



# **CERTIFICATION TEST REPORT**

**Report Number. :** 12393500-E5V2

**Applicant :** SONY MOBILE COMMUNICATIONS, INC.  
4-12-3 HIGASHI-SHINAGAWA  
SHINAGAWA-KU, TOKYO, 140-0002, JAPAN

**FCC ID :** PY7-68553B

**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 E

**Date Of Issue:**  
August 20, 2018

**Prepared by:**  
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NVLAP Lab code: 200065-0

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## REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	8/7/2018	Initial Issue	
V2	8/20/2018	Updated Section 6.3	Kiya Kedida

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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, DTS/UNII a/b/g/n/ac & NFC

**SERIAL NUMBER:** BH94001TDA, BH94001KDA (Radiated)

**DATE TESTED:** JULY 31, 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E	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 the U.S. government.

Approved & Released For  
UL Verification Services Inc. By:

Reviewed By:



Dan Corona  
CONSUMER TECHNOLOGY DIVISION  
Operations Leader  
UL Verification Services Inc.



Kiya Kedida  
CONSUMER TECHNOLOGY DIVISION  
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, FCC 14-30, FCC KDB 662911 D01 v02r01, FCC KDB 905462 D02 v02/D03 v01r02/D06 v02, FCC KDB 789033 D02 v02r01, FCC KDB 644545 D03 v01, ANSI C63.10-2013, FCC 06-96, and FCC KDB 905462 D02 and D03.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, and 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.
<input type="checkbox"/> Chamber A (ISED:2324B-1)	<input type="checkbox"/> Chamber D (ISED:22541-1)	<input checked="" type="checkbox"/> Chamber K (ISED: 2324A-1)
<input type="checkbox"/> Chamber B (ISED:2324B-2)	<input type="checkbox"/> Chamber E (ISED:22541-2)	<input type="checkbox"/> Chamber L (ISED: 2324A-3)
<input type="checkbox"/> Chamber C (ISED:2324B-3)	<input type="checkbox"/> Chamber F (ISED:22541-3)	
	<input type="checkbox"/> Chamber G (ISED:22541-4)	
	<input type="checkbox"/> Chamber H (ISED:22541-5)	

The above test sites and facilities are covered under FCC Test Firm Registration # 208313. Chambers A through C are covered under ISED company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under ISED company address code 22541 with site numbers 22541 -1 through 22541-5, respectively. Chambers K and L are covered under ISED company address code 2324A with site numbers 2324A-1 and 2324A-3, respectively.

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:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamplifier Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
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%.

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## 5. EQUIPMENT UNDER TEST

### 5.1. EUT DESCRIPTION

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, the WLAN, Bluetooth and NFC hardware of PY7-68553B are identical to PY7-12644J. In addition PY7-68553B digital circuit is identical to PY7-12644J. Therefore the following report/data of PY7-68553B may be represented from PY7-12644J, along with the spot check verification data.

- WLAN
- Bluetooth
- NFC
- 15B

### 6.2. DEVICES DIFFERENCES

Difference between PY7-68553B and PY7-12644J:

Sony Mobile Communications Inc. hereby declares that the difference between PY7-68553B and PY7-12644J is related only to the cellular part. Therefore the WLAN/Bluetooth/NFC/15B report/data of PY7-12644J may represent for PY7-68553B.

### 6.3. SPOT CHECK VERIFICATION RESULTS SUMMARY

Spot check verification has been done on device PY7-68553B for radiated harmonic spurious 11n HT20 Channel 64 and radiated band-edge 11n HT20 channel 36. 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

