APPLICATION CERTIFICATION FCC Part 15B
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
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Report Number	:	ATE20122853
Date of Test	:	December 20-29, 2012
Date of Report	:	December 30, 2012

TABLE OF CONTENTS

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 B
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 B 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 : December 20-29, 2012

Prepared by :

(Apple Lv, Engineer)

Approved & Authorized Signer :

(Sean Liu, 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
Receiver Frequency	:	315.8599MHz & 125KHz
GSM Modular	:	Single Modular 824.2-848.8MHz 1850.2-1909.8MHz ID: UDV-0912142009007
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	:	December 20-29, 2012

1.2.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

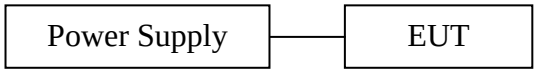
Kind of equipment	Manufacturer	Type	S/N	Calibrated date	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 8, 2012	Jan. 7, 2013
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 8, 2012	Jan. 7, 2013
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 8, 2012	Jan. 7, 2013
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan. 8, 2012	Jan. 7, 2013
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 8, 2012	Jan. 7, 2013
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 8, 2012	Jan. 7, 2013
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 8, 2012	Jan. 7, 2013
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 8, 2012	Jan. 7, 2013
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 8, 2012	Jan. 7, 2013
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 8, 2012	Jan. 7, 2013

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The modes are used: Rx & Charging
(Note: All modes were tested but only the worst mode was recorded in the report.)

3.2.Configuration and peripherals



(EUT: GSM Alarm System)

4. TEST PROCEDURES AND RESULTS

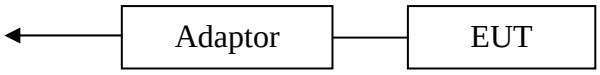
FCC Rules	**Description of Test**	**Result**
Section 15.107	Conducted Emission Test	Compliant
Section 15.109	Radiated Emission Test	Compliant

5. CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.107(A)

5.1.Block Diagram of Test Setup

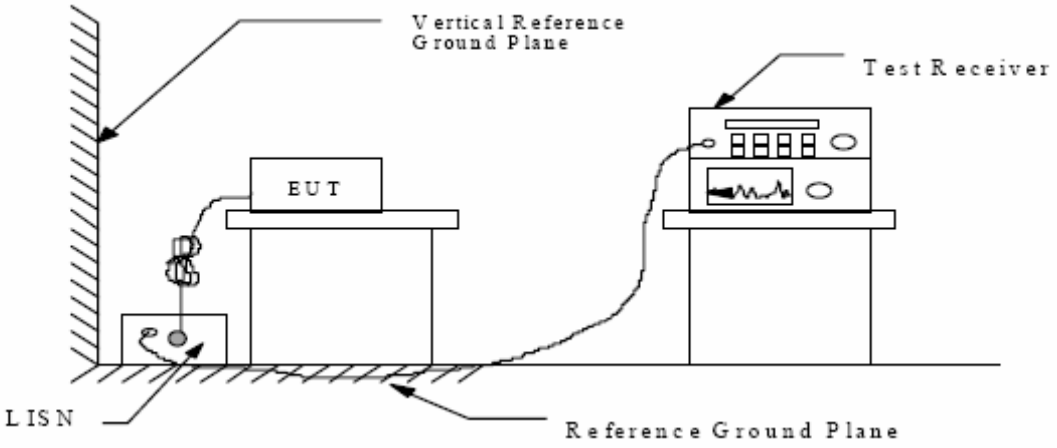
5.1.1.Block diagram of connection between the EUT and simulators

AC 120V/60Hz



(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 15.107(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.Turn on the power of all equipment.

5.4.3.Let the EUT work in modes (Rx & Charging) and 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:	December 26, 2012	Temperature:	25°C
EUT:	GSM Alarm System	Humidity:	50%
Model No.:	CG-G5	Power Supply:	AC 120V/60Hz
Test Mode:	Rx & Charging	Test Engineer:	PEI

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.160218	41.80	11.9	66	23.7	QP	L1	GND
0.369549	42.50	12.0	59	16.0	QP	L1	GND

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.160218	25.60	11.9	56	29.9	AV	L1	GND
0.369549	29.70	12.0	49	18.8	AV	L1	GND

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.369549	48.00	12.0	59	10.5	QP	N	GND
1.054384	34.40	11.8	56	21.6	QP	N	GND

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.366243	36.00	12.0	49	12.6	AV	N	GND
1.038709	23.70	11.8	46	22.3	AV	N	GND

