# APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Chuango Security Technology Corporation

KP-20 Security keypad
Model No.: KP-20

FCC ID: RJY-KP20

| | | |
|---|---|---|
| Prepared for | : | Chuango Security Technology Corporation |
| Address | : | 6-17, Overseas Students Pioneer Park, No. 108, Jia Economic & Technological Development Zone, Fuzhou 350015, China |
| Prepared by | : | ACCURATE TECHNOLOGY CO., LTD |
| Address | : | F1, Bldg. A, Chan Yuan New Material Port, Keyuan Rd. Science & Industry Park, Nan Shan, Shenzhen, Guangdong P.R. China<br><br>Tel: (0755) 26503290<br>Fax: (0755) 26503396 |

| | | |
|---|---|---|
| Report Number | : | ATE20170756 |
| Date of Test | : | May 18, 2017 |
| Date of Report | : | May 18, 2017 |

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# Test Report Certification

| | | |
|---|---|---|
| Applicant& address | : | Chuango Security Technology Corporation<br>6-17, Overseas Students Pioneer Park, No. 108, Jia Economic & Technological Development Zone, Fuzhou 350015, China |
| Manufacturer& address | : | Chuango Security Technology Corporation<br>6-17, Overseas Students Pioneer Park, No. 108, Jia Economic & Technological Development Zone, Fuzhou 350015, China |
| Product | : | KP-20 Security keypad |
| Model No. | : | KP-20 |

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.249**
**ANSI C63.10: 2013**

The EUT was tested according to FCC 47CFR 15.249 for compliance to FCC 47CFR 15.249 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : May 18, 2017
Date of Report: May 18, 2017

Prepared by : Star Yang
( Star Yang, Engineer)

Approved & Authorized Signer :
(Sean Liu, Manager)

# 1. GENERAL INFORMATION

## 1.1.Description of Device (EUT)

The submitted sample is a KP-20 Security keypad Transmitter which is declared TX frequency is 915MHz.
The sample is powered by DC 3V (Powered by Battery).

| | | |
|---|---|---|
| EUT | : | KP-20 Security keypad |
| Model No. | : | KP-20 |
| Frequency | : | 915MHz |
| Number of Channels | : | 1 |
| Modulation Type | : | FSK |
| Type of Antenna | : | Integral antenna |
| Max antenna gain | : | 2.0dBi |
| Power Supply | : | DC 3V |
| Trade name | : | smanos |
| Date of sample received | : | May 12, 2017 |
| Date of Test | : | May 18, 2017 |
| Sample Number | : | 1700580 |

## 1.2.Special Accessory and Auxiliary Equipment

N/A

## 1.3.Description of Test Facility

| | | |
|---|---|---|
| EMC Lab | : | Listed by Federal Communications Commission (FCC)<br>The Registration Number is 752051<br><br>Listed by Innovation, Science and Economic Development Canada (ISEDC)<br>The Registration Number is 5077A-2<br><br>Accredited by China National Accreditation Service for Conformity Assessment (CNAS)<br>The Registration Number is CNAS L3193<br><br>Accredited by American Association for Laboratory Accreditation (A2LA)<br>The Certificate Number is 4297.01 |
| Name of Firm | : | ACCURATE TECHNOLOGY CO. LTD |
| Site Location | : | F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China |

## 1.4.Measurement Uncertainty

| | | |
|---|---|---|
| Conducted Emission Expanded Uncertainty | = | 2.23dB, k=2 |
| Radiated emission expanded uncertainty (9kHz-30MHz) | = | 3.08dB, k=2 |
| Radiated emission expanded uncertainty (30MHz-1000MHz) | = | 4.42dB, k=2 |
| Radiated emission expanded uncertainty (Above 1GHz) | = | 4.06dB, k=2 |

# 2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment**

| Kind of equipment | Manufacturer | Type | S/N | Calibrated dates | Calibrated until |
|---|---|---|---|---|---|
| EMI Test Receiver | Rohde&Schwarz | ESCS30 | 100307 | Jan. 07, 2017 | Jan. 06, 2018 |
| EMI Test Receiver | Rohde&Schwarz | ESPI3 | 101526/003 | Jan. 07, 2017 | Jan. 06, 2018 |
| Spectrum Analyzer | Agilent | E7405A | MY45115511 | Jan. 07, 2017 | Jan. 06, 2018 |
| Pre-Amplifier | Rohde&Schwarz | CBLU1183540-01 | 3791 | Jan. 07, 2017 | Jan. 06, 2018 |
| Loop Antenna | Schwarzbeck | FMZB1516 | 1516131 | Jan. 13, 2017 | Jan. 12, 2018 |
| Bilog Antenna | Schwarzbeck | VULB9163 | 9163-323 | Jan. 13, 2017 | Jan. 12, 2018 |
| Horn Antenna | Schwarzbeck | BBHA9120D | 9120D-655 | Jan. 13, 2017 | Jan. 12, 2018 |
| Horn Antenna | Schwarzbeck | BBHA9170 | 9170-359 | Jan. 13, 2017 | Jan. 12, 2018 |
| LISN | Rohde&Schwarz | ESH3-Z5 | 100305 | Jan. 07, 2017 | Jan. 06, 2018 |
| LISN | Schwarzbeck | NSLK8126 | 8126431 | Jan. 07, 2017 | Jan. 06, 2018 |
| Highpass Filter | Wainwright Instruments | WHKX3.6/18G-10SS | N/A | Jan. 07, 2017 | Jan. 06, 2018 |
| Band Reject Filter | Wainwright Instruments | WRCG2400/2485-2375/2510-60/11SS | N/A | Jan. 07, 2017 | Jan. 06, 2018 |

