TROY GROUP, INC. WIRELESS AND CONDUCTIVITY DIVISION

TEST REPORT FOR THE

WIRELESS PRINT SERVER, ETHERWIND

FCC PART 15 SUBPART C SECTIONS 15.207, 15.209 AND 15.247

COMPLIANCE

DATE OF ISSUE: SEPTEMBER 19, 2001

PREPARED FOR:

Troy Group, Inc. Wireless and
Conductivity Division
1692 Browning
Irvine, CA 92606-4809

P.O. No.: 005008-00
W.O. No.: 76953

PREPARED BY:

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Date of test: August 23-28, 2001

Report No.: FC01-063

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ADMINISTRATIVE INFORMATION

DATE OF TEST:	August 23-28, 2001
DATE OF RECEIPT:	August 23, 2001
PURPOSE OF TEST:	To demonstrate the compliance of the Wireless Print Server, Etherwind, with the requirements for FCC Part 15 Subpart C Section 15.207, 15.209 and15.247 devices.
TEST METHOD:	ANSI C63.4 (1992)
MANUFACTURER:	Troy Group, Inc. Wireless and Conductivity Division 1692 Browning Irvine, CA 92606-4809
REPRESENTATIVE:	Annette Gathright
TEST LOCATION:	CKC Laboratories, Inc. 110 Olinda Place Brea, CA 92621

SUMMARY OF RESULTS

As received, the Troy Group, Inc. Wireless and Conductivity Division Wireless Print Server, Etherwind was found to be fully compliant with the following standards and specifications:

United States

- FCC Part 15 Subpart C Section 15.207, 15.209 and 15.247
- ANSI C63.4 (1992) method

Canada

RSS-210 using:

- FCC Part 15 Subpart C Section 15.207, 15.109 and 15.247
- ANSI C63.4 (1992) method

MODIFICATIONS REQUIRED FOR COMPLIANCE

No modifications to the EUT were required to comply.

APPROVALS

QUALITY ASSURANCE:

Dennis Ward, Quality Manager

Septimiu Apahidean, EMC/Lab Manager

TEST PERSONNEL:

Stuart Yamamoto, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT tested by CKC Laboratories was a production unit.

The Etherwind is a wireless Ethernet compliant print-server that allows users of laptops, PDA's, cell-phones, and other similar devices to print wirelessly using spread spectrum technology.

EQUIPMENT UNDER TEST

Wireless Print Server

Manuf:	Troy Group, Inc. Wireless and Conductivity Division
Model:	Etherwind
Serial:	00750099
FCC ID:	PTY9014B (Pending)

AC Power Adapter

Manuf:	Potrans
Model:	RWP480505-2
Serial:	NA
FCC ID:	DoC

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device:

Printer

Manuf:	Epson
Model:	950A
Serial:	A5PY416008
FCC ID:	DoC

15.33 FREQUENCY RANGE TESTED

Radiated:	9 kHz – 25 GHz
Conducted:	450 kHz – 30 MHz

EUT OPERATING FREQUENCY

The EUT was operating at 2412 – 2462 MHz within the 2400 – 2483.5 MHz band.

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

REPORT OF MEASUREMENTS

The following tables report the six highest worst case levels recorded during the tests performed on the Wireless Print Server, Etherwind. All readings taken are peak readings unless otherwise noted. The data sheets from which these tables were compiled are contained in Appendix B.

Table 1: Fundamental Radiated Emission Levels

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
2412.000	107.1	28.7	-39.5	7.8		104.1	137.0	-32.9	H-1
2412.000	103.5	28.7	-39.5	7.8		100.5	137.0	-36.5	V-1
2437.000	106.3	28.7	-39.5	7.5		103.0	137.0	-34.0	H-2
2437.000	102.9	28.7	-39.5	7.5		99.6	137.0	-37.4	V-2
2462.000	105.5	28.7	-39.5	7.6		102.3	137.0	-34.7	H-3
2462.000	99.8	28.7	-39.5	7.6		96.6	137.0	-40.4	V-3

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(1)
Test Distance: 3 Meters

NOTES:
H = Horizontal Polarization
V = Vertical Polarization
1 = Low Channel (CH. 1)
2 = Mid Channel (CH. 6)
3 = High Channel (CH. 11)

COMMENTS: The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Temperature 23°C, Humidity 59%, Pressure 100kPa.

Table 2: Six Highest Radiated Emission Levels: 15.247 9 kHz - 30 MHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB		Cable dB		CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
4.753	35.8	11.3		0.9		48.0	73.8	-25.8	V
10.048	34.0	11.2		0.9		46.1	73.8	-27.7	V
15.444	41.0	11.0		1.0		53.0	73.8	-20.8	V
17.804	31.0	10.6		1.0		42.6	73.8	-31.2	V
19.992	33.6	10.2		1.0		44.8	73.8	-29.0	V
25.007	29.5	9.4		1.0		39.9	73.8	-33.9	V

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 3 Meters

NOTES: V = Vertical Polarization

COMMENTS: The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Frequency range scanned and maximized, 9 kHz -30 MHz. Temperature 24°C, Humidity 59%, Pressure 100kPa. Limit is 20dB down from peak measured in authorized band. (97dBuV uncorrected peak, corrected peak is 93.8dBuV, 20dB down limit is 73.8dBuV derived from a radiated measurement).

Table 3: Six Highest Radiated Emission Levels: 15.247 30 - 1000 MHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
151.760	49.8	17.2	-28.6	2.3		40.7	73.8	-33.1	H
310.000	41.9	20.8	-28.3	3.4		37.8	73.8	-36.0	H
339.984	48.1	16.2	-28.2	3.6		39.7	73.8	-34.1	V
340.025	50.7	16.1	-28.2	3.6		42.2	73.8	-31.6	H
365.006	50.0	14.9	-28.2	3.8		40.5	73.8	-33.3	H
420.023	49.6	15.6	-28.2	4.1		41.1	73.8	-32.7	H

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Frequency range scanned and maximized, 30-1000 MHz. Temperature 23°C, Humidity 59%, Pressure 100kPa. Limit is 20dB down from peak measured in authorized band. (97dbUV uncorrected peak, corrected peak is 93.8dBuV, 20dB down limit is 73.8dBuV derived from a radiated measurement).

Table 4: Six Highest Radiated Emission Levels: 15.247 1-25 GHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	Dist dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
2087.720	61.1	28.2	-39.3	4.2		54.2	73.8	-19.6	H
2087.726	61.1	28.2	-39.3	4.2		54.2	73.8	-19.6	V
4175.476	44.0	32.6	-38.8	6.3		44.1	73.8	-29.7	H
4175.479	45.1	32.6	-38.8	6.3		45.2	73.8	-28.6	V
4923.280	42.5	33.9	-38.6	7.0		44.8	73.8	-29.0	H
4926.440	40.4	33.9	-38.6	7.0		42.7	73.8	-31.1	V

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Nothing above 8.36 GHz was detected. Temperature 23°C, Humidity 59%, Pressure 100kPa. Limit is 20dB down from peak measured in authorized band. (97dbUV uncorrected peak, corrected peak is 93.8dBuV, 20dB down limit is 73.8dBuV derived from a radiated measurement).

Table 5: Six Highest Radiated Emission Levels: 15.209 9 kHz - 1000 MHz									
	METER	CORRECTION FACTORS				CORRECTED	SPEC		
FREQUENCY MHz	READING dBµV	Ant dB	Amp dB	Cable dB	Dist dB	READING dBµV/m	LIMIT dBµV/m	MARGIN dB	NOTES
324.997	47.1	18.4	-28.2	3.5		40.8	46.0	-5.2	V
325.001	48.6	18.4	-28.2	3.5		42.3	46.0	-3.7	H
329.985	48.2	17.6	-28.2	3.5		41.1	46.0	-4.9	H
399.969	51.7	15.2	-28.1	4.0		42.8	46.0	-3.2	H
399.973	49.7	15.2	-28.1	4.0		40.8	46.0	-5.2	V
407.012	49.7	15.3	-28.1	4.0		40.9	46.0	-5.1	H

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization

COMMENTS: The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Frequency range scanned and maximized, 9 kHz -1000 MHz. Temperature 24°C, Humidity 59%, Pressure 100kPa.

Table 6: Six Highest Radiated Emission Levels: 15.209 1-25 GHz

FREQUENCY MHz	METER READING dBµV	CORRECTION FACTORS Ant dB	Amp dB	Cable dB	dB	CORRECTED READING dBµV/m	SPEC LIMIT dBµV/m	MARGIN dB	NOTES
4175.455	42.7	32.6	-38.8	6.3		42.8	54.0	-11.2	VA
4175.467	38.5	32.6	-38.8	6.3		38.6	54.0	-15.4	HA
4923.301	38.3	33.9	-38.6	7.0		40.6	54.0	-13.4	VA
4923.462	37.9	33.9	-38.6	7.0		40.2	54.0	-13.8	HA
8350.923	35.0	37.6	-38.3	9.7		44.0	54.0	-10.0	HA
8350.996	34.7	37.6	-38.3	9.7		43.7	54.0	-10.3	VA

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.209
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
V = Vertical Polarization
A = Average Reading

COMMENTS: The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Range tested was 1-18 GHz. Nothing above 8.36 GHz was detected. Temperature 23°C, Humidity 59%, Pressure 100kPa. Limit is 20dB down from peak measured in authorized band. (97dBuV uncorrected peak, corrected peak is 93.8dBuV, 20dB down limit is 73.8dBuV derived from a radiated measurement derived from a radiated measurement).

Table 7: Highest Radiated Emission Levels: Peak Power Spectral Density									
	METER	CORRECTION FACTORS				CORRECTED	SPEC		
FREQUENCY MHz	READING dBµV	Ant dB	Amp dB	Cable dB	dB	READING dBµV/m	LIMIT dBµV/m	MARGIN dB	NOTES
2412.000	107.4	28.7	-39.5	7.8		104.4	115.0	-10.6	H
2437.000	106.3	28.7	-39.5	7.5		103.0	115.0	-12.0	H
2462.000	105.9	28.7	-39.5	7.6		102.7	115.0	-12.3	H

Test Method: ANSI C63.4 (1992)
Spec Limit: FCC Part 15 Subpart C Section 15.247(d)
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization

COMMENTS: The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Temperature 23°C, Humidity 59%, Pressure 100kPa.

