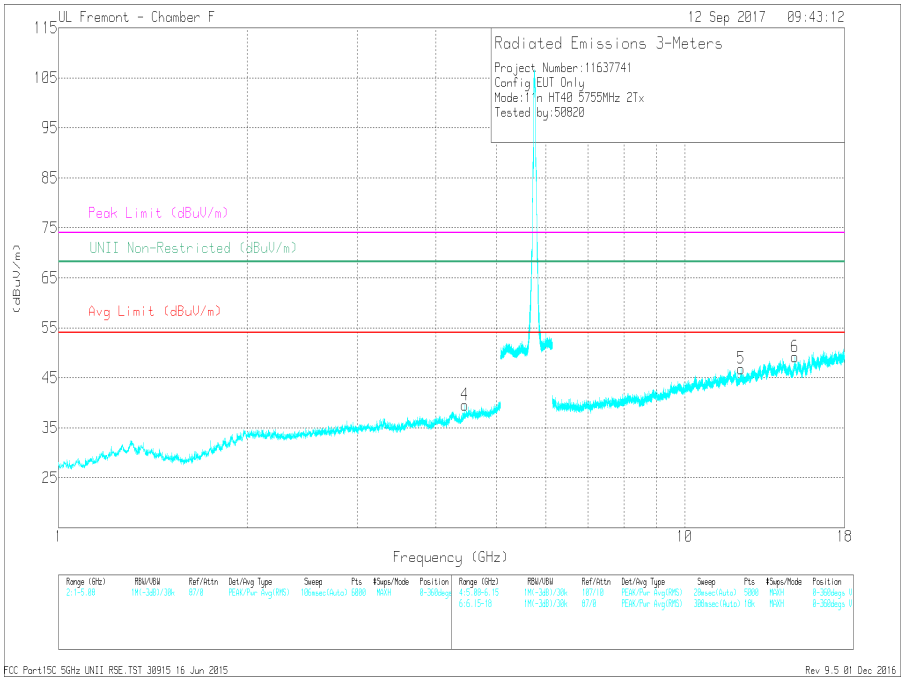
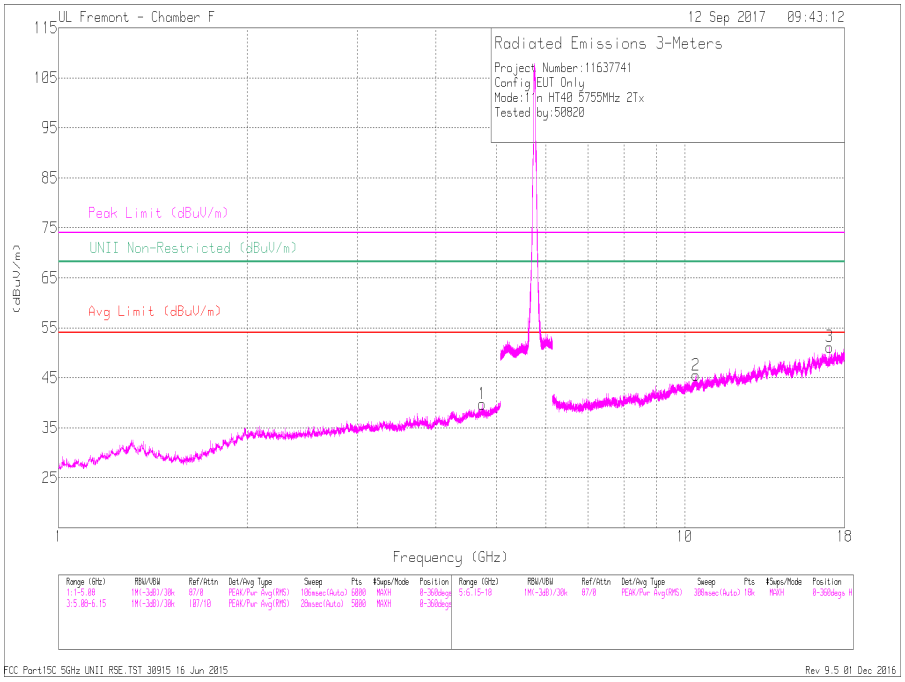
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL RESULTS

VERTICAL



HORIZONTAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.749	38.95	PK-U	34.1	-27.5	0	45.55	-	-	74	-28.45	-	-	315	122	H
	* 4.749	27.55	ADR	34.1	-27.5	.1	34.25	54	-19.75	-	-	-	-	315	122	H
4	4.456	38.28	PK-U	34	-27.3	0	44.98	-	-	-	-	68.2	-23.22	120	245	V
2	10.418	35.35	PK-U	37.7	-20.8	0	52.25	-	-	-	-	68.2	-15.95	99	106	H
3	17.032	35.56	PK-U	41.6	-20.9	0	56.26	-	-	-	-	68.2	-11.94	202	341	H
5	* 12.299	36.34	PK-U	38.8	-21.9	0	53.24	-	-	74	-20.76	-	-	240	163	V
	* 12.298	24.72	ADR	38.8	-21.9	.1	41.72	54	-12.28	-	-	-	-	240	163	V
6	15.002	37.44	PK-U	41.2	-22.8	0	55.84	-	-	-	-	68.2	-12.36	302	259	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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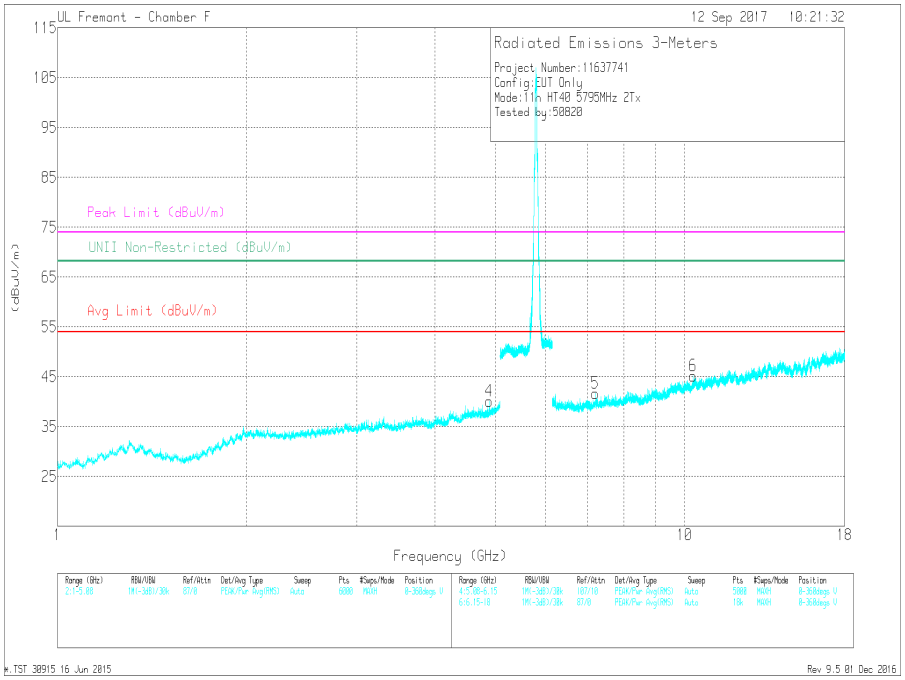
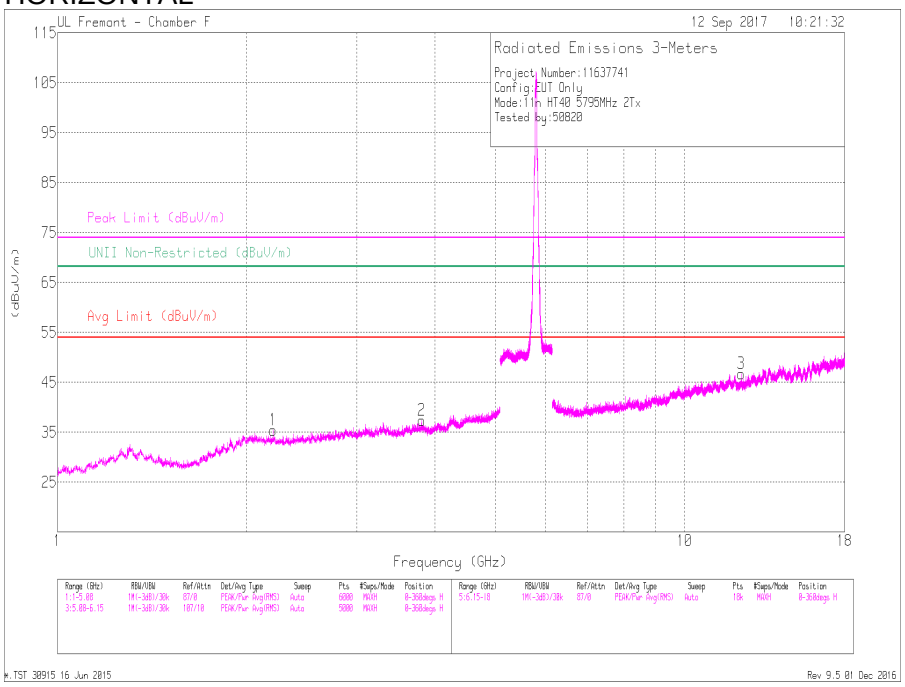
HIGH CHANNEL RESULTS

VERTICAL



HORIZONTAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.204	40.44	PK-U	32	-30.6	0	41.84	-	-	74	-32.16	-	-	255	120	H
	* 2.205	28.55	ADR	32	-30.6	.1	30.05	54	-23.95	-	-	-	-	255	120	H
2	* 3.808	39.38	PK-U	33.3	-29	0	43.68	-	-	74	-30.32	-	-	136	222	H
	* 3.81	28.08	ADR	33.3	-28.9	.1	32.58	54	-21.42	-	-	-	-	136	222	H
4	* 4.884	38.89	PK-U	34.2	-27.2	0	45.89	-	-	74	-28.11	-	-	98	107	V
	* 4.882	27.43	ADR	34.2	-27.3	.1	34.43	54	-19.57	-	-	-	-	98	107	V
3	* 12.309	35.91	PK-U	38.7	-21.8	0	52.81	-	-	74	-21.19	-	-	231	203	H
	* 12.31	24.73	ADR	38.7	-21.8	.1	41.73	54	-12.27	-	-	-	-	231	203	H
5	7.201	37.72	PK-U	35.9	-25.9	0	47.72	-	-	-	-	68.2	-20.48	85	345	V
6	10.31	34.88	PK-U	37.6	-21.8	0	50.68	-	-	-	-	68.2	-17.52	154	296	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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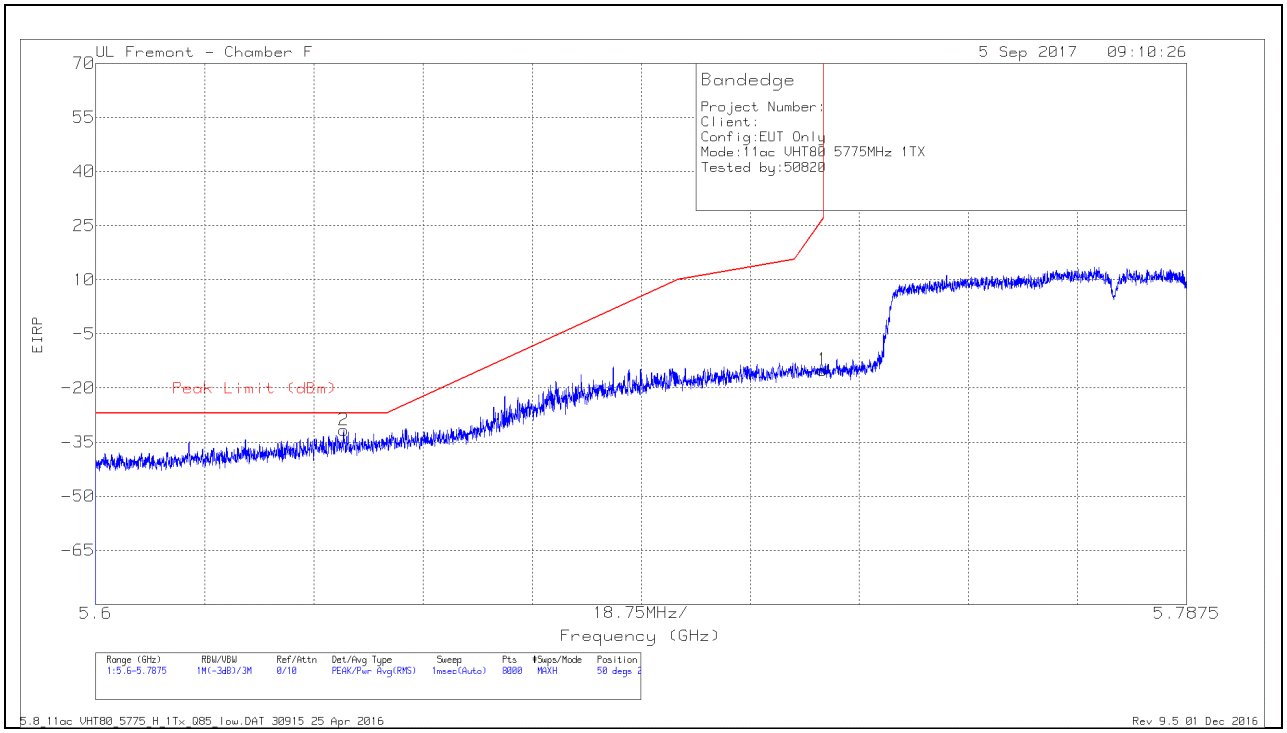
11.1.12. TX ABOVE 1 GHz 802.11ac VHT80 MODE IN THE 5.8 GHz BAND

1TX Antenna A

BANDEDGE (CHANNEL 155 LOW EDGE)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl /Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-43.82	Pk	35	-18	11.8	-15.02	26.96	-41.98	50	252	H
2	5.643	-60.2	Pk	34.9	-18.2	11.8	-31.7	-27	-4.7	50	252	H

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

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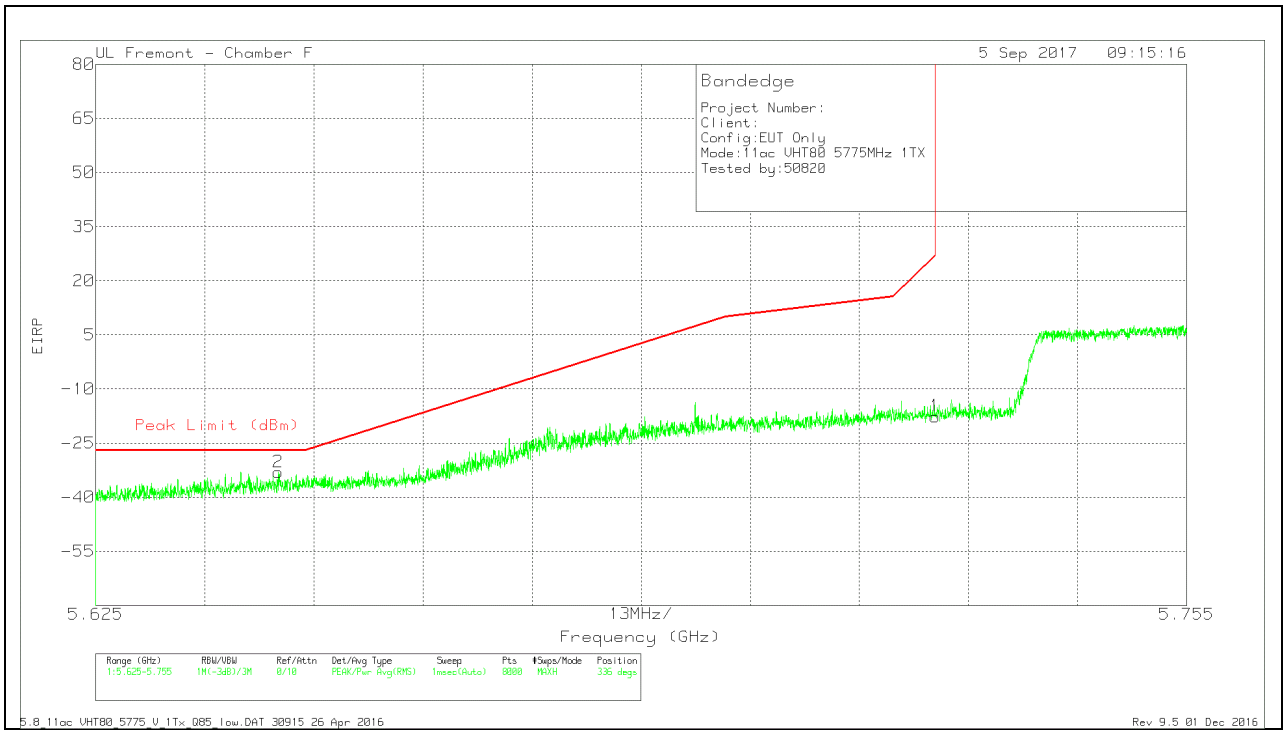
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-46.41	Pk	35	-18	11.8	-17.61	27	-44.61	336	227	V
2	5.647	-61.57	Pk	34.9	-18.2	11.8	-33.07	-27	-6.07	336	227	V

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

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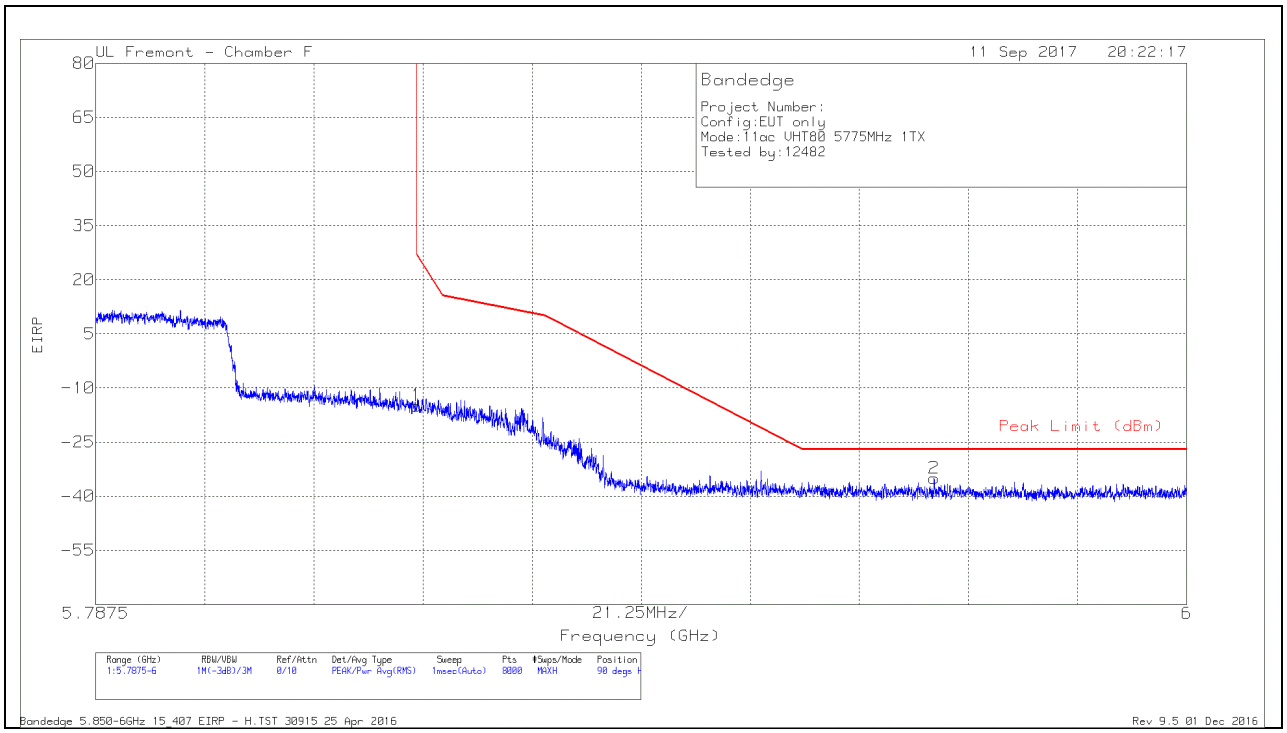
BANDEDGE (CHANNEL 155 HIGH EDGE)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-43.76	Pk	35.1	-18.1	11.8	0	-14.96	26.98	-41.94	90	257	H
2	5.951	-63.75	Pk	35.2	-18.3	11.8	0	-35.05	-27	-8.05	90	257	H

Pk - Peak detector

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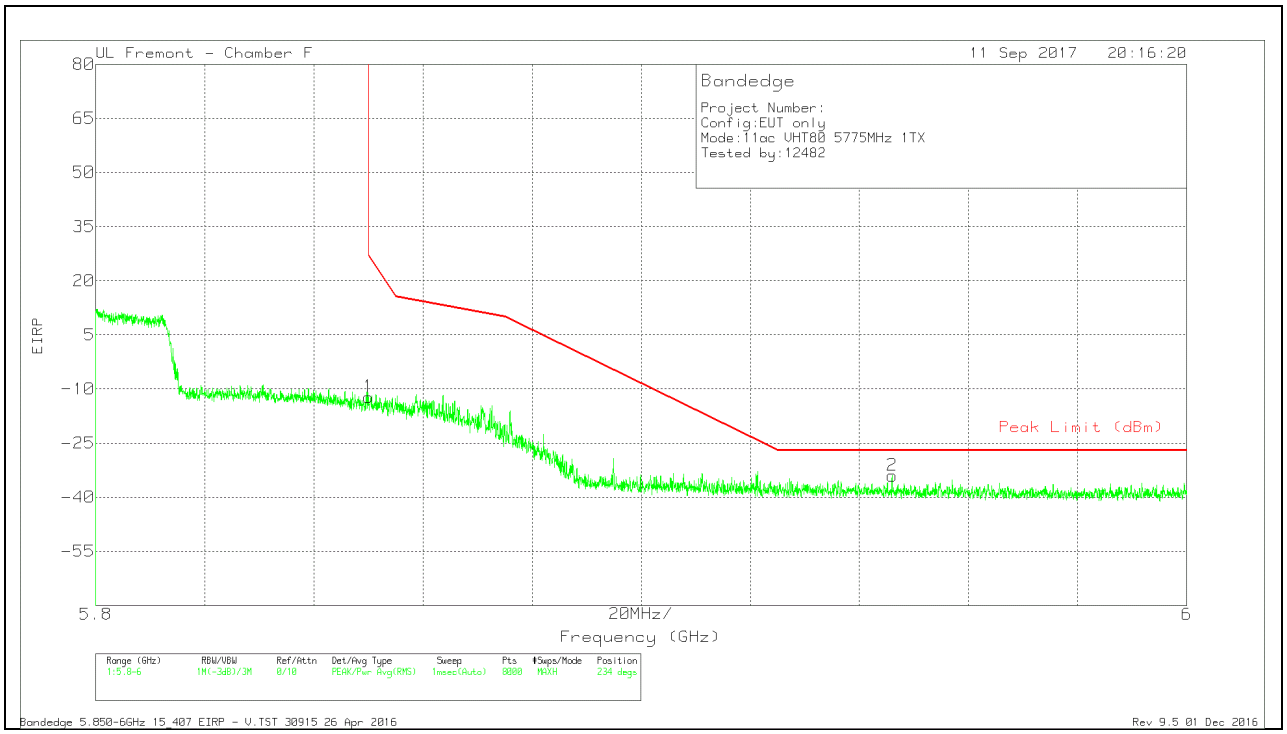
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-41.03	Pk	35.1	-18.1	11.8	0	-12.23	26.99	-39.22	234	312	V
2	5.946	-62.82	Pk	35.2	-18.2	11.8	0	-34.02	-27	-7.02	234	312	V

Pk - Peak detector

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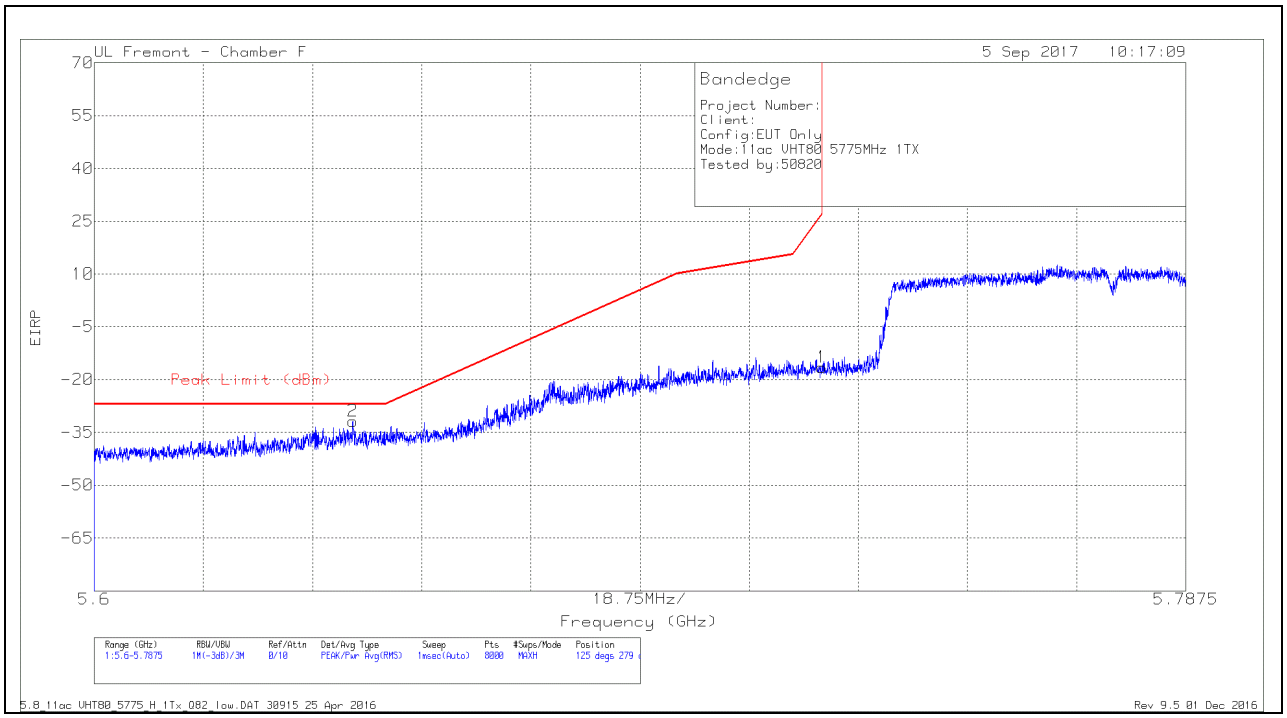
1TX Antenna B

BANDEDGE (CHANNEL 155 LOW EDGE)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-45.3	Pk	35	-18	11.8	-16.5	26.96	-43.46	125	279	H
2	5.644	-60.37	Pk	34.9	-18.2	11.8	-31.87	-27	-4.87	125	279	H

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

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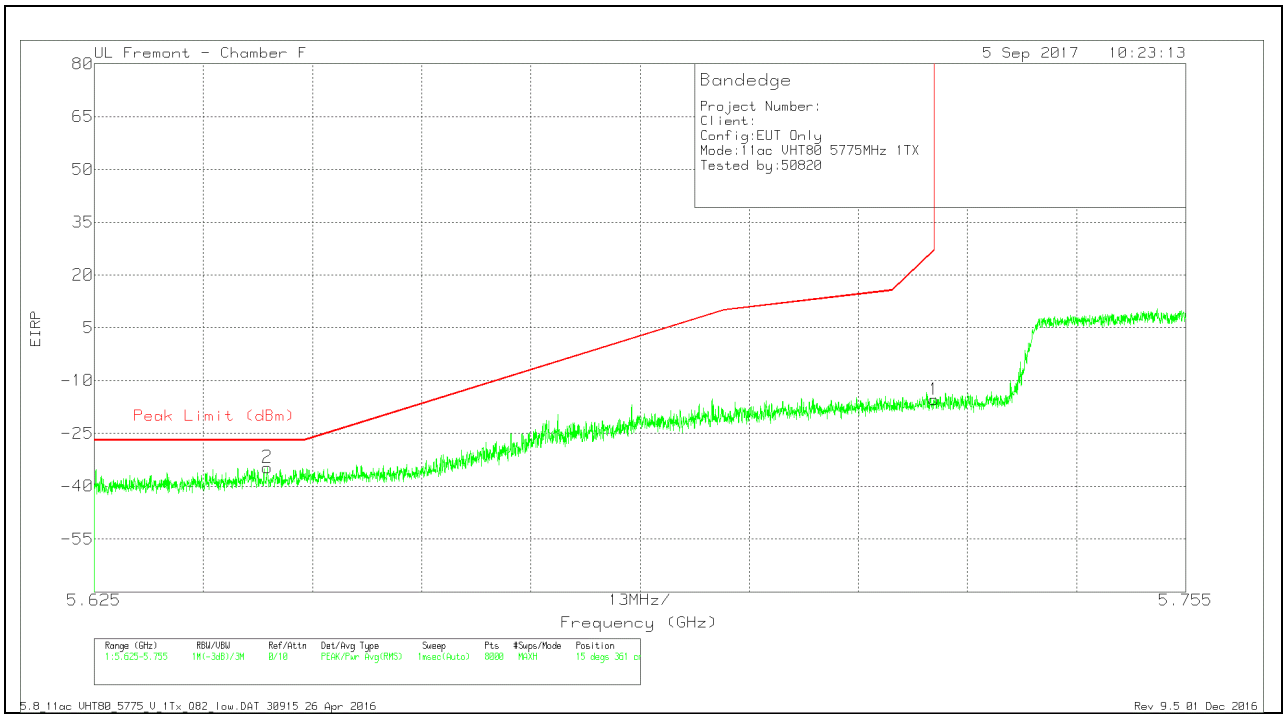
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-44.18	Pk	35	-18	11.8	-15.38	27	-42.38	15	361	V
2	5.646	-63.13	Pk	34.9	-18.2	11.8	-34.63	-27	-7.63	15	361	V

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

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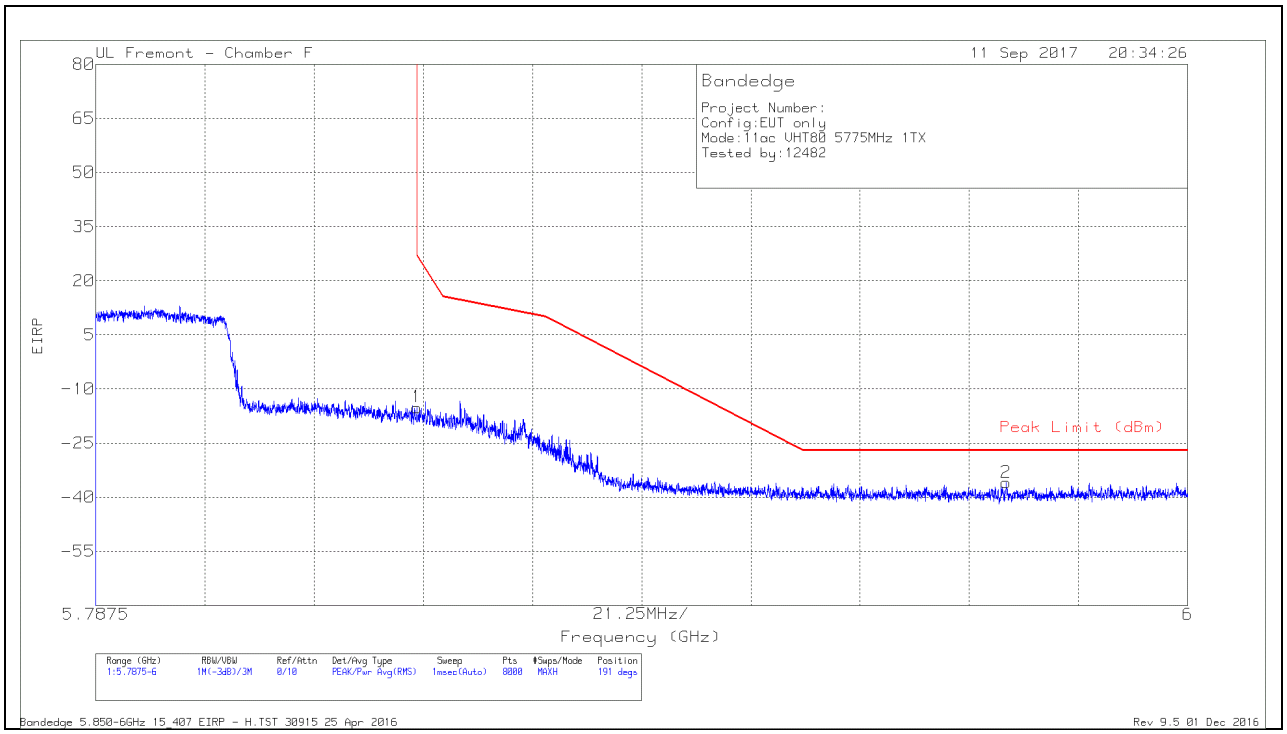
BANDEDGE (CHANNEL 155 HIGH EDGE)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-43.89	Pk	35.1	-18.1	11.8	0	-15.09	26.98	-42.07	191	224	H
2	5.965	-64.75	Pk	35.2	-18.2	11.8	0	-35.95	-27	-8.95	191	224	H

