

# Test Report

FCC ID: XDQ-G3N

Date of issue: Sep. 07, 2016

|                     |                                                                            |
|---------------------|----------------------------------------------------------------------------|
| Sample Description: | Mobile POS terminal                                                        |
| Model(s):           | G3                                                                         |
| Applicant:          | Shenzhen Xinguodu Technology Co., Ltd.                                     |
| Address:            | 17/A, Jinsong Building Tairan Industry And Trading Garden, Shenzhen, China |
| Date of Test:       | Aug. 19, 2016 to Sep. 01, 2016                                             |

Shenzhen Microtest Co., Ltd.  
<http://www.mtitest.com>

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| Test result certification  |                                                                            |
|----------------------------|----------------------------------------------------------------------------|
|                            |                                                                            |
| <b>Applicant's name:</b>   | <b>Shenzhen Xinguodu Technology Co., Ltd.</b>                              |
| Address:                   | 17/A, Jinsong Building Tairan Industry And Trading Garden, Shenzhen, China |
| <b>Manufacture's Name:</b> | <b>Shenzhen Xinguodu Technology Co., Ltd.</b>                              |
| Address:                   | 17/A, Jinsong Building Tairan Industry And Trading Garden, Shenzhen, China |
|                            |                                                                            |
| Product name:              | Mobile POS terminal                                                        |
| Trademark:                 | <b>NEXGO</b>                                                               |
| Model name:                | G3                                                                         |
| <b>Standards:</b>          | FCC Part 15 Subpart B                                                      |
| <b>Test Method:</b>        | ANSI C63.4-2014                                                            |

*This device described above has been tested by Shenzhen Toby Technology Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.*

Tested by:

*David Chen*

David Chen

Sep. 07, 2016

Reviewed by:

*Leon Chen*

Leon Chen

Sep. 07, 2016

Approved by:

*Ares Liu*

Ares Liu

Sep. 07, 2016

## Summary of Test Result

| Item                  | Description of Test | Result |
|-----------------------|---------------------|--------|
| FCC Part 15 Subpart B |                     |        |
| 1                     | Conducted emission  | Pass   |
| 2                     | Radiated emission   | Pass   |

## 1 General description

### 1.1 Feature of equipment under test (EUT)

|                      |                                                                                   |
|----------------------|-----------------------------------------------------------------------------------|
| Product name:        | Mobile POS terminal                                                               |
| Model name:          | G3                                                                                |
| Power supply:        | DC 3.7V by battery<br>DC 5V by adapter                                            |
| Adapter information: | Model: ADS-6MA-06 05050EPCU<br>Input: 100-240V 50/60Hz Max. 0.3A<br>Output: 5V 1A |

### 1.2 Test mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

| Test mode | Description           |
|-----------|-----------------------|
| Mode 1    | Communication with PC |

NOTE: The test modes were carried out for all operation modes. The final test mode of the EUT was the worst test mode for EMI, and its test data was showed.

### 1.3 Test conditions

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

- Temperature: 20°C~30°C
- Humidity: 30%~70%
- Atmospheric pressure: 98kPa~101kPa

### 1.4 EUT test setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

### 1.5 Ancillary equipment

| Equipment   | Model                  | S/N                                  | Manufacturer | Certification Type |
|-------------|------------------------|--------------------------------------|--------------|--------------------|
| Display     | U2879VF                | KBWFBJA00068                         | AOC          | FCC DOC            |
| PC computer | VOSTRO3900             | 18006239306                          | Dell         | FCC DOC            |
| Printer     | HPLASERJET10<br>20PLUS | CNCGC60435                           | HP           | FCC DOC            |
| Keyboard    | SK-8120                | CN-ODJ365-716<br>16-571-1ROV-A<br>OO | DELL         | FCC DOC            |
| Mouse       | MS111-7                | CN-OKW2YH-71<br>616-58R-17BA         | DELL         | FCC DOC            |

## 1.6 Measurement Uncertainty

Measurement Uncertainty for a Level of Confidence of 95 %,  $U=2 \times U_c(y)$

|                                  |                |
|----------------------------------|----------------|
| Conducted emission(150kHz~30MHz) | $\pm 2.5$ dB   |
| Radiated emission(30MHz~1GHz)    | $\pm 4.2$ dB   |
| Radiated emission (above 1GHz)   | $\pm 4.3$ dB   |
| Temperature                      | $\pm 1$ degree |
| Humidity                         | $\pm 5$ %      |

## 2 Testing Site

|                        |                                                                                                                     |
|------------------------|---------------------------------------------------------------------------------------------------------------------|
| Test Site              | Shenzhen Toby Technology Co., Ltd.                                                                                  |
| Test Site Location     | 1 A/F., Bldg.6, Yusheng Industrial Zone The National Road<br>No.107 Xixiang Section 467, Shenzhen, Guangdong, China |
| FCC Registration No.:  | 811562                                                                                                              |
| CNAS Registration No.: | CNAS L5813                                                                                                          |

