





EMC TEST REPORT

Applicant Shanghai Xiaoyi Technology Co., Ltd.

FCC ID 2AFIB-YRS3019

Product YI Dome Guard

Brand YI

Model YRS.3019

Report No. R1912A0776-E1

Issue Date March 24, 2020

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in FCC Code CFR47 Part15B (2019)/ ANSI C63.4 (2014). The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Wei Liu/ Manager

Wei Liu

Approved by: Guangchang Fan/ Director

Guangchang Fan

TA Technology (Shanghai) Co., Ltd.

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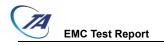
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Summary of measurement results

| Number | Test Case | Clause in FCC Rules | Conclusion | | | |
|--|--------------------|---------------------------------|------------|--|--|--|
| 1 | Radiated Emission | FCC Part15.109, ANSI C63.4-2014 | PASS | | | |
| 2 | Conducted Emission | FCC Part15.107, ANSI C63.4-2014 | PASS | | | |
| Test Detec Ferries 42, 2000, Merch F, 2000 | | | | | | |

Test Date: Fanuary13, 2020 ~March 5, 2020

Note: All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.



1 Test Laboratory

1.1 Notes of the Test Report

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1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA(Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3 Testing Location

Company: TA Technology (Shanghai) Co., Ltd.

Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

City: Shanghai

Post code: 201201

Country: P. R. China

Contact: Xu Kai

Telephone: +86-021-50791141/2/3

Fax: +86-021-50791141/2/3-8000

Website: http://www.ta-shanghai.com

E-mail: xukai@ta-shanghai.com

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2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

| Applicant Shanghai Xiaoyi Technology Co., Ltd. | | | |
|--|---|--|--|
| Applicant address | China (Shanghai) free trade area, ring road, room 1608, no. 515 | | |
| Manufacturer | Shanghai Xiaoyi Technology Co., Ltd. | | |
| Manufacturer address | Kechuang Garden, Lane 55, Chuanhe Road, Pudong New District, Shanghai China | | |

2.2 General information

| EUT Description | | | | | |
|---|-------------------------------|----------------|---------------|--|--|
| Device Type: | PortableDevice | | | | |
| Model: | YRS.3019 | | | | |
| SN | 1# | | | | |
| HW Version: | V1.1 | | | | |
| SW Version: 9.0.05.26_201912181455 | | | | | |
| Antenna Type: Internal Antenna | | | | | |
| Eroguopov: | Band | Tx (MHz) | Rx (MHz) | | |
| Frequency: | WIFI 2.4G: | 2400 ~ 2483.5 | 2400 ~ 2483.5 | | |
| Modulation: | WLAN 802.11b: DSSS | | | | |
| Modulation. | WLAN 802.11g/n: OFDM | | | | |
| | Auxiliary | test equipment | | | |
| PC | PCManufacturer: Dell | | | | |
| PC | Model: E5430 (SN : R98M9 A02) | | | | |
| Note: The EUT is sent from the applicant to TA and theinformation of the EUT is declared by the | | | | | |
| applicant. | applicant. | | | | |

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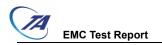


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2.3 Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

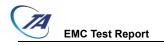
Test standards FCC Code CFR47 Part15B(2019) ANSI C63.4 (2014)



2.4 Test Mode

| Test Mode | |
|-----------|------------------------|
| Mode 1 | EUT with PC+ EUT +Idle |

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3 Test Case Results

3.1 Radiated Emission

Ambient condition

| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 24°C~26°C | 45%~50% | 102.5kPa |

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Methods of Measurement

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The distance between EUT and receive antenna should be 3 meters. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier. During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated signal level.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. During the test, the EUT is worked at maximum output power.

Set the spectrum analyzer in the following:

Below 1GHz:

RBW=100 kHz / VBW=300 kHz / Sweep=AUTO

Above 1GHz:

(a) PEAK Detector: RBW=1MHz / VBW=3MHz/ Sweep=AUTO

(b) AVERAGE Detector: RBW=1MHz / VBW=3MHz / Sweep=AUTO

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

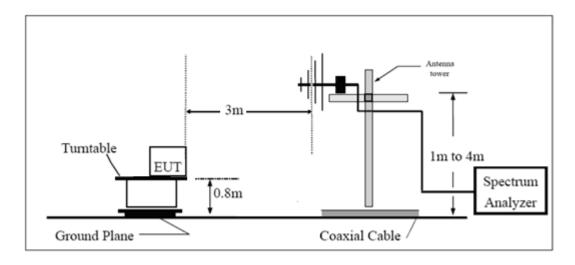
During the test, EUT is connected to a laptop via a USB cable in the case of Transfer Data mode. The EUT is used as the peripheral equipment of the PC. The data is transferred from EUT to PC; PC is connected to server via a long LAN cable.



