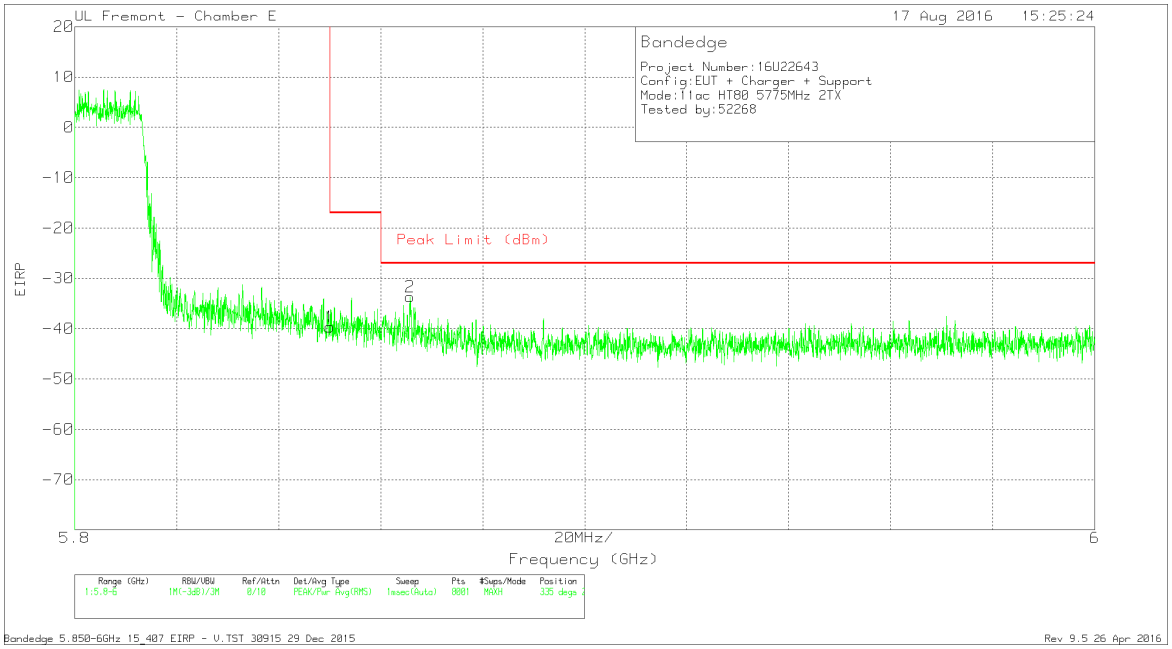
HIGH CHANNEL VERTICAL PLOT



DATA

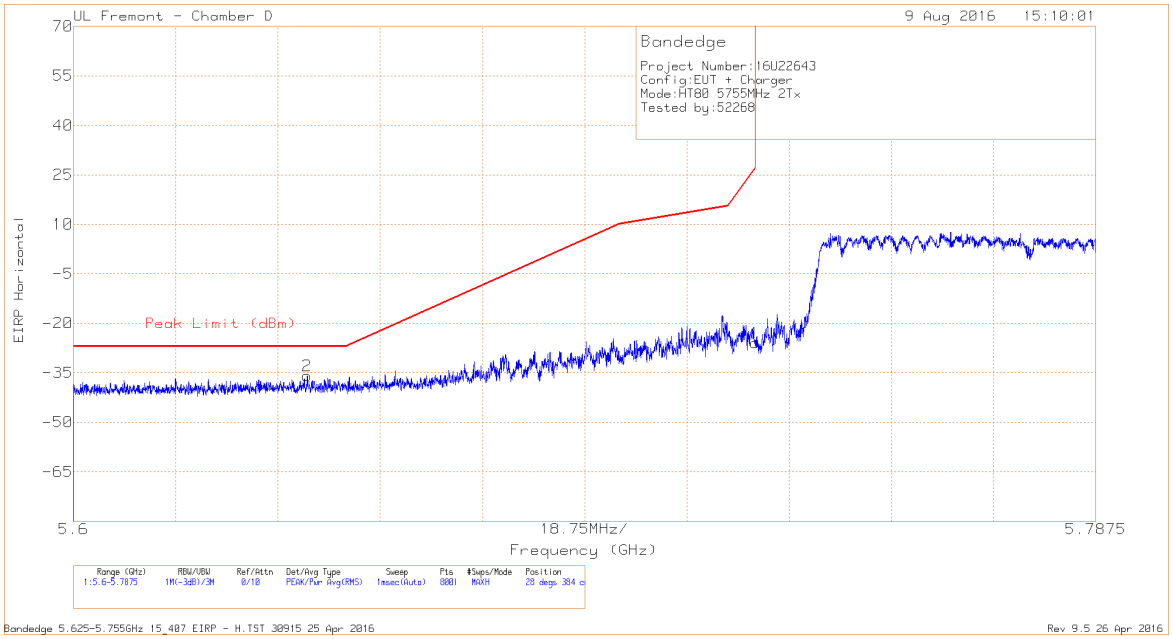
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.05	Pk	34.9	-20.3	11.8	0	-39.65	-17	-22.65	335	201	V
2	5.866	-59.96	Pk	34.9	-20.4	11.8	0	-33.66	-27	-6.66	335	201	V

Pk - Peak detector

8.158. 802.11ac VHT80 2Tx (CHAIN 1 + CHAIN 2) CDD MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL) (FCC)

LOW CHANNEL HORIZONTAL PLOT

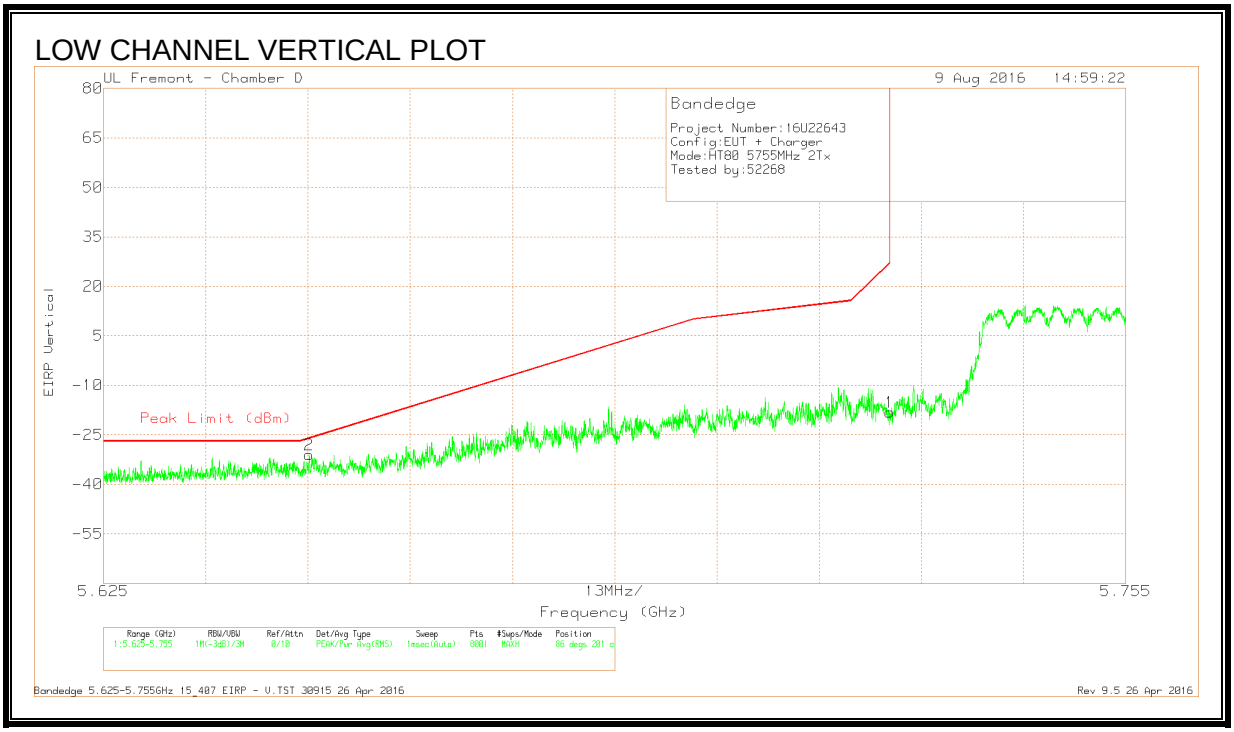


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	5.643	-64.89	Pk	34.6	-17.4	11.8	-35.89	-27	-8.89	28	384	H
1	5.725	-55.28	Pk	34.8	-17.3	11.8	-25.98	26.99	-52.97	28	384	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



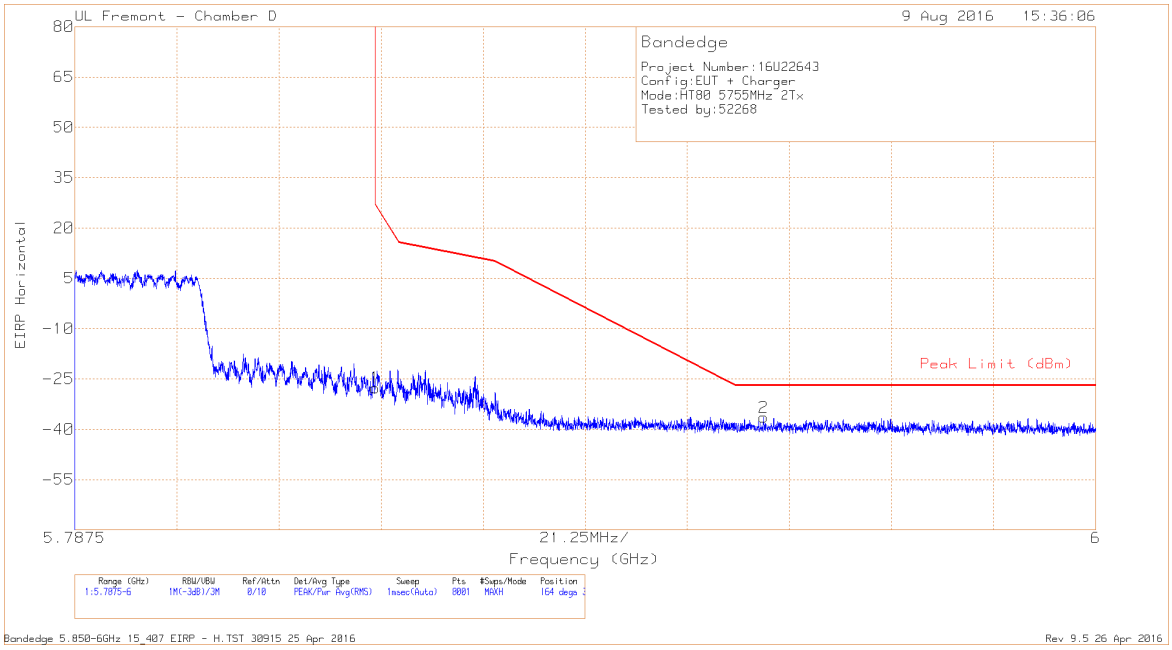
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	5.651	-60.13	Pk	34.6	-17.3	11.8	-31.03	-26.15	-4.88	86	201	V
1	5.725	-47.37	Pk	34.8	-17.3	11.8	-18.07	26.97	-45.04	86	201	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (FCC)

HIGH CHANNEL HORIZONTAL PLOT

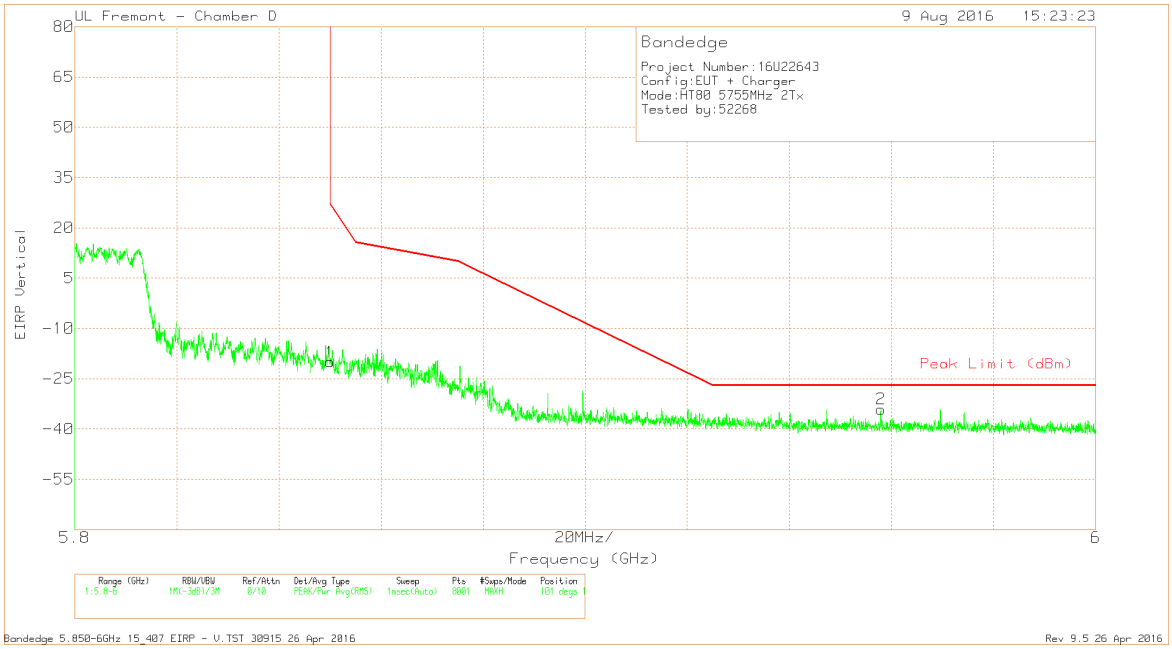


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	-57.08	Pk	34.9	-17.3	11.8	-27.68	26.99	-54.67	164	353	H
2	5.931	-66.11	Pk	35	-17.1	11.8	-36.41	-27	-9.41	164	353	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



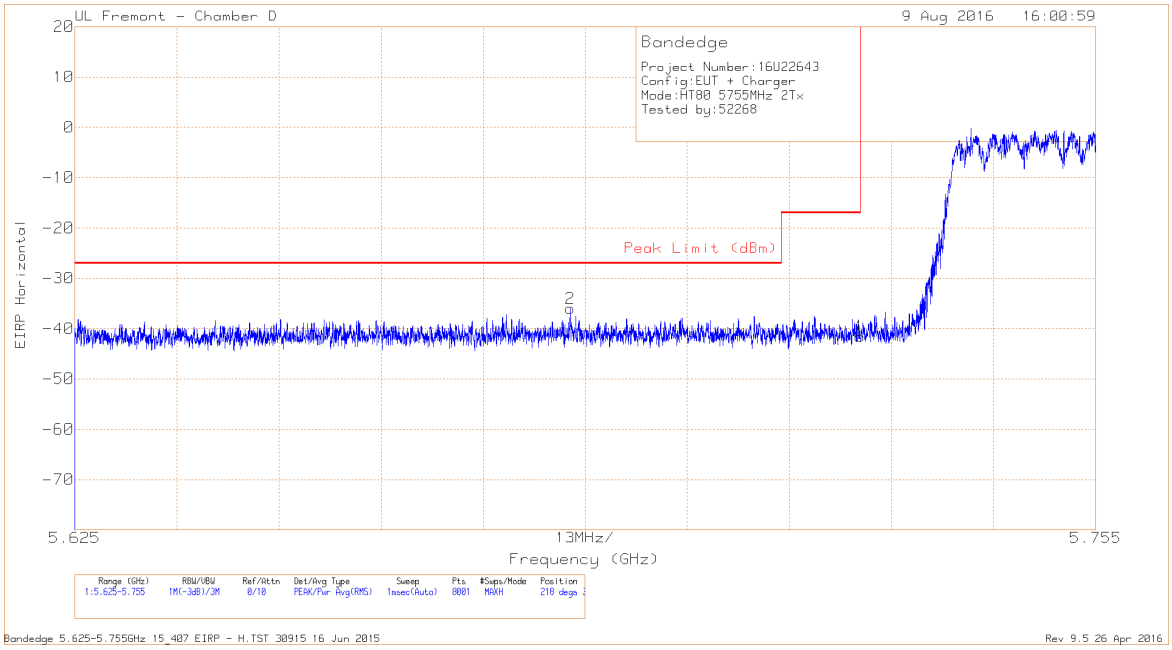
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	-49.43	Pk	34.9	-17.3	11.8	-20.03	26.94	-46.97	101	196	V
2	5.958	-63.67	Pk	35	-17.2	11.8	-34.07	-27	-7.07	101	196	V

Pk - Peak detector

RESTRICTED BANDEDGE (LOW CHANNEL) (IC)

LOW CHANNEL HORIZONTAL PLOT

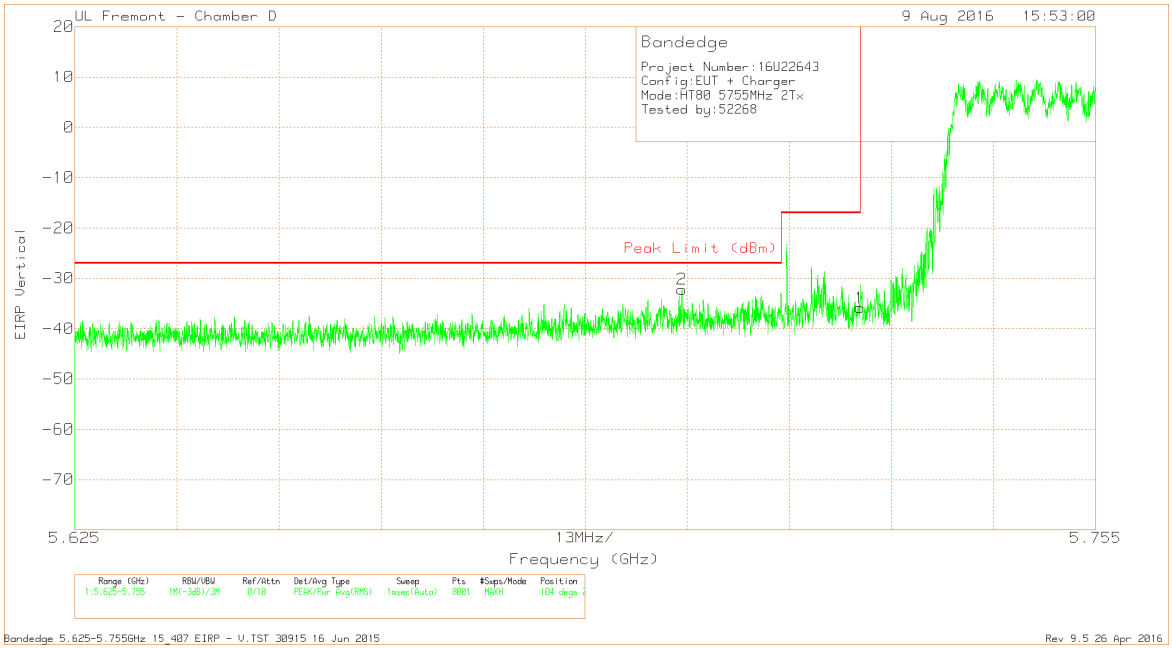


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	5.688	-65.28	Pk	34.7	-17.2	11.8	-35.98	-27	-8.98	218	397	H
1	5.725	-70.82	Pk	34.8	-17.3	11.8	-41.52	-17	-24.52	218	397	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



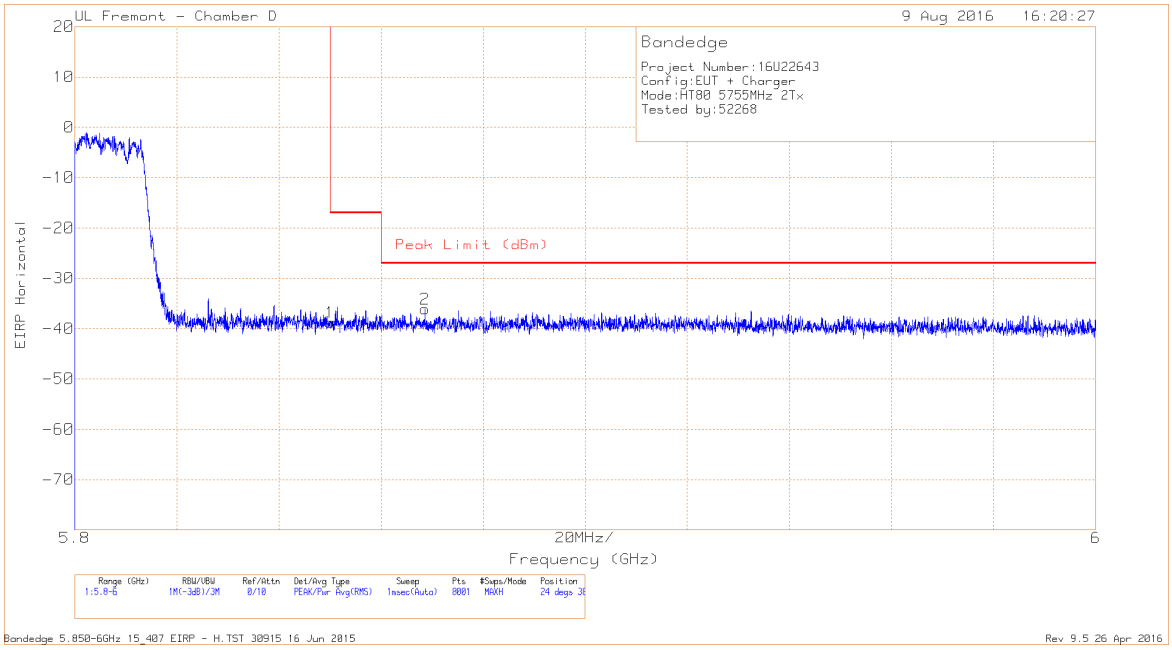
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	5.702	-61.68	Pk	34.8	-17.1	11.8	-32.18	-27	-5.18	104	202	V
1	5.725	-65.15	Pk	34.8	-17.3	11.8	-35.85	-17	-18.85	104	202	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (IC)

HIGH CHANNEL HORIZONTAL PLOT

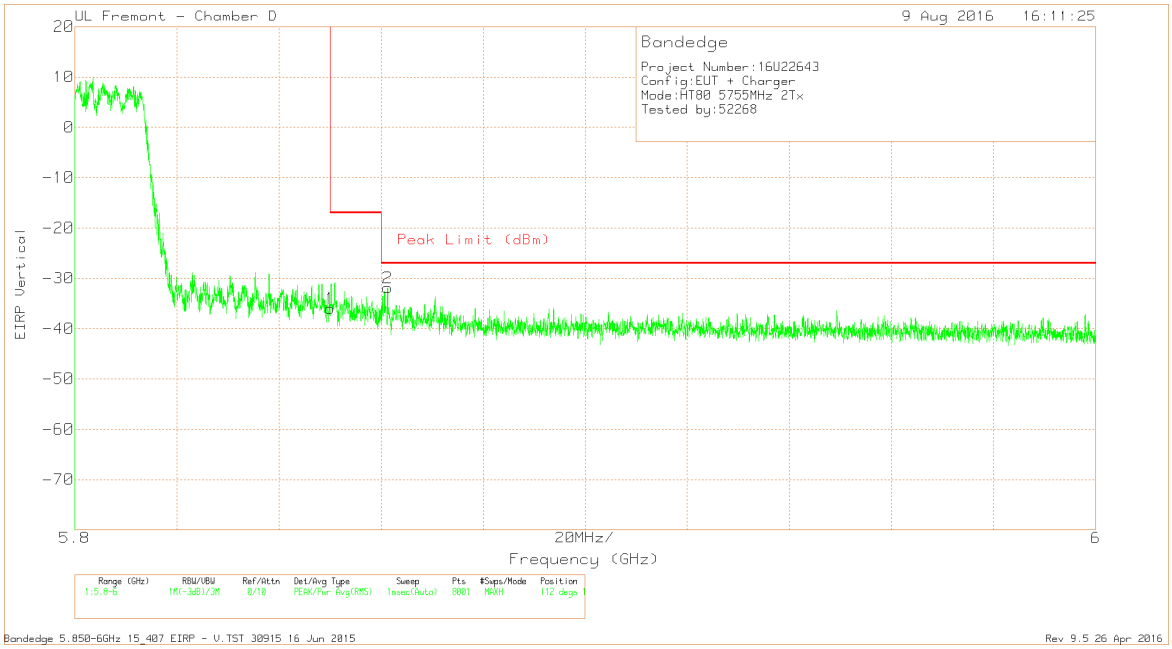


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	-68.17	Pk	34.9	-17.3	11.8	-38.77	-17	-21.77	24	381	H
2	5.869	-65.59	Pk	34.9	-17.2	11.8	-36.09	-27	-9.09	24	381	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



DATA

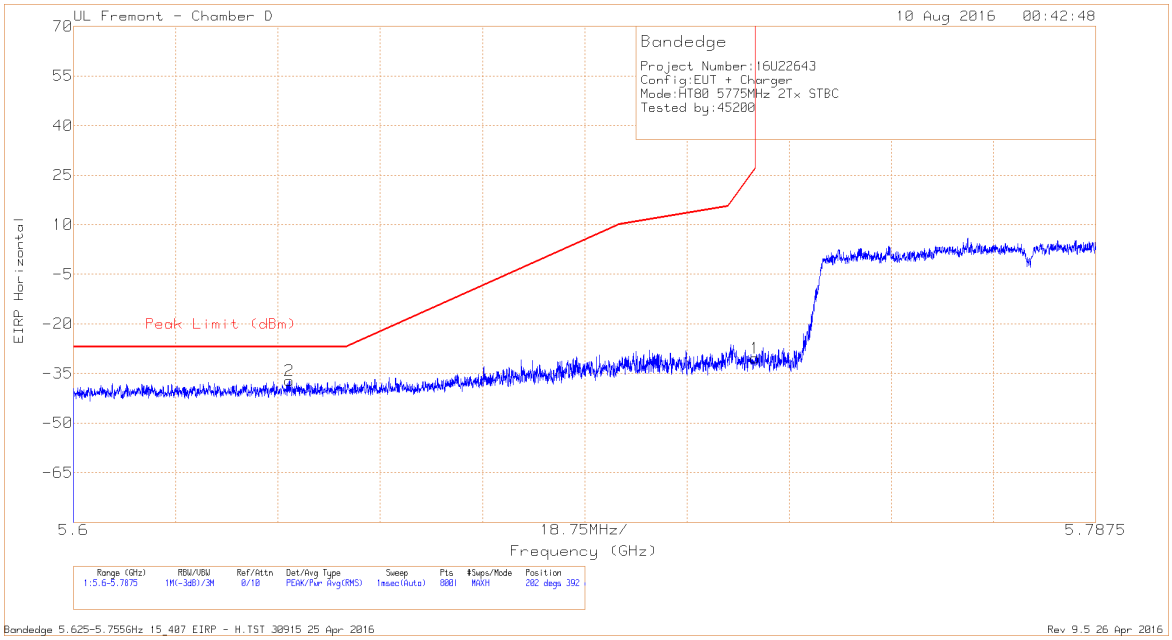
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.36	Pk	34.9	-17.3	11.8	-35.96	-17	-18.96	112	194	V
2	5.861	-61.28	Pk	34.9	-17.3	11.8	-31.88	-27	-4.88	112	194	V

Pk - Peak detector

8.159. 802.11ac VHT80 2Tx (CHAIN 1 + CHAIN 2) STBC MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL) (FCC)

LOW CHANNEL HORIZONTAL PLOT

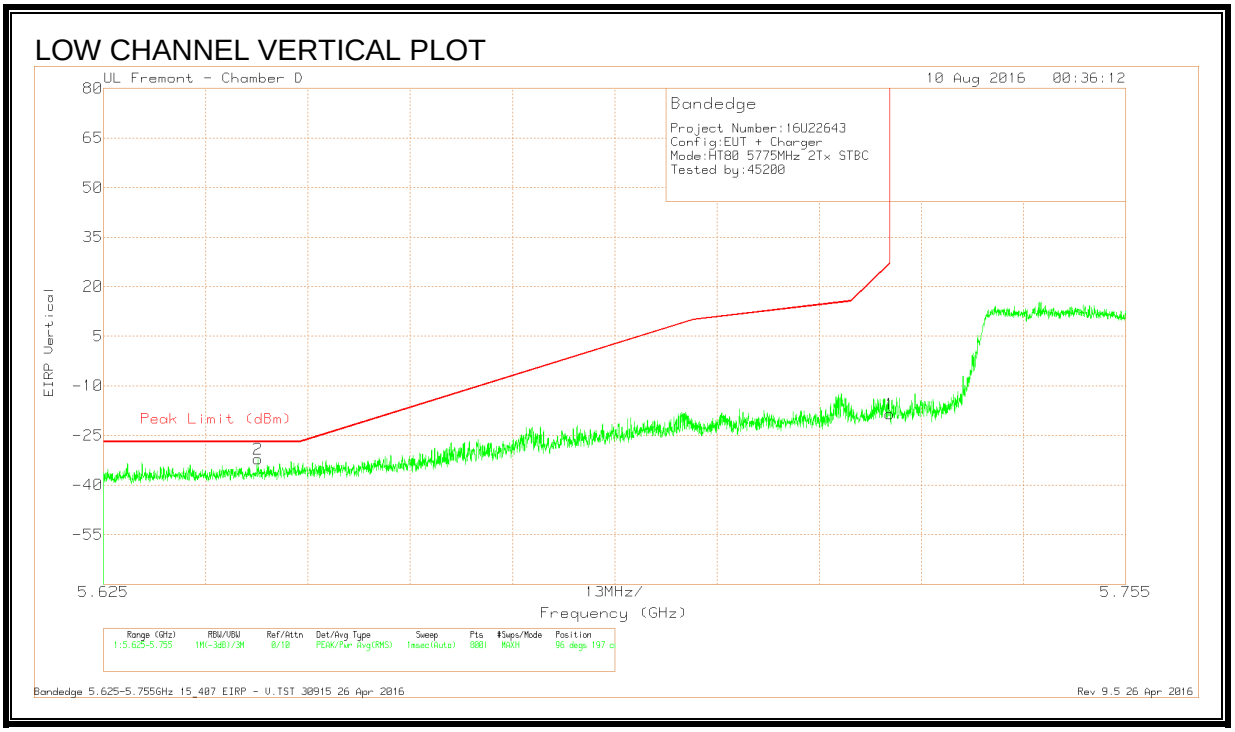


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	5.64	-66.23	Pk	34.6	-17.4	11.8	-37.23	-27	-10.23	202	392	H
1	5.725	-59.67	Pk	34.8	-17.3	11.8	-30.37	26.99	-57.36	202	392	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



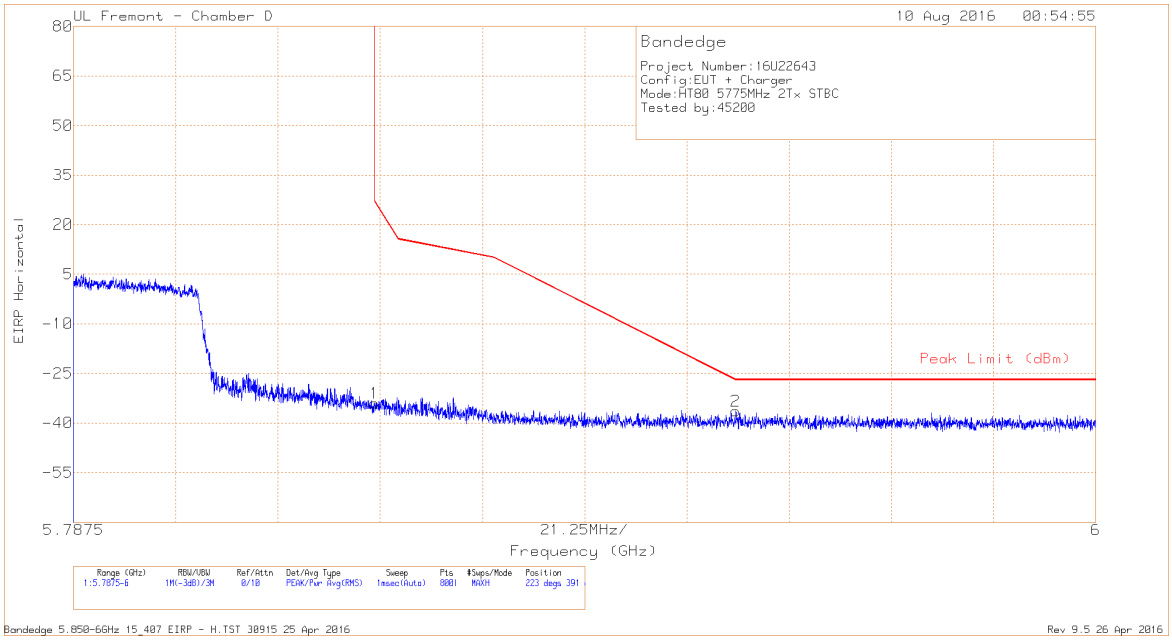
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	5.645	-61.14	Pk	34.6	-17.4	11.8	-32.14	-27	-5.14	96	197	V
1	5.725	-47.74	Pk	34.8	-17.3	11.8	-18.44	26.97	-45.41	96	197	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (FCC)

