FCC 47 CFR PART 15 SUBPART C

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone with BT, BLE, DTS/UNII a/b/g/n/ac & NFC

FCC ID: PY7-30637Z

REPORT NUMBER: 16J23633Y-E7V1

ISSUE DATE: 09/29/2016

Prepared for
SONY MOBILE COMMUNICATIONS INC.
4-12-3 HIGASHI-SHINAGAWA,
SHINAGAWA –KU, TOKYO, 140-0002, JAPAN

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Revision History

Ver.	Issue Date	Revisions	Revised By
1	09/29/16	Initial Issue	Brian Kiewra

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SONY MOBILE COMMUNICATIONS, INC. 4-12-3 HIGASHI-SHINAGAWA, SHINAGAWA –KU,TOKYO, 140-0002, JAPAN
EUT DESCRIPTION:	GSM/WCDMA/LTE Phone with BT, BLE, DTS/UNII a/b/g/n/ac,GPS & NFC
SERIAL NUMBER:	CB512AW74F
DATE TESTED:	2016-09-06 to 2016-09-14, 2016-09-23

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass

UL LLC 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 LLC 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 LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC 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 LLC By:

Jeff Moser
EMC Program Manager
UL – Consumer Technology Division

Prepared By:

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2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Dr., Research Triangle Park, NC 27709, USA and 2800 Suite B, Perimeter Park Drive, Morrisville, NC 27560.

12 Laboratory Dr., RTP, NC 27709
☐ Chamber A
☐ Chamber C

2800 Suite B Perimeter Park Dr., Morrisville, NC 27560
☒ Chamber NORTH
☐ Chamber SOUTH

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0. The full scope of accreditation can be viewed at http://www.nist.gov/nvlap/

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	±3.52 dB
Radiated Disturbance, 9KHz to 30 MHz	±3.15 dB
Radiated Disturbance, 30 to 1000 MHz	±5.36 dB
Radiated Disturbance, 1000 to 18000 MHz	±4.32 dB
Radiated Disturbance,18000 to 26000 MHz	±4.45 dB
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, GPS & NFC.

5.2. MAXIMUM OUTPUT POWER

The testing was performed at 3 meter. The transmitter maximum E-field at 30 meter distance is 21.6 dBuV/m, which is converted from the 3 meter data.

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integral loop coil antenna.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was 39.0.X.1.30

The test utility software used during testing was Tera Term ver 4.89 (SVN# 6182).

5.5. WORST-CASE CONFIGURATION AND MODE

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

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

5.6. MODIFICATIONS

For 30-1000 MHz compliance, a longer polling interval for the NFC radio was implemented. SOMC will implement SW including the new polling interval to the final product.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Headphones	Sony	MH410x	12271A100010396	NA
PowerSupply	Sony	1300-7146.1B	5816W02400051	NA

