

# TEST REPORT

of

FCC CFR 47 part 1, 1.1307(b), 1.1310

FCC ID: BEJLNM1881NCJS

Equipment Under Test : Car NAVIGATION  
Model Name : LNM1881NCJS  
Applicant : LG Electronics USA  
Manufacturer : LG Electronics Inc.  
Date of Receipt : 2017.08.23  
Date of Test(s) : 2017.08.28 ~ 2017.11.28  
Date of Issue : 2017.11.28

In the configuration tested, the EUT complied with the standards specified above.

Tested By:



Date:

2017.11.28

Jinhyoung Cho

Technical  
Manager:



Date:

2017.11.28

Jungmin Yang

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SGS Korea Co., Ltd. (Gunpo Laboratory) 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807 <http://www.sgsgroup.kr>

RTT5041-19(2017.07.10)(0)

Tel. +82 31 428 5700 / Fax. +82 31 427 2370

A4(210 mm x 297 mm)

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## 1. General Information

### 1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

-Wireless Div. 2FL, 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

Phone No. : +82 31 688 0901

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### 1.2. Details of Applicant

Applicant : LG Electronics USA

Address : 1000 Sylvan Avenue Englewood Cliffs New Jersey United States 07632

Contact Person : Han, Kyung-Su

Phone No. : +1 201 472 2623

### 1.3. Details of manufacturer

Company : LG Electronics Inc.

Address : 222 LG-ro Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 17709, Korea

### 1.4. Description of EUT

|                      |                                   |
|----------------------|-----------------------------------|
| Kind of Product      | Car NAVIGATION                    |
| Model Name           | LN1881NCJS                        |
| Power Supply         | DC 12.0 V                         |
| Frequency Range      | 2 402 MHz ~ 2 480 MHz (Bluetooth) |
| Modulation Technique | GFSK, $\pi/4$ DQPSK, 8DPSK        |
| Number of Channels   | 79 channels                       |
| Antenna Type         | Metal Stamped Antenna             |
| Antenna Gain         | 3.46 dB i                         |

### 1.5. Test report revision

| Revision | Report number          | Date of Issue | Description                    |
|----------|------------------------|---------------|--------------------------------|
| 0        | F690501/RF-RTL011785   | 2017.09.04    | Initial                        |
| 1        | F690501/RF-RTL011785-1 | 2017.11.28    | Modified applicant information |

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## 2. RF Exposure Evaluation

### 2.1. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

#### LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency Range<br>(MHz)                                | Electric Field<br>Strength(V/m) | Magnetic Field<br>Strength<br>(A/m) | Power Density<br>(mW/cm <sup>2</sup> ) | Average Time     |
|---------------------------------------------------------|---------------------------------|-------------------------------------|----------------------------------------|------------------|
| (A) Limits for Occupational/Controlled Exposure         |                                 |                                     |                                        |                  |
| 0.3 – 3.0                                               | 614                             | 1.63                                | *100                                   | 6                |
| 3.0 – 30                                                | 1842/f                          | 4.89/f                              | *900/f <sup>2</sup>                    | 6                |
| 30 – 300                                                | 61.4                            | 0.163                               | 1.0                                    | 6                |
| 300 – 1 500                                             | -                               | -                                   | f/300                                  | 6                |
| 1 500 – 100 000                                         | -                               | -                                   | 5                                      | 6                |
| (B) Limits for General Population/Uncontrolled Exposure |                                 |                                     |                                        |                  |
| 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 – 1 500                                             | -                               | -                                   | f/1500                                 | 30               |
| <b><u>1 500 – 100 000</u></b>                           | -                               | -                                   | <b><u>1.0</u></b>                      | <b><u>30</u></b> |

#### 2.1.1. Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where  $P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in cm

$P_d$  the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

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### 2.1.2. Test Result of RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data

Test Mode : Normal Operation

### 2.1.3. Output Power into Antenna & RF Exposure Evaluation Distance

#### Bluetooth

#### - Maximum tune up tolerance

| Operating Frequency (MHz) | Output Average Power to Antenna (dB m) | Antenna Gain (dB i) | Power Density at 20 cm (mW/cm <sup>2</sup> ) | Limits (mW/cm <sup>2</sup> ) |
|---------------------------|----------------------------------------|---------------------|----------------------------------------------|------------------------------|
| 2 402 ~ 2 480             | 4                                      | 3.46                | 0.001 108                                    | 1                            |

Note :

- The power density Pd (5th column) at a distance of 20 cm calculated from the friis transmission formula is far below the limit of 1 mW/cm<sup>2</sup>.
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with minimum 20 cm between the radiator and your body.
- The antenna gain of this transmitter is less than 6 dB i and must not be colocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.

**- End of the Test Report -**

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