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FCC ID: CLVAW2000

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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 85650A, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02,
S/N 3008A00372
2. X Biconnical Antenna: Eaton Model 94455-1, S/N 1057,
3. Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171
4. X Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
Cal.
5. Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409
Cal.
6. Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180,
1-18 GHz, S/N 2319
7. 18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20
8. Horn 40-60GHz: ATM Part #19-443-6R
9. Line Impedance Stabilization Network: Electro-Metrics Model
EM-7820, w/NEMA Adapter S/N 2682
10. Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
11. Frequency Counter: HP Model 5385A, S/N 3242A07460
12. Peak Power Meter: HP Model 8900C, S/N 2131A00545,
13. X Open Area Test Site #1-3meters Cal. 12/22/99
14. Signal Generator: HP 8640B, S/N 2308A21464
15. Signal Generator: HP 8614A, S/N 2015A07428
16. Passive Loop Antenna: EMC0 Model 6512, 9KHz to 30MHz, S/N
9706-1211
17. Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153
18. AC Voltmeter: HP Model 400FL, S/N 2213A14499
19. Digital Multimeter: Fluke Model 8012A, S/N 4810047
20. Digital Multimeter: Fluke Model 77, S/N 43850817
21. Oscilloscope: Tektronix Model 2230, S/N 300572

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 80oC with a humidity of 76%.

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TEST PROCEDURES CONTINUED

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 80oC with a humidity of 76%.

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.

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FCC ID: CLVAW2000

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NO.: 15.223

REQUIREMENTS: THE FIELD STRENGTH OF ANY EMISSION WITHIN THE BAND 1.705-10.0 MHz SHALL NOT EXCEED 100 uV/m (40 dBuV/m) at 30m. HOWEVER, IF THE BANDWIDTH OF THE EMISSION IS LESS THAN 10% OF THE CENTER FREQUENCY, THE FIELD STRENGTH SHALL NOT EXCEED 15 uV/m at 30m.

OUT-OF-BAND EMISSIONS SHALL NOT EXCEED THE GENERAL RADIATED EMISSION LIMITS IS 15.209.

THE SPECTRUM WAS SEARCHED TO THE 10TH HARMONIC AND AND ONLY EMISSIONS LESS THAN 20dB BELOW THE LIMIT WERE LISTED ON THE REPORT.

Sample calculation:

$$MR + ACF - DCF + CL = FS$$

Where: MR is the meter reading

ACF is the antenna corection factor of the loop antenna

DCF is the distance correction factor

CL is cable loss (negligible at this frequency).

TEST DATA:

EMISSION FREQUENCY MHz	FIELD STRENGTH dBuV/m@30m	MARGIN dB
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TUNED FREQUENCY 2.28

2.28	38.4	1.6
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TUNED FREQUENCY 2.78

2.78	35.5	4.5
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3.28	16.4	13.6
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TEST RESULTS: THE UNIT DOES MEET THE FCC REQUIREMENTS.

PERFORMED BY: JOSEPH SCOGLIO

DATE: APRIL 2, 2001

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APPLICANT: RECOTON CORPORATION
FCC ID: CLVAW2000
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 ON THE NEXT 3 PAGES 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 attached plot was taken. The vertical scale is set to -10 dBm per division. The horizontal scale is set to 50 kHz per division.

TEST RESULTS: The unit DOES meet the FCC requirements.

