



FCC CFR47 PART 15 SUBPART C

DTS Wireless LAN

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac , ANT+ and NFC

MODEL NUMBER : SM-C900F/DS

FCC ID: A3LSMC900F

REPORT NUMBER: 4787745030-E1V2

ISSUE DATE: JAN 11 , 2017

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Revision History

Rev.	Issue Date	Revisions	Revised By
V1	01/06/17	Initial issue	Junwhan Lee
V2	01/11/17	Revised detector setting on page 74	Junwhan Lee

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS.....	5
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION.....	6
4. CALIBRATION AND UNCERTAINTY	6
4.1. MEASURING INSTRUMENT CALIBRATION	6
4.2. SAMPLE CALCULATION.....	6
4.3. MEASUREMENT UNCERTAINTY	7
5. EQUIPMENT UNDER TEST	8
5.1. DESCRIPTION OF EUT.....	8
5.2. MAXIMUM OUTPUT POWER.....	8
5.3. DESCRIPTION OF AVAILABLE ANTENNAS	8
5.4. WORST-CASE CONFIGURATION AND MODE.....	8
5.5. DESCRIPTION OF TEST SETUP	9
6. TEST AND MEASUREMENT EQUIPMENT	11
7. MEASUREMENT METHODS.....	12
8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS	13
8.1. ON TIME AND DUTY CYCLE RESULTS.....	13
9. SUMMARY TABLE	15
10. ANTENNA PORT TEST RESULTS.....	16
10.1. 6 dB BANDWIDTH.....	16
10.1.1. 802.11b MODE IN THE 2.4 GHz BAND	16
10.1.2. 802.11g MODE IN THE 2.4 GHz BAND	16
10.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND	16
10.1.4. 6 dB BANDWIDTH PLOTS	17
10.2. 99% BANDWIDTH	20
10.2.1. 802.11b MODE IN THE 2.4 GHz BAND	20
10.2.2. 802.11g MODE IN THE 2.4 GHz BAND	20
10.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND	20
10.2.4. 99% BANDWIDTH PLOTS	21
10.3. OUTPUT POWER.....	24
10.3.1. 802.11b MODE IN THE 2.4 GHz BAND	25
10.3.2. 802.11g MODE IN THE 2.4 GHz BAND	26
10.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND	27
10.4. PSD.....	28

10.4.1.	802.11b MODE IN THE 2.4 GHz BAND	29
10.4.2.	802.11g MODE IN THE 2.4 GHz BAND	29
10.4.3.	802.11n HT20 MODE IN THE 2.4 GHz BAND	29
10.4.4.	PSD PLOTS.....	30
10.5.	<i>OUT-OF-BAND EMISSIONS</i>	33
10.5.1.	802.11b MODE IN THE 2.4 GHz BAND	34
10.5.2.	802.11g MODE IN THE 2.4 GHz BAND	37
10.5.3.	802.11n HT20 MODE IN THE 2.4 GHz BAND	40
11.	RADIATED TEST RESULTS	43
11.1.	<i>LIMITS AND PROCEDURE</i>	43
11.2.	<i>TRANSMITTER ABOVE 1 GHz</i>	45
11.2.1.	TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND	45
11.2.2.	TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND	55
11.2.3.	TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND	65
11.3.	<i>WORST-CASE BELOW 1 GHz</i>	75
12.	AC POWER LINE CONDUCTED EMISSIONS	77
13.	SETUP PHOTOS	82

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac , ANT+ and NFC

MODEL NUMBER: SM-C900F/DS

SERIAL NUMBER: R38HC075C7W, 2651b8f6 (RADIATED);
R38HC075DFM (CONDUCTED)

DATE TESTED: DEC 19, 2016 - JAN 03, 2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart C	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:



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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, KDB 558074 D01 v03r05 and ANSI C63.10-2013.

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, 16675, 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	
☒	Chamber 1
☒	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 GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac , ANT+ and NFC.
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	15.89	38.82
	802.11g	12.97	19.82
	802.11n HT20	11.99	15.81

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an FPCB antennas, with a antenna's maximum gain of 1.12 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X 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
Charger	SAMSUNG	EP-TA20IWE	R37FC5T1661SE3	N/A
Data Cable	SAMSUNG	DP-DN930CWE	N/A	N/A
Earphone	SAMSUNG	EHS64AVFWE	N/A	N/A

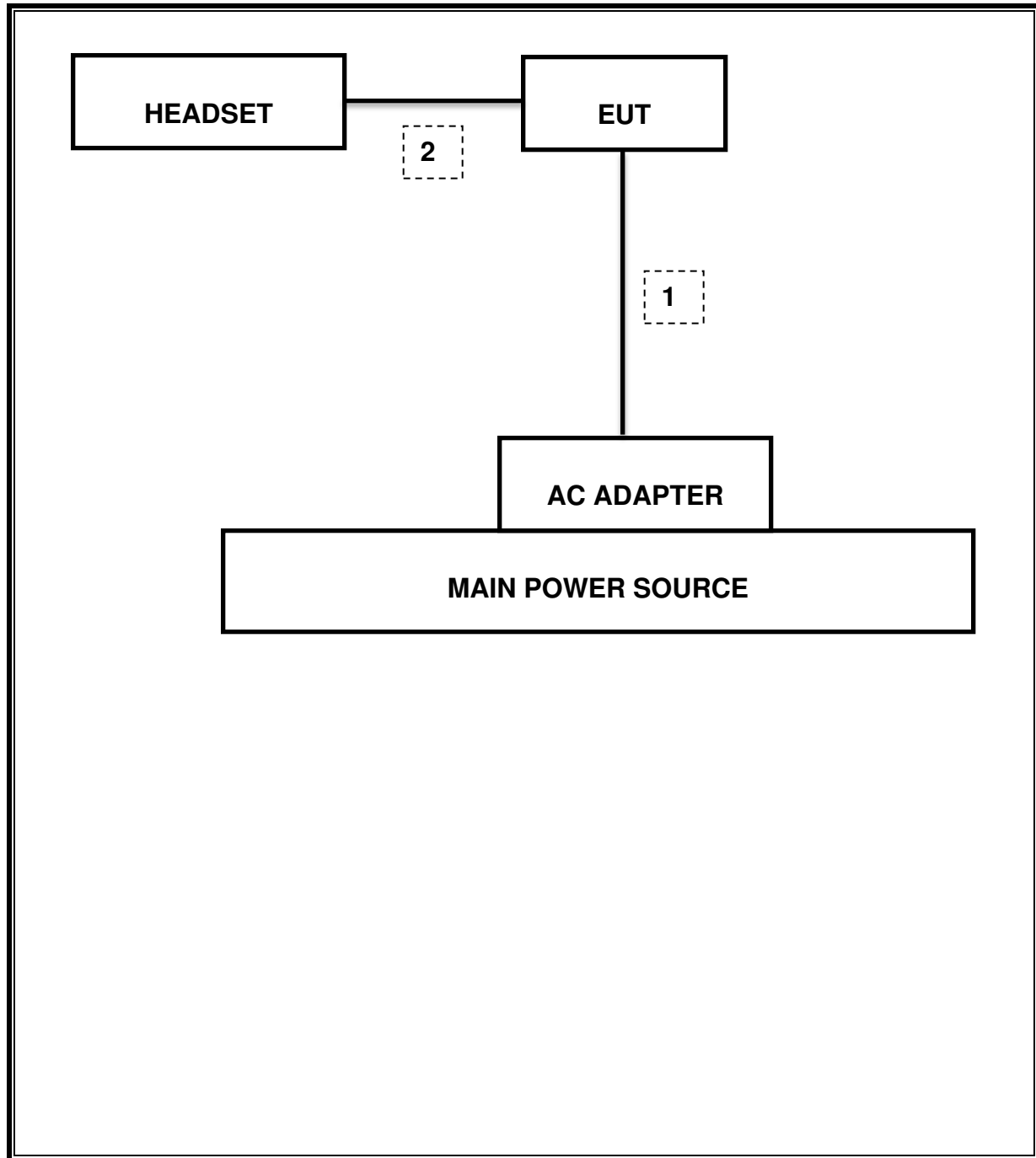
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	C Type USB	Shielded	0.8m	N/A
2	Audio	2	Mini-Jack	Unshielded	1.0m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests.
Test software in hidden menu exercised the EUT to enable DTS mode.

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	10-14-18
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	04-25-17
Antenna, Horn, 18 GHz	ETS	3115	00167211	10-14-18
Antenna, Horn, 18 GHz	ETS	3115	00161451	05-17-17
Antenna, Horn, 18 GHz	ETS	3117	00168724	06-17-17
Antenna, Horn, 18 GHz	ETS	3117	00168717	06-17-17
Antenna, Horn, 40 GHz	ETS	3116C	00166155	11-30-17
Antenna, Horn, 40 GHz	ETS	3116C-PA	00168841	12-15-17
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-17-17
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-16-17
Preamplifier	ETS	3115-PA	00167475	08-17-17
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-16-17
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-17-17
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-16-17
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	11-25-17
Average Power Sensor	R&S	NRP-Z91	102681	08-16-17
Average Power Sensor	Agilent / HP	U2000	MY54270007	08-17-17
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-17-17
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-16-17
EMI Test Receive, 3 GHz	R&S	ESR3	101832	08-16-17
Attenuator / Switch driver	HP	11713A	3748A04272	N/A
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	08-17-17
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	08-16-17
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	08-17-17
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	08-16-17
High Pass Filter 6GHz	Micro-Tronics	HPM17542	009	08-17-17
High Pass Filter 6GHz	Micro-Tronics	HPM17542	016	08-16-17
LISN	R&S	ENV-216	101836	08-16-17
LISN	R&S	ENV-216	101837	08-16-17
Attenuator	PASTERNAK	PE7087-10	A009	08-16-17

7. MEASUREMENT METHODS

KDB 558074 D01 DTS Meas Guidance v03r05: Measurement Procedure §9.2.3.1 AVGPM is used for average power and §10.3 AVGPDS-1, §10.5 AVGPDS-2 are 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.

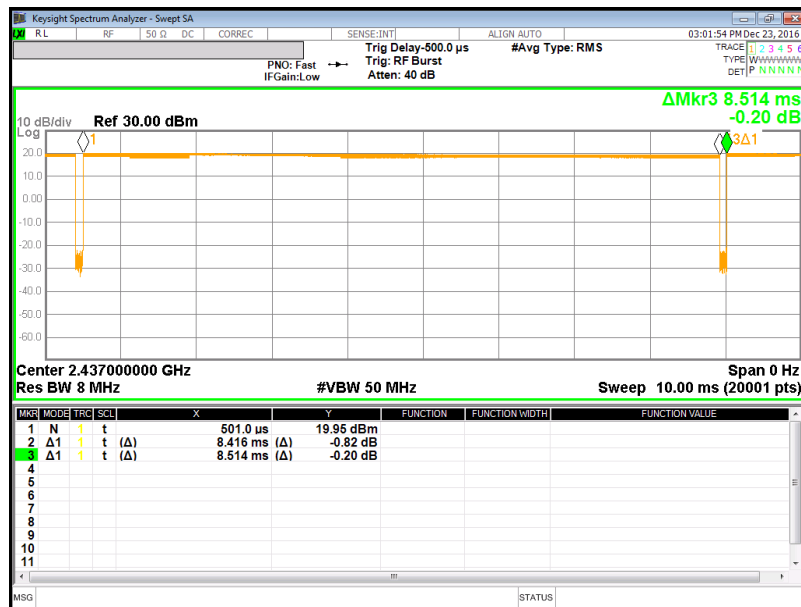
8. ON TIME, DUTY CYCLE AND MEASUREMENT METHODS

LIMITS

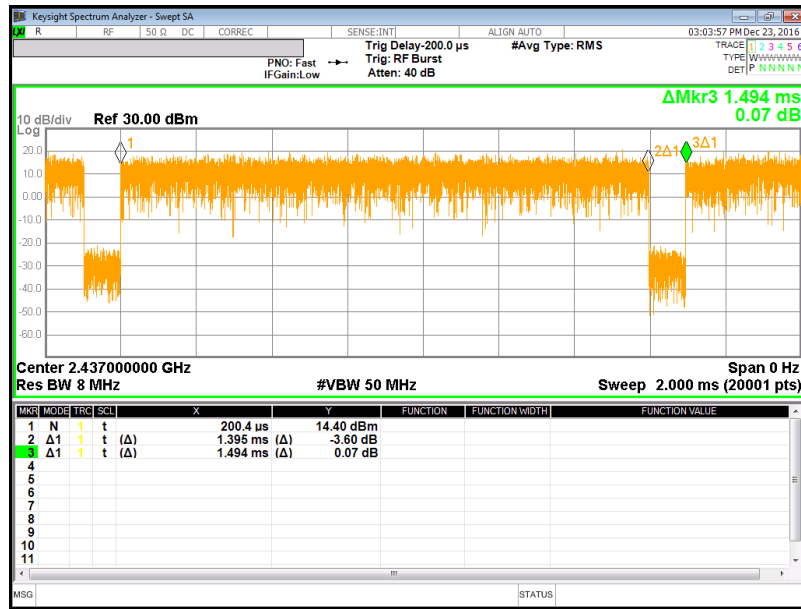
None; for reporting purposes only.

8.1. ON TIME AND DUTY CYCLE RESULTS

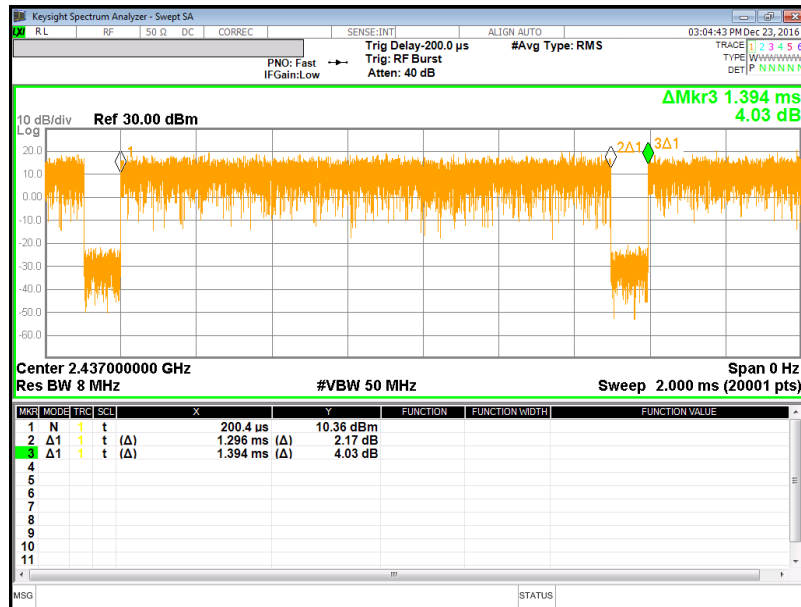
Mode	ON Time B [msec]	Period [msec]	Duty Cycle x [linear]	Duty Cycle [%]	Duty Cycle Correction Factor [dB]	1/T Minimum VBW [kHz]
2400MHz Bands						
802.11b	8.416	8.514	0.988	98.8%	0.00	0.010
802.11g	1.395	1.494	0.934	93.4%	0.30	0.717
802.11n HT20	1.296	1.394	0.930	93.0%	0.32	0.772



[802.11b]



[802.11g]



[802.11n]

9. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	8.525 MHz
2.1051, 15.247 (d)	Band Edge / Conducted Spurious Emission	-30dBc		Pass	-32.452 dBm
15.247	TX conducted output power	<30dBm		Pass	15.89 dBm
15.247	PSD	<8dBm		Pass	-15.398 dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Power Line conducted	Pass	46.84 dBuV (Qp)
15.205, 15.209	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass	51.22 dBuV/m (Av)

10. ANTENNA PORT TEST RESULTS

10.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v03r05: 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

10.1.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
Low	2412	8.563	0.5
Mid	2437	8.525	0.5
High	2462	8.557	0.5
Worst		8.525	0.5

10.1.2. 802.11g MODE IN THE 2.4 GHz BAND

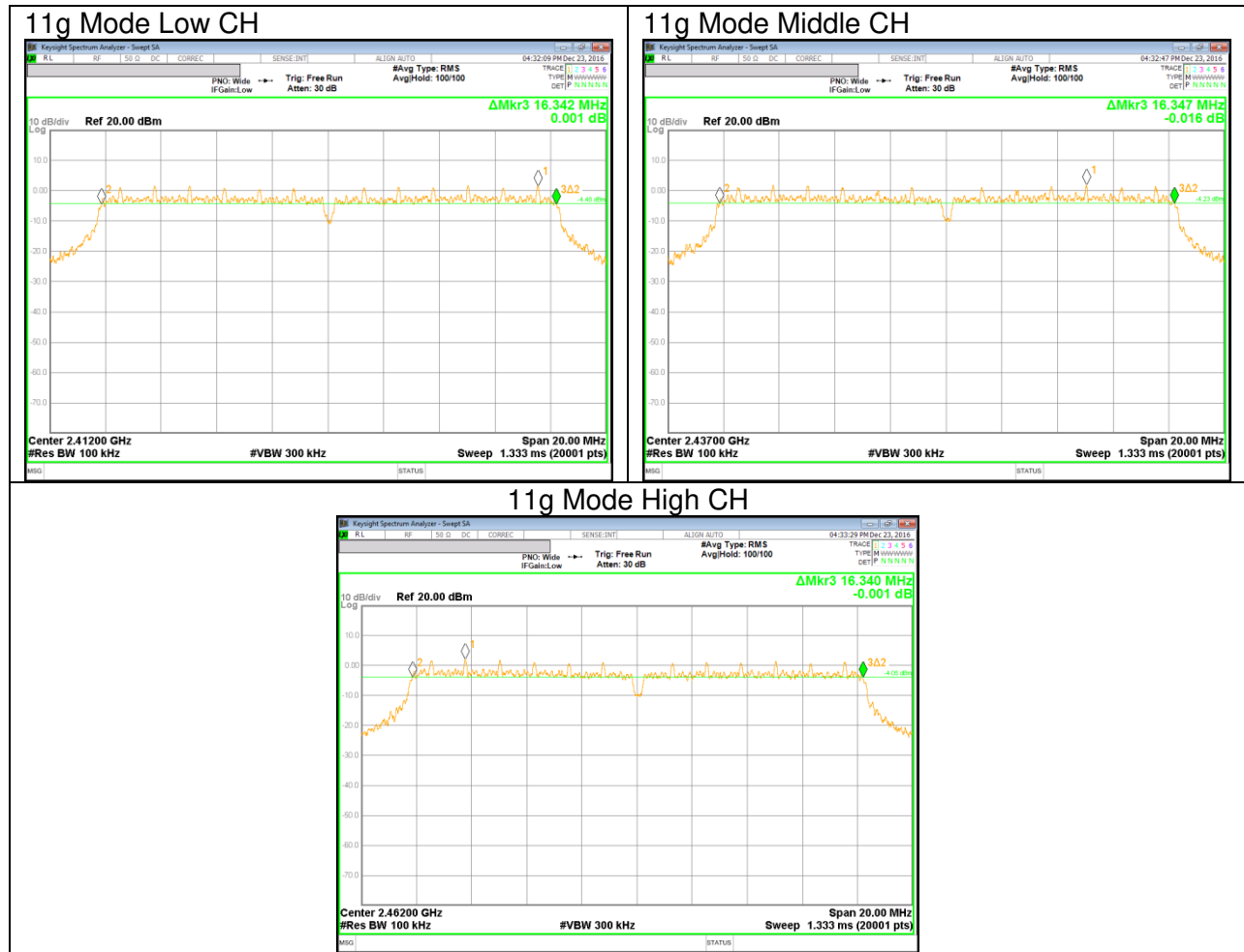
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
Low	2412	16.342	0.5
Mid	2437	16.347	0.5
High	2462	16.340	0.5
Worst		16.340	0.5

10.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

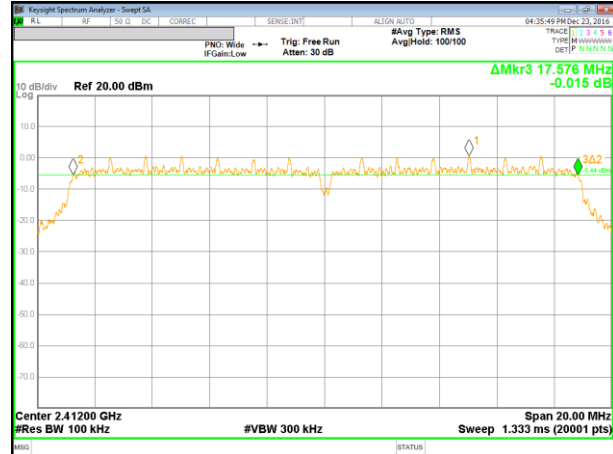
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
Low	2412	17.576	0.5
Mid	2437	17.585	0.5
High	2462	17.575	0.5
Worst		17.575	0.5

10.1.4. 6 dB BANDWIDTH PLOTS





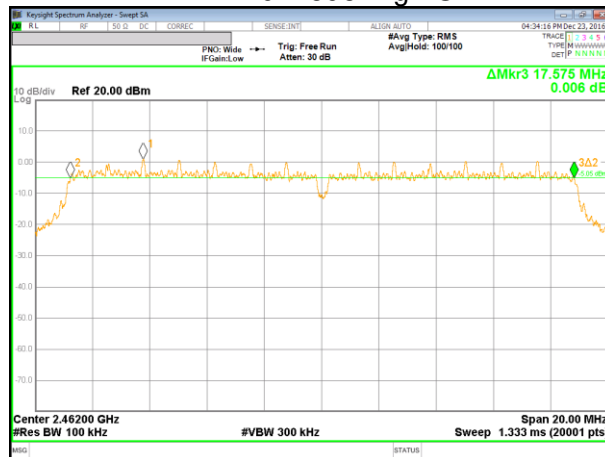
11n HT20 Mode Low CH



11n HT20 Mode Middle CH



11n HT20 Mode High CH



10.2. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

10.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	2412	13.421
Mid	2437	13.182
High	2462	13.285
Worst		13.421

