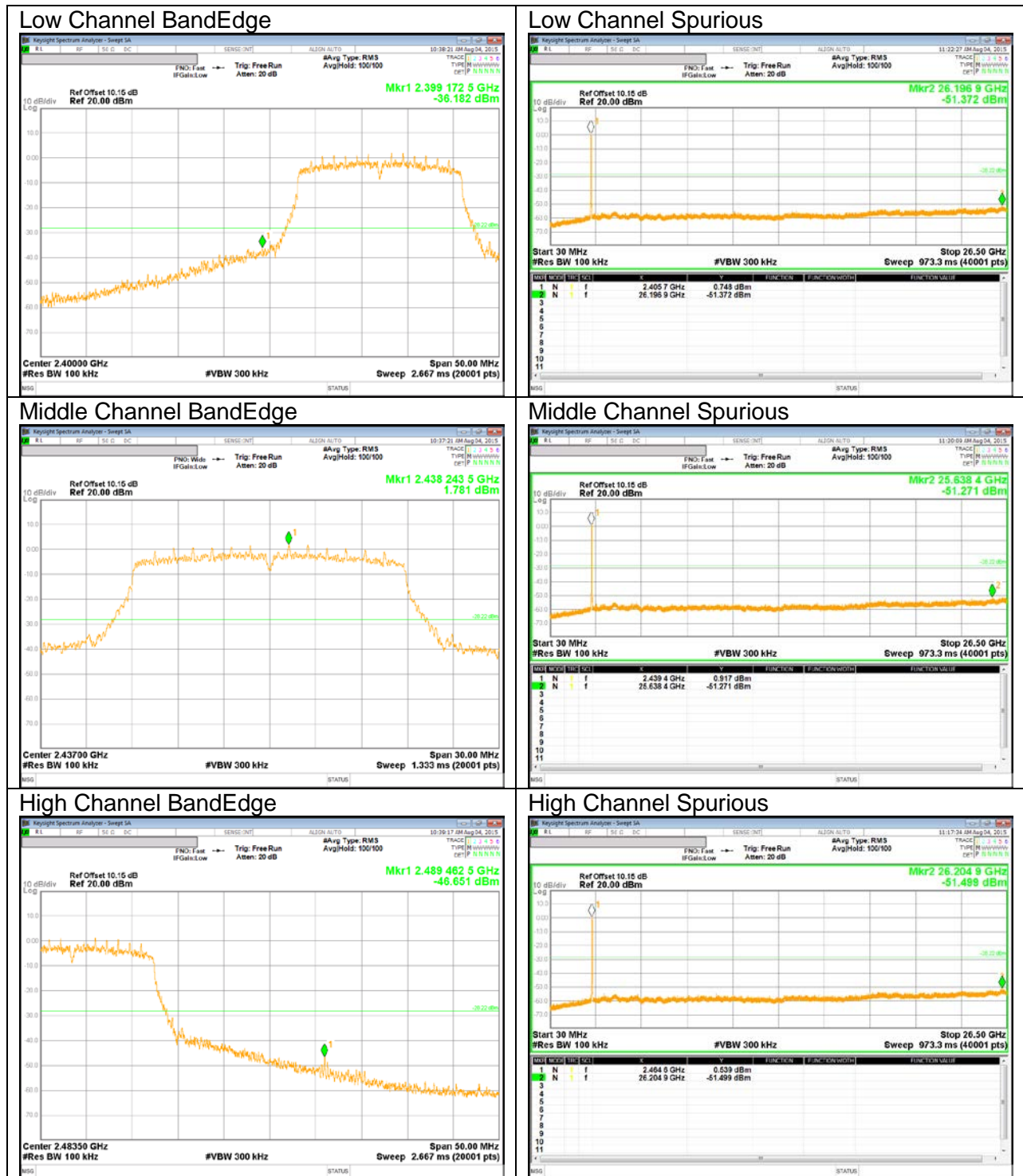


### 10.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND



## 11. RADIATED TEST RESULTS

### 11.1. LIMITS AND PROCEDURE

#### LIMITS

FCC §15.205 and §15.209

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

#### TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. Duty cycle factor=  $10\log(1/x)$  For this sample B mode = 0dB (duty cycle >98%); G mode = 0.29dB; N mode = 0.32dB.

The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

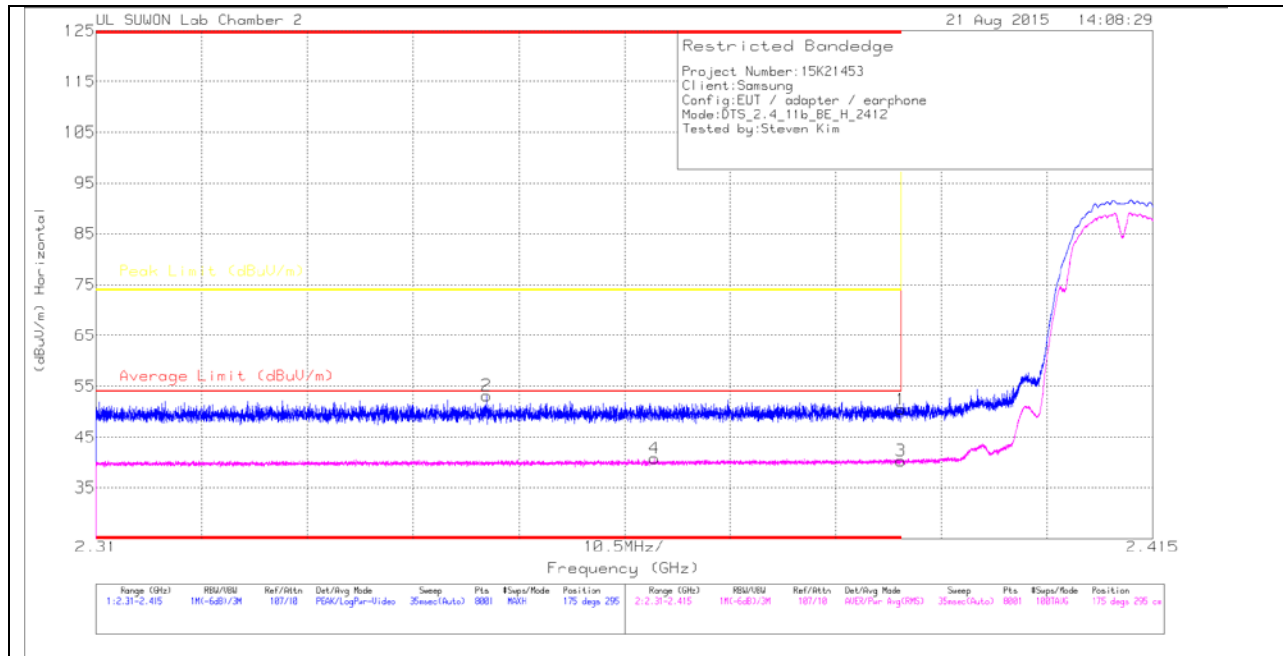
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

## 11.2. TRANSMITTER ABOVE 1 GHz

### 11.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

#### RESTRICTED BANDEDGE (LOW CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

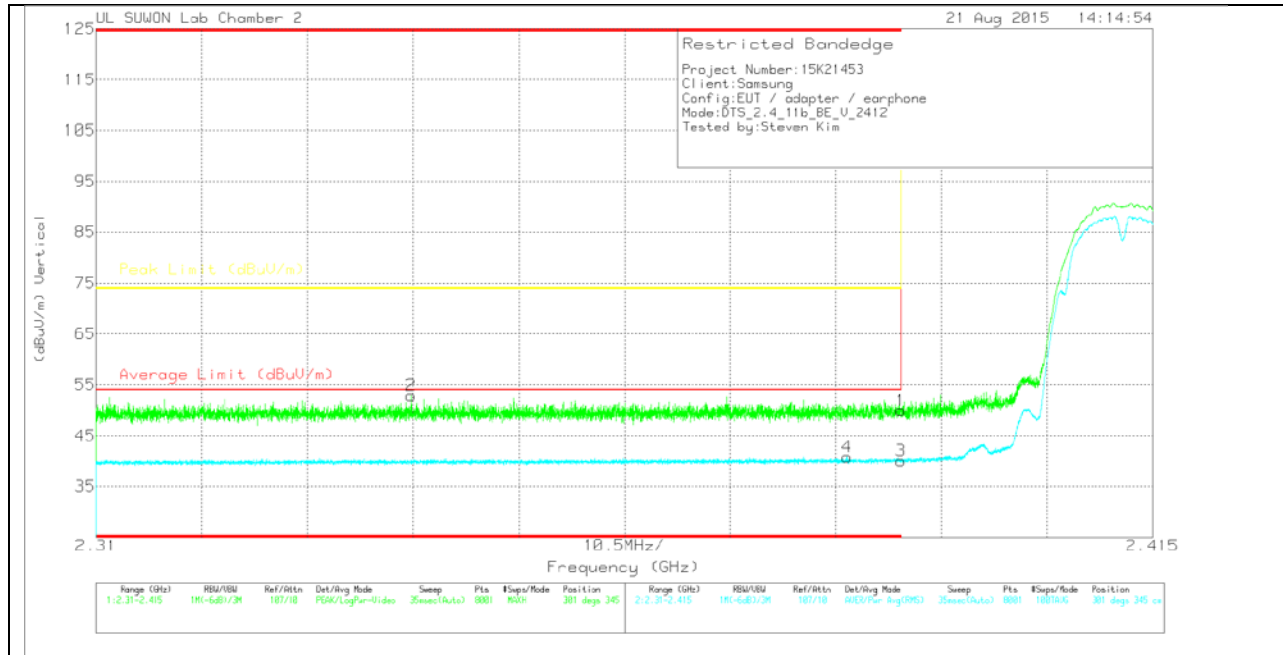
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117/001687 24_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.25	PK	31.7	-19.5	0	50.45	-	-	74	-23.55	175	295	H
2	* 2.349	41.18	PK	31.6	-19.6	0	53.18	-	-	74	-20.82	175	295	H
3	* 2.39	28.15	RMS	31.7	-19.5	0	40.35	54	-13.65	-	-	175	295	H
4	* 2.365	28.65	RMS	31.7	-19.6	0	40.75	54	-13.25	-	-	175	295	H

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

PK - Peak detector

RMS - RMS detection

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	37.77	PK	31.7	-19.5	0	49.97	-	-	74	-24.03	301	345	V
2	* 2.341	40.88	PK	31.6	-19.6	0	52.88	-	-	74	-21.12	301	345	V
3	* 2.39	27.86	RMS	31.7	-19.5	0	40.06	54	-13.94	-	-	301	345	V
4	* 2.385	28.6	RMS	31.7	-19.5	0	40.8	54	-13.2	-	-	301	345	V

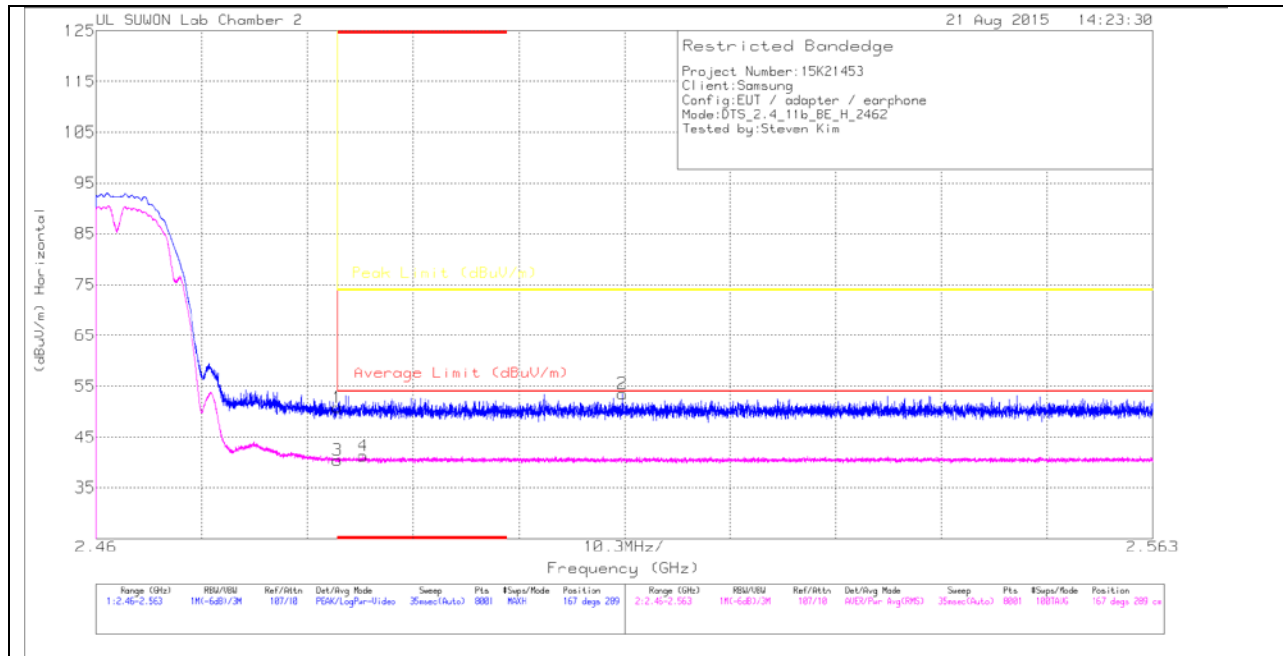
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