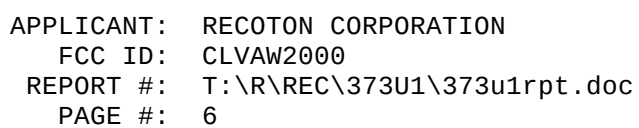
PERFORMED BY: JOSEPH SCOGLIO

DATE: APRIL 2, 2001

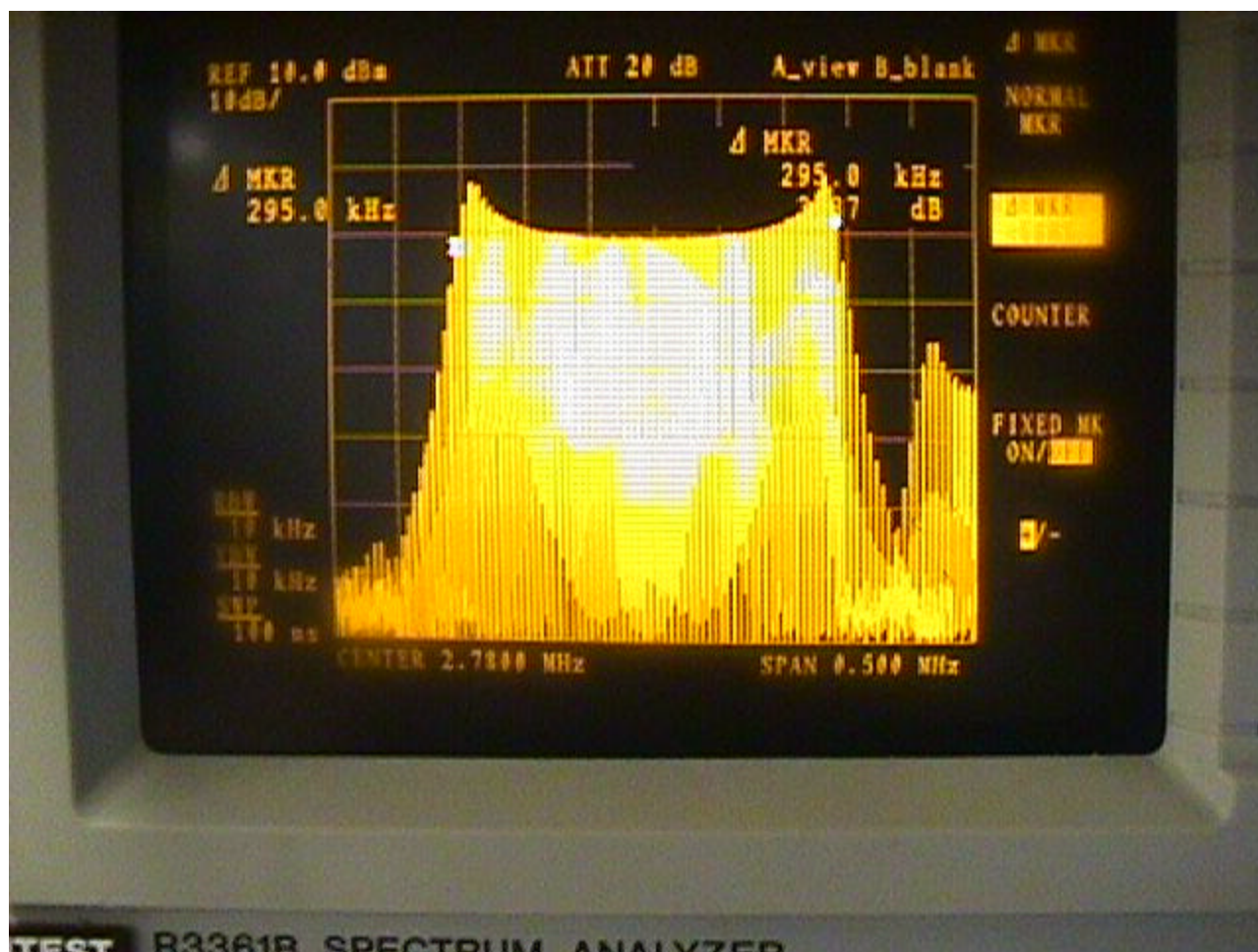
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APPLICANT: RECOTON CORPORATION

FCC ID: CLVAW2000

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.107

MINIMUM REQUIREMENTS:	FREQUENCY MHz	LEVEL uV
	0.450-30	250

TEST PROCEDURE: ANSI STANDARD C63.4-1992

THE HIGHEST EMISSION READ FOR LINE 1 WAS 44.90 dBuV @ 2.75 MHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 146.04 uV @ 2.75 MHz.

THE FOLLOWING GRAPHS REPRESENT THE EMISSIONS READ FOR POWERLINE CONDUCTED FOR THIS DEVICE.

TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

PERFORMED BY: JOSEPH SCOGLIO

DATE: APRIL 2, 2001

APPLICANT: RECOTON CORPORATION

FCC ID: CLVAW2000

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