

**Spectrum Research
& Testing Lab., Inc.**



No. 101-10, Ling 8,
Shan-Tong Li, Chung-Li
City, Taoyuan, Taiwan,
R.O.C.

TEST REPORT

Reference No.:A09100202

Report No.:FCBA09100202

FCC ID : RSQRT-770

Page:1 of 16

Date: Oct. 07, 2009

Product Name: Alpha-numeric Pager
Model Number: RT-770
Applicant: ARCHER WIRELESS CO., LTD
8F, NO. 422, Chung Shun RD., Sec. 2, Chung Ho City, Taipei
Hsieng, Taiwan
Date of Receipt: Oct. 02, 2009
Finished date of Test: Oct. 06, 2009
Applicable Standards: 47 CFR Part 15, Subpart B, Class B
ANSI C63.4:2003

We, **Spectrum Research & Testing Laboratory Inc.**, hereby certify that one sample of the above was tested in our laboratory with positive results according to the above-mentioned standards. The records in the report are an accurate account of the results. Details of the results are given in the subsequent pages of this report.

Tested By :

Shunn Wang
(Shunn Wang)

Date: Oct. 07, 2009

Approved By :

J. H.
(Johnson Ho, Director)

Date: 10/7/2009

NVLAP[®]

Lab Code: 200099-0
FMNG-059.10 REPORT

 <p>Spectrum Research & Testing Lab., Inc. No. 101-10, Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan, Taiwan, R.O.C.</p>	<h1 style="text-align: center;">TEST REPORT</h1>	<p>Reference No.:A09100202 Report No.:FCBA09100202 FCC ID : RSQRT-770 Page:2 of 16 Date: Oct. 07, 2009</p>
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1. DOCUMENT POLICY AND TEST STATEMENT

1.1 DOCUMENT POLICY

- The report shall not be reproduced except in full, without the written approval of SRT Lab, Inc.
- The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

1.2 TEST STATEMENT

- The test results in the report apply only to the unit tested by SRT Lab.
- There was no deviation from the requirements of test standards during the test.
- DC power source from battery: DC power source, 1.5 Vdc, was used during the test.

1.3 EUT MODIFICATION

- No modification in SRT Lab.

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2. DESCRIPTION OF EUT AND TEST MODE

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Alpha-numeric Pager
MODEL NO.	RT-770
POWER SUPPLY	AAA BATTERY
FREQUENCY BAND	UHF BAND
CARRIER FREQUENCY	420~475MHZ
NUMBER OF CHANNEL	1
CHANNEL SPACING	12.5KHZ
I.F. & L.O.	IF-21.4MHZ
MODULATION TYPE	FSK
BIT RATE OF TRANSMISSION	512/1200/2400 bps
ANTENNA TYPE	Loop antenna
ANTENNA GAIN	0 dBi
CABLE	N/A
TYPE	Prototype

NOTE :

For more detailed information, please refer to the EUT's specification or user's manual provided by manufacturer.

2.2 DESCRIPTION OF EUT INTERNAL DEVICE

DEVICE	BRAND / MAKER	MODEL #	FCC ID/DOC	REMARK
N/A				

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2.3 DESCRIPTION OF TEST MODE

Test Mode	Freq.(MHz)
1 Receiving	465.00
2 Standby	N/A

Note: The axis X,Y and Z we evaluate in chamber, the X axis is worst case.

X axis:



Y axis:



Z axis:



2.4 DESCRIPTION OF SUPPORT UNIT

The EUT was configured by the requirement of ANSI C63.4. All interface ports were connected to the appropriate support units via specific cables. The support units and cables are listed below.

NO	DEVICE	BRAND	MODEL #	FCC ID / DOC	CABLE
1	Pager Tester	Credix	PT-7200	N/A	1.5m unshielded AC cable

NOTE : For the actual test configuration, please refer to the photos of testing.

3. DESCRIPTION OF APPLIED STANDARDS

The EUT is a Alpha-numeric Pager and according to the specifications provided by the applicant, it must comply with the requirements of the following standards:

47 CFR Part 15 Subpart B, Class B

All tests have been performed and recorded as per the above standards.

