

DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/ Cbl/FI tr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.725	39.56	PK-U	32.5	-30.5	0	41.56	-	-	74	-32.44	-	-	274	166	H
	* 2.725	29.32	ADR	32.5	-30.5	.1	31.42	54	-22.58	-	-	-	-	274	166	H
4	* 4.87	36.49	PK-U	34.1	-25.2	0	45.39	-	-	74	-28.61	-	-	28	139	V
	* 4.872	26.43	ADR	34.1	-25.2	.1	35.43	54	-18.57	-	-	-	-	28	139	V
2	* 7.505	35.34	PK-U	35.7	-24.6	0	46.44	-	-	74	-27.56	-	-	117	262	H
	* 7.508	25.05	ADR	35.7	-24.7	.1	36.15	54	-17.85	-	-	-	-	117	262	H
3	* 16.1	34.07	PK-U	40.6	-19.5	0	55.17	-	-	74	-18.83	-	-	231	197	H
	* 16.10	24.1	ADR	40.6	-19.3	.1	45.5	54	-8.5	-	-	-	-	231	197	H
6	* 7.626	36.08	PK-U	35.7	-25.6	0	46.18	-	-	74	-27.82	-	-	197	235	V
	* 7.624	26.05	ADR	35.7	-25.6	.1	36.25	54	-17.75	-	-	-	-	197	235	V
5	7.188	34.91	PK-U	35.7	-23.8	0	46.81	-	-	-	-	68.2	-21.39	133	326	V

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

PK-U - U-UNII: Maximum Peak

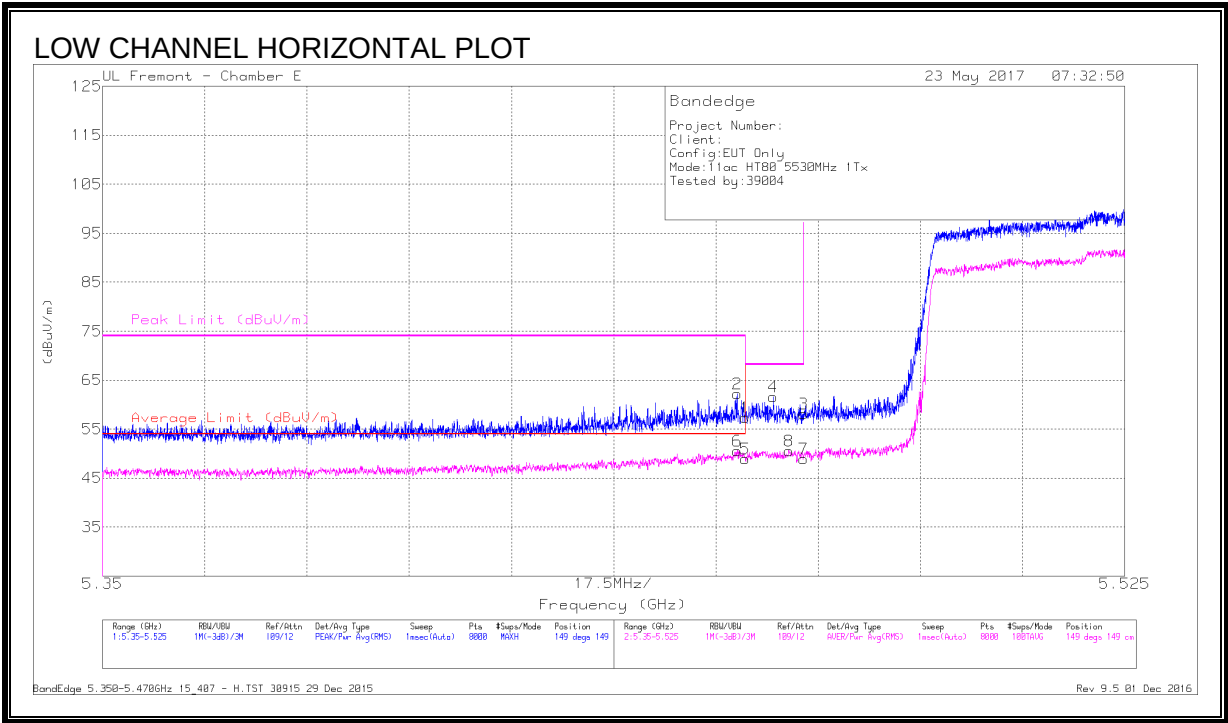
ADR - U-UNII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016

9.1.27. 802.11ac VHT80 UAT 2 1Tx MODE IN THE 5.6 GHz BAND

RESTRICTED BANDEDGE, UAT 2 (LOW CHANNEL)



Marker	Frequency (GHz)	Measurement Reading (dBuV)	Detector	AF T136 (dB/m)	Amp/Cbl/Fitr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	41.58	Pk	35.1	-19.3	0	57.38	-	-	74	-16.62	149	149	H
2	* 5.459	46.46	Pk	35.1	-19.3	0	62.26	-	-	74	-11.74	149	149	H
5	* 5.46	33.11	RMS	35.1	-19.3	.2	49.11	54	-4.89	-	-	149	149	H
6	* 5.459	34.72	RMS	35.1	-19.3	.2	50.72	54	-3.28	-	-	149	149	H
4	5.465	45.77	Pk	35.1	-19.3	0	61.57	-	-	68.2	-6.63	149	149	H
8	5.467	34.92	RMS	35.1	-19.5	.2	50.72	-	-	-	-	149	149	H
3	5.47	42.45	Pk	35.1	-19.4	0	58.15	-	-	68.2	-10.05	149	149	H
7	5.47	33.23	RMS	35.1	-19.4	.2	49.13	-	-	-	-	149	149	H

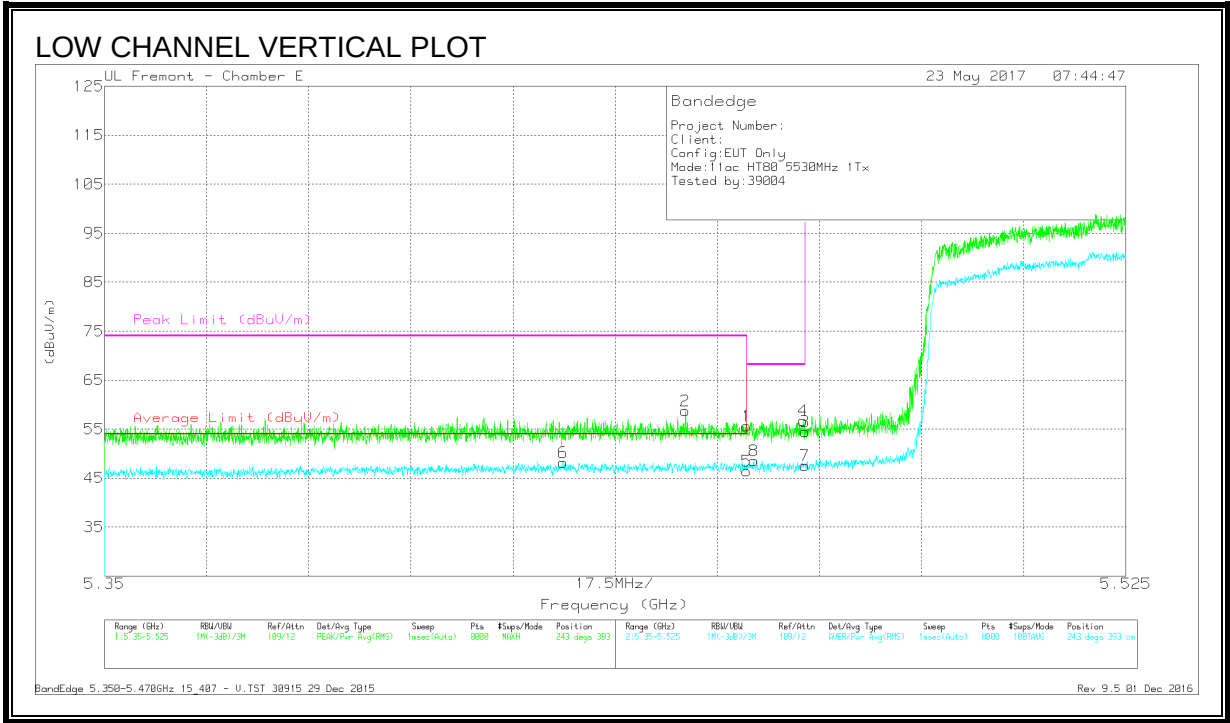
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BandEdge 5.350-5.470GHz 15_407 - H.TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2016



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fit r/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	39.81	Pk	35.1	-19.3	0	55.61	-	-	74	-18.39	243	393	V
2	* 5.45	42.89	Pk	35.1	-19.3	0	58.69	-	-	74	-15.31	243	393	V
5	* 5.46	30.61	RMS	35.1	-19.3	.2	46.61	54	-7.39	-	-	243	393	V
6	* 5.429	32.41	RMS	35.1	-19.3	.2	48.41	54	-5.59	-	-	243	393	V
8	5.461	32.8	RMS	35.1	-19.3	.2	48.8	-	-	-	-	243	393	V
3	5.47	38.86	Pk	35.1	-19.4	0	54.56	-	-	68.2	-13.64	243	393	V
4	5.47	41.01	Pk	35.1	-19.4	0	56.71	-	-	68.2	-11.49	243	393	V
7	5.47	31.85	RMS	35.1	-19.4	.2	47.75	-	-	-	-	243	393	V

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

Pk - Peak detector

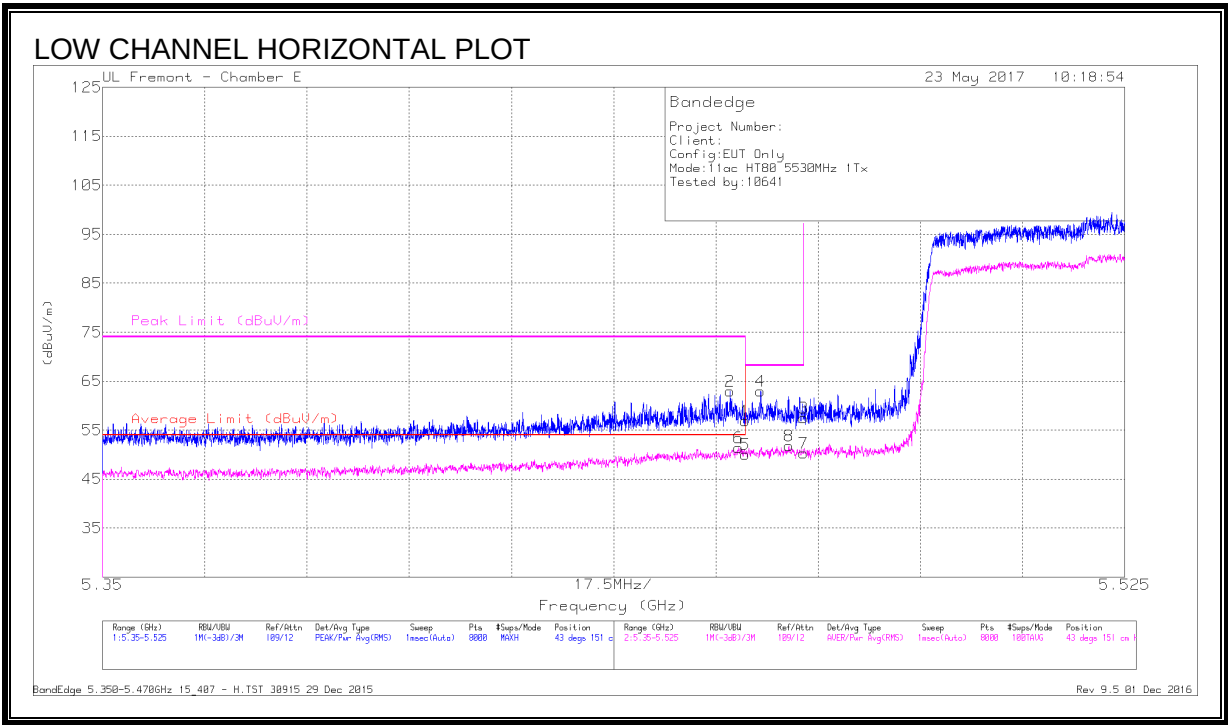
RMS - RMS detection

BandEdge 5.350-5.470GHz 15_407 - V.TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2016

9.1.28. 802.11ac VHT80 LAT 3 1Tx MODE IN THE 5.6 GHz BAND(Margin - 2.55)

RESTRICTED BANDEDGE, LAT 3 (LOW CHANNEL)



Marker	Frequency (GHz)	Measurement Reading (dBuV)	Detector	AF T136 (dB/m)	Amp/Cbl/Fitter/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	41.09	Pk	35.1	-19.3	0	56.89	-	-	74	-17.11	43	151	H
2	* 5.457	47.28	Pk	35.1	-19.4	0	62.98	-	-	74	-11.02	43	151	H
5	* 5.46	34.07	RMS	35.1	-19.3	.2	50.07	54	-3.93	-	-	43	151	H
6	* 5.459	35.45	RMS	35.1	-19.3	.2	51.45	54	-2.55	-	-	43	151	H
4	5.463	47.2	Pk	35.1	-19.4	0	62.9	-	-	68.2	-5.3	43	151	H
8	5.468	36.03	RMS	35.1	-19.5	.2	51.83	-	-	-	-	43	151	H
3	5.47	41.77	Pk	35.1	-19.4	0	57.47	-	-	68.2	-10.73	43	151	H
7	5.47	34.42	RMS	35.1	-19.4	.2	50.32	-	-	-	-	43	151	H

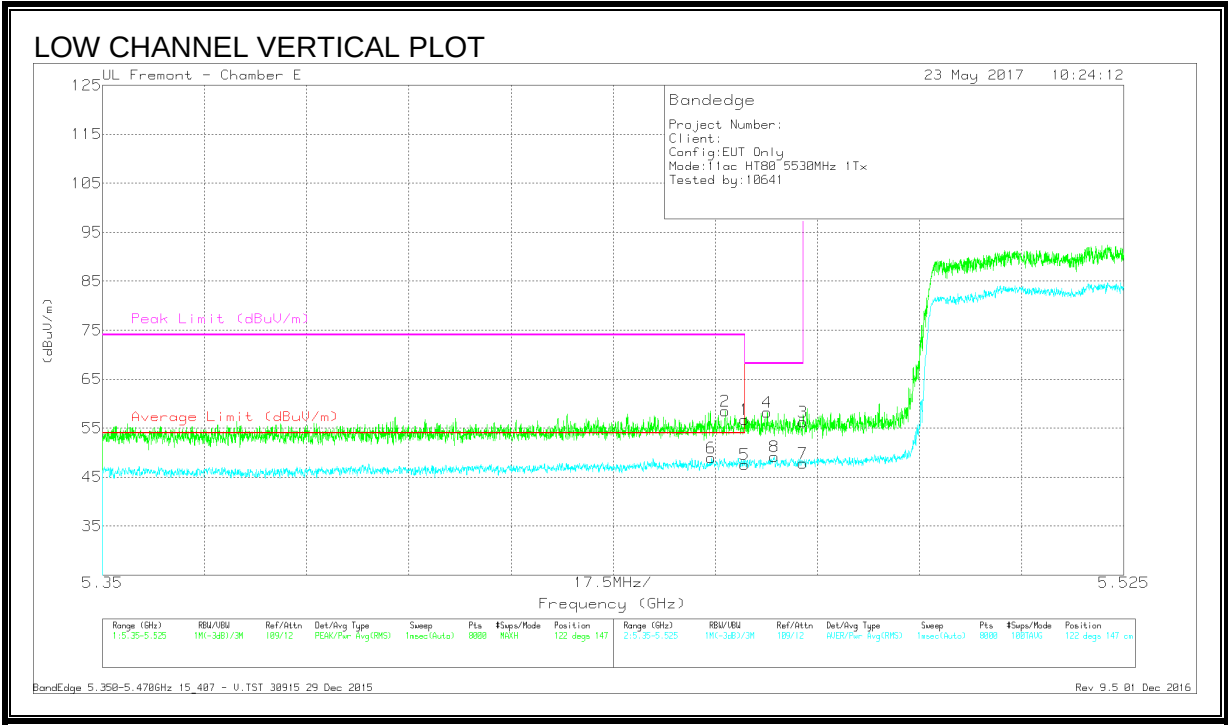
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BandEdge 5.350-5.470GHz 15_407 - H.TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2016



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6	* 5.454	32.95	RMS	35.1	-19.3	.2	48.95	54	-5.05	-	-	122	147	V
2	* 5.457	42.83	Pk	35.1	-19.4	0	58.53	-	-	74	-15.47	122	147	V
1	* 5.46	41	Pk	35.1	-19.3	0	56.8	-	-	74	-17.2	122	147	V
5	* 5.46	31.51	RMS	35.1	-19.3	.2	47.51	54	-6.49	-	-	122	147	V
4	5.464	42.47	Pk	35.1	-19.3	0	58.27	-	-	68.2	-9.93	122	147	V
8	5.465	33.3	RMS	35.1	-19.4	.2	49.2	54	-4.8	-	-	122	147	V
3	5.47	40.5	Pk	35.1	-19.4	0	56.2	-	-	68.2	-12	122	147	V
7	5.47	31.96	RMS	35.1	-19.4	.2	47.86	54	-6.14	-	-	122	147	V

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

Pk - Peak detector

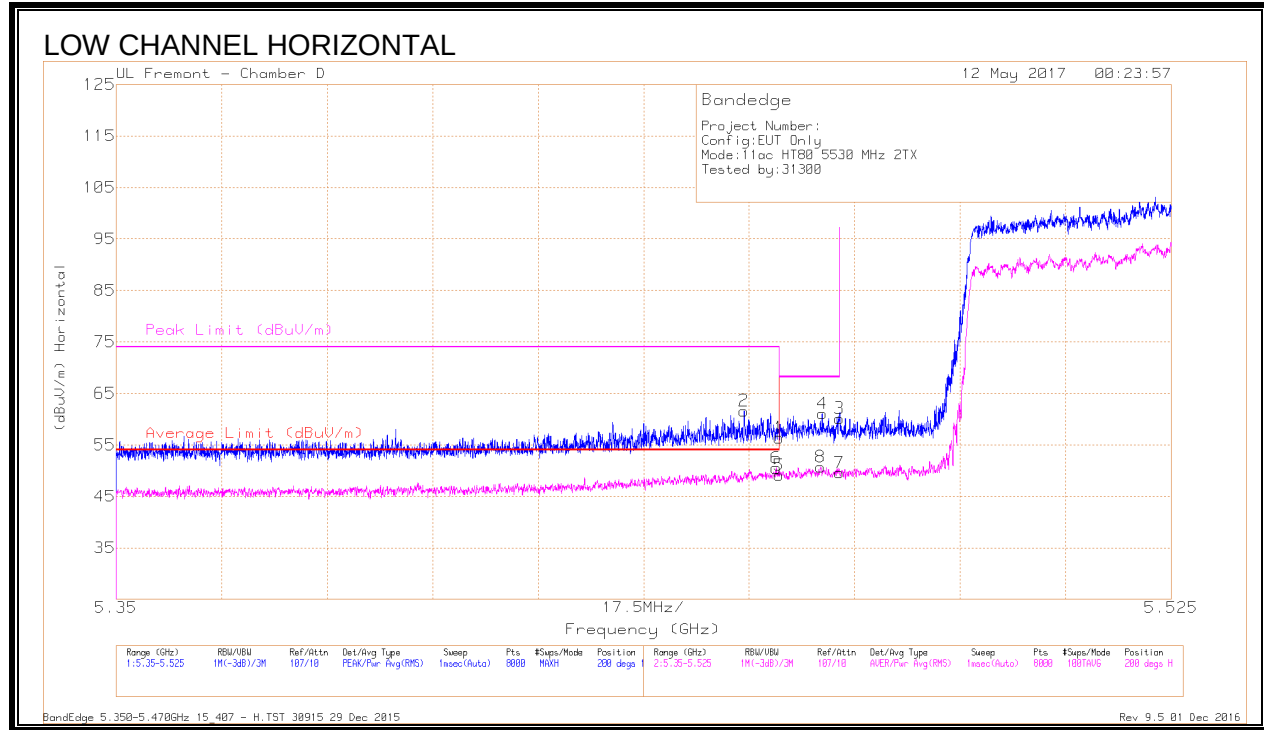
RMS - RMS detection

BandEdge 5.350-5.470GHz 15_407 - V.TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2016

9.1.29. 11ac VHT80 2TX CDD MIMO MODE IN THE 5.6GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AFT120 (dB/m)	Amp/C bl/Filtr/ Pad (dB)	DC Corr (dB)	Correct ed Reading (dBuV/ m)	Average Limit (dBuV/ m)	Margin (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	Azimet h (Degs)	Height (cm)	Polarity
1	* 5.46	39.59	Pk	34.7	-17.9	0	56.39	-	-	74	-17.61	200	104	H
2	* 5.454	44.91	Pk	34.7	-18	0	61.61	-	-	74	-12.39	200	104	H
5	* 5.46	32.1	RMS	34.7	-17.9	.2	49.1	54	-4.9	-	-	200	104	H
6	* 5.459	33.62	RMS	34.7	-18	.2	50.52	54	-3.48	-	-	200	104	H
4	5.467	44.28	Pk	34.7	-17.9	0	61.08	-	-	68.2	-7.12	200	104	H
8	5.467	33.71	RMS	34.7	-17.9	.2	50.71	54	-3.29	-	-	200	104	H
3	5.47	43.33	Pk	34.7	-17.9	0	60.13	-	-	68.2	-8.07	200	104	H
7	5.47	32.58	RMS	34.7	-17.9	.2	49.58	54	-4.42	-	-	200	104	H

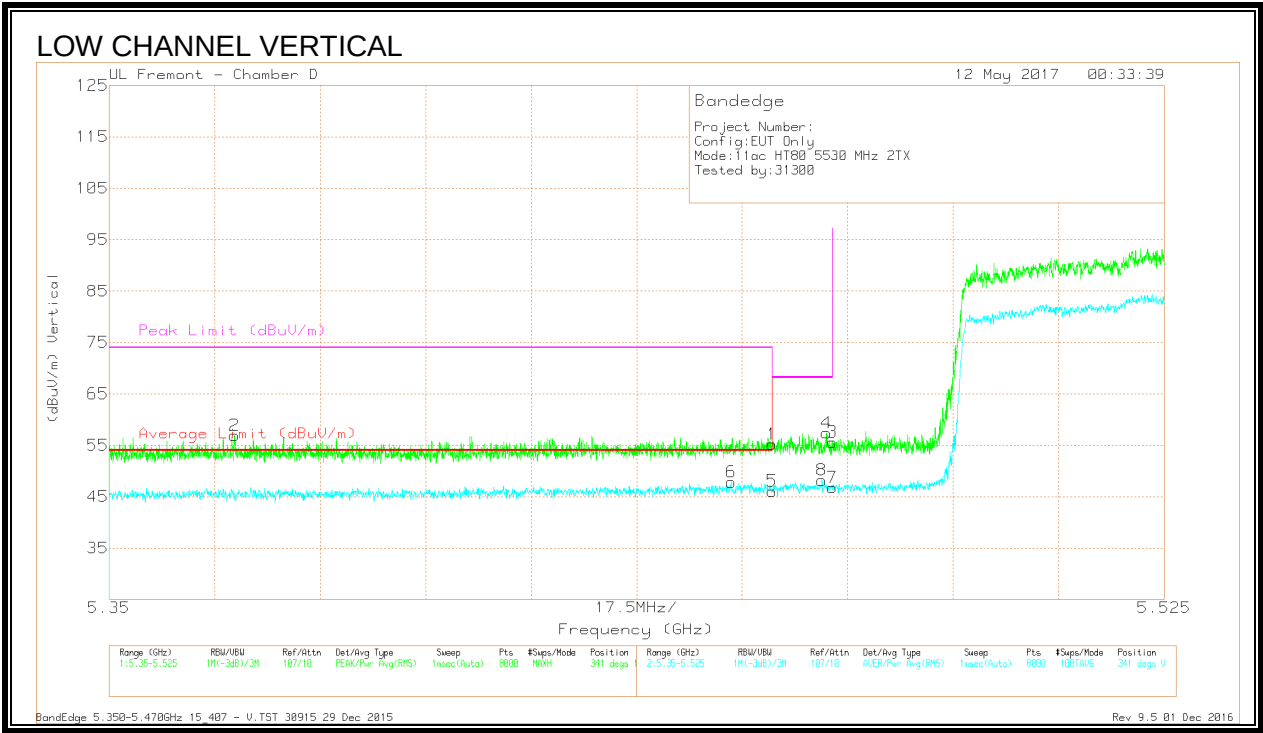
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BandEdge 5.350-5.470GHz 15_407 - H.TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2016



Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T120 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	DC Corr (dB)	Correct ed Reading (dBuV/ m)	Average Limit (dBuV/ m)	Margin (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	38.41	Pk	34.7	-17.9	0	55.21	-	-	74	-18.79	341	110	V
2	* 5.371	40.59	Pk	34.6	-18.3	0	56.89	-	-	74	-17.11	341	110	V
5	* 5.46	29.09	RMS	34.7	-17.9	.2	46.09	54	-7.91	-	-	341	110	V
6	* 5.453	30.94	RMS	34.7	-18	.2	47.84	54	-6.16	-	-	341	110	V
8	5.468	31.2	RMS	34.7	-17.9	.2	48.2	54	-5.8	-	-	341	110	V
4	5.469	40.6	Pk	34.7	-17.9	0	57.4	-	-	68.2	-10.8	341	110	V
3	5.47	38.82	Pk	34.7	-17.9	0	55.62	-	-	68.2	-12.58	341	110	V
7	5.47	29.75	RMS	34.7	-17.9	.2	46.75	54	-7.25	-	-	341	110	V

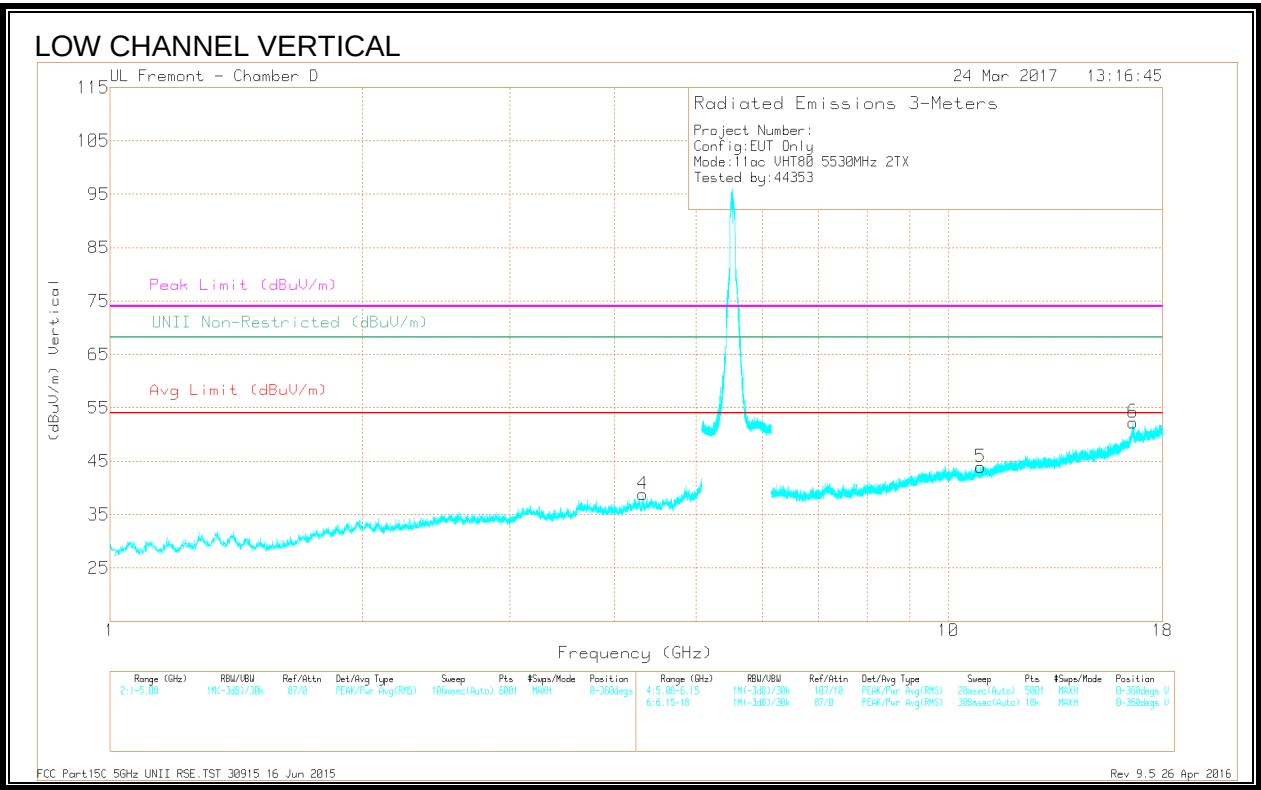
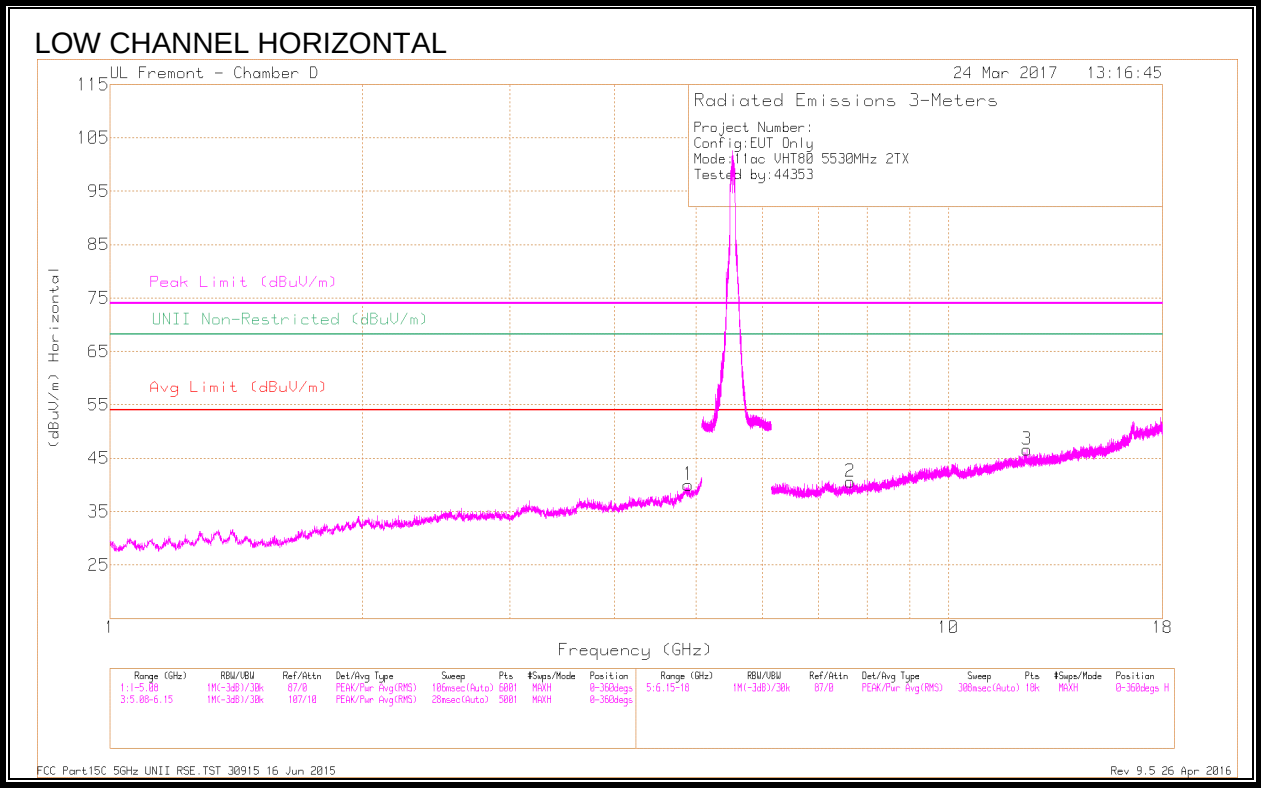
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

BandEdge 5.350-5.470GHz 15_407 - V.TST 30915 29 Dec 2015

Rev 9.5 01 Dec 2016



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr/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	* 4.895	36.42	PK-U	34.2	-25.4	0	45.22	-	-	74	-28.78	-	-	216	330	H
	* 4.896	26.66	ADR	34.2	-25.5	.2	35.56	54	-18.44	-	-	-	-	216	330	H
4	* 4.324	38.06	PK-U	33.6	-28.4	0	43.26	-	-	74	-30.74	-	-	174	169	V
	* 4.324	28.03	ADR	33.6	-28.4	.2	33.43	54	-20.57	-	-	-	-	174	169	V
2	* 7.635	35.66	PK-U	35.7	-25.5	0	45.86	-	-	74	-28.14	-	-	227	212	H
	* 7.633	26.02	ADR	35.7	-25.5	.2	36.42	54	-17.58	-	-	-	-	227	212	H
3	* 12.41	34.42	PK-U	39	-21.1	0	52.32	-	-	74	-21.68	-	-	201	188	H
	* 12.41	23.85	ADR	39	-21.1	.2	41.95	54	-12.05	-	-	-	-	201	188	H
5	* 10.93	33.8	PK-U	37.4	-21.3	0	49.9	-	-	74	-24.1	-	-	244	356	V
	* 10.93	23.78	ADR	37.4	-21.2	.2	40.18	54	-13.82	-	-	-	-	244	356	V
6	16.588	35.2	PK-U	41.4	-18.6	0	58	-	-	-	-	68.2	-10.2	119	200	V

