## FCC TEST REPORT

REPORT NO.: RF940222L01
MODEL NO.: SKY-4001TH
(refer to page 5 for other mode)
RECEIVED: Feb. 22, 2005
TESTED: Feb. 23, 2005
ISSUED Apr. 11, 2005

$$
\begin{aligned}
\text { APPLICANT: } & \text { Skytech II, Inc. } \\
\text { ADDRESS: } & 9230 \text { Conservation Way Fort Wayne, Indiana } \\
& 46809
\end{aligned}
$$

ISSUED BY: Advance Data Technology Corporation<br>LAB ADDRESS: No. 47, $14^{\text {th }}$ Ling, Chia Pau Tsuen, Lin Kou Hsiang 244, Taipei Hsien, Taiwan, R.O.C.<br>TEST LOCATION: No. 19, Hwa Ya $2^{\text {nd }}$ Rd., Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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## 1. CERTIFICATION

```
        PRODUCT: Remote control transmitter
    MODEL NO.: SKY-4001TH (refer to page 5 for other model)
        BRAND: SKYTECH
        APPLICANT: Skytech II, Inc.
        TESTED: Feb. 23, 2005
TEST SAMPLE: R&D SAMPLE
    STANDARDS: FCC Part 15, Subpart C (Section 15.231),
                            ANSI C63.4-2003
```

The above equipment (model: SKY-4001TH) have been tested by Advance Data Technology Corporation, and found compliance with the requirement of the above standards. The test record, data evaluation \& Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.


## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 15, Subpart C |  |  |  |
| :--- | :--- | :---: | :--- |
| STANDARD <br> PARAGRAPH | TEST TYPE | RESULT | REMARK |
| 15.207 | Conducted Emission Test | NA | 3 3Vdc from battery |
| $15.231(\mathrm{a})$ | De-activation | PASS | Meet the requirement <br> of limit |
| 15.209 <br> $15.231(b)$ | Radiated Emission Test | PASS | Minimum passing <br> margin is -12.93dB at <br> 434.04 MHz |
| 15.231 (c) | 20dB Occupied Bandwidth <br> Measurement | PASS | Meet the requirement <br> of limit |

### 2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4:

| Measurement | Frequency | Uncertainty |
| :---: | :---: | :---: |
| Conducted emissions | $9 \mathrm{kHz} \sim 30 \mathrm{MHz}$ | 2.44 dB |
| Radiated emissions | $30 \mathrm{MHz} \sim 200 \mathrm{MHz}$ | 3.63 dB |
|  | $200 \mathrm{MHz} \sim 1000 \mathrm{MHz}$ | 3.65 dB |
|  | $1 \mathrm{GHz} \sim 18 \mathrm{GHz}$ | 2.20 dB |
|  | $18 \mathrm{GHz} \sim 40 \mathrm{GHz}$ | 1.88 dB |

## 3. GENERAL INFORMATION

### 3.1 GENERAL DESCRIPTION OF EUT

| PRODUCT | Remote control transmitter |
| :--- | :--- |
| MODEL NO. | SKY-4001TH |
| POWER SUPPLY | 3 Vdc from battery |
| MODULATION TYPE | ASK |
| CARRIER FREQUENCY <br> OF EACH CHANNEL | 433.92 MHz |
| NUMBER OF CHANNEL | 1 |
| ANTENNA TYPE | Printed antenna |
| DATA CABLE | NA |
| I/O PORTS | NA |

NOTE:

1. The following models are provided to this EUT, and identical to each other except for their models and buttons due to marketing requirement.

| Brand | MODEL NO. | REMARK |
| :---: | :---: | :---: |
| SKYTECH | SKY-4001TH | Three buttons |
| SKYTECH | SKY-4001LCD | Two buttons |

2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

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### 3.2 DESCRIPTION OF TEST MODES

