Intertek Testing Services
ETL SEMKO

Originator's Report Number: 3051978
Project Number: 3051978
February 16, 2004

Evaluation of the

Access Point, Model: Optimist

to (checked standards)

FCC Part 15, Subpart B ☒

ETSI 301 489-1 ☒

VCCI V-3 / 2000.04 ☒

Class B

For
Colubris Networks

Date of Test: December 15, 2003 – February 16
Testing performed by:
Intertek Testing Services
70 Codman Hill Road
Boxborough, MA, 01719

Testing Authorized by:
Colubris Networks
420 Armand-Frappier Suite 200
QC, H7V 4B4 Canada

Prepared by: _____ Date: _____
Nicholas Abbondante

Reviewed by: _____ Date: _____
Michael F. Murphy

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1.0 INTRODUCTION

1.1 Scope

This report is designed to show compliance with the following standards:

- FCC Part 15, Subpart B rules for an unintentional radiator
- ETSI EN 301 489-1
- VCCI V-3 / 2000.04

The test procedures described in American National Standards Institute C63.4: 1992, VCCI V-3 / 2000.04, and CISPR 16-1: 1993 were employed. A description of the product and operating configurations, the various provisions of the rules, the methods for determining compliance and a detailed summary of the results are included within this test report.

1.2 Executive Summary

Colubris Networks Equipment Under Test: Access Point, Model: Optimist

Test Description	Class	Comments
Radiated Emissions		
• FCC Part 15	B	Pass
• ETSI EN 301 489-1	B	Pass
• VCCI	B	Pass
Harmonics & Flicker		
• ETSI EN 301 489-1	-	Pass
Conducted Emissions (AC Mains)		
• FCC Part 15	B	Pass
• ETSI EN 301 489-1	B	Pass
• VCCI	B	Pass

See section 1.9 for modifications required for compliance.

1.3 Job description

1.3.1 Client Information

The EUT has been tested at the request of

Company:	Colubris Networks 420 Armand-Frappier Suite 200 QC, H7V 4B4 Canada
Name of contact:	Mr. Claude Robitaille
Telephone:	450-680-1661
Fax:	450-680-1910

1.3.2 Equipment under test (EUT)

Equipment type:	Access Point
Model number(s):	Optimist
Part or serial number:	M033-00015
Manufacturer:	Colubris Networks
EUT receive date:	December 8, 2003
EUT received condition:	Good
EUT type:	Wireless LAN
Test start date:	December 15, 2003
Test end date:	February 16, 2004

1.3.3 Test plan reference

The test procedures described in American National Standards Institute C63.4: 1992, VCCI V-3 / 2000.04, and CISPR 16-1: 1993 were employed.

1.4 Brief Description of EUT and Received Condition

The Access Point, Model: Optimist, is a wireless LAN router conforming to the IEEE 802.11a/b/g standards. The normal temperature range of operation is from 0 to 50 degrees celsius. The Optimist unit contains one 802.11a/b/g radios. The EUT is capable of being powered via an AC power supply or through power over ethernet via a power injector.

A Production version of the sample was received on December 8, 2003 in good condition.

1.5 System Test Configuration

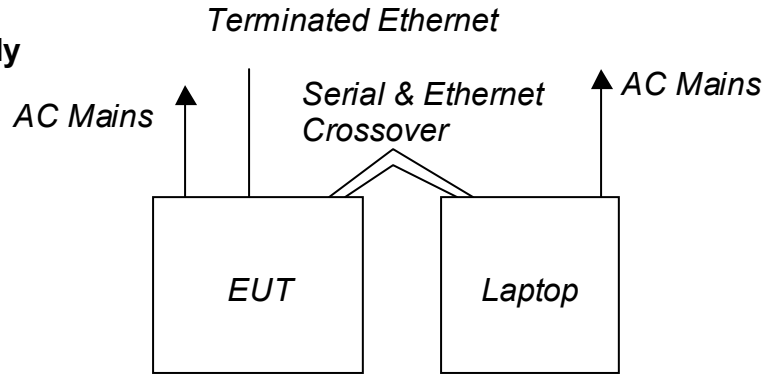
Support Equipment			
Description	**Manufacturer**	**Model Number**	**Serial Number**
Ethernet Power Injector (Power Over Ethernet)	PowerD Sine	PD-6001/AC	A03216040001249A01
AC Adapter (Sparkle Power Supply)	FSP Group, Inc.	FSP015-1AD201A	H00000025
AC Adapter (Delta Power Supply ADP-10SB)	Delta Electronics	ADP-10SB	4D24KD5615SC
AC Adapter (Delta Power Supply ADP-10MB)	Delta Electronics	ADP-10MB	DNT0104007805
Laptop	Dell	Latitude CPt	6V5IL

Cables					
Quantity	**Type**	**Length (m)**	**Shielding**	**Ferrite**	**Connector Type**
1	Ethernet Crossover Cable	2	Foil	None	Metal Side Plating
1	Ethernet Cable	4	Foil	None	Metal Side Plating
1	Serial Cable	1.5	None	None	Plastic
1	AC Adapter AC Cable	2	None	None	Plastic
1	AC Adapter DC Cable	2	None	Built-in	Metal/360

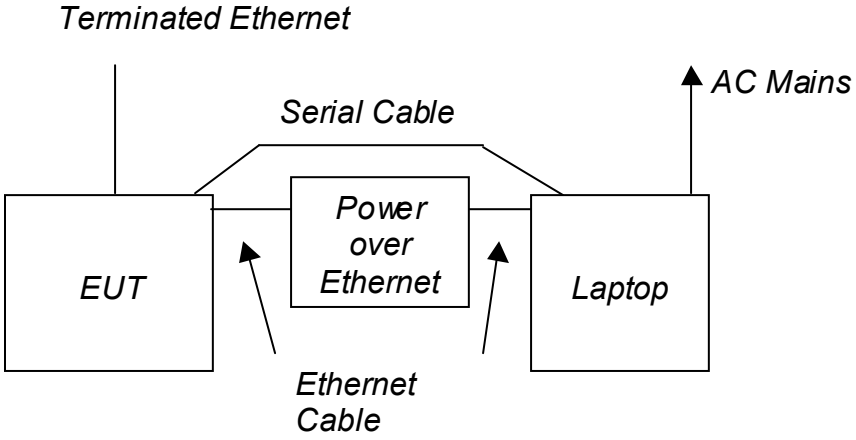
1.6 System Block Diagram

The diagram shown below details the interconnections of the equipment under test to the support equipment.

Power Supply



Power over Ethernet



1.7 EUT Operation and Exercise

The EUT was activated from nominal power and set to transmit normally.

