



FCC CFR47 PART 15 SUBPART C

ANT+

CERTIFICATION TEST REPORT

FOR

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

MODEL NUMBER : SM-T395C

FCC ID: A3LSMT395C

REPORT NUMBER: 4788148881-E5V1

ISSUE DATE: OCT 13, 2017

Prepared for
SAMSUNG ELECTRONICS CO., LTD.
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,
GYEONGGI-DO, 16677, KOREA

Prepared by
UL Korea, Ltd. Suwon Laboratory
218 Maeyeong-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16675, 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>
V1	10/13/17	Initial issue	Junwhan Lee

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	4
1.1. INTRODUCTION OF TEST DATA REUSE.....	5
1.2. DIFFERENCE.....	5
1.3. SPOT CHECK VERIFICATION DATA	5
1.4. REFERENCE DETAIL	6
2. TEST METHODOLOGY	7
3. FACILITIES AND ACCREDITATION	7
4. CALIBRATION AND UNCERTAINTY	7
4.1. MEASURING INSTRUMENT CALIBRATION	7
4.2. SAMPLE CALCULATION	7
4.3. MEASUREMENT UNCERTAINTY.....	7
5. EQUIPMENT UNDER TEST	8
5.1. DESCRIPTION OF EUT	8
5.2. MAXIMUM E-FIELD STRENGTH	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. LIMITS AND RESULTS.....	12
7.1. 99% BANDWIDTH.....	12
7.2. TRANSMITTER RADIATED EMISSIONS.....	14
7.2.1. DUTY CYCLE	16
7.2.2. FUNDAMENTAL FREQUENCY RADIATED EMISSION.....	17
7.2.3. TRANSMITTER RESTRICTED BAND EDGES.....	18
7.2.4. SPURIOUS BELOW 1 GHz	23
8. AC POWER LINE CONDUCTED EMISSIONS.....	25
9. SETUP PHOTOS.....	30

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

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

MODEL NUMBER: SM-T395C

SERIAL NUMBER: R32J500B9LL (RADIATED, Original model);
R32J500B6RB (CONDUCTED, Original model)
R22J9005ZNF, R22J9008P2V (RADIATED, Spot check model);

DATE TESTED: AUG 24, 2017 - AUG 25, 2017 (Original Test)
OCT 10 – OCT 12, 2017 (Spot check and Additional Test)

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:

Tested By:



SungGil Park
Suwon Lab Engineer
UL Korea, Ltd.

Junwhan Lee
Suwon Lab Engineer
UL Korea, Ltd.

1.1. INTRODUCTION OF TEST DATA REUSE

This report referenced from the FCC ID: A3LSMT395, DXX ANT+(FCC CFR 47 Part 15C). And the applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID.

1.2. DIFFERENCE

The FCC ID: A3LSMT395C shares the same enclosure and circuit board as FCC ID: A3LSMT395. The ANT+ circuitry and layout are identical between these two units. The ANT+ antennas and surrounding circuitry are the same between these two units.

After confirming through preliminary radiated emissions that the performance of the FCC ID: A3LSMT395 remains representative of FCC ID: A3LSMT395C. The test data of FCC ID: A3LSMT395 being submitted for this application to cover ANT+ features.

Due to difference of charger, radiated emission under 1GHz and AC line conducted test were performed newly.

1.3. SPOT CHECK VERIFICATION DATA

Mode	Frequency	Test Item	Test Limit	Original model		Deviation	Remark
				SM-T395 Results	SM-T395C Results		
				FCC ID : A3LSMT395	FCC ID : A3LSMT395C		
ANT+	2441 MHz	Fundamental	114 dBuV/m	82.81 dBuV/m	83.98 dBuV/m	1.17 dB	
	4802 MHz	Harmonic	74 dBuV/m	45.21 dBuV/m	44.27 dBuV/m	-0.94 dB	Noise floor level (Both data)

Comparison of two models, deviation is within 3dB range and all test results are under FCC/IC Technical Limits.

1.4. REFERENCE DETAIL

Reference application that contains the reused reference data.

Equipment Class	Reference FCC ID	Type Grant/Permissive Change	Reference Application	Folder Test/RF Exposure	Report Title / Section
DTS	A3LSMT395	Grant	4788060215-E2V2	Test	FCC Report BLE / All sections (Except Section 10.5, 11)
			4788060215-E1V2	Test	FCC Report DTS / All sections (Except Section 10.5, 11)
DSS	A3LSMT395	Grant	4788060215-E3V2	Test	FCC Report BT / All sections (Except Section 10.5, 11)
DXX	A3LSMT395	Grant	4788060215-E5V1	Test	FCC Report ANT+ / All sections (Except Section 7.2.4, 8)
			4788060215-E6V2	Test	FCC Report NFC / All sections (Except Section 8.1.2, 9)
NII	A3LSMT395	Grant	4788060215-E4V3	Test	FCC Report UNII / All sections (Except Section 11, 12)

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. 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	
<input checked="" type="checkbox"/>	Chamber 1
<input 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 GSM/WCDMA/LTE Tablet + BT/BLE, DTS/UNII a/b/g/n/ac, ANT+ and NFC Tablet. This test report addresses the ANT+ operational mode.

5.2. MAXIMUM E-FIELD STRENGTH

The ANT+ mode has maximum output fundamental field strength as follows:

Frequency Range [MHz]	Mode	Peak E-field Strength [dBuV/m]	Avg E-field Strength [dBuV/m]	Distance [m]
2402 - 2480	ANT +	82.81	30.70	3.00

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal antenna, with a maximum gain of -1.9 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 Y orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y orientation.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA12CBC	DK2J606HS/B- E	N/A
Data Cable	SAMSUNG	EP-DN930CWE	N/A	N/A
Earphone	SAMSUNG	EO-EG920BW	N/A	N/A