### AUTHORIZED BANDEDGE (HIGH CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

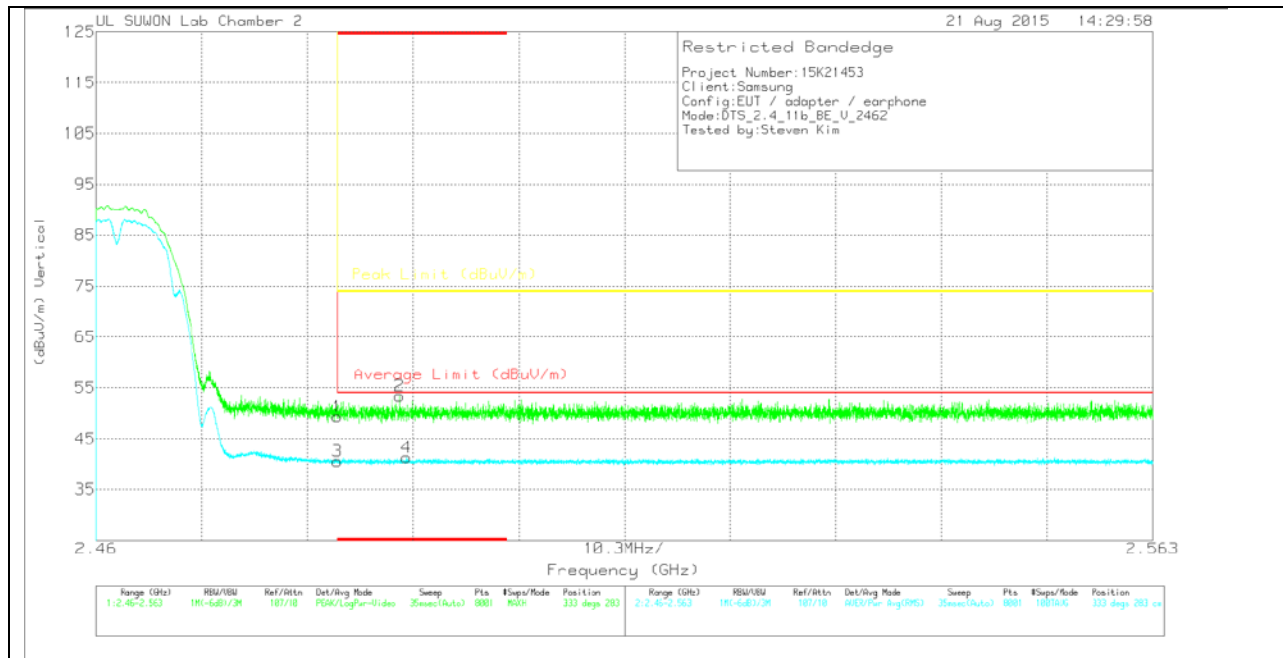
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.47	Pk	31.8	-19.4	0	50.87	-	-	74	-23.13	167	289	H
2	2.511	40.89	Pk	31.9	-19.3	0	53.49	-	-	74	-20.51	167	289	H
3	* 2.484	28.08	RMS	31.8	-19.4	0	40.48	54	-13.52	-	-	167	289	H
4	* 2.486	28.88	RMS	31.8	-19.4	0	41.28	54	-12.72	-	-	167	289	H

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

Pk - Peak detector

RMS - RMS detection

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	36.89	Pk	31.8	-19.4	0	49.29	-	-	74	-24.71	333	283	V
2	* 2.49	41.02	Pk	31.8	-19.4	0	53.42	-	-	74	-20.58	333	283	V
3	* 2.484	28.18	RMS	31.8	-19.4	0	40.58	54	-13.42	-	-	333	283	V
4	* 2.49	28.9	RMS	31.8	-19.4	0	41.3	54	-12.7	-	-	333	283	V

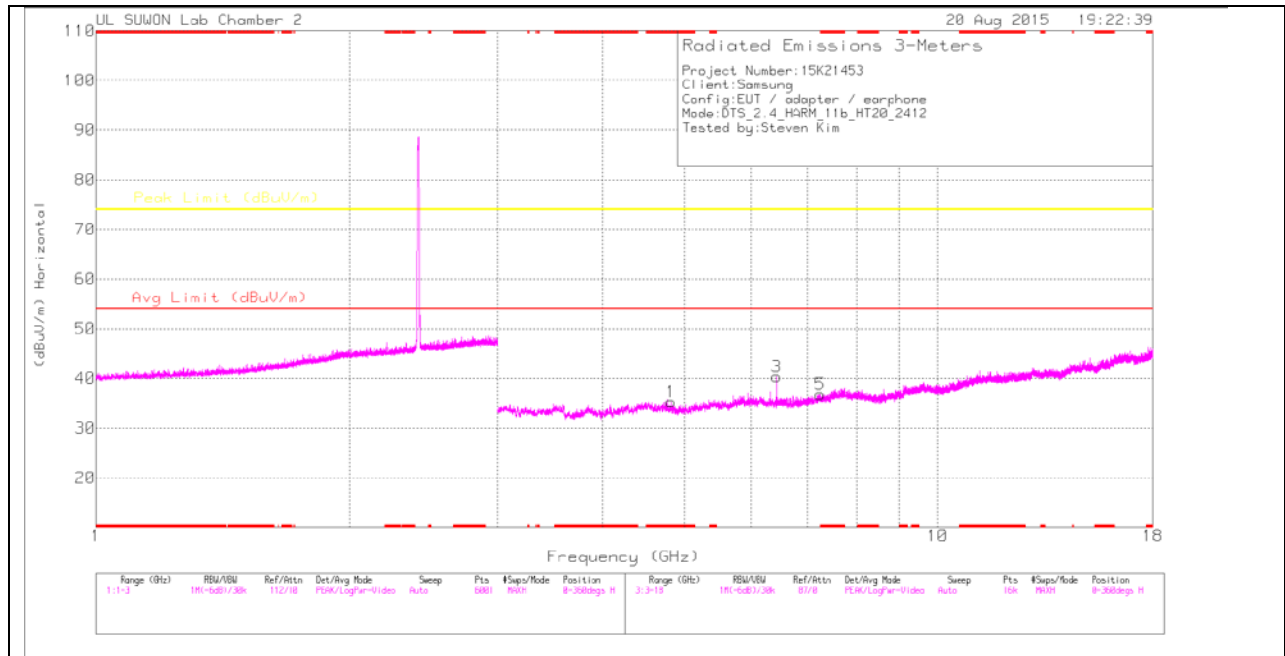
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

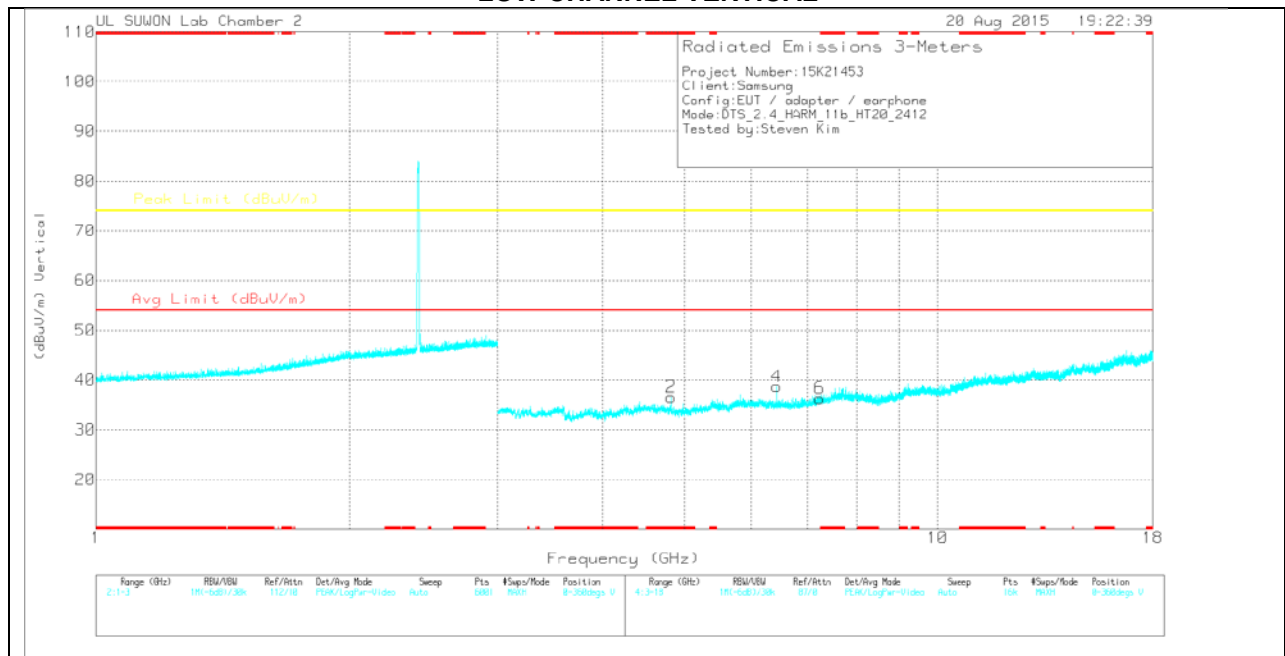
RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL HORIZONTAL



### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

### LOW CHANNEL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.823	26.69	PK	33.9	-25.3	0	35.29	-	-	74	-38.71	0-360	200	H
3	6.432	28.84	PK	35.2	-23.7	0	40.34	-	-	74	-33.66	0-360	100	H
5	7.242	24.05	PK	35.8	-23	0	36.85	-	-	74	-37.15	0-360	200	H
2	* 4.823	28.03	PK	33.9	-25.3	0	36.63	-	-	74	-37.37	0-360	200	V
4	6.432	27.2	PK	35.2	-23.7	0	38.7	-	-	74	-35.3	0-360	200	V
6	7.238	23.58	PK	35.8	-23	0	36.38	-	-	74	-37.62	0-360	100	V

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

PK – Peak Detector

Radiated Emissions

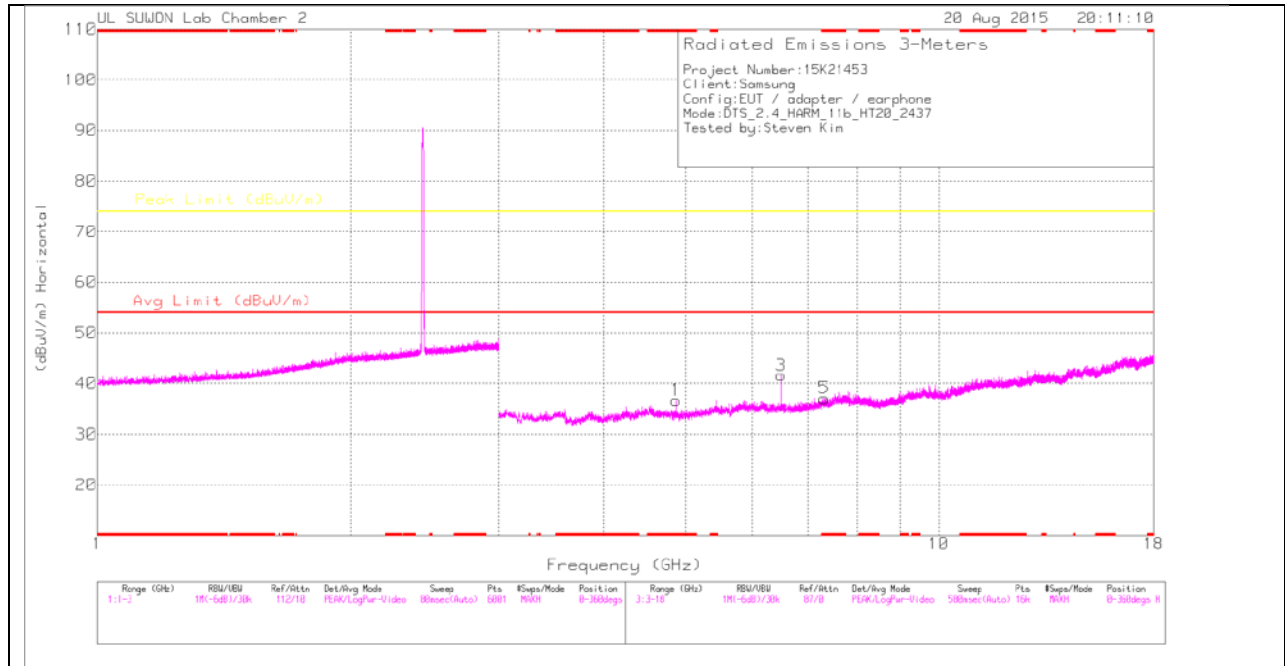
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.824	36.94	PK2	33.9	-25.3	0	45.54	-	-	74	-28.46	350	322	H
* 4.824	24.81	MAv1	33.9	-25.3	0	33.41	54	-20.59	-	-	350	322	H
6.432	37.1	PK2	35.2	-23.7	0	48.6	-	-	74	-25.4	210	127	H
6.432	36.19	PK2	35.2	-23.7	0	47.69	-	-	74	-26.31	356	341	V
* 4.824	38.46	PK2	33.9	-25.3	0	47.06	-	-	74	-26.94	353	241	V
* 4.824	28.07	MAv1	33.9	-25.3	0	36.67	54	-17.33	-	-	353	241	V

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

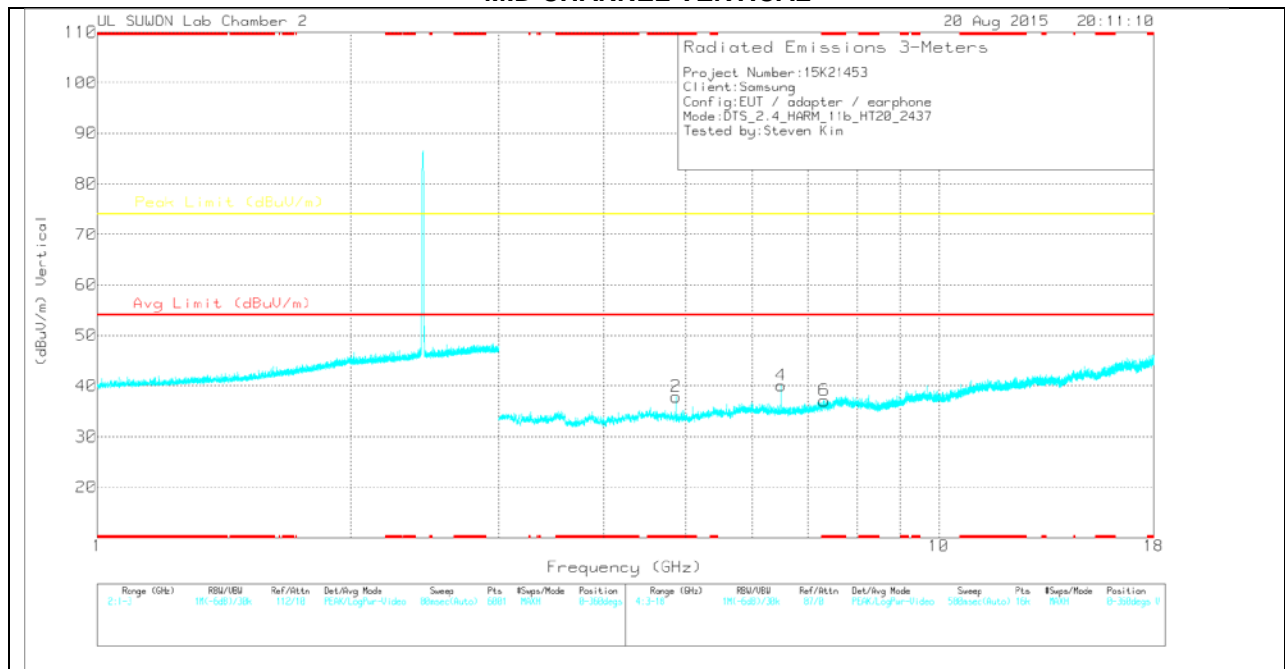
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

