

TEST REPORT

FCC MPE Test for TWG18ANECN
Class II Permissive Change

APPLICANT
LG Electronics Inc.

REPORT NO.
HCT-RF-2107-FC030

DATE OF ISSUE
July 9, 2021

Tested by
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TEST REPORT

FCC MPE Test for
TWG18ANECN

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HCT-RF-2107-FC030

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Additional Model

TWG10ANEN

Applicant

LG Electronics Inc.

222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, 451-713, Korea

**Eut Type
Model Name**

Car telematics device
TWG18ANECN

FCC ID

BEJLTTWG10N

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

This test results were applied only to the test methods required by the standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	July 09, 2021	Initial Release

Engineering Statement:

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

If this report is required to confirmation of authenticity, please contact to www.hct.co.kr

RF Exposure Statement

1. Limit

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

(B) Limits for General Population/Uncontrolled Exposures

Frequency range (MHz)	Electric field Strength (V/m)	Magnetic field Strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
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
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 to the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

3. RESULTS

- GSM850(Voice & GPRS 1TX)-

Max Peak output Power at antenna input terminal	34.00	dBm
Max Peak output Power at antenna input terminal	2511.89	mW
Prediction distance	20.00	cm
Prediction frequency	824.2 - 848.8	MHz
Antenna Gain including Cable (typical)	2.905	dBi
Antenna Gain including Cable (numeric)	1.952	-
Duty Factor	9.175	dB
Power density at prediction frequency(S)	0.1180	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5495	mW/cm ²

- GSM850(GPRS 2TX)-

Max Peak output Power at antenna input terminal	33.00	dBm
Max Peak output Power at antenna input terminal	1995.26	mW
Prediction distance	20.00	cm
Prediction frequency	824.2 - 848.8	MHz
Antenna Gain including Cable (typical)	2.905	dBi
Antenna Gain including Cable (numeric)	1.952	-
Duty Factor	6.083	dB
Power density at prediction frequency(S)	0.1910	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5495	mW/cm ²

- GSM850(EDGE 1TX)-

Max Peak output Power at antenna input terminal	28.50	dBm
Max Peak output Power at antenna input terminal	707.95	mW
Prediction distance	20.00	cm
Prediction frequency	824.2 - 848.8	MHz
Antenna Gain including Cable (typical)	2.905	dBi
Antenna Gain including Cable (numeric)	1.952	-
Duty Factor	9.175	dB
Power density at prediction frequency(S)	0.0332	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5495	mW/cm ²

- GSM850(EDGE 2TX)-

Max Peak output Power at antenna input terminal	27.00	dBm
Max Peak output Power at antenna input terminal	501.19	mW
Prediction distance	20.00	cm
Prediction frequency	824.2 - 848.8	MHz
Antenna Gain including Cable (typical)	2.905	dBi
Antenna Gain including Cable (numeric)	1.952	-
Duty Factor	6.083	dB
Power density at prediction frequency(S)	0.0480	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5495	mW/cm ²

- GSM1900(Voice & GPRS 1TX)--

Max Peak output Power at antenna input terminal	31.00	dBm
Max Peak output Power at antenna input terminal	1258.93	mW
Prediction distance	20.00	cm
Prediction frequency	1 850.2 - 1 909.8	MHz
Antenna Gain including Cable (typical)	1.857	dBi
Antenna Gain including Cable (numeric)	1.534	-
Duty Factor	9.175	dB
Power density at prediction frequency(S)	0.0464	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- GSM1900(GPRS 2TX)-

Max Peak output Power at antenna input terminal	29.5	dBm
Max Peak output Power at antenna input terminal	891.25	mW
Prediction distance	20.00	cm
Prediction frequency	1 850.2 - 1 909.8	MHz
Antenna Gain including Cable (typical)	1.857	dBi
Antenna Gain including Cable (numeric)	1.534	-
Duty Factor	6.083	dB
Power density at prediction frequency(S)	0.0670	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- GSM1900(EDGE 1TX) -

