

FCC TEST REPORT

for

47 CFR, Part 15, Subpart C

Equipment : 2.4G Analog Cordless

Model No. : GH9457**, GH9458**

FCC ID : PIZGH94578

Filing Type : Certification

Applicant : **CIDMATE INTERNATIONAL TECHNOLOGY INC.**
3F-B, No. 58, Sec. 1, Minsheng E. Rd., Taipei,
Taiwan 104, R.O.C.

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SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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History of this test report

Original Report Issue Date: Mar. 26, 2002

No additional attachment.

Additional attachment were issued as following record:

Certificate No. : F220711

CERTIFICATE OF COMPLIANCE

for

47 CFR, Part 15, Subpart C

Equipment : 2.4G Analog Cordless

Model No. : GH9457**, GH9458**

FCC ID : PIZGH94578

Applicant : **CIDMATE INTERNATIONAL TECHNOLOGY INC.**
3F-B, No. 58, Sec. 1, Minsheng E. Rd., Taipei,
Taiwan 104, R.O.C.

I **HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 1992** and the energy emitted by this equipment was **passed** both radiated and conducted emission limits. Testing was carried out on Mar. 22, 2002 at **SPORTON International Inc.** LAB.

K. J. Lin
K. J. Lin
Manager

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. General Description of Equipment under Test

1.1. Applicant

CIDMATE INTERNATIONAL TECHNOLOGY INC.
3F-B, No. 58, Sec. 1, Minsheng E. Rd., Taipei,
Taiwan 104, R.O.C.

1.2. Manufacturer

Same as 1.1.

1.3. Basic Description of Equipment under Test

Equipment : 2.4G Analog Cordless
Model No. : GH9457**, GH9458**
FCC ID : PIZGH94578
Trade Name : CIDMATE
Telephone Line : Non-Shielded, 10m
Power Supply Type : From Battery 3.6V for Handset, Linear for Base Station
AC Power Cord of Base Station : Wall-Mount, 2pin
DC Power Cable of Base Station: Non-Shielded, 1.8m, 2pin

1.4. Feature of Equipment under Test

Technical Information

This cordless telephone uses radio frequencies to allow mobility. There are certain difficulties in using radio frequencies with a cordless telephone. While these are normal, the following could affect the operation of your system.

Noise

Electrical pulse noise is present in most homes at one time or another. This noise is most intense during electrical storms. Certain kinds of electrical equipment such as light dimmers, fluorescent bulbs, motors, and fans also generate noise pulses. Because radio frequencies are susceptible to these noise pulses, you may occasionally hear them in your HANDSET. Generally they are a minor annoyance and should not be interpreted as a defect in your system.

Range

Because radio frequency is used, the location of the BASE UNIT can affect the operating range. Try several locations in your home or office and pick the one that gives you the clearest signal to the HANDSET.

Interference

Electronic circuits activate a relay to connect the cordless telephone to your telephone line. These electronic circuits operate in the radio frequency spectrum. While several protection circuits are used to prevent unwanted signals, there may be periods when these unwanted signals enter the BASE UNIT. You may hear clicks or hear the relay activate while you are not using the HANDSET. If the interference occurs frequently, it can be minimized or eliminated by relocating the BASE UNIT. You can check for interference before selecting the final BASE UNIT location by plugging in the telephone.