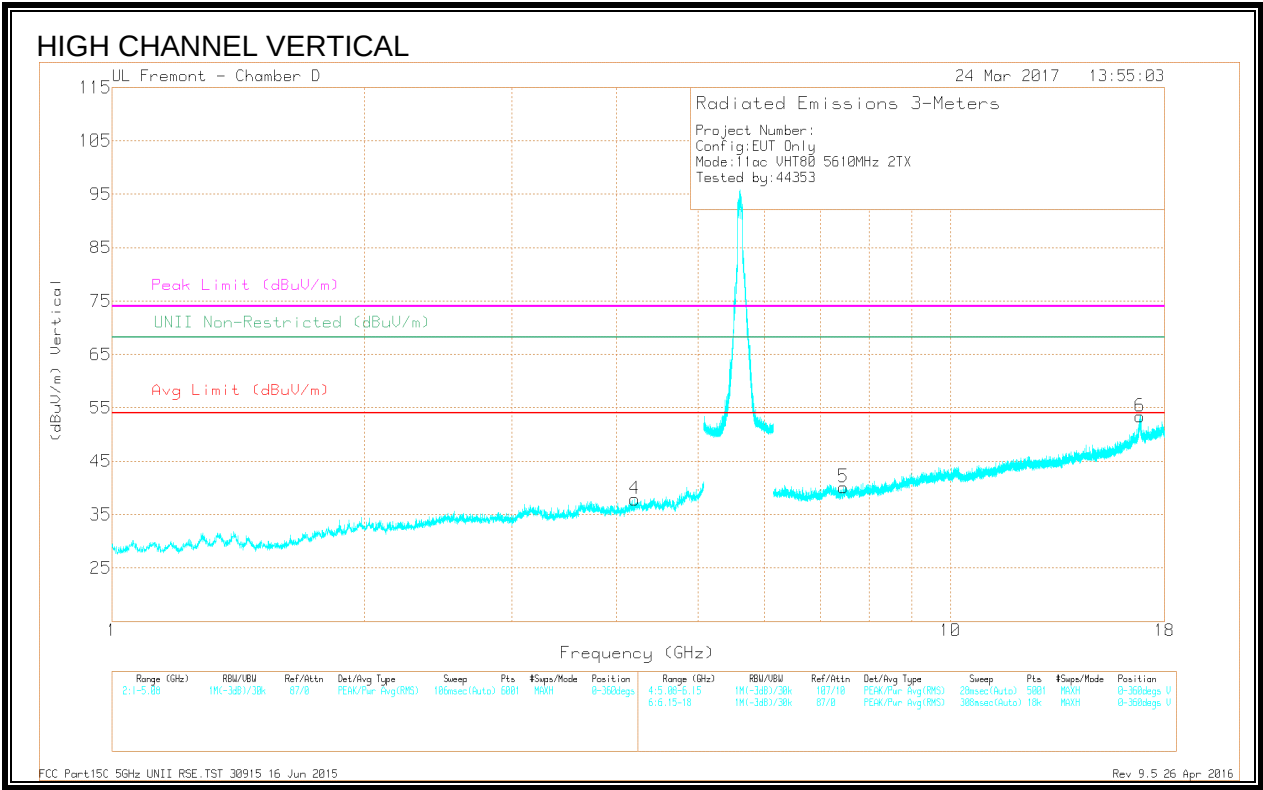
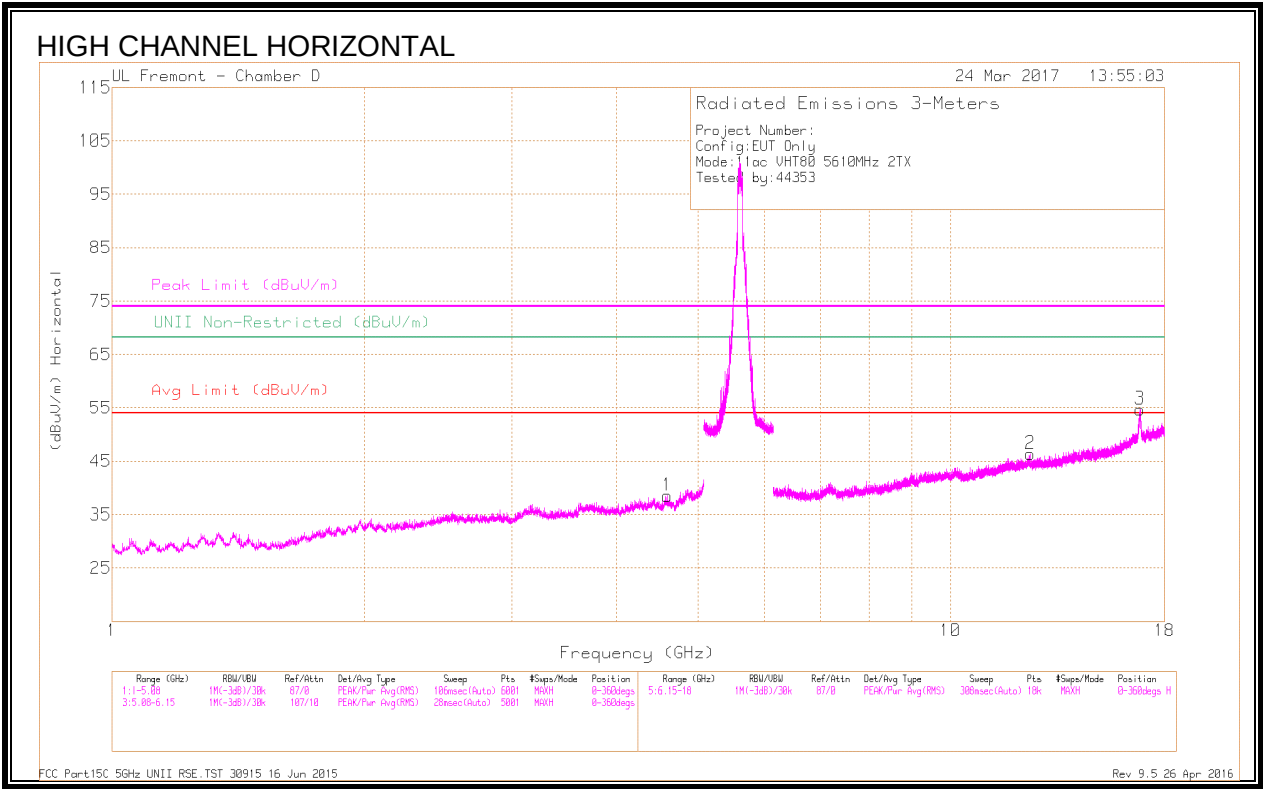
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr/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	* 4.599	36.98	PK-U	34.1	-26.9	0	44.18	-	-	74	-29.82	-	-	263	201	H
	* 4.597	26.84	ADR	34.1	-27	.2	34.14	54	-19.86	-	-	-	-	263	201	H
4	* 4.203	38.05	PK-U	33.5	-27.8	0	43.75	-	-	74	-30.25	-	-	337	292	V
	* 4.206	27.41	ADR	33.5	-27.9	.2	33.21	54	-20.79	-	-	-	-	337	292	V
2	* 12.45	33.94	PK-U	39	-21.4	0	51.54	-	-	74	-22.46	-	-	48	144	H
	* 12.45	24.26	ADR	39	-21.5	.2	41.96	54	-12.04	-	-	-	-	48	144	H
5	* 7.45	35.16	PK-U	35.6	-24.8	0	45.96	-	-	74	-28.04	-	-	291	338	V
	* 7.45	25.15	ADR	35.6	-24.9	.2	36.05	54	-17.95	-	-	-	-	291	338	V
3	16.822	37.31	PK-U	41.7	-18.2	0	60.81	-	-	-	-	68.2	-7.39	197	116	H
6	16.849	36.09	PK-U	41.7	-18.2	0	59.59	-	-	-	-	68.2	-8.61	22	134	V

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

PK-U - U-NII: Maximum Peak

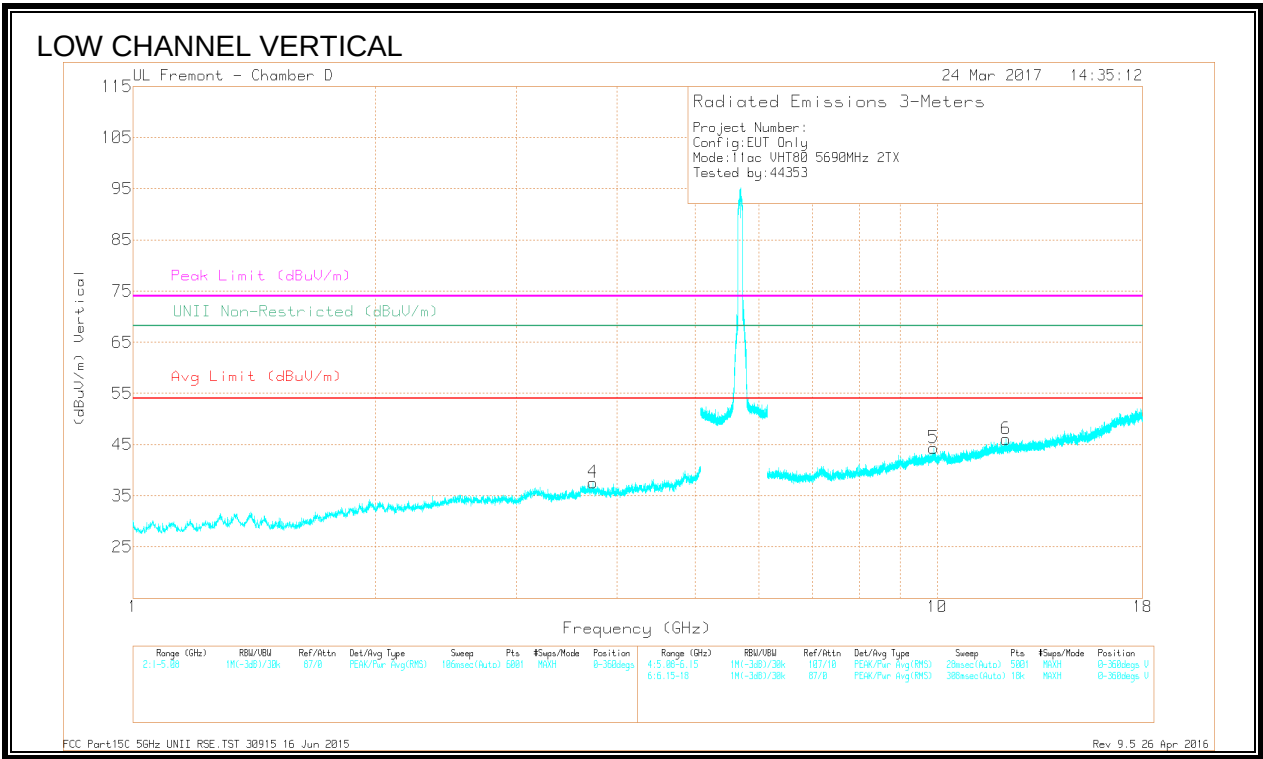
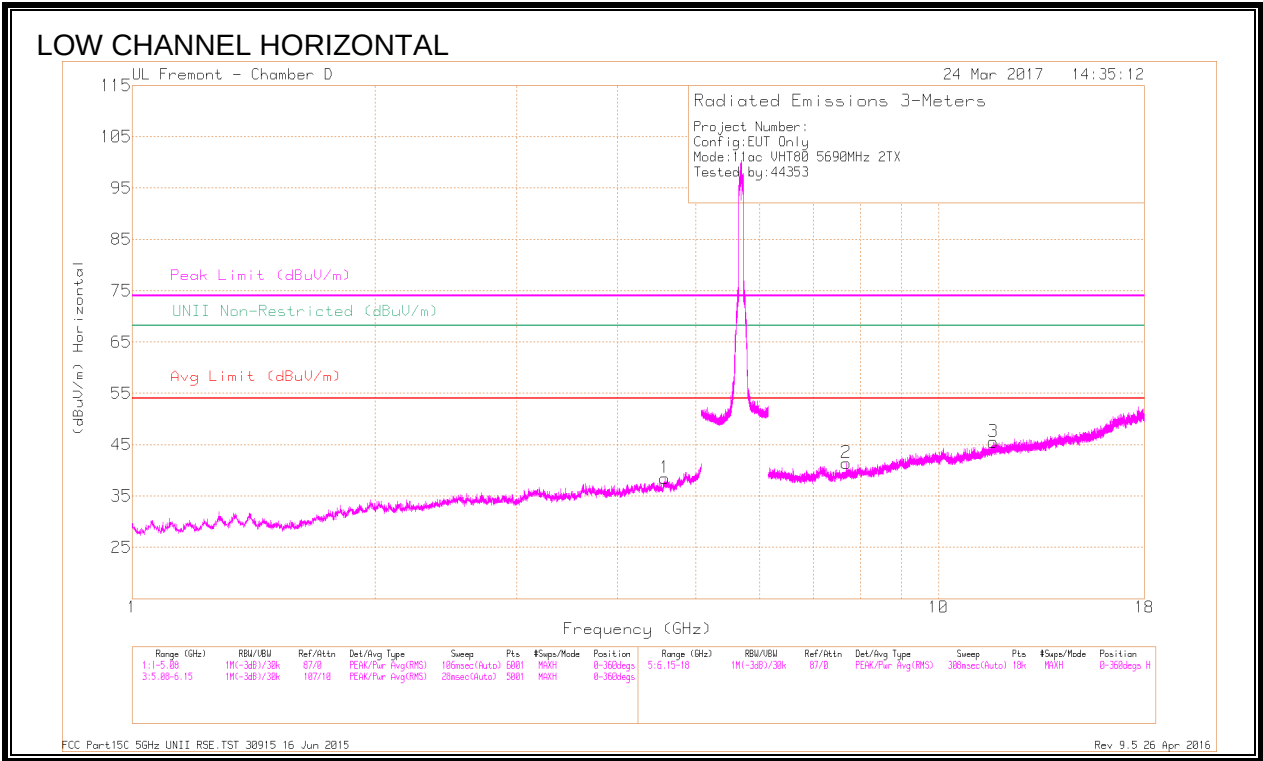
ADR - U-NII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016

9.1.30. 11ac HT80 2TX CDD MIMO STRADDLE CHANNEL 138

HARMONICS AND SPURIOUS EMISSIONS



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/F ltr/Pa d (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	* 4.576	37.49	PK-U	34	-27.3	0	44.19	-	-	74	-29.81	-	-	170	243	H
	* 4.577	27.75	ADR	34	-27.3	.2	34.65	54	-19.35	-	-	-	-	170	243	H
4	* 3.733	38.25	PK-U	33.2	-29	0	42.45	-	-	74	-31.55	-	-	320	179	V
	* 3.731	28.09	ADR	33.2	-29	.2	32.49	54	-21.51	-	-	-	-	320	179	V
2	* 7.686	35.92	PK-U	35.8	-25.1	0	46.62	-	-	74	-27.38	-	-	166	299	H
	* 7.683	25.67	ADR	35.8	-25	.2	36.67	54	-17.33	-	-	-	-	166	299	H
3	* 11.695	34.22	PK-U	38.6	-20.7	0	52.12	-	-	74	-21.88	-	-	18	188	H
	* 11.696	23.4	ADR	38.6	-20.7	.2	41.5	54	-12.5	-	-	-	-	18	188	H
6	* 12.184	34.88	PK-U	39	-21.8	0	52.08	-	-	74	-21.92	-	-	195	338	V
	* 12.182	24.1	ADR	39	-21.8	.2	41.5	54	-12.5	-	-	-	-	195	338	V
5	9.895	34.23	PK-U	37.1	-21	0	50.33	-	-	-	-	68.2	-17.87	251	164	V

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

PK-U - U-NII: Maximum Peak

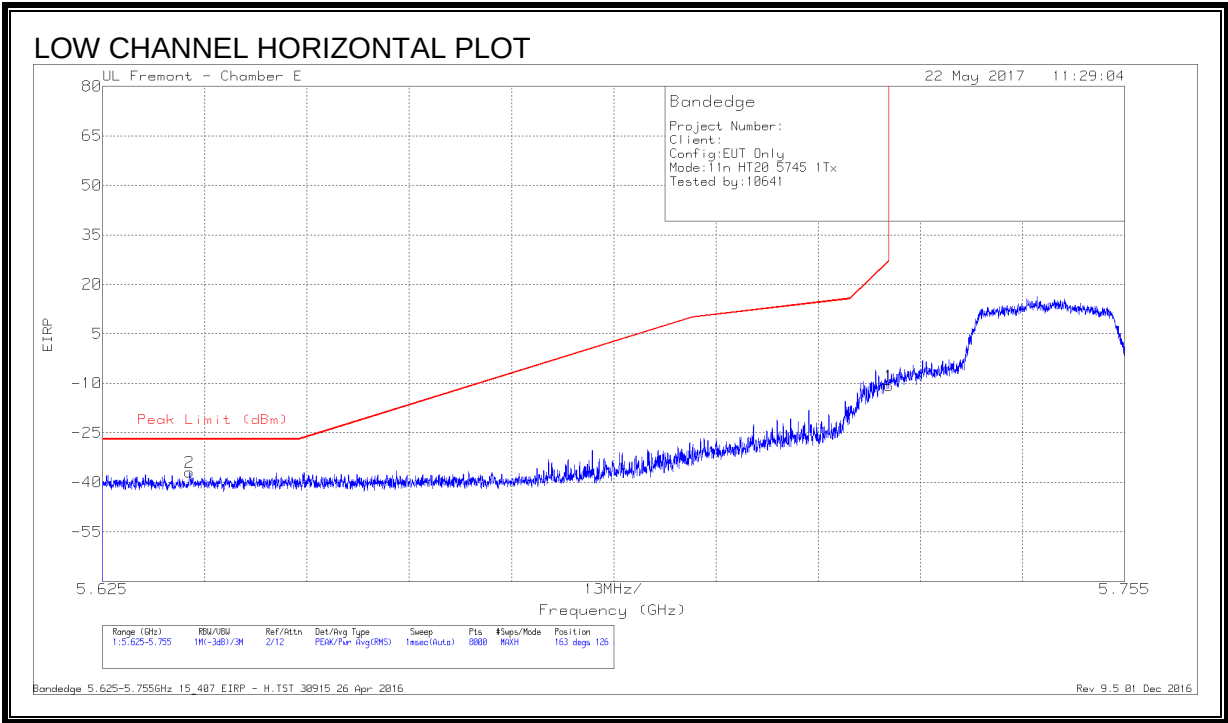
ADR - U-NII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016

9.1.31. 802.11n HT20 UAT 2 1Tx MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE, UAT 2 (LOW CHANNEL)

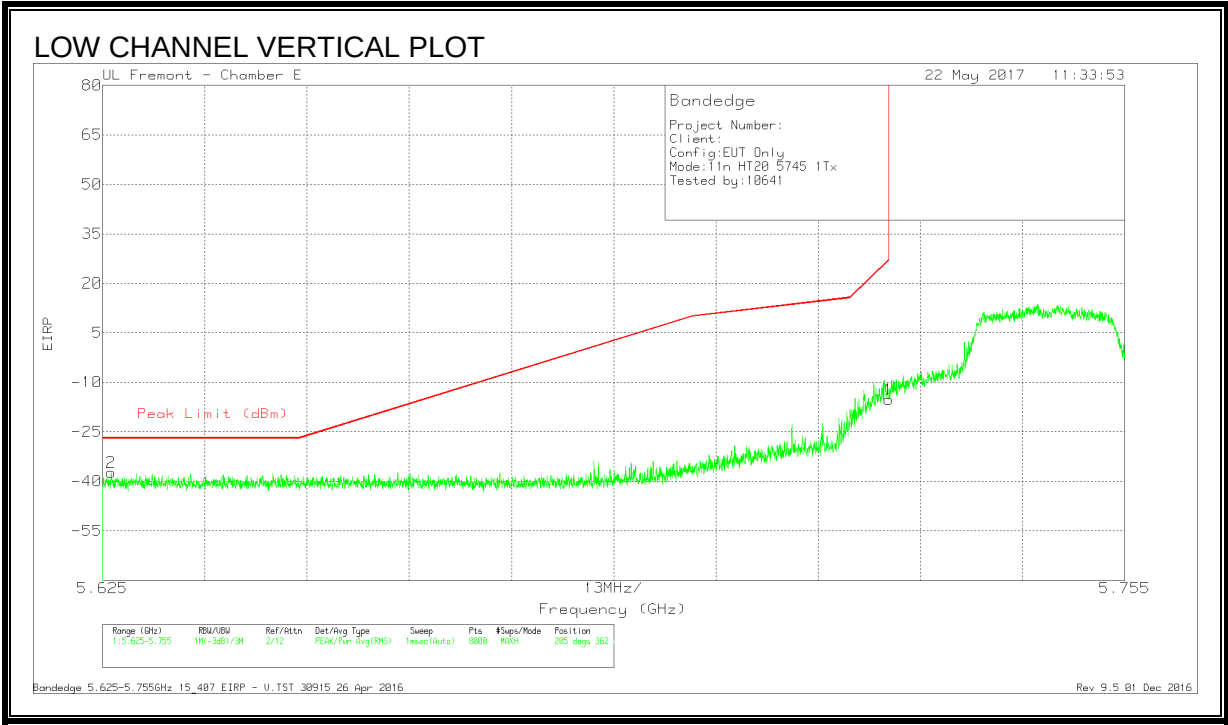


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.636	-64.03	Pk	34.9	-19.6	11.8	-36.93	-27	-9.93	163	126	H
1	5.725	-37.8	Pk	34.9	-19.6	11.8	-10.7	27	-37.7	163	126	H

Pk - Peak detector

Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 26 Apr 2016

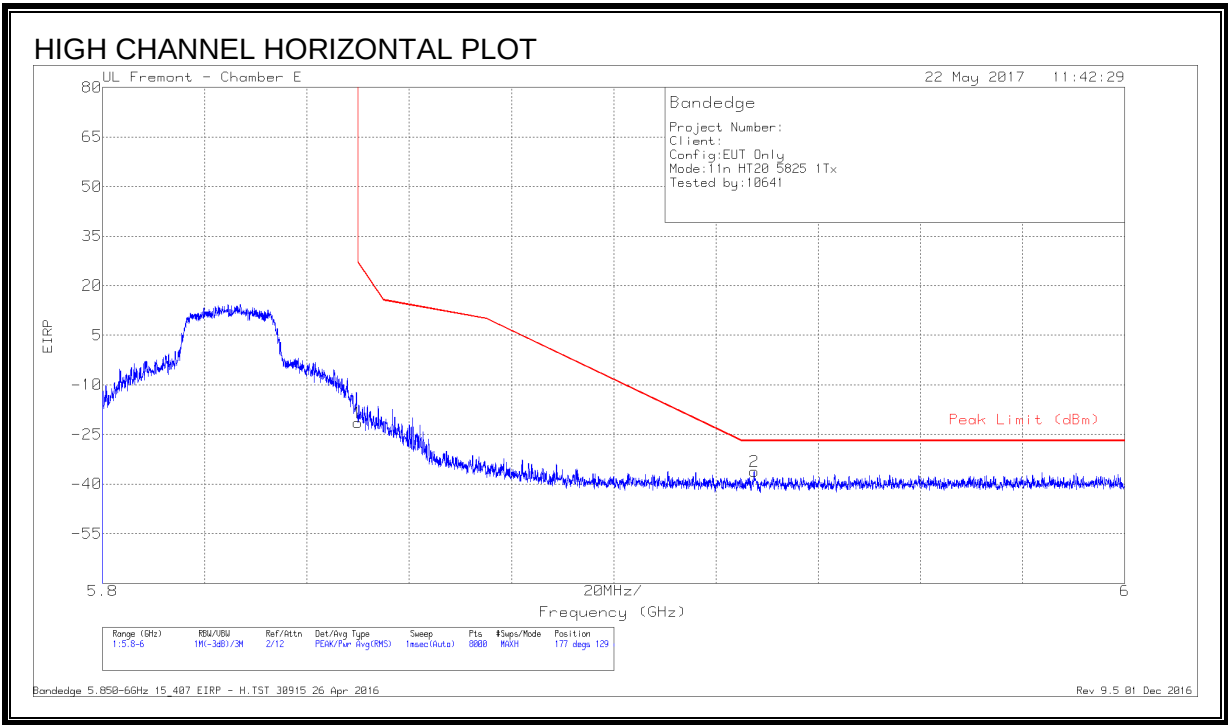
Rev 9.5 01 Dec 2016



Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.626	-64.57	Pk	34.9	-19.5	11.8	-37.37	-27	-10.37	205	362	V
1	5.725	-42.33	Pk	34.9	-19.6	11.8	-15.23	27	-42.23	205	362	V

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016

RESTRICTED BANDEDGE, UAT 2 (HIGH CHANNEL)

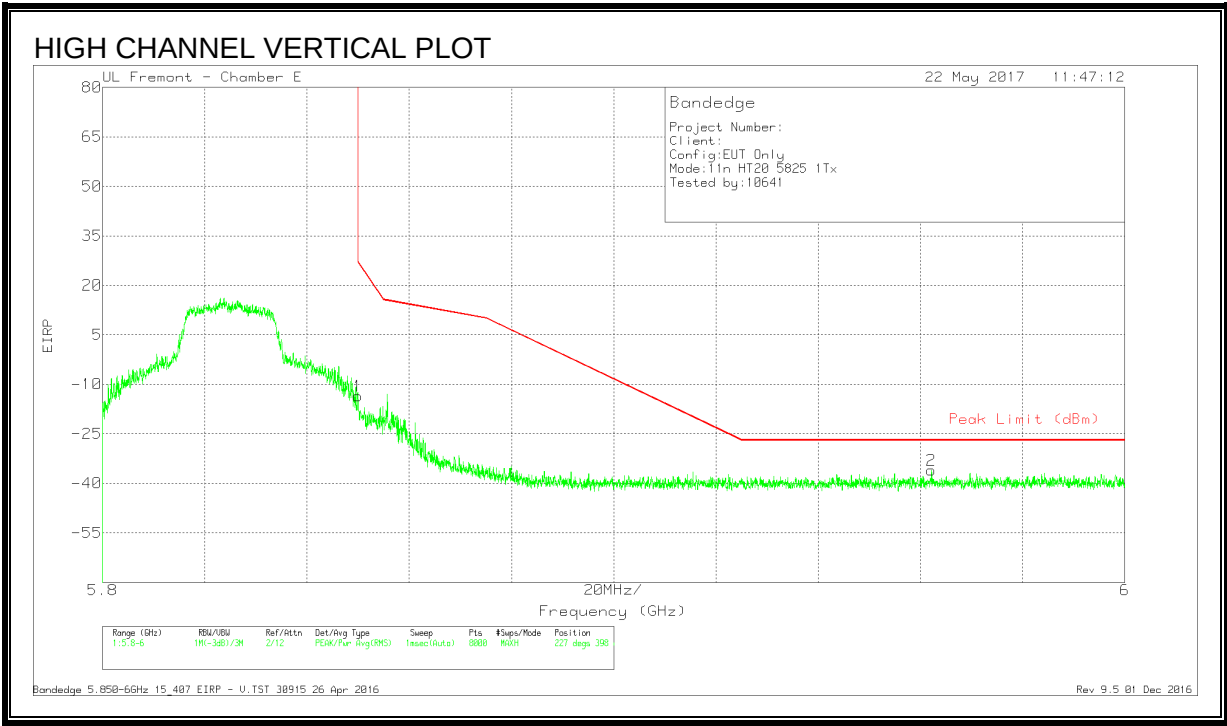


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cb I/Fitr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-49.22	Pk	35.5	-19.5	11.8	-21.42	26.99	-48.41	177	129	H
2	5.927	-64.42	Pk	35.6	-19.2	11.8	-36.22	-27	-9.22	177	129	H

Pk - Peak detector

Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 26 Apr 2016

Rev 9.5 01 Dec 2016

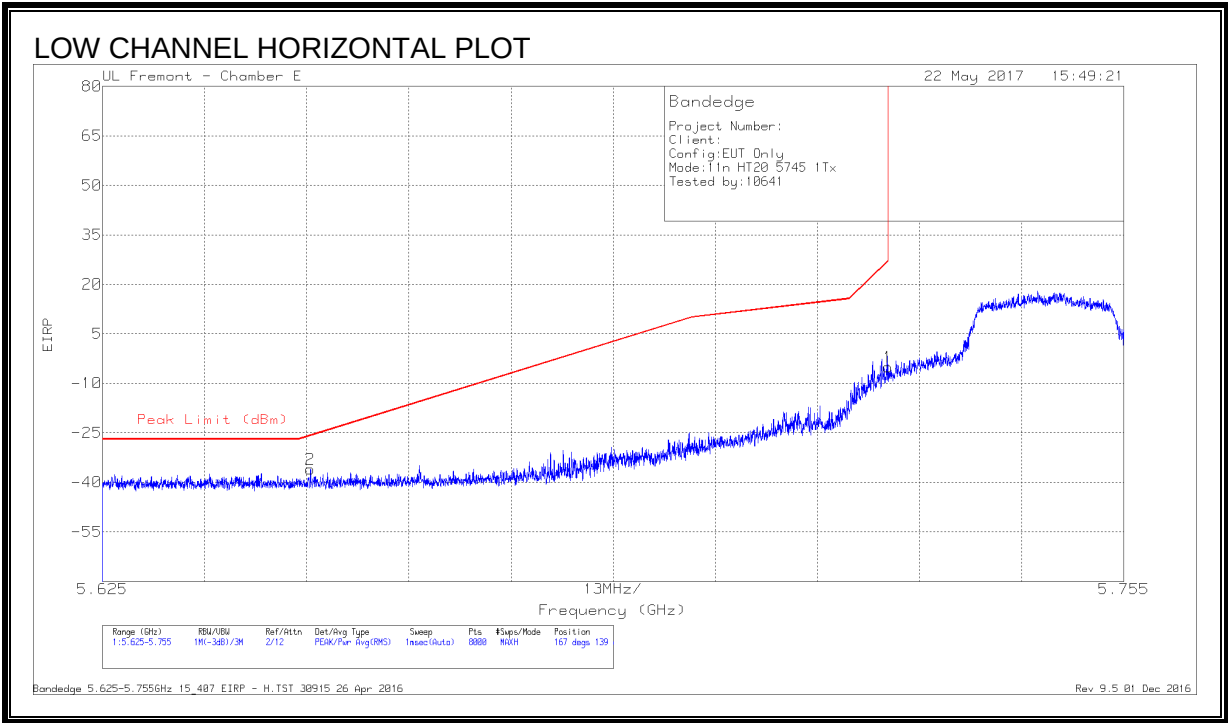


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-41.36	Pk	35.5	-19.5	11.8	-13.56	26.99	-40.55	227	398	V
2	5.962	-64.49	Pk	35.6	-19	11.8	-36.09	-27	-9.09	227	398	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016

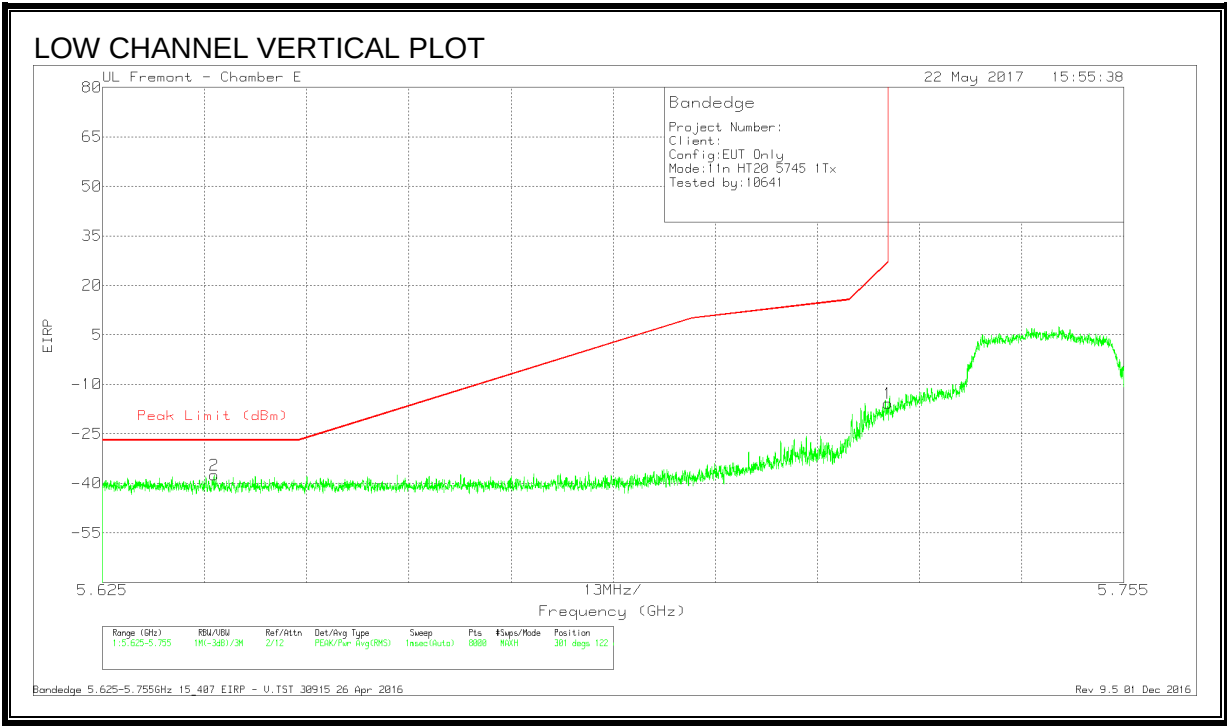
9.1.32. 802.11n HT20 LAT 3 1Tx MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE, LAT 3 (LOW CHANNEL)



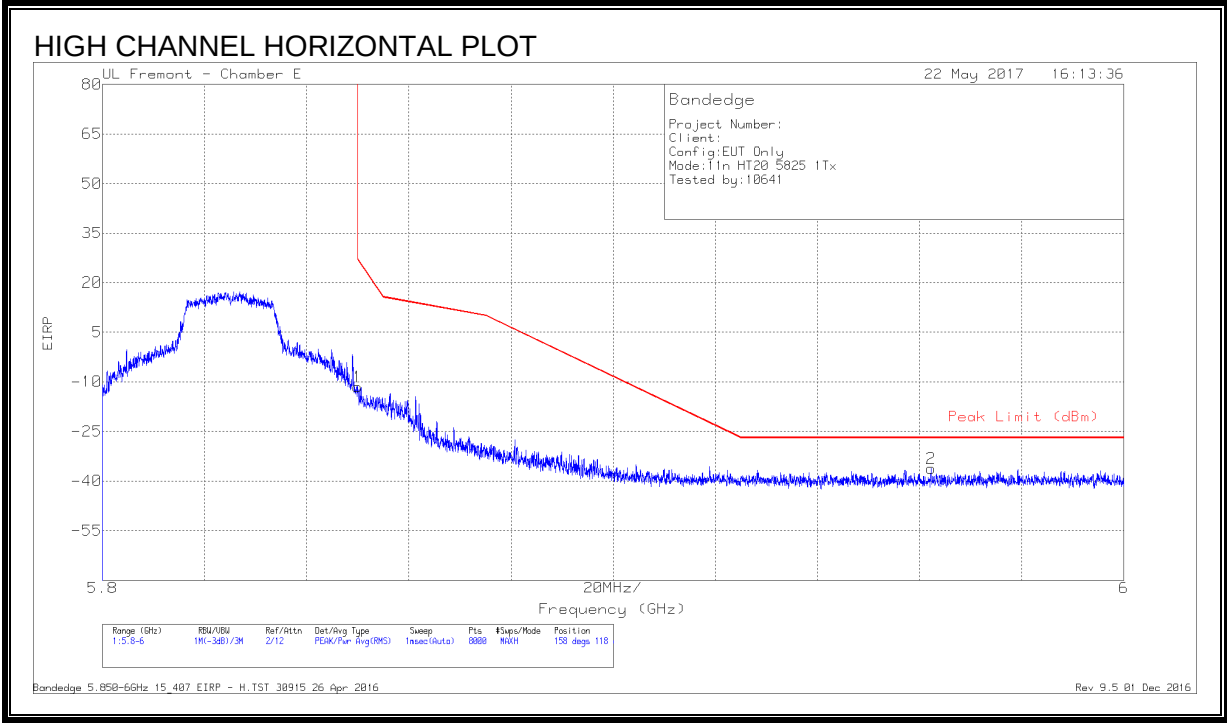
Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl /Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.651	-63.32	Pk	34.9	-19.4	11.8	-36.02	-25.91	-10.11	167	139	H
1	5.725	-32.19	Pk	34.9	-19.6	11.8	-5.09	27	-32.09	167	139	H

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 26 Apr 2016
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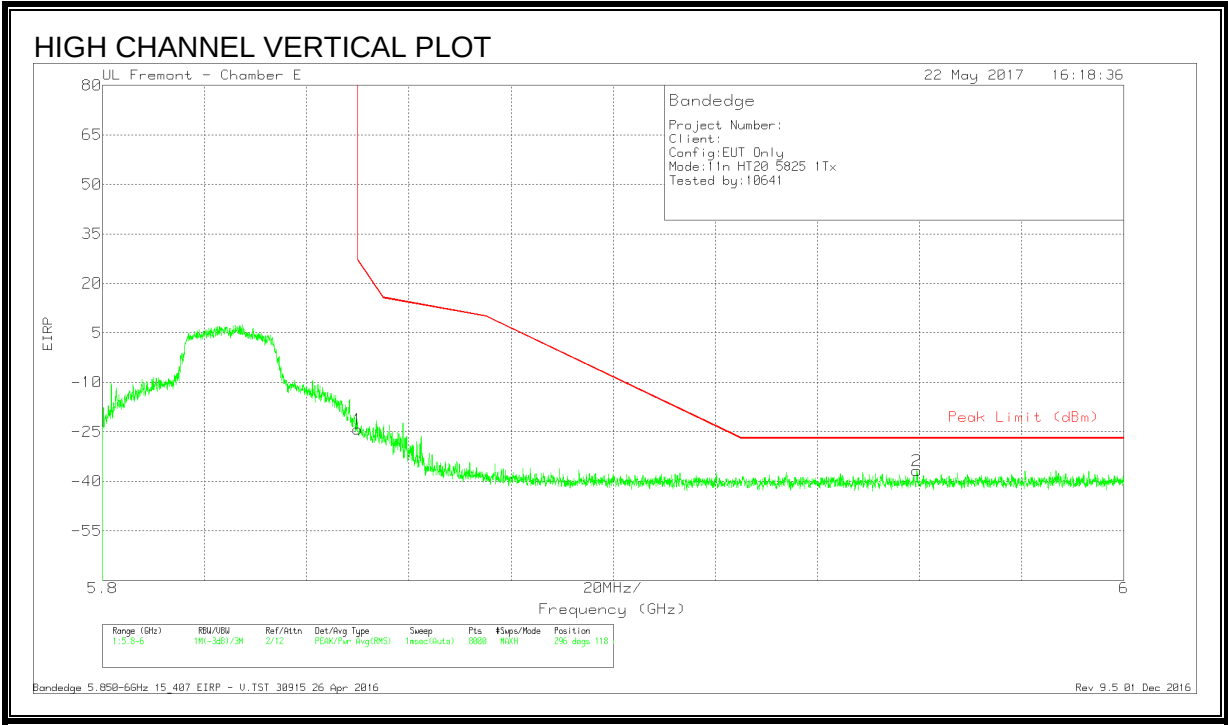
Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl /Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.639	-64.72	Pk	34.9	-19.5	11.8	-37.52	-27	-10.52	301	122	V
1	5.725	-42.83	Pk	34.9	-19.6	11.8	-15.73	27	-42.73	301	122	V

