

PRODUCT EQUALITY DECLARATION

Telematics Module

11 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 TM04ANNABM0 information of original grant

MODEL	FCC	
TM04ANNABM0	FCC ID	BEJ-TM04ANNABM0
	Original Grant Date	14 July 2020
	ISED ID	2703H-TM04ANNABM0
	Original Grant Date	27 July 2020
	Equipment Class: PCS Licensed Transmitter	

Certified Hardware Version: Rev.C3

Changed Hardware Version: Rev.C3

Certified Software Version: WN22XA28

Changed Software Version: WN22XA28

● Change note.

No.	Item	Change Details	Before	After
1	Antenna of SIM2	Updated additional antenna for SIM2	5 antennas	7 antennas in detailed as below

We have additional antenna called F66/F67 Roof-top Antenna and gain was measured in each band for SIM2.

Antenna type	No.	Antenna Name	Antenna Part Number	Remark
Trunk	1	WAVE Low 5G-US	9825131_02	
	2	WAVE Low 5G-US	9825131_04	
	3	MSA TEL	920-631-001	
	4	MSA TEL SDARS	920-631-002	
	5	Antenna Box	8705921	
	6	F66 Roof-top Antenna	920-747-018	Updated
	7	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 71	663 ~ 698	Ant. 1	-4.20	-	-
		Ant. 2	-3.40	-	-
		Ant. 3	1.40	2.12	-0.72
		Ant. 4	1.20	2.12	-0.92
		Ant. 5	-3.00	1.82	-4.82
		Ant. 6(updated)	2.40	2.89	-0.49
		Ant. 7(updated)	0.90	2.89	-1.99
LTE 12	669 ~ 716	Ant. 1	-2.10	-	-
		Ant. 2	-3.10	-	-
		Ant. 3	1.40	2.12	-0.72
		Ant. 4	1.70	2.12	-0.42
		Ant. 5	3.00	1.82	1.18
		Ant. 6(updated)	2.70	2.90	-0.20
		Ant. 7(updated)	0.80	2.90	-2.10
LTE 17	704 ~ 716	Ant. 1	-2.10	-	-
		Ant. 2	-3.10	-	-
		Ant. 3	1.40	2.12	-0.72
		Ant. 4	1.70	2.12	-0.42
		Ant. 5	3.00	1.82	1.18
		Ant. 6(updated)	2.70	2.90	-0.20
		Ant. 7(updated)	0.80	2.90	-2.10
LTE 13	777 - 787	Ant. 1	-0.10	-	-
		Ant. 2	-0.40	-	-
		Ant. 3	1.60	2.12	-0.52
		Ant. 4	1.70	2.12	-0.42
		Ant. 5	3.00	1.82	1.18
		Ant. 6(updated)	2.80	3.00	-0.20
		Ant. 7(updated)	1.90	3.00	1.10
LTE 26	814 - 849	Ant. 1	-1.10	-	-
		Ant. 2	0.00	-	-
		Ant. 3	1.20	2.32	-1.12
		Ant. 4	1.10	2.32	-1.22
		Ant. 5	3.00	2.02	0.98
		Ant. 6(updated)	1.90	3.06	-1.16
		Ant. 7(updated)	3.30	3.06	0.24
LTE 5	824 - 849	Ant. 1	-1.90	-	-
		Ant. 2	-0.20	-	-
		Ant. 3	1.20	2.32	-1.12
		Ant. 4	1.10	2.32	-1.22
		Ant. 5	3.00	2.02	0.98
		Ant. 6(updated)	1.90	3.06	-1.16
		Ant. 7(updated)	3.30	3.06	0.24
LTE 4	1710 - 1755	Ant. 1	2.60	-	-
		Ant. 2	2.80	-	-
		Ant. 3	3.30	3.13	0.17
		Ant. 4	3.30	3.13	0.17
		Ant. 5	5.00	2.70	2.30
		Ant. 6(updated)	2.60	4.18	-1.58
		Ant. 7(updated)	3.40	4.18	-0.78
LTE 66	1710 - 1780	Ant. 1	2.60	-	-
		Ant. 2	3.00	-	-
		Ant. 3	3.30	3.13	0.17
		Ant. 4	3.30	3.13	0.17
		Ant. 5	5.00	2.70	2.30
		Ant. 6(updated)	2.60	4.18	-1.58
		Ant. 7(updated)	3.40	4.18	-0.78
LTE 2	1850 - 1910	Ant. 1	2.00	-	-
		Ant. 2	2.30	-	-
		Ant. 3	2.40	3.52	-1.12
		Ant. 4	2.00	3.52	-1.52

		Ant. 5	5.00	3.04	<u>1.96</u>
		Ant. 6(updated)	6.00	4.70	1.30
		Ant. 7(updated)	5.40	4.70	0.70
LTE 25	1850 - 1915	Ant. 1	2.10	-	-
		Ant. 2	2.30	-	-
		Ant. 3	2.40	3.52	-1.12
		Ant. 4	2.00	3.52	-1.52
		Ant. 5	5.00	3.04	<u>1.96</u>
		Ant. 6(updated)	6.00	4.70	1.30
		Ant. 7(updated)	5.40	4.70	0.70
LTE 41	2496 - 2690	Ant. 1	2.70	-	-
		Ant. 2	N/A	-	-
		Ant. 3	6.60	4.16	<u>2.44</u>
		Ant. 4	6.50	4.16	2.34
		Ant. 5	5.00	3.60	1.40
		Ant. 6(updated)	7.30	5.40	1.90
LTE 7	2500 - 2570	Ant. 7(updated)	5.40	5.40	-1.60
		Ant. 1	2.70	-	-
		Ant. 2	N/A	-	-
		Ant. 3	6.60	4.16	<u>2.44</u>
		Ant. 4	6.50	4.16	2.34
		Ant. 5	5.00	3.60	1.40
		Ant. 6(updated)	7.20	5.40	1.80

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 compliant 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
LTE Band 71	663 ~ 698	LTE Band 71 (15 MHz – QPSK)
LTE Band 41	2 496 ~ 2 690	LTE Band 41 (20 MHz – QPSK)

D. Declaration

The model with additional antenna complies 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