



# **CERTIFICATION TEST REPORT**

**Report Number. :** 12118543-E8V2

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

**FCC ID :** PY7-24117Q

**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 B

**Date Of Issue:**

May 11, 2018

**Prepared by:**

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Revision History

| Rev. | Issue Date | Revisions                       | Revised By |
|------|------------|---------------------------------|------------|
| V1   | 4/12/18    | Initial Issue                   |            |
| V2   | 5/10/18    | Updated Section 2 & Appendix A. |            |

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** SONY MOBILE COMMUNICATIONS, INC.

**EUT DESCRIPTION:** GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac & NFC.

**SERIAL NUMBER:** BH90004MB2

**DATE TESTED:** MARCH 20 to 21, 2018

| APPLICABLE STANDARDS         |              |
|------------------------------|--------------|
| STANDARD                     | TEST RESULTS |
| FCC 47 CFR PART 15 SUBPART B | 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:

Reviewed By:



Dan Corona  
Operations Leader  
UL Verification Services Inc.



Kiya Kedida  
Project Engineer  
UL Verification Services Inc.

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2014 and KDB 484596 D01 Referencing Test Data v01.

## 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                                       |
|-------------------------------------------------|------------------------------------------------------------|
| <input type="checkbox"/> Chamber A(IC: 2324B-1) | <input type="checkbox"/> Chamber D(IC: 22541-1)            |
| <input type="checkbox"/> Chamber B(IC: 2324B-2) | <input type="checkbox"/> Chamber E(IC: 22541-2)            |
| <input type="checkbox"/> Chamber C(IC: 2324B-3) | <input type="checkbox"/> Chamber F(IC: 22541-3)            |
|                                                 | <input checked="" type="checkbox"/> Chamber G(IC: 22541-4) |
|                                                 | <input type="checkbox"/> 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:

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

### 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%.

## 5. 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 Number | Cal Due    |
| Amplifier, 10KHz to 1GHz, 32dB                 | Keysight       | 8447D  | T10       | 02/15/2019 |
| Antenna, Broadband Hybrid,<br>30MHz to 2000MHz | Sunol Sciences | JB3    | 899       | 06/15/2018 |
| PXA Spectrum Analyzer,<br>3Hz to 44GHz         | Agilent        | N9030A | 907       | 02/07/2019 |

| Test Software List |              |        |                       |
|--------------------|--------------|--------|-----------------------|
| Description        | Manufacturer | Model  | Version               |
| Radiated Software  | UL           | UL EMC | Ver 9.5, Dec 01, 2016 |

## 6. REUSE OF TEST DATA

### 6.1. INTRODUCTION

According to the manufacturer, FCC ID: PY7-72474U and FCC ID: PY7-24117Q unlicensed radios (WLAN/BT/BLE/NFC) are electrically identical. The FCC ID: PY7-72474U test data shall remain representative of FCC ID: PY7-24117Q so, FCC ID: PY7-24117Q leverages test data from FCC ID: PY7-72474U.

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 PY7-72474U and PY7-24117Q:

Sony Mobile Communications Inc. hereby declares that the difference between PY7-72474U and PY7-24117Q is related only to the cellular part and no change in non-cellular (WLAN/Bluetooth/NFC) parts. The non-cellular parts which are electrically identical, and therefore the following report/data of PY7-72474U may represent for PY7-24117Q.

### 6.3. SPOT CHECK VERIFICATION RESULTS SUMMARY

Spot check verification has been done on device PY7-24117Q for radiated harmonic spurious. 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         |
|-----------------|------------------|------------------------------|
| JBP (Part 15B)  | PY7-72474U       | 12097277-E8V1 FCC Report 15B |



## 8. SPOT CHECK DATA

### LIMIT

FCC Part 15 Subpart B

§15.109 (a) Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

| Limits for radiated disturbance of Class B ITE at measuring distance of 3 m |                                     |
|-----------------------------------------------------------------------------|-------------------------------------|
| Frequency range<br>(MHz)                                                    | Quasi-peak limits<br>(dB $\mu$ V/m) |
| 30 to 88                                                                    | 40                                  |
| 88 to 216                                                                   | 43.5                                |
| 216 to 960                                                                  | 46                                  |
| Above 960 MHz                                                               | 54                                  |
| Note: The lower limit shall apply at the transition frequency.              |                                     |

