



**FCC CFR47 PART 15 SUBPART C  
INDUSTRY CANADA RSS-247 ISSUE 1**

**Wireless LAN**

**CERTIFICATION TEST REPORT**

**FOR**

**Bluetooth/BLE, DTS b/g/n WATCH**

**MODEL NUMBER : SM-R732**

**FCC ID: A3LSMR732**

**IC ID: 649E-SMR732**

**REPORT NUMBER: 15K21505-E1**

**ISSUE DATE: AUG 26, 2015**

*Prepared for*  
**SAMSUNG ELECTRONICS CO., LTD.**  
**129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,**  
**GYEONGGI-DO, 443-742, KOREA**

*Prepared by*  
**UL Korea, Ltd. Suwon Laboratory**  
**218 Maeyeong-ro, Yeongtong-gu,**  
**Suwon-si, Gyeonggi-do, 443-823, Korea**  
**TEL: (031) 337-9902**  
**FAX: (031) 213-5433**



Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	08/26/15	Initial issue	SungGil Park

## TABLE OF CONTENTS

<b>1. ATTESTATION OF TEST RESULTS .....</b>	<b>4</b>
<b>2. TEST METHODOLOGY .....</b>	<b>5</b>
<b>3. FACILITIES AND ACCREDITATION .....</b>	<b>5</b>
<b>4. CALIBRATION AND UNCERTAINTY .....</b>	<b>5</b>
4.1. MEASURING INSTRUMENT CALIBRATION .....	5
4.2. SAMPLE CALCULATION .....	5
4.3. MEASUREMENT UNCERTAINTY.....	6
<b>5. EQUIPMENT UNDER TEST.....</b>	<b>7</b>
5.1. DESCRIPTION OF EUT .....	7
5.2. MAXIMUM OUTPUT POWER.....	7
5.3. DESCRIPTION OF AVAILABLE ANTENNAS .....	7
5.4. WORST-CASE CONFIGURATION AND MODE.....	7
5.5. DESCRIPTION OF TEST SETUP.....	8
<b>6. TEST AND MEASUREMENT EQUIPMENT .....</b>	<b>10</b>
<b>7. MEASUREMENT METHODS .....</b>	<b>11</b>
<b>8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS .....</b>	<b>11</b>
8.1. ON TIME AND DUTY CYCLE RESULTS.....	11
<b>9. SUMMARY TABLE .....</b>	<b>12</b>
<b>10. ANTENNA PORT TEST RESULTS .....</b>	<b>13</b>
10.1. 6 dB BANDWIDTH .....	13
10.2. 99% BANDWIDTH .....	14
10.3. OUTPUT POWER.....	15
10.4. PSD.....	16
10.5. OUT-OF-BAND EMISSIONS.....	17
<b>11. RADIATED TEST RESULTS .....</b>	<b>18</b>
11.1. LIMITS AND PROCEDURE.....	18
11.2. TRANSMITTER ABOVE 1 GHz.....	19
11.2.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND.....	19
11.2.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND.....	29
11.2.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND .....	39
11.3. WORST-CASE BELOW 1 GHz .....	49
<b>12. AC POWER LINE CONDUCTED EMISSIONS .....</b>	<b>51</b>
<b>13. SETUP PHOTOS .....</b>	<b>54</b>

# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SAMSUNG ELECTRONICS CO., LTD.  
**EUT DESCRIPTION:** Bluetooth/BLE and DTS b/g/n WATCH  
**MODEL NUMBER:** SM-R732  
**SERIAL NUMBER:** 1124D, 11251 (RADIATED); CF50031AE534941 (CONDUCTED)  
**DATE TESTED:** AUG 07, 2015 - AUG 26, 2015

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-247 Issue 1	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For  
UL Korea, Ltd. By:



CY Choi  
Suwon Lab Engineer  
UL Korea, Ltd.

Tested By:



SungGil Park  
Suwon Lab Engineer  
UL Korea, Ltd.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, and KDB 558074 D01 v03r03, ANSI C63.10-2009 for FCC and ANSI C63.10-2013 for IC, RSS-GEN Issue 4, and RSS-247 Issue 1.

### ANSI C63.10-2009 Deviation

Radiated spurious emission above 1GHz EUT height is 1.5m not 0.8m.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 443-823, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro
<input checked="" type="checkbox"/> Chamber 1
<input checked="" type="checkbox"/> Chamber 2

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <http://www.iasonline.org/PDF/TL/TL-637.pdf>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.32 dB
Radiated Disturbance, Below 1GHz	4.14 dB
Radiated Disturbance, Above 1 GHz	5.97 dB

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a Bluetooth/BLE and DTS b/g/n WATCH.

This test report addresses the DTS (WLAN) operational mode.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted average output power as follows:

Frequency Range [MHz]	Mode	Output Power [dBm]	Output Power [mW]
2412 - 2462	802.11b	17.01	50.23
	802.11g	14.25	26.61
	802.11n HT20	13.15	20.65

### 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antennas, with a antenna's maximum gain of -6.29 dBi.

### 5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps

802.11g mode: 6 Mbps

802.11n HT20 mode: MCS0

## 5.5. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Adapter	SAMSUNG	ETA0U60JBE	DK1G725HS/7-E	N/A
Wireless Charger	SAMSUNG	EP-OR720	N/A	N/A
Data Cable	SAMSUNG	ECB-DU6ABE	N/A	N/A

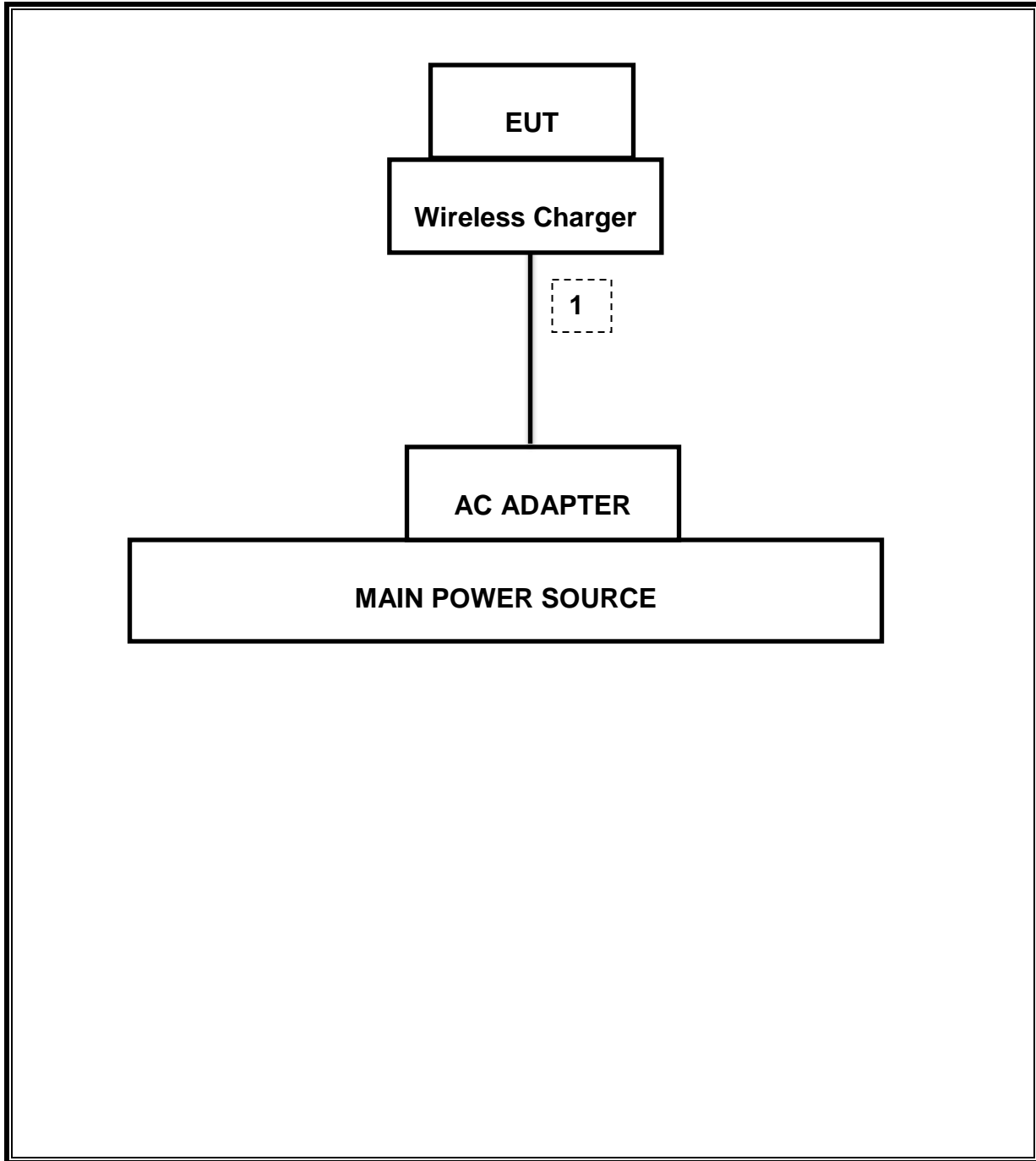
### I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	0.8m	N/A

### TEST SETUP

The EUT is a stand-alone unit during the tests. Test software exercised the radio card.

**SETUP DIAGRAM FOR TESTS**



## 6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	Manufacturer	Model	S/N	Cal Due
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	11-17-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	04-25-16
Antenna, Horn, 18 GHz	ETS	3115	00167211	09-20-15
Antenna, Horn, 18 GHz	ETS	3115	00161451	05-17-16
Antenna, Horn, 18 GHz	ETS	3117	00168724	06-17-16
Antenna, Horn, 18 GHz	ETS	3117	00168717	06-17-16
Antenna, Horn, 40 GHz	ETS	3116C	00166255	09-23-15
Antenna, Horn, 40 GHz	ETS	3116C-PA	00168841	09-29-15
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-18-16
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-18-16
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	08-18-16
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-18-16
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-19-16
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-19-16
Bluetooth Tester	TESCOM	TC-3000C	3000C000546	08-18-16
Average Power Sensor	R&S	NRZ-Z91	102681	08-18-16
Average Power Sensor	Agilent / HP	U2000	MY54270007	08-18-16
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-19-16
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-19-16
EMI Test Receive, 3 GHz	R&S	ESR3	101832	08-19-16
Attenuator / Switch driver	HP	11713A	3748A04272	N/A
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	009	08-18-16
Low Pass Filter 3GHz	Micro-Tronics	LPS17541	015	08-18-16
High Pass Filter 5GHz	Micro-Tronics	HPS17542	009	08-18-16
High Pass Filter 6GHz	Micro-Tronics	HPM17543	010	08-18-16
High Pass Filter 5GHz	Micro-Tronics	HPS17542	016	08-18-16
High Pass Filter 6GHz	Micro-Tronics	HPM17543	015	08-18-16
LISN	R&S	ENV-216	101836	08-19-16
LISN	R&S	ENV-216	101837	08-19-16

## 7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r03: Measurement Procedure §9.2.3.1 AVGPM is used for power and §10.2 AVGPS-1 is used for power spectral density.

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

Band edge emissions within Restricted Bands are measured using RMS with duty cycle factor offset method.

## 8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

### LIMITS

None; for reporting purposes only.

### 8.1. ON TIME AND DUTY CYCLE RESULTS

Please refer to DTS test report of FCC ID: A3LSMR720, IC ID: 649E-SMR720

## 9. SUMMARY TABLE

The FCC ID: A3LSMR732 shares the same enclosure and circuit board as FCC ID: A3LSMR720. All components and PCB outline are same correctly between the two units. The exterior design and mechanic components different between these two units.

Test data for FCC ID: A3LSMR720 is being submitted for this application to cover WLAN conducted test features.

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-247 5.2.1	Occupied Band width (6dB)	>500KHz	Conducted	Pass	9.516 MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	-29.797 dBm
15.247	RSS-247 5.4.4	TX conducted output power	<30dBm		Pass	17.01 dBm
15.247	RSS-247 5.2.2	PSD	<8dBm		Pass	-14.84 dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10	Power Line conducted	Pass	39.22 dBuV (QP)
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 40dBuV/m	Radiated	Pass	46.95 dBuV/m (AV)

## 10. ANTENNA PORT TEST RESULTS

### 10.1. 6 dB BANDWIDTH

#### LIMITS

FCC §15.247 (a) (2)  
IC RSS-247 5.2.1

The minimum 6 dB bandwidth shall be at least 500 kHz.

#### TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r03: The transmitter output is connected to a spectrum analyzer with the RBW set to 100KHz, the VBW  $\geq 3 \times$  RBW, peak detector and max hold.

#### RESULTS

Please refer to DTS test report of FCC ID: A3LSMR720, IC ID: 649E-SMR720

## **10.2. 99% BANDWIDTH**

### **LIMITS**

None; for reporting purposes only.

### **RESULTS**

Please refer to DTS test report of FCC ID: A3LSMR720, IC ID: 649E-SMR720

### **10.3. OUTPUT POWER**

#### **LIMITS**

FCC §15.247  
IC RSS-247 5.4.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### **DIRECTIONAL ANTENNA GAIN**

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

#### **TEST PROCEDURE**

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.1 dB (including 10 dB pad and 0.1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### **RESULTS**

Please refer to DTS test report of FCC ID: A3LSMR720, IC ID: 649E-SMR720

## **10.4. PSD**

### **LIMITS**

FCC §15.247  
IC RSS-247 5.2.2

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### **TEST PROCEDURE**

Power Spectral Density was performed utilizing the "Method AVGPS-1" under KDB558074 D01 DTS Meas Guidance v03r03

### **RESULTS**

Please refer to DTS test report of FCC ID: A3LSMR720, IC ID: 649E-SMR720

## **10.5. OUT-OF-BAND EMISSIONS**

### **LIMITS**

FCC §15.247 (d)  
IC RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

### **TEST PROCEDURE**

The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

### **RESULTS**

Please refer to DTS test report of FCC ID: A3LSMR720, IC ID: 649E-SMR720

## 11. RADIATED TEST RESULTS

### 11.1. LIMITS AND PROCEDURE

#### LIMITS

FCC §15.205 and §15.209  
IC RSS-GEN Clause 8.9 (Transmitter)  
IC RSS-GEN Clause 7 (Receiver)

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.