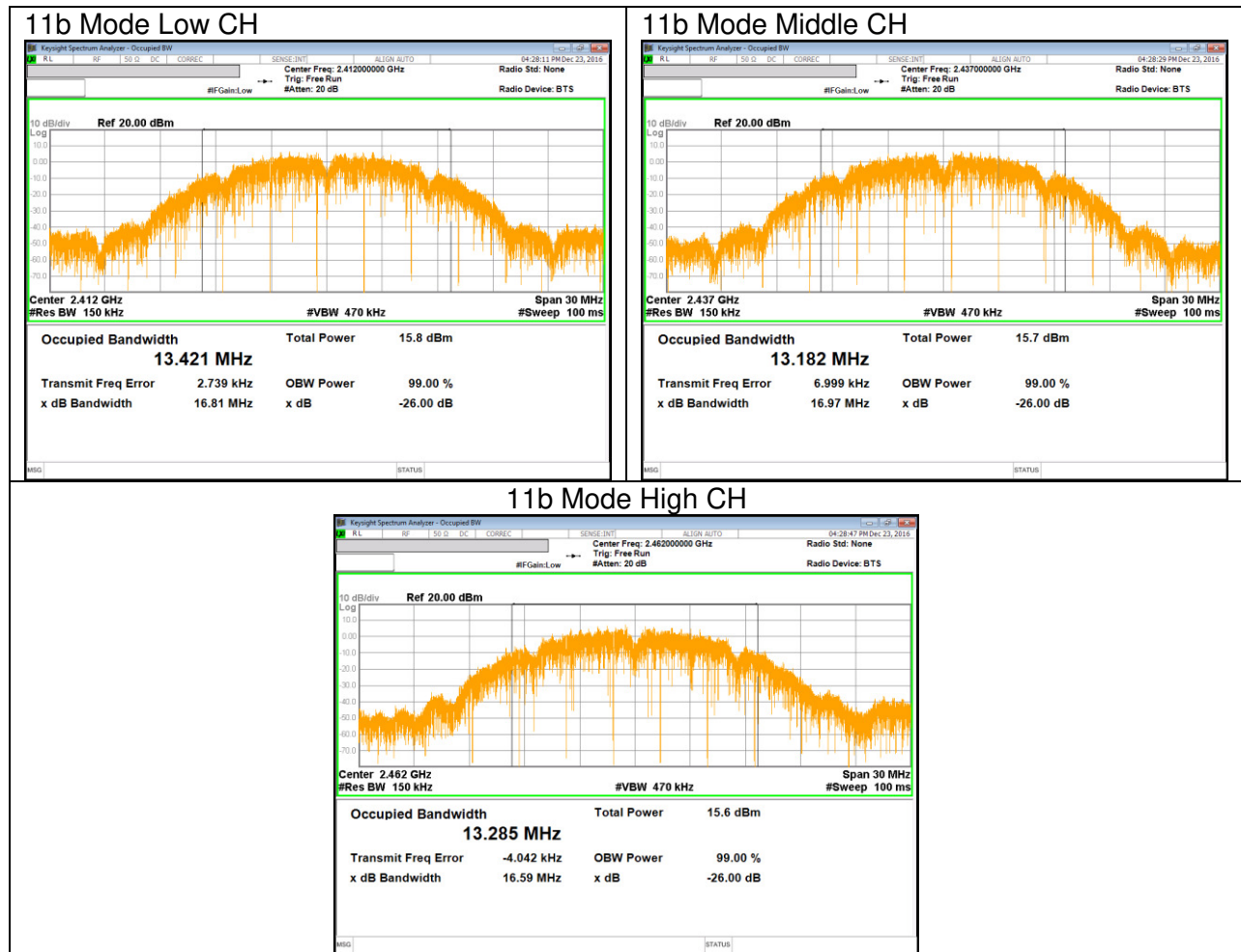
10.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	2412	16.467
Mid	2437	16.500
High	2462	16.524
Worst		16.524

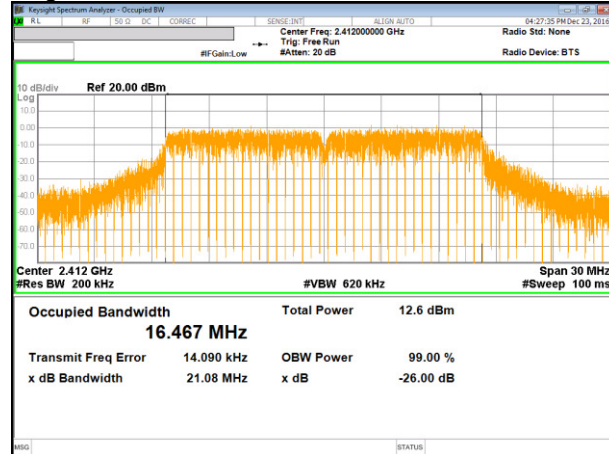
10.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	99% Bandwidth [MHz]
Low	2412	17.655
Mid	2437	17.696
High	2462	17.704
Worst		17.704

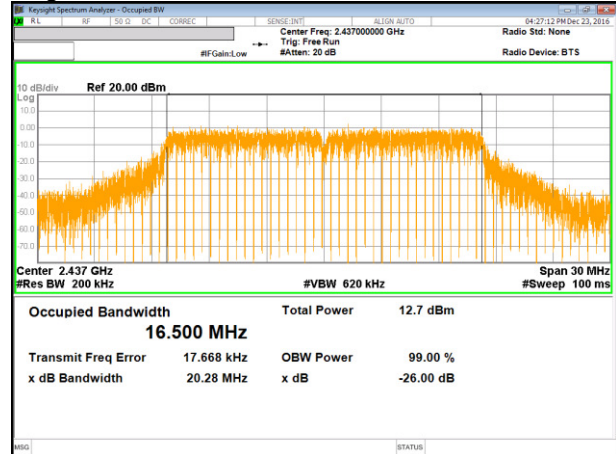
10.2.4. 99% BANDWIDTH PLOTS



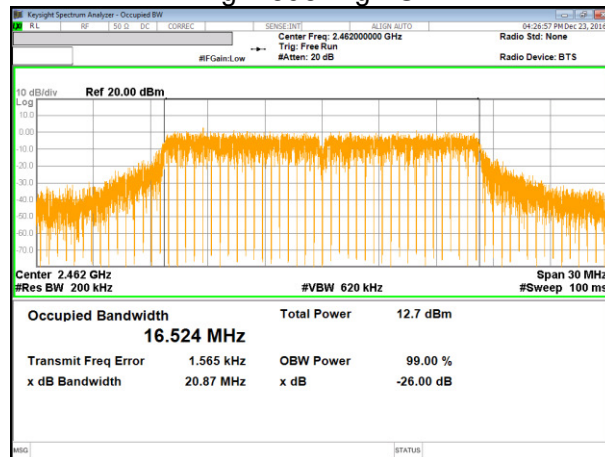
11g Mode Low CH



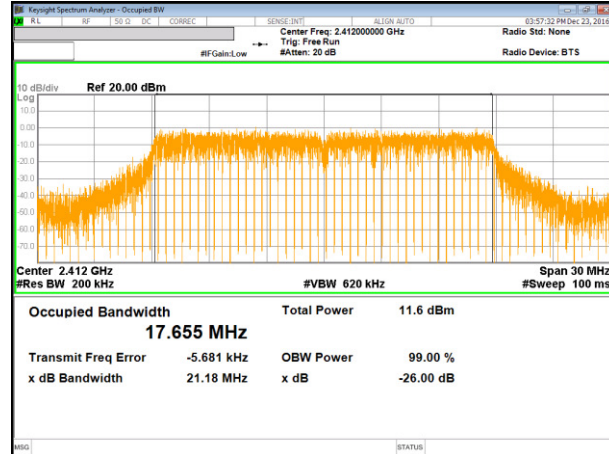
11g Mode Middle CH



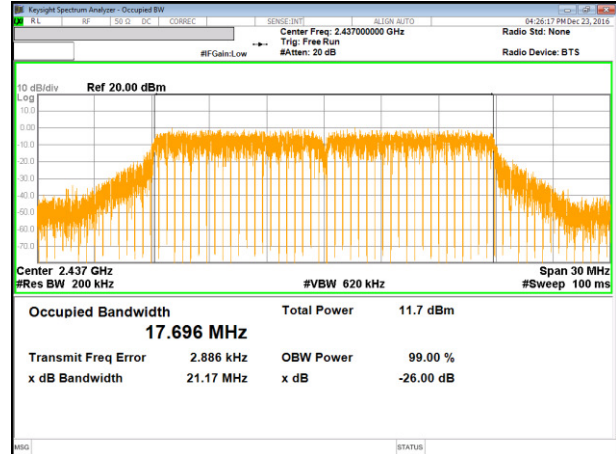
11g Mode High CH



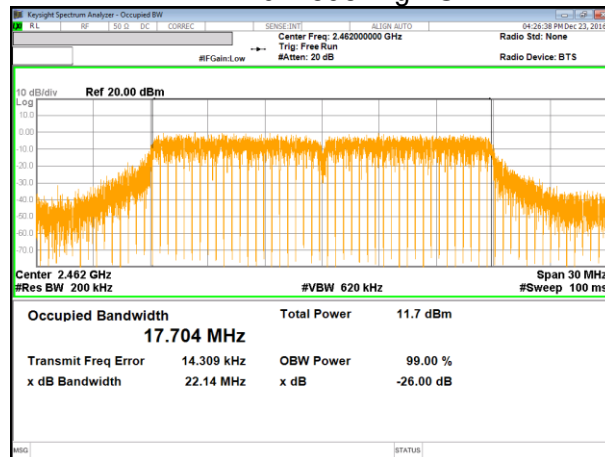
11n HT20 Mode Low CH



11n HT20 Mode Middle CH



11n HT20 Mode High CH



10.3. OUTPUT POWER

LIMITS

FCC §15.247

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.

Duty cycle correction factor is already added to the average output power results for duty cycle factor < 98%. (802.11g, 802.11n mode)

RESULTS

10.3.1. 802.11b MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency [MHz]	Directional Gain Primary [dBi]	FCC Power Limit [dBm]	Max Power [dBm]
Low	2412	1.12	30.00	30.00
Mid	2437	1.12	30.00	30.00
High	2462	1.12	30.00	30.00

Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Power [dBm]	Power Limit [dBm]	Margin [dB]
Low	2412	15.72	15.72	30.00	-14.28
Mid	2437	15.89	15.89	30.00	-14.11
High	2462	15.78	15.78	30.00	-14.22
Worst			15.89	30.00	-14.11

10.3.2. 802.11g MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency [MHz]	Directional Gain Primary [dBi]	FCC Power Limit [dBm]	Max Power [dBm]
Low	2412	1.12	30.00	30.00
Mid	2437	1.12	30.00	30.00
High	2462	1.12	30.00	30.00

Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Power [dBm]	Power Limit [dBm]	Margin [dB]
Low	2412	12.74	12.74	30.00	-17.26
Mid	2437	12.98	12.98	30.00	-17.02
High	2462	12.89	12.89	30.00	-17.11
Worst			12.98	30.00	-17.02

10.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency [MHz]	Directional Gain Primary [dBi]	FCC Power Limit [dBm]	Max Power [dBm]
Low	2412	1.12	30.00	30.00
Mid	2437	1.12	30.00	30.00
High	2462	1.12	30.00	30.00

Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Power [dBm]	Power Limit [dBm]	Margin [dB]
Low	2412	11.85	11.85	30.00	-18.15
Mid	2437	11.99	11.99	30.00	-18.01
High	2462	11.82	11.82	30.00	-18.18
Worst			11.99	30.00	-18.01

10.4. PSD

LIMITS

FCC §15.247

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(802.11 b mode), AVGPS-2(802.11 g/n mode)" under KDB558074 D01 DTS Meas Guidance v03r05.

RESULTS

10.4.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency [MHz]	PSD Meas [dBm]	Duty Factor [dB]	Final PSD [dBm]	Limit [dBm]	Margin [dB]
Low	2412	-15.881	0.00	-15.881	8.00	-23.881
Mid	2437	-15.398	0.00	-15.398	8.00	-23.398
High	2462	-15.867	0.00	-15.867	8.00	-23.867

10.4.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

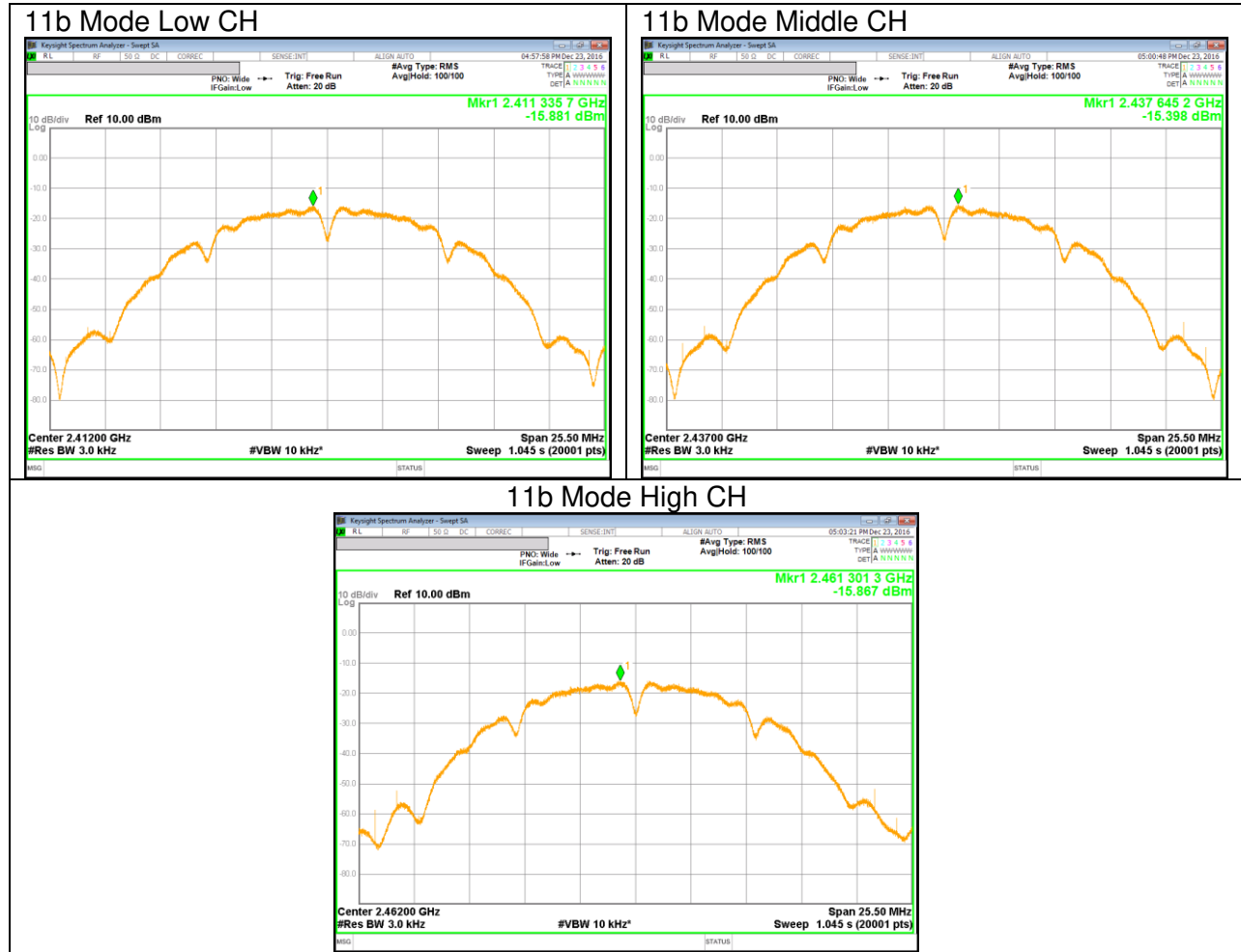
Channel	Frequency [MHz]	PSD Meas [dBm]	Duty Factor [dB]	Final PSD [dBm]	Limit [dBm]	Margin [dB]
Low	2412	-21.511	0.30	-21.211	8.00	-29.511
Mid	2437	-21.001	0.30	-20.701	8.00	-29.001
High	2462	-21.411	0.30	-21.111	8.00	-29.411

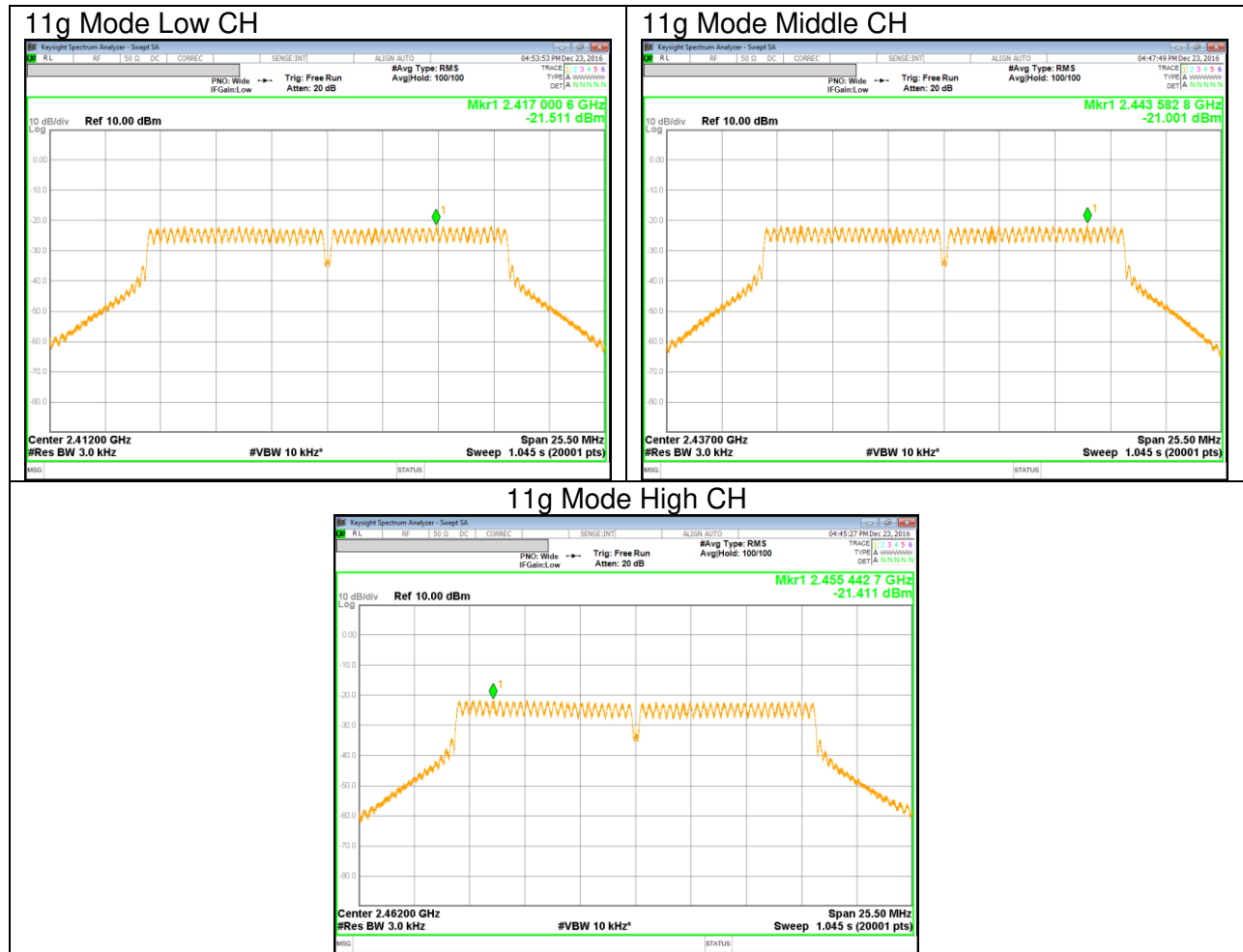
10.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

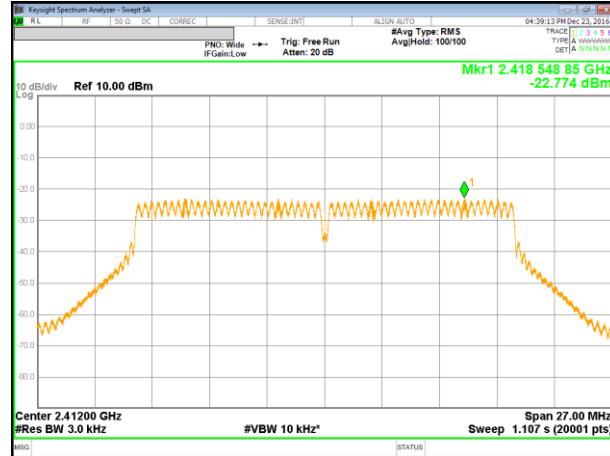
Channel	Frequency [MHz]	PSD Meas [dBm]	Duty Factor [dB]	Final PSD [dBm]	Limit [dBm]	Margin [dB]
Low	2412	-22.774	0.32	-22.454	8.00	-30.774
Mid	2437	-22.422	0.32	-22.102	8.00	-30.422
High	2462	-22.502	0.32	-22.182	8.00	-30.502

10.4.4. PSD PLOTS

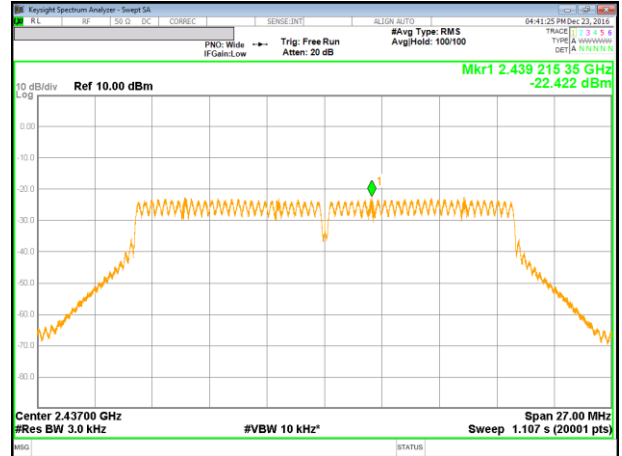




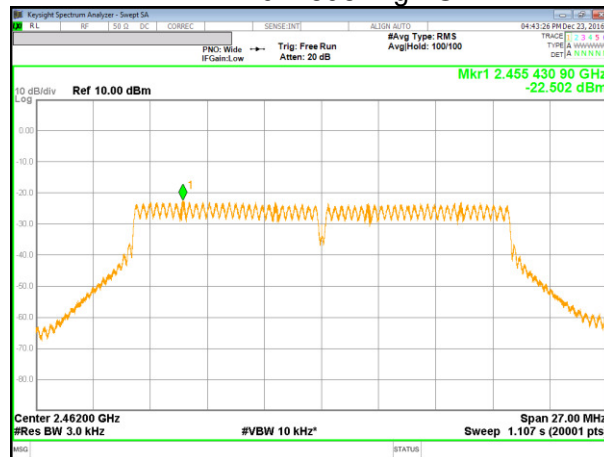
11n HT20 Mode Low CH



11n HT20 Mode Middle CH



11n HT20 Mode High CH



10.5. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

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

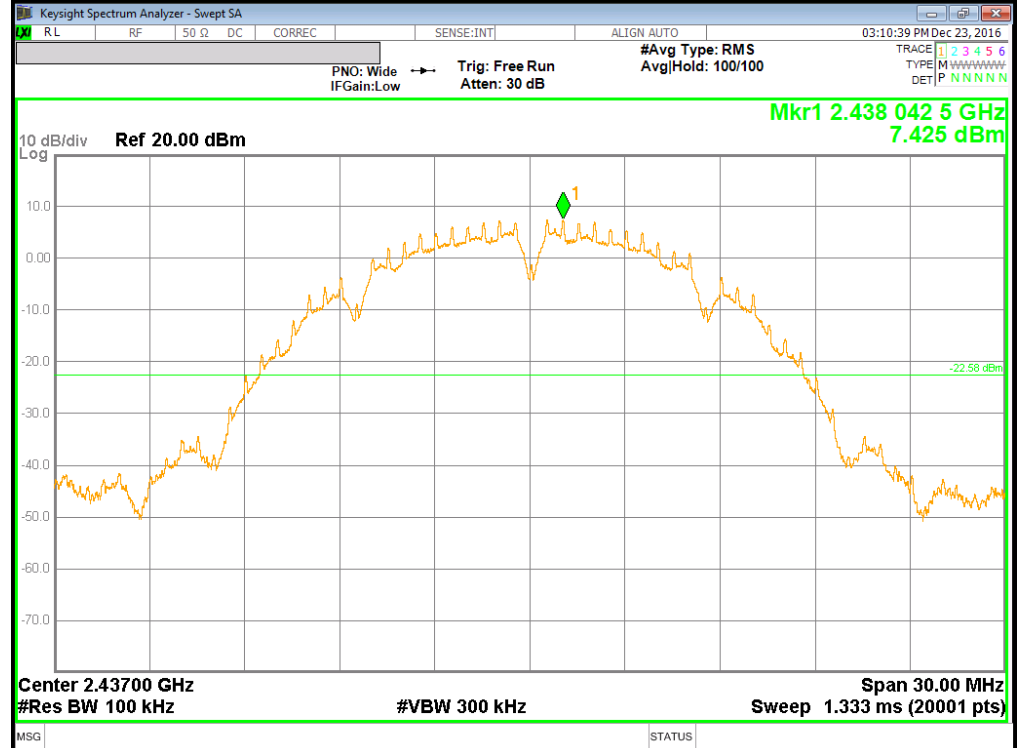
The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