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

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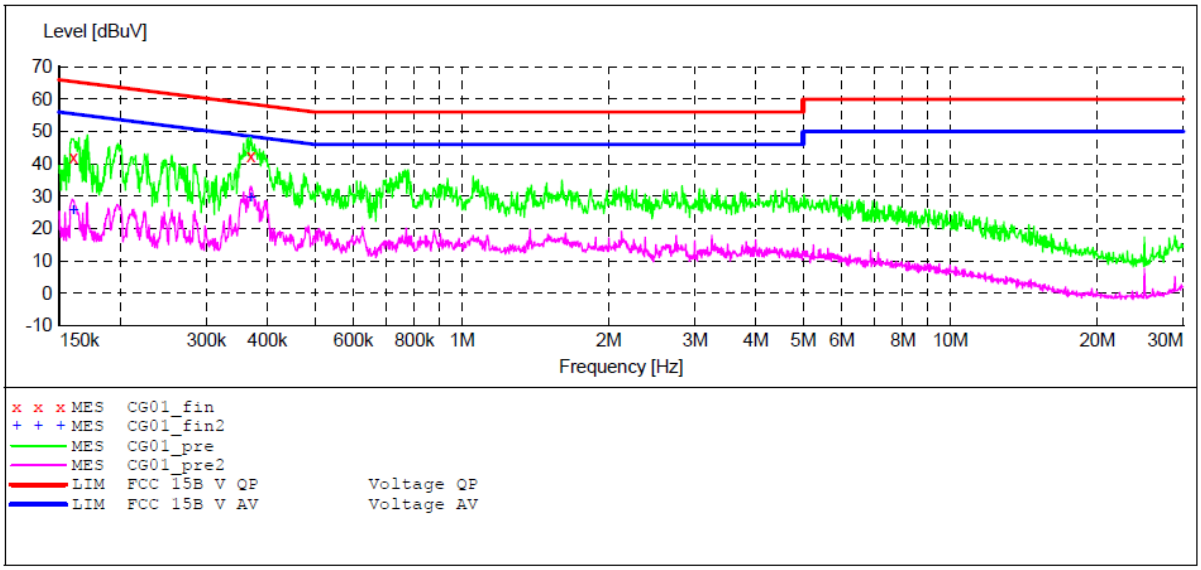
CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                    GSM Alarm System   M/N:CG-G5
Manufacturer:           Chuango
Operating Condition:    Rx & Charging
Test Site:              2#Shielding Room
Operator:               Star
Test Specification:     L   120V/60Hz
Comment:                Report No.:ATE20122853
Start of Test:          2012-12-26 / 14:27:49
```

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

Short Description: _SUB_STD_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	0.4 %	QuasiPeak Average	1.0 s	9 kHz	LISN(ESH3-Z5)



MEASUREMENT RESULT: "CG01_fin"

2012-12-26 14:29

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.160218	41.80	11.9	66	23.7	QP	L1	GND
0.369549	42.50	12.0	59	16.0	QP	L1	GND

MEASUREMENT RESULT: "CG01_fin2"

2012-12-26 14:29

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.160218	25.60	11.9	56	29.9	AV	L1	GND
0.369549	29.70	12.0	49	18.8	AV	L1	GND

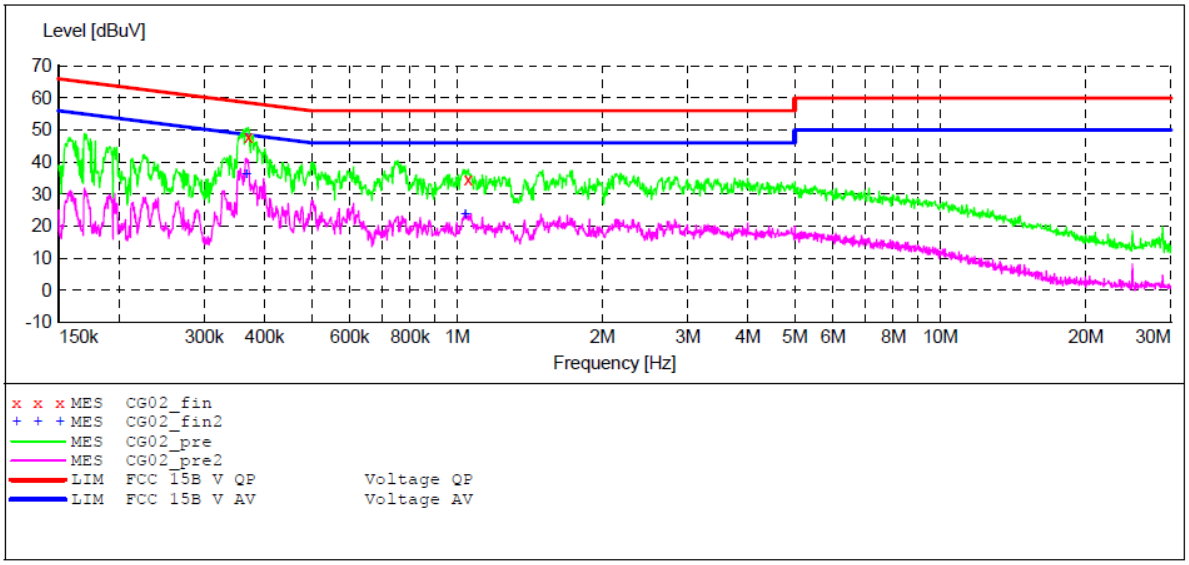
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                  GSM Alarm System   M/N:CG-G5
Manufacturer:         Chuango
Operating Condition:  Rx & Charging
Test Site:            2#Shielding Room
Operator:             Star
Test Specification:   N   120V/60Hz
Comment:              Report No.:ATE20122853
Start of Test:        2012-12-26 / 14:30:17
```

