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FCC ID: CLVAW791

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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 Cal. 8/31/01 Due 8/31/02
- 2._X_Biconnical Antenna: Eaton Model 94455-1, S/N 1057,
Cal. 10/1/01 Due 10/1/02
- 3.___ Biconnical Antenna: Electro-Metrics Model BIA-25, S/N 1171
Cal. 4/26/01 Due 4/26/03
- 4._X_Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
Char. 3/15/00 Due 3/15/01
- 5.___ Log-Periodic Antenna: Electro-Metrics Model LPA-30, S/N 409
Char. 3/15/00 Due 3/15/01
- 6._X_Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180,
1-18 GHz, S/N 2319 Cal. 4/27/99 Due 4/27/00
- 7.___ 18-26.3GHz Systron Donner Standard Gain Horn #DBE-520-20
No Cal Required
- 8.___ Horn 40-60GHz: ATM Part #19-443-6R No Cal Required
- 9._X_Line Impedance Stabilization Network: Electro-Metrics Model
EM-7820, w/NEMA Adapter S/N 2682 Cal. 3/16/01 Due 3/16/02
- 10.___ Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
Char. 1/27/01 Due 1/27/02
- 11.___ Frequency Counter: HP Model 5385A, S/N 3242A07460
Char. 11/20/00 Due 11/20/01
- 12.___ Peak Power Meter: HP Model 8900C, S/N 2131A00545
Char. 1/26/01 Due 1/26/02
- 13._X_Open Area Test Site #1-3meters Cal. 12/22/99
- 14.___ Signal Generator: HP 8640B, S/N 2308A21464
Cal. 11/15/01 Due 11/15/02
- 15.___ Passive Loop Antenna: EMC0 Model 6512, 9KHz to 30MHz, S/N
9706-1211 Char. 6/10/00 Due 6/10/01
- 16.___ Dipole Antenna Kit: Electro-Metrics Model TDA-30/1-4, S/N 153
Char. 11/24/00 Due 11/24/01
- 17.___ AC Voltmeter: HP Model 400FL, S/N 2213A14499
Cal. 10/9/01 Due 10/09/02
- 18._X_Digital Multimeter: Fluke Model 77, S/N 43850817
Cal. 11/16/00 Due 11/16/01
- 19.___ Oscilloscope: Tektronix Model 2230, S/N 300572
Char. 2/1/01 Due 2/1/02

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.

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TEST PROCEDURES CONTINUED

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 3.0MHz above 1.0GHz. The ambient temperature of the UUT was 81 F with a humidity of 81%.

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 74.3°F 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.

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.

APPLICANT: RECOTON CORPORATION
 FCC ID: CLVAW791
 NAME OF TEST: RADIATED SPURIOUS EMISSIONS
 RULES PART NO.: 15.109(a) - Class B Computing Device
 REQUIREMENTS: 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

TEST DATA FOR CLASS B DIGITAL DEVICE :

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
49.80	22.3	v	0.80	10.99	34.09	5.91
86.00	14.1	v	1.08	12.54	27.72	12.28
108.60	15.6	h	1.23	9.32	26.15	17.35
117.70	14.9	h	1.27	10.44	26.61	16.89
149.40	23.3	h	1.40	16.77	41.47	2.03
176.60	15.4	h	1.61	16.41	33.42	10.08
185.60	18.3	h	1.68	14.94	34.92	8.58
190.20	14.1	h	1.72	14.20	30.02	13.48
194.60	12.2	h	1.76	13.48	27.44	16.06
199.20	27.7	h	1.79	12.73	42.22	1.28
203.70	16.0	h	1.81	11.73	29.54	13.96
208.30	21.7	h	1.83	11.63	35.16	8.34
212.80	21.5	h	1.85	11.52	34.87	8.63
217.30	21.1	h	1.87	11.38	34.35	11.65
221.80	20.3	h	1.89	11.34	33.53	12.47
226.30	29.6	h	1.91	11.43	42.94	3.06
230.90	23.7	h	1.92	11.51	37.13	8.87
235.40	26.1	h	1.94	11.55	39.59	6.41
240.00	20.6	h	1.96	11.60	34.16	11.84
249.00	29.5	h	2.00	12.05	43.55	2.45

TEST PROCEDURE: ANSI STANDARD C63.4-1992 The spectrum was scanned from 30 to 1000 MHz. The unit was measured at Timco Engineering Inc. 849 N.W. State Road 45, Newberry, FL 32669.

