



RF Exposure Evaluation Declaration


FCC ID : 2A13GA7110

APPLICANT : Pico Technology Co., Ltd.

Application Type : Certification

Product : VR All-In-One Headset

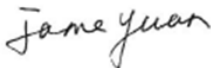
Model No. : A7110

Brand Name :  Pico


Test Procedure(s) : KDB 447498 D01v06
Spread Spectrum Transmitter(DSS)

FCC Classification : Digital Transmission System (DTS)
Unlicensed National Information Infrastructure (UNII)

Test Date : December 03, 2017 ~ January 05, 2018

Reviewed By : 

(Jame Yuan)

Approved By : 

(Marlin Chen)



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

| Report No. | Version | Description | Issue Date | Note |
|--------------|---------|----------------|------------|-------|
| 1711RSU00811 | Rev. 01 | Initial report | 01-09-2018 | Valid |
| | | | | |

1. RF Exposure Evaluation

1.1. Limits

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

| MHz | 5 | 10 | 15 | 20 | 25 | mm |
|------|----|----|-----|-----|-----|-----------------------------------|
| 150 | 39 | 77 | 116 | 155 | 194 | SAR Test Exclusion Threshold (mW) |
| 300 | 27 | 55 | 82 | 110 | 137 | |
| 450 | 22 | 45 | 67 | 89 | 112 | |
| 835 | 16 | 33 | 49 | 66 | 82 | |
| 900 | 16 | 32 | 47 | 63 | 79 | |
| 1500 | 12 | 24 | 37 | 49 | 61 | |
| 1900 | 11 | 22 | 33 | 44 | 54 | |
| 2450 | 10 | 19 | 29 | 38 | 48 | |
| 3600 | 8 | 16 | 24 | 32 | 40 | |
| 5200 | 7 | 13 | 20 | 26 | 33 | |
| 5400 | 6 | 13 | 19 | 26 | 32 | |
| 5800 | 6 | 12 | 19 | 25 | 31 | |

| MHz | 30 | 35 | 40 | 45 | 50 | mm |
|------|-----|-----|-----|-----|-----|-----------------------------------|
| 150 | 232 | 271 | 310 | 349 | 387 | SAR Test Exclusion Threshold (mW) |
| 300 | 164 | 192 | 219 | 246 | 274 | |
| 450 | 134 | 157 | 179 | 201 | 224 | |
| 835 | 98 | 115 | 131 | 148 | 164 | |
| 900 | 95 | 111 | 126 | 142 | 158 | |
| 1500 | 73 | 86 | 98 | 110 | 122 | |
| 1900 | 65 | 76 | 87 | 98 | 109 | |
| 2450 | 57 | 67 | 77 | 86 | 96 | |
| 3600 | 47 | 55 | 63 | 71 | 79 | |
| 5200 | 39 | 46 | 53 | 59 | 66 | |
| 5400 | 39 | 45 | 52 | 58 | 65 | |
| 5800 | 37 | 44 | 50 | 56 | 62 | |

Note: 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:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * \sqrt{f(\text{GHz})} \leq 3.0$ 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 calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

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 according to 5) in section 4.1 is applied to determine SAR test exclusion.

1.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

| | |
|-----------|------------------------|
| Product | VR All-In-One Headset |
| Test Item | RF Exposure Evaluation |

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 3.74dBi for 2.4GHz and 4.87dBi for 5GHz in logarithm scale.

| Test Mode | Frequency Band (MHz) | Maximum Conducted Power (dBm) | Maximum EIRP (mW) | SAR Test Exclusion Threshold (mW) |
|-----------|----------------------|-------------------------------|-------------------|-----------------------------------|
| Bluetooth | 2402 ~ 2480 | 1.87 | 3.64 | 81.554 (Note1) |
| WLAN | 2412 ~ 2462 | 15.18 | 77.98 | 81.554 (Note1) |
| WLAN | 5180 ~ 5320 | 11.89 | 47.42 | 56.036 (Note1) |
| | 5500 ~ 5720 | 12.32 | 52.36 | 55.036 (Note1) |
| | 5745 ~ 5825 | 12.35 | 52.72 | 53.036 (Note1) |

Per FCC KDB 447498 D01v06, the SAR exclusion threshold for distances < 50mm is defined by the following equation:

$$\frac{\text{Max Power of Channel (mW)}}{\text{Test Separation Dist (mm)}} * \sqrt{\text{Frequency (GHz)}} \leq 3.0$$

Note 1: When distance was 42.53 mm, for 2.4GHz band, SAR Test Exclusion Threshold (mW) = 81.554 mW; For 5.2GHz band, SAR Test Exclusion Threshold (mW) = 56.036 mW; For 5.5GHz band, SAR Test Exclusion Threshold (mW) = 55.036 mW; For 5.8GHz band, SAR Test Exclusion Threshold (mW) = 53.036 mW.

Note 2: Based on the maximum conducted power of Bluetooth & WLAN and the antenna to use separation distance, Bluetooth & WLAN SAR was not required;

Bluetooth: $[(3.64\text{mW}/42.53) * \sqrt{2.480}] = 0.1348 < 3.0$

WLAN: $[(77.98\text{mW}/42.53) * \sqrt{2.412}] = 2.8476 < 3.0$

WLAN: $[(52.72\text{mW}/42.53) * \sqrt{5.755}] = 2.9737 < 3.0$

Both of the WLAN and Bluetooth can't transmit simultaneously, 2.4GHz WLAN and 5GHz WLAN also can't transmit simultaneously.

Note: The actual closest distance (From head to the device antenna) is 42.53 mm which is declared by the manufacturer (Detail see operation description). According to FCC KDB 447498 D01v06, the device can be applied to determine SAR test exclusion.

————— The End —————