FCC CFR47 PART 15 SUBPART C

NFC

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-E6V1

ISSUE DATE: OCT 13, 2017

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

Prepared by
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ACCREDITED
TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	10/13/17	Initial issue	Junwhan Lee

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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. WORST-CASE CONFIGURATION AND MODE 8

5.4. DESCRIPTION OF TEST SETUP 9

6. TEST AND MEASUREMENT EQUIPMENT 12

7. 20dB BANDWIDTH 13

8. RADIATED EMISSION TEST RESULTS 14

8.1. LIMITS AND PROCEDURE 14

8.1.1. FUNDAMENTAL AND SPURIOUS EMISSIONS (0.15 – 30 MHz) 16

8.1.2. TX SPURIOUS EMISSION 30 TO 1000 MHz 17

9. AC MAINS LINE CONDUCTED EMISSIONS 19

10. FREQUENCY STABILITY 24

11. SETUP PHOTOS 25

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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, CONDUCTED, , Original model) R22J9005ZNF, R22J9008P2V (RADIATED, Spot check model);
DATE TESTED:	AUG 24, 2017 - AUG 25, 2017 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:

SungGil Park
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:

Junwhan Lee
Suwon Lab Engineer
UL Korea, Ltd.

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1.1. INTRODUCTION OF TEST DATA REUSE

This report referenced from the FCC ID: A3LSMT395, DXX NFC(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 NFC circuitry and layout are identical between these two units.
The NFC 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 NFC features.

Due to difference of charger, radiated emission under 1GHz(From 30MHz) and AC line conducted test were performed newly.

1.3. SPOT CHECK VERIFICATION DATA

Mode	Test Item	Frequency	Test Limit	Original model SM-T395 Results FCC ID : A3LSMT395	Spot check model SM-T390 Results FCC ID : A3LSMT390	Deviation	Remark
NFC	Fundamental	13.56 MHz	84 dBuV/m	9.3 dBuV/m	10.46 dBuV/m	1.16 dB	Loop antenna Face on
	Emission	13.55 MHz	50.48 dBuV/m	4.64 dBuV/m	5.82 dBuV/m	1.18 dB	Loop antenna Face on

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

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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 Tittle / 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)

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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
☒ 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:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

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

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

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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 DXX (NFC) operational mode.

5.2. MAXIMUM E-FIELD STRENGTH

The testing was performed at 1 meter. The transmitter maximum E-field at 30m distance is 9.30 dBuV/m which convert from 1 meter data.

5.3. WORST-CASE CONFIGURATION AND MODE

The NFC function was tested at its' fundamental and only operational frequency of 13.56 MHz. The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z. It was determined that the Z orientation was the worst-case orientation; therefore all final radiated testing was performed with the EUT in the Z orientation while generating continuous emissions.

The fundamental level of the EUT was investigated each type and bitrate.
All test was performed worst case condition(type A and bit rate 106 kbps).

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5.4. 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 a stand-alone device configured and tested in a worst-case setup.

Note: Worst case is using worst case orientation with AC charger and headset attached to the EUT with NFC signal continuously transmitting.

