



FCC TEST REPORT

REPORT NO.: 051135FIA01

MODEL NO.: 00985 transmitter

RECEIVED: Nov. 29, 2005

TESTED: Nov. 29 ~ Dec. 28, 2005

ISSUED: Dec. 29, 2005

APPLICANT: Chaney Instrument Co.

ADDRESS: AB 29/F HaiYing Building South Caitian
Road Futian District Shenzhen China

ISSUED BY: ADT (Shanghai) Corporation

ADDRESS: 2F, Building C, No.1618, Yishan Rd., 201103,
Shanghai, China

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ADT (Shanghai) Corporation.



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1 CERTIFICATION

PRODUCT: Wireless refrigerator / freezer thermometer
MODEL NO.: 00985 transmitter
APPLICANT: Chaney Instrument Co.
TESTED: Nov. 29 ~ Dec. 28, 2005
TEST ITEM: Engineering Sample
STANDARDS: FCC Part 15:2005,
Subpart C (Section 15.209 and 15.231),
ANSI C63.4-2003

The above equipment has been tested by **ADT (Shanghai) 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.

TECHNICAL

ACCEPTANCE : _____ , **DATE:** DEC. 29, 2005
Responsible for EMI (Wailand Zhang)

APPROVED BY : _____ , **DATE:** DEC. 29, 2005
(Wallace Pan, Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

| APPLIED STANDARD: FCC Part 15, Subpart C | | | |
|--|-------------------------------------|--------|---|
| Standard Paragraph | Test Type | Result | Remarks |
| 15.207 | Conducted Emission Test | N/A | |
| 15.231(c) | 20dB Occupied Bandwidth Measurement | PASS | Meet the requirement of limit |
| 15.209 15.231(e) | Radiated Emission Test | PASS | Minimum passing AV margin is -6.04dB at 3037.440MHz |

Note: This report contains data that were produced under subcontract by Laboratory ADT (Shanghai) Corporation.

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 | Value |
|---------------------|-------|
| Conducted emissions | 1.8dB |
| Radiated emissions | 3.5dB |

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

| | |
|--|---|
| PRODUCT | Wireless refrigerator / freezer thermometer |
| MODEL NO. | 00985 transmitter |
| POWER SUPPLY | 3Vdc from battery |
| MODULATION TYPE | ASK |
| CARRIER FREQUENCY OF EACH CHANNEL | 433.92MHz |
| NUMBER OF CHANNEL | 1 |
| EACH CHANNEL FREQUENCY | Fixed |
| CHANNEL SEPARATION | +/-75KHz |
| CHANNEL CONTROL | Manual |
| ANTENNA TYPE | Connector |
| ANTENNA JOINT TYPE | Soldered |
| RF OUTPUT POWER | - 15dBm |
| DATA CABLE SUPPLIED | N/A |
| I/O PORTS | N/A |

NOTE: 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.

3.2 DESCRIPTION OF TEST MODES

One channel is provided to this EUT:

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



Test Mode Applicability AND TESTED CHANNEL DETAIL:

| EUT configure mode | Applicable to | | | | Description |
|--------------------|---------------|-------|-------|-----|-------------|
| | PLC | RE<1G | RE≥1G | APM | |
| - | - | X | X | X | NA |

Where PLC: Power Line Conducted Emission RE<1G RE: Radiated Emission below 1GHz
 RE≥1G: Radiated Emission above 1GHz APM: Antenna Port Measurement

Radiated Emission Test (Below 1 GHz):

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

| Available Channel | Tested Channel | Modulation Type | Axis |
|-------------------|----------------|-----------------|------|
| 1 | 1 | ASK | X |

Radiated Emission Test (Above 1 GHz):

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

| Available Channel | Tested Channel | Modulation Type | Axis |
|-------------------|----------------|-----------------|------|
| 1 | 1 | ASK | X |

Antenna Port Conducted Measurement:

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

| Available Channel | Tested Channel | Modulation Type | Axis |
|-------------------|----------------|-----------------|------|
| 1 | 1 | ASK | X |

3.3 DESCRIPTION OF SUPPORT UNITS

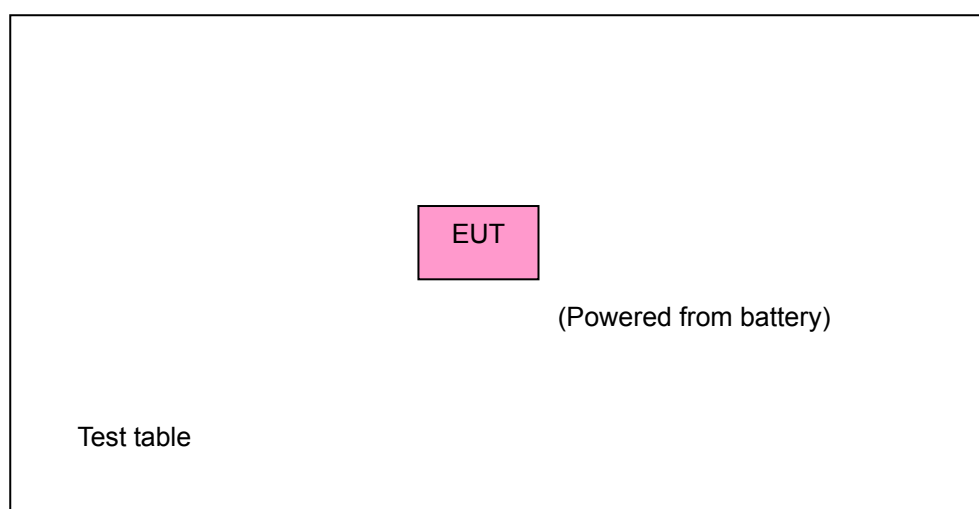
The EUT is a kind of alarm system. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

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.