**MID CHANNEL HORIZONTAL**



**MID CHANNEL VERTICAL**



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**MID CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.874	28.01	PK	33.9	-25.2	0	36.71	-	-	74	-37.29	0-360	200	H
3	6.499	30.36	PK	35.3	-24	0	41.66	-	-	74	-32.34	0-360	100	H
5	* 7.308	23.82	PK	35.9	-22.6	0	37.12	-	-	74	-36.88	0-360	200	H
2	* 4.874	29.19	PK	33.9	-25.2	0	37.89	-	-	74	-36.11	0-360	100	V
4	6.499	28.8	PK	35.3	-24	0	40.1	-	-	74	-33.9	0-360	200	V
6	* 7.308	23.84	PK	35.9	-22.6	0	37.14	-	-	74	-36.86	0-360	200	V

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

PK – Peak detector

Radiated Emissions

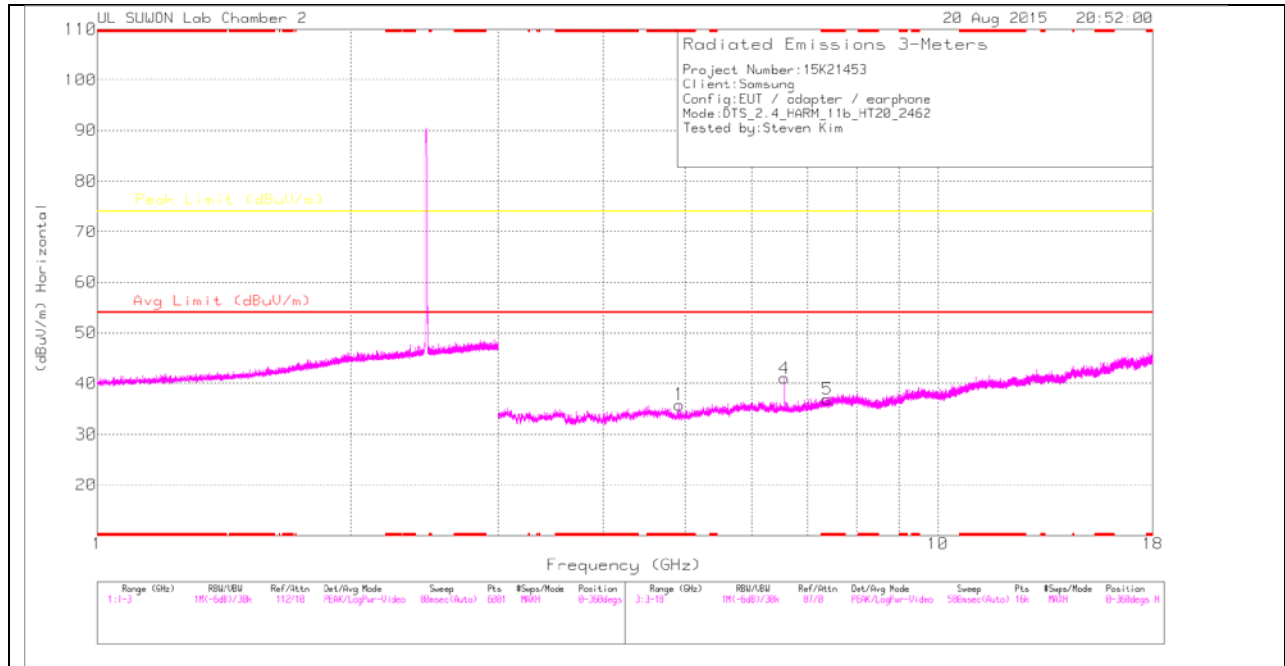
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.874	38.74	PK2	33.9	-25.2	0	47.44	-	-	74	-26.56	11	318	H
* 4.874	27.13	MAv1	33.9	-25.2	0	35.83	54	-18.17	-	-	11	318	H
* 4.874	38.33	PK2	33.9	-25.2	0	47.03	-	-	74	-26.97	341	236	V
* 4.874	28.17	MAv1	33.9	-25.2	0	36.87	54	-17.13	-	-	341	236	V
6.498	37.46	PK2	35.3	-24	0	48.76	-	-	74	-25.24	198	102	H
6.499	29.28	MAv1	35.3	-24	0	40.58	-	-	-	-	198	102	H
6.499	37.34	PK2	35.3	-24	0	48.64	-	-	74	-25.36	290	331	V
6.499	28.35	MAv1	35.3	-24	0	39.65	-	-	-	-	290	331	V

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

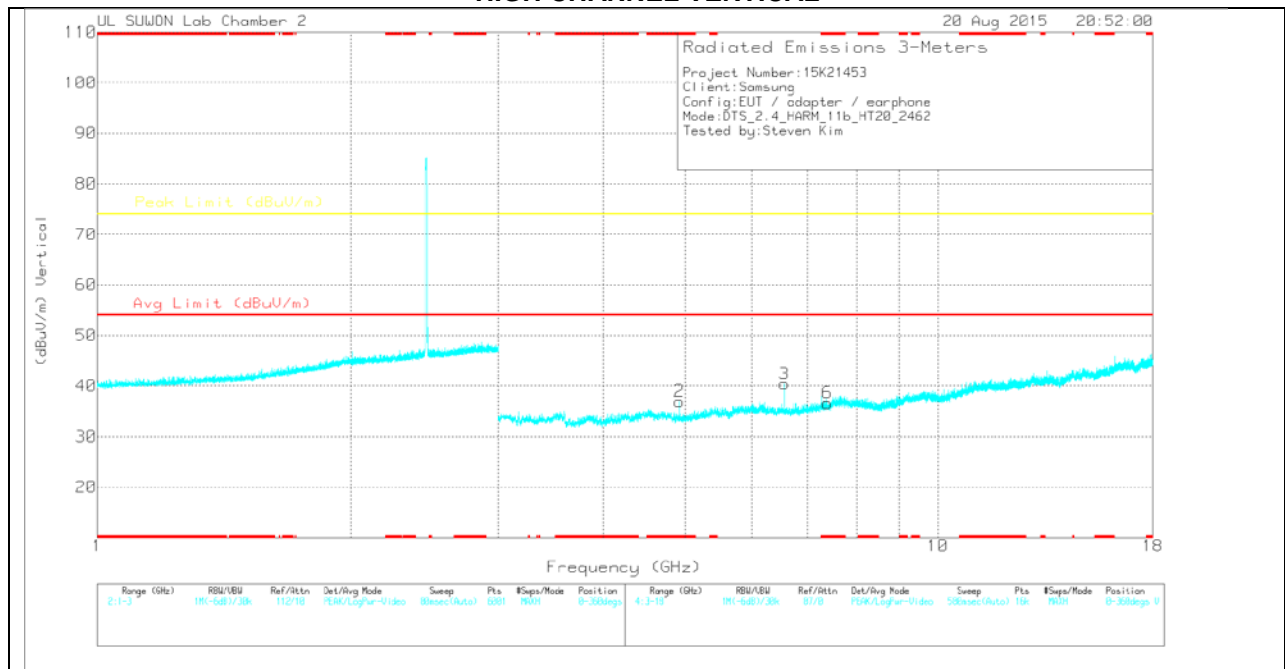
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**HIGH CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.924	27.04	PK	33.9	-25.1	0	35.84	-	-	74	-38.16	0-360	200	H
4	6.565	29.52	PK	35.3	-23.8	0	41.02	-	-	74	-32.98	0-360	200	H
5	* 7.386	23.24	PK	35.9	-22.2	0	36.94	-	-	74	-37.06	0-360	200	H
2	* 4.924	28.16	PK	33.9	-25.1	0	36.96	-	-	74	-37.04	0-360	100	V
3	6.565	28.92	PK	35.3	-23.8	0	40.42	-	-	74	-33.58	0-360	200	V
6	* 7.384	22.93	PK	35.9	-22.2	0	36.63	-	-	74	-37.37	0-360	200	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.93	36.24	PK2	33.9	-25.1	0	45.04	-	-	74	-28.96	329	357	H
* 4.924	26.46	MAv1	33.9	-25.1	0	35.26	54	-18.74	-	-	329	357	H
* 4.924	37.86	PK2	33.9	-25.1	0	46.66	-	-	74	-27.34	350	232	V
* 4.924	27.41	MAv1	33.9	-25.1	0	36.21	54	-17.79	-	-	350	232	V
6.565	37.23	PK2	35.3	-23.8	0	48.73	-	-	74	-25.27	210	205	H
6.566	35.99	PK2	35.3	-23.8	0	47.49	-	-	74	-26.51	260	347	V

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

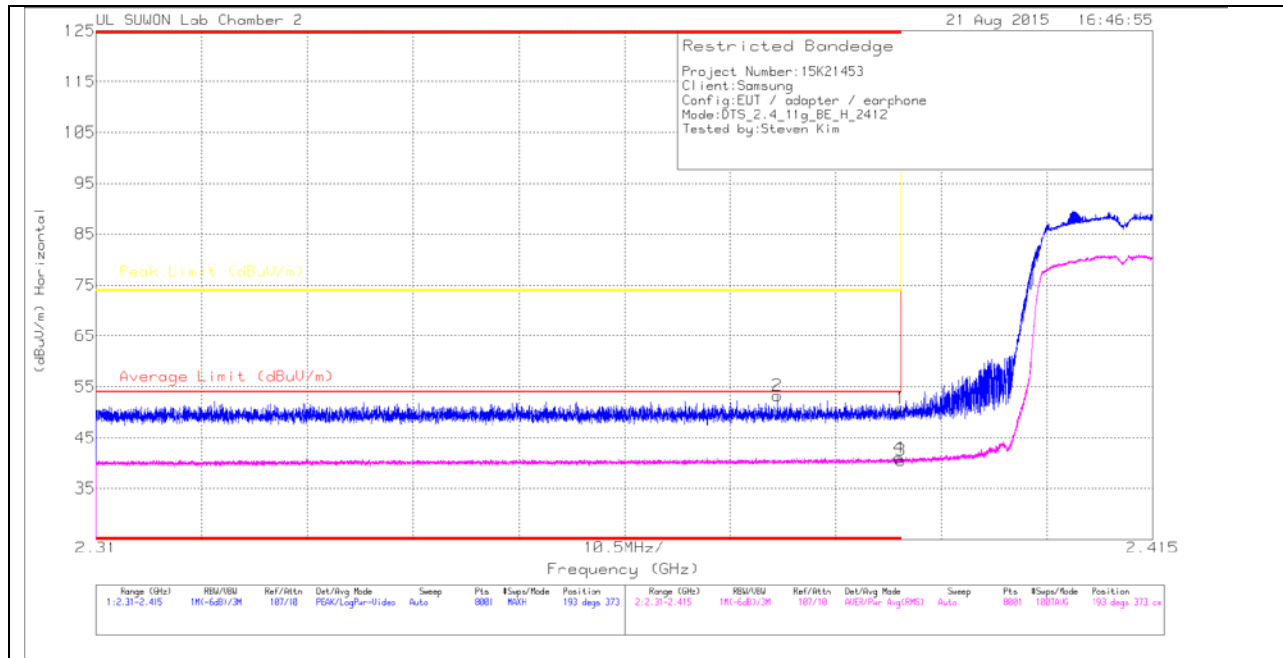
PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

## 11.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

### RESTRICTED BANDEDGE (LOW CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

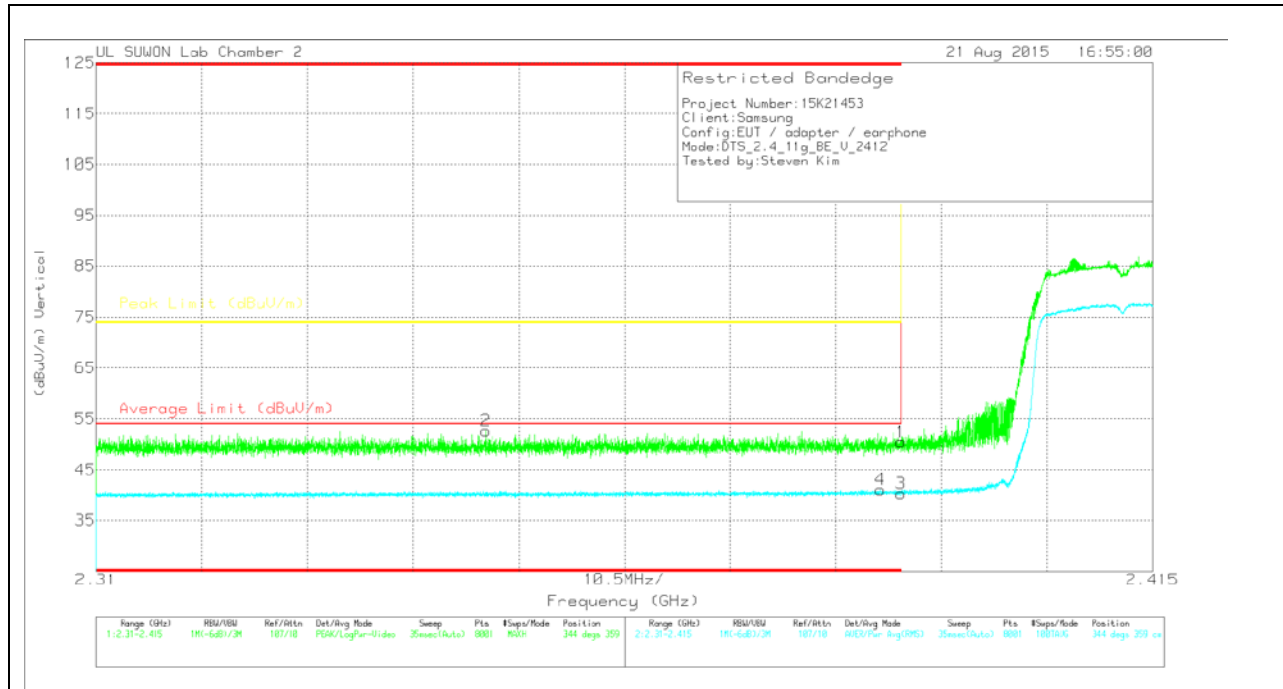
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24_150619)	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.63	PK	31.7	-19.5	0	50.83	-	-	74	-23.17	193	373	H
2	* 2.378	41.24	PK	31.7	-19.6	0	53.34	-	-	74	-20.66	193	373	H
3	* 2.39	28.03	RMS	31.7	-19.5	.29	40.52	54	-13.48	-	-	193	373	H
4	* 2.39	28.55	RMS	31.7	-19.5	.29	41.04	54	-12.96	-	-	193	373	H

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

Pk - Peak detector

RMS - RMS detection

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.2	Pk	31.7	-19.5	0	50.4	-	-	74	-23.6	344	359	V
2	* 2.349	40.71	Pk	31.6	-19.6	0	52.71	-	-	74	-21.29	344	359	V
3	* 2.39	27.82	RMS	31.7	-19.5	.29	40.31	54	-13.69	-	-	344	359	V
4	* 2.388	28.62	RMS	31.7	-19.5	.29	41.11	54	-12.89	-	-	344	359	V

