CERTIFICATION TEST REPORT

Report Number. : 12440598-E7V1

Applicant	:	Samsung Electronics Co., Ltd. 129 Samsung-Ro, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, 16677, Korea
Models	:	SM-A750GN/DS and SM-A750GN
FCC ID	:	A3LSMA750GN
EUT Description	:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, ANT+ and NFC
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C

Date Of Issue:
August 20, 2018

Prepared by:
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NVLAP TESTING

NVLAP Lab code: 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	8/20/18	Initial Issue	

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	Samsung Electronics Co., Ltd. 129 Samsung-Ro, Yeongtong-Gu, Suwon-Si, Gyeonggi-Do, 16677, Korea
EUT DESCRIPTION:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, ANT+ & NFC
MODELS:	SM-A750GN/DS and SM-A750GN
SERIAL NUMBER:	Radiated: R38K70KQFNY, R38K70KQFAH
DATE TESTED:	August 8 – 14, 2018

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C	Complies

UL Verification Services Inc. 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 Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

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UL VERIFICATION SERVICES INC.

Reviewed By:

STEVEN TRAN
CONSUMER TECHNOLOGY DIVISION
Test Engineer
UL VERIFICATION SERVICES INC.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2013, FCC CFR 47 Part 2, and FCC CFR 47 Part 15.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and at 47658 Kato Road, Fremont, California, USA. Line conducted emissions are measured only at the 47173 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.

47173 Benicia Street	47266 Benicia Street	47658 Kato Rd.
☐ Chamber A (IC:2324B-1)	☐ Chamber D (IC:22541-1)	☐ Chamber I (IC: 2324A-5)
☒ Chamber B (IC:2324B-2)	☐ Chamber E (IC:22541-2)	☐ Chamber J (IC: 2324A-6)
☐ Chamber C (IC:2324B-3)	☐ Chamber F (IC:22541-3)	☐ Chamber K (IC: 2324A-1)
	☐ Chamber G (IC:22541-4)	☐ Chamber L (IC: 2324A-3)
	☐ Chamber H (IC:22541-5)	

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers above are covered under Industry Canada company address and respective code.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0

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
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.24 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 with BT, DTS/UNII a/b/g/n/ac, ANT+ & NFC.

5.2. MAXIMUM FIELD STRENGTH

The testing was performed at 1 meters. The transmitter maximum E-field at 30 meter distance was 20.29 dBuV/m, which was converted from the 1 meter data.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes the loop antenna.

5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was A750GN.001

5.5. WORST-CASE CONFIGURATION AND MODE

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

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

NOTE: The EUT pre-scanned in three NFC type A, B & F. The worst type is A, and data rate of 106kbps was recorded to this report.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	EP-TA50EWE	DW3J719AS/A-E	N/A
Earphone	Samsung	N/A	N/A	N/A

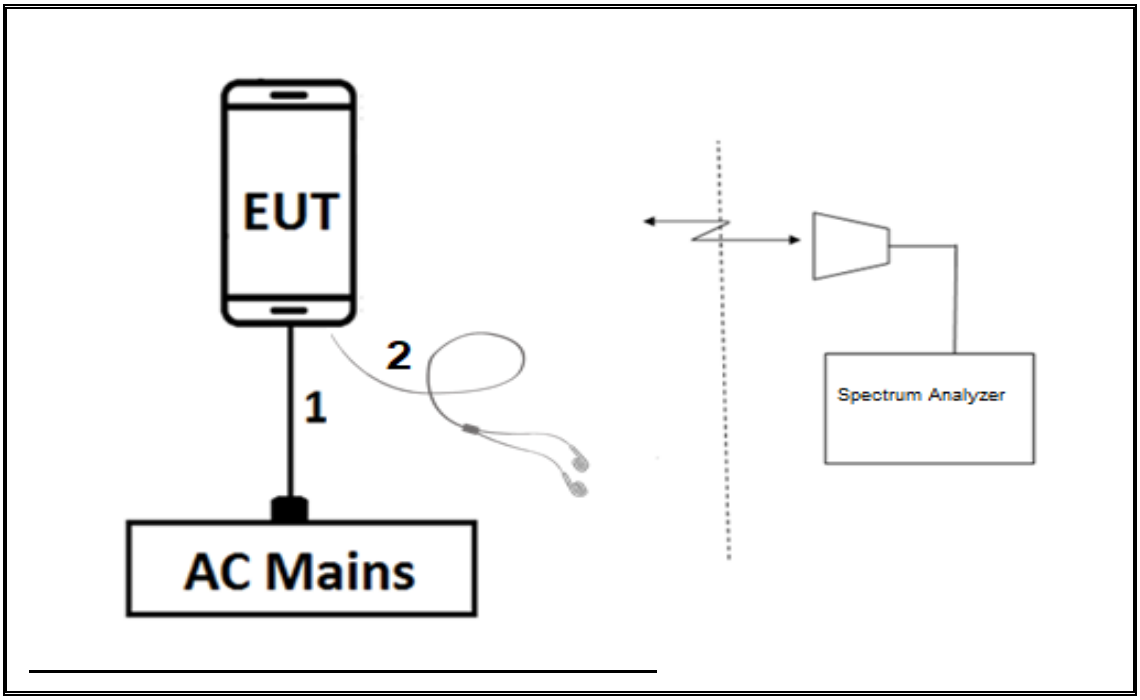
I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	USB	1	USB	Shielded	1	N/A
2	earphone	1	3.5mm	Un-shielded	1	N/A

TEST SETUP

The EUT is a stand alone. Test software exercised the radio card.

SETUP DIAGRAM



TEST SETUP

For radiated tests: EUT is Stand alone. The test software exercises the radio.

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**	**ID Num**	**Cal Due**
Amplifier, 100kHz to 1GHz, 32dB	Hewlet Packard	8447D	T10	02/14/2019
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences Corp.	JB1	T407	05/10/2019
Spectrum Analyzer, PSA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T1454	01/08/2019
Antenna, Active Loop 9kHz-30MHz	Com-Power Corp.	AL-130R	T1866	10/10/2018
EMI Reciever	Rohde & Schwarz	ESR	T1436	02/21/2019
L.I.S.N.	FCC INC.	FCC LISN 50/250	T1310	06/15/2019
L.I.S.N.	FCC INC.	FCC LISN 50/250	T24	03/06/2019
Thermometer - Digital	Control Company	14-650-118	PRE0177862	02/22/2019

UL SOFTWARE			
Antenna Port Software	UL	UL EMC	Ver 8.7, Aug 9, 2018
Radiated Software	UL	UL EMC	Ver 9.5, Dec 01, 2016

7. OCCUPIED BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 10kHz. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

Note: Because the measured signal is CW-like, adjusting the RBW per C63.10 would not be practical since measured bandwidth will always follow the RBW and the result will be approximately twice the RBW.

