# FCC Test Report

Report No.: AGC01519240122FR01A

| | | |
|---|---|---|
| **FCC ID** | : | 2AZWZ-MINI3 |
| **APPLICATION PURPOSE** | : | Class II Permissive Change |
| **PRODUCT DESIGNATION** | : | DASH CAMERA |
| **BRAND NAME** | : | KAWA |
| **MODEL NAME** | : | MINI 3 Pro, MINI 3, MINI 3X, MINI 3X Pro |
| **APPLICANT** | : | KAWA ELECTRONICS COMPANY LIMITED |
| **DATE OF ISSUE** | : | Sep. 30, 2024 |
| **STANDARD(S)** | : | FCC Part 15 Subpart C §15.247 |
| **REPORT VERSION** | : | V1.0 |

***A**ttestation of **G**lobal **C**ompliance (Shenzhen) Co., Ltd*

## Report Revise Record

| Report Version | Revise Time | Issued Date | Valid Version | Notes |
|---|---|---|---|---|
| V1.0 | / | Sep. 30, 2024 | Valid | Initial Release |

Note: The original test report AGC01519240122FR01 (dated Feb. 27, 2024 and tested from Feb. 01, 2024 to Feb. 27, 2024) was modified on Sep. 30, 2024, including the following changes and additions:

- Change model name;
- Add series models;
- Change the hardware version;
- Change the software version;
- Added display screen (affects antenna position, shape and antenna gain);
- Change Car charger;
- Change the EUT photo;

For the above described change(s) the following tests was considered to be necessary:

| Clause | Testing |
|---|---|
| §15.247 (d)&15.209 | Radiated Spurious Emission |

## Table of Contents

## 1. General Information

| | |
|---|---|
| Applicant | KAWA ELECTRONICS COMPANY LIMITED |
| Address | FLAT A 21/F CHEUNG LEE IND BLDG 9 CHEUNG LEE ST CHAI WAN HONG KONG CHINA |
| Manufacturer | KAWA ELECTRONICS COMPANY LIMITED |
| Address | FLAT A 21/F CHEUNG LEE IND BLDG 9 CHEUNG LEE ST CHAI WAN HONG KONG CHINA |
| Factory | Dongguan Apical Electronics Co., Ltd. |
| Address | Building A18, Yuehai Industrial Park, No. 780 Xiecao Road, Xiegang Town, Dongguan |
| Product Designation | DASH CAMERA |
| Brand Name | KAWA |
| Test Model | MINI 3 Pro |
| Series Model(s) | MINI 3, MINI 3X, MINI 3X Pro |
| Difference Description | MINI 3 Compared with the MINI 3 Pro, a display screen is removed, and the car charger, antenna shape, position, antenna gain, hardware version and software version are different;<br>MINI 3X and MINI 3X Pro are the same as the test model except for the model names. |
| Date of receipt of test item | Jul. 22, 2024 |
| Date of Test | Refer report page 2. |
| Deviation from Standard | No any deviation from the test method |
| Condition of Test Sample | Normal |
| Test Result | Pass |
| Test Report Form No | AGCER-FCC-2.4GWLAN-V1 |

Note: The test results of this report relate only to the tested sample identified in this report.

| | | |
|---|---|---|
| Prepared By | Cici Li<br>(Project Engineer) | Sep. 30, 2024 |
| Reviewed By | Calvin Liu<br>(Reviewer) | Sep. 30, 2024 |
| Approved By | Max Zhang<br>Authorized Officer | Sep. 30, 2024 |

## 2. Product Information

### 2.1 Product Technical Description

| | |
|---|---|
| Equipment Type | WLAN 2.4G |
| Frequency Band | 2400MHz ~ 2483.5MHz |
| Operation Frequency | 2412MHz ~ 2462MHz |
| Output Power (Average) | IEEE 802.11b:13.07dBm; IEEE 802.11g:11.97dBm;<br>IEEE 802.11n(HT20):11.77dBm; IEEE 802.11n(HT40):10.93dBm |
| Output Power (Peak) | IEEE 802.11b:15.62dBm; IEEE 802.11g:19.59dBm;<br>IEEE 802.11n(HT20):19.46dBm; IEEE 802.11n(HT40):18.50dBm |
| Modulation | 802.11b:(DQPSK, DBPSK, CCK) DSSS<br>802.11g/n:(64-QAM,16-QAM, QPSK, BPSK) OFDM |
| Data Rate | 802.11b:1/2/5.5/11Mbps<br>802.11g: 6/9/12/18/24/36/48/54Mbps<br>802.11n: up to 300Mbps |
| Number of channels | 11 |
| Hardware Version | MINI 3 Pro: 4513-MAIN-01A-01<br>MINI 3 : 4512-MAIN-01A-01 |
| Software Version | MINI 3 Pro: V4513.240716.01<br>MINI 3 : 0.0.13 |
| Antenna Designation | FPC Antenna |
| Antenna Gain | 0.58dBi |
| Number of transmit chain | 1 |
| Power Supply | DC 5V by car charger |
| Car Charger information | Input: DC 12V-24V<br>Output: DC 5V, 1.5A |