1.8 Justifications

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in C63.4 (2000).

The arrangement of the cables dangling from the rear of the table was varied to the extent possible to produce the maximum emissions.

For maximizing emissions, the system was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported.

1.9 Modifications Required for Compliance

No modifications were installed during compliance testing in order to bring the product into compliance (Please note that this list does not include changes made specifically by Colubris Networks prior to compliance testing).

2.0 TEST ENVIRONMENT

2.1 Test Facility

Site 2C (Middle Site) is a 3m and 10m sheltered EMI measurement range located in a light commercial environment in Boxborough, Massachusetts. It meets the technical requirements of ANSI C63.4-1992 and CISPR 22:1993/EN 55022:1994 for radiated and conducted emission measurements. The shelter structure is entirely fiberglass and plastic, with outside dimensions of 33 ft x 57 ft. The structure resembles a quonset hut with a center ceiling height of 16.5 ft.

The testing floor is covered by a galvanized sheet metal groundplane that is earth-grounded via copper rods around the perimeter of the site. The joints between individual metal sheets are bridged with 2 inch wide metal strips to provide low RF impedance contact throughout. The sheets of metal are screwed in place with stainless steel, round-head screws every three inches. Site illumination and HVAC are provided from beneath the ground reference plane through flush entry ports, the port covers are electrically bonded to the ground plane.

A flush metal turntable with 12 ft. diameter and 5000 lb. load capacity is provided for floor-standing equipment. A wooden table 80 cm high is used for table-top equipment. The turntable is electrically connected to the ground plane with three copper straps. The straps are connected to the turntable at the center of it with ground braid. A copper strap is directly connected to the groundplane at the edges of the turntable. The turntable is located on the south end of the structure and the antennas are mounted 3 and 10 meters away to the north. The antenna mast is a non-conductive with remote control of antenna height and polarization. The antenna height is adjustable from 1 to 4 meters.

All final radiated emission measurements are performed with the testing personnel and measurement equipment located below the ground reference plane. The site has a full basement underneath the turntable where support equipment may be remotely located. Operation of the antenna, turntable and equipment under test is controlled by remote controls that manipulate the antenna height and polarization with a turntable control. Test personnel are located below the ellipse when measurements are performed, however the site maintains the ability of having personnel manipulate cables while monitoring test equipment. Ambient radiated emissions are 6 dB or more below the relevant FCC emission limits.

AC mains power is brought to the equipment under test through a power line filter, to remove ambient conducted noise. 50 Hz (240 VAC single phase), 60 Hz power (120 VAC single phase, 208 VAC three phase), and 60 Hz (480 VAC three phase) are available. Conducted emission measurements are performed with a Line Impedance Stabilization Network (LISN) or Artificial Mains Network (AMN) bonded to the ground reference plane. A removable vertical groundplane (2 meter X 2 meter area) is used for line-conducted measurements for table top equipment. The vertical groundplane is electrically connected to the reference groundplane.

2.2 Test Equipment

Table 2.1 contains a list of the test equipment used during the testing.

Table 2.1 Test Equipment

Description	Manufacturer	Model Number	ITS ID	Serial Number	Cal Due Date
Antenna	EMCO	3142	LOG4	9711-1225	02/18/2004
EMI Receiver Set	Hewlett Packard	8542E	REC2	3520A00125	12/18/2004
RF Filter	Hewlett Packard	85420E	RECFL2	3427A00126	12/18/2004
Spectrum Analyzer	Rohde & Schwarz	FSEK-30	ROS001	100225	05/26/2004
Spectrum Analyer	Agilent	E7405A	AGL001	US40240205	07/02/2004
Attenuator	Mini Circuits	20 dB, 50 Ohm	DS21	DS21	07/08/2004
LISN, 50 uH, 0.01-50 MHz, 24A	Solar Electronics	9252-50-R-24-BNC	LISN11	941713	05/29/2004
Cable, BNC-BNC 10m	Alpha	RG-58C/U	CBLBNC2	CBLBNC2	07/20/2004
Digital Multimeter	Fluke	87	SAF270	52951774	02/24/2004
LISN, 50 uH, 0.01-50 MHz, 24A	Solar Electronics	9252-50-R-24-BNC	LISN13	955107	03/11/2004
Cable, BNC-BNC 10m	Alpha	RG-58C/U	CBL10MS3	CBL10MS3	01/07/2004+
Variac	Powerstat	3PN236B	POW4	POW4	*
Attenuator	Mini Circuits	20 dB, 50 Ohm	DS26A	DS26A	01/07/2004+
Digital Multimeter	BK Precision	391	SAF013	099050522	5/19/2004
Digital 4 Line Barometer	Mannix	0ABA116	BAR2	BAR2	07/09/2004

+ - Note that these items were used prior to the calibration due date

* - AC Power Voltage was verified using a digital multimeter, listed in the test equipment section.

2.3 Field Strength Calculation

The following is how net radiated field strength readings were determined:

NF = RF + AF + CF - PF - AVF - DF

Where,

NF = Net Reading in dBµV/m
RF = Reading from receiver in dBµV
AF = Antenna Correction Factor in dB(1/m)
CF = Cable Correction Factor in dB
PF = Pre-Amplifier Correction Factor in dB
AVF = Duty Cycle Correction Factor in dB (only if applicable)
DF = Distance Factor in dB (using 20 dB/decade unless otherwise specified)

To convert from dBµV/m to µV/m or mV/m the following was used:

$UF = 10^{(NF / 20)}$

Where,

UF = Net Reading in µV/m

Example:

NF = RF + AF + CF - PF - AVF - DF = 62.9 + 13.7 + 2.1 - 16.1 - 0.0 - 10.5 = 52.1 dBµV/m

$UF = 10^{(52.1\ dB\mu V / 20)} = 403\ \mu V/m$

2.4 Measurement Uncertainty

The expanded uncertainty (k = 2) for radiated emissions from 30 to 1000 MHz has been determined to be:

±4 dB at 10m, ±5.4 dB at 3m

The expanded uncertainty (k = 2) for mains conducted emissions from 150 kHz to 30 MHz has been determined to be:

±2.6 dB

3.0 ELECTROMAGNETIC RADIATION DISTURBANCE

3.1 Test Limits

Radiated Disturbance Limit for FCC, ETSI EN 301 489-1, and VCCI

Radiated Emission Limits at 10 meters		
Frequency (MHz)	Class A Quasi-Peak limits, dB (μV/m)	Class B Quasi-Peak limits, dB (μV/m) (1)
30 to 230	40	30
230 to 1000	47	37

