

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

for

**INTENTIONAL RADIATOR**

of

**Car Alarm Transceiver**

**FCC ID Number : H5OTR05**

**Trade Name : Advance Security Inc.**

**Model Number : TRX852DV**

**Agency Series : N/A**

**Report Number : 02E0516-D**

**Date : November 6, 2002**

Prepared for :

**Advance Security Inc.**

**3F, 48 Ta An Street, Hsi Chih,**

**Taipei Hsien, Taiwan, R. O. C.**

Prepared by :

**C&C LABORATORY CO., LTD.**

**#B1, 1<sup>st</sup> Fl., Universal Center,**

**No. 183, Sec. 1, Tatung Rd., Hsi Chih,**

**Taipei Hsien, Taiwan, R.O.C.**

**TEL: (02)8642-2071~3**

**FAX: (02)8642-2256**



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C&C Laboratory Co., Ltd.**

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## 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 : Car Alarm Transceiver

MODEL NAME/NUMBER : TRX852DV

FCC ID : H5OTR05

DATE TESTED : October 24, 2002 ~ October 31, 2002

REPORT NUMBER : 02E0516

|                       |                                           |
|-----------------------|-------------------------------------------|
| TYPE OF EQUIPMENT     | SECURITY EQUIPMENT (INTENTIONAL RADIATOR) |
| EQUIPMENT TYPE        | 433.92 MHz Car Alarm Transceiver          |
| MEASUREMENT PROCEDURE | ANSI 63.4 / 1992                          |
| LIMIT TYPE            | CERTIFICATION                             |
| FCC RULE              | CFR 47, PART 15                           |

The above equipment was tested by C&C Laboratory Co., Ltd. for compliance with the requirements set forth in the FCC CFR 47, PART 15. The results of testing in this report apply to the product/system which was tested only. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties. **Warning:** This document reports conditions under which testing was conducted and results of tests performed. This document may not be altered or revised in any way unless done so by C&C Laboratory Co., Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by C&C Laboratory Co., Ltd. will constitute fraud and shall nullify the document.

*Vince Chiang For.*

James Chan / Manager  
C&C Laboratory Co., Ltd.

## **2. PRODUCT DESCRIPTION**

|                       |                                             |
|-----------------------|---------------------------------------------|
| Fundamental Frequency | <b>433.92 MHz</b>                           |
| Power Source          | <b>1.5V Battery</b>                         |
| Transmitting Time     | <b>Periodic <math>\leq</math> 5 seconds</b> |
| Associated Receiver   | <b>Model: H5OTR04 (FCC ID)</b>              |

## **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.

## **4. MEASUREMENT STANDARDS**

The site is constructed and calibrated in conformance with the requirements of ANSI C63.4/1992.

## **5. TEST METHODOLOGY**

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 KHz, up to at least the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. (CFR 47 Section 15.33)

## 6. MEASUREMENT EQUIPMENT USED

| Manufacturer | Model Number | Description                     | Cal Due Date |
|--------------|--------------|---------------------------------|--------------|
| H.P.         | 8566B        | Spectrum Analyzer (100Hz-22GHz) | 06/2003      |
| H.P.         | 85662A       | Spectrum Analyzer (100Hz-22GHz) | 06/2003      |
| H.P.         | 85650A       | QUASI-PEAK DETECTOR             | 06/2003      |
| EMCO         | 3115         | Antenna (1-18GHz)               | 02/2003      |
| EMCO         | 3142         | Antenna (30-2000MHz)            | 06/2003      |
| H.P.         | 8447D A      | Amplifier (30-2000MHz)          | 05/2003      |
| H.P.         | 8449B        | Amplifier (1-26.5GHz)           | 01/2003      |

## 7. POWERLINE RFI LIMIT

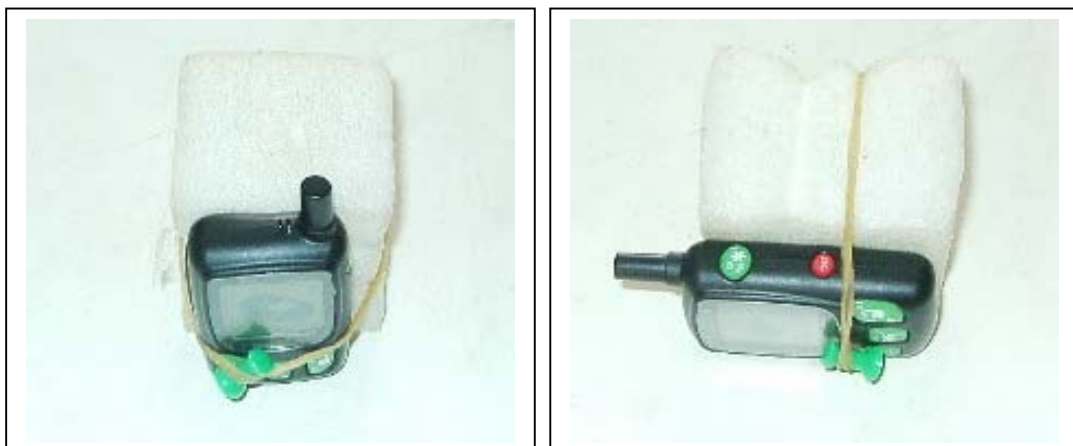
|                                                                       |                                                                                         |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| CONNECTED TO AC POWER LINE                                            | SECTION 15.207                                                                          |
| CARRIER CURRENT SYSTEM IN THE<br>FREQUENCY RANGE OF 450 kHz TO 30 MHz | SECTION 15.205 AND SECTION 15.209, 15.221,<br>15.223, 15.225 OR 15.227, AS APPROPRIATE. |
| BATTERY POWER                                                         | NO REQUIRED.                                                                            |

## 8. RADIATED EMISSION LIMITS

|                                                                      |                |
|----------------------------------------------------------------------|----------------|
| GENERAL REQUIREMENTS                                                 | SECTION 15.209 |
| RESTRICTED BANDS OF OPERATION                                        | SECTION 15.205 |
| PERIODIC OPERATION IN THE BAND<br>40.66 -40.70 MHz AND ABOVE 70 MHz. | SECTION 15.231 |

## 9. SYSTEM TEST CONFIGURATION

Use a block of foam and combined it with EUT wrapping rubber band around it. This way it can test X.Y, and Z axis. To activate continuous transmission, place a small plastic block between rubber band and EUT push button.



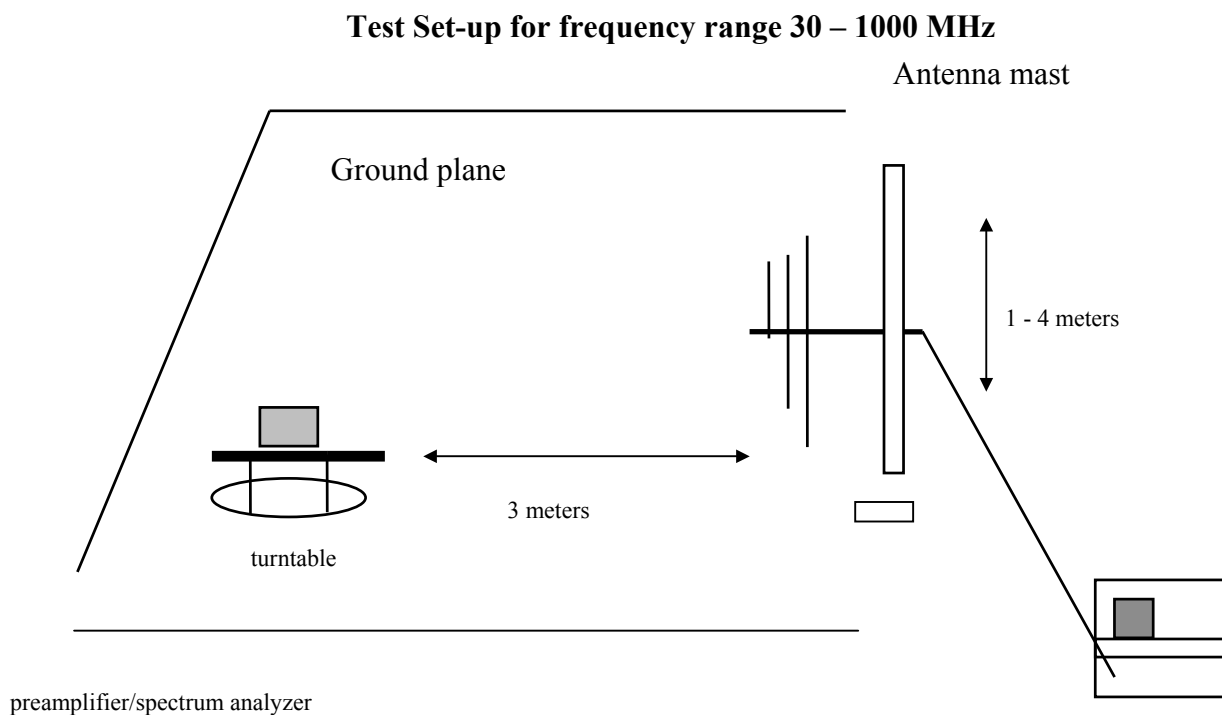
**Radiated Open Site Test Set-up (Transmitter Mode)**