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016



Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cbl /Fitr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-39.35	Pk	35.5	-19.5	11.8	-11.55	26.99	-38.54	158	118	H
2	5.962	-64.53	Pk	35.6	-19	11.8	-36.13	-27	-9.13	158	118	H

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016

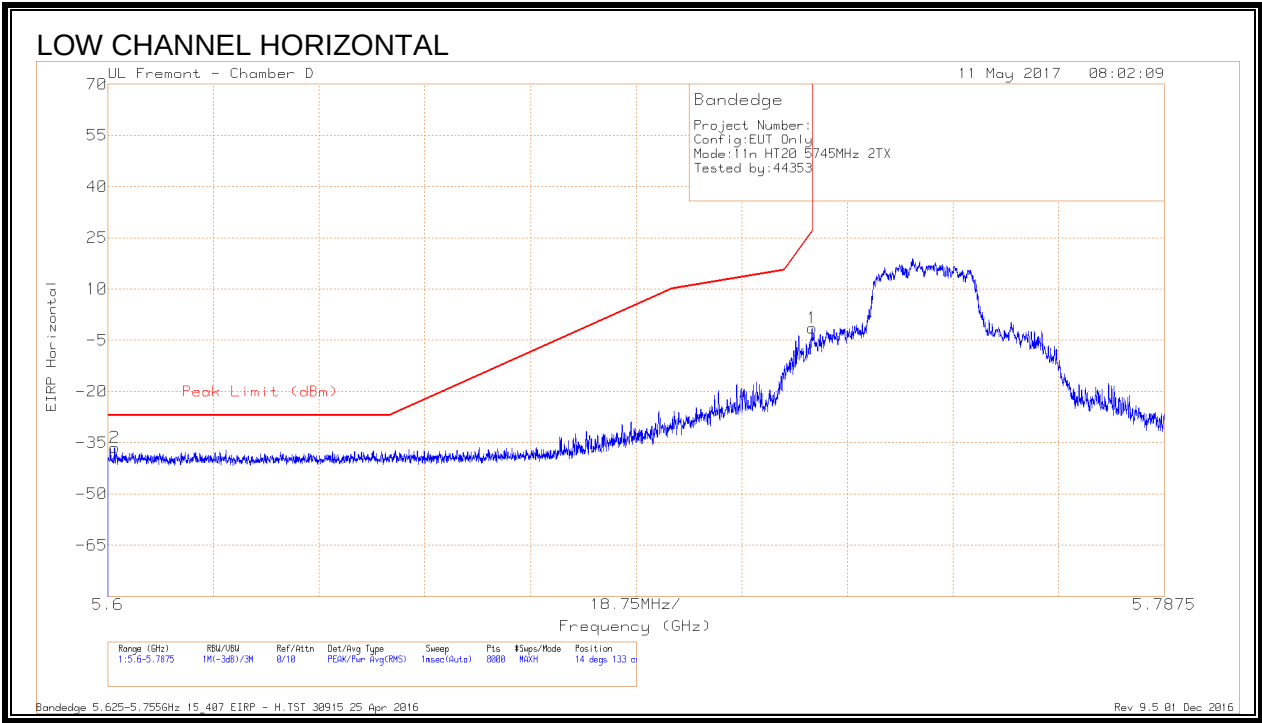


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl /Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-52.09	Pk	35.5	-19.5	11.8	-24.29	26.99	-51.28	296	118	V
2	5.959	-65.08	Pk	35.6	-19	11.8	-36.68	-27	-9.68	296	118	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016

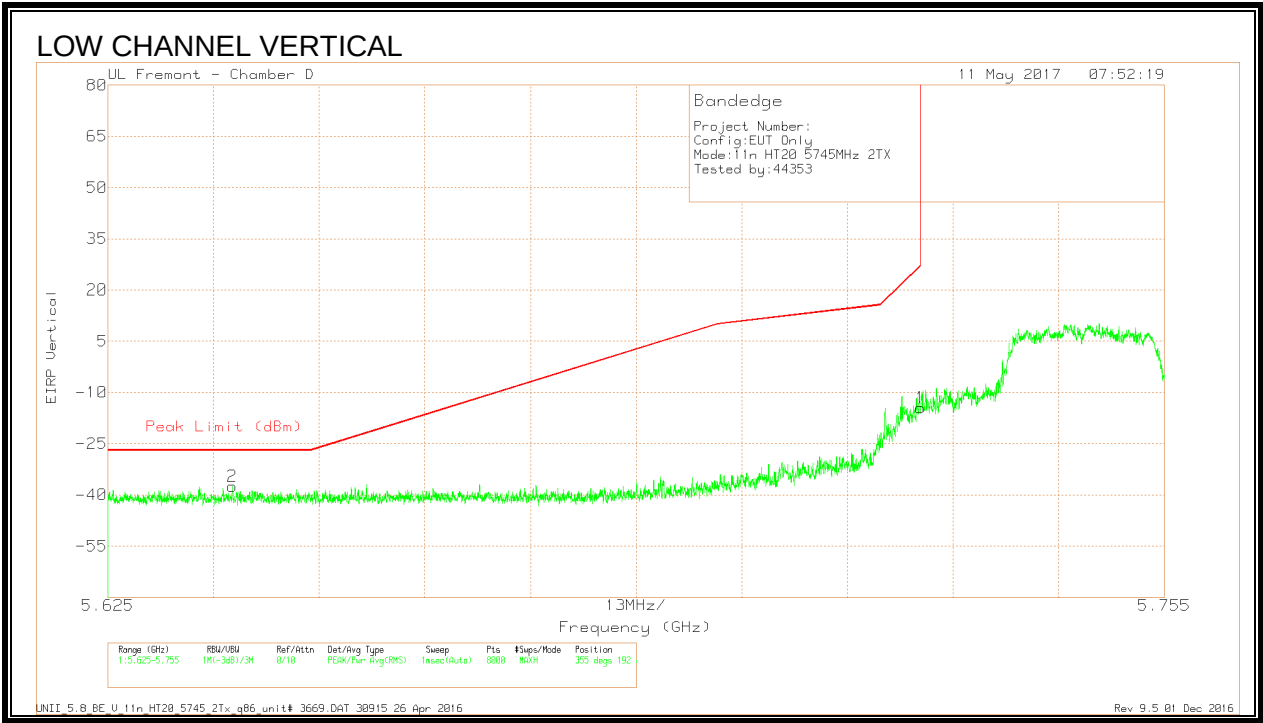
9.1.33. 802.11n HT20 2TX CDD MIMO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



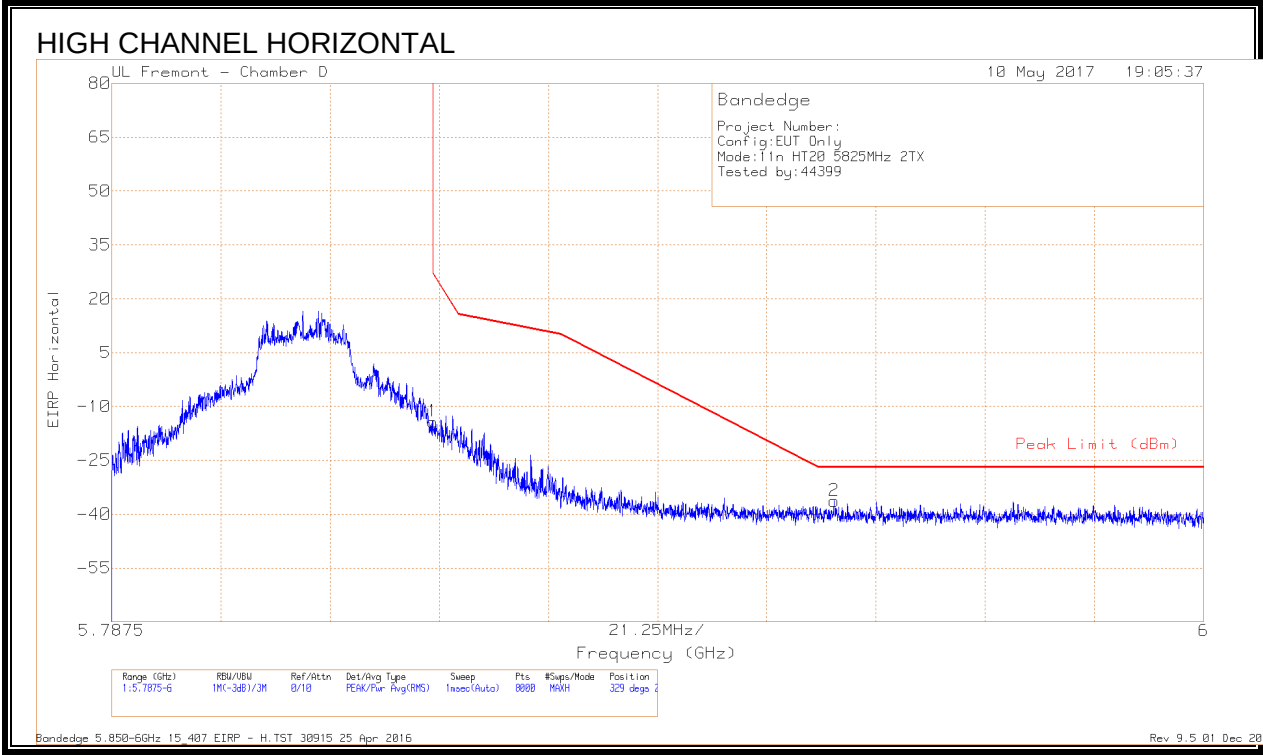
Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cb l/Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.601	-65.2	Pk	34.6	-17.7	11.8	-36.5	-27	-9.5	14	133	H
1	5.725	-30.34	Pk	34.6	-17.5	11.8	-1.44	26.96	-28.4	14	133	H

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 25 Apr 2016
Rev 9.5 01 Dec 2016



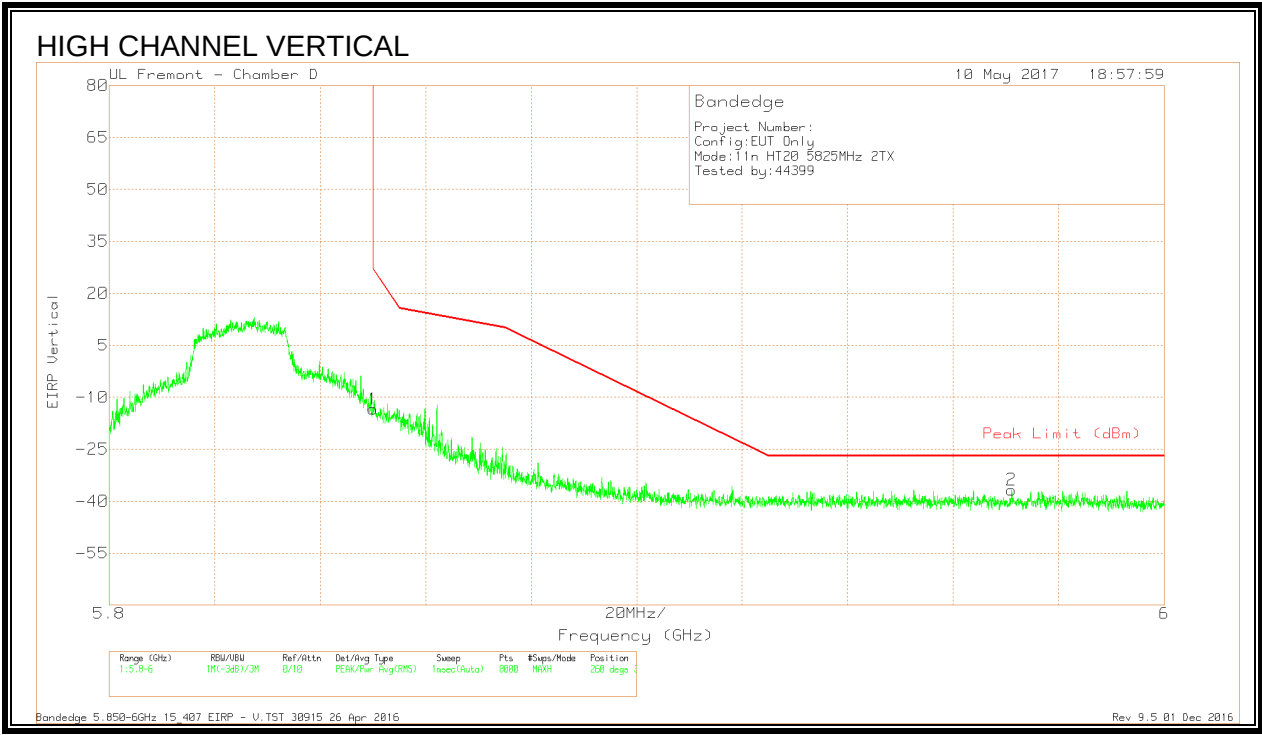
Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cb l/Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.64	-66.27	Pk	34.6	-17.6	11.8	-37.47	-27	-10.47	355	192	V
1	5.725	-43.39	Pk	34.6	-17.5	11.8	-14.49	27	-41.49	355	192	V

Pk - Peak detector
UNII_5.8_BE_V_11n_HT20_5745_2Tx_q86_unit# 3669.DAT 30915 26 Apr 2016
Rev 9.5 01 Dec 2016



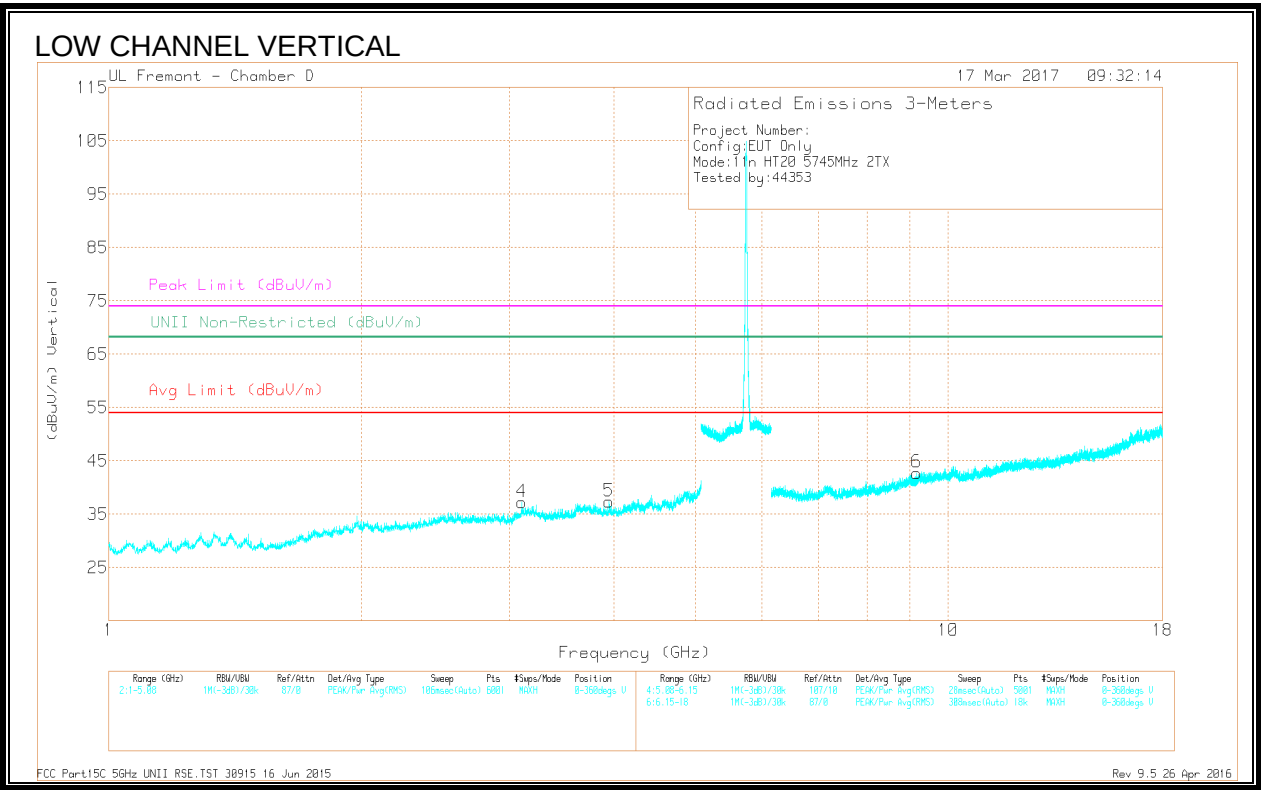
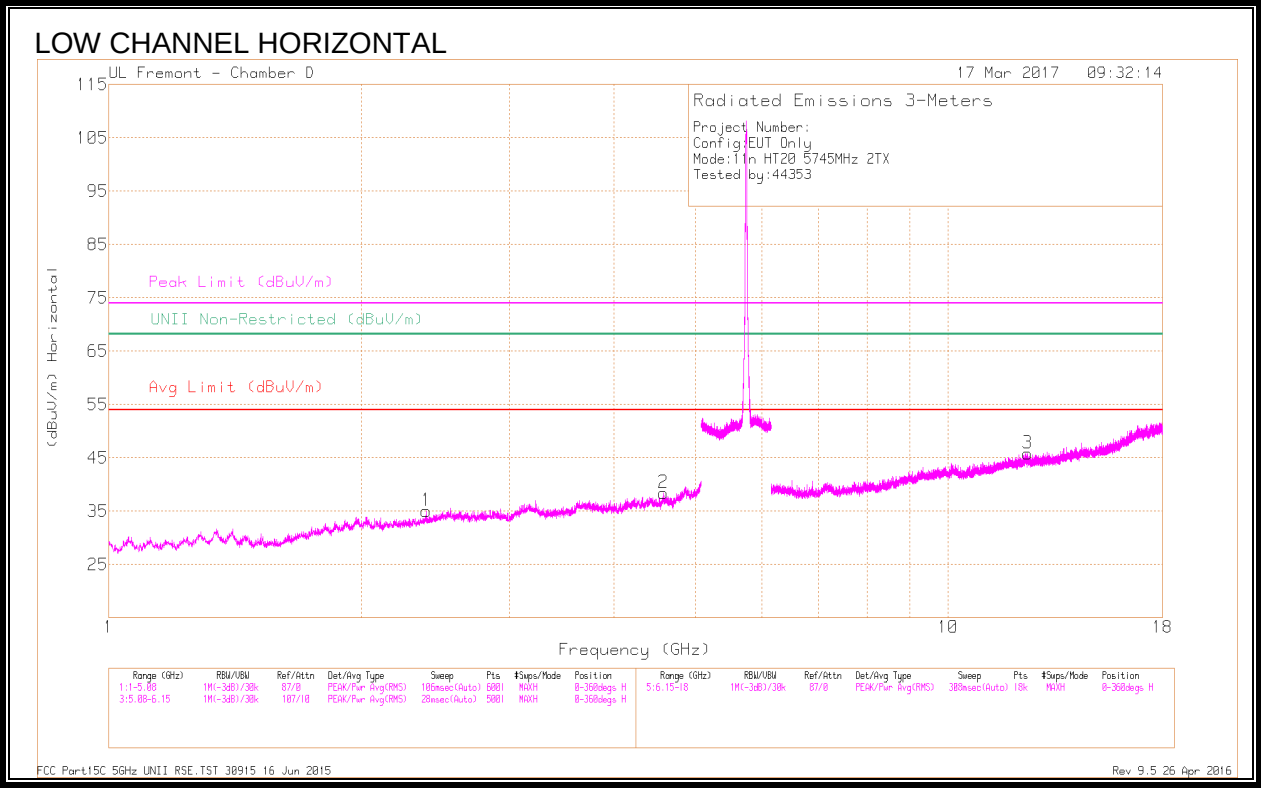
Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl /Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-43.52	Pk	35	-17.5	11.8	-14.22	26.98	-41.2	329	217	H
2	5.928	-65.81	Pk	35	-17.3	11.8	-36.31	-27	-9.31	329	217	H

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 25 Apr 2016
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Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-42.68	Pk	35	-17.5	11.8	-13.38	26.99	-40.37	260	382	V
2	5.971	-66.22	Pk	35.1	-17.4	11.8	-36.72	-27	-9.72	260	382	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.377	39.86	PK-U	31.9	-30.5	41.26	-	-	74	-32.74	-	-	231	177	H
	* 2.382	28.87	ADR	31.9	-30.5	30.27	54	-23.73	-	-	-	-	231	177	H
2	* 4.582	37.42	PK-U	34	-27.3	44.12	-	-	74	-29.88	-	-	324	126	H
	* 4.58	27.55	ADR	34	-27.2	34.35	54	-19.65	-	-	-	-	324	126	H
5	* 3.939	38.5	PK-U	33.2	-28.1	43.6	-	-	74	-30.4	-	-	199	247	V
	* 3.939	27.87	ADR	33.2	-28	33.07	54	-20.93	-	-	-	-	199	247	V
3	* 12.43	34.58	PK-U	39	-21.5	52.08	-	-	74	-21.92	-	-	112	180	H
	* 12.43	24.07	ADR	39	-21.5	41.57	54	-12.43	-	-	-	-	112	180	H
6	* 9.177	35.01	PK-U	36.8	-22.7	49.11	-	-	74	-24.89	-	-	84	102	V
	* 9.176	24.32	ADR	36.8	-22.7	38.42	54	-15.58	-	-	-	-	84	102	V
4	3.106	38.99	PK-U	33.1	-28.7	43.39	-	-	-	-	68.2	-24.81	271	305	V

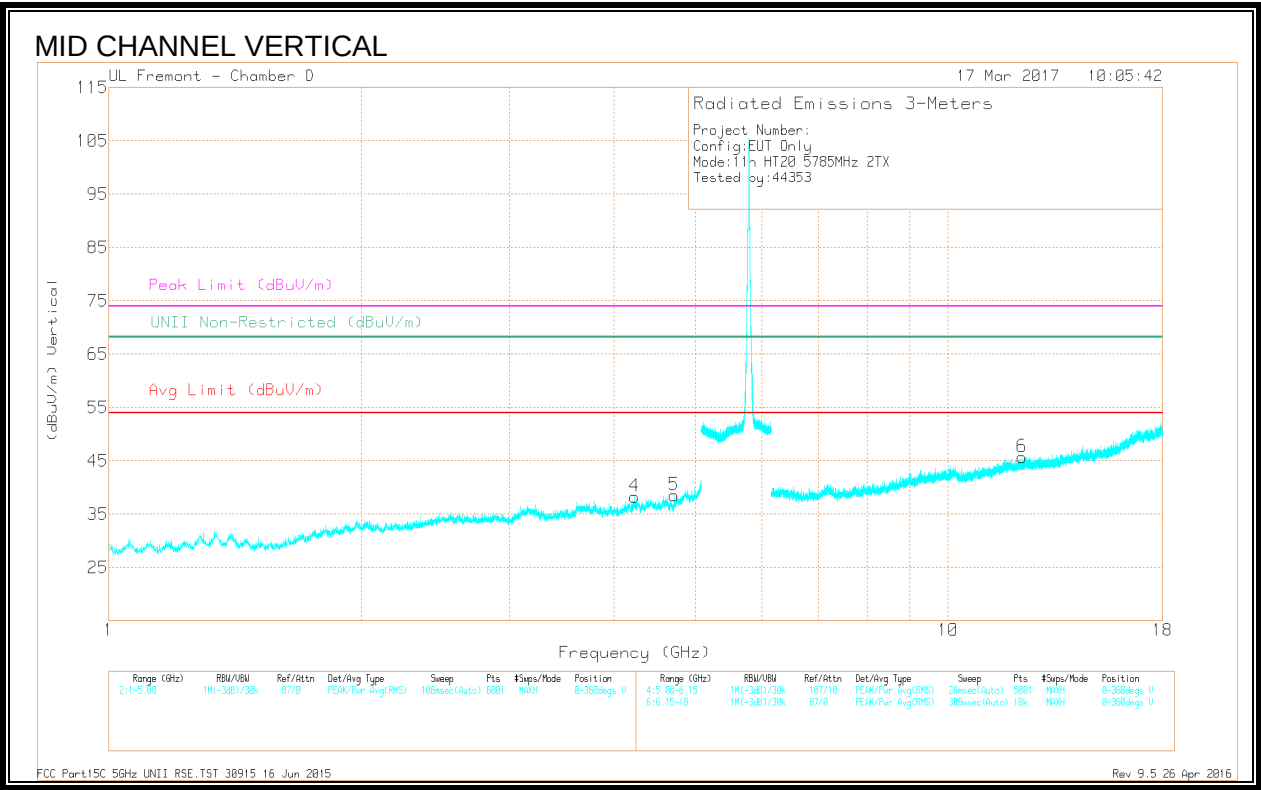
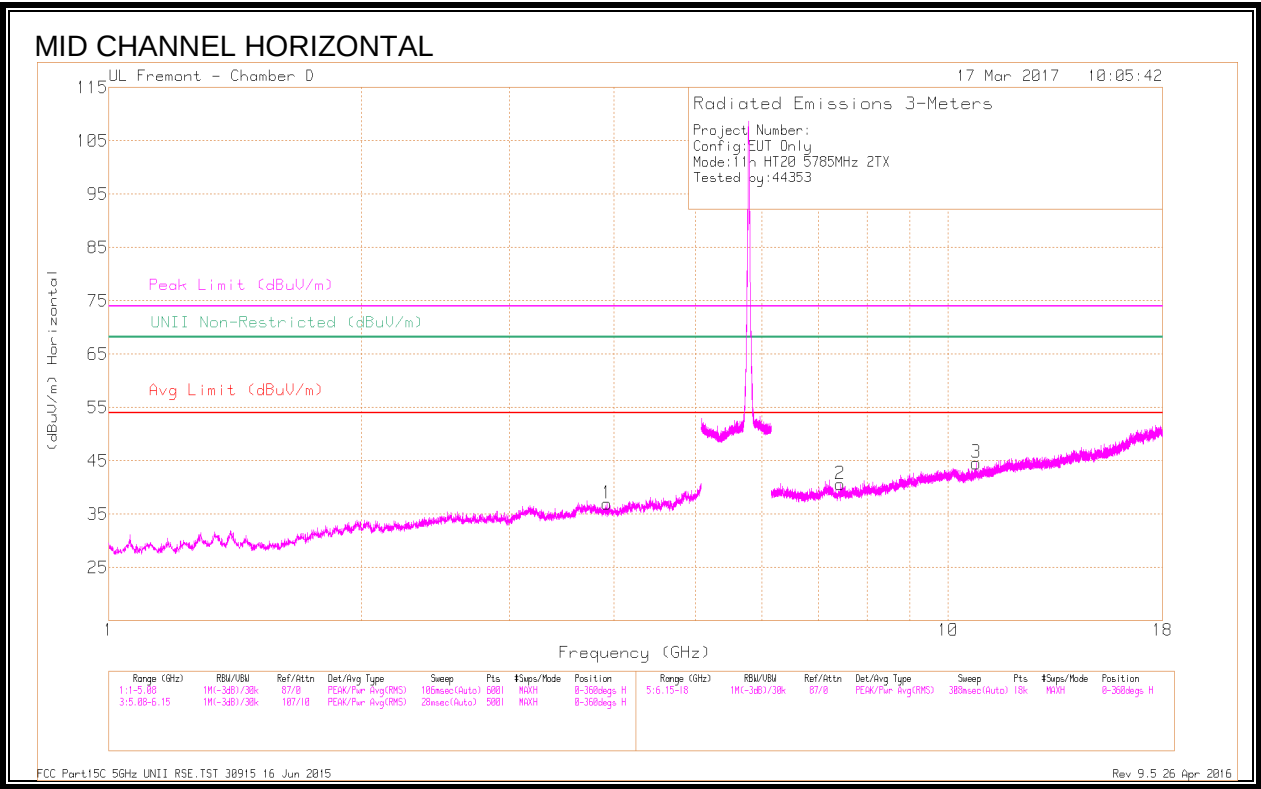
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.919	37.98	PK-U	33.2	-28.6	42.58	-	-	74	-31.42	-	-	254	188	H
	* 3.919	27.85	ADR	33.2	-28.6	32.45	54	-21.55	-	-	-	-	254	188	H
4	* 4.233	36.94	PK-U	33.5	-27.5	42.94	-	-	74	-31.06	-	-	38	272	V
	* 4.234	26.92	ADR	33.5	-27.5	32.92	54	-21.08	-	-	-	-	38	272	V
5	* 4.713	38.41	PK-U	34	-27.9	44.51	-	-	74	-29.49	-	-	126	144	V
	* 4.713	28.54	ADR	34	-27.9	34.64	54	-19.36	-	-	-	-	126	144	V
2	* 7.433	34.91	PK-U	35.6	-24.9	45.61	-	-	74	-28.39	-	-	101	235	H
	* 7.431	24.84	ADR	35.6	-24.9	35.54	54	-18.46	-	-	-	-	101	235	H
3	* 10.80	33.33	PK-U	37.3	-20.6	50.03	-	-	74	-23.97	-	-	264	186	H
	* 10.8	23.32	ADR	37.3	-20.6	40.02	54	-13.98	-	-	-	-	264	186	H
6	* 12.24	34.88	PK-U	39	-21.8	52.08	-	-	74	-21.92	-	-	277	324	V
	* 12.24	24.05	ADR	39	-21.7	41.35	54	-12.65	-	-	-	-	277	324	V

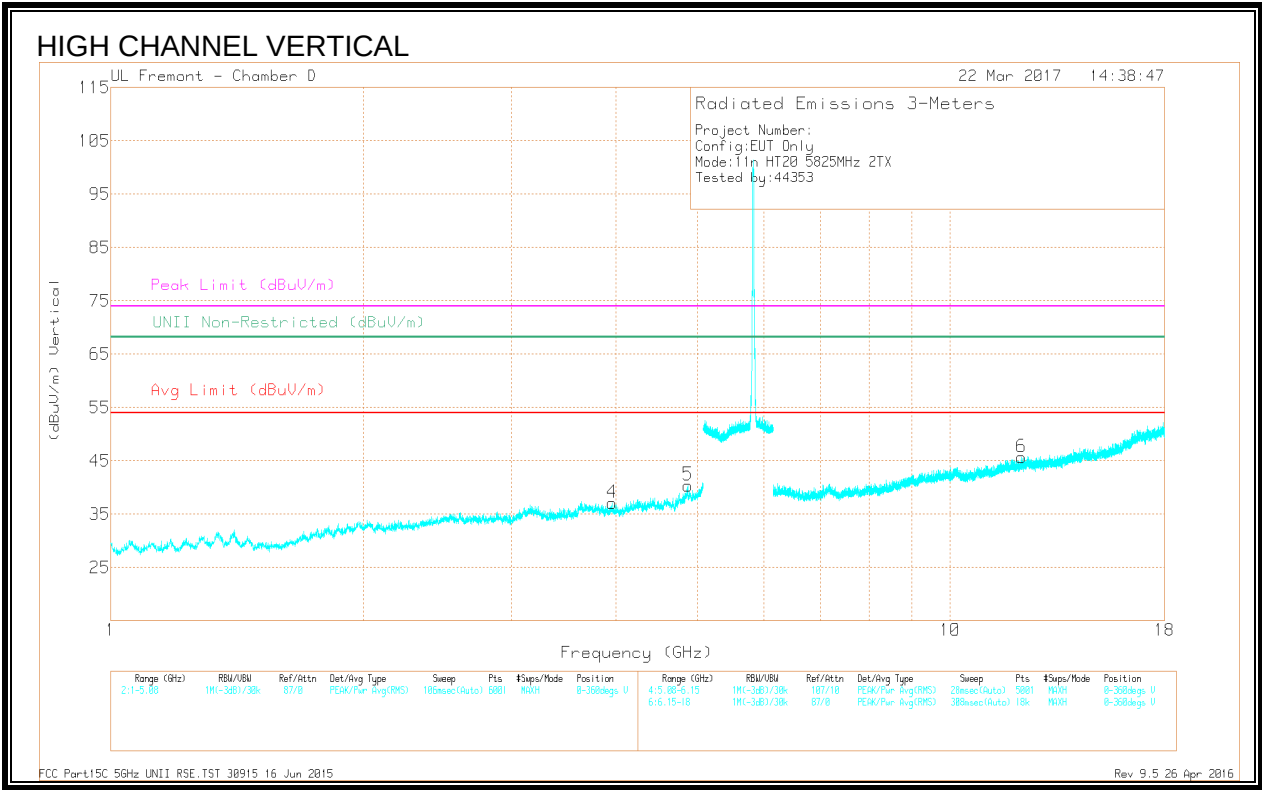
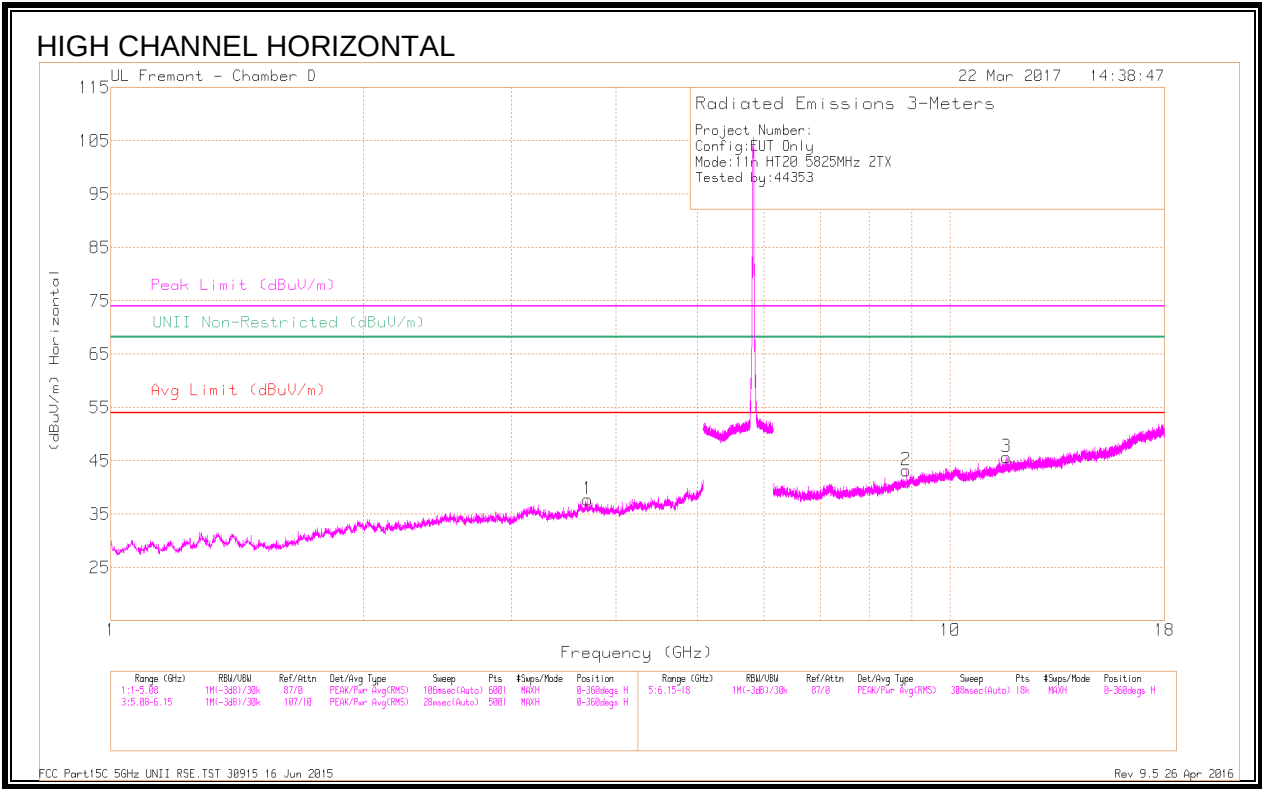
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.703	38.14	PK-U	33.3	-29.2	42.24	-	-	74	-31.76	-	-	89	240	H
	* 3.702	27.88	ADR	33.3	-29.2	31.98	54	-22.02	-	-	-	-	89	240	H
4	* 3.957	37.8	PK-U	33.3	-28	43.1	-	-	74	-30.9	-	-	216	202	V
	* 3.96	27.39	ADR	33.3	-28	32.69	54	-21.31	-	-	-	-	216	202	V
5	* 4.87	36.67	PK-U	34.1	-25.2	45.57	-	-	74	-28.43	-	-	185	133	V
	* 4.871	26.53	ADR	34.1	-25.2	35.43	54	-18.57	-	-	-	-	185	133	V
3	* 11.66	33.29	PK-U	38.5	-20.9	50.89	-	-	74	-23.11	-	-	320	291	H
	* 11.66	23.32	ADR	38.5	-20.9	40.92	54	-13.08	-	-	-	-	320	291	H
6	* 12.16	33.97	PK-U	39	-21.6	51.37	-	-	74	-22.63	-	-	136	208	V
	* 12.16	23.93	ADR	39	-21.6	41.33	54	-12.67	-	-	-	-	136	208	V
2	8.861	34.85	PK-U	36.5	-22.9	48.45	-	-	-	-	68.2	-19.75	244	352	H

