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RSS-GEN ISSUE 5, MARCH 2019 AMENDMENT 1  
RSS-247, ISSUE 2, FEBRUARY 2017

TEST REPORT  
For  
**Meizhou Guo Wei Electronics Co., Ltd.**

AD1 Section, Economic Development Area, Dongsheng Industrial District, Meizhou, Guangdong, China.

**FCC ID: 2ARRB-VM65PU**  
**IC: 20353-VM65PU**

|  |  |
|--|--|
| <b>Report Type:</b><br>Original Report   | <b>Product Type:</b><br>Video baby monitor |
| <b>Report Number:</b> SZ1210218-04515ED  |  |
| <b>Report Date:</b> 2021-04-13   |  |
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## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

|                                     |   |
|-------------------------------------|---|
| Product                             | Video baby monitor  |
| Tested Model                        | VM65 CONNECTPU  |
| Multiple Models                     | VM60 CONNECTPU, VM65X CONNECTPU, VM35PU   |
| Model Differences                   | Refer to the DoS letter   |
| HVIN                                | VM65PU  |
| Frequency Range                     | 2402~2477MHz  |
| Maximum conducted Peak output power | 14.96dBm  |
| Modulation Technique                | GFSK  |
| Antenna Specification*              | 0dBi (It is provided by the applicant)  |
| Voltage Range                       | 3.8V from battery or DC 5.0V from adapter   |
| Date of Test                        | 2021-03-03 to 2021-04-07  |
| Sample serial number                | SZ1210218-04515E-RF-S1 ( Assigned by BACL, Shenzhen)                                    |
| Received date                       | 2021-02-18  |
| Sample/EUT Status                   | Good condition  |
| Adapter1 information                | Model: BQ05A-0501000-U<br>Input: 100-240V,50/60Hz Max, 300mA<br>Output: DC 5.0V, 1000mA |
| Adapter2 information                | Model: YWK-AD050100-U<br>Input: 100-240V, 50/60Hz, 0.3A<br>Output: DC 5.0V, 1000mA      |

### Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions rules and RSS-GEN Issue 5, March 2019 Amendment 1 and RSS-247, Issue 2, February 2017 of the Innovation, Science and Economic Development Canada rules

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.207, 15.209, 15.247 rules and RSS-GEN, RSS-247.

## Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and RSS-GEN Issue 5, March 2019 Amendment 1 and RSS-247, Issue 2, February 2017.

For Radiated Emissions testing, please refer to DA 00-705 Released March 30, 2000, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

## Measurement Uncertainty

| Parameter                          |            | Uncertainty |
|------------------------------------|------------|-------------|
| Occupied Channel Bandwidth         |            | ±5%         |
| RF Output Power with Power meter   |            | ±0.73dB     |
| RF conducted test with spectrum    |            | ±1.6dB      |
| AC Power Lines Conducted Emissions |            | ±1.95dB     |
| Emissions,<br>Radiated             | Below 1GHz | ±4.75dB     |
|                                    | Above 1GHz | ±4.88dB     |
| Temperature                        |            | ±1 °C       |
| Humidity                           |            | ±6%         |
| Supply voltages                    |            | ±0.4%       |

*Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*

## Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

The system was configured for testing in an engineering mode.

#### Frequency List

| Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|
| 1       | 2402            | 12      | 2445            |
| 2       | 2404            | 13      | 2450            |
| 3       | 2406            | 14      | 2455            |
| 4       | 2408            | 15      | 2460            |
| 5       | 2410            | 16      | 2465            |
| 6       | 2415            | 17      | 2467            |
| 7       | 2420            | 18      | 2469            |
| 8       | 2425            | 19      | 2471            |
| 9       | 2430            | 20      | 2473            |
| 10      | 2435            | 21      | 2475            |
| 11      | 2440            | 22      | 2477            |

EUT was tested with Channel 1, 11 and 22.

### EUT Exercise Software

“Teraterm”\* software was used and the power level is default\*. The software and power level was provided by the applicant.

### Special Accessories

No special accessory.

### Equipment Modifications

No modification was made to the EUT tested.