### 3 List of test equipment

Conducted emission:

| Equipment         | Manufacturer | Model      | Serial No. | Calibration Due |
|-------------------|--------------|------------|------------|-----------------|
| LISN              | R&S          | ENV216     | 101313     | 2016.12.06      |
| LISN              | SCHWARZBECK  | NNLK 8129  | 8129245    | 2016.12.25      |
| Pulse Limiter     | SCHWARZBECK  | VTSD 9561F | 9716       | 2016.12.25      |
| Test Cable        | N/A          | N/A        | C01        | 2016.12.06      |
| EMI Test Receiver | R&S          | ESCI       | 101160     | 2016.12.06      |

Radiated emission:

| Equipment               | Manufacturer     | Model       | Serial No. | Calibration Due |
|-------------------------|------------------|-------------|------------|-----------------|
| Log-Bicon Antenna       | MESS-ELEKTRO NIK | VULB 9160   | 3058       | 2016.12.11      |
| Horn Antenna            | Schwarzbeck      | BBHA 9120D  | 631        | 2016.12.05      |
| Test Cable              | United Microwave | 57793       | 1m         | 2016.12.05      |
| Test Cable              | United Microwave | A30A30-5006 | 10m        | 2016.12.05      |
| Microwave Pre_amplifier | Agilent          | 8449B       | 3008A01714 | 2016.12.05      |
| Pre-Amplifier           | Anritsu          | MH648A      | M09961     | 2016.12.05      |
| EMI Test Receiver       | R&S              | ESPI-7      | 101318     | 2016.12.05      |
| Spectrum analyzer       | Agilent          | E4470B      | MY41441082 | 2017.06.01      |

Note: the calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



## 4 EMC emission test

### 4.1 Conducted emission

#### 4.1.1 Limits

| Frequency<br>(MHz) | Class A (dB $\mu$ V) |         | Class B (dB $\mu$ V) |           |
|--------------------|----------------------|---------|----------------------|-----------|
|                    | Quasi-peak           | Average | Quasi-peak           | Average   |
| 0.15 -0.5          | 79                   | 66      | 66 - 56 *            | 56 - 46 * |
| 0.5 -5             | 73                   | 60      | 56                   | 46        |
| 5 -30              | 73                   | 60      | 60                   | 50        |

Note 1: the tighter limit applies at the band edges.

Note 2: the limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

#### 4.1.2 Test Procedures

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

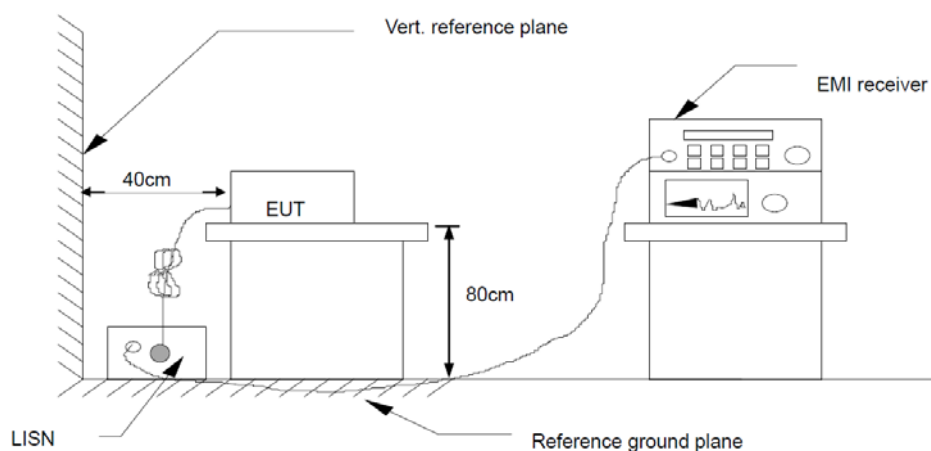
Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN is at least 80 cm from nearest part of EUT chassis.