Pk - Peak detector

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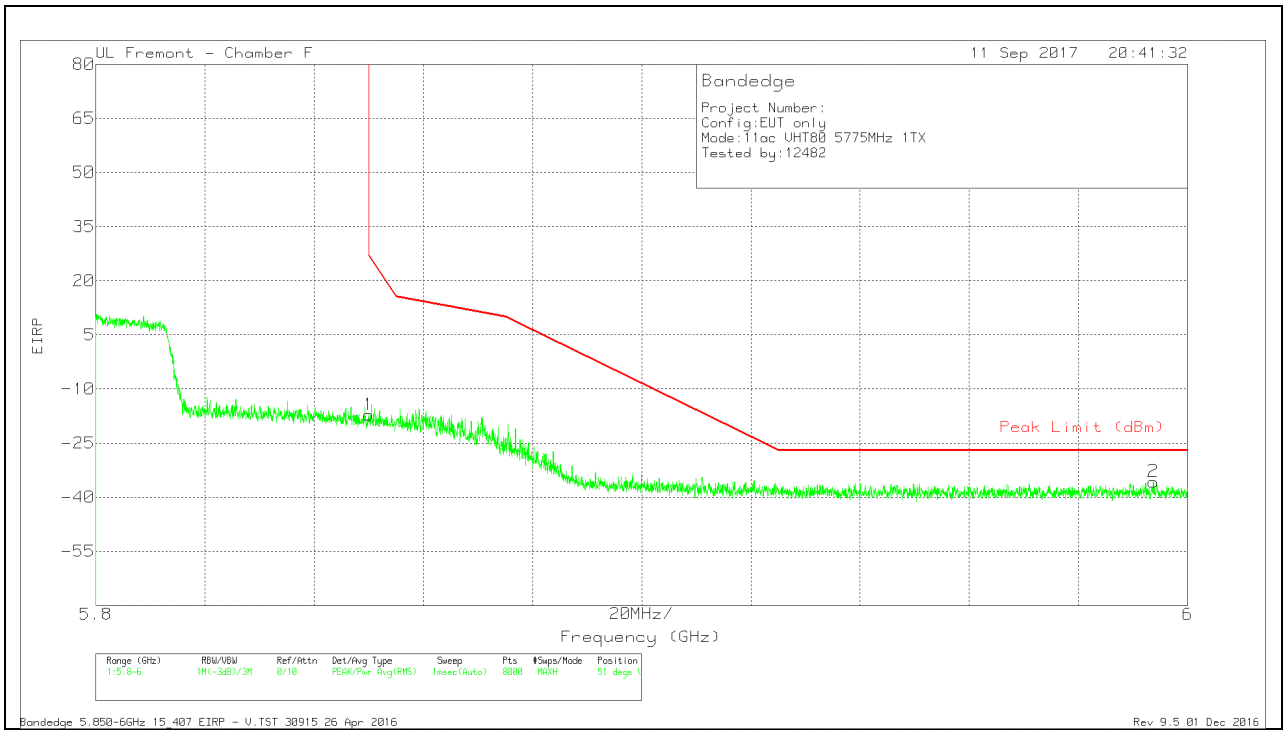
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-45.98	Pk	35.1	-18.1	11.8	-17.18	26.99	-44.17	51	324	V
2	5.994	-64.59	Pk	35.2	-18.1	11.8	-35.69	-27	-8.69	51	324	V

Pk - Peak detector

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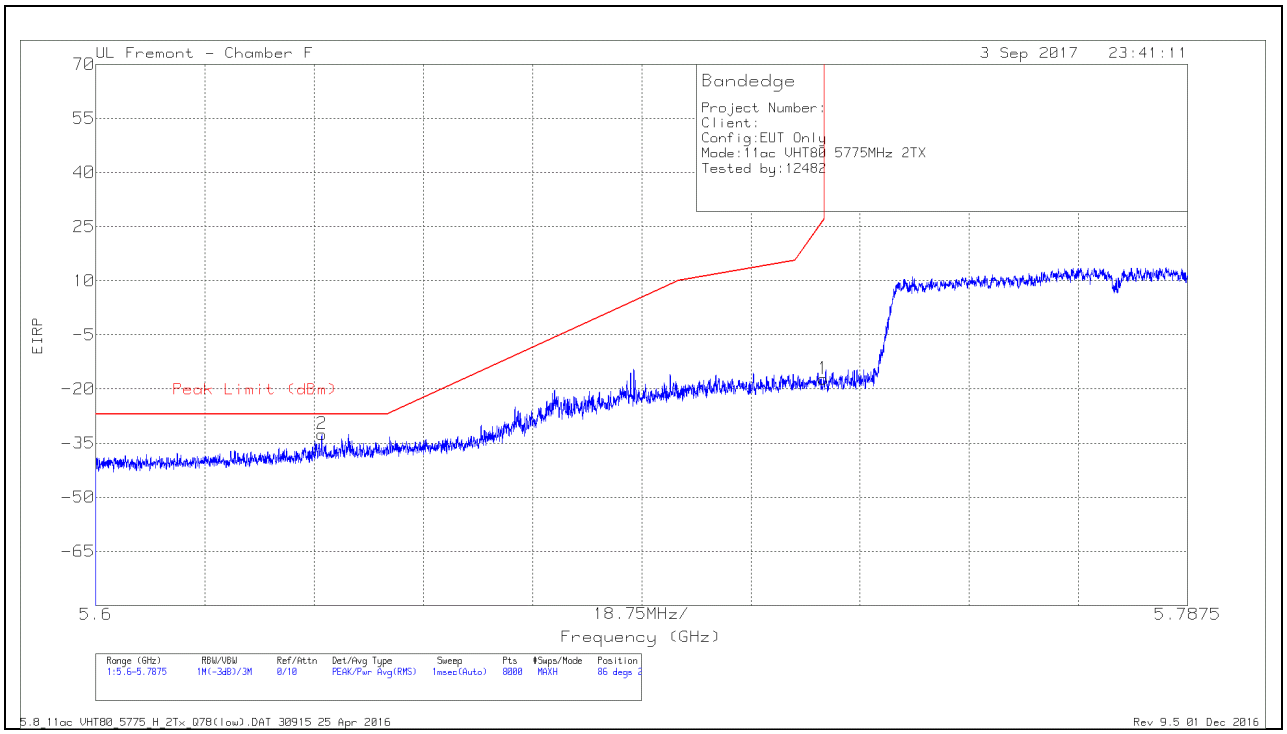
2TX Antenna A + Antenna B CDD MODE

BANDEDGE (CHANNEL 155 LOW EDGE)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-45.96	Pk	35	-18	11.8	0	-17.16	26.96	-44.12	86	249	H
2	5.639	-60.99	Pk	34.9	-18.2	11.8	0	-32.49	-27	-5.49	86	249	H

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

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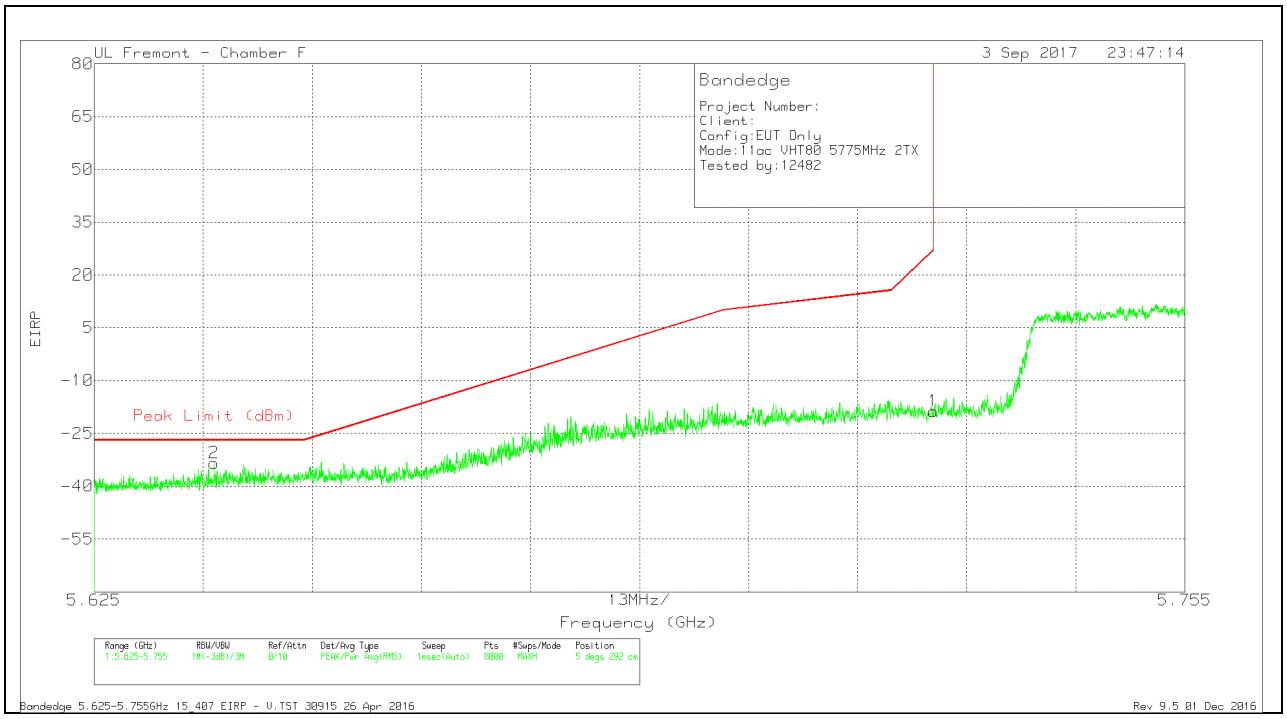
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-47.45	Pk	35	-18	11.8	-18.65	27	-45.65	5	292	V
2	5.639	-61.85	Pk	34.9	-18.2	11.8	-33.35	-27	-6.35	5	292	V

Pk - Peak detector

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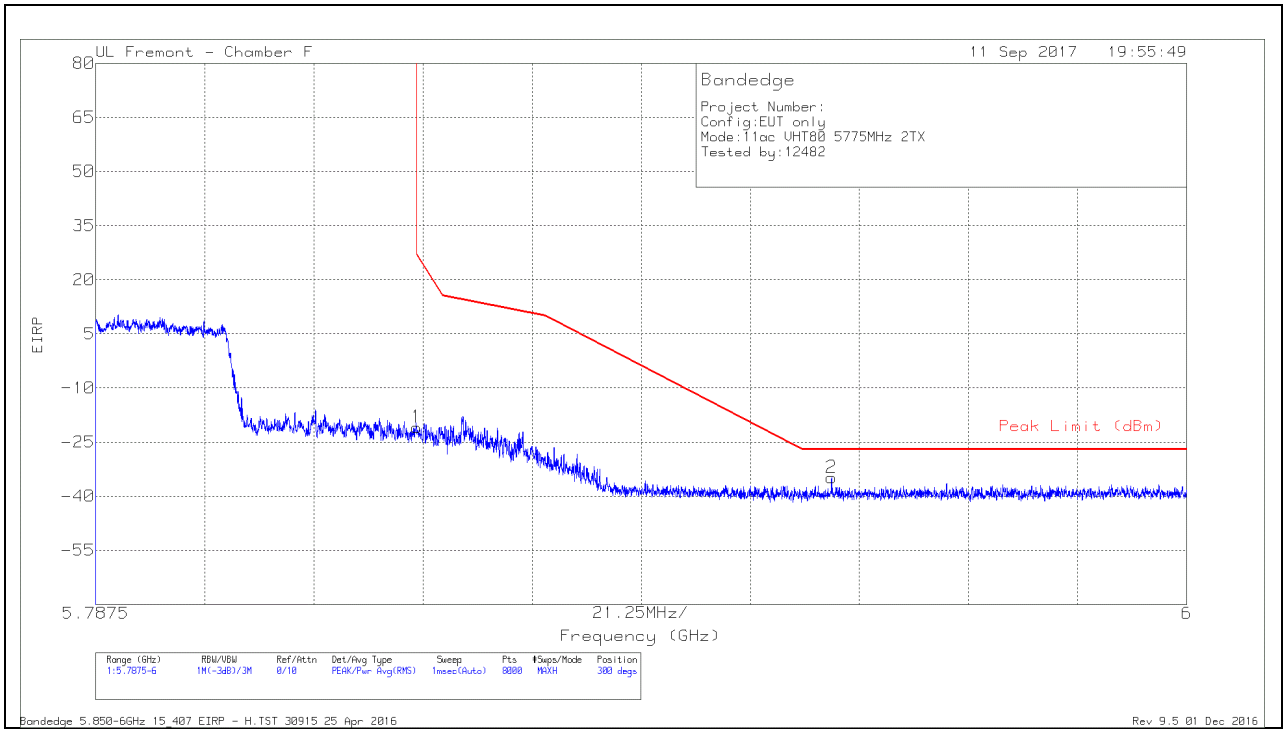
BANDEDGE (CHANNEL 155 HIGH EDGE)

HORIZONTAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-49.71	Pk	35.1	-18.1	11.8	0	-20.91	26.98	-47.89	300	213	H
2	5.931	-63.54	Pk	35.2	-18.3	11.8	0	-34.84	-27	-7.84	300	213	H

Pk - Peak detector

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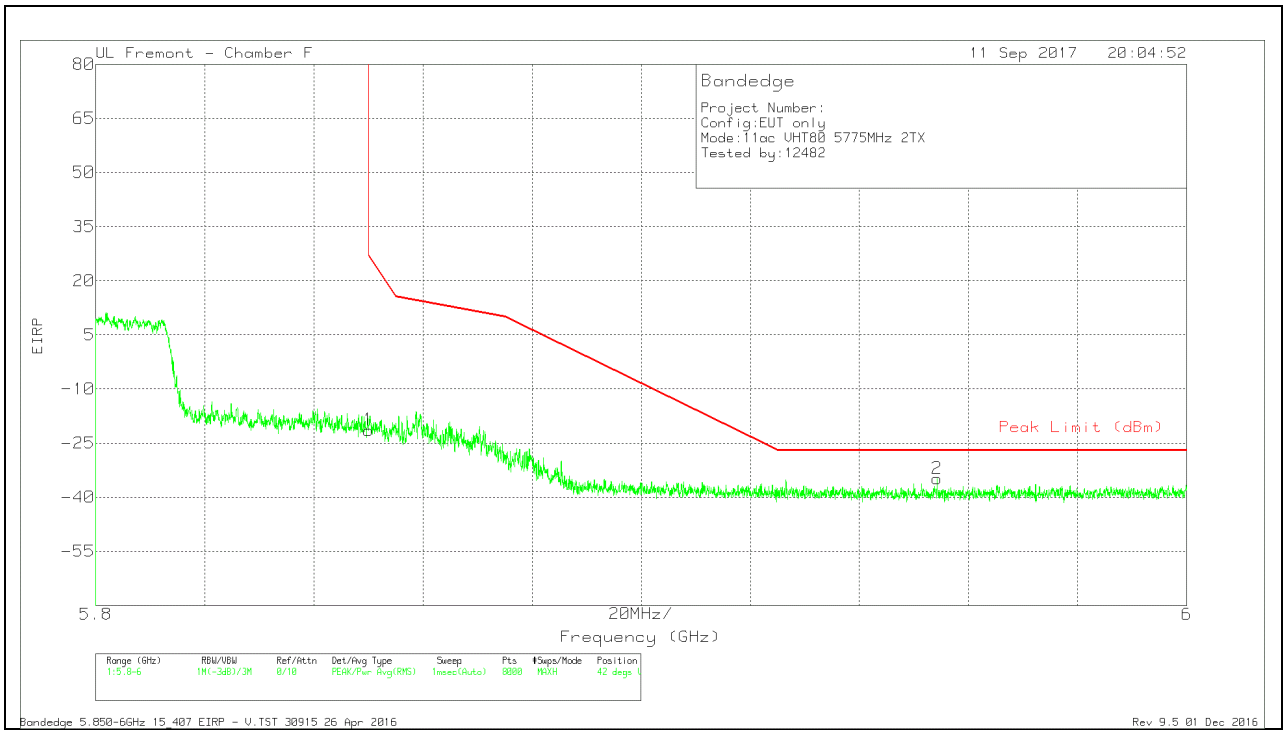
VERTICAL RESULT



Marker	Frequency (GHz)	Meter Reading (dBm)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-50.2	Pk	35.1	-18.1	11.8	0	-21.4	26.99	-48.39	42	269	V
2	5.954	-63.66	Pk	35.2	-18.2	11.8	0	-34.86	-27	-7.86	42	269	V

Pk - Peak detector

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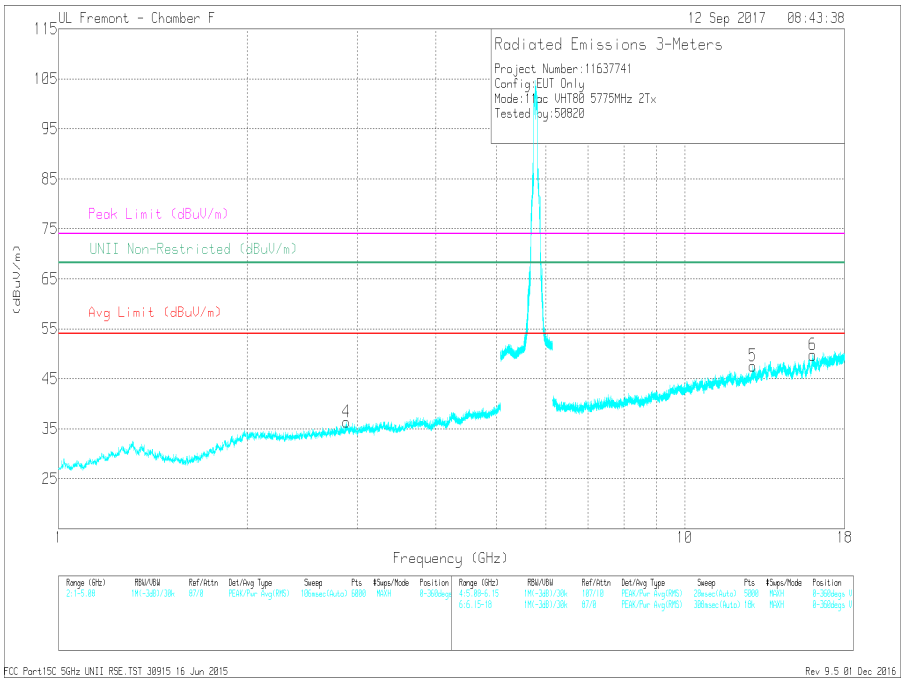
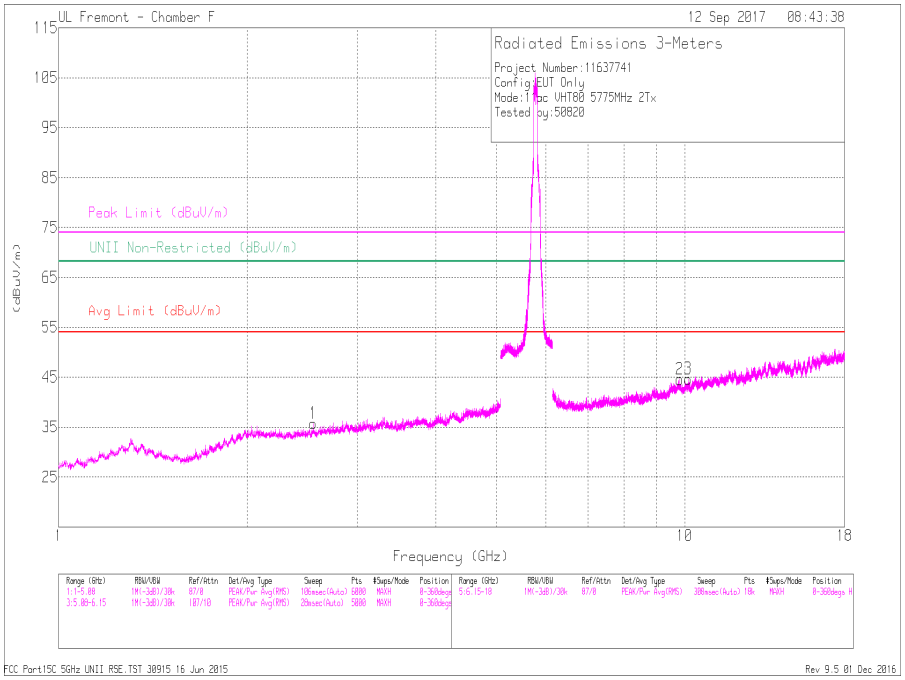
HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL RESULTS

VERTICAL



HORIZONTAL



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RADIATED EMISSIONS

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T119 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.55	40.9	PK-U	32.2	-30.3	0	42.8	-	-	-	-	68.2	-25.4	311	160	H
4	* 2.882	40.11	PK-U	32.8	-29.4	0	43.51	-	-	74	-30.49	-	-	169	215	V
	* 2.883	28.23	ADR	32.8	-29.4	.2	31.83	54	-22.17	-	-	-	-	169	215	V
2	9.821	35.29	PK-U	37.4	-21.6	0	51.09	-	-	-	-	68.2	-17.11	233	109	H
3	10.126	34.72	PK-U	37.4	-21.2	0	50.92	-	-	-	-	68.2	-17.28	210	257	H
5	12.84	35.82	PK-U	39.1	-21.9	0	53.02	-	-	-	-	68.2	-15.18	138	260	V
6	* 16.005	36.76	PK-U	41.9	-22	0	56.66	-	-	74	-17.34	-	-	54	111	V
	* 16.005	25.22	ADR	41.9	-22	.2	45.32	54	-8.68	-	-	-	-	54	111	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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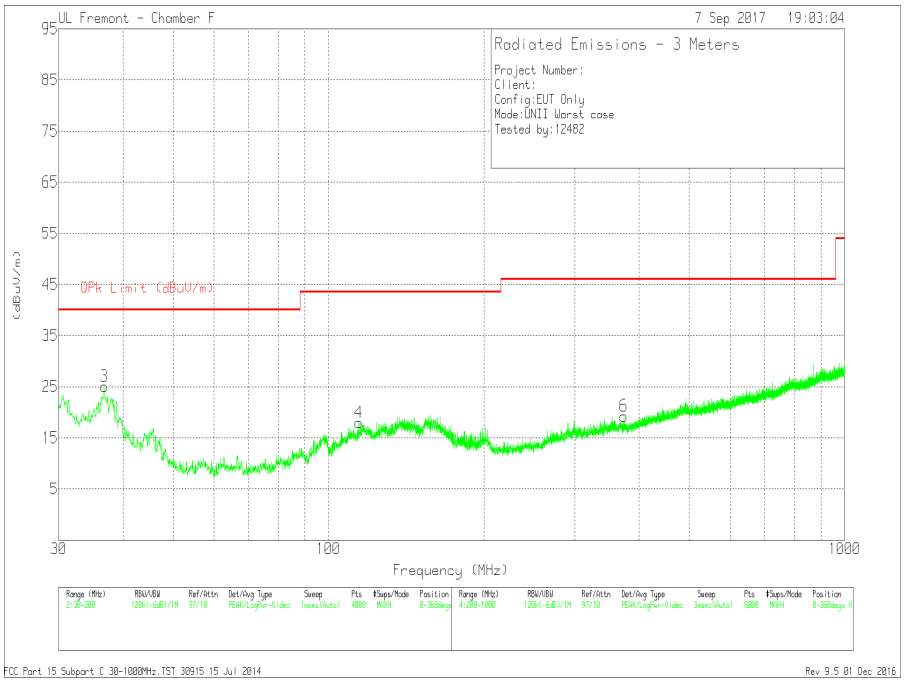
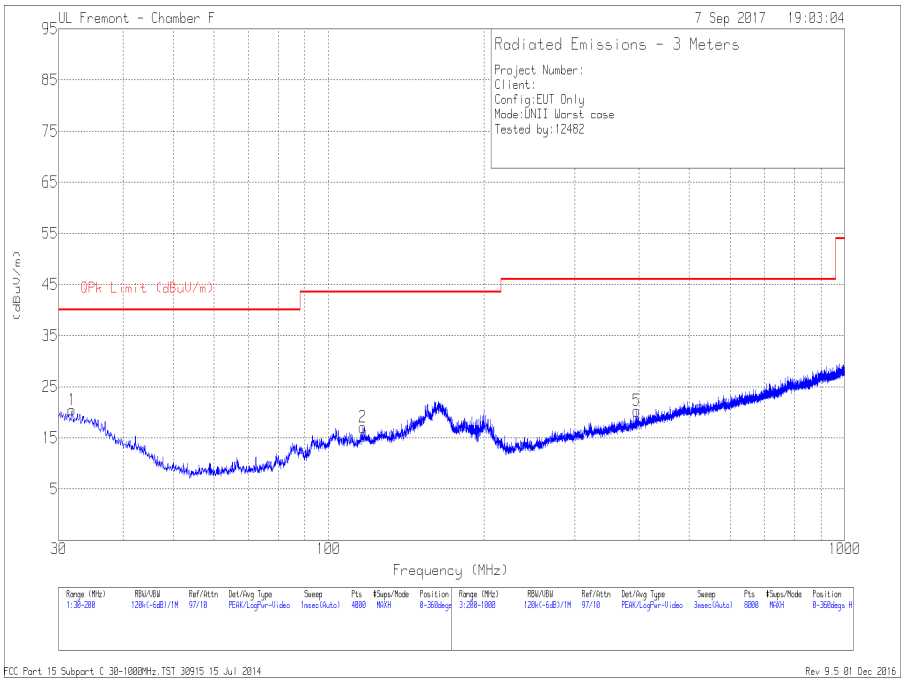
11.2. Worst Case Below 1 GHz



HORIZONTAL



VERTICAL

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Below 1GHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T122 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	31.828	29.46	Pk	22.9	-31.9	20.46	40	-19.54	0-360	399	H
2	* 116.5524	30.58	Pk	17.5	-31	17.08	43.52	-26.44	0-360	199	H
3	36.7805	36.97	Pk	19.9	-31.8	25.07	40	-14.93	0-360	100	V
4	* 114.5119	31.78	Pk	17.2	-31	17.98	43.52	-25.54	0-360	100	V
5	395.2254	30.31	Pk	19.4	-29.4	20.31	46.02	-25.71	0-360	299	H
6	373.5226	29.87	Pk	19	-29.6	19.27	46.02	-26.75	0-360	299	V

Pk - Peak detector

FCC Part 15 Subpart C 30-1000MHz.TST 30915 15 Jul 2014
Rev 9.5 01 Dec 2016

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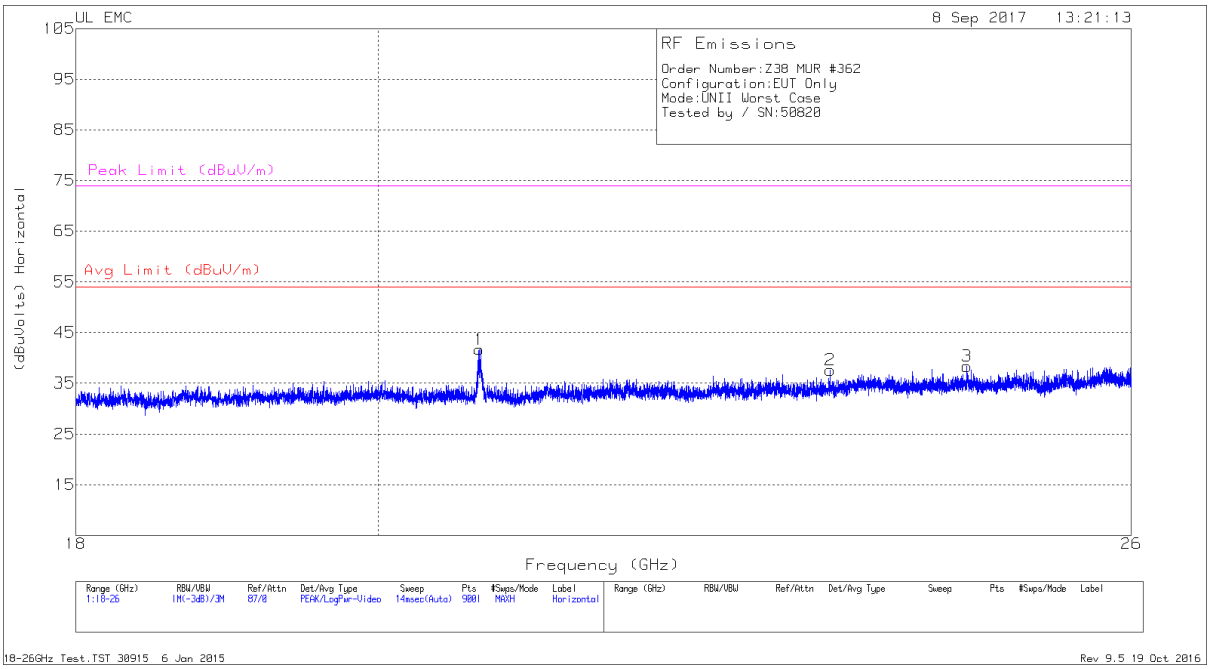
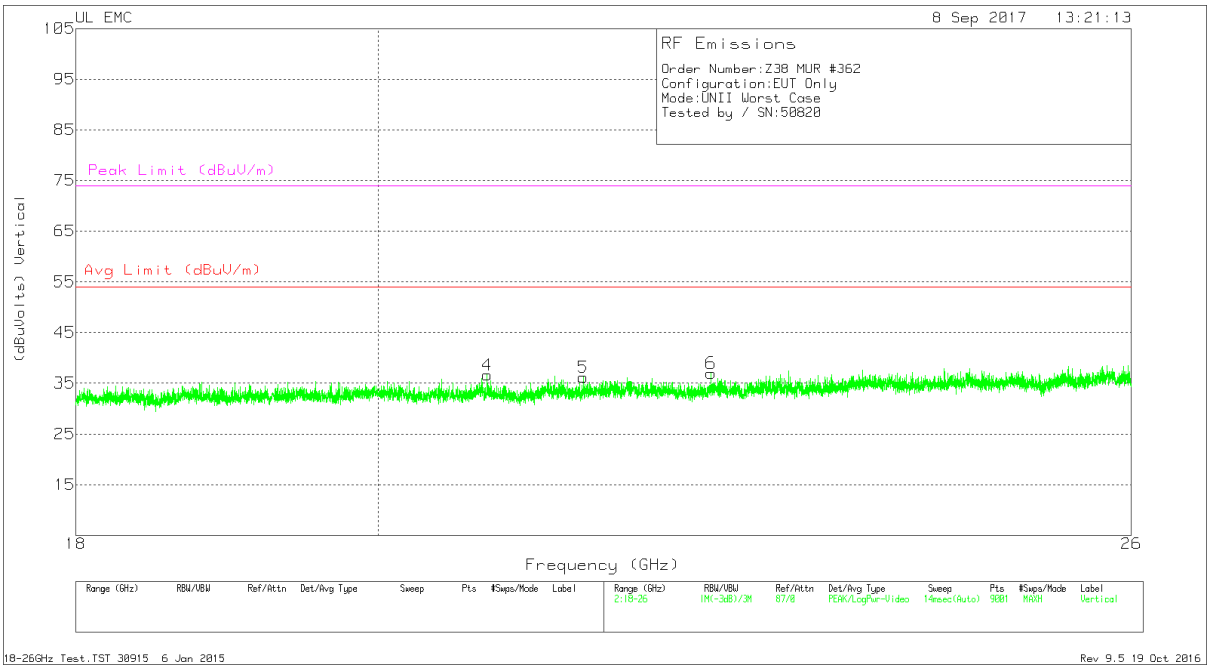
11.3. Worst Case 18-26 GHz

HORIZONTAL



VERTICAL



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18 – 26GHz DATA

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T89 AF (dB/m)	Amp/Cbl (dB)	Dist Corr (dB)	Corrected Reading (dBuVolts)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)
1	18.954	38.27	Pk	32.2	-24.9	-9.5	36.07	54	-17.93	74	-37.93
2	20.467	38.63	Pk	32.6	-25.4	-9.5	36.33	54	-17.67	74	-37.67
3	23.79	39.04	Pk	33.7	-24.2	-9.5	39.04	54	-14.96	74	-34.96
4	19.458	37.28	Pk	32.5	-24.6	-9.5	35.68	54	-18.32	74	-38.32
5	21.852	38.05	Pk	33.3	-24.6	-9.5	37.25	54	-16.75	74	-36.75
6	24.099	38.67	Pk	33.4	-24.3	-9.5	38.27	54	-15.73	74	-35.73