Table 8: Six Highest Conducted Emission Levels									
	METER	CORRECTION FACTORS				CORRECTED	SPEC		
FREQUENCY MHz	READING dBµV	Lisn dB	dB	dB	dB	READING dBµV	LIMIT dBµV	MARGIN dB	NOTES
0.460801	32.1	0.0				32.1	48.0	-15.9	B
0.592758	32.0	0.0				32.0	48.0	-16.0	B
0.602620	32.0	0.0				32.0	48.0	-16.0	B
0.641597	32.6	0.0				32.6	48.0	-15.4	B
0.669069	32.7	0.0				32.7	48.0	-15.3	B
8.486656	33.2	0.0				33.2	48.0	-14.8	B

Test Method: ANSI C63.4 (1992) NOTES: B = Black Lead
Spec Limit: FCC Part 15 Subpart C Section 15.207 Class B

COMMENTS: The EUT and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is in default mode. Voltage to the EUT is 110 Vac, 60 Hz. Temperature 23°C, Humidity 47%, Pressure 100kPa. Frequency range tested, 450 kHz to 30 MHz.

MEASUREMENT UNCERTAINTY

Associated with data in this report is a ± 4dB measurement uncertainty.

EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected. The interval between different pieces of equipment was approximately 10 centimeters. All excessive interconnecting cable was bundled in 30-40 centimeter lengths.

The radiated and conducted emissions data of the Wireless Print Server, Etherwind, was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBµV/m, the spectrum analyzer reading in dBµV was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

TABLE A: SAMPLE CALCULATIONS

	Meter reading	(dBµV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBµV/m)

A typical data sheet will display the following in column format:

#	Freq	Rdng	Pream	Bicon	Log_3	Cable	Corr	Spec	Margin	Polar
				Horn		Dist	HP830	Activ		

means reading number.
Freq is the frequency in MHz of the obtained reading.
Rdng is the reading obtained on the spectrum analyzer in dBµV.
HP830 and Pream are the preamplifier factor or gain in dB.
Bicon is the biconical antenna factor in dB.
Log_3 is the log periodic antenna factor in dB.
Horn is the horn antenna factor in dB.
Cable is the cable loss in dB of the coaxial cable on the OATS.
Dist is the distance factor in dB used when testing at a different test distance than the one stated in the spec.
Corr is the corrected reading in dBµV/m (field strength).
Spec is the specification limit (dB) stated in the FCC regulations.
Margin is the closeness to the specified limit in dB; + is over and - is under the limit.
Polar is the polarity of the antenna with respect to earth.
Activ is the active magnetic loop antenna.

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the Wireless Print Server, Etherwind. For frequencies below 30 MHz the magnetic loop antenna was used. For radiated measurements below 300 MHz, the biconical antenna was used. For frequencies from 300 to 1000 MHz, the log periodic antenna was used. The horn antenna was used for frequencies above 1000 MHz. All antennas were located at a distance of 3 meters from the edge of the EUT. Conducted emissions tests required the use of the FCC type LISNs.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dBµV, and a vertical scale of 10 dB per division.

FCC SECTION 15.35:
TABLE B: ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE

TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
CONDUCTED EMISSIONS	450 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	9 kHz	150 kHz	200 Hz
RADIATED EMISSIONS	150 kHz	30 MHz	9 kHz
RADIATED EMISSIONS	30 MHz	1000 MHz	120 kHz
RADIATED EMISSIONS	1000 MHz	25 GHz	1 MHz

SPECTRUM ANALYZER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data for the Wireless Print Server, Etherwind.

Peak

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual was followed.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.

EUT TESTING

Radiated Emissions

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. Frequencies below 30 MHz were tested using the magnetic loop antenna. The frequency range of 30 MHz to 88 MHz was scanned with the biconical antenna located about 1.5 meter above the ground plane in the vertical configuration. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. The frequency range of 100 to 300 MHz was then scanned in the same manner using the biconical antenna and the peaks recorded. Lastly, a scan of the FM band from 88 to 110 MHz was made, using a reduced resolution bandwidth and frequency span. The biconical antenna was changed to the horizontal polarity and the above steps were repeated. After changing to the log periodic antenna in the horizontal configuration, the frequency range of 300 to 1000 MHz was scanned. The log periodic antenna was changed to the vertical polarity and the frequency range of 300 to 1000 MHz was again scanned. For frequencies exceeding 1000 MHz, the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.

A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable as needed. The test engineer maximized the readings with respect to the table rotation, antenna height, and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor. Photographs showing the final worst case configuration of the EUT are contained in Appendix A.

Mains Conducted Emissions

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT was located has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

For conducted emissions testing, a 30 to 50 second sweep time was used for automated measurements in the frequency bands of 450 kHz to 1.705 MHz, 1.705 MHz to 3 MHz, and 3 MHz to 30 MHz. All readings within 20 dB of the limit were recorded. At frequencies where the recorded emissions were close to the limit, further investigation was performed manually at a slower sweep rate.

TRANSMITTER CHARACTERISTICS

15.203 Antenna Requirements

The EUT has a permanently attached antenna or antenna that uses a unique coupling.

15.205 Restricted Bands

Operating frequency:

The Fundamental operating frequency lies outside the restricted bands and therefore complies with the requirements of Section 15.205 of the FCC rules.

Any spurious emission coming from the EUT was investigated to determine if any portion lies inside the restricted band. If any portion of a spurious emissions signal was found to be within a restricted band, investigation was performed to ensure compliance with Section 15.209.

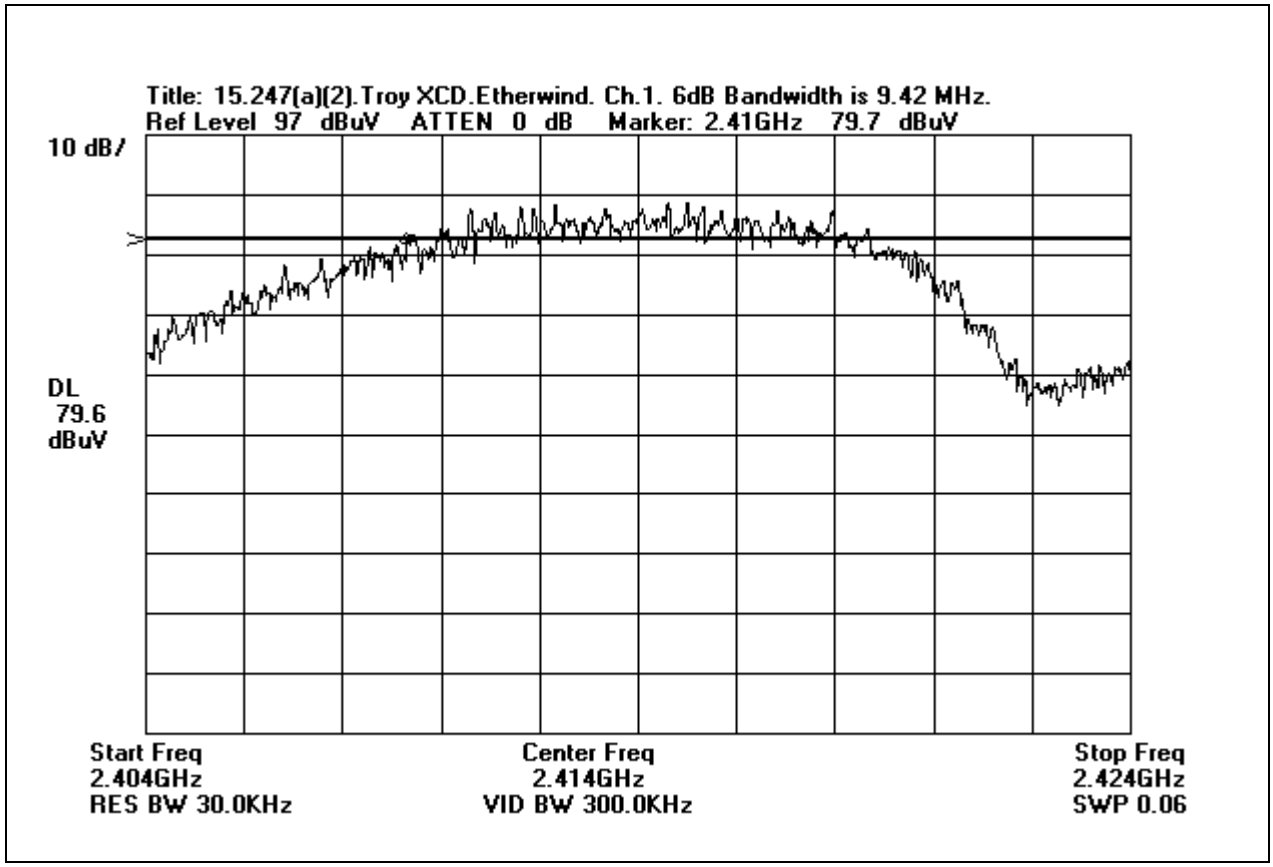
15.215 Additional Provisions To The General Radiated Emission Limitations

The fundamental frequency was kept within at least the central 80% of the permitted band.