**Radiated Open Site Test Set Up (Receiver Mode)**

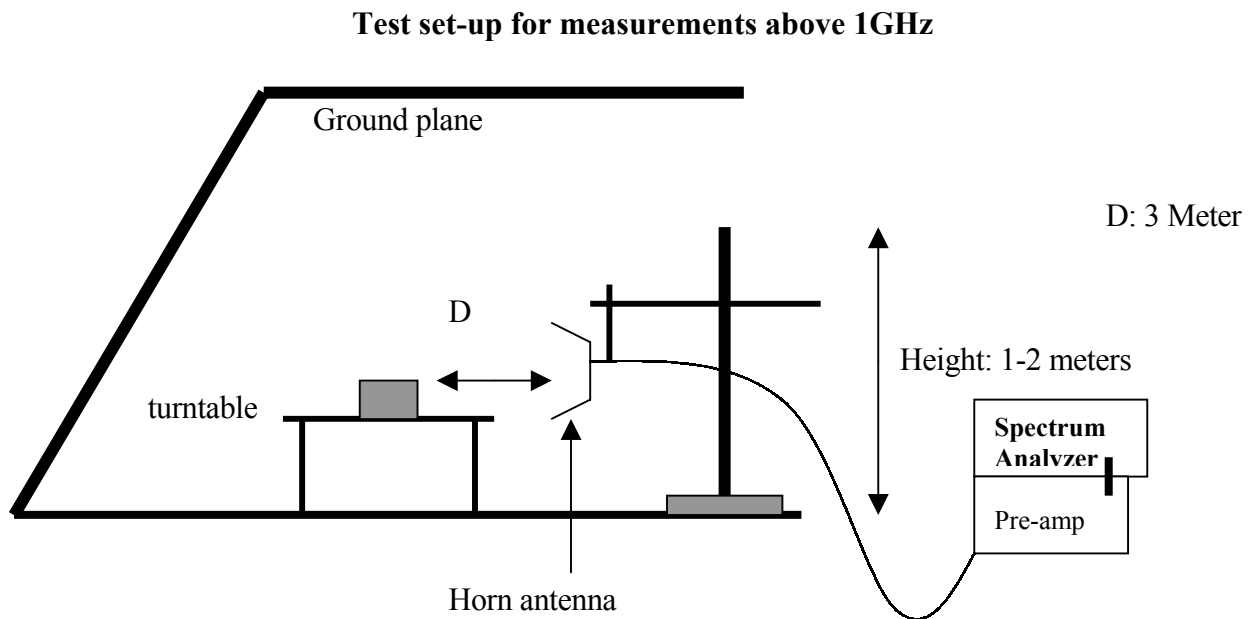
## 10. TEST PROCEDURE

### Radiated Emissions, 15.231(4)(b)



**Fig. 1**

1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 3-meters from the EUT.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.



1. The EUT was placed on a wooden table on the outdoor ground plane. The search antenna was placed 1-meters from the EUT. The EUT antenna was mounted vertically as per normal installation.
2. The turntable was slowly rotated to locate the direction of maximum emission at each emission falling in the restricted bands of 15.205. The EUT was moved throughout the XY, XZ, and YZ planes to maximize emissions received by the search antenna.
3. Once maximum direction was determined, the search antenna was raised and lowered in both vertical and horizontal polarizations. The maximum readings so obtained are recorded in the data listed below.

## 11. Equipment Modifications

To achieve compliance to FCC Section 15.231 technical limits, the following change(s) were made during compliance testing:

**NONE**

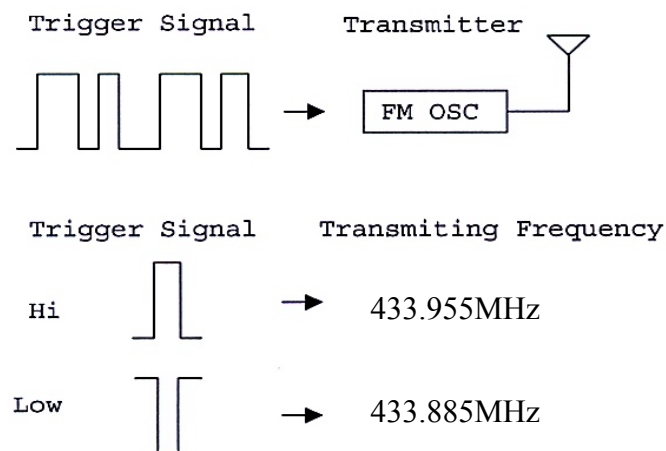
## 12. TEST RESULT

| Powerline RFI Class B                                            | Eut | Radiated Emission Limits | Eut |
|------------------------------------------------------------------|-----|--------------------------|-----|
| SECTION 15.207                                                   |     | SECTION 15.209           | X   |
| SECTION 15.205, 15.209,<br>15.221, 15.223, x 15.225 OR<br>15.227 |     | SECTION 15.205           |     |
| BATTERY POWER                                                    | X   | SECTION 15.231 (b)       | X   |
|                                                                  |     | SECTION 15.231 (e)       |     |
|                                                                  |     | SECTION 15.109           | X   |

### 12.1 Maximum Modulation Percentage (M%)

CALCULATION: No duty cycle.

Note: Following is the diagram to show the modulation method of the EUT.



This EUT works as a FM modulation. Signal HI will trigger FM OSC to generate a 433.955 MHz frequency and signal LOW will trigger FM OSC to generate a 433.885 MHz frequency. It is only 0.07 MHz deviation, so that there is no duty cycle on it.

