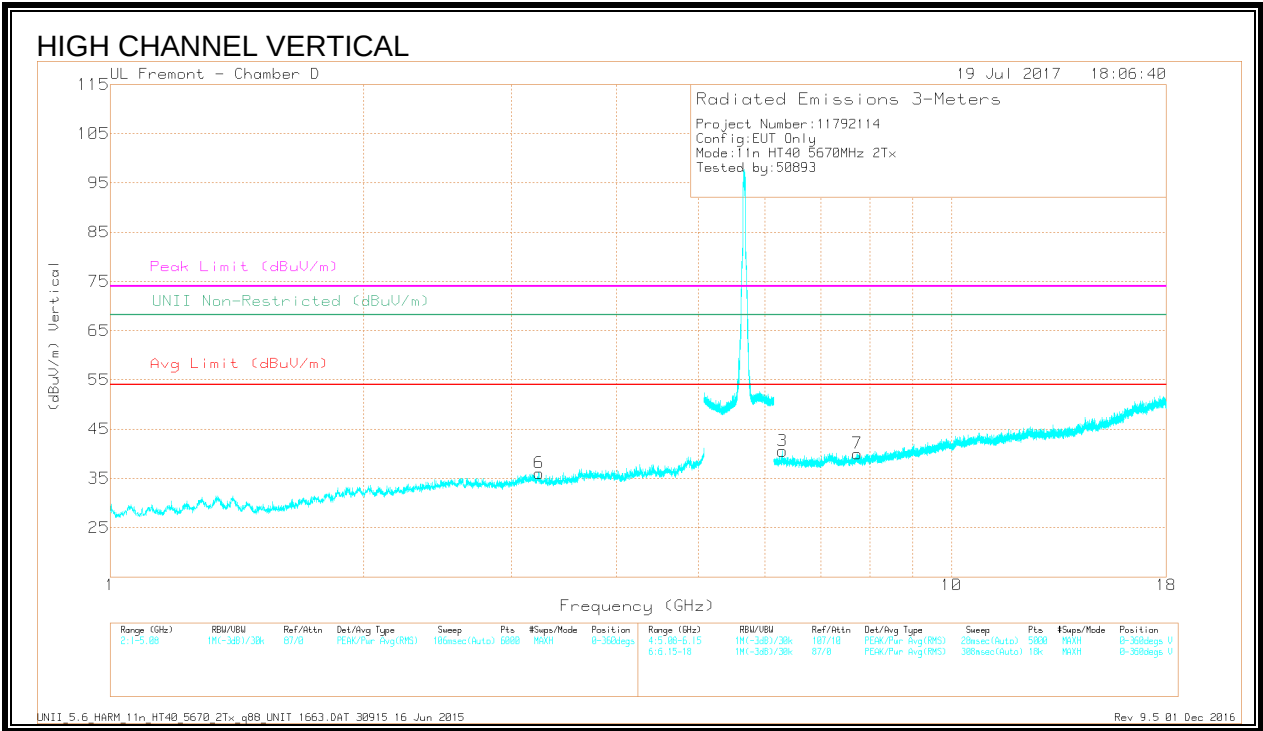
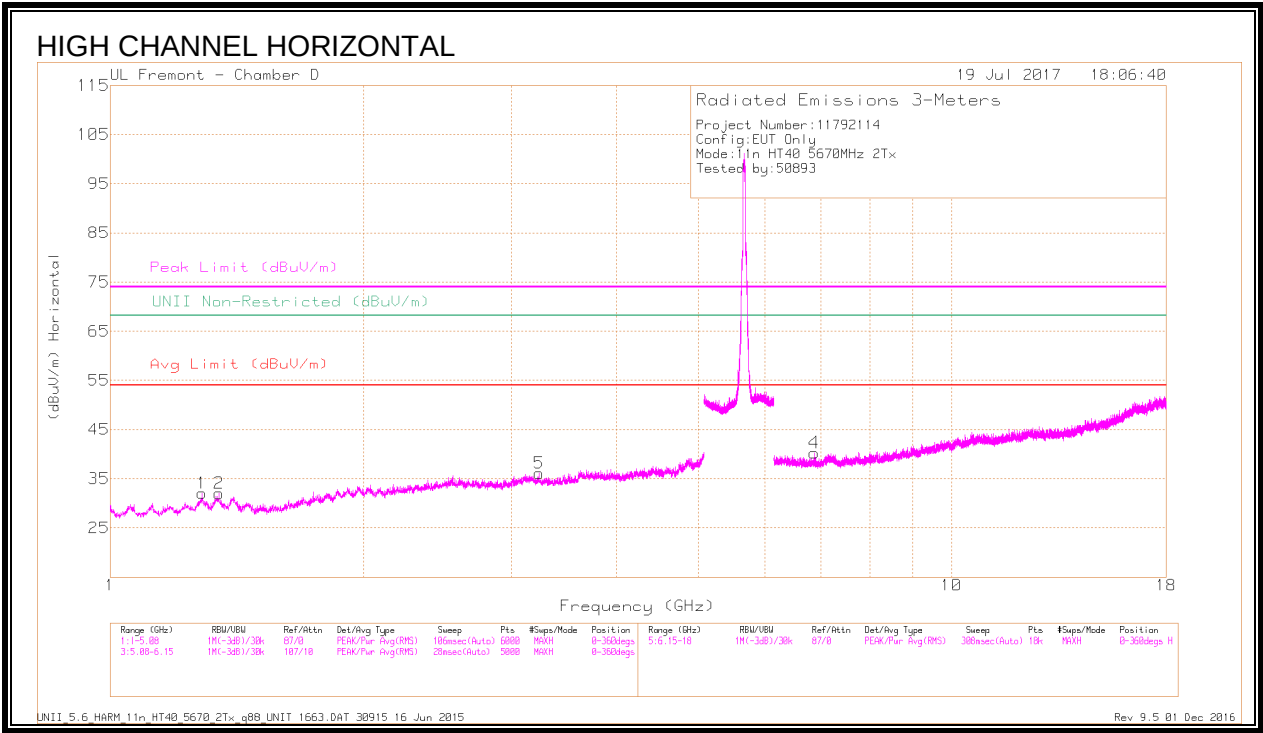




Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl/FI tri/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.286	40.85	PK-U	29.4	-31.8	0	38.45	-	-	74	-35.55	-	-	216	393	H
	* 1.285	29.05	ADR	29.4	-31.8	.1	26.75	54	-27.25	-	-	-	-	216	393	H
2	* 1.343	41.24	PK-U	29.4	-31.5	0	39.14	-	-	74	-34.86	-	-	23	182	H
	* 1.34	28.99	ADR	29.4	-31.5	.1	26.99	54	-27.01	-	-	-	-	23	182	H
7	* 7.74	35.26	PK-U	35.6	-24.5	0	46.36	-	-	74	-27.64	-	-	39	358	V
	* 7.741	23.9	ADR	35.6	-24.5	.1	35.1	54	-18.9	-	-	-	-	39	358	V
5	3.227	40.37	PK-U	32.9	-29.4	0	43.87	-	-	-	-	68.2	-24.33	185	309	H
	3.23	27.48	ADR	32.9	-29.5	.1	30.98	-	-	-	-	-	-	282	139	V
6	3.231	27.43	ADR	32.9	-29.5	.1	30.93	-	-	-	-	-	-	185	309	H
	3.24	39.7	PK-U	32.9	-29.5	0	43.1	-	-	-	-	68.2	-25.1	282	139	V
3	6.288	36.68	PK-U	35.4	-26	0	46.08	-	-	-	-	68.2	-22.12	351	285	V
	6.288	25.11	ADR	35.4	-26	.1	34.61	-	-	-	-	-	-	351	285	V
4	6.87	36.33	PK-U	35.5	-25.6	0	46.23	-	-	-	-	68.2	-21.97	275	218	H
	6.873	24.56	ADR	35.5	-25.7	.1	34.46	-	-	-	-	-	-	275	218	H

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

PK-U - U-NII: Maximum Peak

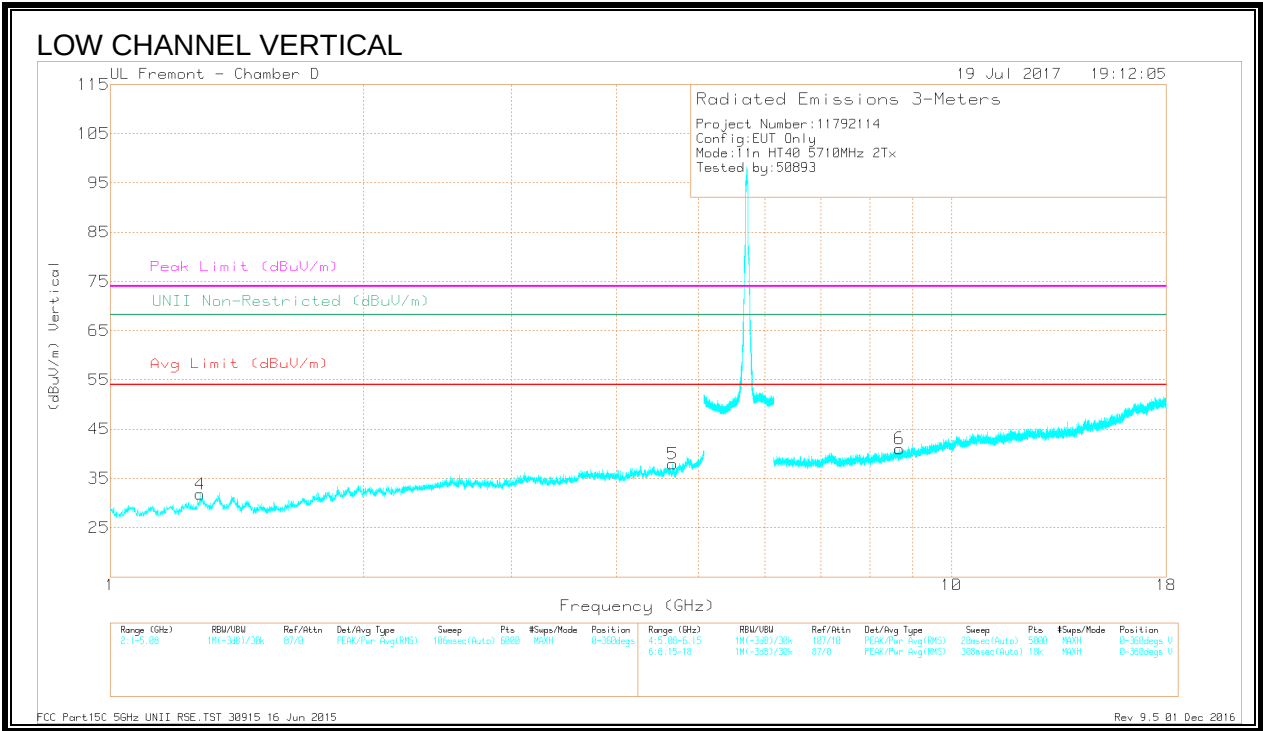
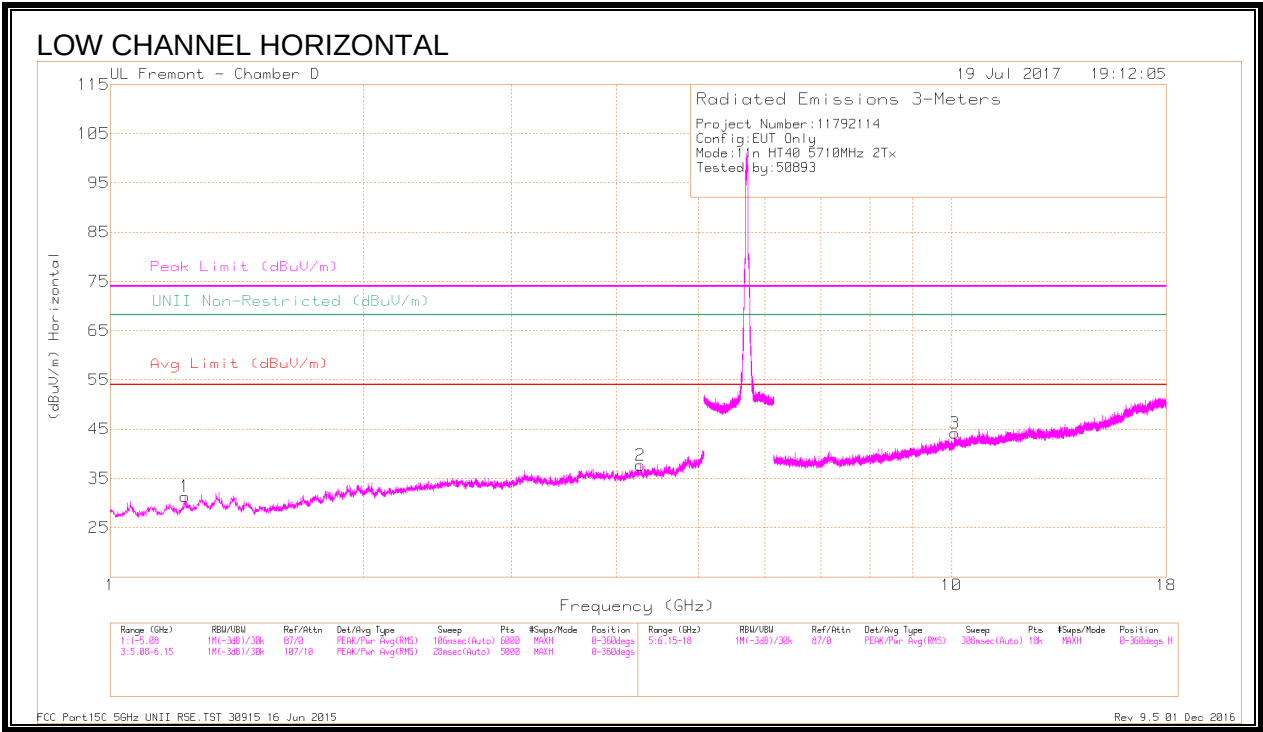
ADR - U-NII AD primary method, RMS average

UNII_5.6_HARM_11n_HT40_5670_2Tx_q88_UNIT 1663.DAT 30915 16 Jun 2015

Rev 9.5 01 Dec 2016

9.1.26. 11n HT40 2TX CDD MIMO STRADDLE CHANNEL 142

HARMONICS AND SPURIOUS EMISSIONS



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T711 (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	* 1.218	40.89	PK-U	28.8	-32.2	0	37.49	-	-	74	-36.51	-	-	257	176	H
	* 1.23	29.02	ADR	28.9	-32.3	.1	25.72	54	-28.28	-	-	-	-	257	176	H
2	* 4.265	37.77	PK-U	33.3	-27.6	0	43.47	-	-	74	-30.53	-	-	112	187	H
	* 4.269	26.15	ADR	33.4	-27.5	.1	32.15	54	-21.85	-	-	-	-	112	187	H
4	* 1.28	41.51	PK-U	29.4	-31.8	0	39.11	-	-	74	-34.89	-	-	223	277	V
	* 1.282	29.04	ADR	29.4	-31.8	.1	26.74	54	-27.26	-	-	-	-	223	277	V
5	* 4.673	38.61	PK-U	33.8	-27.9	0	44.51	-	-	74	-29.49	-	-	17	132	V
	* 4.672	27.06	ADR	33.8	-27.9	.1	33.06	54	-20.94	-	-	-	-	17	132	V
6	8.665	34.72	PK-U	35.8	-23.2	0	47.32	-	-	-	-	68.2	-20.88	95	392	V
	8.677	23.28	ADR	35.8	-23.3	.1	35.88	-	-	-	-	-	-	95	392	V
3	10.092	22.32	ADR	36.9	-21	.1	38.32	-	-	-	-	-	-	11	138	H
	10.098	34.07	PK-U	37	-20.9	0	50.17	-	-	-	-	68.2	-18.03	11	138	H

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

PK-U - U-NII: Maximum Peak

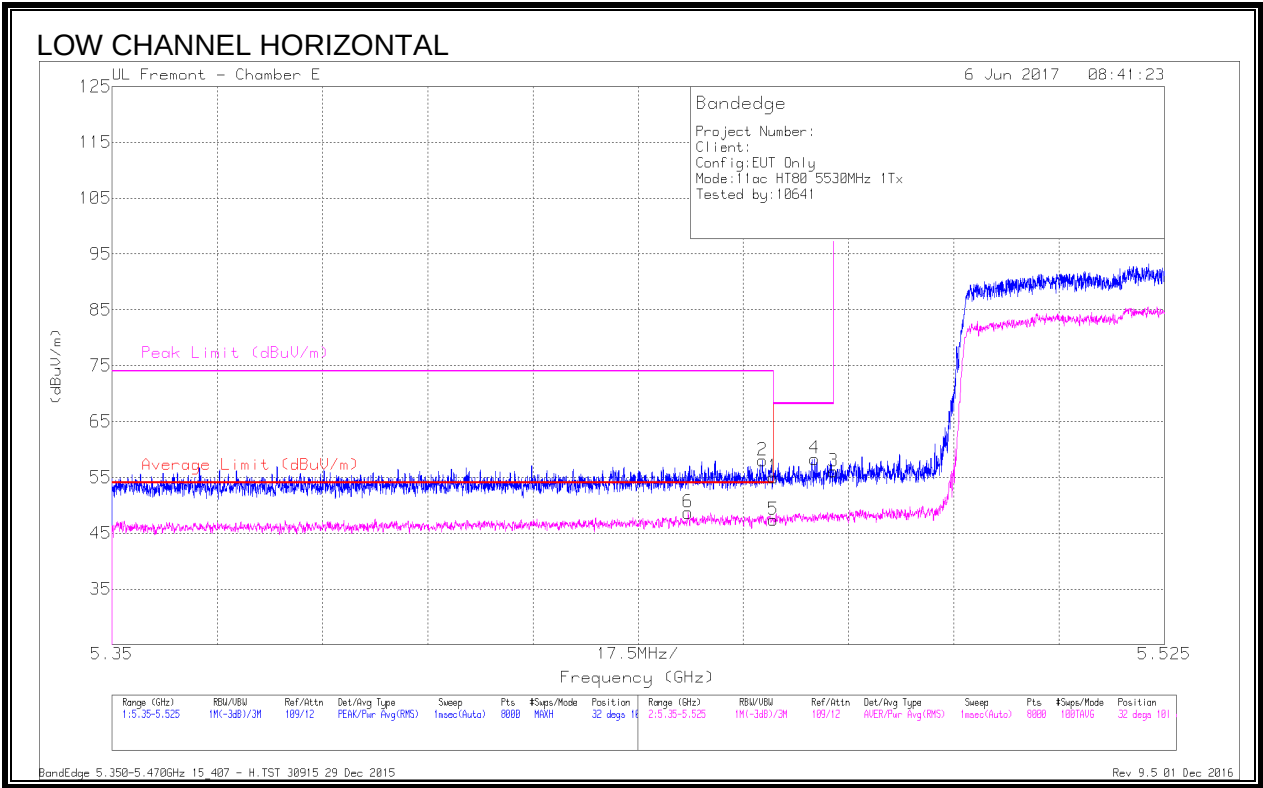
ADR - U-NII AD primary method, RMS average

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

Rev 9.5 01 Dec 2016

9.1.27. 11ac HT80 UAT 2 SISO MODE IN THE 5.6GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequ ency (GHz)	Meter Readi ng (dBuV)	Det	AF T136 (dB/m)	Amp/C bl/Fitr/ Pad (dB)	DC Corr (dB)	Correc ted Readin g (dBuV/ m)	Avera ge Limit (dBuV/ m)	Margin (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	Azimet h (Degs)	Height (cm)	Polarit y
1	* 5.46	39.2	Pk	35.1	-19.3	0	55	-	-	74	-19	32	101	H
2	* 5.458	42.21	Pk	35.1	-19.3	0	58.01	-	-	74	-15.99	32	101	H
5	* 5.46	31.37	RMS	35.1	-19.3	.19	47.37	54	-6.63	-	-	32	101	H
6	* 5.446	32.7	RMS	35.1	-19.3	.19	48.7	54	-5.3	-	-	32	101	H
4	5.467	42.73	Pk	35.1	-19.5	0	58.33	-	-	68.2	-9.87	32	101	H
3	5.47	40.36	Pk	35.1	-19.4	0	56.06	-	-	68.2	-12.14	32	101	H

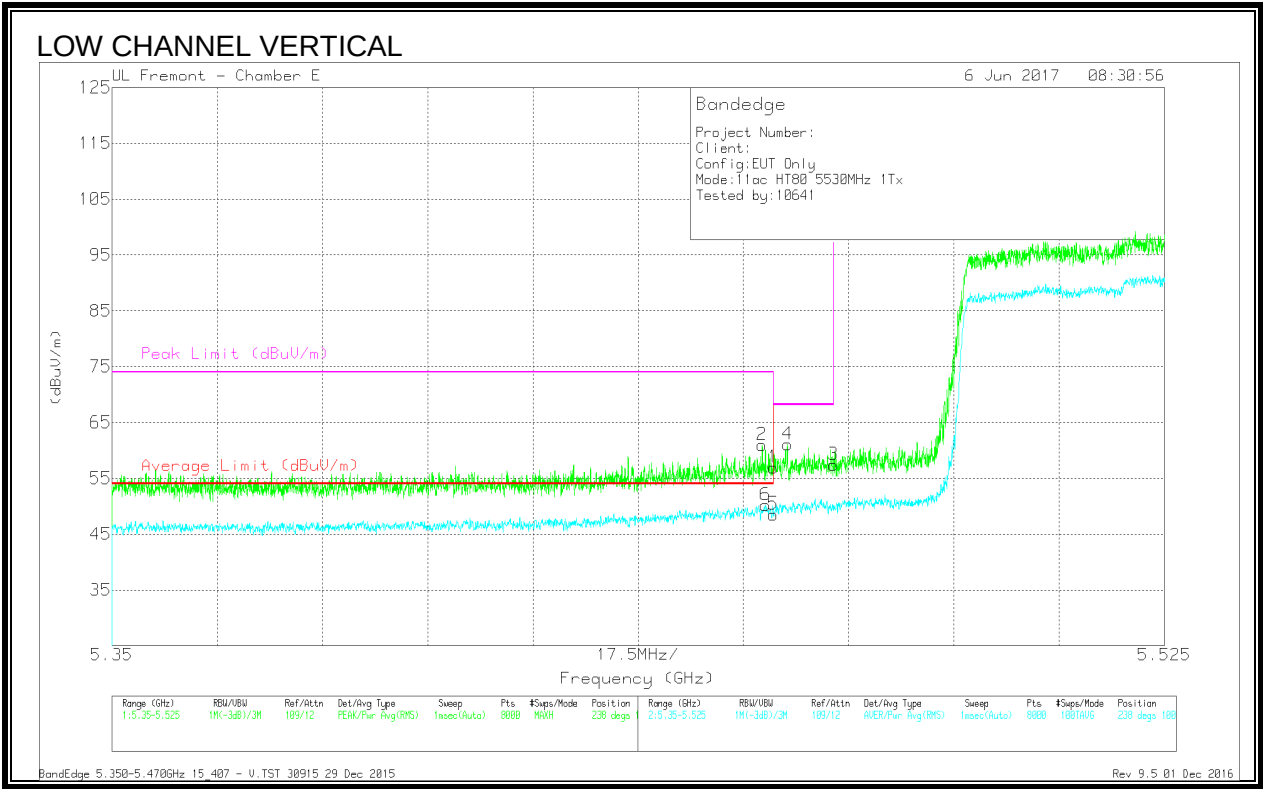
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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	Frequ ency (GHz)	Meter Readi ng (dBuV)	Det	AF T136 (dB/m)	Amp/C bI/Fitr/ Pad (dB)	DC Corr (dB)	Correc ted Readin g (dBuV/ m)	Avera ge Limit (dBuV/ m)	Margin (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	Azimet h (Degs)	Height (cm)	Polarit y
1	* 5.46	41.1	Pk	35.1	-19.3	0	56.9	-	-	74	-17.1	238	100	V
2	* 5.458	45.15	Pk	35.1	-19.3	0	60.95	-	-	74	-13.05	238	100	V
5	* 5.46	32.53	RMS	35.1	-19.3	.19	48.53	54	-5.47	-	-	238	100	V
6	* 5.459	34.22	RMS	35.1	-19.3	.19	50.22	54	-3.78	-	-	238	100	V
4	5.462	45.35	Pk	35.1	-19.4	0	61.05	-	-	68.2	-7.15	238	100	V
3	5.47	41.71	Pk	35.1	-19.4	0	57.41	-	-	68.2	-10.79	238	100	V

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

Pk - Peak detector

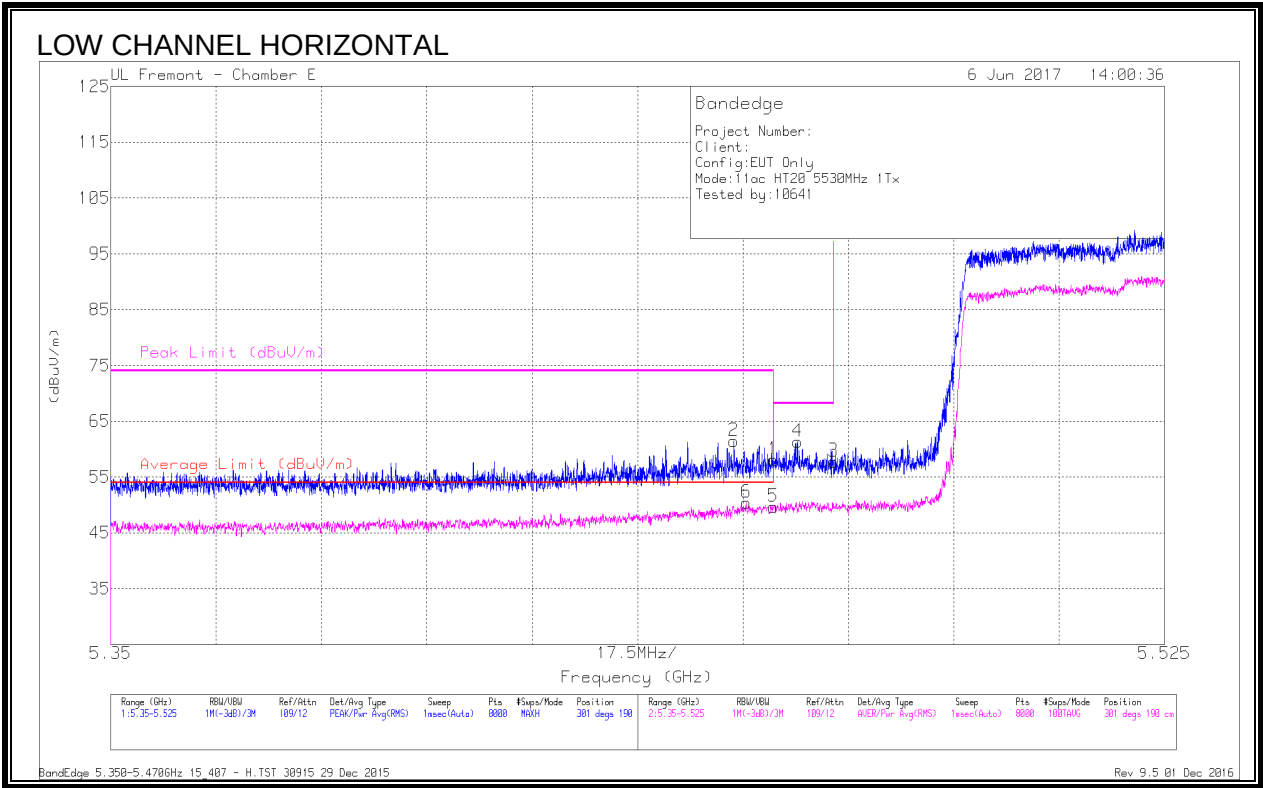
RMS - RMS detection

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

Rev 9.5 01 Dec 2016

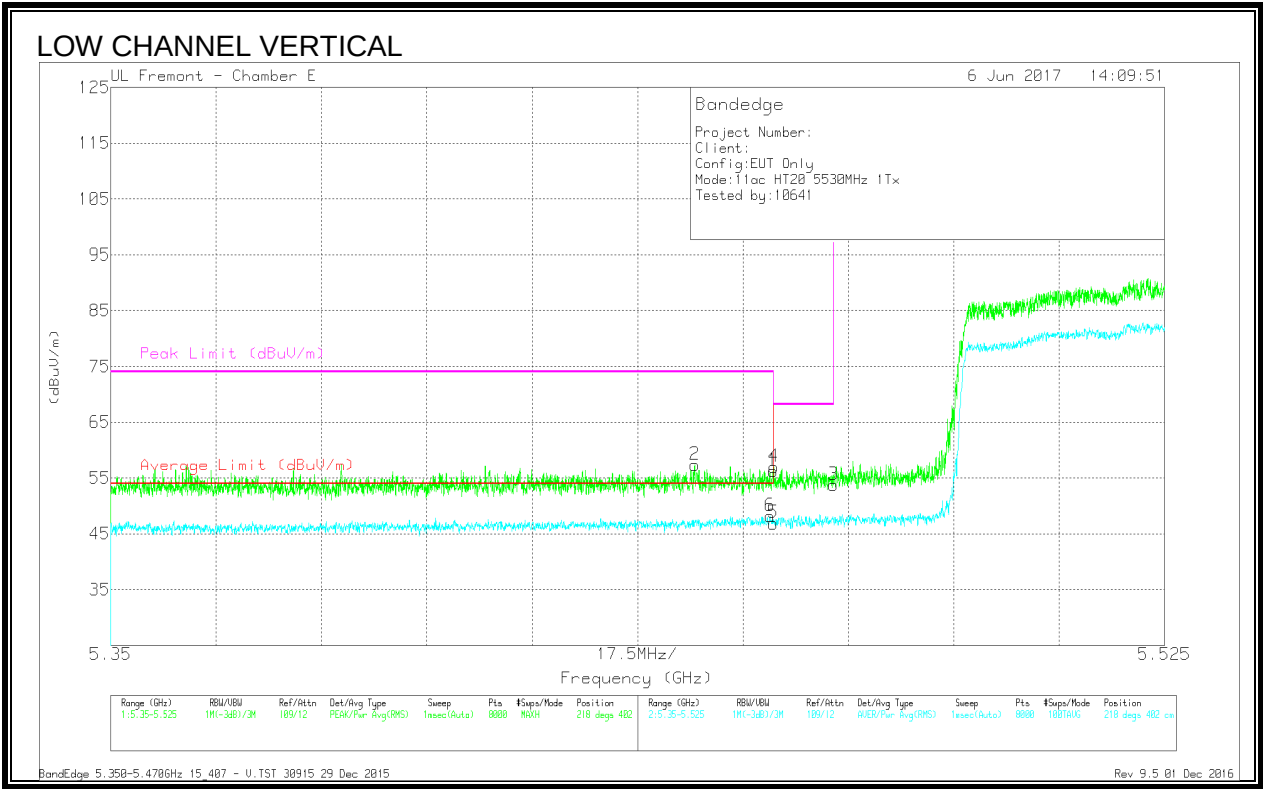
9.1.28. 11ac HT80 LAT 3 SISO MODE IN THE 5.6GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/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	42.36	Pk	35.1	-19.3	0	58.16	-	-	74	-15.84	301	190	H
2	* 5.453	45.71	Pk	35.1	-19.3	0	61.51	-	-	74	-12.49	301	190	H
5	* 5.46	33.9	RMS	35.1	-19.3	.19	49.9	54	-4.1	-	-	301	190	H
6	* 5.456	34.69	RMS	35.1	-19.4	.19	50.59	54	-3.41	-	-	301	190	H
4	5.464	45.55	Pk	35.1	-19.3	0	61.35	-	-	68.2	-6.85	301	190	H
3	5.47	42.1	Pk	35.1	-19.4	0	57.8	-	-	68.2	-10.4	301	190	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	Frequ ency (GHz)	Meter Readi ng (dBuV)	Det	AF T136 (dB/m)	Amp/C bI/Filtr/ Pad (dB)	DC Corr (dB)	Correc ted Readin g (dBuV/ m)	Avera ge Limit (dBuV/ m)	Margin (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	Azimet h (Degs)	Height (cm)	Polarit y
1	* 5.46	40.41	Pk	35.1	-19.3	0	56.21	-	-	74	-17.79	218	402	V
2	* 5.447	41.56	Pk	35.1	-19.3	0	57.36	-	-	74	-16.64	218	402	V
5	* 5.46	30.89	RMS	35.1	-19.3	.19	46.89	54	-7.11	-	-	218	402	V
6	* 5.459	32.14	RMS	35.1	-19.3	.19	48.14	54	-5.86	-	-	218	402	V
4	5.46	41.19	Pk	35.1	-19.3	0	56.99	-	-	68.2	-11.21	218	402	V
3	5.47	38.04	Pk	35.1	-19.4	0	53.74	-	-	68.2	-14.46	218	402	V

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

Pk - Peak detector

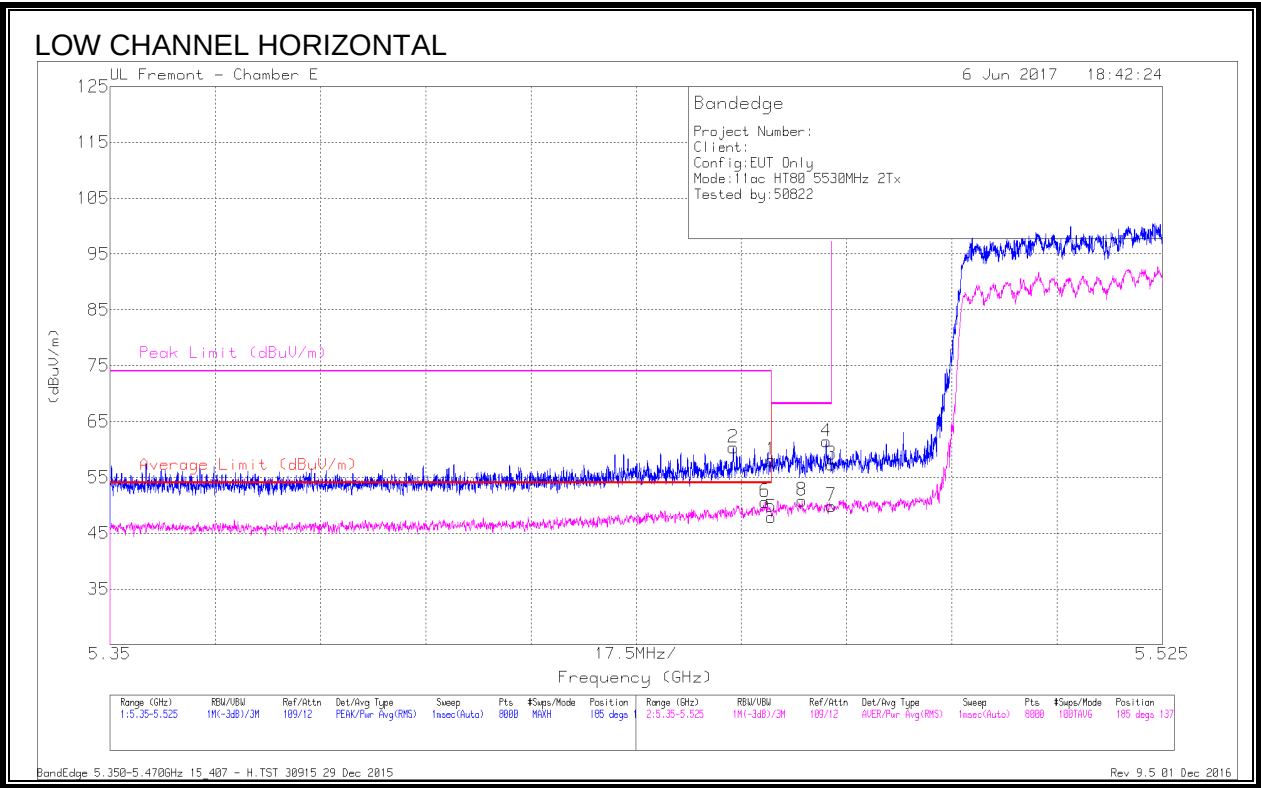
RMS - RMS detection

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

Rev 9.5 01 Dec 2016

9.1.29. 11ac HT80 2TX CDD MIMO MODE IN THE 5.6GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T136 (dB/m)	Amp/Cbl/Fitr/P ad (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	42.29	Pk	35.1	-19.3	0	58.09	-	-	74	-15.91	185	137	H
2	* 5.454	44.52	Pk	35.1	-19.3	0	60.32	-	-	74	-13.68	185	137	H
5	* 5.46	32.07	RMS	35.1	-19.3	.19	48.07	54	-5.93	-	-	185	137	H
6	* 5.459	34.82	RMS	35.1	-19.3	.19	50.82	54	-3.18	-	-	185	137	H
8	5.465	35.14	RMS	35.1	-19.4	.19	50.84	-	-	-	-	185	137	H
4	5.469	45.73	Pk	35.1	-19.4	0	61.43	-	-	68.2	-6.77	185	137	H
3	5.47	41.63	Pk	35.1	-19.4	0	57.33	-	-	68.2	-10.87	185	137	H
7	5.47	34.16	RMS	35.1	-19.4	.19	49.86	-	-	-	-	185	137	H