### Support Equipment List and Details

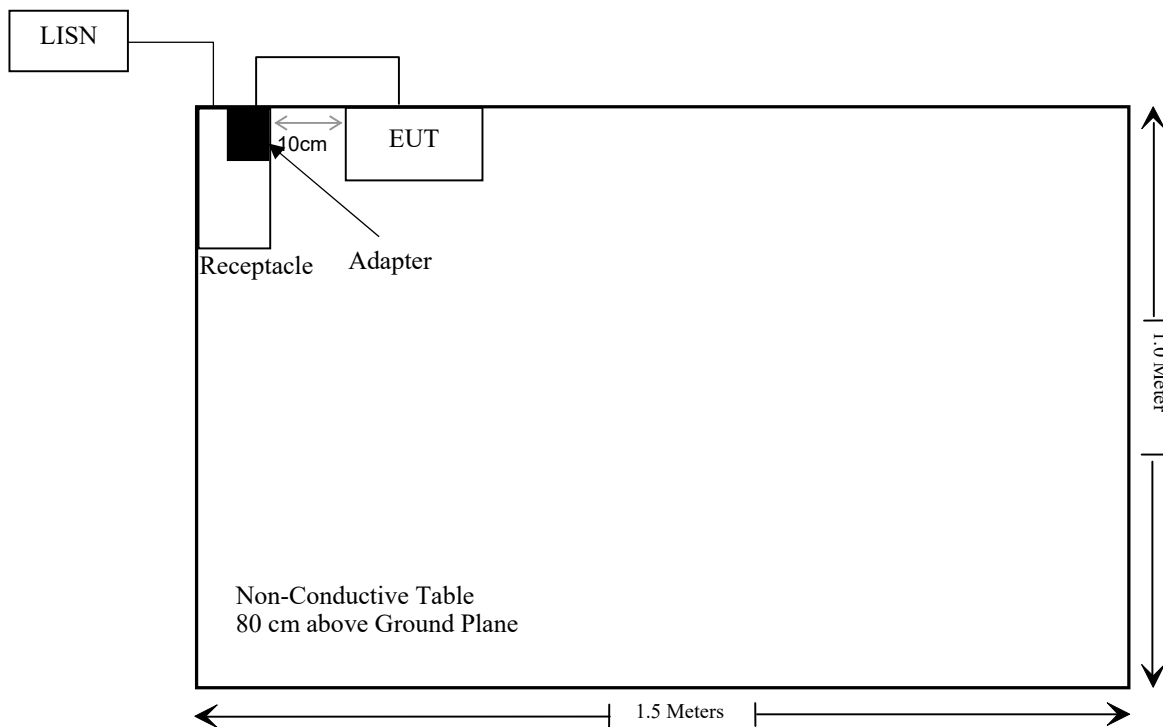
| Manufacturer | Description | Model | Serial Number |
|--------------|-------------|-------|---------------|
| /            | /           | /     | /             |

**External I/O Cable**

| Cable Description                 | Length (m) | From Port | To      |
|-----------------------------------|------------|-----------|---------|
| Unshielded Un-detachable DC Cable | 1.0        | EUT       | Adapter |

**Block Diagram of Test Setup**

For conducted emission:



## SUMMARY OF TEST RESULTS

| FCC Rules                     | RSS-247/RSS-Gen Rules           | Description of Test                               | Result              |
|-------------------------------|---------------------------------|---|---------------------|
| § 1.1307 , §2.1093            | RSS-102                         | RF Exposure (SAR)                                 | Compliance*         |
| §15.203                       | RSS-Gen §6.8                    | Antenna Requirement                               | Compliance          |
| §15.207(a)                    | RSS-Gen §8.8                    | AC Line Conducted Emissions                       | Compliance**        |
| §15.205, §15.209 & §15.247(d) | RSS-247 § 5.5                   | Radiated Emissions                                | Compliance** (note) |
| §15.247(a)(1)                 | RSS- Gen§6.7, RSS-247 § 5.1 (a) | 99% OCCUPIED BANDWIDTH & 20 dB Emission Bandwidth | Compliance**        |
| §15.247(a)(1)                 | RSS-247 § 5.1 (b)               | Channel Separation Test                           | Compliance**        |
| §15.247(a)(1)(iii)            | RSS-247 § 5.1 (d)               | Time of Occupancy (Dwell Time)                    | Compliance**        |
| §15.247(a)(1)(iii)            | RSS-247 § 5.1 (d)               | Quantity of hopping channel Test                  | Compliance**        |
| §15.247(b)(1)                 | RSS-247 § 5.1(b) & § 5.4(b)     | Peak Output Power Measurement                     | Compliance**        |
| §15.247(d)                    | RSS-247 § 5.5                   | Band edges  | Compliance**        |

Compliance\*: Please refer to SAR report issued by BACL, report number: SZ1210218-04515E-20B.

