

FCC MPE REPORT

Certification

Applicant Name:

SAMSUNG Electronics Co., Ltd.

Address:

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Suwon-si, Gyeonggi-do, 16677, Rep. of Korea

Date of Issue:

February 28, 2019

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-1902-FC062

FCC ID:

A3LRT2201-46A

APPLICANT:

SAMSUNG Electronics Co., Ltd.

Model:

RT2201-46A

EUT Type:

RT2201

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.


Report prepared by : Kwon Jeong
Engineer of telecommunication testing center


Approved by : Jong Seok Lee
Manager of telecommunication testing center

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Version

| TEST REPORT NO. | DATE | DESCRIPTION |
|-------------------|-------------------|-------------------------|
| HCT-RF-1902-FC062 | February 28, 2019 | - First Approval Report |
| | | |
| | | |
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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

3.1 6 dBi Results

- UNII1

| | | |
|---|---------|--------------------|
| Max peak output power at antenna input terminal (dBm) | 29.000 | dBm |
| Max peak output power at antenna input terminal (mW) | 794.328 | mW |
| Prediction distance | 20.000 | cm |
| Prediction frequency | 5 170.0 | MHz |
| Antenna gain (typical) | 6.00 | dBi |
| Antenna gain (numeric) | 3.981 | - |
| Power density at prediction frequency | 0.6291 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 1.0000 | mW/cm ² |

2.1091

| | |
|-----------|-------------|
| EIRP | 35.00 (dBm) |
| ERP | 32.85 (dBm) |
| ERP | 1.928 (W) |
| ERP Limit | 3.00 (W) |
| MARGIN | 1.92 (dB) |

- UNII3

| | | |
|---|----------|--------------------|
| Max peak output power at antenna input terminal (dBm) | 30.000 | dBm |
| Max peak output power at antenna input terminal (mW) | 1000.000 | mW |
| Prediction distance | 20.000 | cm |
| Prediction frequency | 5 735.0 | MHz |
| Antenna gain (typical) | 6.00 | dBi |
| Antenna gain (numeric) | 3.981 | - |
| Power density at prediction frequency | 0.7920 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 1.0000 | mW/cm ² |

2.1091

| | |
|-----------|-------------|
| EIRP | 36.00 (dBm) |
| ERP | 33.85 (dBm) |
| ERP | 2.427 (W) |
| ERP Limit | 3.00 (W) |
| MARGIN | 0.92 (dB) |

3.2 9 dBi Results

- UNII1

| | | |
|---|----------|--------------------|
| Max peak output power at antenna input terminal (dBm) | 26.50 | dBm |
| Max peak output power at antenna input terminal (mW) | 446.6834 | mW |
| Prediction distance | 20.000 | cm |
| Prediction frequency | 5 230.0 | MHz |
| Antenna gain (typical) | 9.00 | dBi |
| Antenna gain (numeric) | 7.943 | - |
| Power density at prediction frequency | 0.7059 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 1.0000 | mW/cm ² |

2.1091

| | |
|-----------|-------------|
| EIRP | 35.50 (dBm) |
| ERP | 33.35 (dBm) |
| ERP | 2.163 (W) |
| ERP Limit | 3.00 (W) |
| MARGIN | 1.42 (dB) |

- UNII3

| | | |
|---|---------|--------------------|
| Max peak output power at antenna input terminal (dBm) | 27.000 | dBm |
| Max peak output power at antenna input terminal (mW) | 501.187 | mW |
| Prediction distance | 20.000 | cm |
| Prediction frequency | 5 735.0 | MHz |
| Antenna gain (typical) | 9.00 | dBi |
| Antenna gain (numeric) | 7.943 | - |
| Power density at prediction frequency | 0.7920 | mW/cm ² |
| MPE limit for uncontrolled exposure at prediction frequency | 1.0000 | mW/cm ² |

2.1091

| | |
|-----------|-------------|
| EIRP | 36.00 (dBm) |
| ERP | 33.85 (dBm) |
| ERP | 2.427 (W) |
| ERP Limit | 3.00 (W) |
| MARGIN | 0.92 (dB) |