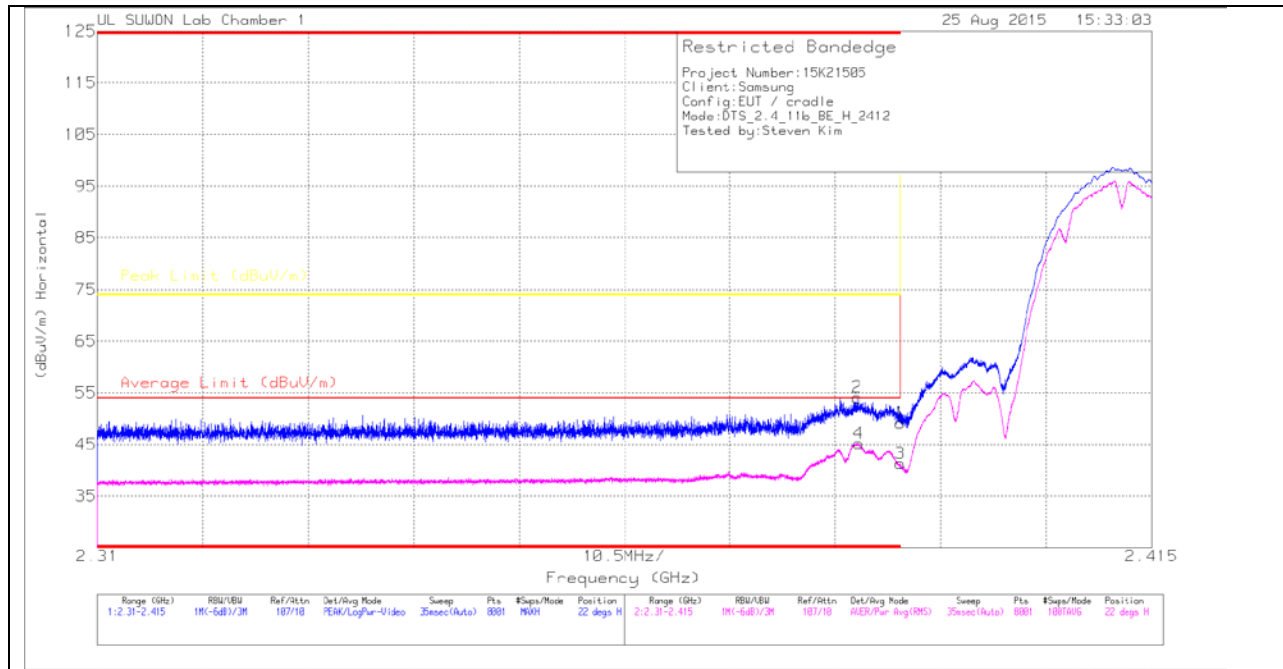
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

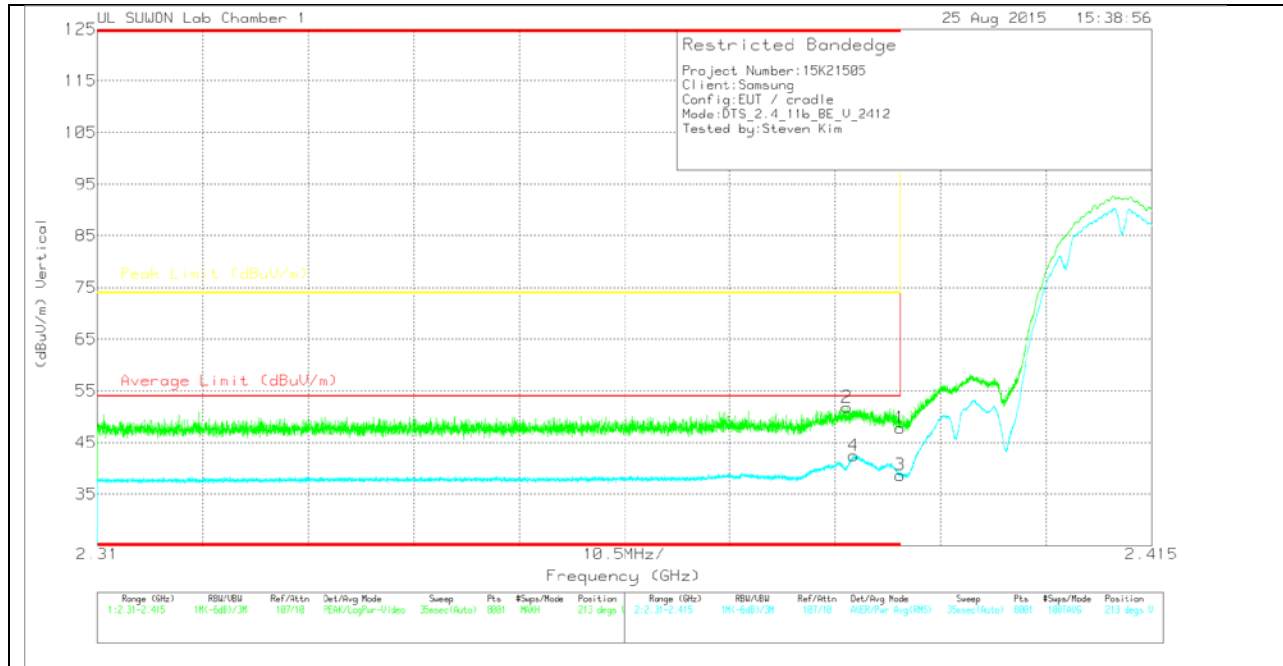
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 17)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.18	PK	31.8	-22.8	0	49.18	-	-	74	-24.82	22	351	H
2	* 2.386	45.09	PK	31.8	-22.8	0	54.09	-	-	74	-19.91	22	351	H
3	* 2.39	32.32	RMS	31.8	-22.8	0	41.32	54	-12.68	-	-	22	351	H
4	* 2.386	36.23	RMS	31.8	-22.8	0	45.23	54	-8.77	-	-	22	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 17_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	38.85	PK	31.8	-22.8	0	47.85	-	-	74	-26.15	213	141	V
2	* 2.385	42.85	PK	31.8	-22.8	0	51.85	-	-	74	-22.15	213	141	V
3	* 2.39	29.73	RMS	31.8	-22.8	0	38.73	54	-15.27	-	-	213	141	V
4	* 2.385	33.5	RMS	31.8	-22.8	0	42.5	54	-11.5	-	-	213	141	V

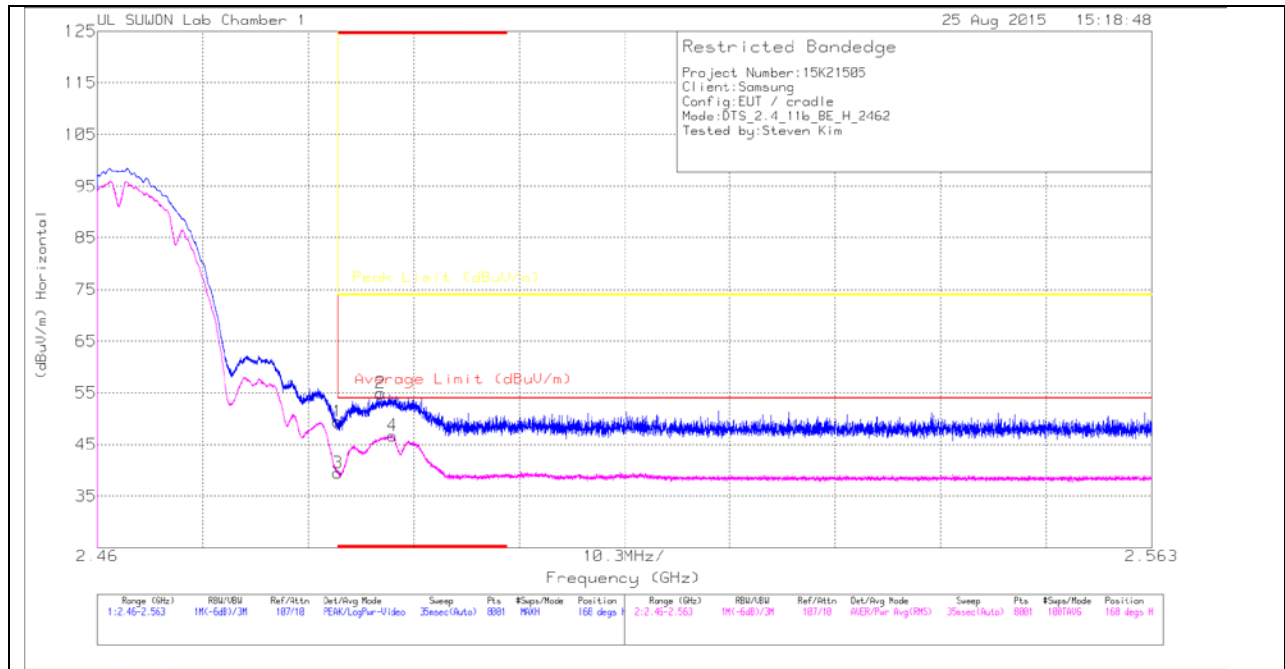
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

RMS - RMS detection

**AUTHORIZED BANDEDGE (HIGH CHANNEL)**

**HORIZONTAL PEAK AND AVERAGE PLOT**



**HORIZONTAL DATA**

**Trace Markers**

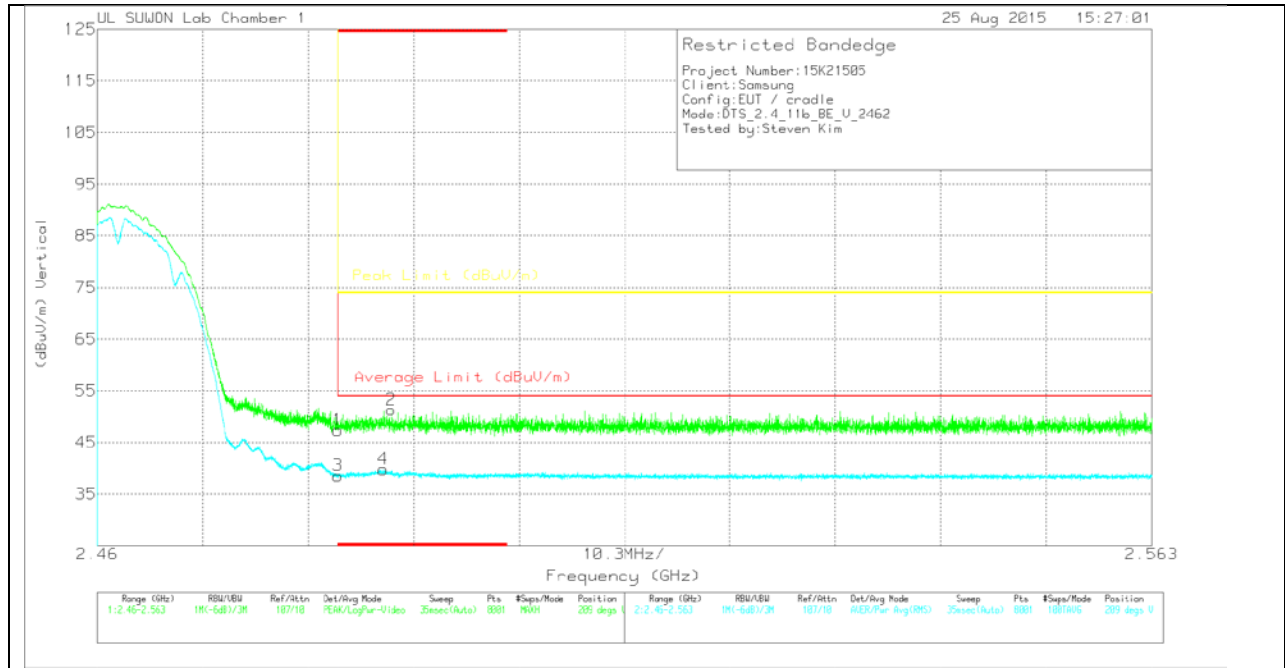
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	40.06	PK	32	-22.6	0	49.46	-	-	74	-24.54	168	101	H
2	* 2.488	45.54	PK	32	-22.6	0	54.94	-	-	74	-19.06	168	101	H
3	* 2.484	30.11	RMS	32	-22.6	0	39.51	54	-14.49	-	-	168	101	H
4	* 2.489	37.34	RMS	32	-22.6	0	46.74	54	-7.26	-	-	168	101	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	32	-22.6	0	47.39	-	-	74	-26.61	209	142	V
2	* 2.489	41.96	PK	32	-22.6	0	51.36	-	-	74	-22.64	209	142	V
3	* 2.484	29.21	RMS	32	-22.6	0	38.61	54	-15.39	-	-	209	142	V
4	* 2.488	30.44	RMS	32	-22.6	0	39.84	54	-14.16	-	-	209	142	V

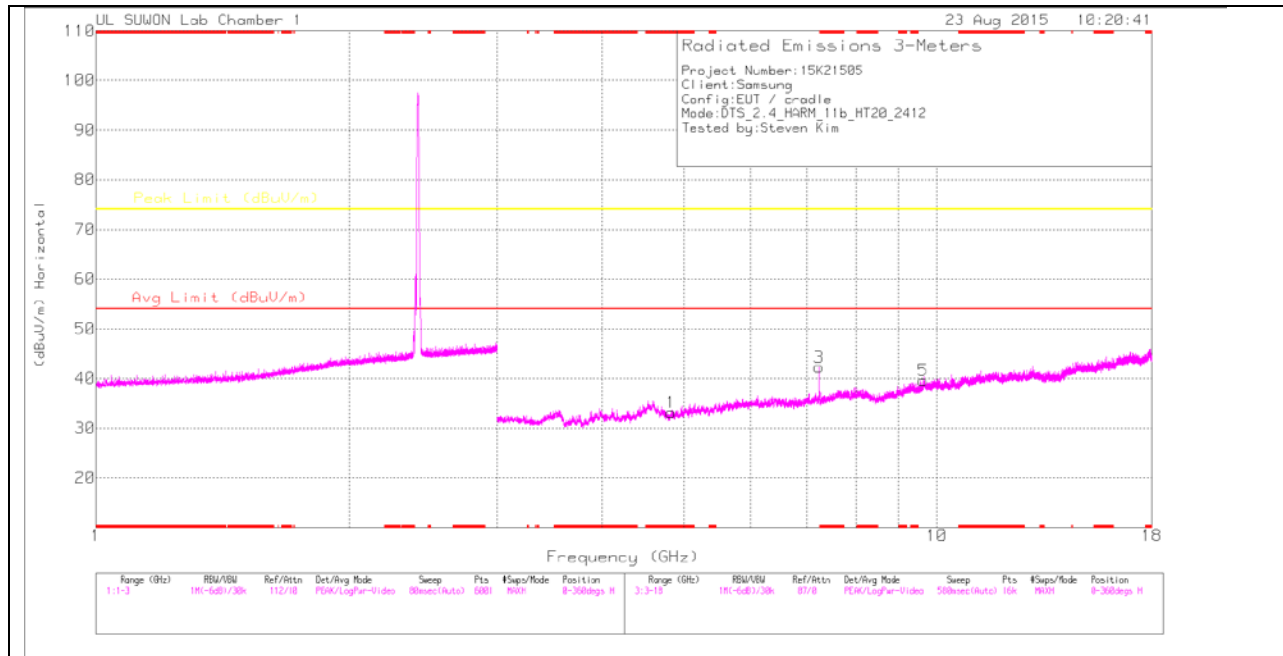
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