RESULTS

99% and 20dB BW

TYPE A

Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
424	13.56	22.210	25.14
212	13.56	22.348	24.73
106	13.56	23.784	25.05

TYPE B

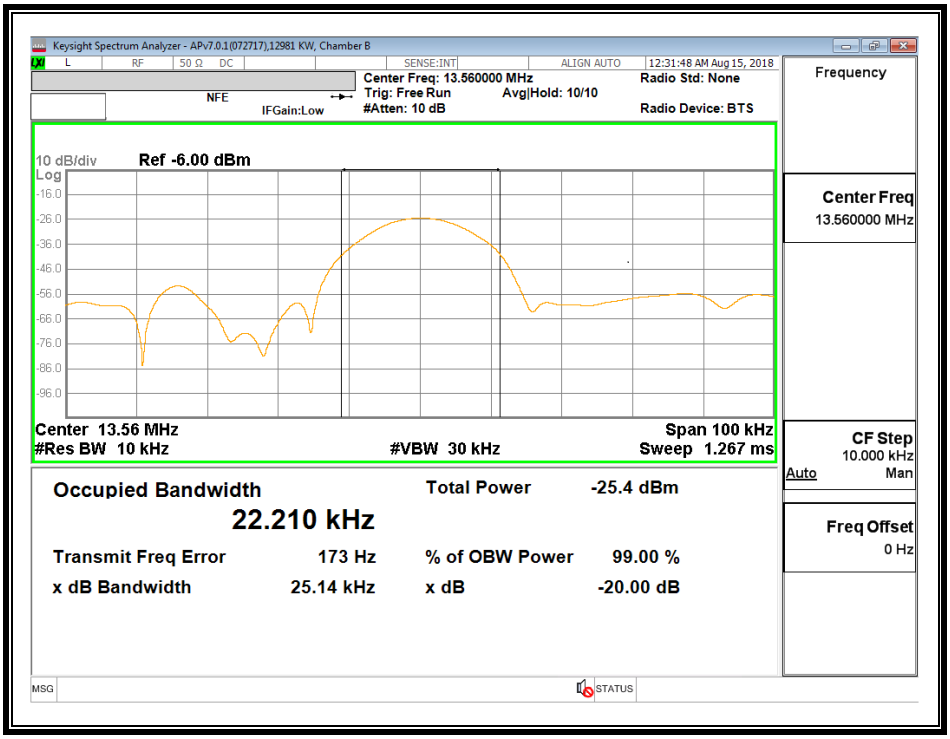
Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
424	13.56	22.101	25.65
212	13.56	22.364	25.43
106	13.56	24.415	23.27

TYPE F

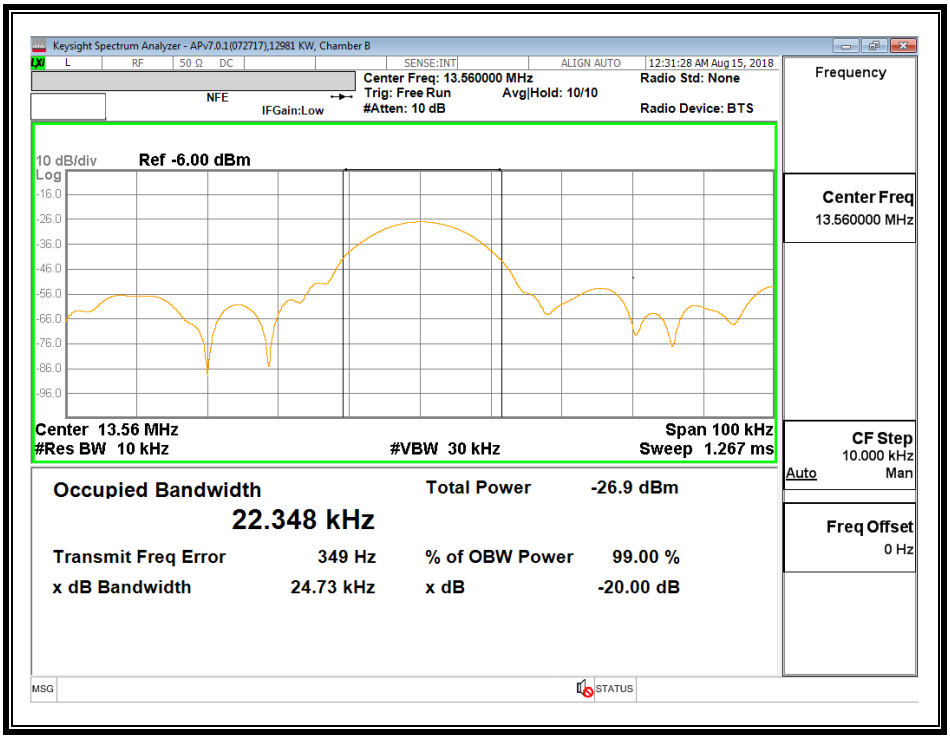
Mode Kbps	Frequency (MHz)	99% Bandwidth (KHz)	20dB Bandwidth (KHz)
424	13.56	21.162	24.96
212	13.56	21.288	24.98
106	13.56	21.140	24.94