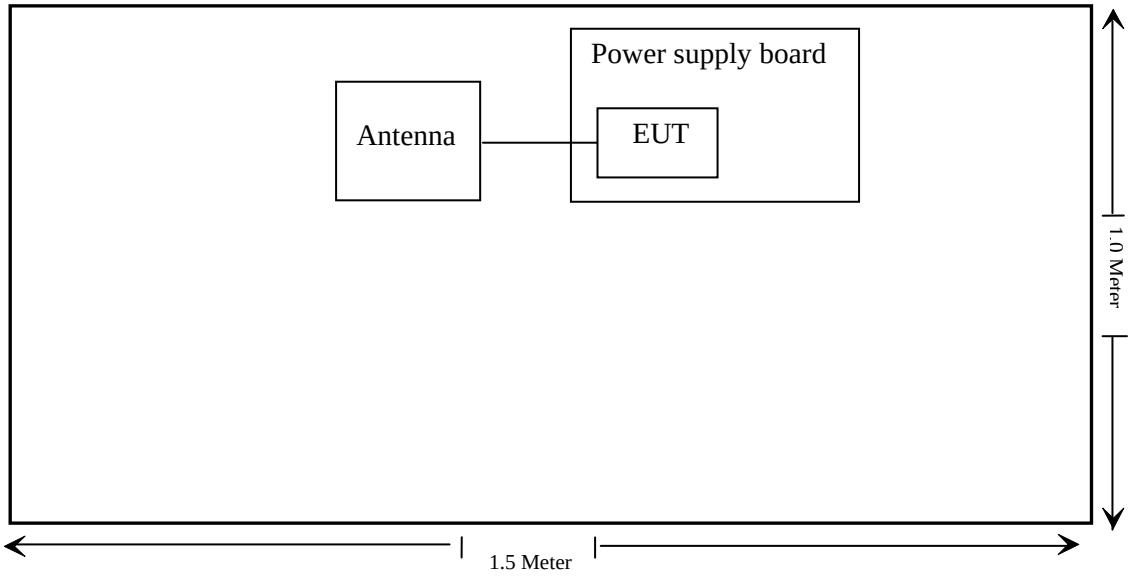
# 3. OPERATION OF EUT DURING TESTING

## 3.1.Operating Mode

The mode is used: **Transmitting mode**
TX Channel: 915MHz

## 3.2.Configuration and peripherals

Block Diagram of Test Setup



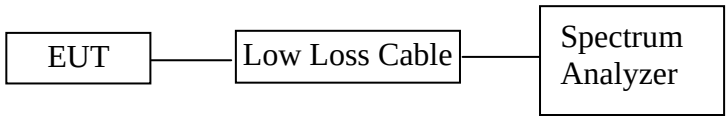
# 4. TEST PROCEDURES AND RESULTS

| FCC Rules | Description of Test | Result |
|---|---|---|
| Section 15.215(c) | 20dB Bandwidth | Compliant |
| Section 15.249(d) | Band Edge Compliance Test | Compliant |
| Section 15.205(a), Section 15.209(a), Section 15.249, Section 15.35 | Radiated Spurious Emission Test | Compliant |
| Section 15.207 | AC Power Line Conducted Emission Test | N/A |
| Section 15.203 | Antenna Requirement | Compliant |

Note: The power supply mode of the module is DC 3V, According to the FCC standard requirements, conducted emission is not applicable.

# 5. 20DB BANDWIDTH MEASUREMENT

## 5.1.Block Diagram of Test Setup




## 5.2.The Requirement For Section 15.215(c)

The bandwidth of a frequency hopping channel is the 20 dB emission bandwidth, measured with the hopping stopped. The system RF bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset while the long-term distribution appears evenly distributed.

## 5.3.Operating Condition of EUT

5.3.1.Setup the EUT and simulator as shown as Section 5.1.

5.3.2.Turn on the power of all equipment.

5.3.3.Let the EUT work in TX modes measure it. The transmit frequency is 915MHz.

## 5.4.Test Procedure

5.4.1.Place the EUT on the table and set it in transmitting mode.

5.4.2.Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

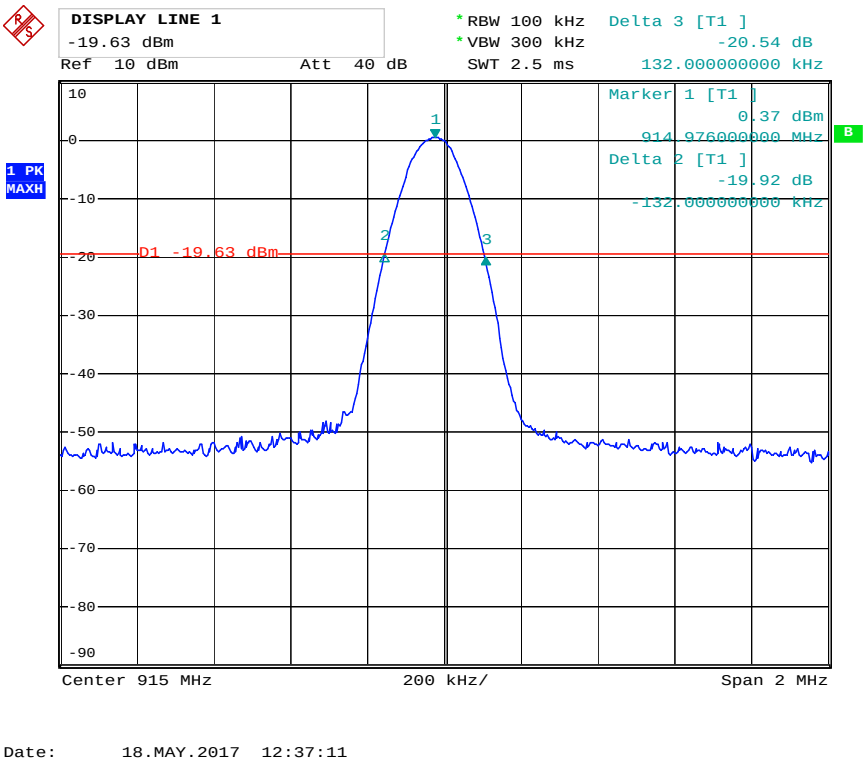
5.4.3.Set RBW of spectrum analyzer to 100 kHz and VBW to300 kHz, Detector function=peak, Trace=max hold, Sweep=auto.