(1) *Note: If the field strength measurement at 10m cannot be made because of high ambient noise levels or for other reasons, measurement of Class B EUT's may be made at a closer distance, for example 3m. An inverse proportionality factor of 20 dB per decade should be used to normalize the measured data to the specific distance for determining compliance. For example, a factor of –10.5 dB should be applied to a reading taken at 3 meters*

3.2 Test Procedure

Measurements are conducted with a quasi-peak detector instrument in the frequency range of 30 MHz to 1000 MHz. The measuring receiver meets the requirements of Section One of CISPR 16 and the measuring antenna correlates to a balanced dipole.
Measurements of the radiated field are made with the antenna located at a distance of 10 meters from the EUT. If the field-strength measurements at 10m cannot be made because of high ambient noise level or for other reasons, measurements of Class B equipment may be made at a closer distance, for example 3m. An inverse proportionality factor of 20 dB per decade should be used to normalize the measured data to the specified distance for determining compliance.
The antenna is adjusted between 1m and 4m in height above the ground plane for maximum meter reading at each test frequency.
The antenna-to-EUT azimuth is varied during the measurement to find the maximum field-strength readings.
The antenna-to-EUT polarization (horizontal and vertical) is varied during the measurements to find the maximum field-strength readings.
Equipment setup for radiated disturbance tests followed the guidelines of ANSI C63.4: 1992, ETSI EN 301 489-1, VCCI V-3 / 2000.04.

3.3 Test Results

The test results are located in Table 3.3-1.

3.4 Test Configuration Photograph

Figures 3.4-1 and 3.4-2 show the testing configurations used.

Table 3.3-1: Radiated Disturbance

Radiated Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist Platform
Engineer:	Nicholas Abbondante	Location:	Site 2	Serial #:	M033-00015
Project #:	3051978	Pressure:	985 mb	Receiver:	Agilent E7405A
Date:	12/18/03	Temp:	17c	Antenna:	LOG4 2-18-04 V10.ant LOG4 2-18-04 H10.ant
Standard:	CISPR 22	Humidity:	33%	PreAmp:	None
Class:	B	Group:	1	Cable(s):	Site2, 10M Floor 3-22-04.cbl None
Limit Distance:	10 meters			Test Distance:	10 meters
Voltage/Frequency:	120V / 60 Hz			Frequency Range:	30 MHz - 1 GHz

Ant. Pol. (V/H)	Frequency MHz	Reading dB(uV)	Antenna Factor dB(1/m)	Cable Loss dB	Pre-amp Factor dB	Distance Factor dB	Net dB(uV/m)	Limit dB(uV/m)	Margin dB
V	62.220	21.5	7.1	1.1	0.0	0.0	29.8	30.0	-0.2
V	85.330	14.8	7.3	1.4	0.0	0.0	23.6	30.0	-6.4
V	114.900	8.6	7.4	1.6	0.0	0.0	17.6	30.0	-12.4
V	138.400	11.2	7.5	1.8	0.0	0.0	20.5	30.0	-9.5
V	268.300	11.1	12.9	2.7	0.0	0.0	26.7	37.0	-10.3
V	300.500	7.8	14.0	2.8	0.0	0.0	24.6	37.0	-12.4

Figure 3.4-1 Radiated Emission Front View

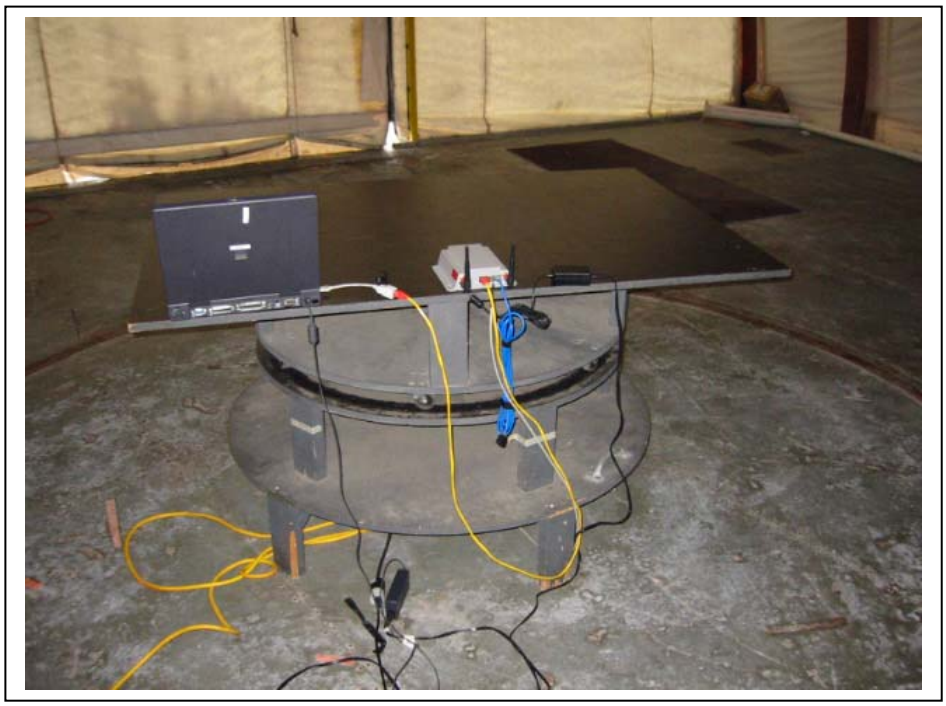


Figure 3.4-2 Radiated Emission Rear View

4.0 AC MAINS LINE-CONDUCTED DISTURBANCE

4.1 Test Limits

FCC, ETSI EN 301 489-1, and VCCI Limits for Mains Ports Conducted Disturbances

Frequency band MHz	Class A Limit (dBµV)		Class B Limit (dBµV)	
	Quasi-Peak	Average	Quasi-Peak	Average
0.15-0.50	79	66	66 to 56*	56 to 46*
0.50-5.00	73	60	56	46
5.00-30.00	73	60	60	50

** The limit decreases linearly with the logarithm of the frequency in the range of 0.15 MHz to 0.50 MHz.*
Note: The lower limit shall apply at the transition frequency

4.2 Test Procedure

Measurements are carried out using quasi-peak and average detector receivers in accordance with CISPR 16. An AMN is required to provide a defined impedance at high frequencies across the power feed at the point of measurement of terminal voltage and also to provide isolation of the circuit under test from the ambient noise on the power lines. An AMN as defined in CISPR 16 shall be used.
The EUT is located so that the distance between the boundary of the EUT and the closest surface of the AMN is 0.8m.
Where a flexible mains cord is provided by the manufacturer, this shall be 1m long or if in excess of 1m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4m in length.
The EUT is arranged and connected with cables terminated in accordance with the product specification.
Conducted disturbance is measured between the phase lead and the reference ground, and between the neutral lead and the reference ground. Both measured values are reported.
The EUT, where intended for table-top use, is placed 0.4m from a vertical metal reference plane of at least 2m by 2m and shall be kept at least 0.8m from any other metal surface or other ground plane not being part of the EUT.
Floor standing EUTs are place on a horizontal metal ground plane, the point(s) of contact being consistent with normal use but not in metallic contact with the ground plane. The metal ground plane extends at least 0.5m beyond the boundaries of the EUT and has minimum dimensions of 2m by 2m.
Equipment setup for conducted disturbance tests followed the guidelines of ANSI C63.4: 1992, ETSI EN 301 489-1, VCCI V-3 / 2000.04.

