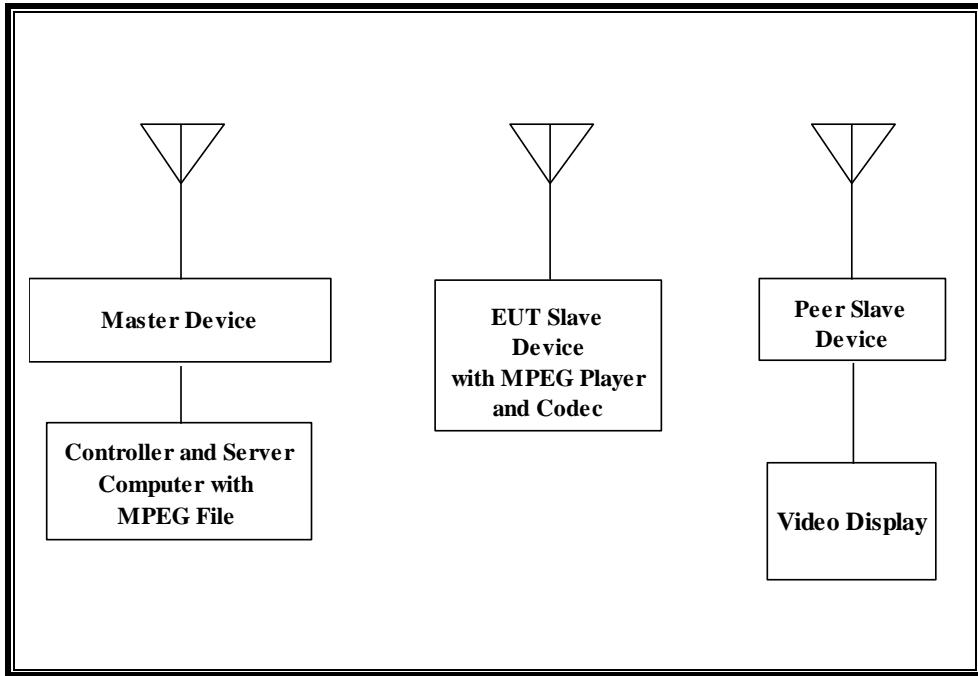
#### SUPPORT EQUIPMENT

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
3x3 MIMO Base Station (Master Device)	Apple	A1521	C86PJ60JFJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1278	C02HJ0A7DTY4	DoC
AC Adapter (Controller/Server PC)	Dongguan Samsung Electro Mechanics	A1344	RR008012YAL3A	DoC

#### 11.1.4. 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
3x3 MIMO Base Station (Master Device)	Apple	A1521	C86PJ60JFJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1278	C02HJ0A7DTY4	DoC
AC Adapter (Controller/Server PC)	Dongguan Samsung Electro Mechanics	A1344	RR008012YAL3A	DoC
Apple TV (Peer Slave Device)	Apple	A1469	C07K202CFFF1	BCGA1469
Video Display	Upstar	240A2	ZH157E000M00318	DoC
AC Adapter (Display)	ShenZhen SOY Technology Co., Ltd.	DC12030013A	No Serial Number	DoC

### 11.1.5. 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 25.14 dBm EIRP in the 5250-5350 MHz band and 27.71 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT is composed of two antennas with respective gains of 3.05 dBi and 3.33 dBi in the 5250-5350 MHz band and 5.00 dBi and 4.57 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 a margin to the limit.

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

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

In standard client mode WLAN traffic that meets or exceeds the minimum required loading was generated by transferring a data stream from the Master Device to the Slave Device using iPerf version 2.0.5 software package.

In client to client mode WLAN traffic is generated by streaming the compressed version of the video test file "6 ½ Magic Hours" from the Master to the Slave and then on to the peer slave device in full motion video mode using QuickTime media player and embedded proprietary AirPlay software.

In Client-to-Client Communications Mode the EUT utilizes the 802.11ac architecture between the EUT and the Master Device 2 where three nominal channel bandwidths are implemented: 20 MHz, 40 MHz and 80 MHz. However, 802.11a/n architecture is utilized between the EUT and the Peer Slave Device in Client-to Client Communications Mode where only two nominal channel bandwidths are implemented: 20 MHz and 40 MHz. Therefore, pursuant to FCC KDB Publication 848637, "Client devices with 80 MHz BW mode can be tested with an approved master operating in 40 MHz BW mode". Therefore, 80MHz BW DFS testing in Client-to-Client Communications Mode was not performed and has been excluded from this report.

The software installed in the EUT is version 10.11.3.

### UNIFORM CHANNEL SPREADING

This function is not applicable to slave devices.

**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 > 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 software installed in the access point is 7.7.2d0 dev.

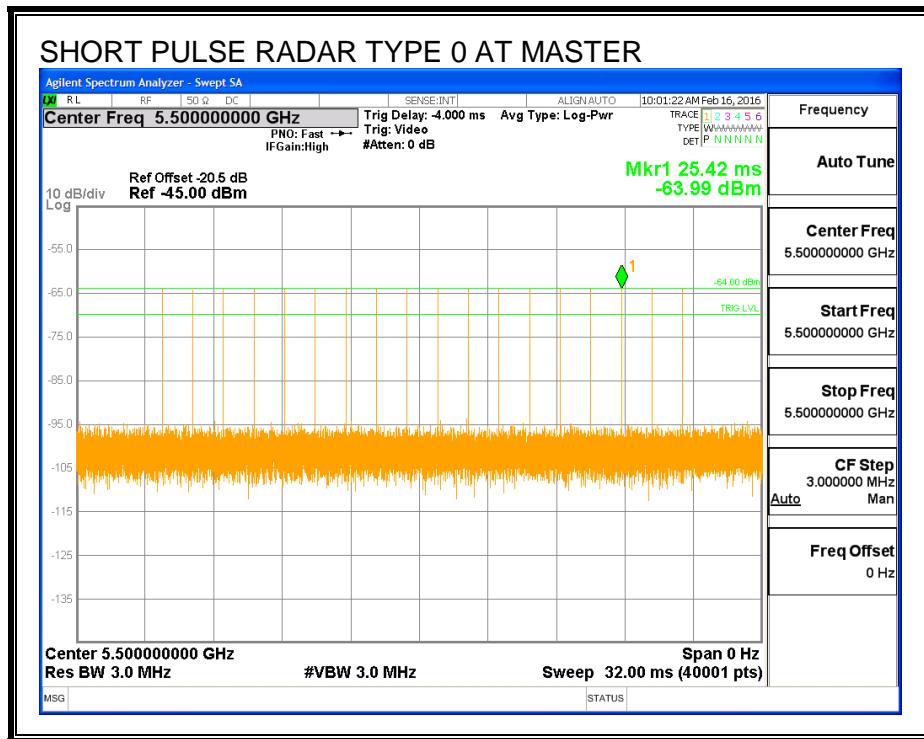
## 11.2. CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH

### 11.2.1. TEST CHANNEL

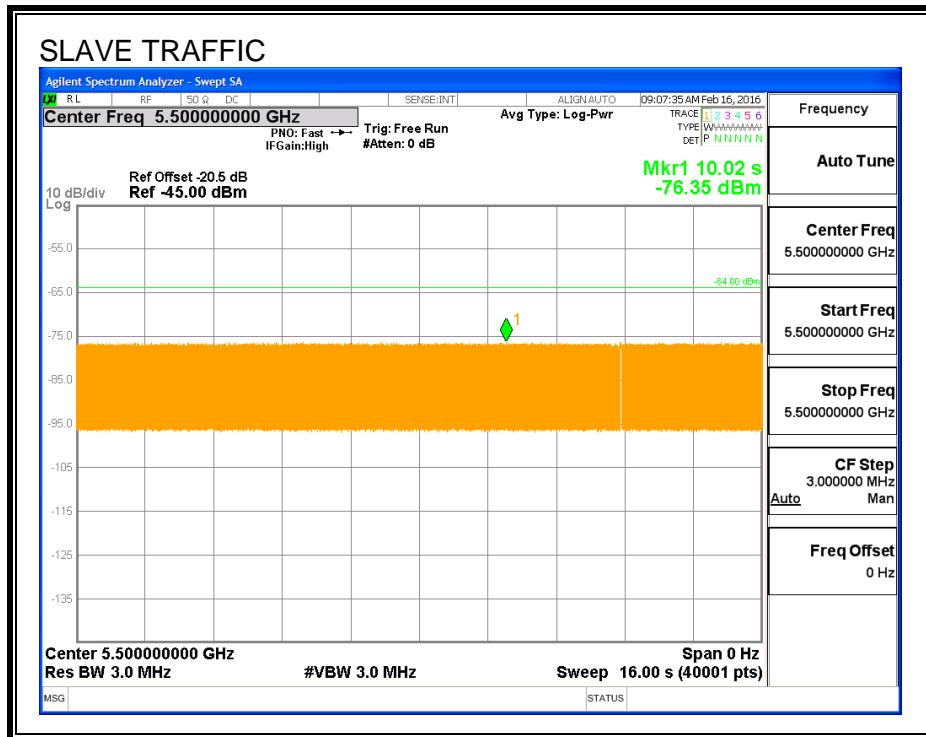
All tests were performed at a channel center frequency of 5500 MHz.

### 11.2.2. RADAR WAVEFORM AND TRAFFIC

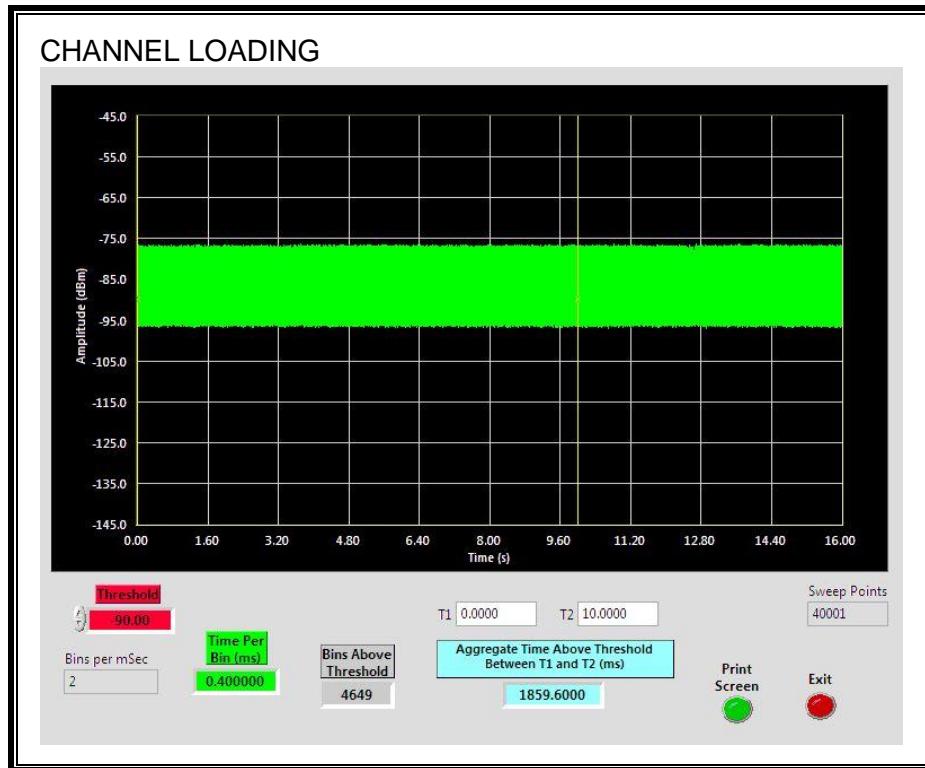
#### RADAR WAVEFORM



## TRAFFIC



## CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 18.59%

### 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)

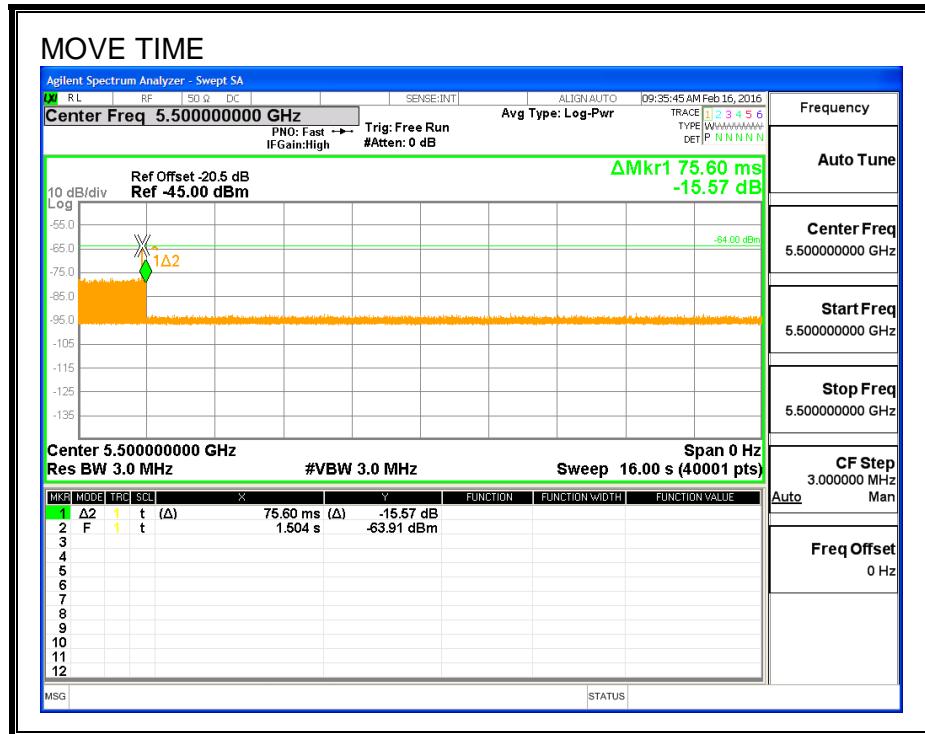
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### RESULTS

