


ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CLASS B CERTIFICATION


Test Report No. : E06OR-061
AGR No. : A069A-054
Applicant : Bluebird Soft Inc.
Address : 558-5, Sinsa-dong, Gangnam-gu, Seoul, Korea
Manufacturer : Bluebird Soft Inc.
Address : 558-5, Sinsa-dong, Gangnam-gu, Seoul, Korea
Type of Equipment : Personal PDA with Bluetooth and WLAN
(Peripheral Device for Class B Computing Device)
FCC ID : SS4BM300
Model Name : BM-300
Serial number : N/A
Total page of Report : 12 pages (including this page)
Date of Incoming : August 10, 2006
Date of Issuing : October 24, 2006

SUMMARY

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

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 : Bluebird Soft Inc.
- ADDRESS : 558-5, Sinsa-dong, Gangnam-gu, Seoul, Korea
- CONTACT PERSON : Mr. Jin-Sung, Gu / Developing Engineer
- TELEPHONE NO : +82-2-541-4002
- FCC ID : SS4BM300
- MODEL NAME : BM-300
- SERIAL NUMBER : N/A
- DATE : October 24, 2006

DEVICE TYPE	Peripheral Device for Class B Computing Device - Unintentional Radiator
E.U.T. DESCRIPTION	Personal PDA with Bluetooth and WLAN
THIS REPORT CONCERNS	ORIGINAL GRANT
MEASUREMENT PROCEDURES	ANSI C63.4: 2003
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

- 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 Bluebird Soft Inc., Model BM-300 (referred to as the EUT in this report) is a Personal PDA with Bluetooth and WLAN, which has a function of battery charging and data uploading/downloading by USB cable. This report is for Peripheral Device for Class B Computing Device and test report for WLAN and BT shall be issued by another test report. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic and Metal
LIST OF EACH OSC. or CRY. FREQ.(FREQ.>=1MHz)	26 MHz, 24.576 MHz and 13 MHz
POWER REQUIREMENT	DC 5V, 2A from an AC/DC Adaptor
NUMBER OF LAYERS	8 Layers
EXTERNAL CONNECTOR	USB Port, Earphone Jack

2.2 Model Differences

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

2.3 Related Submittal(s) / Grant(s)

-. Original submittal only

2.4 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
BM-300	Bluebird Soft Inc.	SS4BM300	Personal PDA with Bluetooth and WLAN (EUT)	PC
PSC11R-050	Phihong Technology	N/A	AC/DC Adapter	EUT
MANIAC2004MRW	LG International	DoC	PC	-
E176FPb	Dell Computer	DoC	LCD Monitor	PC
SK-8115	Dell Computer	DoC	Keyboard	PC
N/A	ARTec	DoC	Mouse	PC
UP-DP10	Sony	DoC	Printer	PC
3453C	U.S.Robotics	CJE-0263	Modem	PC

2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2003. Radiated testing was performed at a distance of 3 meters from EUT to the antenna.

2.6 Test Facility

The open area test site and conducted measurement facilities are located on at 307-51 Daessangryung-Ri, Chowol-Eup, Kwangju-City, Kyunggi-Do, 464-080, Korea. Description details of test facilities were submitted to the Commission on August 30, 2005. (Registration Number: 340658)

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	N/A	BM300 DMB REV2000	N/A
Key Board	N/A	BM300 DMB KEY REV2000	N/A
LCD	N/A	TD028STEB2	N/A

3.2 Mode of operation during the test

The EUT was connected to a PC and then the EUT continuously transferred data to the PC during the test. The power of the EUT was supplied by USB Port from a PC and AC/DC adaptor, but worst case data was recorded in this report.

3.3 Cable Description

Ports Name	Shielded	Ferrite Bead	Metal Hood	Length (m)	Connected to
USB Port	N	Y (EUT END)	BOTH END	1.5	PC
Earphone Port	N	N	EUT END	1.5	Earphone

3.5 Equipment Modifications

-. None

3.6 Configuration of Test System

Line Conducted Test : The power of the EUT was connected to LISN. All supporting equipments were connected to another LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4: 2003 7.2.3 to determine the worse operating conditions.