4.3 Test Results

The test results are located in Tables 4.3-1 through 4.3-12.

4.4 Test Configuration Photographs

Figures 4.4-1 through 4.4-8 show the testing configurations used.

Table 4.3-1 & 2: FCC Part 15 Conducted Emissions at AC Main Power over Ethernet and Delta Power Supply ADP-10MB

Conducted Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist Platform	
Engineer:	Nicholas Abbondante	Location:	Site 2	Serial #:	M033-00015	
Project #:	3051978	Pressure:	985mb	Receiver:	HP 8546A	
Date:	12/13/03	Temp:	17c	Cable:	CBL10MS3 1-7-04.cbl	
Standard:	CISPR 22	Humidity:	49%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn	LISN13 [2] 3-11-04.lsn
Class:	B	Group:	1	LISN 3, N:	None	None
Preamp:	None			Attenuator:	DS26A 1-7-04.att	
Voltage/Frequency:	PoE - 120V/60Hz			Frequency Range:	150 kHz - 30 MHz	

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Power Over Ethernet

Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Neutral dB(uV)	Quasi-Peak Net dB(uV)	Quasi-Peak Limit dB(uV)	Quasi-Peak Margin dB
0.263	24.5	26.5			48.9	61.3	-12.4
0.957	20.2	20.2			41.5	56.0	-14.5
1.651	19.2	18.9			40.2	56.0	-15.8
8.148	15.4	17.2			38.4	60.0	-21.6
17.350	13.5	11.9			35.1	60.0	-24.9
29.660	9.1	8.3			31.1	60.0	-28.9

Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Neutral dB(uV)	Average Net dB(uV)	Average Limit dB(uV)	Average Margin dB
0.263	17.1	20.0			42.4	51.3	-8.9
0.957	5.7	7.3			28.6	46.0	-17.4
1.651	-0.7	2.1			23.1	46.0	-22.9
8.148	0.4	2.3			23.5	50.0	-26.5
17.350	-1.7	-3.1			21.4	50.0	-28.6
29.660	-4.3	-5.5			21.6	50.0	-28.4

Conducted Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist Platform	
Engineer:	Nicholas Abbondante	Location:	Site 2	Serial #:	M033-00015	
Project #:	3051978	Pressure:	985mb	Receiver:	HP 8546A	
Date:	12/13/03	Temp:	17c	Cable:	CBL10MS3 1-7-04.cbl	
Standard:	CISPR 22	Humidity:	49%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn	LISN13 [2] 3-11-04.lsn
Class:	B	Group:	1	LISN 3, N:	None	None
Preamp:	None			Attenuator:	DS26A 1-7-04.att	
Voltage/Frequency:	120V/60Hz			Frequency Range:	150 kHz - 30 MHz	

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Delta Power Supply ADP-10MB

Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Neutral dB(uV)	Quasi-Peak Net dB(uV)	Quasi-Peak Limit dB(uV)	Quasi-Peak Margin dB
0.161	13.3	29.1			52.2	65.4	-13.3
0.444	16.0	15.9			37.8	57.0	-19.2
3.856	12.0	11.8			33.1	56.0	-22.9
11.930	19.2	16.4			40.5	60.0	-19.5
17.840	26.8	21.0			48.5	60.0	-11.5
19.000	18.1	24.4			46.1	60.0	-13.9

Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Neutral dB(uV)	Average Net dB(uV)	Average Limit dB(uV)	Average Margin dB
0.161	-9.4	13.5			36.6	55.4	-18.9
0.444	13.2	10.0			34.9	47.0	-12.1
3.856	-0.4	1.9			23.0	46.0	-23.0
11.930	14.1	14.3			35.6	50.0	-14.4
17.840	23.2	17.4			44.9	50.0	-5.1
19.000	14.3	20.9			42.6	50.0	-7.4

Table 4.3-3: FCC Part 15 Conducted Emissions at AC Main Delta Power Supply ADP-10SB

Conducted Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist w/Delta P.S
Engineer:	Jeff Goulet	Location:	Site 2	Serial #:	M033-00015
Project #:	3051978	Pressure:	1018mb	Receiver:	HP 8542E
Date:	02/16/04	Temp:	21c	Cable:	CBLBNC2 7-20-04.cbl
Standard:	CISPR 22	Humidity:	23%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn LISN13 [2] 3-11-04.lsn
Class:	B	Group:	None	LISN 3, N:	None None
Preamp:	None			Attenuator:	DS21 7-08-04.att
Voltage/Frequency:		120V/60Hz		Frequency Range:	0.15-30MHz

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Delta Power Supply ADP-10SB

	Reading	Reading			Quasi-Peak		
Frequency MHz	Line 1 dB(uV)	Line 2 dB(uV)			Net dB(uV)	Limit dB(uV)	Margin dB
0.223	26.9	26.9			48.8	62.7	-13.9
0.425	15.9	16.4			37.5	57.4	-19.8
1.105	19.6	19.8			40.1	56.0	-15.9
1.318	19.3	17.1			39.5	56.0	-16.5
1.886	13.6	14.7			35.0	56.0	-21.0
25.000	7.3	9.6			30.5	60.0	-29.5
28.760	1.1	2.6			23.5	60.0	-36.5

	Reading	Reading			Average		
Frequency MHz	Line 1 dB(uV)	Line 2 dB(uV)			Net dB(uV)	Limit dB(uV)	Margin dB
0.223	17.0	14.4			38.9	52.7	-13.8
0.425	7.2	6.8			28.2	47.4	-19.2
1.105	4.6	5.5			25.8	46.0	-20.2
1.318	2.4	-0.6			22.6	46.0	-23.4
1.886	-1.9	-1.6			20.1	46.0	-25.9
25.000	4.2	7.0			27.9	50.0	-22.1
28.760	-5.0	-2.9			20.5	50.0	-29.5