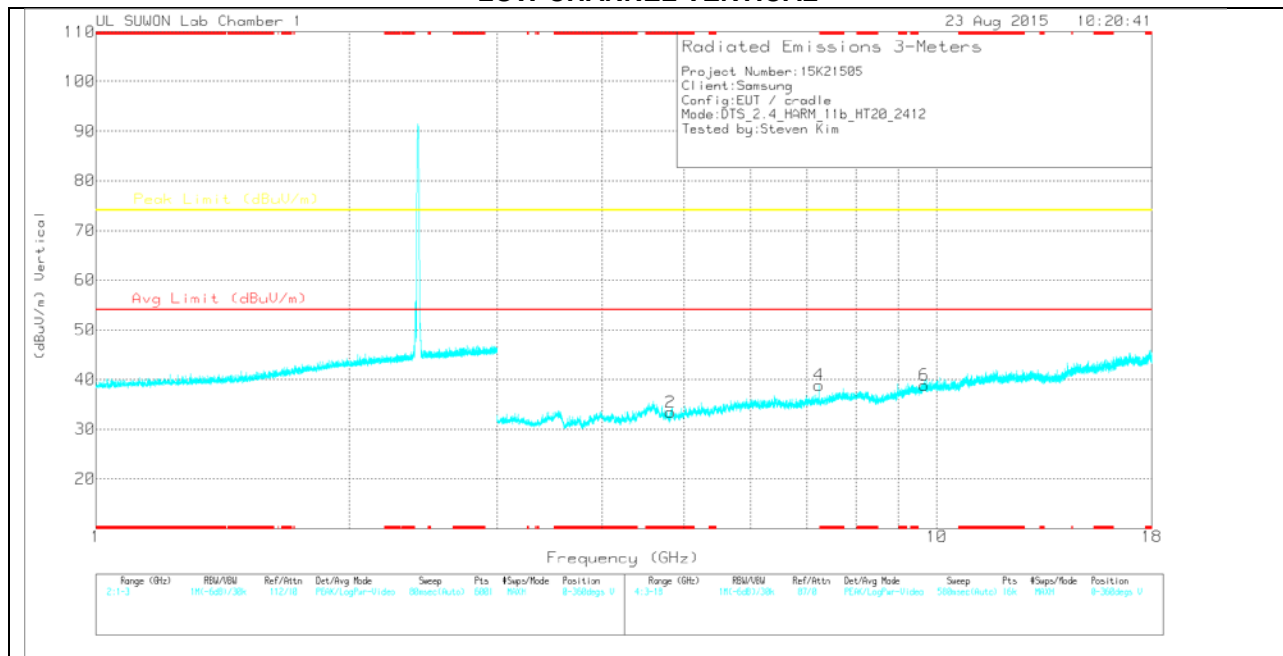
RMS - RMS detection

### 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(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	* 4.827	28.67	PK	34	-29.5	0	33.17	-	-	74	-40.83	0-360	100	H
3	7.235	32.06	PK	35.7	-25.5	0	42.26	-	-	74	-31.74	0-360	200	H
5	9.631	23.56	PK	37	-20.9	0	39.66	-	-	74	-34.34	0-360	200	H
2	* 4.822	28.98	PK	34	-29.6	0	33.38	-	-	74	-40.62	0-360	100	V
4	7.237	28.68	PK	35.7	-25.5	0	38.88	-	-	74	-35.12	0-360	200	V
6	9.652	22.6	PK	37.1	-20.8	0	38.9	-	-	74	-35.1	0-360	200	V

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

PK – Peak detector

Radiated Emissions

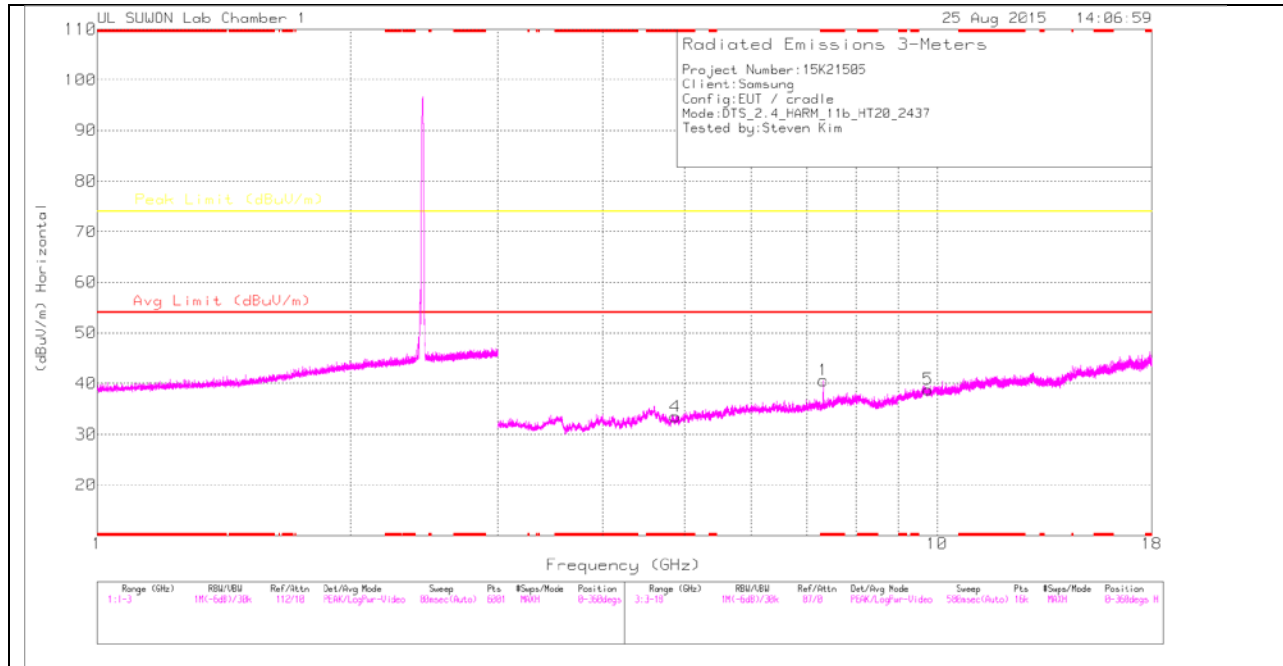
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
7.238	37.09	PK2	35.7	-25.5	0	47.29	-	-	74	-26.71	140	285	H
7.232	37.9	PK2	35.7	-25.5	0	48.1	-	-	74	-25.9	191	138	V

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

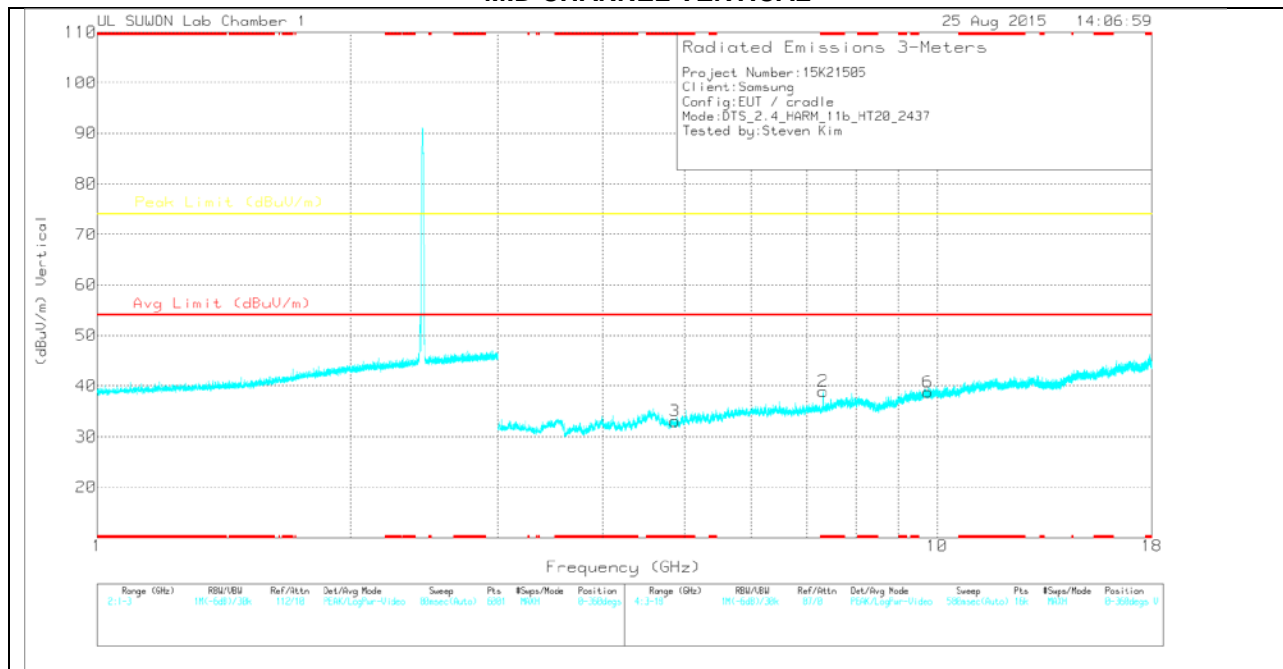
PK2 - KDB558074 Method: Maximum Peak

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(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	* 7.312	30.61	PK	35.7	-25.7	0	40.61	-	-	74	-33.39	0-360	200	H
4	* 4.878	28.55	PK	34	-29.1	0	33.45	-	-	74	-40.55	0-360	100	H
5	9.751	23.53	PK	37.2	-21.9	0	38.83	-	-	74	-35.17	0-360	100	H
2	* 7.31	28.95	PK	35.7	-25.7	0	38.95	-	-	74	-35.05	0-360	200	V
3	* 4.873	28.23	PK	34	-29.2	0	33.03	-	-	74	-40.97	0-360	200	V
6	9.744	23.37	PK	37.2	-21.8	0	38.77	-	-	74	-35.23	0-360	100	V

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

PK – Peak detector

Radiated Emissions

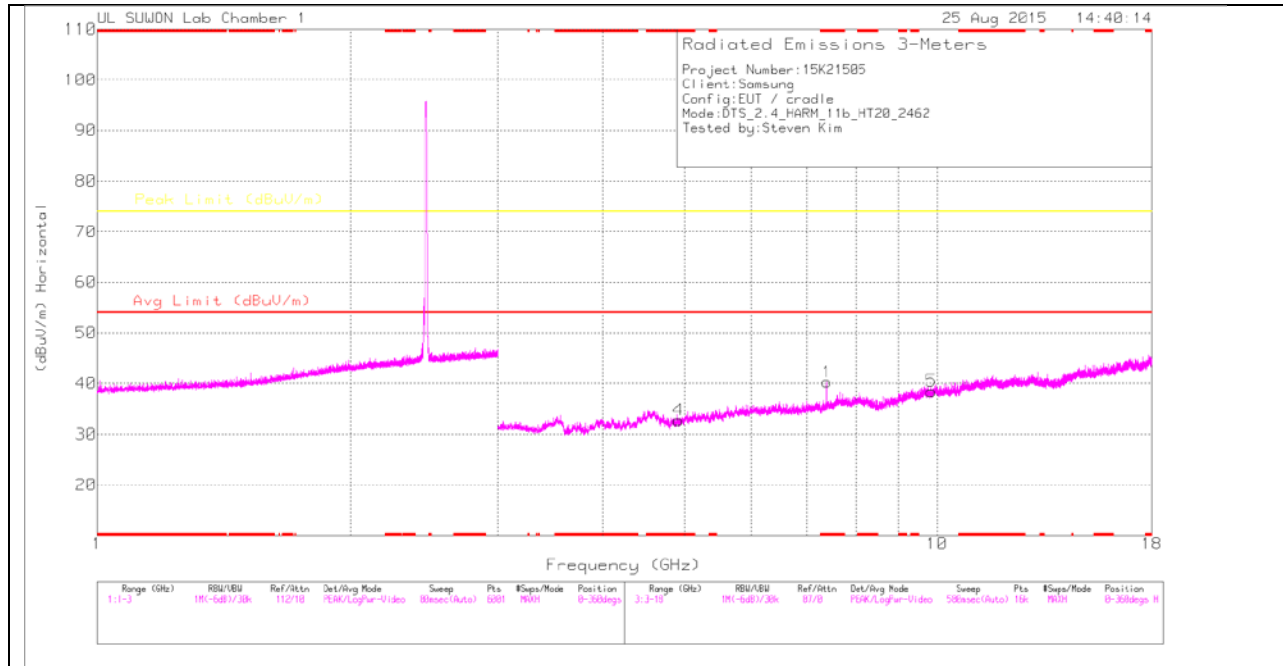
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168724)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 7.312	39.36	PK2	35.7	-25.7	0	49.36	-	-	74	-24.64	207	165	H
* 7.31	29.15	MAv1	35.7	-25.7	0	39.15	54	-14.85	-	-	207	165	H
* 7.312	39.4	PK2	35.7	-25.7	0	49.4	-	-	74	-24.6	166	261	V
* 7.312	28.8	MAv1	35.7	-25.7	0	38.8	54	-15.2	-	-	166	261	V

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

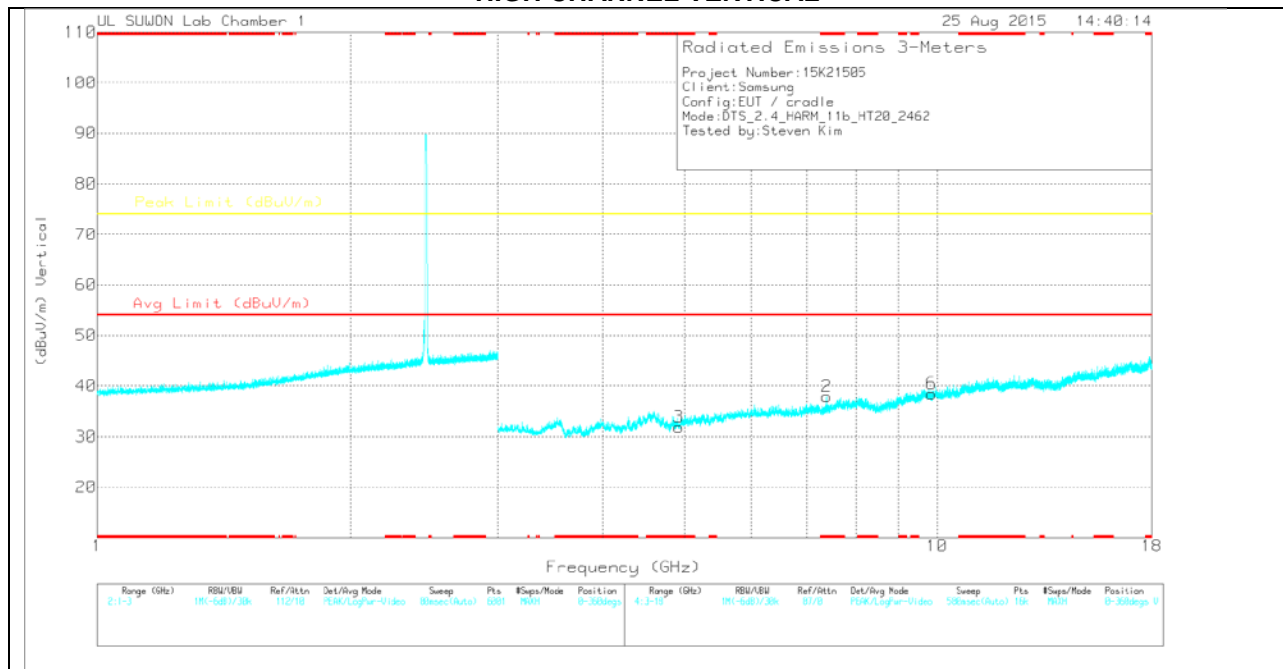
PK2 - KDB558074 Method: Maximum Peak

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	* 7.387	29.59	PK	35.8	-25.1	0	40.29	-	-	74	-33.71	0-360	200	H
4	* 4.92	27.86	PK	34	-29.1	0	32.76	-	-	74	-41.24	0-360	100	H
5	9.846	22.78	PK	37.3	-21.6	0	38.48	-	-	74	-35.52	0-360	200	H
2	* 7.386	27.22	PK	35.8	-25.1	0	37.92	-	-	74	-36.08	0-360	200	V
3	* 4.926	26.87	PK	34	-29	0	31.87	-	-	74	-42.13	0-360	200	V
6	9.847	22.76	PK	37.3	-21.6	0	38.46	-	-	74	-35.54	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
* 7.386	38.42	PK2	35.8	-25.1	0	49.12	-	-	74	-24.88	184	199	H
* 7.385	29.4	MAv1	35.8	-25.1	0	40.1	54	-13.9	-	-	184	199	H
* 7.385	38.96	PK2	35.8	-25.1	0	49.66	-	-	74	-24.34	165	293	V
* 7.385	28.86	MAv1	35.8	-25.1	0	39.56	54	-14.44	-	-	165	293	V