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

PK-U - U-NII: Maximum Peak

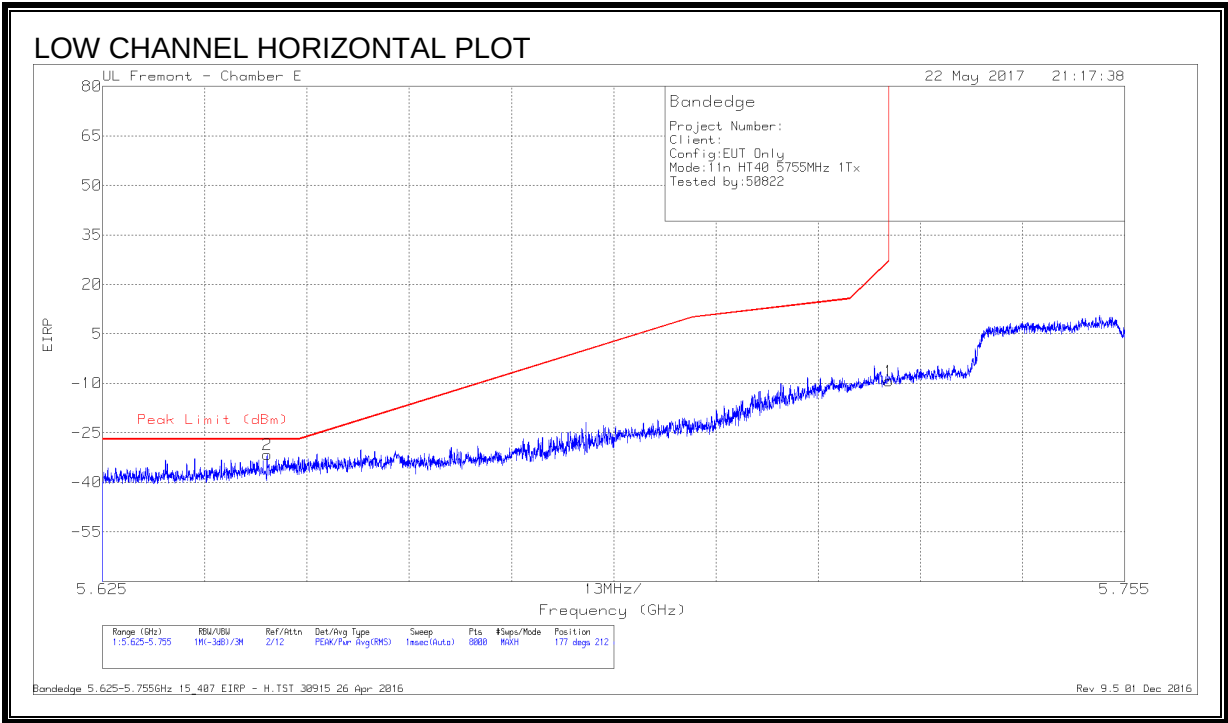
ADR - U-NII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016

9.1.34. 802.11n HT40 UAT 2 1Tx MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE, UAT 2 (LOW CHANNEL)

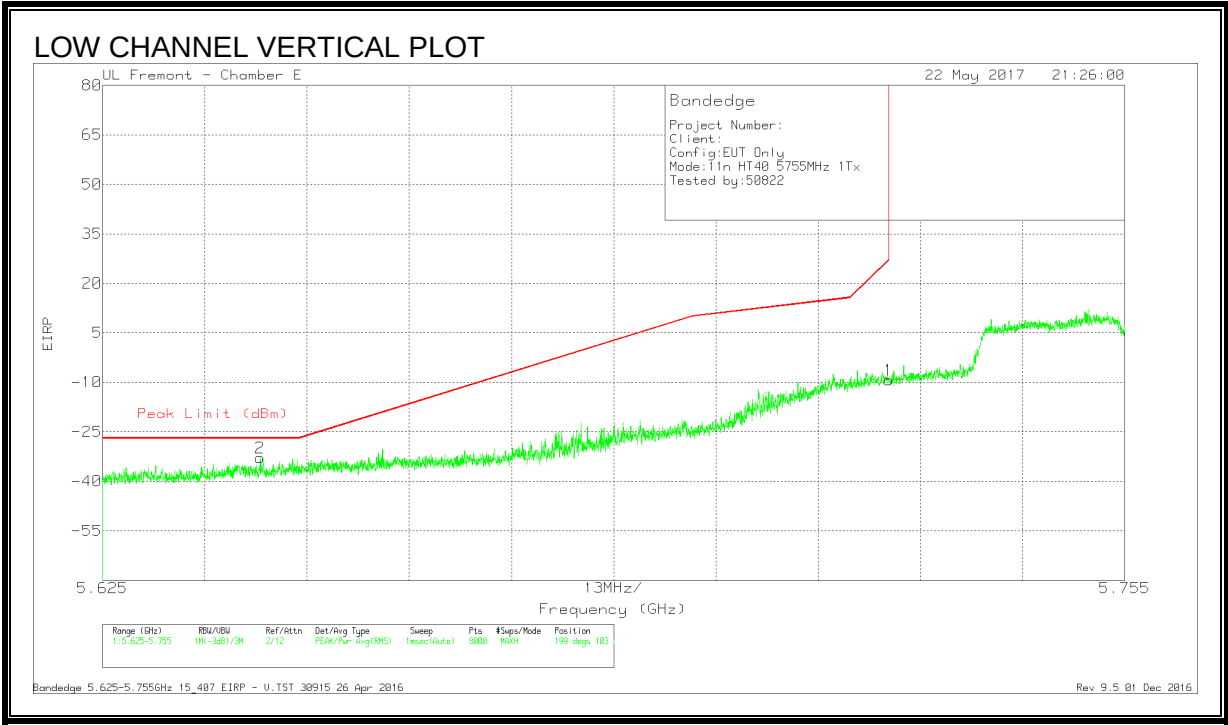


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.646	-58.77	Pk	34.9	-19.5	11.8	-31.57	-27	-4.57	177	212	H
1	5.725	-36.44	Pk	34.9	-19.6	11.8	-9.34	27	-36.34	177	212	H

Pk - Peak detector

Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 26 Apr 2016

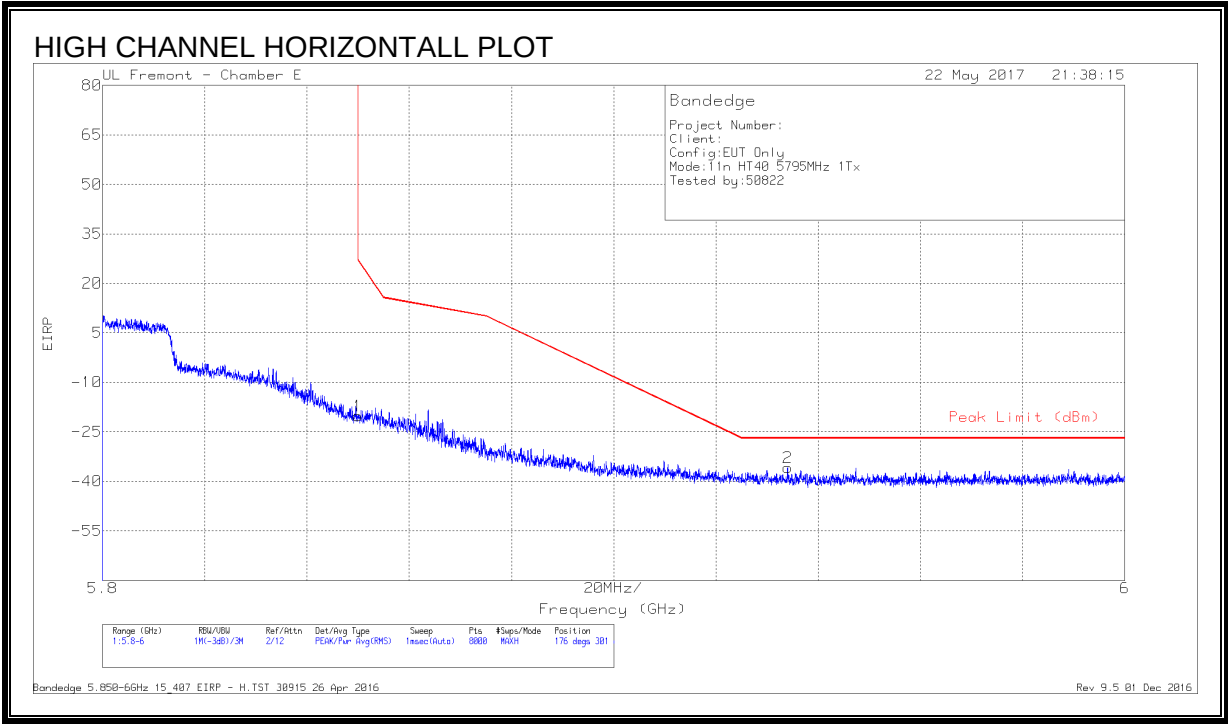
Rev 9.5 01 Dec 2016



Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.645	-60.1	Pk	34.9	-19.5	11.8	-32.9	-27	-5.9	199	103	V
1	5.725	-36.35	Pk	34.9	-19.6	11.8	-9.25	27	-36.25	199	103	V

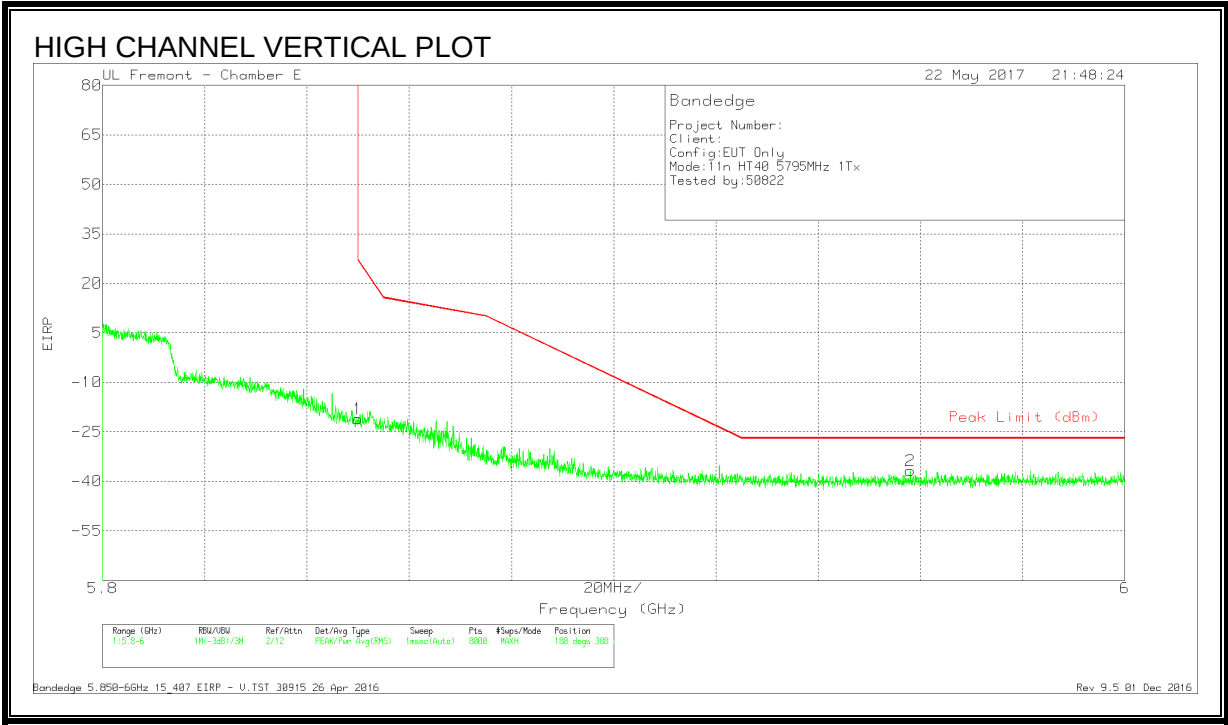
Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016

RESTRICTED BANDEDGE, UAT 2 (HIGH CHANNEL)



Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-47.97	Pk	35.5	-19.5	11.8	-20.17	26.99	-47.16	176	301	H
2	5.934	-63.94	Pk	35.6	-19.3	11.8	-35.84	-27	-8.84	176	301	H

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016

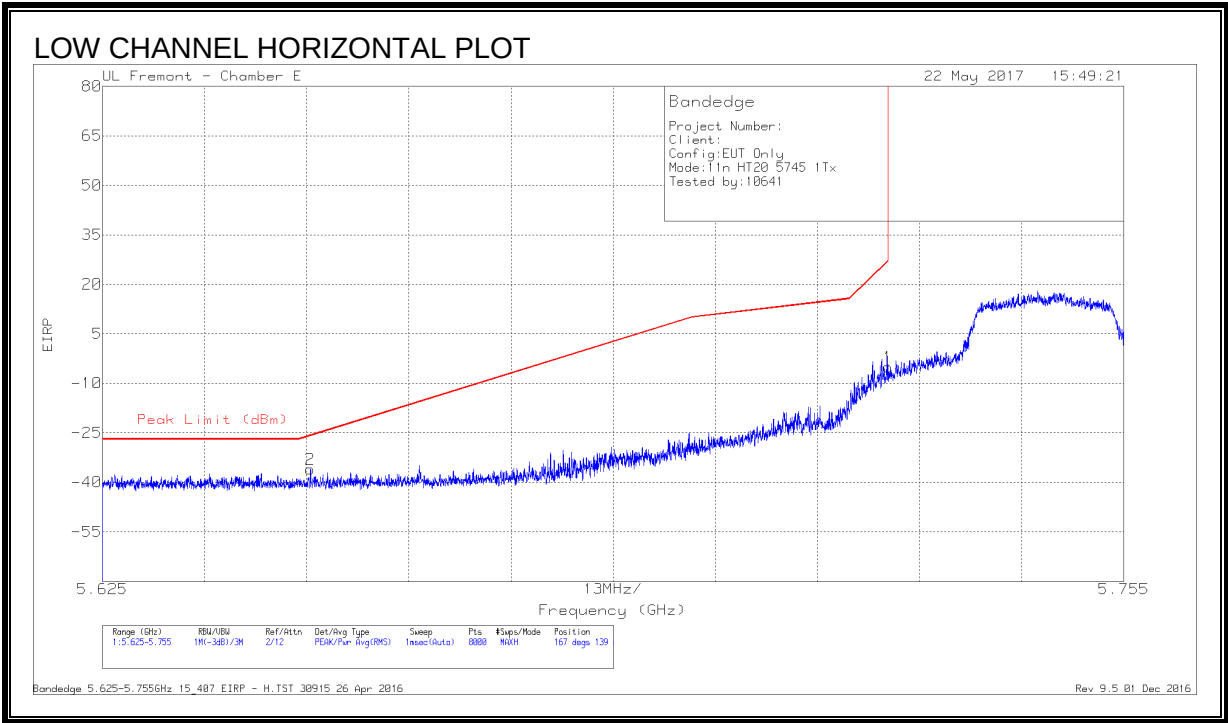


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-48.8	Pk	35.5	-19.5	11.8	-21	26.99	-47.99	180	388	V
2	5.958	-65.18	Pk	35.6	-19	11.8	-36.78	-27	-9.78	180	388	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
Rev 9.5 01 Dec 2016

9.1.35. 802.11n HT40 LAT 3 1Tx MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE, LAT 3 (LOW CHANNEL)

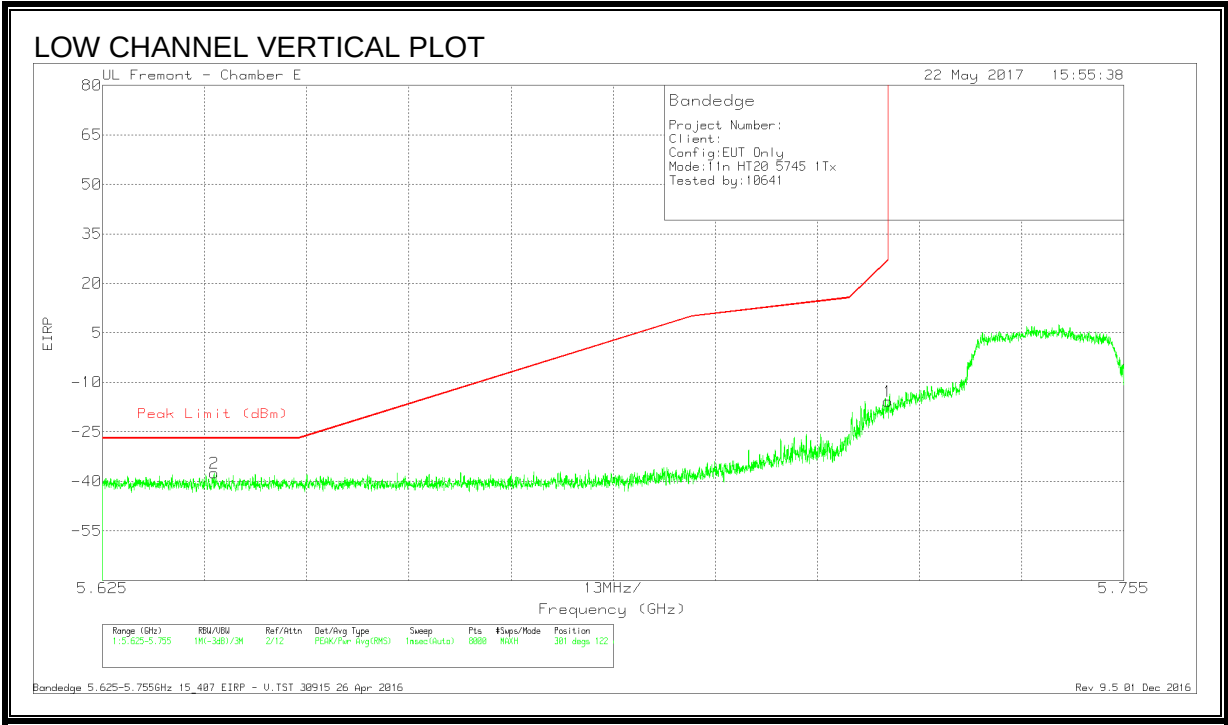


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl /Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.651	-63.32	Pk	34.9	-19.4	11.8	-36.02	-25.91	-10.11	167	139	H
1	5.725	-32.19	Pk	34.9	-19.6	11.8	-5.09	27	-32.09	167	139	H

Pk - Peak detector

Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 26 Apr 2016

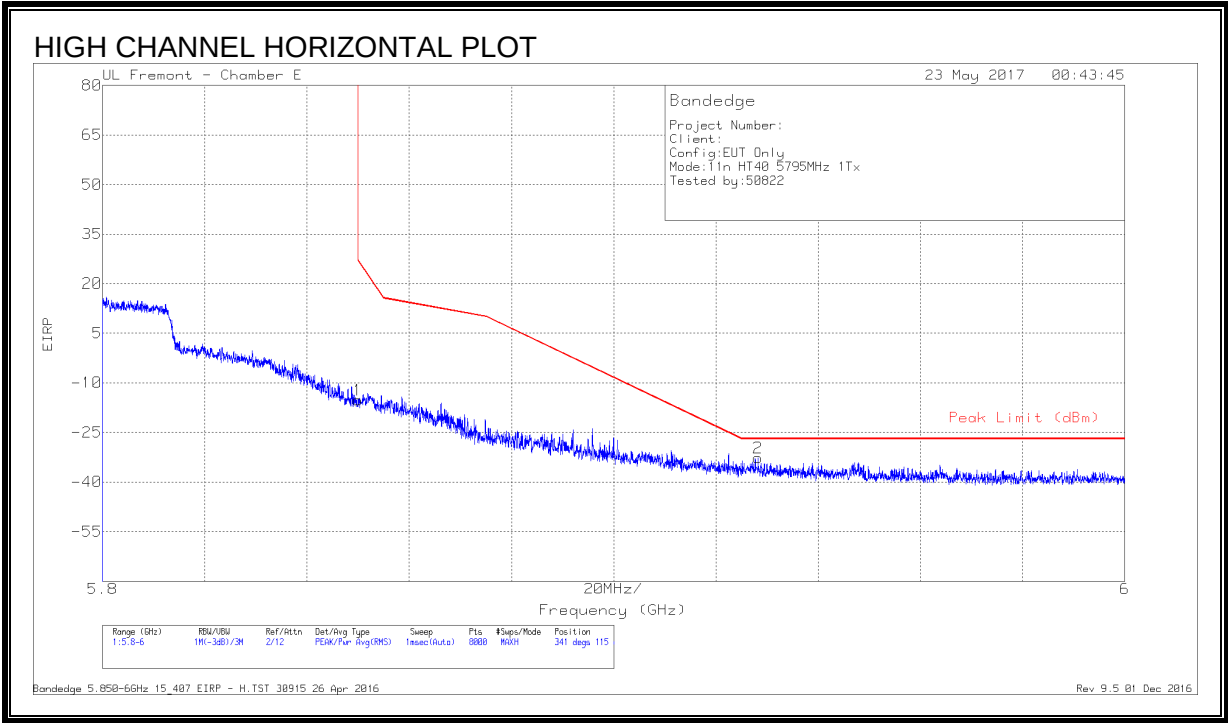
Rev 9.5 01 Dec 2016



Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl /Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.639	-64.72	Pk	34.9	-19.5	11.8	-37.52	-27	-10.52	301	122	V
1	5.725	-42.83	Pk	34.9	-19.6	11.8	-15.73	27	-42.73	301	122	V

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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RESTRICTED BANDEDGE, LAT 3 (HIGH CHANNEL)

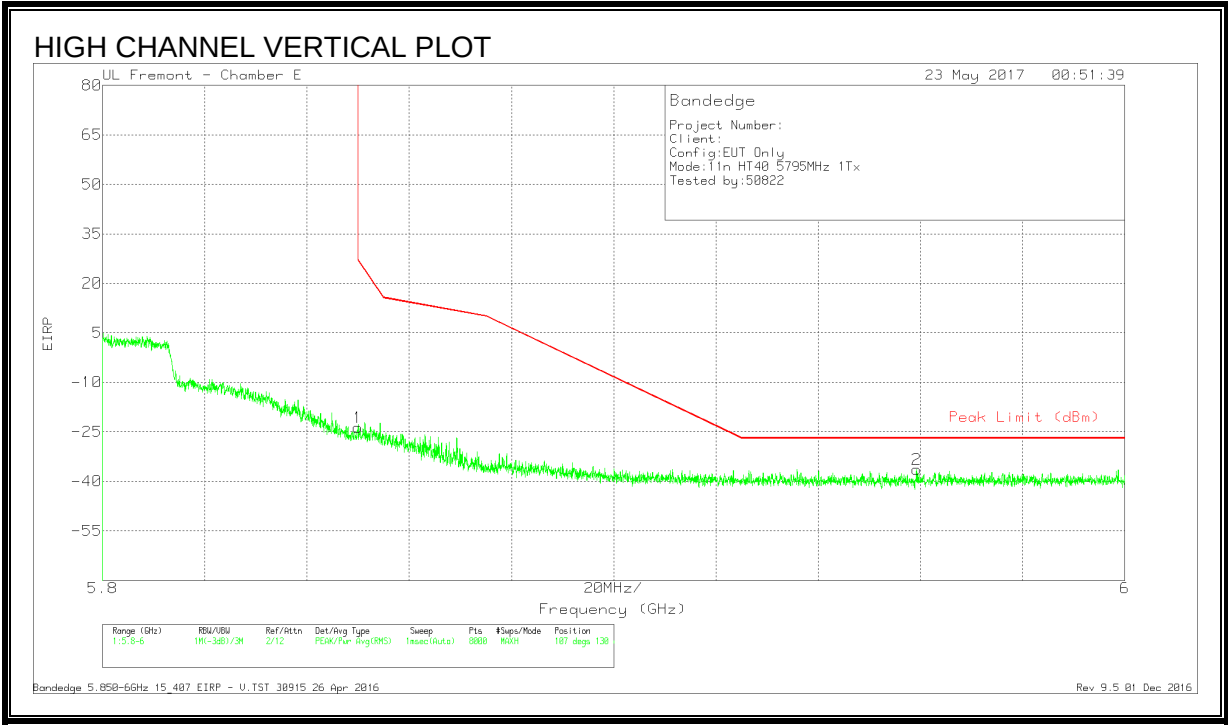


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cb I/Fitr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-43	Pk	35.5	-19.5	11.8	-15.2	26.99	-42.19	341	115	H
2	5.928	-60.86	Pk	35.6	-19.3	11.8	-32.76	-27	-5.76	341	115	H

Pk - Peak detector

Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 26 Apr 2016

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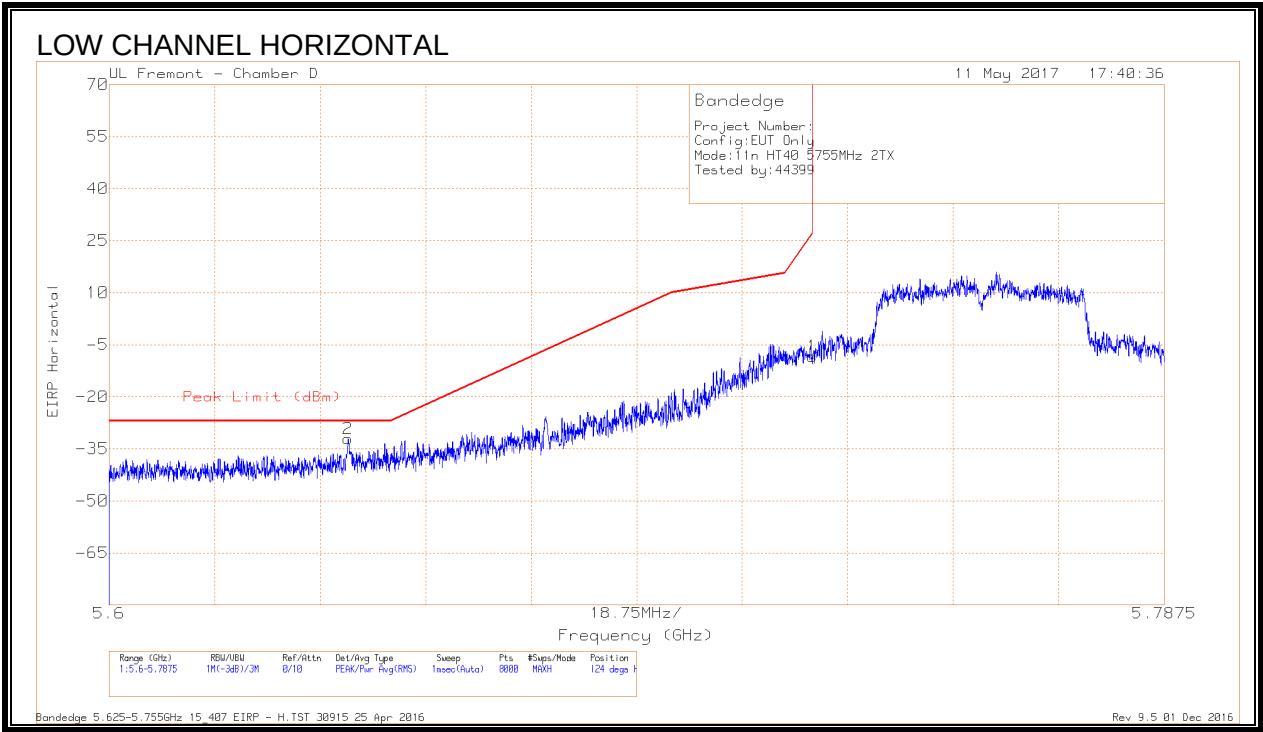
Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-51.45	Pk	35.5	-19.5	11.8	-23.65	26.99	-50.64	107	130	V
2	5.959	-64.79	Pk	35.6	-19	11.8	-36.39	-27	-9.39	107	130	V

Pk - Peak detector

Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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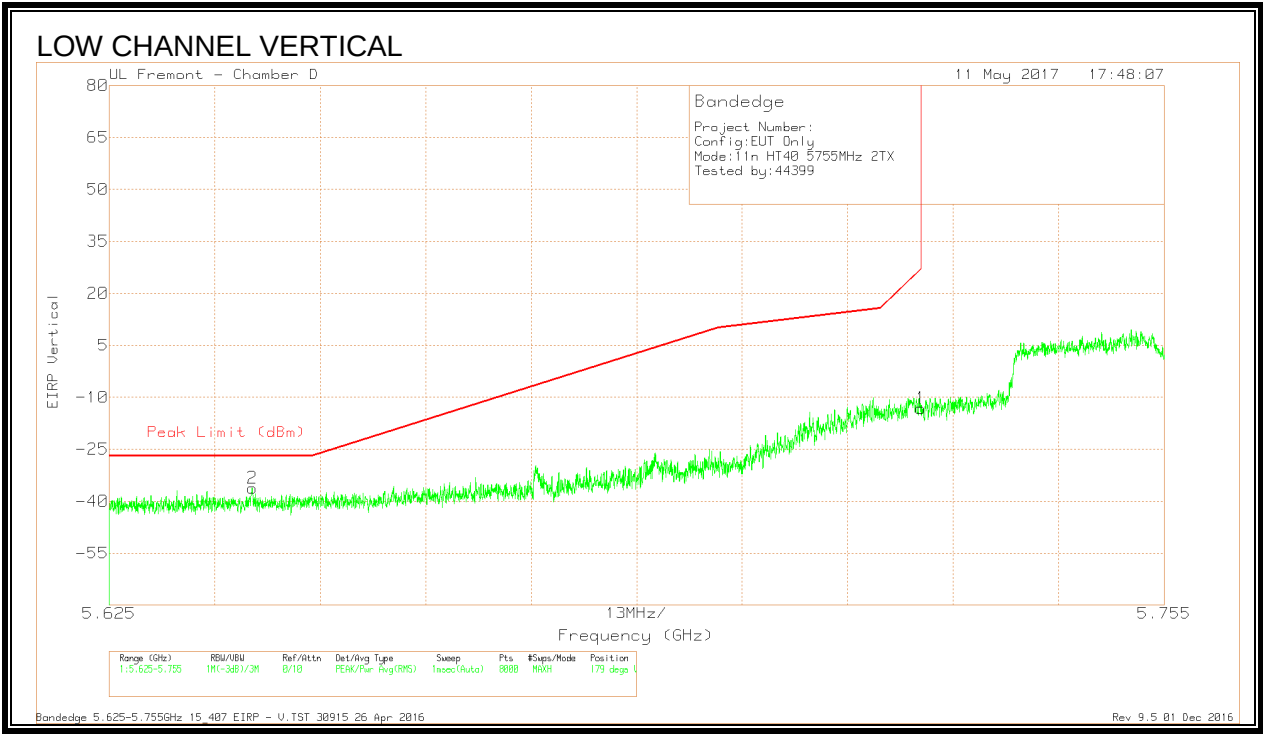
9.1.36. 11n HT40 2TX CDD MIMO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



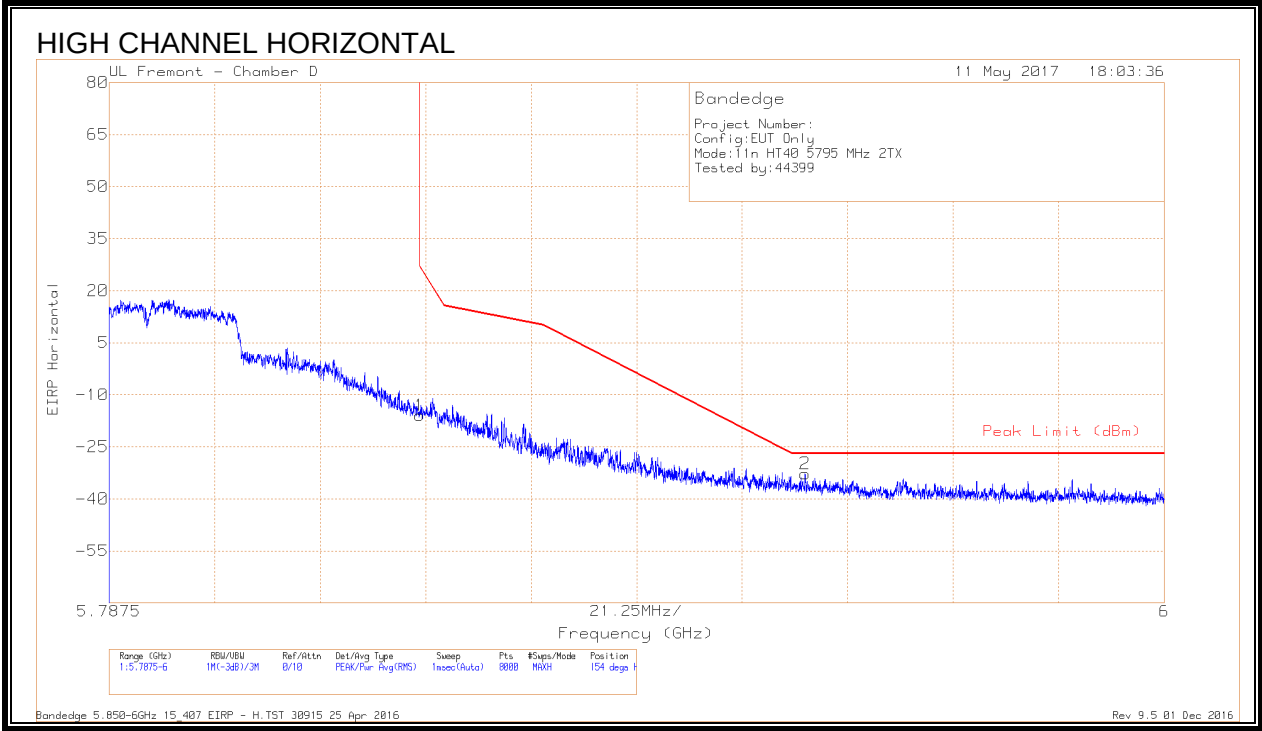
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AFT120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.642	-60.9	Pk	34.6	-17.6	11.8	-32.1	-27	-5.1	124	115	H
1	5.725	-37.24	Pk	34.6	-17.5	11.8	-8.34	26.96	-35.3	124	115	H