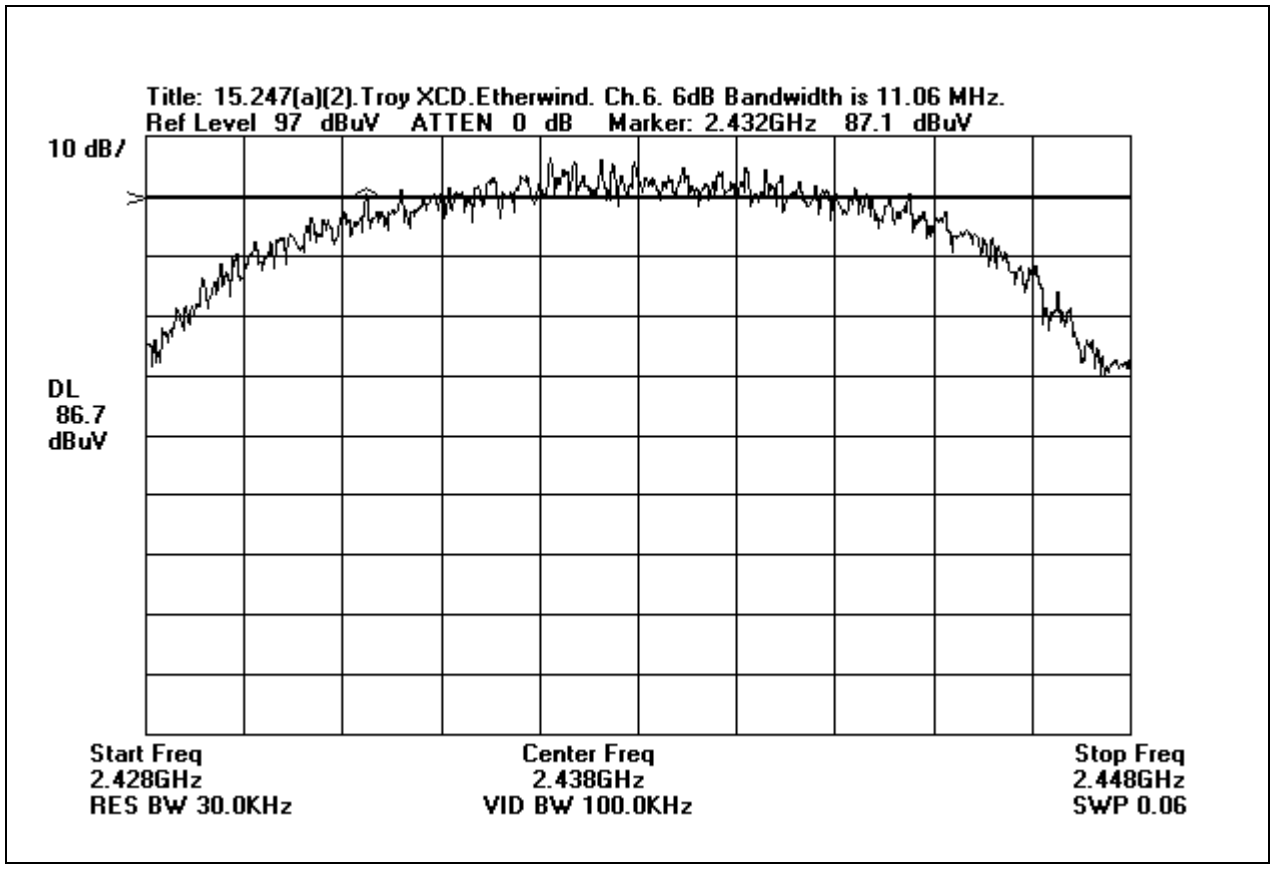
15.247(a)(2) Bandwidth Measurements (Direct Sequence)

The fundamental frequency was kept within the permitted band, 2400-2483.5 MHz. The minimum 6dB bandwidth shall be at least 500 kHz. Refer to the following occupied bandwidth plots.