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

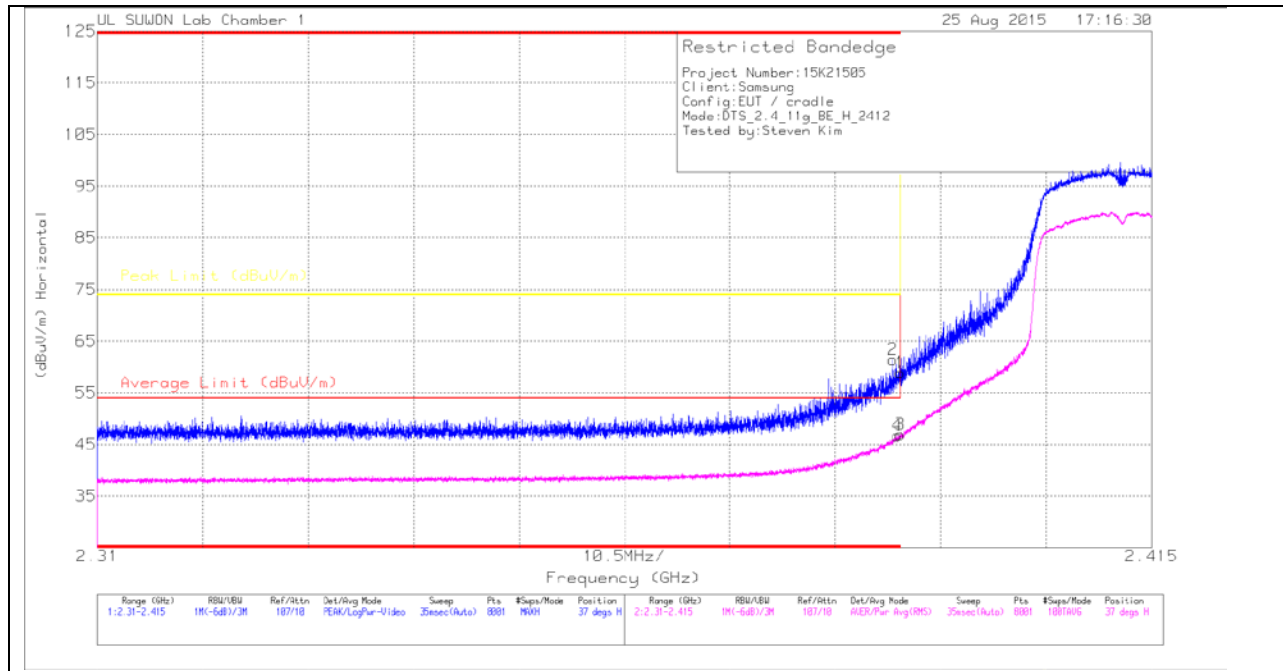
PK2 - KDB558074 Method: Maximum Peak

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

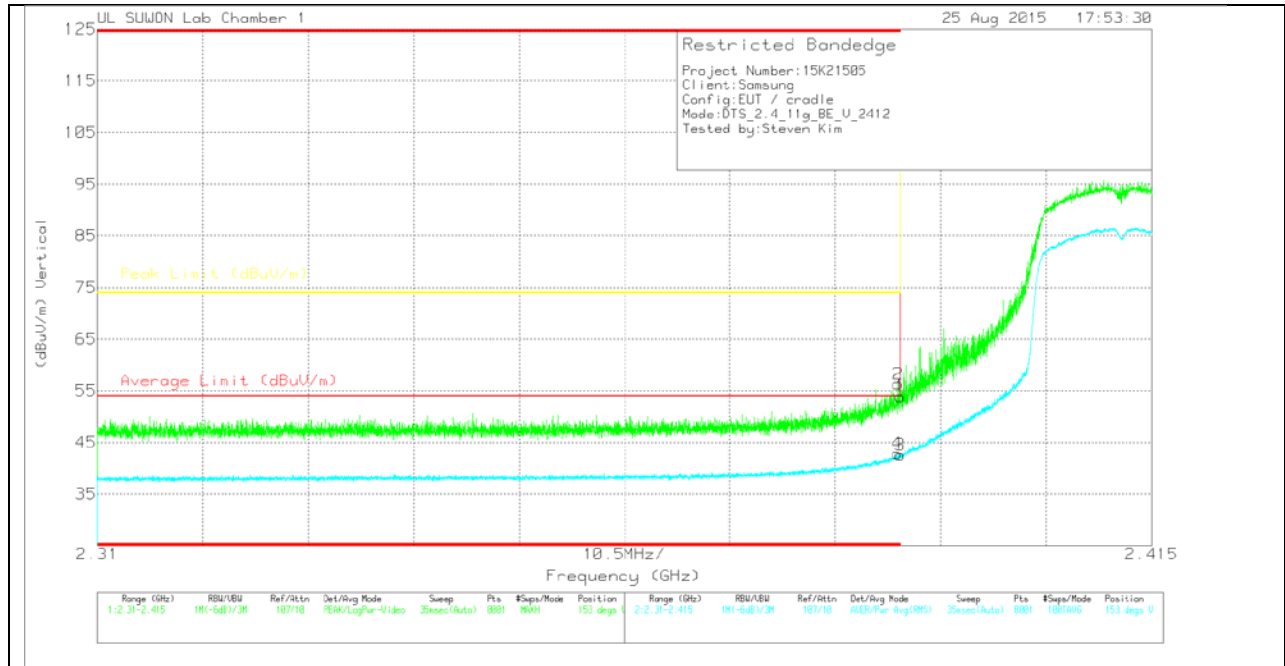
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	49.9	Pk	31.8	-22.8	0	58.9	-	-	74	-15.1	37	102	H
2	* 2.389	52.42	Pk	31.8	-22.8	0	61.42	-	-	74	-12.58	37	102	H
3	* 2.39	37.66	RMS	31.8	-22.8	.29	46.95	54	-7.05	-	-	37	102	H
4	* 2.39	37.42	RMS	31.8	-22.8	.29	46.71	54	-7.29	-	-	37	102	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	44.92	Pk	31.8	-22.8	0	53.92	-	-	74	-20.08	153	286	V
2	* 2.39	47.32	Pk	31.8	-22.8	0	56.32	-	-	74	-17.68	153	286	V
3	* 2.39	33.3	RMS	31.8	-22.8	.29	42.59	54	-11.41	-	-	153	286	V
4	* 2.39	33.56	RMS	31.8	-22.8	.29	42.85	54	-11.15	-	-	153	286	V

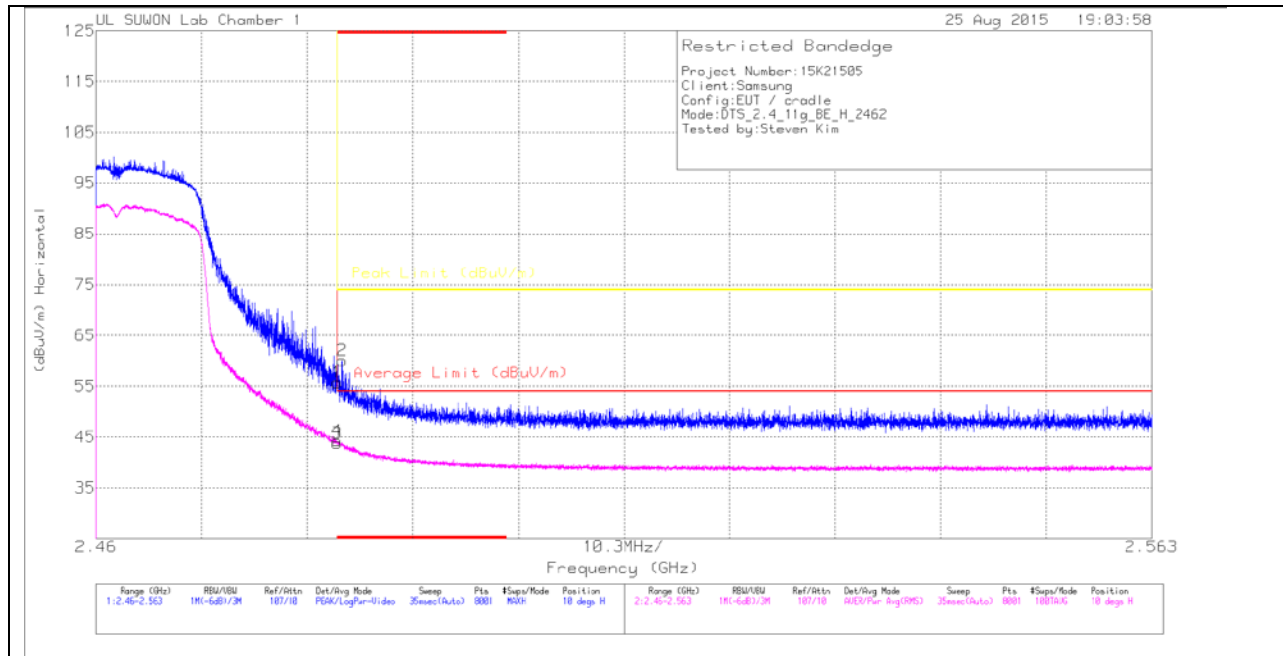
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

### AUTHORIZED BANDEDGE (HIGH CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

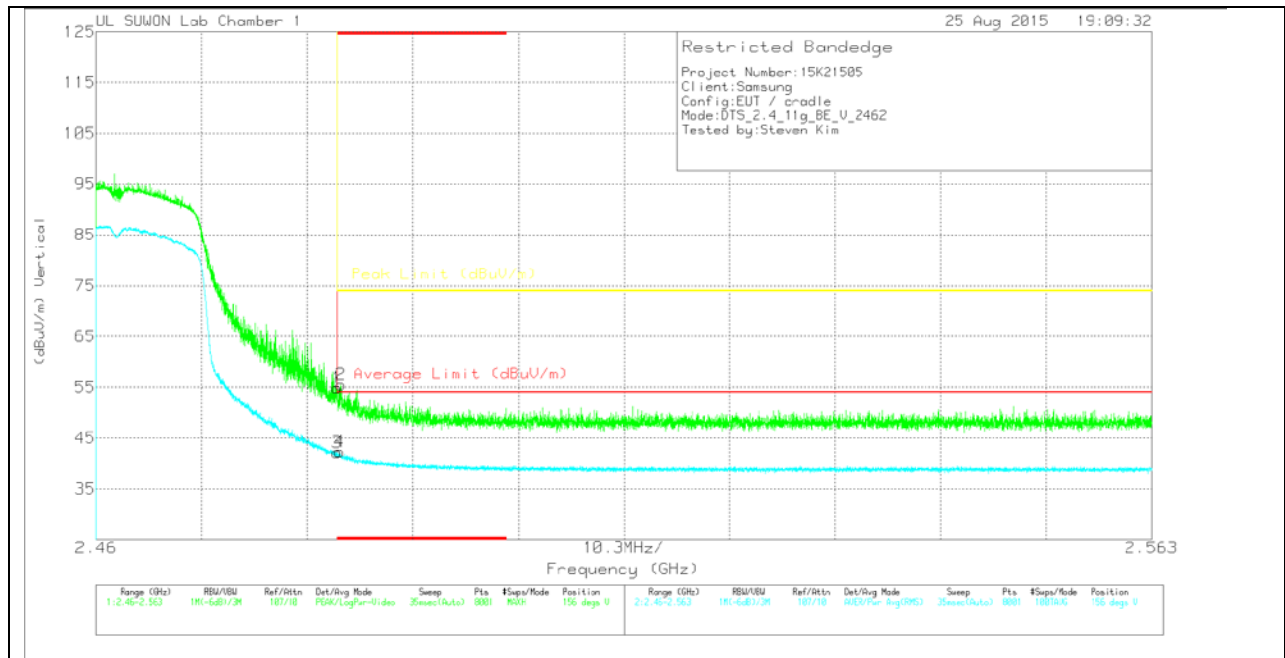
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	46.31	Pk	32	-22.6	0	55.71	-	-	74	-18.29	10	274	H
2	* 2.484	50.74	Pk	32	-22.6	0	60.14	-	-	74	-13.86	10	274	H
3	* 2.484	34.12	RMS	32	-22.6	.29	43.81	54	-10.19	-	-	10	274	H
4	* 2.484	34.61	RMS	32	-22.6	.29	44.3	54	-9.7	-	-	10	274	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	45.54	Pk	32	-22.6	0	54.94	-	-	74	-19.06	156	276	V
2	* 2.484	46.08	PK	32	-22.6	0	55.48	-	-	74	-18.52	156	276	V
3	* 2.484	32.5	RMS	32	-22.6	.29	42.19	54	-11.81	-	-	156	276	V
4	* 2.484	32.56	RMS	32	-22.6	.29	42.25	54	-11.75	-	-	156	276	V

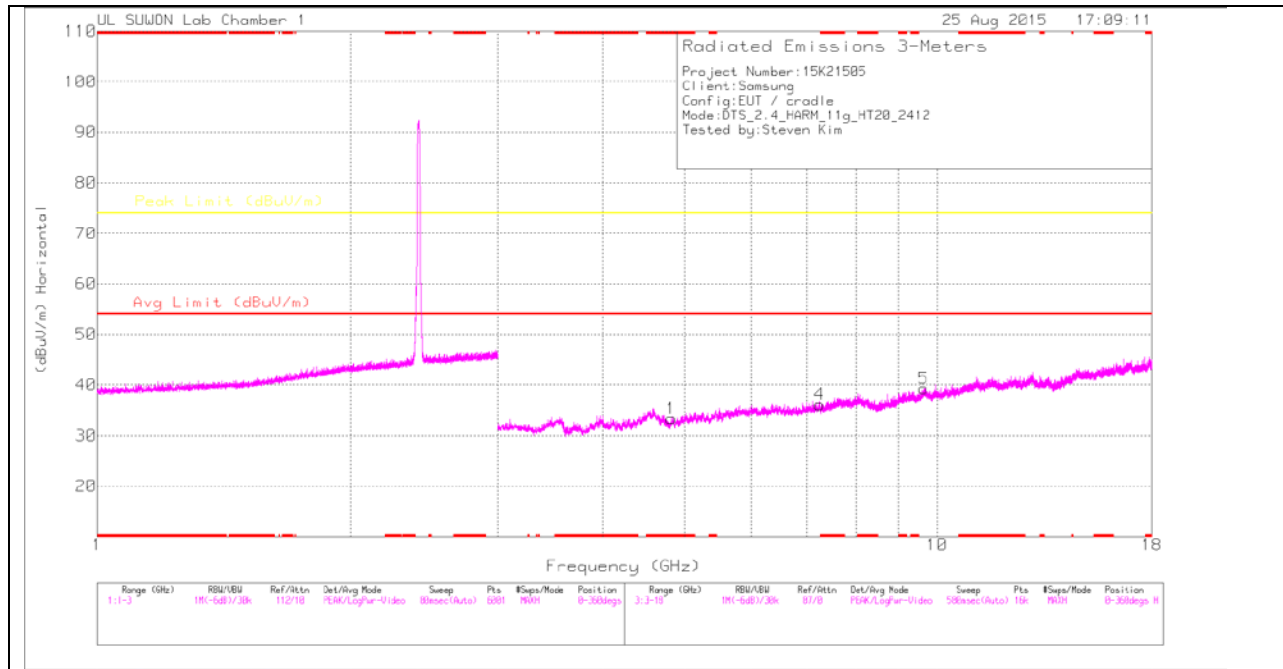
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

