



RF Exposure evaluation

Report Reference No..... : CTA-01-160700302

FCC ID..... : 2AI52-ARES-G100

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Date of issue..... : Jul. 19, 2016

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Applicant's name : MAD Gaze (Shen Zhen) Limited

Address..... : Room 201,Building A,NO.1 Qianwan Road 1,Shenzhen and Hongkong Cooperation Zone, Qianhai, Shenzhen, China

Test specification :

Standard

47CFR §2.1093(d)/KDB447498v06

TRF Originator..... : Shenzhen CTA Testing Technology Co., Ltd.

Master TRF..... : Dated 2014-12

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Test item description : Smart Glasses

Trade Mark

MAD Gaze

Manufacturer

MAD Gaze (Shen Zhen) Limited

Model/Type reference..... : Ares G100

Listed Models

/

Modulation Type

DSSS(CCK,DQPSK,DBPSK),OFDM(64QAM,16QAM,QPSK, BPSK)

Operation Frequency..... : From 2412MHz to 2462MHz

Exposure category..... : General population/uncontrolled environment

EUT Type

Production Unit

Device Type..... : Portable Device

Rating

DC 3.70V

Result..... : **PASS**

TEST REPORT

| | | |
|--------------------------|-------------------------|---------------|
| Test Report No. : | CTA-01-160700302 | Jul. 19, 2016 |
| | | Date of issue |

Equipment under Test : Smart Glasses

Model /Type : Ares G100

Listed Models : /

Applicant : **MAD Gaze (Shen Zhen) Limited**

Address : Room 201, Building A, NO.1 Qianwan Road 1, Shenzhen and Hongkong Cooperation Zone, Qianhai, Shenzhen, China

Manufacturer : **MAD Gaze (Shen Zhen) Limited**

Address : Room 201, Building A, NO.1 Qianwan Road 1, Shenzhen and Hongkong Cooperation Zone, Qianhai, Shenzhen, China

| | |
|---------------------|-------------|
| Test Result: | PASS |
|---------------------|-------------|

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

| Revision | Issue Date | Revisions | Revised By |
|----------|------------|---------------|------------|
| V1.0 | 2016-07-19 | Initial Issue | Eric Wang |
| | | | |
| | | | |

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1. SUMMARY

1.1. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

| | | | |
|-----------------------|-------------|--------------|---|
| <input type="radio"/> | Power Cable | Length (m) : | / |
| <input type="radio"/> | | Shield : | / |
| <input type="radio"/> | | Detachable : | / |

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Asia Institute Technology (DongGuan) Limited

Floor 1-A, Baisha Technology Park, No. 3011, Shahexi Road, Nanshan, Shenzhen 518055 China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.

2.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS- Registration No: L6177

Dongguan Yaxu (AiT) technology Limited is accredited to ISO/IEC 17025:2005 general Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the competence of testing and calibration laboratories) on Apr. 18, 2013

FCC- Registration No: 248337

The 3m Semi-Anechoic Chamber, 3m/10m Open Area Test Site and Shielding Room of Dongguan Yaxu (AiT) Technology Limited have been registered by Federal Communications Commission (FCC) on Aug.29, 2014.

Industry Canada(IC)-Registration No: IC6819A

The 3m Semi-Anechoic Chamber and 3m/10m Open Area Test Site of Dongguan Yaxu (AiT) Technology Limited have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing on Oct. 01, 2014.

VCCI- Registration No: 2705

The 3m/10m Open Area Test Site, Shielding Room and 3m Chamber of Dngguan Yaxu (AiT) technology Limited have been registered by Voluntary Control Council for Interference on Nov. 21, 2012. The Telecommunication Ports Conducted Disturbance Measurement of Asia Institute Technology (Dongguan) Limited have been registered by Voluntary Control Council for Interference on May. 13, 2013.