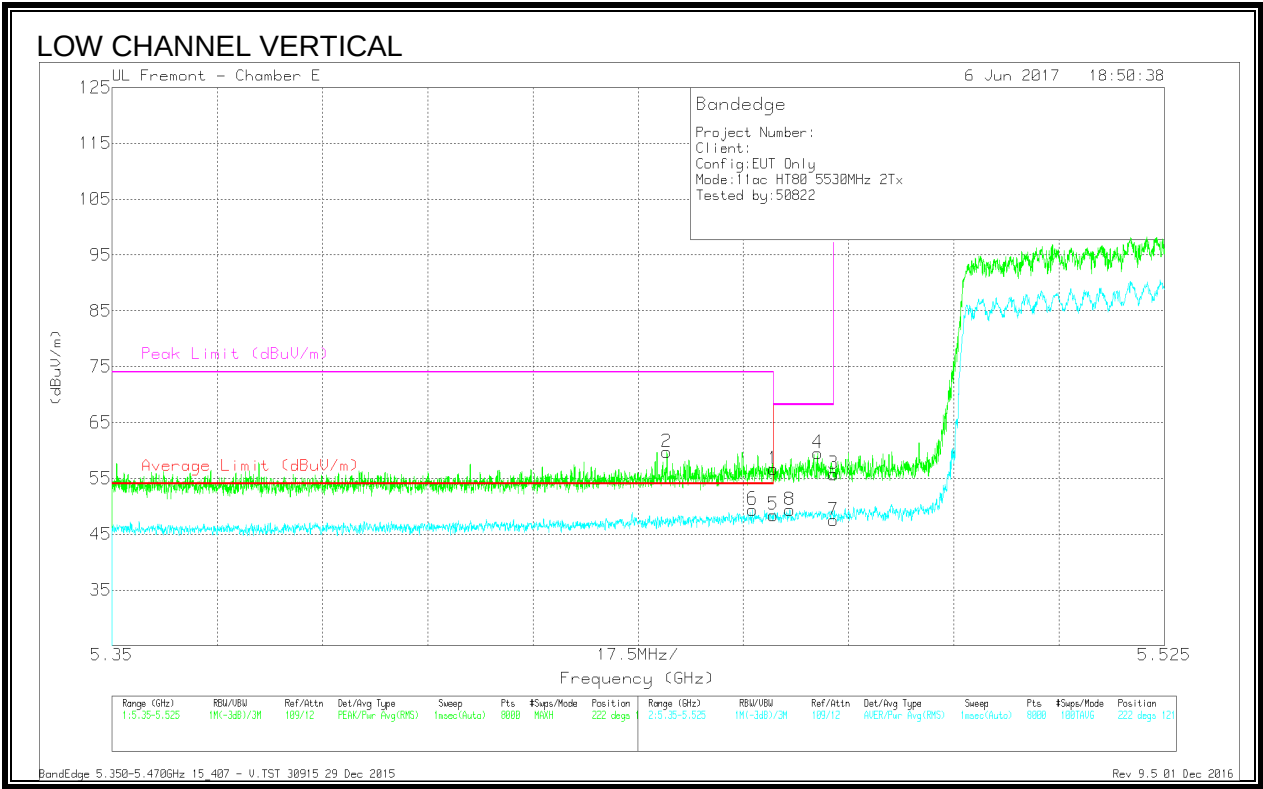
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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/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	40.87	Pk	35.1	-19.3	0	56.67	-	-	74	-17.33	222	121	V
2	* 5.442	44.01	Pk	35.1	-19.4	0	59.71	-	-	74	-14.29	222	121	V
5	* 5.46	32.63	RMS	35.1	-19.3	.19	48.63	54	-5.37	-	-	222	121	V
6	* 5.457	33.7	RMS	35.1	-19.4	.19	49.6	54	-4.4	-	-	222	121	V
8	5.463	33.65	RMS	35.1	-19.4	.19	49.55	-	-	-	-	222	121	V
4	5.467	43.92	PK	35.1	-19.5	0	59.52	-	-	68.2	-8.68	222	121	V
3	5.47	40.08	Pk	35.1	-19.4	0	55.78	-	-	68.2	-12.42	222	121	V
7	5.47	31.82	RMS	35.1	-19.4	.19	47.72	-	-	-	-	222	121	V

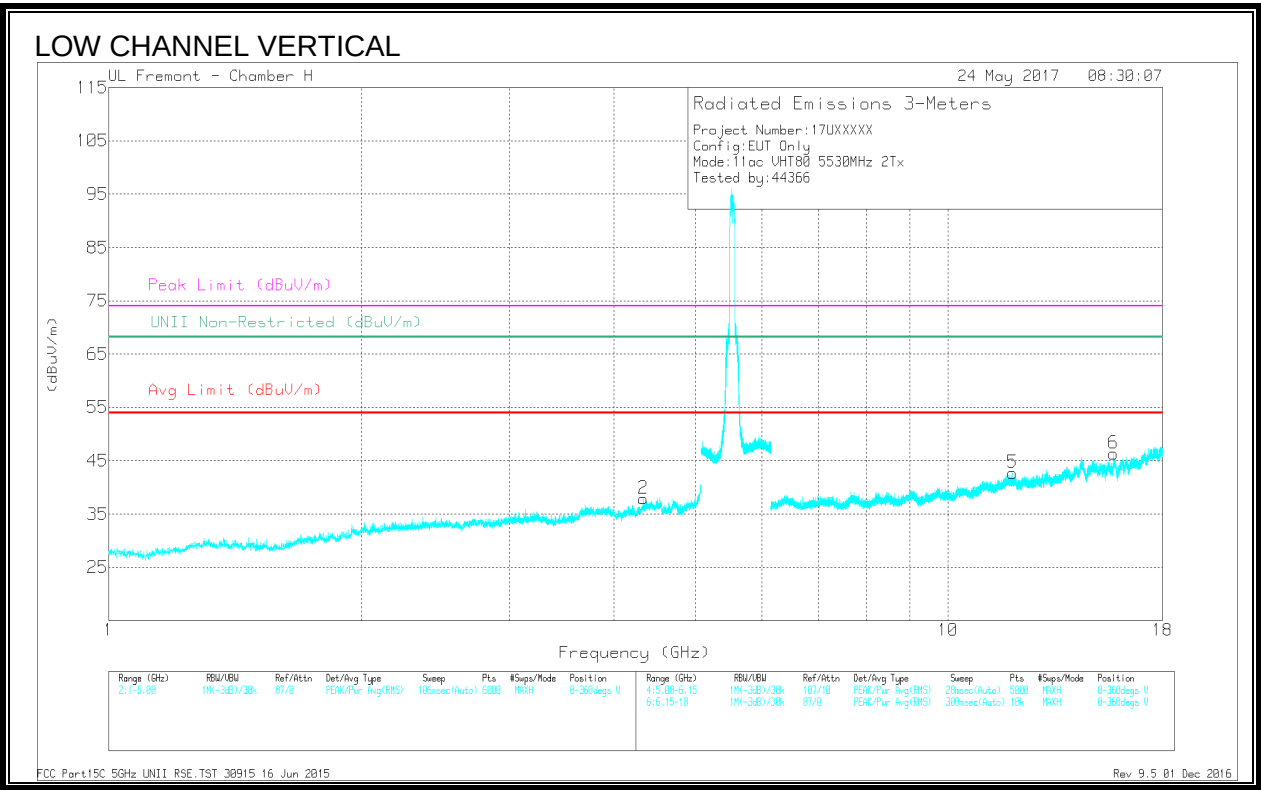
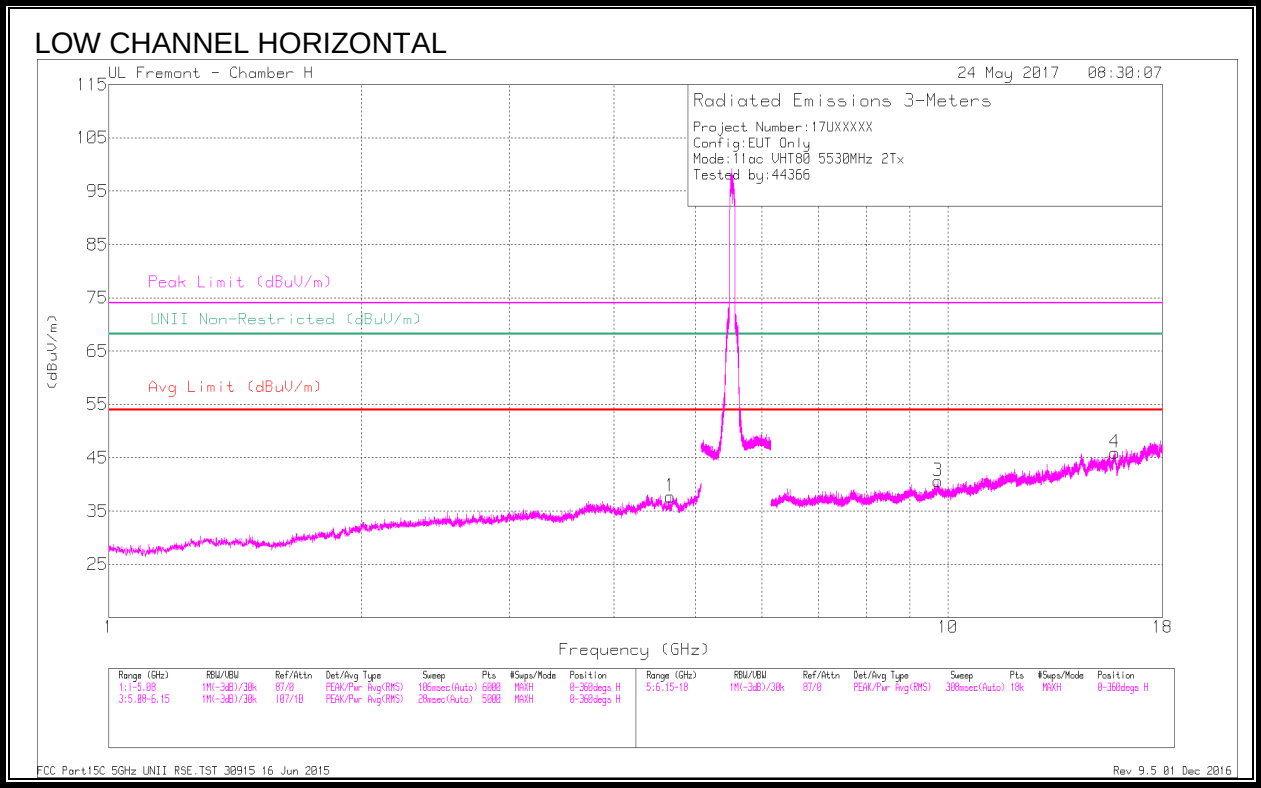
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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



Markers	Frequency (GHz)	Meter Reading (dBUV)	Det	AF T344 (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	* 4.669	43.42	PK-U	34.2	-34.3	0	43.32	-	-	74	-30.68	-	-	63	176	H
	* 4.668	31.63	ADR	34.2	-34.3	.19	31.73	54	-22.27	-	-	-	-	63	176	H
2	* 4.336	45.02	PK-U	33.8	-35.1	0	43.72	-	-	74	-30.28	-	-	42	208	V
	* 4.336	33.59	ADR	33.8	-35.1	.19	32.49	54	-21.51	-	-	-	-	42	208	V
4	* 15.793	35.89	PK-U	42.2	-24.5	0	53.59	-	-	74	-20.41	-	-	128	392	H
	* 15.791	23.93	ADR	42.2	-24.6	.19	41.73	54	-12.27	-	-	-	-	128	392	H
5	* 11.922	36.6	PK-U	39.1	-26.7	0	49	-	-	74	-25	-	-	228	381	H
	* 11.924	24.67	ADR	39.1	-26.7	.19	37.27	54	-16.73	-	-	-	-	228	381	H
6	* 15.729	36.13	PK-U	41.2	-24.3	0	53.03	-	-	74	-20.97	-	-	5	365	V
	* 15.729	23.86	ADR	41.2	-24.3	.19	40.96	54	-13.04	-	-	-	-	5	365	V
3	9.731	38.05	PK-U	37.3	-29.1	0	46.25	-	-	-	-	68.2	-21.95	80	174	H

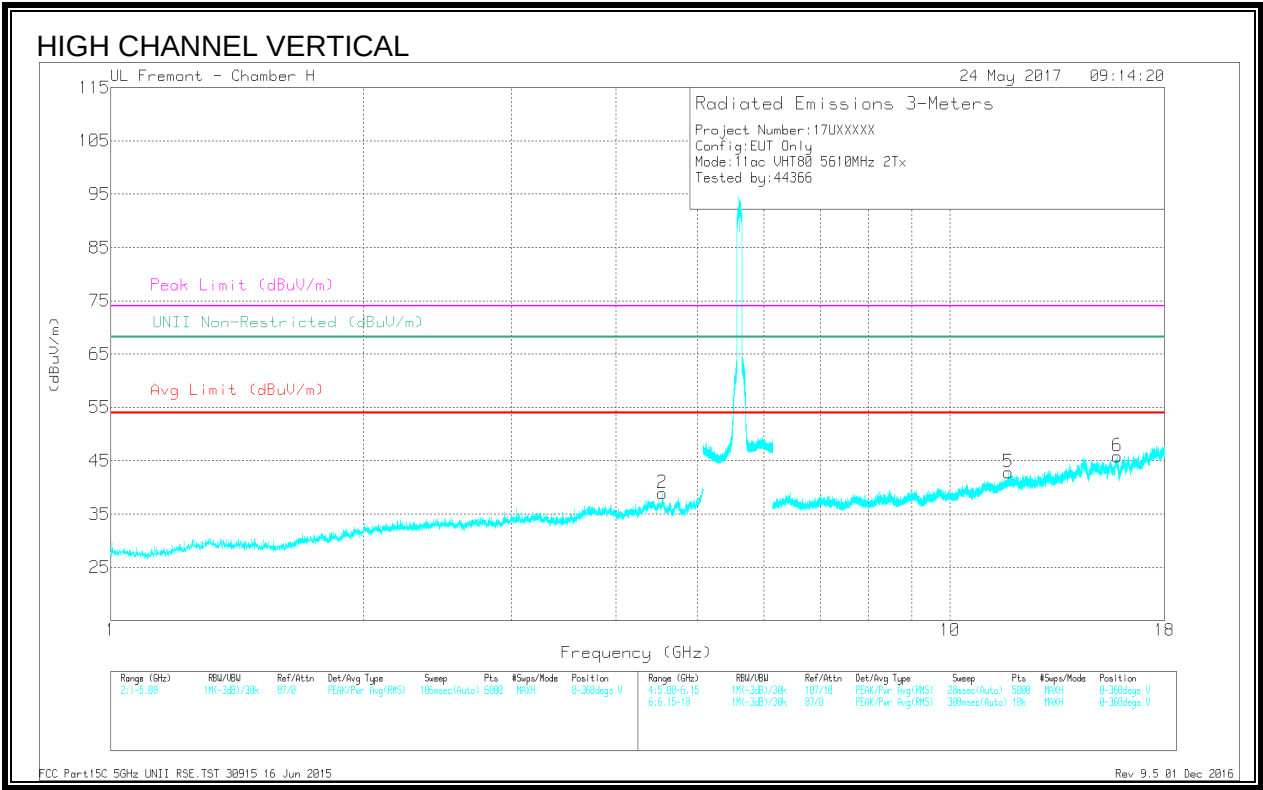
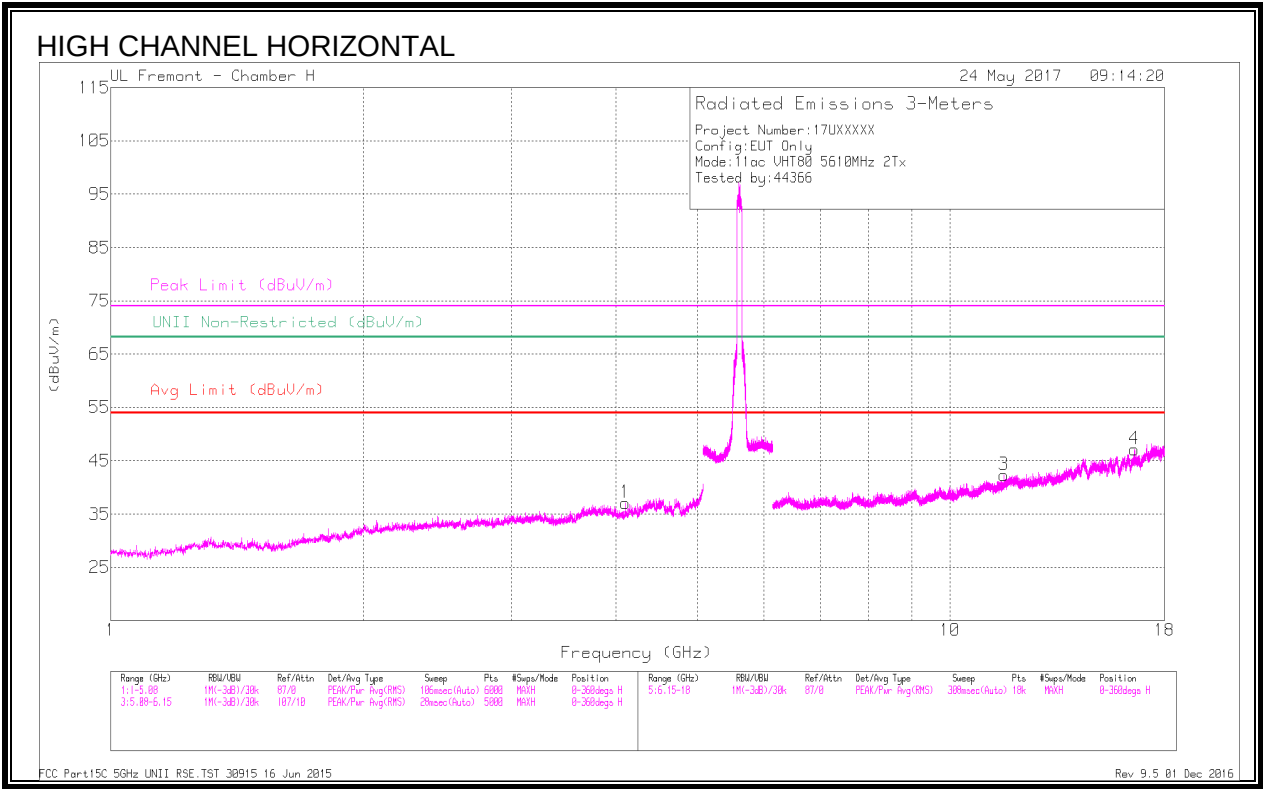
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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 01 Dec 2016



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (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	* 4.104	44.84	PK-U	33.5	-35.3	0	43.04	-	-	74	-30.96	-	-	93	134	H
	* 4.104	32.7	ADR	33.5	-35.4	.19	31	54	-23	-	-	-	-	93	134	H
2	* 4.546	45.84	PK-U	34.3	-34.9	0	45.24	-	-	74	-28.76	-	-	186	392	V
	* 4.546	33.53	ADR	34.3	-34.9	.19	33.13	54	-20.87	-	-	-	-	186	392	V
3	* 11.586	36.82	PK-U	38.3	-26.8	0	48.32	-	-	74	-25.68	-	-	319	295	H
	* 11.588	25.12	ADR	38.3	-26.8	.19	36.82	54	-17.18	-	-	-	-	319	295	H
5	* 11.726	36.86	PK-U	38.8	-26.8	0	48.86	-	-	74	-25.14	-	-	222	319	V
	* 11.727	25.04	ADR	38.8	-26.8	.19	37.24	54	-16.76	-	-	-	-	222	319	V
6	* 15.808	34.88	PK-U	42.2	-24.2	0	52.88	-	-	74	-21.12	-	-	251	337	V
	* 15.81	23.41	ADR	42.1	-24.3	.19	41.41	54	-12.59	-	-	-	-	251	337	V
4	16.567	35.13	PK-U	41.8	-24.1	0	52.83	-	-	-	-	68.2	-15.37	55	306	H

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

PK-U - U-UNII: Maximum Peak

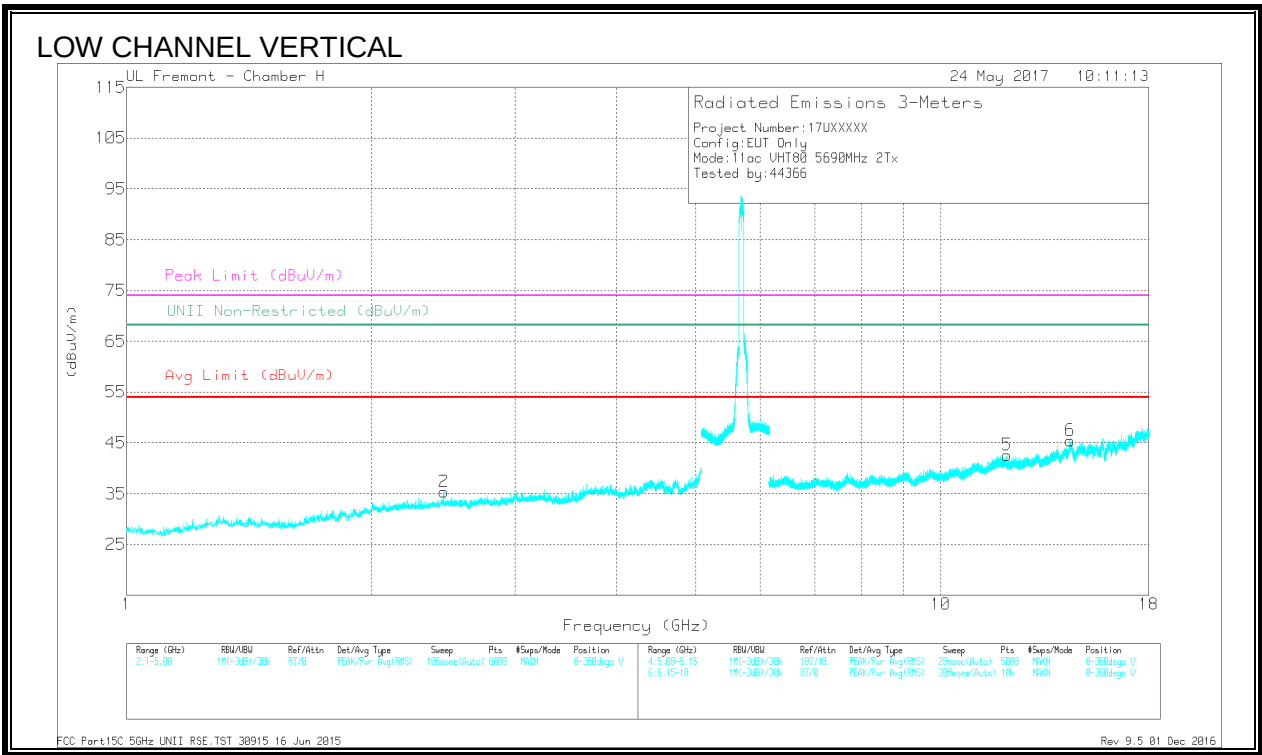
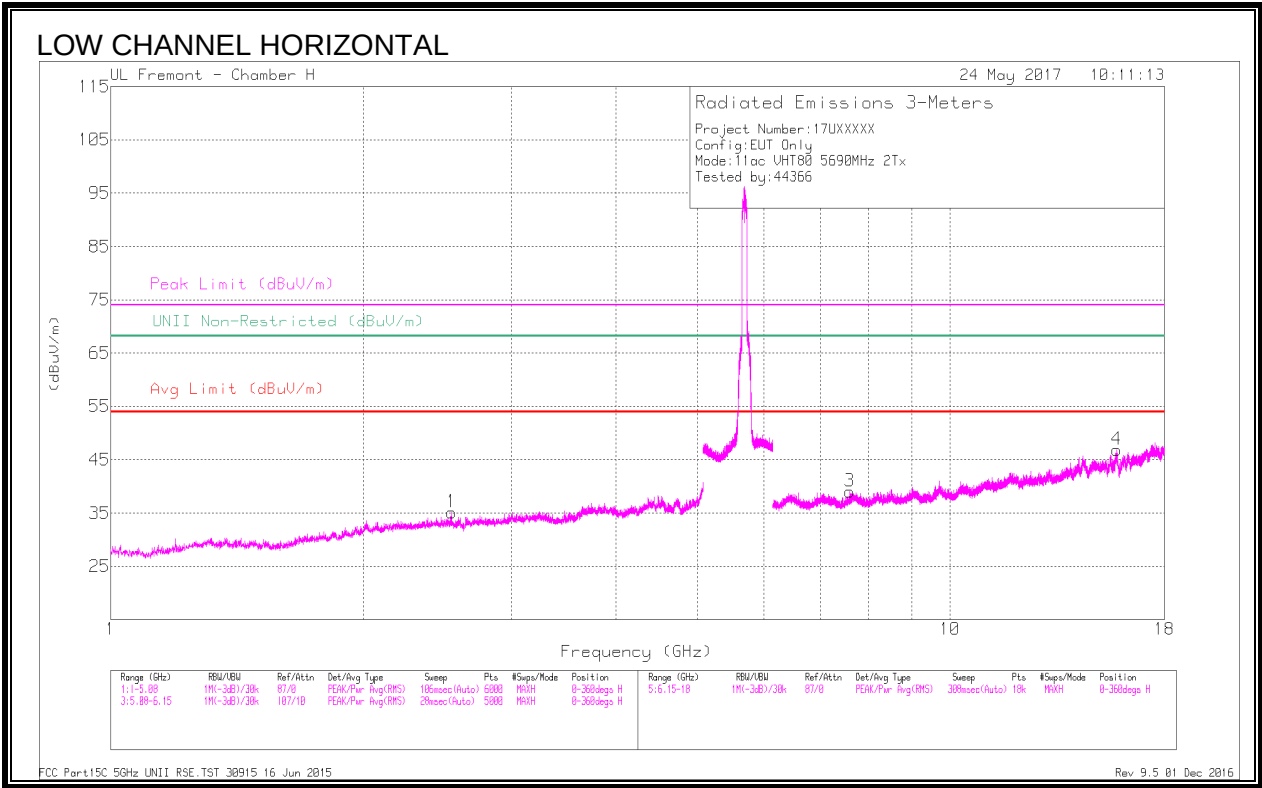
ADR - U-UNII AD primary method, RMS average

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

Rev 9.5 01 Dec 2016

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

HARMONICS AND SPURIOUS EMISSIONS



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filtri/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	* 7.599	39.84	PK-U	36.1	-31.1	0	44.84	-	-	74	-29.16	-	-	184	392	H
	* 7.596	28.13	ADR	36.1	-31.1	.19	33.33	54	-20.67	-	-	-	-	184	392	H
4	* 15.795	35.32	PK-U	42.3	-24.4	0	53.22	-	-	74	-20.78	-	-	78	363	H
	* 15.794	23.71	ADR	42.3	-24.4	.19	41.81	54	-12.19	-	-	-	-	78	363	H
5	* 12.052	35.84	PK-U	39.2	-26.5	0	48.54	-	-	74	-25.46	-	-	307	381	V
	* 12.052	24.4	ADR	39.2	-26.5	.19	37.3	54	-16.7	-	-	-	-	307	381	V
2	2.453	48.26	PK-U	32.4	-38	0	42.66	-	-	-	-	68.2	-25.54	46	168	V
1	2.547	46.88	PK-U	32.3	-38.1	0	41.08	-	-	-	-	68.2	-27.12	183	147	H
6	14.414	35.87	PK-U	40.6	-24.3	0	52.17	-	-	-	-	68.2	-16.03	182	315	V

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

PK-U - U-NII: Maximum Peak

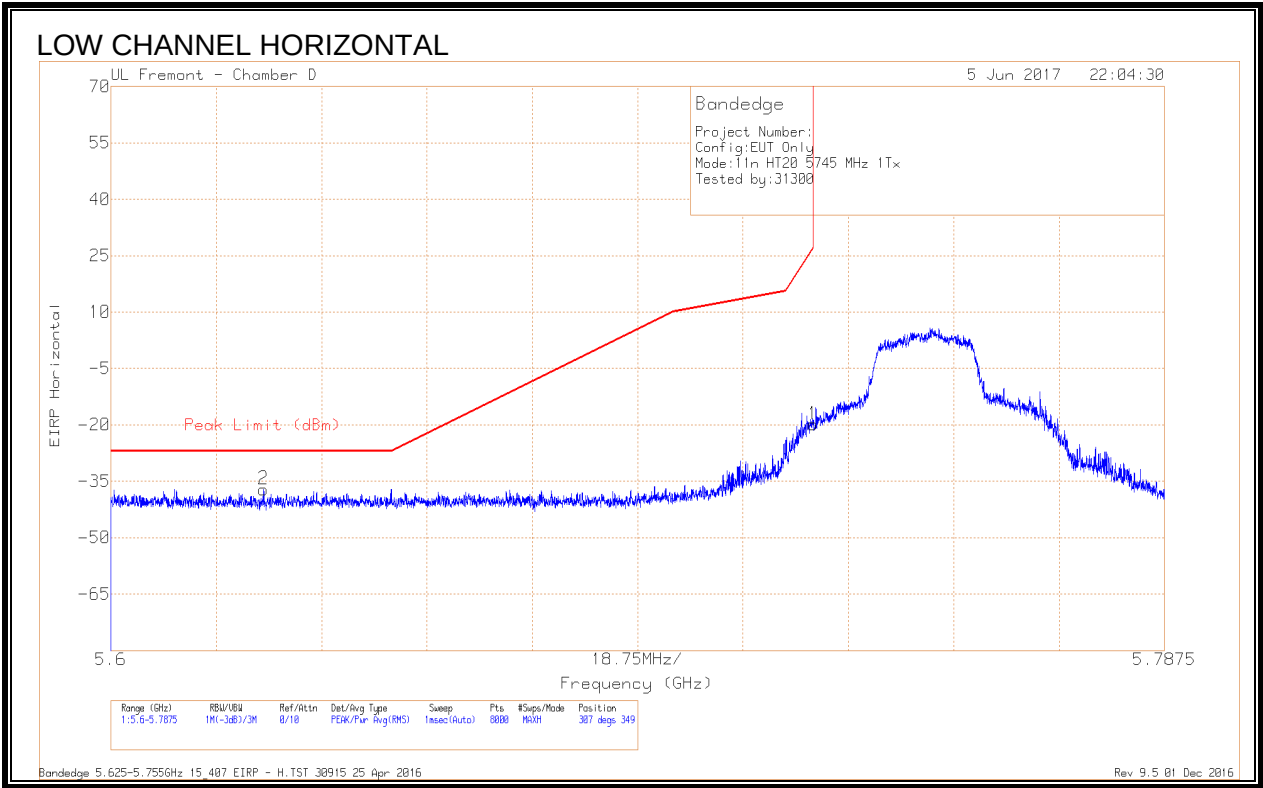
ADR - U-NII AD primary method, RMS average

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

Rev 9.5 01 Dec 2016

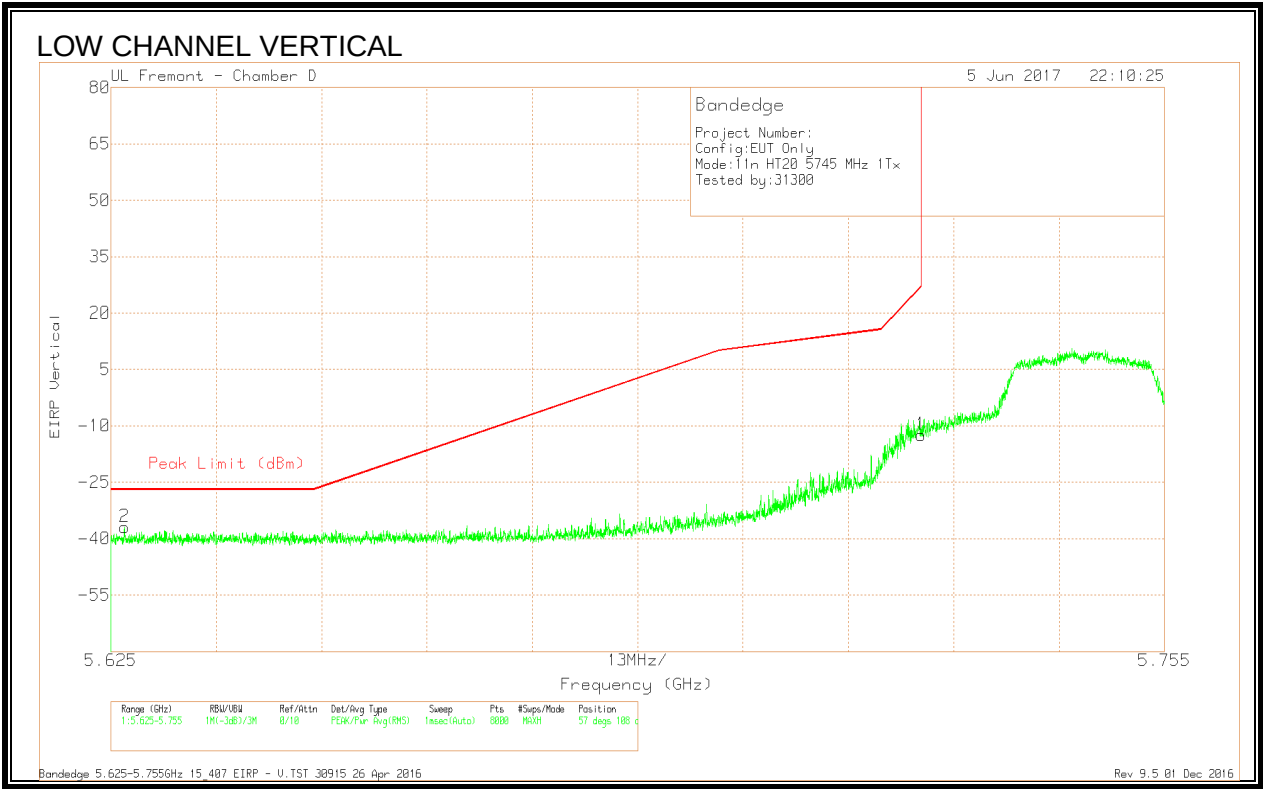
9.1.31. 11n HT20 UAT 2 SISO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



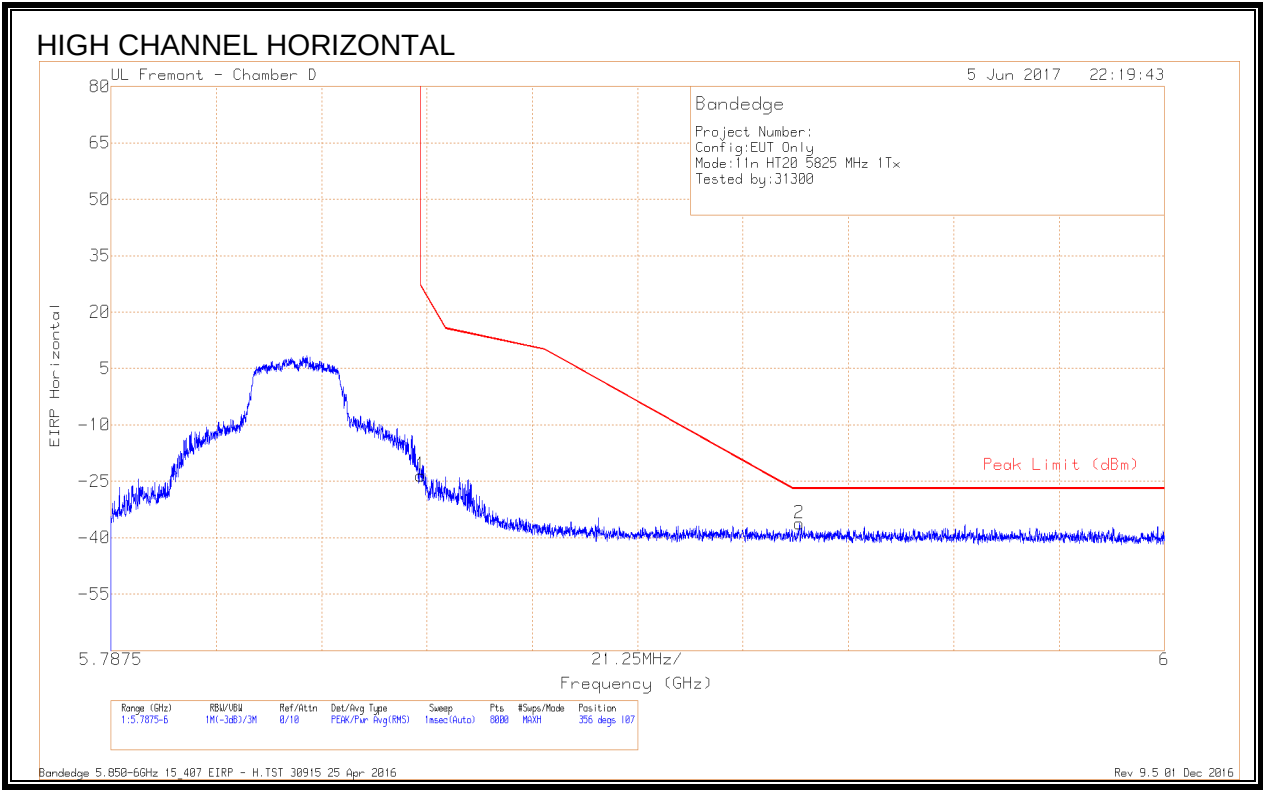
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.627	-65.78	Pk	34.6	-17.7	11.8	-37.08	-27	-10.08	307	349	H
1	5.725	-48.81	Pk	34.6	-17.5	11.8	-19.91	26.96	-46.87	307	349	H

Pk - Peak detector



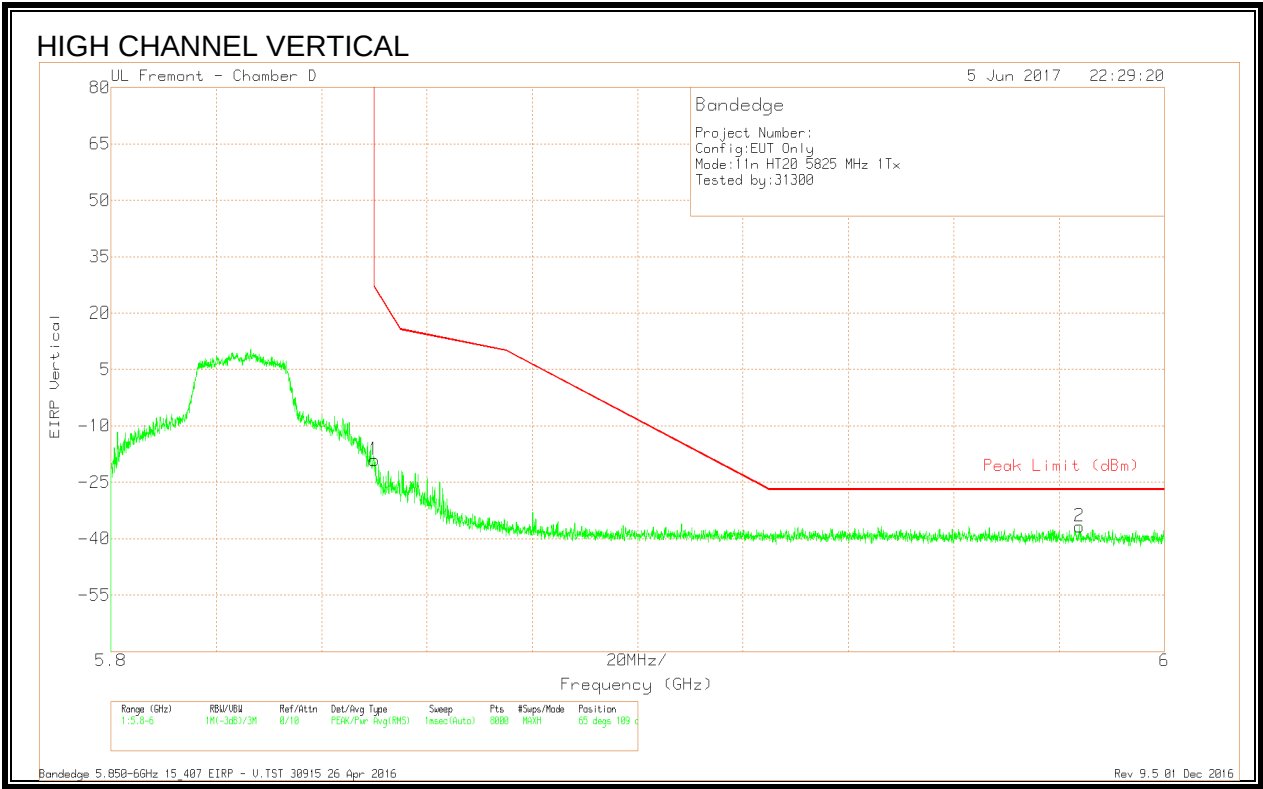
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.627	-65.71	Pk	34.6	-17.7	11.8	-37.01	-27	-10.01	57	108	V
1	5.725	-41.36	Pk	34.6	-17.5	11.8	-12.46	27	-39.46	57	108	V

