THRU-KES Co., Ltd.

477-6, Hager-Ri, Yoju-Up, Yoju-Gun
Kyunggi-Do,469-803, Korea
T82-31-883-5092/F82-31-883-5169 email thrukang@paran.com

Test Report

Product Name: RCL pager (Receiver)

FCCID: XTZRCL-R700

Model No.: RCL-R700

Applicant:
RCL KOREA

1566 Joong San – dong ILsan dong – Gu,
Goyang City Kyungki-do, Korea

Date Receipt : 10/27/2009

Date Tested : 10/28/2009

Date Issued : 10/28/2009

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APPLICANT: **RCL KOREA**

FCCID: XTZRCL-R700

TABLE OF CONTENTS FOR A RECEIVER REPORT

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EMC Equipment List

No	Description	Manufacturer	Model No.	Serial No.	Due Cal.	Used
1	Test Receiver	Rohde & Schwarz	ESHS 10	862970/018	2010.05.21	☐
2	Test Receiver	Rohde & Schwarz	ESVS 10	826008/014	2010.06.16	☒
3	Spectrum Analyzer	Hewlett Packard	8566B	2311A02394	2010.05.15	☒
4	Preamplifer	Hewlett Packard	8447F	2805A02570	2010.05.15	☐
5	Preamplifer	A.H. Systems	PAM-0118	164	2010.04..17	☐
6	Signal Generator	Hewlett Packard	8673D	2708A00448	2010.05.15	☐
7	Loop Antenna	Rohde & Schwarz	HFH2-Z2.335.4711.52	826532/006	2010.02.12	☐
8	Dipole Antenna	Rohde & Schwarz	VHAP	574	2010.07.07	☐
9	Dipole Antenna	Rohde & Schwarz	VHAP	575	2010.07.17	☐
10	Dipole Antenna	Rohde & Schwarz	UHAP	546	2010.07.07	☐
11	Dipole Antenna	Rohde & Schwarz	UHAP	547	2010.07.07	☐
12	Trilog -Broadband Antenna	SCHWARZBECK	VULB 9168	9168-350	2011.03.27	☒
13	Biconical Antenna	Eaton Corp.	94455-1	0977	2010.07.03	☐
14	Biconical Antenna	EMCO	3104C	9111-2468	2010.07.03	☐
15	Log Periodic Antenna	EMCO	3146	2051	2010.06.05	☐
16	Log Periodic Antenna	EMCO	3146	8901-2320	2010.07.03	☐
17	Horn Antenna	A.H. Systems	SAS-571	414	2011.03.16	☐
18	LISN	EMCO	3825/2	9111-1912	2010.05.15	☐
19	LISN	EMCO	3810/2	2228	2010.05.15	☐
20	Dummy Load	Bird Electronics	8201	16521	2010.04.17	☐

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TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of THRU-KES Co., Ltd. Shielded interface cables were used in all cases except for cables connecting to the telephone line and the power cords. A test program was run which filled the screen with H's and also with the modem dialing out. Peripherals were turned on and operating.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-2003 using a Rohde & Schwarz EMI Test Receiver ESVS10. The bandwidth of the test receiver was 120 kHz with an appropriate sweep speed. The test receiver was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 120 kHz. The ambient temperature of the UUT was 17.3ºC with a humidity of 65%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the test receiver (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB.

Example:

Freq (MHz)	METER READING + ACF = FS
33	20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The UUT was placed in a manner that was representative of the way the EUT would be used. If the EUT had any peripherals, they were attached and placed in a similar manner. The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. In addition, in the event of the test being for a computer set up, the modem and printer positions were swapped and cables were manipulated as much as possible. The monitor was not moved, as that would not represent a typical situation configuration.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSIC63.4-2003 with the EUT 40 cm from the vertical ground wall.

TEST FACILTY : THRU-KES Co., Ltd.(Test site #:343818)
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APPLICANT: **RCL KOREA**

FCCID: XTZRCL-R700

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.109,15.33(b)(3)

REQUIREMENTS:

30 to 88 MHz:	40.0 dBuV/M @ 3 METERS
88 to 216 MHz:	43.5 dBuV/M
216 to 960 MHz:	46.0 dBuV/M
ABOVE 960 MHz:	54.0 dBuV/M

TEST RESULTS: A search was made of the spectrum from 30 to 2000 MHz and the measurements indicate that the unit DOES meet the FCC requirements.

TEST DATA:
*** Tuning Frequency : 450.0000MHz**

No	Emission Frequency (MHz)	Meter Reading dBuV/m	Ant. Polaritry	Correction Factor dB	Cable Loss dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)
1	31.40	14.0	V	13.3	3.7	31.0	-9.0	40.0
2	37.00	13.2	V	13.8	3.1	30.1	-9.9	40.0
3	56.70	13.2	H	13.0	4.3	30.5	-9.5	40.0
4	58.00	11.0	V	12.9	4.4	28.3	-11.7	40.0
5	184.30	21.5	V	11.2	2.8	35.4	-8.1	43.5
6	231.20	23.6	V	11.2	3.0	37.9	-8.1	46.0
7	275.60	8.7	V	12.2	3.2	24.2	-21.8	46.0
8	774.00	9.7	V	20.6	5.1	35.4	-10.6	46.0
9	796.50	8.7	H	20.7	5.2	34.6	-11.4	46.0
10	941.00	8.2	H	22.0	5.6	35.9	-10.1	46.0