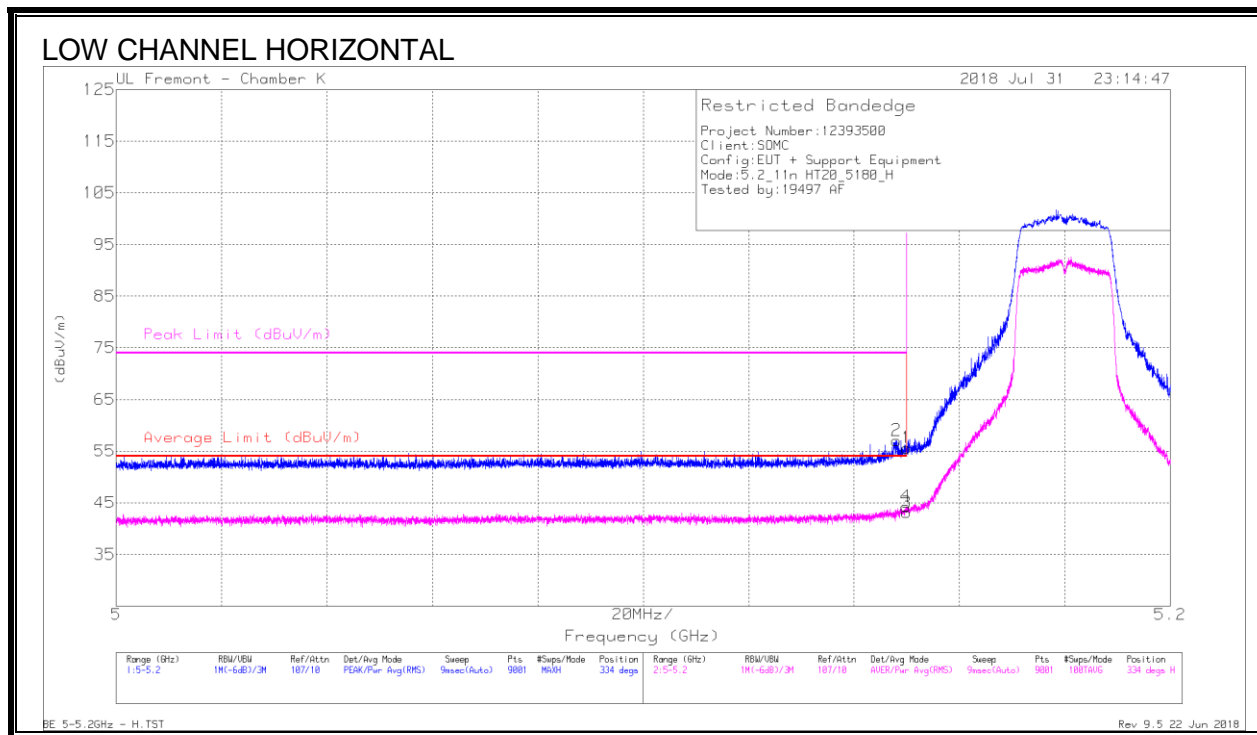
Equipment Class	Reference FCC ID	Report Title/Section
NII (UNII WLAN)	PY7-12644J	12380932-E5V1 FCC Report UNII WLAN



## 7. SPOT CHECK DATA

### 7.1. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.2 GHz BAND

#### 7.1.1. BANDEDGE (LOW CHANNEL)



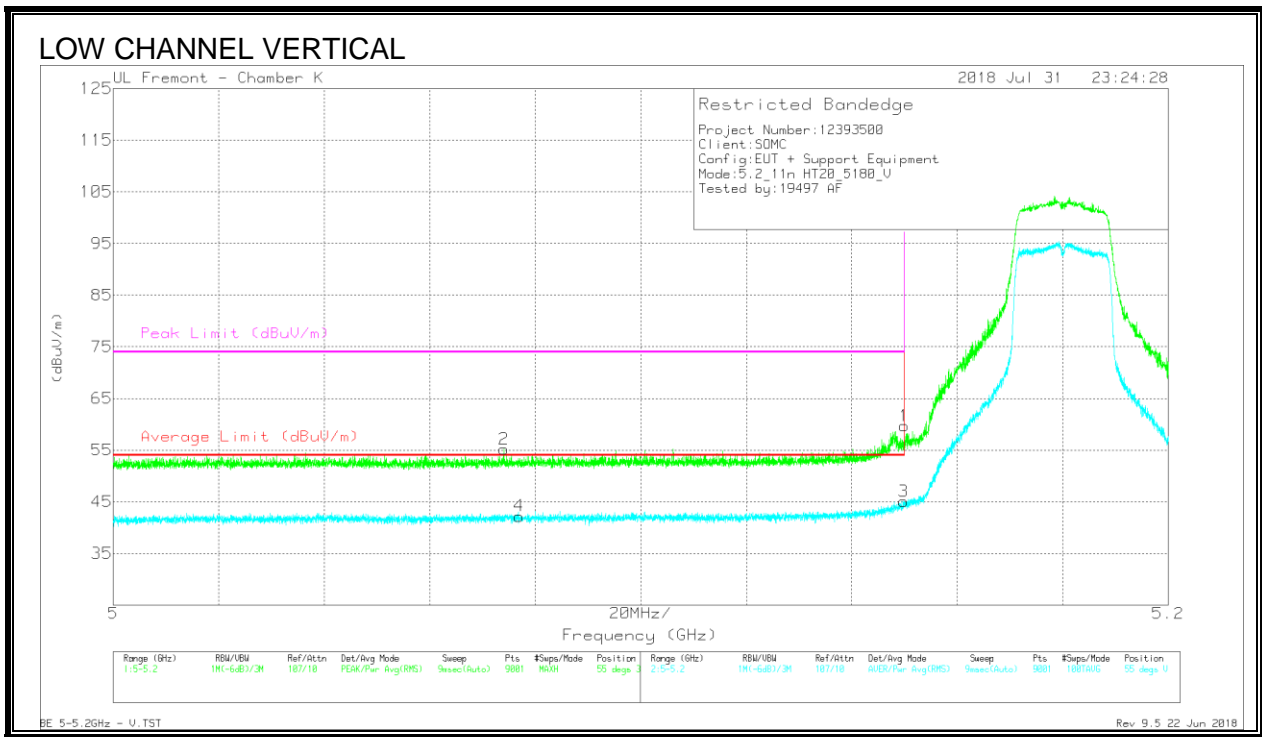
#### Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filtr/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	* 5.15	41.32	Pk	34.4	-20.1	0	55.62	-	-	74	-18.38	334	319	H
2	* 5.148	42.76	Pk	34.4	-20.1	0	57.06	-	-	74	-16.94	334	319	H
3	* 5.15	28.71	RMS	34.4	-20.1	.1	43.11	54	-10.89	-	-	334	319	H
4	* 5.15	29.86	RMS	34.4	-20.1	.1	44.26	54	-9.74	-	-	334	319	H