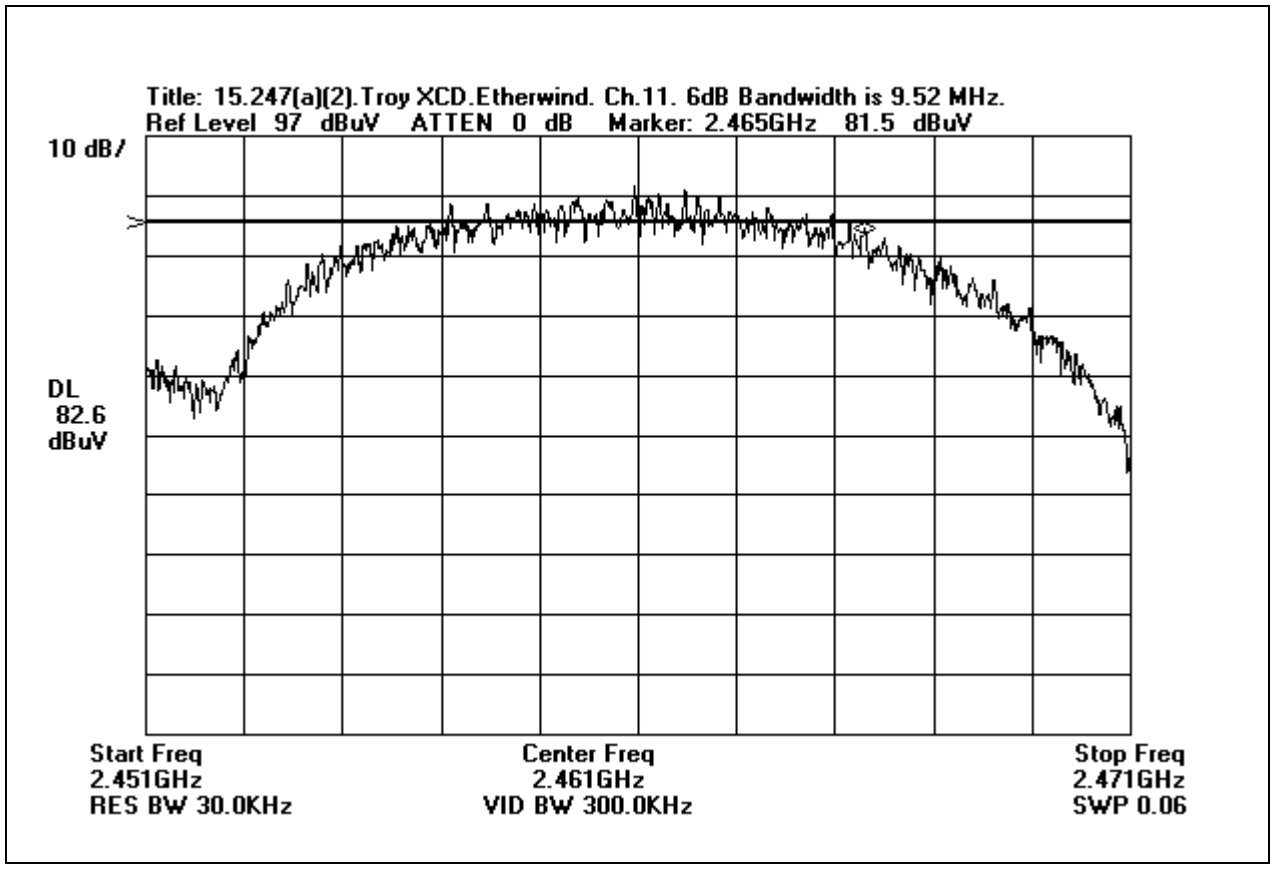
CHANNEL 1 BANDWIDTH



CHANNEL 6 BANDWIDTH



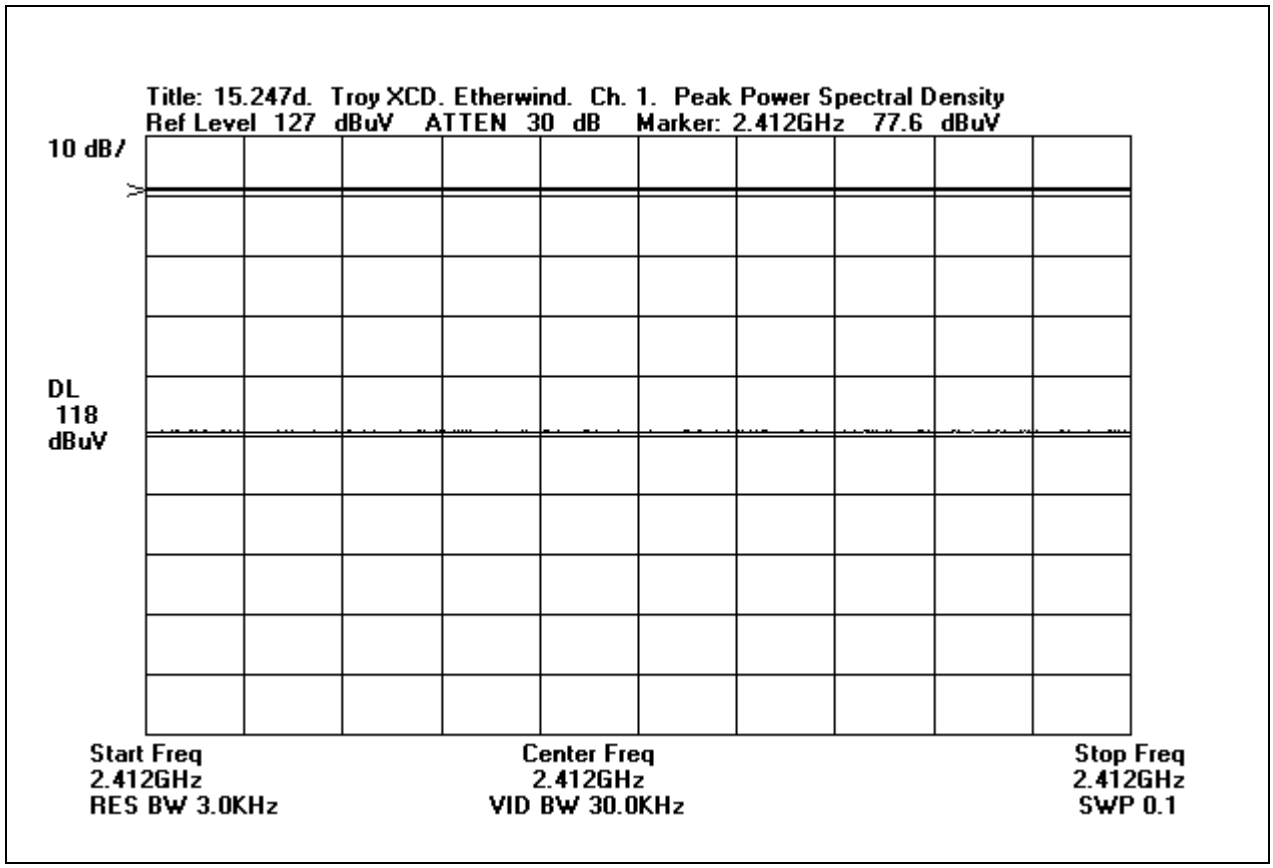
CHANNEL 11 BANDWIDTH



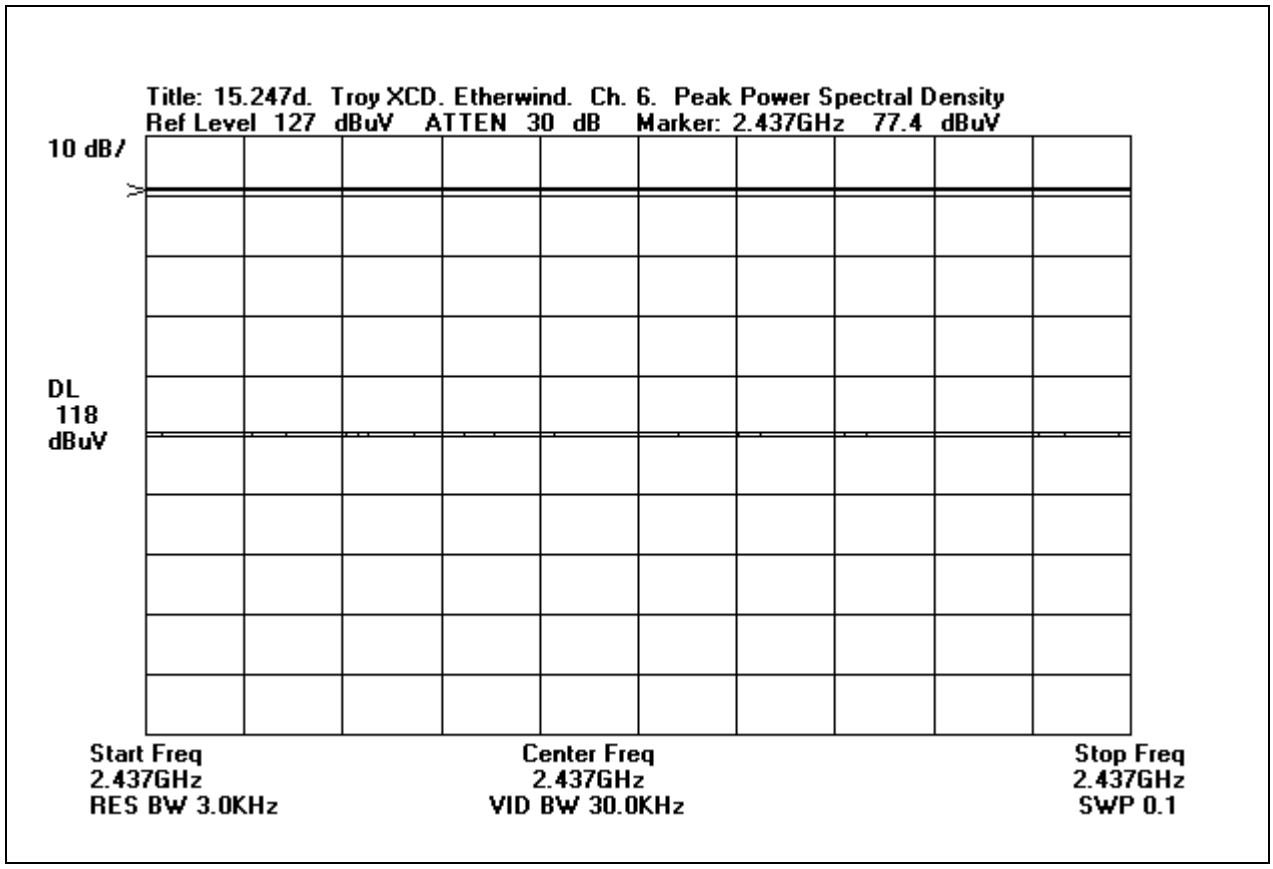
15.247(d) Peak Power Spectral Density

The peak power spectral density conducted from the EUT to the antenna was not greater than 8 dm in any 3 kHz band during any time interval of continuous transmission.

CHANNEL 1



CHANNEL 6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10 dB/
DL
118
dBuV
Start Freq
2.437GHz
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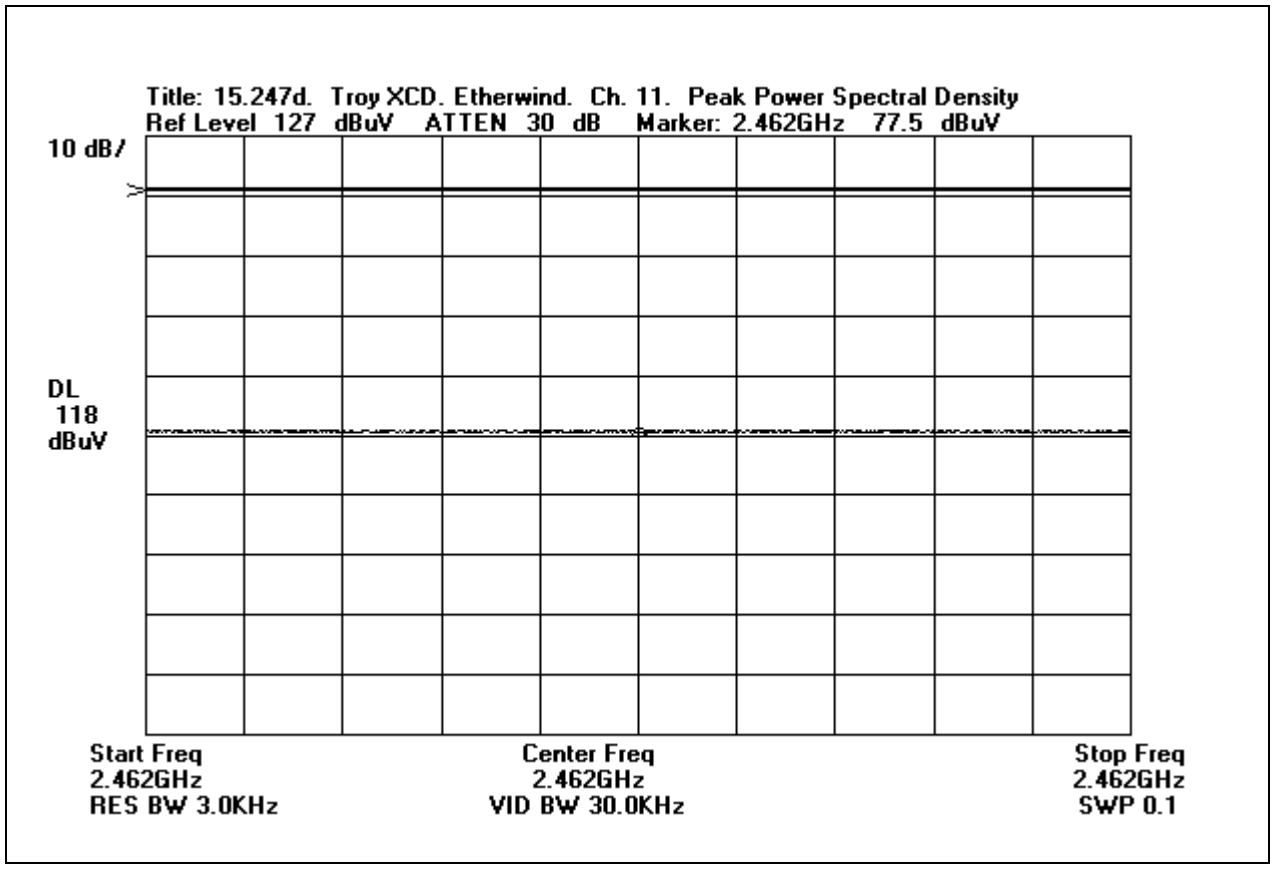
Center Freq
2.437GHz
VID BW 30.0KHz
Stop Freq
2.437GHz
SWP 0.1

CHANNEL 11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Ref Level 127 dBuV ATTEN 30 dB Marker: 2.462GHz 77.5 dBuV
10 dB/
DL
118
dBuV
Start Freq
2.462GHz
RES BW 3.0KHz
Center Freq
2.462GHz
VID BW 30.0KHz
Stop Freq
2.462GHz
SWP 0.1

APPENDIX A

INFORMATION ABOUT THE EQUIPMENT UNDER TEST

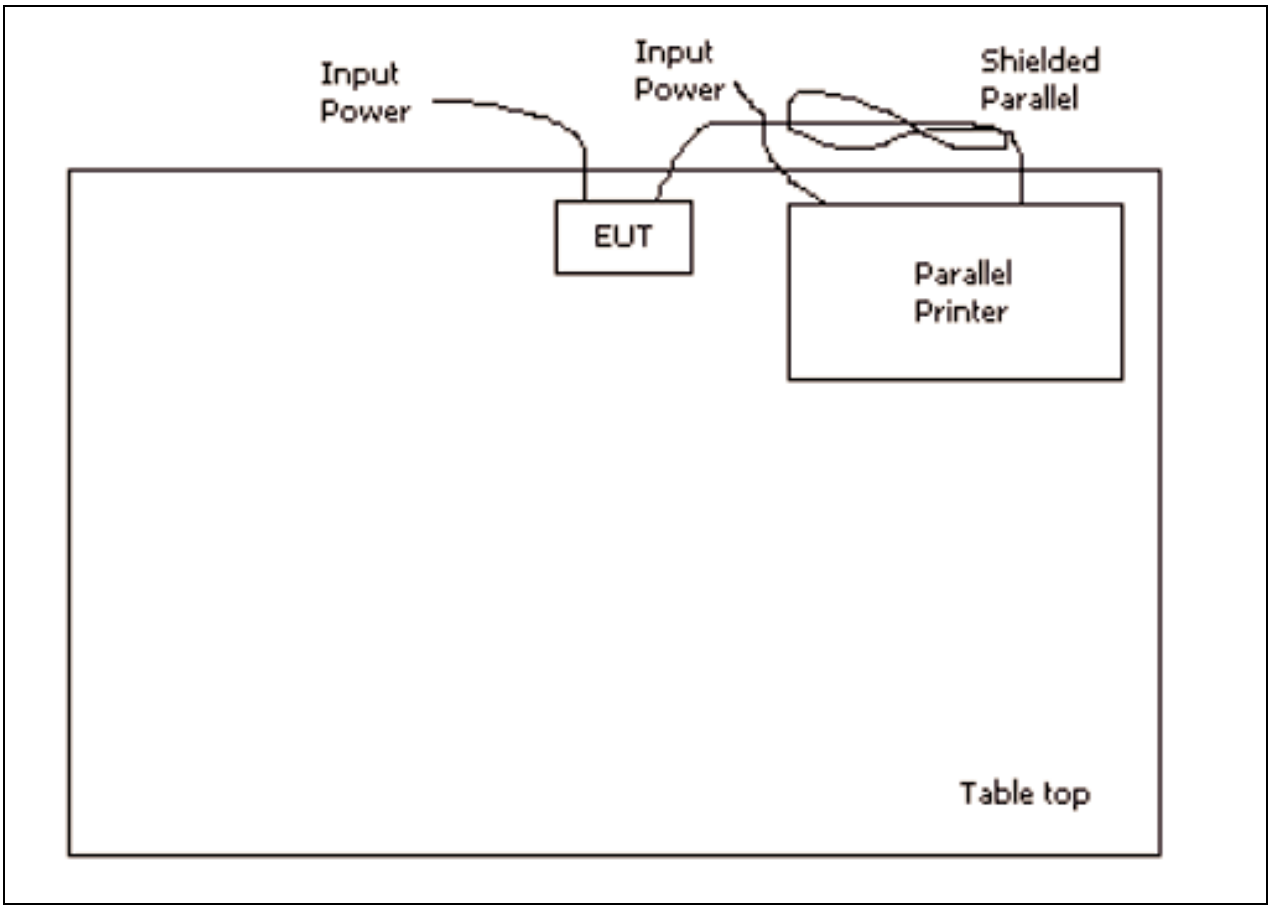
INFORMATION ABOUT THE EQUIPMENT UNDER TEST	
Test Software/Firmware:	Etherwind Printserver FW/Intersil 802.11b FW
CRT was displaying:	NA
Power Supply Manufacturer:	NA
Power Supply Part Number:	NA
AC Line Filter Manufacturer:	NA
AC Line Filter Part Number:	NA

