

FCC TEST REPORT

according to

47 CFR Part 15 Subpart B

Equipment : Mobile Phone

Trade Name : Vodafone 804N

Model No. : KMP7N2H1

FCC ID : GKRKMP7N2H1

Filing Type : Certificate

Applicant : Compal Electronics, Inc.

No. 581, Juikuang Rd., Neihu, Taipei, (114) Taiwan, R.O.C.

- The test result refers exclusively to the test presented test model / sample.
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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. 01

SPORTON International Inc.

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

SPORTON International Inc.

TEL : 886-2-2696-2468

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Report Version: Rev. 01

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History of this test report

Report Issue Date: Dec. 09, 2005

Report No.	Description



Certificate No. : FD5N0707

CERTIFICATE OF COMPLIANCE

according to

47 CFR Part 15 Subpart B

Equipment : Mobile Phone

Trade Name : Vodafone 804N

Model No. : KMP7N2H1

FCC ID : GKRKMP7N2H1

Filing Type : Certificate

Applicant : **Compal Electronics, Inc.**
No. 581, Juikuang Rd., Neihu, Taipei, (114) Taiwan, 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 - 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 Dec. 07, 2005 at SPORTON International Inc. LAB.

Dr. Daniel Lee
EMC/SAR Director

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

Compal Electronics, Inc.

No. 581, Juikuang Rd., Neihu, Taipei, (114) Taiwan, R.O.C.

1.2 Manufacturer

Compal Electronics, Inc.

No. 581, Juikuang Rd., Neihu, Taipei, (114) Taiwan, R.O.C.

1.3 Basic Description of Equipment under Test

Equipment	: Mobile Phone
Trade Name	: Vodafone 804N
Model No.	: KMP7N2H1
FCC ID	: GKRKMP7N2H1
Power Supply Type	: Switching, DC 3.7V
AC Power Cord	: AC 120V, Wall-mount, 3.5 meter, 2 pin

**FC****TEST REPORT****Report No. : FD5N0707**

1.4 Feature of Equipment under Test

Product Feature & Specification	
1. DUT Type :	Mobile Phone
2. Trade Name :	Vodafone 804N
3. Model Name :	KMP7N2H1
4. FCC ID :	GKRKMP7N2H1
6. Tx Frequency :	PCS: 1850-1910 MHz Bluetooth: 2400-2483.5 MHz
7. Rx Frequency :	PCS: 1930-1990 MHz Bluetooth: 2400-2483.5 MHz
8. HW Version :	EP2-2
9. SW Version :	1.0
10. Type of Modulation :	PCS: GMSK Bluetooth: FHSS
11. DUT Stage :	Production Unit

2. Test Configuration of Equipment under Test

2.1 Test Manner

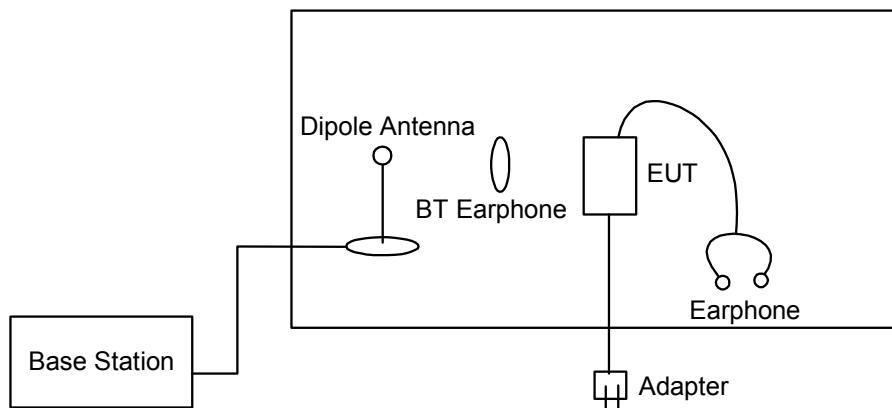
- a. The EUT has been setup pursuant to ANSI C63.4-2003 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The complete test system included EUT for EMI test.
- c. The following test modes were tested for conduction test:
Mode 1: PCS1900 Idle Mode + BT Link + Camera + Earphone + Adapter
- d. The following test modes were tested for radiation test:
Mode 1: PCS1900 Idle Mode + BT Link + Camera + Earphone + 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	Model Name	Power Cord
1.	Base Station (R&S)	CMU 200	N/A
2.	Bluetooth Device	M3000	N/A

2.3 Connection Diagram of Test System

<Idle Mode>



3. Test Software

The EUT is in PCS1900 Idle mode controlled by Base Station Simulator.

At the same time, BT is linked with BT Earphone.

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. : CO01-HY, 03CH06-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 MHz
- b. Radiation: from 30 MHz to 13000MHz

4.6 Test Distance

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

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.

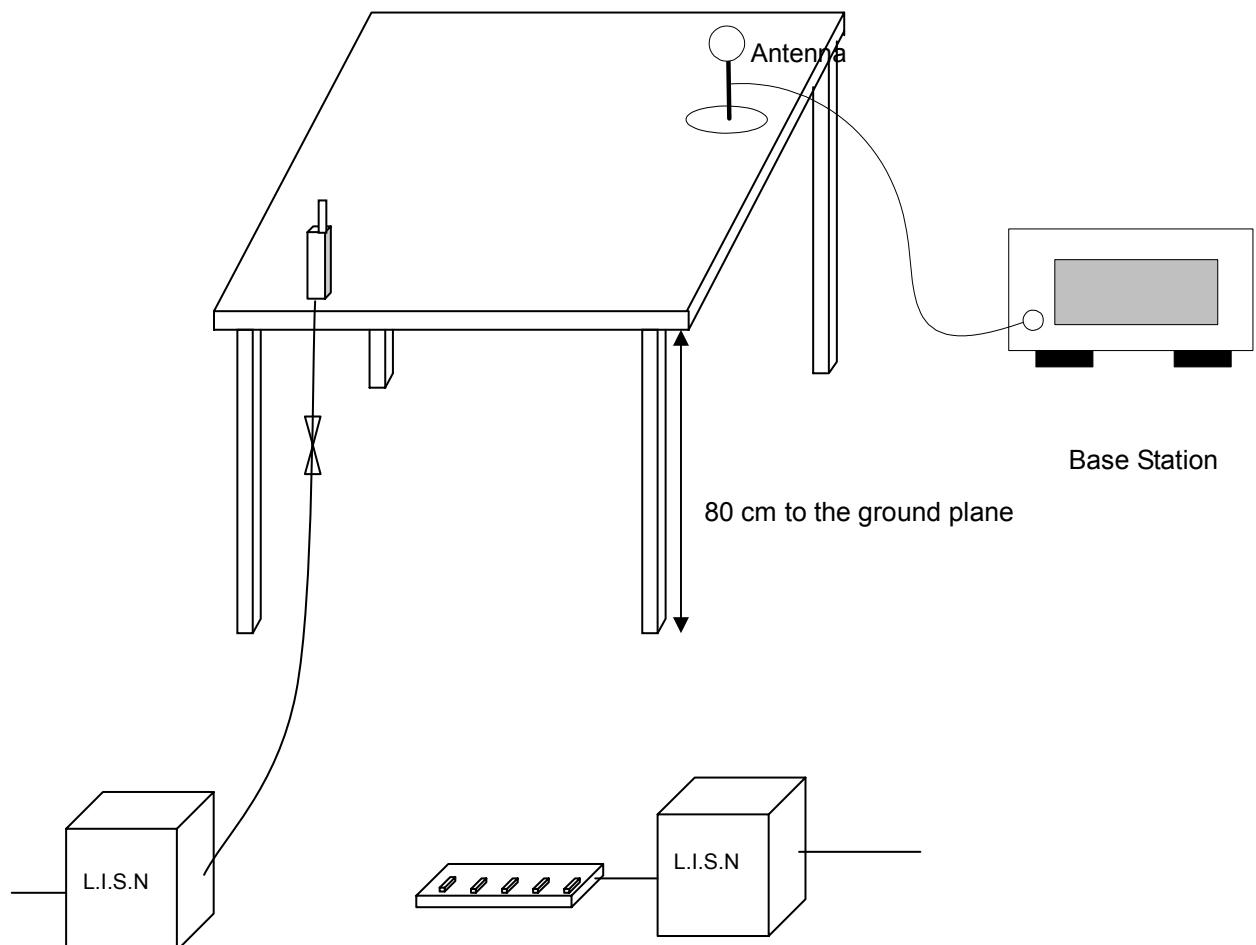
5.1 Major Measuring Instruments

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.

5.3 Typical Test Setup Layout of Conducted Powerline

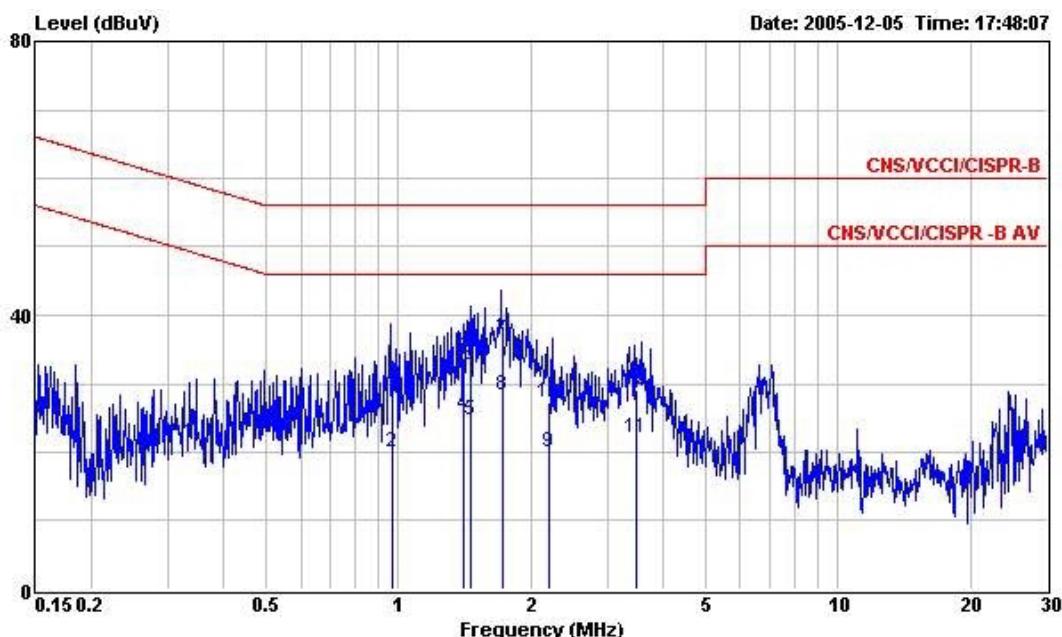


5.4 Test Result of AC Powerline Conducted Emission

5.4.1 Test Mode: Mode 1

- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 24°C
- Relative Humidity: 56%
- 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

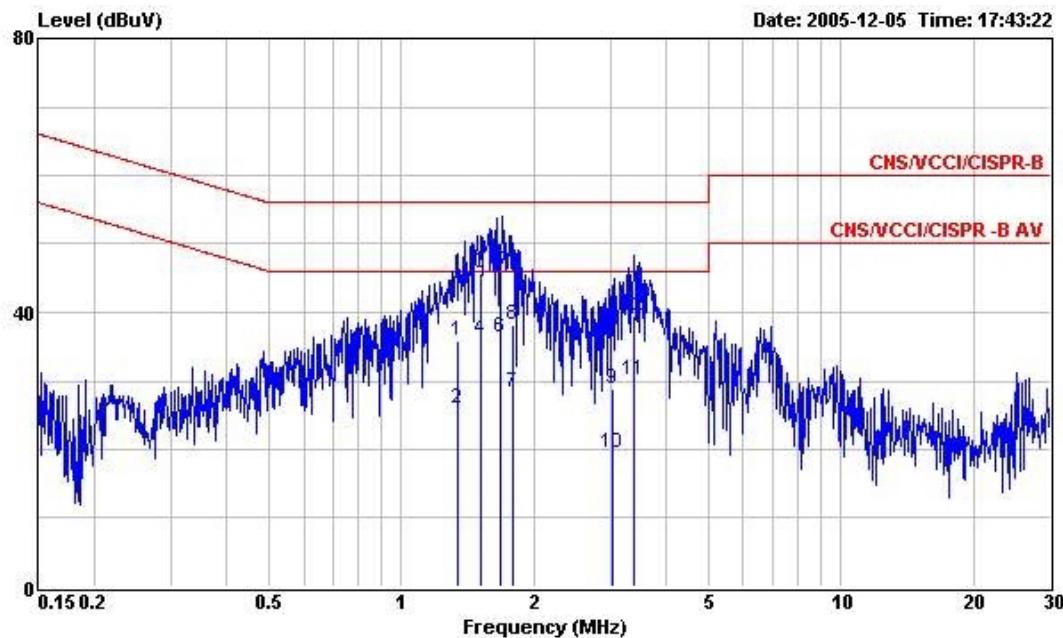


Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200505 LINE
EUT : GSM/GPRS/WCDMA Mobile Phone
with Bluetooth
Power : 120V/60Hz
Model : FD5N0707
Memo : PCS1900 IDLE + BT LINK+CAMERA
Memo : +CHARGER

	+CHARGER		Over	Limit	Read	Probe	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.973	28.44	-27.56	56.00	28.23	0.11	0.10	QP
2	0.973	19.93	-26.07	46.00	19.72	0.11	0.10	Average
3	1.411	33.73	-22.27	56.00	33.51	0.11	0.11	QP
4	1.411	25.33	-20.67	46.00	25.11	0.11	0.11	Average
5	1.465	24.76	-21.24	46.00	24.54	0.11	0.11	Average
6	1.465	32.82	-23.18	56.00	32.60	0.11	0.11	QP
7	1.720	36.35	-19.65	56.00	36.12	0.11	0.12	QP
8	1.720	28.30	-17.70	46.00	28.07	0.11	0.12	Average
9	2.211	19.89	-26.11	46.00	19.63	0.13	0.13	Average
0	2.211	27.19	-28.81	56.00	26.93	0.13	0.13	QP
1	3.476	22.11	-23.89	46.00	21.77	0.19	0.15	Average
2	3.476	29.05	-26.95	56.00	28.71	0.19	0.15	QP

**TEST REPORT**

Report No. : FD5N0707



Site : CO01-HY

Condition : CNS/VCCI/CISPR-B 2001/004 200505 NEUTRAL

EUT : GSM/GPRS/WCDMA Mobile Phone

with Bluetooth

Power : 120V/60Hz

Model : FD5N0707

Memo : PCS1900 IDLE + BT LINK+CAMERA

Memo : +CHARGER

Freq	Over Level	Limit	Read Line	Probe	Cable	Remark
				dBuV	dB	
1	1.340	35.76	-20.24	56.00	35.42	0.23 0.11 QP
2	1.340	25.99	-20.01	46.00	25.65	0.23 0.11 Average
3	1.523	45.67	-10.33	56.00	45.33	0.23 0.11 QP
4	1.523	36.18	-9.82	46.00	35.84	0.23 0.11 Average
5	1.687	46.05	-9.95	56.00	45.70	0.23 0.12 QP
6	1.687	36.44	-9.56	46.00	36.09	0.23 0.12 Average
7	1.790	28.30	-17.70	46.00	27.95	0.23 0.12 Average
8	1.790	38.24	-17.76	56.00	37.89	0.23 0.12 QP
9	3.036	28.87	-27.13	56.00	28.50	0.23 0.14 QP
10	3.036	19.53	-26.47	46.00	19.16	0.23 0.14 Average
11	3.383	30.25	-15.75	46.00	29.87	0.23 0.15 Average
12	3.383	39.54	-16.46	56.00	39.16	0.23 0.15 QP

Test Engineer : Jay

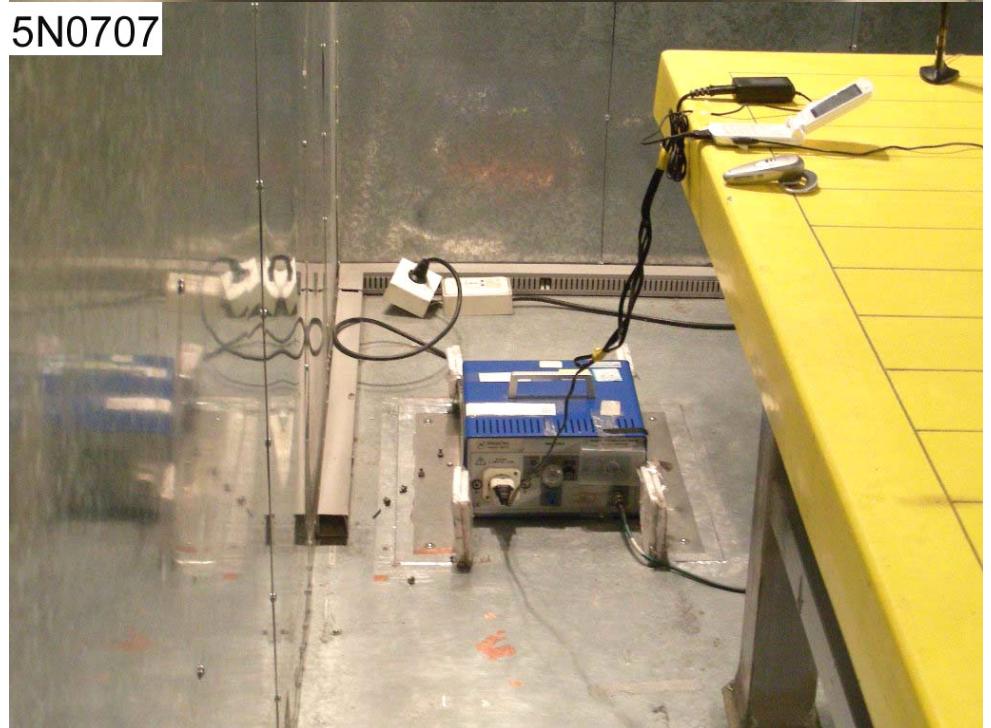
Jay

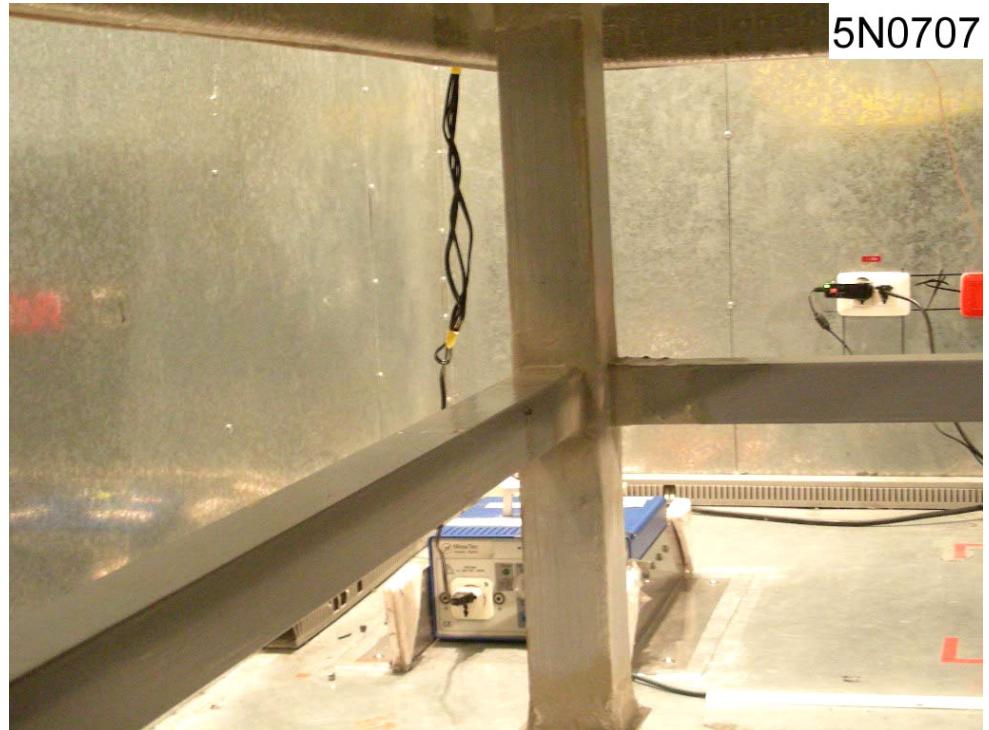
5.5 Photographs of Conducted Powerline Test Configuration

Front View



Rear View



5N0707**Side View**

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.

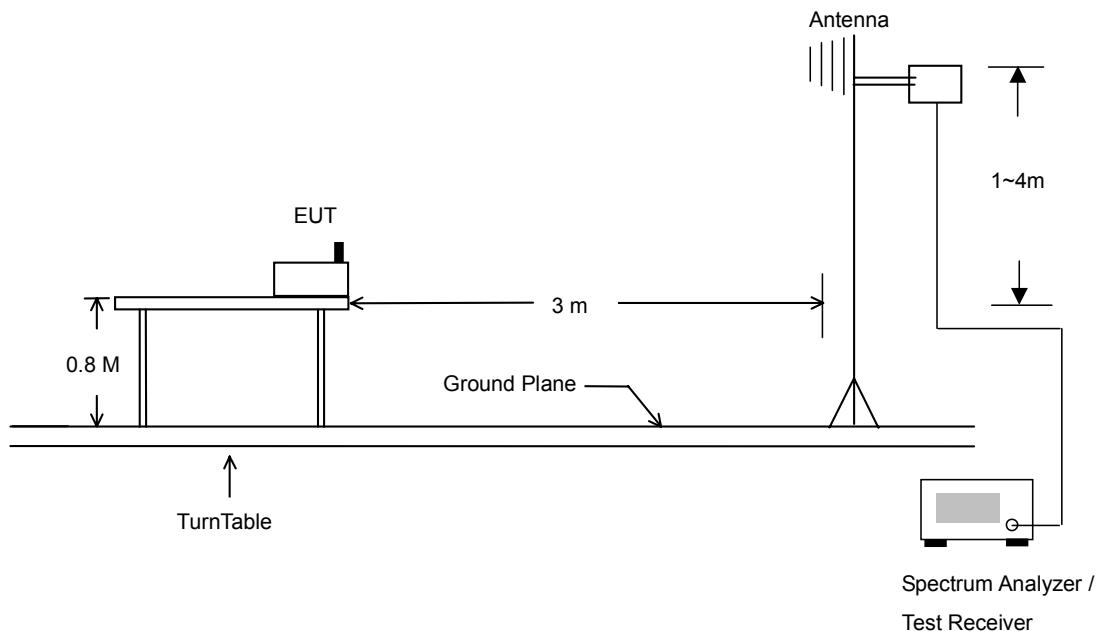
6.1 Major Measuring Instruments

As described in Chapter 7.

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.

6.3 Typical Test Setup Layout of Radiated Emission

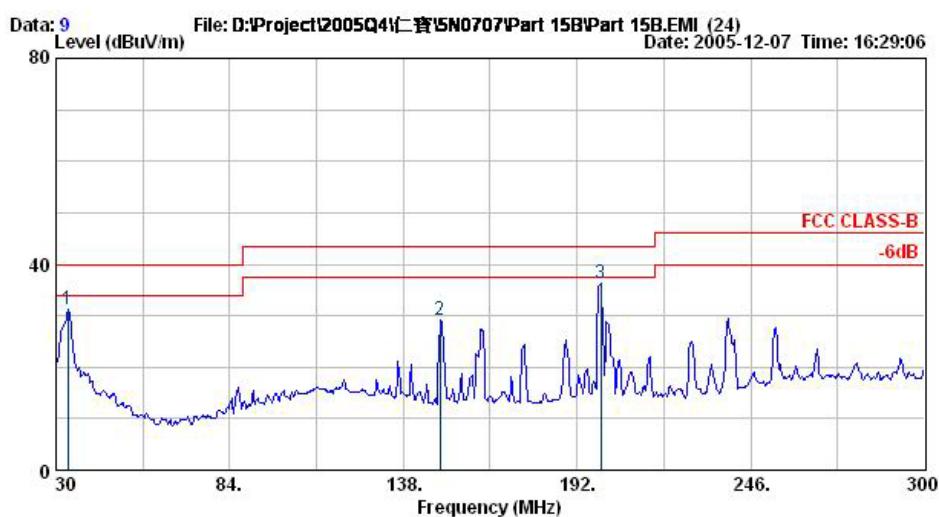


6.4 Test Result of Radiated Emission

6.4.1 Test Mode: Mode 1

- Test Distance: 3m
- Temperature: 26°C
- Relative Humidity: 59%
- Emission level (dB_{UV}/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

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



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : GSM/GPRS/WCDMA Mobile Phone with
 : Bluetooth
 Power : 120Vac/60Hz
 Model : FD5N0707
 Memo : PCS1900 Idle Mode+Earphone+Charger
 : +BT Link+Camera
 Plane : E1

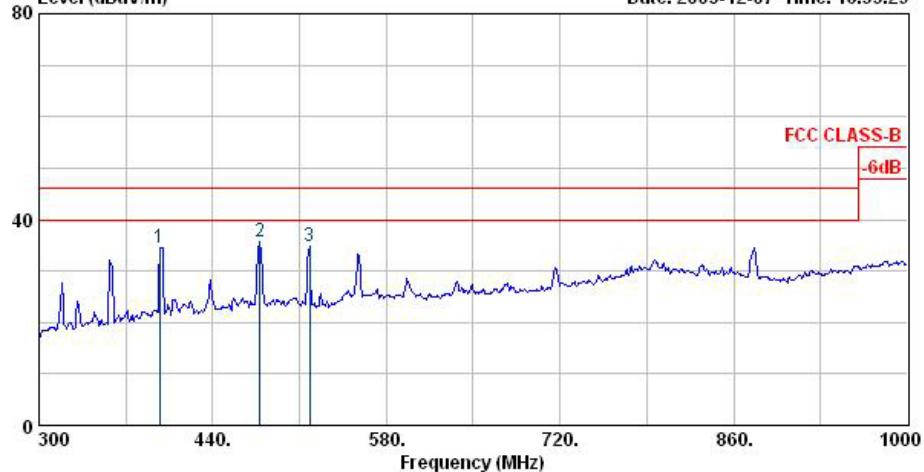
	Freq	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dB _{UV} /m	dB	dB _{UV} /m	dB _{UV}	dB/m	dB	dB	cm	deg
1	33.78	31.31	-8.69	40.00	44.09	17.40	1.43	31.61	400	0 Peak
2	149.34	29.09	-14.41	43.50	48.47	9.09	3.00	31.46	400	0 Peak
3 @	199.29	36.14	-7.36	43.50	54.05	9.93	3.50	31.34	400	0 Peak



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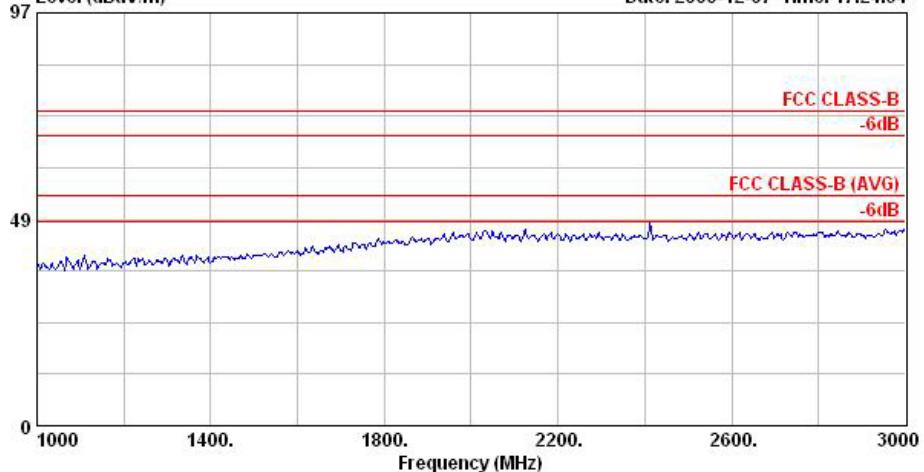
Data: 10 File: D:\Project\2005Q4\仁寶\5N0707\Part 15B\Part 15B.EMI (24)
Level (dBuV/m) Date: 2005-12-07 Time: 16:33:29



Site : 03CH06-HY
Condition : BI-LOG-2004-1122 HORIZONTAL
EUT : GSM/GPRS/WCDMA Mobile Phone with
: Bluetooth
Power : 120Vac/60Hz
Model : FD5N0707
Memo : PCS1900 Idle Mode+Earphone+Charger
: +BT Link+Camera
Plane : E1

	Freq	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Line	Level	Factor	Loss	Pos	Pos
1	397.30	34.58	-11.42	46.00	44.53	15.81	5.05	30.81	100	0 Peak
2	477.80	35.63	-10.37	46.00	43.93	16.90	5.60	30.80	100	0 Peak
3	518.40	34.78	-11.22	46.00	43.06	16.87	5.87	31.02	100	0 Peak

Data: 11 File: D:\Project\2005Q4\仁寶\5N0707\Part 15B\Part 15B.EMI (24)
Level (dBuV/m) Date: 2005-12-07 Time: 17:24:34



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : GSM/GPRS/WCDMA Mobile Phone with
: Bluetooth
Power : 120Vac/60Hz
Model : FD5N0707
Memo : PCS1900 Idle Mode+Earphone+Charger
: +BT Link+Camera
Plane : E1

Sportun International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

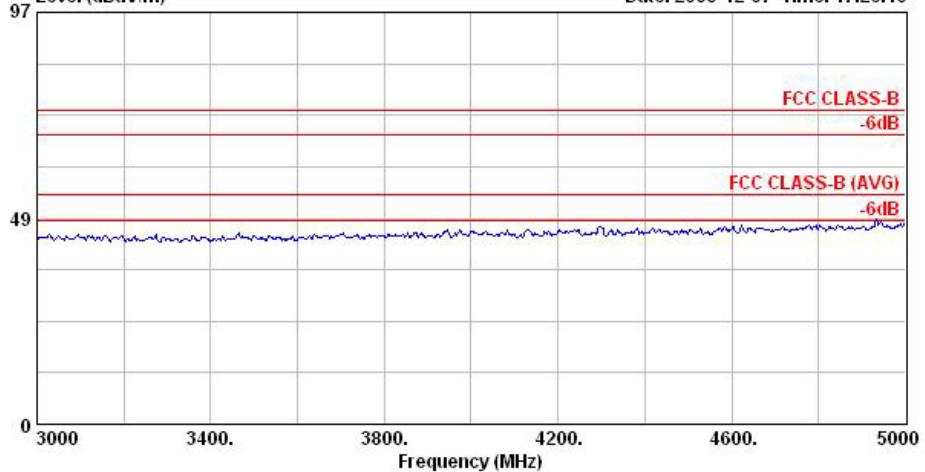
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Data: 12 File: D:\Project\2005Q4\二寶\FD5N0707\Part 15B\Part 15B.EMI (24)
Level (dBuV/m) Date: 2005-12-07 Time: 17:26:40



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 HORIZONTAL
EUT : GSM/GPRS/WCDMA Mobile Phone with
: Bluetooth
Power : 120Vac/60Hz
Model : FD5N0707
Memo : PCS1900 Idle Mode+Earphone+Charger
: +BT Link+Camera
Plane : E1

SPORTON International Inc.

TEL : 886-2-2696-2468

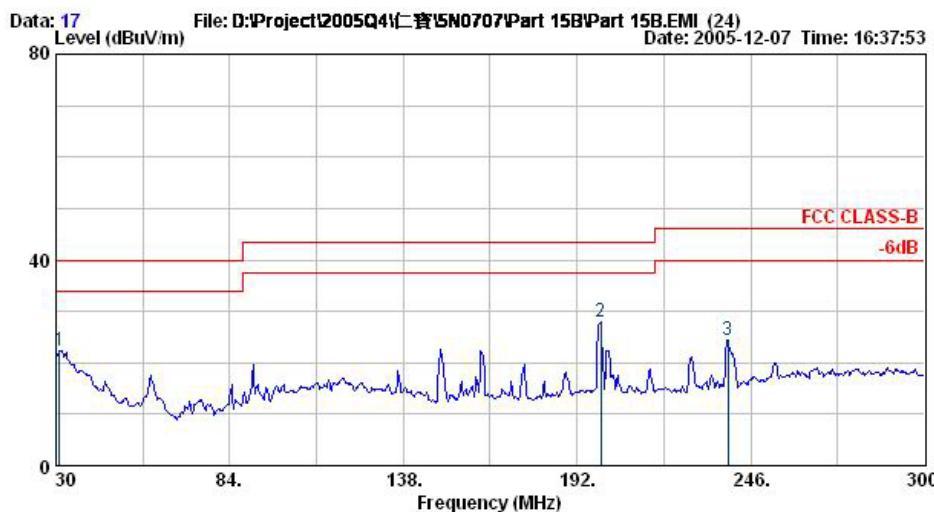
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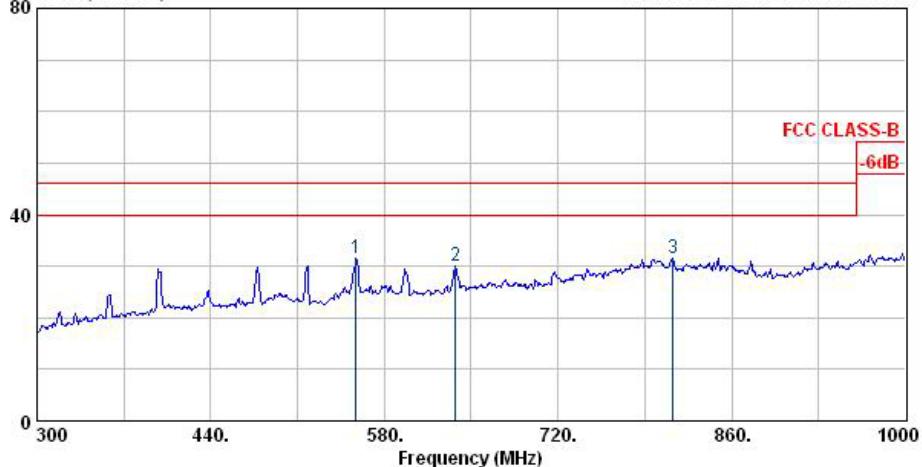
Report No. : FD5N0707



Site : 03CH06-HY
Condition : BI-LOG-2004-1122 VERTICAL
EUT : GSM/GPRS/WCDMA Mobile Phone with
: Bluetooth
Power : 120Vac/60Hz
Model : FDSN0707
Memo : PCS1900 Idle Mode+Earphone+Charger
: +BT Link+Camera
Plane : E1

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
			Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	cm	deg	
1	31.08	22.40	-17.60	40.00	34.15	18.40	1.37	31.52	400	0	Peak
2	199.29	27.95	-15.55	43.50	45.86	9.93	3.50	31.34	400	0	Peak
3	238.98	24.48	-21.52	46.00	40.99	10.87	3.83	31.21	400	0	Peak

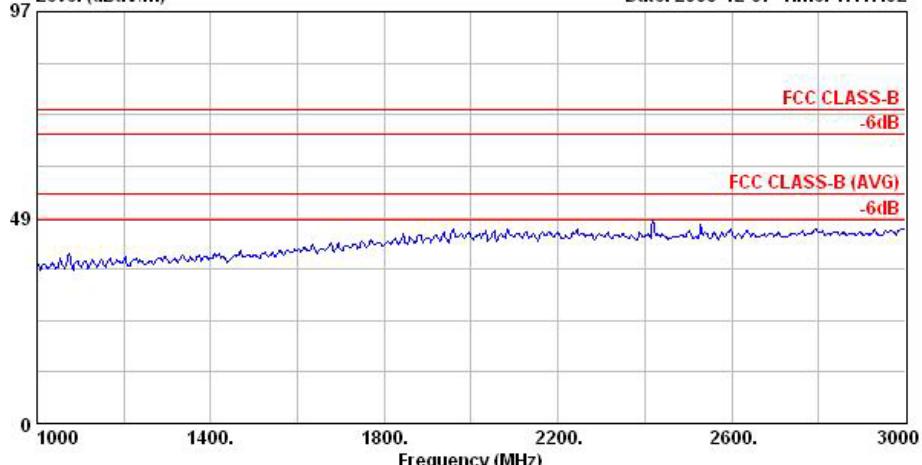
Data: 18 File: D:\Project\2005Q4\仁寶\5N0707\Part 15B\Part 15B.EMI (24)
 Level (dBuV/m) Date: 2005-12-07 Time: 16:42:15



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : GSM/GPRS/WCDMA Mobile Phone with
 : Bluetooth
 Power : 120Vac/60Hz
 Model : FD5N0707
 Memo : PCS1900 Idle Mode+Earphone+Charger
 : +BT Link+Camera
 Plane : E1

	Freq MHz	Level dBuV/m	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table
			Line	dB	Level	Factor	Loss	Factor	Pos	Pos
1	556.90	31.51	-14.49	46.00	37.44	18.59	6.12	30.64	100	0 Peak
2	637.40	29.97	-16.03	46.00	35.63	18.35	6.57	30.58	100	0 Peak
3	812.40	31.53	-14.47	46.00	32.87	21.65	7.52	30.51	100	0 Peak

Data: 19 File: D:\Project\2005Q4\仁寶\5N0707\Part 15B\Part 15B.EMI (24)
 Level (dBuV/m) Date: 2005-12-07 Time: 17:47:02



Site : 03CH06-HY
 Condition : HF-ANT-071025-940201 VERTICAL
 EUT : GSM/GPRS/WCDMA Mobile Phone with
 : Bluetooth
 Power : 120Vac/60Hz
 Model : FD5N0707
 Memo : PCS1900 Idle Mode+Earphone+Charger
 : +BT Link+Camera
 Plane : E1

SPORTON International Inc.

TEL : 886-2-2696-2468

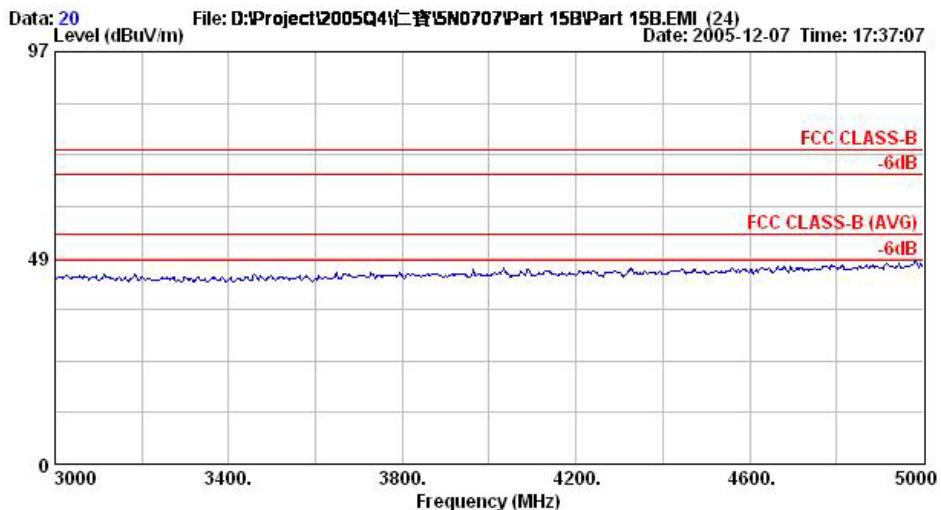
FAX : 886-2-2696-2255

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Report No. : FD5N0707



Site : 03CH06-HY
Condition : HF-ANT-071025-940201 VERTICAL
EUT : GSM/GPRS/WCDMA Mobile Phone with
: Bluetooth
Power : 120Vac/60Hz
Model : FD5N0707
Memo : PCS1900 Idle Mode+Earphone+Charger
: +BT Link+Camera
Plane : E1

Remark: The spurious emission above 5GHz is too low to be taken.

Test Engineer : Jay
Jay

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

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6.5 Photographs of Radiated Emission Test Configuration**FRONT VIEW****REAR VIEW**



7. List of Measuring Equipment Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Feb. 19, 2005	Feb. 19, 2006	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Apr. 26, 2005	Apr. 26, 2006	Conduction (CO01-HY)
LISN (Support Unit)	PIC	NNB-2/16Z	2001/008	9kHz – 30MHz	May 06, 2005	May 06, 2006	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. 23, 2004	Dec. 23, 2006	Conduction (CO01-HY)
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Jul. 25, 2005	Jul. 24, 2006	Radiation (03CH06-HY)
Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jun. 28, 2005	Jun. 27, 2006	Radiation (03CH06-HY)
Controller	CT	SC100	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 22, 2004	Nov. 22, 2006	Radiation (03CH06-HY)
Horn Antenna	Com-Power	AH118	071025	1G-18G	Feb. 22, 2005	Feb. 22, 2006	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBEC K	BBHA 9170	9170-249	14G - 40G	Jul. 21, 2005	Jul. 20, 2006	Radiation (03CH06-HY)
HF Amplifier	MITEQ	AFS44	973248	0.1G - 26.5G	Dec. 17, 2004	Dec. 17, 2005	Radiation (03CH06-HY)
Amplifier	MITEQ	AMF-6F	997165	26G - 40G	Jul. 21, 2005	Jul. 20, 2006	Radiation (03CH06-HY)
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	N/A	Radiation (03CH06-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	N/A	Radiation (03CH06-HY)

8. Uncertainty of Evaluation

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

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability 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 $U_c(y)$	1.13		
Measuring uncertainty for a level of confidence of 95% $U=2U_c(y)$	2.26		

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

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
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 $U_c(y)$	1.27		
Measuring uncertainty for a level of confidence of 95% $U=2U_c(y)$	2.54		

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

Contribution	Uncertainty of x_i		$u(x_i)$	Ci	$Ci * u(x_i)$
	dB	Probability Distribution			
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 $\Gamma 1= 0.197$ Antenna VSWR $\Gamma 2= 0.194$ Uncertainty=20log(1- $\Gamma 1 * \Gamma 2 * \Gamma 3$)	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty $U_c(y)$	2.36				
Measuring uncertainty for a level of confidence of 95% $U=2U_c(y)$	4.72				

9. Certificate of NVLAP Accreditation

United States Department of Commerce
National Institute of Standards and Technology



ISO/IEC 17025:1999
ISO 9002:1994

Certificate of Accreditation



SPORTON INTERNATIONAL, INC.

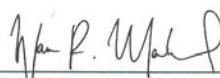
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*is recognized by the National Voluntary Laboratory Accreditation Program
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all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994.
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ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

December 31, 2005

Effective through



For the National Institute of Standards and Technology

NVLAP Lab Code: 200079-0

NVLAP-01C (06-01)

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Report Issued Date	: Dec. 09, 2005
Report Version	: Rev. 01