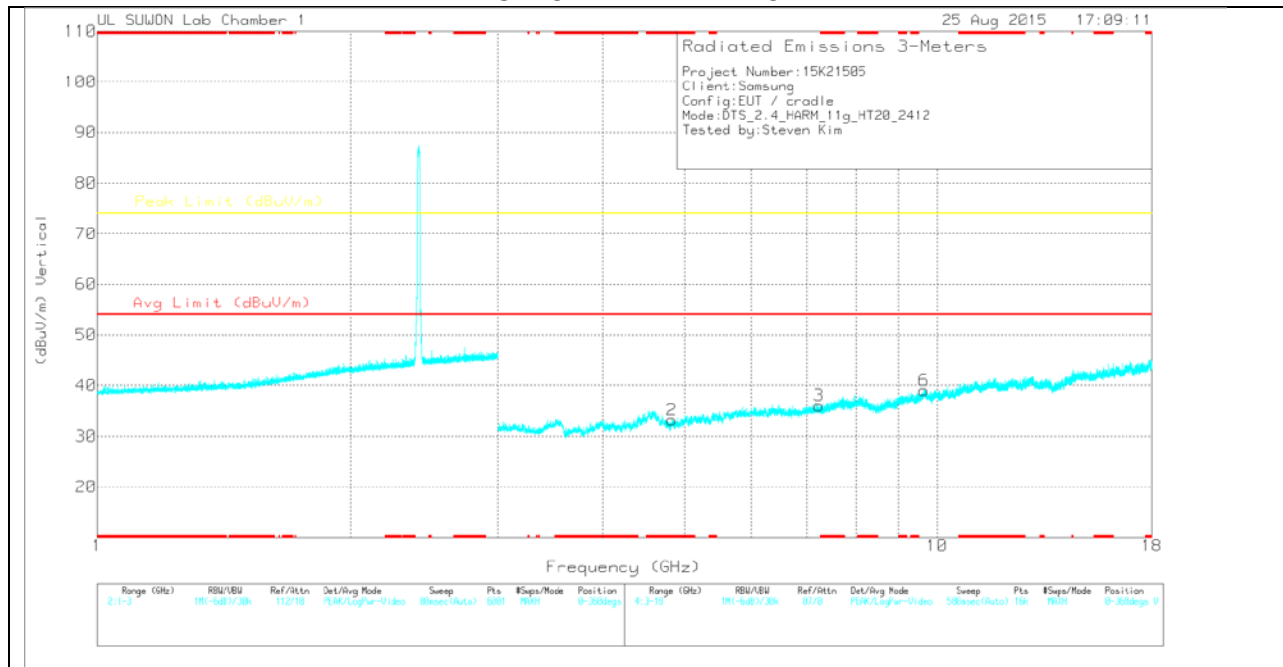
RMS - RMS detection

### 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

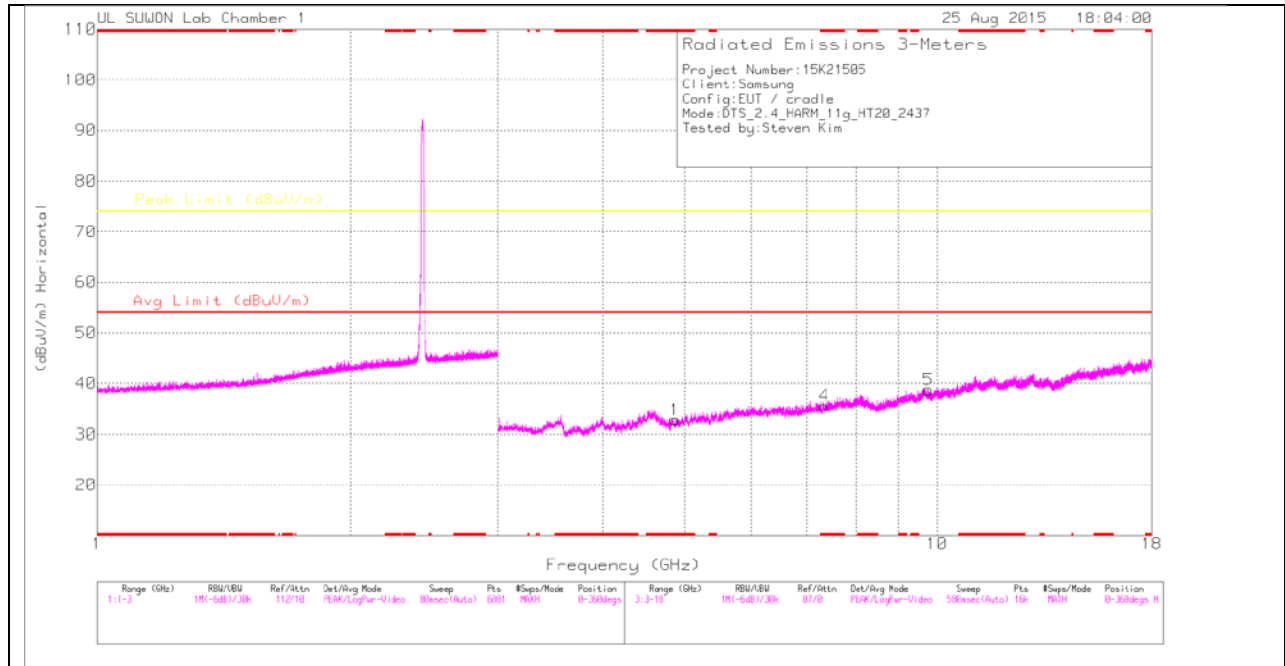
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.827	28.84	PK	34	-29.5	0	33.34	-	-	74	-40.66	0-360	100	H
4	7.24	25.95	PK	35.7	-25.5	0	36.15	-	-	74	-37.85	0-360	200	H
5	9.638	23.11	PK	37	-20.8	0	39.31	-	-	74	-34.69	0-360	200	H
2	* 4.829	28.71	PK	34	-29.5	0	33.21	-	-	74	-40.79	0-360	200	V
3	7.233	25.87	PK	35.7	-25.5	0	36.07	-	-	74	-37.93	0-360	200	V
6	9.644	22.73	PK	37.1	-20.8	0	39.03	-	-	74	-34.97	0-360	100	V

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

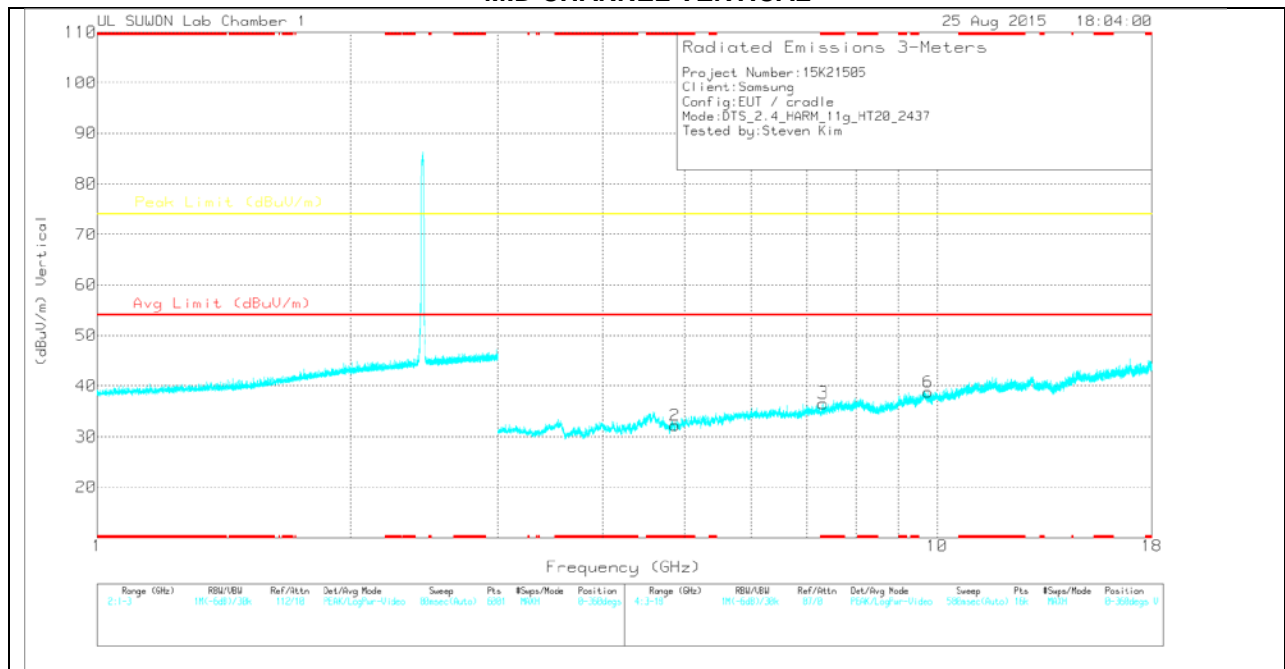
PK – Peak detector

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

**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

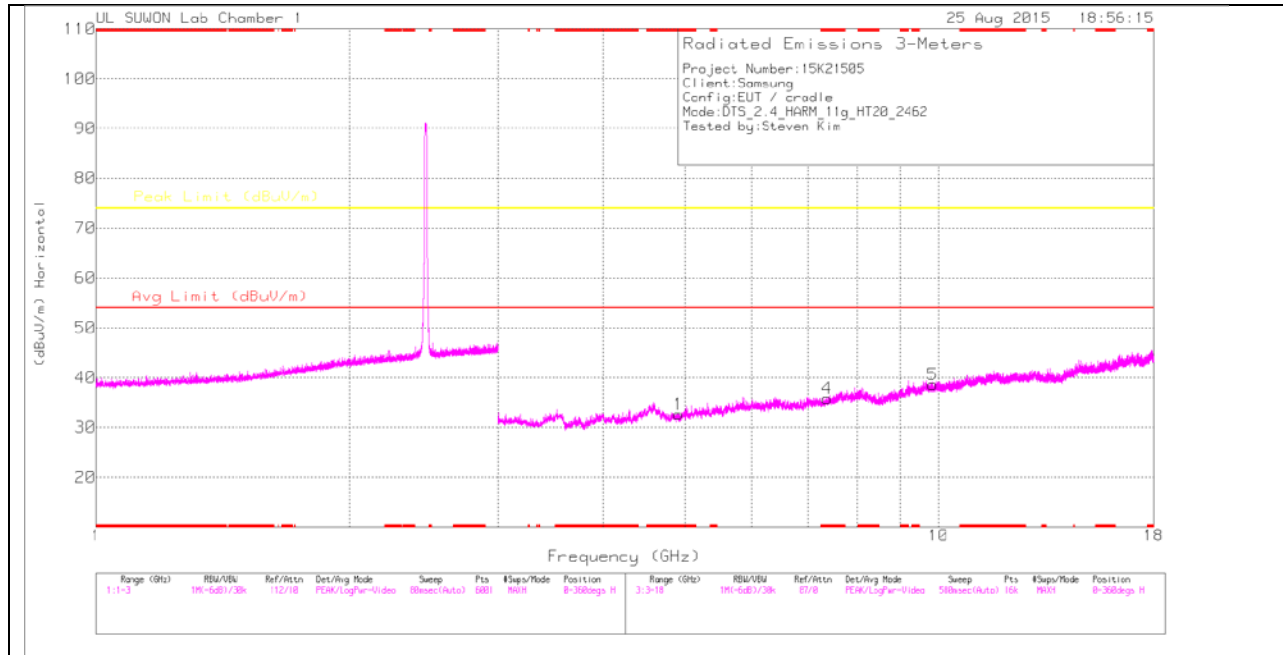
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.873	28.04	PK	34	-29.2	0	32.84	-	-	74	-41.16	0-360	100	H
4	* 7.339	25.3	PK	35.8	-25.5	0	35.6	-	-	74	-38.4	0-360	200	H
5	9.759	23.56	PK	37.2	-22	0	38.76	-	-	74	-35.24	0-360	100	H
2	* 4.875	27.38	PK	34	-29.2	0	32.18	-	-	74	-41.82	0-360	100	V
3	* 7.31	26.6	PK	35.7	-25.7	0	36.6	-	-	74	-37.4	0-360	200	V
6	9.755	23.6	PK	37.2	-22	0	38.8	-	-	74	-35.2	0-360	200	V

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

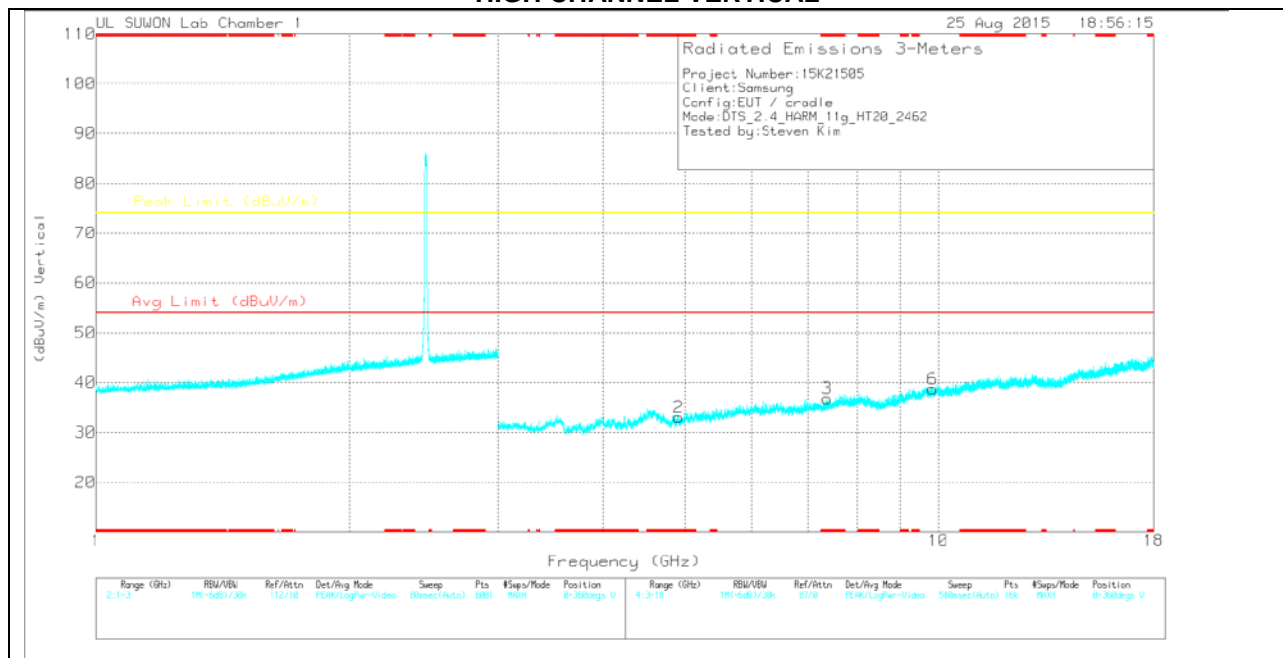
PK – Peak detector

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

### 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	* 4.914	27.79	PK	34	-29.1	0	32.69	-	-	74	-41.31	0-360	100	H
4	* 7.376	25.26	PK	35.8	-25.2	0	35.86	-	-	74	-38.14	0-360	100	H
5	9.836	23.07	PK	37.3	-21.8	0	38.57	-	-	74	-35.43	0-360	100	H
2	* 4.914	28.13	PK	34	-29.1	0	33.03	-	-	74	-40.97	0-360	200	V
3	* 7.371	26.18	PK	35.8	-25.2	0	36.78	-	-	74	-37.22	0-360	200	V
6	9.84	23.07	PK	37.3	-21.7	0	38.67	-	-	74	-35.33	0-360	200	V