5.4.4.Set the measured low, middle and high frequency and test 20dB bandwidth with spectrum analyzer.

## 5.5.Test Result

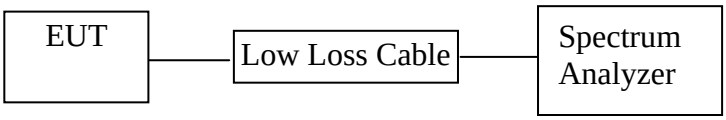
| Channel | Frequency (MHz) | 20 dB Bandwidth (MHz) |
|---|---|---|
| 1 | 915 | 0.264 |

The spectrum analyzer plots are attached as below.



# 6. BAND EDGE COMPLIANCE TEST

## 6.1.Block Diagram of Test Setup




(EUT: KP-20 Security keypad)

## 6.2.The Requirement For Section 15.249

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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 the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 6.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 6.1.

6.4.2.Turn on the power of all equipment.

6.4.3.Let the EUT work in TX modes measure it. The transmit frequency is 915 MHz.

## 6.5.Test Procedure

Conducted Band Edge:

6.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

6.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

Radiate Band Edge:

6.5.3.The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.

6.5.4.The turntable was rotated for 360 degrees to determine the position of maximum emission level.

6.5.5.EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

6.5.6.Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

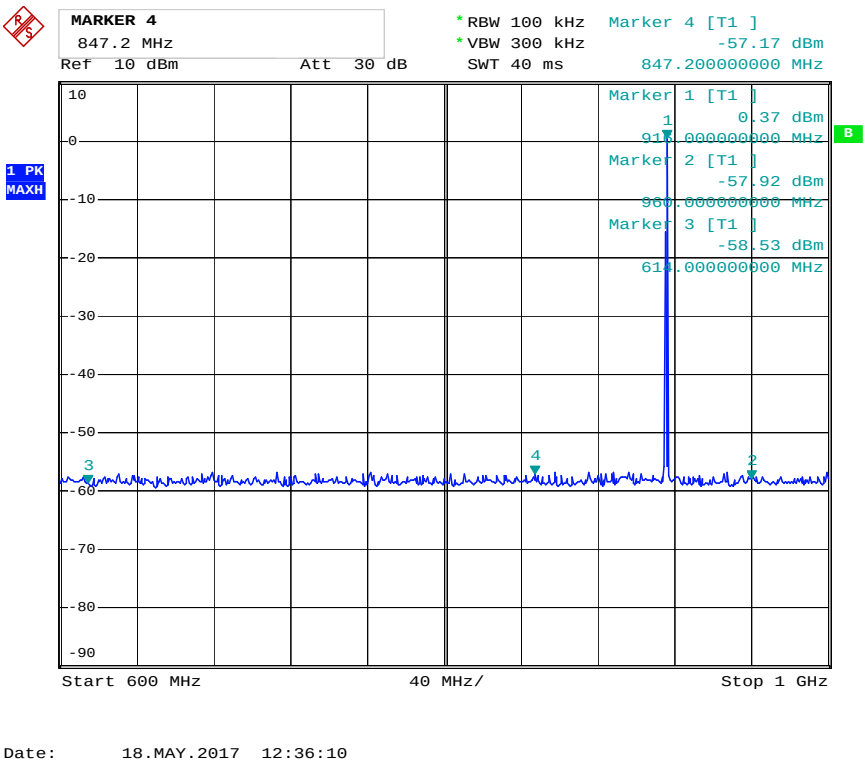
6.5.7.RBW=1MHz, VBW=1MHz

6.5.8.The band edges was measured and recorded.

## 6.6.Test Result

**Pass**

Conducted Band Edge:




Radiate Band Edge:

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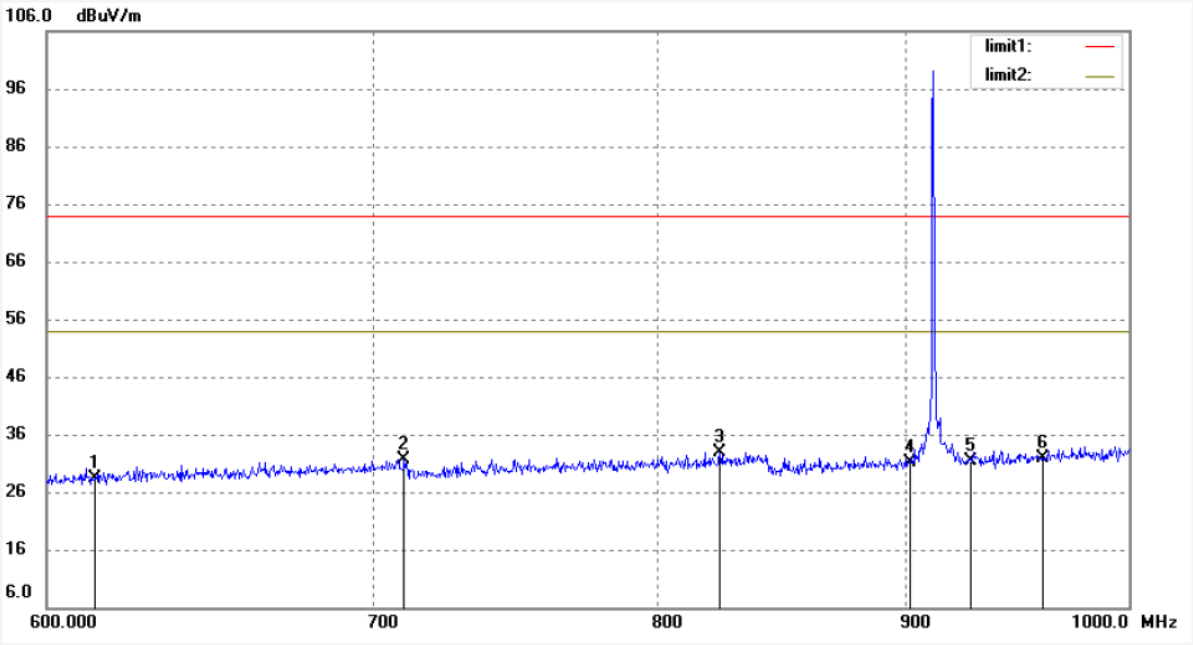
| | |
|---|---|
| Job No.: DING #3611 | Polarization: Horizontal |
| Standard: FCC PK | Power Source: DC 3V |
| Test item: Radiation Test | Date: 17/05/18/ |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 10/27/10 |
| EUT: KP-20 Security keypad | Engineer Signature: DING |
| Mode: TX 915MHz | Distance: 3m |
| Model: KP-20 | |
| Manufacturer: CHUANGO | |