Compliance\*\*(note): The EUT is identical with the device (FCC ID: 2ARRB-VM64PU & IC: 20353-VM64PU) except the size of the screen. So the “Radiated emission below 1GHz” was tested, all other data were refer to the report SZ1210218-04515EC issued on 2021-04-13 by Bay Area Compliance Laboratories Corp. (Shenzhen).

**TEST EQUIPMENT LIST**

| Manufacturer                  | Description        | Model           | Serial Number | Calibration Date | Calibration Due Date |
|-------------------------------|--------------------|-----------------|---------------|------------------|----------------------|
| <b>Radiated Emission Test</b> |                    |                 |               |                  |                      |
| R&S                           | EMI Test Receiver  | ESR3            | 102455        | 2020/08/04       | 2021/08/03           |
| Sonoma instrument             | Pre-amplifier      | 310 N           | 186238        | 2020/08/04       | 2021/08/03           |
| Sunol Sciences                | Broadband Antenna  | JB1             | A040904-2     | 2020/12/22       | 2023/12/21           |
| Unknown                       | Cable 2            | RF Cable 2      | F-03-EM197    | 2020/11/29       | 2021/11/28           |
| Unknown                       | Cable              | Chamber Cable 1 | F-03-EM236    | 2020/11/29       | 2021/11/28           |
| Rohde & Schwarz               | Auto test software | EMC 32          | V9.10         | NCR              | NCR                  |

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

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## **FCC §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION**

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### **Applicable Standard**

FCC§1.1310 and §2.1093.

### **Test Result**

Compliance, please refer to the SAR report: SZ1210218-04515E-20B.

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## **RSS-102 – RF EXPOSURE**

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### **Applicable Standard**

According to RSS-102, 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 guideline.

**Result:** Compliance.

Please refer to SAR Report *Number*: SZ1210218-04515E-20B.

## FCC §15.203 & RSS-Gen §6.8– ANTENNA REQUIREMENT

### Applicable Standard

According to FCC § 15.203, 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 shall be considered sufficient to comply with the provisions of this Section. 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.

The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer.

The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device. Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

### Antenna Connector Construction

The EUT has one integral antenna arrangement, which was permanently attached and the antenna gain is 0dBi, fulfill the requirement of this section. Please refer to the EUT photos.

| Type     | Antenna Gain | Impedance |
|----------|--------------|-----------|
| Monopole | 0dBi         | 50 Ω      |

**Result: Pass**

## FCC §15.205, §15.209 & §15.247(d) & RSS-247 § 5.5– RADIATED EMISSIONS

### Applicable Standard

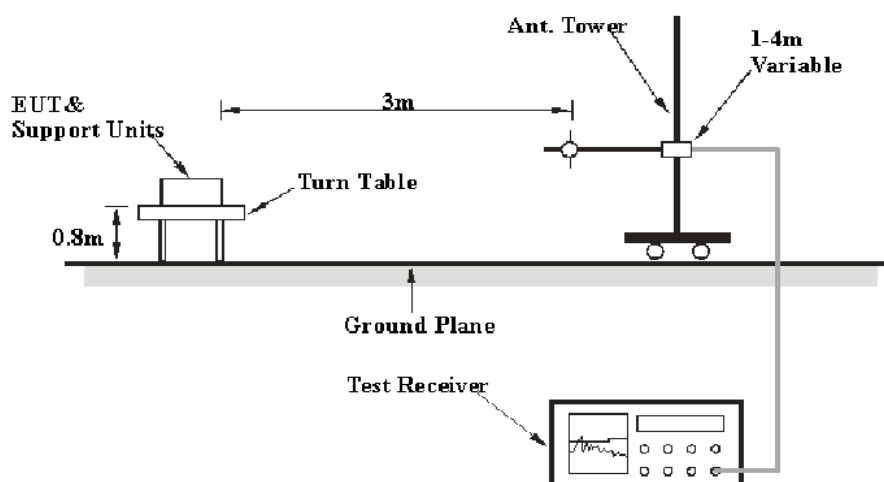
FCC §15.205; §15.209; §15.247(d)

According to RSS-247 §5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

### EUT Setup

Below 1 GHz:



The radiated emission tests were performed in the 3 meters, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209 and FCC 15.247 & RSS-247/RSS-Gen limits.