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 25 Apr 2016
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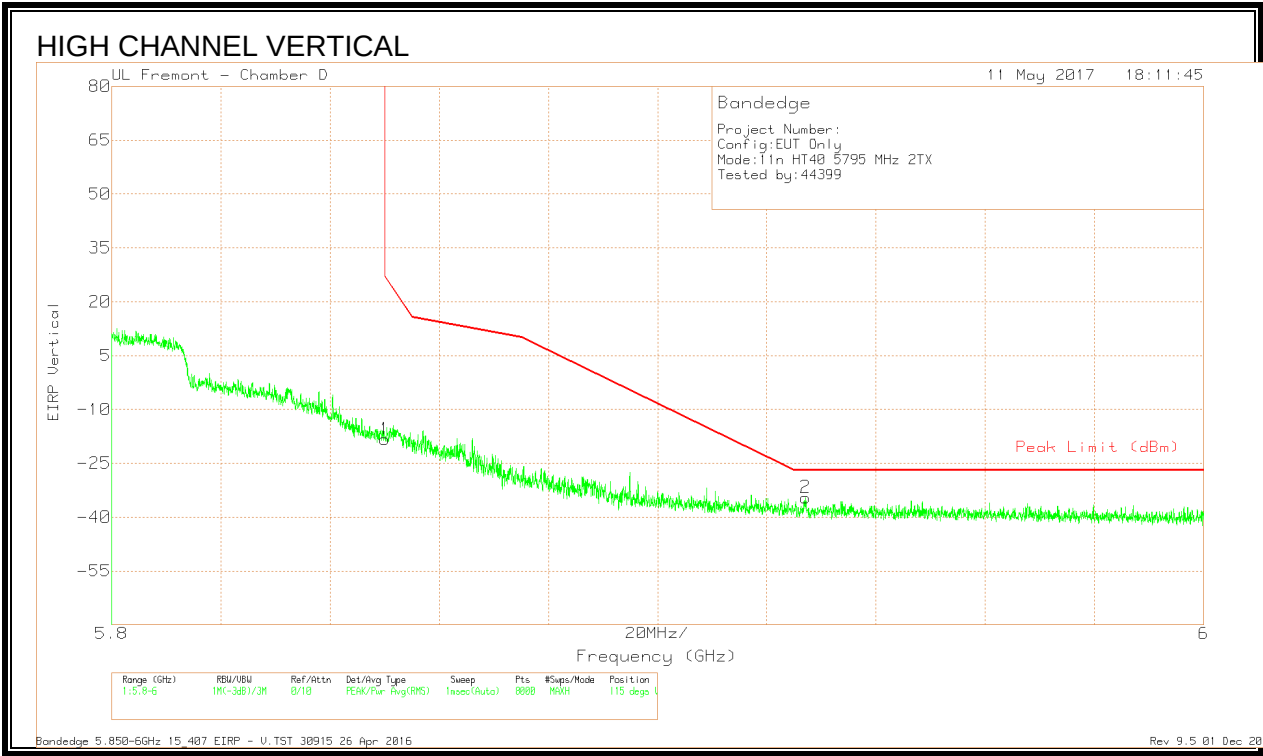
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.643	-65	Pk	34.6	-17.6	11.8	-36.2	-27	-9.2	179	112	V
1	5.725	-42.06	Pk	34.6	-17.5	11.8	-13.16	27	-40.16	179	112	V

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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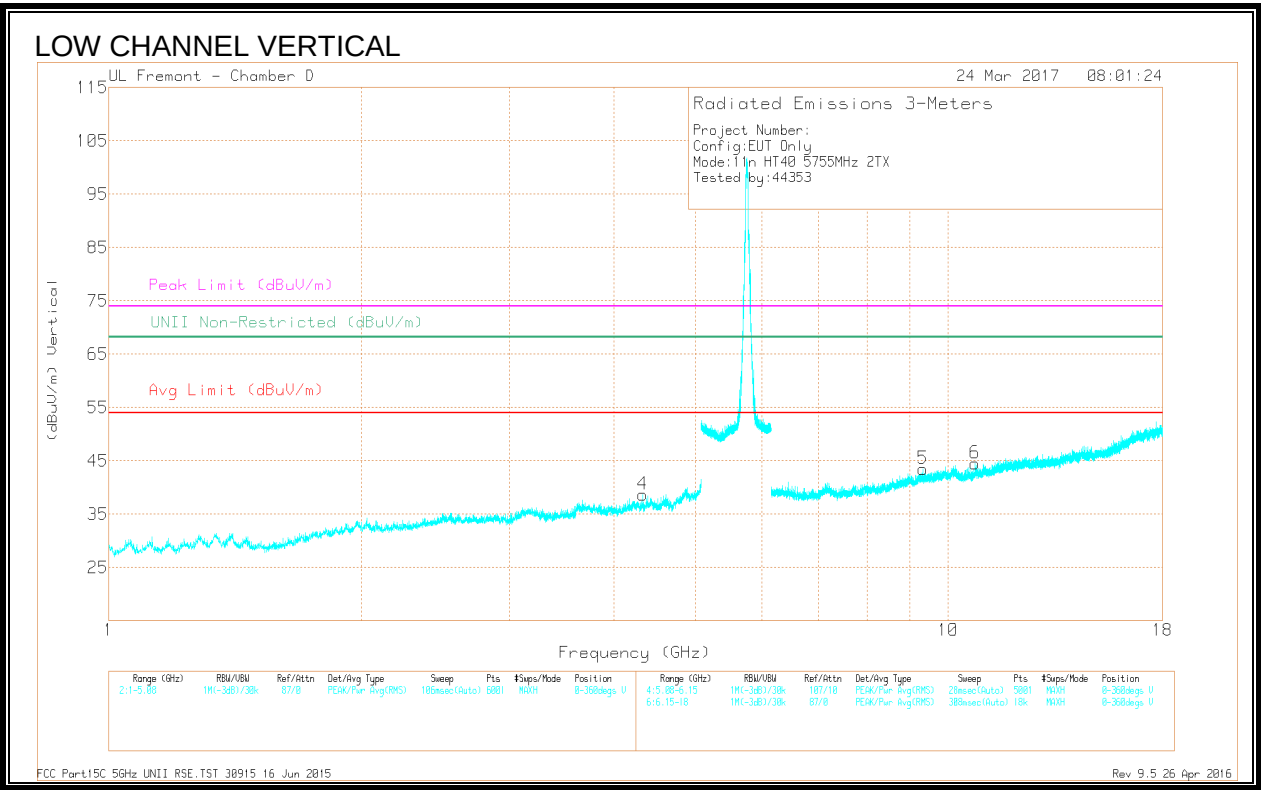
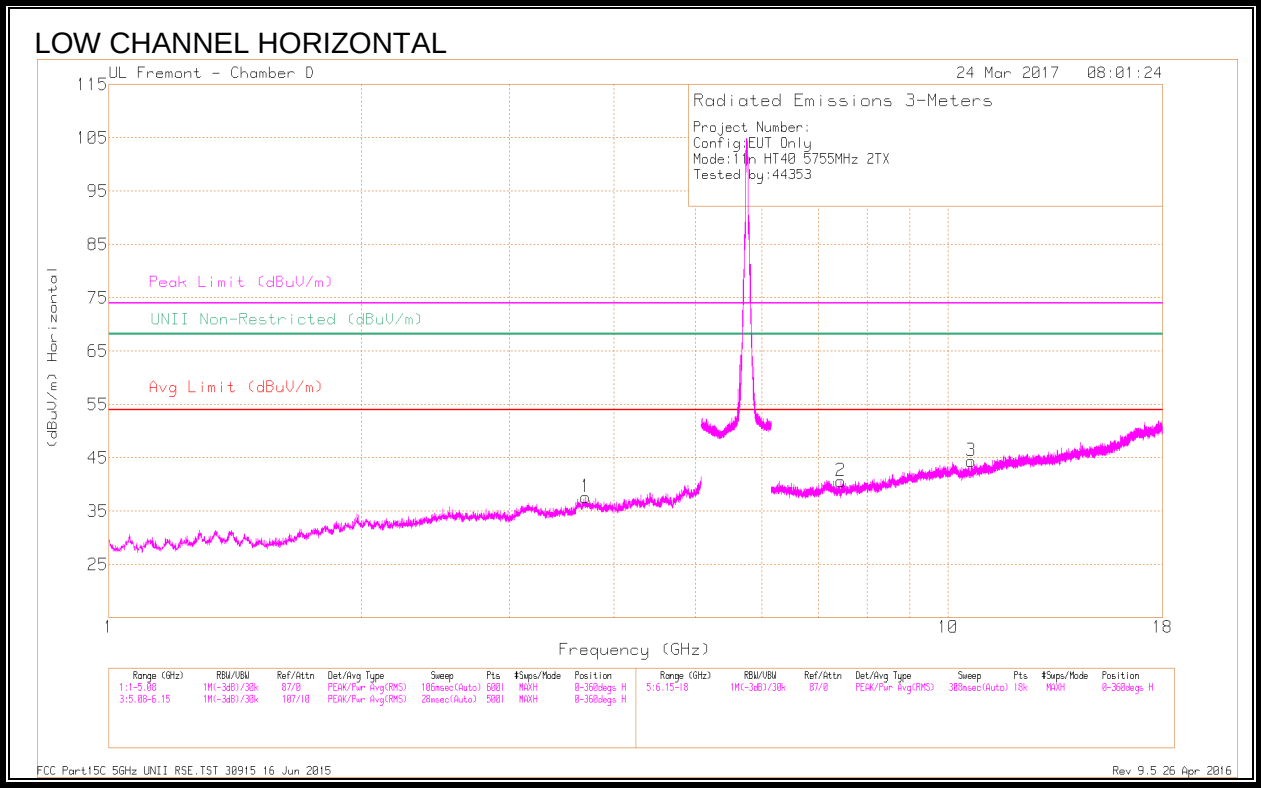
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-45.25	Pk	35	-17.5	11.8	-15.95	26.98	-42.93	154	124	H
2	5.928	-62.25	Pk	35	-17.3	11.8	-32.75	-27	-5.75	154	124	H

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 25 Apr 2016
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Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AFT120 (dB/m)	Amp/Cbl/ Fitr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-47.58	Pk	35	-17.5	11.8	-18.28	26.99	-45.27	115	277	V
2	5.927	-63.94	Pk	35	-17.4	11.8	-34.54	-27	-7.54	115	277	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr/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	* 3.7	38.58	PK-U	33.3	-29.2	0	42.68	-	-	74	-31.32	-	-	340	176	H
	* 3.701	28.16	ADR	33.3	-29.2	.1	32.36	54	-21.64	-	-	-	-	340	176	H
4	* 4.324	38.36	PK-U	33.6	-28.4	0	43.56	-	-	74	-30.44	-	-	268	129	V
	* 4.323	27.85	ADR	33.6	-28.4	.1	33.15	54	-20.85	-	-	-	-	268	129	V
2	* 7.452	35.08	PK-U	35.6	-24.9	0	45.78	-	-	74	-28.22	-	-	244	311	H
	* 7.453	25.37	ADR	35.6	-24.9	.1	36.17	54	-17.83	-	-	-	-	244	311	H
3	* 10.64	34.21	PK-U	37	-21.8	0	49.41	-	-	74	-24.59	-	-	82	208	H
	* 10.64	23.97	ADR	37	-21.8	.1	39.27	54	-14.73	-	-	-	-	82	208	H
6	* 9.331	33.9	PK-U	37	-22	0	48.9	-	-	74	-25.1	-	-	141	147	V
	* 9.332	24.05	ADR	37	-22	.1	39.15	54	-14.85	-	-	-	-	141	147	V
5	* 10.77	34.17	PK-U	37.3	-20.7	0	50.77	-	-	74	-23.23	-	-	186	168	V
	* 10.77	23.53	ADR	37.2	-20.9	.1	39.93	54	-14.07	-	-	-	-	186	168	V

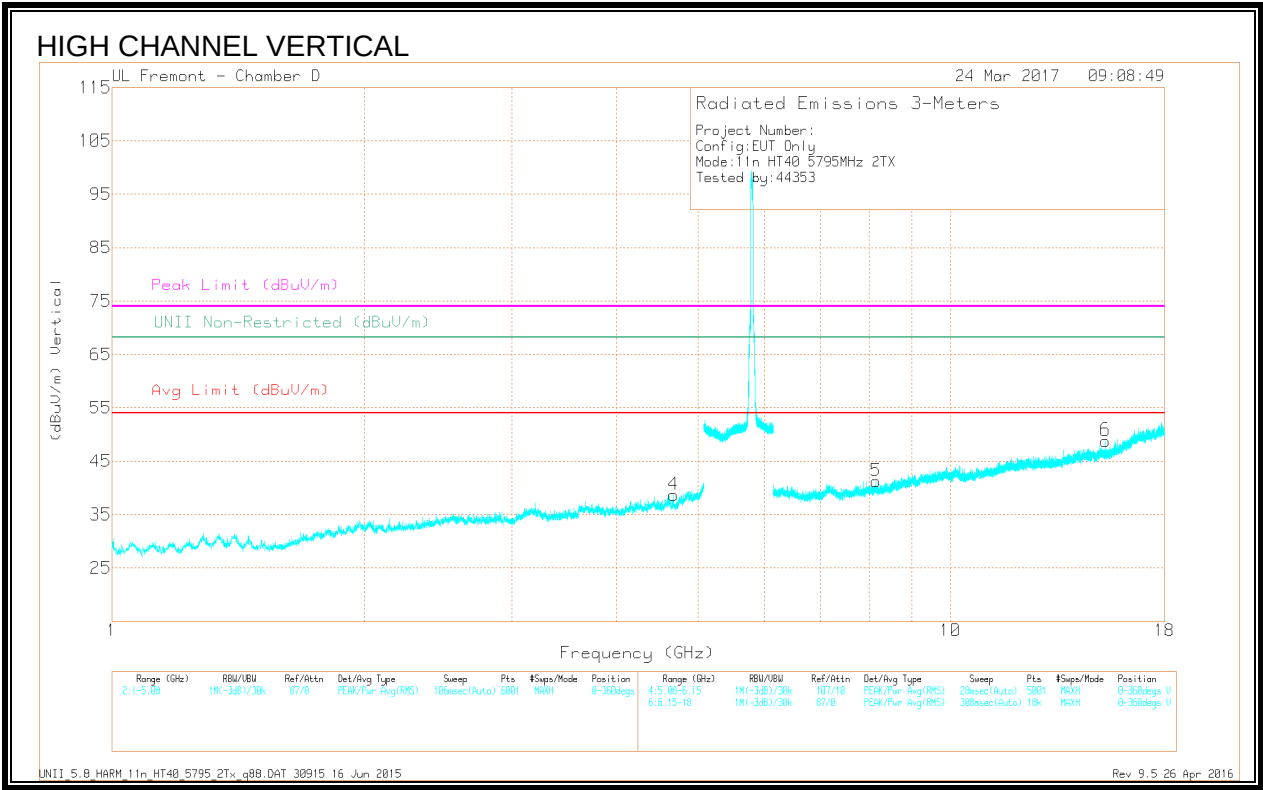
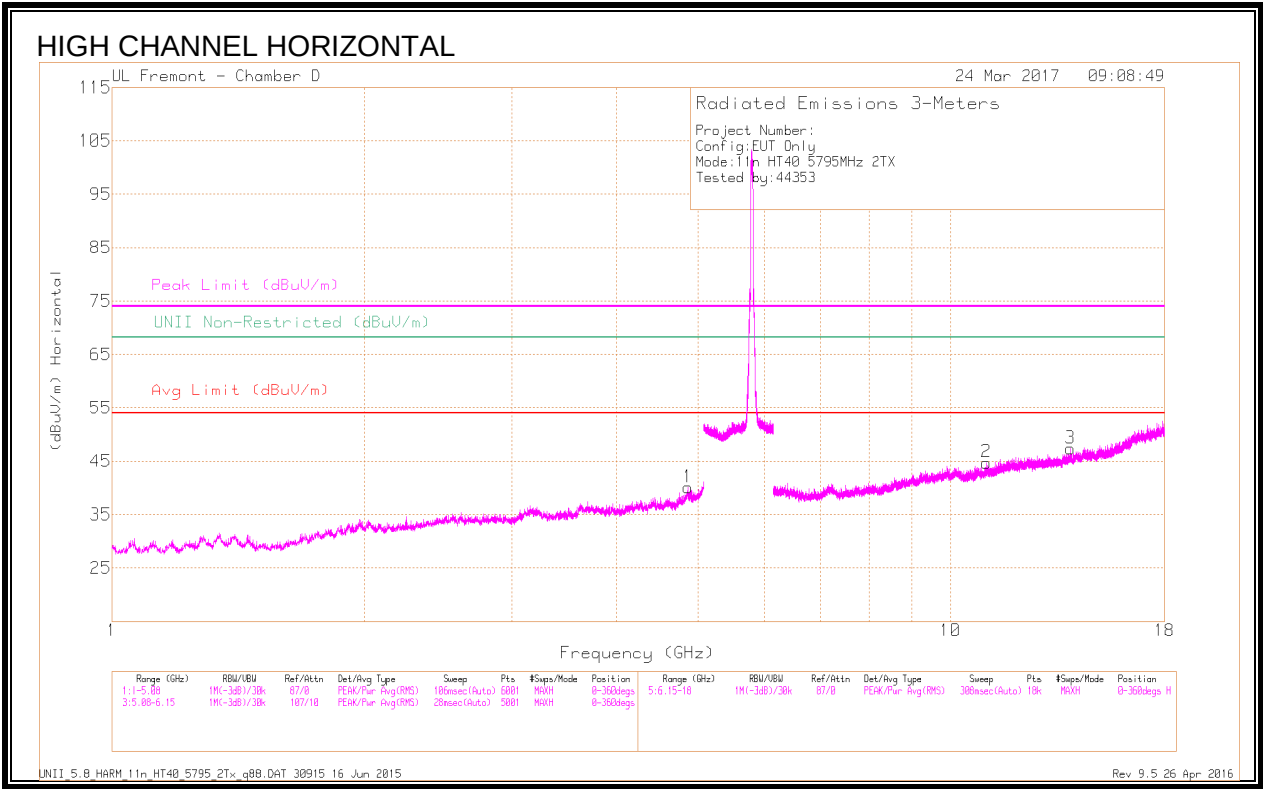
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016



DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.86	36.75	PK-U	34.1	-25.4	0	45.45	-	-	74	-28.55	-	-	134	277	H
	* 4.86	26.66	ADR	34.1	-25.4	.1	35.46	54	-18.54	-	-	-	-	134	277	H
4	* 4.67	38.53	PK-U	34	-27.9	0	44.63	-	-	74	-29.37	-	-	308	129	V
	* 4.67	28.45	ADR	34	-27.9	.1	34.65	54	-19.35	-	-	-	-	308	129	V
2	* 11.1	34.18	PK-U	37.6	-21.2	0	50.58	-	-	74	-23.42	-	-	282	348	H
	* 11.1	23.79	ADR	37.6	-21.2	.1	40.29	54	-13.71	-	-	-	-	282	348	H
5	* 8.16	35.17	PK-U	35.9	-24.2	0	46.87	-	-	74	-27.13	-	-	221	187	V
	* 8.16	25.02	ADR	35.9	-24.2	.1	36.82	54	-17.18	-	-	-	-	221	187	V
3	13.898	35.56	PK-U	39.5	-22.3	0	52.76	-	-	-	-	68.2	-15.44	45	227	H
6	15.303	34.96	PK-U	39.9	-21.7	0	53.16	-	-	-	-	68.2	-15.04	126	102	V

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

PK-U - U-NII: Maximum Peak

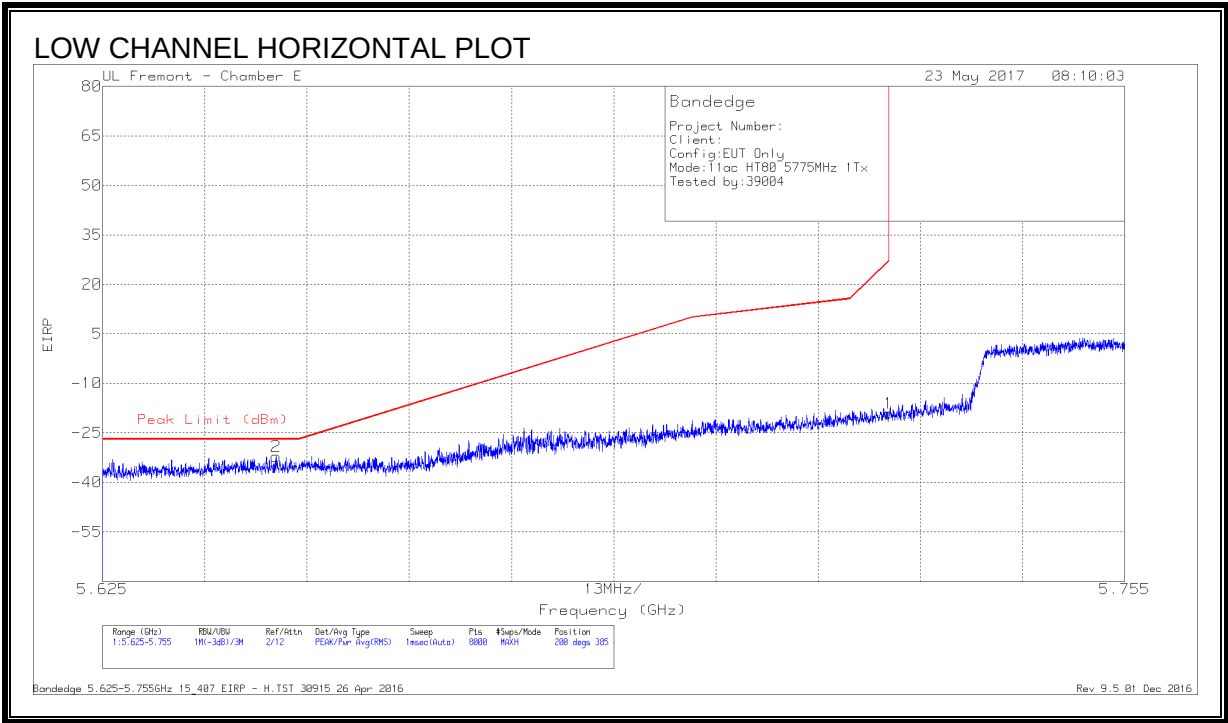
ADR - U-NII AD primary method, RMS average

UNII_5.8_HARM_11n_HT40_5795_2Tx_q88.DAT 30915 16 Jun 2015

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9.1.37. 802.11ac VHT80 UAT 2 1Tx MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE, UAT 2 (LOW CHANNEL)

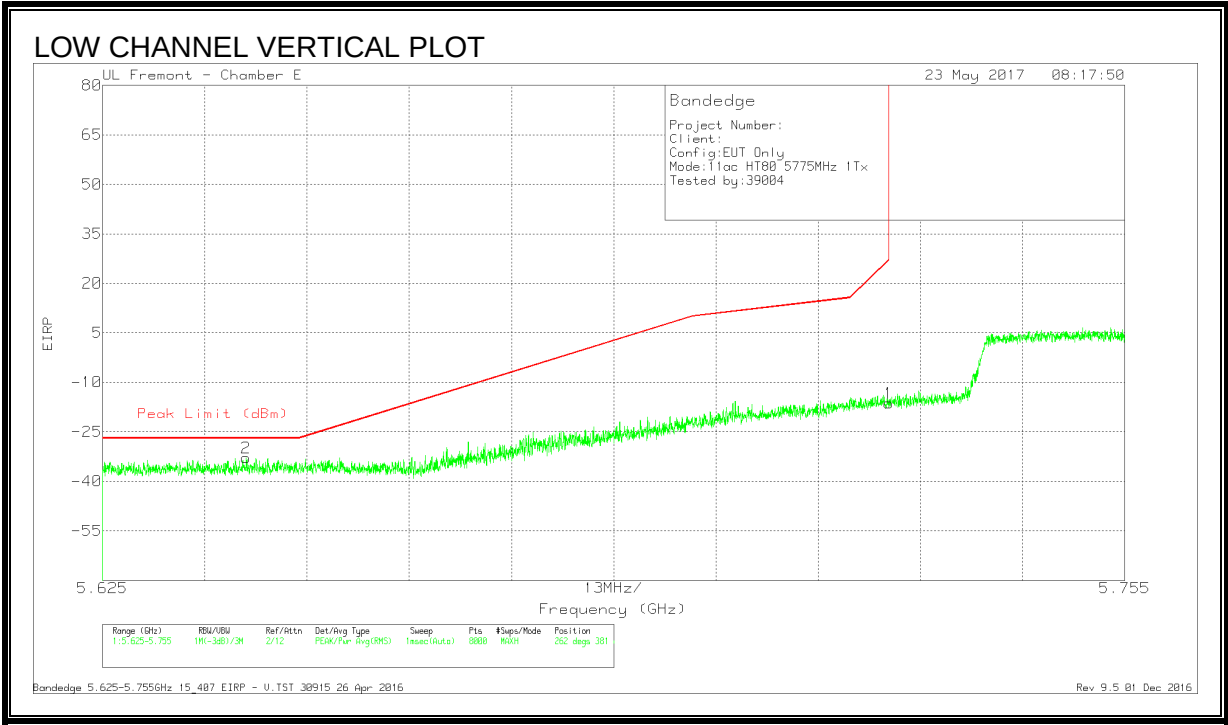


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.647	-59.34	Pk	34.9	-19.5	11.8	-32.14	-27	-5.14	200	385	H
1	5.725	-46.08	Pk	34.9	-19.6	11.8	-18.98	27	-45.98	200	385	H

Pk - Peak detector

Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 26 Apr 2016

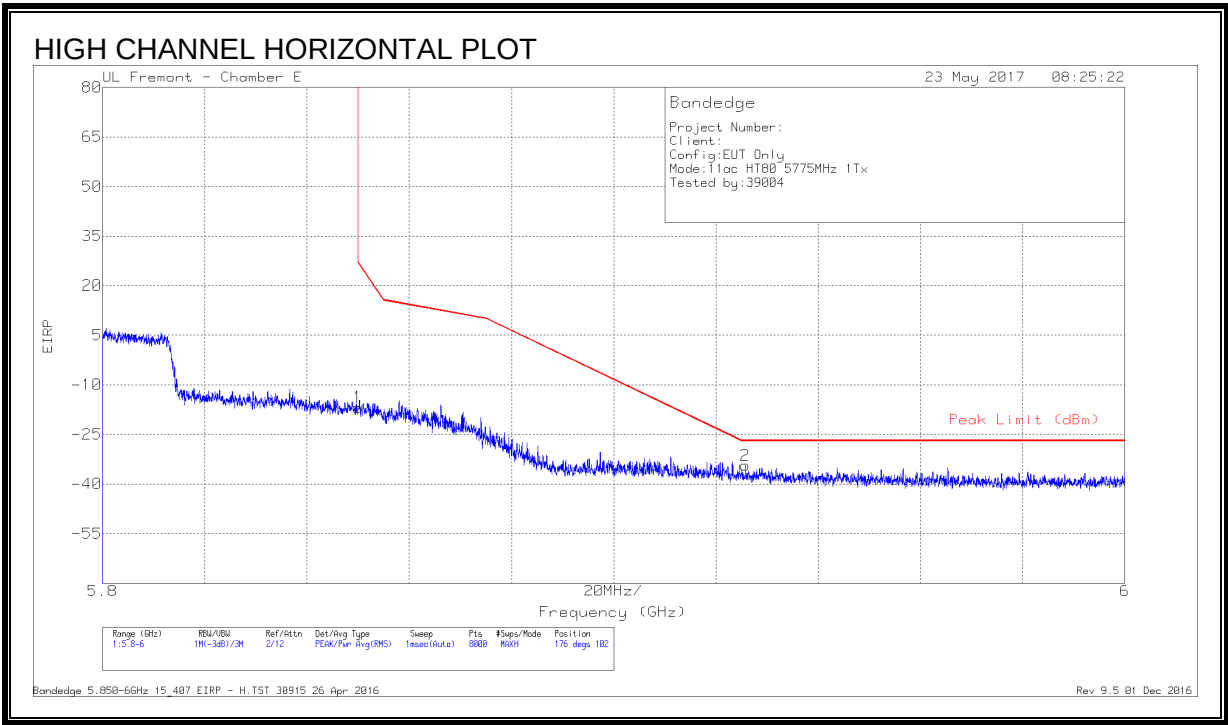
Rev 9.5 01 Dec 2016



Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.643	-60.04	Pk	34.9	-19.5	11.8	-32.84	-27	-5.84	262	381	V
1	5.725	-43.45	Pk	34.9	-19.6	11.8	-16.35	27	-43.35	262	381	V

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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RESTRICTED BANDEDGE, UAT 2 (HIGH CHANNEL) (

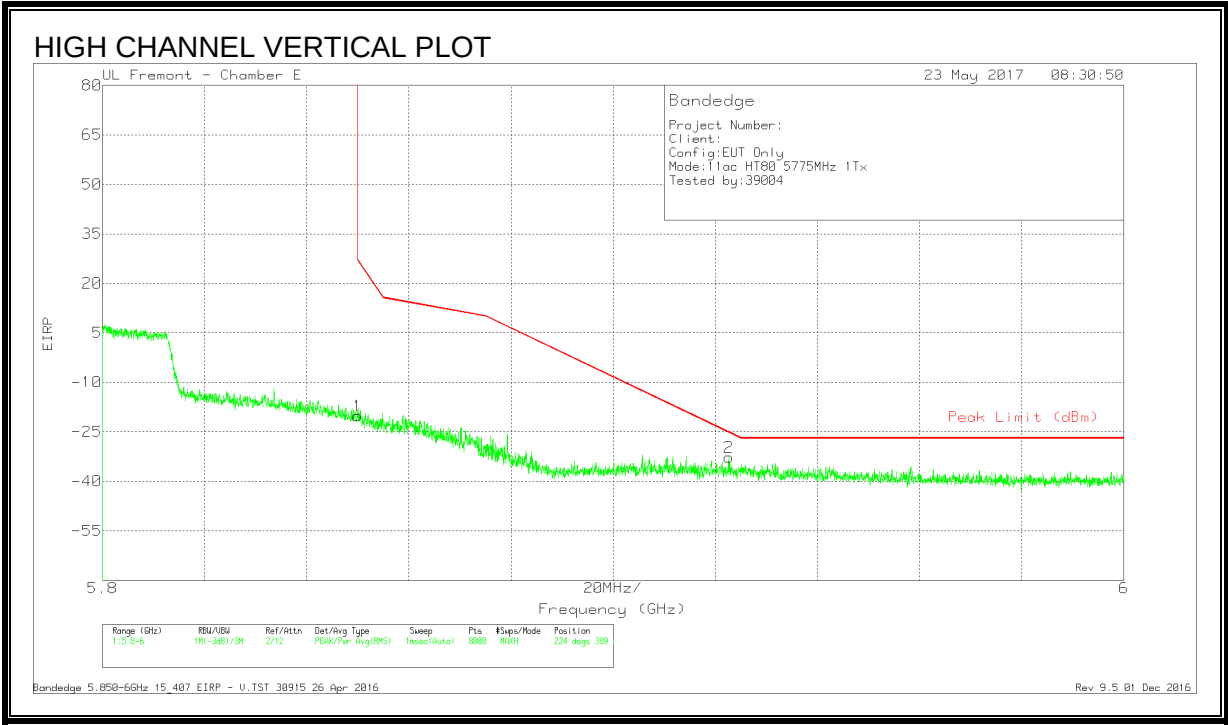


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cb I/Fitr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-44.56	Pk	35.5	-19.5	11.8	-16.76	26.99	-43.75	176	102	H
2	5.926	-62.57	Pk	35.6	-19.2	11.8	-34.37	-27	-7.37	176	102	H

Pk - Peak detector

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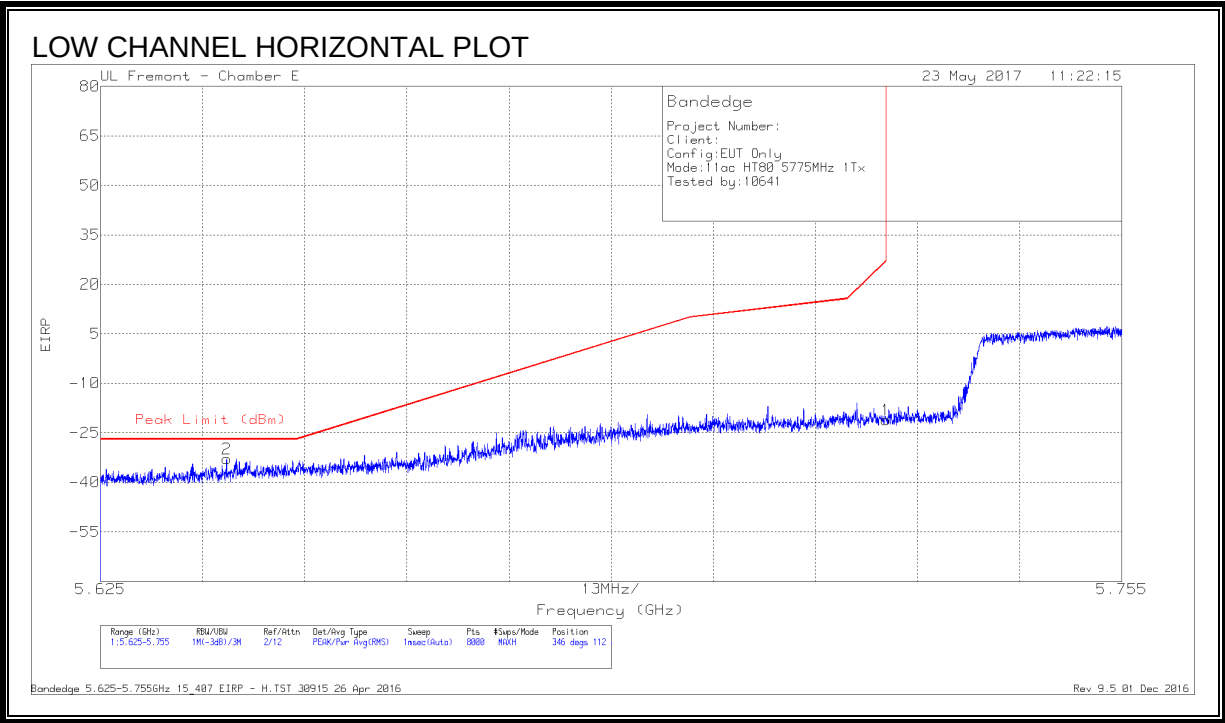


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl /Filtr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-48.02	Pk	35.5	-19.5	11.8	-20.22	26.99	-47.21	224	389	V
2	5.923	-60.83	Pk	35.6	-19.2	11.8	-32.63	-25.24	-7.39	224	389	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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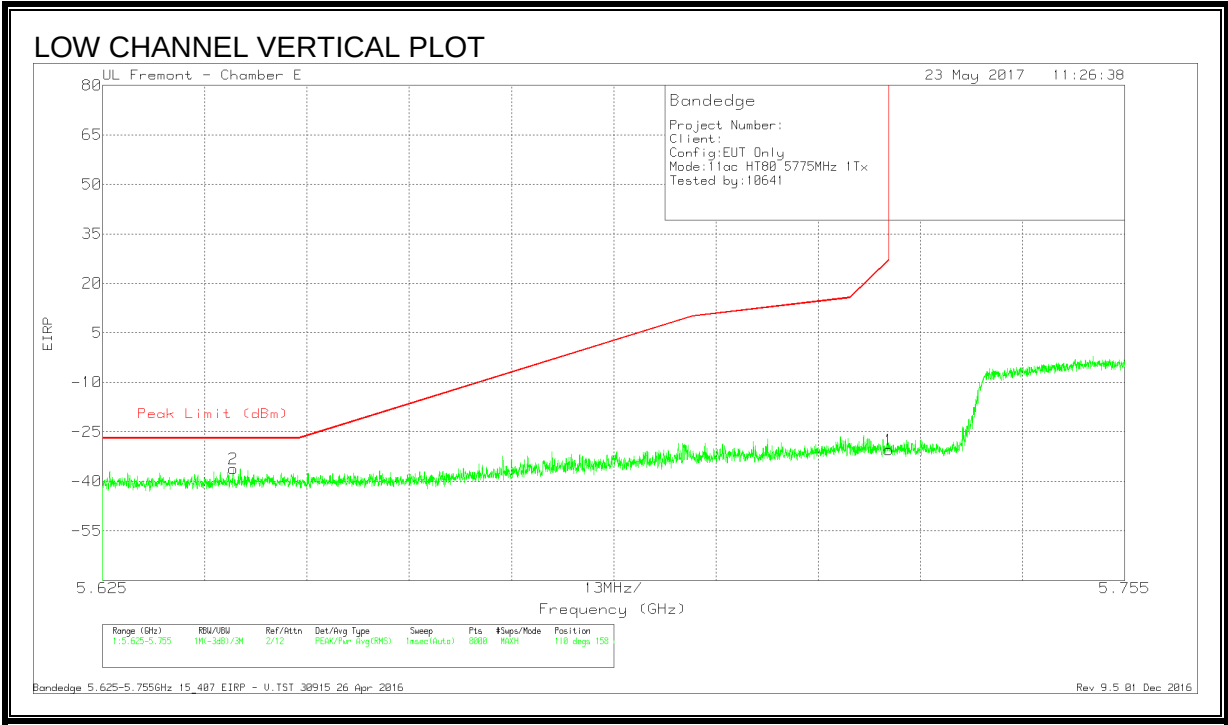
9.1.38. 802.11ac VHT80 LAT 3 1Tx MODE IN THE 5.8 GHz BAND