RESULTS

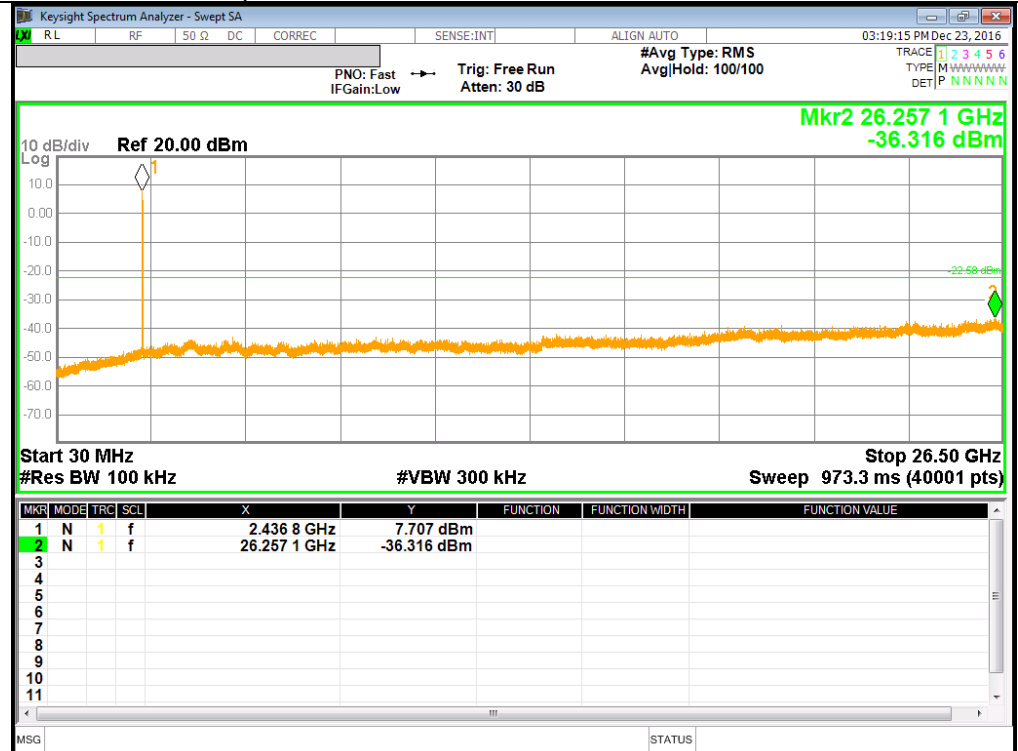
10.5.1. 802.11b MODE IN THE 2.4 GHZ BAND



Middle Channel BandEdge

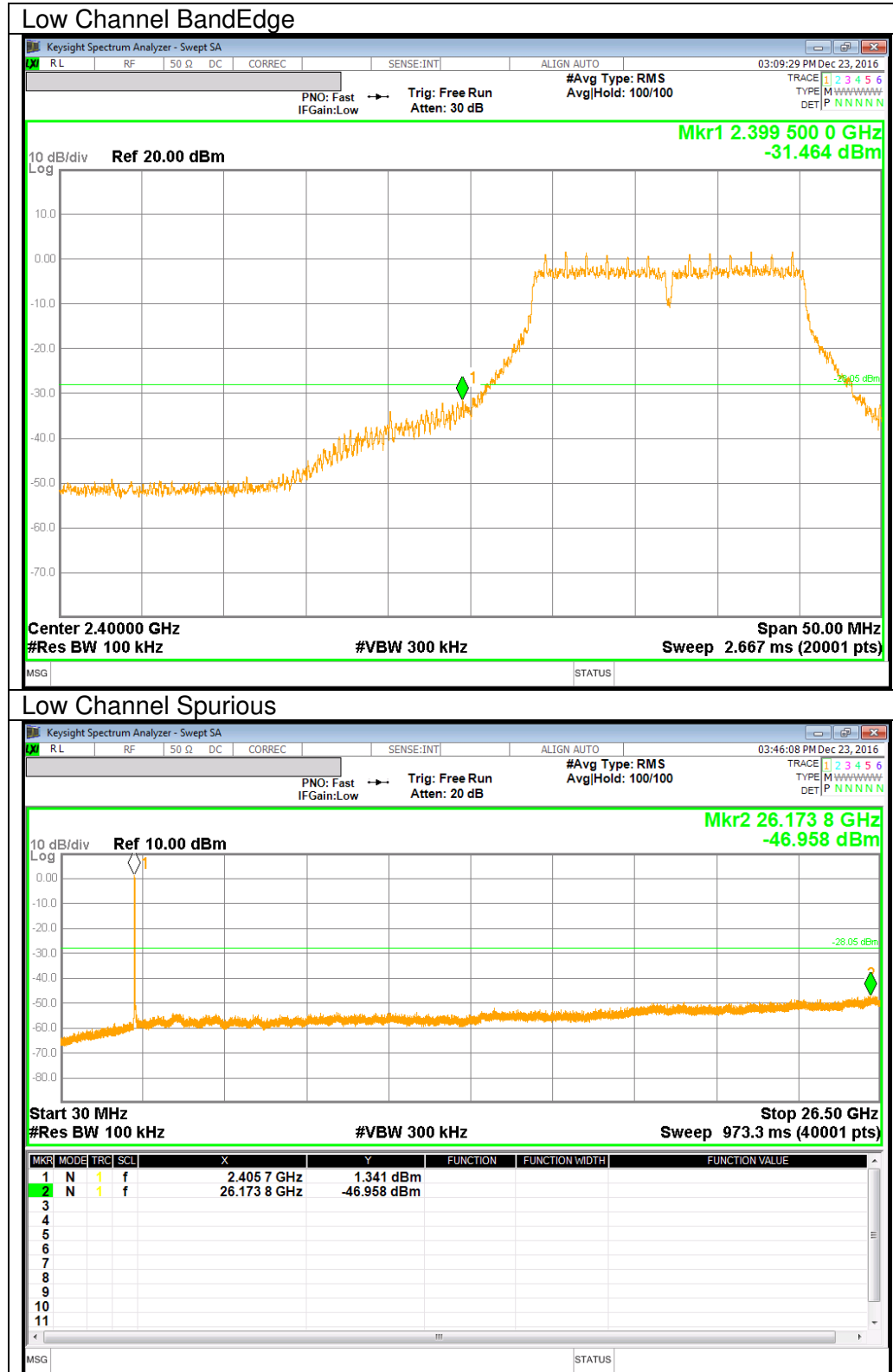


Middle Channel Spurious

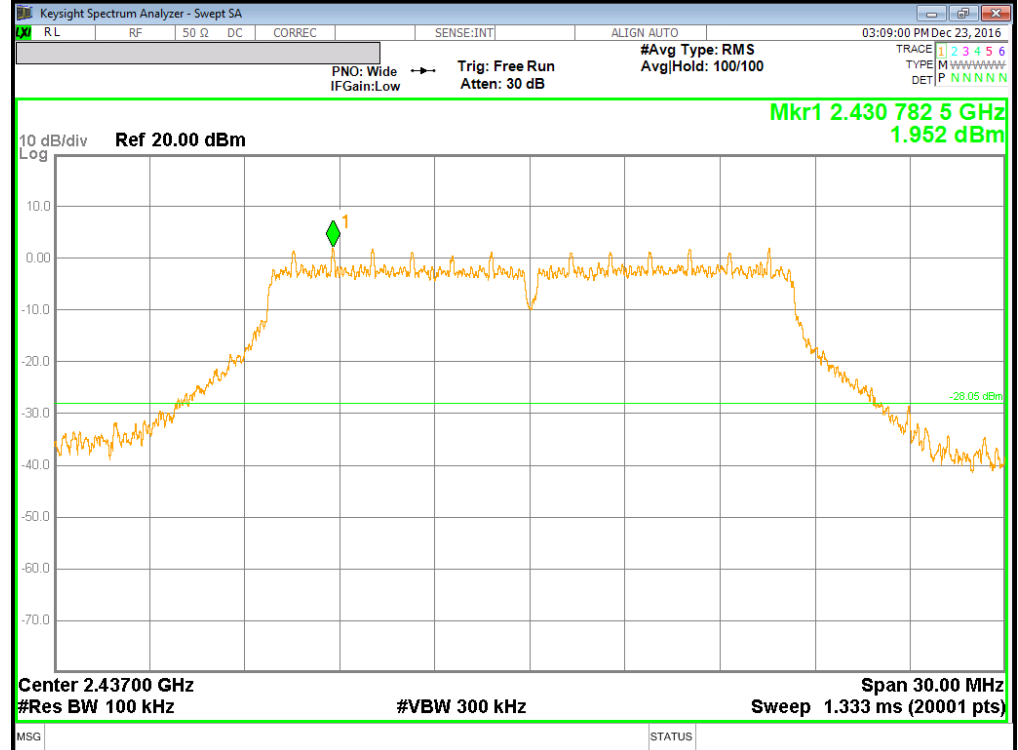




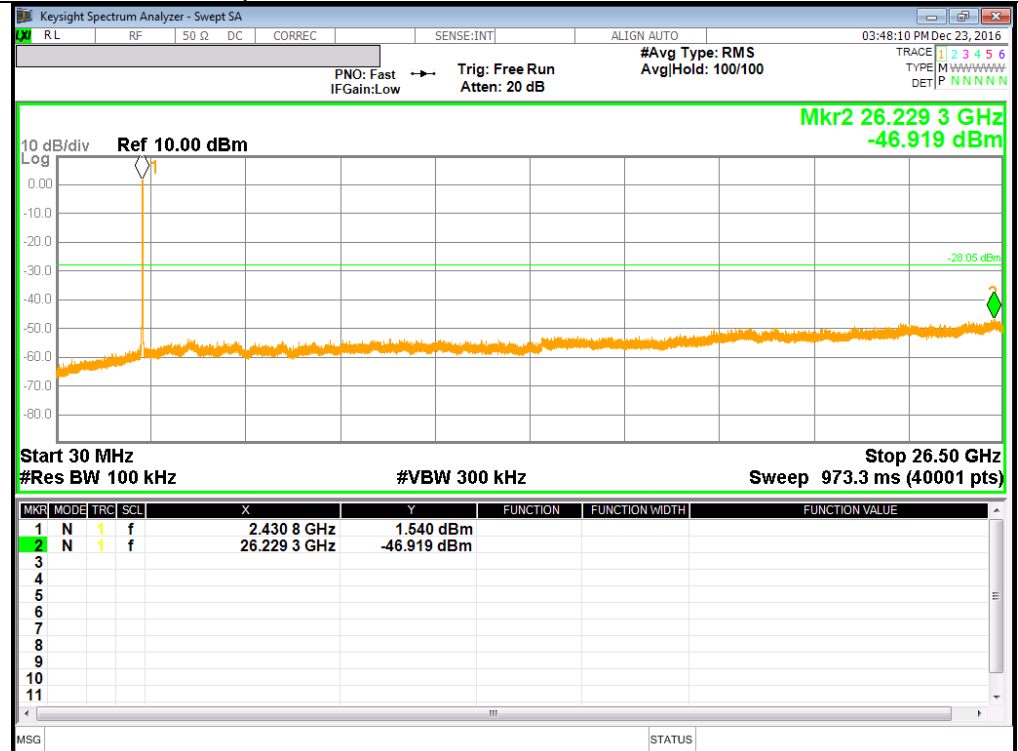
10.5.2. 802.11g MODE IN THE 2.4 GHZ BAND

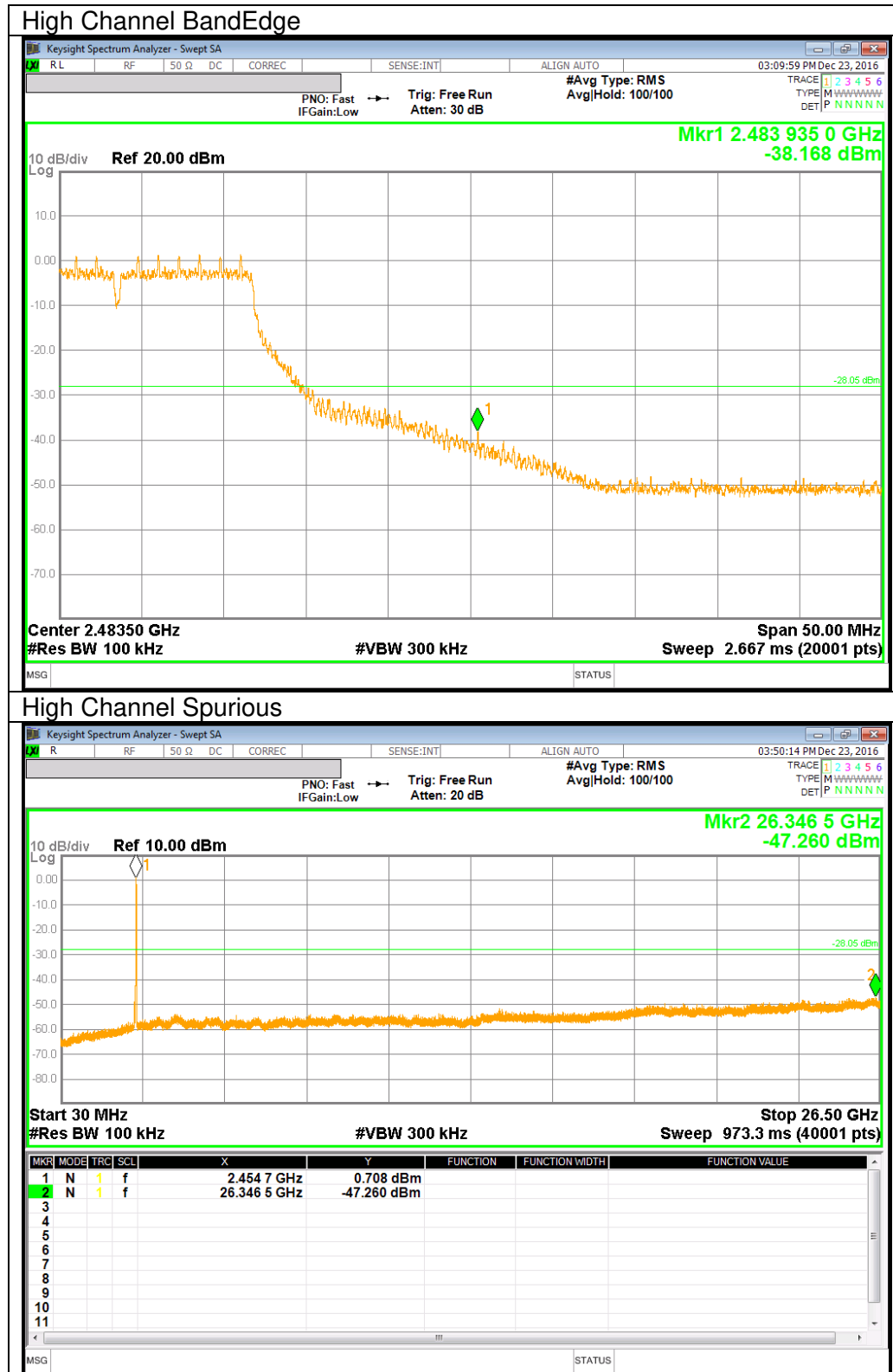


Middle Channel BandEdge

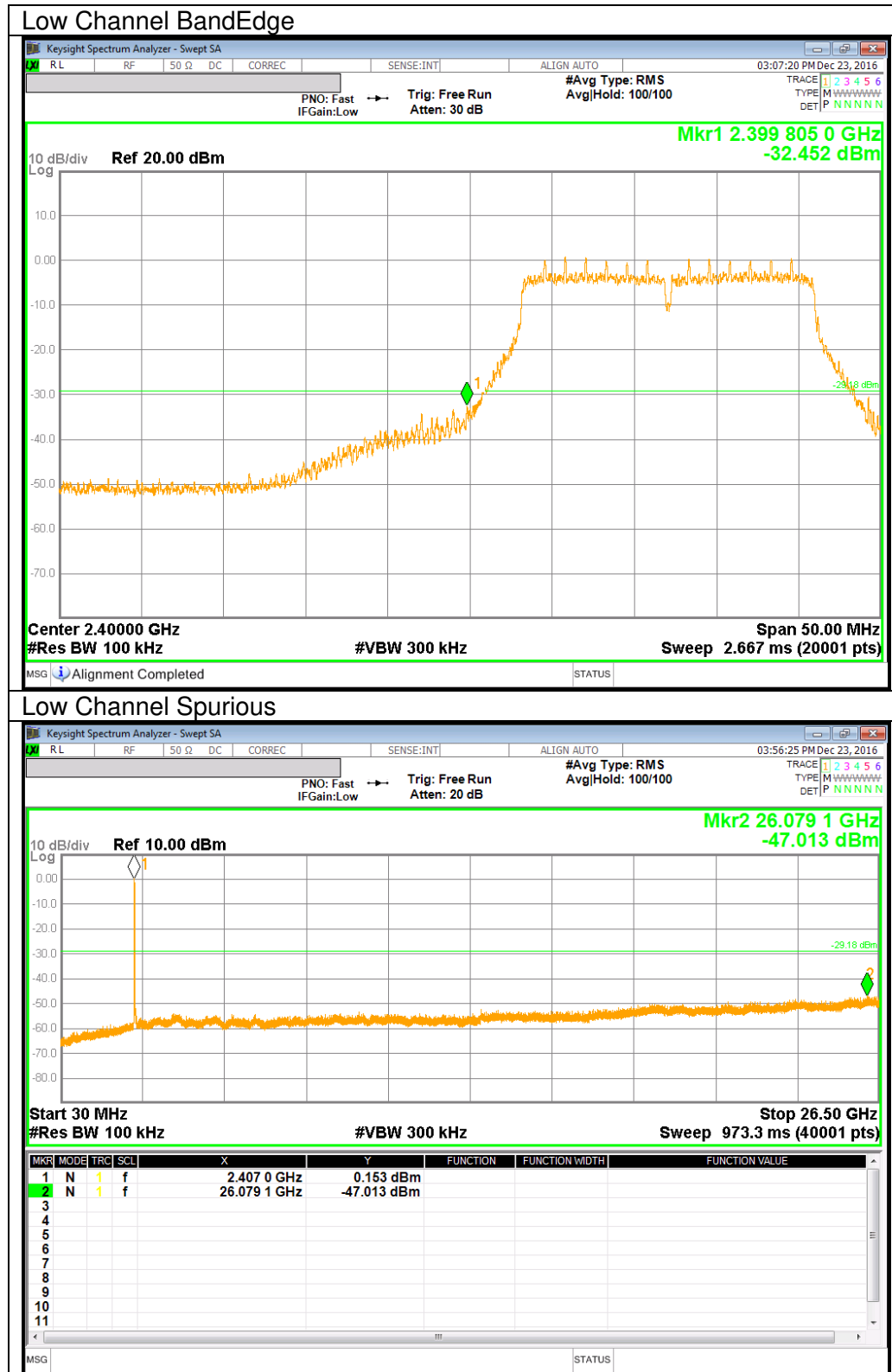


Middle Channel Spurious

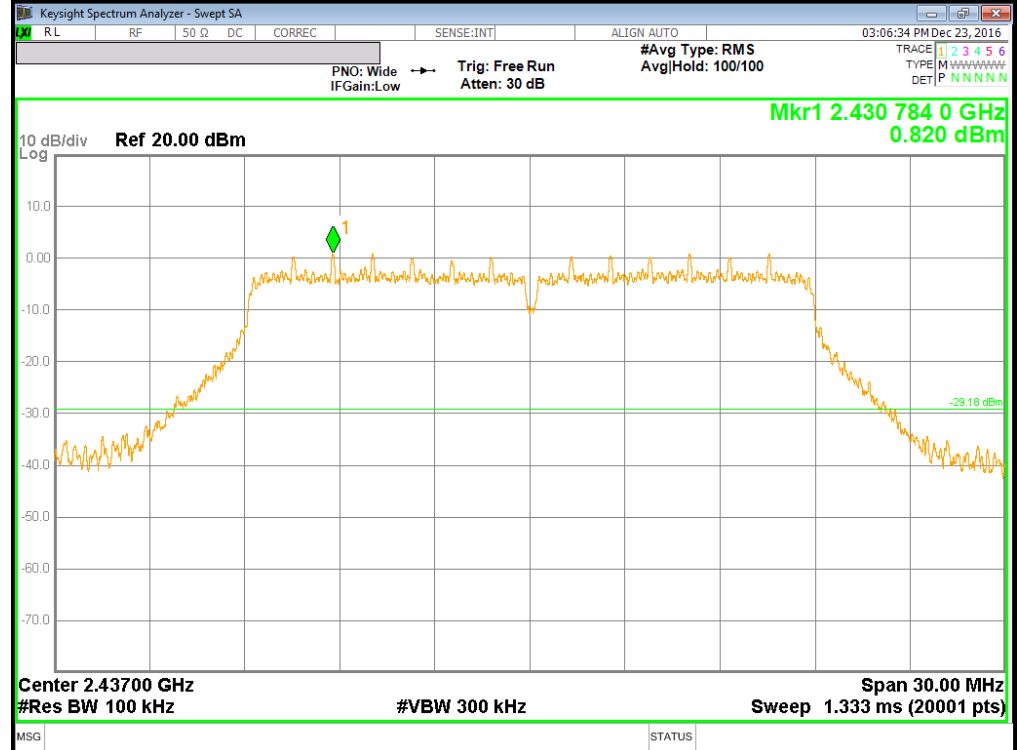




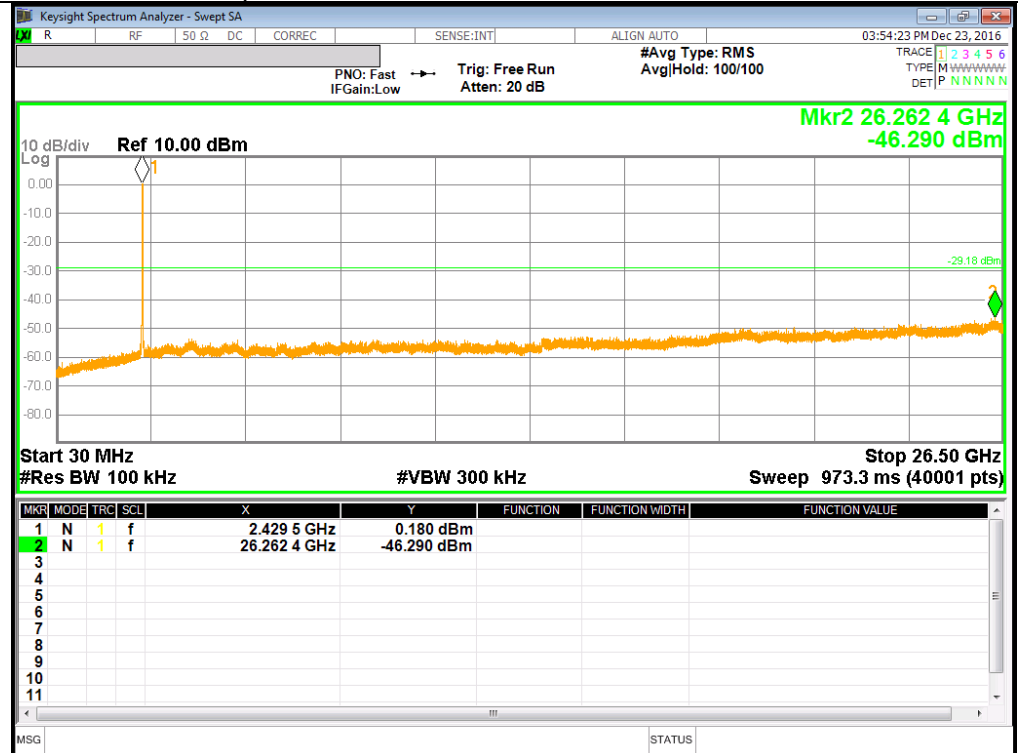
10.5.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