1.5. Channel Table of Equipment under Test

CH	BASE		HANDSET		(Unit: MHz)
	TX	RX local osc.	TX	RX local osc.	
1	2402.55	2484.70	2474.00	2391.85	
2	2402.60	2484.75	2474.05	2391.90	
3	2402.65	2484.80	2474.10	2391.95	
4	2402.70	2484.85	2474.15	2392.00	
5	2402.75	2484.90	2474.20	2392.05	
6	2402.80	2484.95	2474.25	2392.10	
7	2402.85	2485.00	2474.30	2392.15	
8	2402.90	2485.05	2474.35	2392.20	
9	2402.95	2485.10	2474.40	2392.25	
10	2403.00	2485.15	2474.45	2392.30	
11	2403.05	2485.20	2474.50	2392.35	
12	2403.10	2485.25	2474.55	2392.40	
13	2403.15	2485.30	2474.60	2392.45	
14	2403.20	2485.35	2474.65	2392.50	
15	2403.25	2485.40	2474.70	2392.55	
16	2403.30	2485.45	2474.75	2392.60	
17	2403.35	2485.50	2474.80	2392.65	
18	2403.40	2485.55	2474.85	2392.70	
19	2403.45	2485.60	2474.90	2392.75	
20	2403.50	2485.65	2474.95	2392.80	
21	2403.55	2485.70	2475.00	2392.85	
22	2403.60	2485.75	2475.05	2392.90	
23	2403.65	2485.80	2475.10	2392.95	
24	2403.70	2485.85	2475.15	2393.00	
25	2403.75	2485.90	2475.20	2393.05	
26	2403.80	2485.95	2475.25	2393.10	
27	2403.85	2486.00	2475.30	2393.15	
28	2403.90	2486.05	2475.35	2393.20	
29	2403.95	2486.10	2475.40	2393.25	
30	2404.00	2486.15	2475.45	2393.30	
31	2404.05	2486.20	2475.50	2393.35	
32	2404.10	2486.25	2475.55	2393.40	
33	2404.15	2486.30	2475.60	2393.45	
34	2404.20	2486.35	2475.65	2393.50	
35	2404.25	2486.40	2475.70	2393.55	
36	2404.30	2486.45	2475.75	2393.60	
37	2404.35	2486.50	2475.80	2393.65	
38	2404.40	2486.55	2475.85	2393.70	
39	2404.45	2486.60	2475.90	2393.75	
40	2404.50	2486.65	2475.95	2393.80	

1.6. Statement of the EUT to comply with requirement of 15.214 (d)

The following description was described on page 28 in user manual

Security System

Your cordless telephone uses a digital coding security system to prevent unauthorized use of your telephone line by another nearby cordless telephone. The system has its own identifying signal created by microcomputers in both the BASE UNIT and the HANDSET.

Security Code

This telephone has an internal security code with 65,536 possible combinations.

Resetting Security Code and Channel Information

Communication between the HANDSET and the BASE UNIT may not be possible in any of the following situations:

1. After a power failure.
2. After relocating the BASE UNIT by disconnecting the AC ADAPTER.
3. After replacing the HANDSET BATTERY PACK.

To reset, place the HANDSET on the BASE UNIT for 2 to 5 seconds.

2. Test Configuration of Equipment under Test

2.1. Test Manner

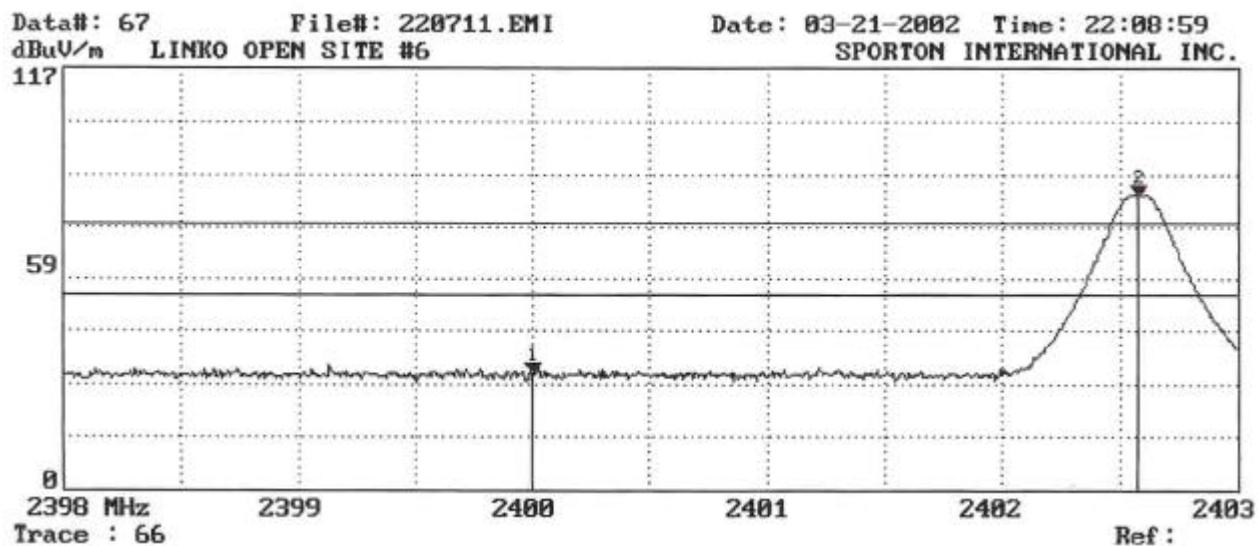
- a. The EUT has been configured and operated pursuant to ANSI C63.4-1992 in a manner which tended to maximize its emission characteristics in a typical application.
- b. Frequency range investigated: conduction 450 KHz to 30 MHz, radiation 30 MHz to 25000MHz.
- c. During testing, the EUT kept transmitting signals.
- d. According to 15.203 of FCC rule, the EUT is designed to ensure that no antenna other than that furnished with the EUT could be used. The antenna is permanently mounted on the EUT.
- e. The EUT has 40 channels as shown on section 1.5 of this test report, the frequency range of the EUT is within 10MHz, two frequencies were tested. One is near top, the other is near bottom. For the Handset, channel 1 at 2474.0MHz and channel 40 at 2475.95MHz were tested. For the base station, channel 1 at 2402.55MHz and channel 40 at 2404.5MHz were tested.
- f. The emissions test of handset were made by rotating three orthogonal axes. (Normal mode, Horizontal mode, Vertical mode).