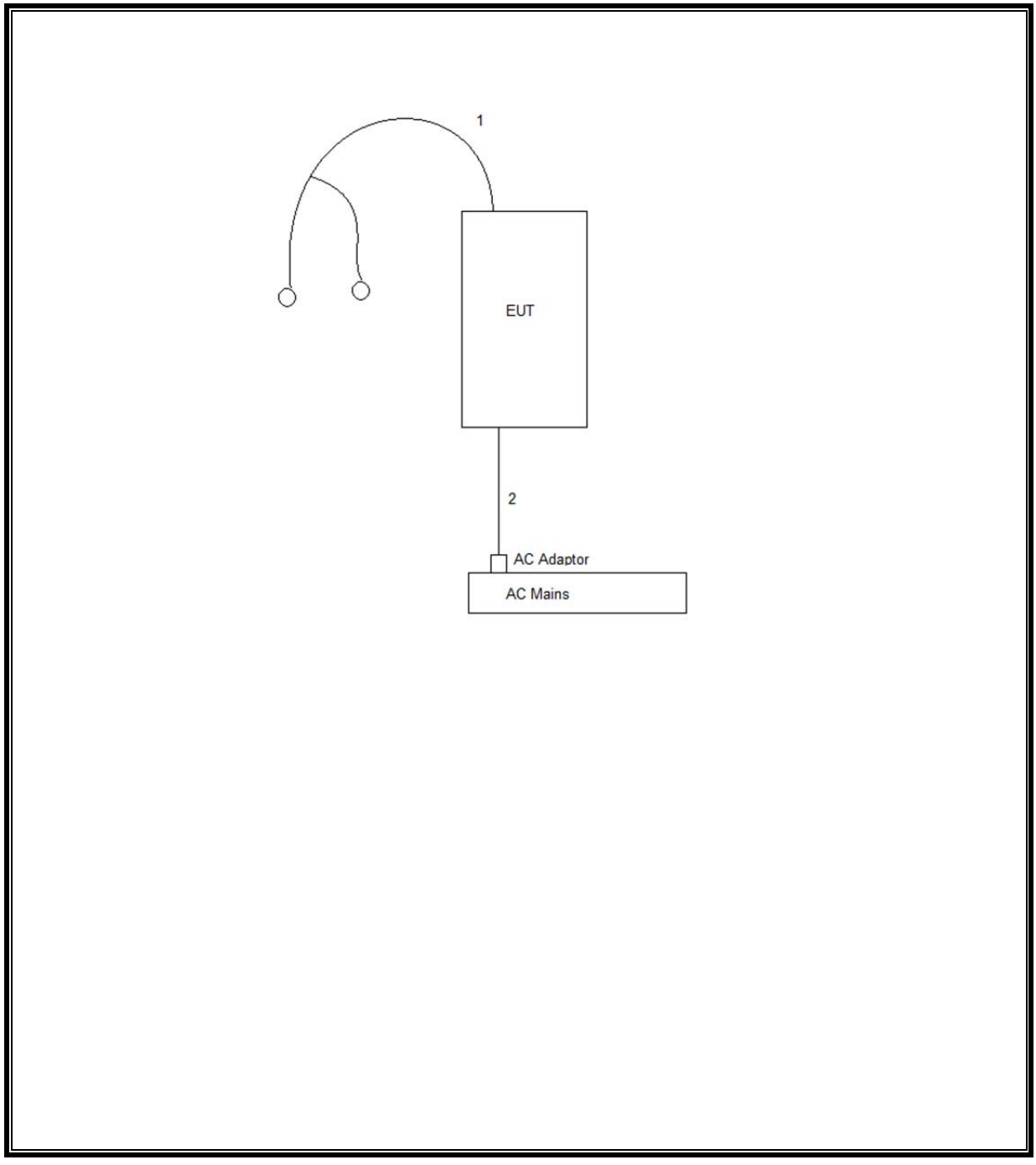
I/O CABLES

I/O Cable List					
Cable No	**Port**	**# of Identical ports**	**Connector Type**	**Cable Length (m)**	**Remarks**
1	Audio	1	3.5mm	>1m	Headphones
2	DC Mains	1	USB	>1m	NA

TEST SETUP

The EUT is a stand-alone unit during the tests.

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 Used - Radiated Disturbance Emissions Test Equipment (Morrisville - North Chamber)

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	0.009-30MHz	**(Loop Ant.)**			
AT0079	Active Loop Antenna	ETS-Lindgren	6502	2015-12-08	2016-12-31
	30-1000 MHz				
AT0074	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB3	2016-06-07	2017-06-30
	Gain-Loss Chains				
N-SAC01	Gain-loss string: 0.009-30MHz	Various	Various	2015-10-07	2016-10-31
N-SAC02	Gain-loss string: 30-1000MHz	Various	Various	2016-06-26	2017-06-30
	Receiver & Software				
SA0027	Spectrum Analyzer	Agilent	N9030A	2016-02-08	2017-02-08
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Additional Equipment used				
HI0078	Temp/Humid/Pressure Meter	Springfield Precision	PreciseTemp	2016-06-13	2017-06-13

Test Equipment Used - Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Conducted Room 2				
SA0020	Spectrum Analyzer	Agilent Technologies	E4446A	2016-03-22	2017-03-31
1100502	Temp/Humid Chamber	Cincinnati Sub-Zero	ZPH-8-3.5-SCT/AC	2016-06-06	2017-06-06
HI0078	Temp/Humid/Pressure Meter	Springfield	PreciseTemp	2015-06-13	2017-06-13
76021	DC Regulated Power Supply	CircuitSpecialists.Com	CSI3005X5	N/A	N/A
	Additional Equipment used				
SA0026	Spectrum Analyzer	Keysight Technologies	N9030A	2016-02-24	2017-02-28
7405	E and B – Field Probes	EMCO	7405	N/A	N/A

Test Equipment Used - Line-Conducted Emissions – Voltage (Morrisville – Conducted 1)

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
CBL077	Coax cable, RG223, N-male to BNC-male, 20-ft.	Pasternack	PE3476-240	2016-06-15	2017-06-30
LISN003	LISN, 50-ohm/50-uH, 2-conductor, 25A	Fischer Custom Com.	FCC-LISN-50-25-2-01-550V	2016-08-24	2017-08-24
LISN008	LISN, 50-ohm/50-uH, 2-conductor, 25A (For support gear only.)	Solar Electronics	8012-50-R-24-BNC	2015-09-03	2016-09-30
PRE0101521 (75141)	EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESCI 7	2016-08-23	2017-08-23
TL001	Transient Limiter, 0.009-30MHz	Com-Power	LIT-930A	2016-06-09	2017-06-30
PS214	AC Power Source	Elgar	CW2501M (s/n 1523A02396)	NA	NA
PS215	AC Power Source	Elgar	CW2501M (s/n 1523A02397)	NA	NA
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
	Miscellaneous (if needed)				
CDECABLE001	ANSI C63.4 1m extension cable.	UL	Per Annex B of ANSI C63.4	2016-06-04	2017-06-30