One channel is provided to this EUT:

| Channel | Frequency |
| :---: | :---: |
| 1 | 433.92 MHz |

### 3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

|  | EUT |
| :--- | :--- |
| (Power from battery) |  |
| Test table |  |

### 3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

| EUT <br> configure <br> mode | Applicable to |  |  |  | Description |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | PLC | RE<1G | RE $\geq 1 G$ | APM |  |
| - | - | $x$ | $x$ | $x$ | NA |

Where PLC: Power Line Conducted Emission $\quad$ RE<1G RE: Radiated Emission below 1GHz RE $\geq$ 1G: Radiated Emission above $1 \mathrm{GHz} \quad$ APM: Antenna Port Measurement

## Radiated Emission Test (Below 1 GHz):

$\boxtimes$ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet types and X.Y.Z. axis.
$\boxtimes$ Following channel(s) was (were) selected for the final test as listed below.

| Available <br> Channel | Tested <br> Channel | Modulation <br> Type | Axis |
| :---: | :---: | :---: | :---: |
| 1 | 1 | ASK | Z |

## Radiated Emission Test (Above 1 GHz):

$\boxtimes$ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet types and X.Y.Z. axis.
$\boxtimes$ Following channel(s) was (were) selected for the final test as listed below.

| Available <br> Channel | Tested <br> Channel | Modulation <br> Type | Axis |
| :---: | :---: | :---: | :---: |
| 1 | 1 | ASK | Z |

## Antenna Port Conducted Measurement:

$\boxtimes$ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, packet types .
$\boxtimes$ Following channel(s) was (were) selected for the final test as listed below.

| Available <br> Channel | Tested <br> Channel | Modulation <br> Type |
| :---: | :---: | :---: |
| 1 | 1 | ASK |

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### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Remote control transmitter. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.231)
ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

### 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| NO. | PRODUCT | BRAND | MODEL NO. | SERIAL NO. | FCC ID |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | NA | NA | NA | NA | NA |


| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
| :---: | :--- |
| 1 | NA |

NOTE: All power cords of the above support units are non shielded (1.8m).

## 4. TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

NA

### 4.2 DEACTIVATION TIME

### 4.2.1 LIMITS OF DEACTIVATION TIME MEASUREMENT

A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

### 4.2.2 TEST INSTRUMENTS

| Description \& Manufacturer | Model No. | Serial No. | Calibrated Until |
| :---: | :---: | :---: | :---: |
| SPECTRUM ANALYZER | FSEK30 | 100049 | Aug. 12, 2005 |

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

### 4.2.3 TEST PROCEDURES

1 The EUT was placed on the turning table.
2 The signal was coupled to the spectrum analyzer through an antenna.
3 Set the resolution bandwidth to 1 kHz and video bandwidth to 100 kHz . The spectrum analyser was turned to the centre frequency of the transmitter's and the analyser's marker function was used to determine the duration of transmission.

4 The transmission duration was measured and recorded.

### 4.2.4 DEVIATION FROM TEST STANDARD

No deviation

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### 4.2.5 TEST SETUP



### 4.2.6 TEST RESULTS

| Push button | Frequency <br> $(\mathbf{M H z})$ | Transmission <br> duration <br> $(\mathbf{s e c})$ | Maximum limit <br> $(\mathbf{s e c})$ | PASS/FAIL |
| :---: | :---: | :---: | :---: | :---: |
| 1 | 433.92 | 2.10 | 5 | PASS |

The plot of test result is attached as below.

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Manual Push - Button 1


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### 4.3 RADIATED EMISSION MEASUREMENT

### 4.3.1 LIMITS OF RADIATED EMISSION MEASUREMENT

According to 15.231 the field strength of emissions from intentional radiators operated under these frequencies bands shall not exceed the following:

| Fundamental <br> Frequency (MHz) | Field Strength of Fundamental |  | Field Strength of Spurious |  |
| :---: | :---: | :---: | :---: | :---: |
|  | uV/meter | dBuV/meter | uV/meter | dBuV/meter |
| $40.66-40.70$ | 2250 | 67.04 | 225 | 48.04 |
| $70-130$ | 1250 | 61.94 | 125 | 41.94 |
| $130-174$ | 1250 to 3750 | 61.94 to 71.48 | 125 to 375 | 41.94 to 51.48 |
| $174-260$ | 3750 | 71.48 | 75 | 37.50 |
| $260-470$ | 3750 to 12500 | 71.48 to 81.94 | 375 to 1250 | 51.48 to 61.94 |
| Above 470 | 12500 | 81.94 | 1250 | 61.94 |