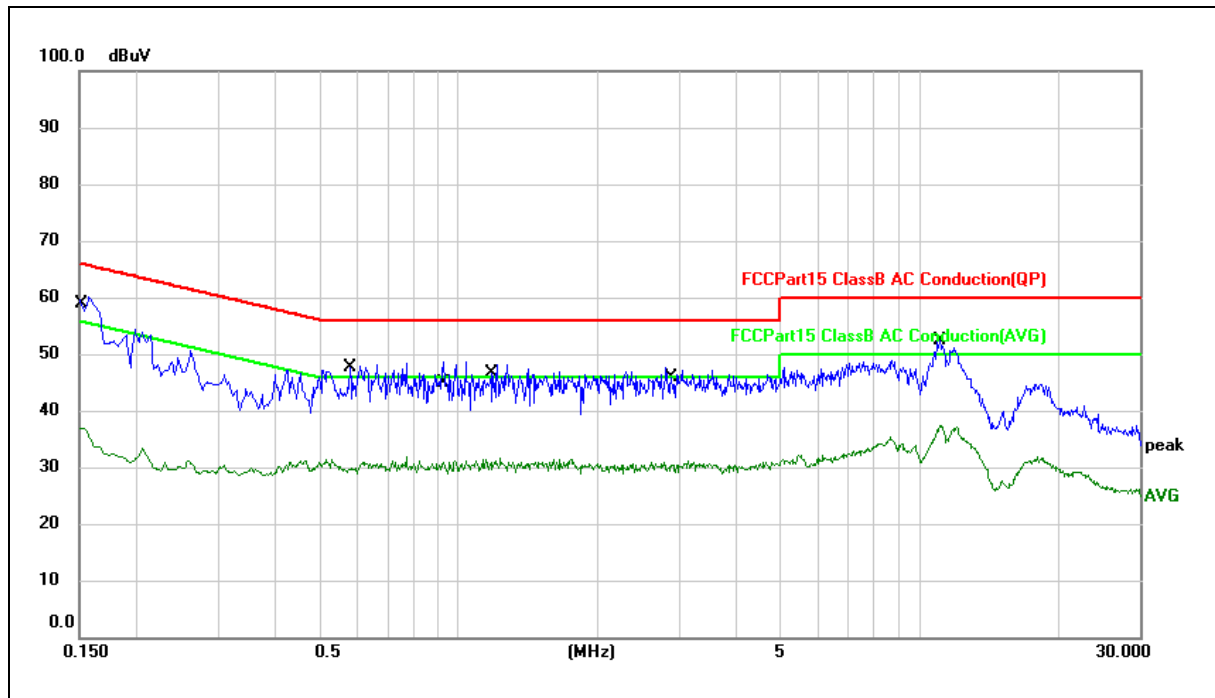
For the actual test configuration, please refer to the related Item – photographs of the test setup.

#### 4.1.3 Test Setup



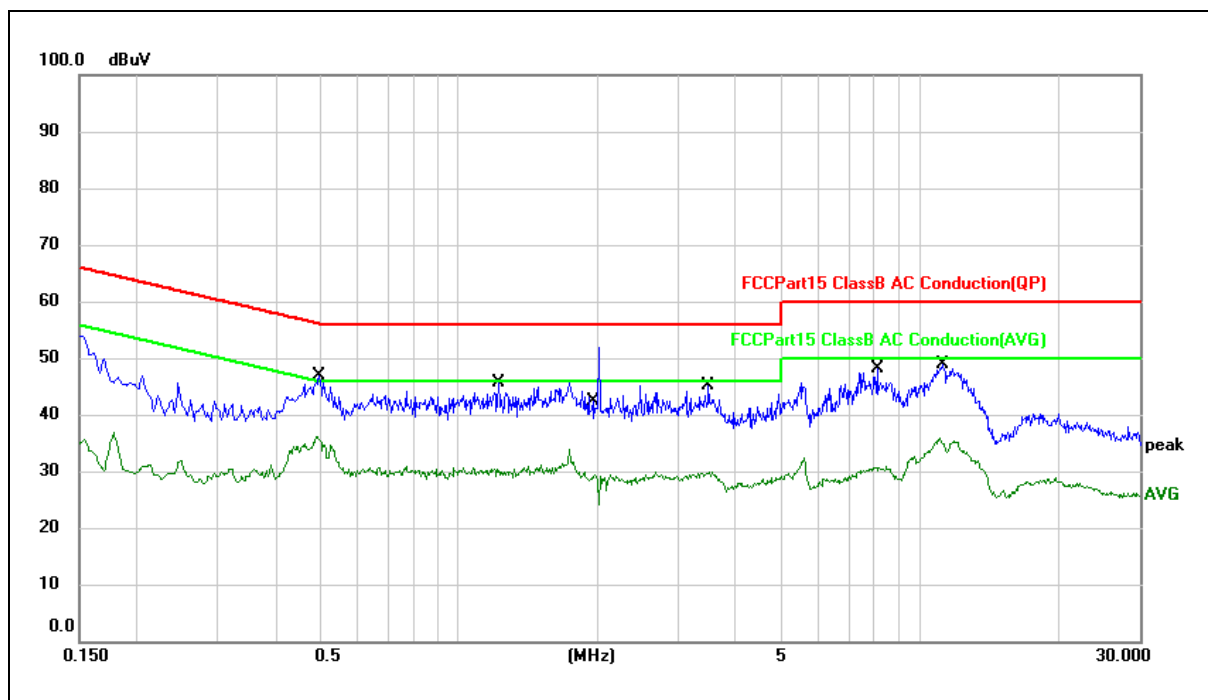
#### 4.1.4 Test Result

|               |              |                    |        |
|---------------|--------------|--------------------|--------|
| Temperature:  | 23℃          | Relative Humidity: | 67%    |
| Pressure:     | 101kPa       | Phase:             | L      |
| Test voltage: | AC 120V/60Hz | Test mode:         | Mode 1 |



