MEASUREMENT AND TECHNICAL REPORT

KIDPOWER, INC.
8005 Church Street, E.
Brentwood, TN 37027

DATE: 09 August 2001

This Report Concerns:	Original Grant: X	Class II Change:
Equipment Type:	Radar Gun, Model RG-8800	
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?	Yes: **Defer until:**	No: X
Company Name **agrees to notify the Commission by:** **of the intended date of announcement of the product so that the grant can be issued on that date.**	N/A	
Transition Rules Request per 15.37?	Yes:	*No: X

(*) FCC Part 15, Paragraphs 15.109(a); 15.245(b)

Report Prepared by:

TÜV PRODUCT SERVICE
10040 Mesa Rim Road
San Diego, CA 92121-2912
Phone: 858 546 3999
Fax: 858 546 0364

TABLE OF CONTENTS

		Pages
1	**GENERAL INFORMATION**	3
1.1	Product Description	3
1.2	Related Submittal Grant	3
1.3	Tested System Details	3
1.4	Test Methodology	3
1.5	Test Facility	4
2	**SYSTEM TEST CONFIGURATION**	5
	2.1 Justification	5
	2.2 EUT Exercise Software	5
	2.3 Special Accessories	5
	2.4 Equipment Modifications	5
	2.5 Configuration of Tested System	5
3	**RADIATED EMISSION DATA/EQUIPMENT**	6
	Field Strength Calculation	11
4	**CONDUCTED EMISSION DATA/EQUIPMENT**	12
5	**ATTESTATION STATEMENT**	13

1 GENERAL INFORMATION

1.1 Product Description

EUT Description:	Radar Gun, Model RG-8800
EUT Interface Ports and Cables: None	
EUT Operating Modes to be Tested - Continuous	
Oscillator Frequencies	

Frequency	***Derived Frequency***	***Component # / Location***	***Description of Use***
10.52	--	--	Microwave Transceiver

1.2 Related Submittal/Grant

None

1.3 Tested System Details

The FCC IDs for all equipment, plus descriptions of all cables used in the tested system are:

None

1.4 Test Methodology

Purpose of Test: To demonstrate compliance with the ANSI C63.4 setup.

Test Performed:

1. Conducted Emissions, FCC Part 2, Paragraphs 2.1051 and Part 22, Paragraph 22.917
2. Radiated Emissions EN55022: 1992 Class B limit, 30 - 1,000 MHz, 10 meters

X 3. Radiated Emission per FCC Part 15, Paragraphs 15.109(a); 15.245(b)

4. Engineering evaluations
5. Frequency Stability, Part 2, Paragraph 2.995, and Part 87, Paragraph 87.133
6. RF Output Power, 2.1046

Both Conducted and radiated testing were performed according to the procedures in FCC/ANSI C63.4 and CSA 108.8 - M1983. Radiated testing was performed at an antenna-to-EUT distance of 3 meters (1 - 10 GHz).

1.5 Test Facility

The open area test site and conducted measurement data were tested by:

TÜV PRODUCT SERVICE
10040 Mesa Rim Road
San Diego, CA 92121-2912
Phone: 858 546 3999
Fax: 858 546 0364

The Test Site Data and performance comply with ANSI 63.4 and are registered with the FCC, 7435 Oakland Mills Rd, Columbia Maryland 21046. All Measurement Data is acquired according to the content of FCC Measurement Procedure and ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

2. SYSTEM TEST CONFIGURATION

2.1 Justification

The EUT was initially tested for FCC emission in the following configuration:

See Block Diagram.

2.2 EUT Exercise Software

None

2.3 Special Accessories

None

2.4 Modification

None

2.5 Configuration of Tested System

See Block Diagram.

3 RADIATED EMISSION DATA

The following data lists the significant emission frequencies, measured levels, correction factor (which includes cable and antenna corrections), the corrected reading, and the limit.

See following page(s).

Emissions Test Conditions: RADIATED EMISSIONS

The *RADIATED EMISSIONS* measurements were performed at the following test location :

☐ - Test not applicable

■ - Roof (Small Open Area Test Site)

Testing was performed at a test distance of:

☐ - 1 meters
■ - 3 meters
☐ - 10 meters
■ - SR-2, Shielded Room, 12' x 20' x 8', Metal Chamber

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.	Cal Date
3115	798	Antenna, Double Ridge Guide	EMCO	9908-5927	03/02
HP 8566B	720	Spectrum Analyzer	Hewlett Packard	2349A03116	10/01
11975A	716	Amplifier	Hewlett Packard	2517A00639	NCR
LPB 2520/A	738	LPB	Antenna Research	1169	06/02
12A-1B115300	--	Standard Gain Horn	Scientific Atlanta	21554MB	NCR
12A-26	--	Horn	Scientific Atlanta	491	NCR
11970K	652	Harmonic Mixer	Hewlett Pakcard	3003A05400	NCR
11970A	653	Harmonic Mixer	Hewlett Pakcard	3003A07466	NCR