Pk - Peak detector



Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Ftr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-52.69	Pk	35	-17.5	11.8	-23.39	26.98	-50.37	356	107	H
2	5.926	-65.66	Pk	35	-17.4	11.8	-36.26	-27	-9.26	356	107	H

Pk - Peak detector

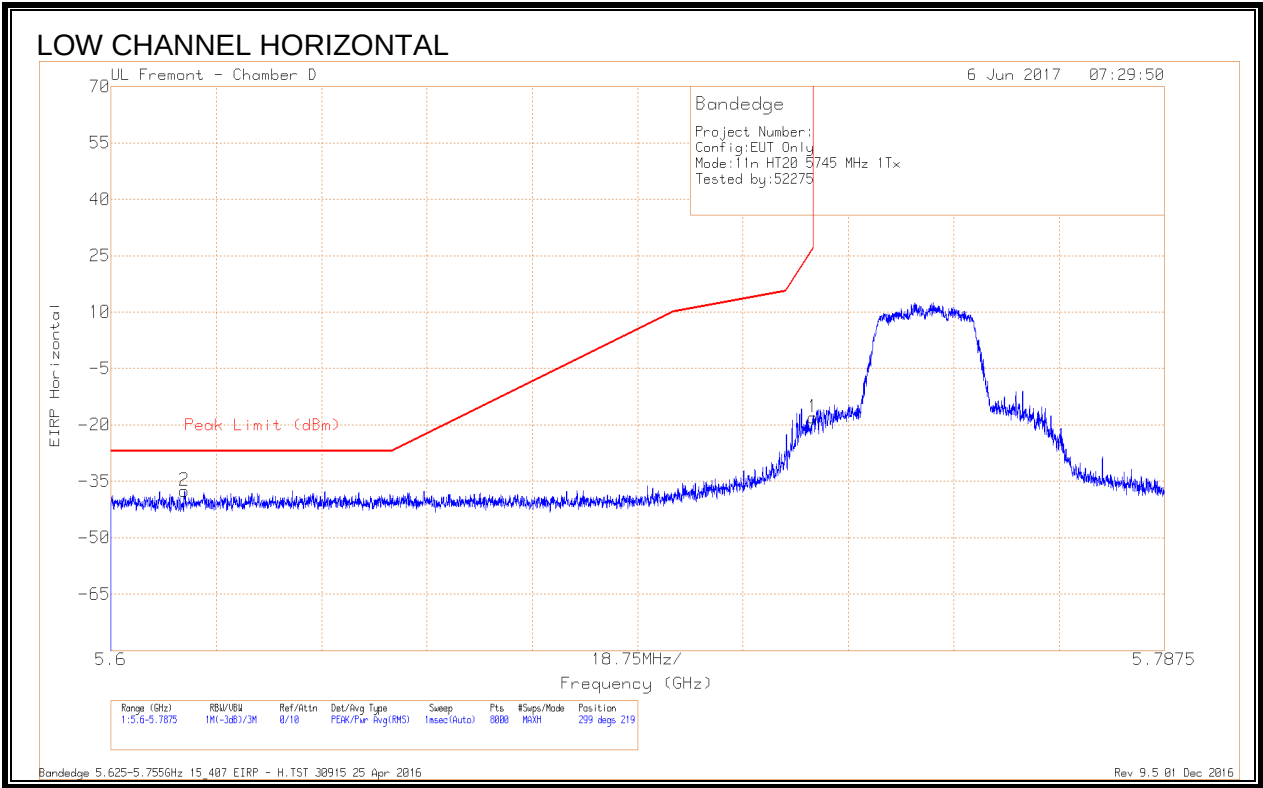


Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-48.42	Pk	35	-17.5	11.8	-19.12	26.99	-46.11	65	109	V
2	5.984	-66.28	PK	35.1	-17.3	11.8	-36.68	-27	-9.68	65	109	V

Pk - Peak detector

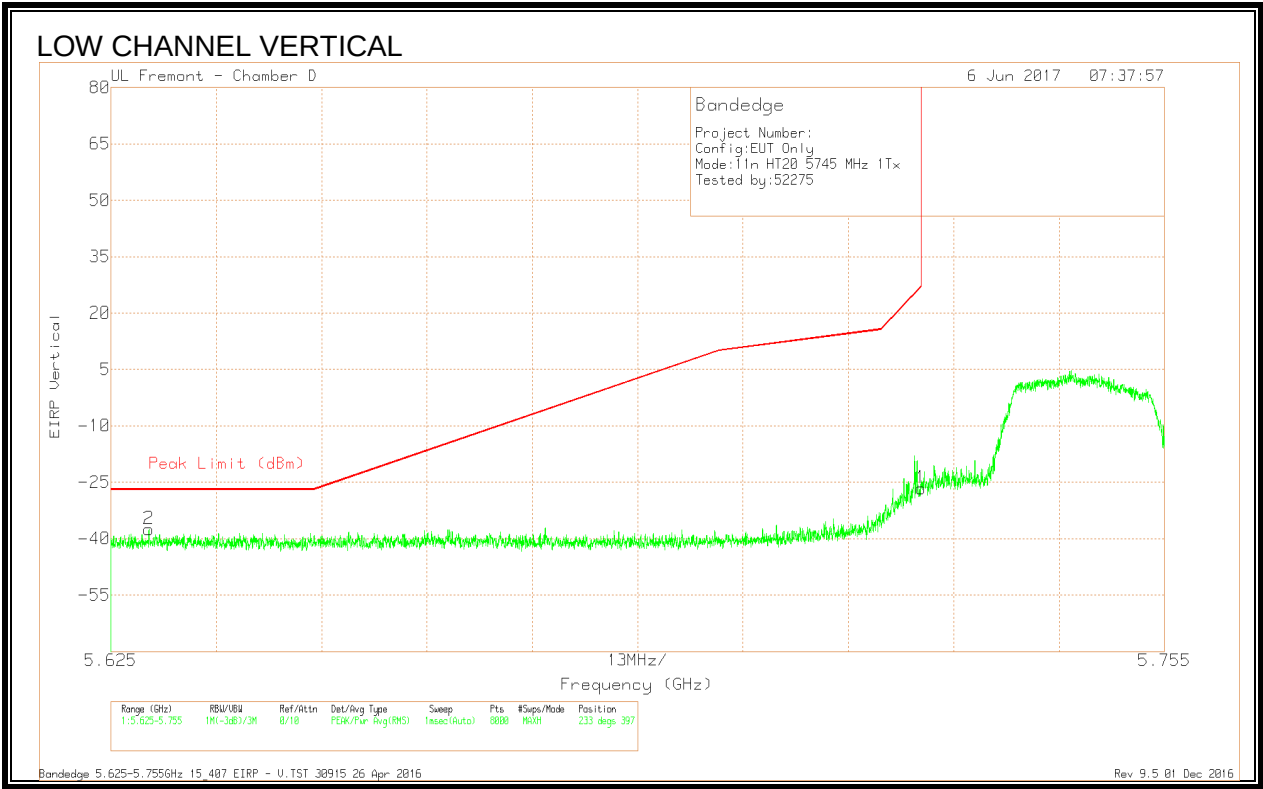
9.1.32. 11n HT20 LAT 3 SISO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



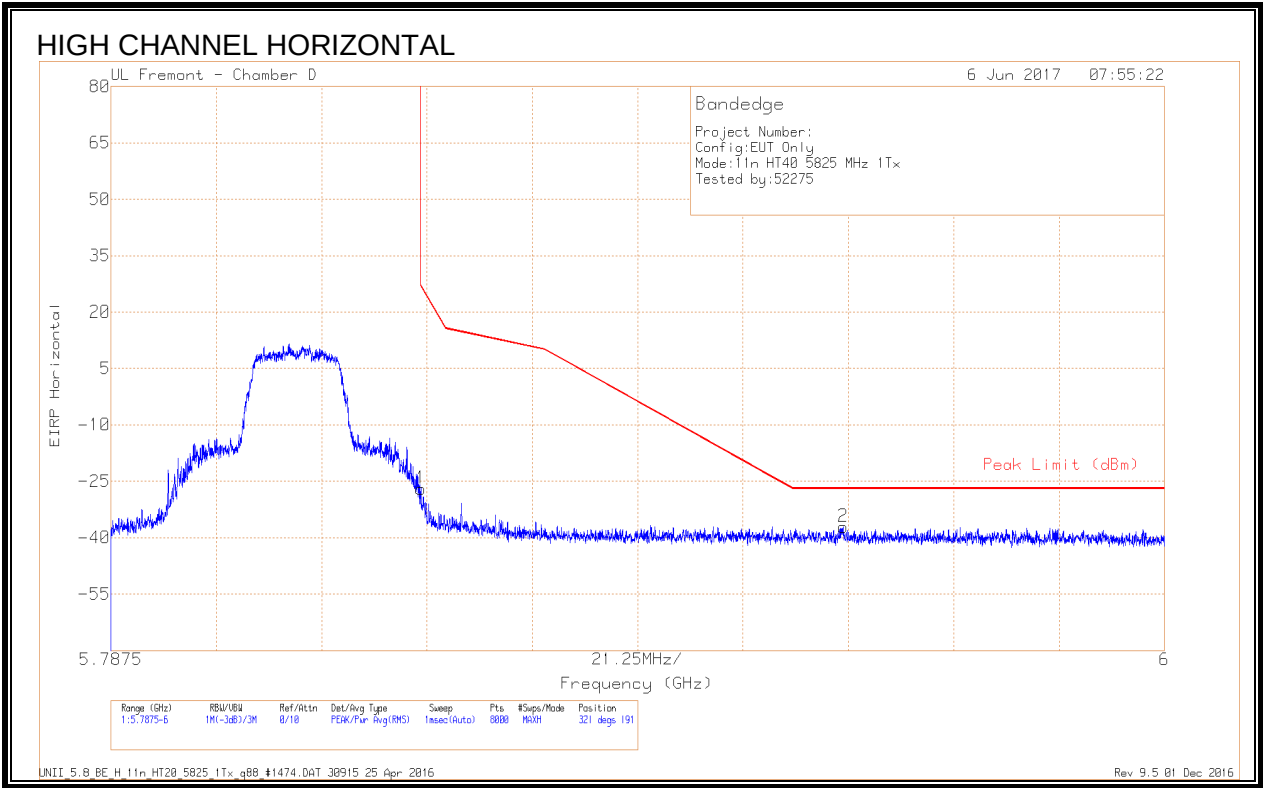
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.613	-66.2	Pk	34.6	-17.7	11.8	-37.5	-27	-10.5	299	219	H
1	5.725	-46.94	Pk	34.6	-17.5	11.8	-18.04	26.96	-45	299	219	H

Pk - Peak detector



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	5.63	-66.24	Pk	34.6	-17.6	11.8	-37.44	-27	-10.44	233	397	V
1	5.725	-55.58	Pk	34.6	-17.5	11.8	-26.68	27	-53.68	233	397	V

Pk - Peak detector



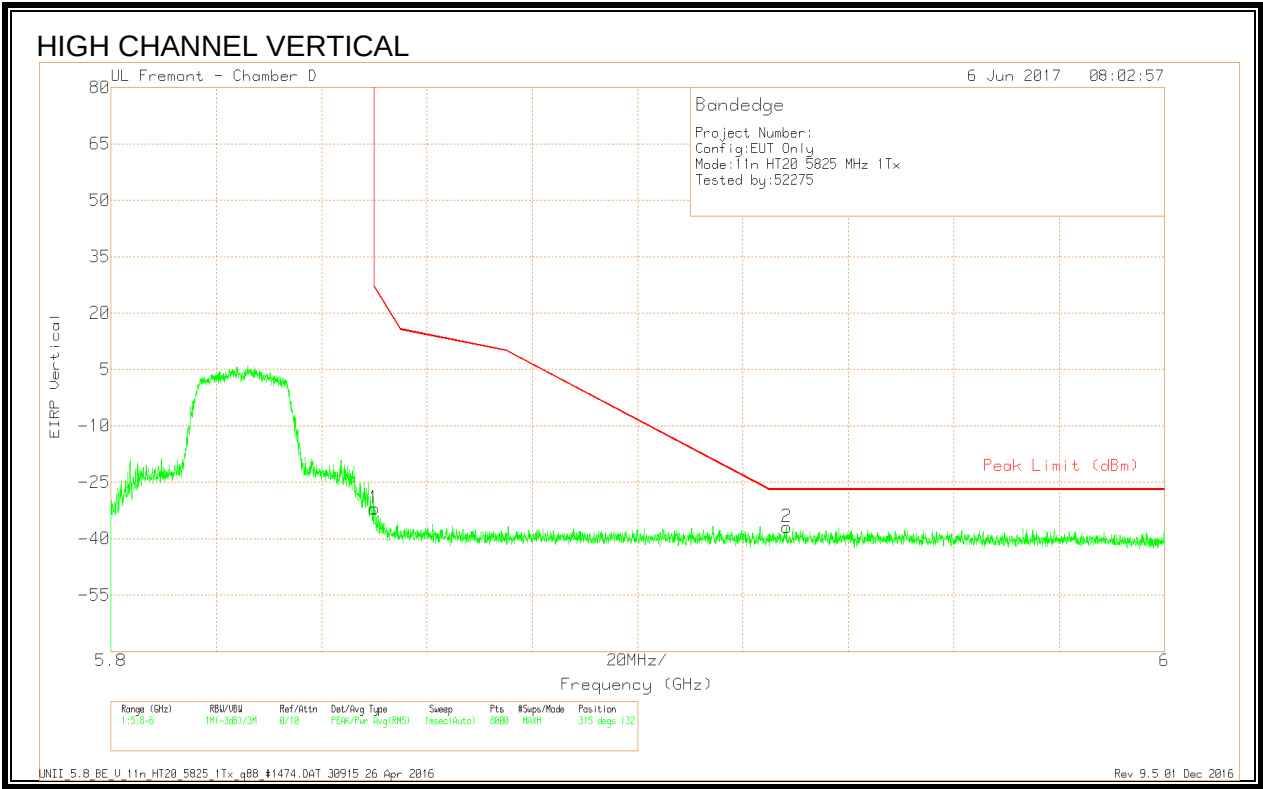
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/CbI/Filt/P ad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-56.28	Pk	35	-17.5	11.8	-26.98	26.98	-53.96	321	191	H
2	5.935	-66.56	Pk	35	-17.4	11.8	-37.16	-27	-10.16	321	191	H

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

Pk - Peak detector

UNII_5.8_BE_H_11n_HT20_5825_1Tx_q88_#1474.DAT 30915 25 Apr 2016

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Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Conversion Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-61.29	Pk	35	-17.5	11.8	-31.99	26.99	-58.98	315	132	V
2	5.928	-66.4	Pk	35	-17.3	11.8	-36.9	-27	-9.9	315	132	V

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

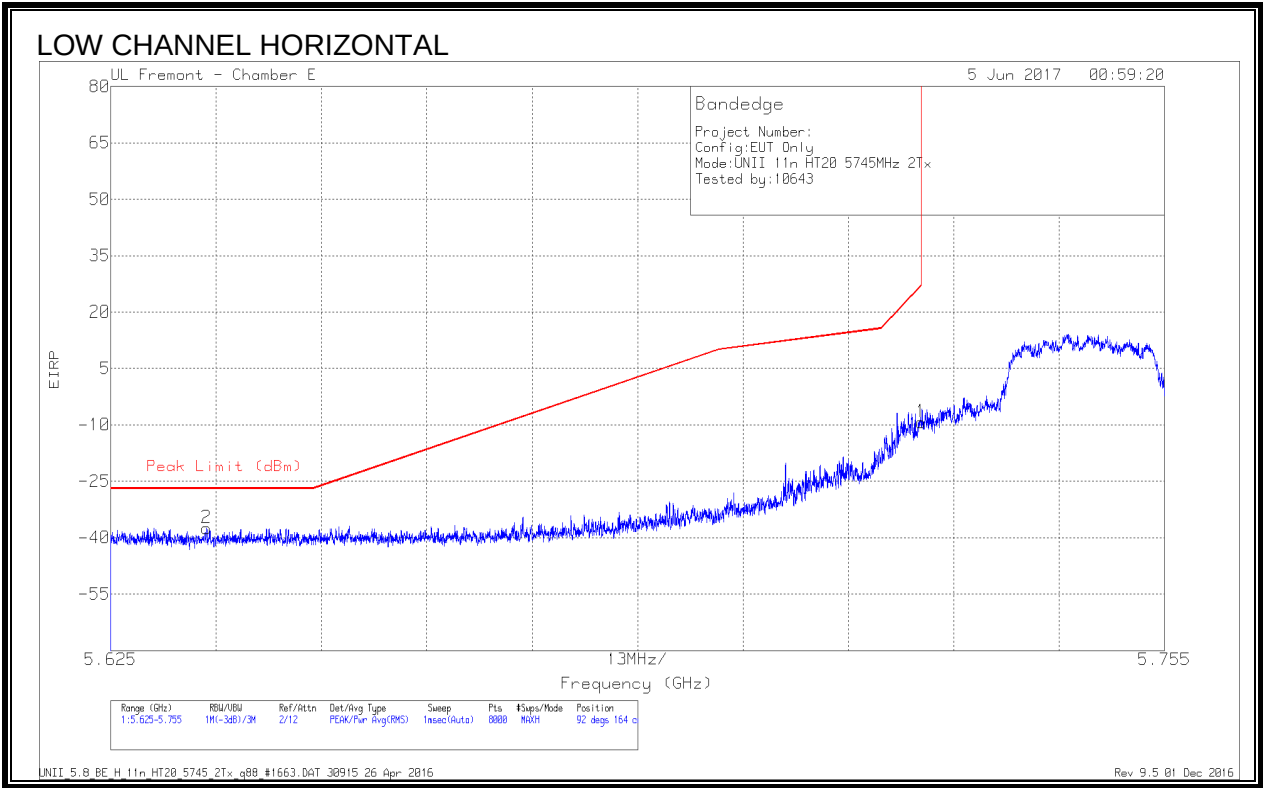
Pk - Peak detector

UNII_5.8_BE_V_11n_HT20_5825_1Tx_q88_#1474.DAT 30915 26 Apr 2016

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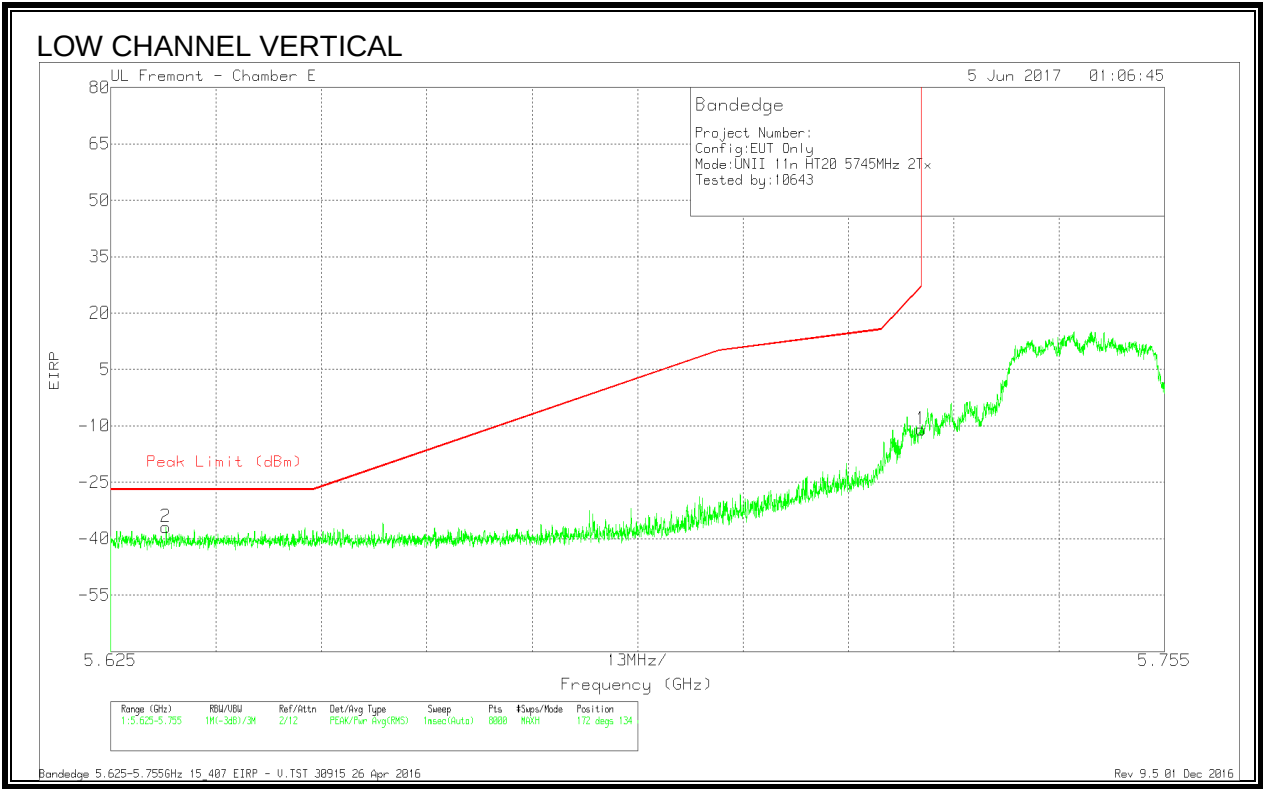
9.1.33. 11n HT20 2Tx CDD MIMO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



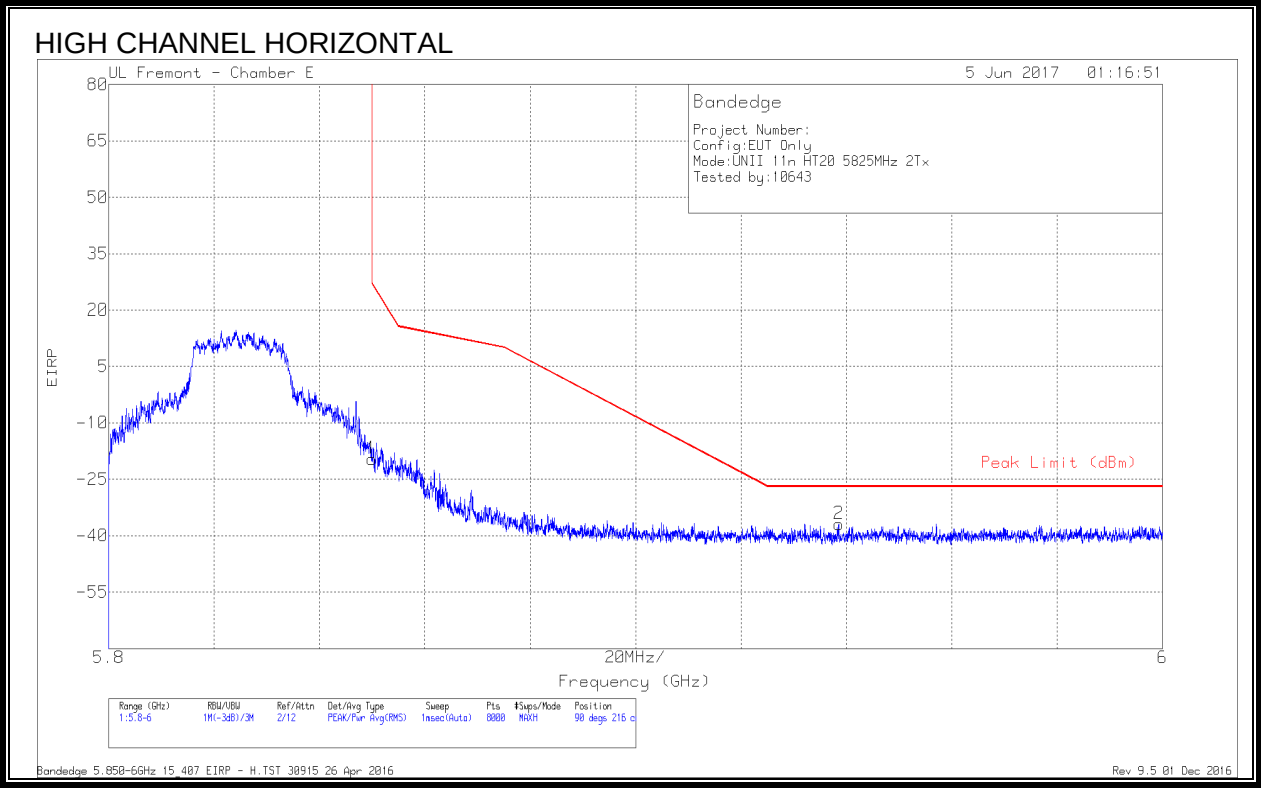
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Conversion Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.637	-64.55	Pk	34.9	-19.6	11.8	-37.45	-27	-10.45	92	164	H
1	5.725	-36.43	Pk	34.9	-19.6	11.8	-9.33	27	-36.33	92	164	H

Pk - Peak detector
UNII_5.8_BE_H_11n_HT20_5745_2Tx_q88_#1663.DAT 30915 26 Apr 2016
Rev 9.5 01 Dec 2016



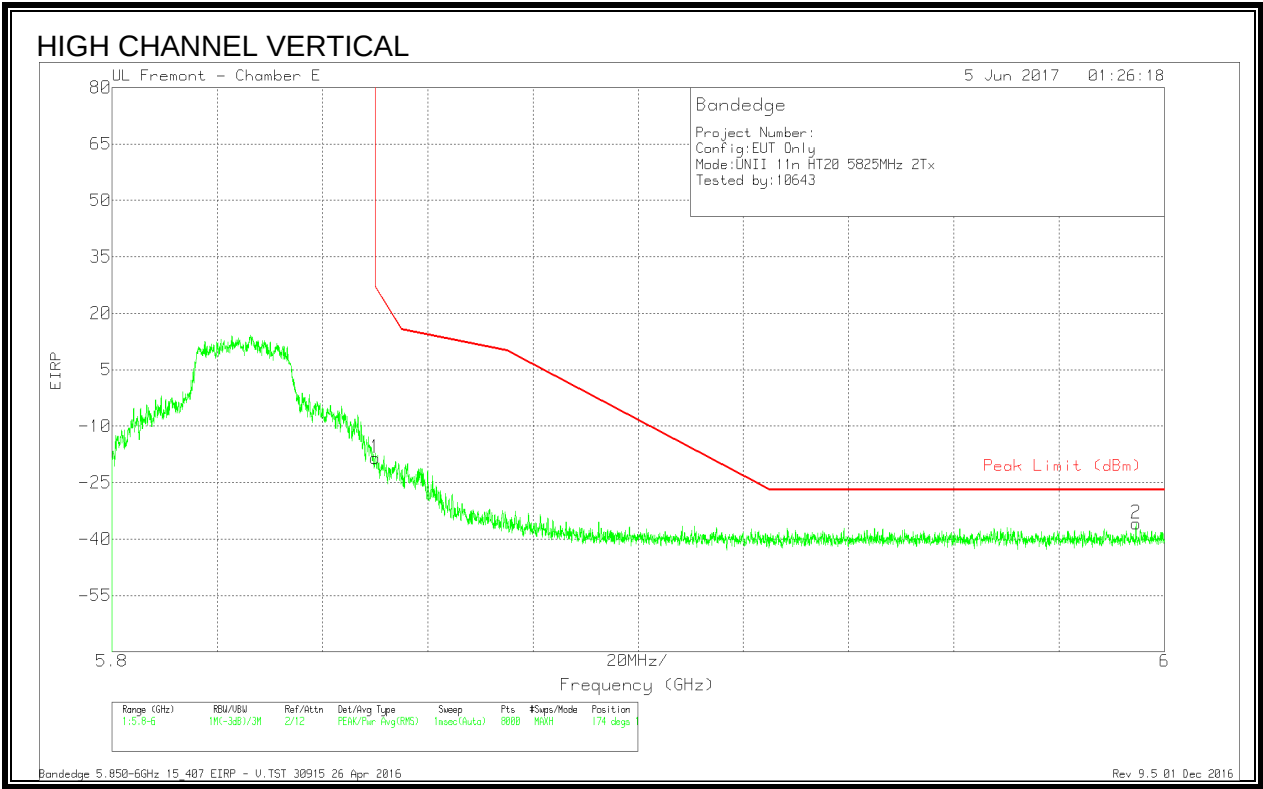
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Conversion Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.632	-63.95	Pk	34.9	-19.6	11.8	-36.85	-27	-9.85	172	134	V
1	5.725	-38.06	Pk	34.9	-19.6	11.8	-10.96	27	-37.96	172	134	V

Pk - Peak detector



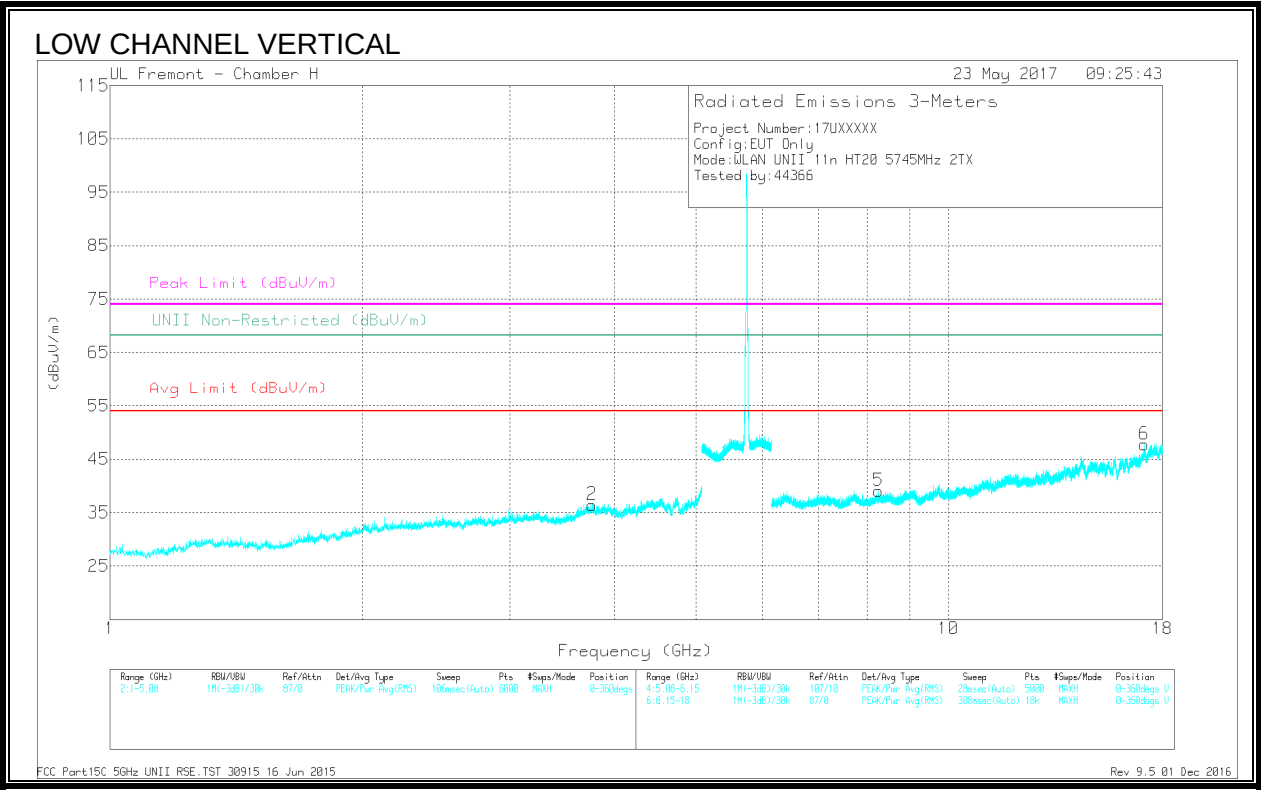
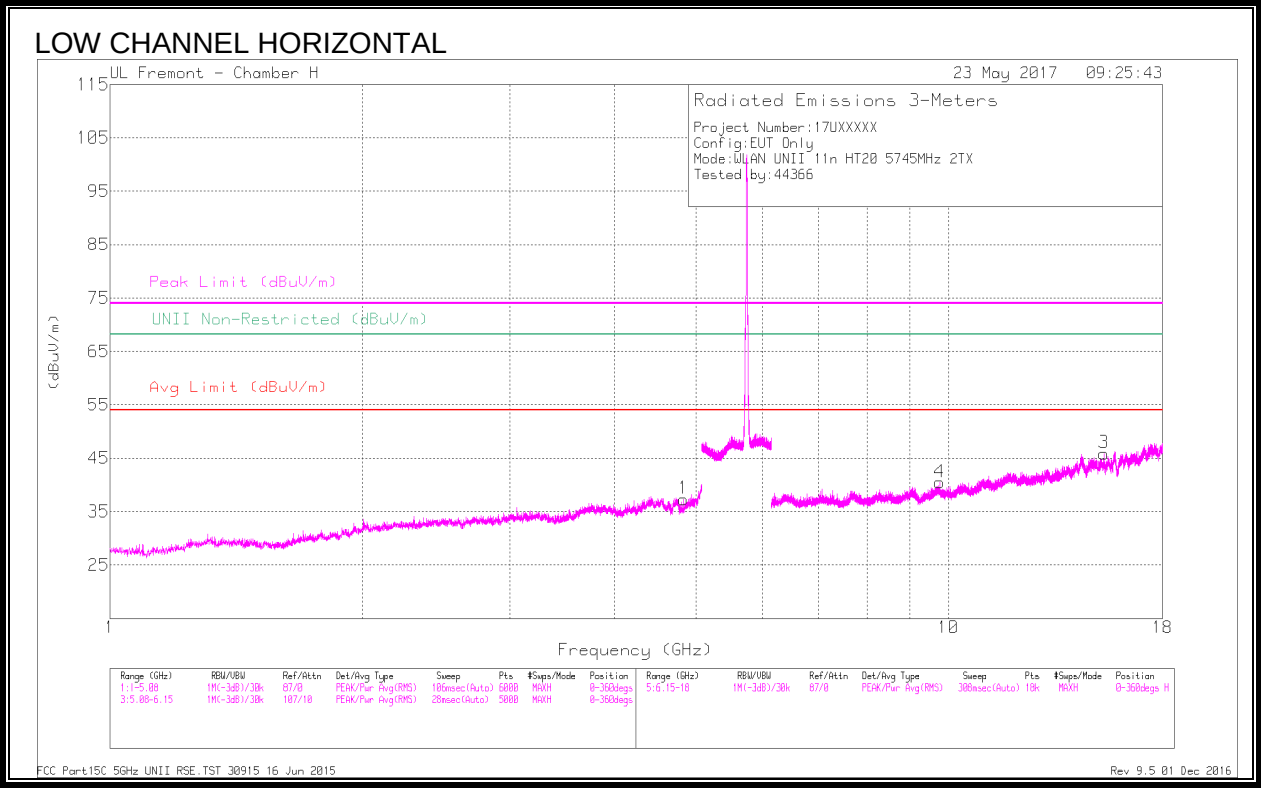
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/CbI/Filtr/P ad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-47.43	Pk	35.5	-19.5	11.8	-19.63	26.99	-46.62	90	216	H
2	5.939	-65	Pk	35.6	-19.3	11.8	-36.9	-27	-9.9	90	216	H

Pk - Peak detector



Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Conversion Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-46.22	Pk	35.5	-19.5	11.8	-18.42	26.99	-45.41	174	166	V
2	5.995	-64.4	Pk	35.6	-18.8	11.8	-35.8	-27	-8.8	174	166	V

Pk - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (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)	Polarization
1	* 4.833	43.28	PK-U	34.2	-34.6	42.88	-	-	74	-31.12	-	-	271	100	H
	* 4.834	31.71	ADR	34.2	-34.5	31.41	54	-22.59	-	-	-	-	271	100	H
2	* 3.757	45.6	PK-U	33.1	-35.7	43	-	-	74	-31	-	-	287	167	V
	* 3.757	33.96	ADR	33.1	-35.7	31.36	54	-22.64	-	-	-	-	287	167	V
5	* 8.256	39.16	PK-U	36.1	-29.6	45.66	-	-	74	-28.34	-	-	341	259	V
	* 8.253	27.03	ADR	36.1	-29.6	33.53	54	-20.47	-	-	-	-	341	259	V
4	9.759	38.13	PK-U	37.2	-29.4	45.93	-	-	-	-	68.2	-22.27	326	273	H
3	15.323	24.3	ADR	40.7	-24.7	40.3	-	-	-	-	-	-	274	317	H
6	17.129	35.29	PK-U	41.7	-22.5	54.49	-	-	-	-	68.2	-13.71	302	130	V