Note: Report NO.:ATE20170756




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 614.0000 | 36.51 | -8.10 | 28.41 | 74.00 | -45.59 | peak | | | |
| 2 | 710.4083 | 37.80 | -6.11 | 31.69 | 74.00 | -42.31 | peak | | | |
| 3 | 824.5090 | 36.54 | -3.71 | 32.83 | 74.00 | -41.17 | peak | | | |
| 4 | 902.0000 | 33.44 | -2.26 | 31.18 | 74.00 | -42.82 | peak | | | |
| 5 | 928.0000 | 33.17 | -1.85 | 31.32 | 74.00 | -42.68 | peak | | | |
| 6 | 960.0000 | 33.17 | -1.23 | 31.94 | 74.00 | -42.06 | peak | | | |

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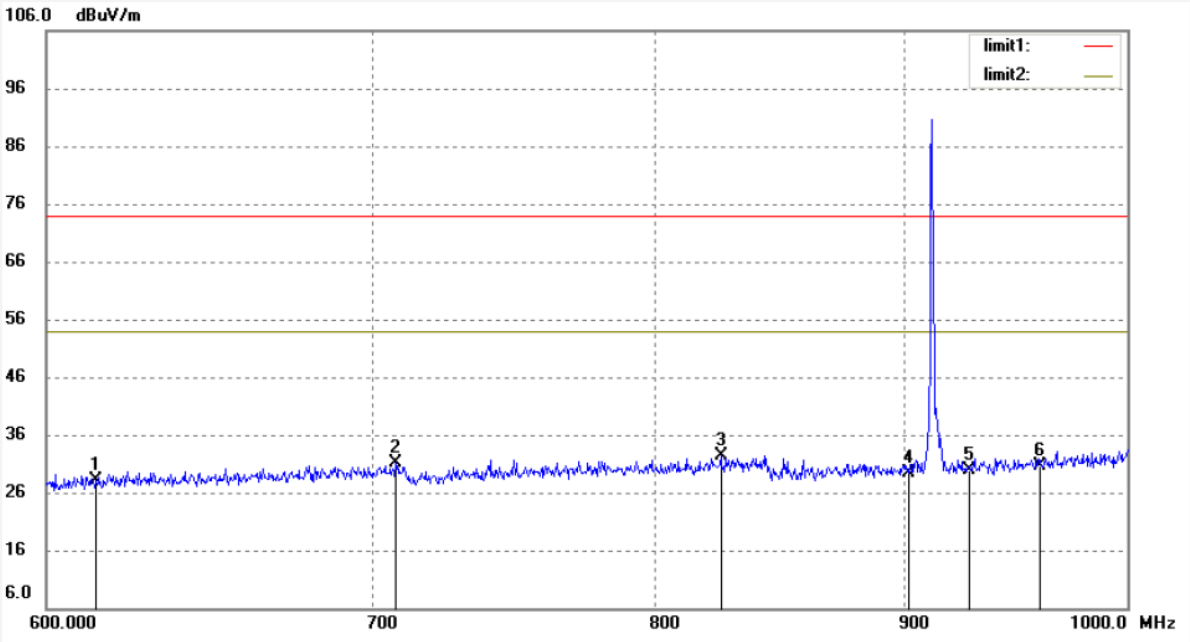
Job No.: DING #3610
Standard: FCC PK
Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 55 %
EUT: KP-20 Security keypad
Mode: TX 915MHz
Model: KP-20
Manufacturer: CHUANGO

Polarization: Vertical
Power Source: DC 3V
Date: 17/05/18/
Time: 10/26/58
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170756




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 614.0000 | 36.19 | -8.10 | 28.09 | 74.00 | -45.91 | peak | | | |
| 2 | 707.8673 | 37.26 | -6.18 | 31.08 | 74.00 | -42.92 | peak | | | |
| 3 | 825.3535 | 36.01 | -3.69 | 32.32 | 74.00 | -41.68 | peak | | | |
| 4 | 902.0000 | 31.53 | -2.26 | 29.27 | 74.00 | -44.73 | peak | | | |
| 5 | 928.0000 | 31.85 | -1.85 | 30.00 | 74.00 | -44.00 | peak | | | |
| 6 | 960.0000 | 31.84 | -1.23 | 30.61 | 74.00 | -43.39 | peak | | | |

Note:

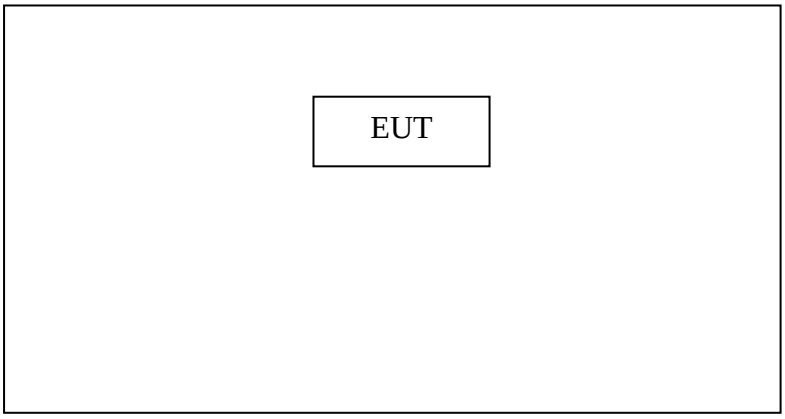
1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

   Result = Reading + Corrected Factor
3. Display the measurement of peak values.