TEST RESULTS: The unit DOES appear to meet the FCC requirements.

PERFORMED BY: JOE SCOGLIO

DATE: OCTOBER 24, 2001

APPLICANT: RECOTON CORPORATION
 FCC ID: CLVAW791
 NAME OF TEST: RADIATED SPURIOUS EMISSIONS
 RULES PART NO.: 15.109(a) - Class B Computing Device
 REQUIREMENTS: 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

TEST DATA FOR CLASS B DIGITAL DEVICE :

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
258.00	21.1	H	2.03	12.66	35.79	10.21
262.60	19.5	H	2.05	13.01	34.56	11.44
267.10	17.4	H	2.07	13.37	32.84	13.16
271.60	18.5	H	2.09	13.78	34.37	11.63
276.20	23.7	H	2.10	14.28	40.08	5.92
280.70	19.0	H	2.12	14.76	35.88	10.12
285.20	21.0	H	2.14	15.12	38.26	7.74
289.70	17.4	H	2.16	15.48	35.04	10.96
298.80	24.1	H	2.20	13.74	40.04	5.96
303.30	11.6	H	2.22	13.76	27.58	18.42
307.90	19.4	H	2.25	14.13	35.78	10.22
312.30	18.9	H	2.27	14.30	35.47	10.53
316.90	18.2	H	2.30	14.30	34.80	11.20
321.40	20.8	H	2.33	14.36	37.49	8.51
325.90	23.0	H	2.36	14.54	39.90	6.10
330.50	17.5	H	2.38	14.70	34.58	11.42
335.00	19.9	H	2.41	14.65	36.96	9.04

TEST PROCEDURE: ANSI STANDARD C63.4-1992 The spectrum was scanned
 from 30 to 1000 MHz. The unit was measured at Timco Engineering
 Inc. 849 N.W. State Road 45, Newberry, FL 32669.

TEST RESULTS: The unit DOES appear to meet the FCC requirements.

PERFORMED BY: JOE SCOGLIO

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APPLICANT: RECOTON CORPORATION
 FCC ID: CLVAW791
 NAME OF TEST: RADIATED SPURIOUS EMISSIONS
 RULES PART NO.: 15.109(a) - Class B Digital Device
 REQUIREMENTS: 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

TEST DATA FOR CLASS B DIGITAL DEVICE :

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
348.60	13.3	H	2.49	14.43	30.22	15.78
357.60	12.9	H	2.55	14.78	30.23	15.77
362.20	16.8	H	2.57	14.92	34.29	11.71
366.70	14.4	H	2.60	14.97	31.97	14.03
371.20	18.5	H	2.63	15.02	36.15	9.85
375.80	18.8	H	2.65	15.12	36.57	9.43
380.30	15.5	H	2.68	15.21	33.39	12.61
384.80	16.1	H	2.71	15.39	34.20	11.80
384.80	11.7	H	2.71	15.39	29.80	16.20
389.40	11.7	H	2.74	15.58	30.02	15.98
407.50	14.4	H	2.82	16.15	33.37	12.63
412.00	16.7	H	2.84	16.42	35.96	10.04
416.50	13.3	H	2.85	16.69	32.84	13.16
421.00	17.7	H	2.86	16.94	37.50	8.50
425.60	14.4	H	2.88	17.12	34.40	11.60
430.10	12.0	H	2.89	17.30	32.19	13.81
434.60	15.7	H	2.90	17.12	35.72	10.28
448.20	17.5	H	2.94	16.99	37.43	8.57

TEST PROCEDURE: ANSI STANDARD C63.4-1992 The spectrum was scanned from 30 to 1000 MHz. The unit was measured at Timco Engineering Inc. 849 N.W. State Road 45, Newberry, FL 32669.

TEST RESULTS: The unit DOES appear to meet the FCC requirements.

