

Declaration of RF Exposure Compliance for SAR exclusion

No. I20Z70192-SEM01

For

Samsung Electronics Co., Ltd.

Wearable device

Model name: SM-R220

With

FCC ID: ZCASMR220

Issued Date: 2020-7-1

Note:

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Test Laboratory:

CTTL, Telecommunication Technology Labs, CAICT

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REPORT HISTORY

Report Number	Revision	Issue Date	Description
I20Z70192-SEM01	Rev.0	2020-7-1	Initial creation of test report



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1 Test Laboratory

1.1 Testing Location

Company Name:	CTTL(Shouxiang)
Address:	No. 51 Shouxiang Science Building, Xueyuan Road, Haidian District, Beijing, P. R. China100191

1.2 Testing Environment

Temperature:	18°C~25°C,
Relative humidity:	30%~ 70%
Ground system resistance:	< 0.5 Ω
Ambient noise & Reflection:	< 0.012 W/kg

1.3 Project Data

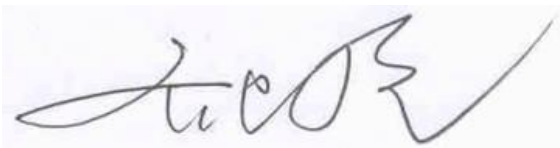
Project Leader:	Qi Dianyuan
Test Engineer:	Lin Xiaojun
Testing Start Date:	June 30, 2020
Testing End Date:	June 30, 2020

1.4 Signature



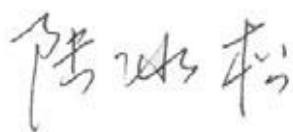
Lin Xiaojun

(Prepared this test report)



Qi Dianyuan

(Reviewed this test report)



Lu Bingsong

Deputy Director of the laboratory
(Approved this test report)

2 Client Information

2.1 Applicant Information

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2.2 Manufacturer Information

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3 Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1 About EUT

Description:	Wearable device
Model name:	SM-R220
Operating mode(s):	Bluetooth

3.2 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
AE1	Battery	Secondary Li-ion Battery	HQ-506N	Dongguan Amperex Technology Limited



4 TEST METHODOLOGY

4.1 Applicable Limit Regulations

ANSI C95.1–1992: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

4.2 Applicable Measurement Standards

IEEE 1528–2013: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

KDB447498 D01: General RF Exposure Guidance v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

5 Standalone SAR Test Exclusion Considerations

Standalone 1-g head or body SAR evaluation by measurement or numerical simulation is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied. The 1-g SAR test exclusion threshold for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR, where

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

Table 5.1: Standalone SAR test exclusion considerations

Band/Mode	F(GHz)	Distance (mm)	SAR test exclusion threshold(mW)	RF output power		SAR test exclusion
				dBm	mW	
Bluetooth	2.441	5mm	9.60	1	1.26	Yes

Note1: Maximum possible output power declared by manufacturer

Note2: When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

Table 5.2 Estimated SAR for Bluetooth:

Band/Mode	F(GHz)	Distance (mm)	RF output power		Estimated _{1g} (W/kg)
			dBm	mW	
Bluetooth	2.441	5mm	1	1.26	0.05

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

6 Conclusion

As the SAR Test Exclusion calculation result is below SAR test exclusion thresholds, the SAR evaluation is not required.