\* - indicates frequency in CFR47 Pt 15 -Restricted Band

Pk - Peak detector

RMS - RMS detection



## Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF T344 (dB/m)	Amp/Cbl/Filtr/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	* 5.15	45.38	Pk	34.4	-20.1	0	59.68	-	-	74	-14.32	55	302	V
2	* 5.074	41.09	Pk	34.3	-20.2	0	55.19	-	-	74	-18.81	55	302	V
3	* 5.15	30.66	RMS	34.4	-20.1	.1	45.06	54	-8.94	-	-	55	302	V
4	* 5.077	28.01	RMS	34.3	-20.2	.1	42.21	54	-11.79	-	-	55	302	V

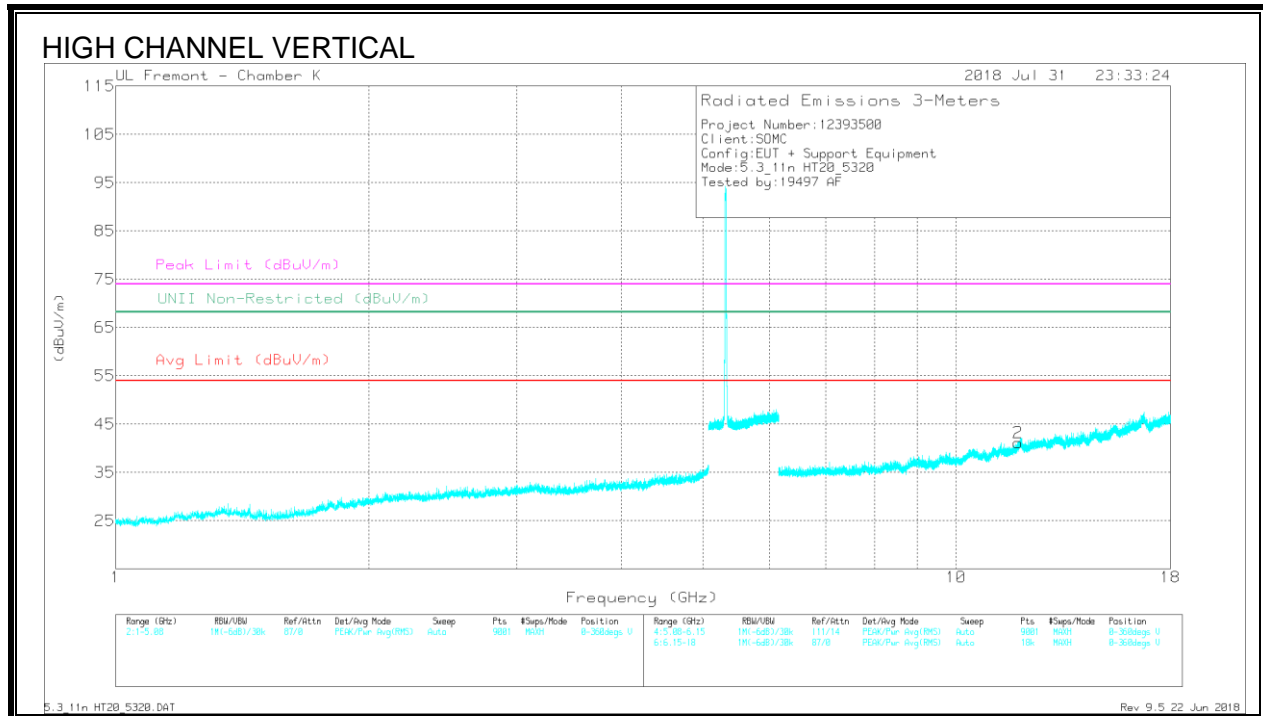
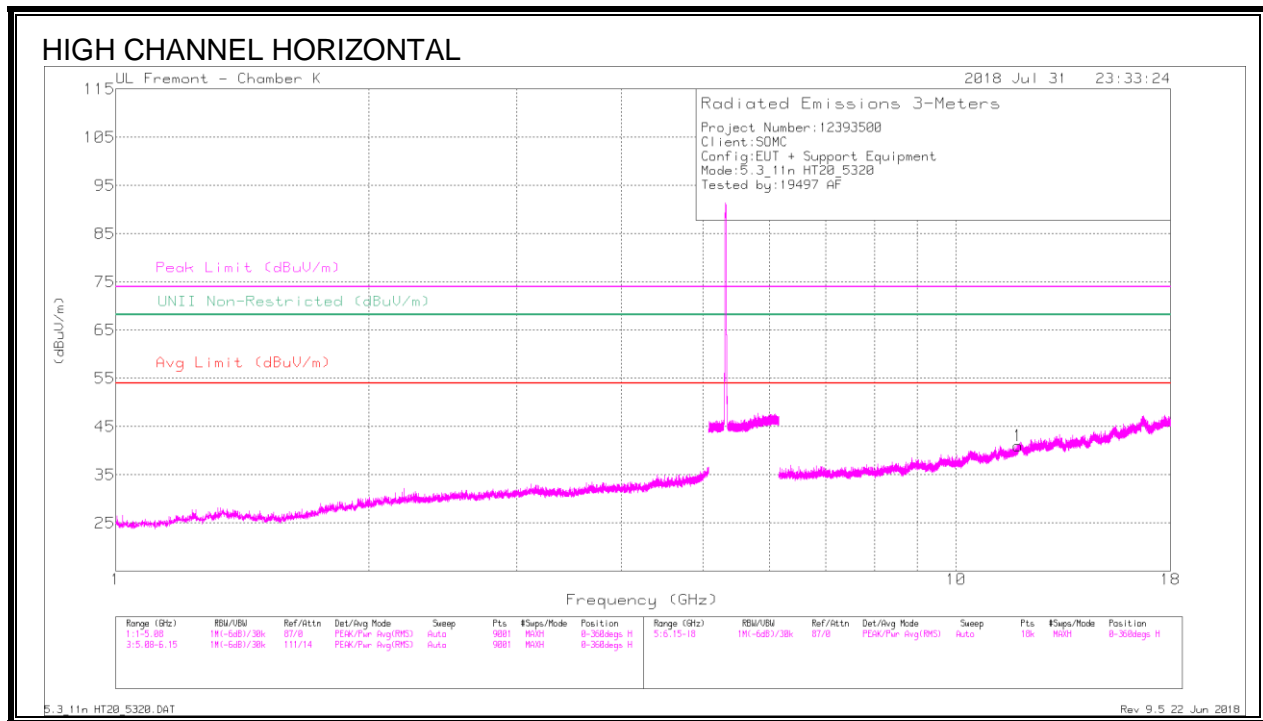
\* - indicates frequency in CFR47 Pt 15 -Restricted Band

Pk - Peak detector

RMS - RMS detection

## 7.2. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 5.3 GHz BAND

### 7.2.1. HARMONICS AND SPURIOUS EMISSIONS



## Radiated Emissions

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	AF EMC4294 (dB/m)	Amp/Cbl/Filtr/Pad (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	UNII Non-Restricted (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 11.854	30.65	PK-U	38.4	-20.8	0	48.25	-	-	74	-25.75	-	-	179	175	H
	* 11.853	21.86	ADR	38.4	-20.8	.1	39.56	54	-14.44	-	-	-	-	179	175	H
2	* 11.854	30.93	PK-U	38.4	-20.8	0	48.53	-	-	74	-25.47	-	-	44	397	V
	* 11.855	21.77	ADR	38.4	-20.8	.1	39.47	54	-14.53	-	-	-	-	44	397	V

\* - indicates frequency in CFR47 Pt 15 -Restricted Band

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

## APPENDIX A

PY7-68553B SPOT CHECK RESULTS										
Technology	Mode	Test Item	Channel	Measured Frequency	PY7-12644J		PY7-68553B		Delta (dB)	
					Peak	Ave	Peak	Ave	Peak	Ave
UNII	11n HT20	RBE	36	5149MHz	58.25	48.28	59.68	45.06	1.43	-3.22
	11n HT20	RSE	64	11851MHz	52.31	41.17	48.53	39.47	-3.78	-1.7

**END OF REPORT**