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TEST REPORT

FCC MPE Test for AT1H01-A10

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2008-FC023-R1

DATE OF ISSUE
18 August, 2020

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August 07, 2020

Additional Model
-

Applicant	**SAMSUNG Electronics Co., Ltd.** 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
FCC ID	A3LAT1H01-A10
Product Name	AU(AT1H01)
Model Name	AT1H01-A10

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.
This test results were applied only to the test methods required by the standard.

REVISION HISTORY

The revision history for this test report is shown in table.

Revision No.	Date of Issue	Description
0	August 07, 2020	Initial Release
1	August 18, 2020	Adding the calculation of Wall (Direction to Bottom)

The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of the FCC Rules under normal use and maintenance.

RF Exposure Statement

1. Limit

- According to § 1.1310 RF exposure is calculated.

Table 1 – Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	$*900/f^2$	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			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

- The EUT duty cycle is calculated according to ANSI C63.26 - 5.2.4.3.4.

  Duty Cycle = On-time / Transmitter period = 75 %

  (By manufacturer's declaration, this EUT has a duty cycle of up to 75%)

  Duty Correction = 10 log (1/duty cycle) = 10 log (1/0.75) = 1.249 dB

  Direction loss (to Bottom) = 65 % = 1.871 dB

- Max. EIRP (43 dBm) – Duty Correction (1.249 dB) + tolerance (5 dB) = Total (46.751 dBm)
- *Max. EIRP (43 dBm) – Duty correction (1.249 dB) – Direction loss (1.871 dB) + Tolerance (5 dB) = Total 44.88 dBm

-Wall installation-

EIRP[Radiated Power]	46.751	dBm
EIRP[Radiated Power]	47326.02	mW
Prediction distance	62.00	cm
Prediction frequency	27 500 ~ 28 350	MHz
Power density at prediction frequency (S)	0.9797	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.00	mW/cm^2

-Wall installation (Direction to bottom)-

EIRP[Radiated Power]	44.88	dBm
EIRP[Radiated Power]	30760.97	mW
Prediction distance	50.00	cm
Prediction frequency	27 500 ~ 28 350	MHz
Power density at prediction frequency (S)	0.9797	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.00	mW/cm^2

-Pole installation-

EIRP[Radiated Power]	46.751	dBm
EIRP[Radiated Power]	47326.02	mW
Prediction distance	62.00	cm
Prediction frequency	27 500 ~ 28 350	MHz
Power density at prediction frequency (S)	0.9797	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.00	mW/cm^2

-Ceiling installation-

EIRP[Radiated Power]	42.751	dBm
EIRP[Radiated Power]	18840.83	mW
Prediction distance	39.00	cm
Prediction frequency	27 500 ~ 28 350	MHz
Power density at prediction frequency (S)	0.9857	mW/cm^2
MPE limit for uncontrolled exposure at prediction frequency	1.00	mW/cm^2