FCC CERTIFICATION
On Behalf of
Chuango Security Technology Co., Ltd.

GSM Alarm System
Model No.: CG-G5

FCC ID: RJYG5

Prepared for	:	Chuango Security Technology Co., Ltd.
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, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396

Report Number	:	ATE20122857
Date of Test	:	January 12-16, 2013
Date of Report	:	January 16, 2012

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Description Page

Test Report Certification

Applicant	:	Chuango Security Technology Co., Ltd.
Manufacturer	:	Chuango Security Technology Co., Ltd.
EUT Description	:	GSM Alarm System

(A) MODEL NO.: CG-G5

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: DC 12V (Power by adapter) & DC 3.7V ("BL-5B" battery 2×)

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.209
ANSI C63.4: 2009

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 15.209 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 : January 12-16, 2013

Prepared by :

(Engineer)

Approved & Authorized Signer :

(Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	GSM Alarm System
Model Number	:	CG-G5
Power Supply	:	DC 12V (Power by adapter) & DC 3.7V (“BL-5B” battery 2×)
Adapter	:	M/N: FKS106HSC-1200500U Input: AC 100-240V; 50/60Hz Output: DC 12V/500mA
Operation Frequency	:	125KHz
GSM Modular	:	Single Modular 824.2-848.8MHz 1850.2-1909.8MHz ID: UDV-0912142009007
Receiver Frequency	:	315.8599MHz & 125KHz
Applicant	:	Chuango Security Technology Co., Ltd.
Address	:	6-17, Overseas Students Pioneer Park, No. 108, Jia Economic & Technological Development Zone, Fuzhou 350015, China
Manufacturer	:	Chuango Security Technology Co., Ltd.
Address	:	6-17, Overseas Students Pioneer Park, No. 108, Jia Economic & Technological Development Zone, Fuzhou 350015, China
Date of sample received	:	December 20, 2012
Date of Test	:	January 12-16, 2013

1.2.Special Accessory and Auxiliary Equipment

n.a.

1.3.Description of Test Facility

EMC Lab	:	Accredited by TUV Rheinland Shenzhen Listed by FCC The Registration Number is 752051 Listed by Industry Canada The Registration Number is 5077A-2 Accredited by China National Accreditation Committee for Laboratories The Certificate Registration Number is L3193
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 date	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 12, 2013	Jan. 11, 2014
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 12, 2013	Jan. 11, 2014
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 12, 2013	Jan. 11, 2014
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan. 12, 2013	Jan. 11, 2014
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 12, 2013	Jan. 11, 2014
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 12, 2013	Jan. 11, 2014
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 12, 2013	Jan. 11, 2014
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 12, 2013	Jan. 11, 2014
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 12, 2013	Jan. 11, 2014
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 12, 2013	Jan. 11, 2014

3. SUMMARY OF TEST RESULTS

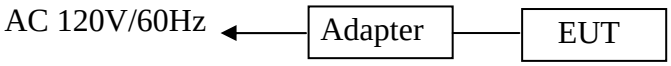
FCC Rules	Description of Test	Result
Section 15.207	Conducted Emission	Compliant
Section 15.209	Radiated Emission	Compliant
Section 15.203	Antenna Requirement	Compliant

Remark: “N/A” means “Not applicable”.

4. RADIATED EMISSION FOR FCC PART 15 SECTION 15.209

4.1.Block Diagram of Test Setup

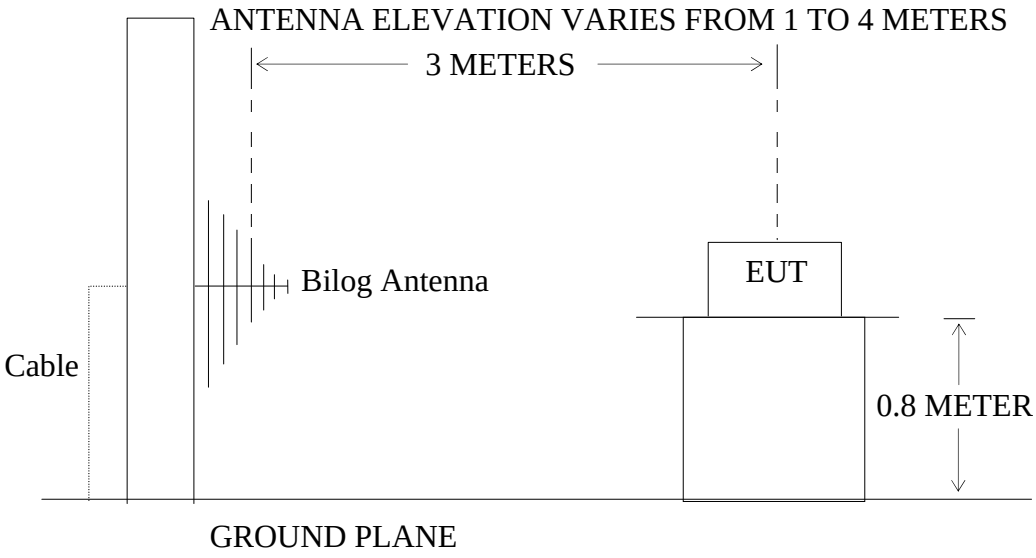
4.1.1.Block diagram of connection between the EUT and simulators