4 EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

TEST STANDARD:

FCC Part 15: 2005, Subpart C (Section: 15.207)

| FREQUENCY (MHz) | Quasi-peak | Average |
|-----------------|------------|---------|
| 0.15 - 0.5 | 66 - 56 | 56 - 46 |
| 0.50 - 5.0 | 56 | 46 |
| 5.0 - 30.0 | 60 | 50 |

- NOTES:** 1. The lower limit shall apply at the transition frequencies.
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.

4.1.2 TEST RESULT

Since the EUT does not have AC port, the test item is not applicable.

4.2 20dB OCCUPIED BANDWIDTH MEASUREMENT

4.2.1 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 20 dB Bandwidth(kHz) |
|-----------------------------|-------------------------------|
| 433.975 | 1084.9 |

4.2.2 TEST INSTRUMENTS

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|------------------------------|-----------|------------|------------------|
| SPECTRUM ANALYZER Agilent | E4403B | E1S1001 | Jan. 13, 2006 |

NOTE: The calibration interval of the above test instruments is 12 months.

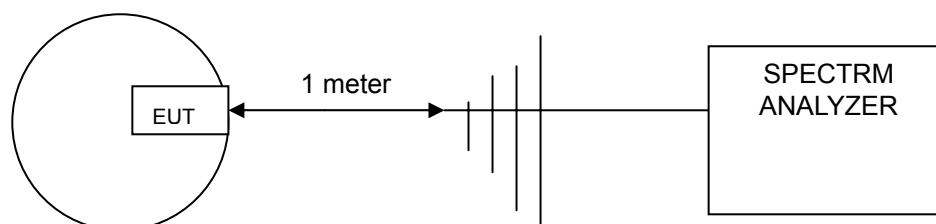
4.2.3 TEST PROCEDURES

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 10 kHz and video bandwidth to 1MHz then select Peak function to scan the channel frequency.
4. The 20dB bandwidth was measured and recorded.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

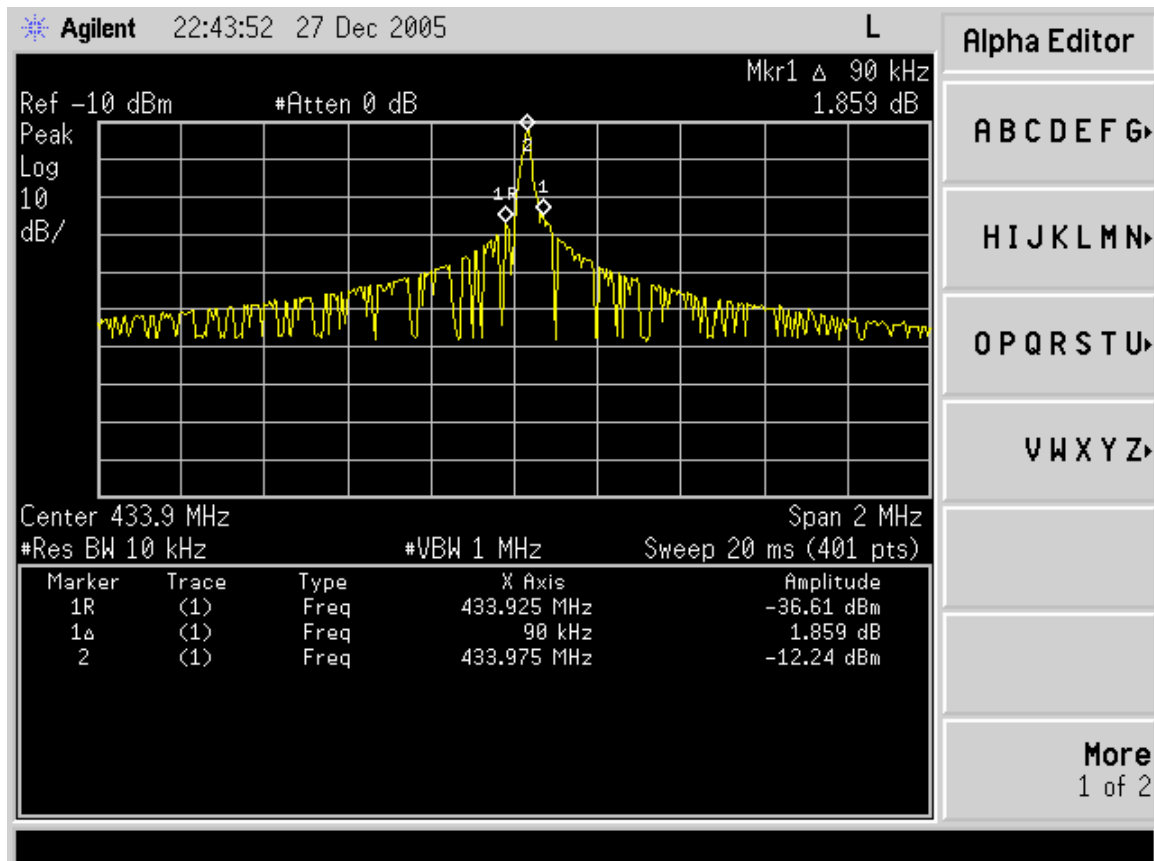
4.2.5 TEST SETUP



4.2.6 TEST RESULTS

| Frequency (MHz) | 20 dB bandwidth (kHz) | Maximum limit (kHz) | PASS/FAIL |
|-----------------|-----------------------|---------------------|-----------|
| 433.975 | 90 | 1084.9 | PASS |

The plot of test result is attached as below.