HIGH CHANNEL HORIZONTAL PLOT

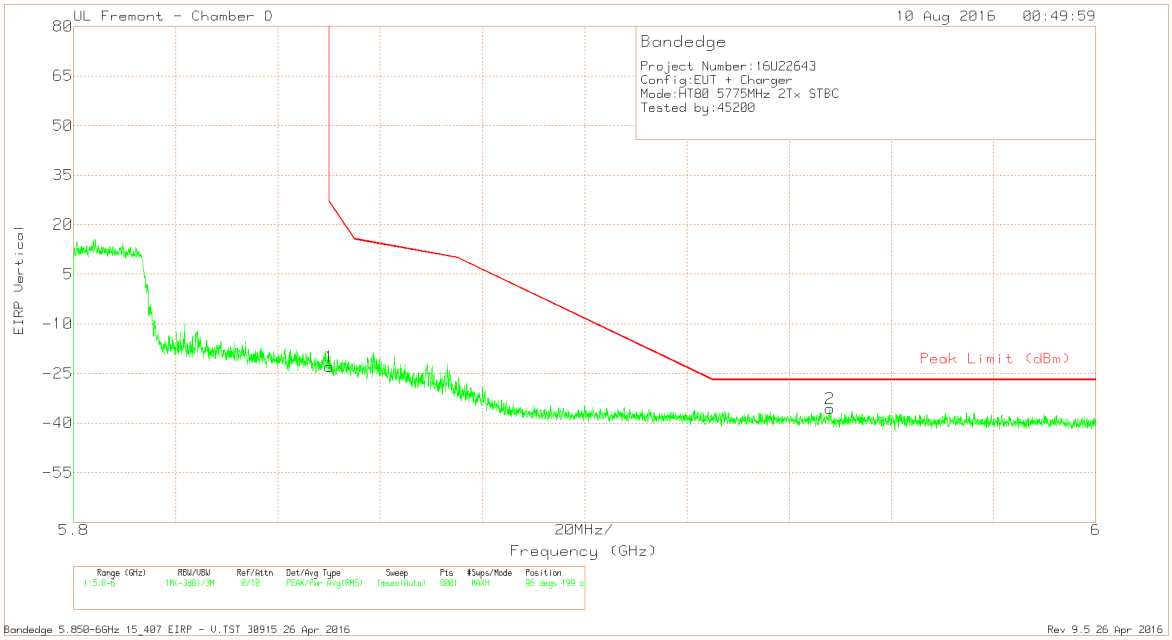


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	-63.44	Pk	34.9	-17.3	11.8	-34.04	26.99	-61.03	223	391	H
2	5.925	-66.02	Pk	35	-17.1	11.8	-36.32	-27	-9.32	223	391	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT

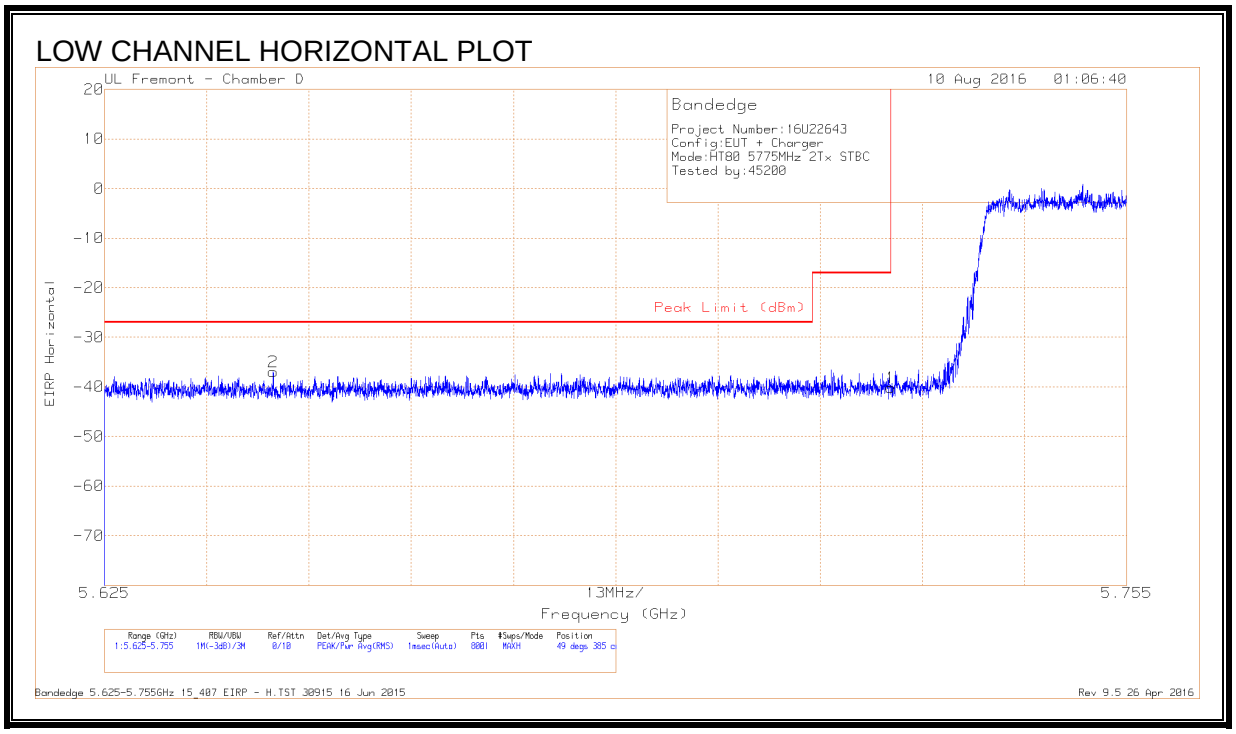


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	-52.33	Pk	34.9	-17.3	11.8	-22.93	26.94	-49.87	96	199	V
2	5.948	-65.35	Pk	35	-17.1	11.8	-35.65	-27	-8.65	96	199	V

Pk - Peak detector

RESTRICTED BANDEDGE (LOW CHANNEL) (IC)

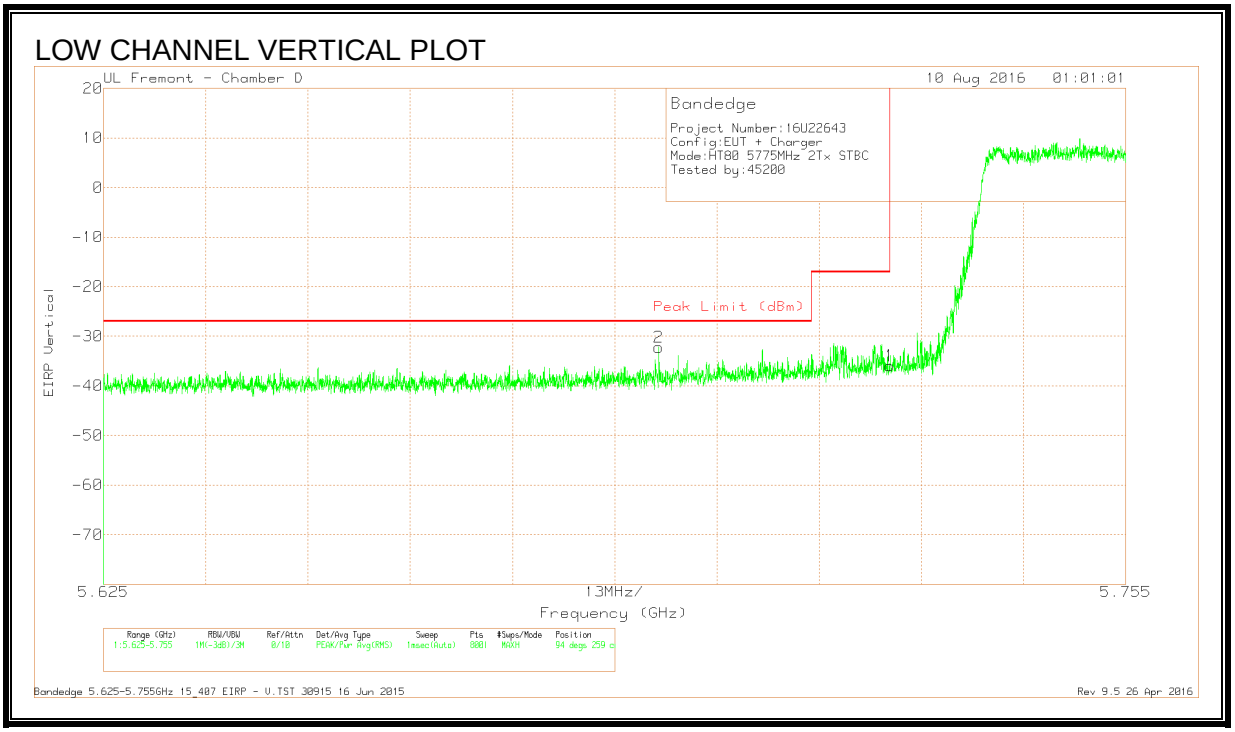


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	5.646	-65.91	Pk	34.6	-17.4	11.8	-36.91	-27	-9.91	49	385	H
1	5.725	-69.42	Pk	34.8	-17.3	11.8	-40.12	-17	-23.12	49	385	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



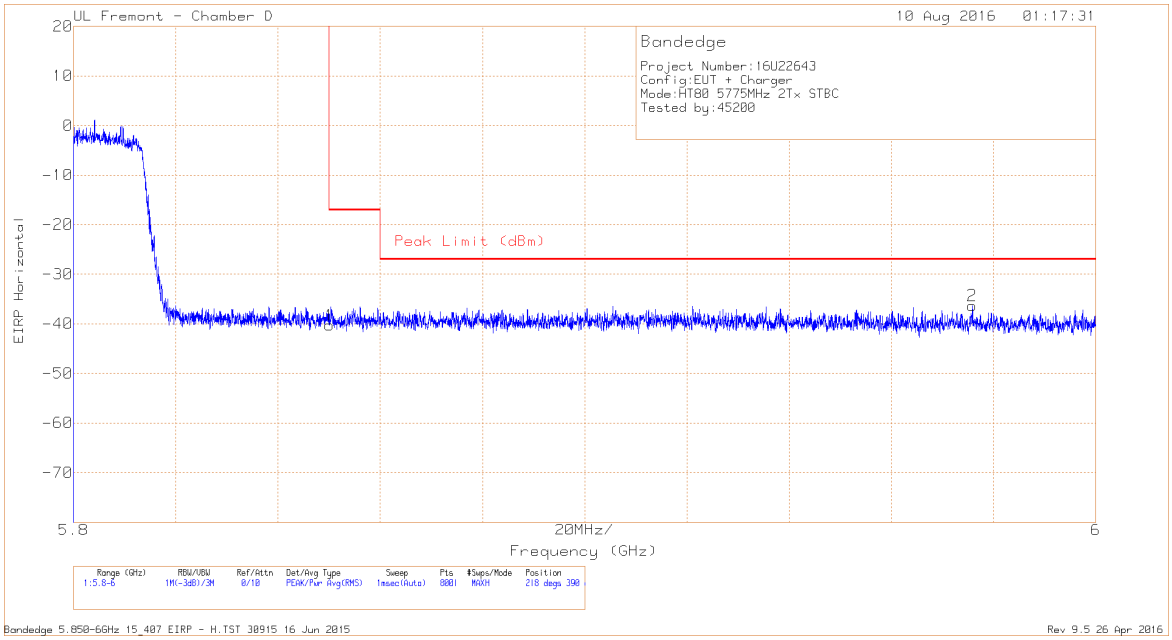
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	5.696	-61.52	Pk	34.7	-17.2	11.8	-32.22	-27	-5.22	94	259	V
1	5.725	-65.21	Pk	34.8	-17.3	11.8	-35.91	-17	-18.91	94	259	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (IC)

HIGH CHANNEL HORIZONTAL PLOT

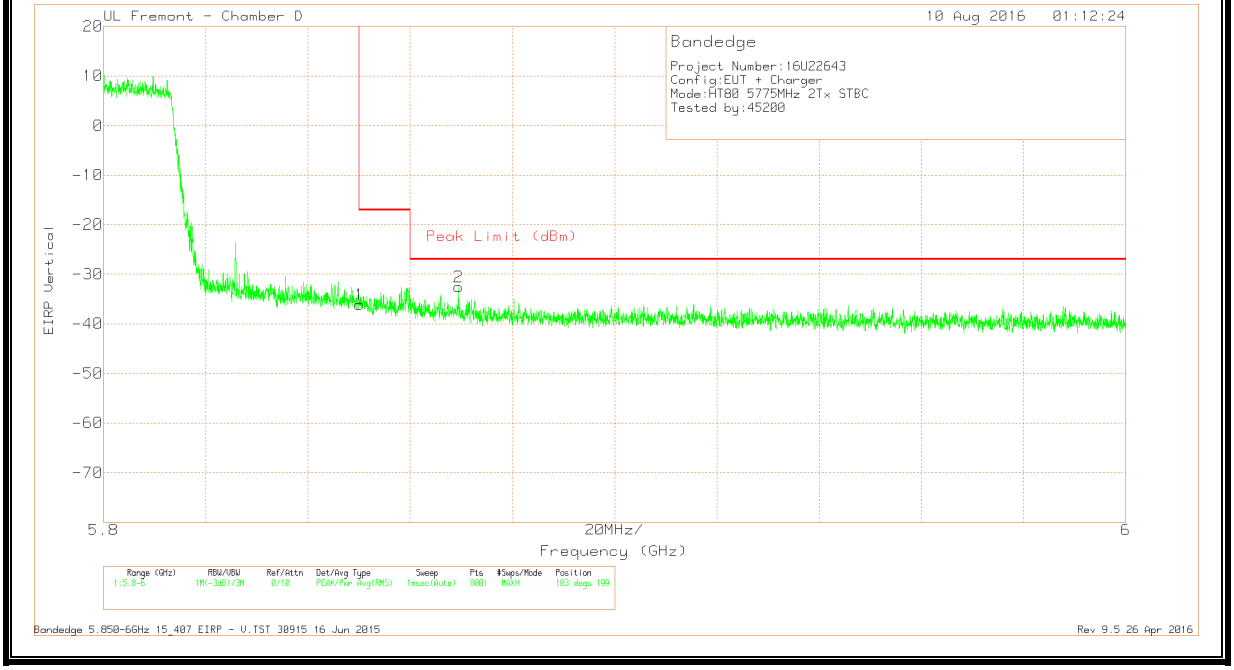


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (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	-69.65	Pk	34.9	-17.3	11.8	-40.25	-17	-23.25	218	390	H
2	5.976	-65.98	Pk	35.1	-17.2	11.8	-36.28	-27	-9.28	218	390	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



DATA

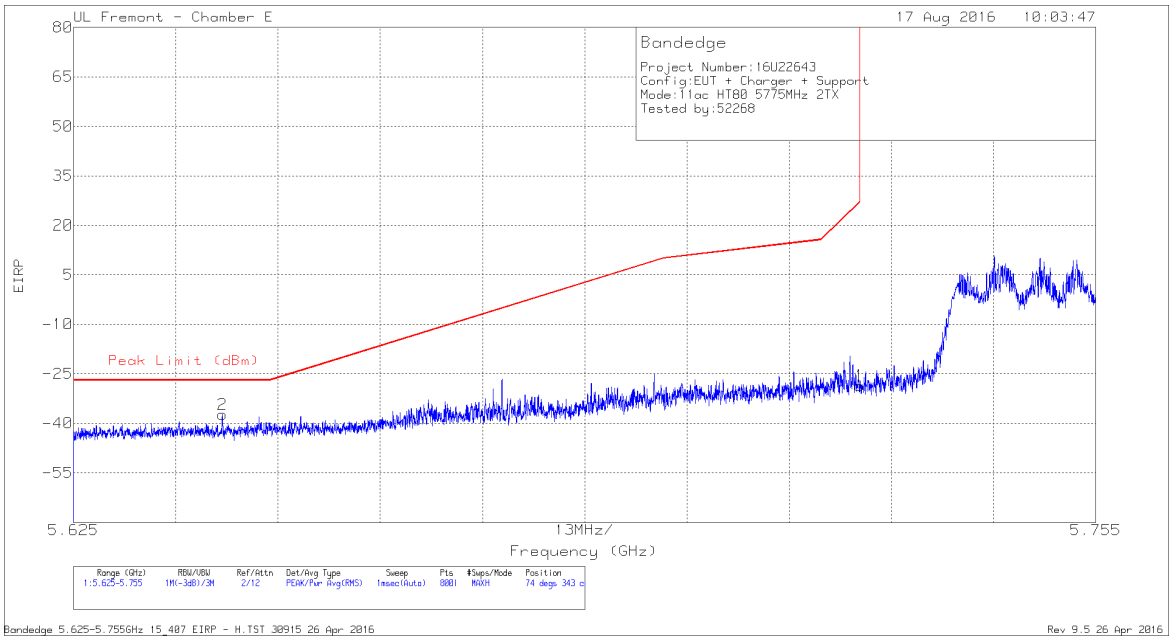
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T712 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.45	Pk	34.9	-17.3	11.8	-36.05	-17	-19.05	103	199	V
2	5.869	-62.01	Pk	34.9	-17.2	11.8	-32.51	-27	-5.51	103	199	V

Pk - Peak detector

8.160. 802.11ac VHT80 2Tx (CHAIN 1 + CHAIN 2) BEAM FORMING MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL) (FCC)

LOW CHANNEL HORIZONTAL PLOT

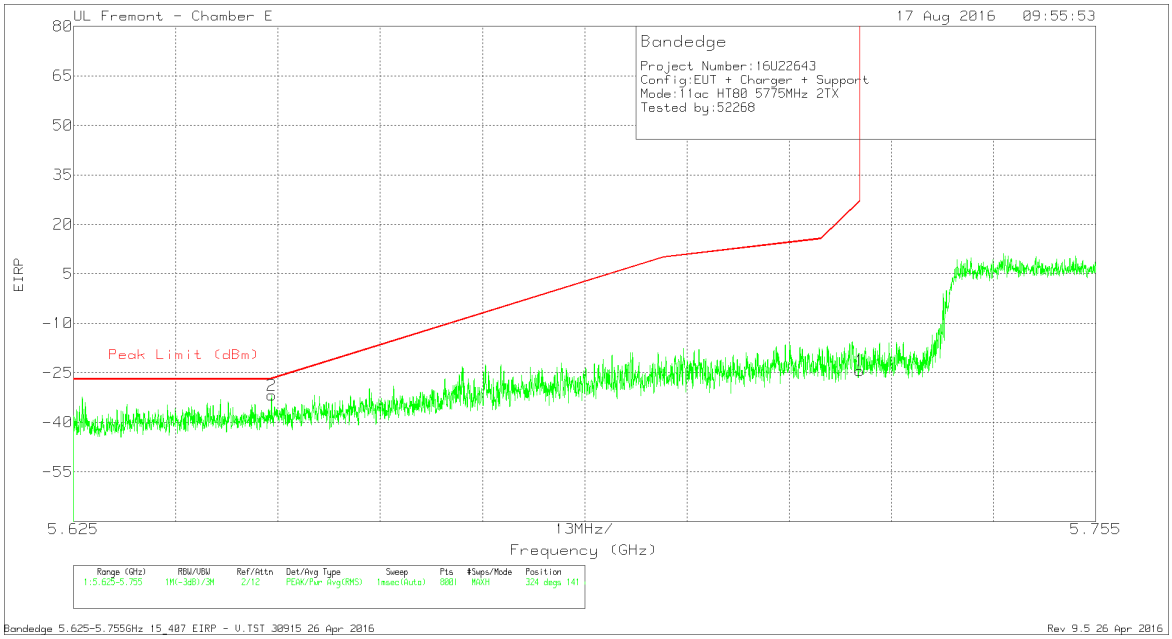


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.644	-64.08	Pk	34.8	-19.8	11.8	-37.28	-27	-10.28	74	343	H
1	5.725	-55.45	Pk	34.9	-19.8	11.8	-28.55	26.97	-55.52	74	343	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



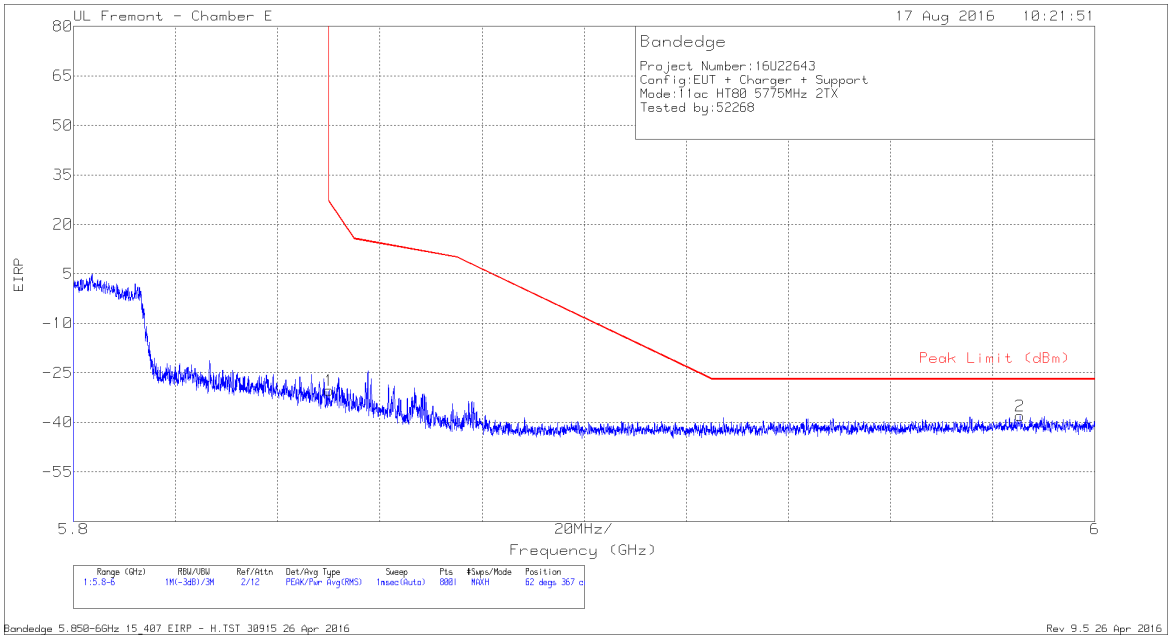
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.65	-58.6	Pk	34.8	-19.8	11.8	0	-31.8	-26.86	-4.94	324	141	V
1	5.725	-51.21	Pk	34.9	-19.8	11.8	0	-24.31	26.97	-51.28	324	141	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (FCC)

HIGH CHANNEL HORIZONTAL PLOT

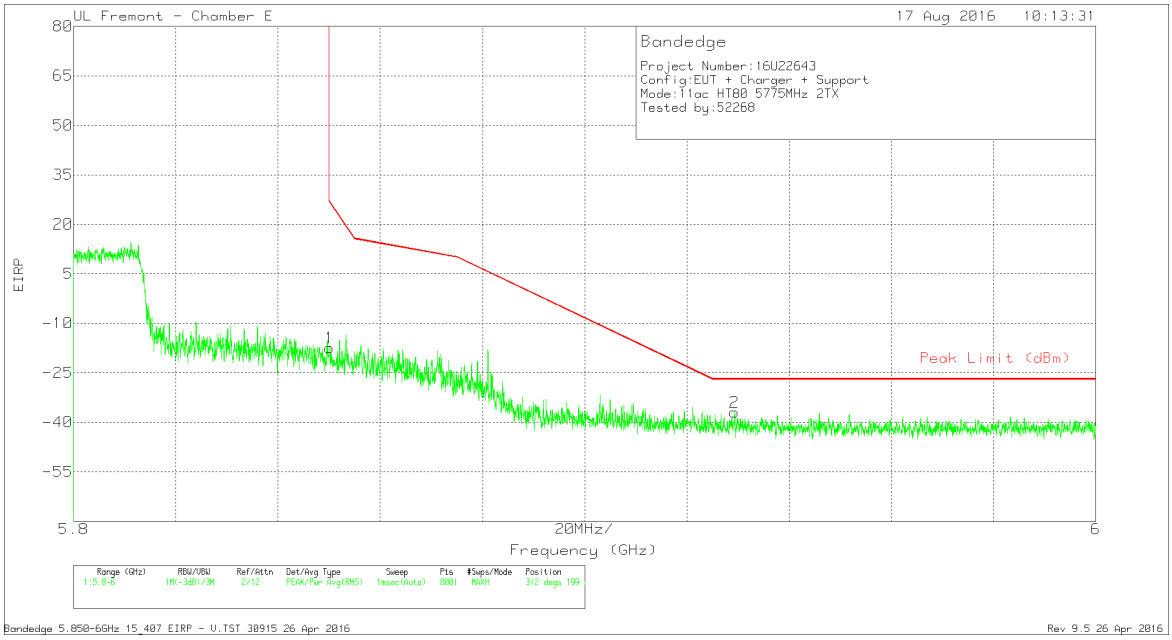


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-57.07	Pk	34.9	-20	11.8	-30.37	26.94	-57.31	62	367	H
2	5.985	-65.45	Pk	35	-19.3	11.8	-37.95	-27	-10.95	62	367	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



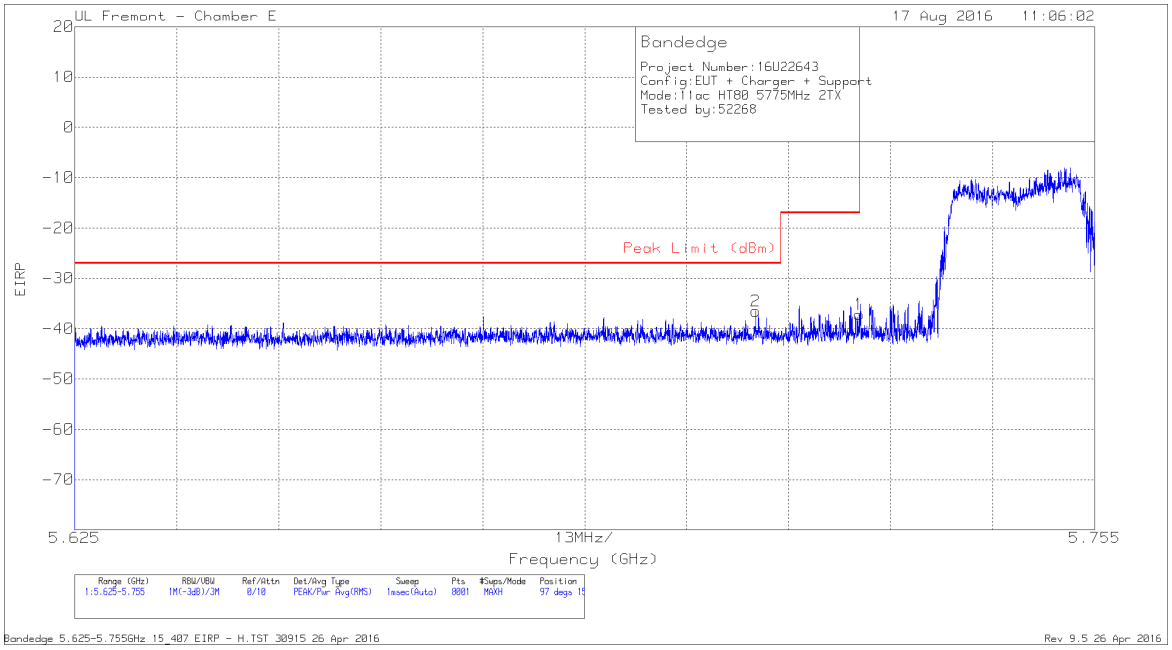
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-44.08	Pk	34.9	-20	11.8	-17.38	26.94	-44.32	312	199	V
2	5.929	-64.07	Pk	35	-19.7	11.8	-36.97	-27	-9.97	312	199	V

Pk - Peak detector

RESTRICTED BANDEDGE (LOW CHANNEL) (IC)

LOW CHANNEL HORIZONTAL PLOT

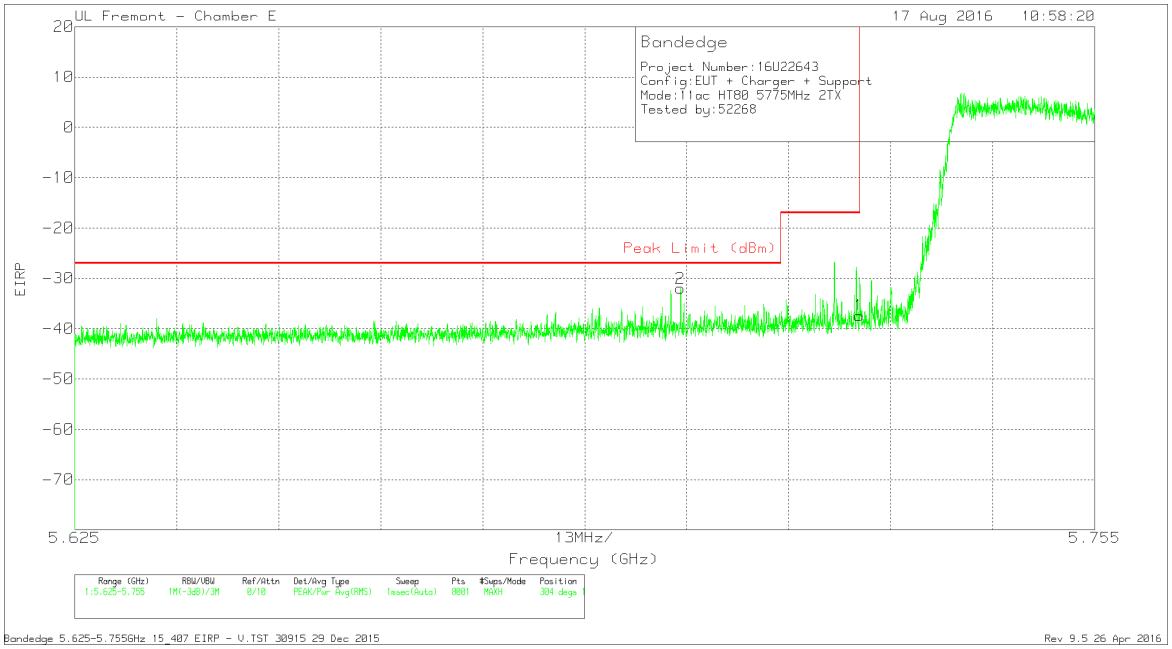


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.712	-63.1	Pk	34.9	-20.1	11.8	-36.5	-27	-9.5	97	152	H
1	5.725	-63.75	Pk	34.9	-20.1	11.8	-37.15	-17	-20.15	97	152	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