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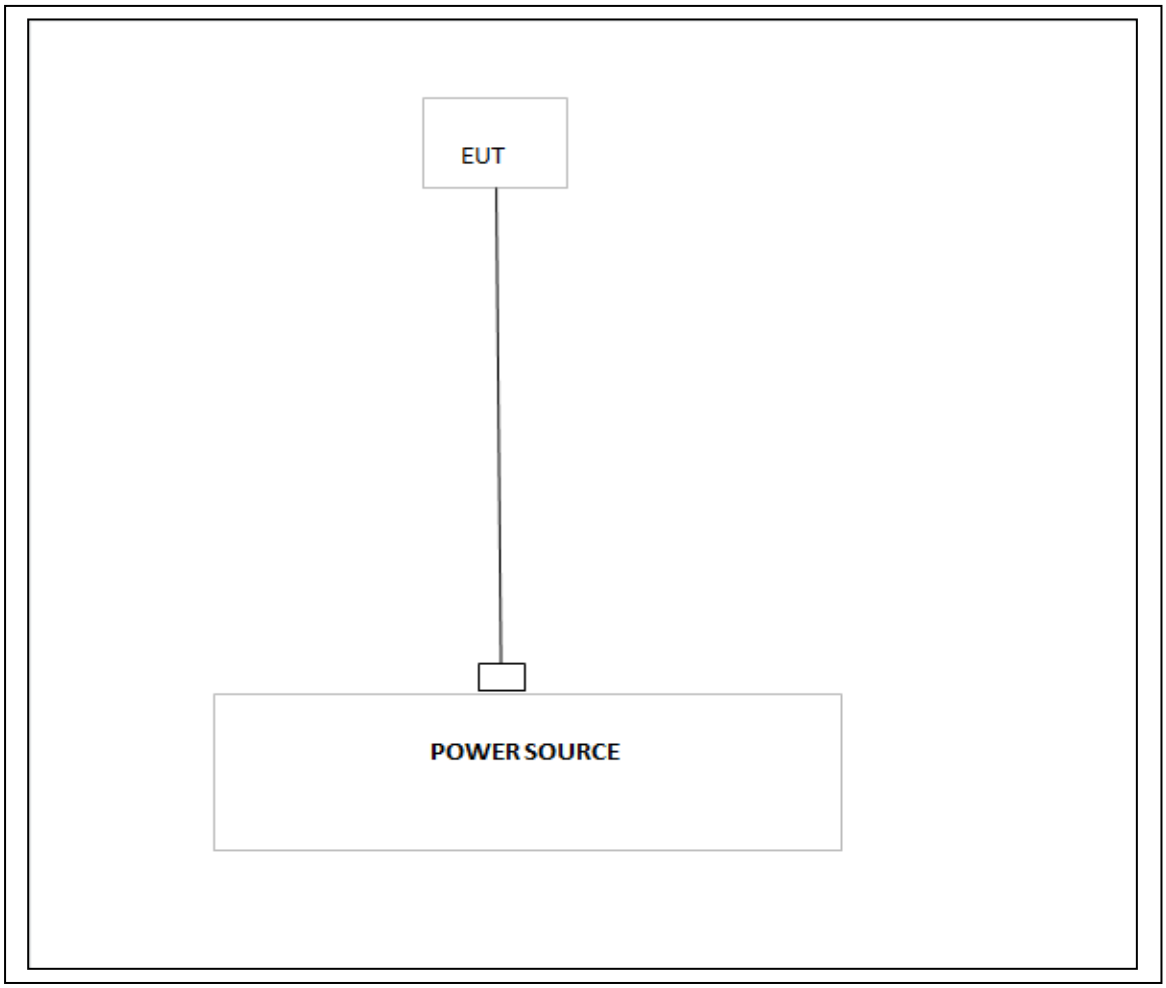
SETUP DIAGRAM FOR TESTS

Radiated Emissions Below 30 MHz:



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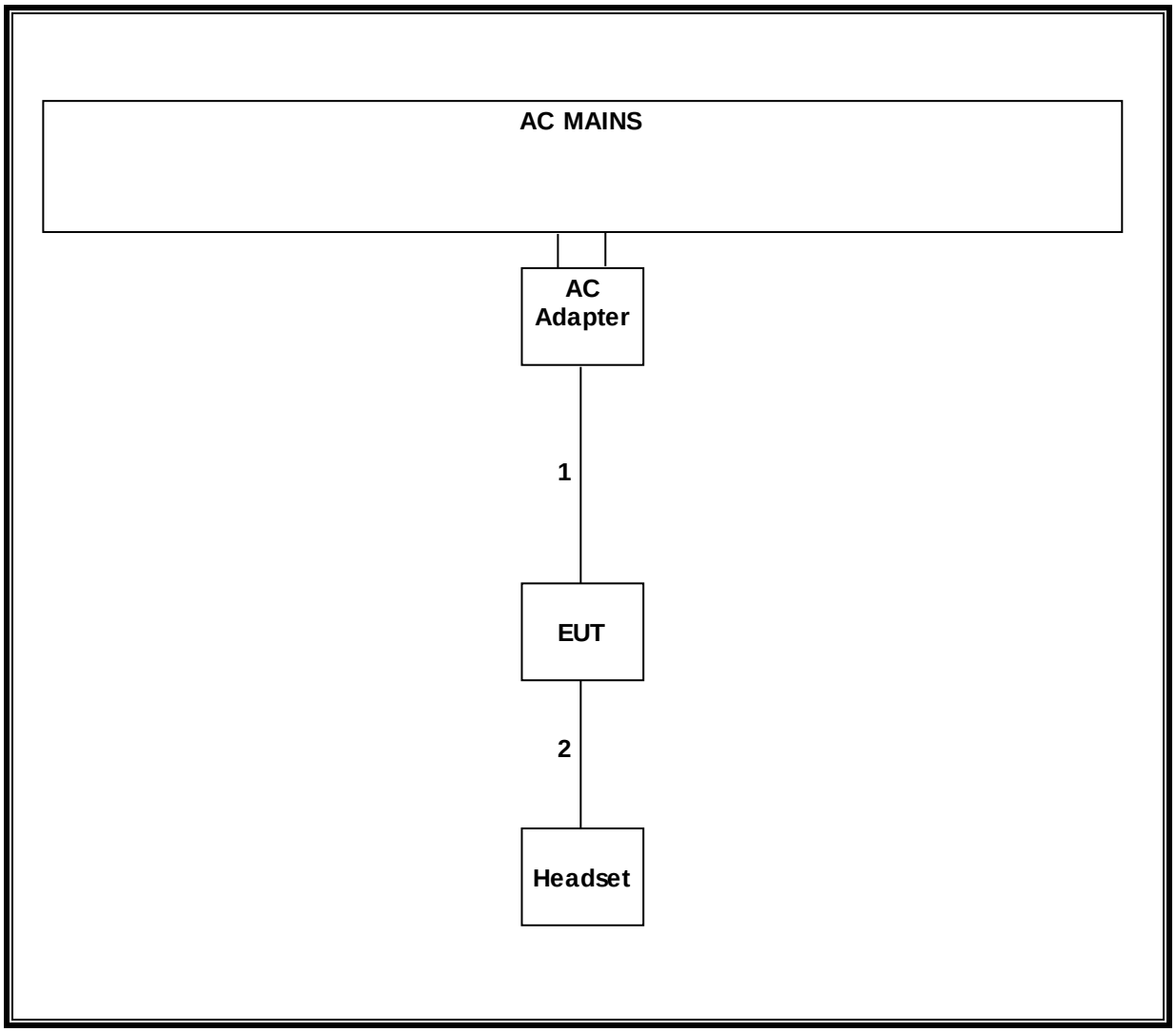
Radiated Emissions Above 30 MHz, AC Line Conducted Emissions:



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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, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	11-25-17
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-09-18
Preamplifier, 1000 MHz	Sonoma	310N	251741	08-07-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-08-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	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
DC Power Supply	Agilent / HP	E3640A	MY54226395	08-07-18
Temperature Chamber	ESPEC	SH-642	93001109	08-08-18
LISN	R&S	ENV216	101837	08-09-18
UL Software				
Description	**Manufacturer**	**Model**	**Version**	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

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7. 20dB BANDWIDTH

LIMITS

§15.215

(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated

§15.225

Operation within the band 13.110 – 14.010MHz

TEST PROCEDURE

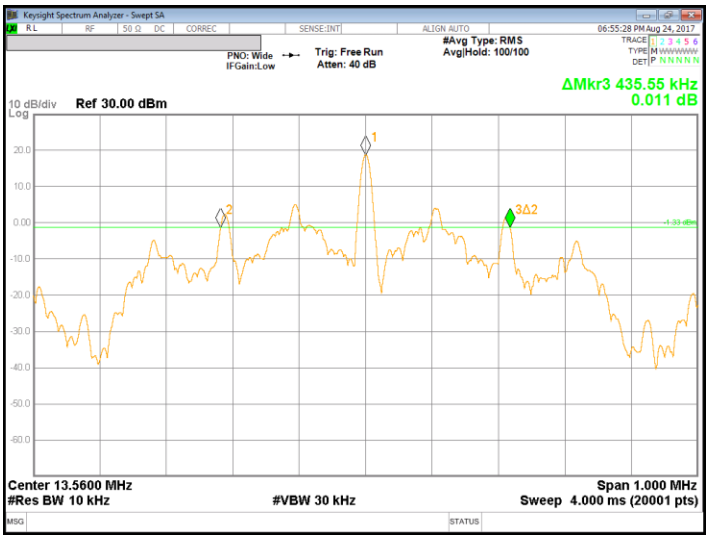
The spectrum analyzer connected receive antenna and the EUT placed on near the receive antenna. The RBW is set to 10KHz. The VBW is set to 3 times the RBW. The sweep time is coupled.