4. CONDUCTED EMISSION TEST

The test item was not performed, because the EUT uses 1.5Vdc battery as power source.

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5. RADIATED EMISSION TEST

5.1 RADIATED EMISSION LIMIT

CISPR22:2006 Limits of radiated emission measurement for frequency below 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 10m)
	dB μ V/m	dB μ V/m
30 – 230	40	30
230 - 1000	47	37

FCC Part 15, Subpart B limit of radiated emission for frequency above 1 GHz (Close)

FREQUENCY (MHz)	Class A (dB μ V/m) (at 3m)	Class B (dB μ V/m) (at 3m)
	AV dB μ V/m	AV dB μ V/m
Above 1000	60.0	54.0

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dB μ V/m) = 20 log Emission level (μ V/m).
3. The device operates or tunes above 1000MHz, upper frequency of measurement shall be 5th harmonic of the highest frequency or 40GHz and whichever is lower.
4. The radiated emission limits of digital devices may be shown to comply with the standards contained in Third Edition of the CISPR 22.

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5.2 TEST EQUIPMENT

The following test equipment was used during the radiated emission test:

EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER	20 MHz TO 1000 MHz	ROHDE & SCHWARZ	ESVS30 / 841977/003	DEC. 2009 ETC
BI-LOG ANTENNA	30MHz to 2GHz	SCHFFNER	CBL6141A / 4128	MAY 2010 ETC
COAXIAL CABLE	30M	TIMES	LMR-400 / #30M	MAY 2010 ETC
FILTER	2 LINE, 30A	FIL.COIL	FC-943 / 869	NRC
OATS	3 – 10 M MEASUREMEN T	SRT	SRT-1	MAY 2010 SRT
SPECTRUM ANALYZER	9K-40GHz	ROHDE & SCHWARZ	FSP40 / 100093	OCT. 2009 ETC
PRE-AMPLIFIE R	1 GHz TO 26.5 GHz	AGILENT	8449B/ 3008A01019	NOV. 2009 ETC
HORN ANTENNA	1 GHz TO 18 GHz	EMCO	3115/ 9602-4681	FEB. 2010 ETC
K-TYPE CABLE	15M	HUBER SUHNER	SF102-40/2*11 / 23932/2	MAY 2010 ETC
K-TYPE CABLE	1M	HUBER SUHNER	SF102-40/2*11 / 28934/2	NOV. 2010 ETC



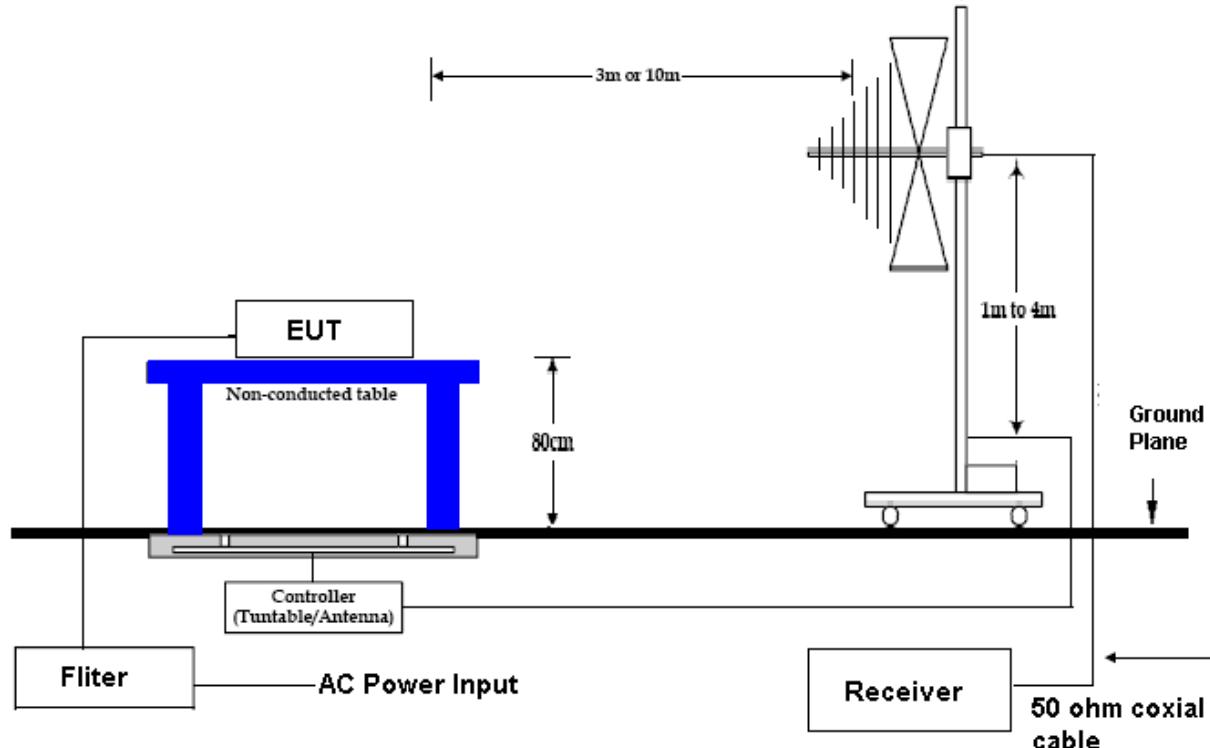
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5.3 TEST SET-UP