7.1. TYPE A

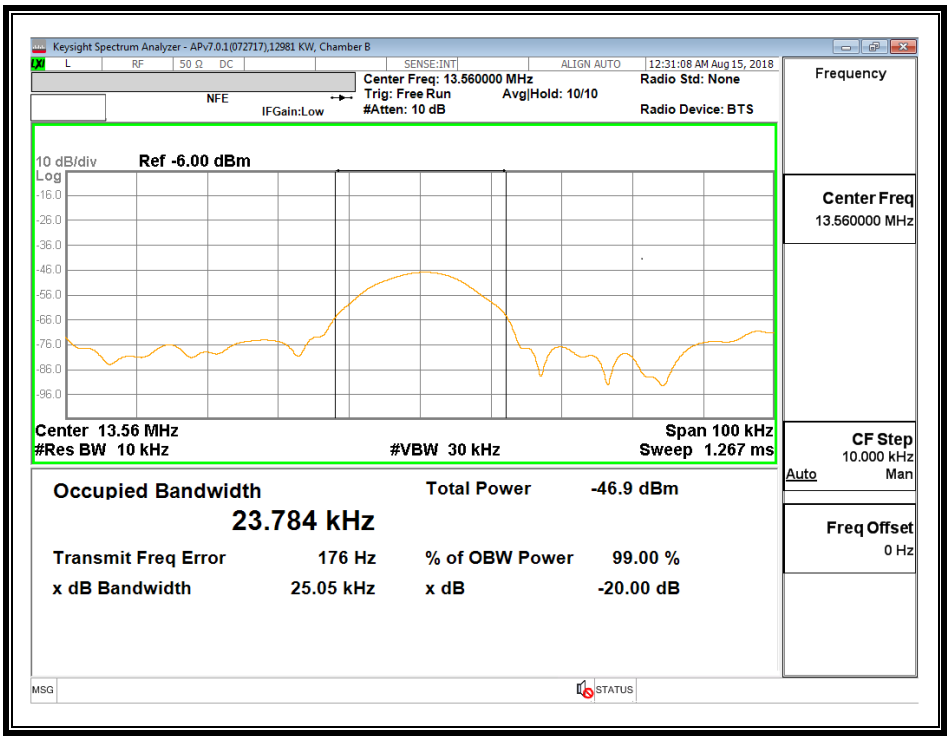
424Kbps



212Kbps

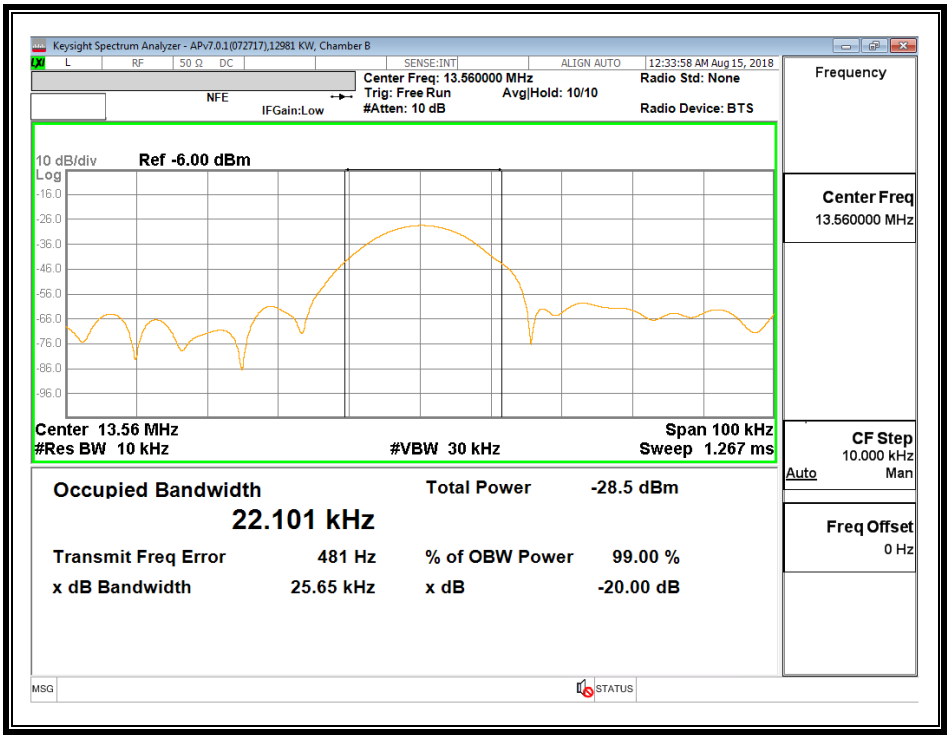


106Kbps

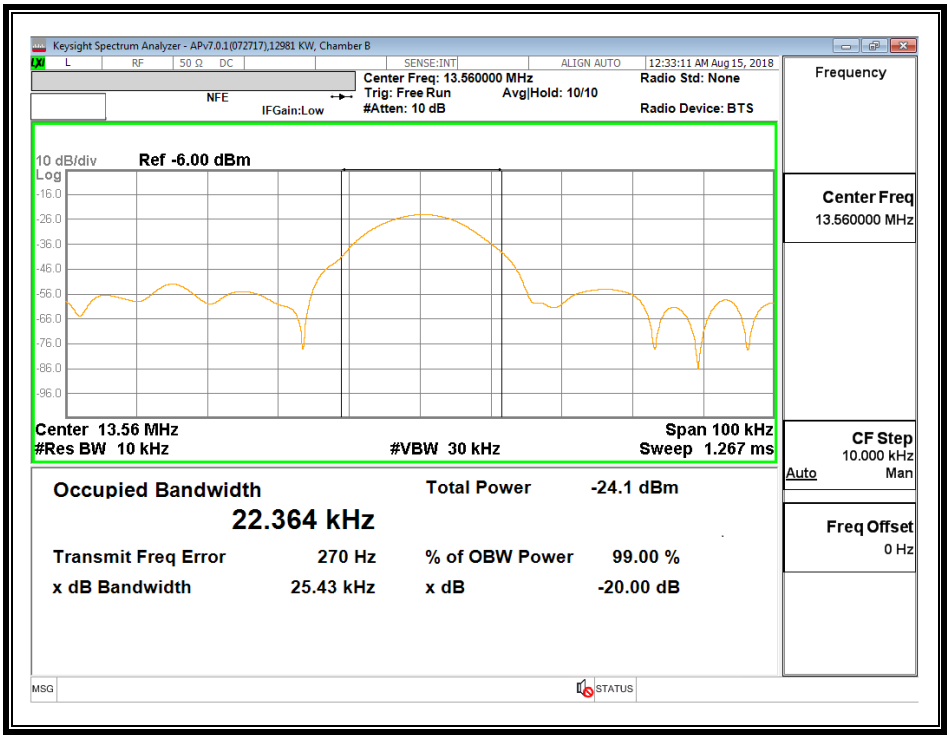


7.2. TYPE B

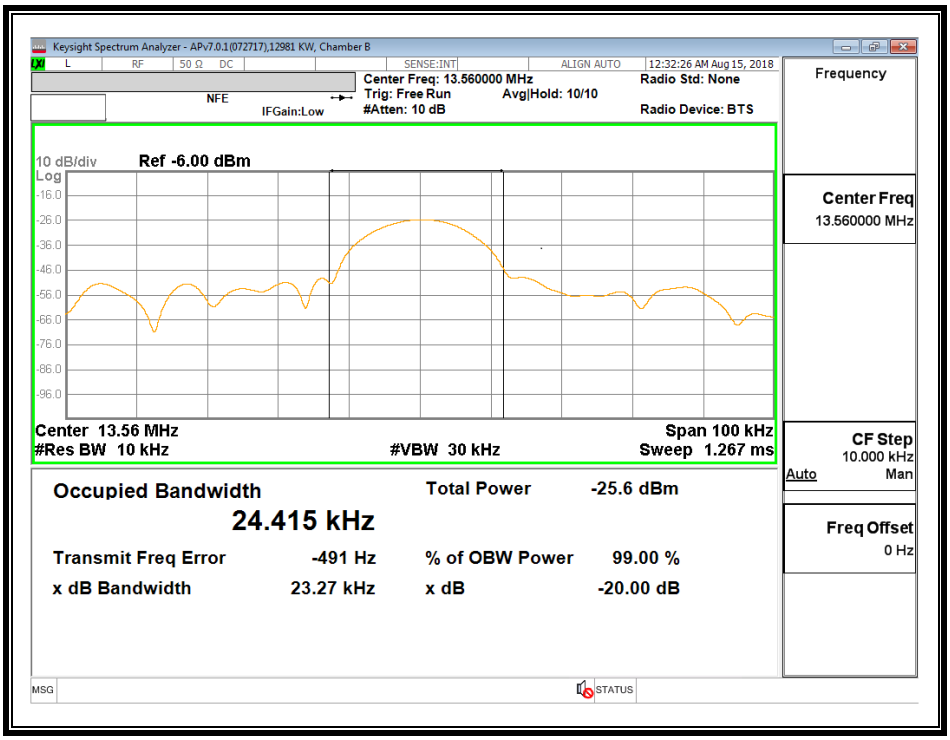
424Kbps



212Kbps

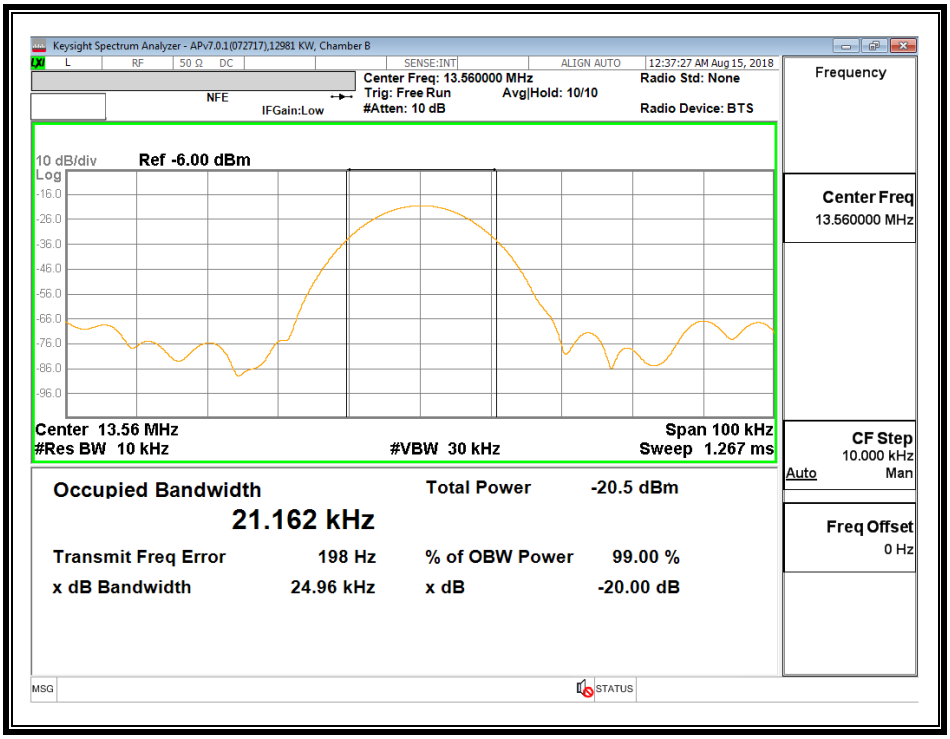