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 0.1536       | 20.26                    | 30.02                   | 50.28                    | 65.80         | -15.52     | QP       |         |
| 2   |     | 0.1536       | 4.19                     | 30.02                   | 34.21                    | 55.80         | -21.59     | AVG      |         |
| 3   |     | 0.5813       | 8.36                     | 30.02                   | 38.38                    | 56.00         | -17.62     | QP       |         |
| 4   |     | 0.5813       | -0.44                    | 30.02                   | 29.58                    | 46.00         | -16.42     | AVG      |         |
| 5   |     | 0.9357       | 10.63                    | 30.02                   | 40.65                    | 56.00         | -15.35     | QP       |         |
| 6   |     | 0.9357       | 0.26                     | 30.02                   | 30.28                    | 46.00         | -15.72     | AVG      |         |
| 7   |     | 1.1659       | 9.17                     | 30.02                   | 39.19                    | 56.00         | -16.81     | QP       |         |
| 8   |     | 1.1659       | 0.33                     | 30.02                   | 30.35                    | 46.00         | -15.65     | AVG      |         |
| 9   |     | 2.8940       | 8.41                     | 30.04                   | 38.45                    | 56.00         | -17.55     | QP       |         |
| 10  |     | 2.8940       | -0.47                    | 30.04                   | 29.57                    | 46.00         | -16.43     | AVG      |         |
| 11  | *   | 11.0448      | 16.84                    | 30.10                   | 46.94                    | 60.00         | -13.06     | QP       |         |
| 12  |     | 11.0448      | 6.50                     | 30.10                   | 36.60                    | 50.00         | -13.40     | AVG      |         |

|               |              |                    |        |
|---------------|--------------|--------------------|--------|
| Temperature:  | 23℃          | Relative Humidity: | 67%    |
| Pressure:     | 101kPa       | Phase:             | N      |
| Test voltage: | AC 120V/60Hz | Test mode:         | Mode 1 |



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 0.5000       | 9.09                     | 30.02                   | 39.11                    | 56.00         | -16.89     | QP       |         |
| 2   | *   | 0.5000       | 3.72                     | 30.02                   | 33.74                    | 46.00         | -12.26     | AVG      |         |
| 3   |     | 1.2278       | 6.59                     | 30.02                   | 36.61                    | 56.00         | -19.39     | QP       |         |
| 4   |     | 1.2278       | -0.54                    | 30.02                   | 29.48                    | 46.00         | -16.52     | AVG      |         |
| 5   |     | 1.9629       | 3.96                     | 30.02                   | 33.98                    | 56.00         | -22.02     | QP       |         |
| 6   |     | 1.9629       | -1.63                    | 30.02                   | 28.39                    | 46.00         | -17.61     | AVG      |         |
| 7   |     | 3.4480       | 6.11                     | 30.04                   | 36.15                    | 56.00         | -19.85     | QP       |         |
| 8   |     | 3.4480       | -1.34                    | 30.04                   | 28.70                    | 46.00         | -17.30     | AVG      |         |
| 9   |     | 8.0814       | 7.32                     | 30.08                   | 37.40                    | 60.00         | -22.60     | QP       |         |
| 10  |     | 8.0814       | 0.07                     | 30.08                   | 30.15                    | 50.00         | -19.85     | AVG      |         |
| 11  |     | 11.1219      | 12.28                    | 30.10                   | 42.38                    | 60.00         | -17.62     | QP       |         |
| 12  |     | 11.1219      | 4.24                     | 30.10                   | 34.34                    | 50.00         | -15.66     | AVG      |         |

## 4.2 Radiated emission

### 4.2.1 Limits

Limits of radiated emission measurement

| Frequency (MHz) | Class B device (at 3m) dB $\mu$ V/m |  | Detector |
|-----------------|-------------------------------------|--|----------|
| 30-88           | 40                                  |  | QP       |
| 88-216          | 43.5                                |  | QP       |
| 216-960         | 46                                  |  | QP       |
| 960-1000        | 54                                  |  | QP       |
| Above 1000      | 54                                  |  | AV       |
| Above 1000      | 74                                  |  | PK       |

