

FCC MPE REPORT

Certification

Applicant Name:
SAMSUNG Electronics Co., Ltd.

Date of Issue:
May 20, 2019

Address:
129, Samsung-ro, Yeongtong-gu, Suwon-si,
Gyeonggi-do, 16677, Rep. of Korea

Test Site/Location:
HCT CO., LTD., 74, Seoicheon-ro 578beon-gil, Majang-
myeo, Icheon-si, Gyeonggi-do, 17383, Rep. of KOREA

Report No.: HCT-RF-1905-FC011-R1

FCC ID: A3LSMV310

APPLICANT: SAMSUNG Electronics Co., Ltd.

Model: SM-V310

EUT Type: AI Speaker

Frequency Range: 2412 MHz - 2462 MHz (WLAN),
2402 MHz - 2480 MHz (BT LE)
2402 MHz - 2480 MHz (Bluetooth)

The measurements shown in this report were made in accordance with the procedures specified in §2.947. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them.

HCT CO., LTD. Certifies that no party to this application has subject to a denial of Federal benefits that includes FCC benefits pursuant to section 5301 of the Anti-Drug Abuse Act of 1998, 21 U.S. C. 853(a)



Report prepared by : Jeong Ho Kim
Engineer of Telecommunication testing center



Approved by : Kwon Jeong
Manager of Telecommunication testing center

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Version

TEST REPORT NO.	DATE	DESCRIPTION
HCT-RF-1905-FC011	May 08, 2019	- First Approval Report
HCT-RF-1905-FC011-R1	May 20, 2019	- Deleted the Simultaneous MPE on page 6.

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	-	-	-	-
1.34 - 30	614	1.63	*(100)	30
30 - 300	824/f	2.19/f	*(180/ f ²)	30
300 - 1500	27.5	0.073	0.2	30
1500 - 100.000	-	-	f/1500	30
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

3-1. Bluetooth

Average output Power at antenna input terminal	11.00	dBm
Average output Power at antenna input terminal	12.589	mW
Prediction distance	20.00	cm
Prediction frequency	2402 – 2480	MHz
Antenna Gain(typical)	0.10	dBi
Antenna Gain(numeric)	1.023	-
Power density at prediction frequency(S)	0.00256	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	11.100 (dBm)
ERP	8.95 (dBm)
ERP	0.008 (W)
ERP Limit	3.00 (W)
MARGIN	25.82 (dB)

3-2. BT LE

Average output Power at antenna input terminal	5.00	dBm
Average output Power at antenna input terminal	3.162	mW
Prediction distance	20.00	cm
Prediction frequency	2402 – 2480	MHz
Antenna Gain(typical)	0.10	dBi
Antenna Gain(numeric)	1.023	-
Power density at prediction frequency(S)	0.00064	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	5.100 (dBm)
ERP	2.95 (dBm)
ERP	0.002 (W)
ERP Limit	3.00 (W)
MARGIN	31.82 (dB)

3-3. DTS

Average output Power at antenna input terminal	18.00	dBm
Average output Power at antenna input terminal	63.096	mW
Prediction distance	20.00	cm
Prediction frequency	2412 – 2462	MHz
Antenna Gain(typical)	0.10	dBi
Antenna Gain(numeric)	1.023	-
Power density at prediction frequency(S)	0.01284	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.000	mW/cm ²

2.1091

EIRP	18.100 (dBm)
ERP	15.95 (dBm)
ERP	0.039 (W)
ERP Limit	3.00 (W)
MARGIN	18.82 (dB)