RESULTS

Frequency [MHz]	20dB Bandwidth [KHz]
13.56	435.6

Note : Because the intentional signal is very narrowband (almost CW) adjusting the RBW per RSS-GEN/ANSI C63.10:2013 to be a value between 1-5% of the OBW is impractical. Measurements were made to show the emissions were fully contained within the frequency band designated in the rule section under which the equipment is operated.

20dB Bandwidth Plot



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8. RADIATED EMISSION TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMIT

FCC §15.225

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15.848 microvolts/ meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110– 14.010 MHz and shall not exceed the general radiated emission limits in § 15.209 as follows:
§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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.
§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

Formula for converting the filed strength from uV/m to dBuV/m is:
Limit (dBuV/m) = 20 log limit (uV/m)

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In addition:

§15.209 (d) The emission limits shown the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

§15.209 (d) The provisions in §§ 15.225, measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

TEST PROCEDURE

ANSI C63.10-2013

The EUT is an intentional radiator that incorporates a digital device. The highest fundamental frequency generated or used in the device is 13.56 MHz. The frequency range was investigated from 0.15 MHz to the 10th harmonic of the highest fundamental frequency, or 1000 MHz, whichever is greater (1000MHz)

RESULTS

No non-compliance noted:

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8.1.1. FUNDAMENTAL AND SPURIOUS EMISSIONS (0.15 – 30 MHz)

FCC Part 15, Subpart B & C **1 Meter Distance Measurement At Chamber 1**

Company: Samsung
Project #: 4788060215
Model #: SM-T395
Tester: YH Lim
Date: 2017-08-24

Frequency (MHz)	PK (dBu/V)	QP (dBu/V)	AV (dBuV)	AF dB/m	Distance Correction (dB)	PK Corrected Reading (dBuV/m)	AV Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dB)	AV Margin (dB)	Notes
Loop Antenna Face on: Z position worst												
13.56	49.35		N/A	19.03	-59.08	9.30	N/A	84.00	N/A	-74.7	N/A	Fundamental @ 1m Dist
13.55	44.69		N/A	19.032	-59.08	4.64	N/A	50.48	N/A	-45.8	N/A	13.41MHz-13.553MHz
13.57	43.38		N/A	19.029	-59.08	3.32	N/A	50.48	N/A	-47.2	N/A	13.567MHz-13.71MHz
13.34	28.19		N/A	19.065	-59.08	-11.83	N/A	40.51	N/A	-52.3	N/A	13.110-13.410MHz
13.77	26.88		N/A	18.998	-59.08	-13.21	N/A	41.51	N/A	-54.7	N/A	13.71-14.01MHz
4.85	24.99		N/A	19.8	-59.08	-14.29	N/A	29.54	N/A	-43.8	N/A	9k-13.11MHz
14.62	16.75		N/A	18.861	-59.08	-23.47	N/A	29.54	N/A	-53.0	N/A	14.01MHz-30MHz
Loop Antenna Face off: Z position worst												
13.56	43.9		N/A	19.03	-59.08	3.85	N/A	84.00	N/A	-80.2	N/A	Fundamental @ 1m Dist
13.55	38.53		N/A	19.032	-59.08	-1.52	N/A	50.48	N/A	-52.0	N/A	13.41MHz-13.553MHz
13.57	37.76		N/A	19.029	-59.08	-2.30	N/A	50.48	N/A	-52.8	N/A	13.567MHz-13.71MHz
13.35	26.91		N/A	19.064	-59.08	-13.11	N/A	40.51	N/A	-53.6	N/A	13.110-13.410MHz
13.78	23.91		N/A	18.996	-59.08	-16.18	N/A	40.51	N/A	-56.7	N/A	13.71-14.01MHz
4.83	31.58		N/A	19.8	-59.08	-7.70	N/A	29.54	N/A	-37.2	N/A	9k-13.11MHz
14.17	17.39		N/A	18.933	-59.08	-22.76	N/A	29.54	N/A	-52.3	N/A	14.01MHz-30MHz

* No more emissions were found up to 30MHz

Note: The emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000Mhz. Radiated emission limits in these three bands are based on measurements employing an average detector.

