

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

*for*

**UNINTENTIONAL RADIATOR**

**AUTO ALARM SYSTEM RECEIVER**

**MODEL: RX210**

**FCC ID NO: H5OR33**

**REPORT NO: 01E9763**

**DATE: SEPTEMBER 04, 2001**

*Prepared for*

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

*Prepared by*

**COMPLIANCE ENGINEERING SERVICES, INC.  
NO. 199, CHUNG SHENG ROAD,  
HSIN TIEN CITY, TAIPEI,  
TAIWAN, R. O. C.**

*d.b.a.*

**COMPLIANCE CERTIFICATION SERVICES**



## TABLE OF CONTENTS

<b>1.</b>	<b>VERIFICATION OF COMPLIANCE</b> .....	<b>1</b>
<b>2.</b>	<b>PRODUCT DESCRIPTION</b> .....	<b>2</b>
<b>3.</b>	<b>TEST FACILITY</b> .....	<b>2</b>
<b>4.</b>	<b>MEASUREMENT EQUIPMENT USED</b> .....	<b>2</b>
<b>5.</b>	<b>TEST CONFIGURATION</b> .....	<b>3</b>
<b>6.</b>	<b>TESTS CONDUCTED</b> .....	<b>3</b>
<b>7.</b>	<b>RADIATED EMISSION TEST PROCEDURE</b> .....	<b>3</b>
<b>8.</b>	<b>COHERENT TESTS</b> .....	<b>3</b>
<b>9.</b>	<b>EQUIPMENT MODIFICATIONS</b> .....	<b>4</b>
<b>10.</b>	<b>TEST CONFIGURATION PHOTOS (RADIATED EMISSION TEST)</b> .....	<b>5</b>

### TEST DATA

- Fundamental Frequency Plot
- Radiated Emission Data

Proposed FCC Label.....	Exhibit 1
Operational Description.....	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) 8648-1688

EUT DESCRIPTION : AUTO ALARM SYSTEM RECEIVER

MODEL NAME/NUMBER : RX210

DATE TESTED : AUGUST 31, 2001

REPORT NUMBER : 01E9763

TYPE OF EQUIPMENT	SECURITY EQUIPMENT (UNINTENTIONAL RADIATOR)
EQUIPMENT TYPE	434 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*

RICK YEO / EMC MANAGER  
COMPLIANCE ENGINEERING SERVICES, INC.

## 2. PRODUCT DESCRIPTION

ADVANCE SECURITY INC., Model RX210 is the receiving portion of a multi-purpose security device. The associated Transmitter is manufactured by ADVANCE SECURITY INC.. 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 (9 KHz – 2.08 GHz)	11/2001
H.P.	8566B	Spectrum Analyzer (100Hz ~ 22GHz)	06/2002
H.P.	85650A	QUASI-PEAK DETECTOR	06/2002
EMCO	3142	Antenna (30-2000 MHz)	06/2002
H.P.	8447D B	Amplifier (0.1 - 1300 MHz)	05/2002
EMCO	3115	Antenna(1 – 18 GHz)	02/2002
MITEQ	NSP2600-44	Preamplifier (1 - 26.5 GHz)	02/2002

## 5. TEST CONFIGURATION

Set frequency generator to 434 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 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.

