

TEST REPORT

of

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

FCC ID: BEJGEN11NAN

1. Equipment Under Test : Telematics
2. Model Name : GEN11NAN
3. Variant Model Name(s) : -
4. FCC Applicant : LG Electronics USA
5. IC Applicant : LG ELECTRONICS INC.
6. Manufacturer : LG Electronics Inc.
7. Date of Receipt : 2020.04.01
8. Date of Test(s) : 2020.04.13 ~ 2020.04.29
9. Date of Issue : 2020.05.19

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

- 1) The results of this test report are effective only to the items tested.
- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.

Tested by:



Nancy Park

Technical
Manager:



Jungmin Yang

SGS Korea Co., Ltd. Gunpo Laboratory



SGS Korea Co., Ltd.

4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807

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

<http://www.sgsgroup.kr>

Report Number: F690501-RF-RTL000681

Page: 2 of 6

INDEX

<u>Table of Contents</u>	Page
1. General Information -----	3
2. RF Exposure Evaluation -----	4

1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

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Telephone : +82 31 688 0901

FAX : +82 31 688 0921

1.2. Details of Applicant

FCC Applicant : LG Electronics USA

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

IC Applicant : LG ELECTRONICS INC.

IC Address : 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Korea (Republic of), 451-713

Contact Person : Han, Kyung-su

Phone No. : +1 201 472 2623

1.3. Details of Manufacturer

Company : LG Electronics Inc.

Address : 10, Magokjungang 10-ro, Gangseo-gu, Seoul, Korea, 07796

1.4. Description of EUT

Kind of Product	Telematics
Model Name	GEN11NAN
Power Supply	DC 12 V
Frequency Range	GSM 850: 824 MHz ~ 849 MHz GSM 1 900: 1 850 MHz ~ 1 910 MHz WCDMA II: 1 850 MHz ~ 1 910 MHz WCDMA IV: 1 710 MHz ~ 1 755 MHz WCDMA V: 824 MHz ~ 849 MHz LTE Band 2: 1 850 MHz ~ 1 910 MHz LTE Band 4: 1 710 MHz ~ 1 755 MHz LTE Band 5: 824 MHz ~ 849 MHz LTE Band 12/17: 699 MHz ~ 716 MHz LTE Band 13: 777 MHz ~ 787 MHz

1.5. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL000681	2020.05.19	Initial

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 (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	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 ²	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 ²	30
30-300	27.5	0.073	0.2	30
<u>300-1 500</u>	-	-	<u>f/1500</u>	<u>30</u>
<u>1 500-100 000</u>	-	-	<u>1.0</u>	<u>30</u>

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/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d the limit of MPE, 1 mW/cm². 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.

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

GSM 850

- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Duty Cycle	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
128	824.2	33	3.81	0.25	0.238 633	0.549 467

GSM 1 900

- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Duty Cycle	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
512	1 850.2	27.5	5.33	0.25	0.095.440	1

WCDMA - Band II

- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
9262	1 852.4	24	5.33	0.170 502	1

WCDMA - Band IV

- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
1312	1 712.4	23.7	6.19	0.193 968	1

WCDMA - Band V

- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
4132	826.4	24	3.81	0.120 152	0.550 933

LTE Band 2
- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
18607	1 850.7	24	5.33	0.170 502	1

LTE Band 4
- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
19957	1 710.7	23.7	6.19	0.193 968	1

LTE Band 5
- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
20407	824.7	24	3.81	0.120 152	0.549 800

LTE Band 12/17
- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
23017	699.7	24	4.26	0.133 269	0.466 467

LTE Band 13
- Maximum tune up tolerance

Channel	Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
23205	779.5	24	4.26	0.133 269	0.519 667

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/cm².
- 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 collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.
- According to KDB 447498 D01 RF Exposure Guidance 4.1.

- End of the Test Report -