### EMI Test Receiver & Spectrum Analyzer Setup

During the radiated emission test, according to the DA 00-705 Released March 30, 2000, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

| Frequency Range   | RBW     | Video B/W | IF B/W  | Measurement |
|-------------------|---------|-----------|---------|-------------|
| 30 MHz – 1000 MHz | 100 kHz | 300 kHz   | 120 kHz | QP          |

## Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All final data was recorded in Quasi-peak detection mode for frequency range of 30 MHz -1 GHz.

## Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

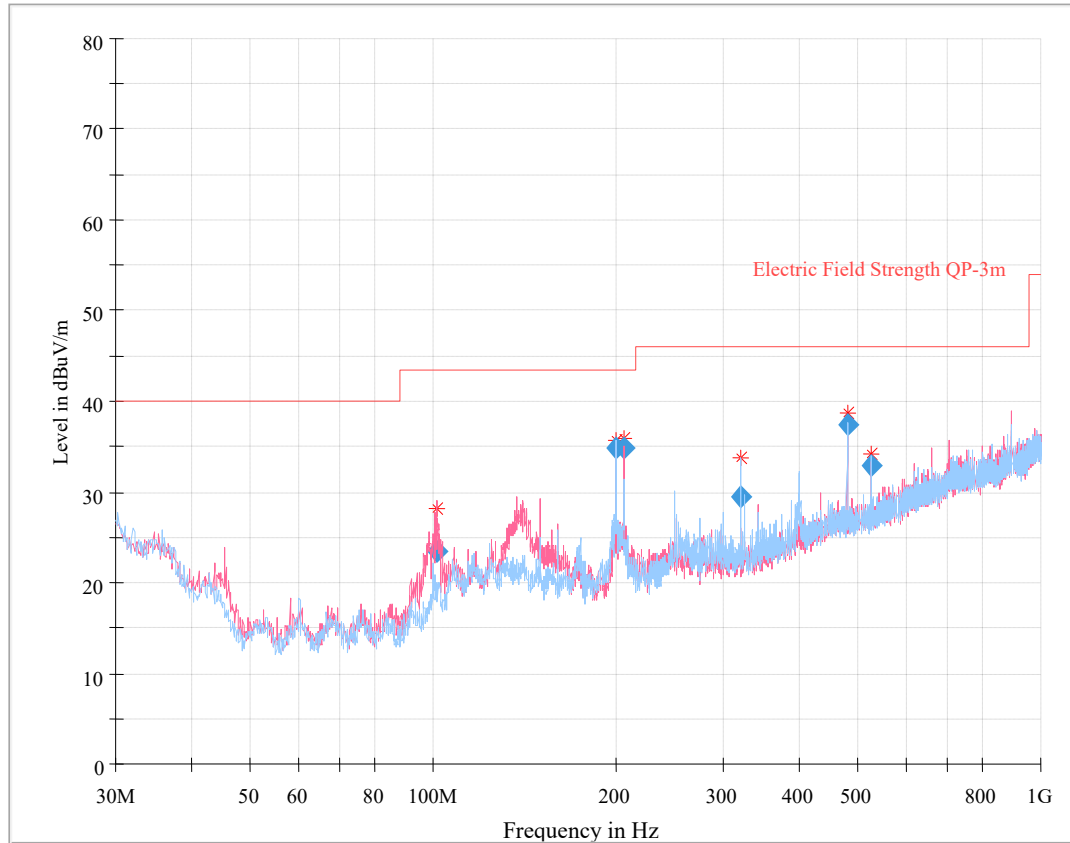
## Test Data

### Environmental Conditions

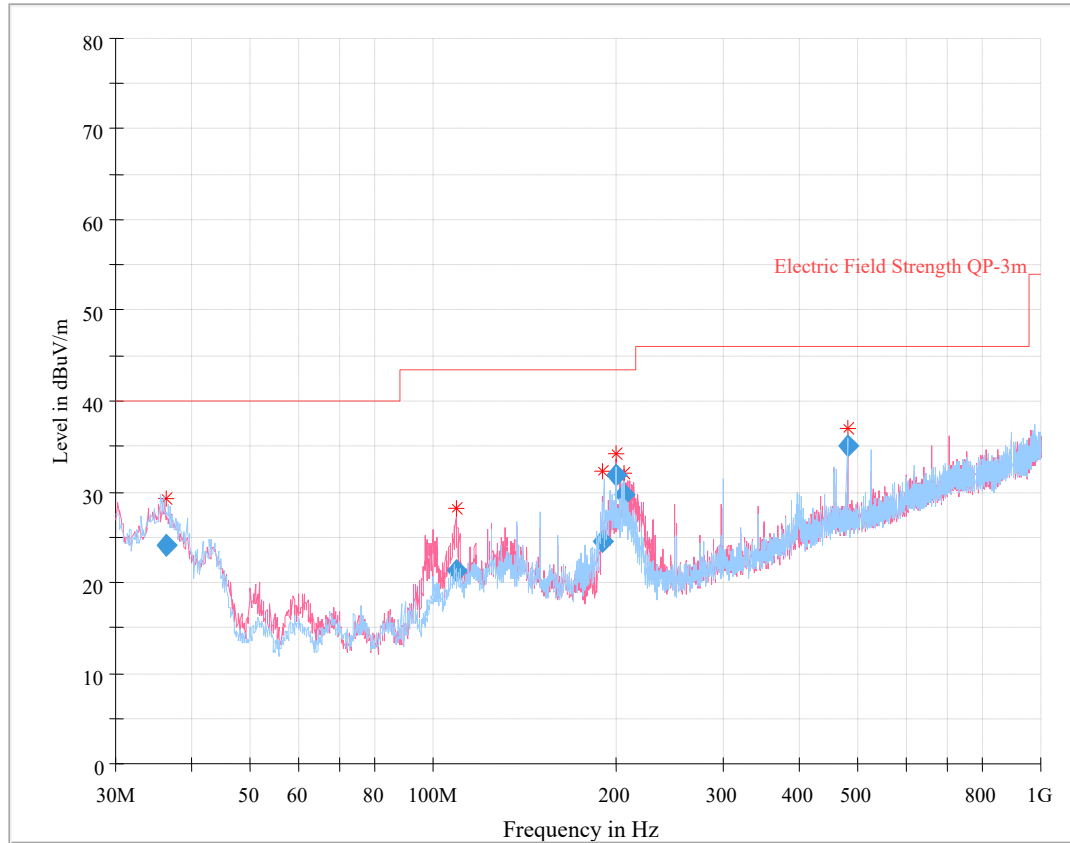
|                           |                 |
|---------------------------|-----------------|
| <b>Temperature:</b>       | 21~24.1 °C      |
| <b>Relative Humidity:</b> | 44~52 %         |
| <b>ATM Pressure:</b>      | 101.0~101.1 kPa |

*The testing was performed by Andy Yu on 2021-03-03.*

*EUT operation mode: Transmitting*

**30 MHz~1 GHz: (Low channel was worst case)***Adapter1-Model: BQ05A-0501000-U***Final Result**

| Frequency (MHz) | QuasiPeak (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------------|----------------------|-------------|-------------|-----|---------------|------------|
| 101.111375      | 23.40                    | 43.50                | 20.10       | 104.0       | V   | 94.0          | -7.4       |
| 200.030375      | 34.85                    | 43.50                | 8.65        | 179.0       | H   | 321.0         | -5.0       |
