JABIL Technology Services **Regulatory Laboratory**

Jabil Circuit, Inc.
10800 Roosevelt Boulevard
St. Petersburg, FL 33716
USA
Telephone: (727) 803-5953

47 C.F.R. Part 15 FCC Rules
Digital Circuitry Radiated Emissions Test

Zhone Technologies
SkyZhone-1424 WiFi Access Point
Class II Permissive Change
Adding SkyZhone-1400 AC Powered Model

Equipment:	**SKYZHONE-1400, Wi-Fi Access Point**
Client:	**Zhone Technologies**
Address:	**8545 126th Avenue North** **Largo, FL 33773** **USA**

Test Report Number: FCCIR-ZHONE-11-30-07
Date: December 7, 2007
Total Number of Pages: 30

NVLAP LAP Code: 200125-0

Table of Contents

1 IDENTIFICATION SUMMARY

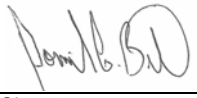
1.1 Test Report

Test Report Number: FCCIR-ZHONE-11-30-07
Test Report Date: December 7, 2007

Report written and approved by:

Date	Name	Signature
December 7, 2007	Peter J. Walsh, NCE	

Reviewed by:

Date	Name	Signature
December 7, 2007	Dominick Bitume	

1.2 Testing Laboratory

Jabil Circuit
JTS Regulatory & Safety Lab
10800 Roosevelt Boulevard
St. Petersburg FL 33716
USA

Telephone: (727) 803-5953
Internet: www.jabil.com
Email: Peter_Walsh@jabil.com

1.3 Limits and Reservations

The test results in this report apply only to the particular Device Under Test (DUT) and component Implementations Under Test (IUTs) declared in this test report. The results and associated conclusions apply only to the DUT while operating in the configuration and modes described herein. The test data contained herein is intended to satisfy the FCC's requirement to report changes in the emissions characteristics of the device where these result in a Class II Permissive Change. The previously certified, line-powered model did not require an ac power line conducted emissions test. Because this ac powered model did require the test, this report was prepared on behalf of the applicant to file a Class II Permissive Change.

The test report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

1.4 Client Information

Name:	Zhone Technologies
Street:	8545 126th Avenue North
City:	Largo
State:	Florida
Country:	USA
Phone:	(727) 530-2000
Contact Person:	Chuck Coston
Phone:	(727) 530-8326
Email:	ccoston@zhone.com

1.5 Dates

Date of commission:	October 29, 2007
Date of receipt of DUT:	November 28, 2007
Date of test completion:	November 30, 2007

1.6 Device Under Test (DUT)

Name:	SKYZHONE-1400, Wi-Fi Access Point
Version:	4.9 GHz Public Safety Band Radio
Serial Number:	None (Engineering Prototype)
FCC ID Number:	PJZSZ1424
Industry Canada ID:	3691A-SZ1424
Modulation Type:	OFDM
Modulation Designation:	20M0D7W
Operating Band:	4940 – 4990 MHz
Rated Peak Transmit Power	1.4 watts
Frequency Stability:	± 20 ppm
Antenna Configuration:	2x2 MIMO
Antenna Gain:	5.3 dBi
Power Supply:	XP Power Part Number: 10005627

2 GENERAL INFORMATION

2.1 Product Description

The SkyZhone-1400 access point is an ac powered carrier class outdoor Wi-Fi access point. Using the 4.9 GHz Public Safety Radio Band, the SkyZhone-1400 supports a variety of applications including VoIP, internet access, mobile video, and enterprise VPNs optimized for deployments by licensed governmental agencies. SkyZhone-1400 allows for a more reliable, lower latency, higher speed and lower cost network than traditional mesh Wi-Fi solutions. The product includes two 5.3 dBi antennas, Comet Part Number SF-D49N W-SR. Antennas with lower gain may also be used. The antennas are configured in a 2X2 MIMO fashion with power split between the two antennas. The difference between the SkyZhone-1400 and the previously certified SkyZhone-1424 is that former model is powered by 120 V / 60 Hz whereas the latter is line powered by $\pm$ 140 VDC. The power supply is the same in both models as is all other radio circuitry. Also, circuitry associated with the SkyZhone-1424's SHDSL functions has been depopulated.