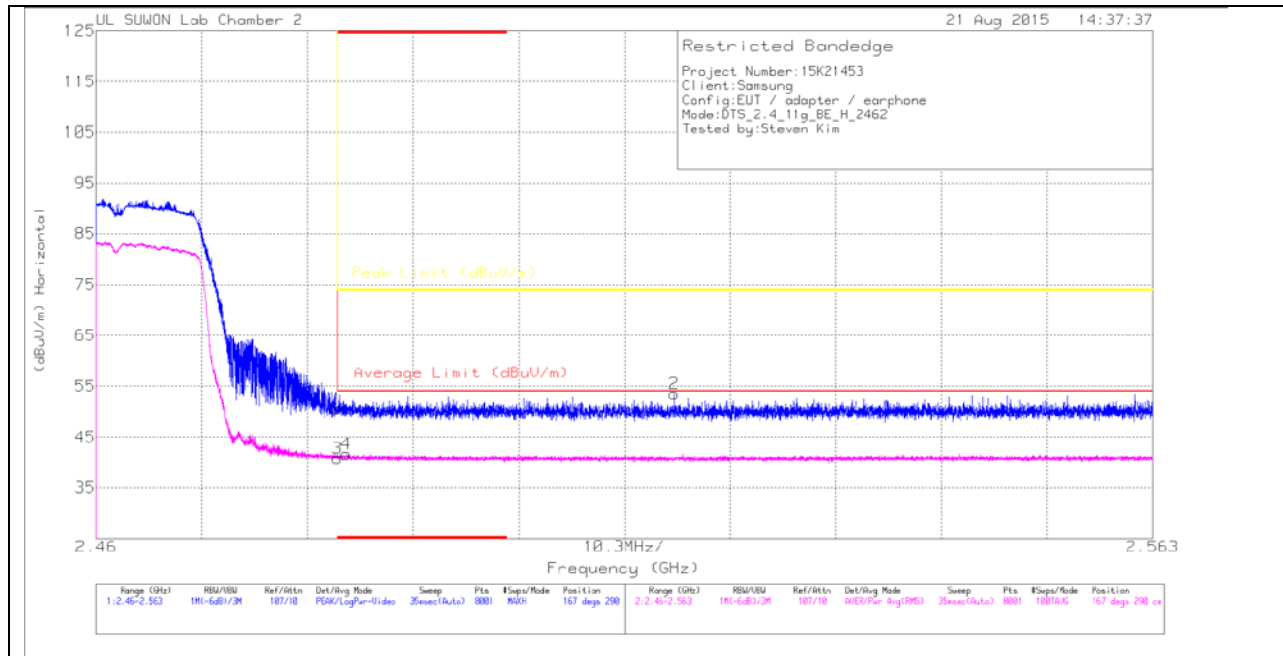
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

### AUTHORIZED BANDEDGE (HIGH CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

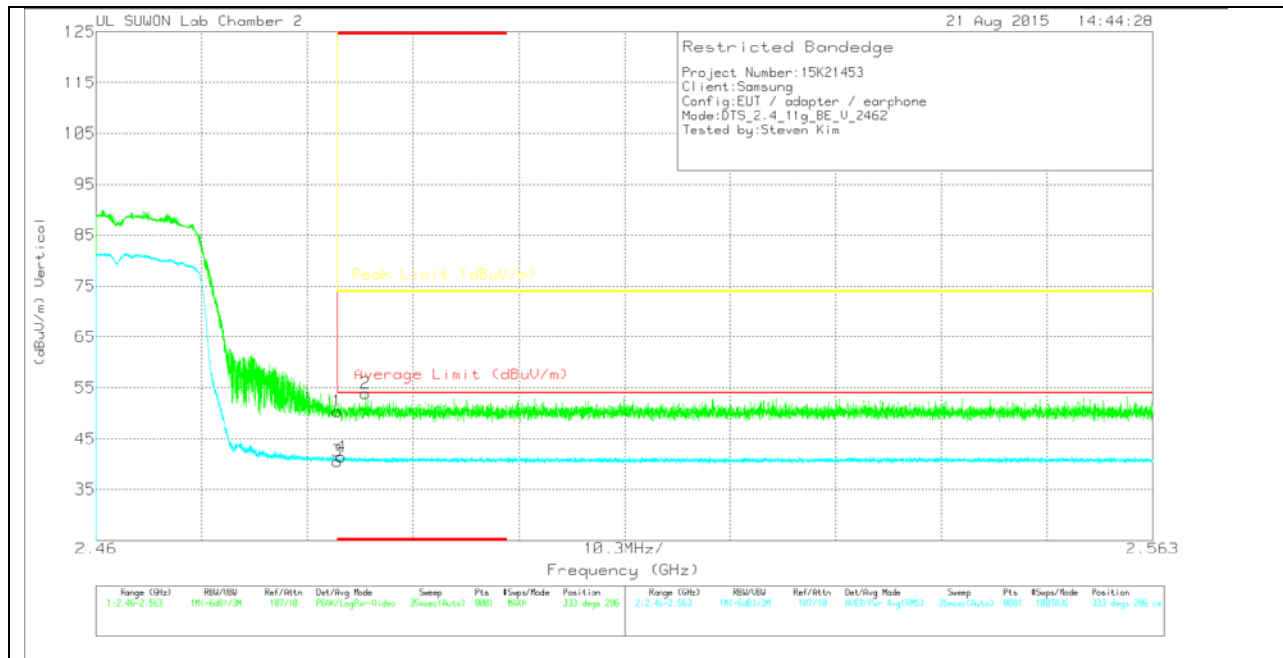
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.16	Pk		-19.4	0	50.56	-	-	74	-23.44	167	290	H
2	2.516	40.98	Pk		-19.3	0	53.58	-	-	74	-20.42	167	290	H
3	* 2.484	28.08	RMS		-19.4	.29	40.77	54	-13.23	-	-	167	290	H
4	* 2.484	28.92	RMS		-19.4	.29	41.61	54	-12.39	-	-	167	290	H

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

Pk - Peak detector

RMS - RMS detection

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	37.99	Pk	31.8	-19.4	0	50.39	-	-	74	-23.61	333	286	V
2	* 2.486	41.56	Pk	31.8	-19.4	0	53.96	-	-	74	-20.04	333	286	V
3	* 2.484	27.91	RMS	31.8	-19.4	.29	40.6	54	-13.4	-	-	333	286	V
4	* 2.484	28.77	RMS	31.8	-19.4	.29	41.46	54	-12.54	-	-	333	286	V

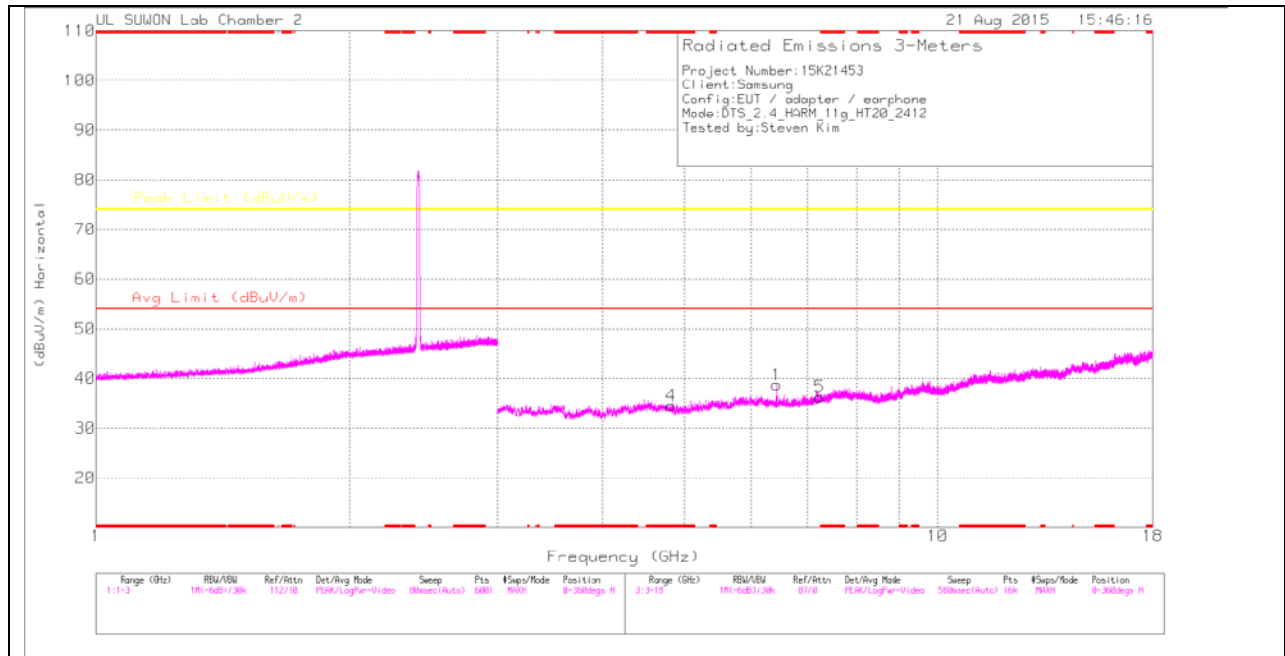
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

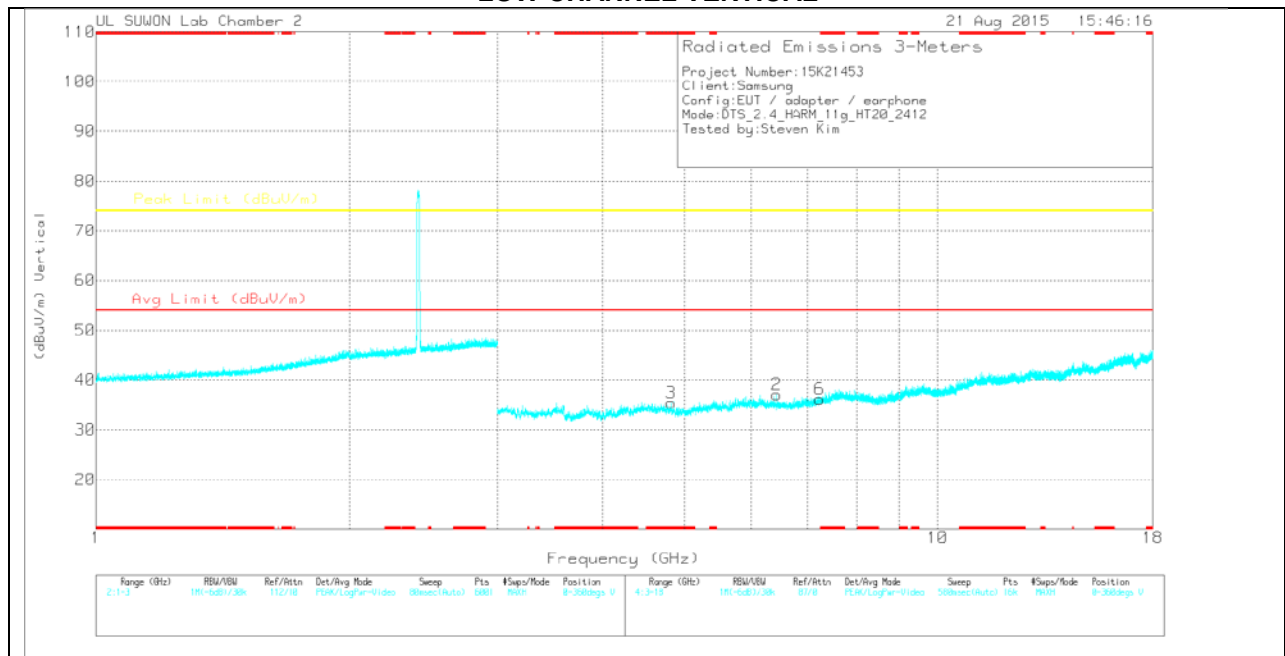
RMS - RMS detection

### HARMONICS AND SPURIOUS EMISSIONS

#### LOW CHANNEL HORIZONTAL



#### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**LOW CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.432	27.2	PK	35.2	-23.7	0	38.7	-	-	74	-35.3	0-360	100	H
4	* 4.823	25.9	PK	33.9	-25.3	0	34.5	-	-	74	-39.5	0-360	200	H
5	7.238	23.55	PK	35.8	-23	0	36.35	-	-	74	-37.65	0-360	200	H
2	6.432	25.6	PK	35.2	-23.7	0	37.1	-	-	74	-36.9	0-360	100	V
3	* 4.823	26.8	PK	33.9	-25.3	0	35.4	-	-	74	-38.6	0-360	100	V
6	7.233	23.39	PK	35.8	-23	0	36.19	-	-	74	-37.81	0-360	200	V

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

PK – Peak detector

Radiated Emissions

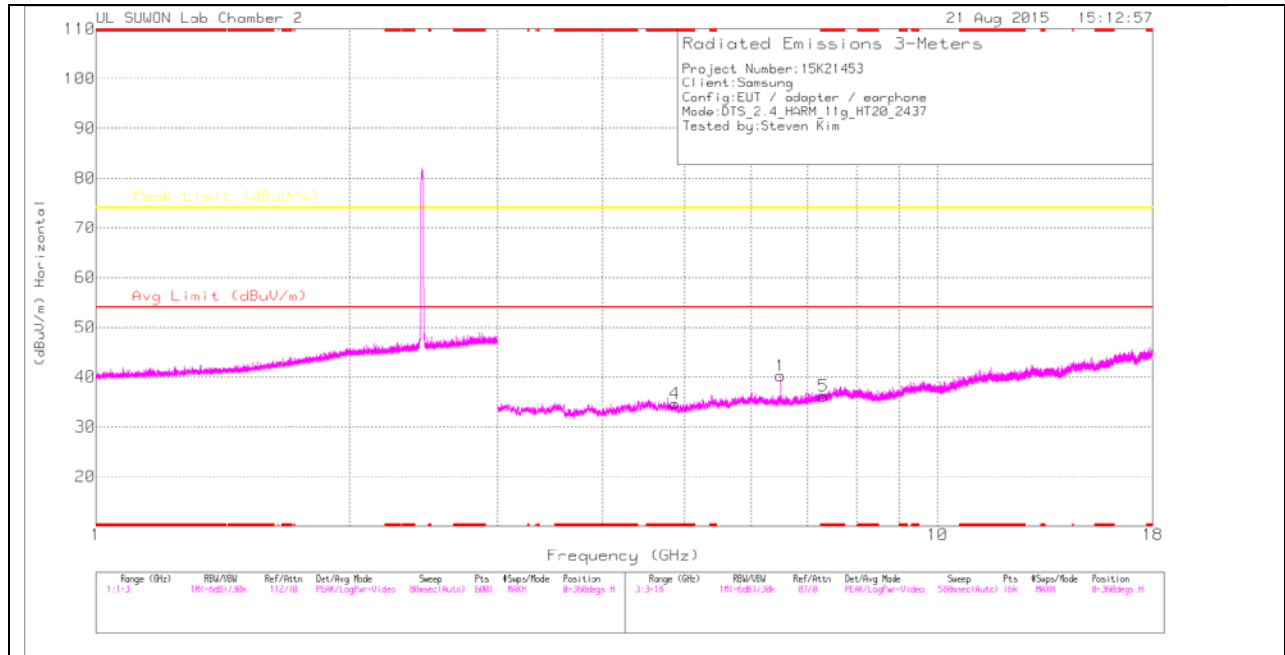
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.432	37.64	PK2	35.2	-23.7	0	49.14	-	-	74	-24.86	213	310	H
6.432	36.46	PK2	35.2	-23.7	0	47.96	-	-	74	-26.04	8	282	V

