



SAMSUNG Electronics CO., Ltd.  
(Maetan-dong) 129, Samsung-ro, Yeongtong-gu,  
Suwon-si, Gyeonggi-do, Republic of Korea

January 25, 2024

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.

[24GHz Antenna] – 30.4 dBi

Frequency (GHz)	Calibration Value (dB)	Measured Value (dBi) - Raw data	Modified antenna gain (dBi)
24.1	15.472	14.715	30.187
24.15	15.797	14.398	30.195
24.2	16.146	14.067	30.213
24.25	16.147	14.082	30.229
24.3	15.884	14.358	30.242
24.35	15.684	14.568	30.252
24.4	15.792	14.471	30.263
24.45	15.823	14.465	30.288
24.5	15.762	14.534	30.296
24.55	15.598	14.714	30.312
24.6	15.75	14.574	30.324
24.65	16.014	14.323	30.337
24.7	15.933	14.409	30.342
24.75	15.316	15.053	30.369
24.8	15.117	15.257	30.374
24.85	15.56	14.832	30.392



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24.9	15.905	14.496	30.401
24.95	15.592	14.822	30.414
25	15.418	15.014	30.432
25.05	15.973	14.47	30.443
25.1	16.257	14.202	30.459
25.15	15.692	14.78	30.472
25.2	15.13	15.356	30.486
25.25	15.417	15.076	30.493
25.3	16.137	14.376	30.513
25.35	16.072	14.456	30.528
25.4	15.575	14.96	30.535

[39GHz Antenna] – 29.9 dBi

Frequency (GHz)	Calibration Value (dB)	Measured Value (dBi) - Raw data	Modified antenna gain (dBi)
38.2	18.536	11.328	29.864
38.3	18.115	11.776	29.891
38.4	19.182	10.731	29.913
38.5	18.16	11.771	29.931
38.6	19.091	10.866	29.957
38.7	19.062	10.918	29.98
38.8	19.796	10.211	30.007
38.9	18.144	11.877	30.021
39	20.206	9.841	30.047
39.1	19.642	10.423	30.065
39.2	19.186	10.901	30.087
39.3	20.029	10.086	30.115
39.4	20.321	9.822	30.143
39.5	20.063	10.108	30.171
39.6	19.48	10.702	30.182

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39.7	21.2	9.015	30.215
39.8	19.314	10.915	30.229
39.9	20.48	9.767	30.247
40	20.521	9.756	30.277
40.1	19.742	10.569	30.311

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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,



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Jongin Kim / Staff Research Engineer

SAMSUNG Electronics Co.,Ltd