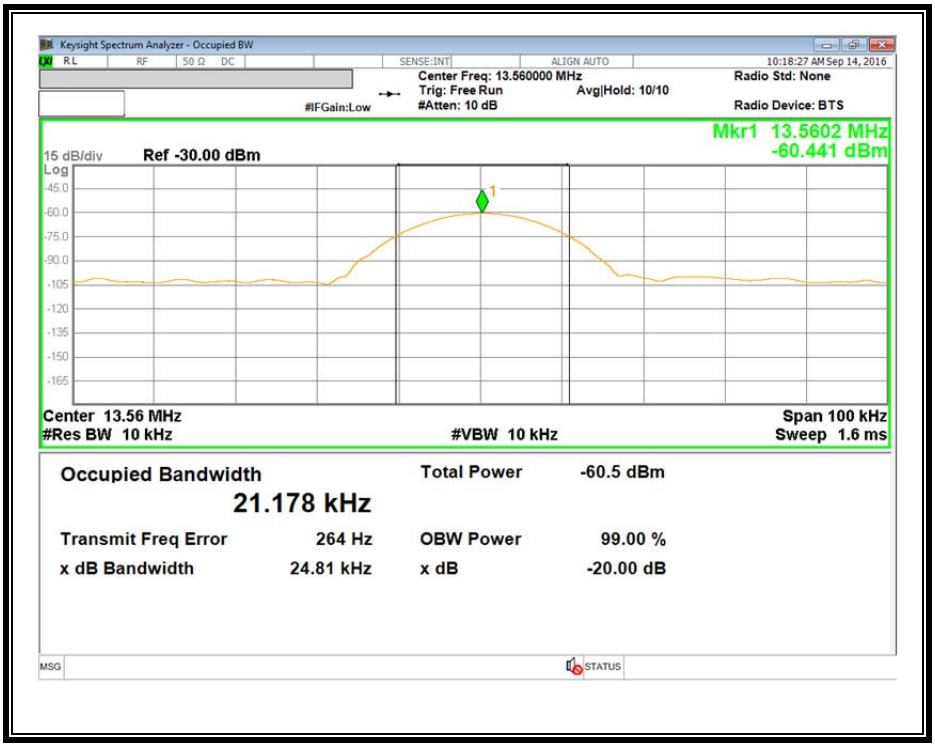
7. OCCUPIED BANDWIDTH

LIMITS

For reporting purposes only. Tested per ANSI C63.10 (6.9.2 and 6.9.3)

RESULTS

Channel	Frequency (MHz)	20dB Bandwidth (KHz)	99% OBW (KHz)
Low	13.56	24.81	21.18



TEST INFORMATION

Date 8/14/16

Project No: 11349470

Tester: Mark Learner

8. RADIATED EMISSION TEST RESULTS

8.1. LIMITS AND PROCEDURE

LIMIT

§15.225, 15.209

(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. 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:

KDB 937606 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.

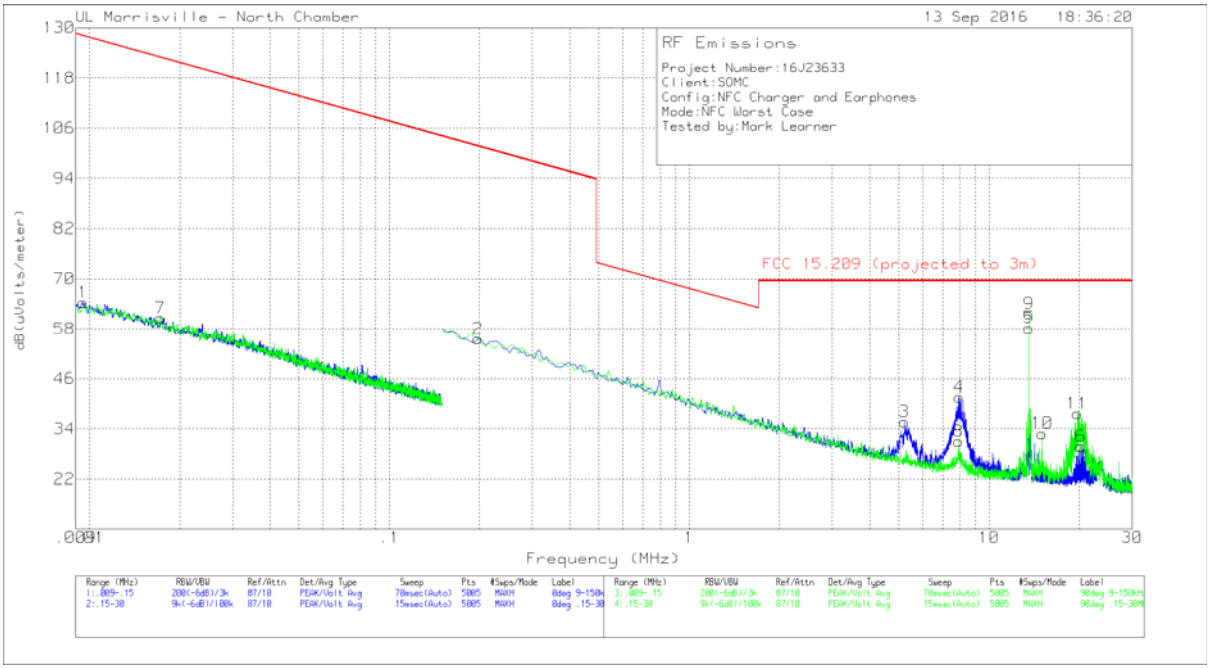
OATs and chamber correlation testing had been performed and chamber measured test result is the worst case test result.