2.2. Description of Test System

The EUT was tested alone. No support devices is needed for testing.

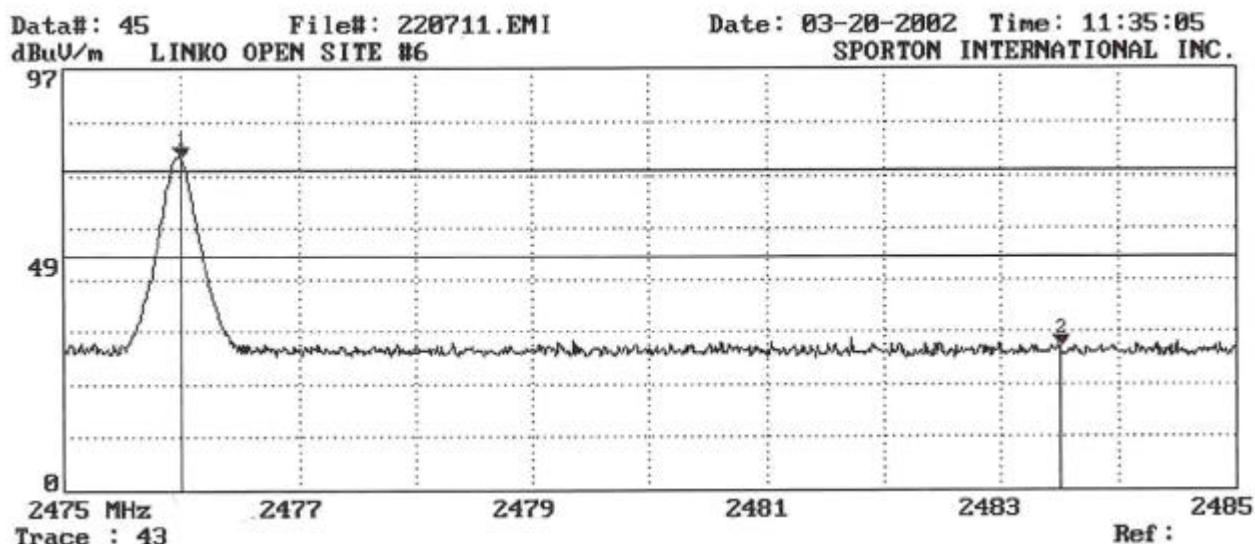
2.3. Band edges measurement

Channel 1 of base station:



Frequency (MHz)	Antenna Polarity	Cable Factor	Reading Loss	Limits	Emission	Level	Margin		
2400.00	H	28.48	6.28	-2.66	54.00	501.19	32.10	40.27	-21.90

Channel 40 of handset:



Frequency (MHz)	Antenna Polarity	Cable Factor	Reading Loss	Limits	Emission	Level	Margin
2483.50	H	28.50	6.38	-1.76 54.00	501.19	33.12 45.29	-20.88

3. General Information of Test

3.1. Test Facility

This test was carried out by SPORTON International Inc.

