CERTIFICATION TEST REPORT

Report Number. : 12085703-E11V1

Applicant	:	SONY MOBILE COMMUNICATIONS, INC. 4-12-3 HIGASHI-SHINAGAWA, SHINAGAWA -KU, TOKYO, 140-0002, JAPAN
FCC ID	:	PY7-00718V
EUT Description	:	GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac & NFC
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C

Date Of Issue:

February 13, 2018

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP TESTING
NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	02/13/18	Initial Review	Dan Coronia

TABLE OF CONTENTS

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, DTS/UNII a/b/g/n/ac & NFC
SERIAL NUMBER:	RADIATED: QV70000R16, QV7000LZ16
DATE TESTED:	FEBRUARY 8 – FEBRUARY 9, 2018

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

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

Dan Coronia
Operations Leader
UL Verification Services Inc.

Prepared By:

Kiya Kedida
Project Engineer
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013 and KDB 484596 D01 v01 Referencing Test Data DR01-42712.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, 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
☒ Chamber A(IC: 2324B-1)	☐ Chamber D(IC: 22541-1)
☒ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 22541-2)
☐ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 22541-3)
	☐ Chamber G(IC: 22541-4)
	☐ Chamber H(IC: 22541-5)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.
UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.
Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.
.

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 & NFC.

6. REUSE OF TEST DATA

6.1. INTRODUCTION

According to the manufacturer, FCC ID: PY7-21831A and FCC ID: PY7-00718V licensed and unlicensed radios (WWAN/WLAN/BT/BLE/NFC) are electrically identical. The FCC ID: PY7-21831A test data shall remain representative of FCC ID: PY7-00718V so, FCC ID: PY7-00718V leverages test data from FCC ID: PY7-21831A.

The applicant takes full responsibility that the test data as referenced in this section represents compliance for this FCC ID.

6.2. DEVICES DIFFERENCES

Difference between PY7-21831A and PY7-00718V:

- Conducted power all same (i.e. Cellular band and WLAN)
- For cellular band, all cellular bands will change the antenna perspective which is listed as below (i.e. antenna gain, pattern, and matching circuit), Hence RSE and SAR has been tested for all bands.
  - LTE: B2/B4/B5/B7/B12/B13/B17/B26/B41/B66 (*B29 Rx only no impact)
  - UMTS: B2/B4/B5
  - GSM: 850/1900
- For WLAN only 2.4GHz/5GHz chain 1 will change from antenna gain perspective. (i.e. WLAN 2.4GHz and 5GHz WLAN chain 0, PY7-00718V is same as PY7-21831A).

Please refer to operational description for details.

6.3. SPOT CHECK VERIFICATION RESULTS SUMMARY

Spot check verification has been done on device PY7-00718V for radiated harmonic spurious and radiated band-edge. The data from the application has been verified through appropriate spot checks to demonstrate compliance for this device as shown in the summary and appendix A.