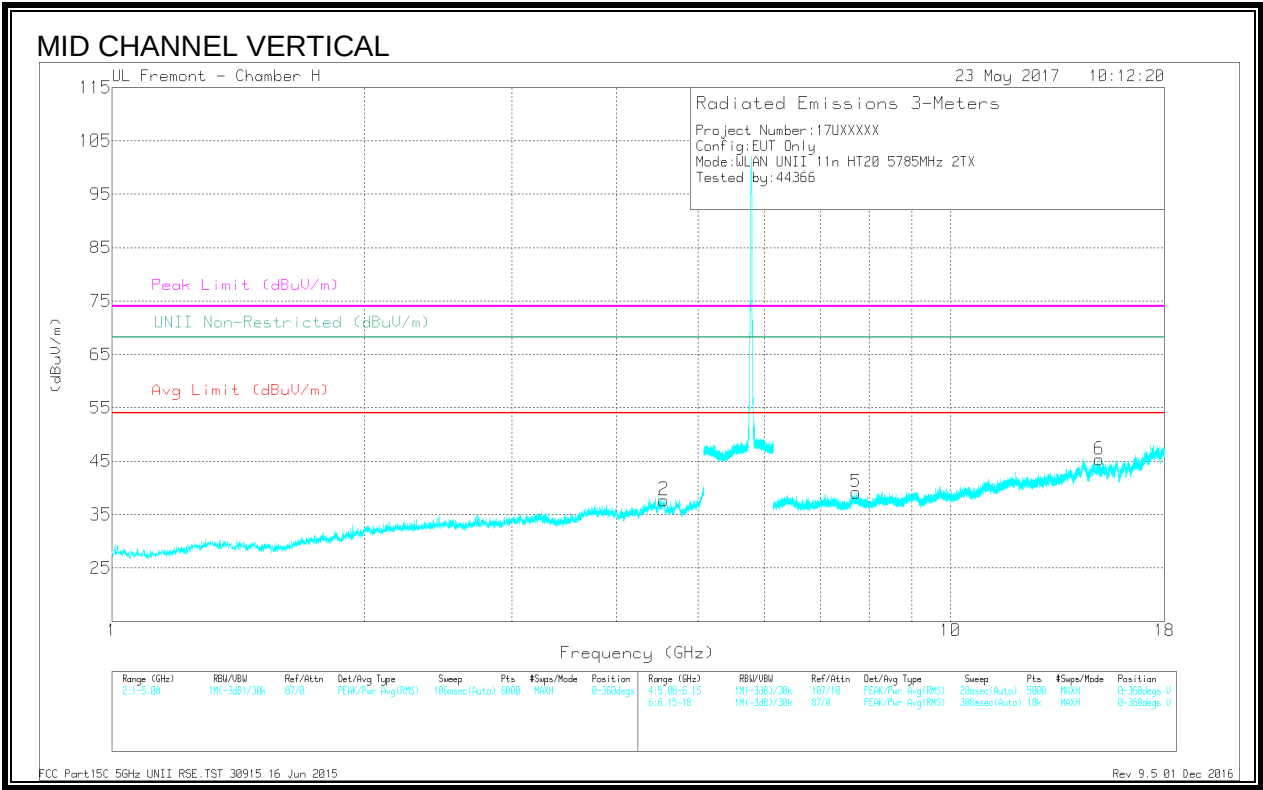
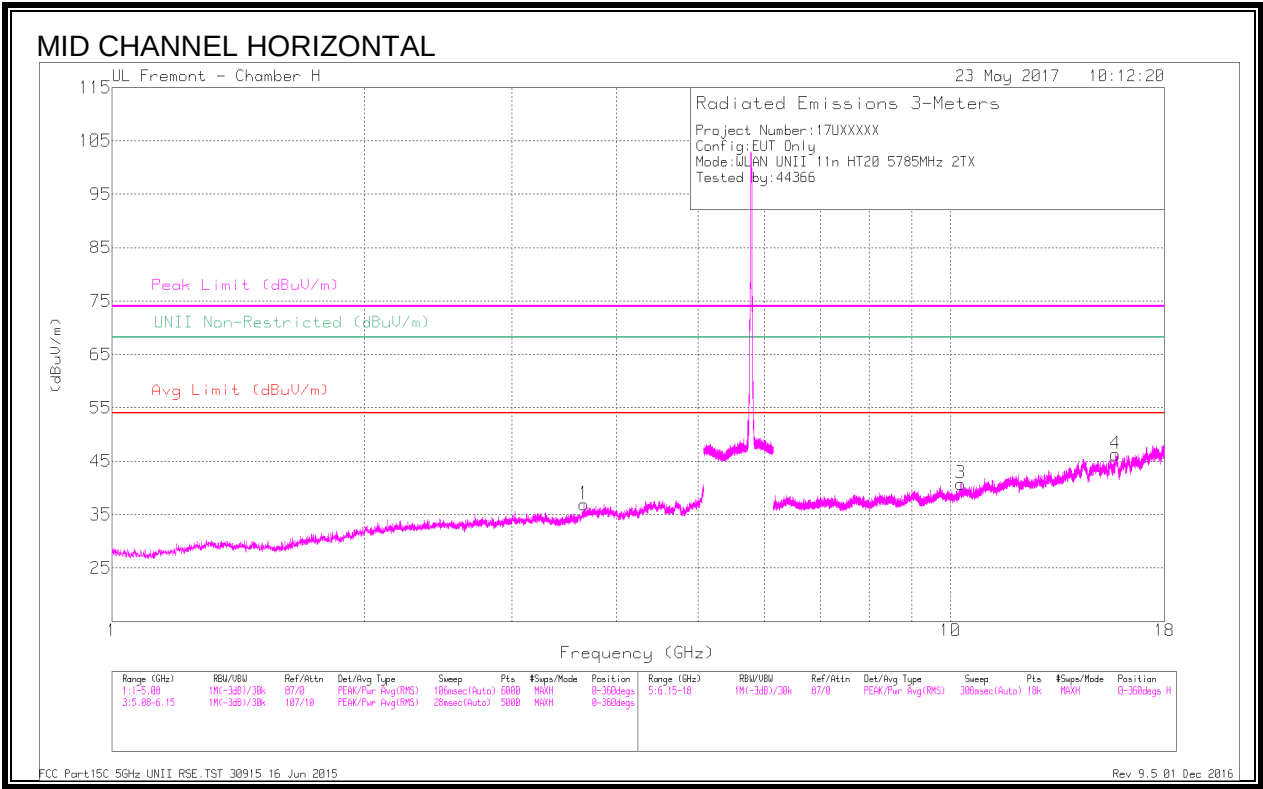
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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Marker	Frequen cy (GHz)	Meter Readin g (dBuV)	Det	AF T344 (dB/m)	Amp/C bl/Filtr/ Pad (dB)	Correc ted Readin g (dBuV/ m)	Avg Limit (dBuV/ m)	Margin (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	UNII Non- Restric ted (dBuV/ m)	PK Margin (dB)	Azimu t (Degs)	Height (cm)	Polarit y
1	* 3.657	46.31	PK-U	33.1	-35.9	43.51	-	-	74	-30.49	-	-	261	226	H
	* 3.657	34.24	ADR	33.1	-35.9	31.44	54	-22.56	-	-	-	-	261	226	H
2	* 4.552	45.05	PK-U	34.3	-34.9	44.45	-	-	74	-29.55	-	-	96	176	V
	* 4.553	33.39	ADR	34.3	-34.9	32.79	54	-21.21	-	-	-	-	96	176	V
4	* 15.737	35.82	PK-U	41.3	-24	53.12	-	-	74	-20.88	-	-	326	140	H
	* 15.737	24.37	ADR	41.3	-23.9	41.77	54	-12.23	-	-	-	-	326	140	H
5	* 7.714	40.9	PK-U	36.2	-31.2	45.9	-	-	74	-28.1	-	-	204	177	V
	* 7.714	29.11	ADR	36.2	-31.2	34.11	54	-19.89	-	-	-	-	204	177	V
3	10.284	38.61	PK-U	37.4	-28.8	47.21	-	-	-	-	68.2	-20.99	277	330	H
6	15.052	35.27	PK-U	40.8	-24.8	51.27	-	-	-	-	68.2	-16.93	303	246	V

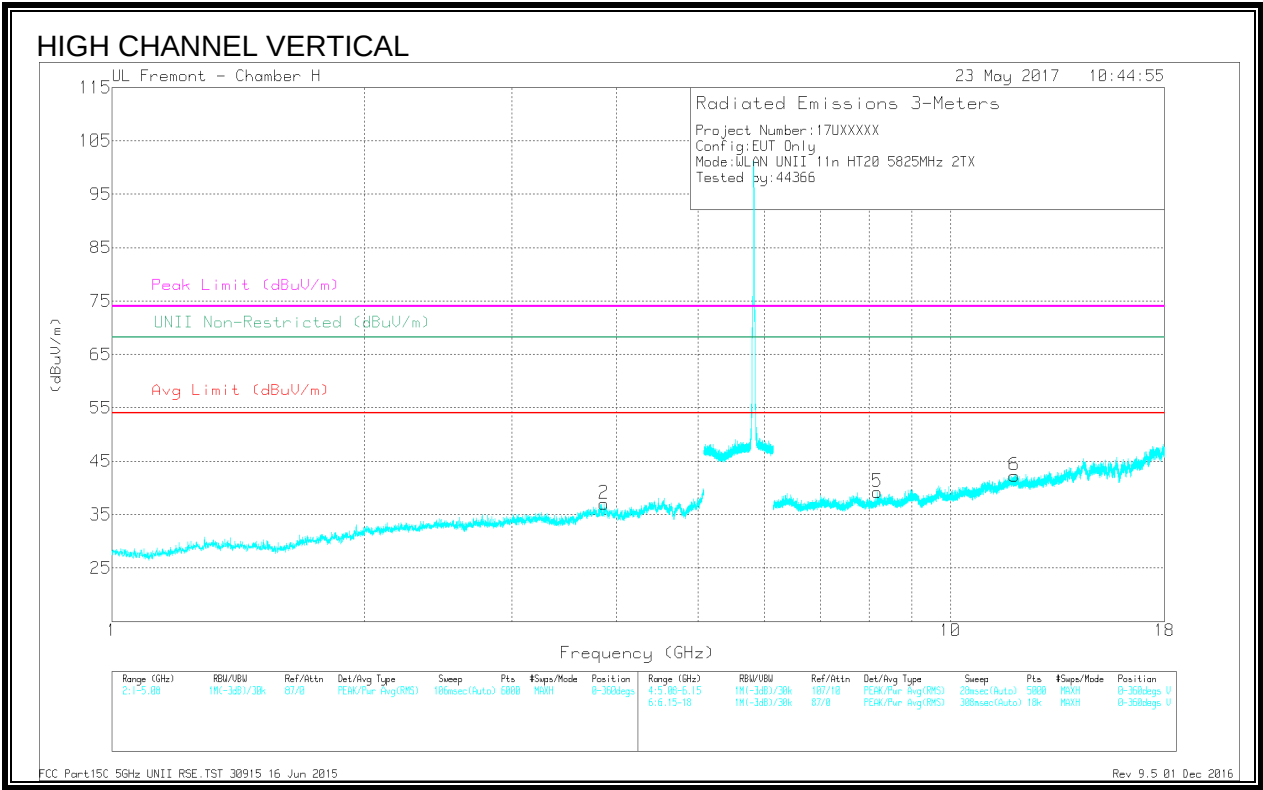
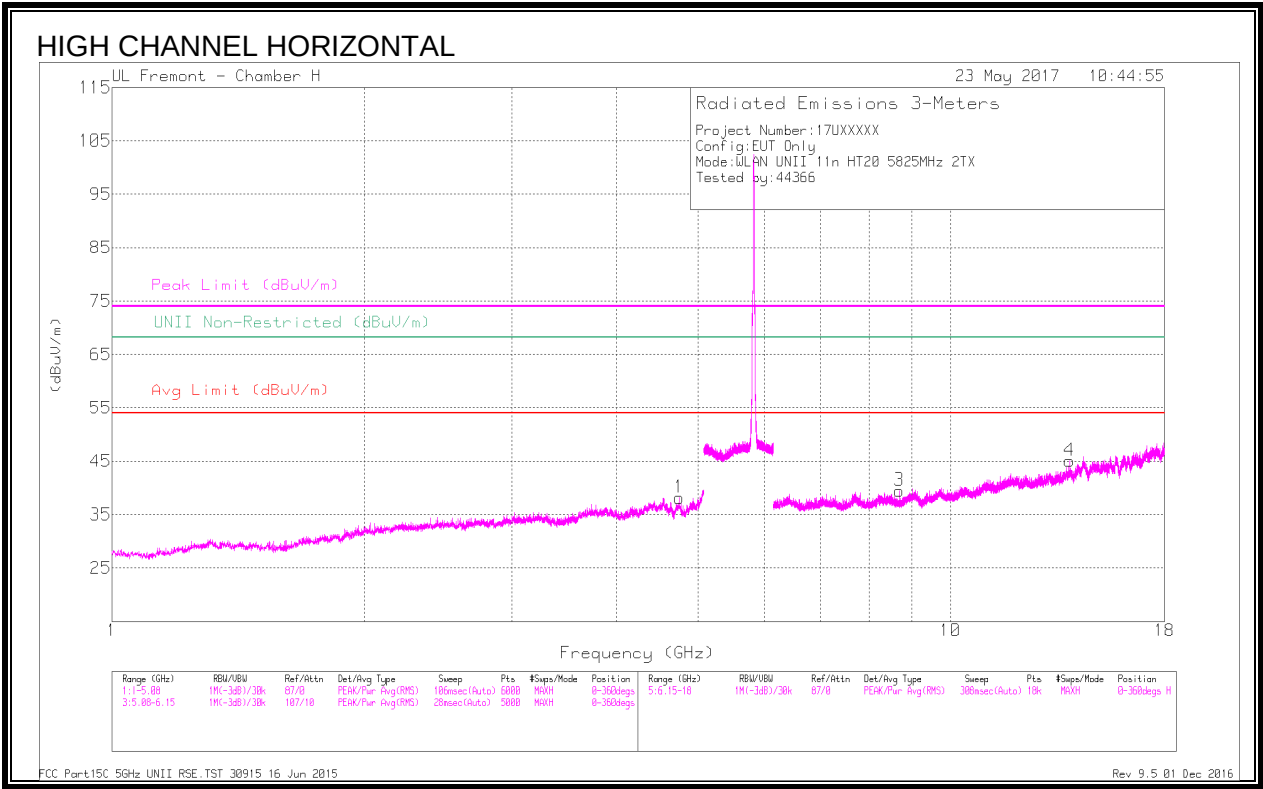
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (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)	Polarization
1	* 4.747	43.02	PK-U	34.2	-34.1	43.12	-	-	74	-30.88	-	-	247	397	H
	* 4.747	31.98	ADR	34.2	-34.1	32.08	54	-21.92	-	-	-	-	247	397	H
2	* 3.864	45.5	PK-U	33.3	-35.6	43.2	-	-	74	-30.8	-	-	123	285	V
	* 3.864	33.86	ADR	33.3	-35.6	31.56	54	-22.44	-	-	-	-	123	285	V
5	* 8.185	38.59	PK-U	36.2	-30	44.79	-	-	74	-29.21	-	-	236	180	V
	* 8.184	27.99	ADR	36.2	-30	34.19	54	-19.81	-	-	-	-	236	180	V
6	* 11.919	36.61	PK-U	39.1	-26.7	49.01	-	-	74	-24.99	-	-	340	301	V
	* 11.919	25.21	ADR	39.1	-26.7	37.61	54	-16.39	-	-	-	-	340	301	V
3	8.689	38.48	PK-U	36	-29.9	44.58	-	-	-	-	68.2	-23.62	45	319	H
4	13.868	35.61	PK-U	39.4	-25.1	49.91	-	-	-	-	68.2	-18.29	220	134	H

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

PK-U - U-NII: Maximum Peak

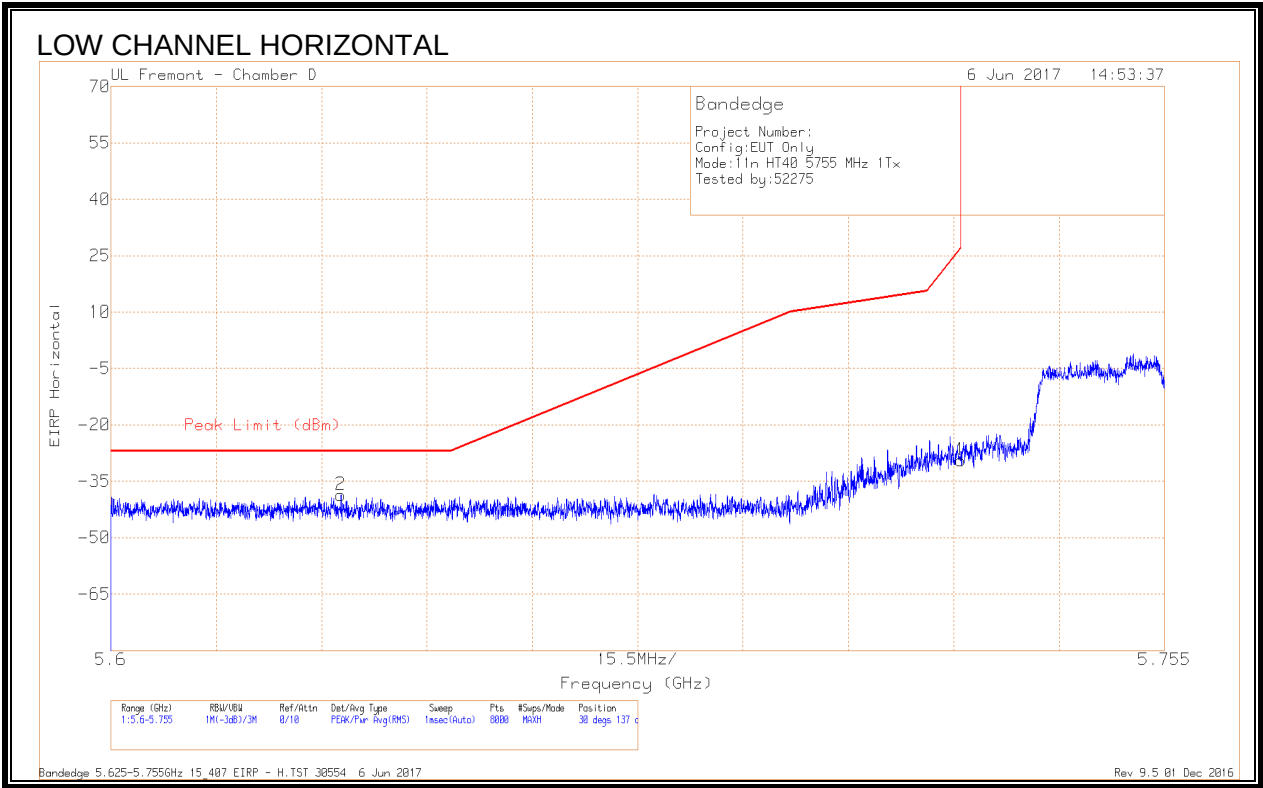
ADR - U-NII AD primary method, RMS average

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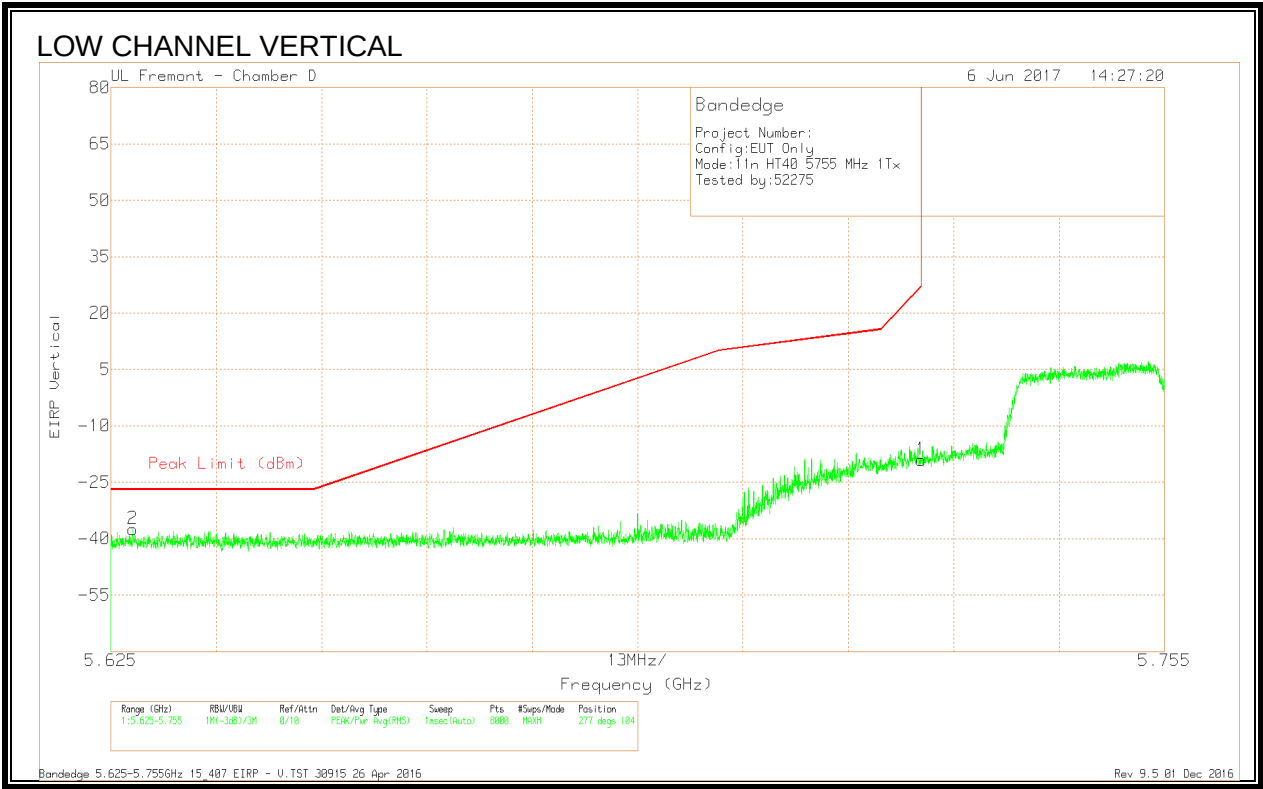
9.1.34. 11n HT40 UAT 2 SISO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



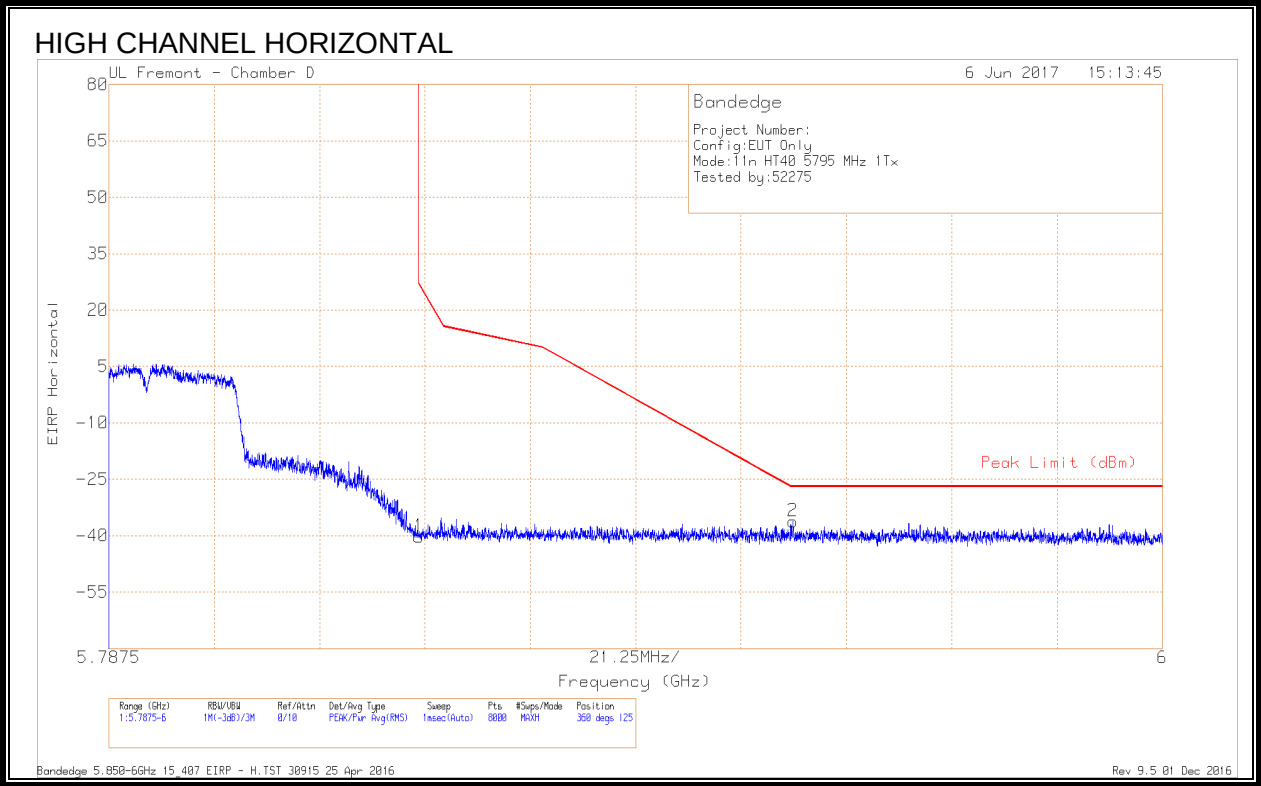
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Conversion Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.634	-67.56	Pk	34.6	-17.5	11.8	-38.66	-27	-11.66	30	137	H
1	5.725	-58.4	Pk	34.6	-17.5	11.8	-29.5	26.96	-56.46	30	137	H

Pk - Peak detector



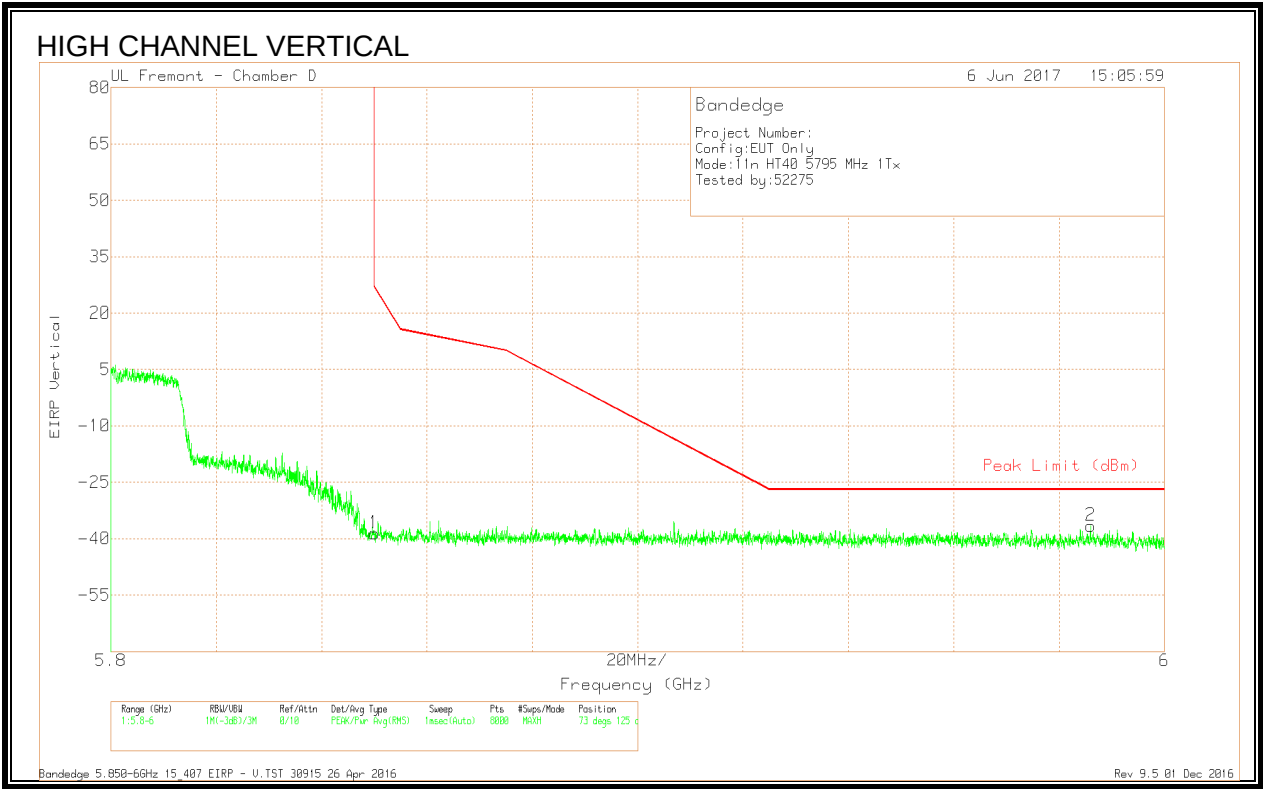
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Conversion Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.628	-66.22	Pk	34.6	-17.7	11.8	-37.52	-27	-10.52	277	104	V
1	5.725	-47.99	Pk	34.6	-17.5	11.8	-19.09	27	-46.09	277	104	V

Pk - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-69.54	Pk	35	-17.5	11.8	-40.24	26.98	-67.22	360	125	H
2	5.925	-65.58	Pk	35	-17.4	11.8	-36.18	-27	-9.18	360	125	H

Pk - Peak detector

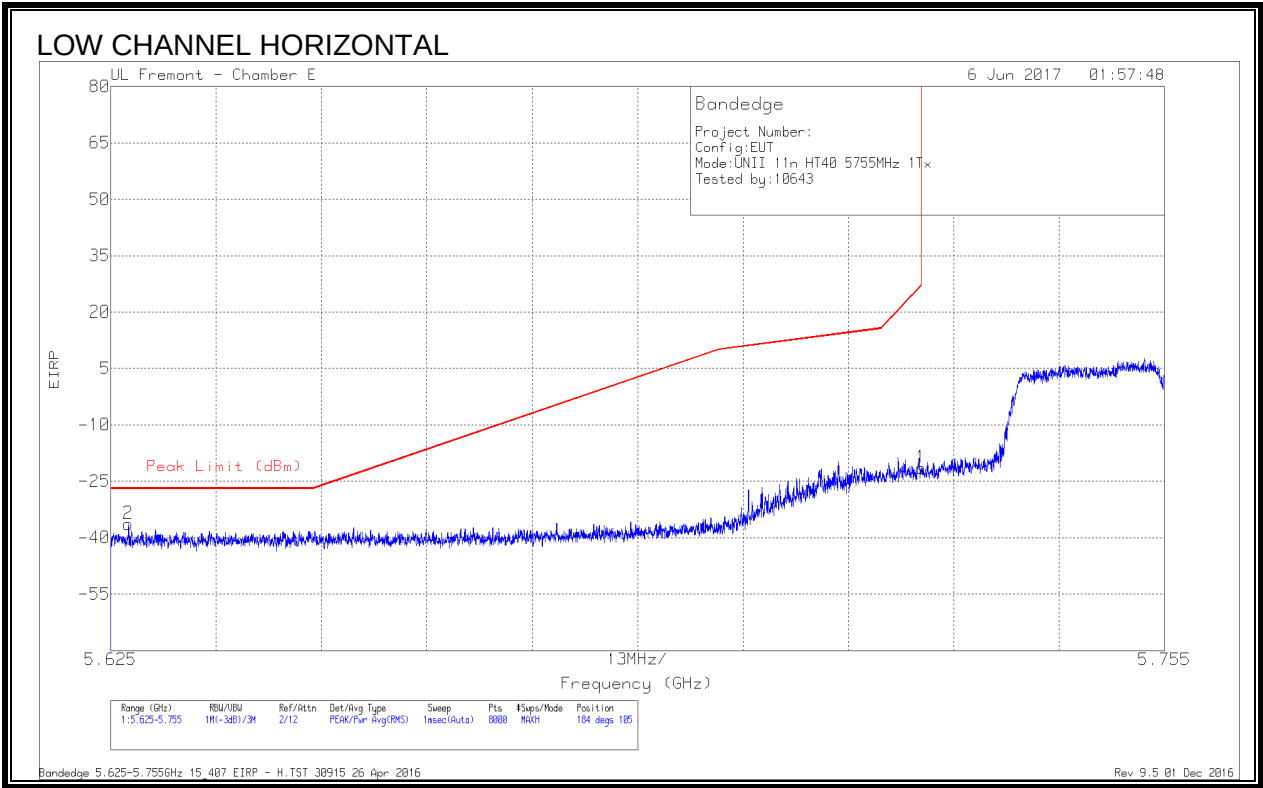


Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/Filtr/P ad (dB)	Conversion Factor (dB)	Correcte d Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-67.88	Pk	35	-17.5	11.8	-38.58	26.99	-65.57	73	125	V
2	5.986	-66.05	Pk	35.1	-17.4	11.8	-36.55	-27	-9.55	73	125	V

Pk - Peak detector

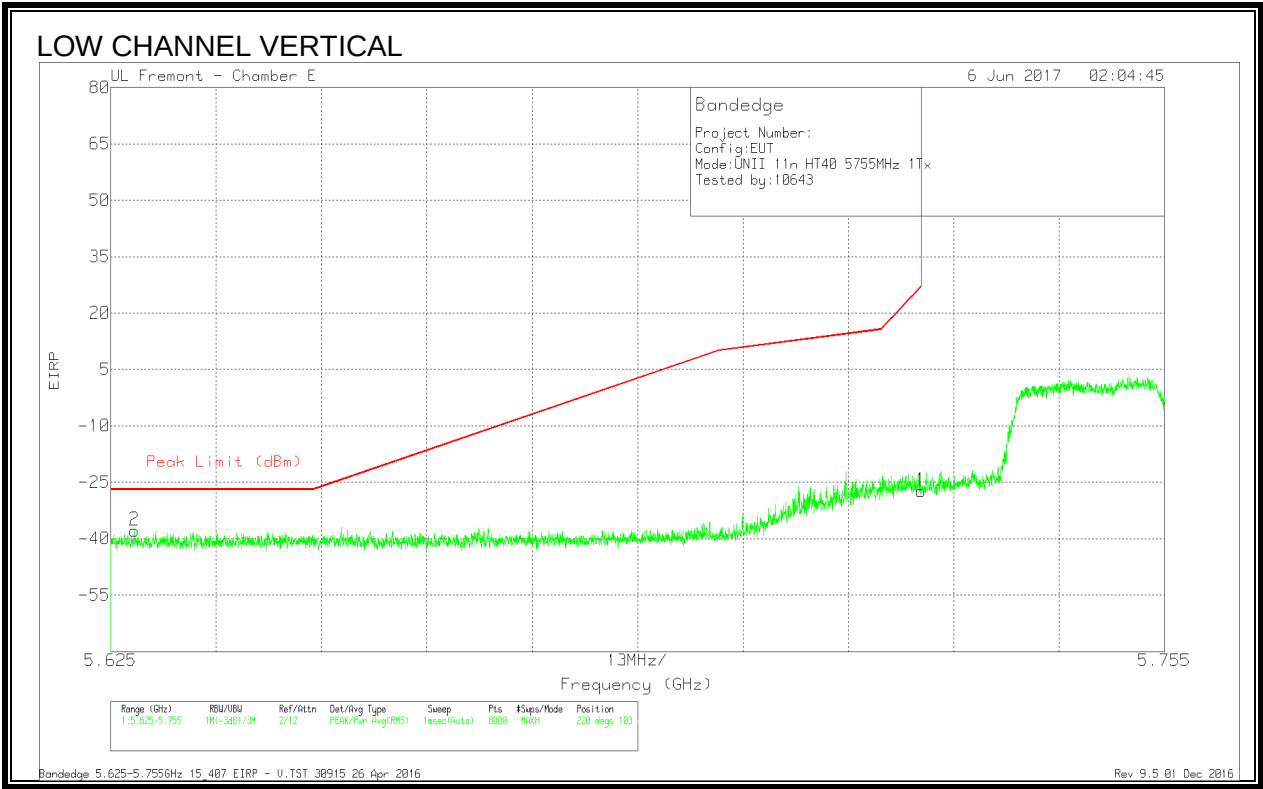
9.1.35. 11n HT40 LAT 3 SISO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



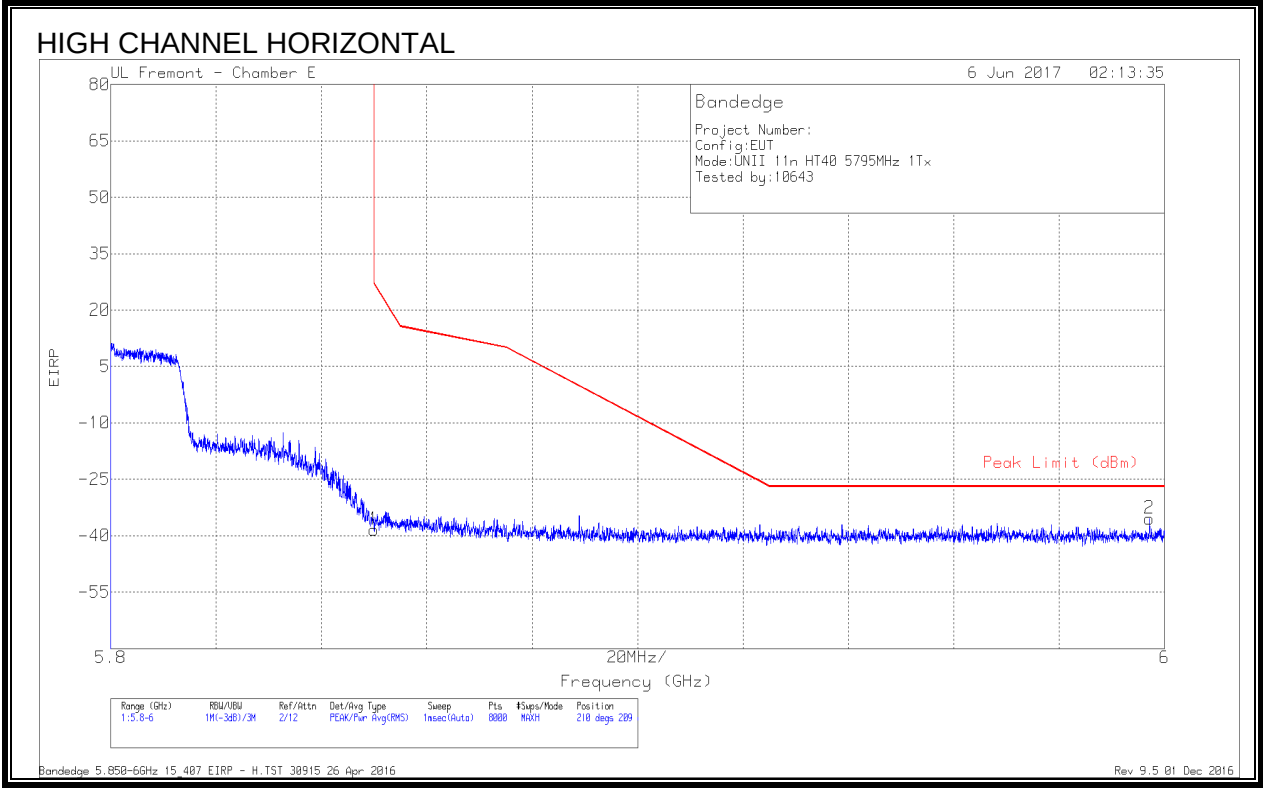
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.627	-63.41	Pk	34.9	-19.6	11.8	-36.31	-27	-9.31	184	105	H
1	5.725	-48.61	Pk	34.9	-19.6	11.8	-21.51	27	-48.51	184	105	H