## NOTE:

(1) Where F is the frequency in MHz , the formula for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 $\mathrm{MHz}, \mathrm{uV} / \mathrm{m}$ at 3 meters $=56.81818(\mathrm{~F})-6136.3636$; for the band $260-470 \mathrm{MHz}$, $\mathrm{uV} / \mathrm{m}$ at 3 meters $=41.6667(\mathrm{~F})$ - 7083.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.
(2) The above field strength limits are specified at a distance of 3 meters. The tighter limits apply at the band edges.

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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| Frequencies <br> $(\mathbf{M H z})$ | Field strength <br> (microvolts/meter) | Measurement distance <br> (meters) |
| :---: | :---: | :---: |
| $0.009-0.490$ | $2400 / \mathrm{F}(\mathrm{kHz})$ | 300 |
| $0.490-1.705$ | $24000 / \mathrm{F}(\mathrm{kHz})$ | 30 |
| $1.705-30.0$ | 30 | 30 |
| $30-88$ | 100 | 3 |
| $88-216$ | 150 | 3 |
| $216-960$ | 200 | 3 |
| Above 960 | 500 | 3 |

As shown in 15.35 (b), for frequencies above 1000 MHz , the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition of modulation.

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4.3.2 TEST INSTRUMENTS

| DESCRIPTION \& MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED UNTIL |
| :---: | :---: | :---: | :---: |
| Test Receiver ROHDE \& SCHWARZ | ESI7 | 838496/016 | Jan. 07, 2006 |
| Spectrum Analyzer ROHDE \& SCHWARZ | FSP40 | 100041 | Nov. 29, 2005 |
| BILOG Antenna SCHWARZBECK | VULB9168 | 9168-155 | Feb. 03, 2006 |
| HORN Antenna SCHWARZBECK | BBHA 9120D | 9120D-404 | Jan. 05, 2006 |
| HORN Antenna SCHWARZBECK | BBHA 9170 | BBHA 9170242 | Jan. 23, 2006 |
| Preamplifier Agilent | 8447D | 2944A10631 | Nov. 17, 2005 |
| Preamplifier Agilent | 8449B | 3008A01960 | Nov. 14, 2005 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 219272/4 | Mar. 04, 2005 |
| RF signal cable HUBER+SUHNNER | SUCOFLEX 104 | 219275/4 | Mar. 04, 2005 |
| Software ADT. | ADT_Radiated_V5.14 | NA | NA |
| Antenna Tower inn-co GmbH | MA 4000 | 010303 | NA |
| Antenna Tower Controller inn-co GmbH | CO2000 | 019303 | NA |
| Turn Table ADT. | TT100. | TT93021704 | NA |
| Turn Table Controller ADT. | SC100. | SC93021704 | NA |

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 3.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1 GHz if tested.
4. The IC Site Registration No. is IC4924-4.

### 4.3.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.

## NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1 GHz .
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1 GHz .

### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

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4.3.5 TEST SETUP


For the actual test configuration, please refer to the related item - Photographs of the Test Configuration.

### 4.3.6 EUT OPERATING CONDITIONS

Set the transmitter part of EUT under transmission condition continuously at specific channel frequency.