4.3 RADIATED EMISSION MEASUREMENT

4.3.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD:

FCC Part 15: 2005, Subpart C (Section: 15.205)

FCC Part 15: 2005, Subpart C (Section: 15.209)

FCC Part 15: 2005, Subpart C (Section: 15.231(e))

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

| Fundamental Frequency (MHz) | Field Strength of Fundamental | | Field Strength of Spurious | |
|-----------------------------|-------------------------------|----------------|----------------------------|----------------|
| | uV/meter | dBuV/meter | uV/meter | dBuV/meter |
| 40.66 – 40.70 | 1000 | 60.00 | 100 | 40.00 |
| 70 – 130 | 500 | 53.98 | 50 | 36.98 |
| 130 – 174 | 500 to 1500 | 53.98 to 63.52 | 50 to 150 | 36.98 to 43.52 |
| 174 – 260 | 1500 | 63.52 | 150 | 43.52 |
| 260 – 470 | 1500 to 5000 | 63.52 to 73.98 | 150 to 500 | 43.52 to 53.98 |
| Above 470 | 5000 | 73.98 | 500 | 53.98 |

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 MHz, uV/m at 3 meters = $22.72727(F) - 2454.545$; for the band 260-470 MHz, uV/m at 3 meters = $16.6667(F) - 2833.3333$. 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 3meters. 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:

| Frequencies (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|-------------------|-----------------------------------|-------------------------------|
| 0.009-0.490 | $2400/F(\text{kHz})$ | 300 |
| 0.490-1.705 | $24000/F(\text{kHz})$ | 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 1000MHz, 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 20dB under any condition of modulation.

FREQUENCY RANGE OF RADIATED MEASUREMENT

(For unintentional radiators)

| Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz) | Range (MHz) |
|---|---|
| Below 1.705 | 30 |
| 1.705 – 108 | 1000 |
| 108 – 500 | 2000 |
| 500 – 1000 | 5000 |
| Above 1000 | 5 th harmonic of the highest frequency or 40 GHz, whichever is lower |



4.3.2 TEST INSTRUMENTS

| DESCRIPTION & MANUFACTURER | MODEL NO. | SERIAL NO. | CALIBRATED UNTIL |
|--|-------------------|------------|------------------|
| Test Receiver ROHDE & SCHWARZ | ESCS30 | E1R1001 | Apr. 19, 2006 |
| BILOG Antenna SCHWARZBECK | VULB9168 | E1A1001 | Sep. 26, 2006 |
| Preamplifier Agilent | 8447D | E1A2001 | Jan. 27, 2006 |
| Preamplifier Agilent | 8449B | E1A2002 | Jan. 27, 2006 |
| Double Ridged Broadband Horn Antenna Schwarzbeck | BBHA 9120D | E1A1002 | Feb.15, 2006 |
| *Spectrum Analyzer Agilent | E4403B | E1S1001 | Jan. 13, 2006 |
| *Spectrum Analyzer ROHDE & SCHWARZ | FSP30 | E1S1002 | May.15,2006 |
| RF signal cable Woken | RG-402 | E1CBH01 | May. 30, 2006 |
| RF signal cable Woken | RG-402 | E1CBH02 | May. 30, 2006 |
| RF signal cable Woken | RG-402 | E1CBH03 | May. 30, 2006 |
| RF signal cable Woken | RG-412 | E1CBL02 | May. 30, 2006 |
| RF signal cable Woken | RG-412 | E1CBL03 | May. 30, 2006 |
| RF signal cable Woken | RG-412 | E1CBL04 | May. 30, 2006 |
| Software ADT | ADT_Radiated_V7.5 | NA | NA |

- NOTE:**
1. The calibration interval of the above test instruments is 12 months.
 2. "*" = These equipment are used for the final measurement.
 3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
 4. The Spectrum Analyzer (model: FSP30) and RF signal cable (SERIAL: E1CBH02&E1CBH03) are used only for the measurement of emission frequency above 2GHz if tested.