106Kbps

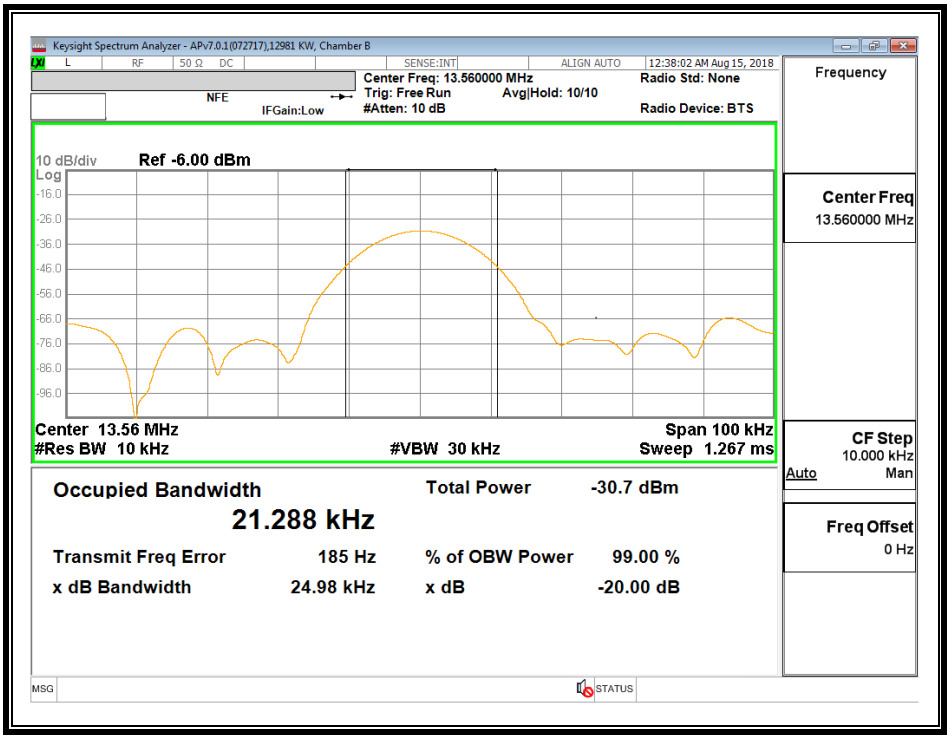


7.3. TYPE F

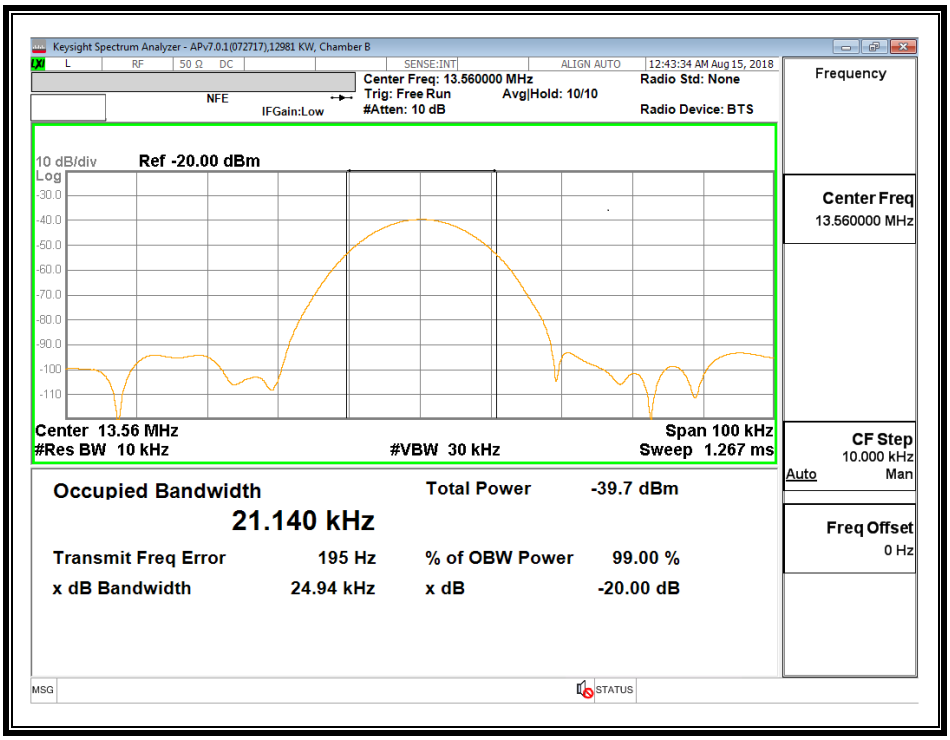
424Kbps



212Kbps



106Kbps



8. RADIATED EMISSION TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMIT

§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)

