RF Exposure Exemption Report

Applicant	：	***Direction Technology Co., Ltd.***
Product Name	：	***Power meter***
Trade Name	：	***BION***
Model Number	：	***F2, F5 , NOZA P1 , ST100 , PWS01 , GW1600 , DC100 , SBP100***
Applicable Standard	：	***47 CFR § 2.1093***
Received Date	：	***May 19, 2023***
Issued Date	：	***Nov. 09, 2023***

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Taiwan Accreditation Foundation accreditation number: 1330

Note:
1.The test results are valid only for samples provided by customers and under the test conditions described in this report.
2.This report shall not be reproduced except in full, without the written approval of Eurofins E&E Wireless Taiwan Co., Ltd.
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.

Approved By :

Testing Laboratory
1330

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Revision History

Rev.	Issued Date	Description	Revised by
00	Nov. 09, 2023	Initial Issue	Yiying Chiang

1. General Information

1.1 Reference Applicable Standard

Standard	Description	Version
IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York.	1992
47 CFR § 2.1093	Radiofrequency radiation exposure evaluation: Portable devices.	-
47 CFR § 1.1310	Radiofrequency radiation exposure limits.	-
KDB 447498 D04	RF exposure procedures and equipment authorization policies for mobile and portable devices	v01

1.2 Testing Location

Test Facilities

Company Name: Eurofins E&E Wireless Taiwan Co., Ltd.
Address: No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan
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Test Site Location

■ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan
☐ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan

Laboratory Accreditation

Location	TAF	FCC	ISED
No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan	Accreditation No.: 1330	Designation No.: TW0010	Company No.: 7381A CAB ID: TW1330
No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan	Accreditation No.: 1330	Designation No.: TW0034	Company No.: 28922 CAB ID: TW1330

2. Description of Equipment under Test (EUT)

Applicant	Direction Technology Co., Ltd. 1F, No. 88-7, Sec.1,Kwang Fu Rd., Sec.1, San Chung, Taipei. Taiwan.			
Product Name	Power meter			
Trade Name	BION			
Model Number	F2, F5 , NOZA P1 , ST100 , PWS01 , GW1600 , DC100 , SBP100			
Difference description of model number	All models are electrically identical, different model names are for marketing purpose.			
FCC ID	TM6BION-POWER1			
Antenna Information	Trade Name	Model No.	Type	Gain
	Direction	CC_GPS100	Monopole Antenna	-2.88 dBi
Accessory Information				
Lithium Battery	Trade Name	MITSUBISHI	Model Number	CR2032
	3 V, 220 mAh			

Note:

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

2.1 RF Specification

Bluetooth				
Support type:	☐ BR	☐ EDR	☒ BLE-1 Mbps	☒ BLE-2 Mbps

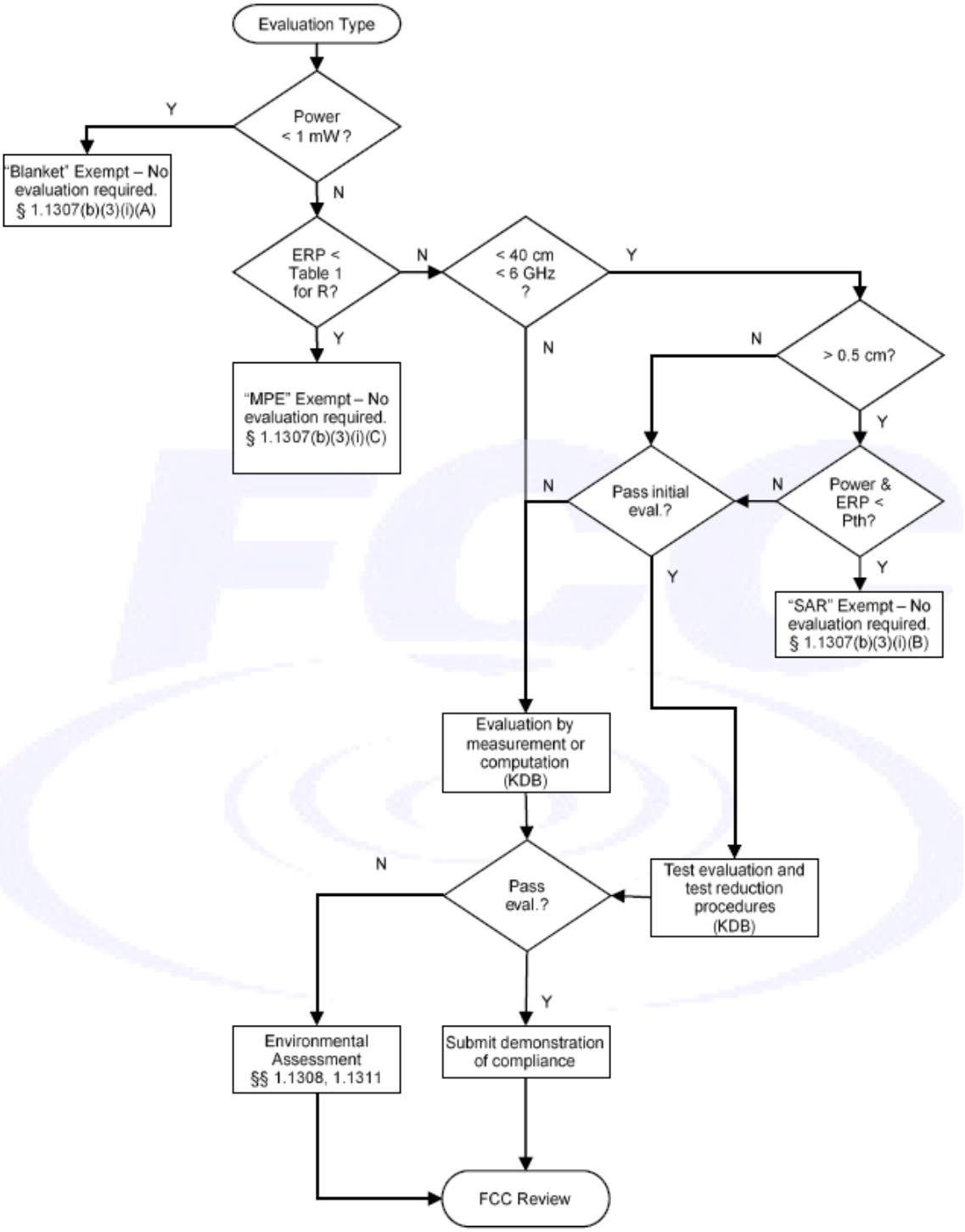
Ant+				
Support type:	☒ GFSK			

3. RF Exposure Assessment

3.1 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.



3.2 RF Exposure-based Exemption

SAR-based thresholds are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time averaged power or maximum time-averaged ERP, whichever is greater. If the ERP of a device is not easily determined, such as for a portable device with a small form factor, the applicant may use the available maximum time-averaged power exclusively if the device antenna or radiating structure does not exceed an electrical length of λ/4. As for devices with antennas of length greater than λ/4 where the gain is not well defined, but always less than that of a half-wave dipole (length λ/2), the available maximum time-averaged power generated by the device may be used in place of the maximum time-averaged ERP, where that value is not known. The separation distance is the smallest distance from any part of the antenna or radiating structure for all persons, during operation at the applicable ERP. In the case of mobile or portable devices, the separation distance is from the outer housing of the device where it is closest to the antenna. The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW). This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). Pth is given by Formula (B.2).

$$P_{\text{th}}\ (\text{mW}) = \begin{cases} ERP_{20\ \text{cm}}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ \text{cm}} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases} \qquad \text{(B.2)}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ \text{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).
The example values shown in Table B.2 are for illustration only.

4. Maximum Transmitting Mode Evaluation

Antenna transmission description
Bluetooth: 1Tx(Diversity) Ant + : 1Tx(Diversity)

5. Result

Band	Frequency (MHz)	Conducted Power (dBm)	Conducted Power (mW)	ANT Gain (dBi)	ERP (W)	<§1.1307(b)(3)(i)(B)> Exemption P_{th} (mW)	<§1.1307(b)(3)(i)(B)> Exemption considerations
Bluetooth	2402 - 2480	3.07	2.03	-2.88	0.001	2.72	SAR evaluation is not required.
Ant +	2456	2.69	1.9	-2.88	0.001	2.74	SAR evaluation is not required.

Note:

This device is qualified for exemption under §1.1307(b)(3)(i)(B).

6. Conclusion

The result shows that this device is qualified for Low Power Exemption in KDB447498. Therefore, SAR testing is not required.

********** End of Report **********