Pk - Peak detector



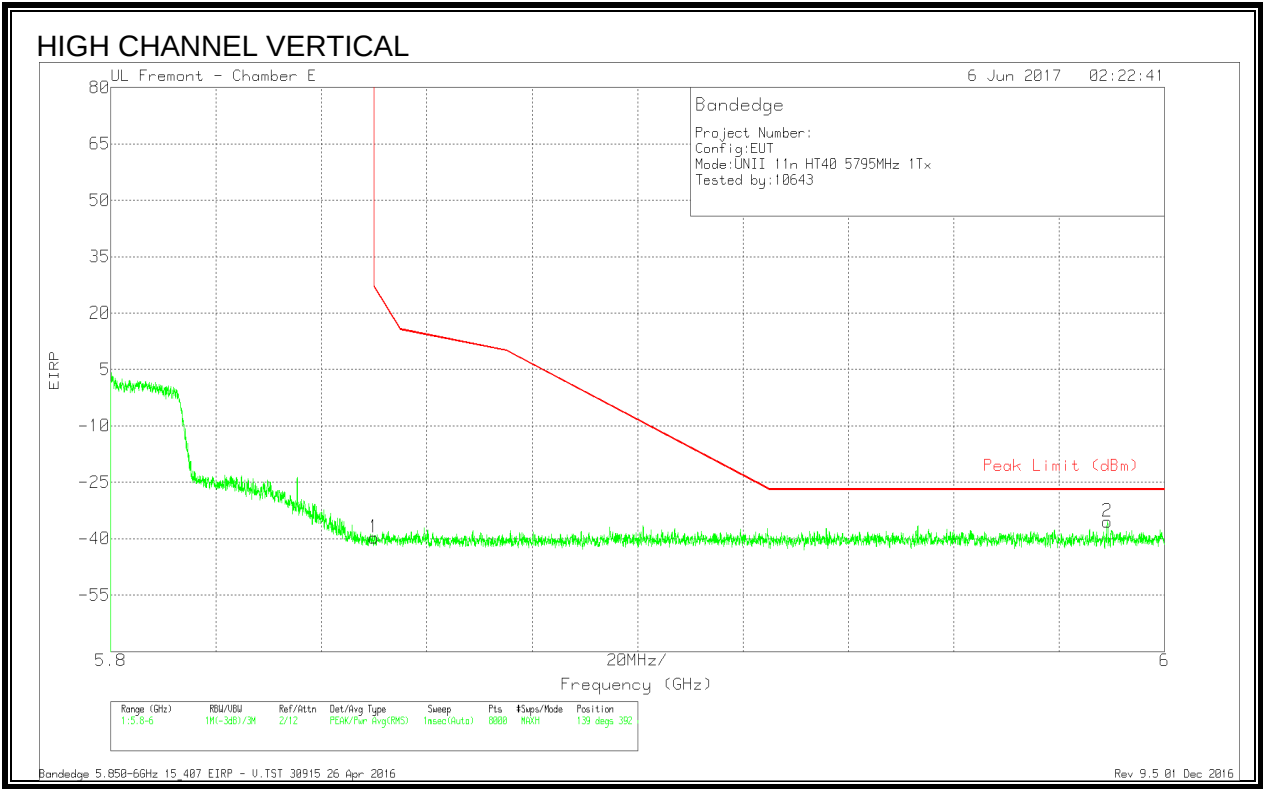
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/CbI/ Fitr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.628	-64.86	Pk	34.9	-19.6	11.8	-37.76	-27	-10.76	220	103	V
1	5.725	-54.36	Pk	34.9	-19.6	11.8	-27.26	27	-54.26	220	103	V

Pk - Peak detector



Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.14	Pk	35.5	-19.5	11.8	-38.34	26.99	-65.33	210	209	H
2	5.997	-64.12	Pk	35.6	-18.7	11.8	-35.42	-27	-8.42	210	209	H

Pk - Peak detector

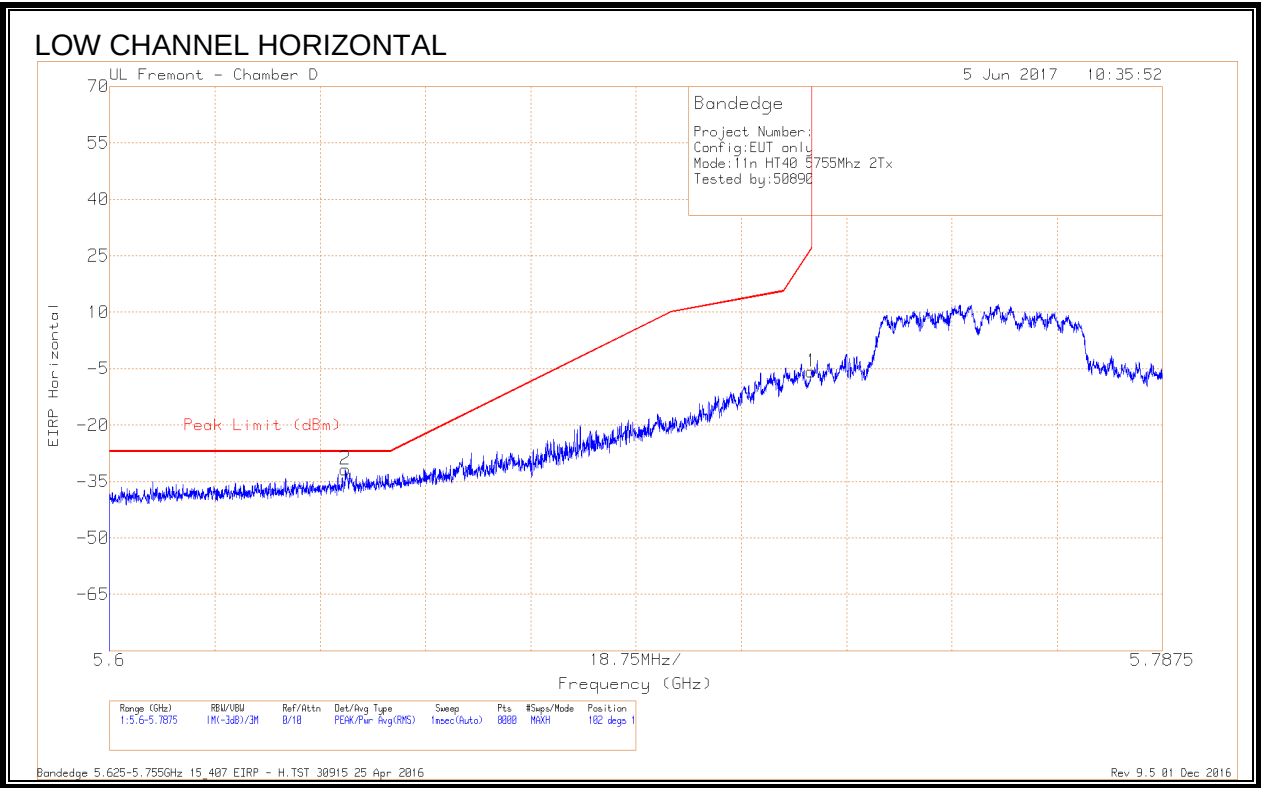


Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/CbI/ Filt/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-67.49	Pk	35.5	-19.5	11.8	-39.69	26.99	-66.68	139	392	V
2	5.989	-64.13	Pk	35.6	-18.7	11.8	-35.43	-27	-8.43	139	392	V

Pk - Peak detector

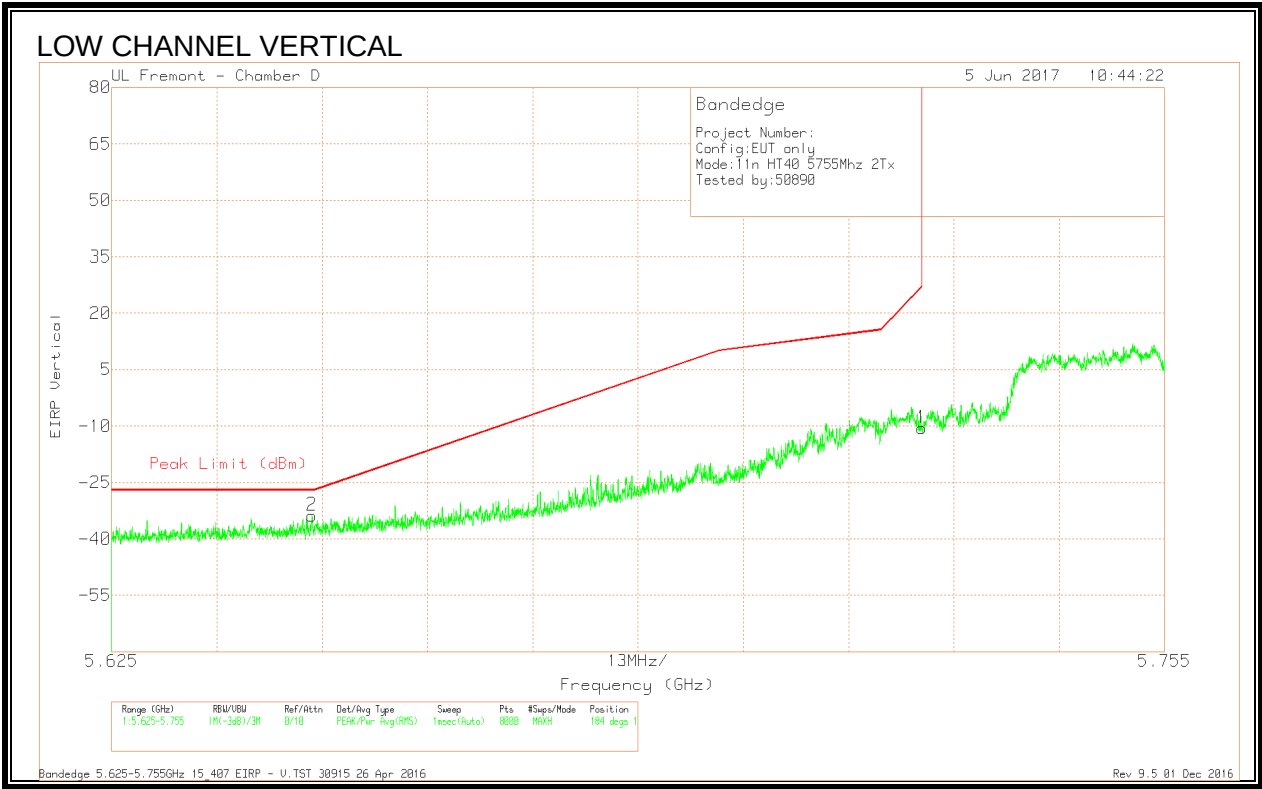
9.1.36. 11n HT40 2TX CDD MIMO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



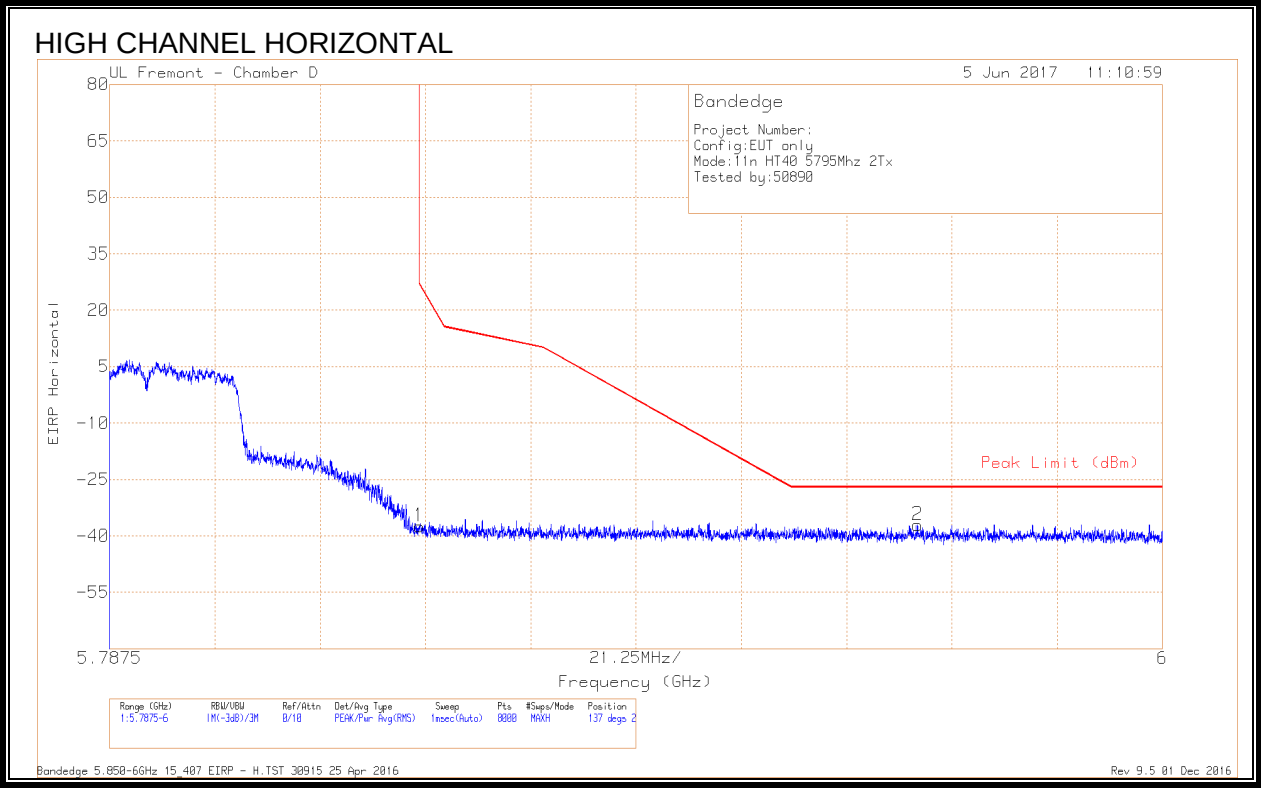
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.642	-60.56	Pk	34.6	-17.6	11.8	-31.76	-27	-4.76	102	157	H
1	5.725	-34.69	Pk	34.6	-17.5	11.8	-5.79	26.96	-32.75	102	157	H

Pk - Peak detector



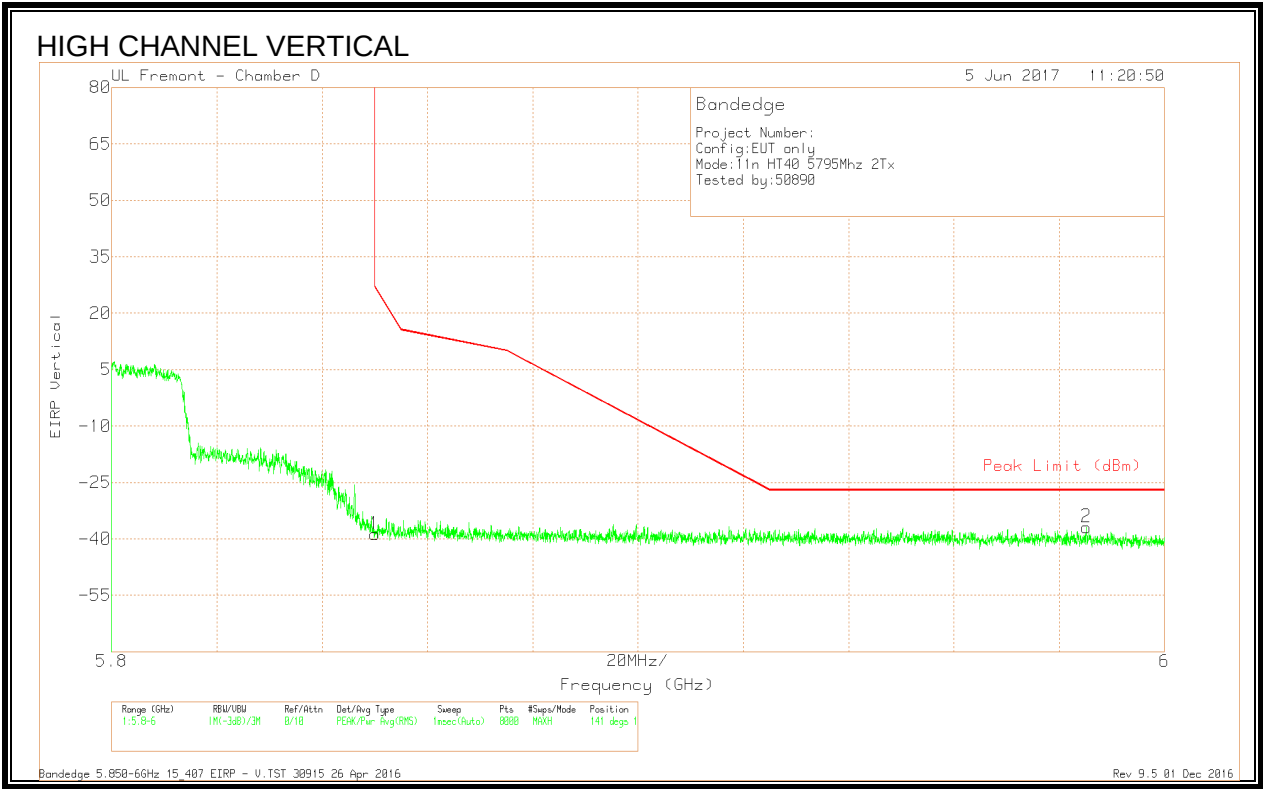
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.65	-62.66	Pk	34.6	-17.5	11.8	-33.76	-27	-6.76	184	153	V
1	5.725	-39.41	Pk	34.6	-17.5	11.8	-10.51	27	-37.51	184	153	V

Pk - Peak detector



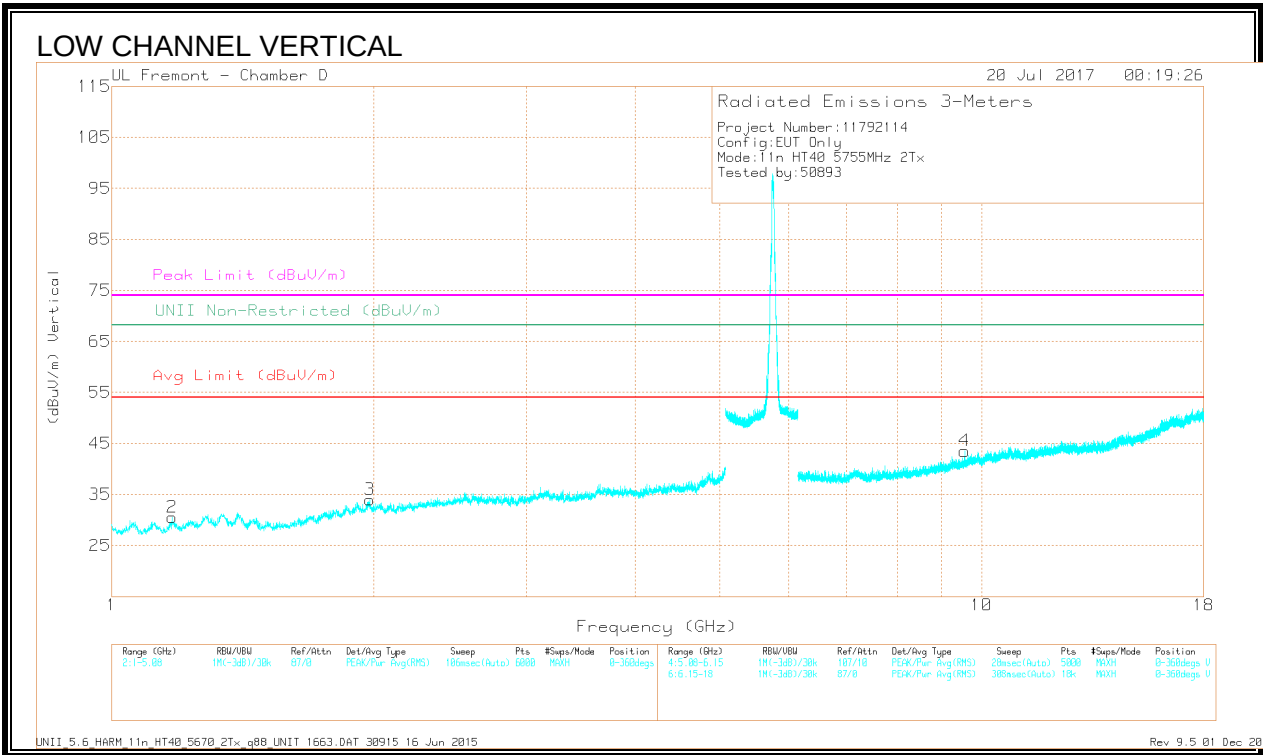
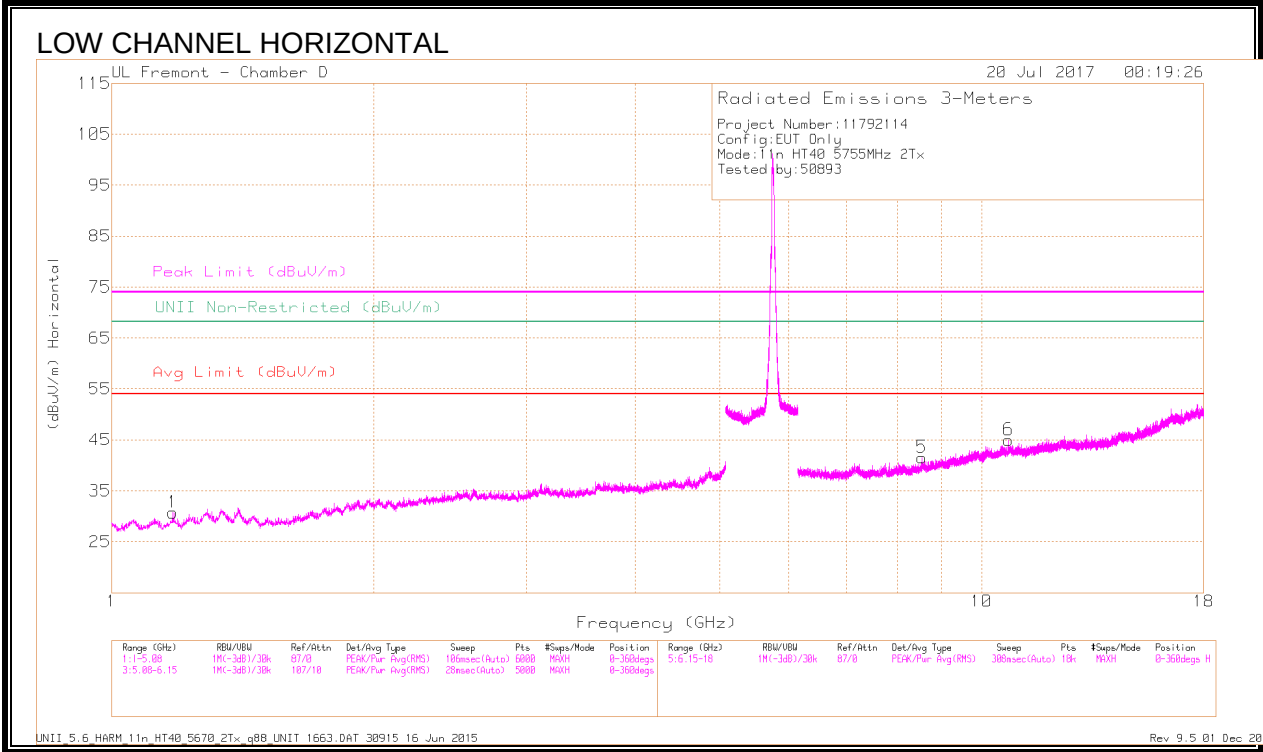
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T120 (dB/m)	Amp/Cbl/F Itr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.68	Pk	35	-17.5	11.8	-37.38	26.98	-64.36	137	240	H
2	5.951	-66.64	Pk	35.1	-17.3	11.8	-37.04	-27	-10.04	137	240	H

Pk - Peak detector



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	-68.04	Pk	35	-17.5	11.8	-38.74	26.99	-65.73	141	180	V
2	5.985	-66.36	Pk	35.1	-17.4	11.8	-36.86	-27	-9.86	141	180	V

Pk - Peak detector



Markers	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl /Fitr/Pa d (dB)	DC Corr (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non- Restrict ed (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.172	41.61	PK-U	28.4	-32.2	0	37.81	-	-	74	-36.19	-	-	182	173	H
	* 1.178	29.25	ADR	28.4	-32.3	.1	25.45	54	-28.55	-	-	-	-	182	173	H
2	* 1.177	41.56	PK-U	28.4	-32.2	0	37.76	-	-	74	-36.24	-	-	169	133	V
	* 1.178	29.22	ADR	28.4	-32.3	.1	25.42	54	-28.58	-	-	-	-	169	133	V
6	* 10.729	34.54	PK-U	37.9	-21.3	0	51.14	-	-	74	-22.86	-	-	18	159	H
	* 10.731	22.38	ADR	37.9	-21.3	.1	39.08	54	-14.92	-	-	-	-	18	159	H
3	1.972	40.71	PK-U	31.4	-30.8	0	41.31	-	-	-	-	68.2	-26.89	211	115	V
	1.973	28.42	ADR	31.4	-30.8	.1	29.12	-	-	-	-	-	-	211	115	V
5	8.53	23.32	ADR	35.7	-23.4	.1	35.72	-	-	-	-	-	-	189	152	H
	8.536	35.23	PK-U	35.7	-23.2	0	47.73	-	-	-	-	68.2	-20.47	189	152	H
4	9.56	33.73	PK-U	36.5	-21.6	0	48.63	-	-	-	-	68.2	-19.57	126	181	V
	9.568	22.37	ADR	36.6	-21.9	.1	37.17	-	-	-	-	-	-	126	181	V

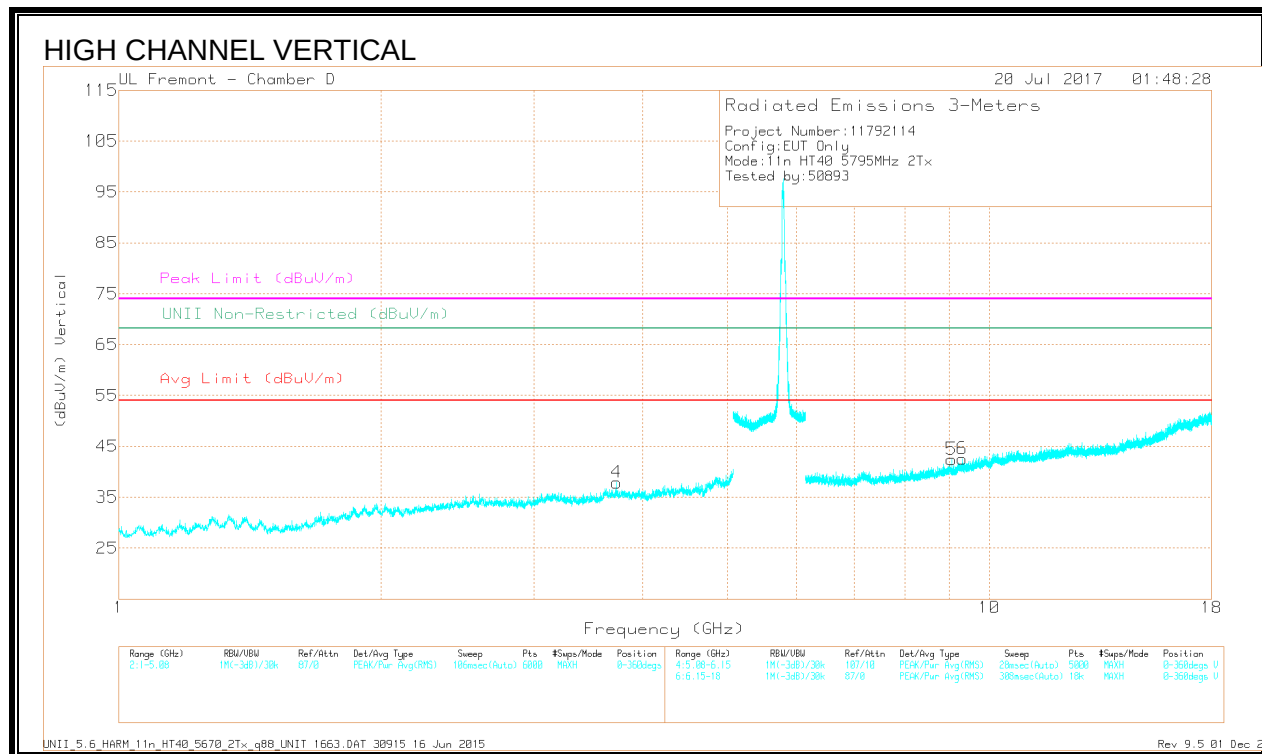
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

UNII_5.6_HARM_11n_HT40_5670_2Tx_q88_UNIT 1663.DAT 30915 16 Jun 2015

Rev 9.5 01 Dec 2016



Marker	Frequen cy (GHz)	Meter Reading (dBuV)	Det	AF T711 (dB/m)	Amp/Cbl /Filt/Pa d (dB)	DC Corr (dB)	Correcte d Reading (dBuV/m)	Avg Limit (dBuV/ m)	Margin (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	UNII Non- Restrict ed (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.203	37.82	PK-U	33.2	-27.8	0	43.22	-	-	74	-30.78	-	-	160	269	H
	* 4.205	26.2	ADR	33.2	-27.9	.1	31.6	54	-22.4	-	-	-	-	160	269	H
4	* 3.732	38.58	PK-U	33.1	-29	0	42.68	-	-	74	-31.32	-	-	325	197	V
	* 3.727	27.02	ADR	33.1	-29	.1	31.22	54	-22.78	-	-	-	-	325	197	V
5	* 9.054	34.79	PK-U	36.1	-22.4	0	48.49	-	-	74	-25.51	-	-	192	380	V
	* 9.041	22.81	ADR	36	-22.4	.1	36.51	54	-17.49	-	-	-	-	192	380	V
6	* 9.309	34.46	PK-U	36.2	-21.8	0	48.86	-	-	74	-25.14	-	-	90	318	V
	* 9.304	22.59	ADR	36.2	-22	.1	36.89	54	-17.11	-	-	-	-	90	318	V
1	3.111	26.96	ADR	33	-28.6	.1	31.46	-	-	-	-	-	-	281	351	H
	3.124	39.2	PK-U	33	-28.8	0	43.4	-	-	-	-	68.2	-24.8	281	351	H
3	7.118	24.15	ADR	35.5	-24.9	.1	34.85	-	-	-	-	-	-	311	365	H
	7.122	36.35	PK-U	35.5	-24.6	0	47.25	-	-	-	-	68.2	-20.95	311	365	H

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

PK-U - U-NII: Maximum Peak

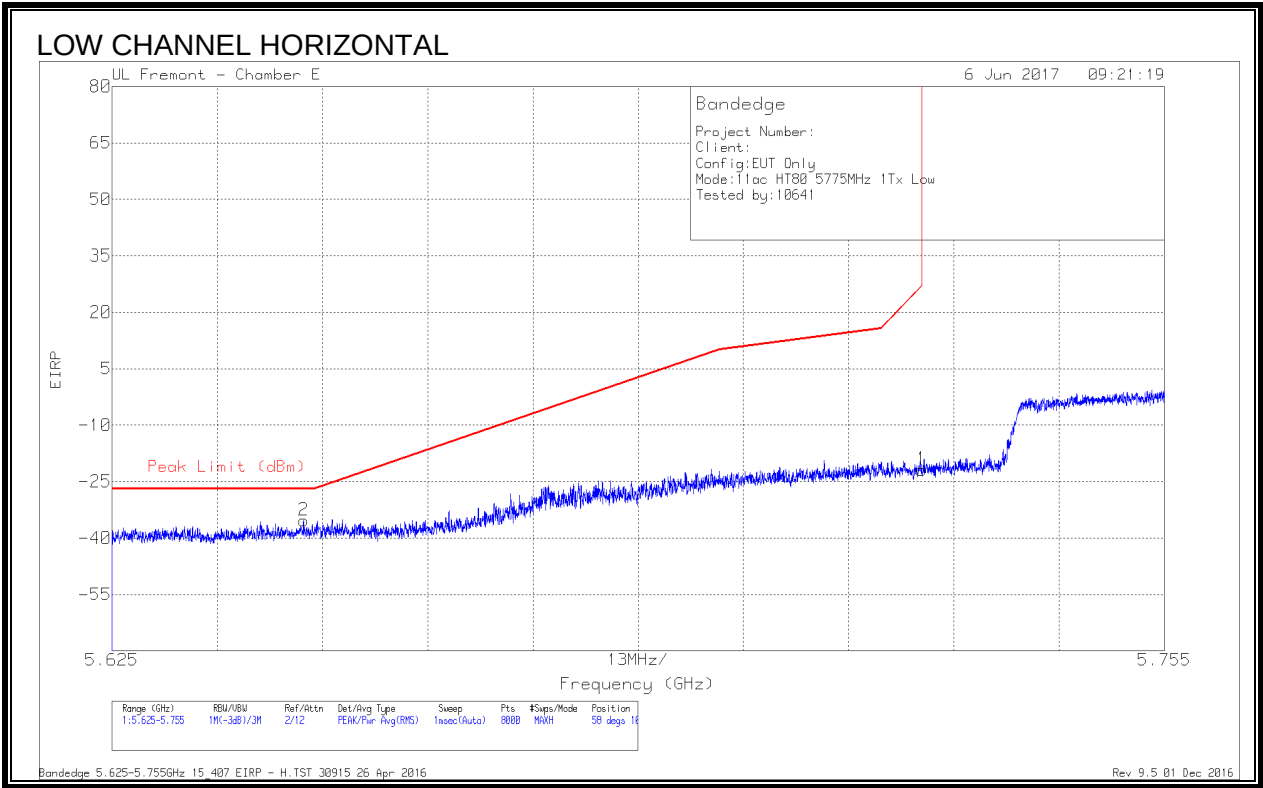
ADR - U-NII AD primary method, RMS average

UNII_5.6_HARM_11n_HT40_5670_2Tx_q88_UNIT 1663.DAT 30915 16 Jun 2015

Rev 9.5 01 Dec 2016

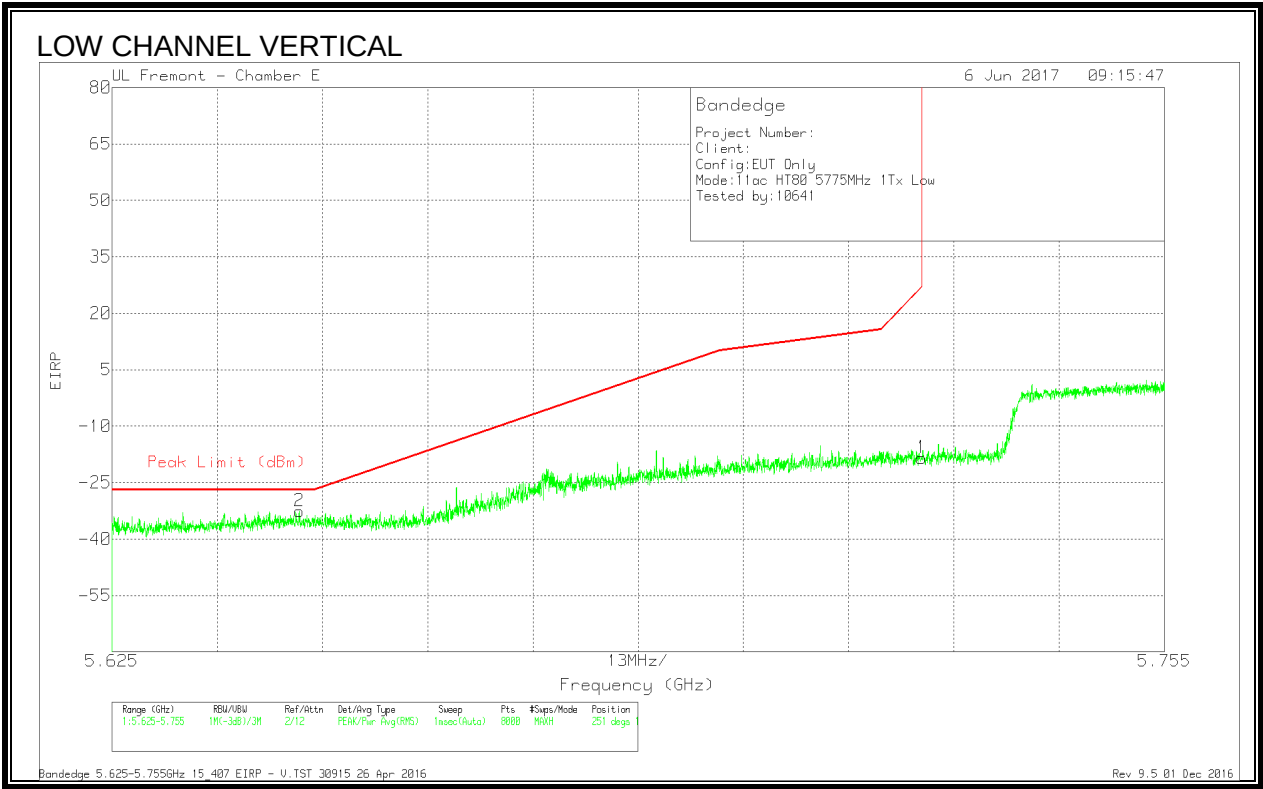
9.1.37. 11ac HT80 UAT 2 SISO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