Test Site Location : No. 30-2, Lin 6, Diing-Fwu Tsuen, Lin-Kou-Hsiang,
Taipei Hsien, Taiwan, R.O.C.
TEL : 886-2-2601-1640
FAX : 886-2-2601-1695

3.2. Standard for Methods of Measurement

ANSI C63.4-1992

3.3. Test in Compliance with

FCC Part 15, Subpart C

3.4. Frequency Range Investigated

- a. Conduction: from 450 kHz to 30 MHz
- b. Radiation : from 30 MHz to 25 GHz

3.5. Test Distance

The test distance of radiated emission from antenna to EUT is 3 M.

4. Test of Conducted Powerline

Conducted Emissions were measured from 450 kHz to 30 MHz with a bandwidth of 9 KHz on the 115 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-1992 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

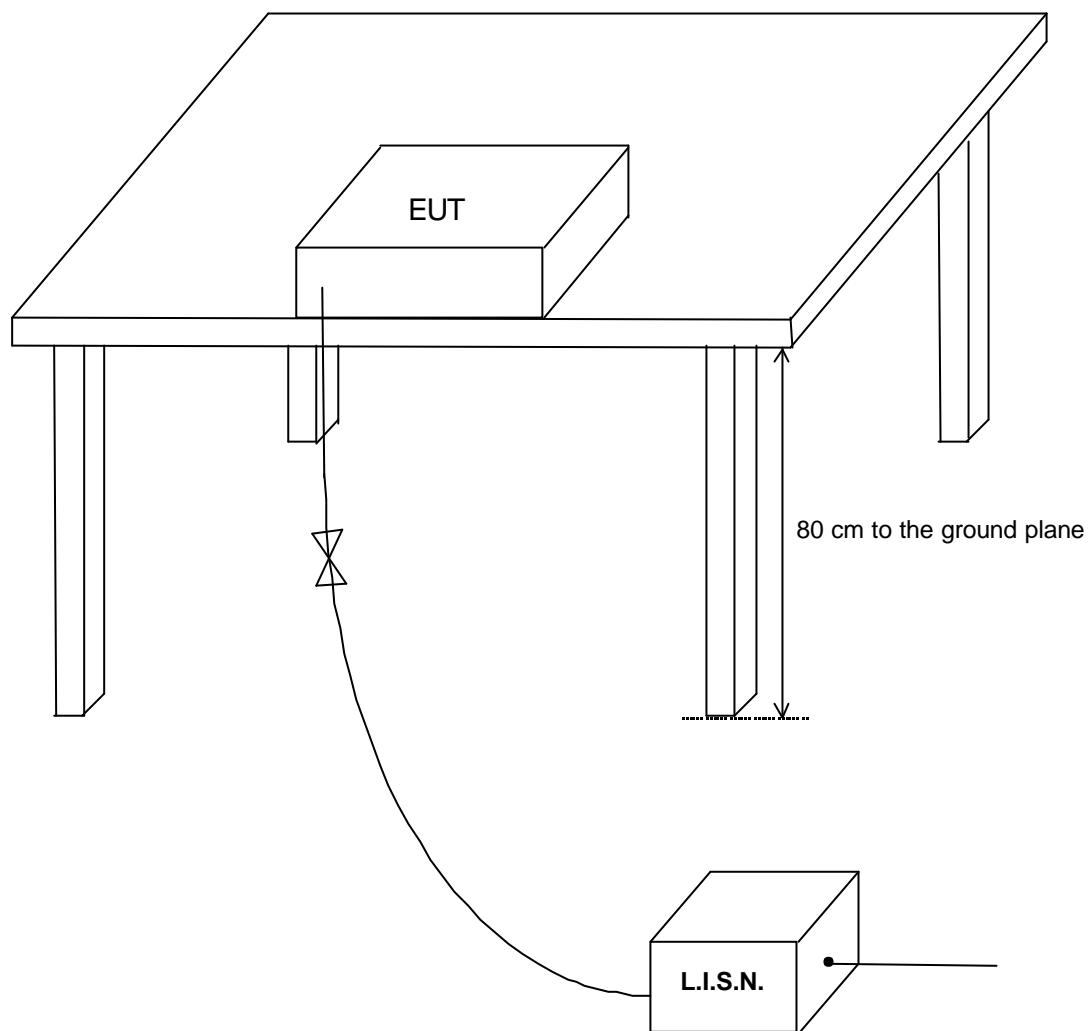
4.1. Major Measuring Instruments

Test Receiver	HP 8591EM
Attenuation	10 dB
Start Frequency	0.45 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.2. Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 450 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- i. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be retested one by one using the quasi-peak method and reported.