Table 4.3-4: FCC Part 15 Conducted Emissions at AC Main Sparkle Power Supply

Conducted Emissions / Interference

Company:	Colubris Netwroks			Model #:	Optimist w/ Sparkle P.S	
Engineer:	Jeff Goulet	Location:	Site 2	Serial #:	M033-00015	
Project #:	3051978	Pressure:	1002mb	Receiver:	HP 8542E	
Date:	02/13/04	Temp:	22c	Cable:	CBLBNC2 7-20-04.cbl	
Standard:	CISPR 22	Humidity:	24%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn	LISN13 [2] 3-11-04.lsn
Class:	B	Group:	None	LISN 3, N:	None	None
Preamp:	None			Attenuator:	DS21 7-08-04.att	
Voltage/Frequency:		120V/60Hz		Frequency Range:	0.15-30MHz	

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Sparkle Power Supply

	Reading	Reading			Quasi-Peak		
Frequency MHz	Line 1 dB(uV)	Line 2 dB(uV)			Net dB(uV)	Limit dB(uV)	Margin dB
0.160	27.6	27.6			49.9	65.5	-15.6
0.213	22.0	24.2			46.1	63.1	-17.0
0.369	13.8	10.4			34.9	58.5	-23.6
1.423	7.8	8.3			28.6	56.0	-27.4
1.897	4.4	1.4			24.8	56.0	-31.2
2.424	8.0	6.8			28.4	56.0	-27.6
2.955	4.9	5.3			25.6	56.0	-30.4
3.475	7.7	4.0			28.1	56.0	-27.9
4.006	8.7	7.2			29.1	56.0	-26.9
4.481	7.5	6.2			27.9	56.0	-28.1
15.910	7.5	6.5			28.1	60.0	-31.9
17.840	14.0	12.5			34.7	60.0	-25.3
18.980	11.0	6.4			31.8	60.0	-28.2
20.000	7.5	2.4			28.3	60.0	-31.7

	Reading	Reading			Average		
Frequency MHz	Line 1 dB(uV)	Line 2 dB(uV)			Net dB(uV)	Limit dB(uV)	Margin dB
0.160	19.1	17.5			41.4	55.5	-14.1
0.213	16.4	18.3			40.2	53.1	-12.9
0.369	12.9	6.3			34.0	48.5	-14.5
1.423	7.0	7.5			27.8	46.0	-18.2
1.897	-0.3	-5.6			20.1	46.0	-25.9
2.424	7.4	4.0			27.8	46.0	-18.2
2.955	-2.3	2.9			23.2	46.0	-22.8
3.475	2.0	-3.6			22.4	46.0	-23.6
4.006	5.4	3.9			25.8	46.0	-20.2
4.481	-0.3	-1.1			20.2	46.0	-25.8
15.910	-1.6	-0.6			20.4	50.0	-29.6
17.840	12.9	8.9			33.6	50.0	-16.4
18.980	8.6	1.2			29.4	50.0	-20.6
20.000	3.4	-1.7			24.2	50.0	-25.8

Table 4.3-5 & 6: ETSI EN 301 489-1 AC Main Conducted Emissions Power Over Ethernet and Delta Power Supply ADP-10MB

Conducted Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist Platform	
Engineer:	Nicholas Abbondante	Location:	Site 2	Serial #:	M033-00015	
Project #:	3051978	Pressure:	985mb	Receiver:	HP 8546A	
Date:	12/13/03	Temp:	17c	Cable:	CBL10MS3 1-7-04.cbl	
Standard:	CISPR 22	Humidity:	49%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn	LISN13 [2] 3-11-04.lsn
Class:	B	Group:	1	LISN 3, N:	None	None
Preamp:	None			Attenuator:	DS26A 1-7-04.att	
Voltage/Frequency:	PoE - 230V/50Hz			Frequency Range:	150 kHz - 30 MHz	

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Power Over Ethernet

	Reading	Reading	Reading	Reading	Quasi-Peak		
Frequency	Line 1	Line 2	Line 3	Neutral	Net	Limit	Margin
MHz	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB
0.158	29.3	29.1			52.4	65.6	-13.2
0.542	22.2	21.9			43.7	56.0	-12.3
1.603	18.5	17.8			39.5	56.0	-16.5
8.764	17.2	18.3			39.5	60.0	-20.5
17.840	11.2	14.2			35.9	60.0	-24.1
29.550	7.1	9.8			31.8	60.0	-28.2

	Reading	Reading	Reading	Reading	Average		
Frequency	Line 1	Line 2	Line 3	Neutral	Net	Limit	Margin
MHz	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB
0.158	-1.6	-1.9			21.5	55.6	-34.1
0.542	6.4	10.7			32.4	46.0	-13.6
1.603	2.5	2.0			23.5	46.0	-22.5
8.764	2.4	3.0			24.2	50.0	-25.8
17.840	-2.1	7.8			29.5	50.0	-20.5
29.550	-6.2	-4.2			21.6	50.0	-28.4

Conducted Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist Platform	
Engineer:	Nicholas Abbondante	Location:	Site 2	Serial #:	M033-00015	
Project #:	3051978	Pressure:	985mb	Receiver:	HP 8546A	
Date:	12/13/03	Temp:	17c	Cable:	CBL10MS3 1-7-04.cbl	
Standard:	CISPR 22	Humidity:	49%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn	LISN13 [2] 3-11-04.lsn
Class:	B	Group:	1	LISN 3, N:	None	None
Preamp:	None			Attenuator:	DS26A 1-7-04.att	
Voltage/Frequency:	230V/50Hz			Frequency Range:	150 kHz - 30 MHz	

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Delta Power Supply ADP-10MB

	Reading	Reading	Reading	Reading	Quasi-Peak		
Frequency	Line 1	Line 2	Line 3	Neutral	Net	Limit	Margin
MHz	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB
0.160	24.2	-3.5			47.3	65.5	-18.2
0.427	12.4	15.8			37.7	57.3	-19.6
3.856	17.2	16.2			38.3	56.0	-17.7
11.930	18.8	20.1			41.4	60.0	-18.6
17.150	23.0	12.3			44.6	60.0	-15.4
19.000	23.6	21.2			45.3	60.0	-14.7