I/O PORTS	
Type	#
RS232	1
IEEE P1284	1
IEEE 802.11B	1

CRYSTAL OSCILLATORS	
Type	Freq In MHz
VCO	44MHZ
VCO	20MHz
VCXO	2.077GHz
VCXO	748MHz

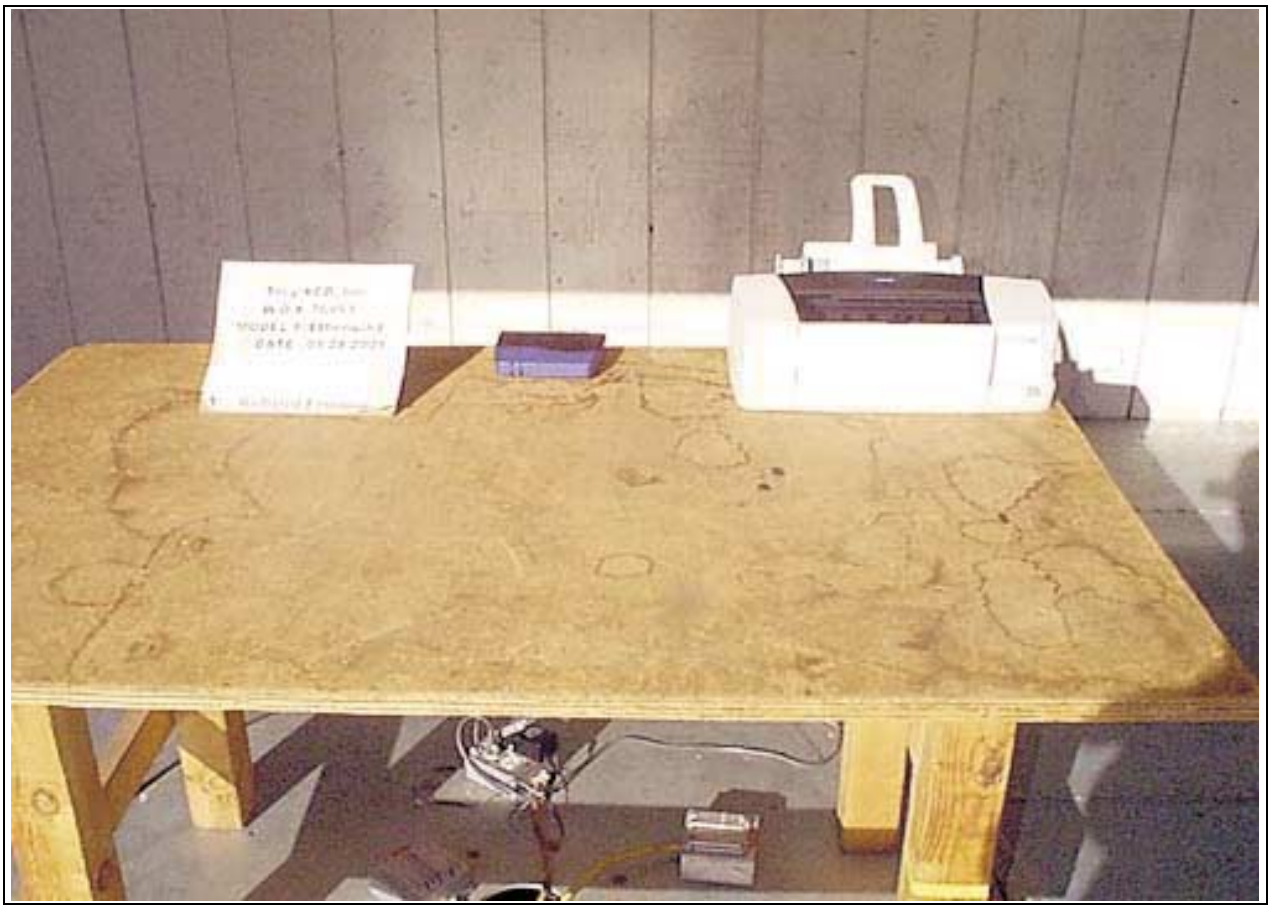
PRINTED CIRCUIT BOARDS				
Function	Model & Rev	Clocks, MHz	Layers	Location
Unit board	30148-D	See above	6	