6.4. REFERENCE DETAIL

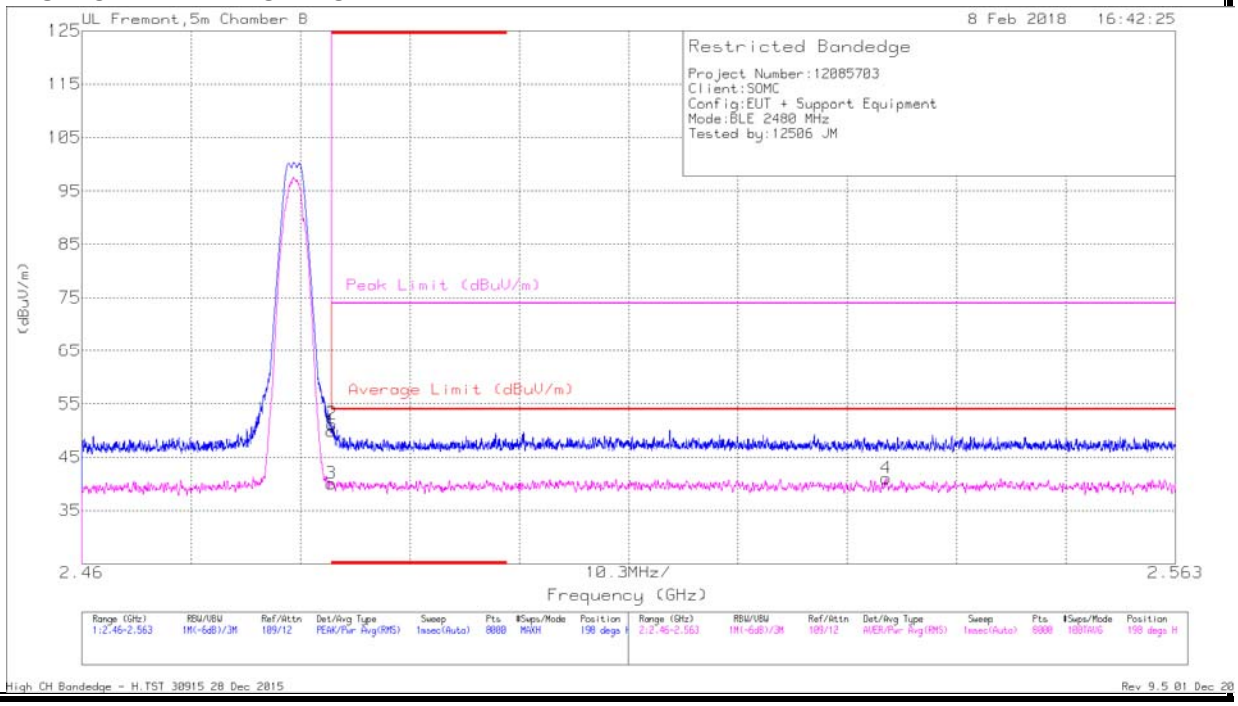
Equipment Class	Reference FCC ID	Report Title/Section
DTS (BLE)	PY7-21831A	12073310-E3V1 FCC Report BLE