	Reading	Reading	Reading	Reading	Average		
Frequency	Line 1	Line 2	Line 3	Neutral	Net	Limit	Margin
MHz	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB(uV)	dB
0.160	-7.0	-7.8			20.7	55.5	-34.8
0.427	-4.6	14.0			35.9	47.3	-11.4
3.856	9.8	2.8			30.9	46.0	-15.1
11.930	16.2	14.8			37.5	50.0	-12.5
17.150	20.5	-0.2			42.1	50.0	-7.9
19.000	21.0	19.2			42.7	50.0	-7.3

Table 4.3-7: ETSI EN 301 489-1 AC Main Conducted Emissions Delta Power Supply ADP-10SB

Conducted Emissions / Interference

Company:	Colubris Networks		Model #:	Optimist w/Delta P.S	
Engineer:	Jeff Goulet	Location: Site 2	Serial #:	M033-00015	
Project #:	3051978	Pressure: 1018mb	Receiver:	HP 8542E	
Date:	02/16/04	Temp: 21c	Cable:	CBLBNC2 7-20-04.cbl	
Standard:	CISPR 22	Humidity: 23%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn	LISN13 [2] 3-11-04.lsn
Class:	B	Group: None	LISN 3, N:	None	None
Preamp:	None		Attenuator:	DS21 7-08-04.att	
Voltage/Frequency:	230V/50Hz		Frequency Range:	0.15-30MHz	

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Delta Power Supply ADP-10SB

	Reading	Reading			Quasi-Peak		
Frequency	Line 1	Line 2			Net	Limit	Margin
MHz	dB(uV)	dB(uV)			dB(uV)	dB(uV)	dB
0.273	30.7	27.2			52.3	61.0	-8.8
0.421	28.4	28.8			49.9	57.4	-7.5
1.126	24.1	27.2			47.5	56.0	-8.5
1.398	25.9	24.4			46.1	56.0	-9.9
1.889	22.1	21.4			42.5	56.0	-13.5
2.378	24.4	24.8			45.1	56.0	-10.9
2.973	20.1	22.1			42.4	56.0	-13.6
3.502	16.3	16.0			36.7	56.0	-19.3
4.050	15.1	17.7			38.1	56.0	-17.9
10.050	11.8	11.5			32.2	60.0	-27.8
25.000	10.2	9.3			31.1	60.0	-28.9

	Reading	Reading			Average		
Frequency	Line 1	Line 2			Net	Limit	Margin
MHz	dB(uV)	dB(uV)			dB(uV)	dB(uV)	dB
0.273	16.3	22.6			44.2	51.0	-6.9
0.421	15.8	23.5			44.6	47.4	-2.8
1.126	14.7	19.1			39.4	46.0	-6.6
1.398	14.4	14.0			34.6	46.0	-11.4
1.889	4.8	4.7			25.2	46.0	-20.8
2.378	16.5	17.4			37.7	46.0	-8.3
2.973	6.2	3.5			26.6	46.0	-19.4
3.502	4.3	3.2			24.7	46.0	-21.3
4.050	3.8	6.1			26.5	46.0	-19.5
10.050	-0.2	-1.4			20.2	50.0	-29.8
25.000	7.2	6.1			28.1	50.0	-21.9

Table 4.3-8: ETSI EN 301 489-1 AC Mains Conducted Emissions Sparkle Power Supply

Conducted Emissions / Interference

Company:	Colubris Netwroks			Model #:	Optimist w/ Sparkle P.S
Engineer:	Jeff Goulet	Location:	Site 2	Serial #:	M033-00015
Project #:	3051978	Pressure:	1002mb	Receiver:	HP 8542E
Date:	02/13/04	Temp:	22c	Cable:	CBLBNC2 7-20-04.cbl
Standard:	CISPR 22	Humidity:	24%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn LISN13 [2] 3-11-04.lsn
Class:	B	Group:	None	LISN 3, N:	None None
Preamp:	None			Attenuator:	DS21 7-08-04.att
Voltage/Frequency:	230V/50Hz			Frequency Range:	0.15-30MHz

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Sparkle Power Supply

	Reading	Reading			Quasi-Peak		
Frequency MHz	Line 1 dB(uV)	Line 2 dB(uV)			Net dB(uV)	Limit dB(uV)	Margin dB
0.160	36.5	36.4			58.8	65.5	-6.7
0.213	35.9	35.4			57.8	63.1	-5.3
0.369	16.5	16.2			37.6	58.5	-20.9
1.423	5.1	7.7			28.0	56.0	-28.0
1.897	8.1	3.5			28.5	56.0	-27.5
2.436	10.6	6.8			31.0	56.0	-25.0
2.965	9.1	6.6			29.5	56.0	-26.5
3.494	8.3	5.6			28.7	56.0	-27.3
4.024	6.7	2.7			27.1	56.0	-28.9
4.501	7.1	5.7			27.5	56.0	-28.5
15.940	10.5	8.9			31.1	60.0	-28.9
17.850	11.3	10.7			32.0	60.0	-28.0
19.010	8.3	7.8			29.1	60.0	-30.9
20.020	8.5	7.6			29.3	60.0	-30.7
20.330	7.1	6.2			27.9	60.0	-32.1

	Reading	Reading			Average		
Frequency MHz	Line 1 dB(uV)	Line 2 dB(uV)			Net dB(uV)	Limit dB(uV)	Margin dB
0.160	9.9	9.1			32.2	55.5	-23.3
0.213	4.0	11.9			33.8	53.1	-19.3
0.369	2.1	4.2			25.5	48.5	-23.1
1.423	0.9	4.5			24.8	46.0	-21.2
1.897	6.2	-0.1			26.6	46.0	-19.4
2.436	10.0	5.8			30.4	46.0	-15.6
2.965	8.4	5.9			28.8	46.0	-17.2
3.494	4.1	5.0			25.4	46.0	-20.6
4.024	-2.3	-1.1			20.2	46.0	-25.8
4.501	3.1	3.9			24.3	46.0	-21.7
15.940	6.5	4.3			27.1	50.0	-22.9
17.850	8.1	7.9			28.8	50.0	-21.2
19.010	5.4	2.7			26.2	50.0	-23.8
20.020	4.9	3.6			25.7	50.0	-24.3
20.330	1.9	1.0			22.7	50.0	-27.3

Table 4.3-9 & 10: VCCI AC Mains Conducted Disturbance Power Over Ethernet and Delta Power Supply ADP-10MB

Conducted Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist Platform
Engineer:	Nicholas Abbondante	Location:	Site 2	Serial #:	M033-00015
Project #:	3051978	Pressure:	985mb	Receiver:	HP 8546A
Date:	12/13/03	Temp:	17c	Cable:	CBL10MS3 1-7-04.cbl
Standard:	VCCI	Humidity:	49%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn LISN13 [2] 3-11-04.lsn
Class:	B	Group:	1	LISN 3, N:	None None
Preamp:	None			Attenuator:	DS26A 1-7-04.att
Voltage/Frequency:	PoE - 100V/60Hz			Frequency Range:	150 kHz - 30 MHz