# 7. RADIATED SPURIOUS EMISSION TEST

## 7.1.Block Diagram of Test Setup

### 7.1.1.Block diagram of connection between the EUT and peripherals

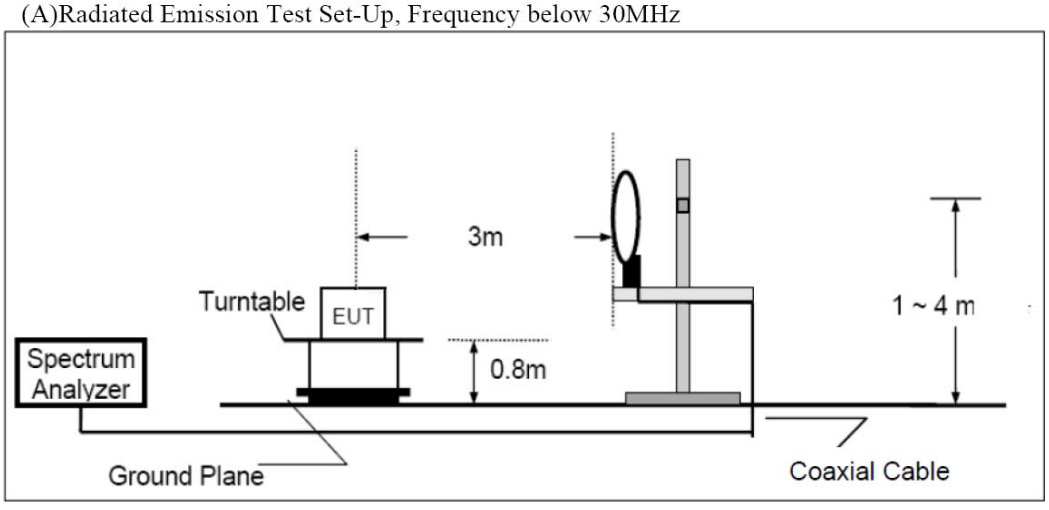



Setup: Transmitting mode

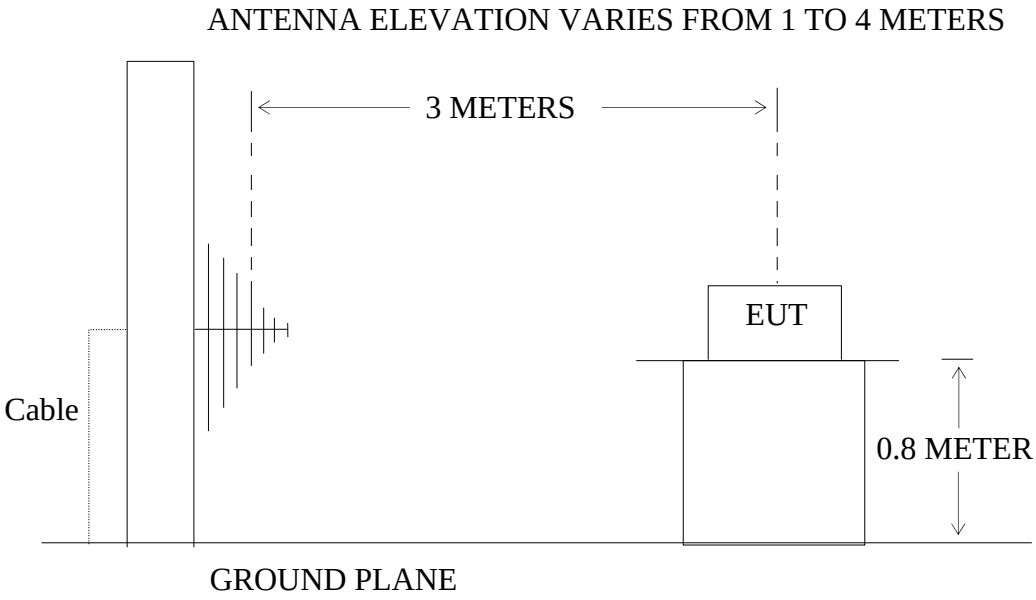
(EUT: KP-20 Security keypad)

### 7.1.2.Semi-Anechoic Chamber Test Setup Diagram

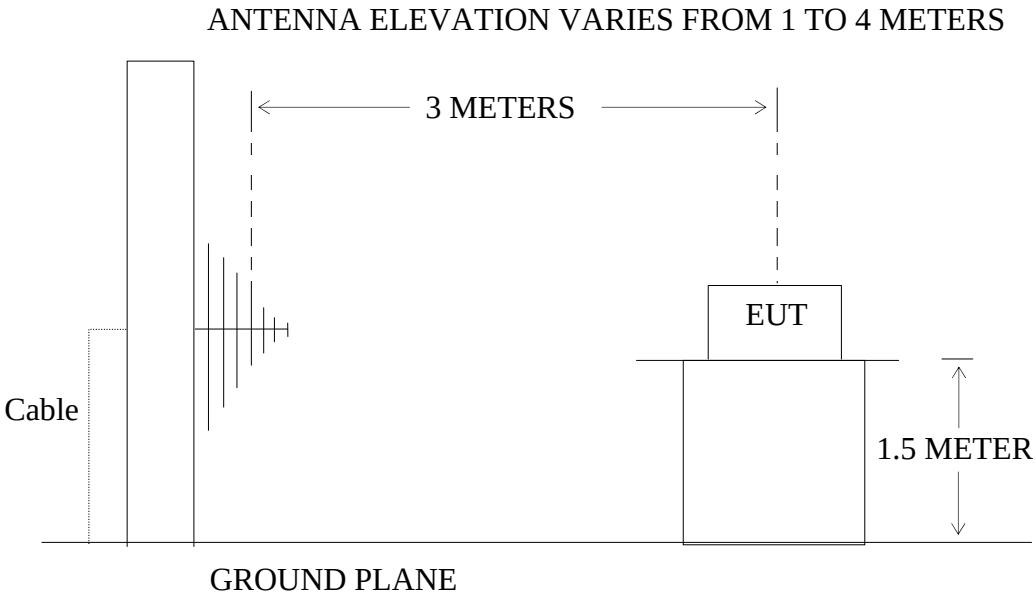
(A)Radiated Emission Test Set-Up, Frequency below 30MHz



