



SAMSUNG Electronics CO., Ltd.
(Maetan-dong) 129, Samsung-ro, Yeongtong-gu,
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October 7, 2022

Application Examiner / Reviewing Engineer
Federal Communications Commission
7435 Oakland Mills Road
Columbia, MD 21046

To Whom It May Concern,

We, Samsung Electronics Co., Ltd, declare that we calculate the antenna gain using below formula to get modify raw data of antenna measured at 'Electromagnetic wave Technology Institute (EMTI) of Korea Radio Promotion Association (RAPA)'.

Antenna Gain = Calibration Value + Measured Value.

[28GHz Antenna]

Frequency (GHz)	Calibration Value (dB)	Measured Value (dBi) - Raw data	Modified antenna gain (dBi)
27	14.46	15.64	30.1
27.1	15.11	15.09	30.2
27.2	15.03	15.2	30.23
27.3	14.85	15.41	30.26
27.4	14.55	15.76	30.31
27.5	15.06	15.29	30.35
27.6	15.92	14.46	30.38
27.7	16.48	13.94	30.42
27.8	16.66	13.74	30.4
27.9	18.16	12.29	30.45
28	18.49	12.01	30.5
28.1	19.86	10.65	30.51
28.2	20.36	10.18	30.54
28.3	19.72	10.85	30.57
28.4	17.8	12.8	30.6
28.5	17.21	13.44	30.65



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28.6	16.01	14.65	30.66
28.7	15.57	15.11	30.68
28.8	14.9	15.82	30.72
28.9	15.38	15.37	30.75

[39GHz Antenna]

Frequency (GHz)	Calibration Value (dB)	Measured Value (dBi) - Raw data	Modified antenna gain (dBi)
37.1	15.54	13.96	29.5
37.2	15.03	14.57	29.6
37.3	15.47	14.18	29.65
37.4	16.09	13.57	29.66
37.5	16.92	12.78	29.7
37.6	17.07	12.65	29.72
37.7	17.96	11.79	29.75
37.8	17.9	11.86	29.76
37.9	17.49	12.28	29.77
38	15.52	14.27	29.79
38.1	15.53	14.27	29.8
38.2	14.91	14.9	29.81
38.3	14.32	15.5	29.82
38.4	14.4	15.45	29.85
38.5	13.77	16.1	29.87
38.6	14.28	15.62	29.9
38.7	13.8	16.12	29.92
38.8	15.05	14.9	29.95
38.9	13.74	16.22	29.96
39	15.18	14.8	29.98

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39.1	14.69	15.31	30
39.2	15.18	14.85	30.03
39.3	14.9	15.15	30.05
39.4	15.54	14.53	30.07
39.5	15.66	14.44	30.1
39.6	16.51	13.6	30.11
39.7	15.8	14.34	30.14
39.8	17.18	12.99	30.17

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※Calibration value compensate power divide of antenna, cable loss and connector loss.
The modified antenna gain is summed raw data and calibration value.

If you have questions or need further information, please contact the undersigned.

Sincerely,



Jongin Kim / Staff Research Engineer

SAMSUNG Electronics Co.,Ltd