7. SPOT CHECK DATA

7.1. TRANSMITTER ABOVE 1GHz

7.1.1. BANDEDGE (LOW CHANNEL)

HIGH CHANNEL HORIZONTAL

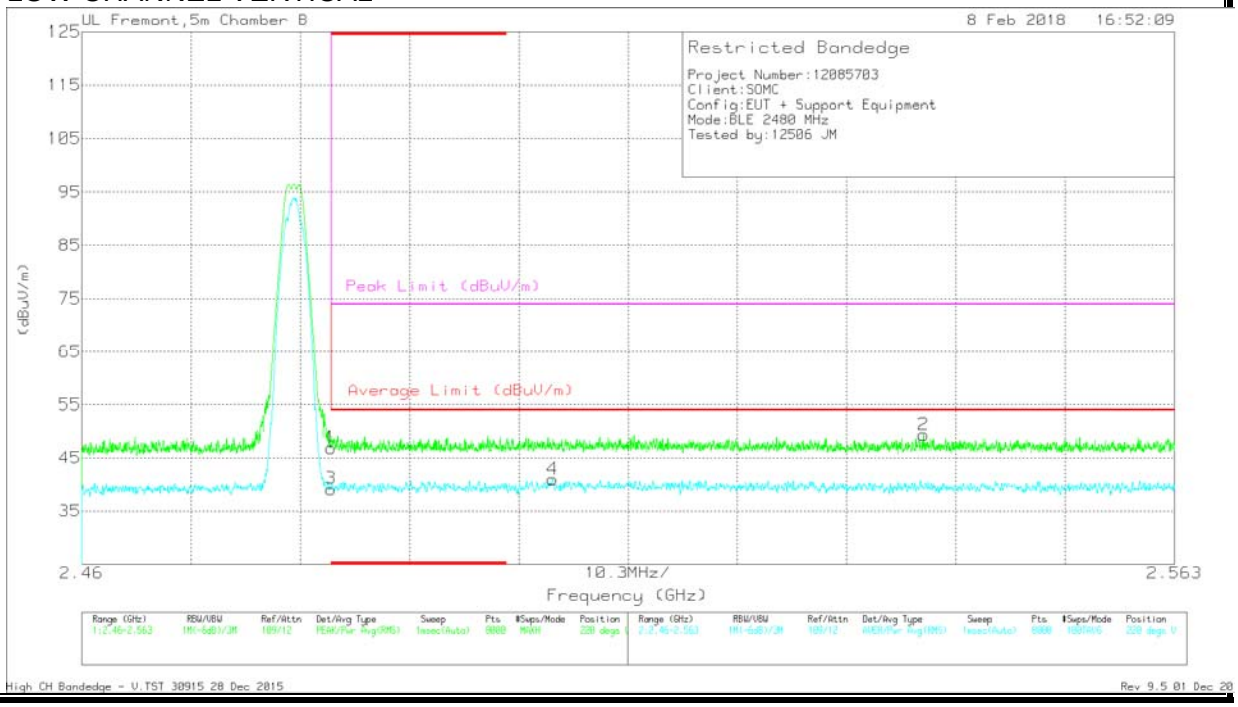


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	38.62	Pk	32.5	-21.3	0	49.82	-	-	74	-24.18	198	114	H
2	* 2.484	40	Pk	32.5	-21.3	0	51.2	-	-	74	-22.8	198	114	H
3	* 2.484	26.44	RMS	32.5	-21.3	2.4	40.04	54	-13.96	-	-	198	114	H
4	2.536	27.42	RMS	32.5	-21.3	2.4	41.02	54	-12.98	-	-	198	114	H

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

LOW CHANNEL VERTICAL



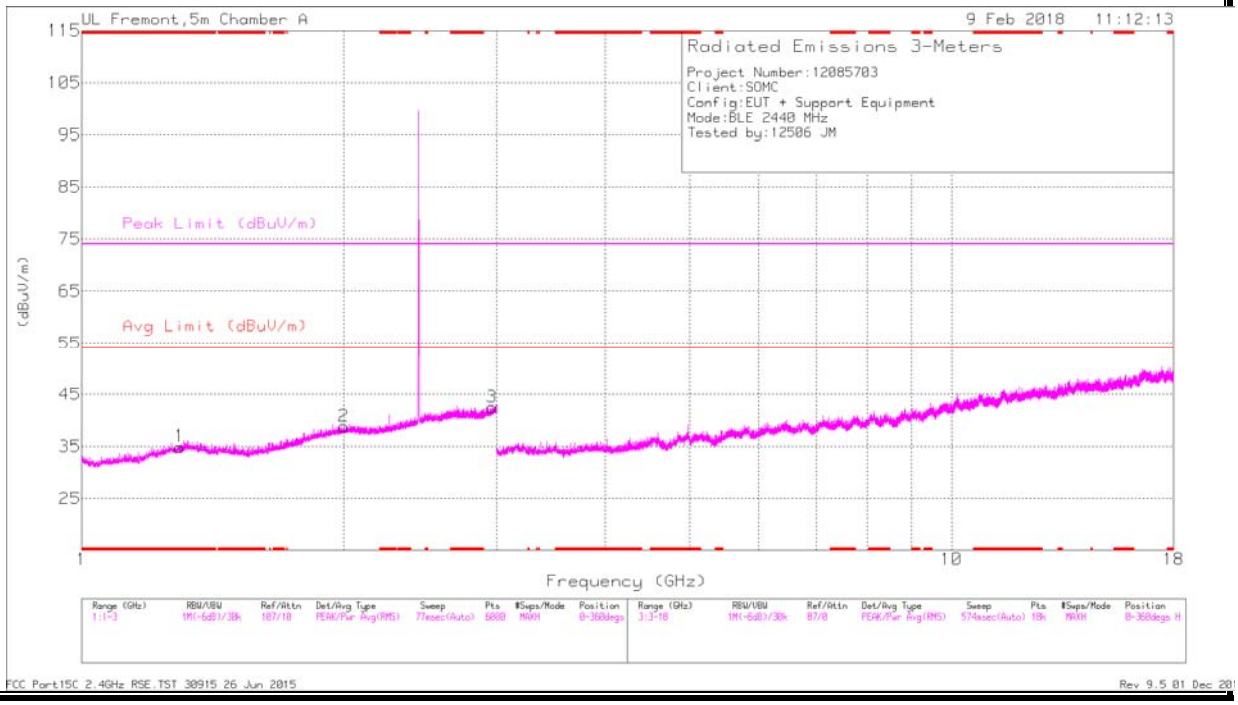
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T863 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.484	35.67	Pk	32.5	-21.3	0	46.87	-	-	74	-27.13	220	372	V
3	* 2.484	25.54	RMS	32.5	-21.3	2.4	39.14	54	-14.86	-	-	220	372	V
4	2.504	27.05	RMS	32.6	-21.1	2.4	40.95	54	-13.05	-	-	220	372	V
2	2.539	37.9	Pk	32.5	-21.1	0	49.3	-	-	74	-24.7	220	372	V