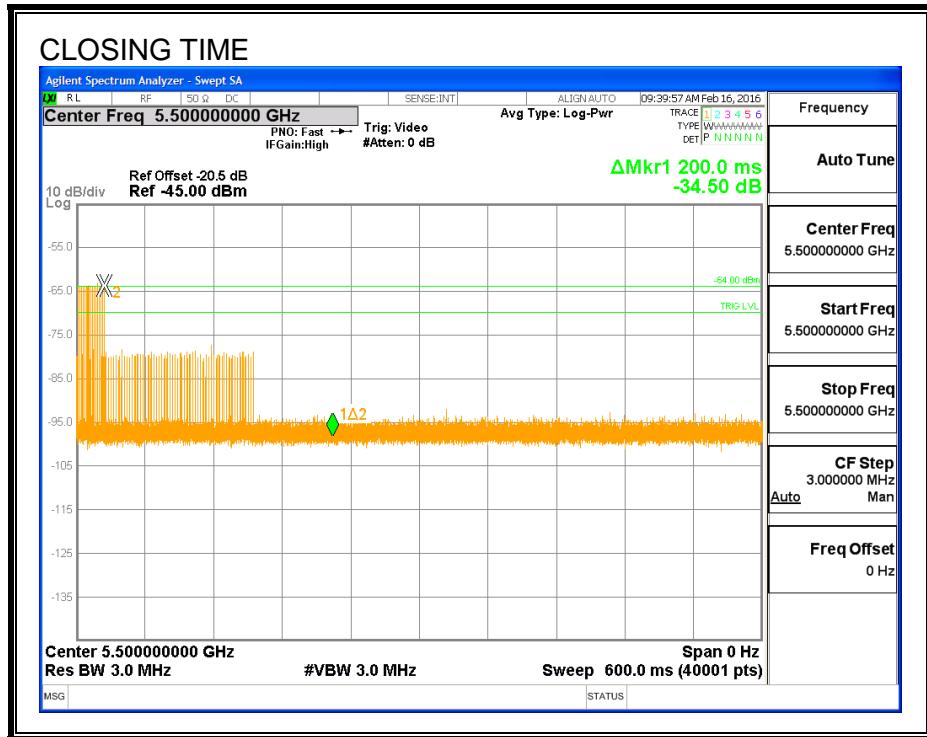
Channel Move Time (sec)	Limit (sec)
0.0756	10

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

**MOVE TIME**

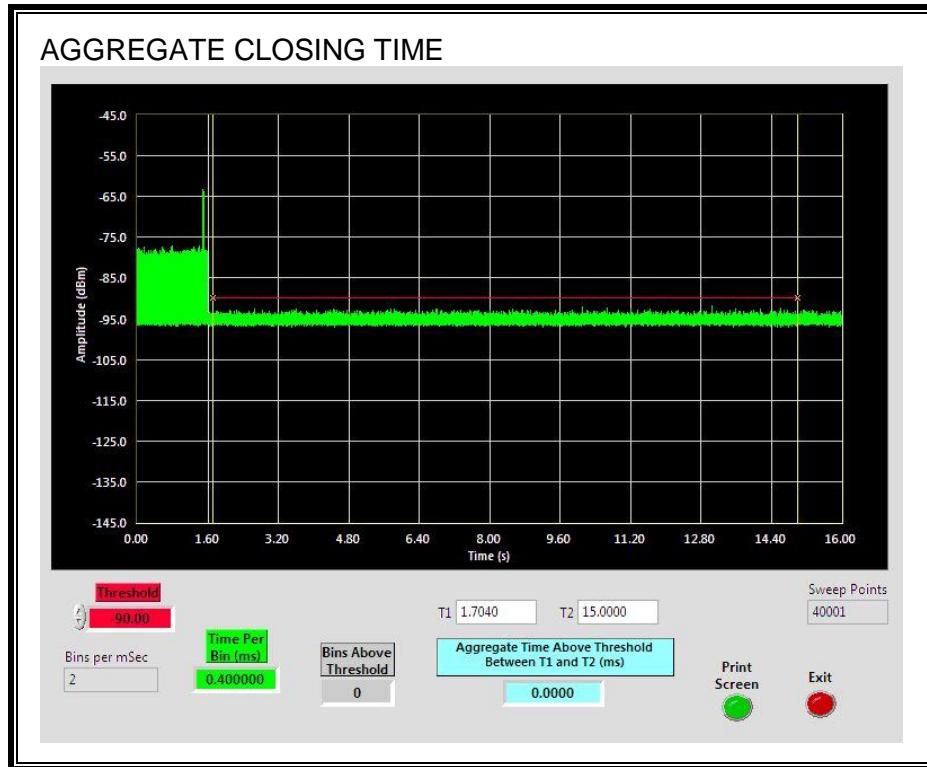


**CHANNEL CLOSING TIME**



### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



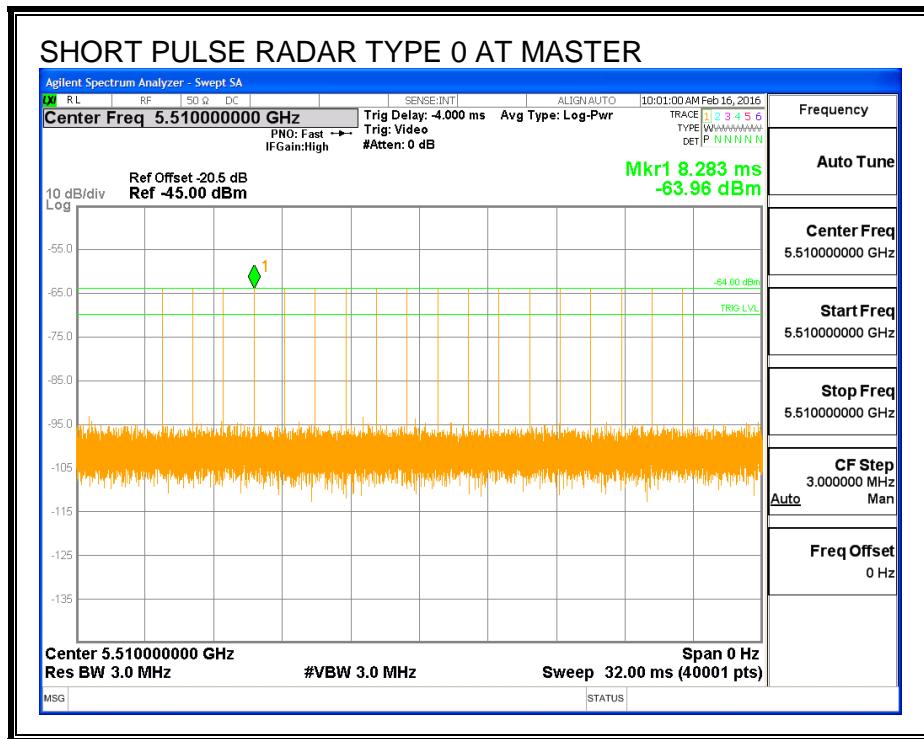
## 11.3. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH

### 11.3.1. TEST CHANNEL

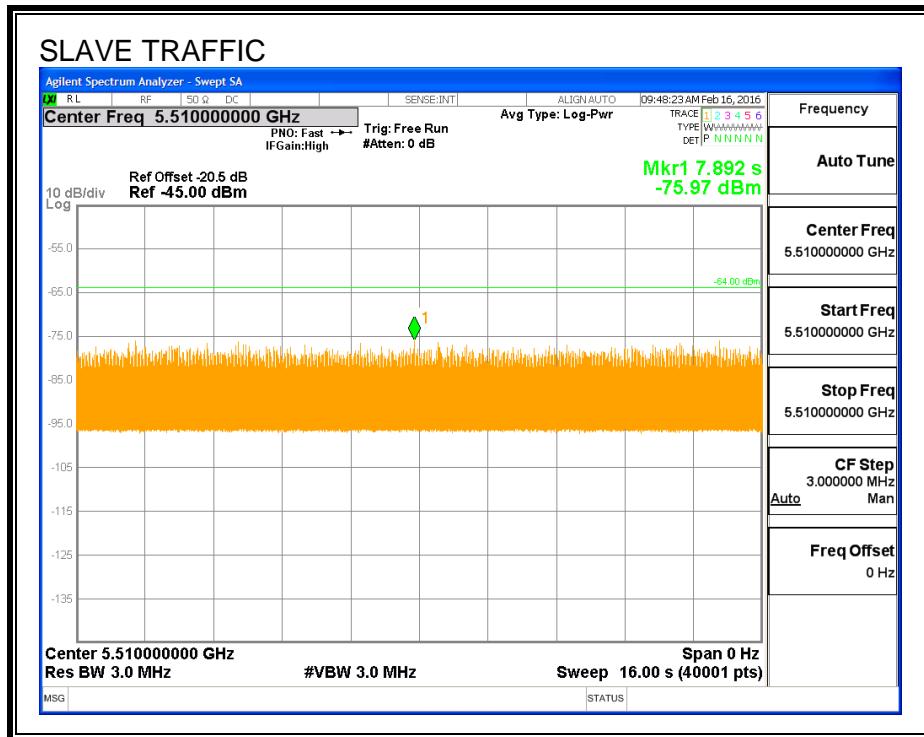
All tests were performed at a channel center frequency of 5510 MHz.

### 11.3.2. RADAR WAVEFORM AND TRAFFIC

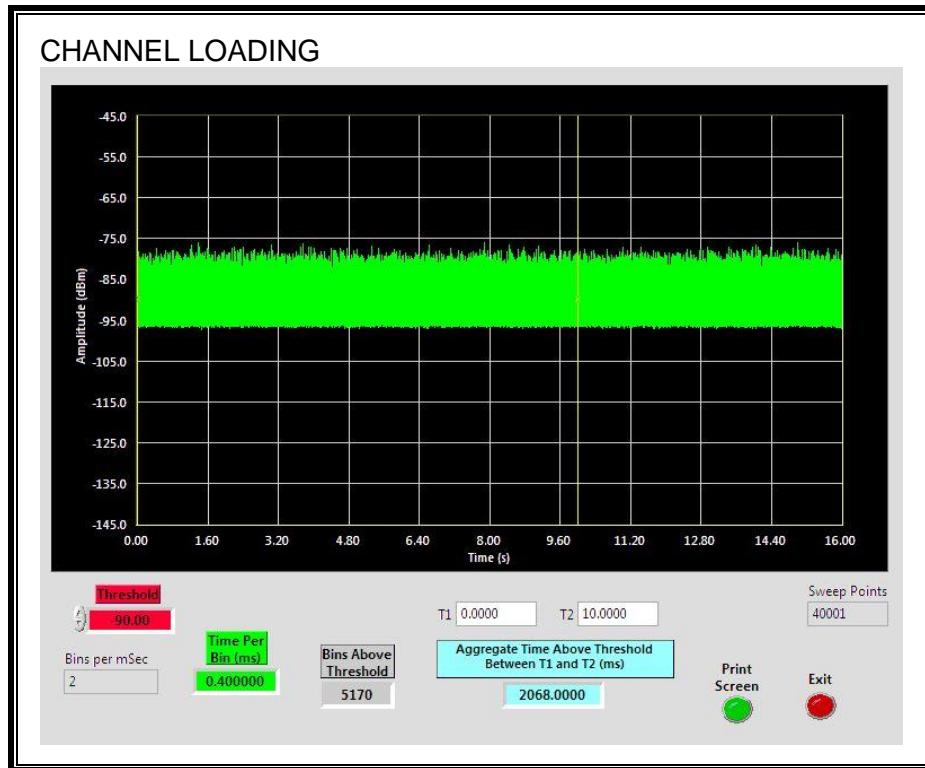
#### RADAR WAVEFORM



## TRAFFIC



## CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 20.68%

### 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)

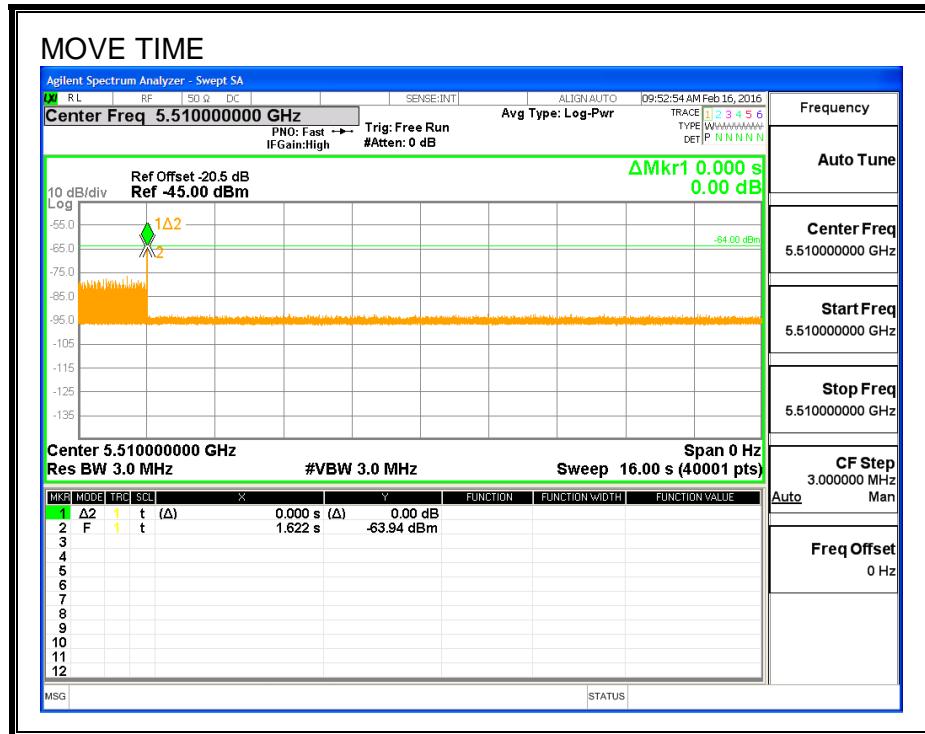
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### RESULTS