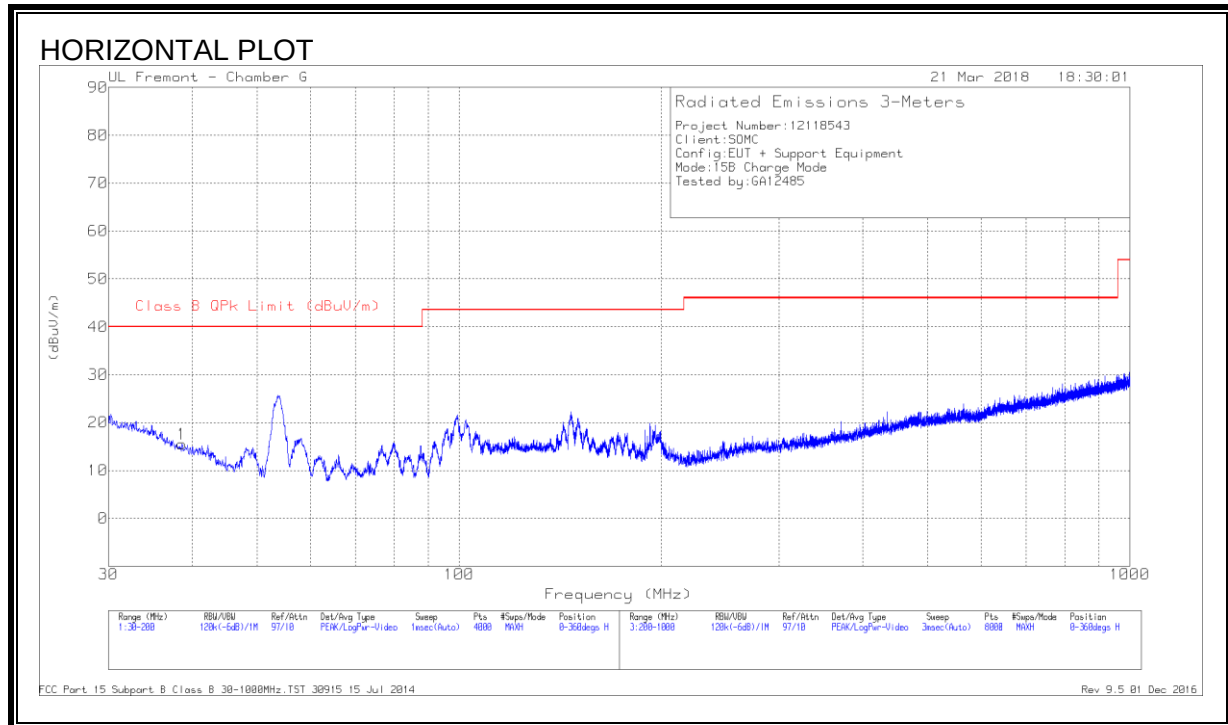
### TEST PROCEDURE

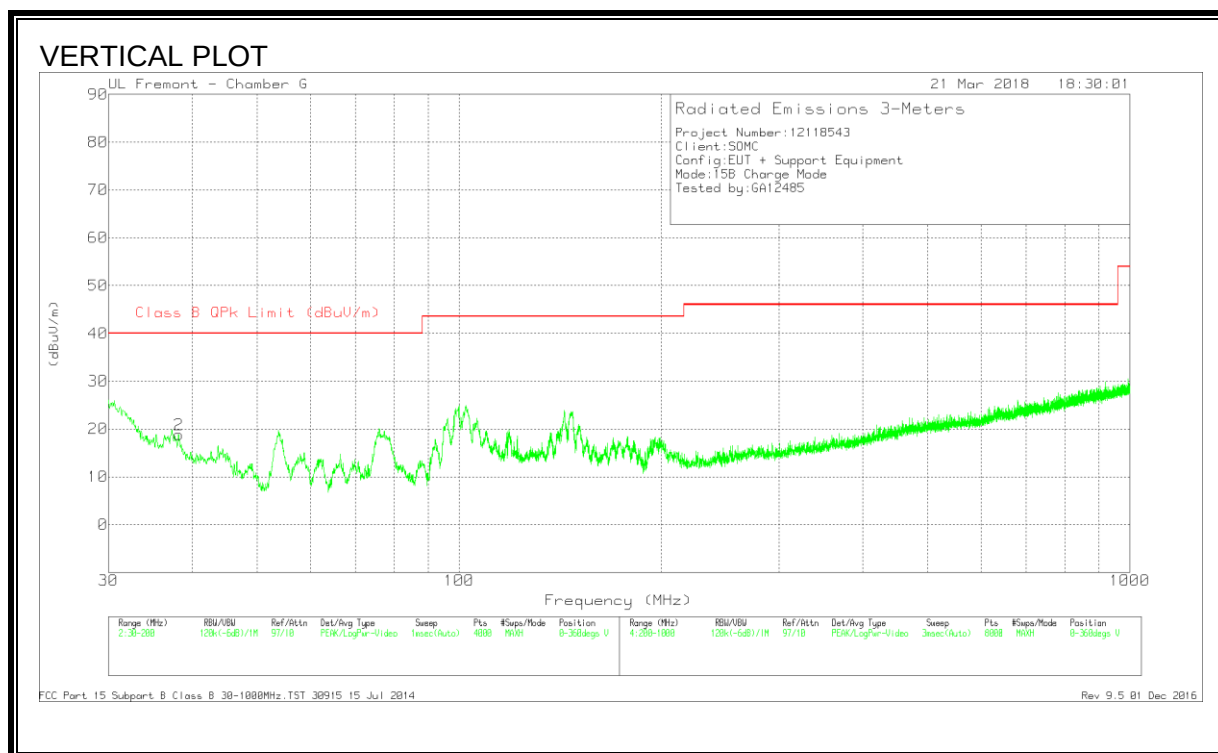
ANSI C63.4: 2014

The spectrum from 30MHz to 1 GHz is investigated with charging mode as worst case.

The antenna to EUT distance is 3 meters. The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

## 8.1. RADIATED EMISSIONS 30 TO 1000 MHz (CHARGE MODE)





## HORIZONTAL AND VERTICAL DATA

### Trace Markers

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T899 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | Class B QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|----------------------------|-------------|----------------|-------------|----------|
| 2      | 38.1621         | 31.18                | Pk  | 18.8           | -31.1        | 18.88                      | 40                         | -21.12      | 0-360          | 100         | V        |
| 1      | 38.6297         | 28.12                | Pk  | 18.5           | -31.1        | 15.52                      | 40                         | -24.48      | 0-360          | 98          | H        |

Pk - Peak detector

### Radiated Emissions

| Marker | Frequency (MHz) | Meter Reading (dBuV) | Det | AF T899 (dB/m) | Amp/Cbl (dB) | Corrected Reading (dBuV/m) | Class B QPk Limit (dBuV/m) | Margin (dB) | Azimuth (Degs) | Height (cm) | Polarity |
|--------|-----------------|----------------------|-----|----------------|--------------|----------------------------|----------------------------|-------------|----------------|-------------|----------|