TEST SET- UP (30MHz - 1GHz)



NOTE :

1. The EUT system was put on a wooden table with 0.8m heights above a ground plane.
2. For the actual test configuration, please refer to the photos of testing.

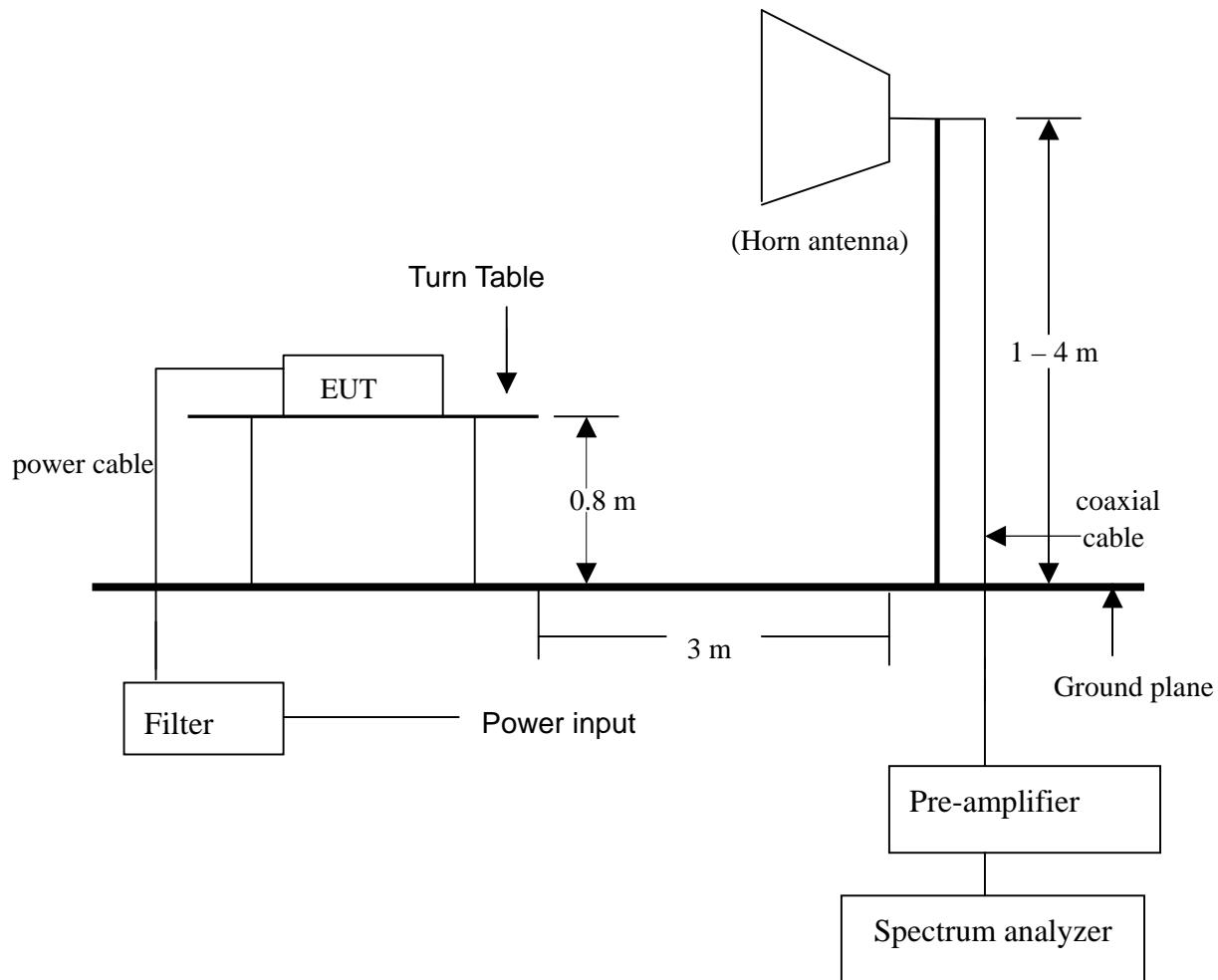


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TEST SET- UP (1GHz - 25GHz)



NOTE :

1. The EUT system was put on a wooden table with 0.8m heights above a ground plane.
2. For the actual test configuration, please refer to the photos of testing.

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5.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.4:2003 and CISPR22:2006. The frequency spectrum measured started from 30 MHz. Under 1 GHz, all readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver. Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak or average values with 1 MHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency. First, Find the margin or higher points at least 6 points by software, then use manual to find the maximum data. The procedure is referred on the test procedure of SRT LAB.

5.5 EUT OPERATING CONDITION

The EUT was operated on receiving and standby mode.

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5.6 TEST RESULT

Temperature:	24 °C	Humidity:	65 %RH
Frequency Range:	30 – 1000 MHz	Measured Distance:	10m
