



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CERTIFICATION

Test Report No. : E04NR-077

Applicant : Cybertree Co.,Ltd.

Address : Chungjook Tower Bldg. 7F 546-9, Sang2-Dong, Wonmi-Gu, Bucheon-Si, Gyeonggi-Do, Korea

Manufacturer : Cybertree Co., Ltd.

Address : Chungjook Tower Bldg. 7F 546-9, Sang2-Dong, Wonmi-Gu, Bucheon-Si, Gyeonggi-Do, Korea

Type of Equipment : PAGER (All other receiver subject to Part 15)

FCC ID : RLRCPF190NXT9000P

Model Name : CPF-190N

Multiple Model Name : N/A

Serial number : N/A

Total page of Report : 10 pages (including this page)

Date of Incoming : November 08, 2004

Date of Issuing : November 23, 2004

SUMMARY

The equipment complies with the requirements of **FCC CFR 47 PART 15 SUBPART B, SECTION 15.101.**

This test report contains only the results of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

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**1. VERIFICATION OF COMPLIANCE**

- APPLICANT : Cybertree Co.,Ltd.
- ADDRESS : Chungjook Tower Bldg. 7F 546-9, Sang2-Dong, Wonmi-Gu, Bucheon-Si, Gyeonggi-Do,Korea
- CONTACT PERSON : Mr. Beom Mo, Jeong / Director in R&D
- TELEPHONE NO : +82-32-327-4534
- FCC ID : RLRCPF190NXT9000P
- MODEL NO/NAME : CPF-190N
- SERIAL NUMBER : N/A
- DATE : November 23, 2004

DEVICE TYPE	All other receiver subject to Part 15 - Unintentional Radiator
E.U.T. DESCRIPTION	PAGER
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2001
TYPE OF EQUIPMENT TESTED	PRE-PRODUCTION
KIND OF EQUIPMENT AUTHORIZATION REQUESTED	CERTIFICATION
EQUIPMENT WILL BE OPERATED UNDER FCC RULES PART(S)	FCC PART 15, SECTION 15.101
MODIFICATIONS ON THE EQUIPMENT TO ACHIEVE COMPLIANCE	No
FINAL TEST WAS CONDUCTED ON	3 METER OPEN AREA TEST SITE

- This device has shown compliance with the conducted emissions limits in 15.107 adopted under FCC 02-107 (ET Docket 98-80). The device may be marketed after July 11, 2005 affected by the 15.37(j) transition provisions.
- The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.

2. GENERAL INFORMATION

2.1 Product Description

The Cybertree Co.,Ltd., Model CPF-190N (referred to as the EUT in this report) is a FLEX Alpha-Numeric Display Pager which using a microcomputer to control radio frequency (RF) circuits and other customized decoding hardware to receive, decode, store. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic
RECEIVING FREQUENCY	929.0125MHz ~ 931.9875MHz
DETECT METHOD	Super heterodyne Detector
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	1 st Local Osc. Frequency = (Tuning Frequency – 21.4MHz) / 12 MHz 2 nd : 20.945MHz on the main board
INTERMITTENT FREQUENCY	21.4MHz
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	20.945MHz on the main board
POWER REQUIREMENT	DC1.5V AAA Type Battery
NUMBER OF LAYERS	4 Layers : Main and LCD Board

Model Differences:

The difference(s) compared to the EUT is as follows: None.

2.2 Related Submittal(s) / Grant(s)

Original submittal only

2.3 Test System Details

The model numbers for all the equipments that were used in the tested system is:

Model	Manufacturer	FCC ID	Description	Connected to
CPF-190N	Cybertree Co.,Ltd.	RLRCPF190NXT9000P	PAGER (EUT)	N/A
TC-1101A	TESCOM	N/A	FLEX PAGER TESTER	N/A

2.4 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2001. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.5 Test Facility

The open area test site and conducted measurement facilities are located on at 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do, 464-080, Korea. Description details of test facilities were submitted to the Commission on January 18, 2002. (Registration Number: 92819)

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FCC-003 (Rev.0)

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EMC Testing Dept : 426-1 Daessangryung-Ri, Chowol-Myun, Kwangju-City, Kyunggi-Do 464-860 Korea. (TEL: +82-31-765-8289, FAX: +82-31-766-2904)



3. SYSTEM TEST CONFIGURATION

3.1 Justification

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
MAIN BOARD	Cybertree Co.,Ltd.	CPL-190N(VER D)	N/A
LCD BOARD	Cybertree Co.,Ltd.	CPL-190N(VER C)	N/A

3.2 EUT exercise Software

During Radiated Emission Tests, TESCOM signal generator model no: TC-1101A was used to radiate an modulated CW signal to EUT at 1 near top, and 1 near bottom frequency in order to stabilize the local oscillator of the EUT.

The receiving frequency of the EUT is not more than 10MHz, so the test was performed at the nearest bottom, and top frequency according to the section 15.31.

Also to get a maximum emission level from the EUT, the EUT was moved throughout the XY, XZ, and YZ planes.