4.3.3 TEST PROCEDURE

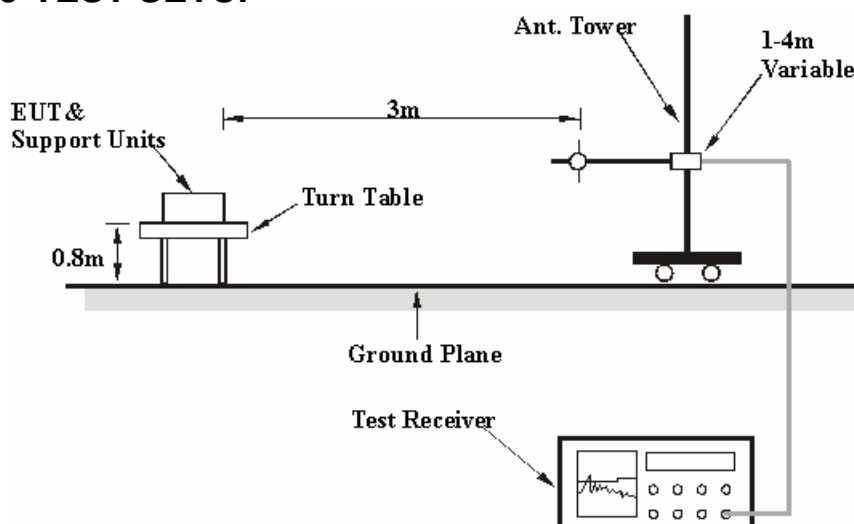
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. 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.
- e. 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.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. 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 1GHz.
 2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

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

Power on the EUT and make it in the statement of normal emission.

4.3.7 TEST RESULTS

Below 1GHz Worst-Case Data

| | | | |
|---------------------------------|---|-----------------------------|-----------------------------|
| EUT | Wireless refrigerator/freezer thermometer | MODEL NO. | 00985 transmitter |
| CHANNEL | Channel 1 | FREQUENCY RANGE | 30 ~ 1000 MHz |
| MODULATION TYPE | ASK | INPUT POWER (SYSTEM) | 3 Vdc from battery |
| ENVIRONMENTAL CONDITIONS | 21deg. C, 60%RH, 1013hPa | DETECTOR FUNCTION | Quasi-Peak / Peak / Average |
| TESTED BY | BRIGHT | | |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| No. | Freq. (MHz) | Factor (dB/M) | Reading (dBuV/M) | Emission (dBuV/M) | Limit (dBuV/M) | Margin (dB) | Ant. Height (cm) | Table Angle (Deg.) |
|-----|-------------|---------------|------------------|-------------------|----------------|-------------|------------------|--------------------|
| 1 | 153.680 | 17.01 | -7.16 | 9.85QP | 43.52 | -33.65 | 138.00 | 338.00 |
| 2 | 287.050 | 16.10 | -6.73 | 9.37QP | 46.00 | -36.63 | 242.00 | 252.00 |
| 3* | 433.975 | 19.74 | 45.00 | 64.74PK | 92.87 | -28.13 | 132.00 | 178.00 |
| 3* | 433.975 | 19.74 | 36.70 | 56.44AV | 72.87 | -16.43 | 132.00 | 178.00 |
| 4 | 597.450 | 23.08 | -7.05 | 16.03QP | 46.00 | -29.97 | 127.00 | 149.00 |
| 5 | 687.170 | 24.37 | -7.10 | 17.28QP | 46.00 | -28.72 | 143.00 | 142.00 |
| 6 | 776.900 | 25.64 | -6.94 | 18.69QP | 46.00 | -27.31 | 143.00 | 137.00 |
| 7 | 867.950 | 26.45 | 4.89 | 31.34PK | 72.87 | -41.53 | 100.00 | 187.00 |
| 7 | 867.950 | 26.45 | -3.41 | 23.04AV | 52.87 | -29.83 | 100.00 | 187.00 |
| 8 | 956.350 | 27.79 | -6.68 | 21.11QP | 46.00 | -24.89 | 280.00 | 261.00 |

- NOTE:**
1. Emission level (dBuV/m) = Raw Value (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 + 20log (Duty cycle), where the duty factor is calculated from following formula:

$$20\log (\text{Duty cycle}) = 20\log \frac{1.05 \times 29 + 8}{100\text{ms}} = -8.30\text{dB}$$

Please see page 19 to 20 for plotted duty.



| | | | |
|---------------------------------|---|-----------------------------|-----------------------------|
| EUT | Wireless refrigerator/freezer thermometer | MODEL NO. | 00985 transmitter |
| CHANNEL | Channel 1 | FREQUENCY RANGE | 30 ~ 1000 MHz |
| MODULATION TYPE | ASK | INPUT POWER (SYSTEM) | 3 Vdc from battery |
| ENVIRONMENTAL CONDITIONS | 21deg. C, 60%RH, 1013hPa | DETECTOR FUNCTION | Quasi-Peak / Peak / Average |
| TESTED BY | BRIGHT | | |

| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | | | | | | |
|--|-------------|---------------|------------------|-------------------|----------------|-------------|------------------|--------------------|
| No. | Freq. (MHz) | Factor (dB/M) | Reading (dBuV/M) | Emission (dBuV/M) | Limit (dBuV/M) | Margin (dB) | Ant. Height (cm) | Table Angle (Deg.) |
| 1 | 177.930 | 14.95 | -6.90 | 8.05QP | 43.52 | -35.45 | 100.00 | 225.00 |
| 2 | 325.850 | 17.15 | -6.69 | 10.47QP | 46.00 | -35.53 | 100.00 | 154.00 |
| 3* | 433.975 | 19.74 | 43.64 | 63.38PK | 92.87 | -29.49 | 100.00 | 102.00 |
| 3* | 433.975 | 19.74 | 35.34 | 55.08AV | 72.87 | -17.79 | 100.00 | 102.00 |
| 4 | 551.370 | 22.09 | -7.38 | 14.71QP | 46.00 | -31.29 | 100.00 | 82.00 |
| 5 | 687.170 | 24.37 | -7.12 | 17.26QP | 46.00 | -28.74 | 101.00 | 47.00 |
| 6 | 808.420 | 26.00 | -7.02 | 18.98QP | 46.00 | -27.02 | 100.00 | 11.00 |
| 7 | 867.950 | 26.53 | 5.19 | 31.72PK | 72.87 | -41.15 | 100.00 | 268.00 |
| 7 | 867.950 | 26.53 | -3.11 | 23.42AV | 52.87 | -29.45 | 100.00 | 268.00 |
| 8 | 936.950 | 27.75 | -6.28 | 21.47QP | 46.00 | -24.53 | 100.00 | 82.00 |