**2.2 Table of Carrier Frequency**

**For 2412-2462MHz:**

**11 channels are provided for 802.11b/g/n(HT20):**

| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---|---|---|---|---|---|
| 01 | 2412 MHz | 02 | 2417 MHz | 03 | 2422 MHz |
| 04 | 2427 MHz | 05 | 2432 MHz | 06 | 2437 MHz |
| 07 | 2442 MHz | 08 | 2447 MHz | 09 | 2452 MHz |
| 10 | 2457 MHz | 11 | 2462 MHz | | |

**7 channels are provided for 802.11n(HT40):**

| Channel | Frequency | Channel | Frequency | Channel | Frequency |
|---|---|---|---|---|---|
| 01 | -- | 02 | -- | 03 | 2422 MHz |
| 04 | 2427 MHz | 05 | 2432 MHz | 06 | 2437 MHz |
| 07 | 2442 MHz | 08 | 2447 MHz | 09 | 2452 MHz |
| 10 | -- | 11 | -- | | |

### 2.3 IEEE 802.11n Modulation Scheme

| MCS Index | Nss | Modulation | R | $N_{BPSC}$ | $N_{CBPS}$ | | $N_{DBPS}$ | | Data Rate(Mbps) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | 800nsGI | |
| | | | | | 20MHz | 40MHz | 20MHz | 40MHz | 20MHz | 40MHz |
| 0 | 1 | BPSK | 1/2 | 1 | 52 | 108 | 26 | 54 | 6.5 | 13.5 |
| 1 | 1 | QPSK | 1/2 | 2 | 104 | 216 | 52 | 108 | 13.0 | 27.0 |
| 2 | 1 | QPSK | 3/4 | 2 | 104 | 216 | 78 | 162 | 19.5 | 40.5 |
| 3 | 1 | 16-QAM | 1/2 | 4 | 208 | 432 | 104 | 216 | 26.0 | 54.0 |
| 4 | 1 | 16-QAM | 3/4 | 4 | 208 | 432 | 156 | 324 | 39.0 | 81.0 |
| 5 | 1 | 64-QAM | 2/3 | 6 | 312 | 648 | 208 | 432 | 52.0 | 108.0 |
| 6 | 1 | 64-QAM | 3/4 | 6 | 312 | 648 | 234 | 489 | 58.5 | 121.5 |
| 7 | 1 | 64-QAM | 5/6 | 6 | 312 | 648 | 260 | 540 | 65.0 | 135.0 |

| Symbol | Explanation |
|---|---|
| NSS | Number of spatial streams |
| R | Code rate |
| NBPSC | Number of coded bits per single carrier |
| NCBPS | Number of coded bits per symbol |
| NDBPS | Number of data bits per symbol |
| GI | Guard interval |

### 2.4 Related Submittal(S) / Grant (S)

This submittal(s) (test report) is intended for FCC ID:**2AZWZ-MINI3,** filing to comply with Part 2, Part 15 of the Federal Communication Commission rules.

### 2.5 Test Methodology

The tests were performed according to following standards:

| No. | Identity | Document Title |
|---|---|---|
| 1 | FCC 47 CFR Part 2 | Frequency allocations and radio treaty matters; general rules and regulations |
| 2 | FCC 47 CFR Part 15 | Radio Frequency Devices |
| 3 | ANSI C63.10-2013 | American National Standard for Testing Unlicensed Wireless Devices |

### 2.6 Special Accessories

Refer to section 4.4.

### 2.7 Equipment Modifications

Not available for this EUT intended for grant.

### 2.8 Antenna Requirement

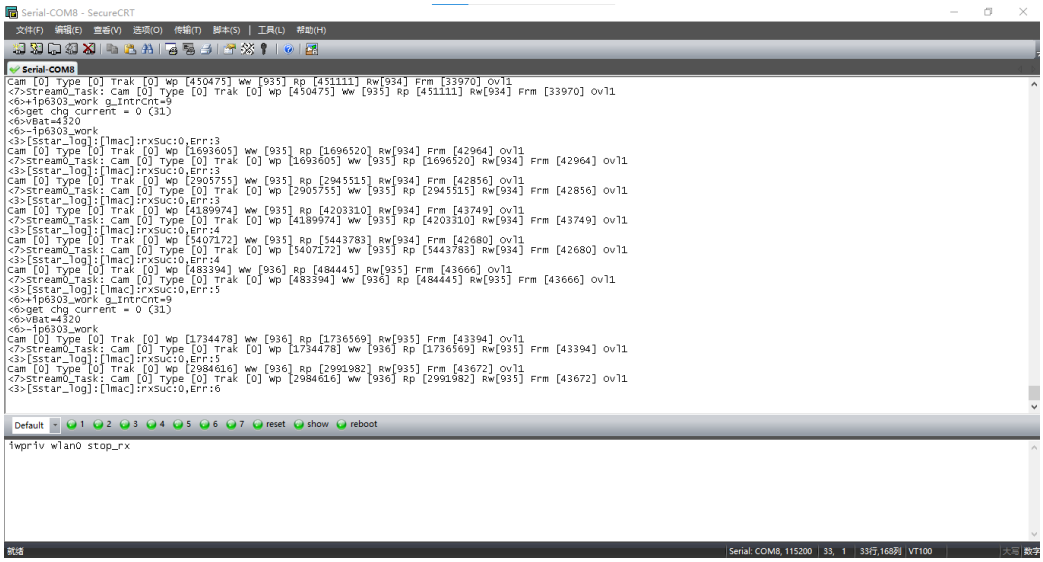
| **Standard Requirement** |
|---|
| 15.203 requirement:<br>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.<br>15.247(b) (4) requirement:<br>The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi |
| **EUT Antenna:** |
| The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna is 0.58dBi. |