### 12.2 The Emissions Bandwidth

The bandwidth of the emissions were investigated per 15.231(c)

| Center Frequency | Measured                       | Limits                     |
|------------------|--------------------------------|----------------------------|
| 433.92 MHz       | 725.0 kHz <<br>(refer to plot) | 433.92MHzX0.25%=1084.8 kHz |

hp

MARKER  $\Delta$   
725 KHz  
.71 dB

ACTV DET: PEAK  
MEAS DET: PEAK QP AVG  
MKR 725 kHz  
.71 dB

CLEAR  
WRITE B

MAX  
HOLD B

VIEW B

BLANK B

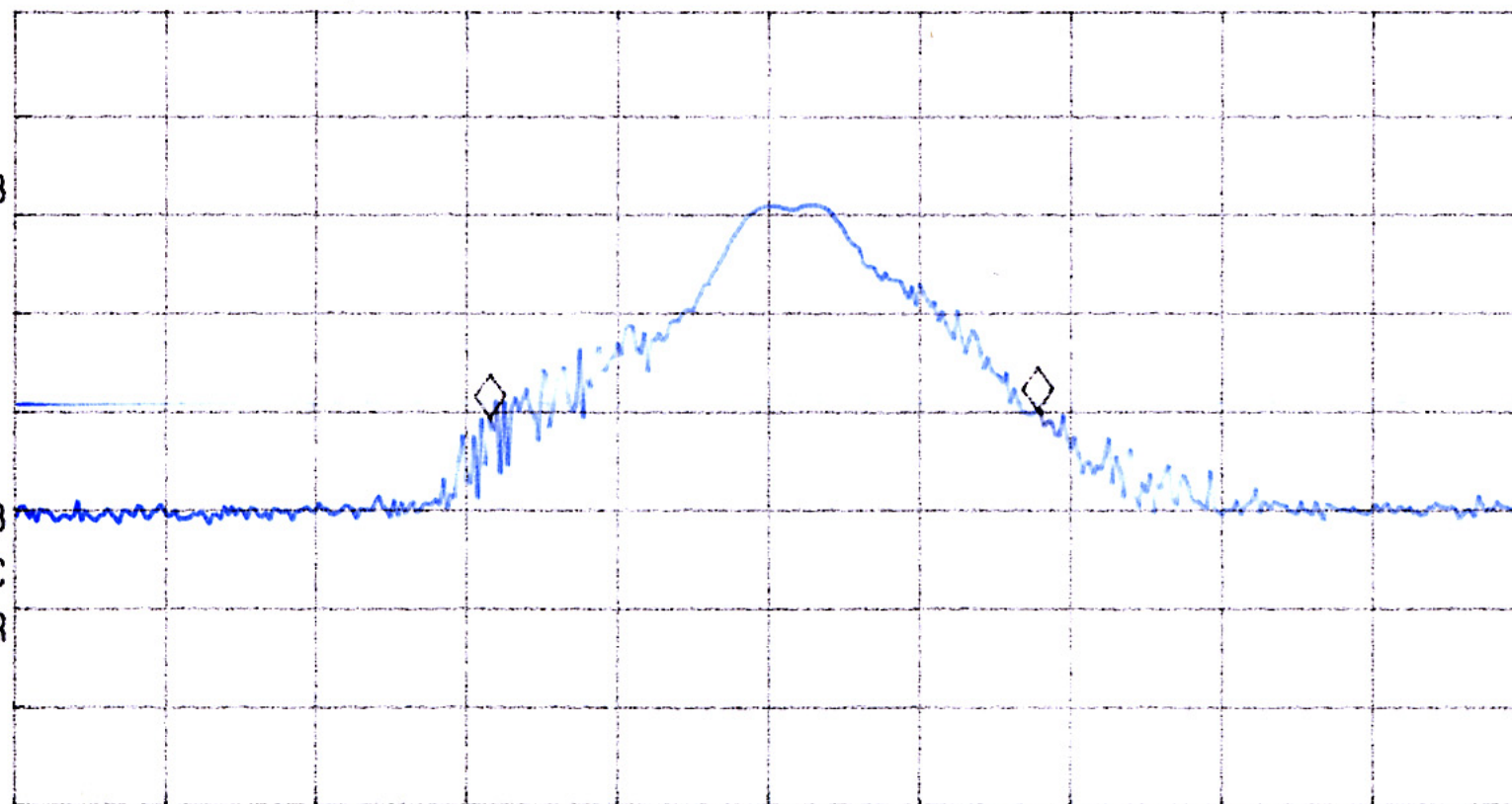
Trace  
A B C

More  
1 of 4

LOG REF 80.0 dB $\mu$ V

10  
dB/  
ATN  
10 dB

DL  
40.5  
dB $\mu$ V  
MA SB  
SC FC  
CORR



CENTER 433.890 MHz  
IF BW 120 KHz

AVG BW 300 KHz

SPAN 2.000 MHz  
SWP 20.0 msec

# C&C Laboratory CO., LTD.

FCC, VCCI, CISPR, CE, AUSTEL, NZ  
UL, CSA, TUV, BSMI, DHHS, NVLAP

No. 199 Chung Sheng Road  
Hsin Tien City, Taipei, Taiwan, R.O.C.  
PHONE: 02-2217-0894 FAX: 02-2217-1254

**Project #:** 02E0516  
**Report #:** 0516E1  
**Date& Time:** 2002/10/25  
**Test Engr:** DAVID HUNG

**Company:** Advance Security Inc.  
**EUT Description:** TRX852DV (433.92 MHz / Car Alarm Transceiver)  
**Test Configuration :** EUT ONLY  
**Type of Test:** FCC 15.231(b)  
**Mode of Operation:** TRANSMITTER MODE

E-File

$$M\% = ((t1+t2+t3+...)/T) * 100\% = 100 \%$$

$$Av \text{ Reading} = Pk \text{ Reading} + 20 * \log(M\%)$$

$$20 * \log(M\%) = 0$$

|   | Freq.      | Pk Rdg | Av Rdg | AF    | Closs | Pre-amp | Level    | Limit | Margin | Pol   | Az    | Height  |
|---|------------|--------|--------|-------|-------|---------|----------|-------|--------|-------|-------|---------|
|   | (MHz)      | (dBuV) | (dBuV) | (dB)  | (dB)  | (dB)    | (dBuV/m) | FCC_B | (dB)   | (H/V) | (Deg) | (Meter) |
| X | Button #1: |        |        |       |       |         |          |       |        |       |       |         |
|   | 433.87     | 51.50  | 51.50  | 17.43 | 3.21  | 26.33   | 45.81    | 80.82 | -35.01 | 3mV   | 270   | 1.00    |
| Y | 867.86     | 38.90  | 38.90  | 24.81 | 4.75  | 26.31   | 42.15    | 60.82 | -18.67 | 3mV   | 270   | 1.30    |
|   | 433.86     | 45.72  | 45.72  | 17.43 | 3.21  | 26.33   | 40.03    | 80.82 | -40.79 | 3mV   | 0     | 1.10    |
| Z | 867.88     | 37.20  | 37.20  | 24.81 | 4.75  | 26.31   | 40.45    | 60.82 | -20.37 | 3mV   | 0     | 1.20    |
|   | 433.94     | 49.00  | 49.00  | 17.43 | 3.21  | 26.33   | 43.31    | 80.82 | -37.51 | 3mV   | 90    | 1.00    |
|   | 867.88     | 38.00  | 38.00  | 24.81 | 4.75  | 26.31   | 41.25    | 60.82 | -19.57 | 3mV   | 90    | 1.50    |
|   |            |        |        |       |       |         |          |       |        |       |       |         |
| X | 433.94     | 50.50  | 50.50  | 17.43 | 3.21  | 26.33   | 44.81    | 80.82 | -36.01 | 3mH   | 90    | 1.00    |
|   | 867.76     | 35.90  | 35.90  | 24.81 | 4.75  | 26.31   | 39.15    | 60.82 | -21.67 | 3mH   | 90    | 1.10    |
| Y | 433.88     | 50.00  | 50.00  | 17.43 | 3.21  | 26.33   | 44.31    | 80.82 | -36.51 | 3mH   | 0     | 1.00    |
|   | 867.88     | 32.30  | 32.30  | 24.81 | 4.75  | 26.31   | 35.55    | 60.82 | -25.27 | 3mH   | 0     | 1.20    |
| Z | 433.96     | 47.70  | 47.70  | 17.43 | 3.21  | 26.33   | 42.01    | 80.82 | -38.81 | 3mH   | 270   | 1.00    |
|   | 867.89     | 37.50  | 37.50  | 24.81 | 4.75  | 26.31   | 40.75    | 60.82 | -20.07 | 3mH   | 270   | 1.30    |