- NOTE:**
1. Emission level (dBuV/m) = Raw Value (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 + 20log (Duty cycle), where the duty factor is calculated from following formula:

$$20\log (\text{Duty cycle}) = 20\log \frac{1.05 \times 29 + 8}{100\text{ms}} = -8.30\text{dB}$$

please see page 19 to 20 for plotted duty



ASK modulation

| | | | |
|---------------------------------|---|-----------------------------|-------------------|
| EUT | Wireless refrigerator/freezer thermometer | MODEL NO. | 00985 transmitter |
| CHANNEL | Channel 1 | FREQUENCY RANGE | 0.96GHz – 5GHz |
| MODULATION TYPE | ASK | INPUT POWER (SYSTEM) | 3Vdc from battery |
| ENVIRONMENTAL CONDITIONS | 21deg. C, 60%RH, 1013hPa | DETECTOR FUNCTION | Peak/ Average |
| TESTED BY | BRIGHT | | |

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

| No. | Freq. (MHz) | Factor (dB/M) | Reading (dBuV/M) | Emission (dBuV/M) | Limit (dBuV/M) | Margin (dB) | Ant. Height (cm) | Table Angle (Deg.) |
|-----------|-----------------|---------------|------------------|-------------------|----------------|--------------|------------------|--------------------|
| 1 | 1301.925 | 31.32 | 20.68 | 52.00PK | 72.87 | -20.87 | 100.00 | 19.00 |
| 1 | 1301.925 | 31.32 | 12.38 | 43.70AV | 52.87 | -9.17 | 100.00 | 19.00 |
| 2 | 1501.360 | 31.41 | 20.26 | 51.67PK | 73.98 | -22.33 | 100.00 | 19.00 |
| 3 | 1501.360 | 31.41 | 7.36 | 38.77AV | 53.98 | -15.23 | 100.00 | 19.00 |
| 4 | 1735.900 | 31.80 | 18.68 | 50.48PK | 72.87 | -22.39 | 100.00 | 19.00 |
| 4 | 1735.900 | 31.80 | 10.38 | 42.18AV | 52.87 | -10.69 | 100.00 | 19.00 |
| 5 | 1986.160 | 33.23 | 5.37 | 38.60AV | 53.98 | -15.40 | 100.00 | 19.00 |
| 6 | 1994.240 | 33.25 | 17.98 | 51.22PK | 73.98 | -22.78 | 100.00 | 19.00 |
| 7 | 2169.875 | 35.53 | 16.20 | 51.73PK | 72.87 | -21.14 | 100.00 | 19.00 |
| 7 | 2169.875 | 35.53 | 7.90 | 43.43AV | 52.87 | -9.44 | 100.00 | 19.00 |
| 8 | 2503.280 | 36.33 | 3.80 | 40.13AV | 53.98 | -13.87 | 100.00 | 19.00 |
| 9 | 2511.360 | 36.33 | 16.20 | 52.53PK | 73.98 | -21.47 | 100.00 | 19.00 |
| 10 | 2603.850 | 36.28 | 16.75 | 53.03PK | 72.87 | -19.84 | 100.00 | 19.00 |
| 10 | 2603.850 | 36.28 | 8.45 | 44.73AV | 52.87 | -8.14 | 100.00 | 19.00 |
| 11 | 2996.160 | 37.19 | 15.97 | 53.16PK | 73.98 | -20.84 | 100.00 | 19.00 |
| 12 | 3004.240 | 37.22 | 5.09 | 42.31AV | 53.98 | -11.69 | 100.00 | 19.00 |
| 13 | 3037.825 | 37.34 | 17.79 | 55.13PK | 72.87 | -17.74 | 100.00 | 19.00 |
| 13 | 3037.825 | 37.34 | 9.49 | 46.83AV | 52.87 | -6.04 | 100.00 | 19.00 |
| 14 | 3471.800 | 38.94 | 15.73 | 54.67PK | 72.87 | -18.20 | 100.00 | 19.00 |
| 14 | 3471.800 | 38.94 | 7.43 | 46.37AV | 52.87 | -6.50 | 100.00 | 19.00 |
| 15 | 3497.120 | 39.22 | 15.89 | 55.11PK | 73.98 | -18.89 | 100.00 | 19.00 |
| 16 | 3497.120 | 39.22 | 3.97 | 43.19AV | 53.98 | -10.81 | 100.00 | 19.00 |
| 17 | 3905.775 | 40.68 | 14.30 | 54.98PK | 72.87 | -19.02 | 100.00 | 19.00 |
| 17 | 3905.775 | 40.68 | 6.00 | 46.68AV | 52.87 | -6.19 | 100.00 | 19.00 |
| 18 | 3998.080 | 41.19 | 13.97 | 55.16PK | 73.98 | -18.84 | 100.00 | 19.00 |
| 19 | 4006.160 | 41.22 | 1.33 | 42.55AV | 53.98 | -11.45 | 100.00 | 19.00 |
| 20 | 4339.750 | 42.50 | 11.96 | 54.46PK | 72.87 | -18.41 | 100.00 | 19.00 |
| 20 | 4339.750 | 42.50 | 3.66 | 46.16AV | 52.87 | -6.71 | 100.00 | 19.00 |



