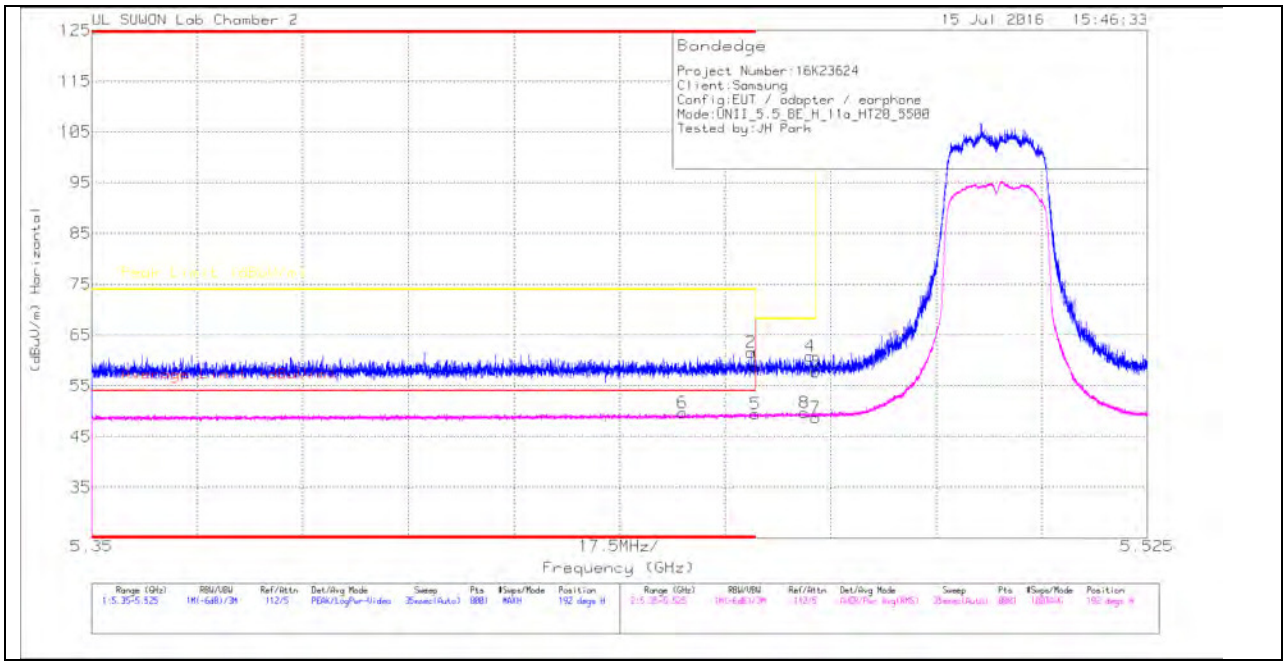
11.3. 5.5-5.6 GHz

11.3.1. TX ABOVE 1 GHz 802.11a 2TX CDD MODE IN THE 5.5 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10dB	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	40.41	Pk	34.5	-16.2	0	58.71	-	-	74	-15.29	192	118	H
2	* 5.459	43.29	Pk	34.5	-16.2	0	61.59	-	-	74	-12.41	192	118	H
3	5.47	39.45	Pk	34.5	-16.2	0	57.75	-	-	68.2	-10.45	192	118	H
4	5.469	42.58	Pk	34.5	-16.2	0	60.88	-	-	68.2	-7.32	192	118	H
5	* 5.46	30.85	RMS	34.5	-16.2	.29	49.44	54	-4.56	-	-	192	118	H
6	* 5.448	31.17	RMS	34.5	-16.2	.29	49.76	54	-4.24	-	-	192	118	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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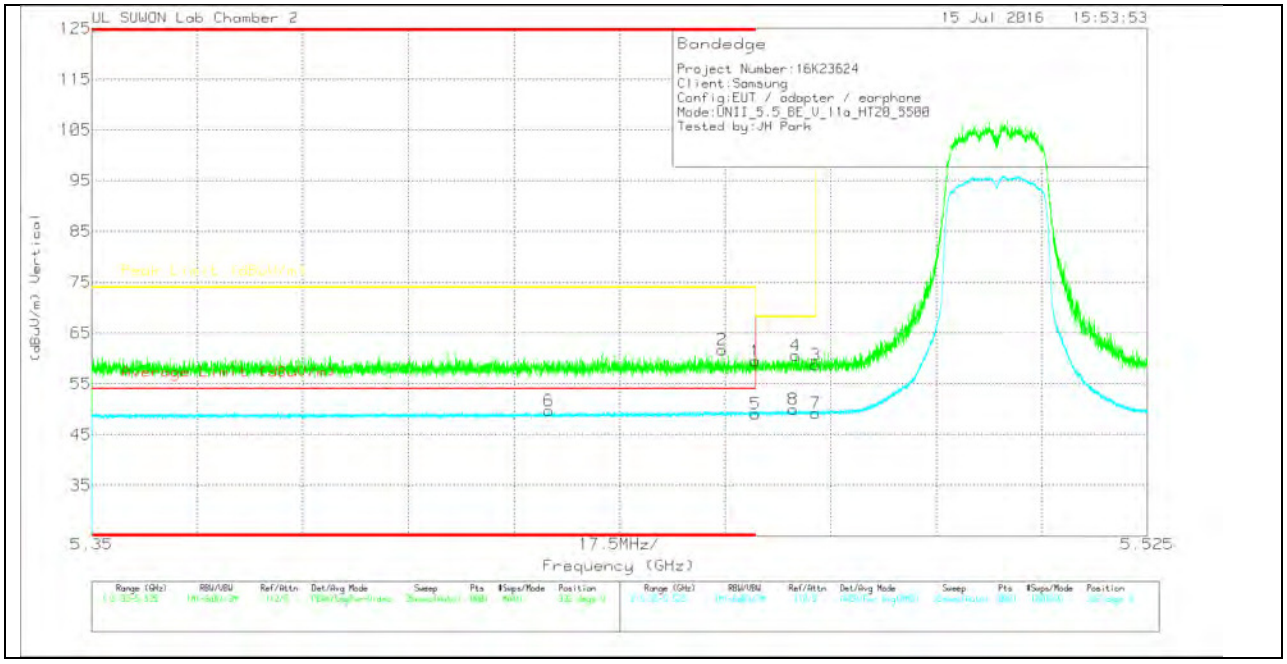
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	41.23	Pk	34.5	-16.2	0	59.53	-	-	74	-14.47	332	208	V
2	* 5.455	43.36	Pk	34.5	-16.2	0	61.66	-	-	74	-12.34	332	208	V
3	5.47	40.43	Pk	34.5	-16.2	0	58.73	-	-	68.2	-9.47	332	208	V
4	5.467	42.28	Pk	34.5	-16.2	0	60.58	-	-	68.2	-7.62	332	208	V
5	* 5.46	30.52	RMS	34.5	-16.2	.29	49.11	54	-4.89	-	-	332	208	V
6	* 5.426	31.18	RMS	34.5	-16.3	.29	49.67	54	-4.33	-	-	332	208	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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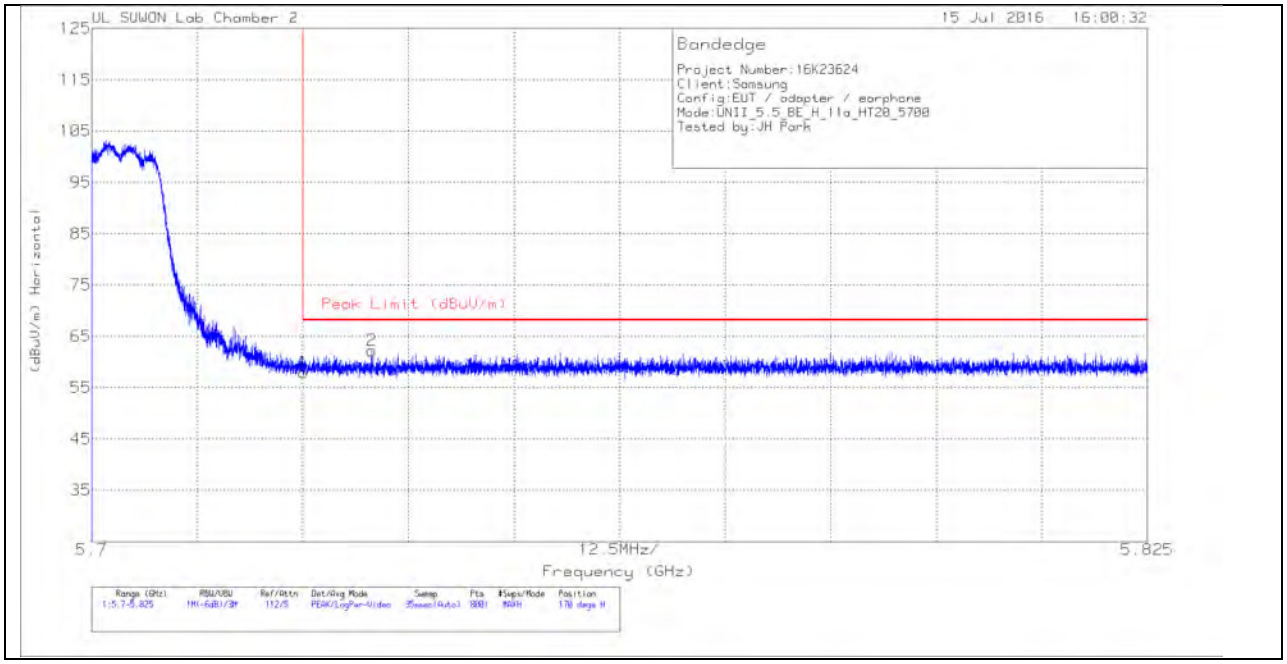
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10 dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	38.9	Pk	34.7	-15.6	0	58	68.2	-10.2	170	366	H
2	5.733	43.01	Pk	34.7	-15.5	0	62.21	68.2	-5.99	170	366	H

Pk - Peak detector

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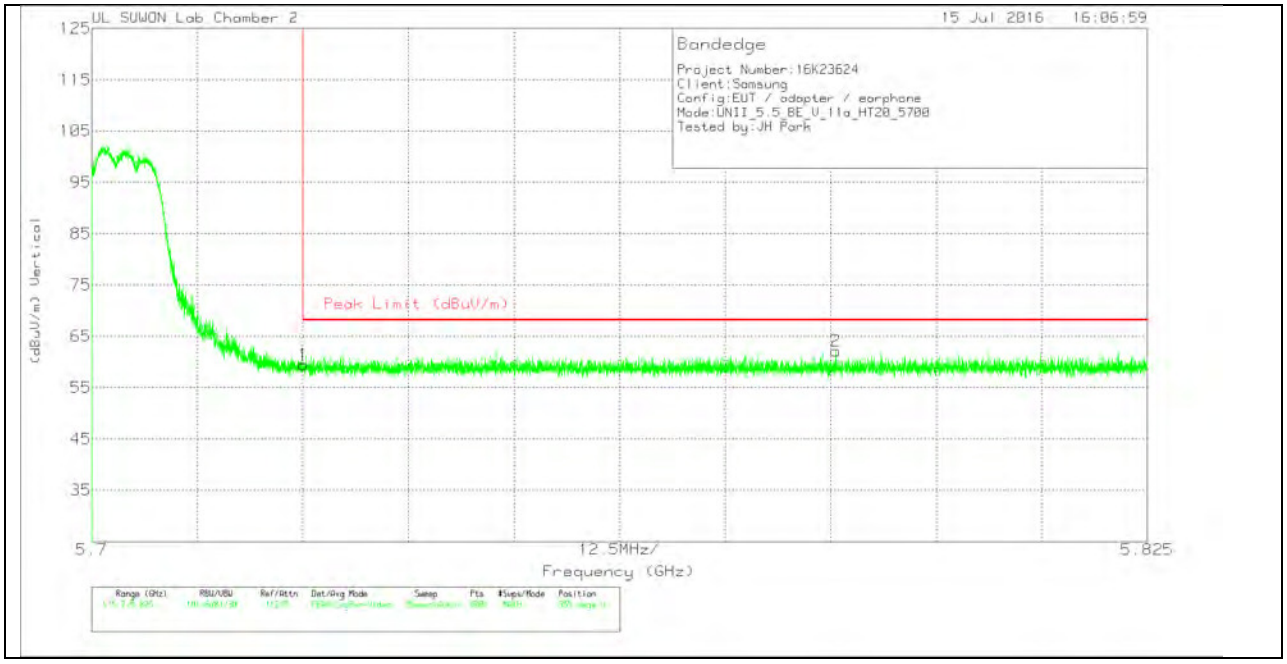
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10 dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	40.37	Pk	34.7	-15.6	0	59.47	68.2	-8.73	355	159	V
2	5.788	42.89	Pk	34.7	-15.4	0	62.19	68.2	-6.01	355	159	V

Pk - Peak detector

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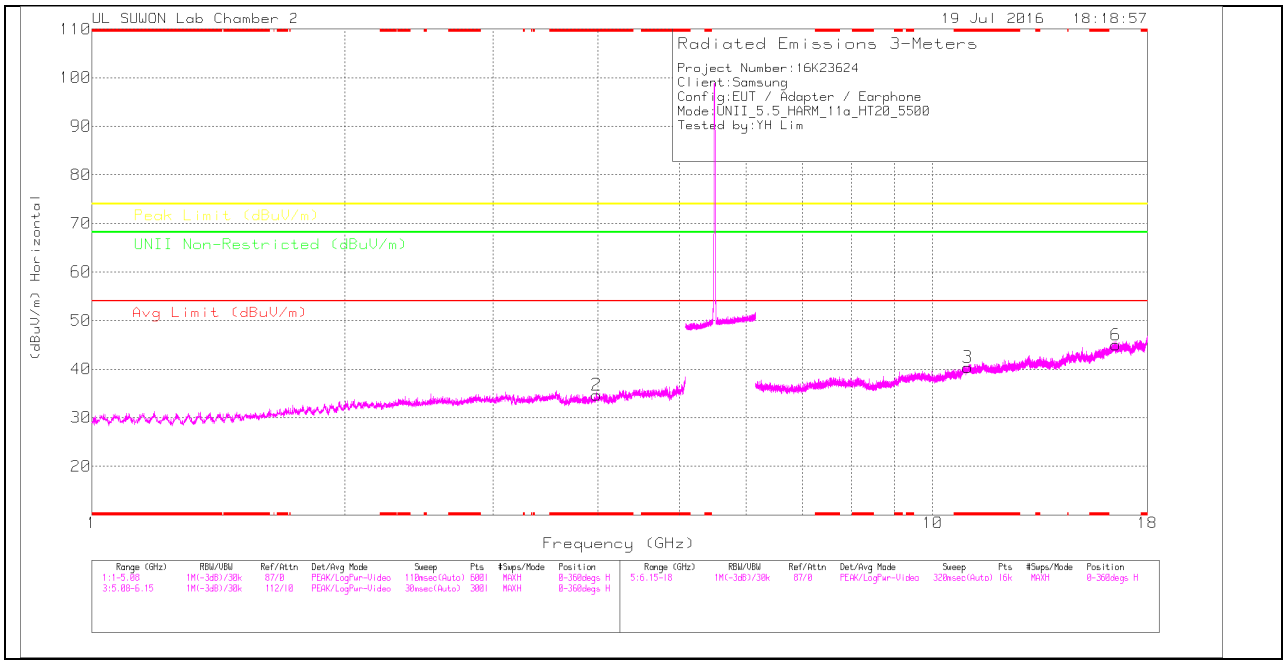
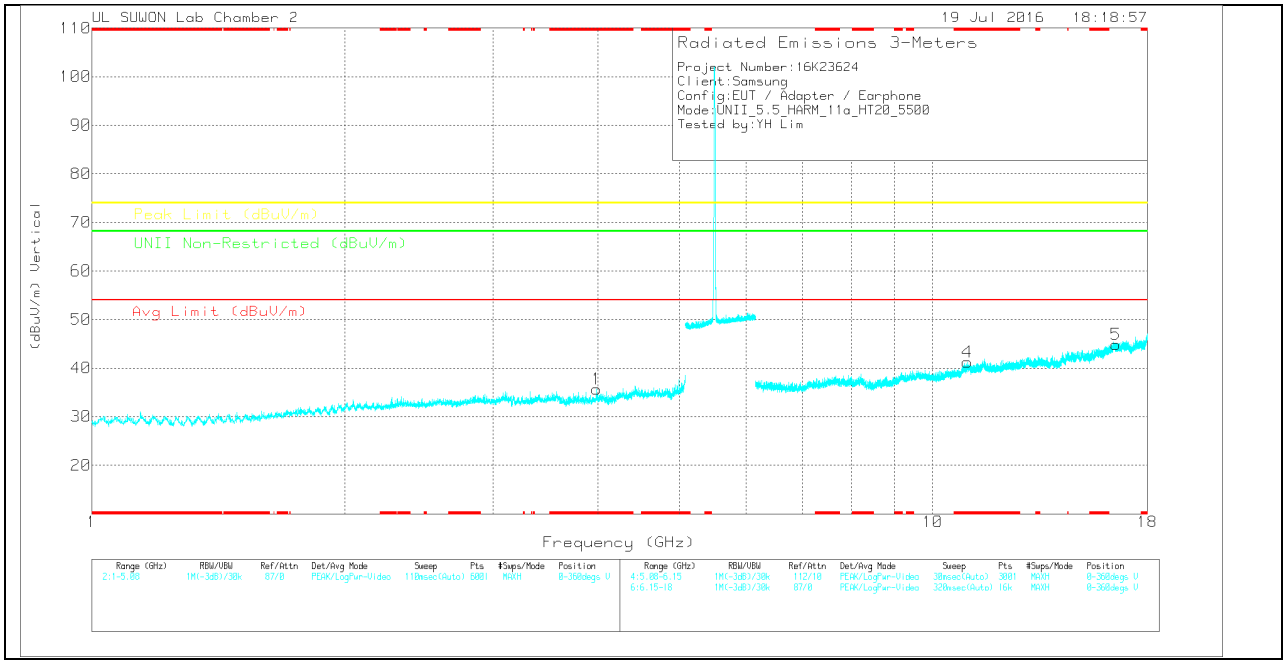
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
2	* 3.985	27.3	Pk	33.3	-25.9	0	34.7	-	-	74	-39.3	-	-	0-360	100	H
1	* 3.981	28.43	Pk	33.2	-25.9	0	35.73	-	-	74	-38.27	-	-	0-360	100	V
3	* 11.002	19.99	Pk	38	-17.6	0	40.39	-	-	74	-33.61	-	-	0-360	200	H
6	16.509	20.07	Pk	41	-16.1	0	44.97	-	-	-	-	68.2	-23.23	0-360	100	H
4	* 10.996	20.83	Pk	38	-17.6	0	41.23	-	-	74	-32.77	-	-	0-360	200	V
5	16.506	19.9	Pk	41	-16.1	0	44.8	-	-	-	-	68.2	-23.4	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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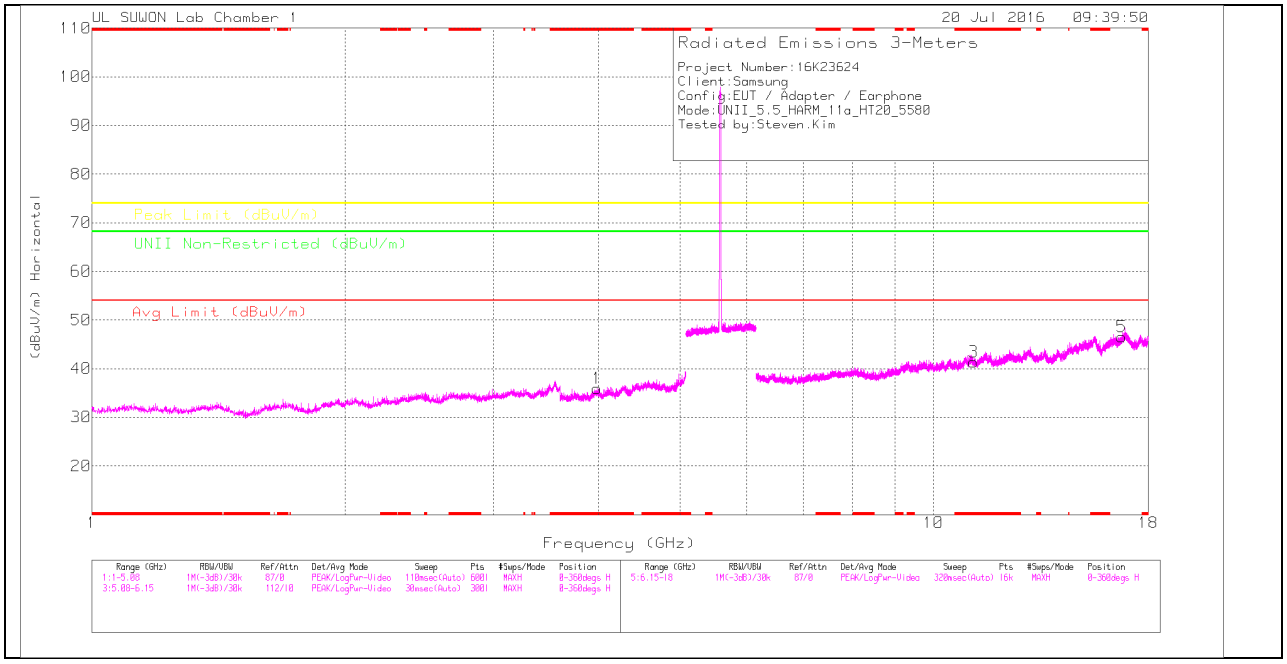
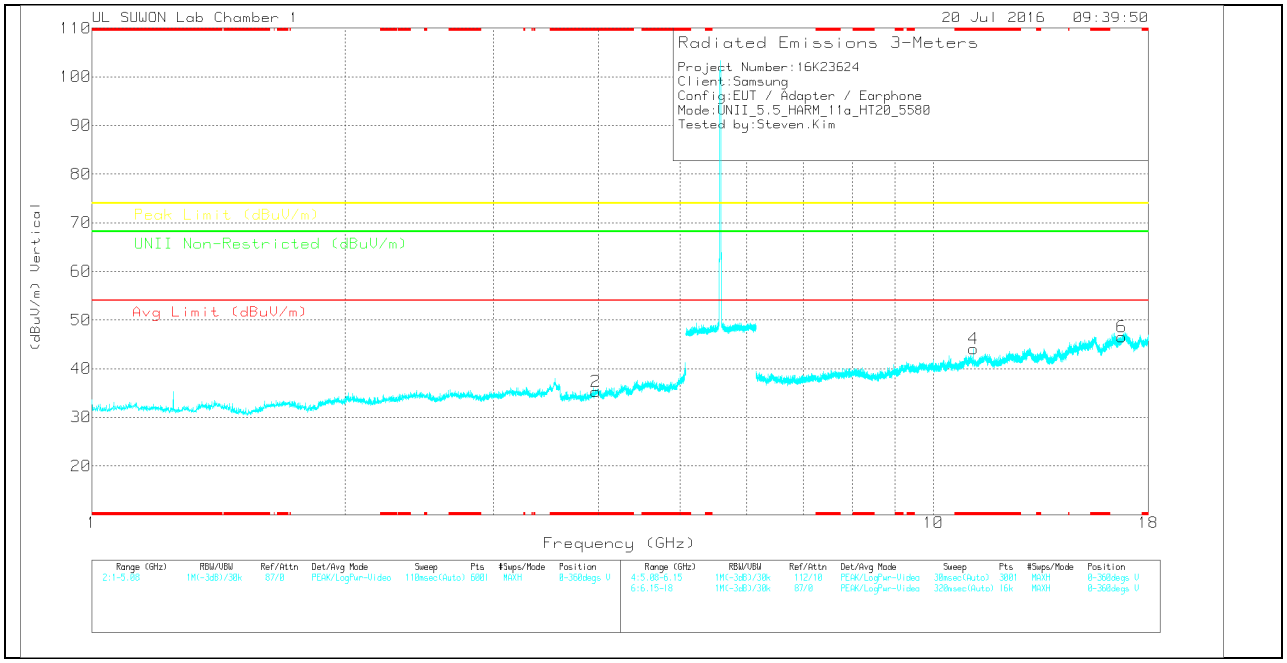
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.98	36.3	PK	33.4	-33.8	0	35.9	-	-	74	-38.1	-	-	0-360	100	H
2	* 3.972	35.73	PK	33.4	-33.8	0	35.33	-	-	74	-38.67	-	-	0-360	100	V
3	* 11.161	30.15	PK	38.3	-27.1	0	41.35	-	-	74	-32.65	-	-	0-360	200	H
5	16.741	26.4	PK	41.3	-21.2	0	46.5	-	-	-	-	68.2	-21.7	0-360	100	H
4	* 11.16	32.88	PK	38.3	-27.1	0	44.08	-	-	74	-29.92	-	-	0-360	100	V
6	16.743	26.47	PK	41.3	-21.2	0	46.57	-	-	-	-	68.2	-21.63	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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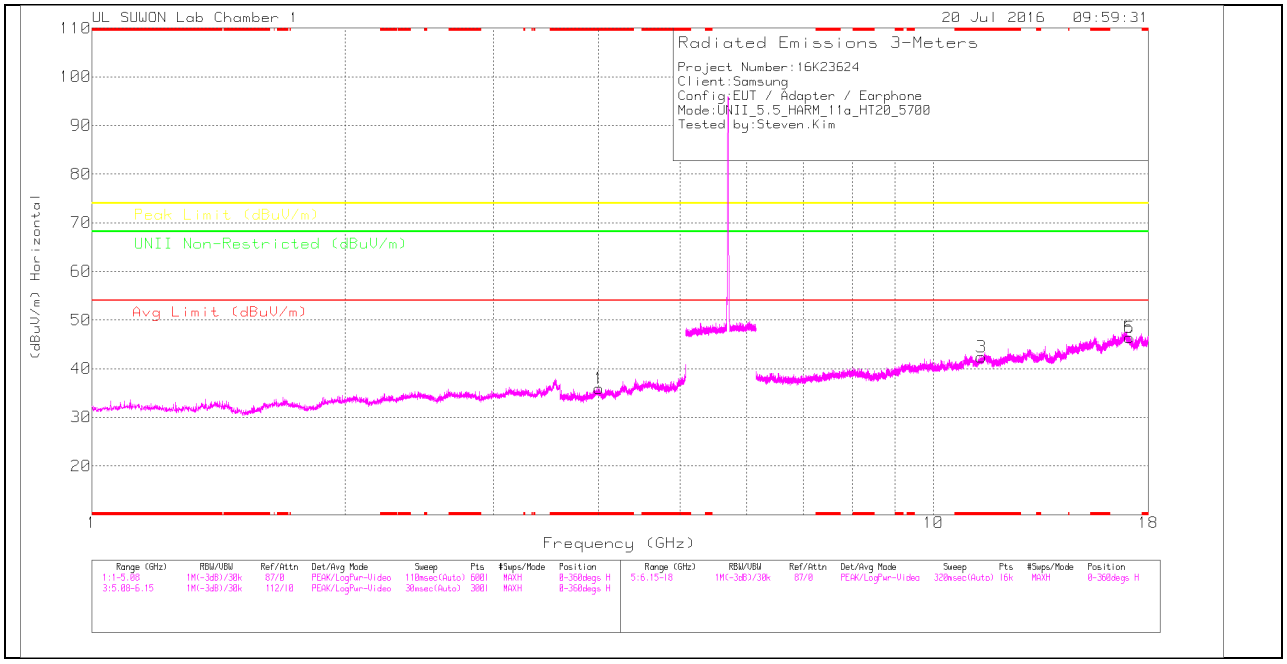
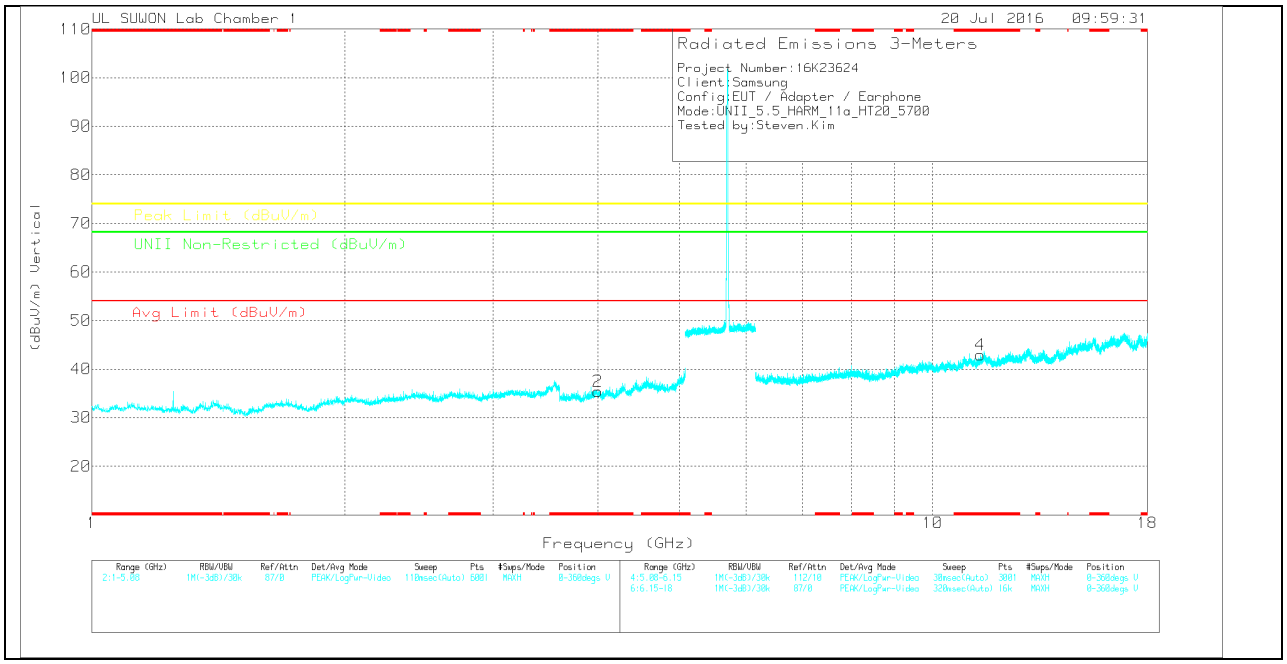
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.004	36.45	PK	33.4	-33.9	0	35.95	-	-	74	-38.05	-	-	0-360	200	H
2	* 4	35.88	PK	33.4	-33.9	0	35.38	-	-	74	-38.62	-	-	0-360	100	V
3	* 11.4	31.23	PK	38.5	-27.3	0	42.43	-	-	74	-31.57	-	-	0-360	100	H
5	17.102	26.56	PK	41.3	-21.5	0	46.36	-	-	-	-	68.2	-21.84	0-360	100	H
6	17.102	26.56	PK	41.3	-21.5	0	46.36	-	-	-	-	68.2	-21.84	0-360	100	H
4	* 11.397	31.72	PK	38.5	-27.3	0	42.92	-	-	74	-31.08	-	-	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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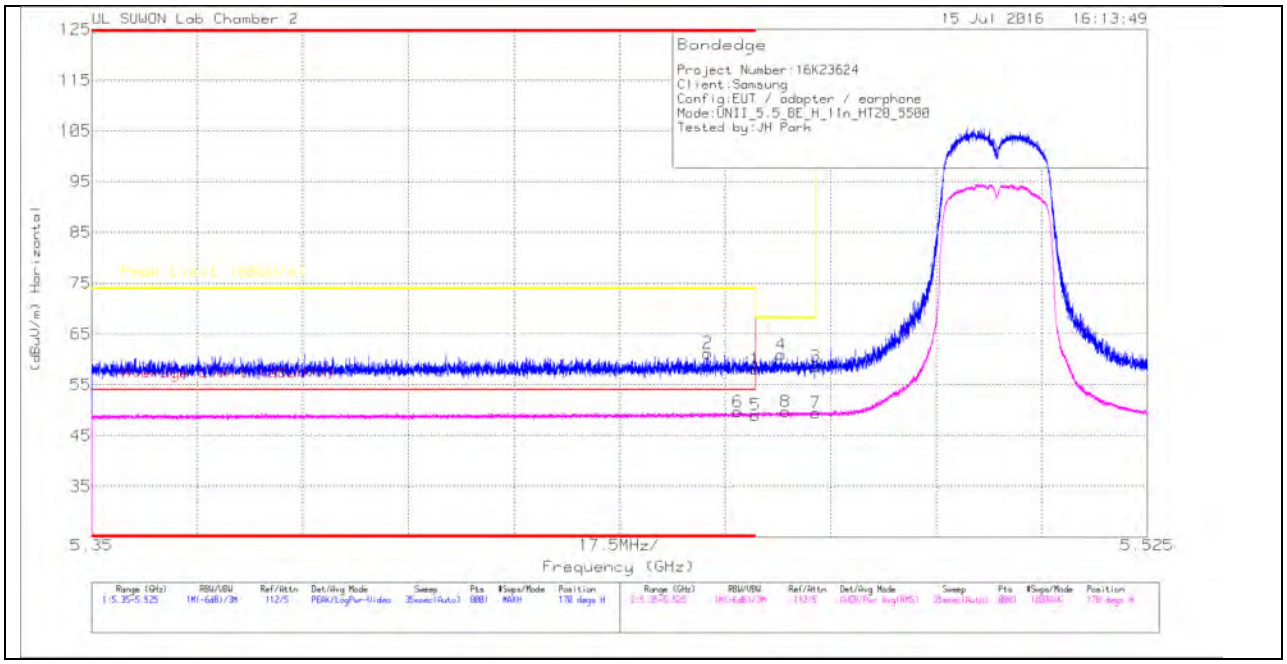
11.3.2. TX ABOVE 1GHz 802.11n HT20 2TX CDD MODE IN THE 5.5GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	39.87	Pk	34.5	-16.2	0	58.17	-	-	74	-15.83	170	151	H
2	* 5.452	42.97	Pk	34.5	-16.2	0	61.27	-	-	74	-12.73	170	151	H
3	5.47	40.31	Pk	34.5	-16.2	0	58.61	-	-	68.2	-9.59	170	151	H
4	5.464	42.62	Pk	34.5	-16.2	0	60.92	-	-	68.2	-7.28	170	151	H
5	* 5.46	30.42	RMS	34.5	-16.2	.31	49.03	54	-4.97	-	-	170	151	H
6	* 5.457	31.09	RMS	34.5	-16.2	.31	49.7	54	-4.3	-	-	170	151	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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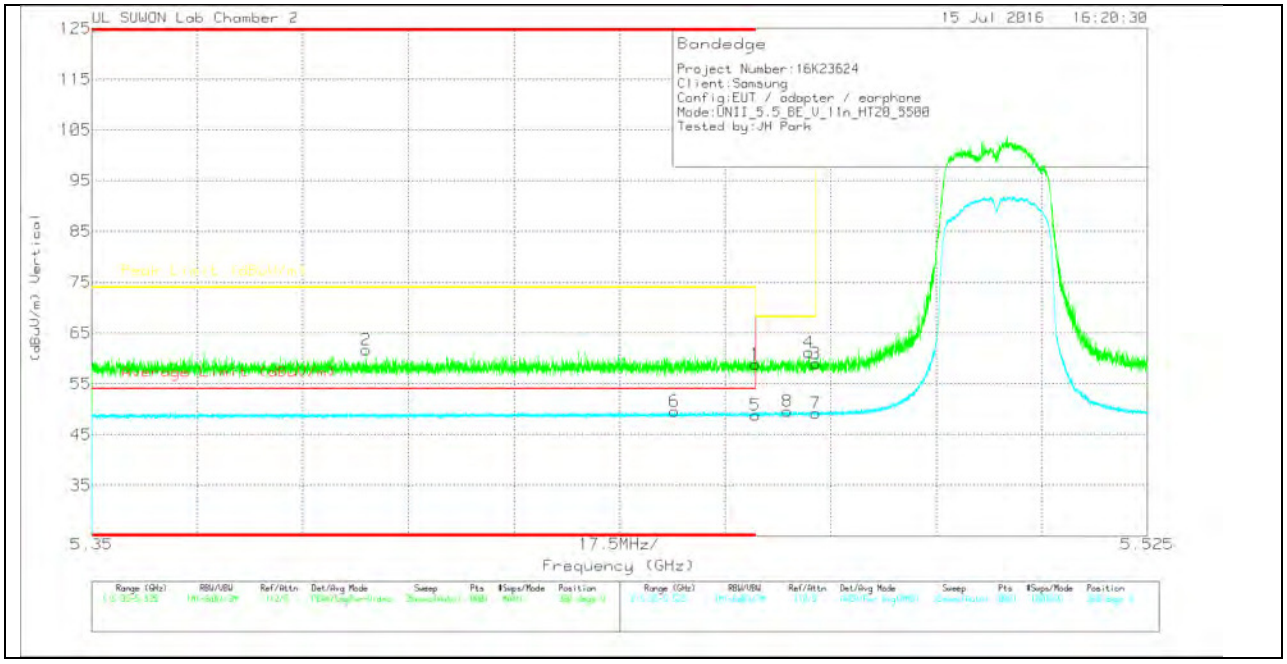
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10dB	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	40.59	Pk	34.5	-16.2	0	58.89	-	-	74	-15.11	360	101	V
2	* 5.395	43.56	Pk	34.4	-16.3	0	61.66	-	-	74	-12.34	360	101	V
3	5.47	40.66	Pk	34.5	-16.2	0	58.96	-	-	68.2	-9.24	360	101	V
4	5.469	42.96	Pk	34.5	-16.2	0	61.26	-	-	68.2	-6.94	360	101	V
5	* 5.46	30.27	RMS	34.5	-16.2	.31	48.88	54	-5.12	-	-	360	101	V
6	* 5.447	31.03	RMS	34.5	-16.2	.31	49.64	54	-4.36	-	-	360	101	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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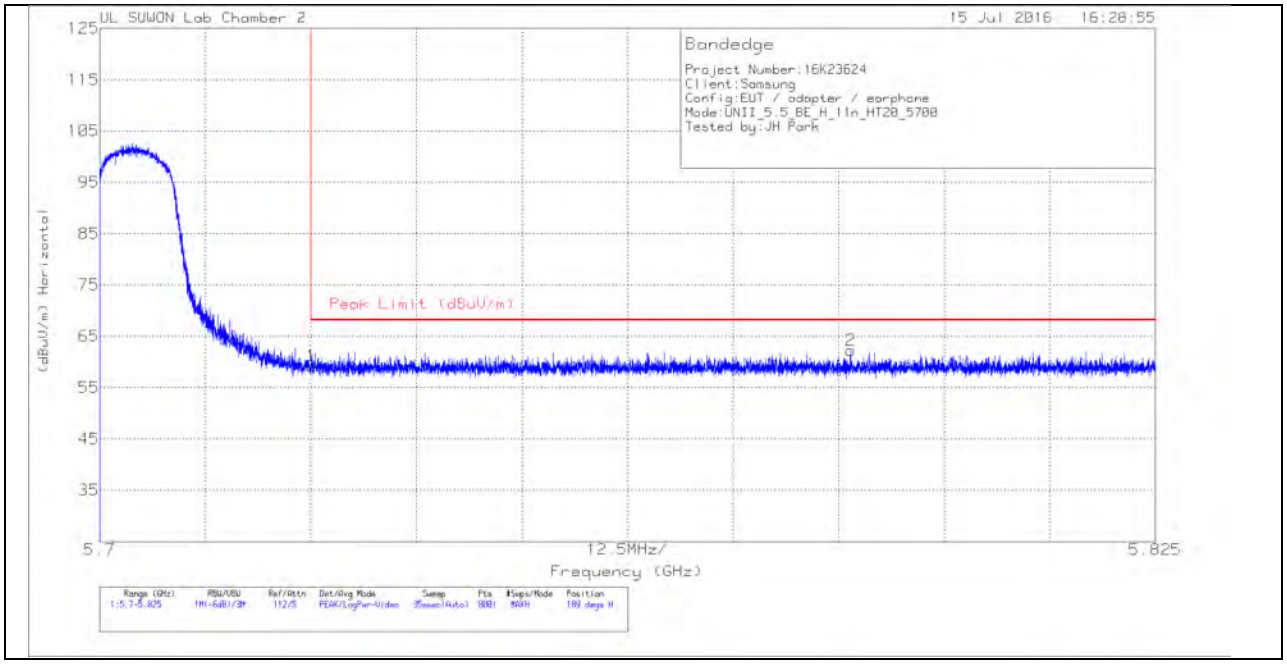
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10 dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	40.16	Pk	34.7	-15.6	0	59.26	68.2	-8.94	189	362	H
2	5.789	43	Pk	34.7	-15.4	0	62.3	68.2	-5.9	189	362	H