P.K. = Peak
Q.P. = Quasi Peak Readings
A.F. = Antenna factor

Rev. 10.23.09

Note : Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

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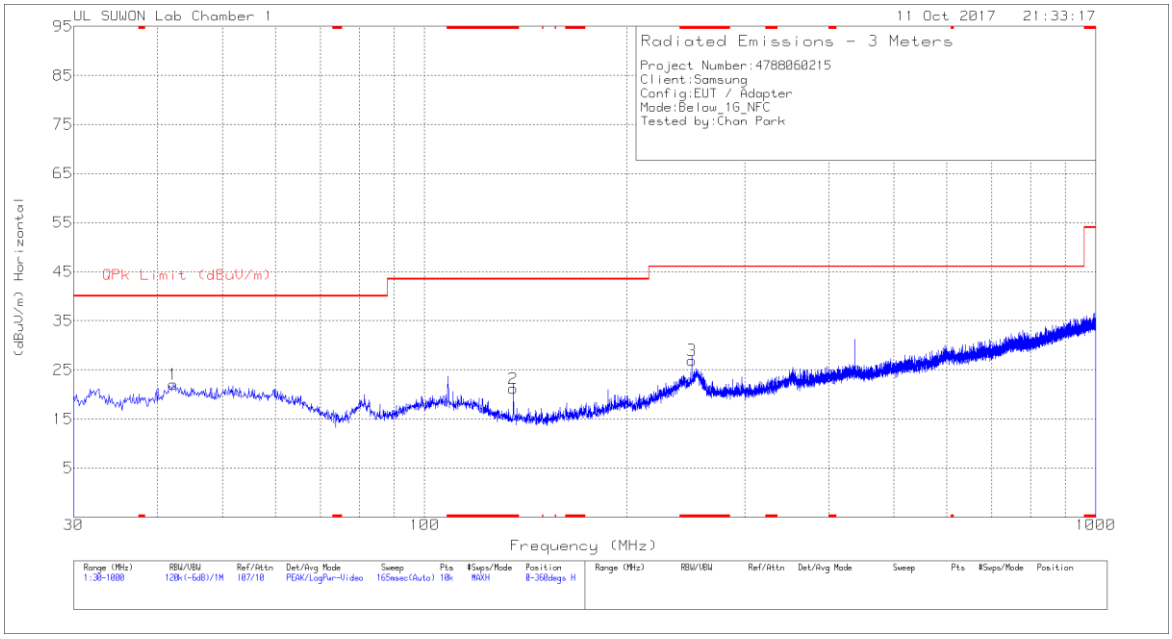
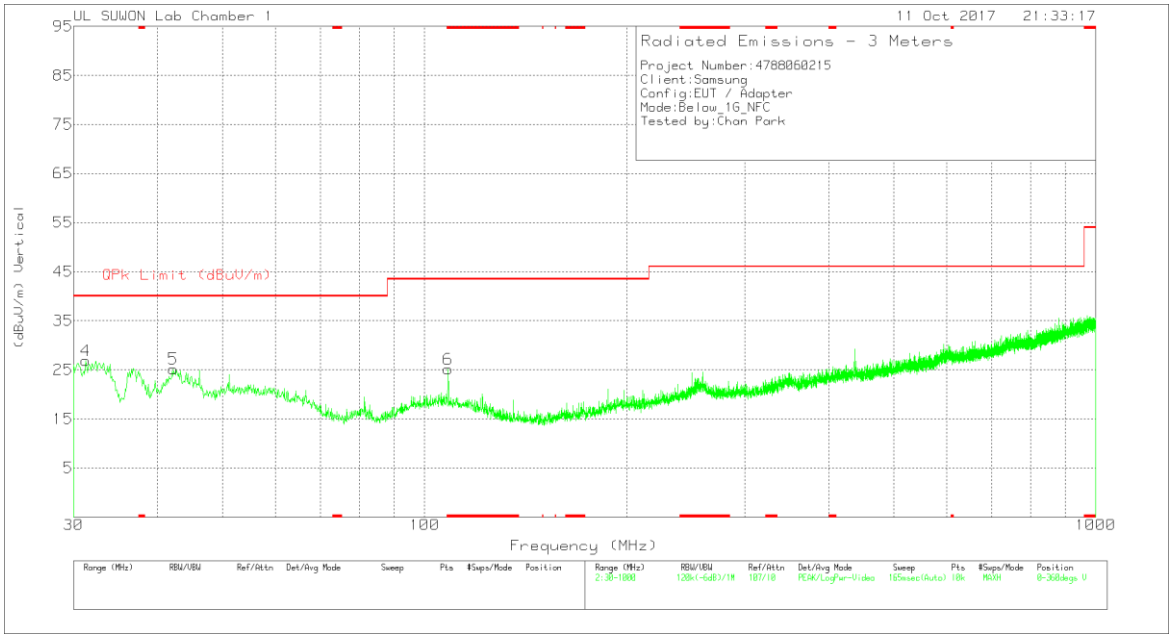
8.1.2. TX SPURIOUS EMISSION 30 TO 1000 MHz

