

# **FCC TEST REPORT**

## according to

## 47 CFR Part 15 Subpart B

**Equipment**: Mobile Text Device

Model No. : D00111

FCC ID : UUU-L7E20070323

Filing Type : Declaration of Conformity

Applicant : Payne LLC

The Neumours Bldg, Suite 1414 Wilmington, Delaware 19801

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- Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.
- · Report Version: Rev. 02.

## SPORTON International Inc.

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

TEL: 886-2-2696-2468 FAX: 886-2-2696-2255 Report Version: Rev. 02



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Report No. : FD661611-04

## History of this test report

Report Issue Date: Jul. 09, 2007

Report No. Description	
1. apolitics Description	

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Report No. : FD661611-04

Certificate No. : FD661611-04

CERTIFICATE OF COMPLIANCE

according to

47 CFR Part 15 Subpart B

**Equipment : Mobile Text Device** 

Model No. : D00111

FCC ID : UUU-L7E20070323

Filing Type : Declaration of Conformity

Applicant : Payne LLC

The Neumours Bldg, Suite 1414 Wilmington, Delaware 19801

# I **HEREBY** CERTIFY THAT:

The measurements shown in this test report were made in accordance with the procedures given in ANSI C63.4 - 2003 and the energy emitted by this equipment was *passed* FCC Part 15 B in both radiated and conducted emission class B limits. Testing was carried out on Jul. 07, 2007 at SPORTON International Inc. LAB.

Roy Wu Manager

## SPORTON International Inc.

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

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# 1. General Description of Equipment under Test

## 1.1 Applicant

#### Payne LLC

The Neumours Bldg, Suite 1414 Wilmington, Delaware 19801

#### 1.2 Manufacturer

Hon Hai Precision Ind. Co., Ltd.

4F, No. 2, ZihYou St., Tu-Cheng City, Taipei County 236, Taiwan

## 1.3 Basic Description of Equipment under Test

Equipment : Mobile Text Device

Model No. : D00111

Power Supply Type : Switching, From battery 3.7V

AC Power Cord : AC 120V, Wall-mound, 1.8 meter 2 pin

Adapter : Foxlink, FA-052000SA

Battery : BA1001 USB Cable : N/A

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## 1.4 Feature of Equipment under Test

Product	Feature & Specification				
1. DUT Type:	Mobile Text Device				
2. Model No. :	D00111				
3. Type of Modulation :	QPSK				
4. Tx Frequency :	CDMA2000 Cellular 850 : 824 ~ 849 MHz CDMA2000 PCS 1900 : 1850 ~1910 MHz				
5. Rx Frequency :	CDMA2000 Cellular 850 : 869 ~ 894 MHz CDMA2000 PCS1900 : 1930 ~ 1990 MHz				
	CDMA2000 Cellular 850 (1xRTT)				
	FCH_RC1 : 25.80 dBm				
	FCH_RC3 : 25.89 dBm				
	FCH+SCH_RC3: 25.91 dBm				
	CDMA2000 Cellular 850 (1xEV-DO)				
	9.6Kbps : 25.06 dBm				
	38.4Kbps : 25.07 dBm				
6 Maximum Outnut Power to Antonna	153.6Kbps : 25.34 dBm				
6. Maximum Output Power to Antenna :	CDMA2000 PCS1900 (1xRTT)				
	FCH_RC1 : 25.81 dBm				
	FCH_RC3: 25.85 dBm				
	FCH+SCH_RC3: 25.81 dBm				
	CDMA2000 PCS1900 (1xEV-DO)				
	9.6Kbps : 25.20 dBm				
	38.4Kbps : 25.24 dBm				
	153.6Kbps : 25.33 dBm				
7. Type of Antenna Connector :	N/A				
8. Antenna Type :	Fixed Internal				
9. Power Rating (DC/AC Voltage) :	DC 5V / 2A				

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# 2. Test Configuration of Equipment under Test

#### 2.1 Test Manner

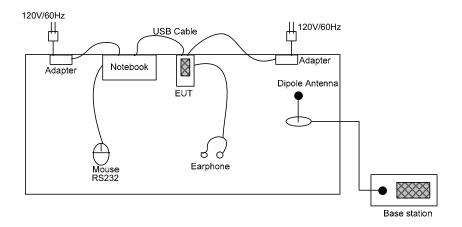
- a. The EUT has been setup pursuant to ANSI C63.4-2003 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The complete test system refers to 2.2 for EMI test.
- c. The following test modes were tested for conduction test:
  - Mode 1: CDMA2000 Cellular 850 Idle Mode + USB Link + Adapter
  - Mode 2: CDMA2000 PCS1900 Idle Mode + USB Link + Adapter
- d. The following test modes were tested for radiation test:
  - Mode 1: CDMA2000 Cellular 850 Idle Mode + USB Link + Adapter
  - Mode 2: CDMA2000 PCS1900 Idle Mode + USB Link + Adapter
- e. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 13 GHz.

## 2.2 Description of Test System

Item	Asset	Trade Name	Model Name	FCC ID	Power Cord
1.	Base Station	R&S	CMU 200	N/A	N/A
2.	RS-232 Mouse	State	MS-303	DoC	Weave-shielded, 1.2 m
3.	Earphone	Sony	MDR-E828	DoC	N/A
4.	USB Cable (*)	N/A	N/A	N/A	Weave-shielded, 0.8 m
5.	Notebook	DELL	D400	E2K24GBRL	N/A
6.	USB Mouse	Microsoft	B75-00093	DoC	Non-shielded, 1.8 m

<sup>\*</sup> Notice: Please refer to 1.3 Basic Description of Equipment under Test.

## 2.3 Connection Diagram of Test System



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## 3. Test Software

The executive program, EMCTEST.EXE under WIN XP installed in notebook, which generates a complete line of continuously repeating "H" pattern were used as the test software.

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The EUT is in CDMA2000 Idle mode controlled by Base Station Simulator.

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## 4. General Information of Test

## 4.1 Test Facility

Test Site Location: No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,

Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.

TEL: 886-3-327-3456 FAX: 886-3-318-0055

Test Site No. : 03CH06-HY, CO01-HY

## 4.2 Test Voltage

120V / 60Hz

#### 4.3 Standard for Methods of Measurement

ANSI C63.4-2003

## 4.4 Test in Compliance with

FCC Part 15 Subpart B

## 4.5 Frequency Range Investigated

a. Conduction: from 150 kHz to 30 MHzb. Radiation: from 30 MHz to 13000MHz

#### 4.6 Test Distance

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

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## 5. Test of Conducted Powerline

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in ANSI C63.4-2003 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.

## 5.1 Major Measuring Instruments

As described in Chapter 7.

#### 5.2 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 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

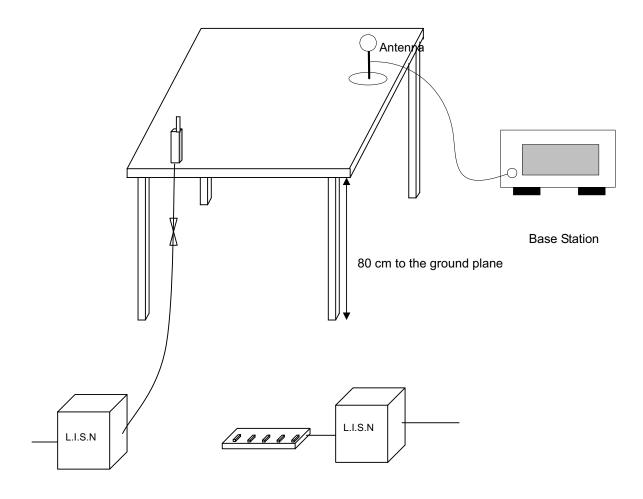
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# 5.3 Typical Test Setup Layout of Conducted Powerline



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## 5.4 Test Result of AC Powerline Conducted Emission

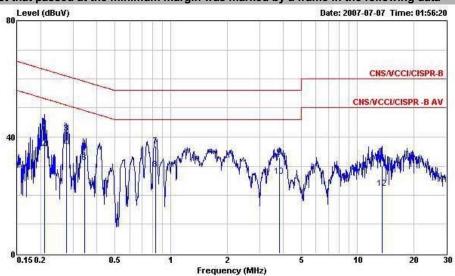
5.4.1 Test Mode: Mode 1

Frequency Range of Test: from 0.15 MHz to 30 MHz

Temperature: 25°CRelative Humidity: 46%Test Engineer: Andy

All emissions not reported here are more than 10 dB below the prescribed limit.

## ■ The test that passed at the minimum margin was marked by a frame in the following data

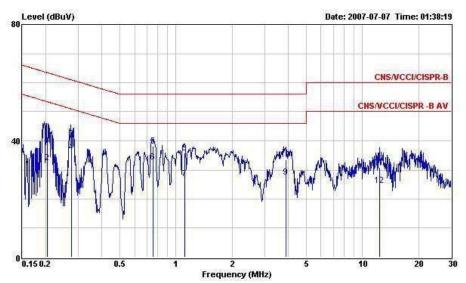


Site Condition	: CO01-H		-B 2001 <i>/</i> 00	4 200604	LINE							
EUT Power	: 120V/60Hz											
Model Memo Memo Memo	CDMA2	000 850 I	dle+Adapte:	r+USB Lin	k							
			Over	Limit	Read	Probe	Cable					
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark				
-	MHz	dBuV	dB	dBuV	dBuV	dB	dB	3				
1	0.209	43.37	-19.87	63.24	43.17	0.10	0.10	QP				
2	0.209	36.05	-17.19	53.24	35.85	0.10	0.10	Average				
3	0.275	41.39	-19.57	60.96	41.22	0.10	0.07	QP				
4	0.275	36.25	-14.71	50.96	36.08	0.10	0.07	Average				
-5	0.344	35.02	-24.09	59.11	34.87	0.10	0.05	QP				
6	0.344	31.15	-17.96	49.11	31.00	0.10	0.05	Average				
7	0.830	36.86	-19.14	56.00	36.62	0.10	0.14	QP				
8	0.830	28.83	-17.17	46.00	28.59	0.10	0.14	Average				
9	3.824	32.99	-23.01	56.00	32.63	0.19	0.17	QP				
10	3.824	26.37	-19.63	46.00	26.01	0.19	0.17	Average				
11	13.620	30.18	-29.82	60.00	29.68	0.30	0.20	QP				
12	13.620	22.21	-27.79	50.00	21.71	0.30	0.20	Average				

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Site Condition EUT Power Model Memo Memo Memo 120V/60Hz

CO01-HY CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL

CDMA2000 850 Idle+Adapter+USB Link

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
<u> </u>	MHz	dBuV	dB	dBuV	dBuV	dB	dB	i.
1	0.203	41.39	-22.08	63.47	41.19	0.10	0.10	QP
2	0.203	32.39	-21.08	53.47	32.19	0.10	0.10	Average
3	0.275	40.75	-20.22	60.97	40.58	0.10	0.07	QP
4	0.275	36.12	-14.85	50.97	35.95	0.10	0.07	Average
- 5	0.752	38.09	-17.91	56.00	37.86	0.10	0.13	QP
6	0.752	32.75	-13.25	46.00	32.52	0.10	0.13	Average
7	1.110	27.02	-18.98	46.00	26.74	0.10	0.18	Average
8	1.110	35.89	-20.11	56.00	35.61	0.10	0.18	QP
9	3.880	27.41	-18.59	46.00	27.05	0.20	0.16	Average
10	3.880	33.59	-22.41	56.00	33.23	0.20	0.16	QP
11	12.320	30.87	-29.13	60.00	30.32	0.30	0.25	QP
12	12.320	24.79	-25.21	50.00	24.24	0.30	0.25	Average

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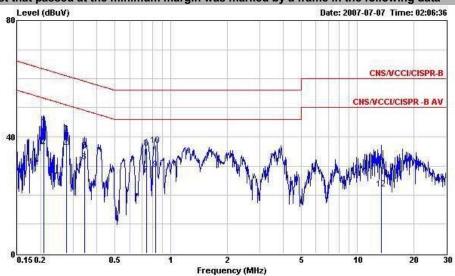
#### 5.4.2 Test Mode: Mode 2

Frequency Range of Test: from 0.15 MHz to 30 MHz

Temperature: 25°CRelative Humidity: 46%Test Engineer: <u>Andy</u>

All emissions not reported here are more than 10 dB below the prescribed limit.

## ■ The test that passed at the minimum margin was marked by a frame in the following data



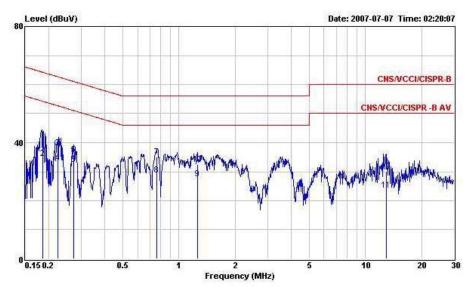
Site	: CO01-HY
Condition	: CNS/YCCI/CISPR-B 2001/004 200604 LINE
EUT	
Power	: 120V/60Hz
Model	
Memo	: CDMA2000 1900 Idle+Adapter+USB Link
Memo	
Memo	¥3

	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu∀	dB	dBu∀	dBuV	dB	dB	į.
1	0.207	43.35	-19.97	63.32	43.15	0.10	0.10	QP
2	0.207	36.60	-16.72	53.32	36.40	0.10	0.10	Average
3	0.276	41.03	-19.91	60.94	40.86	0.10	0.07	QP
4	0.276	35.87	-15.07	50.94	35.70	0.10	0.07	Average
5	0.345	35.28	-23.80	59.08	35.13	0.10	0.05	QP
6	0.345	31.45	-17.63	49.08	31.30	0.10	0.05	Average
7	0.739	26.96	-19.04	46.00	26.73	0.10	0.13	Average
8	0.739	36.00	-20.00	56.00	35.77	0.10	0.13	QP
9	0.826	28.83	-17.17	46.00	28.59	0.10	0.14	Average
10	0.826	37.10	-18.90	56.00	36.86	0.10	0.14	QP
11	13.480	29.97	-30.03	60.00	29.47	0.30	0.20	QP
12	13 480	21 97	-28 03	50.00	21 47	0.30	0.20	Average

Over Limit Read Probe Cable

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: CO01-HY : CNS/VCCI/CISPR-B 2001/004 200604 NEUTRAL

120V/60Hz

Site Condition EUT Power Model Memo Memo Memo

CDMA2000 1900 Idle+Adapter+USB Link

			Over	Limit	Read	Probe	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
200	MHz	dBuV	dB	dBuV	dBuV	dB	dB	o ·
1	0.186	41.15	-23.06	64.21	40.96	0.10	0.09	QP
2	0.186	34.52	-19.69	54.21	34.33	0.10	0.09	Average
3	0.224	38.29	-24.37	62.66	38.10	0.10	0.09	QP
4	0.224	33.03	-19.63	52.66	32.84	0.10	0.09	Average
5	0.274	35.94	-25.07	61.01	35.77	0.10	0.07	QP
6	0.274	32.56	-18.45	51.01	32.39	0.10	0.07	Average
7	0.763	35.12	-20.88	56.00	34.89	0.10	0.13	QP
8	0.763	28.93	-17.07	46.00	28.70	0.10	0.13	Average
9	1.260	27.49	-18.51	46.00	27.20	0.10	0.19	Average
10	1.260	32.45	-23.55	56.00	32.16	0.10	0.19	QP
11	12.920	23.70	-26.30	50.00	23.21	0.26	0.23	Average
12	12.920	30.23	-29.77	60.00	29.74	0.26	0.23	QP

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# 5.5 Photographs of Conducted Powerline Test Configuration

Please refer to Appendix B

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## 6. Test of Radiated Emission

Radiated emissions from 30 MHz to 13 GHz were measured with a bandwidth of 120 kHz and 1MHz according to the methods defines in ANSI C63.4-2003. The EUT was placed on a nonmetallic stand, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

## 6.1 Major Measuring Instruments

As described in Chapter 7.

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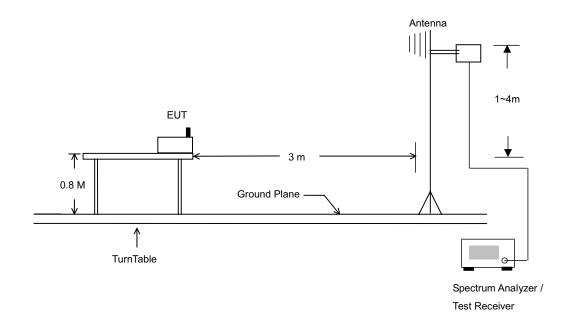
#### 6.2 Test Procedures

- 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 Bi-Log antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both for horizontal polarization and vertical polarization of the antenna.
- 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 turntable (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.

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## 6.3 Typical Test Setup Layout of Radiated Emission



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#### 6.4 Test Result of Radiated Emission

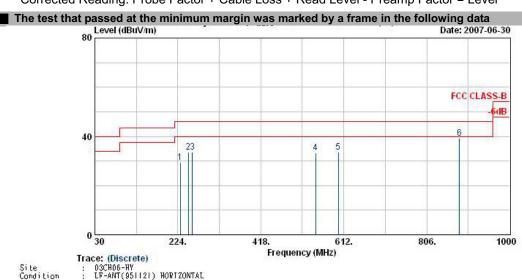
6.4.1 Test Mode: Mode 1

· Test Distance: 3m Temperature: 26°C Relative Humidity: 57%

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Test Engineer: <u>Andy</u>

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Site Condition EUT

120Vac/60Hz

CDMA 850 Idle and USB Link With Notebook + Adaptor E2

	Freq	Level	Over Limit	Limit Line				Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBu√m	dB	$\overline{dBuV/m}$	<b>dB</b> u¥	dB/π	dB	-dB	cm	deg	
1 @	229.53	29.55	-16.45	46.00	47.76	11.07	1.65	30.93			Peak
1 @ 2 @	248.43	33.54	-12.46	46.00	50.58	12.16	1.72	30.92			Peak
3 @	257. 88	33.57	-12.43	46.00	50.33	12.42	1.76	30.94			Peak
4 @	546.40	33.18	-12.82	46.00	43.24	17.90	2.77	30.73			Peak
5 @ 6 @	598.90	33, 69	-12.31	46.00	42.95	18.45	2.95	30.66			Peak
6 @	882 40	39 34	-6 66	46 00	45 58	20 41	3 75	30 39	100	90	Poak

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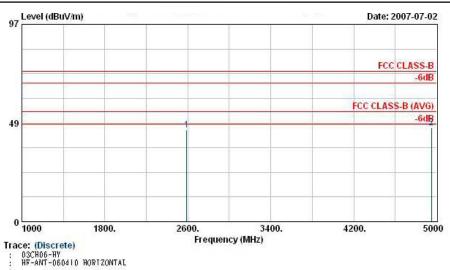
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Site Condition EUT Power Model Memo Memo Plane

120Vac/60Hz

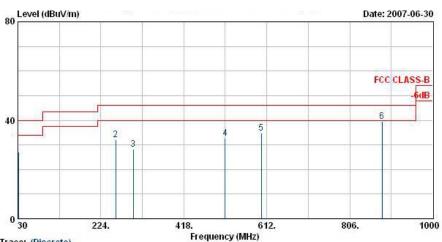
CDMA 850 Idle and USB Link With Notebook + Adaptor E2

1 2 @

2	Freq	Level		Limit Line					Ant Pos	Table Pos	Remark
+	MHz	$\overline{dBuY/m}$	- dB	$\overline{dBuV/m}$	<b>dBu</b> ¥	-dB/m			cm	deg	-
	2588.00	45. 17	-28.83	74.00	46.55	30.18	3.96	35. 52			Peak
	4948, 00	46.04	-27.96	74, 00	42.94	33, 40	5, 93	36, 23			Peak

SPORTON International Inc.

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Site Condition EUT Power Model Memo Memo Plane

Trace: (Discrete)
: 03CH06-HY
: LF-ANT(951121) VERTICAL

120Vac/60Hz

CDMA 850 Idle and USB Link With Notebook + Adaptor E2

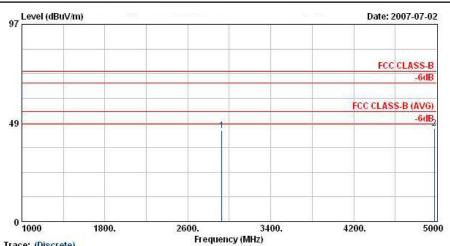
183	E
	-

	Freq	Level	Over Limit			Intenna Factor		Preamp Factor	Ant Pos	Table Pos Remark
	MHz	dBuV/m	- dB	$\overline{dBuV/m}$	<b>dB</b> u∛	<b>dB</b> /π	<u>dB</u>	<u>dB</u> -	cm	deg —
1 @ 2 @ 3 @	31.08	27.13	-12.87	40.00	38. 97	18.95	0.64	31.43		Peak
2 @	259. 23	32.01	-13.99	46.00	48.76	12.44	1.77	30.95		Peak
3 @	299. 73	28.38	-17.62	46.00	44.16	13.21	1.94	30.93		Peak
4 @	514.90	32, 79	-13.21	46.00	43.32	17.58	2.66	30, 77		Peak
5 @	598. 90	34.73	-11.27	46.00	43.99	18.45	2.95	30.66		Peak
6 @	881.70	39.70	-6.30	46.00	45. 95	20.40	3.74	30.39	100	139 Peak

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Site Condition EUT Power Model Memo Memo Plane

Trace: (Discrete)
: 03CH06-HY
: HF-ANT-060410 VERTICAL

120Vac/60Hz

CDMA 850 Idle and USB Link With Notebook + Adaptor E2

	Freq	Level		Limit Line		Intenna Factor			Ant Pos	Table Pos Remark
	MHz	$\overline{dBuV/m}$	- dB	$\overline{dBuV/m}$	<b>dB</b> u∛	-dB/m	<u>dB</u>	dB -	cm	deg ——
1	2928.00	44.56	-29.44	74.00	46.11	29.72	4. 24	35.51		Peak
2 @	4978.00	45. 76	-28.24	74.00	42.53	33, 53	5.94	36, 25		Peak

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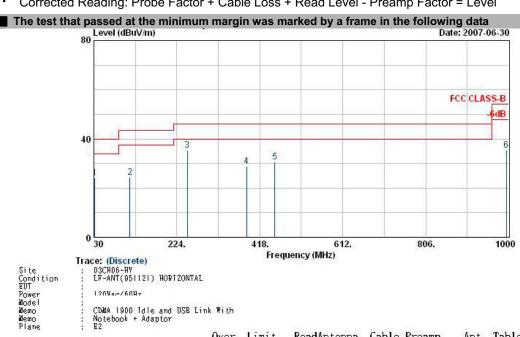
6.4.2 Test Mode: Mode 2

 Test Distance: 3m Temperature: 26°C Relative Humidity: 57%

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Test Engineer: Andy

Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level



Plane	; EZ	Freq	Level	Over Limit			Antenna Factor		Preamp Factor	Ant Pos		Remark
	( <del>1)</del>	MHz	$\overline{\text{dBuV/m}}$	<del>d</del> B	$\overline{dBuV/m}$	-dBu¥	$\overline{dB/m}$	<u>dB</u>	<u>dB</u>	cm	deg	<del>1.</del>
1 @		31.89	24. 22	-15. 78	40.00	36.71	18. 25	0.65	31.39			Peak
2 @		114.24		-19.24	43.50	42.04	12.13	1.14	31.06			Peak
3 @		248. 43	35.31	-10.69	46.00	52.36	12.16	1.72	30.92	100		Peak
4 @		386.80	28. 78	-17.22	46.00	42.01	15.44	2.20	30.87			Peak
5 @		453.30	30.57	-15.43	46.00	42.33	16.64	2.41	30.81			Peak
6 @		994.40	35.39	-18.61	54.00	40.46	21.20	4.01	30.27			Peak

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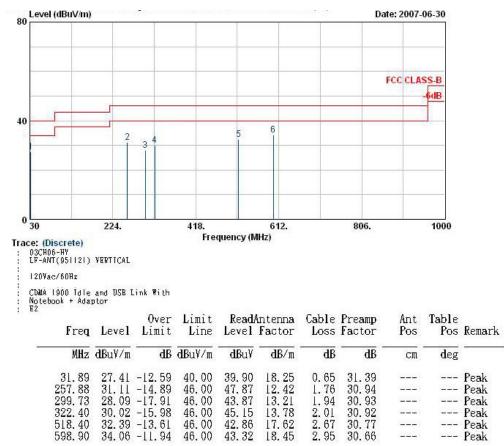
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Site Condition EUT Power Model Memo Memo Plane

1 @ @ 3 @ @ 6 @ 6



Remark: The spurious emission above 1 GHz is too low to be taken.

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## 6.5 Photographs of Radiated Emission Test Configuration

Please refer to Appendix B

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# 7. List of Measuring Equipment Used

	1		ı				1
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9kHz – 2.75GHz	Jul. 04, 2007	Jul. 04, 2008	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Mar. 30, 2007	Mar. 30, 2008	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 30, 2007	Mar. 30, 2008	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 04, 2006	Dec. 04, 2007	Conduction (CO01-HY)
Isolation Transformer	Erika Fiedler OHG	D-65396 Walluf	58	45MHz-2.15GHz	N/A	N/A	Conduction (CO01-HY)
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Oct. 05, 2006	Oct. 04, 2007	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul. 13, 2006	Jul. 12, 2007	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Com-Power	AH118	071025	1G~18G	Jun. 04, 2007	Jun. 04, 2008	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBEC K	BBHA 9170	9170-249	14G - 40G	Nov. 20, 2006	Nov. 19, 2008	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G - 26.5G	Nov. 15, 2006	Nov. 14, 2007	Radiation (03CH06-HY)
Pre Amplifier	Mini Circuits	ZKL-2	D092004-1	10~2500MHz	Nov. 15, 2006	Nov. 14, 2007	Radiation (03CH06-HY)
Base Station Simulator	R&S	CMU200	106656	WCDMA	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)
Controller	INN-CO	CO2000	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 ~ 360 degree	N/A	N/A	Radiation (03CH06-HY)
Antenna Mast	INN-CO	MM3000	114/8000604/ L	1 m - 4 m	N/A	N/A	Radiation (03CH06-HY)

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# 8. Uncertainty of Evaluation

**Uncertainty of Conducted Emission Measurement** (150kHz ~ 30MHz)

Contribution	Uncerta	. ()	
	dB	Probability	$u(x_i)$
	иь	Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
combined standard uncertainty Uc(y)		1.13	
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)		2.26	

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Emocranity of Radiated Emission measuremen	t (OOMITIZ TO	<u> </u>		
Contribution	Uncerta	ainty of $X_i$		
Contribution	-10	Probability	$u(x_i)$	
	dB	Distribution	( 1 )	
Receiver reading	0.41	Normal(k=2)	0.21	
Antenna factor calibration	0.83	Normal(k=2)	0.42	
Cable loss calibration	0.25	Normal(k=2)	0.13	
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14	
RCV/SPA specification	2.50	Rectangular	0.72	
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29	
Site imperfection	1.43	Rectangular	0.83	
Mismatch	+0.39/-0.41	U-shaped	0.28	
combined standard uncertainty Uc(y)		1.27		
Measuring uncertainty for a level of	2.54			
confidence of 95% U=2Uc(y)				

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**Uncertainty of Radiated Emission Measurement** (1GHz ~ 40GHz)

Contribution	Uncerta	v			
Contribution	dB	Probability Distribution	$u(x_i)$	Ci	$Ci * u(x_i)$
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR Γ1= 0.197 Antenna VSWR Γ2= 0.194 Uncertainty=20log(1-Γ1*Γ2*Γ3)	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)			2.36		
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)			4.72		

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## 9. Certificate of NVLAP Accreditation

United States Department of Commerce National Institute of Standards and Technology



# Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200079-0

## Sporton International, Inc. Hwa Ya EMC Laboratory

Tao Yuan Hsien 333 TAIWAN

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

#### ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated 18 June 2005).

2007-01-01 through 2007-12-31

Effective dates

STATE OF COMPANY

For the National Institute of Standards and Technology

Report No.: FD661611-04

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