## 2.9 Description of Test Software

**For IEEE 802.11 mode:**

The test utility software used during testing was “SecureCRT”

Software Setting Diagram




| Test Mode | Channel | Power Index | |
|---|---|---|---|
| | | Chain 1 | Chain 2 |
| 802.11b | L/M/H | 24 | 24 |
| 802.11g | L/M/H | 24 | 24 |
| 802.11n-HT20 | L/M/H | 24 | 24 |
| 802.11n-HT40 | L/M/H | 24 | 24 |

# 3. Test Environment

## 3.1 Address of The Test Laboratory

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

## 3.2 Test Facility

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

**CNAS-Lab Code: L5488**

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to follow CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories).

**A2LA-Lab Cert. No.: 5054.02**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to follow ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

**FCC-Registration No.: 975832**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

**IC-Registration No.: 24842 (CAB identifier: CN0063)**

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

### 3.3 Environmental Conditions

| | Normal Conditions |
|---|---|
| Temperature range (℃) | 15 - 35 |
| Relative humidity range | 20 % - 75 % |
| Pressure range (kPa) | 86 - 106 |

### 3.4 Measurement Uncertainty

The reported uncertainty of measurement y±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

| Item | Measurement Uncertainty |
|---|---|
| Uncertainty of Conducted Emission for AC Port | $U_c$ = ±2.9 dB |
| Uncertainty of Radiated Emission below 1GHz | $U_c$ = ±3.9 dB |
| Uncertainty of Radiated Emission above 1GHz | $U_c$ = ±4.9 dB |
| Uncertainty of total RF power, conducted | $U_c$ = ±0.8 dB |
| Uncertainty of RF power density, conducted | $U_c$ = ±2.6 dB |
| Uncertainty of spurious emissions, conducted | $U_c$ = ±2 % |
| Uncertainty of Occupied Channel Bandwidth | $U_c$ = ±2 % |

### 3.5 List of Equipment Used

| ● Radiated Spurious Emission | | | | | | | |
|---|---|---|---|---|---|---|---|
| Used | Equipment No. | Test Equipment | Manufacturer | Model No. | Serial No. | Last Cal. Date (YY-MM-DD) | Next Cal. Date (YY-MM-DD) |
| ☐ | AGC-EM-E046 | EMI Test Receiver | R&S | ESCI | 10096 | 2024-02-01 | 2025-01-31 |
| ☒ | AGC-EM-E116 | EMI Test Receiver | R&S | ESCI | 100034 | 2023-06-03 | 2024-06-02 |
| ☒ | AGC-EM-E061 | Spectrum Analyzer | Agilent | N9010A | MY53470504 | 2023-06-01 | 2024-05-31 |
| ☒ | AGC-EM-E086 | Loop Antenna | ZHINAN | ZN30900C | 18051 | 2022-03-12 | 2024-03-11 |
| ☒ | AGC-EM-E001 | Wideband Antenna | SCHWARZBECK | VULB9168 | D69250 | 2023-05-11 | 2025-05-10 |
| ☒ | AGC-EM-E029 | Broadband Ridged Horn Antenna | ETS | 3117 | 00034609 | 2023-03-23 | 2024-03-22 |
| ☒ | AGC-EM-E082 | Horn Antenna | SCHWARZBECK | BBHA 9170 | #768 | 2023-09-24 | 2025-09-23 |
| ☒ | AGC-EM-E146 | Pre-amplifier | ETS | 3117-PA | 00246148 | 2022-08-04 | 2024-08-03 |
| ☒ | AGC-EM-A119 | 2.4G Filter | SongYi | N/A | N/A | 2023-06-01 | 2024-05-31 |
| ☒ | AGC-EM-A138 | 6dB Attenuator | Eeatsheep | LM-XX-6-5W | N/A | 2023-06-09 | 2024-06-08 |
| ☐ | AGC-EM-A139 | 6dB Attenuator | Eeatsheep | LM-XX-6-5W | N/A | 2023-06-09 | 2024-06-08 |

| ● Test Software | | | | | |
|---|---|---|---|---|---|
| Used | Equipment No. | Test Equipment | Manufacturer | Model No. | Version Information |
| ☒ | AGC-EM-S003 | RE-Test System | FARA | EZ-EMC | VRA-03A |
| ☒ | AGC-EM-S011 | RSE Test System | Tonscend | TS+-Ver2.1(JS36-RSE) | 4.0.0.0 |