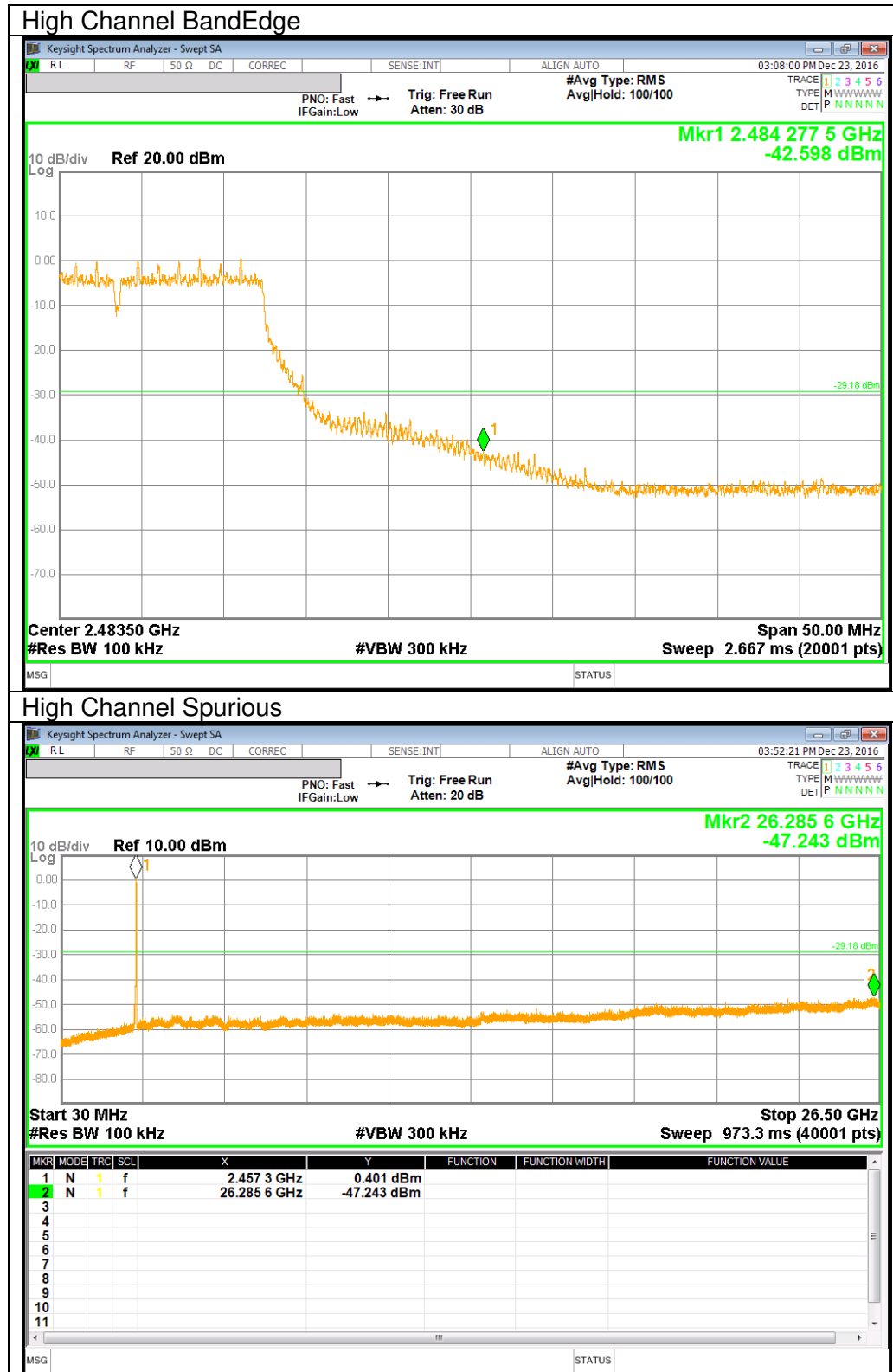


Middle Channel BandEdge



Middle Channel Spurious





11. RADIATED TEST RESULTS

11.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (μV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

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. (Restricted bandedge, Final detection of spurious harmonic emissions)
Duty cycle factor= $10\log(1/x)$ For this sample B mode = 0dB (duty cycle >98%); G mode = 0.3dB; N mode = 0.32dB.

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 KHz for peak measurements.

The spectrum from 1 GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

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.

Note : Emission was pre-scanned from 9KHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

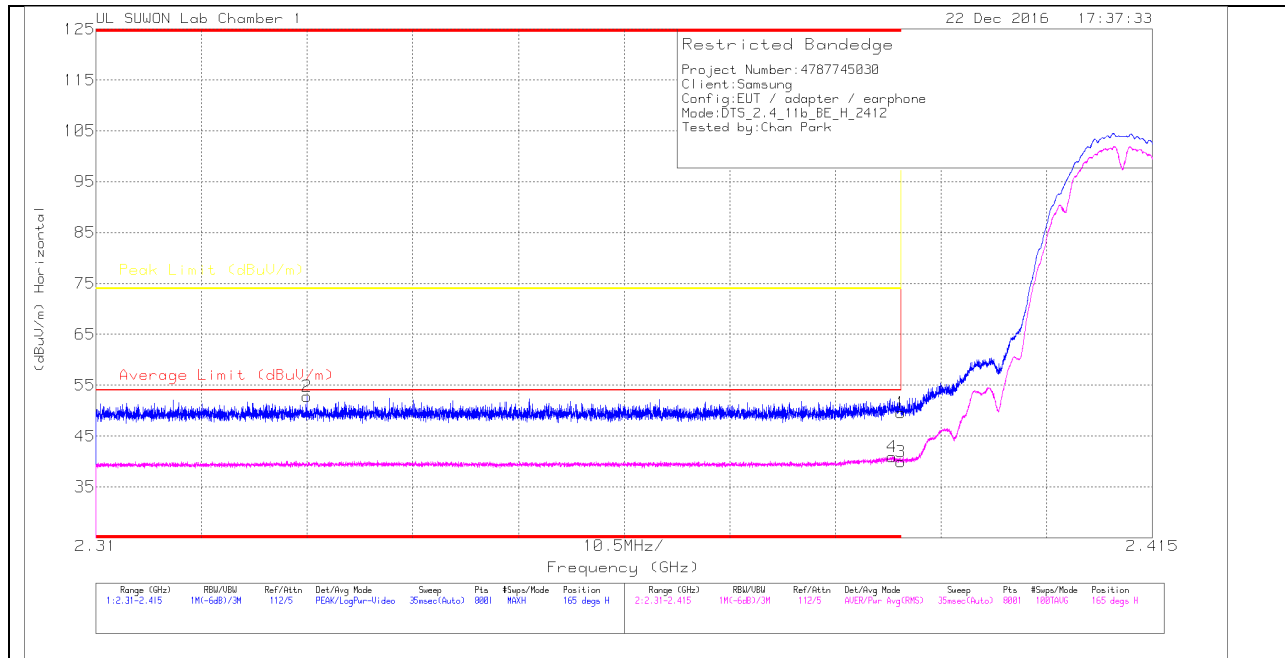
Formula for converting the field strength from uV/m to dBuV/m is:
Limit (dBuV/m) = $20 \log \text{limit (uV/m)}$

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

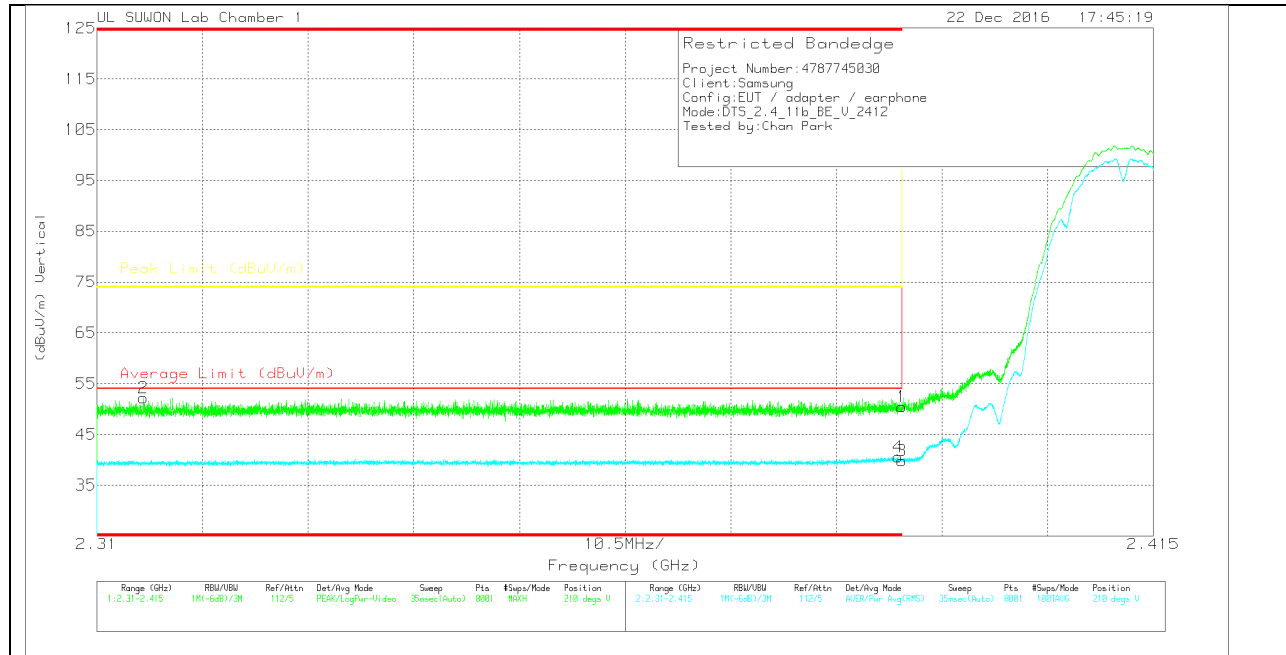
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117/00168 7171_15061 9	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	46.15	Pk		-28.4	0	49.55	-	-	74	-24.45	165	337	H
2	* 2.331	49.58	Pk		-28.5	0	52.78	-	-	74	-21.22	165	337	H
3	* 2.39	36.57	RMS		-28.4	0	39.97	54	-14.03	-	-	165	337	H
4	* 2.389	37.57	RMS		-28.4	0	40.97	54	-13.03	-	-	165	337	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(00168 717)_15061 9	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	* 2.39	47.03	Pk		-28.4	0	50.43	-	-	74	-23.57	210	340	V
2	* 2.315	49.03	Pk		-28.5	0	52.23	-	-	74	-21.77	210	340	V
3	* 2.39	36.37	RMS		-28.4	0	39.77	54	-14.23	-	-	210	340	V
4	* 2.39	37.19	RMS		-28.4	0	40.59	54	-13.41	-	-	210	340	V

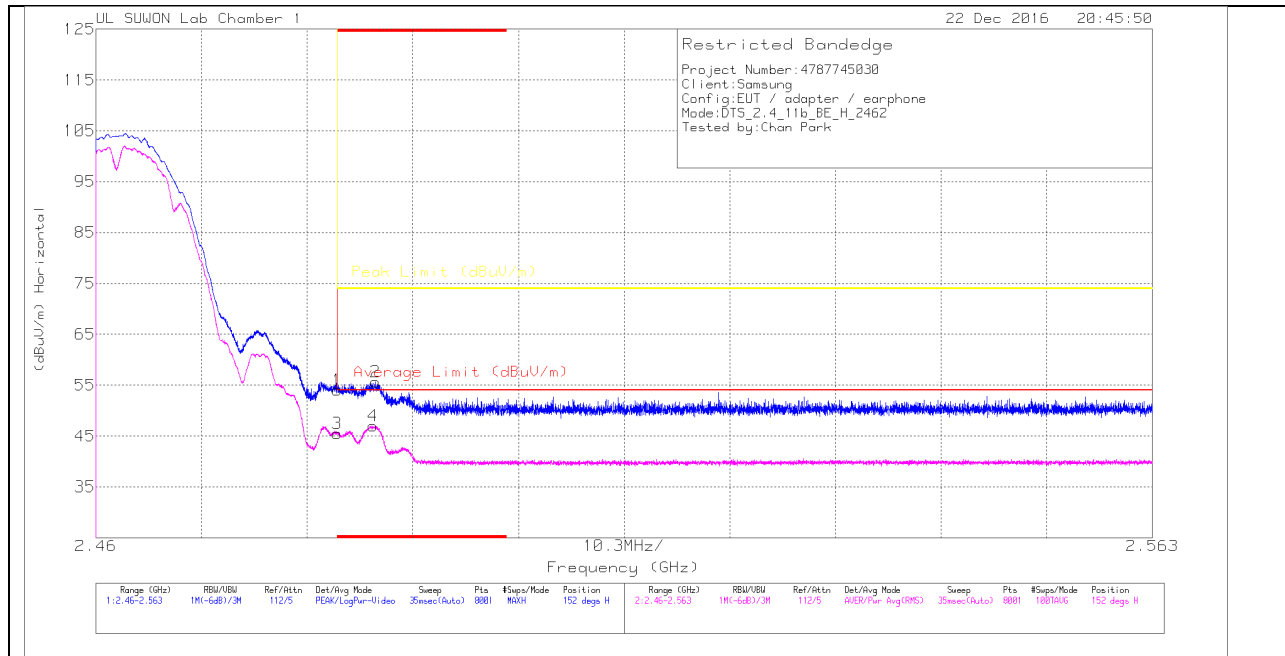
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

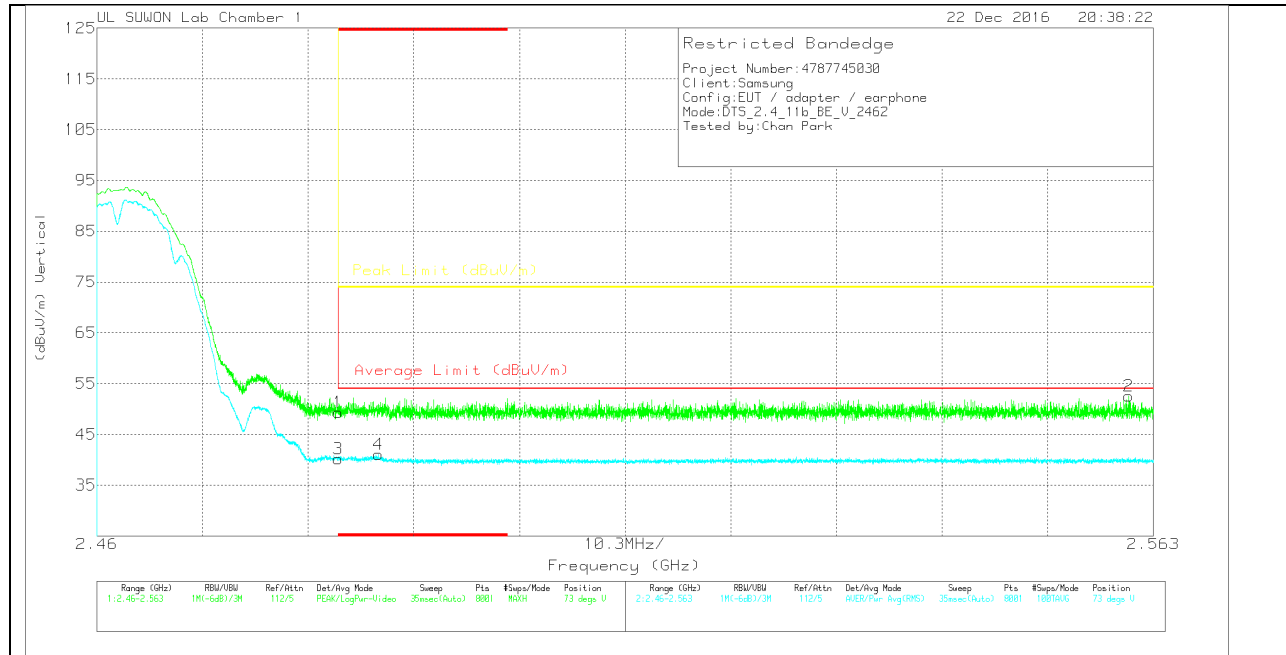
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117/001687 17_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	50.32	Pk	32	-28.3	0	54.02	-	-	74	-19.98	152	139	H
2	* 2.487	51.92	Pk	32	-28.3	0	55.62	-	-	74	-18.38	152	139	H
3	* 2.484	41.79	RMS	32	-28.3	0	45.49	54	-8.51	-	-	152	139	H
4	* 2.487	43.31	RMS	32	-28.3	0	47.01	54	-6.99	-	-	152	139	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	3117/00168 717/_15061 9	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	* 2.484	45.6	Pk	32	-28.3	0	49.3	-	-	74	-24.7	73	247	V
2	2.561	48.86	Pk	32	-28.3	0	52.56	-	-	74	-21.44	73	247	V
3	* 2.484	36.46	RMS	32	-28.3	0	40.16	54	-13.84	-	-	73	247	V
4	* 2.487	37.36	RMS	32	-28.3	0	41.06	54	-12.94	-	-	73	247	V

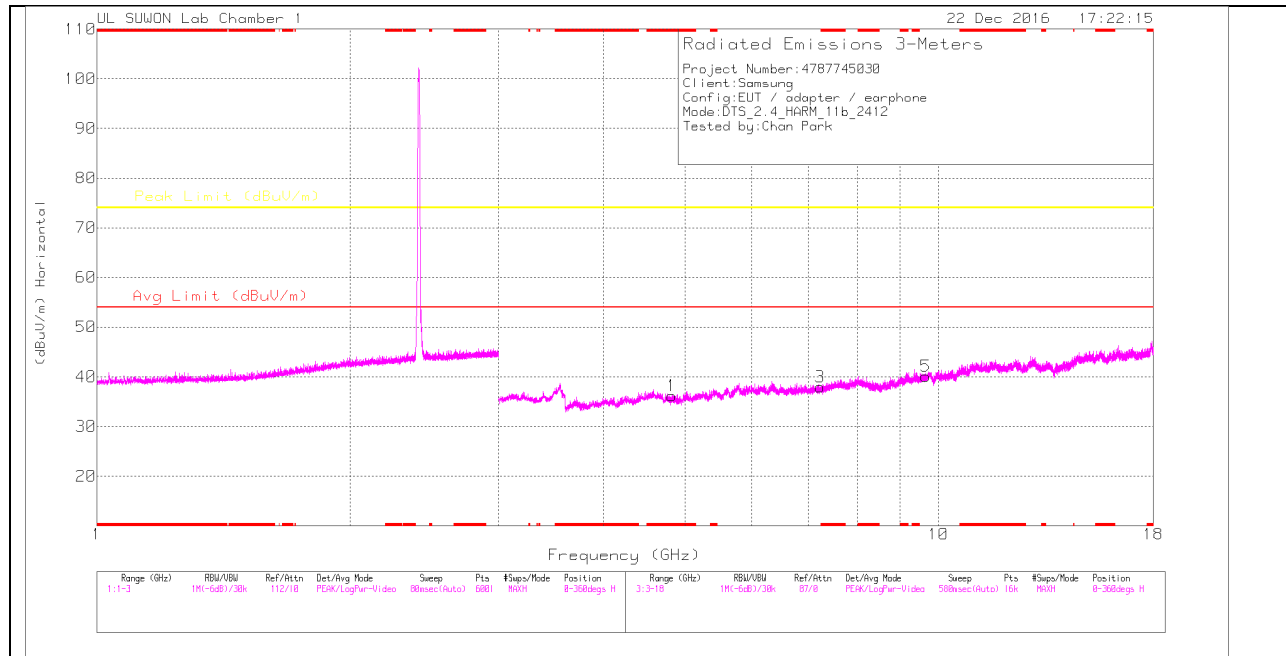
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

