

TIMCO ENGINEERING INC.

849 NW State Road 45

Newberry, Florida 32669

<http://www.timcoengr.com>

888.472.2424 F 352.472.2030 email: sid@timcoengr.com



TITLE PAGE

TIMCO ENGINEERING, INC. TEST REPORT

APPLICANT: TAIYO KOGYO CO., LTD.
NO 1-23-17, HIGASHIYOTSUGI
KATSUSHIKA-KU
TOKYO 124 JAPAN

FCC ID: AEKA50749R

DESCRIPTION OF BATTLE TANK RECEIVER
SAMPLE TESTED: 49.82-49.90 MHz

DATE SAMPLE
RECEIVED FOR TESTING: 6/1/2005

DATE TESTED: 6/7/2005

PLEASE NOTE: THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN
FULL WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.

APPLICANT: TAIYO KOGYO CO., LTD.
FCC ID: AEKA50749R
REPORT #: U:\T\Taiyo_AEK\1187JT5\1187JT5 TestReport.DOC

COVER SHEET

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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 3/18/03	3/18/05
Biconnical Antenna	Eaton	94455-1	1096	CAL 10/1/01	10/1/03
Biconnical Antenna	Electro-Metrics	BIA-25	1171	CAL 4/26/01	4/26/03
Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 4/15/03	4/15/05
Blue Tower RF	HP	85685A	2620A00294	CAL 4/27/04	4/27/06
Preselector					
Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 4/15/03	4/15/05
LISN	Electro-Metrics	ANS-25/2	2604	CAL 10/9/01	10/9/03
LISN	Electro-Metrics	EM-7820	2682	CAL 3/12/03	3/12/05
Log-Periodic Antenna	Eaton	96005	1243	CAL 5/8/03	5/8/05

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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 300KHZ. The ambient temperature of the UUT was 80°F with a humidity of 70%.

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 1m by 1.5m. 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.

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NAME OF TEST: RADIATION INTERFERENCE
RULES PART NO.: 15.109

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 1000MHz and the measurements indicate that the unit DOES meet the FCC requirements.

TEST DATA:

Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
49.8	47.60	21.8	V	0.49	10.62	32.91	7.09
49.8	47.60	22.4	H	0.49	11.20	34.09	5.91
49.8	51.10	21.0	V	0.50	11.25	32.75	7.25
49.8	51.10	22.5	H	0.50	11.20	34.20	5.80
49.8	53.20	16.2	V	0.51	11.55	28.26	11.74
49.8	53.20	19.2	H	0.51	11.20	30.91	9.09
49.8	92.70	21.0	V	0.63	10.15	31.78	11.72
49.8	92.70	24.6	H	0.63	8.85	34.08	9.42

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

TEST PROCEDURE: ANSI STANDARD C63.4-2003 12.1.1.1 SUPERREGENERATIVE
RECEIVER: A Signal Generator was set to the unit under test operating frequency. An un-modulated continuous wave (CW) signal was radiated at the super regenerative receiver operating frequency to cohere the characteristic broadband emissions from the receiver.

PERFORMED BY: JOSEPH SCOGLIO

DATE: June 7, 2005

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NAME OF TEST: TEST SETUP PHOTO



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