4.3. Typical Test Setup Layout of Conducted Powerline



4.4. Test Result of AC Powerline Conducted Emission

- ✓ Frequency Range of Test : from 0.45 MHz to 30 MHz
- ✓ Temperature : 23°C
- ✓ Relative Humidity : 55 %
- ✓ Test Date : Mar. 22, 2002
- ✓ Test Mode: Base, CHANNEL 1

The Conducted Emission test was passed at minimum margin LINE 0.454 MHz / 38.00 dBuV.

Freq. (MHz)	Line/ Neutral	Meter (dBuV)	Reading (uV)	Limits (dBuV) (uV)		Margin (dB)
0.454	L	38.00	79.43	48.00	251.19	-10.0
0.564	L	36.70	68.39	48.00	251.19	-11.3
0.773	L	36.40	66.07	48.00	251.19	-11.6
0.454	N	37.90	78.52	48.00	251.19	-10.1
0.564	N	36.60	67.61	48.00	251.19	-11.4
0.773	N	36.50	66.83	48.00	251.19	-11.5

Test Engineer : Jason
Jason Chang

- ~~✓~~ Frequency Range of Test : from 0.45 MHz to 30 MHz
- ~~✓~~ Temperature : 23?C
- ~~✓~~ Relative Humidity : 55 %
- ~~✓~~ Test Date : Mar. 22, 2002
- ~~✓~~ Test Mode: Base, CHANNEL 40

The Conducted Emission test was passed at minimum margin LINE 0.452 MHz / 37.50 dBuV.

Freq. (MHz)	Line/ Neutral	Meter (dBuV)	Reading (uV)	Limits (dBuV) (uV)		Margin (dB)
0.452	L	37.50	74.99	48.00	251.19	-10.5
0.546	L	37.10	71.61	48.00	251.19	-10.9
0.775	L	37.30	73.28	48.00	251.19	-10.7
0.452	N	37.40	74.13	48.00	251.19	-10.6
0.546	N	36.70	68.39	48.00	251.19	-11.3
0.775	N	37.20	72.44	48.00	251.19	-10.8

Test Engineer : Jason
Jason Chang

5. Test of Radiated Emission

Radiated emissions from 30 MHz to 25 GHz were measured with a bandwidth of 120 kHz according to the methods defines in ANSI C63.4-1992. The EUT was placed on a nonmetallic stand in the open-field site, 0.8 meter above the ground plane, as shown in section 5.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

5.1. Major Measuring Instruments

5.1.1. from 30MHz to 1GHz

EE Amplifier	(HP 87405A)
Attenuation	10 dB
RF Gain	20 dB
Signal Input	10 MHz to 3 GHz
EE Spectrum Analyzer	(HP 8560E)
Attenuation	10 dB
Start Frequency	30 MHz
Stop Frequency	1000 MHz
Resolution Bandwidth	1 MHz
Video Bandwidth	1 MHz
Signal Input	30 Hz to 2.9 GHz
EE Test Receiver	(R&S ESEC30)
Resolution Bandwidth	120 KHz
Frequency Band	9 KHz to 2.75 GHz
Quasi-Peak Detector	ON for Quasi-Peak Mode OFF for Peak Mode

5.1.2. from 1GHz to 25GHz

EE Spectrum	(R&S FSP30)
Attenuation	10 dB
Start Frequency	1000 MHz
Stop Frequency	10GHz
Resolution Bandwidth	1 MHz
Video Bandwidth	For peak mode: 1MHz For average mode: 300Hz
Signal Input	30 MHz to 30 GHz

5.2. Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be repeated one by one using the quasi-peak method and reported.

5.3. Typical Test Setup Layout of Radiated Emission

