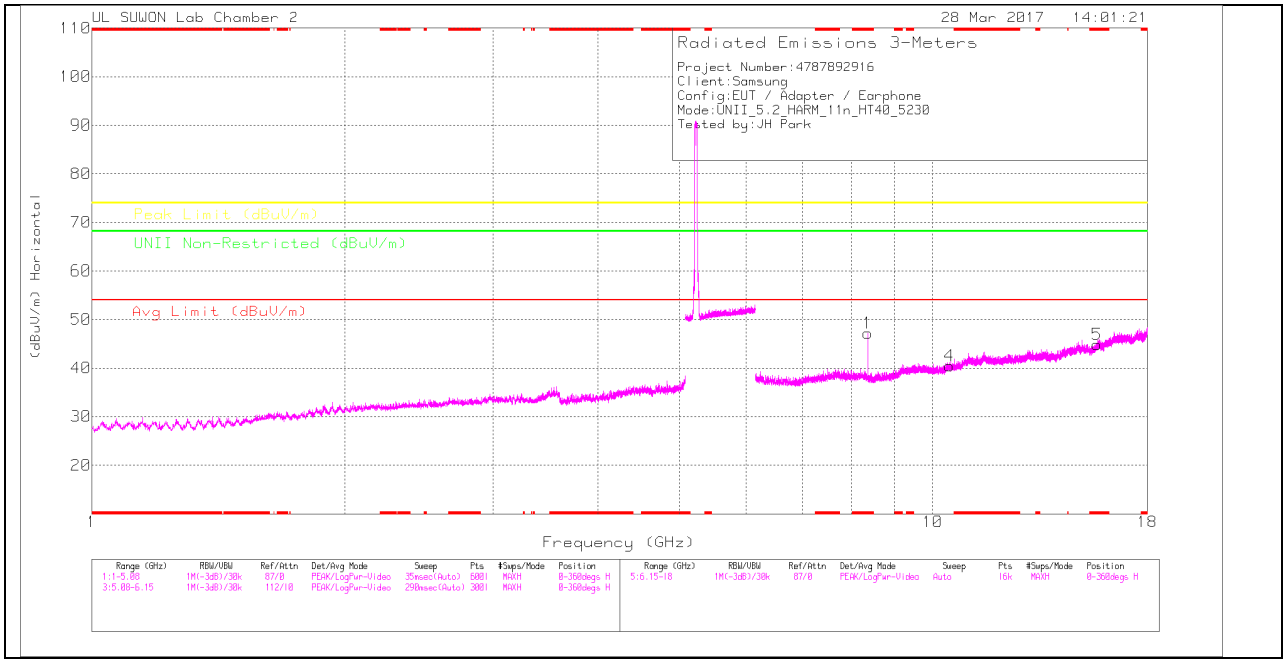
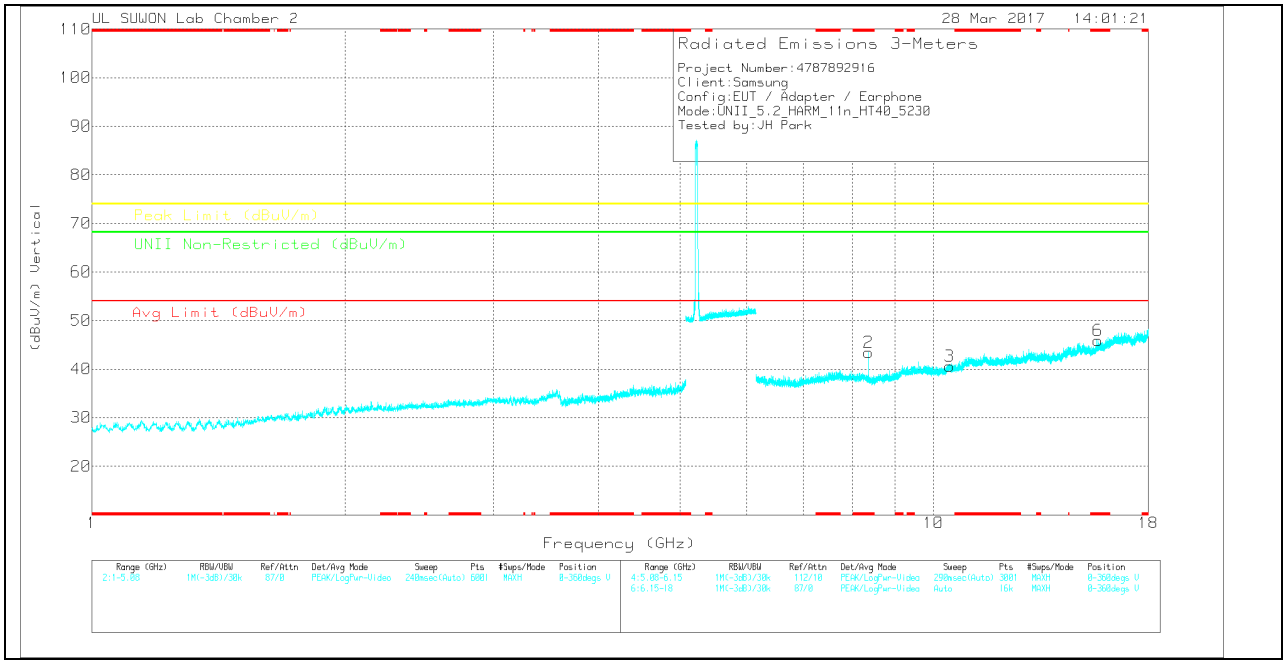
HIGH CHANNEL HORIZONTAL



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(001688724)_150619	6GHz_HP[dB]	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	* 8.368	30.53	PK	35.9	-19.3	0	47.13	-	-	74	-26.87	-	-	0-360	250	H
4	10.462	19	PK	37.7	-16.3	0	40.4	-	-	-	-	68.2	-27.8	0-360	150	H
5	* 15.692	19.53	PK	40.1	-14.8	0	44.83	-	-	74	-29.17	-	-	0-360	250	H
2	* 8.368	26.84	PK	35.9	-19.3	0	43.44	-	-	74	-30.56	-	-	0-360	250	V
3	10.459	19.19	PK	37.7	-16.3	0	40.59	-	-	-	-	68.2	-27.61	0-360	250	V
6	* 15.693	20.57	PK	40.1	-14.8	0	45.87	-	-	74	-28.13	-	-	0-360	250	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	6GHz_HP[dB]	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
* 8.368	36.14	PK-U	35.9	-19.3	0	52.74	-	-	74	-21.26	-	-	43	218	H
* 8.368	29.39	ADR	35.9	-19.3	0	45.99	54	-8.01	-	-	-	-	43	218	H
* 8.368	33.84	PK-U	35.9	-19.3	0	50.44	-	-	74	-23.56	-	-	325	143	V
* 8.368	24.73	ADR	35.9	-19.3	0	41.33	54	-12.67	-	-	-	-	325	143	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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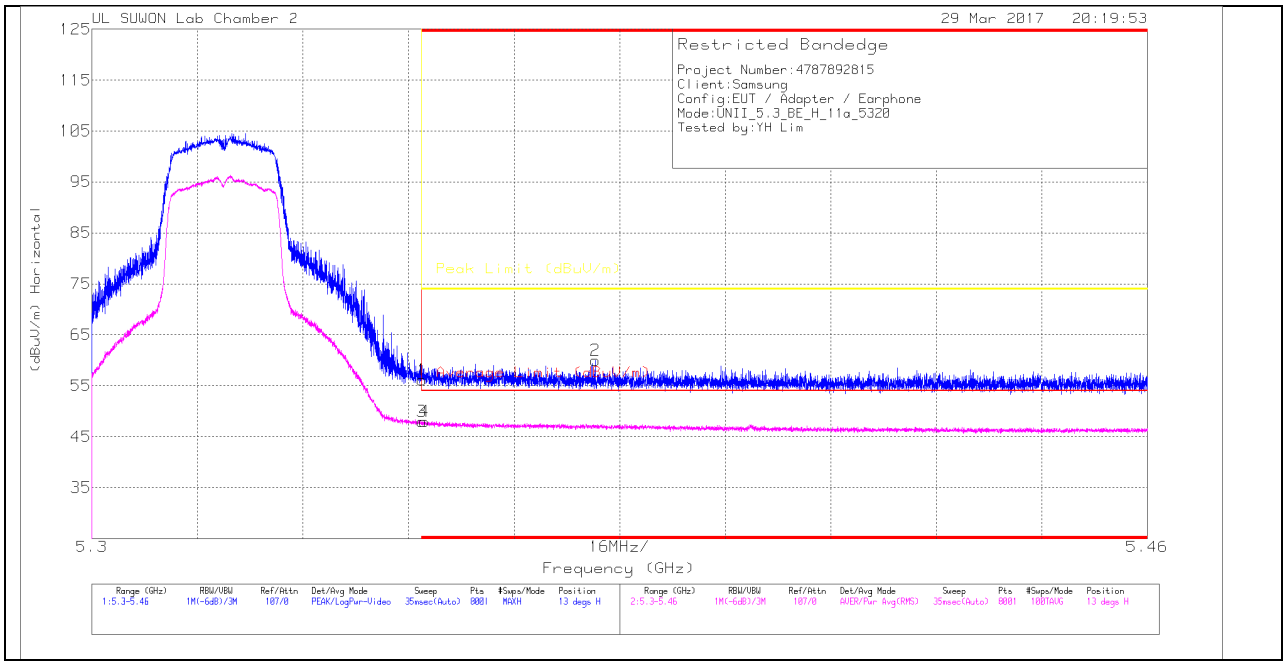
10.2. 5.3 GHz

10.2.1. TX ABOVE 1 GHz 802.11a MODE IN THE 5.3 GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	36.97	Pk	34.4	-15.2	0	56.17	-	-	74	-17.83	13	128	H
2	* 5.376	40.75	Pk	34.4	-15.2	0	59.95	-	-	74	-14.05	13	128	H
3	* 5.35	28.42	RMS	34.4	-15.2	.32	47.94	54	-6.06	-	-	13	128	H
4	* 5.35	28.49	RMS	34.4	-15.2	.32	48.01	54	-5.99	-	-	13	128	H

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

Pk - Peak detector

RMS - RMS detection

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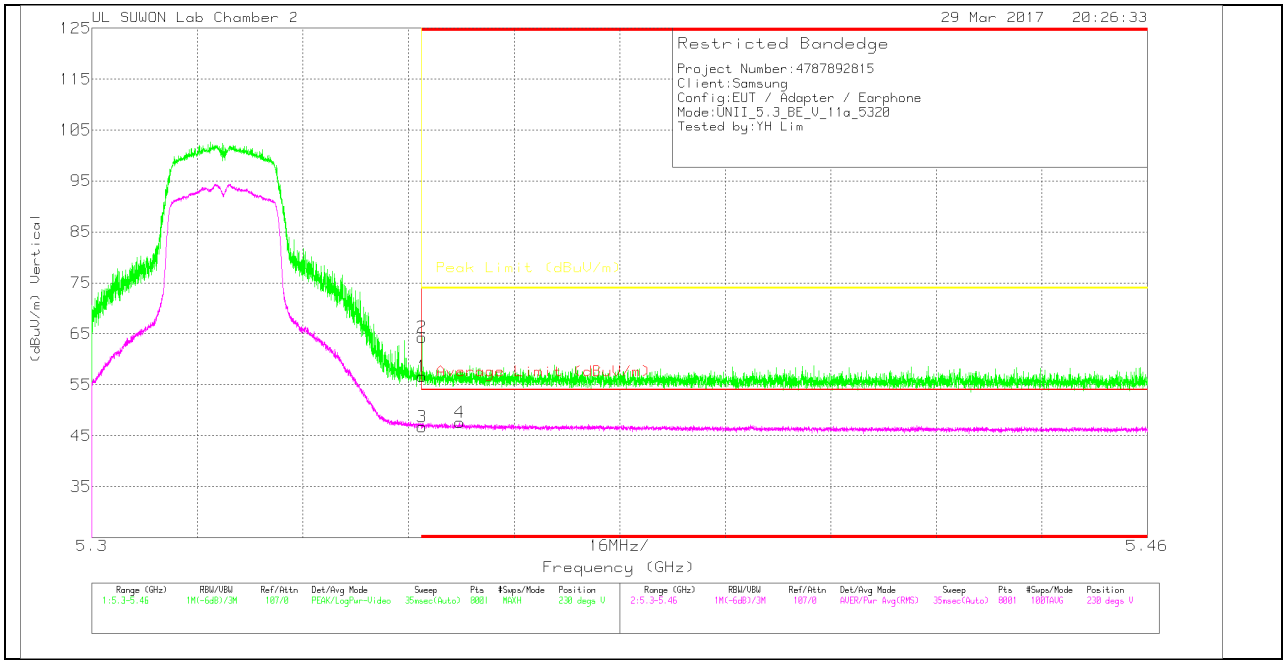
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.4	Pk	34.4	-15.2	0	56.6	-	-	74	-17.4	230	332	V
2	* 5.35	45.15	Pk	34.4	-15.2	0	64.35	-	-	74	-9.65	230	332	V
3	* 5.35	27.21	RMS	34.4	-15.2	.32	46.73	54	-7.27	-	-	230	332	V
4	* 5.356	28.06	RMS	34.4	-15.2	.32	47.58	54	-6.42	-	-	230	332	V

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

Pk - Peak detector

RMS - RMS detection

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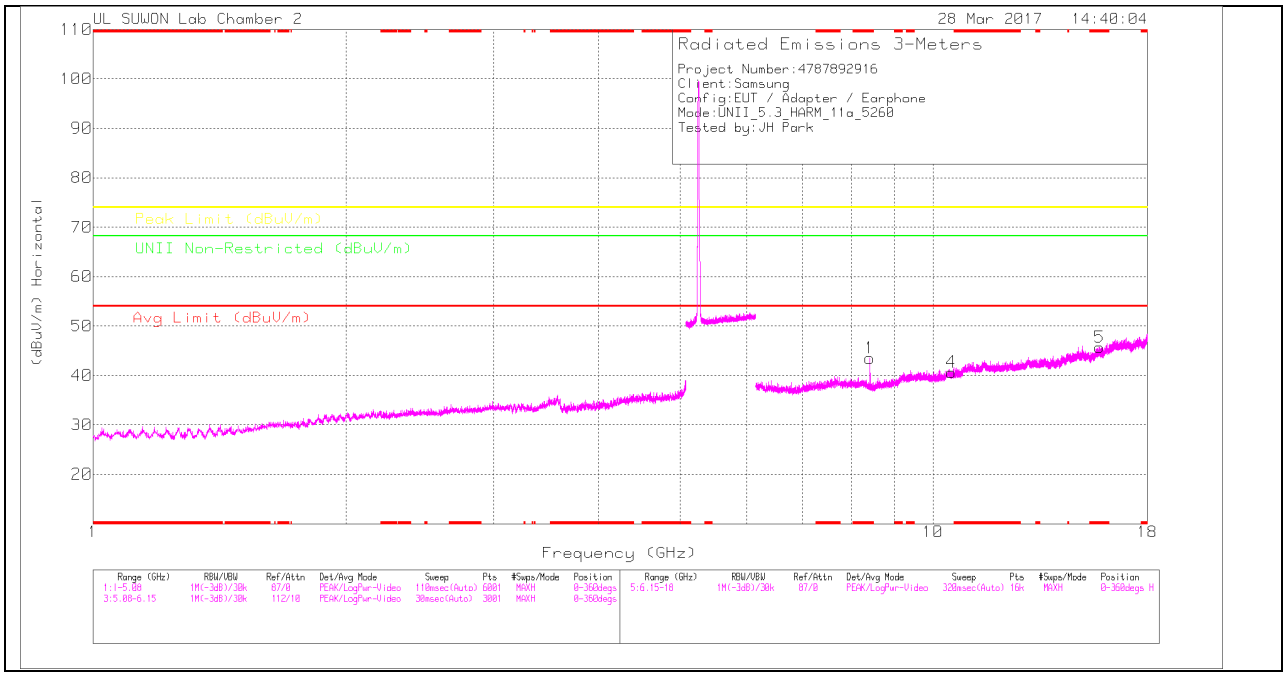
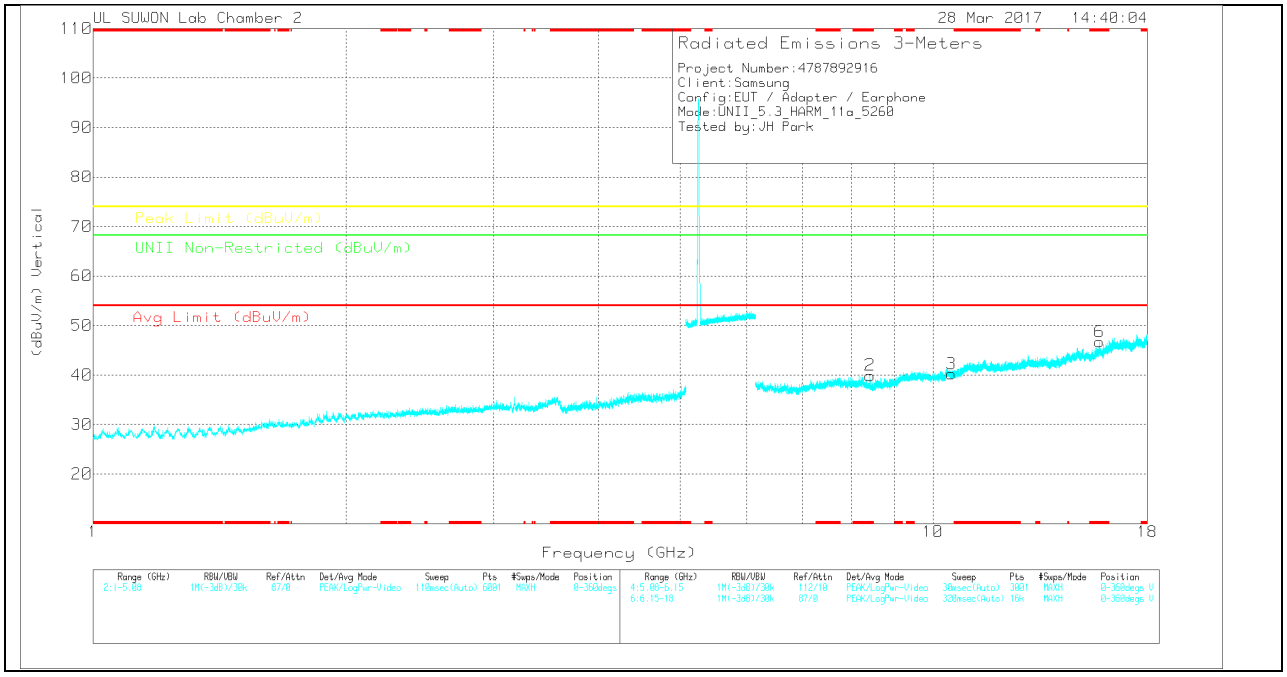
HARMONICS AND SPURIOUS EMISSIONS

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	6GHz_HP[dB]	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	* 8.415	27.09	PK	35.9	-19.5	0	43.49	-	-	74	-30.51	-	-	0-360	250	H
4	10.522	19.55	PK	37.7	-16.6	0	40.65	-	-	-	-	68.2	-27.55	0-360	150	H
5	* 15.782	20.3	PK	40.2	-14.8	0	45.7	-	-	74	-28.3	-	-	0-360	150	H
2	* 8.416	23.51	PK	35.9	-19.5	0	39.91	-	-	74	-34.09	-	-	0-360	250	V
3	10.523	19.11	PK	37.7	-16.6	0	40.21	-	-	-	-	68.2	-27.99	0-360	150	V
6	* 15.78	21.33	PK	40.2	-14.8	0	46.73	-	-	74	-27.27	-	-	0-360	150	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	6GHz_HP[dB]	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
* 8.416	34.6	PK-U	35.9	-19.5	0	51	-	-	74	-23	-	-	36	127	H
* 8.416	25.93	ADR	35.9	-19.5	0	42.33	54	-11.67	-	-	-	-	36	127	H
* 8.416	32.94	PK-U	35.9	-19.5	0	49.34	-	-	74	-24.66	-	-	310	134	V
* 8.416	22.34	ADR	35.9	-19.5	0	38.74	54	-15.26	-	-	-	-	310	134	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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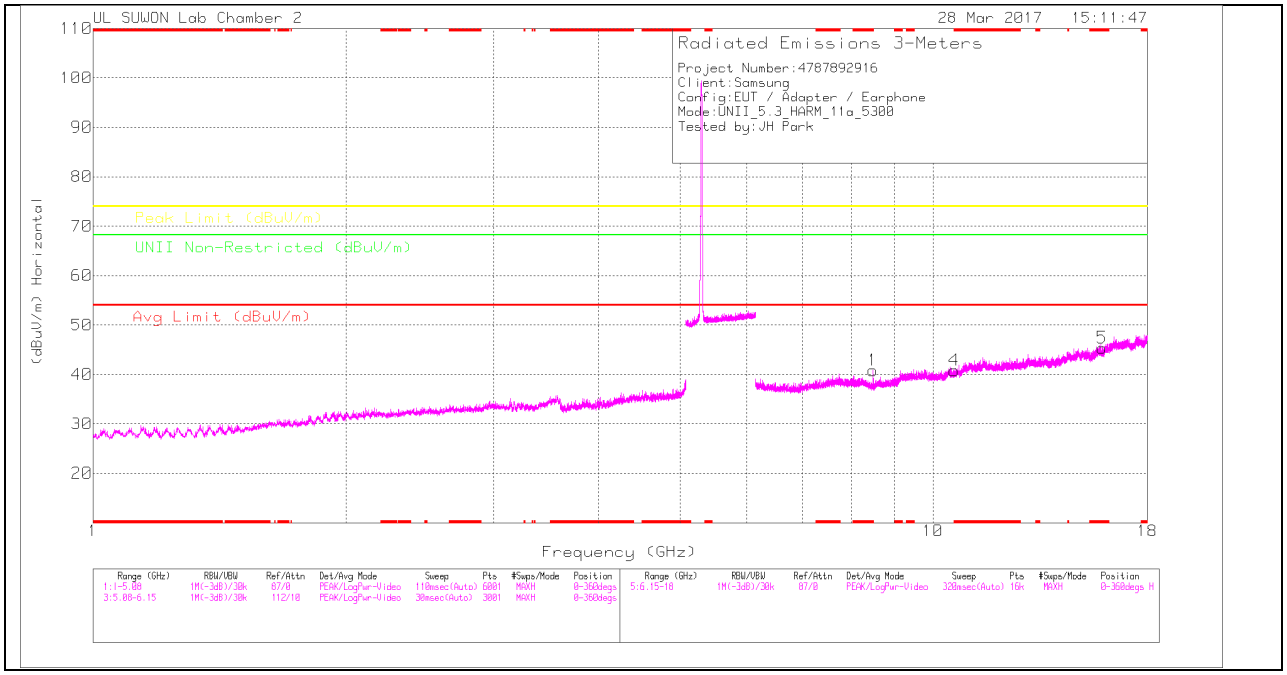
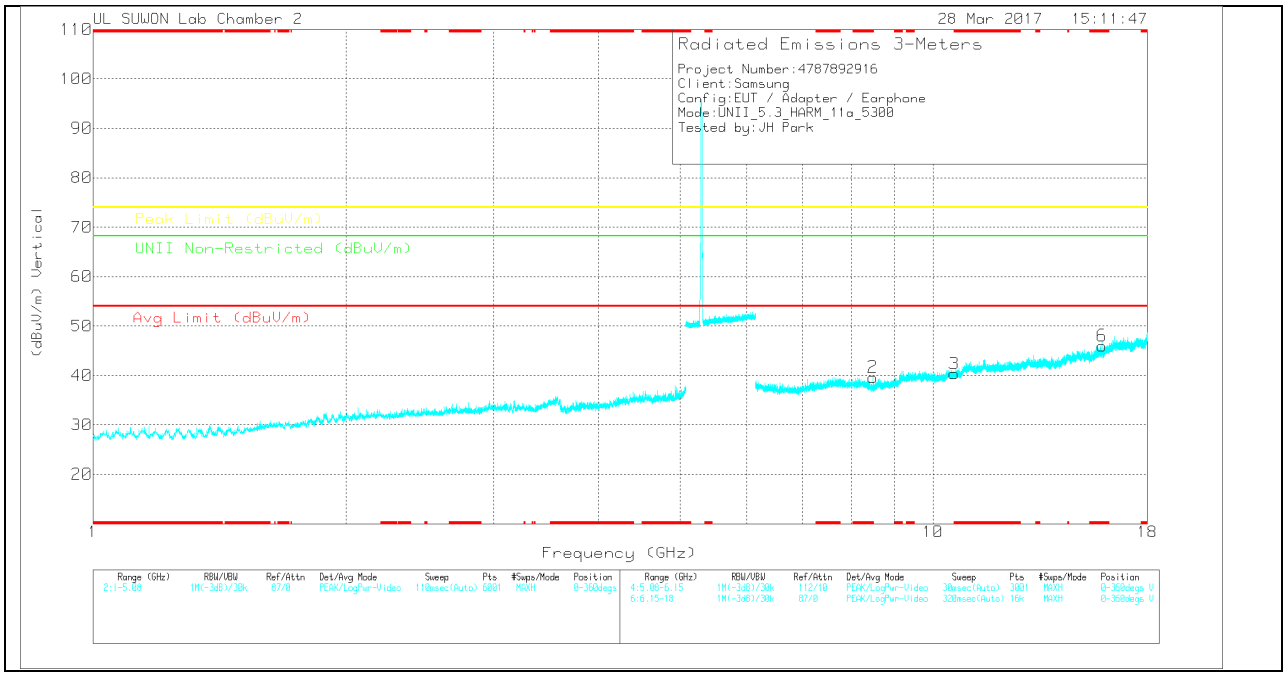
MID CHANNEL HORIZONTAL



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	6GHz_HP[dB]	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	* 8.48	24.62	PK	35.9	-19.7	0	40.82	-	-	74	-33.18	-	-	0-360	250	H
4	* 10.602	19.61	PK	37.8	-16.6	0	40.81	-	-	74	-33.19	-	-	0-360	250	H
5	* 15.906	19.66	PK	40.4	-14.7	0	45.36	-	-	74	-28.64	-	-	0-360	150	H
2	* 8.479	23.45	PK	35.9	-19.7	0	39.65	-	-	74	-34.35	-	-	0-360	250	V
3	* 10.601	19.16	PK	37.8	-16.6	0	40.36	-	-	74	-33.64	-	-	0-360	150	V
6	* 15.906	20.29	PK	40.4	-14.7	0	45.99	-	-	74	-28.01	-	-	0-360	150	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	6GHz_HP[dB]	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
* 8.48	34.13	PK-U	35.9	-19.7	0	50.33	-	-	74	-23.67	-	-	46	175	H
* 8.48	24.31	ADR	35.9	-19.7	0	40.51	54	-13.49	-	-	-	-	46	175	H
* 8.48	33.36	PK-U	35.9	-19.7	0	49.56	-	-	74	-24.44	-	-	6	160	V
* 8.48	21.62	ADR	35.9	-19.7	0	37.82	54	-16.18	-	-	-	-	6	160	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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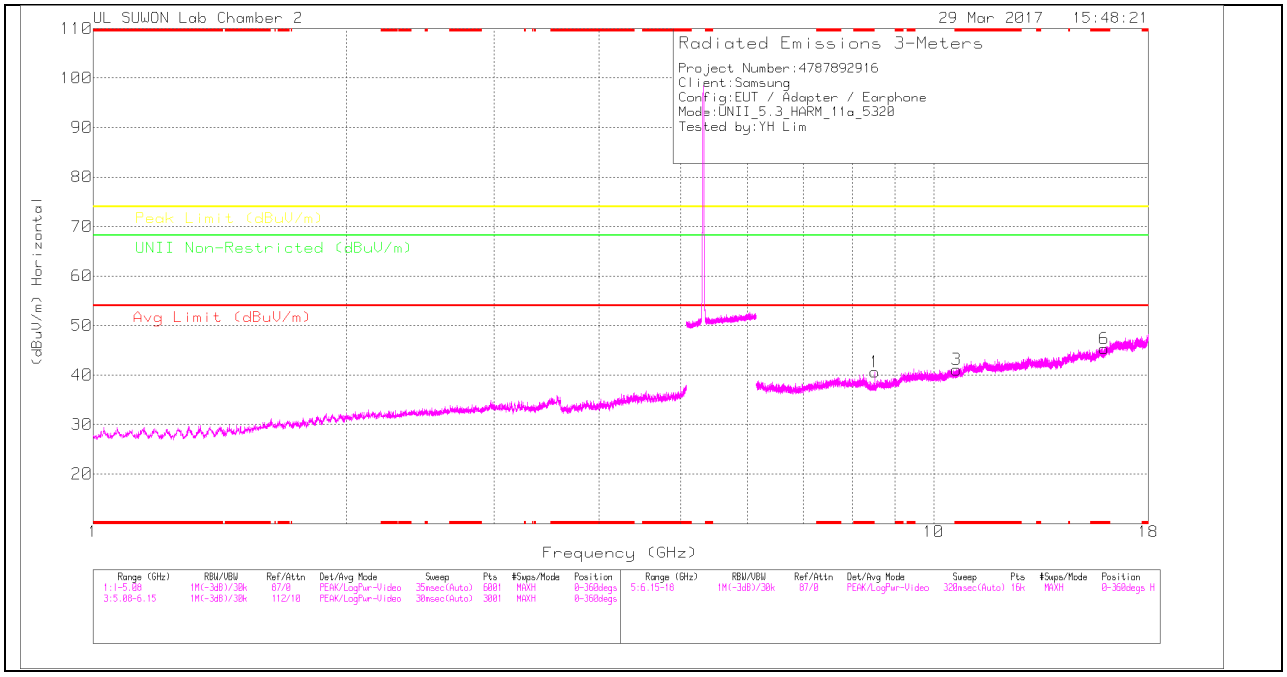
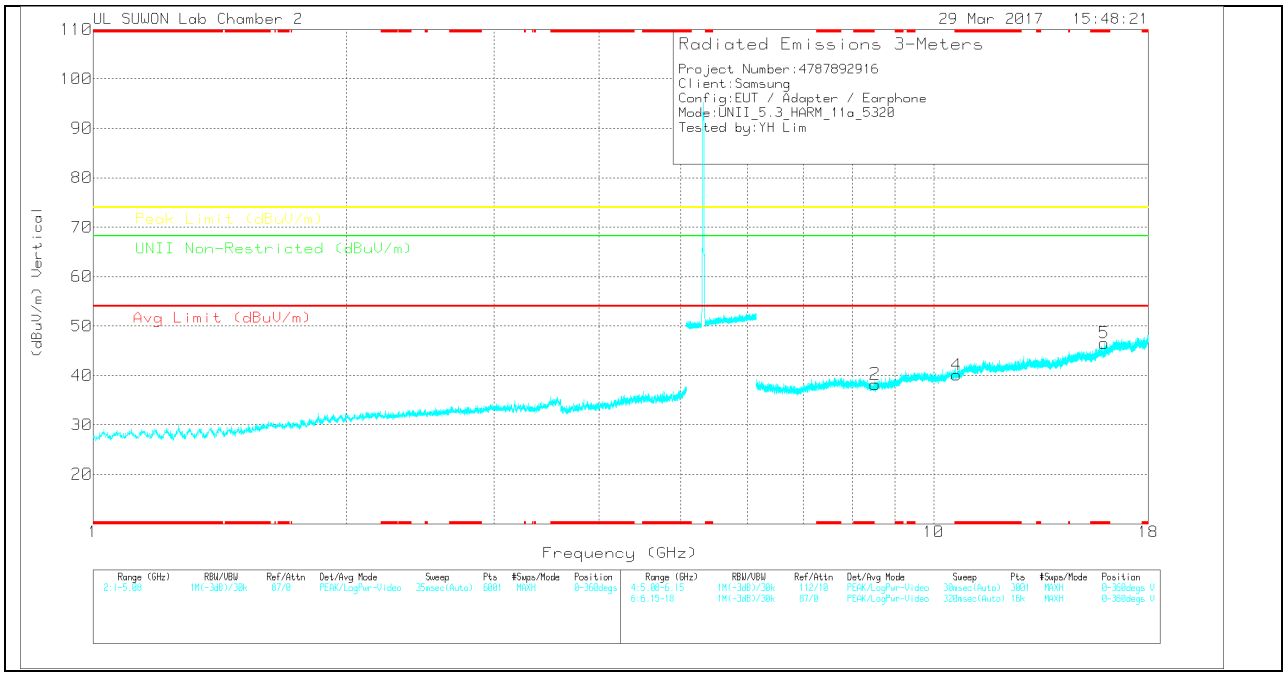
HIGH CHANNEL HORIZONTAL



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	6GHz_HP[dB]	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	8.512	24.09	PK	35.9	-19.4	0	40.59	-	-	-	-	68.2	-27.61	0-360	150	H
3	* 10.648	19.77	PK	37.8	-16.5	0	41.07	-	-	74	-32.93	-	-	0-360	150	H
6	* 15.964	19.22	PK	40.4	-14.3	0	45.32	-	-	74	-28.68	-	-	0-360	150	H
2	8.518	21.63	PK	35.9	-19.3	0	38.23	-	-	-	-	68.2	-29.97	0-360	250	V
4	* 10.64	18.89	PK	37.8	-16.6	0	40.09	-	-	74	-33.91	-	-	0-360	150	V
5	* 15.963	20.45	PK	40.4	-14.3	0	46.55	-	-	74	-27.45	-	-	0-360	250	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	6GHz_HP[dB]	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
8.512	34.32	PK-U	35.9	-19.4	0	50.82	-	-	-	-	68.2	-17.38	41	151	H
8.515	32.49	PK-U	35.9	-19.4	0	48.99	-	-	-	-	68.2	-19.21	308	146	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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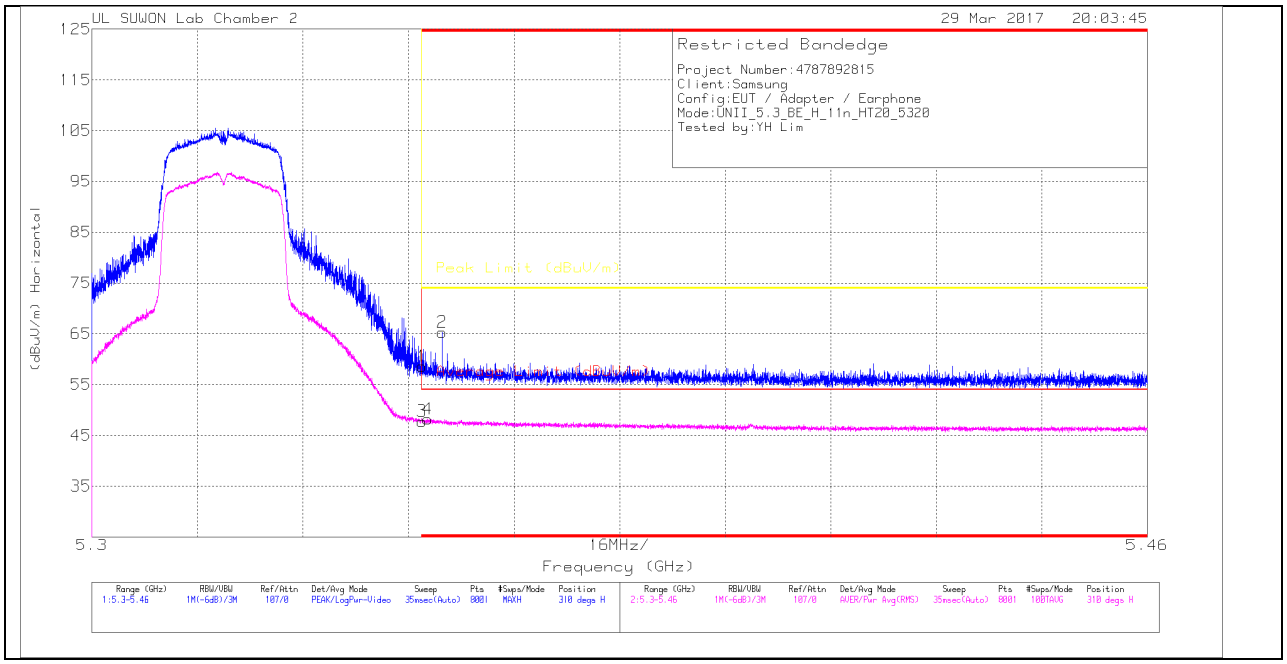
10.2.2. TX ABOVE 1GHz 802.11n HT20 MODE IN THE 5.3GHz BAND

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	39.37	Pk	34.4	-15.2	0	58.57	-	-	74	-15.43	310	122	H
2	* 5.353	46.15	Pk	34.4	-15.2	0	65.35	-	-	74	-8.65	310	122	H
3	* 5.35	28.24	RMS	34.4	-15.2	.35	47.79	54	-6.21	-	-	310	122	H
4	* 5.351	28.68	RMS	34.4	-15.2	.35	48.23	54	-5.77	-	-	310	122	H