Peak: RBW= 120KHz  
VBW= 300KHz  
A(Average): PkReading - 0dB

Total Data #12

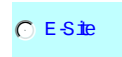
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FCC, VCCI, CISPR, CE, AUSTEL, NZ  
UL, CSA, TUV, BSMI, DHHS, NVLAP

No. 199 Chung Sheng Road  
Hsin Tien City, Taipei, Taiwan, R.O.C.  
PHONE: 02-2217-0894 FAX: 02-2217-1254

**Project #:** 02E0516  
**Report #:** 0516E2  
**Date & Time:** 2002/10/25  
**Test Engr:** DAVID HUNG

**Company:** Advance Security Inc.  
**EUT Description:** TRX852DV (433.92 MHz / Car Alarm Transceiver)  
**Test Configuration :** EUT ONLY  
**Type of Test:** FCC 15.231(b)  
**Mode of Operation:** TRANSMITTER MODE



$$M\% = ((t1+t2+t3+...)/T) * 100\% = 100 \%$$

$$Av \text{ Reading} = Pk \text{ Reading} + 20 * \log(M\%)$$

$$20 * \log(M\%) = 0$$

|   | Freq.      | Pk Rdg | Av Rdg | AF    | Closs | Pre-amp | Level    | Limit | Margin | Pol   | Az    | Height  |
|---|------------|--------|--------|-------|-------|---------|----------|-------|--------|-------|-------|---------|
|   | (MHz)      | (dBuV) | (dBuV) | (dB)  | (dB)  | (dB)    | (dBuV/m) | FCC_B | (dB)   | (H/V) | (Deg) | (Meter) |
| X | Button #2: |        |        |       |       |         |          |       |        |       |       |         |
|   | 433.89     | 51.40  | 51.40  | 17.43 | 3.21  | 26.33   | 45.71    | 80.82 | -35.11 | 3mV   | 180   | 1.00    |
| Y | 867.89     | 37.30  | 37.30  | 24.81 | 4.75  | 26.31   | 40.55    | 60.82 | -20.27 | 3mV   | 180   | 1.20    |
|   | 433.88     | 49.10  | 49.10  | 17.43 | 3.21  | 26.33   | 43.41    | 80.82 | -37.41 | 3mV   | 90    | 1.00    |
| Z | 867.74     | 38.00  | 38.00  | 24.81 | 4.75  | 26.31   | 41.25    | 60.82 | -19.57 | 3mV   | 90    | 1.30    |
|   | 433.96     | 51.40  | 51.40  | 17.43 | 3.21  | 26.33   | 45.71    | 80.82 | -35.11 | 3mV   | 270   | 1.00    |
|   | 867.77     | 38.20  | 38.20  | 24.81 | 4.75  | 26.31   | 41.45    | 60.82 | -19.37 | 3mV   | 270   | 1.40    |
|   |            |        |        |       |       |         |          |       |        |       |       |         |
| X | 433.89     | 50.60  | 50.60  | 17.43 | 3.21  | 26.33   | 44.91    | 80.82 | -35.91 | 3mH   | 270   | 1.00    |
|   | 867.75     | 37.20  | 37.20  | 24.81 | 4.75  | 26.31   | 40.45    | 60.82 | -20.37 | 3mH   | 270   | 1.10    |
| Y | 433.94     | 54.10  | 54.10  | 17.43 | 3.21  | 26.33   | 48.41    | 80.82 | -32.41 | 3mH   | 90    | 1.10    |
|   | 867.89     | 38.30  | 38.30  | 24.81 | 4.75  | 26.31   | 41.55    | 60.82 | -19.27 | 3mH   | 90    | 1.10    |
| Z | 433.89     | 44.50  | 44.50  | 17.43 | 3.21  | 26.33   | 38.81    | 80.82 | -42.01 | 3mH   | 270   | 1.00    |
|   | 867.75     | 35.50  | 35.50  | 24.81 | 4.75  | 26.31   | 38.75    | 60.82 | -22.07 | 3mH   | 270   | 1.20    |

Peak: RBW= 120KHz  
VBW= 300KHz  
A(Average): PkReading - 0dB

Total Data #12

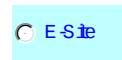
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$$Av \text{ Reading} = Pk \text{ Reading} + 20 * \log(M\%)$$

$$20 * \log(M\%) = 0$$

|   | Freq.      | Pk Rdg | Av Rdg | AF    | Closs | Pre-amp | Level    | Limit | Margin | Pol   | Az    | Height  |
|---|------------|--------|--------|-------|-------|---------|----------|-------|--------|-------|-------|---------|
|   | (MHz)      | (dBuV) | (dBuV) | (dB)  | (dB)  | (dB)    | (dBuV/m) | FCC_B | (dB)   | (H/V) | (Deg) | (Meter) |
| X | Button #3: |        |        |       |       |         |          |       |        |       |       |         |
|   | 433.88     | 47.00  | 47.00  | 17.43 | 3.21  | 26.33   | 41.31    | 80.82 | -39.51 | 3mV   | 180   | 1.00    |
| Y | 867.75     | 36.70  | 36.70  | 24.81 | 4.75  | 26.31   | 39.95    | 60.82 | -20.87 | 3mV   | 180   | 1.10    |
|   | 433.79     | 49.20  | 49.20  | 17.43 | 3.21  | 26.33   | 43.51    | 80.82 | -37.31 | 3mV   | 0     | 1.10    |
| Z | 867.76     | 39.20  | 39.20  | 24.81 | 4.75  | 26.31   | 42.45    | 60.82 | -18.37 | 3mV   | 0     | 1.40    |
|   | 433.93     | 48.90  | 48.90  | 17.43 | 3.21  | 26.33   | 43.21    | 80.82 | -37.61 | 3mV   | 270   | 1.00    |
|   | 867.74     | 38.00  | 38.00  | 24.81 | 4.75  | 26.31   | 41.25    | 60.82 | -19.57 | 3mV   | 270   | 1.50    |
|   |            |        |        |       |       |         |          |       |        |       |       |         |
| X | 433.95     | 51.30  | 51.30  | 17.43 | 3.21  | 26.33   | 45.61    | 80.82 | -35.21 | 3mH   | 0     | 1.00    |
|   | 867.95     | 31.50  | 31.50  | 24.81 | 4.75  | 26.31   | 34.75    | 60.82 | -26.07 | 3mH   | 0     | 1.10    |
| Y | 433.94     | 51.00  | 51.00  | 17.43 | 3.21  | 26.33   | 45.31    | 80.82 | -35.51 | 3mH   | 180   | 1.00    |
|   | 867.74     | 38.50  | 38.50  | 24.81 | 4.75  | 26.31   | 41.75    | 60.82 | -19.07 | 3mH   | 180   | 1.10    |
| Z | 433.88     | 47.80  | 47.80  | 17.43 | 3.21  | 26.33   | 42.11    | 80.82 | -38.71 | 3mH   | 270   | 1.30    |
|   | 867.77     | 36.10  | 36.10  | 24.81 | 4.75  | 26.31   | 39.35    | 60.82 | -21.47 | 3mH   | 270   | 1.20    |