HORIZONTAL



VERTICAL



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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	42.222	32.34	Pk	19.1	-29.4	22.04	40	-17.96	0-360	300	H
2	* 135.633	35.21	Pk	14	-28	21.21	43.52	-22.31	0-360	200	H
3	* 250.287	35.94	Pk	18.4	-27.4	26.94	46.02	-19.08	0-360	100	H
4	31.261	40.52	Pk	16.1	-29.7	26.92	40	-13.08	0-360	100	V
5	42.222	35.51	Pk	19.1	-29.4	25.21	40	-14.79	0-360	100	V
6	* 108.473	36.25	Pk	17.3	-28.4	25.15	43.52	-18.37	0-360	100	V

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

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9. AC MAINS LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range (MHz)	Limits (dBµV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Notes: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

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

No non-compliance noted:

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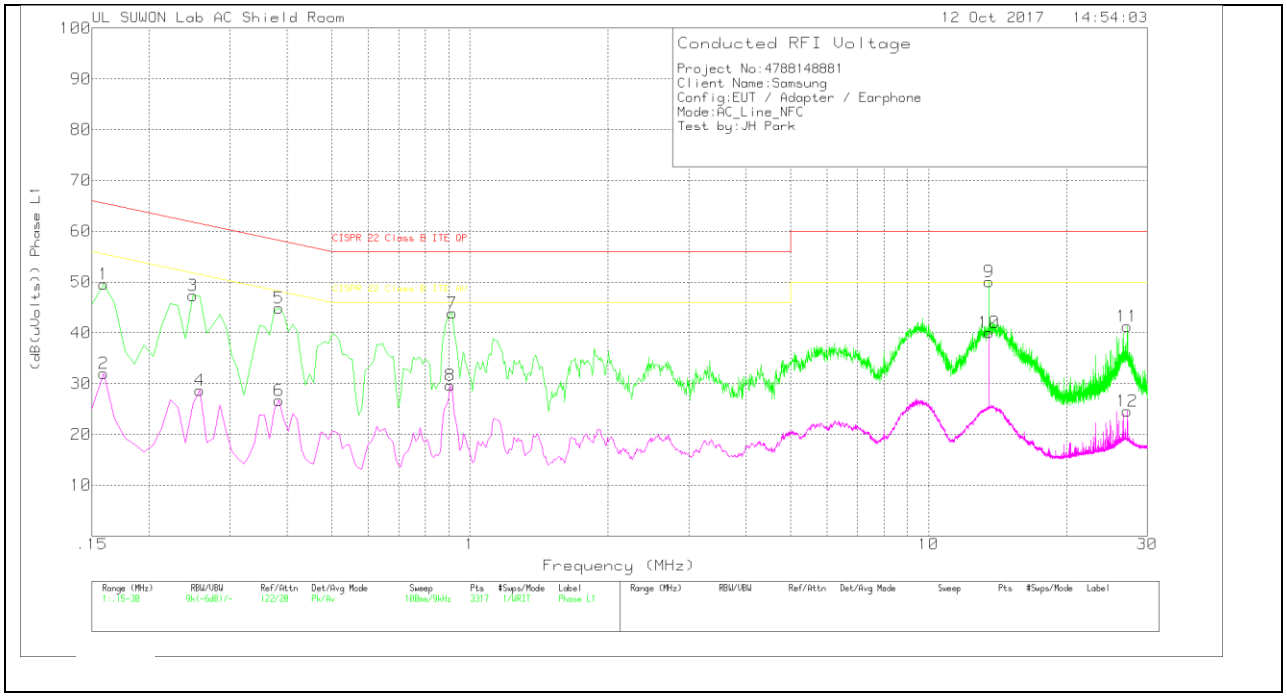
WORST EMISSIONS