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

Pk - Peak detector

RMS - RMS detection

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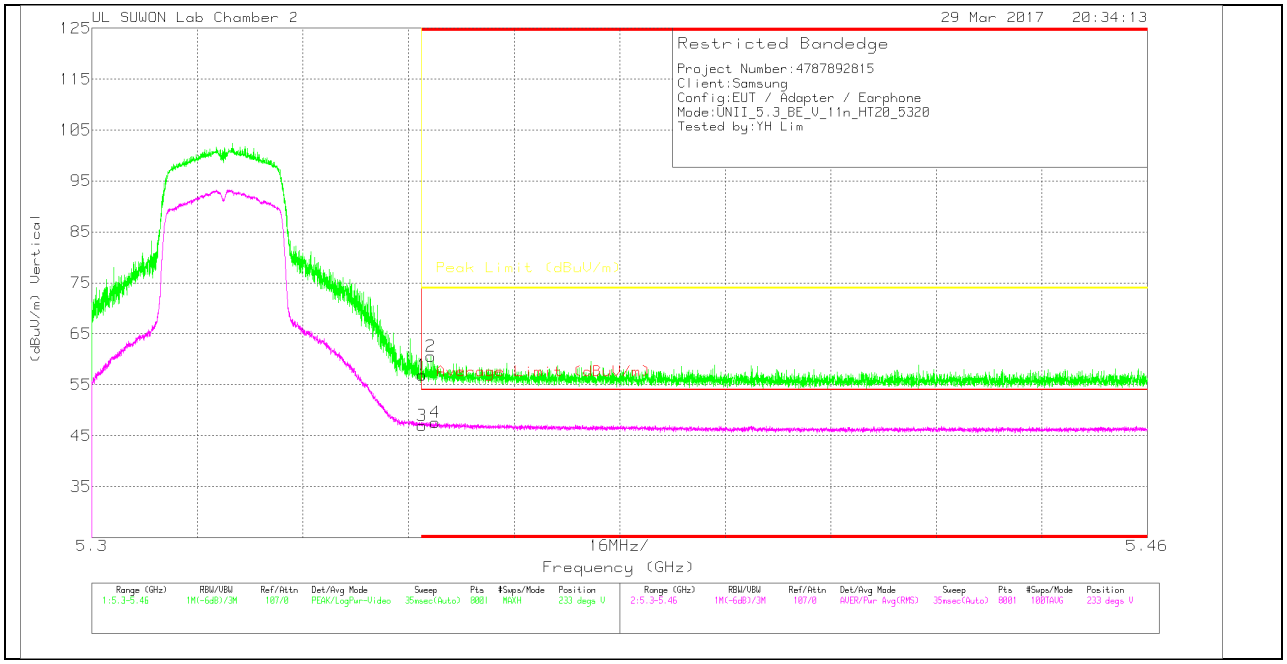
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	37.67	Pk	34.4	-15.2	0	56.87	-	-	74	-17.13	233	353	V
2	* 5.351	41.42	Pk	34.4	-15.2	0	60.62	-	-	74	-13.38	233	353	V
3	* 5.35	27.46	RMS	34.4	-15.2	.35	47.01	54	-6.99	-	-	233	353	V
4	* 5.352	28.06	RMS	34.4	-15.2	.35	47.61	54	-6.39	-	-	233	353	V

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

Pk - Peak detector

RMS - RMS detection

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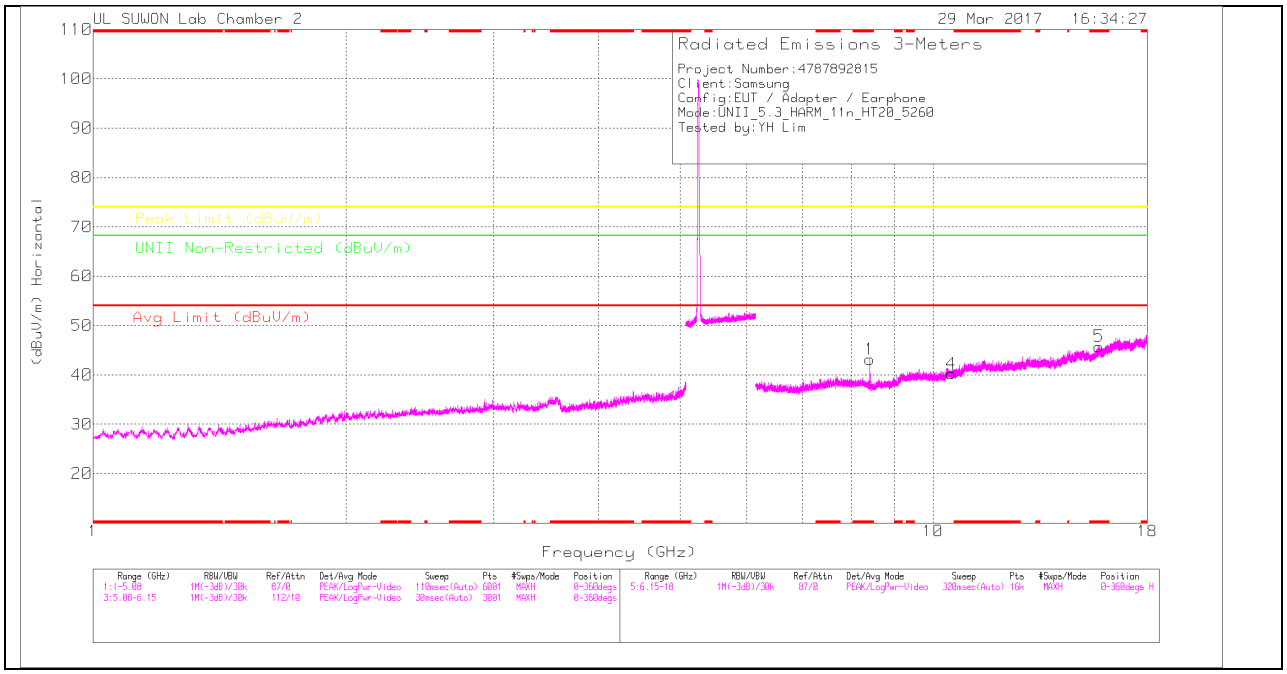
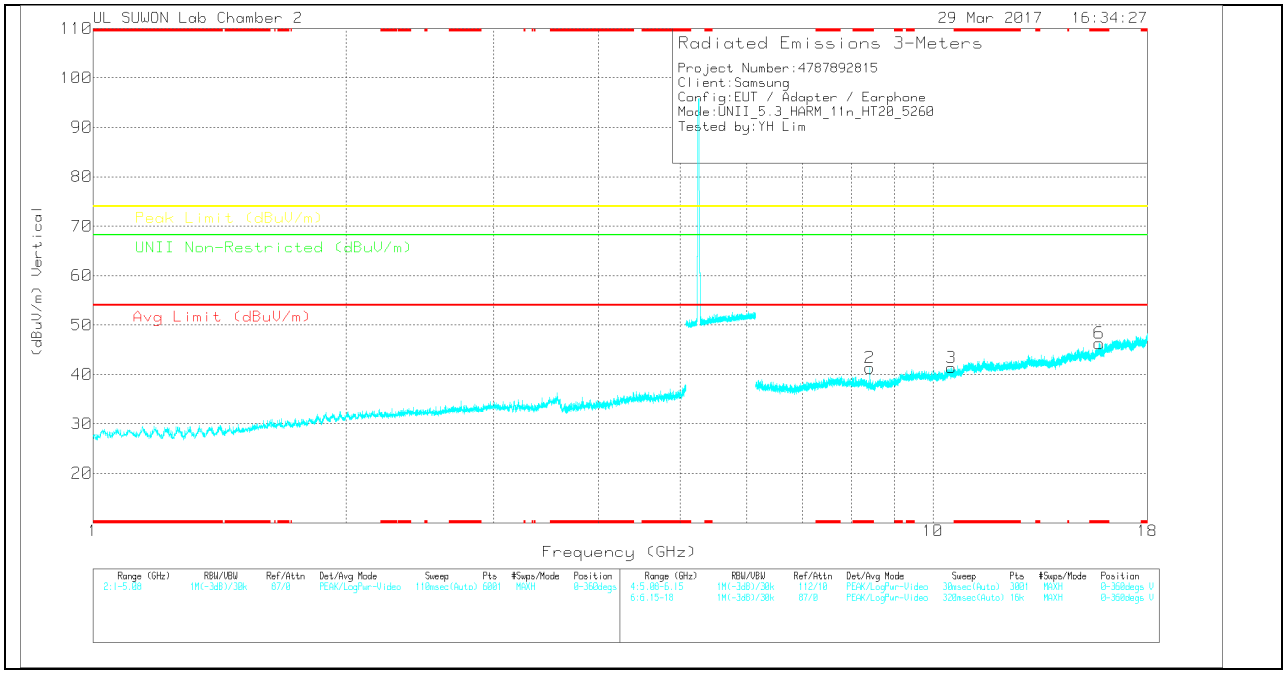
HARMONICS AND SPURIOUS EMISSIONS

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(001688724)_150619	6GHz_HP[dB]	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	* 8.415	26.77	PK	35.9	-19.5	0	43.17	-	-	74	-30.83	-	-	0-360	250	H
4	10.52	19.13	PK	37.7	-16.6	0	40.23	-	-	-	-	68.2	-27.97	0-360	150	H
5	* 15.767	20.45	PK	40.2	-14.9	0	45.75	-	-	74	-28.25	-	-	0-360	250	H
2	* 8.415	24.94	PK	35.9	-19.5	0	41.34	-	-	74	-32.66	-	-	0-360	250	V
3	10.519	20.29	PK	37.7	-16.6	0	41.39	-	-	-	-	68.2	-26.81	0-360	150	V
6	* 15.777	20.8	PK	40.2	-14.7	0	46.3	-	-	74	-27.7	-	-	0-360	250	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	6GHz_HP[dB]	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
* 8.416	34.79	PK-U	35.9	-19.5	0	51.19	-	-	74	-22.81	-	-	33	203	H
* 8.416	27.14	ADR	35.9	-19.5	0	43.54	54	-10.46	-	-	-	-	33	203	H
* 8.416	32.83	PK-U	35.9	-19.5	0	49.23	-	-	74	-24.77	-	-	307	151	V
* 8.416	23.43	ADR	35.9	-19.5	0	39.83	54	-14.17	-	-	-	-	307	151	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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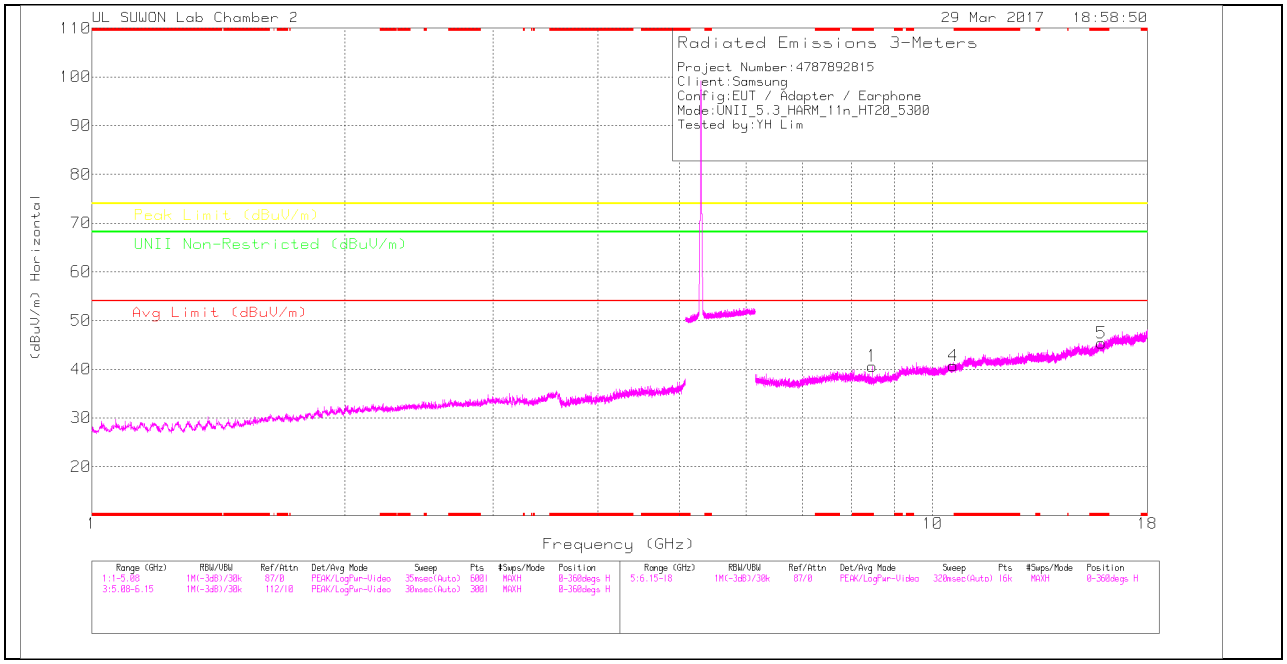
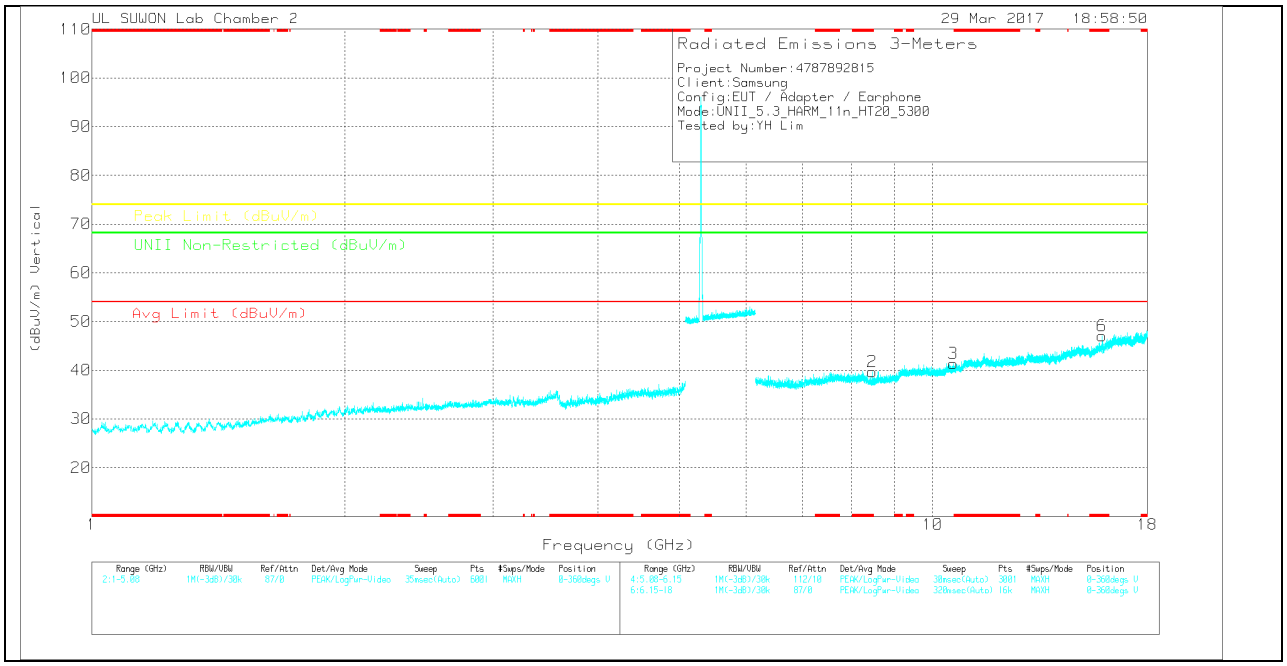
MID CHANNEL HORIZONTAL



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	6GHz_HP[dB]	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	* 8.479	24.45	PK	35.9	-19.7	0	40.65	-	-	74	-33.35	-	-	0-360	150	H
4	10.584	19.36	PK	37.8	-16.5	0	40.66	-	-	-	-	68.2	-27.54	0-360	150	H
5	* 15.88	19.84	PK	40.3	-14.8	0	45.34	-	-	74	-28.66	-	-	0-360	250	H
2	* 8.479	23.49	PK	35.9	-19.7	0	39.69	-	-	74	-34.31	-	-	0-360	250	V
3	10.581	20.02	PK	37.8	-16.5	0	41.32	-	-	-	-	68.2	-26.88	0-360	250	V
6	* 15.9	21.3	PK	40.4	-14.7	0	47	-	-	74	-27	-	-	0-360	250	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	6GHz_HP[dB]	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
* 8.48	34.42	PK-U	35.9	-19.7	0	50.62	-	-	74	-23.38	-	-	38	175	H
* 8.48	24.76	ADR	35.9	-19.7	0	40.96	54	-13.04	-	-	-	-	38	175	H
* 8.48	33.54	PK-U	35.9	-19.7	0	49.74	-	-	74	-24.26	-	-	307	156	V
* 8.48	22.42	ADR	35.9	-19.7	0	38.62	54	-15.38	-	-	-	-	307	156	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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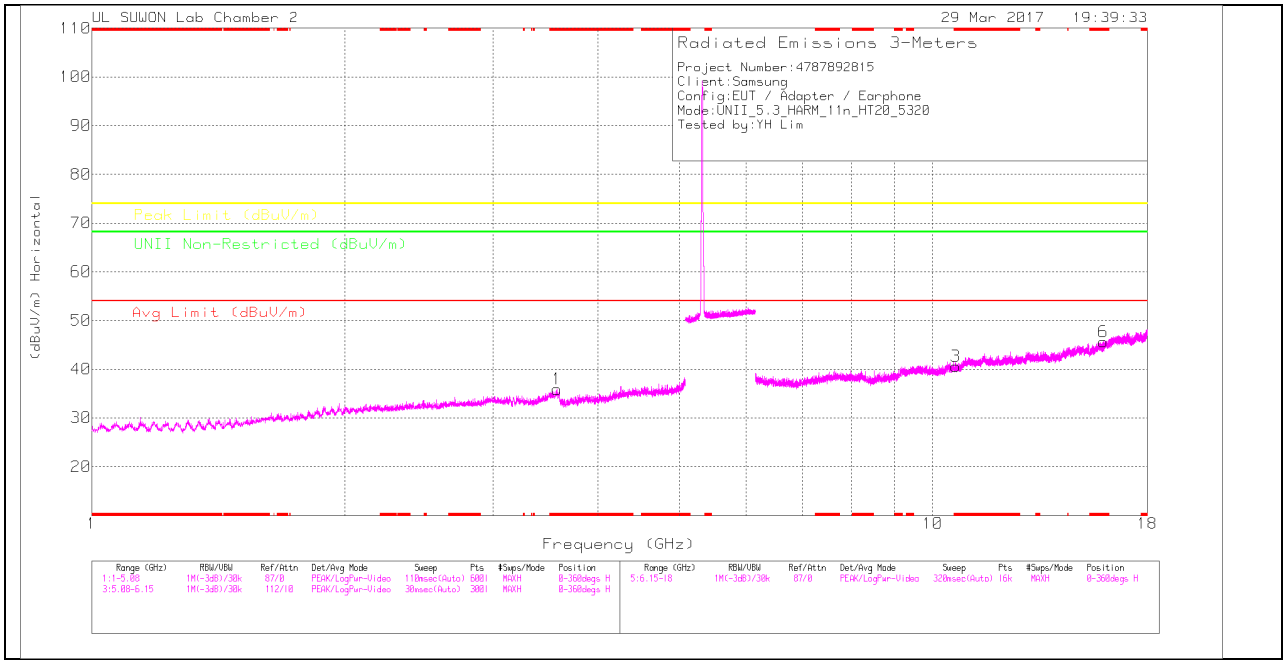
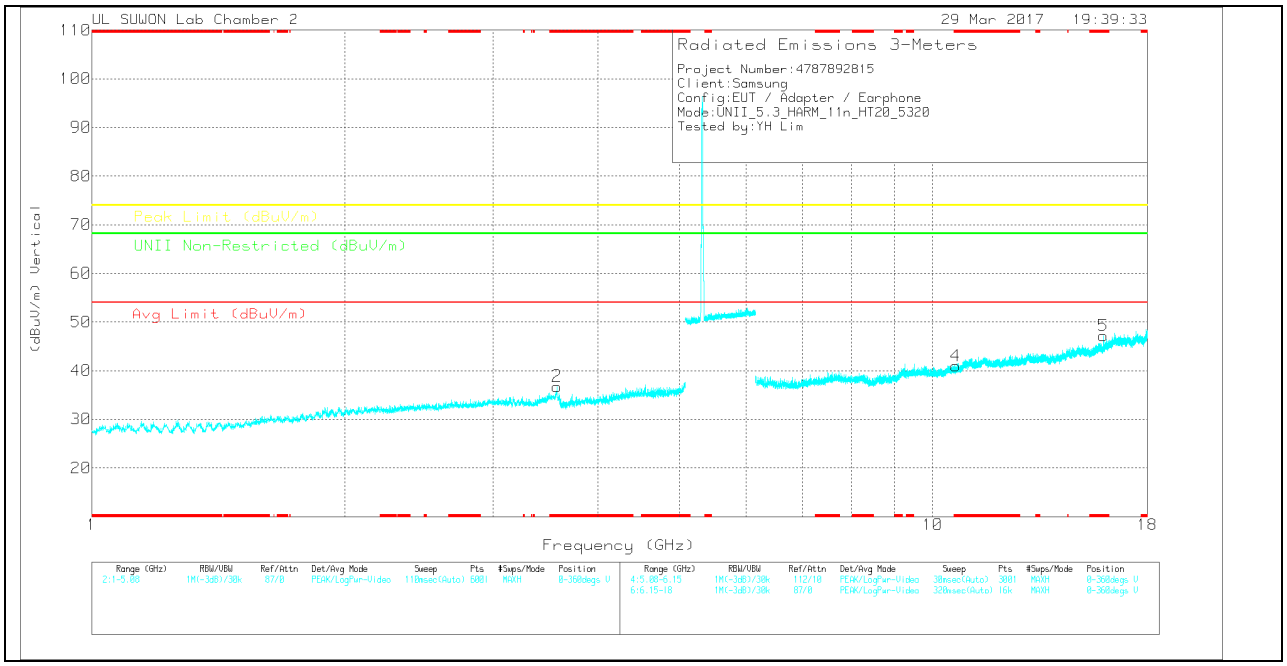
HIGH CHANNEL HORIZONTAL



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	5GHz_LP[dB]	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	* 3.574	28.07	PK	32.8	-25	0	35.87	-	-	74	-38.13	-	-	0-360	250	H
2	* 3.574	28.97	PK	32.8	-25	0	36.77	-	-	74	-37.23	-	-	0-360	150	V
3	* 10.647	19.43	PK	37.8	-16.6	0	40.63	-	-	74	-33.37	-	-	0-360	250	H
6	* 15.958	19.68	PK	40.4	-14.4	0	45.68	-	-	74	-28.32	-	-	0-360	250	H
4	* 10.644	19.8	PK	37.8	-16.6	0	41	-	-	74	-33	-	-	0-360	150	V
5	* 15.963	21.04	PK	40.4	-14.3	0	47.14	-	-	74	-26.86	-	-	0-360	150	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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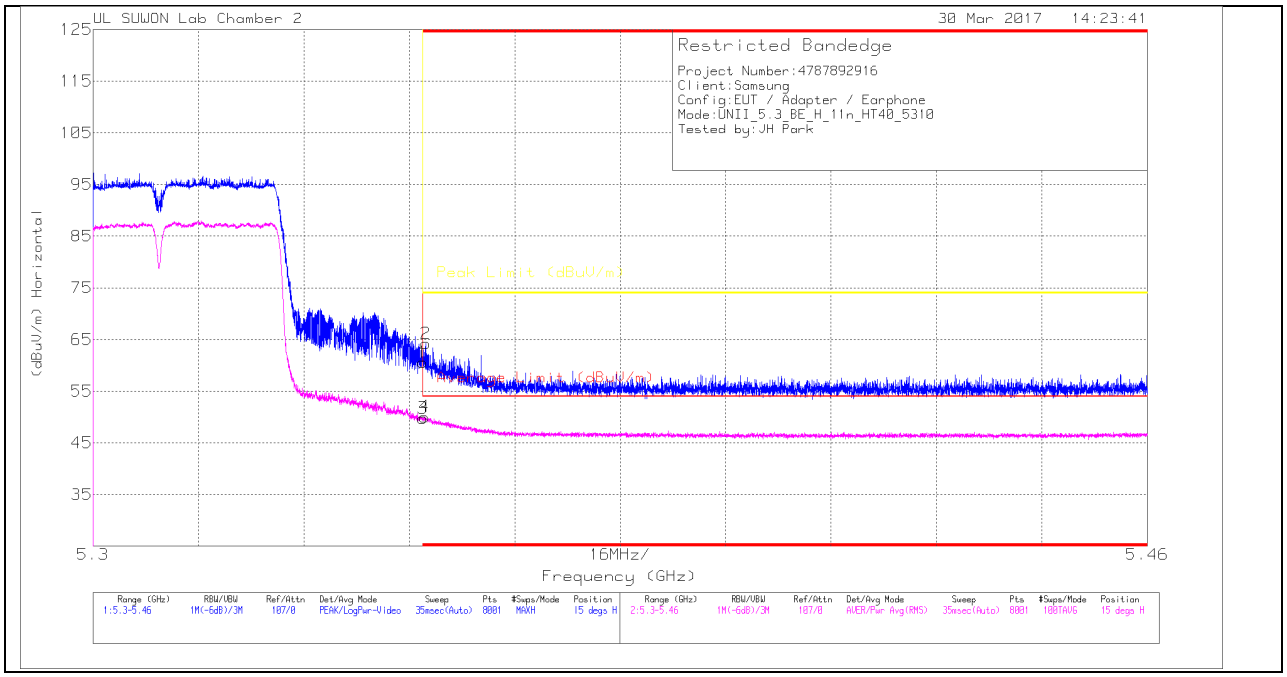
10.2.3. TX ABOVE 1GHz 802.11n HT40 MODE IN THE 5.3GHz BAND AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	41.38	Pk	34.4	-15.2	0	60.58	-	-	74	-13.42	15	189	H
2	* 5.35	45.02	Pk	34.4	-15.2	0	64.22	-	-	74	-9.78	15	189	H
3	* 5.35	29.92	RMS	34.4	-15.2	.67	49.79	54	-4.21	-	-	15	189	H
4	* 5.35	30.18	RMS	34.4	-15.2	.67	50.05	54	-3.95	-	-	15	189	H

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

Pk - Peak detector

RMS - RMS detection

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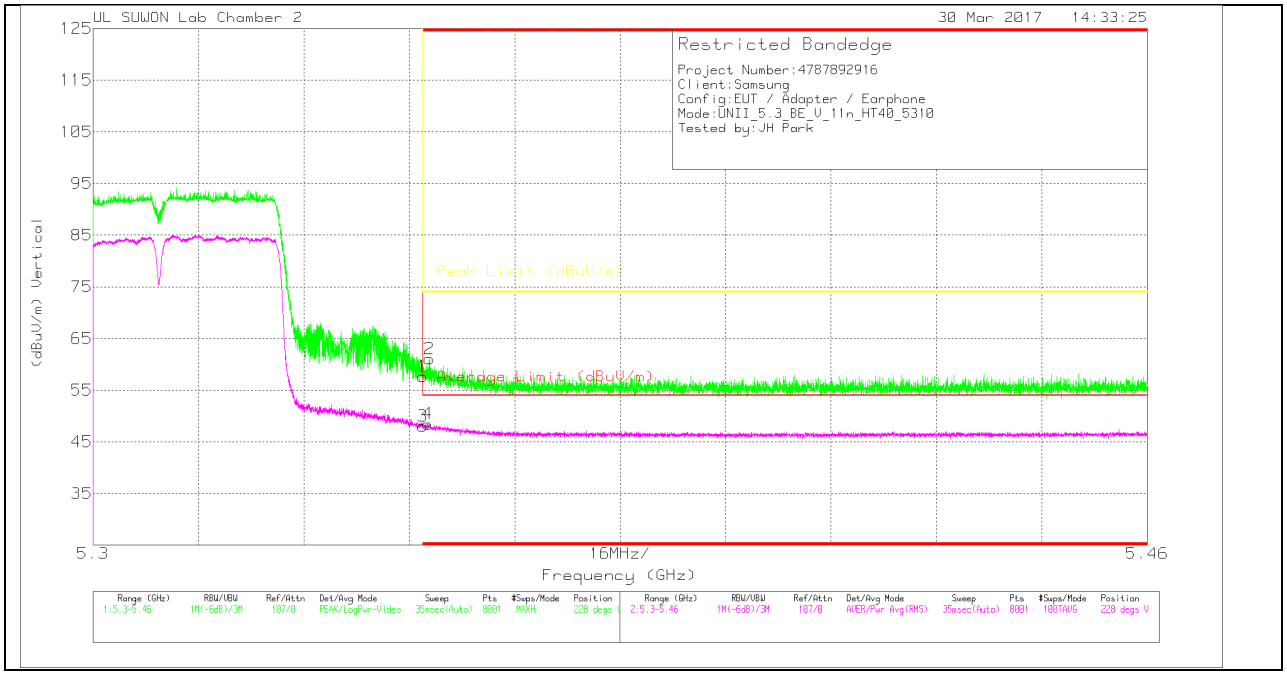
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.35	38.43	Pk	34.4	-15.2	0	57.63	-	-	74	-16.37	228	332	V
2	* 5.351	41.86	Pk	34.4	-15.2	0	61.06	-	-	74	-12.94	228	332	V
3	* 5.35	28.16	RMS	34.4	-15.2	.67	48.03	54	-5.97	-	-	228	332	V
4	* 5.351	28.6	RMS	34.4	-15.2	.67	48.47	54	-5.53	-	-	228	332	V

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

Pk - Peak detector

RMS - RMS detection

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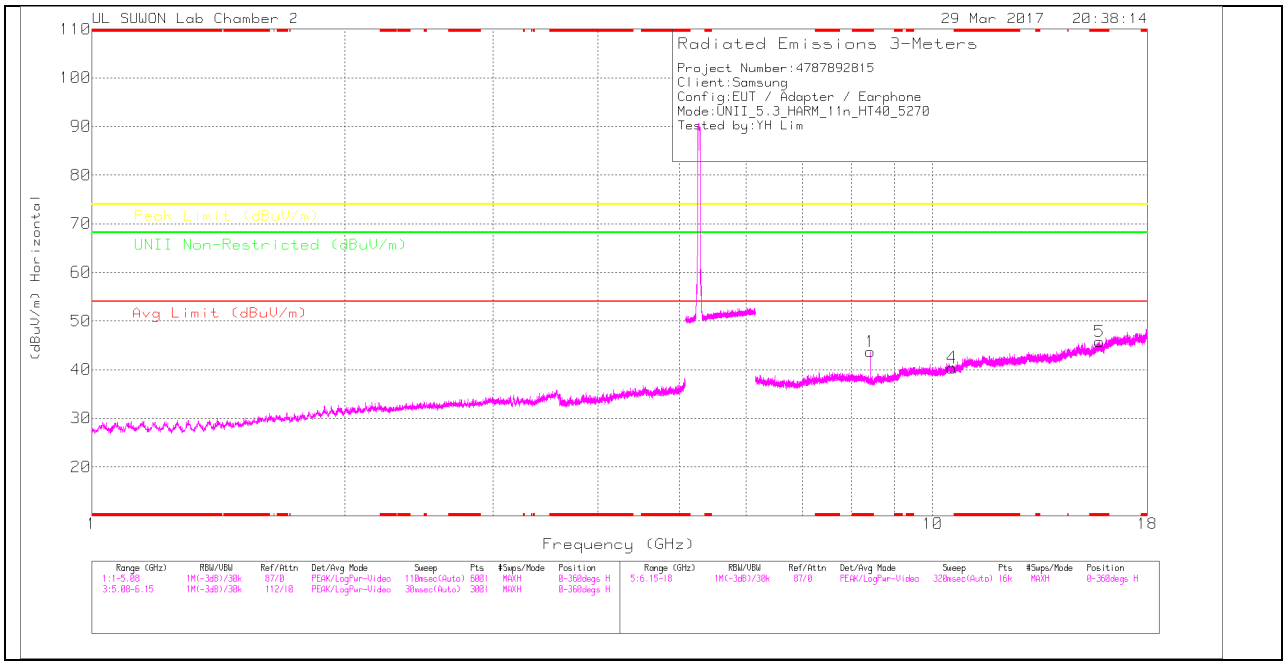
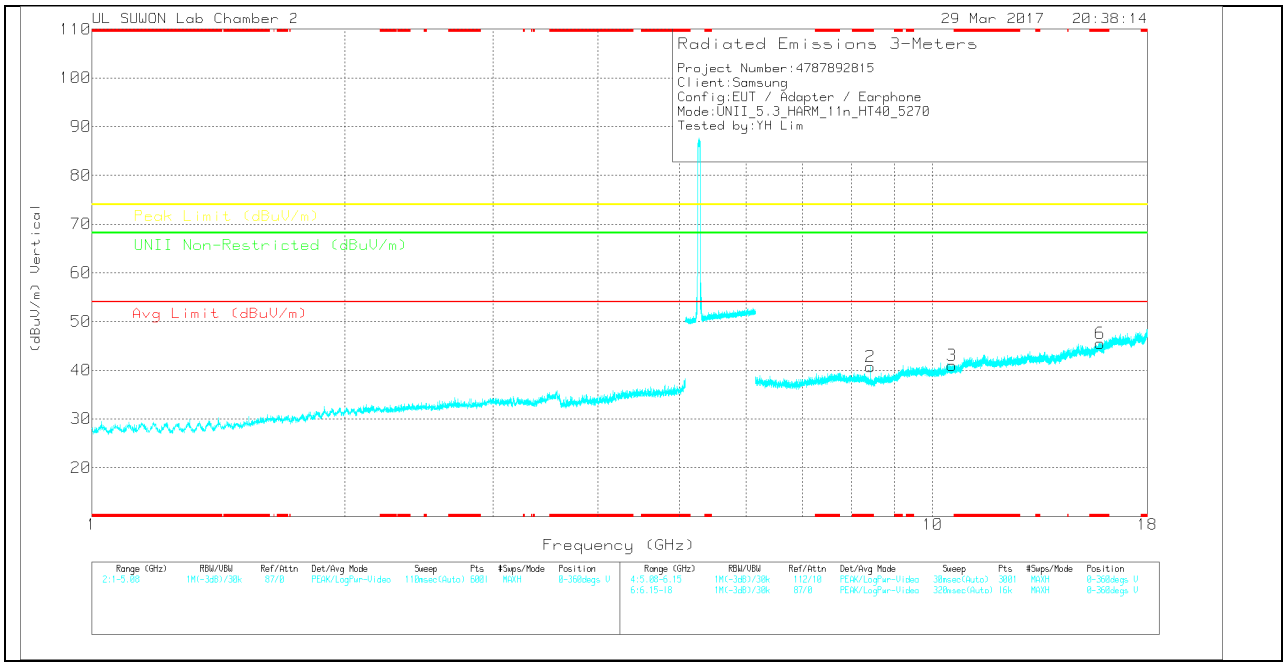
HARMONICS AND SPURIOUS EMISSIONS

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	6GHz_HP[dB]	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	* 8.432	27.39	PK	35.9	-19.6	0	43.69	-	-	74	-30.31	-	-	0-360	150	H
4	10.536	19.29	PK	37.7	-16.6	0	40.39	-	-	-	-	68.2	-27.81	0-360	250	H
5	* 15.797	20.31	PK	40.2	-14.7	0	45.81	-	-	74	-28.19	-	-	0-360	250	H
2	* 8.432	24.43	PK	35.9	-19.6	0	40.73	-	-	74	-33.27	-	-	0-360	250	V
3	10.536	19.82	PK	37.7	-16.6	0	40.92	-	-	-	-	68.2	-27.28	0-360	250	V
6	* 15.806	19.87	PK	40.3	-14.7	0	45.47	-	-	74	-28.53	-	-	0-360	150	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	6GHz_HP[dB]	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
* 8.432	34.77	PK-U	35.9	-19.6	0	51.07	-	-	74	-22.93	-	-	41	174	H
* 8.432	27.34	ADR	35.9	-19.6	0	43.64	54	-10.36	-	-	-	-	41	174	H
* 8.431	33.15	PK-U	35.9	-19.6	0	49.45	-	-	74	-24.55	-	-	324	142	V
* 8.432	22.89	ADR	35.9	-19.6	0	39.19	54	-14.81	-	-	-	-	324	142	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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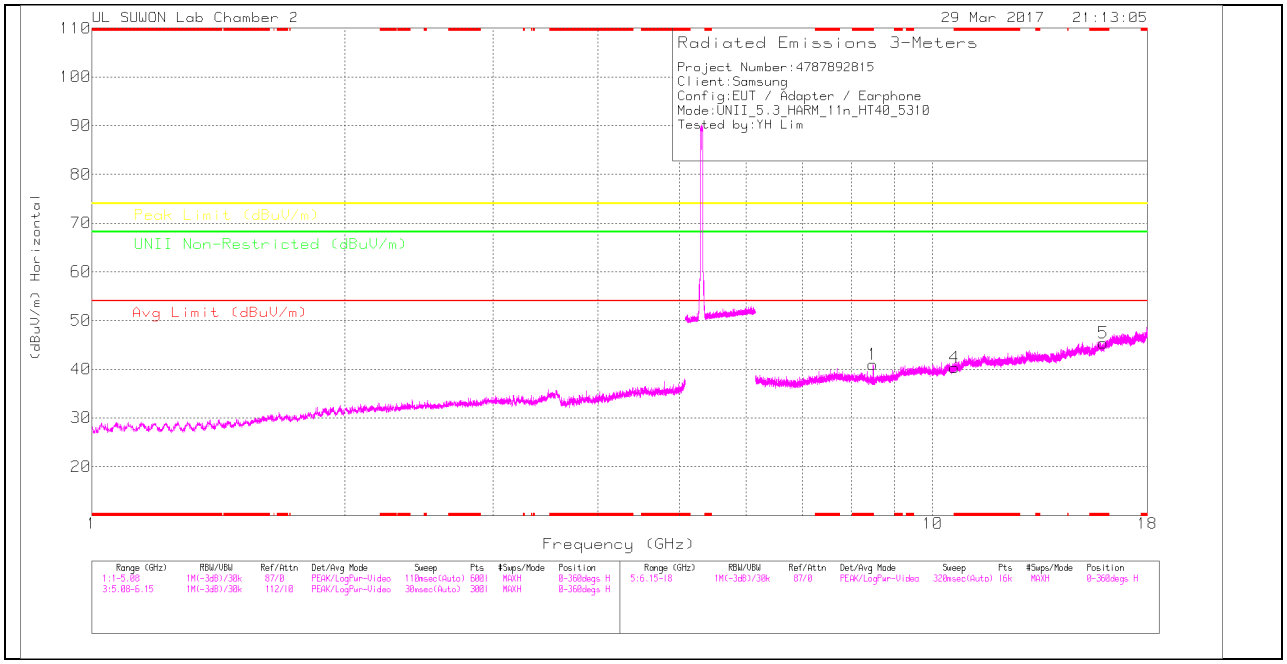
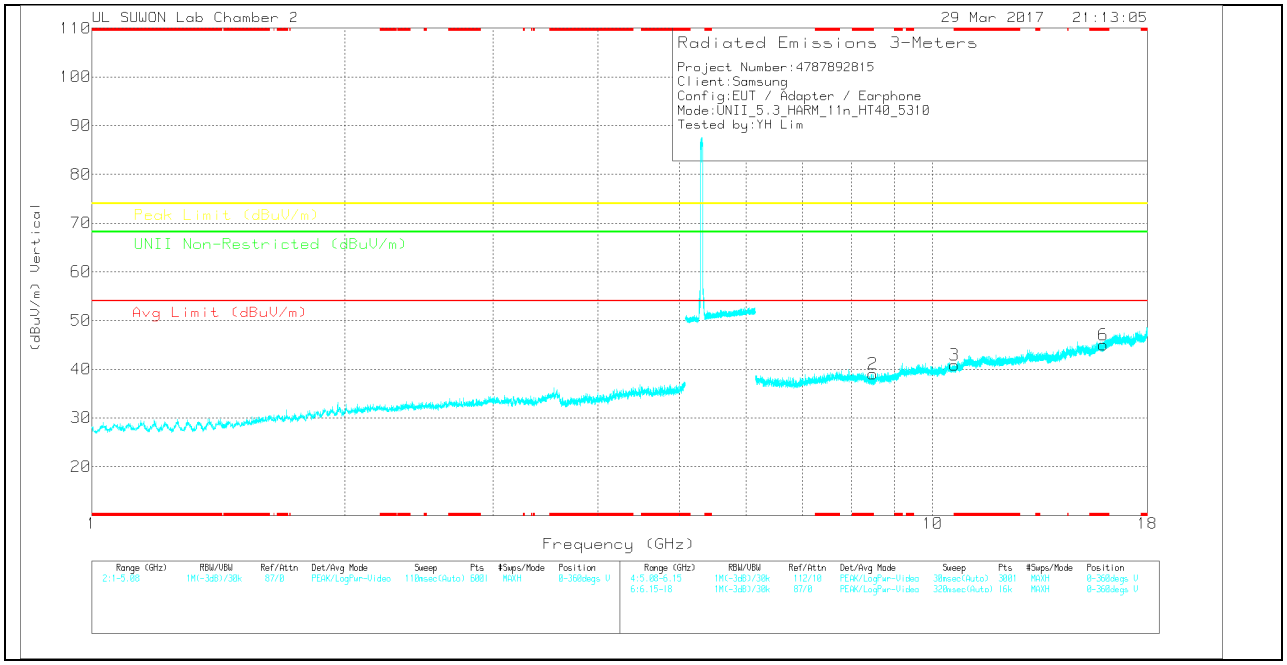
HIGH CHANNEL HORIZONTAL