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

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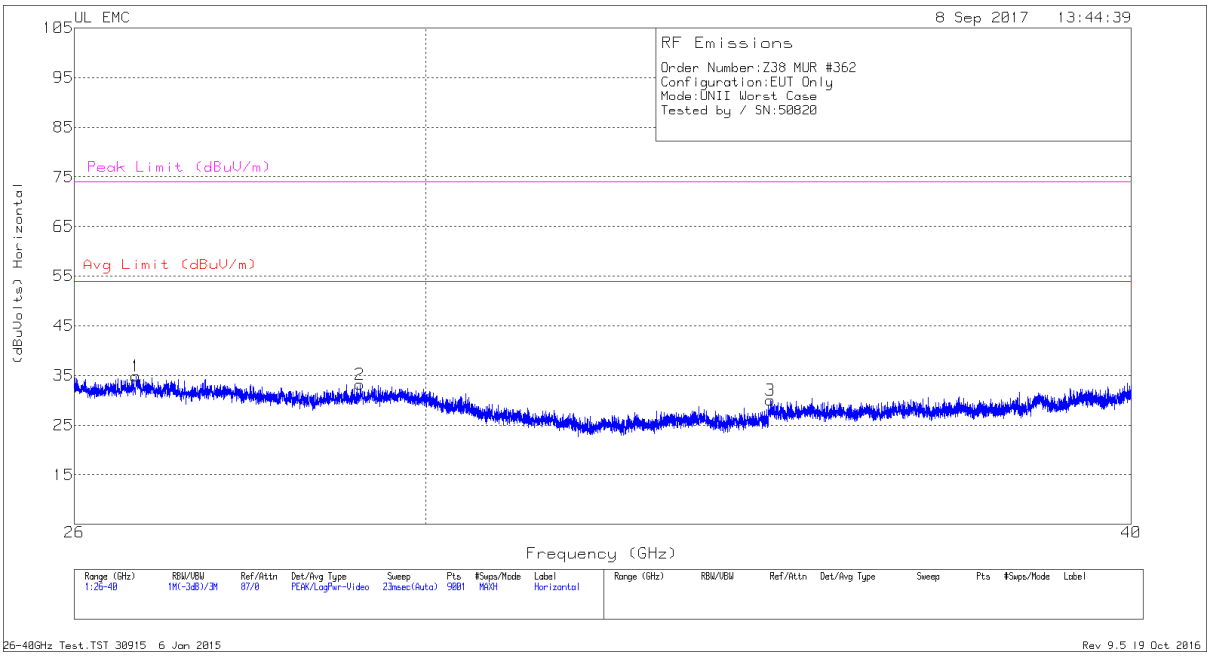
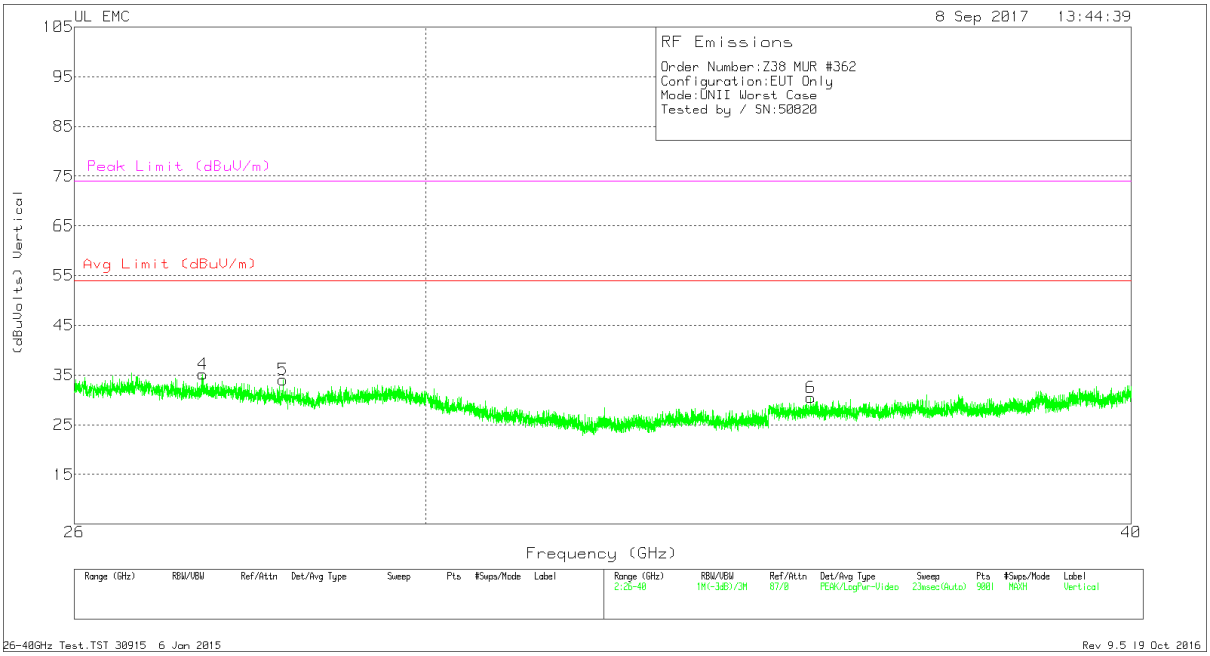
11.4. Worst Case 26-40 GHz

HORIZONTAL



VERTICAL



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26 – 40GHz 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	26.661	39.53	Pk	35.3	-30.5	-9.5	34.83	54	-19.17	74	-39.17
2	29.209	39.01	Pk	35.9	-32.2	-9.5	33.21	54	-20.79	74	-40.79
3	34.528	35.22	Pk	37.4	-33.1	-9.5	30.02	54	-23.98	74	-43.98
4	27.395	40.46	Pk	35.7	-31.5	-9.5	35.16	54	-18.84	74	-38.84
5	28.307	39.36	Pk	35.8	-31.6	-9.5	34.06	54	-19.94	74	-39.94
6	35.1	35.76	Pk	37.4	-33.2	-9.5	30.46	54	-23.54	74	-43.54

Pk - Peak detector
26-40GHz Test.TST 30915 6 Jan 2015
Rev 9.5 19 Oct 2016

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12. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 8.8

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

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

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

RESULTS

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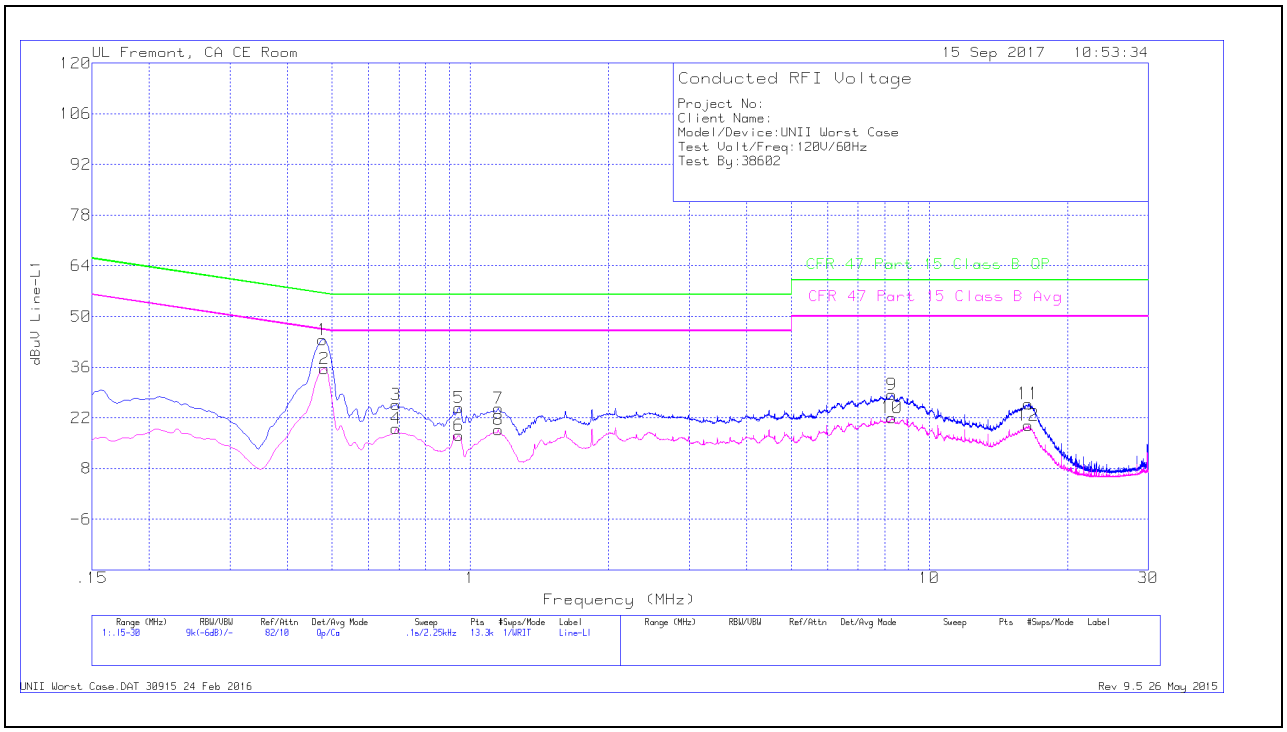
LINE 1 RESULTS



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	.47625	33.5	Qp	0	0	10.1	43.6	56.4	-12.8	-	-
2	.48075	25.49	Ca	0	0	10.1	35.59	-	-	46.33	-10.74
3	.69	15.56	Qp	0	0	10.1	25.66	56	-30.34	-	-
4	.69	8.98	Ca	0	0	10.1	19.08	-	-	46	-26.92
5	.94537	14.55	Qp	0	.1	10.1	24.75	56	-31.25	-	-
6	.94425	6.87	Ca	0	.1	10.1	17.07	-	-	46	-28.93
7	1.15125	14.42	Qp	0	.1	10.1	24.62	56	-31.38	-	-
8	1.15125	8.44	Ca	0	.1	10.1	18.64	-	-	46	-27.36
9	8.286	18.08	Qp	0	.2	10.2	28.48	60	-31.52	-	-
10	8.286	11.7	Ca	0	.2	10.2	22.1	-	-	50	-27.9
11	16.413	15.32	Qp	0	.3	10.3	25.92	60	-34.08	-	-
12	16.413	9.41	Ca	0	.3	10.3	20.01	-	-	50	-29.99

Qp - Quasi-Peak detector

Ca - CISPR average detection

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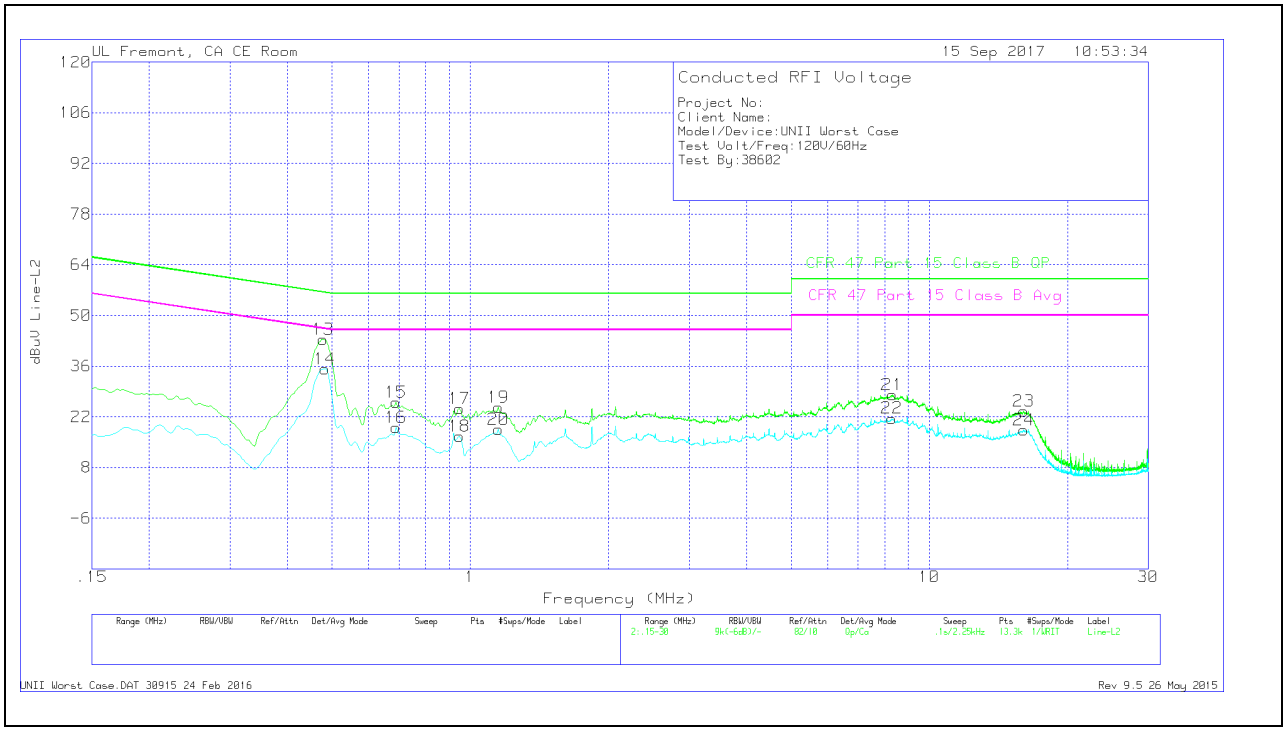
LINE 2 RESULTS



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	.4785	33.37	Qp	0	0	10.1	43.47	56.37	-12.9	-	-
14	.483	25.18	Ca	0	0	10.1	35.28	-	-	46.29	-11.01
15	.69	15.88	Qp	0	0	10.1	25.98	56	-30.02	-	-
16	.69	8.98	Ca	0	0	10.1	19.08	-	-	46	-26.92
17	.9465	14.15	Qp	0	.1	10.1	24.35	56	-31.65	-	-
18	.9465	6.38	Ca	0	.1	10.1	16.58	-	-	46	-29.42
19	1.15125	14.36	Qp	0	.1	10.1	24.56	56	-31.44	-	-
20	1.15125	8.36	Ca	0	.1	10.1	18.56	-	-	46	-27.44
21	8.30175	17.63	Qp	0	.2	10.2	28.03	60	-31.97	-	-
22	8.286	11.18	Ca	0	.2	10.2	21.58	-	-	50	-28.42
23	16.05075	12.9	Qp	0	.3	10.3	23.5	60	-36.5	-	-
24	16.04625	7.81	Ca	0	.3	10.3	18.41	-	-	50	-31.59

Qp - Quasi-Peak detector

Ca - CISPR average detection

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13. DYNAMIC FREQUENCY SELECTION

13.1. OVERVIEW

13.1.1. LIMITS

INDUSTRY CANADA

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

RSS-247 Issue 1

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

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

FCC

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

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Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client **(without DFS)**	Client **(with DFS)**
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar DFS	Client (without DFS)
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required
Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in all 20 MHz channel blocks and a null frequency between the bonded 20 MHz channel blocks.		

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

Maximum Transmit Power	Value (see notes)
E.I.R.P. ≥ 200 milliwatt	-64 dBm
E.I.R.P. < 200 milliwatt and power spectral density < 10 dBm/MHz	-62 dBm
E.I.R.P. < 200 milliwatt that do not meet power spectral density requirement	-64 dBm

Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna
Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response.
Note 3: E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.

Table 4: DFS Response requirement values

Parameter	Value
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. (See Note 3)

Note 1: *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
Note 2: The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* move (an aggregate of 60 milliseconds) during the remainder of the 10-second period. The aggregate duration of control signals will not count quiet periods in between transmissions.
Note 3: During the *U-NII Detection Bandwidth* detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.

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Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (usec)	PRI (usec)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in table 5a	Roundup: {(1/360) x (19 x 10^6 PRI_{usec})}	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 usec. With a minimum increment of 1 usec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120

Note 1: Short Pulse Radar Type 0 should be used for the *Detection Bandwidth* test, *Channel Move Time*, and *Channel Closing Time* tests.

Table 6 – Long Pulse Radar Test Signal

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

Table 7 – Frequency Hopping Radar Test Signal

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

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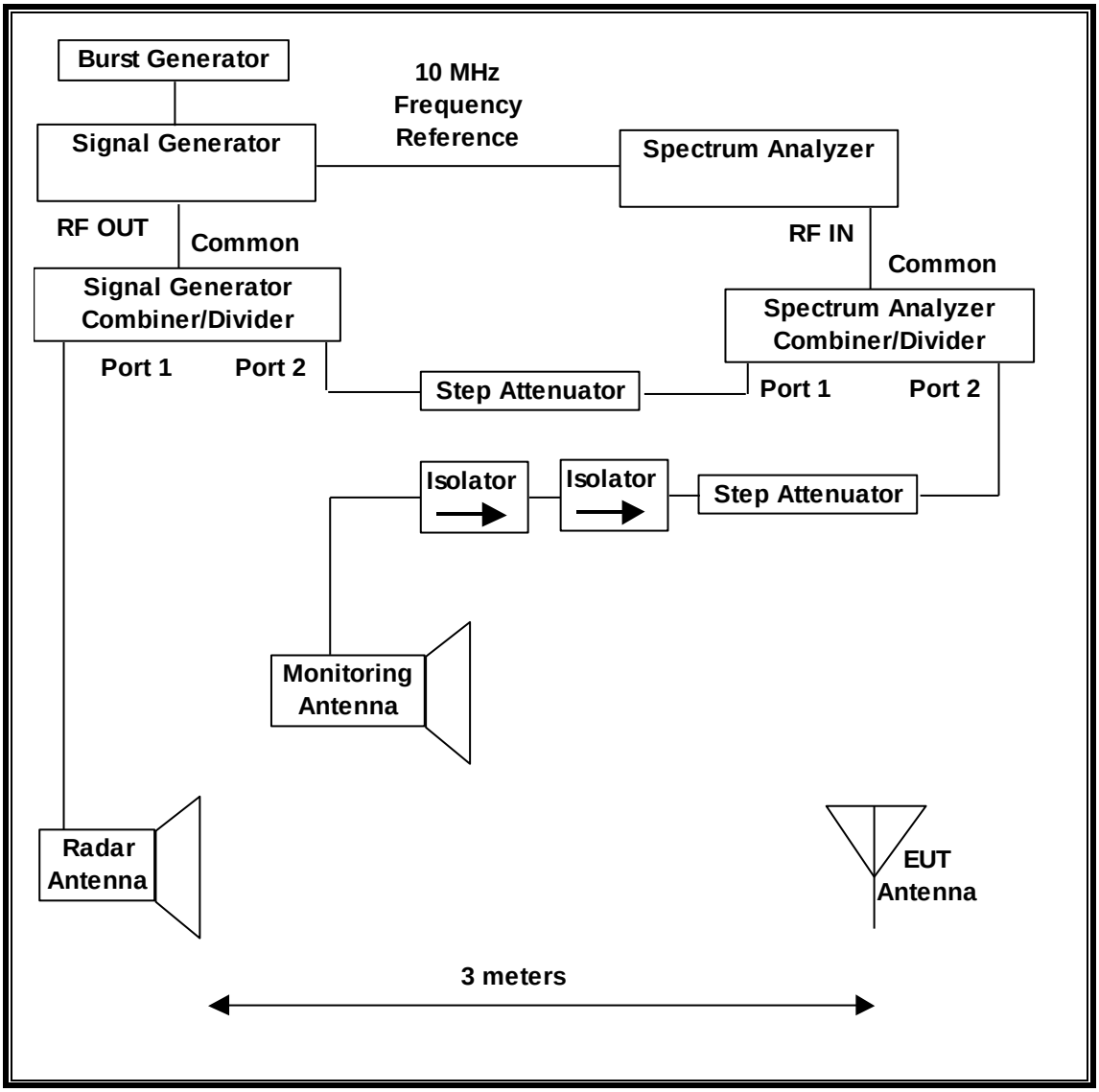
13.1.2. TEST AND MEASUREMENT SYSTEM

RADIATED METHOD SYSTEM BLOCK DIAGRAM



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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.

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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	06/22/18
Signal Generator, MXG X-Series RF Vector	Agilent	N5182B	MY51350337	04/21/18

13.1.3. TEST AND MEASUREMENT SOFTWARE

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

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

13.1.4. 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	24.9 and 25.0 °C
Humidity	32 and 34 %

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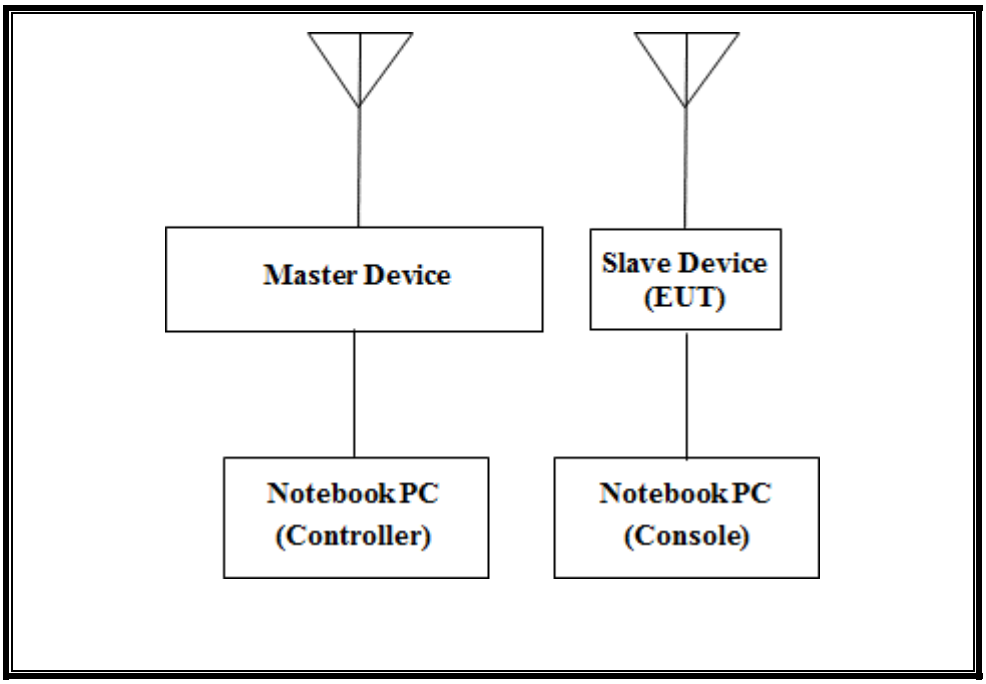
13.1.5. SETUP OF EUT (CLIENT MODE)

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	C86PJ5RUFJ1R	BCGA1521
Notebook PC (Controller)	Apple	A1706	C02TN024J499	DoC
AC Adapter (Controller PC)	Apple	B281	C046252A6KHGW855M	DoC
Notebook PC (EUT Console)	Apple	A1398	C02NLL4YTFD57	DoC
AC Adapter (Console PC)	Apple	A1435	C0444731FVZG6HKAS	DoC

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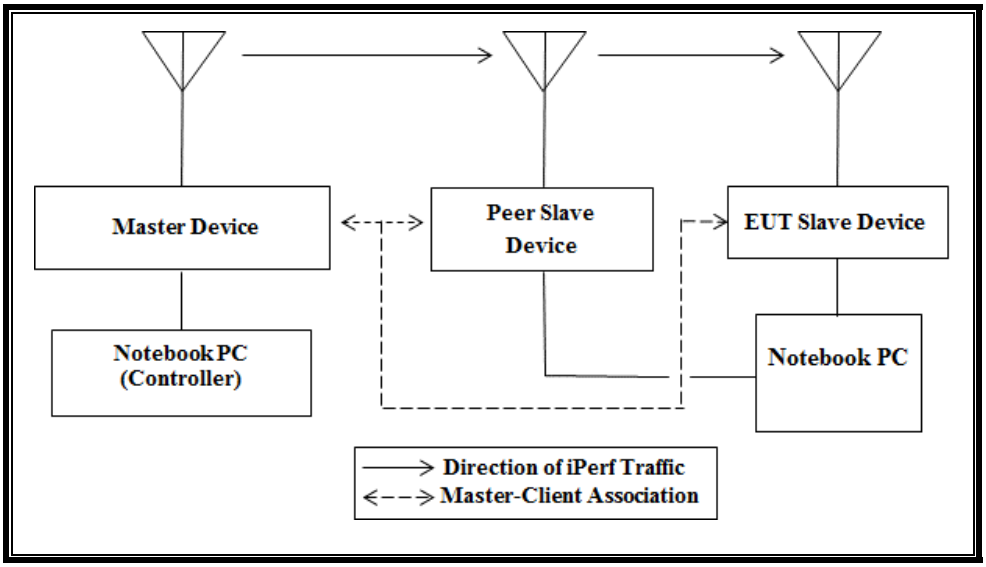
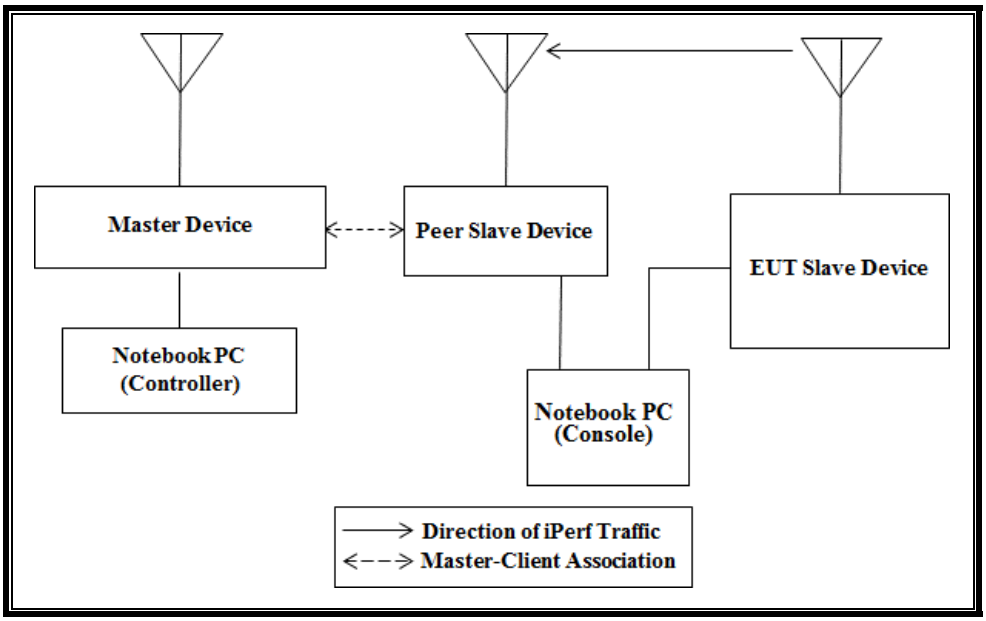
13.1.6. SETUP OF EUT (CLIENT TO CLIENT MODE)

RADIATED METHOD EUT TEST SETUP WHEN MONITORING THE EUT



13.1.7. SETUP OF EUT (PEER TO PEER MODE)

RADIATED METHOD EUT TEST SETUP WHEN MONITORING THE EUT



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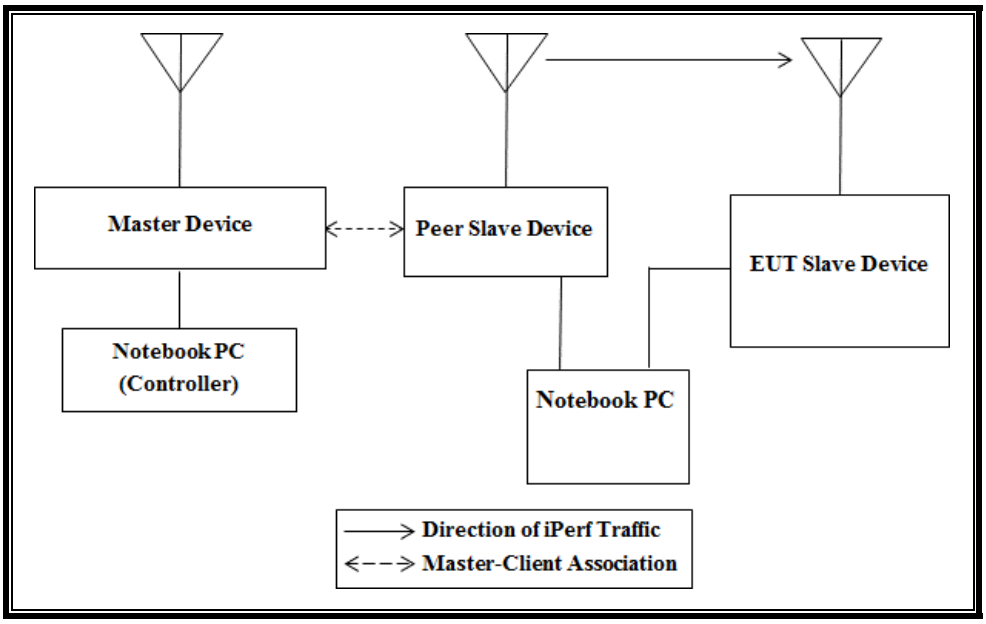
RADIATED METHOD EUT TEST SETUP WHEN MONITORING THE PEER SLAVE DEVICE)



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	C86PJ5RUFJ1R	BCGA1521
Notebook PC (Controller)	Apple	A1466	C2QLN093FKYR	DoC
AC Adapter (Controller PC)	Apple	A1435	C0444731FVZG6HKAS	DoC
Notebook PC (Console)	Apple	A1398	C2QN9015FG1J	DoC
iPhone 8+ (Peer Slave Device)	Apple	A1864	C39TQ05UJ6KP	BCG-E3160A

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13.1.8. DESCRIPTION OF EUT

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

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

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 25.56 dBm EIRP in the 5250-5350 MHz band and 27.73 dBm EIRP in the 5470-5725 MHz band.

The only antenna assembly utilized with the EUT is constructed using two antennas with respective gains of 3.1 dBi and 2.8 dBi in the 5250-5350 MHz band and 2.7 dBi and 4.0 dBi in the 5470-5725 MHz band.

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

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

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

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

In **Standard Client Mode** WLAN traffic that meets or exceeds the minimum required loading was generated by transferring a data stream from the Master Device to the Slave Device using iPerf.

In **Client to Client Mode** WLAN traffic that meets or exceeds the minimum required loading was generated transferring a data stream from the Master Device to the Peer Slave Device using iPerf and then on to the EUT Slave Device using AirPlay mode.

In **Peer to Peer Mode while monitoring the EUT**, WLAN traffic is generated by transferring a data stream from the EUT to the Peer Slave Device using Iperf.

In **Peer to Peer Mode while monitoring the Peer Slave Device**, WLAN traffic is generated by transferring a data stream from the Peer Slave Device to the EUT using Iperf.

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

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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 required since the maximum EIRP is greater 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 7.74f0 dev.

The software installed in the EUT is 15A420.

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 7.74f0 dev.

