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APPLICANT: ROSTRA PRECISION CONTROLS, INC.

FCC ID: JDR ROSS01

TEST REPORT CONTAINING:

EXHIBIT ATTACHMENTS:

APPLICANT: ROSTRA PRECISION CONTROLS, INC.
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TEST EQUIPMENT LIST

1. Spectrum Analyzer: Hewlett Packard 8566B - Opt 462, w/ preselector 85685A, & Quasi-Peak Adapter HP 8565OA, & HP 8449B - OPT H02 Cal. 10/17/99
2. Signal Generator, Hewlett Packard 8640B, cal. 9/23/99
3. Signal Generator, HP 8614A Serial No.2015A07428 cal. 5/27/99
3. Eaton Biconnical Antenna Model 94455-1 20-200 MHz Serial No. 0997 Cal. 9/30/99
4. Electro-Metric Log-Periodic Model No. EM-6950 Ser#632 9/18/99
5. Electro-Metric Dipole Kit, 20-1000 MHz, Model TDA-30 10/31/98
6. Electro-Metric Horn 1-18 GHz, Model RGA-180, Cal. 4/27/99
7. Systron Donner Horn 18-26.3GHz Model DBE-520-20 7/14/99
8. Systron Donner Horn 26.5-40.2GHz Model DBD-520-20 7/14/99
9. ATM HOrn 40-60GHz Part #19-443-6R 9/15/99
10. Electro-Metric Antennas Model TDA-30/1-4,Cal. 10/15/98
11. Electro-Metric Line Impedance Stabilization Network Model No. EM-7821, Serial No. 101; 100KHz-30MHz 50uH. Cal.11/19/98
12. Electro-Metric Line Impedance Stabilization Network Model No. EM-7820, Serial No. 2682; 10KHz-30MHz 50uH. Cal. 11/19/98
13. Special low loss cable was used above 1 GHz
14. Tenney Temperature Chamber
15. AC Voltmeter, HP 400FL, Serial No 2213A14499. Cal. 9/21/99
16. Digital Multimeter, Fluke 8010A/12A, Serial No. 4810047. Cal 9/21/99
17. Digital Multimeter, Fluke 77, Serial No. 43850817. Cal 9/21/99
18. Oscilloscope, Tektronix 2230, Serial No. 300572. Cal 9/23/99
19. Frequency Counter, HP 5385A, Serial No. 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. The UUT was transmitting a test signal during the testing.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. 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 up to 1.0GHz and 1.0MHz with a video BW of 1.0MHz above 1.0GHz. For frequencies above 1.0GHz measurements were made at a distance of 1.0 meter and adjusted for 3 meters. The ambient temperature of the UUT was 74.3oF with a humidity of 69%.

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 74.3oF with a humidity of 69%.

ANSI STANDARD C63.4-1992 10.1.7 MEASUREMENT PROCEDURES: The UUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The UUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. The measurements were made at 1.0 meter with the antenna being moved around to find the highest emission.

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:

The 10.5GHz transmitter is a short range obstacle sensor for automobiles. Its range of use is expected to be 10 to 15 feet.

This unit is a low power OBSTACLE SENSOR operating in the 10,500-10,550MHz band.

ANTENNA & GROUND:

This unit uses a horn antenna. The antenna is self contained and there is no provision for connecting an external antenna.

No ground connection is provided. The only ground used is the ground track on the PC board.

APPLICANT: ROSTRA PRECISION CONTROLS, INC.

FCC ID: JDR ROSS01

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.245, 15.205

REQUIREMENTS:
FIELD STRENGTH FIELD STRENGTH S15.245 & 15.205 & 15.209

of Fundamental: of Harmonics
10.5-10.55GHz

2500mV/m or 127.95dBuV/m 25.0mV/m or 87.95dBuV/m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 dB BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

TEST RESULTS: This unit DOES meet the FCC requirements.

TEST DATA:

EMISSION FREQUENCY MHz	METER READING AT 3 METERS dBuV	COAX LOSS dB	ACB dB	PEAK FIELD STRENGTH dBuV/m@3m	FCC LIMIT dB	MARGIN Db	ANT. POL.
10517.00	34.20	2.19	39.18	75.57	127.95	52.38	H
21034.00R	6.00	3.19	41.00	50.19	77.50	27.31	V
10524.00	32.50	2.20	39.18	73.88	127.95	54.07	H
21048.00R	4.30	3.19	41.00	48.49	77.50	29.01	V
10533.00	29.20	2.20	39.19	70.58	127.95	57.37	V
10600.00R	-2.60	2.20	39.23	38.83	77.50	38.67	V
21066.00R	-2.10	3.19	41.00	42.09	77.50	35.41	V

Measurement were made to the fifth harmonic of the fundamental for all of the measured frequencies.

APPLICANT: ROSTRA PRECISION CONTROLS, INC.

FCC ID: JDR ROSS01

NAME OF TEST: RADIATION INTERFERENCE

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. The bandwidth of spectrum analyzer was 100 kHz with an appropriate sweep speed up to 1.0GHz and 1.0MHz above 1.0GHz. For frequencies above 1.0 GHz measurements were made at 1 meter distance and corrected for 3 meters. 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 spectrum was searched to at least the tenth(10) harmonic of the fundamental. Between 10 & 30GHz measurements must be made to the fifth harmonic or to 100GHz, whichever is lower.

PERFORMED BY:_____DATE: 28 Oct. 1999

APPLICANT: ROSTRA PRECISION CONTROLS, INC.

FCC ID: JDR ROSS01

NAME OF TEST: Occupied Bandwidth

RULES PART NO.: 15.245

REQUIREMENTS: The field strength of any emissions appearing outside the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 50 dB below the level of the carrier or to the general limits of 15.249.

THE PLOTS IN EXHIBIT 7A-7B REPRESENTS THE EMISSIONS TAKEN FOR THIS DEVICE.

METHOD OF MEASUREMENT: A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. 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: S. S. SANDERS 28 Oct. 1999