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; therefore, the frequency range was investigated from 0.15 MHz to the 10th harmonic of the highest fundamental frequency, or 1000 MHz, whichever is greater.

RESULTS

KDB 414788 OATS and Chamber Correlation Justification

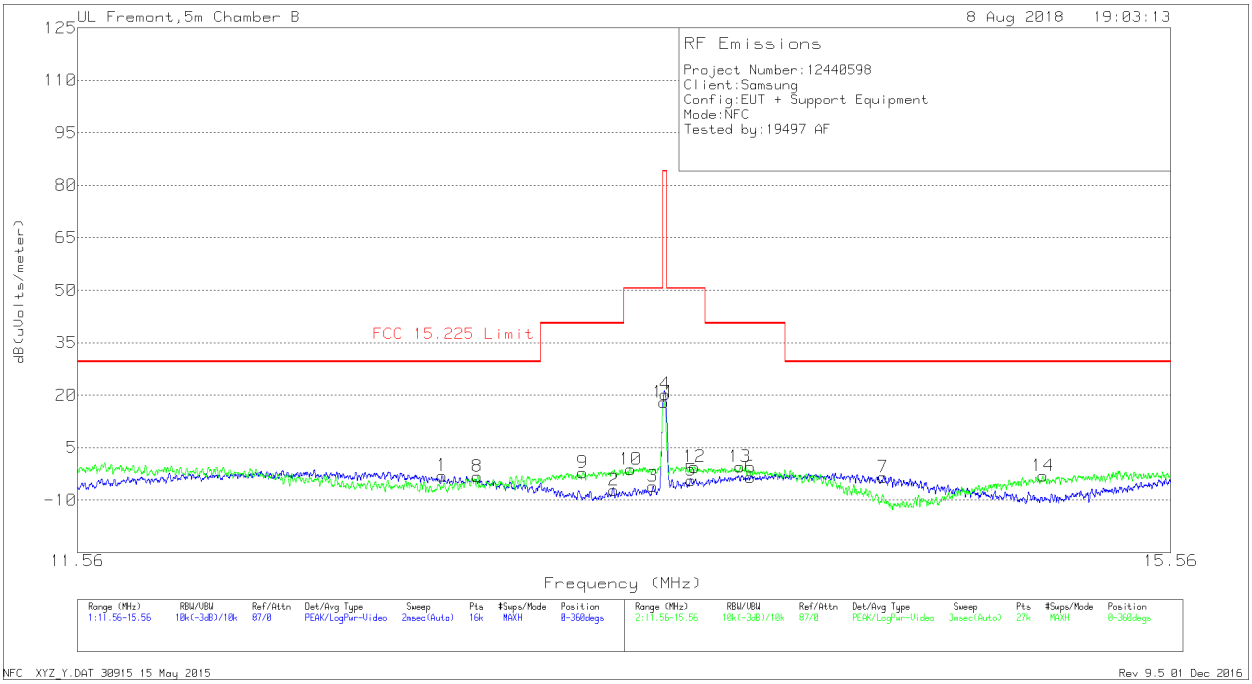
Device is a Smart Phone.

Base on FCC 15.31 (f) (2): measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field.

OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

8.2. FUNDAMENTAL AND SPURIOUS EMISSIONS (0.09 - 1000 MHz)

FUNDAMENTAL EMISSION MASK - TYPE A, 106Kbps (11.56 – 15.56 MHz)



FACE ON AND FACE OFF

NOTE: All data rate Field Strength was investigated and Type A, 106k found to have the highest Field Strength results and represents as the worst case data rate.

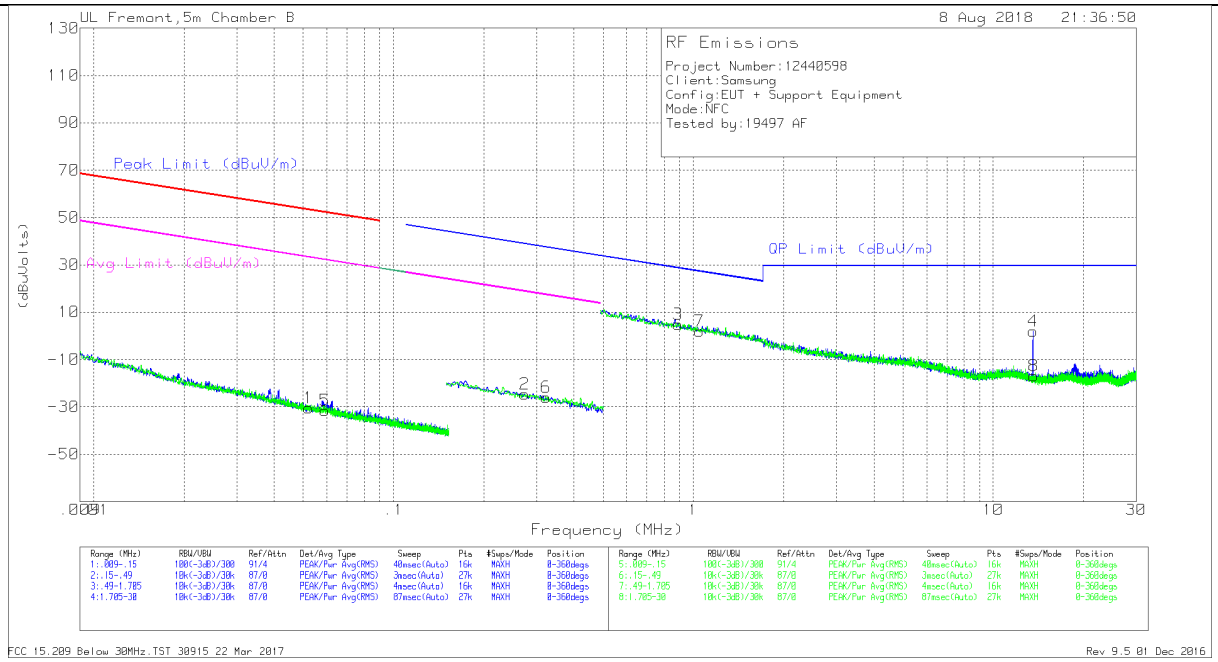
DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading dB(uVolts/meter)	FCC 15.225 Limit	PK Margin (dB)	Azimuth (Degs)
1	12.76463	24.71	Pk	10.7	1.6	-40	-2.99	29.54	-32.53	0-360
8	12.88815	24.48	Pk	10.7	1.6	-40	-3.22	29.54	-32.76	0-360
9	13.26244	25.57	Pk	10.7	1.6	-40	-2.13	40.51	-42.64	0-360
2	13.3745	20.54	Pk	10.7	1.6	-40	-7.16	40.51	-47.67	0-360
10	13.4356	26.53	Pk	10.7	1.6	-40	-1.17	50.5	-51.67	0-360
3	13.51788	21.79	Pk	10.6	1.6	-40	-6.01	50.5	-56.51	0-360
11	*13.558	45.82	Pk	10.6	1.6	-40	18.02	84	-65.98	0-360
4	*13.56275	48.09	Pk	10.6	1.6	-40	20.29	84	-63.71	0-360
5	13.659	23.43	Pk	10.6	1.6	-40	-4.37	50.5	-54.87	0-360
12	13.67203	27.24	Pk	10.6	1.6	-40	-.56	50.5	-51.06	0-360
13	13.84238	27.33	Pk	10.6	1.6	-40	-.47	40.51	-40.98	0-360
6	13.8805	24.31	Pk	10.6	1.6	-40	-3.49	40.51	-44	0-360
7	14.39025	24.42	Pk	10.6	1.6	-40	-3.38	29.54	-32.92	0-360
14	15.02853	24.74	Pk	10.5	1.6	-40	-3.16	29.54	-32.7	0-360