# 4.System Test Configuration

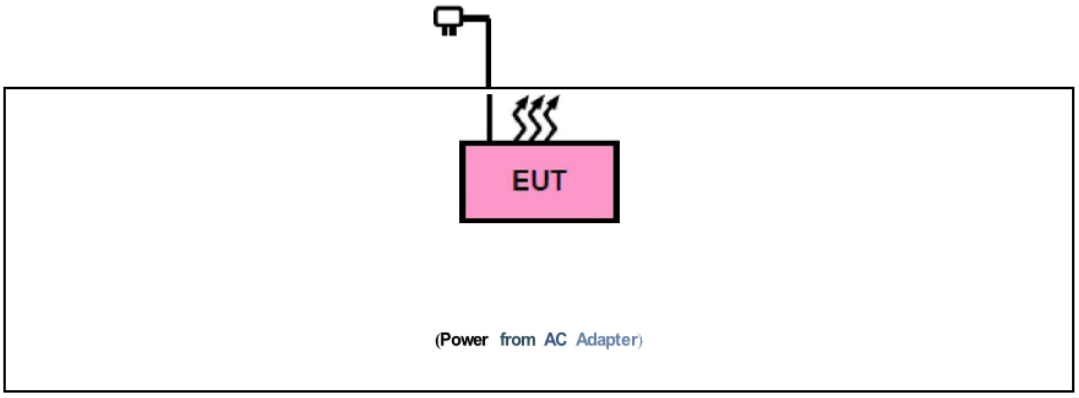
## 4.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

## 4.2 EUT Exercise

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

## 4.3 Configuration of Tested System




## 4.4 Equipment Used in Tested System

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

☐ Test Accessories Come From The Laboratory

| No. | Equipment | Model No. | Manufacturer | Specification Information | Note |
|---|---|---|---|---|---|
| 1 | -- | -- | -- | -- | -- |

☐ Test Accessories Come From The Manufacturer

| No. | Equipment | Model No. | Manufacturer | Specification Information | Note |
|---|---|---|---|---|---|
| 1 | -- | -- | -- | -- | -- |

### 4.5 Summary of Test Results

| Item | FCC Rules | Description of Test | Result |
|---|---|---|---|
| 1 | §15.247 (d)&15.209 | Radiated Spurious Emission | Pass |

## 5. Description of Test Modes

| Summary table of Test Cases | |
|---|---|
| Test Item | Data Rate / Modulation |
| | 2.4G WLAN – 802.11b/g/n (DSSS/OFDM) |
| Radiated & Conducted Test Cases | Mode 1: 802.11b_TX CH01_2412 MHz_1 Mbps<br>Mode 2: 802.11b_TX CH06_2437 MHz_1 Mbps<br>Mode 3: 802.11b_TX CH11_2462 MHz_1 Mbps<br>Mode 4: 802.11g_TX CH01_2412 MHz_6 Mbps<br>Mode 5: 802.11g_TX CH06_2437 MHz_6 Mbps<br>Mode 6: 802.11g_TX CH11_2462 MHz_6 Mbps<br>Mode 7: 802.11n-HT20_TX CH01_2412 MHz_MCS0 Mbps<br>Mode 8: 802.11n-HT20_TX CH06_2437 MHz_ MCS0 Mbps<br>Mode 9: 802.11n-HT20_TX CH11_2462 MHz_ MCS0 Mbps<br>Mode 10: 802.11n-HT40_TX CH03_2422 MHz_MCS0 Mbps<br>Mode 11: 802.11n-HT40_TX CH06_2437 MHz_ MCS0 Mbps<br>Mode 12: 802.11n-HT40_TX CH09_2452 MHz_ MCS0 Mbps |
| AC Conducted Emission | N/A |

Note:
1. The battery is full-charged during the test.
2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.
3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.
4. All modes and antennas in the radiation spurious test are pre-scanned.
5. The conducted emission tests at AC port are not required for devices which only employ battery power for operation.

## 6. Radiated Spurious Emission

### 6.1 Measurement Limits

15.209(a) Limit in the below table has to be followed

| Frequencies (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|---|---|---|
| 0.009~0.490 | 2400/F(kHz) | 300 |
| 0.490~1.705 | 24000/F(kHz) | 30 |
| 1.705~30.0 | 30 | 30 |
| 30~88 | 100 | 3 |
| 88~216 | 150 | 3 |
| 216~960 | 200 | 3 |
| Above 960 | 500 | 3 |

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

### 6.2 Measurement Procedure

1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

◆ The following table is the setting of spectrum analyzer and receiver.

| Spectrum Parameter | Setting |
|---|---|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |
| Start ~Stop Frequency | 1GHz~26.5GHz<br>1MHz/3MHz for Peak, 1MHz/3MHz for Average |

| Receiver Parameter | Setting |
|---|---|
| Start ~Stop Frequency | 9KHz~150KHz/RB 200Hz for QP |
| Start ~Stop Frequency | 150KHz~30MHz/RB 9KHz for QP |
| Start ~Stop Frequency | 30MHz~1000MHz/RB 120KHz for QP |

- **Quasi-Peak Measurements below 1GHz**

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as shown in the table above
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