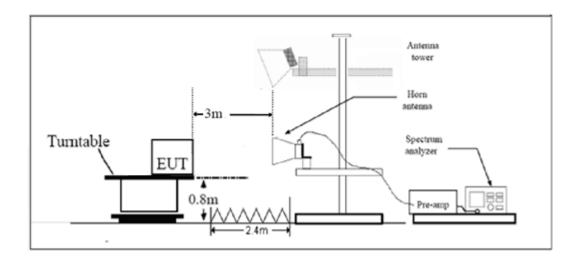
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Test Setup

Below 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Antenna Tower meets ANSI C63.4 requirements for measurements above 1 GHz by keeping the antenna aimed at the EUT during the antenna's ascent/ descent along the antenna mast.



Limits

| Frequency (MHz) | Field Strength (dBµV/m) | Detector |
|--|----------------------------|------------|
| 30 -88 | 40.0 | Quasi-peak |
| 88-216 | 43.5 | Quasi-peak |
| 216 – 960 | 46.0 | Quasi-peak |
| 960-1000 | 54.0 | Quasi-peak |
| 1000-5 th harmonic of the highest | 54 | Average |
| frequency or 40GHz, which is lower | 74 | Peak |

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Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96.

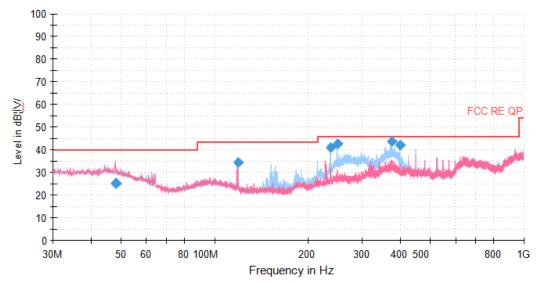
| Frequency | Uncertainty |
|----------------|-------------|
| 30MHz~200MHz | 4.02 dB |
| 200MHz~1000MHz | 3.28 dB |
| 1GHz~18GHz | 3.70 dB |

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Test Results

Sweep the whole frequency band through the range from 30MHz to the 5th harmonic of the carrier, the Emissions in the frequency band 18GHz- 26.5 GHz is more than 20dB below the limitare not reported.

The following graphs display the maximum values of horizontal and vertical by software. For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.



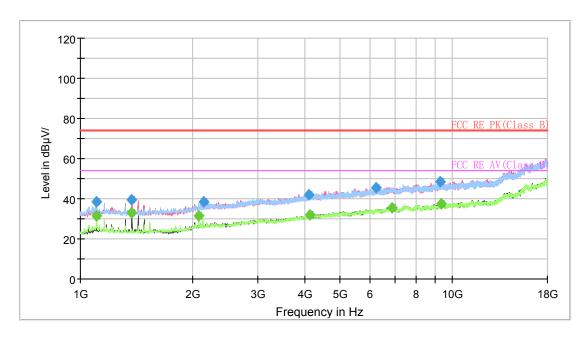
Radiated Emission from 30MHz to 1GHz

| Frequency | Quasi-Peak | Height | Polarization | Azimuth | Correct | Margin | Limit |
|------------|------------|--------|--------------|---------|------------|--------|----------|
| (MHz) | (dBuV/m) | (cm) | Polarization | (deg) | Factor(dB) | (dB) | (dBuV/m) |
| 48.025138 | 25.13 | 125.0 | V | 37.0 | 2.1 | 14.87 | 40.00 |
| 119.483238 | 34.36 | 210.0 | Н | 46.0 | -7.6 | 9.14 | 43.50 |
| 238.312750 | 40.97 | 109.0 | Н | 113.0 | -4.2 | 5.03 | 46.00 |
| 250.002500 | 42.46 | 100.0 | Н | 116.0 | -4.2 | 3.54 | 46.00 |
| 374.978750 | 43.19 | 100.0 | Н | 346.0 | 1.5 | 2.81 | 46.00 |
| 399.973750 | 41.64 | 100.0 | Н | 109.0 | 0.3 | 4.36 | 46.00 |