Max Peak output Power at antenna input terminal	27.00	dBm
Max Peak output Power at antenna input terminal	501.19	mW
Prediction distance	20.00	cm
Prediction frequency	1 850.2 - 1 909.8	MHz
Antenna Gain including Cable (typical)	1.857	dBi
Antenna Gain including Cable (numeric)	1.534	-
Duty Factor	9.175	dB
Power density at prediction frequency(S)	0.0185	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- GSM1900(GPRS 2TX) -

Max Peak output Power at antenna input terminal	25.5	dBm
Max Peak output Power at antenna input terminal	354.81	mW
Prediction distance	20.00	cm
Prediction frequency	1 850.2 - 1 909.8	MHz
Antenna Gain including Cable (typical)	1.857	dBi
Antenna Gain including Cable (numeric)	1.534	-
Duty Factor	6.083	dB
Power density at prediction frequency(S)	0.0267	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- WCDMA850-

Max Peak output Power at antenna input terminal	25.00	dBm
Max Peak output Power at antenna input terminal	316.23	mW
Prediction distance	20.00	cm
Prediction frequency	826.4 - 846.6	MHz
Antenna Gain including Cable (typical)	2.905	dBi
Antenna Gain including Cable (numeric)	1.952	-
Power density at prediction frequency(S)	0.1228	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5509	mW/cm ²

- WCDMA1900-

Max Peak output Power at antenna input terminal	25.00	dBm
Max Peak output Power at antenna input terminal	316.23	mW
Prediction distance	20.00	cm
Prediction frequency	1 852.4 – 1 907.6	MHz
Antenna Gain including Cable (typical)	1.857	dBi
Antenna Gain including Cable (numeric)	1.534	-
Power density at prediction frequency(S)	0.0965	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- WCDMA1700-

Max Peak output Power at antenna input terminal	25.00	dBm
Max Peak output Power at antenna input terminal	316.23	mW
Prediction distance	20.00	cm
Prediction frequency	1 712.4 – 1 752.6	MHz
Antenna Gain including Cable (typical)	1.575	dBi
Antenna Gain including Cable (numeric)	1.437	-
Power density at prediction frequency(S)	0.0904	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- LTE Band 2-

Max Peak output Power at antenna input terminal	26.20	dBm
Max Peak output Power at antenna input terminal	416.87	mW
Prediction distance	20.00	cm
Prediction frequency	1 860.0 – 1 900.0	MHz
Antenna Gain including Cable (typical)	1.857	dBi
Antenna Gain including Cable (numeric)	1.534	-
Power density at prediction frequency(S)	0.1272	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- LTE Band 4-

Max Peak output Power at antenna input terminal	26.20	dBm
Max Peak output Power at antenna input terminal	416.87	mW
Prediction distance	20.00	cm
Prediction frequency	1 710.7 – 1 754.3	MHz
Antenna Gain including Cable (typical)	1.575	dBi
Antenna Gain including Cable (numeric)	1.437	-
Power density at prediction frequency(S)	0.1192	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- LTE Band 5-

Max Peak output Power at antenna input terminal	26.20	dBm
Max Peak output Power at antenna input terminal	416.87	mW
Prediction distance	20.00	cm
Prediction frequency	824.7 – 848.3	MHz
Antenna Gain including Cable (typical)	2.905	dBi
Antenna Gain including Cable (numeric)	1.952	-
Power density at prediction frequency(S)	0.1619	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5498	mW/cm ²

- LTE Band 13-

Max Peak output Power at antenna input terminal	26.20	dBm
Max Peak output Power at antenna input terminal	416.87	mW
Prediction distance	20.00	cm
Prediction frequency	779.5 – 784.5	MHz
Antenna Gain including Cable (typical)	2.600	dBi
Antenna Gain including Cable (numeric)	1.820	-
Power density at prediction frequency(S)	0.1509	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.5197	mW/cm ²

- LTE Band 17-

Max Peak output Power at antenna input terminal	26.20	dBm
Max Peak output Power at antenna input terminal	416.87	mW
Prediction distance	20.00	cm
Prediction frequency	706.5 – 713.5	MHz
Antenna Gain including Cable (typical)	2.600	dBi
Antenna Gain including Cable (numeric)	1.820	-
Power density at prediction frequency(S)	0.1509	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	0.4710	mW/cm ²