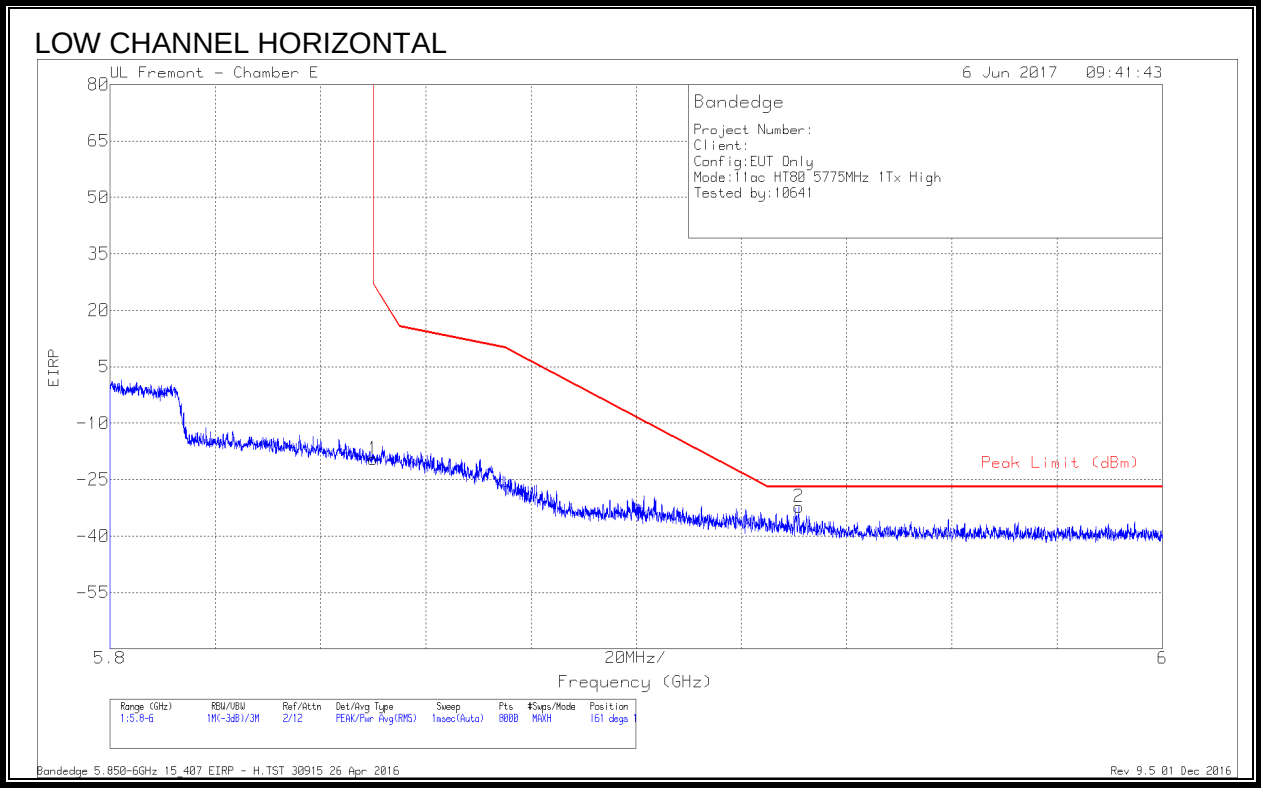
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.649	-62.52	Pk	34.9	-19.5	11.8	0	-35.32	-27	-8.32	58	104	H
1	5.725	-48.98	Pk	34.9	-19.6	11.8	0	-21.88	27	-48.88	58	104	H

Pk - Peak detector



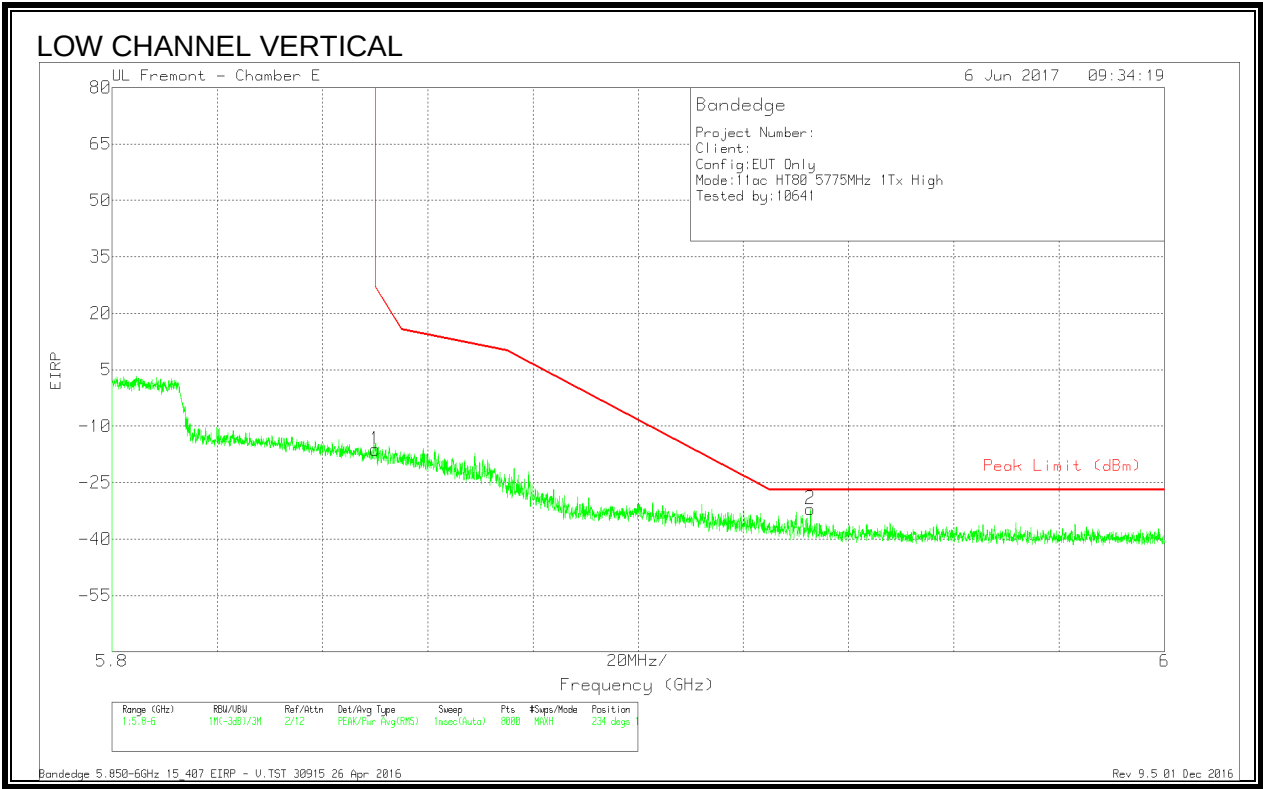
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/Ftr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.648	-59.81	Pk	34.9	-19.5	11.8	0	-32.61	-27	-5.61	251	100	V
1	5.725	-45.6	Pk	34.9	-19.6	11.8	0	-18.5	27	-45.5	251	100	V

Pk - Peak detector



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Ampl/Cbl/F Itt/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	-47.41	Pk	35.5	-19.5	11.8	0	-19.61	26.99	-46.6	161	104	H
2	5.931	-60.35	Pk	35.6	-19.3	11.8	0	-32.25	-27	-5.25	161	104	H

Pk - Peak detector

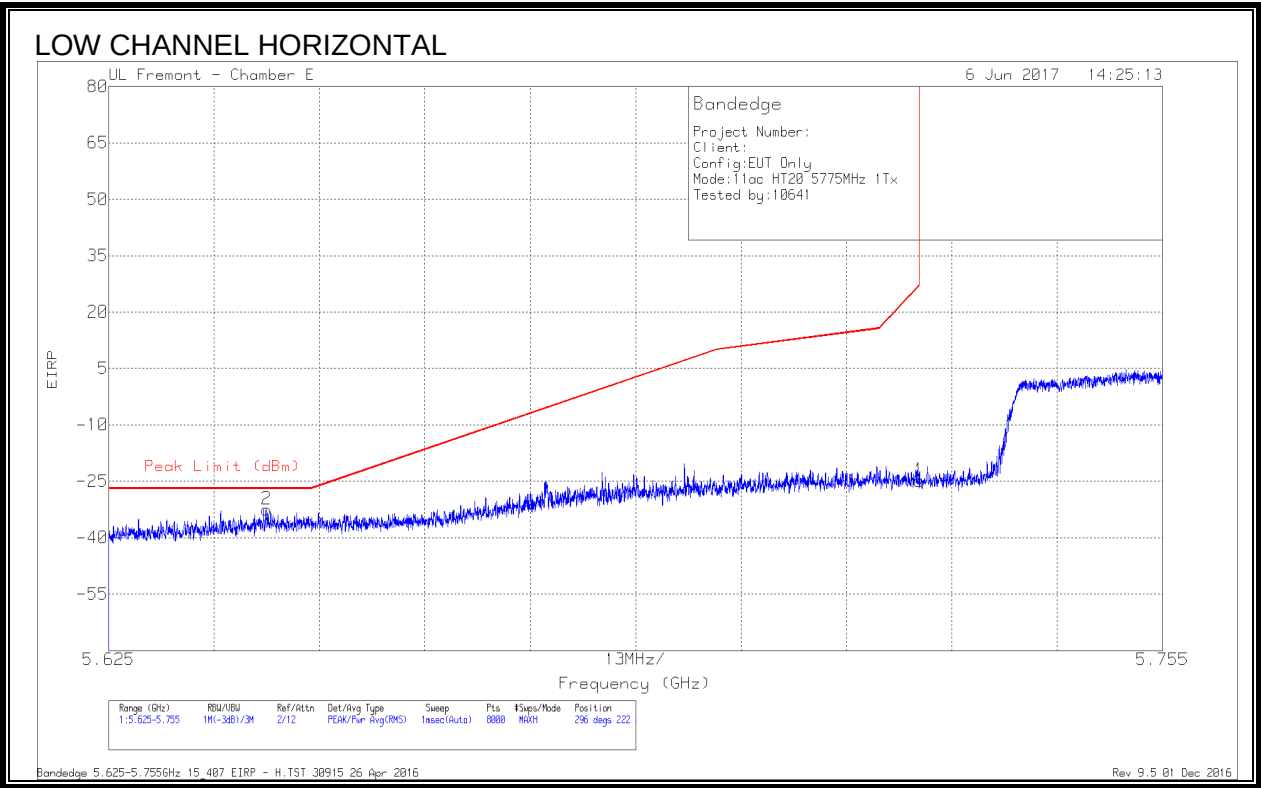


Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/F ltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-43.97	Pk	35.5	-19.5	11.8	0	-16.17	26.99	-43.16	234	102	V
2	5.933	-60.24	Pk	35.6	-19.2	11.8	0	-32.04	-27	-5.04	234	102	V

Pk - Peak detector

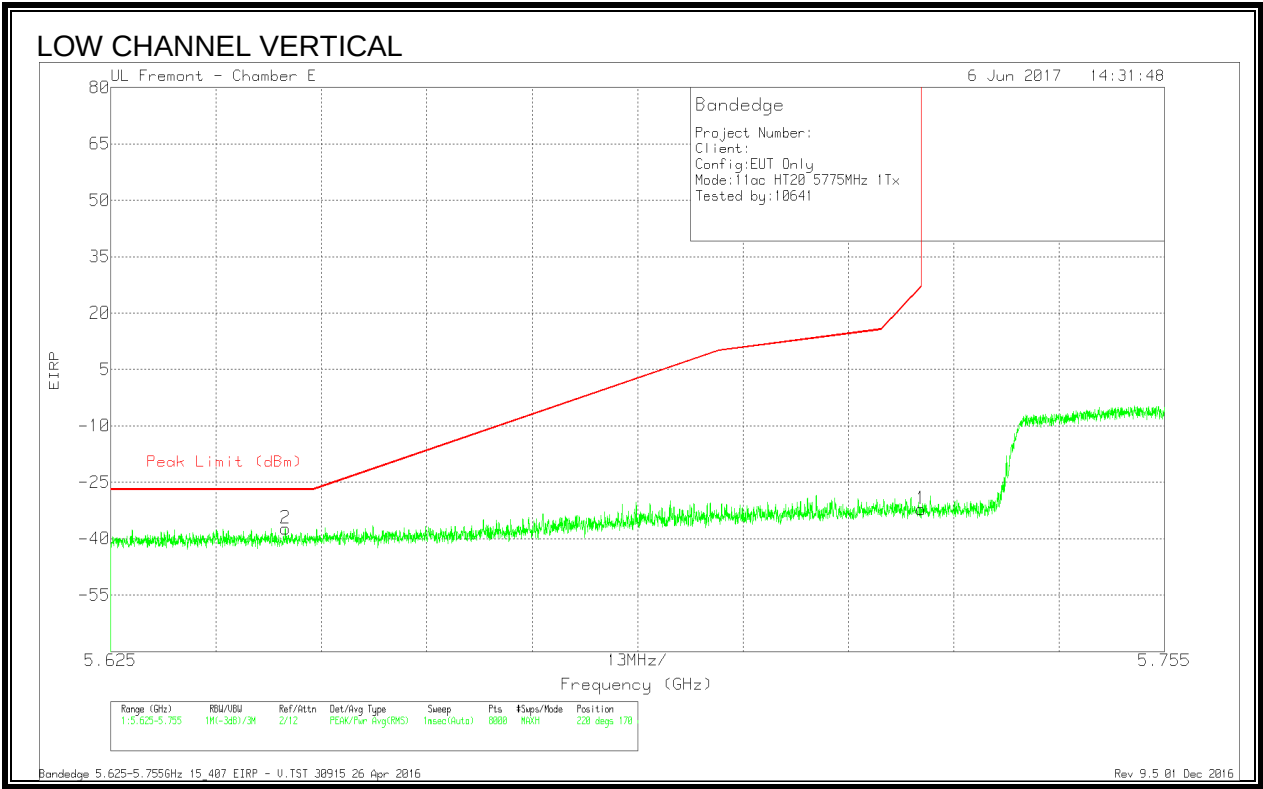
9.1.38. 11ac HT80 LAT 3 SISO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



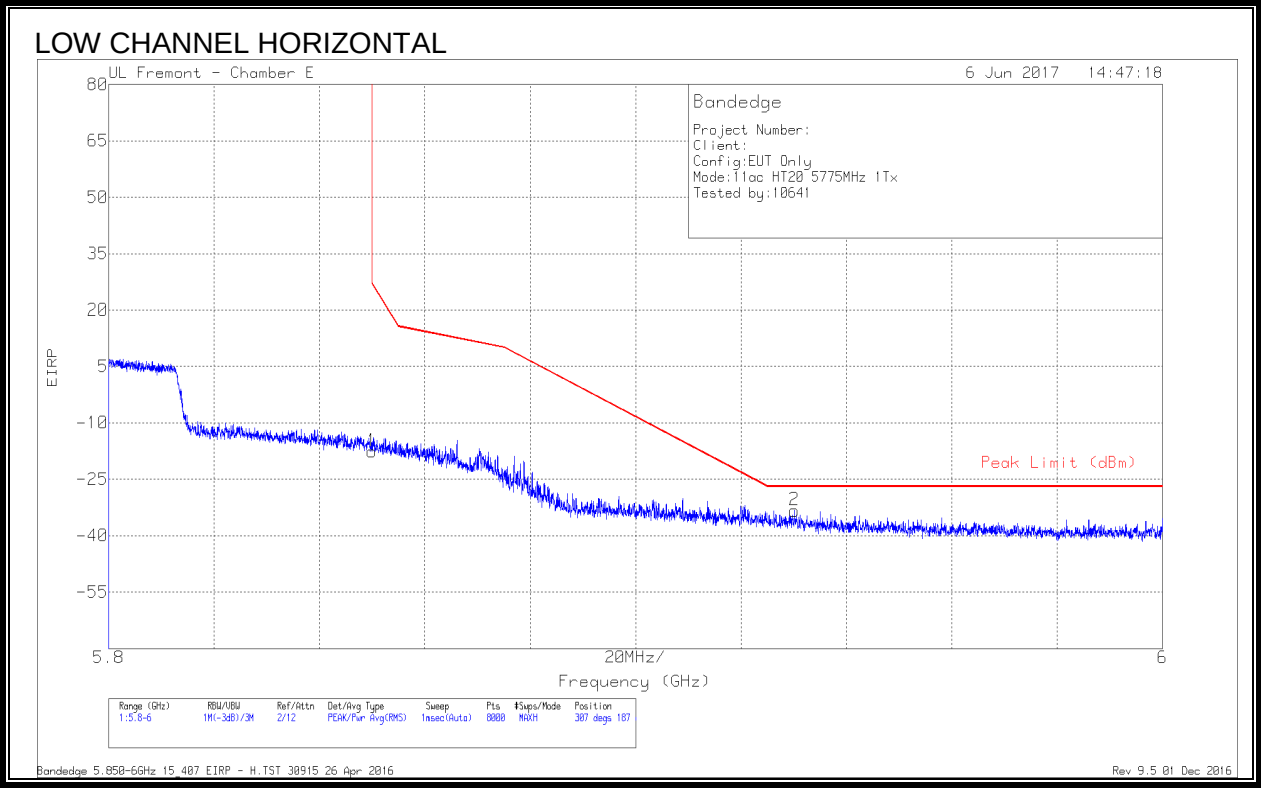
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dBm)	Amp/Cbl/ Ftr/Pad (dB)	Conversio n Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.644	-59.68	Pk	34.9	-19.5	11.8	0	-32.48	-27	-5.48	296	222	H
1	5.725	-51.97	Pk	34.9	-19.6	11.8	0	-24.87	27	-51.87	296	222	H

Pk - Peak detector



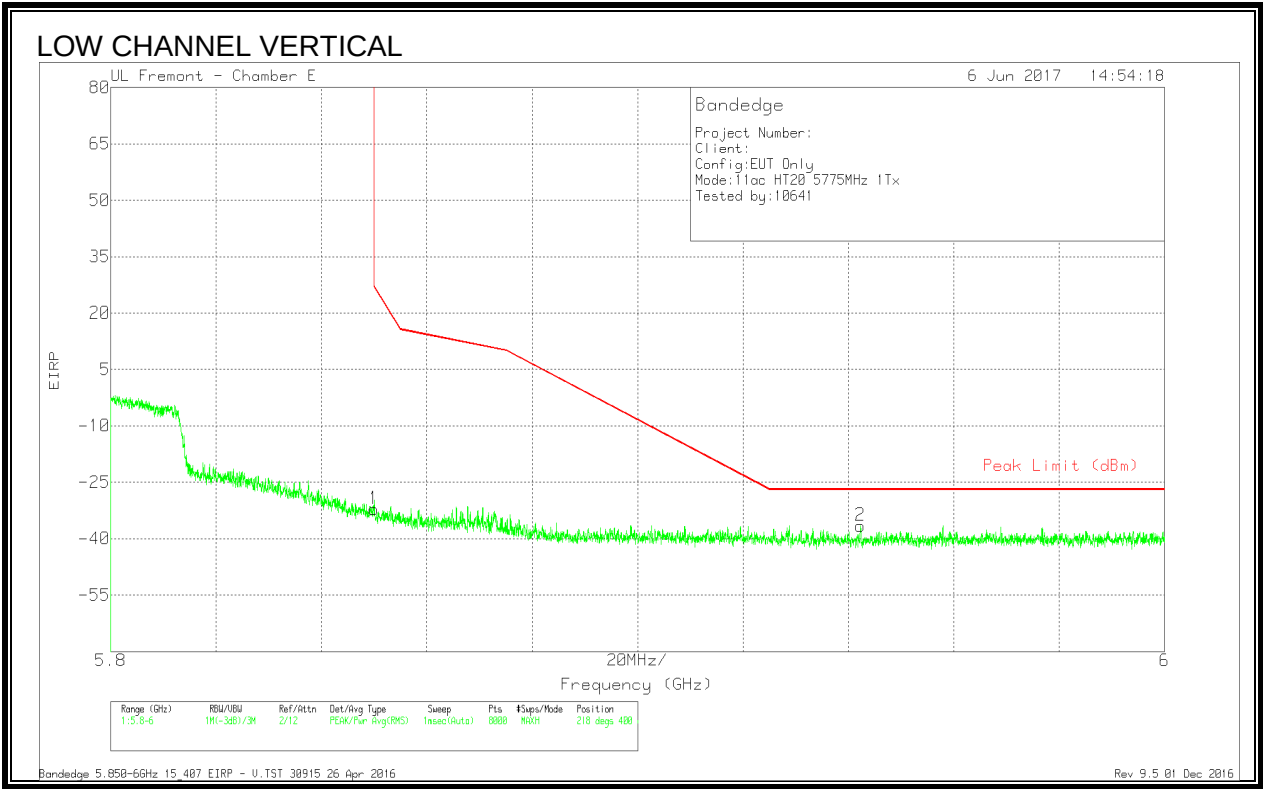
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Ampl/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.647	-64.45	Pk	34.9	-19.5	11.8	0	-37.25	-27	-10.25	220	170	V
1	5.725	-59.3	Pk	34.9	-19.6	11.8	0	-32.2	27	-59.2	220	170	V

Pk - Peak detector



Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Ampl/Cbl/ Filt/Pad (dB)	Conversio n Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-45.38	Pk	35.5	-19.5	11.8	0	-17.58	26.99	-44.57	307	187	H
2	5.93	-61.43	Pk	35.6	-19.3	11.8	0	-33.33	-27	-6.33	307	187	H

Pk - Peak detector

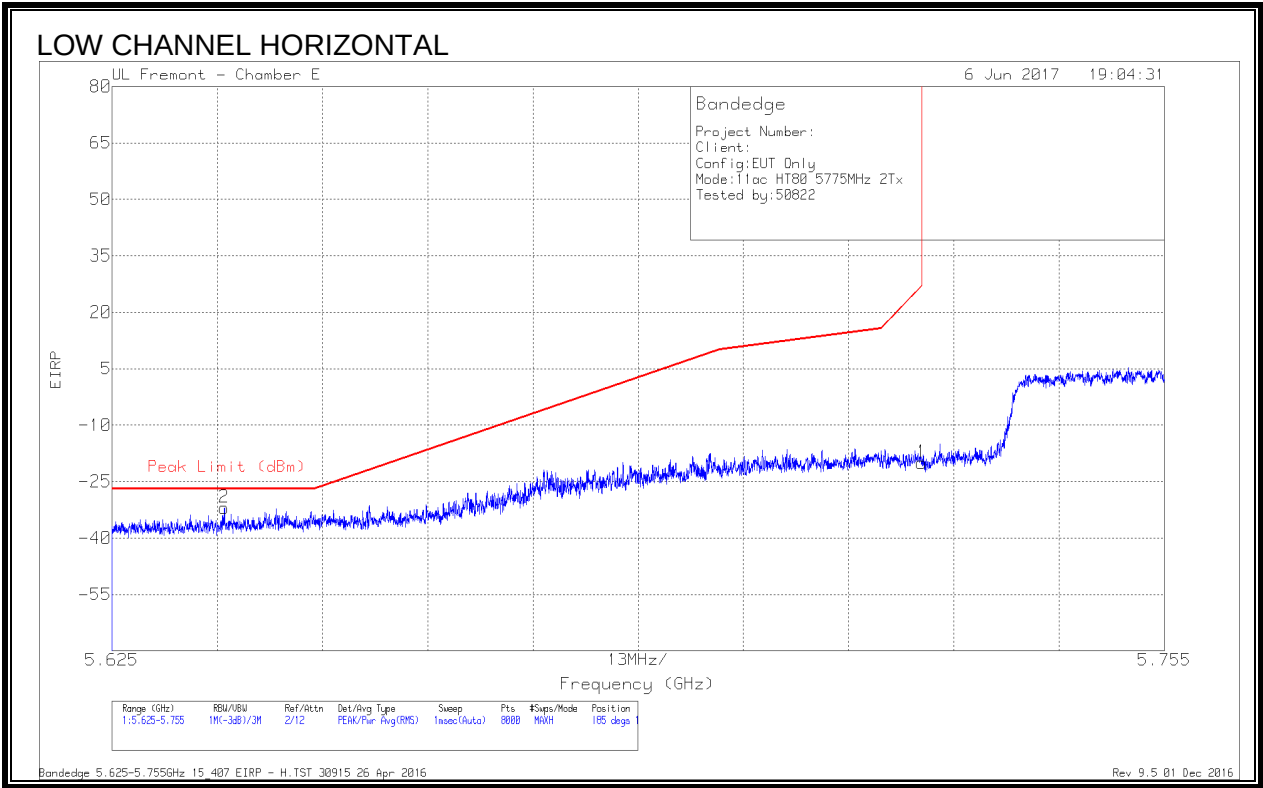


Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Ampl/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-59.87	Pk	35.5	-19.5	11.8	0	-32.07	26.99	-59.06	218	400	V
2	5.942	-64.61	Pk	35.6	-19.3	11.8	0	-36.51	-27	-9.51	218	400	V

Pk - Peak detector

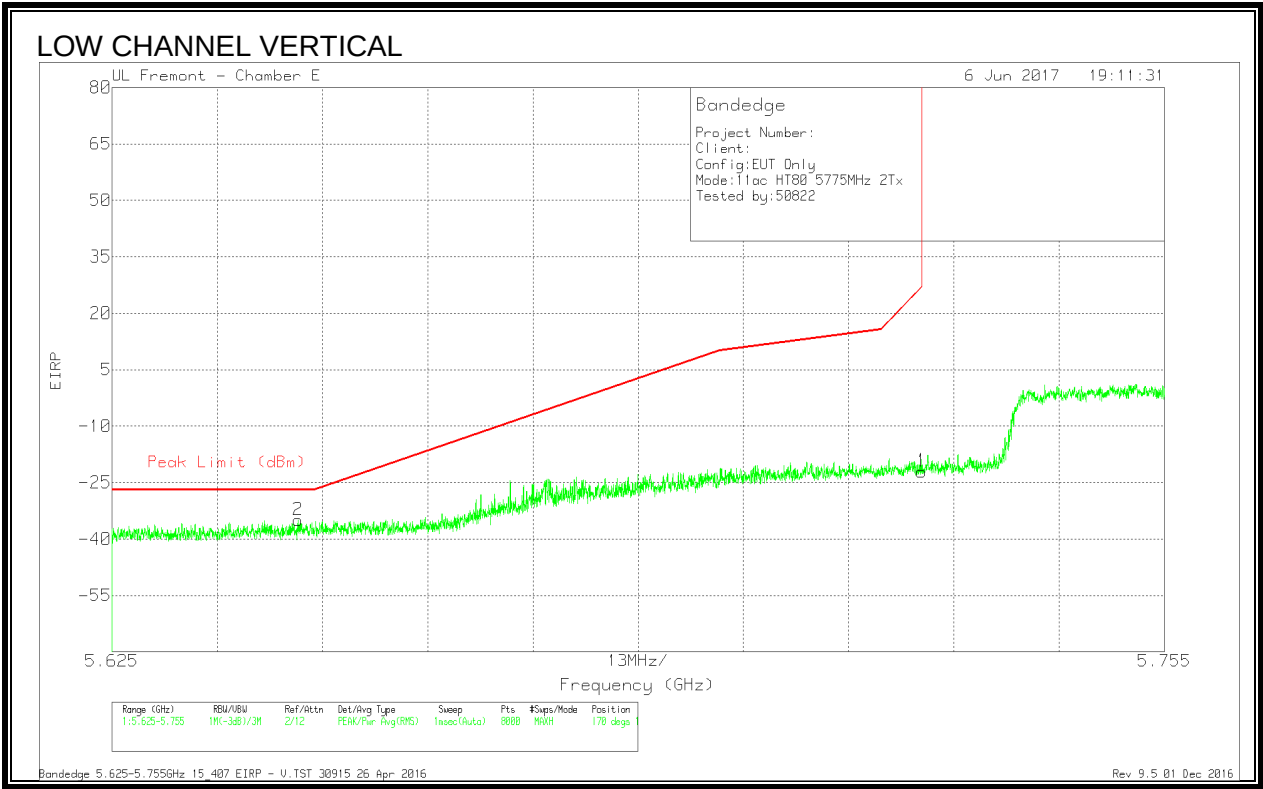
9.1.39. 11ac HT80 2TX CDD MIMO MODE IN THE 5.8GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)



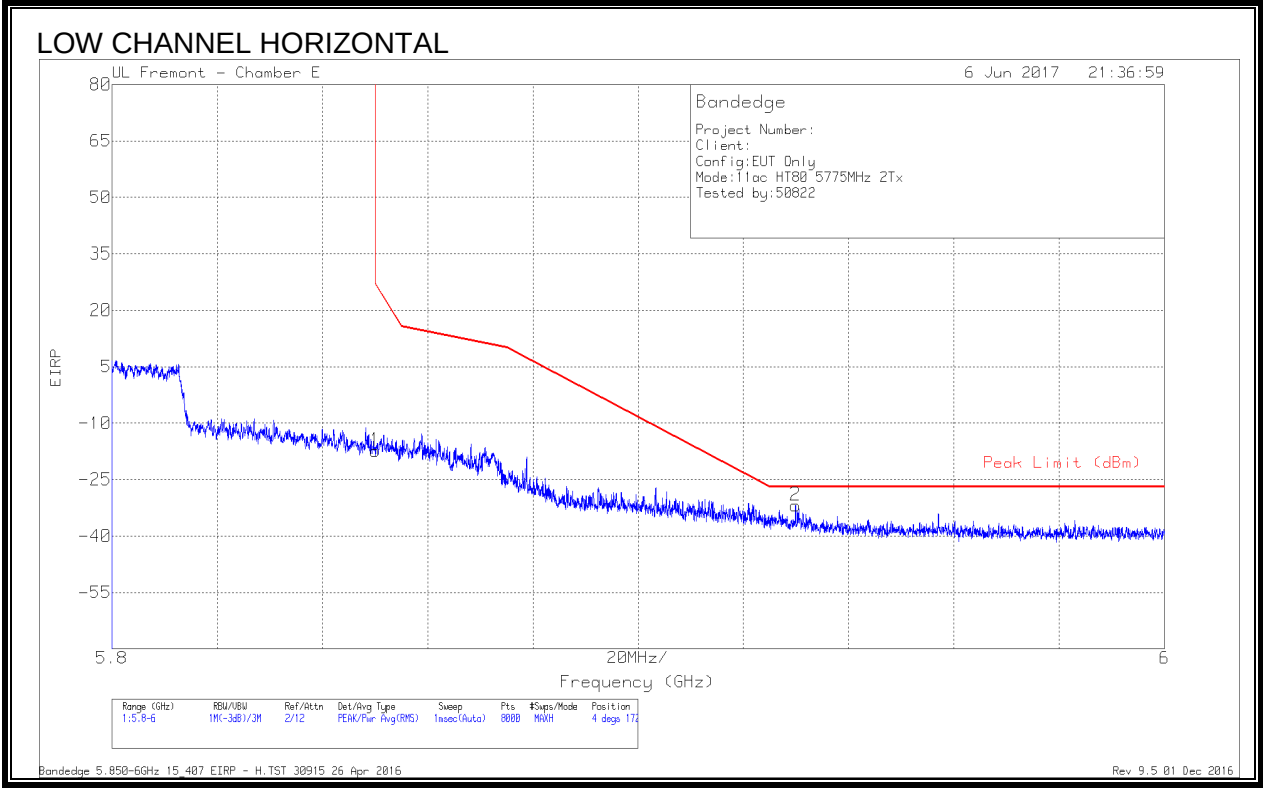
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.639	-59.17	Pk	34.9	-19.5	11.8	-31.97	-27	-4.97	185	106	H
1	5.725	-47.09	Pk	34.9	-19.6	11.8	-19.99	27	-46.99	185	106	H

Pk - Peak detector



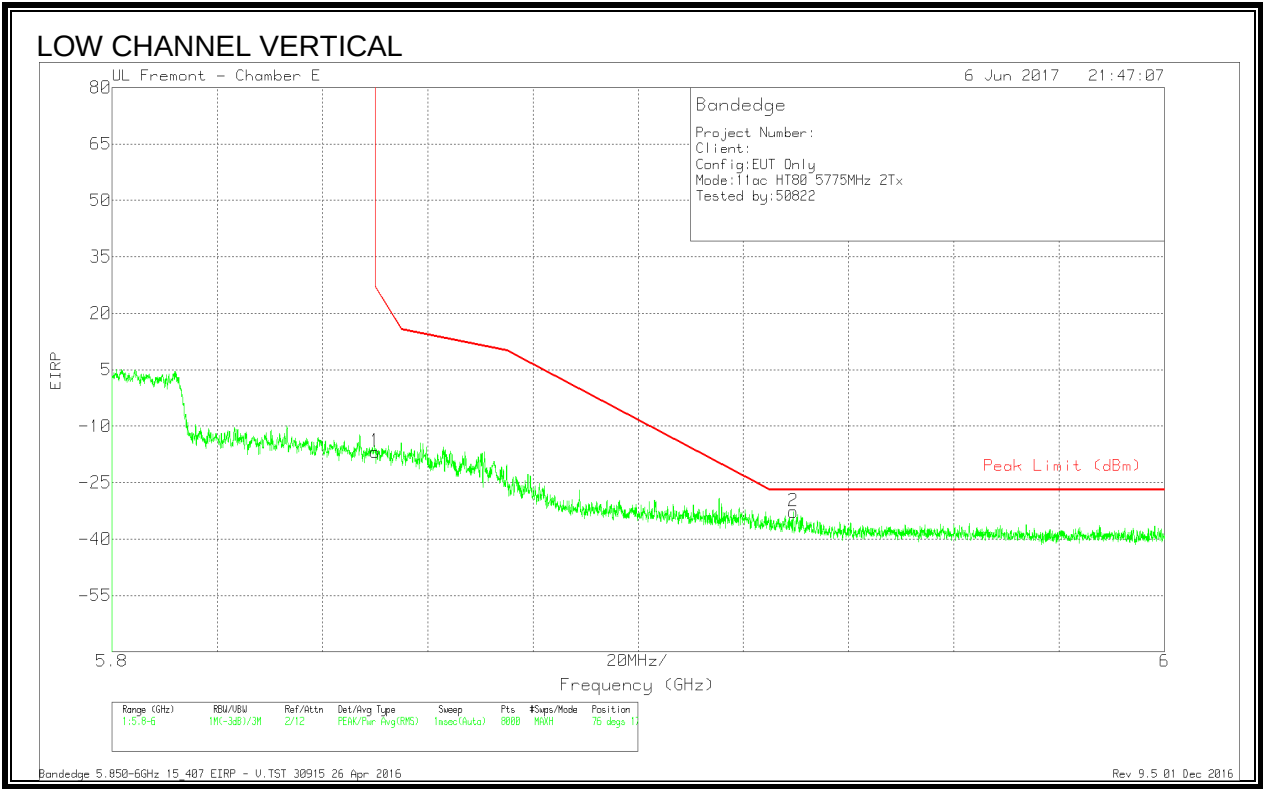
Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/ Filtr/Pad (dB)	Conversio n Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	5.648	-62.19	Pk	34.9	-19.5	11.8	-34.99	-27	-7.99	170	153	V
1	5.725	-49.17	Pk	34.9	-19.6	11.8	-22.07	27	-49.07	170	153	V

Pk - Peak detector



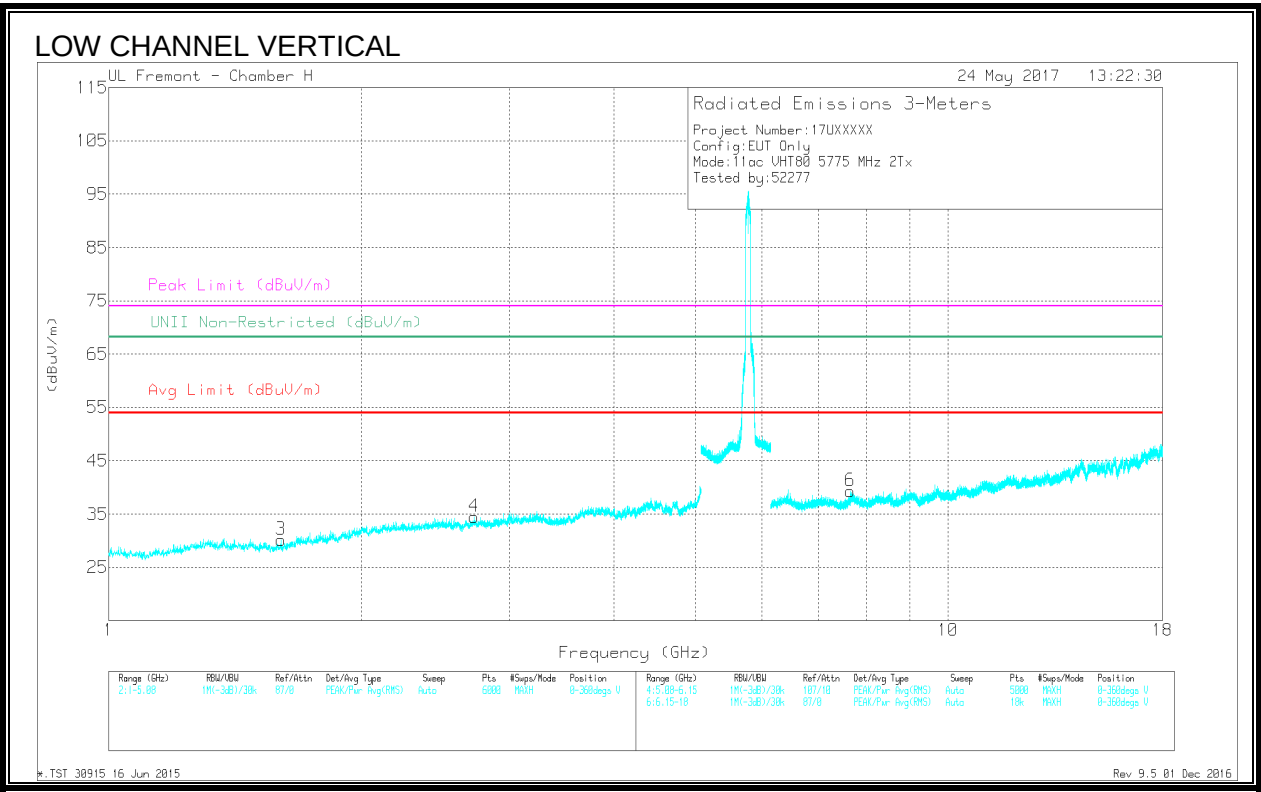
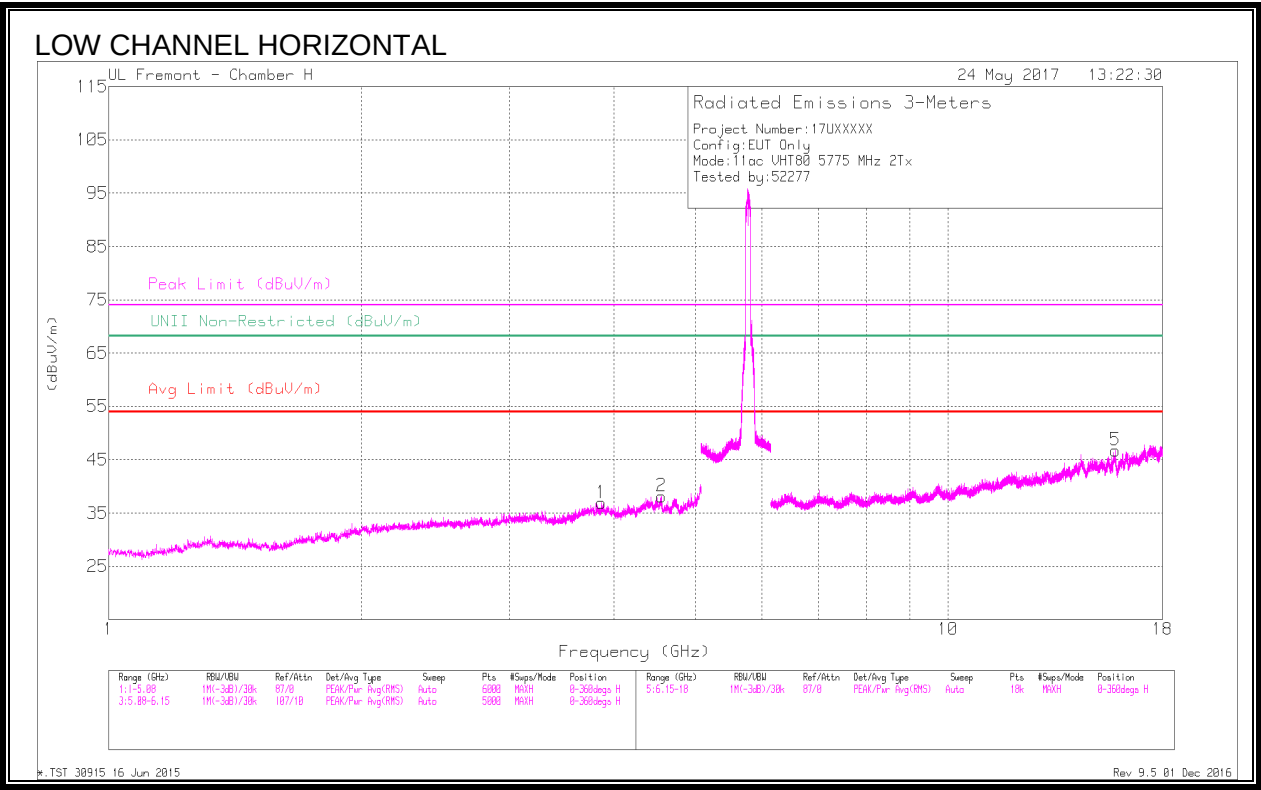
Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T136 (dB/m)	Amp/Cbl/ Filt/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-45.13	Pk	35.5	-19.5	11.8	-17.33	26.99	-44.32	4	172	H
2	5.93	-59.94	Pk	35.6	-19.3	11.8	-31.84	-27	-4.84	4	172	H