8.1.1. FUNDAMENTAL AND SPURIOUS EMISSIONS (0.009 – 30 MHz)

Fundamental

Freq (MHz)	Meter Reading (dBuV)	Detector Type	AF (dB/m)	Gain/Loss (dB)	Test Distance (m)	DCF (dB)	Corrected Reading (dBuV/m)	QP Limit @ 30m (dBuV/m)	Margin (dB)	Loop Orientation	Notes
13.560	47.0	Pk	10.7	0.6	3.0	-40.0	18.3	84.0	-65.7	Face On	Fundamental @ 30m
13.349	26.2	Pk	10.8	0.6	3.0	-40.0	-2.5	40.5	-43.0	Face On	13.110-13.410MHz Band @ 30m
13.454	26.0	Pk	10.8	0.6	3.0	-40.0	-2.7	50.5	-53.1	Face On	13.410-13.553MHz Band @ 30m
13.662	26.3	Pk	10.7	0.6	3.0	-40.0	-2.4	50.5	-52.9	Face On	13.567-13.710MHz Band @ 30m
13.771	28.3	Pk	10.7	0.6	3.0	-40.0	-0.4	40.5	-40.9	Face On	13.710-14.010MHz Band @ 30m
13.560	50.3	Pk	10.7	0.6	3.0	-40.0	21.6	84.0	-62.4	Face Off	Fundamental @ 30m
13.347	25.6	Pk	10.8	0.6	3.0	-40.0	-3.0	40.5	-43.5	Face Off	13.110-13.410MHz Band @ 30m
13.454	27.9	Pk	10.8	0.6	3.0	-40.0	-0.7	50.5	-51.2	Face Off	13.410-13.553MHz Band @ 30m
13.673	27.0	Pk	10.7	0.6	3.0	-40.0	-1.7	50.5	-52.2	Face Off	13.567-13.710MHz Band @ 30m
13.771	27.3	Pk	10.7	0.6	3.0	-40.0	-1.4	40.5	-41.9	Face Off	13.710-14.010MHz Band @ 30m
Note:	Emissions at the break points met the lowest applicable limit with -42 dB margin or more										

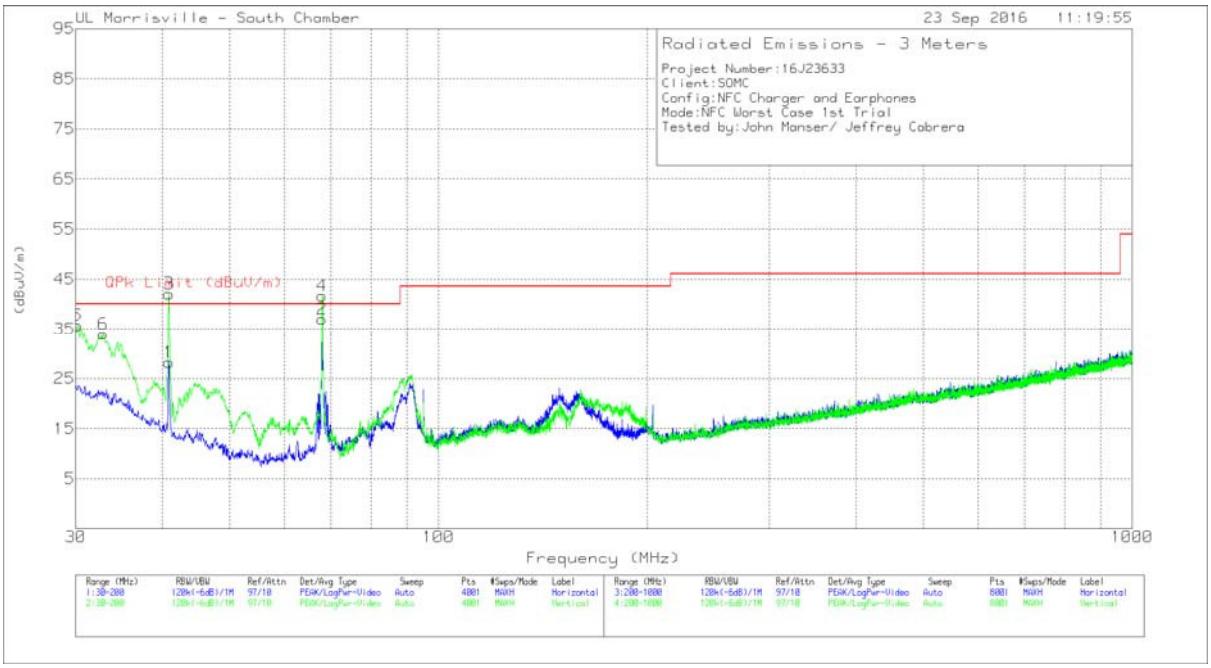
Spurious Emissions (0.150 – 30MHz)