2.2 Interface Cable Details

Interface cables used in the system are as follows:

Qty	Length	Cable Description
1	30'	Shielded CAT5e 4 twisted pairs Ethernet cable
1	6'	Unshielded 3-conductor ac power cable

2.3 Peripheral Devices

The following test support devices were used in the test set-up.

Qty	Description	Manufacturer/Model	Serial Number
1	PC	Gateway GP6-400	0014300762

2.4 Test Methodology

A radiated emission testing was performed according to ANSI C63.4-2003, the procedure referenced by Part 15, FCC Rules. Radiated emissions tests were performed at an antenna to EUT distance of 3 meters.

2.5 Test Facility

The 3-meter semi-anechoic test chamber and measurement facility used to collect the radiated and conducted data is located at 8545 126th Avenue N., Largo FL 33773. This laboratory is NVLAP Accredited (NVLAP Lab Code 200125-0).

2.6 Deviations

No deviations were exercised during the course of the testing.

3 SYSTEM TEST CONFIGURATION

3.1 Justification

A radiated emissions test from 30 to 1000 MHz was performed to determine if the ac powering configuration have degraded its emissions characteristics. Additionally, a conducted emissions test was performed on the ac power port. The characteristics of the radio operating in the 4940 – 4990 MHz band would not be affected as the radio and its input voltage was not affected by the changes to accept ac power input.

The DUT was tested using a specialized test mode used to stress the DUT maximizing its emissions.

The Ethernet cable was also routed down to the center of the turn table beneath the ground plane and connected to a host PC located outside the test chamber. The PC was conditioned to ping the IP address of the DUT continuously. The DUT has a serial port but this is only used for service reasons. As such, the serial port cable was not connected.

A radio test mode allowed the radio to transmit at its maximum duty cycle and allowed the line rate, channel, and power level to be set. The tested power level was set to its maximum value as determined from prior tests.

All measurements were performed with the DUT powered by a nominal line voltage of 120 VAC / 60 Hz.

Although not required, the radiated emissions test for digital circuitry was performed with the radio on. Performing the test in this manner also confirmed that the radio did not cause excessive emissions levels in the restricted frequency bands below 1000 MHz.

3.2 Special Accessories

None

3.3 Equipment Modifications

No modifications were needed to achieve compliance.

Signature:  Date: December 7, 2007

Typed/Printed Name: Peter J. Walsh
Position: Regulatory Lab Manager

If modifications were needed to achieve compliance, the client shall acknowledge these by signing below.

Signature: _____ Date: _____
Typed/Printed Name: _____
Position: _____

4 CONDUCTED EMISSIONS DATA

Reference: 47 C.F.R. § 15.207 (a)