### 4.2.2 Test Procedures

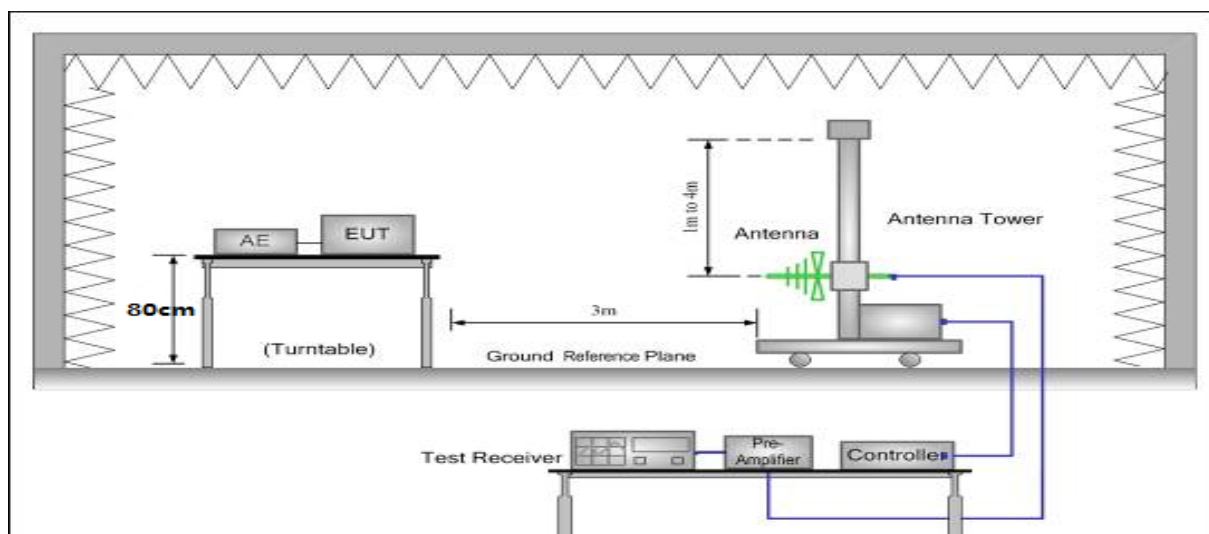
The radiated emission tests were performed in the 3 meters.

The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.

The height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

QP detector RBW=120KHz VBW=300KHz for below 1GHz , PK detector RBW=1MHz VBW=3MHz for PK value , RBW=1MHz VBW=10Hz for AV value above 1GHz