2.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

| | |
|-----------------------|--------------|
| Temperature: | 15-35 ° C |
| Humidity: | 30-60 % |
| Atmospheric pressure: | 950-1050mbar |

2.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Dongguan Yaxu (AiT) Technology Limited quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Dongguan Yaxu (AiT) Technology Limited is reported:

| Test Items | Measurement Uncertainty | Notes |
|-----------------------------|-------------------------|-------|
| Transmitter power conducted | 0.57 dB | (1) |

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. Method of measurement

3.1. Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1093 RF exposure requirement

KDB447498 v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

3.2. Requirement

According to KDB447498 D01 General RF Exposure Guidance v05r01 Section 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 Test Exclusion Threshold condition, listed below, is satisfied. These test exclusion conditions are based on source-based time-averaged maximum conducted output power of the RF channel requiring evaluation, adjusted for tune-up tolerance, and the minimum test separation distance required for the exposure conditions.²² The minimum test separation distance is determined by the smallest distance from the antenna and radiating structures or outer surface of the device, according to the host form factor, exposure conditions and platform requirements, to any part of the body or extremity of a user or bystander (see 5) of section 4.1). To qualify for SAR test exclusion, the test separation distances applied must be fully explained and justified by the operating configurations and exposure conditions of the transmitter and applicable host platform requirements, typically in the SAR measurement or SAR analysis report, according to the required published RF exposure KDB procedures. When no other RF exposure testing or reporting is required, a statement of justification and compliance must be included in the equipment approval, in lieu of the SAR report, to qualify for the SAR test exclusion. When required, the device specific conditions described in the other published RF exposure KDB procedures must be satisfied before applying these SAR test exclusion provisions; for example, handheld PTT two-way radios, handsets, laptops & tablets etc.²³ "

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f} \text{ (GHz)}]$
 ≤ 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 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.

3.3. Conducted Power Results

2.4GWLAN

| Mode | Channel | Frequency (MHz) | Conducted Peak Output Power (dBm) | Conducted Average Output Power (dBm) |
|--------------------|---------|-----------------|-----------------------------------|--------------------------------------|
| IEEE 802.11 b | 1 | 2412 | 10.26 | 9.14 |
| | 6 | 2437 | 10.55 | 9.37 |
| | 11 | 2462 | 10.11 | 8.89 |
| IEEE 802.11 g | 1 | 2412 | 12.02 | 8.56 |
| | 6 | 2437 | 12.87 | 9.22 |
| | 11 | 2462 | 12.53 | 9.01 |
| IEEE 802.11 n HT20 | 1 | 2412 | 12.16 | 8.59 |
| | 6 | 2437 | 12.71 | 9.14 |
| | 11 | 2462 | 12.66 | 8.98 |
| IEEE 802.11 n HT40 | 3 | 2122 | 12.47 | 8.32 |
| | 6 | 2437 | 12.92 | 8.25 |
| | 9 | 2452 | 12.05 | 8.51 |

Manufacturing tolerance

2.4GWLAN

| IEEE 802.11 b (Average) | | | |
|-------------------------------------|------|------|------|
| Frequency (MHz) | 2412 | 2437 | 2462 |
| Target (dBm) | 8.5 | 8.5 | 8.5 |
| Tolerance ±(dB) | 1.0 | 1.0 | 1.0 |
| IEEE 802.11 g (Average) | | | |
| Frequency (MHz) | 2412 | 2437 | 2462 |
| Target (dBm) | 8.5 | 8.5 | 8.5 |
| Tolerance ±(dB) | 1.0 | 1.0 | 1.0 |
| IEEE 802.11 n HT20 (Average) | | | |
| Frequency (MHz) | 2412 | 2437 | 2462 |
| Target (dBm) | 8.5 | 8.5 | 8.5 |
| Tolerance ±(dB) | 1.0 | 1.0 | 1.0 |
| IEEE 802.11 n HT40 (Average) | | | |
| Frequency (MHz) | 2422 | 2437 | 2452 |
| Target (dBm) | 8.0 | 8.0 | 8.0 |
| Tolerance ±(dB) | 1.0 | 1.0 | 1.0 |

4. Evaluation Result

4.1 Standalone

| Band/Mode | f (GHz) | Antenna Distance (mm) | RF output power | | SAR Test Exclusion Threshold | SAR Test Exclusion |
|-----------|---------|-----------------------|-----------------|--------|------------------------------|--------------------|
| | | | dBm | mW | | |
| 2.4GWLAN | 2.45 | 5 | 9.50 | 8.9125 | 2.8<3.0 | Yes |

Remark:

1. Maximum average power including tune-up tolerance;
2. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 4.1 f) is applied to determine SAR test exclusion.

4.2 Simultaneous

The WLAN and BT share same modular and same antenna, also the sample will disable BT by software, not need consider simultaneous SAR exclusion.

5. Conclusion

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 v06.

.....**End of Report**.....