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Power Over Ethernet

Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Neutral dB(uV)	Quasi-Peak Net dB(uV)	Quasi-Peak Limit dB(uV)	Quasi-Peak Margin dB
0.266	24.8	20.0			47.2	61.2	-14.0
0.808	18.4	18.6			40.2	56.0	-15.8
1.505	15.1	15.6			36.6	56.0	-19.4
8.755	11.8	13.6			34.8	60.0	-25.2
21.750	10.5	17.0			38.8	60.0	-21.2
29.790	8.8	8.8			30.8	60.0	-29.2

Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Neutral dB(uV)	Average Net dB(uV)	Average Limit dB(uV)	Average Margin dB
0.266	19.6	14.9			42.0	51.2	-9.2
0.808	5.7	5.9			27.5	46.0	-18.5
1.505	-0.5	0.3			21.3	46.0	-24.7
8.755	-1.9	-1.8			21.0	50.0	-29.0
21.750	5.9	14.1			35.9	50.0	-14.1
29.790	-5.0	-4.5			21.6	50.0	-28.4

Conducted Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist Platform
Engineer:	Nicholas Abbondante	Location:	Site 2	Serial #:	M033-00015
Project #:	3051978	Pressure:	985mb	Receiver:	HP 8546A
Date:	12/13/03	Temp:	17c	Cable:	CBL10MS3 1-7-04.cbl
Standard:	VCCI	Humidity:	49%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn LISN13 [2] 3-11-04.lsn
Class:	B	Group:	1	LISN 3, N:	None None
Preamp:	None			Attenuator:	DS26A 1-7-04.att
Voltage/Frequency:	100V/60Hz			Frequency Range:	150 kHz - 30 MHz

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Delta Power Supply ADP-10MB

Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Neutral dB(uV)	Quasi-Peak Net dB(uV)	Quasi-Peak Limit dB(uV)	Quasi-Peak Margin dB
0.151	33.7	31.1			56.8	65.9	-9.1
0.456	15.8	16.5			38.3	56.8	-18.4
3.933	10.1	11.0			32.1	56.0	-23.9
11.930	16.0	25.9			47.2	60.0	-12.8
17.840	20.9	19.2			42.6	60.0	-17.4
21.740	13.6	25.0			46.8	60.0	-13.2

Frequency MHz	Reading Line 1 dB(uV)	Reading Line 2 dB(uV)	Reading Line 3 dB(uV)	Reading Neutral dB(uV)	Average Net dB(uV)	Average Limit dB(uV)	Average Margin dB
0.151	16.0	15.7			39.1	55.9	-16.8
0.456	10.9	9.4			32.6	46.8	-14.2
3.933	0.5	0.9			22.0	46.0	-24.0
11.930	10.7	22.8			44.1	50.0	-5.9
17.840	13.8	15.7			37.4	50.0	-12.6
21.740	9.3	21.5			43.3	50.0	-6.7

Table 4.3-11: VCCI AC Mains Conducted Emissions Delta Power Supply ADP-10SB

Conducted Emissions / Interference

Company:	Colubris Networks			Model #:	Optimist w/Delta P.S
Engineer:	Jeff Goulet	Location:	Site 2	Serial #:	M033-00015
Project #:	3051978	Pressure:	1018mb	Receiver:	HP 8542E
Date:	02/16/04	Temp:	21c	Cable:	CBLBNC2 7-20-04.cbl
Standard:	VCCI	Humidity:	23%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn LISN13 [2] 3-11-04.lsn
Class:	B	Group:	None	LISN 3, N:	None None
Preamp:	None			Attenuator:	DS21 7-08-04.att
Voltage/Frequency:	100V/60Hz			Frequency Range:	0.15-30MHz

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Delta Power Supply ADP-10SB

	Reading	Reading			Quasi-Peak		
Frequency	Line 1	Line 2			Net	Limit	Margin
MHz	dB(uV)	dB(uV)			dB(uV)	dB(uV)	dB
0.186	27.2	17.3			49.3	64.2	-14.9
0.403	16.4	17.3			38.5	57.8	-19.3
1.067	14.1	15.9			36.2	56.0	-19.8
1.886	11.0	10.0			31.4	56.0	-24.6
25.000	6.9	2.7			27.8	60.0	-32.2

	Reading	Reading			Average		
Frequency	Line 1	Line 2			Net	Limit	Margin
MHz	dB(uV)	dB(uV)			dB(uV)	dB(uV)	dB
0.186	5.7	7.9			30.0	54.2	-24.2
0.403	2.6	8.5			29.7	47.8	-18.1
1.067	1.3	7.0			27.3	46.0	-18.7
1.886	-4.3	-6.3			20.1	46.0	-25.9
25.000	3.2	-1.0			24.1	50.0	-25.9

Table 4.3-12: VCCI Conducted Emissions at AC Main Sparkle Power Supply

Conducted Emissions / Interference

Company:	Colubris Netwroks			Model #:	Optimist w/ Sparkle P.S	
Engineer:	Jeff Goulet	Location:	Site 2	Serial #:	M033-00015	
Project #:	3051978	Pressure:	1002mb	Receiver:	HP 8542E	
Date:	02/13/04	Temp:	22c	Cable:	CBLBNC2 7-20-04.cbl	
Standard:	VCCI	Humidity:	24%	LISN 1, 2:	LISN13 [1] 3-11-04.lsn	LISN13 [2] 3-11-04.lsn
Class:	B	Group:	None	LISN 3, N:	None	None
Preamp:	None			Attenuator:	DS21 7-08-04.att	
Voltage/Frequency:		100V/60Hz		Frequency Range:	0.15-30MHz	

Net is the sum of worst-case lisn, cable, & attenuator losses, preamp gain, and initial reading

Sparkle Power Supply

	Reading	Reading			Quasi-Peak		
Frequency	Line 1	Line 2			Net	Limit	Margin
MHz	dB(uV)	dB(uV)			dB(uV)	dB(uV)	dB
0.160	26.4	27.8			50.1	65.5	-15.4
0.213	20.2	23.0			44.9	63.1	-18.2
0.369	11.5	8.7			32.6	58.5	-25.9
1.423	2.6	5.7			26.0	56.0	-30.0
1.897	5.6	2.7			26.0	56.0	-30.0
2.424	6.0	5.8			26.4	56.0	-29.6
2.958	5.4	4.5			25.8	56.0	-30.2
3.483	5.7	5.4			26.1	56.0	-29.9
4.011	6.4	4.8			26.8	56.0	-29.2
4.487	6.2	5.1			26.6	56.0	-29.4
15.920	6.2	5.4			26.8	60.0	-33.2
17.840	9.3	19.4			40.1	60.0	-19.9
18.980	9.0	7.3			29.8	60.0	-30.2
20.000	6.2	4.6			27.0	60.0	-33.0

