Report No.: DDT-R22052423-2E08

Issued Date: Jun. 24, 2022

RF EXPOSURE REPORT

FOR

Applicant	:	Zebra Technologies Corporation
Address	:	3 Overlook Point, Lincolnshire, IL 60069, USA
Equipment under Test	:	Mobile Thermal Printer
Model No.	:	ZQ220 Plus, ZQ120 Plus, ZR138CN, ZR138CR, ZR138EM, ZR138RT
Trade Mark	:	Zebra
FCC ID	:	I28-BR8051A01
Manufacturer	:	Zebra Technologies Corporation
Address	:	3 Overlook Point, Lincolnshire, IL 60069, USA

Issued By: Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

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REPORT

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TEST REPORT DECLARE

Applicant	:	Zebra Technologies Corporation
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Trade Mark	:	Zebra
Manufacturer	:	Zebra Technologies Corporation
Address	:	3 Overlook Point, Lincolnshire, IL 60069, USA

Standard Used: KDB447498 D01 General RF Exposure Guidance v06

We Declare:
The equipment described above is assessed by Dongguan Dongdian Testing Service Co., Ltd and in the configuration assessed the equipment complied with the standards specified above. The assessed results are contained in this report and Dongguan Dongdian Testing Service Co., Ltd is assumed of full responsibility for the accuracy and completeness of these assess.

After evaluation, our opinion is that the equipment In Accordance with above standard.

Report No:	DDT-R22052423-2E08		
Date of Receipt:	May 24, 2022	**Date of Test:**	May 24, 2022~ Jun. 24, 2022

Prepared By:

Jacky Huang

Jacky Huang /Engineer

Approved By:

Damon Hu

DONGGUAN DONGDIAN TESTING SERVICE CO., LTD. DDT APPROVED

Damon Hu/EMC Manager

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Dongguan Dongdian Testing Service Co., Ltd.

Revision History

Rev.	Revisions	Issue Date	Revised By
---	Initial issue	Jun. 24, 2022	

1. General information

1.1. Description of Equipment

EUT* Name	:	Mobile Thermal Printer
Model Number	:	ZQ220 Plus, ZQ120 Plus, ZR138CN, ZR138CR, ZR138EM, ZR138RT
Difference of models	:	Above models are identical in schematic and structure, only the name is different for all the models, therefore the test performed on the model ZR138RT.
EUT Function Description	:	Please reference user manual of this device
Power Supply	:	DC 5 V by external AC Adapter DC 7.2V by Rechargeable Li-ion Battery
Hardware Version	:	B
Software Version	:	A
Radio Specification	:	Bluetooth V5.0
Operation Frequency	:	2402 MHz - 2480 MHz
Modulation	:	GFSK, π/4-DQPSK, 8DPSK
Data Rate	:	1 Mbps, 2 Mbps, 3 Mbps
Antenna Type	:	Ceramic chip antenna, maximum PK gain: 4.16 dBi
Sample Number	:	S22052423-21 for radiation, S22052423-22 for conductive

Note: EUT is the abbreviation of equipment under test.

1.2. Assess laboratory

Dongguan Dongdian Testing Service Co., Ltd.

Add.: No. 17, Zongbu Road 2, Songshan Lake Sci&Tech, Industry Park, Dongguan City, Guangdong Province, China, 523808

Tel.: +86-0769-38826678, http://www.dgddt.com, Email: ddt@dgddt.com

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, G-20118

2. RF Exposure Evaluation

According to 447498 D01 General RF Exposure Guidance v06

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] ·[√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity 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

Manufacturing Tolerance

BT

GFSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	-4	-4	-4
Tolerance ±(dB)	2	2	2
π/4DQPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	-4	-4	-4
Tolerance ±(dB)	2	2	2
8DPSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	-4	-4	-4
Tolerance ±(dB)	2	2	2

BLE

GFSK (Peak)			
Channel	Channel 0	Channel 39	Channel 78
Target (dBm)	-10	-10	-10
Tolerance ±(dB)	2	2	2

Evaluation Result

Worse case is as below: [2480 MHz, -2 dBm, (0.63 mW) output power]

(0.63/5) ·[√2.480 (GHz)] = 0.20< 3.0 for 1-g SAR

Then SAR evaluation is not required.

END OF REPORT