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

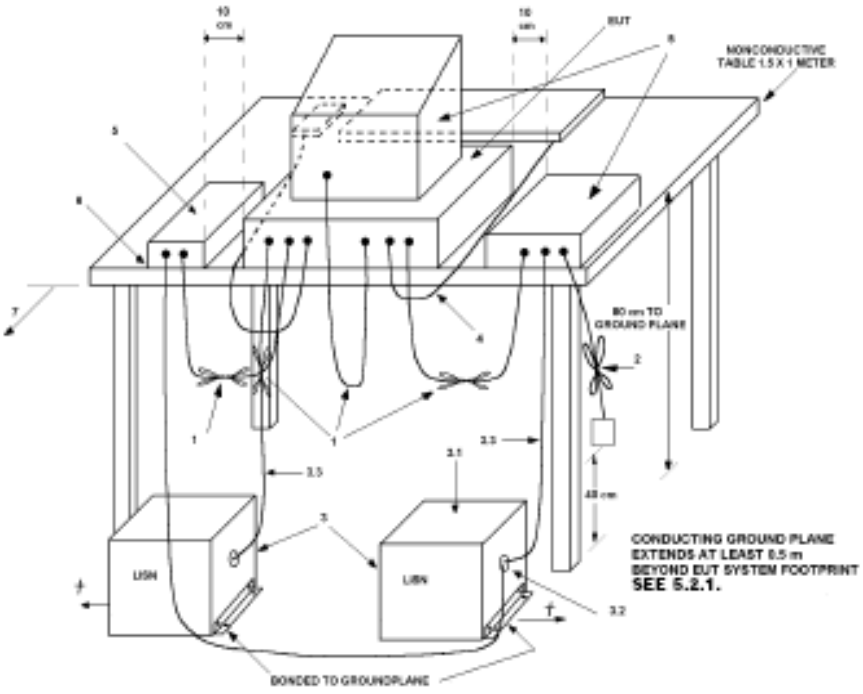
Table 4-1

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

4.1 Test Procedure

The test is performed in accordance with ANSI C63.4-2003 § 7. The test setup is consistent with ANSI C63.4-2003 Figure 10a below. The test was performed in a semi-anechoic chamber. As such, the optional vertical conducting plane is not used.



LEGEND:

1) Interconnecting cables that hang closer than 40 cm to the groundplane shall be folded back and forth in the center forming a bundle 30 to 40 cm long (see 6.1.4 and 11.2.4).
2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m (see 6.1.4).
3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference groundplane (see 5.2.3 and 7.2.1).
   3.1) All other equipment powered from additional LISN(s).
   3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
   3.3) LISN at least 80 cm from nearest part of EUT chassis.
4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use (See 6.2.1.3 and 11.2.4).
5) Non-EUT components of EUT system being tested (see also Figure 13).
6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop (see 6.2.1.1 and 6.2.1.2).
7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the groundplane (see 5.2.2 for options).

Figure 10a—Test arrangement for conducted emissions

Conducted emissions measurements are first made using a peak detector and average detector simultaneously. The receiver then performs the final measurements using a quasi-peak detector for comparison with the quasi-peak limit and an average detector for comparison with the average limit.

4.2 Measured Data

Compliance Verdict: Pass

Figure 4.2-1 shows a plot of the conducted emissions. Tables 4.2-1 and 4.2-2 show the conducted emissions tabular data using the QuasiPeak and Average detectors respectively.