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   0.4 %     QuasiPeak 1.0 s     9 kHz    LISN(ESH3-Z5)
                                  Average
```



MEASUREMENT RESULT: "CG02_fin"

2012-12-26 14:31

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.369549	48.00	12.0	59	10.5	QP	N	GND
1.054384	34.40	11.8	56	21.6	QP	N	GND

MEASUREMENT RESULT: "CG02_fin2"

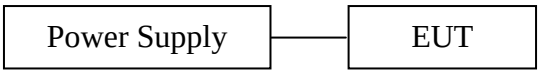
2012-12-26 14:31

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.366243	36.00	12.0	49	12.6	AV	N	GND
1.038709	23.70	11.8	46	22.3	AV	N	GND

6. RADIATED EMISSION FOR FCC PART 15 SECTION 15.109(A)

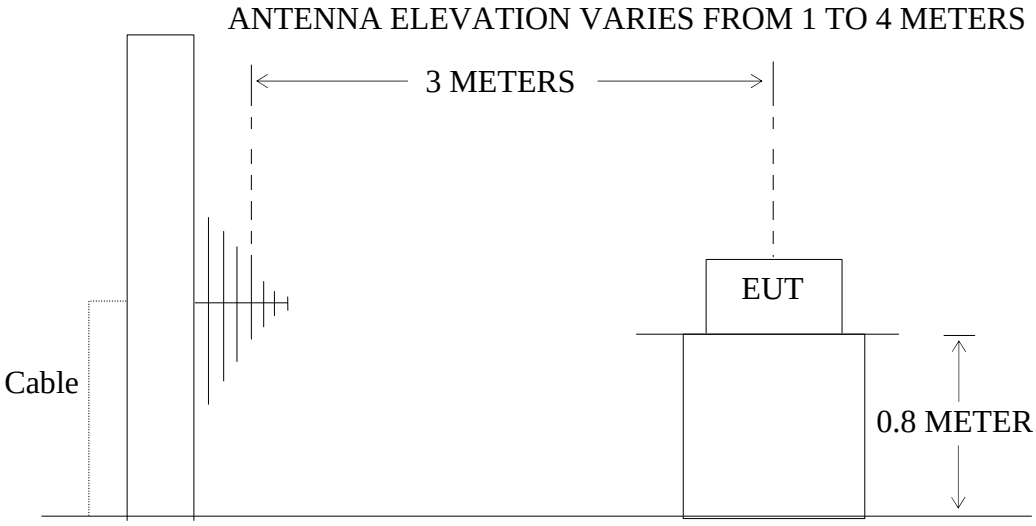
6.1.Block Diagram of Test Setup

6.1.1.Block diagram of connection between the EUT and simulators



(EUT: GSM Alarm System)

6.1.2.Semi-Anechoic Chamber Test Setup Diagram



(EUT: GSM Alarm System)

6.2.The Emission Limit For Section 15.109 (a) & 15.209

