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RF Exposure Evaluation Report

Report No. : CQASZ20200200060E-02
Applicant: Uniden America Corporation
Address of Applicant: 6225 N. State Highway 161 Suite 300, Irving, Texas, United States 75038
Equipment Under Test (EUT):
Product: ZA-0204
Model No.: PT03
Brand Name: Road King
FCC ID: AMWUT427ZI
Standards: 47 CFR Part 1.1307
47 CFR Part 1.1310
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2020-02-20
Date of Test: 2020-02-20 to 2020-02-24
Date of Issue: 2020-02-24
Test Result : **PASS***

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

Tested By:

Tom Chen

(Tom Chen)

Reviewed By:

Aaron Ma

(Aaron Ma)

Approved By:

Jack Ai

(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20200200060E-02	Rev.01	Initial report	2020-02-24

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3 General Information

3.1 Client Information

Applicant:	Uniden America Corporation
Address of Applicant:	6225 N. State Highway 161 Suite 300, Irving, Texas, United States 75038
Manufacturer:	Uniden Vietnam Ltd.
Address of Manufacturer:	Lot 5. 1, Tan Troung Industrial Zone, Cam Giang District, Hai Duong Province, Vietnam

3.2 General Description of EUT

Name:	ZA-0204
Model No.:	PT03
Trade Mark :	Road King
Hardware Version:	HB16-B2V20
Software Version:	V1.0(195B)
Frequency Range:	2402MHz
Modulation Type:	GFSK
Number of Channels:	1(declared by the client)
Sample Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
Power Supply:	lithium battery:DC3.7V, Charge by DC5.0V

4 RF Exposure 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:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0$$
 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

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

4.2 EUT RF Exposure Evaluation

1) For 2.4G

$$e_{irp} = p_t \times g_t = (E \times d)^2 / 30$$

where:

p_t = transmitter output power in watts,

g_t = 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,

$$\text{So } p_t = (E \times d)^2 / 30 / g_t$$

The worst case (refer to report CQASZ20190700645E-01) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dBuV/m)	Polarization
2402	92.20	Peak
2402	87.92	Average

For 2480MHz wireless:

Field strength = 92.20dBuV/m @3m

Ant. gain 0dBi; so Ant numeric gain=1.0

$$\text{So } p_t = \{ [10^{(92.20/20)} / 10^6 \times 3]^2 / 30 / 1.0 \} \times 1000 \text{mW} = 0.498 \text{mW}$$

$$\text{So } (0.498 \text{mW} / 5 \text{mm}) \times \sqrt{2.402 \text{GHz}} = 0.154,$$

0.154 < 3.0 for 1-g SAR

So the SAR report is not required.