EQUIPMENT TEST SETUP DIAGRAM - RADIATED EMISSIONS



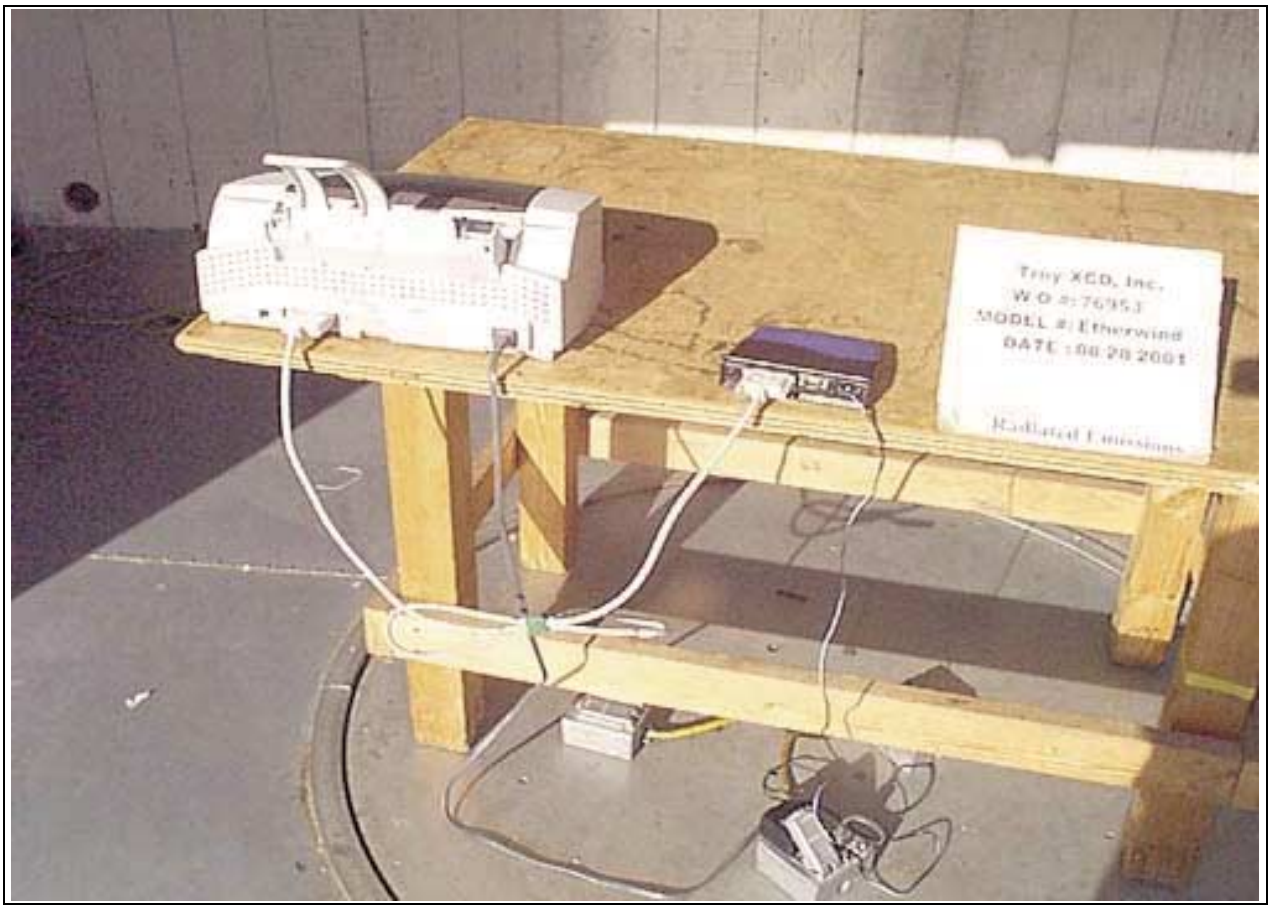
Radiated Emissions

PHOTOGRAPH SHOWING RADIATED EMISSIONS



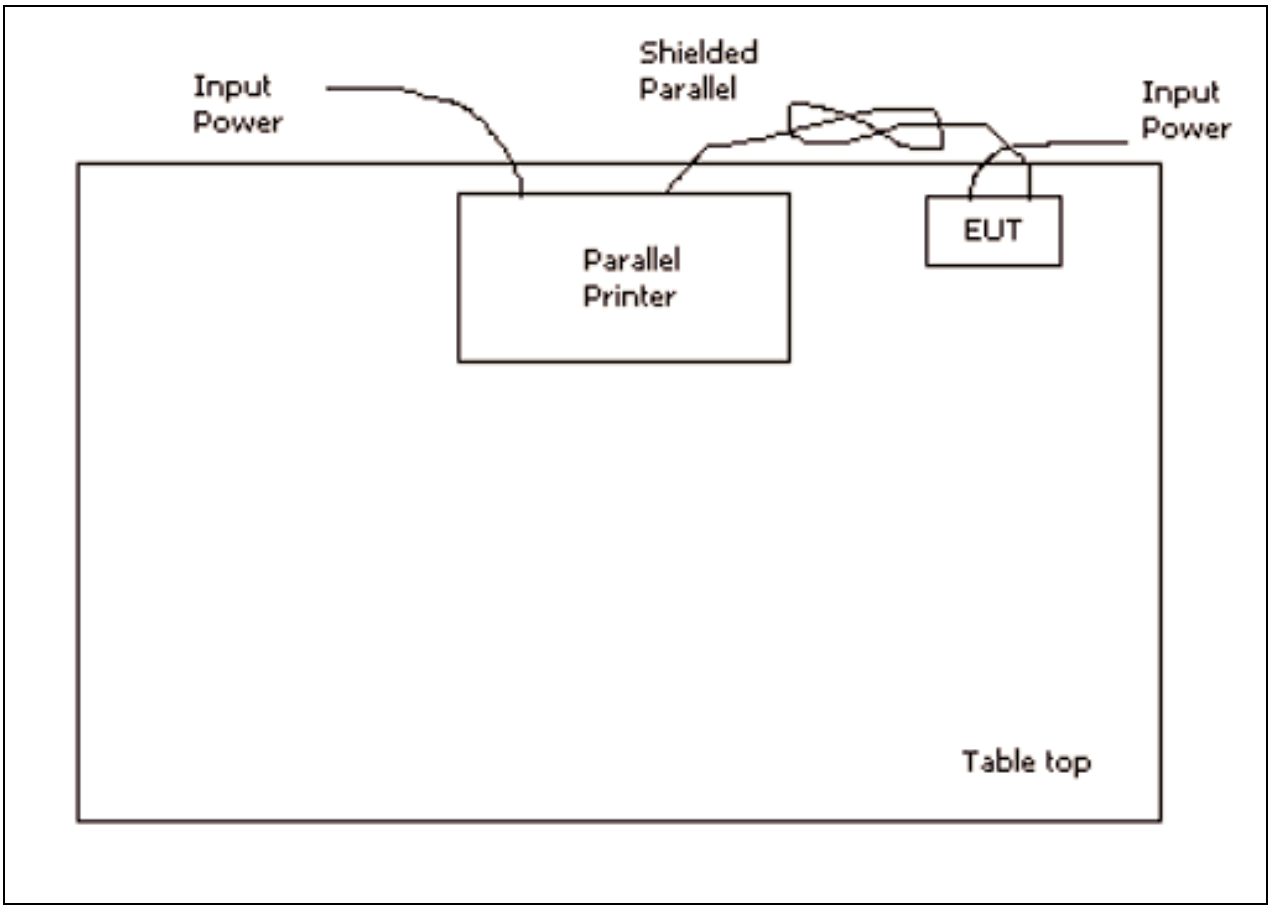
Radiated Emissions - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View

EQUIPMENT TEST SETUP DIAGRAM - CONDUCTED EMISSIONS



Conducted Emissions

PHOTOGRAPH SHOWING CONDUCTED EMISSIONS

Conducted Emissions - Front View

PHOTOGRAPH SHOWING CONDUCTED EMISSIONS

Conducted Emissions - Back View

APPENDIX B

TEST EQUIPMENT LIST

Industry of Canada File No. IC 3172-A

Radiated Emissions

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	01865	HP	8566B	2532A02509	102500	102501
QP Adapter	01437	HP	85650A	3303A01884	092600	092601
Bicon Antenna	00306	A.H. System	SAS-200/540	220	092000	092001
Log Periodic Antenna	00300	A.H. System	SAS-200/516	331	092000	092001
Pre-amp	00309	HP	8447D	1937A02548	091800	091801
Antenna cable	NA	NA	RG214	Cable#15	122000	122001
Pre-amp to SA cable	NA	Harbour	RG223/U	Cable#10	071601	071602
Horn Antenna	00849	EMCO	3115	6246	092500	092501
Microwave Pre-amp	00798	HP	83017A	3123A00281	101100	101101
¼" Heliax Coaxial Cable	NA	Andrew	FSJ-50A-4	Cable#7 (6 ft)	071701	071702
¼" Heliax Coaxial Cable		Andrew	LDF1-50	Cable 70ft	091500	091501

Conducted Emissions

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	01865	HP	8566B	2532A02509	102500	102501
QP Adapter	01437	HP	85650A	3303A01884	092600	092601
LISN	02128	EMCO	3816/2NM	9809-1090	030701	030702
LISN	00847	EMCO	3816/2NM	1104	092600	092601

APPENDIX C

15.247 (b)(1), (c) & (d), 15.209 & 15.207
MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **15.247(b)(1)**
Work Order #: **76953** Date: 08/28/2001
Test Type: **Maximized Emissions** Time: 10:26:43
Equipment: **Print Server** Sequence#: 8
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Ault, Inc.	P41050400A01RG	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	P156A	CMR1545596

Test Conditions / Notes:

The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Temperature 23°C, Humidity 59%, Pressure 100kPa.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Cable dB	Cable dB	Horn dB	HP830 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2412.000M	107.1	+3.2	+4.6	+28.7	-39.5	+0.0	104.1	137.0	-32.9	Horiz
							136		Low Channel (CH. 1)		100
2	2437.000M	106.3	+2.9	+4.6	+28.7	-39.5	+0.0	103.0	137.0	-34.0	Horiz
							133		Mid Channel (CH. 6)		100
3	2462.000M	105.5	+2.9	+4.7	+28.7	-39.5	+0.0	102.3	137.0	-34.7	Horiz
							112		High Channel (CH. 11)		100
4	2412.000M	103.5	+3.2	+4.6	+28.7	-39.5	+0.0	100.5	137.0	-36.5	Vert
									Low Channel (CH. 1)		100
5	2437.000M	102.9	+2.9	+4.6	+28.7	-39.5	+0.0	99.6	137.0	-37.4	Vert
									Mid Channel (CH. 6)		100
6	2462.000M	99.8	+2.9	+4.7	+28.7	-39.5	+0.0	96.6	137.0	-40.4	Vert
							304		High Channel (CH. 11)		100

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **15.247(c)**
Work Order #: **76953** Date: 08/28/2001
Test Type: **Maximized Emissions** Time: 15:24:39
Equipment: **Print Server** Sequence#: 12
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Ault, Inc.	P41050400A01RG	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	P156A	CMR1545596

Test Conditions / Notes:

The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Frequency range scanned and maximized, 9 kHz - 30 MHz. Temperature 24°C, Humidity 59%, Pressure 100kPa. Limit is 20dB down from peak measured in authorized band. (97dBuV uncorrected peak, corrected peak is 93.8dBuV, 20dB down limit is 73.8dBuV derived from a radiated measurement).

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Cable dB	Cable dB	Activ dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	15.444M	41.0	+0.1	+0.9	+11.0		+0.0 360	53.0	73.8	-20.8	Vert 100
2	4.753M	35.8	+0.0	+0.9	+11.3		+0.0 266	48.0	73.8	-25.8	Vert 100
3	10.048M	34.0	+0.0	+0.9	+11.2		+0.0	46.1	73.8	-27.7	Vert 100
4	19.992M	33.6	+0.1	+0.9	+10.2		+0.0 360	44.8	73.8	-29.0	Vert 100
5	17.804M	31.0	+0.1	+0.9	+10.6		+0.0 360	42.6	73.8	-31.2	Vert 100
6	25.007M	29.5	+0.1	+0.9	+9.4		+0.0 144	39.9	73.8	-33.9	Vert 100
7	29.216M	30.0	+0.1	+0.9	+8.5		+0.0 307	39.5	73.8	-34.3	Vert 100

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **15.247(c)**
Work Order #: **76953** Date: 08/28/2001
Test Type: **Maximized Emissions** Time: 14:43:06
Equipment: **Print Server** Sequence#: 11
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Ault, Inc.	P41050400A01RG	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	P156A	CMR1545596

Test Conditions / Notes:

The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Frequency range scanned and maximized, 30-1000 MHz. Temperature 23°C, Humidity 59%, Pressure 100kPa. Limit is 20dB down from peak measured in authorized band. (97dbUV uncorrected peak, corrected peak is 93.8dBuV, 20dB down limit is 73.8dBuV derived from a radiated measurement).

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Pream Log_3 dB	Bicon dB	Cable dB	Cable dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	340.025M	50.7	-28.2 +16.1	+0.0	+0.3	+3.3	+0.0 139	42.2	73.8	-31.6	Horiz 210
2	420.023M	49.6	-28.2 +15.6	+0.0	+0.4	+3.7	+0.0 134	41.1	73.8	-32.7	Horiz 270
3	151.760M	49.8	-28.6 +0.0	+17.2	+0.2	+2.1	+0.0 258	40.7	73.8	-33.1	Horiz 199
4	365.006M	50.0	-28.2 +14.9	+0.0	+0.3	+3.5	+0.0 148	40.5	73.8	-33.3	Horiz 102
5	339.984M	48.1	-28.2 +16.2	+0.0	+0.3	+3.3	+0.0 189	39.7	73.8	-34.1	Vert 168
6	310.000M	41.9	-28.3 +20.8	+0.0	+0.3	+3.1	+0.0 114	37.8	73.8	-36.0	Horiz 217
7	315.004M	42.6	-28.3 +20.0	+0.0	+0.3	+3.1	+0.0 195	37.7	73.8	-36.1	Horiz 179
8	160.003M	44.8	-28.6 +0.0	+17.8	+0.2	+2.2	+0.0 82	36.4	73.8	-37.4	Horiz 100
9	209.989M	45.8	-28.6 +0.0	+16.4	+0.3	+2.4	+0.0 309	36.3	73.8	-37.5	Horiz 177
10	479.978M	42.9	-28.1 +16.6	+0.0	+0.4	+4.0	+0.0 146	35.8	73.8	-38.0	Horiz 198
11	159.984M	44.0	-28.6 +0.0	+17.8	+0.2	+2.2	+0.0 360	35.6	73.8	-38.2	Vert 100