Receiver Detector:	Q.P.	Tested Mode:	Receiving
Tested By:	Shunm Wang	Tested Date:	Oct. 06, 2009

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Data (dB μ V)	Emission Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	AZ(°)	EL(m)
30.2260	0.78	22.10	3.3	26.2	30.0	-3.8	210	4.0
80.1530	1.18	7.40	8.2	16.8	30.0	-13.2	162	4.0
298.4230	2.39	13.10	7.3	22.8	37.0	-14.2	324	3.2
445.1130	2.92	16.84	5.5	25.3	37.0	-11.7	101	1.6
591.4790	3.35	19.65	7.9	30.9	37.0	-6.1	79	1.4
740.0660	3.77	22.32	5.1	31.2	37.0	-5.8	142	1.2

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Data (dB μ V)	Emission Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	AZ(°)	EL(m)
52.9600	0.98	12.36	9.5	22.8	30.0	-7.2	211	1.0
62.9500	1.05	9.00	10.6	20.7	30.0	-9.3	246	1.0
445.1120	2.92	16.84	9.7	29.5	37.0	-7.5	124	1.0
591.4789	3.35	19.65	7.3	30.3	37.0	-6.7	354	1.0
740.0620	3.77	22.32	5.5	31.6	37.0	-5.4	50	1.1
931.0060	4.27	24.51	4.1	32.9	37.0	-4.1	26	1.05

NOTE :

1. Measurement uncertainty is +/-3.7dB.
2. **: Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.

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Temperature:	24 °C	Humidity:	65 %RH
Frequency Range:	30 – 1000 MHz	Measured Distance:	10m
Receiver Detector:	Q.P.	Tested Mode:	Standby
Tested By:	Shunm Wang	Tested Date:	Oct. 06, 2009

