

TEST REPORT

FCC MPE Test for MF1601d-25A
Certification

APPLICANT
SAMSUNG Electronics Co., Ltd.

REPORT NO.
HCT-RF-2104-FC011

DATE OF ISSUE
April 27, 2021

Tested by
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TEST REPORT FCC MPE Test for MF1601d-25A	REPORT NO. HCT-RF-2104-FC011
	DATE OF ISSUE April 27, 2021
	Additional Model -

Applicant **SAMSUNG Electronics Co., Ltd.**
5-5, Mojeon-Ri, Backsa-Myun, Icheon-Citi, Kyunggi-Do, Korea

Eut Type	MMU(MF1601d)
Model Name	MF1601d-25A
FCC ID	A3LMF1601D-25A

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	April 27, 2021	Initial Release

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.

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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.....	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 - 1500.....	f/1500	30
1500 - 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 of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna

3. RESULTS

- PCS

Max Peak output Power at antenna input terminal	53.04	dBm
Max Peak output Power at antenna input terminal	201372.42	mW
Prediction distance	1500.00	cm
Prediction frequency	1930 – 1995	MHz
Antenna Gain(typical)	21.20	dBi
Antenna Gain(numeric)	131.83	-
Power density at prediction frequency(S)	0.9389	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²
Max Peak output Power at antenna input terminal	53.04	dBm
Max Peak output Power at antenna input terminal	201372.42	mW
Prediction distance	2100.00	cm
Prediction frequency	1930 – 1995	MHz
Antenna Gain(typical)	21.20	dBi
Antenna Gain(numeric)	131.83	-
Power density at prediction frequency(S)	0.4790	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

- AWS

Max Peak output Power at antenna input terminal	53.04	dBm
Max Peak output Power at antenna input terminal	201372.42	mW
Prediction distance	1500.00	cm
Prediction frequency	2110 - 2200	MHz
Antenna Gain(typical)	21.40	dBi
Antenna Gain(numeric)	138.04	-
Power density at prediction frequency(S)	0.9831	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

Max Peak output Power at antenna input terminal	53.04	dBm
Max Peak output Power at antenna input terminal	201372.42	mW
Prediction distance	2100.00	cm
Prediction frequency	2110 - 2200	MHz
Antenna Gain(typical)	21.40	dBi
Antenna Gain(numeric)	138.04	-
Power density at prediction frequency(S)	0.5016	mW/cm ²
MPE limit for uncontrolled exposure at prediction frequency	1.0000	mW/cm ²

Simultaneous band emission conditions

Band	MPE Ratio (Power density / Limit)	Sum of MPE Ratio	
PCS	0.4790	0.9806	≤ 1
AWS	0.5016		

***Note**

1. The result of each band was applied to the worst value.
2. MPE ratios are calculated as

$$[(\text{Power density}_1 / \text{MPE Limit}) + [(\text{Power density}_2 / \text{MPE Limit}) + \dots]] \leq 1$$