I/O CABLES

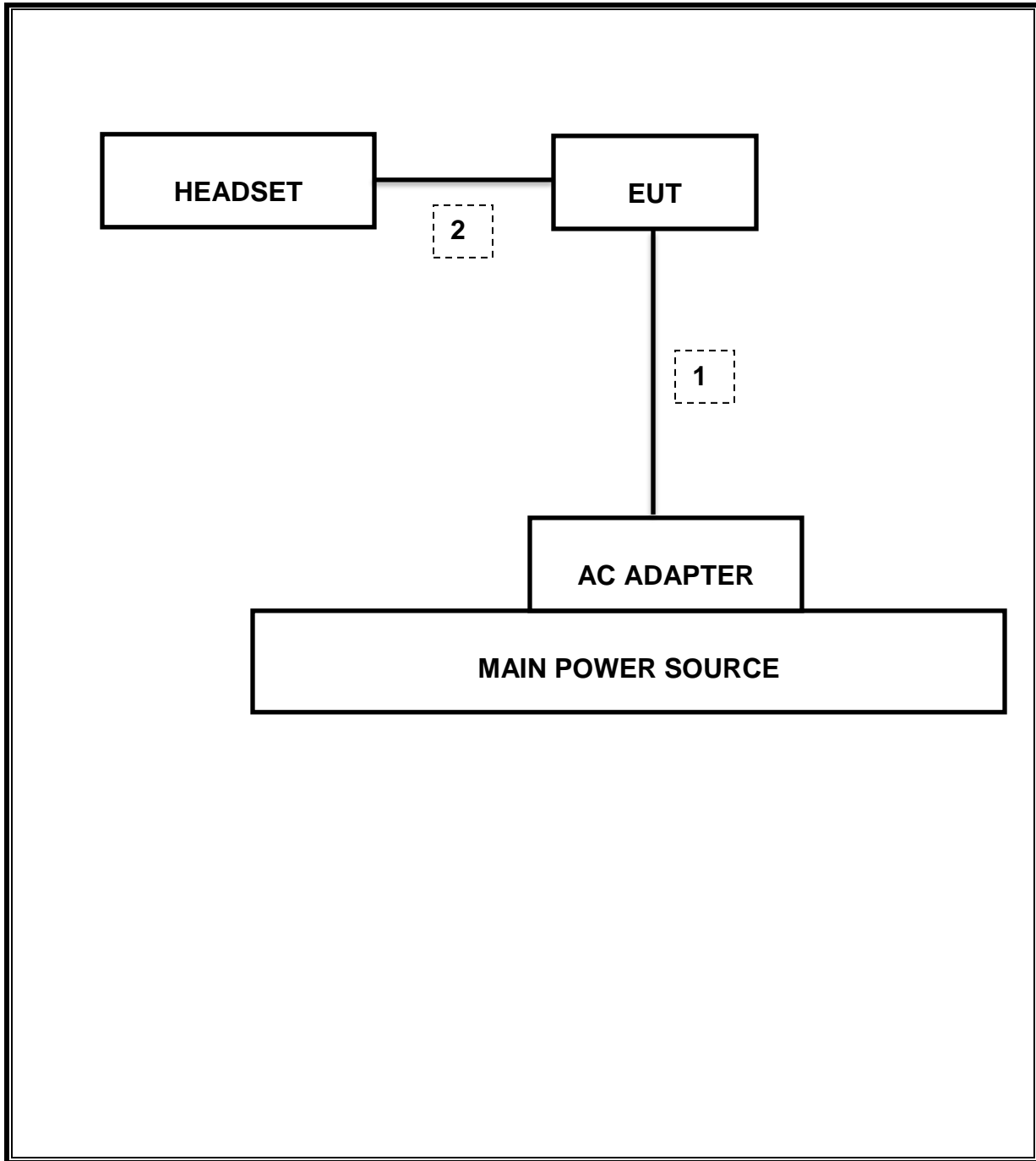
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	C-type	Shielded	1.2m	N/A
2	Audio	2	Mini-Jack	Unshielded	1.2m	N/A

NOTE : Protective cover (with S-pen) is in-box item. So additional radiated measurements were performed on worst case equipped with protective case. Fundamental level and spurious emission is lower than stan-alone condition. So test report didn't described additional data.

TEST SETUP

The EUT is set to continuously transmit in ANT + test mode.
 Test software in hidden menu exercised the EUT to enable ANT+ 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	08-31-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	04-14-19
Antenna, Horn, 18 GHz	ETS	3115	00167211	10-14-18
Antenna, Horn, 18 GHz	ETS	3115	00161451	03-10-19
Antenna, Horn, 18 GHz	ETS	3117	00168724	05-31-19
Antenna, Horn, 18 GHz	ETS	3117	00168717	05-31-19
Antenna, Horn, 40 GHz	ETS	3116C	00166155	11-30-17
Antenna, Horn, 40 GHz	ETS	3116C-PA	00168841	12-15-17
Attenuator / Switch driver	HP	11713A	3748A04272	N/A
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-09-18
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-07-18
Preamplifier	ETS	3115-PA	00167475	08-09-18
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-08-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-08-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-08-18
Average Power Sensor	Agilent / HP	U2000	MY54270007	08-08-18
Attenuator	PASTERNAK	PE7087-10	A009	08-08-18
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-08-18
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-08-18
EMI Test Receive, 3 GHz	R&S	ESR3	101832	08-07-18
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	08-08-18
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	08-08-18
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	08-08-18
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	08-08-18
High Pass Filter 6GHz	Micro-Tronics	HPM17542	009	08-08-18
High Pass Filter 6GHz	Micro-Tronics	HPM17542	016	08-08-18
LISN	R&S	ENV-216	101837	08-09-18
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	11-25-17
UL Software				
Description	Manufacturer	Model	Version	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