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0079 AF (dB/m)	Cbl (dB)	Corrected Reading dB(uVolts/meter)	FCC 15.209 (projected to 3m)	Margin (dB)	Azimuth (Degs)	Polarity
2	.19772	43.61	Pk	11.9	.1	55.61	101.68	-46.07	0-360	0°
3	5.21429	23.98	Pk	11.3	.4	35.68	69.54	-33.86	0-360	0°
4	7.95222	29.93	Pk	11.2	.5	41.63	69.54	-27.91	0-360	0°
6	20.23416	19.1	Pk	9.9	.8	29.8	69.54	-39.74	0-360	0°
8	7.9045	19.35	Pk	11.2	.5	31.05	69.54	-38.49	0-360	90°
10	15.03864	21.7	Pk	10.6	.6	32.9	69.54	-36.64	0-360	90°
11	19.72713	27.03	Pk	9.9	.7	37.63	69.54	-31.91	0-360	90°

Pk - Peak detector

8.1.2. TX SPURIOUS EMISSION 30 TO 1000 MHz



Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AT0074 AF (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
5	30.17	41.61	Pk	25.9	-31.8	35.71	40	-4.29	0-360	101	V
6	32.89	41.89	Pk	23.9	-31.8	33.99	40	-6.01	0-360	101	V
1	40.6696	32.18	Qp	17.9	-31.6	18.48	40	-21.52	114	297	H
3	41.0377	33	Qp	17.6	-31.6	19	40	-21	297	103	V
2	67.848	34.58	Qp	12.3	-31.3	15.58	40	-24.42	160	200	H
4	67.8088	43.8	Qp	12.3	-31.3	24.8	40	-15.2	217	103	V

Pk - Peak detector
Qp - Quasi-Peak detector

9. 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

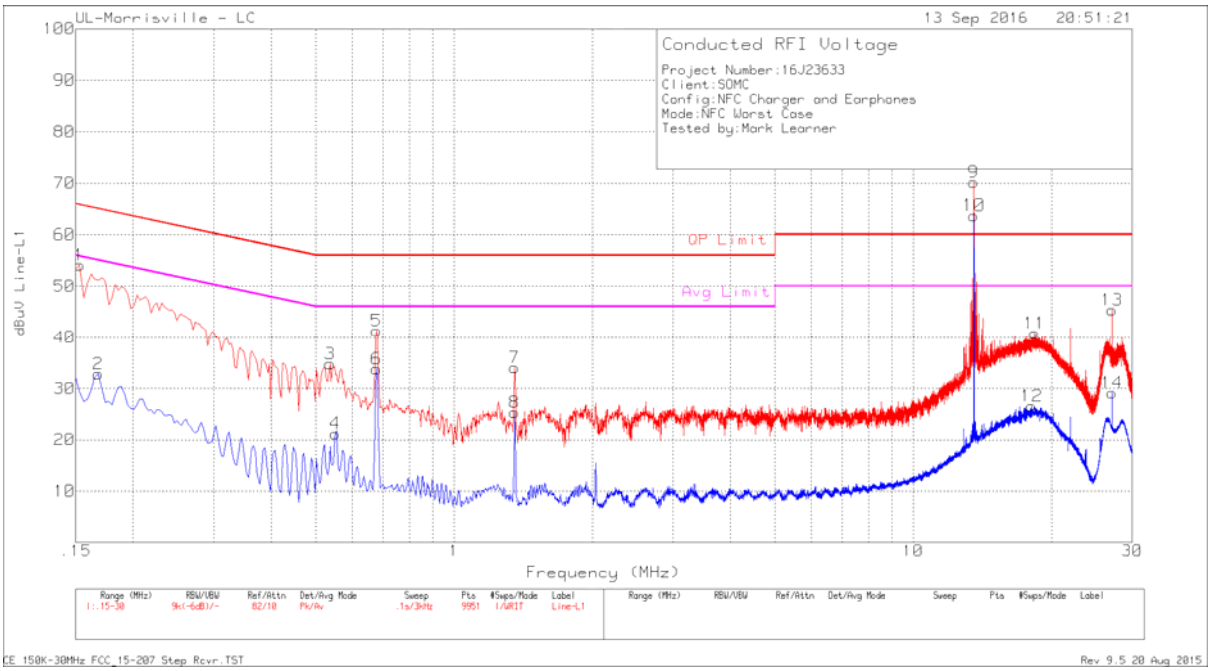
ANSI C63.10

RESULTS

No non-compliance noted.