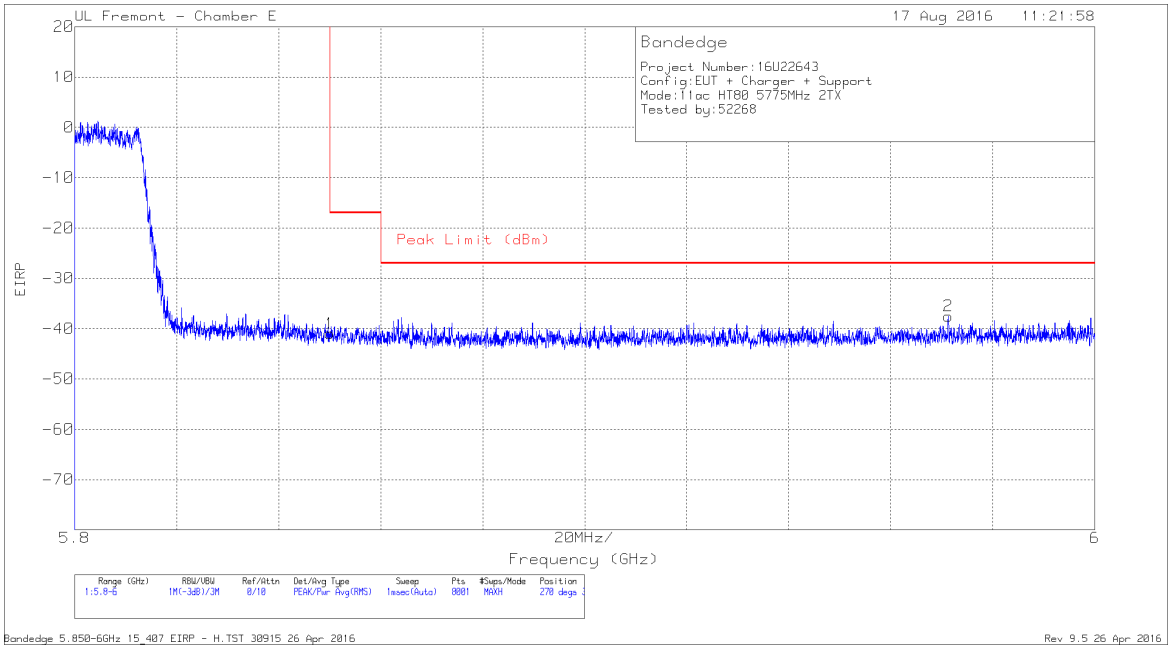
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.702	-58.71	Pk	35	-20.1	11.8	0	-32.01	-27	-5.01	304	141	V
1	5.725	-63.97	Pk	34.9	-20.1	11.8	0	-37.37	-17	-20.37	304	141	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (IC)

HIGH CHANNEL HORIZONTAL PLOT

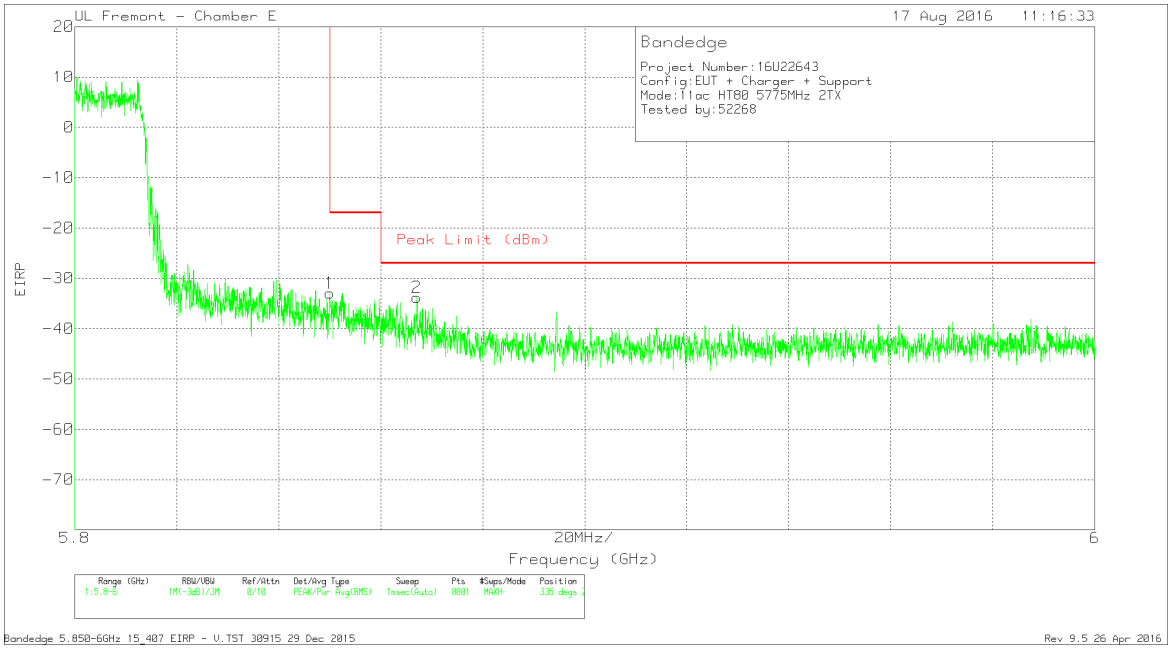


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-67.36	Pk	34.9	-20.3	11.8	-40.96	-17	-23.96	270	354	H
2	5.971	-64.19	Pk	35	-20.1	11.8	-37.49	-27	-10.49	270	354	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



DATA

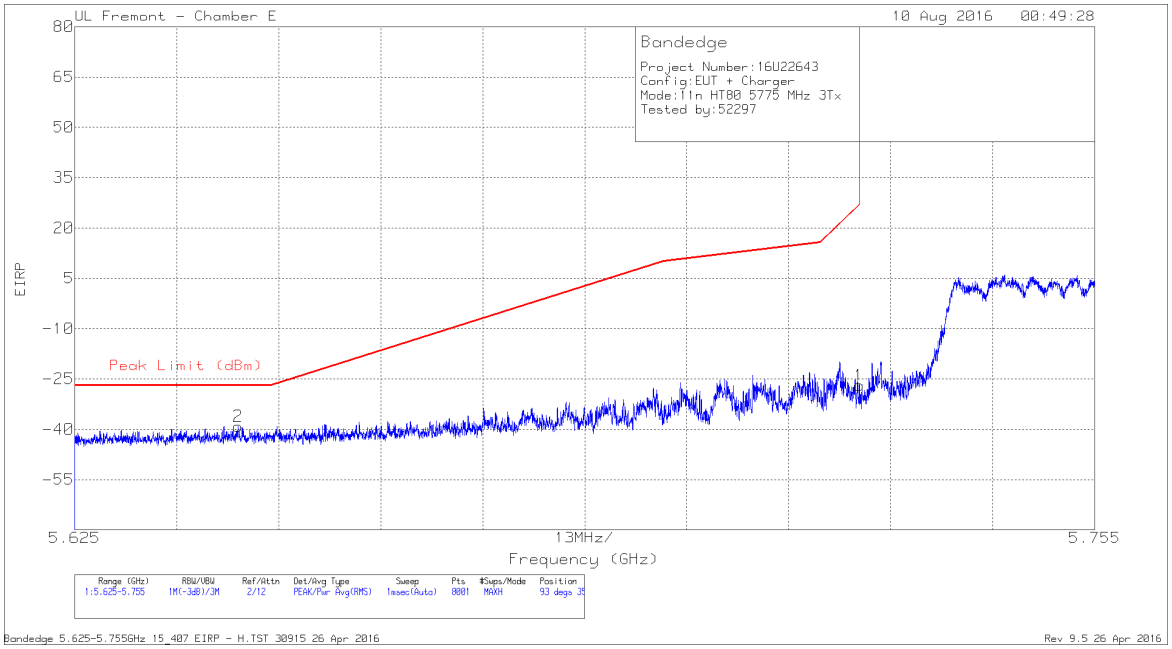
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-59.31	Pk	34.9	-20.3	11.8	-32.91	-17	-15.91	335	209	V
2	5.867	-60.07	Pk	34.9	-20.4	11.8	-33.77	-27	-6.77	335	209	V

Pk - Peak detector

8.161. 802.11ac VHT80 3Tx CDD MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL) (FCC)

LOW CHANNEL HORIZONTAL PLOT

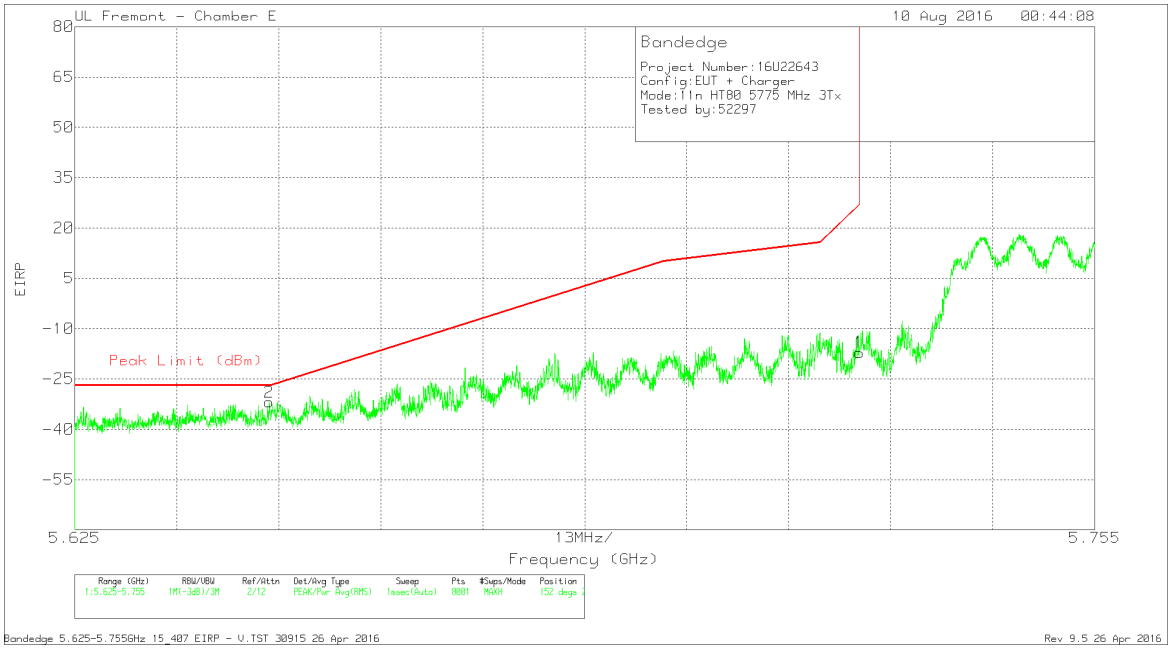


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.646	-65.88	Pk	34.8	-19.8	11.8	-39.08	-27	-12.08	93	351	H
1	5.725	-53.79	Pk	34.9	-19.8	11.8	-26.89	26.97	-53.86	93	351	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



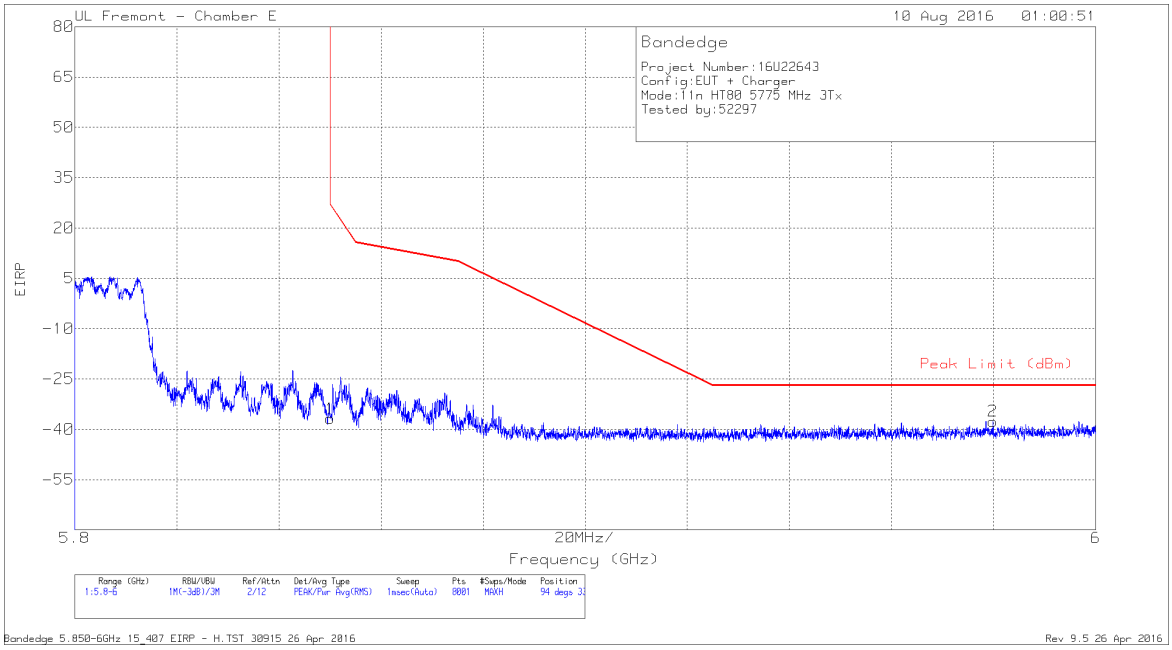
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.65	-58.69	Pk	34.8	-19.8	11.8	0	-31.89	-27	-4.89	152	242	V
1	5.725	-44.02	Pk	34.9	-19.8	11.8	0	-17.12	26.97	-44.09	152	242	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (FCC)

HIGH CHANNEL HORIZONTAL PLOT

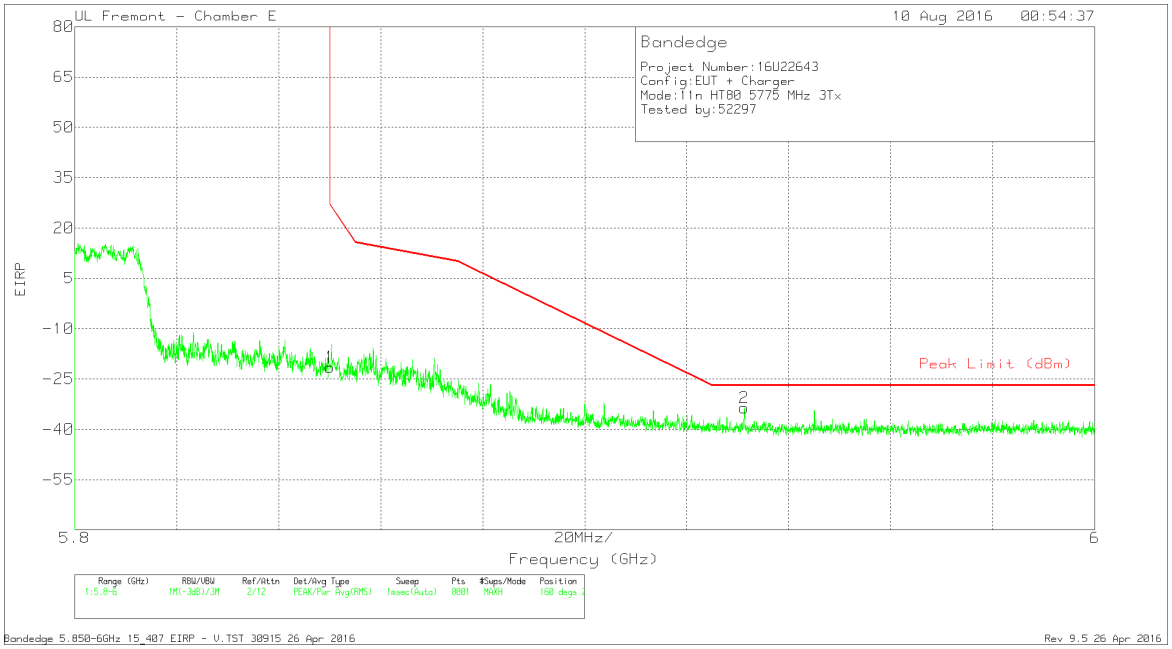


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-63.52	Pk	34.9	-20	11.8	-36.82	26.94	-63.76	94	332	H
2	5.98	-65.1	Pk	35	-19.3	11.8	-37.6	-27	-10.6	94	332	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



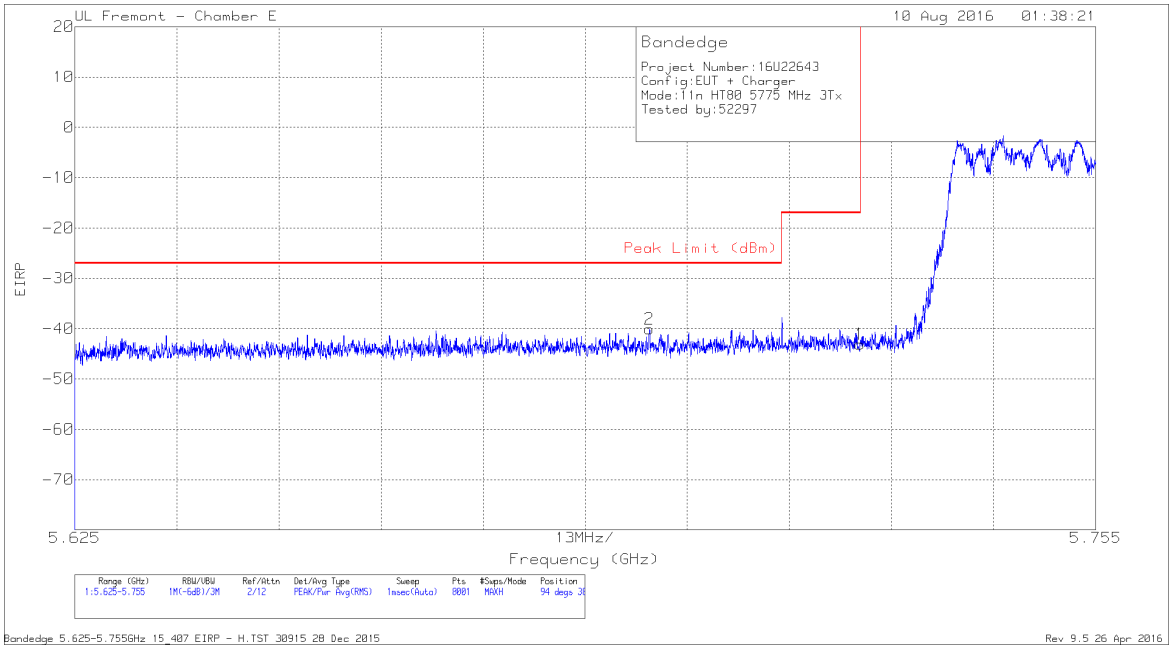
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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
1	5.85	-48.19	Pk	34.9	-20	11.8	0	-21.49	26.94	-48.43	160	260	V
2	5.931	-60.68	Pk	35	-19.7	11.8	0	-33.58	-27	-6.58	160	260	V

Pk - Peak detector

RESTRICTED BANDEDGE (LOW CHANNEL) (IC)

LOW CHANNEL HORIZONTAL PLOT

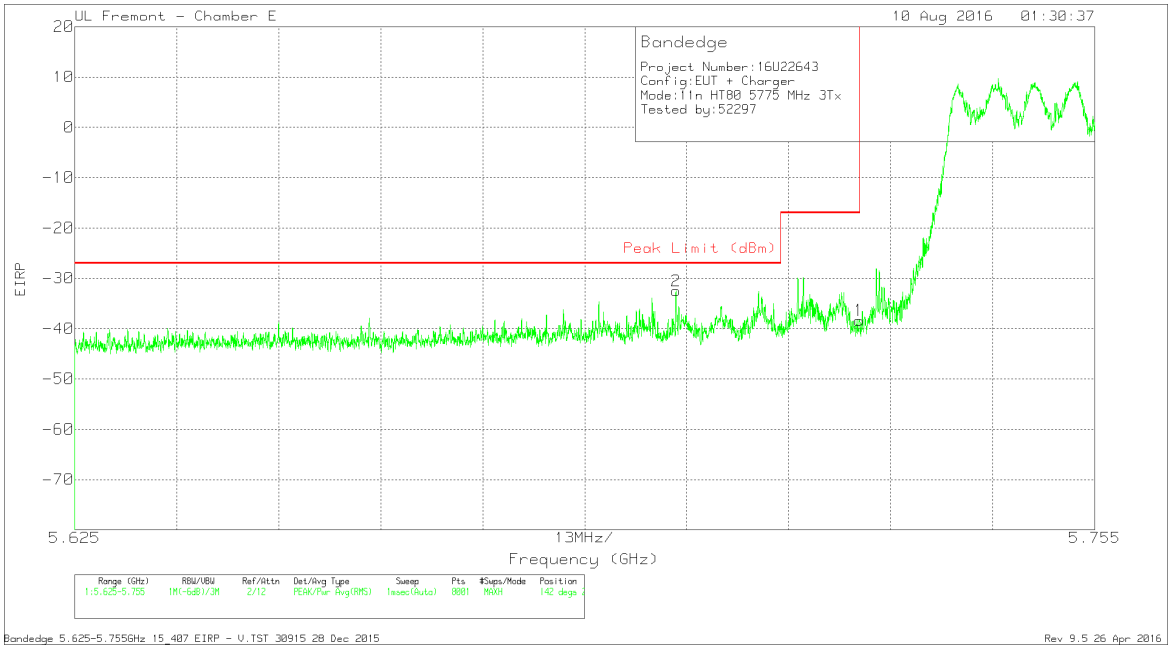


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.698	-66.85	Pk	35	-20	11.8	-40.05	-27	-13.05	94	385	H
1	5.725	-69.98	Pk	34.9	-19.8	11.8	-43.08	-17	-26.08	94	385	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



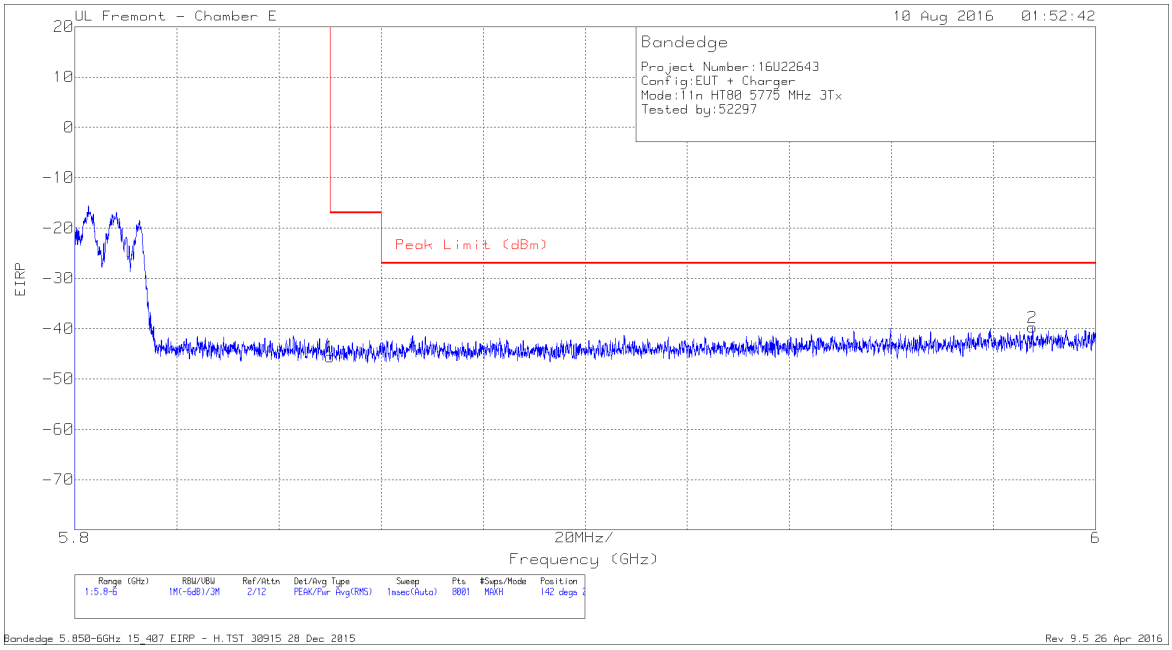
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.702	-59.3	Pk	35	-20	11.8	0	-32.5	-27	-5.5	142	240	V
1	5.725	-65.25	Pk	34.9	-19.8	11.8	0	-38.35	-17	-21.35	142	240	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (IC)

HIGH CHANNEL HORIZONTAL PLOT

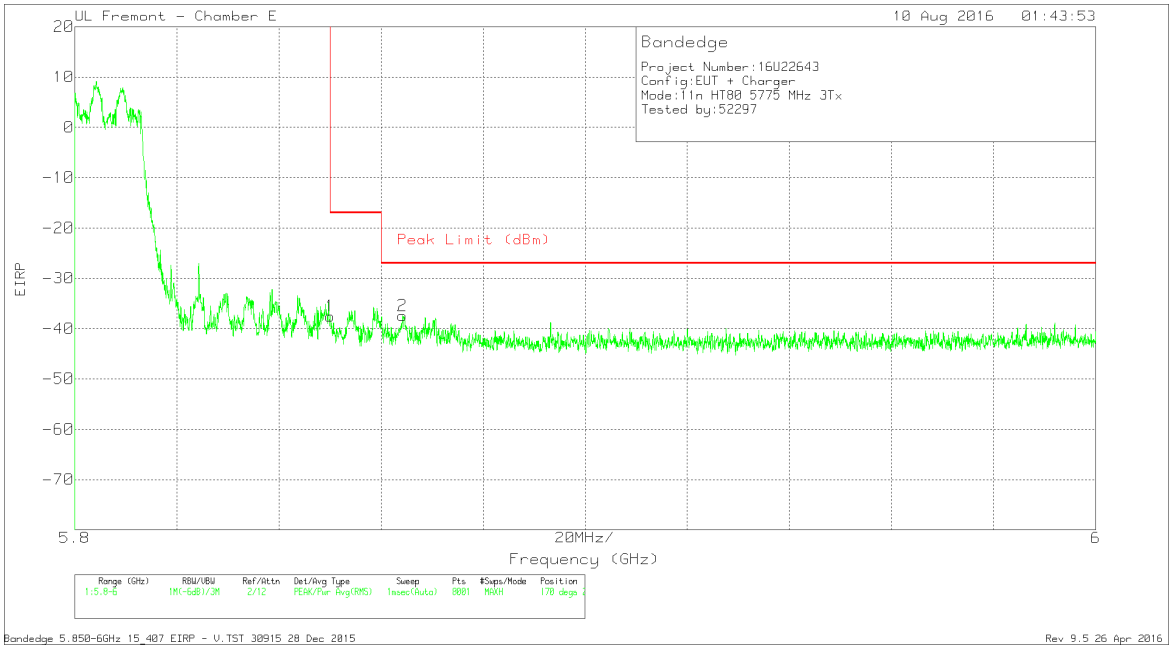


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-72.27	Pk	34.9	-20	11.8	-45.57	-17	-28.57	142	216	H
2	5.988	-67.25	Pk	35	-19.3	11.8	-39.75	-27	-12.75	142	216	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



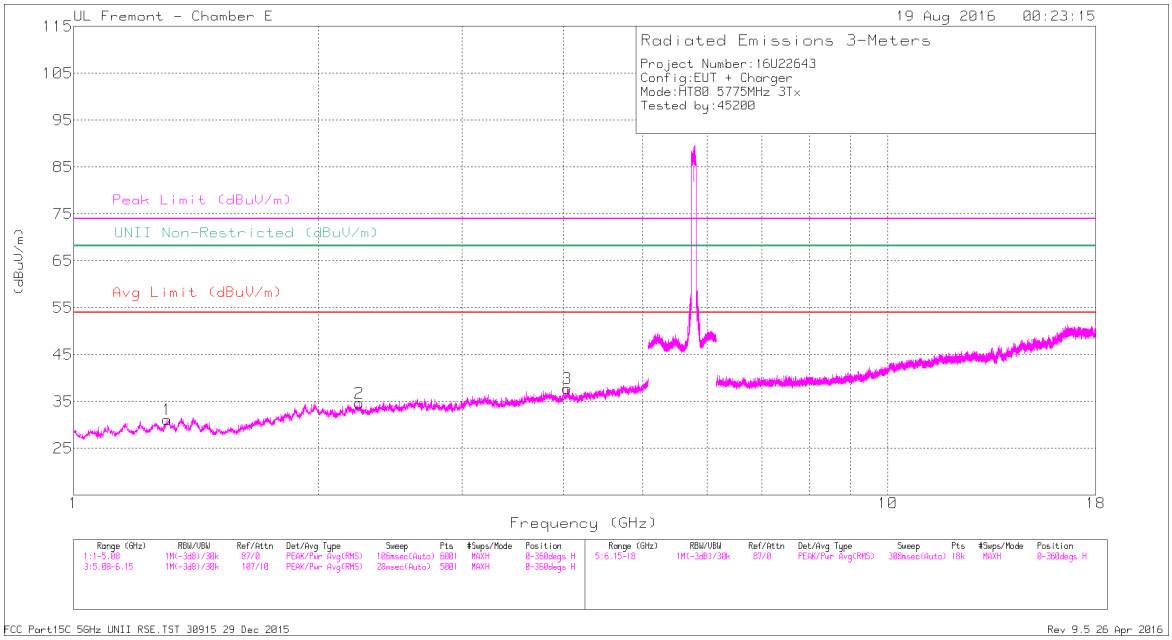
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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
1	5.85	-64.19	Pk	34.9	-20	11.8	0	-37.49	-17	-20.49	170	238	V
2	5.864	-64.29	Pk	34.9	-19.8	11.8	0	-37.39	-27	-10.39	170	238	V

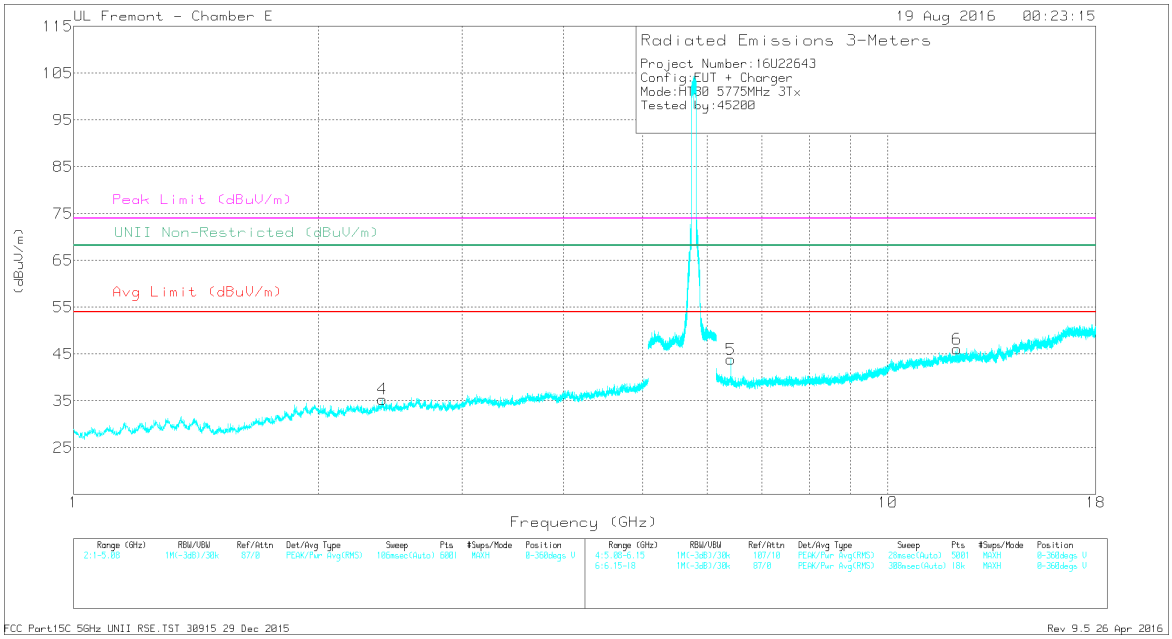
Pk - Peak detector

CHANNEL 155 HARMONICS AND SPURIOUS EMISSIONS

CHANNEL 155 HORIZONTAL PLOT



CHANNEL 155 VERTICAL PLOT



DATA

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr /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
* 1.304	44.62	PK-U	29.3	-35.4	0	38.52	-	-	74	-35.48	-	-	323	105	H
* 1.303	33.29	ADR	29.3	-35.4	.18	27.37	54	-26.63	-	-	-	-	323	105	H
* 2.244	42.2	PK-U	31.7	-32.8	0	41.1	-	-	74	-32.9	-	-	305	278	H
* 2.247	30.83	ADR	31.7	-32.9	.18	29.81	54	-24.19	-	-	-	-	305	278	H
* 4.043	39.91	PK-U	33.2	-29.7	0	43.41	-	-	74	-30.59	-	-	48	311	H
* 4.043	29.07	ADR	33.2	-29.7	.18	32.75	54	-21.25	-	-	-	-	48	311	H
* 12.161	36.29	PK-U	39	-23.9	0	51.39	-	-	74	-22.61	-	-	251	258	V
* 12.159	25.85	ADR	39	-23.9	.18	41.13	54	-12.87	-	-	-	-	251	258	V
2.396	41.89	PK-U	32.1	-32.2	0	41.79	-	-	-	-	68.2	-26.41	164	243	V
6.417	41.74	PK-U	35.6	-27.6	0	49.74	-	-	-	-	68.2	-18.46	154	221	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