3.3 Cable Description

-. Not applicable

3.4 Noise Suppression Parts on Cable

-. Not applicable

3.5 Equipment Modifications

To achieve compliance to CLASS B levels, the following change(s) was made by ONETECH Corp. during compliance testing:

“There were no Modified items during EMI test”

3.6 Configuration of Test System

Line Conducted Test : It does not need to test this requirement, because of the power of the EUT is supplied from a DC battery

Radiated Emission Test : Preliminary radiated emission test was conducted using the procedure in ANSI C63.4/2001 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 3 meters open area test site.



4. PRELIMINARY TEST

4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
N/A	N/A
It does not need to test this requirement, because of the power of the EUT is supplied from a DC battery.	

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The Worse operating condition (Please check one only)
Standby	
Receiving	X

**5. FINAL RESULT OF MEASUREMENT**

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level

5.1 Radiated Emission Test**5.1.1 Test data for the near bottom frequency**

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

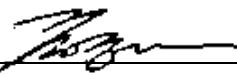
Humidity Level : 50 % Temperature : 18 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109
 Type of Test : All other receiver subject to Part 15
 Result : PASSED BY -4.73 dB at 907.59 MHz

EUT : PAGER Date: November 11, 2004
 Operating Condition : Receiving mode
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter
 Receiving Frequency : 929.0125MHz

Radiated Emissions		Ant	Correction Factors		Total	FCC CLASS B	
Frequency (MHz)	Amplitude (dBuV)	Pol.	Antenna (dB/m)	Cable (dB)	Amplitude (dBuV/m)	Limit (dBuV/m)	Margin (dB)
43.57	13.40	H	13.52	1.20	28.12	40.00	-11.88
161.79	12.90	H	14.56	2.10	29.56	43.52	-13.96
270.32	13.60	H	17.48	2.68	33.76	46.02	-12.26
907.59	13.23	H	22.85	5.21	41.29	46.02	-4.73
1815.39	15.03	H	25.00	6.18	46.21	53.97	-7.76
Other frequencies up to 5GHz were not observed during the test.							

Radiated Emission Tabulated Data

Remark: "H": Horizontal, "V": Vertical


 Tested by: Young-Min, Choi / Project Engineer

**5.1.2 Test data for the near top frequency**

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

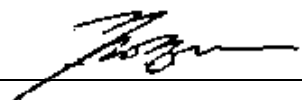
Humidity Level : 50 % Temperature : 18 °C
 Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109
 Type of Test : All other receiver subject to Part 15
 Result : PASSED BY -4.64 dB at 910.56 MHz

EUT : PAGER Date: November 11, 2004
 Operating Condition : Receiving mode
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter
 Receiving Frequency : 931.9875MHz

Radiated Emissions		Ant	Correction Factors		Total	FCC CLASS B	
Frequency (MHz)	Amplitude (dBuV)	Pol.	Antenna (dB/m)	Cable (dB)	Amplitude. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
44.50	10.50	H	13.23	1.20	24.93	40.00	-15.07
221.87	13.64	H	16.86	2.46	32.96	46.02	-13.06
306.17	15.10	H	13.66	2.92	31.68	46.02	-14.34
910.56	13.32	H	22.85	5.21	41.38	46.02	-4.64
1821.35	17.19	H	25.00	6.18	48.37	53.97	-5.60
Other frequencies up to 5GHz were not observed during the test.							

Radiated Emission Tabulated Data

Remark: "H": Horizontal, "V": Vertical


 Tested by: Young-Min, Choi / Project Engineer



6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses

+ Meter reading (dBuV)

+ Cable Loss (dB)

+ Antenna Factor (Loss) (dB/meter)

= Corrected Reading (dBuV/meter)

- Specification Limit (dBuV/meter)

= dB Relative to Spec (+/- dB)

**7. LIST OF TEST EQUIPMENT**

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.	Test receiver	R/S	ESVS 10	827864/005	DEC/03	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	MAY/04	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	JUL/04	12MONTH	■
4.	Spectrum analyzer	HP	8568B	3109A05456	JUL/04	12MONTH	■
5.	RF preselector	HP	85685A	3107A01264	APR/04	12MONTH	■
6.	Quasi-Peak Adapter	HP	85650A	3107A01542	JUL/04	12MONTH	■
7.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	FEB/04	12MONTH	
8.	Biconical antenna	EMCO	3104C	9109-4443	MAY/04	12MONTH	
		Schwarzbeck	VHA9103	91031852	JAN/04		■
9.	Log Periodic antenna	EMCO	3146	9109-3213	FEB/04	12MONTH	
				9109-3217	MAY/04		
		Schwarzbeck	9108-A(494)	62281001	JAN/04		■
10.	Horn antenna	Schwarzbeck	BBHA 9120D	BBHA9120D294	JUNE/04	12MONTH	■
11.	LISN	EMCO	3825/2	9109-1867	JUL/04	12MONTH	■
				9109-1869	OCT/04		■
12.	Microwave System Preamplifier	Agilent	83051A	3950M00201	JUNE/04	12MONTH	■
13.	Position Controller	HD GmbH	HD100	N/A	N/A	N/A	■
14.	Turn Table	HD GmbH	DS420S	N/A	N/A	N/A	■
15.	Antenna Master	HD GmbH	MA240	N/A	N/A	N/A	■