RESTRICTED BANDEDGE, LAT 3 (LOW CHANNEL)



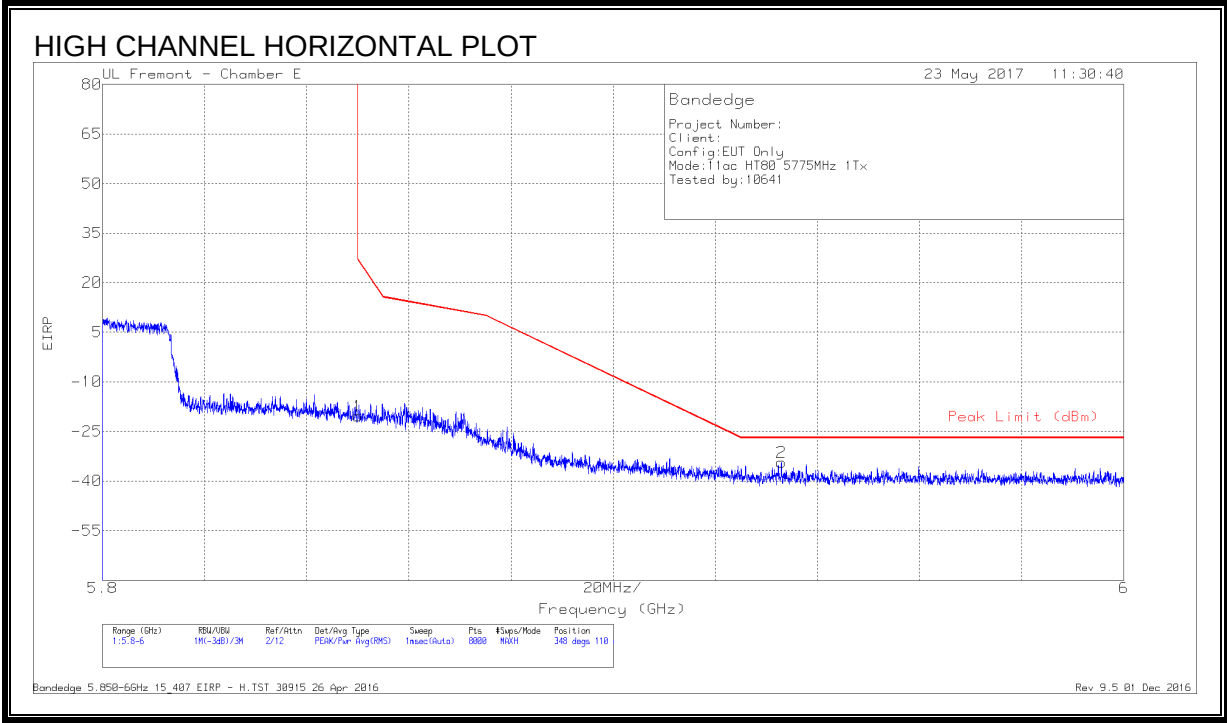
Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl /Fitr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.641	-60	Pk	34.9	-19.5	11.8	-32.8	-27	-5.8	346	112	H
1	5.725	-48.13	Pk	34.9	-19.6	11.8	-21.03	27	-48.03	346	112	H

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 26 Apr 2016
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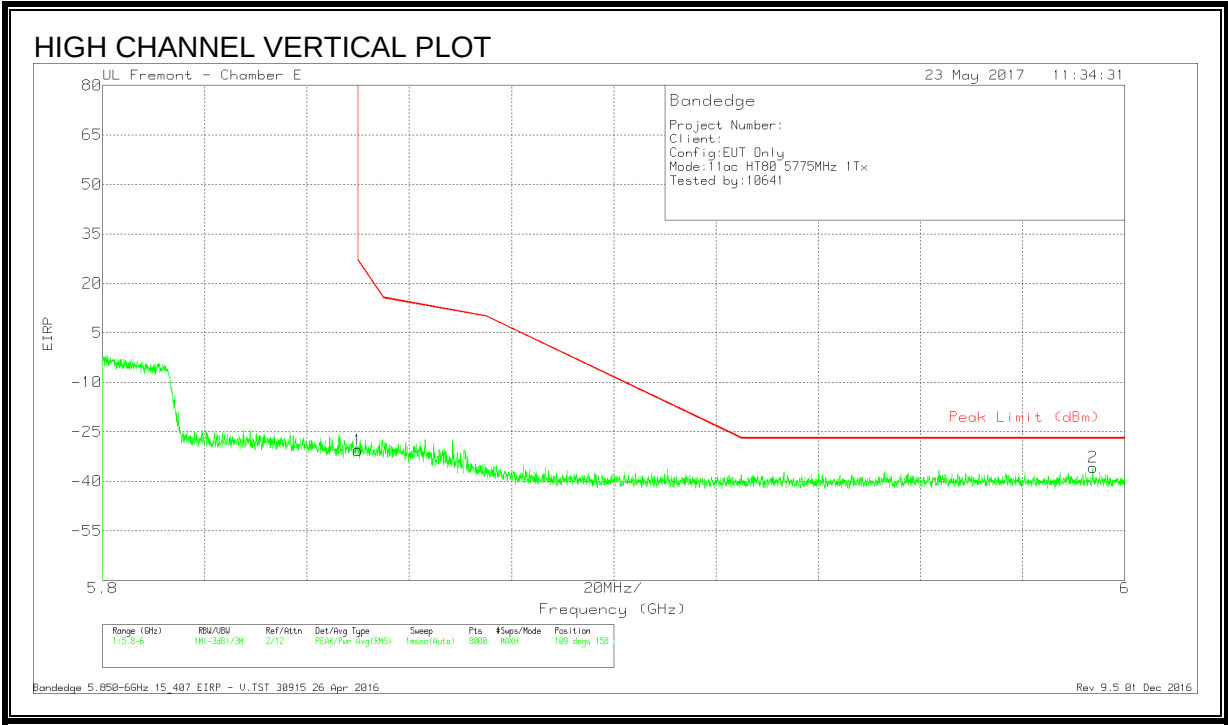
Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/P ad (dB)	Convers ion Factor (dB)	Correct ed Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.642	-63.43	Pk	34.9	-19.5	11.8	-36.23	-27	-9.23	110	158	V
1	5.725	-57.6	Pk	34.9	-19.6	11.8	-30.5	27	-57.5	110	158	V

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AFT136 (dB/m)	Amp/Cbl /Fitr/Pa d (dB)	Conversi on Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-48.17	Pk	35.5	-19.5	11.8	-20.37	26.99	-47.36	348	110	H
2	5.933	-62.6	Pk	35.6	-19.2	11.8	-34.4	-27	-7.4	348	110	H

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 26 Apr 2016
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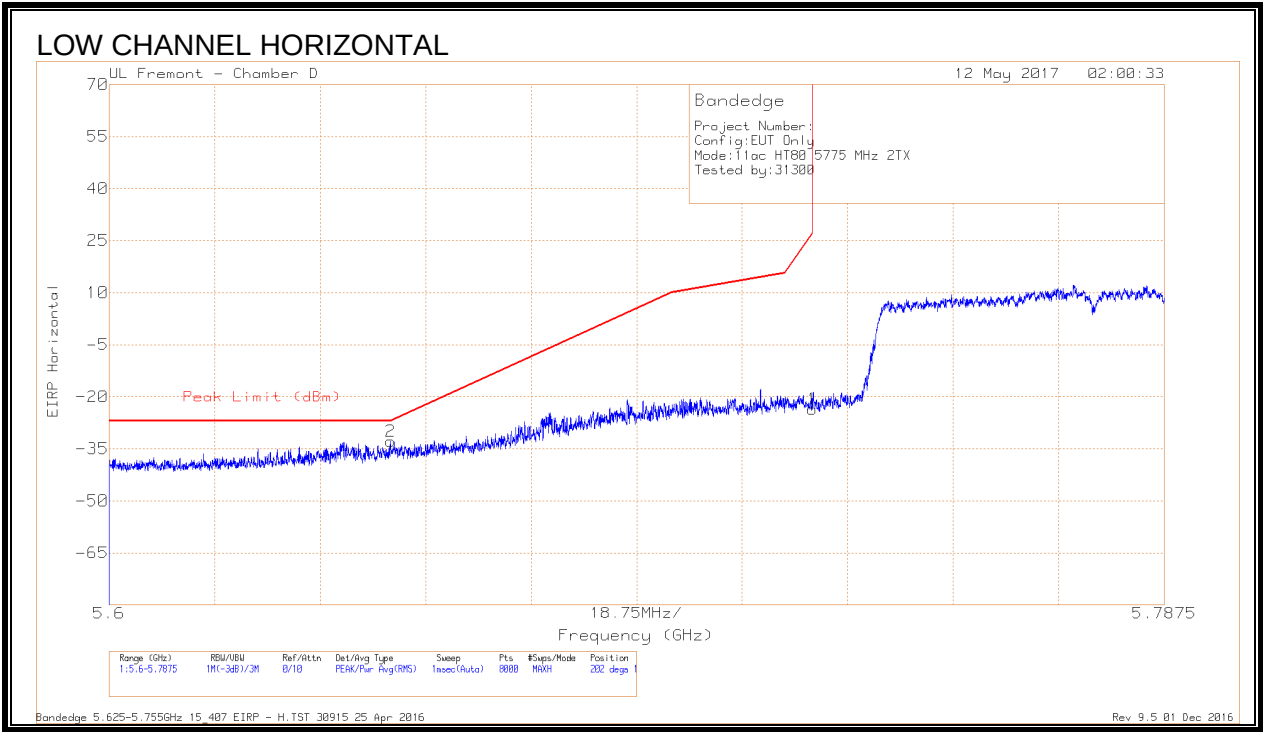


Marker	Frequen cy (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cb l/Filtr/Pa d (dB)	Convers ion Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-58.37	Pk	35.5	-19.5	11.8	-30.57	26.99	-57.56	109	158	V
2	5.994	-64.33	Pk	35.6	-18.8	11.8	-35.73	-27	-8.73	109	158	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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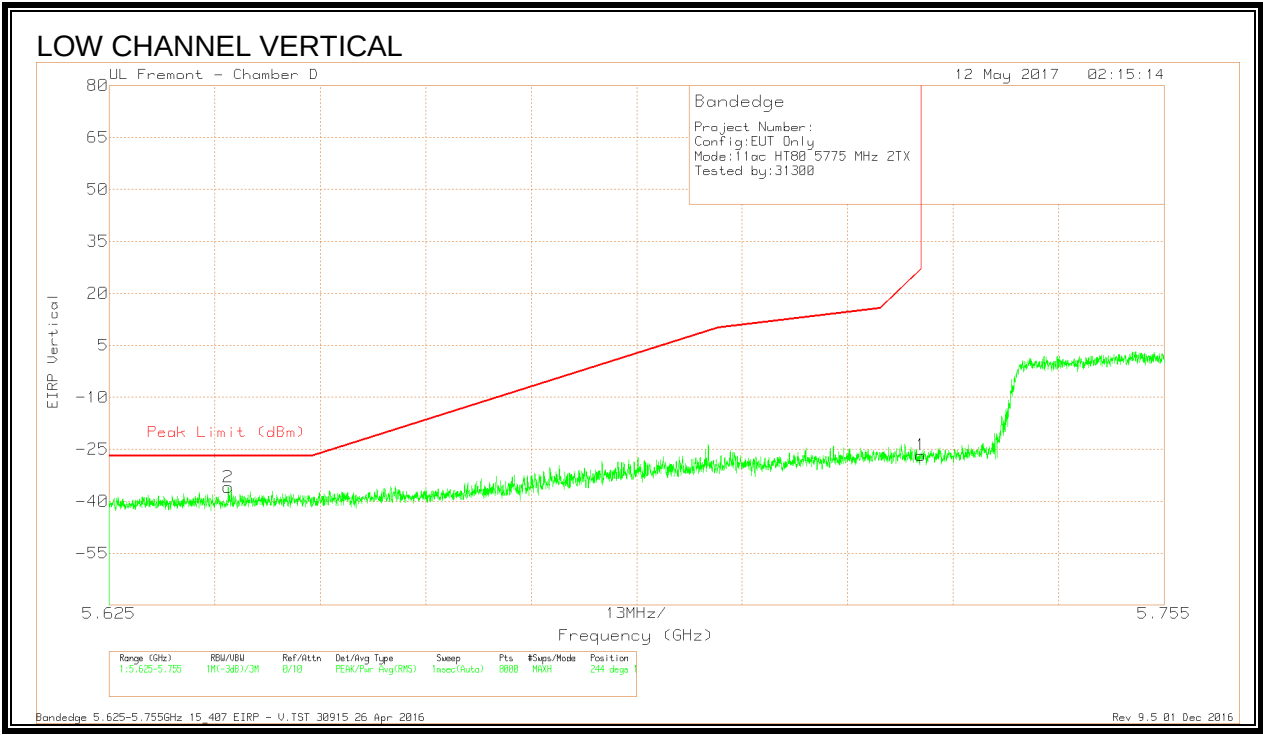
9.1.39. 11ac HT80 2TX CDD MIMO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.65	-61.67	Pk	34.5	-17.5	11.8	-32.87	-26.98	-5.89	202	105	H
1	5.725	-52.48	Pk	34.6	-17.5	11.8	-23.58	26.96	-50.54	202	105	H

Pk - Peak detector
Bandedge 5.625-5.755GHz 15_407 EIRP - H.TST 30915 25 Apr 2016
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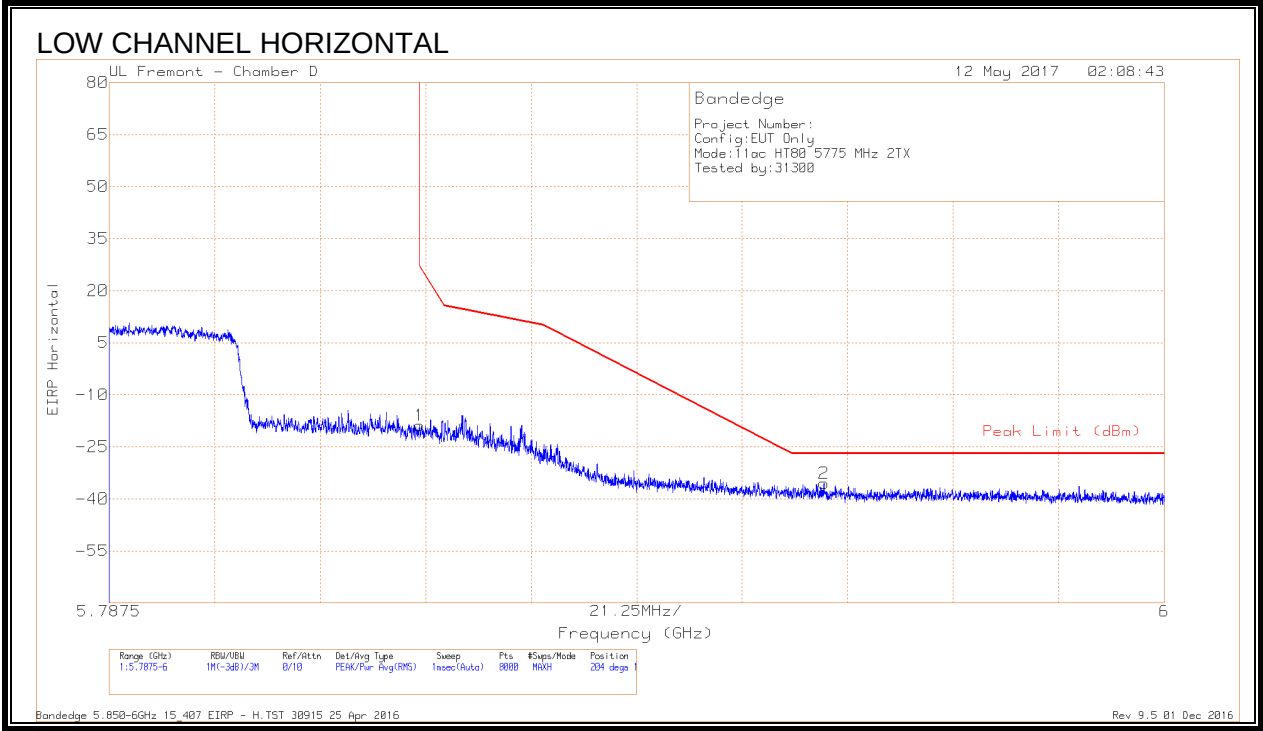


Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.64	-64.73	Pk	34.6	-17.6	11.8	-35.93	-27	-8.93	244	116	V
1	5.725	-55.62	Pk	34.6	-17.5	11.8	-26.72	27	-53.72	244	116	V

Pk - Peak detector

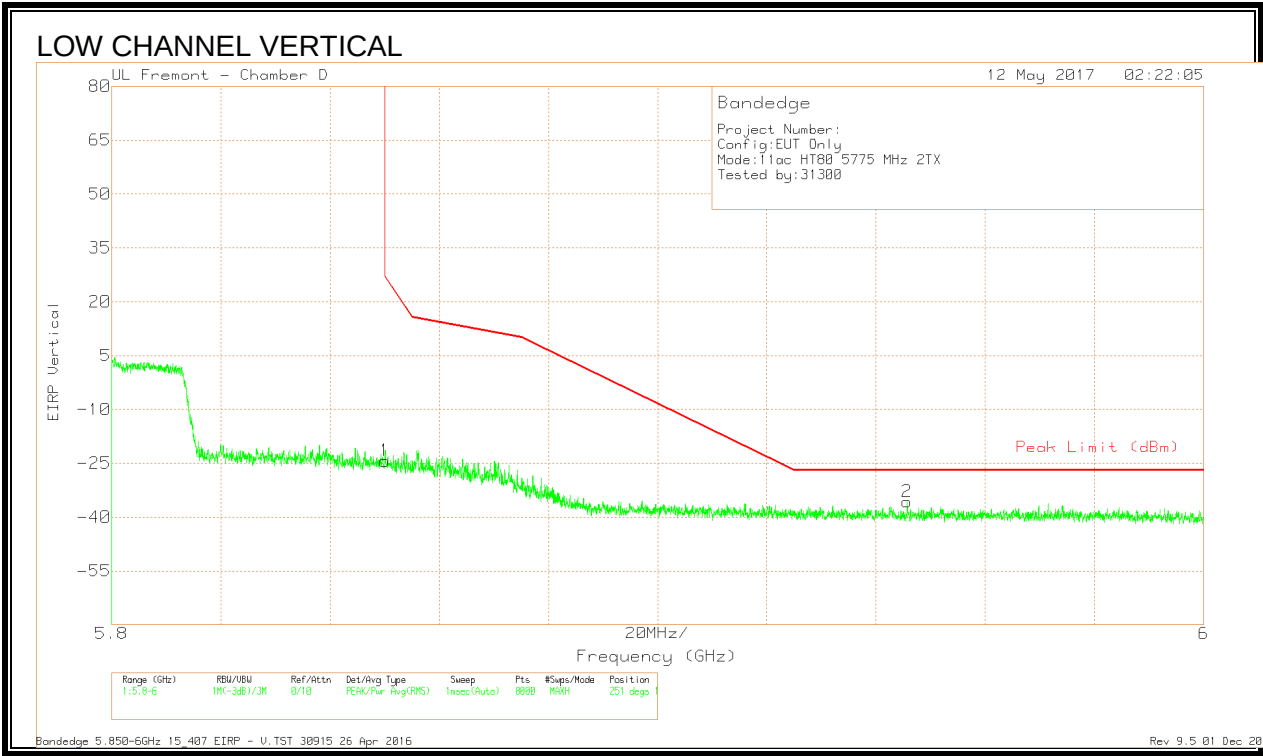
Bandedge 5.625-5.755GHz 15_407 EIRP - V.TST 30915 26 Apr 2016

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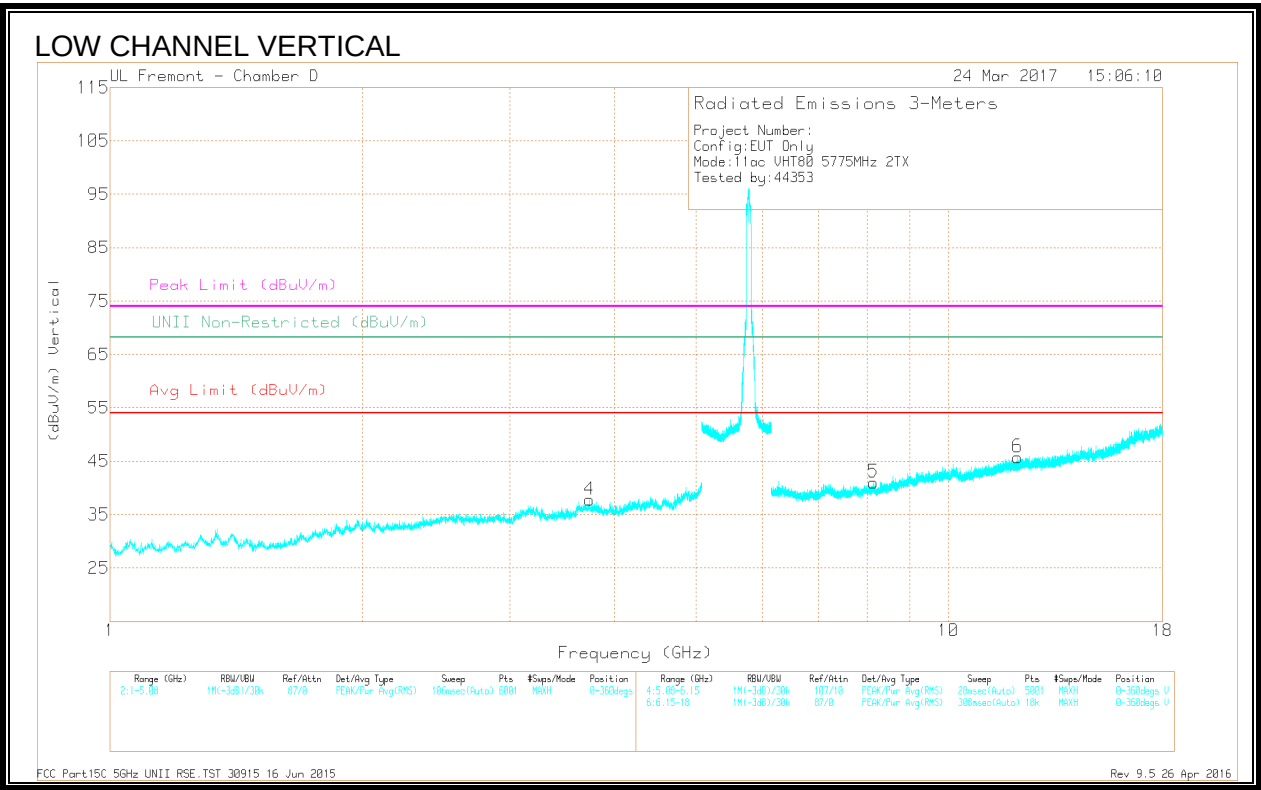
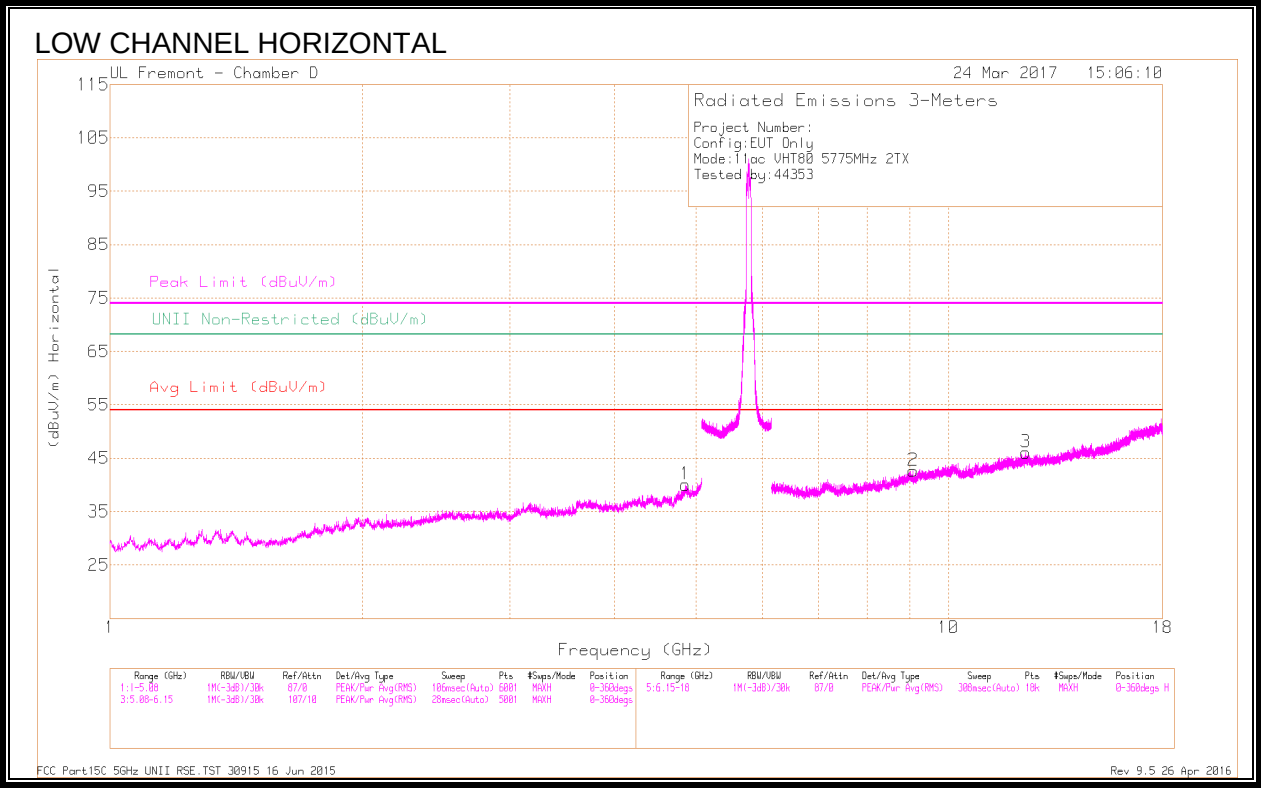
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-48.15	Pk	35	-17.5	11.8	-18.85	26.98	-45.83	204	101	H
2	5.931	-65.04	Pk	35	-17.3	11.8	-35.54	-27	-8.54	204	101	H

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - H.TST 30915 25 Apr 2016
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Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cb/Fitr /Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-53.64	Pk	35	-17.5	11.8	-24.34	26.99	-51.33	251	164	V
2	5.946	-65.2	Pk	35.1	-17.4	11.8	-35.7	-27	-8.7	251	164	V

Pk - Peak detector
Bandedge 5.850-6GHz 15_407 EIRP - V.TST 30915 26 Apr 2016
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DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Ftr/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	* 4.86	36.92	PK-U	34.1	-25.5	0	45.52	-	-	74	-28.48	-	-	221	179	H
	* 4.859	26.92	ADR	34.1	-25.6	.2	35.62	54	-18.38	-	-	-	-	221	179	H
4	* 3.73	38.36	PK-U	33.2	-29	0	42.56	-	-	74	-31.44	-	-	270	328	V
	* 3.732	28.26	ADR	33.2	-29	.2	32.66	54	-21.36	-	-	-	-	270	328	V
2	* 9.078	34.24	PK-U	36.7	-22.8	0	48.14	-	-	74	-25.86	-	-	52	141	H
	* 9.077	24.23	ADR	36.7	-22.8	.2	38.33	54	-15.67	-	-	-	-	52	141	H
3	* 12.365	33.66	PK-U	39	-21.1	0	51.56	-	-	74	-22.44	-	-	110	207	H
	* 12.367	24.24	ADR	39	-21.1	.2	42.34	54	-11.66	-	-	-	-	110	207	H
5	* 8.14	34.82	PK-U	35.9	-23.9	0	46.82	-	-	74	-27.18	-	-	29	254	V
	* 8.143	24.88	ADR	35.9	-23.9	.2	37.08	54	-16.92	-	-	-	-	29	254	V
6	* 12.096	34.12	PK-U	39	-21.7	0	51.42	-	-	74	-22.58	-	-	182	133	V
	* 12.096	23.92	ADR	39	-21.7	.2	41.42	54	-12.58	-	-	-	-	182	133	V

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

PK-U - U-NII: Maximum Peak

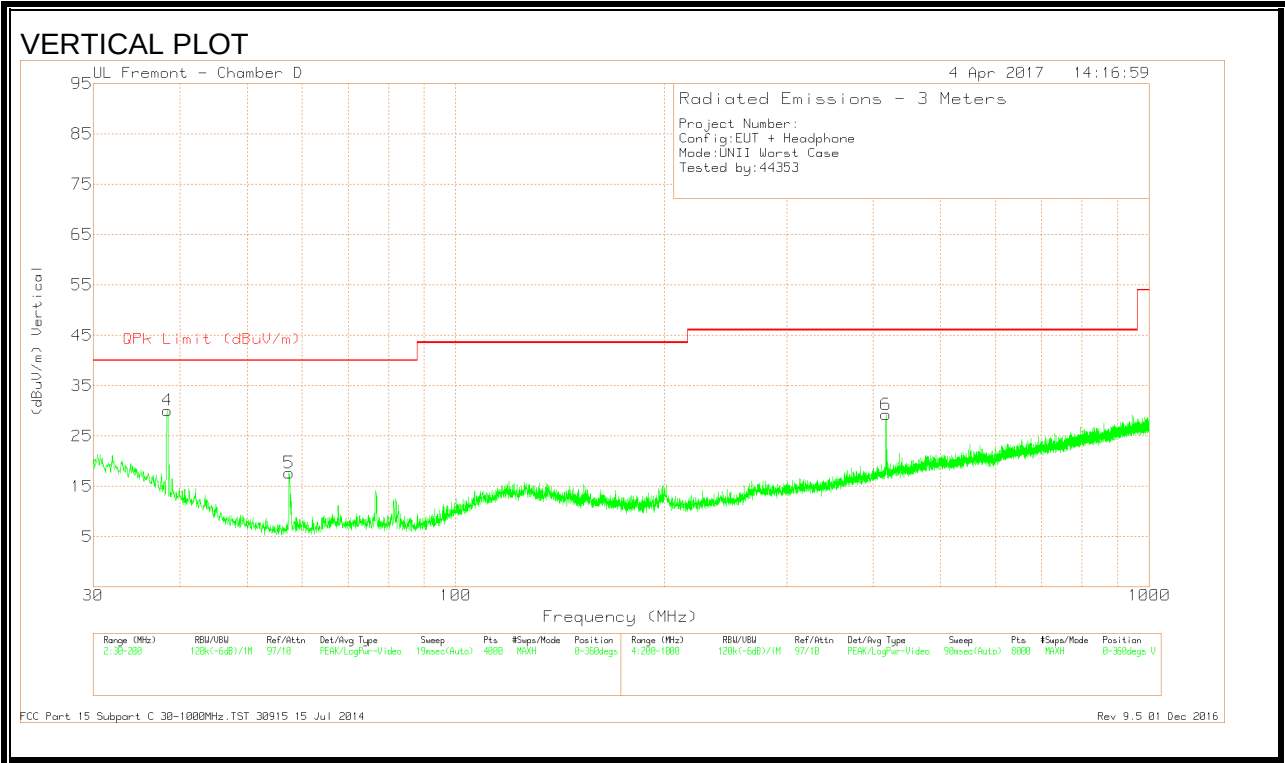
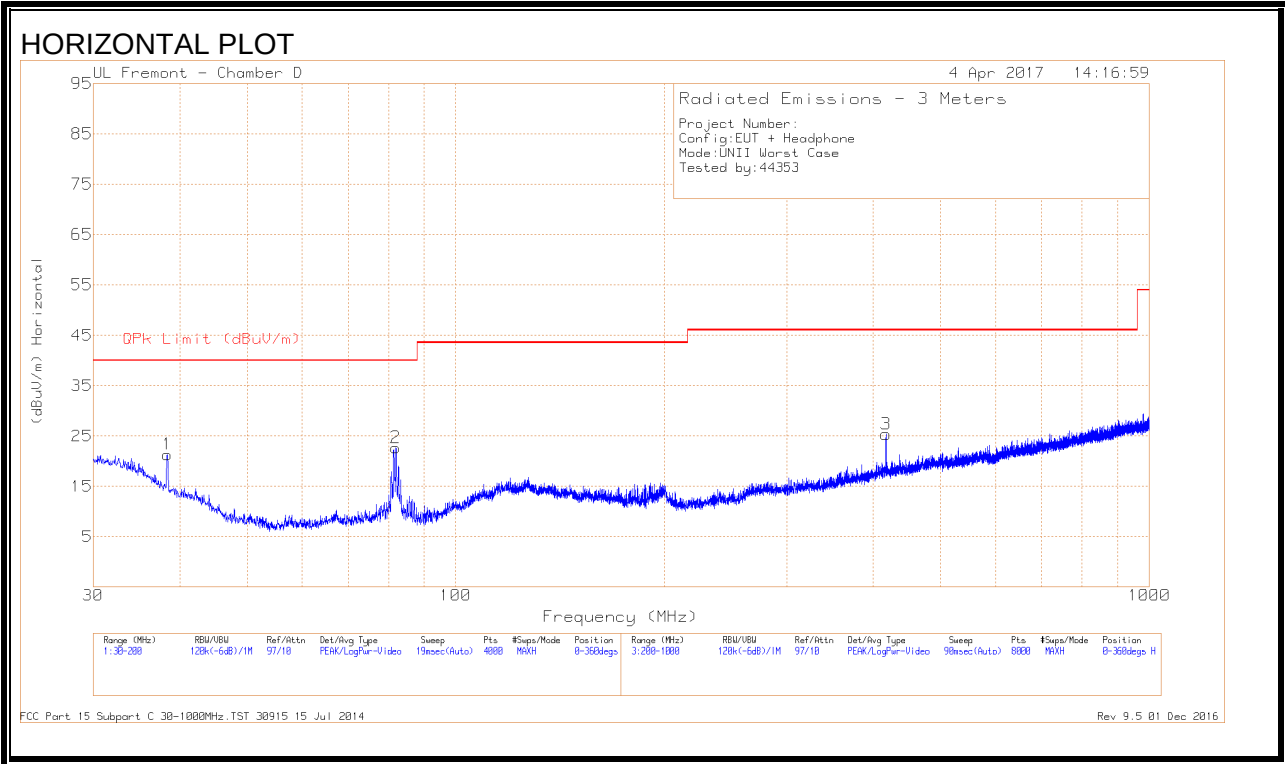
ADR - U-NII AD primary method, RMS average

FCC Part15C 5GHz UNII RSE.TST 30915 16 Jun 2015

Rev 9.5 26 Apr 2016

9.2. WORST-CASE BELOW 1 GHz

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



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
1	38.3747	34.14	Pk	19	-31.8	21.34	40	-18.66	0-360	199	H
4	38.4172	42.88	Pk	19	-31.8	30.08	40	-9.92	0-360	100	V
5	57.5046	37.98	Pk	11.3	-31.6	17.68	40	-22.32	0-360	100	V
2	81.991	42.79	Pk	11.4	-31.5	22.69	40	-17.31	0-360	199	H
3	417.2282	34.96	Pk	20.3	-29.9	25.36	46.02	-20.66	0-360	299	H
6	417.2282	38.84	Pk	20.3	-29.9	29.24	46.02	-16.78	0-360	101	V