7. LIMITS AND RESULTS

7.1. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

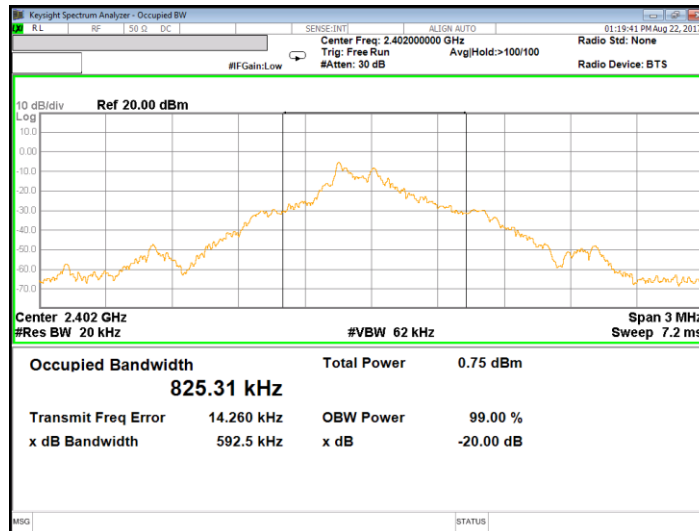
The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

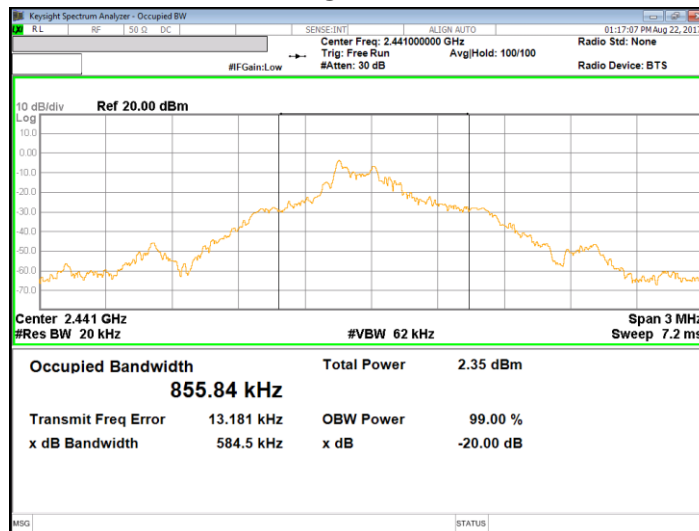
Channel	Frequency [MHz]	99% Bandwidth [KHz]	20 dB Bandwidth [KHz]
Low	2402	825.31	592.50
Mid	2441	855.84	584.50
High	2480	856.23	601.80
Worst		856.23	601.80

99% BANDWIDTH PLOTS

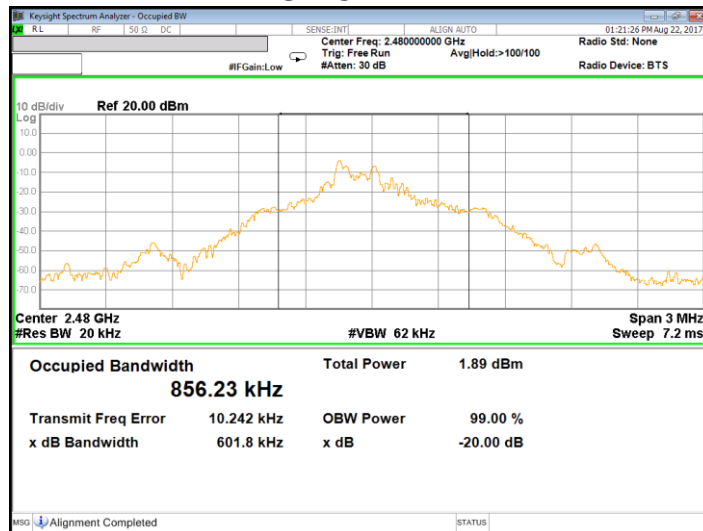
LOW CHANNEL



MID CHANNEL



HIGH CHANNEL



7.2. TRANSMITTER RADIATED EMISSIONS

TEST PROCEDURE

ANSI C63.10: 2013

LIMIT

FCC §15.249
IC RSS-210, B.10

Operation within the bands 902–928 MHz, 2400–2483.5 MHz, 5725–5875 MHz, and 24.0–24.25 GHz.

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

(e) As shown in Sec. 15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.


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

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.

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.

7.2.2. FUNDAMENTAL FREQUENCY RADIATED EMISSION



FCC
UL SUWON LAB
Chamber 1

Project #: 4788060215
Report #: 4788060215
Date & Time: 2017-08-24
Test Engr: YH Lim

Company: Samsung
EUT Description: GSM/WCDMA/LTE Tablet + Bluetooth/BLE, DTS/UNII a/b/g/n/ac, NFC and ANT+
Test Configuration : Y POSITION
Type of Test: FCC
Mode of Operation: Transmitting : ANT+ mode

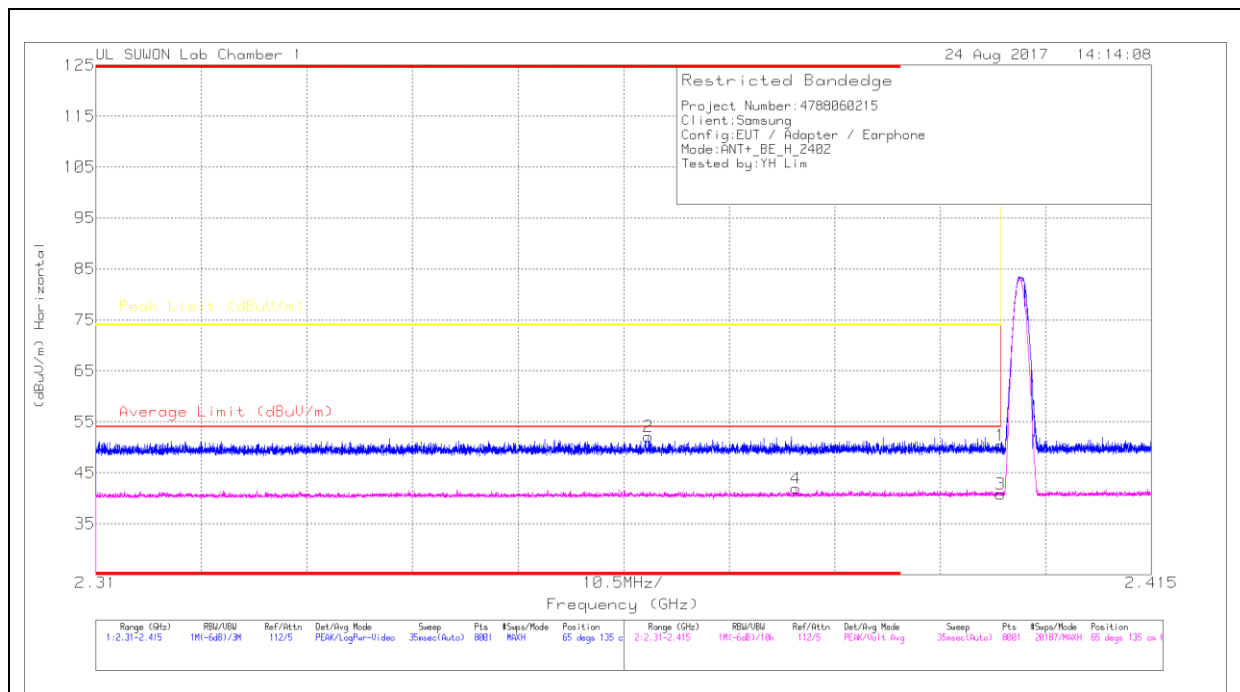
M% = ((t1+t2+t3+...)/T) * 66.83% = 0.25%