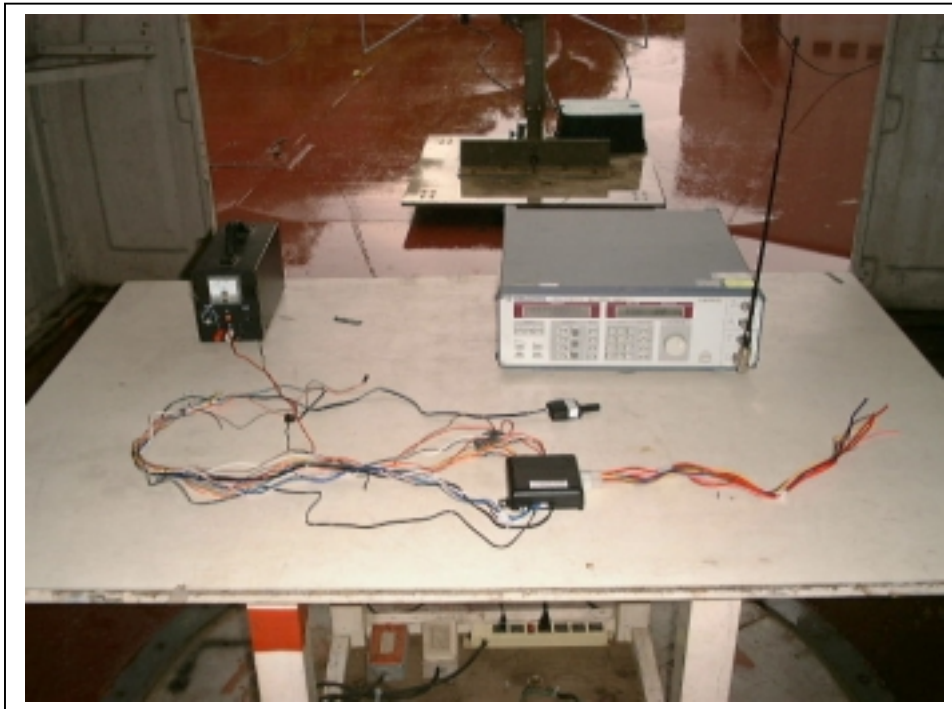
## 8. COHERENT TESTS

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 434 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:

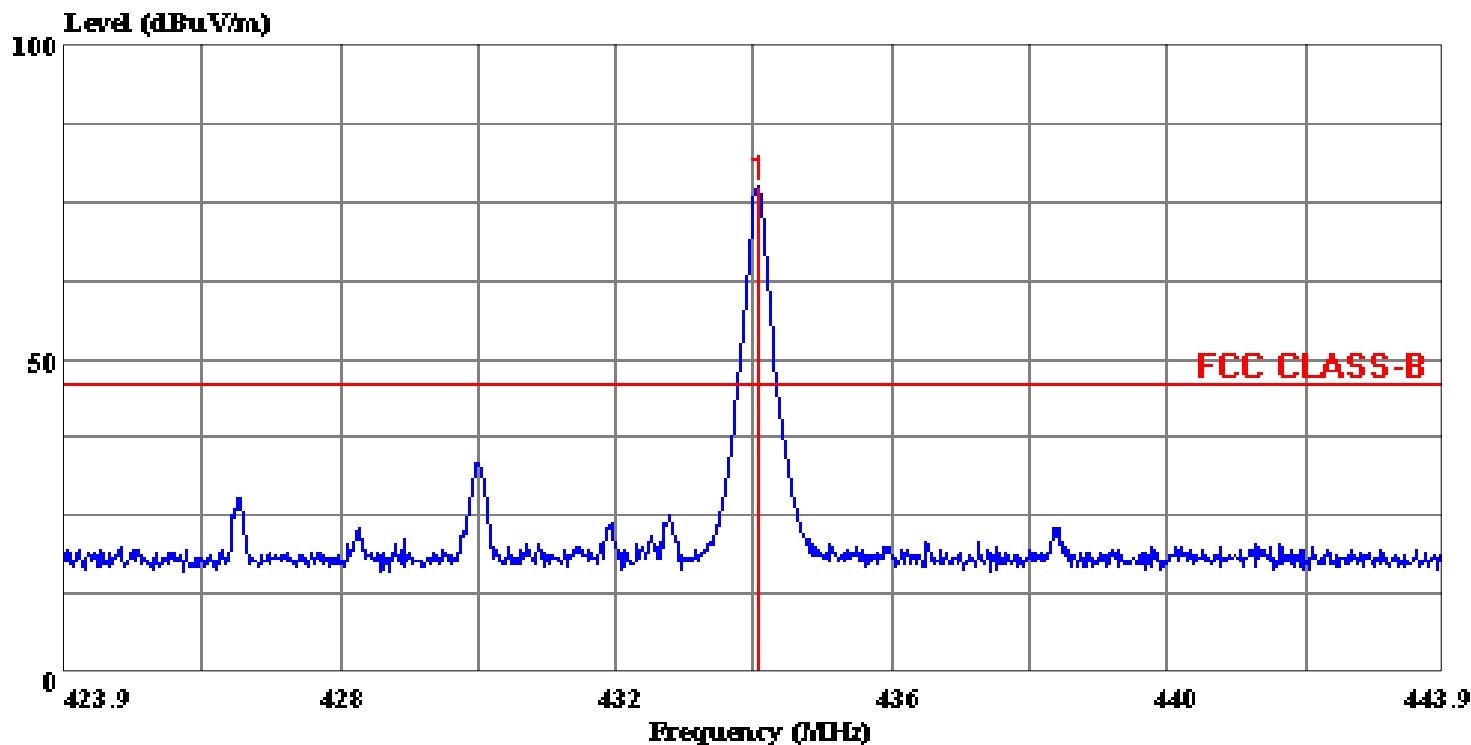
NOT APPLICABLE

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

PAGE NO: 5

Data#: 3 File#: 9763f.emi

Date: 2001-08-31 Time: 17:07:27



(CCS E-Site)

Trace: 1

Ref Trace:

Condition: VERTICAL  
 Report No. : 01E9763  
 Test Engr. : VINCE CHIANG  
 Company : ADVANCE SECURITY INC.  
 EUT : RX210  
 Test Config : EUT/DC POWER/S.G.  
 Type of Test: FCC 15.109  
 Mode of Op. : NORMAL MODE