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

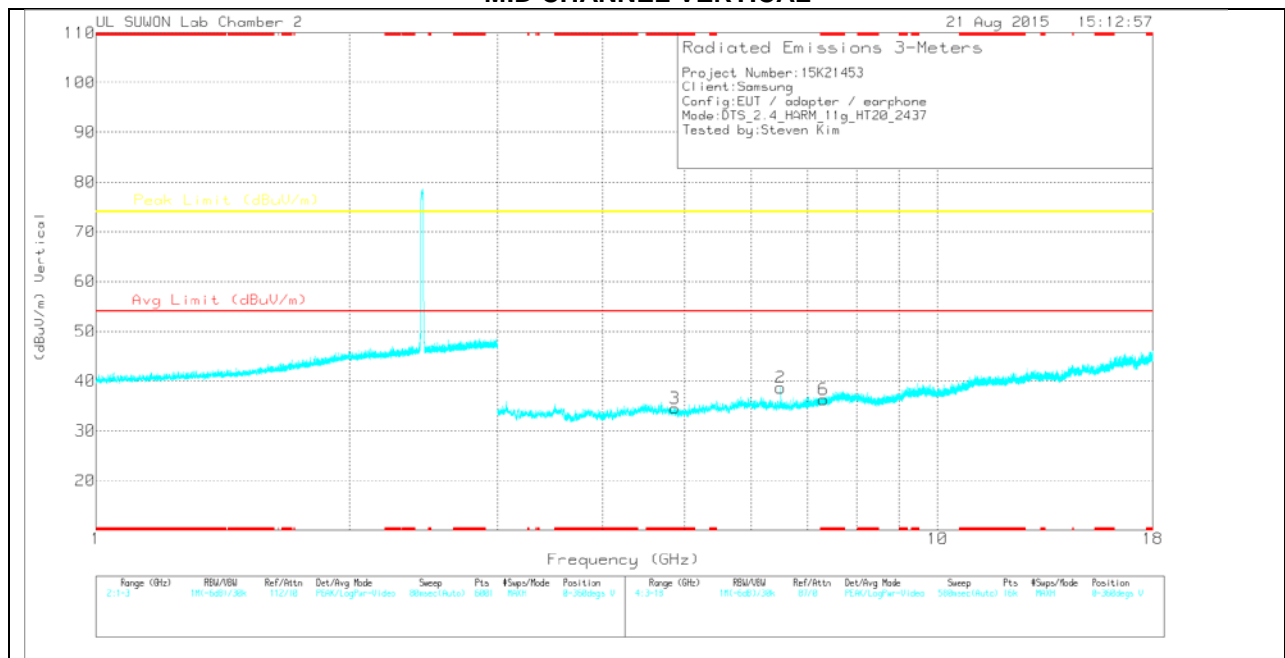
PK2 - KDB558074 Method: Maximum Peak

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

**MID CHANNEL HORIZONTAL**



**MID CHANNEL VERTICAL**



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**MID CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.499	28.9	PK	35.3	-24	0	40.2	-	-	74	-33.8	0-360	100	H
4	* 4.874	26.03	PK	33.9	-25.2	0	34.73	-	-	74	-39.27	0-360	200	H
5	* 7.31	22.91	PK	35.9	-22.6	0	36.21	-	-	74	-37.79	0-360	200	H
2	6.499	27.36	PK	35.3	-24	0	38.66	-	-	74	-35.34	0-360	100	V
3	* 4.874	25.88	PK	33.9	-25.2	0	34.58	-	-	74	-39.42	0-360	100	V
6	* 7.314	23	PK	35.9	-22.6	0	36.3	-	-	74	-37.7	0-360	100	V

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

PK – Peak detector

Radiated Emissions

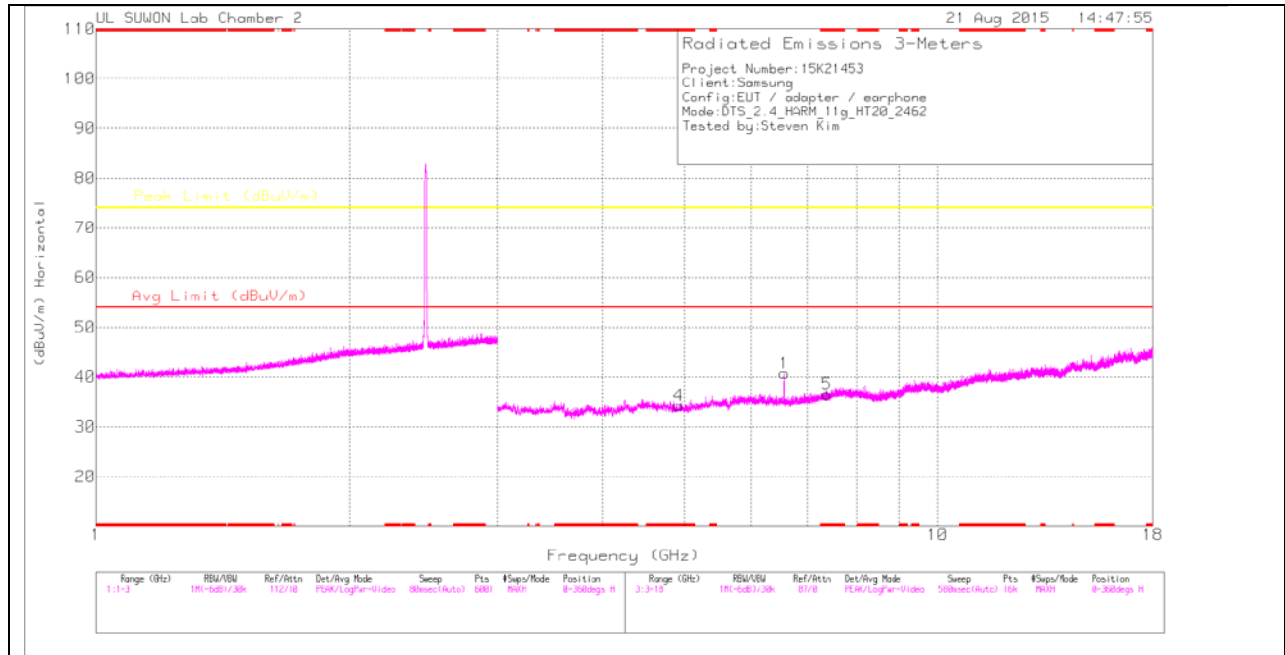
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.499	37.88	PK2	35.3	-24	0	49.18	-	-	74	-24.82	220	101	H
6.498	36.26	PK2	35.3	-24	0	47.56	-	-	74	-26.44	3	322	V

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

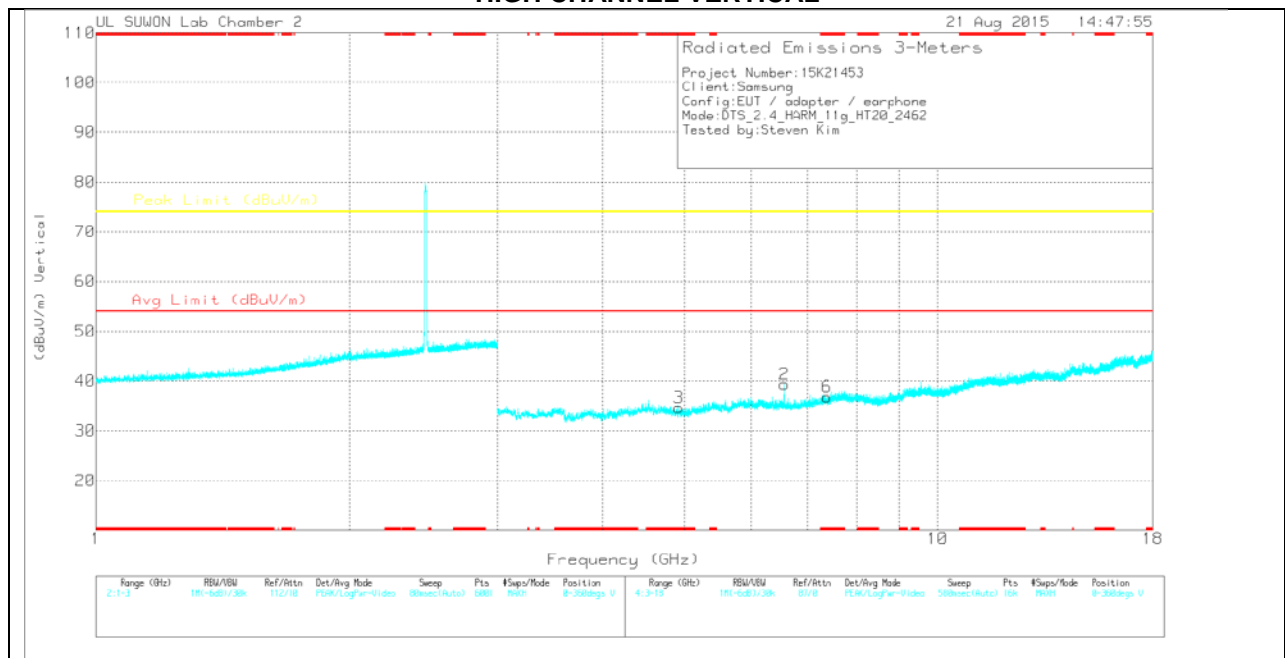
PK2 - KDB558074 Method: Maximum Peak

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

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**HIGH CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.565	29.26	PK	35.3	-23.8	0	40.76	-	-	74	-33.24	0-360	100	H
4	* 4.924	25.54	PK	33.9	-25.1	0	34.34	-	-	74	-39.66	0-360	200	H
5	* 7.386	22.87	PK	35.9	-22.2	0	36.57	-	-	74	-37.43	0-360	200	H
2	6.565	27.89	PK	35.3	-23.8	0	39.39	-	-	74	-34.61	0-360	100	V
3	* 4.924	25.84	PK	33.9	-25.1	0	34.64	-	-	74	-39.36	0-360	100	V
6	* 7.386	23.16	PK	35.9	-22.2	0	36.86	-	-	74	-37.14	0-360	100	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.565	38.05	PK2	35.3	-23.8	0	49.55	-	-	74	-24.45	214	329	H
6.565	37.44	PK2	35.3	-23.8	0	48.94	-	-	74	-25.06	341	275	V

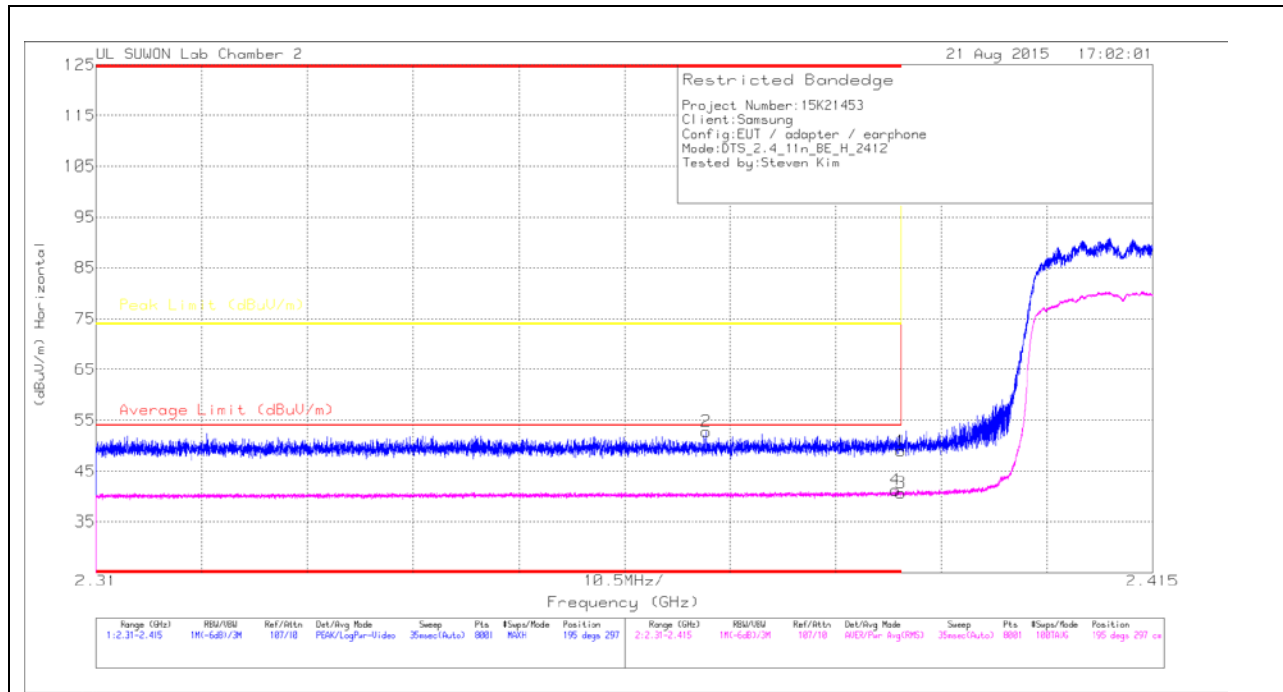
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

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

### 11.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND RESTRICTED BANDEDGE (LOW CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