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	6GHz_HP[dB]	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	* 8.495	24.52	PK	35.9	-19.5	0	40.92	-	-	74	-33.08	-	-	0-360	250	H
4	* 10.618	19.21	PK	37.8	-16.7	0	40.31	-	-	74	-33.69	-	-	0-360	150	H
5	* 15.96	19.33	PK	40.4	-14.4	0	45.33	-	-	74	-28.67	-	-	0-360	150	H
2	* 8.495	22.59	PK	35.9	-19.5	0	38.99	-	-	74	-35.01	-	-	0-360	250	V
3	* 10.614	19.78	PK	37.8	-16.7	0	40.88	-	-	74	-33.12	-	-	0-360	250	V
6	* 15.952	18.96	PK	40.4	-14.4	0	44.96	-	-	74	-29.04	-	-	0-360	150	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	6GHz_HP[dB]	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
* 8.496	33.98	PK-U	35.9	-19.5	0	50.38	-	-	74	-23.62	-	-	43	187	H
* 8.496	24.14	ADR	35.9	-19.5	0	40.54	54	-13.46	-	-	-	-	43	187	H
* 8.496	33.39	PK-U	35.9	-19.5	0	49.79	-	-	74	-24.21	-	-	310	134	V
* 8.496	21.95	ADR	35.9	-19.5	0	38.35	54	-15.65	-	-	-	-	310	134	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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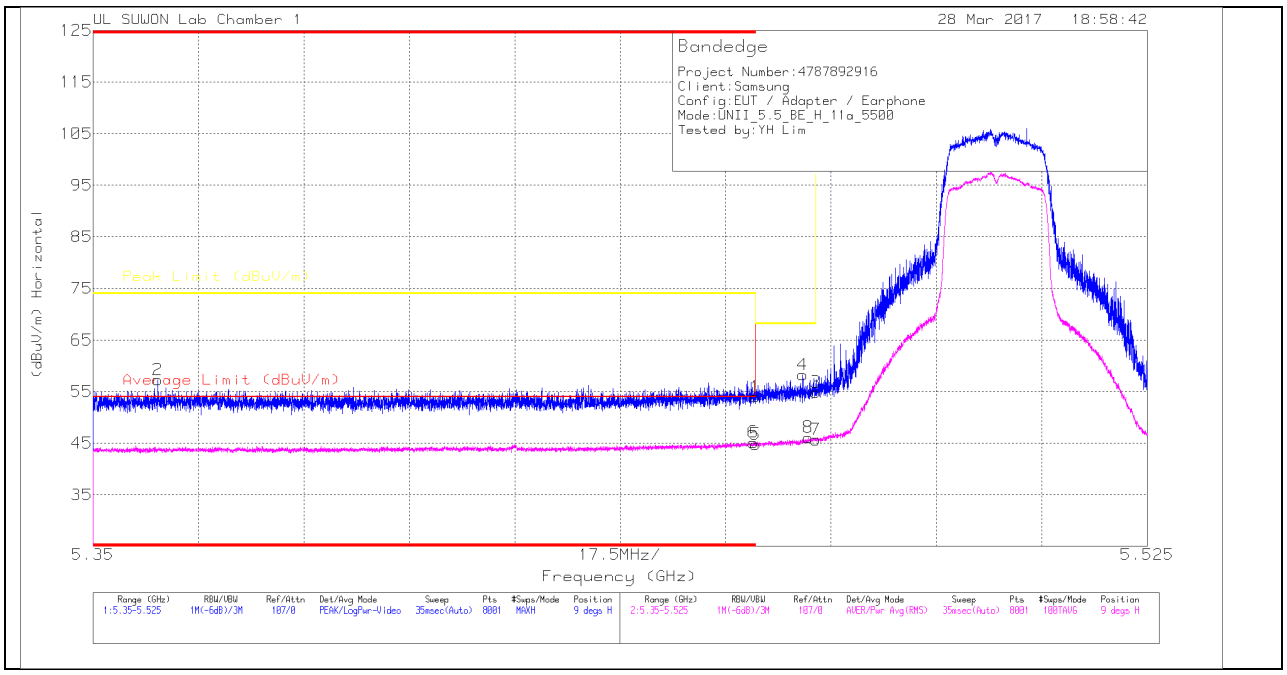
10.3. 5.5-5.6 GHz

10.3.1. TX ABOVE 1 GHz 802.11a 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(00168717)_150619	10dB_Att(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	42.52	Pk	34.6	-23.1	0	54.02	-	-	74	-19.98	9	397	H
2	* 5.361	46.09	Pk	34.5	-23.3	0	57.29	-	-	74	-16.71	9	397	H
3	5.47	43.39	Pk	34.6	-23.1	0	54.89	-	-	68.2	-13.31	9	397	H
4	5.468	46.77	Pk	34.6	-23.1	0	58.27	-	-	68.2	-9.93	9	397	H
5	* 5.46	33.56	RMS	34.6	-23.7	.32	44.78	54	-9.22	-	-	9	397	H
6	* 5.46	33.96	RMS	34.6	-23.7	.32	45.18	54	-8.82	-	-	9	397	H

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

Pk - Peak detector

RMS - RMS detection

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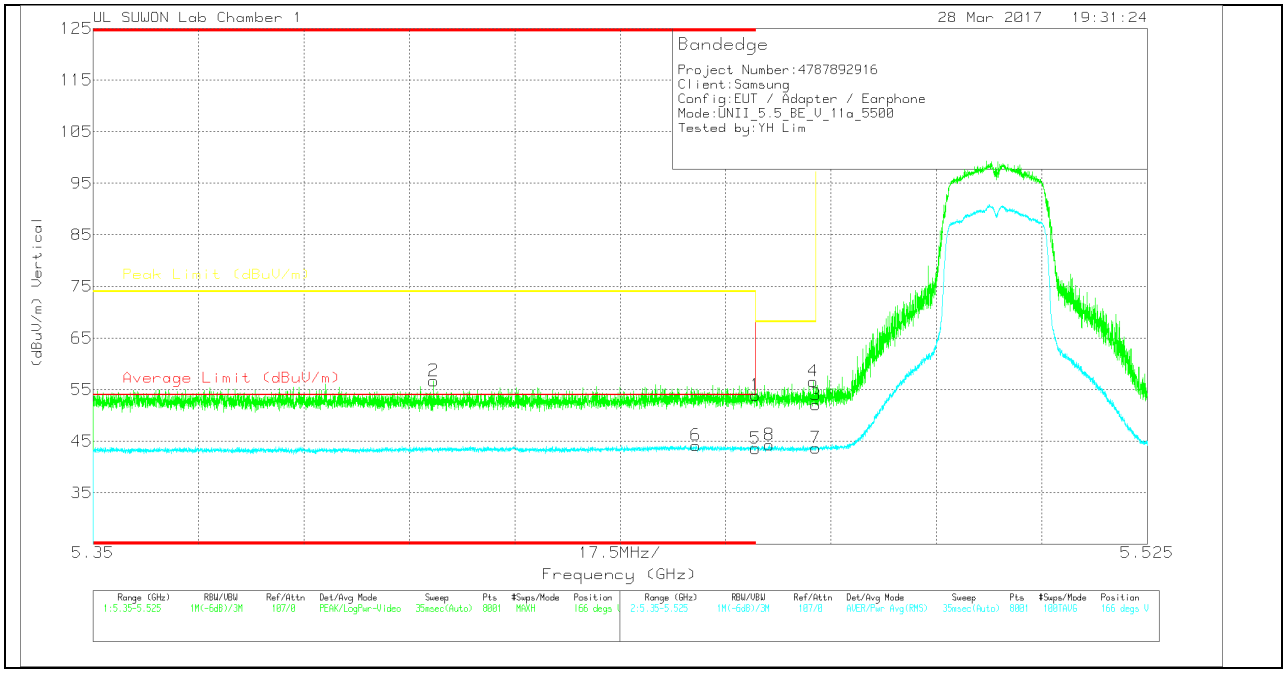
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	10dB_Att(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	42.44	Pk	34.6	-23.1	0	53.94	-	-	74	-20.06	166	118	V
2	* 5.407	45.64	Pk	34.6	-23.5	0	56.74	-	-	74	-17.26	166	118	V
3	5.47	40.59	Pk	34.6	-23.1	0	52.09	-	-	68.2	-16.11	166	118	V
4	5.47	45.13	Pk	34.6	-23.1	0	56.63	-	-	68.2	-11.57	166	118	V
5	* 5.46	32.4	RMS	34.6	-23.7	.32	43.62	54	-10.38	-	-	166	118	V
6	* 5.45	32.99	RMS	34.6	-23.7	.32	44.21	54	-9.79	-	-	166	118	V

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

Pk - Peak detector

RMS - RMS detection

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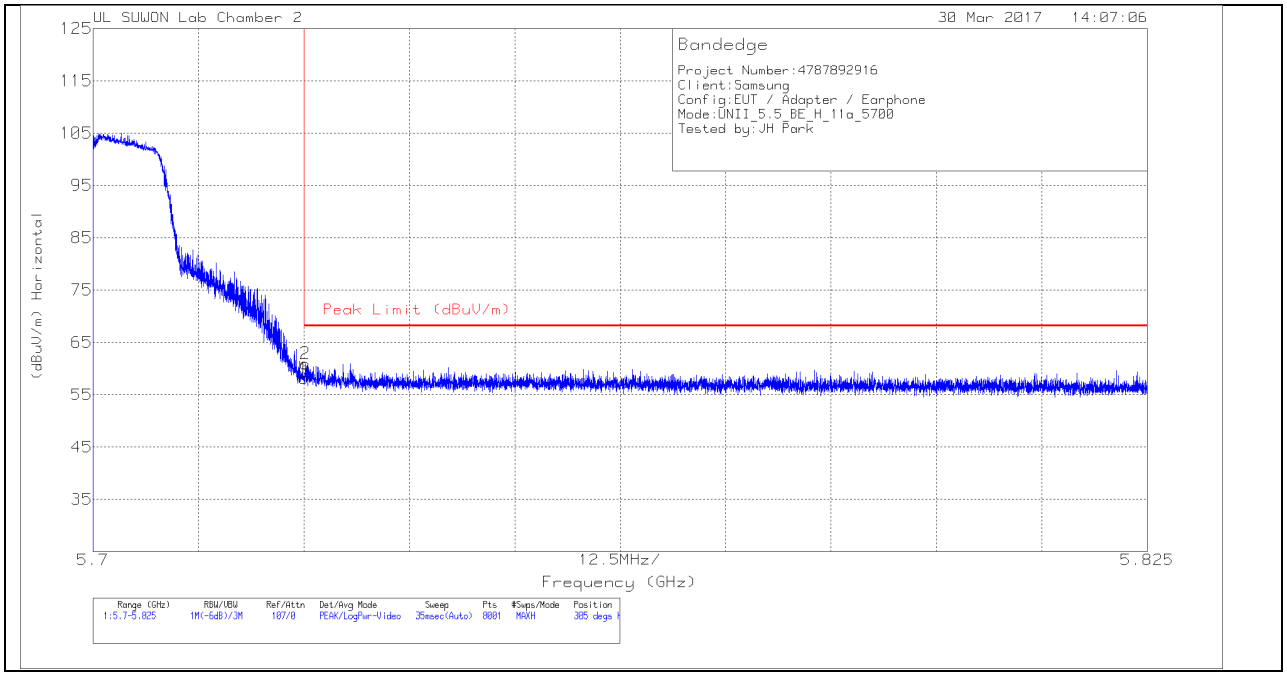
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	37.92	Pk	34.7	-14.5	0	58.12	68.2	-10.08	305	222	H
2	5.725	40.74	Pk	34.7	-14.5	0	60.94	68.2	-7.26	305	222	H

Pk - Peak detector

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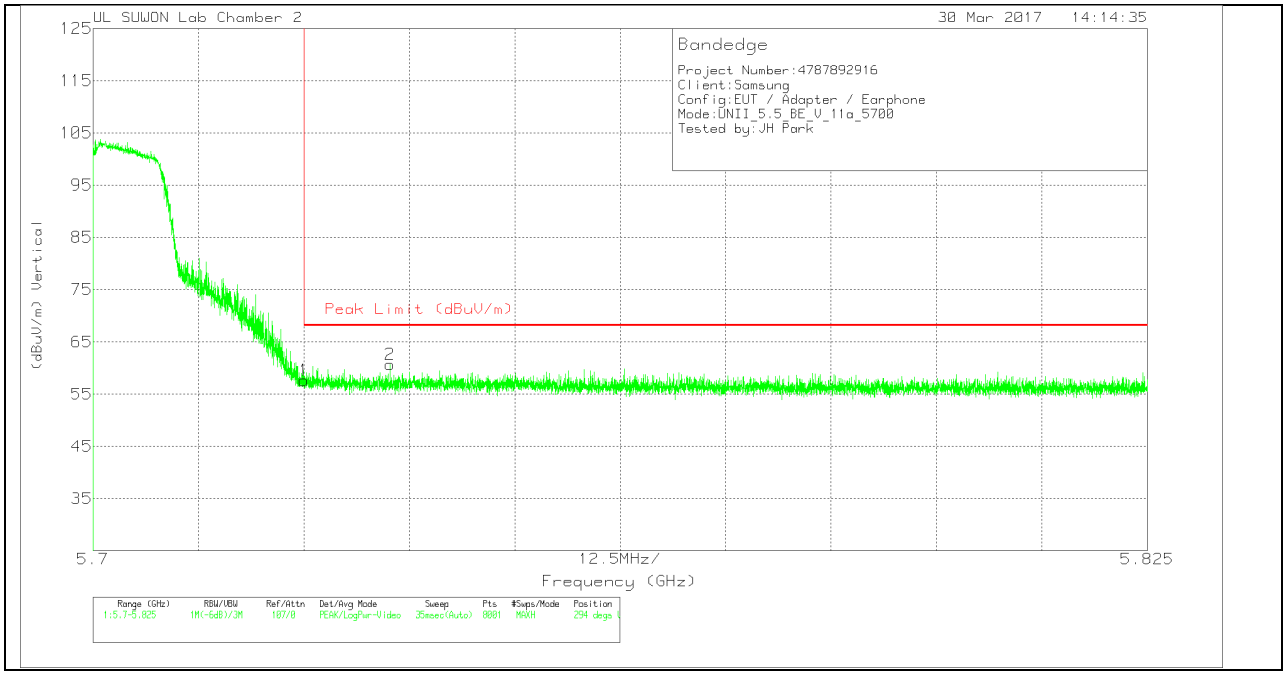
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	37.43	Pk	34.7	-14.5	0	57.63	68.2	-10.57	294	367	V
2	5.735	40.38	Pk	34.7	-14.4	0	60.68	68.2	-7.52	294	367	V

Pk - Peak detector

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_15E
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675 Korea TEL: (031) 337-9902,FAX: (031) 213-5433
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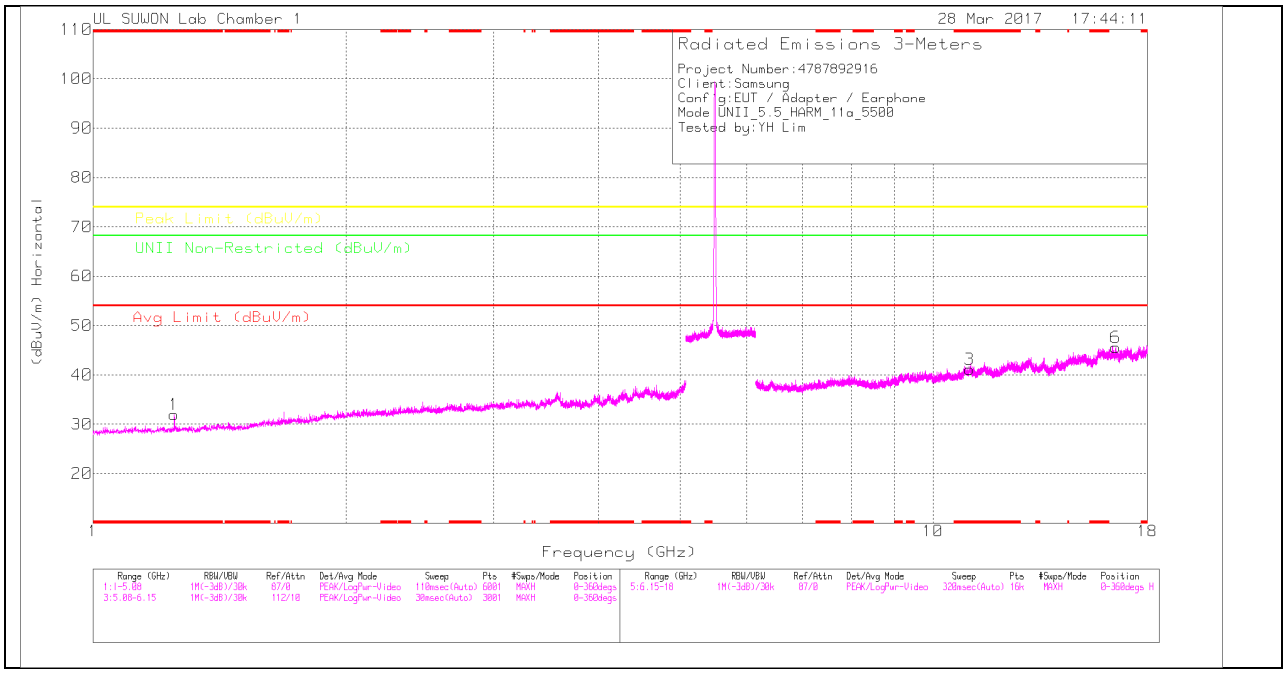
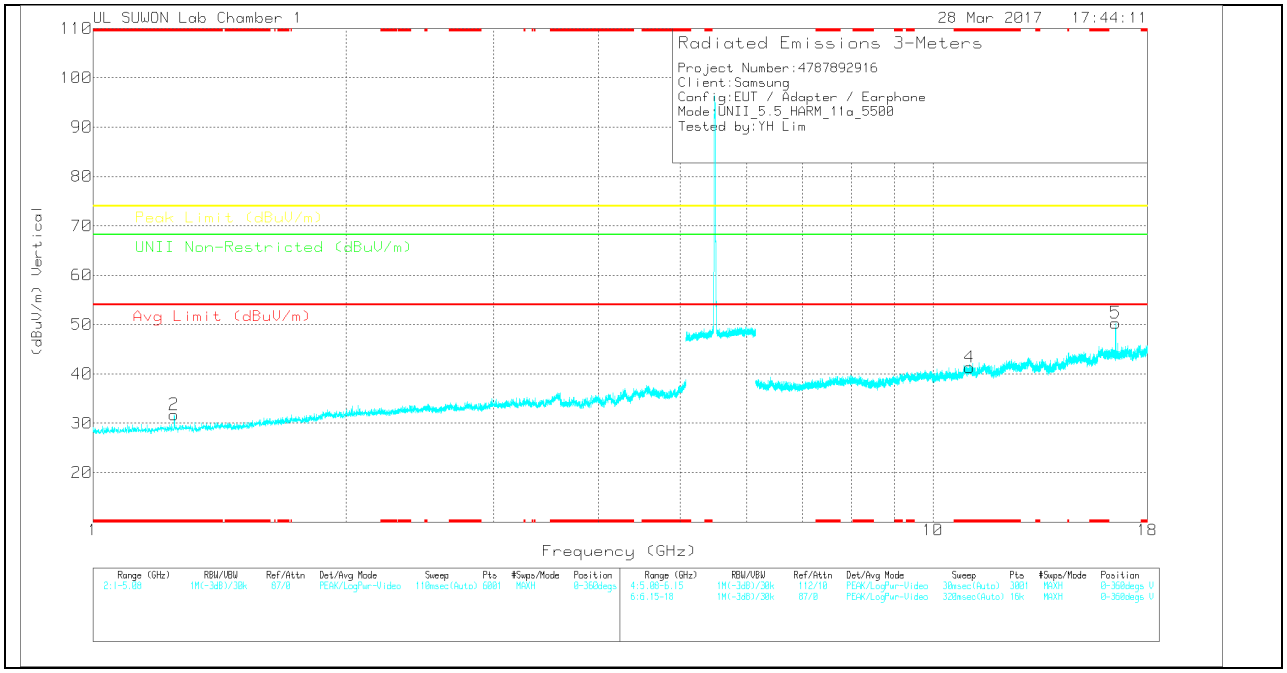
HARMONICS AND SPURIOUS EMISSIONS

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	5Ghz_LP(dB)	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	* 1.25	43.24	PK	28.3	-39.6	0	31.94	-	-	74	-42.06	-	-	0-360	150	H
2	* 1.25	43.06	PK	28.3	-39.6	0	31.76	-	-	74	-42.24	-	-	0-360	250	V
3	* 11.057	30.93	PK	38.2	-28	0	41.13	-	-	74	-32.87	-	-	0-360	250	H
6	16.501	28.09	PK	41.1	-23.6	0	45.59	-	-	-	-	68.2	-22.61	0-360	250	H
4	* 11.06	31.23	PK	38.2	-28.1	0	41.33	-	-	74	-32.67	-	-	0-360	250	V
5	16.5	32.84	PK	41.1	-23.6	0	50.34	-	-	-	-	68.2	-17.86	0-360	250	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	6Ghz_HP(dB)	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
16.501	41.8	PK-U	41.1	-23.6	0	59.3	-	-	-	-	68.2	-8.9	36	120	H
16.496	46.39	PK-U	41.1	-23.6	0	63.89	-	-	-	-	68.2	-4.31	11	234	V

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

PK-U - U-NII: Maximum Peak

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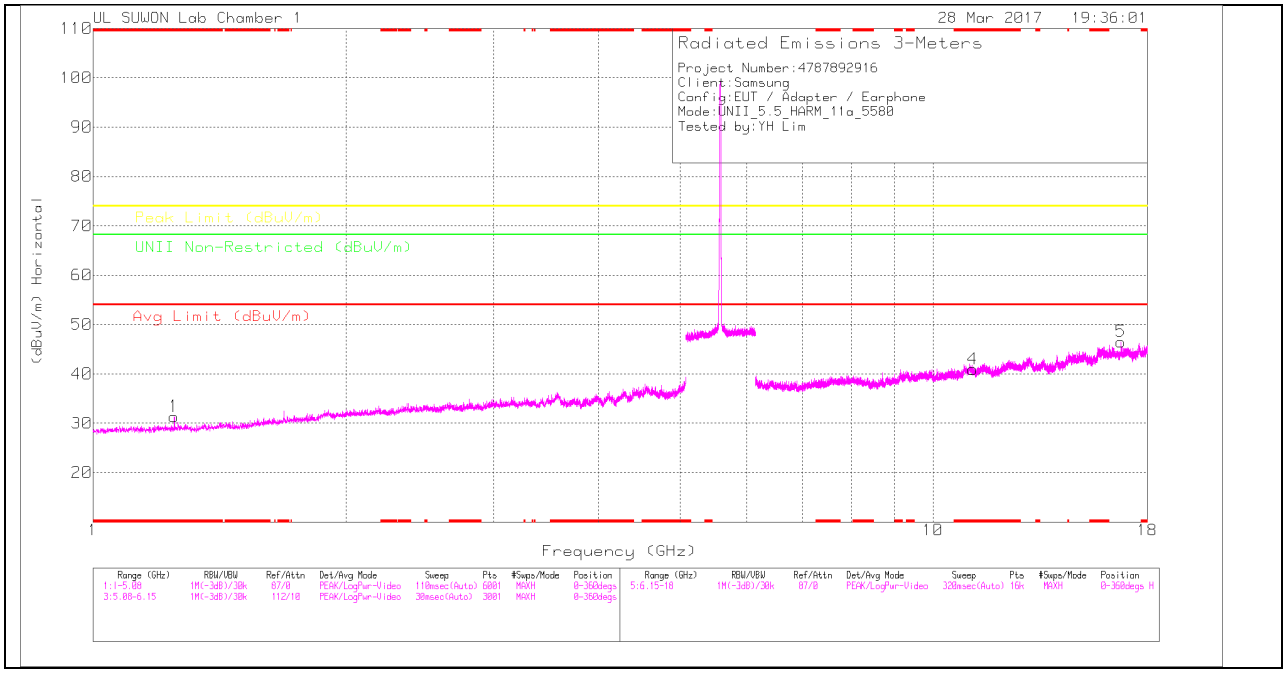
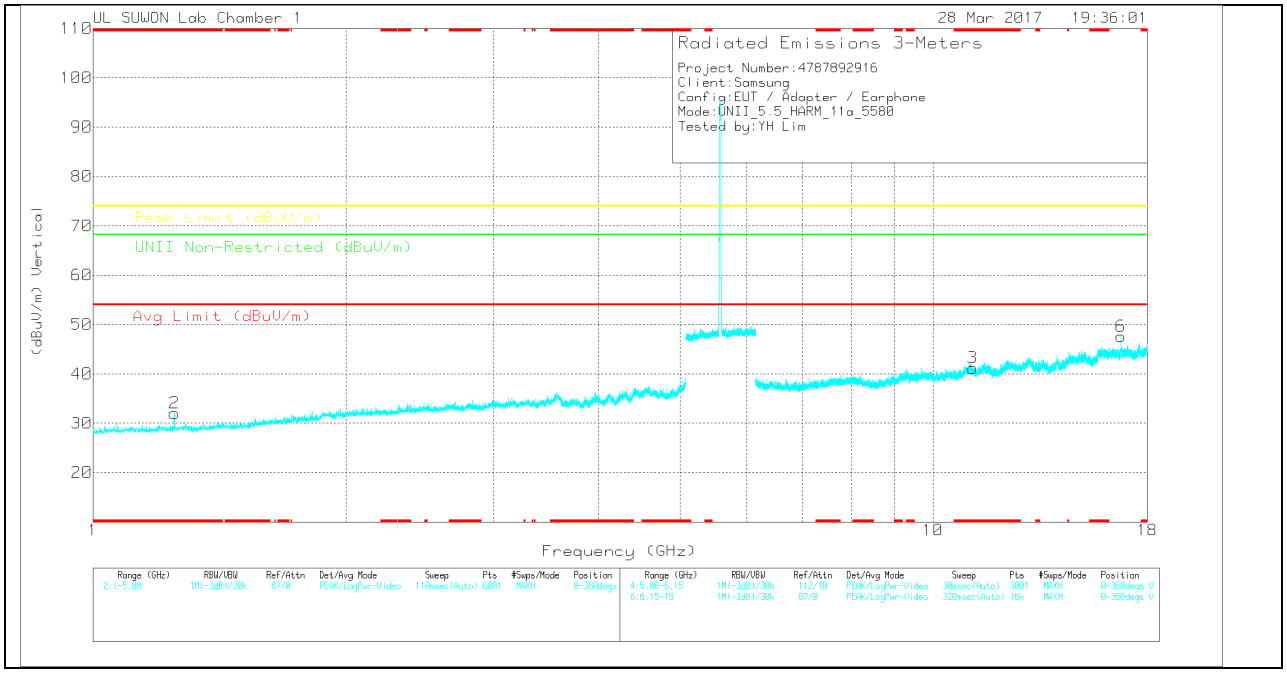
MID CHANNEL HORIZONTAL



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	5Ghz_LP(dB)	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	* 1.25	42.66	PK	28.3	-39.6	0	31.36	-	-	74	-42.64	-	-	0-360	150	H
2	* 1.25	43.34	PK	28.3	-39.6	0	32.04	-	-	74	-41.96	-	-	0-360	250	V
4	* 11.157	30.45	PK	38.3	-27.8	0	40.95	-	-	74	-33.05	-	-	0-360	150	H
5	16.743	28.33	PK	41.3	-23.1	0	46.53	-	-	-	-	68.2	-21.67	0-360	250	H
3	* 11.152	30.6	PK	38.3	-27.7	0	41.2	-	-	74	-32.8	-	-	0-360	250	V
6	16.746	29.38	PK	41.3	-23.1	0	47.58	-	-	-	-	68.2	-20.62	0-360	250	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	6Ghz_HP(dB)	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
16.743	39.11	PK-U	41.3	-23.1	0	57.31	-	-	-	-	68.2	-10.89	34	122	H
16.746	42.85	PK-U	41.3	-23.1	0	61.05	-	-	-	-	68.2	-7.15	6	323	V

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

PK-U - U-NII: Maximum Peak

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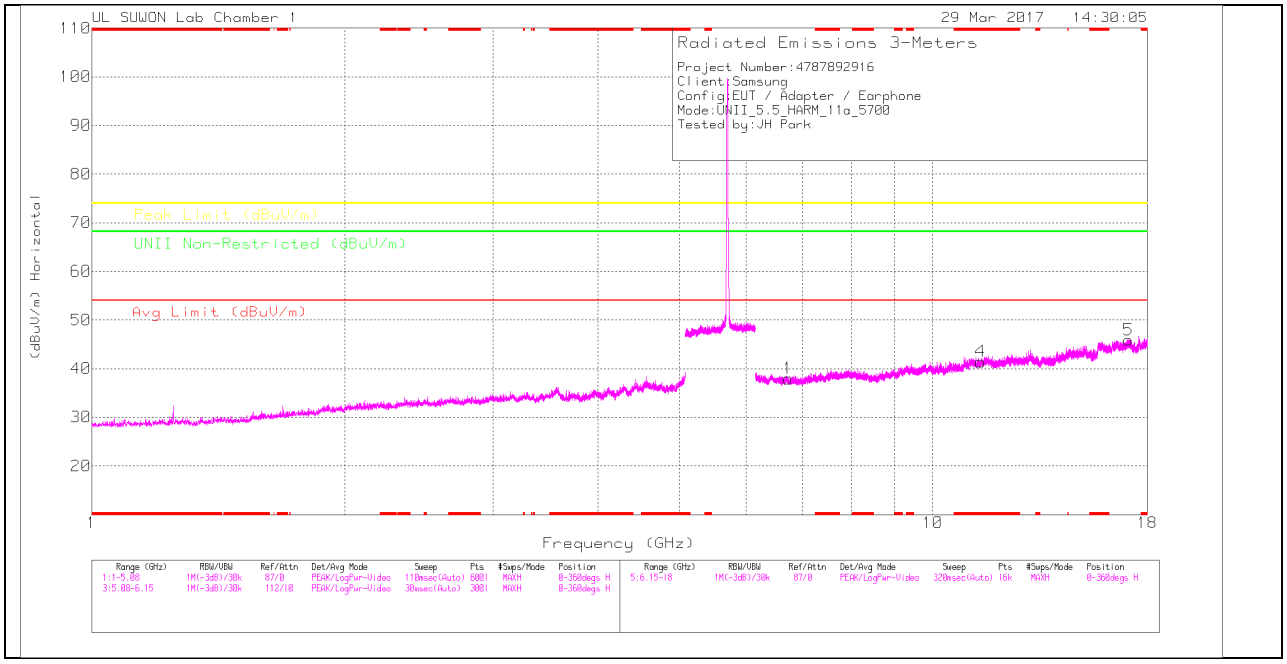
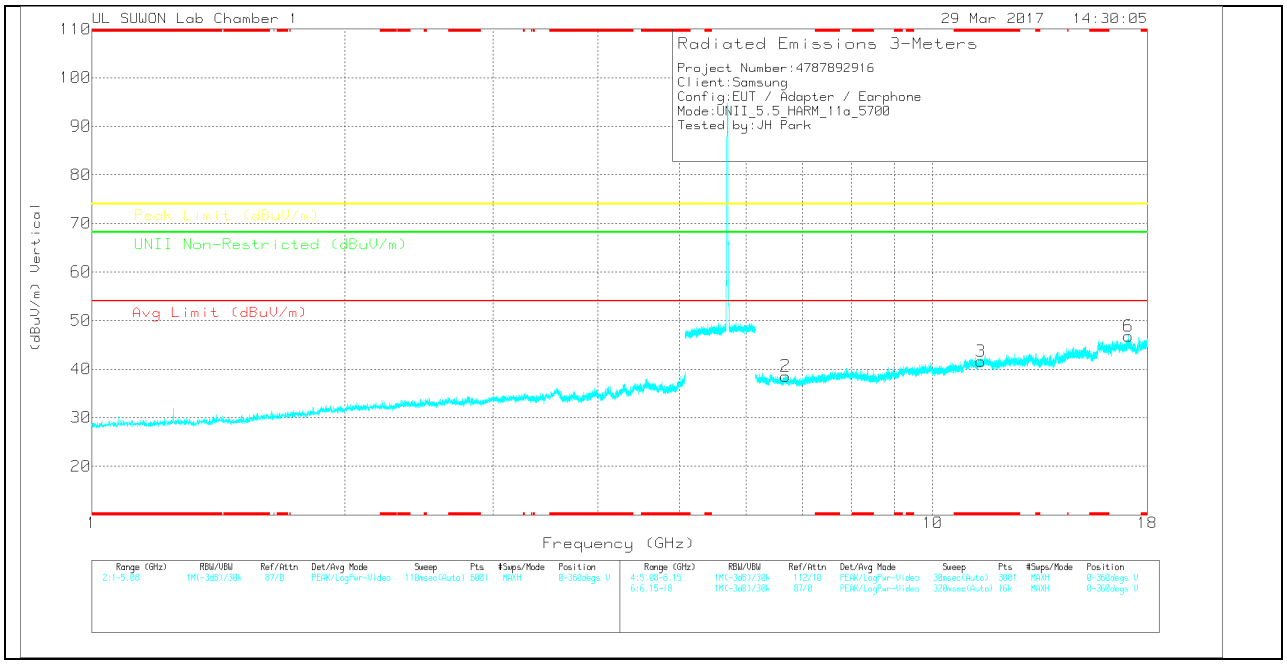
HIGH CHANNEL HORIZONTAL



