



RF Exposure Evaluation

FCC ID: 2AZWI-4180LEQI**IC: 27649-4180LEQI**

1. Client Information

| | | |
|---------------------|---|--|
| Applicant | : | Shenzhen Leqi Network Technology Co., LTD |
| Address | : | Rooms 103, 501 and 601, Building 5, Fenghe Industrial Park, Nos. 1301-50 Guanguang Road, Longhua District, Shenzhen, Guangdong, China. |
| Manufacturer | : | Shenzhen Leqi Network Technology Co., LTD |
| Address | : | Rooms 103, 501 and 601, Building 5, Fenghe Industrial Park, Nos. 1301-50 Guanguang Road, Longhua District, Shenzhen, Guangdong, China. |

2. General Description of EUT

| | | |
|---|----------------------|---|
| EUT Name | : | VIVE Mars FIZTrack |
| HVIN/Model No. | : | 4180 |
| Sample ID | : | RW-C-202303-0147-2-1#&RW-C-202303-0147-2-2# |
| Product Description | Operation Frequency: | ZigBee: 2405MHz~2480MHz |
| | Number of Channel: | ZigBee: 16channels |
| | Antenna Gain: | 1.92dBi FPC Antenna |
| Power Supply | : | USB Input: DC 5V/2A |
| Software Version | : | V1.2 |
| Hardware Version | : | V1 |
| Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab. | | |

Note: More test information about the EUT please refer the RF Test Report.

The RF Exposure Evaluation for FCC:

SAR Test Exclusion Calculations

FCC: According to 447498 D04 Interim General RF Exposure Guidance v01.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

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

where

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

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

| Frequency (MHz) | Distance (mm) | | | | | | | | | |
|-----------------|---------------|----|----|-----|-----|-----|-----|-----|-----|-----|
| | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| 300 | 39 | 65 | 88 | 110 | 129 | 148 | 166 | 184 | 201 | 217 |
| 450 | 22 | 44 | 67 | 89 | 112 | 135 | 158 | 180 | 203 | 226 |
| 835 | 9 | 25 | 44 | 66 | 90 | 116 | 145 | 175 | 207 | 240 |
| 1900 | 3 | 12 | 26 | 44 | 66 | 92 | 122 | 157 | 195 | 236 |
| 2450 | 3 | 10 | 22 | 38 | 59 | 83 | 111 | 143 | 179 | 219 |
| 3600 | 2 | 8 | 18 | 32 | 49 | 71 | 96 | 125 | 158 | 195 |
| 5800 | 1 | 6 | 14 | 25 | 40 | 58 | 80 | 106 | 136 | 169 |



Calculation:

| Test separation: 5mm | | | | | |
|----------------------|-----------------------|------------------------------|--------------------------------------|-------------------------------------|----------------------------|
| ZigBee Mode | | | | | |
| Frequency (GHz) | Conducted Power (dBm) | Turn-up Power Tolerance (dB) | Max power of tune up tolerance (dBm) | Max power of tune up tolerance (mW) | Limit P _{th} (mW) |
| 2.405 | 1.322 | 1±1 | 2 | 1.585 | 3 |
| 2.445 | 1.157 | 1±1 | 2 | 1.585 | 3 |
| 2.480 | 0.988 | 0±1 | 1 | 1.259 | 3 |

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 D04, No SAR is required.



The RF Exposure Evaluation for IC:

SAR Test Exclusion Calculations

IC: According to RSS-102 — Radio Frequency (RF) Exposure Compliance of Radio Communication Apparatus (All Frequency Bands) Issue 5: March 19, 2015

(1) Clause 2.5.1: Exemption limits for Routine Evaluation – SAR Evaluation

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1.

| Table 1: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance | | | | | |
|--|---------------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| Frequency (MHz) | Exemption Limits (mW) | | | | |
| | At separation distance of ≤ 5 mm | At separation distance of 10 mm | At separation distance of 15 mm | At separation distance of 20 mm | At separation distance of 25 mm |
| ≤ 300 | 71 mW | 101 mW | 132 mW | 162 mW | 193 mW |
| 450 | 52 mW | 70 mW | 88 mW | 106 mW | 123 mW |
| 835 | 17 mW | 30 mW | 42 mW | 55 mW | 67 mW |
| 1900 | 7 mW | 10 mW | 18 mW | 34 mW | 60 mW |
| 2450 | 4 mW | 7 mW | 15 mW | 30 mW | 52 mW |
| 3500 | 2 mW | 6 mW | 16 mW | 32 mW | 55 mW |
| 5800 | 1 mW | 6 mW | 15 mW | 27 mW | 41 mW |

| Table 1: SAR evaluation — Exemption limits for routine evaluation based on frequency and separation distance | | | | | |
|--|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--|
| Frequency (MHz) | Exemption Limits (mW) | | | | |
| | At separation distance of 30 mm | At separation distance of 35 mm | At separation distance of 40 mm | At separation distance of 45 mm | At separation distance of ≥ 50 mm |
| ≤ 300 | 223 mW | 254 mW | 284 mW | 315 mW | 345 mW |
| 450 | 141 mW | 159 mW | 177 mW | 195 mW | 213 mW |
| 835 | 80 mW | 92 mW | 105 mW | 117 mW | 130 mW |
| 1900 | 99 mW | 153 mW | 225 mW | 316 mW | 431 mW |
| 2450 | 83 mW | 123 mW | 173 mW | 235 mW | 309 mW |
| 3500 | 86 mW | 124 mW | 170 mW | 225 mW | 290 mW |
| 5800 | 56 mW | 71 mW | 85 mW | 97 mW | 106 mW |



Calculation:

| ZigBee Mode | | | | | | | |
|-----------------|---------------------------|---------------------|--------------------|--------------------|-------------------|-------|--------|
| Frequency (MHz) | Max Conducted Power (dBm) | Tune-up Power (dBm) | Antenna Gain (dBi) | Max. E.I.R.P (dBm) | Max. E.I.R.P (mw) | Limit | Result |
| 2405 | 1.322 | 1 ± 1 | 1.92 | 3.92 | 2.466 | ≤4mw | PASS |
| 2445 | 1.157 | 1 ± 1 | 1.92 | 3.92 | 2.466 | ≤4mw | PASS |
| 2480 | 0.988 | 0 ± 1 | 1.92 | 2.92 | 1.959 | ≤4mw | PASS |

Note: At separation distance of ≤5 mm

Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1093 and the RSS-102§4 Table 4 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06, No SAR is required.

-----END OF THE REPORT-----