Antenna Unterminated

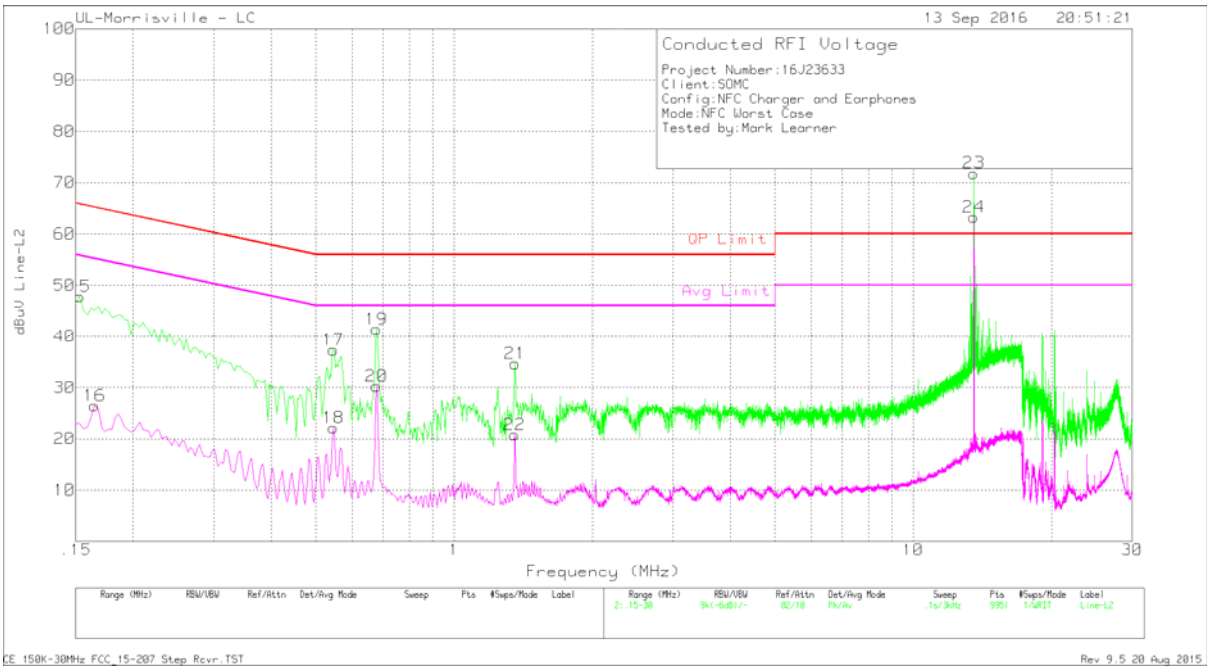
Line 1



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit	Margin (dB)	Avg Limit	Margin (dB)
1	.153	43.89	Pk	.2	10	54.09	65.84	-11.75	-	-
2	.168	22.61	Av	.2	10	32.81	-	-	55.06	-22.25
3	.537	24.82	Pk	0	10	34.82	56	-21.18	-	-
4	.552	11.21	Av	0	10	21.21	-	-	46	-24.79
5	.678	31.33	Pk	0	10	41.33	56	-14.67	-	-
6	.678	23.81	Av	0	10	33.81	-	-	46	-12.19
7	1.356	24.07	Pk	0	10	34.07	56	-21.93	-	-
8	1.356	15.34	Av	0	10	25.34	-	-	46	-20.66
9	13.56*	59.7	Pk	.1	10.4	70.2	**60**	**10.2**	-	-
10	13.56*	53.24	Av	.1	10.4	63.74	-	-	**50**	**13.74**
11	18.411	30.11	Pk	.2	10.5	40.81	60	-19.19	-	-
12	18.129	15.9	Av	.2	10.5	26.6	-	-	50	-23.4
13	27.12	34.4	Pk	.3	10.7	45.4	60	-14.6	-	-
14	27.12	18.17	Av	.3	10.7	29.17	-	-	50	-20.83