Remark: 1. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

2. Margin = Limit - Quasi-Peak

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Radiated Emission from 1GHz to 18GHz

| Frequency (MHz) | Peak (dBuV/m) | Average (dBuV/m) | Height (cm) | Polarization | Azimuth (deg) | Correct Factor(dB) | Margin (dB) | Limit (dBuV/m) |
|--------------------|------------------|------------------|-------------|--------------|---------------|-----------------------|----------------|-------------------|
| 1106.250000 | | 31.68 | 100.0 | Н | 187.0 | -10.7 | 22.32 | 54.00 |
| 1106.250000 | 38.67 | | 200.0 | Н | 66.0 | -10.7 | 35.33 | 74.00 |
| 1376.125000 | | 32.95 | 100.0 | V | 153.0 | -9.2 | 21.05 | 54.00 |
| 1376.125000 | 39.36 | | 100.0 | V | 153.0 | -9.2 | 34.64 | 74.00 |
| 2077.375000 | | 31.25 | 100.0 | Н | 222.0 | -6.0 | 22.75 | 54.00 |
| 2149.625000 | 38.60 | | 100.0 | V | 234.0 | -5.6 | 35.40 | 74.00 |
| 4102.500000 | 41.96 | | 100.0 | Н | 118.0 | 0.9 | 32.04 | 74.00 |
| 4140.750000 | | 31.94 | 100.0 | Н | 166.0 | 1.0 | 22.06 | 54.00 |
| 6240.250000 | 45.48 | | 100.0 | Н | 239.0 | 5.4 | 28.52 | 74.00 |
| 6867.125000 | | 35.50 | 200.0 | V | 287.0 | 6.0 | 18.50 | 54.00 |
| 9283.250000 | 48.41 | | 100.0 | Н | 97.0 | 9.3 | 25.59 | 74.00 |
| 9347.000000 | | 37.37 | 100.0 | V | 264.0 | 9.5 | 16.63 | 54.00 |

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3.2 Conducted Emission

Ambient condition

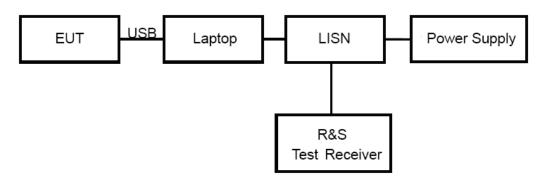
| Temperature | Relative humidity | Pressure |
|-------------|-------------------|----------|
| 24°C ~26°C | 50%~55% | 102.5kPa |

Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2014. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz. The measurement result should include both L line and N line.

During the test, EUT is connected to a laptop via a USB cable in the case of Transfer Data mode. The EUT is used as the peripheral equipment of the PC. The data is transferred from EUT to PC; PC is connected to server via a long LAN cable.

Test Setup



Note: Power Supply is AC Power source and it is used to change the voltage 120V/60Hz.

Limits

| Frequency | Conducted Limits(dBμV) | | | | |
|--|------------------------|-----------------------|--|--|--|
| (MHz) | Quasi-peak | Average | | | |
| 0.15 - 0.5 | 66 to 56 * | 56 to 46 [*] | | | |
| 0.5 - 5 | 56 | 46 | | | |
| 5 - 30 60 50 | | | | | |
| * Decreases with the logarithm of the frequency. | | | | | |

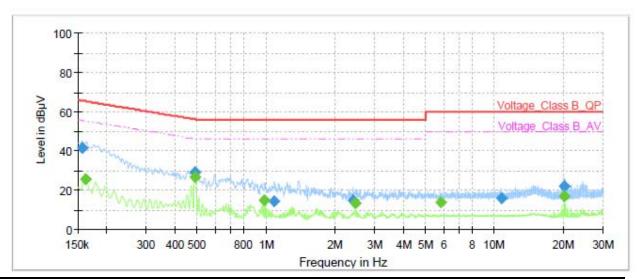
Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96. U=2.57 dB.

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Test Results

Following plots, Blue trace uses the peak detection; Green trace uses the average detection.



| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|--------------------|---------------------|-------------------|-----------------|----------------|-----------------------|--------------------|------|--------|---------------|
| 0.16 | 41.42 | | 65.63 | 24.21 | 1000.0 | 9.000 | L1 | ON | 19 |
| 0.16 | | 25.87 | 55.40 | 29.53 | 1000.0 | 9.000 | L1 | ON | 19 |
| 0.49 | | 26.87 | 46.17 | 19.30 | 1000.0 | 9.000 | L1 | ON | 19 |
| 0.49 | 29.28 | | 56.17 | 26.89 | 1000.0 | 9.000 | L1 | ON | 19 |
| 0.98 | | 14.95 | 46.00 | 31.05 | 1000.0 | 9.000 | L1 | ON | 19 |
| 1.09 | 14.11 | | 56.00 | 41.89 | 1000.0 | 9.000 | L1 | ON | 19 |
| 2.41 | 14.71 | | 56.00 | 41.29 | 1000.0 | 9.000 | L1 | ON | 19 |
| 2.47 | | 13.09 | 46.00 | 32.91 | 1000.0 | 9.000 | L1 | ON | 19 |
| 5.85 | | 13.96 | 50.00 | 36.04 | 1000.0 | 9.000 | L1 | ON | 19 |
| 10.73 | 15.66 | | 60.00 | 44.34 | 1000.0 | 9.000 | L1 | ON | 19 |
| 20.26 | | 17.08 | 50.00 | 32.92 | 1000.0 | 9.000 | L1 | ON | 20 |
| 20.26 | 22.08 | | 60.00 | 37.92 | 1000.0 | 9.000 | L1 | ON | 20 |