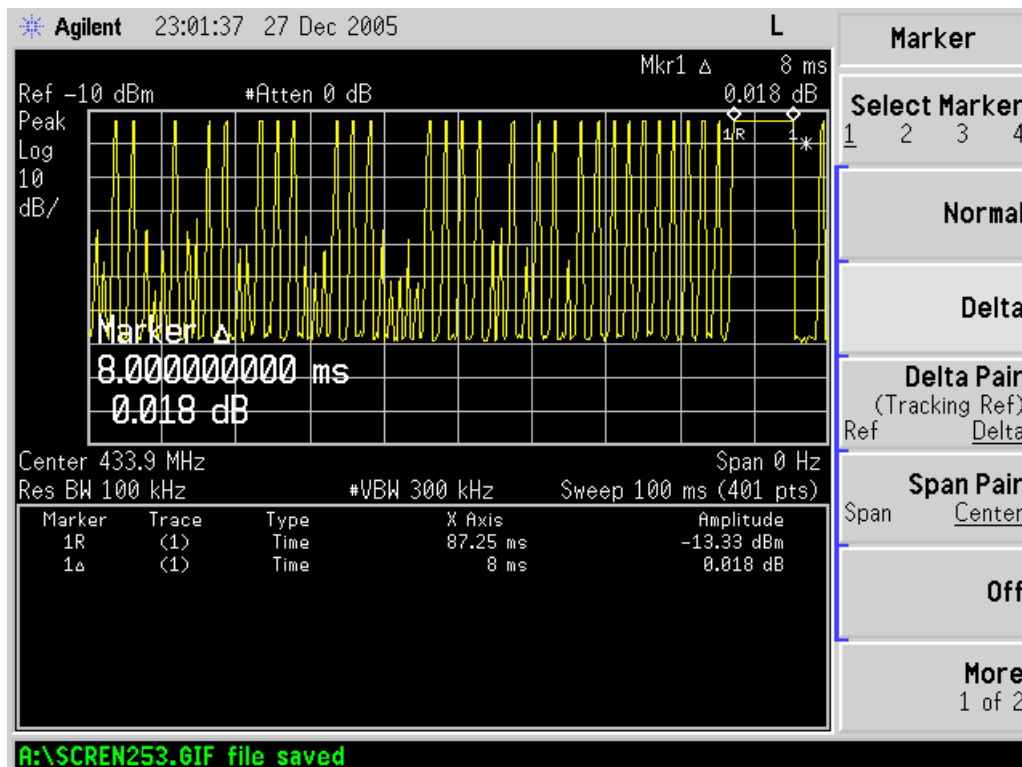
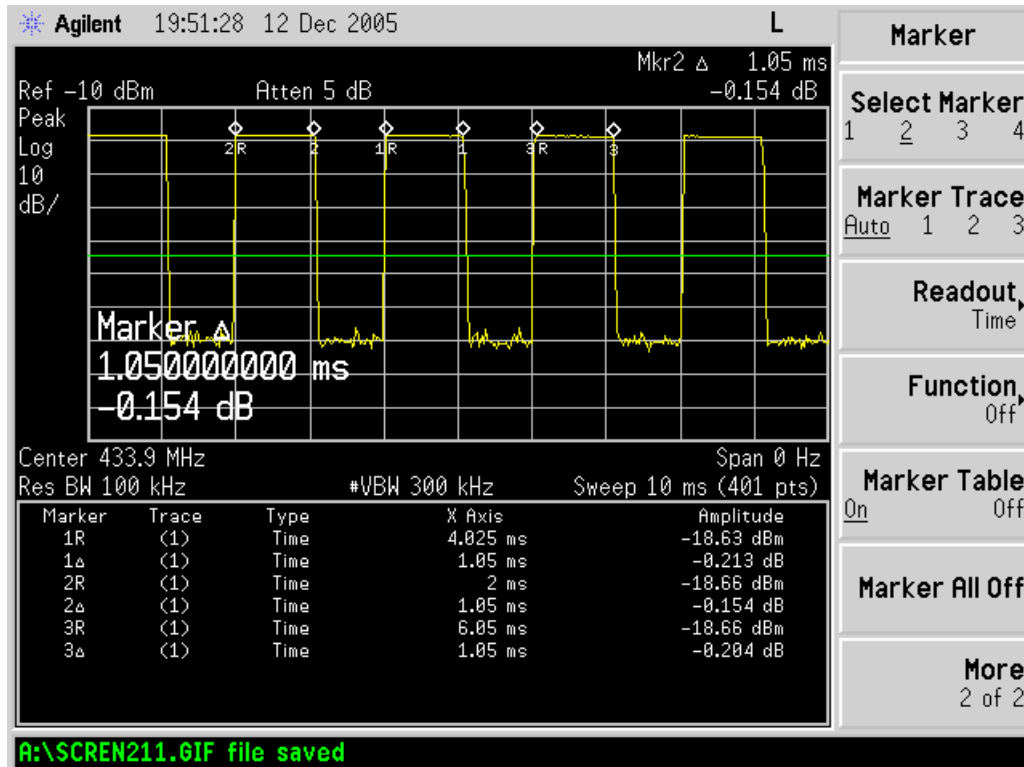
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