- **Peak Measurements above 1GHz**

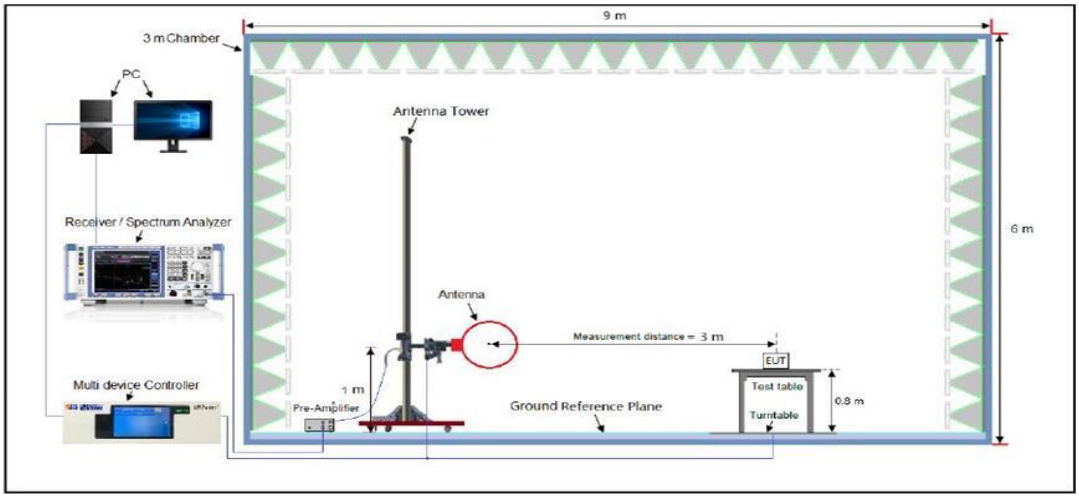
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

- **Average Measurements above 1GHz (Method VB)**

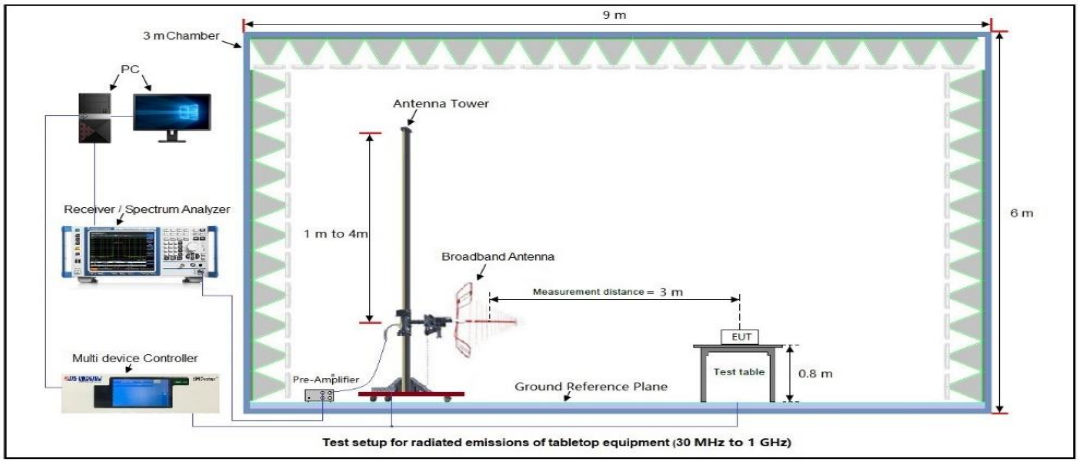
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW setting requirements are as follows:
4. If the EUT is configured to transmit with duty cycle ≥ 98%, set VBW = 10 Hz.
5. If the EUT duty cycle is < 98%, set VBW ≥ 1/T. T is the minimum transmission duration.
6. Detector = Peak
7. Sweep time = auto
8. Trace mode = max hold