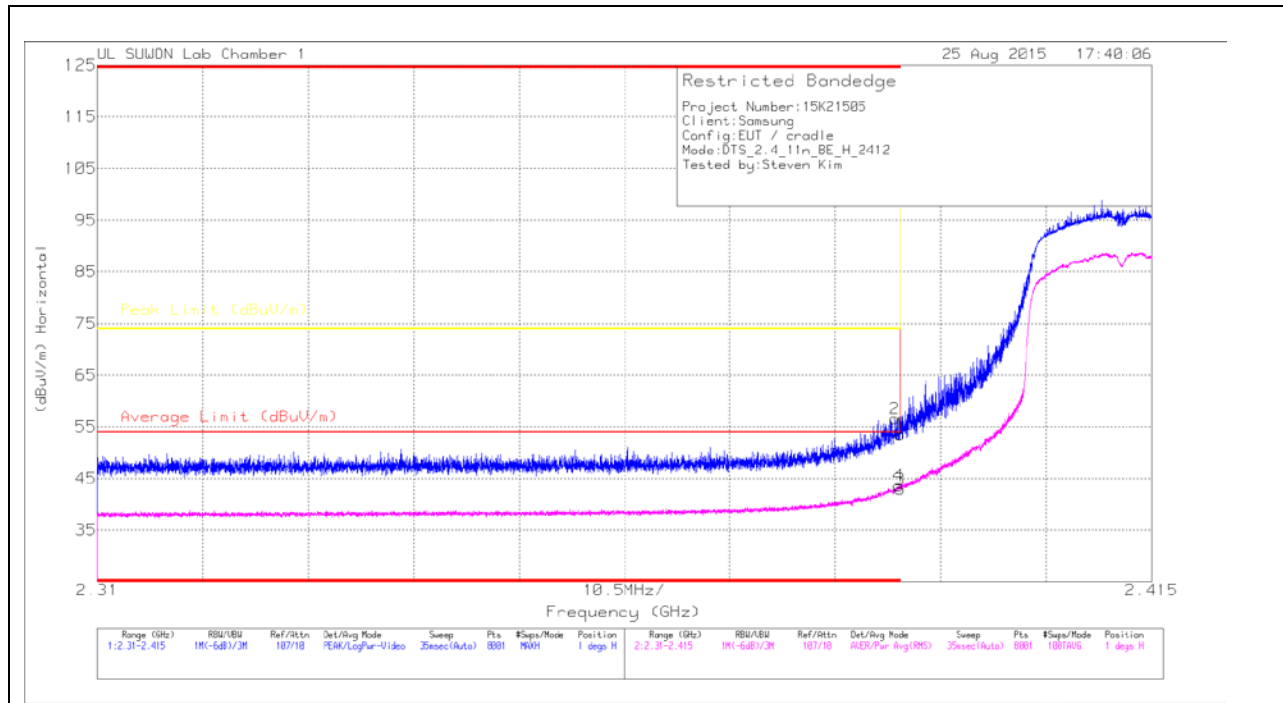
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

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

### 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

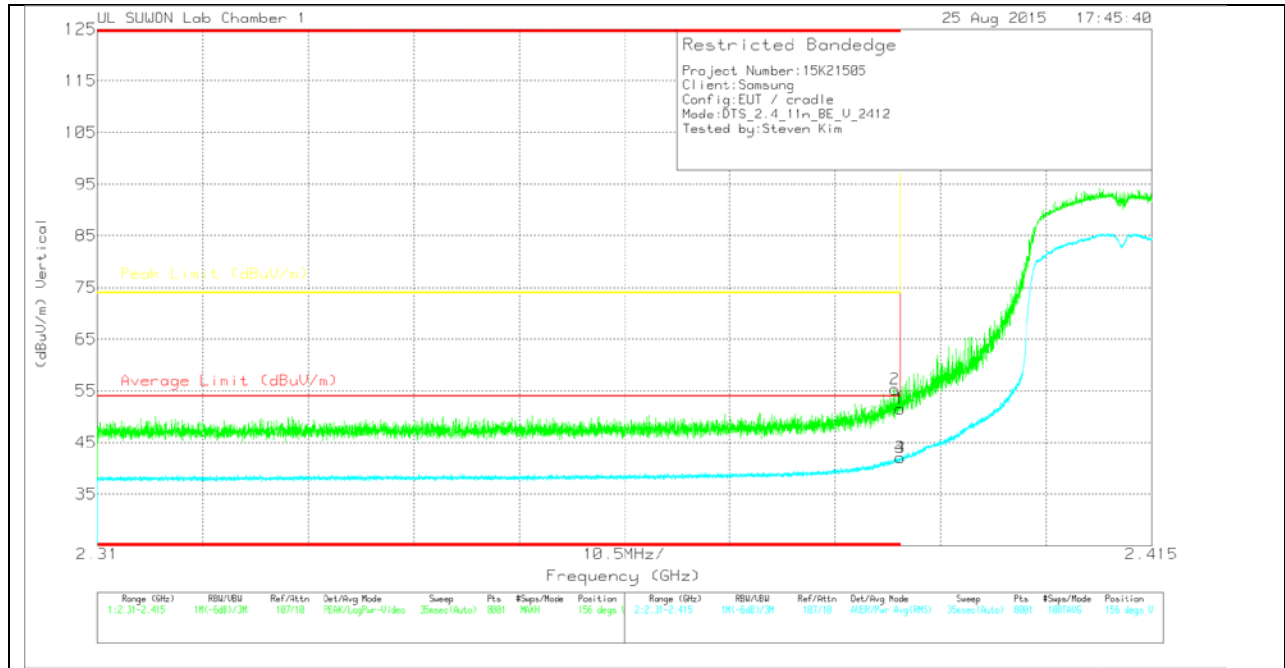
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	44.59	PK	31.8	-22.8	0	53.59	-	-	74	-20.41	1	283	H
2	* 2.389	47.57	PK	31.8	-22.8	0	56.57	-	-	74	-17.43	1	283	H
3	* 2.39	33.61	RMS	31.8	-22.8	.32	42.93	54	-11.07	-	-	1	283	H
4	* 2.39	34.27	RMS	31.8	-22.8	.32	43.59	54	-10.41	-	-	1	283	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	42.53	Pk	31.8	-22.8	0	51.53	-	-	74	-22.47	156	282	V
2	* 2.389	46.3	Pk	31.8	-22.8	0	55.3	-	-	74	-18.7	156	282	V
3	* 2.39	32.74	RMS	31.8	-22.8	.32	42.06	54	-11.94	-	-	156	282	V
4	* 2.39	32.74	RMS	31.8	-22.8	.32	42.06	54	-11.94	-	-	156	282	V

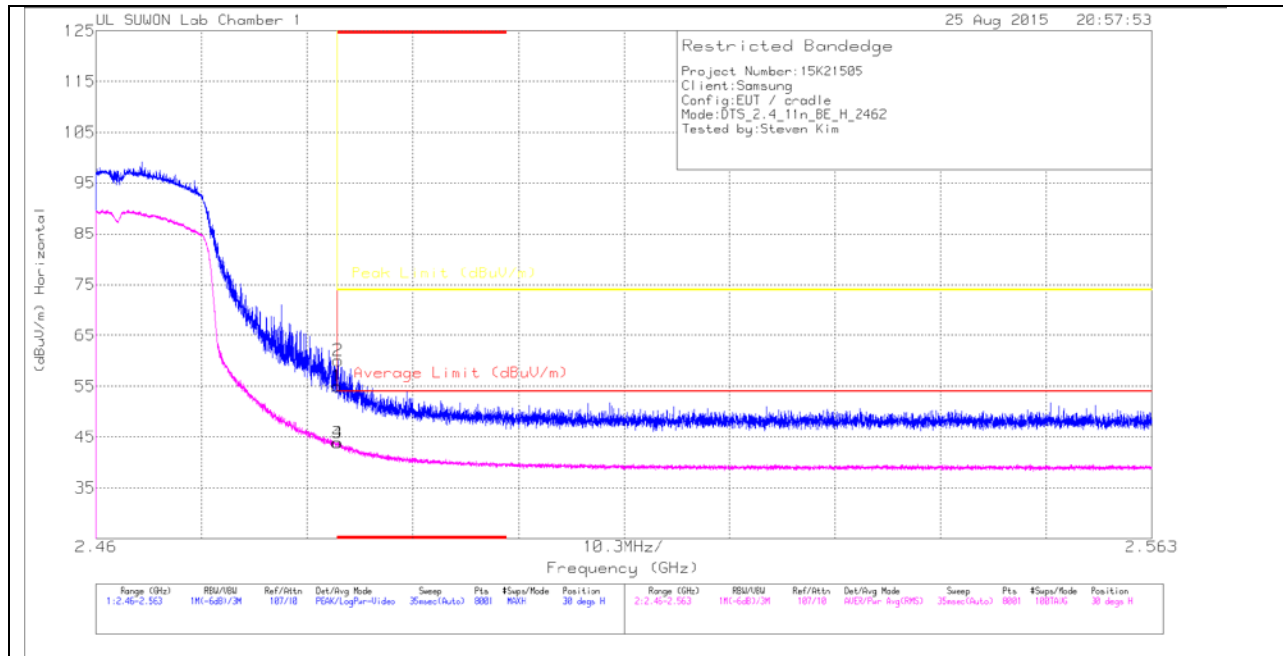
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

### AUTHORIZED BANDEDGE (HIGH CHANNEL)

#### HORIZONTAL PEAK AND AVERAGE PLOT



#### HORIZONTAL DATA

##### Trace Markers

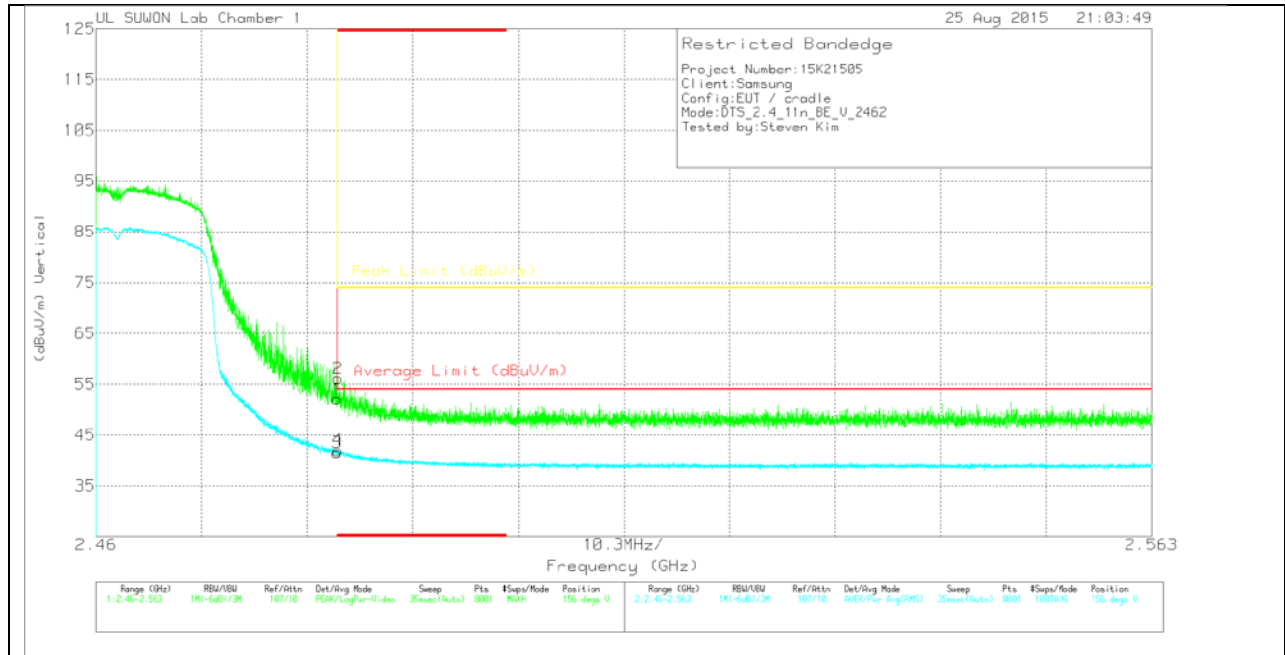
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(001687 24)_150619	Path_2_10dB	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	45.6	Pk	32	-22.6	0	55	-	-	74	-19	30	273	H
2	* 2.484	50.72	Pk	32	-22.6	0	60.12	-	-	74	-13.88	30	273	H
3	* 2.484	34.21	RMS	32	-22.6	.32	43.93	54	-10.07	-	-	30	273	H
4	* 2.484	34.18	RMS	32	-22.6	.32	43.9	54	-10.1	-	-	30	273	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	42.7	PK	32	-22.6	0	52.1	-	-	74	-21.9	156	265	V
2	* 2.484	46.74	PK	32	-22.6	0	56.14	-	-	74	-17.86	156	265	V
3	* 2.484	31.81	RMS	32	-22.6	.32	41.53	54	-12.47	-	-	156	265	V
4	* 2.484	32.26	RMS	32	-22.6	.32	41.98	54	-12.02	-	-	156	265	V

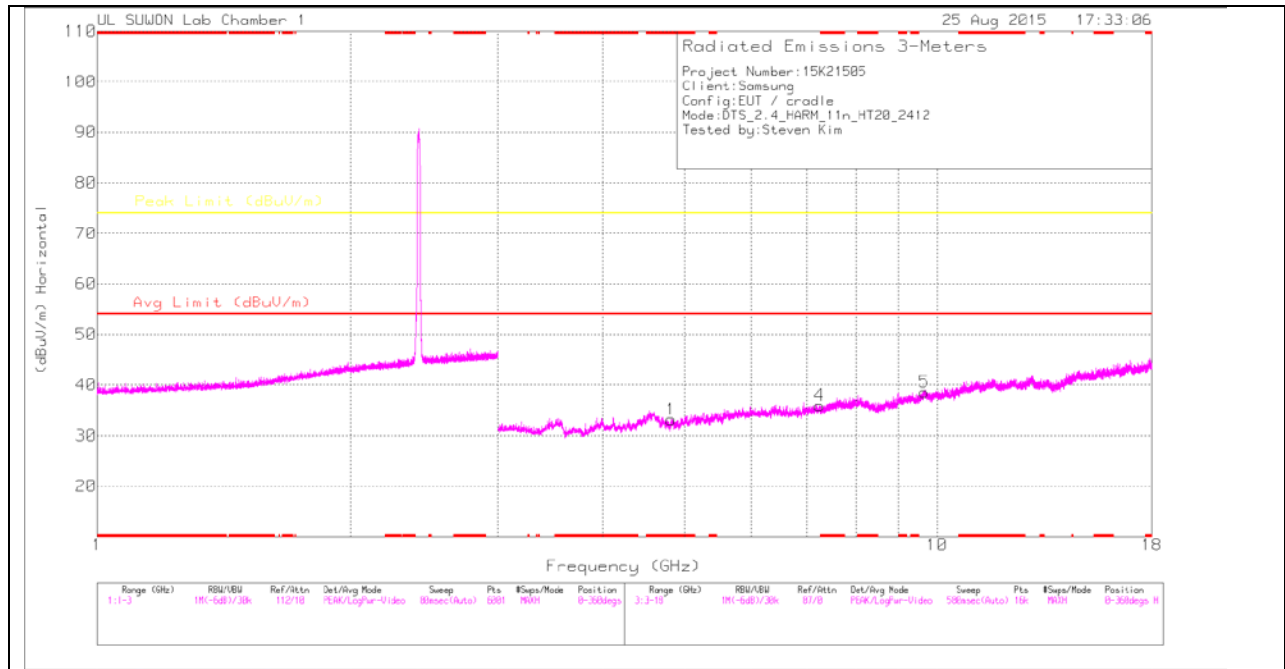
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK - Peak detector