Pk - Peak detector



Marker	Frequenc y (GHz)	Meter Reading (dBm)	Det	AF T136 (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	-44.58	Pk	35.5	-19.5	11.8	-16.78	26.99	-43.77	76	171	V
2	5.929	-60.79	PK	35.6	-19.3	11.8	-32.69	-27	-5.69	76	171	V

Pk - Peak detector



Marke rs	Freque ncy (GHz)	Meter Readi ng (dBu V)	Det	AF T344 (dB/m)	Amp/C bl/Filtr/ Pad (dB)	DC Corr (dB)	Correc ted Readi ng (dBuV/ m)	Avg Limit (dBuV/ m)	Margi n (dB)	Peak Limit (dBuV/ m)	PK Margin (dB)	UNII Non- Restri cted (dBuV/ m)	PK Margin (dB)	Azimu th (Degs)	Height (cm)	Polarit y
1	* 3.863	45.54	PK-U	33.3	-35.6	0	43.24	-	-	74	-30.76	-	-	187	249	H
	* 3.862	33.75	ADR	33.3	-35.6	.19	31.65	54	-22.35	-	-	-	-	187	249	H
2	* 4.555	44.78	PK-U	34.3	-34.9	0	44.18	-	-	74	-29.82	-	-	54	288	H
	* 4.554	33.34	ADR	34.3	-34.9	.19	32.94	54	-21.06	-	-	-	-	54	288	H
3	* 2.727	47.79	PK-U	32.2	-37.9	0	42.09	-	-	74	-31.91	-	-	24	252	V
	* 2.726	35.19	ADR	32.2	-37.9	.19	29.69	54	-24.31	-	-	-	-	24	252	V
4	* 1.605	46.44	PK-U	28.2	-37.7	0	36.94	-	-	74	-37.06	-	-	153	145	V
	* 1.603	34.33	ADR	28.1	-37.7	.19	24.93	54	-29.07	-	-	-	-	153	145	V
5	* 15.816	34.92	PK-U	42	-24.3	0	52.62	-	-	74	-21.38	-	-	20	384	H
	* 15.817	23.66	ADR	42	-24.3	.19	41.56	54	-12.44	-	-	-	-	20	384	H
6	* 7.645	40.04	PK-U	36.2	-30.8	0	45.44	-	-	74	-28.56	-	-	360	190	V
	* 7.647	28.08	ADR	36.2	-30.7	.19	33.78	54	-20.22	-	-	-	-	360	190	V

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

PK-U - U-NII: Maximum Peak

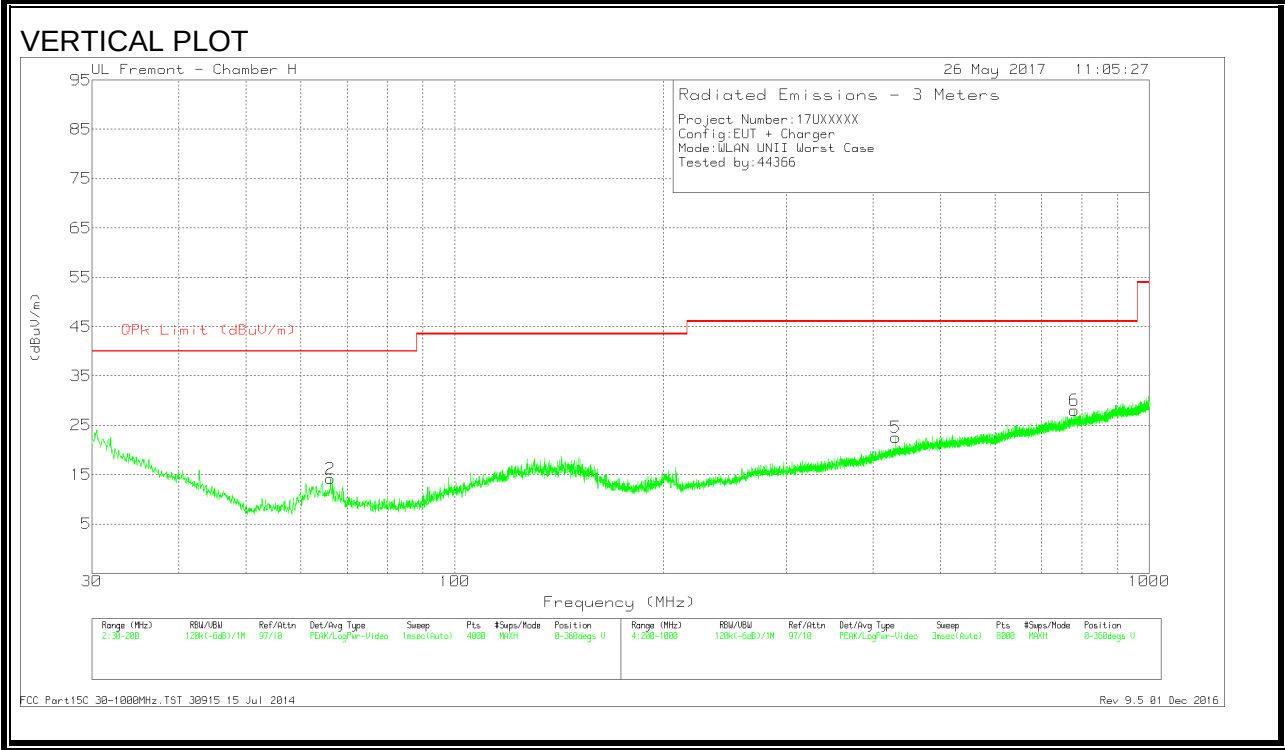
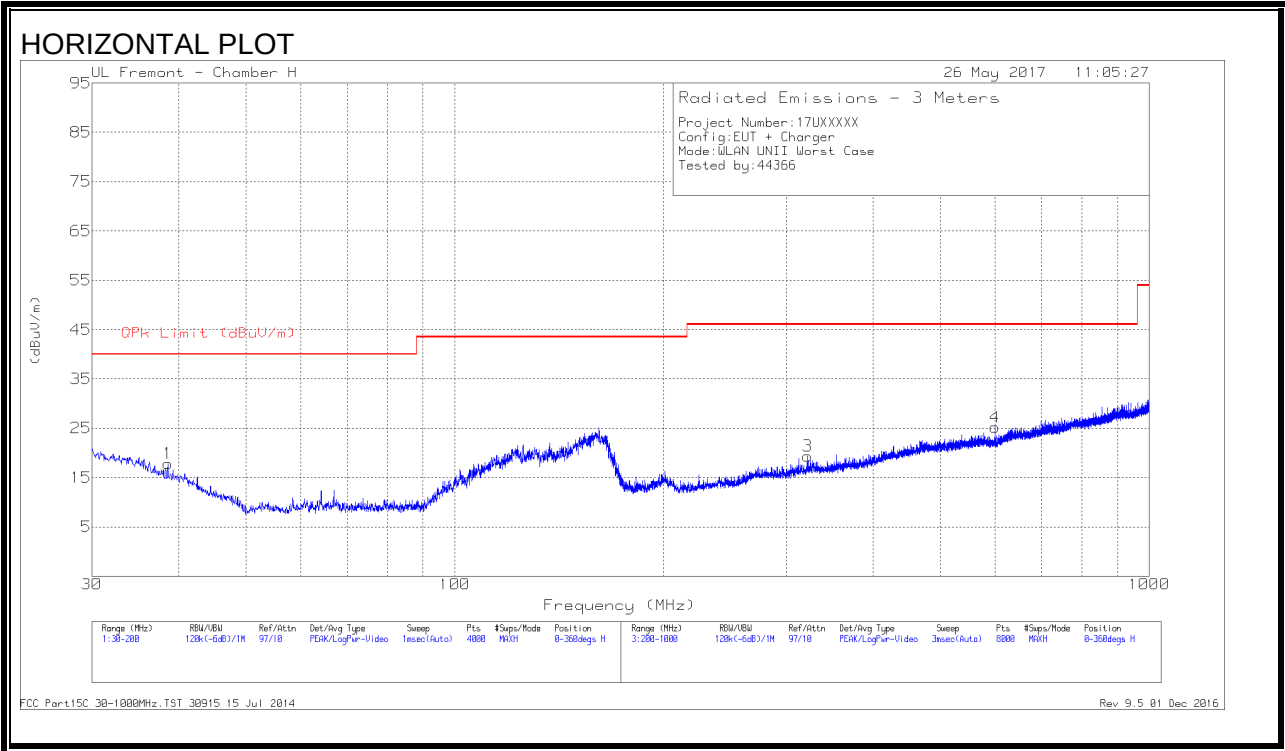
ADR - U-NII AD primary method, RMS average

*.TST 30915 16 Jun 2015

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9.2. WORST-CASE BELOW 1 GHz

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



DATA

Marker	Frequenc y (MHz)	Meter Reading (dBuV)	Det	AF T185 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
3	*	30.61	Pk	17.8	-29	19.41	46.02	-26.61	0-360	101	H
1	38.6297	30.21	Pk	18.8	-31.2	17.81	40	-22.19	0-360	199	H
2	66.2194	33.29	Pk	11.7	-30.8	14.19	40	-25.81	0-360	100	V
5	431.13	30.71	Pk	20.4	-28.6	22.51	46.02	-23.51	0-360	299	V
4	600.152	30.87	Pk	22.2	-27.9	25.17	46.02	-20.85	0-360	199	H
6	780.2754	30.28	Pk	25.1	-27.3	28.08	46.02	-17.94	0-360	199	V

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

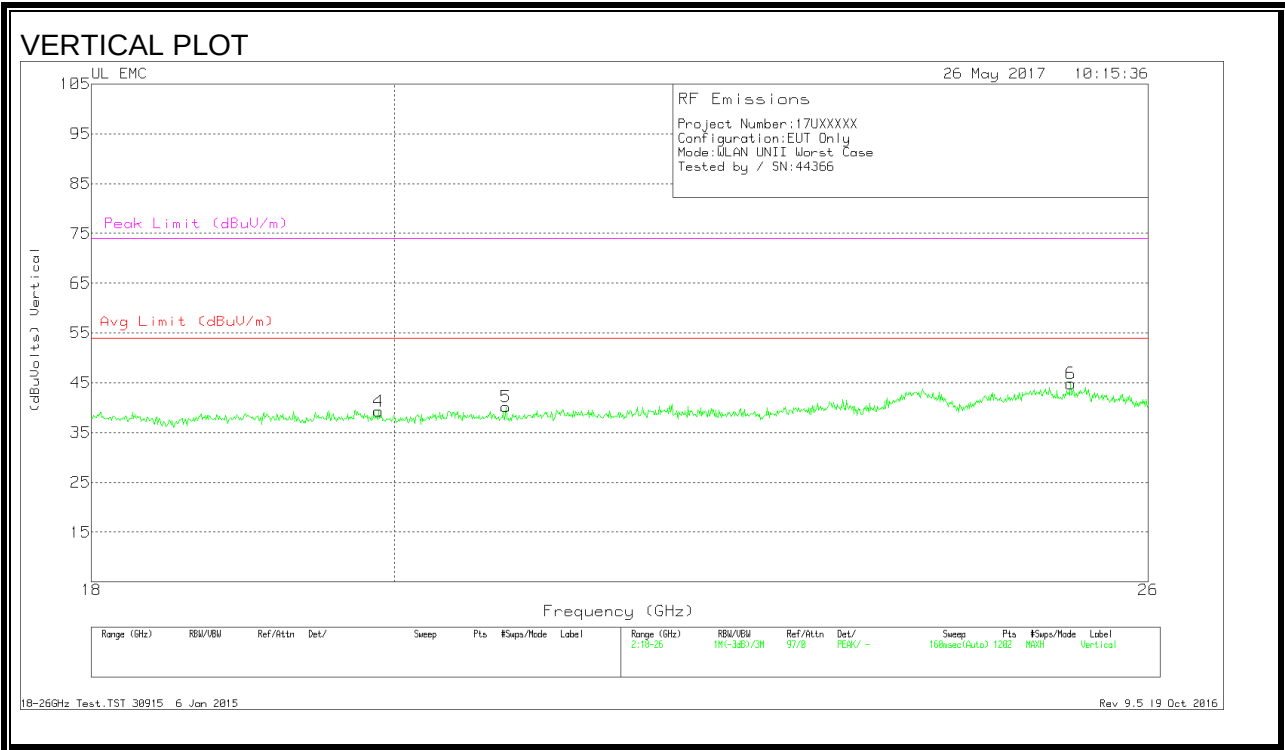
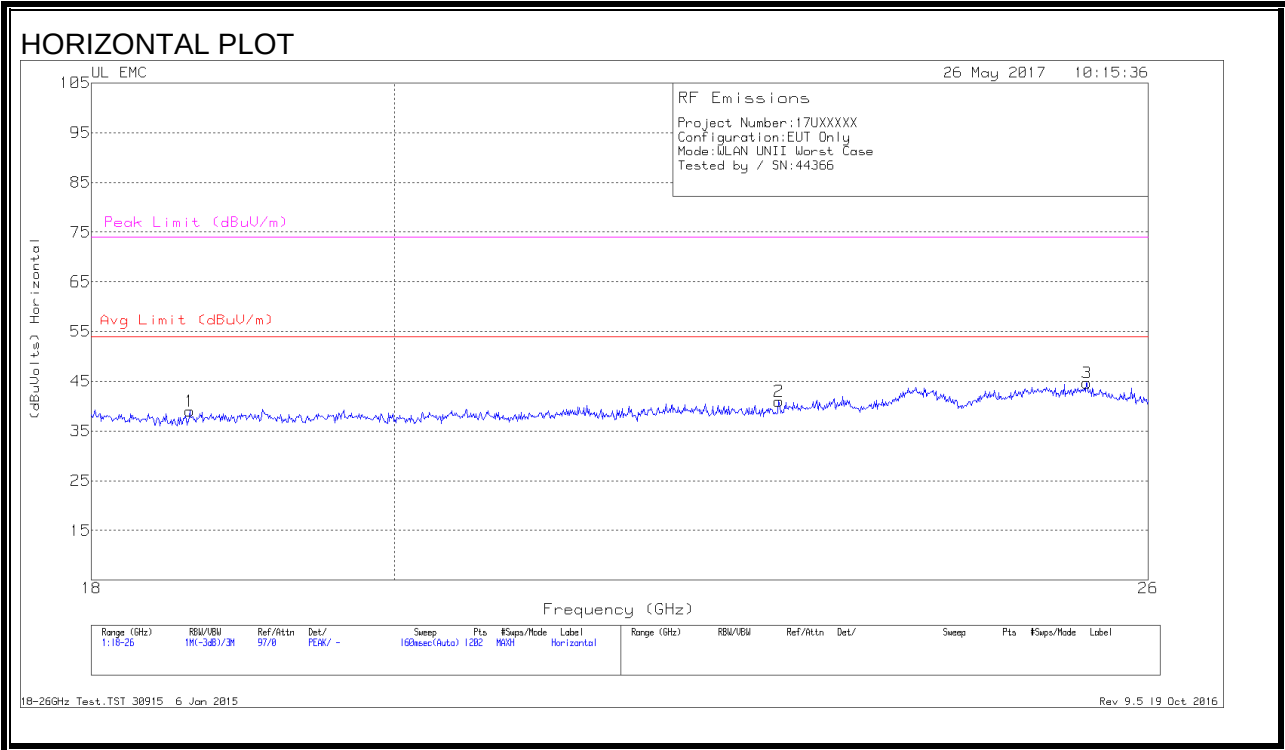
Pk - Peak detector

FCC Part15C 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)



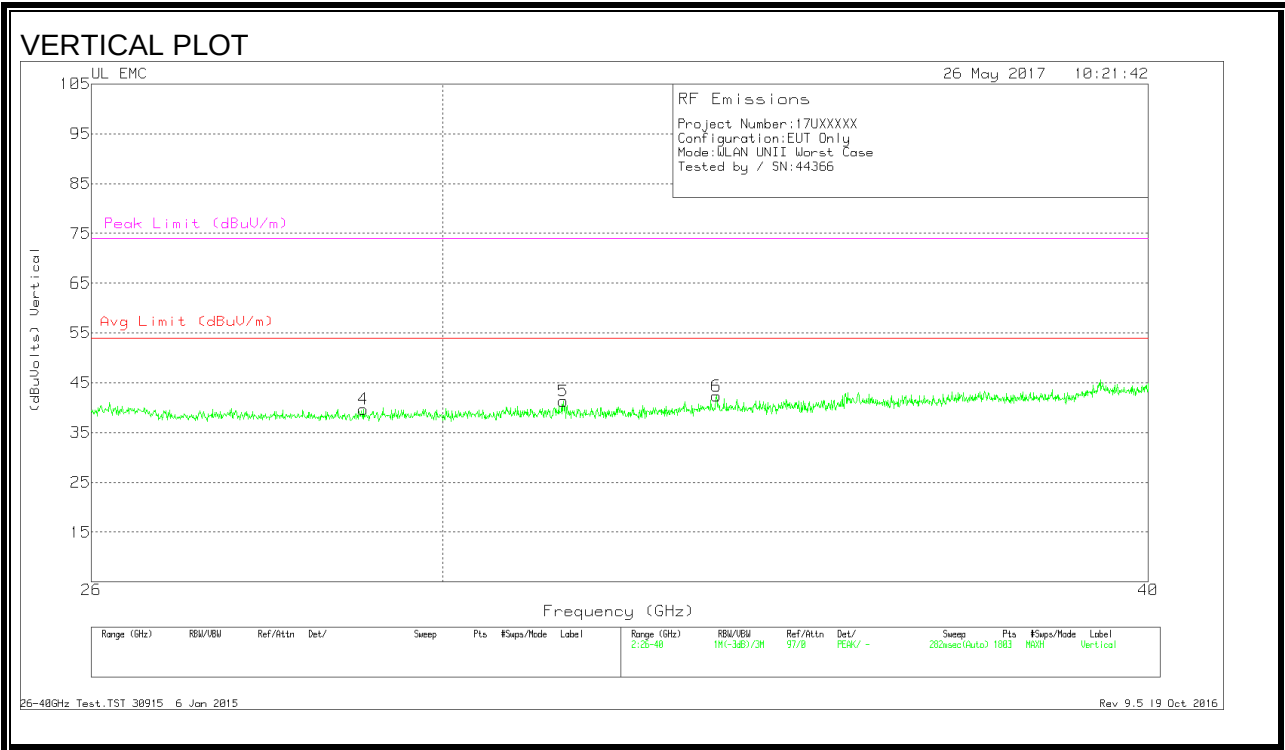
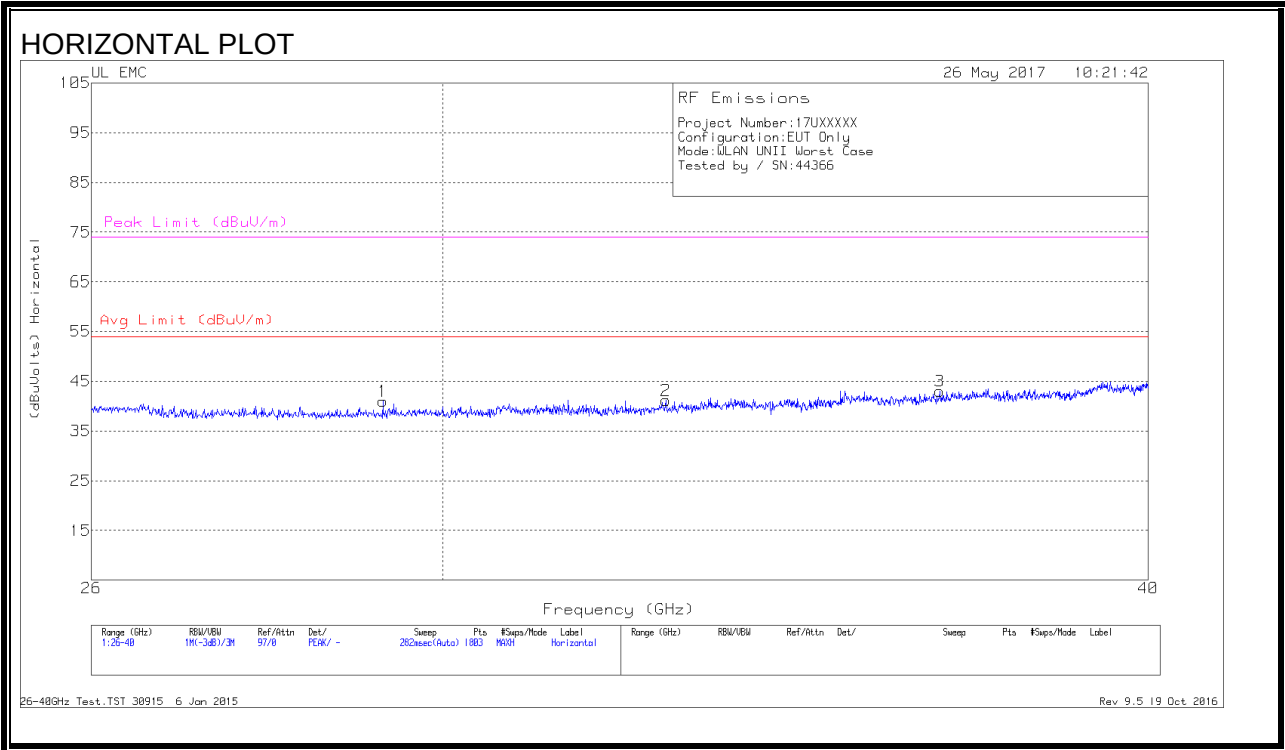
DATA

Marker	Frequenc y (GHz)	Meter Reading (dBuV)	Det	AF T449 (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.626	40.7	Pk	32.5	-24.7	-9.5	39	54	-15	74	-35
2	22.863	42	Pk	33.4	-24.9	-9.5	41	54	-13	74	-33
3	25.45	44.27	Pk	34.4	-24.5	-9.5	44.67	54	-9.33	74	-29.33
4	19.892	41.23	Pk	32.6	-25	-9.5	39.33	54	-14.67	74	-34.67
5	20.791	41.57	Pk	33	-24.9	-9.5	40.17	54	-13.83	74	-33.83
6	25.307	44.43	Pk	34.3	-24.4	-9.5	44.83	54	-9.17	74	-29.17

Pk - Peak detector
18-26GHz Test.TST 30915 6 Jan 2015
Rev 9.5 19 Oct 2016

9.4. WORST-CASE 26 to 40 GHz

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



DATA

Marker	Frequenc y (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	29.279	47.3	Pk	35.9	-32.7	-9.5	41	54	-13	74	-33
2	32.86	47.57	Pk	36.6	-33.5	-9.5	41.17	54	-12.83	74	-32.83
3	36.737	49.9	Pk	37.1	-34.5	-9.5	43	54	-11	74	-31
4	29.046	45.87	Pk	35.9	-32.6	-9.5	39.67	54	-14.33	74	-34.33
5	31.516	47.93	Pk	36.2	-33.3	-9.5	41.33	54	-12.67	74	-32.67
6	33.544	48.53	Pk	37	-33.7	-9.5	42.33	54	-11.67	74	-31.67

Pk - Peak detector

26-40GHz Test.TST 30915 6 Jan 2015

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10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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.

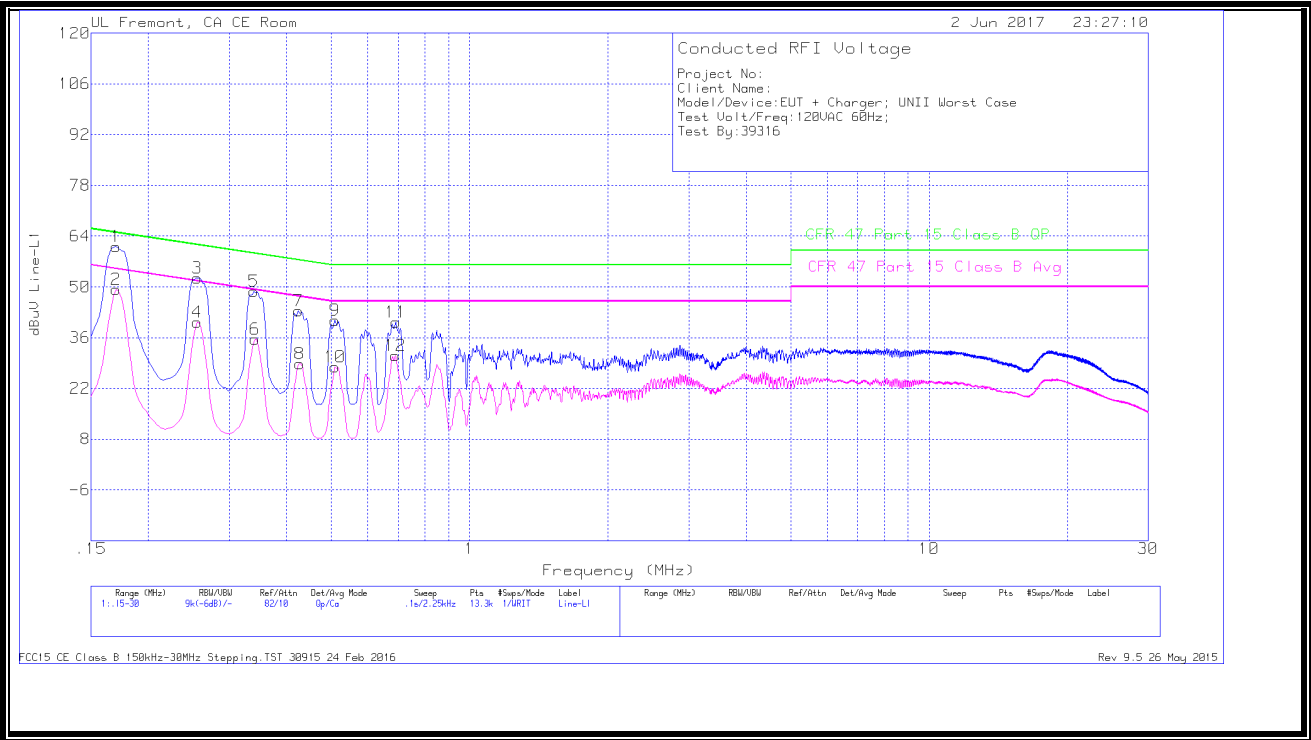
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

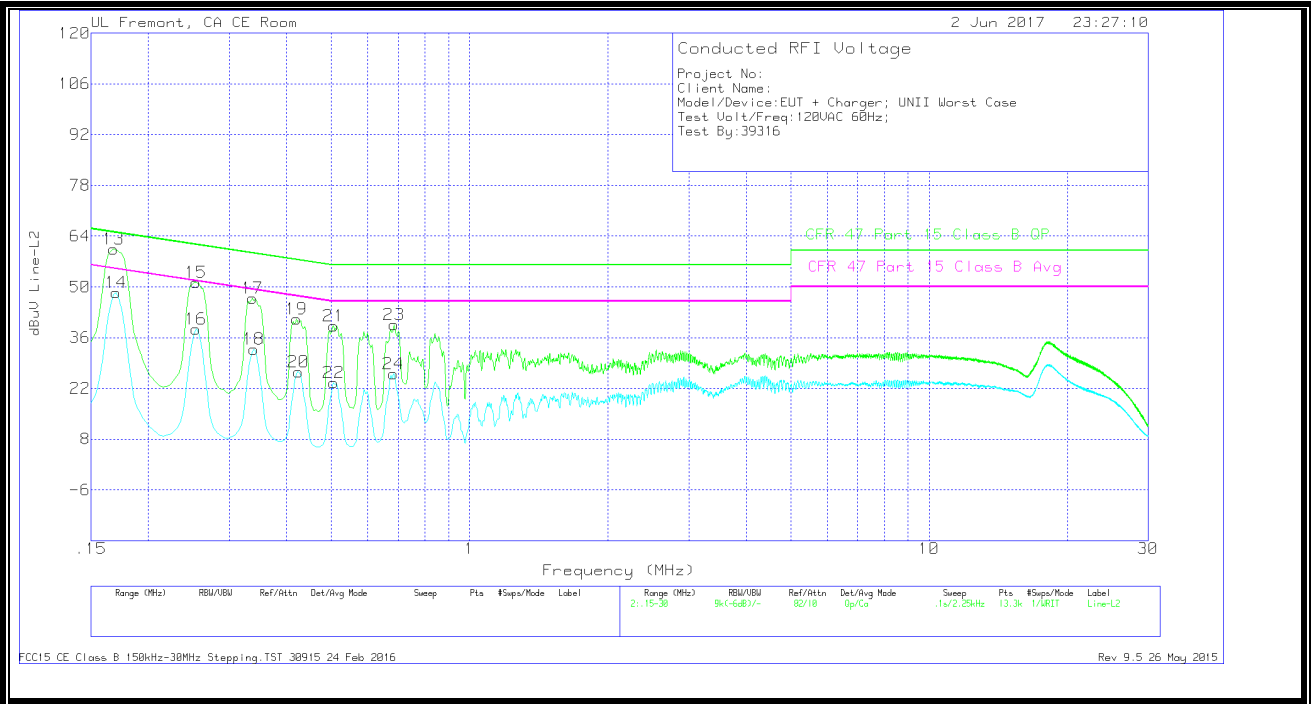
RESULTS

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

LINE 1 RESULTS



LINE 2 RESULTS



WORST EMISSIONS

Trace Markers

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	.17025	50.94	Qp	0	.1	10.1	61.14	64.95	-3.81	-	-
2	.17025	39.13	Ca	0	.1	10.1	49.33	-	-	54.95	-5.62
3	.25575	42.29	Qp	0	.1	10.1	52.49	61.57	-9.08	-	-
4	.25575	30.08	Ca	0	.1	10.1	40.28	-	-	51.57	-11.29
5	.339	38.6	Qp	0	.1	10.1	48.8	59.23	-10.43	-	-
6	.34125	25.42	Ca	0	.1	10.1	35.62	-	-	49.17	-13.55
7	.4245	33.22	Qp	0	.1	10.1	43.42	57.36	-13.94	-	-
8	.42675	18.66	Ca	0	.1	10.1	28.86	-	-	47.32	-18.46
9	.51	30.52	Qp	0	.1	10.1	40.72	56	-15.28	-	-
10	.51	17.79	Ca	0	.1	10.1	27.99	-	-	46	-18.01
11	.69225	30	Qp	0	.1	10.1	40.2	56	-15.8	-	-
12	.69	20.81	Ca	0	.1	10.1	31.01	-	-	46	-14.99

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN 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	.168	50.29	Qp	0	0	10.1	60.39	65.06	-4.67	-	-
14	.17025	38.27	Ca	0	.1	10.1	48.47	-	-	54.95	-6.48
15	.2535	41.03	Qp	0	.1	10.1	51.23	61.64	-10.41	-	-
16	.2535	28.14	Ca	0	.1	10.1	38.34	-	-	51.64	-13.3
17	.33675	36.64	Qp	0	.1	10.1	46.84	59.28	-12.44	-	-
18	.339	22.67	Ca	0	.1	10.1	32.87	-	-	49.23	-16.36
19	.42	30.89	Qp	0	.1	10.1	41.09	57.45	-16.36	-	-
20	.4245	16.36	Ca	0	.1	10.1	26.56	-	-	47.36	-20.8
21	.5055	29.06	Qp	0	.1	10.1	39.26	56	-16.74	-	-
22	.5055	13.35	Ca	0	.1	10.1	23.55	-	-	46	-22.45
23	.6855	29.35	Qp	0	.1	10.1	39.55	56	-16.45	-	-
24	.68325	15.87	Ca	0	.1	10.1	26.07	-	-	46	-19.93

Qp - Quasi-Peak detector

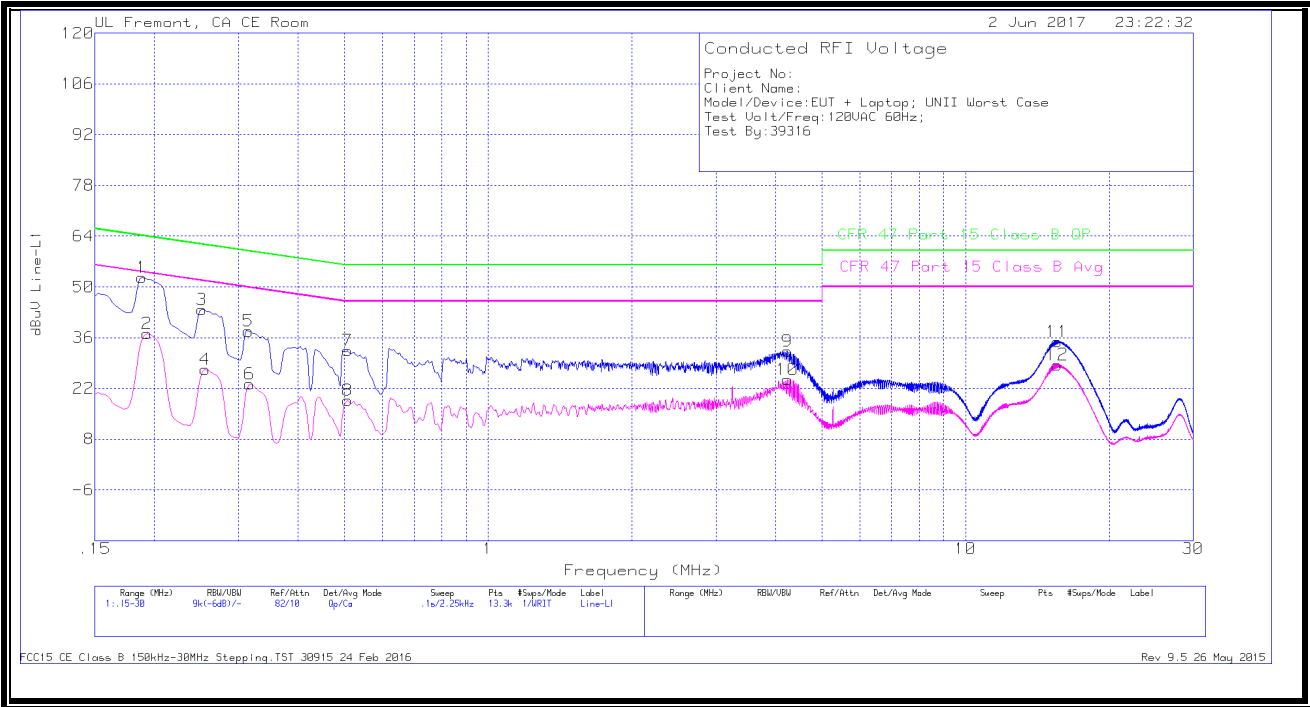
Ca - CISPR average detection

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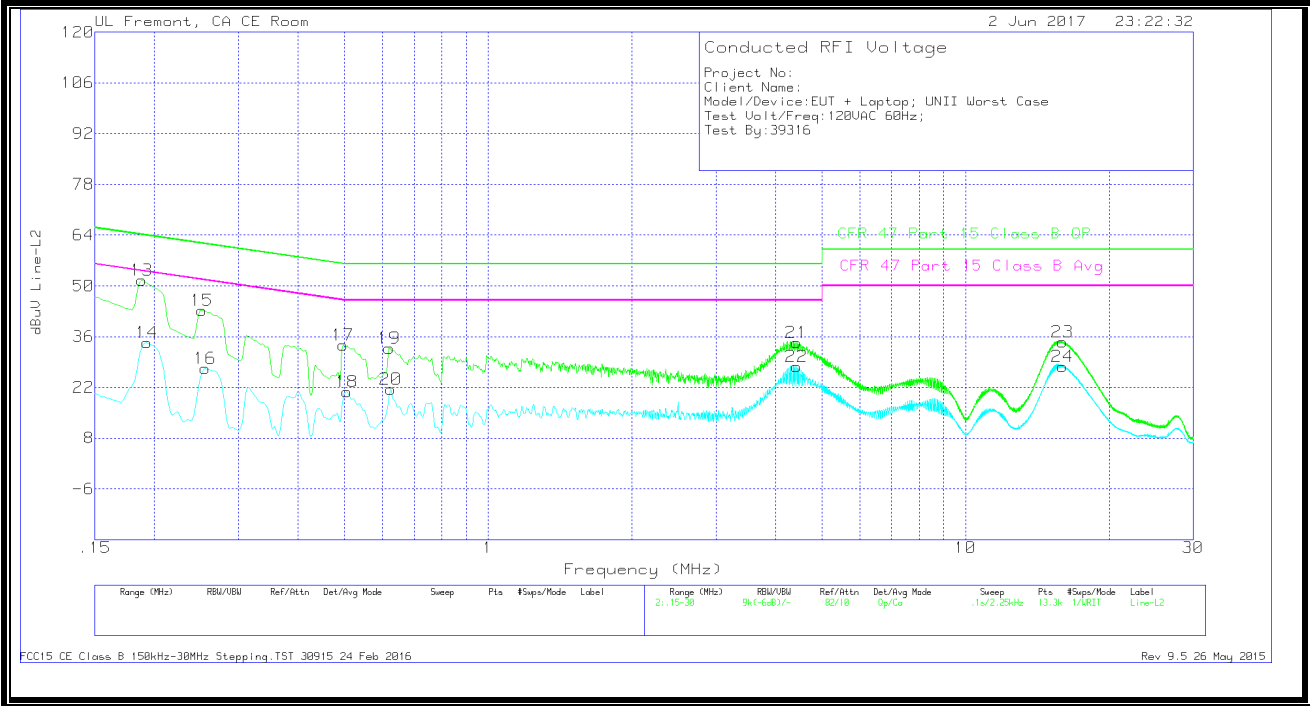
Rev 9.5 26 May 2015