## 6.3 Measurement Setup (Block Diagram of Configuration)

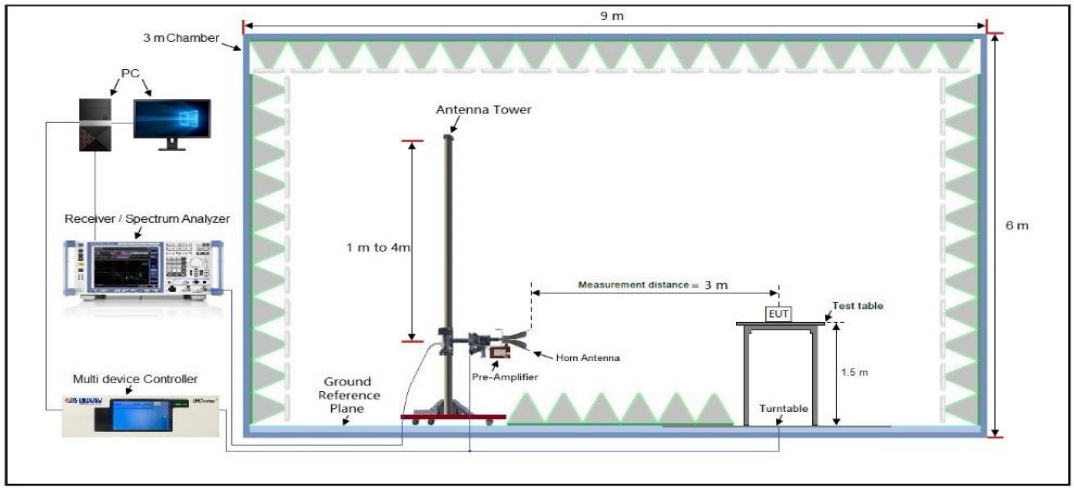
Radiated Emission Test Setup 9kHz-30MHz




Radiated Emission Test Setup 30MHz-1000MHz




Radiated Emission Test Setup Above 1000MHz

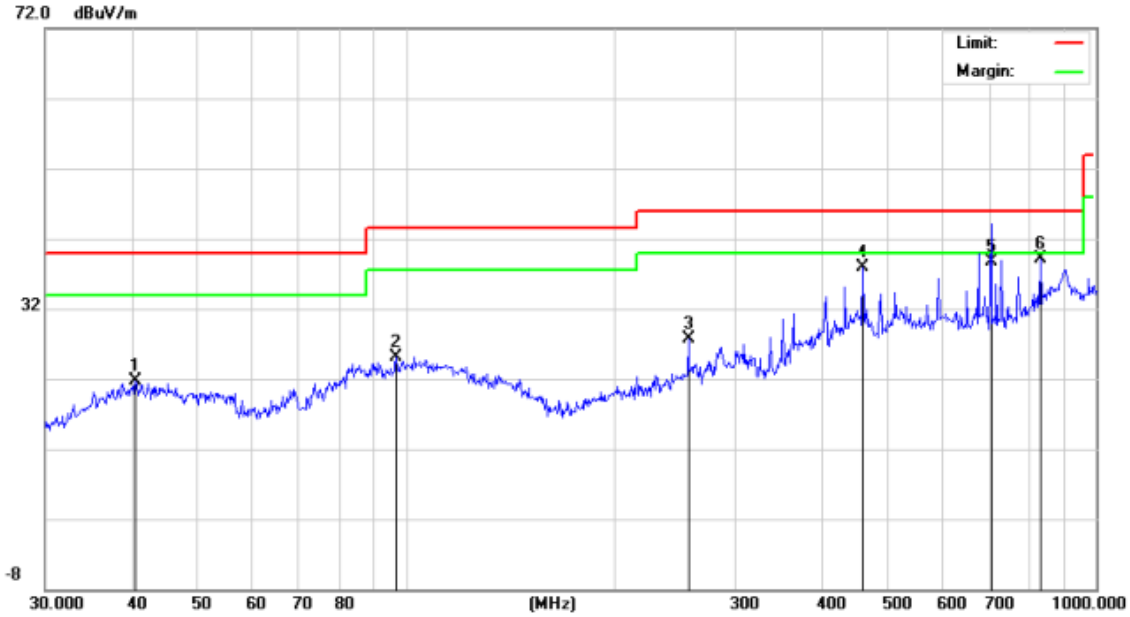


### 6.4 Measurement Result

**Radiated Emission at 9kHz-30MHz**

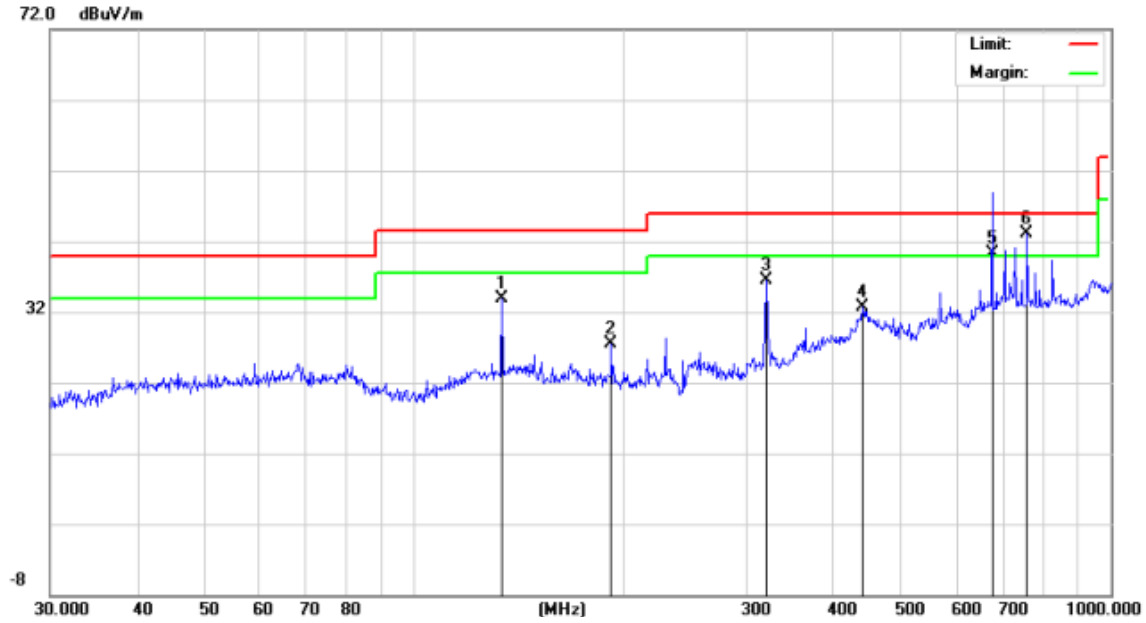
The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