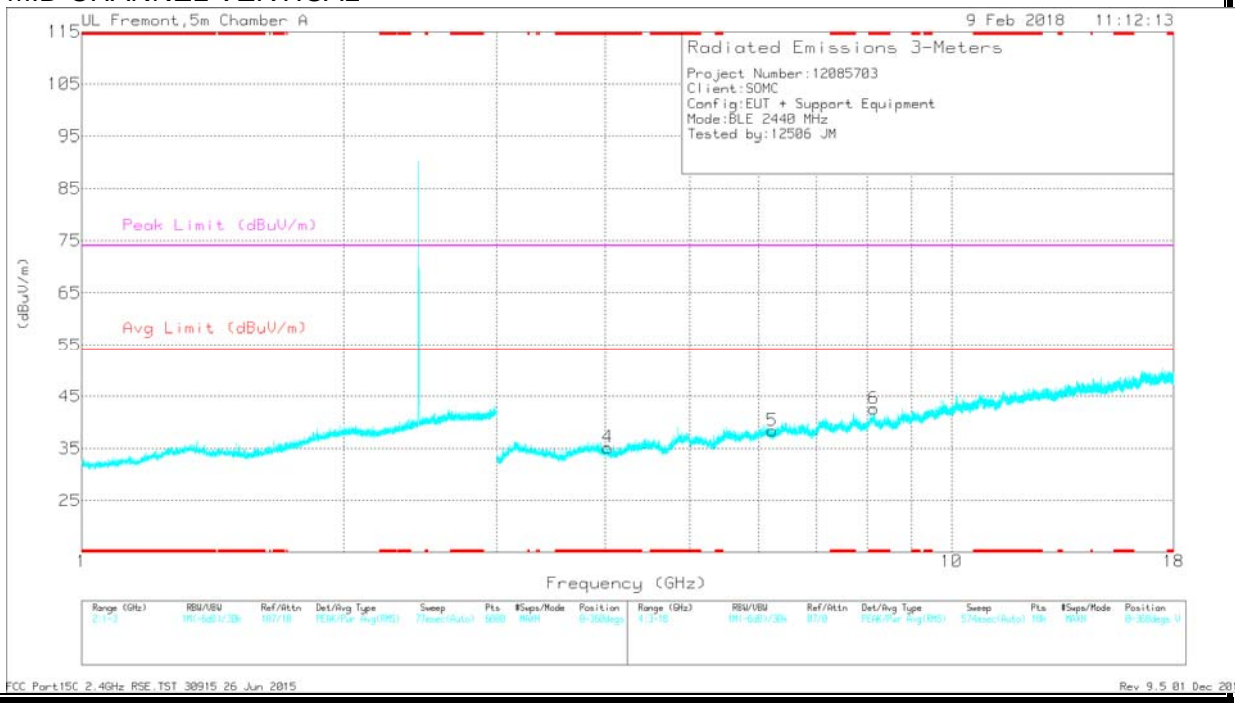
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