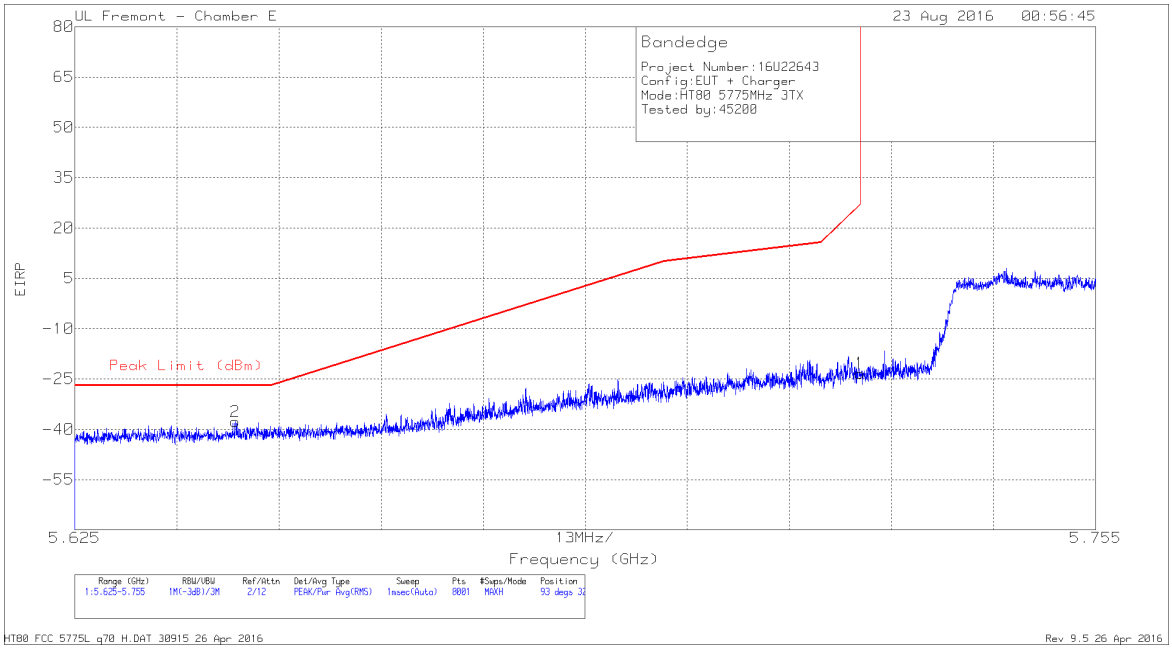
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

8.162. 802.11ac VHT80 3Tx STBC MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL) (FCC)

LOW CHANNEL HORIZONTAL PLOT

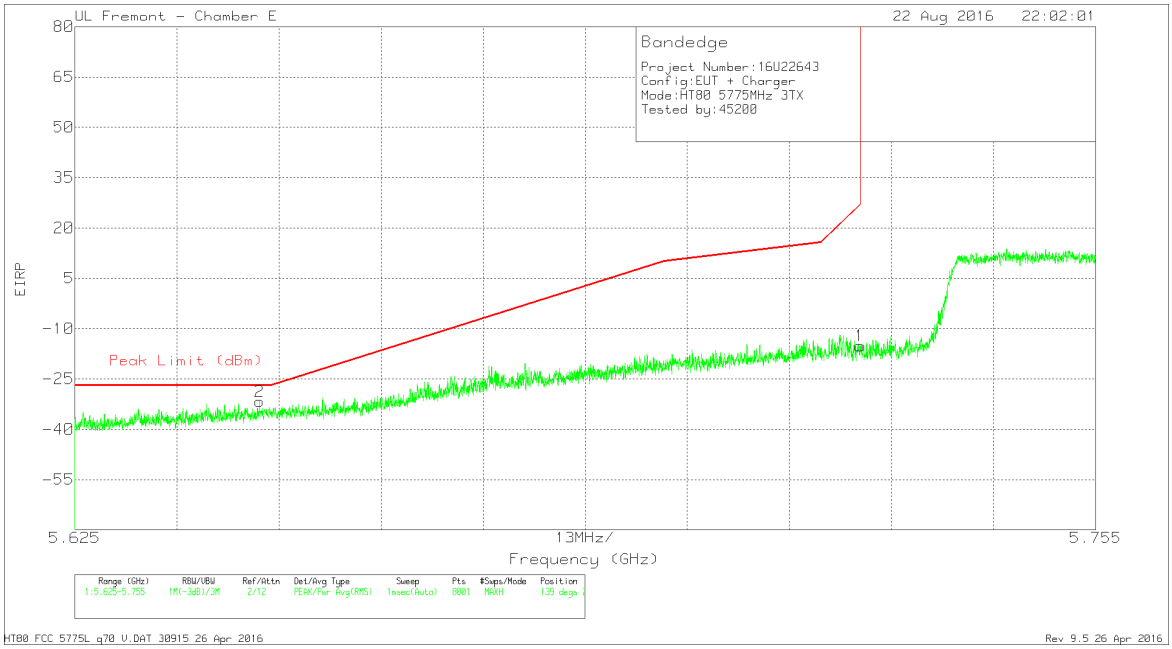


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.645	-64.48	Pk	34.8	-19.8	11.8	-37.68	-27	-10.68	93	323	H
1	5.725	-50.19	Pk	34.9	-19.8	11.8	-23.29	26.97	-50.26	93	323	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



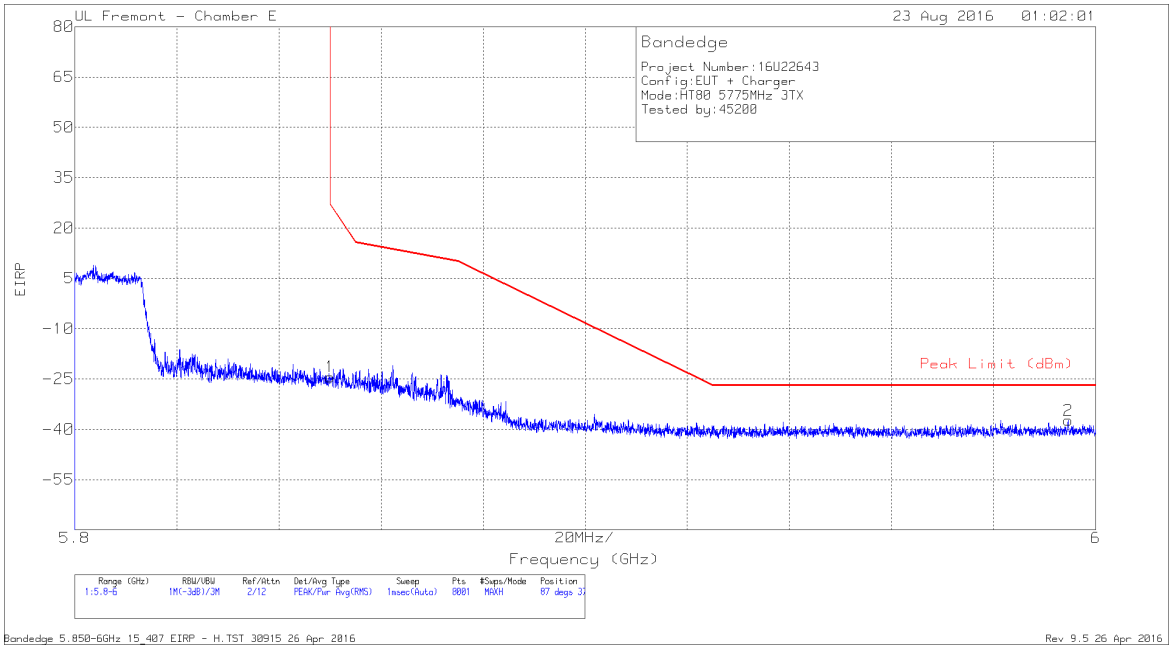
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.649	-58.52	Pk	34.8	-19.8	11.8	-31.72	-27	-4.72	139	248	V
1	5.725	-42	Pk	34.9	-19.8	11.8	-15.1	26.97	-42.07	139	248	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (FCC)

HIGH CHANNEL HORIZONTAL PLOT

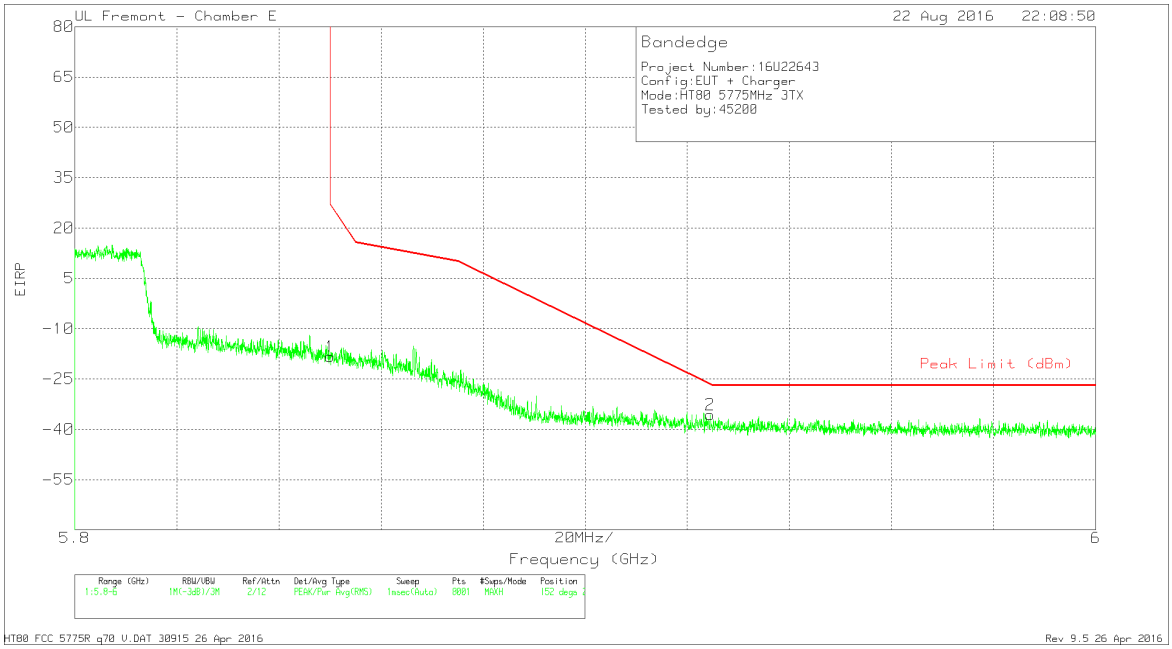


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-51.07	Pk	34.9	-20	11.8	-24.37	26.94	-51.31	87	379	H
2	5.995	-64.91	Pk	35.1	-19.3	11.8	-37.31	-27	-10.31	87	379	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



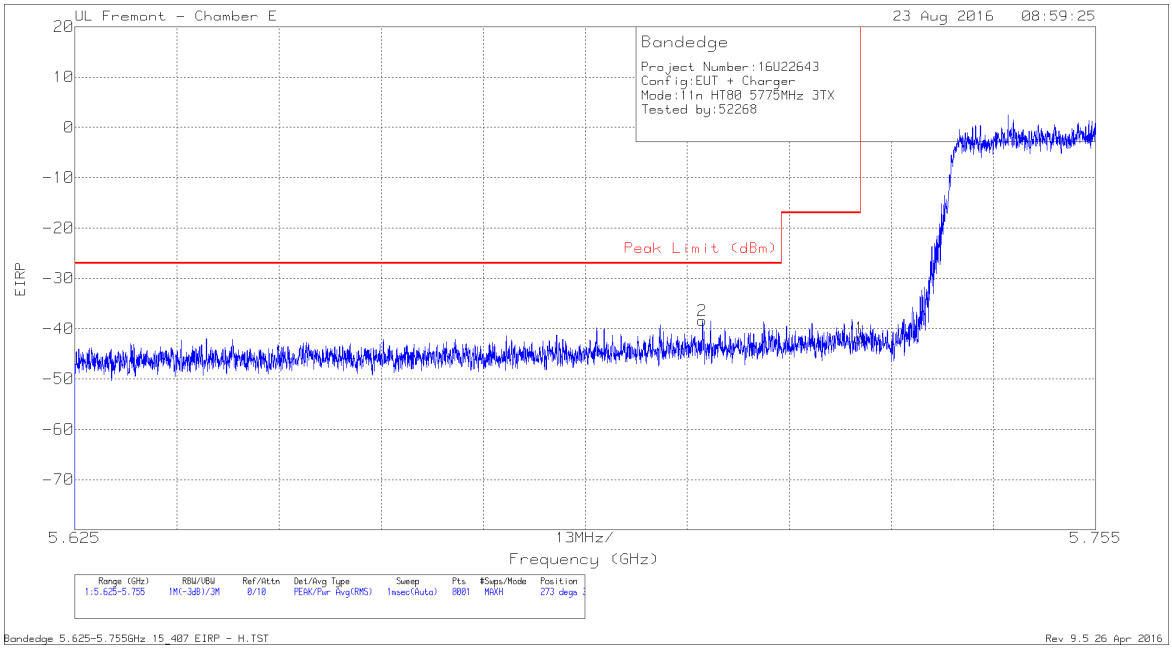
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-44.99	Pk	34.9	-20	11.8	-18.29	26.94	-45.23	152	239	V
2	5.924	-62.84	Pk	35	-19.6	11.8	-35.64	-26.61	-9.03	152	239	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector

RESTRICTED BANDEDGE (LOW CHANNEL) (IC)

LOW CHANNEL HORIZONTAL PLOT

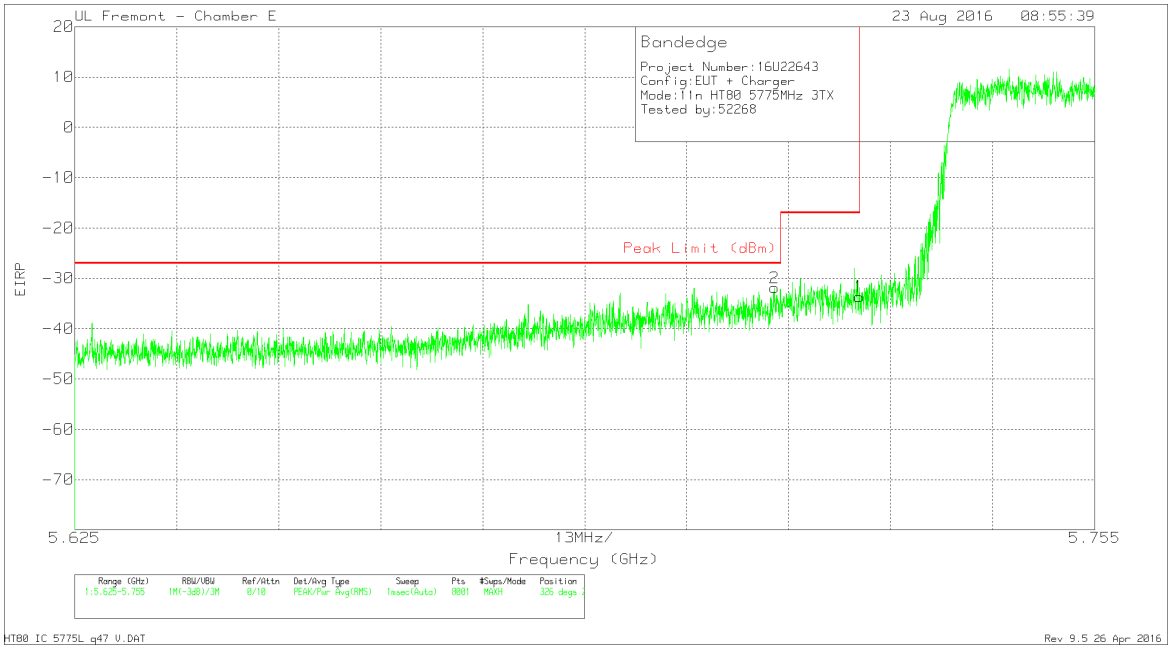


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.705	-65.1	Pk	35	-20.1	11.8	-38.4	-27	-11.4	273	387	H
1	5.725	-68.47	Pk	34.9	-20.1	11.8	-41.87	-17	-24.87	273	387	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



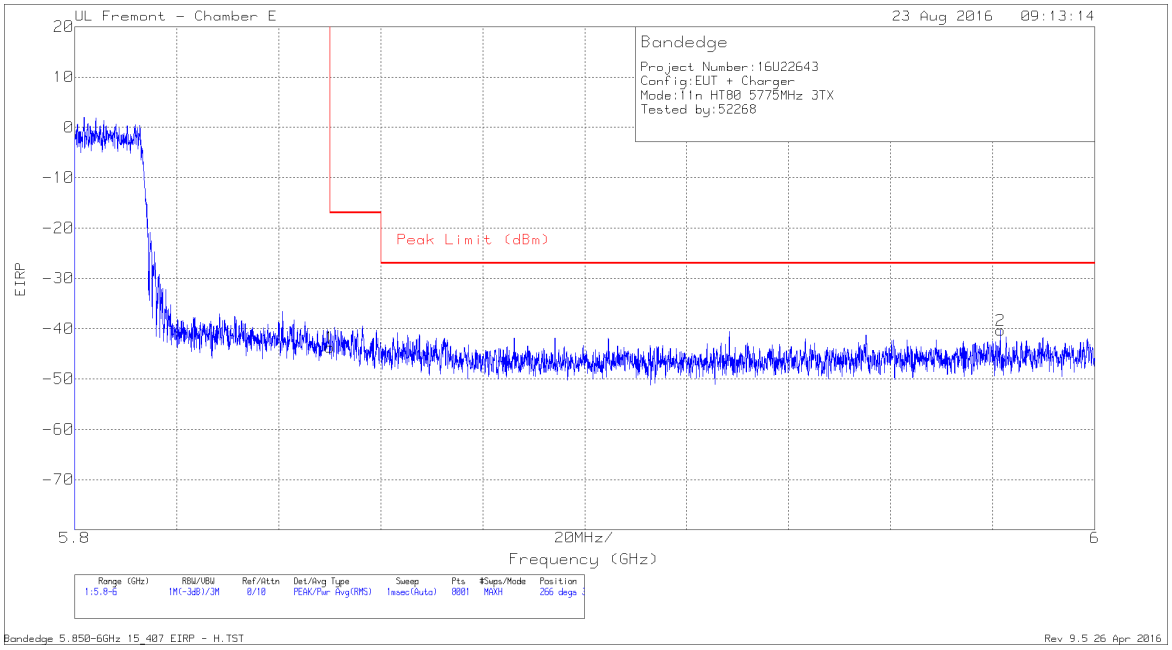
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-58.46	Pk	34.9	-20.1	11.8	-31.86	-27	-4.86	326	243	V
1	5.725	-60.24	Pk	34.9	-20.1	11.8	-33.64	-17	-16.64	326	243	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (IC)

HIGH CHANNEL HORIZONTAL PLOT

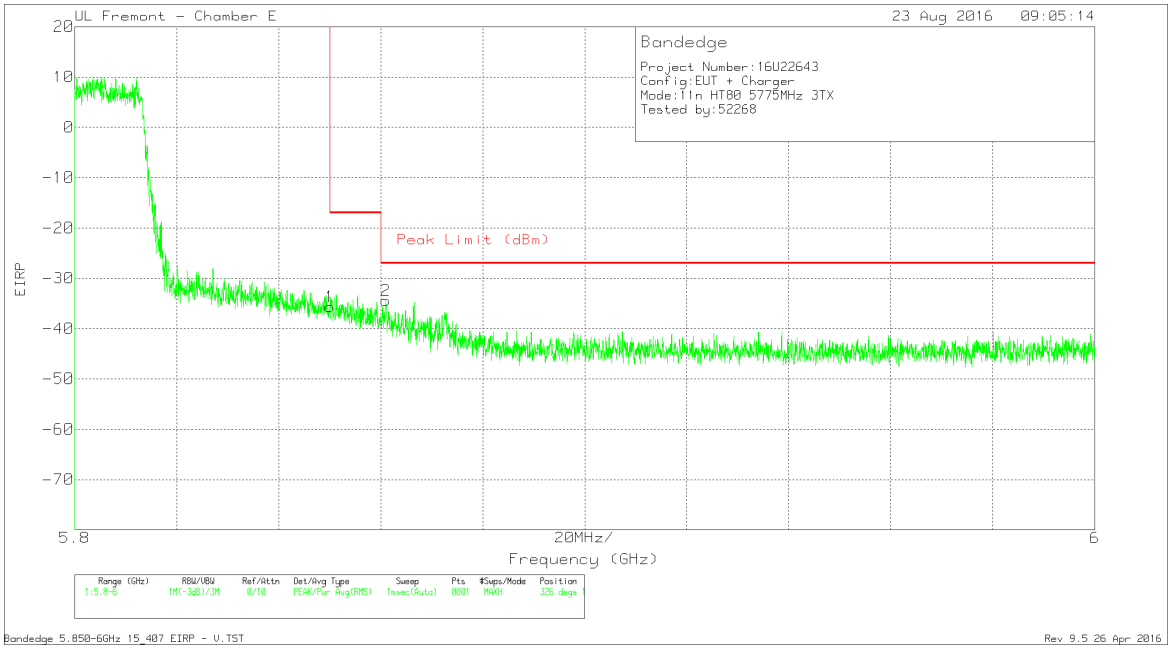


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-70.14	Pk	34.9	-20.3	11.8	-43.74	-17	-26.74	266	378	H
2	5.982	-67.14	Pk	35	-20	11.8	-40.34	-27	-13.34	266	378	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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
1	5.85	-62.05	Pk	34.9	-20.3	11.8	0	-35.65	-17	-18.65	326	182	V
2	5.861	-60.7	Pk	34.9	-20.4	11.8	0	-34.4	-27	-7.4	326	182	V

Pk - Peak detector

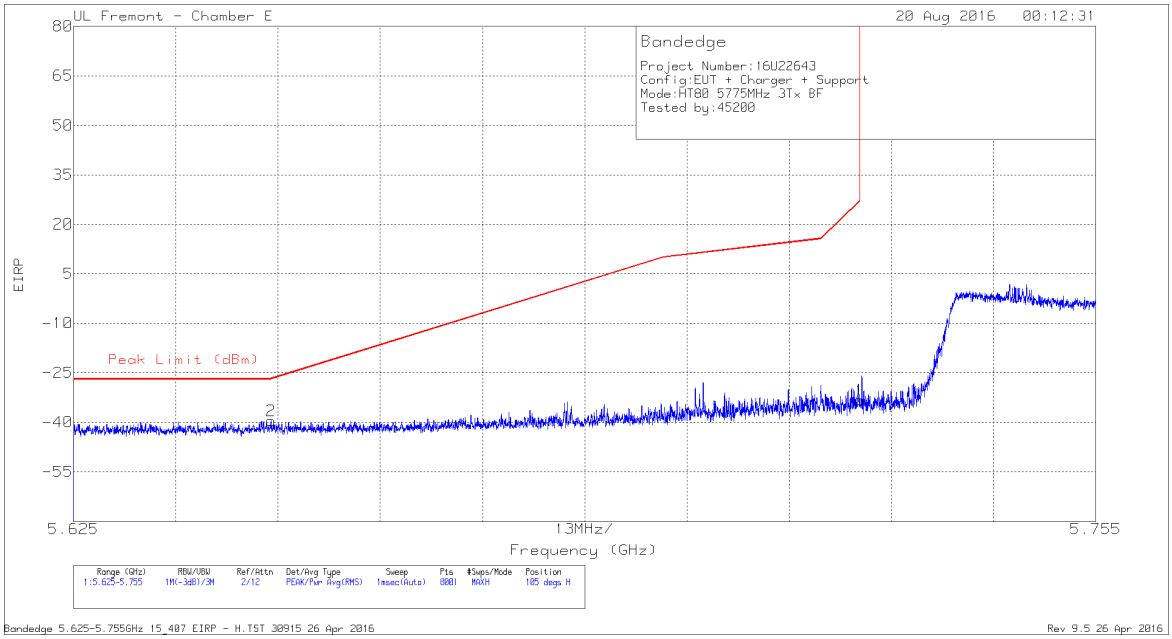
HARMONICS AND SPURIOUS EMISSIONS

Noted: Covered by 3TX CDD Mode

8.163. 802.11ac VHT80 3Tx BEAM FORMING MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL) (FCC)

LOW CHANNEL HORIZONTAL PLOT

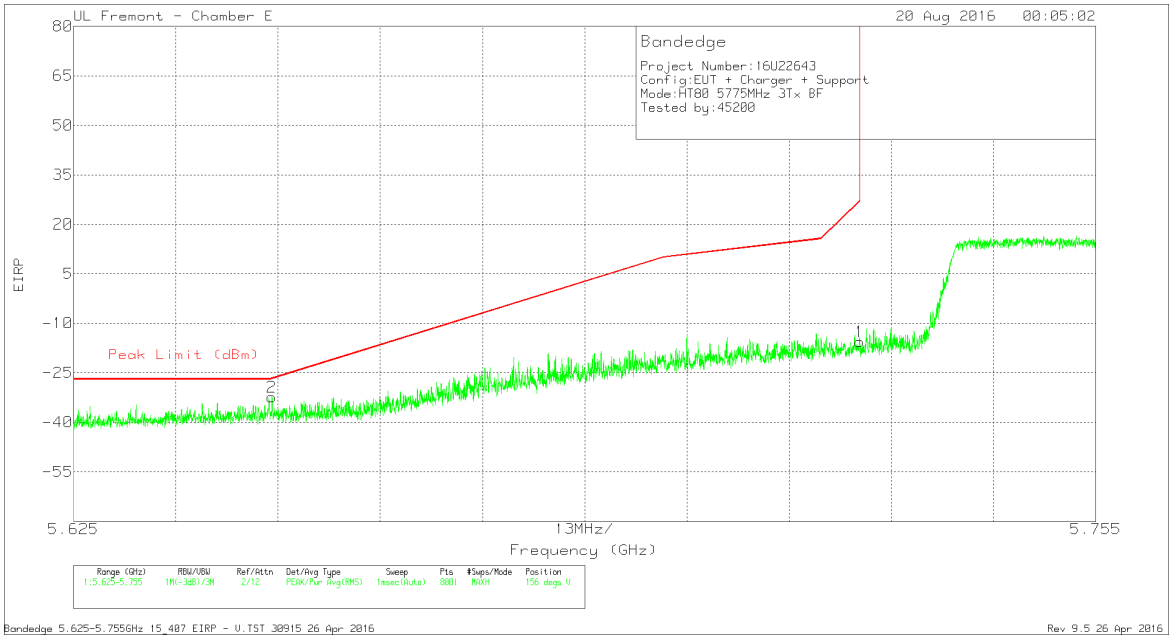


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.65	-66.36	Pk	34.8	-19.8	11.8	-39.56	-26.93	-12.63	105	279	H
1	5.725	-60.15	Pk	34.9	-19.8	11.8	-33.25	26.97	-60.22	105	279	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



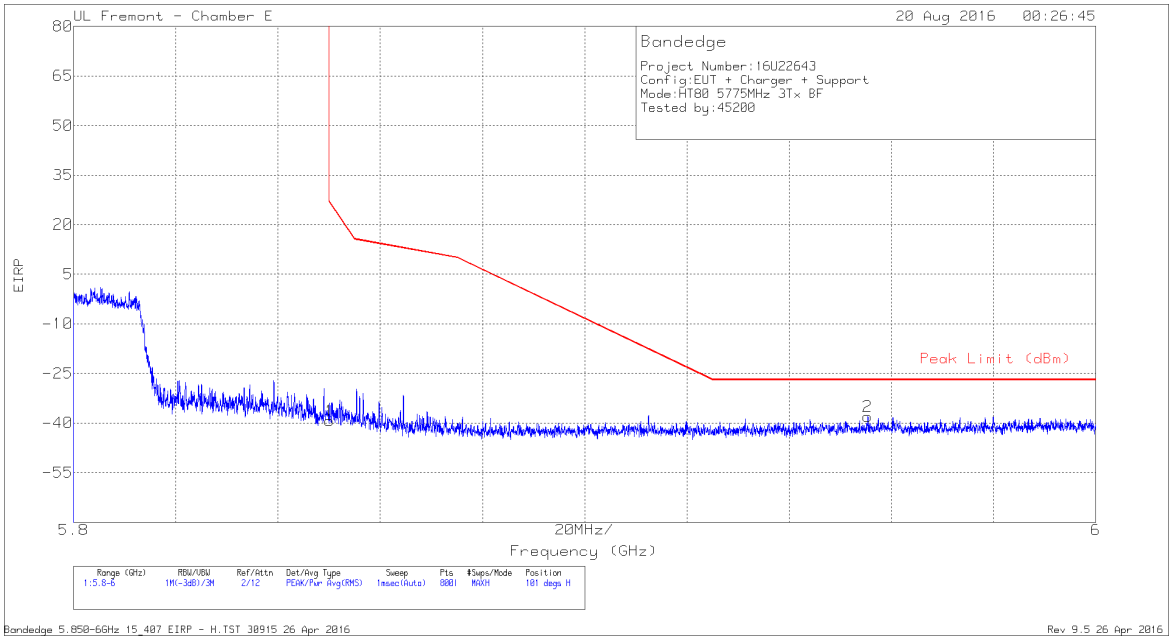
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	5.65	-59.12	Pk	34.8	-19.8	11.8	-32.32	-26.83	-5.49	156	239	V
1	5.725	-42.38	Pk	34.9	-19.8	11.8	-15.48	26.97	-42.45	156	239	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (FCC)

HIGH CHANNEL HORIZONTAL PLOT

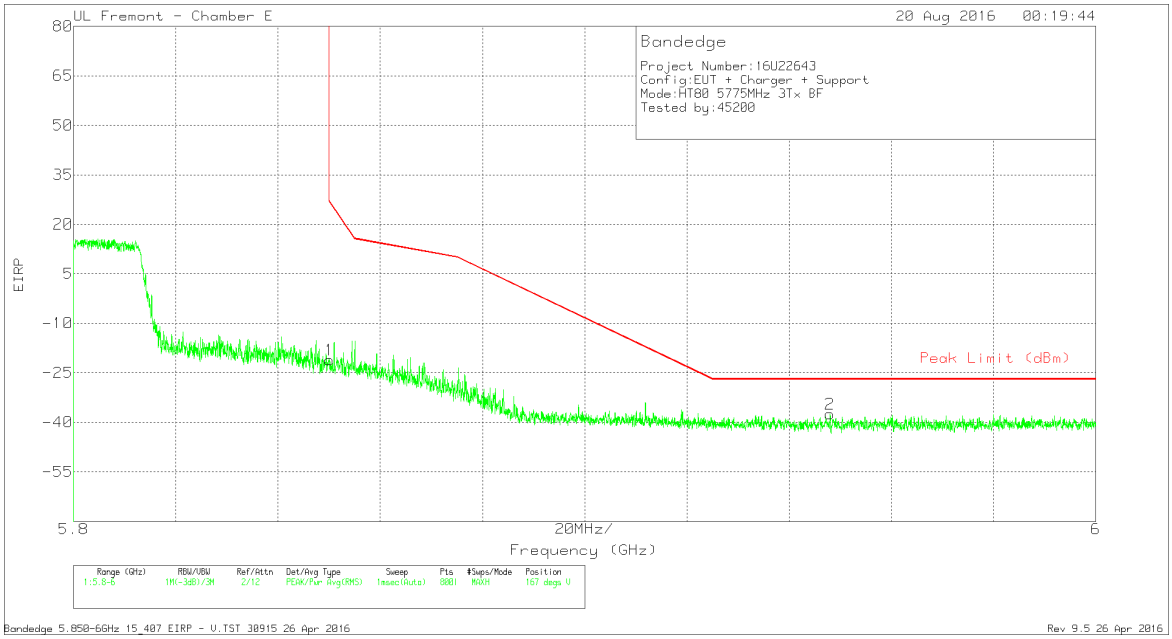


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-66.01	Pk	34.9	-20	11.8	-39.31	26.94	-66.25	101	392	H
2	5.955	-65.36	Pk	35	-19.5	11.8	-38.06	-27	-11.06	101	392	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