LINE 1 PLOT



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LINE 1 RESULTS

Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101837_L1_with extension	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CISPR 22 Class B ITE QP	Margin (dB)	CISPR 22 Class B ITE AV	Margin (dB)
1	.159	39.44	Pk	10	.1	49.54	65.52	-15.98	-	-
2	.159	21.86	Av	10	.1	31.96	-	-	55.52	-23.56
3	.249	37.64	Pk	9.5	.2	47.34	61.79	-14.45	-	-
4	.258	19	Av	9.5	.2	28.7	-	-	51.5	-22.8
5	.384	34.99	Pk	9.7	.2	44.89	58.19	-13.3	-	-
6	.384	16.79	Av	9.7	.2	26.69	-	-	48.19	-21.5
7	.915	33.92	Pk	9.7	.3	43.92	56	-12.08	-	-
8	.906	19.65	Av	9.7	.3	29.65	-	-	46	-16.35
9	13.56	39.88	Pk	9.8	.4	50.08	60	-9.92	-	-
10	13.56	29.88	Av	9.8	.4	40.08	-	-	50	-9.92
11	27.123	30.66	Pk	10.3	.3	41.26	60	-18.74	-	-
12	27.123	13.98	Av	10.3	.3	24.58	-	-	50	-25.42

Pk - Peak detector
Av - Average detection

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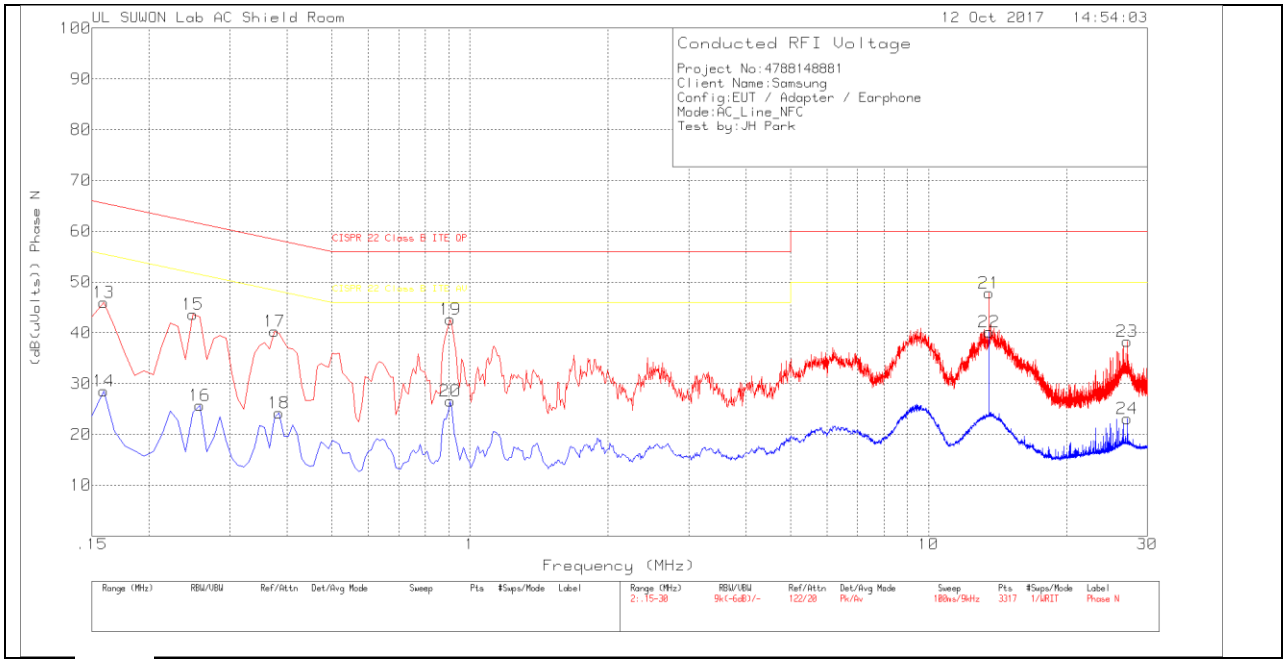
LINE 2 PLOT