* - Indicates fundamental frequency
Pk - Peak detector

SPURIOUS EMISSIONS - TYPE A, 106kbps (0.09 – 30MHz)



FACE ON AND FACE OFF

DATA

Trace Markers

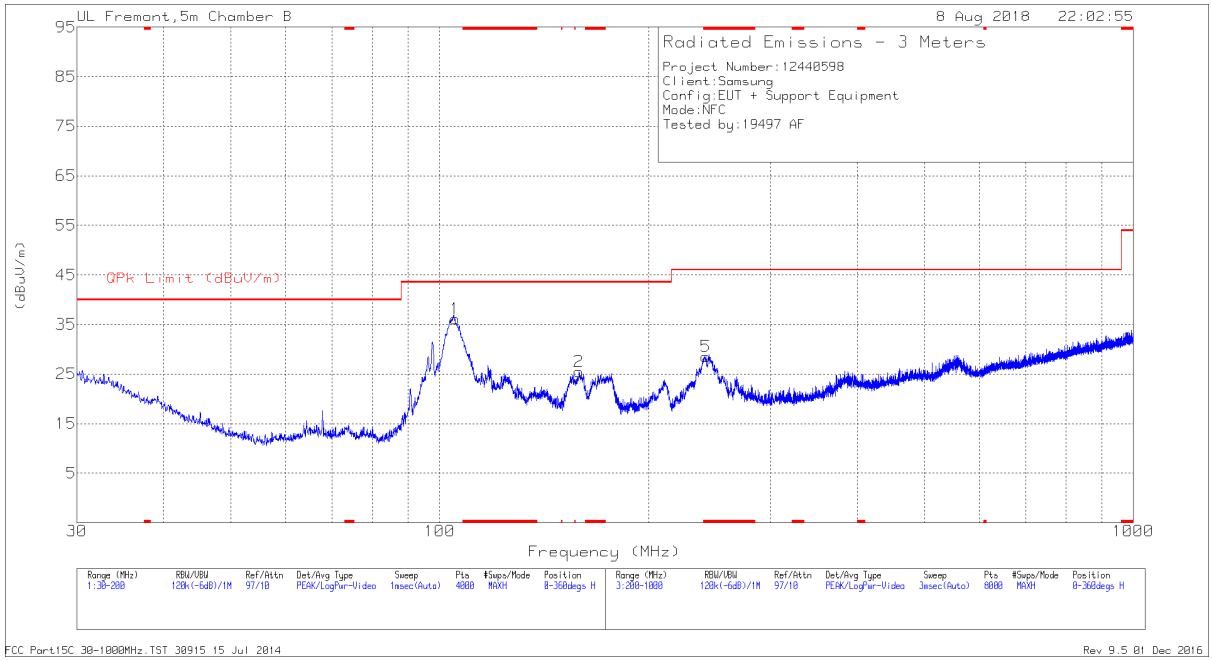
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr 300m	Corrected Reading (dBuVolts)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
1	.05211	36.46	Pk	11.8	1.4	-80	-30.34	53.25	-83.59	33.25	-63.59	-	-	-	-	0-360
5	.05902	35.4	Pk	11.8	1.4	-80	-31.4	52.16	-83.56	32.16	-63.56	-	-	-	-	0-360
2	.27394	43.02	Pk	10.9	1.5	-80	-24.58	-	-	-	-	38.86	-63.44	18.86	-43.44	0-360
6	.3228	41.72	Pk	10.9	1.5	-80	-25.88	-	-	-	-	37.43	-63.31	17.43	-43.31	0-360