*Fundamental Frequency
Pk - Peak detector
Av - Average detection

Line 2

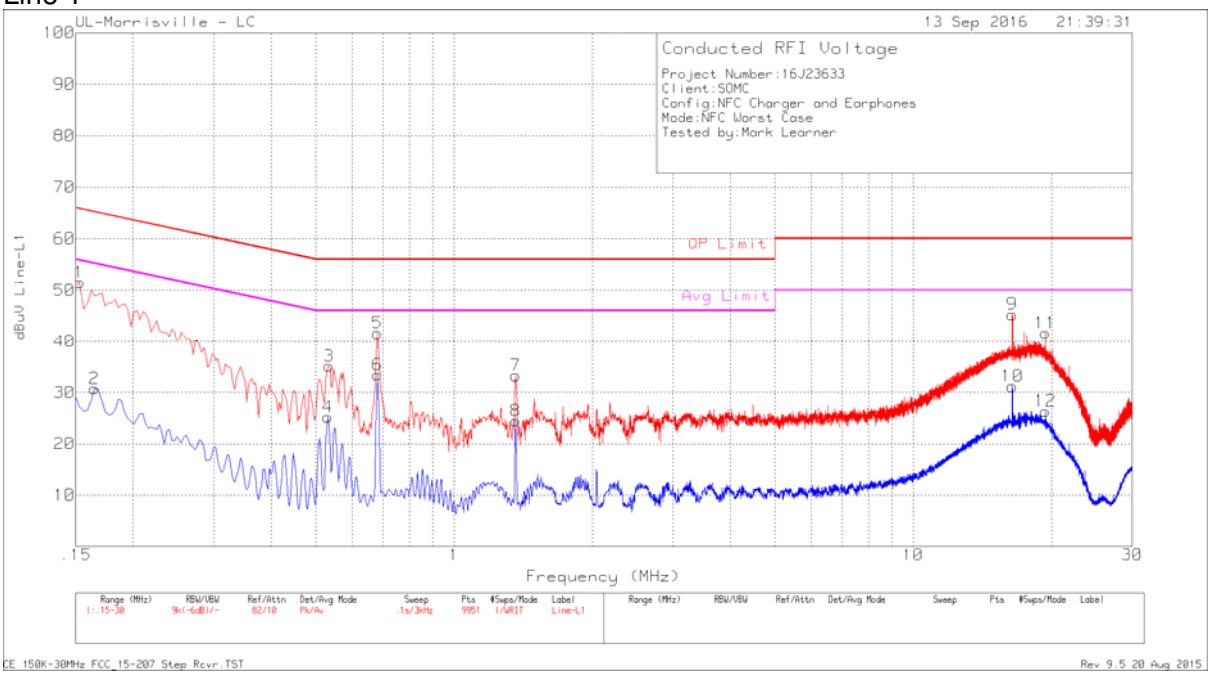


Range 2: Line-L2 .15 - 30MHz										
Marker	**Frequency (MHz)**	**Meter Reading (dBuV)**	**Det**	**LISN VCF (dB)**	**Cbl/Limiter (dB)**	**Corrected Reading dBuV**	**QP Limit**	**Margin (dB)**	**Avg Limit**	**Margin (dB)**
15	.153	37.6	Pk	.2	10	47.8	65.84	-18.04	-	-
16	.165	16.27	Av	.2	10	26.47	-	-	55.21	-28.74
17	.546	27.34	Pk	0	10	37.34	56	-18.66	-	-
18	.546	12.15	Av	0	10	22.15	-	-	46	-23.85
19	.678	31.46	Pk	0	10	41.46	56	-14.54	-	-
20	.678	20.27	Av	0	10	30.27	-	-	46	-15.73
21	1.359	24.64	Pk	0	10	34.64	56	-21.36	-	-
22	1.356	10.76	Av	0	10	20.76	-	-	46	-25.24
23	13.56*	61.36	Pk	.1	10.4	71.86	**60**	**11.86**	-	-
24	13.56*	52.81	Av	.1	10.4	63.31	-	-	**50**	**13.31**

*Fundmental Frequency
Pk - Peak detector
Av - Average detection

Antenna Terminated

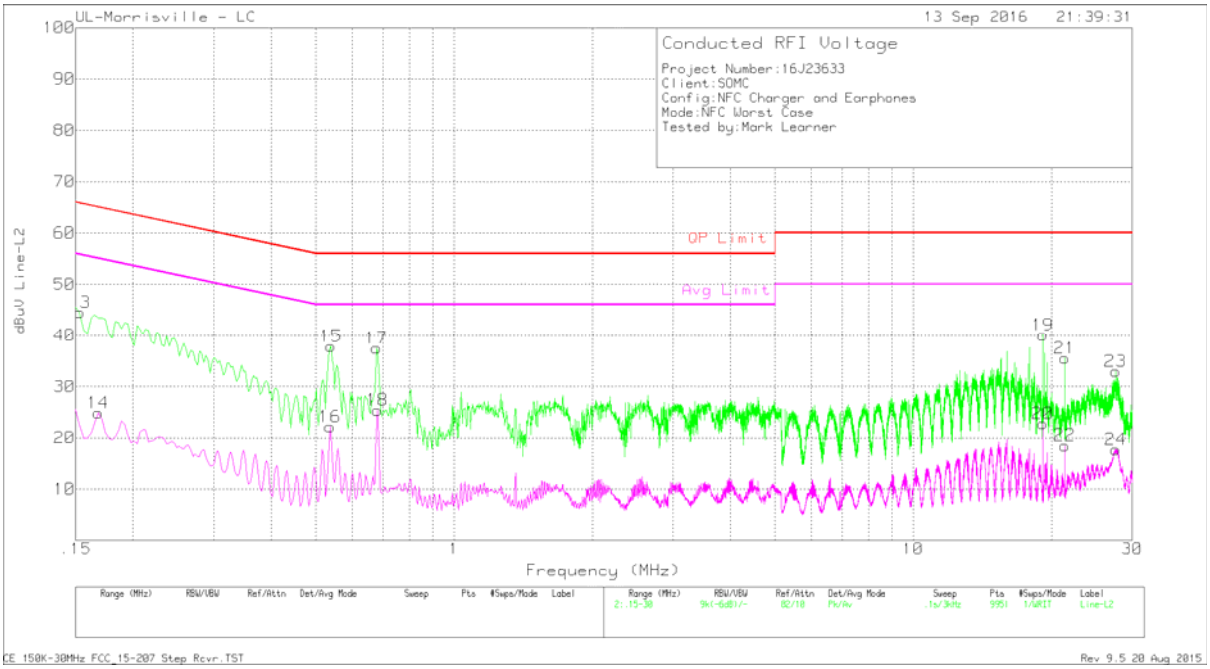
Line 1



Range 1: Line-L1 .15 - 30MHz										
Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	LISN VCF (dB)	Cbl/Limiter (dB)	Corrected Reading dBuV	QP Limit	Margin (dB)	Avg Limit	Margin (dB)
1	.153	41.35	Pk	.2	10	51.55	65.84	-14.29	-	-
2	.165	20.55	Av	.2	10	30.75	-	-	55.21	-24.46
3	.534	25.2	Pk	0	10	35.2	56	-20.8	-	-
4	.531	15.22	Av	0	10	25.22	-	-	46	-20.78
5	.681	31.64	Pk	0	10	41.64	56	-14.36	-	-
6	.681	23.47	Av	0	10	33.47	-	-	46	-12.53
7	1.362	23.29	Pk	0	10	33.29	56	-22.71	-	-
8	1.362	14.51	Av	0	10	24.51	-	-	46	-21.49
9	16.446	34.62	Pk	.2	10.5	45.32	60	-14.68	-	-
10	16.443	20.5	Av	.2	10.5	31.2	-	-	50	-18.8
11	19.416	30.96	Pk	.2	10.5	41.66	60	-18.34	-	-
12	19.413	15.67	Av	.2	10.5	26.37	-	-	50	-23.63