Peak: RBW= 120KHz  
VBW= 300KHz  
A(Average): PkReading - 0dB

Total Data #12

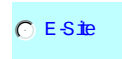
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$$M\% = ((t1+t2+t3+...)/T) * 100\% = 100 \%$$

$$Av \text{ Reading} = Pk \text{ Reading} + 20 * \log(M\%)$$

$$20 * \log(M\%) = 0$$

|   | Freq.      | Pk Rdg | Av Rdg | AF    | Closs | Pre-amp | Level    | Limit | Margin | Pol   | Az    | Height  |
|---|------------|--------|--------|-------|-------|---------|----------|-------|--------|-------|-------|---------|
|   | (MHz)      | (dBuV) | (dBuV) | (dB)  | (dB)  | (dB)    | (dBuV/m) | FCC_B | (dB)   | (H/V) | (Deg) | (Meter) |
| X | Button #4: |        |        |       |       |         |          |       |        |       |       |         |
|   | 433.89     | 48.00  | 48.00  | 17.43 | 3.21  | 26.33   | 42.31    | 80.82 | -38.51 | 3mV   | 90    | 1.00    |
|   | 867.75     | 36.30  | 36.30  | 24.81 | 4.75  | 26.31   | 39.55    | 60.82 | -21.27 | 3mV   | 90    | 1.20    |
| Y | 433.94     | 51.10  | 51.10  | 17.43 | 3.21  | 26.33   | 45.41    | 80.82 | -35.41 | 3mV   | 0     | 1.30    |
|   | 867.78     | 39.40  | 39.40  | 24.81 | 4.75  | 26.31   | 42.65    | 60.82 | -18.17 | 3mV   | 0     | 1.00    |
| Z | 433.88     | 49.70  | 49.70  | 17.43 | 3.21  | 26.33   | 44.01    | 80.82 | -36.81 | 3mV   | 270   | 1.00    |
|   | 867.77     | 38.80  | 38.80  | 24.81 | 4.75  | 26.31   | 42.05    | 60.82 | -18.77 | 3mV   | 270   | 1.50    |
| X | 433.95     | 51.20  | 51.20  | 17.43 | 3.21  | 26.33   | 45.51    | 80.82 | -35.31 | 3mH   | 180   | 1.00    |
|   | 867.85     | 37.90  | 37.90  | 24.81 | 4.75  | 26.31   | 41.15    | 60.82 | -19.67 | 3mH   | 180   | 1.40    |
|   | 433.88     | 51.60  | 51.60  | 17.43 | 3.21  | 26.33   | 45.91    | 80.82 | -34.91 | 3mH   | 0     | 1.00    |
| Y | 867.87     | 38.60  | 38.60  | 24.81 | 4.75  | 26.31   | 41.85    | 60.82 | -18.97 | 3mH   | 0     | 1.20    |
|   | 433.96     | 55.30  | 55.30  | 17.43 | 3.21  | 26.33   | 49.61    | 80.82 | -31.21 | 3mH   | 90    | 1.00    |
| Z | 867.77     | 41.10  | 41.10  | 24.81 | 4.75  | 26.31   | 44.35    | 60.82 | -16.47 | 3mH   | 90    | 1.30    |

There are total 5 buttons, only one has function, the other 4 buttons which if pressed will produce the digital control signals and modulate the carrier signal.

Peak: RBW= 120KHz  
VBW= 300KHz  
A(Average): PkReading - 0dB

Total Data #12

# C&C Laboratory CO., LTD.

FCC, VCCI, CISPR, CE, AUSTEL, NZ  
UL, CSA, TUV, BSMI, DHHS, NVLAP

No. 199 Chung Sheng Road  
Hsin Tien City, Taipei, Taiwan, R.O.C.  
PHONE: 02-2217-0894 FAX: 02-2217-1254

**Project #:** 02E516  
**Report #:** 0516E5  
**Date & Time:** 2002/10/24  
**Test Engr:** DAVID HUNG

**Company:** Advance Security Inc.  
**EUT Description:** TRX852DV (433.92 MHz / Car Alarm Transceiver)  
**Test Configuration :** EUT ONLY  
**Type of Test:** FCC 15.231(b)/FCC 15.209  
**Mode of Operation:** TRANSMITTER MODE

E-Stat

| Freq. | Pk Rdg | Av Rdg | AF    | Closs | Pre-amp | Level    | Limit | Margin | Pol   | Az    | Height  | Mark    |
|-------|--------|--------|-------|-------|---------|----------|-------|--------|-------|-------|---------|---------|
| (MHz) | (dBuV) | (dBuV) | (dB)  | (dB)  | (dB)    | (dBuV/m) | FCC_B | (dB)   | (H/V) | (Deg) | (Meter) | (P/Q/A) |
| 1302  | 55.10  | 55.10  | 24.88 | 3.59  | 37.07   | 46.50    | 54.0  | -7.50  | 3mV   | 180   | 1.0     | A       |
| 1736  | 52.85  | 52.85  | 26.37 | 4.44  | 36.47   | 47.19    | 60.8  | -13.61 | 3mV   | 180   | 1.0     | A       |
| 2170  | 48.34  | 48.34  | 27.75 | 4.47  | 36.06   | 44.50    | 60.8  | -16.30 | 3mV   | 90    | 1.0     | A       |
| 2604  | 53.44  | 53.44  | 28.82 | 5.64  | 36.02   | 51.88    | 60.8  | -8.92  | 3mV   | 90    | 1.0     | A       |
| 3037  | 49.62  | 49.62  | 30.38 | 5.81  | 36.06   | 52.15    | 60.8  | -8.65  | 3mV   | 270   | 1.0     | A       |
| 3472  | 48.32  | 48.32  | 31.26 | 6.13  | 35.64   | 50.07    | 60.8  | -10.73 | 3mV   | 270   | 1.0     | A       |
| 3905  | 46.42  | 46.42  | 32.30 | 6.68  | 35.21   | 50.19    | 54.0  | -3.81  | 3mV   | 90    | 1.0     | A       |
| 4339  | 47.57  | 47.57  | 32.36 | 7.15  | 35.17   | 51.91    | 54.0  | -2.09  | 3mV   | 90    | 1.0     | A       |
| 1302  | 51.50  | 51.50  | 24.88 | 3.59  | 37.07   | 42.90    | 54.0  | -11.10 | 3mH   | 90    | 1.0     | A       |
| 1736  | 52.34  | 52.34  | 26.37 | 4.44  | 36.47   | 46.68    | 60.8  | -14.12 | 3mH   | 90    | 1.0     | A       |
| 2170  | 49.27  | 49.27  | 27.75 | 4.47  | 36.06   | 45.43    | 60.8  | -15.37 | 3mH   | 270   | 1.0     | A       |
| 2603  | 53.98  | 53.98  | 28.82 | 5.64  | 36.02   | 52.42    | 60.8  | -8.38  | 3mH   | 270   | 1.0     | A       |
| 3038  | 49.13  | 49.13  | 30.38 | 5.81  | 36.06   | 52.15    | 60.8  | -8.65  | 3mH   | 180   | 1.0     | A       |
| 3471  | 49.20  | 49.20  | 31.26 | 6.13  | 35.64   | 50.95    | 60.8  | -9.85  | 3mH   | 180   | 1.0     | A       |
| 3905  | 48.04  | 48.04  | 32.30 | 6.68  | 35.21   | 51.81    | 54.0  | -2.19  | 3mH   | 0     | 1.0     | A       |
| 4339  | 47.62  | 47.62  | 32.36 | 7.14  | 35.17   | 51.95    | 54.0  | -2.05  | 3mH   | 0     | 1.0     | A       |