Av Reading = Pk Reading + 20*log(M%)
20 * log (M%) = -52.11

Freq. (MHz)	Pk Rdg (dBuV)	Av Rdg (dBuV)	AF (dB)	Closs (dB)	Pre-amp (dB)	Pk Level (dBuV/m)	Av Level (dBuV/m)	Pk Limit FCC_C	Av Limit FCC_C	Pk Margin (dB)	Avg Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)
Low channel														
2402.00	91.92	39.81	27.85	-38.39	0.00	81.38	29.27	114.00	94.00	-32.62	-64.73	3mV	0.00	1.00
2402.00	90.47	38.36	27.85	-38.39	0.00	79.93	27.82	114.00	94.00	-34.07	-66.18	3mH	0.00	2.00
Mid channel														
2441.00	93.35	41.24	27.85	-38.39	0.00	82.81	30.70	114.00	94.00	-31.19	-63.30	3mV	0.00	1.00
2441.00	92.90	40.79	27.85	-38.39	0.00	82.36	30.25	114.00	94.00	-31.64	-63.75	3mH	0.00	2.00
High channel														
2480.00	92.09	39.98	27.85	-38.39	0.00	81.55	29.44	114.00	94.00	-32.45	-64.56	3mV	0.00	1.00
2480.00	92.00	39.89	27.85	-38.39	0.00	81.46	29.35	114.00	94.00	-32.54	-64.65	3mH	0.00	2.00

7.2.3. TRANSMITTER RESTRICTED BAND EDGES

BANDEDGE (LOW CHANNEL, HORIZONTAL)



HORIZONTAL DATA

Trace Markers

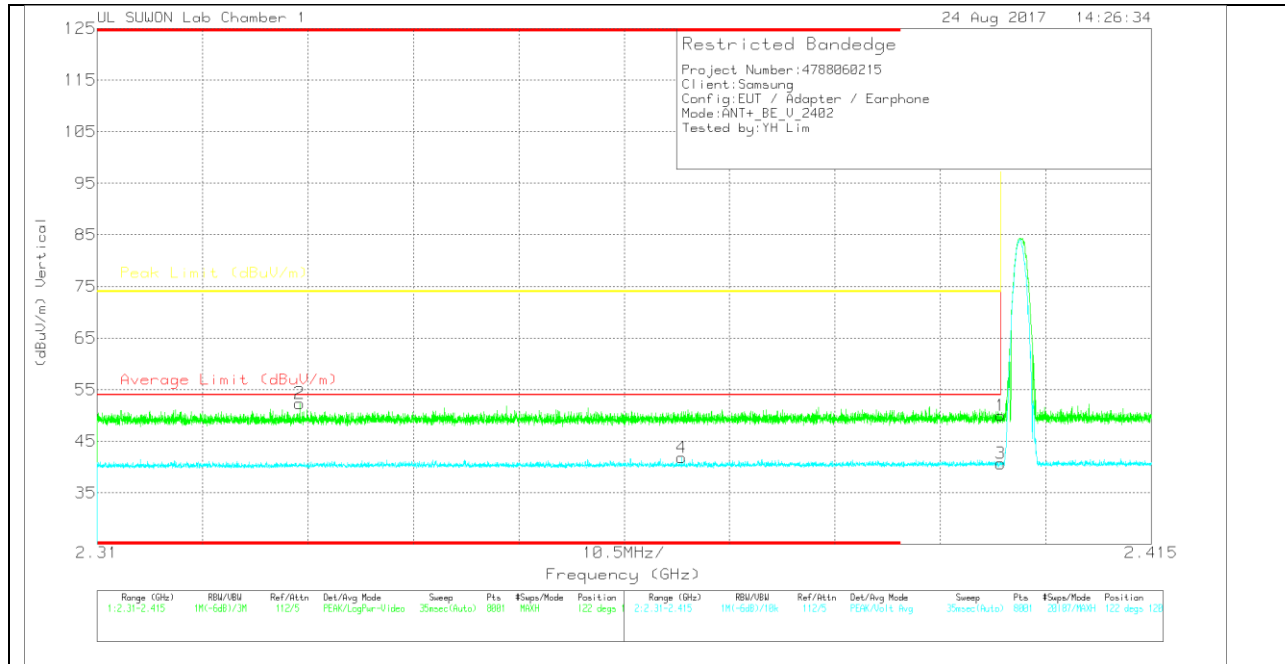
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	20170531_3117_00_168717	10dB_ATT(dB)_17080_9	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4	44.73	Pk	31.3	-25.7	50.33	-	-	74	-23.67	65	135	H
2	* 2.365	46.69	Pk	31.2	-25.8	52.09	-	-	74	-21.91	65	135	H
3	2.4	35.2	V1TV	31.3	-25.7	40.8	54	-13.2	-	-	65	135	H
4	* 2.38	36.3	V1TV	31.3	-25.7	41.9	54	-12.1	-	-	65	135	H