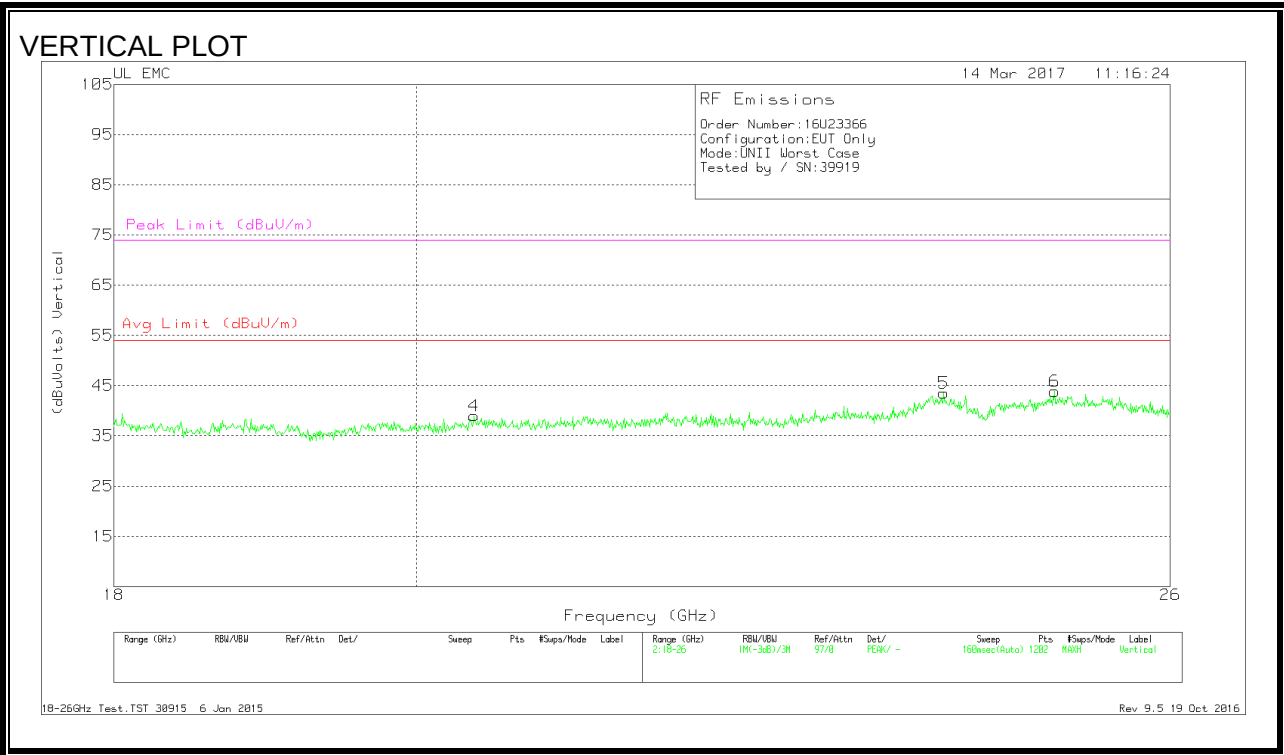
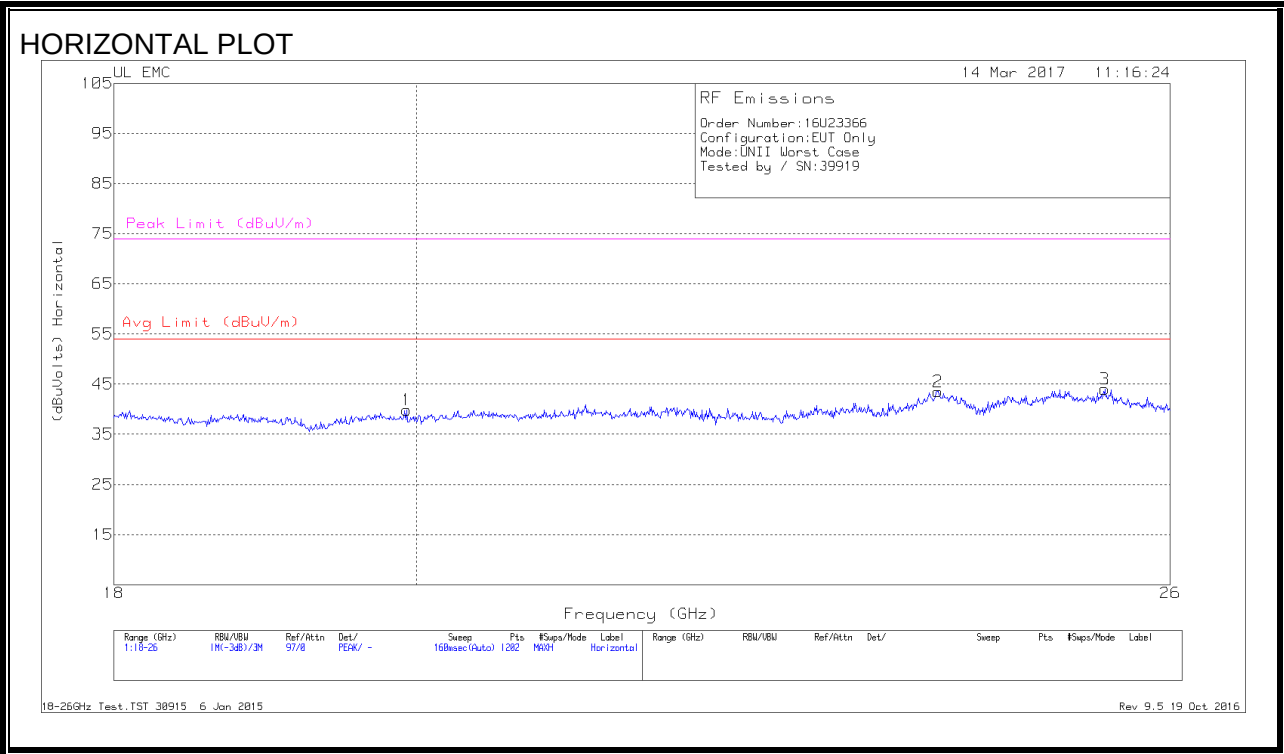
Pk - Peak detector

FCC Part 15 Subpart C 30-1000MHz.TST 30915 15 Jul 2014

Rev 9.5 01 Dec 2016

9.3. WORST-CASE 18 to 26 GHz

SPURIOUS EMISSIONS 18 TO 26 GHz (WORST-CASE CONFIGURATION, HORIZONTAL & VERTICAL)

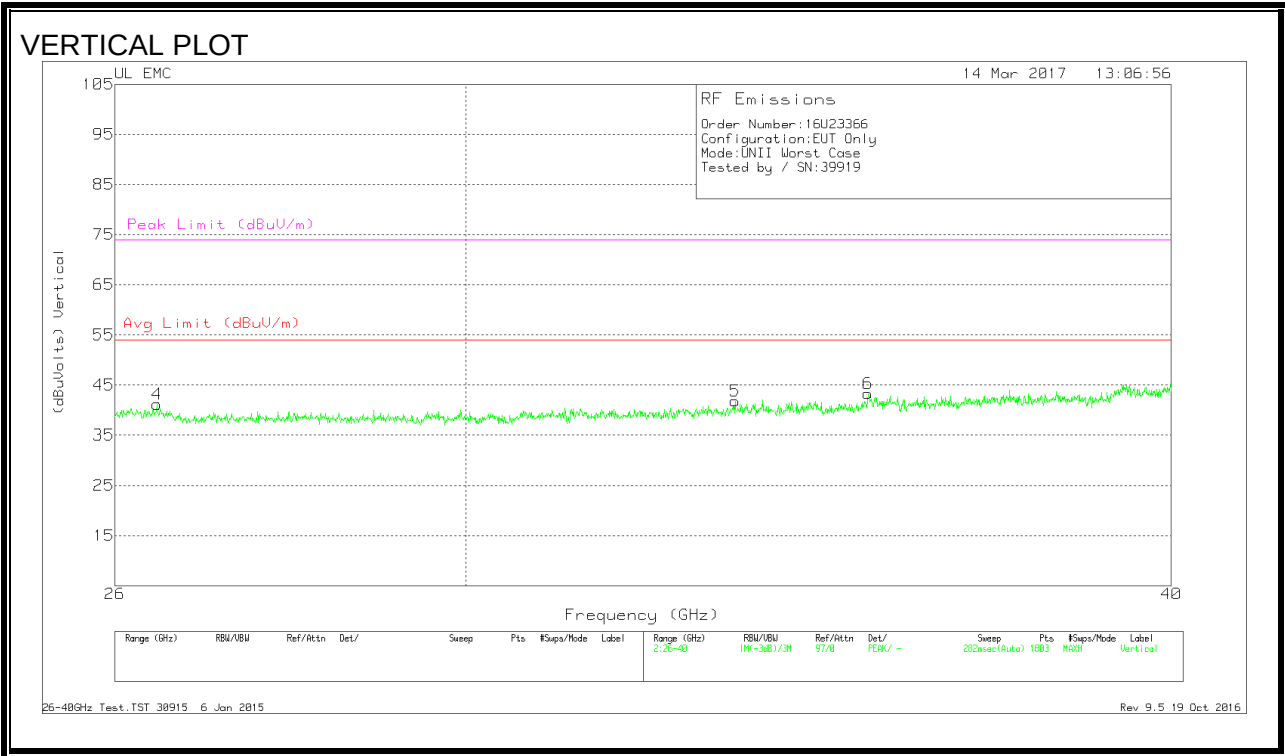
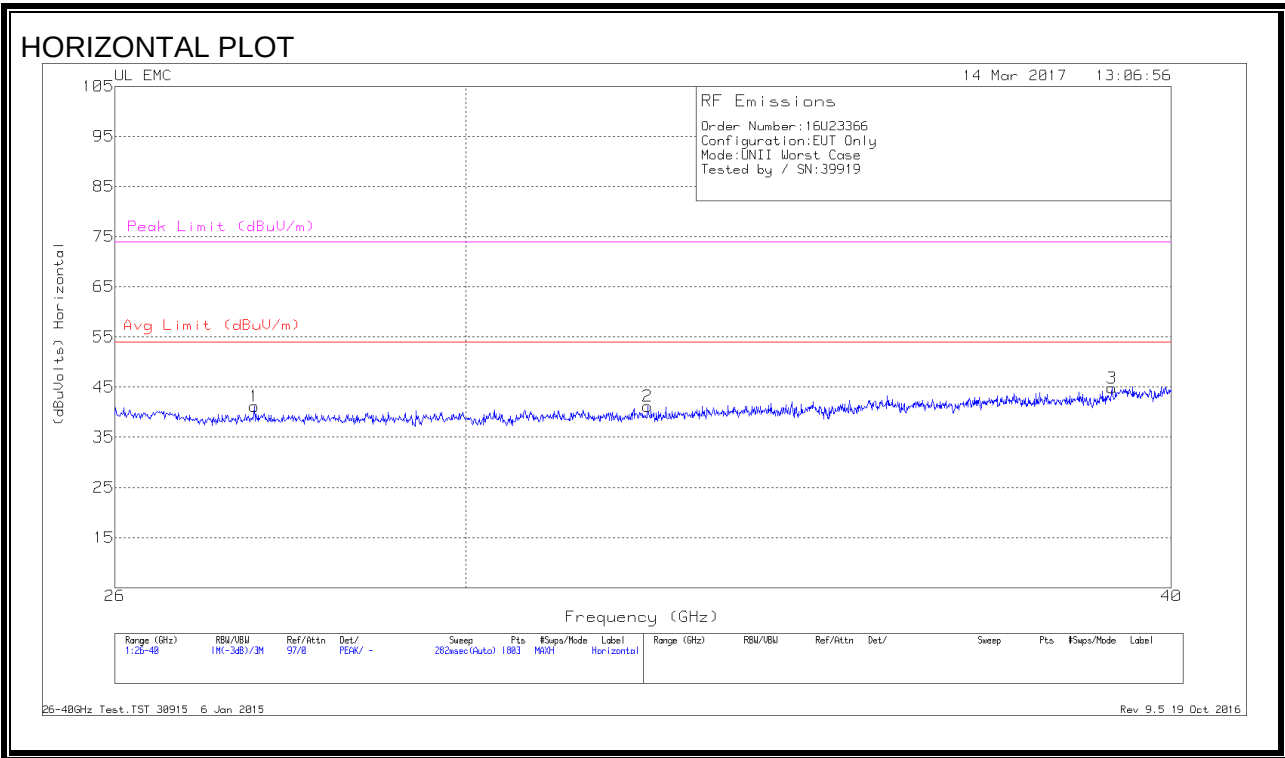


DATA

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T449 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Correcte d Reading (dBuVolt s)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	19.932	41.93	Pk	32.6	-25.2	-9.5	39.83	54	-14.17	74	-34.17
2	23.978	43.2	Pk	34	-24.2	-9.5	43.5	54	-10.5	74	-30.5
3	25.414	43.5	Pk	34.3	-24.3	-9.5	44	54	-10	74	-30
4	20.405	40.7	Pk	32.9	-25.1	-9.5	39	54	-15	74	-35
5	24.028	43.1	Pk	34	-24.1	-9.5	43.5	54	-10.5	74	-30.5
6	24.974	43.33	Pk	34.2	-24.2	-9.5	43.83	54	-10.17	74	-30.17

9.4. WORST-CASE 26 to 40 GHz

SPURIOUS EMISSIONS 26 TO 40 GHz (WORST-CASE CONFIGURATION)



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	27.523	46.77	Pk	35.7	-31.8	-9.5	41.17	54	-12.83	74	-32.83
2	32.309	47.67	Pk	36.4	-33.4	-9.5	41.17	54	-12.83	74	-32.83
3	39.044	49.53	Pk	37.5	-32.7	-9.5	44.83	54	-9.17	74	-29.17
4	26.451	46.27	Pk	35.5	-31.1	-9.5	41.17	54	-12.83	74	-32.83
5	33.482	47.63	Pk	37.1	-33.4	-9.5	41.83	54	-12.17	74	-32.167
6	35.346	48.73	Pk	37.8	-33.7	-9.5	43.333	54	-10.67	74	-30.67

10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dB μ 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.

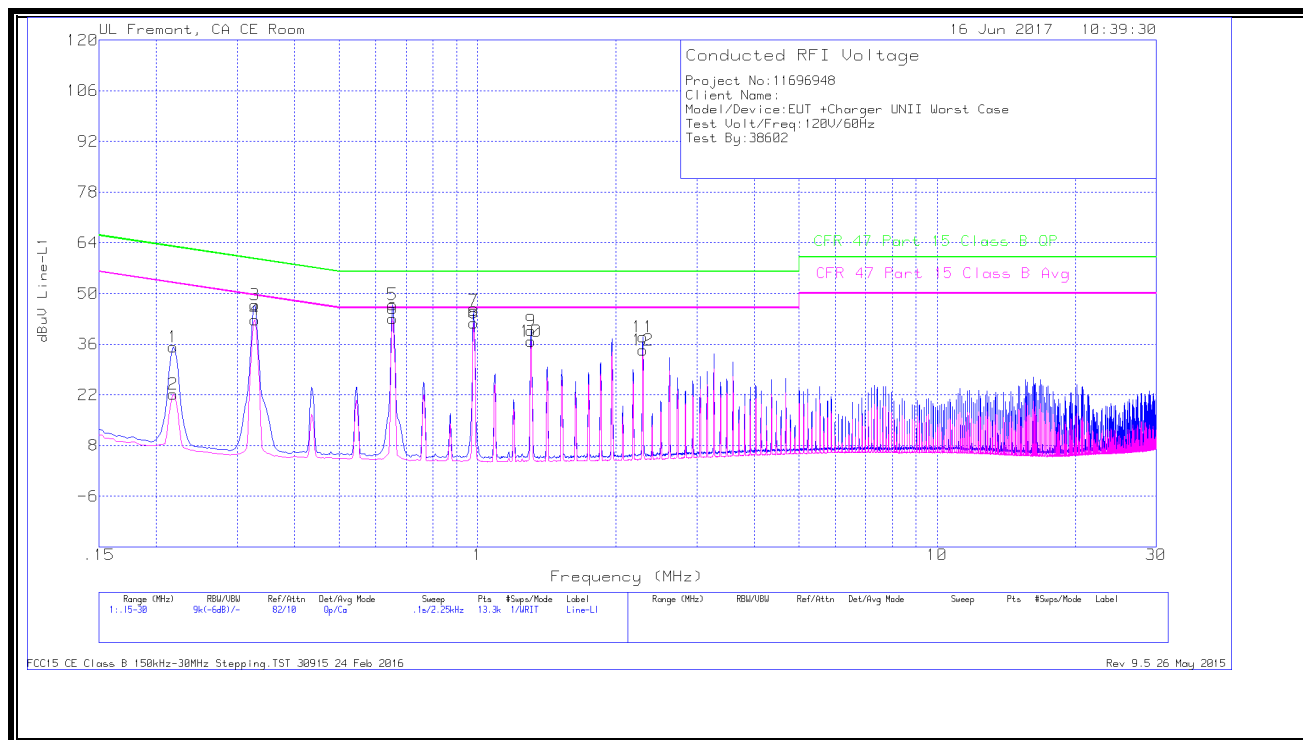
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

10.1. EUT POWERED BY AC/DC ADAPTER VIA USB CABLE

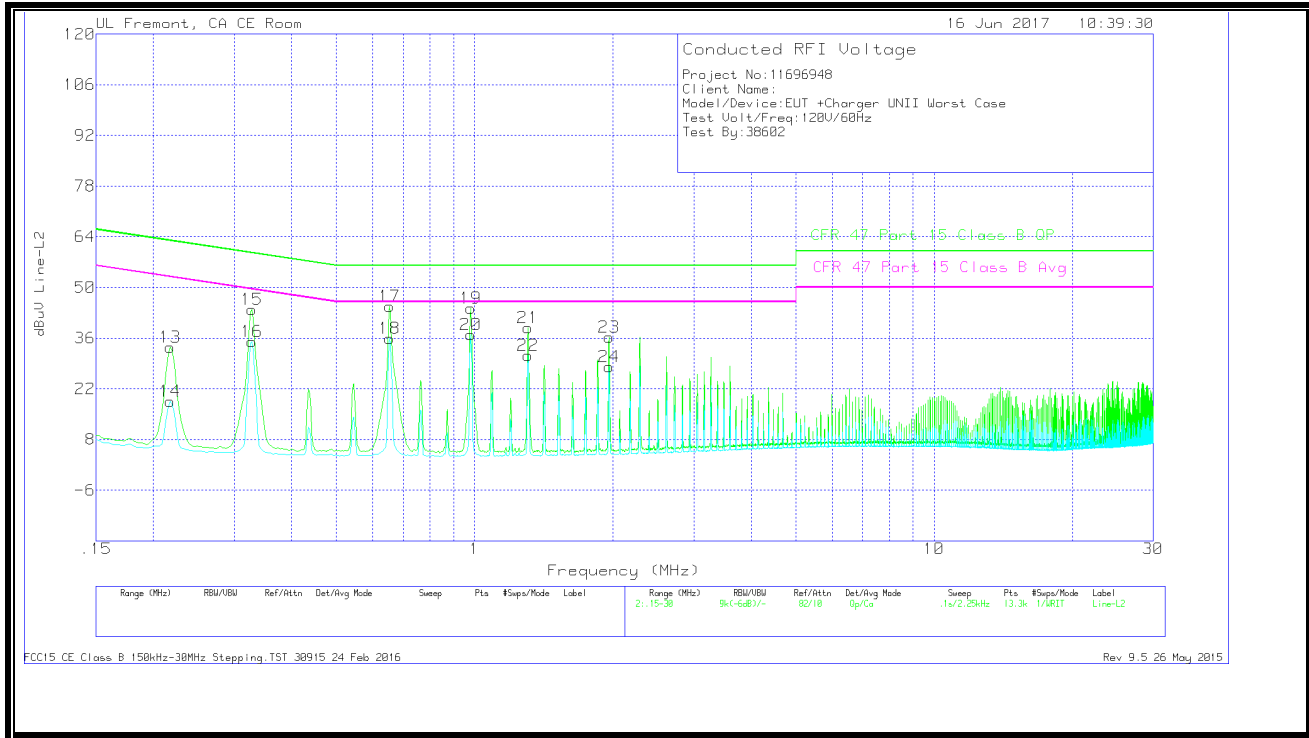
LINE 1 RESULTS



WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L1	LC Cables C1&C3	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	.2175	24.4	Qp	.8	0	10.1	35.3	62.91	-27.61	-	-
2	.2175	11.34	Ca	.8	0	10.1	22.24	-	-	52.91	-30.67
3	.32775	36.19	Qp	.5	.1	10.1	46.89	59.51	-12.62	-	-
4	.32775	31.92	Ca	.5	.1	10.1	42.62	-	-	49.51	-6.89
5	.654	36.45	Qp	.3	.1	10.1	46.95	56	-9.05	-	-
6	.654	32.59	Ca	.3	.1	10.1	43.09	-	-	46	-2.91
7	.98025	34.97	Qp	.2	.1	10.1	45.37	56	-10.63	-	-
8	.98025	31.47	Ca	.2	.1	10.1	41.87	-	-	46	-4.13
9	1.30875	29.39	Qp	.2	.1	10.1	39.79	56	-16.21	-	-
10	1.30875	26.44	Ca	.2	.1	10.1	36.84	-	-	46	-9.16
11	2.2875	27.55	Qp	.2	.1	10.1	37.95	56	-18.05	-	-
12	2.28975	24	Ca	.2	.1	10.1	34.4	-	-	46	-11.6

LINE 1 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	T24 IL L2	LC Cables C2&C3	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	.2175	22.44	Qp	.9	0	10.1	33.44	62.91	-29.47	-	-
14	.2175	7.59	Ca	.9	0	10.1	18.59	-	-	52.91	-34.32
15	.32775	33.14	Qp	.5	.1	10.1	43.84	59.51	-15.67	-	-
16	.32775	24.38	Ca	.5	.1	10.1	35.08	-	-	49.51	-14.43
17	.654	34.21	Qp	.3	.1	10.1	44.71	56	-11.29	-	-
18	.654	25.49	Ca	.3	.1	10.1	35.99	-	-	46	-10.01
19	.98025	33.71	Qp	.3	.1	10.1	44.21	56	-11.79	-	-
20	.98025	26.46	Ca	.3	.1	10.1	36.96	-	-	46	-9.04
21	1.30875	28.49	Qp	.2	.1	10.1	38.89	56	-17.11	-	-
22	1.30875	20.89	Ca	.2	.1	10.1	31.29	-	-	46	-14.71
23	1.96125	25.85	Qp	.2	.1	10.1	36.25	56	-19.75	-	-
24	1.96125	17.68	Ca	.2	.1	10.1	28.08	-	-	46	-17.92

Qp - Quasi-Peak detector

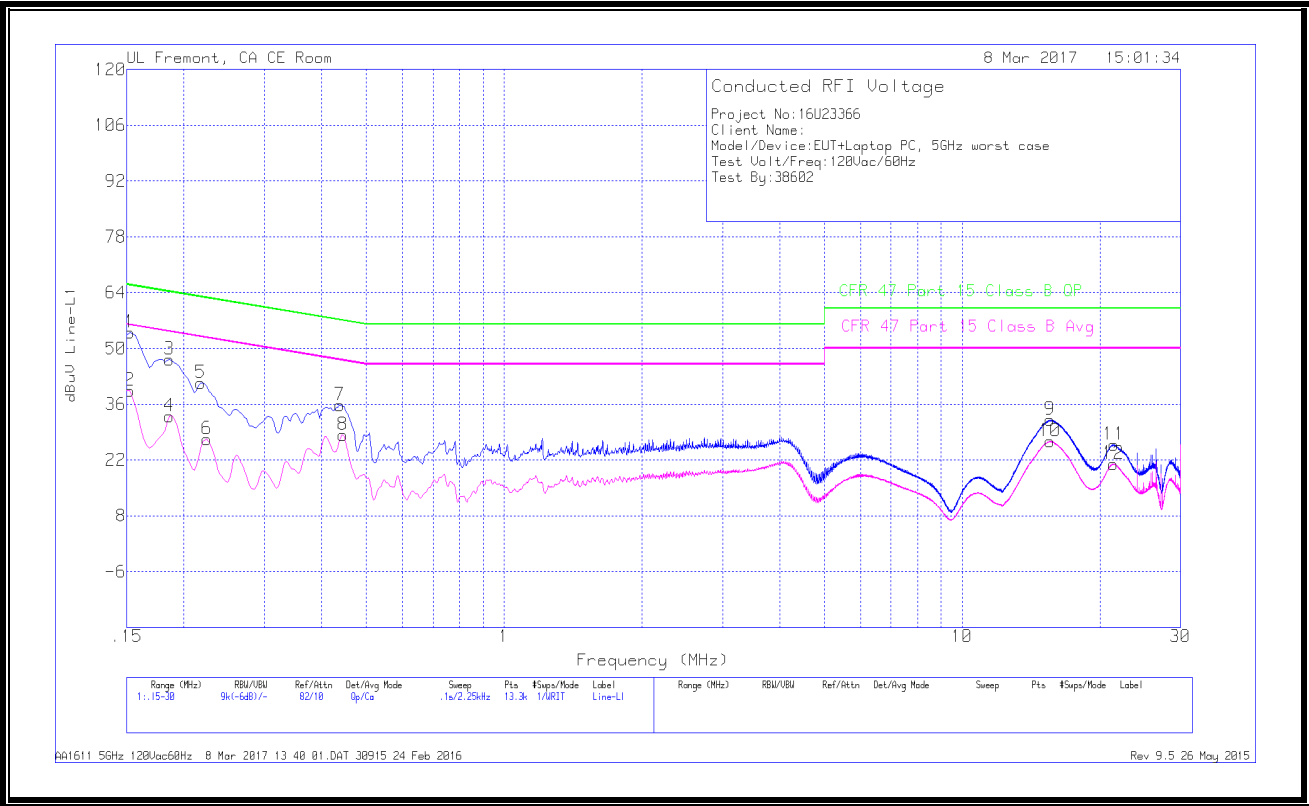
Ca - CISPR average detection

FCC15 CE Class B 150kHz-30MHz Stepping.TST 30915 24 Feb 2016

Rev 9.5 26 May 2015

10.2. EUT POWERED BY HOST PC VIA USB CABLE

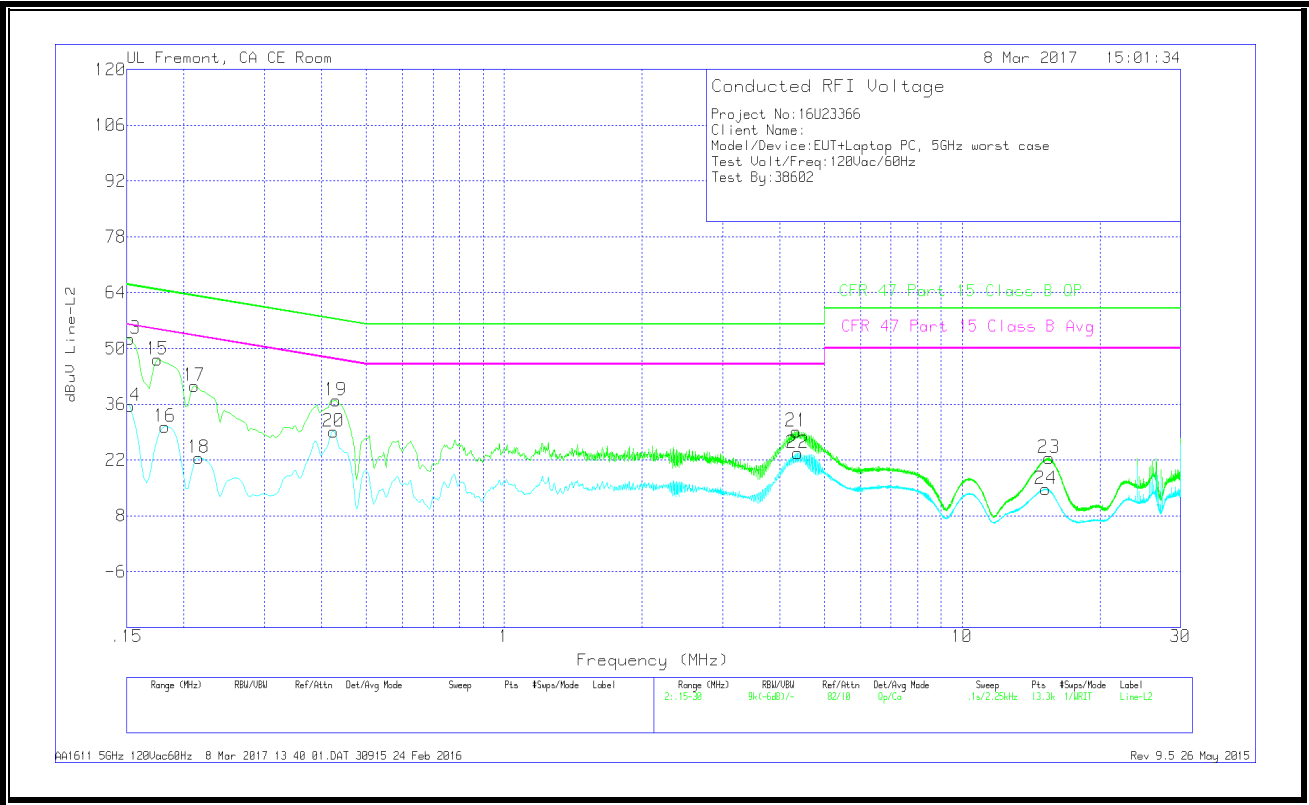
LINE 1 RESULTS



WORST EMISSIONS

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	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	43.7	Qp	.1	.1	10.1	54	65.88	-11.88	-	-
2	.15225	29.16	Ca	.1	.1	10.1	39.46	-	-	55.88	-16.42
3	.186	36.99	Qp	0	.1	10.1	47.19	64.21	-17.02	-	-
4	.186	22.81	Ca	0	.1	10.1	33.01	-	-	54.21	-21.2
5	.2175	31.23	Qp	0	0	10.1	41.33	62.91	-21.58	-	-
6	.22425	17.01	Ca	0	.1	10.1	27.21	-	-	52.66	-25.45
7	.438	25.53	Qp	0	.1	10.1	35.73	57.1	-21.37	-	-
8	.44475	18.12	Ca	0	.1	10.1	28.32	-	-	46.97	-18.65
9	15.5513	21.67	Qp	0	.2	10.2	32.07	60	-27.93	-	-
10	15.5535	16.31	Ca	0	.2	10.2	26.71	-	-	50	-23.29
11	21.444	15.15	Qp	0	.3	10.4	25.85	60	-34.15	-	-
12	21.417	10.35	Ca	0	.3	10.4	21.05	-	-	50	-28.95

LINE 2 RESULTS



WORST EMISSIONS

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequenc y (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Correcte d Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISP R)Margin (dB)
13	.15225	42.3	Qp	0	0	10.1	52.4	65.88	-13.48	-	-
14	.15225	25.42	Ca	0	0	10.1	35.52	-	-	55.88	-20.36
15	.17475	37.04	Qp	0	.1	10.1	47.24	64.73	-17.49	-	-
16	.1815	20.08	Ca	0	.1	10.1	30.28	-	-	54.42	-24.14
17	.21075	30.49	Qp	0	0	10.1	40.59	63.18	-22.59	-	-
18	.21525	12.32	Ca	0	.1	10.1	22.52	-	-	53	-30.48
19	.429	26.78	Qp	0	.1	10.1	36.98	57.27	-20.29	-	-
20	.4245	18.94	Ca	0	.1	10.1	29.14	-	-	47.36	-18.22
21	4.33725	19.02	Qp	0	.1	10.1	29.22	56	-26.78	-	-
22	4.37775	13.53	Ca	0	.1	10.1	23.73	-	-	46	-22.27
23	15.4928	12.14	Qp	0	.2	10.2	22.54	60	-37.46	-	-
24	15.2498	4.33	Ca	0	.2	10.2	14.73	-	-	50	-35.27

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: <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel</i> move (an aggregate of 60 milliseconds) during the remainder of the 10-second period. The aggregate duration of control signals will not count quiet periods in between transmissions. Note 3: During the <i>U-NII Detection Bandwidth</i> detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (usec)	PRI (usec)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in table 5a	Roundup: $\{(1/360) \times (19 \times 10^6 \text{ PRI}_{\text{usec}})\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 usec. With a minimum increment of 1 usec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the <i>Detection Bandwidth</i> test, <i>Channel Move Time</i> , and <i>Channel Closing Time</i> tests.					

Table 6 – Long Pulse Radar Test Signal

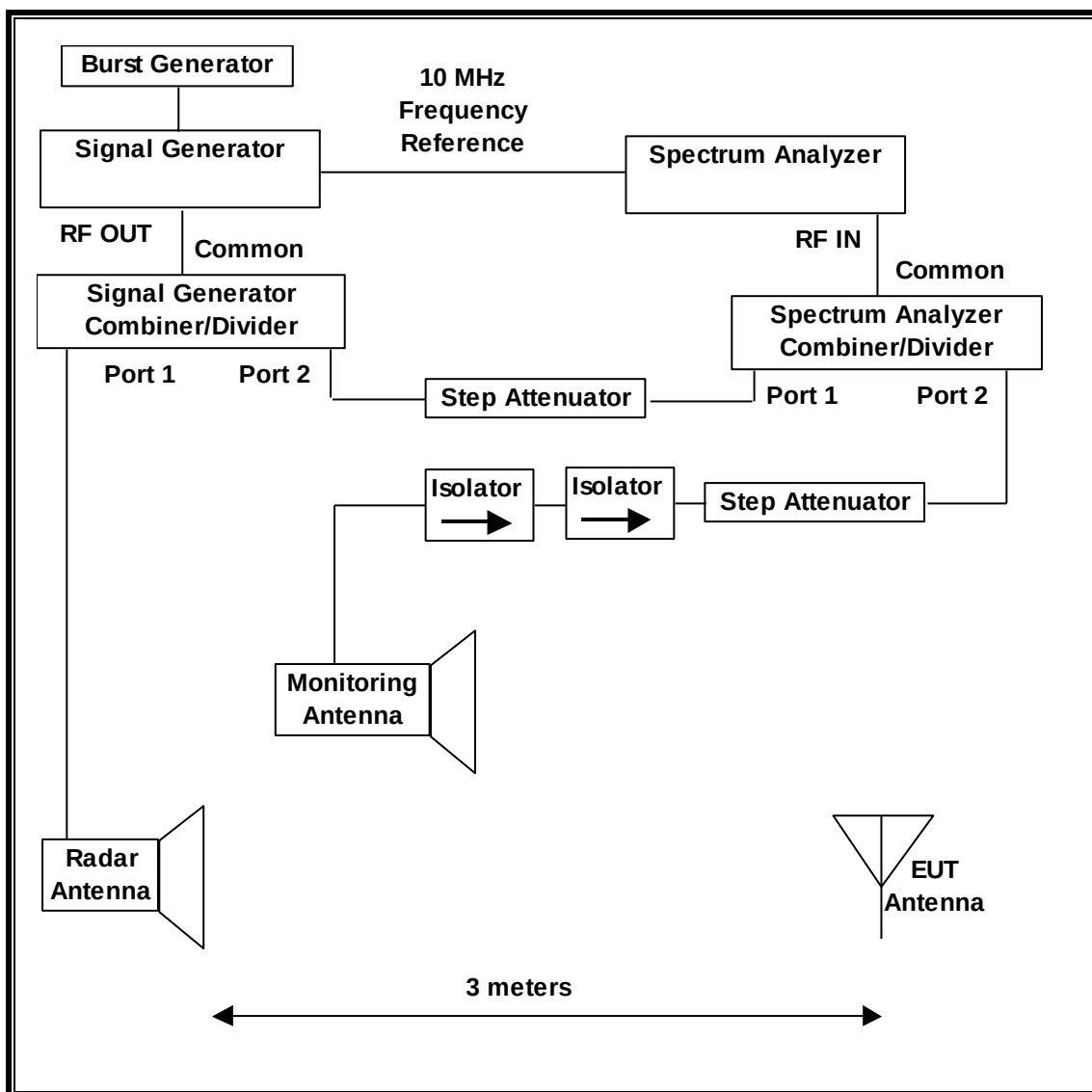
Radar Waveform Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Signal

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

11.1.2. 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	04/21/18

11.1.3. TEST ROOM ENVIRONMENT

The test room temperature and humidity shall be maintained within normal temperature of 15~35 °C and normal humidity 20~75% (relative humidity).