| Radiated Emission Test Results at 30MHz-1GHz | | | |
|---|---|---|---|
| **EUT Name** | DASH CAMERA | **Model Name** | MINI 3 Pro |
| **Temperature** | 22.8°C | **Relative Humidity** | 59.7% |
| **Pressure** | 960hPa | **Test Voltage** | DC 5V by car charger |
| **Test Mode** | Mode 4 | **Antenna Polarity** | Horizontal |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 40.5591 | 7.79 | 13.86 | 21.65 | 40.00 | -18.35 | peak |
| 2 | | 96.7749 | 9.49 | 15.70 | 25.19 | 43.50 | -18.31 | peak |
| 3 | | 256.5210 | 12.80 | 14.90 | 27.70 | 46.00 | -18.30 | peak |
| 4 | | 459.1143 | 13.40 | 24.43 | 37.83 | 46.00 | -8.17 | peak |
| 5 | | 704.2259 | 14.36 | 24.25 | 38.61 | 46.00 | -7.39 | QP |
| 6 | * | 830.4002 | 11.71 | 27.32 | 39.03 | 46.00 | -6.97 | peak |

| Radiated Emission Test Results at 30MHz-1GHz | | | |
|---|---|---|---|
| **EUT Name** | DASH CAMERA | **Model Name** | MINI 3 Pro |
| **Temperature** | 22.8°C | **Relative Humidity** | 59.7% |
| **Pressure** | 960hPa | **Test Voltage** | DC 5V by car charger |
| **Test Mode** | Mode 4 | **Antenna Polarity** | Vertical |




| No. | Mk. | Freq. | Reading Level | Correct Factor | Measure-ment | Limit | Over | |
|---|---|---|---|---|---|---|---|---|
| | | MHz | dBuV | dB | dBuV/m | dBuV/m | dB | Detector |
| 1 | | 133.6187 | 15.81 | 18.04 | 33.85 | 43.50 | -9.65 | peak |
| 2 | | 191.7450 | 9.40 | 18.15 | 27.55 | 43.50 | -15.95 | peak |
| 3 | | 319.9370 | 16.12 | 20.30 | 36.42 | 46.00 | -9.58 | peak |
| 4 | | 440.1963 | 6.64 | 26.09 | 32.73 | 46.00 | -13.27 | peak |
| 5 | ! | 675.2080 | 12.64 | 27.65 | 40.29 | 46.00 | -5.71 | QP |
| 6 | * | 758.0407 | 14.99 | 28.07 | 43.06 | 46.00 | -2.94 | peak |

**RESULT: Pass**

**Note:** 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. All test modes had been pre-tested. The mode 4 is the worst case and recorded in the report.

**Radiated Emissions Test Results above 1 GHz**

| | | | |
|---|---|---|---|
| **EUT Name** | DASH CAMERA | **Model Name** | MINI 3 Pro |
| **Temperature** | 22.8°C | **Relative Humidity** | 59.7% |
| **Pressure** | 960hPa | **Test Voltage** | DC 5V by car charger |
| **Test Mode** | Mode 4 | **Antenna Polarity** | Horizontal |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4824.000 | 46.28 | 0.08 | 46.36 | 74 | -27.64 | peak |
| 4824.000 | 37.42 | 0.08 | 37.5 | 54 | -16.5 | AVG |
| 7236.000 | 42.19 | 2.21 | 44.4 | 74 | -29.6 | peak |
| 7236.000 | 32.34 | 2.21 | 34.55 | 54 | -19.45 | AVG |
| | | | | | | |
| | | | | | | |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| | | | |
|---|---|---|---|
| **EUT Name** | DASH CAMERA | **Model Name** | MINI 3 Pro |
| **Temperature** | 22.8°C | **Relative Humidity** | 59.7% |
| **Pressure** | 960hPa | **Test Voltage** | DC 5V by car charger |
| **Test Mode** | Mode 4 | **Antenna Polarity** | Vertical |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4824.000 | 47.61 | 0.08 | 47.69 | 74 | -26.31 | peak |
| 4824.000 | 37.52 | 0.08 | 37.6 | 54 | -16.4 | AVG |
| 7236.000 | 42.16 | 2.21 | 44.37 | 74 | -29.63 | peak |
| 7236.000 | 32.35 | 2.21 | 34.56 | 54 | -19.44 | AVG |
| | | | | | | |
| | | | | | | |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

**RESULT: Pass**

**Radiated Emissions Test Results above 1GHz**

| **EUT Name** | DASH CAMERA | **Model Name** | MINI 3 Pro |
|---|---|---|---|
| **Temperature** | 22.8°C | **Relative Humidity** | 59.7% |
| **Pressure** | 960hPa | **Test Voltage** | DC 5V by car charger |
| **Test Mode** | Mode 5 | **Antenna Polarity** | Horizontal |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4874.000 | 48.65 | 0.14 | 48.79 | 74 | -25.21 | peak |
| 4874.000 | 37.52 | 0.14 | 37.66 | 54 | -16.34 | AVG |
| 7311.000 | 42.19 | 2.36 | 44.55 | 74 | -29.45 | peak |
| 7311.000 | 32.35 | 2.36 | 34.71 | 54 | -19.29 | AVG |
| | | | | | | |
| | | | | | | |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| **EUT Name** | DASH CAMERA | **Model Name** | MINI 3 Pro |
|---|---|---|---|
| **Temperature** | 22.8°C | **Relative Humidity** | 59.7% |
| **Pressure** | 960hPa | **Test Voltage** | DC 5V by car charger |
| **Test Mode** | Mode 5 | **Antenna Polarity** | **Vertical** |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4874.000 | 47.53 | 0.14 | 47.67 | 74 | -26.33 | peak |
| 4874.000 | 38.42 | 0.14 | 38.56 | 54 | -15.44 | AVG |
| 7311.000 | 42.16 | 2.36 | 44.52 | 74 | -29.48 | peak |
| 7311.000 | 31.28 | 2.36 | 33.64 | 54 | -20.36 | AVG |
| | | | | | | |
| | | | | | | |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