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

Pk - Peak detector

V1TV - VB=1/Ton, Linear Voltage Average where: Ton is packet duration

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	20170531_3117_00_168717	10dB_ATT(dB)_17080_9	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	2.4	44.39	Pk	31.3	-25.7	49.99	-	-	74	-24.01	122	120	V
2	* 2.33	47.06	Pk	31.2	-25.9	52.36	-	-	74	-21.64	122	120	V
3	2.4	35.1	V1TV	31.3	-25.7	40.7	54	-13.3	-	-	122	120	V
4	* 2.368	36.41	V1TV	31.2	-25.8	41.81	54	-12.19	-	-	122	120	V

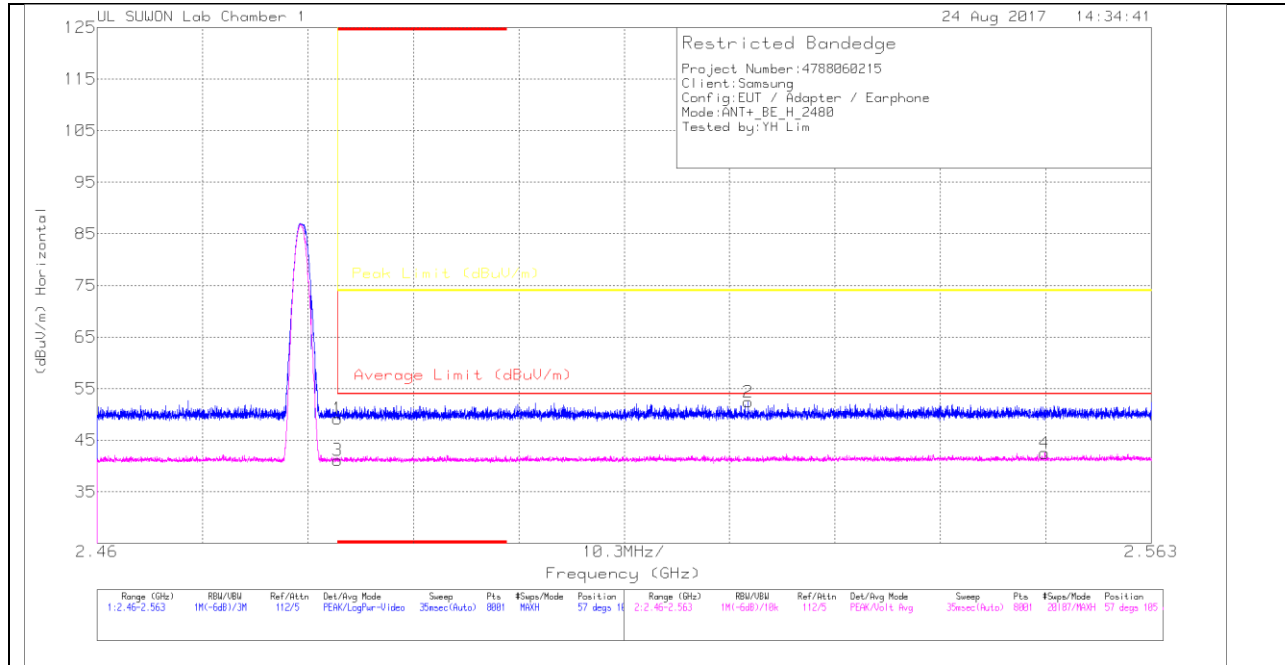
* - indicates frequency in CFR15.205/IC7.2.2 Restricted Band

Pk - Peak detector

V1TV - VB=1/Ton, Linear Voltage Average where: Ton is packet duration

AUTHORIZED BANDEGE (HIGH CHANNEL)

HORIZONTAL PEAK AND AVERAGE PLOT



HORIZONTAL DATA

Trace Markers

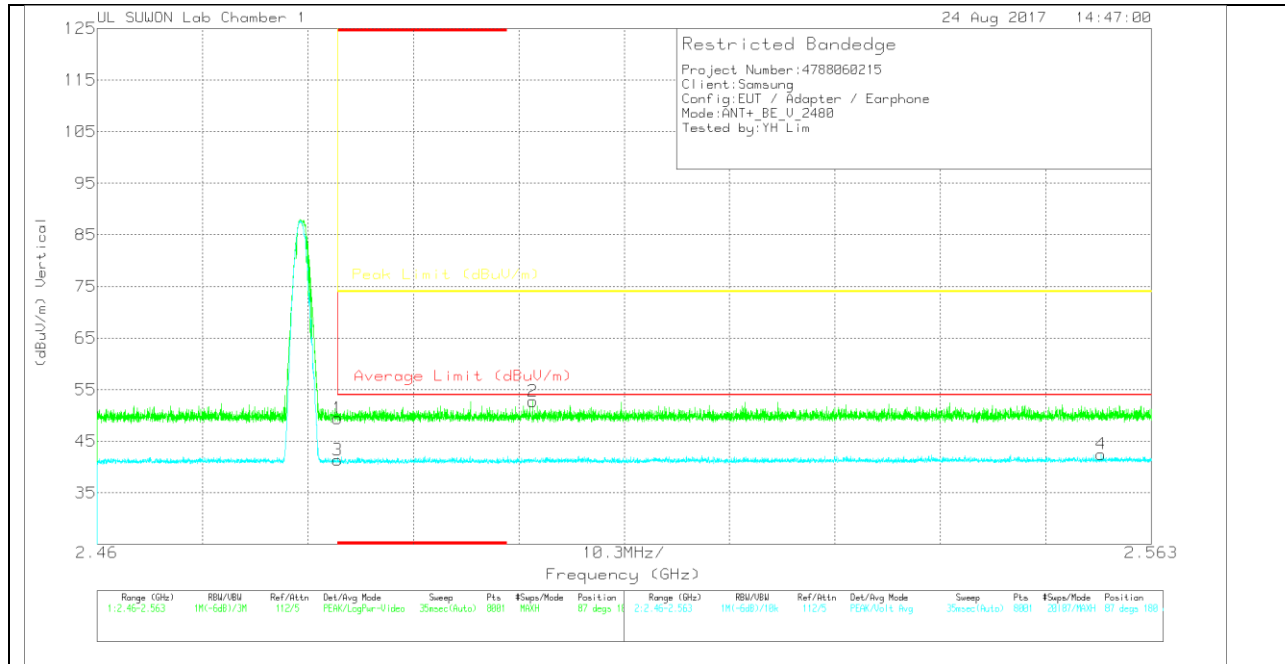
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	20170531_3 117_001687 17	10dB_ATT(d B)_170809	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	43.09	Pk		-25.5	0	49.19	-	-	74	-24.81	57	105	H
2	2.524	46.1	Pk		-25.3	0	52.4	-	-	74	-21.6	57	105	H
3	* 2.484	35.03	V1TV		-25.5	0	41.13	54	-12.87	-	-	57	105	H
4	2.553	36.13	V1TV		-25.3	0	42.53	54	-11.47	-	-	57	105	H

