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APPLICANT: KIDDESIGNS, INC.

FCC ID: IAJHW229

TEST REPORT CONTAINING:

EXHIBITS ATTACHMENTS:

APPLICANT: KIDDESIGNS, INC.

FCC ID: IAJHW229

TEST EQUIPMENT LIST

1._X_Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/ preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter HP 8565OA, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02, S/N 3008A00372 Cal. 10/17/99
2.___Signal Generator: HP 8640B, S/N 2308A21464 Cal. 9/23/99
3.___Signal Generator: HP 8614A, S/N 2015A07428 Cal. 5/29/99
4.___Passive Loop Antenna: EMCO Model 6512, 9KHz to 30MHz, S/N 9706-1211 Cal. 6/23/97
5._X_Biconnical Antenna: Eaton Model 94455-1, S/N 1057
6._X_Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
7.___Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153 Cal. 11/24/99
8.___Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180, 1-18 GHz, S/N 2319 Cal. 4/27/99
9.___Horn 40-60GHz: ATM Part #19-443-6R
10.___Line Impedance Stabilization Network: Electro-Metrics Model ANS-25/2, S/N 2604 Cal. 2/9/00
11.___Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
12.___AC Voltmeter: HP Model 400FL, S/N 2213A14499 Cal. 9/21/99
13.___Digital Multimeter: Fluke Model 8012A, S/N 4810047 Cal 9/21/99
14.___Digital Multimeter: Fluke Model 77, S/N 43850817 Cal 9/21/99
15.___Oscilloscope: Tektronix Model 2230, S/N 300572 Cal 9/23/99
16.___Frequency Counter: HP Model 5385A, S/N 3242A07460 Cal 10/6/99

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 C63.4-1992 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 79oF with a humidity of 51%.

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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

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-1992 using a 50uH LISN. Both lines were observed. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The ambient temperature of the UUT was 79oF with a humidity of 51%.

ANSI STANDARD C63.4-1992 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.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSIC63.4-1992 with the EUT 40 cm from the vertical ground wall.

CIRCUIT_DESCRIPTION:

When Unit A is turned on it transmits on 49.86MHz. This frequency is generated by oscillator Q2. The signal is coupled to the antenna by means of a capacitor created by means of the PC board layout. The transmitted signal is amplitude modulated by means of transistors Q2 and Q3. When the code key is pressed the audio section oscillates to allow Morse code to be transmitted. The signal from Q2 is also introduced into the receiver mixer stage (Q1). This signal serves as a receiver Local Oscillator signal which hetrodynes an incoming 49.405 MHz signal to a 455 kHz IF frequency. The IF amplifier, detector, and receiver audio amplifier stages are all incorporated in integrated circuit KA22421.

When Unit B is turned on it transmits on 49.405MHz. This frequency again serves as both the transmitter carrier and the receiver Local Oscillator. This signal provides low side injection to produce a 455 kHz IF from an incoming 49.86 MHz. signal.

ANTENNA_AND_GROUND_CIRCUITRY

This unit makes use of a short, helical antenna. The antenna is inductively coupled. The antenna is self contained, no provision is made for an external antenna. This unit is powered from a 9.0V battery.

No ground connection is provided. The unit relies on the ground track of the printed circuit board.

APPLICANT: KIDDESIGNS, INC.

FCC ID: IAJHW229

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NO.: 15.235

REQUIREMENTS: CARRIER FREQUENCY WILL NOT EXCEED 80 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	

* Harmonics must be less than the fundamental.

TEST DATA:

EMISSION FREQUENCY MHz	METER READING AT 3 METERS dBuV	COAX LOSS dB	ANTENNA CORRECTION FACTOR dB	FIELD STRENGTH dBuV/m@3m	MARGIN dB	ANT. POL.
49.85	54.10	0.25	10.99	65.34	14.66	V
149.56	16.70	0.80	16.90	34.40	9.10	H
249.27	13.90	1.20	13.35	28.45	17.55	V
299.13	21.40	1.40	15.64	38.44	7.56	V
348.99	24.50	1.40	15.52	41.42	4.58	V
398.84	20.50	1.40	16.97	38.87	7.13	H
448.84	14.50	1.60	18.12	34.22	11.78	V
548.41	13.90	1.60	19.69	35.19	10.81	V

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

WITH THE TRANSMITTER SECTIONS OF THIS UNIT DISABLED BY REMOVING R11, THE SPECTRUM WAS SCANNED FROM 30 TO 1000 MHz. NO SIGNIFICANT EMISSIONS WERE NOTED.

TEST PROCEDURE: The procedure used was ANSI STANDARD C63.4-1992. 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.

TEST RESULTS: THE UNIT DOES MEET THE FCC REQUIREMENTS.

PERFORMED BY:_____ DATE: MARCH 17, 2000

APPLICANT: KIDDESIGNS, INC.

FCC ID: IAJHW229

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.209

REQUIREMENTS:
1.705 to 30 MHz: 49.54 dBuV/m @ 3 METERS
30 to 88 MHz: 40.00 dBuV/M @ 3 METERS
88 to 216 MHz: 43.52 dBuV/M
216 to 960 MHz: 46.02 dBuV/M
ABOVE 960 MHz: 54.00 dBuV/M
* Harmonics must be less than the fundamental.

TEST RESULTS: A search was made of the spectrum from 25 to 1000 MHz and the measurements indicate that the unit DOES meet the FCC requirements.

TEST DATA:

EMISSION FREQUENCY MHz	METER READING AT 3 METERS dBuV	COAX LOSS dB	ANTENNA CORRECTION FACTOR dB	FIELD STRENGTH dBuV/m@3m	MARGIN dB	ANT. POL.
49.40	22.70	0.25	10.98	33.93	46.07	V
148.30	10.80	0.80	16.90	28.50	15.00	H

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

TEST PROCEDURE: ANSI STANDARD C63.4-1992 using a Hewlett Packard Model 8566B spectrum analyzer, a Hewlett Packard Model 85685A Preselector, a Hewlett Packard Model 85650A Quasi-Peak adapter, Electro-Metric Dipole kits, models TDA, TDS-25-1, TDS-25-2, and an Eaton Model 94455-1 Biconical Antenna. The bandwidth of spectrum analyzer was 100 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:_____DATE: MARCH 17, 2000

APPLICANT: KIDDESIGNS, INC.

FCC ID: IAJHW229

NAME OF TEST: Occupied Bandwidth

RULES PART NO.: 15.235

REQUIREMENTS: The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits of 15.209, whichever permits the higher emission levels.

THE GRAPHS IN EXHIBITS 10A-10B REPRESENT THE EMISSIONS TAKEN FOR THE DEVICE.

METHOD OF MEASUREMENT: 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. The horizontal scale is set to 5 kHz per division.

TEST RESULTS: The unit DOES meet the FCC requirements.

PERFORMED BY:_____ MARCH 17, 2000