	Reading	Reading			Average		
Frequency	Line 1	Line 2			Net	Limit	Margin
MHz	dB(uV)	dB(uV)			dB(uV)	dB(uV)	dB
0.160	17.7	17.9			40.2	55.5	-15.3
0.213	15.3	17.0			38.9	53.1	-14.2
0.369	9.3	4.9			30.4	48.5	-18.1
1.423	-4.0	2.4			22.7	46.0	-23.3
1.897	0.6	-3.0			21.0	46.0	-25.0
2.424	2.6	0.0			23.0	46.0	-23.0
2.958	0.9	-2.4			21.3	46.0	-24.7
3.483	0.9	-0.2			21.3	46.0	-24.7
4.011	0.9	-2.6			21.3	46.0	-24.7
4.487	0.1	-1.5			20.5	46.0	-25.5
15.920	-3.2	-4.2			20.4	50.0	-29.6
17.840	5.7	16.6			37.3	50.0	-12.7
18.980	0.4	1.7			22.5	50.0	-27.5
20.000	-2.1	-4.1			20.5	50.0	-29.5

Figure 4.4-1 Conducted Emission Front View, FCC & ETSI EN 301 489-1 120V and 230V Power Supply

Figure 4.4-2 Conducted Emission Rear or Side View, FCC & ETSI EN 301 489-1 120V and 230V Power Supply

Figure 4.4-3 Conducted Emission Front View, FCC & ETSI EN 301 489-1 120V and 230V Power over Ethernet

Figure 4.4-4 Conducted Emission Rear or Side View, FCC & ETSI EN 301 489-1 120V and 230V Power over Ethernet

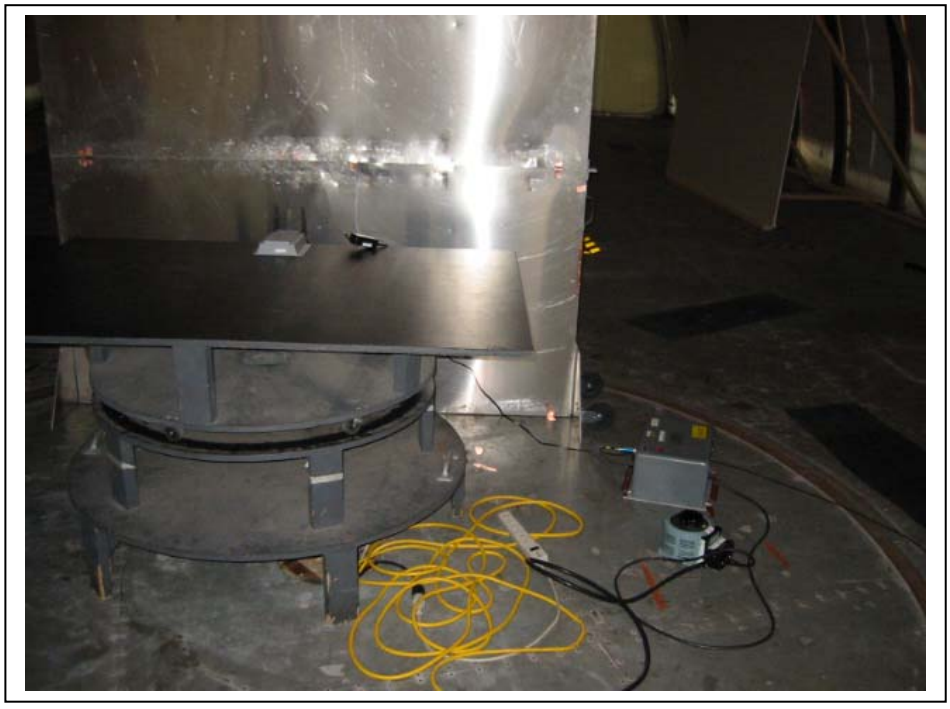


Figure 4.4-5 Conducted Emission Front View, VCCI Power Supply 100V

Figure 4.4-6 Conducted Emission Rear or Side View, VCCI Power Supply 100V

Figure 4.4-7 Conducted Emission Front View, VCCI Power over Ethernet 100V

Figure 4.4-8 Conducted Emission Rear or Side View, VCCI Power over Ethernet 100V

5.0 LABELING AND INSTRUCTION MANUAL REQUIREMENTS

5.1 FCC Part 15, Subpart B

5.1.1 Labeling Requirements

Devices must be labeled with the following statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

5.1.2 Instruction Manual Requirements

The users manual or instruction manual for an unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CLASS A

For a Class A digital device or peripheral, the instructions furnished to the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

If shielded cables or other specialized accessories are necessary for the unit to achieve compliance, a statement similar to the following should be added:

Shielded cables must be used with this unit to ensure compliance with the Class A FCC limits.

CLASS B

For a Class B digital device or peripheral, the instructions furnished to the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

> ***NOTE:*** **This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:**
>
> - **Reorient or relocate the receiving antenna.**
> - **Increase the separation between the equipment and receiver.**
> - **Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.**
> - **Consult the dealer or an experienced radio TV technician for help.**

If shielded cables or other specialized accessories are necessary for the unit to achieve compliance, a statement similar to the following should be added:

> **Shielded cables must be used with this unit to ensure compliance with the Class B FCC limits.**

5.2 ETSI EN 301 489-1

5.2.1 Labeling Requirements

There are no specific labeling requirements for ETSI EN 301 489-1.

5.2.2 Instruction Manual Requirements

Class A equipment should not be restricted in sale but the following warning shall be in the instructions for use:

Warning This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

5.3 VCCI

5.3.1 Labeling Requirements

The VCCI specifies that the following labels must be placed on equipment meeting Class A and Class B VCCI limits.

CLASS A

この装置は，クラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-A

CLASS B

5.3.2 Instruction Manual Requirements

The VCCI requires that statements be placed in the user's manual for devices meeting VCCI Class A and Class B limits.

CLASS A

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

CLASS B

この装置は，情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づくクラスＢ情報技術装置です。この装置は，家庭環境で使用することを目的としていますが，この装置がラジオやテレビジョン受信機に近接して使用されると，受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。