



ELECTROMAGNETIC EMISSION COMPLIANCE REPORT FOR FCC CERTIFICATION

Test Report No. : E04OR-064

Applicant : MAXTEL Co., Ltd.

Address : 103-303 Dongmoon Good-Morning Hill Office, 1305 Baekseok-Dong, Ilsan-Gu, Goyang-City, Gyeonggi-Do, Korea

Manufacturer : MAXTEL Co., Ltd.

Address : 1402 Hyundai Town Vill 848-1, Janghang-dong, Ilsan-Gu, Goyang-City Gyeonggi-Do, Korea

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

FCC ID : SNXNXP781

Model Name : NXP-780

Multiple Model Name : N/A

Serial number : N/A

Total page of Report : 11 pages (including this page)

Date of Incoming : October 12, 2004


Date of Issuing : October 20, 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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CONTENTS

	Page
1. VERIFICATION OF COMPLIANCE	3
2. GENERAL INFORMATION.....	4
2.1 PRODUCT DESCRIPTION	4
2.2 RELATED SUBMITTAL(S) / GRANT(S)	4
2.3 TEST SYSTEM DETAILS	4
2.4 TEST METHODOLOGY	4
2.5 TEST FACILITY	4
3. SYSTEM TEST CONFIGURATION.....	5
3.1 JUSTIFICATION	5
3.2 EUT EXERCISE SOFTWARE.....	5
3.3 CABLE DESCRIPTION	5
3.4 NOISE SUPPRESSION PARTS ON CABLE	5
3.5 EQUIPMENT MODIFICATIONS	5
3.6 CONFIGURATION OF TEST SYSTEM	5
4. PRELIMINARY TEST	6
4.1 AC POWER LINE CONDUCTED EMISSION TEST	6
4.2 RADIATED EMISSION TEST	6
5. FINAL RESULT OF MEASUREMENT	7
5.1 RADIATED EMISSION TEST	7
5.1.1 TEST DATA FOR THE NEAR BOTTOM FREQUENCY	7
5.1.2 TEST DATA FOR THE NEAR MIDDLE FREQUENCY	8
5.1.3 TEST DATA FOR THE NEAR TOP FREQUENCY	9
6. FIELD STRENGTH CALCULATION	10
7. LIST OF TEST EQUIPMENT	11

**1. VERIFICATION OF COMPLIANCE**

- APPLICANT : MAXTEL Co., Ltd.
- ADDRESS : 103-303 Dongmoon Good-Morning Hill Officetel, 1305 Backseok-Dong, Ilsan-Gu, Goyang-City, Gyeonggi-Do, Korea
- CONTACT PERSON : Mr. Han Ho, Jung / President
- TELEPHONE NO : +82-31-907-9055
- FCC ID : SNXNXP781
- MODEL NAME : NXP-780
- SERIAL NUMBER : N/A
- DATE : October 20, 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

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 MAXTEL Co., Ltd., Model NXP-780 (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	137.9250MHz ~ 170.1750 MHz
DETECT METHOD	Super heterodyne Detector
LIST OF EACH OSC. OR CRY. FREQ.(FREQ.>=1MHz)	1 st Local Osc. Frequency = (Tuning Frequency – 21.4MHz) / 2 MHz 2 nd : 20.945MHz on the main board
INTERMITTENT FREQUENCY	21.4MHz
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
NXP-780	MAXTEL Co., Ltd.	SNXNXP781	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)



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	MAXTEL Co., Ltd.	N/A	N/A
LCD BOARD	MAXTEL Co., Ltd.	N/A	N/A

3.2 EUT exercise Software

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

The receiving frequency of the EUT is more than 30MHz, so the test was performed at the nearest bottom, middle 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 : 51 % Temperature : 23 °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 -8.66 dB at 830.41 MHz

EUT : PAGER Date: October 14, 2004
 Operating Condition : Receiving mode
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter
 Receiving Frequency : 137.9250MHz

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)
251.91	10.10	V	17.20	2.61	29.91	46.02	-16.11
270.32	11.40	V	17.48	2.68	31.56	46.02	-14.46
324.59	15.30	V	14.01	2.97	32.28	46.02	-13.74
554.25	10.60	V	18.91	3.92	33.43	46.02	-12.59
830.41	10.01	V	22.64	4.71	37.36	46.02	-8.66
Other frequencies up to 2GHz 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 middle frequency**

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

Humidity Level : 51 % Temperature : 23 °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 -13.09dB at 554.25 MHz

EUT : PAGER Date: October 14, 2004
 Operating Condition : Receiving mode
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter
 Receiving Frequency : 154.6250MHz

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)
250.94	13.10	H	17.18	2.60	32.88	46.02	-13.14
270.32	10.90	H	17.48	2.68	31.06	46.02	-14.96
324.59	13.90	H	14.01	2.97	30.88	46.02	-15.14
554.25	10.10	V	18.91	3.92	32.93	46.02	-13.09
561.99	10.15	H	18.79	3.95	32.89	46.02	-13.13
Other frequencies up to 2GHz were not observed during the test.							

Radiated Emission Tabulated Data

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


 Tested by: Young-Min, Choi / Project Engineer

**5.1.3 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 : 51 % Temperature : 23 °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 -10.41 dB at 270.32 MHz

EUT : PAGER Date: October 14, 2004
 Operating Condition : Receiving mode
 Detector : CISPR Quasi-Peak (6 dB Bandwidth: 120 kHz)
 Distance : 3 Meter
 Receiving Frequency : 170.1750MHz

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)
216.05	10.50	V	16.65	2.39	29.54	46.02	-16.48
252.88	11.00	V	17.21	2.61	30.82	46.02	-15.20
255.78	10.20	V	17.26	2.62	30.08	46.02	-15.94
270.32	15.45	H	17.48	2.68	35.61	46.02	-10.41
324.59	15.75	V	14.01	2.97	32.73	46.02	-13.29
554.25	10.90	H	18.91	3.92	33.73	46.02	-12.29
Other frequencies up to 2GHz 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/03		■
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	■