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**FEDERAL COMMUNICATIONS COMMISSION** Laboratory Division

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May 31, 2002

Registration number: 282399

Report No.: **02.09.1100E-1**

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FCC ID: QNMWA168

## ***FCC TEST REPORT***

**Application No.** : 02.09.1100E-1**Applicant** : WELLSEEK TECHNOLOGY DEVELOPMENT CO., LTD.**FCC ID** : QNMWA168**Equipment under Test (EUT):**

Name : Auto Security System

Model No. : ICBM-7070, ICBM-7071 ♣

- ♣ Please refer to section 3.1 of this report which indicates which model was actually tested and which models are electrically identical.

**Standards** : FCC PART 15, SUBPART C : 2002**Date of Receipt** : 13 September 2002**Date of Test** : 14 to 20 September 2002**Date of Issue** : 23 September 2002

<b>Test Result :</b>	<b>PASS *</b>
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\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation..

Kent Hsu  
Laboratory Manager  
SGS-CSTC Co., Ltd

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the SGS PRODUCT CERTIFICATION MARK.. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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### **3 General Information**

#### **3.1 Client Information**

Applicant: WELLSEEK TECHNOLOGY DEVELOPMENT CO., LTD.  
Address of Applicant: XIAMAO INDUSTRIAL ZONE 18, BAIYUN DIST.,  
GUANGZHOU CITY CHINA  
Name: Auto Security System  
Model No.: ICBM-7070, ICBM-7071 ♣

♣ Only one item was tested since the above 2 Items were electrically identical. They are the same samples with different item no. and description only.

#### **3.2 Details of E.U.T.**

Power Supply: 12V DC ( Batteries Supply)  
Power Cord: N/A-

#### **3.3 Description of Support Units**

The EUT was tested as an independent unit.

#### **3.4 Test Location**

All tests were performed at:-

SGS-CSTC Standards Technical Services Ltd., Guangzhou Safety & EMC Laboratory, 1/F,  
Building No. 1, Agriculture Machinery Materials Company Warehouse Ltd., Wushan Road  
Shipai, Tianhe District, Guangzhou, China. P.C. 510630.

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Registration number: 282399

#### **3.5 Other Information Requested by the Customer**

None.

## 4 Test Results

### 4.1 Test Instruments

Description	Manufacturer	Model No.	Asset No.	Date of Cal.
Temperature, Humidity & Barometer	Oregon Scientific	BA-888	EMC023	26-07-2001
Radiated Emissions CNE	LAPLACE	ERS-A	EMC025	27-04-1998
Bioconic Antenna	R & S	HK116	EMC047	14-12-2001
Log-Periodic Dipole Antenna	R & S	HL233	EMC2005	17-12-2001
Double Riger Guide Horn Antenna	EMCO	3115	EMC2009	08-06-2001
3M Semi-Anechoic Chamber	Frankonia	11.5 x 7.5 x 6 m <sup>3</sup>	EMC1001	21-01-2002
0.8m Test Table	SGS-CSTC	N/A	EMC1003	N/A
EMI Receiver	R & S	ESCS30	EMC2001	13-11-2001
Spectrum Analyser	SCHAFFNER	R3261C+99	EMC071	26-07-2001
Monitor System	HD-GmbH	N/A	EMC2008	N/A
Antenna Mask	HD-GmbH	AS620M	EMC2010	N/A
Turn-Table	HD-GmbH	DT430	EMC2014	N/A
Turn_Table & Mask Controller	ADVANTEST	HD-GmbH HD100	EMC2015	N/A
Coaxial Cable (12m)	R & S	HFU2-Z4	EMC3001	08-03-2002
EMI Test Software	R & S	ES-K1	EMC5001	N/A

### 4.2 E.U.T. Operation

Input voltage: 12V DC (Batteries Supply)

Operating Environment:

Temperature: 24.0 °C

Humidity: 50 % RH

Atmospheric Pressure: 1004 mbar

EUT Operation:

Test the EUT in On Mode.

### 4.3 Test Procedure & Measurement Data

#### 4.3.1 Radiated Emissions

Test Requirement: FCC Part15 C  
Test Method: Based on FCC Part15 C Section 15.231  
Test Date: 18 September 2002  
Measurement Distance: 3m (Semi-Anechoic Chamber)

##### Requirements:

Fundamental Frequency MHz	Field Strength of Fundamental (dBuV/m @ 3m)	Field Strength of Harmonics and Spurious Emissions (dBuV/m @ 3m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	61.94 to 71.48	41.94 to 51.48
174 to 260	71.48	51.48
260 to 470	71.48 to 81.94	51.48 to 61.94
470 and above	81.94	61.94

The limit for average field strength dBuV/m for the fundamental frequency= 80.83 dBuV/m.  
No fundamental is allowed in the restricted bands.

The limit for average field strength dBuV/m for the harmonics and spurious frequencies = 60.83 dBuV/m. Spurious in the restricted bands must be less than 54 dBuV/m or 15.209.

Test Procedure: The procedure used was ANSI Standard C63.4-1992. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed with Peak detection mode. The EUT was measured for 2 orthogonal polarities.

The following test results were performed on the EUT on 18<sup>h</sup> September 2002:  
 Test the EUT in On Mode.