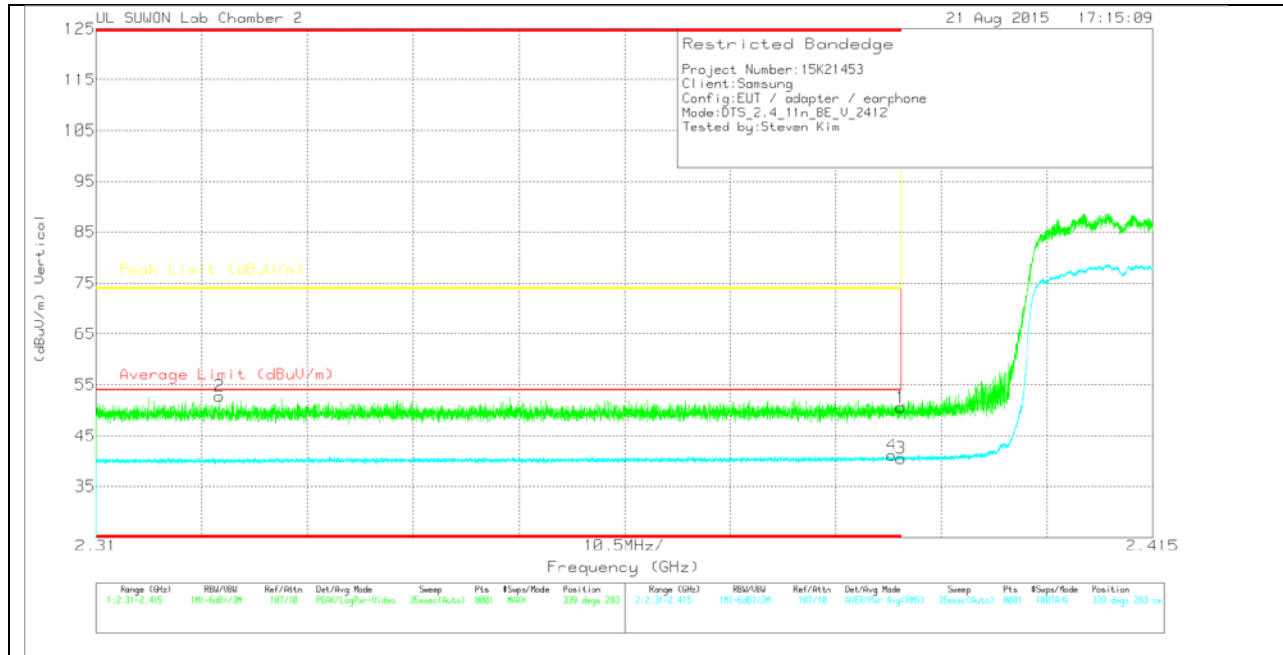
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24_150619)	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	36.8	PK	31.7	-19.5	0	49	-	-	74	-25	195	297	H
2	* 2.371	40.73	PK	31.7	-19.6	0	52.83	-	-	74	-21.17	195	297	H
3	* 2.39	28.1	RMS	31.7	-19.5	.34	40.64	54	-13.36	-	-	195	297	H
4	* 2.389	28.7	RMS	31.7	-19.5	.34	41.24	54	-12.76	-	-	195	297	H

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

PK - Peak detector

RMS - RMS detection

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	38.33	PK	31.7	-19.5	0	50.53	-	-	74	-23.47	339	283	V
2	* 2.322	40.93	PK	31.6	-19.7	0	52.83	-	-	74	-21.17	339	283	V
3	* 2.39	27.99	RMS	31.7	-19.5	.34	40.53	54	-13.47	-	-	339	283	V
4	* 2.389	28.59	RMS	31.7	-19.5	.34	41.13	54	-12.87	-	-	339	283	V

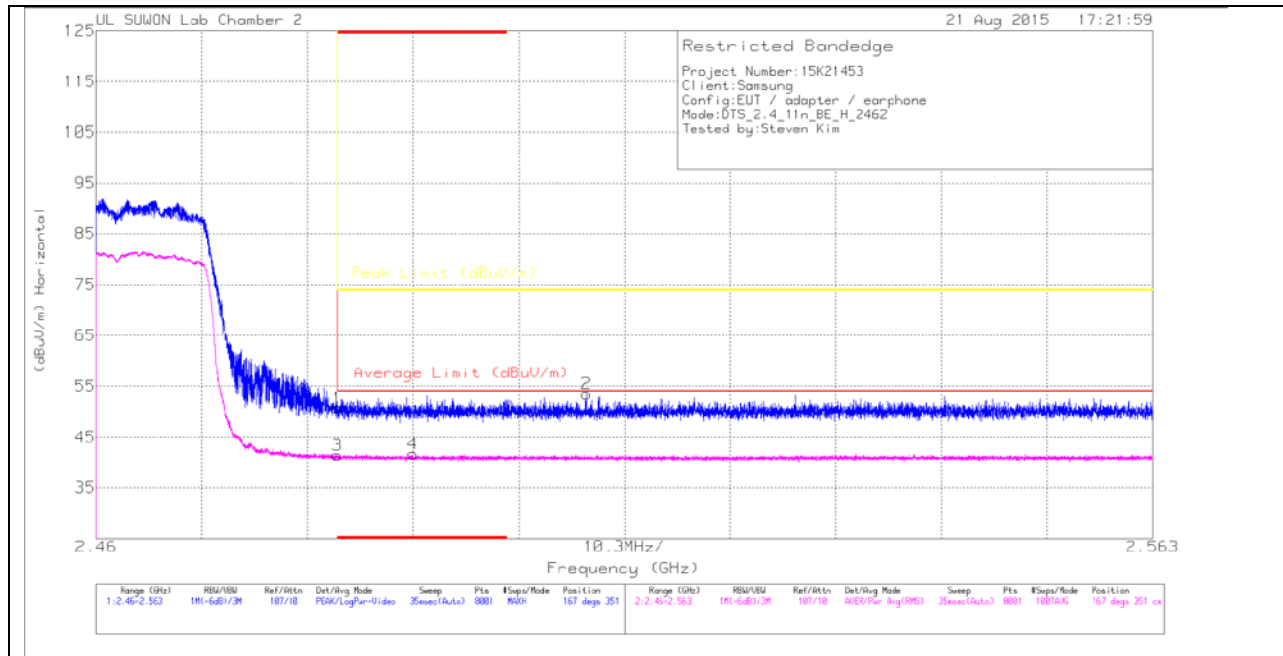
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

**AUTHORIZED BANDEDGE (HIGH CHANNEL)**

**HORIZONTAL PEAK AND AVERAGE PLOT**



**HORIZONTAL DATA**

Trace Markers

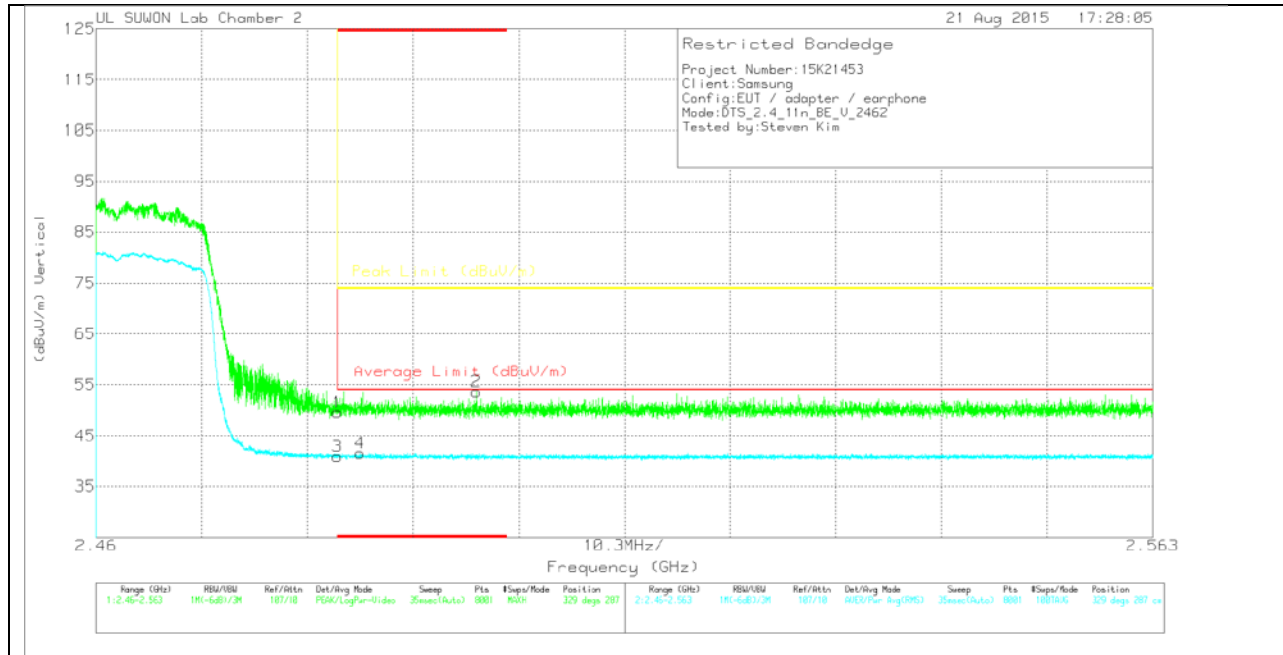
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.35	Pk	31.8	-19.4	0	50.75	-	-	74	-23.25	167	351	H
2	2.508	40.9	Pk	31.9	-19.3	0	53.5	-	-	74	-20.5	167	351	H
3	* 2.484	28.63	RMS	31.8	-19.4	.34	41.37	54	-12.63	-	-	167	351	H
4	* 2.491	28.98	RMS	31.8	-19.4	.34	41.72	54	-12.28	-	-	167	351	H

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

Pk - Peak detector

RMS - RMS detection

**VERTICAL PEAK AND AVERAGE PLOT**



**VERTICAL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	37.23	PK	31.8	-19.4	0	49.63	-	-	74	-24.37	329	287	V
2	* 2.497	41.15	PK	31.8	-19.3	0	53.65	-	-	74	-20.35	329	287	V
3	* 2.484	28.17	RMS	31.8	-19.4	.34	40.91	54	-13.09	-	-	329	287	V
4	* 2.486	28.84	RMS	31.8	-19.4	.34	41.58	54	-12.42	-	-	329	287	V

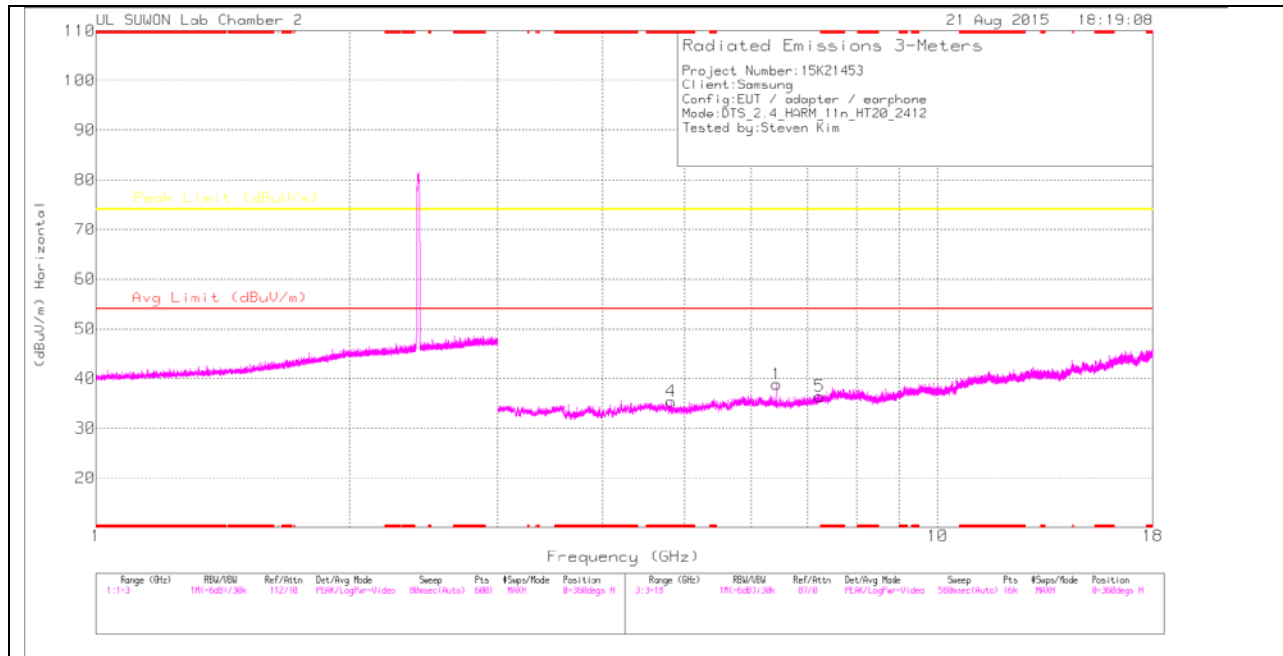
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

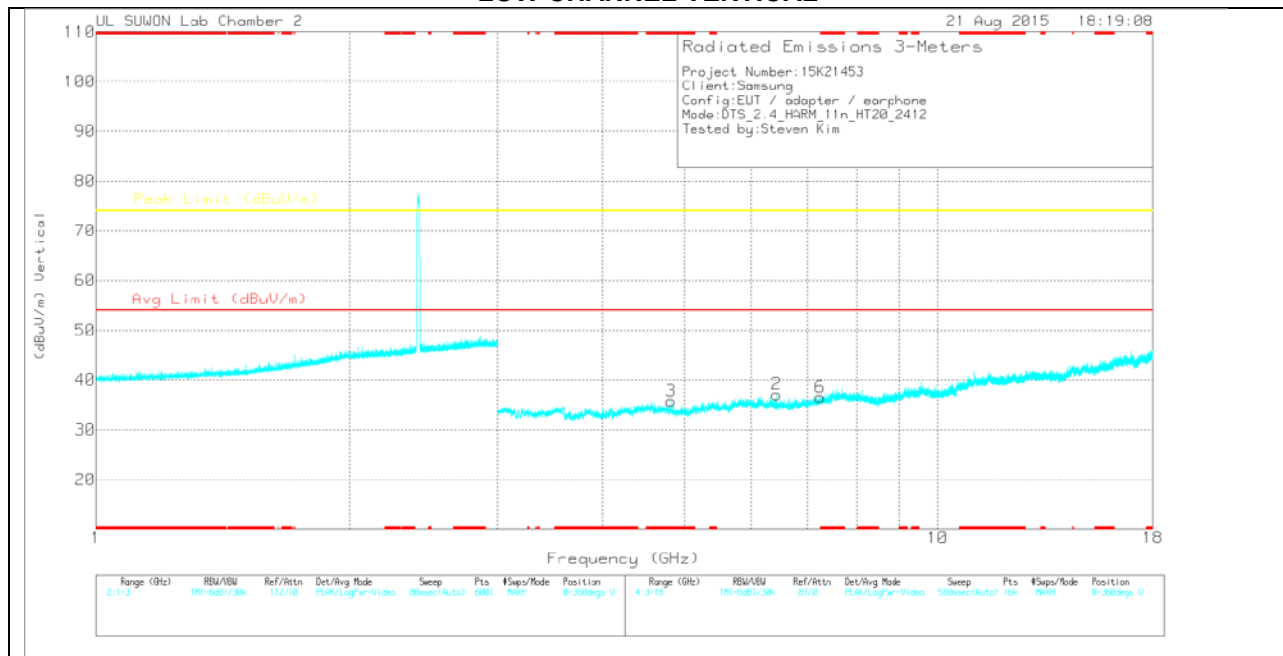
RMS - RMS detection

## HARMONICS AND SPURIOUS EMISSIONS

### LOW CHANNEL HORIZONTAL



### LOW CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**LOW CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.432	27.3	PK	35.2	-23.7	0	38.8	-	-	74	-35.2	0-360	100	H
4	* 4.823	26.86	PK	33.9	-25.3	0	35.46	-	-	74	-38.54	0-360	200	H
5	7.234	23.6	PK	35.8	-23	0	36.4	-	-	74	-37.6	0-360	200	H
2	6.432	25.64	PK	35.2	-23.7	0	37.14	-	-	74	-36.86	0-360	99	V
3	* 4.823	27.17	PK	33.9	-25.3	0	35.77	-	-	74	-38.23	0-360	99	V
6	7.242	23.79	PK	35.8	-23	0	36.59	-	-	74	-37.41	0-360	99	V