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

Pk - Peak detector

V1TV - VB=1/Ton, Linear Voltage Average where: Ton is packet duration

VERTICAL PEAK AND AVERAGE PLOT



VERTICAL DATA

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	20170531_3117_00	10dB_ATT(168717)	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	43.36	Pk	31.6	-25.5	49.46	-	-	74	-24.54	87	180	V
2	2.503	46.46	Pk	31.6	-25.3	52.76	-	-	74	-21.24	87	180	V
3	* 2.484	35.28	V1TV	31.6	-25.5	41.38	54	-12.62	-	-	87	180	V
4	2.558	36.11	V1TV	31.7	-25.3	42.51	54	-11.49	-	-	87	180	V


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

Pk - Peak detector

V1TV - VB=1/Ton, Linear Voltage Average where: Ton is packet duration

HARMONICS AND SPURIOUS EMISSIONS ABOVE 1GHz

HARMONICS



FCC
UL SUWON LAB
Chamber 1

Project #: 4788060215
Report #: 4788060215
Date & Time: 2017-08-24
Test Engr: YH Lim

Company: Samsung
EUT Description: GSM/WCDMA/LTE Tablet + Bluetooth/BLE, DTS/UNII a/b/g/n/ac, NFC and ANT+
Test Configuration: Y POSITION
Type of Test: FCC
Mode of Operation: Transmitting : ANT+ mode

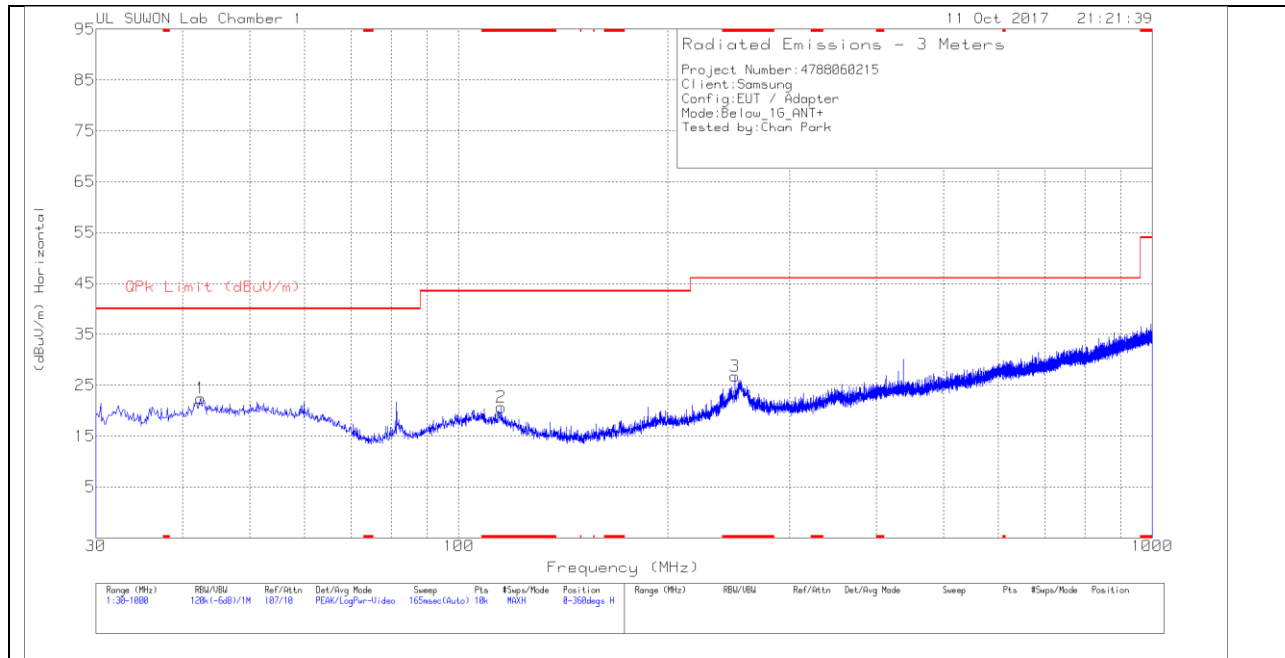
M% = ((t1+t2+t3+...)/T) * 66.83% = 0.25%