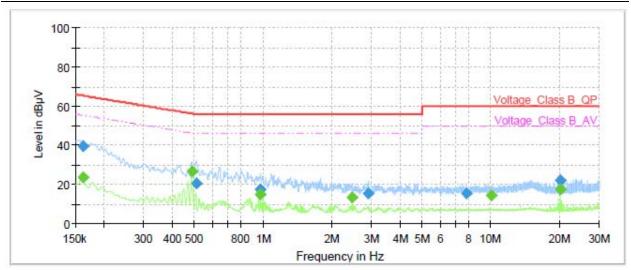
Remark: Correct factor=cable loss + LISN factor

L line

Conducted Emission from 150 KHz to 30MHz

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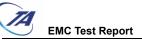


| Frequency (MHz) | QuasiPeak (dBµV) | Average (dBµV) | Limit (dBµV) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|--------------------|---------------------|-------------------|-----------------|----------------|-----------------------|--------------------|------|--------|---------------|
| 0.16 | | 23.64 | 55.40 | 31.76 | 1000.0 | 9.000 | N | ON | 19 |
| 0.16 | 39.43 | | 65.40 | 25.97 | 1000.0 | 9.000 | N | ON | 19 |
| 0.49 | | 26.73 | 46.21 | 19.48 | 1000.0 | 9.000 | N | ON | 19 |
| 0.51 | 20.32 | | 56.00 | 35.68 | 1000.0 | 9.000 | N | ON | 19 |
| 0.97 | 17.40 | | 56.00 | 38.60 | 1000.0 | 9.000 | N | ON | 19 |
| 0.97 | | 15.03 | 46.00 | 30.97 | 1000.0 | 9.000 | N | ON | 19 |
| 2.45 | | 13.53 | 46.00 | 32.47 | 1000.0 | 9.000 | N | ON | 19 |
| 2.90 | 15.47 | | 56.00 | 40.53 | 1000.0 | 9.000 | N | ON | 19 |
| 7.81 | 15.42 | | 60.00 | 44.58 | 1000.0 | 9.000 | N | ON | 19 |
| 10.06 | | 14.39 | 50.00 | 35.61 | 1000.0 | 9.000 | N | ON | 19 |
| 20.26 | 22.11 | | 60.00 | 37.89 | 1000.0 | 9.000 | N | ON | 19 |
| 20.26 | | 17.21 | 50.00 | 32.79 | 1000.0 | 9.000 | N | ON | 19 |

Remark:Correct factor=cable loss + LISN factor

N line

Conducted Emission from 150 KHz to 30MHz



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4 Main Test Instruments

| Name | Manufacturer | Туре | Serial Number | Calibration Date | Expiration Time |
|----------------------------|--------------|-----------|------------------|---------------------|--------------------|
| Spectrum Analyzer | R&S | FSV40 | 15195-01- 00 | 2019-05-19 | 2020-05-18 |
| EMI Test Receiver | R&S | ESCI | 100948 | 2019-05-19 | 2020-05-18 |
| Trilog Antenna | SCHWARZBECK | VULB 9163 | 9163-201 | 2017-11-18 | 2020-11-17 |
| Horn Antenna | R&S | HF907 | 100126 | 2018-07-07 | 2020-07-06 |
| Standard Gain Horn | ETS-Lindgren | 3160-09 | 00102643 | 2018-06-20 | 2020-06-19 |
| EMI Test Receiver | R&S | ESR | 101667 | 2019-05-19 | 2020-05-18 |
| LISN | R&S | ENV216 | 101171 | 2018-12-15 | 2021-12-14 |
| Bore Sight Antenna mast | ETS | 2171B | 00058752 | 1 | 1 |
| Test software | EMC32 | R&S | 9.26.0 | 1 | 1 |

******END OF REPORT ******