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RF Exposure Evaluation Report

Report No.:	CQASZ20201100034EX-02
Applicant:	Digital Guard Dawg, Inc.
Address of Applicant:	1079 Sunrise Ave STE: B-326 Roseville, CA 95661-7009
Equipment Under Test (EUT):	
EUT Name:	iKEY Premier
Model No.:	iKEY Premier
Brand Name:	Digital Guard Dawg, Inc.
FCC ID:	2AX8M-IKEY
Standards:	47 CFR Part 1.1307
	47 CFR Part 2.1093
	KDB447498D01 General RF Exposure Guidance v06
Date of Receipt:	Nov. 04, 2020
Date of Test:	Nov. 04, 2020 to Nov. 13, 2020
Date of Issue:	Nov. 13, 2020
Test Result:	**PASS***

***In the configuration tested, the EUT complied with the standards specified above**

Tested By: Jun Li

(Jun Li)

Reviewed By: Sheek Luo

(Sheek Luo)

Approved By:

(Jack Ai)

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20201100034EX-02	Rev.01	Initial report	Nov. 13, 2020

2 Contents

3 General Information

3.1 Client Information

Applicant:	Digital Guard Dawg, Inc.
Address of Applicant:	1079 Sunrise Ave STE: B-326 Roseville, CA 95661-7009
Manufacturer:	Digital Guard Dawg, Inc.
Address of Manufacturer:	1079 Sunrise Ave STE: B-326 Roseville, CA 95661-7009
Factory:	Digital Guard Dawg, Inc.
Address of Factory:	1079 Sunrise Ave STE: B-326 Roseville, CA 95661-7009

3.2 General Description of EUT

Product Name:	iKEY Premier
Model No.:	iKEY Premier
Trade Mark:	Digital Guard Dawg, Inc.
Hardware Version:	V01
Software Version:	V1.0
Test sample No:	CQASZ20201100034EX-02
Sample Type:	☐ Mobile ☒ Portable ☐ Fix Location
Operation Frequency:	433.92MHz
Channel Numbers:	1
Modulation Type:	ASK
Antenna Type:	PCB Antenna
Antenna Gain:	0dBi
Power Supply:	DC 3.0V from battery

Note: Using the new battery for testing.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

4.1.2 Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(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, where

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.1.3 EUT RF Exposure

eirp = pt x gt = $(E \times d)^2/30$
where:
pt = transmitter output power in watts,
gt = numeric gain of the transmitting antenna (unitless),
E = electric field strength in V/m, ---$10^{((dB\mu V/m)/20)}/10^6$,
d = measurement distance in meters (m)---3m,
So pt = $(E \times d)^2/30$ / gt

The worst case (refer to report CQASZ20201100034EX-01) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dBuV/m)	Polarization
433.92	78.19	Peak
433.92	78.19	Average

Antenna polarization: Vertical		
Frequency (MHz)	Level (dBuV/m)	Polarization
433.92	76.75	Peak
433.92	76.75	Average

For 433.92MHz wireless:
Field strength = 78.19dBμV/m @3m
Ant. gain 0dBi; so Ant numeric gain=1.0
So pt={[$10^{(78.19/20)}/10^6$x3]^2/30 /1.0}x1000mW =0.020mW
So (0.020mW/5mm)x √0.43392GHz = 0.0026,

0.0096<3.0 for 1-g SAR

So the SAR report is not required.