PERFORMED BY: JOE SCOGLIO

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APPLICANT: RECOTON CORPORATION
 FCC ID: CLVAW791
 NAME OF TEST: RADIATED SPURIOUS EMISSIONS
 RULES PART NO.: 15.109(a) - Class B Digital Device
 REQUIREMENTS: 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

TEST DATA FOR CLASS B DIGITAL DEVICE :

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
470.80	15.5	H	3.01	17.52	36.03	9.97
475.40	14.8	H	3.03	17.66	35.49	10.51
484.40	12.5	H	3.05	17.71	33.26	12.74
520.60	14.5	H	3.16	18.77	36.43	9.57
525.20	14.5	H	3.18	18.54	36.22	9.78
570.40	14.2	H	3.31	19.20	36.71	9.29
597.60	17.7	H	3.39	18.93	40.02	5.98
611.20	15.2	H	3.43	19.30	37.93	8.07
615.70	13.9	H	3.45	19.30	36.65	9.35
620.30	17.3	H	3.46	19.30	40.06	5.94
624.70	17.2	H	3.47	19.35	40.02	5.98
633.80	11.4	H	3.50	19.55	34.45	11.55
638.40	15.7	H	3.52	19.74	38.96	7.04
642.80	13.0	H	3.53	19.68	36.21	9.79
656.40	13.3	H	3.57	19.97	36.84	9.16
674.60	15.3	H	3.62	20.78	39.70	6.30
719.90	13.6	H	3.76	21.40	38.76	7.24
724.30	14.5	H	3.77	21.49	39.76	6.24
796.80	15.4	H	3.99	21.43	40.82	5.18

TEST PROCEDURE: ANSI STANDARD C63.4-1992 The spectrum was scanned from 30 to 1000 MHz. The unit was measured at Timco Engineering Inc. 849 N.W. State Road 45, Newberry, FL 32669.

TEST RESULTS: The unit DOES appear to meet the FCC requirements.

PERFORMED BY: JOE SCOGLIO

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APPLICANT: RECOTON CORPORATION
 FCC ID: CLVAW791
 NAME OF TEST: RADIATION INTERFERENCE
 RULES PART NUMBER: 15.249, 15.209

REQUIREMENTS:
 FIELD STRENGTH FIELD STRENGTH S15.209
 of Fundamental: of Harmonics 30 - 88 MHz 40 dBuV/m @3M
 902-928 MHz 88 -216 MHz 43.5
 2.4-2.4835 GHz 216 -960 MHz 46
 94 dBuV/m @3m 54 dBuV/m @3m ABOVE 960 MHz 54dBuV/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 FOR RF FUNDAMENTAL AND HARMONICS:

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
913.00	57.6	V	3.91	23.40	84.91	9.09
911.50	57.4	v	3.94	23.40	84.74	9.26

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, and an appropriate 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. The spectrum was searched to at least the tenth(10) harmonic of the fundamental.

PERFORMED BY: JOE SCOGLIO

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APPLICANT: RECOTON CORPORATION
FCC ID: CLVAW791
NAME OF TEST: Occupied Bandwidth
RULES PART NO.: 15.249
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 ON THE FOLLOWING PAGES 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: JOSEPH SCOGLIO