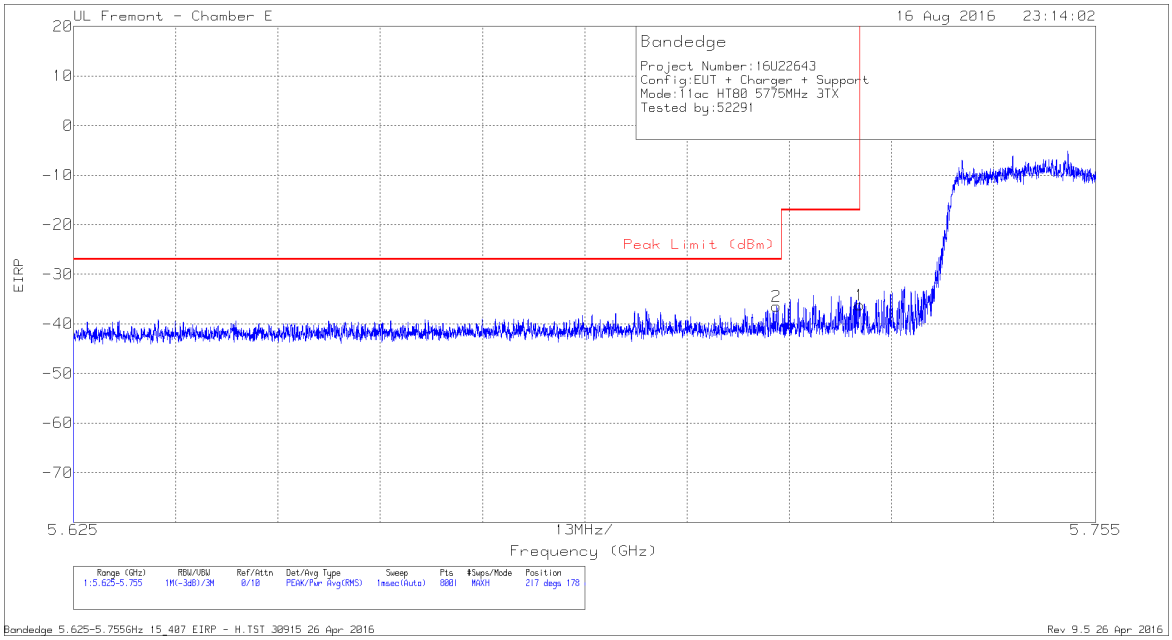
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-47.8	Pk	34.9	-20	11.8	-21.1	26.94	-48.04	167	229	V
2	5.948	-64.81	Pk	35	-19.5	11.8	-37.51	-27	-10.51	167	229	V

Pk - Peak detector

RESTRICTED BANDEDGE (LOW CHANNEL) (IC)

LOW CHANNEL HORIZONTAL PLOT

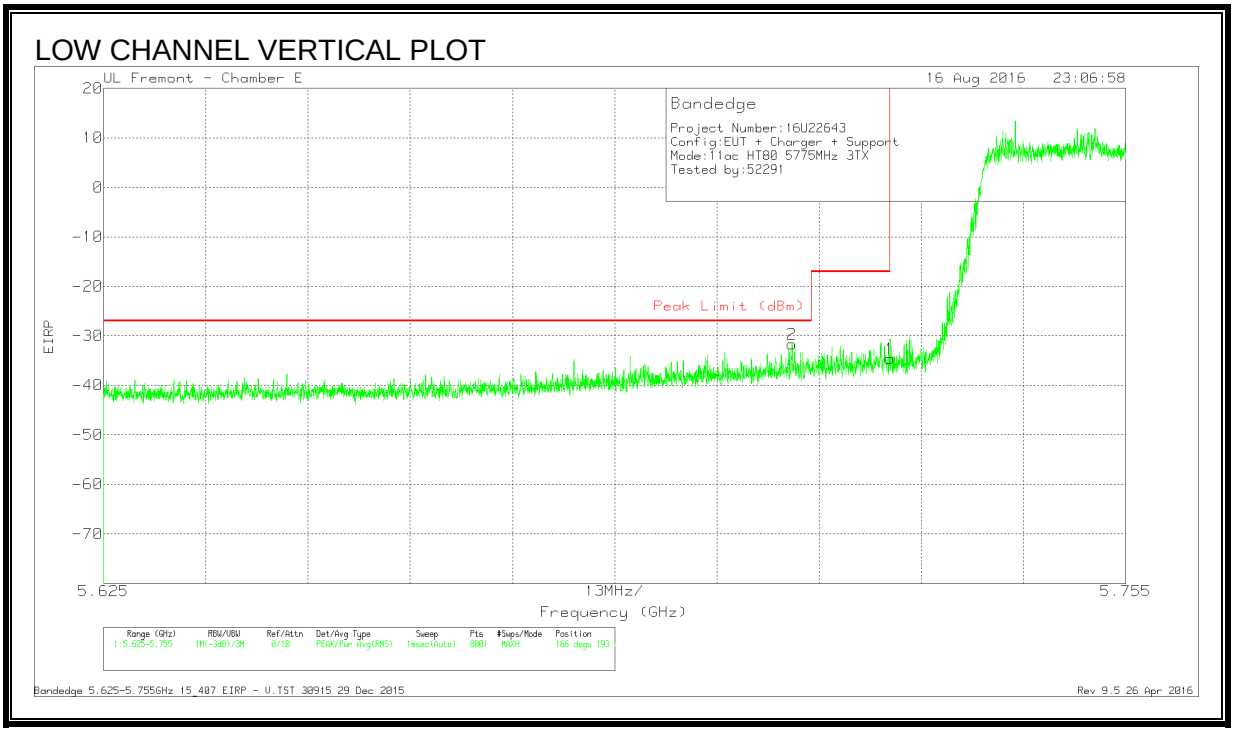


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-63.04	Pk	34.9	-20.1	11.8	-36.44	-27	-9.44	217	178	H
1	5.725	-62.78	Pk	34.9	-20.1	11.8	-36.18	-17	-19.18	217	178	H

Pk - Peak detector

LOW CHANNEL VERTICAL PLOT



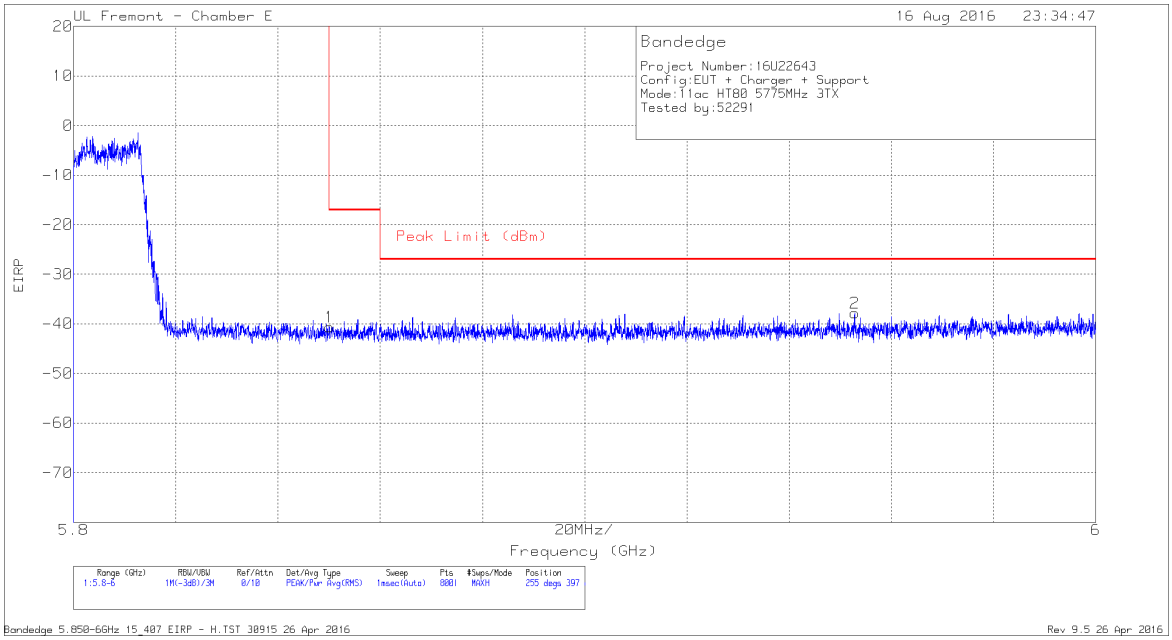
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-58.24	Pk	34.9	-20.1	11.8	0	-31.64	-27	-4.64	166	193	V
1	5.725	-61.19	Pk	34.9	-20.1	11.8	0	-34.59	-17	-17.59	166	193	V

Pk - Peak detector

RESTRICTED BANDEDGE (HIGH CHANNEL) (IC)

HIGH CHANNEL HORIZONTAL PLOT

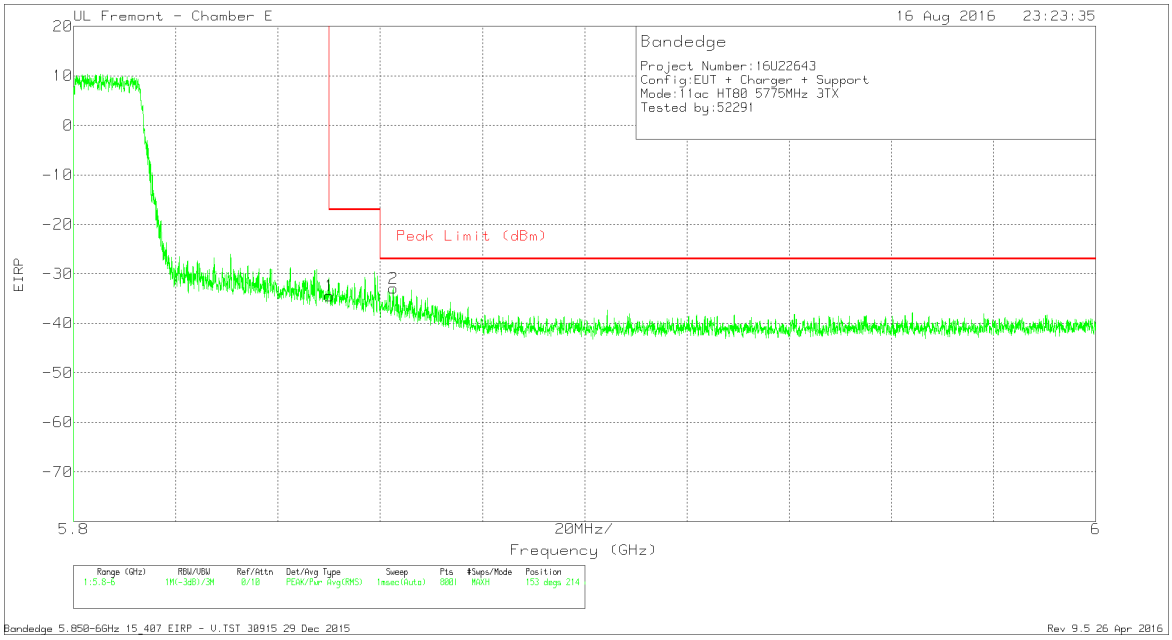


DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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	-67.07	Pk	34.9	-20.3	11.8	-40.67	-17	-23.67	255	397	H
2	5.953	-64.46	Pk	35	-20.2	11.8	-37.86	-27	-10.86	255	397	H

Pk - Peak detector

HIGH CHANNEL VERTICAL PLOT



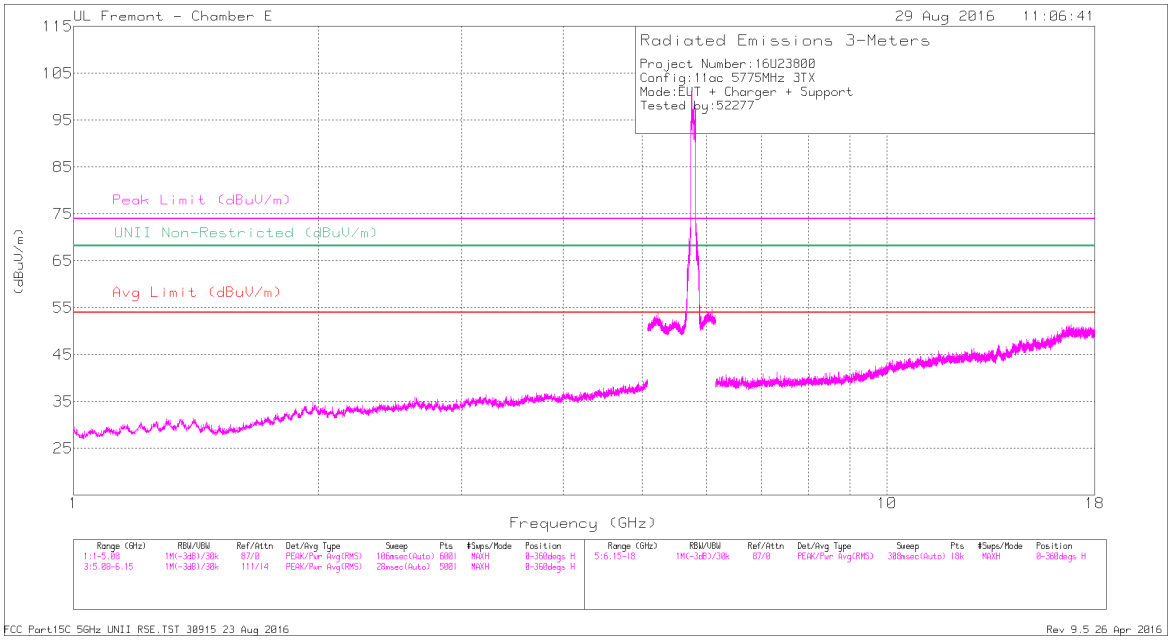
DATA

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T711 (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
1	5.85	-60.83	Pk	34.9	-20.3	11.8	0	-34.43	-17	-17.43	153	214	V
2	5.863	-59.23	Pk	34.9	-20.4	11.8	0	-32.93	-27	-5.93	153	214	V

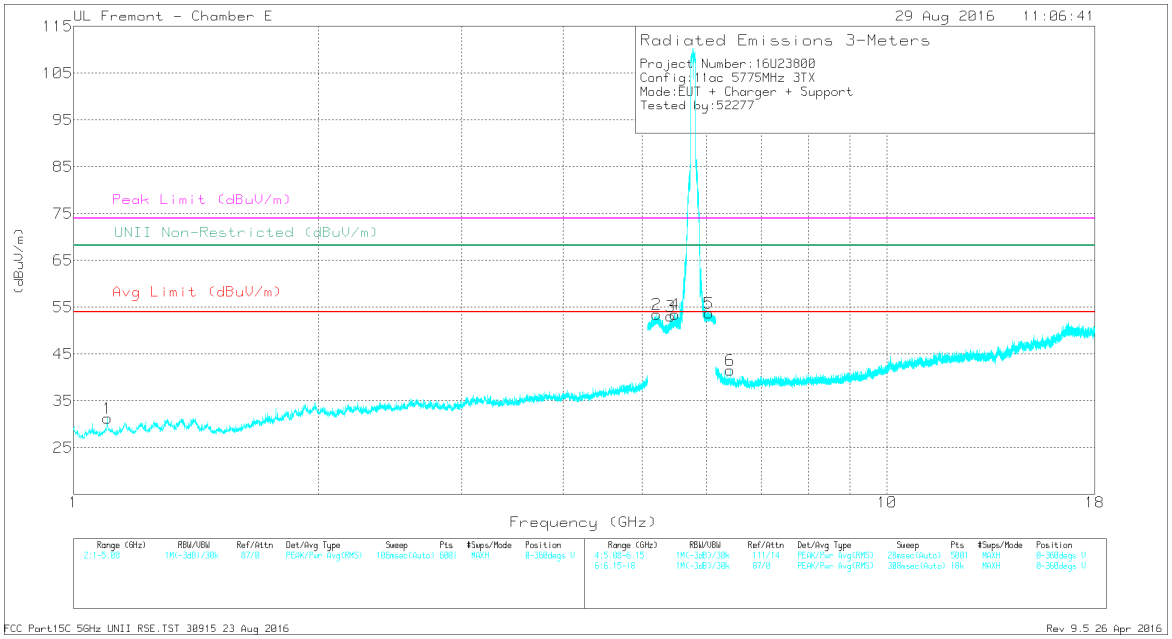
Pk - Peak detector

CHANNEL 155 HARMONICS AND SPURIOUS EMISSIONS

CHANNEL 155 HORIZONTAL PLOT



CHANNEL 155 VERTICAL PLOT



DATA

Markers	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/Fltr/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	* 1.1	47.56	PK-U	27.7	-35.7	0	39.56	-	-	74	-34.44	-	-	196	279	V
	* 1.1	34.79	ADR	27.7	-35.7	.62	27.41	54	-26.59	-	-	-	-	196	279	V
2	* 5.417	43.9	PK-U	34.4	-19.5	0	58.8	-	-	74	-15.2	-	-	145	268	V
	* 5.417	33.01	ADR	34.4	-19.5	.62	48.53	54	-5.47	-	-	-	-	145	268	V
3	5.212	44.45	PK-U	34.3	-19	0	59.75	-	-	-	-	68.2	-8.45	207	285	V
4	5.487	45.31	PK-U	34.4	-19.5	.62	60.21	-	-	-	-	68.2	-7.99	137	211	V
5	6.038	43.96	PK-U	35.2	-19.4	0	59.76	-	-	-	-	68.2	-8.44	6	227	V
6	6.416	41.36	PK-U	35.6	-27.6		49.36	-	-	-	-	68.2	-18.84	202	122	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

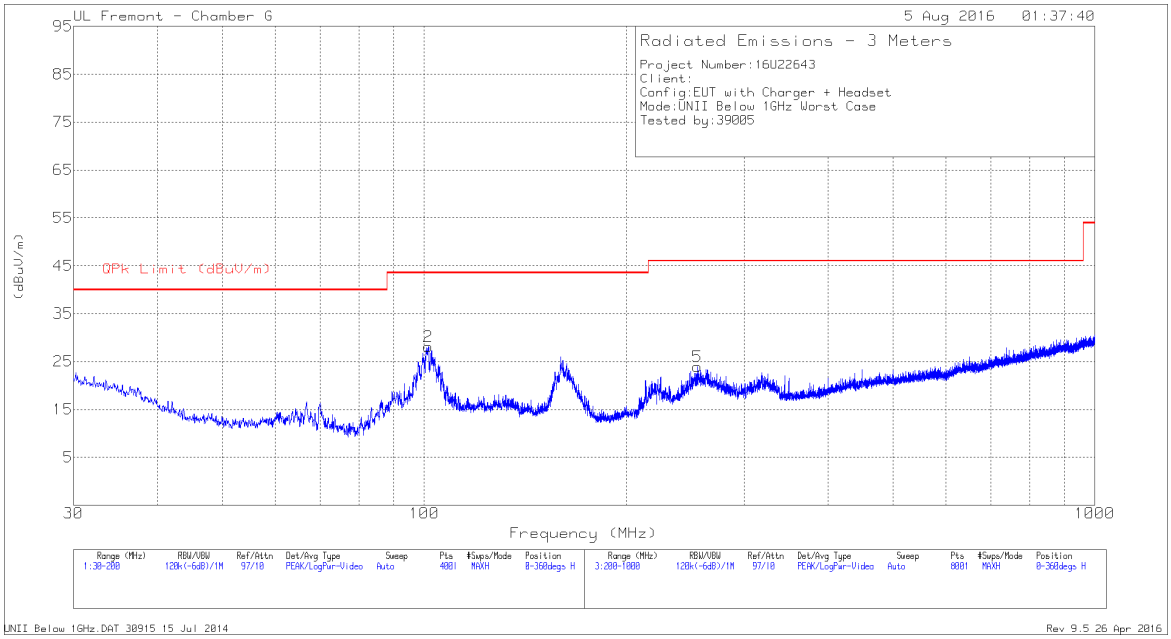
PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

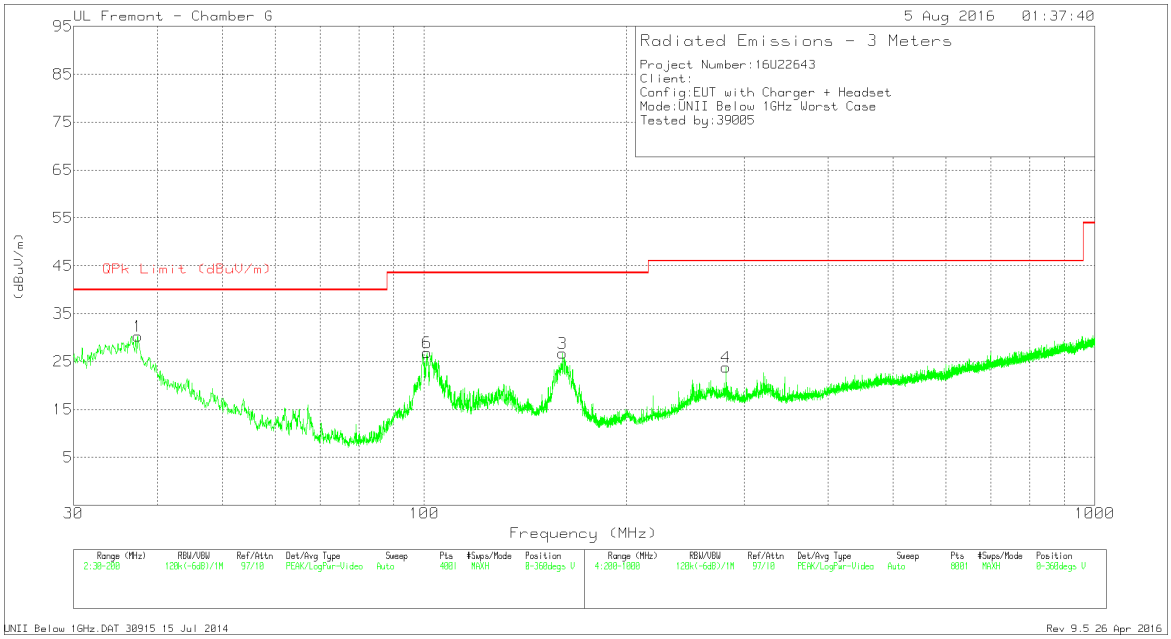
8.164. WORST-CASE BELOW 1 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

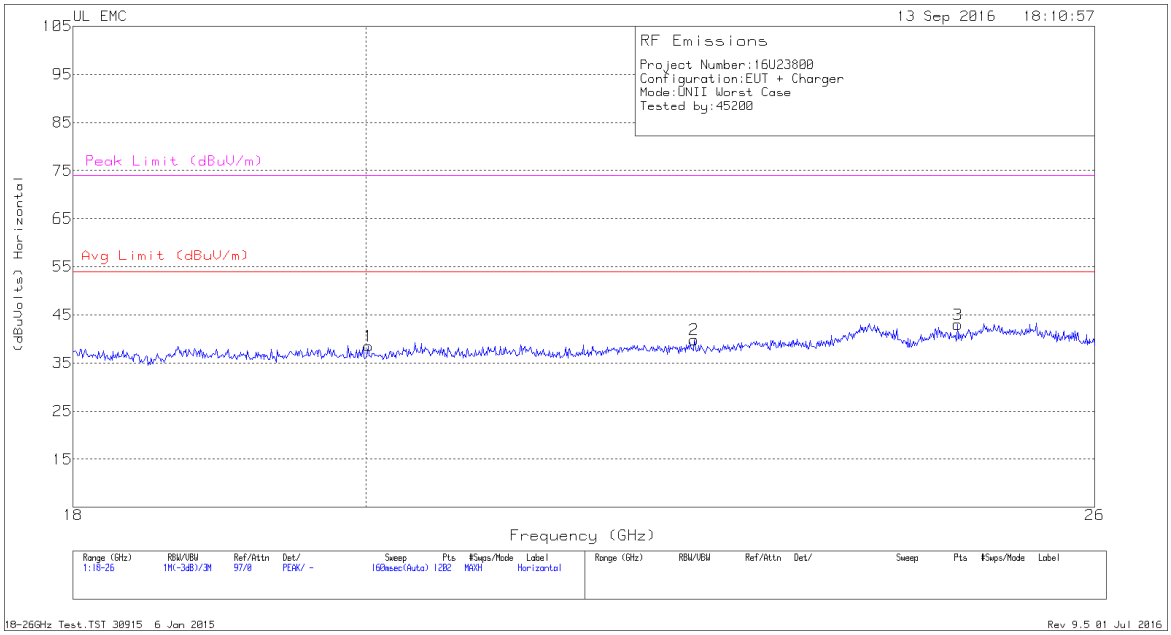
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 255.3	37.89	Pk	15.5	-29.4	23.99	46.02	-22.03	0-360	100	H
4	* 282	35.72	Pk	17.3	-29.2	23.82	46.02	-22.2	0-360	201	V
1	37.395	41.76	Pk	19.7	-31.2	30.26	40	-9.74	0-360	100	V
	37.4539	34.83	Qp	19.7	-31.2	23.33	40	-16.67	81	160	V
6	101.0175	42.89	Pk	14.5	-30.5	26.89	43.52	-16.63	0-360	100	V
2	101.485	44	Pk	14.6	-30.5	28.1	43.52	-15.42	0-360	299	H
3	160.7725	40.62	Pk	16.1	-30	26.72	43.52	-16.8	0-360	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
Qp - Quasi-Peak detector

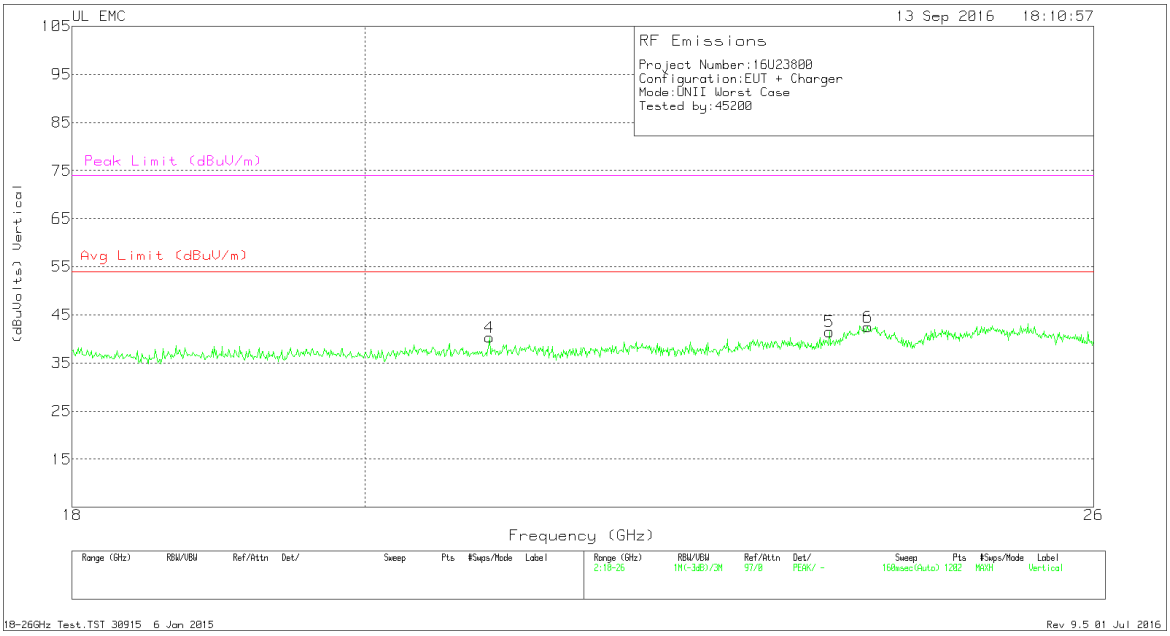
8.165. WORST-CASE ABOVE 18 GHz

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

HORIZONTAL PLOT



VERTICAL PLOT



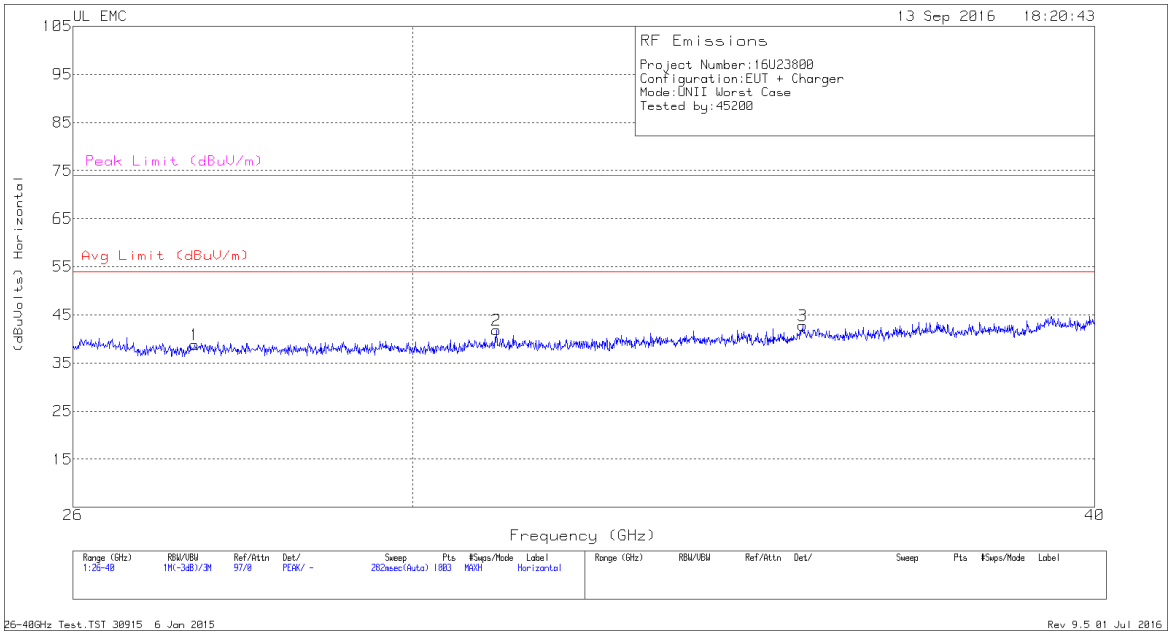
HORIZONTAL AND VERTICAL DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T449 (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	20.018	40.6	Pk	32.6	-25.2	-9.5	38.5	54	-15.5	74	-35.5
2	22.51	40.83	Pk	33.5	-25	-9.5	39.833	54	-14.167	74	-34.167
3	24.748	43.1	Pk	34.2	-24.8	-9.5	43	54	-11	74	-31
4	20.918	41.93	Pk	33.1	-25.2	-9.5	40.333	54	-13.667	74	-33.667
5	23.642	41.8	Pk	33.8	-24.6	-9.5	41.5	54	-12.5	74	-32.5
6	23.968	42.2	Pk	34	-24.2	-9.5	42.5	54	-11.5	74	-31.5

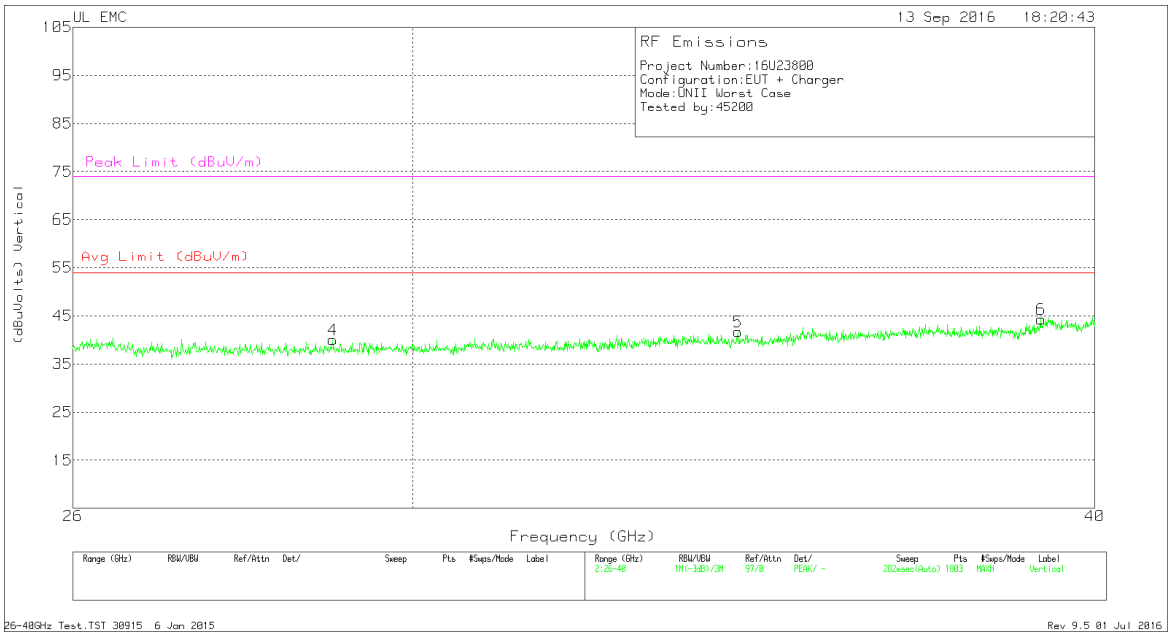
Pk - Peak detector

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

HORIZONTAL PLOT



VERTICAL PLOT



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	27.367	44.23	Pk	35.7	-31.6	-9.5	38.833	54	-15.167	74	-35.167
2	31.081	48.83	Pk	35.9	-33.4	-9.5	41.833	54	-12.167	74	-32.167
3	35.362	48.23	Pk	37.8	-33.7	-9.5	42.833	54	-11.167	74	-31.167
4	29.007	45.9	Pk	35.9	-32.3	-9.5	40	54	-14	74	-34
5	34.414	47.67	Pk	37.3	-33.8	-9.5	41.667	54	-12.333	74	-32.333
6	39.099	48.73	Pk	37.8	-32.7	-9.5	44.333	54	-9.667	74	-29.667

Pk - Peak detector

9. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	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.