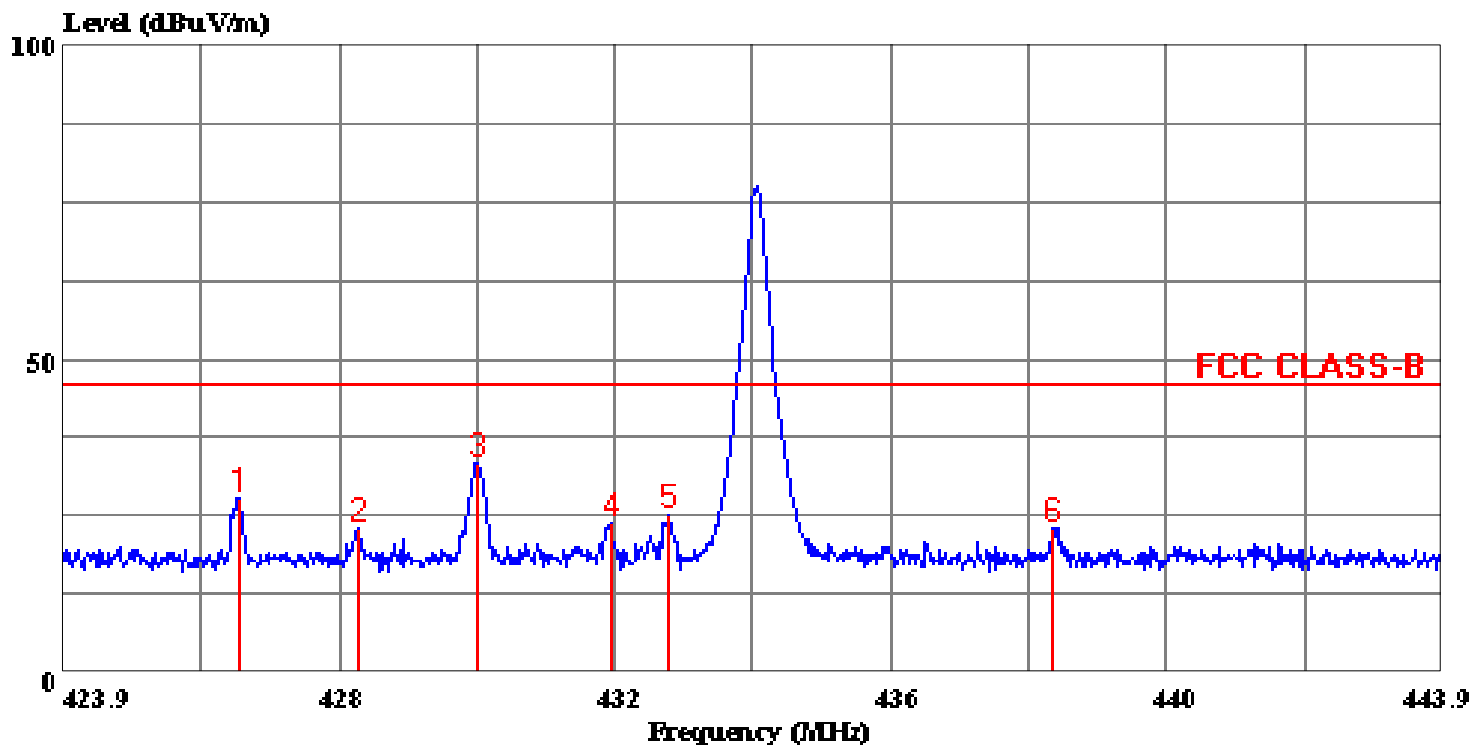
Page: 1

	Freq	Level
	MHz	dBuV/m
1 *	433.960	77.29



Data#: 5 File#: 9763f.emi

Date: 2001-08-31 Time: 17:09:29



(CCS E-Site)

Trace: 1

Ref Trace:

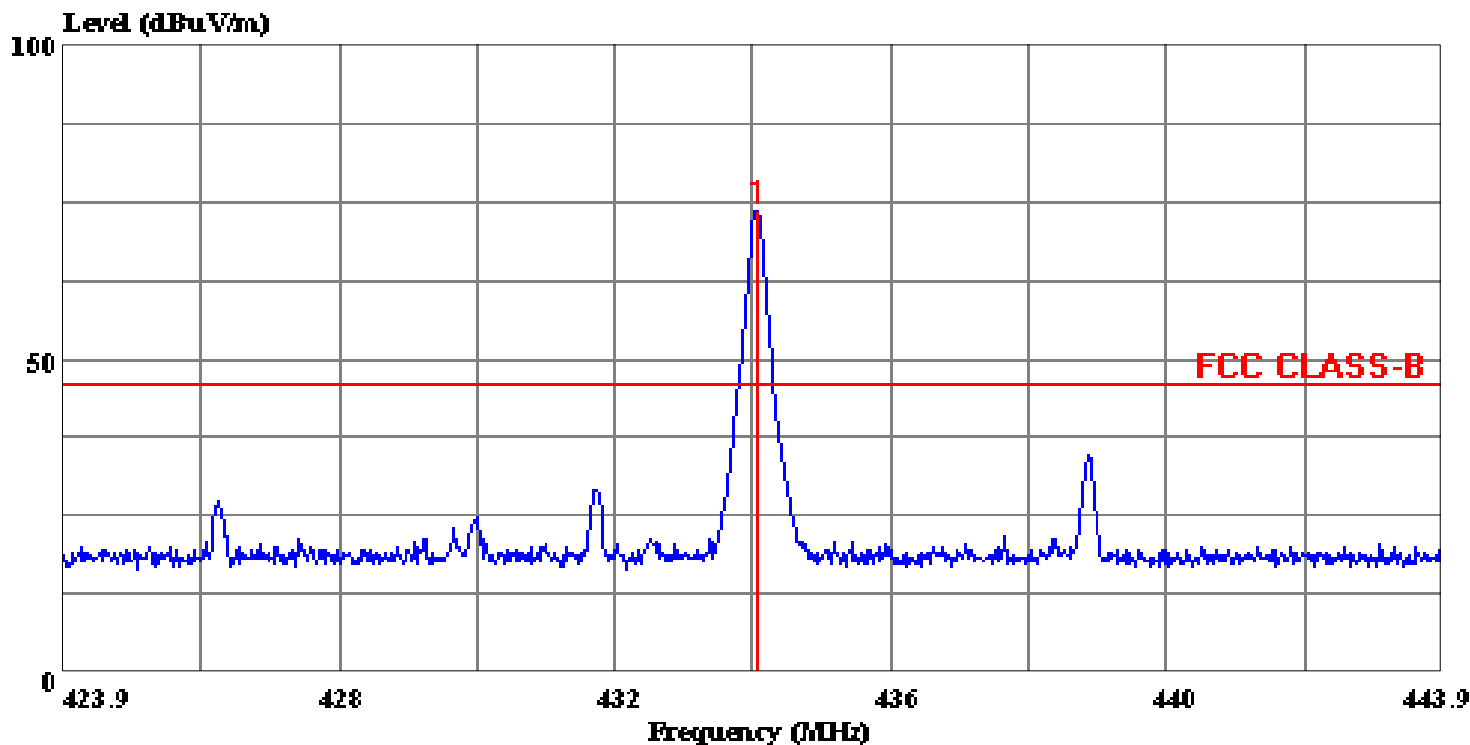
Condition: VERTICAL  
Report No. : 01E9763  
Test Engr. : VINCE CHIANG  
Company : ADVANCE SECURITY INC.  
EUT : RX210  
Test Config : EUT/DC POWER/S.G.  
Type of Test: FCC 15.109  
Mode of Op. : NORMAL MODE