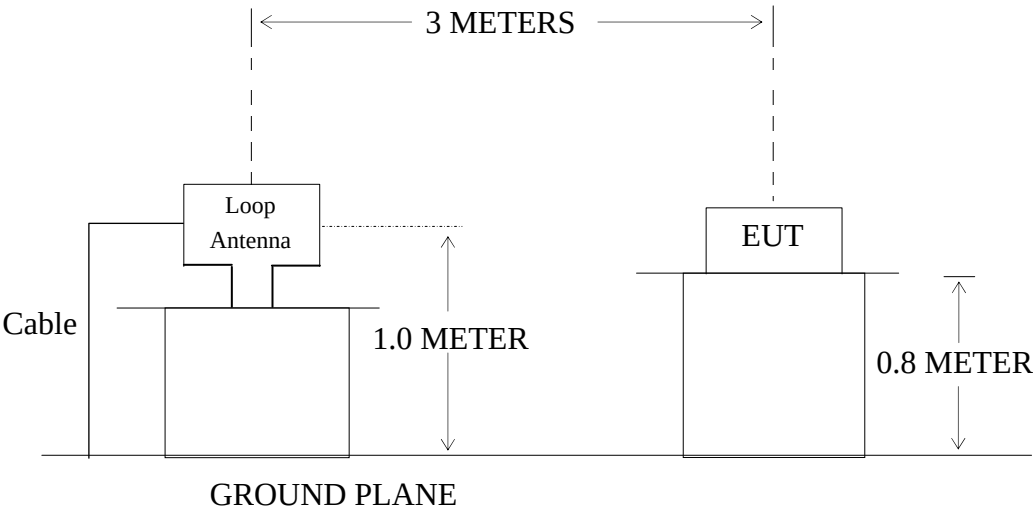
(EUT: GSM Alarm System)

4.1.2.Semi-Anechoic Chamber Test Setup Diagram

4.1.2.1. Above 30MHz



4.1.2.2. Below 30MHz



(EUT: GSM Alarm System)

4.2.The Field Strength of Radiation Emission Measurement Limits

Frequency (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

4.3.Configuration of EUT on Measurement

The following 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.

4.3.1. GSM Alarm System (EUT)

Model Number : CG-G5
Serial Number : N/A
Manufacturer : Chuango Security Technology Co., Ltd.

4.4.Operating Condition of EUT

4.4.1.Setup the EUT and simulator as shown as Section 4.1.

4.4.2.Turn on the power of all equipment.

4.4.3.Let the EUT work in TX modes and measure it.

4.5. Test Procedure

4.5.1. **Above 30MHz:** The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. 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 bilog 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 interface cables must be manipulated according to ANSI C 63.4: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 120kHz in 30-1000MHz.

The frequency range from 30MHz to 1000MHz is checked.

4.5.2. **Below 30MHz:** The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. 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. calibrated Loop antenna is used as receiving antenna. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C 63.4: 2009 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9kHz in 9kHz-30MHz.

The frequency range from 9kHz to 30MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz 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.

4.6.The Field Strength of Radiation Emission Measurement Results

PASS.

Date of Test:	January 15, 2013	Temperature:	25°C
EUT:	GSM Alarm System	Humidity:	50%
Model No.:	CG-G5	Test Engineer:	Pei
Test Mode:	TX		

Fundamental Radiated Emissions

Fundamental Frequency	125.0KHz
Final Result	77.9dBuV/m
Limit	105.7dBuV/m
Note: Measurement was performed with modulated signal with peak detector.	

Radiated Emissions

Date of Test:	January 15, 2013	Temperature:	25°C
EUT:	GSM Alarm System	Humidity:	50%
Model No.:	CG-G5	Test Engineer:	Pei
Test Mode:	TX		

Below 30MHz:

Polarization	Frequency (MHz)	Reading(dBμV/m) PK/AV	Factor Corr.(dB)	Result(dBμV/m) PK/AV	Limits(dBμV/m) PK/AV	Margin(dBμV/m) PK/AV
Horizontal	-	-	-	-	-	-
Vertical	-	-	-	-	-	-

For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency	Reading (dBμV/m) QP	Factor Corr. (dB)	Result (dBμV/m) QP	Limit (dBμV/m) QP	Margin (dB) QP	Polarization
80.5207	3.65	12.57	16.22	40.00	-23.78	Vertical
135.9163	5.52	12.46	17.98	43.50	-25.52	Vertical
358.4497	8.18	18.51	26.99	46.00	-19.31	Vertical
164.3129	6.11	12.15	18.26	43.50	-25.24	Horizontal
226.2202	5.17	14.95	20.12	46.00	-25.88	Horizontal
275.4124	5.03	16.19	21.22	46.00	-24.78	Horizontal