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	6Ghz_HP(dB)	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	6.727	33.64	PK	35.6	-31.3	0	37.94	-	-	-	-	68.2	-30.26	0-360	150	H
4	* 11.4	31.03	PK	38.5	-28.1	0	41.43	-	-	74	-32.57	-	-	0-360	250	H
5	17.101	27.72	PK	41.3	-23.1	0	45.92	-	-	-	-	68.2	-22.28	0-360	250	H
2	6.688	34.08	PK	35.5	-31	0	38.58	-	-	-	-	68.2	-29.62	0-360	250	V
3	* 11.402	31.21	PK	38.5	-28.1	0	41.61	-	-	74	-32.39	-	-	0-360	150	V
6	17.099	28.63	PK	41.3	-23.1	0	46.83	-	-	-	-	68.2	-21.37	0-360	250	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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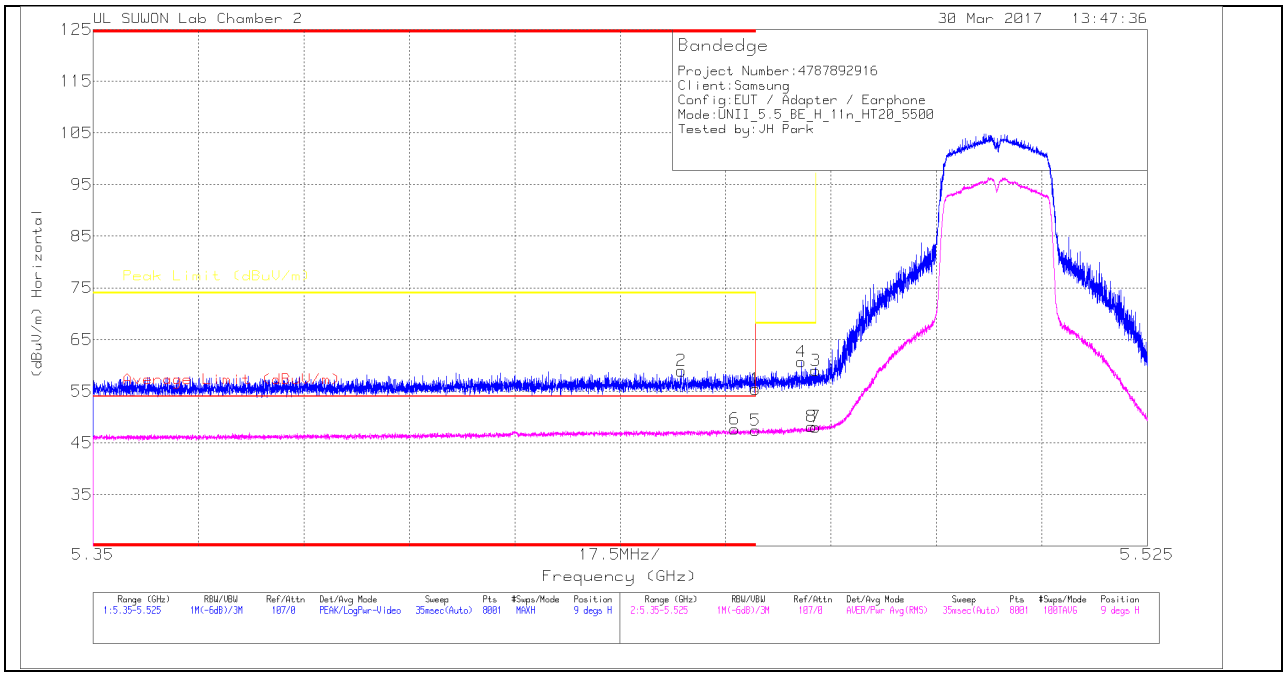
10.3.2. TX ABOVE 1GHz 802.11n HT20 MODE IN THE 5.5GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	35.92	Pk	34.5	-15	0	55.42	-	-	74	-18.58	9	139	H
2	* 5.448	39.56	Pk	34.5	-15.1	0	58.96	-	-	74	-15.04	9	139	H
3	5.47	39.47	Pk	34.5	-15	0	58.97	-	-	68.2	-9.23	9	139	H
4	5.468	41.2	Pk	34.5	-15	0	60.7	-	-	68.2	-7.5	9	139	H
5	* 5.46	27.59	RMS	34.5	-15	.35	47.44	54	-6.56	-	-	9	139	H
6	* 5.457	27.9	RMS	34.5	-15.1	.35	47.65	54	-6.35	-	-	9	139	H

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

Pk - Peak detector

RMS - RMS detection

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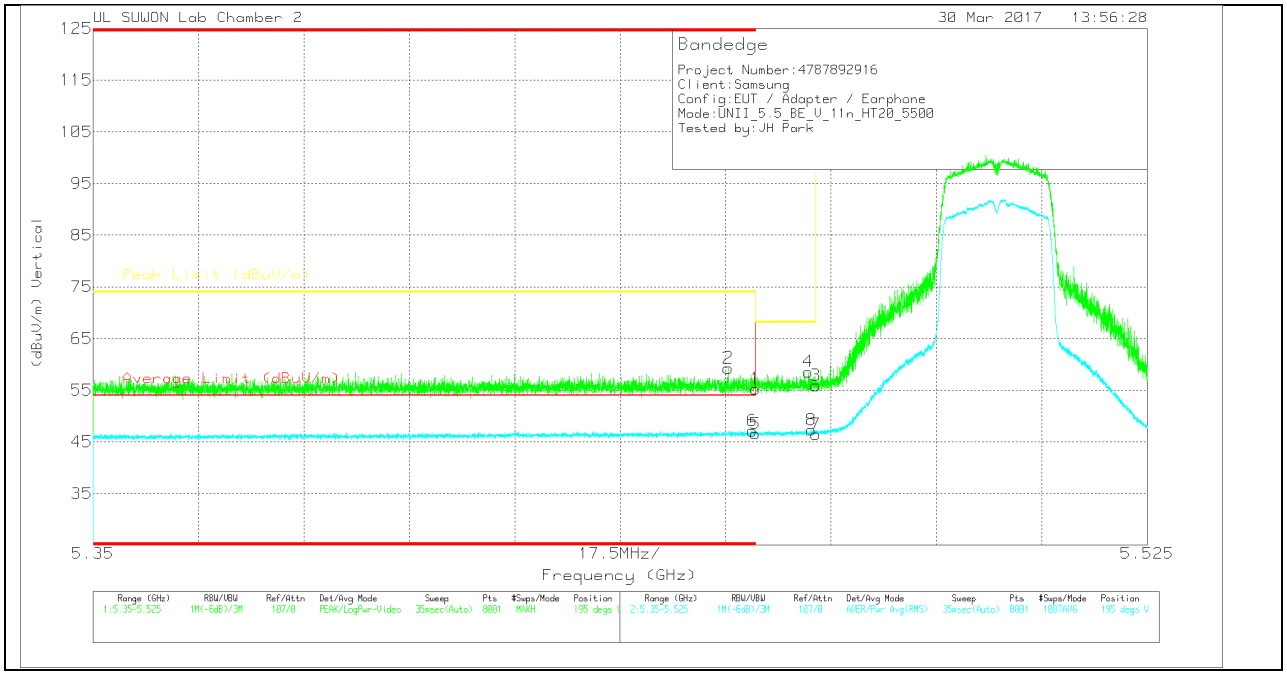
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	35.77	Pk	34.5	-15	0	55.27	-	-	74	-18.73	195	101	V
2	* 5.455	39.87	Pk	34.5	-15.1	0	59.27	-	-	74	-14.73	195	101	V
3	5.47	36.41	Pk	34.5	-15	0	55.91	-	-	68.2	-12.29	195	101	V
4	5.469	39.07	Pk	34.5	-15	0	58.57	-	-	68.2	-9.63	195	101	V
5	* 5.46	26.71	RMS	34.5	-15	.35	46.56	54	-7.44	-	-	195	101	V
6	* 5.459	27.31	RMS	34.5	-15	.35	47.16	54	-6.84	-	-	195	101	V

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

Pk - Peak detector

RMS - RMS detection

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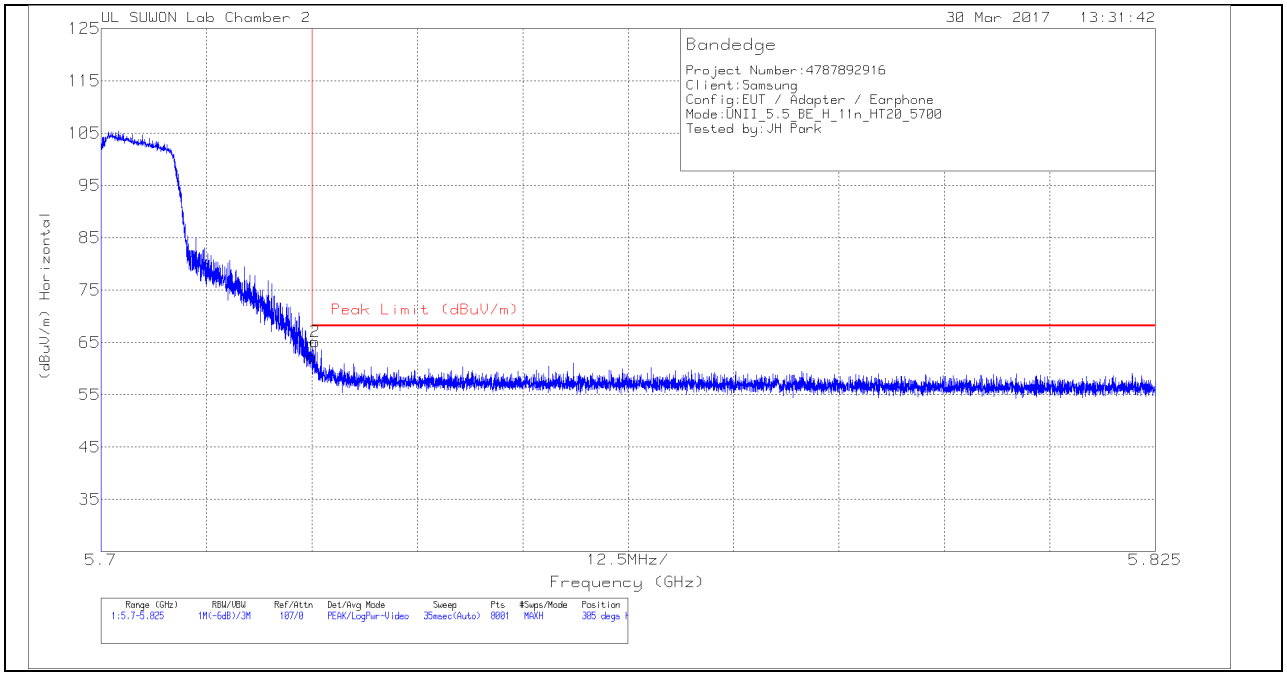
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	42.01	Pk	34.7	-14.5	0	62.21	68.2	-5.99	305	153	H
2	5.725	44.93	Pk	34.7	-14.5	0	65.13	68.2	-3.07	305	153	H

Pk - Peak detector

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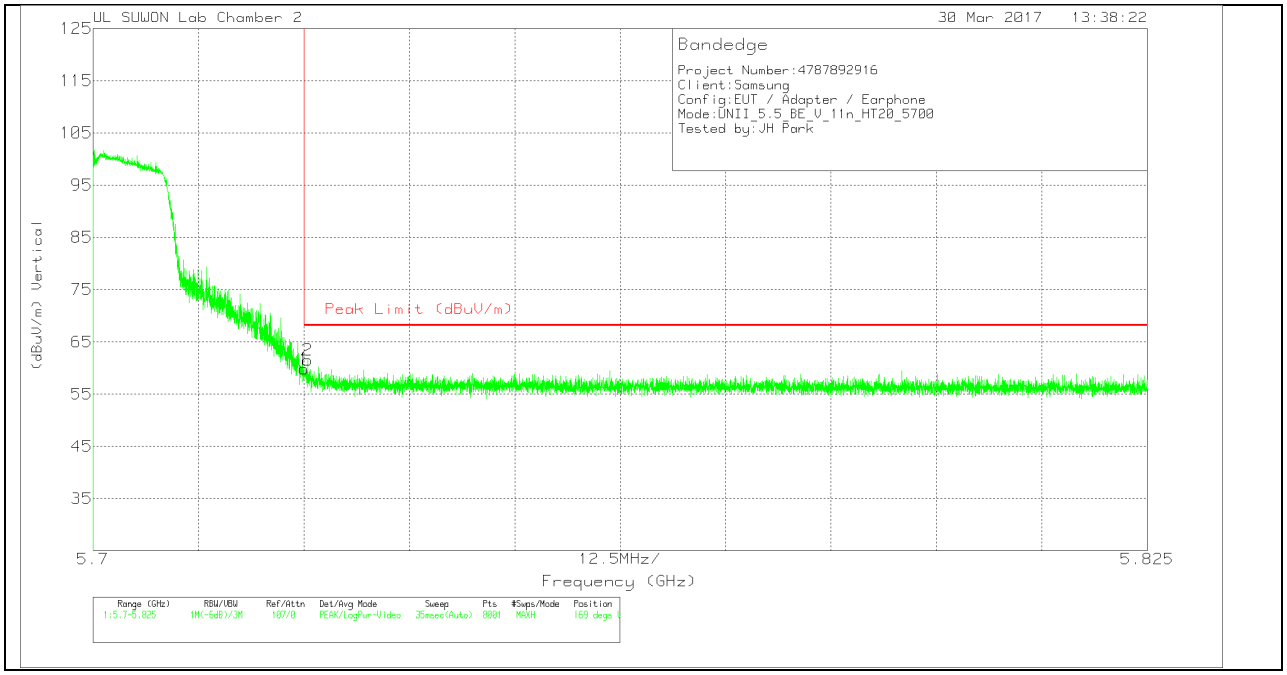
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	39.63	Pk	34.7	-14.5	0	59.83	68.2	-8.37	169	110	V
2	5.725	41.31	Pk	34.7	-14.5	0	61.51	68.2	-6.69	169	110	V

Pk - Peak detector

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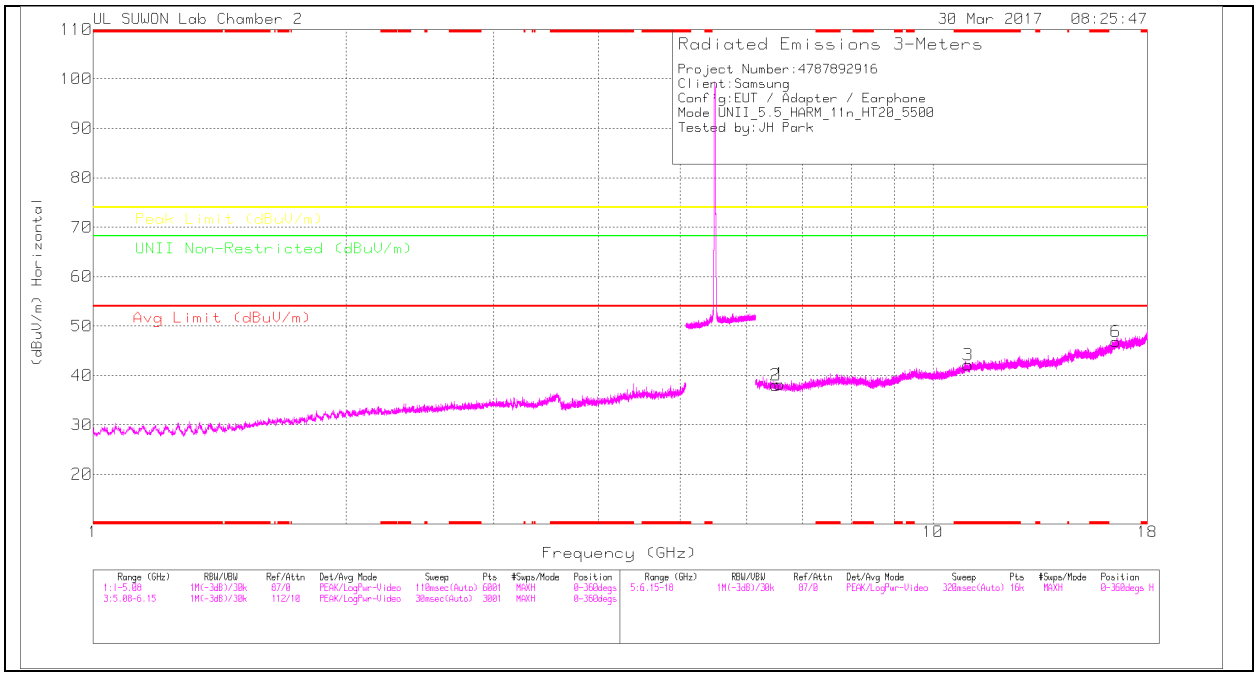
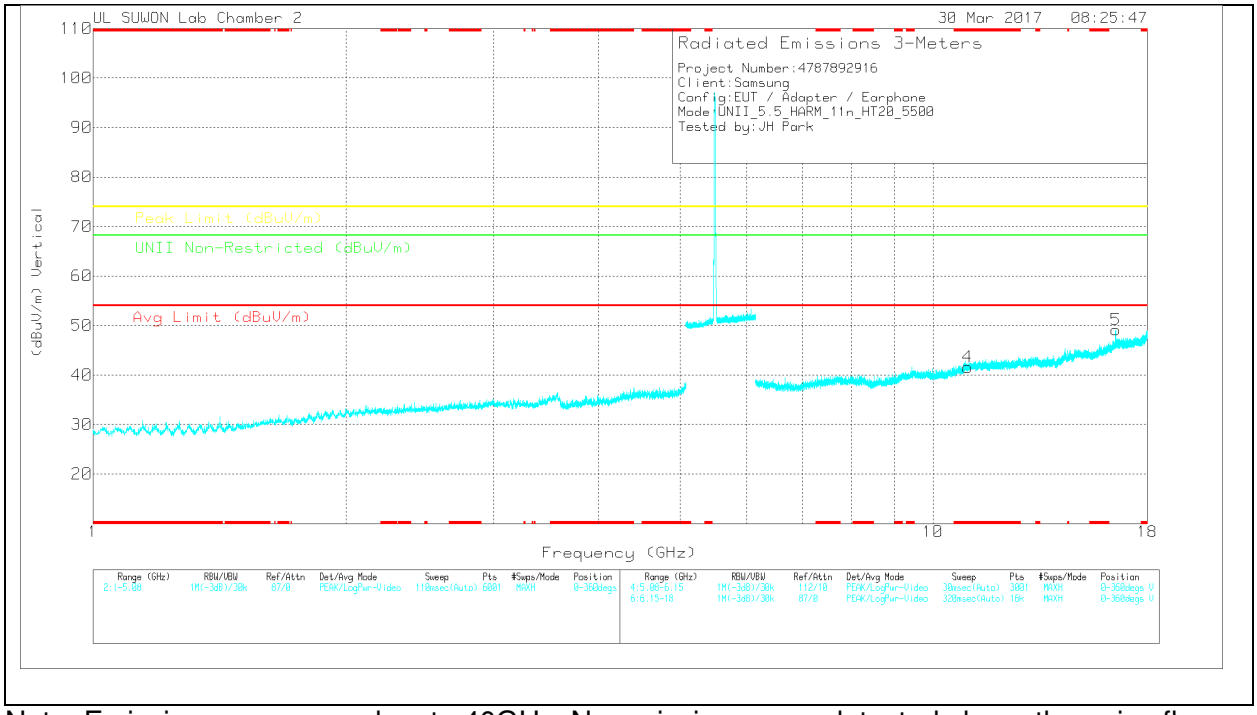
HARMONICS AND SPURIOUS EMISSIONS

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	6GHz_HP[dB]	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	6.574	25.22	PK	35.3	-22.3	0	38.22	-	-	-	-	68.2	-29.98	0-360	250	H
2	6.492	24.83	PK	35.3	-22.1	0	38.03	-	-	-	-	68.2	-30.17	0-360	150	H
3	* 11.009	20.23	PK	38	-16.1	0	42.13	-	-	74	-31.87	-	-	0-360	250	H
6	16.508	20.22	PK	41	-14.4	0	46.82	-	-	-	-	68.2	-21.38	0-360	250	H
4	* 11.006	19.58	PK	38	-16	0	41.58	-	-	74	-32.42	-	-	0-360	150	V
5	16.503	22.54	PK	41	-14.4	0	49.14	-	-	-	-	68.2	-19.06	0-360	250	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	6GHz_HP[dB]	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
16.504	34.21	PK-U	41	-14.4	0	60.81	-	-	-	-	68.2	-7.39	13	246	V

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

PK-U - U-NII: Maximum Peak

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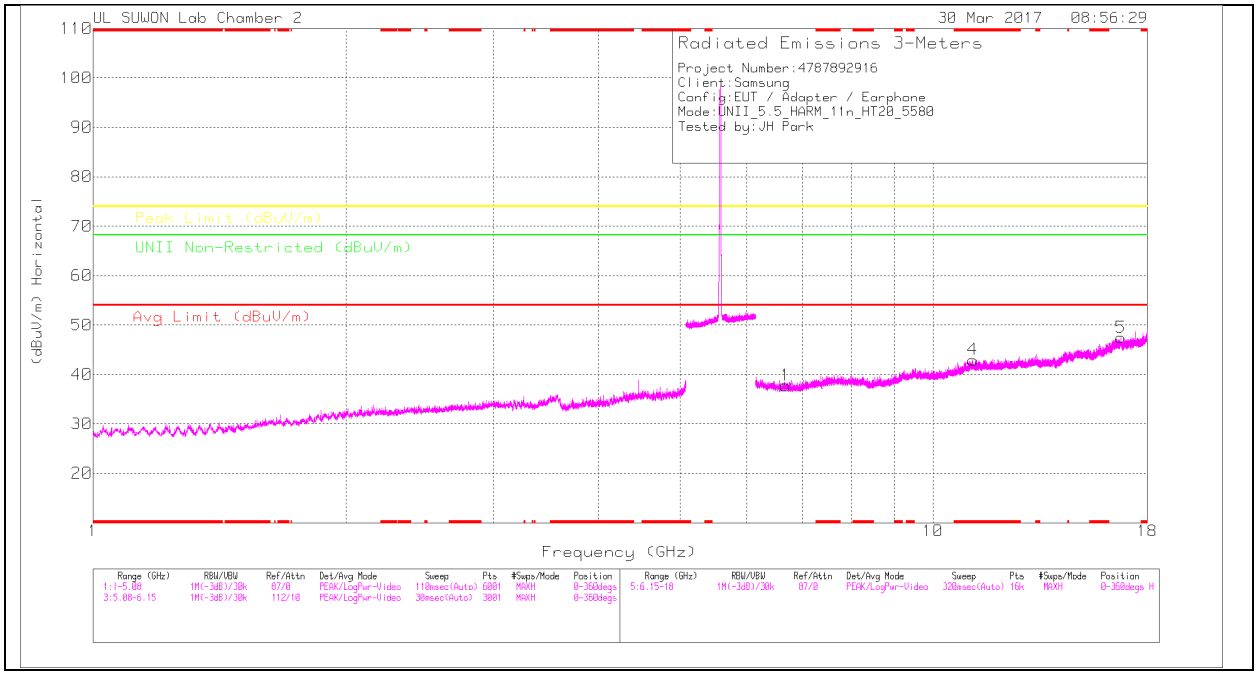
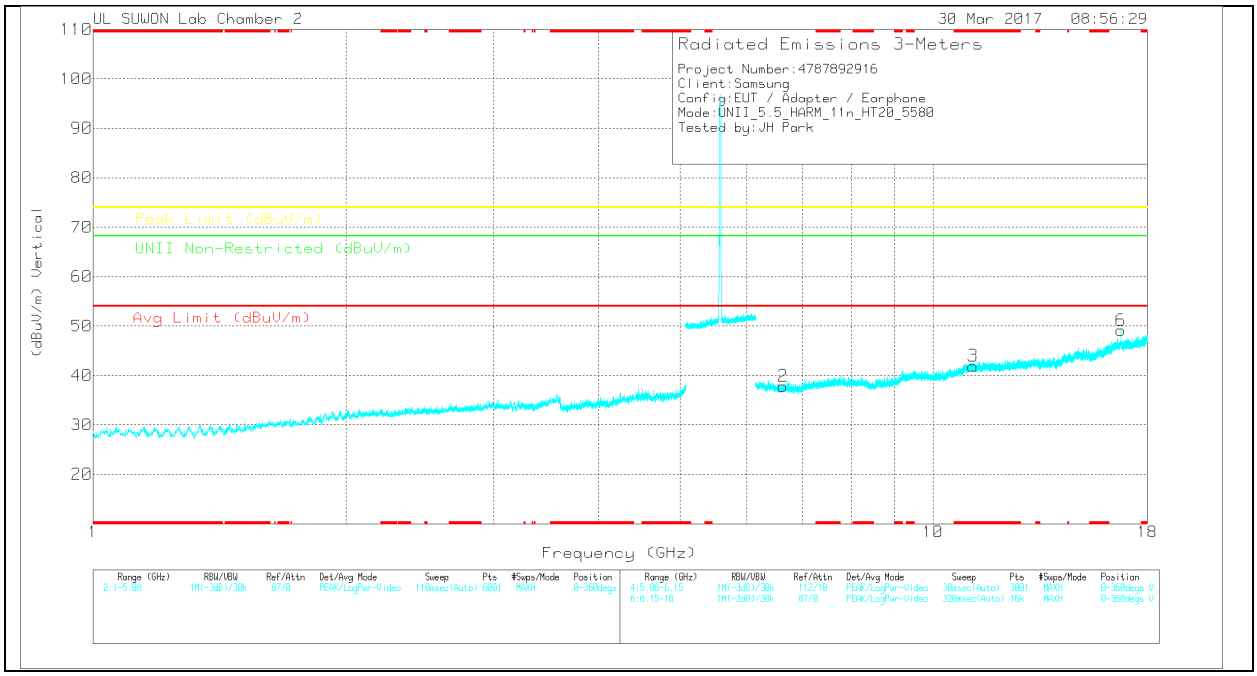
MID CHANNEL HORIZONTAL



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	6GHz_HP[dB]	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	6.678	23.77	PK	35.4	-21.4	0	37.77	-	-	-	-	68.2	-30.43	0-360	150	H
4	* 11.161	21.07	PK	38.1	-16.2	0	42.97	-	-	74	-31.03	-	-	0-360	250	H
5	16.741	20.16	PK	41	-13.7	0	47.46	-	-	-	-	68.2	-20.74	0-360	150	H
2	6.628	24.33	PK	35.3	-21.8	0	37.83	-	-	-	-	68.2	-30.37	0-360	150	V
3	* 11.161	20.04	PK	38.1	-16.2	0	41.94	-	-	74	-32.06	-	-	0-360	150	V
6	16.74	21.95	PK	41	-13.8	0	49.15	-	-	-	-	68.2	-19.05	0-360	250	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	6GHz_HP[dB]	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
16.741	34.64	PK-U	41	-13.8	0	61.84	-	-	-	-	68.2	-6.36	24	196	V

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

PK-U - U-NII: Maximum Peak

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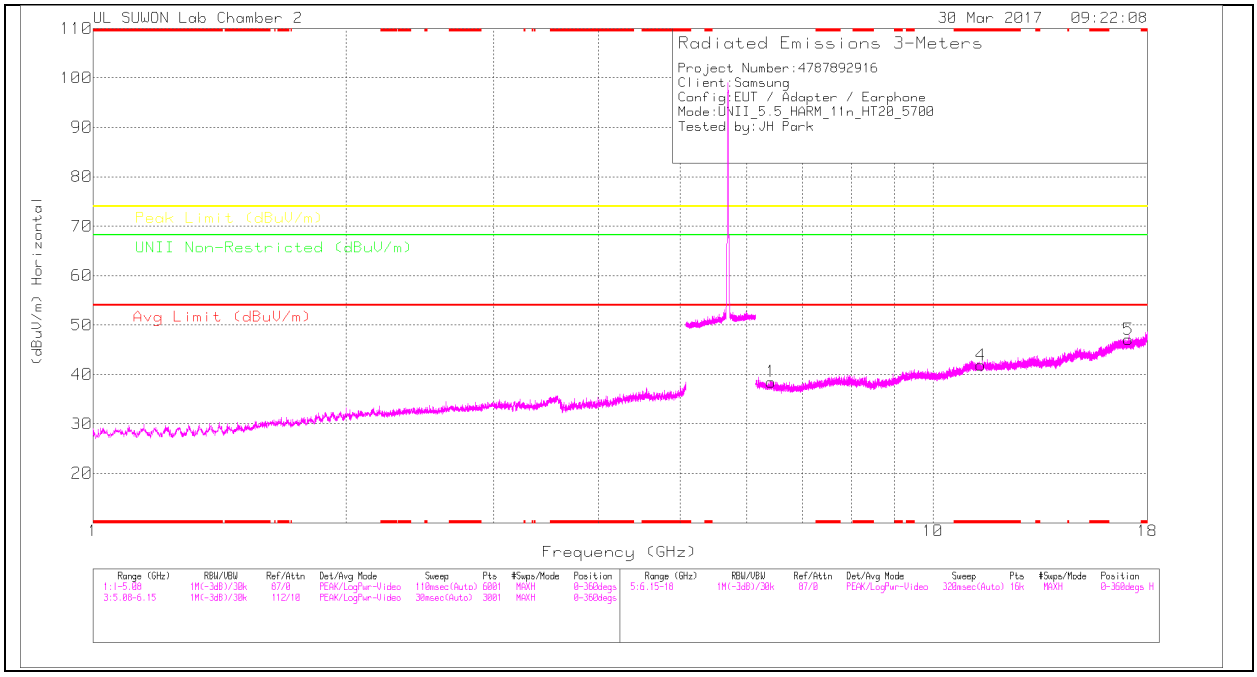
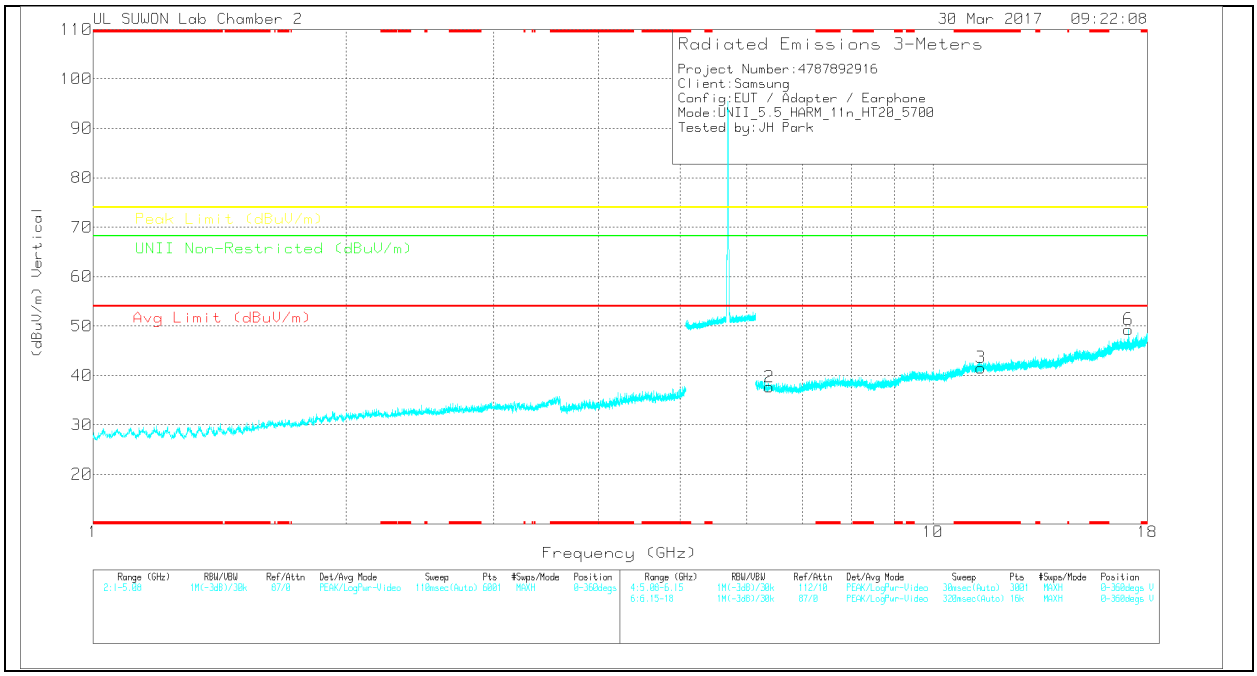
HIGH CHANNEL HORIZONTAL



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	6GHz_HP[dB]	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	6.42	24.81	PK	35.2	-21.5	0	38.51	-	-	-	-	68.2	-29.69	0-360	150	H
4	* 11.398	19.17	PK	38.3	-15.6	0	41.87	-	-	74	-32.13	-	-	0-360	150	H
5	17.101	19.5	PK	41.1	-13.5	0	47.1	-	-	-	-	68.2	-21.1	0-360	250	H
2	6.386	24.38	PK	35.2	-21.9	0	37.68	-	-	-	-	68.2	-30.52	0-360	150	V
3	* 11.401	18.96	PK	38.3	-15.7	0	41.56	-	-	74	-32.44	-	-	0-360	150	V
6	17.1	21.69	PK	41.1	-13.5	0	49.29	-	-	-	-	68.2	-18.91	0-360	150	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	6GHz_HP[dB]	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
17.1	31.86	PK-U	41.1	-13.5	0	59.46	-	-	-	-	68.2	-8.74	319	256	V

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

PK-U - U-NII: Maximum Peak

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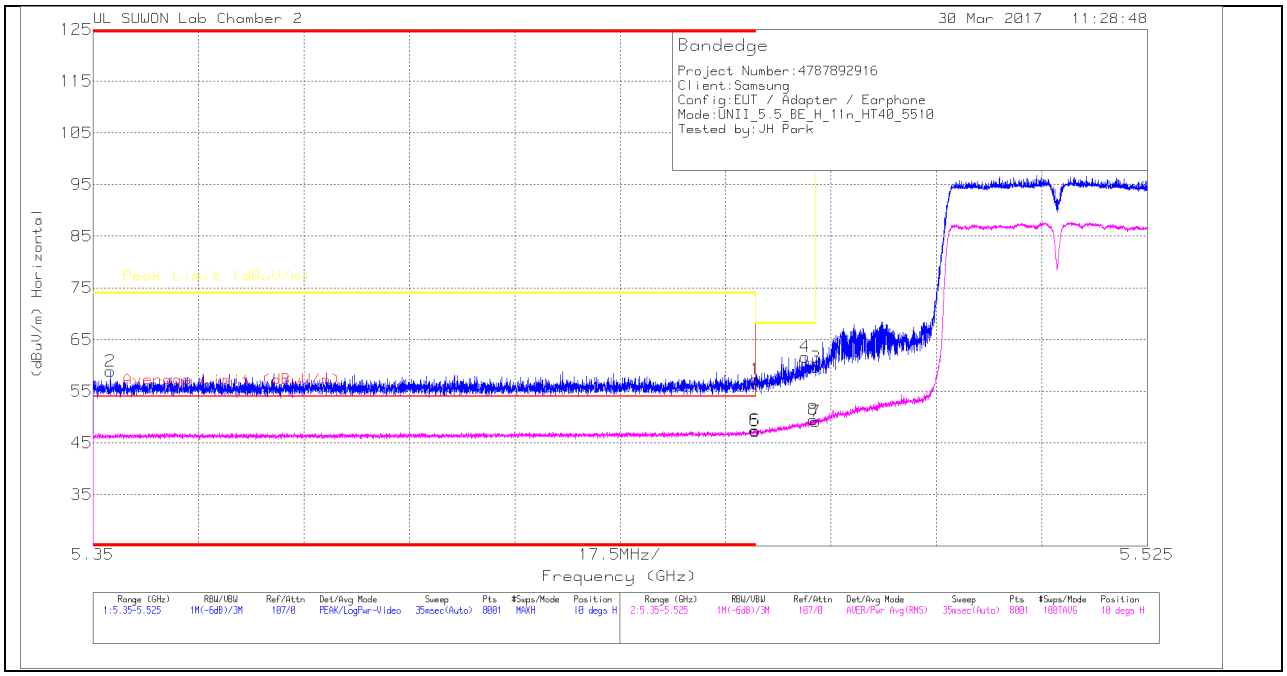
10.3.3. TX ABOVE 1GHz 802.11n HT40 MODE IN THE 5.5GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	37.79	Pk	34.5	-15	0	57.29	-	-	74	-16.71	10	139	H
2	* 5.353	39.66	Pk	34.4	-15.2	0	58.86	-	-	74	-15.14	10	139	H
3	5.47	40.12	Pk	34.5	-15	0	59.62	-	-	68.2	-8.58	10	139	H
4	5.468	42.13	Pk	34.5	-15	0	61.63	-	-	68.2	-6.57	10	139	H
5	* 5.46	27.11	RMS	34.5	-15	.67	47.28	54	-6.72	-	-	10	139	H
6	* 5.46	27.3	RMS	34.5	-15	.67	47.47	54	-6.53	-	-	10	139	H

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

Pk - Peak detector

RMS - RMS detection

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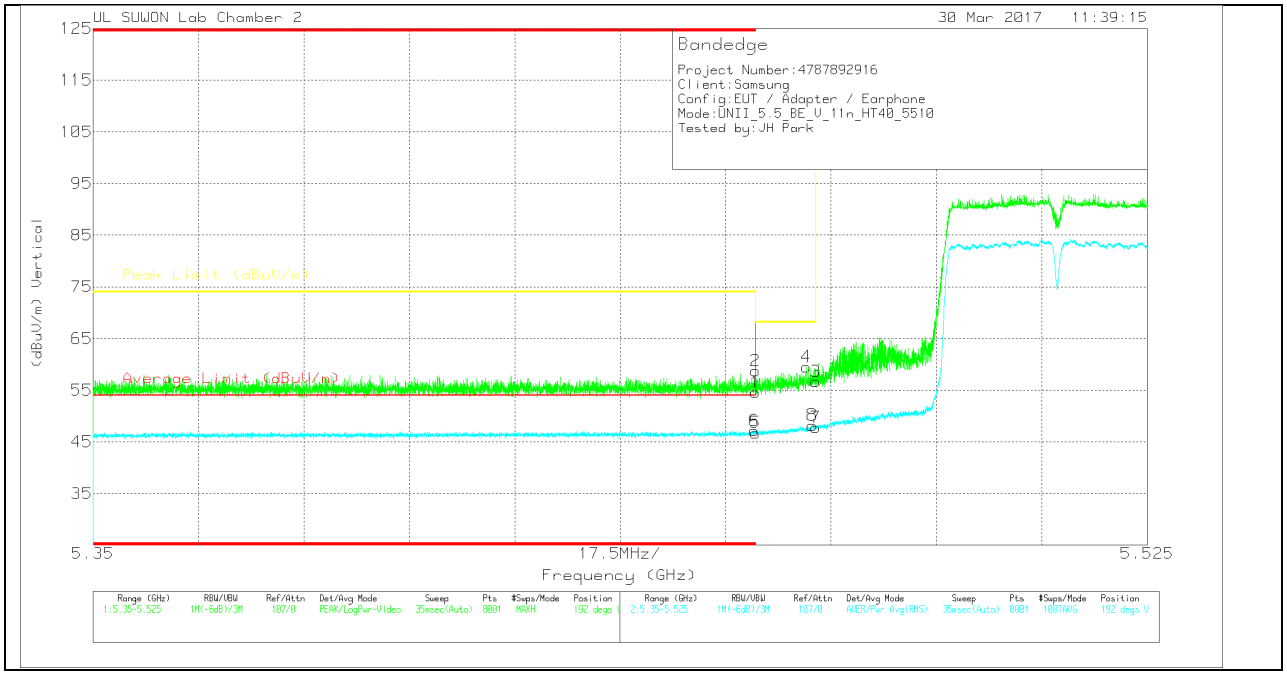
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.46	35.1	Pk	34.5	-15	0	54.6	-	-	74	-19.4	192	101	V
2	* 5.46	39.23	Pk	34.5	-15	0	58.73	-	-	74	-15.27	192	101	V
3	5.47	37.17	Pk	34.5	-15	0	56.67	-	-	68.2	-11.53	192	101	V
4	5.468	40.02	Pk	34.5	-15	0	59.52	-	-	68.2	-8.68	192	101	V
5	* 5.46	26.6	RMS	34.5	-15	.67	46.77	54	-7.23	-	-	192	101	V
6	* 5.46	27	RMS	34.5	-15	.67	47.17	54	-6.83	-	-	192	101	V

