RF Exposure Report

Project Number:	**4681230**	**Proposal Number:**	**11079**
Report Number:	**4681230EMC05**	**Revision Level:**	**0**

Client: **ZEROKEY Inc.**

Equipment Under Test: **50V Ultrasonic Transducer**
Model Name: **Mobile Node**
Model Numbers: **AGISMB10 and ZKISMB10**
FCC ID: **2AX6LISMB10**

Applicable Standards: **47 CFR §§ 2.1093;**
FCC KDB 447498 D01 General RF Exposure Guidance v06

Report issued on: **04 June 2021**
Result: **Exempt**

FOR THE SCOPE OF ACCREDITATION UNDER CERTIFICATE NUMBER: 3212.01
This report must not be used by the client to claim product certification, approval, or endorsement by A2LA, NIST, or any agency of the Federal Government.

Prepared by: Martin Taylor, RF/EMC Engineer

Reviewed by: Jeremy Pickens, RF Lab Manager

Remarks: This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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1 General Information

1.1 *Client Information*

Name:	ZEROKEY Inc.
Address:	3120 12 Street NE
City, State, Zip, Country:	Calgary, Alberta T2E 8T3 Canada

1.2 *Test Laboratory*

Name:	SGS North America, Inc.
Address:	620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country:	Suwanee, GA 30024, USA
Accrediting Body:	A2LA
Type of lab:	Testing Laboratory
Certificate Number:	3212.01

1.3 *General Information of EUT*

Equipment Under Test:	50V Ultrasonic Transducer
Model Name:	Mobile Node
Model Numbers:	AGISMB10 and ZKISMB10
Sample ID:	5922
FCC ID:	2AX6LISMB10
Frequency Range:	2402 – 2480 MHz
Data Modes:	Bluetooth Low Energy (GFSK 1Mbps & 2Mbps) Nordic Enhanced ShockBurst Protocol (GFSK 2Mbps)
Antenna:	Surface Mount Stamped Metal Antenna (4.9 dBi max gain)
Rated Voltage:	3.7 Vdc Rechargeable Lithium Polymer Battery
Test Voltage:	3.7 Vdc Rechargeable Lithium Polymer Battery
Sample Received Date:	21 December 2020
Dates of testing:	22 December 2020 to 07 January 2021

2 SAR Exclusion Calculations

The highest output power in conjunction with the upper and lower frequency boundaries have been used to demonstrate compliance.

The EUT is considered a Body worn application.

Low Channel

447498 D01 General RF Exposure Guidance v06
SAR test exclusion calculations
Section 4.3: General SAR test exclusion guidance / Section 4.3.1: Standalone SAR test exclusion considerations

	Input	Select Units	
Max Power:	6.96	dBm	
Duty Cycle:	100.0%		<== *Source based time average duty cycle*
Min separation distance:	25.31	mm	
Frequency, f:	2402	MHz	

Value reference Number	Values used for Calculation		Reference number definition
v1	5	mW	*[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW*
v2	25	mm	*[min. test separation distance, mm] 'Rounded to nearest mm*
v3	1.550		*[√f(GHz)]*

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
[(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,

Exclusion Calculation(1g):	0.3	number	<== *[v2 / v3] must be less than 3*
Exclusion Calculation(10g):	0.8	number	<== *[v2 / v3] must be less than 7.5*

Conclusions (Body):	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Body applications
Conclusions (Extremity):	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Extremity applications

High Channel

447498 D01 General RF Exposure Guidance v06
SAR test exclusion calculations
Section 4.3: General SAR test exclusion guidance / Section 4.3.1: Standalone SAR test exclusion considerations

	Input	Select Units	
Max Power:	6.74	dBm	
Duty Cycle:	100.0%		<== *Source based time average duty cycle*
Min separation distance:	25.31	mm	
Frequency, f:	2480	MHz	

Value reference Number	Values used for Calculation		Reference number definition
v1	5	mW	*[max. power of channel, including tune-up tolerance, mW] 'Rounded to nearest mW*
v2	25	mm	*[min. test separation distance, mm] 'Rounded to nearest mm*
v3	1.575		*[√f(GHz)]*

a) For 100 MHz to 6 GHz and test separation distances ≤ 50 mm, the 1-g and 10-g SAR test exclusion thresholds are determined by the following:
[(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,

Exclusion Calculation(1g):	0.3	number	<== *[v2 / v3] must be less than 3*
Exclusion Calculation(10g):	0.8	number	<== *[v2 / v3] must be less than 7.5*

Conclusions (Body):	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Body applications
Conclusions (Extremity):	The EUT max power is BELOW the threshold. SAR Testing is NOT required for Extremity applications

3 Revision History

Revision Level	Description of changes	Revision Date
Draft	--	10 February 2021
0	Initial Release	04 June 2021