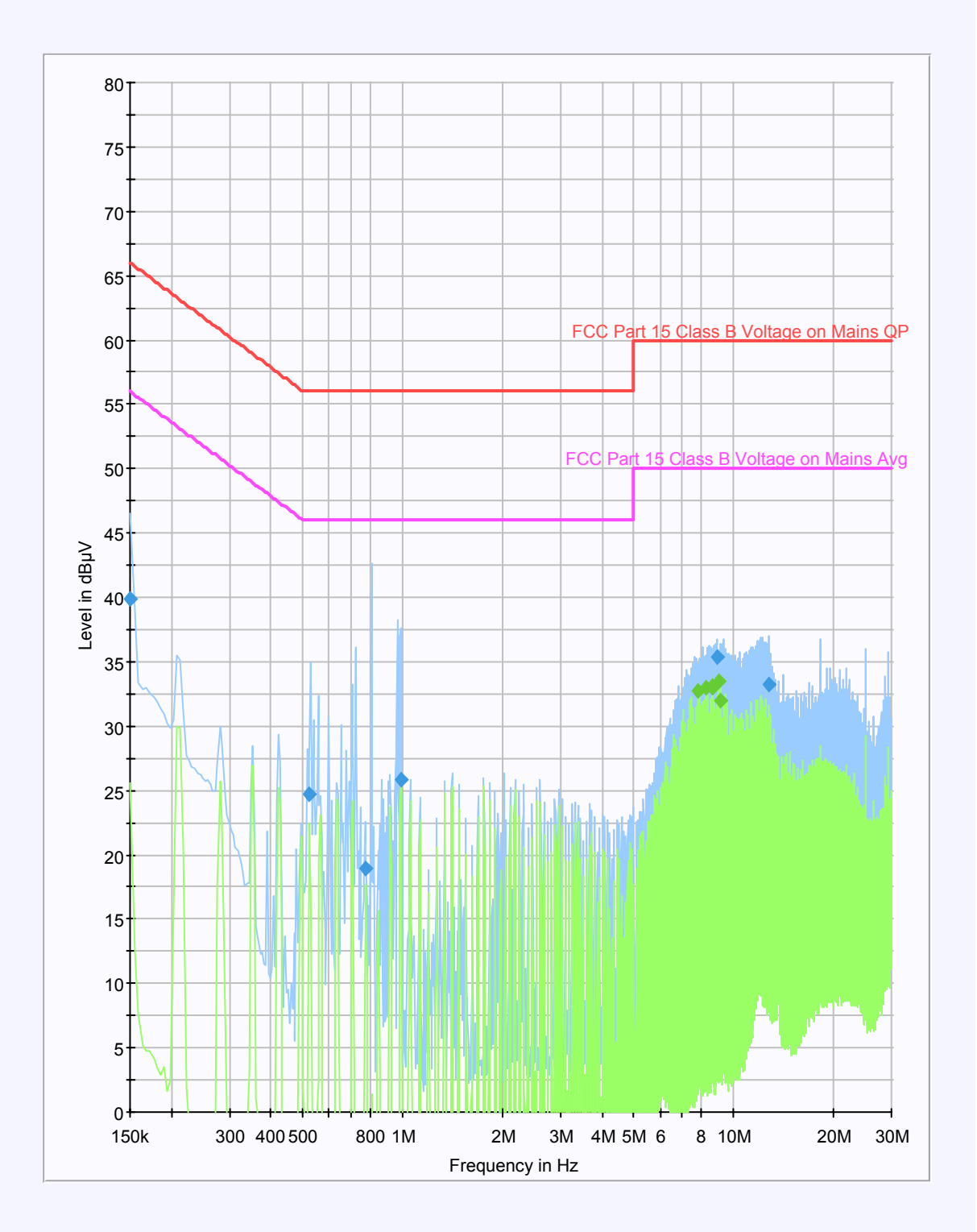

FCC Part 15 Class B Voltage on Mains QP
FCC Part 15 Class B Voltage on Mains Avg
Level in dBµV
Frequency in Hz
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
150k
300
400
500
800
1M
2M
3M
4M
5M
6
8
10M
20M
30M

Figure 4.2-1

Table 4.2-1 QuasiPeak Detector Conducted Emissions Data

Frequency (MHz)	QuasiPeak (dBµV)	Line	CF* (dB)	Limit (dBµV)	Margin (dB)
0.150000	39.9	L1	0.2	66.0	26.2
0.523500	24.7	N	0.3	56.0	31.3
0.775500	19.0	N	0.3	56.0	37.0
0.987000	25.8	N	0.4	56.0	30.2
8.880000	35.3	N	0.9	60.0	24.7
12.750000	33.3	L1	1.1	60.0	26.7

Table 4.2-2 Average Detector Conducted Emissions Data

Frequency (MHz)	Average (dBµV)	Line	CF* (dB)	Limit (dBµV)	Margin (dB)
7.822500	32.8	N	0.8	50.0	17.2
8.245500	33.0	N	0.8	50.0	17.0
8.596500	33.1	N	0.9	50.0	16.9
8.668500	32.9	N	0.9	50.0	17.1
9.019500	33.5	N	0.9	50.0	16.5
9.087000	31.9	N	0.9	50.0	18.1

* CF is the LISN correction factor plus the cable loss.

Minimum Margin: 16.5 dBµV

Measurement Uncertainty: +/- 3.59 dB

Test Personnel:

November 30, 2007 Peter J. Walsh, NCE 

Date Name Signature

4.3 Conducted Emissions Test Instrumentation

Type	Manufacturer/ Model No.	Serial Number
EMI Receiver	Rohde & Schwarz ESCS 30	825788/002
LISN	Rohde & Schwarz ESH3-Z5	840730/005

Calibration and Traceability: All measuring and test equipment are calibrated and are traceable to the National Institute for Standards and Technology (NIST) and Methods.