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

Pk - Peak detector

RMS - RMS detection

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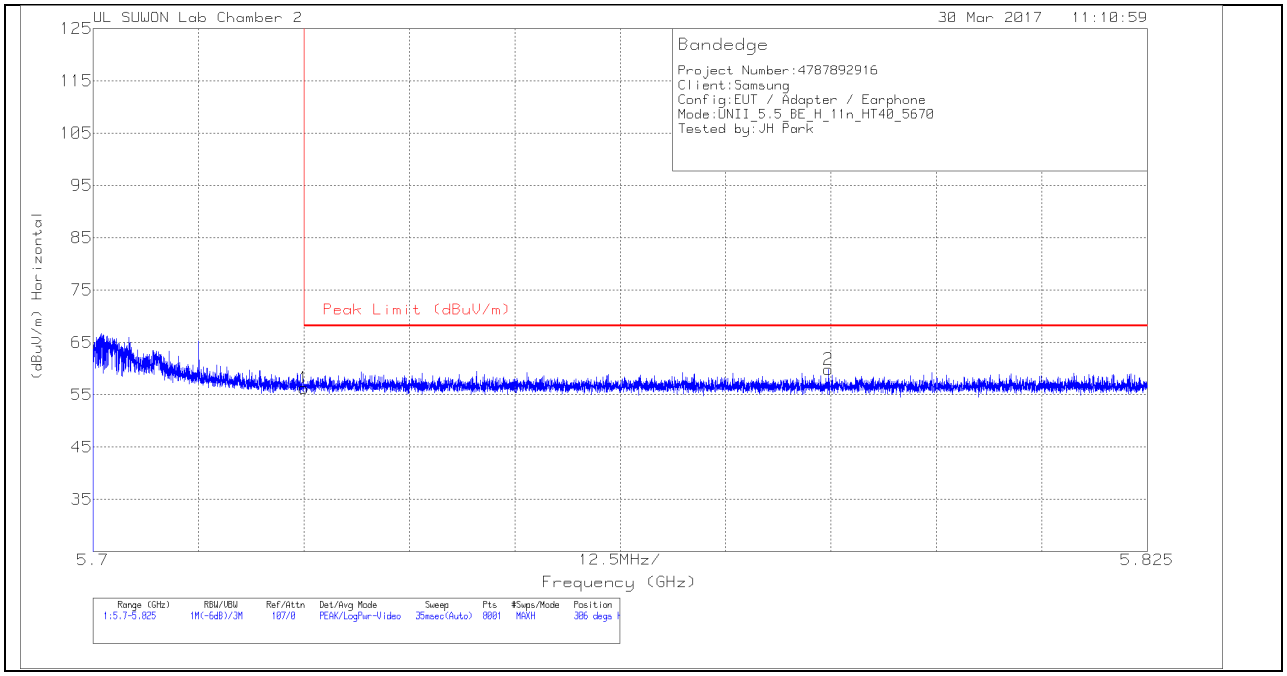
AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	36.09	Pk	34.7	-14.5	0	56.29	68.2	-11.91	306	125	H
2	5.787	39.55	Pk	34.7	-14.4	0	59.85	68.2	-8.35	306	125	H

Pk - Peak detector

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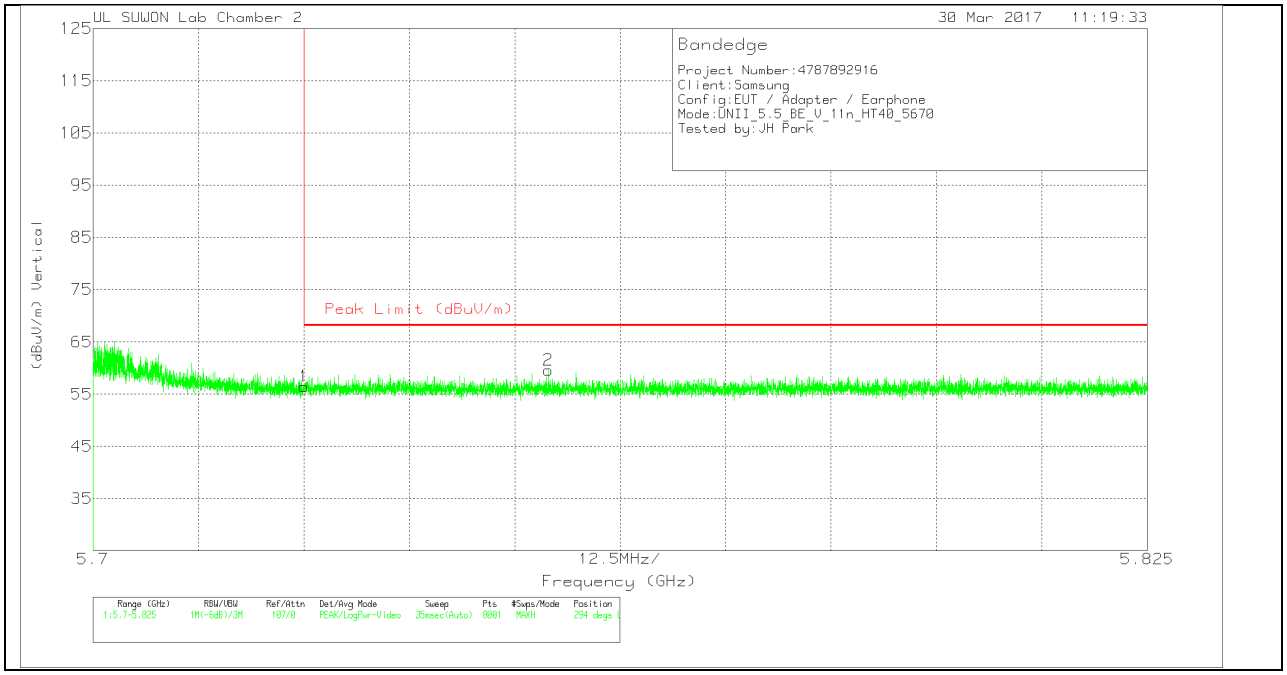
VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	36.26	Pk	34.7	-14.5	0	56.46	68.2	-11.74	294	320	V
2	5.754	39.26	Pk	34.7	-14.4	0	59.56	68.2	-8.64	294	320	V

Pk - Peak detector

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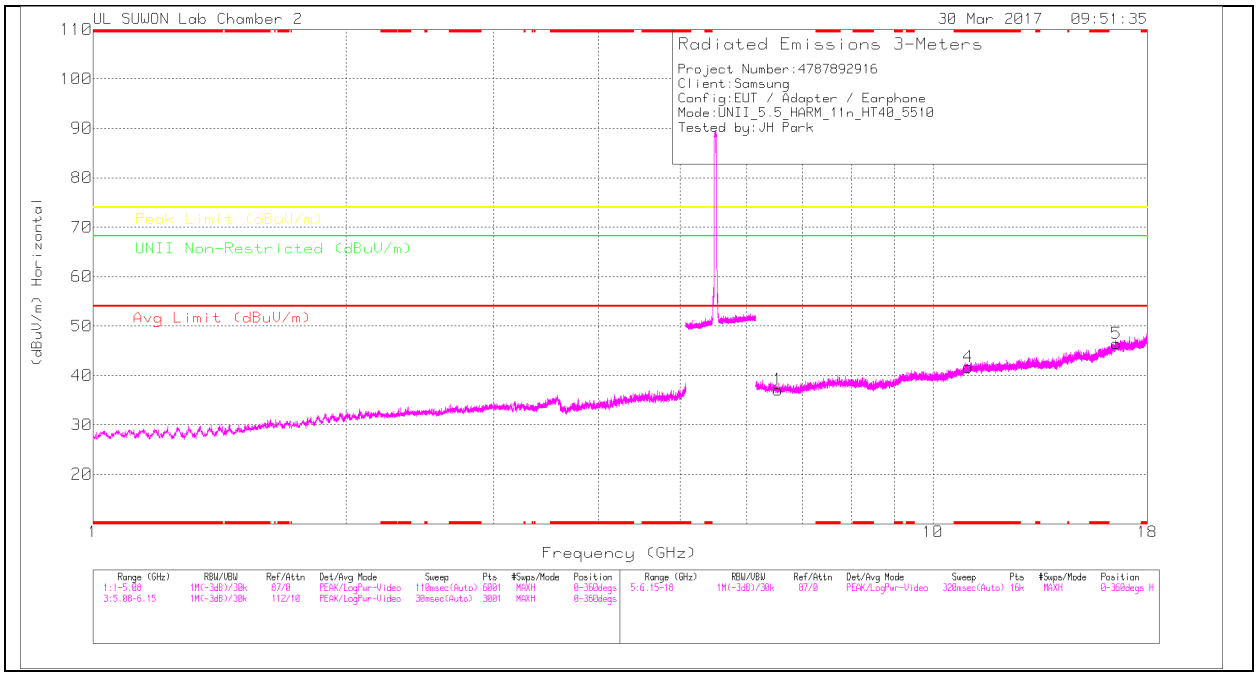
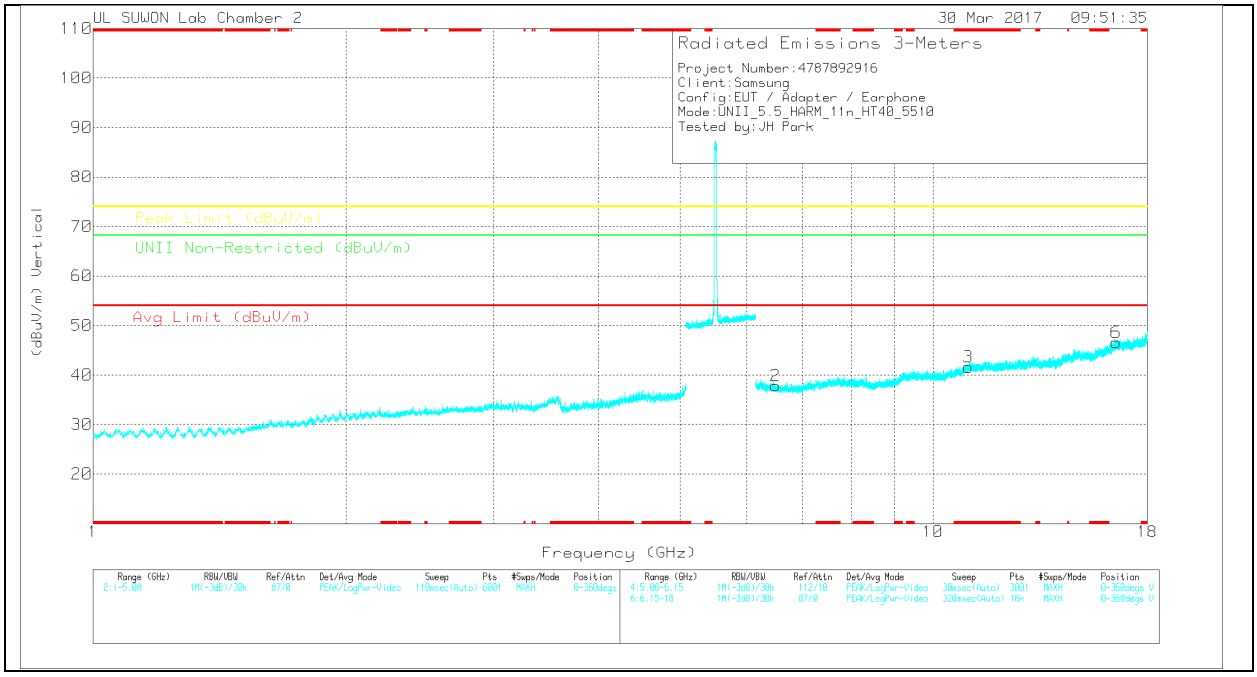
HARMONICS AND SPURIOUS EMISSIONS

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	6GHz_HP[dB]	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	6.537	24.21	PK	35.3	-22.4	0	37.11	-	-	-	-	68.2	-31.09	0-360	150	H
4	* 11.018	19.81	PK	38	-16.1	0	41.71	-	-	74	-32.29	-	-	0-360	150	H
5	16.531	19.77	PK	41	-14.3	0	46.47	-	-	-	-	68.2	-21.73	0-360	150	H
2	6.495	24.7	PK	35.3	-22.2	0	37.8	-	-	-	-	68.2	-30.4	0-360	250	V
3	* 11.021	19.68	PK	38	-16.1	0	41.58	-	-	74	-32.42	-	-	0-360	150	V
6	16.528	19.88	PK	41	-14.3	0	46.58	-	-	-	-	68.2	-21.62	0-360	250	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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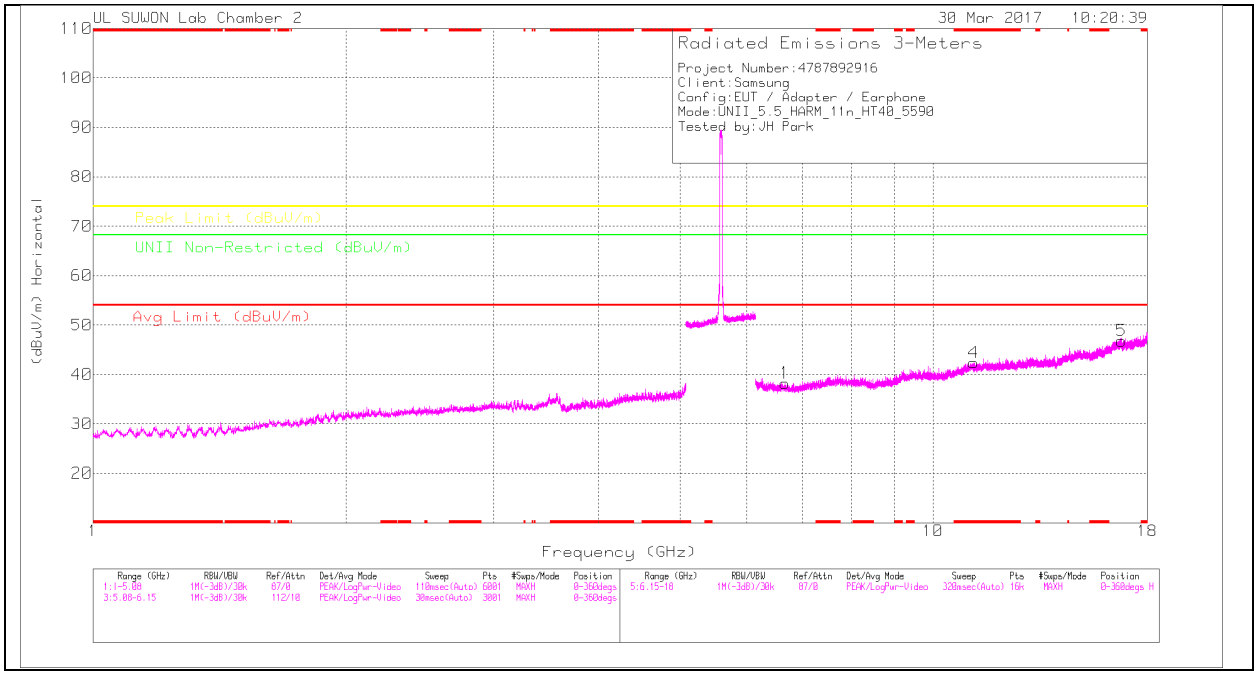
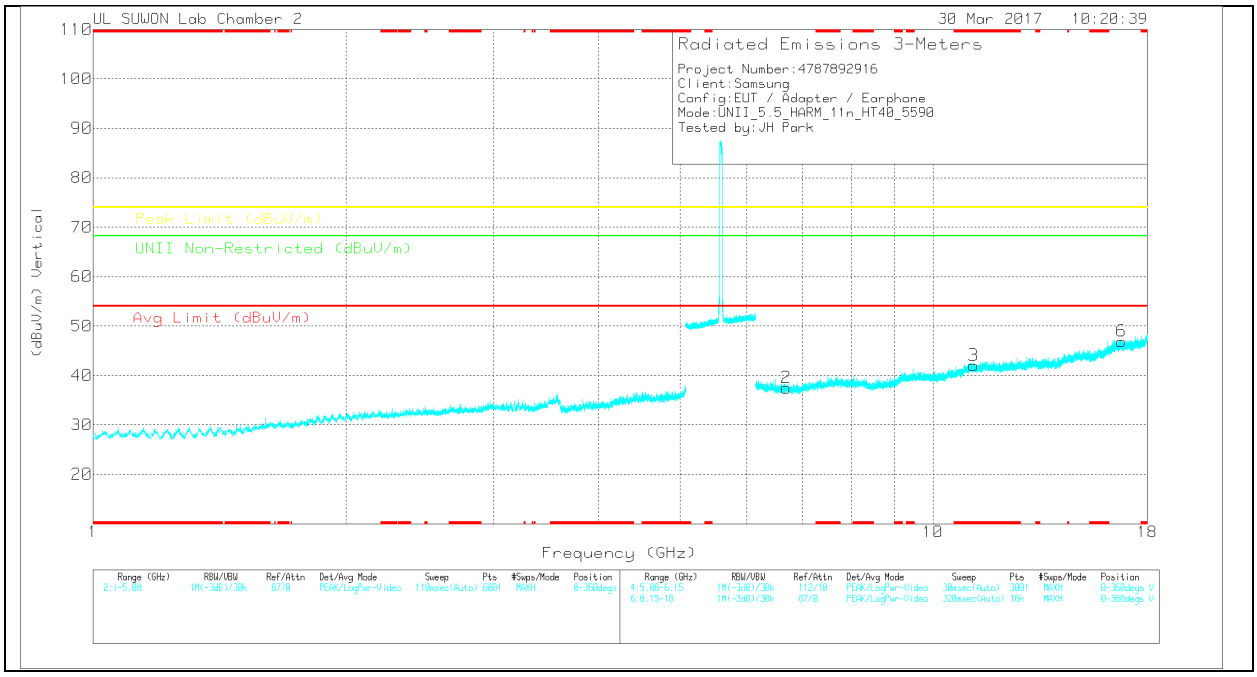
MID CHANNEL HORIZONTAL



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	6GHz_HP[dB]	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	6.665	24.32	PK	35.4	-21.5	0	38.22	-	-	-	-	68.2	-29.98	0-360	250	H
4	* 11.183	20.56	PK	38.1	-16.3	0	42.36	-	-	74	-31.64	-	-	0-360	250	H
5	16.77	19.3	PK	41	-13.5	0	46.8	-	-	-	-	68.2	-21.4	0-360	250	H
2	6.685	23.51	PK	35.4	-21.4	0	37.51	-	-	-	-	68.2	-30.69	0-360	250	V
3	* 11.18	20.23	PK	38.1	-16.3	0	42.03	-	-	74	-31.97	-	-	0-360	150	V
6	16.768	19.51	PK	41	-13.6	0	46.91	-	-	-	-	68.2	-21.29	0-360	150	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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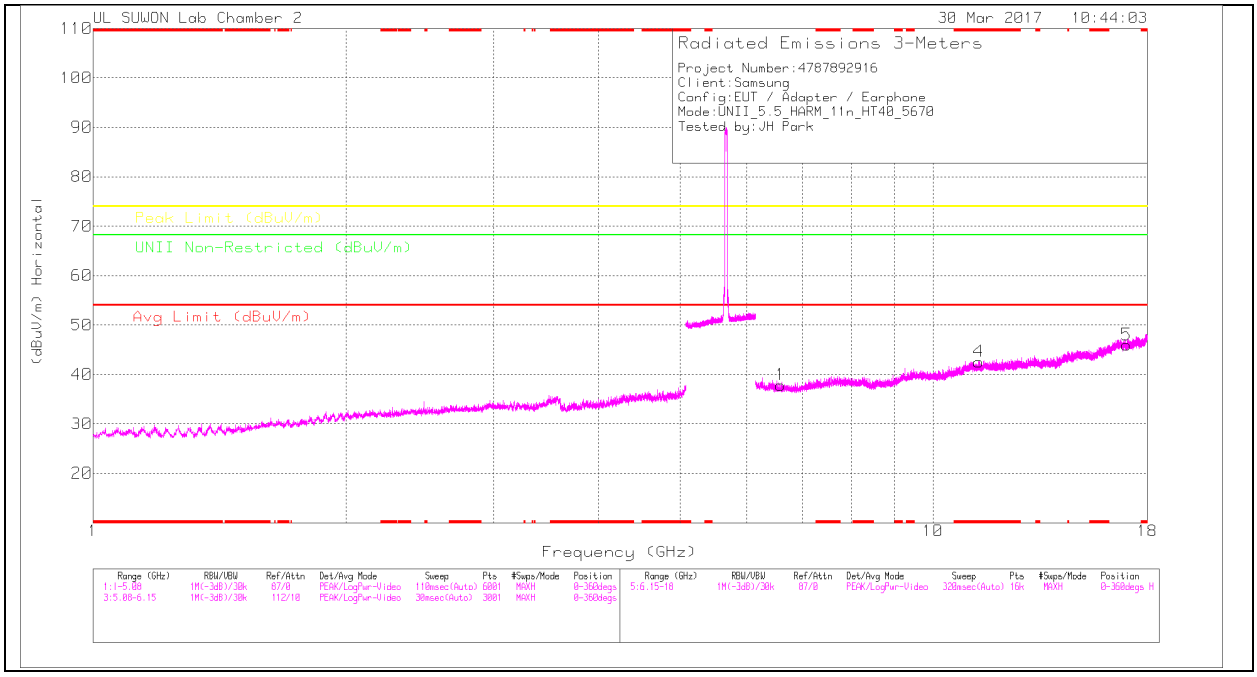
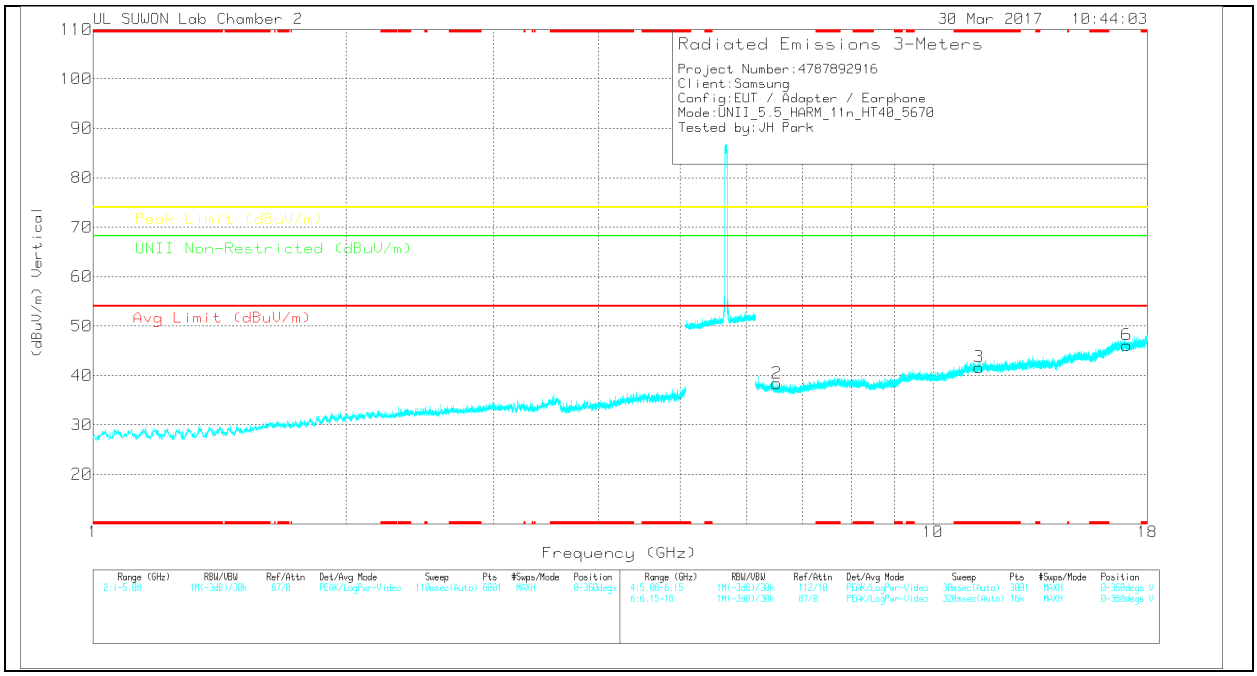
HIGH CHANNEL HORIZONTAL



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	6GHz_HP[dB]	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	6.588	24.77	PK	35.3	-22.2	0	37.87	-	-	-	-	68.2	-30.33	0-360	250	H
4	* 11.338	19.98	PK	38.2	-15.6	0	42.58	-	-	74	-31.42	-	-	0-360	250	H
5	17.009	18.19	PK	41.1	-13.3	0	45.99	-	-	-	-	68.2	-22.21	0-360	150	H
2	6.523	25.41	PK	35.3	-22.3	0	38.41	-	-	-	-	68.2	-29.79	0-360	150	V
3	* 11.341	18.99	PK	38.2	-15.5	0	41.69	-	-	74	-32.31	-	-	0-360	150	V
6	17.015	18.15	PK	41.1	-13.1	0	46.15	-	-	-	-	68.2	-22.05	0-360	150	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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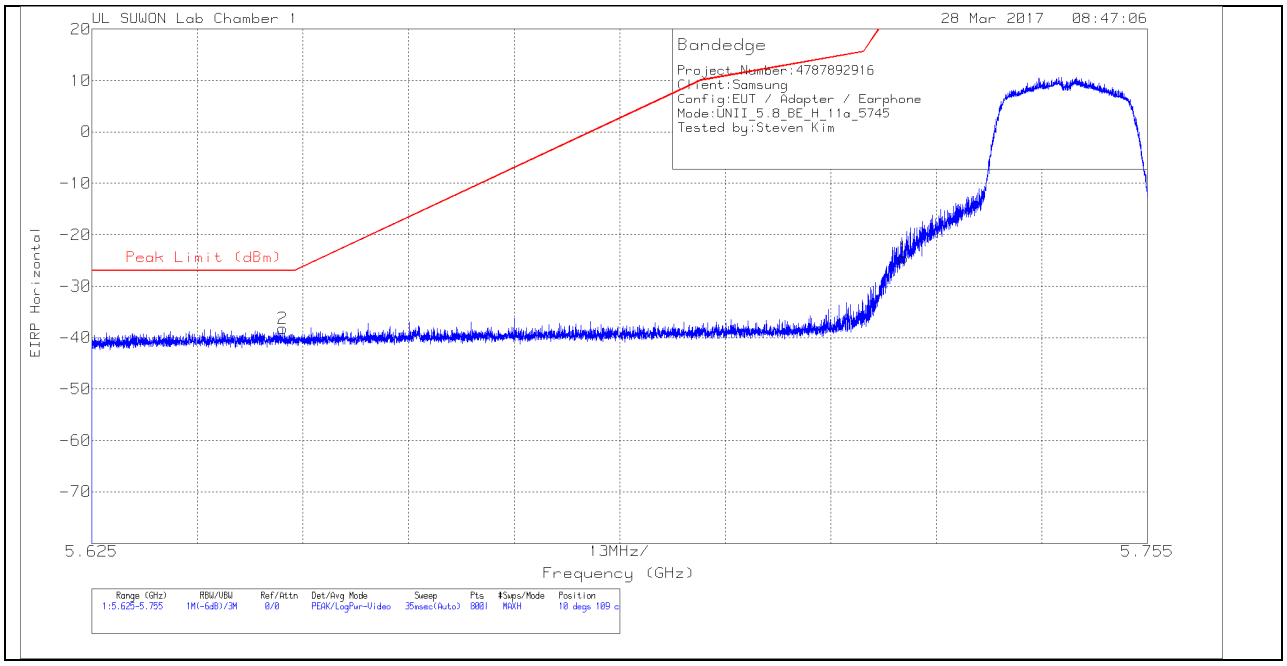
10.4. 5.8 GHz

10.4.1. TX ABOVE 1GHz 802.11a MODE IN THE 5.8GHz BAND BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-48.15	Pk	34.8	-22.9	11.8	0	-24.45	26.97	-51.42	10	109	H
2	5.649	-61.81	Pk	34.8	-23	11.8	0	-38.21	-27	-11.21	10	109	H

Pk - Peak detector

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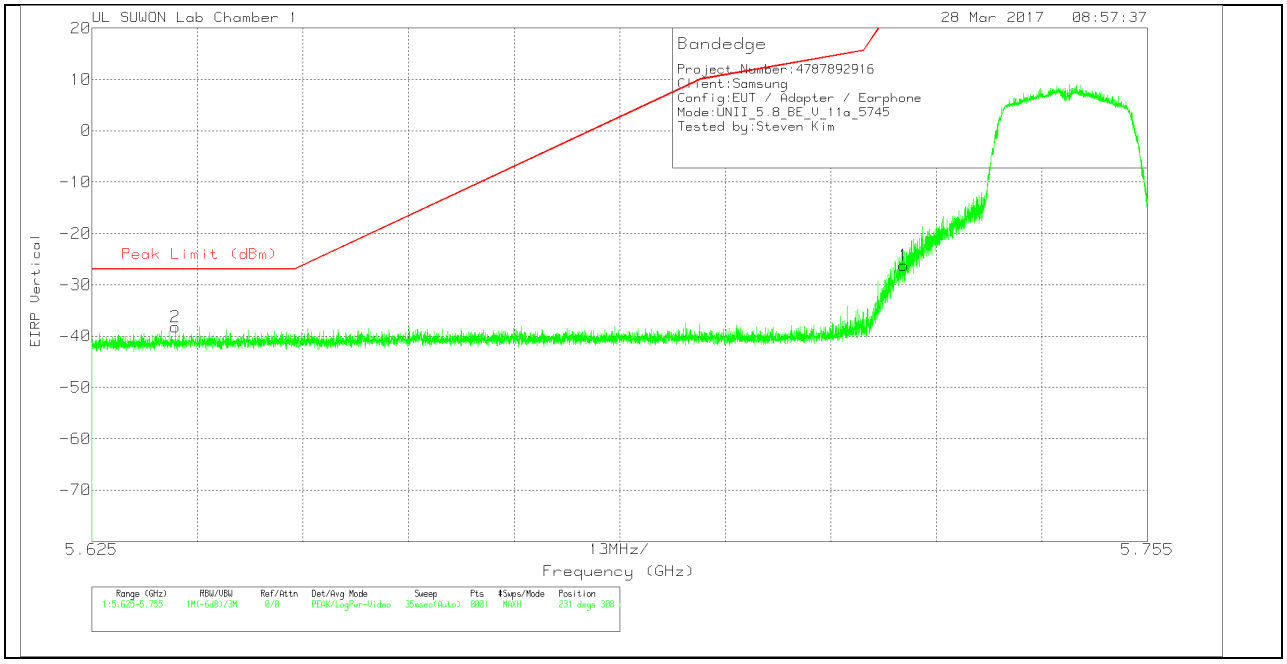
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-49.9	Pk	34.8	-22.9	11.8	0	-26.2	26.97	-53.17	231	308	V
2	5.635	-61.78	Pk	34.8	-23	11.8	0	-38.18	-27	-11.18	231	308	V

Pk - Peak detector

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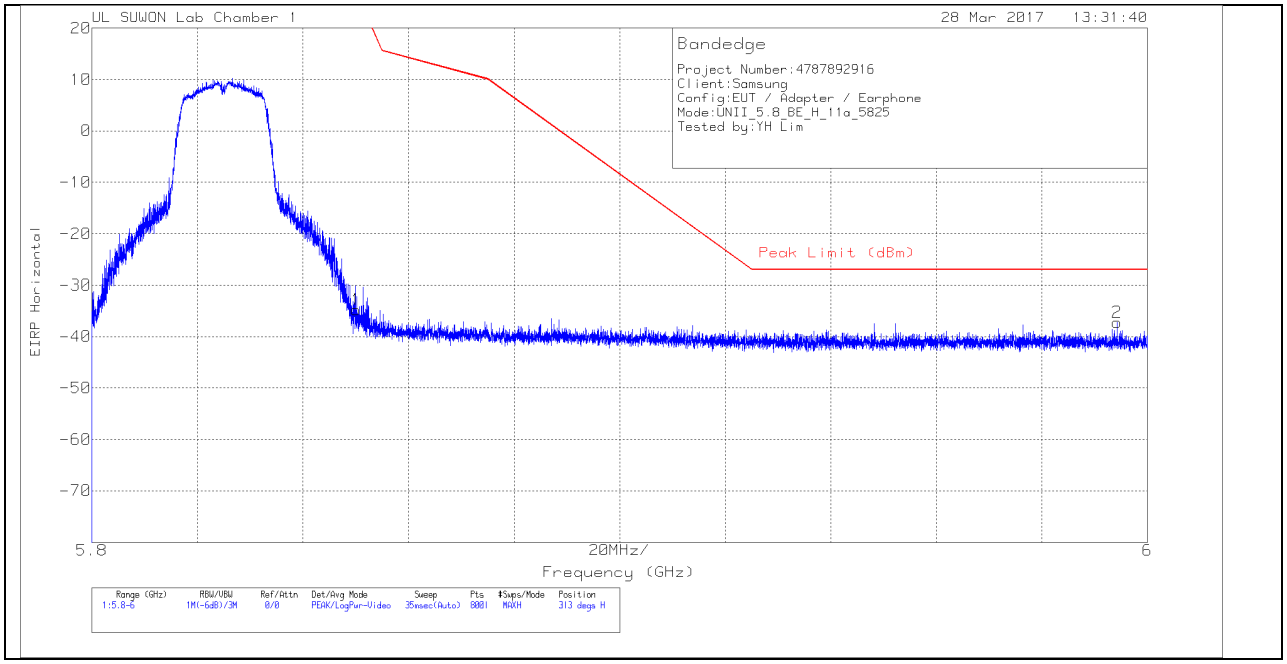
BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	Path_2	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-59.26	Pk	34.9	-22.2	11.8	0	-34.76	26.94	-61.7	313	118	H
2	5.994	-61.68	Pk	34.9	-22.2	11.8	0	-37.18	-27	-10.18	313	118	H

Pk - Peak detector

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_15E
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675 Korea TEL: (031) 337-9902,FAX: (031) 213-5433
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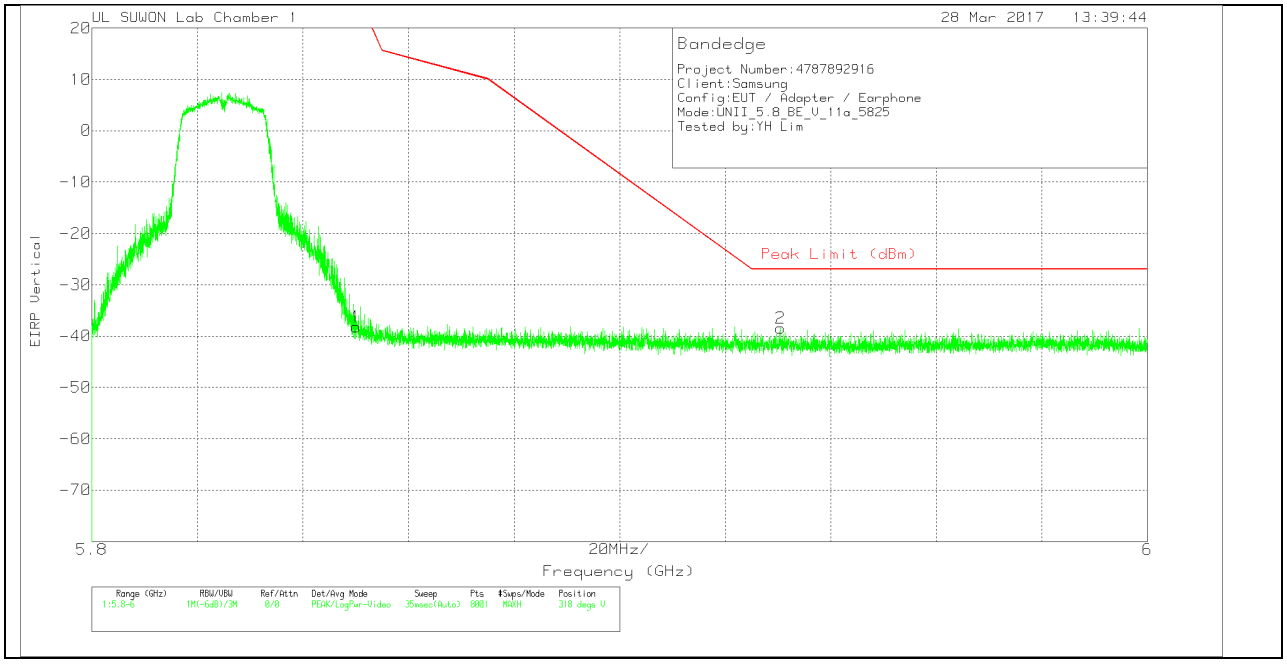
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-62.62	Pk	34.9	-22.3	11.8	0	-38.22	26.94	-65.16	318	102	V
2	5.931	-62.66	Pk	34.9	-22.5	11.8	0	-38.46	-27	-11.46	318	102	V