10.2. EUT POWERED BY HOST PC VIA USB CABLE

LINE 1 RESULTS



LINE 2 RESULTS



WORST EMISSIONS

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	.18825	42.38	Qp	0	.1	10.1	52.58	64.11	-11.53	-	-
2	.19275	26.87	Ca	0	.1	10.1	37.07	-	-	53.92	-16.85
3	.25125	33.61	Qp	0	.1	10.1	43.81	61.72	-17.91	-	-
4	.25575	16.98	Ca	0	.1	10.1	27.18	-	-	51.57	-24.39
5	.31425	27.55	Qp	0	.1	10.1	37.75	59.86	-22.11	-	-
6	.3165	12.98	Ca	0	.1	10.1	23.18	-	-	49.8	-26.62
7	.50775	22.17	Qp	0	.1	10.1	32.37	56	-23.63	-	-
8	.50775	8.47	Ca	0	.1	10.1	18.67	-	-	46	-27.33
9	4.2315	22.03	Qp	0	.1	10.1	32.23	56	-23.77	-	-
10	4.2315	14.31	Ca	0	.1	10.1	24.51	-	-	46	-21.49
11	15.5783	24.55	Qp	0	.2	10.2	34.95	60	-25.05	-	-
12	15.5783	18.13	Ca	0	.2	10.2	28.53	-	-	50	-21.47

Qp - Quasi-Peak detector

Ca - CISPR average detection

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN 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	.18825	41.32	Qp	0	.1	10.1	51.52	64.11	-12.59	-	-
14	.19275	24.08	Ca	0	.1	10.1	34.28	-	-	53.92	-19.64
15	.25125	33.08	Qp	0	.1	10.1	43.28	61.72	-18.44	-	-
16	.25575	17.04	Ca	0	.1	10.1	27.24	-	-	51.57	-24.33
17	.4965	23.49	Qp	0	.1	10.1	33.69	56.06	-22.37	-	-
18	.5055	10.61	Ca	0	.1	10.1	20.81	-	-	46	-25.19
19	.62025	22.66	Qp	0	.1	10.1	32.86	56	-23.14	-	-
20	.62475	11.26	Ca	0	.1	10.1	21.46	-	-	46	-24.54
21	4.43175	24.18	Qp	0	.1	10.1	34.38	56	-21.62	-	-
22	4.4295	17.56	Ca	0	.1	10.1	27.76	-	-	46	-18.24
23	15.954	24.02	Qp	0	.2	10.3	34.52	60	-25.48	-	-
24	15.9563	17.21	Ca	0	.2	10.3	27.71	-	-	50	-22.29

Qp - Quasi-Peak detector

Ca - CISPR average detection

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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

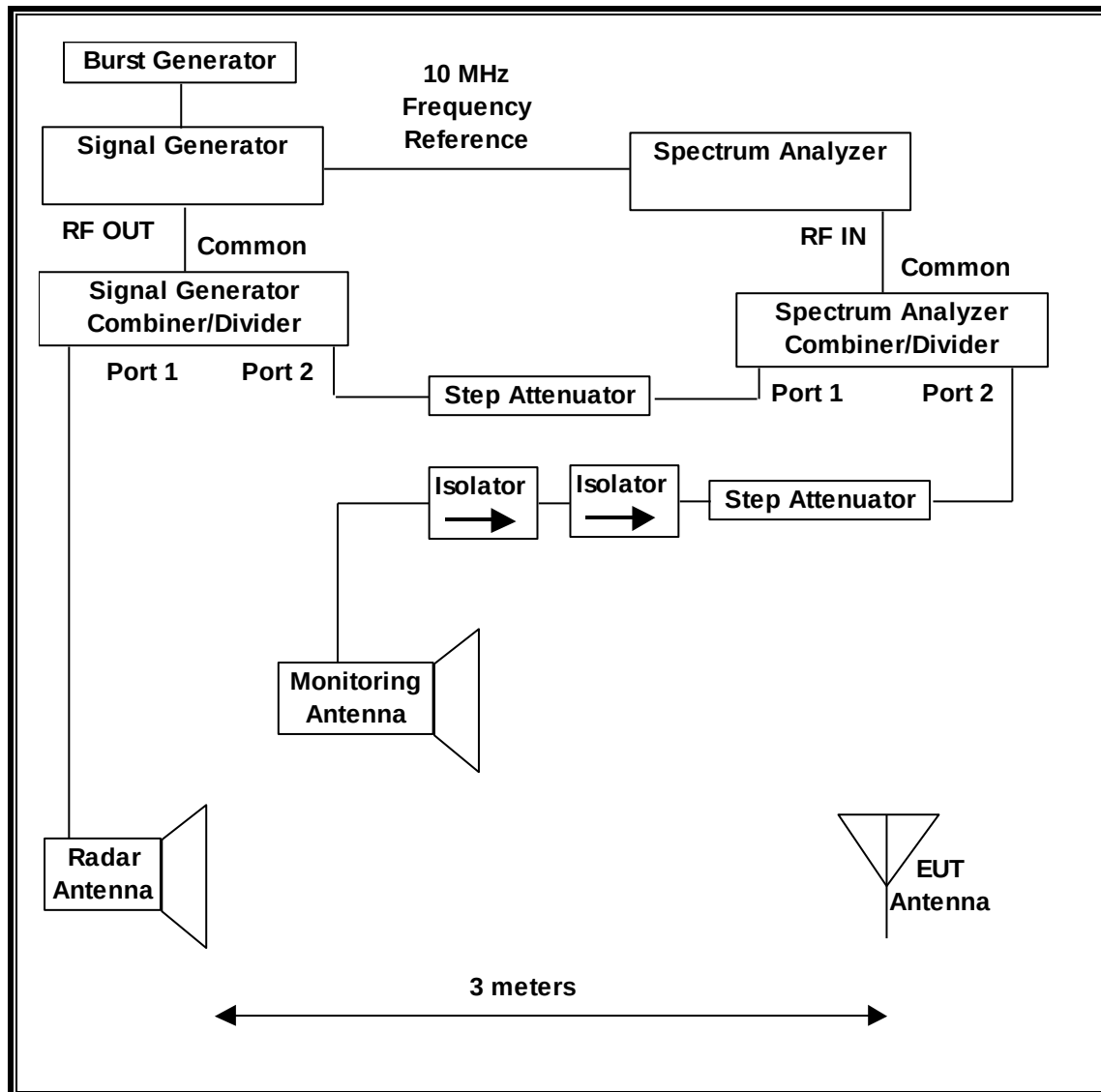
Radar Waveform Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

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	Serial 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	26 °C
Humidity	32 %

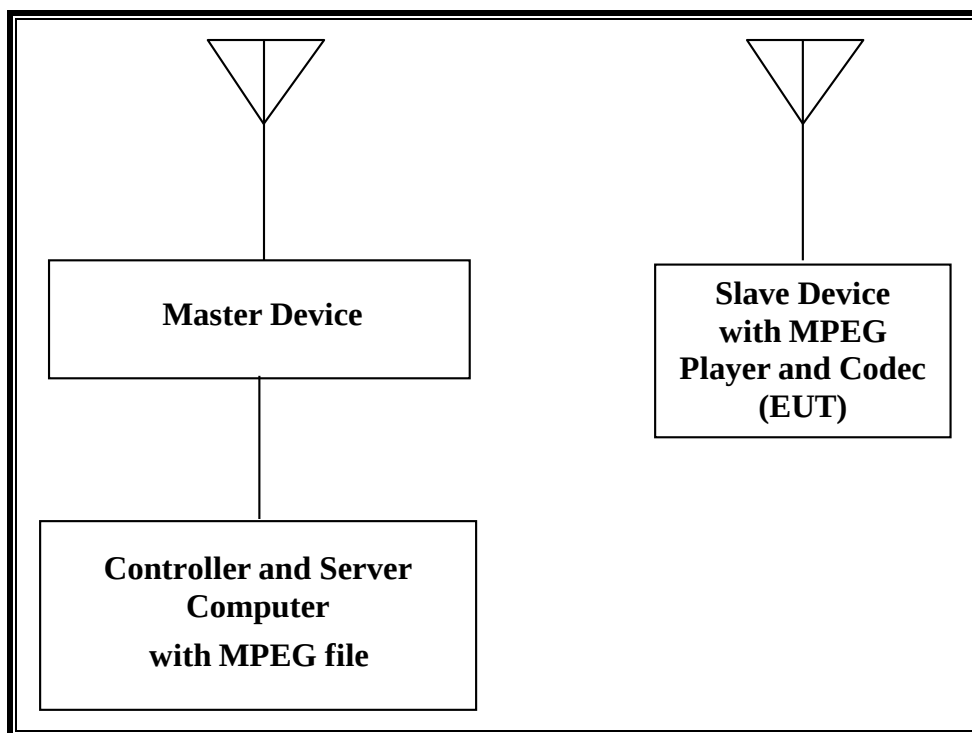
11.1.4. TEST AND MEASUREMENT SOFTWARE

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



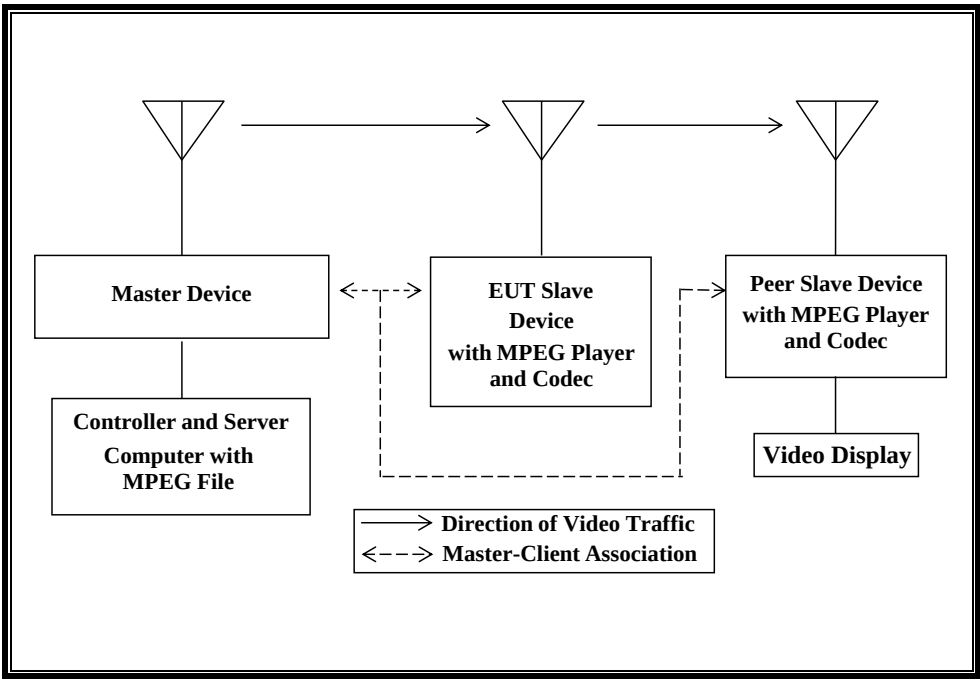
SUPPORT EQUIPMENT

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



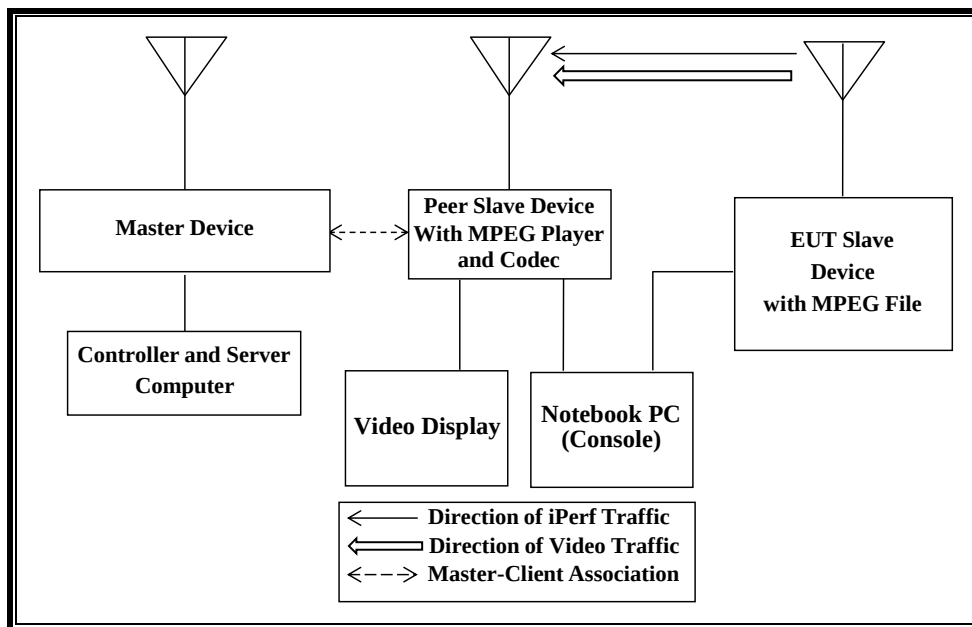
SUPPORT EQUIPMENT

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

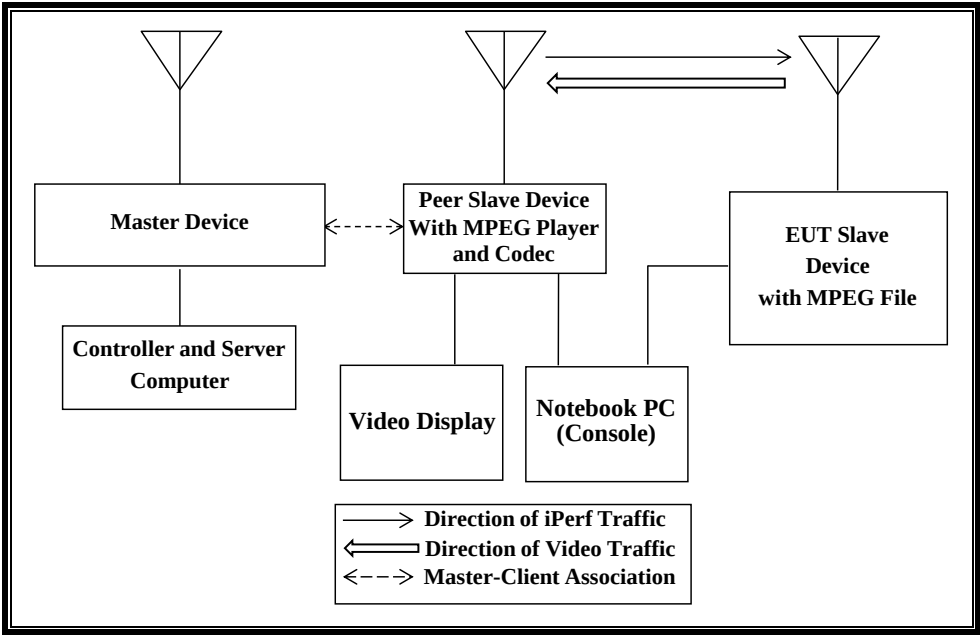
PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
802.11a/b/g/n/ac Wireless Router (Master Device)	Apple	A1521	C86LCE5GFJ1R	BCGA1521
Notebook PC (Controller/Server)	Apple	A1181	4H629022WLV	DoC
AC Adapter (Notebook PC)	Apple	A1343	C0424760BMPF1Y7AB	DoC
Peer Slave 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 19.16 dBm EIRP in the 5250-5350 MHz band and 19.66 dBm EIRP in the 5470-5725 MHz band.

Only UAT 2 and LAT 3 antennas assembly utilized with the EUT has a gain of -3.27dBi and -6.98dBi in the 5250-5350 MHz band and -2.77 dBi and -6.89 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 (15A176a).

UNIFORM CHANNEL SPREADING

This function is not required per KDB 905462.

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

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

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

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

The software installed in the access point is revision 7.7.4 f0 dev.

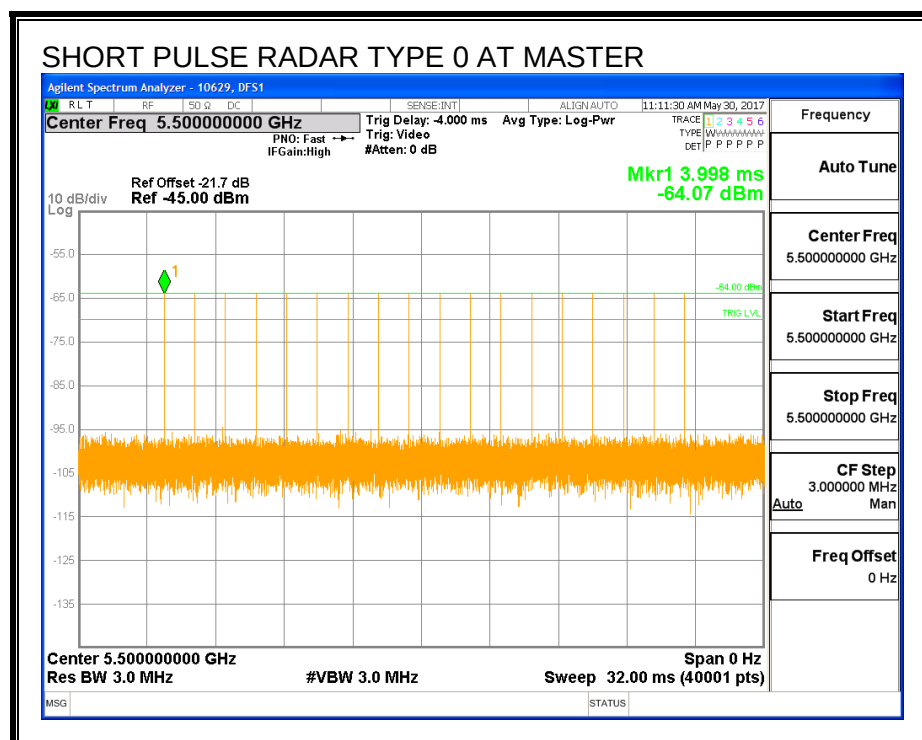
11.2. CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH

11.2.1. TEST CHANNEL

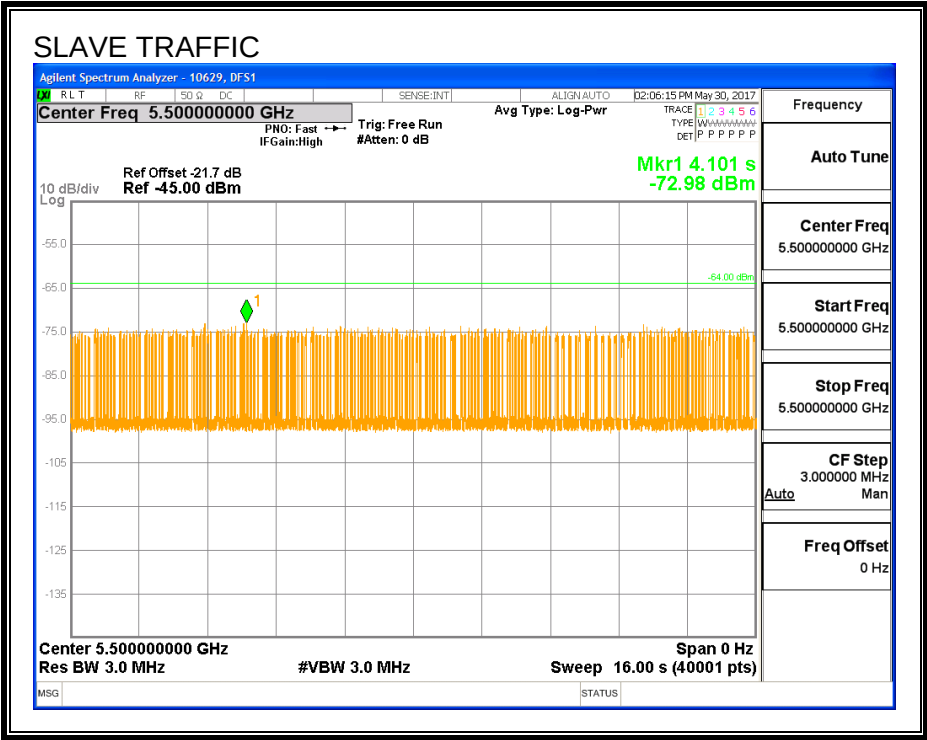
All tests were performed at a channel center frequency of 5500 MHz.

11.2.2. RADAR WAVEFORM AND TRAFFIC

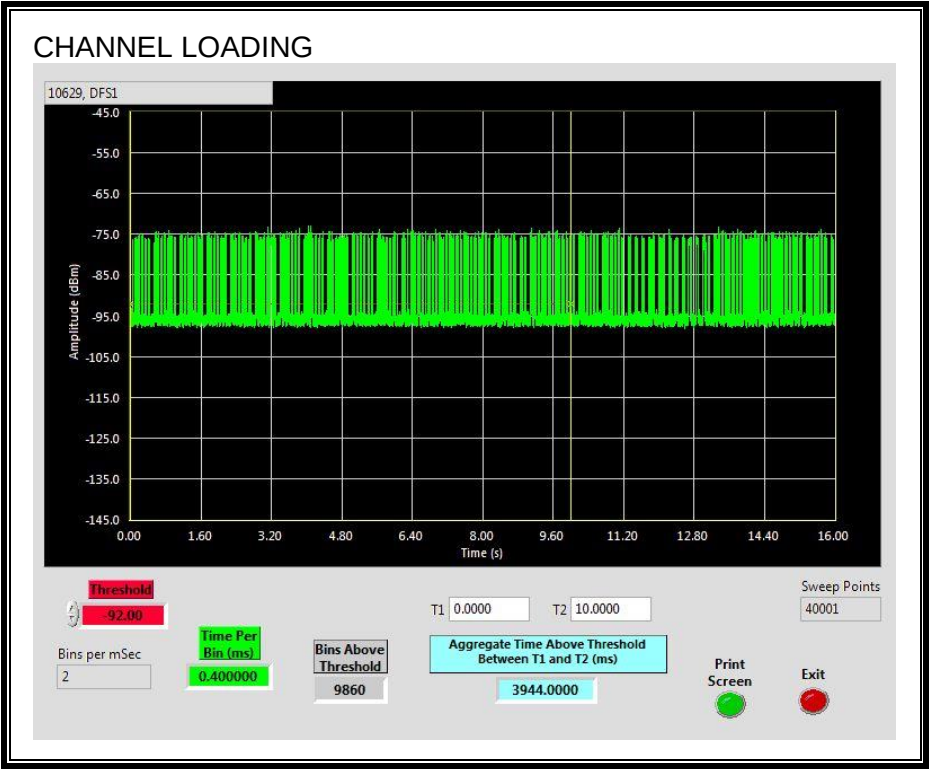
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 39.44%

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)

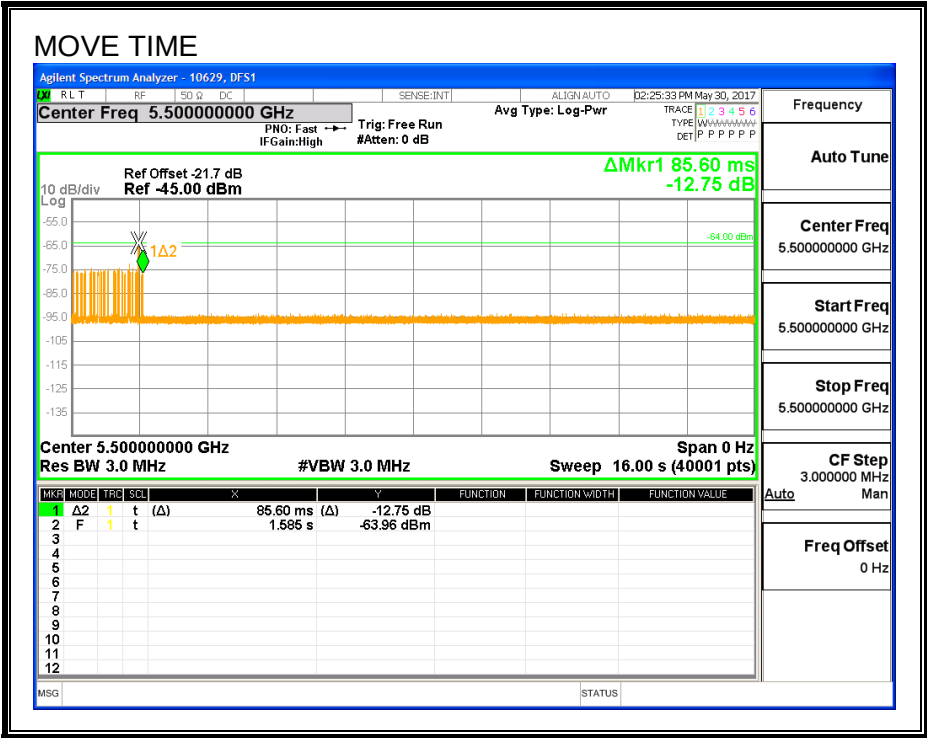
The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

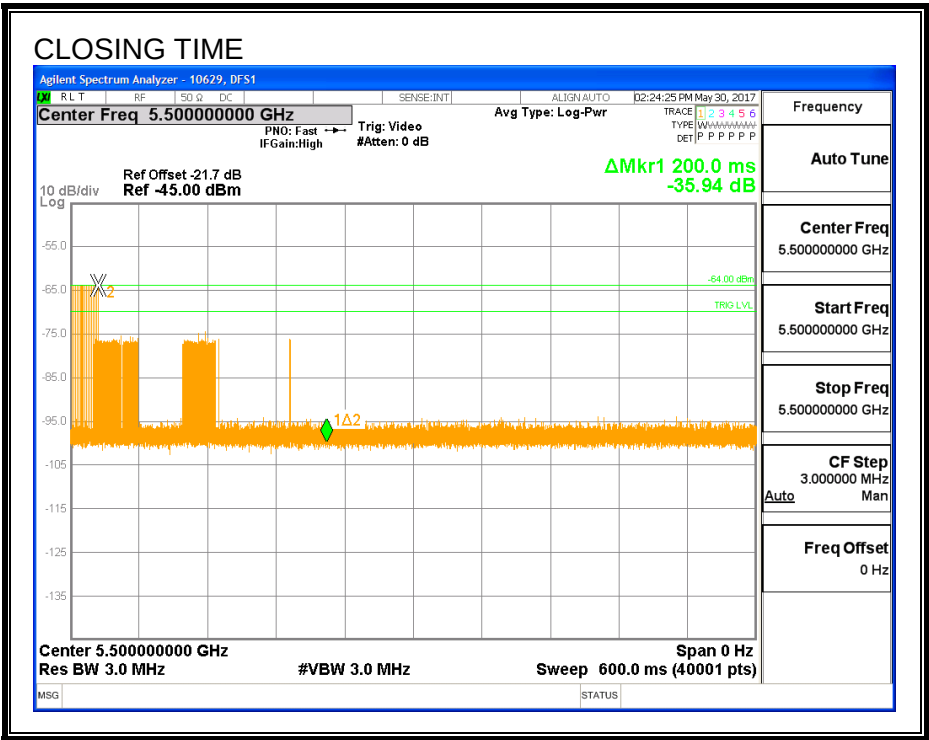
Channel Move Time (sec)	Limit (sec)
0.086	10

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

MOVE TIME

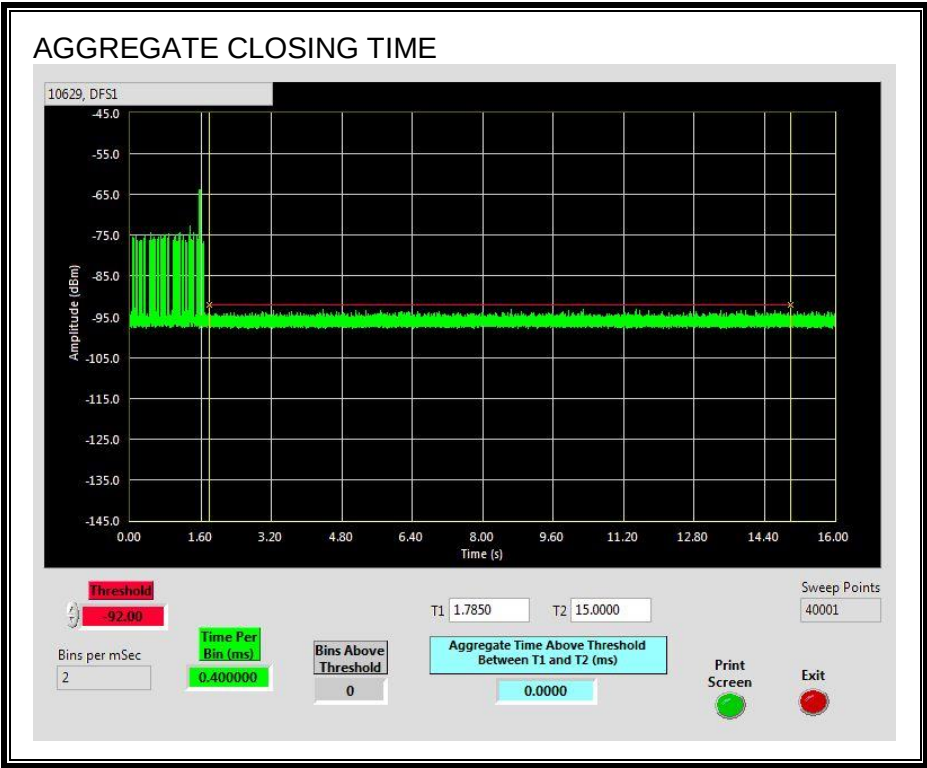


CHANNEL CLOSING TIME



AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



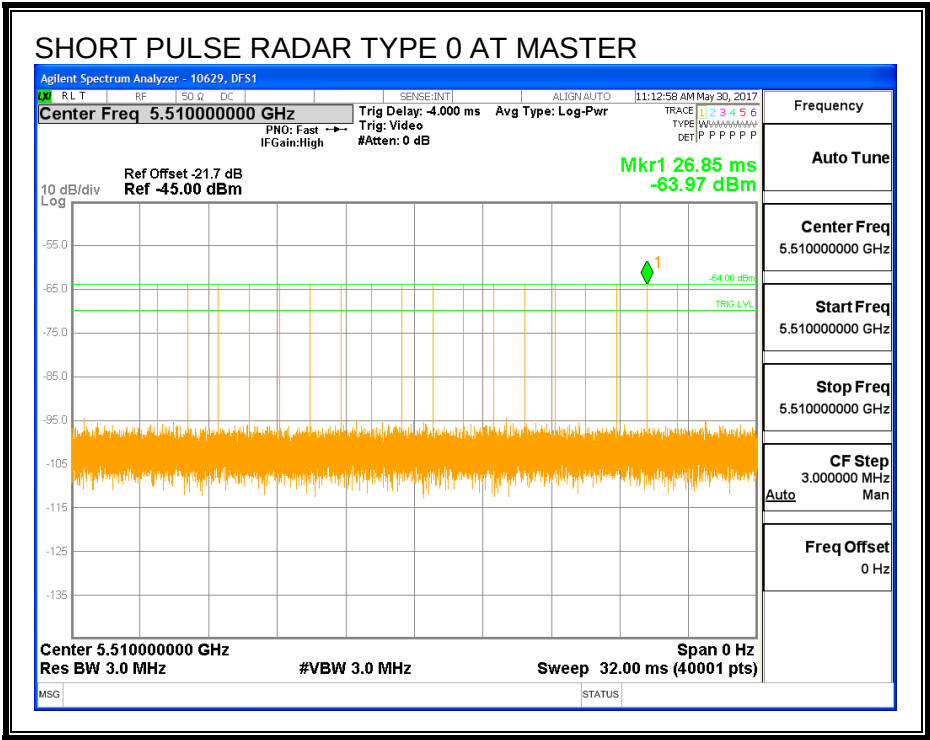
11.3. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH

11.3.1. TEST CHANNEL

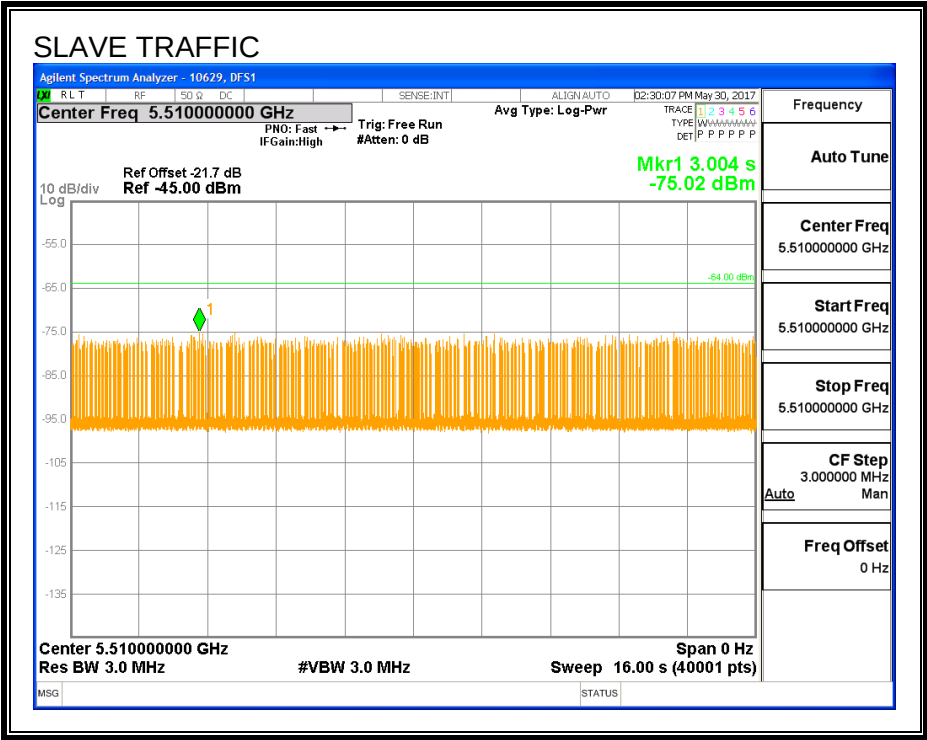
All tests were performed at a channel center frequency of 5510 MHz.

11.3.2. RADAR WAVEFORM AND TRAFFIC

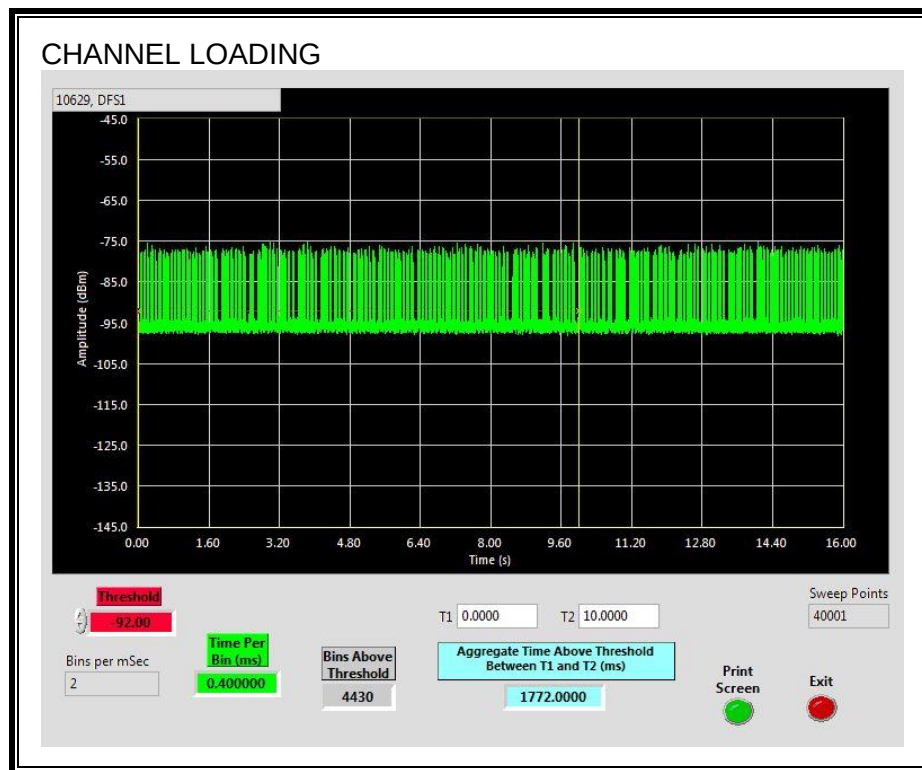
RADAR WAVEFORM



TRAFFIC



CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 17.72%

11.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

11.3.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

Channel Move Time (sec)	Limit (sec)
0.136	10

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

MOVE TIME

