TIMCO ENGINEERING INC.
849 NW State Road 45
Newberry, Florida 32669
http://www.timcoengr.com
888.472.2424 F 352.472.2030 email: tei@timcoengr.com

Test Report

Product Name: 88-108MHz WIRELESS DEVICE-TX

FCC ID: NZTSF-180

Applicant:

ARTCHIEF INDUSTRIES LTD.
Rm901-905, 9/F, Tower A
Regent Ctr,63-73 Wo Yi Hop Road
Kwai Chung, N.T.
Hong Kong

Date Receipt: 1/10/2006

Date Tested: 1/18/06

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TABLE OF CONTENTS

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TEST REPORT CONTAINING:

EXHIBITS INCLUDING:

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EMC Equipment List

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/27/04	3/26/07
3-Meter OATS	TEI	N/A	N/A	Listed 1/13/03	1/12/06
Biconnical Antenna	Eaton	94455-1	1057	CAL 12/12/05	12/12/07
Biconnical Antenna	Eaton	94455-1	1096	CAL 8/17/04	8/17/06
Biconnical Antenna	Electro-Metrics	BIA-25	1171	CAL 4/29/05	4/29/07
Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/13/05	4/13/07
Blue Tower RF Preselector	HP	85685A	2926A00983	CAL 9/5/05	9/5/07
Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/13/05	4/13/07
LISN	Electro-Metrics	ANS-25/2	2604	CAL 8/27/04	8/27/06
LISN	Electro-Metrics	EM-7820	2682	CAL 4/28/05	4/28/07
Log-Periodic Antenna	Eaton	96005	1243	CAL 12/14/05	12/14/07

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TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-2003 using a HEWLETT PACKARD spectrum analyzer with a preselector. The bandwidth of the spectrum analyzer was 100 kHz with an appropriate sweep speed. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300 kHz. The ambient temperature of the UUT was &tempr& with a humidity of &humr&.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (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. The gain of the Preselector was accounted for in the spectrum analyzer meter reading.

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 unit under test was placed on a table 80 cm high and with dimensions of 1 m by 1.5 m. 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 1 m to 4 m. The antenna was placed in both the horizontal and vertical planes.

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APPLICANT: ARTCHIEF INDUSTRIES LTD.

FCC ID: NZTSF-180

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NO.: 15.239

REQUIREMENTS: CARRIER FREQUENCY WILL NOT EXCEEDS 48.0 dBuV/m AT 3M. OUT-OF-BAND EMISSIONS SHALL NOT EXCEED:

30 - 88 MHz	40.0 dBuV/M MEASURED AT 3 METERS
88 - 216 MHz	43.5 dBuV/M
216 - 960 MHz	46.0 dBuV/M
ABOVE 960 MHz	54.0 dBuV/M

TEST DATA:

Emission Frequency MHz	Meter Reading dBuV	Ant. Pol.	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
88.10	30.8	V	1.30	10.53	42.63	5.37
88.10	31.3	H	1.30	10.10	42.70	5.30
176.20	17.9	V	1.93	15.48	35.31	8.19
176.20	22.5	H	1.93	14.78	39.21	4.29
264.30	10.4	V	2.42	12.97	25.79	17.71
264.30	15.3	H	2.42	12.97	30.69	12.81
107.50	32.2	V	1.45	10.90	44.55	3.45
107.50	35.5	H	1.45	10.65	47.60	0.40
215.00	20.0	V	2.18	11.50	33.68	9.82
215.00	23.4	H	2.18	11.65	37.23	6.27
322.50	13.5	H	2.71	14.85	31.06	12.44
322.50	14.7	V	2.71	15.30	32.71	10.79
430.00	7.7	V	3.22	16.20	27.12	16.38
430.00	11.5	H	3.22	16.60	31.32	14.68

TEST PROCEDURE: The procedure used was ANSI STANDARD C63.4-2003. The spectrum was scanned from 30 MHz to 1000 MHz. 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. The UUT was tested in 3 orthogonal planes.

PERFORMED BY: JOSEPH SCOGLIO **DATE**: 1/10/2006

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APPLICANT: ARTCHIEF INDUSTRIES LTD.

FCC ID: NZTSF-180

NAME OF TEST: Occupied Bandwidth

RULES PART NO.: 15.239

REQUIREMENTS: Emissions from the device shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.

TEST DATA:

THE GRAPH ON THE FOLLOWING PAGE REPRESENTS THE EMISSIONS TAKEN FOR THIS DEVICE.

METHOD OF MEASUREMENT: The zero level was set without modulation. A small sample of the transmitter output was fed into the spectrum analyzer and the above photo was taken. The vertical scale is set to -10 dBm per division.

PERFORMED BY: JOSEPH SCOGLIO **DATE**: 1/10/2006

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NOTES:
2606ut5 occupied bandwidth