Page: 1

	Read Freq	Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	426.440	35.00	16.75	2.48	26.44	27.80	46.00	-18.20	Peak
2	428.160	30.20	16.78	2.49	26.45	23.02	46.00	-22.98	Peak
3	429.920	40.50	16.81	2.49	26.46	33.34	46.00	-12.66	Peak
4	431.840	31.10	16.84	2.50	26.47	23.96	46.00	-22.04	Peak
5	432.660	32.10	16.85	2.50	26.48	24.97	46.00	-21.03	Peak
6	438.260	30.20	16.93	2.52	26.51	23.14	46.00	-22.86	Peak

Data#: 4 File#: 9763f.emi

Date: 2001-08-31 Time: 17:08:10



(CCS E-Site)

Trace: 2

Ref Trace:

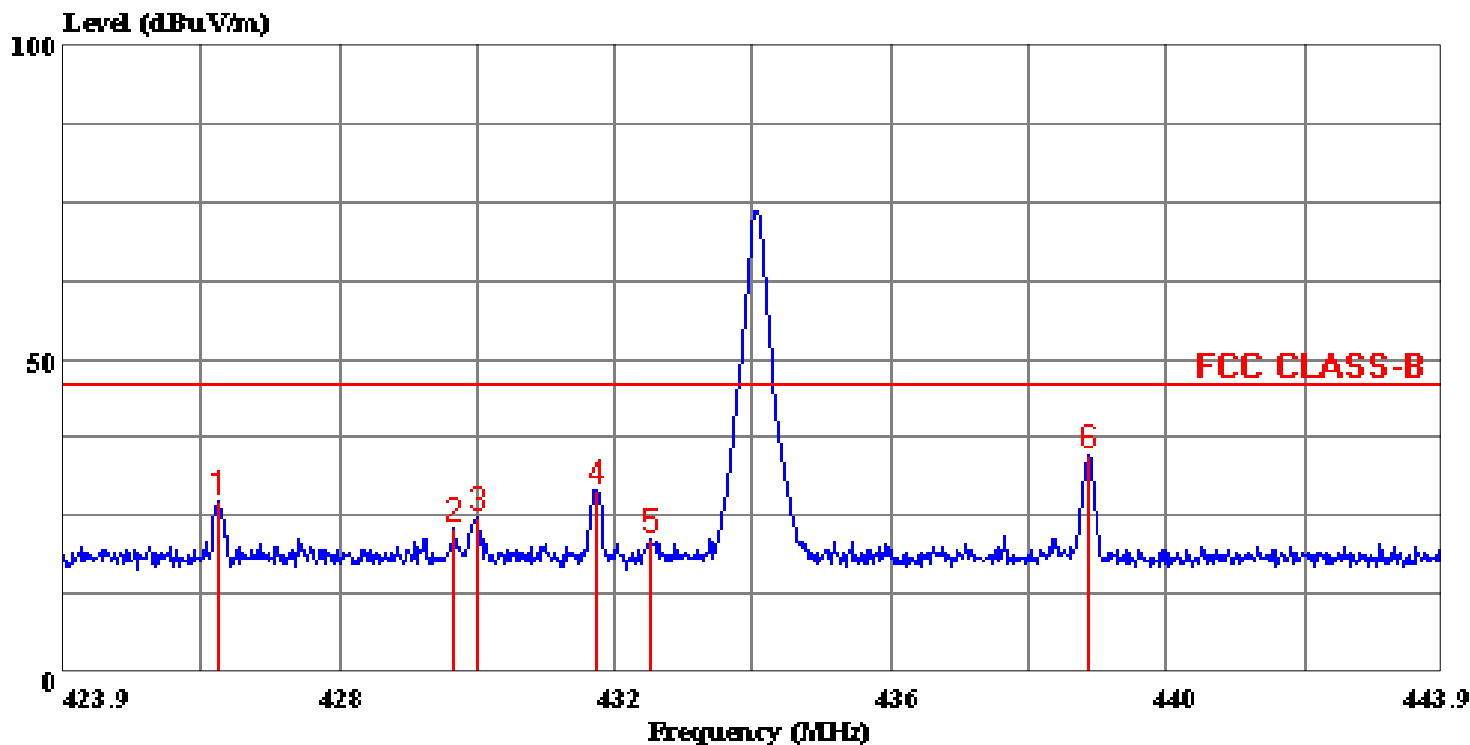
Condition: HORIZONTAL  
 Report No. : 01E9763  
 Test Engr. : VINCE CHIANG  
 Company : ADVANCE SECURITY INC.  
 EUT : RX210  
 Test Config : EUT/DC POWER/S.G.  
 Type of Test: FCC 15.109  
 Mode of Op. : NORMAL MODE

Page: 1

	Freq	Level
	MHz	dBuV/m
1 *	433.960	73.39

Data#: 6 File#: 9763f.emi

Date: 2001-08-31 Time: 17:10:05



(CCS E- Site)

Trace: 2

Ref Trace:

