



RF Exposure Evaluation

FCC ID: 2AWFO-TCM-BMS-H02
APPLICANT: Bio Nature Scientific Co., Ltd.
Application Type: Certification
Product: DarMo Qi resonance device
Model No.: BMS-H02
Brand Name: DarMo
FCC Rule Part(s): Part 2.1093 (Portable)
Received Date: September 28, 2022
Test Date: October 27, 2022

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The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
2209TWE912-U2	1.0	Original Report	2022-10-27	

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	DarMo Qi resonance device
Model No.	BMS-H02
Brand Name	DarMo
Supports Radios Spec.	Bluetooth Single Mode: V4.2
Bluetooth Specification	Bluetooth Single Mode: V4.2
Accessories	
Red terminal Resonance Cable	Brand: WANDY RUBBER INDUSTRIAL Co., Ltd Model No.: BN- L-R-01 Length:1.1m
White terminal Detection Cable	Brand: WANDY RUBBER INDUSTRIAL Co., Ltd Model No.: BN- L-D-01 Length:1.1m
Micro USB Charging Cable	Brand: Accurate Innotech Inc. Model No.: BN-cable-YA Length:0.5m
Rectangular resonance patches	Brand: WANDY RUBBER INDUSTRIAL Co., Ltd Model No.: BN- P-R-01
Square detection patches	Brand: WANDY RUBBER INDUSTRIAL Co., Ltd Model No.: BN- P-D-01
Battery	Brand: Bio Nature. Model: 503040 Rating: DC 3.7V, 550mAh

1.2. Antenna Description

No.	Brand	Part No.	Antenna Type	Peak Gain
1	RAYTAC	MDBT42Q-512KV2	Chip	-1.60dBi

2. RF Exposure Evaluation

2.1. FCC Limits

According to FCC KDB 447498 D04V01 - SAR-Based Exemption

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). P_{th} is given by Formula .

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

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_{20cm} is per Formula.

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

The example values shown as below are for illustration only.

Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
300		39	65	88	110	129	148	166	184	201	217
450		22	44	67	89	112	135	158	180	203	226
835		9	25	44	66	90	116	145	175	207	240
1900		3	12	26	44	66	92	122	157	195	236
2450		3	10	22	38	59	83	111	143	179	219
3600		2	8	18	32	49	71	96	125	158	195
5800		1	6	14	25	40	58	80	106	136	169

2.2. Test Result of RF Exposure Evaluation

Mode	Frequency Band (MHz)	Average Output Power (dBm)	Output Power (mW)	FCC SAR Test Exclusion Threshold (mW)
BLE	2402~2480	-1.34	0.73	3

So, this device can complies the SAR test exclusion.

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