Pk - Peak detector

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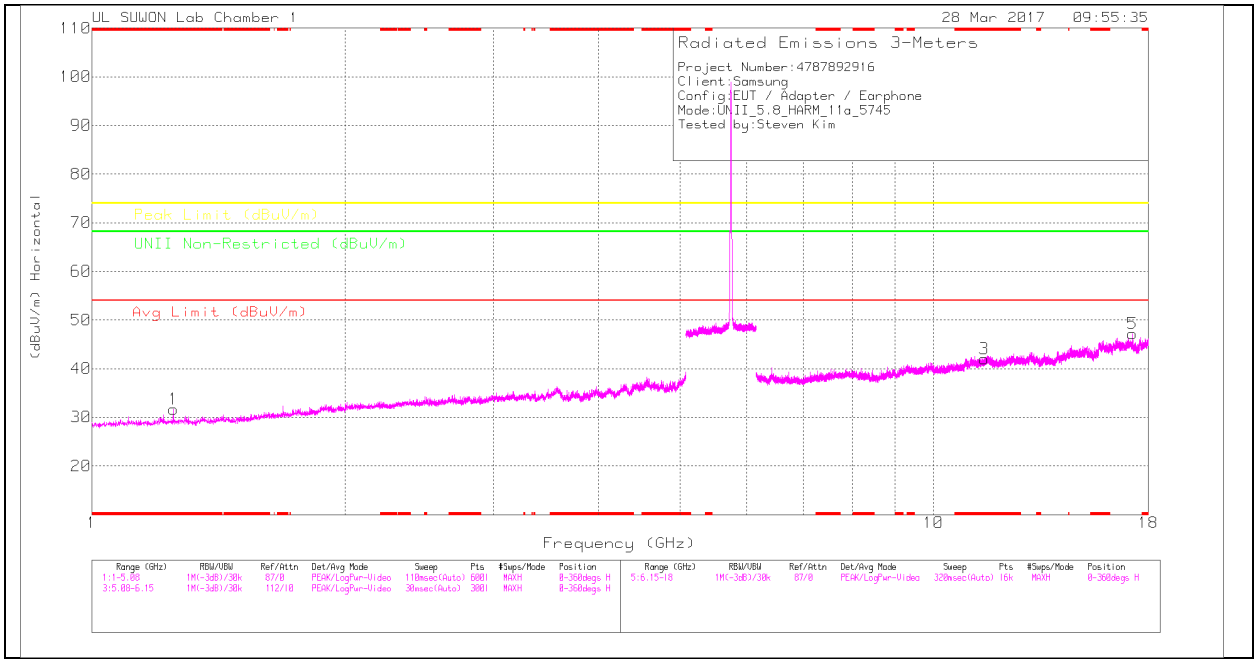
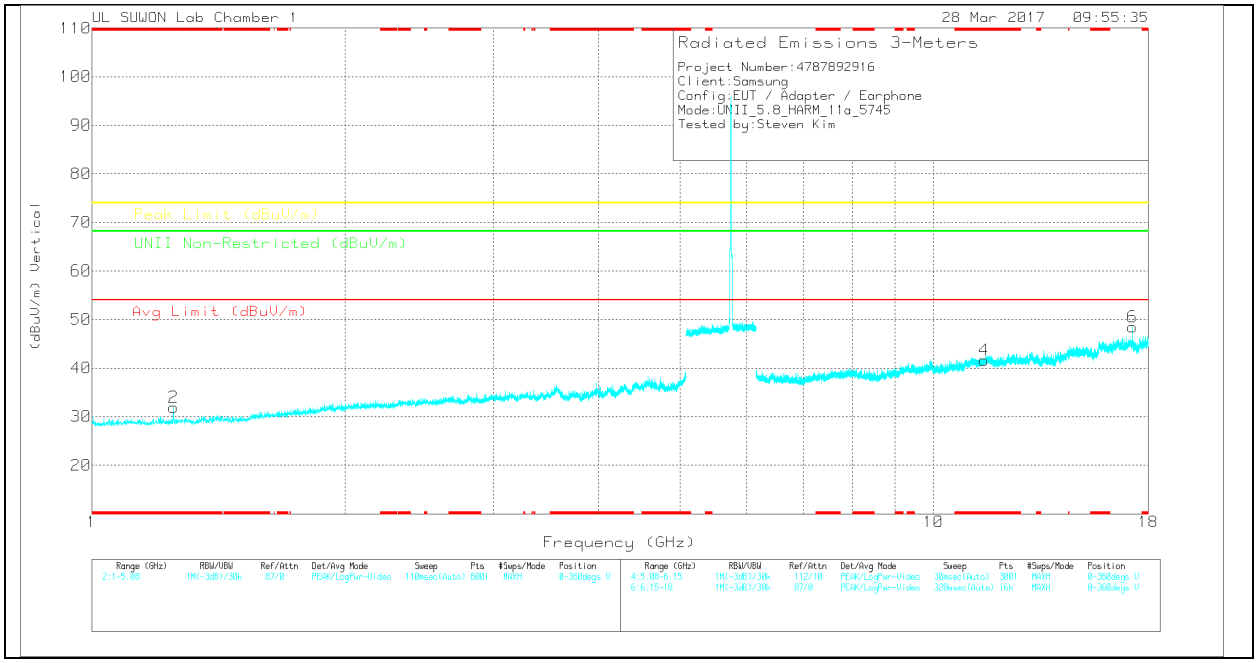
LOW CHANNEL HORIZONTAL



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	5Ghz_LP(dB)	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	* 1.25	42.94	PK	28.3	-39.6	0	31.64	-	-	74	-42.36	-	-	0-360	150	H
2	* 1.25	43.27	PK	28.3	-39.6	0	31.97	-	-	74	-42.03	-	-	0-360	250	V
3	* 11.491	31.56	PK	38.6	-28.1	0	42.06	-	-	74	-31.94	-	-	0-360	250	H
5	17.239	28.57	PK	41.2	-22.6	0	47.17	-	-	-	-	68.2	-21.03	0-360	250	H
4	* 11.494	30.97	PK	38.6	-28	0	41.57	-	-	74	-32.43	-	-	0-360	150	V
6	17.238	29.93	PK	41.2	-22.7	0	48.43	-	-	-	-	68.2	-19.77	0-360	150	V

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

PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	6Ghz_HP(dB)	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
17.244	39.59	PK-U	41.2	-22.7	0	58.09	-	-	-	-	68.2	-10.11	22	114	H
17.239	42	PK-U	41.2	-22.6	0	60.6	-	-	-	-	68.2	-7.6	336	102	V

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

PK-U - U-NII: Maximum Peak

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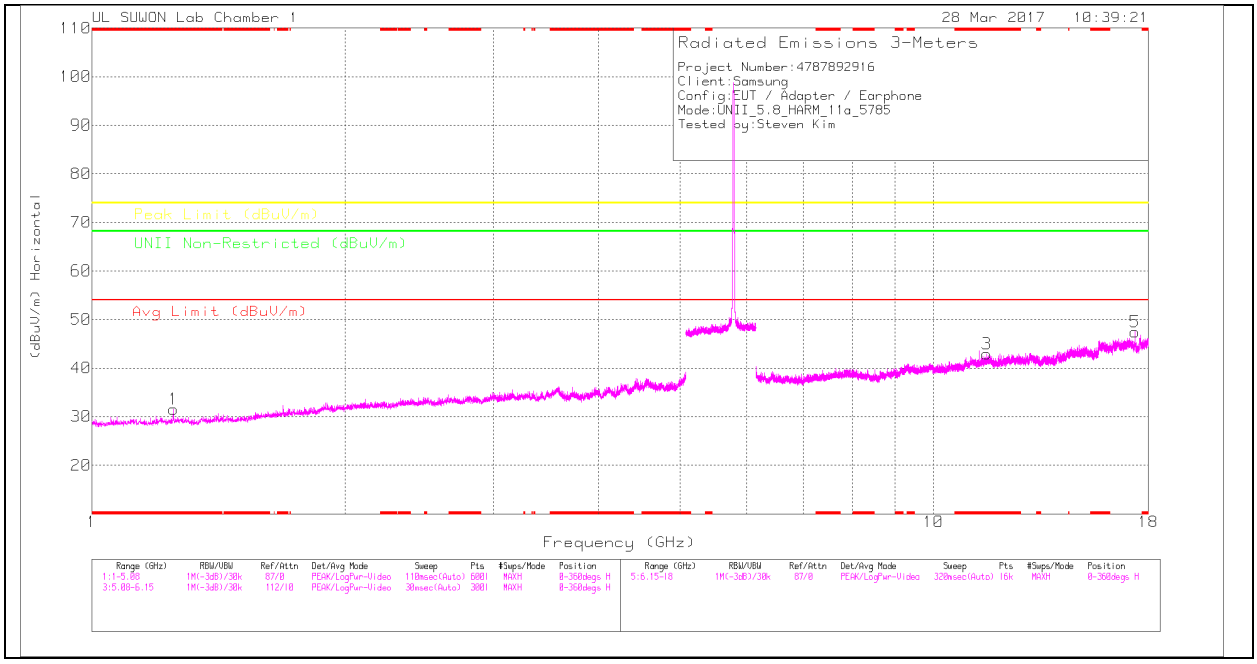
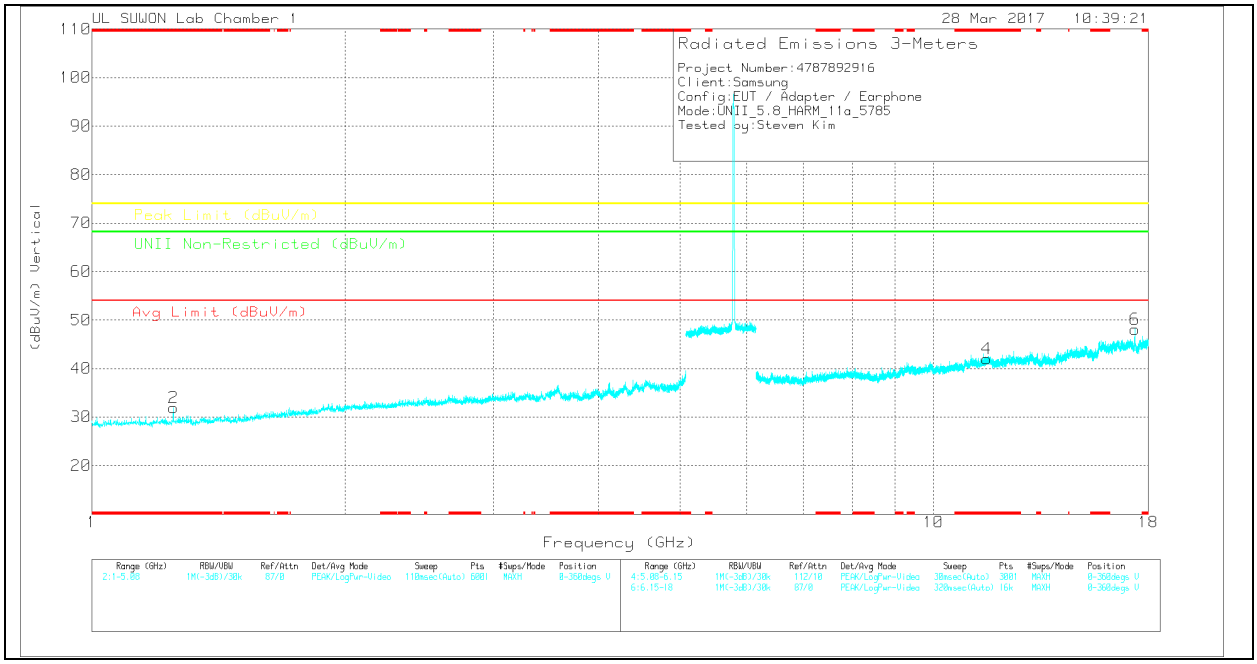
MID CHANNEL HORIZONTAL



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	5Ghz_LP(dB)	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	* 1.25	42.87	PK	28.3	-39.6	0	31.57	-	-	74	-42.43	-	-	0-360	150	H
2	* 1.25	43.26	PK	28.3	-39.6	0	31.96	-	-	74	-42.04	-	-	0-360	250	V
3	* 11.57	32.13	PK	38.7	-27.9	0	42.93	-	-	74	-31.07	-	-	0-360	150	H
5	17.356	28.79	PK	41.2	-22.6	0	47.39	-	-	-	-	68.2	-20.81	0-360	250	H
4	* 11.566	31.15	PK	38.7	-27.8	0	42.05	-	-	74	-31.95	-	-	0-360	250	V
6	17.354	29.61	PK	41.2	-22.7	0	48.11	-	-	-	-	68.2	-20.09	0-360	150	V

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

PK - Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	6Ghz_HP(dB)	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
17.354	41.64	PK-U	41.2	-22.7	0	60.14	-	-	-	-	68.2	-8.06	14	232	H
17.356	44.03	PK-U	41.2	-22.7	0	62.53	-	-	-	-	68.2	-5.67	336	102	V

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

PK-U - U-NII: Maximum Peak

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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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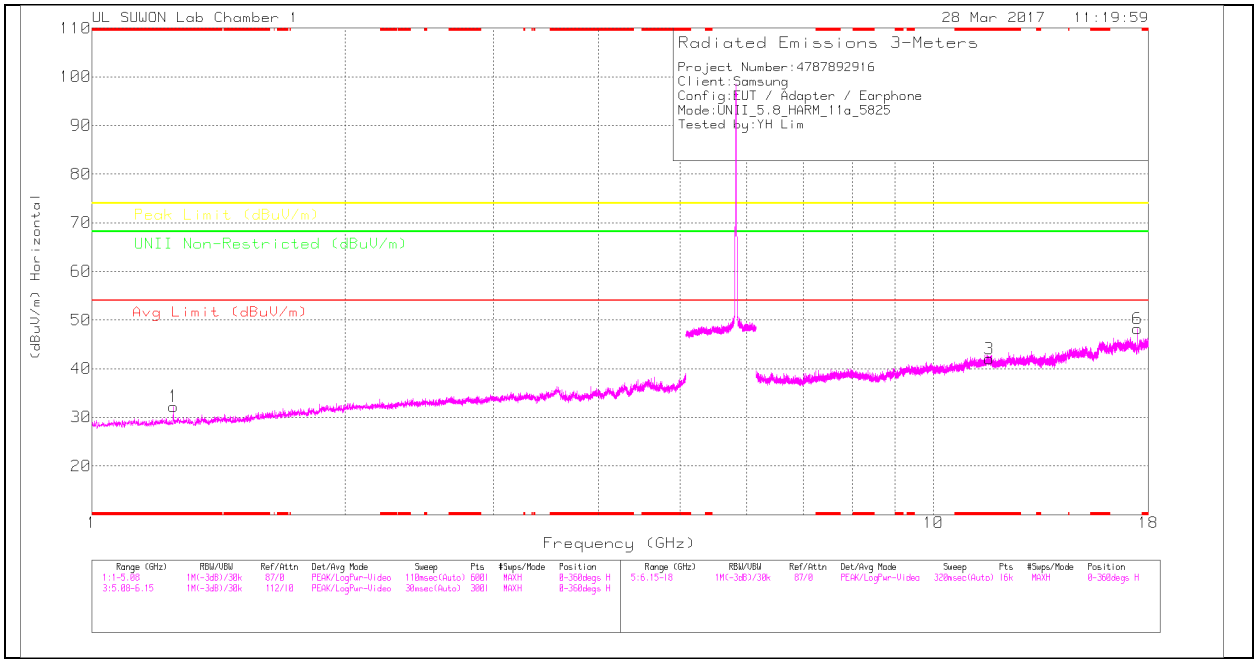
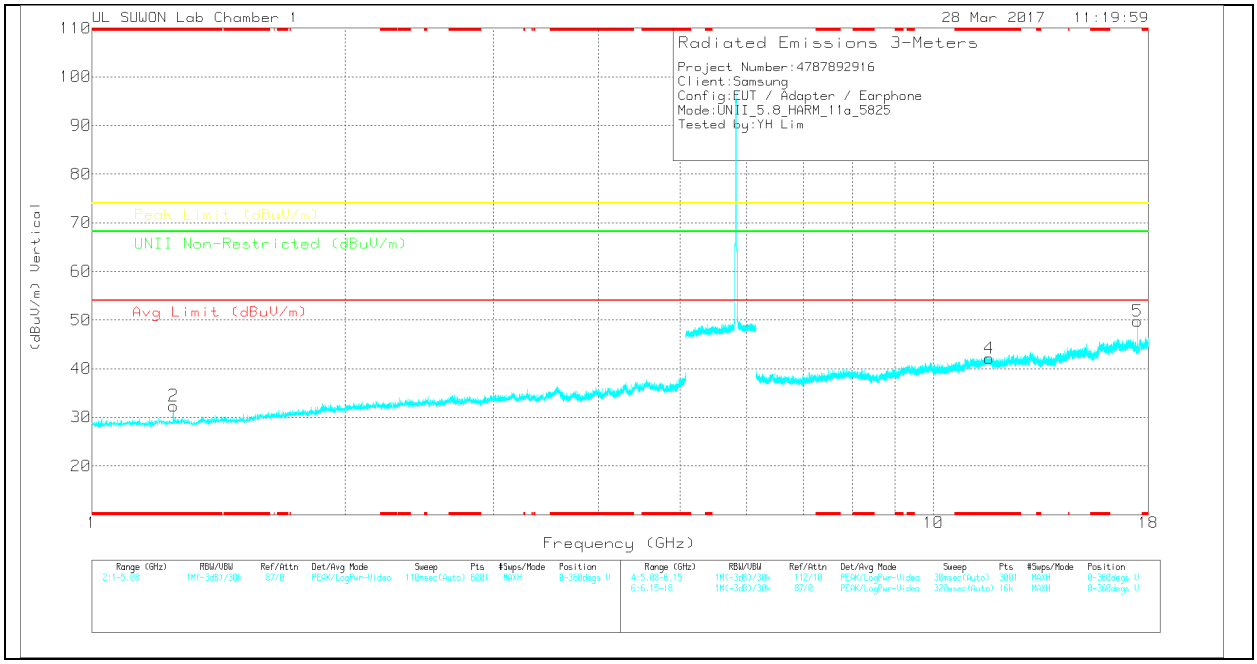
HIGH CHANNEL HORIZONTAL



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(001688717)_150619	5Ghz_LP(dB)	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	* 1.25	43.54	PK	28.3	-39.6	0	32.24	-	-	74	-41.76	-	-	0-360	150	H
2	* 1.25	43.67	PK	28.3	-39.6	0	32.37	-	-	74	-41.63	-	-	0-360	250	V
3	* 11.649	31.94	PK	38.7	-28.6	0	42.04	-	-	74	-31.96	-	-	0-360	250	H
6	17.478	30.15	PK	41.1	-23	0	48.25	-	-	-	-	68.2	-19.95	0-360	250	H
4	* 11.65	31.95	PK	38.7	-28.5	0	42.15	-	-	74	-31.85	-	-	0-360	150	V
5	17.475	31.64	PK	41.1	-23	0	49.74	-	-	-	-	68.2	-18.46	0-360	150	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	6Ghz_HP(dB)	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
17.472	43.36	PK-U	41.1	-23	0	61.46	-	-	-	-	68.2	-6.74	18	110	H
17.48	45.35	PK-U	41.1	-23	0	63.45	-	-	-	-	68.2	-4.75	341	106	V

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

PK-U - U-NII: Maximum Peak

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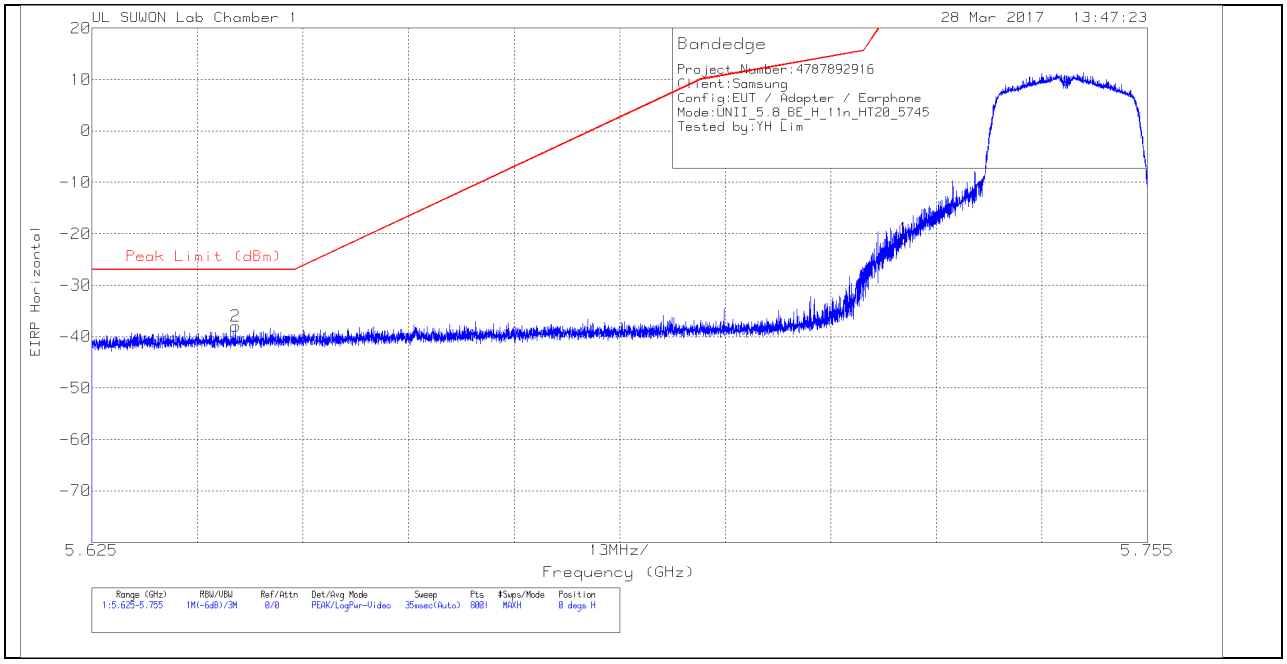
10.4.2. TX ABOVE 1GHz 802.11n HT20 MODE IN THE 5.8GHz BAND BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-44.66	Pk	34.8	-22.9	11.8	0	-20.96	26.97	-47.93	0	126	H
2	5.643	-61.42	Pk	34.8	-23.1	11.8	0	-37.92	-27	-10.92	0	126	H

Pk - Peak detector

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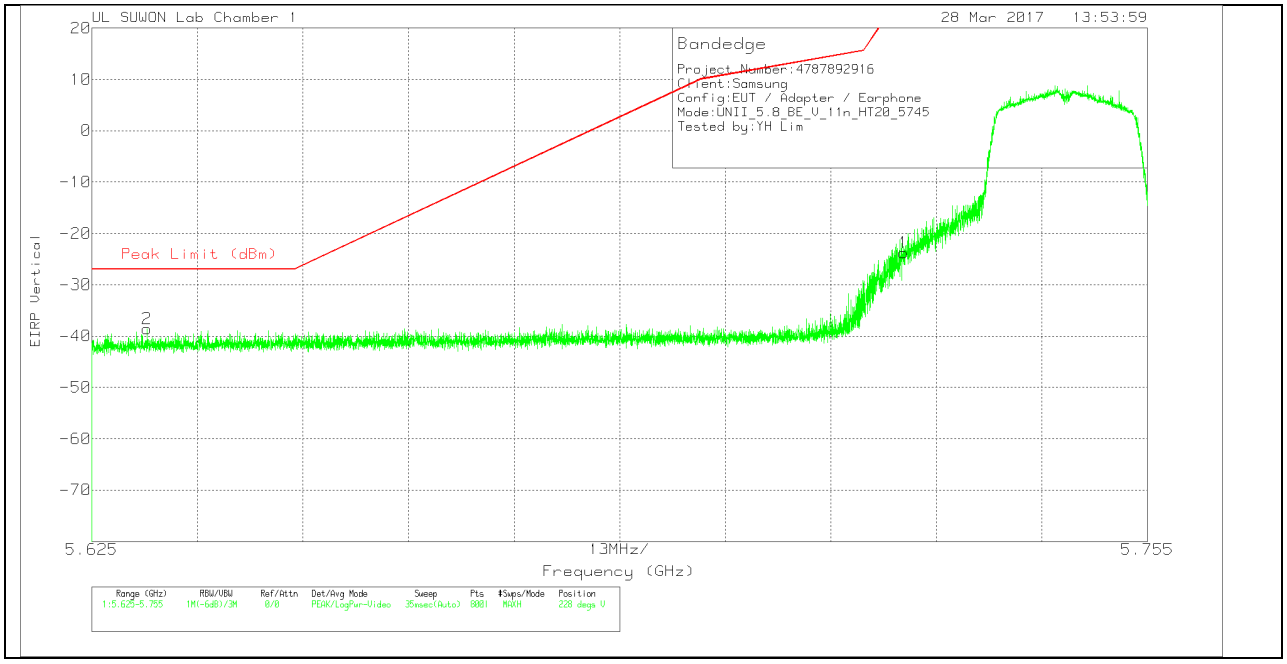
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-47.43	Pk	34.8	-22.9	11.8	0	-23.73	26.97	-50.7	228	311	V
2	5.632	-61.96	Pk	34.7	-23.1	11.8	0	-38.56	-27	-11.56	228	311	V

Pk - Peak detector

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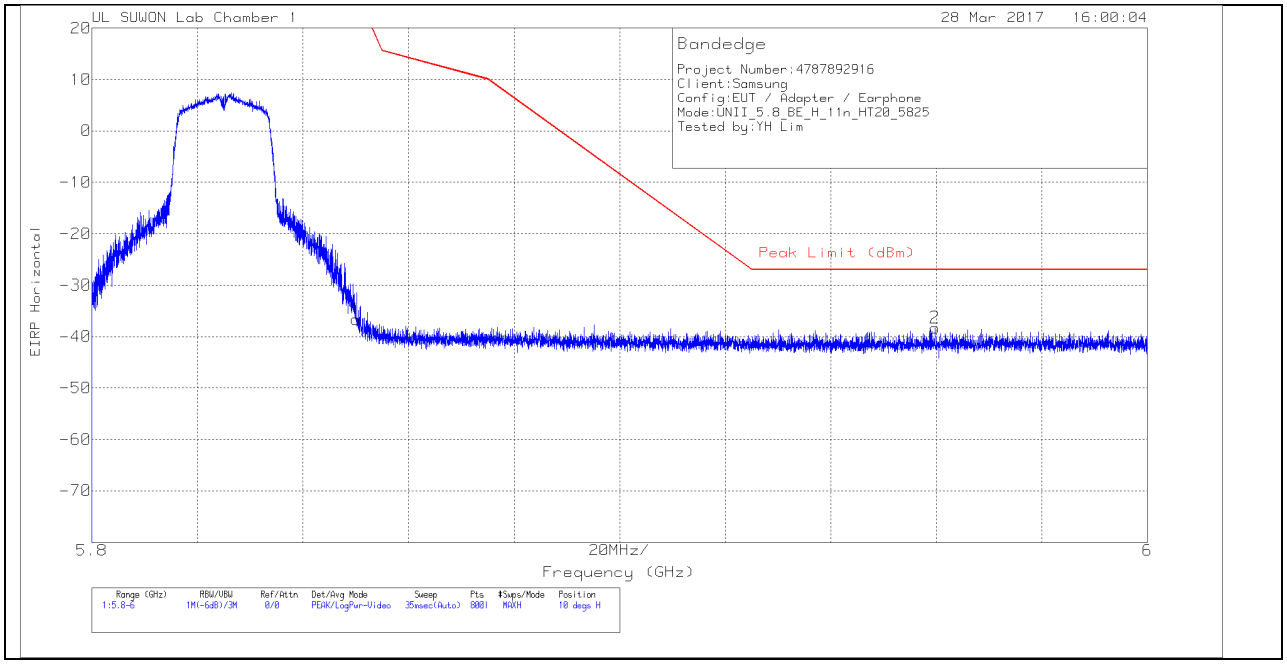
BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	Path_2	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-61.09	Pk	34.9	-22.2	11.8	0	-36.59	26.94	-63.53	10	105	H
2	5.96	-62.57	Pk	34.9	-22.4	11.8	0	-38.27	-27	-11.27	10	105	H

Pk - Peak detector

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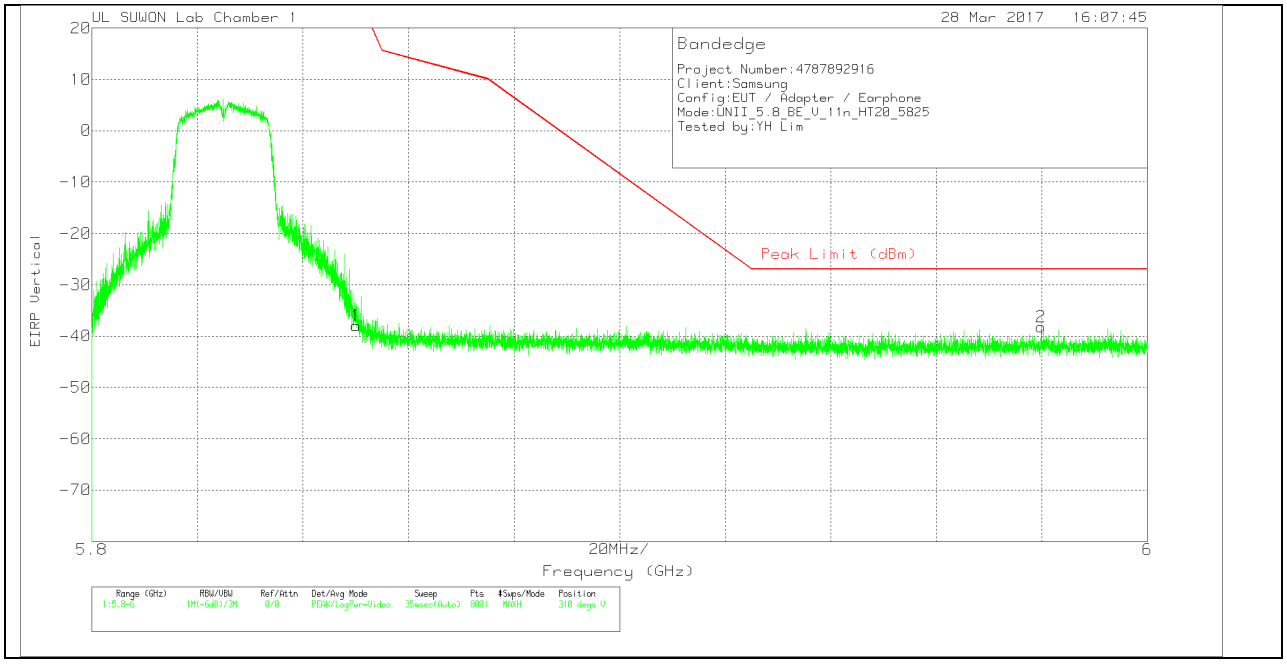
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-62.34	Pk	34.9	-22.3	11.8	0	-37.94	26.94	-64.88	310	102	V
2	5.98	-62.66	Pk	34.9	-22.3	11.8	0	-38.26	-27	-11.26	310	102	V

Pk - Peak detector

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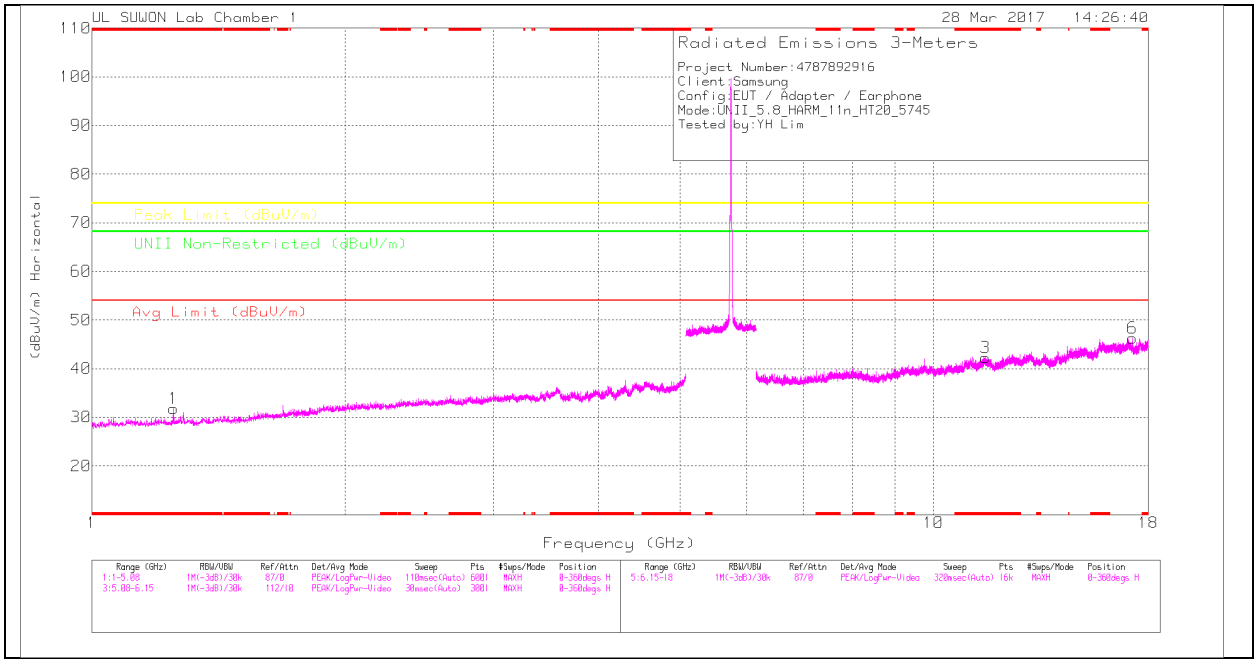
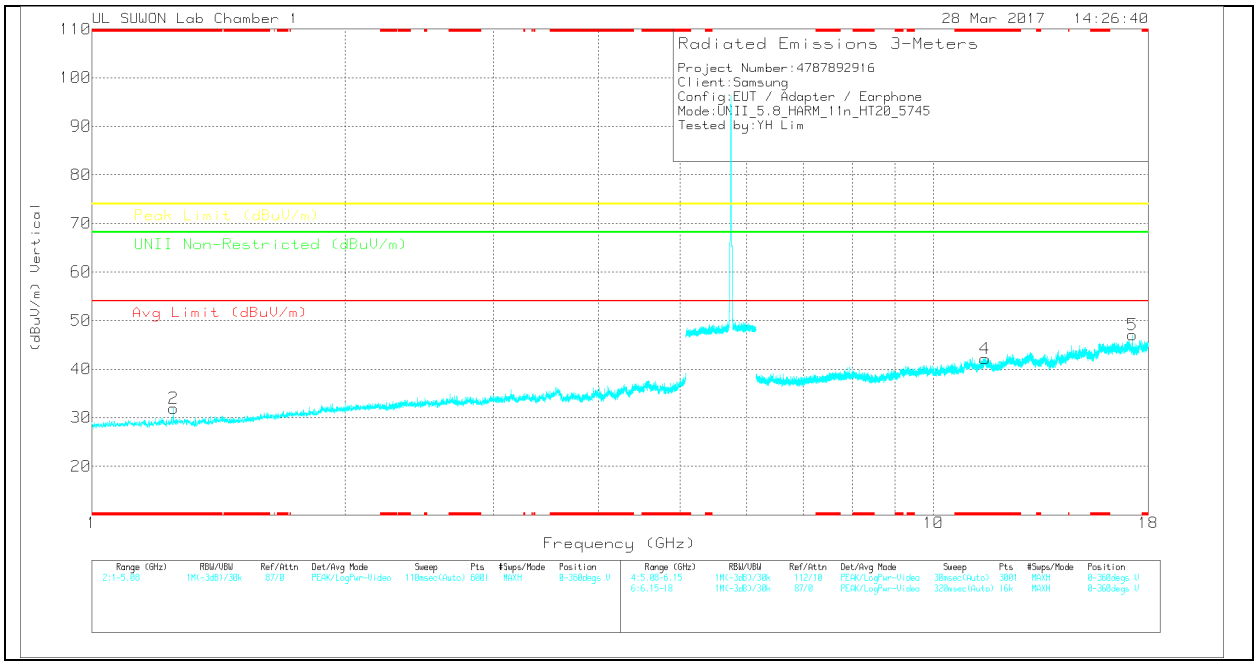
LOW CHANNEL HORIZONTAL



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	5Ghz_LP(dB)	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	* 1.25	43.12	PK	28.3	-39.6	0	31.82	-	-	74	-42.18	-	-	0-360	150	H
2	* 1.25	43.22	PK	28.3	-39.6	0	31.92	-	-	74	-42.08	-	-	0-360	250	V
3	* 11.522	31.31	PK	38.6	-27.6	0	42.31	-	-	74	-31.69	-	-	0-360	150	H
6	17.236	27.58	PK	41.2	-22.5	0	46.28	-	-	-	-	68.2	-21.92	0-360	250	H
4	* 11.518	31.27	PK	38.6	-27.7	0	42.17	-	-	74	-31.83	-	-	0-360	250	V
5	17.23	28.3	PK	41.2	-22.4	0	47.1	-	-	-	-	68.2	-21.1	0-360	250	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	6Ghz_HP(dB)	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
17.242	40.22	PK-U	41.2	-22.6	0	58.82	-	-	-	-	68.2	-9.38	11	237	H
17.235	42.53	PK-U	41.2	-22.5	0	61.23	-	-	-	-	68.2	-6.97	336	105	V