**Below 1GHz**




**Above 1GHz**




## 7.2.The Limit For Section 15.249

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator 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 the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as

permitted under paragraph A8.4(4), the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

## 7.3.Restricted bands of operation

### 7.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

| MHz | MHz | MHz | GHz |
|---|---|---|---|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| [1]0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 1300-1427 | 8.025-8.5 |
| 4.17725-4.17775 | 37.5-38.25 | 1435-1626.5 | 9.0-9.2 |
| 4.20725-4.20775 | 73-74.6 | 1645.5-1646.5 | 9.3-9.5 |
| 6.215-6.218 | 74.8-75.2 | 1660-1710 | 10.6-12.7 |
| 6.26775-6.26825 | 108-121.94 | 1718.8-1722.2 | 13.25-13.4 |
| 6.31175-6.31225 | 123-138 | 2200-2300 | 14.47-14.5 |
| 8.291-8.294 | 149.9-150.05 | 2310-2390 | 15.35-16.2 |
| 8.362-8.366 | 156.52475-156.52525 | 2483.5-2500 | 17.7-21.4 |
| 8.37625-8.38675 | 156.7-156.9 | 2690-2900 | 22.01-23.12 |
| 8.41425-8.41475 | 162.0125-167.17 | 3260-3267 | 23.6-24.0 |
| 12.29-12.293 | 167.72-173.2 | 3332-3339 | 31.2-31.8 |
| 12.51975-12.52025 | 240-285 | 3345.8-3358 | 36.43-36.5 |
| 12.57675-12.57725 | 322-335.4 | 3600-4400 | ([2]) |
| 13.36-13.41 | | | |

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

## 7.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 7.5.Operating Condition of EUT

7.5.1.Setup the EUT and simulator as shown as Section 7.1.

7.5.2.Turn on the power of all equipment.

7.5.3.Let the EUT work in TX modes measure it. The transmit frequency is 915MHz.

## 7.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9 kHz in below 30MHz. and set at 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9 kHz to 10GHz is checked.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.
The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:
Result = Reading + Corrected Factor
Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier GainThe Field Strength of Radiation Emission Measurement Results

**PASS.**

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

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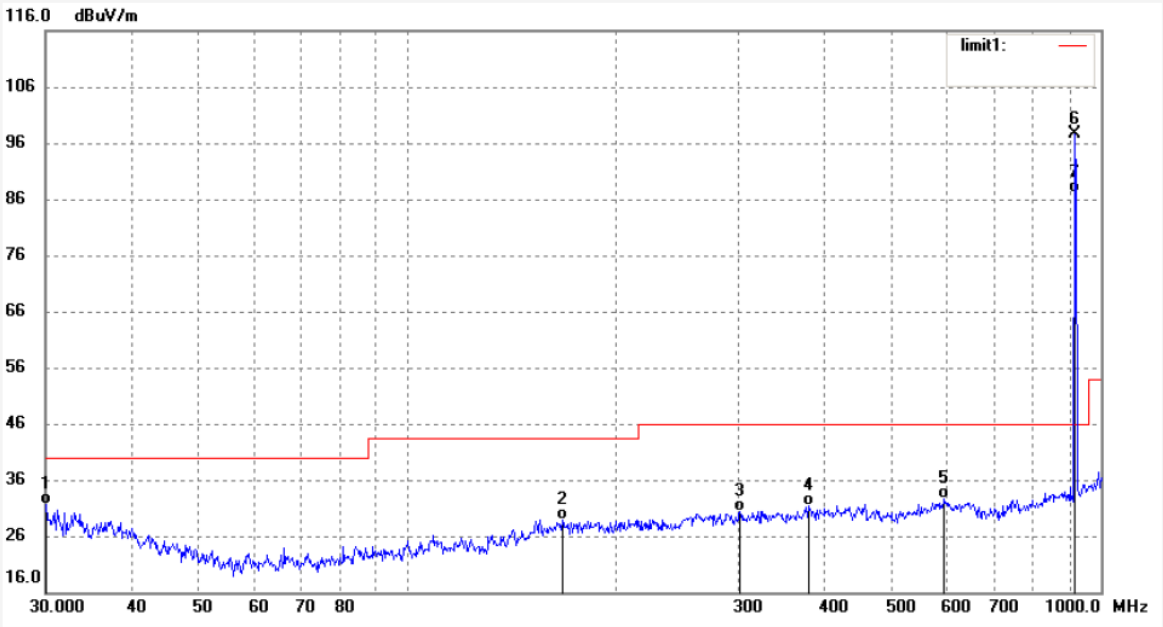
Job No.: DING #3605
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 55 %
EUT: KP-20 Security keypad
Mode: TX 915MHz
Model: KP-20
Manufacturer: CHUANGO

Polarization: Horizontal
Power Source: DC 3V
Date: 17/05/18/
Time: 10/24/54
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170756




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.1051 | 46.29 | -14.73 | 31.56 | 40.00 | -8.44 | QP | | | |
| 2 | 167.2248 | 49.55 | -20.59 | 28.96 | 43.50 | -14.54 | QP | | | |
| 3 | 301.7572 | 46.04 | -15.67 | 30.37 | 46.00 | -15.63 | QP | | | |
| 4 | 379.1779 | 44.55 | -13.24 | 31.31 | 46.00 | -14.69 | QP | | | |
| 5 | 594.5143 | 41.17 | -8.54 | 32.63 | 46.00 | -13.37 | QP | | | |
| 6 | 915.0076 | 99.64 | -2.02 | 97.62 | 114.00 | -16.38 | peak | | | |
| 7 | 915.0076 | 89.27 | -2.02 | 87.25 | 94.00 | -6.75 | AVG | | | |