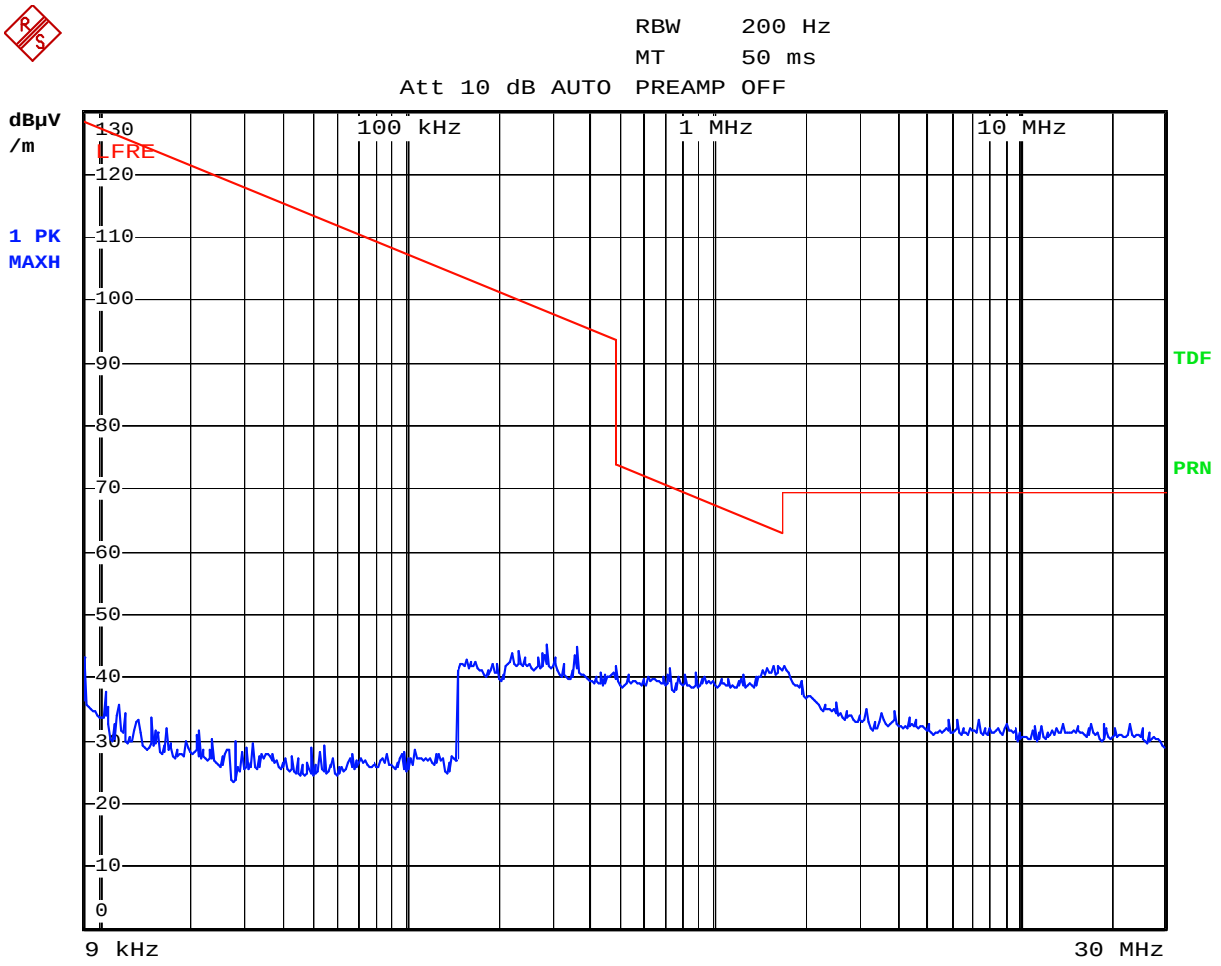
Note:

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:

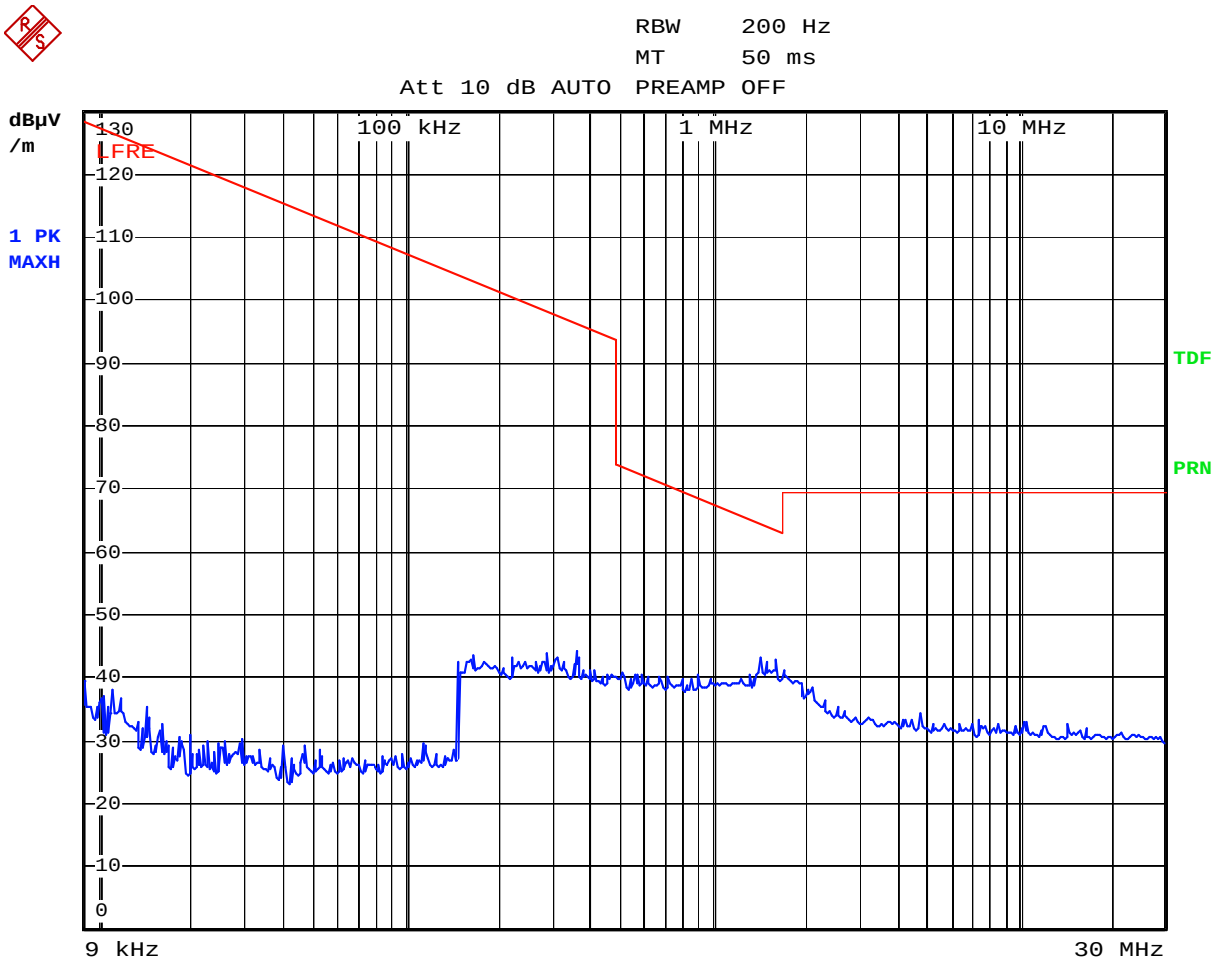
   Result = Reading + Corrected Factor

   Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain
3. The spectral diagrams in appendix I display the measurement of peak values.
4. Between the antenna and Amplifier have a Highpass Filter (Restricted bands of operation is 120.0-135.0 KHz)

