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RF EXPOSURE TEST REPORT

Manufacturer: Infinite Biomedical Technologies, LLC
1101 East 33rd Street, Suite E305
Baltimore, Maryland 21218 USA

Applicant: Same As Above

Product Name: morph2

Product Description: RFID Tag Reader with Bluetooth

Model: morph2-45LC*

**Denotes actual model tested as worst case of product family that includes the following models: morph2-45LC, morph2-50LC, morph2-54LC and morph2-MCLC.*

FCC ID: O7Q-MORPH2

Testing Commenced: Sept. 7, 2016

Testing Ended: Sept. 7, 2016

Summary of Test Results: In Compliance, with Modifications

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

Standards:

- KDB447498



Order Number: F2LQ8149B

Client: Infinite Biomedical Technologies, LLC

Model: morph2-45LC

Evaluation Conducted by:

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Report Reviewed by:

Ken Littell, Director of EMC & Wireless Operations

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TABLE OF CONTENTS

Section	Title	Page
1	ADMINISTRATIVE INFORMATION	3
2	SUMMARY OF TEST RESULTS/MODIFICATIONS	5
3	ENGINEERING STATEMENT	6
4	EUT INFORMATION AND DATA	7
5	RF EXPOSURE FOR DEVICE ≤ 20 cm FROM HUMAN	8



1 ADMINISTRATIVE INFORMATION

1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

1.2 Measurement Procedure:

All measurements were from tests performed according to KDB447498. A list of the measurement equipment can be found in Section 6.

1.3 Document History

Document Number	Description	Issue Date	Approved By
F2LQ8149B-08E	First Issue	Sept. 19, 2016	K. Littell
F2LQ8149B-08E Rev. 1	Update in product family/model nomenclature and addition of EUT modifications.	Nov. 2, 2016	K. Littell



2 SUMMARY OF TEST RESULTS

	Standard(s)	Results
RF Exposure for Device $\leq 20\text{cm}$ from Human	KDB447498	Complies

Modifications Made to the Equipment
The following modifications were made to the EUT by the manufacturer: 1) Changed the 3.3V regulator from TPS62142RGTT to LM53600NQDSXTQ1. The latter has spread spectrum capabilities. 2) Added the following surface mount ferrite beads: a. BLM15PX330SN1D to B+, B-, H+ and H-, which are the power inputs and outputs of the board. b. BLM15PX331SN1D to Tx and Rx, which are the battery (FlexCell2) communication input of the board. 3) In the ARM embedded system, enabled clock spread spectrum. 4) In the ARM embedded system, increased the period of the RFID antenna from 50ms to 100ms, so that the antenna is OFF (no voltage) for a longer period of time.



3 ENGINEERING STATEMENT

This report has been prepared on behalf of Infinite Biomedical Technologies, LLC to provide documentation for the testing described herein. This equipment has been tested and found to comply with KDB447498. The test results found in this test report relate only to the item(s) tested.



4 EUT INFORMATION AND DATA

4.1 Equipment Under Test:

Product: morph2 RFID Tag Reader with Bluetooth

Model: morph2-45LC*

Part Number: 60201-0-1

FCC ID: O7Q-MORPH2

**Denotes actual model tested as worst case of product family that includes the following models: morph2-45LC, morph2-50LC, morph2-54LC and morph2-MCLC. Tests were performed to determine the worst case antenna and this was used for the testing.*

4.2 Trade Name:

Infinite Biomedical Technologies, LLC

4.3 Power Supply:

Battery-operated

4.4 Applicable Rules:

KDB447498

4.5 Equipment Category:

RFID Tag Reader with Bluetooth

4.6 Antenna:

External Loop Antenna

4.7 Accessories:

N/A



5 RF EXPOSURE FOR DEVICE <20cm FROM HUMAN

5.1 Procedures

For devices designed for typical desktop applications, such as wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 10 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 10 cm measured from the center of the probe(s) to the edge of the device.

Test Equipment Used:

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Temp/Hum. Recorder	CL137	Extech	RH520	CH16992	June 3, 2017
Isotropic Field Probe	0186	Amplifier Research	FP6001	302518	Oct. 30, 2016



5.2 Test Data

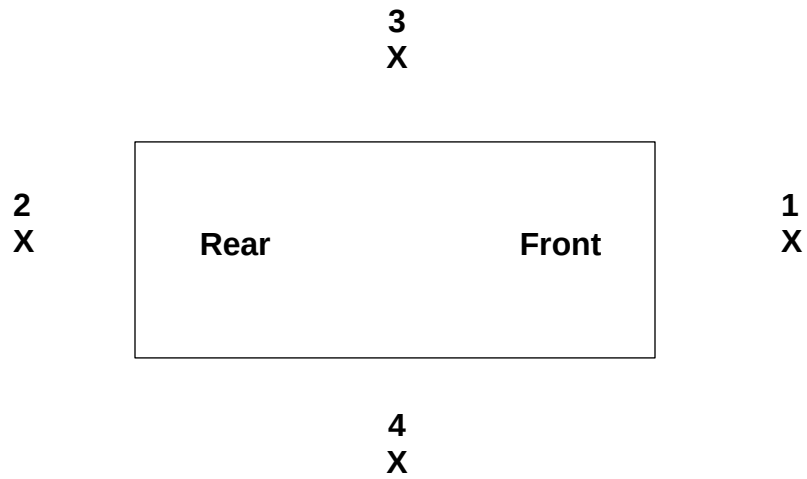
Test Date:	Sept. 7, 2016	Test Engineer:	J. Knepper
Rule:	KDB447498	Air Temperature:	21.2° C
Distance:		Relative Humidity:	46%

Measurement Position	HF E-field
	(V/m)
Position #1 (front)	0.502
Position #2 (rear)	0.522
Position #3 (let)	0.509
Position #4 (right)	0.533



5.3 Diagram/Photograph(s) of Test Setup

Diagram of Measurement Positions

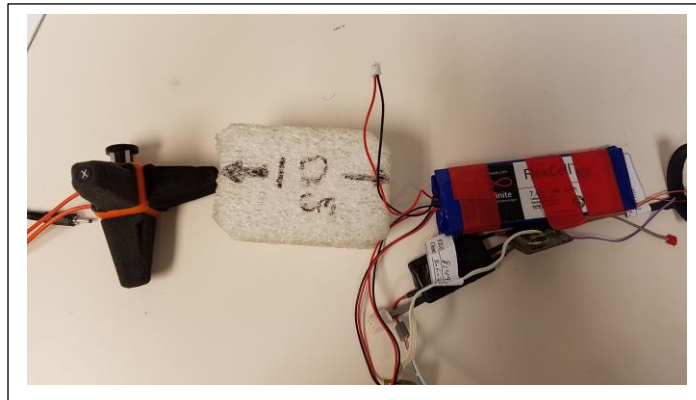




Front



Rear





Left Side



Right Side