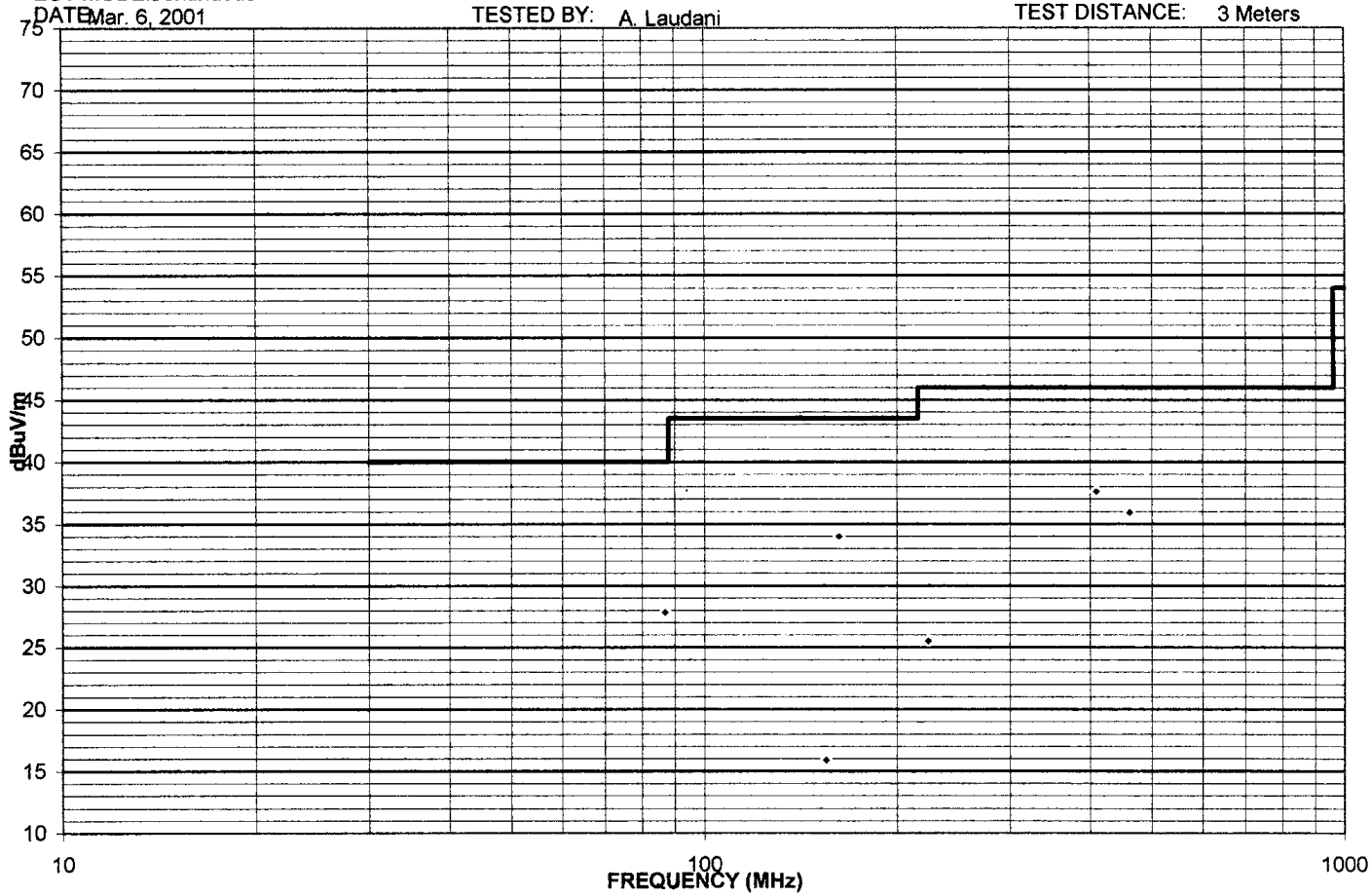
Remarks: _____

REPORT NO:SC100728
COMPANY:Kidpower
EUT:Radar Gun
EUT MODE:Continuous
DATE:Mar. 6, 2001

SPEC: FCC Part 15 para 15.109(a)

TESTED BY: A. Laudani

TEST DISTANCE: 3 Meters



REPORT No: SC100728 SPEC: FCC Part 15 para 15.109(a)

CUSTOMER: Kidpower TEST DIST: 3 Meters

E U T: Radar Gun TEST SITE: 2

EUT MODE: Continuous BICONICAL: 738

DATE: Mar. 6, 2001 TESTED BY: A. Laudani LOG PERIODIC: 738

NOTES: Quasi-Peak with 120 KHz measurement bandwidth. RCVR:

Temperature: 16 Relative Humidity: 58

EUT MARGIN -8.4 dB at 409.53 MHz ver 1.8

FREQUENCY (MHz)	VERTICAL measured (dBuv)	HORIZONTAL measured (dBuV)	CORRECTION FACTOR (dB/m)	MAXIMUM CORRECTED (dBuV/m)	SPECIFIED LIMIT (dBuV/m)	EUT MARGIN (dB)	EUT ROTATION (degrees)	ANTENNA HEIGHT (meters)
86.82	17.6	6.7	10.3	**27.9**	40	-12.1	0	1
154.90	4.5	-1.6	11.4	**15.9**	43.5	-27.6	0	1
162.55	22.4	2	11.6	**34.0**	43.5	-9.5	0	1
223.94	10	9	15.5	**25.5**	46	-20.5	0	2
409.53	17	9.9	20.6	**37.6**	46	-8.4	0	1
461.40	13.9	3	22.0	**35.9**	46	-10.1	0	1

Test Report #: SC 100278 Test Area: 3/8 2

Test Method FCC Part 15 Date: 8/AUG/2001
Section 15.245(b)

EUT POWER:
☐ 230 Vac/50 Hz ☐ 120 Vac/60 Hz
☒ Other (6) X 1.5V Batteries

EUT Model #: RG-8800 Temperature 23 °C

EUT Description: RADAR GUN Air Pressure: 100.2 kPa

NOTES: TEST DISTANCE 3 METERS Relative Humidity: 48 %

Freq. MHz	Vertical Measured dBµV		Horizontal Measured dBµV		Correct. Factor dB/m	Maximum Corrected dBµV/m		Specified Limit dBµV		EUT Margin dB		EUT ROTATION (degrees)		ANTENNA HEIGHT (meters	
	Peak	Avg	Peak	Avg		Peak	Avg	Peak	Avg	Peak	Avg	Vert	Horz	Vert	Horz
10,543	77.7	77.7	61.9	61.9	40.3	118	118	128	128	-10	-10	0	0	1.0	1.0
								**	**						
21,086	*29.6	29.6	29.6	29.6	32.5	60.1	60.1	77.5	77.5	-17.4	-17.4	0	0	1.0	1.0
31,629	51.8	51.8	51.0	51.0	35.9	87.7	87.7	88	88	-0.3	-0.3	0	0	1.0	1.0

Tested by: DAVE BERNARDIN (Printed) (Signature)

Reviewed by: (Printed) (Signature)

- HORN ANTENNA #298
- H/P SPECTRUM ANALYZER #743
- PRE-AMP H/P #916
- STANDARD GAIN HORN MODEL 12A-(B 115300 S/N21554MB WITH HARMONIC MIXER MODEL 11970K S/N 3003A05400 (TUV ID #0652)
- SCIENTIFIC ATLANTA HORN MODEL 12A-26 S/N 491 WAVE H/P MIXER 11970A S/N 3003A07466

* Note: MOVED EUT INTO 1 METER DISTANCE - NOISE LEVEL ONLY

** Note: LIMIT FOR RESTRICTED BANDS

Field Strength Calculation

If a preamplifier was used during the Radiated Emission Testing, it is required that the amplifier gain must be subtracted from the Spectrum Analyzer (Meter) Reading. In addition, a correction factor for the antenna , cable used and a distance factor, if any, must be applied to the Meter Reading before a true field strength reading can be obtained. In the automatic measurement, these considerations are automatically presented as a part of the print out. In the case of manual measurements and for greater efficiency and convenience, instead of using these correlation factors for each meter reading, the specification limit was modified to reflect these correlation factors at each frequency value so that the meter readings can be compared directly to the modified specification limit. This modified specification limit is referred to as the "Corrected Meter Reading Limit" or simply the CMRL, which is the actual field strength present at the antenna. The quantity can be derived in the following manner:

Corrected Meter Reading Limit (CMRL) = SAR + AF + CL - AG - DC

Where, SAR = Spectrum Analyzer Reading
AF = Antenna Factor
CL = Cable Loss
AG = Amplifier Gain (if any)
DC = Distance Correction (if any)

Assume the following situation: A meter reading of 29.4 dBuV was obtained from a Class A computing device measured at 83 MHz. Assume an antenna factor of 9.2 dB, a cable loss of 1.4 dB and amplifier gain of 20.0 dB at 83 MHz. The final field strength would be determined as follows:

CMRL = 29.4 dBuV + 9.2dB = 1.4 dB - 20 dB/M - 0.0 dB

CMRL = 20.0 dBuV/M

This result is well below the FCC and CSA Class A limit of 29.5 dbuV/m at 83 MHz.

For the manual mode of measurement, a table of corrected meter reading limit was used to permit immediate comparison of the meter reading to determine if the measure emission amplitude exceeded the specification limit at that specific frequency.

4 CONDUCTED EMISSION DATA

EUT is battery operated.

5 ATTESTATION STATEMENT

GENERAL REMARKS:

SUMMARY:

All tests according to the standards sited on page 1 of this report.

■ - Performed

☐ - **Not** Performed

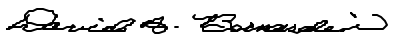
The Equipment Under Test

■ - **Fulfills** the general approval requirements cited on page 1.

☐ - **Does not** fulfill the general approval requirements cited on page 1.

- TÜV PRODUCT SERVICE, INC. -

Responsible Engineer:



Dave Bernardin
(EMC Engineer)