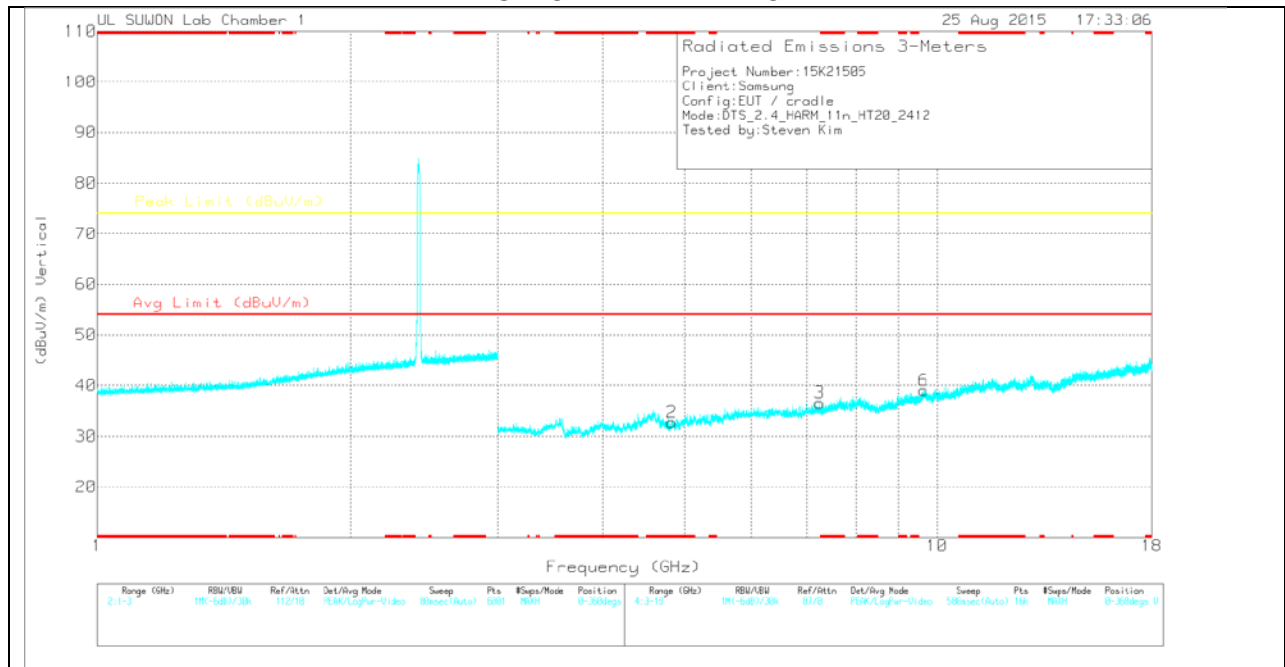
RMS - RMS detection

### 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

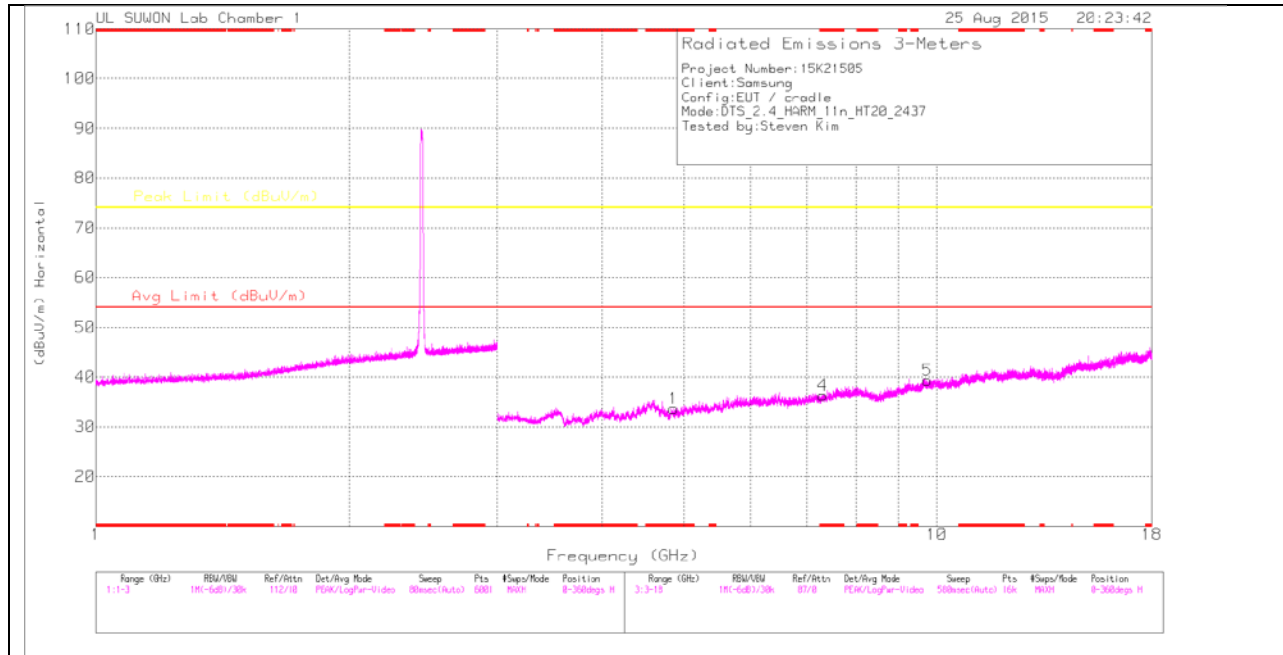
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.825	28.66	PK	34	-29.5	0	33.16	-	-	74	-40.84	0-360	102	H
4	7.239	25.77	PK	35.7	-25.5	0	35.97	-	-	74	-38.03	0-360	200	H
5	9.649	22.29	PK	37.1	-20.8	0	38.59	-	-	74	-35.41	0-360	200	H
2	* 4.83	28.23	PK	34	-29.5	0	32.73	-	-	74	-41.27	0-360	100	V
3	7.237	26.39	PK	35.7	-25.5	0	36.59	-	-	74	-37.41	0-360	200	V
6	9.641	22.84	PK	37	-20.8	0	39.04	-	-	74	-34.96	0-360	200	V

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

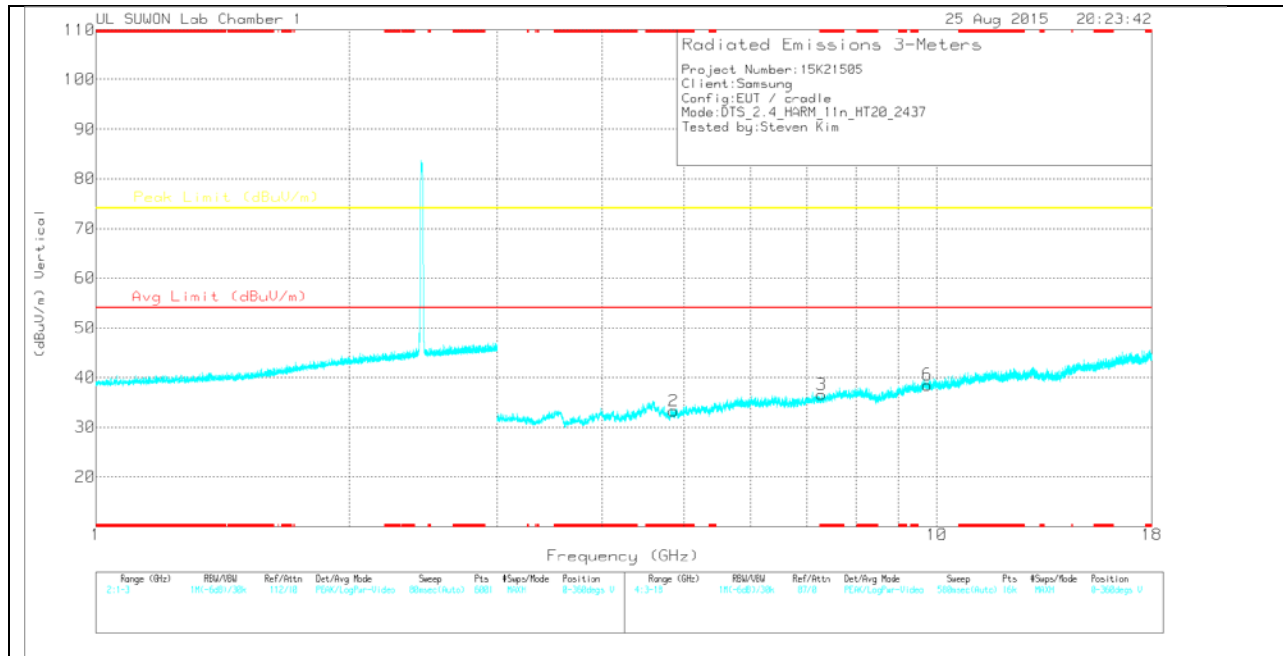
PK – Peak detector

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

**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

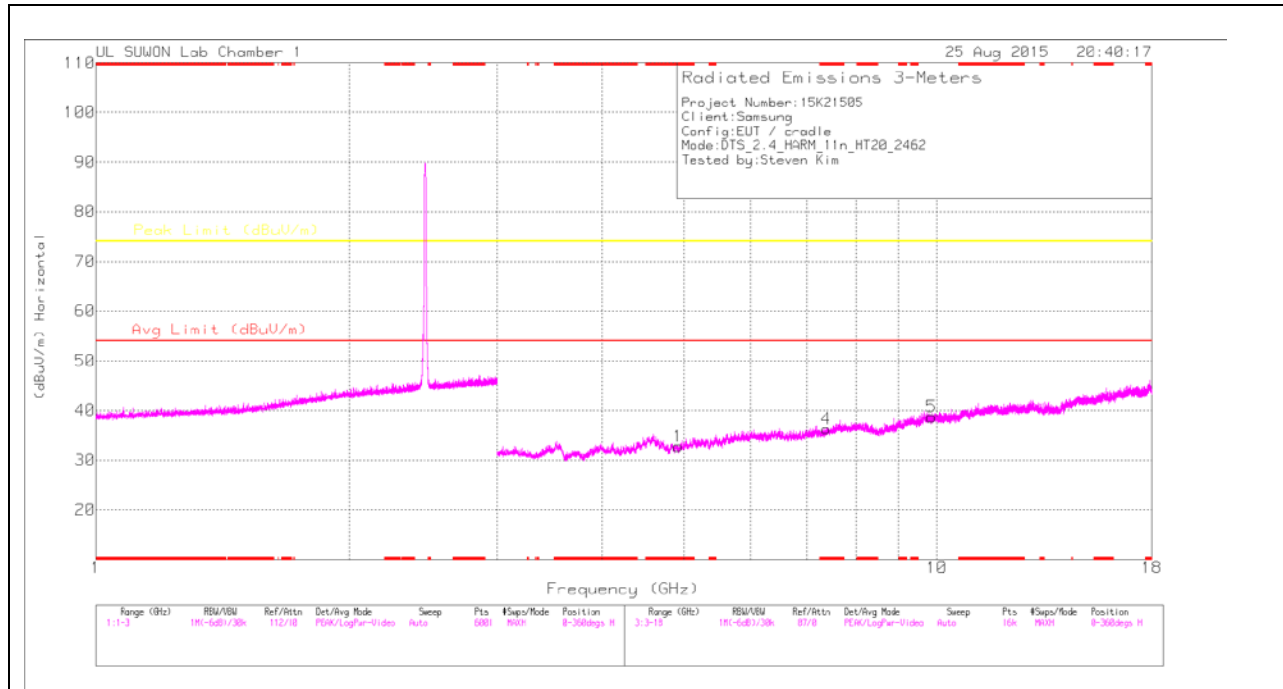
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(0016872 4)_150619	Path_3	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.866	28.85	PK	34	-29.2	0	33.65	-	-	74	-40.35	0-360	200	H
4	* 7.306	26.3	PK	35.7	-25.7	0	36.3	-	-	74	-37.7	0-360	200	H
5	9.74	23.95	PK	37.2	-21.8	0	39.35	-	-	74	-34.65	0-360	200	H
2	* 4.866	28.54	PK	34	-29.2	0	33.34	-	-	74	-40.66	0-360	100	V
3	* 7.29	26.56	PK	35.7	-25.7	0	36.56	-	-	74	-37.44	0-360	200	V
6	9.736	23.03	PK	37.2	-21.7	0	38.53	-	-	74	-35.47	0-360	200	V

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

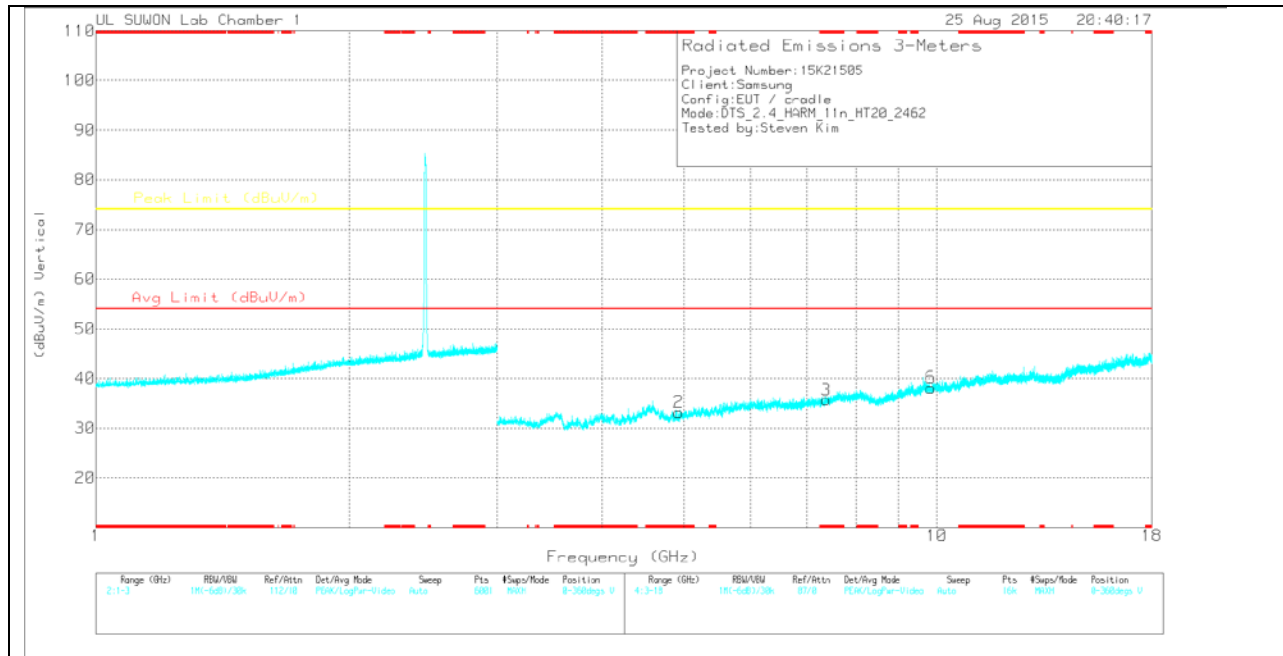
PK – Peak detector

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

### 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	* 4.921	27.92	PK	34	-29.1	0	32.82	-	-	74	-41.18	0-360	100	H
4	* 7.381	25.57	PK	35.8	-25.1	0	36.27	-	-	74	-37.73	0-360	100	H
5	9.853	22.9	PK	37.3	-21.5	0	38.7	-	-	74	-35.3	0-360	100	H
2	* 4.929	28.22	PK	34	-29	0	33.22	-	-	74	-40.78	0-360	200	V
3	* 7.386	25.04	PK	35.8	-25.1	0	35.74	-	-	74	-38.26	0-360	200	V
6	9.846	22.45	PK	37.3	-21.6	0	38.15	-	-	74	-35.85	0-360	200	V