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4.3.7 TEST RESULTS

Below 1GHz Worst-Case Data

| EUT | Remote control transmitter | MODEL | SKY-4001TH |
| :--- | :--- | :--- | :--- |
| CHANNEL | Channel 1 | FREQUENCY <br> RANGE | Below 1000MHz |
| MODULATION <br> TYPE | ASK | INPUT POWER <br> (SYSTEM) | 3Vdc |
| ENVIRONMENTAL <br> CONDITIONS | 25deg. C, 61\%RH, <br> 991hPa | DETECTOR <br> FUNCTION | Quasi-Peak / Peak/ <br> Average |
| TESTED BY | Long Chen |  |  |

ANTENNA POLARITY \& TEST DISTANCE: HORIZONTAL AT 3 M

| No. | Freq. <br> $(\mathrm{MHz})$ | Emission <br> Level <br> $(\mathrm{dBuV} / \mathrm{m})$ | Limit <br> $(\mathrm{dBuV} / \mathrm{m})$ | Margin <br> $(\mathrm{dB})$ | Antenna <br> Height <br> $(\mathrm{m})$ | Table <br> Angle <br> $($ Degree $)$ | Raw <br> Value <br> $(\mathrm{dBuV})$ | Correction <br> Factor <br> $(\mathrm{dB} / \mathrm{m})$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 288.54 | 14.48 QP | 46.00 | -31.52 | 1.50 H | 307 | -0.34 | 14.82 |
| 2 | $* 434.04$ | 76.37 PK | 100.83 | -24.46 | 1.55 H | 249 | 58.17 | 18.20 |
| 2 | $* 434.04$ | 57.02 AV | 80.83 | -23.81 | 1.55 H | 249 | 38.82 | 18.20 |
| 3 | 517.92 | 20.75 QP | 46.00 | -25.25 | 1.00 H | 106 | 1.11 | 19.64 |
| 4 | 741.46 | 23.85 QP | 46.00 | -22.15 | 1.50 H | 184 | -0.21 | 24.05 |
| 5 | 817.27 | 24.32 QP | 46.00 | -21.68 | 1.00 H | 241 | -0.40 | 24.72 |
| 6 | 868.08 | 41.04 PK | 80.83 | -39.79 | 1.00 H | 283 | 15.71 | 25.33 |
| 7 | 868.08 | 21.69 AV | 60.83 | -39.14 | 1.00 H | 283 | -3.64 | 25.33 |
| 8 | 914.47 | 25.62 QP | 46.00 | -20.38 | 1.50 H | 328 | -0.45 | 26.07 |
| 9 | 945.57 | 26.47 QP | 46.00 | -19.53 | 1.00 H | 256 | 0.03 | 26.43 |

NOTE: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB)
2. Correction Factor $(\mathrm{dB})=$ Antenna Factor $(\mathrm{dB})+$ Cable Factor $(\mathrm{dB})$
3. The other emission levels were very low against the limit.
4. Margin value $=$ Emission level - Limit value.
5. "*" = Fundamental frequency
6. The average value of fundamental frequency is: Average $=$ Peak value $+20 \log$ (Duty cycle)

Where the duty factor is calculated from following formula:
$20 \log ($ Duty cycle $)=20 \log \frac{(2+4+15+12)^{*} 0.216 \mathrm{~ms}}{66.13 \mathrm{~ms}}=-19.35 \mathrm{~dB}$
please see page 20 to 21 for plotted duty

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| EUT | Remote control transmitter | MODEL | SKY-4001TH |
| :--- | :--- | :--- | :--- |
| CHANNEL | Channel 1 | FREQUENCY <br> RANGE | Below 1000MHz |
| MODULATION <br> TYPE | ASK | INPUT POWER <br> (SYSTEM) | 3Vdc |
| ENVIRONMENTAL <br> CONDITIONS | 25deg. C, 61\%RH, <br> 991hPa | DETECTOR <br> FUNCTION | Quasi-Peak / Peak/ <br> Average |
| TESTED BY | Long Chen |  |  |


