

RF Exposure Evaluation Report

Report No.: 2405S70989EC

Applicant: Shenzhen VanTop Technology & Innovation Co., Ltd.

Address: 506, BLDG 4, Pingshan minQi Technology Park, No. 65 Lishan Road, Pingshan Community, Taoyuan Street, Nanshan District, Shenzhen, China

Product Name: R/C QUADCOPTER

Product Model: DR-STE51B

Multiple Models: N/A

Trade Mark: SNAPTAIN, AMETA

FCC ID: 2AQ3A-STE51BT2425

Standards: 47 CFR §1.1307
KDB 447498 D04 Interim General RF Exposure Guidance v01

Test Date: 2024-07-09

Test Result: Complied

Report Date: 2024-07-11

Reviewed by:

Abel chen

Abel Chen
Project Engineer

Approved by:

Jacob Kong

Jacob Kong
Manager

Prepared by:

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China



This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk “★”

Announcement

1. This test report shall not be reproduced except in full, without the written approval of World Alliance Testing & Certification (Shenzhen) Co., Ltd
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.
5. The information marked “#” is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

Revision History

| Version No. | Issued Date | Description |
|-------------|-------------|-------------|
| 00 | 2024-07-11 | Original |

Contents

| | | |
|----------|-------------------------------------|----------|
| 1 | General Information | 4 |
| 1.1 | Client Information | 4 |
| 1.2 | Product Description of EUT | 4 |
| 1.3 | Laboratory Location..... | 4 |
| 2 | RF Exposure Evaluation | 5 |
| 2.1 | Standard | 5 |
| 2.2 | Result..... | 7 |

1 General Information

1.1 Client Information

| | |
|---------------|--|
| Applicant: | Shenzhen VanTop Technology & Innovation Co., Ltd. |
| Address: | 506, BLDG 4, Pingshan minQi Technology Park, No. 65 Lishan Road, Pingshan Community, Taoyuan Street, Nanshan District, Shenzhen, China |
| Manufacturer: | Shenzhen VanTop Technology & Innovation Co., Ltd. |
| Address: | 506, BLDG 4, Pingshan minQi Technology Park, No. 65 Lishan Road, Pingshan Community, Taoyuan Street, Nanshan District, Shenzhen, China |

1.2 Product Description of EUT

The EUT is R/C QUADCOPTER that contains 2.4G WLAN radio.

| | |
|------------------------------------|--|
| Sample Serial Number | 2JZC-3 (assigned by WATC) |
| Sample Received Date | 2024-04-18 |
| Sample Status | Good Condition |
| Frequency Range | 2417MHz |
| Maximum Conducted Output Power | 2417MHz: 24.03dBm |
| Modulation Technology | DSSS, OFDM |
| Antenna Gain [#] | 3.53dBi |
| Spatial Streams | SISO (1TX, 1RX) |
| Power Supply | DC 3.7V from battery |
| Operating temperature [#] | 0 deg.C to +40 deg.C |
| Adapter Information | N/A |
| Modification | Sample No Modification by the test lab |

1.3 Laboratory Location

World Alliance Testing & Certification (Shenzhen) Co., Ltd

No. 1002, East Block, Laobing Building, Xingye Road 3012, Xixiang street, Bao'an District, Shenzhen, Guangdong, People's Republic of China

Tel: +86-755-29691511, Email: qa@watc.com.cn

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 463912, the FCC Designation No. : CN5040.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0160.

2 RF Exposure Evaluation

2.1 Standard

According to §1.1307(b)(3)(i), For single RF sources (i.e., any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

- (A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
- (B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

d = the separation distance (cm);

- (C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C)—Single RF Sources Subject to Routine Environmental Evaluation

| RF Source frequency (MHz) | Threshold ERP (watts) |
|---------------------------|--|
| 0.3–1.34 | 1,920 R ² . |
| 1.34–30 | 3,450 R ² /f ² . |
| 30–300 | 3.83 R ² . |
| 300–1,500 | 0.0128 R ² f. |
| 1,500–100,000 | 19.2R ² . |

According to §1.1307(b)(3)(ii), For multiple RF sources: Multiple RF sources are exempt if:

(A) The available maximum time-averaged power of each source is no more than 1 mW and there is a separation distance of two centimeters between any portion of a radiating structure operating and the nearest portion of any other radiating structure in the same device, except if the sum of multiple sources is less than 1 mW during the time-averaging period, in which case they may be treated as a single source (separation is not required). This exemption may not be used in conjunction with other exemption criteria other than those is paragraph (b)(3)(i)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(i)(A).

(B) in the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

2.2 Result

Single RF source:

Option C:

| Radio | Frequency (MHz) | Distance (mm) | Exemption ERP (mW) | Maximum Conducted Power including Tune-up Tolerance (dBm) | Antenna Gain (dBi) | ERP | | Result Option C |
|-----------|-----------------|---------------|--------------------|---|--------------------|-------|-------|-----------------|
| | | | | | | dBm | mW | |
| 2.4G WLAN | 2417 | 200 | 768 | 24.5 | 3.53 | 25.88 | 387.3 | exempt |

Note: The Maximum Conducted Power including Tune-up Tolerance was declared by manufacturer.

Multiple RF sources transmission simultaneously consider:

N/A

Result: Complied

---End of Report---