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13.2. CLIENT MODE RESULTS FOR 20 MHz BANDWIDTH

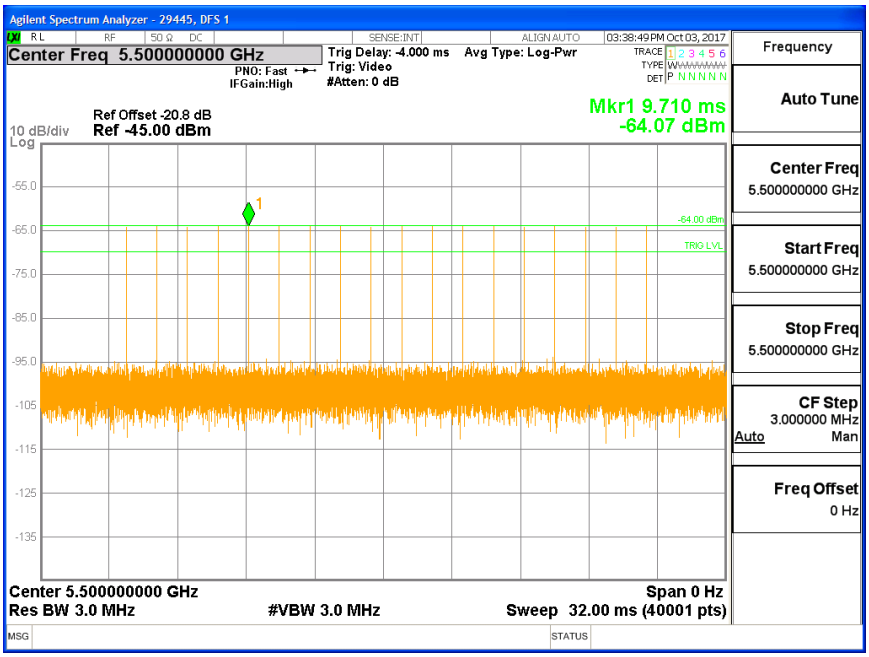
13.2.1. TEST CHANNEL

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

13.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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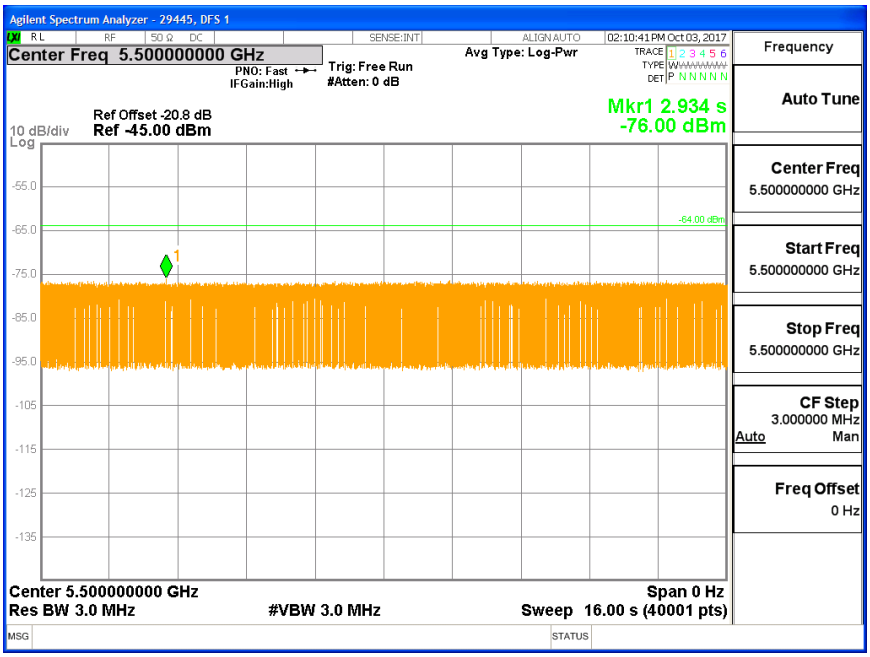
TRAFFIC

SLAVE TRAFFIC



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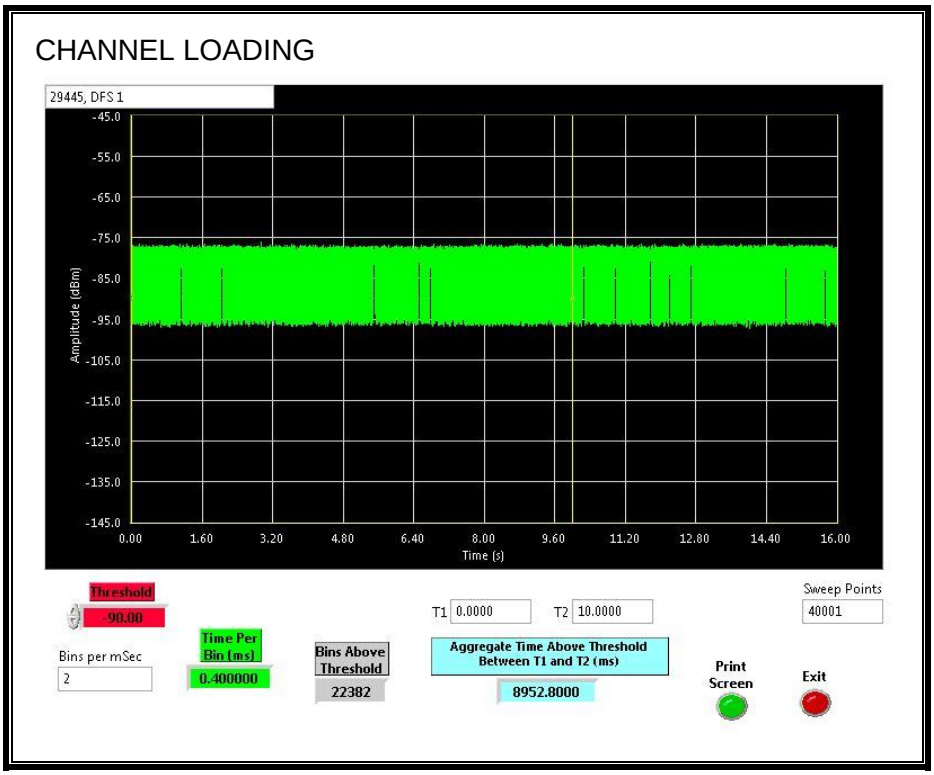
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 89.52%

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13.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.2.4. 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)
139.600	**10**

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

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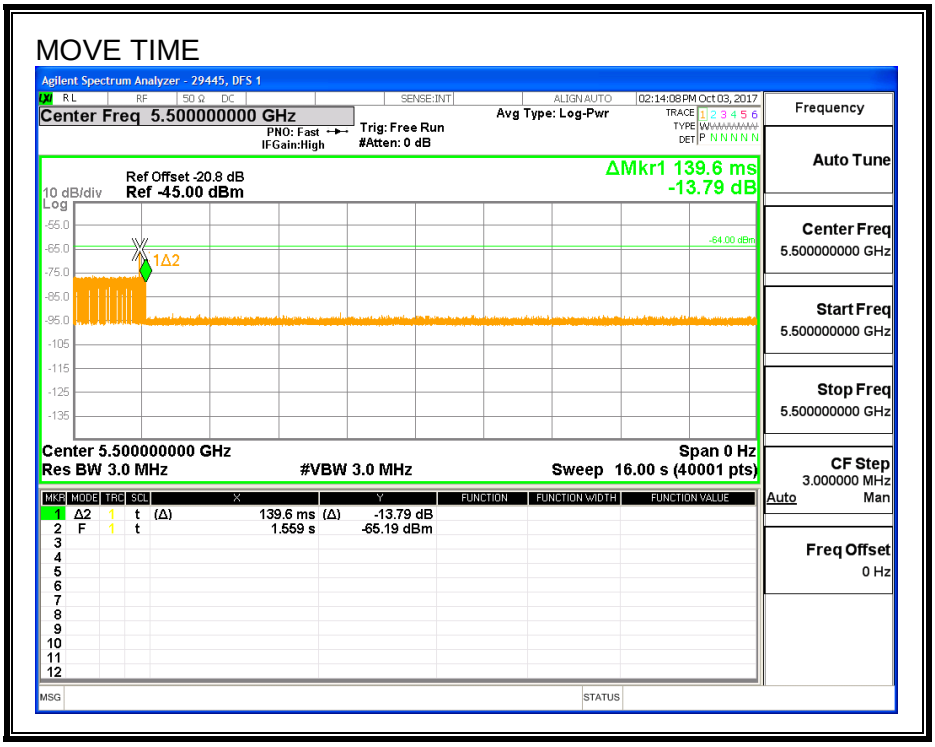
MOVE TIME



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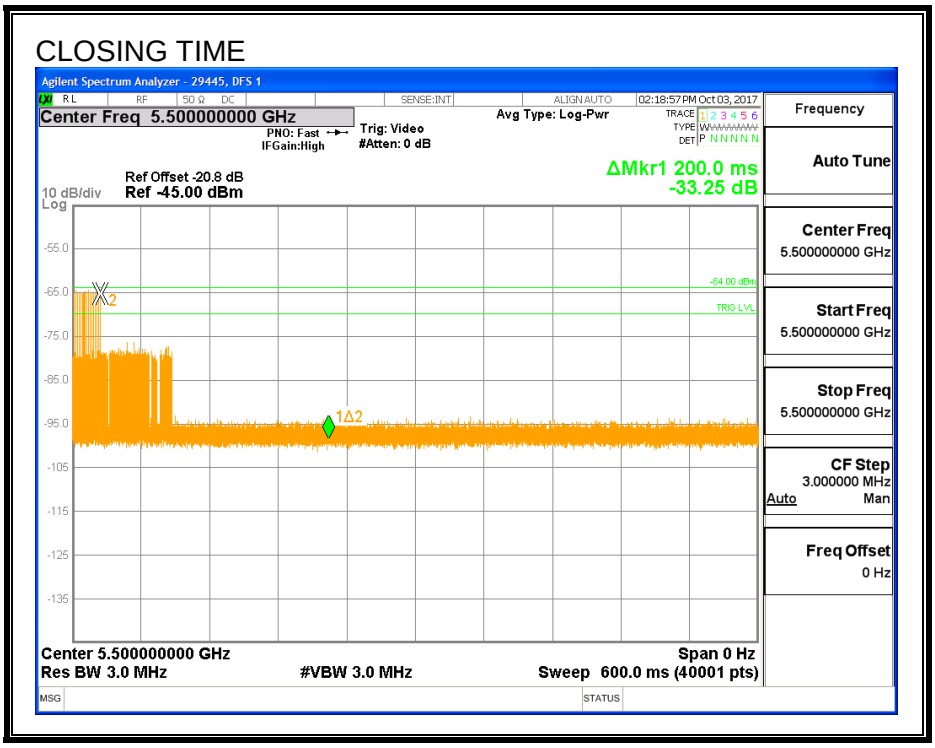
CHANNEL CLOSING TIME



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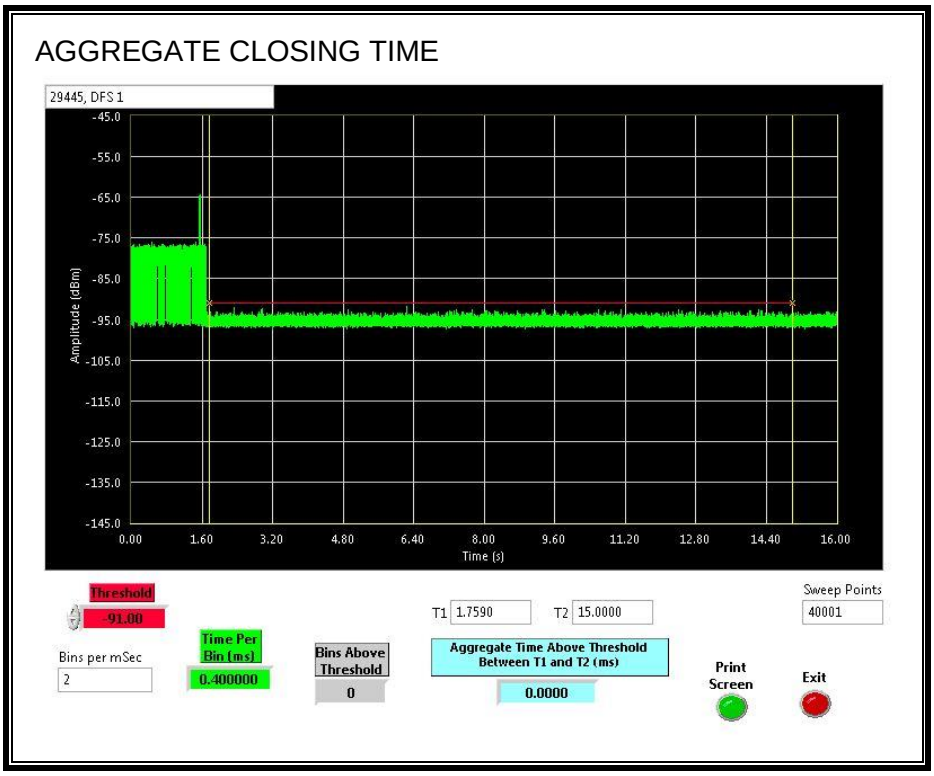
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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13.3. CLIENT MODE RESULTS FOR 40 MHz BANDWIDTH

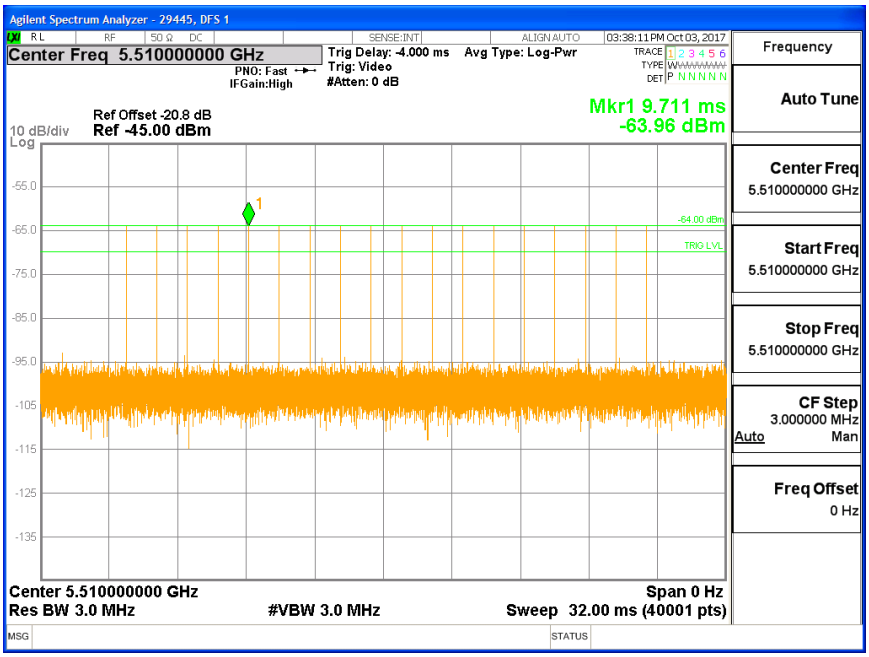
13.3.1. TEST CHANNEL

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

13.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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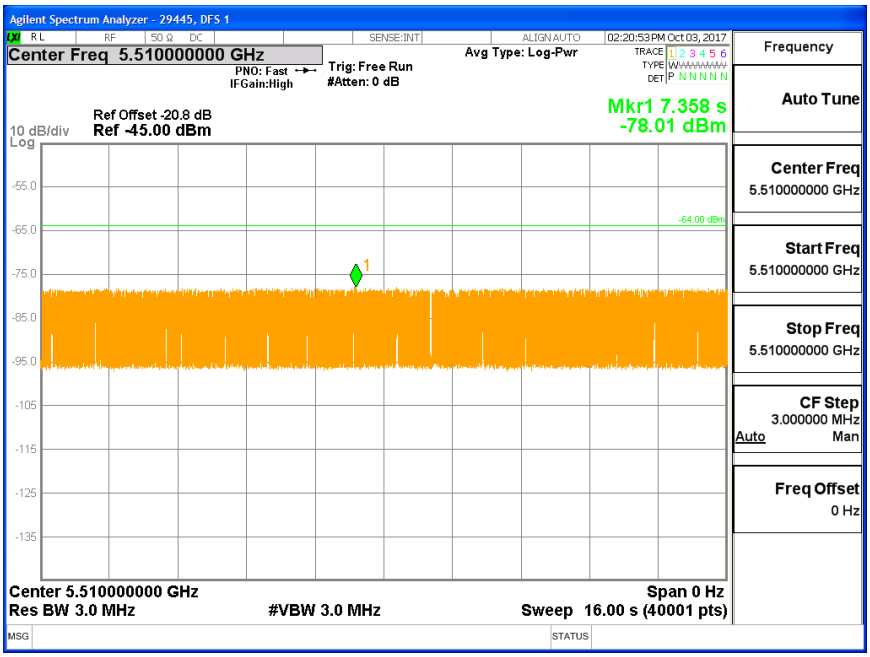
TRAFFIC

SLAVE TRAFFIC



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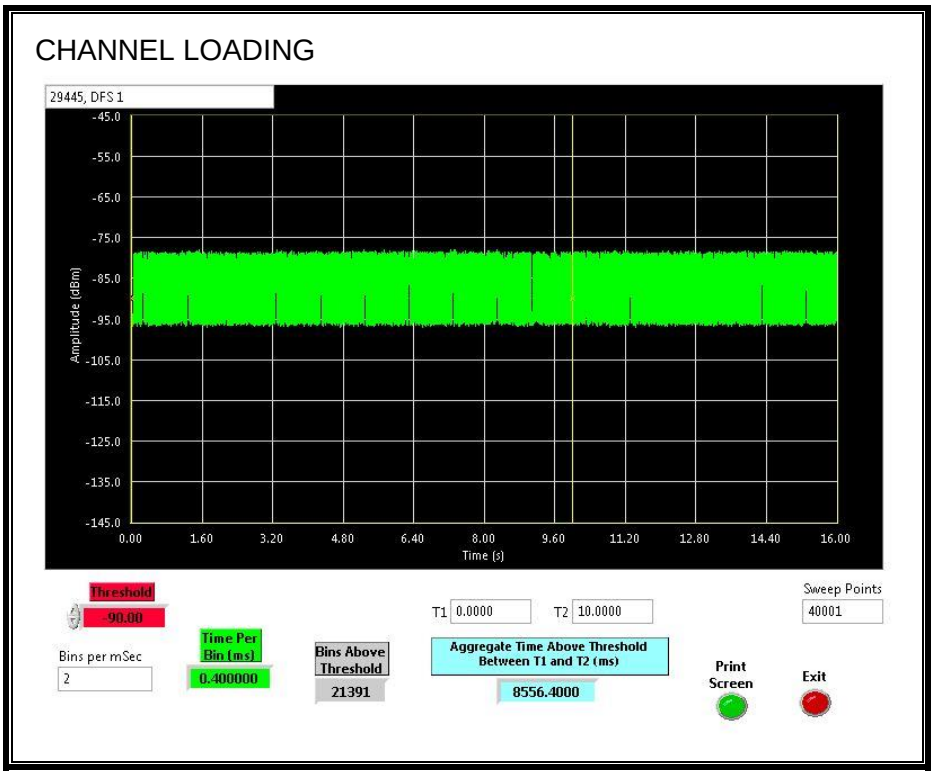
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 85.56%

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13.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.3.4. 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)
0.0976	**10**

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

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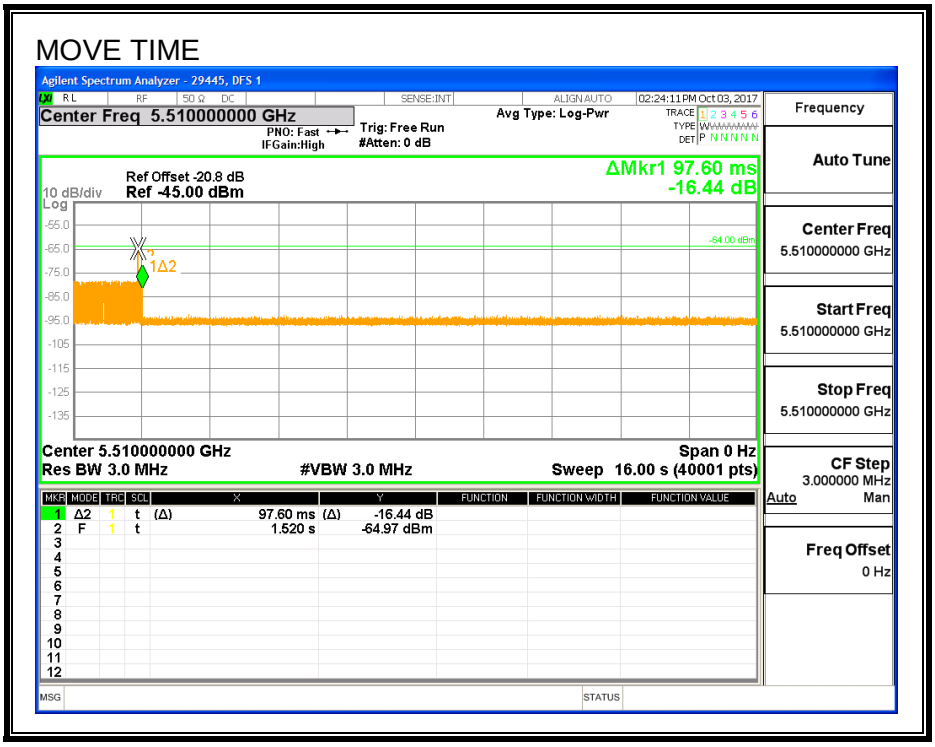
MOVE TIME



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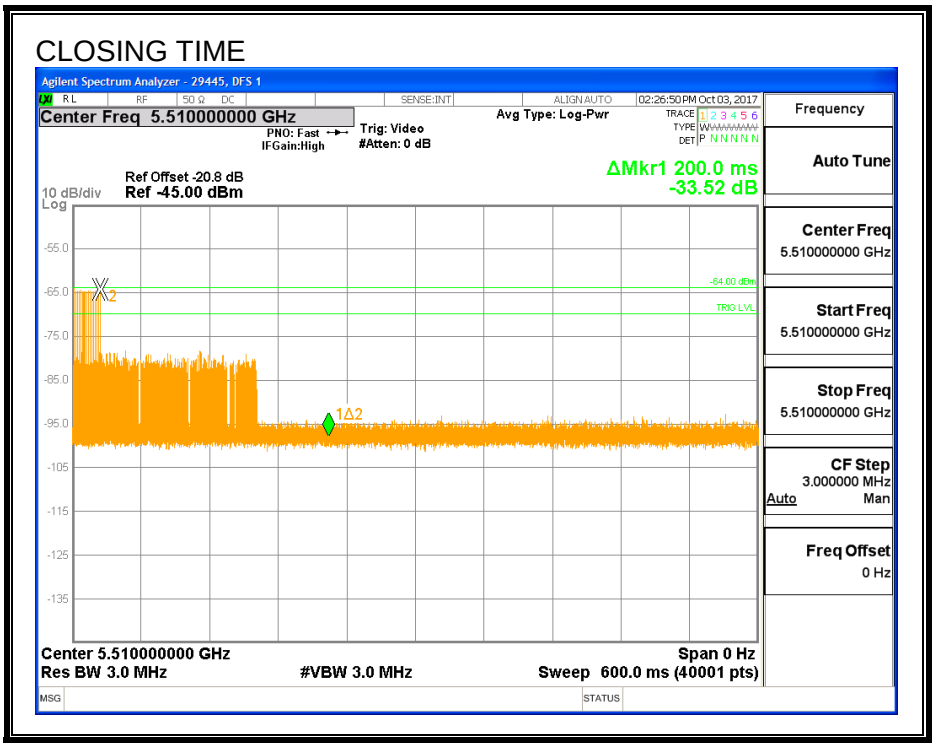
CHANNEL CLOSING TIME



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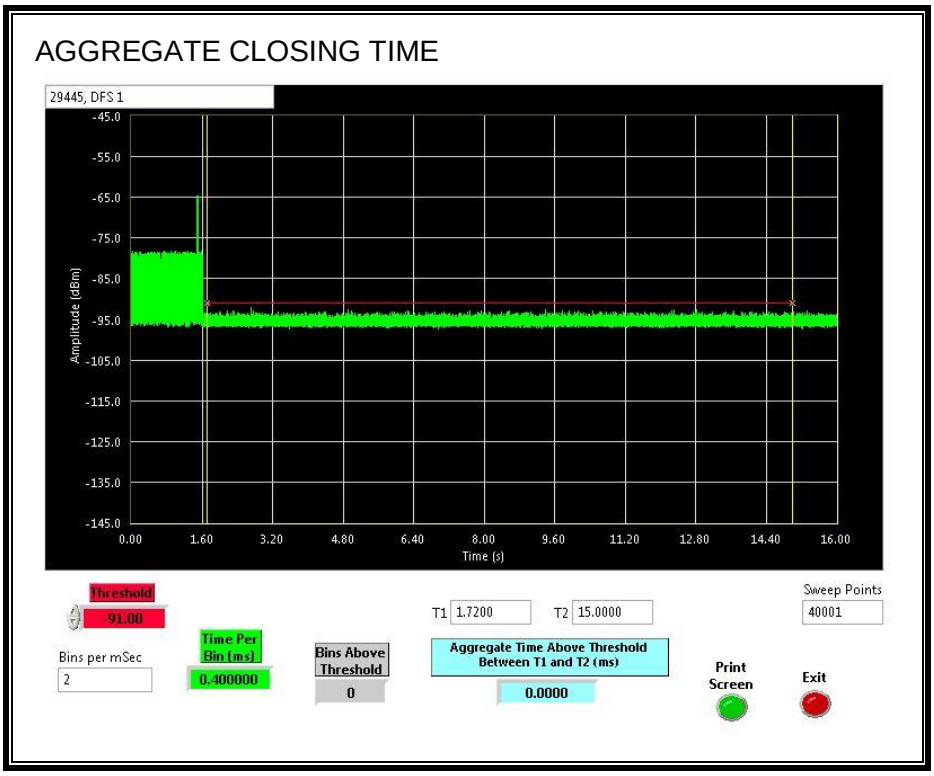
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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13.4. CLIENT MODE RESULTS FOR 80 MHz BANDWIDTH

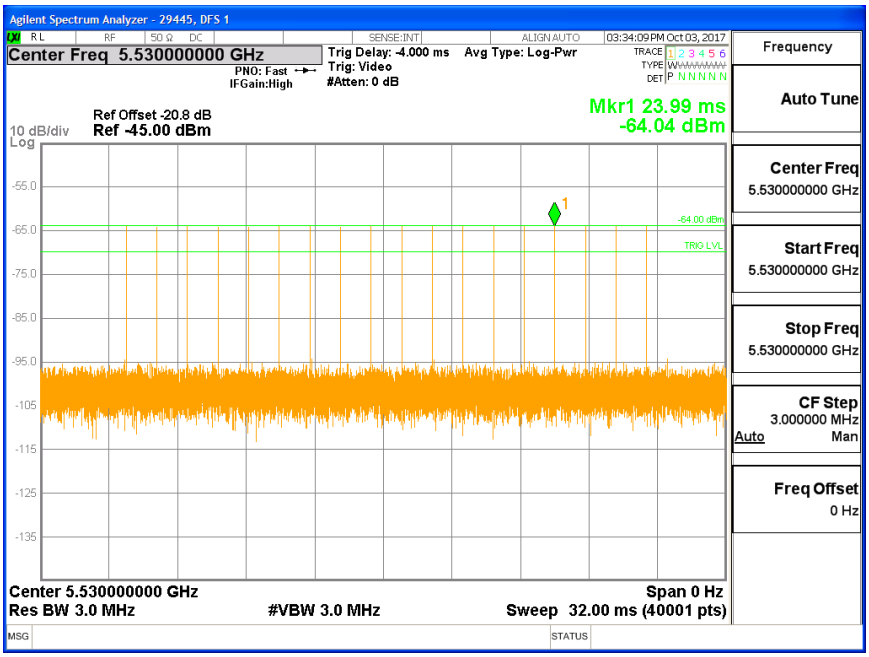
13.4.1. TEST CHANNEL

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

13.4.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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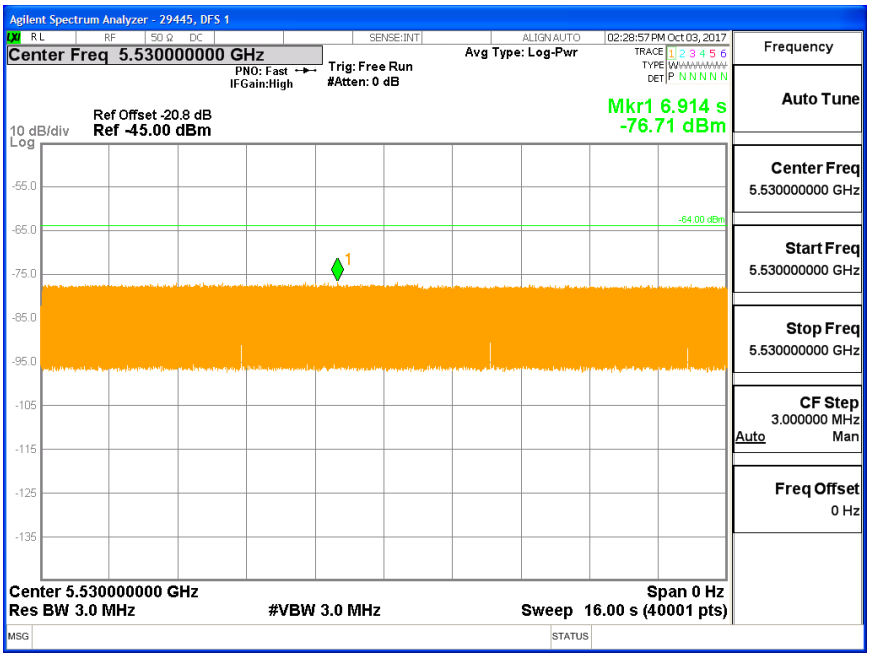
TRAFFIC

SLAVE TRAFFIC



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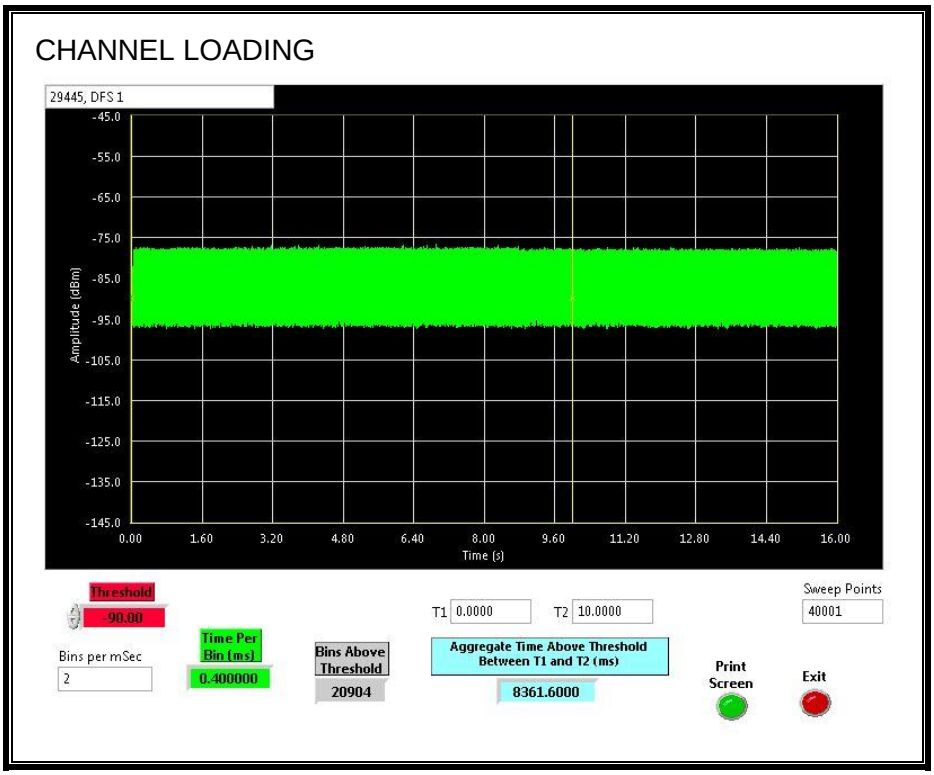
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 83.61%

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13.4.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.4.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

Channel Move Time (sec)	Limit (sec)
0.0916	**10**

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

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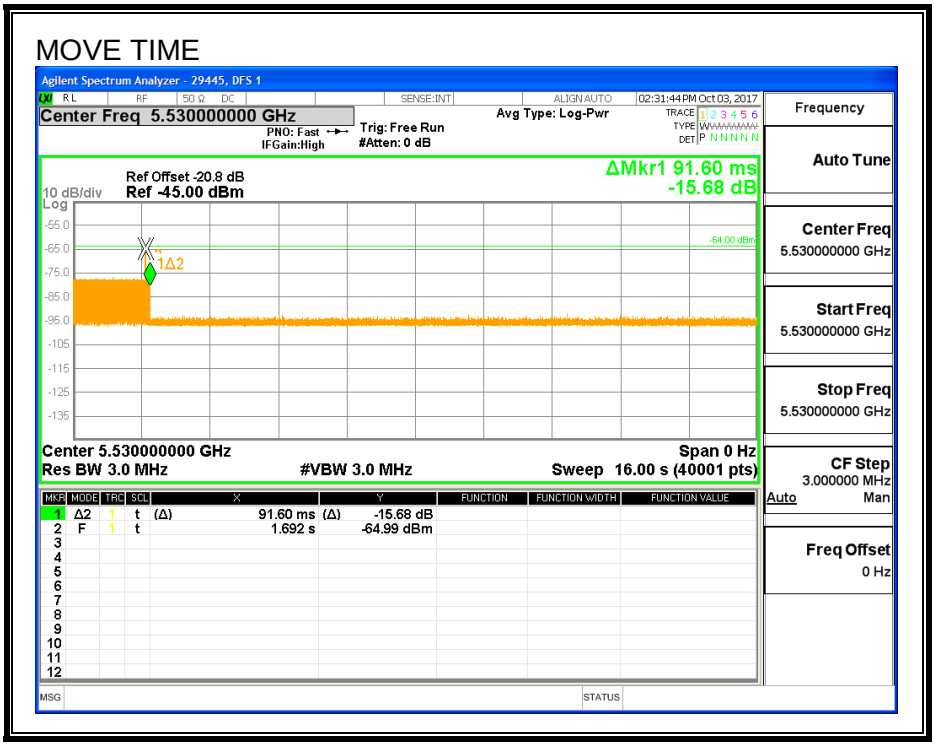
MOVE TIME