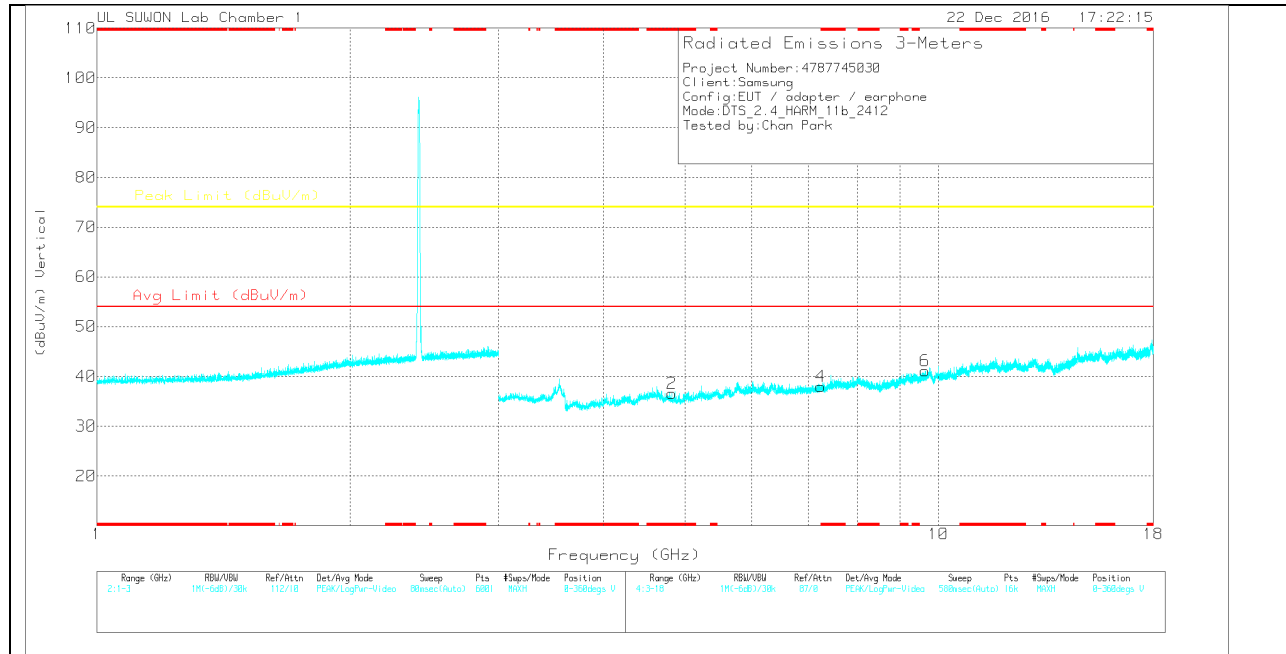
RMS - RMS detection

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

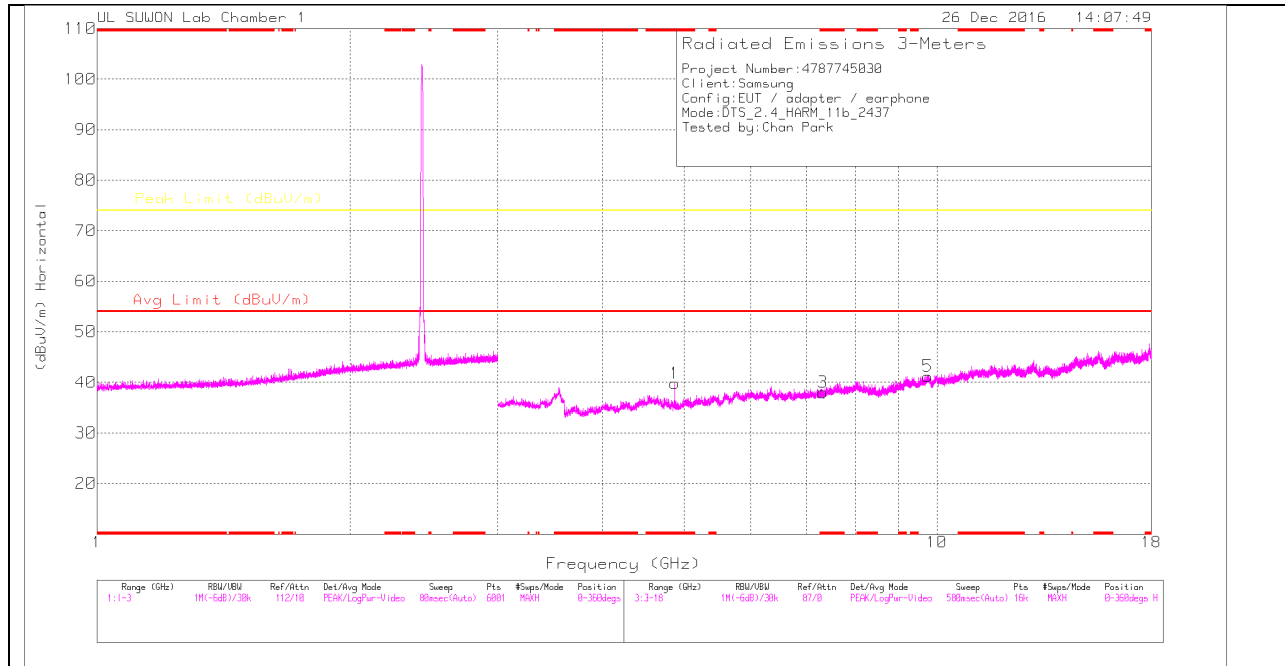
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[001687 17]_150619	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.823	35.73	Pk	34	-33.5	0	36.23	-	-	74	-37.77	0-360	150	H
3	7.234	33.08	Pk	35.7	-30.8	0	37.98	-	-	74	-36.02	0-360	250	H
5	9.65	30.36	Pk	37.1	-27.4	0	40.06	-	-	74	-33.94	0-360	150	H
2	* 4.823	36.09	Pk	34	-33.5	0	36.59	-	-	74	-37.41	0-360	250	V
4	7.241	32.94	Pk	35.7	-30.7	0	37.94	-	-	74	-36.06	0-360	150	V
6	9.647	31.41	Pk	37.1	-27.4	0	41.11	-	-	74	-32.89	0-360	150	V

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

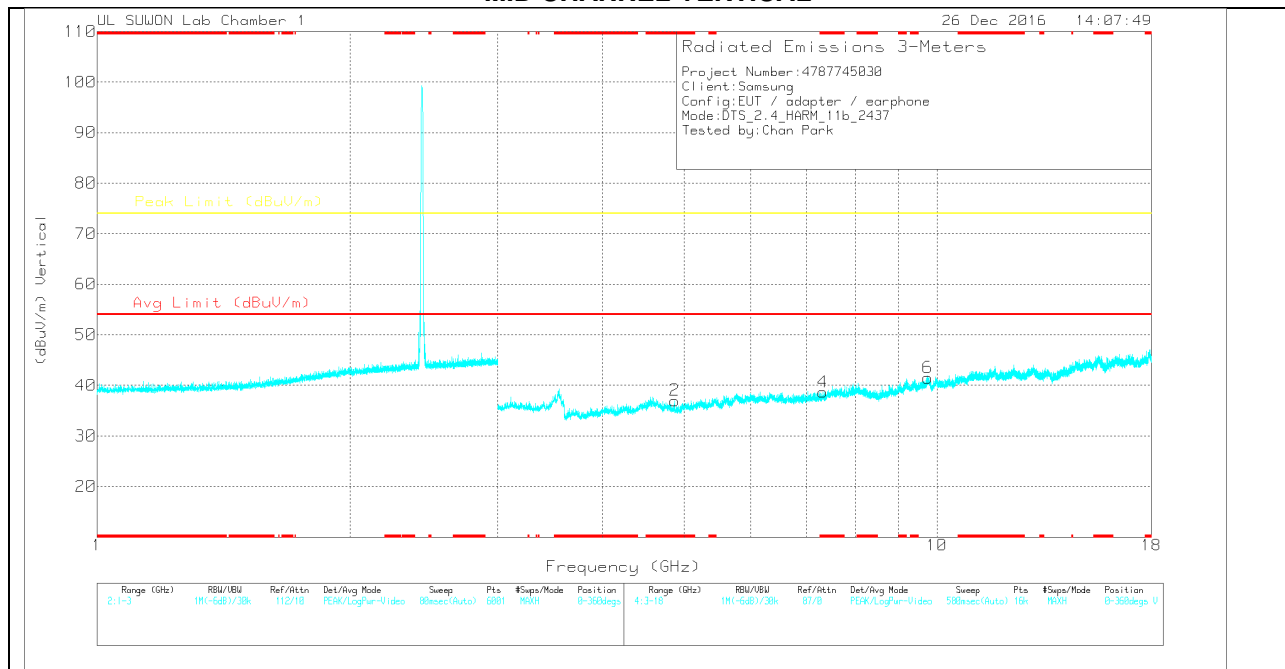
Pk – Peak detector

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

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(00168717)_150619	3GHz_HP[dB]	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	39.39	Pk	34	-33.6	0	39.79	-	-	74	-34.21	0-360	250	H
3	* 7.311	32.81	Pk	35.7	-30.5	0	38.01	-	-	74	-35.99	0-360	250	H
5	9.749	30.78	Pk	37.2	-26.8	0	41.18	-	-	74	-32.82	0-360	250	H
2	* 4.874	36.59	Pk	34	-33.6	0	36.99	-	-	74	-37.01	0-360	250	V
4	* 7.314	33.35	Pk	35.8	-30.5	0	38.65	-	-	74	-35.35	0-360	250	V
6	9.748	31.09	Pk	37.2	-26.8	0	41.49	-	-	74	-32.51	0-360	150	V

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

Pk – Peak detector

Radiated Emissions

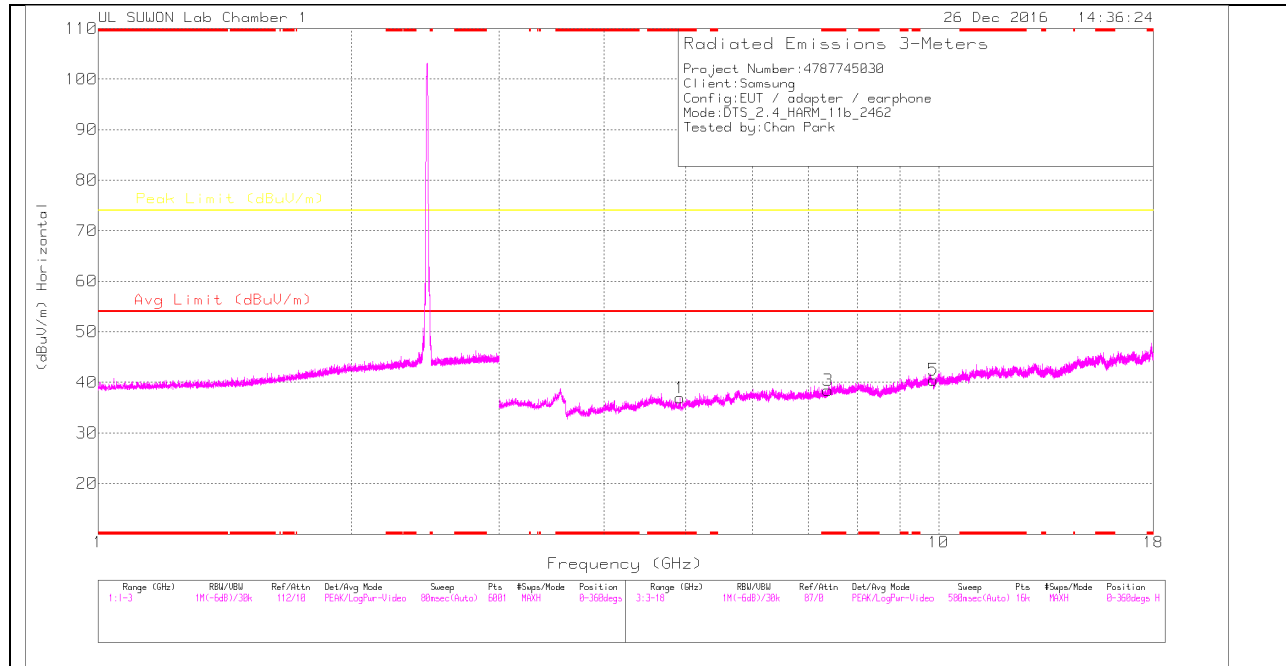
Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168717)_150619	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.874	48.78	PK2	34	-33.6	0	49.18	-	-	74	-24.82	129	108	H
* 4.874	35.67	MAv1	34	-33.6	0	36.07	54	-17.93	-	-	129	108	H
* 4.874	47.36	PK2	34	-33.6	0	47.76	-	-	74	-26.24	60	320	V
* 4.874	35.33	MAv1	34	-33.6	0	35.73	54	-18.27	-	-	60	320	V

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

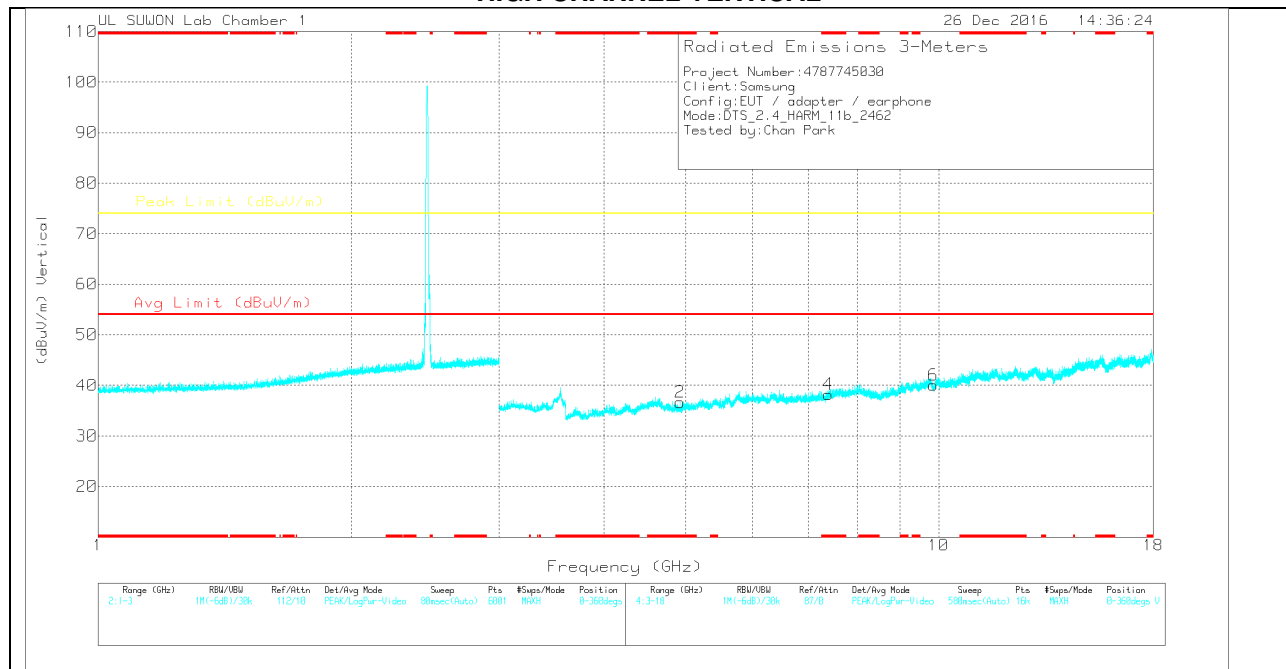
PK2 - KDB558074 Method: Maximum Peak

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[001687 17]_150619	3GHz_HP[dB]	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	36.33	Pk	34	-33.4	0	36.93	-	-	74	-37.07	0-360	250	H
3	* 7.385	33.21	Pk	35.8	-30.6	0	38.41	-	-	74	-35.59	0-360	150	H
5	9.851	30.67	Pk	37.3	-27.5	0	40.47	-	-	74	-33.53	0-360	150	H
2	* 4.924	36.04	Pk	34	-33.4	0	36.64	-	-	74	-37.36	0-360	150	V
4	* 7.387	32.91	Pk	35.8	-30.5	0	38.21	-	-	74	-35.79	0-360	150	V
6	9.848	30.25	Pk	37.3	-27.5	0	40.05	-	-	74	-33.95	0-360	250	V

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

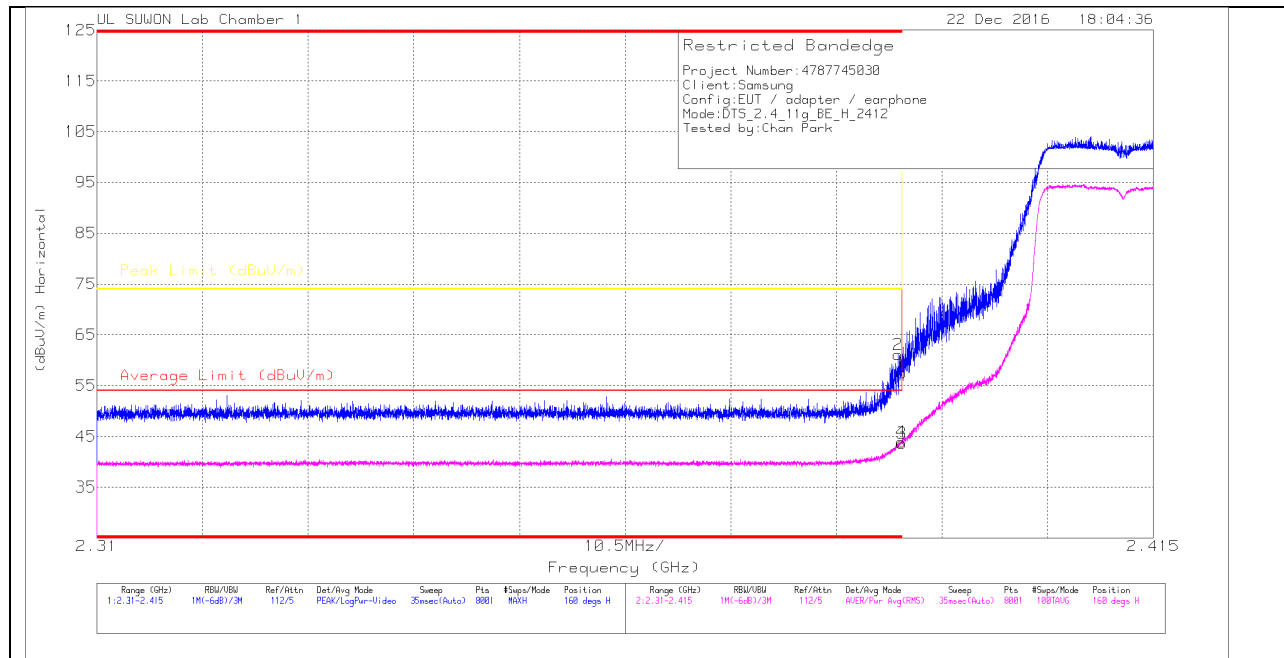
Pk – Peak detector

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

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

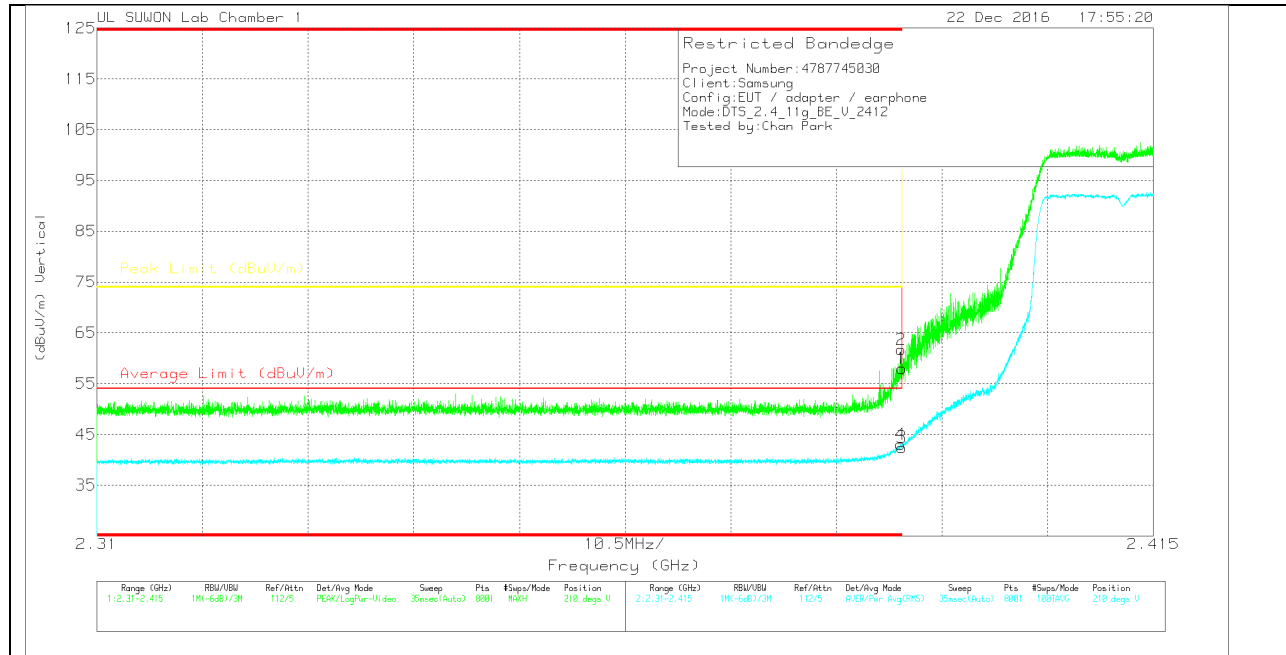
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117/00168 717_15061 9	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.07	Pk		-28.4	0	57.47	-	-	74	-16.53	160	335	H
2	* 2.39	57.67	Pk		-28.4	0	61.07	-	-	74	-12.93	160	335	H
3	* 2.39	39.97	RMS		-28.4	.3	43.67	54	-10.33	-	-	160	335	H
4	* 2.39	40.21	RMS		-28.4	.3	43.91	54	-10.09	-	-	160	335	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(00168 717)_15061 9	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	* 2.39	54.55	Pk	31.8	-28.4	0	57.95	-	-	74	-16.05	210	340	V
2	* 2.39	58.34	Pk	31.8	-28.4	0	61.74	-	-	74	-12.26	210	340	V
3	* 2.39	38.77	RMS	31.8	-28.4	.3	42.47	54	-11.53	-	-	210	340	V
4	* 2.39	39.32	RMS	31.8	-28.4	.3	43.02	54	-10.98	-	-	210	340	V

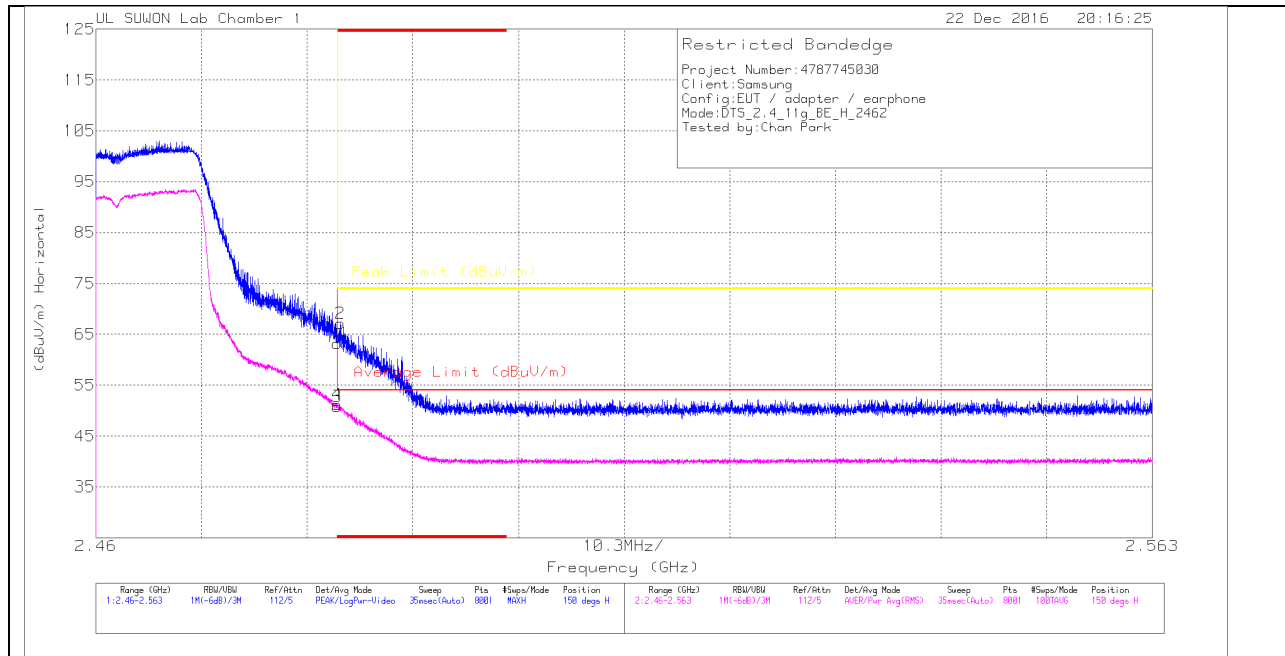
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

