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RF Exposure Evaluation Report

Report No.: CQASZ20201101312E-02
Applicant: Shenzhen VanTop Technology & Innovation Co., Ltd.
Address of Applicant: 502, 5th Flr. BLDG 4, MinQi Technology Park, No. 65 Lishan Road, Taoyuan Street, Nanshan District, Shenzhen, China
Equipment Under Test (EUT):
EUT Name: Smart Watch
Model No.: VG3, VG3 Lite, VG3 Pro, VG3 GT, VG3 GS, VG4, VG5, DG3, DG4, DG5, DG6
Test Model No.: VG3
Brand Name: VIRMEE
FCC ID: 2AQ3A-VG3
Standards: 47 CFR Part 1.1307
47 CFR Part 2.1093
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2020-11-03
Date of Test: 2020-11-03 to 2020-11-13
Date of Issue: 2020-11-13
Test Result: **PASS***

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

Tested By: Martin Lee
(Martin Lee)
Reviewed By: Sheek, Luo
(Sheek Luo)
Approved By: Jack Ai
(Jack Ai)



1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20201101312E-02	Rev.01	Initial report	2020-11-13

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3 General Information

3.1 Client Information

Applicant:	Shenzhen VanTop Technology & Innovation Co., Ltd.
Address of Applicant:	502, 5th Flr. BLDG 4, MinQi Technology Park, No. 65 Lishan Road, Taoyuan Street, Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen VanTop Technology & Innovation Co., Ltd.
Address of Manufacturer:	502, 5th Flr. BLDG 4, MinQi Technology Park, No. 65 Lishan Road, Taoyuan Street, Nanshan District, Shenzhen, China
Factory:	Shenzhen IWOWN Technology Co., Ltd. Guangming Branch
Address of Factory:	6A, Building H, Innovative Yungu Plant, No. 48 Paotai Road, Lisonglang Community First Industrial Zone, Gongming Street, Guangming District, Shenzhen City

3.2 General Description of EUT

Product Name:	Smart Watch
Model No.:	VG3, VG3 Lite, VG3 Pro, VG3 GT, VG3 GS, VG4, VG5, DG3, DG4, DG5, DG6
Test Model No.:	VG3
Trade Mark:	VIRMEE
Hardware Version:	V1.1
Software Version:	17.0.12.12
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Type:	GFSK
Transfer Rate:	1Mbps
Number of Channel:	40
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Test Software of EUT:	WCN Combo Tool #1 (manufacturer declare)
Antenna Type:	Ceramic antenna
Antenna Gain:	2.0dBi
EUT Power Supply:	lithium battery: DC3.8V, 250mAh, Charge by DC5V

Note:

Model No.: VG3, VG3 Lite, VG3 Pro, VG3 GT, VG3 GS, VG4, VG5, DG3, DG4, DG5, DG6

Only the model VG3 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being appearance design.

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:

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

f(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

4.1.3 EUT RF Exposure

1) For BLE

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.68	-1.5±1	-0.5	0.891
Middle(2440MHz)	-0.47	-1.0±1	0	1.000
Highest(2480MHz)	-0.48	-1.0±1	0	1.000

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-0.68	-1.5±1	-0.5	0.891	0.276	3.0
Middle (2440MHz)	-0.47	-1.0±1	0	1.000	0.312	
Highest (2480MHz)	-0.48	-1.0±1	0	1.000	0.315	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20201101312E-01