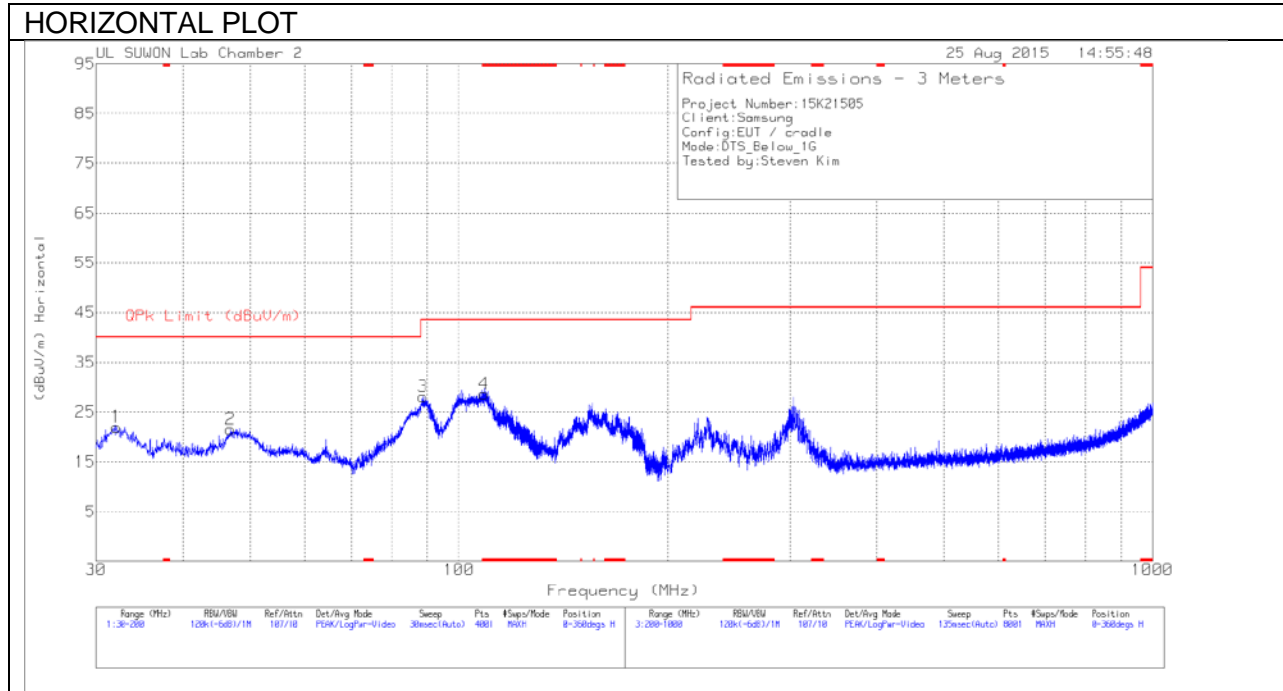
\* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

PK – Peak detector

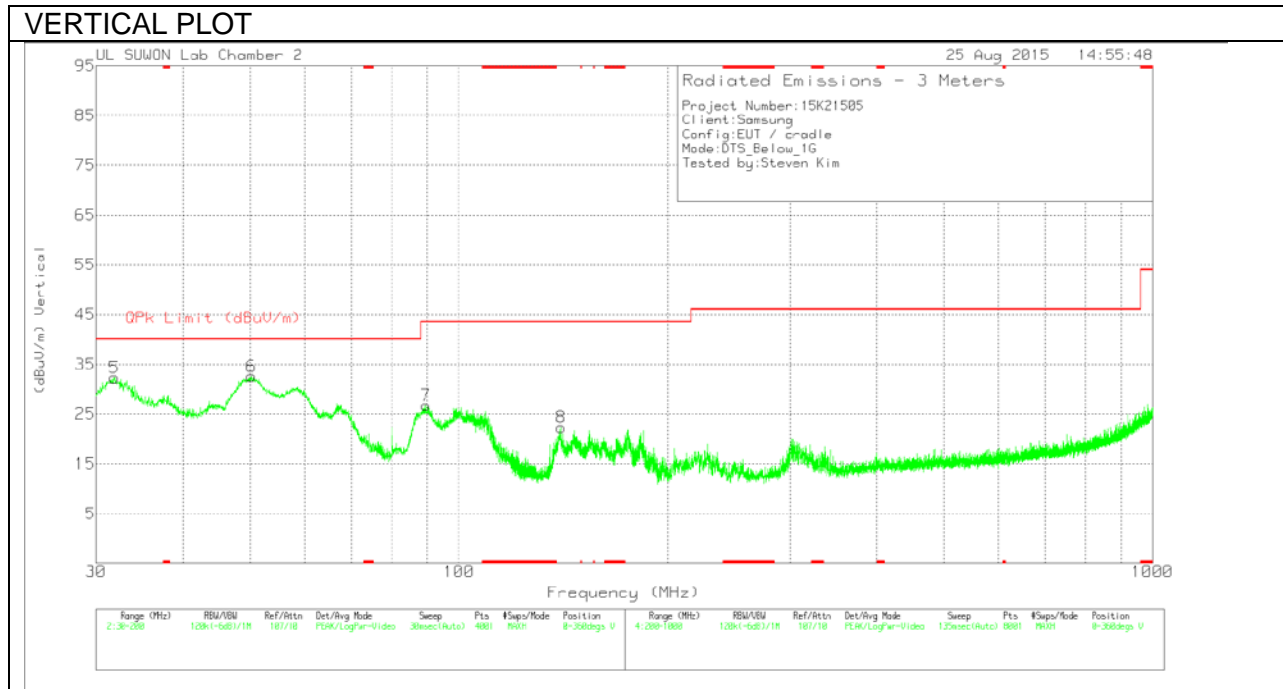
Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

### 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	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	32.0825	42.31	Pk	10.5	-30.8	22.01	40	-17.99	0-360	300	H
2	46.8725	38.41	Pk	14	-30.8	21.61	40	-18.39	0-360	300	H
3	88.65	49.46	Pk	9.3	-30.6	28.16	43.52	-15.36	0-360	300	H
4	* 108.6675	48.27	Pk	10.9	-30.5	28.67	43.52	-14.85	0-360	300	H
5	31.87	52.66	Pk	10.4	-30.8	32.26	40	-7.74	0-360	101	V
6	50.1875	49.13	Pk	14.1	-30.7	32.53	40	-7.47	0-360	101	V
7	89.67	47.88	Pk	9.5	-30.6	26.78	43.52	-16.74	0-360	101	V
8	140.3725	44.69	Pk	8	-30.4	22.29	43.52	-21.23	0-360	101	V

Pk - Peak detector

## 12. AC POWER LINE CONDUCTED EMISSIONS

### LIMITS

FCC §15.207 (a)  
RSS-Gen 8.8

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

\*Decreases with the logarithm of the frequency.

### TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10 2009.

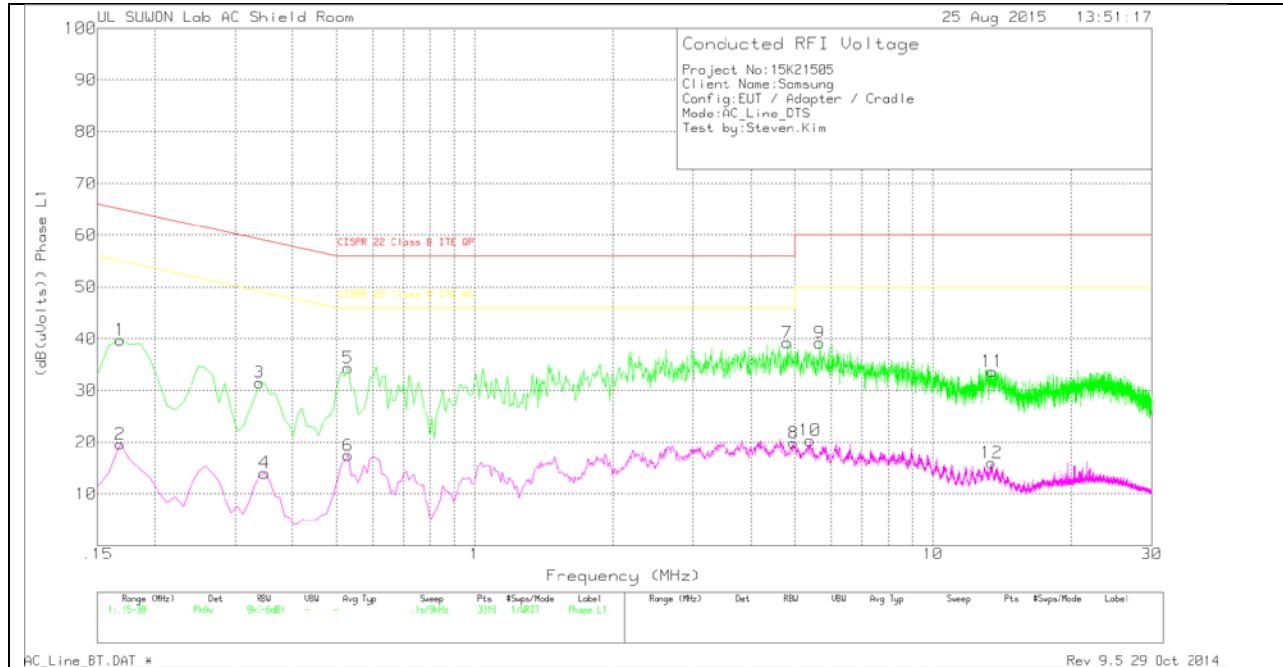
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

**RESULTS**

**WORST EMISSIONS**

**LINE 1 PLOT**



**LINE 1 RESULTS**

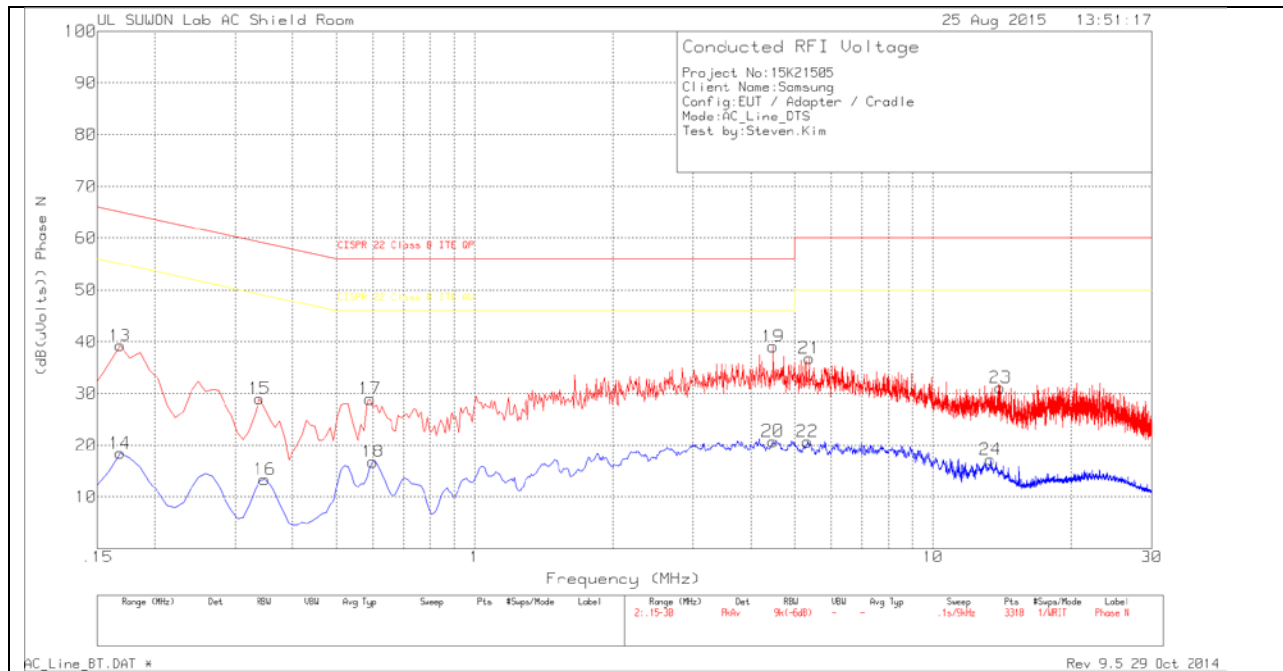
Phase L1 .15 - 30MHz

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	.168	29.57	Pk	10.2	0	39.77	65.06	-25.29	-	-
2	.168	9.41	Av	10.2	0	19.61	-	-	55.06	-35.45
3	.339	21.5	Pk	10	0	31.5	59.23	-27.73	-	-
4	.348	4.07	Av	10	0	14.07	-	-	49.01	-34.94
5	.528	24.28	Pk	10.1	0	34.38	56	-21.62	-	-
6	.528	7.32	Av	10.1	0	17.42	-	-	46	-28.58
7	4.803	29.32	Pk	9.8	.1	39.22	56	-16.78	-	-
8	4.965	9.96	Av	9.8	.1	19.86	-	-	46	-26.14
9	5.649	29.3	Pk	9.8	.1	39.2	60	-20.8	-	-
10	5.388	10.45	Av	9.8	.1	20.35	-	-	50	-29.65
11	13.479	23.37	Pk	10.1	.2	33.67	60	-26.33	-	-
12	13.425	5.72	Av	10.1	.2	16.02	-	-	50	-33.98

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)
1	.168	29.57	Pk	10.2	0	39.77	65.06	-25.29	-	-
2	.168	9.41	Av	10.2	0	19.61	-	-	55.06	-35.45
3	.339	21.5	Pk	10	0	31.5	59.23	-27.73	-	-
4	.348	4.07	Av	10	0	14.07	-	-	49.01	-34.94
5	.528	24.28	Pk	10.1	0	34.38	56	-21.62	-	-
6	.528	7.32	Av	10.1	0	17.42	-	-	46	-28.58
7	4.803	29.32	Pk	9.8	.1	39.22	56	-16.78	-	-
8	4.965	9.96	Av	9.8	.1	19.86	-	-	46	-26.14
9	5.649	29.3	Pk	9.8	.1	39.2	60	-20.8	-	-
10	5.388	10.45	Av	9.8	.1	20.35	-	-	50	-29.65
11	13.479	23.37	Pk	10.1	.2	33.67	60	-26.33	-	-
12	13.425	5.72	Av	10.1	.2	16.02	-	-	50	-33.98

Pk - Peak detector

Av - Average detection