Av Reading = Pk Reading + 20*log(M%)
20 * log (M%) = -52.11

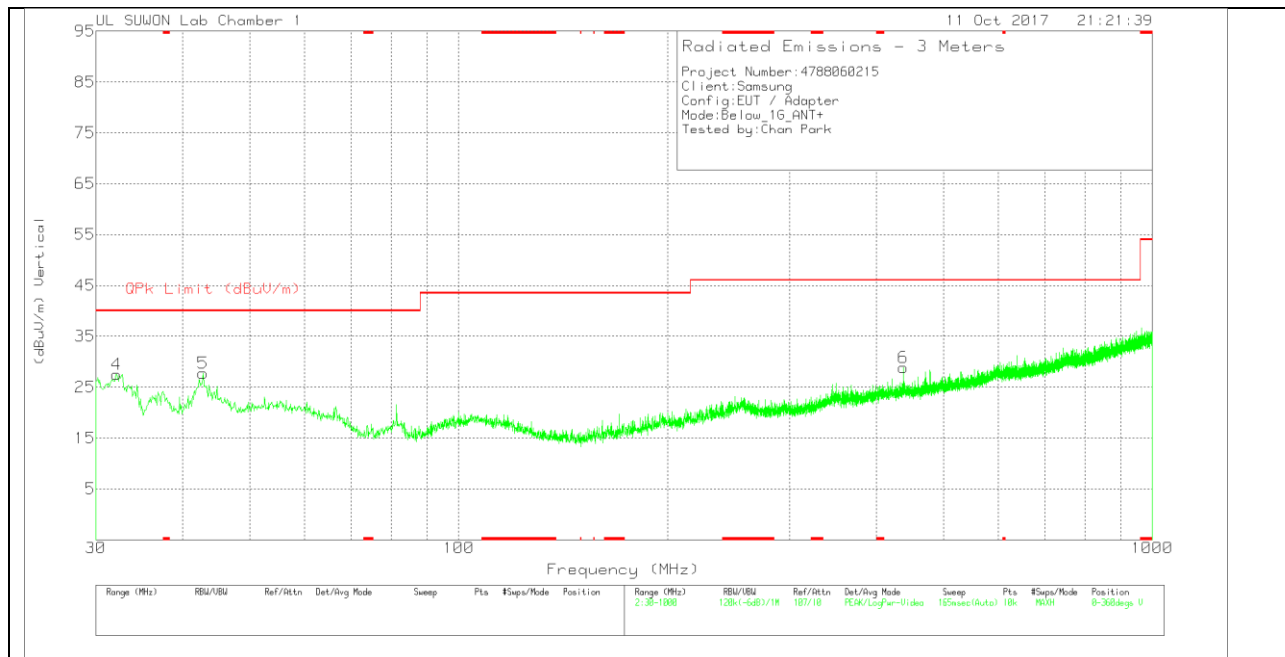
Freq. (MHz)	Pk Rdg (dBuV)	Av Rdg (dBuV)	AF (dB)	Cross (dB)	Pre-amp (dB)	Pk Level (dBuV/m)	Av Level (dBuV/m)	Pk Limit FCC_C	Av Limit FCC_C	Pk Margin (dB)	Avg Margin (dB)	Pol (H/V)	Az (Deg)	Height (Meter)
Low channel														
4804.00	46.28	-5.83	32.00	-33.07	0.00	45.21	-6.90	74.00	54.00	-28.79	-60.90	3mV	0.00	1.00
4804.00	45.95	-6.16	32.00	-33.07	0.00	44.88	-7.23	74.00	54.00	-29.12	-61.23	3mH	0.00	2.00
Mid channel														
4882.00	45.83	-6.28	32.00	-33.07	0.00	44.76	-7.35	74.00	54.00	-29.24	-61.35	3mV	0.00	1.00
4882.00	45.67	-6.44	32.00	-33.07	0.00	44.60	-7.51	74.00	54.00	-29.40	-61.51	3mH	0.00	2.00
High channel														
4960.00	45.79	-6.32	32.00	-33.07	0.00	44.72	-7.39	74.00	54.00	-29.28	-61.39	3mV	0.00	1.00
4960.00	45.34	-6.77	32.00	-33.07	0.00	44.27	-7.84	74.00	54.00	-29.73	-61.84	3mH	0.00	2.00

7.2.4. SPURIOUS BELOW 1 GHz

SPURIOUS EMISSIONS 30 TO 1000 MHz (HORIZONTAL)



VERTICAL PLOT



BELOW 1 GHz TABLE

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	750_20170831	30-1000MHz[dB]	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	42.513	32.7	Pk	19.2	-29.5	22.4	40	-17.6	0-360	400	H
2	* 115.166	32.24	Pk	16.6	-28.2	20.64	43.52	-22.88	0-360	300	H
3	* 250.19	35.73	Pk	18.4	-27.4	26.73	46.02	-19.29	0-360	100	H
4	32.134	40.84	Pk	16.2	-29.5	27.54	40	-12.46	0-360	100	V
5	42.804	37.91	Pk	19.2	-29.4	27.71	40	-12.29	0-360	100	V
6	437.594	32.83	Pk	22	-26	28.83	46.02	-17.19	0-360	200	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

8. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

Frequency of emission (MHz)	Conducted limit (dB μ V)	
	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.

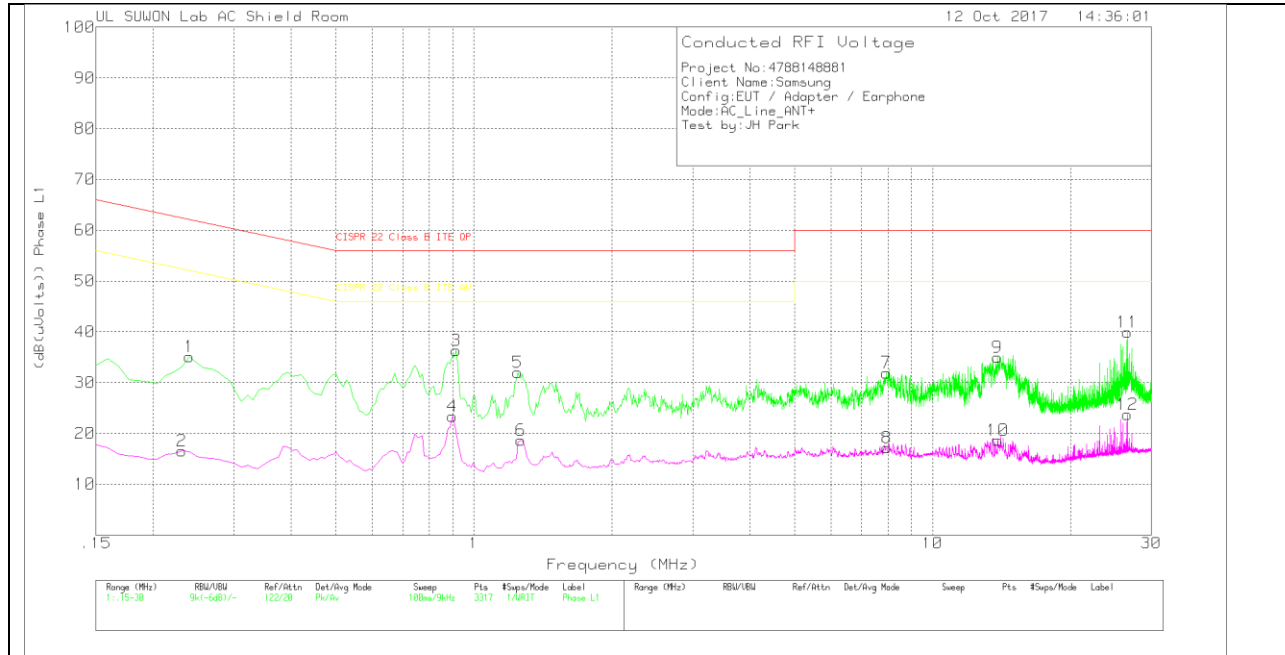
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

