



**FCC 47 CFR PART 15 SUBPART E**

**CERTIFICATION TEST REPORT**

**FOR**

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

**FCC ID: PY7-89807R**

**REPORT NUMBER: 16J23633M-E5V3**

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Revision History

| Rev. | Issue Date | Revisions                                                                                | Revised By   |
|------|------------|------------------------------------------------------------------------------------------|--------------|
| V1   | 2016-08-19 | Initial Issue                                                                            | Brian Kiewra |
| V2   | 2016-08-29 | Revise cross reference information in Section 7.4 to include only UNII report reference. | Jeff Moser   |
| V3   | 2016-09-01 | Added KDB789033 D02 v01r03 reference to Section 2.                                       | 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, DTS/UNII a/b/g/n/ac & NFC

**SERIAL NUMBER:** CB512AW74T

**DATE TESTED:** 2016-08-02

| APPLICABLE STANDARDS     |              |
|--------------------------|--------------|
| STANDARD                 | TEST RESULTS |
| CFR 47 Part 15 Subpart E | 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:



Brian Kiewra  
EMC Engineer  
UL- Consumer Technology Division

## 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 KDB789033 D02 v01r03.

## 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 |           |
| <input type="checkbox"/>         | Chamber A |
| <input type="checkbox"/>         | Chamber C |

  

|                                                           |               |
|-----------------------------------------------------------|---------------|
| 2800 Suite B Perimeter Park Dr.,<br>Morrisville, NC 27560 |               |
| <input type="checkbox"/>                                  | Chamber NORTH |
| <input checked="" type="checkbox"/>                       | 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:

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

### 4.3. MEASUREMENT UNCERTAINTY

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

| PARAMETER                                | UNCERTAINTY |
|------------------------------------------|-------------|
| 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 & NFC.

## 6. TEST AND MEASUREMENT EQUIPMENT

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

| Equip. ID | Description                                       | Manufacturer | Model Number | Last Cal.  | Next Cal.  |
|-----------|---------------------------------------------------|--------------|--------------|------------|------------|
| AT0069    | Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz | ETS Lindgren | 3117         | 2016-03-07 | 2017-03-31 |
| S-SAC03   | Gain-loss string: 1-18GHz                         | Various      | Various      | 2015-08-22 | 2016-08-31 |
| SA0025    | Spectrum Analyzer                                 | Agilent      | N9030A       | 2016-03-17 | 2017-03-31 |
| SOFTEMI   | EMI Software                                      | UL           | Version 9.5  | NA         | NA         |
| HI0050    | Temp/Humid/Pressure Meter                         | Cole-Parmer  | 99760-00     | 2015-07-01 | 2016-08-31 |

## 7. REUSE OF TEST DATA

### 7.1. INTRODUCTION

According to manufacturer, FCC ID: PY7-29752M and FCC ID: PY7-89807R unlicensed radios (WLAN/BT/BLE/NFC) are electrically identical. They share the same chipset, same power and same antenna performance including antenna gain. The FCC ID: PY7-29752M test data shall remain representative of FCC ID: PY7-89807R, so FCC ID: PY7-89807R leverages test data from FCC ID: PY7-29752M.

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

### 7.2. DEVICES DIFFERENCES

Difference between PY7-29752M and PY7-89807R:

Various components were removed from PY7-29752M to establish PY7-89807R; such components are related only to the cellular part and no change in non-cellular (WLAN/Bluetooth/NFC) parts, which are electronically identical.

### 7.3. SPOT CHECK VERIFICATION

Spot check verification has been done on device FCC ID: PY7-89807R for radiated harmonic, spurious and radiated bandedge. Test results were consistent with FCC ID: PY7-29752M.

| Technology | Test Items                          | Configurations     | PY7-29752M        | PY7-89807R        |
|------------|-------------------------------------|--------------------|-------------------|-------------------|
|            |                                     |                    | Worst Case Margin | Spot Check Margin |
| WiFi UNII  | Radiated Band edge Margin           | 11ac_VHT80 5210MHz | -9.24dB           | -4.8dB            |
|            | Radiated Harmonic Margin above 1GHz | 11ac_VHT80 5290MHz | -17.99dB*         | -18.1dB*          |

\*:Noise Floor

#### 7.4. REFERENCE DETAIL

| Equipment Class | Reference FCC ID | Report Title/Section           |
|-----------------|------------------|--------------------------------|
| UNII (WLAN)     | PY7-29752M       | 16J23633A-E5V3 FCC Report UNII |

**END OF TEST REPORT**