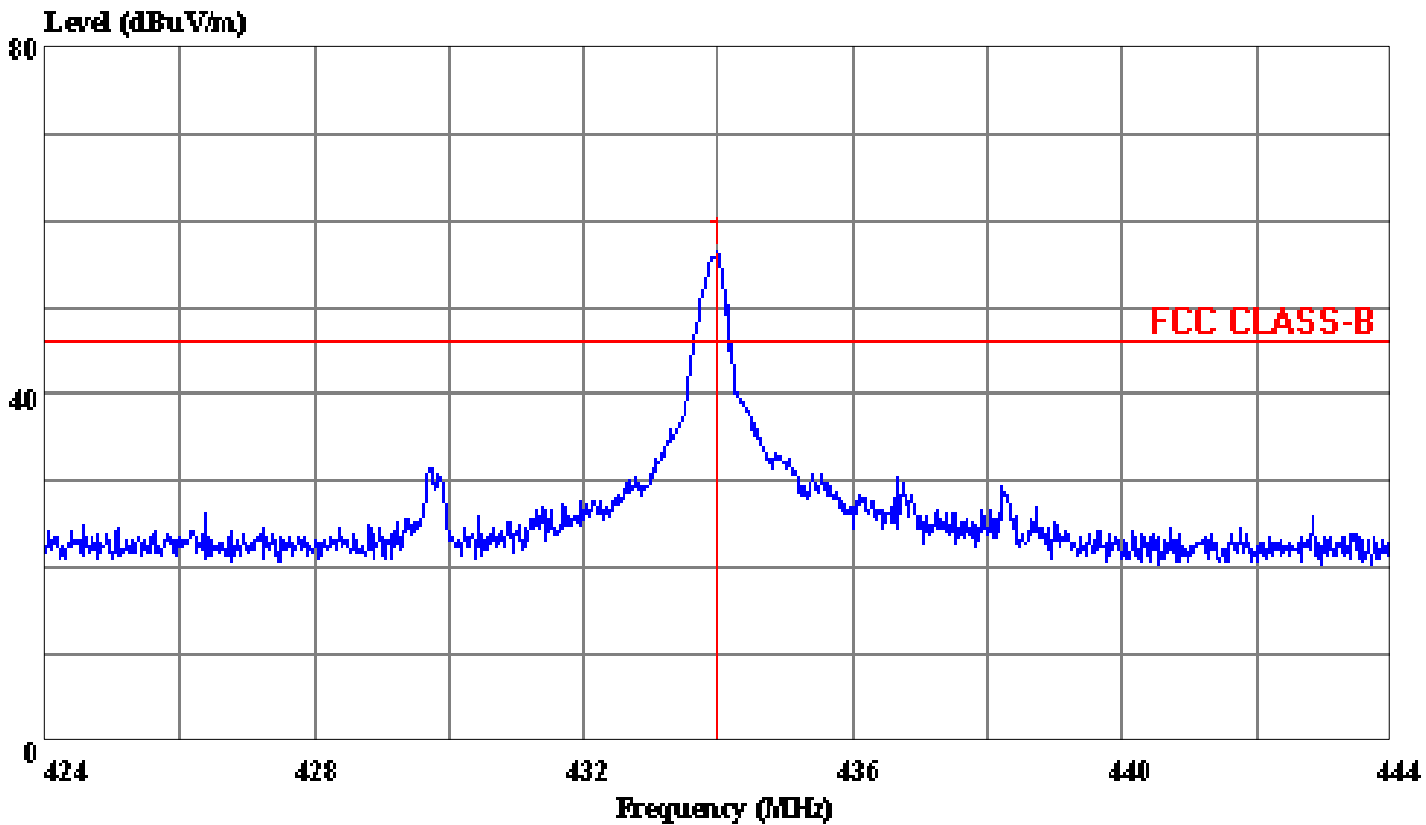
\* No other emission were found within 20dB under the limits upto 4.5 GHz.

Total data #16  
V.2d

P(Peak): RBW=VBW=1MHz  
A(Average): Pk Reading -0dB(For FCC 15.231(b))

Data#: 59 File#: 0516e.emi

Date: 2002-10-31 Time: 11:03:29



(E- Site)

Trace: 56

Ref Trace:

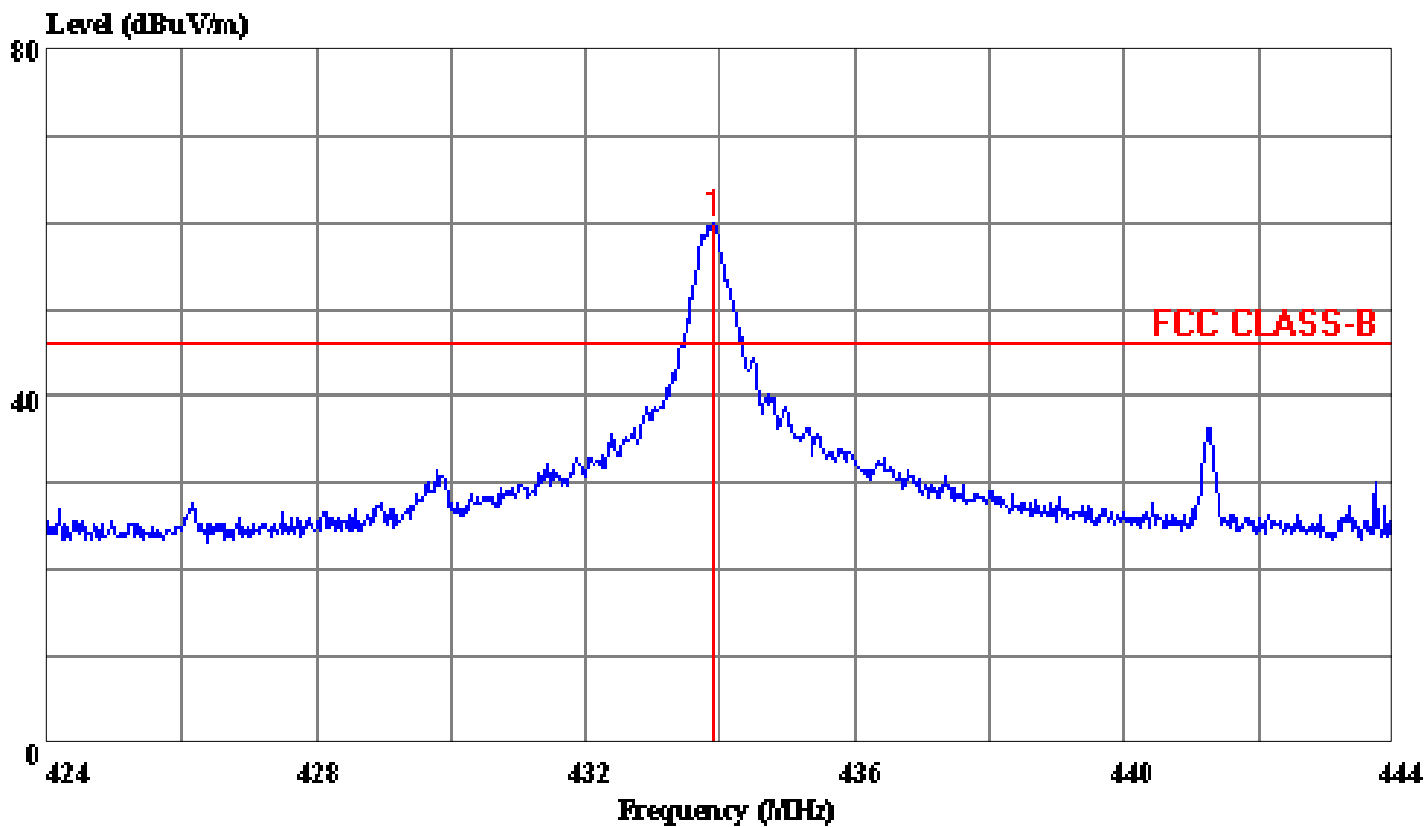
Condition: VERTICAL  
Report No. : 02E0516  
Test Engr. : DAVID HUNG  
Company : Advance Security Inc.  
EUT : TRX852DV  
Test Config : EUT / TX  
Type of Test: FCC 15.109  
Mode of Op. : RECIVER MODE (Model No. TRX86 transmit signal and trigger EUT to product signal)

Page: 1

|     | Freq    | Read Level |
|-----|---------|------------|
|     | MHz     | dBuV       |
| 1 * | 433.980 | 62.10      |

Data#: 61 File#: 0516e.emi

Date: 2002-10-31 Time: 11:04:10



(E- Site)

Trace: 57

Ref Trace:

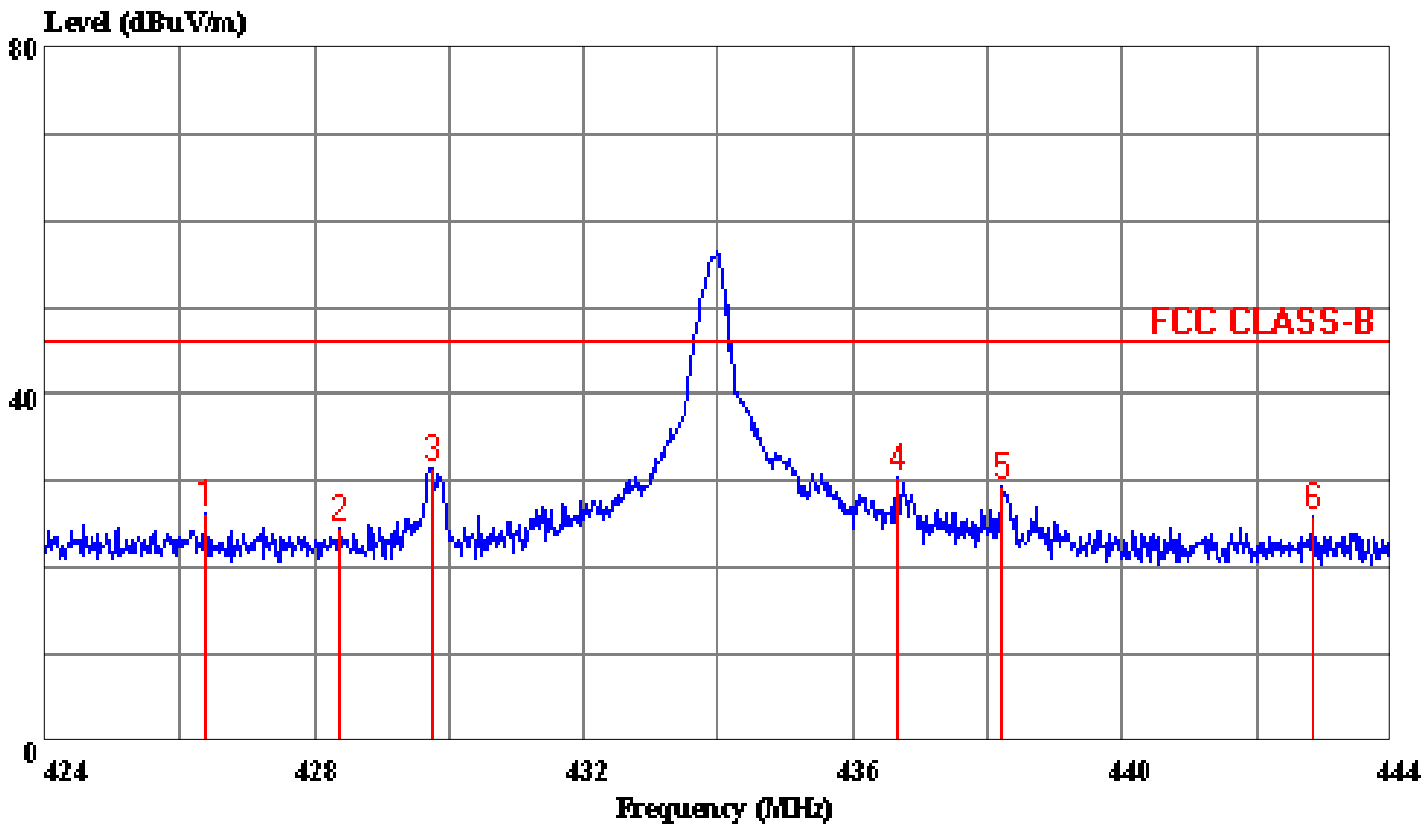
Condition: HORIZONTAL  
Report No. : 02E0516  
Test Engr. : DAVID HUNG  
Company : Advance Security Inc.  
EUT : TRX852DV  
Test Config : EUT / TX  
Type of Test: FCC 15.109  
Mode of Op. : RECIVER MODE (Model No. TRX86 transmit signal and trigger EUT to product signal)

Page: 1

|     | Freq    | Read Level |
|-----|---------|------------|
|     | MHz     | dBuV       |
| 1 * | 433.900 | 65.50      |

Data#: 63 File#: 0516e.emi

Date: 2002-10-31 Time: 11:05:49



(E- Site)

Trace: 56

Ref Trace:

Condition: VERTICAL

Report No. : 02E0516

Test Engr. : DAVID HUNG

Company : Advance Security Inc.

EUT : TRX852DV

Test Config : EUT / TX

Type of Test: FCC 15.109

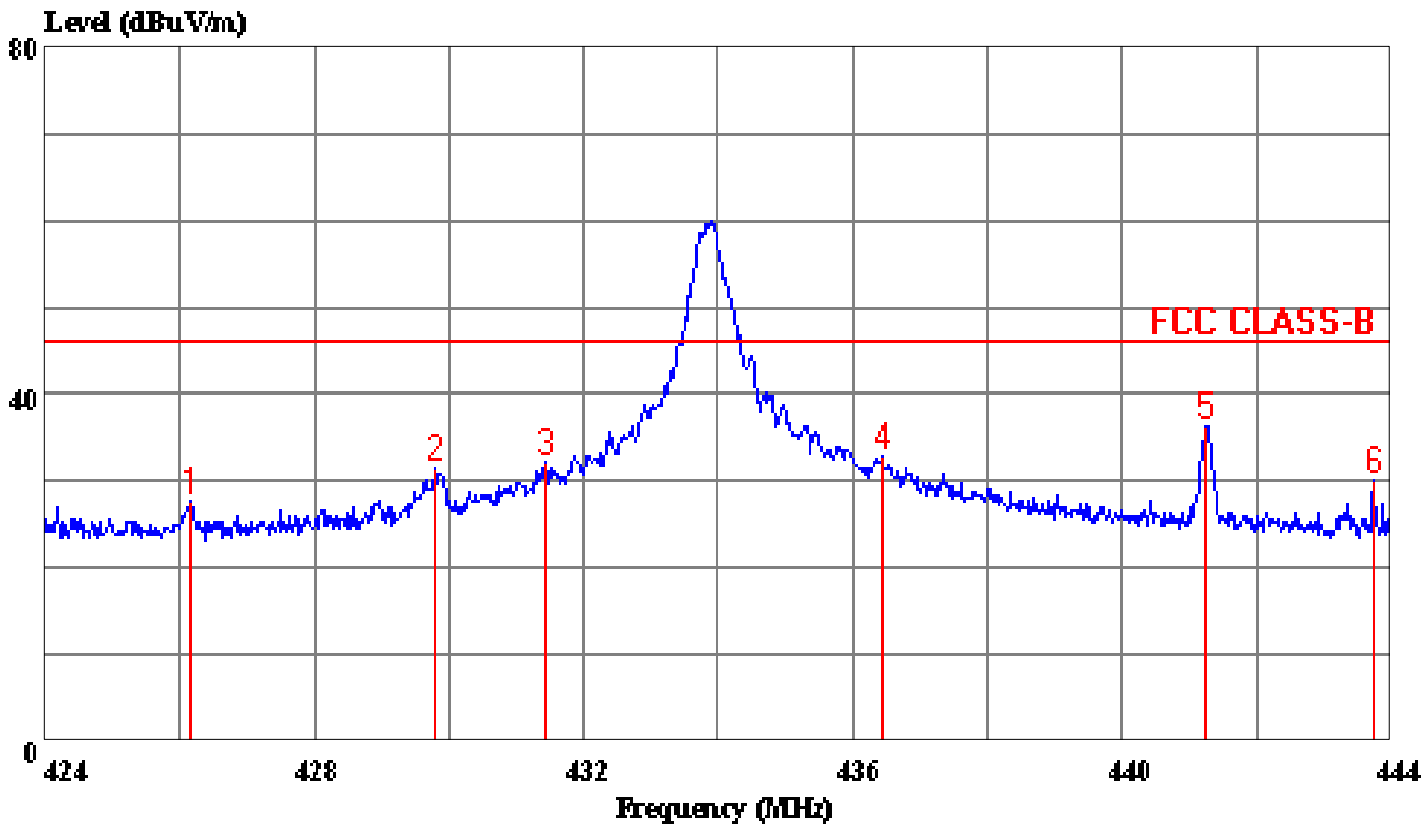
Mode of Op. : RECIVER MODE (Model No. TRX86 transmit signal and trigger EUT to product signal)

