

PRODUCT EQUALITY DECLARATION

Telematics Module

05 September 2024

We, LG Electronics Inc., as a manufacturer of following product, hereby submit Class 2 Permissive Change application for the FCC in the filings following changes applied on the product and compliance of product throughout additional testing with updated samples. After initial testing, product has been updated as listed in 'change note' below.

A. Single modular TM05NNNABM0 information of original grant

MODEL	FCC	
TM05NNNABM0	FCC ID	BEJTM05NNNABM0
	Original Grant Date	05 August 2024
	Equipment Class : PCS Licensed Transmitter	

Certified Hardware Version: Rev.E

Changed Hardware Version: Rev.E

Certified Software Version: v013.142.025

Changed Software Version: v013.142.025

- **Change note.**

No.	Item	Change Details	Before	After
1	NR	Updated to support 256QAM modulation of NR2, NR5 for SIM2	SIM2 : 64QAM modulation of NR2, NR5	SIM2 : 256QAM modulation of NR2, NR5
2	Antenna of SIM2	Updated additional antenna for SIM2	5 antennas	6 antennas in detailed as below

We have additional antenna called F67 Roof-top Antenna and gain was measured in each band for SIM2.

Antenna type	No.	Antenna Name	Antenna Part Number	Remark
Trunk	1	Antenna Box	8705921	
	2	FSA WAVE 5G (left/right)	8705919/8705920	
	3	HKL Mobilradioantenna (basic)	5A2D602	
	4	ZB Spoilerantenna	5A0C5B0	
	5	F66 Roof-top Antenna	920-747-018	
	6	F67 Roof-top Antenna	920-783-018, 920-783-008	Updated

Operating Frequency (MHz)		Antenna Peak Gain (dB i)			
		Ant. No	Ant. Gain	Cable Loss	Final Gain
LTE Band 71 NR Band 71	663 ~ 698	Ant. 1	-3	0.57	-3.57
		Ant. 2	4	0.57	3.43
		Ant. 3	5	0.57	4.43
		Ant. 4	4	0.57	3.43
		Ant. 5	2.4	2.89	-0.49
		Ant. 6 (updated)	0.90	2.89	-1.99
LTE Band 12/17	669 ~ 716	Ant. 1	3	0.57	2.43
		Ant. 2	4	0.57	3.43
		Ant. 3	5	0.57	4.43
		Ant. 4	3	0.57	2.43
		Ant. 5	2.7	2.9	-0.2
		Ant. 6 (updated)	0.80	2.90	-2.10
LTE Band 13	777 ~ 787	Ant. 1	3	0.57	2.43
		Ant. 2	4	0.57	3.43
		Ant. 3	5	0.57	4.43
		Ant. 4	3	0.57	2.43
		Ant. 5	2.8	3	-0.2
		Ant. 6 (updated)	1.90	3.00	-1.10
GSM 850 LTE Band 26/5	814 ~ 849	Ant. 1	3	0.57	2.43
		Ant. 2	4	0.57	3.43
		Ant. 3	5	0.57	4.43
		Ant. 4	3	0.57	2.43
		Ant. 5	1.9	3.06	-1.16
		Ant. 6 (updated)	3.30	3.06	0.24
LTE Band 66/4 NR Band 66	1 710 ~ 1 780	Ant. 1	5	0.79	4.21
		Ant. 2	4	0.79	3.21
		Ant. 3	5	0.79	4.21
		Ant. 4	4	0.79	3.21
		Ant. 5	2.6	4.18	-1.58
		Ant. 6 (updated)	3.40	4.18	-0.78
GSM 1 900 LTE Band 25/2 NR Band 25	1 850 ~ 1 915	Ant. 1	5	0.89	4.11
		Ant. 2	4	0.89	3.11
		Ant. 3	5	0.89	4.11
		Ant. 4	4	0.89	3.11
		Ant. 5	6	4.7	1.3
		Ant. 6 (updated)	5.40	4.70	0.70
LTE Band 7/41 NR Band 41	2 496 ~ 2 690	Ant. 1	5	1.04	3.96
		Ant. 2	5	1.04	3.96
		Ant. 3	5	1.04	3.96
		Ant. 4	4	1.04	2.96
		Ant. 5	7.3	5.4	1.9
		Ant. 6 (updated)	3.80	5.40	-1.60
NR Band 77	3 450 ~ 3 550, 3 700 ~ 3 980	Ant. 1	5	1.15	3.85
		Ant. 2	5	1.15	3.85
		Ant. 3	5	1.15	3.85
		Ant. 4	3	1.15	1.85
		Ant. 5	7.8	6.24	1.56
		Ant. 6 (updated)	6.70	6.24	0.46

This product is a professional installation equipment and installed by vehicle manufacturer.

As antennas will be installed by vehicle manufacturer. Vehicle manufacturer will implement specific software version for each antenna and vehicle.

B. E.R.P./ E.I.R.P. [SIM2]

Due to lower antenna gain of additional antenna then previous antenna gain, E.R.P. & E.I.R.P. was complied the limits in Parts 22, 24, 27, and 90 of FCC rules

C. Radiated Spurious Emissions

The Radiated spurious emissions were tested with additional antenna on SIM 2.

Although the additional antenna gain is not higher than the original antenna gain, the radiated spurious emissions were tested some bands for verification.

Operating Frequency (MHz)		Test Case
GSM 850	824 ~ 849	GSM 850 (Voice)
NR Band 41	2 496 ~ 2 690	NR Band 41 (30 MHz – BPSK)

D. Declaration

The model with additional antenna comply ERP/EIRP requirements, power thresholds for exemption from routine evaluation, MPE limits and the limits in Parts 22, 24, 27, and 90 of FCC rules.

Based on technical analysis mentioned above, we declare, as a manufacturer, the product still complies all the standard requirements and we hereby request permissive change for FCC certification.

Sincerely,



David Kim

Team leader, LGEUS NA Policy & Regulatory Affairs

LG Electronics USA