ENVIRONMENT CONDITION

Parameter	Value
Temperature	25.8 °C
Humidity	27 %

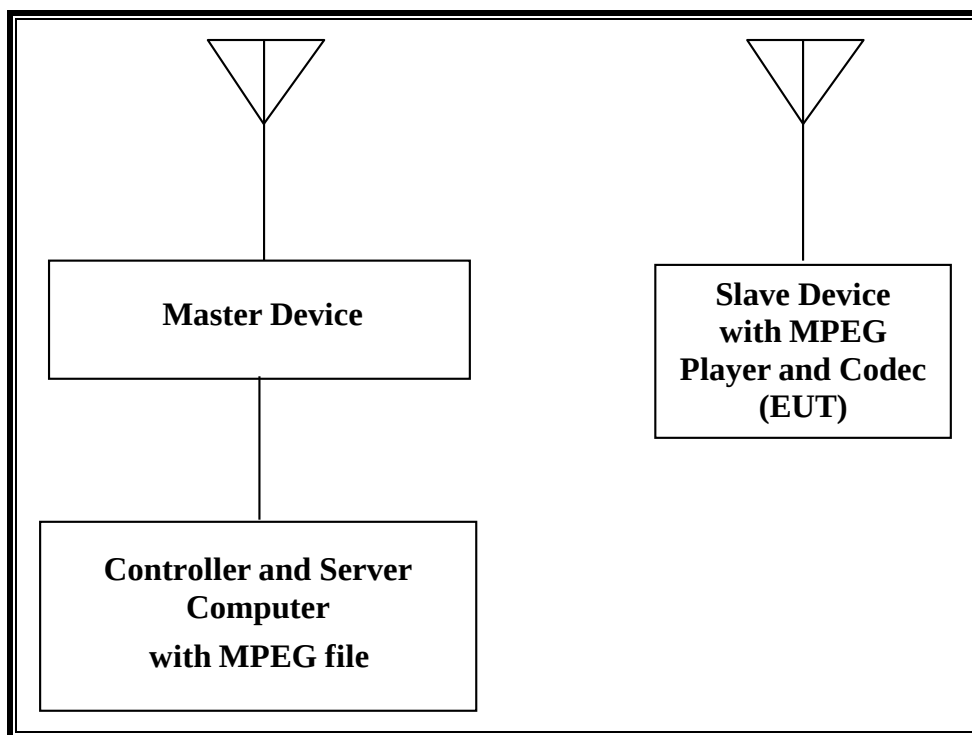
11.1.4. TEST AND MEASUREMENT SOFTWARE

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

11.1.5. SETUP OF EUT (CLIENT MODE)

RADIATED METHOD EUT TEST SETUP



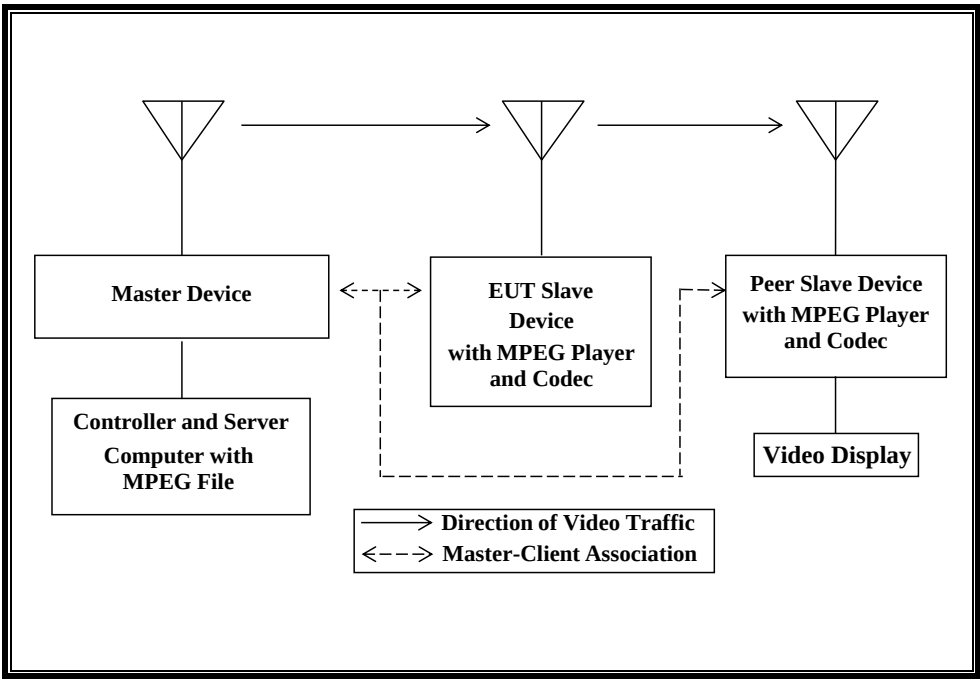
SUPPORT EQUIPMENT

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

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
802.11a/b/g/n/ac Wireless Router (Master Device)	Apple	A1521	C86LCE5GFJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1181	4H629022WLV	DoC
AC Adapter (Notebook PC)	Apple	A1343	C0424760BMPF1Y7AB	DoC

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

RADIATED METHOD EUT TEST SETUP



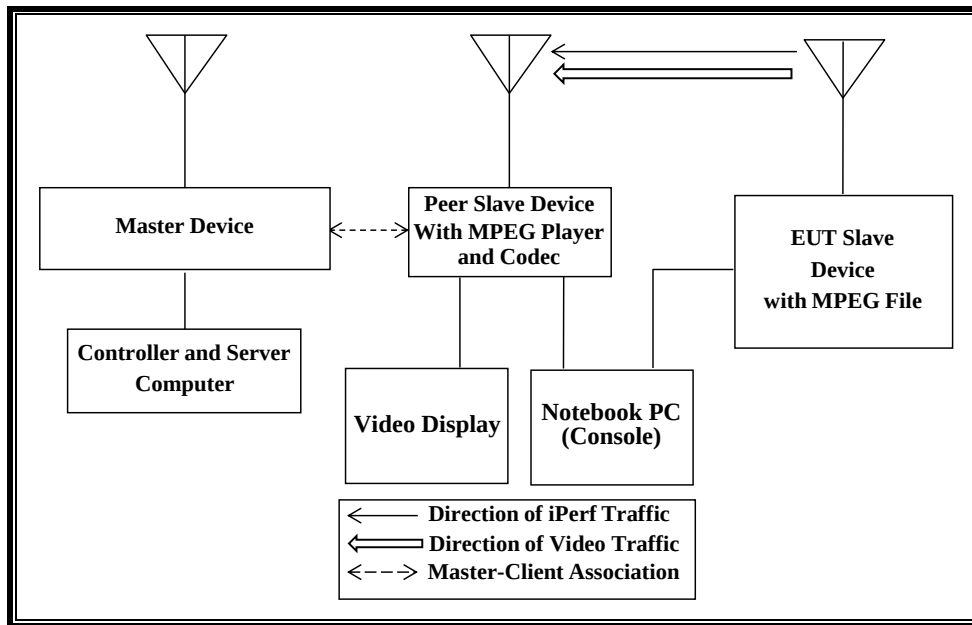
SUPPORT EQUIPMENT

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

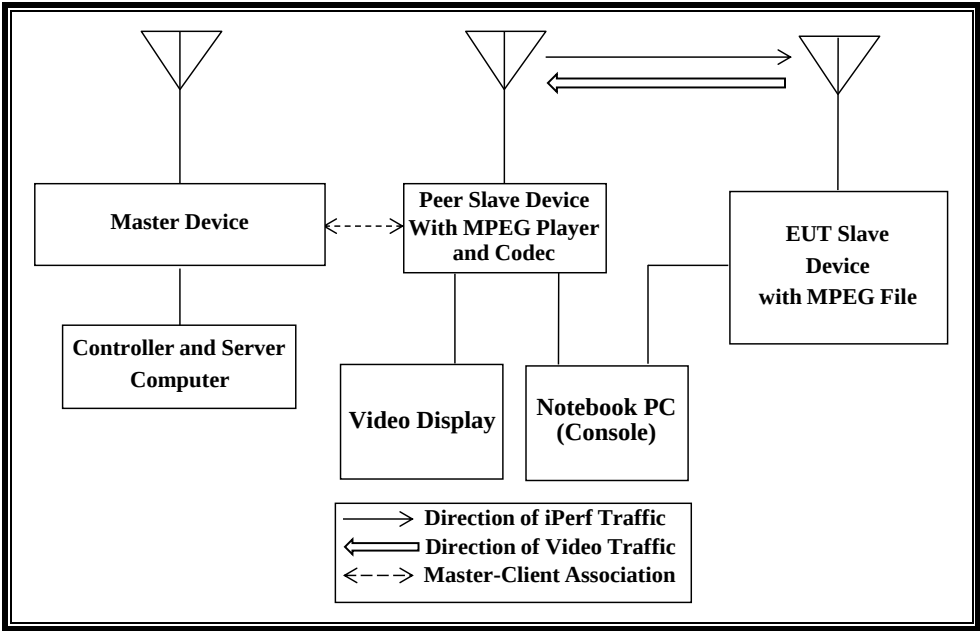
PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
802.11a/b/g/n/ac Wireless Router (Master Device)	Apple	A1521	C86LCE5GFJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1181	4H629022WLV	DoC
AC Adapter (Notebook PC)	Apple	A1343	C0424760BMPF1Y7AB	DoC
Peer Slave Device	Apple	A1625	C07S4033HHFP	BCGA1625
15" LCD TV (Video Display)	Polaroid	TLX-01511C	02006	DoC

11.1.7. SETUP OF EUT (PEER TO PEER MODE)

RADIATED METHOD EUT TEST SETUP WHEN MONITORING THE EUT



RADIATED METHOD EUT TEST SETUP WHEN MONITORING THE PEER SLAVE DEVICE)



SUPPORT EQUIPMENT

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

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
802.11a/b/g/n/ac Wireless Router (Master Device)	Apple	A1521	C86LCE5GFJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1181	4H629022WLV	DoC
AC Adapter (Notebook PC)	Apple	A1343	C0424760BMPF1Y7AB	DoC
Apple TV (Peer Slave Device)	Apple	A1625	C07S4033HHFP	BCGA1625
Notebook PC (Peer Console)	Apple	A1466	C2QLN093FKYR	DoC
AC Adapter (Console PC)	Apple	A1424	C06520721HYG6P4AH	DoC
15" LCD TV (Video Display)	Polaroid	TLX-01511C	02006	DoC

11.1.8. 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 20.26 dBm EIRP in the 5250-5350 MHz band and 21.62 dBm EIRP in the 5470-5725 MHz band.

Only UAT 2 and LAT 3 assemblies utilized with the EUT has a gain of -3.74 dBi and -1.09 dBi in the 5250-5350 MHz band and -0.75 dBi and -0.96 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 two 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 streaming the compressed version of the video test file "6 ½ Magic Hours" from the Master to the Slave.

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 **Peer to Peer mode while monitoring the EUT**, WLAN traffic is generated with the combination of streaming the compressed version of the video test file "6 ½ Magic Hours" from the EUT to the Peer Slave Device in full motion video mode using QuickTime media player and embedded proprietary AirPlay software and Iperf from the EUT to the Peer Slave Device.

In **Peer to Peer mode while monitoring the Peer Slave Device**, WLAN traffic is generated with the combination of streaming the compressed version of the video test file "6 ½ Magic Hours" from the EUT to the Peer Slave Device in full motion video mode using QuickTime media player and embedded proprietary AirPlay software and Iperf from the Peer Slave Device to the EUT.

While performing Peer to Peer Mode testing only the Peer Slave Device is associated to the Master Device.

The Peer to Peer mode has been reviewed and approved as compliant with the DFS requirements for client devices by the FCC via KDB enquiry. The enquiry confirmed that the test cases used adequately demonstrate compliance with DFS requirements for client devices.

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 is revision 7.7.4 f0 dev.

The software installed in the EUT is 11.0 (15A288).

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 is revision 7.7.4 f0 dev.

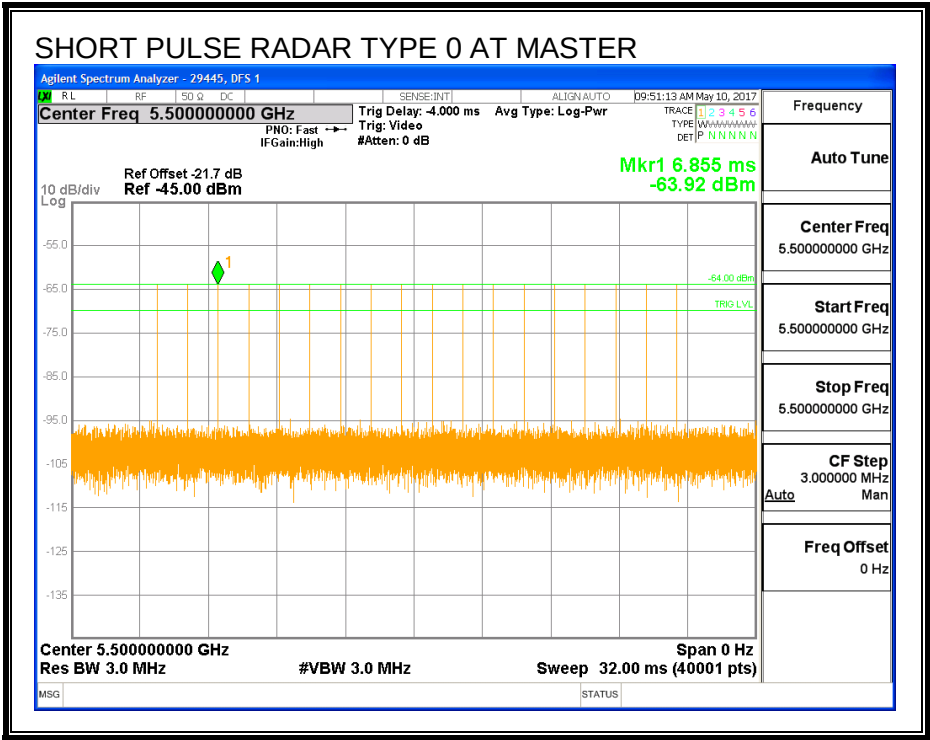
11.2. CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH

11.2.1. TEST CHANNEL

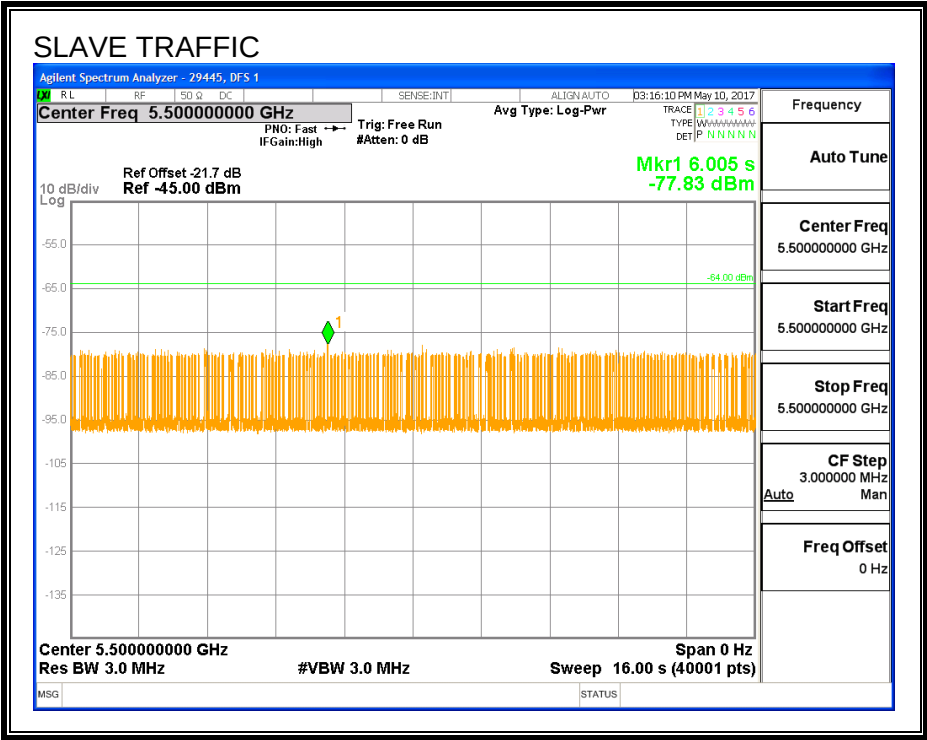
All tests were performed at a channel center frequency of 5500 MHz.

11.2.2. RADAR WAVEFORM AND TRAFFIC

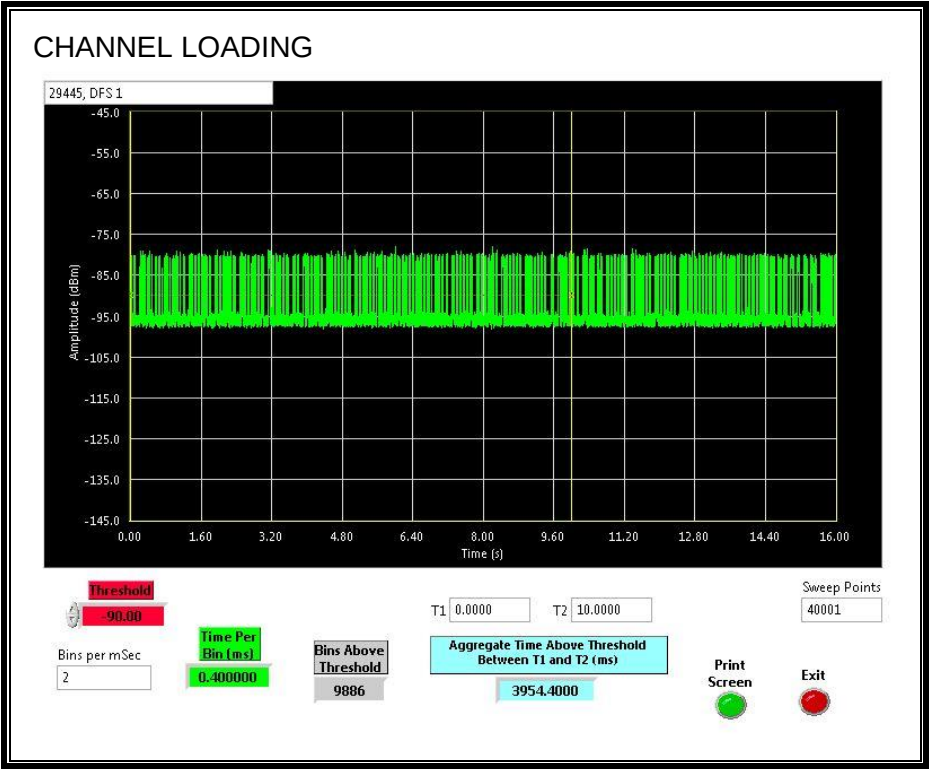
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 39.54%

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)

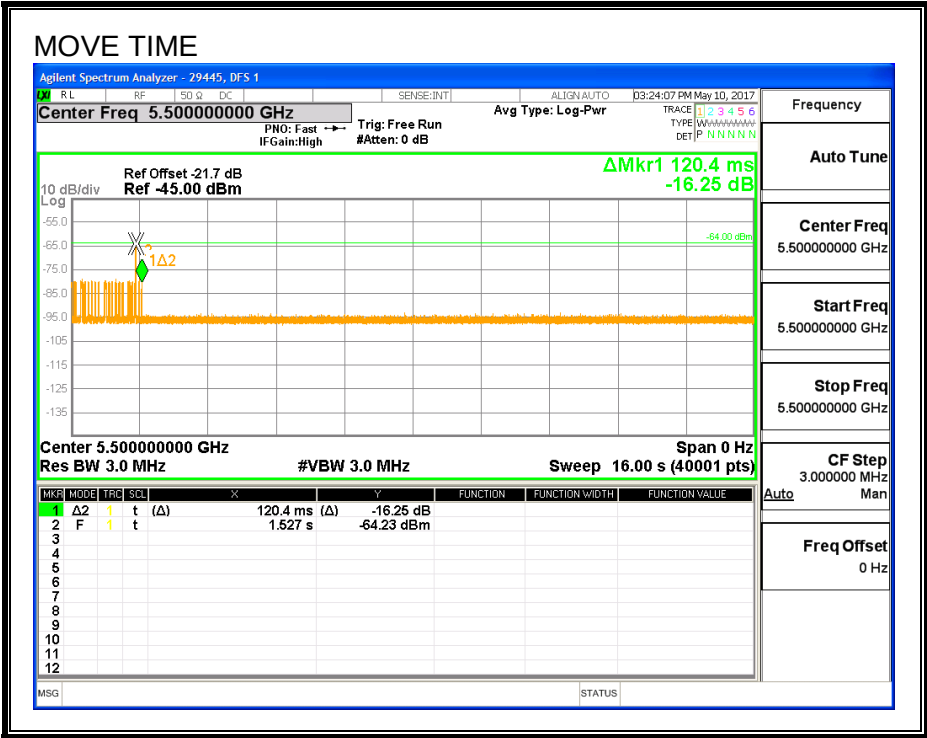
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

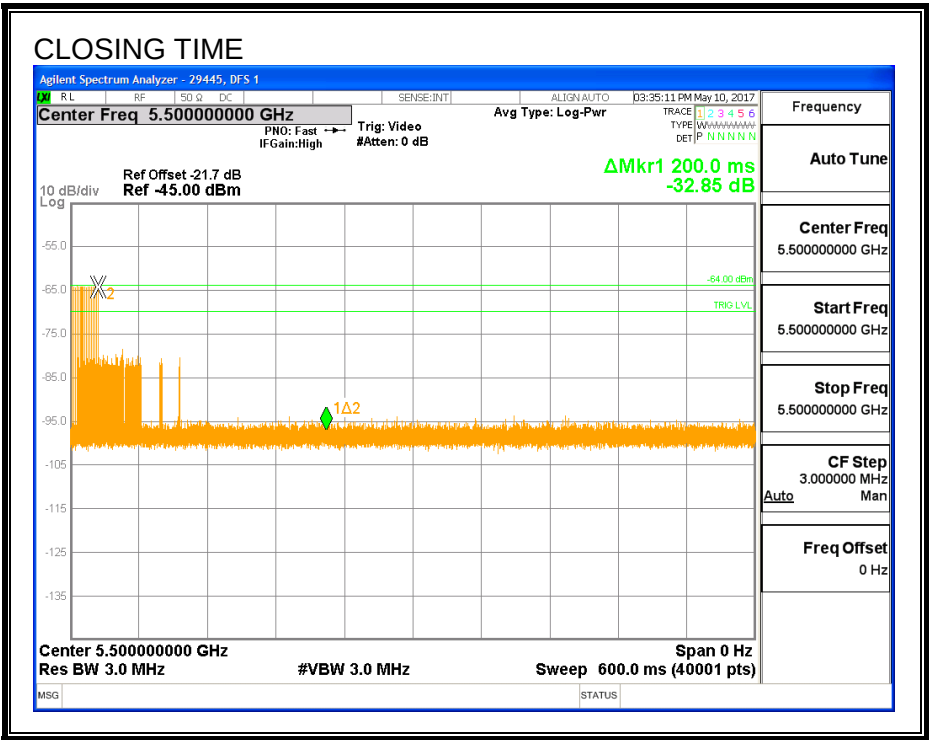
Channel Move Time (sec)	Limit (sec)
0.1204	10

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

MOVE TIME

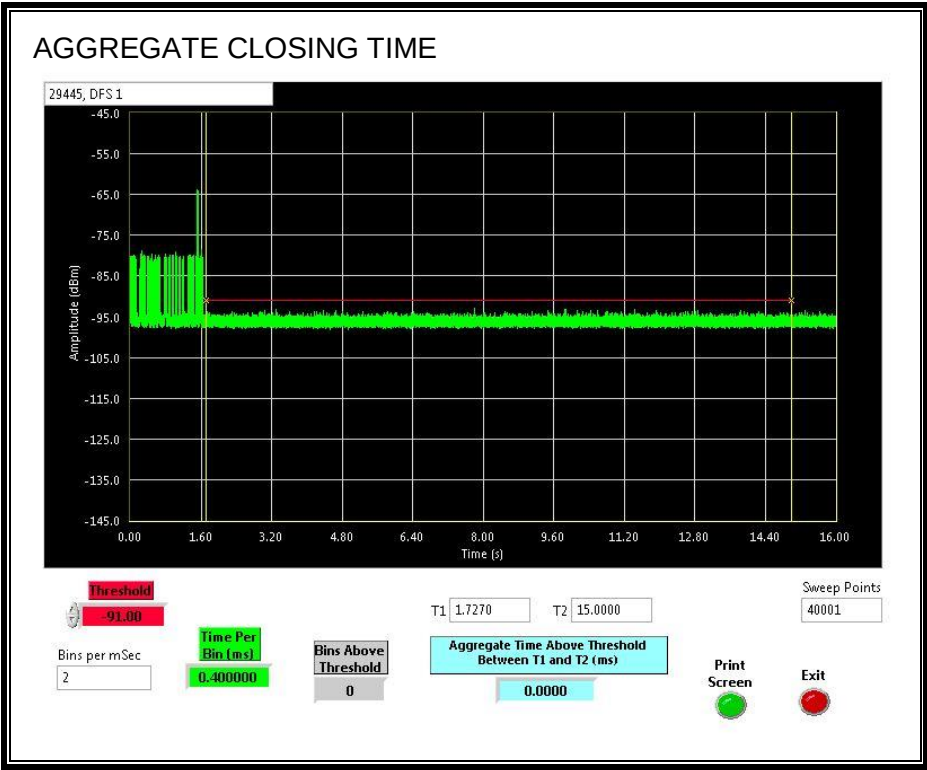


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



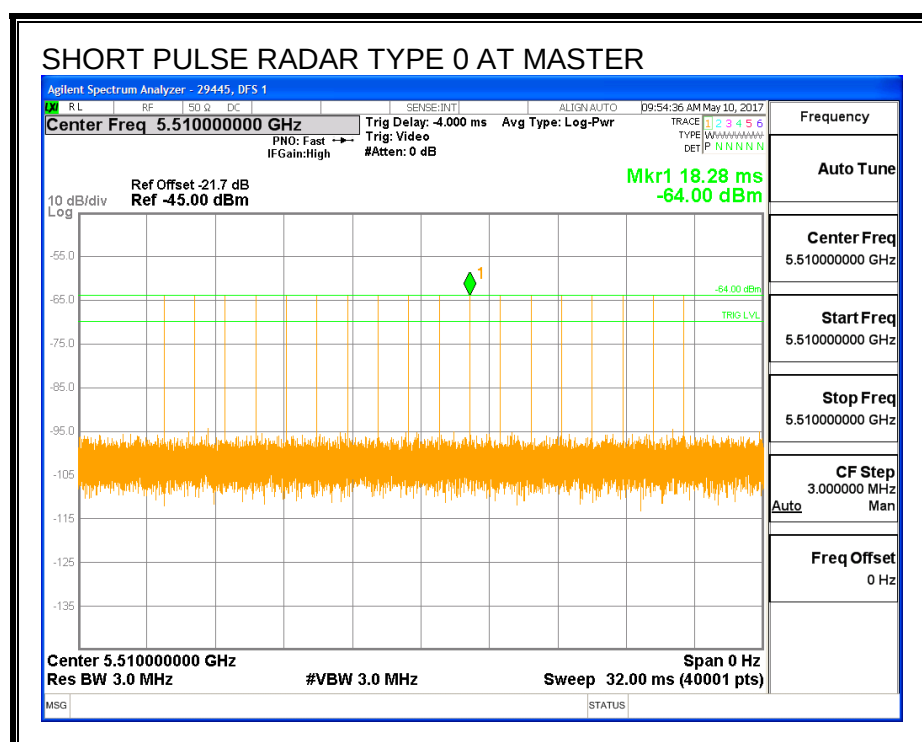
11.3. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH

11.3.1. TEST CHANNEL

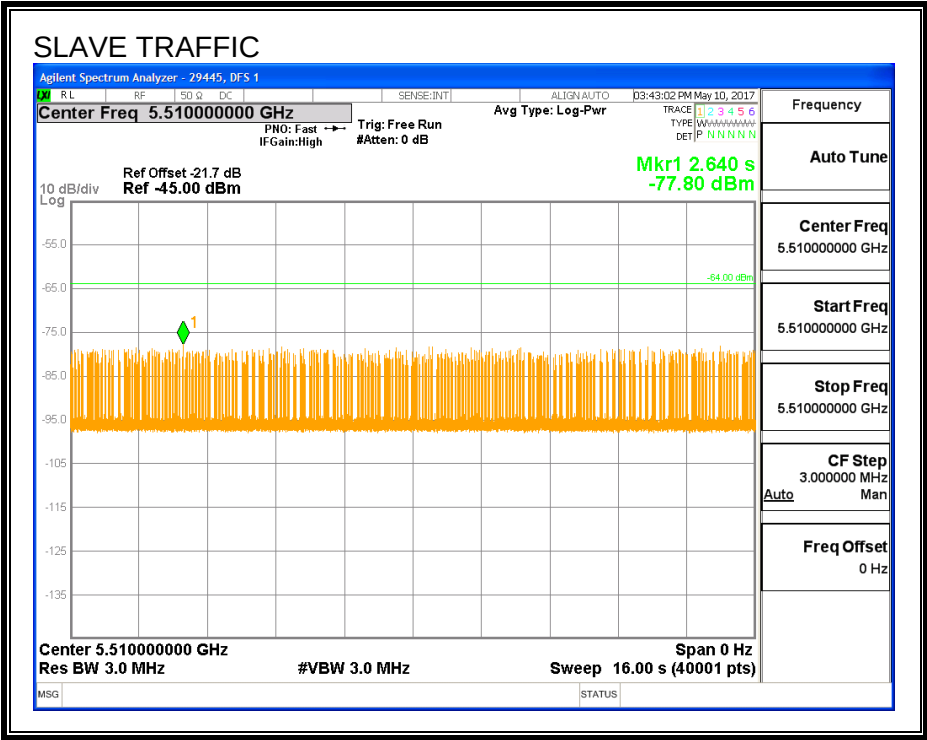
All tests were performed at a channel center frequency of 5510 MHz.

11.3.2. RADAR WAVEFORM AND TRAFFIC

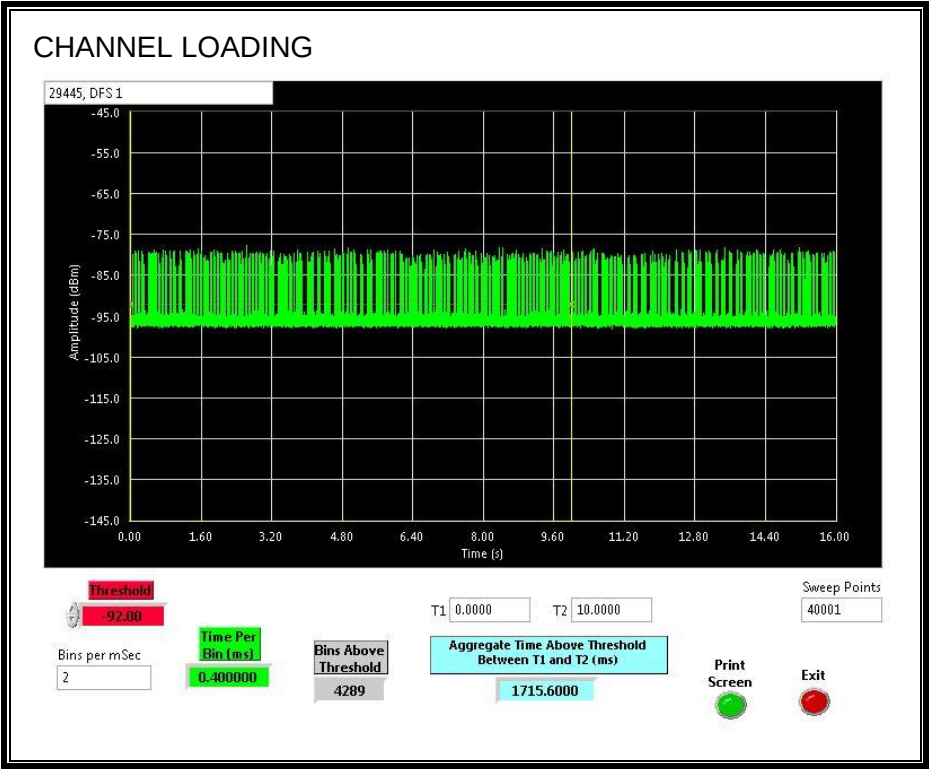
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 17.15%

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)

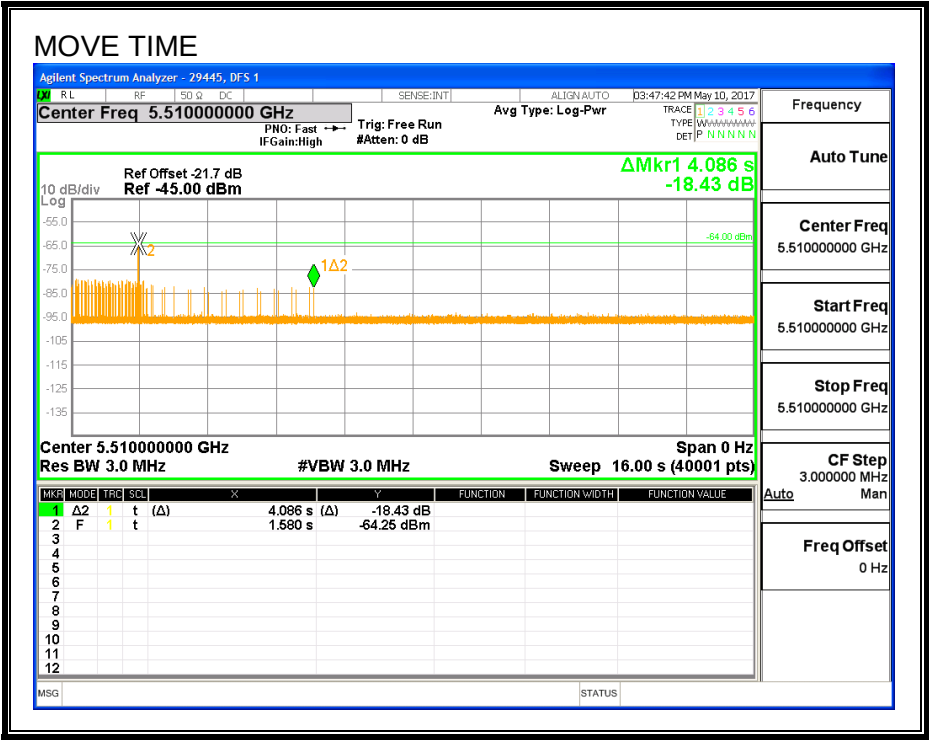
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

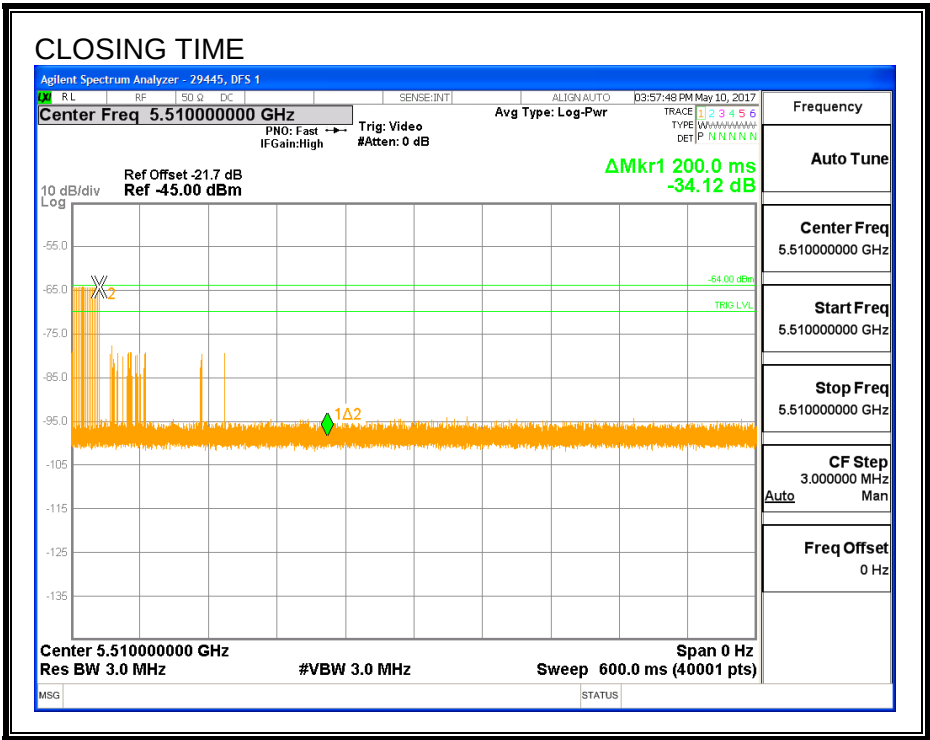
Channel Move Time (sec)	Limit (sec)
4.086	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
11.2	60

MOVE TIME



CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



11.4. CLIENT MODE RESULTS FOR 80 MHz BANDWIDTH

11.4.1. TEST CHANNEL

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

11.4.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