Page: 1

|   | Freq    | Read Level | Probe Factor | Cable Loss | Preamplifier Factor | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|--------------|------------|---------------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB           | dB         | dB                  | dBuV/m | dBuV/m     | dB         |        |
| 1 | 426.360 | 31.90      | 17.56        | 3.19       | 26.30               | 26.34  | 46.00      | -19.66     | Peak   |
| 2 | 428.380 | 30.30      | 17.52        | 3.19       | 26.31               | 24.70  | 46.00      | -21.30     | Peak   |
| 3 | 429.740 | 37.10      | 17.49        | 3.20       | 26.31               | 31.47  | 46.00      | -14.53     | Peak   |
| 4 | 436.660 | 36.10      | 17.36        | 3.22       | 26.34               | 30.33  | 46.00      | -15.67     | Peak   |
| 5 | 438.220 | 35.20      | 17.32        | 3.22       | 26.35               | 29.40  | 46.00      | -16.60     | Peak   |
| 6 | 442.820 | 31.90      | 17.23        | 3.23       | 26.36               | 26.00  | 46.00      | -20.00     | Peak   |

Data#: 60 File#: 0516e.emi

Date: 2002-10-31 Time: 11:03:54



(E-Site)

Trace: 57

Ref Trace:

Condition: HORIZONTAL

Report No. : 02E0516

Test Engr. : DAVID HUNG

Company : Advance Security Inc.

EUT : TRX852DV

Test Config : EUT / TX

Type of Test: FCC 15.109

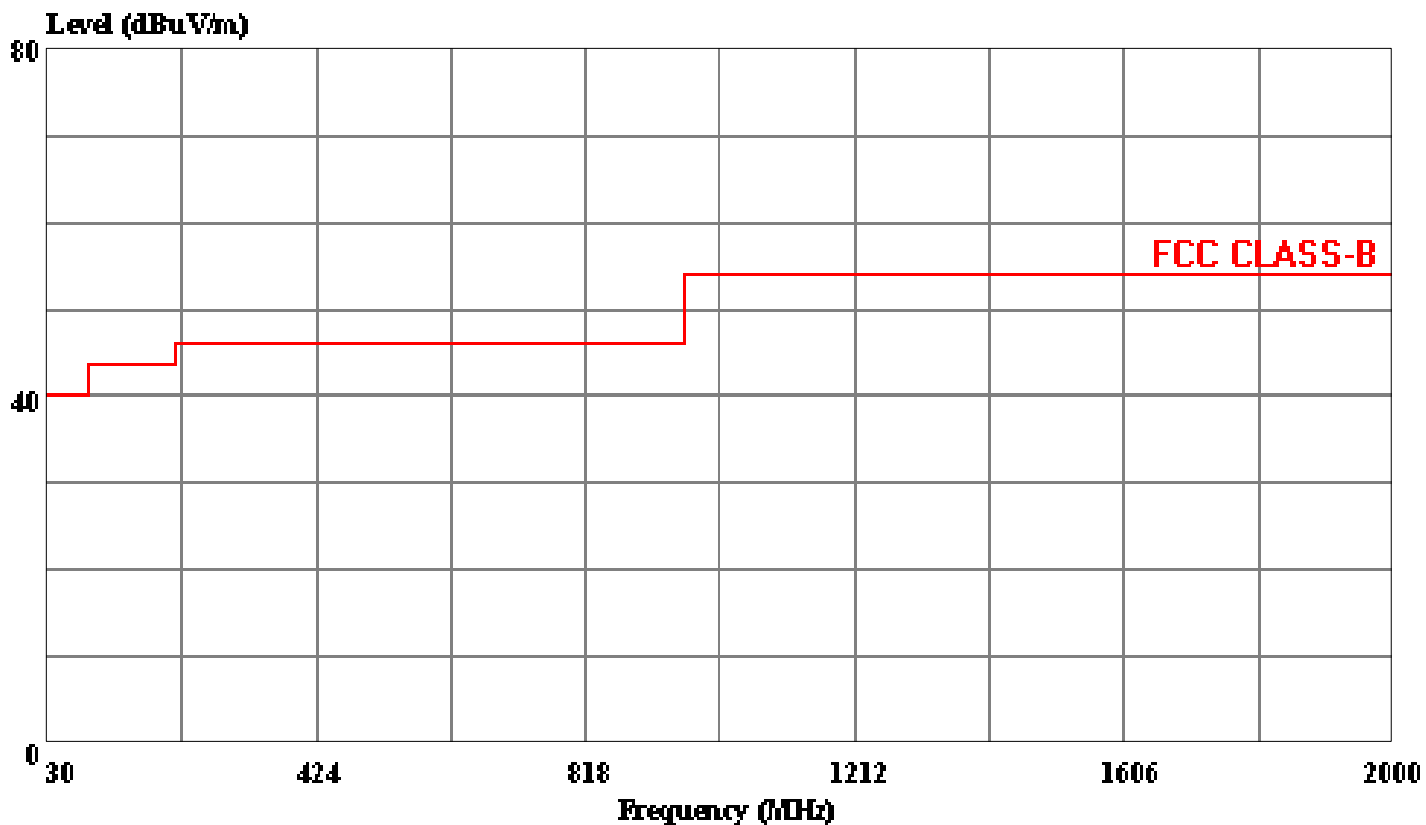
Mode of Op. : RECIVER MODE (Model No. TRX86 transmit signal and trigger EUT to product signal)

Page: 1

|   | Freq    | Read Level | Probe Factor | Cable Loss | Preamplifier Factor | Level  | Limit Line | Over Limit | Remark |
|---|---------|------------|--------------|------------|---------------------|--------|------------|------------|--------|
|   | MHz     | dBuV       | dB           | dB         | dB                  | dBuV/m | dBuV/m     | dB         |        |
| 1 | 426.160 | 33.20      | 17.56        | 3.19       | 26.30               | 27.65  | 46.00      | -18.35     | Peak   |
| 2 | 429.780 | 37.30      | 17.49        | 3.20       | 26.31               | 31.67  | 46.00      | -14.33     | Peak   |
| 3 | 431.440 | 37.70      | 17.46        | 3.20       | 26.32               | 32.04  | 46.00      | -13.96     | Peak   |
| 4 | 436.420 | 38.60      | 17.36        | 3.22       | 26.34               | 32.84  | 46.00      | -13.16     | Peak   |
| 5 | 441.240 | 42.10      | 17.26        | 3.23       | 26.36               | 36.23  | 46.00      | -9.77      | Peak   |
| 6 | 443.720 | 36.00      | 17.22        | 3.23       | 26.37               | 30.08  | 46.00      | -15.93     | Peak   |

Data#: 64 File#: 0516e.emi

Date: 2002-10-31 Time: 11:05:23



**(E-Site)**

Trace:

Ref Trace:

Condition:  
Report No. : 02E0504  
Test Engr. : DAVID HUNG  
Company : Advance Security Inc.  
EUT : TRX852DV  
Test Config : EUT / TX  
Type of Test: FCC 15.109  
Mode of Op. : RECEIVER MODE  
: NO OTHER EMISSION WERE FOUND WITHIN  
: 20 dB BELOW THE LIMITS FROM 30-2000MHZ