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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	.159	35.9	Pk	10	.1	46	65.52	-19.52	-	-
14	.159	18.45	Av	10	.1	28.55	-	-	55.52	-26.97
15	.249	33.79	Pk	9.6	.2	43.59	61.79	-18.2	-	-
16	.258	15.91	Av	9.6	.2	25.71	-	-	51.5	-25.79
17	.375	30.31	Pk	9.8	.2	40.31	58.39	-18.08	-	-
18	.384	14.2	Av	9.8	.2	24.2	-	-	48.19	-23.99
19	.906	32.59	Pk	9.8	.3	42.69	56	-13.31	-	-
20	.906	16.5	Av	9.8	.3	26.6	-	-	46	-19.4
21	13.56	37.66	Pk	9.8	.4	47.86	60	-12.14	-	-
22	13.56	29.93	Av	9.8	.4	40.13	-	-	50	-9.87
23	27.123	27.8	Pk	10.2	.3	38.3	60	-21.7	-	-
24	27.123	12.62	Av	10.2	.3	23.12	-	-	50	-26.88

Pk - Peak detector
Av - Average detection

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10. FREQUENCY STABILITY

LIMIT

FCC §15.225
(e) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency, over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

IC RSS-210 B.6
Carrier frequency stability shall be maintained to ±0.01% (±100 ppm).

TEST PROCEDURE

ANSI C63.10 §6.8

RESULTS

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir.	Frequency Deviation Measureed with Time Elapse								
(Vdc)	Temp (°C)	Start up (MHz)	Delta (ppm)	@ 2mins (MHz)	Delta (ppm)	@ 5mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	50	13.559836333	0.105	13.559835634	0.156	13.559835210	0.188	13.559834880	0.212	100
3.80	40	13.559836925	0.061	13.559836741	0.075	13.559836625	0.083	13.559836580	0.087	100
3.80	30	13.559838021	-0.020	13.559837825	-0.005	13.559837420	0.025	13.559837126	0.046	100
3.80	***20***	***13.559837755***	***0***	***13.559837880***	-0.009	***13.559837928***	-0.013	***13.559838264***	-0.038	***100***
3.80	10	13.559835008	0.203	13.559835822	0.143	13.559836082	0.123	13.559837070	0.051	100
3.80	0	13.559833266	0.331	13.559833872	0.286	13.559834024	0.275	13.559834710	0.225	100
3.80	-10	13.559827071	0.788	13.559828024	0.718	13.559828742	0.665	13.559830524	0.533	100
3.80	-20	13.559821374	1.208	13.559823251	1.070	13.559824510	0.977	13.559826812	0.807	100
3.80	-30	13.559824643	0.967	13.559823432	1.056	13.559818666	1.408	13.559817610	1.486	100

Reference Frequency: EUT Channel 13.56 MHz @ 20°C Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir.	Frequency Deviation Measureed with Time Elapse								
(Vdc)	Temp (°C)	Start up (MHz)	Delta (ppm)	@ 2mins (MHz)	Delta (ppm)	@ 5mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
3.80	***20***	***13.559837755***	***0***	***13.559837880***	-0.009	***13.559837928***	-0.013	***13.559838264***	-0.038	***100***
4.20	20	13.559837852	-0.007	***13.559837894***	-0.010	***13.559837936***	-0.001	***13.559838241***	-0.036	100
3.60	20	13.559837794	-0.003	***13.559837825***	-0.005	***13.559837904***	0.002	***13.559838276***	-0.038	100

No non-compliance noted.

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