7.1.2. HARMONICS AND SPURIOUS EMISSIONS

MID CHANNEL HORIZONTAL



MID CHANNEL VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 1.297	29.24	Pk	29.4	-23.7	0	34.94	-	-	74	-39.06	0-360	101	H
4	* 4.028	29.89	Pk	33.4	-28.1	0	35.19	-	-	74	-38.81	0-360	200	V
6	* 8.139	27.55	Pk	35.8	-20.7	0	42.65	-	-	74	-31.35	0-360	200	V
2	2.003	30.65	Pk	31.4	-23.2	0	38.85	-	-	-	-	0-360	101	H
3	2.965	32.11	Pk	32.2	-21.8	0	42.51	-	-	-	-	0-360	199	H
5	6.221	28.03	Pk	35.6	-25.2	0	38.43	-	-	-	-	0-360	101	V

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

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	AF T862 (dB/m)	Amp/Cbl/Fltr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 1.298	35.58	PK2	29.4	-23.7	0	41.28	-	-	74	-32.72	295	128	H
* 1.296	24.26	MAv1	29.4	-23.7	2.4	32.36	54	-21.64	-	-	295	128	H
* 4.03	36.56	PK2	33.4	-28.1	0	41.86	-	-	74	-32.14	272	126	V
* 4.027	25.26	MAv1	33.4	-28.1	2.4	32.96	54	-21.04	-	-	272	126	V
* 8.139	32.96	PK2	35.8	-20.7	0	48.06	-	-	74	-25.94	273	193	V
* 8.141	21.92	MAv1	35.8	-20.7	2.4	39.42	54	-14.58	-	-	273	193	V
2.001	36.64	PK2	31.4	-23.2	0	44.84	-	-	-	-	305	129	H
2.966	37.44	PK2	32.2	-21.8	0	47.84	-	-	-	-	288	138	H
6.223	35.07	PK2	35.6	-25.2	0	45.47	-	-	-	-	276	119	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

APPENDIX A

PY7-00718V SPOT CHECK RESULTS									
Technology	Test Item	Channel	Measured Frequency	PY7-21831A		PY7-00718V		Delta (dB)	
				Peak	Ave	Peak	Ave	Peak	Ave
BT	RBE	1	2439MHz	44.81	34.38	47.08	35.44	-2.27	-1.06
	RSE	39	2759MHz	51.47	38.14	49.51	36.11	1.96	2.03
Note: GFSK is the worst mode									
BLE	**RBE**	**19**	**2484MHz**	**52.26**	**39.02**	**51.2**	**40.04**	**1.06**	**-1.02**
	RSE	**19**	**8141MHz**	**47.64**	**38.28**	**48.06**	**39.42**	**-0.42**	**-1.14**
Note:									
DTS	RBE	13	2390MHz	63.44	48.83	66.35	51.39	-2.91	-2.56
	RSE	11	1076.5MHz	51.62	40.66	48.7	38.14	2.92	2.52
Note: 802.11n HT20 is the worst mode									
UNII	RBE	36	5150MHz	57.36	45.37	53.13	46.85	-4.23	1.48
	RSE	36	11679MHz	48.26	36.07	48.48	36.27	0.22	0.2
Note: 802.11a HT20 is the worst mode									
NFC	Fundamental	N/A	13.56 MHz	19.49		13.14		-6.35	
Note: Fundamental is the worst case									
Part15B	RSE	N/A	398.62MHz	42.09		30.7		-11.39	
Note: Below 1GHz is the worst case									

END OF REPORT

UL VERIFICATION SERVICES INC. FORM NO: CCSUP4701I
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888