Antenna Polarization : Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Data (dB μ V)	Emission Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	AZ(°)	EL(m)
150.1150	1.59	11.60	6.5	19.7	30.0	-10.3	162	4.0
270.3900	2.15	12.70	7.3	22.2	37.0	-14.9	314	4.0
298.4230	2.39	13.10	7.1	22.6	37.0	-14.4	319	3.21
445.1130	2.92	16.84	5.2	25.0	37.0	-12.0	105	1.62
591.4790	3.35	19.65	7.5	30.5	37.0	-6.5	75	1.39
740.0660	3.77	22.32	4.9	31.0	37.0	-6.0	147	1.22

Antenna Polarization : Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Data (dB μ V)	Emission Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	AZ(°)	EL(m)
43.0230	0.91	16.53	6.2	23.6	30.0	-6.4	68	1.0
62.9500	1.05	9.00	10.1	20.2	30.0	-9.8	240	1.0
298.4226	2.39	13.10	5.5	21.0	37.0	-16.0	120	1.0
445.1120	2.92	16.84	9.2	29.0	37.0	-8.0	349	1.0
591.4789	3.35	19.65	7.1	30.1	37.0	-6.9	56	1.11
740.0620	3.77	22.32	5.3	31.4	37.0	-5.6	20	1.07

NOTE :

1. Measurement uncertainty is +/-3.7dB.
2. **: Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.

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Temperature:	24 °C	Humidity:	65 %RH
Frequency Range:	1 – 6 GHz	Measured Distance:	3m
Receiver Detector:	PK. or AV.	Tested Mode:	Receiving
Tested By:	Shunm Wang	Tested Channel:	N/A
Tested Date:	Oct. 06, 2009	Modulation Type:	FSK

Antenna Polarization : Horizontal

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1003.00	-29.79	24.11	*	*	*	*	74.0	54.0	*	*	*	*
1085.50	-29.52	24.32	*	*	*	*	74.0	54.0	*	*	*	*
1186.00	-28.31	24.58	*	*	*	*	74.0	54.0	*	*	*	*
1333.00	-27.40	24.97	*	*	*	*	74.0	54.0	*	*	*	*
1816.00	-25.87	26.60	*	*	*	*	74.0	54.0	*	*	*	*
1835.50	-25.73	26.67	*	*	*	*	74.0	54.0	*	*	*	*

Antenna Polarization : Vertical

Frequency (MHz)	Correct Factor (dB)	Ant. Factor (dB/m)	Reading Data (dB μ V)		Emission Level (dB μ V/m)		Limit (dB μ V/m)		Margin (dB)		AZ (°)	EL (m)
			PK.	AV.	PK.	AV.	PK.	AV.	PK.	AV.		
1333.00	-27.40	24.97	*	*	*	*	74.0	54.0	*	*	*	*
1396.00	-25.33	25.13	*	*	*	*	74.0	54.0	*	*	*	*
1483.00	-24.12	25.36	*	*	*	*	74.0	54.0	*	*	*	*
1816.00	-25.87	26.60	*	*	*	*	74.0	54.0	*	*	*	*
1861.00	-25.54	26.77	*	*	*	*	74.0	54.0	*	*	*	*
1906.00	-25.20	26.94	47.2	40.6	49.0	42.3	74.0	54.0	-25.1	-11.7	168.0	1.2

NOTE :

1. Measurement uncertainty is +/-3.7dB.
2. **: The Peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Emission Level = Reading Value + Ant. Factor + Correct Factor (incl.:Cable Loss and Pre-Amplifier Gain)
4. The field strength of other emission frequencies were very low against the limit.
5. (F):The field strength of fundamental frequency.

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7. TERMS OF ABBREVIATION

AV.	Average detection
AZ(°)	Turn table azimuth
Correct.	Correction
EL(m)	Antenna height (meter)
EUT	Equipment Under Test
Horiz.	Horizontal direction
LISN	Line Impedance Stabilization Network
NSA	Normalized Site Attenuation
Q.P.	Quasi-peak detection
SRT Lab	Spectrum Research & Testing Laboratory, Inc.
Vert.	Vertical direction