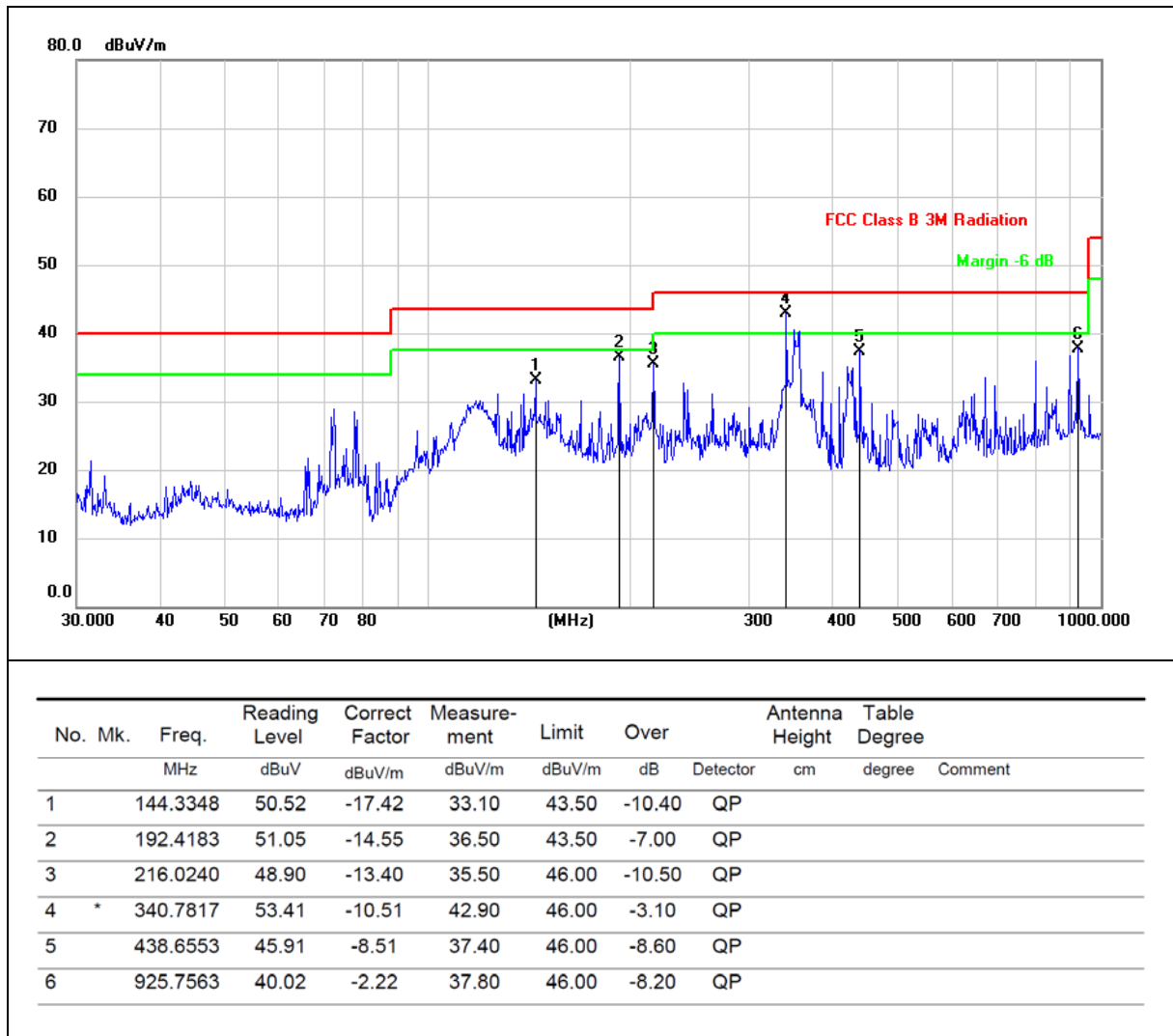
### 4.2.3 Test Setup



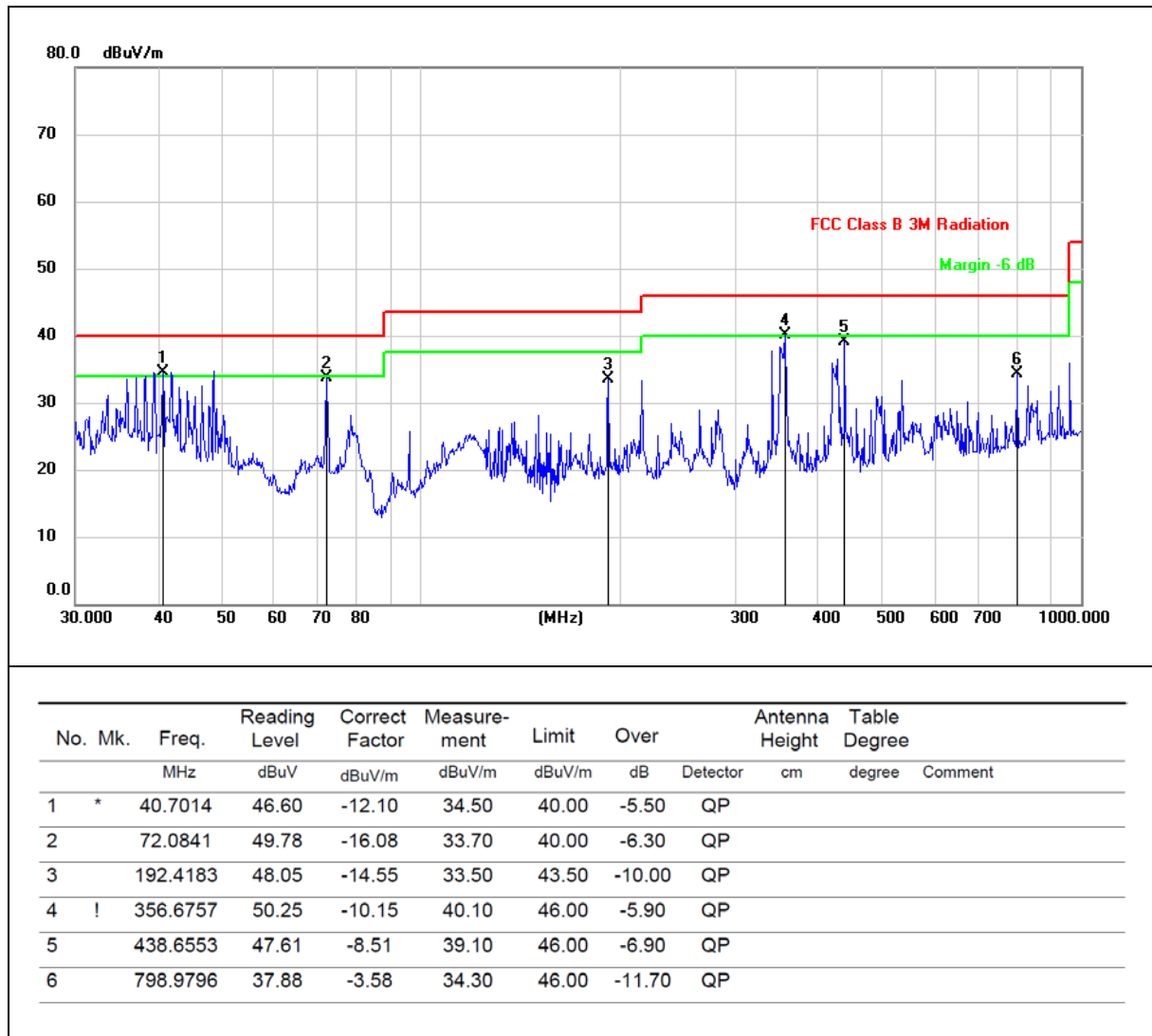
### 4.2.4 Test Result

**Note:** Test from 30MHz-25GHz , no emission found above 5GHz . Only reported worse case

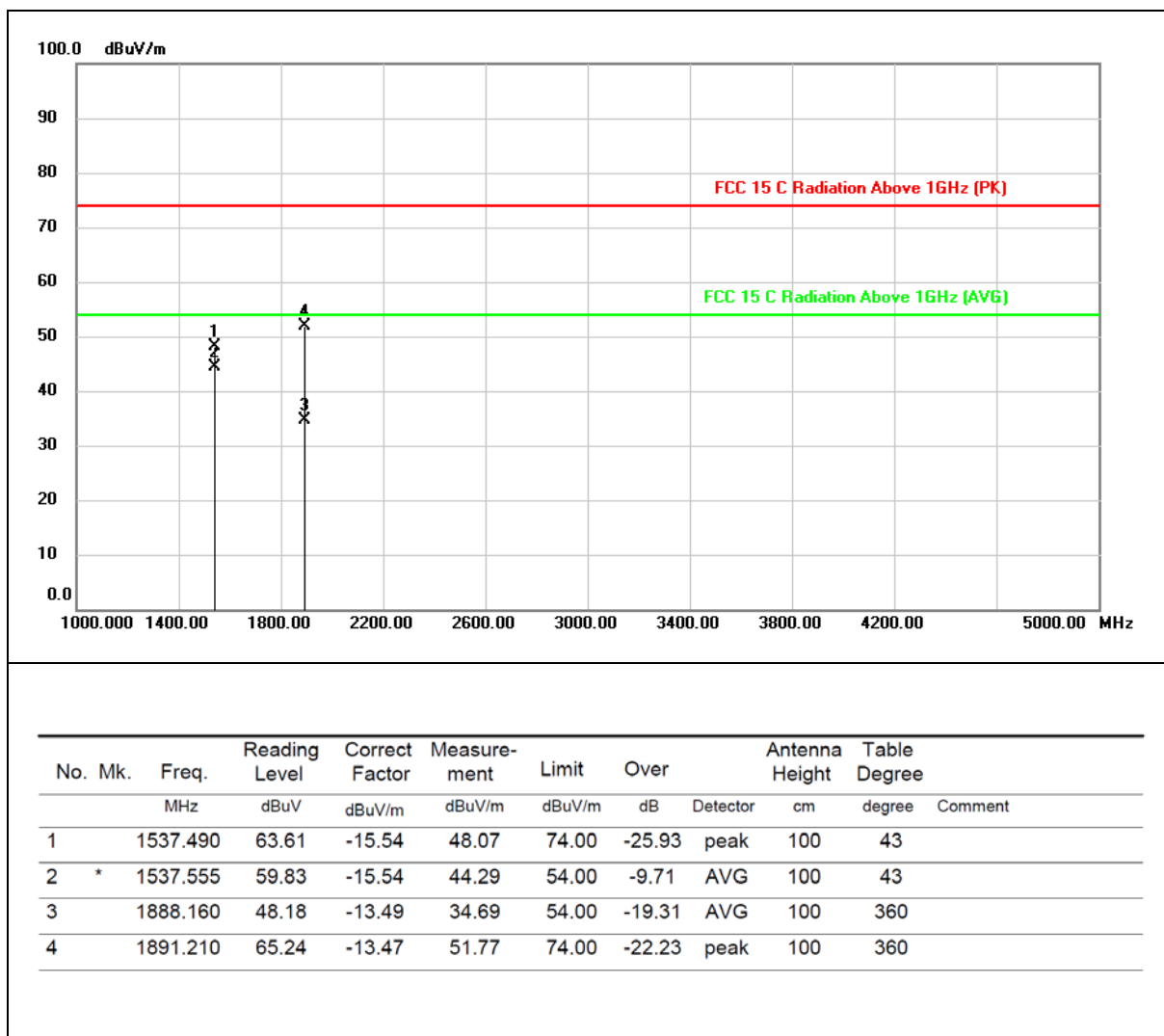
|               |              |                    |            |
|---------------|--------------|--------------------|------------|
| Temperature:  | 23°C         | Relative Humidity: | 59%        |
| Pressure:     | 101kPa       | Polarization:      | Horizontal |
| Test voltage: | AC 120V/60Hz | Test mode:         | Mode 1     |