6.2.1.Radiation Emission Measurement Limits According to Section 15.109 (a) & 15.209.

Frequency (MHz)	Limit		
	Field Strength (microvolts/meter)	Measurement Distance (meters)	
0.009 – 0.490	2400/F(kHz)	300	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.
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	

6.3.EUT Configuration on Measurement

The following 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.

6.3.1.GSM Alarm System (EUT)

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

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 RX & Charging mode measure it.

6.5. Test Procedure

6.5.1. **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 5000MHz is checked.

6.5.2. **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.

6.6. The Emission Measurement Result

PASS.

Date of Test:	December 24, 2012	Temperature:	25°C
EUT:	GSM Alarm System	Humidity:	50%
Model No.:	CG-G5	Power Supply:	AC 120V/60Hz
Test Mode:	Rx & Charging	Test Engineer:	PEI

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 (MHz)	Reading (dBμV/m)	Factor(dB) Corr.	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
	QP		QP	QP	QP	
36.2678	9.00	15.40	24.40	40.00	-15.60	Vertical
141.2721	12.57	11.48	24.05	43.50	-19.45	
170.7878	12.69	12.92	25.61	43.50	-17.89	
141.2720	14.22	11.48	25.70	43.50	-17.80	Horizontal
164.8910	14.36	12.16	26.52	43.50	-16.98	
350.9721	11.53	18.39	29.92	46.00	-16.08	

Above 1GHz:

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	-	-	-	-	-	-

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

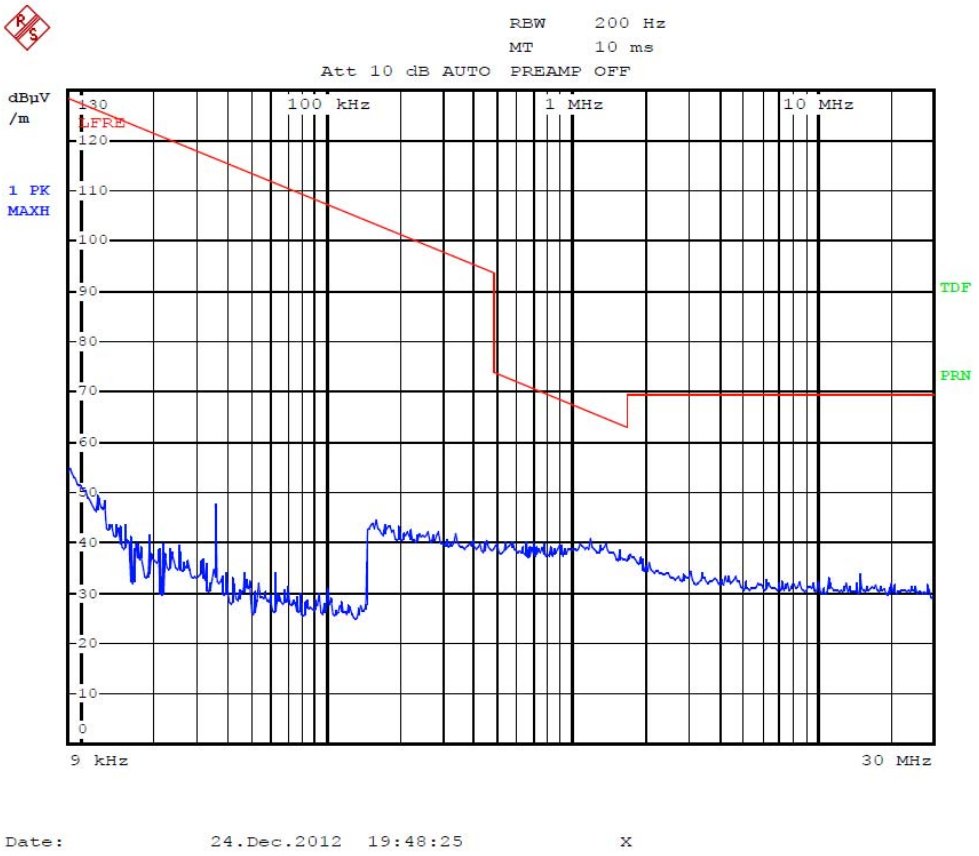
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

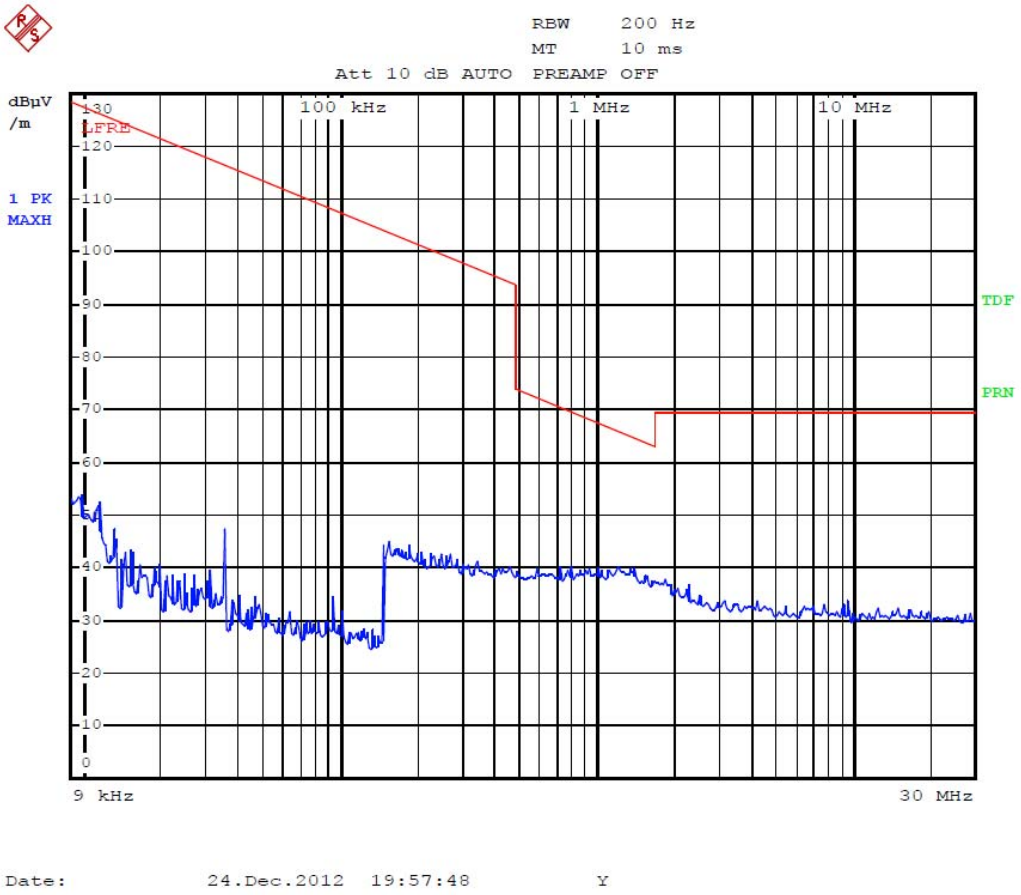
Where Corrected Factor = Antenna Factor + Cable Loss + High Pass Filter Loss – Amplifier Gain