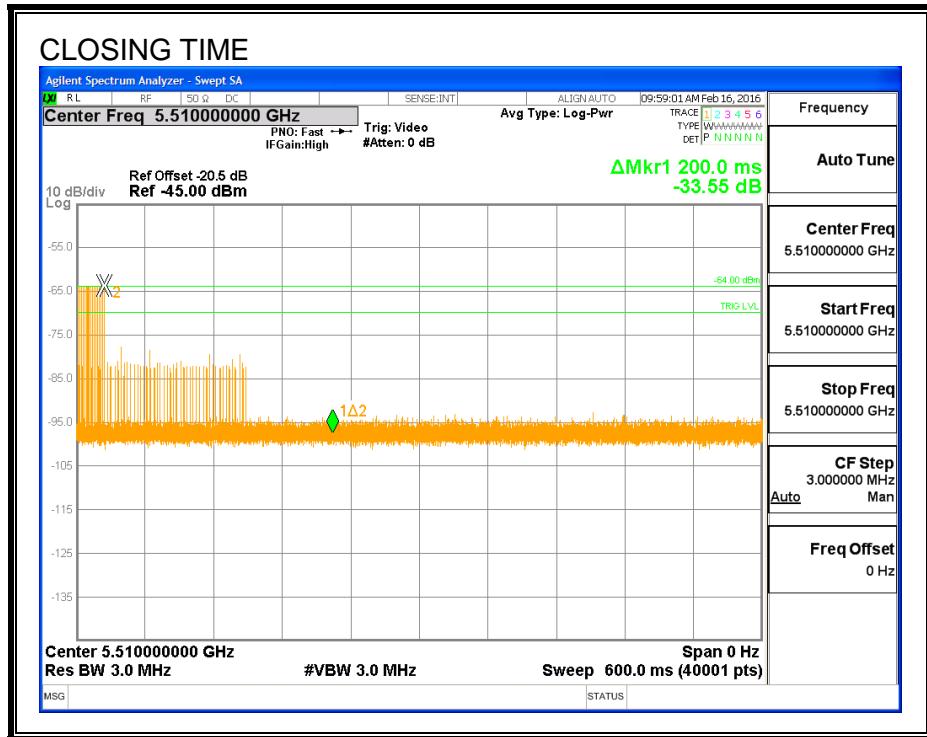
Channel Move Time (sec)	Limit (sec)
0.000	10

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.



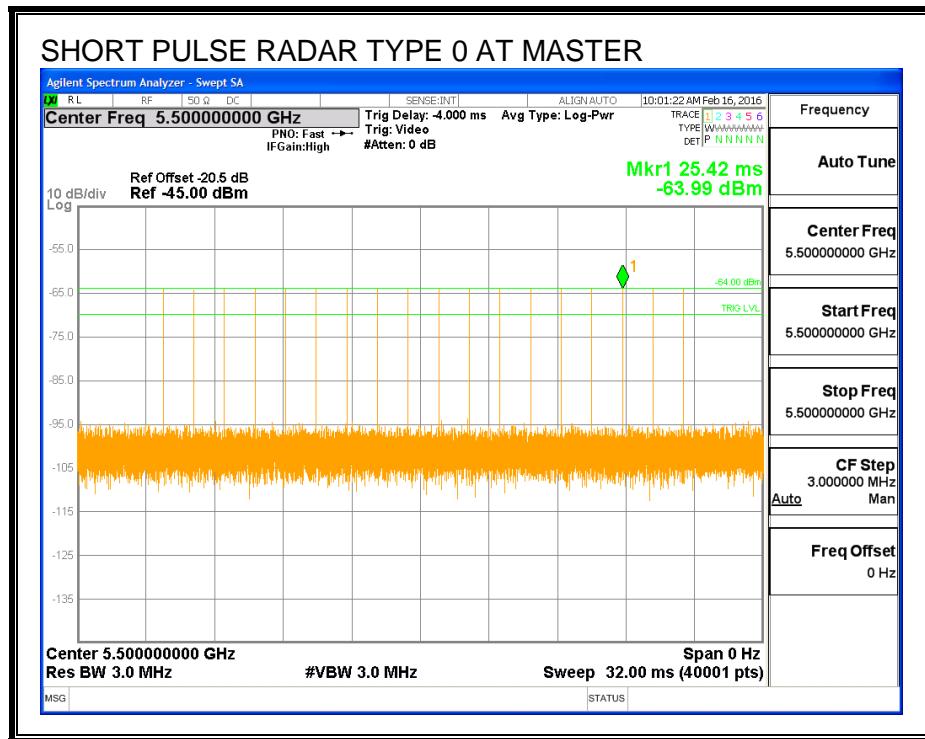
## 11.4. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 20 MHz BANDWIDTH

### 11.4.1. TEST CHANNEL

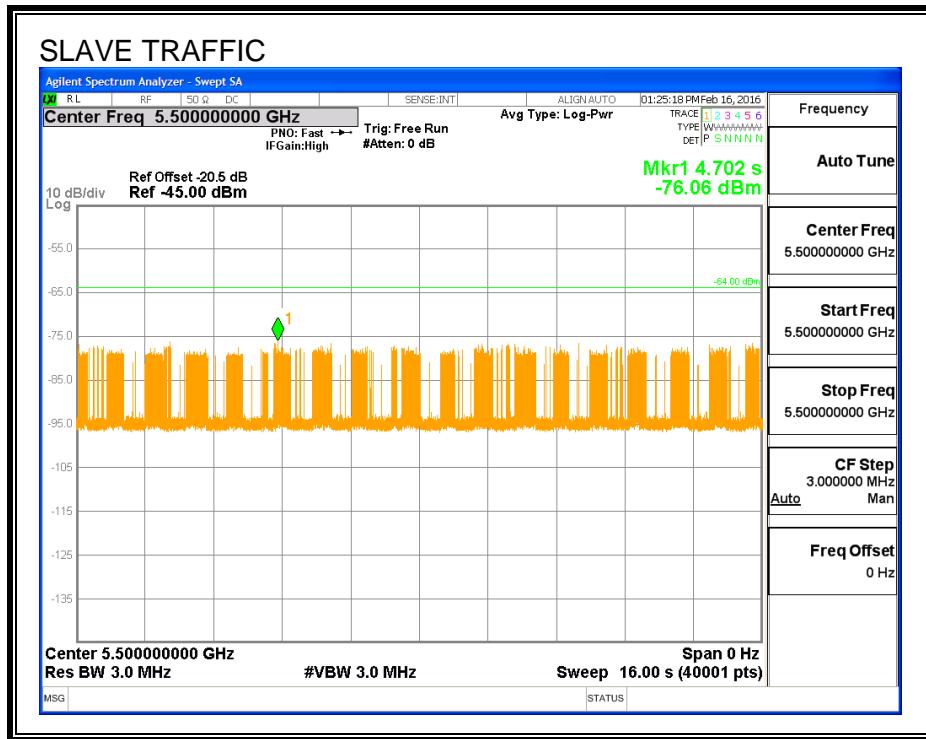
All tests were performed at a channel center frequency of 5500 MHz.

### 11.4.2. RADAR WAVEFORM AND TRAFFIC

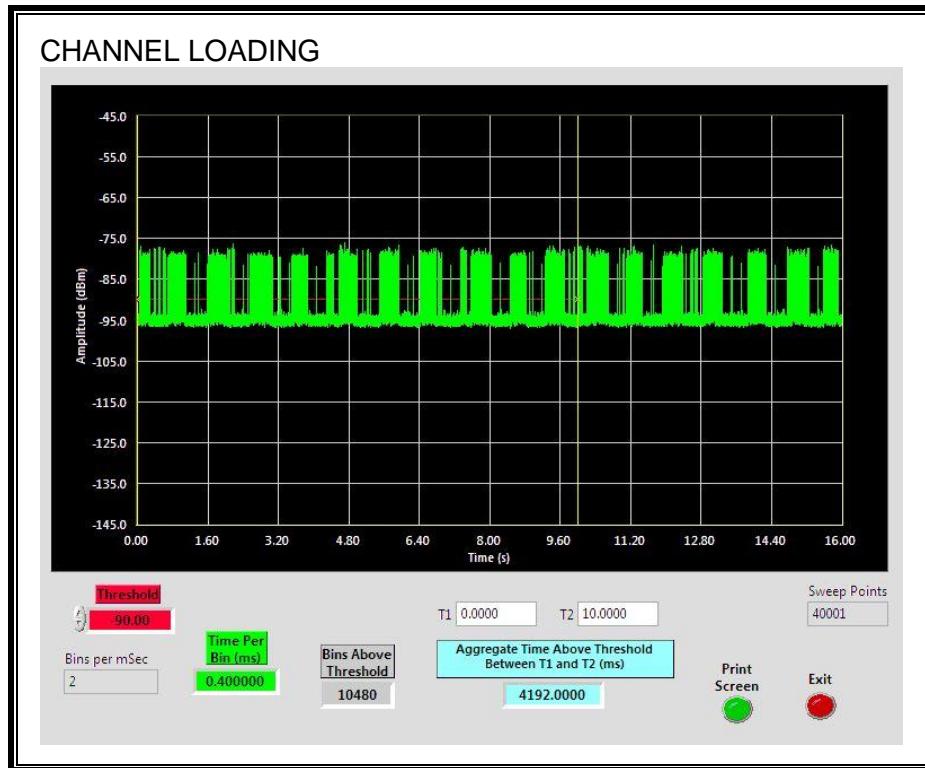
#### RADAR WAVEFORM



## TRAFFIC



## CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 41.92%

### 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)

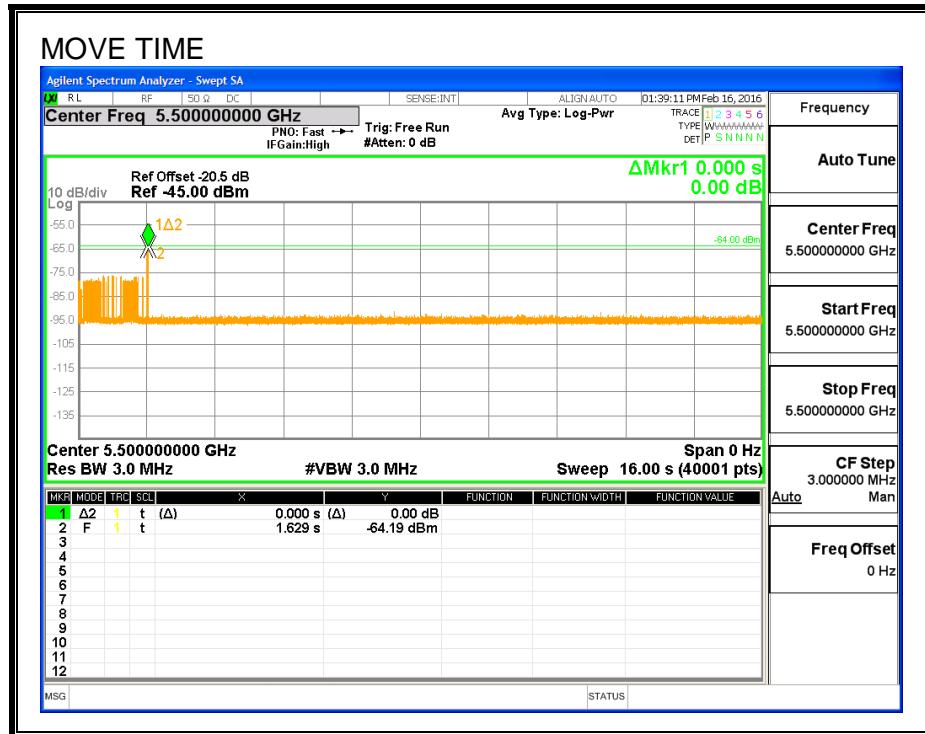
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### RESULTS

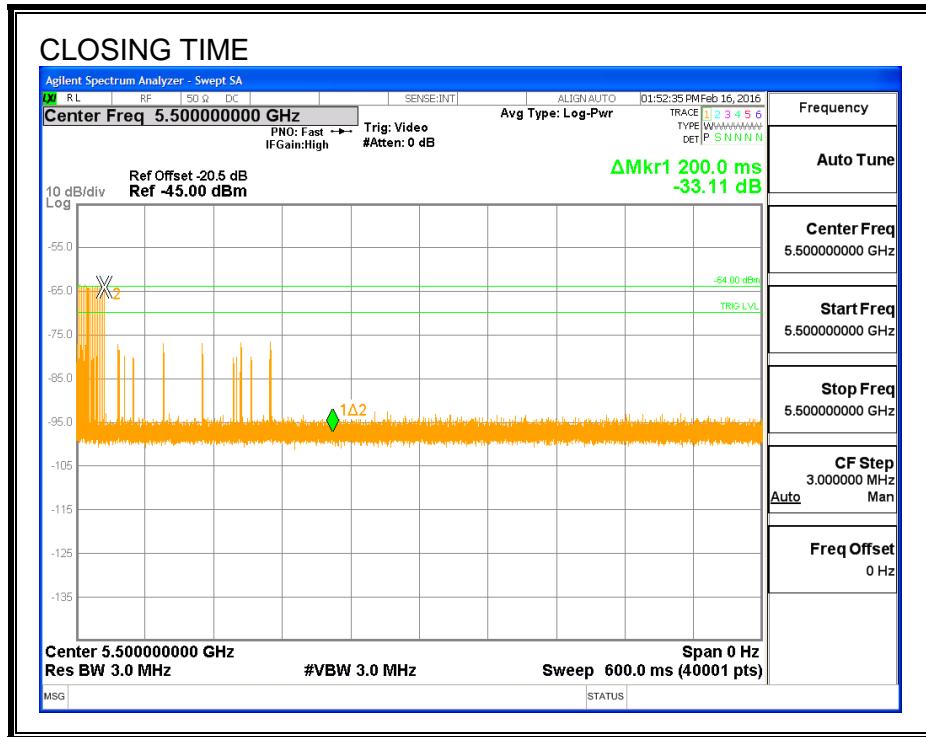
Channel Move Time (sec)	Limit (sec)
0.000	10

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

**MOVE TIME**

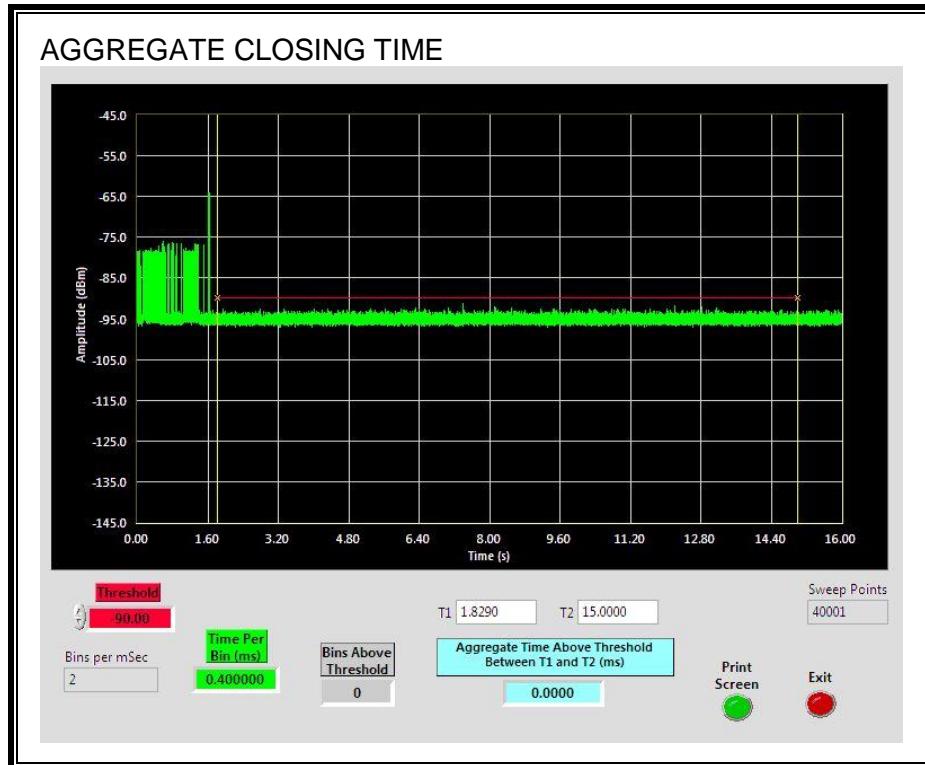


**CHANNEL CLOSING TIME**



### AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



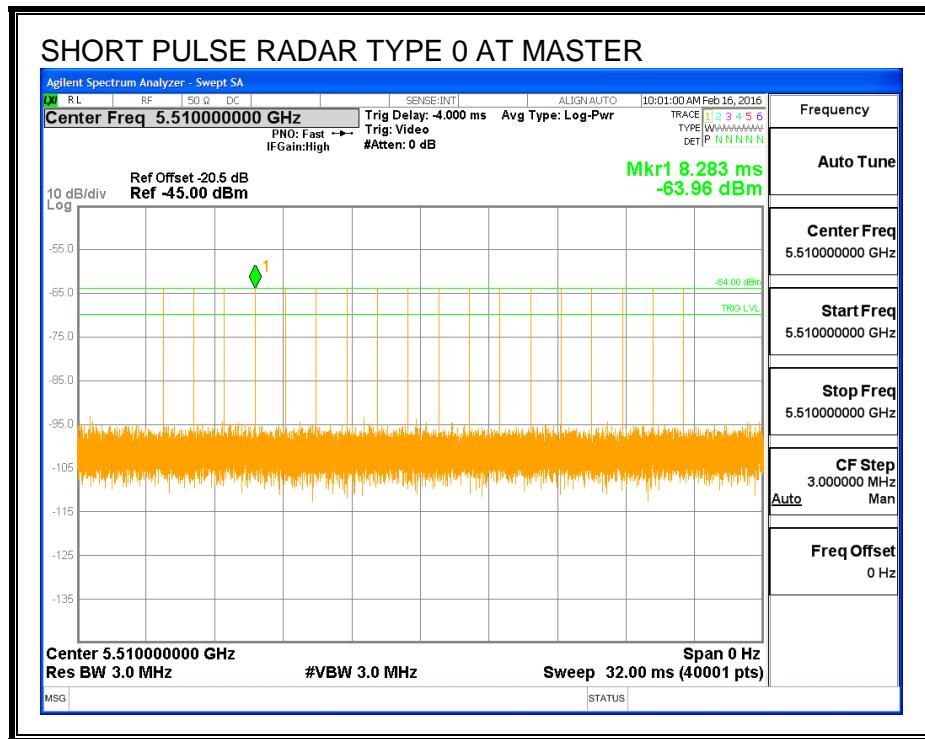
## 11.5. CLIENT-TO-CLIENT COMMUNICATIONS MODE RESULTS FOR 40 MHz BANDWIDTH

### 11.5.1. TEST CHANNEL

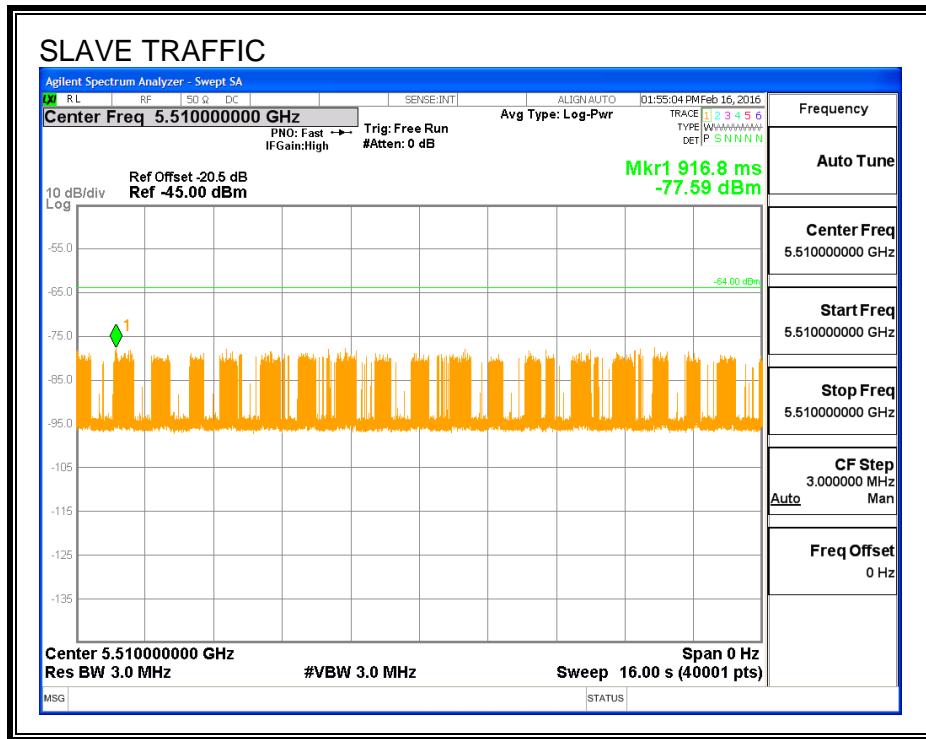
All tests were performed at a channel center frequency of 5510 MHz.

### 11.5.2. RADAR WAVEFORM AND TRAFFIC

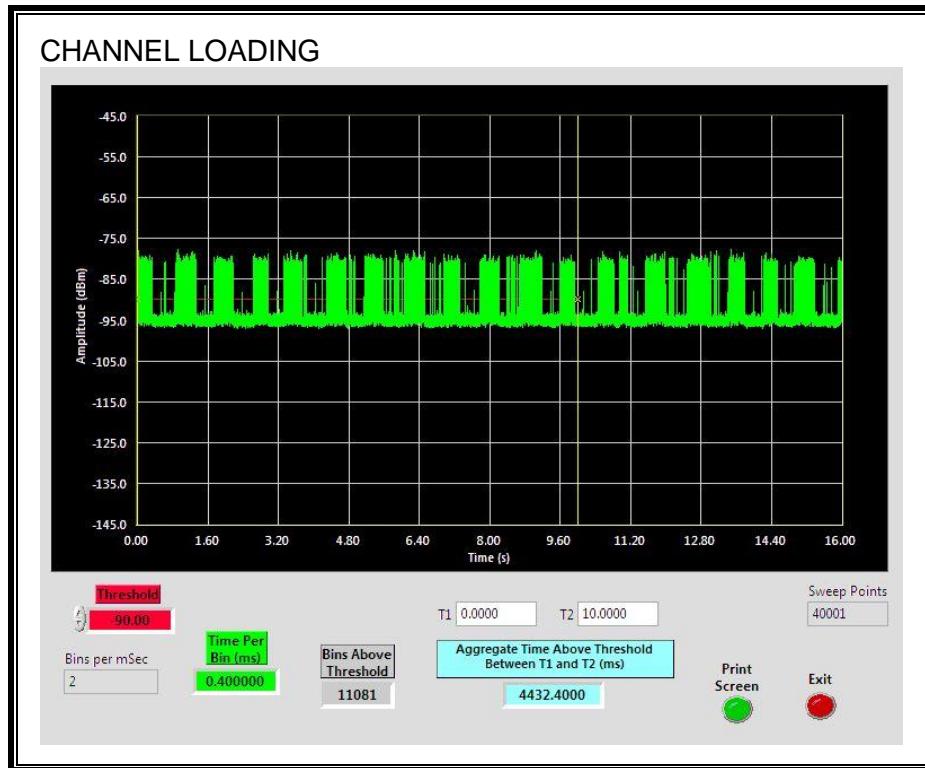
#### RADAR WAVEFORM



## TRAFFIC



## CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 44.32%

### 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)

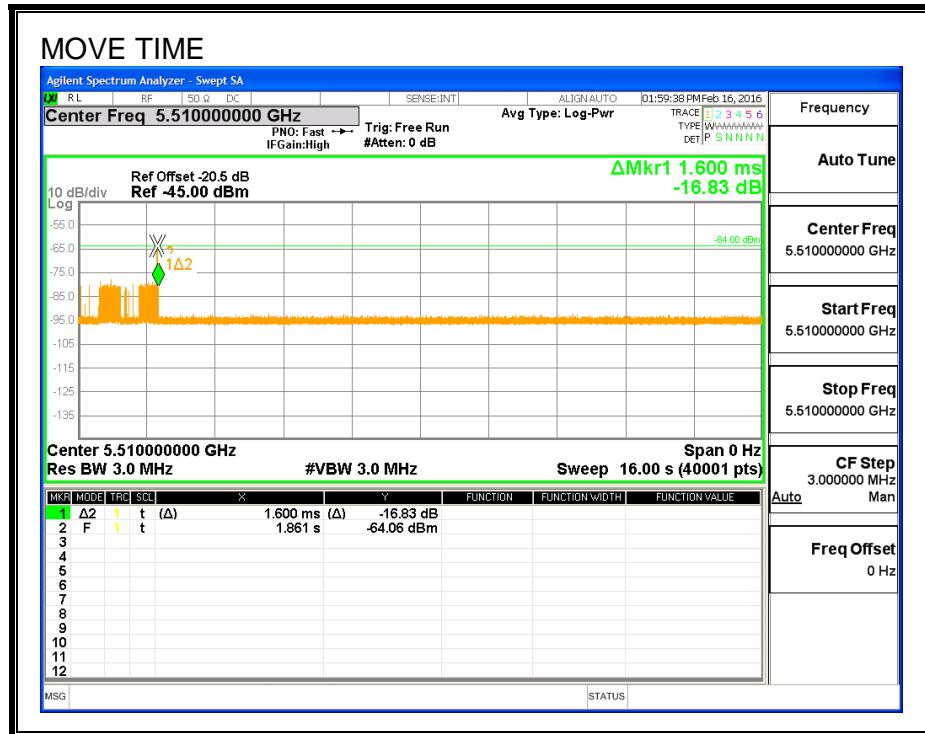
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

#### RESULTS

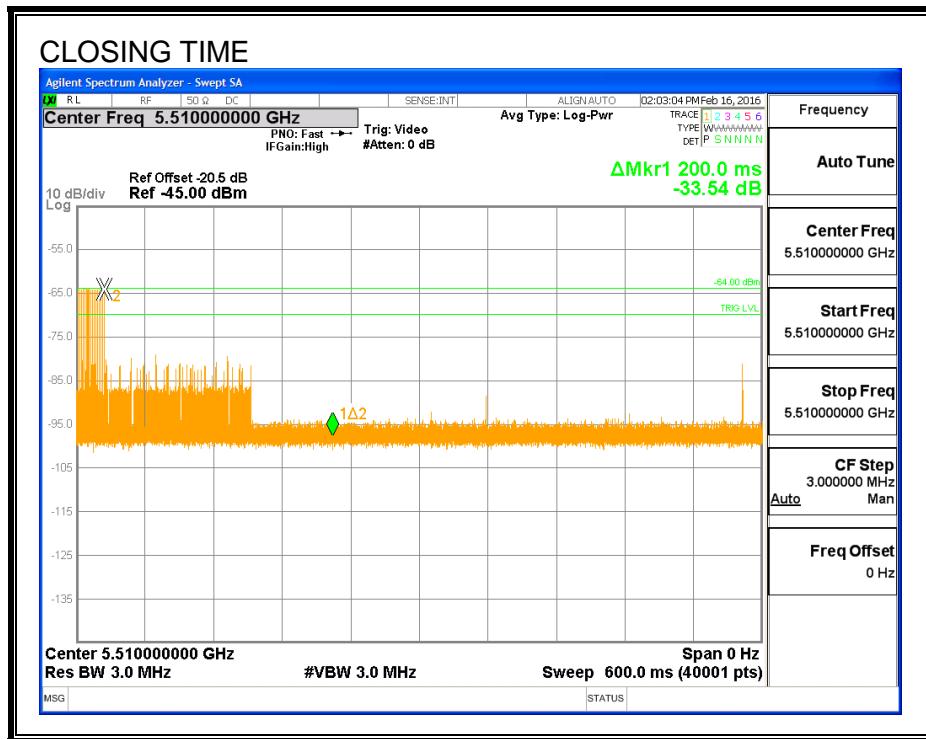
Channel Move Time (sec)	Limit (sec)
0.0016	10

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.



### 11.5.5. 10-MINUTE CLIENT Tx MONITORING PERIOD

## **RESULTS**

No EUT transmissions were observed on the test channel during the 10-minute observation time.