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

PK – Peak detector

Radiated Emissions

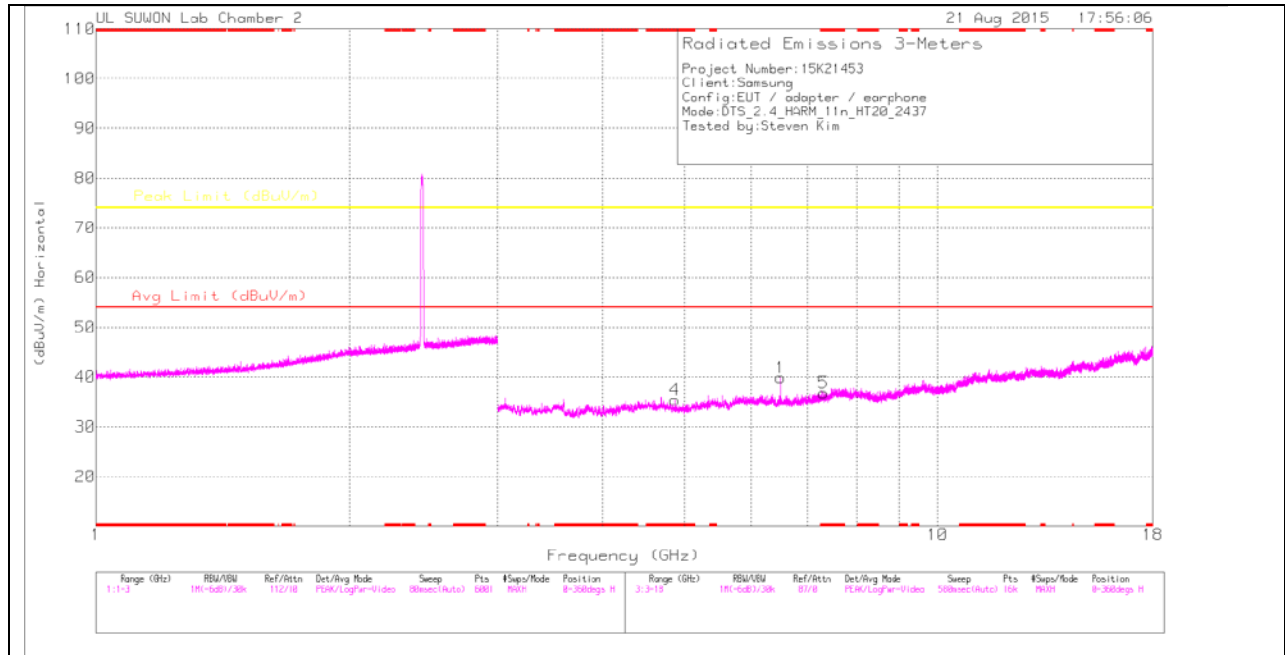
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.432	36.38	PK2	35.2	-23.7	0	47.88	-	-	74	-26.12	200	310	H
6.432	36.44	PK2	35.2	-23.7	0	47.94	-	-	74	-26.06	16	244	V

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

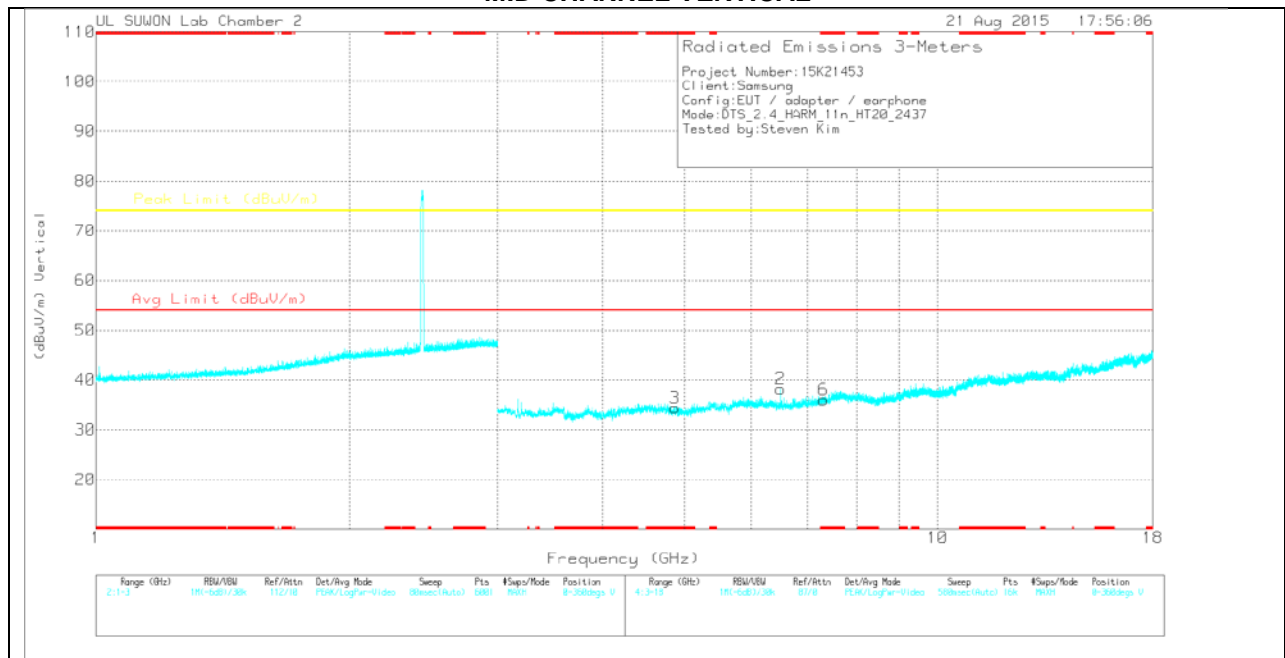
PK2 - KDB558074 Method: Maximum Peak

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

**MID CHANNEL HORIZONTAL**



**MID CHANNEL VERTICAL**



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**MID CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.499	28.57	PK	35.3	-24	0	39.87	-	-	74	-34.13	0-360	100	H
4	* 4.874	26.69	PK	33.9	-25.2	0	35.39	-	-	74	-38.61	0-360	200	H
5	* 7.31	23.47	PK	35.9	-22.6	0	36.77	-	-	74	-37.23	0-360	200	H
2	6.499	26.95	PK	35.3	-24	0	38.25	-	-	74	-35.75	0-360	100	V
3	* 4.874	25.73	PK	33.9	-25.2	0	34.43	-	-	74	-39.57	0-360	100	V
6	* 7.313	22.81	PK	35.9	-22.6	0	36.11	-	-	74	-37.89	0-360	200	V

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

PK – Peak detector

Radiated Emissions

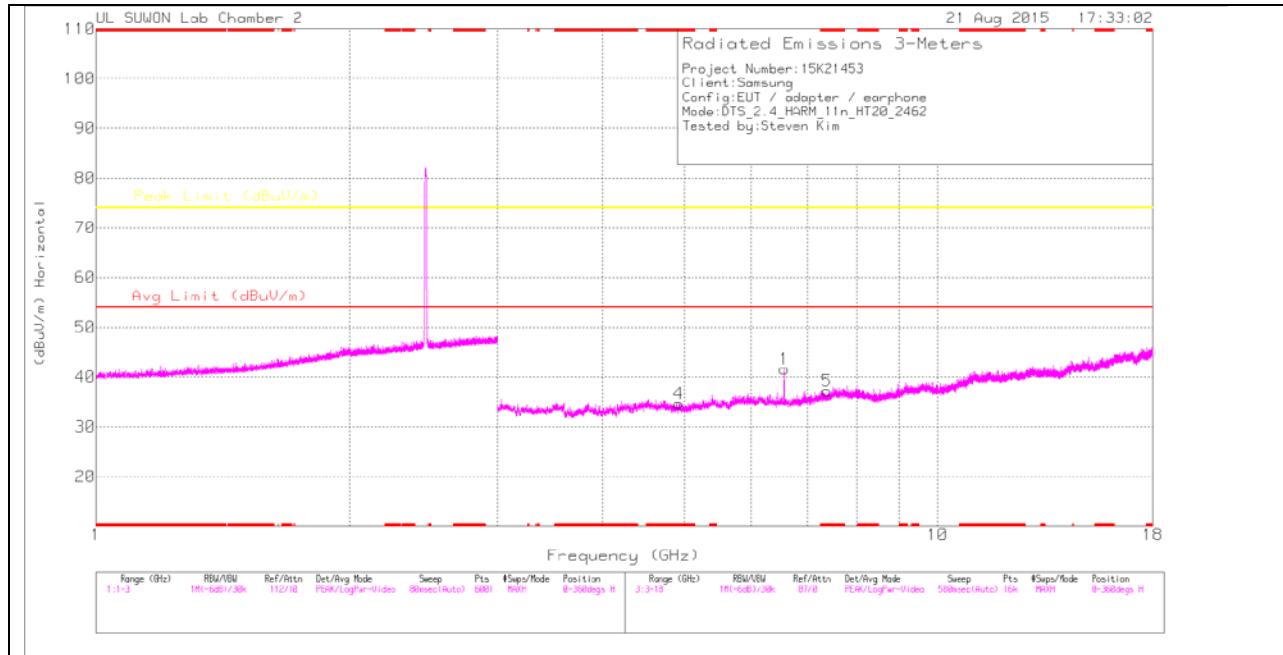
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.498	37.85	PK2	35.3	-24	0	49.15	-	-	74	-24.85	215	362	H
6.499	37.06	PK2	35.3	-24	0	48.36	-	-	74	-25.64	10	258	V

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

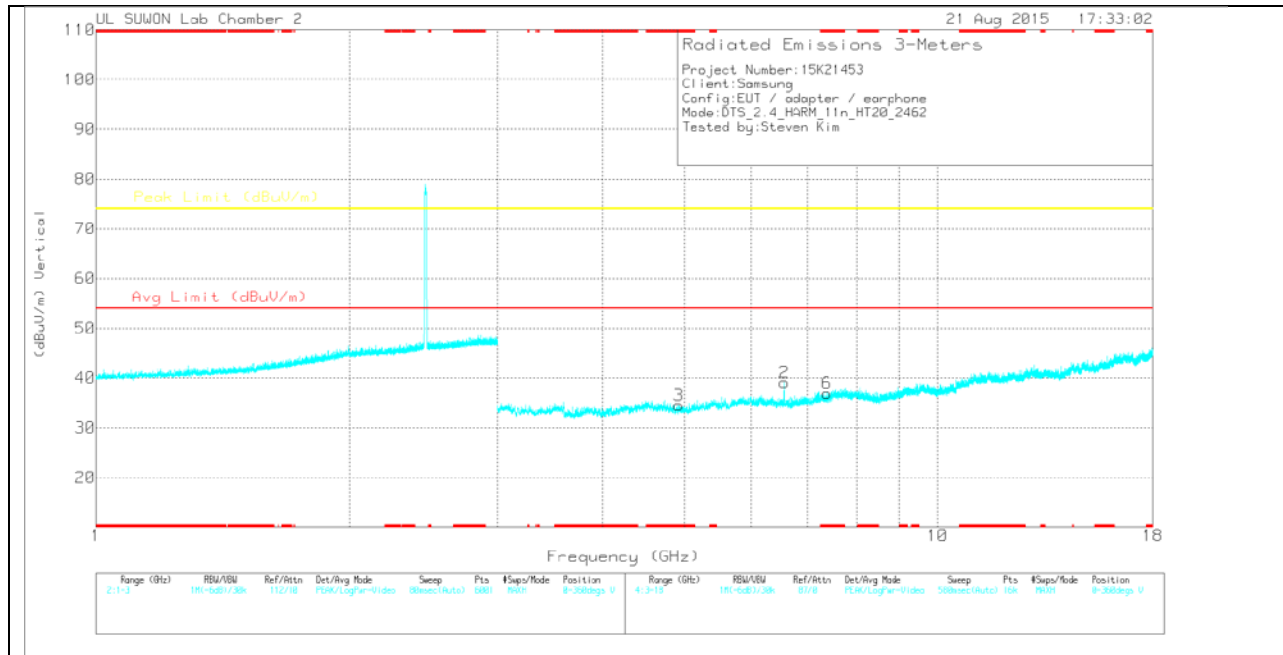
PK2 - KDB558074 Method: Maximum Peak

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

### HIGH CHANNEL HORIZONTAL



### HIGH CHANNEL VERTICAL



Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

**HIGH CHANNEL DATA**

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	6.565	30.17	PK	35.3	-23.8	0	41.67	-	-	74	-32.33	0-360	100	H
4	* 4.924	25.84	PK	33.9	-25.1	0	34.64	-	-	74	-39.36	0-360	200	H
5	* 7.386	23.54	PK	35.9	-22.2	0	37.24	-	-	74	-36.76	0-360	200	H
2	6.565	27.56	PK	35.3	-23.8	0	39.06	-	-	74	-34.94	0-360	200	V
3	* 4.924	25.73	PK	33.9	-25.1	0	34.53	-	-	74	-39.47	0-360	100	V
6	* 7.389	23.25	PK	35.9	-22.2	0	36.95	-	-	74	-37.05	0-360	200	V

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

PK – Peak detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016 8724)_150 619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
6.565	38.06	PK2	35.3	-23.8	0	49.56	-	-	74	-24.44	214	328	H
6.566	37.35	PK2	35.3	-23.8	0	48.85	-	-	74	-25.15	3	276	V

