

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
CERTIFICATION TO FCC PART 15 REQUIREMENTS**

*for*

**UNINTENTIONAL RADIATOR**

**AUTO ALARM SYSTEM RECEIVER**

**MODEL: MC5500**

**FCC ID: H5OR31**

**REPORT NO: 00E9051**

**DATE: OCTOBER 23, 2000**

*Prepared for*

**ADVANCE SECURITY INC.  
3F, 48, TA AN STREET, HSI CHIH  
TAIPEI HSIEN, TAIWAN, R. O. C.**

*Prepared by*

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**NVLAP<sup>®</sup>**  
LAB CODE: SL2-IN-E-0005



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## TEST DATA

- Fundamental Frequency Plot
- Radiated Emission Data

|                                 |              |
|---------------------------------|--------------|
| Proposed FCC ID Label.....      | Exhibit 1    |
| Agent Authorization Letter..... | Exhibit 2    |
| User Manual.....                | Attachment A |
| Block Diagram/Schematics.....   | Attachment B |

**1. VERIFICATION OF COMPLIANCE**

COMPANY NAME : ADVANCE SECURITY INC.  
 3F, 48, TA AN STREET, HSI CHIH  
 TAIPEI HSIEN, TAIWAN, R. O. C.

CONTACT PERSON : MICHAEL CHEN / PRESIDENT

TELEPHONE NO. : (886-2) 2643-8192

EUT DESCRIPTION : AUTO ALARM SYSTEM RECEIVER

MODEL NAME/NUMBER : MC5500

FCC ID : H5OR31

DATE TESTED : OCTOBER 19, 2000

REPORT NUMBER : 00E9051

|                       |                                             |
|-----------------------|---------------------------------------------|
| TYPE OF EQUIPMENT     | SECURITY EQUIPMENT (UNINTENTIONAL RADIATOR) |
| EQUIPMENT TYPE        | 433.92 MHz SUPERREGENERATE RECEIVER         |
| MEASUREMENT PROCEDURE | ANSI 63.4 / 1992                            |
| LIMIT TYPE            | CERTIFICATION                               |
| FCC RULE              | CFR 47, PART 15.109                         |

The above equipment was tested by Compliance Engineering Services, Inc. for compliance with the requirements set forth in CFR 47, PART 15. This said equipment in the configuration described in this report shows that maximum emission levels emanating from equipment are within the compliance requirements.

*Rick yeo*

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 RICK YEO / EMC MANAGER  
 COMPLIANCE ENGINEERING SERVICES, INC.

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## 2. PRODUCT DESCRIPTION

ADVANCE SECURITY INC., Model MC5500 is the receiving portion of a multi-purpose security device. The associated Transmitter is manufactured by Advance Security Inc. Model No: 6905E, FCC ID: H5OT12 OR Model No: 6905S, FCC ID: H5OT13.

## 3. TEST FACILITY

The open area test sites and conducted measurement facilities used to collect the radiated data are located at No. 199, Chung Sheng Road, Hsin Tien City, Taipei, Taiwan R.O.C. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

The measuring instrument which was utilized in performing the tests documented herein has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment which is traceable to recognized national standards.

## 4. MEASUREMENT EQUIPMENT USED

| Manufacturer | Model Number | Description                            | Cal Due Date |
|--------------|--------------|----------------------------------------|--------------|
| R&S          | SMY 02       | Signal Generator<br>(9 KHz – 2.08 GHz) | 01/2001      |
| H.P.         | 8595EM       | Spectrum Analyzer<br>(9 KHz – 6.5 GHz) | 01/2001      |
| EMCO         | 3142         | Antenna<br>(30-2000 MHz)               | 06/2001      |
| T.E.C.       | PA-102       | Preamplifier<br>(0.1 - 2000 MHz)       | 05/2001      |
| EMCO         | 3115         | Antenna(1 – 18 GHz)                    | 09/2001      |
| MITEQ        | NSP2600-44   | Preamplifier (1 - 26.5 GHz)            | 12/2000      |

## 5. TEST CONFIGURATION

Set frequency generator to 433.92 MHz. EUT receiving transmission continuously. All the wires are placed on the turn table to their maximum length to simulate the worse emission conditions.

## 6. TESTS CONDUCTED

|                                           |                       |
|-------------------------------------------|-----------------------|
| CFR 47, 15.109<br>RADIATED EMISSION TESTS | CONDUCTED AT 3 METERS |
|-------------------------------------------|-----------------------|

## 7. RADIATED EMISSION TEST PROCEDURE

The EUT and all other support equipment are placed on a wooden table 80 cm above the ground screen. Antenna to EUT distance is 3 meters. During the test, the table is rotated 360 degrees to maximize emissions and the antenna is positioned from 1 to 4 meters above the ground screen to further maximize emissions. The antenna is polarized in both vertical and horizontal positions.

Monitor the frequency range of interest at a fixed antenna height and EUT azimuth. Frequency span should be small enough to easily differentiate between broadcast stations and intermittent ambients. Rotate EUT 360 degrees to maximize emissions received from EUT. If emission increases by more than 1 dB, or if another emission appears that is greater by 1 dB, return to azimuth where maximum occurred and perform additional cable manipulation to further maximize received emission.

Move antenna up and down to further maximize suspected highest amplitude signal. If emission increased by 1 dB or more, or if another emission appears that is greater by 1dB or more, return to antenna height where maximum signal was observed and manipulate cables to produce highest emissions, noting frequency and amplitude.

## 8. COHERENT TESTS

During Radiated Emission Tests, R&S signal generator model no: SMY 02 (9K – 2.08G Hz) was used to radiate unmodulated CW signal to EUT at 433.92 MHz. Please refer to radiated radiate emission plots and data for the highest readings.

**9. EQUIPMENT MODIFICATIONS**

To achieve compliance to FCC section 15.109, the following change(s) were made during compliance testing:

NOT APPLICABLE

**10. TEST CONFIGURATION PHOTOS (Radiated Emission Test)**

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