SAMPLE CALCULATION: FSdBuV/m = MR(dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-2003 using a Rohde & Schwarz EMI Test Receiver ESVS10, and an appropriate antenna – see the test equipment list. The bandwidth of test receiver was 120 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

PERFORMED BY: Kyoung Moon Choi **DATE**: 10/28/2009

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APPLICANT: **RCL KOREA**

FCCID: XTZRCL-R700

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.109,15.33(b)(3)

REQUIREMENTS:

30 to 88 MHz:	40.0 dBuV/M @ 3 METERS
88 to 216 MHz:	43.5 dBuV/M
216 to 960 MHz:	46.0 dBuV/M
ABOVE 960 MHz:	54.0 dBuV/M

TEST RESULTS: A search was made of the spectrum from 30 to 2000 MHz and the measurements indicate that the unit DOES meet the FCC requirements.

TEST DATA:
*** Tuning Frequency : 457.5750MHz**

No	Emission Frequency (MHz)	Meter Reading dBuV/m	Ant. Polaritry	Correction Factor dB	Cable Loss dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)
1	42.20	11.7	V	14.0	3.4	29.1	-10.9	40.0
2	67.10	13.2	V	11.4	3.5	28.1	-11.9	40.0
3	182.50	13.6	H	11.4	2.8	27.7	-15.8	43.5
4	238.70	9.2	V	11.4	3.1	23.7	-22.3	46.0
5	316.40	10.7	H	13.1	3.4	27.2	-18.8	46.0
6	368.00	9.2	H	14.2	3.8	27.1	-18.9	46.0
7	542.00	8.7	V	17.2	4.2	30.1	-15.9	46.0
8	549.00	21.2	H	17.4	4.2	42.8	-3.2	46.0
9	825.00	8.6	H	20.9	5.3	34.8	-11.2	46.0
10	853.00	12.0	V	21.3	5.4	38.8	-7.2	46.0

SAMPLE CALCULATION: FSdBuV/m = MR(dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-2003 using a Rohde & Schwarz EMI Test Receiver ESVS10, and an appropriate antenna – see the test equipment list. The bandwidth of test receiver was 120 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

PERFORMED BY: Kyoung Moon Choi **DATE**: 10/28/2009

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APPLICANT: **RCL KOREA**

FCCID: XTZRCL-R700

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.109,15.33(b)(3)

REQUIREMENTS:

30 to 88 MHz:	40.0 dBuV/M @ 3 METERS
88 to 216 MHz:	43.5 dBuV/M
216 to 960 MHz:	46.0 dBuV/M
ABOVE 960 MHz:	54.0 dBuV/M

TEST RESULTS: A search was made of the spectrum from 30 to 2000 MHz and the measurements indicate that the unit DOES meet the FCC requirements.

TEST DATA:
*** Tuning Frequency : 470.000MHz**

No	Emission Frequency (MHz)	Meter Reading dBuV/m	Ant. Polaritry	Correction Factor dB	Cable Loss dB	Field Strength (dBuv/m)	Margin (dBuv)	Limit (dBuv/m)
1	35.10	19.8	V	13.7	3.2	36.7	-3.3	40.0
2	48.90	15.4	V	13.6	3.9	32.9	-7.1	40.0
3	133.40	6.9	V	13.0	2.5	22.4	-21.1	43.5
4	236.00	14.0	V	11.4	3.1	28.4	-17.6	46.0
5	261.80	8.4	V	11.8	3.2	23.4	-22.6	46.0
6	328.40	7.8	H	13.5	3.5	24.7	-21.3	46.0
7	737.00	8.2	H	20.2	5.0	33.3	-12.7	46.0
8	767.50	11.1	V	20.5	5.1	36.7	-9.3	46.0
9	845.00	8.6	H	21.2	5.4	35.2	-10.8	46.0
10	920.50	8.3	V	21.9	5.6	35.8	-10.2	46.0

SAMPLE CALCULATION: FSdBuV/m = MR(dBuV) + ACFdB.

TEST PROCEDURE: ANSI STANDARD C63.4-2003 using a Rohde & Schwarz EMI Test Receiver ESVS10, and an appropriate antenna – see the test equipment list. The bandwidth of test receiver was 120 kHz with an appropriate sweep speed. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported.

PERFORMED BY: Kyoung Moon Choi **DATE**: 10/28/2009

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APPLICANT: **RCL KOREA**

MODEL #: XTZRCL-R700

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NO.: 15.107

REQUIREMENTS:

	QUASI-PEAK	**AVERAGE**
.15 – 0.5 MHz	66-56 dBuV	56-46 dBuV
0.5 – 5.0	56	46
5.0 – 30.	60	50

TEST PROCEDURE: ANSI STANDARD C63.4-2003. The spectrum was scanned from .15 to 30 MHz.

TEST DATA:

THE HIGHEST EMISSION READ FOR LINE 1 WAS

THE HIGHEST EMISSION READ FOR LINE 2 WAS

THE GRAPHS ON THE FOLLOWING PAGE REPRESENT THE EMISSIONS TAKEN FOR THIS DEVICE.

TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

PERFORMED BY: Kyoung Moon Choi **DATE**: 10/28/2009

N/A

N/A

N/A