Pk - Peak detector

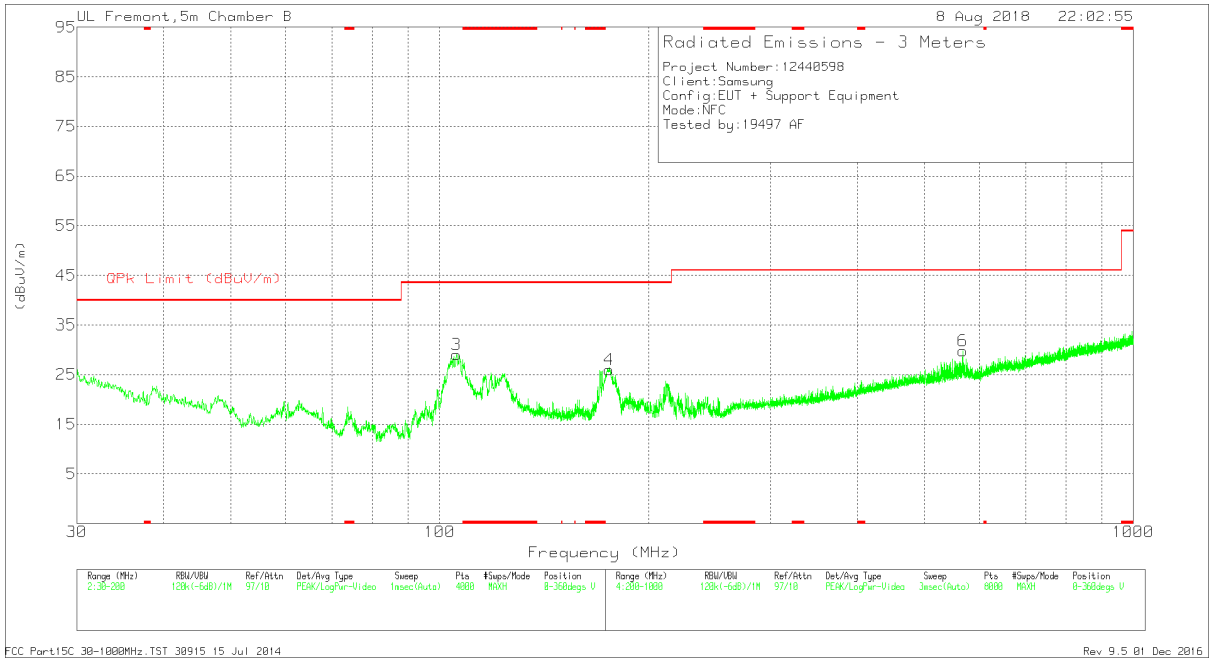
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Loop Antenna (dB/m)	Cbl (dB)	Dist Corr (dB) 40Log	Corrected Reading (dBuVolts)	QP Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Avg Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)
3	.889	32.3	Pk	11.1	1.5	-40	4.9	28.64	-23.74	-	-	-	-	0-360
7	1.04826	29.1	Pk	11.3	1.5	-40	1.9	27.21	-25.31	-	-	-	-	0-360
4	13.55945	29.29	Pk	11	1.6	-40	1.89	29.5	-27.61	-	-	-	-	0-360
8	13.65639	10.41	Pk	11	1.6	-40	-16.99	29.5	-46.49	-	-	-	-	0-360

Pk - Peak detector

SPURIOUS EMISSIONS - TYPE A, 106kbps (30 – 1000MHz)



HORIZONTAL



VERTICAL

DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T407 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	* 242.1055	39.3	Pk	15.6	-26.4	28.5	46.02	-17.52	0-360	100	H
1	105.202	48.21	Pk	15.8	-27.9	36.11	43.52	-7.41	0-360	300	H
3	105.7971	41.06	Pk	15.9	-27.9	29.06	43.52	-14.46	0-360	100	V
2	158.8508	36.41	Pk	16.3	-27.2	25.51	43.52	-18.01	0-360	200	H
4	175.3876	37.64	Pk	15.5	-27.1	26.04	43.52	-17.48	0-360	100	V
6	567.8478	32.87	Pk	22.6	-25.7	29.77	46.02	-16.25	0-360	100	V

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

9. FREQUENCY STABILITY

LIMIT

§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.

TEST PROCEDURE

ANSI C63.10-2013 Clause 6.8

RESULTS

Tested By:	12981 KW
Date:	8/14/2018

No non-compliance noted.

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC Limit: ± 100 ppm = 1.356 kHz										
Power Supply	Envir. Temp	Frequency Deviation Measureed with Time Elapse								
(Vdc)	(ºC)	Startup (MHz)	Delta (ppm)	@ 2 mins (MHz)	Delta (ppm)	@ 5 mins (MHz)	Delta (ppm)	@ 10 mins (MHz)	Delta (ppm)	Limit (ppm)
5.00	50	13.5599608	-0.052	13.5599611	-0.074	13.5599610	-0.066	13.5599610	-0.066	± 100
5.00	40	13.5599606	-0.037	13.5599607	-0.044	13.5599607	-0.044	13.5599607	-0.044	± 100
5.00	30	13.5599602	-0.007	13.5599601	0.000	13.5599600	0.007	13.5599602	-0.007	± 100
5.00	***20***	***13.5599601***	***0.000***	***13.5599601***	***0.000***	***13.5599601***	***0.000***	***13.5599601***	***0.000***	***± 100***
5.00	10	13.5599625	-0.177	13.5599624	-0.170	13.5599623	-0.162	13.5599623	-0.162	± 100
5.00	0	13.5599619	-0.133	13.5599621	-0.147	13.5599620	-0.140	13.5599621	-0.147	± 100
5.00	-10	13.5599614	-0.096	13.5599612	-0.081	13.5599611	-0.074	13.5599613	-0.088	± 100
4.25	20	13.5599610	-0.066	13.5599610	-0.066	13.5599613	-0.088	13.5599607	-0.044	± 100
4.37	20	13.5599605	-0.029	13.5599602	-0.007	13.5599606	-0.037	13.5599603	-0.015	± 100

10. AC MAINS LINE CONDUCTED EMISSIONS

LIMITS

§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.		

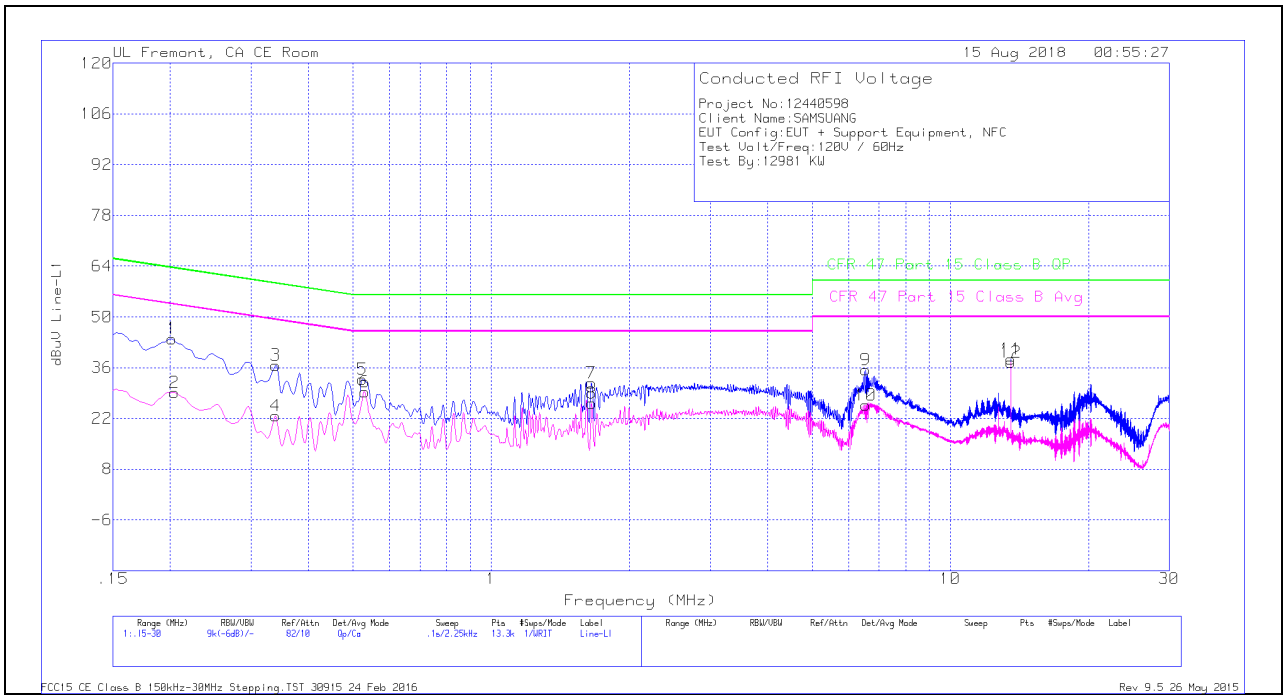
TEST PROCEDURE

ANSI C63.10:2013

RESULTS

No non-compliance noted:

LINE 1 RESULTS



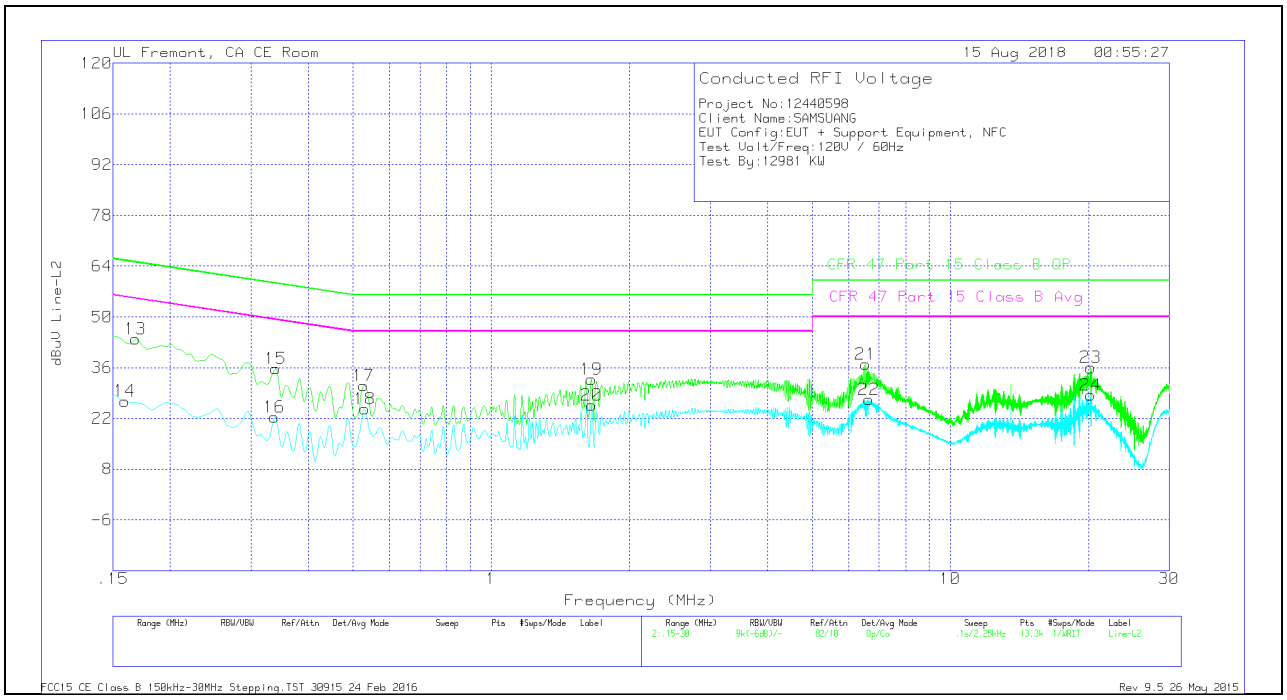
WORST EMISSIONS

Trace Markers

Range 1: Line-L1 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L1	LC Cables C1&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
1	.20175	33.9	Qp	0	0	10.1	44	63.54	-19.54	-	-
2	.204	19.09	Ca	0	0	10.1	29.19	-	-	53.45	-24.26
3	.339	26.6	Qp	0	0	10.1	36.7	59.23	-22.53	-	-
4	.339	12.53	Ca	0	0	10.1	22.63	-	-	49.23	-26.6
5	.5235	22.76	Qp	0	0	10.1	32.86	56	-23.14	-	-
6	.53025	19.23	Ca	0	0	10.1	29.33	-	-	46	-16.67
7	1.653	21.56	Qp	0	.1	10.1	31.76	56	-24.24	-	-
8	1.65525	15.93	Ca	0	.1	10.1	26.13	-	-	46	-19.87
9	6.5445	24.92	Qp	0	.2	10.2	35.32	60	-24.68	-	-
10	6.54788	15.33	Ca	0	.2	10.2	25.73	-	-	50	-24.27
11	13.56	27.82	Qp	.1	.2	10.2	38.32	60	-21.68	-	-
12	13.56	27.03	Ca	.1	.2	10.2	37.53	-	-	50	-12.47

Qp - Quasi-Peak detector
Ca - CISPR average detection
Note: Markers 11 and 12 are the 13.56MHz NFC Fundamental

LINE 2 RESULTS



WORST EMISSIONS

Trace Markers

Range 2: Line-L2 .15 - 30MHz											
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN L2	LC Cables C2&C3	Limiter (dB)	Corrected Reading dBuV	CFR 47 Part 15 Class B QP	QP Margin (dB)	CFR 47 Part 15 Class B Avg	Av(CISPR) Margin (dB)
13	.168	33.69	Qp	.1	0	10.1	43.89	65.06	-21.17	-	-
14	.159	16.59	Ca	.1	0	10.1	26.79	-	-	55.52	-28.73
15	.339	25.58	Qp	0	0	10.1	35.68	59.23	-23.55	-	-
16	.33675	12.25	Ca	0	0	10.1	22.35	-	-	49.28	-26.93
17	.528	21	Qp	0	0	10.1	31.1	56	-24.9	-	-
18	.53025	14.57	Ca	0	0	10.1	24.67	-	-	46	-21.33
19	1.653	22.6	Qp	0	.1	10.1	32.8	56	-23.2	-	-
20	1.65525	15.41	Ca	0	.1	10.1	25.61	-	-	46	-20.39
21	6.5445	26.58	Qp	0	.2	10.2	36.98	60	-23.02	-	-
22	6.64125	16.76	Ca	0	.2	10.2	27.16	-	-	50	-22.84
23	20.229	25.31	Qp	.1	.3	10.3	36.01	60	-23.99	-	-
24	20.2335	17.8	Ca	.1	.3	10.3	28.5	-	-	50	-21.5

Qp - Quasi-Peak detector
Ca - CISPR average detection