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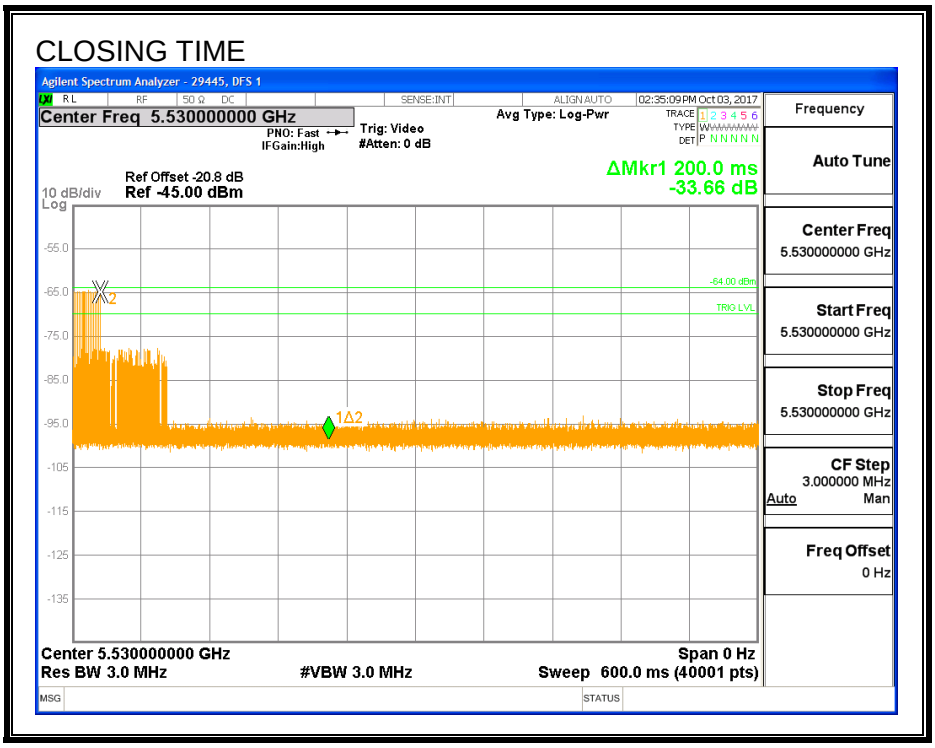
CHANNEL CLOSING TIME



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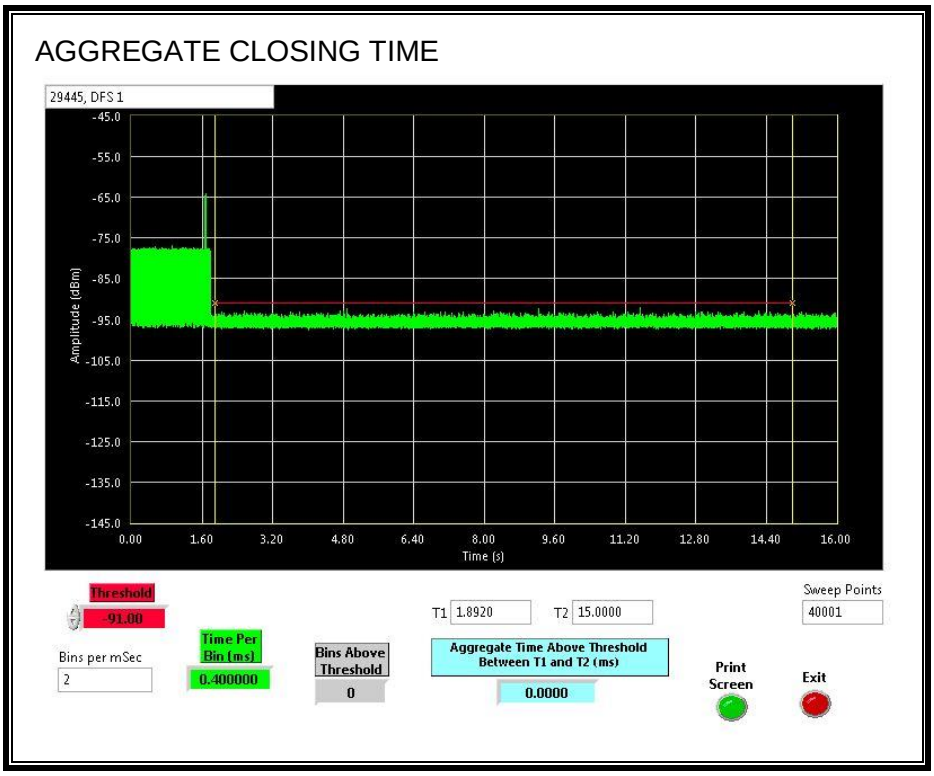
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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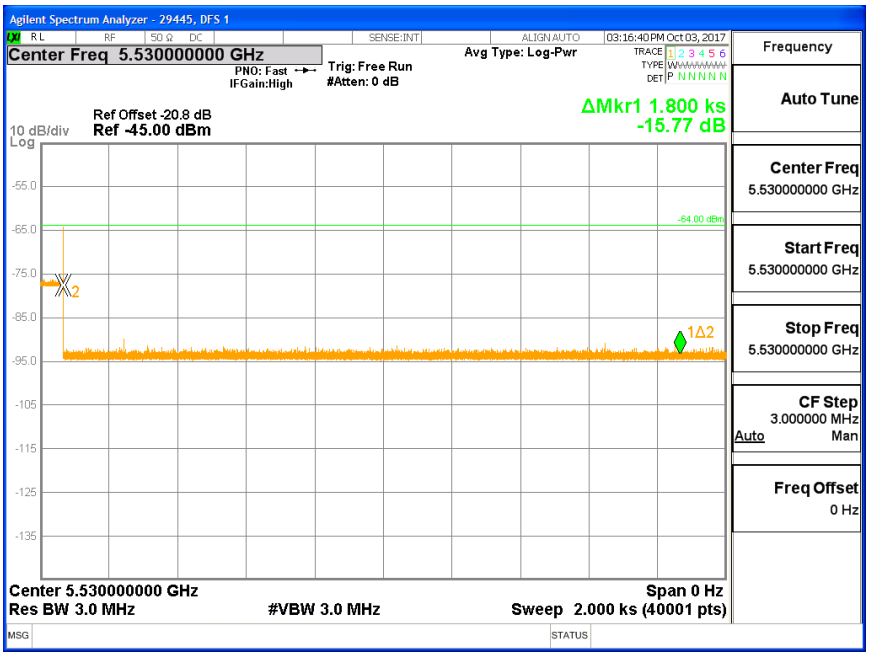
13.4.5. 30-MINUTE NON-OCCUPANCY PERIOD

RESULTS

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

30-MINUTE NON-OCCUPANCY PERIOD



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

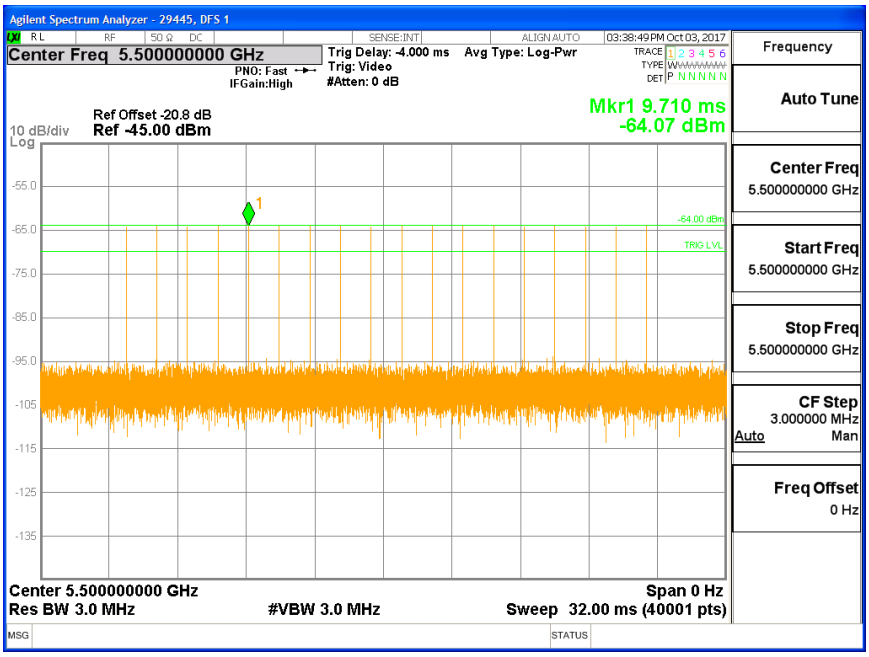
13.5.1. TEST CHANNEL

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

13.5.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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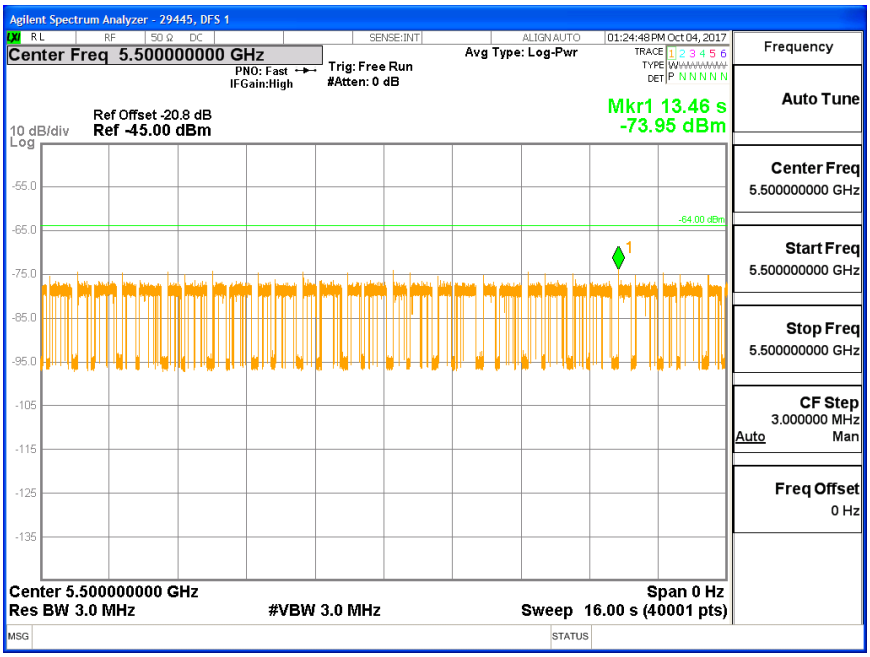
TRAFFIC

SLAVE TRAFFIC



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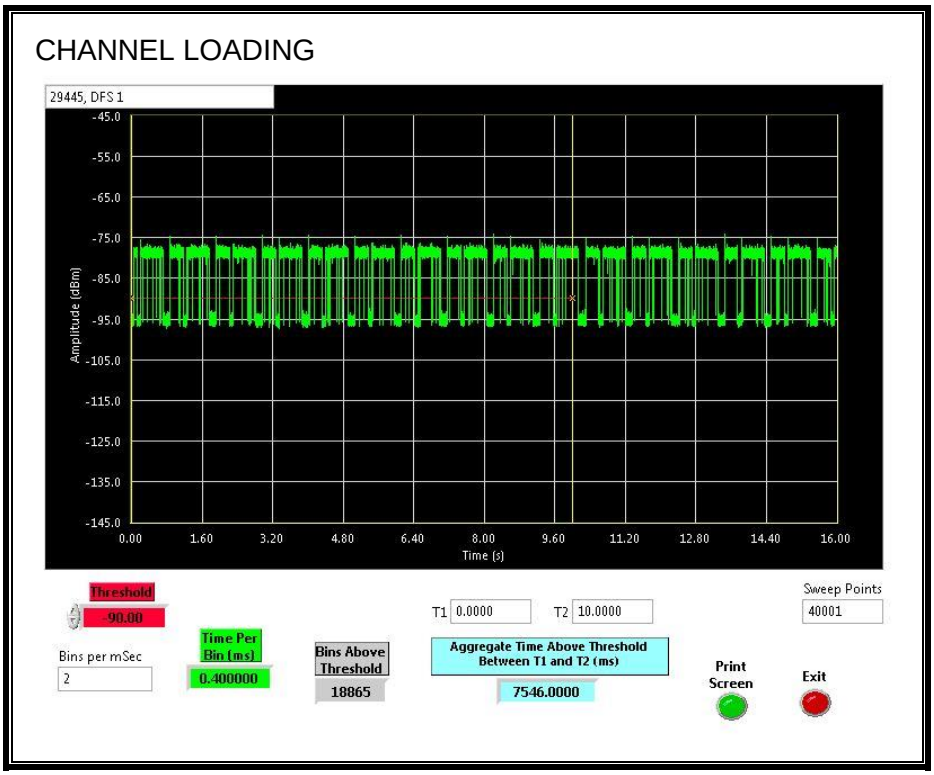
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 75.46%

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13.5.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.5.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

Channel Move Time (sec)	Limit (sec)
0.144	10

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

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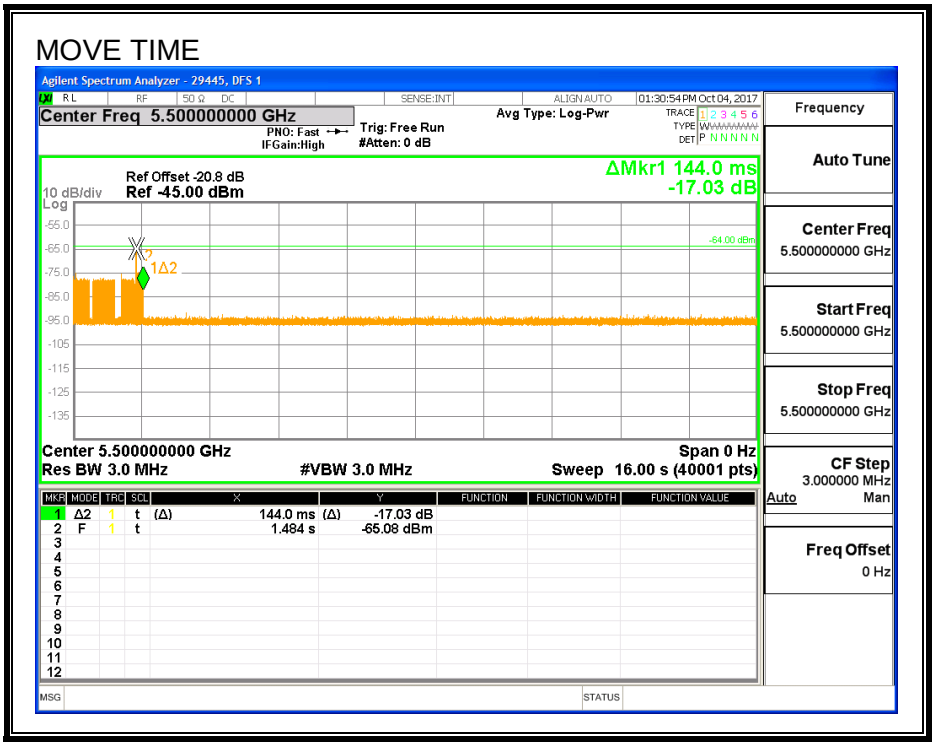
MOVE TIME



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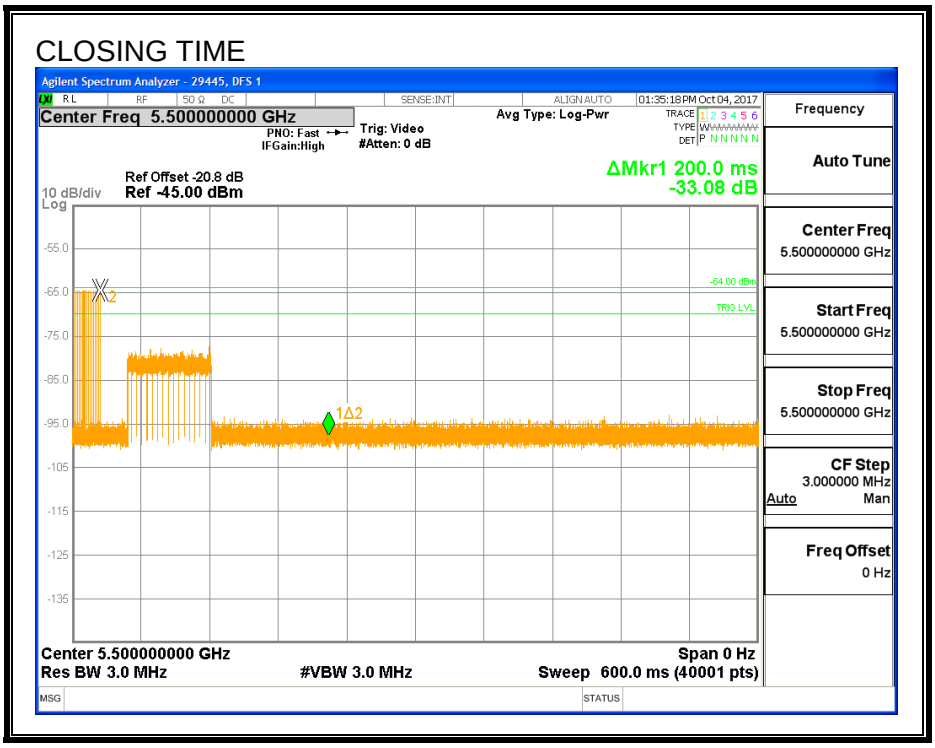
CHANNEL CLOSING TIME



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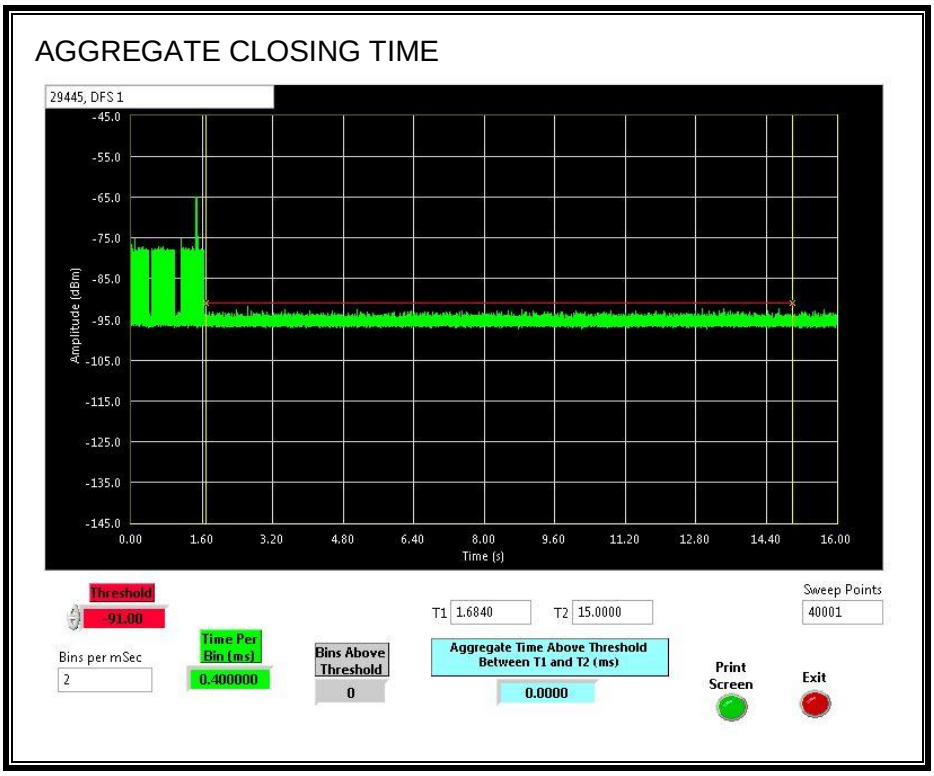
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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

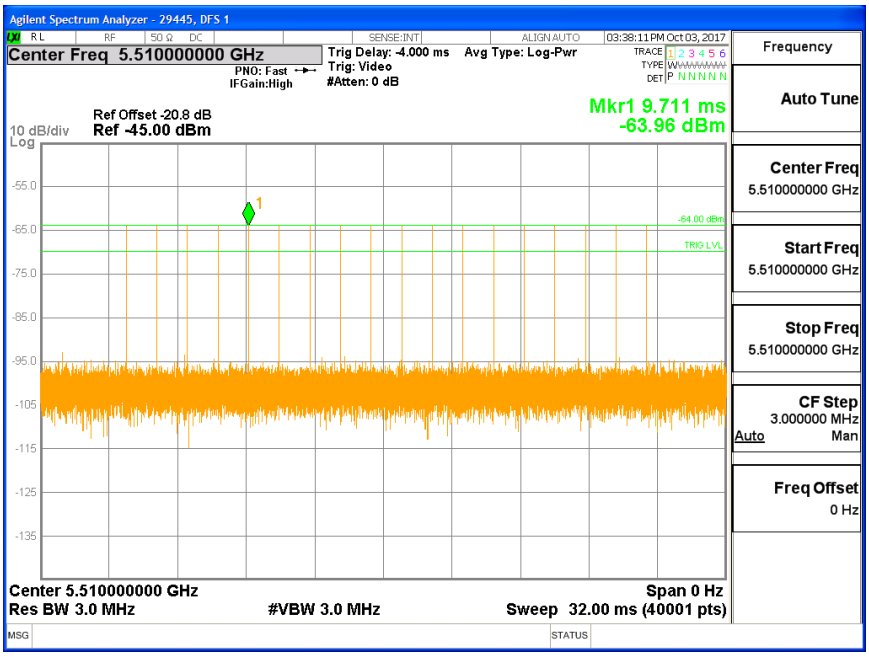
13.6.1. TEST CHANNEL

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

13.6.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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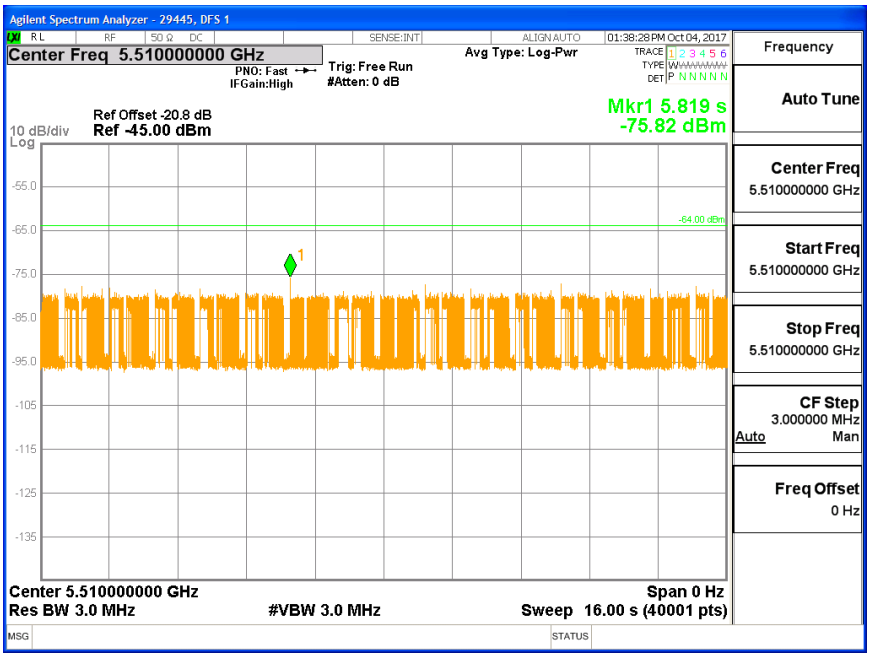
TRAFFIC

SLAVE TRAFFIC



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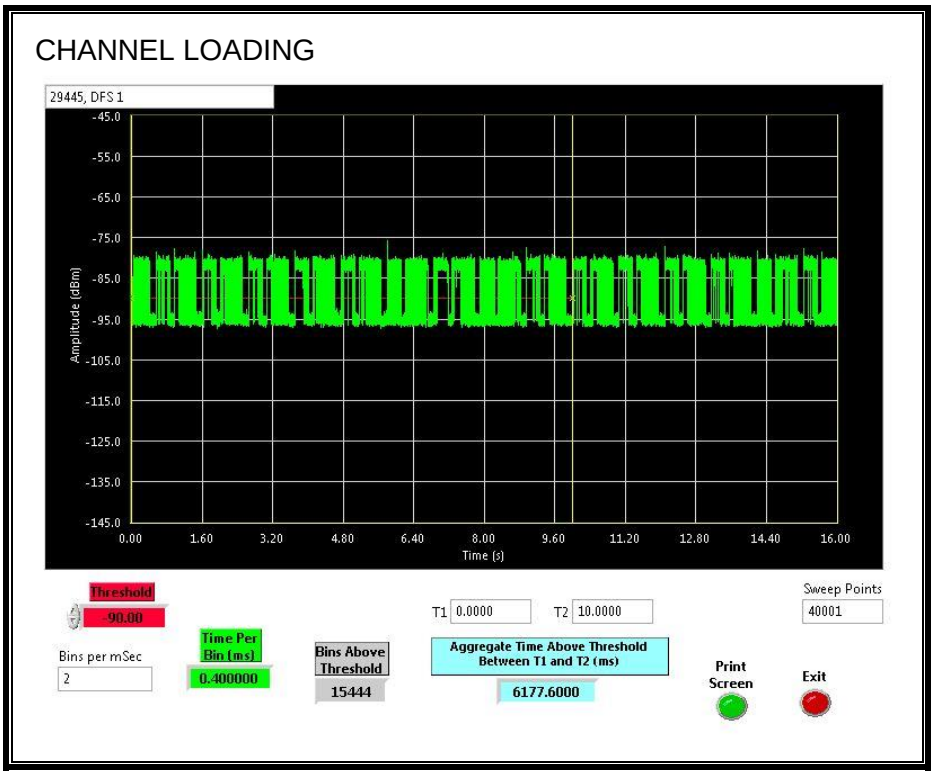
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 61.77%

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13.6.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.6.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

Channel Move Time (sec)	Limit (sec)
0.1104	**10**

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

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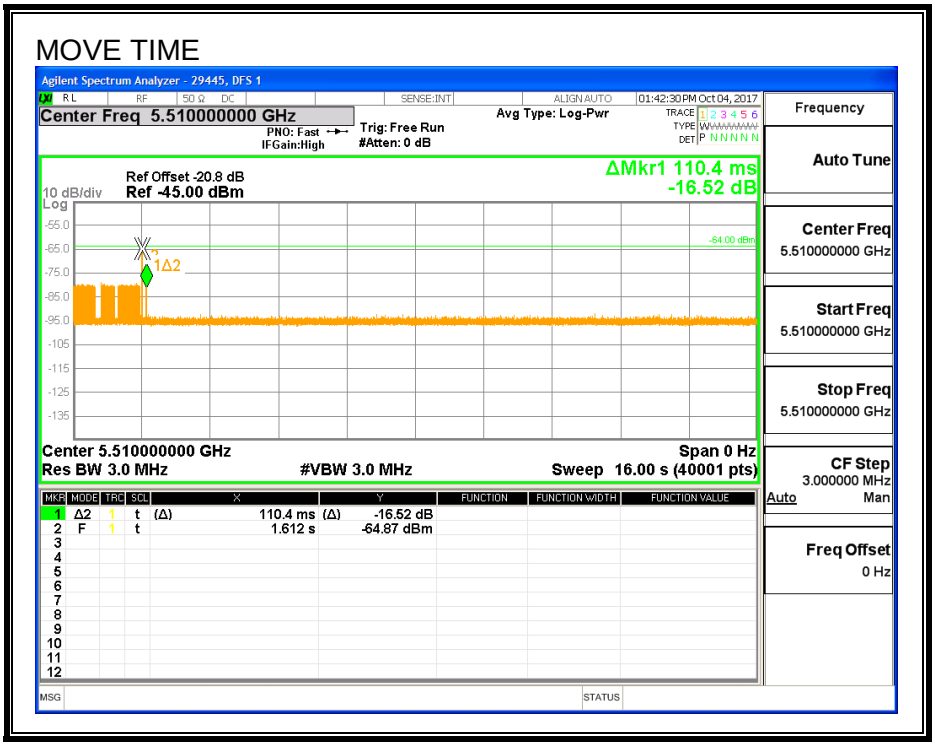
MOVE TIME



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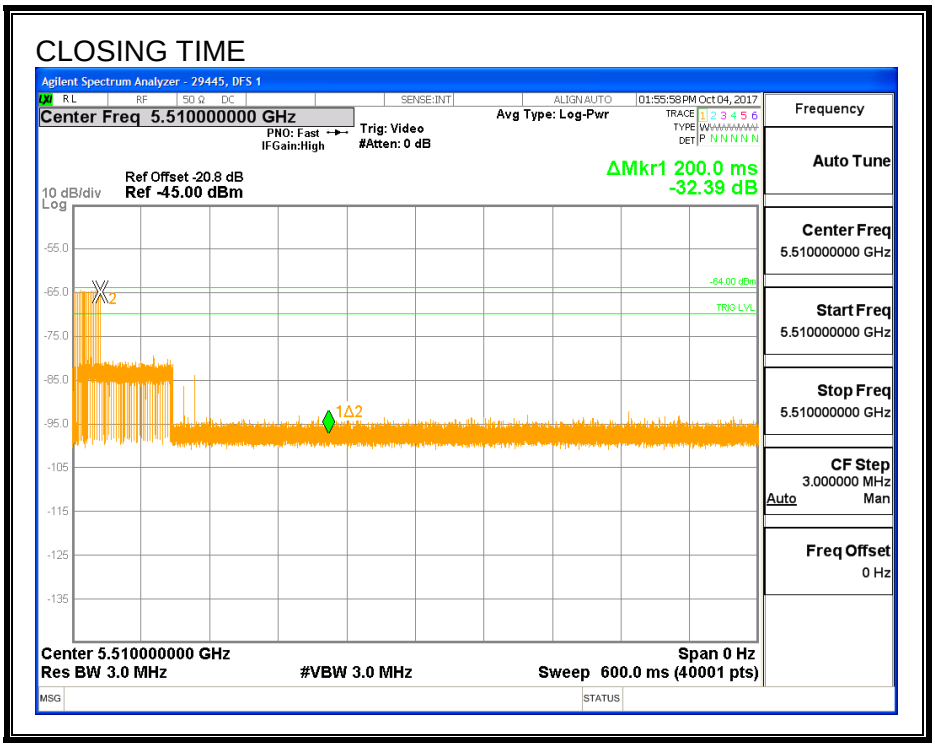
CHANNEL CLOSING TIME



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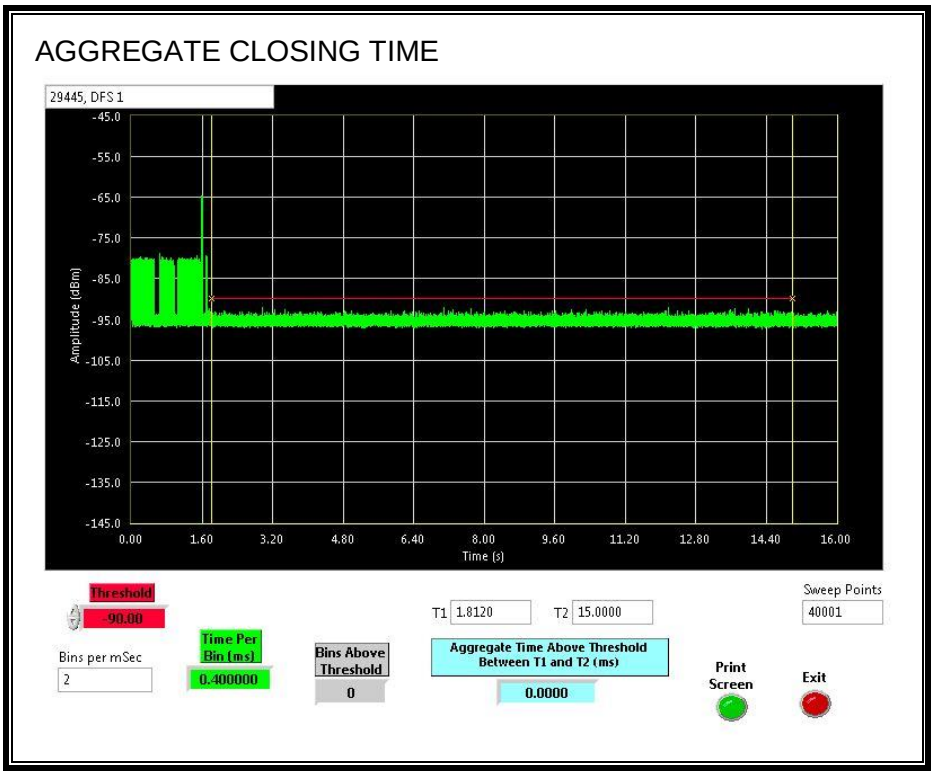
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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