3. The spectral diagrams are attached as below display the measurement of peak values.

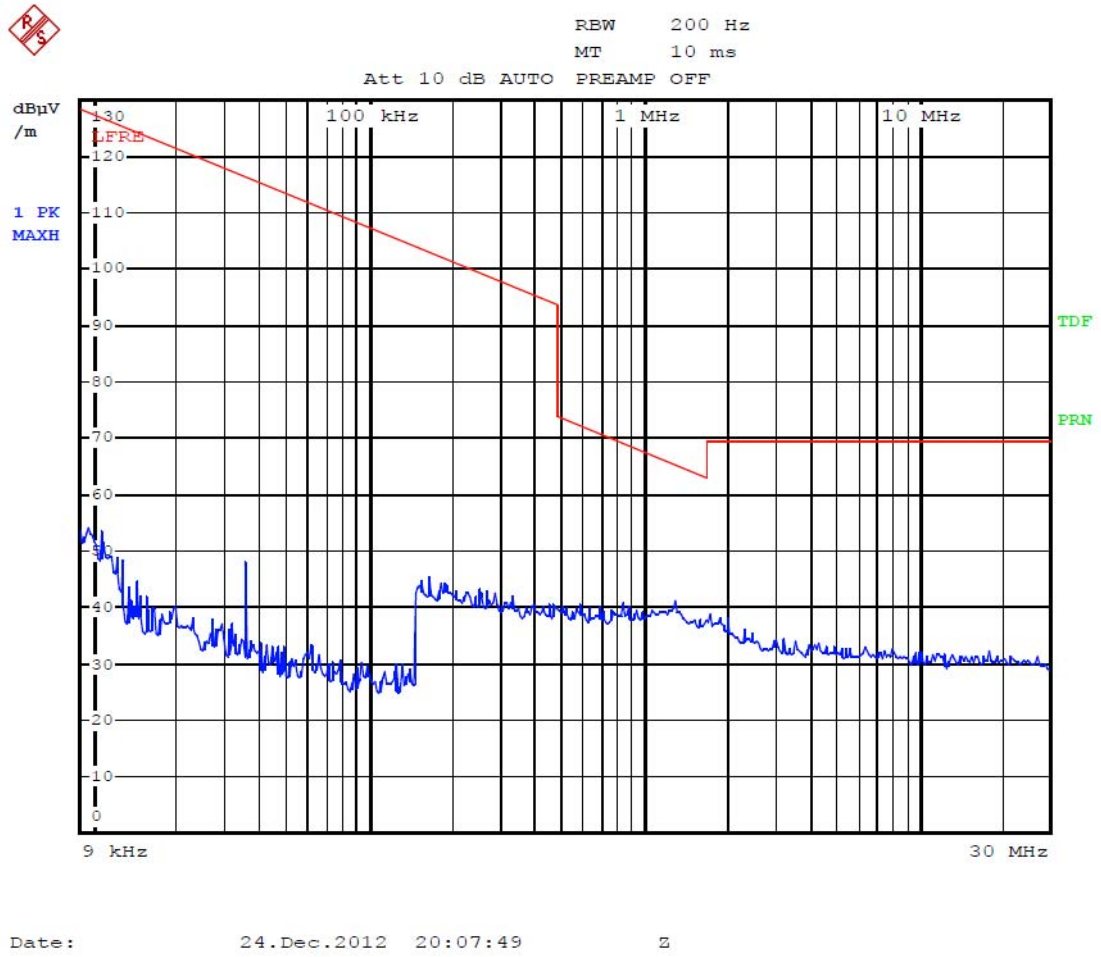
X Axis


RBW 200 Hz
MT 10 ms
Att 10 dB AUTO PREAMP OFF
dBµV /m
1 PK MAXH
130
LFRE
120
110
100
90
80
70
60
50
40
30
20
10
0
100 kHz
1 MHz
10 MHz
TDF
PRN
9 kHz
30 MHz
Date: 24.Dec.2012 19:48:25
X

Y Axis


RBW 200 Hz
MT 10 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
TDF
PRN
9 kHz
30 MHz
Date: 24.Dec.2012 19:57:48
Y

Z Axis


RBW 200 Hz
MT 10 ms
Att 10 dB AUTO PREAMP OFF
dBµV /m
1 PK MAXH
130
LFRE
120
110
100
90
80
70
60
50
40
30
20
10
0
100 kHz
1 MHz
10 MHz
TDF
PRN
9 kHz
30 MHz
Date: 24.Dec.2012 20:07:49
Z

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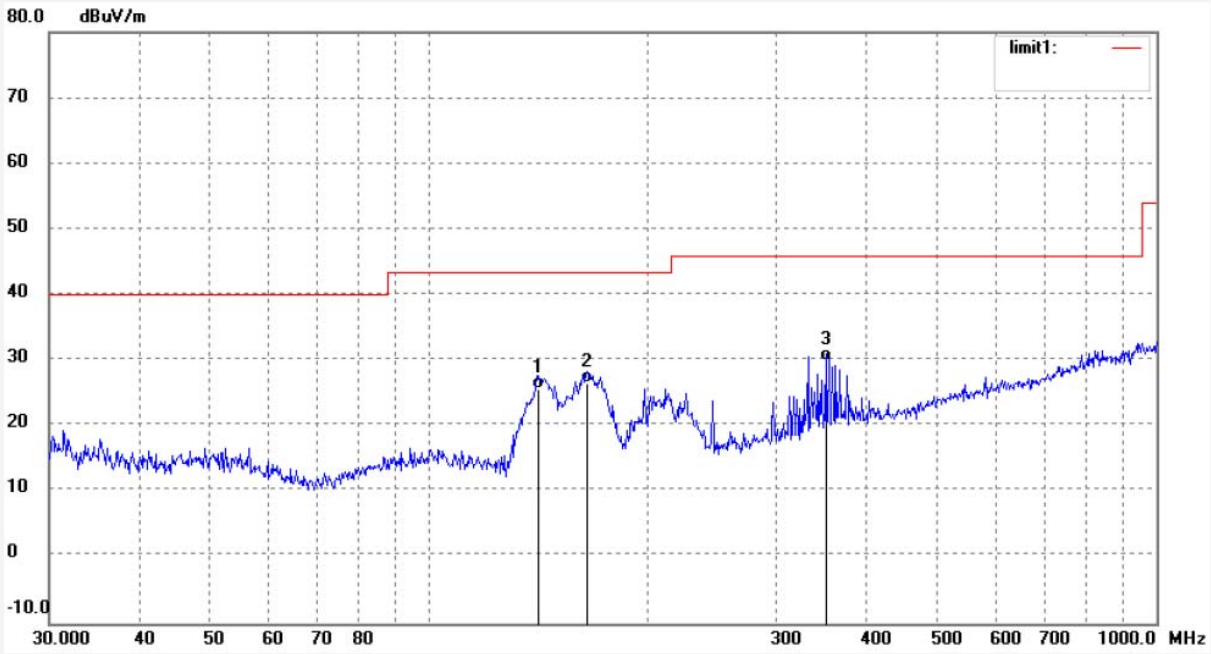
Job No.: star #3483	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 12/12/24/
Temp.(C)/Hum.(%) 26 C / 60 %	Time: 9/12/27