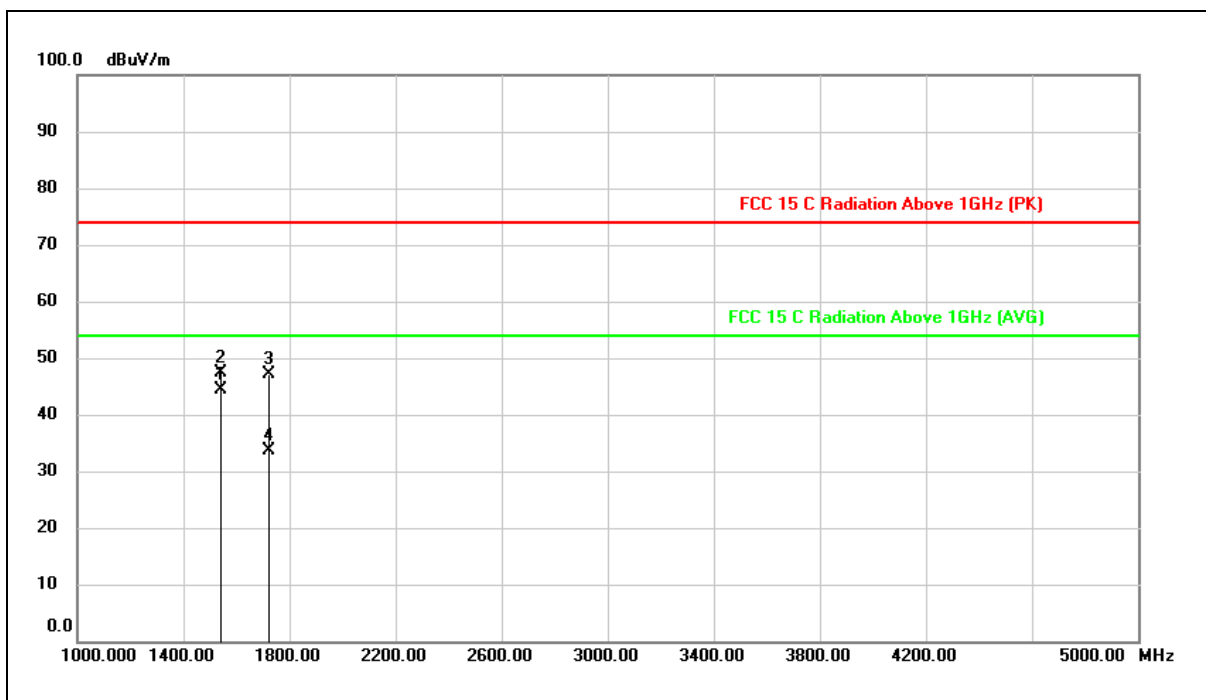
|               |              |                    |          |
|---------------|--------------|--------------------|----------|
| Temperature:  | 23℃          | Relative Humidity: | 59%      |
| Pressure:     | 101kPa       | Polarization:      | Vertical |
| Test voltage: | AC 120V/60Hz | Test mode:         | Mode 1   |



|               |              |                    |            |
|---------------|--------------|--------------------|------------|
| Temperature:  | 23°C         | Relative Humidity: | 59%        |
| Pressure:     | 101kPa       | Polarization:      | Horizontal |
| Test voltage: | AC 120V/60Hz | Test mode:         | Mode 1     |



|               |              |                    |          |
|---------------|--------------|--------------------|----------|
| Temperature:  | 23°C         | Relative Humidity: | 59%      |
| Pressure:     | 101kPa       | Polarization:      | Vertical |
| Test voltage: | AC 120V/60Hz | Test mode:         | Mode 1   |



| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit  | Over   | Antenna Height | Table Degree |        |
|-----|-----|----------|---------------|----------------|-------------|--------|--------|----------------|--------------|--------|
|     |     | MHz      | dBuV          | dBuV/m         | dBuV/m      | dBuV/m | dB     | Detector       | cm           | degree |
| 1   | *   | 1537.555 | 59.82         | -15.54         | 44.28       | 54.00  | -9.72  | AVG            | 100          | 319    |
| 2   |     | 1537.685 | 63.02         | -15.54         | 47.48       | 74.00  | -26.52 | peak           | 100          | 319    |
| 3   |     | 1720.030 | 61.78         | -14.70         | 47.08       | 74.00  | -26.92 | peak           | 100          | 360    |
| 4   |     | 1722.180 | 48.21         | -14.69         | 33.52       | 54.00  | -20.48 | AVG            | 100          | 360    |

----END OF REPORT----