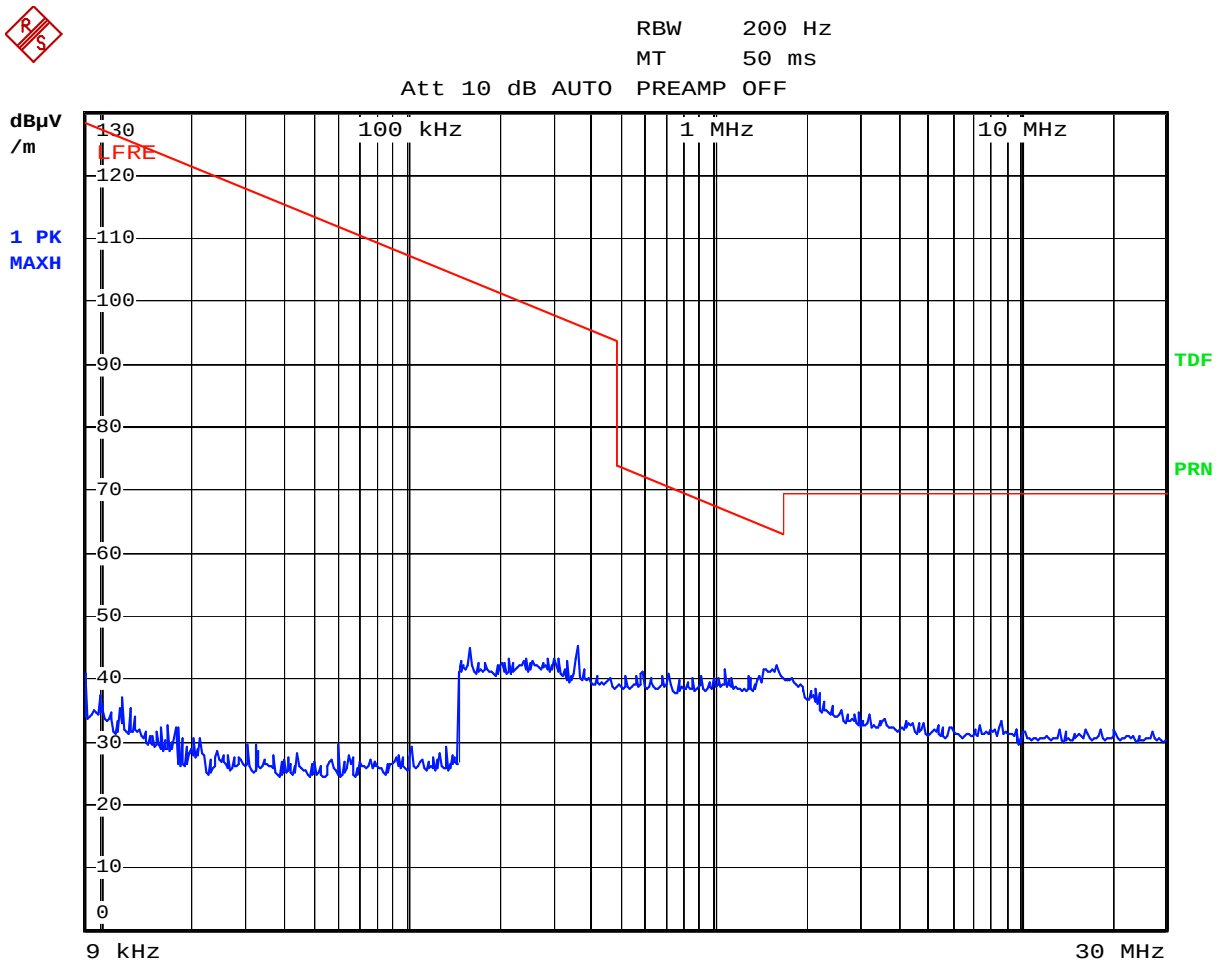
X Axis


RBW 200 Hz
MT 50 ms
Att 10 dB AUTO PREAMP OFF
dBµV
/m
1 PK
MAXH
130
120
110
100
90
80
70
60
50
40
30
20
10
0
100 kHz
1 MHz
10 MHz
LFRE
TDF
PRN
9 kHz
30 MHz

Y Axis


RBW 200 Hz
MT 50 ms
Att 10 dB AUTO PREAMP OFF
dBµV
/m
1 PK
MAXH
130
120
110
100
90
80
70
60
50
40
30
20
10
0
100 kHz
1 MHz
10 MHz
LFRE
TDF
PRN
9 kHz
30 MHz

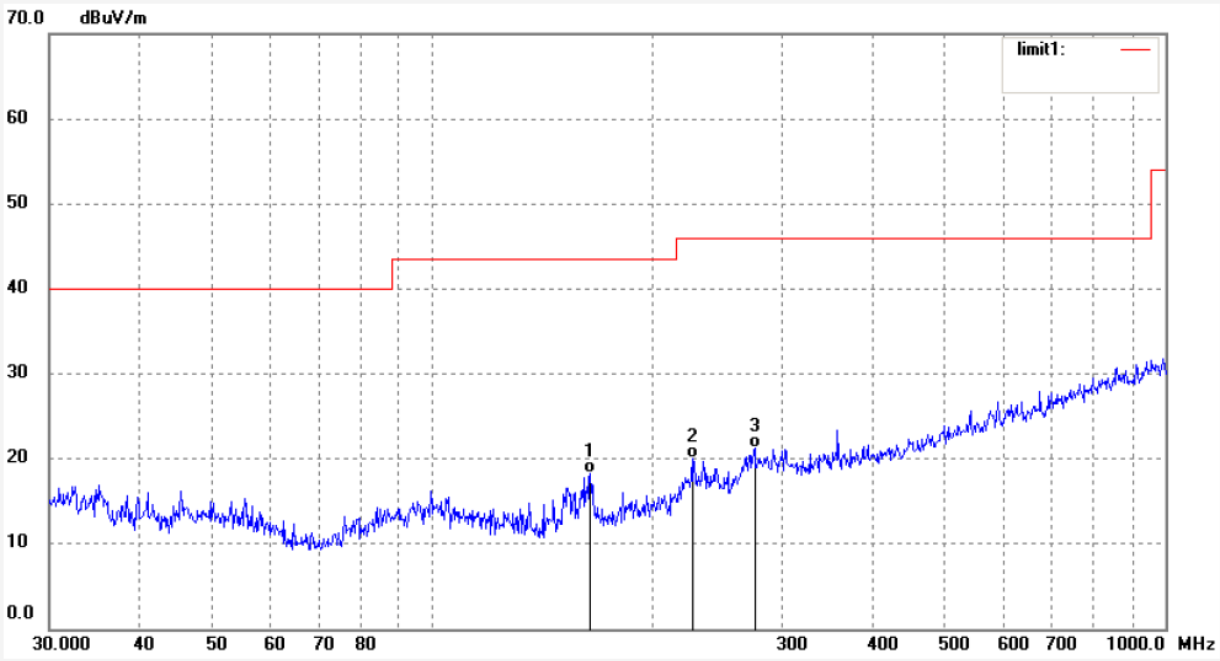
Z Axis


RBW 200 Hz
MT 50 ms
Att 10 dB AUTO PREAMP OFF
dBµV
/m
1 PK
MAXH
1FRE
100 kHz
1 MHz
10 MHz
TDF
PRN
130
120
110
100
90
80
70
60
50
40
30
20
10
0
9 kHz
30 MHz