| 2      | 37.9375         | 31.34                | Pk  | 18.9           | -31.1        | 19.14                      | 40                         | -20.86      | 171            | 126         | V        |
|        | 37.9375         | 16.66                | Av  | 18.9           | -31.1        | 4.46                       | -                          | -           | 171            | 126         | V        |
| 1      | 38.6292         | 28.86                | Pk  | 18.5           | -31.1        | 16.26                      | 40                         | -23.74      | 4              | 337         | H        |
|        | 38.6292         | 14.89                | Av  | 18.5           | -31.1        | 2.29                       | -                          | -           | 4              | 337         | H        |

Pk - Peak detector

Qp - Quasi-Peak detector

## APPENDIX A

| PY7-24117Q SPOT CHECK RESULTS |                        |           |         |            |            |            |            |
|-------------------------------|------------------------|-----------|---------|------------|------------|------------|------------|
| Technology                    | Mode                   | Test Item | Channel | Measured   | PY7-72474U | PY7-24117Q | Delta (dB) |
|                               |                        |           |         | Frequency  | Peak       | Peak       | Peak       |
| Part15B                       | Below 1GHz Charge Mode | RSE       | N/A     | 38.3747MHz | 29.69      | 19.14      | -10.55     |
| Note:                         |                        |           |         |            |            |            |            |

**END OF REPORT**