12	446.446M	43.3	-28.3 +16.0	+0.0	+0.4	+3.9	+0.0 247	35.3	73.8	-38.5	Horiz 100
13	151.002M	43.6	-28.6 +0.0	+17.2	+0.2	+2.1	+0.0 221	34.5	73.8	-39.3	Vert 100
14	456.445M	42.0	-28.3 +16.2	+0.0	+0.4	+3.9	+0.0 119	34.2	73.8	-39.6	Horiz 100
15	289.991M	38.5	-28.3 +0.0	+20.4	+0.3	+3.0	+0.0 262	33.9	73.8	-39.9	Horiz 180
16	419.979M	42.1	-28.2 +15.6	+0.0	+0.4	+3.7	+0.0 162	33.6	73.8	-40.2	Vert 117
17	155.133M	39.2	-28.6 +0.0	+17.3	+0.2	+2.1	+0.0 213	30.2	73.8	-43.6	Vert 100
18	210.004M	39.0	-28.6 +0.0	+16.4	+0.3	+2.4	+0.0 1	29.5	73.8	-44.3	Vert 100

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **15.247(c)**
Work Order #: **76953** Date: 08/28/2001
Test Type: **Maximized Emissions** Time: 11:58:52
Equipment: **Print Server** Sequence#: 10
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Ault, Inc.	P41050400A01RG	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	P156A	CMR1545596

Test Conditions / Notes:

The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Nothing above 8.36 GHz was detected. Temperature 23°C, Humidity 59%, Pressure 100kPa. Limit is 20dB down from peak measured in authorized band. (97dBuV uncorrected peak, corrected peak is 93.8dBuV, 20dB down limit is 73.8dBuV derived from a radiated measurement). Frequency tested: 1-25 GHz.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	dB	Cable dB	Horn dB	HP830 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2087.726M	61.1		+4.2	+28.2	-39.3	+0.0 39	54.2	73.8	-19.6	Vert 100
2	2087.720M	61.1		+4.2	+28.2	-39.3	+0.0 172	54.2	73.8	-19.6	Horiz 100
3	4175.479M	45.1		+6.3	+32.6	-38.8	+0.0 228	45.2	73.8	-28.6	Vert 100
4	4923.280M	42.5		+7.0	+33.9	-38.6	+0.0 81	44.8	73.8	-29.0	Horiz 100
5	4175.476M	44.0		+6.3	+32.6	-38.8	+0.0 185	44.1	73.8	-29.7	Horiz 100
6	4926.440M	40.4		+7.0	+33.9	-38.6	+0.0 1	42.7	73.8	-31.1	Vert 100
7	6263.218M	32.2		+8.1	+34.8	-38.5	+0.0	36.6	73.8	-37.2	Vert 100

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **FCC 15.209**
Work Order #: **76953** Date: 08/28/2001
Test Type: **Maximized Emissions** Time: 16:32:03
Equipment: **Print Server** Sequence#: 13
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Ault, Inc.	P41050400A01RG	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	P156A	CMR1545596

Test Conditions / Notes:

The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Frequency range scanned and maximized, 9 kHz - 1000 MHz. Temperature 24°C, Humidity 59%, Pressure 100kPa.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Cable Log_3 dB	Cable dB	Pream dB	Bicon dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	399.969M	51.7	+0.4 +15.2	+3.6	-28.1	+0.0	+0.0 119	42.8	46.0	-3.2	Horiz 100
2	325.001M	48.6	+0.3 +18.4	+3.2	-28.2	+0.0	+0.0 145	42.3	46.0	-3.7	Horiz 141
3	329.985M	48.2	+0.3 +17.6	+3.2	-28.2	+0.0	+0.0 132	41.1	46.0	-4.9	Horiz 130
4	407.012M	49.7	+0.4 +15.3	+3.6	-28.1	+0.0	+0.0 112	40.9	46.0	-5.1	Horiz 100
5	399.973M	49.7	+0.4 +15.2	+3.6	-28.1	+0.0	+0.0 140	40.8	46.0	-5.2	Vert 100
6	324.997M	47.1	+0.3 +18.4	+3.2	-28.2	+0.0	+0.0 242	40.8	46.0	-5.2	Vert 100
7	163.517M	46.3	+0.3 +0.0	+2.2	-28.6	+17.7	+0.0 250	37.9	43.5	-5.6	Horiz 156
8	159.997M	45.0	+0.2 +0.0	+2.2	-28.6	+17.8	+0.0 236	36.6	43.5	-6.9	Horiz 141
9	299.994M	42.0	+0.3 +0.0	+3.0	-28.3	+21.1	+0.0 266	38.1	46.0	-7.9	Horiz 100
10	329.989M	45.1	+0.3 +17.6	+3.2	-28.2	+0.0	+0.0 186	38.0	46.0	-8.0	Vert 173
11	209.982M	44.1	+0.3 +0.0	+2.4	-28.6	+16.4	+0.0 314	34.6	43.5	-8.9	Horiz 199
12	170.027M	43.1	+0.3 +0.0	+2.3	-28.6	+17.5	+0.0	34.6	43.5	-8.9	Vert 100

13	409.985M	45.3	+0.4 +15.4	+3.7	-28.1	+0.0	+0.0 117	36.7	46.0	-9.3	Horiz 100
14	119.973M	45.5	+0.2 +0.0	+1.9	-28.5	+14.9	+0.0 137	34.0	43.5	-9.5	Horiz 100
15	150.027M	42.9	+0.2 +0.0	+2.1	-28.6	+17.2	+0.0 238	33.8	43.5	-9.7	Horiz 180
16	334.032M	43.8	+0.3 +17.0	+3.3	-28.2	+0.0	+0.0 107	36.2	46.0	-9.8	Horiz 100
17	334.998M	43.8	+0.3 +16.9	+3.3	-28.2	+0.0	+0.0 146	36.1	46.0	-9.9	Horiz 153
18	119.996M	44.4	+0.2 +0.0	+1.9	-28.5	+14.9	+0.0	32.9	43.5	-10.6	Vert 100
19	130.007M	43.7	+0.2 +0.0	+1.9	-28.5	+15.5	+0.0 105	32.8	43.5	-10.7	Vert 100
20	163.604M	40.8	+0.3 +0.0	+2.2	-28.6	+17.7	+0.0 305	32.4	43.5	-11.1	Vert 100
21	150.008M	40.6	+0.2 +0.0	+2.1	-28.6	+17.2	+0.0 187	31.5	43.5	-12.0	Vert 100
22	169.979M	37.9	+0.3 +0.0	+2.3	-28.6	+17.5	+0.0 153	29.4	43.5	-14.1	Horiz 100
23	123.531M	40.5	+0.2 +0.0	+1.9	-28.5	+15.0	+0.0	29.1	43.5	-14.4	Vert 100

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **FCC 15.209**
Work Order #: **76953** Date: 08/28/2001
Test Type: **Maximized Emissions** Time: 16:55:59
Equipment: **Print Server** Sequence#: 14
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Ault, Inc.	P41050400A01RG	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	P156A	CMR1545596

Test Conditions / Notes:

The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Nothing above 8.36 GHz was detected. Temperature 24°C, Humidity 59%, Pressure 100kPa. Frequency tested: 1-25 GHz.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq	Rdng	Cable	Horn	HP830		Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	8350.923M	35.0	+9.7	+37.6	-38.3		+0.0	44.0	54.0	-10.0	Horiz
	Ave						105				100
2	8350.996M	34.7	+9.7	+37.6	-38.3		+0.0	43.7	54.0	-10.3	Vert
	Ave						328				100
3	4175.455M	42.7	+6.3	+32.6	-38.8		+0.0	42.8	54.0	-11.3	Vert
	Ave						180				100
4	4923.301M	38.3	+7.0	+33.9	-38.6		+0.0	40.6	54.0	-13.4	Vert
	Ave						361				100
5	4923.462M	37.9	+7.0	+33.9	-38.6		+0.0	40.2	54.0	-13.8	Horiz
	Ave						197				100
6	4175.467M	38.5	+6.3	+32.6	-38.8		+0.0	38.6	54.0	-15.4	Horiz
	Ave						149				100

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **15.247(d)**
Work Order #: **76953** Date: 08/28/2001
Test Type: **Maximized Emissions** Time: 10:59:49
Equipment: **Print Server** Sequence#: 9
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Ault, Inc.	P41050400A01RG	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	P156A	CMR1545596

Test Conditions / Notes:

The EUT (Print Server) and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is continuously transmitting. Temperature 23°C, Humidity 59%, Pressure 100kPa.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Cable dB	Cable dB	Horn dB	HP830 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2412.000M	107.4	+3.2	+4.6	+28.7	-39.5	+0.0	104.4	115.0	-10.6	Horiz
							132				100
2	2437.000M	106.3	+2.9	+4.6	+28.7	-39.5	+0.0	103.0	115.0	-12.0	Horiz
							131				100
3	2462.000M	105.9	+2.9	+4.7	+28.7	-39.5	+0.0	102.7	115.0	-12.3	Horiz
							110				100

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **FCC 15.207**
Work Order #: **77036** Date: 08/23/2001
Test Type: **Conducted Emissions** Time: 4:24:13 PM
Equipment: **Print Server** Sequence#: 5
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Potrans	RWP480505-2	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	950A	A5PY416008

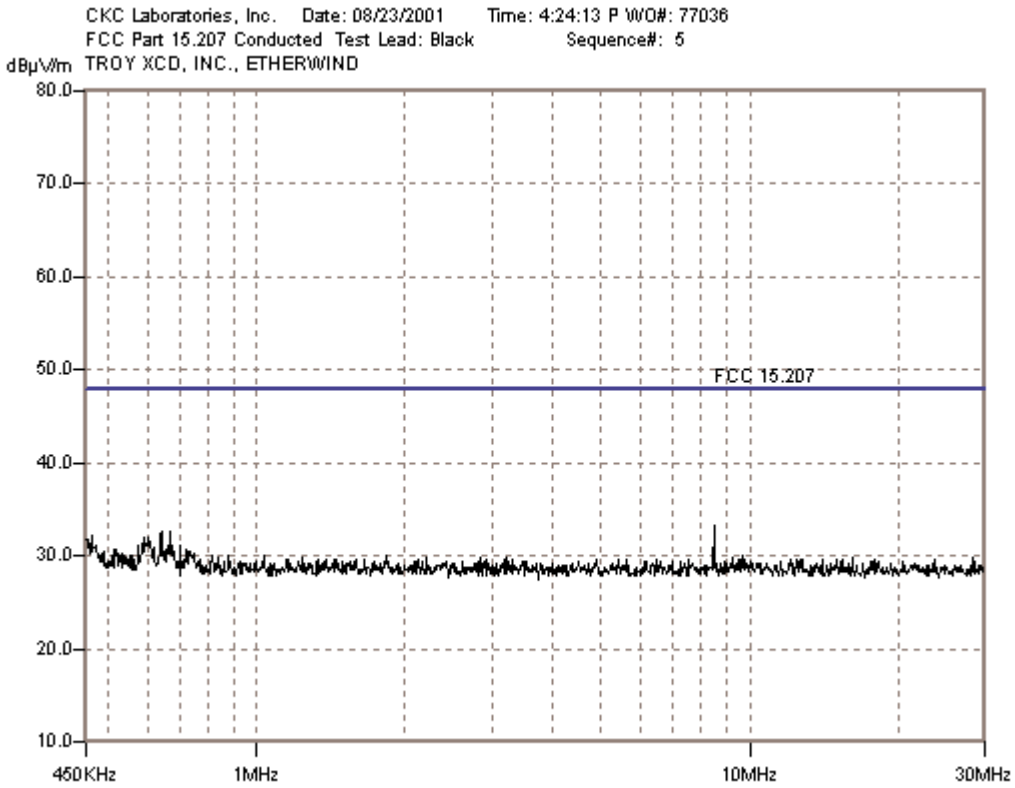
Test Conditions / Notes:

The EUT and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is in default mode. Voltage to the EUT is 110 Vac, 60 Hz. Temperature 23°C, Humidity 47%, Pressure 100kPa. Frequency range tested, 450 kHz to 30 MHz.