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #4264	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2013/01/15
Temp.(C)/Hum.(%) 26 C / 55 %	Time: 10:56:24
EUT: GSM Alarm System	Engineer Signature: Bob
Mode: Tx	Distance: 3m
Model: CG-G5	
Manufacturer: Chuango Security Technology Co., Ltd.	

Note: Report NO.:ATE20122857



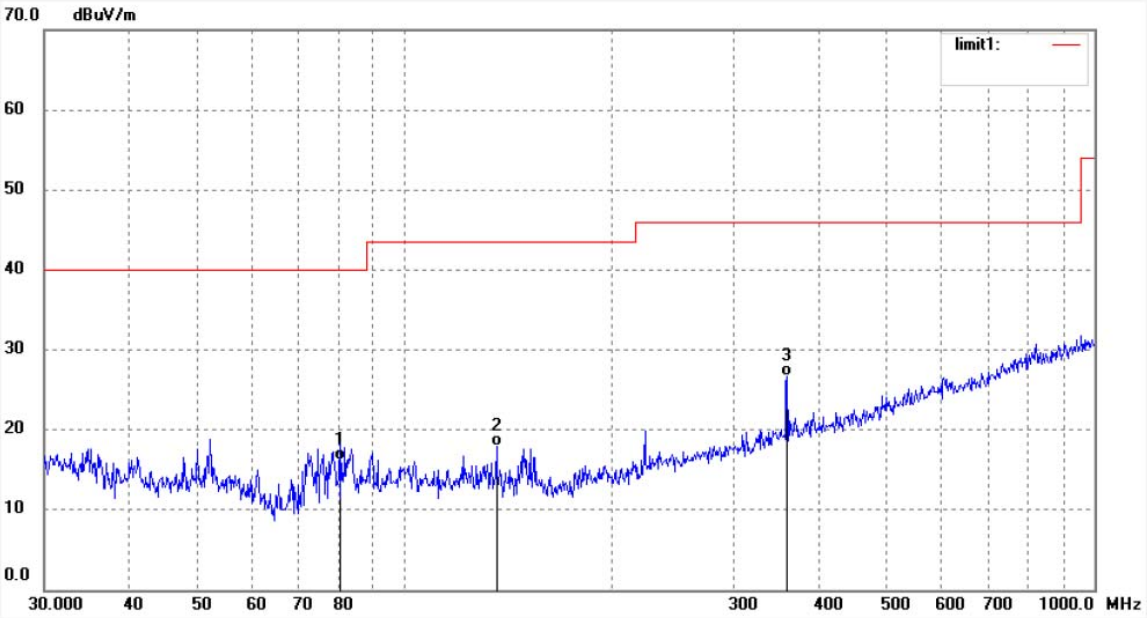
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	164.3129	6.11	12.15	18.26	43.50	-25.24	QP			
2	226.2202	5.17	14.95	20.12	46.00	-25.88	QP			
3	275.4124	5.03	16.19	21.22	46.00	-24.78	QP			

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: Bob #4263
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 26 C / 55 %
EUT: GSM Alarm System
Mode: Tx
Model: CG-G5
Manufacturer: Chuango Security Technology Co., Ltd.

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2013/01/15
Time: 10:54:49
Engineer Signature: Bob
Distance: 3m

Note: Report NO.:ATE20122857

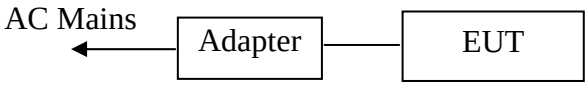


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	80.5207	3.65	12.57	16.22	40.00	-23.78	QP			
2	135.9163	5.52	12.46	17.98	43.50	-25.52	QP			
3	358.4497	8.18	18.51	26.69	46.00	-19.31	QP			