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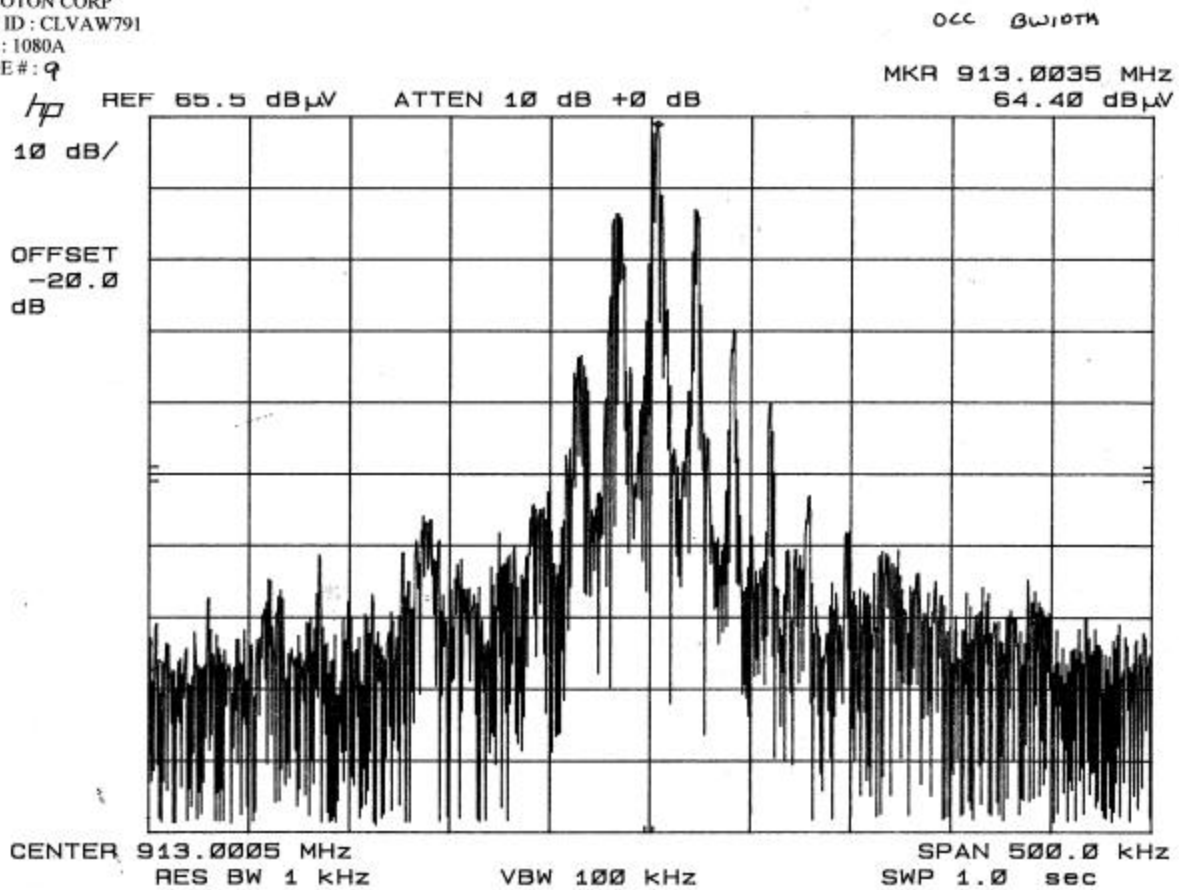
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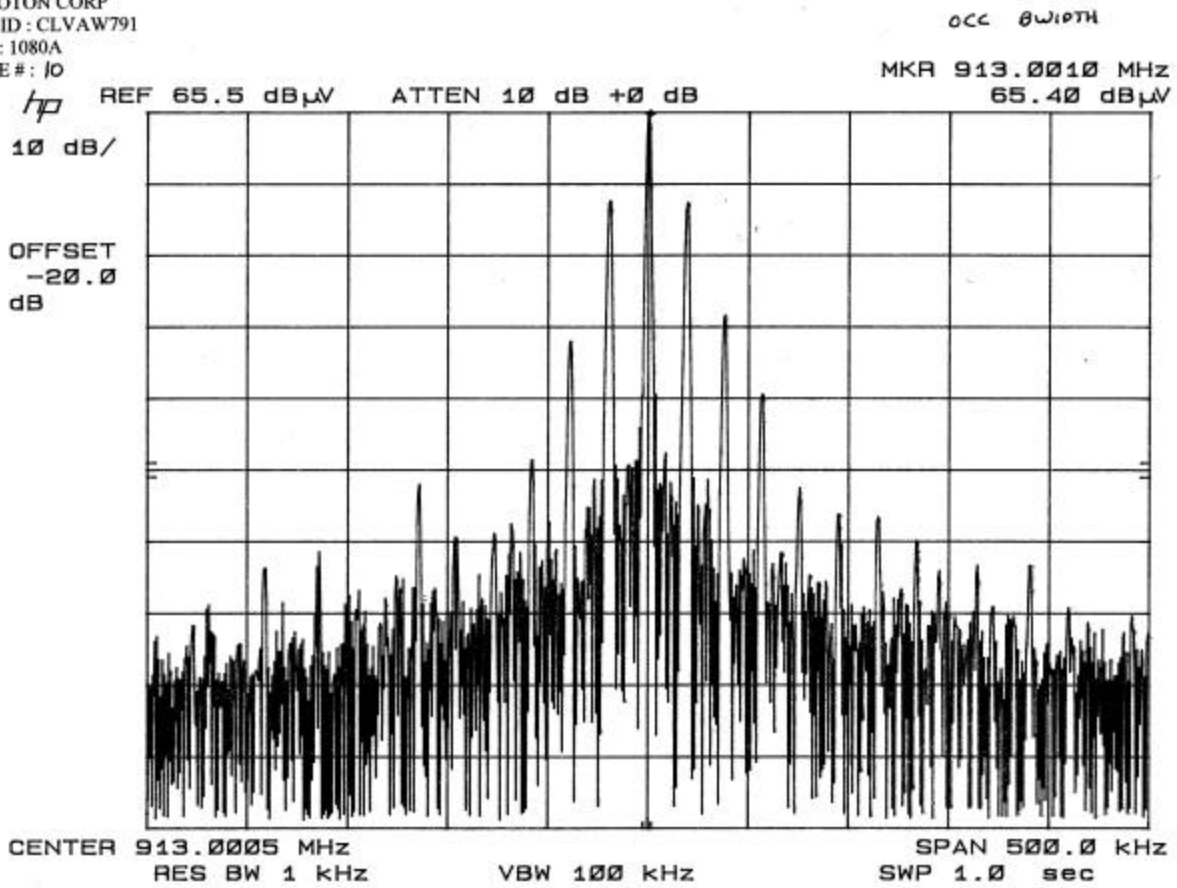
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APPLICANT: RECOTON CORPORATION