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	8.487M	33.2					+0.0	33.2	48.0	-14.8	Black
2	669.069k	32.7					+0.0	32.7	48.0	-15.3	Black
3	641.597k	32.6					+0.0	32.6	48.0	-15.4	Black
4	460.801k	32.1					+0.0	32.1	48.0	-15.9	Black
5	602.620k	32.0					+0.0	32.0	48.0	-16.0	Black
6	592.758k	32.0					+0.0	32.0	48.0	-16.0	Black
7	451.878k	31.8					+0.0	31.8	48.0	-16.2	Black
8	587.123k	31.4					+0.0	31.4	48.0	-16.6	Black
9	660.381k	31.2					+0.0	31.2	48.0	-16.8	Black
10	470.662k	31.2					+0.0	31.2	48.0	-16.8	Black
11	699.998k	31.1					+0.0	31.1	48.0	-16.9	Black
12	676.347k	31.1					+0.0	31.1	48.0	-16.9	Black

13	577.262k	31.1		+0.0	31.1	48.0	-16.9	Black
14	618.586k	31.0		+0.0	31.0	48.0	-17.0	Black
15	654.276k	30.8		+0.0	30.8	48.0	-17.2	Black
16	519.031k	30.8		+0.0	30.8	48.0	-17.2	Black
17	515.744k	30.8		+0.0	30.8	48.0	-17.2	Black
18	719.996k	30.7		+0.0	30.7	48.0	-17.3	Black
19	614.830k	30.6		+0.0	30.6	48.0	-17.4	Black
20	729.995k	30.4		+0.0	30.4	48.0	-17.6	Black
21	488.507k	30.4		+0.0	30.4	48.0	-17.6	Black
22	534.058k	30.2		+0.0	30.2	48.0	-17.8	Black
23	526.075k	30.2		+0.0	30.2	48.0	-17.8	Black
24	486.159k	30.2		+0.0	30.2	48.0	-17.8	Black
25	876.406k	30.1		+0.0	30.1	48.0	-17.9	Black
26	1.032M	30.0		+0.0	30.0	48.0	-18.0	Black
27	811.771k	30.0		+0.0	30.0	48.0	-18.0	Black
28	560.826k	30.0		+0.0	30.0	48.0	-18.0	Black
29	554.721k	30.0		+0.0	30.0	48.0	-18.0	Black
30	507.761k	30.0		+0.0	30.0	48.0	-18.0	Black


CKC Laboratories, Inc. Date: 08/23/2001 Time: 4:24:13 P WO#: 77036
FCC Part 15.207 Conducted Test Lead: Black Sequence#: 5
dBµV/m TROY XCD, INC., ETHERWIND
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC 15.207
450KHz
1MHz
10MHz
30MHz

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Troy XCD, Inc.**
Specification: **FCC 15.207**
Work Order #: **77036** Date: 08/23/2001
Test Type: **Conducted Emissions** Time: 4:29:50 PM
Equipment: **Print Server** Sequence#: 6
Manufacturer: Troy XCD, Inc. Tested By: Stuart Yamamoto
Model: EtherWind (Rev. D)
S/N: 00750099

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Print Server*	Troy XCD, Inc.	EtherWind (Rev. D)	00750099
AC Power Adapter	Potrans	RWP480505-2	

Support Devices:

Function	Manufacturer	Model #	S/N
Printer	Epson	950A	A5PY416008

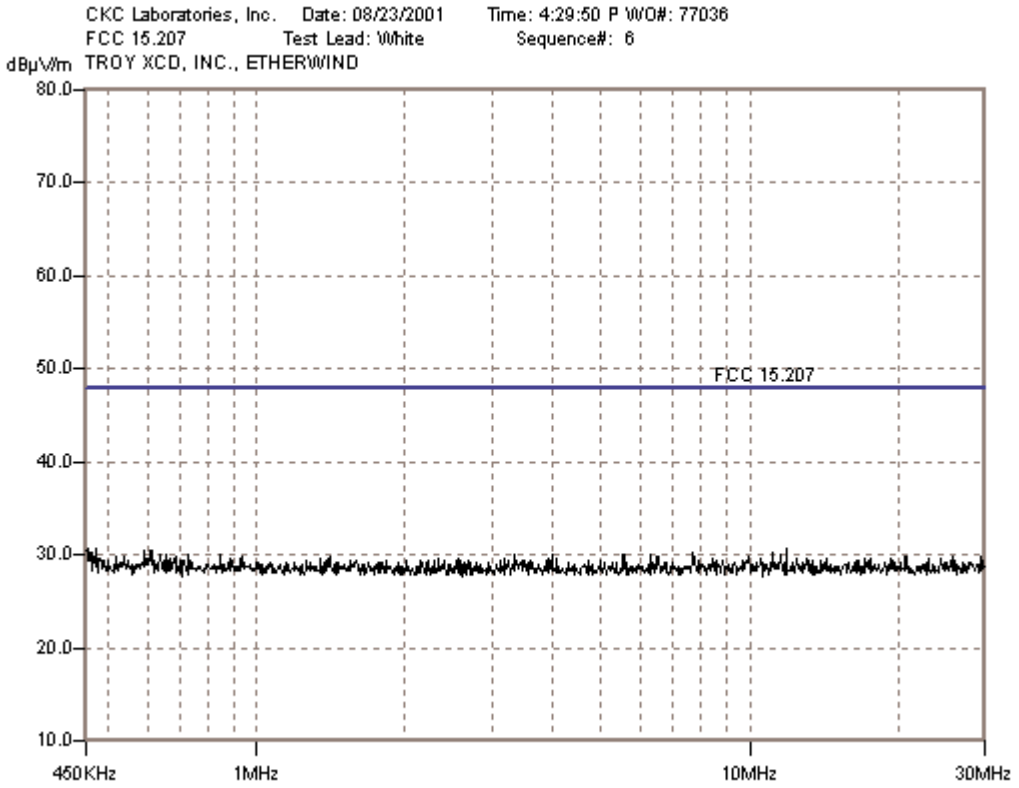
Test Conditions / Notes:

The EUT and support printer are located stand alone on the tabletop. The printer is connected to the parallel port of the EUT. The EUT is in default mode. Voltage to the EUT is 110 Vac, 60 Hz. Temperature 23°C, Humidity 47%, Pressure 100kPa. Frequency range tested, 450 kHz to 30 MHz.

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	472.541k	30.7					+0.0	30.7	48.0	-17.3	White
2	453.287k	30.7					+0.0	30.7	48.0	-17.3	White
3	11.842M	30.6					+0.0	30.6	48.0	-17.4	White
4	605.438k	30.5					+0.0	30.5	48.0	-17.5	White
5	594.167k	30.5					+0.0	30.5	48.0	-17.5	White
6	616.238k	30.4					+0.0	30.4	48.0	-17.6	White
7	11.184M	30.3					+0.0	30.3	48.0	-17.7	White
8	465.497k	30.3					+0.0	30.3	48.0	-17.7	White
9	458.922k	30.3					+0.0	30.3	48.0	-17.7	White
10	7.687M	30.2					+0.0	30.2	48.0	-17.8	White
11	5.556M	30.1					+0.0	30.1	48.0	-17.9	White
12	3.351M	30.1					+0.0	30.1	48.0	-17.9	White

13	730.709k	30.1		+0.0	30.1	48.0	-17.9	White
14	11.575M	30.0		+0.0	30.0	48.0	-18.0	White
15	6.322M	30.0		+0.0	30.0	48.0	-18.0	White
16	3.985M	30.0		+0.0	30.0	48.0	-18.0	White
17	843.552k	30.0		+0.0	30.0	48.0	-18.0	White
18	657.094k	30.0		+0.0	30.0	48.0	-18.0	White
19	634.553k	30.0		+0.0	30.0	48.0	-18.0	White
20	20.770M	29.9		+0.0	29.9	48.0	-18.1	White
21	6.517M	29.9		+0.0	29.9	48.0	-18.1	White
22	1.412M	29.9		+0.0	29.9	48.0	-18.1	White
23	536.406k	29.9		+0.0	29.9	48.0	-18.1	White
24	517.153k	29.9		+0.0	29.9	48.0	-18.1	White
25	29.588M	29.8		+0.0	29.8	48.0	-18.2	White
26	25.802M	29.8		+0.0	29.8	48.0	-18.2	White
27	9.985M	29.8		+0.0	29.8	48.0	-18.2	White
28	939.969k	29.8		+0.0	29.8	48.0	-18.2	White
29	683.861k	29.8		+0.0	29.8	48.0	-18.2	White
30	599.333k	29.7		+0.0	29.7	48.0	-18.3	White


CKC Laboratories, Inc. Date: 08/23/2001 Time: 4:29:50 P WO#: 77036
FCC 15.207 Test Lead: White Sequence#: 6
dBµV/m TROY XCD, INC., ETHERWIND
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC 15.207
450KHz
1MHz
10MHz
30MHz