5. AC POWER LINE CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.207(A)

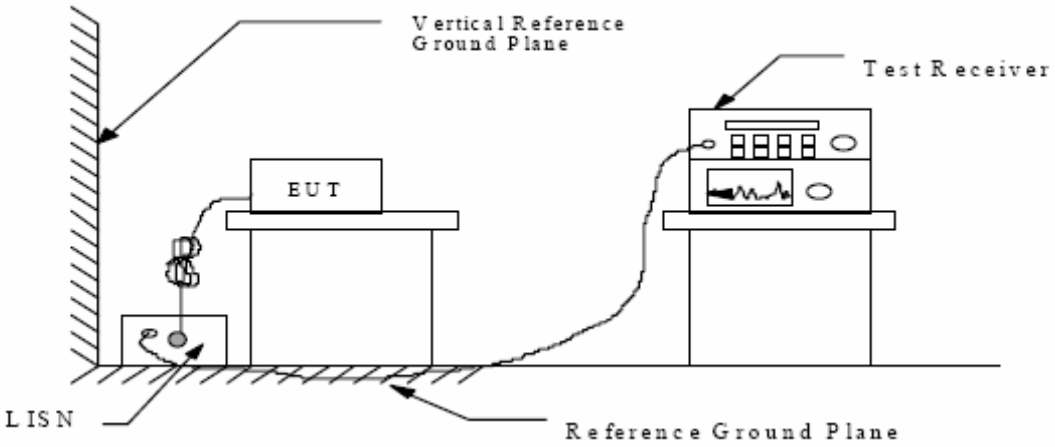
5.1.Block Diagram of Test Setup

5.1.1.Block diagram of connection between the EUT and simulators



(EUT: GSM Alarm System)

5.1.2.Shielding Room Test Setup Diagram



(EUT: GSM Alarm System)

5.2.The Emission Limit

5.2.1.Conducted Emission Measurement Limits According to Section 15.207(a)

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0

* Decreases with the logarithm of the frequency.

5.3. Configuration of EUT on Measurement

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

5.3.1. GSM Alarm System (EUT)

Model Number	**:**	CG-G5
Serial Number	**:**	N/A
Manufacturer	**:**	Chuango Security Technology Co., Ltd.

5.4. Operating Condition of EUT

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

5.4.2. Let the EUT work in Tx mode measure it.

5.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2009 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

5.6. Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Date of Test:	January 15, 2013	Temperature:	25°C
EUT:	GSM Alarm System	Humidity:	50%
Model No.:	CG-G5	Power Supply:	AC 120/60Hz
Test Mode:	Tx	Test Engineer:	Pei

Frequency (MHz)	Result (dBμV)	Limit (dBμV)	Margin (dB)	Detector	Line
0.176674	28.20	65	-36.4	QP	Live
0.196781	37.70	64	-26.0	QP	
0.260222	36.80	61	-24.6	QP	
0.200748	23.90	54	-29.7	AV	
0.268666	25.60	51	-25.6	AV	
0.320256	19.60	50	-30.1	AV	
0.257124	35.70	62	-25.8	QP	Neutral
0.353867	26.30	59	-32.6	QP	
0.734698	23.10	56	-32.9	QP	
0.257124	15.60	52	-35.9	AV	

Emissions attenuated more than 20 dB below the permissible value are not reported.
The spectral diagrams are attached as below.

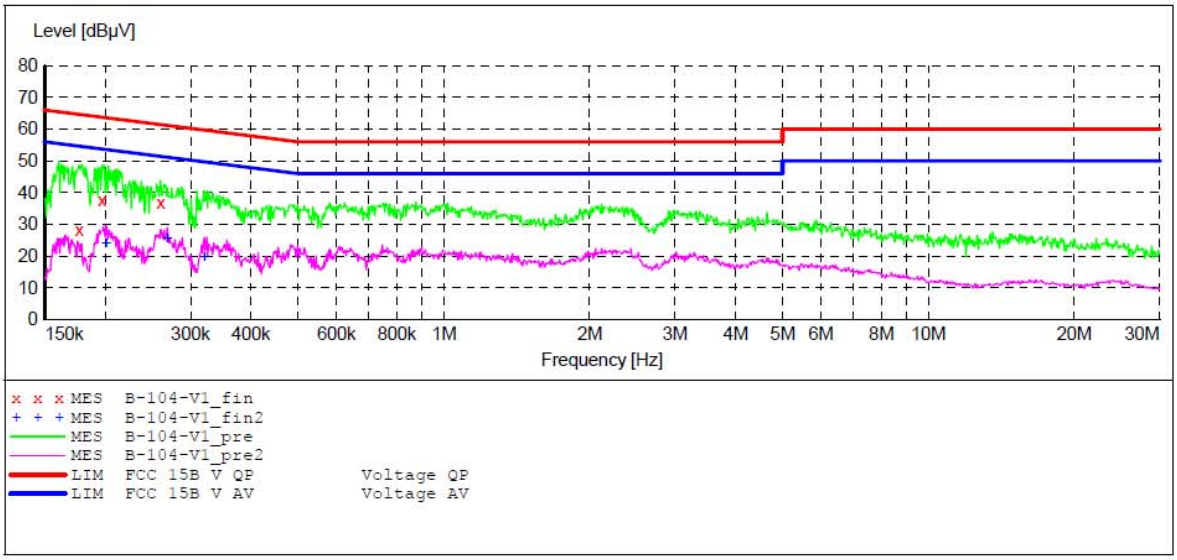
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15

```
EUT:                 GSM Alarm System   M/N:CG-G5
Manufacturer:        Chuango Security Technology Co., Ltd.
Operating Condition: Tx
Test Site:           1#Shielding Room
Operator:            Bob
Test Specification:  L  120V/60Hz
Comment:             Report No.:ATE20122857
Start of Test:       1/15/2013 / 4:22:28PM
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:            _SUB_STD_VTERM2 1.70
  Start      Stop       Step      Detector  Meas.     IF      Transducer
  Frequency  Frequency  Width               Time      Bandw.
  150.0 kHz  30.0 MHz   0.8 %     QuasiPeak 1.0 s     9 kHz   NSLK8126 2008
                                  Average
```