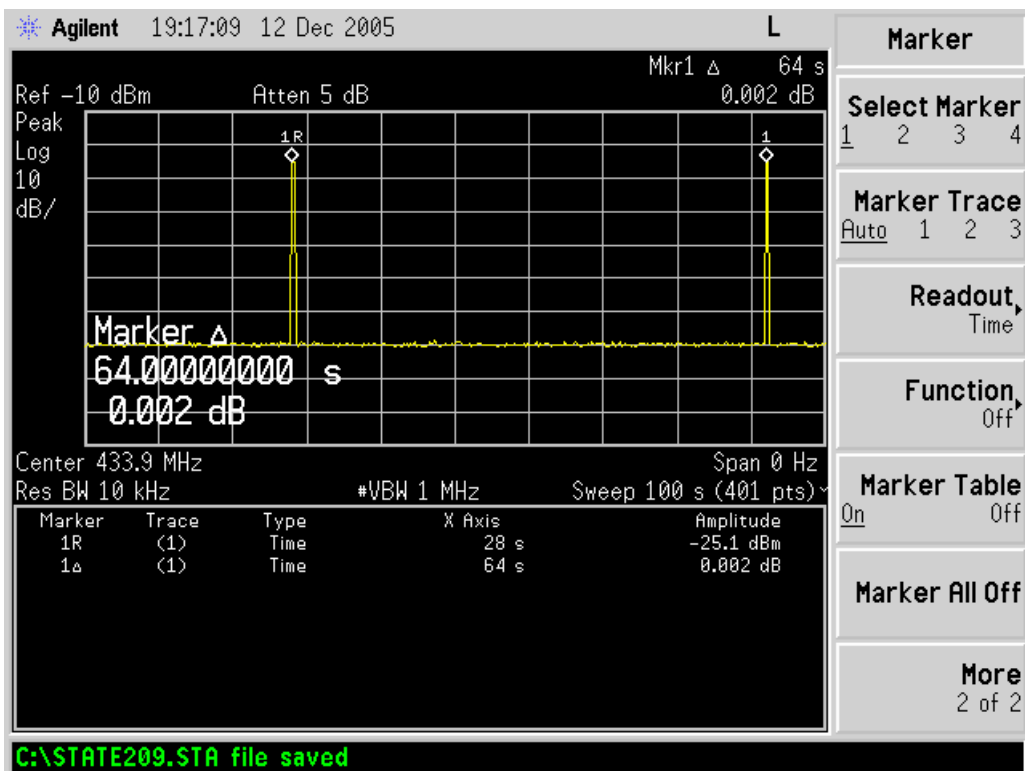
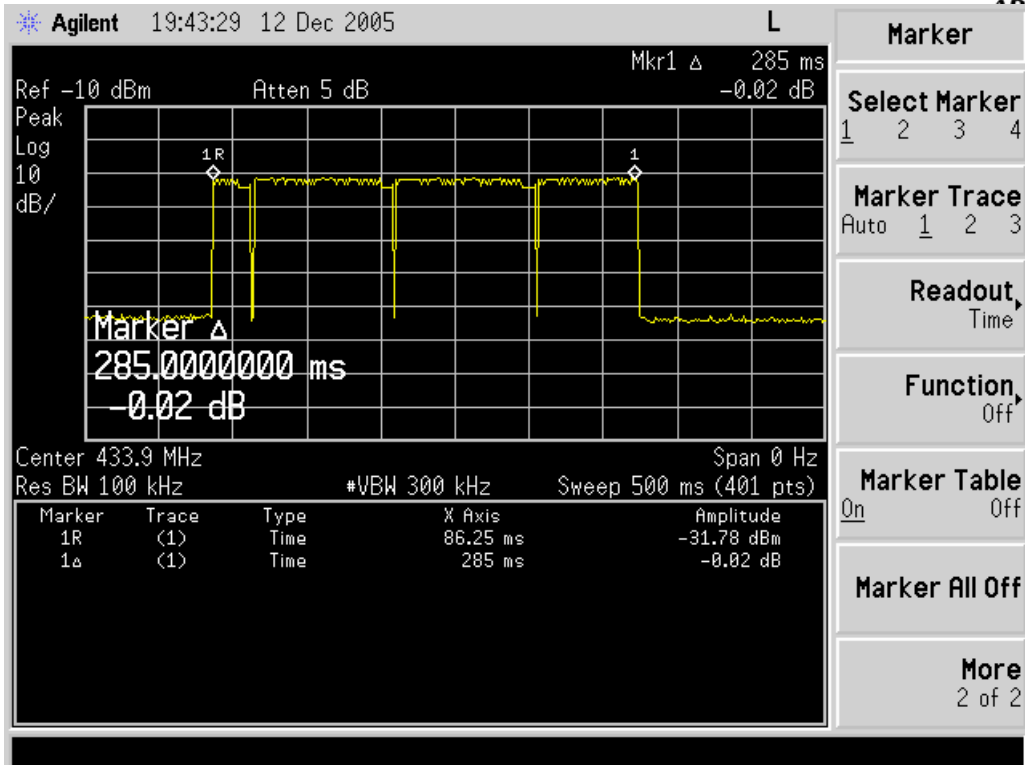
| No. | Freq. (MHz) | Factor (dB/M) | Reading (dBuV/M) | Emission (dBuV/M) | Limit (dBuV/M) | Margin (dB) | Ant. Height (cm) | Table Angle (Deg.) |
|-----|-------------|---------------|------------------|-------------------|----------------|-------------|------------------|--------------------|
| 1 | 1301.925 | 31.32 | 19.82 | 51.14PK | 72.87 | -21.73 | 100.00 | 19.00 |
| 1 | 1301.925 | 31.32 | 11.52 | 42.84AV | 52.87 | -10.03 | 100.00 | 19.00 |
| 2 | 1501.360 | 31.41 | 19.08 | 50.49PK | 73.98 | -23.51 | 100.00 | 19.00 |
| 3 | 1501.360 | 31.41 | 7.34 | 38.75AV | 53.98 | -15.25 | 100.00 | 19.00 |
| 4 | 1735.900 | 31.80 | 17.92 | 49.72PK | 72.87 | -23.15 | 100.00 | 19.00 |
| 4 | 1735.900 | 31.80 | 9.62 | 41.42AV | 52.87 | -11.45 | 100.00 | 19.00 |
| 5 | 1986.160 | 33.23 | 17.89 | 51.12PK | 73.98 | -22.88 | 100.00 | 19.00 |
| 6 | 1994.240 | 33.25 | 5.47 | 38.72AV | 53.98 | -15.28 | 100.00 | 19.00 |
| 7 | 2169.875 | 35.53 | 15.49 | 51.02PK | 72.87 | -21.85 | 100.00 | 19.00 |
| 7 | 2169.875 | 35.53 | 7.19 | 42.72AV | 52.87 | -10.15 | 100.00 | 19.00 |
| 8 | 2495.200 | 36.32 | 3.61 | 39.94AV | 53.98 | -14.06 | 100.00 | 19.00 |
| 9 | 2511.360 | 36.33 | 16.09 | 52.41PK | 73.98 | -21.59 | 100.00 | 19.00 |
| 10 | 2603.850 | 36.28 | 15.66 | 51.94PK | 72.87 | -20.93 | 100.00 | 19.00 |
| 10 | 2603.850 | 36.28 | 7.36 | 43.64AV | 52.87 | -9.23 | 100.00 | 19.00 |
| 11 | 3004.240 | 37.22 | 16.61 | 53.83PK | 73.98 | -20.17 | 100.00 | 19.00 |
| 12 | 3004.240 | 37.22 | 5.13 | 42.35AV | 53.98 | -11.65 | 100.00 | 19.00 |
| 13 | 3037.825 | 37.34 | 16.97 | 54.31PK | 72.87 | -18.56 | 100.00 | 19.00 |