FCC ID: CLVAW791

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.107

MINIMUM REQUIREMENTS:	FREQUENCY <u> MHz </u>	LEVEL <u> uV </u>
	0.450-30	250

TEST PROCEDURE: ANSI STANDARD C63.4-1992

THE HIGHEST EMISSION READ FOR LINE 1 WAS 22.881 uV @ 12.33 MHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 18.385 uV @ 12.33 MHz.

THE PLOTS ON THE NEXT TWO PAGES 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: OCTOBER 24, 2001

APPLICANT: RECOTON CORPORATION

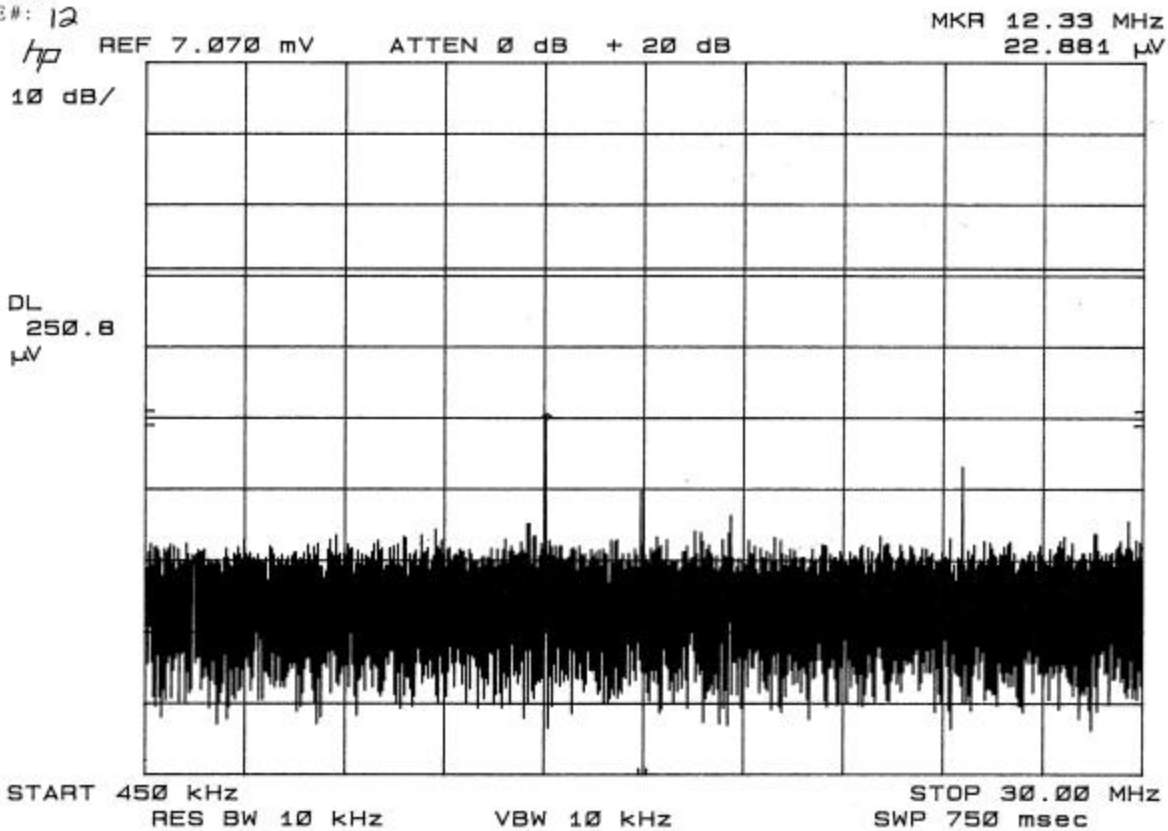
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Line 1



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