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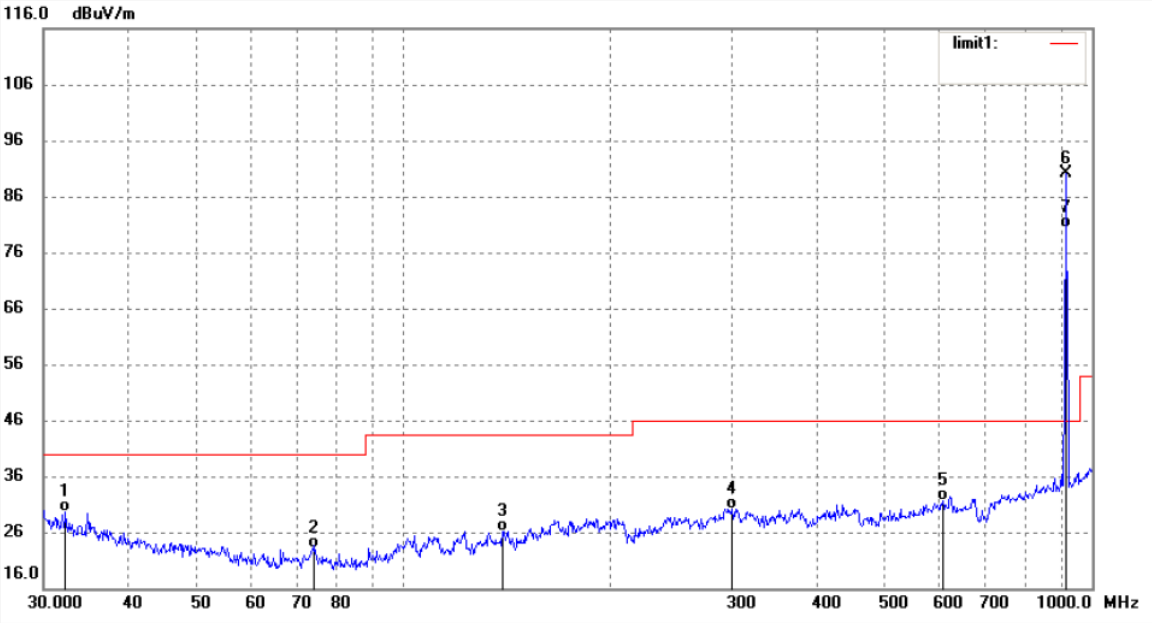
Fax:+86-0755-26503396

| | |
|---|---|
| Job No.: DING #3606 | Polarization: Vertical |
| Standard: FCC Class B 3M Radiated | Power Source: DC 3V |
| Test item: Radiation Test | Date: 17/05/18/ |
| Temp.( C)/Hum.(%) 25 C / 55 % | Time: 10/25/23 |
| EUT: KP-20 Security keypad | Engineer Signature: DING |
| Mode: TX 915MHz | Distance: 3m |
| Model: KP-20 | |
| Manufacturer: CHUANGO | |

Note: Report NO.:ATE20170756




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 32.2972 | 44.89 | -15.28 | 29.61 | 40.00 | -10.39 | QP | | | |
| 2 | 73.7496 | 45.37 | -22.25 | 23.12 | 40.00 | -16.88 | QP | | | |
| 3 | 139.3006 | 48.43 | -22.30 | 26.13 | 43.50 | -17.37 | QP | | | |
| 4 | 300.6988 | 45.92 | -15.70 | 30.22 | 46.00 | -15.78 | QP | | | |
| 5 | 607.1806 | 39.89 | -8.23 | 31.66 | 46.00 | -14.34 | QP | | | |
| 6 | 915.0076 | 92.09 | -2.02 | 90.07 | 114.00 | -23.93 | peak | | | |
| 7 | 915.0076 | 82.36 | -2.02 | 80.34 | 94.00 | -13.66 | AVG | | | |

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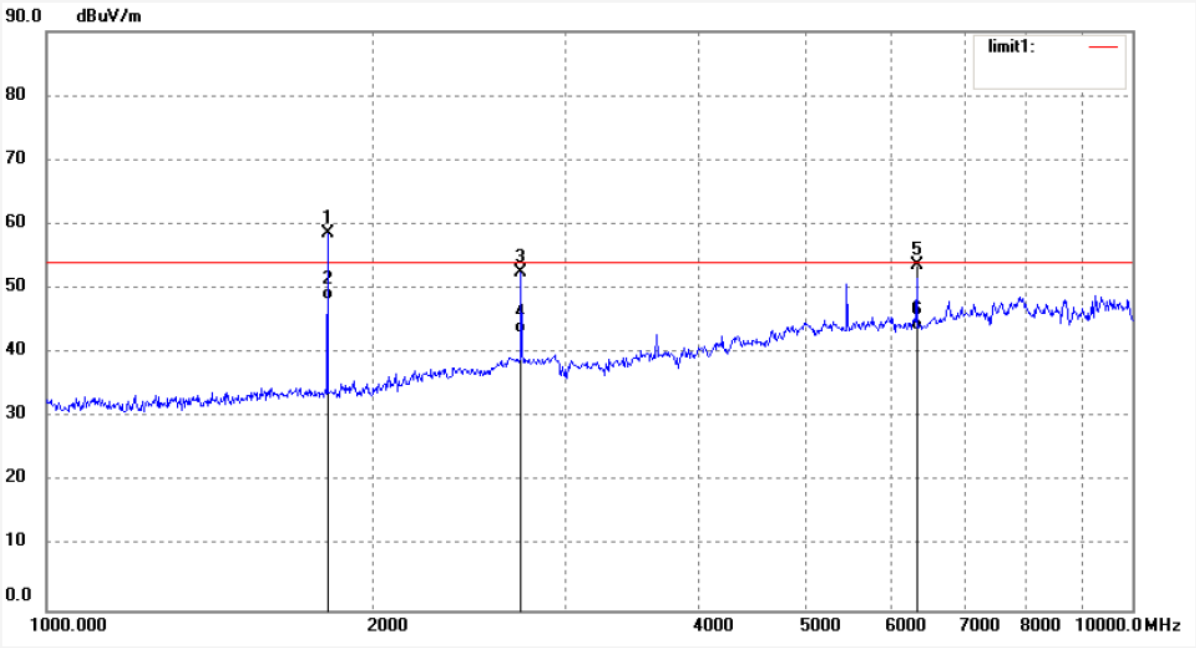
Job No.: DING #3604
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 55 %
EUT: KP-20 Security keypad
Mode: TX 915MHz
Model: KP-20
Manufacturer: CHUANGO