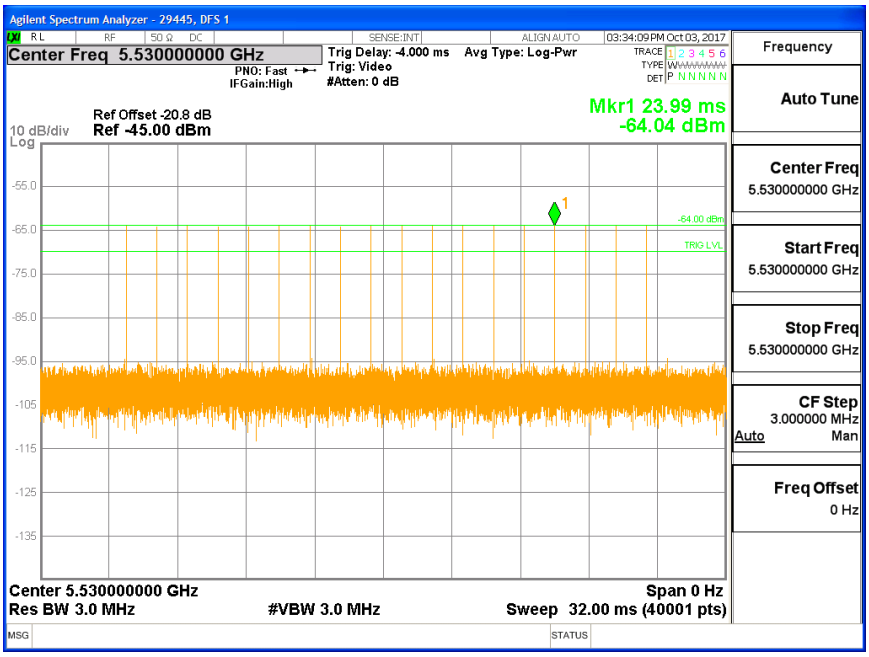
13.7.1. TEST CHANNEL

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

13.7.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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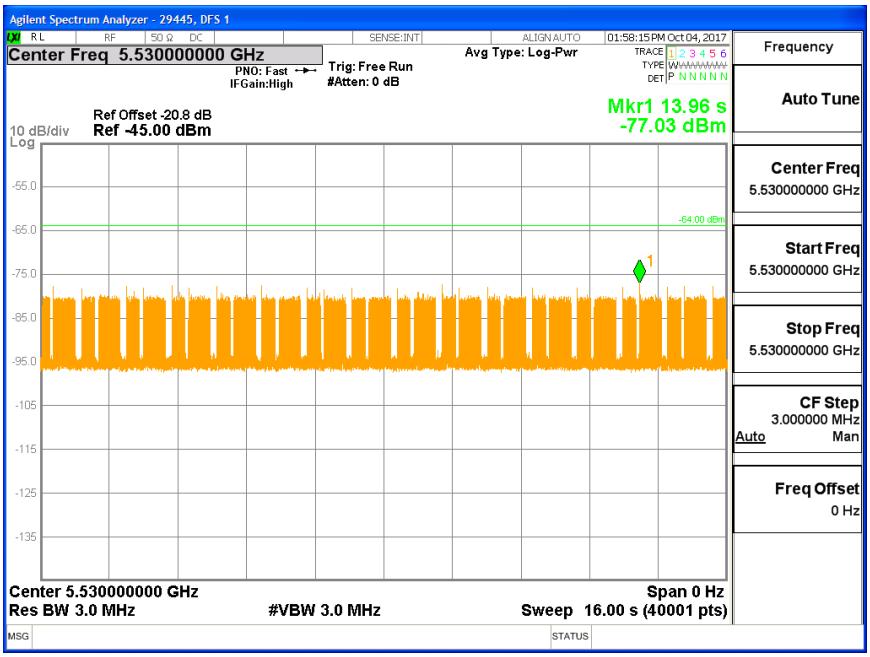
TRAFFIC

SLAVE TRAFFIC



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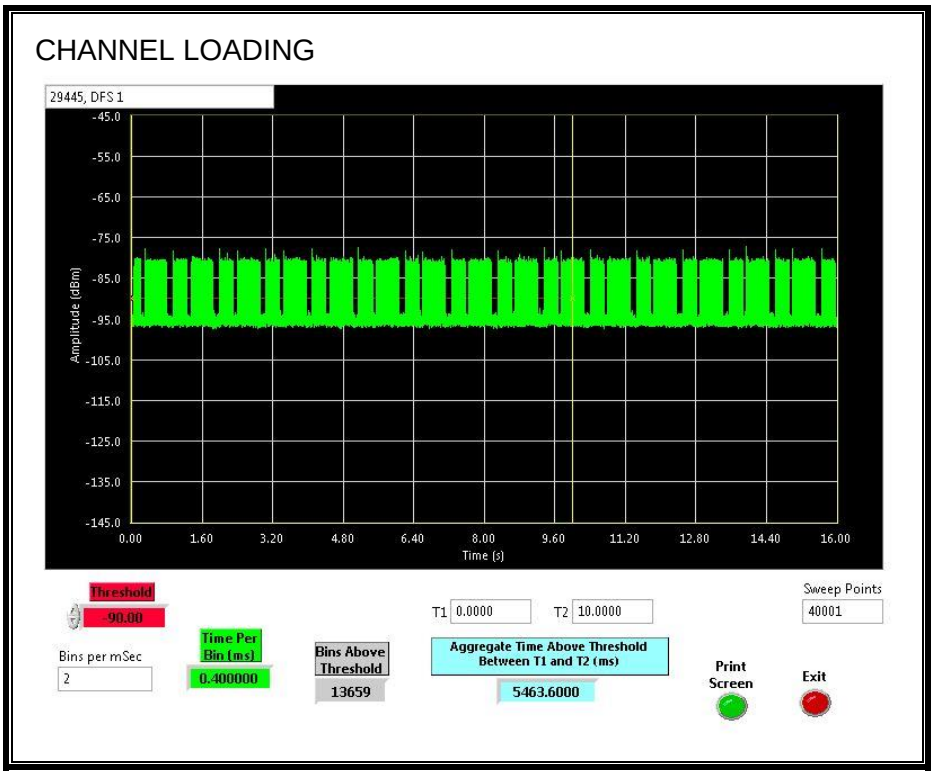
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 54.63%

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13.7.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.7.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

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

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

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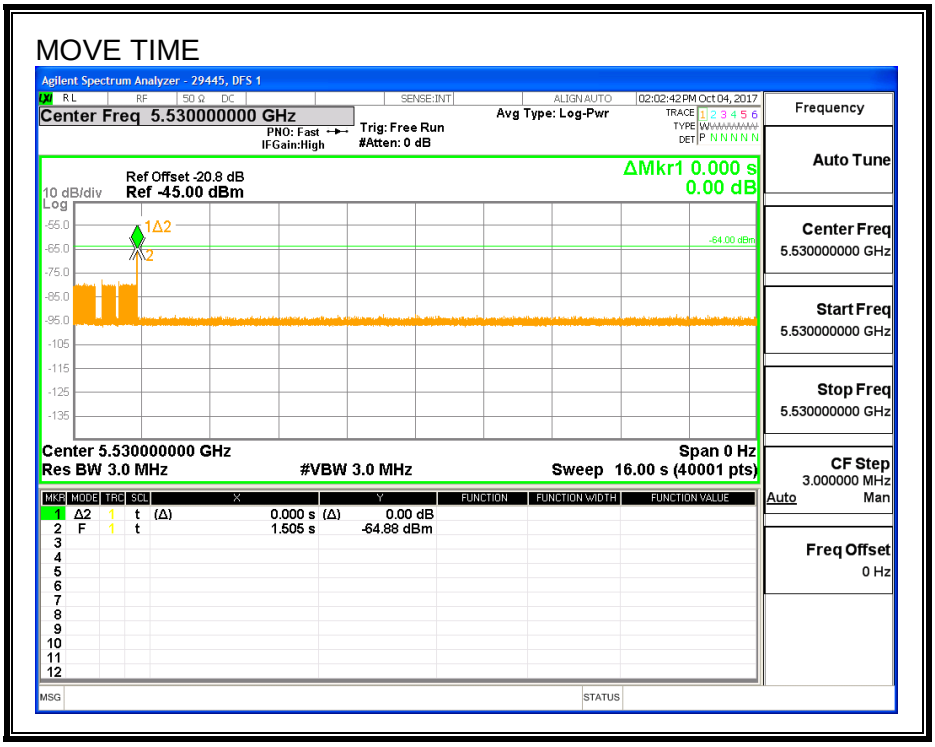
MOVE TIME



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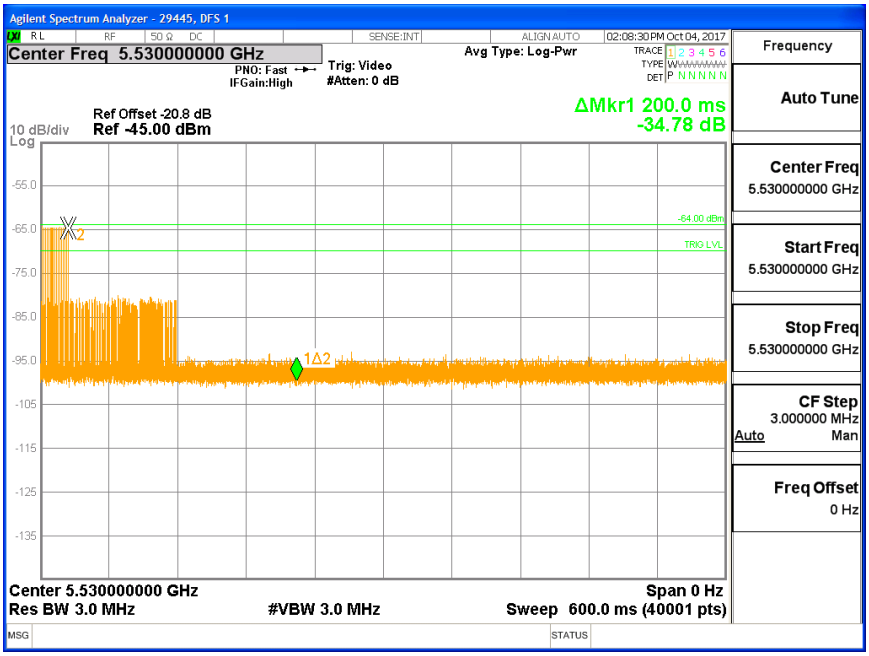
CHANNEL CLOSING TIME

CLOSING TIME



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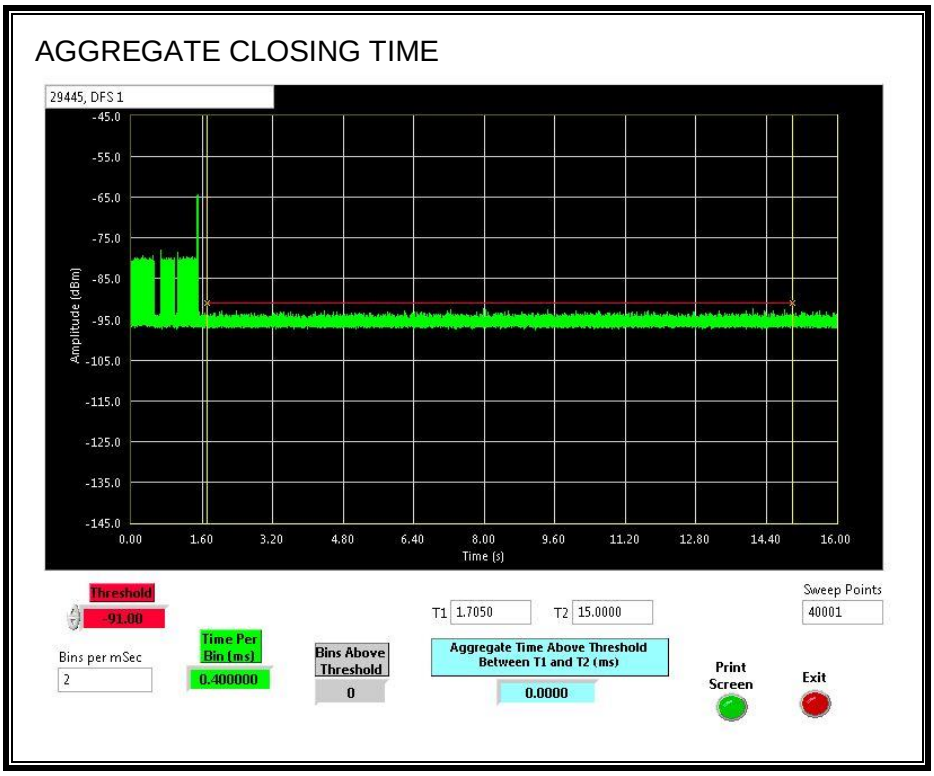
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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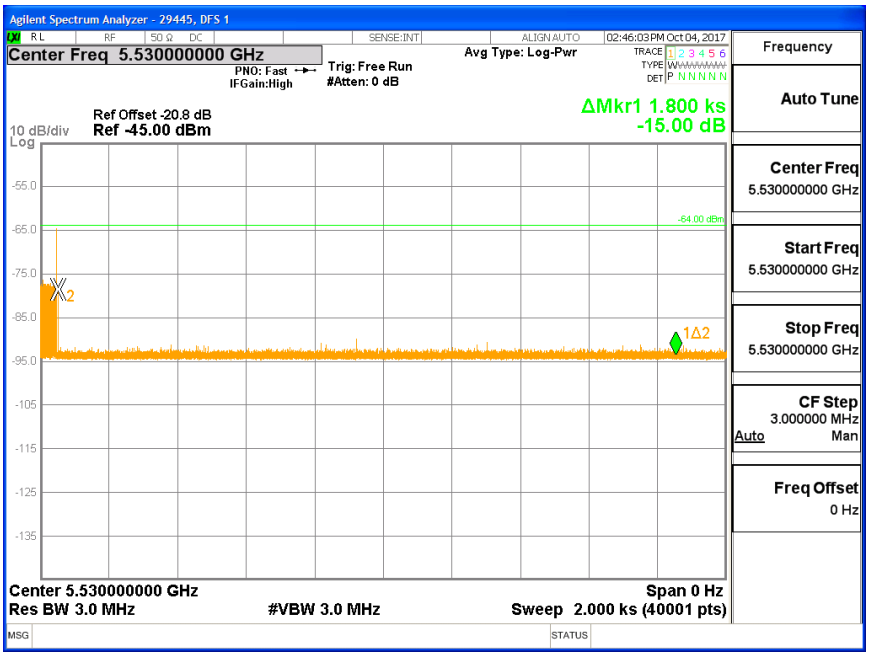
13.7.5. 30-MINUTE NON-OCCUPANCY PERIOD

RESULTS

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

30-MINUTE NON-OCCUPANCY PERIOD



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13.8. PEER TO PEER MODE EUT RESULTS FOR 20 MHz BANDWIDTH

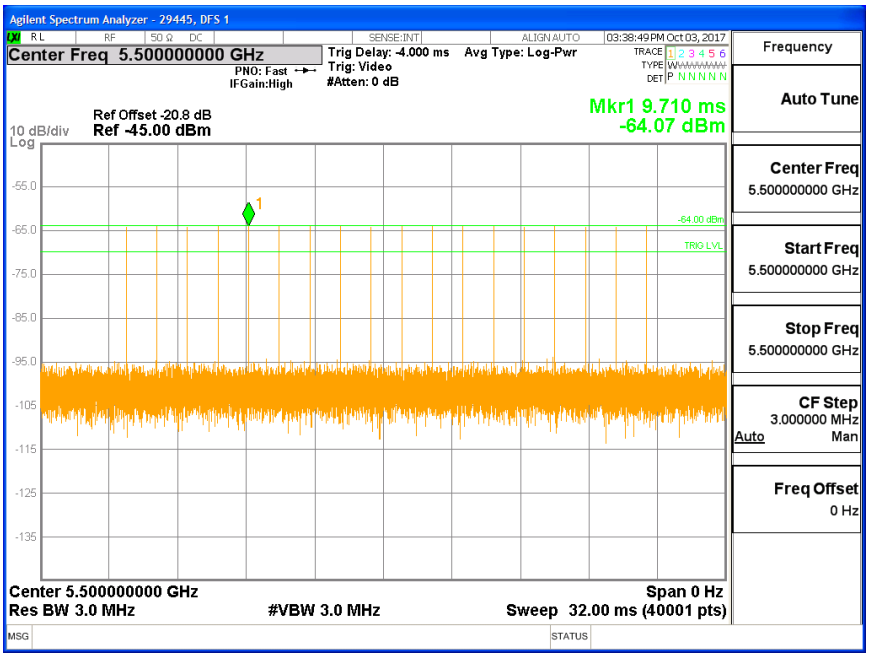
13.8.1. TEST CHANNEL

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

13.8.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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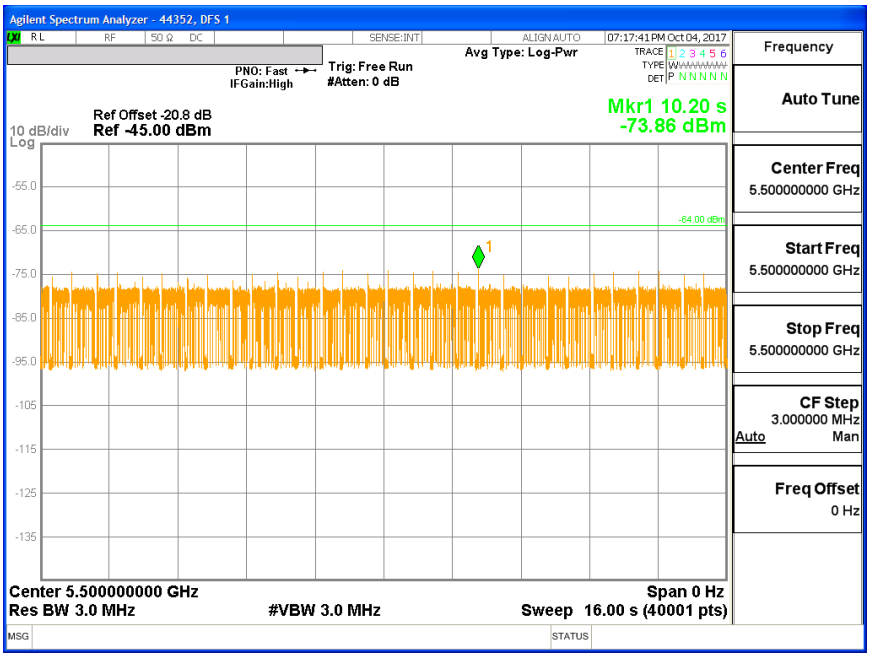
TRAFFIC

EUT SLAVE TRAFFIC



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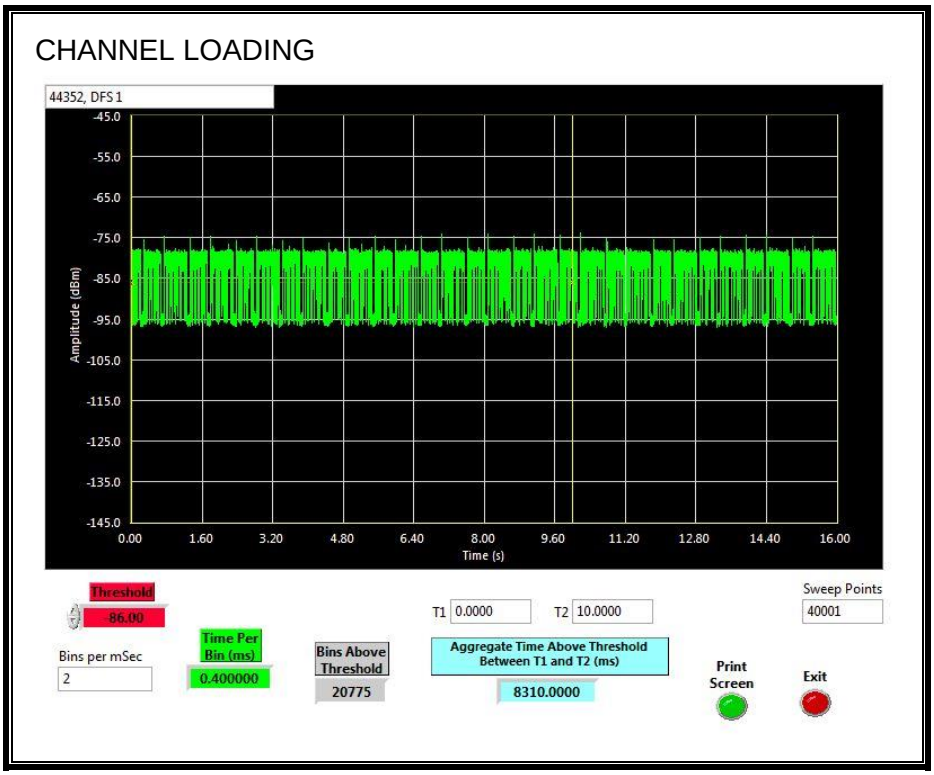
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 83.1%.

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13.8.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.8.4. 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)
0.123	10

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

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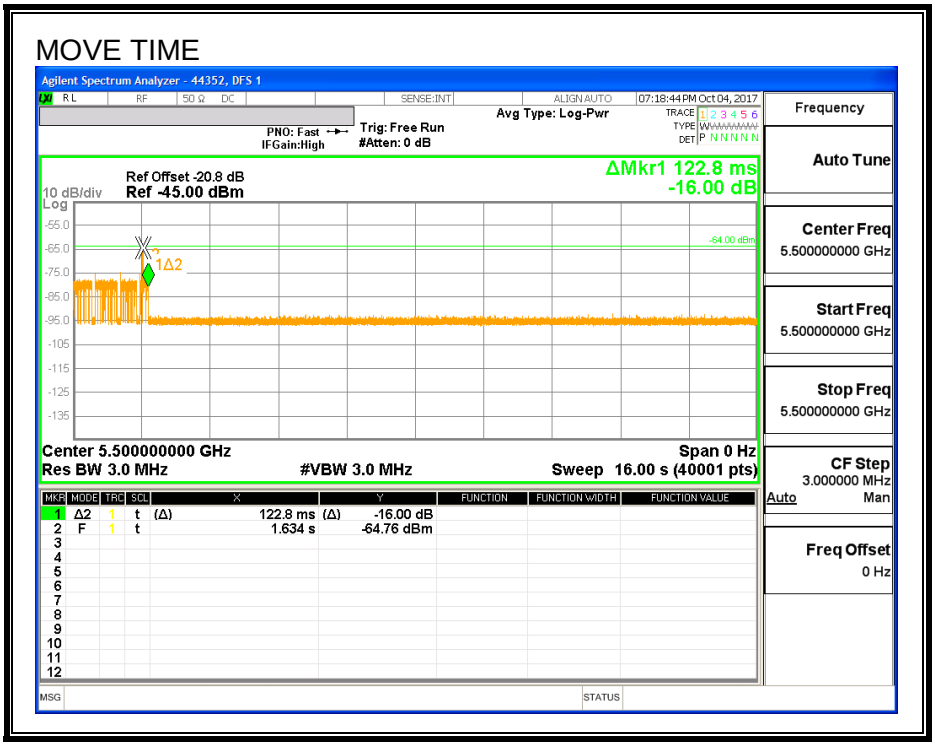
MOVE TIME



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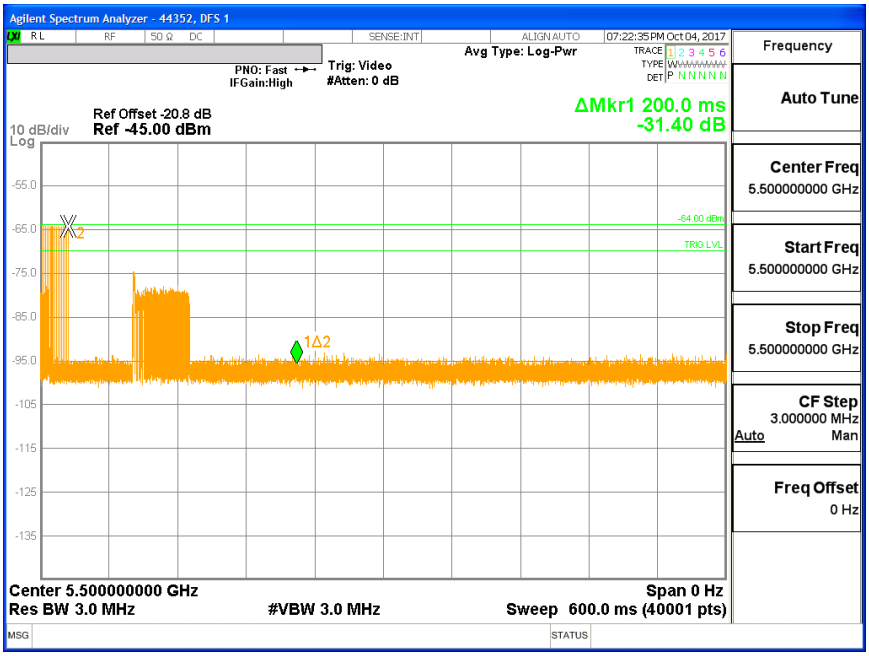
CHANNEL CLOSING TIME

CLOSING TIME



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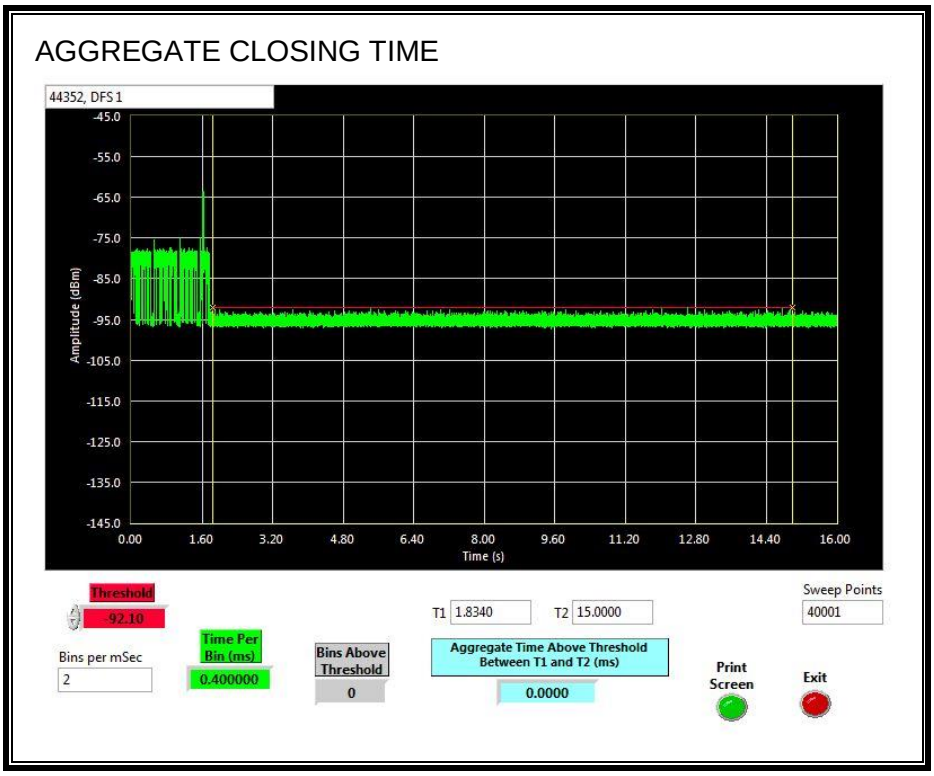
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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13.9. PEER TO PEER MODE EUT RESULTS FOR 40 MHz BANDWIDTH

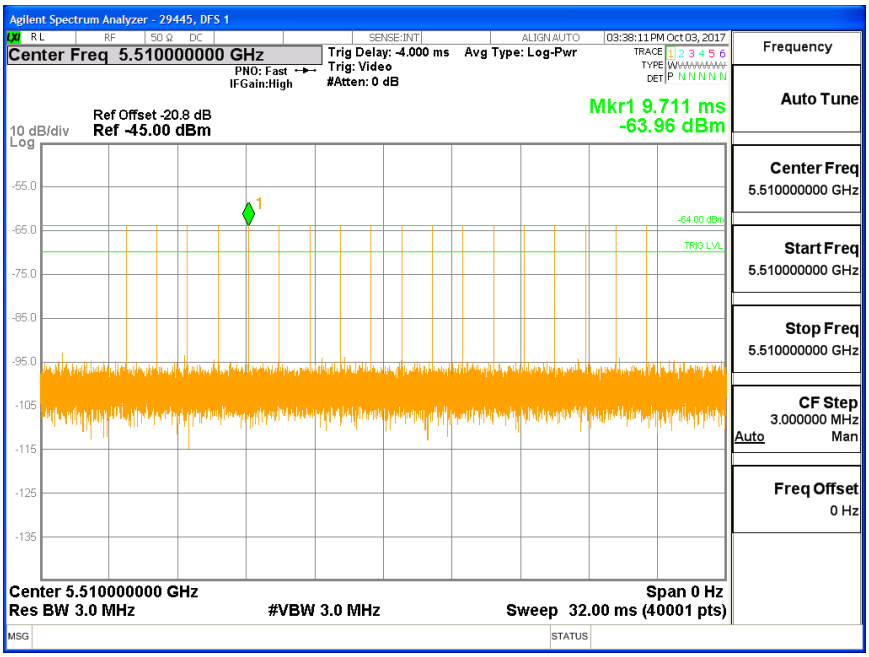
13.9.1. TEST CHANNEL

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

13.9.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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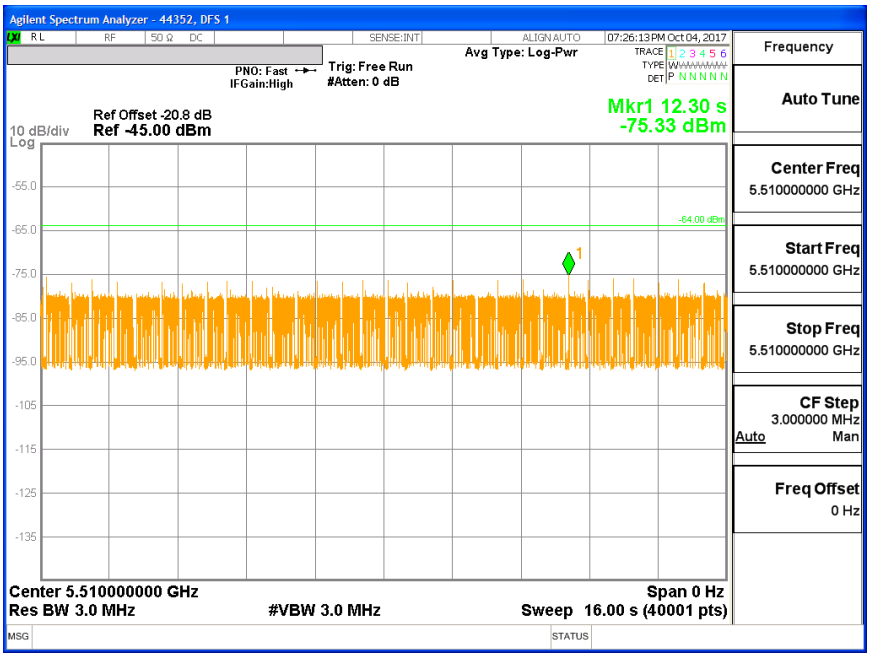
TRAFFIC