| ANTENNA POLARITY \& TEST DISTANCE: VERTICAL AT 3 M |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. | Freq. <br> $(\mathrm{MHz})$ | Emission <br> Level <br> $(\mathrm{dBuV} / \mathrm{m})$ | Limit <br> $(\mathrm{dBuV} / \mathrm{m})$ | Margin <br> $(\mathrm{dB})$ | Antenna <br> Height <br> $(\mathrm{m})$ | Table <br> Angle <br> $($ Degree $)$ | Raw <br> Value <br> $(\mathrm{dBuV})$ | Correction <br> Factor <br> $(\mathrm{dB} / \mathrm{m})$ |
| 1 | 39.72 | 15.51 QP | 40.00 | -24.49 | 1.00 V | 97 | 0.06 | 15.45 |
| 2 | 99.98 | 12.81 QP | 43.50 | -30.69 | 1.00 V | 259 | 1.52 | 11.29 |
| 3 | 144.69 | 16.67 QP | 43.50 | -26.83 | 1.00 V | 85 | 1.81 | 14.86 |
| 4 | $* 434.04$ | 87.25 PK | 100.83 | -13.58 | 1.21 V | 161 | 82.63 | 18.20 |
| $\mathbf{4}$ | $* 434.04$ | $\mathbf{6 7 . 9 0} \mathrm{AV}$ | $\mathbf{8 0 . 8 3}$ | -12.93 | $\mathbf{1 . 2 1 \mathrm { V }}$ | $\mathbf{1 6 1}$ | $\mathbf{4 9 . 7 0}$ | $\mathbf{1 8 . 2 0}$ |
| 5 | 475.15 | 20.21 QP | 46.00 | -25.79 | 1.00 V | 196 | 1.25 | 18.96 |
| 6 | 646.21 | 21.20 QP | 46.00 | -24.80 | 1.00 V | 172 | -1.03 | 22.24 |
| 7 | 725.91 | 23.04 QP | 46.00 | -22.96 | 1.00 V | 346 | -0.60 | 23.64 |
| 8 | 868.07 | 51.05 PK | 80.83 | -29.78 | 1.17 V | 101 | 25.72 | 25.33 |
| 8 | 868.07 | 32.70 AV | 60.83 | -28.13 | 1.17 V | 101 | 7.37 | 25.33 |

NOTE: 1. Emission level $(\mathrm{dBuV} / \mathrm{m})=$ Raw Value $(\mathrm{dBuV})+$ Correction Factor( dB )
2. Correction Factor(dB) = Antenna Factor (dB) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value $=$ Emission level - Limit value
5. "*" = Fundamental frequency
6. The average value of fundamental frequency is: Average $=$ Peak value $+20 \log$ (Duty cycle)

Where the duty factor is calculated from following formula:

please see page 20 to 21 for plotted duty

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ASK modulation

| EUT | Remote control transmitter | MODEL | SKY-4001TH |
| :--- | :--- | :--- | :--- |
| CHANNEL | Channel 1 | FREQUENCY <br> RANGE | $1-7 \mathrm{GHz}$ |
| MODULATION <br> TYPE | ASK | INPUT POWER <br> (SYSTEM) | 3 Vdc |
| ENVIRONMENTAL <br> CONDITIONS | 25deg. C, 61\%RH, <br> 991hPa | DETECTOR <br> FUNCTION | Peak (PK) |
| TESTED BY | Long Chen |  |  |

ANTENNA POLARITY \& TEST DISTANCE: HORIZONTAL AT 3 M

| No. | Freq. <br> $(\mathrm{MHz})$ | Emission <br> Level <br> $(\mathrm{dBuV} / \mathrm{m})$ | Limit <br> $(\mathrm{dBuV} / \mathrm{m})$ | Margin <br> $(\mathrm{dB})$ | Antenna <br> Height <br> $(\mathrm{m})$ | Table <br> Angle <br> $($ Degree $)$ | Raw <br> Value <br> $(\mathrm{dBuV})$ | Correction <br> Factor <br> $(\mathrm{dB} / \mathrm{m})$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 1302.08 | 45.64 PK | 74.00 | -28.36 | 1.15 H | 287 | 17.52 | 28.12 |
| 2 | 1736.21 | 54.38 PK | 74.00 | -19.62 | 1.47 H | 58 | 26.26 | 28.12 |
| 3 | 2604.11 | 45.25 PK | 74.00 | -28.75 | 1.47 H | 58 | 17.13 | 28.12 |