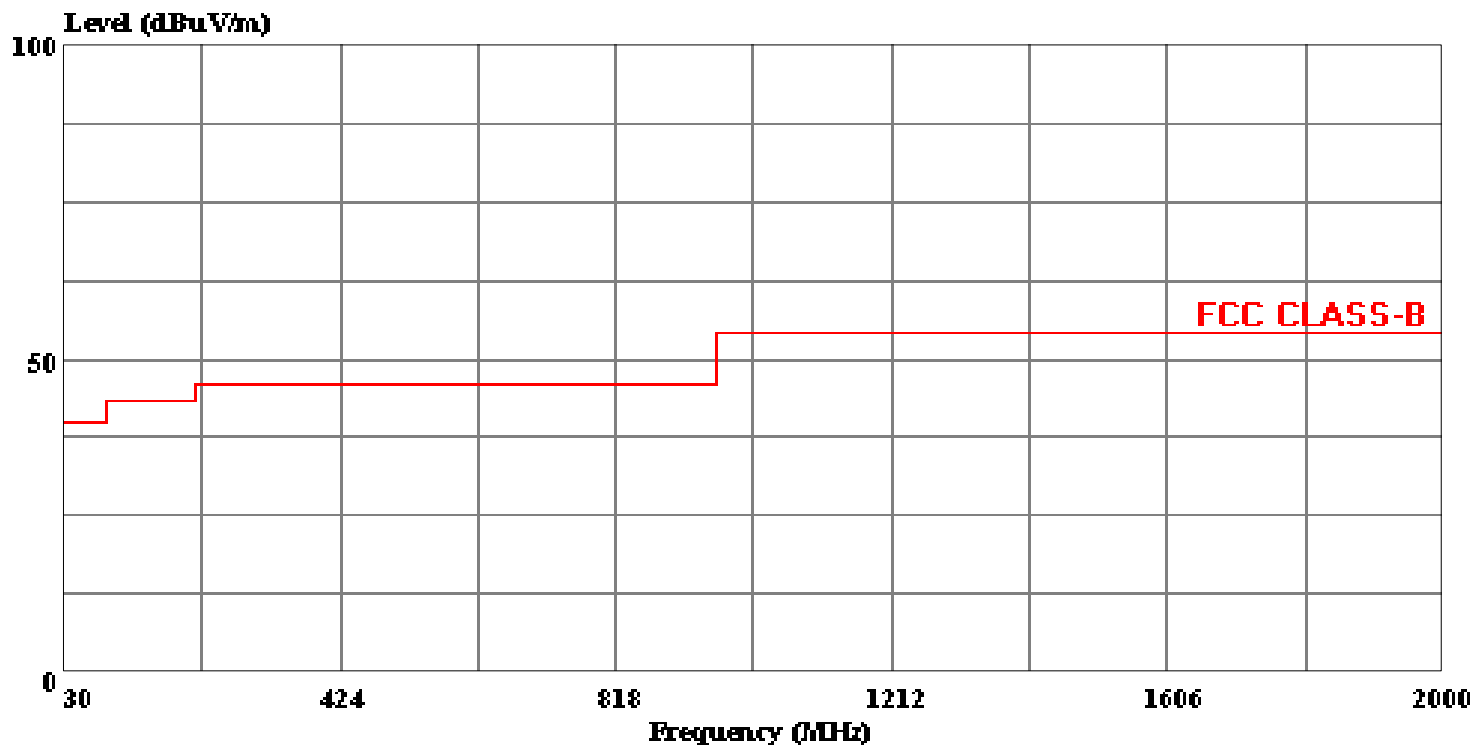
Condition: HORIZONTAL  
Report No. : 01E9763  
Test Engr. : VINCE CHIANG  
Company : ADVANCE SECURITY INC.  
EUT : RX210  
Test Config : EUT/DC POWER/S.G.  
Type of Test: FCC 15.109  
Mode of Op. : NORMAL MODE

Page: 1

	Read Freq	Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	426.140	34.40	16.75	2.48	26.44	27.19	46.00	-18.81	Peak
2	429.560	30.30	16.80	2.49	26.46	23.13	46.00	-22.87	Peak
3	429.900	31.90	16.81	2.49	26.46	24.74	46.00	-21.26	Peak
4	431.620	36.30	16.83	2.50	26.47	29.16	46.00	-16.84	Peak
5	432.400	28.20	16.85	2.50	26.47	21.07	46.00	-24.93	Peak
6	438.780	41.60	16.94	2.52	26.51	34.55	46.00	-11.45	Peak

Data#: 7 File#: 9763f.emi

Date: 2001-08-31 Time: 17:16:10



(CCS E-Site)

Trace:

Ref Trace:

Report No. : 01E9763  
 Test Engr. : VINCE CHIANG  
 Company : ADVANCE SECURITY INC.  
 EUT : RX210  
 Test Config : EUT/DC POWER/S.G.  
 Type of Test: FCC CLASS B  
 Mode of Op. : NO OTHER EMISSION WERE FOUND WITHIN  
 : 20 dB BELOW THE LIMITES FROM 30-2000MHZ