Polarization: Horizontal
Power Source: DC 3V
Date: 17/05/18/
Time: 10/21/17
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170756




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1814.728 | 67.35 | -8.82 | 58.53 | 74.00 | -15.47 | peak | | | |
| 2 | 1814.729 | 57.05 | -8.82 | 48.23 | 54.00 | -5.77 | AVG | | | |
| 3 | 2735.643 | 56.38 | -3.81 | 52.57 | 74.00 | -21.43 | peak | | | |
| 4 | 2735.643 | 46.97 | -3.81 | 43.16 | 54.00 | -10.84 | AVG | | | |
| 5 | 6333.026 | 46.18 | 7.40 | 53.58 | 74.00 | -20.42 | peak | | | |
| 6 | 6333.026 | 36.24 | 7.40 | 43.64 | 54.00 | -10.36 | AVG | | | |

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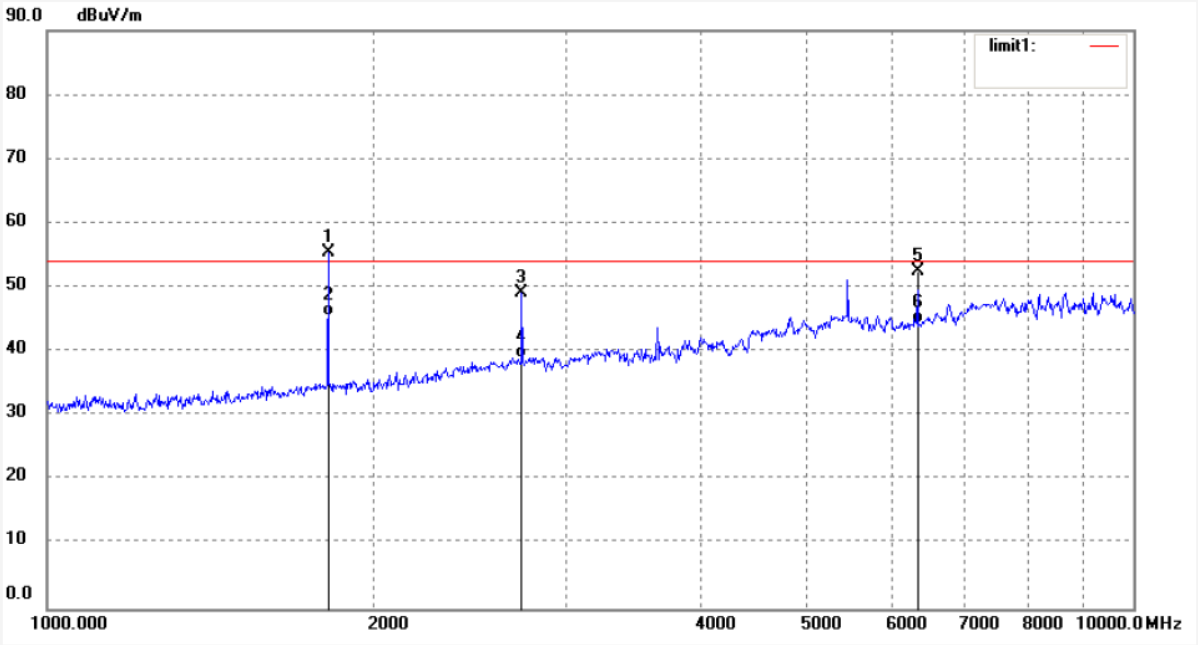
Job No.: DING #3603
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 55 %
EUT: KP-20 Security keypad
Mode: TX 915MHz
Model: KP-20
Manufacturer: CHUANGO

Polarization: Vertical
Power Source: DC 3V
Date: 17/05/18/
Time: 10/19/49
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170756




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Height (cm) | Degree (deg.) | Remark |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1814.728 | 64.35 | -8.82 | 55.53 | 74.00 | -18.47 | peak | | | |
| 2 | 1814.728 | 54.29 | -8.82 | 45.47 | 54.00 | -8.53 | AVG | | | |
| 3 | 2735.643 | 52.88 | -3.81 | 49.07 | 74.00 | -24.93 | peak | | | |
| 4 | 2735.643 | 42.79 | -3.81 | 38.98 | 54.00 | -15.02 | AVG | | | |
| 5 | 6333.026 | 45.18 | 7.40 | 52.58 | 74.00 | -21.42 | peak | | | |
| 6 | 6333.026 | 36.97 | 7.40 | 44.37 | 54.00 | -9.63 | AVG | | | |

# 8. ANTENNA REQUIREMENT

## 8.1.The Requirement

According to Section 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.

## 8.2.Antenna Construction

The module must contain a permanently attached antenna, or contain a unique antenna connector, and be marketed and operated only with specific antenna(s), per Sections 15.203, 15.204(b), 15.204(c), 15.212(a), 2.929(b); The Antenna gain of EUT is 2.0dBi. Therefore, the equipment complies with the antenna requirement.