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

PK-U - U-NII: Maximum Peak

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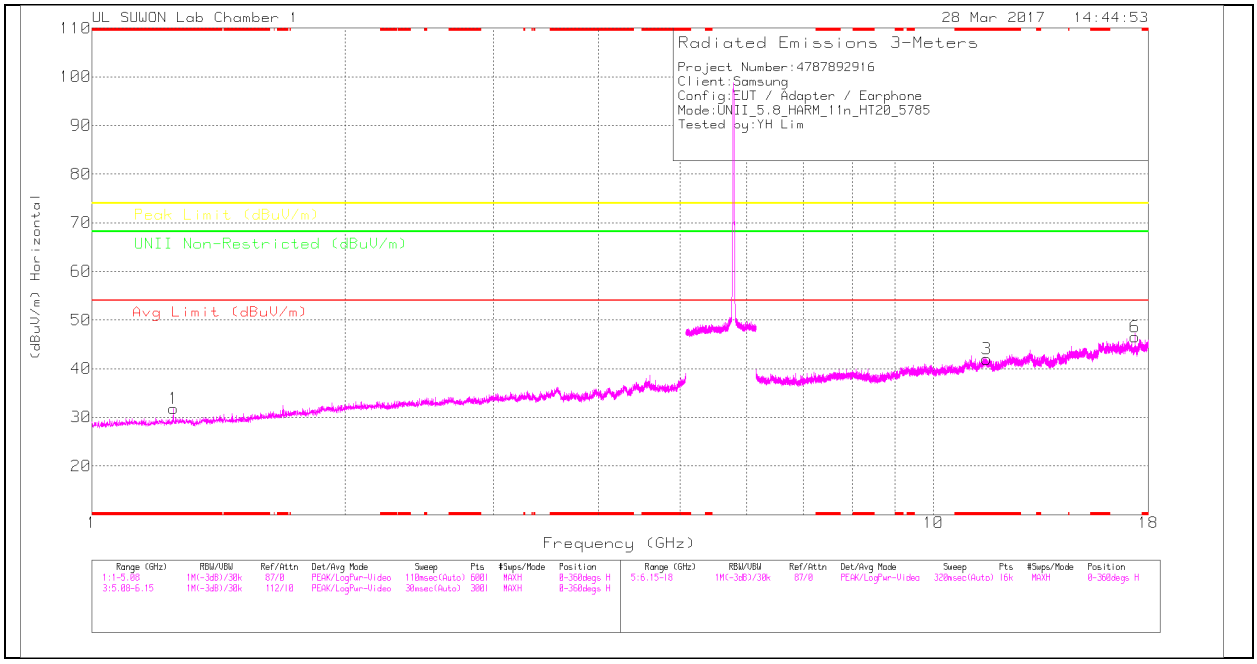
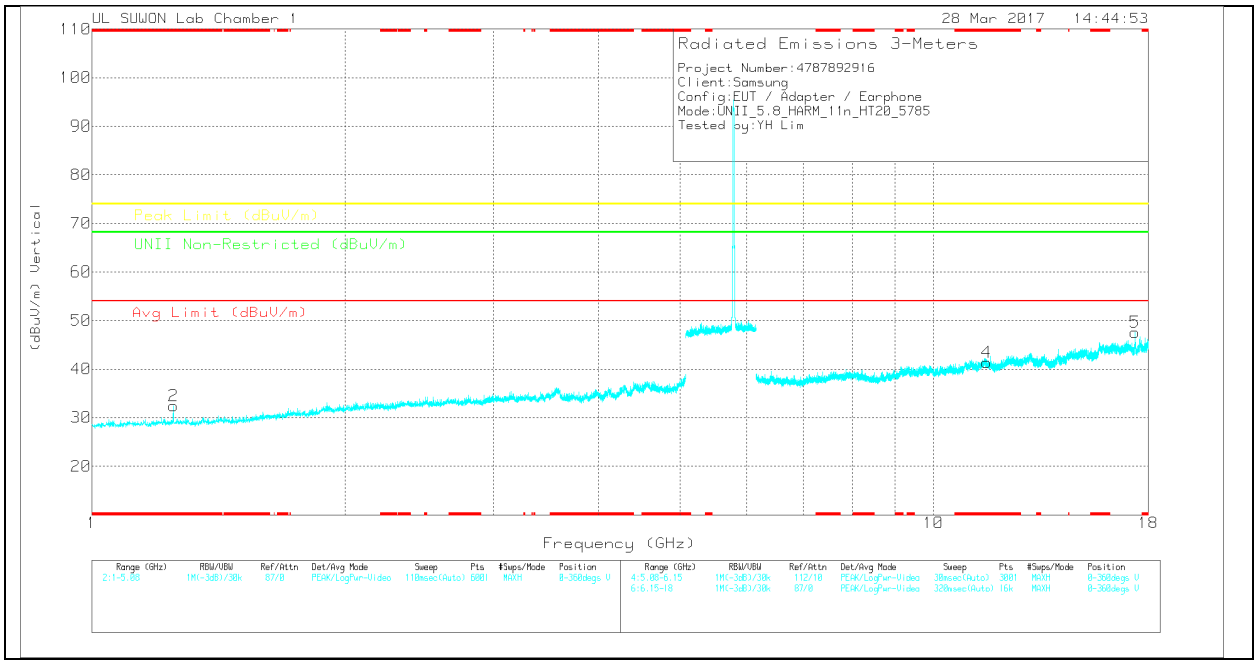
MID CHANNEL HORIZONTAL



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	5Ghz_LP(dB)	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	* 1.25	43.13	PK	28.3	-39.6	0	31.83	-	-	74	-42.17	-	-	0-360	150	H
2	* 1.25	43.68	PK	28.3	-39.6	0	32.38	-	-	74	-41.62	-	-	0-360	250	V
3	* 11.573	31.25	PK	38.7	-28	0	41.95	-	-	74	-32.05	-	-	0-360	250	H
6	17.355	28.02	PK	41.2	-22.7	0	46.52	-	-	-	-	68.2	-21.68	0-360	250	H
4	* 11.575	30.58	PK	38.7	-27.9	0	41.38	-	-	74	-32.62	-	-	0-360	150	V
5	17.353	29.11	PK	41.2	-22.7	0	47.61	-	-	-	-	68.2	-20.59	0-360	150	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	6Ghz_HP(dB)	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
17.353	41.34	PK-U	41.2	-22.7	0	59.84	-	-	-	-	68.2	-8.36	14	331	H
17.361	43.5	PK-U	41.2	-22.4	0	62.3	-	-	-	-	68.2	-5.9	336	102	V

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

PK-U - U-NII: Maximum Peak

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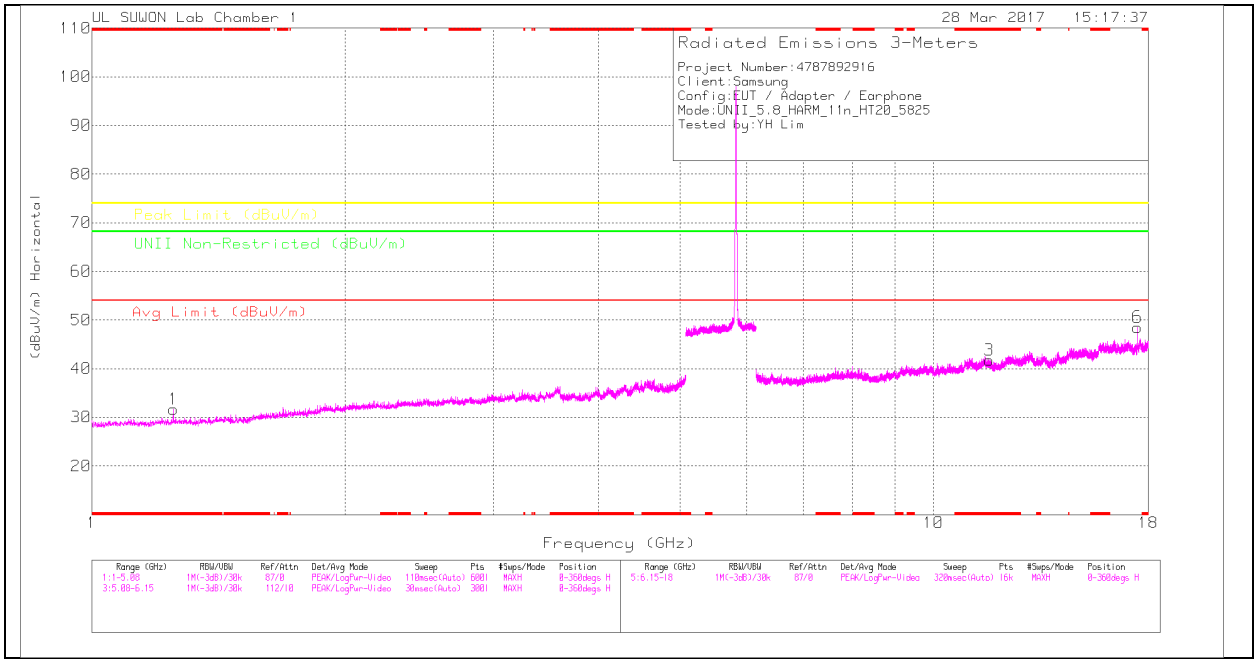
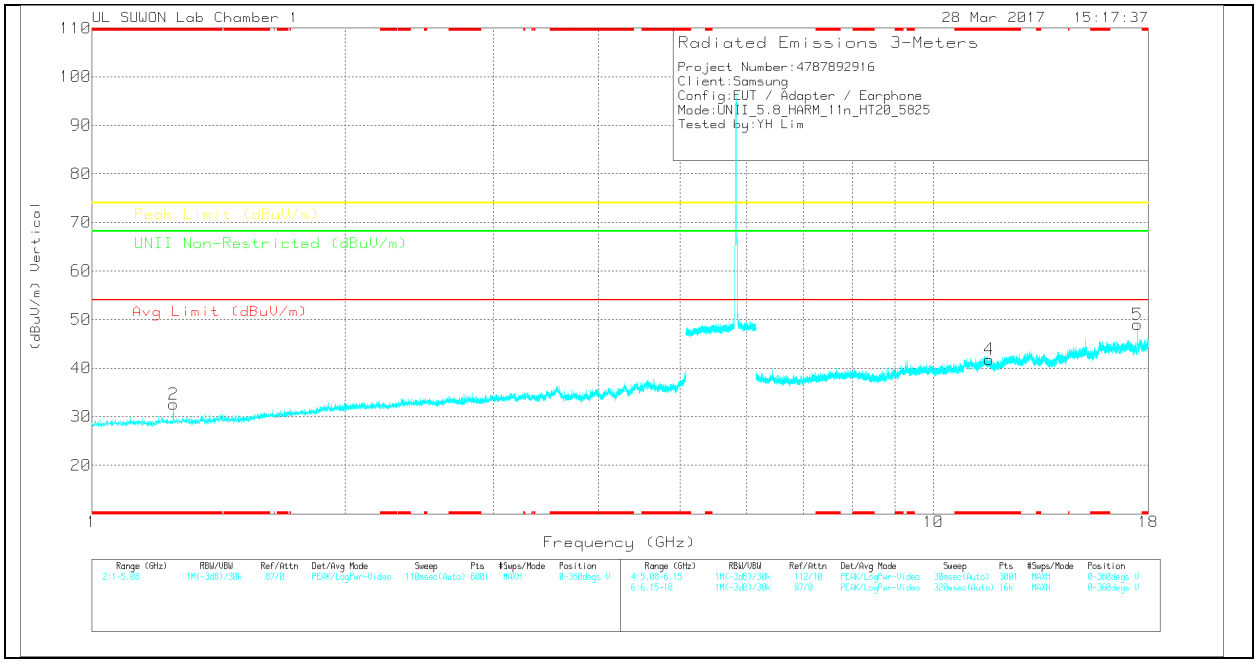
HIGH CHANNEL HORIZONTAL



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(001688717)_150619	5Ghz_LP(dB)	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	* 1.25	42.96	PK	28.3	-39.6	0	31.66	-	-	74	-42.34	-	-	0-360	150	H
2	* 1.25	43.88	PK	28.3	-39.6	0	32.58	-	-	74	-41.42	-	-	0-360	250	V
3	* 11.639	31.66	PK	38.7	-28.6	0	41.76	-	-	74	-32.24	-	-	0-360	150	H
6	17.482	30.54	PK	41.1	-23.1	0	48.54	-	-	-	-	68.2	-19.66	0-360	250	H
4	* 11.638	31.61	PK	38.7	-28.5	0	41.81	-	-	74	-32.19	-	-	0-360	250	V
5	17.473	30.78	PK	41.1	-22.9	0	48.98	-	-	-	-	68.2	-19.22	0-360	150	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	6Ghz_HP(dB)	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
17.479	42.1	PK-U	41.1	-23.1	0	60.1	-	-	-	-	68.2	-8.1	15	108	H
17.468	42.05	PK-U	41.1	-23	0	60.15	-	-	-	-	68.2	-8.05	333	320	V

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

PK-U - U-NII: Maximum Peak

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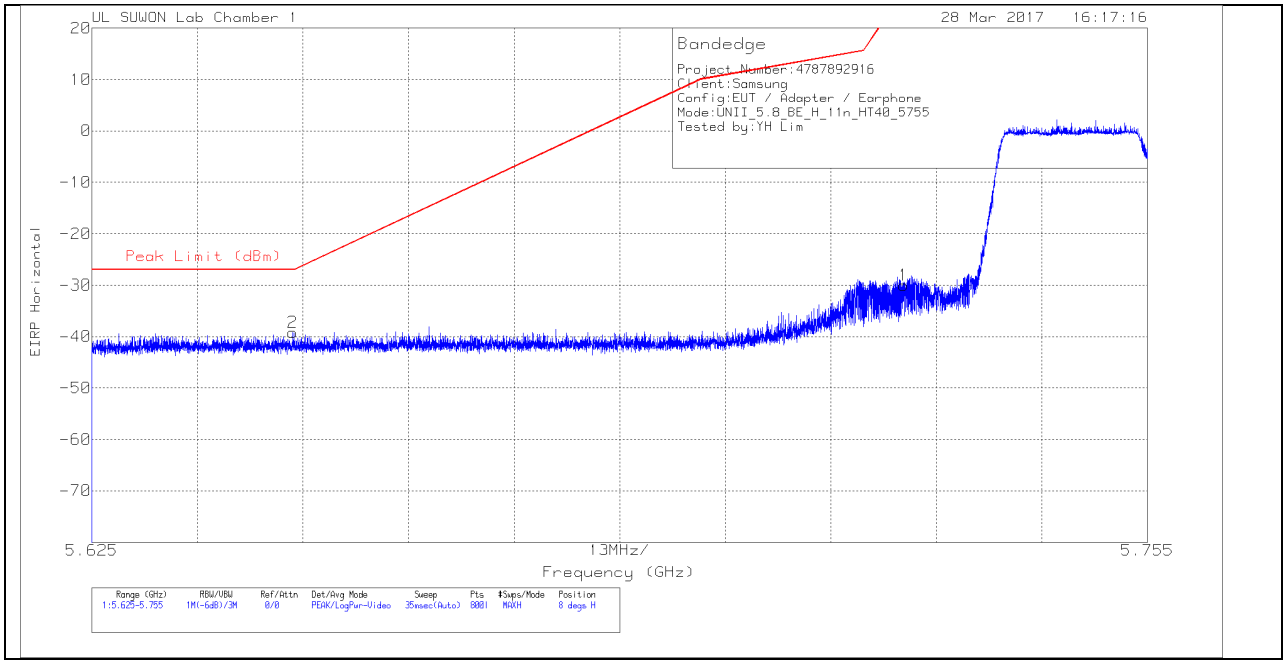
10.4.3. TX ABOVE 1GHz 802.11n HT40 MODE IN THE 5.8GHz BAND BANDEDGE (LOW CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-53.75	Pk	34.8	-22.9	11.8	0	-30.05	26.97	-57.02	8	100	H
2	5.65	-62.73	Pk	34.8	-23.1	11.8	0	-39.23	-27	-12.23	8	100	H

Pk - Peak detector

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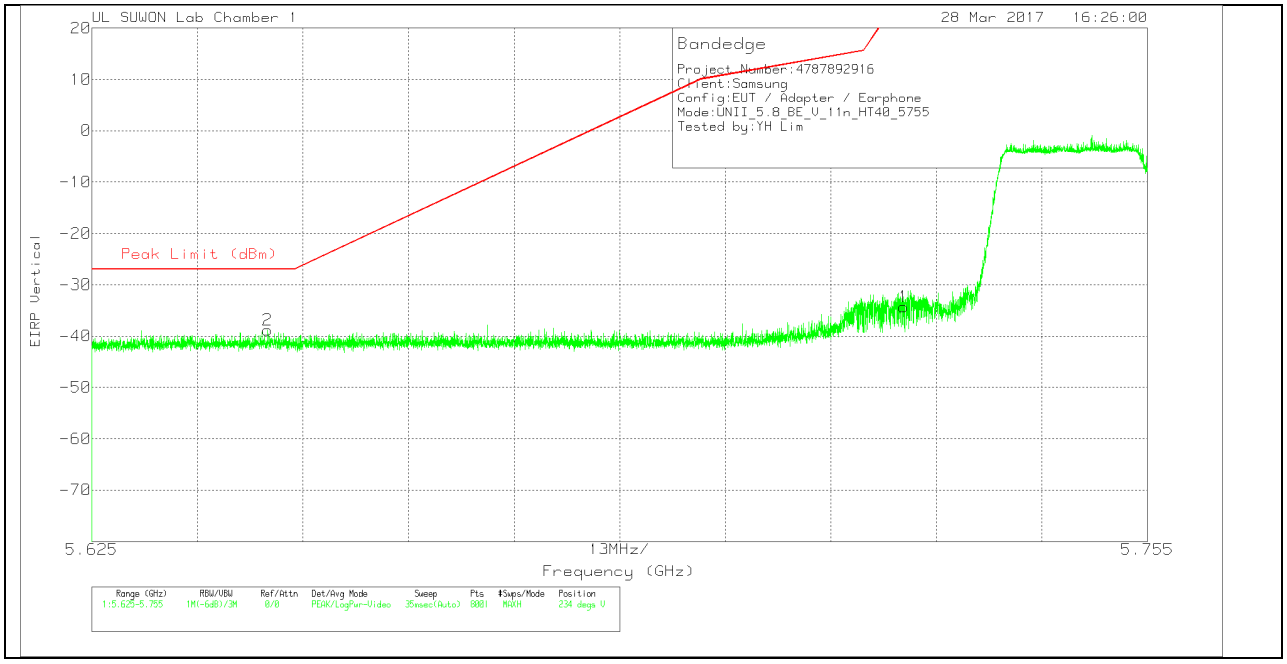
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-57.95	Pk	34.8	-22.9	11.8	0	-34.25	26.97	-61.22	234	291	V
2	5.647	-62.37	Pk	34.8	-23.1	11.8	0	-38.87	-27	-11.87	234	291	V

Pk - Peak detector

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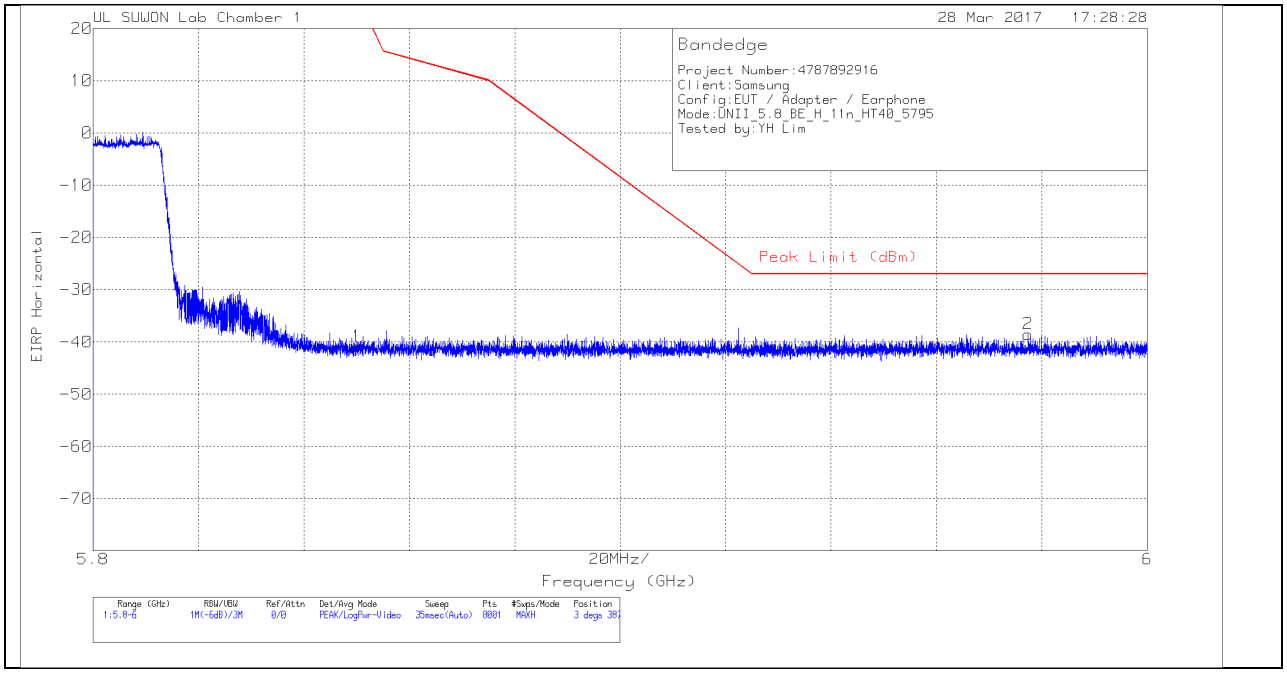
BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK PLOT



HORIZONTAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	Path_2	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-65.33	Pk	34.9	-22.2	11.8	0	-40.83	26.94	-67.77	3	387	H
2	5.977	-62.89	Pk	34.9	-22.3	11.8	0	-38.49	-27	-11.49	3	387	H

Pk - Peak detector

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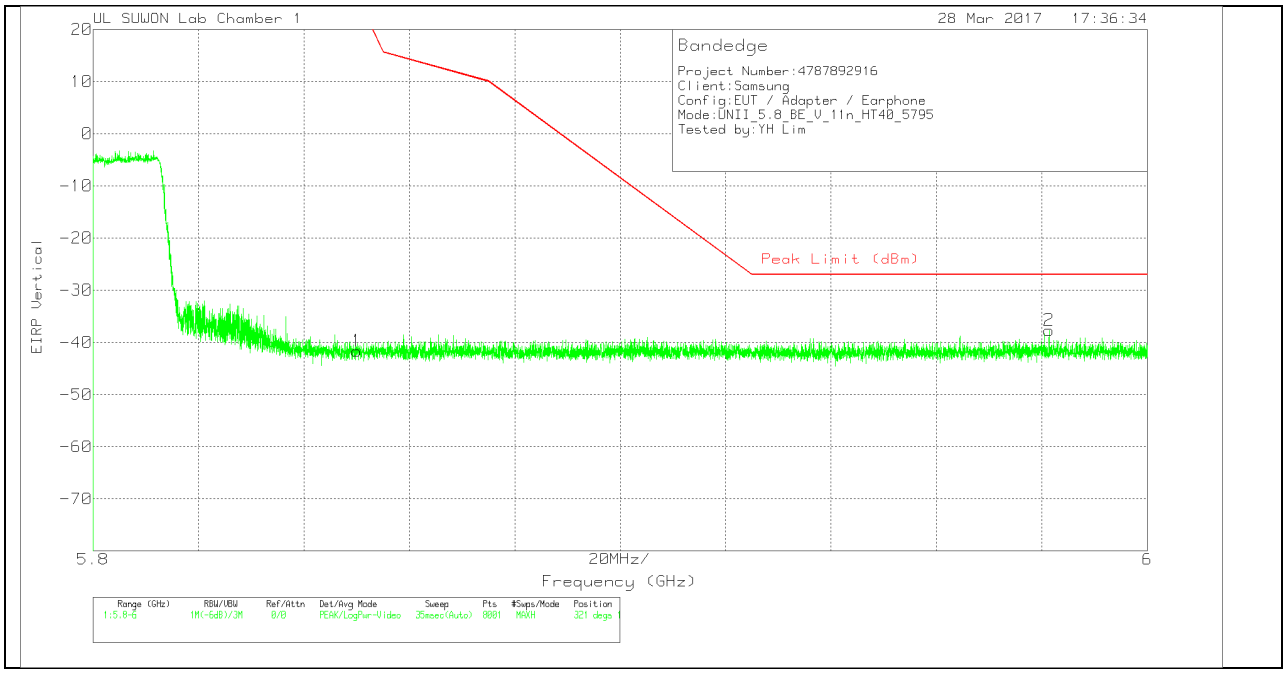
VERTICAL PEAK PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117(00168717)_150619	10dB_Att(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.85	-66.04	Pk	34.9	-22.3	11.8	0	-41.64	26.94	-68.58	321	108	V
2	5.981	-62.16	Pk	34.9	-22.2	11.8	0	-37.66	-27	-10.66	321	108	V

Pk - Peak detector

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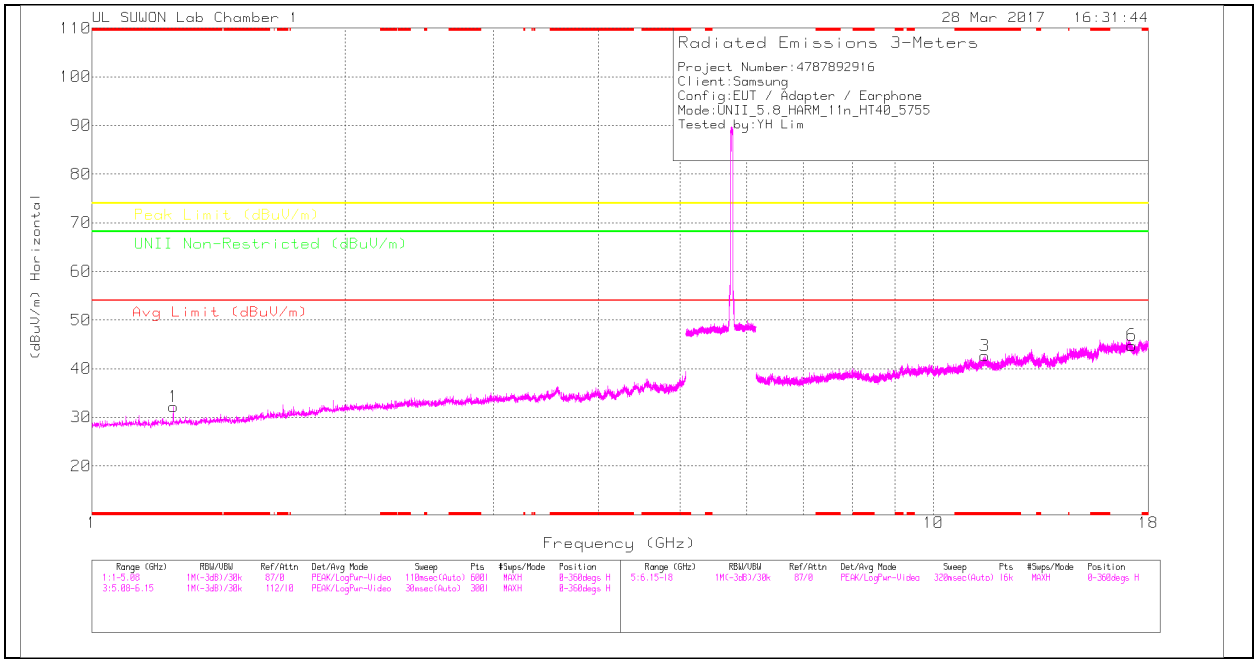
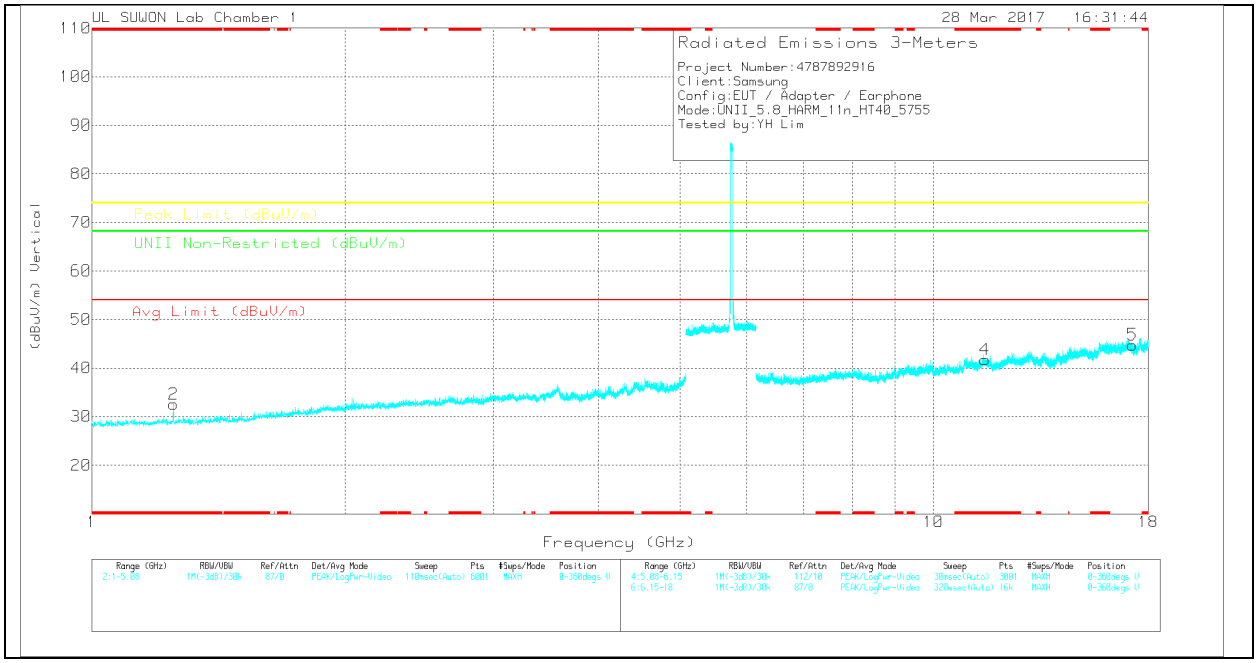
LOW CHANNEL HORIZONTAL



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	5Ghz_LP(dB)	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	* 1.25	43.52	PK	28.3	-39.6	0	32.22	-	-	74	-41.78	-	-	0-360	250	H
2	* 1.25	43.88	PK	28.3	-39.6	0	32.58	-	-	74	-41.42	-	-	0-360	250	V
3	* 11.514	31.74	PK	38.6	-27.7	0	42.64	-	-	74	-31.36	-	-	0-360	150	H
6	17.222	25.99	PK	41.2	-22.4	0	44.79	-	-	-	-	68.2	-23.41	0-360	250	H
4	* 11.518	30.82	PK	38.6	-27.7	0	41.72	-	-	74	-32.28	-	-	0-360	150	V
5	17.232	25.99	PK	41.2	-22.4	0	44.79	-	-	-	-	68.2	-23.41	0-360	150	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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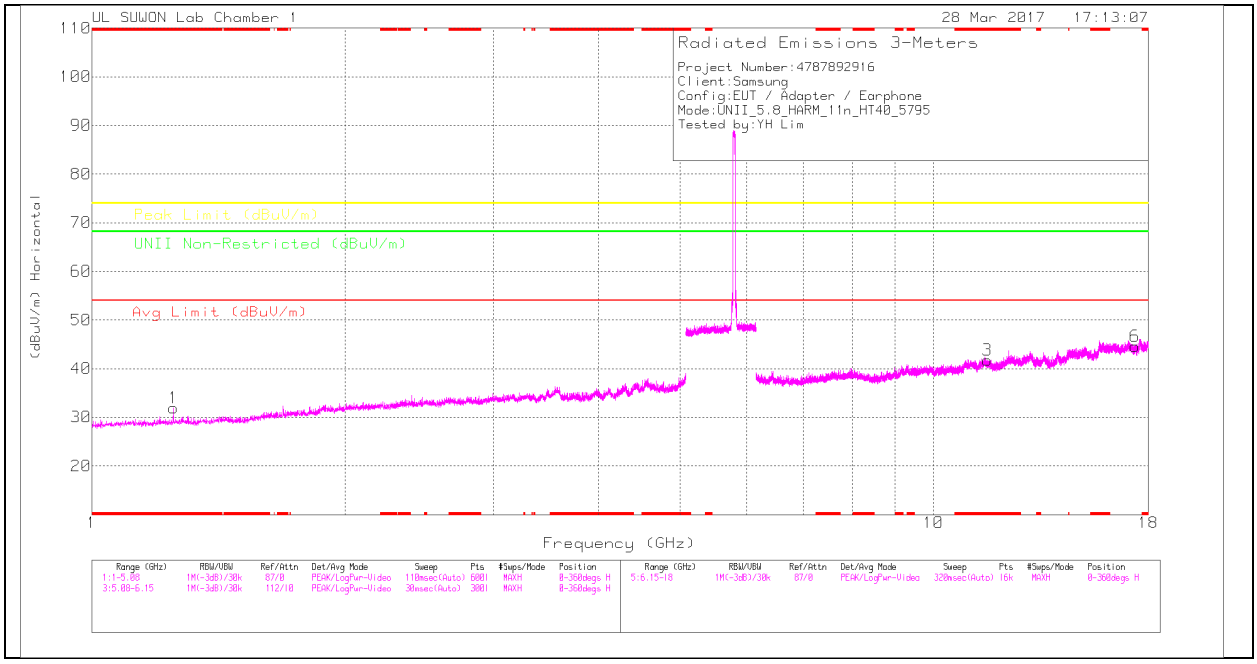
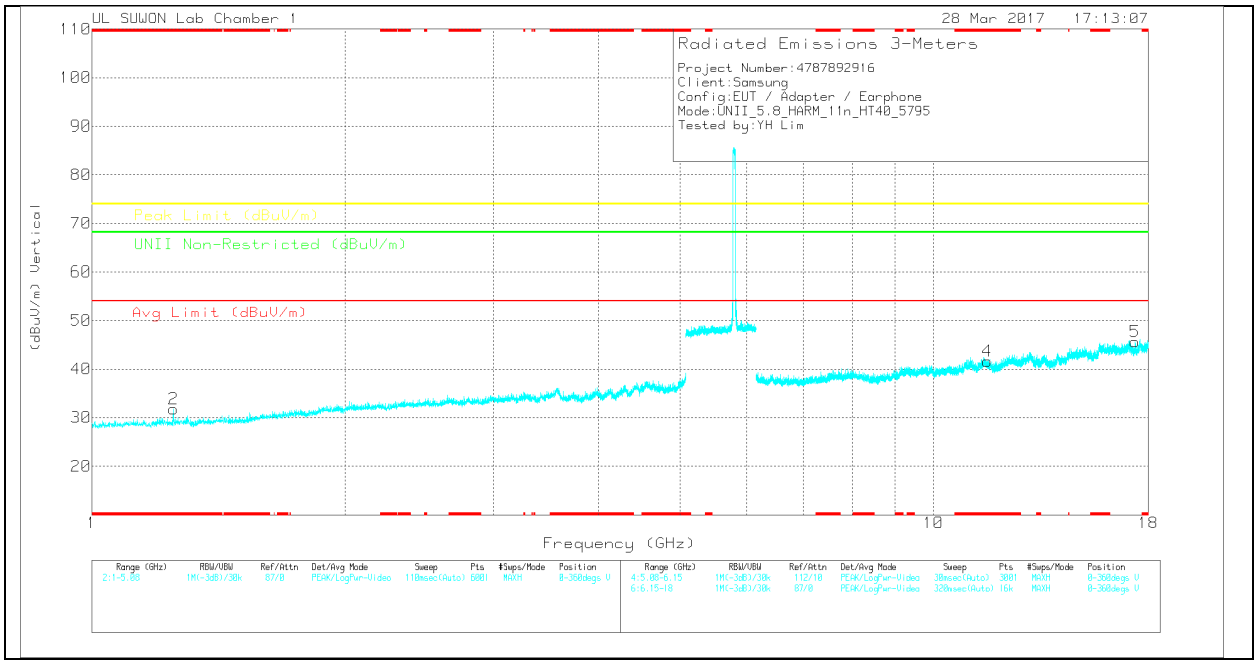
HIGH CHANNEL HORIZONTAL