EUT: GSM Alarm System	Engineer Signature:
Mode: RX & Charging	Distance: 3m
Model: CG-G5	
Manufacturer: Chuango	

Note: Report No.:ATE20122853



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	141.2720	14.22	11.48	25.70	43.50	-17.80	QP			
2	164.8910	14.36	12.16	26.52	43.50	-16.98	QP			
3	350.9721	11.53	18.39	29.92	46.00	-16.08	QP			

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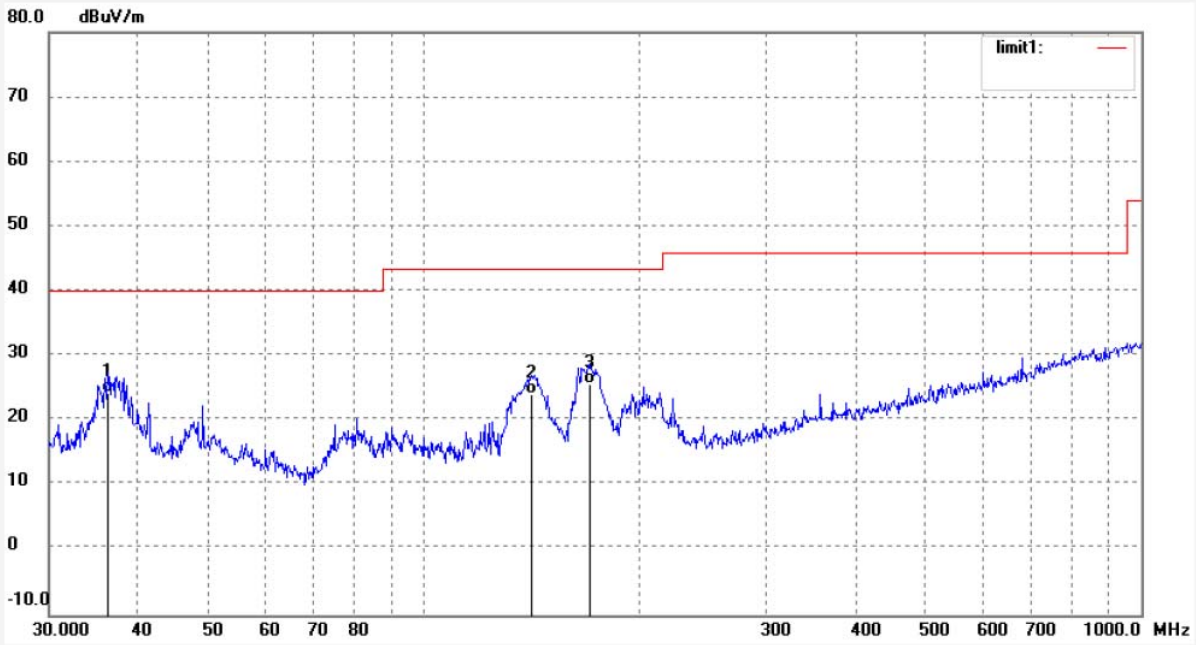
Job No.: star #3482	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 12/12/24/
Temp.(C)/Hum.(%) 26 C / 60 %	Time: 9/11/14
EUT: GSM Alarm System	Engineer Signature:
Mode: RX & Charging	Distance: 3m
Model: CG-G5	
Manufacturer: Chuango	

Note: Report No.:ATE20122853



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	36.2678	9.00	15.40	24.40	40.00	-15.60	QP			
2	141.2721	12.57	11.48	24.05	43.50	-19.45	QP			
3	170.7878	12.69	12.92	25.61	43.50	-17.89	QP			