| 205.733125      | 34.81                    | 43.50                | 8.69        | 103.0       | V   | 14.0          | -5.1       |
| 320.005250      | 29.44                    | 46.00                | 16.56       | 130.0       | H   | 20.0          | -3.5       |
| 480.031000      | 37.42                    | 46.00                | 8.58        | 203.0       | H   | 0.0           | 0.7        |
| 525.721125      | 32.92                    | 46.00                | 13.08       | 192.0       | H   | 0.0           | 1.2        |

*Adapter2-Model: YWK-AD050100-U*

## Final Result

| Frequency (MHz) | QuasiPeak (dB $\mu$ V/m) | Limit (dB $\mu$ V/m) | Margin (dB) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) |
|-----------------|--------------------------|----------------------|-------------|-------------|-----|---------------|------------|
| 36.242500       | 24.18                    | 40.00                | 15.82       | 206.0       | H   | 333.0         | -2.1       |
| 108.903500      | 21.24                    | 43.50                | 22.26       | 106.0       | V   | 86.0          | -5.4       |
| 190.567500      | 24.50                    | 43.50                | 19.00       | 188.0       | H   | 325.0         | -6.2       |
| 200.030500      | 31.90                    | 43.50                | 11.60       | 109.0       | V   | 239.0         | -5.0       |
| 205.770875      | 29.77                    | 43.50                | 13.73       | 105.0       | V   | 20.0          | -5.1       |
| 480.032750      | 35.06                    | 46.00                | 10.94       | 200.0       | H   | 0.0           | 0.7        |

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