Radiated Emission Test : Preliminary radiated emission test was conducted using the procedure in ANSI C63.4: 2003 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 operating condition
The EUT continuously transferred data to the PC during the test.	X

4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated

Operation Mode	The operating condition
The EUT continuously transferred data to the PC during the test.	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 Conducted Emission Test

Humidity Level : 41 % Temperature: 20 °C
Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107 (a)
Type of Test : CLASS B
Result : PASSED BY -14.22 dB at 0.475 MHz

EUT : Personal PDA with Bluetooth and WLAN Date: September 04, 2006
Operating Condition : The EUT continuously transferred data to the PC during the test.
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 9 kHz)

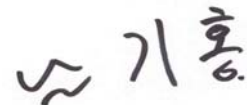
Frequency (MHz)	Line	Quasi-Peak (dBuV)		Margin (dB)	Average (dBuV)		Margin (dB)
		Emission level	Limits		Emission level	Limits	
0.155	N	44.37	65.73	-21.36	-	-	-
0.175	H	43.00	64.72	-21.72	-	-	-
0.455	H	38.94	56.78	-17.84	-	-	-
0.475	H	42.21	56.43	-14.22	-	-	-
0.70	H	37.83	56.00	-18.17	-	-	-
0.715	N	30.71	56.00	-25.29	-	-	-

Line Conducted Emission Tabulated Data

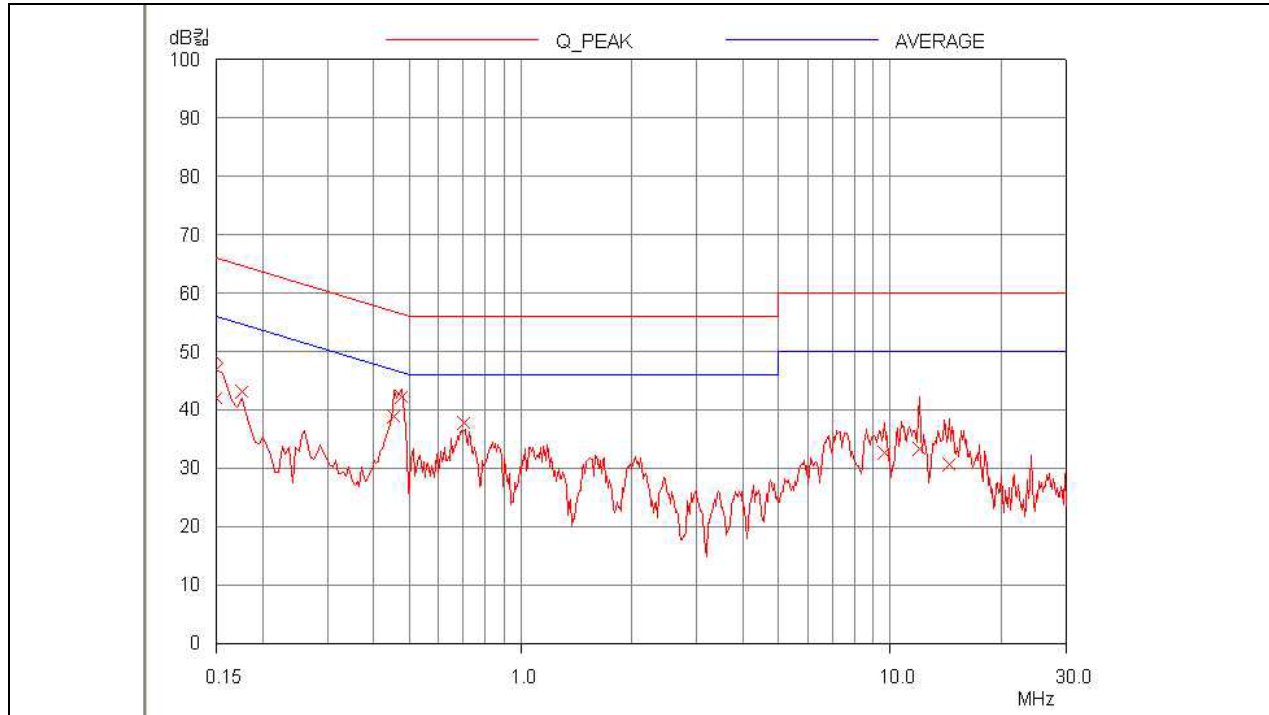
Remark : "H": Hot Line, "N": Neutral line

Average mode was not measured, because peak values were under the Average limit.