| 13 | 3037.825 | 37.34 | 8.67 | 46.01AV | 52.87 | -6.86 | 100.00 | 19.00 |
| 14 | 3471.800 | 38.94 | 14.82 | 53.76PK | 72.87 | -19.11 | 100.00 | 19.00 |
| 14 | 3471.800 | 38.94 | 6.52 | 45.46AV | 52.87 | -7.14 | 100.00 | 19.00 |
| 15 | 3497.120 | 39.22 | 15.86 | 55.08PK | 73.98 | -18.92 | 100.00 | 19.00 |
| 16 | 3497.120 | 39.22 | 3.89 | 43.11AV | 53.98 | -10.89 | 100.00 | 19.00 |
| 17 | 3905.775 | 40.68 | 13.38 | 54.06PK | 72.87 | -18.81 | 100.00 | 19.00 |
| 17 | 3905.775 | 40.68 | 5.08 | 45.76AV | 52.87 | -7.11 | 100.00 | 19.00 |
| 18 | 3998.080 | 41.19 | 13.41 | 54.60PK | 73.98 | -19.40 | 100.00 | 19.00 |
| 19 | 3998.080 | 41.19 | 1.46 | 42.65AV | 53.98 | -11.35 | 100.00 | 19.00 |
| 20 | 4339.750 | 42.50 | 11.64 | 54.14PK | 72.87 | -18.73 | 100.00 | 19.00 |
| 20 | 4339.750 | 42.50 | 3.34 | 45.84AV | 52.87 | -7.03 | 100.00 | 19.00 |

- 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.
 5. The average value of fundamental frequency is: Average = Peak value + 20log (Duty cycle), where the duty factor is calculated from following formula:

$$20\log (\text{Duty cycle}) = 20\log \frac{1.05 \times 29 + 8}{100\text{ms}} = -8.30\text{dB}$$

please see page 19 to 20 for plotted duty







5 APPENDIX - INFORMATION ON THE TESTING LABORATORIES

We, ADT (Shanghai) Corp., were founded in 2003 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.

| | |
|---------------|------------------|
| Japan | VCCI |
| Norway | DNV |
| USA | FCC, NVLAP, A2LA |

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.cnadt.com.

If you have any comments, please feel free to contact us at the following:

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Web Site: www.cnadt.com

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