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	5Ghz_LP(dB)	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	* 1.25	43.17	PK	28.3	-39.6	0	31.87	-	-	74	-42.13	-	-	0-360	150	H
2	* 1.25	43.1	PK	28.3	-39.6	0	31.8	-	-	74	-42.2	-	-	0-360	250	V
3	* 11.588	31.08	PK	38.7	-28	0	41.78	-	-	74	-32.22	-	-	0-360	250	H
6	17.366	25.51	PK	41.2	-22.1	0	44.61	-	-	-	-	68.2	-23.59	0-360	150	H
4	* 11.596	30.97	PK	38.7	-28.1	0	41.57	-	-	74	-32.43	-	-	0-360	150	V
5	17.364	26.63	PK	41.2	-22.2	0	45.63	-	-	-	-	68.2	-22.57	0-360	150	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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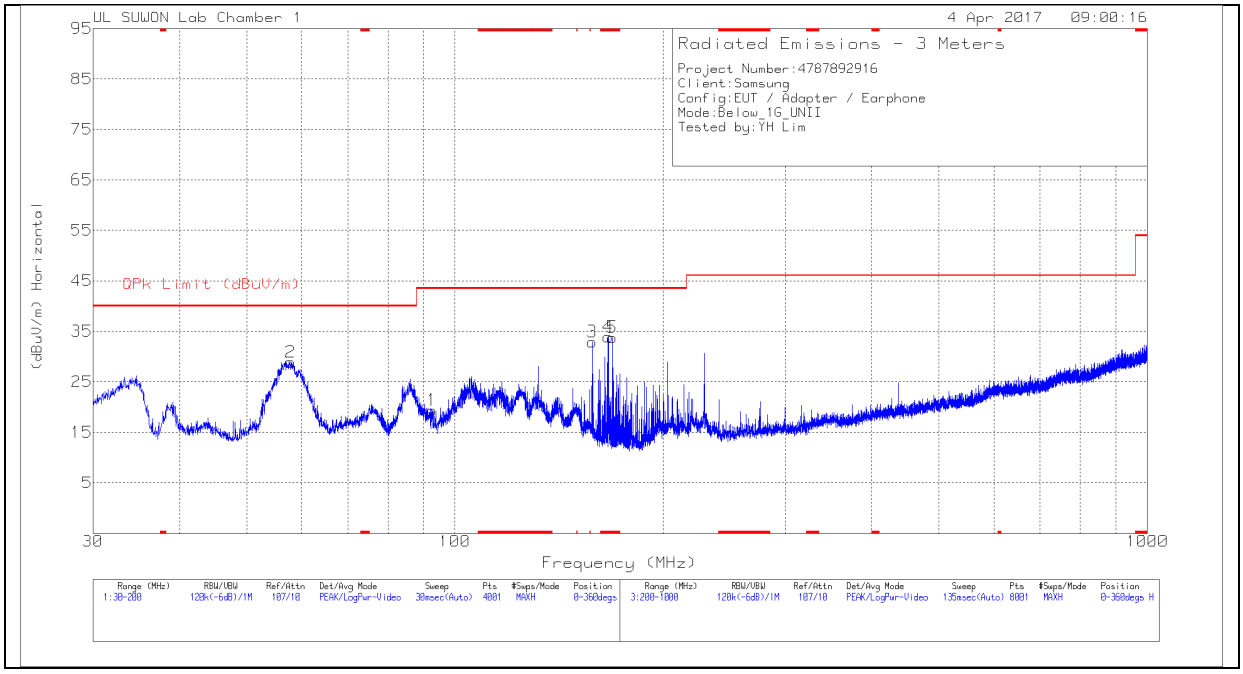
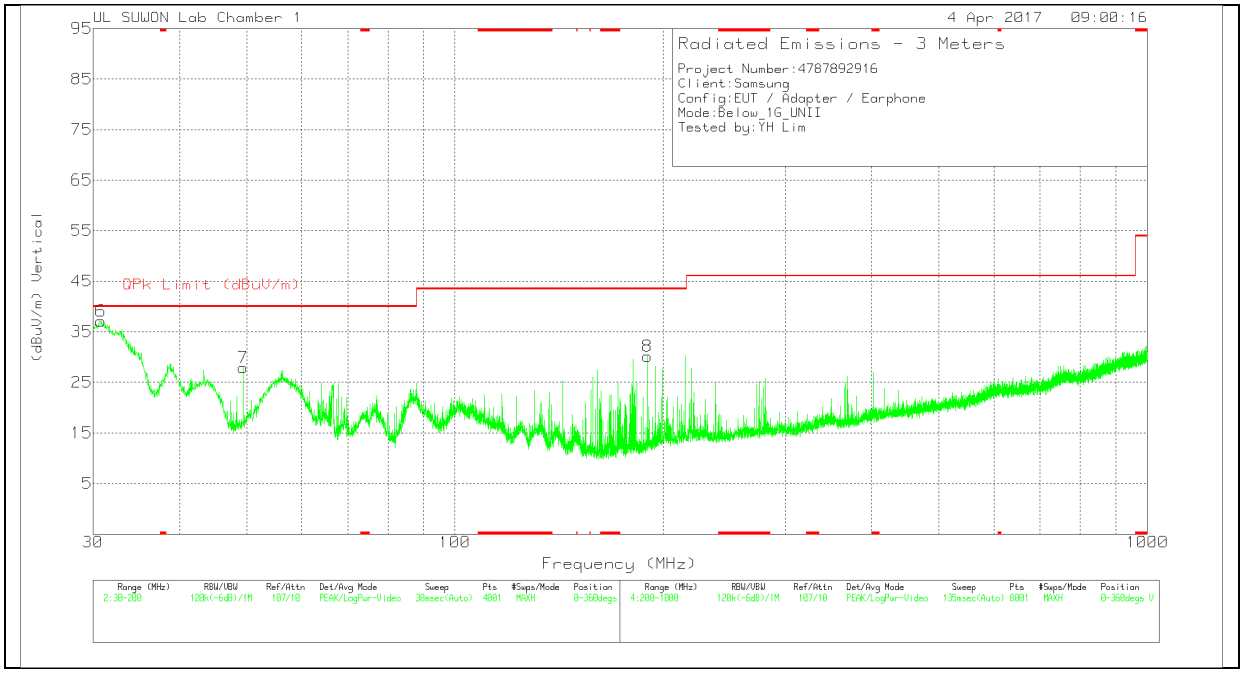
11. WORST-CASE BELOW 1 GHz (in the 5.3 GHz Band)

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_750(dB)	30-1000MHz(dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	92.7088	36.37	Pk	10.2	-27.2	19.37	43.52	-24.15	0-360	300	H
2	57.88	43.68	Pk	13	-27.8	28.88	40	-11.12	0-360	400	H
3	157.7975	51.51	Pk	8.3	-26.9	32.91	43.52	-10.61	0-360	300	H
4	* 166.4675	51.96	Pk	8.7	-26.8	33.86	43.52	-9.66	0-360	100	H
5	* 168.72	51.77	Pk	8.8	-26.8	33.77	43.52	-9.75	0-360	400	H
6	30.8075	54.88	Pk	10.4	-28.2	37.08	40	-2.92	0-360	100	V
7	49.4225	42.61	Pk	13.9	-28.6	27.91	40	-12.09	0-360	100	V
8	189.7575	46.44	Pk	10.3	-26.6	30.14	43.52	-13.38	0-360	100	V

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

Pk - Peak detector

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12. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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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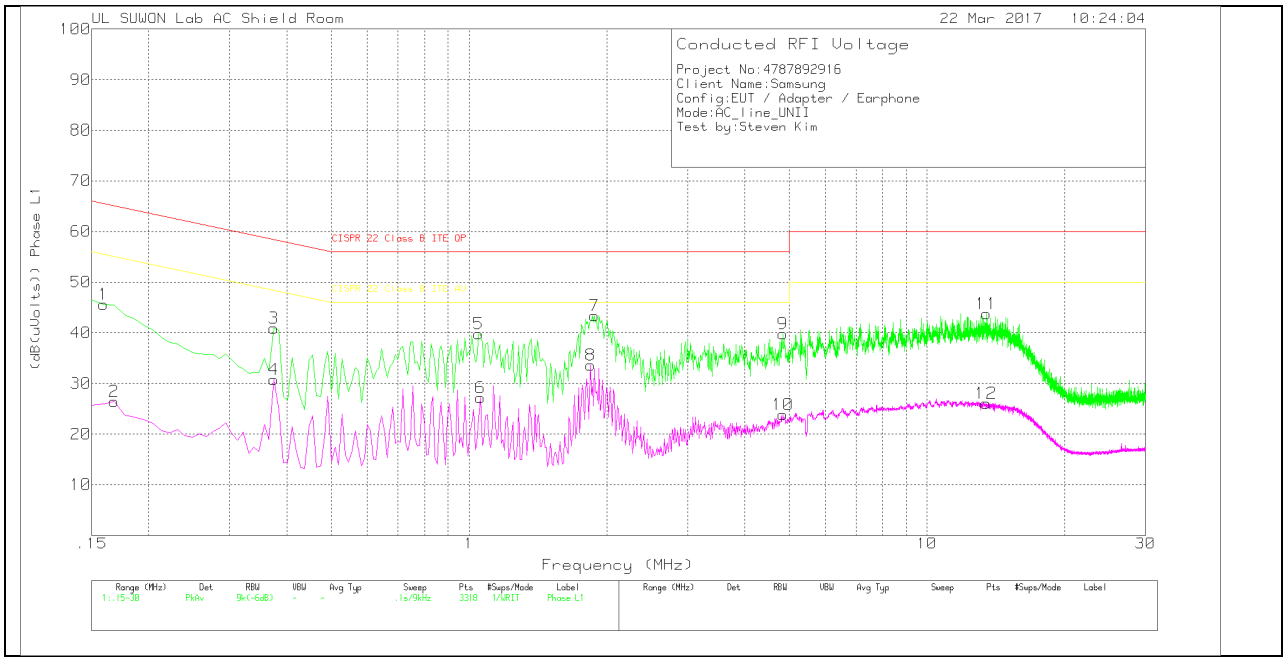
6 WORST EMISSIONS

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	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.159	35.65	Pk	9.9	.1	45.65	65.52	-19.87	-	-
2	.168	16.33	Av	10	.1	26.43	-	-	55.06	-28.63
3	.375	30.83	Pk	9.9	.2	40.93	58.39	-17.46	-	-
4	.375	20.69	Av	9.9	.2	30.79	-	-	48.39	-17.6
5	1.05	29.71	Pk	9.8	.3	39.81	56	-16.19	-	-
6	1.059	17.1	Av	9.8	.3	27.2	-	-	46	-18.8
7	1.878	33.44	Pk	9.7	.3	43.44	56	-12.56	-	-
8	1.842	23.65	Av	9.7	.3	33.65	-	-	46	-12.35
9	4.848	29.68	Pk	9.8	.3	39.78	56	-16.22	-	-
10	4.848	13.72	Av	9.8	.3	23.82	-	-	46	-22.18
11	13.497	33.2	Pk	10.1	.4	43.7	60	-16.3	-	-
12	13.461	15.57	Av	10.1	.4	26.07	-	-	50	-23.93

Pk - Peak detector

Av - Average detection

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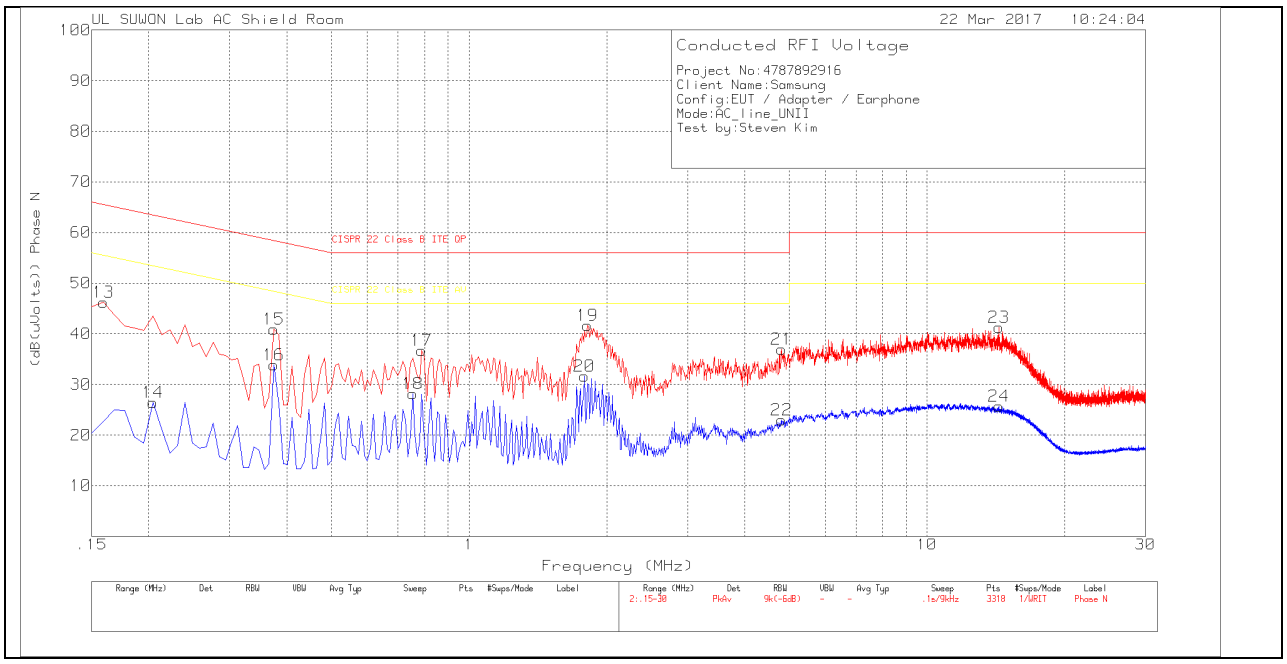
LINE 2 PLOT



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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	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
13	.159	36.19	Pk	9.9	.1	46.19	65.52	-19.33	-	-
14	.204	16.39	Av	9.9	.2	26.49	-	-	53.45	-26.96
15	.375	30.79	Pk	9.9	.2	40.89	58.39	-17.5	-	-
16	.375	23.76	Av	9.9	.2	33.86	-	-	48.39	-14.53
17	.789	26.6	Pk	9.9	.2	36.7	56	-19.3	-	-
18	.753	18.1	Av	9.9	.2	28.2	-	-	46	-17.8
19	1.815	31.62	Pk	9.7	.3	41.62	56	-14.38	-	-
20	1.788	21.64	Av	9.7	.3	31.64	-	-	46	-14.36
21	4.812	26.89	Pk	9.8	.3	36.99	56	-19.01	-	-
22	4.821	12.83	Av	9.8	.3	22.93	-	-	46	-23.07
23	14.361	30.6	Pk	10.3	.4	41.3	60	-18.7	-	-
24	14.352	15.04	Av	10.3	.4	25.74	-	-	50	-24.26

Pk - Peak detector

Av - Average detection

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13. DYNAMIC FREQUENCY SELECTION

13.1. OVERVIEW

13.1.1. LIMITS

FCC

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

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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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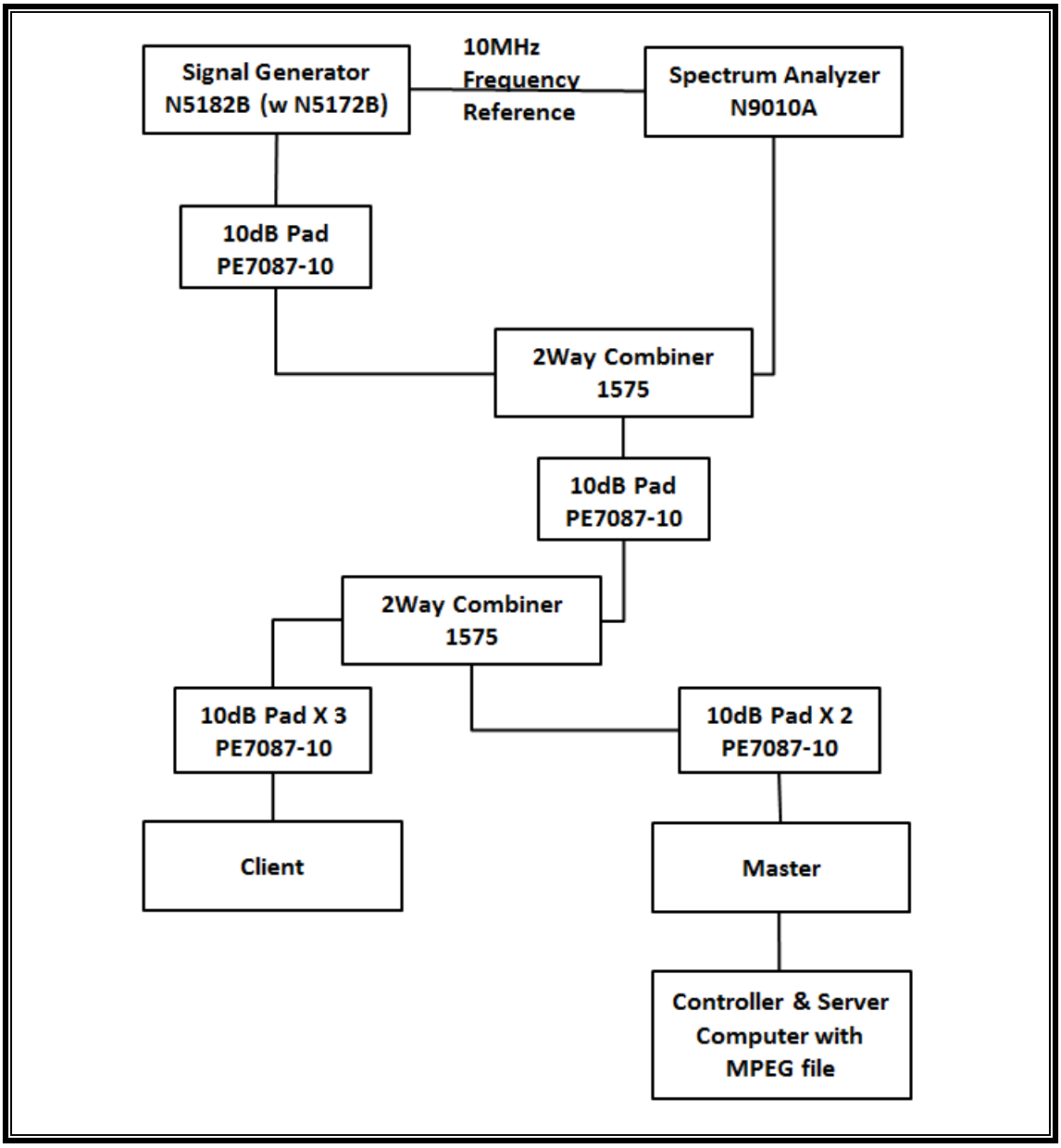
13.1.1. TEST AND MEASUREMENT SYSTEM

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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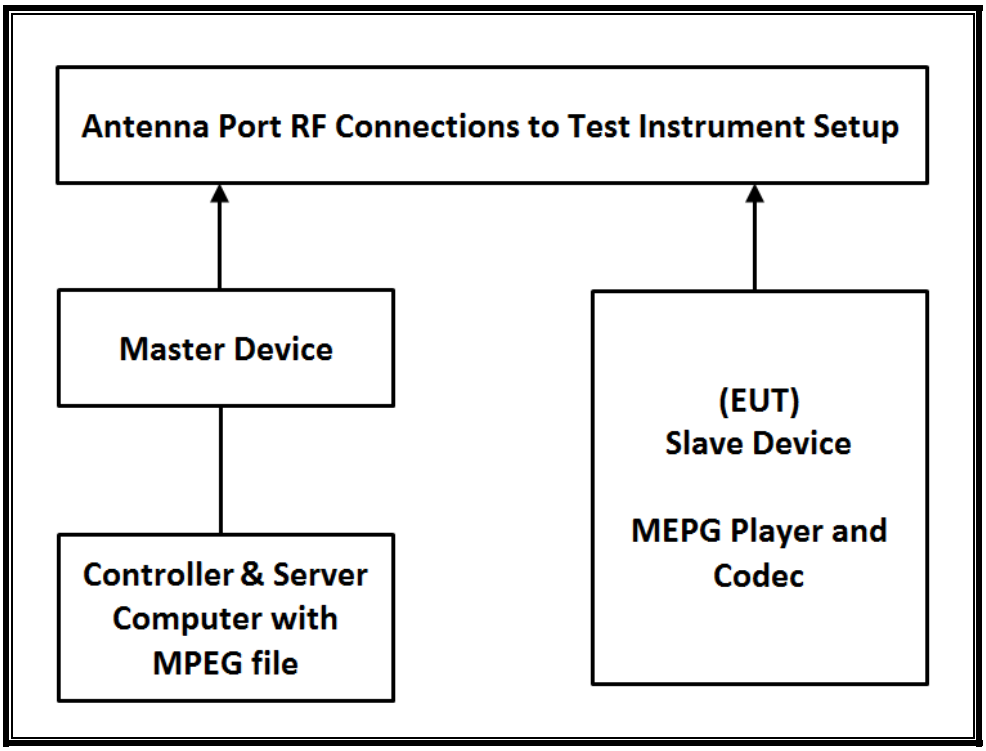
13.1.2. SETUP OF EUT

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
PC (Controller/Server)	HP	HP EliteDesk 800 G1 TWR	CZC4125J25	DoC

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13.1.3. 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 15.69 dBm in the 5250-5350 MHz band and 15.68 dBm in the 5470-5725 MHz band.

The antenna gain assembly utilized with the EUT are -1.61 dBi in the 5250-5350 MHz band and -0.34 dBi in the 5470-5725 MHz band.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is –64 dBm. After correction for procedural adjustments, the required 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. Two nominal channel bandwidths are implemented: 20 MHz and 40 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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13.2. RESULTS FOR 20 MHz BANDWIDTH

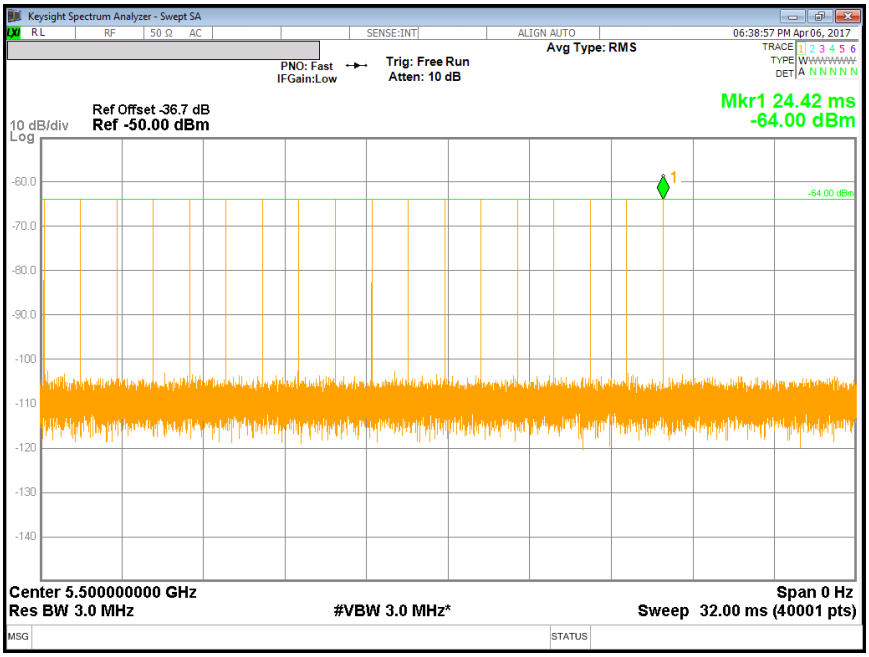
13.2.1. TEST CHANNEL

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

13.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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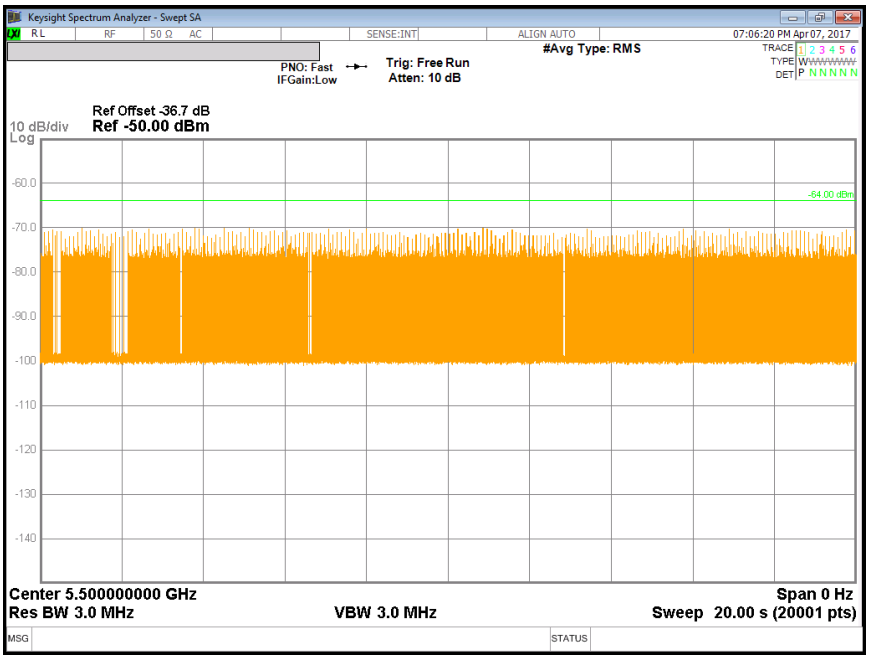
TRAFFIC

SLAVE TRAFFIC



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13.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

Channel Move Time (sec)	Limit (sec)
0.730	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
6.750	60

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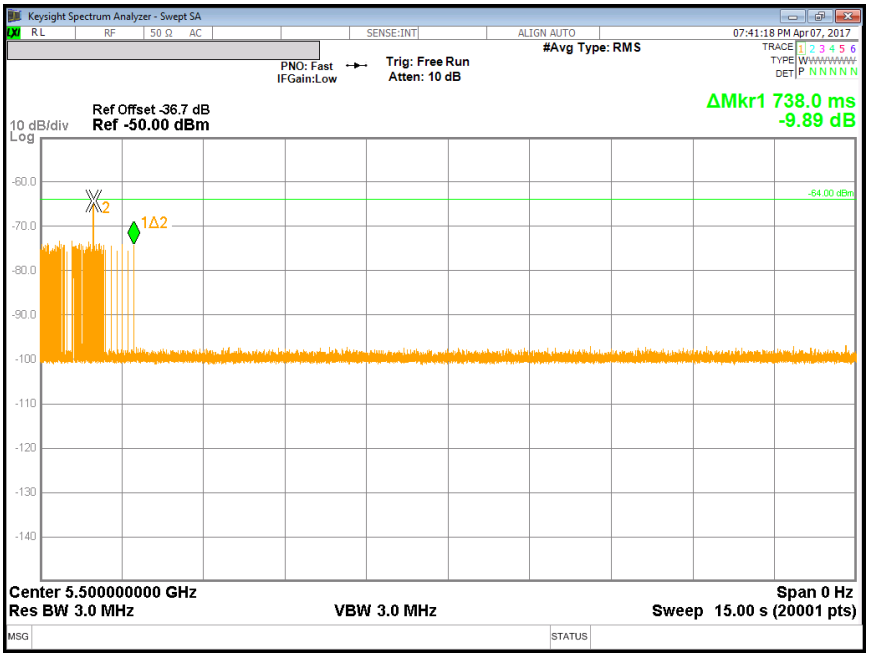
MOVE TIME & CHANNEL CLOSING TIME

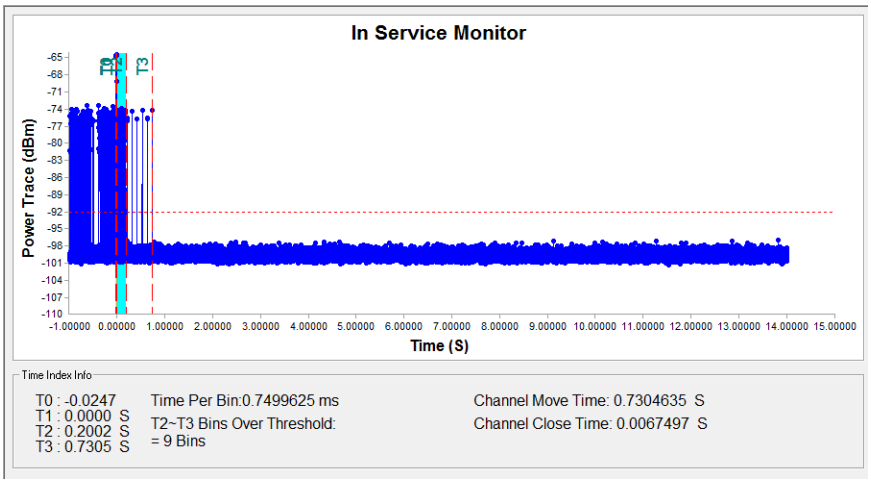
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

MOVE TIME & AGGREGATE CHANNEL CLOSING TRANSMISSION TIME



MOVE TIME & CLOSING TIME AT IN SERVISE MONITER



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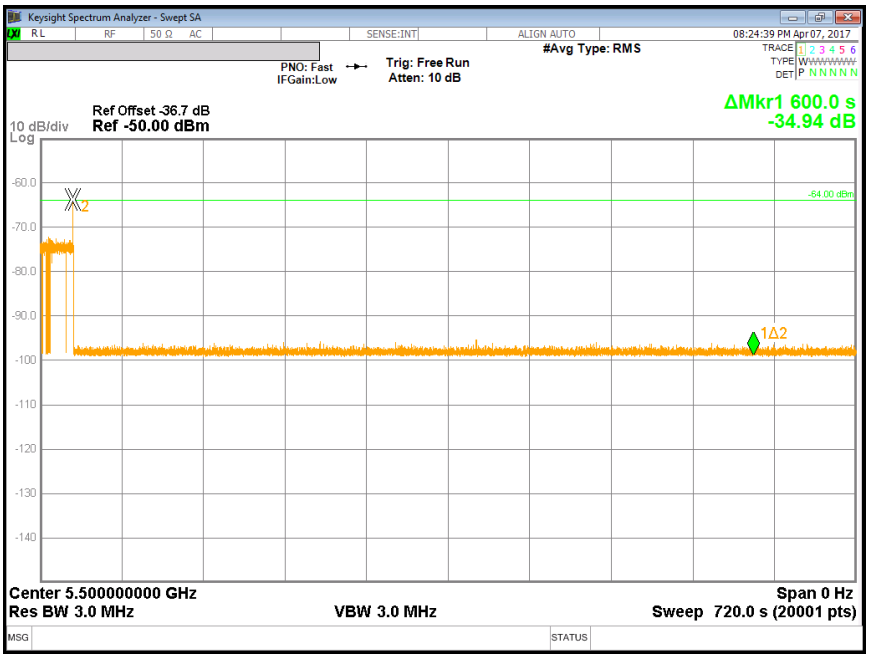
NON-OCCUPANCY PERIOD

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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13.3. RESULTS FOR 40 MHz BANDWIDTH

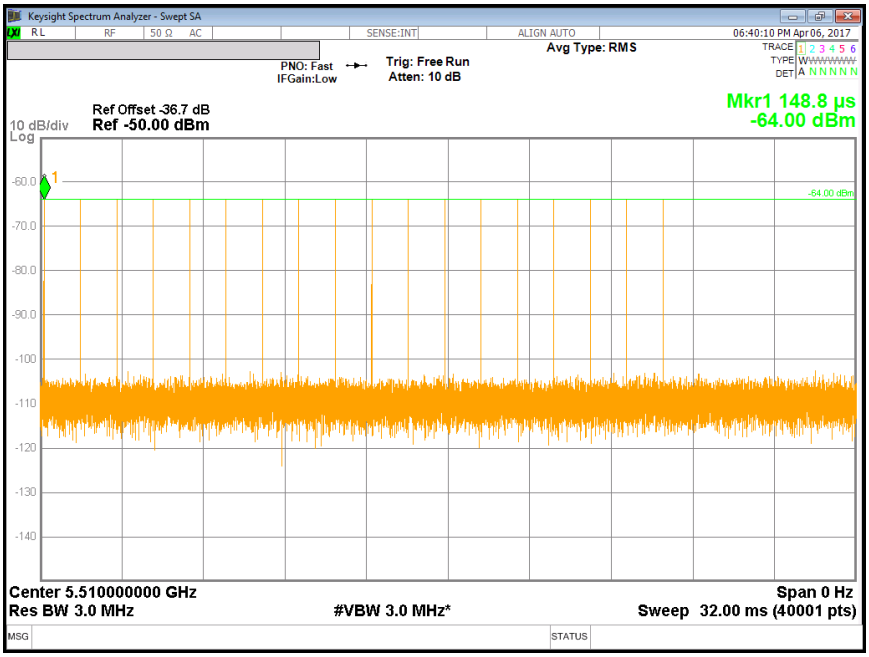
13.3.1. TEST CHANNEL

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

13.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

SHORT PULSE RADAR TYPE 0 AT MASTER



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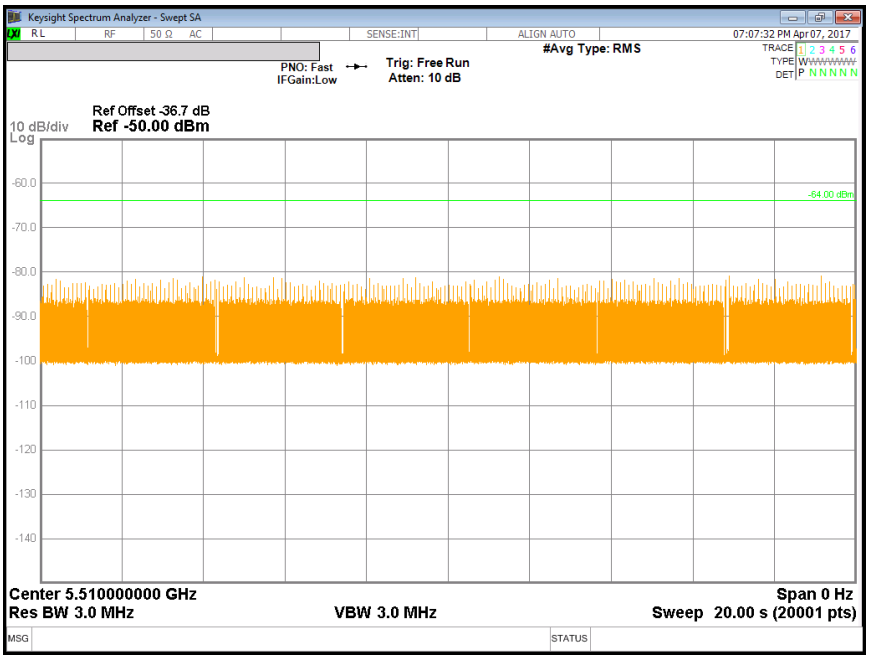
TRAFFIC

SLAVE TRAFFIC



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13.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

13.3.4. MOVE AND CLOSING TIME

REPORTING NOTES

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

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

The aggregate channel closing transmission time is calculated as follows:

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

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

RESULTS

Channel Move Time (sec)	Limit (sec)
0.820	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
7.500	60

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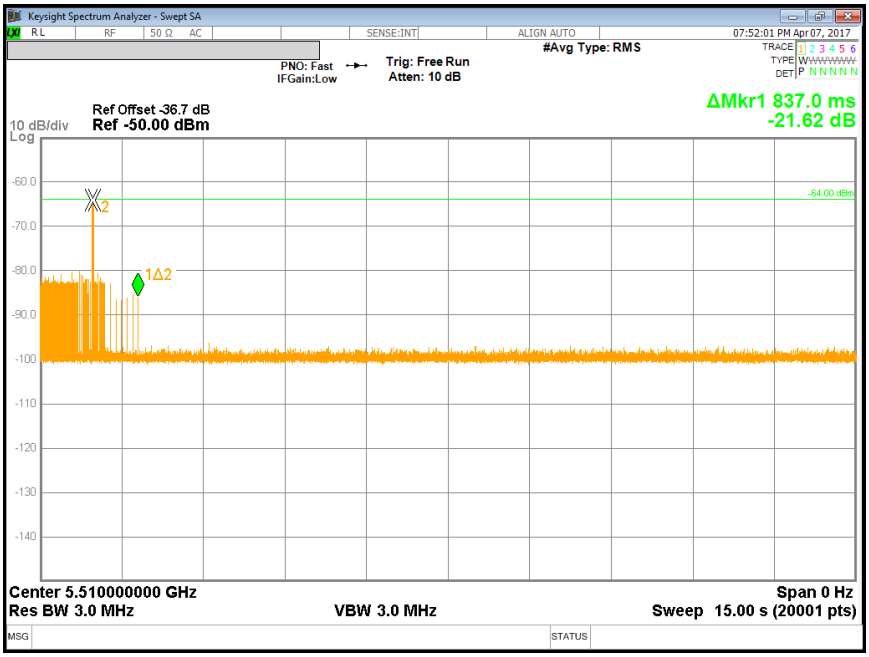
MOVE TIME & CHANNEL CLOSING TIME

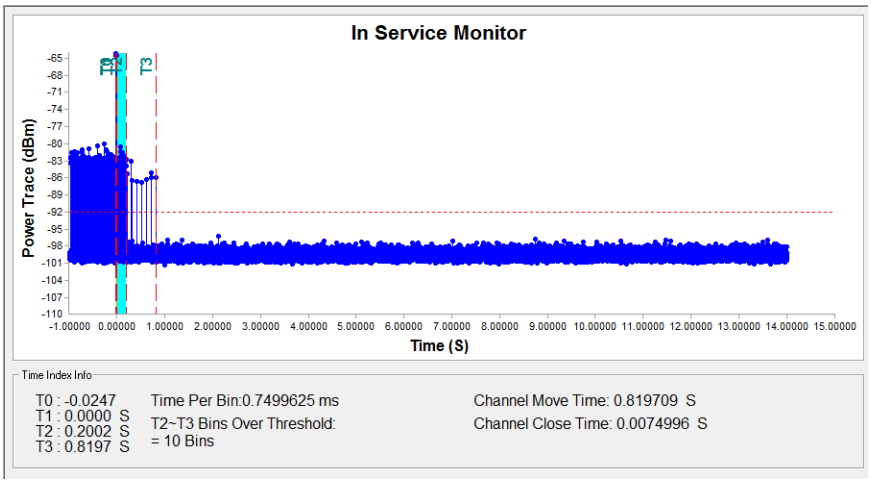
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

MOVE TIME & AGGREGATE CHANNEL CLOSING TRANSMISSION TIME



MOVE TIME & CLOSING TIME AT IN SERVISE MONITER



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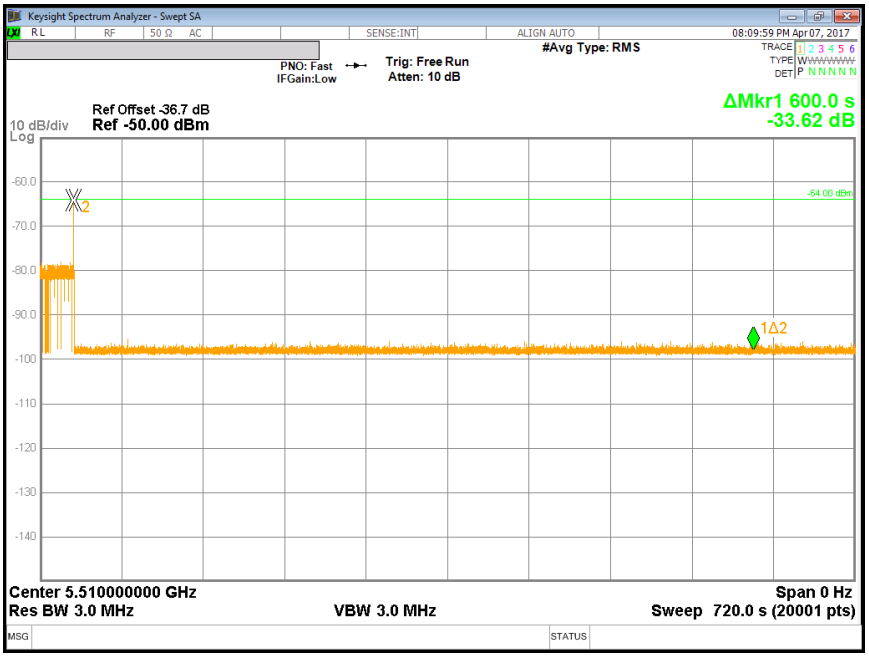
NON-OCCUPANCY PERIOD

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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