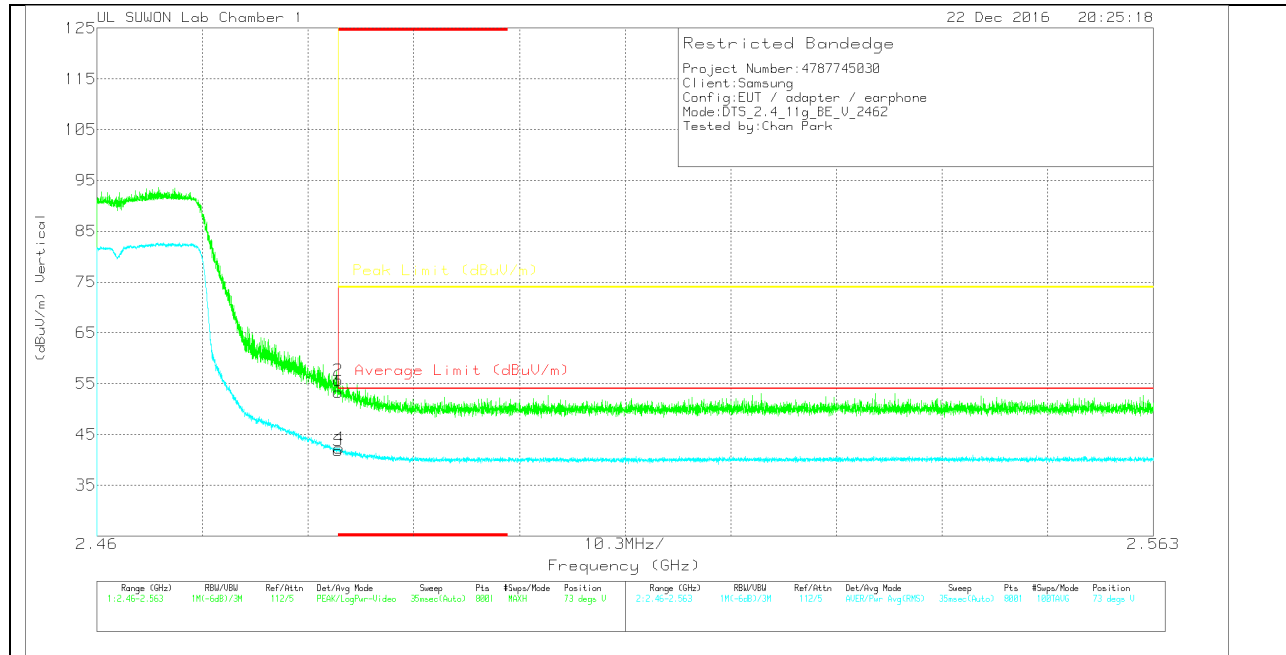
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117/001687 171_150619	10dB(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	59.46	Pk	32	-28.3	0	63.16	-	-	74	-10.84	150	139	H
2	* 2.484	63.5	Pk	32	-28.3	0	67.2	-	-	74	-6.8	150	139	H
3	* 2.484	46.82	RMS	32	-28.3	.3	50.82	54	-3.18	-	-	150	139	H
4	* 2.484	47.22	RMS	32	-28.3	.3	51.22	54	-2.78	-	-	150	139	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(00168 717)_15061 9	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	* 2.484	49.61	Pk	32	-28.3	0	53.31	-	-	74	-20.69	73	247	V
2	* 2.484	51.99	Pk	32	-28.3	0	55.69	-	-	74	-18.31	73	247	V
3	* 2.484	37.78	RMS	32	-28.3	.3	41.78	54	-12.22	-	-	73	247	V
4	* 2.484	38.27	RMS	32	-28.3	.3	42.27	54	-11.73	-	-	73	247	V

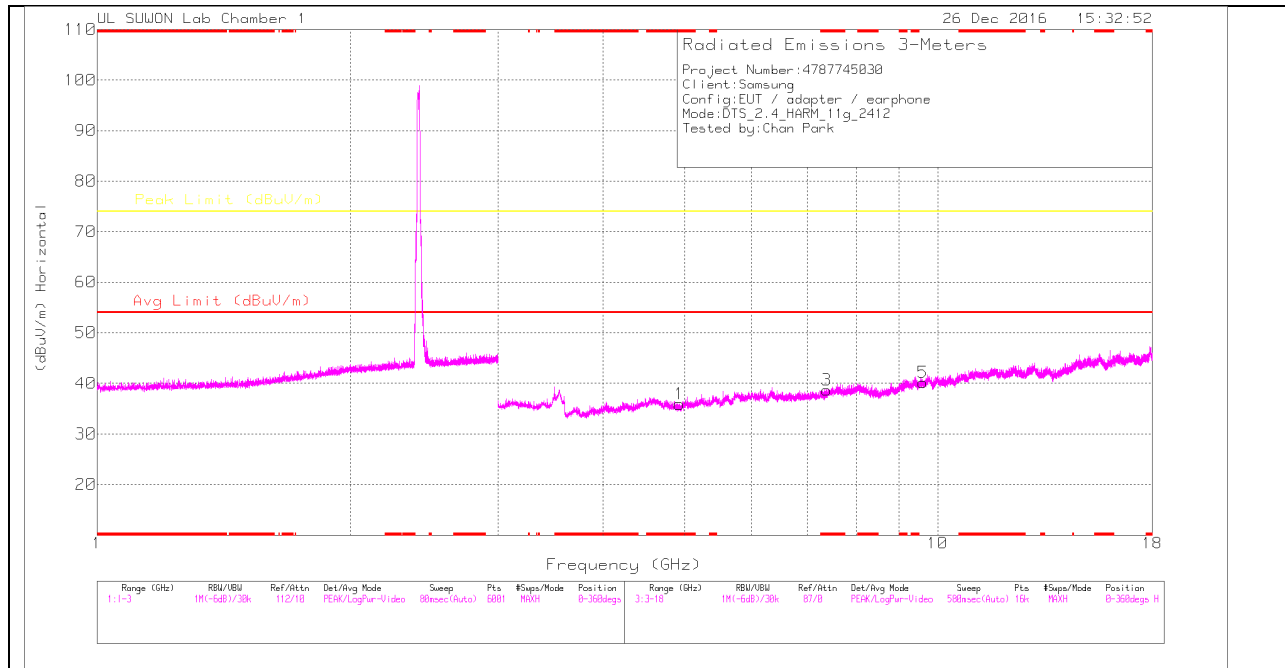
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

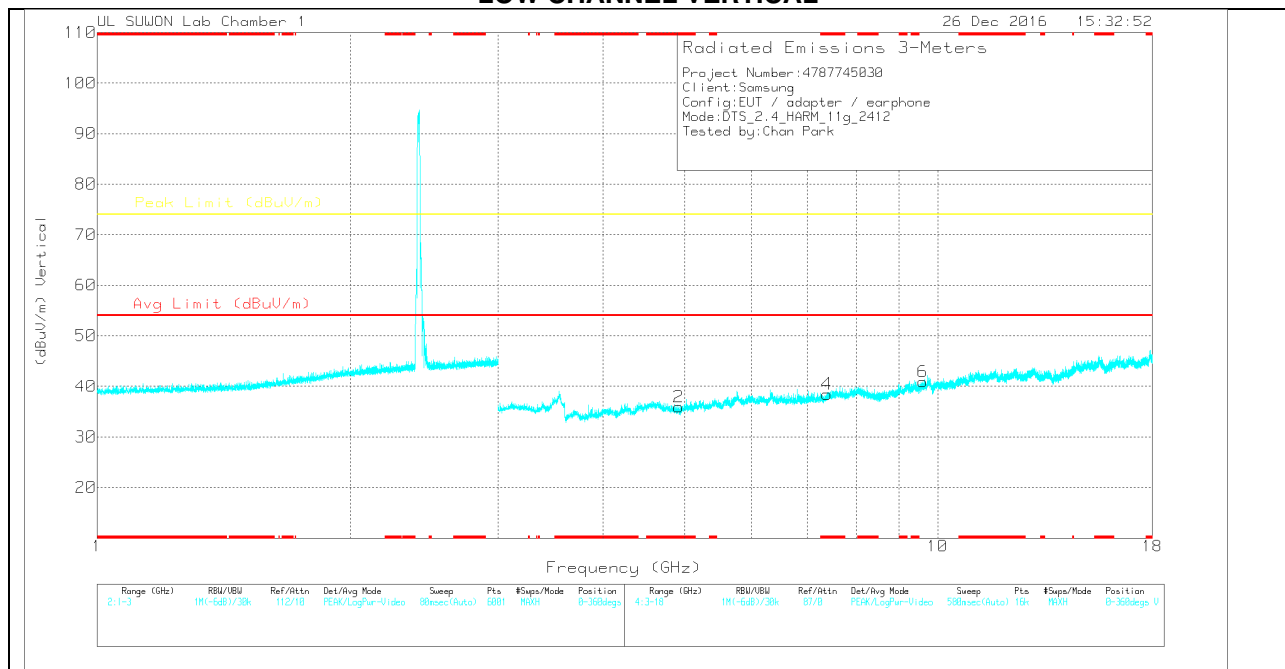
RMS - RMS detection

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

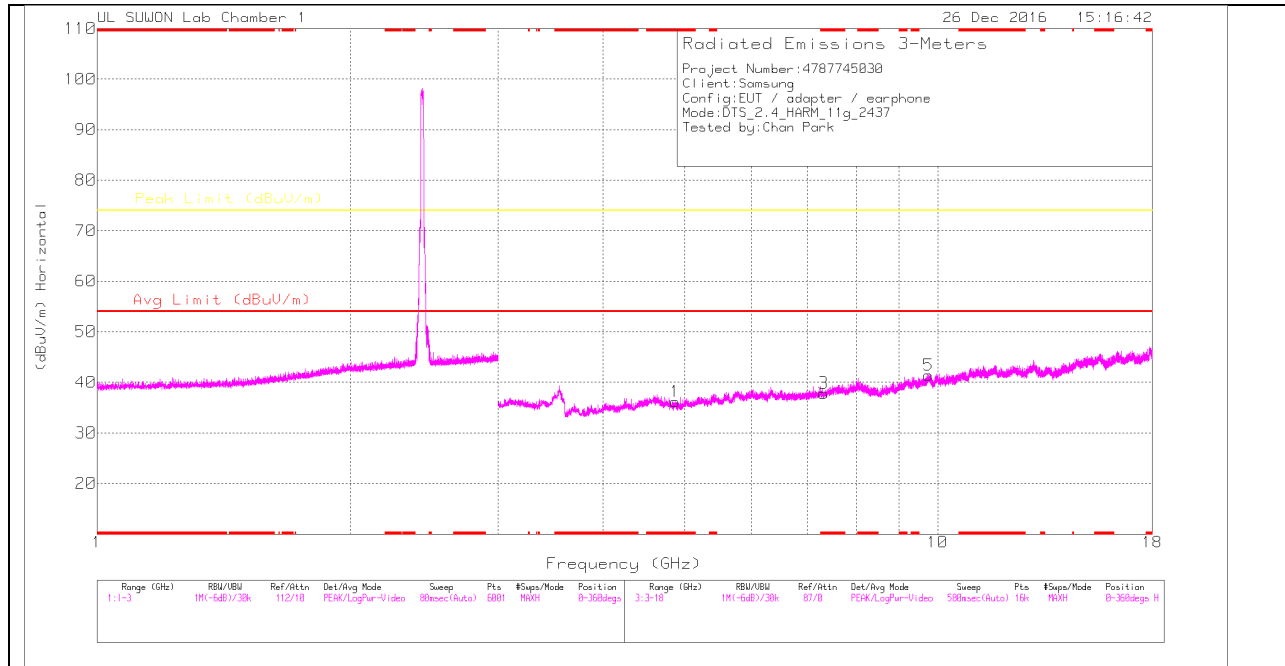
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[001687 17]_150619	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.928	35.29	Pk	34	-33.4	0	35.89	-	-	74	-38.11	0-360	150	H
3	* 7.383	33.46	Pk	35.8	-30.6	0	38.66	-	-	74	-35.34	0-360	250	H
5	9.601	30.47	Pk	37	-27.3	0	40.17	-	-	74	-33.83	0-360	150	H
2	* 4.92	35.33	Pk	34	-33.4	0	35.93	-	-	74	-38.07	0-360	250	V
4	* 7.384	33.26	Pk	35.8	-30.6	0	38.46	-	-	74	-35.54	0-360	250	V
6	9.607	31.3	Pk	37	-27.4	0	40.9	-	-	74	-33.1	0-360	150	V

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

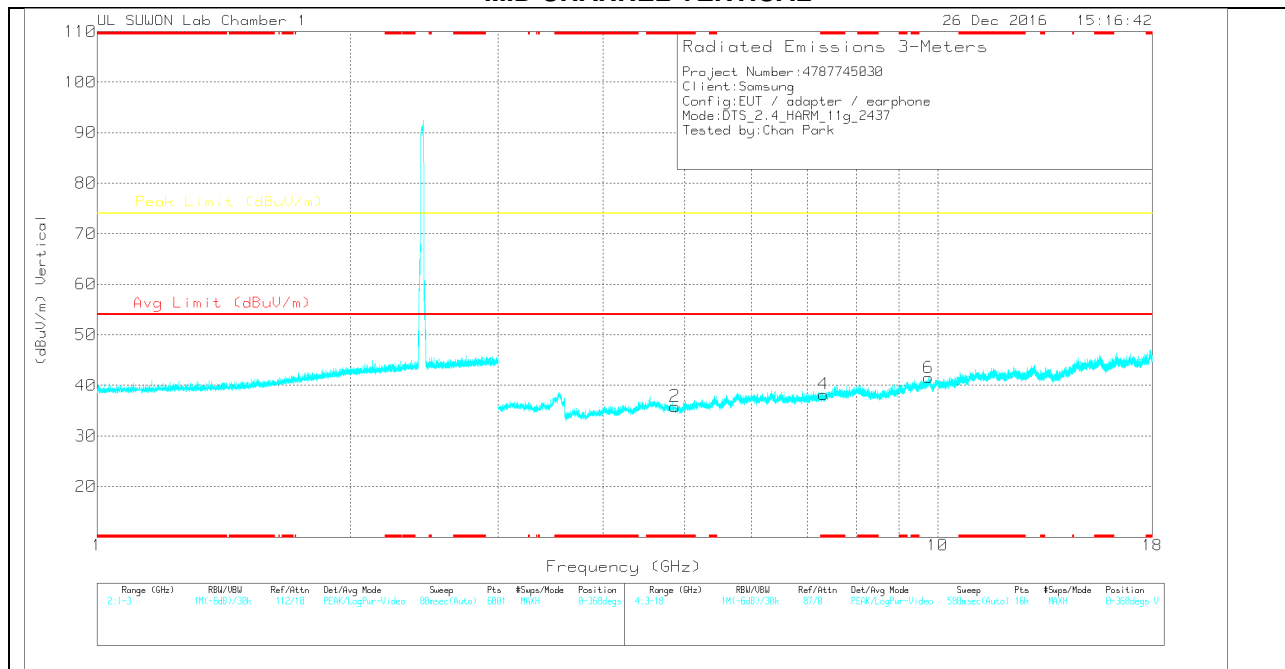
Pk – Peak detector

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

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

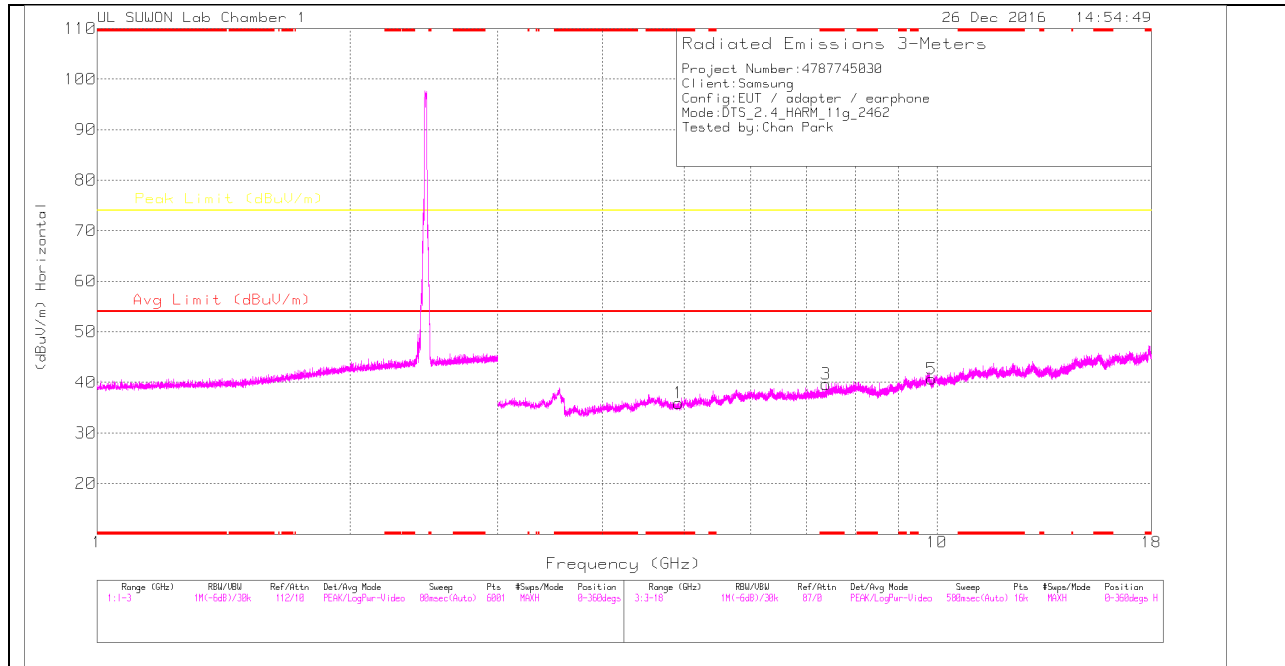
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[001687 17]_150619	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.876	35.78	Pk	34	-33.6	0	36.18	-	-	74	-37.82	0-360	250	H
3	* 7.311	32.63	Pk	35.7	-30.5	0	37.83	-	-	74	-36.17	0-360	250	H
5	9.75	31	Pk	37.2	-26.8	0	41.4	-	-	74	-32.6	0-360	250	H
2	* 4.869	35.45	Pk	34	-33.6	0	35.85	-	-	74	-38.15	0-360	250	V
4	* 7.313	32.94	Pk	35.8	-30.5	0	38.24	-	-	74	-35.76	0-360	150	V
6	9.748	31.12	Pk	37.2	-26.8	0	41.52	-	-	74	-32.48	0-360	250	V

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

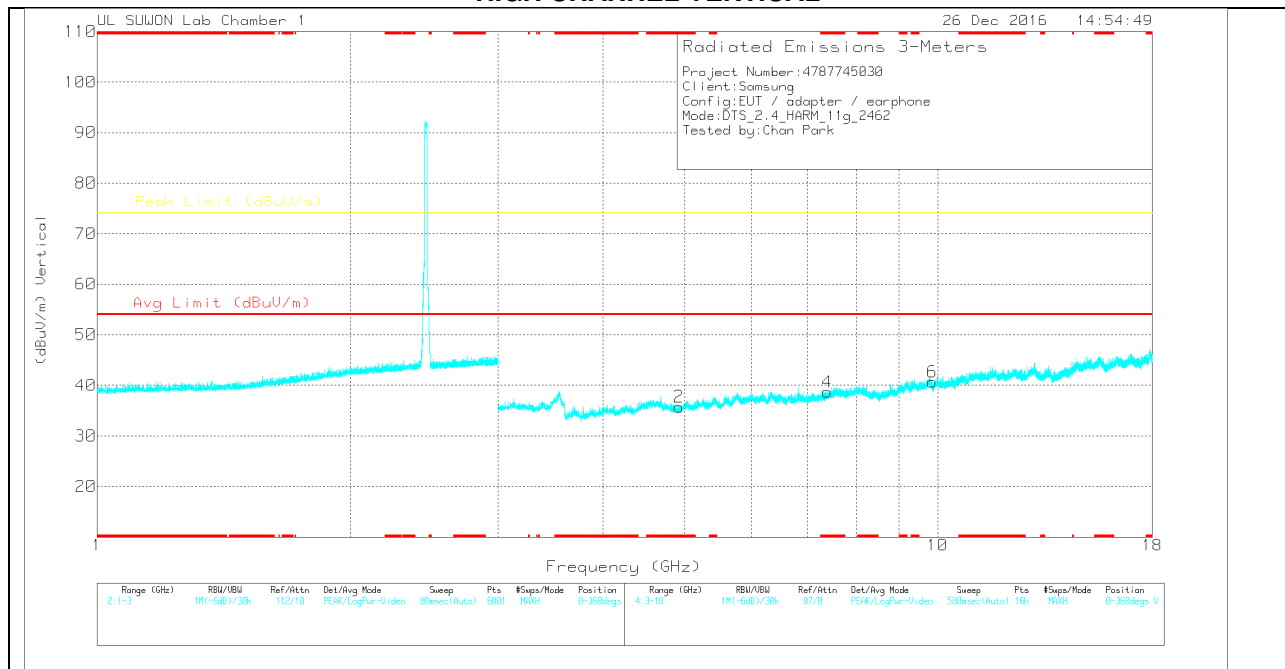
Pk – Peak detector

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

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[001687 17]_150619	3GHz_HP[dB]	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	* 4.925	35.29	Pk	34	-33.4	0	35.89	-	-	74	-38.11	0-360	150	H
3	* 7.383	34.43	Pk	35.8	-30.6	0	39.63	-	-	74	-34.37	0-360	150	H
5	9.849	30.86	Pk	37.3	-27.5	0	40.66	-	-	74	-33.34	0-360	150	H
2	* 4.921	35.14	Pk	34	-33.4	0	35.74	-	-	74	-38.26	0-360	150	V
4	* 7.389	33.38	Pk	35.8	-30.5	0	38.68	-	-	74	-35.32	0-360	150	V
6	9.848	30.87	Pk	37.3	-27.5	0	40.67	-	-	74	-33.33	0-360	250	V

