



HCT CO.,LTD.

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## FCC MPE REPORT

### Certification

**Applicant Name:**  
LG Electronics Inc.

**Address:**  
222 LG-ro Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do,  
Korea

**Date of Issue:**

July 23, 2018

**Test Site/Location:**

HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-myeon, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

**Report No.:** HCT-RF-1807-FI015

**FCC ID:** BEJLGSBWAC92

**APPLICANT:** LG Electronics Inc.

**Model:** LGSBWAC92

**EUT Type:** RF Module

The measurements shown in this report were made in accordance with the procedures specified in §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S. C.853(a)

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**Approved by : Jong Seok Lee**  
**Manager of Telecommunication testing center**

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## Version

| TEST REPORT NO.   | DATE          | DESCRIPTION             |
|-------------------|---------------|-------------------------|
| HCT-RF-1807-FI015 | July 23, 2018 | - First Approval Report |
|                   |               |                         |
|                   |               |                         |

# RF Exposure Statement

## 1. LIMITS

According to §1.1310 and §2.1091 RF exposure is calculated.

### (B) Limits for General Population/Uncontrolled Exposures

| Frequency range<br>(MHz) | Electric field<br>Strength (V/m) | Magnetic field<br>Strength (A/m) | Power density<br>(mW/cm <sup>2</sup> ) | Averaging time<br>(minutes) |
|--------------------------|----------------------------------|----------------------------------|----------------------------------------|-----------------------------|
| 0.3 - 1.34.....          | 614                              | 1.63                             | *(100)                                 | 30                          |
| 1.34 - 30.....           | 824/f                            | 2.19/f                           | *(180/ f <sup>2</sup> )                | 30                          |
| 30 - 300.....            | 27.5                             | 0.073                            | 0.2                                    | 30                          |
| 300 - 1500.....          | .....                            | .....                            | f/1500                                 | 30                          |
| 1500 - 100.000.....      | .....                            | .....                            | 1.0                                    | 30                          |

F = frequency in MHz

\* = Plane-wave equivalent power density

## 2. MAXIMUM PERMISSIBLE EXPOSURE Prediction

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

S = Power density

P = power input to antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

### 3. RESULTS

#### 3-1. BLUETOOTH MODE

|                                                             |             |                    |
|-------------------------------------------------------------|-------------|--------------------|
| Max Peak output Power at antenna input terminal             | 8.500       | dBm                |
| Max Peak output Power at antenna input terminal             | 7.079       | mW                 |
| Prediction distance                                         | 20.000      | cm                 |
| Prediction frequency                                        | 2402 ~ 2480 | MHz                |
| Antenna Gain(typical)                                       | 0.490       | dBi                |
| Antenna Gain(numeric)                                       | 1.119       | -                  |
| Power density at prediction frequency( S)                   | 0.001577    | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000       | mW/cm <sup>2</sup> |

#### 3-2. 2.4 GHz Band (DTS)

##### (2412 – 2472)

|                                                             |               |                    |
|-------------------------------------------------------------|---------------|--------------------|
| Max Peak output Power at antenna input terminal             | 28.500        | dBm                |
| Max Peak output Power at antenna input terminal             | 707.946       | mW                 |
| Prediction distance                                         | 20.000        | cm                 |
| Prediction frequency                                        | 2 412 ~ 2 472 | MHz                |
| Antenna Gain(typical)                                       | 4.440         | dBi                |
| Antenna Gain(numeric)                                       | 2.780         | -                  |
| Power density at prediction frequency( S)                   | 0.391499      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000         | mW/cm <sup>2</sup> |

### 3-3. 5 GHz Band

#### (UNII 1)

|                                                             |               |                    |
|-------------------------------------------------------------|---------------|--------------------|
| Max Peak output Power at antenna input terminal             | 19.500        | dBm                |
| Max Peak output Power at antenna input terminal             | 89.125        | mW                 |
| Prediction distance                                         | 20.000        | cm                 |
| Prediction frequency                                        | 5 150 ~ 5 250 | MHz                |
| Antenna Gain(typical)                                       | 4.500         | dBi                |
| Antenna Gain(numeric)                                       | 2.818         | -                  |
| Power density at prediction frequency( S)                   | 0.049972      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000         | mW/cm <sup>2</sup> |

#### (UNII 2A)

|                                                             |               |                    |
|-------------------------------------------------------------|---------------|--------------------|
| Max Peak output Power at antenna input terminal             | 19.500        | dBm                |
| Max Peak output Power at antenna input terminal             | 89.125        | mW                 |
| Prediction distance                                         | 20.000        | cm                 |
| Prediction frequency                                        | 5 250 ~ 5 350 | MHz                |
| Antenna Gain(typical)                                       | 4.510         | dBi                |
| Antenna Gain(numeric)                                       | 2.825         | -                  |
| Power density at prediction frequency( S)                   | 0.050088      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000         | mW/cm <sup>2</sup> |

#### (UNII 2C)

|                                                             |               |                    |
|-------------------------------------------------------------|---------------|--------------------|
| Max Peak output Power at antenna input terminal             | 19.500        | dBm                |
| Max Peak output Power at antenna input terminal             | 89.125        | mW                 |
| Prediction distance                                         | 20.000        | cm                 |
| Prediction frequency                                        | 5 470 ~ 5 725 | MHz                |
| Antenna Gain(typical)                                       | 4.510         | dBi                |
| Antenna Gain(numeric)                                       | 2.825         | -                  |
| Power density at prediction frequency( S)                   | 0.050088      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000         | mW/cm <sup>2</sup> |

(UNII 3)

|                                                             |               |                    |
|-------------------------------------------------------------|---------------|--------------------|
| Max Peak output Power at antenna input terminal             | 19.500        | dBm                |
| Max Peak output Power at antenna input terminal             | 89.125        | mW                 |
| Prediction distance                                         | 20.000        | cm                 |
| Prediction frequency                                        | 5 725 ~ 5 850 | MHz                |
| Antenna Gain(typical)                                       | 4.480         | dBi                |
| Antenna Gain(numeric)                                       | 2.805         | -                  |
| Power density at prediction frequency( S)                   | 0.049743      | mW/cm <sup>2</sup> |
| MPE limit for uncontrolled exposure at prediction frequency | 1.000         | mW/cm <sup>2</sup> |

Simultaneous transmission operations

1. The power density level at 20 cm is **0.001577 mW/cm<sup>2</sup>**, which is below the uncontrolled exposure limit of **1.0 mW/cm<sup>2</sup>** at **Bluetooth**.
2. The power density level at 20 cm is **0.391499 mW/cm<sup>2</sup>**, which is below the uncontrolled exposure limit of **1.0 mW/cm<sup>2</sup>** at **WLAN(2.4 GHz)**.
3. The power density level at 20 cm is **0.050088 mW/cm<sup>2</sup>**, which is below the uncontrolled exposure limit of **1.0 mW/cm<sup>2</sup>** at **WLAN(5 GHz)**.

->Simultaneous MPE 20cm is WLAN(2.4 GHz) (0.391499/1.0) + Bluetooth (0.001577/1.0) = 0.39308 < 1

->Simultaneous MPE 20cm is + WLAN(5 GHz) (0.050088/1.0) + Bluetooth (0.001577/1.0) = 0.05167 < 1