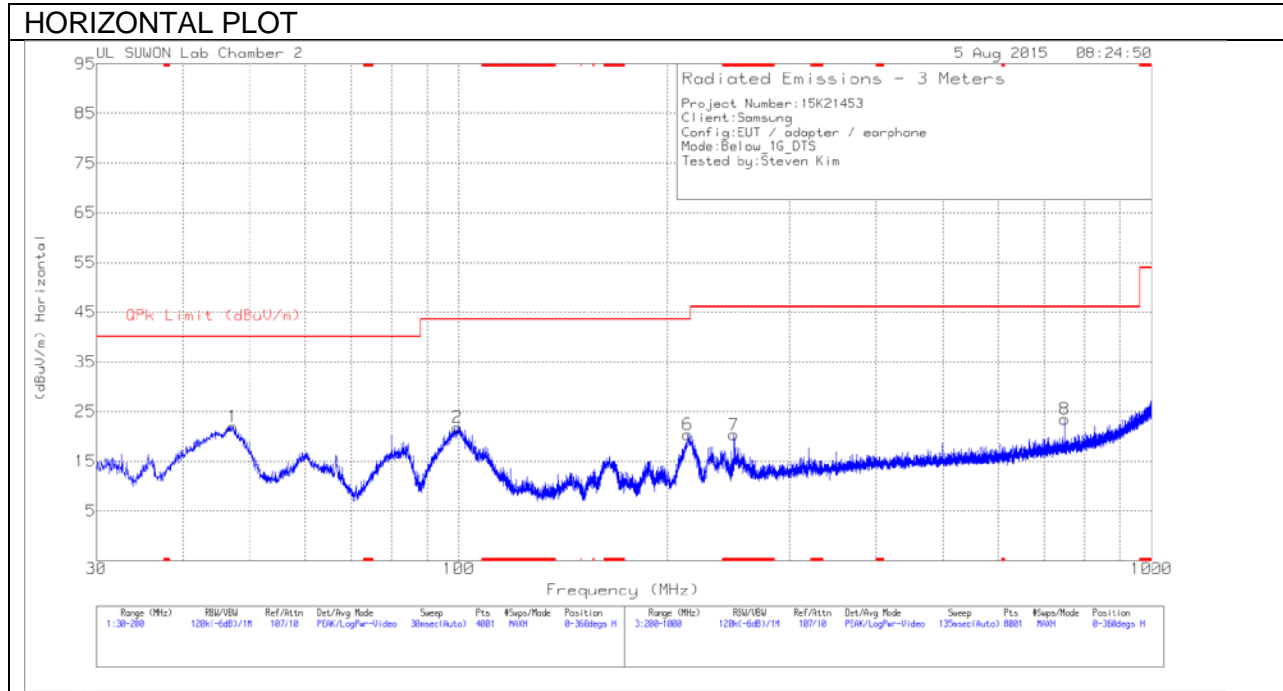
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK2 - KDB558074 Method: Maximum Peak

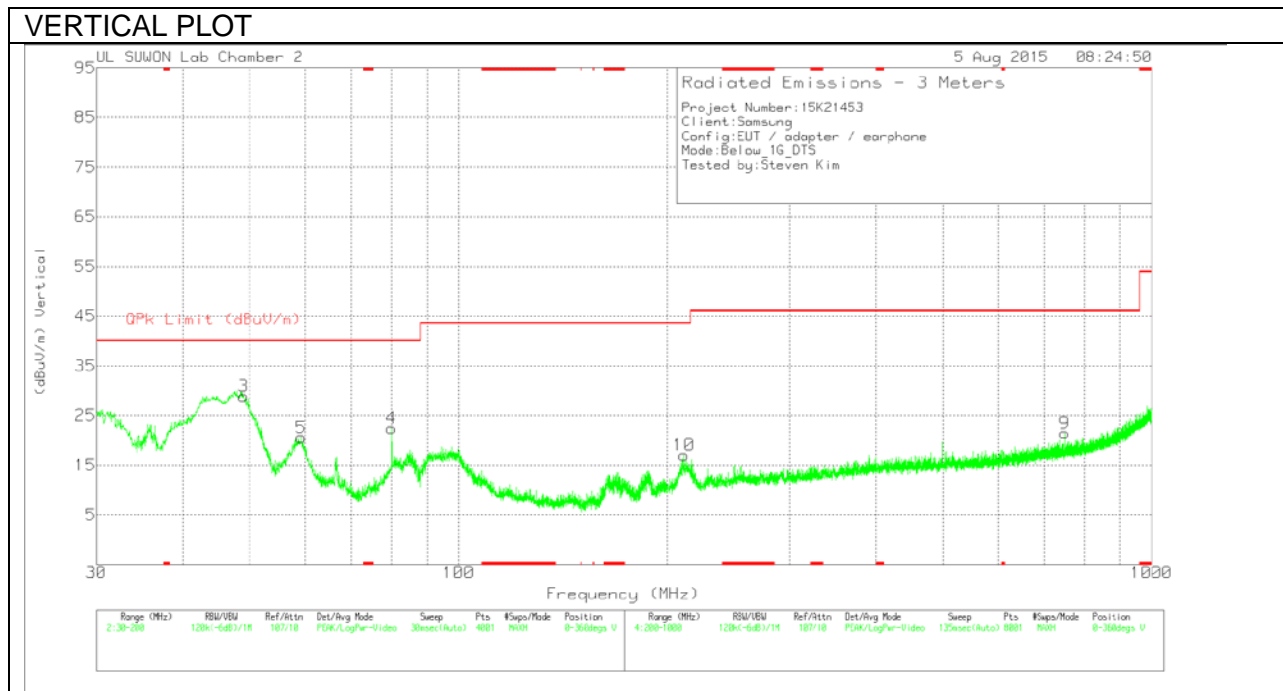
Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

### 11.3. WORST-CASE BELOW 1 GHz

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



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



**Below 1G Data**

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163-749	Below_1G	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	47.2125	38.79	Pk	14	-30.8	0	21.99	40	-18.01	0-360	300	H
2	99.5725	40.81	Pk	11.5	-30.5	0	21.81	43.52	-21.71	0-360	300	H
3	48.955	45.48	Pk	14.1	-30.7	0	28.88	40	-11.12	0-360	100	V
4	79.98	45.92	Pk	7.1	-30.6	0	22.42	40	-17.58	0-360	100	V
5	59.325	38.35	Pk	12.9	-30.7	0	20.55	40	-19.45	0-360	100	V
6	214	38.87	Pk	11.7	-30.2	0	20.37	43.52	-23.15	0-360	100	H
7	* 249.5	38.05	Pk	12.4	-30.1	0	20.35	46.02	-25.67	0-360	100	H
8	748.8	35.01	Pk	17.5	-29	0	23.51	46.02	-22.51	0-360	100	H
9	748.8	32.95	Pk	17.5	-29	0	21.45	46.02	-24.57	0-360	200	V
10	211.4	35.63	Pk	11.6	-30.2	0	17.03	43.52	-26.49	0-360	200	V

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

Pk - Peak detector

## 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 2009.

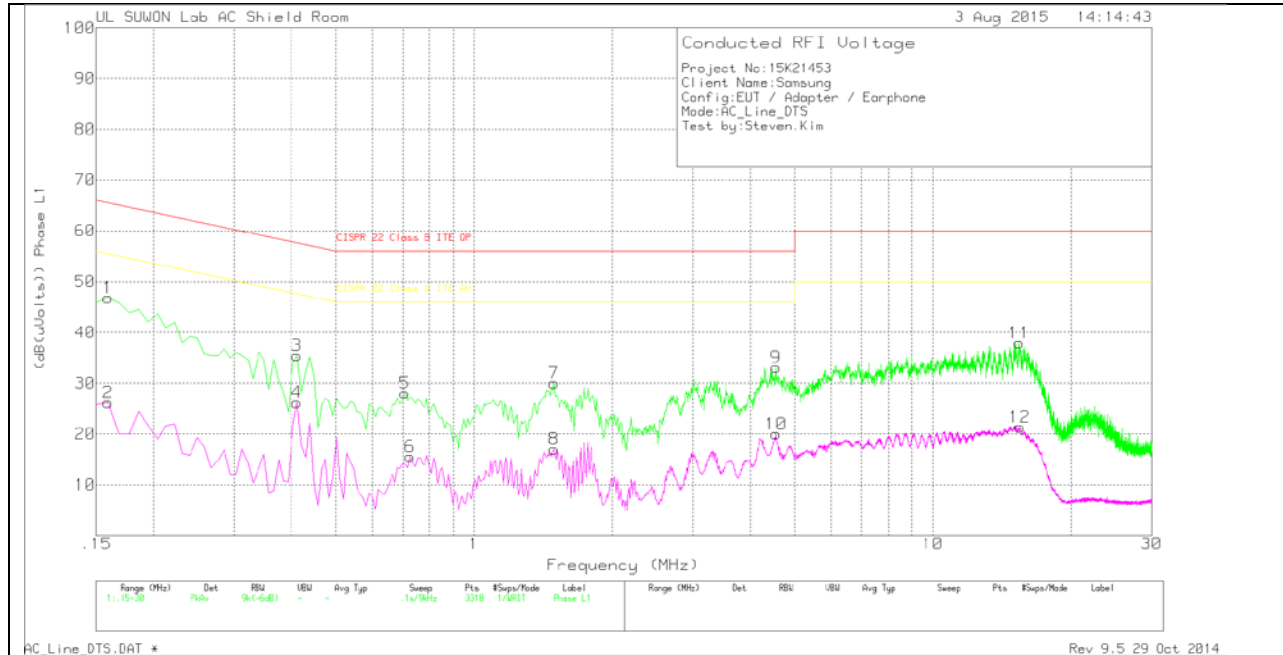
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

**RESULTS**

**6 WORST EMISSIONS**

**LINE 1 PLOT**



**LINE 1 RESULTS**

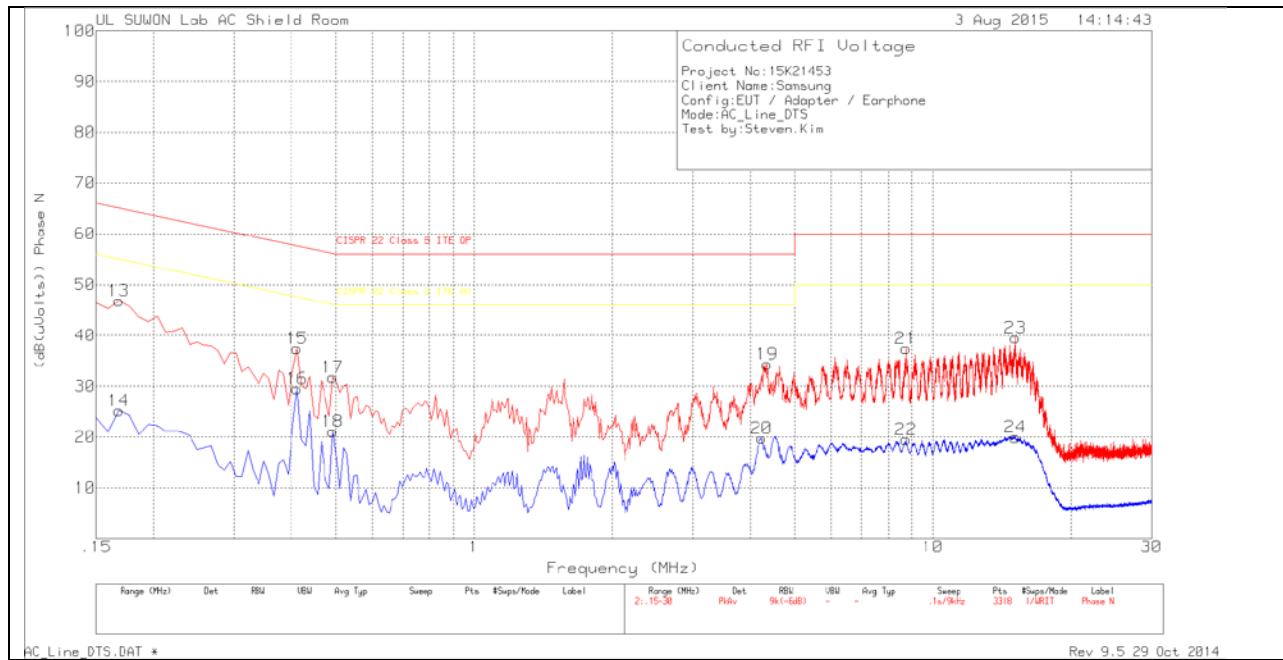
Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_w ith ex-cord_L1	CE Shield Room	Corrected Reading (dBuV)	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.159	36.81	Pk	10	0	46.81	65.52	-18.71	-	-
2	.159	16.2	Av	10	0	26.2	-	-	55.52	-29.32
3	.411	25.33	Pk	10.1	0	35.43	57.63	-22.2	-	-
4	.411	16.15	Av	10.1	0	26.25	-	-	47.63	-21.38
5	.708	17.99	Pk	10.1	0	28.09	56	-27.91	-	-
6	.726	5.58	Av	10	0	15.58	-	-	46	-30.42
7	1.491	20.12	Pk	9.8	.1	30.02	56	-25.98	-	-
8	1.491	7.1	Av	9.8	.1	17	-	-	46	-29
9	4.551	23.26	Pk	9.8	.1	33.16	56	-22.84	-	-
10	4.551	10.09	Av	9.8	.1	19.99	-	-	46	-26.01
11	15.432	27.54	Pk	10.2	.2	37.94	60	-22.06	-	-
12	15.4545	10.93	Av	10.2	.2	21.33	-	-	50	-28.67

Pk - Peak detector

Av - Average detection

**LINE 2 PLOT**



**LINE 2 RESULTS**

Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_w ith ex-cord_N	CE Shield Room	Corrected Reading (dBuV)	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
13	.168	36.73	Pk	10.1	0	46.83	65.06	-18.23	-	-
14	.168	15.05	Av	10.1	0	25.15	-	-	55.06	-29.91
15	.411	27.38	Pk	10.1	0	37.48	57.63	-20.15	-	-
16	.411	19.42	Av	10.1	0	29.52	-	-	47.63	-18.11
17	.492	21.63	Pk	10.1	0	31.73	56.13	-24.4	-	-
18	.492	10.99	Av	10.1	0	21.09	-	-	46.13	-25.04
19	4.362	24.49	Pk	9.8	.1	34.39	56	-21.61	-	-
20	4.236	9.89	Av	9.8	.1	19.79	-	-	46	-26.21
21	8.745	27.34	Pk	10	.1	37.44	60	-22.56	-	-
22	8.745	9.37	Av	10	.1	19.47	-	-	50	-30.53
23	15.135	29.01	Pk	10.3	.2	39.51	60	-20.49	-	-
24	15.126	9.45	Av	10.3	.2	19.95	-	-	50	-30.05

Pk - Peak detector

Av - Average detection