

RF Exposure Exemption

Applicant : Marson Technology Co., Ltd.

Product Name : 2D Mini Wireless Barcode Scanner

Trade Name : Marson

Model Number : MT840

Applicable Standard : 47 CFR §2.1093

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Issued by

Approved By : _____

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Taiwan Accreditation Foundation accreditation number: 1330
Test Firm MRA designation number: TW0010

Note:

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- 3.The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Revision History

Rev.	Issued Date	Revisions	Revised By
00	Feb. 10, 2023	Initial Issue	Emma Chao

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1. General Information

1.1 Reference Testing Standards

Standard	Description	Version
47 CFR §2.1093	Radiofrequency radiation exposure evaluation: portable devices	-
IEEE C95.1	IEEE Standard for Safety Levels with Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz	1992
KDB 447498 D04	RF exposure procedures and equipment authorization policies for mobile and portable devices	v01

1.2 Testing Location

Lab Name: Eurofins E&E Wireless Taiwan Co., Ltd.

Site Address: ☒ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.)

Site Address: ☐ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan (R.O.C.)

2. Description of Equipment under Test (EUT)

Applicant	Marson Technology Co., Ltd. 9F., No.108-3, Mincyuan Rd., Sindian Dist., New Taipei City 23141, Taiwan
Product Name	2D Mini Wireless Barcode Scanner
Trade Name	Marson
Model Number	MT840
FCC ID	IRJ-MT840
Frequency Range	Bluetooth : 2402 - 2480 MHz
Supported Modulations	Bluetooth : BR / EDR / LE

Note:

The above information of DUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Antenna Information			
Model	Type	Frequency	Max. Gain (dBi)
RFANT5220110A0T	MULTILAYER CERAMIC ANTENNA	2400 - 2500	2
Antenna Diversity			
Bluetooth : 1TX			

3. RF Exposure Limit

Table 1 Safety Limits for Controlled / Uncontrolled Environment Exposure

SAR Exposure Limit		
	General Population / Uncontrolled Exposure ¹ (W/kg)	Occupational / Controlled Exposure ² (W/kg)
Spatial Peak SAR ³ (head or Body)	1.60	8.00
Spatial Peak SAR ⁴ (Whole Body)	0.08	0.40
Spatial Peak SAR ⁵ (Hands / Feet / Ankle / Wrist)	4.00	20.00

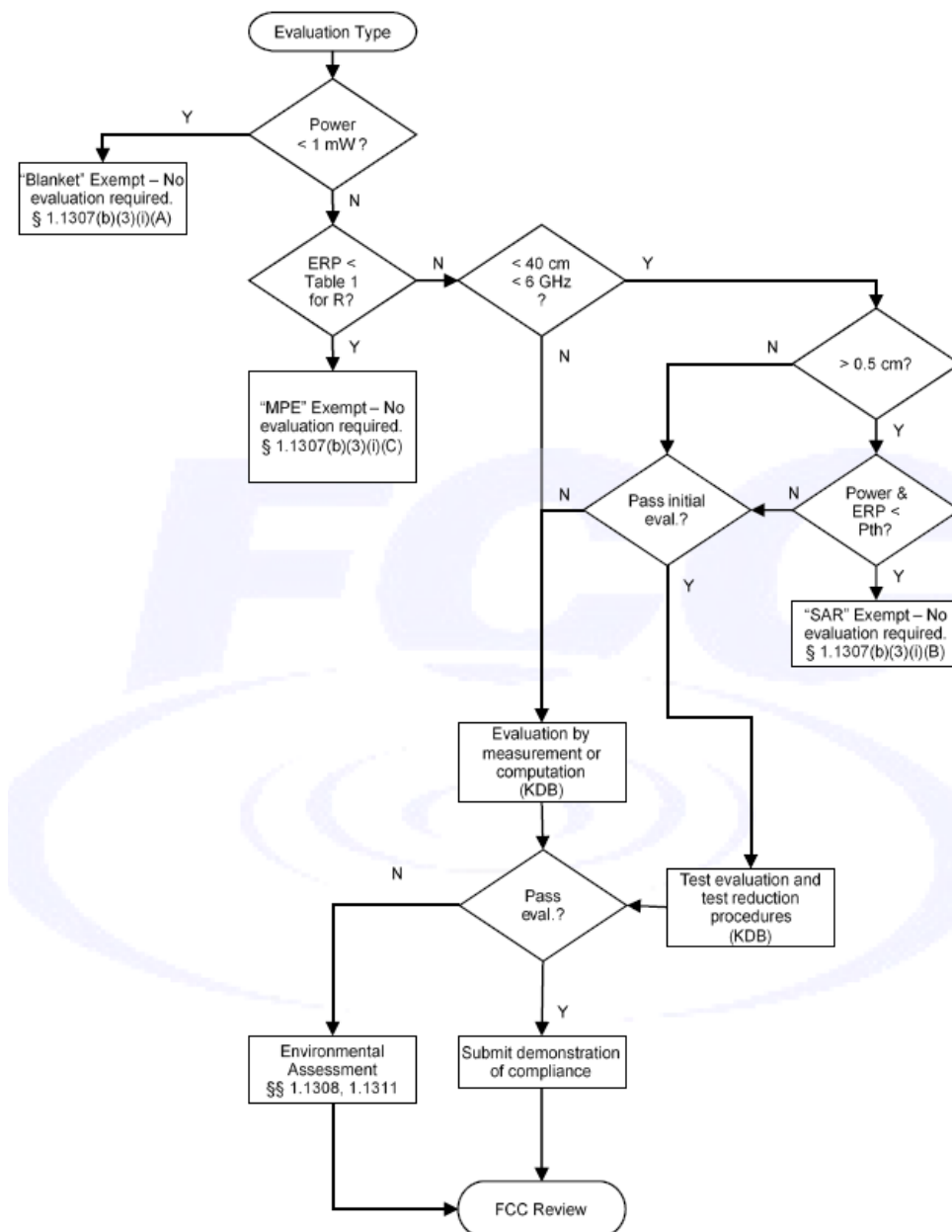
Note:

1. General Population / Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.
2. Occupational / Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).
3. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.
4. The Spatial Average value of the SAR averaged over the whole body.
5. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.

4. Exemption Evaluation

Exemption evaluation was performed according to the appendix A and B in KDB447498 D04.

The General Sequence for Determination of Procedure demonstrated in Figure A.1 of KDB447498 D04 was applied.



5. Maximum Tune-up Power

Operate Band	Frequency (MHz)	Maximum Tune-up(dBm)
Bluetooth	2402 - 2480	0

6. Result

Band	Frequency (MHz)	Antenna	Tune-up Power (dBm)	Tune-up Power (mW)	ANT Gain (dBi)	ERP (W)	ERP (mW)	<§1.1307(b)(3)(i)(A)> 1 mW Exemption Threshold ERP (mW)	<§1.1307(b)(3)(i)(A)> 1 mW Exemption considerations
Bluetooth	2402 - 2480	ANT 0	0.00	1.00	2.00	0.001	0.966	1.00	Qualified

Note:

This device is qualified for the 1 mW blanket exemption under § 1.1307(b)(3)(i)(A).

7. Conclusion

The result shows that this device is qualified for 1 mW Test Exemption in KDB447498. Therefore, SAR testing is not required.

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