EUT SLAVE TRAFFIC



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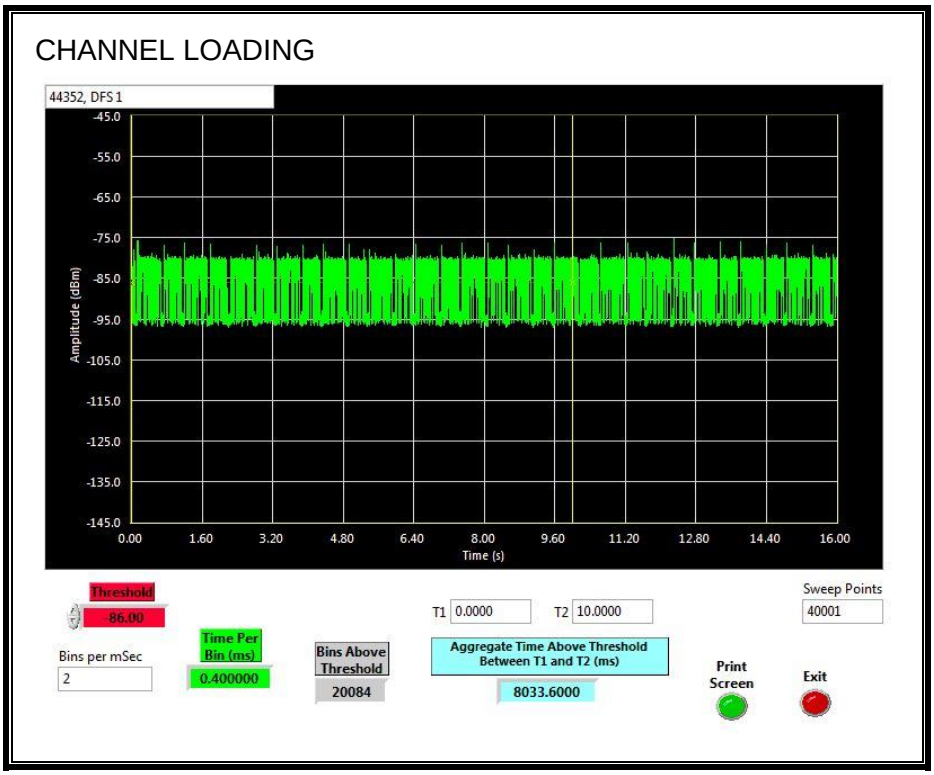
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 80.336%

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13.9.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.9.4. 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)
0.073	10

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

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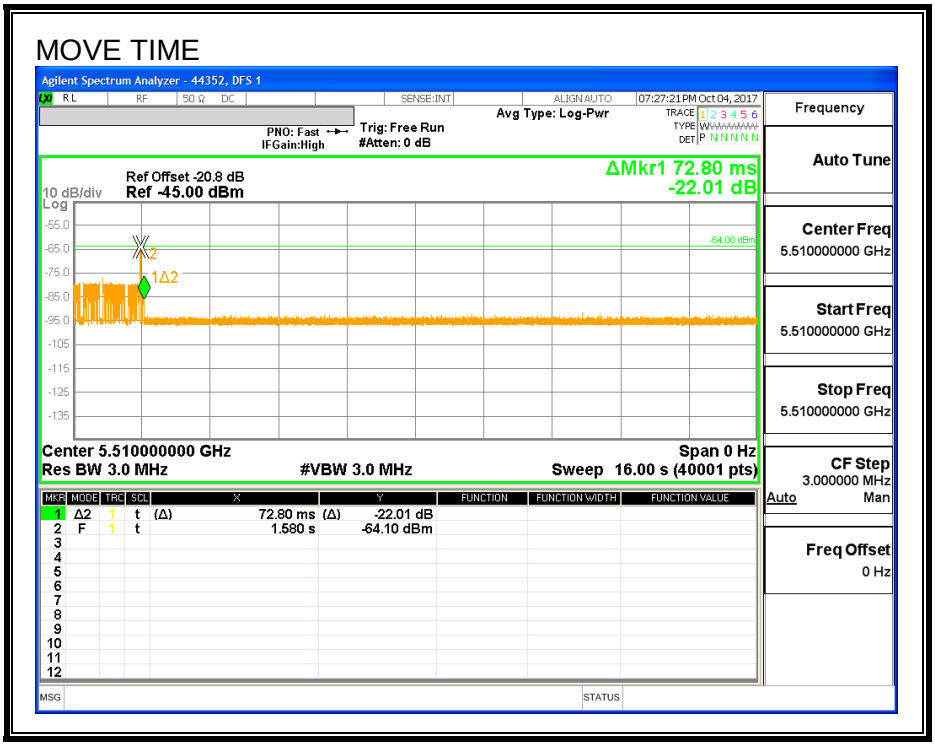
MOVE TIME



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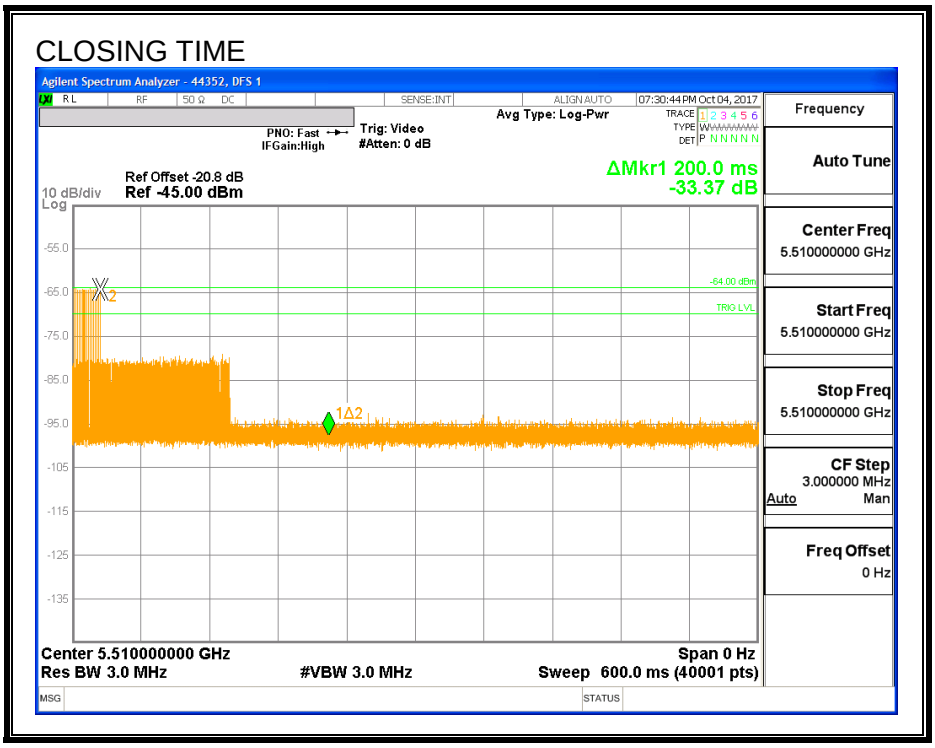
CHANNEL CLOSING TIME



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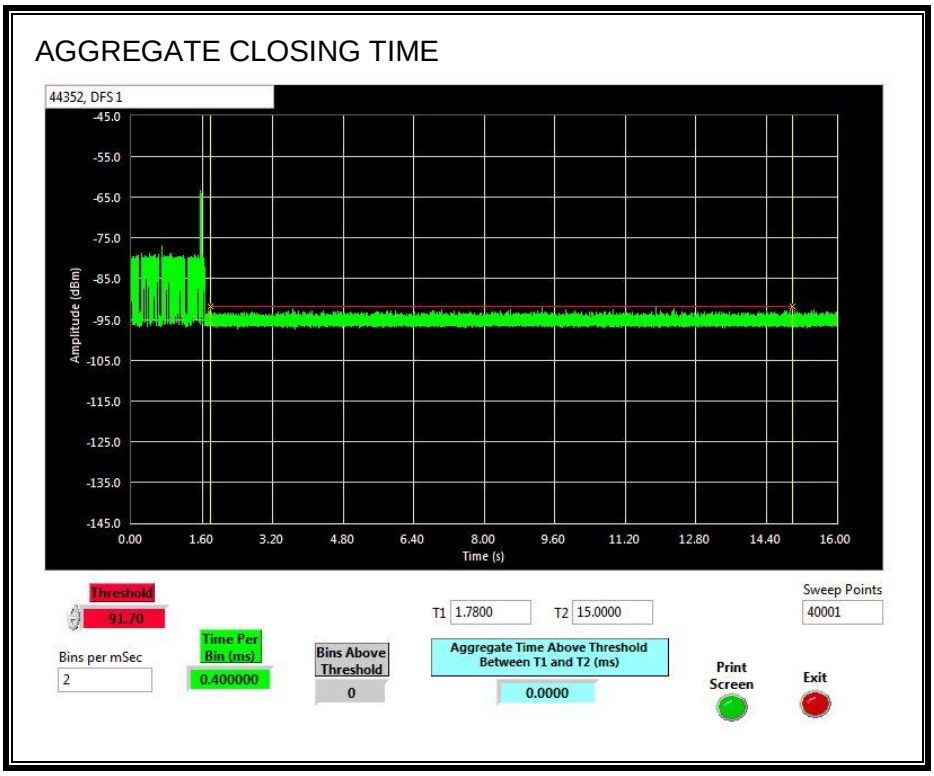
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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13.10. PEER TO PEER MODE EUT RESULTS FOR 80 MHz BANDWIDTH

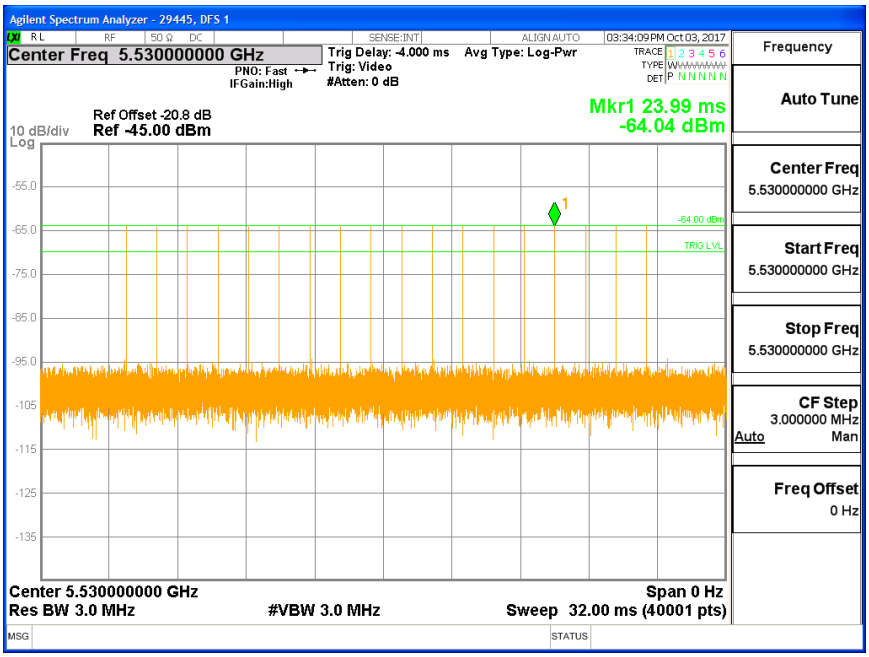
13.10.1. TEST CHANNEL

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

13.10.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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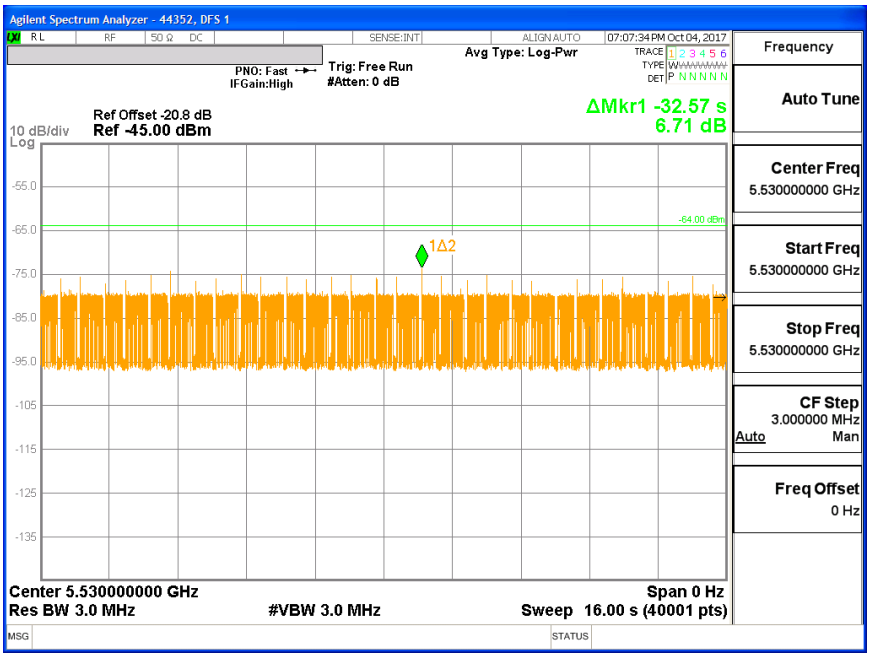
TRAFFIC

EUT SLAVE TRAFFIC



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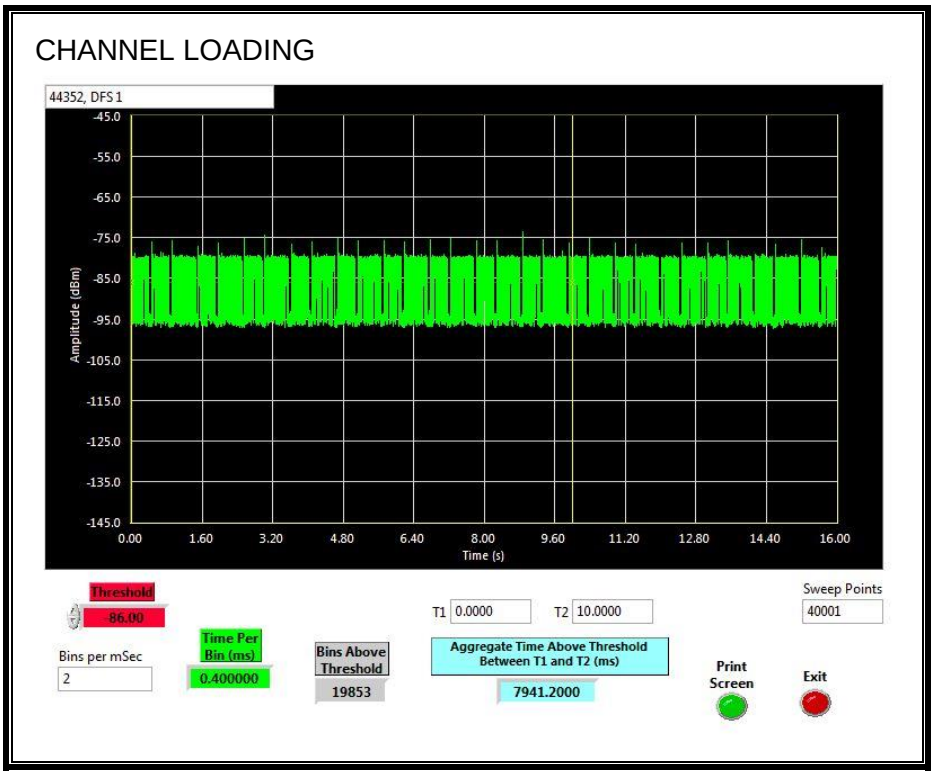
CHANNEL LOADING



The level of traffic loading on the channel by the EUT is 79.412%.

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13.10.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.10.4. 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)
0.048	10

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

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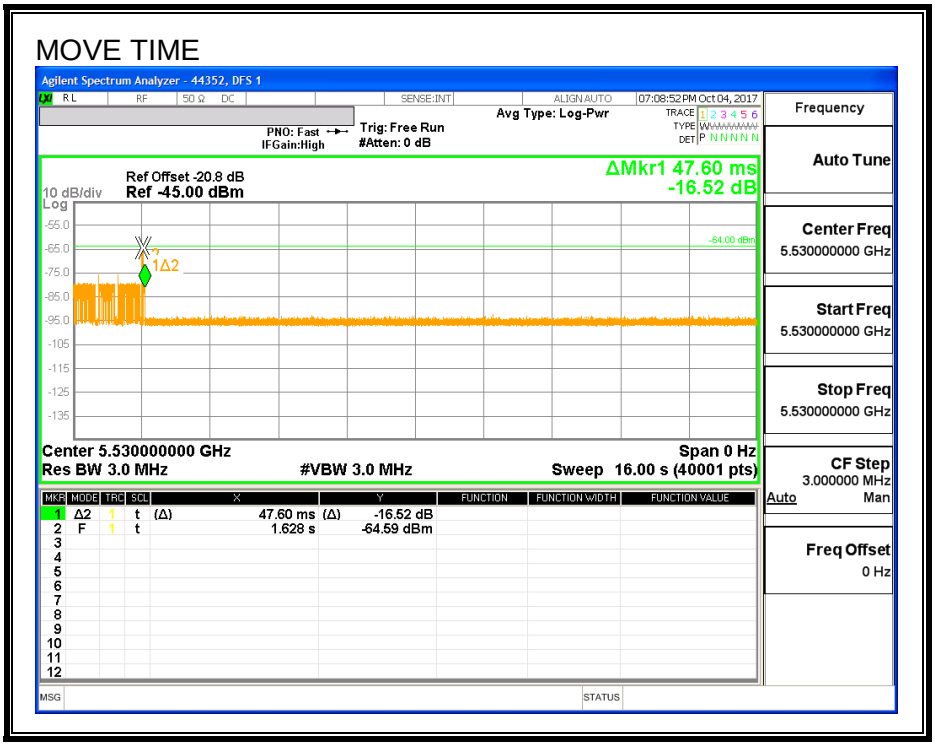
MOVE TIME



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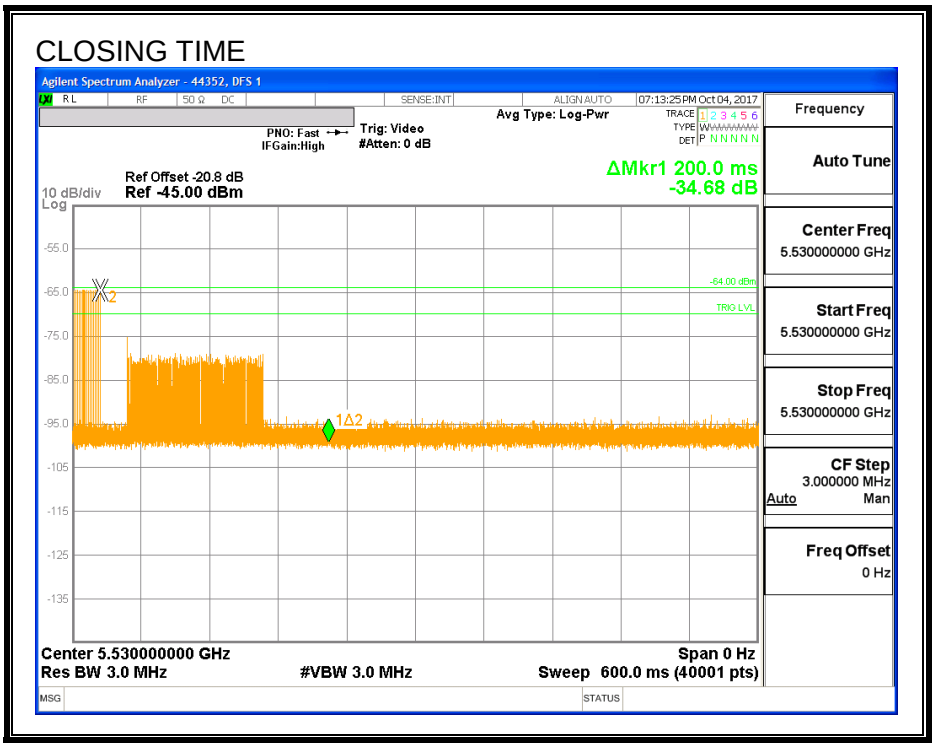
CHANNEL CLOSING TIME



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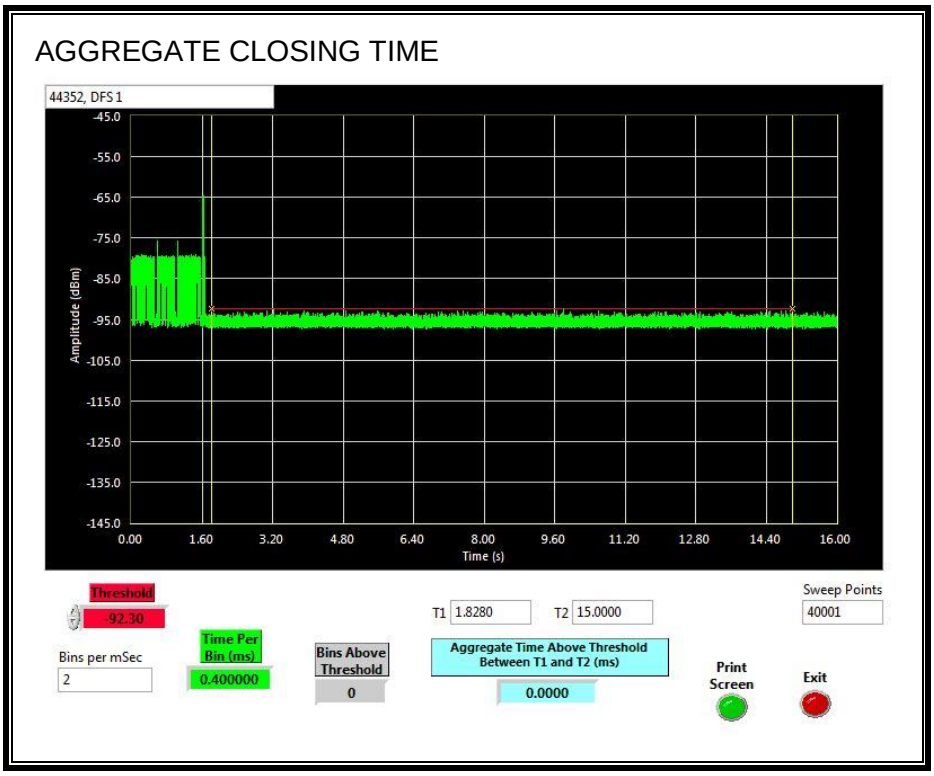
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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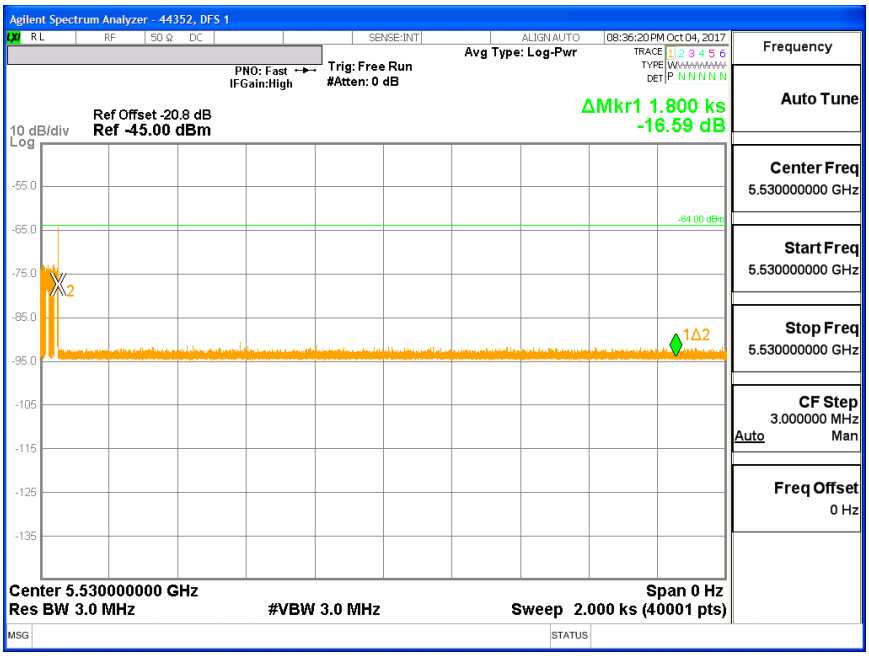
13.10.5. 30-MINUTE NON-OCCUPANCY PERIOD

RESULTS

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

30-MINUTE NON-OCCUPANCY PERIOD



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13.11. PEER TO PEER MODE PEER SLAVE DEVICE RESULTS FOR 20 MHz BANDWIDTH

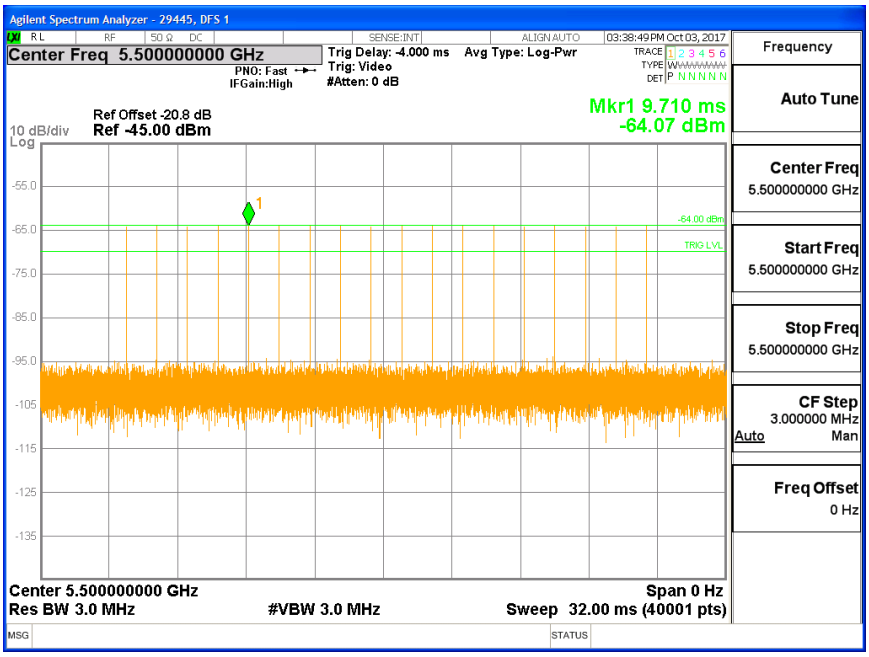
13.11.1. TEST CHANNEL

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

13.11.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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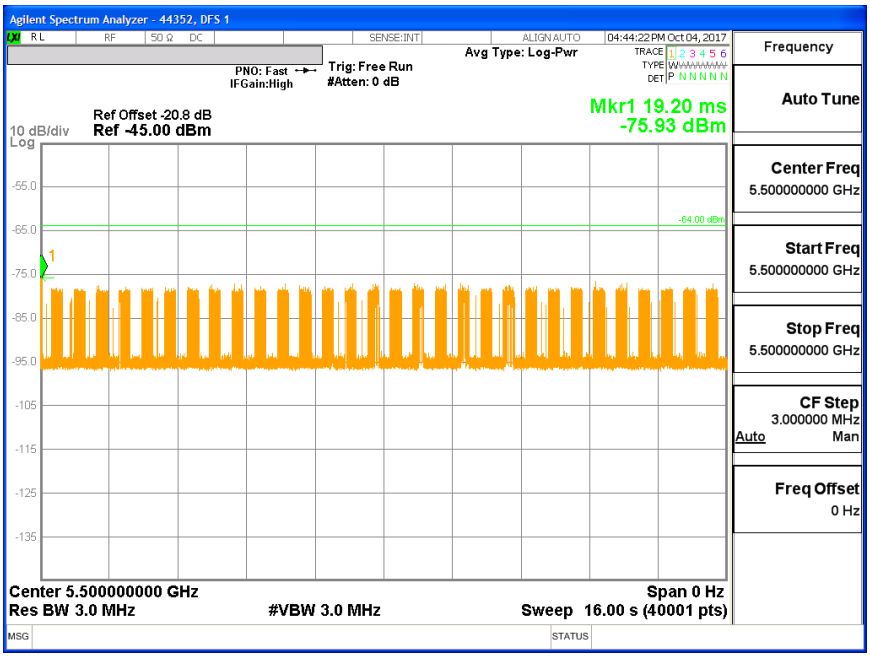
TRAFFIC

PEER SLAVE TRAFFIC



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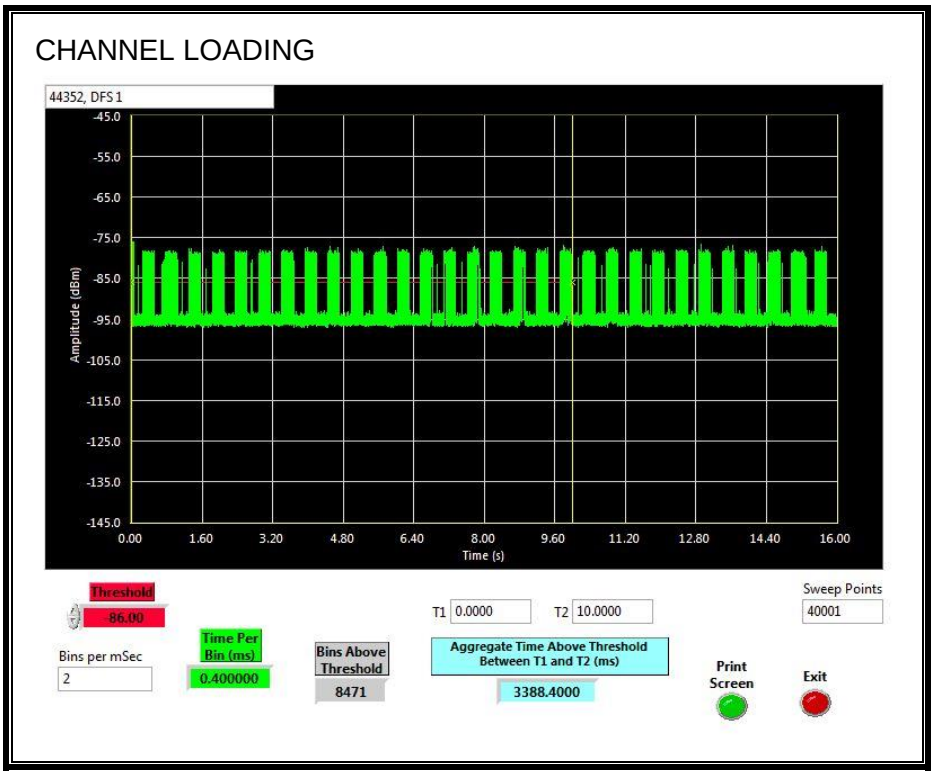
CHANNEL LOADING



The level of traffic loading on the channel by the Peer Slave is 33.884%.