Test Frequency (MHz)	Average (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
433.92	47.60	49.60	80.83	33.23	31.23
867.84	49.60	32.80	60.83	11.23	28.03
1301.76	47.05	46.39	60.83	13.78	14.44
1735.68	49.55	49.27	60.83	11.28	11.56
2169.6	54.17	52.95	60.83	6.66	7.88
2603.52	53.28	52.59	60.83	7.55	8.24
3037.44	55.91	53.49	60.83	4.92	7.34
3471.36	57.40	53.77	60.83	3.43	7.06
3905.28	55.70	56.69	60.83	5.13	4.14
4339.20	57.60	57.30	60.83	3.23	3.53

SAMPLE CALCULATION OF LIMIT @ 433.92 MHz:

$(470 - 260)\text{MHz} = 210 \text{ MHz}$

$(12500 - 3750)\text{uV/m} = 8750 \text{ uV/m}$

$8750\text{uV/m}/210\text{MHz} = 41.67 \text{ uV/m/MHz}$

$(433.92-260)\text{MHz} = 173.92 \text{ MHz}$

$173.92 \text{ MHz} * 41.67 \text{ uV/m/MHz} = 7247.25 \text{ uV/m}$

$(7247.25 + 3750)\text{uV/m} = 10997.25 \text{ uV/m limit @ 433.92 MHz}$

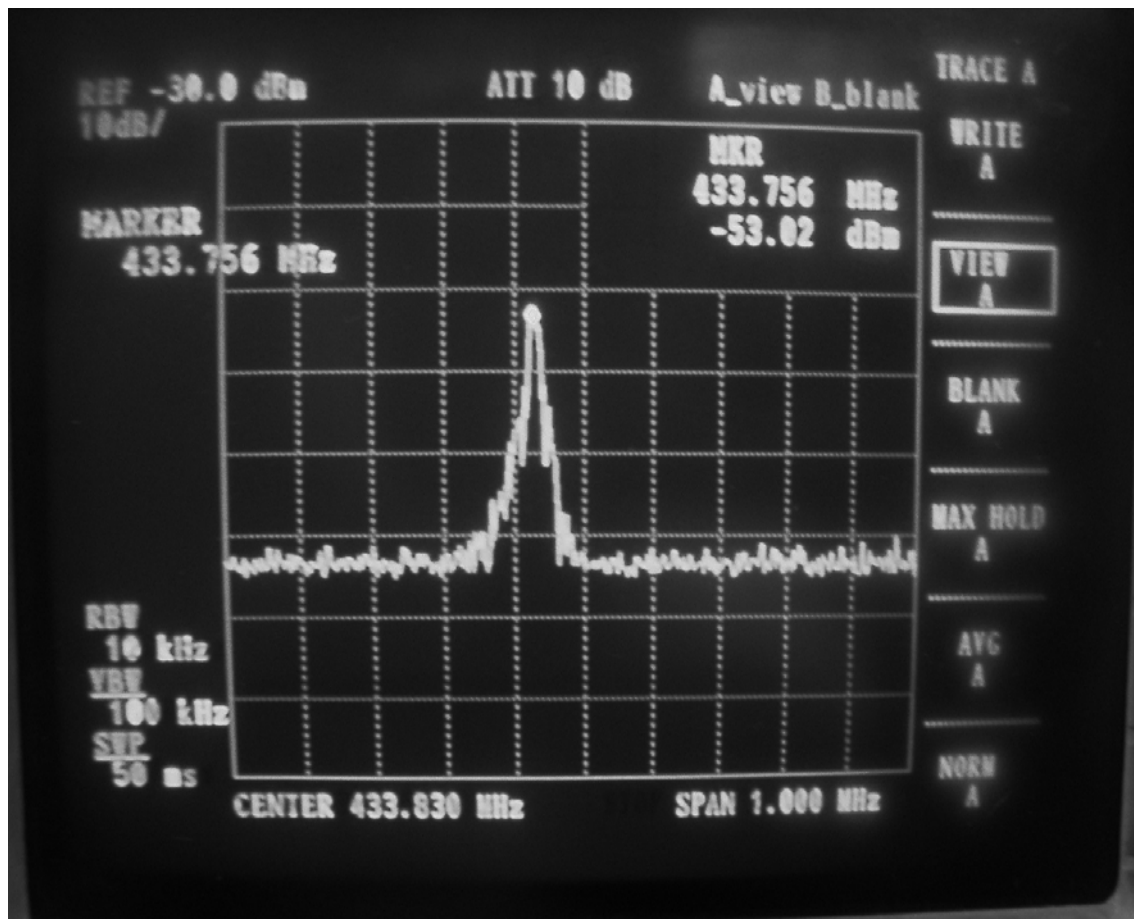
TEST RESULTS: The unit DOES meet the FCC requirements.

## 4.3.2 Occupied Bandwidth

Test Requirement: FCC Part15 C  
 Test Method: Based on FCC Part15 C Section 15.231:  
 Test Date: 19 September 2002  
 Requirements: The field strength of any emissions which appear outside of this band shall not exceed the general radiated emission limits in Section 15.231.

Method of measurement: A small sample of the transmitter output was fed into the Spectrum Analyzer and the attached plot was taken. The vertical is set to -10dB per division. The horizontal scale is set to 100KHz per division.

The graph as below, represents the emissions take for this device.



The results: The unit does meet the FCC requirements.

### 4.3.3 Calculation Of Duty Cycle:

Test Requirement: FCC Part15 C  
Test Method: Based on FCC Part15 C Section 15.231:  
Test Date: 19 September 2002  
Method of measurement:

The period of the pulse train is determined by observing it on an oscilloscope or a spectrum analyzer with zero (0) frequency span. A plot is then made of the pulse train with a sweep time of 100 milliseconds. This sweep determines the duration of the pulse train, which in this case is milliseconds. This sweep allows the determination of the number of and type of pulses, i.e. long & short. Plots are then made showing the duration of each type of pulse and its duration. From the 100millisecond Plot the number of a given type of pulse is then multiplied by the duration of that type pulse. This allows the calculation of the amount of time the UUT is on within 100milliseconds .

DUTY CYCLE PLOT – COMPLETE PULSE TRAIN