Pk - Peak detector
Av - Average detection

Line 2



Range 2: Line-L2 .15 - 30MHz										
Marker	**Frequency (MHz)**	**Meter Reading (dBuV)**	**Det**	**LISN VCF (dB)**	**Cbl/Limiter (dB)**	**Corrected Reading dBuV**	**QP Limit**	**Margin (dB)**	**Avg Limit**	**Margin (dB)**
13	.153	34.28	Pk	.2	10	44.48	65.84	-21.36	-	-
14	.168	14.65	Av	.2	10	24.85	-	-	55.06	-30.21
15	.54	27.91	Pk	0	10	37.91	56	-18.09	-	-
16	.537	12.17	Av	0	10	22.17	-	-	46	-23.83
17	.678	27.5	Pk	0	10	37.5	56	-18.5	-	-
18	.681	15.38	Av	0	10	25.38	-	-	46	-20.62
19	19.179	29.39	Pk	.2	10.5	40.09	60	-19.91	-	-
20	19.179	12.09	Av	.2	10.5	22.79	-	-	50	-27.21
21	21.387	24.77	Pk	.2	10.6	35.57	60	-24.43	-	-
22	21.387	7.71	Av	.2	10.6	18.51	-	-	50	-31.49
23	27.591	21.95	Pk	.3	10.7	32.95	60	-27.05	-	-
24	27.612	6.75	Av	.3	10.7	17.75	-	-	50	-32.25

Pk - Peak detector
Av - Average detection

10. 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

RESULTS

No non-compliance noted.

Startup

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC **Limit: ± 100 ppm = 135.600 kHz**				
Power Supply (Vdc)	**Environment Temperature (ºC)**	**Frequency Deviation Measured with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
5.00	50	13.5599381	0.069	± 100
5.00	40	13.5599654	0.048	± 100
5.00	30	13.5599990	0.024	± 100
5.00	***20***	***13.5600312***	***0.000***	***± 100***
5.00	10	13.5600538	-0.017	± 100
5.00	0	13.5600656	-0.025	± 100
5.00	-10	13.5600571	-0.019	± 100
5.00	-20	13.5600312	0.000	± 100
4.25	20	13.5600320	-0.001	± 100
5.75	20	13.5600312	0.000	± 100

2 minutes

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC Limit: ± 100 ppm = 135.600 kHz				
Power Supply (Vdc)	**Environment Temperature (ºC)**	**Frequency Deviation Measured with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
5.00	50	13.5599396	0.068	± 100
5.00	40	13.5599669	0.048	± 100
5.00	30	13.5600000	0.024	± 100
5.00	***20***	***13.5600324***	***0.000***	***± 100***
5.00	10	13.5600537	-0.016	± 100
5.00	0	13.5600656	-0.024	± 100
5.00	-10	13.5600570	-0.018	± 100
5.00	-20	13.5600354	-0.002	± 100
4.25	20	13.5600319	0.000	± 100
5.75	20	13.5600316	0.001	± 100

5 minutes

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC Limit: ± 100 ppm = 135.600 kHz				
Power Supply (Vdc)	**Environment Temperature (ºC)**	**Frequency Deviation Measured with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
5.00	50	13.5599381	0.069	± 100
5.00	40	13.5599654	0.048	± 100
5.00	30	13.5599990	0.024	± 100
5.00	***20***	***13.5600312***	***0.000***	***± 100***
5.00	10	13.5600538	-0.017	± 100
5.00	0	13.5600656	-0.025	± 100
5.00	-10	13.5600571	-0.019	± 100
5.00	-20	13.5600312	0.000	± 100
4.25	20	13.5600320	-0.001	± 100
5.75	20	13.5600312	0.000	± 100

10 minutes

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC Limit: ± 100 ppm = 135.600 kHz				
Power Supply (Vdc)	**Environment Temperature (ºC)**	**Frequency Deviation Measured with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
5.00	50	13.5599367	0.068	± 100
5.00	40	13.5599646	0.048	± 100
5.00	30	13.5599983	0.023	± 100
5.00	***20***	***13.5600295***	***0.000***	***± 100***
5.00	10	13.5600541	-0.018	± 100
5.00	0	13.5600656	-0.027	± 100
5.00	-10	13.5600569	-0.020	± 100
5.00	-20	13.5600269	0.002	± 100
4.25	20	13.5600294	0.000	± 100
5.75	20	13.5600297	0.000	± 100

TEST INFORMATION

Date: 9/14/16
Project No: 16J23633
Tester: Mark Learner