Pk - Peak detector

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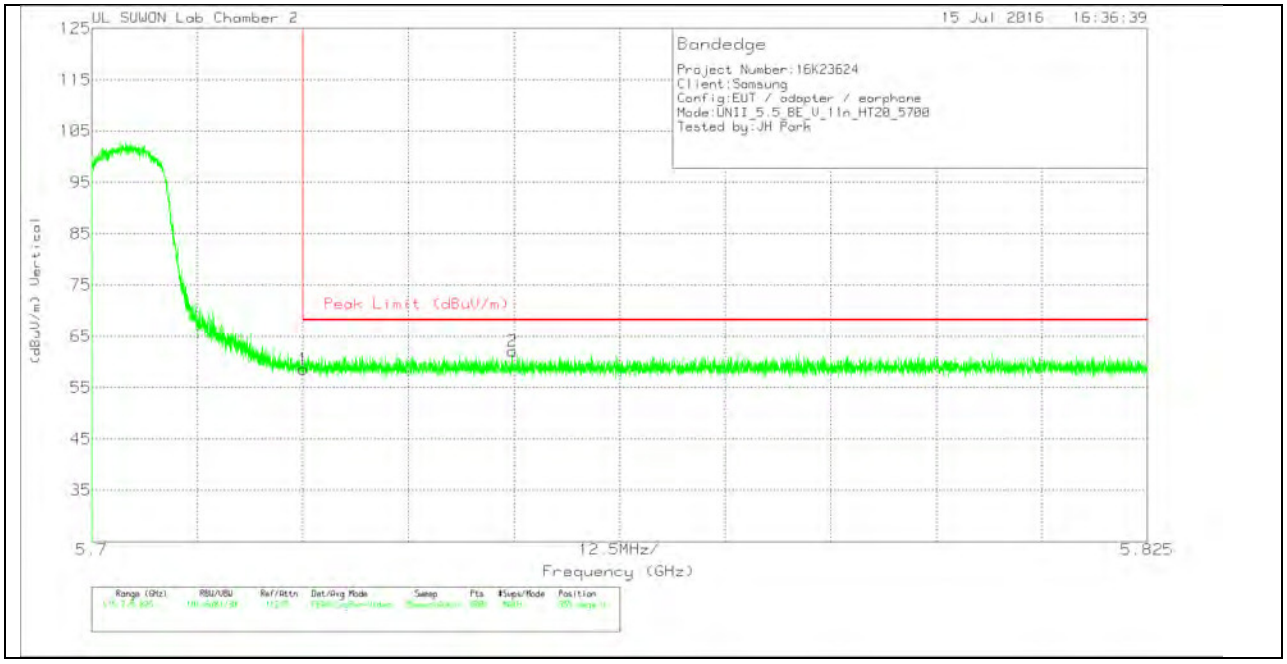
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10 dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.5	Pk	34.7	-15.6	0	58.6	68.2	-9.6	355	163	V
2	5.75	42.96	Pk	34.7	-15.5	0	62.16	68.2	-6.04	355	163	V

Pk - Peak detector

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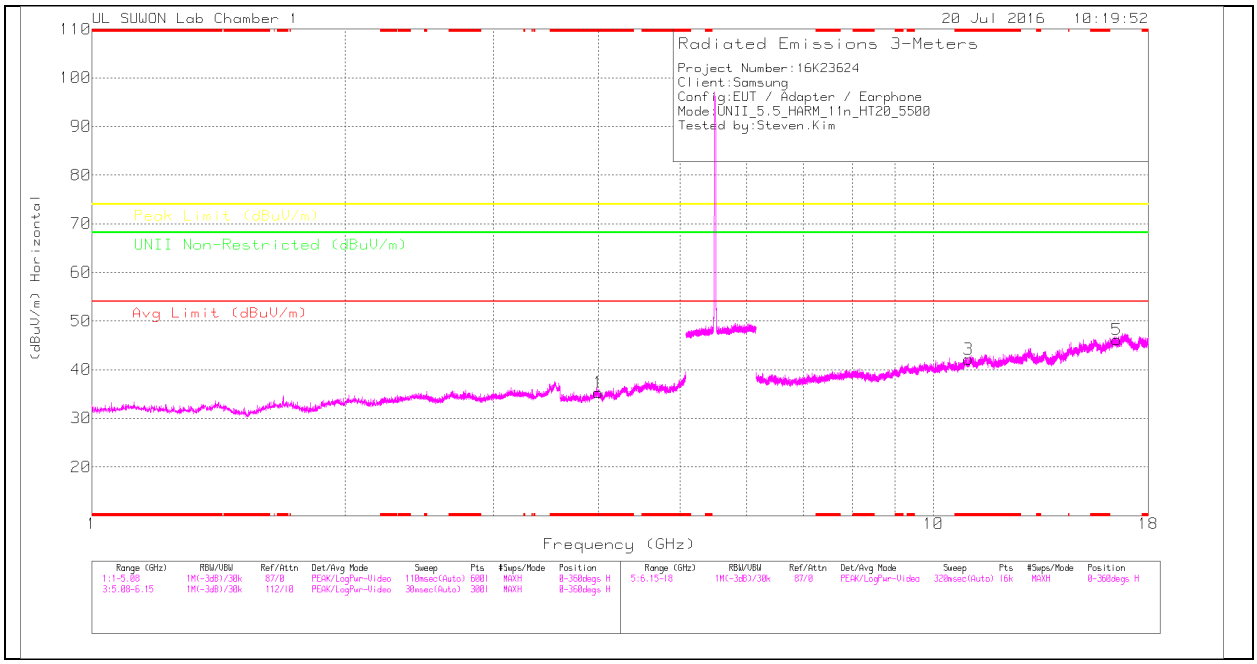
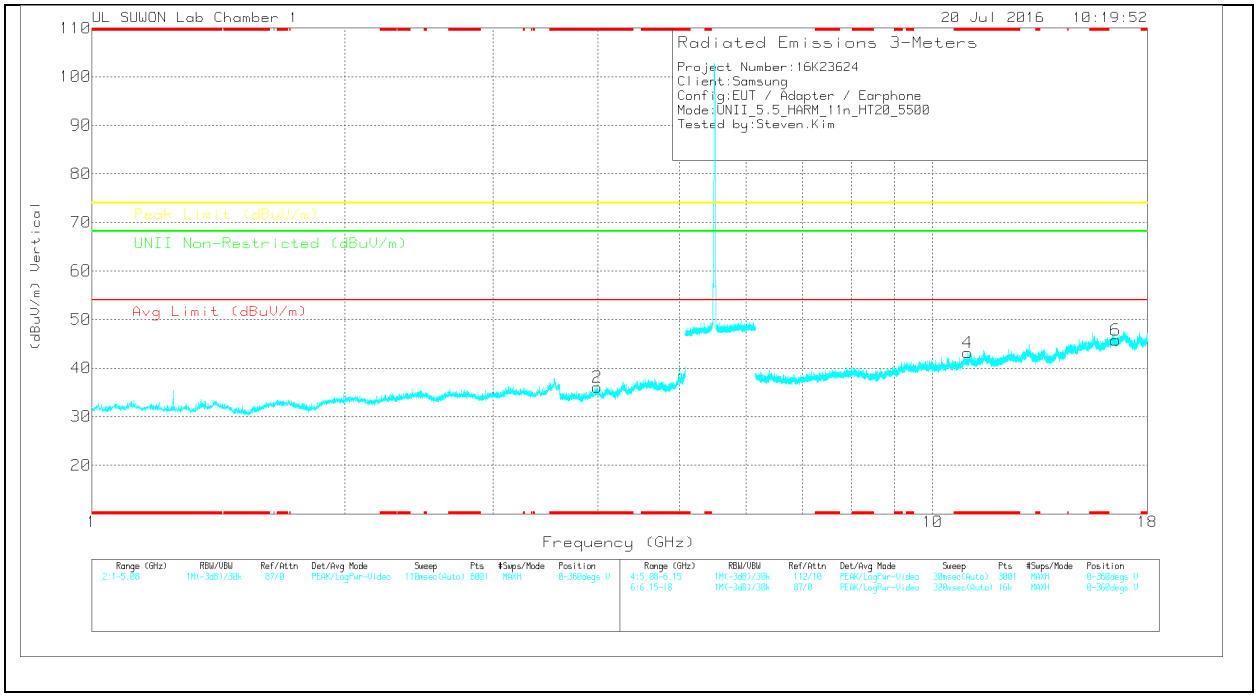
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.999	35.75	PK	33.4	-33.9	0	35.25	-	-	74	-38.75	-	-	0-360	100	H
2	* 3.992	36.56	PK	33.4	-33.9	0	36.06	-	-	74	-37.94	-	-	0-360	100	V
3	* 11.006	31.36	PK	38.2	-27.4	0	42.16	-	-	74	-31.84	-	-	0-360	200	H
5	16.5	27.3	PK	41.1	-22.2	0	46.2	-	-	-	-	68.2	-22	0-360	100	H
4	* 11.007	32.43	PK	38.2	-27.4	0	43.23	-	-	74	-30.77	-	-	0-360	100	V
6	16.499	26.81	PK	41.1	-22.2	0	45.71	-	-	-	-	68.2	-22.49	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675 Korea TEL: (031) 337-9902,FAX: (031) 213-5433
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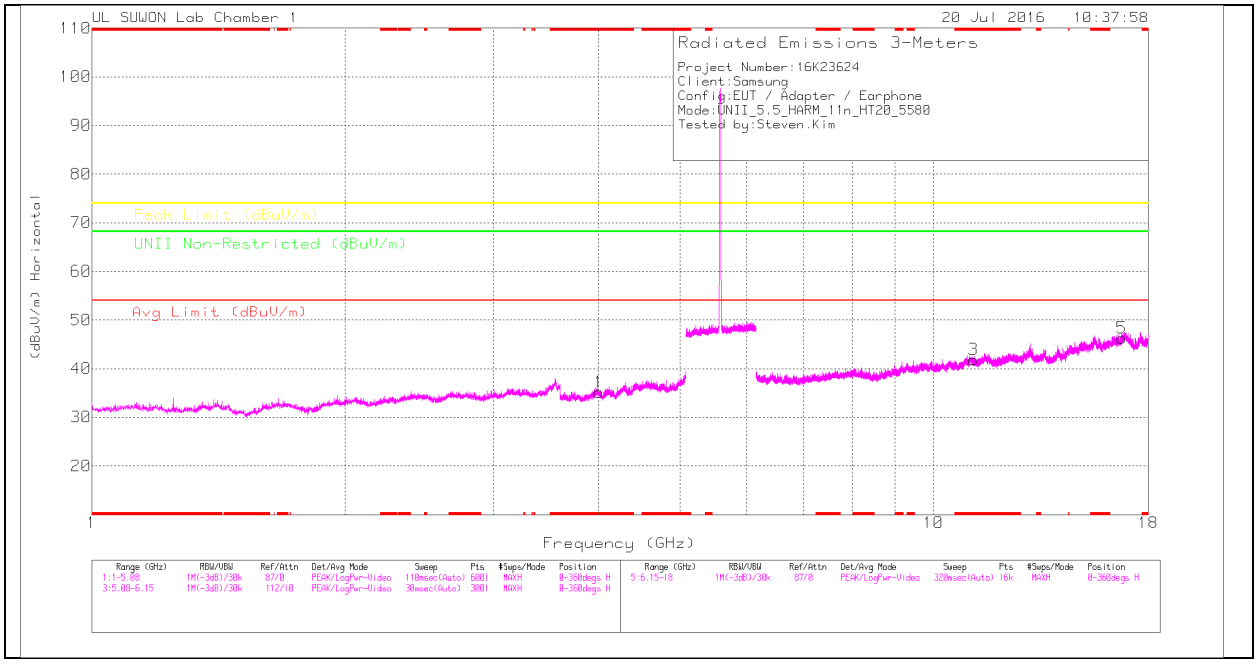
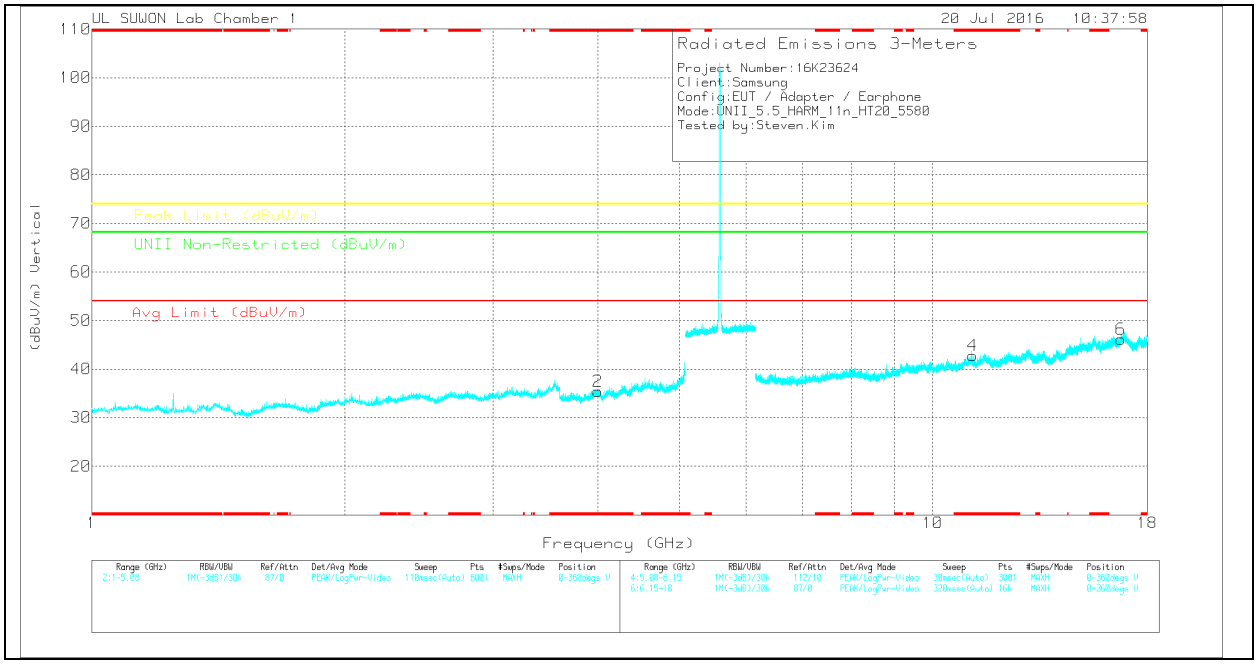
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.007	35.72	PK	33.4	-34	0	35.12	-	-	74	-38.88	-	-	0-360	100	H
2	* 3.995	35.94	PK	33.4	-33.9	0	35.44	-	-	74	-38.56	-	-	0-360	100	V
3	* 11.166	30.67	PK	38.3	-27.1	0	41.87	-	-	74	-32.13	-	-	0-360	200	H
5	16.741	26.14	PK	41.3	-21.2	0	46.24	-	-	-	-	68.2	-21.96	0-360	100	H
4	* 11.163	31.61	PK	38.3	-27.1	0	42.81	-	-	74	-31.19	-	-	0-360	100	V
6	16.743	25.99	PK	41.3	-21.2	0	46.09	-	-	-	-	68.2	-22.11	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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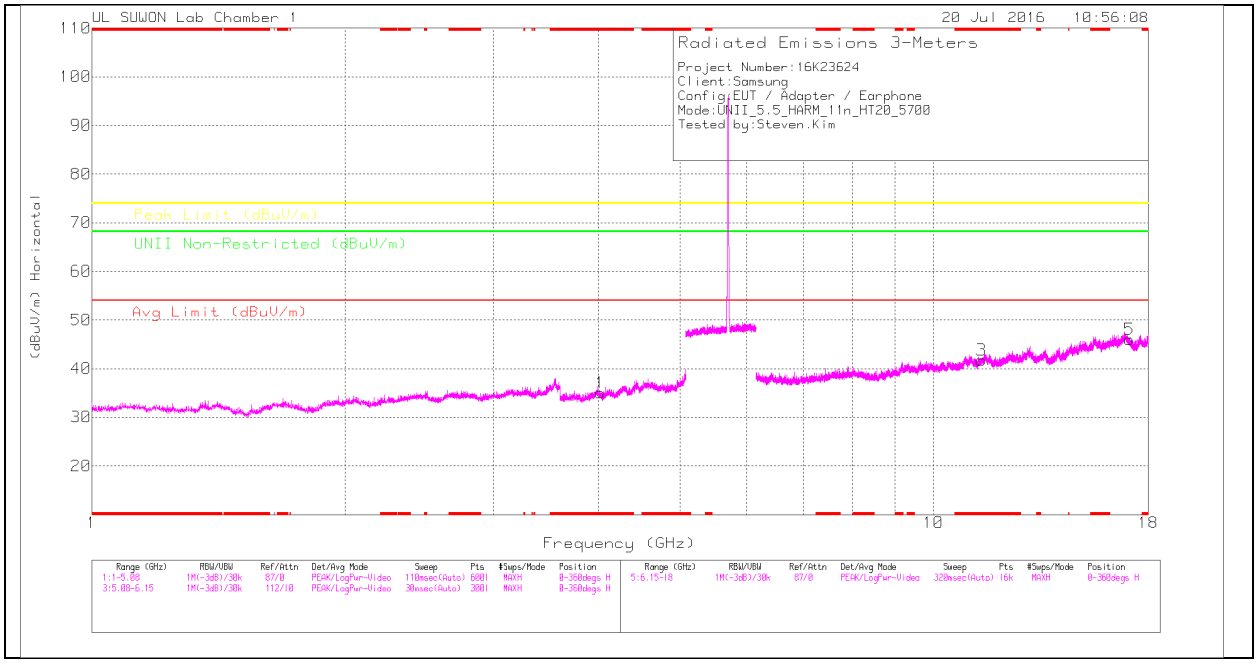
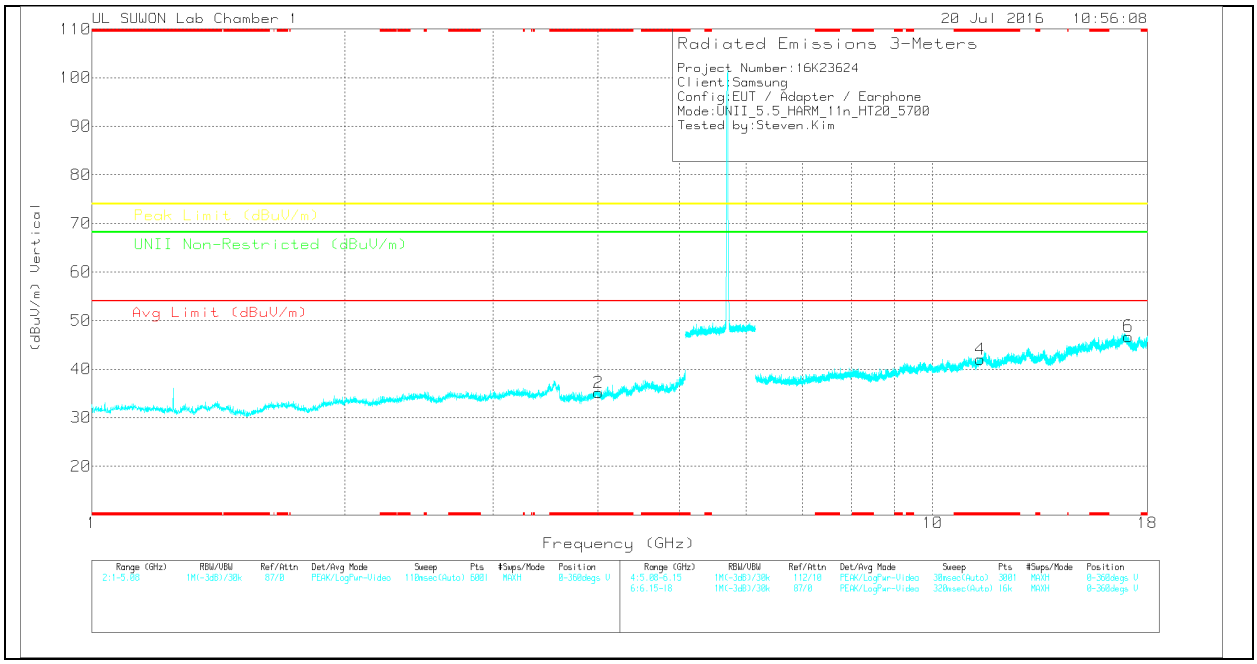
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.021	35.78	PK	33.4	-34.1	0	35.08	-	-	74	-38.92	-	-	0-360	100	H
2	* 4.002	35.71	PK	33.4	-33.9	0	35.21	-	-	74	-38.79	-	-	0-360	100	V
3	* 11.4	30.51	PK	38.5	-27.3	0	41.71	-	-	74	-32.29	-	-	0-360	200	H
5	17.1	26.16	PK	41.3	-21.5	0	45.96	-	-	-	-	68.2	-22.24	0-360	100	H
4	* 11.398	30.77	PK	38.5	-27.3	0	41.97	-	-	74	-32.03	-	-	0-360	100	V
6	17.1	26.93	PK	41.3	-21.5	0	46.73	-	-	-	-	68.2	-21.47	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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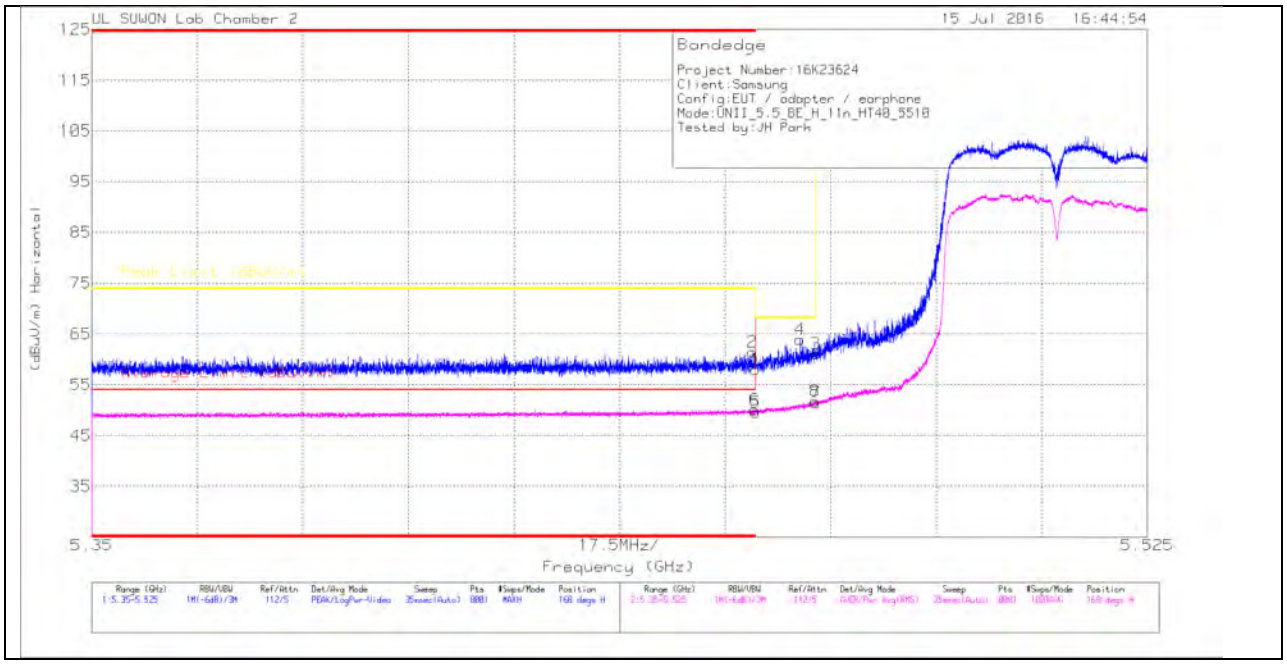
11.3.3. TX ABOVE 1GHz 802.11n HT40 2TX CDD MODE IN THE 5.5GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	39.65	Pk	34.5	-16.2	0	57.95	-	-	74	-16.05	168	100	H
2	* 5.459	43.18	Pk	34.5	-16.2	0	61.48	-	-	74	-12.52	168	100	H
3	5.47	42.75	Pk	34.5	-16.2	0	61.05	-	-	68.2	-7.15	168	100	H
4	5.467	45.62	Pk	34.5	-16.2	0	63.92	-	-	68.2	-4.28	168	100	H
5	* 5.46	30.71	RMS	34.5	-16.2	.59	49.6	54	-4.4	-	-	168	100	H
6	* 5.46	31.24	RMS	34.5	-16.2	.59	50.13	54	-3.87	-	-	168	100	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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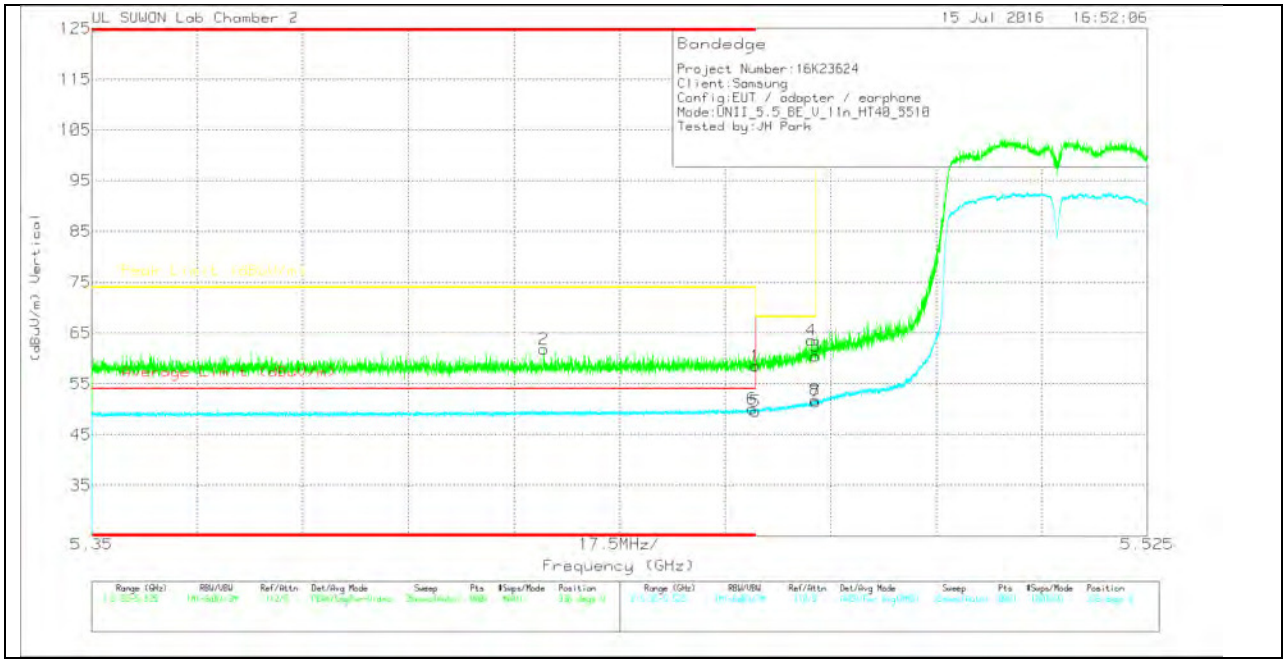
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10dB	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	40.19	Pk	34.5	-16.2	0	58.49	-	-	74	-15.51	336	215	V
2	* 5.425	43.73	Pk	34.4	-16.3	0	61.83	-	-	74	-12.17	336	215	V
3	5.47	42.14	Pk	34.5	-16.2	0	60.44	-	-	68.2	-7.76	336	215	V
4	5.469	45.22	Pk	34.5	-16.2	0	63.52	-	-	68.2	-4.68	336	215	V
5	* 5.46	30.64	RMS	34.5	-16.2	.59	49.53	54	-4.47	-	-	336	215	V
6	* 5.46	31.19	RMS	34.5	-16.2	.59	50.08	54	-3.92	-	-	336	215	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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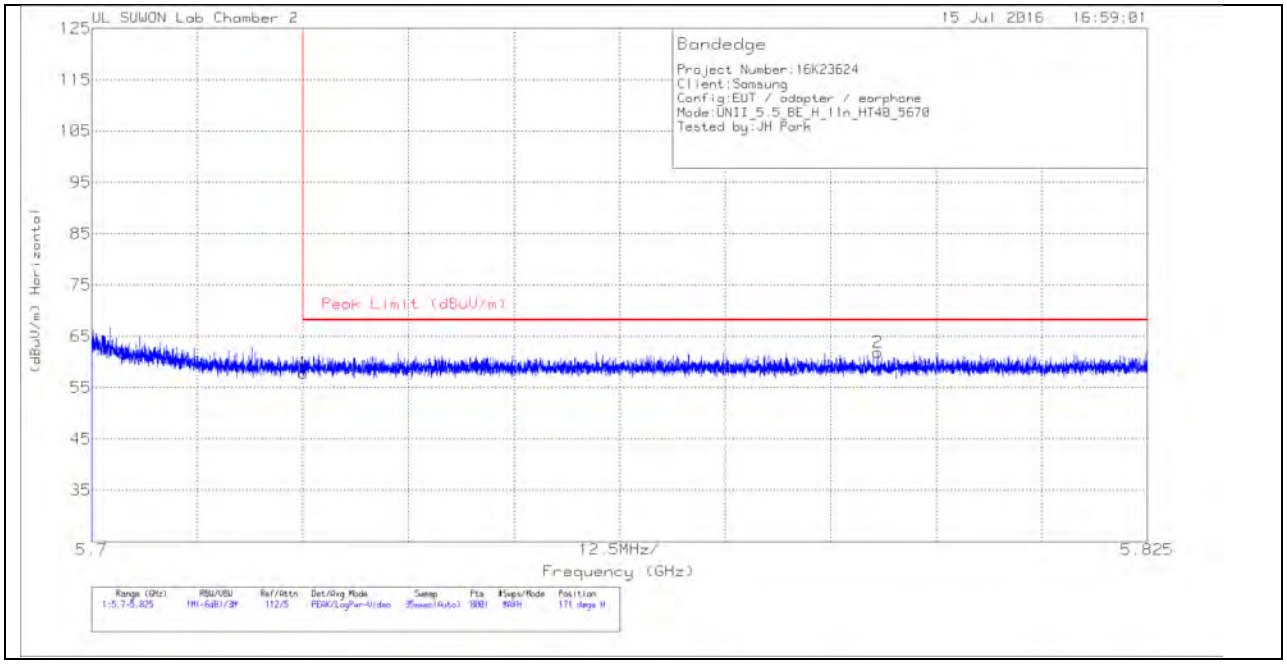
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10 dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	38.72	Pk	34.7	-15.6	0	57.82	68.2	-10.38	171	369	H
2	5.793	42.58	Pk	34.7	-15.4	0	61.88	68.2	-6.32	171	369	H

Pk - Peak detector

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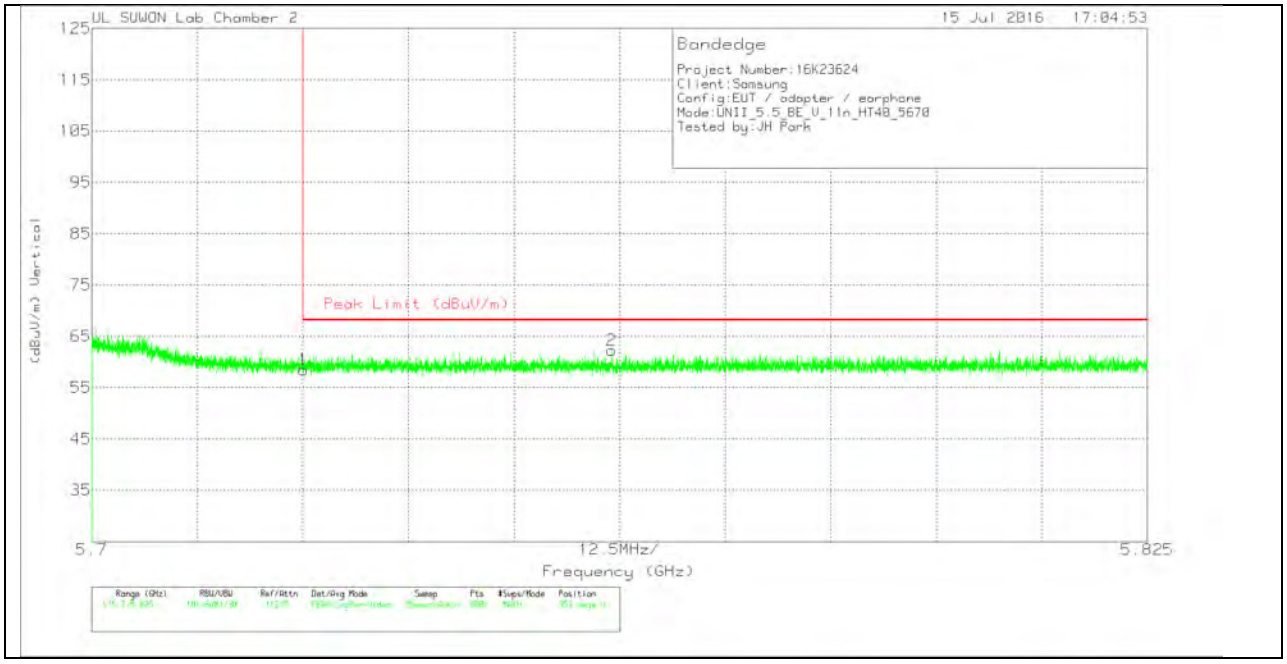
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10 dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.35	Pk	34.7	-15.6	0	58.45	68.2	-9.75	353	161	V
2	5.762	43.08	Pk	34.7	-15.5	0	62.28	68.2	-5.92	353	161	V

Pk - Peak detector

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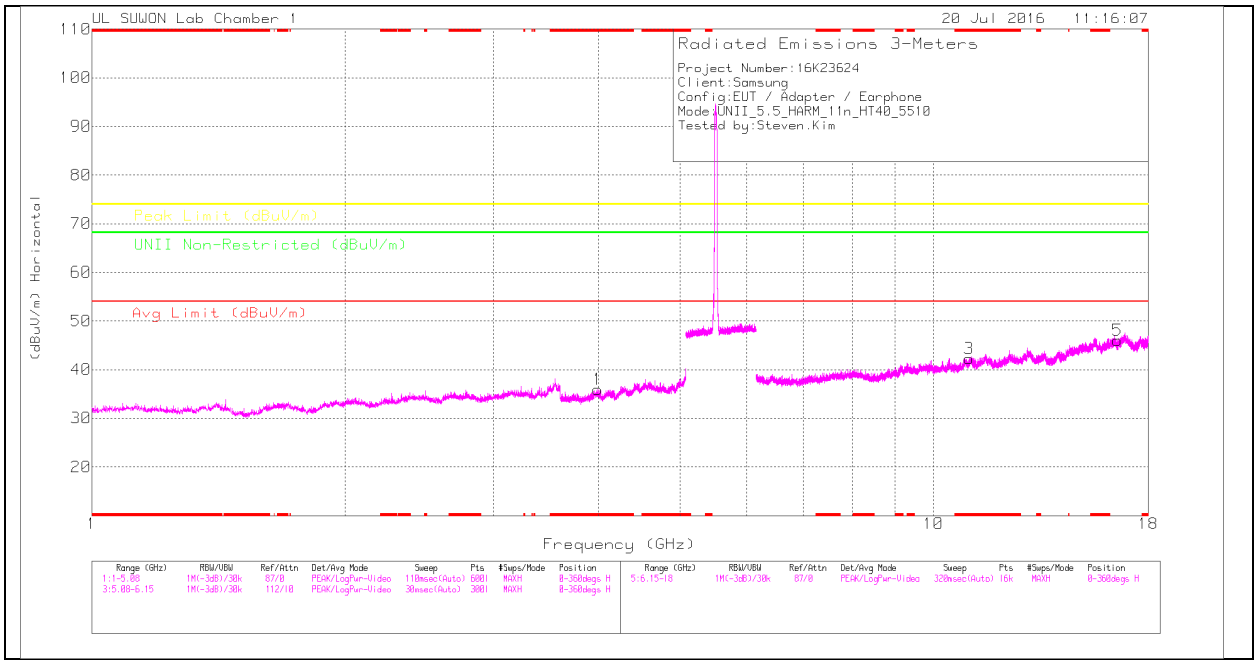
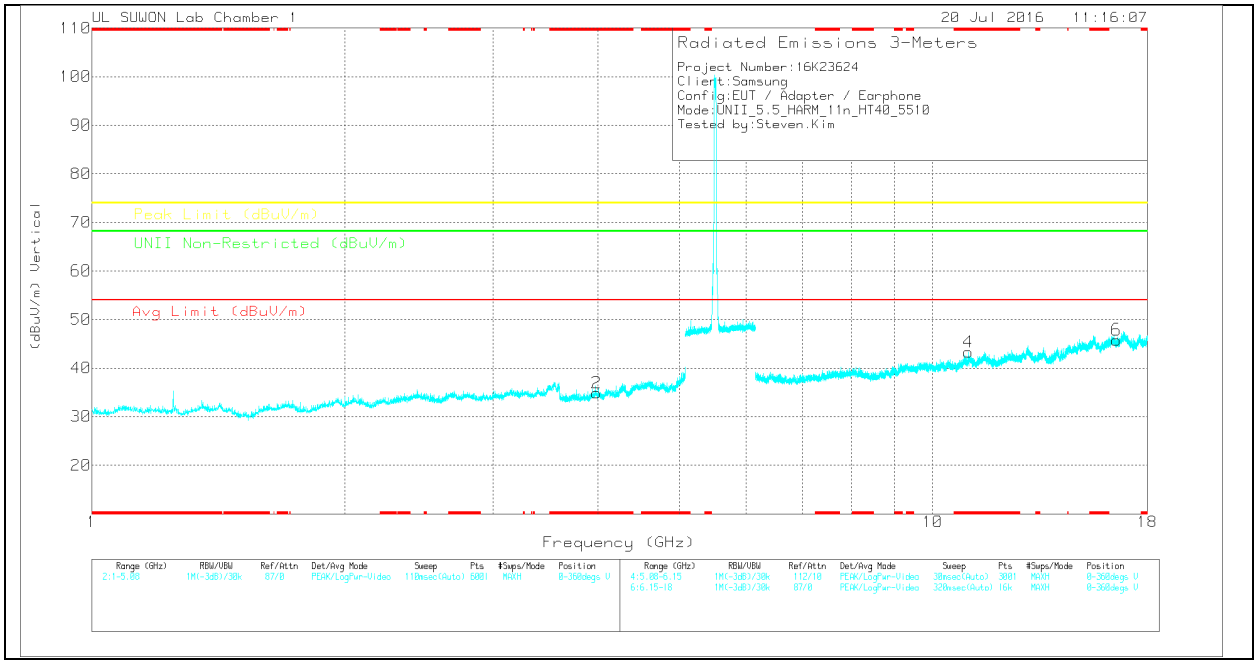
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.991	36.35	PK	33.4	-33.8	0	35.95	-	-	74	-38.05	-	-	0-360	200	H
2	* 3.987	35.33	PK	33.4	-33.8	0	34.93	-	-	74	-39.07	-	-	0-360	100	V
3	* 11.019	31.32	PK	38.2	-27.2	0	42.32	-	-	74	-31.68	-	-	0-360	100	H
5	16.535	26.84	PK	41.2	-22	0	46.04	-	-	-	-	68.2	-22.16	0-360	100	H
4	* 11.02	32.35	PK	38.2	-27.2	0	43.35	-	-	74	-30.65	-	-	0-360	100	V
6	16.534	26.62	PK	41.2	-22	0	45.82	-	-	-	-	68.2	-22.38	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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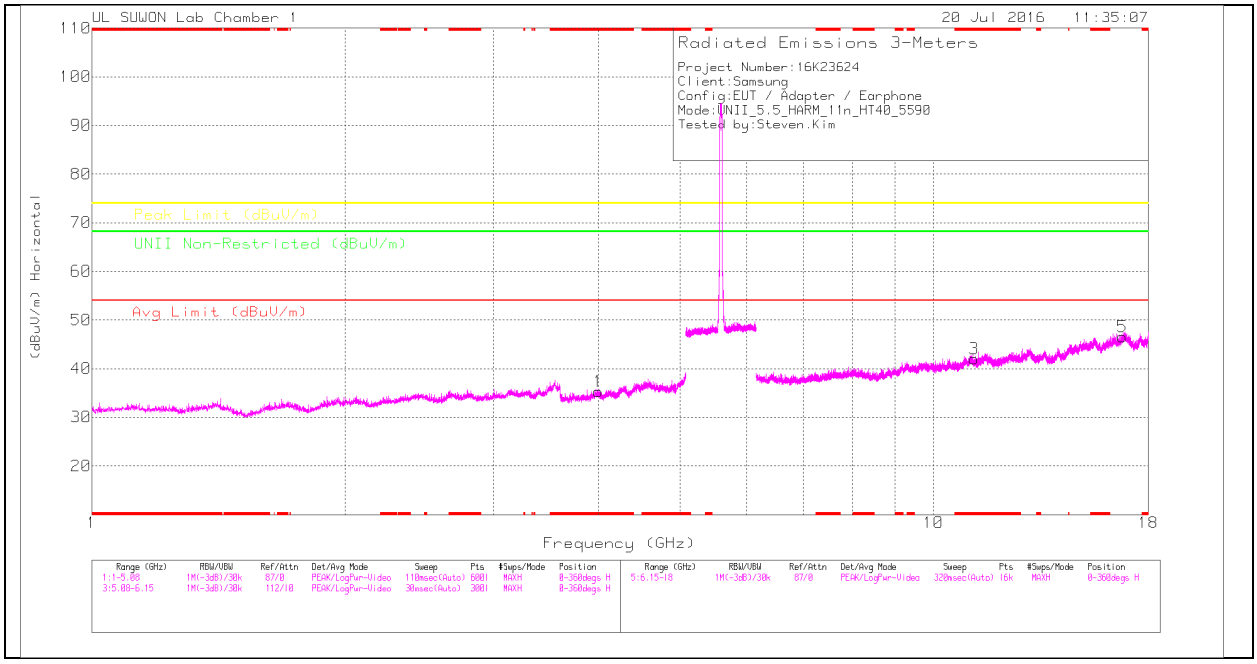
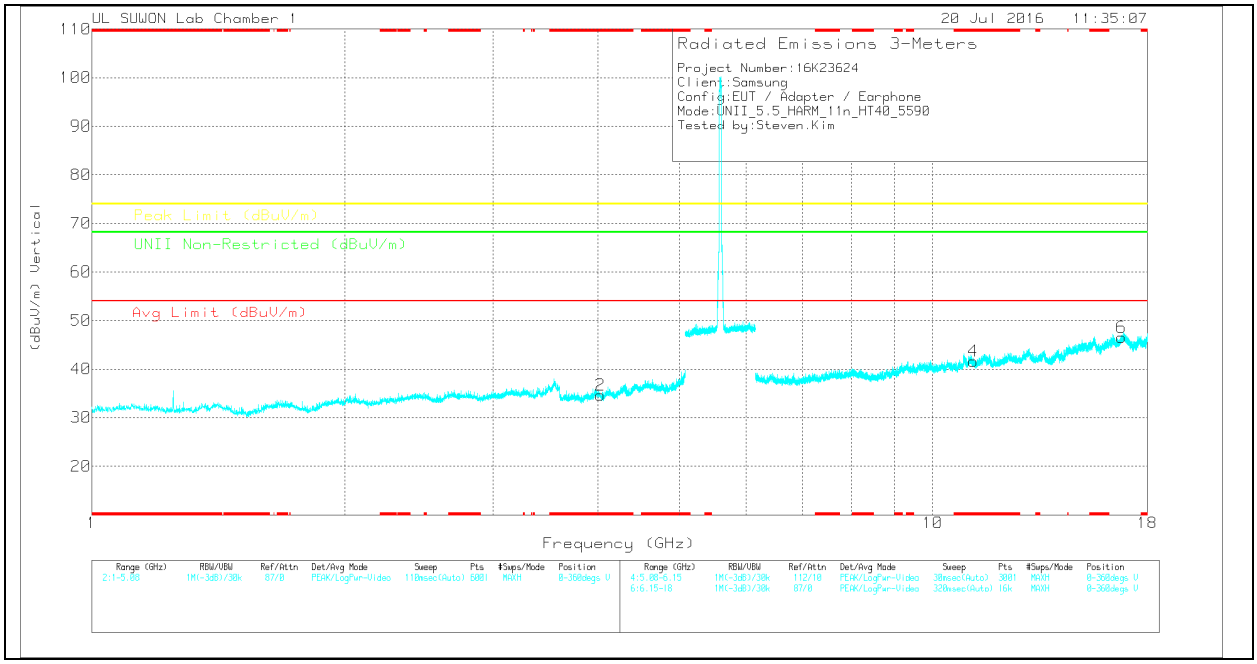
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.996	35.75	PK	33.4	-33.9	0	35.25	-	-	74	-38.75	-	-	0-360	200	H
2	* 4.027	35.37	PK	33.4	-34.1	0	34.67	-	-	74	-39.33	-	-	0-360	100	V
3	* 11.178	30.81	PK	38.3	-27.1	0	42.01	-	-	74	-31.99	-	-	0-360	200	H
5	16.765	26.36	PK	41.3	-21.1	0	46.56	-	-	-	-	68.2	-21.64	0-360	200	H
4	* 11.174	30.29	PK	38.3	-27	0	41.59	-	-	74	-32.41	-	-	0-360	100	V
6	16.763	26.28	PK	41.3	-21.1	0	46.48	-	-	-	-	68.2	-21.72	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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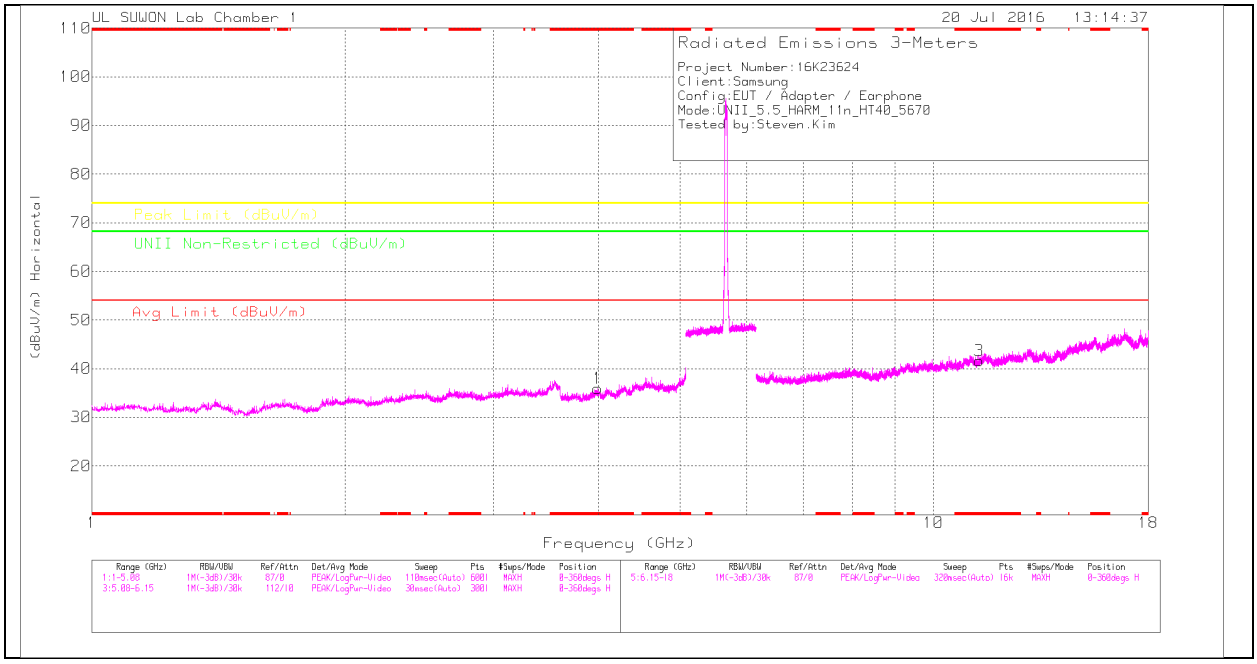
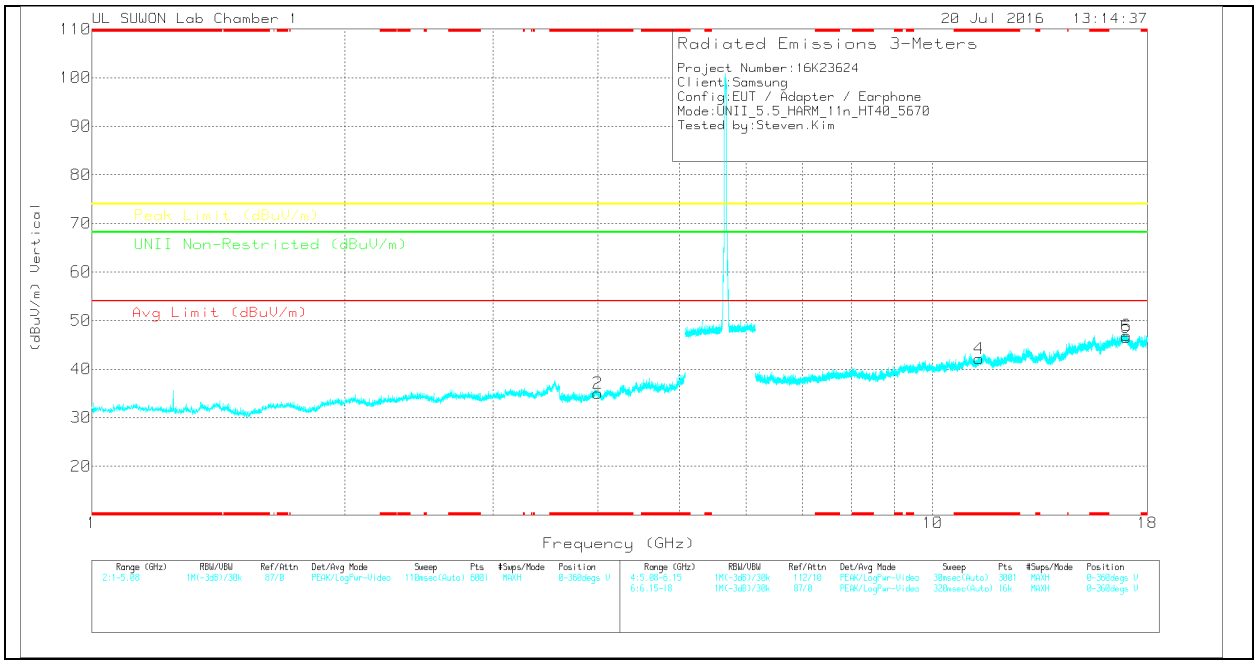
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.991	36.4	PK	33.4	-33.9	0	35.9	-	-	74	-38.1	-	-	0-360	200	H
2	* 3.994	35.58	PK	33.4	-33.9	0	35.08	-	-	74	-38.92	-	-	0-360	200	V
3	* 11.341	29.94	PK	38.5	-26.8	0	41.64	-	-	74	-32.36	-	-	0-360	100	H
4	* 11.344	30.45	PK	38.5	-26.8	0	42.15	-	-	74	-31.85	-	-	0-360	200	V
5	17.011	26.6	PK	41.4	-21.5	0	46.5	-	-	-	-	68.2	-21.7	0-360	100	V
6	17.014	26.95	PK	41.4	-21.4	0	46.95	-	-	-	-	68.2	-21.25	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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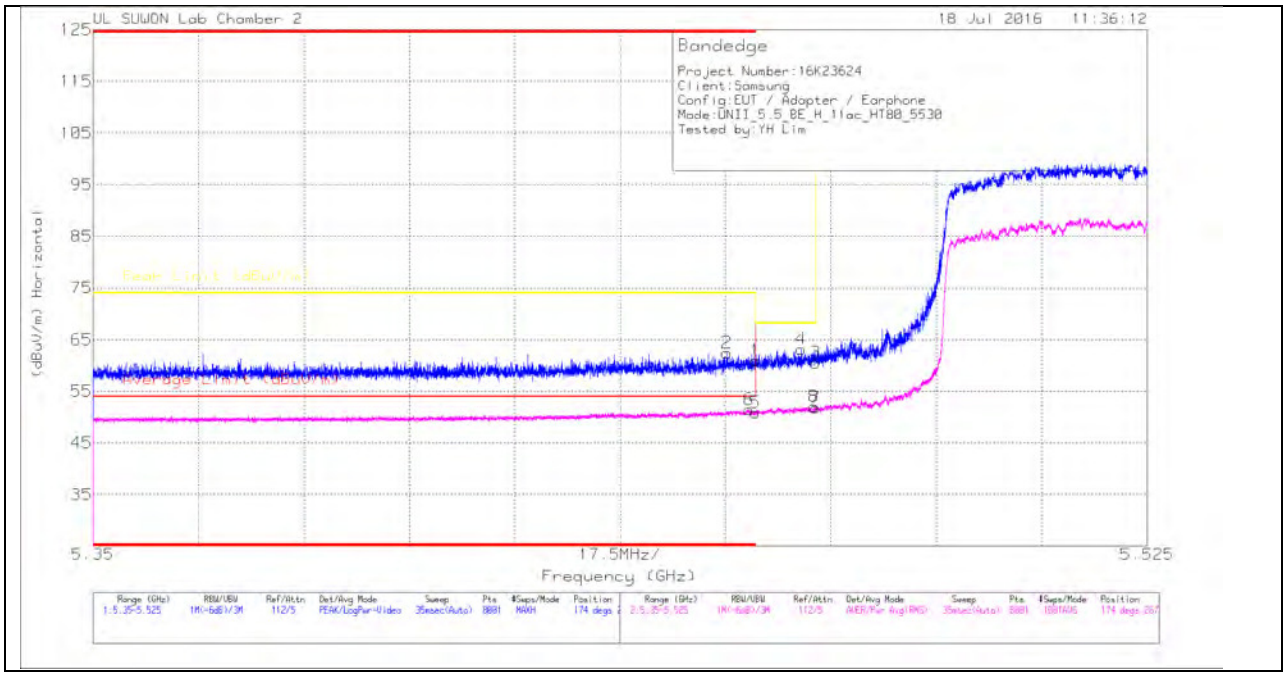
11.3.4. TX ABOVE 1GHz 802.11ac VHT80 2TX CDD MODE IN THE 5.5GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10dB	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	42.67	Pk	34.5	-16.2	0	60.97	-	-	74	-13.03	174	267	H
2	* 5.455	44.15	Pk	34.5	-16.2	0	62.45	-	-	74	-11.55	174	267	H
3	5.47	42.23	Pk	34.5	-16.2	0	60.53	-	-	68.2	-7.67	174	267	H
4	5.468	44.88	Pk	34.5	-16.2	0	63.18	-	-	68.2	-5.02	174	267	H
5	* 5.46	31.48	RMS	34.5	-16.2	1.11	50.89	54	-3.11	-	-	174	267	H
6	* 5.459	32.07	RMS	34.5	-16.2	1.11	51.48	54	-2.52	-	-	174	267	H

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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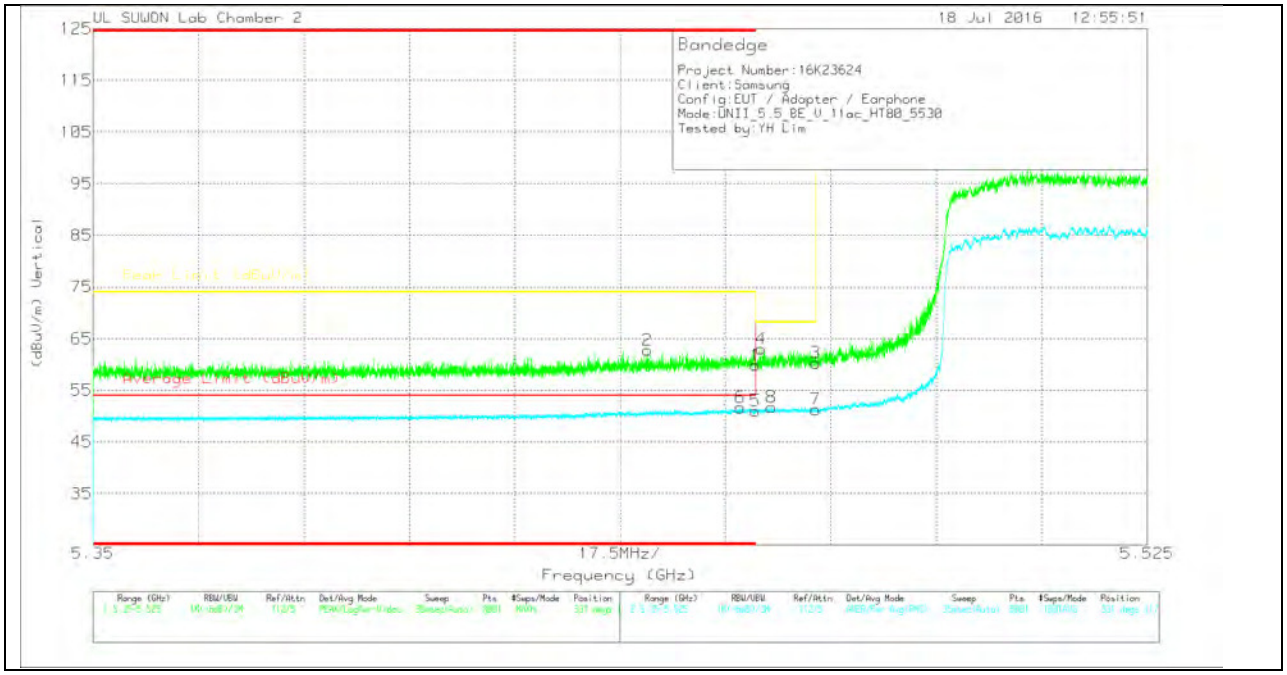
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	41.55	Pk	34.5	-16.2	0	59.85	-	-	74	-14.15	331	117	V
2	* 5.442	44.56	Pk	34.5	-16.3	0	62.76	-	-	74	-11.24	331	117	V
3	5.47	41.99	Pk	34.5	-16.2	0	60.29	-	-	68.2	-7.91	331	117	V
4	5.461	44.7	Pk	34.5	-16.2	0	63	-	-	68.2	-5.2	331	117	V
5	* 5.46	31.59	RMS	34.5	-16.2	1.11	51	54	-3	-	-	331	117	V
6	* 5.457	32.25	RMS	34.5	-16.2	1.11	51.66	54	-2.34	-	-	331	117	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

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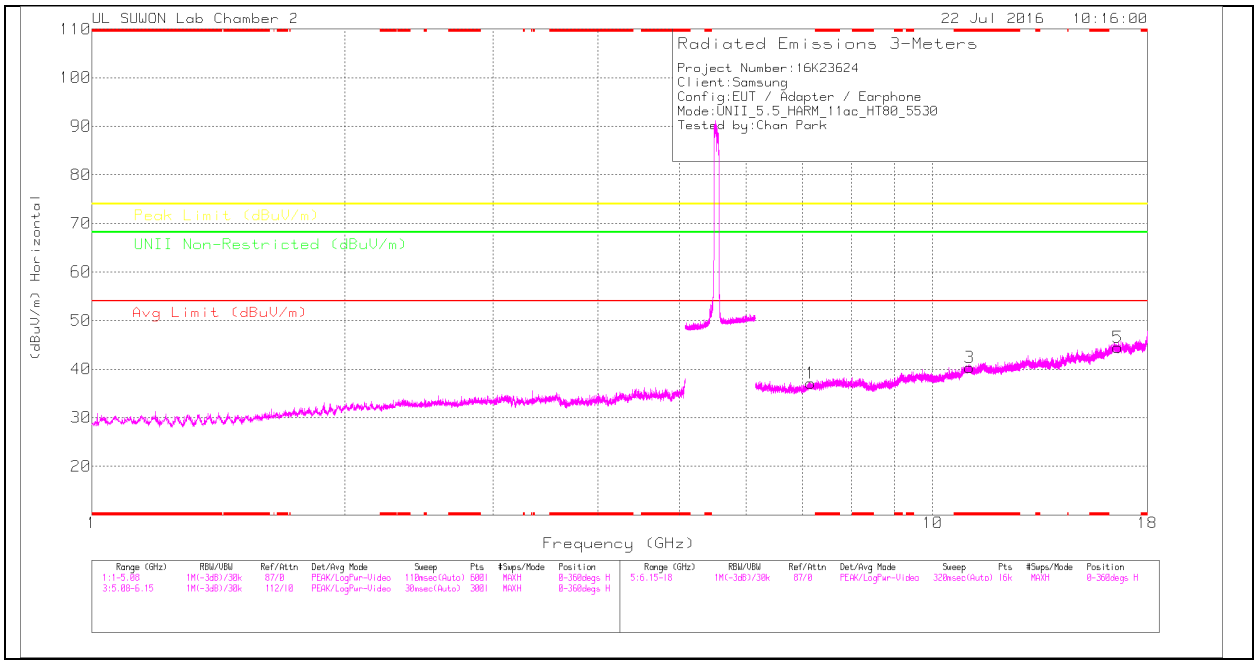
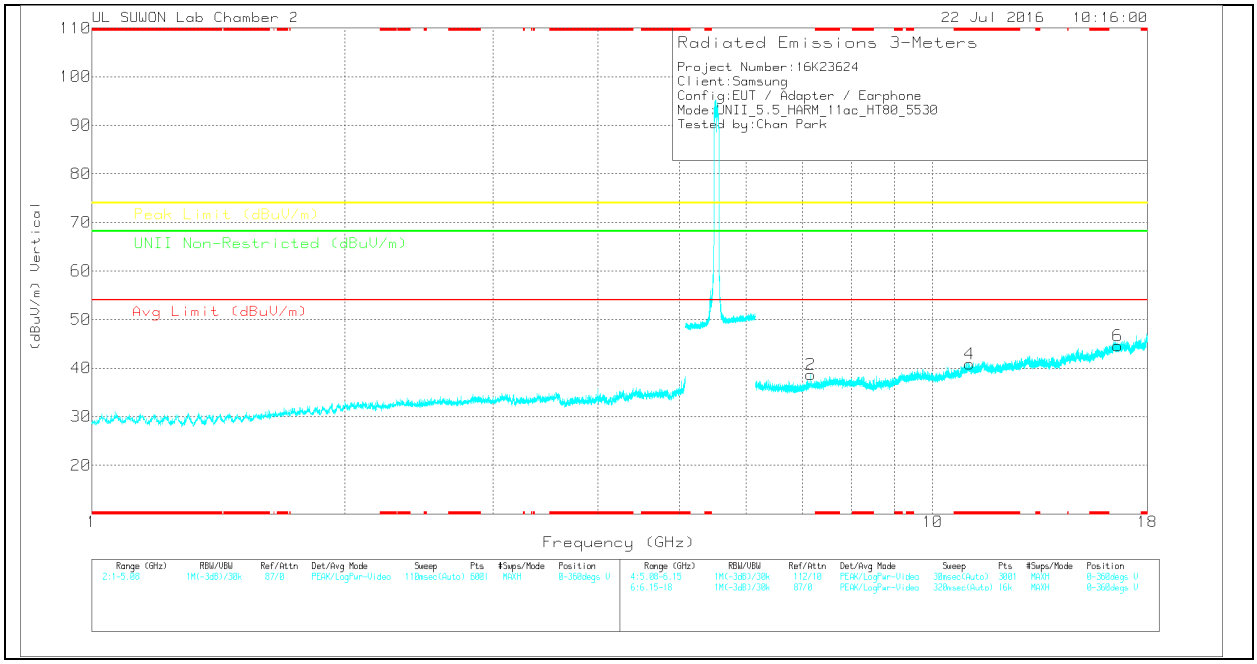
HARMONICS AND SPURIOUS EMISSIONS

LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	7.158	24.24	PK	35.7	-22.9	0	37.04	-	-	-	-	68.2	-31.16	0-360	100	H
3	* 11.062	19.9	PK	38.1	-17.7	0	40.3	-	-	74	-33.7	-	-	0-360	100	H
5	16.59	19.33	PK	41	-15.9	0	44.43	-	-	-	-	68.2	-23.77	0-360	200	H
2	7.155	25.82	PK	35.7	-22.9	0	38.62	-	-	-	-	68.2	-29.58	0-360	100	V
4	* 11.062	20.43	PK	38.1	-17.7	0	40.83	-	-	74	-33.17	-	-	0-360	100	V
6	16.594	19.48	PK	41	-15.9	0	44.58	-	-	-	-	68.2	-23.62	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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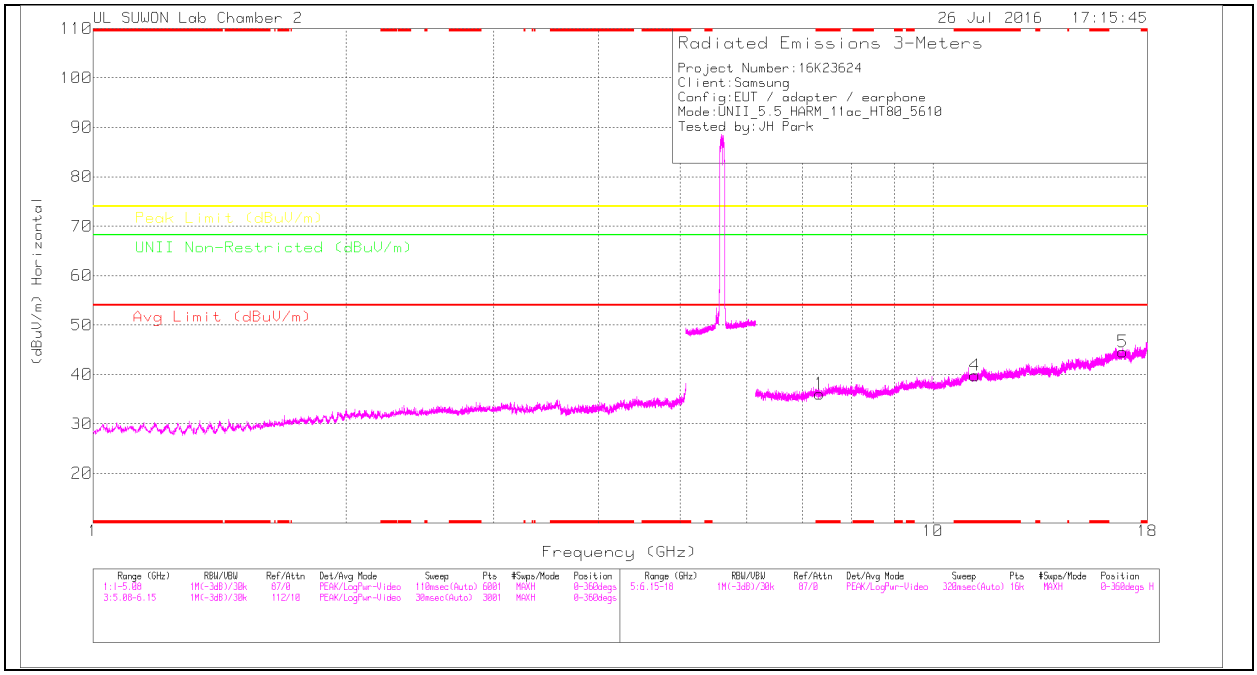
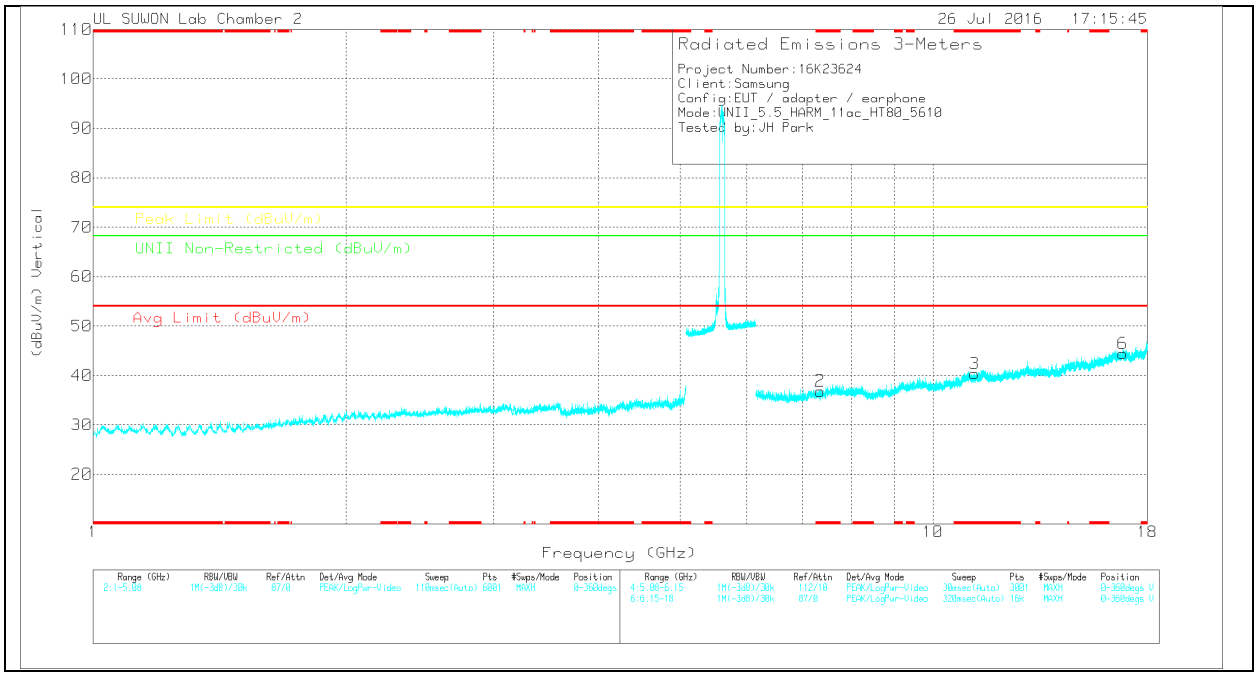
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 7.329	22.28	PK	35.9	-22.1	0	36.08	-	-	74	-37.92	-	-	0-360	100	H
4	* 11.222	19.2	PK	38.2	-17.6	0	39.8	-	-	74	-34.2	-	-	0-360	100	H
5	16.834	18.88	PK	41.1	-15.4	0	44.58	-	-	-	-	68.2	-23.62	0-360	100	H
2	* 7.339	23.04	PK	35.9	-22.1	0	36.84	-	-	74	-37.16	-	-	0-360	200	V
3	* 11.218	19.77	PK	38.2	-17.6	0	40.37	-	-	74	-33.63	-	-	0-360	200	V
6	16.834	18.71	PK	41.1	-15.4	0	44.41	-	-	-	-	68.2	-23.79	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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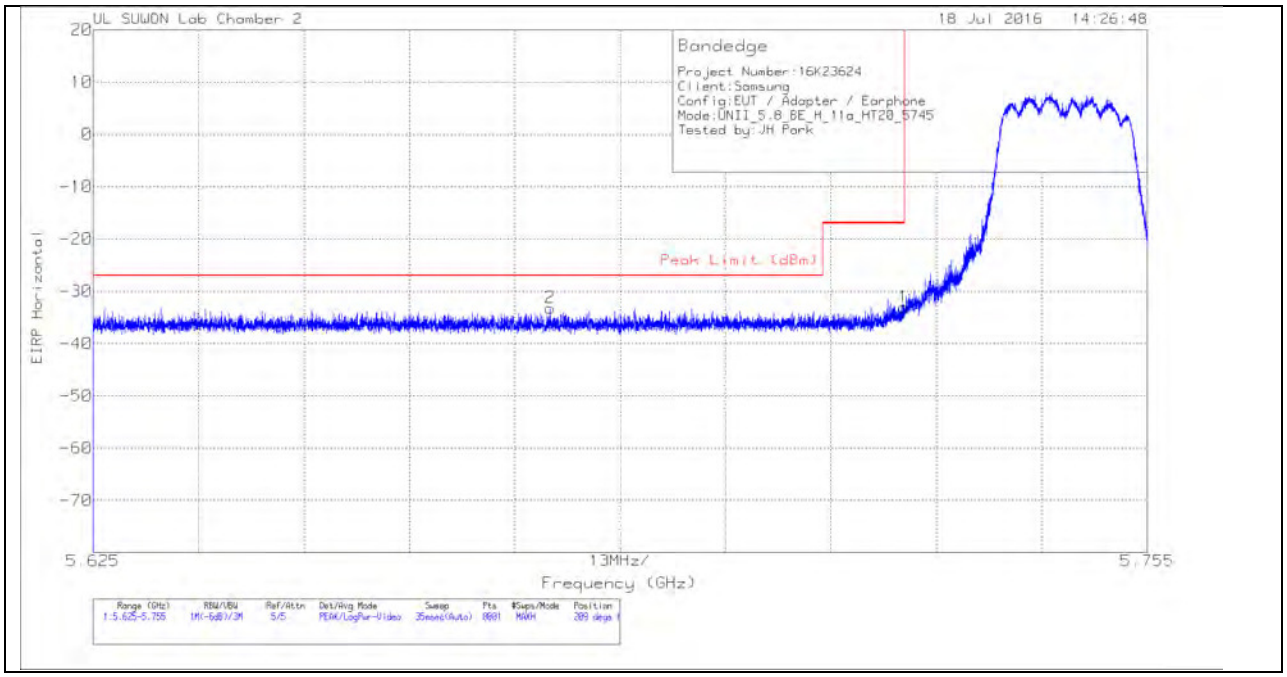
11.4. 5.8 GHz

11.4.1. TX ABOVE 1GHz 802.11a 2TX CDD MODE IN THE 5.8GHz BAND HARMONICS AND SPURIOUS EMISSIONS

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-63.91	Pk	34.7	-15.6	11.8	0	-33.01	-17	-16.01	209	367	H
2	5.681	-63.99	Pk	34.6	-15.6	11.8	0	-33.19	-27	-6.19	209	367	H

Pk - Peak detector

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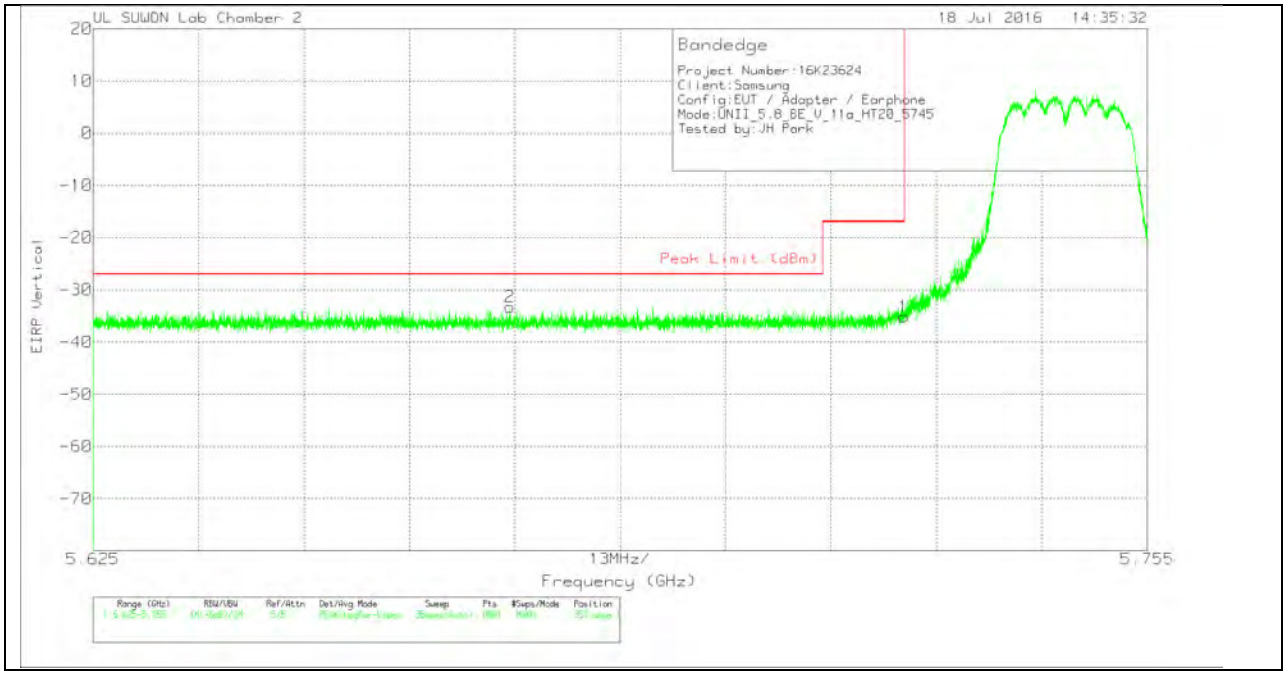
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-66.1	Pk	34.7	-15.6	11.8	0	-35.2	-17	-18.2	357	176	V
2	5.676	-64.08	Pk	34.6	-15.6	11.8	0	-33.28	-27	-6.28	357	176	V

Pk - Peak detector

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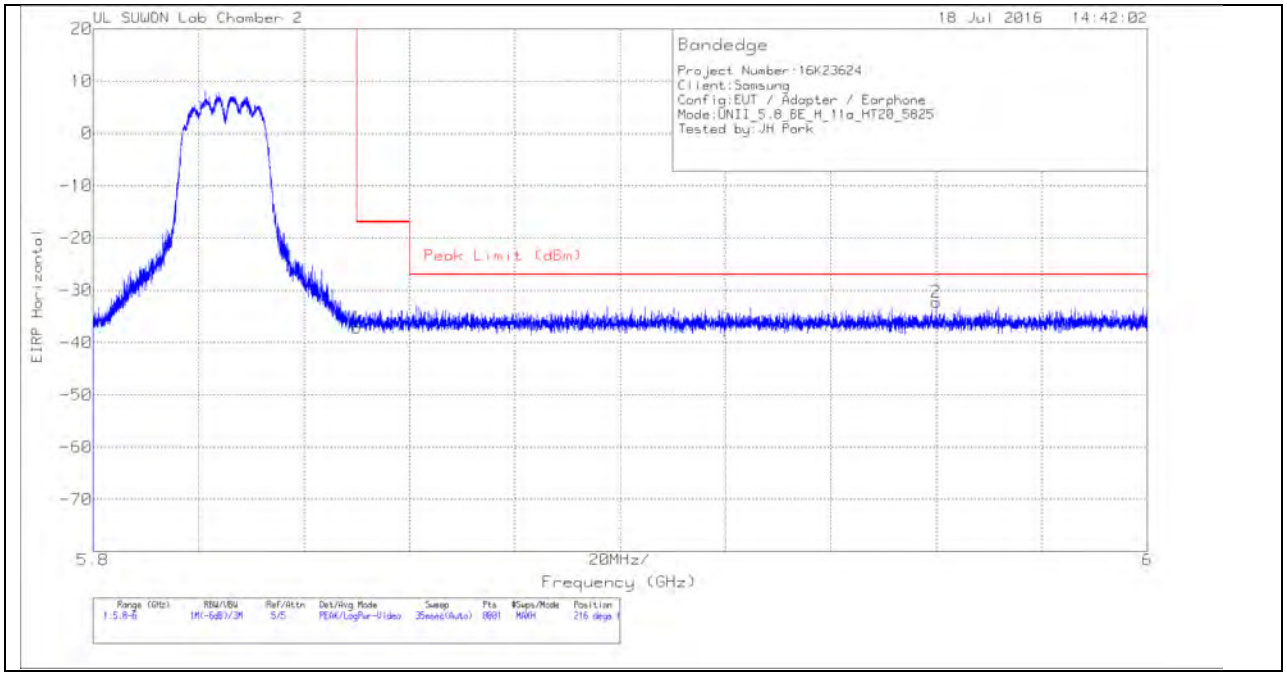
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-68.17	Pk	34.7	-15.5	11.8	0	-37.17	-17	-20.17	216	383	H
2	5.96	-63.45	Pk	34.8	-15.4	11.8	0	-32.25	-27	-5.25	216	383	H

Pk - Peak detector

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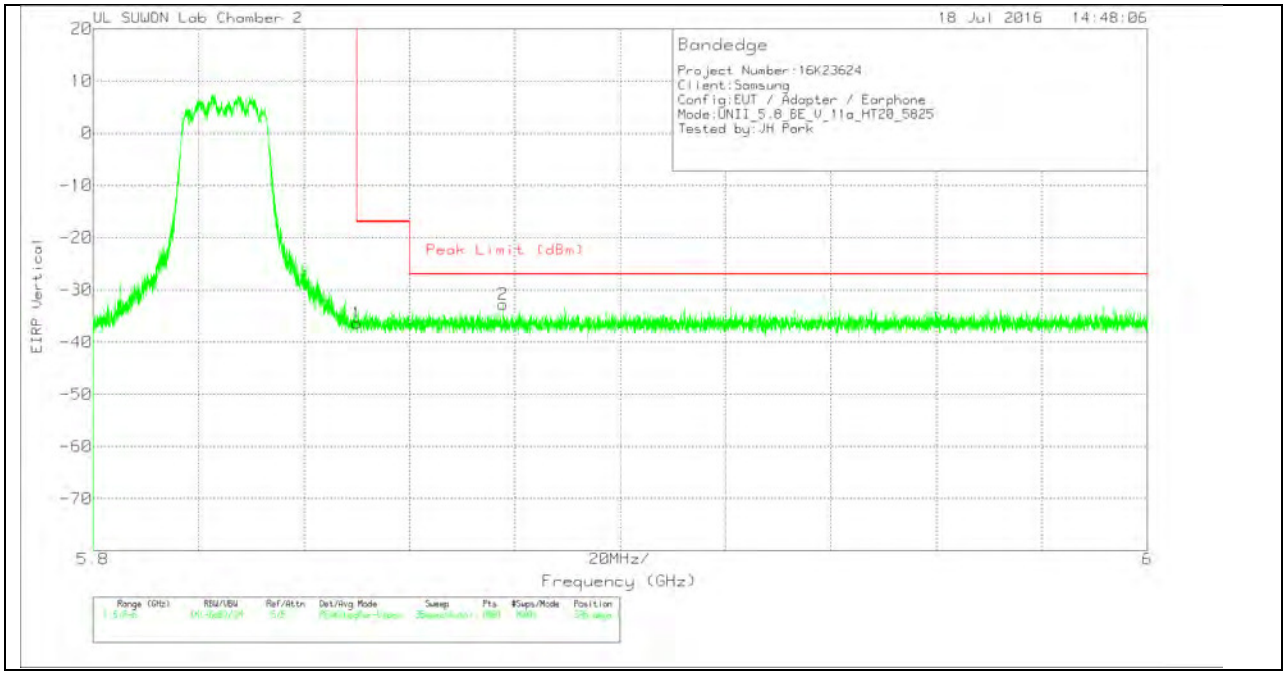
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-67.37	Pk	34.7	-15.5	11.8	0	-36.37	-17	-19.37	326	251	V
2	5.878	-63.87	Pk	34.8	-15.5	11.8	0	-32.77	-27	-5.77	326	251	V

Pk - Peak detector

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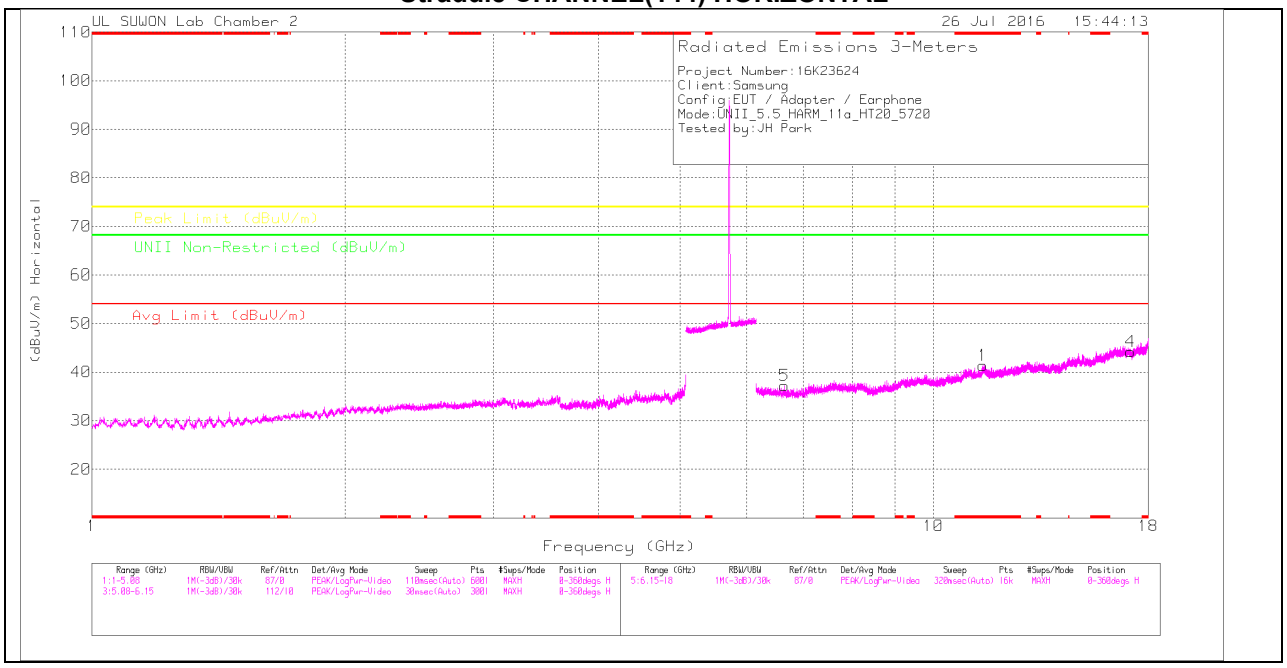
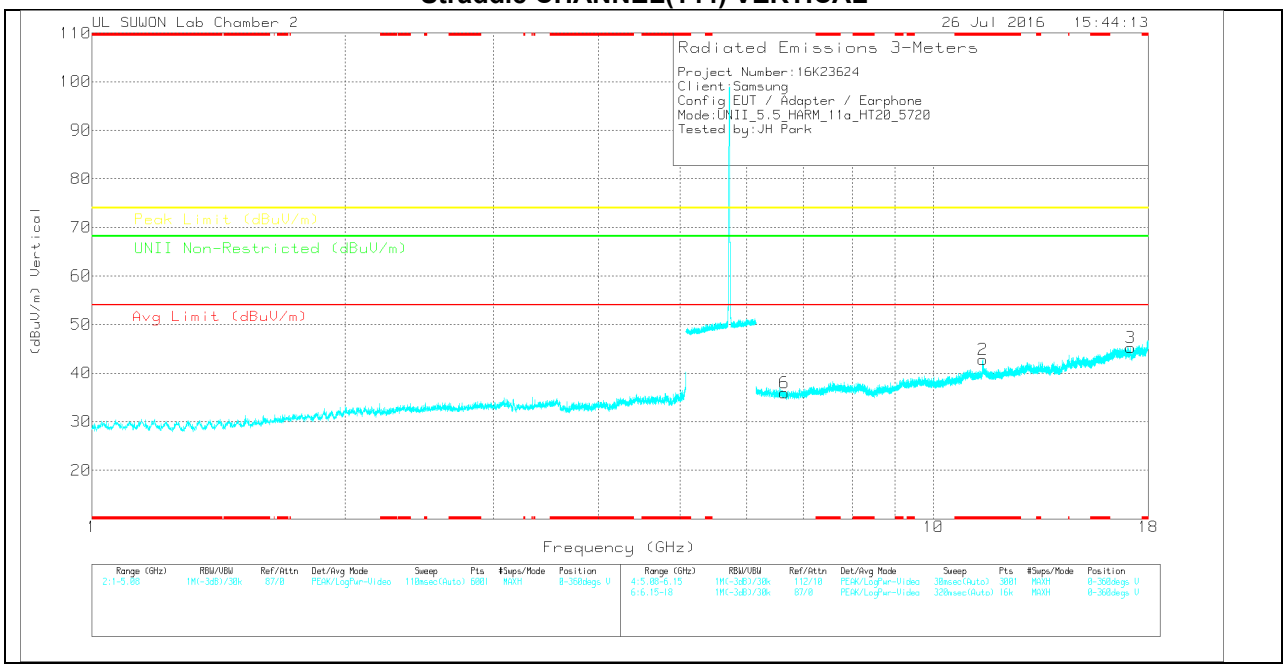
Straddle CHANNEL(144) HORIZONTAL



Straddle CHANNEL(144) VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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Straddle CHANNEL(144) DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 11.45	20.54	PK	38.3	-17.5	0	41.34	-	-	74	-32.66	-	-	0-360	100	H
4	17.156	18.44	PK	41.1	-15.3	0	44.24	-	-	-	-	68.2	-23.96	0-360	200	H
5	6.649	24.77	PK	35.3	-22.9	0	37.17	-	-	-	-	68.2	-31.03	0-360	100	H
2	* 11.442	21.83	PK	38.3	-17.4	0	42.73	-	-	74	-31.27	-	-	0-360	100	V
3	17.154	19.49	PK	41.1	-15.3	0	45.29	-	-	-	-	68.2	-22.91	0-360	100	V
6	6.646	23.64	PK	35.3	-23	0	35.94	-	-	-	-	68.2	-32.26	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 11.438	29.95	PK-U	38.3	-17.4	0	50.85	-	-	74	-23.15	-	-	19	307	H
* 11.442	17.66	ADR	38.3	-17.4	.29	38.85	54	-15.15	-	-	-	-	19	307	H
* 11.442	31.12	PK-U	38.3	-17.4	0	52.02	-	-	74	-21.98	-	-	356	272	V
* 11.443	18.05	ADR	38.3	-17.4	.29	39.24	54	-14.76	-	-	-	-	356	272	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

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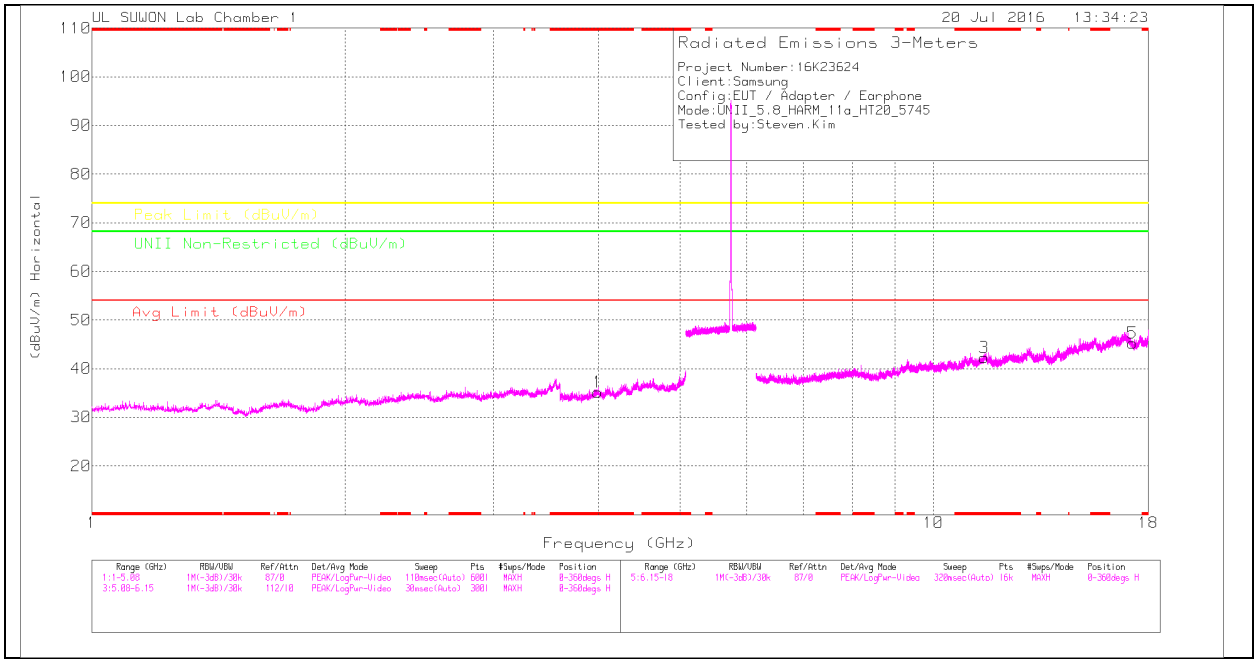
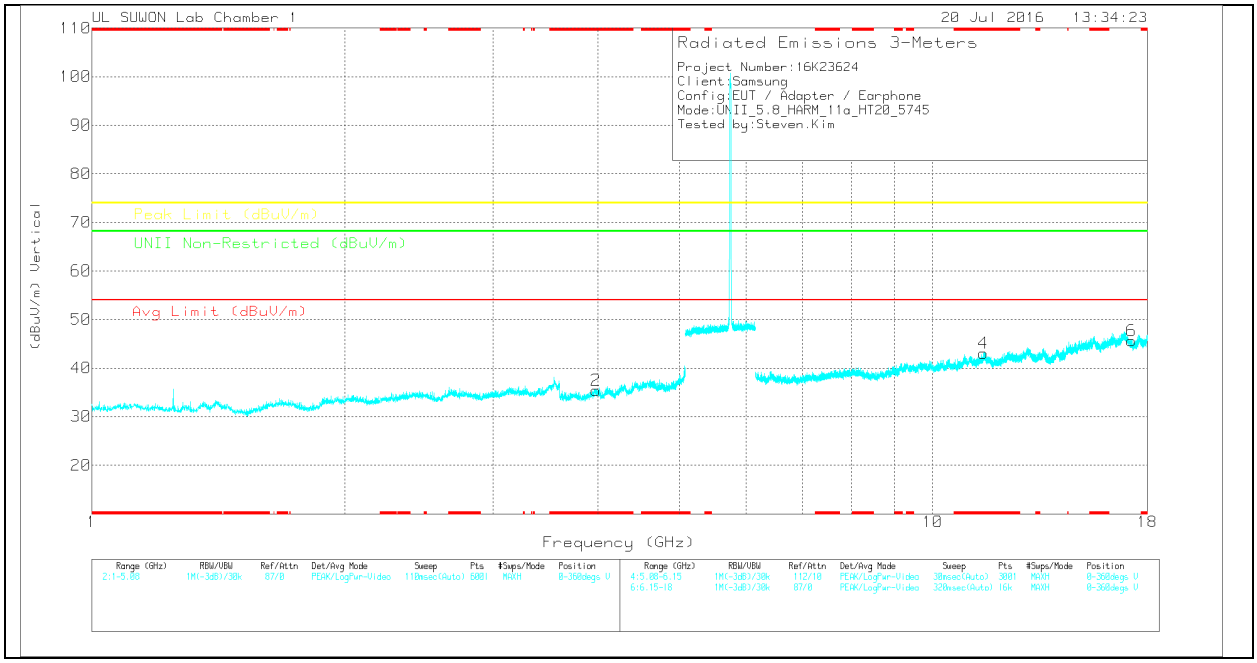
LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.988	35.61	PK	33.4	-33.8	0	35.21	-	-	74	-38.79	-	-	0-360	200	H
2	* 3.978	35.82	PK	33.4	-33.8	0	35.42	-	-	74	-38.58	-	-	0-360	200	V
3	* 11.49	30.61	PK	38.6	-27	0	42.21	-	-	74	-31.79	-	-	0-360	200	H
5	17.238	25.34	PK	41.2	-21.3	0	45.24	-	-	-	-	68.2	-22.96	0-360	200	H
4	* 11.49	31.46	PK	38.6	-27	0	43.06	-	-	74	-30.94	-	-	0-360	100	V
6	17.24	25.8	PK	41.2	-21.4	0	45.6	-	-	-	-	68.2	-22.6	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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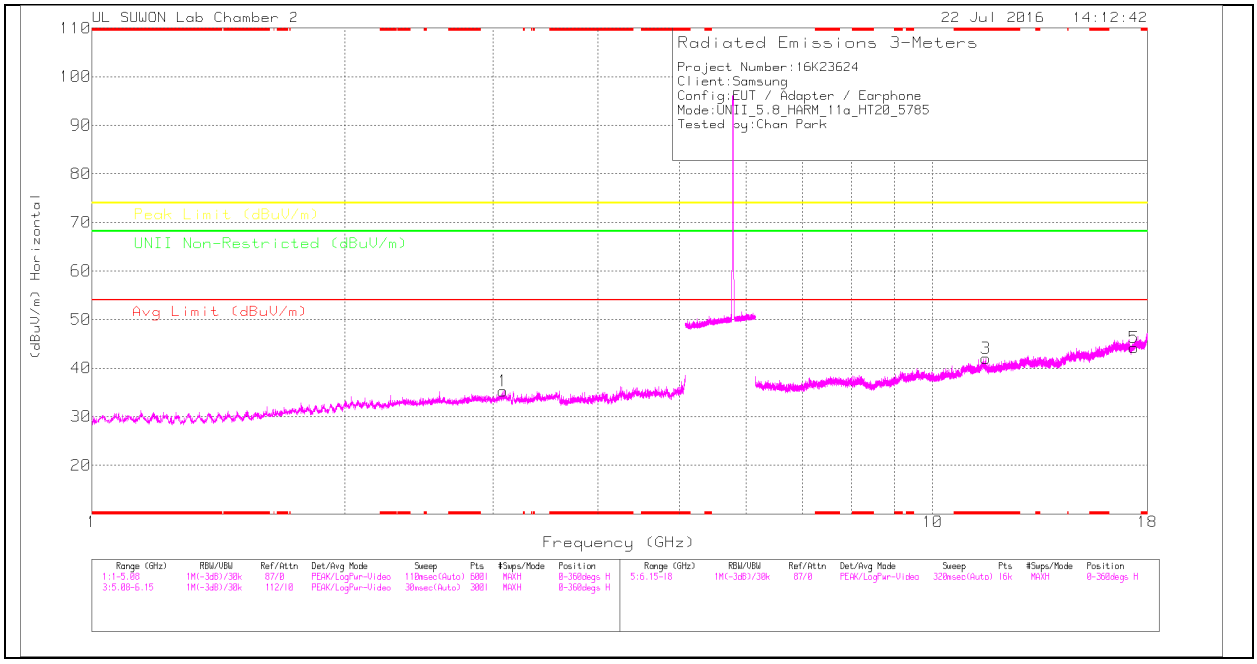
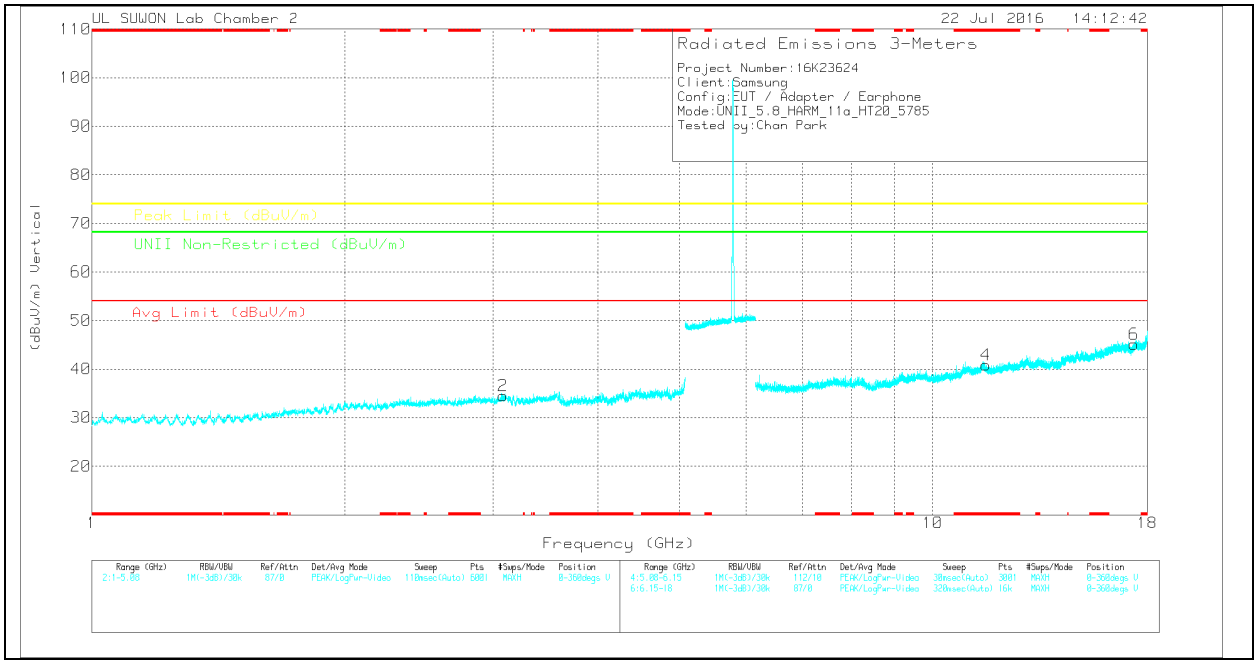
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.084	29.2	PK	32.5	-26.4	0	35.3	-	-	-	-	68.2	-32.9	0-360	100	H
2	3.084	28.4	PK	32.5	-26.4	0	34.5	-	-	-	-	68.2	-33.7	0-360	100	V
3	* 11.57	21.1	PK	38.4	-17.5	0	42	-	-	74	-32	-	-	0-360	100	H
5	17.354	18.11	PK	41.2	-15.1	0	44.21	-	-	-	-	68.2	-23.99	0-360	100	H
4	* 11.567	19.97	PK	38.4	-17.5	0	40.87	-	-	74	-33.13	-	-	0-360	200	V
6	17.352	18.96	PK	41.2	-15.1	0	45.06	-	-	-	-	68.2	-23.14	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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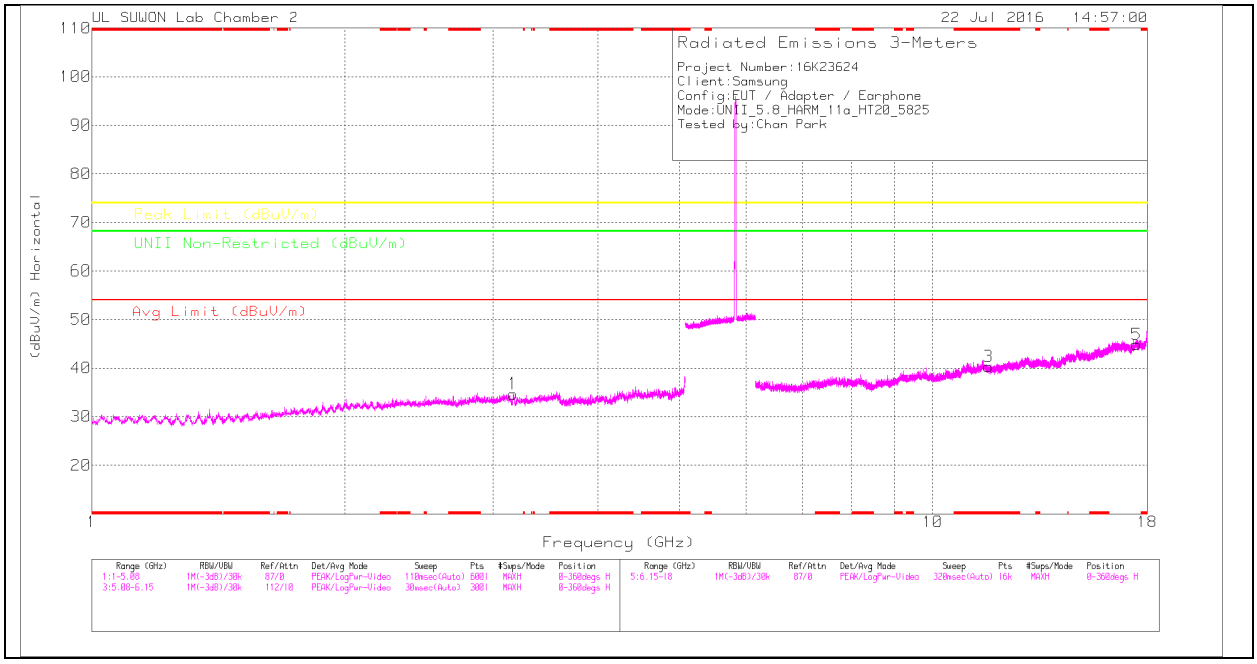
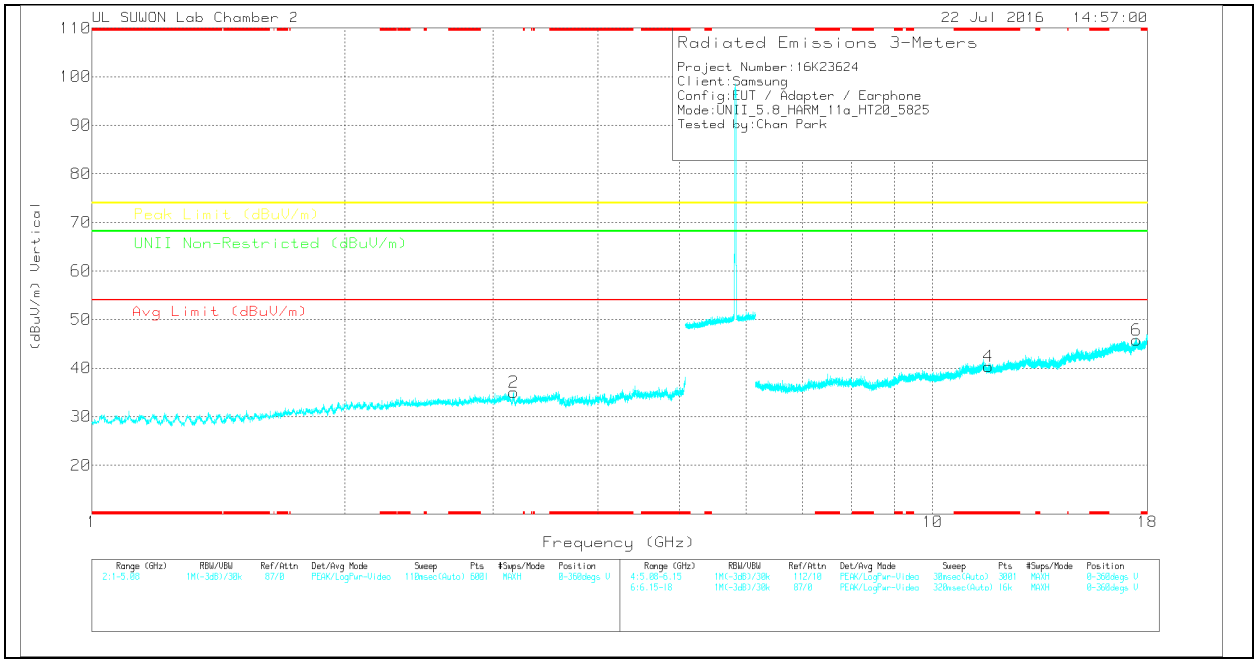
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.169	28.3	PK	32.5	-26.1	0	34.7	-	-	-	-	68.2	-33.5	0-360	100	H
2	3.173	28.6	PK	32.5	-26.1	0	35	-	-	-	-	68.2	-33.2	0-360	200	V
3	* 11.652	19.31	PK	38.4	-17.4	0	40.31	-	-	74	-33.69	-	-	0-360	100	H
5	17.476	17.95	PK	41.3	-14.4	0	44.85	-	-	-	-	68.2	-23.35	0-360	100	H
4	* 11.652	19.35	PK	38.4	-17.4	0	40.35	-	-	74	-33.65	-	-	0-360	100	V
6	17.479	18.86	PK	41.3	-14.4	0	45.76	-	-	-	-	68.2	-22.44	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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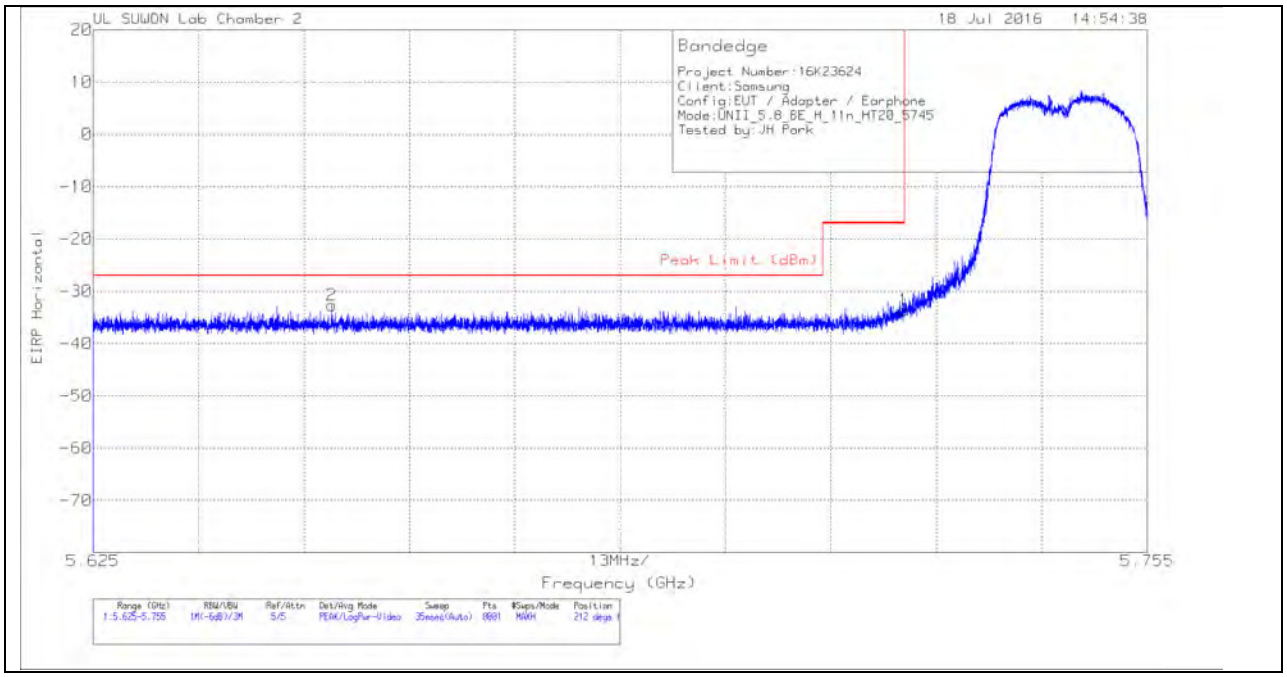
11.4.2. TX ABOVE 1GHz 802.11n HT20 2TX CDD MODE IN THE 5.8GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(0016 8724)_150 619	Path_2_10 dB	Conversio n Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-64.49	Pk	34.7	-15.6	11.8	0	-33.59	-17	-16.59	212	361	H
2	5.654	-63.38	Pk	34.6	-15.7	11.8	0	-32.68	-27	-5.68	212	361	H

Pk - Peak detector

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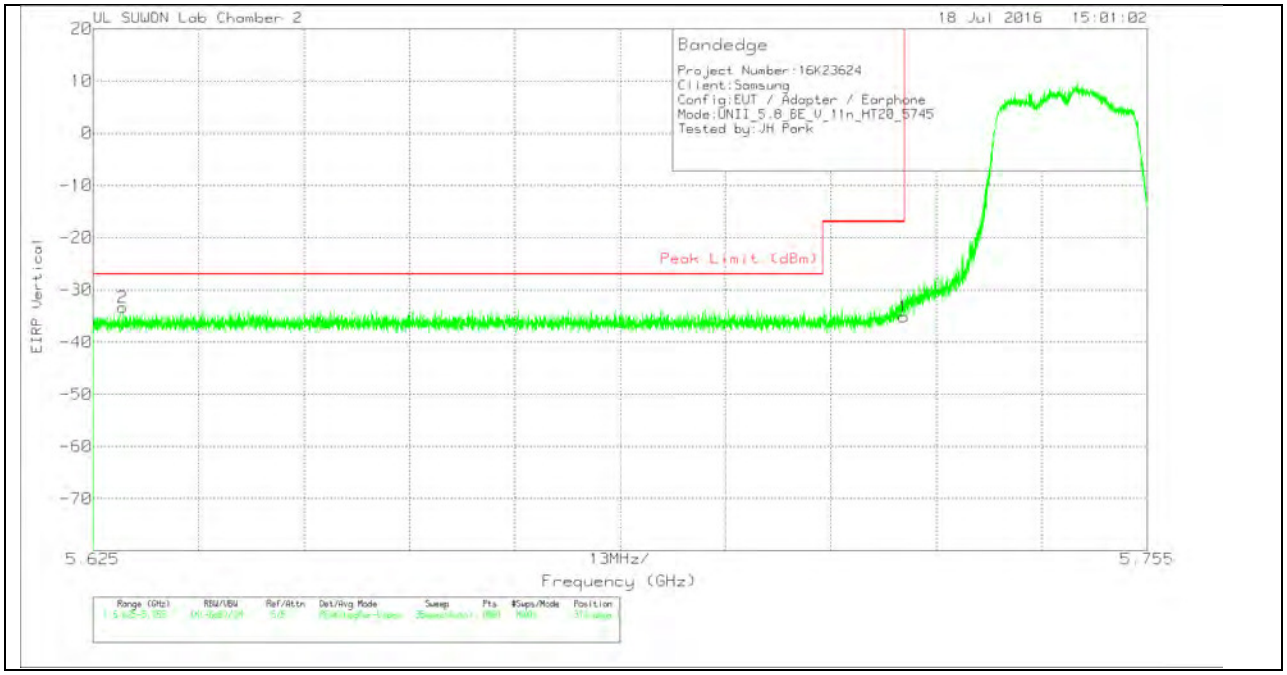
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-66.1	Pk	34.7	-15.6	11.8	0	-35.2	-17	-18.2	313	257	V
2	5.629	-64.06	Pk	34.6	-15.7	11.8	0	-33.36	-27	-6.36	313	257	V

Pk - Peak detector

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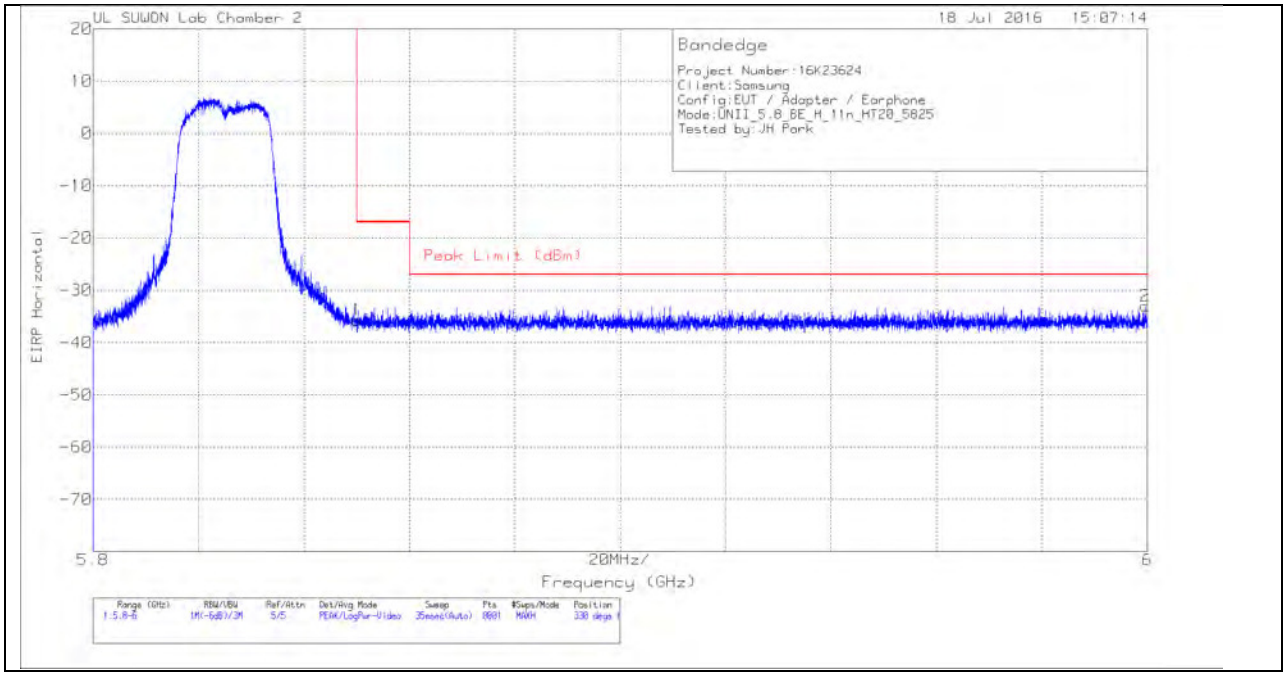
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.73	Pk	34.7	-15.5	11.8	0	-35.73	-17	-18.73	330	333	H
2	6	-64.21	Pk	34.8	-15.4	11.8	0	-33.01	-27	-6.01	330	333	H

Pk - Peak detector

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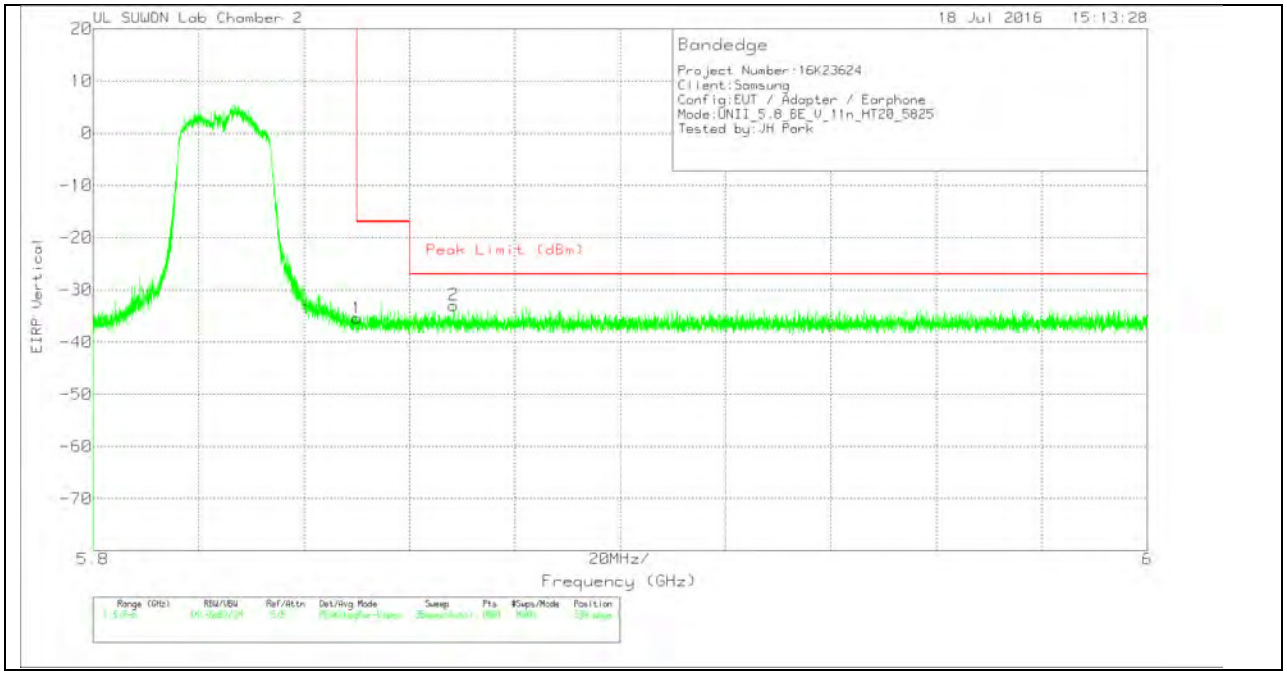
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.4	Pk	34.7	-15.5	11.8	0	-35.4	-17	-18.4	339	265	V
2	5.868	-63.94	Pk	34.7	-15.5	11.8	0	-32.94	-27	-5.94	339	265	V

Pk - Peak detector

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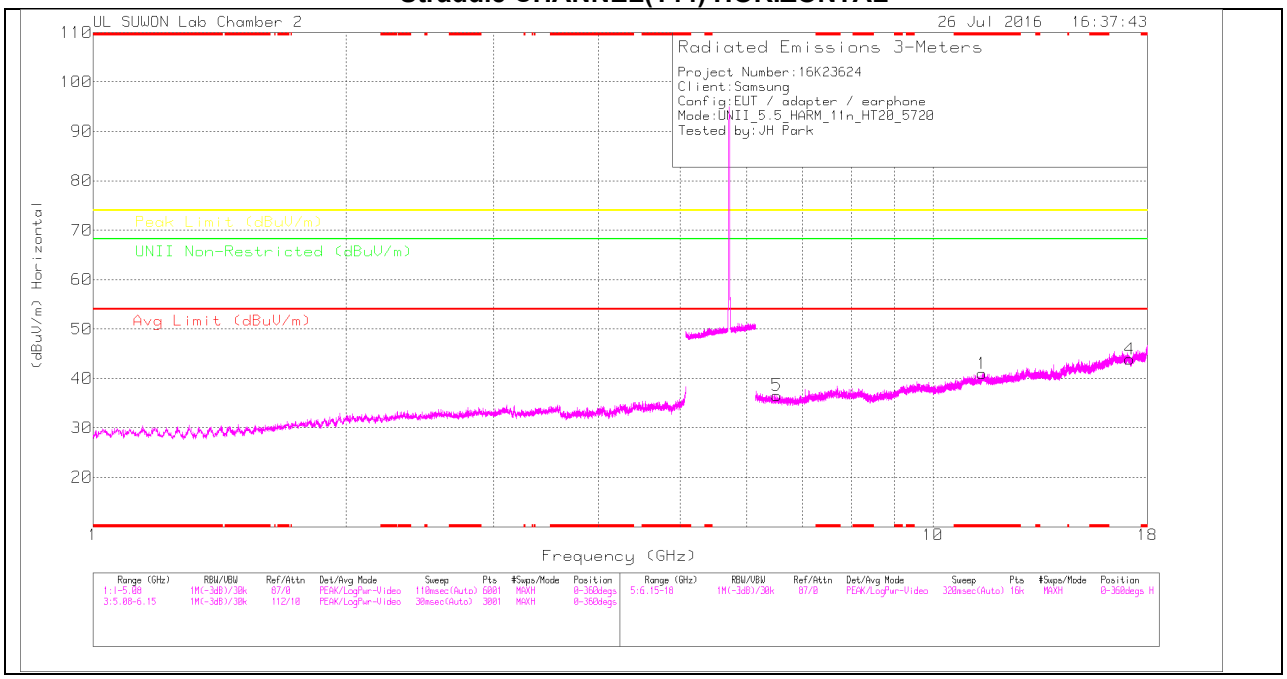
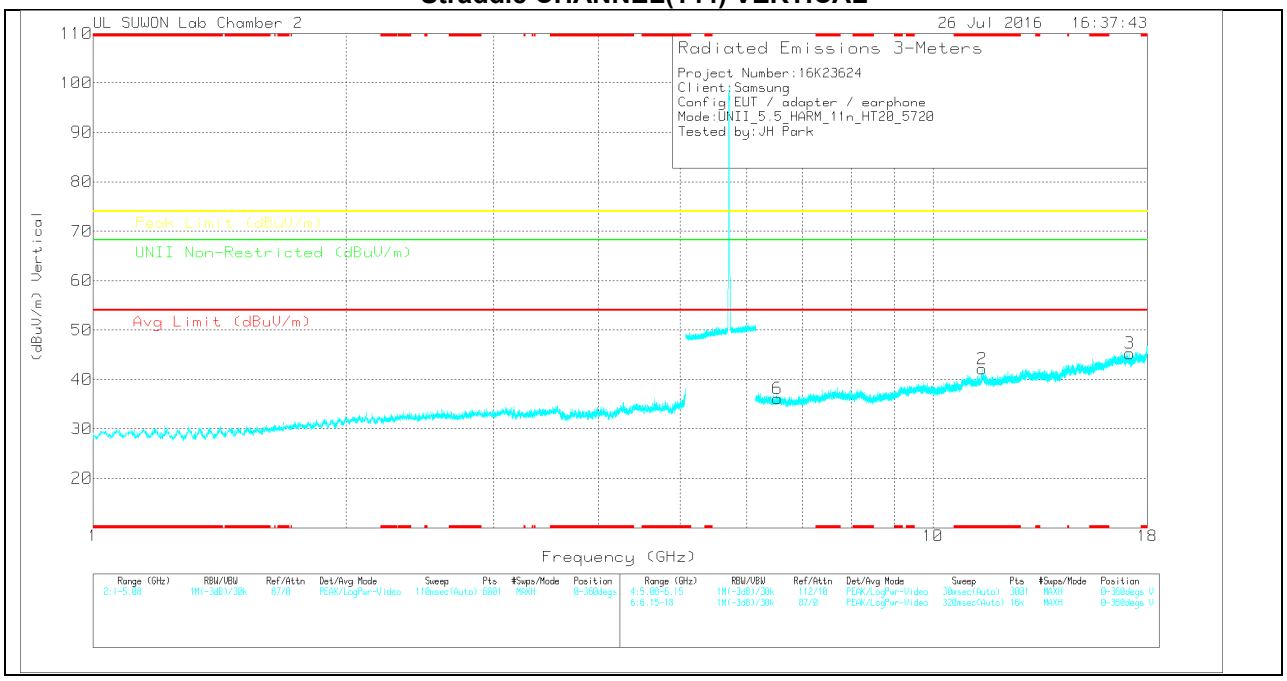
Straddle CHANNEL(144) HORIZONTAL



Straddle CHANNEL(144) VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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Straddle CHANNEL(144) DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 11.44	20.07	PK	38.3	-17.4	0	40.97	-	-	74	-33.03	-	-	0-360	200	H
4	17.161	18.12	PK	41.1	-15.3	0	43.92	-	-	-	-	68.2	-24.28	0-360	200	H
5	6.517	24.79	PK	35.3	-23.5	0	36.59	-	-	-	-	68.2	-31.61	0-360	100	H
2	* 11.447	21.34	PK	38.3	-17.5	0	42.14	-	-	74	-31.86	-	-	0-360	100	V
3	17.159	19.47	PK	41.1	-15.3	0	45.27	-	-	-	-	68.2	-22.93	0-360	200	V
6	6.526	24.44	PK	35.3	-23.6	0	36.14	-	-	-	-	68.2	-32.06	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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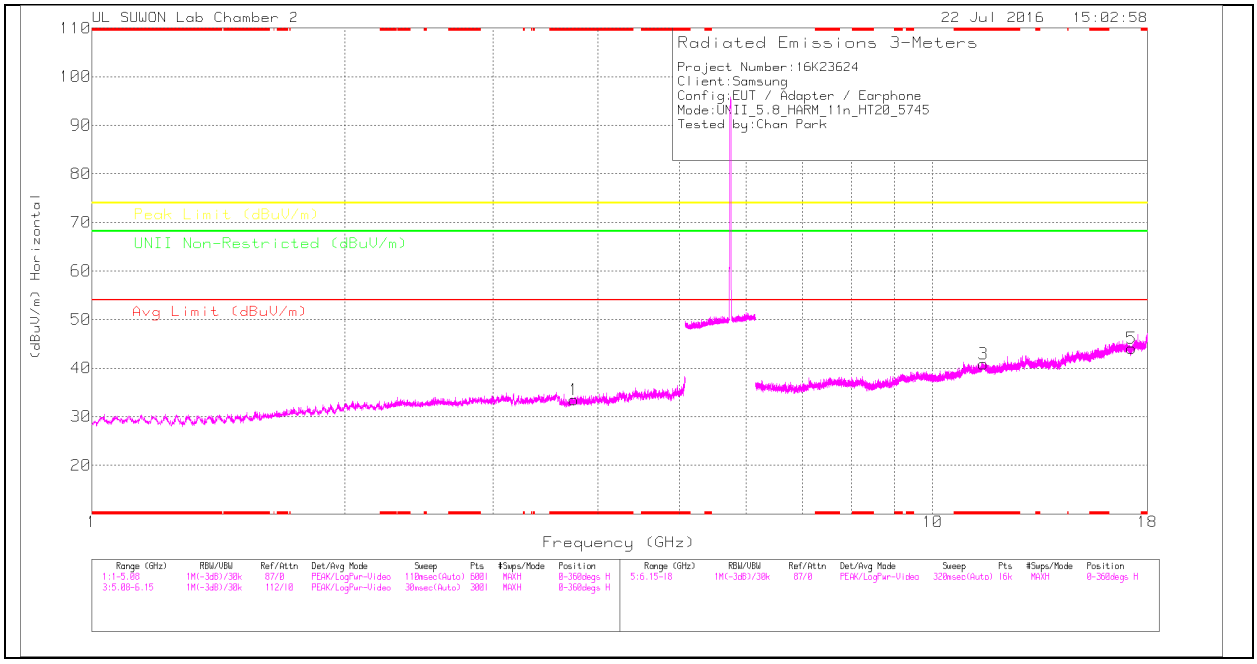
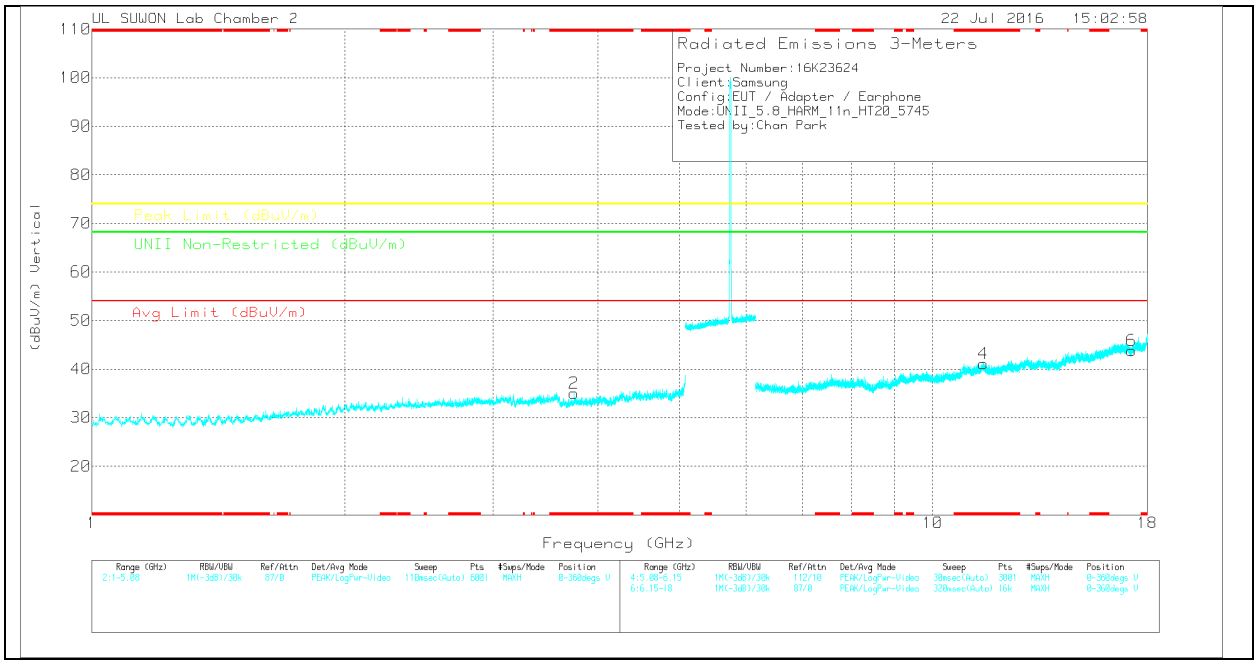
LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 3.742	26.46	PK	33	-26	0	33.46	-	-	74	-40.54	-	-	0-360	200	H
2	* 3.746	27.99	PK	33	-26	0	34.99	-	-	74	-39.01	-	-	0-360	200	V
3	* 11.493	20.02	PK	38.3	-17.5	0	40.82	-	-	74	-33.18	-	-	0-360	200	H
5	17.241	18.04	PK	41.2	-15.2	0	44.04	-	-	-	-	68.2	-24.16	0-360	200	H
4	* 11.492	20.25	PK	38.3	-17.5	0	41.05	-	-	74	-32.95	-	-	0-360	200	V
6	17.239	17.8	PK	41.2	-15.2	0	43.8	-	-	-	-	68.2	-24.4	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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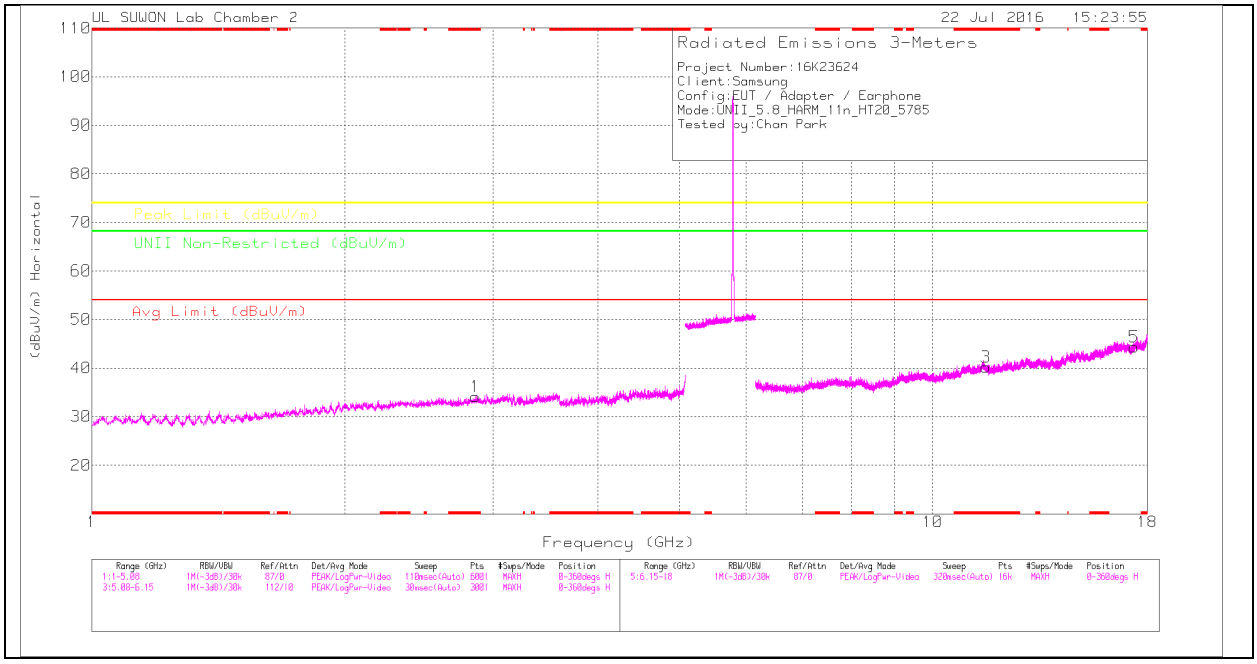
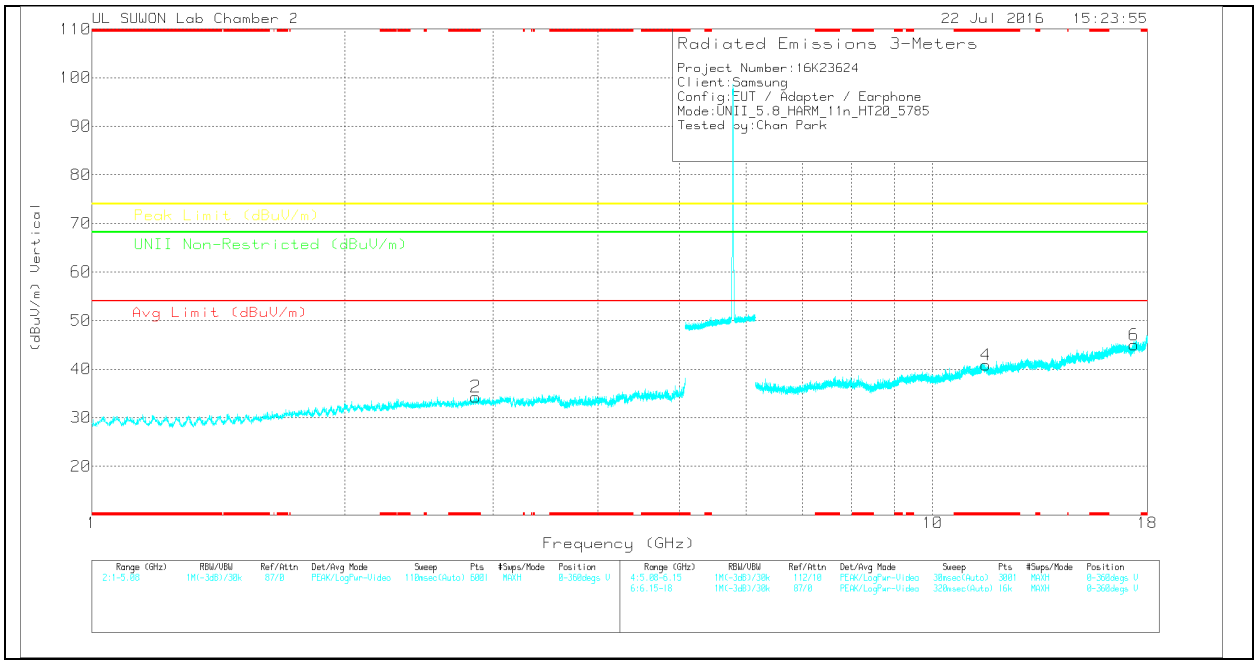
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.858	28.31	PK	32.3	-26.5	0	34.11	-	-	74	-39.89	-	-	0-360	100	H
2	* 2.861	28.51	PK	32.3	-26.5	0	34.31	-	-	74	-39.69	-	-	0-360	200	V
3	* 11.569	19.24	PK	38.4	-17.5	0	40.14	-	-	74	-33.86	-	-	0-360	200	H
5	17.351	18.24	PK	41.2	-15.1	0	44.34	-	-	-	-	68.2	-23.86	0-360	100	H
4	* 11.572	19.91	PK	38.4	-17.5	0	40.81	-	-	74	-33.19	-	-	0-360	100	V
6	17.353	18.87	PK	41.2	-15.1	0	44.97	-	-	-	-	68.2	-23.23	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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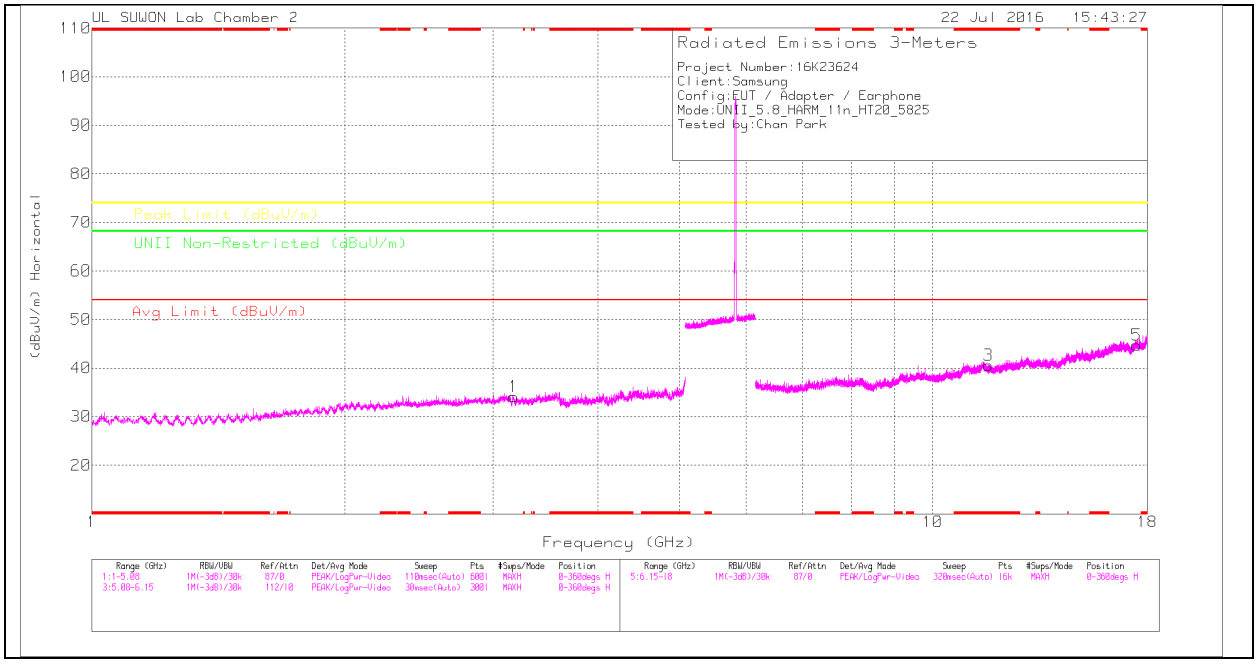
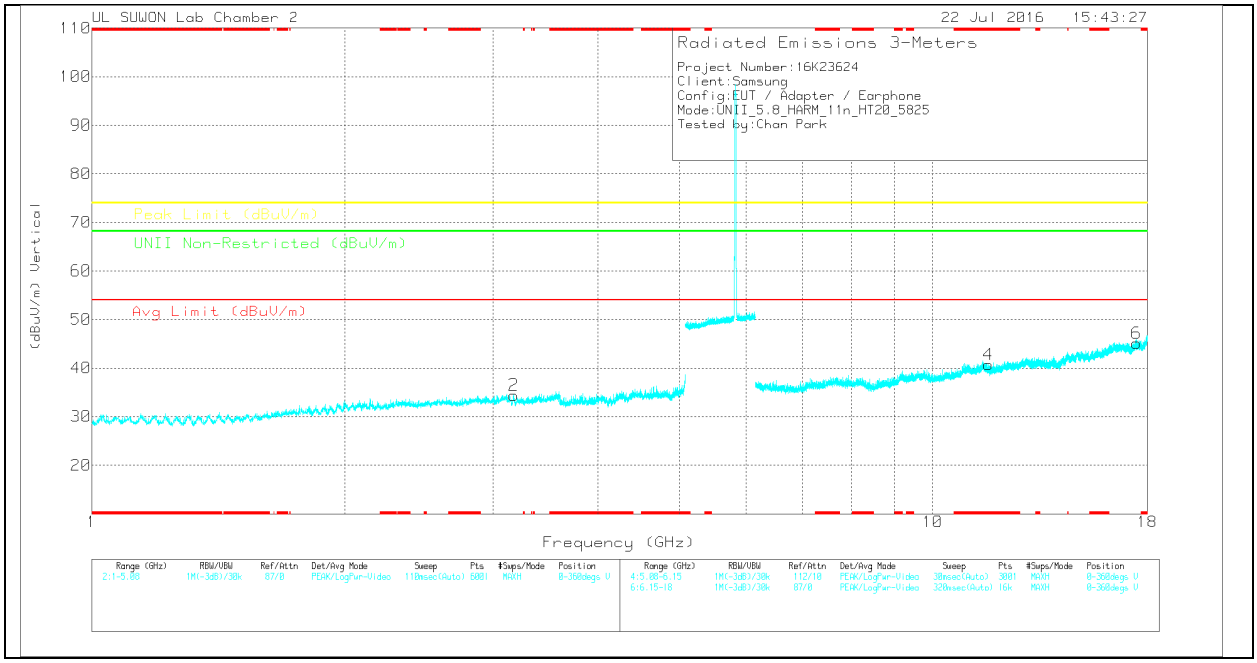
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	3.175	27.67	PK	32.6	-26.1	0	34.17	-	-	-	-	68.2	-34.03	0-360	100	H
2	3.173	28.04	PK	32.5	-26.1	0	34.44	-	-	-	-	68.2	-33.76	0-360	100	V
3	* 11.65	19.55	PK	38.4	-17.4	0	40.55	-	-	74	-33.45	-	-	0-360	100	H
5	17.476	17.97	PK	41.3	-14.5	0	44.77	-	-	-	-	68.2	-23.43	0-360	100	H
4	* 11.651	19.66	PK	38.4	-17.4	0	40.66	-	-	74	-33.34	-	-	0-360	200	V
6	17.473	18.28	PK	41.3	-14.5	0	45.08	-	-	-	-	68.2	-23.12	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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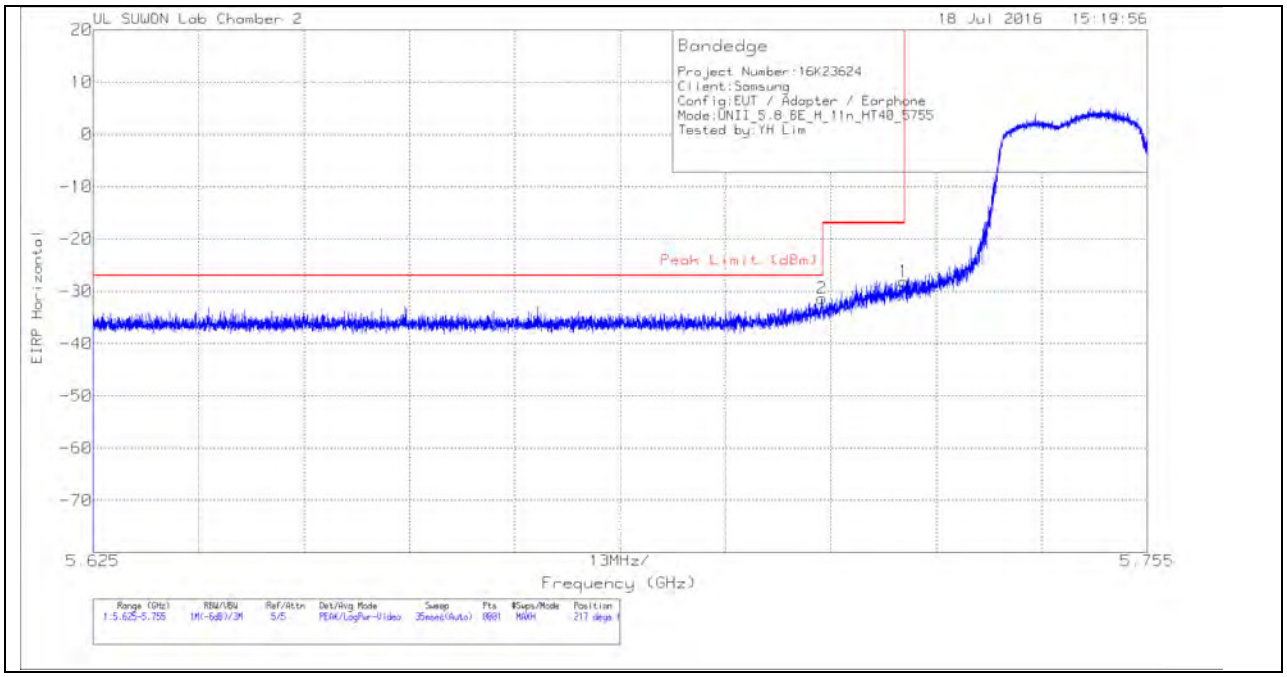
11.4.3. TX ABOVE 1GHz 802.11n HT40 2TX CDD MODE IN THE 5.8GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(0016 8724)_150 619	Path_2_10 dB	Conversio n Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-59.06	Pk	34.7	-15.6	11.8	0	-28.16	-17	-11.16	217	102	H
2	5.715	-62.26	Pk	34.7	-15.6	11.8	0	-31.36	-27	-4.36	217	102	H

Pk - Peak detector

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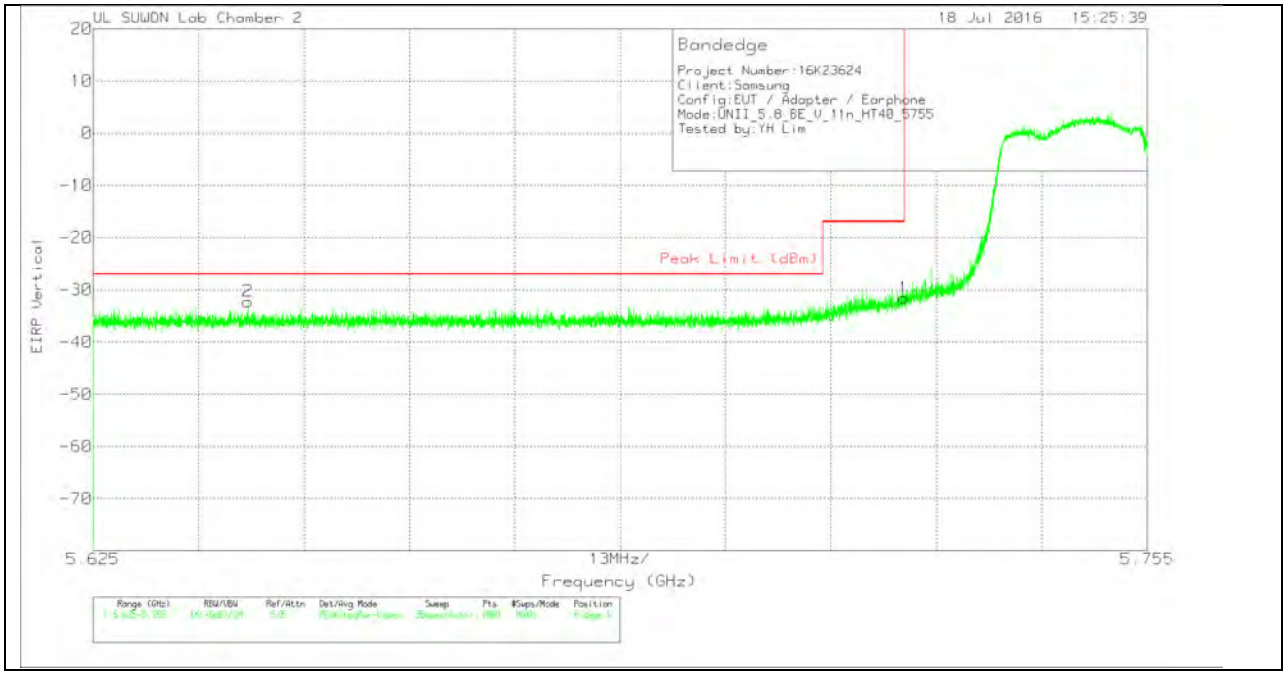
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-62.48	Pk	34.7	-15.6	11.8	0	-31.58	-17	-14.58	8	293	V
2	5.644	-62.92	Pk	34.6	-15.7	11.8	0	-32.22	-27	-5.22	8	293	V

Pk - Peak detector

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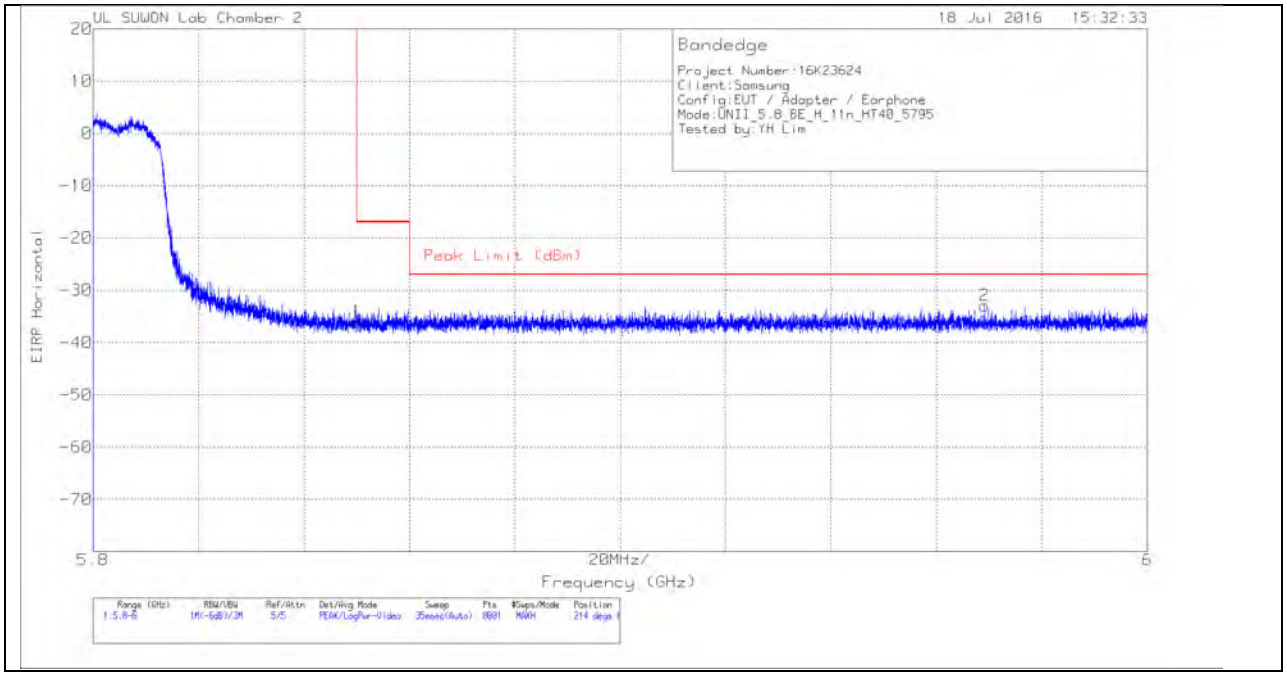
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-67.1	Pk	34.7	-15.5	11.8	0	-36.1	-17	-19.1	214	390	H
2	5.969	-64.13	Pk	34.8	-15.4	11.8	0	-32.93	-27	-5.93	214	390	H

Pk - Peak detector

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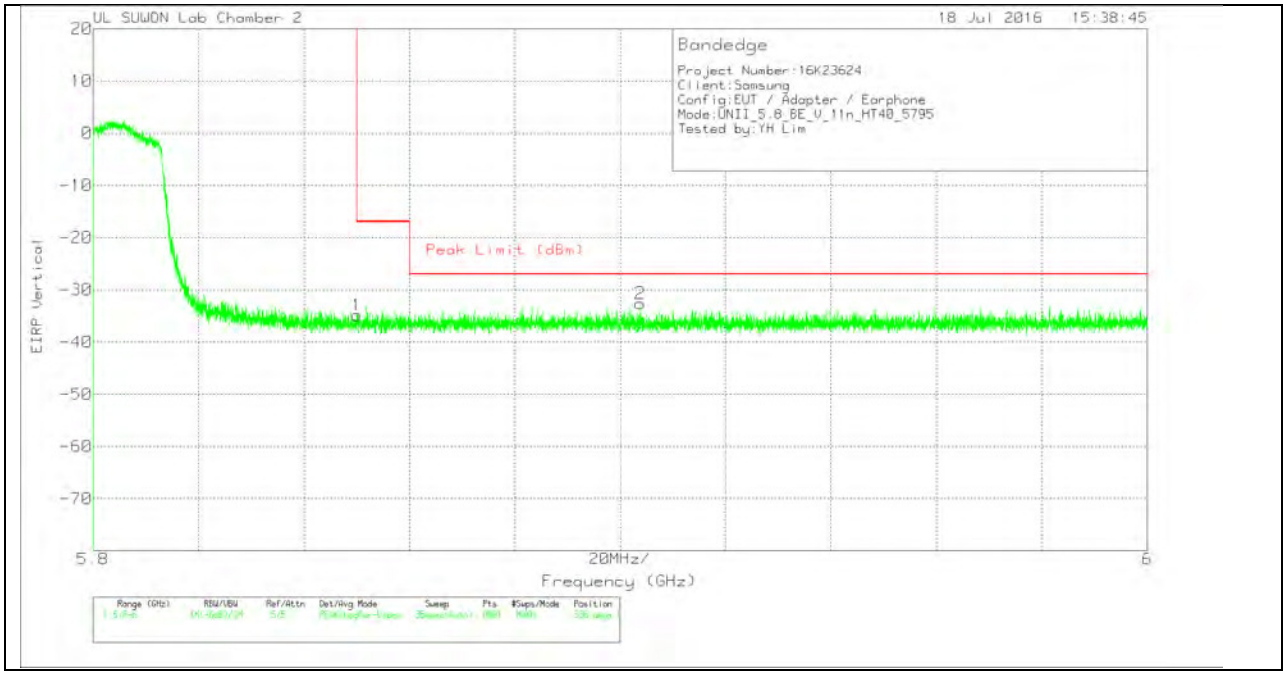
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.86	Pk	34.7	-15.5	11.8	0	-34.86	-17	-17.86	338	228	V
2	5.904	-63.72	Pk	34.8	-15.5	11.8	0	-32.62	-27	-5.62	338	228	V

Pk - Peak detector

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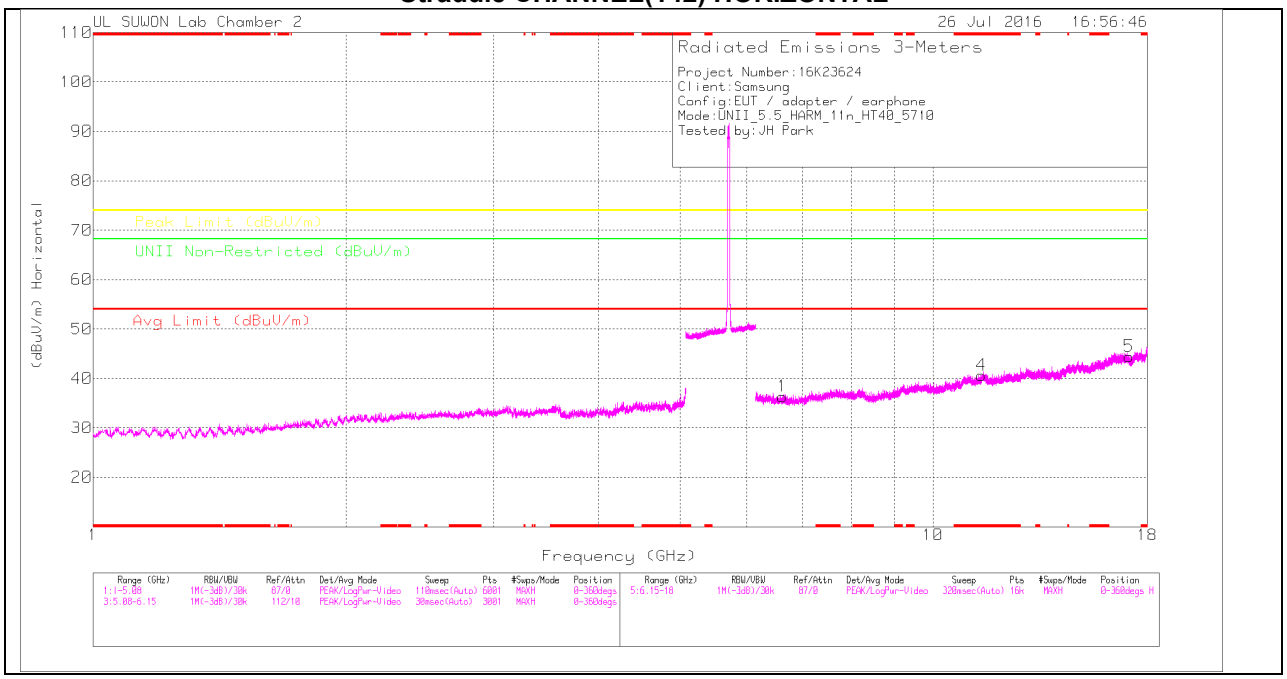
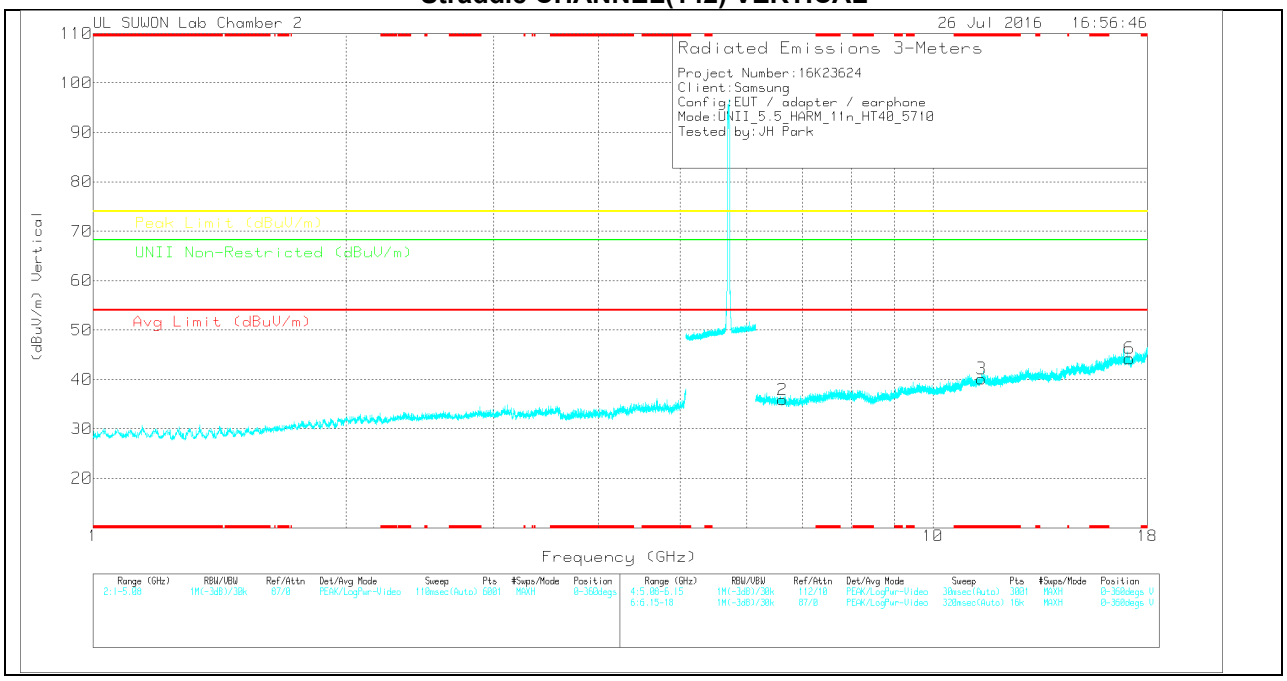
Straddle CHANNEL(142) HORIZONTAL



Straddle CHANNEL(142) VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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Straddle CHANNEL(142) DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.618	24.15	PK	35.3	-23.1	0	36.35	-	-	-	-	68.2	-31.85	0-360	100	H
4	* 11.418	19.64	PK	38.3	-17.3	0	40.64	-	-	74	-33.36	-	-	0-360	200	H
5	17.119	18.65	PK	41.1	-15.3	0	44.45	-	-	-	-	68.2	-23.75	0-360	200	H
2	6.62	23.67	PK	35.3	-23.1	0	35.87	-	-	-	-	68.2	-32.33	0-360	100	V
3	* 11.419	19.13	PK	38.3	-17.3	0	40.13	-	-	74	-33.87	-	-	0-360	200	V
6	17.134	18.45	PK	41.1	-15.3	0	44.25	-	-	-	-	68.2	-23.95	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak Detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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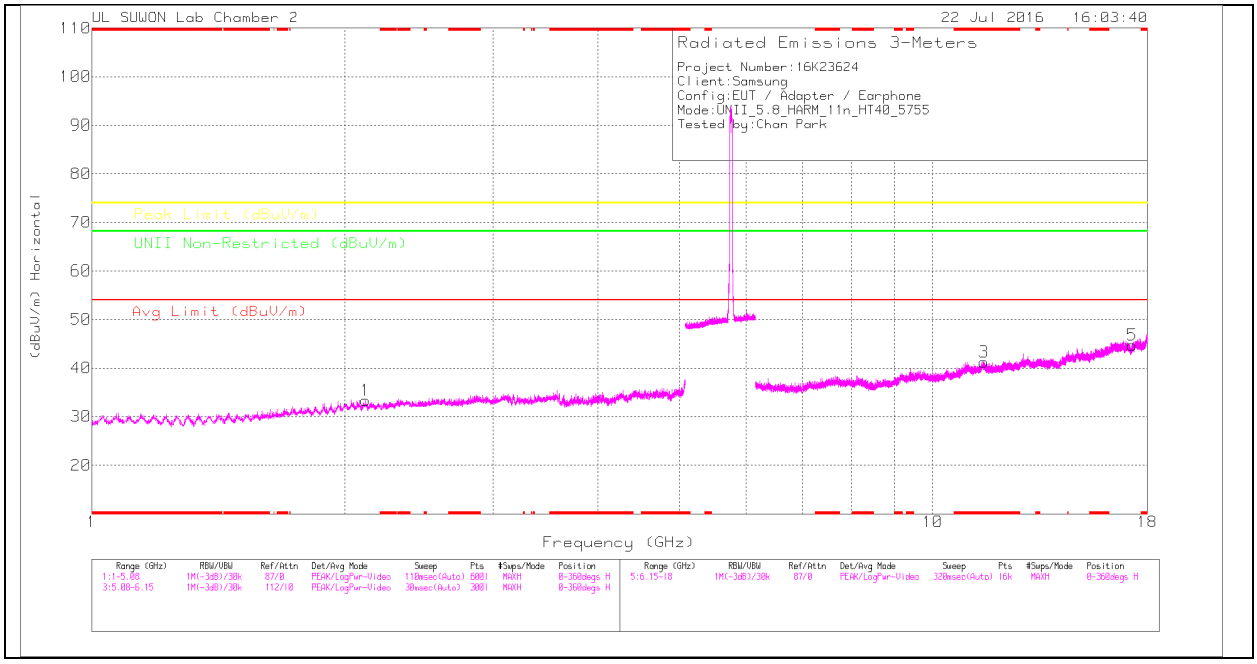
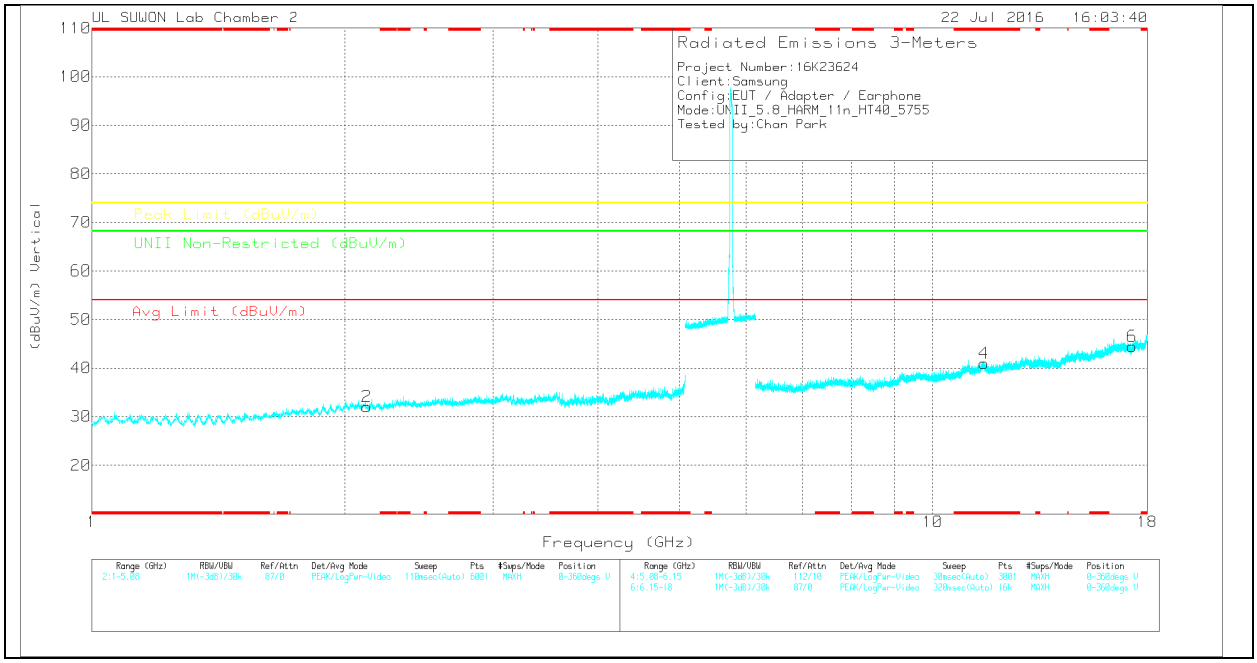
LOW CHANNEL HORIZONTAL



LOW CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.116	29	PK	31.3	-26.9	0	33.4	-	-	-	-	68.2	-34.8	0-360	200	H
2	2.123	27.68	PK	31.3	-26.9	0	32.08	-	-	-	-	68.2	-36.12	0-360	100	V
3	* 11.512	20.43	PK	38.3	-17.5	0	41.23	-	-	74	-32.77	-	-	0-360	200	H
5	17.264	18.69	PK	41.2	-15.2	0	44.69	-	-	-	-	68.2	-23.51	0-360	100	H
4	* 11.51	20.23	PK	38.3	-17.5	0	41.03	-	-	74	-32.97	-	-	0-360	200	V
6	17.26	18.47	PK	41.2	-15.2	0	44.47	-	-	-	-	68.2	-23.73	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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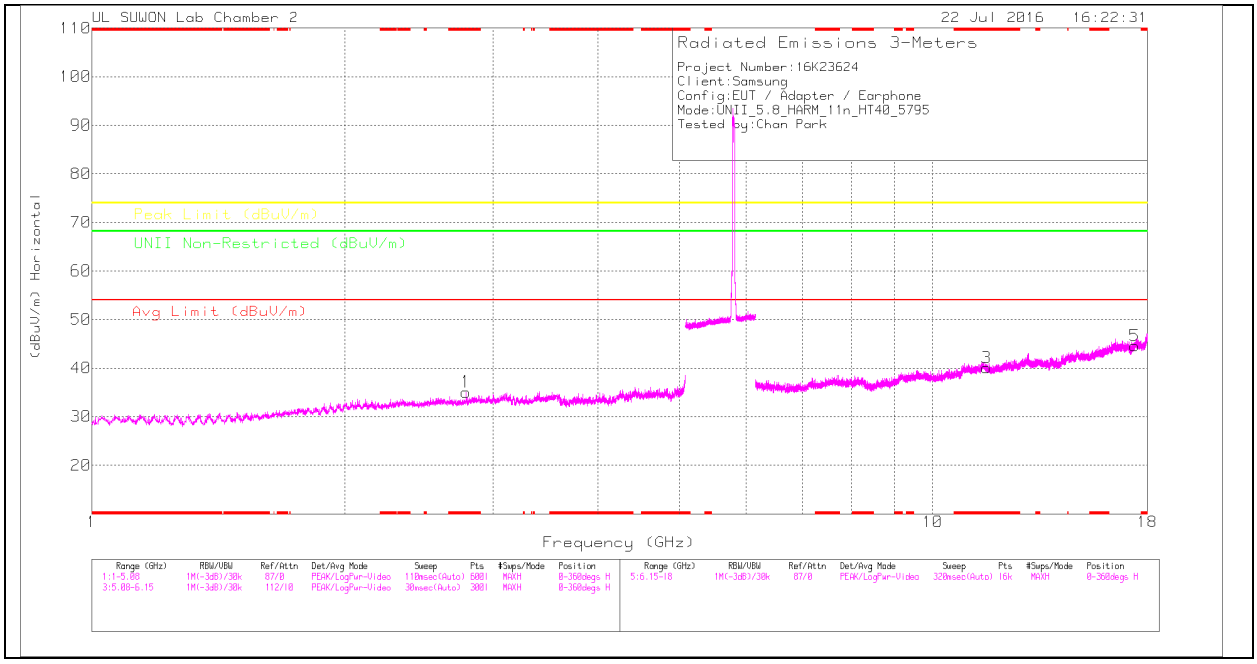
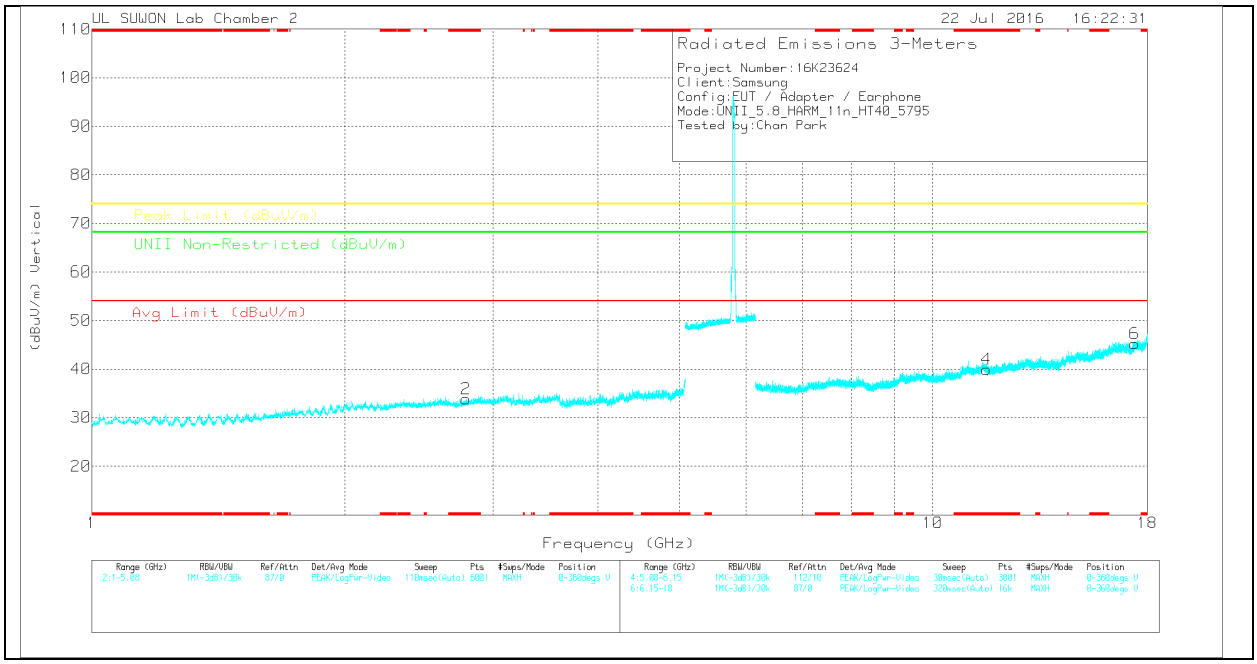
HIGH CHANNEL HORIZONTAL



HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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HIGH CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_4	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.785	29.39	PK	32.2	-26.5	0	35.09	-	-	74	-38.91	-	-	0-360	200	H
2	* 2.787	28.17	PK	32.2	-26.5	0	33.87	-	-	74	-40.13	-	-	0-360	100	V
3	* 11.59	19.09	PK	38.4	-17.4	0	40.09	-	-	74	-33.91	-	-	0-360	100	H
5	17.388	18.34	PK	41.2	-14.9	0	44.64	-	-	-	-	68.2	-23.56	0-360	200	H
4	* 11.586	18.96	PK	38.4	-17.4	0	39.96	-	-	74	-34.04	-	-	0-360	100	V
6	17.385	19	PK	41.2	-15	0	45.2	-	-	-	-	68.2	-23	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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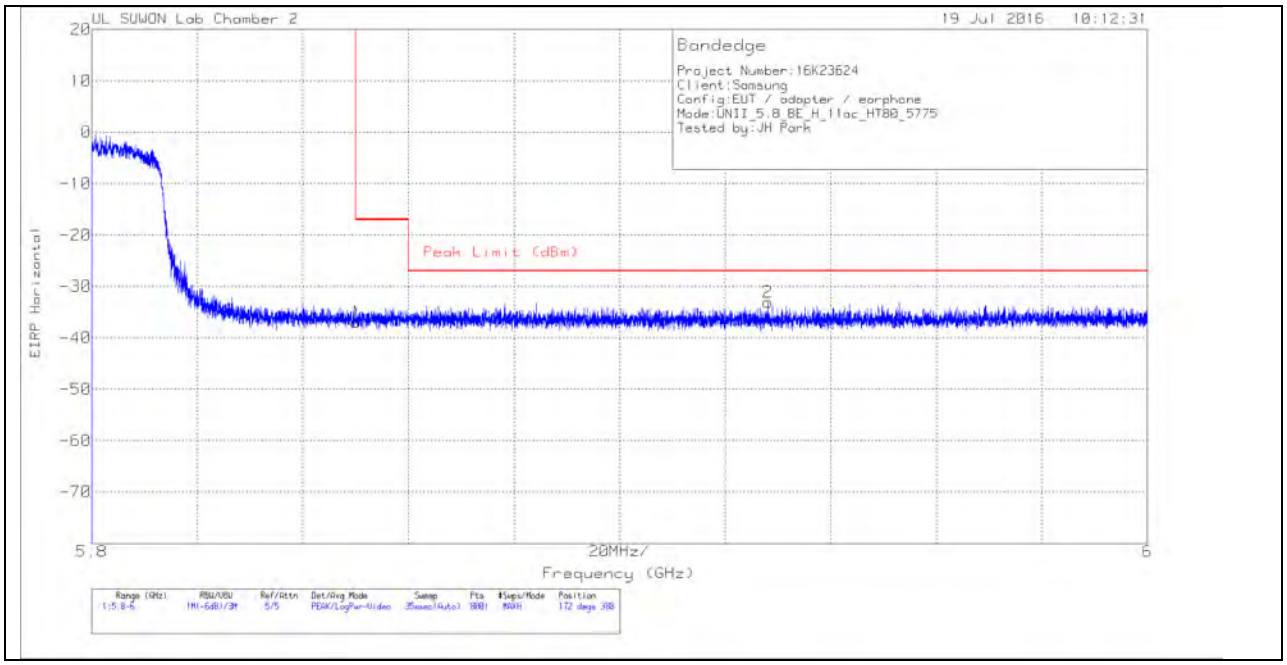
11.4.4. TX ABOVE 1GHz 802.11ac VHT80 2TX CDD MODE IN THE 5.8GHz BAND HARMONICS AND SPURIOUS EMISSIONS

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(0016 8724)_150 619	Path_2_10 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	-67.98	Pk	34.7	-15.5	11.8	0	-36.98	-17	-19.98	172	388	H
2	5.928	-64.13	Pk	34.8	-15.5	11.8	0	-33.03	-27	-6.03	172	388	H

Pk - Peak detector

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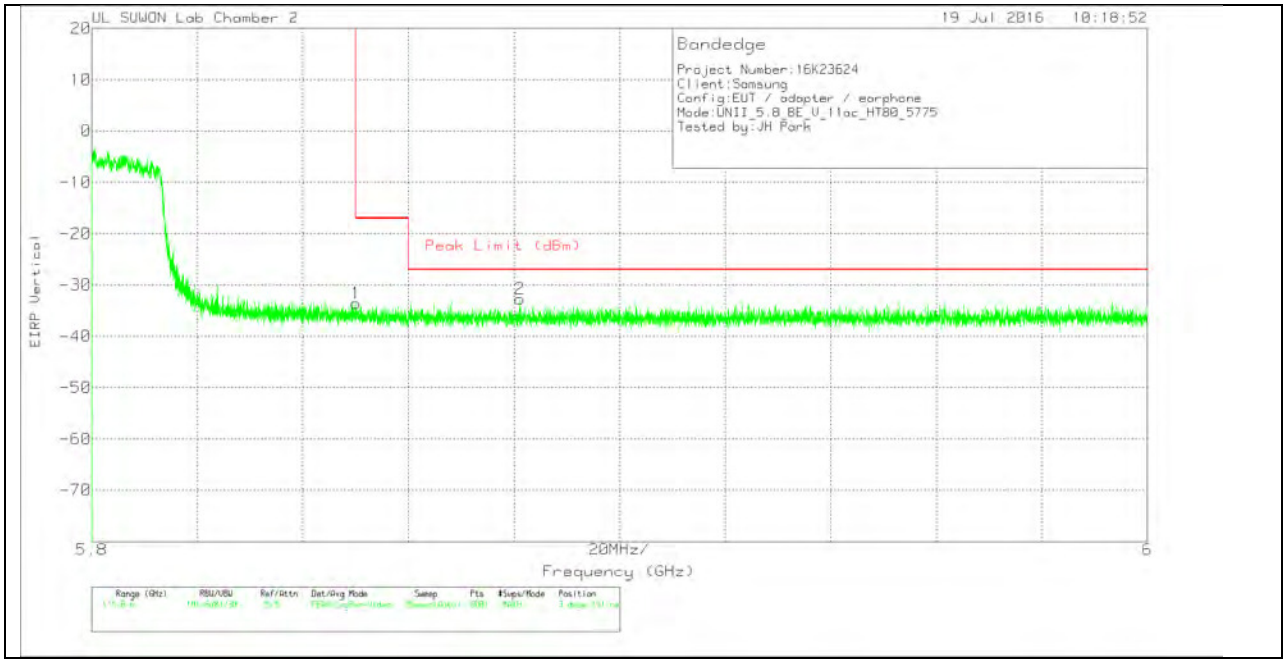
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168724)_150619	Path_2_10 dB	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-64.59	Pk	34.7	-15.5	11.8	0	-33.59	-17	-16.59	3	191	V
2	5.881	-63.83	Pk	34.8	-15.5	11.8	0	-32.73	-27	-5.73	3	191	V

Pk - Peak detector

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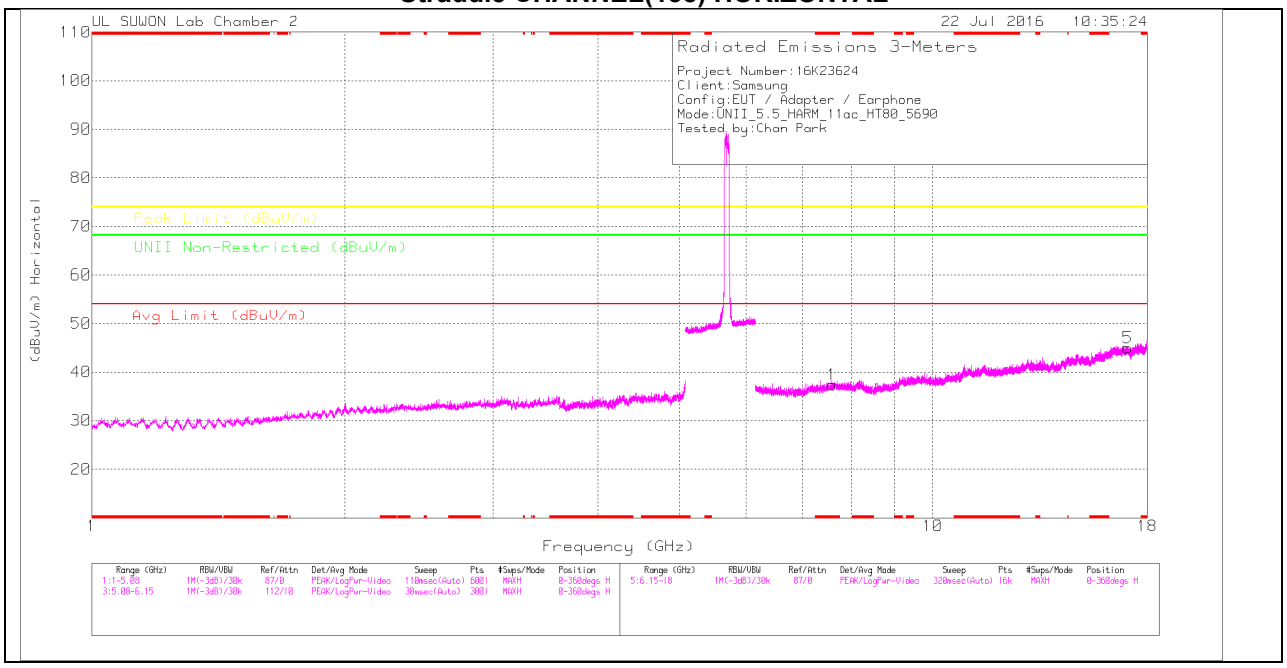
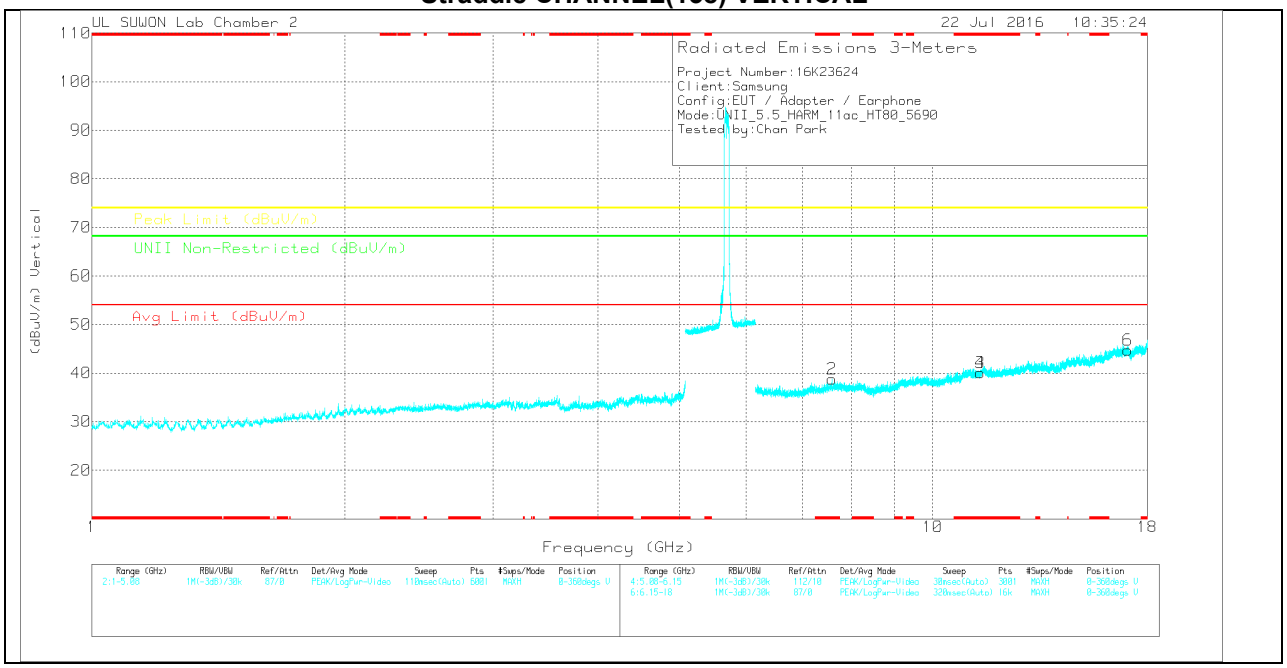
Straddle CHANNEL(138) HORIZONTAL



Straddle CHANNEL(138) VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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Straddle CHANNEL(138) DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 7.591	22.95	PK	36.1	-21.7	0	37.35	-	-	74	-36.65	-	-	0-360	100	H
5	17.072	19.19	PK	41.1	-15.3	0	44.99	-	-	-	-	68.2	-23.21	0-360	100	H
2	* 7.592	24.32	PK	36.1	-21.7	0	38.72	-	-	74	-35.28	-	-	0-360	200	V
3	* 11.382	18.87	PK	38.3	-17.1	0	40.07	-	-	74	-33.93	-	-	0-360	200	V
4	* 11.386	18.88	PK	38.3	-17.1	0	40.08	-	-	74	-33.92	-	-	0-360	200	V
6	17.074	18.98	PK	41.1	-15.3	0	44.78	-	-	-	-	68.2	-23.42	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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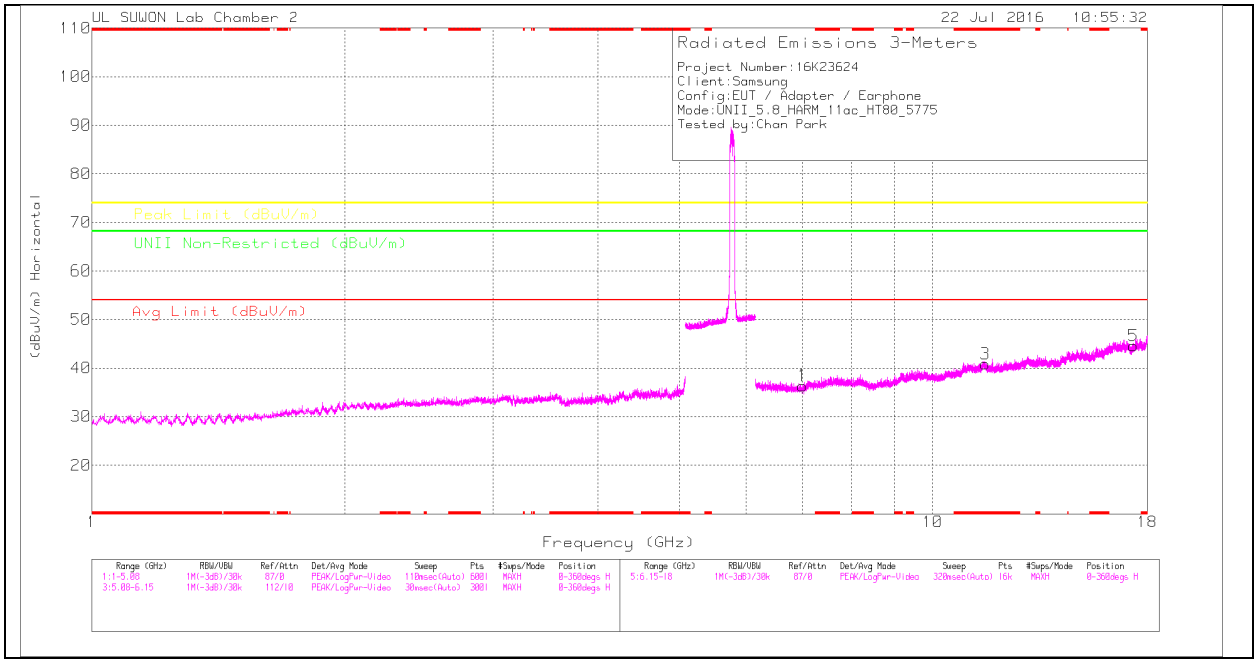
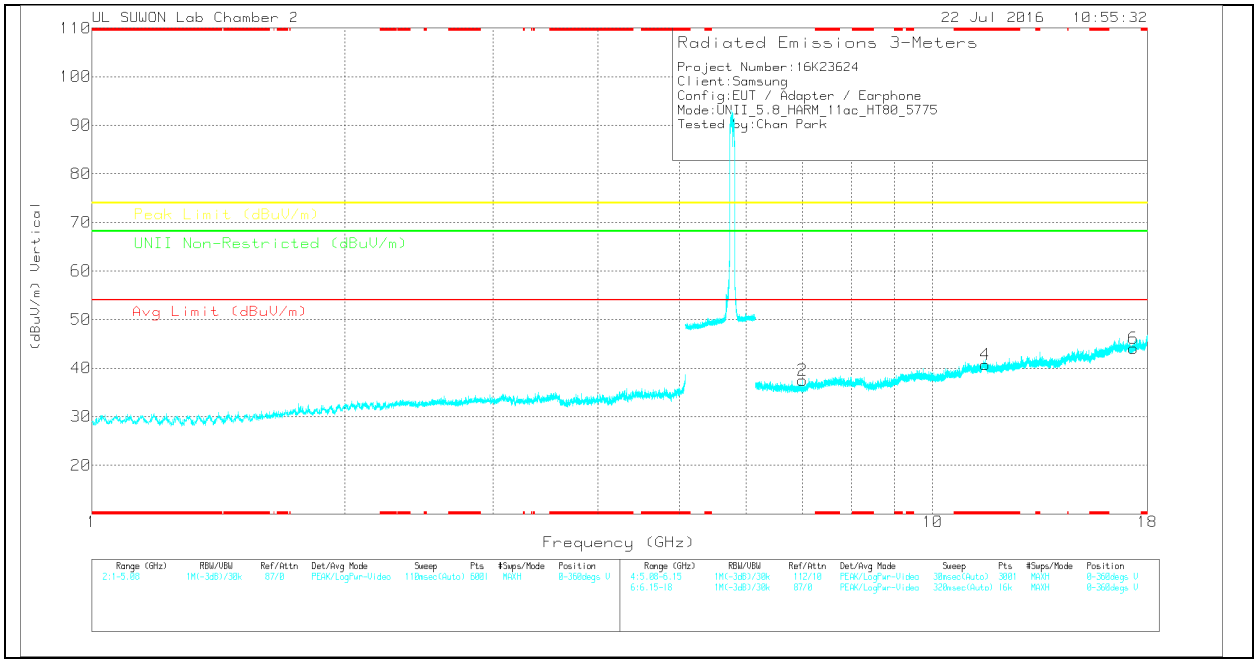
MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

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MID CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_5	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.999	22.68	PK	35.5	-21.8	0	36.38	-	-	-	-	68.2	-31.82	0-360	200	H
3	* 11.552	19.96	PK	38.4	-17.5	0	40.86	-	-	74	-33.14	-	-	0-360	200	H
5	17.323	18.48	PK	41.2	-15.1	0	44.58	-	-	-	-	68.2	-23.62	0-360	100	H
2	7.002	23.84	PK	35.5	-21.8	0	37.54	-	-	-	-	68.2	-30.66	0-360	100	V
4	* 11.552	19.79	PK	38.4	-17.5	0	40.69	-	-	74	-33.31	-	-	0-360	100	V
6	17.322	17.93	PK	41.2	-15.1	0	44.03	-	-	-	-	68.2	-24.17	0-360	200	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

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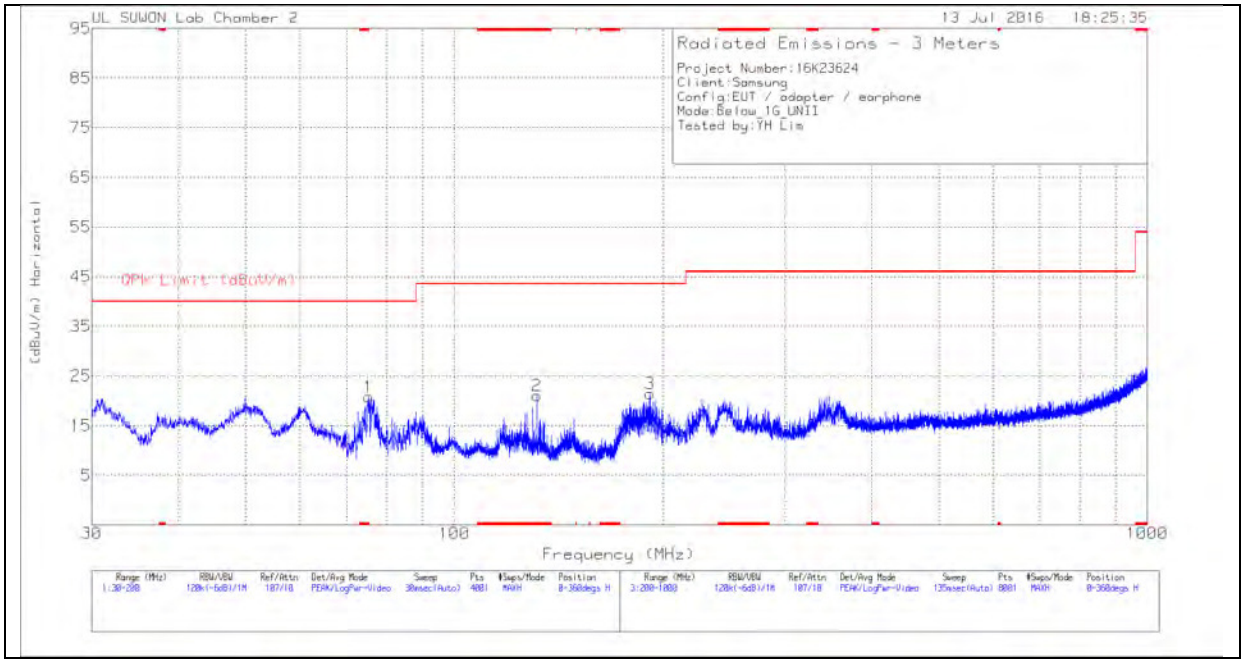
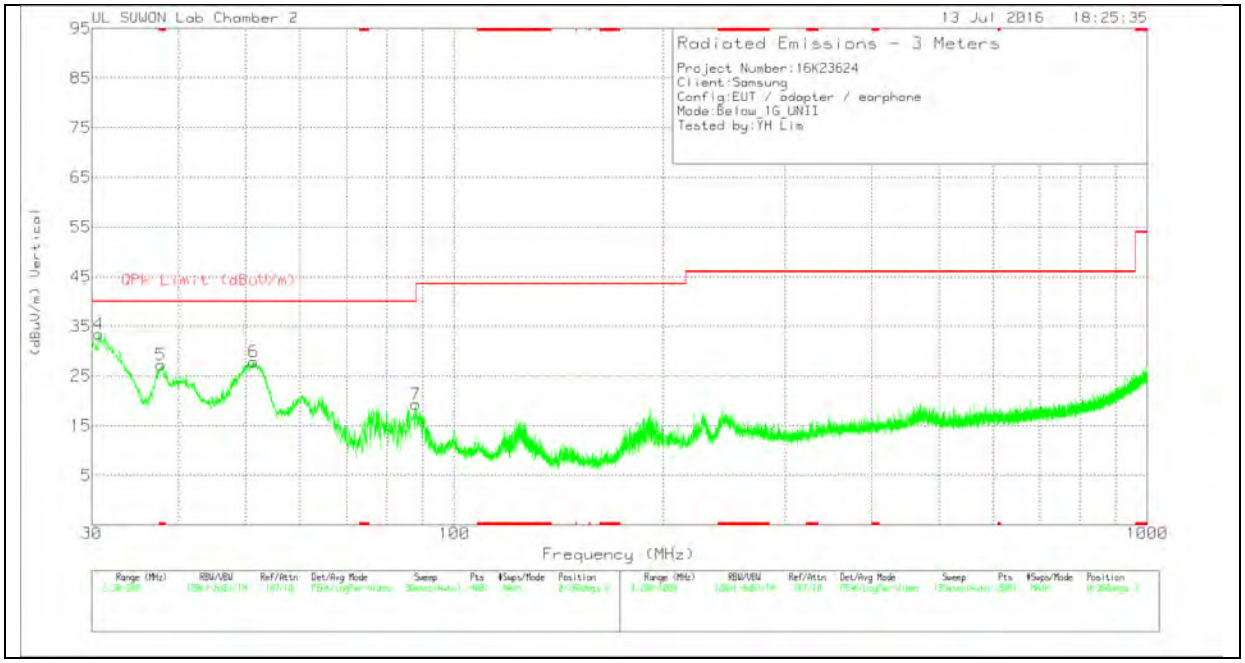
12. WORST-CASE BELOW 1 GHz (in the 5.3 GHz Band)

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



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



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Below 1G Data

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163-749	Below_1G	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 75.1775	43.06	Pk	8.3	-30.6	20.76	40	-19.24	0-360	300	H
2	* 131.66	42.79	Pk	8.8	-30.5	21.09	43.52	-22.43	0-360	200	H
3	191.415	41.16	Pk	10.6	-30.3	21.46	43.52	-22.06	0-360	100	H
4	30.68	53.93	Pk	10.3	-30.8	33.43	40	-6.57	0-360	100	V
5	* 37.735	46.15	Pk	11.9	-30.8	27.25	40	-12.75	0-360	100	V
6	51.42	44.64	Pk	13.9	-30.7	27.84	40	-12.16	0-360	100	V
7	87.97	40.85	Pk	9.1	-30.6	19.35	40	-20.65	0-360	100	V

* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

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13. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
IC RSS-GEN Clause 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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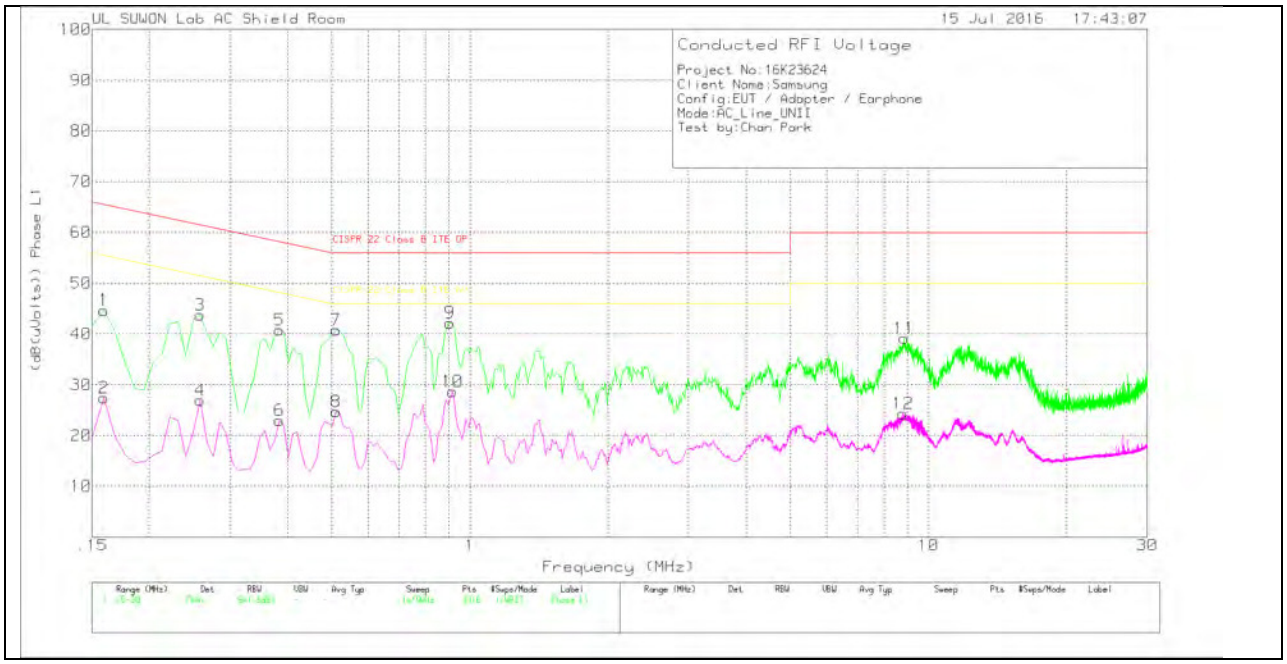
6 WORST EMISSIONS

LINE 1 PLOT



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LINE 1 RESULTS

Trace Markers

Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_with ex-cord_L1	CE Shield Room	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.159	34.68	Pk	10	0	44.68	65.52	-20.84	-	-
2	.159	17.4	Av	10	0	27.4	-	-	55.52	-28.12
3	.258	33.91	Pk	9.8	0	43.71	61.5	-17.79	-	-
4	.258	17.08	Av	9.8	0	26.88	-	-	51.5	-24.62
5	.384	30.66	Pk	10.1	0	40.76	58.19	-17.43	-	-
6	.384	12.92	Av	10.1	0	23.02	-	-	48.19	-25.17
7	.51	30.6	Pk	10.2	0	40.8	56	-15.2	-	-
8	.51	14.55	Av	10.2	0	24.75	-	-	46	-21.25
9	.906	32.31	Pk	9.9	0	42.21	56	-13.79	-	-
10	.915	18.74	Av	9.9	0	28.64	-	-	46	-17.36
11	8.853	29.07	Pk	10	.1	39.17	60	-20.83	-	-
12	8.808	14.18	Av	10	.1	24.28	-	-	50	-25.72

Pk - Peak detector

Av - Average detection

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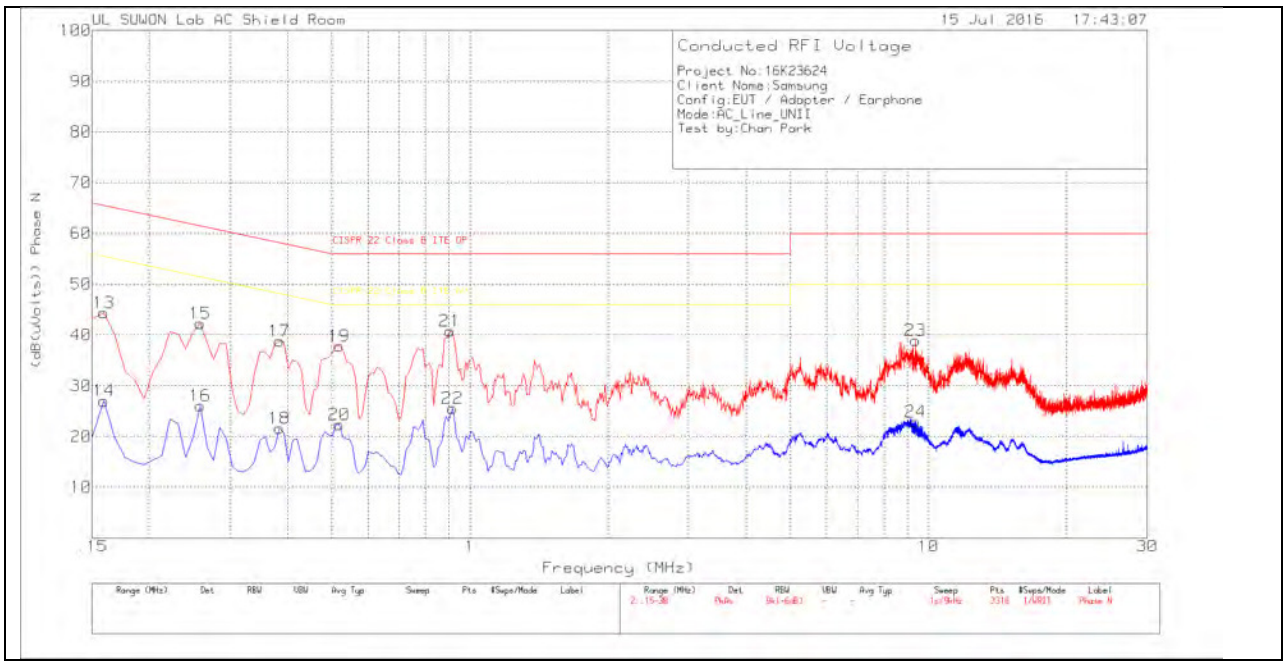
LINE 2 PLOT



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LINE 2 RESULTS

Trace Markers

Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_with ex-cord_N	CE Shield Room	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
13	.159	34.41	Pk	10	0	44.41	65.52	-21.11	-	-
14	.159	17	Av	10	0	27	-	-	55.52	-28.52
15	.258	32.55	Pk	9.7	0	42.25	61.5	-19.25	-	-
16	.258	16.32	Av	9.7	0	26.02	-	-	51.5	-25.48
17	.384	28.71	Pk	10.1	0	38.81	58.19	-19.38	-	-
18	.384	11.56	Av	10.1	0	21.66	-	-	48.19	-26.53
19	.519	27.74	Pk	10.1	0	37.84	56	-18.16	-	-
20	.519	12.28	Av	10.1	0	22.38	-	-	46	-23.62
21	.906	30.87	Pk	9.9	0	40.77	56	-15.23	-	-
22	.915	15.68	Av	9.9	0	25.58	-	-	46	-20.42
23	9.366	28.73	Pk	10	.2	38.93	60	-21.07	-	-
24	9.375	12.71	Av	10	.2	22.91	-	-	50	-27.09

Pk - Peak detector

Av - Average detection

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14. DYNAMIC FREQUENCY SELECTION

14.1. OVERVIEW

14.1.1. LIMITS

INDUSTRY CANADA

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

RSS-247 Issue §6.3

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 mill watt	-64 dBm
E.I.R.P. < 200 mill watt and power spectral density < 10 dBm/MHz	-62 dBm
E.I.R.P. < 200 mill watt 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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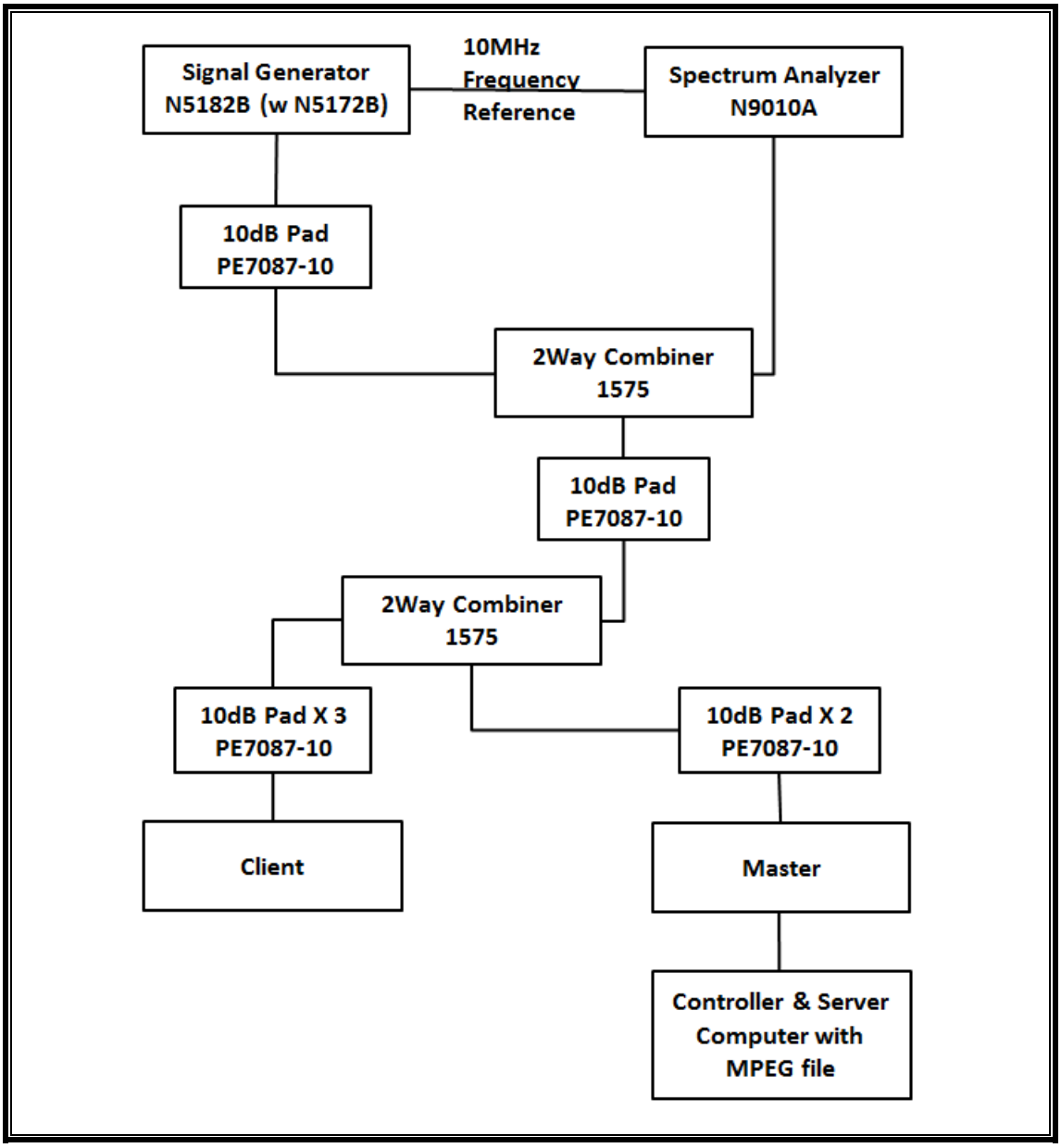
14.1.1. TEST AND MEASUREMENT SYSTEM

CONDUCTED METHOD SYSTEM BLOCK DIAGRAM



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SYSTEM OVERVIEW

The short pulse and long pulse signal generating system utilizes the Keysite Signal Studio for Pulse Building as N5172B. 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 1, 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**	**S/N**	**Cal Due**
Spectrum Analyzer, 7 GHz	Agilent / HP	N9010A	MY54200580	08-17-17
Vector Signal Generator, 6GHz	Agilent / HP	N5182B	MY53051241	08-16-17

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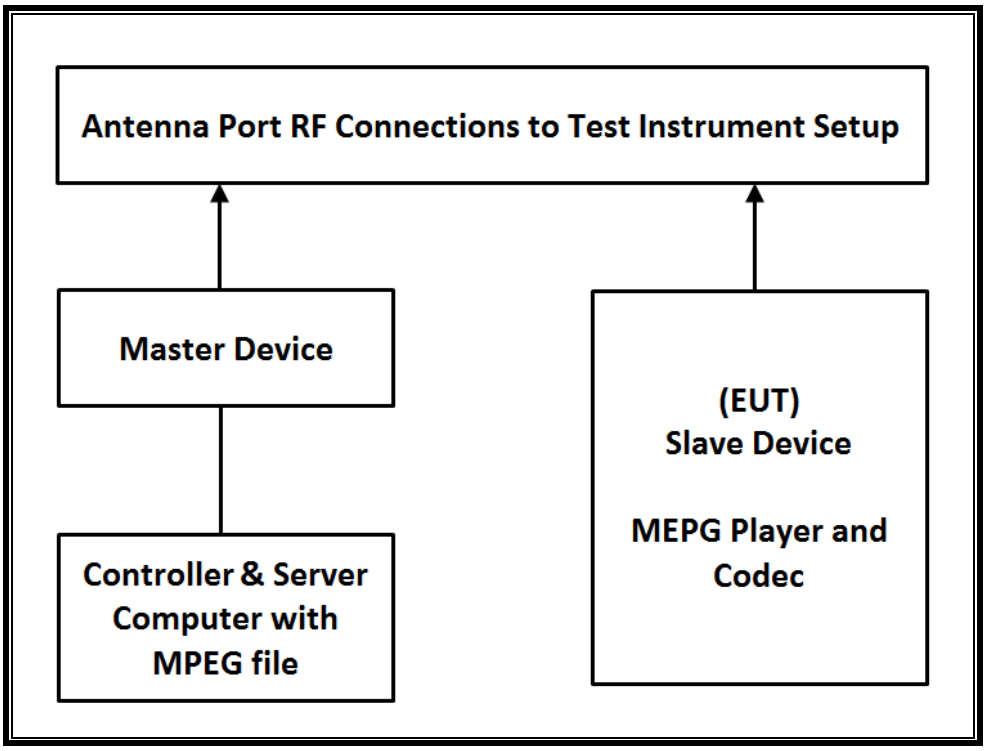
14.1.2. SETUP OF EUT

CONDUCTED 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**
Wireless Access Point	Cisco	AIR-CAP3702E-A-K9	FTX182276QX	LDK102087
Notebook PC (Controller/Server)	HP	HP EliteDesk 800 G1 TWR	CZC4125J25	DoC

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14.1.3. DESCRIPTION OF EUT

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

The EUT is a Slave Device without Radar Detection.

The highest power level within these bands is 20.07 dBm in the 5250-5350 MHz band and 20.01 dBm in the 5470-5725 MHz band.

The antenna assembly utilized two antenna with the EUT one is -1.12 dBi, and the other is -3.57 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 conducted 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 one transmitter/receiver chain connected to an antenna to perform radiated tests.

WLAN traffic that meets or exceeds the minimum required loading was generated by transferring a data stream from the controller/server PC to the EUT using iPerf version 2.0.5 software package.

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 12.4(25d)JA1.

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Slave radio devices.

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

The Master Device is a Cisco Access Point, FCC ID: LDK102087. The minimum antenna gain for the Master Device is 6 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.

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14.2. RESULTS FOR 20 MHz BANDWIDTH

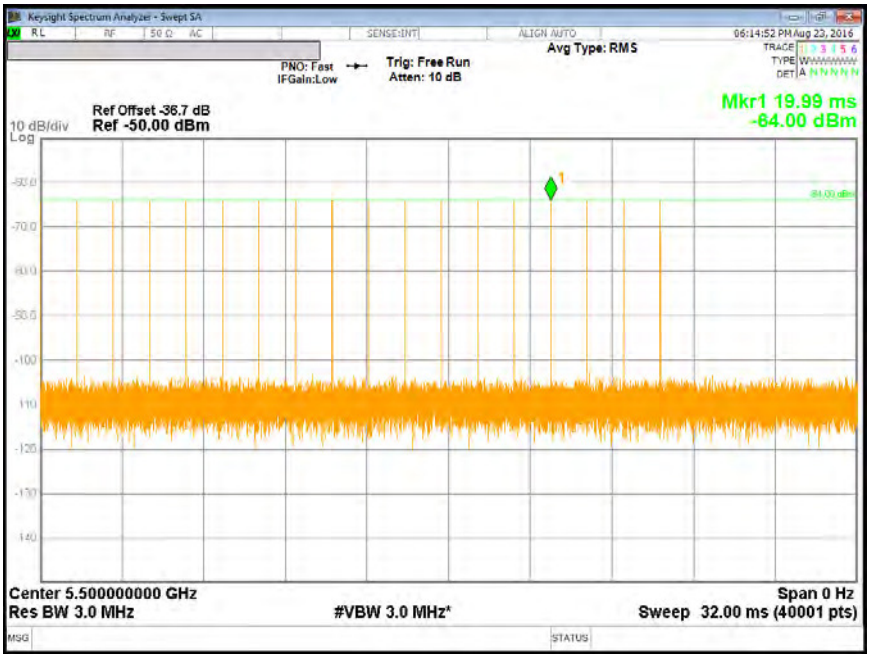
14.2.1. TEST CHANNEL

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

14.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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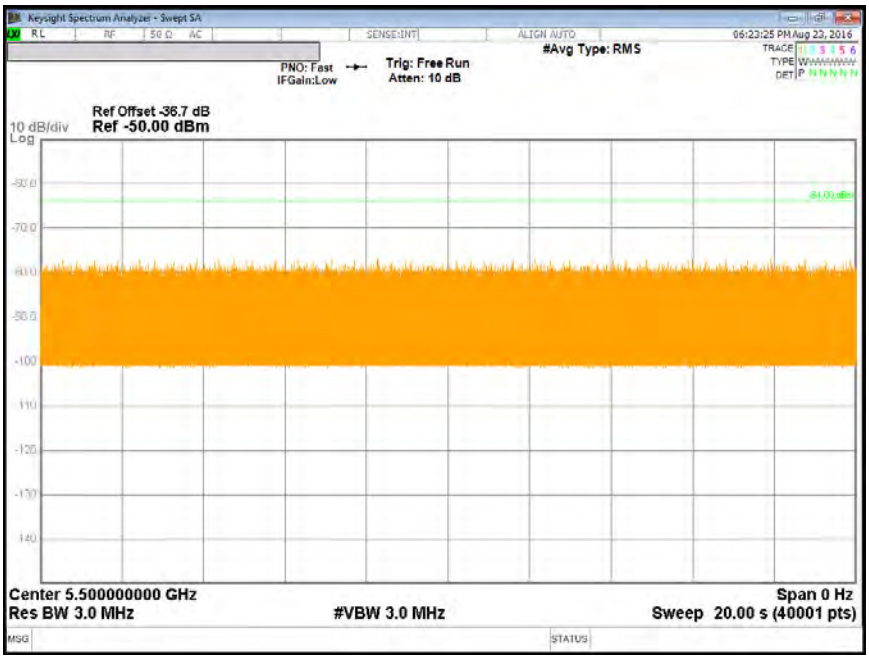
TRAFFIC

SLAVE TRAFFIC



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14.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.2.4. 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)
0.699	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
3.375	60

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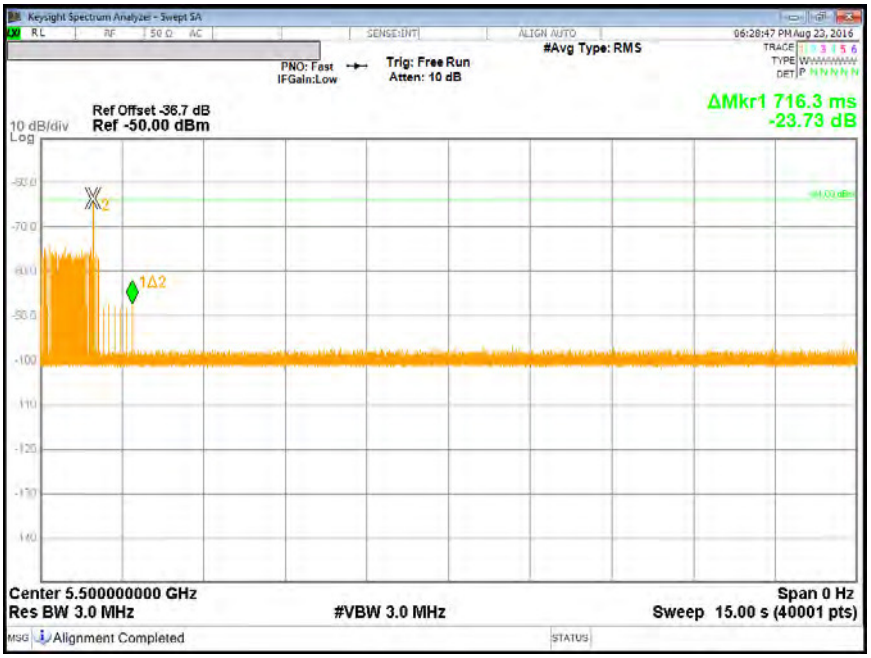
MOVE TIME & CHANNEL CLOSING TIME

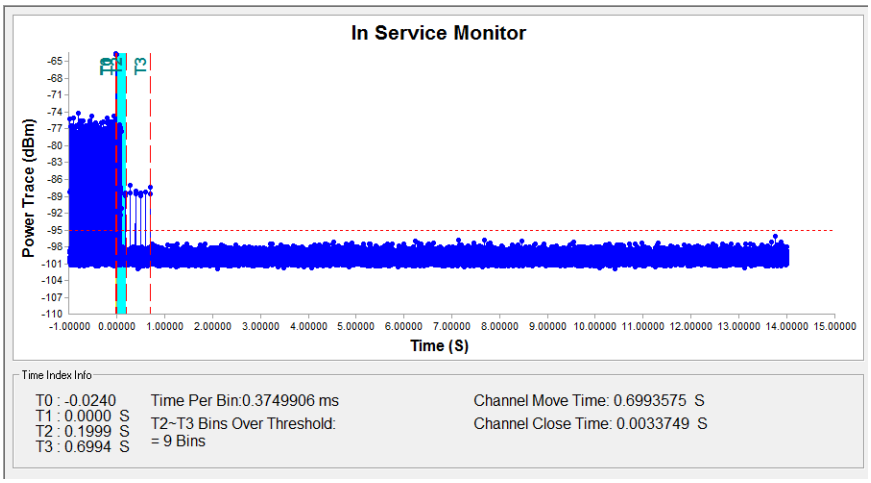
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

MOVE TIME & AGGREGATE CHANNEL CLOSING TRANSMISSION TIME



MOVE TIME & CLOSING TIME AT IN SERVICE MONITOR



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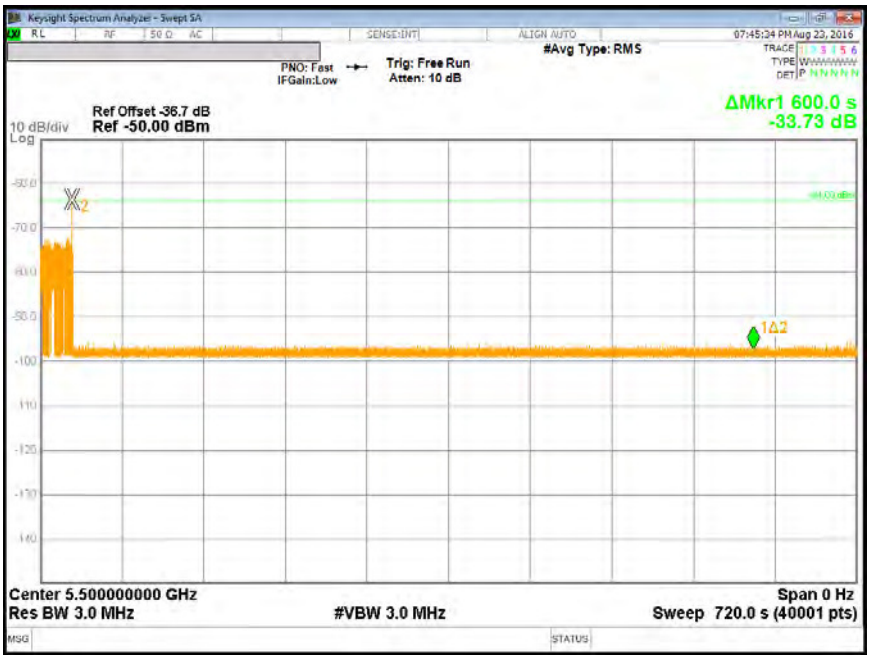
NON-OCCUPANCY PERIOD

RESULTS

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

10-MINUTE BEACON MONITORING PERIOD



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14.3. RESULTS FOR 40 MHz BANDWIDTH

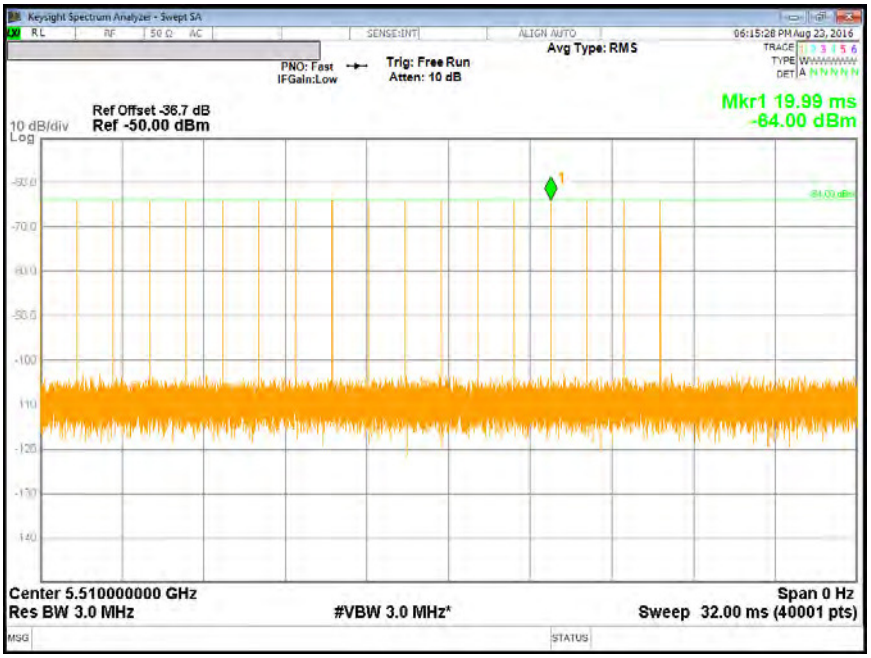
14.3.1. TEST CHANNEL

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

14.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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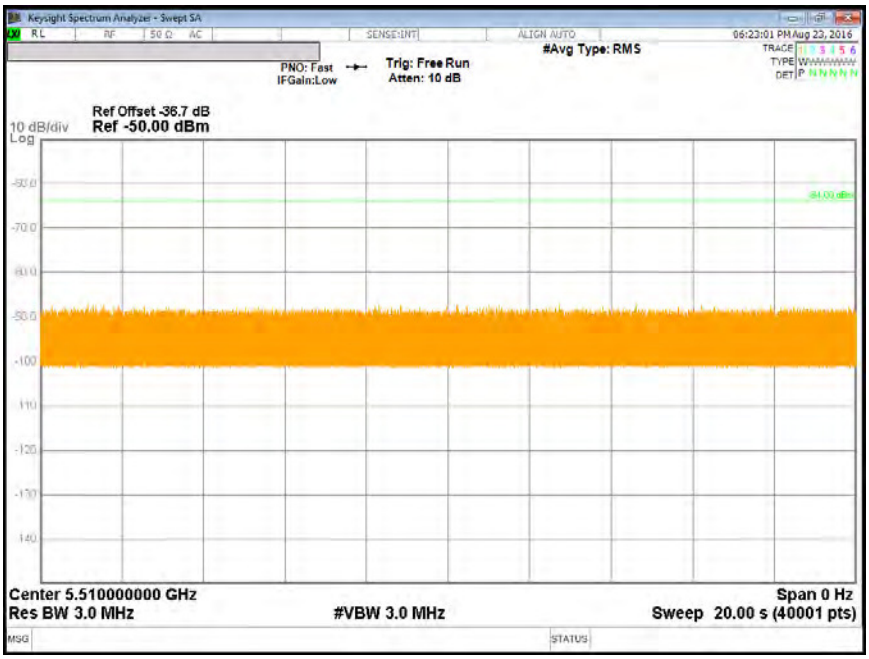
TRAFFIC

SLAVE TRAFFIC



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14.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.3.4. 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)
0.699	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
3.375	60

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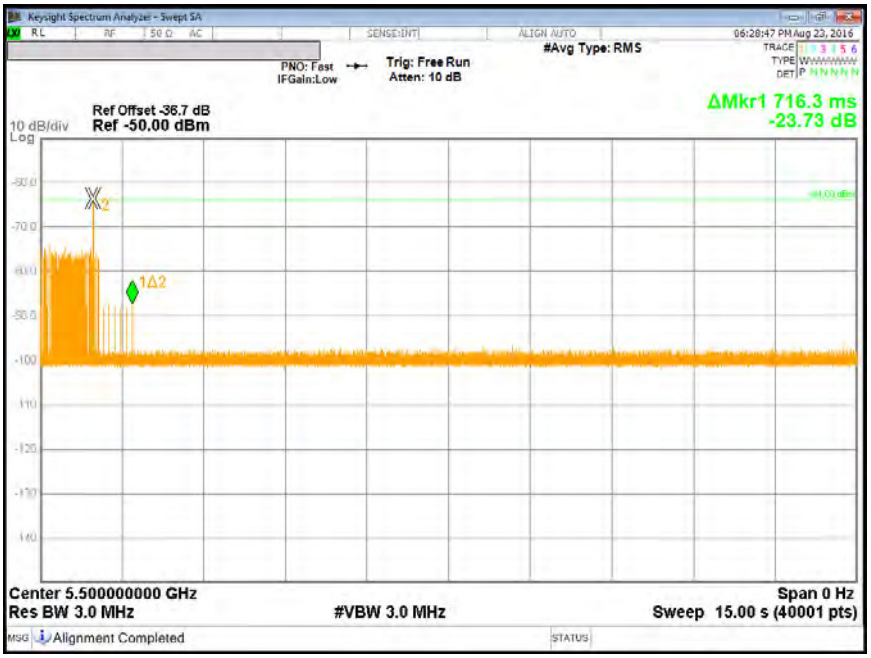
MOVE TIME & CHANNEL CLOSING TIME

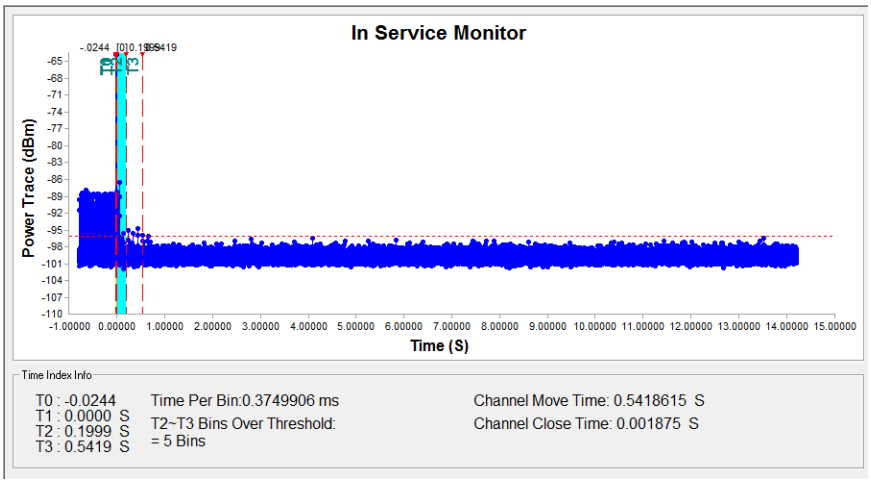
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

MOVE TIME & AGGREGATE CHANNEL CLOSING TRANSMISSION TIME



MOVE TIME & CLOSING TIME AT IN SERVICE MONITOR



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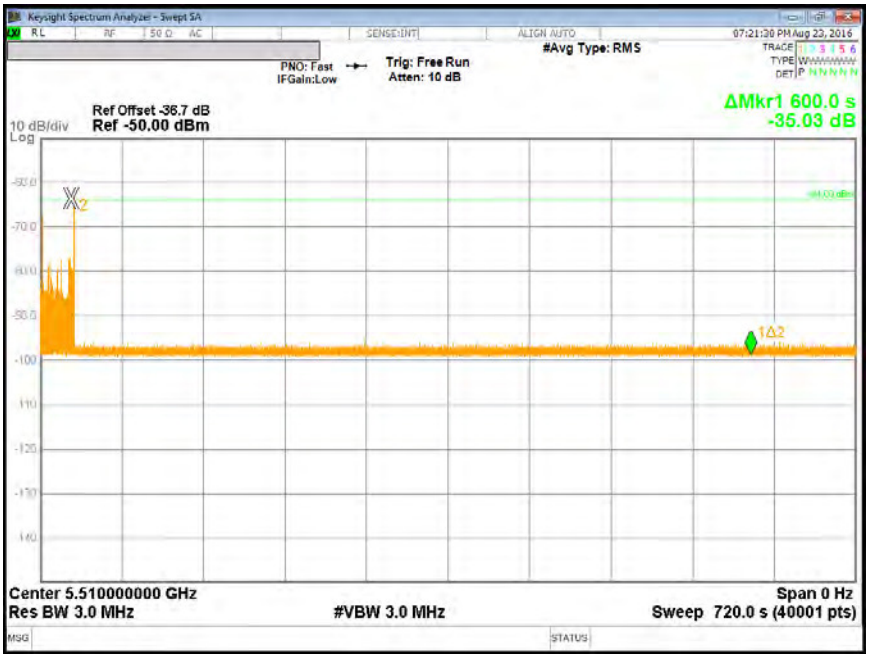
NON-OCCUPANCY PERIOD

RESULTS

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

10-MINUTE BEACON MONITORING PERIOD



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14.4. RESULTS FOR 80 MHz BANDWIDTH

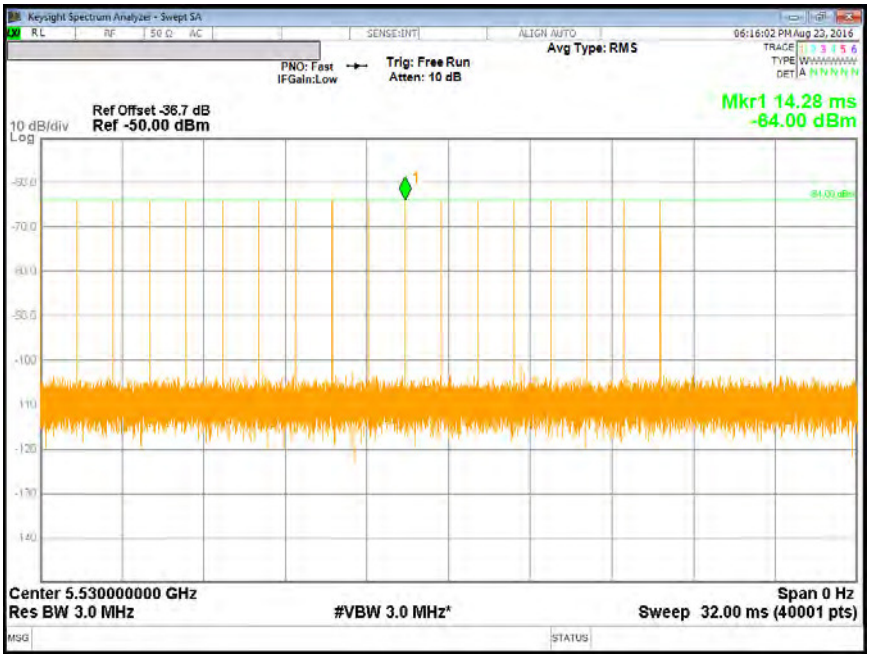
14.4.1. TEST CHANNEL

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

14.4.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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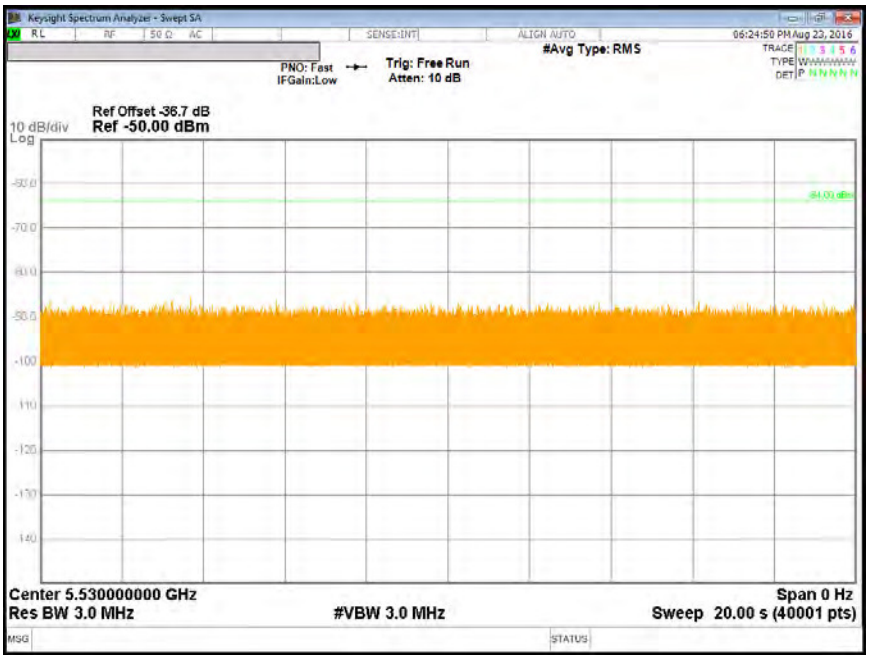
TRAFFIC

SLAVE TRAFFIC



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14.4.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.4.4. 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)
5.631	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
0.375	60

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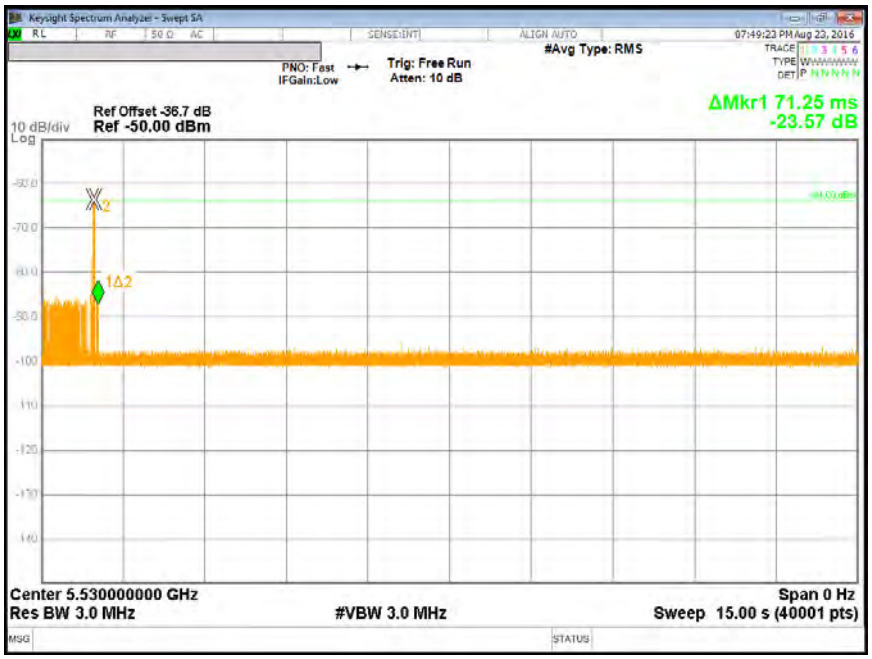
MOVE TIME & CHANNEL CLOSING TIME

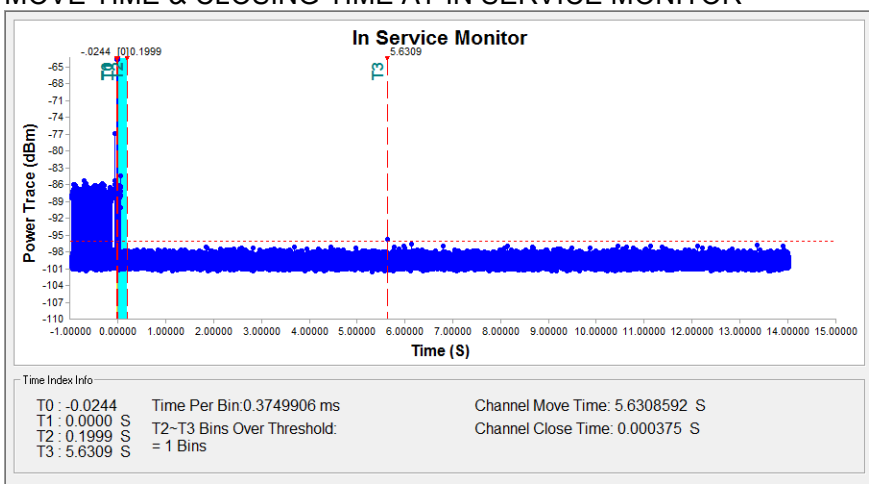
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

MOVE TIME & AGGREGATE CHANNEL CLOSING TRANSMISSION TIME



MOVE TIME & CLOSING TIME AT IN SERVICE MONITOR



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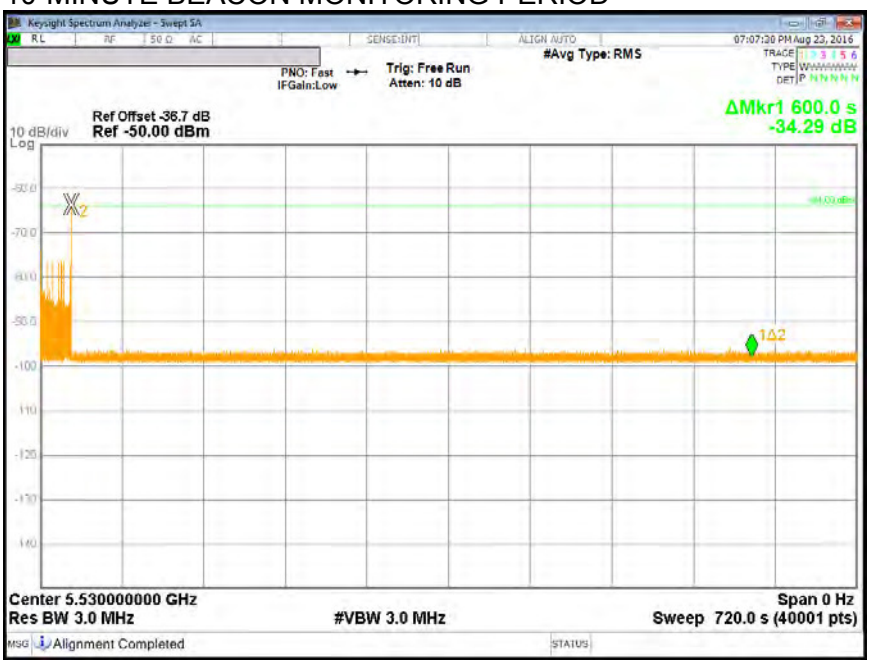
NON-OCCUPANCY PERIOD

RESULTS

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

10-MINUTE BEACON MONITORING PERIOD



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