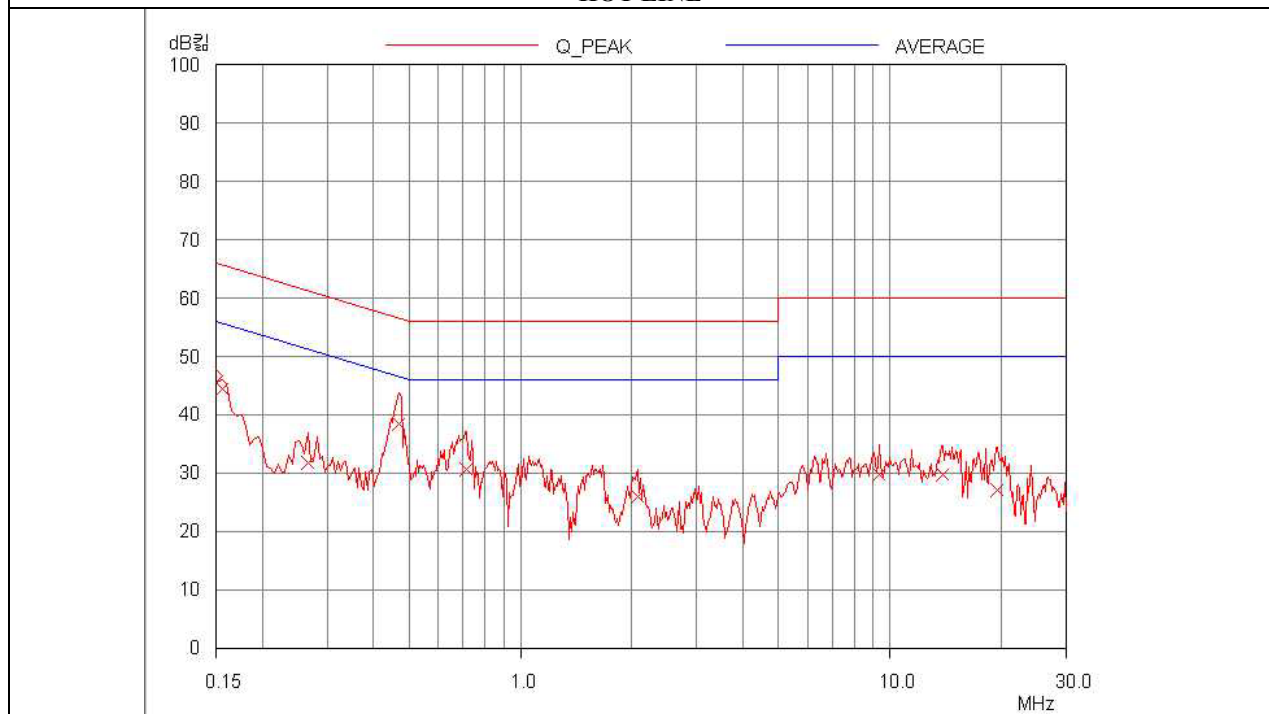
See next page for an overview sweep performed with peak detector.



Tested by: Ki-Hong, Nam / Test Engineer



HOT LINE



NEUTRAL LINE

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EMC-002 (Rev.0)

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5.2 Radiated Emission Test

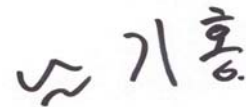
The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

Humidity Level : 50 % Temperature: 24 °C
Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (a)
Type of Test : CLASS B
Result : PASSED BY -3.01 dB at 434.00 MHz

EUT : Personal PDA with Bluetooth and WLAN Date: September 22, 2006
Operating Condition : The EUT continuously transferred data to the PC during the test.
Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
Frequency Range : 30 MHz – 1000 MHz
Distance : 3 Meter

Frequency (MHz)	Reading (dBuV)	Ant. Pol. (H/V)	Ant. Factor (dB/m)	Cable Loss	Emission Level(dBuV/m)	Limits (dBuV/m)	Margin (dB)
131.70	17.20	V	13.59	2.23	33.02	43.52	-10.50
144.30	18.40	H	14.40	2.36	35.16	43.52	-8.36
216.20	16.90	V	16.63	2.93	36.46	46.02	-9.56
434.00	20.80	H	17.74	4.47	43.01	46.02	-3.01
474.70	19.10	V	18.69	4.99	42.78	46.02	-3.24
511.60	17.60	V	19.25	5.45	42.30	46.02	-3.72

Radiated Emissions Tabulated Data



Tested by: Ki-Hong, Nam / Test 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	ESVS10	827864/005	DEC/05	12MONTH	■
2.	Test receiver	R/S	ESHS 10	834467/007	MAY/06	12MONTH	■
3.	Spectrum analyzer	HP	8566B	3407A08547	JUN/06	12MONTH	■
4.	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	VULB9163 166	MAY/06	12MONTH	
5.	Biconical antenna	EMCO	3110	9003-1121	FEB/06	12MONTH	
		Schwarzbeck	VHA9103	91031852	FEB/06		■
6.	Log Periodic antenna	EMCO	3146	9001-2614	FEB/06	12MONTH	
		Schwarzbeck	9108-A(494)	62281001	FEB/06		■
7.	LISN	EMCO	3825/2	9109-1867	JUN/06	12MONTH	■
				9109-1869	JUN/06		
		Schwarzbeck	NSLK 8126	8126-404	JUL/06		■
8.	Position Controller	HD GmbH	HD100	N/A	N/A	N/A	■
9.	Turn Table	HD GmbH	DS420S	N/A	N/A	N/A	■
10.	Antenna Master	HD GmbH	MA240	N/A	N/A	N/A	■