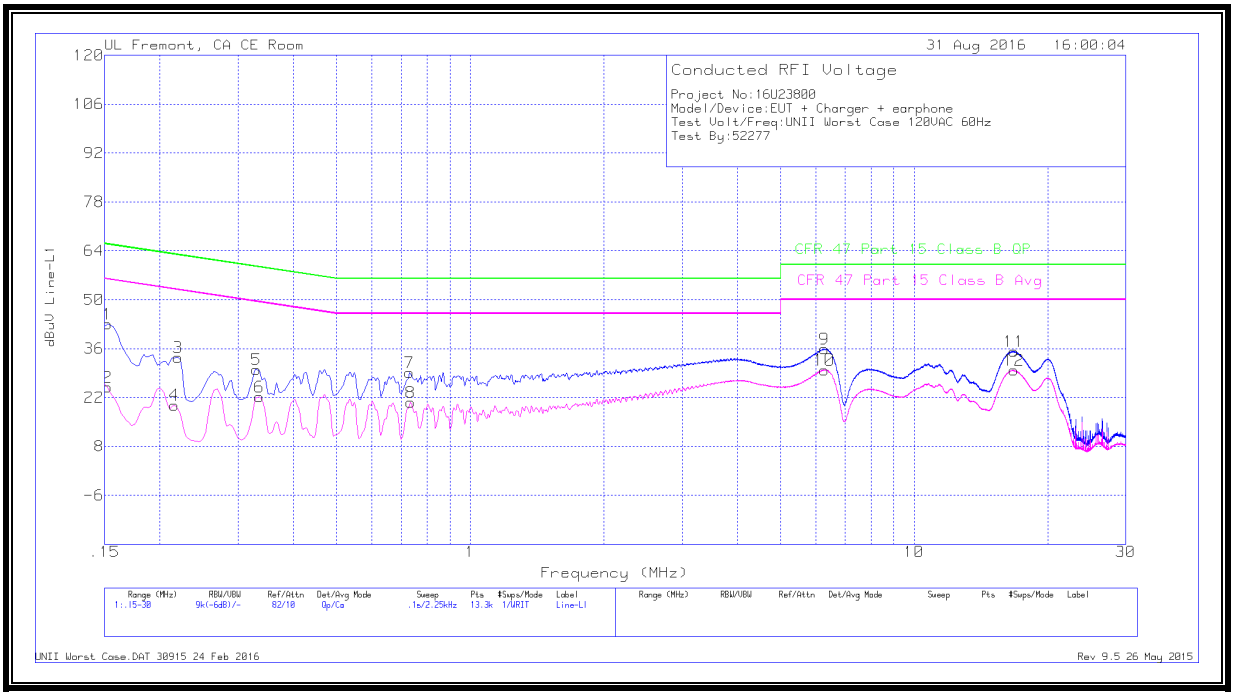
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

EUT POWERED BY AC/DC ADAPTER

LINE 1 RESULTS



WORST EMISSIONS

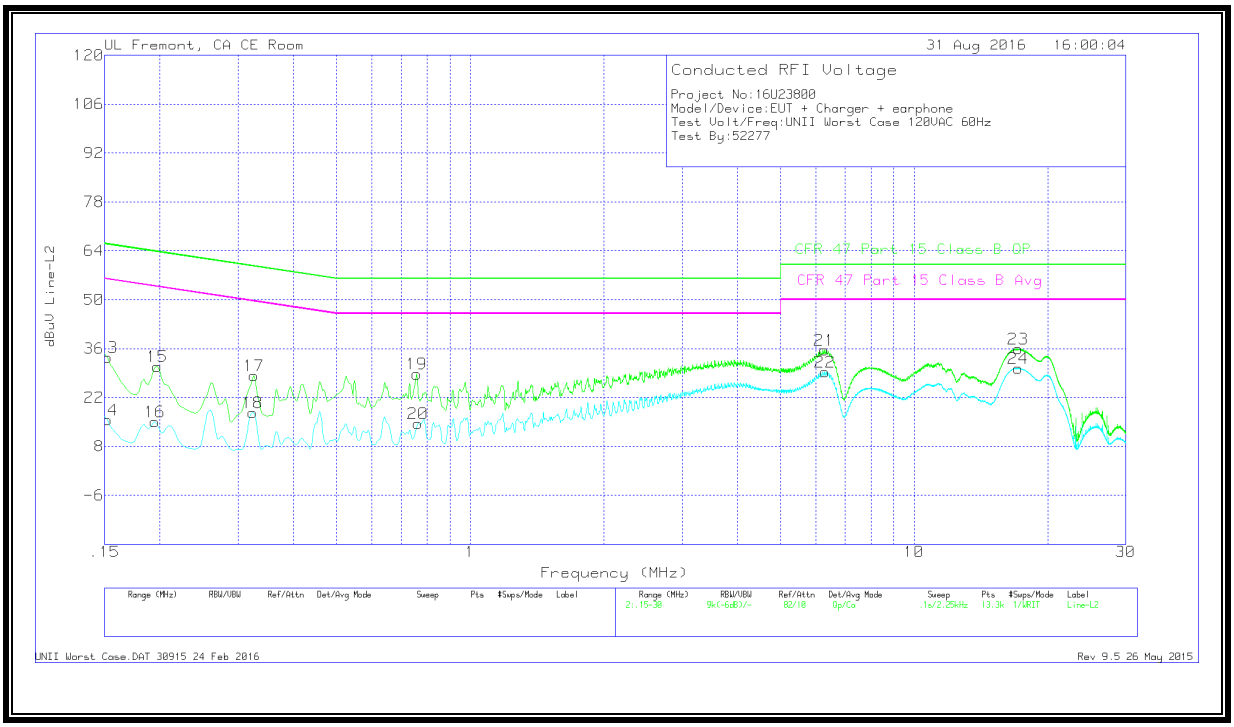
Range 1: Line-L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables 1&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.15225	32.84	Qp	.1	0	10.1	43.04	65.88	-22.84	-	-
2	.15225	14.82	Ca	.1	0	10.1	25.02	-	-	55.88	-30.86
3	.21975	23.37	Qp	0	0	10.1	33.47	62.83	-29.36	-	-
4	.21525	9.74	Ca	0	0	10.1	19.84	-	-	53	-33.16
5	.33	19.9	Qp	0	0	10.1	30	59.45	-29.45	-	-
6	.3345	12.06	Ca	0	0	10.1	22.16	-	-	49.34	-27.18
7	.7305	19.05	Qp	0	0	10.1	29.15	56	-26.85	-	-
8	.735	10.54	Ca	0	0	10.1	20.64	-	-	46	-25.36
9	6.28125	25.57	Qp	0	.1	10.2	35.87	60	-24.13	-	-
10	6.27788	19.62	Ca	0	.1	10.2	29.92	-	-	50	-20.08
11	16.78875	24.66	Qp	0	.2	10.3	35.16	60	-24.84	-	-
12	16.78425	19.32	Ca	0	.2	10.3	29.82	-	-	50	-20.18

Qp - Quasi-Peak detector

Ca - CISPR average detection

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables 2&3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.15225	23.39	Qp	0	0	10.1	33.49	65.88	-32.39	-	-
14	.15225	5.45	Ca	0	0	10.1	15.55	-	-	55.88	-40.33
15	.19725	20.84	Qp	0	0	10.1	30.94	63.73	-32.79	-	-
16	.195	4.91	Ca	0	0	10.1	15.01	-	-	53.82	-38.81
17	.3255	18.2	Qp	0	0	10.1	28.3	59.57	-31.27	-	-
18	.32325	7.58	Ca	0	0	10.1	17.68	-	-	49.62	-31.94
19	.7575	18.61	Qp	0	0	10.1	28.71	56	-27.29	-	-
20	.762	4.45	Ca	0	0	10.1	14.55	-	-	46	-31.45
21	6.28575	25.31	Qp	0	.1	10.2	35.61	60	-24.39	-	-
22	6.2925	19.06	Ca	0	.1	10.2	29.36	-	-	50	-20.64
23	17.16675	25.4	Qp	0	.2	10.3	35.9	60	-24.1	-	-
24	17.14875	19.9	Ca	0	.2	10.3	30.4	-	-	50	-19.6

Qp - Quasi-Peak detector

Ca - CISPR average detection

10. DYNAMIC FREQUENCY SELECTION

10.1. OVERVIEW

10.1.1. 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)
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	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

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
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)
U-NII Detection Bandwidth	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) x (19 x 10^6 PRI_{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 *Detection Bandwidth* test, *Channel Move Time*, and *Channel Closing Time* tests.

Table 6 – Long Pulse Radar Test Signal

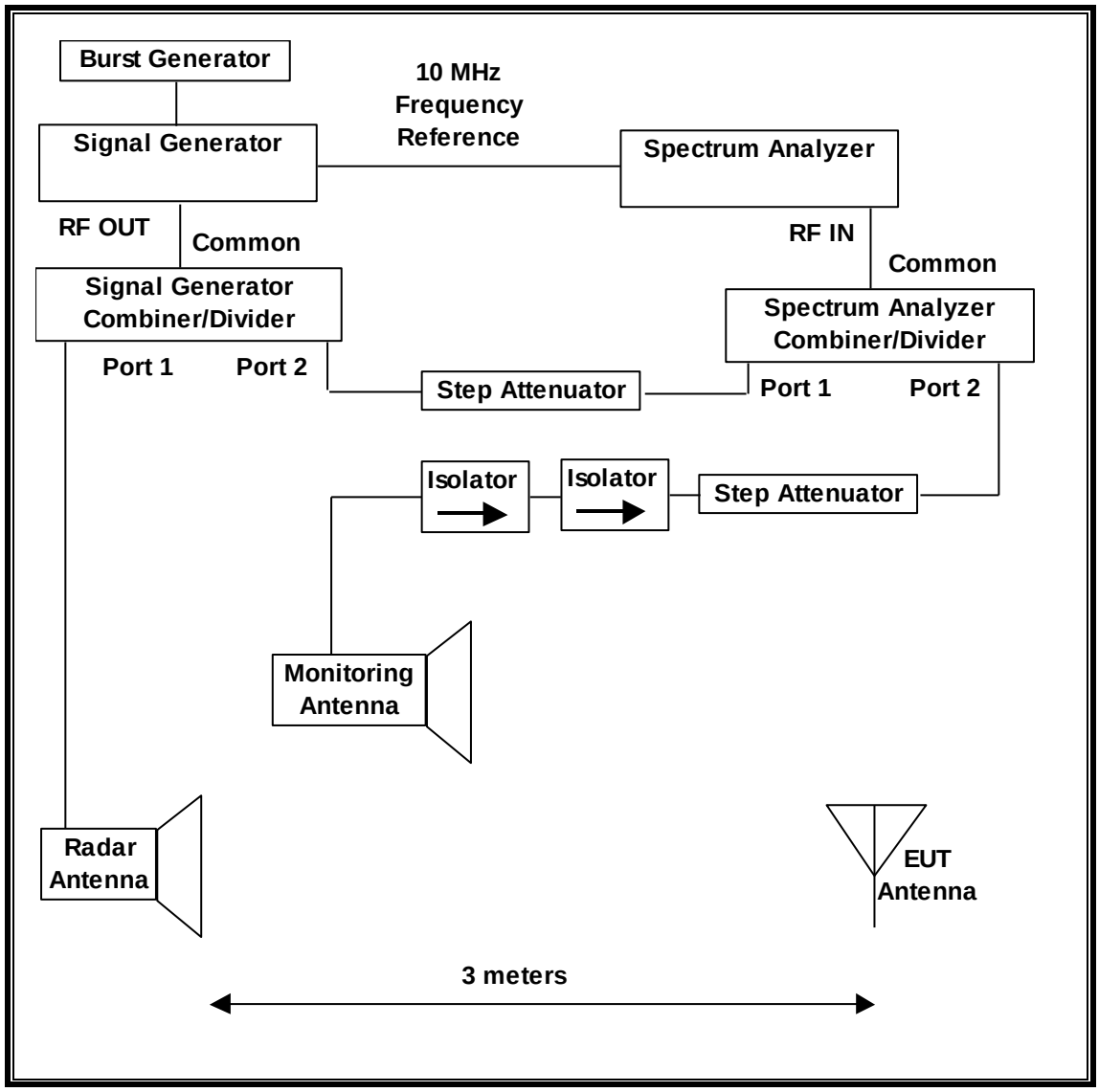
Radar Waveform Type	Pulse Width (µsec)	Chirp Width (MHz)	PRI (µsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

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

10.1.2. 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:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset Number**	**Cal Due**
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	US51350187	06/13/17
Signal Generator, MXG X-Series RF Vector	Agilent	N5182B	MY51350337	03/11/17

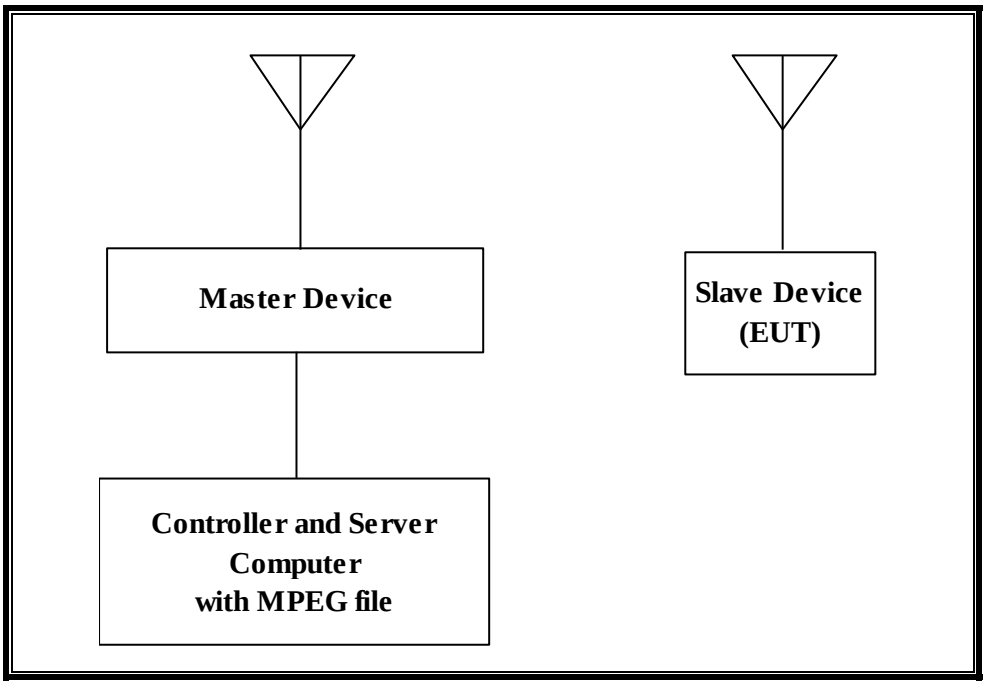
10.1.3. TEST AND MEASUREMENT SOFTWARE

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

TEST SOFTWARE LIST		
Name	**Version**	**Test / Function**
Aggregate Time-PXA	3.0	Channel Loading and Aggregate Closing Time
PXA Read	3.0.0.9	Signal Generator Screen Capture
SGXProject.exe	1.7	Radar Waveform Generation and Download

10.1.4. SETUP OF EUT (CLIENT MODE)

RADIATED METHOD EUT TEST SETUP



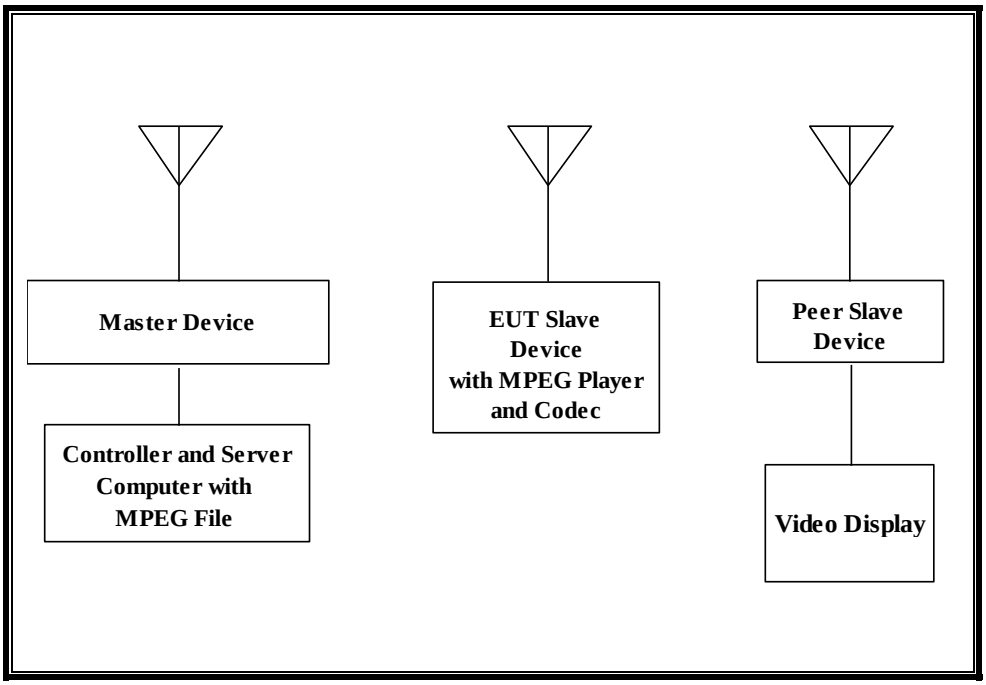
SUPPORT EQUIPMENT

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**
AC Adapter (EUT)	Apple	B280	No Serial Number	DoC
3x3 MIMO Base Station (Master Device)	Apple	A1521	C86L3BA8FJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1502	C02LRKYFH00	DoC
AC Adapter (Controller/Server PC)	Apple	A1436	C045204H7VAG6HHAW	DoC

10.1.5. 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**
AC Adapter (EUT)	Apple	B280	No Serial Number	DoC
3x3 MIMO Base Station (Master Device)	Apple	A1521	C86PJ60JFJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1181	4H629022WLV	DoC
AC Adapter (Controller/Server PC)	Delta Electronics	A1344	MV05104CNAL1A	DoC
Apple TV (Peer Slave Device)	Apple	A1625	C07PR001GPWK	BCGA1625
Video Display	Polaroid	TLX-01511C	02006	DoC

10.1.6. DESCRIPTION OF EUT

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

For IC the EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges, excluding the 5600-5650 MHz range.

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 24.85 dBm EIRP in the 5250-5350 MHz band and 25.09 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT has a gain of 7.6 dBi in the 5250-5350 MHz band and 7.4 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.

The EUT uses three transmitter/receiver chains, each 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 VLC version 2.2.4 Weatherwax media player and embedded proprietary AirPlay software.

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 access point used during Client Mode is 7.7.2f0 dev.

The software installed in the access point used during Client-to-Client Communications Mode is 7.7.4f0 dev.

The software installed in the EUT is Mac OS Sierra revision 10.12 (16A215).

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 > 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 used during Client Mode is 7.7.2f0 dev.

The software installed in the access point used during Client-to-Client Communications Mode is 7.7.4f0 dev.

10.2. CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH

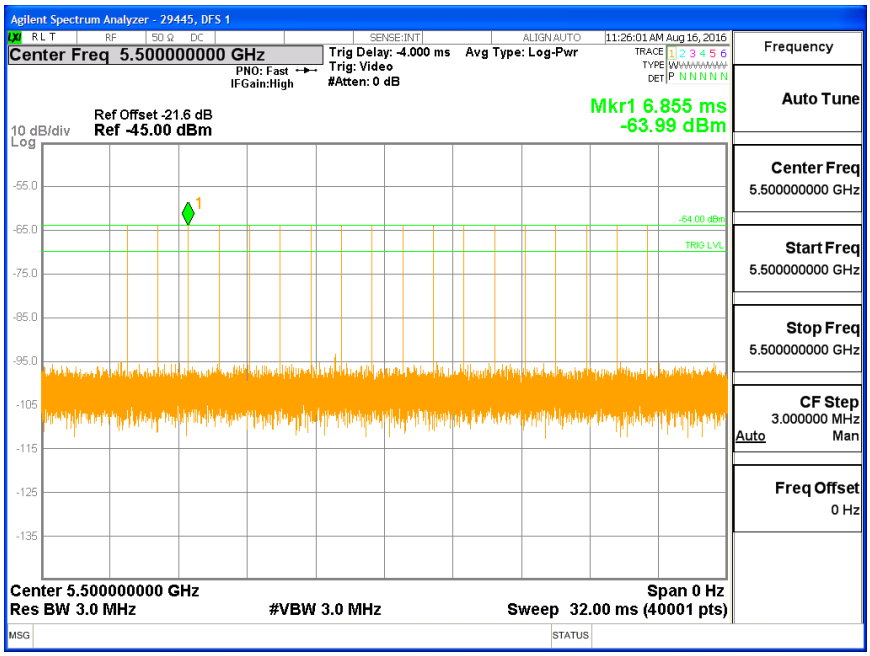
10.2.1. TEST CHANNEL

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

10.2.2. RADAR WAVEFORM AND TRAFFIC

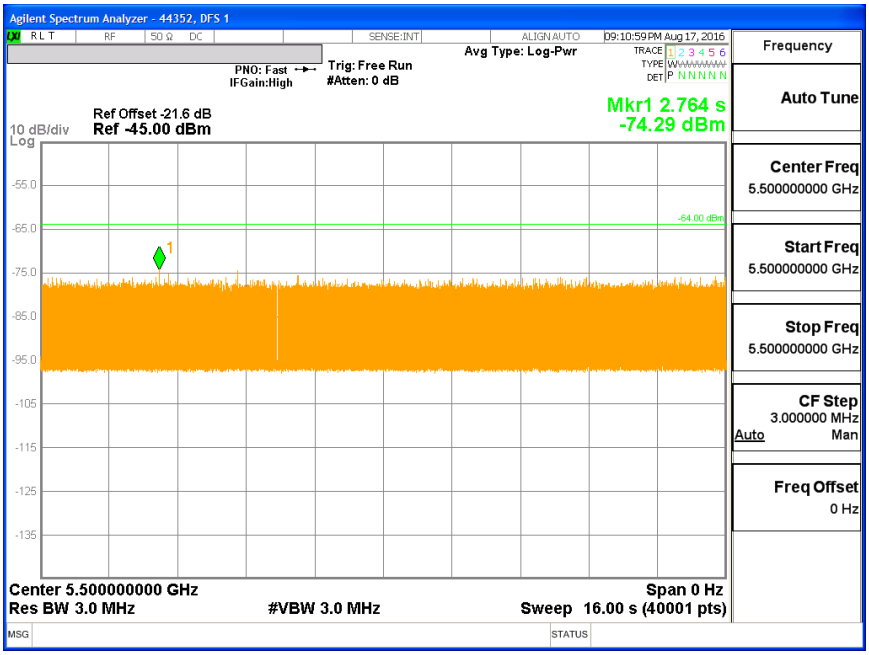
RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER

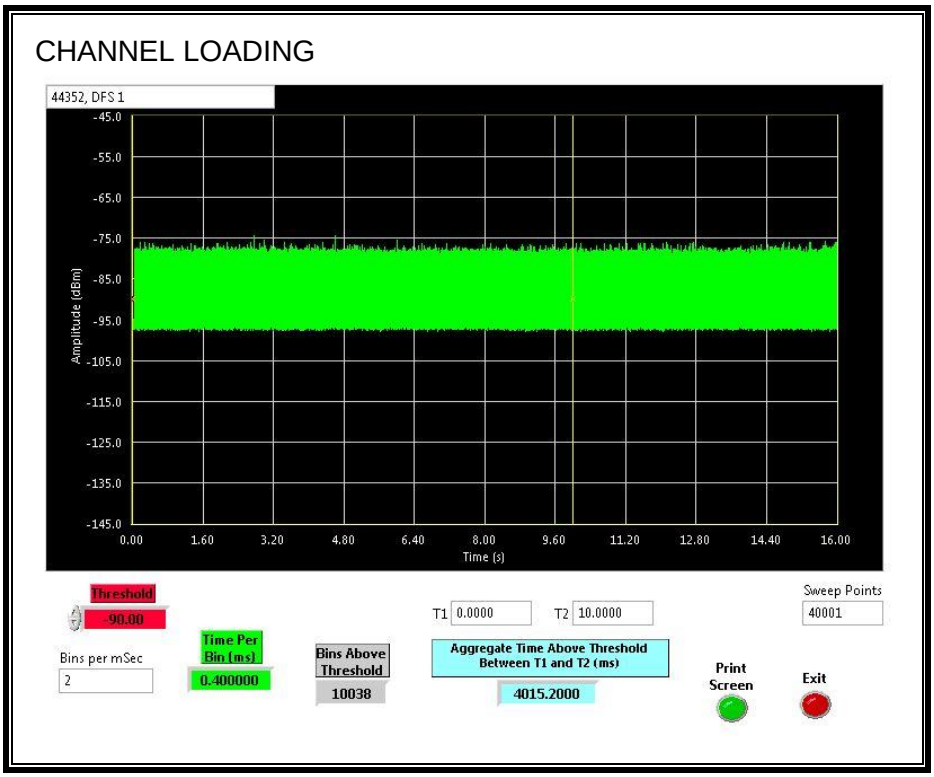


TRAFFIC

SLAVE TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 40.152%

10.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

10.2.4. 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).

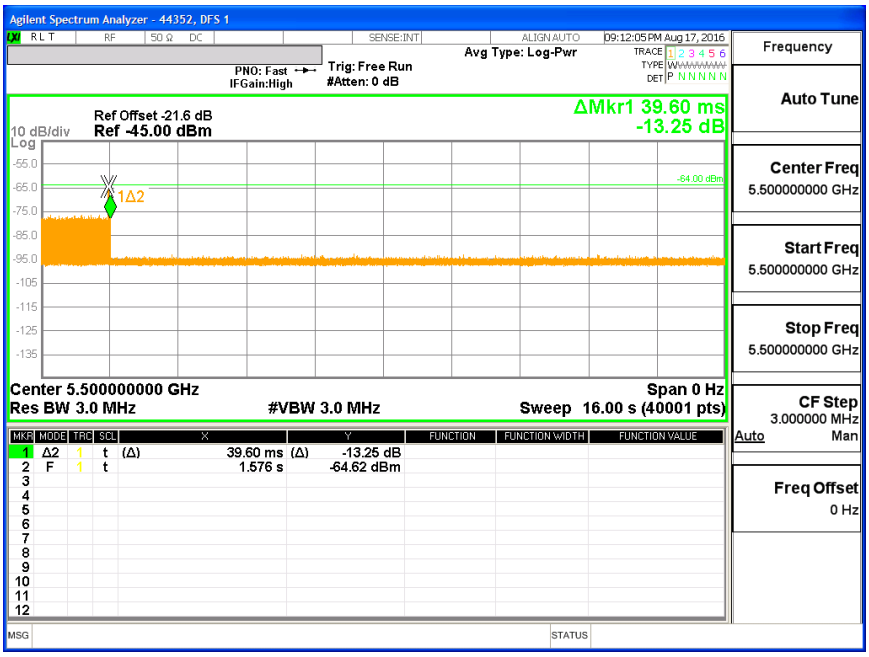
RESULTS

Channel Move Time (sec)	Limit (sec)
0.0396	10

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

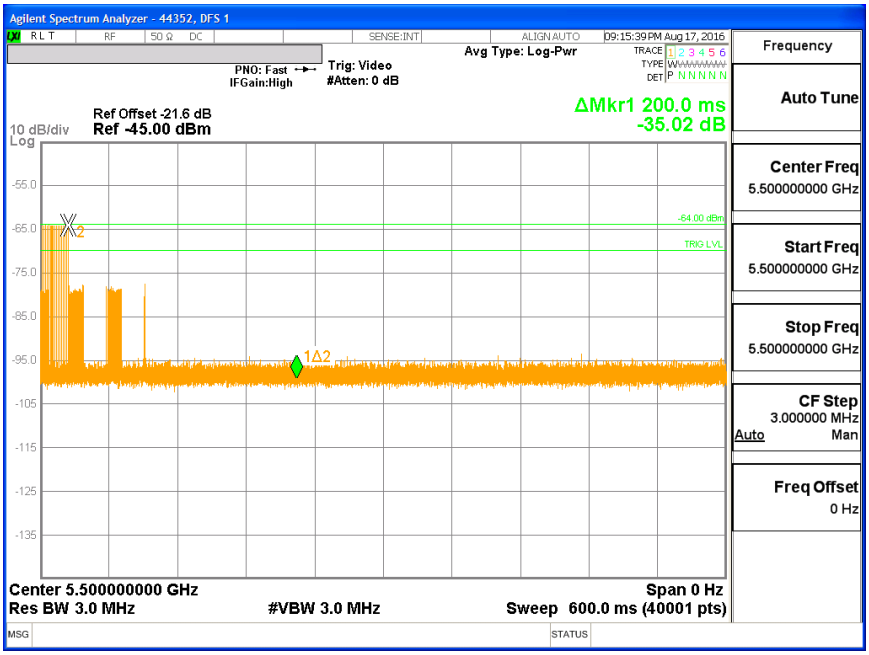
MOVE TIME

MOVE TIME



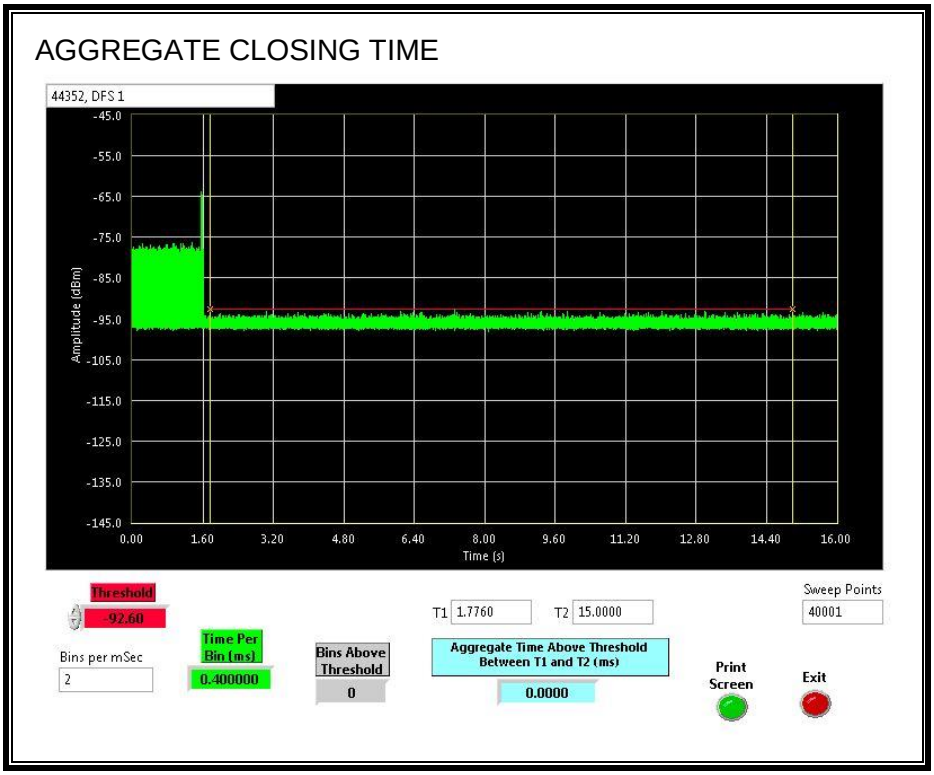
CHANNEL CLOSING TIME

CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



10.3. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH

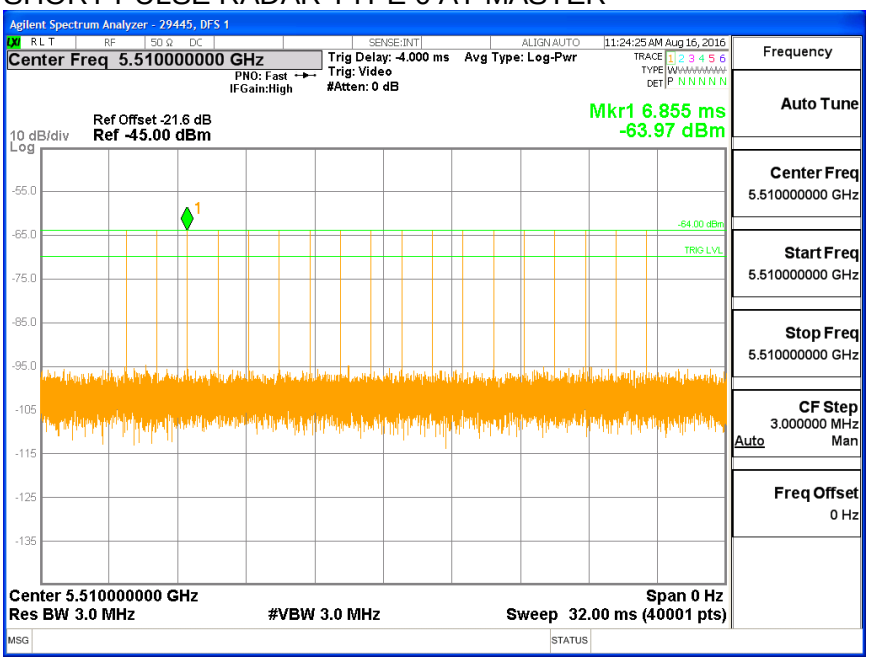
10.3.1. TEST CHANNEL

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

10.3.2. RADAR WAVEFORM AND TRAFFIC

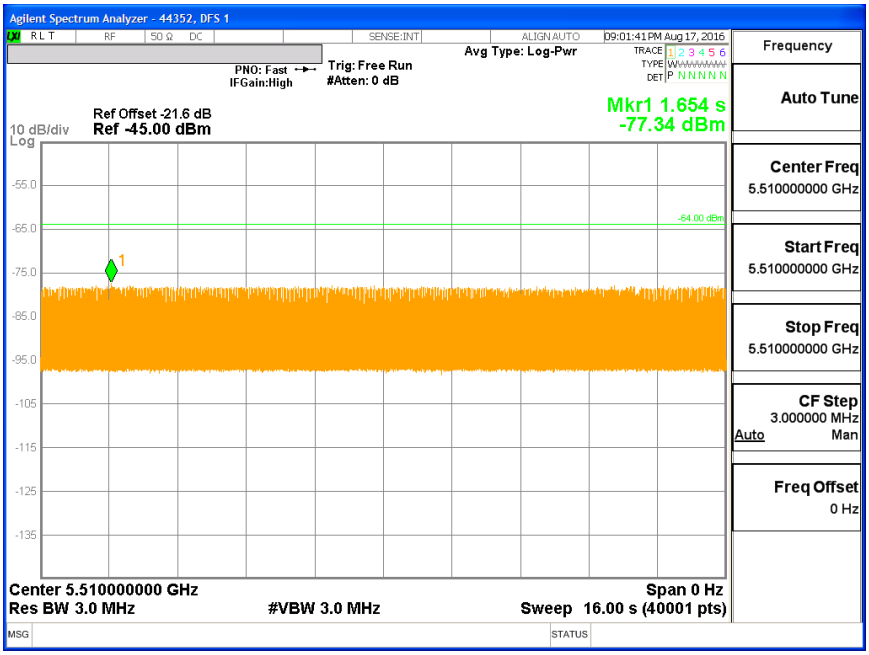
RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER

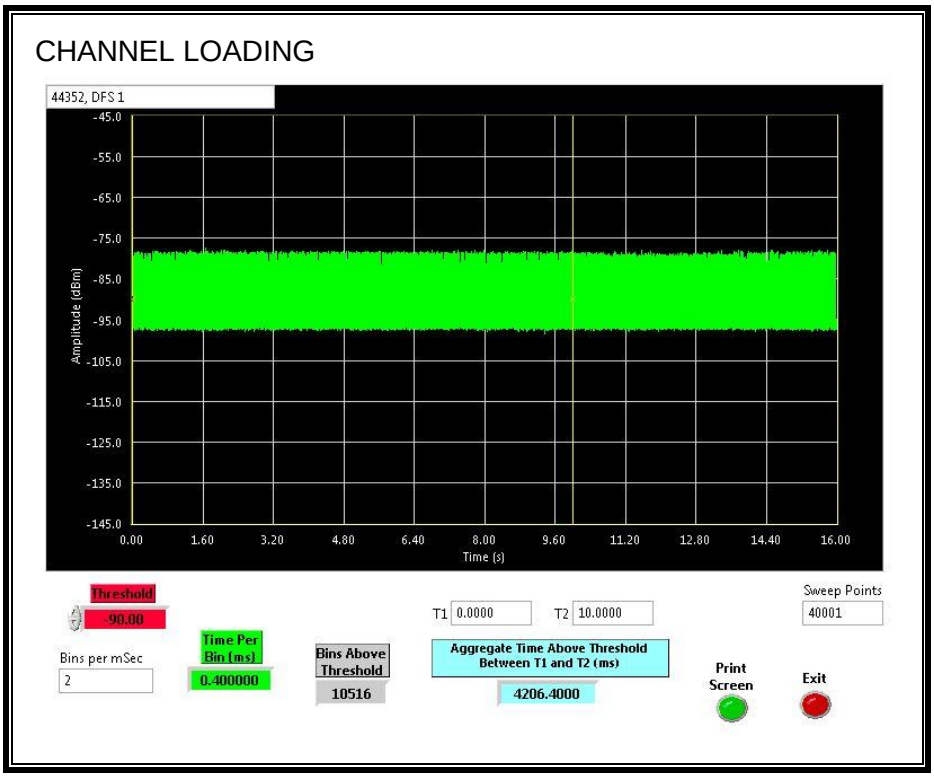


TRAFFIC

SLAVE TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 42.064%

10.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

10.3.4. 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).

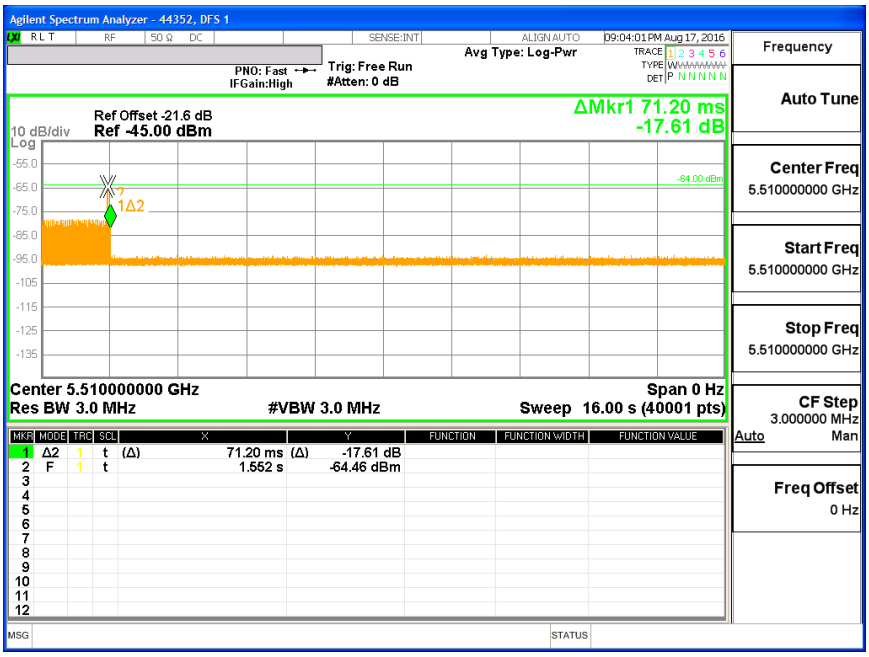
RESULTS

Channel Move Time (sec)	Limit (sec)
0.712	10

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

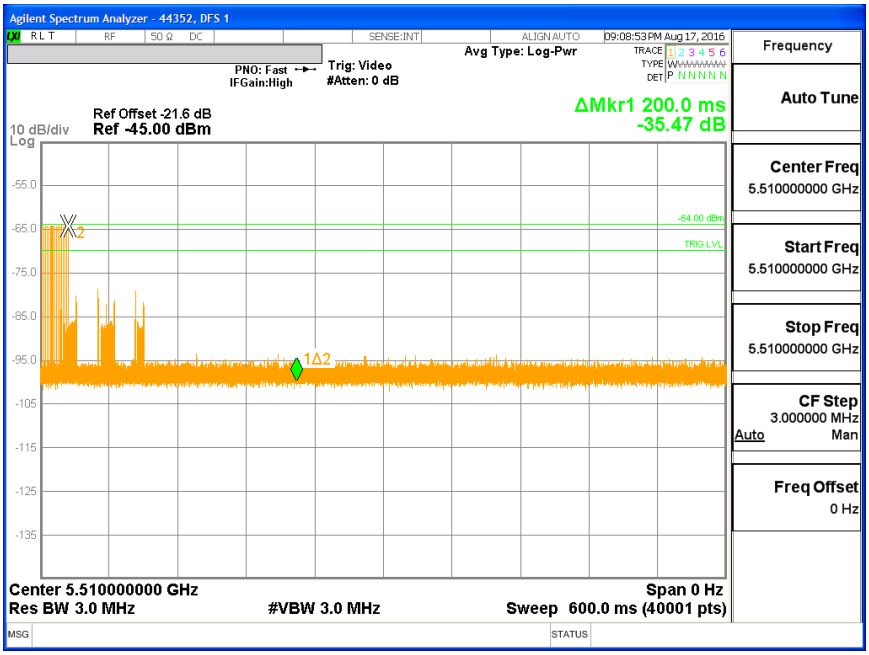
MOVE TIME

MOVE TIME



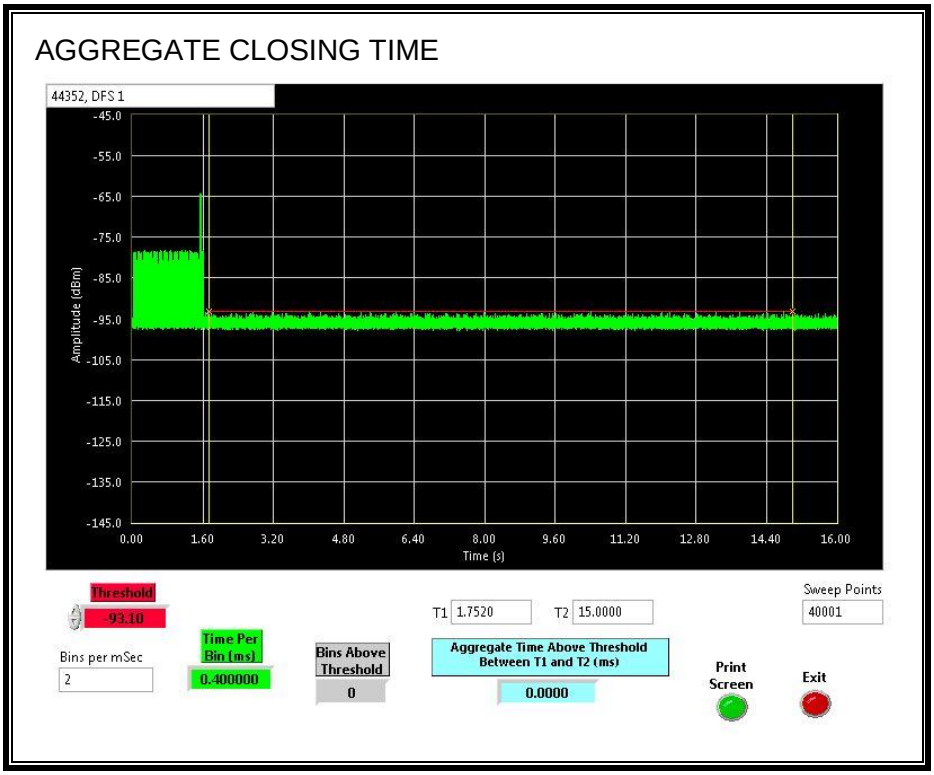
CHANNEL CLOSING TIME

CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



10.4. CLIENT MODE RESULTS FOR 80 MHz BANDWIDTH

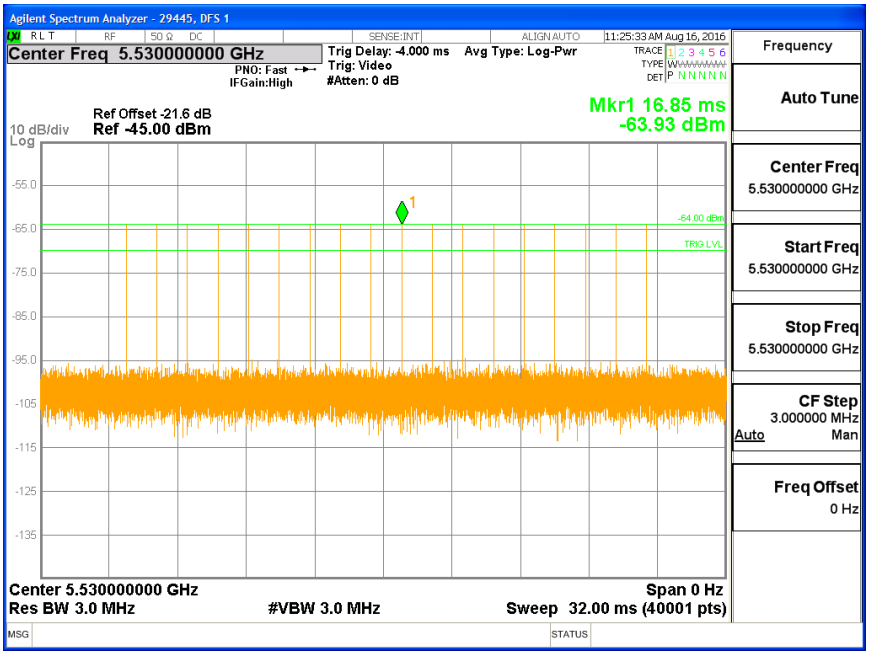
10.4.1. TEST CHANNEL

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

10.4.2. RADAR WAVEFORM AND TRAFFIC

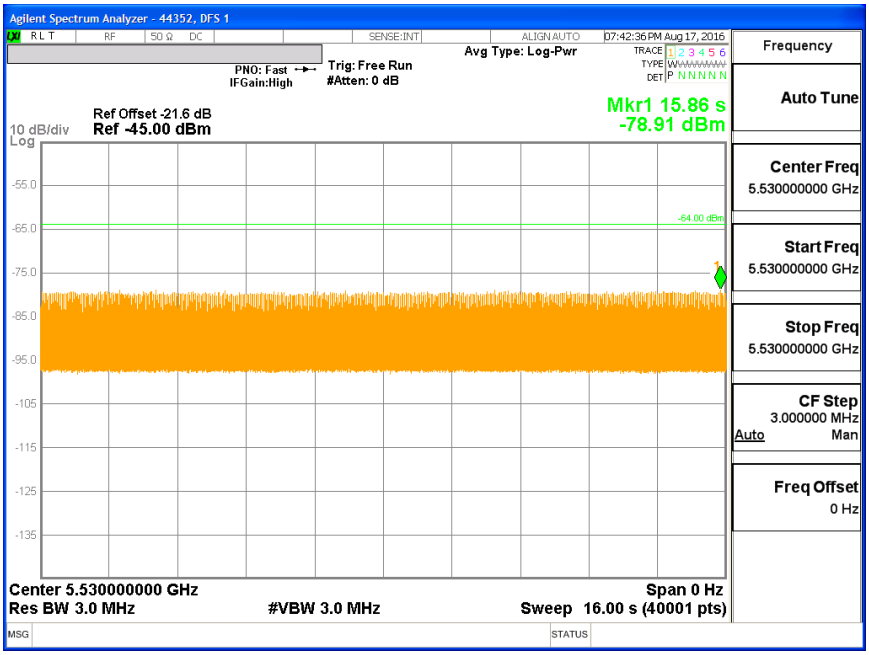
RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER

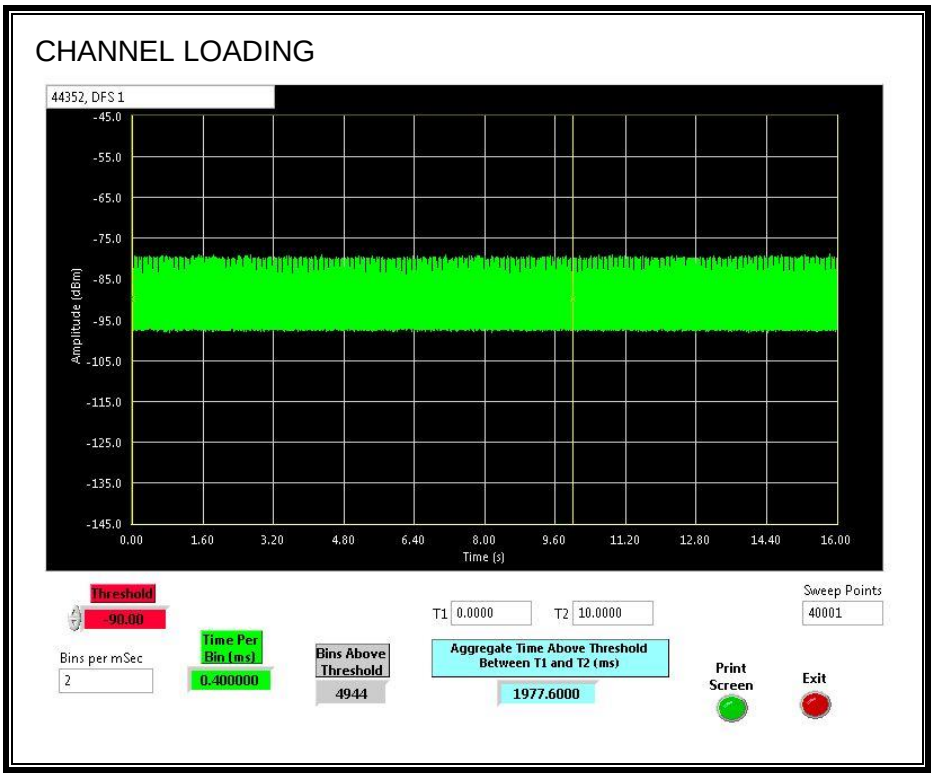


TRAFFIC

SLAVE TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 19.776%

10.4.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

10.4.4. 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).

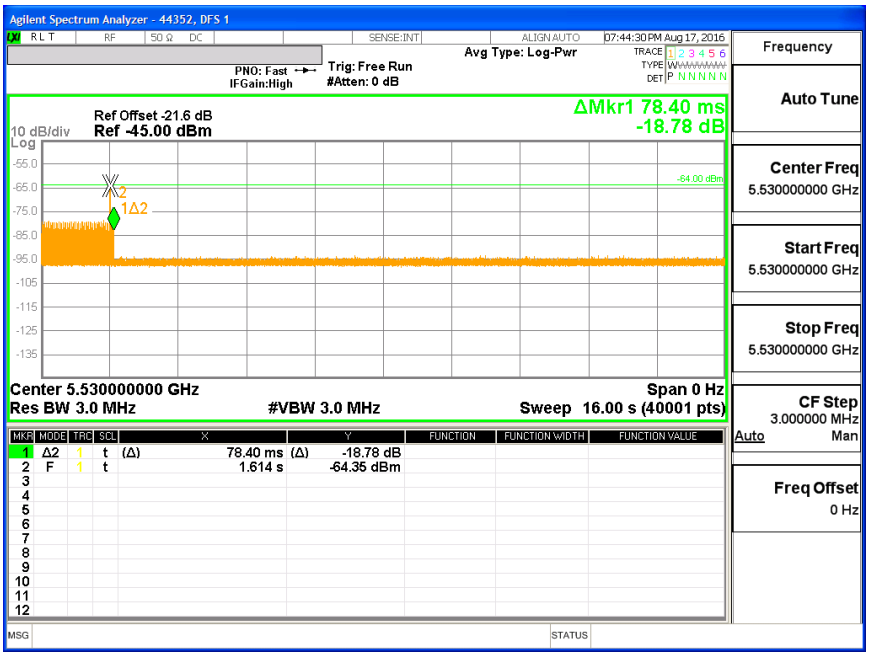
RESULTS

Channel Move Time (sec)	Limit (sec)
0.0784	10

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

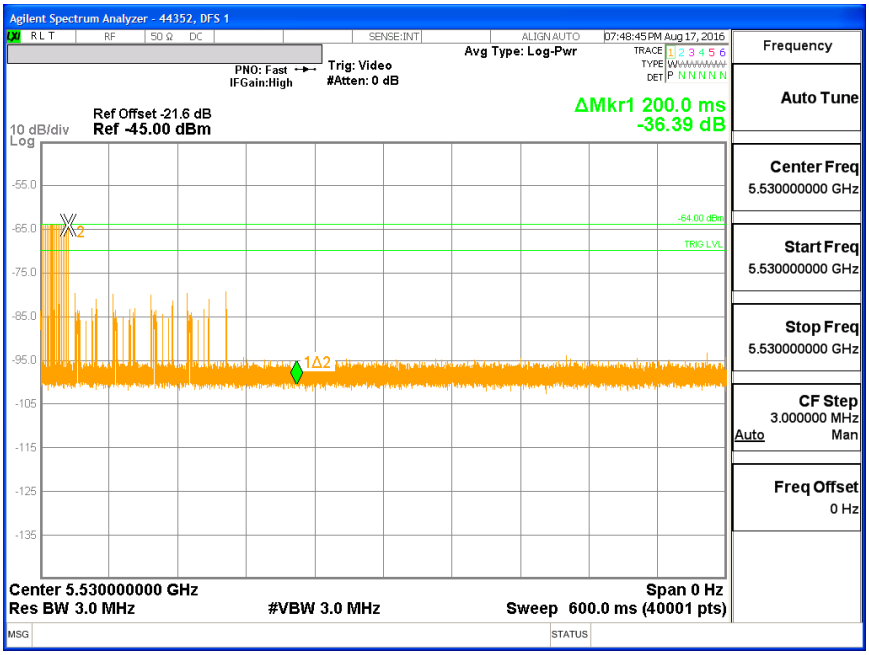
MOVE TIME

MOVE TIME



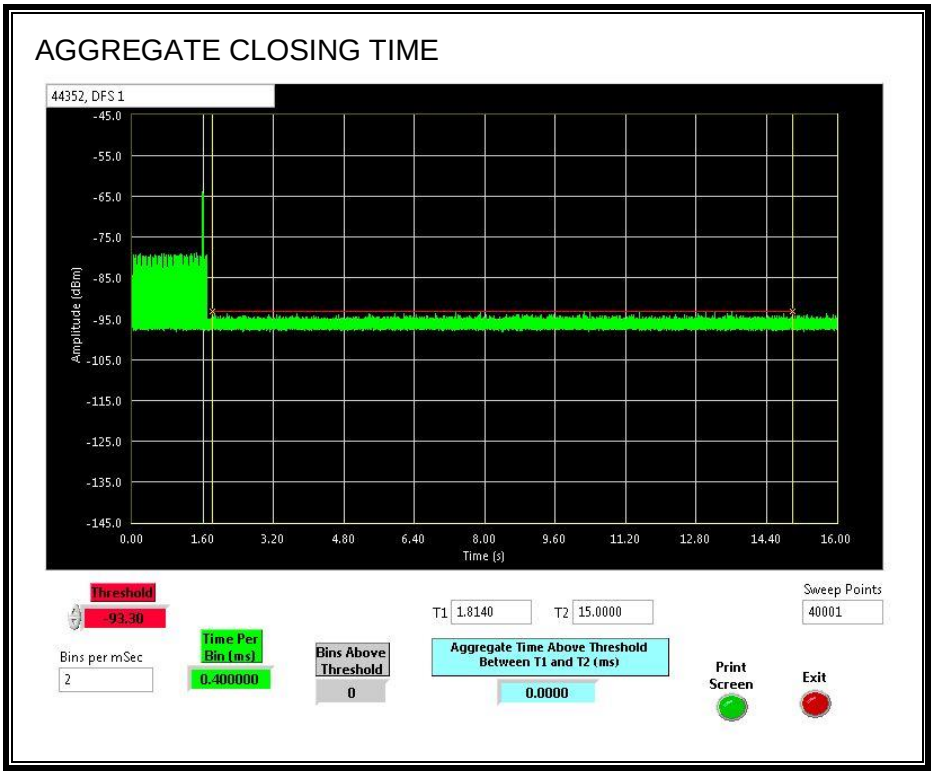
CHANNEL CLOSING TIME

CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

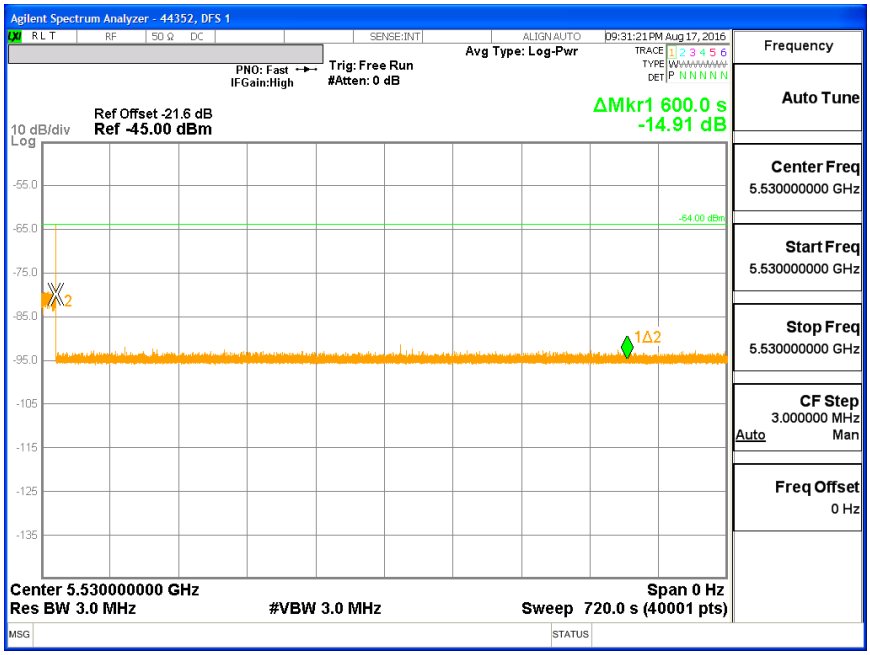


10.4.5. 10-MINUTE CLIENT Tx MONITORING PERIOD

RESULTS

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

10-MINUTE CLIENT Tx MONITORING PERIOD



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

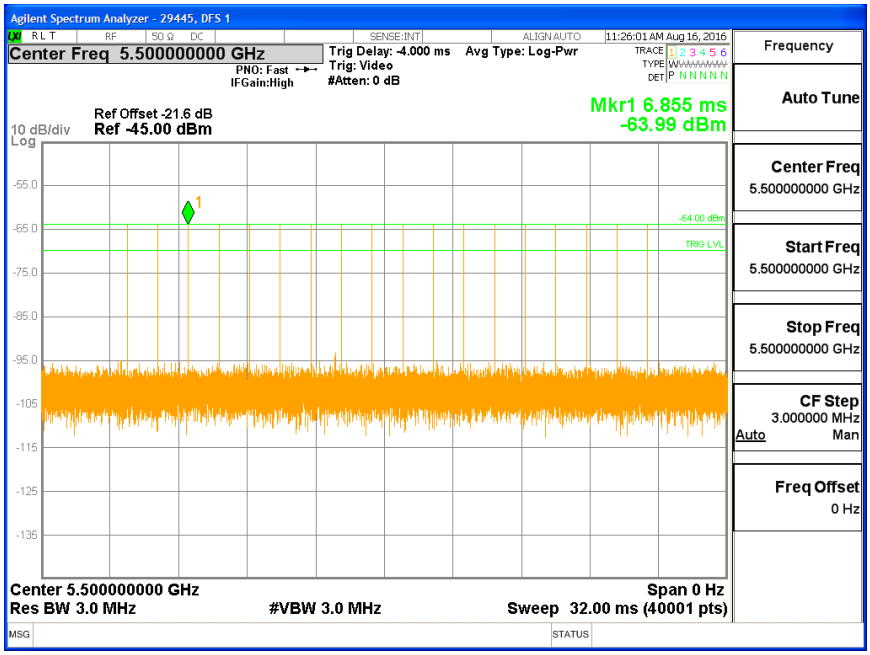
10.5.1. TEST CHANNEL

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

10.5.2. RADAR WAVEFORM AND TRAFFIC

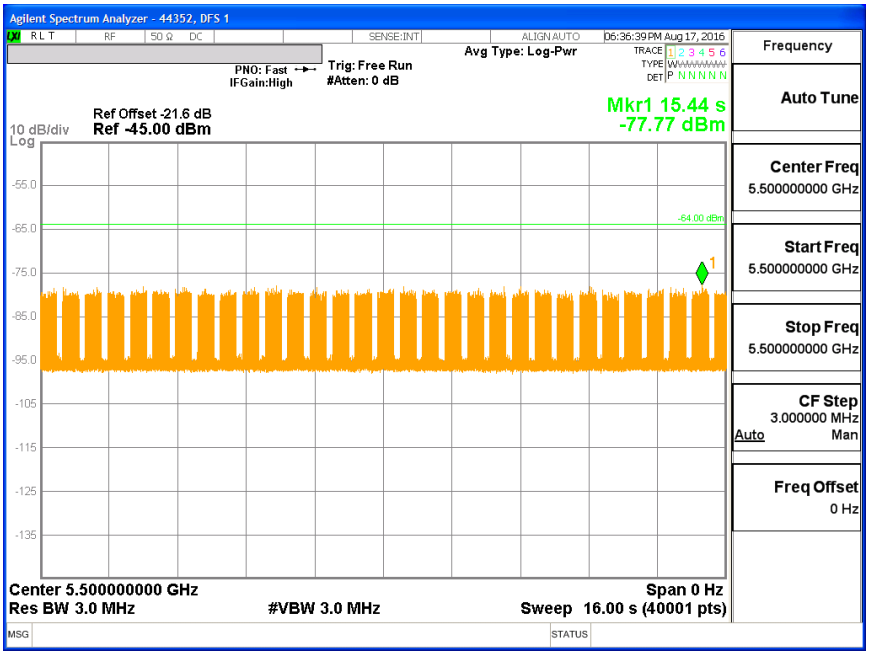
RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER

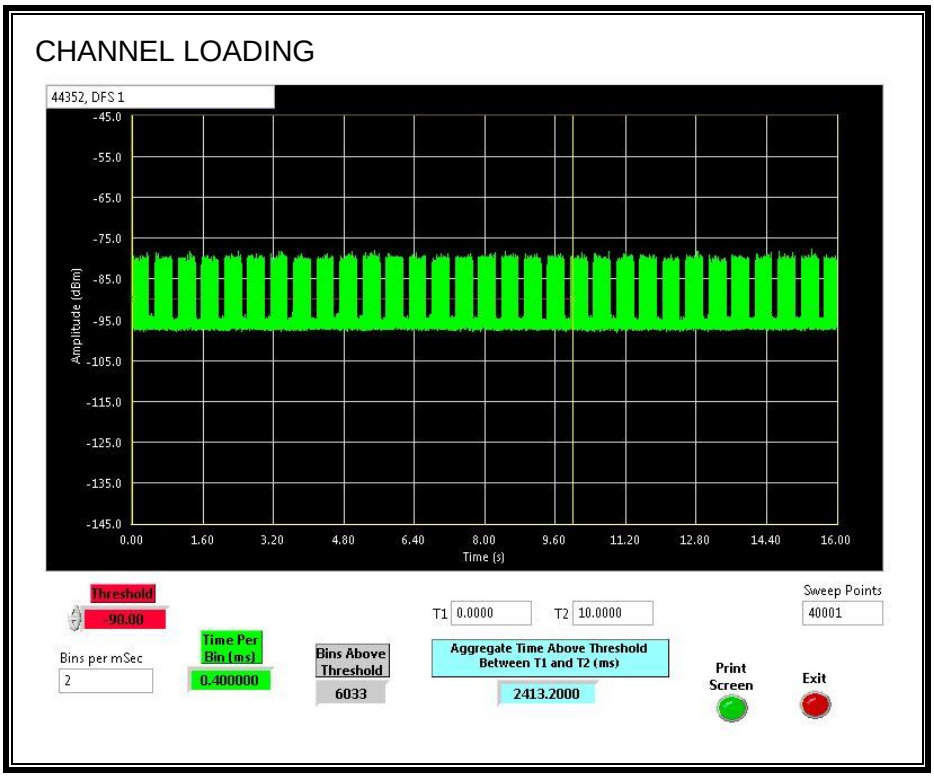


TRAFFIC

SLAVE TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 24.132%

10.5.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

10.5.4. 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)
0.151	10

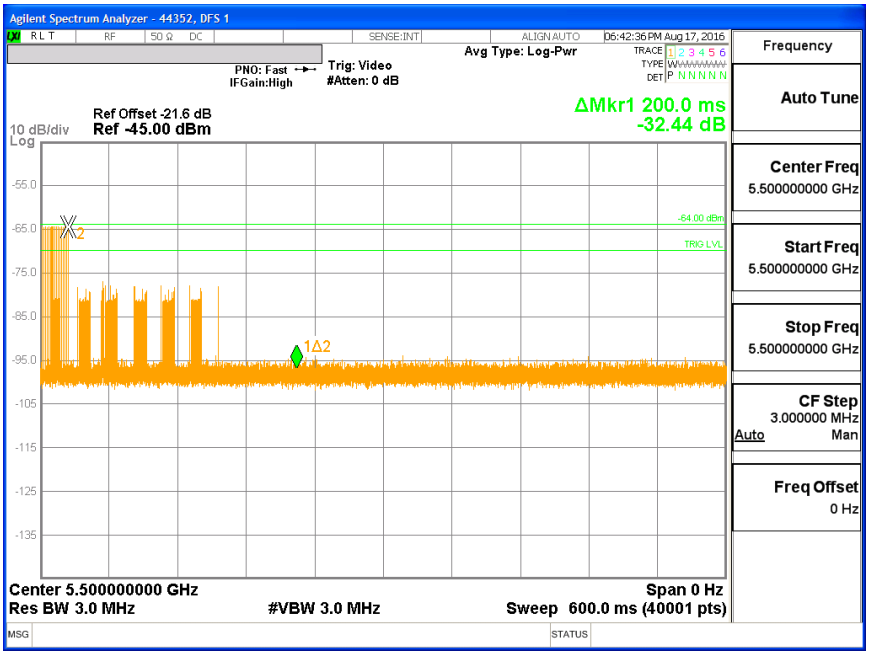
Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

MOVE TIME

MOVE TIME

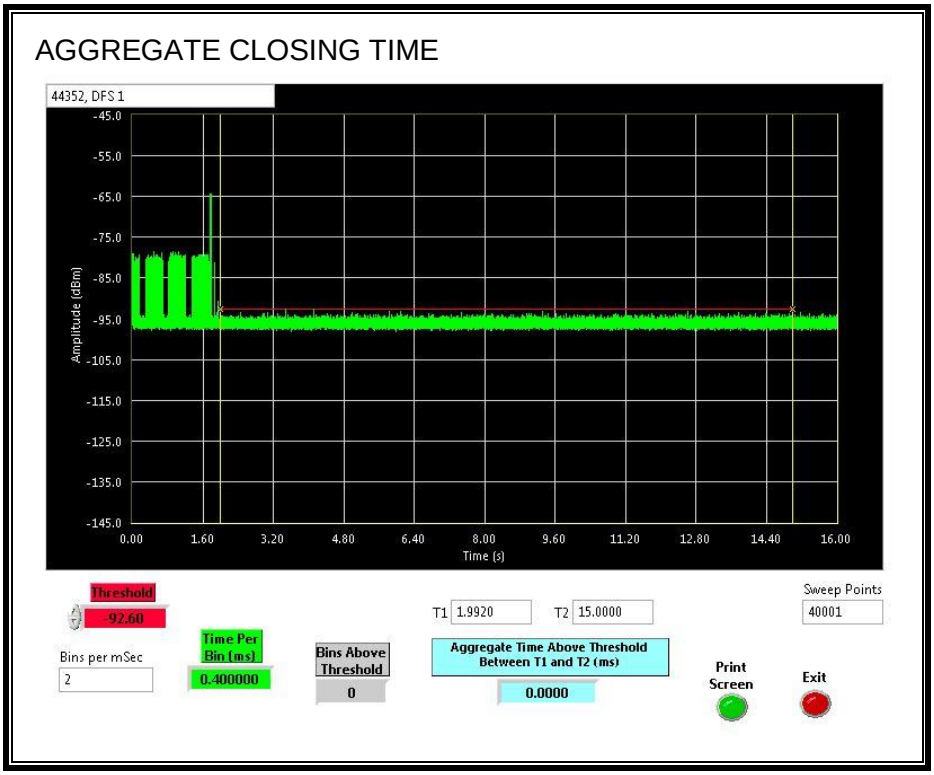
CHANNEL CLOSING TIME

CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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

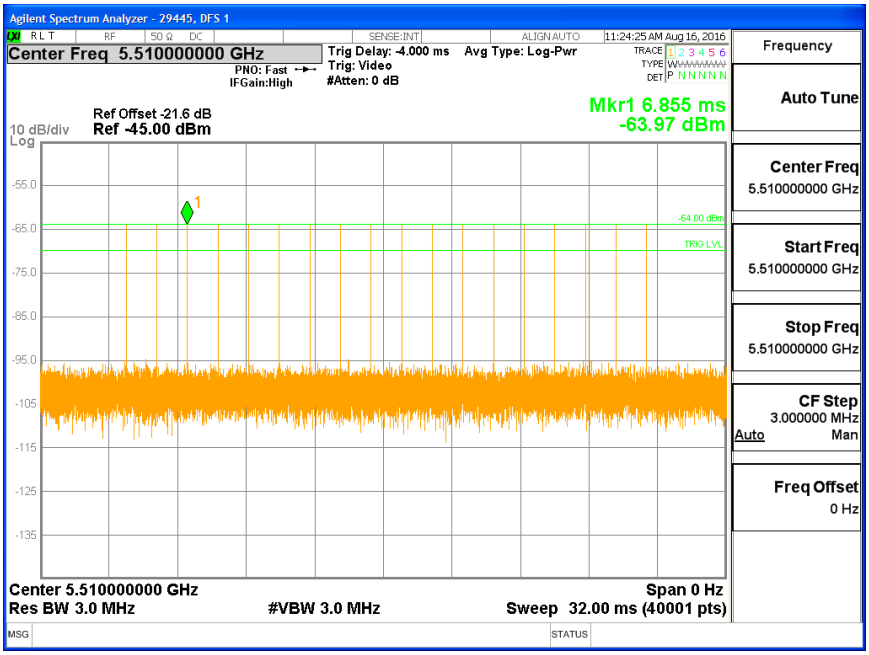
10.6.1. TEST CHANNEL

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

10.6.2. RADAR WAVEFORM AND TRAFFIC

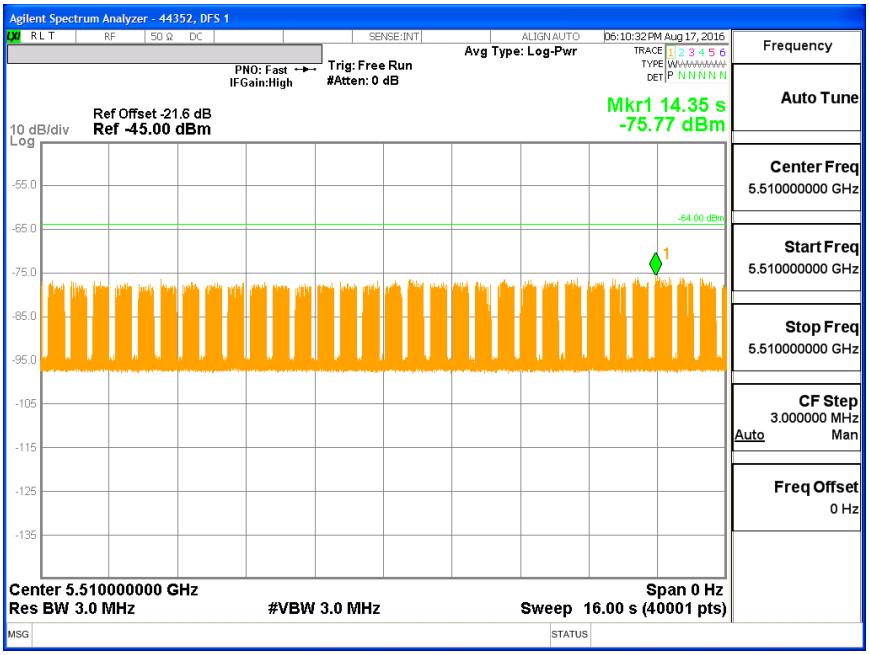
RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER

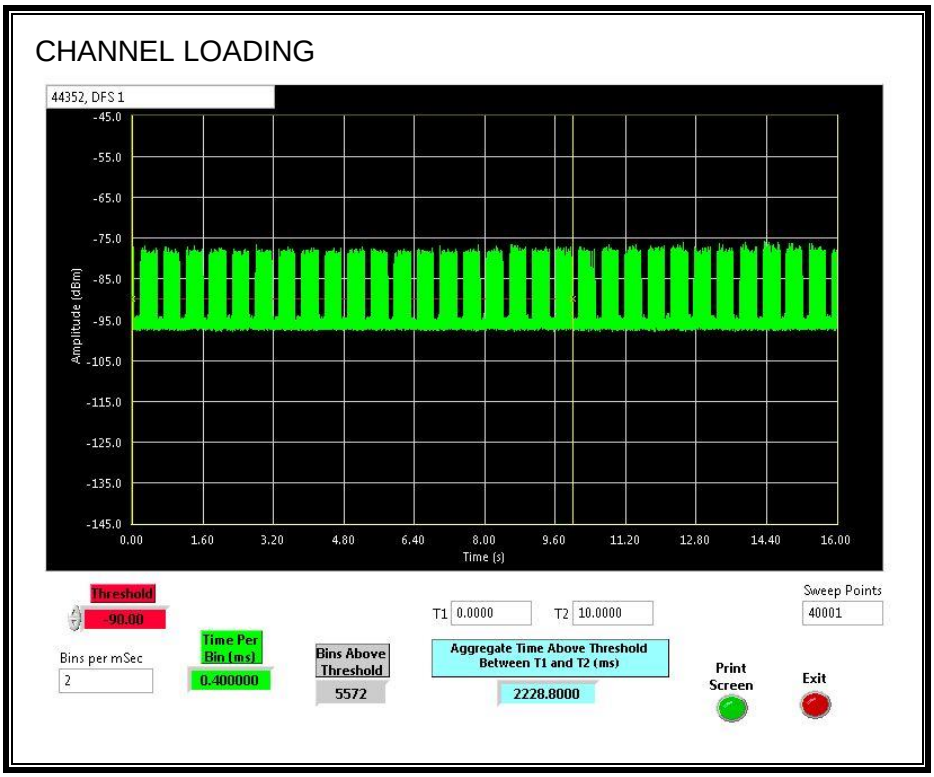


TRAFFIC

SLAVE TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 22.28%%

10.6.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

10.6.4. 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)

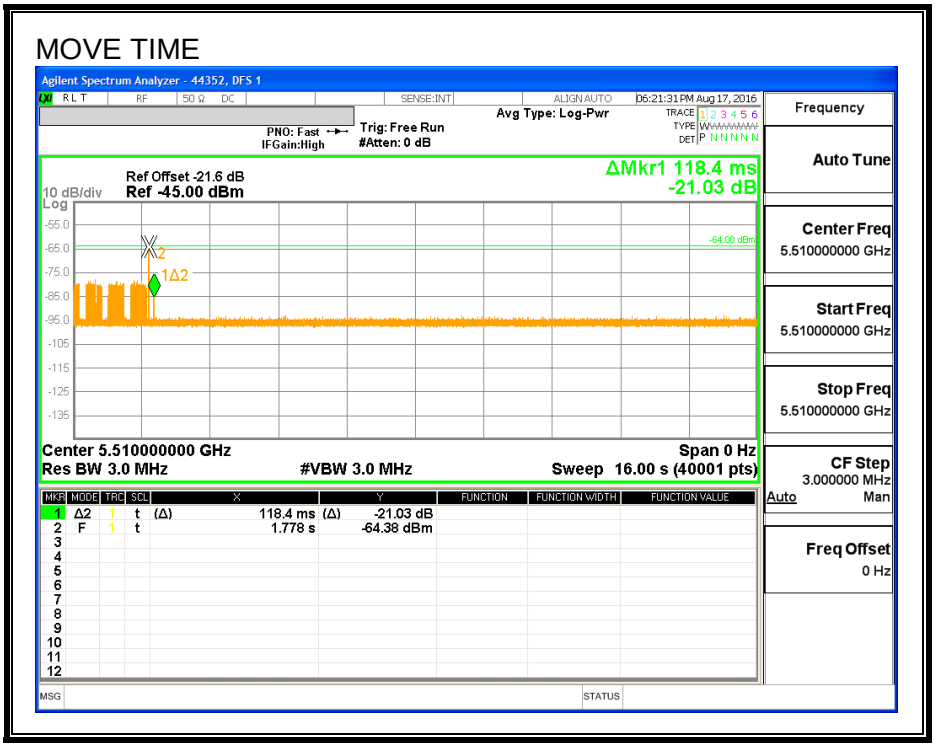
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

Channel Move Time (sec)	Limit (sec)
0.118	10

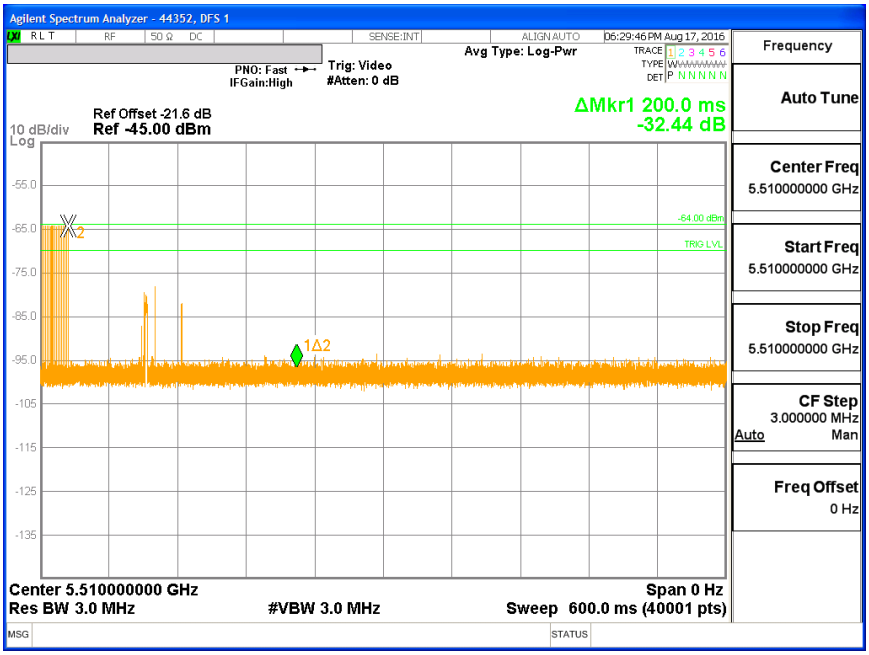
Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.0	60

MOVE TIME



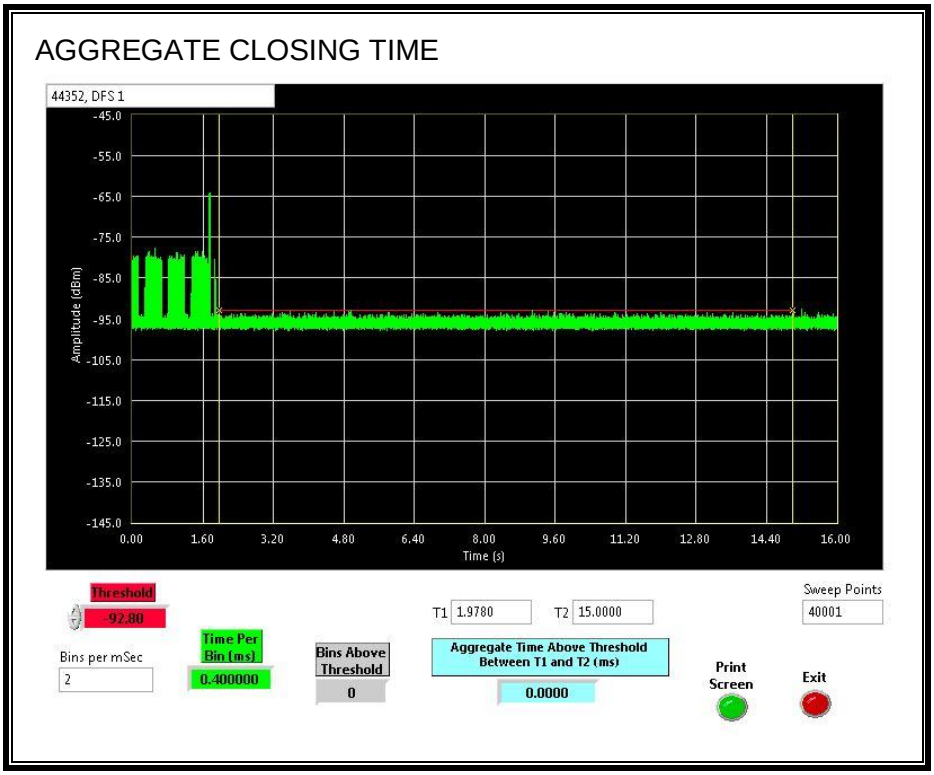
CHANNEL CLOSING TIME

CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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

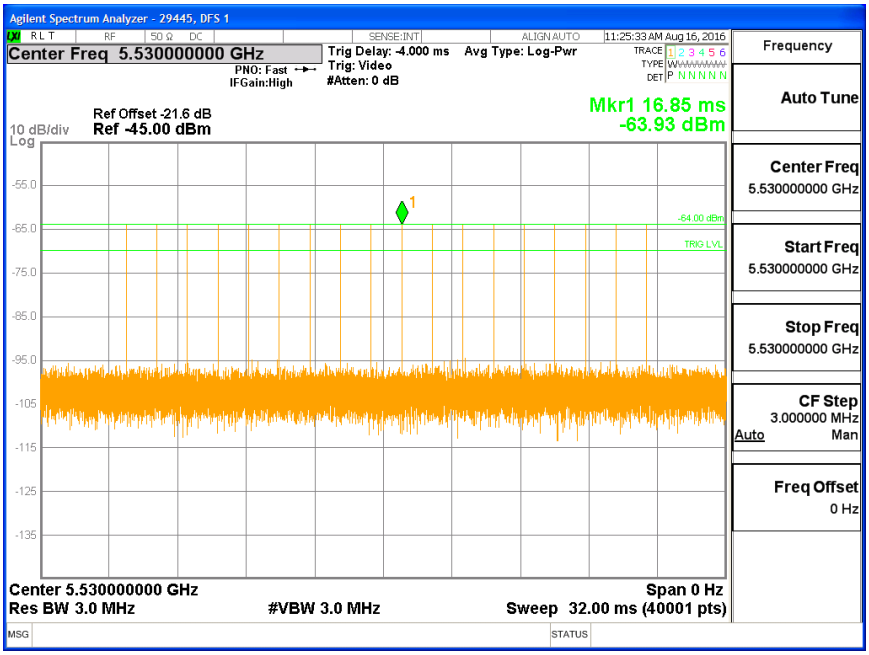
10.7.1. TEST CHANNEL

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

10.7.2. RADAR WAVEFORM AND TRAFFIC

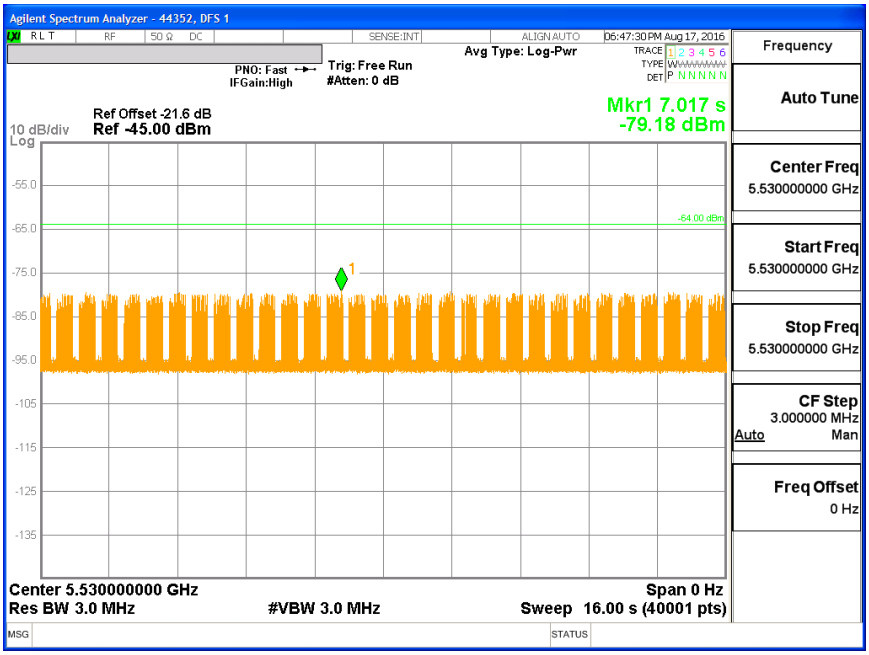
RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER

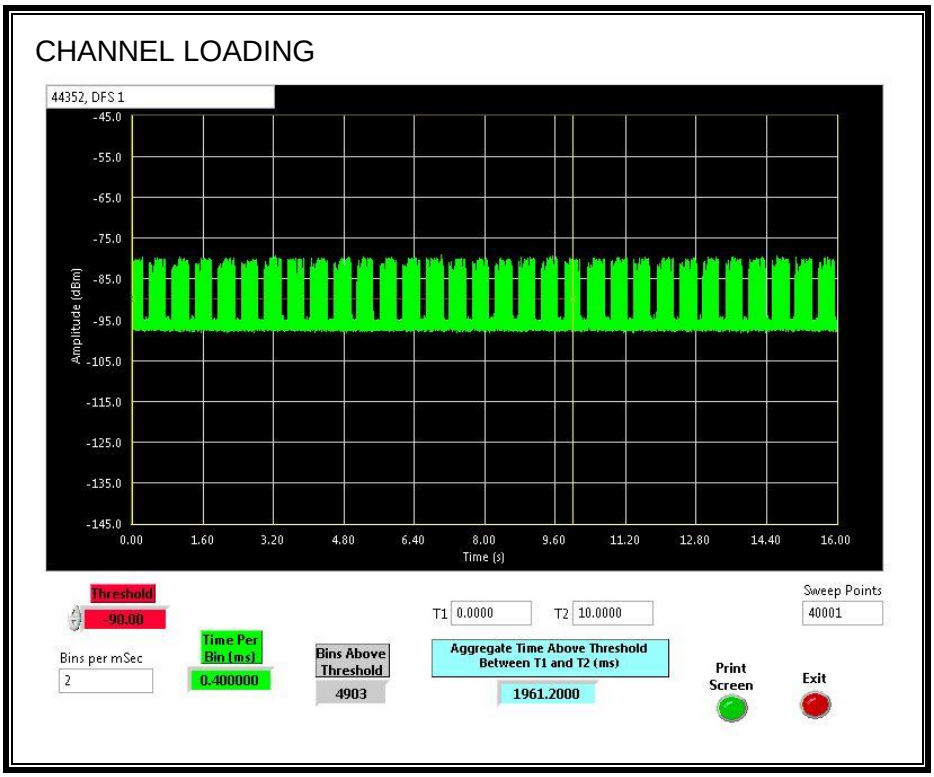


TRAFFIC

SLAVE TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 19.612%

10.7.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

10.7.4. 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).

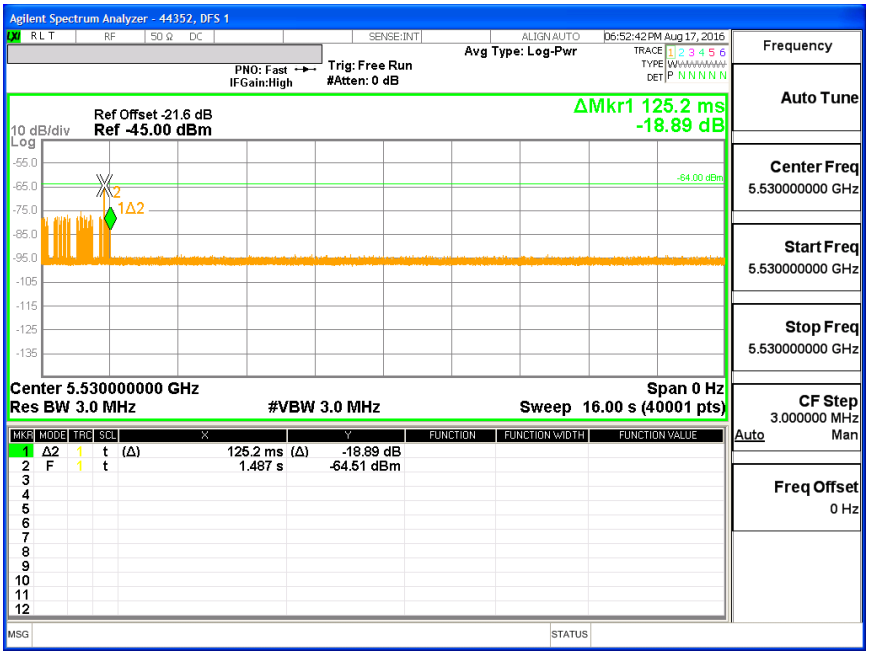
RESULTS

Channel Move Time (sec)	Limit (sec)
0.1252	10

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

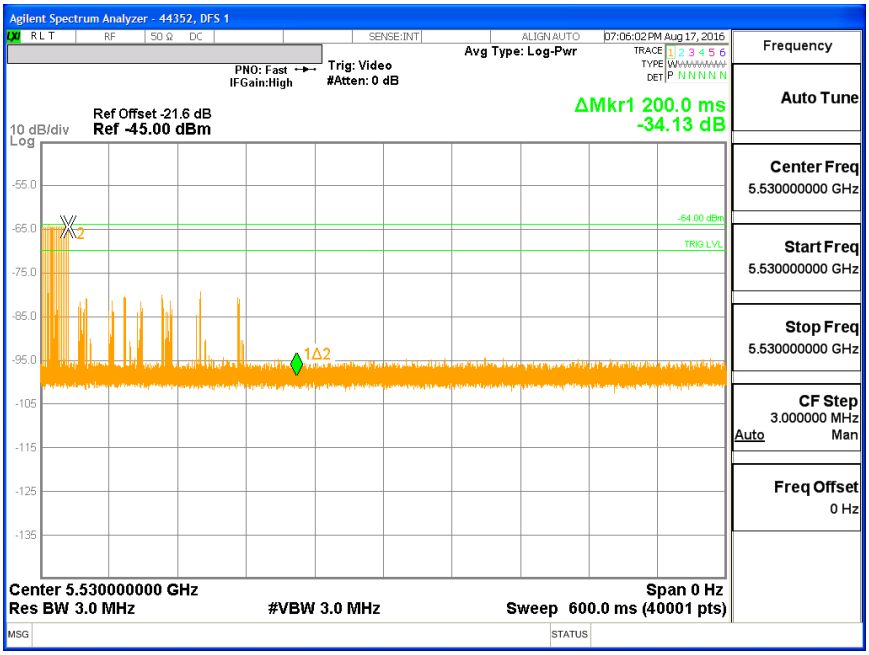
MOVE TIME

MOVE TIME



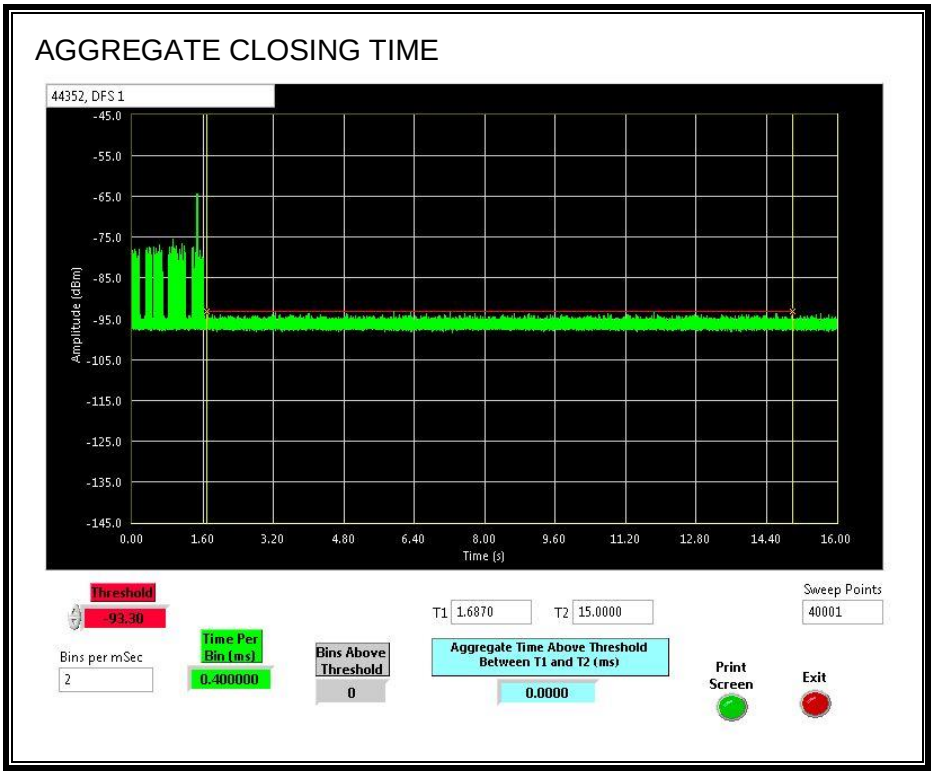
CHANNEL CLOSING TIME

CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

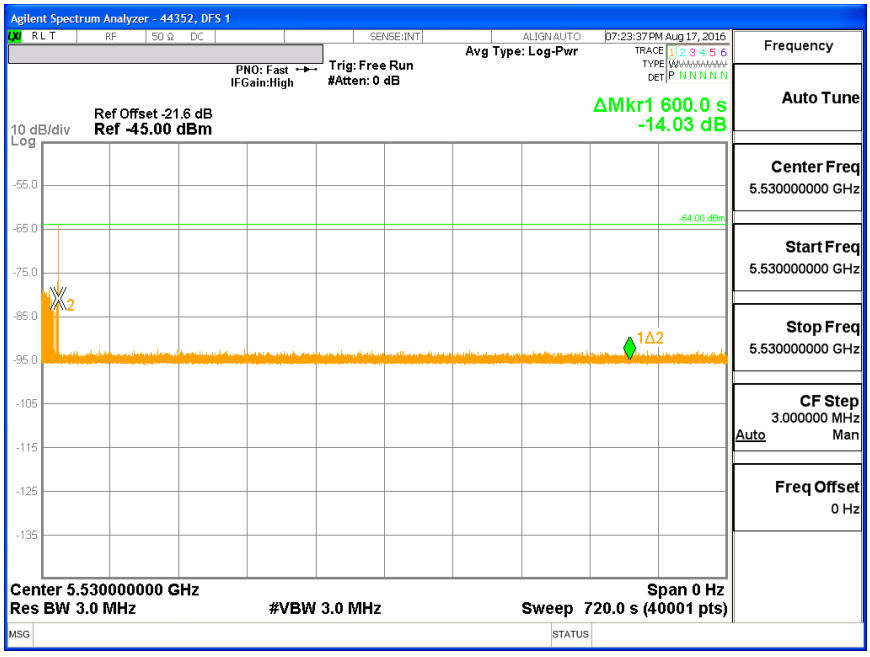


10.7.1. 10-MINUTE CLIENT Tx MONITORING PERIOD

RESULTS

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

10-MINUTE CLIENT Tx MONITORING PERIOD



END OF REPORT