

TEST REPORT

SAR Test Exclusion Report for WSP-W40
Certification

APPLICANT
WOOSIM SYSTEMS INC

REPORT NO.
HCT-SR-2108-FC004

DATE OF ISSUE
August 25, 2021

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Applicant

WOOSIM SYSTEMS INC.

60, Sandan-ro 388beon-gil, Chwisaeng-ri, Galsan-myeon, Hongseong-gun,
Chungcheongnam-do, Korea

Eut Type
Model Name
Additional Model

Mobile Printer
WSP-W40
PORTI-W40

FCC ID

QDD-WSPW40

Max. RF Output Power

1.035 dBm (1.27 mW)

FCC Classification

Spread Spectrum Transmitter

FCC Rule Part(s)

47CFR §2.1093

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 25, 2021	Initial Release

Engineering Statement:

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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1. EUT DESCRIPTION

Model	WSP-W40
Additional Model	PORTI-W40
EUT Type	Mobile Printer
Power Supply	DC 8.4 V
Frequency Range	2 402 MHz – 2 480 MHz
Max. RF Output Power	1.035 dBm (1.27 mW)
BT Operating Mode	Normal, EDR, AFH
Modulation Type	GFSK(Normal), π /4DQPSK and 8DPSK(EDR)
Modulation Technique	FHSS
Number of Channels	79Channels, Minimum 20 Channels(AFH)
Antenna Specification	Antenna type: Printed Monopole Antenna Peak Gain : -3.0 dBi
Date(s) of Tests	August 02, 2021 ~ August 19, 2021
EUT serial numbers	Radiated : DAMCEB21E00321 Conducted : DAMCEB21E00320

2. FCC SAR TEST Exclusion

Body SAR measurement is required because this product can be used at a close distance of less than 20cm from the body of most users.

According to the FCC KDB 447498 D01 v06 section 4.3.1, for 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g SAR test exclusion thresholds are determined by the following:

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g SAR test exclusion thresholds are determined by the following:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR, and ≤ 7.5 for 10-g extremity SAR, where

$$\frac{\text{Max Power of Channel(mW)}}{\text{Test Separation Distance (mm)}} * \sqrt{\text{Frequency(GHz)}} \leq 3.0 \text{ For 1g SAR, 7.5 for 10g SAR}$$

where

- f(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

Calculation Result::

Tx frequency range: 2 402 MHz ~ 2 480 MHz

Body SAR Consideration Min. test separation distance: 5 mm

Maximum Output Power including tune up tolerance: 3mW

The Highest RF channel frequency: 2 480 MHz

For Body SAR Exclusion

Mode	Frequency	Maximum Allowed Power	Separation Distance	≤ 3.0 for 1g SAR
	[MHz]	[mW]	[mm]	
Bluetooth	2 480	3	5	0.9

Based on the maximum output power of Bluetooth and antenna to use separation distance, Body SAR for this device is not required.

*note: "SAR Exemption threshold is calculated with Maximum Output Power including tune up tolerance which is more conservative than the measurement result of RF Output Power."