6 WORST EMISSIONS

LINE 1 PLOT



LINE 1 RESULTS

Trace Markers

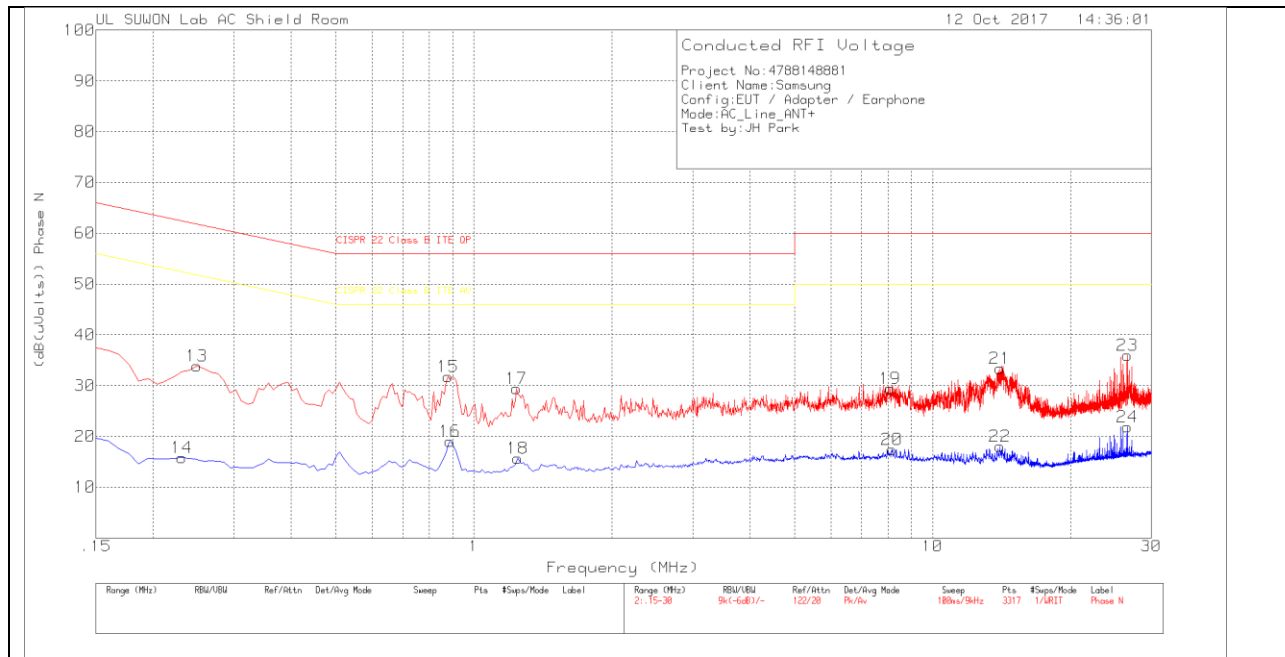
Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_L1_wit h extension	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.24	25.26	Pk	9.6	.2	35.06	62.1	-27.04	-	-
2	.231	6.69	Av	9.6	.2	16.49	-	-	52.41	-35.92
3	.915	26.37	Pk	9.7	.3	36.37	56	-19.63	-	-
4	.897	13.4	Av	9.7	.3	23.4	-	-	46	-22.6
5	1.248	21.77	Pk	9.9	.3	31.97	56	-24.03	-	-
6	1.266	8.44	Av	9.9	.3	18.64	-	-	46	-27.36
7	7.935	21.94	Pk	9.7	.3	31.94	60	-28.06	-	-
8	7.944	7.17	Av	9.7	.3	17.17	-	-	50	-32.83
9	13.866	24.83	Pk	9.8	.4	35.03	60	-24.97	-	-
10	13.875	8.5	Av	9.8	.4	18.7	-	-	50	-31.3
11	26.61	29.33	Pk	10.3	.3	39.93	60	-20.07	-	-
12	26.61	13.1	Av	10.3	.3	23.7	-	-	50	-26.3

Pk - Peak detector

Av - Average detection

LINE 2 PLOT



LINE 2 RESULTS

Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_N_with extension	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
13	.249	24.05	Pk	9.6	.2	33.85	61.79	-27.94	-	-
14	.231	5.87	Av	9.7	.2	15.77	-	-	52.41	-36.64
15	.879	21.79	Pk	9.7	.3	31.79	56	-24.21	-	-
16	.888	9.01	Av	9.7	.3	19.01	-	-	46	-26.99
17	1.239	19.23	Pk	9.9	.3	29.43	56	-26.57	-	-
18	1.248	5.47	Av	9.9	.3	15.67	-	-	46	-30.33
19	8.07	19.35	Pk	9.8	.3	29.45	60	-30.55	-	-
20	8.151	7.31	Av	9.8	.3	17.41	-	-	50	-32.59
21	14.019	23.05	Pk	9.9	.4	33.35	60	-26.65	-	-
22	14.01	7.75	Av	9.9	.4	18.05	-	-	50	-31.95
23	26.61	25.48	Pk	10.2	.3	35.98	60	-24.02	-	-
24	26.61	11.31	Av	10.2	.3	21.81	-	-	50	-28.19

Pk - Peak detector

Av - Average detection