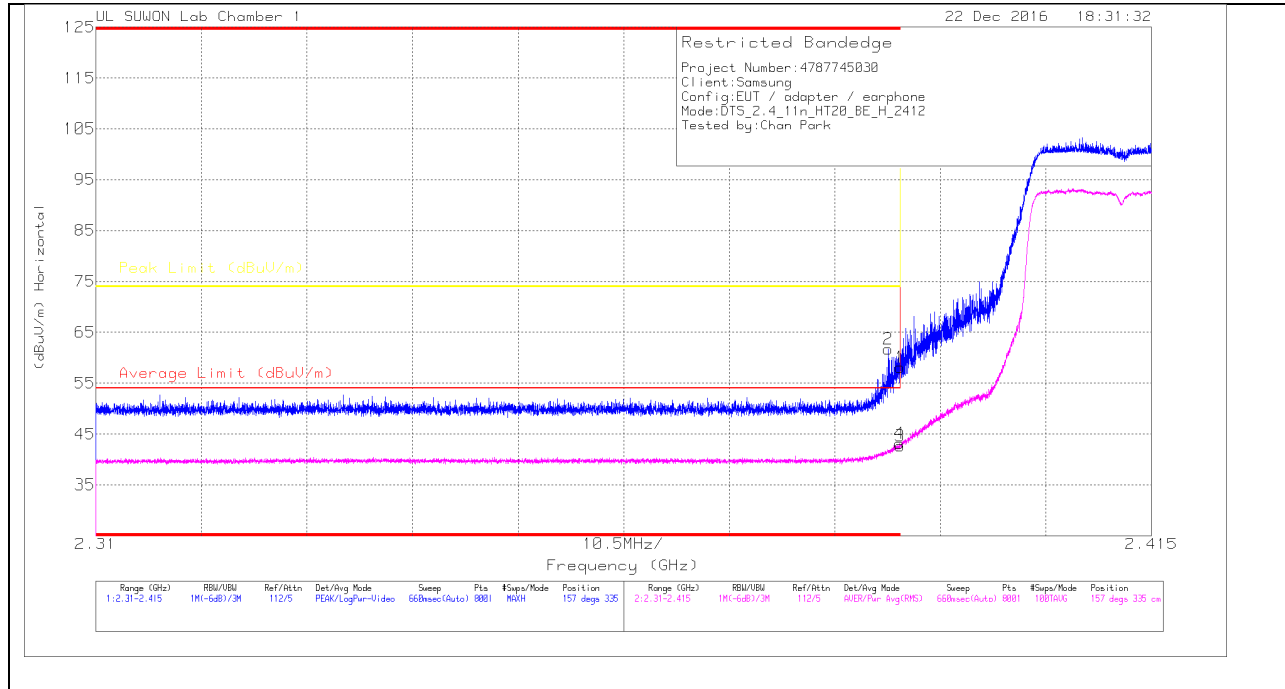
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

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

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

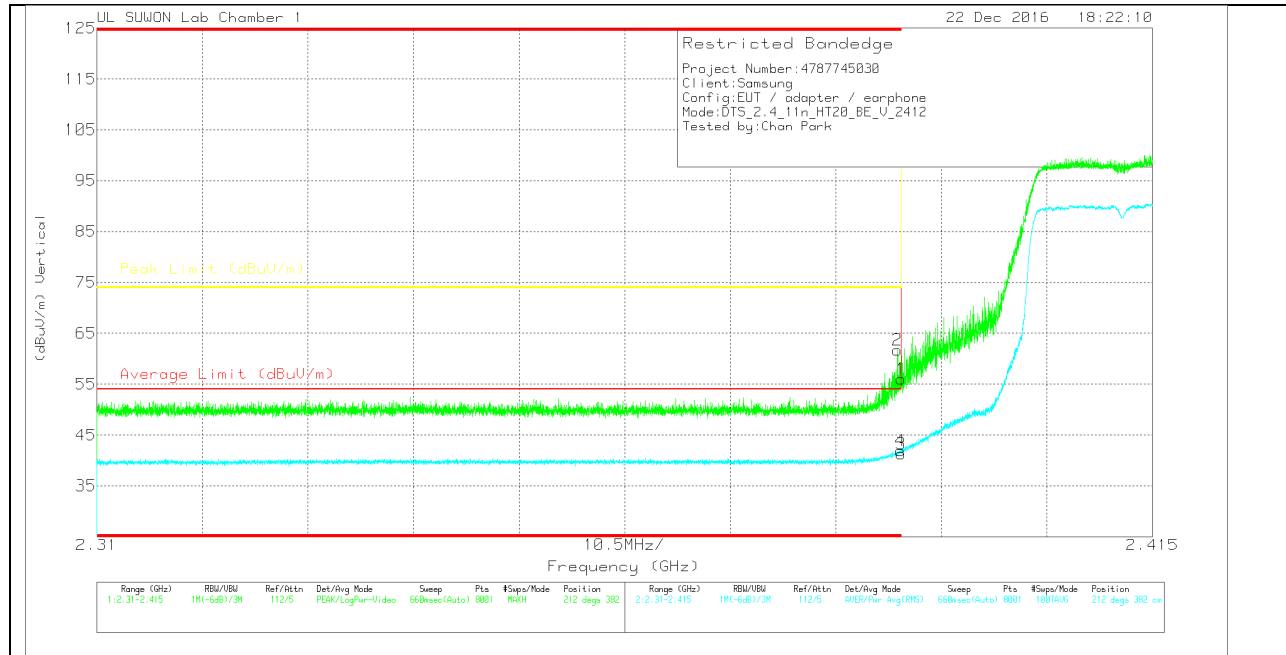
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117(00168 717)_15061 9	10dB(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	54.75	Pk	31.8	-28.4	0	58.15	-	-	74	-15.85	157	335	H
2	* 2.389	58.29	Pk	31.8	-28.4	0	61.69	-	-	74	-12.31	157	335	H
3	* 2.39	38.95	RMS	31.8	-28.4	.32	42.67	54	-11.33	-	-	157	335	H
4	* 2.39	39.49	RMS	31.8	-28.4	.32	43.21	54	-10.79	-	-	157	335	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(00168 717)_15061 9	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	* 2.39	52.56	Pk	31.8	-28.4	0	55.96	-	-	74	-18.04	212	382	V
2	* 2.39	58.36	Pk	31.8	-28.4	0	61.76	-	-	74	-12.24	212	382	V
3	* 2.39	37.58	RMS	31.8	-28.4	.32	41.3	54	-12.7	-	-	212	382	V
4	* 2.39	38.25	RMS	31.8	-28.4	.32	41.97	54	-12.03	-	-	212	382	V

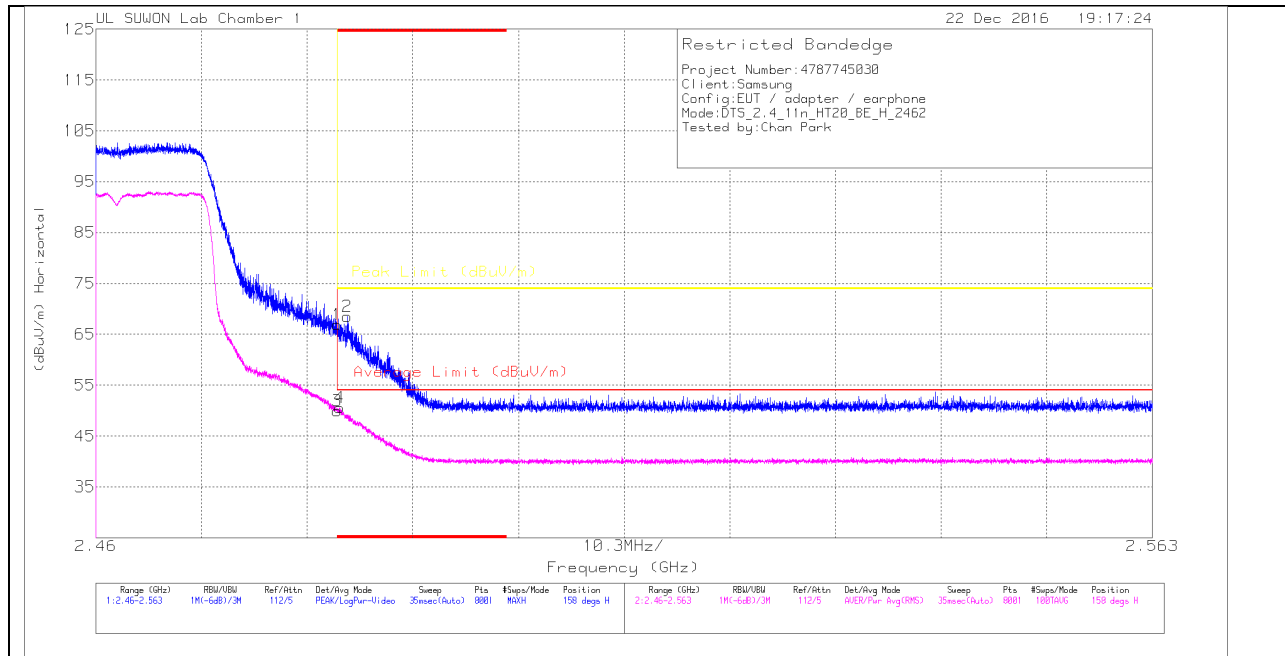
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

RMS - RMS detection

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

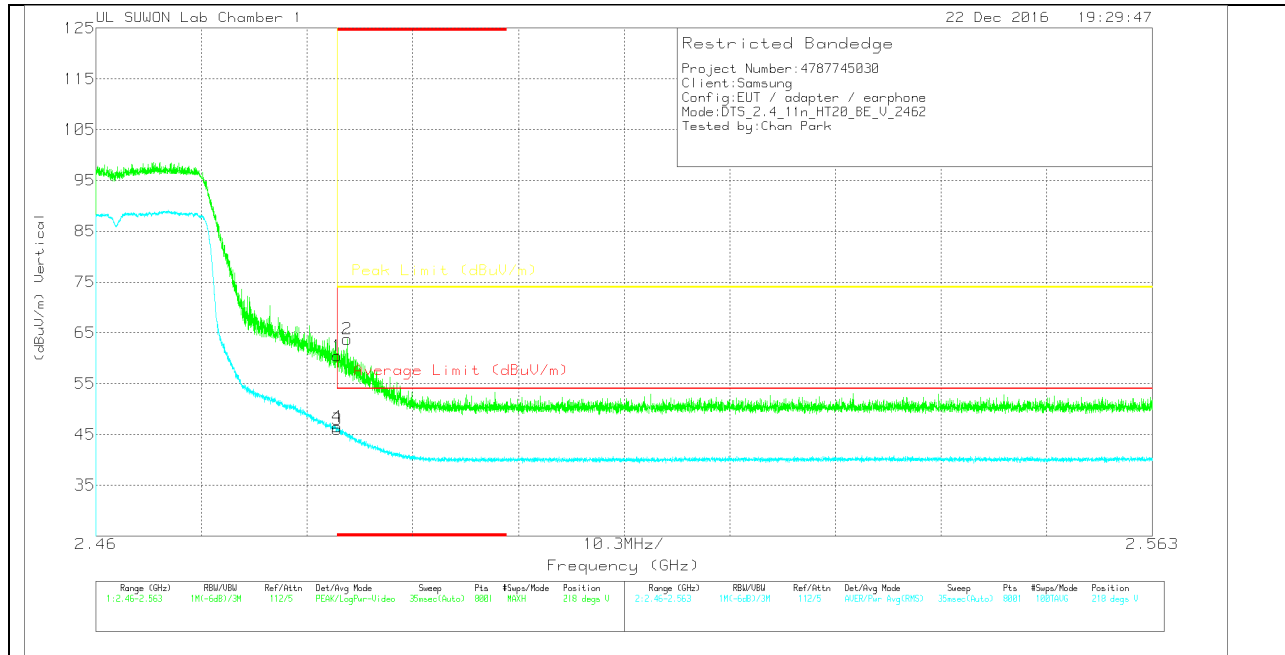
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117/001687 171_150619	10dB[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	63.23	Pk	32	-28.3	0	66.93	-	-	74	-7.07	158	360	H
2	* 2.485	64.82	Pk	32	-28.3	0	68.52	-	-	74	-5.48	158	360	H
3	* 2.484	45.99	RMS	32	-28.3	.32	50.01	54	-3.99	-	-	158	360	H
4	* 2.484	46.5	RMS	32	-28.3	.32	50.52	54	-3.48	-	-	158	360	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 171_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	* 2.484	56.72	Pk	32	-28.3	0	60.42	-	-	74	-13.58	218	320	V
2	* 2.484	60.05	Pk	32	-28.3	0	63.75	-	-	74	-10.25	218	320	V
3	* 2.484	42.01	RMS	32	-28.3	.32	46.03	54	-7.97	-	-	218	320	V
4	* 2.484	42.46	RMS	32	-28.3	.32	46.48	54	-7.52	-	-	218	320	V

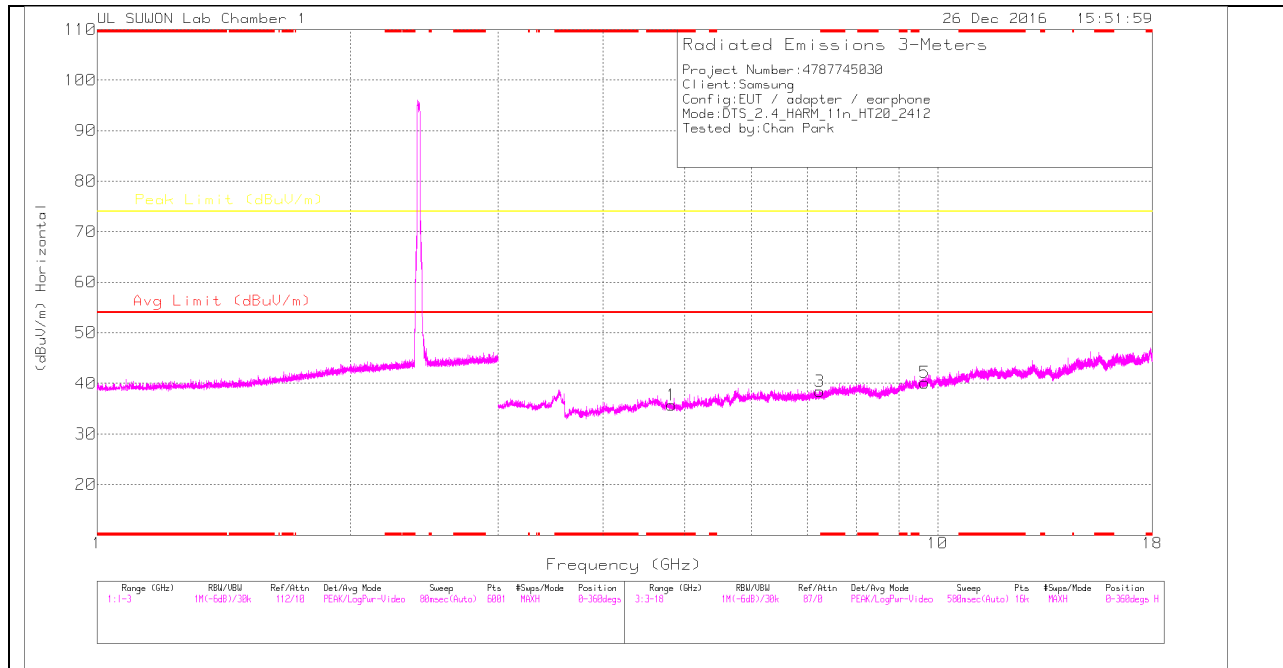
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

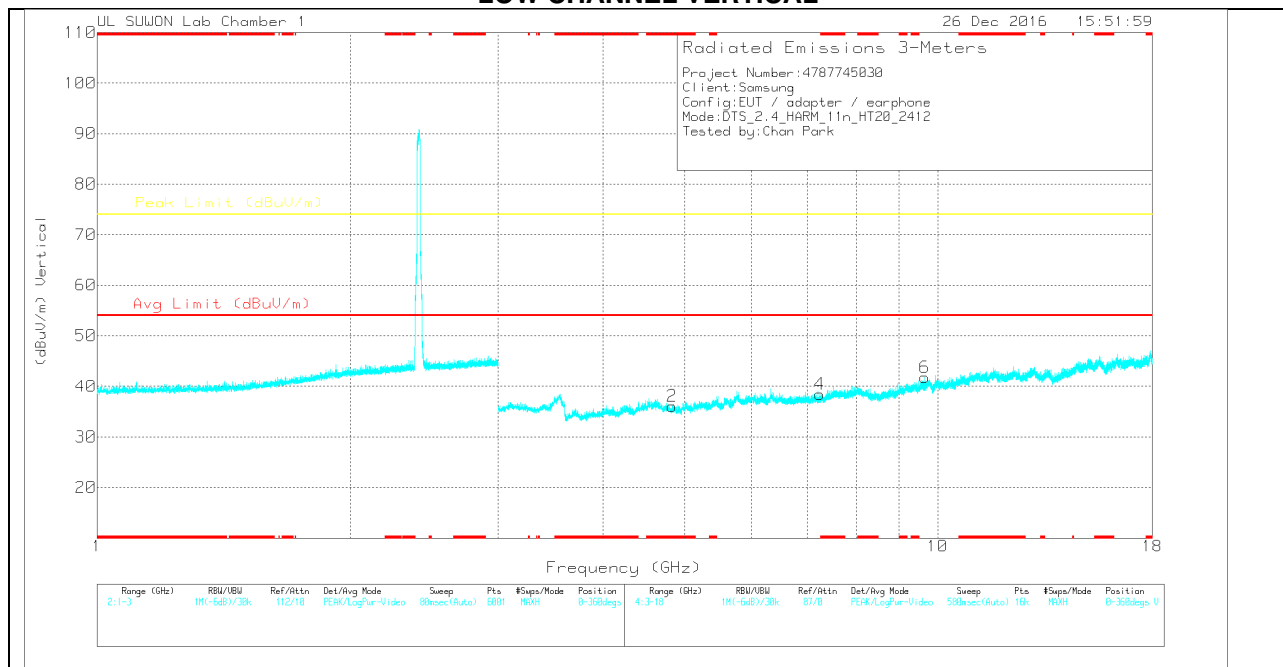
RMS - RMS detection

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

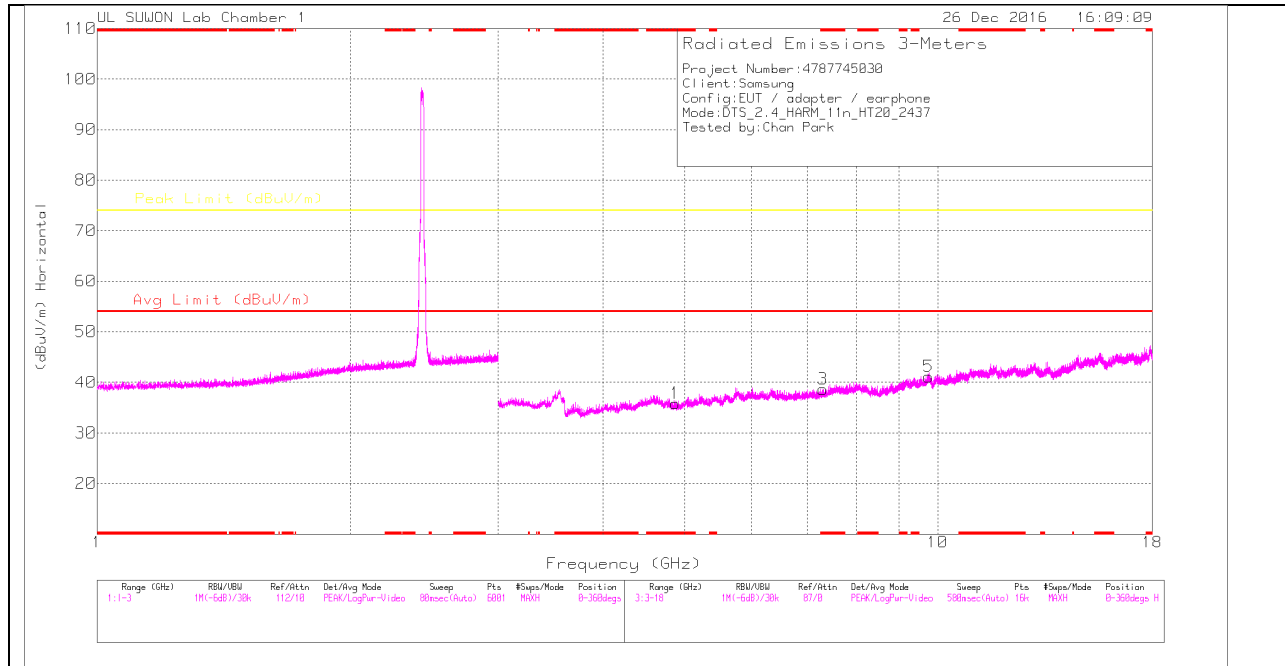
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[001687 17]_150619	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.824	35.2	Pk	34	-33.5	0	35.7	-	-	74	-38.3	0-360	150	H
3	7.238	33.41	Pk	35.7	-30.7	0	38.41	-	-	74	-35.59	0-360	250	H
5	9.649	30.43	Pk	37.1	-27.4	0	40.13	-	-	74	-33.87	0-360	250	H
2	* 4.829	35.58	Pk	34	-33.5	0	36.08	-	-	74	-37.92	0-360	250	V
4	7.236	33.46	Pk	35.7	-30.7	0	38.46	-	-	74	-35.54	0-360	150	V
6	9.648	32.08	Pk	37.1	-27.4	0	41.78	-	-	74	-32.22	0-360	250	V