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13.11.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.11.4. 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)
4.125	**10**

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
29.2	**60**

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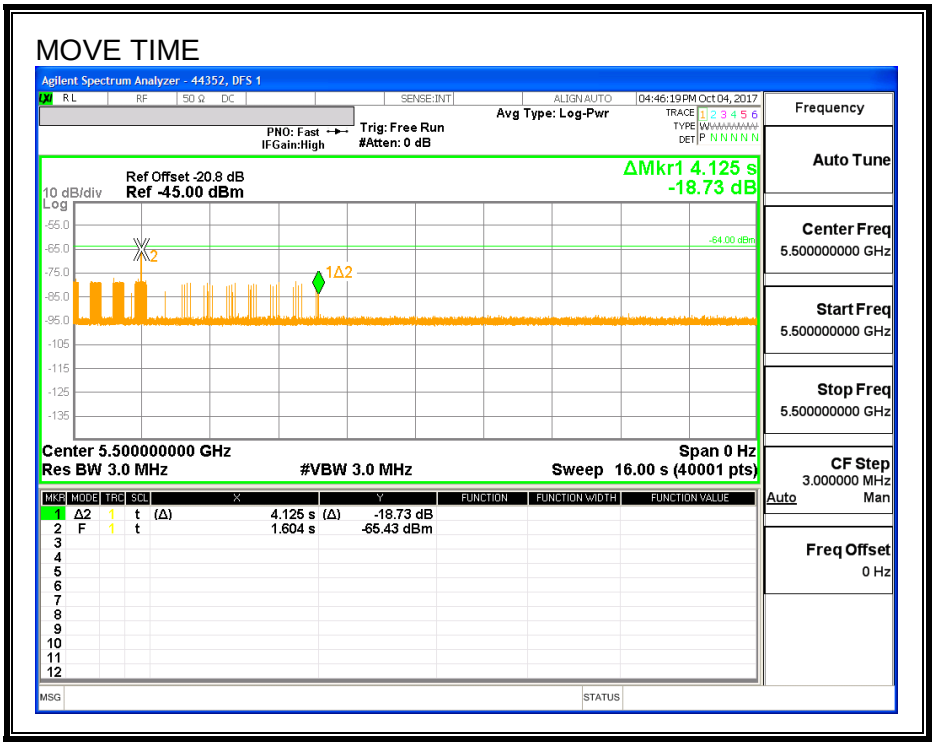
MOVE TIME



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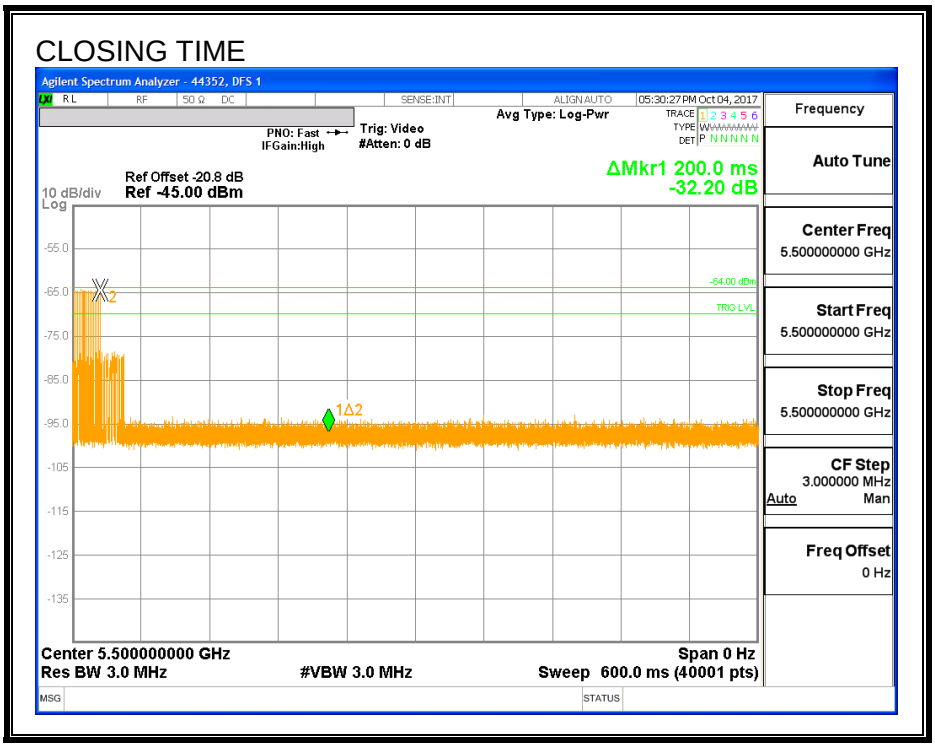
CHANNEL CLOSING TIME



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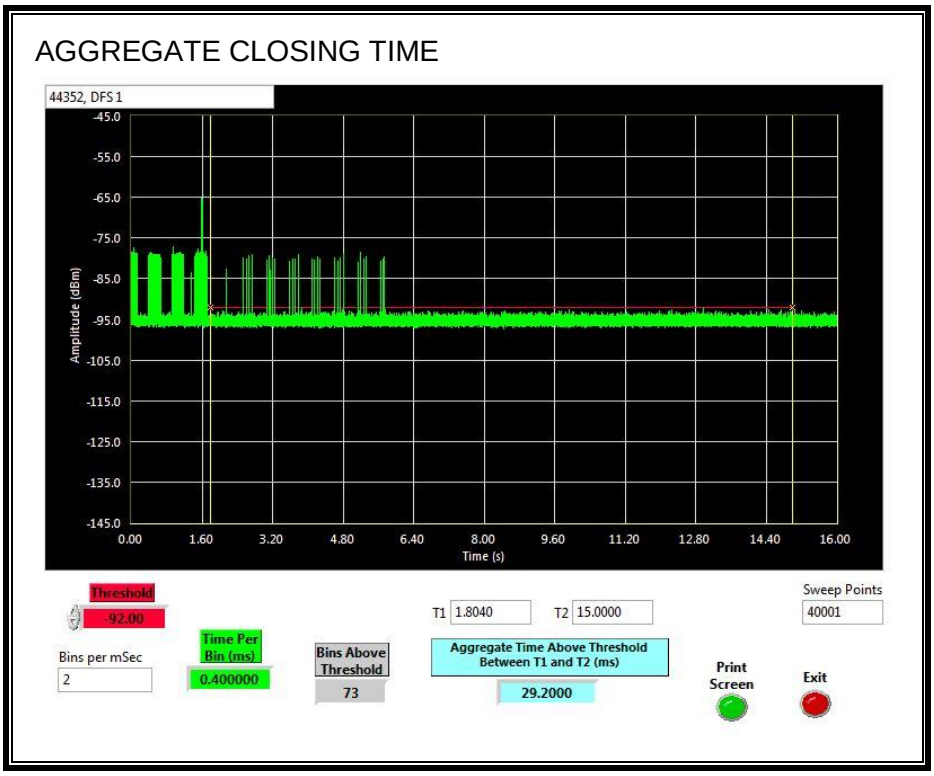
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

Only intermittent transmissions are observed during the aggregate monitoring period.



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13.12. PEER TO PEER MODE PEER SLAVE DEVICE RESULTS FOR 40 MHz BANDWIDTH

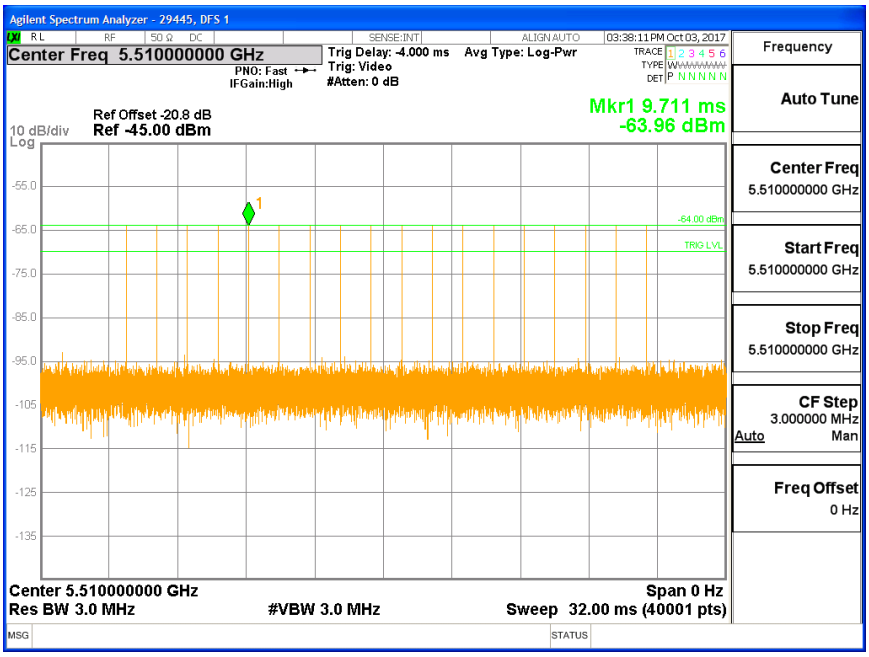
13.12.1. TEST CHANNEL

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

13.12.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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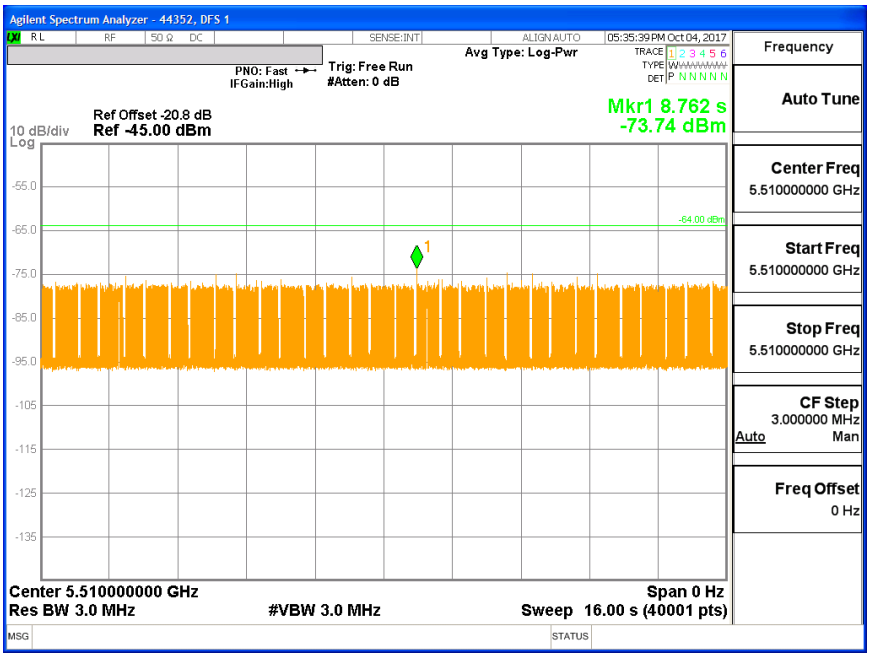
TRAFFIC

PEER SLAVE TRAFFIC



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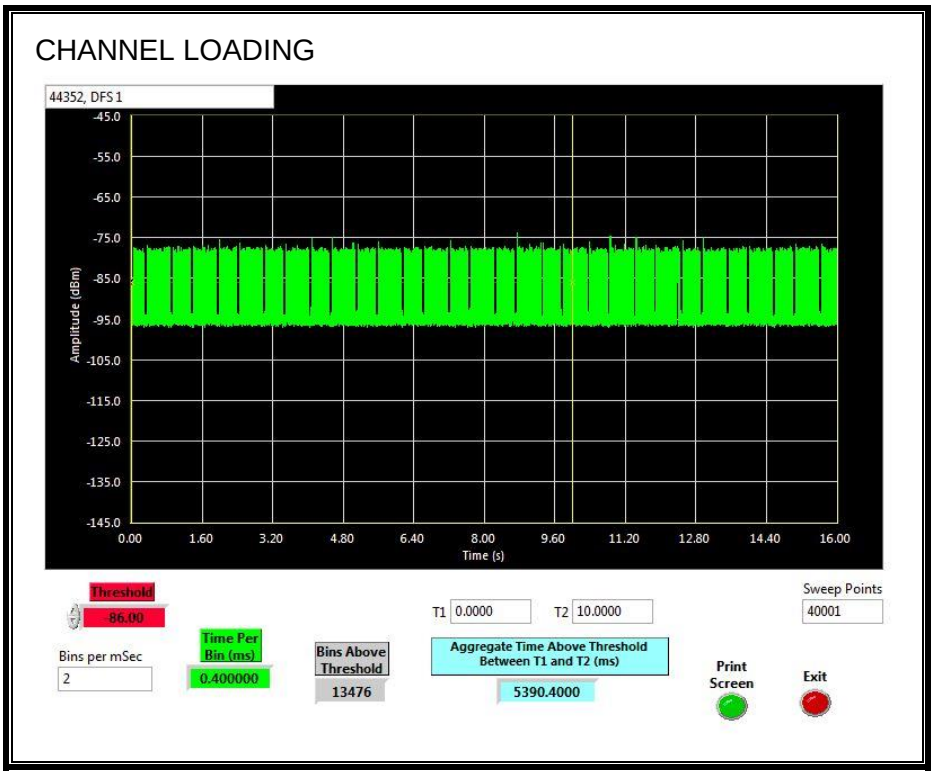
CHANNEL LOADING



The level of traffic loading on the channel by the Peer Slave is 53.904%.

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13.12.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.12.4. 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)
0.047	10

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

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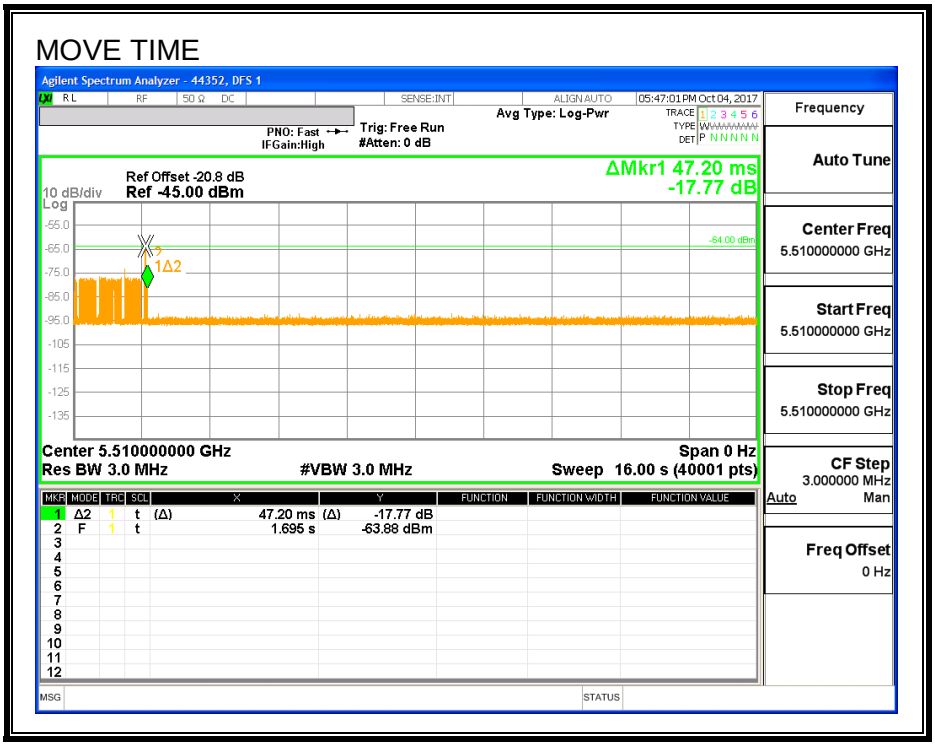
MOVE TIME



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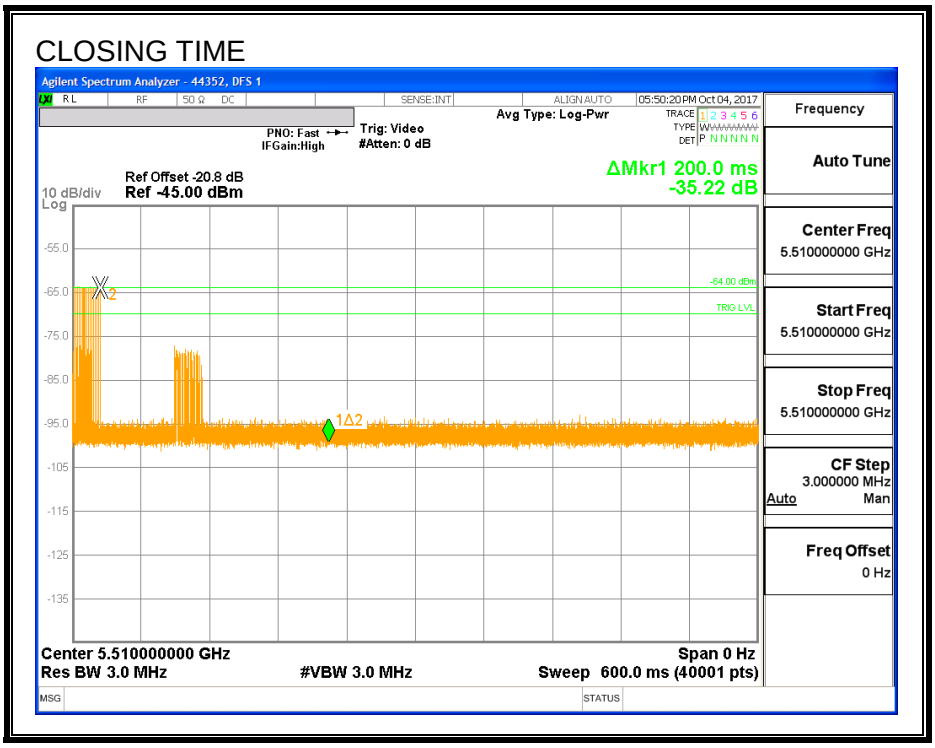
CHANNEL CLOSING TIME



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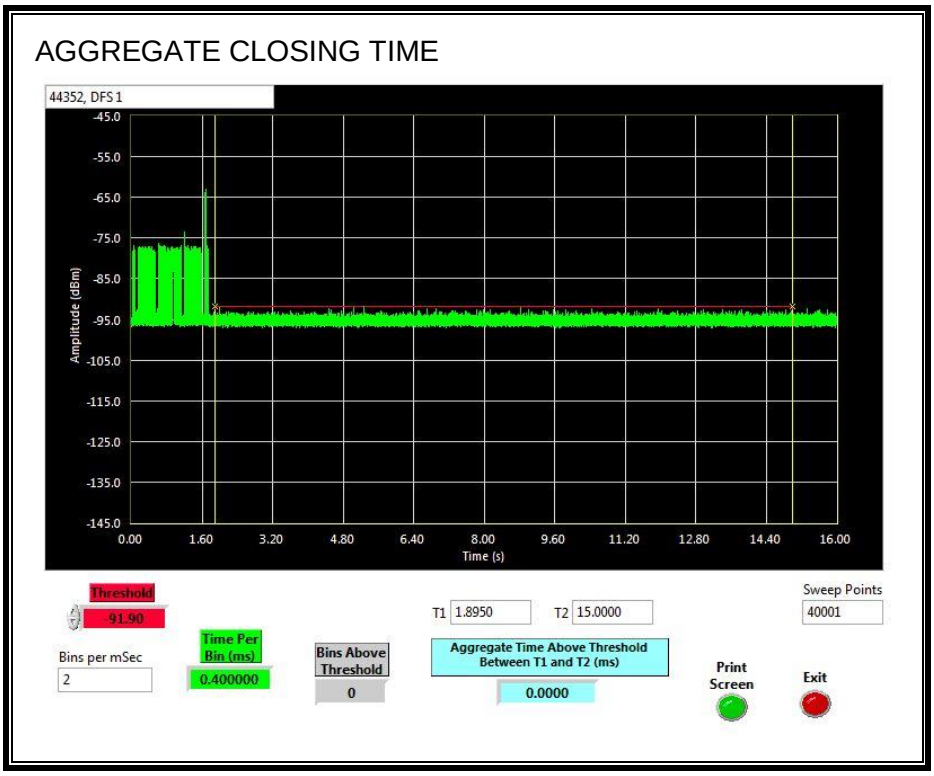
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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13.13. PEER TO PEER MODE PEER SLAVE DEVICE RESULTS FOR 80 MHz BANDWIDTH

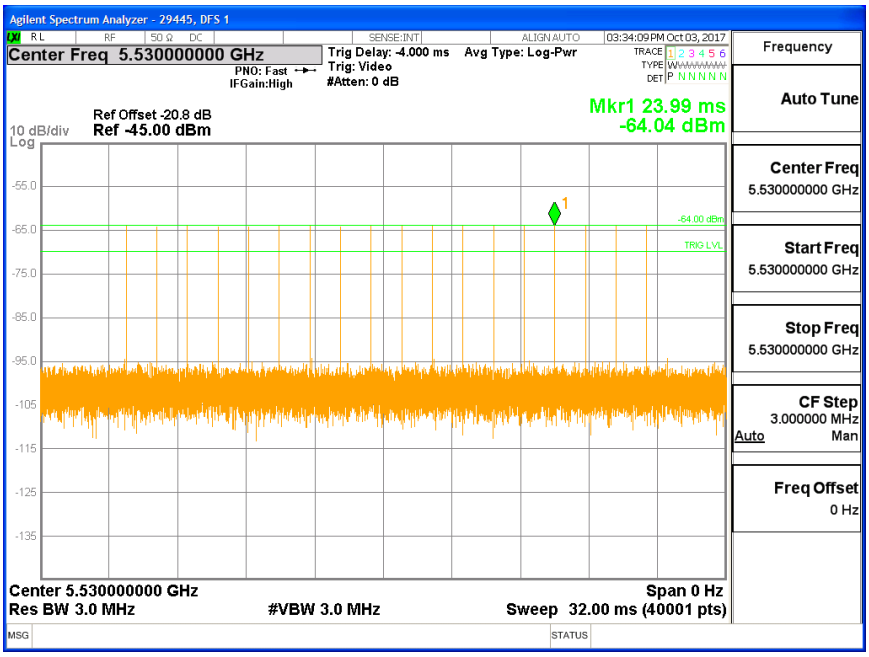
13.13.1. TEST CHANNEL

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

13.13.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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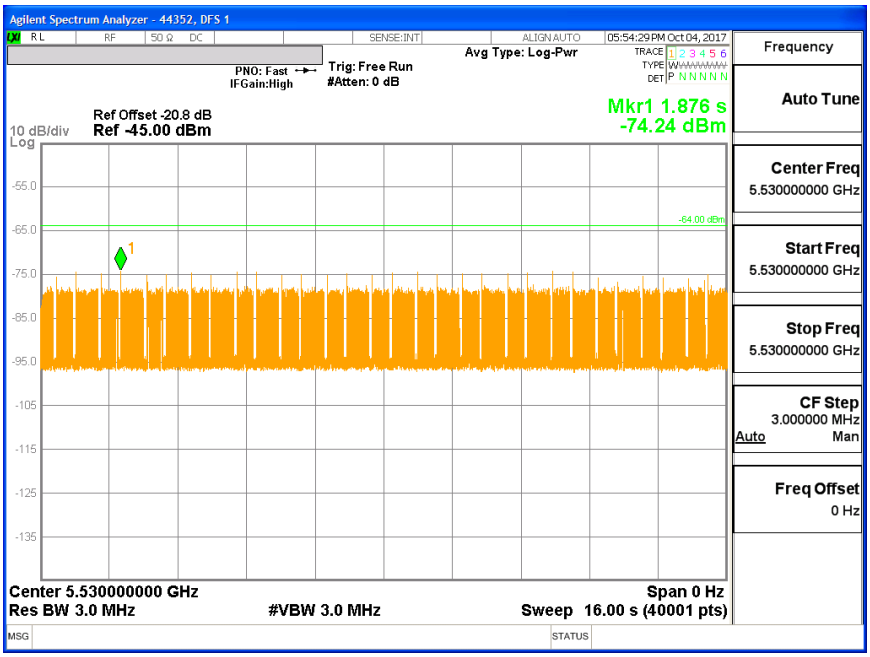
TRAFFIC

PEER SLAVE TRAFFIC



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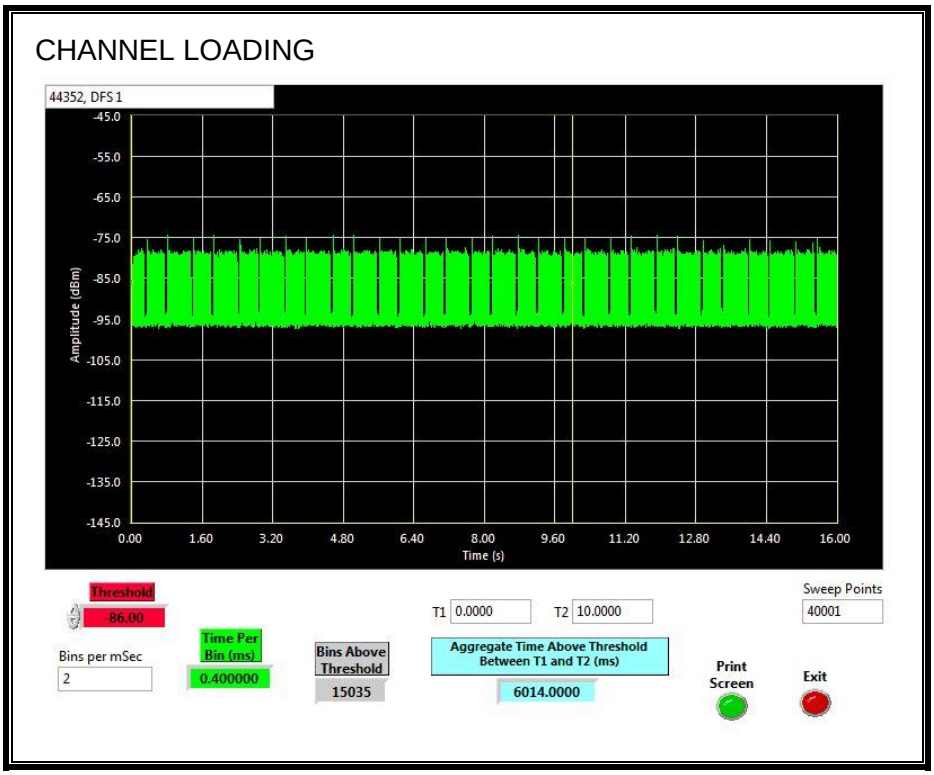
CHANNEL LOADING



The level of traffic loading on the channel by the Peer Slave is 60.14%.

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13.13.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.13.4. 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)
0.129	**10**

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

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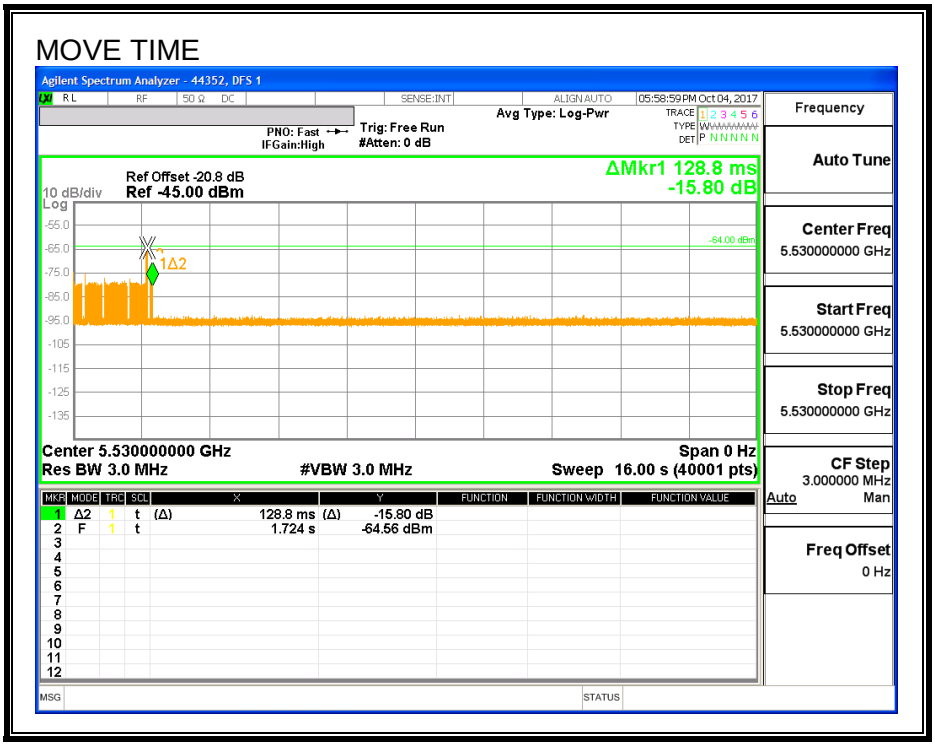
MOVE TIME



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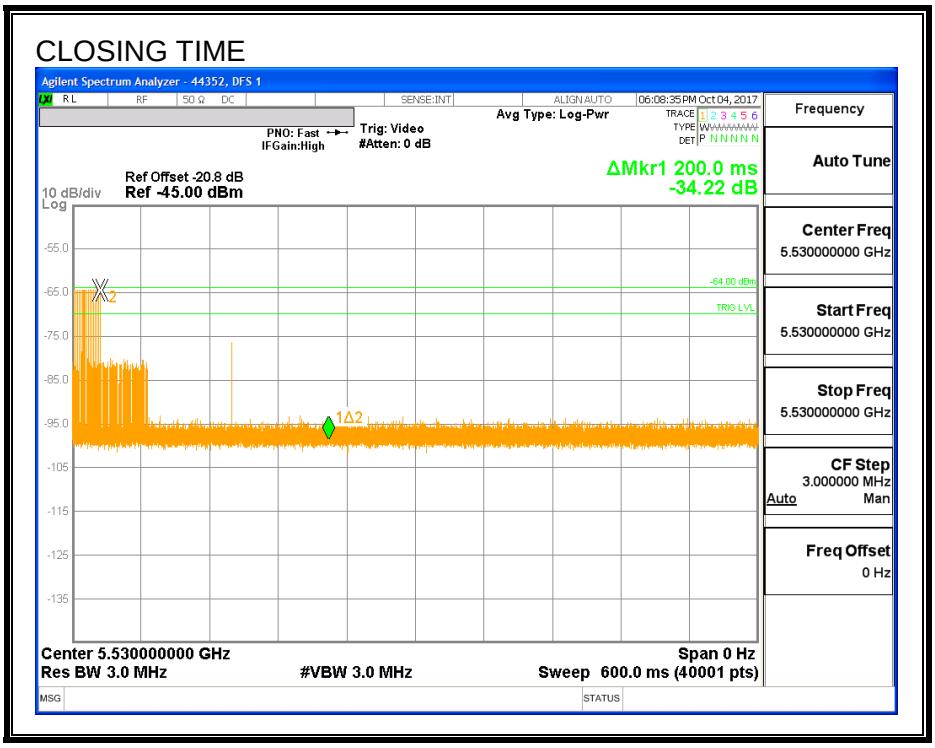
CHANNEL CLOSING TIME



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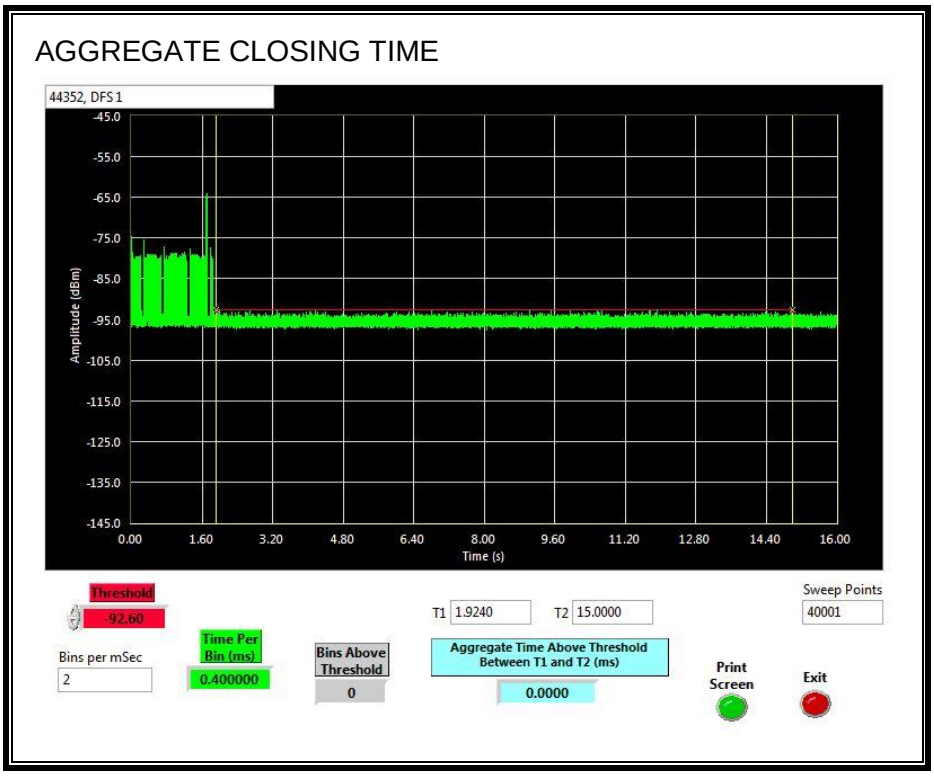
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.



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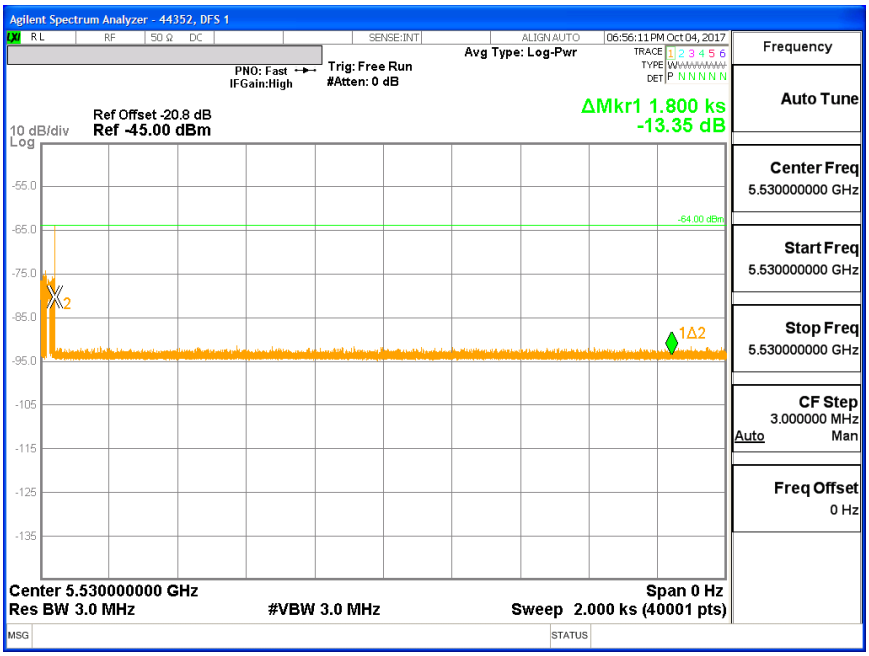
13.13.5. 30-MINUTE NON-OCCUPANCY PERIOD

RESULTS

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

30-MINUTE NON-OCCUPANCY PERIOD



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