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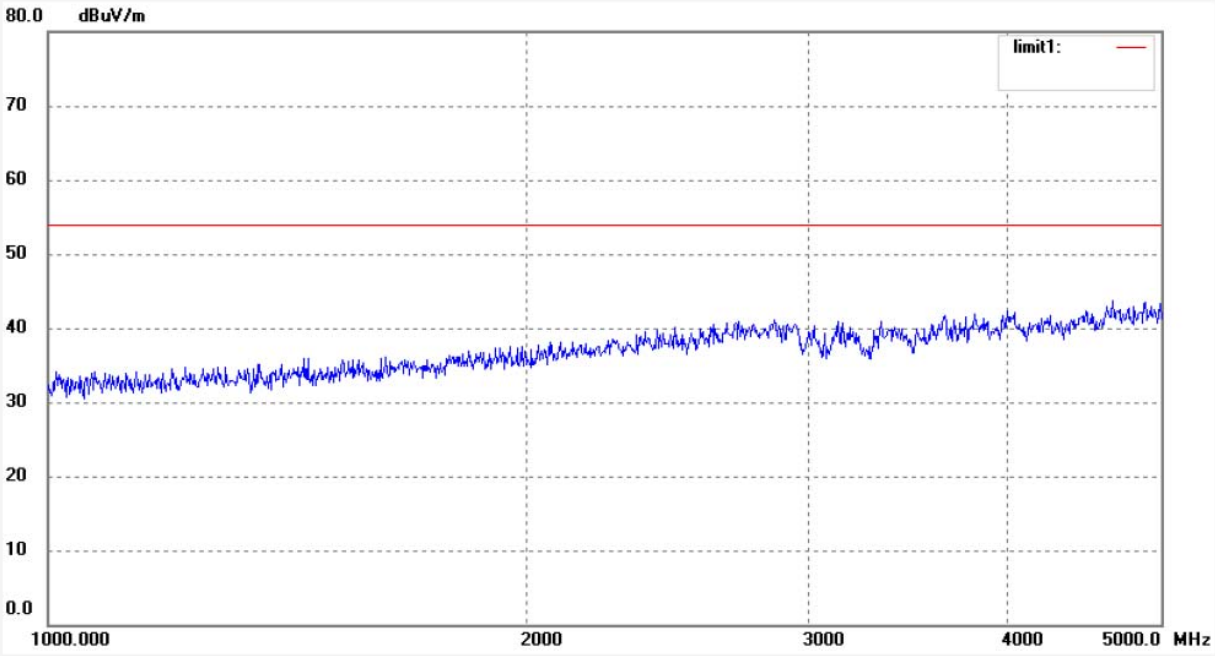
Site: 2# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: STAR #3495	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2012/12/24
Temp.(C)/Hum.(%) 26 C / 60 %	Time: 11:33:59
EUT: GSM Alarm System	Engineer Signature:
Mode: Rx & Charging	Distance: 3m
Model: CG-G5	
Manufacturer: Chuango	

Note: Report No.:ATE20122853

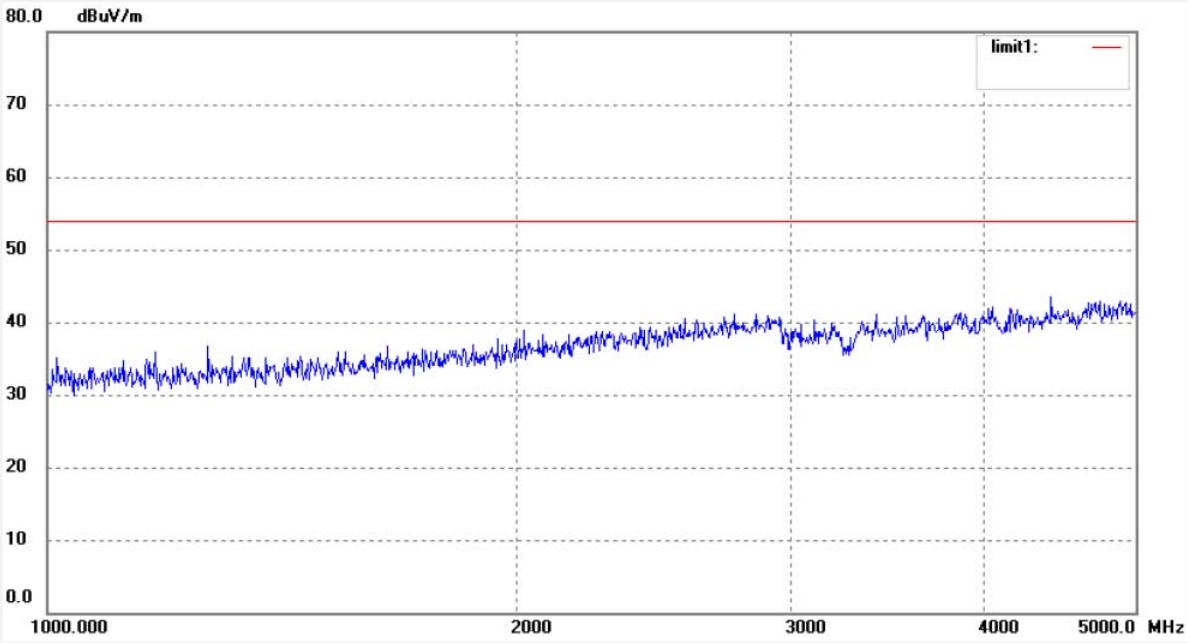


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark

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.: STAR #3494	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2012/12/24
Temp.(C)/Hum.(%) 26 C / 60 %	Time: 11:29:11
EUT: GSM Alarm System	Engineer Signature:
Mode: Rx & Charging	Distance: 3m
Model: CG-G5	
Manufacturer: Chuango	

Note: Report No.:ATE20122853



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark