





SPORTON International Inc. TEL: 886-2-2696-2468 FAX: 886-2-2696-2255 FCC ID : MAU470





1. #7: MS Signal

- 2. #8: BS Signal



: 79 of 97 Report Issued Date : Jul. 05, 2007 Report Version : Rev. 03







Remark : There is no more obvious emission except the listings above.



4.6.5.5 Mode 5 Horizontal Polarization



SPORTON International Inc.





#7: BT Signal 1.







Remark: There's no more obvious spurious emission except the listings above.



Vertical Polarization



SPORTON International Inc.





1. #9: BT Signal



SPORTON International Inc. TEL: 886-2-2696-2468 FAX: 886-2-2696-2255 FCC ID : MAU470





Remark : There is no more obvious emission except the listings above.



4.6.5.6 Mode 6 Horizontal Polarization



SPORTON International Inc.





#7: WLAN Signal 1.



SPORTON International Inc. TEL: 886-2-2696-2468 FAX: 886-2-2696-2255 FCC ID : MAU470

Page No. Report Issued Date : Jul. 05, 2007 Report Version











Vertical Polarization



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Remark:





SPORTON International Inc.





Remark : There is no more obvious emission except the listings above.

: Jul. 05, 2007



4.7 Frequency Stability (Temperature Variation)

- 4.7.1 Measurement Instrument
 - As decribed in chapter 5 of this test report.
- 4.7.2 Test Procedure
 - 1. The EUT and test equipment were set up as shown on the following section.
 - 2. With all power removed, the temperature was decreased to -30°C and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.
 - 3. With power OFF, the temperature was raised in 10°C steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change ws noted within one minute.
 - 4. The temperature tests were performed for the worst case.
 - 5. Test data was recorded.

4.7.3 Test Setup Layout





4.7.4 Test Result

Test Mode : CDMA2000 Cellular 850 1xRTT FCH_RC3 CH384

Temperature(°C)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	8.32	0.00		
-20	9.35	0.00		
-10	7.14	0.00		
0	7.80	0.00		
10	9.35	0.00	2.5	Passed
20	3.17	0.00		
30	8.40	0.00		
40	5.73	0.00		
50	-3.37	0.00		

Test Mode : CDMA2000 PCS 1900 1xRTT FCH_RC3 CH600

Temperature(°C)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
-30	12.40	0.01		
-20	19.70	0.01		
-10	13.35	0.01		
0	39.56	0.02		
10	13.58	0.01	2.5	Passed
20	-2.26	0.00		
30	19.09	0.01		
40	12.25	0.01		
50	-12.81	-0.01		



4.8 Frequency Stability (Voltage Variation)

4.8.1 Measurement Instrument

As described in chapter 5 of this test report.

4.8.2 Test Procedure

- 1. The EUT was placed in a temperature chamber at 25±5 °C and connected as the following section.
- 2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
- 3. The variation in frequency was measured for the worst case.
- 4.8.3 Test Setup Layout



4.8.4 Test Result

Test Mode : CDMA2000 Cellular 850 1xRTT CH384 •

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
21.9	0.4	0.00		
BEP	-2.3	0.00	2.5	Passed
19.0	3.8	0.00		

•	Test Mode :	CDMA2000	PCS	1900	1xRTT	CH600

Voltage(Volt)	Change (Hz)	Change (ppm)	Limit (ppm)	Result
21.9	0.21	0.00		
BEP	-3.14	0.00	2.5	Passed
19.0	6.65	0.00		

Remark:

- 1. Normal Voltage=19 V.
- 2. Battery End Point (BEP)=16.2 V.



5 List of Measurement Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
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	10094	1G~18G	Dec. 26, 2006	Dec. 25, 2007	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	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	Agilent	8960	GB463111322	WCDMA	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)



6 Uncertainty Evaluation

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

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

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

Contribution	Uncertainty of x_i				
	٩D	Probability	$u(x_i)$	Ci	$Ci * u(x_i)$
	ûВ	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 Γ1= 0.197	.0.24/0.25		0.044		0.044
Antenna VSWR Γ2= 0.194	+0.34/-0.35	U-snaped	0.244	1	0.244
Uncertainty=20log(1-Γ1*Γ2*Γ3)					
Combined standard uncertainty Uc(y)			2.36		
Measuring uncertainty for a level of	4.70				
confidence of 95% U=2Ue(y)	4.12				

END OF TEST REPORT