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

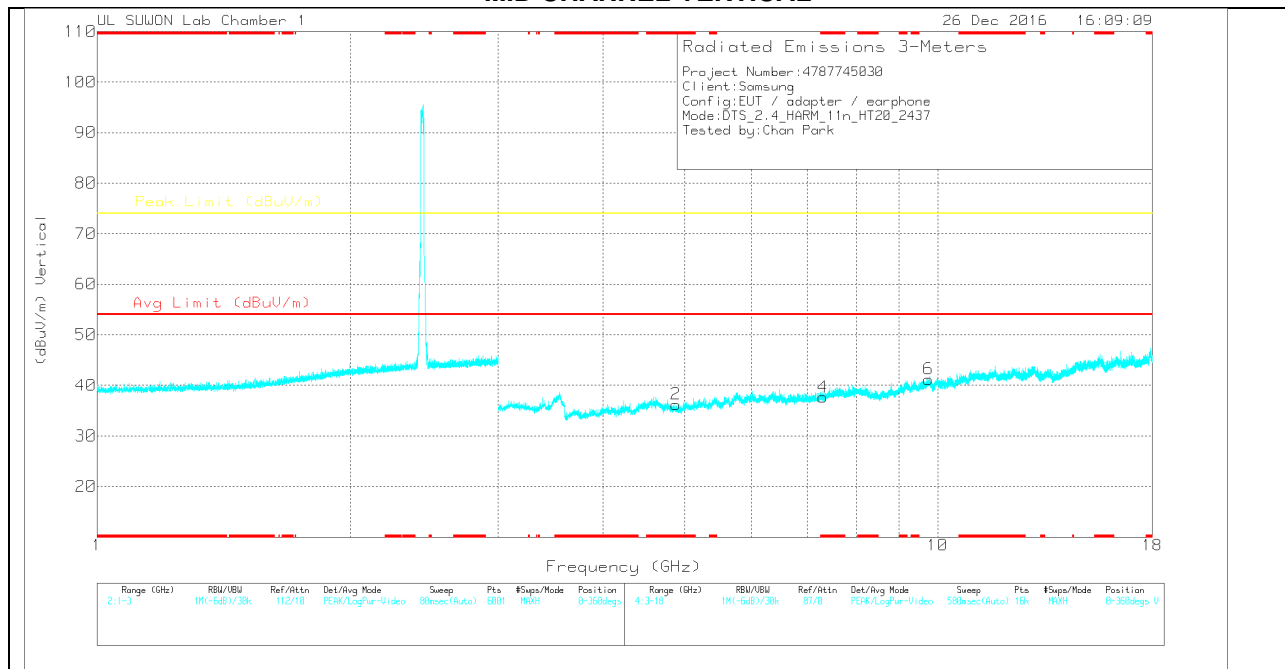
Pk – Peak detector

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

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

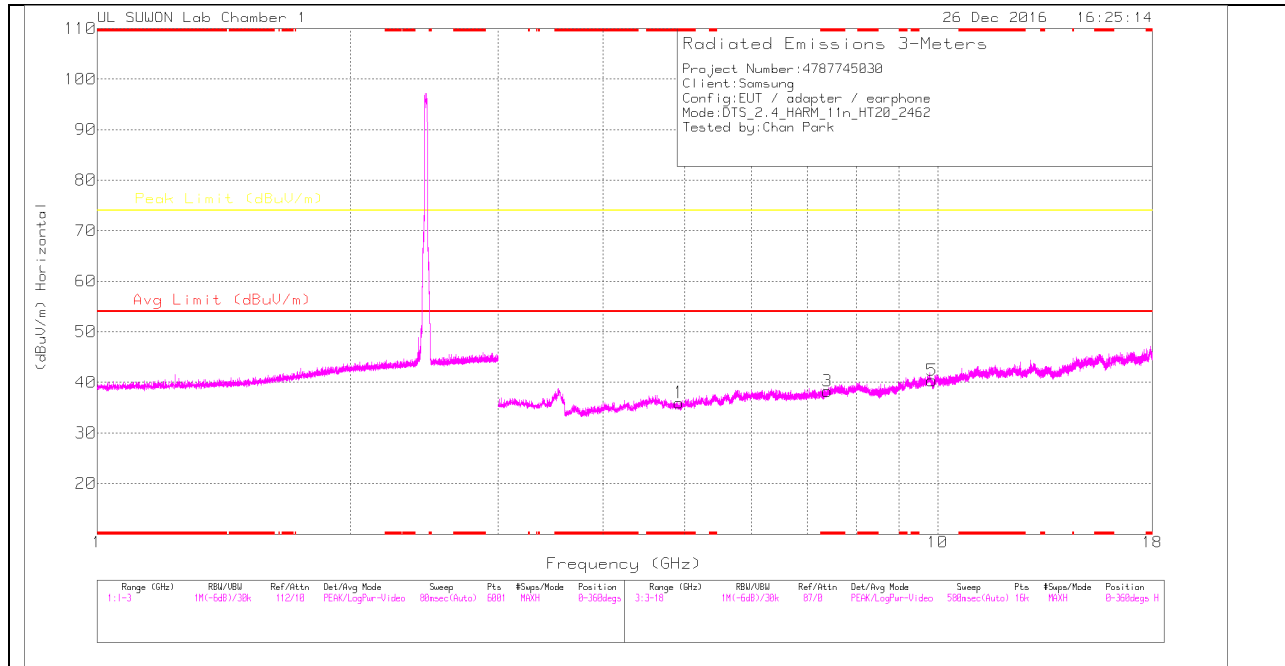
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117[001687 17]_150619	3GHz_HP[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 4.874	35.43	Pk	34	-33.6	0	35.83	-	-	74	-38.17	0-360	150	H
3	* 7.305	33.53	Pk	35.7	-30.6	0	38.63	-	-	74	-35.37	0-360	250	H
5	9.749	30.72	Pk	37.2	-26.8	0	41.12	-	-	74	-32.88	0-360	250	H
2	* 4.879	35.75	Pk	34	-33.5	0	36.25	-	-	74	-37.75	0-360	250	V
4	* 7.307	32.56	Pk	35.7	-30.6	0	37.66	-	-	74	-36.34	0-360	250	V
6	9.748	30.83	Pk	37.2	-26.8	0	41.23	-	-	74	-32.77	0-360	250	V

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

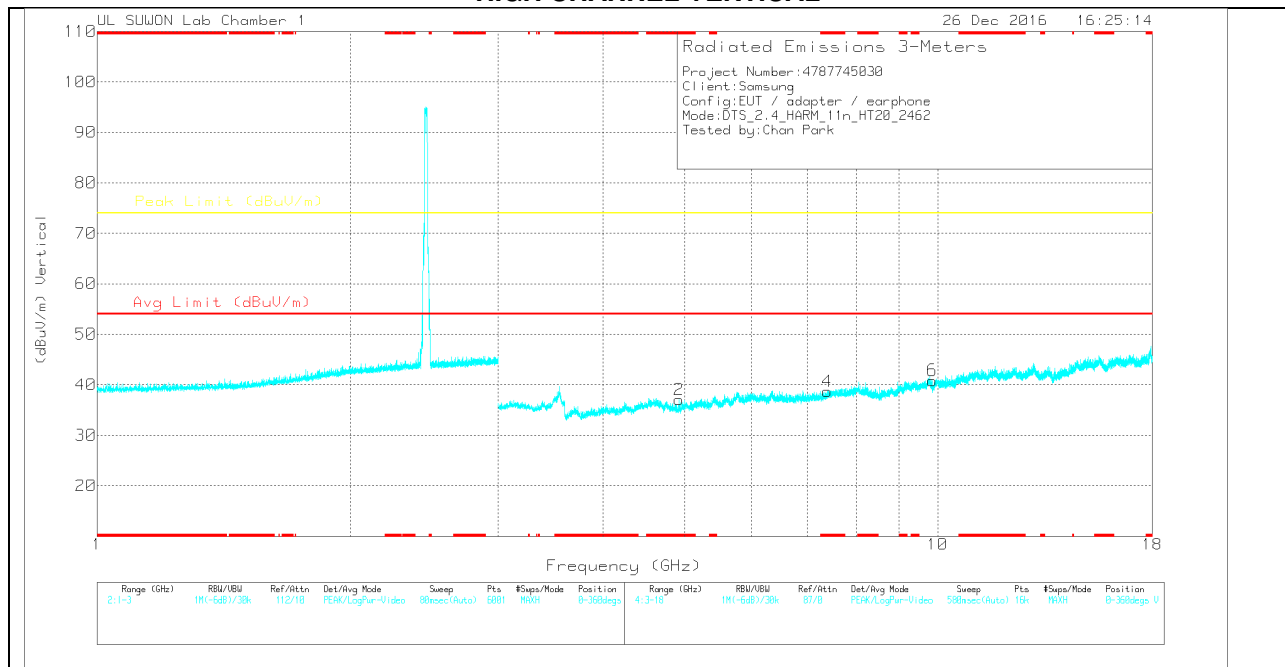
Pk – Peak detector

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

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[001687 17]_150619	3GHz_HP[dB]	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	* 4.923	35.38	Pk	34	-33.4	0	35.98	-	-	74	-38.02	0-360	150	H
3	* 7.387	32.95	Pk	35.8	-30.5	0	38.25	-	-	74	-35.75	0-360	150	H
5	9.845	30.57	Pk	37.3	-27.5	0	40.37	-	-	74	-33.63	0-360	150	H
2	* 4.925	36.44	Pk	34	-33.4	0	37.04	-	-	74	-36.96	0-360	150	V
4	* 7.389	33.38	Pk	35.8	-30.5	0	38.68	-	-	74	-35.32	0-360	250	V
6	9.848	31.04	Pk	37.3	-27.5	0	40.84	-	-	74	-33.16	0-360	150	V

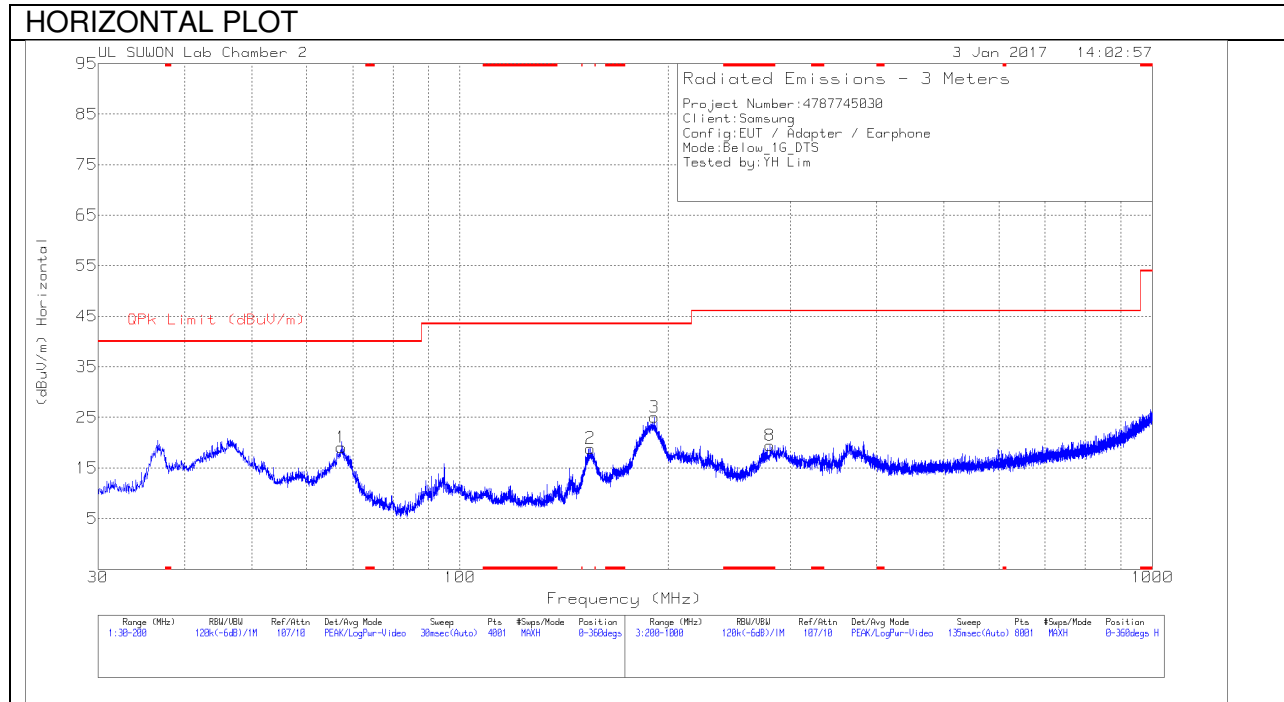
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk – Peak detector

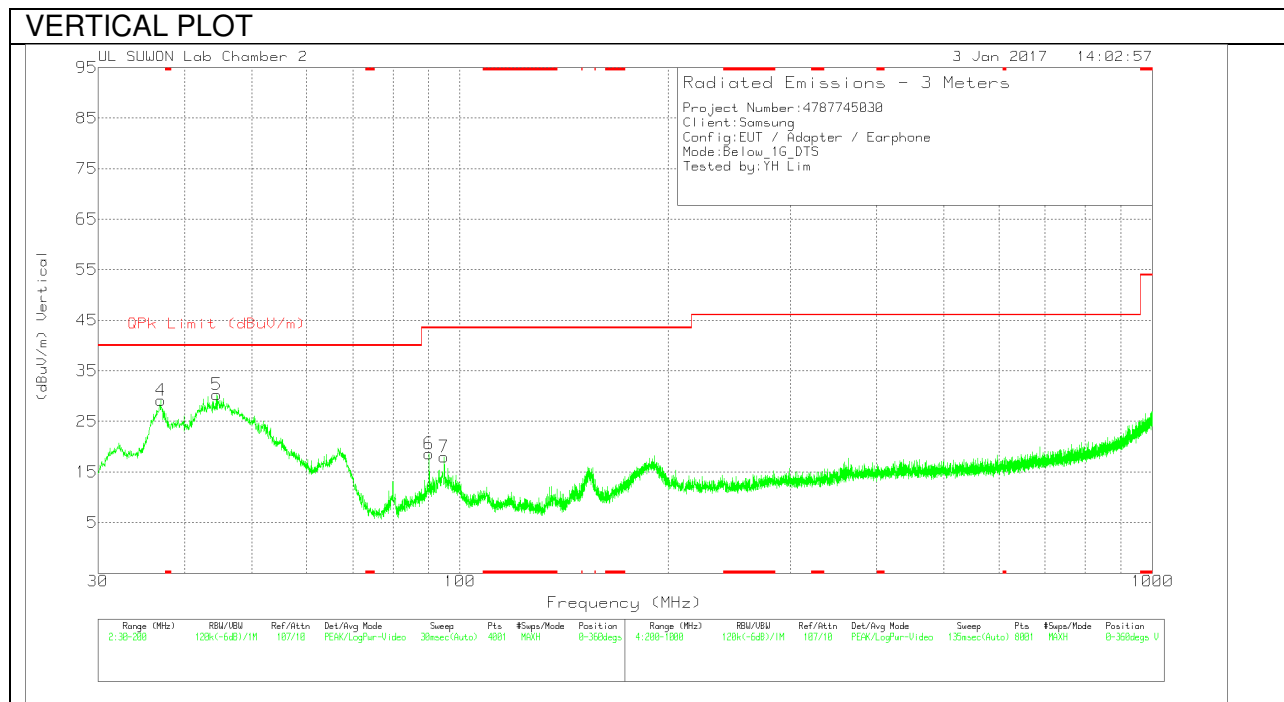
Note: Only peak measurement was performed. Because peak measurement result of unwanted emission is less than average limit (54dBuV/m).

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

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163-749	30-1000MHz[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	67.4	39.84	Pk	10.5	-31.3	19.04	40	-20.96	0-360	200	H
2	154.1425	41.17	Pk	8.4	-30.7	18.87	43.52	-24.65	0-360	200	H
3	190.7775	45.11	Pk	10.5	-30.6	25.01	43.52	-18.51	0-360	200	H
4	36.97	49.17	Pk	11.6	-31.6	29.17	40	-10.83	0-360	100	V
5	44.535	47.99	Pk	13.8	-31.5	30.29	40	-9.71	0-360	100	V
6	90.2225	40.1	Pk	9.6	-31.1	18.6	43.52	-24.92	0-360	100	V
7	94.8975	38.48	Pk	10.6	-31.1	17.98	43.52	-25.54	0-360	100	V
8	* 280.4	36.61	Pk	13	-30.2	19.41	46.02	-26.61	0-360	100	H

* - 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.

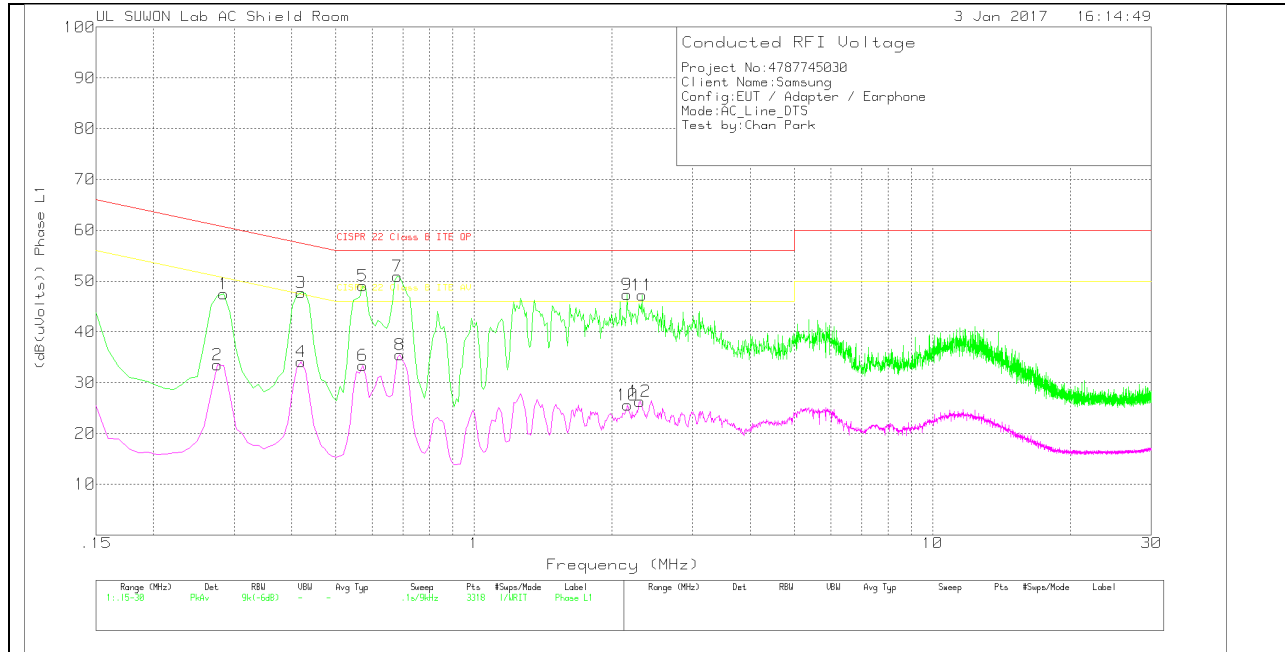
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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 (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.285	37.57	Pk	9.9	0	47.47	60.67	-13.2	-	-
2	.276	23.74	Av	9.8	0	33.54	-	-	50.94	-17.4
3	.42	37.62	Pk	10.1	0	47.72	57.45	-9.73	-	-
4	.42	24.03	Av	10.1	0	34.13	-	-	47.45	-13.32
5	.573	38.96	Pk	10.1	0	49.06	56	-6.94	-	-
6	.573	23.24	Av	10.1	0	33.34	-	-	46	-12.66
7	.681	40.81	Pk	10.1	0	50.91	56	-5.09	-	-
8	.69	25.36	Av	10.1	0	35.46	-	-	46	-10.54
9	2.157	37.41	Pk	9.8	.1	47.31	56	-8.69	-	-
10	2.166	15.63	Av	9.8	.1	25.53	-	-	46	-20.47
11	2.328	37.36	Pk	9.8	.1	47.26	56	-8.74	-	-
12	2.301	16.42	Av	9.8	.1	26.32	-	-	46	-19.68

Pk - Peak detector

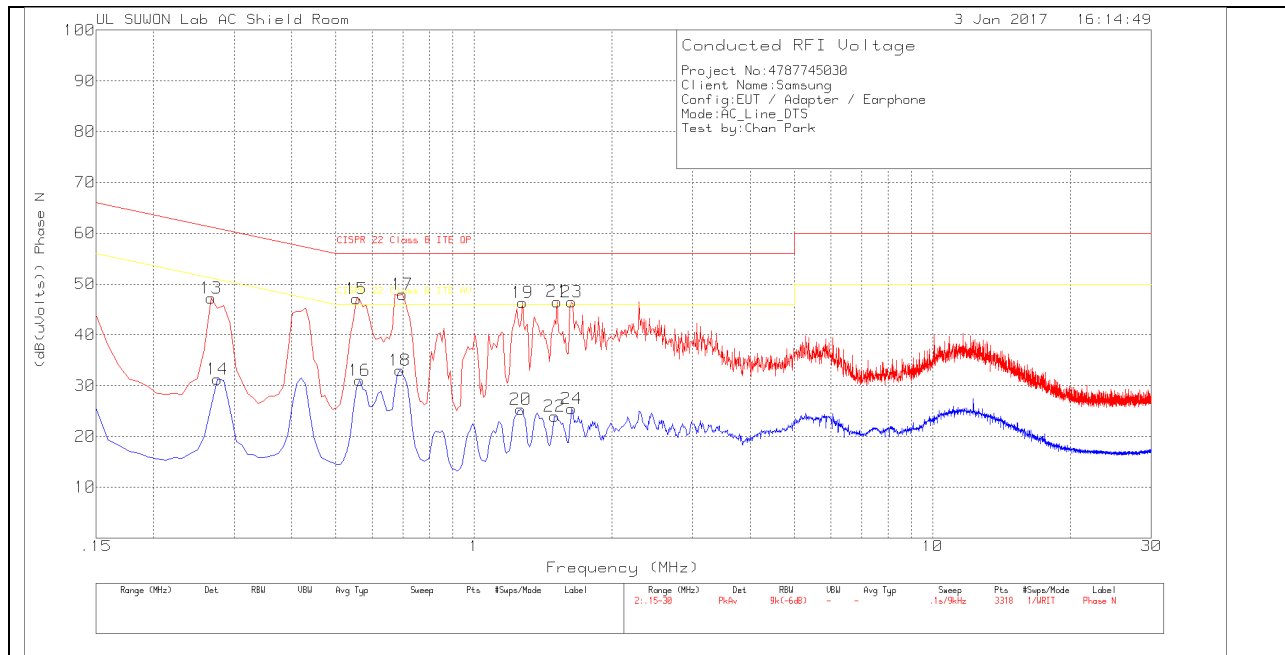
Av - Average detection

Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101837_wit h ex-cord_L1	CE Shield Room	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
.2823	32.99	Qp	9.8	0	42.79	60.75	-17.96	-	-
.4245	33.45	Qp	10.1	0	43.55	57.36	-13.81	-	-
.5757	34.68	Qp	10.1	0	44.78	56	-11.22	-	-
.6846	36.74	Qp	10.1	0	46.84	56	-9.16	-	-
2.1525	28.04	Qp	9.8	.1	37.94	56	-18.06	-	-
2.328	28.36	Qp	9.8	.1	38.26	56	-17.74	-	-

Qp - Quasi-Peak detector

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 (dB(uVolts)	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
13	.267	37.38	Pk	9.8	0	47.18	61.21	-14.03	-	-
14	.276	21.49	Av	9.8	0	31.29	-	-	50.94	-19.65
15	.555	37.05	Pk	10.1	0	47.15	56	-8.85	-	-
16	.564	20.96	Av	10.1	0	31.06	-	-	46	-14.94
17	.699	37.98	Pk	10	0	47.98	56	-8.02	-	-
18	.69	22.95	Av	10	0	32.95	-	-	46	-13.05
19	1.275	36.51	Pk	9.8	.1	46.41	56	-9.59	-	-
20	1.266	15.45	Av	9.8	.1	25.35	-	-	46	-20.65
21	1.518	36.64	Pk	9.8	.1	46.54	56	-9.46	-	-
22	1.5	14.08	Av	9.8	.1	23.98	-	-	46	-22.02
23	1.635	36.56	Pk	9.8	.1	46.46	56	-9.54	-	-
24	1.635	15.6	Av	9.8	.1	25.5	-	-	46	-20.5

Pk - Peak detector

Av - Average detection

Phase N .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101837_wit h ex-cord_N	CE Shield Room	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
.2715	31.11	Qp	9.8	0	40.91	61.07	-20.16	-	-
.5586	29.89	Qp	10.1	0	39.99	56	-16.01	-	-
.6981	32.37	Qp	10	0	42.37	56	-13.63	-	-
1.2768	27.19	Qp	9.8	.1	37.09	56	-18.91	-	-
1.5198	26.03	Qp	9.8	.1	35.93	56	-20.07	-	-
1.6314	25.71	Qp	9.8	.1	35.61	56	-20.39	-	-

Qp - Quasi-Peak detector