| ANTENN POLARITY \& TEST DISTANCE: VERTICAL AT 3 M |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| No. | Freq. <br> $(\mathrm{MHz})$ | Emission <br> Level <br> $(\mathrm{dBuV} / \mathrm{m})$ | Limit <br> $(\mathrm{dBBV} / \mathrm{m})$ | Margin <br> $(\mathrm{dB})$ | Antenna <br> Height <br> $(\mathrm{m})$ | Table <br> Angle <br> $($ Degree $)$ | Raw <br> Value <br> $(\mathrm{dBu})$ | Correction <br> Factor <br> $(\mathrm{dB} / \mathrm{m})$ |  |
| 1 | 1302.06 | 49.62 PK | 74.00 | -24.38 | 1.20 V | 58 | 21.50 | 28.12 |  |
| 2 | 1736.17 | 58.34 PK | 74.00 | -15.66 | 1.25 V | 129 | 30.21 | 28.12 |  |
| 3 | 2604.02 | 48.93 PK | 74.00 | -25.07 | 1.06 V | 0 | 20.81 | 28.12 |  |

REMARKS: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value $=$ Emission level - Limit value.

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### 4.4 20dB OCCUPIED BANDWIDTH MEASUREMENT

### 4.4.1 LIMITS OF BAND EDGES MEASUREMENT

The bandwidth of the emission shall be no wider than $0.25 \%$ of the center frequency for device operating above 70 MHz and below 900 MHz .

| Fundamental Frequency (MHz) | Limit of $\mathbf{2 0} \mathbf{~ d B}$ Bandwidth(kHz) |
| :---: | :---: |
| 433.92 | 1084.8 |

### 4.4.2 TEST INSTRUMENTS

| Description \& Manufacturer | Model No. | Serial No. | Calibrated Until |
| :---: | :---: | :---: | :---: |
| SPECTRUM ANALYZER | FSEK30 | 100049 | Aug. 12, 2005 |

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

### 4.4.3 TEST PROCEDURES

1. The EUT was placed on the turning table.
2. The signal was coupled to the spectrum analyzer through an antenna.
3. Set the resolution bandwidth to 10 kHz and video bandwidth to 30 kHz then select Peak function to scan the channel frequency.
4. The 20 dB bandwidth was measured and recorded.

### 4.4.4 DEVIATION FROM TEST STANDARD

No deviation

FCC ID: K9L-4001THTX
4.4.5 TEST SETUP


### 4.4.6 TEST RESULTS

| Frequency (MHz) | $\mathbf{2 0} \mathbf{~ d B ~ b a n d w i d t h ~}$ <br> $(\mathbf{k H z})$ | Maximum limit <br> $(\mathbf{k H z})$ | PASS/FAIL |
| :---: | :---: | :---: | :---: |
| 433.92 | 55.11 | 1084.80 | PASS |

The plot of test result is attached as below.

FCC ID: K9L-4001THTX



## 5. PHOTOGRAPHS OF THE TEST CONFIGURATION

RADIATED EMISSION TEST


## 6. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

| USA | FCC, NVLAP, UL, A2LA |
| :--- | :--- |
| Germany | TUV Rheinland |
| Japan | VCCI |
| Norway | NEMKO |
| Canada | INDUSTRY CANADA, CSA |
| R.O.C. | CNLA, BSMI, DGT |
| Netherlands | Telefication |
| Singapore | PSB, GOST-ASIA(MOU) |
| Russia | CERTIS(MOU) |

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:
www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

## Linko EMC/RF Lab:

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Fax: 886-2-26052943
Hwa Ya EMC/RF/Safety Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3185050

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Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also