MEASUREMENT RESULT: "B-104-V1_fin"

```
1/15/2013  4:27PM
   Frequency     Level  Transd  Limit  Margin  Detector  Line   PE
         MHz      dBµV      dB   dBµV      dB

    0.176674     28.20    11.2     65    36.4  QP        L1     GND
    0.196781     37.70    11.2     64    26.0  QP        L1     GND
    0.260222     36.80    11.2     61    24.6  QP        L1     GND
```

MEASUREMENT RESULT: "B-104-V1_fin2"

```
1/15/2013  4:27PM
   Frequency     Level  Transd  Limit  Margin  Detector  Line   PE
         MHz      dBµV      dB   dBµV      dB

    0.200748     23.90    11.2     54    29.7  AV        L1     GND
    0.268666     25.60    11.2     51    25.6  AV        L1     GND
    0.320256     19.60    11.2     50    30.1  AV        L1     GND
```

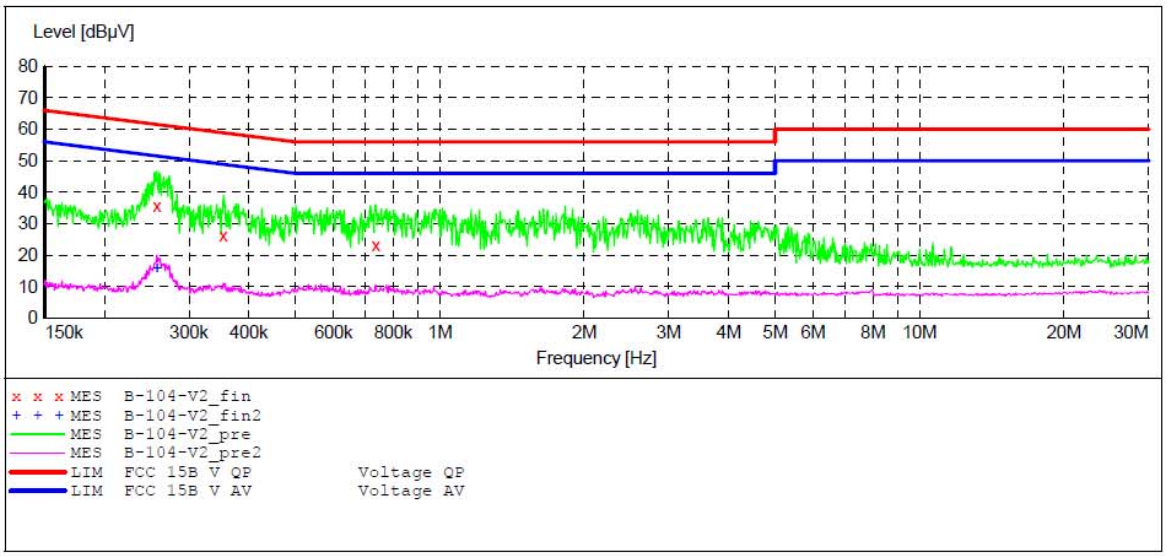
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15

```
EUT:                  GSM Alarm System   M/N:CG-G5
Manufacturer:         Chuango Security Technology Co., Ltd.
Operating Condition:  Tx
Test Site:            1#Shielding Room
Operator:             Bob
Test Specification:   N  120V/60Hz
Comment:              Report No.:ATE20122857
Start of Test:        1/15/2013 / 4:33:31PM
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:            _SUB_STD_VTERM2 1.70
  Start      Stop       Step      Detector  Meas.     IF       Transducer
  Frequency  Frequency  Width               Time      Bandw.
  150.0 kHz  30.0 MHz   0.8 %     QuasiPeak 1.0 s     9 kHz    NSLK8126 2008
                                  Average
```



MEASUREMENT RESULT: "B-104-V2_fin"

1/15/2013 4:34PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.257124	35.70	11.2	62	25.8	QP	N	GND
0.353867	26.30	11.2	59	32.6	QP	N	GND
0.734698	23.10	11.3	56	32.9	QP	N	GND

MEASUREMENT RESULT: "B-104-V2_fin2"

1/15/2013 4:34PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.257124	15.60	11.2	52	35.9	AV	N	GND

6. ANTENNA REQUIREMENT

6.1. 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.

6.2. Antenna Construction

Device is equipped with unique antenna, which isn't displaced by other antenna. Therefore, the equipment complies with the antenna requirement of Section 15.203.