**RESULT: Pass**

**Radiated Emissions Test Results above 1GHz**

| **EUT Name** | DASH CAMERA | **Model Name** | MINI 3 Pro |
|---|---|---|---|
| **Temperature** | 22.8°C | **Relative Humidity** | 59.7% |
| **Pressure** | 960hPa | **Test Voltage** | DC 5V by car charger |
| **Test Mode** | Mode 6 | **Antenna Polarity** | Horizontal |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4924.000 | 47.53 | 0.22 | 47.75 | 74 | -26.25 | peak |
| 4924.000 | 38.52 | 0.22 | 38.74 | 54 | -15.26 | AVG |
| 7386.000 | 42.16 | 2.64 | 44.8 | 74 | -29.2 | peak |
| 7386.000 | 32.24 | 2.64 | 34.88 | 54 | -19.12 | AVG |
| | | | | | | |
| | | | | | | |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

| **EUT Name** | DASH CAMERA | **Model Name** | MINI 3 Pro |
|---|---|---|---|
| **Temperature** | 22.8°C | **Relative Humidity** | 59.7% |
| **Pressure** | 960hPa | **Test Voltage** | DC 5V by car charger |
| **Test Mode** | Mode 6 | **Antenna Polarity** | Vertical |

| Frequency (MHz) | Meter Reading (dBμV) | Factor (dB) | Emission Level (dBμV/m) | Limits (dBμV/m) | Margin (dB) | Value Type |
|---|---|---|---|---|---|---|
| 4924.000 | 47.53 | 0.22 | 47.75 | 74 | -26.25 | peak |
| 4924.000 | 38.52 | 0.22 | 38.74 | 54 | -15.26 | AVG |
| 7386.000 | 42.16 | 2.64 | 44.8 | 74 | -29.2 | peak |
| 7386.000 | 31.24 | 2.64 | 33.88 | 54 | -20.12 | AVG |
| | | | | | | |
| | | | | | | |

Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

**RESULT: Pass**

**Note:**

1. The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.
2. Factor = Antenna Factor + Cable loss – Pre-amplifier gain, Margin =Emission Level-Limit.
3. The “Factor” value can be calculated automatically by software of measurement system.
4. All test modes had been tested. The 802.11g modulation is the worst case and recorded in the report.

## Appendix I: Photographs of Test Setup

Refer to the Report No.: AGC01519240122AP02A

## Appendix II: Photographs of Test EUT

Refer to the Report No.: AGC01519240122AP03A

**-----End of Report-----**

# Conditions of Issuance of Test Reports

1. All samples and goods are accepted by the Attestation of Global Compliance (Shenzhen) Co., Ltd (the "Company") solely for testing and reporting in accordance with the following terms and conditions. The company provides its services on the basis that such terms and conditions constitute express agreement between the company and any person, firm or company requesting its services (the "Clients").

2. Any report issued by Company as a result of this application for testing services (the "Report") shall be issued in confidence to the Clients and the Report will be strictly treated as such by the Company. It may not be reproduced either in its entirety or in part and it may not be used for advertising or other unauthorized purposes without the written consent of the Company. The Clients to whom the Report is issued may, however, show or send it, or a certified copy thereof prepared by the Company to its customer, supplier or other persons directly concerned. The Company will not, without the consent of the Clients, enter into any discussion or correspondence with any third party concerning the contents of the Report, unless required by the relevant governmental authorities, laws or court orders.

3.The Company shall not be called or be liable to be called to give evidence or testimony on the Report in a court of law without its prior written consent, unless required by the relevant governmental authorities, laws or court orders.

4. In the event of the improper use of the report as determined by the Company, the Company reserves the right to withdraw it, and to adopt any other additional remedies which may be appropriate.

5. Samples submitted for testing are accepted on the understanding that the Report issued cannot form the basis of, or be the instrument for, any legal action against the Company.

6. The Company will not be liable for or accept responsibility for any loss or damage however arising from the use of information contained in any of its Reports or in any communication whatsoever about its said tests or investigations.

7.Clients wishing to use the Report in court proceedings or arbitration shall inform the Company to that effect prior to submitting the sample for testing.

8. The Company is not responsible for recalling the electronic version of the original report when any revision is made to them. The Client assumes the responsibility to providing the revised version to any interested party who uses them.

9. Subject to the variable length of retention time for test data and report stored hereinto as otherwise specifically required by individual accreditation authorities, the Company will only keep the supporting test data and information of the test report for a period of six years. The data and information will be disposed of after the aforementioned retention period has elapsed. Under no circumstances shall we provide any data and information which has been disposed of after retention period. Under no circumstances shall we be liable for damage of any kind, including (but not limited to) compensatory damages, lost profits, lost data, or any form of special, incidental, indirect, consequential or punitive damages of any kind, whether based on breach of contract of warranty, tort (including negligence), product liability or otherwise, even if we are informed in advance of the possibility of such damages.