4.4 Conducted Emissions Photographs

Photo 4.4-1 – Front View of Conducted Emissions Test Set-up

Photo 4.4-2 – Rear View of Conducted Emissions Test Set-up

5 RADIATED EMISSIONS DATA

Reference: 47 C.F.R. § 15.209

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Table 5-1

Frequency of Emission (MHz)	Field Strength (3 m) (microvolts/meter)	Field Strength (3 m) (dBµV/m)
0.009 – 0.490	2400/F (kHz) @ 300 m	300
0.490 – 1.705	24000/F (kHz) @ 30 m	30
1.705 – 30.0	30 @ 30 m	30
30 - 88	100**	40.0
88 - 216	150**	43.5
216 - 960	200**	46.0
Above 960	500	54.0

*** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.*

Reference: 47 C.F.R. § 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

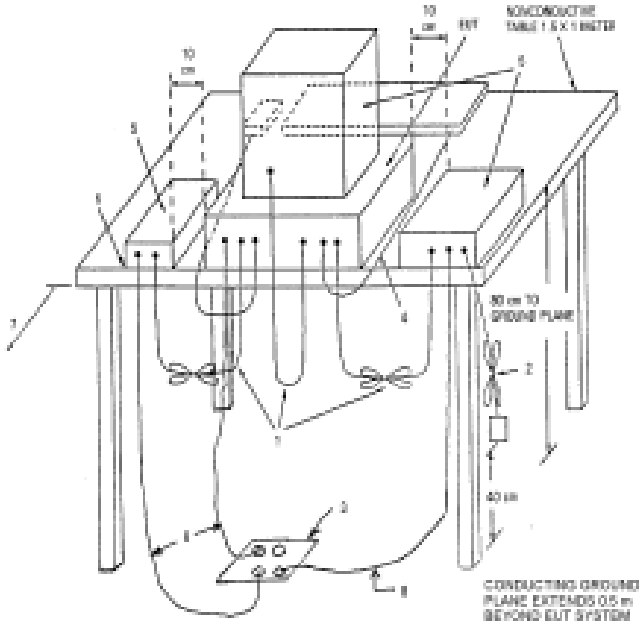
Table 5-2

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

(b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

5.1 Test Procedure

The test was performed in accordance with ANSI C63.4-2003 § 8. The test setup was consistent with ANSI C63.4-2003 Figure 11a below. The test was performed in a semi-anechoic chamber.



LEGEND:

1) Interconnecting cables that hang closer than 40 cm to the groundplane shall be folded back and forth in the center, forming a bundle 30 to 40 cm long (see 6.1.4 and 11.2.4).

2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated if required using the correct terminating impedance. The total length shall not exceed 1 m (see 6.1.4).

3) If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the groundplane with the receptacle flush with the groundplane (see 6.1.4).

4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use (see 6.2.1.3 and 11.2.4).

5) Non-EUT components of EUT system being tested (see also Figure 13).

6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop (see 6.2.1.1 and 6.2.1.2).

7) No vertical conducting plane used (see 5.2.2).

8) Power cords drape to the floor and are routed over to receptacle (see 6.1.4).

Figure 11a—Test arrangement for radiated emissions tabletop equipment

The following data lists the significant emission frequencies, amplitude levels (including cable correction and antenna factors), plus the limit. The frequency range investigated was 30 MHz to 1 GHz. The highest frequency to which the DUT must be measured is 1 GHz as determined by the calculation of 5 times the highest frequency to which the DUT operates or tunes. The six highest emissions within 20 dB of the limit were recorded.

5.2 Test Data

Compliance Verdict: PASS

Figure 5.2-1 shows a composite graph of the radiated emissions levels from 30 to 1000 MHz measured with a peak detector in both vertical and horizontal antenna polarity at turntable angles of 0, 90, 180, and 270 degrees and an antenna height of 1, 2.5, and 4 meters. Rotating the turntable and adjusting the antenna elevation and polarity maximized the final quasi-peak measurements, denoted by the diamonds. In the 30 to 1000 MHz frequency range, the final measurement detector was quasi-peak; the measurement bandwidth was 120 kHz. Table 5.2-1 shows the six highest measured results within 20 dB of the limit.

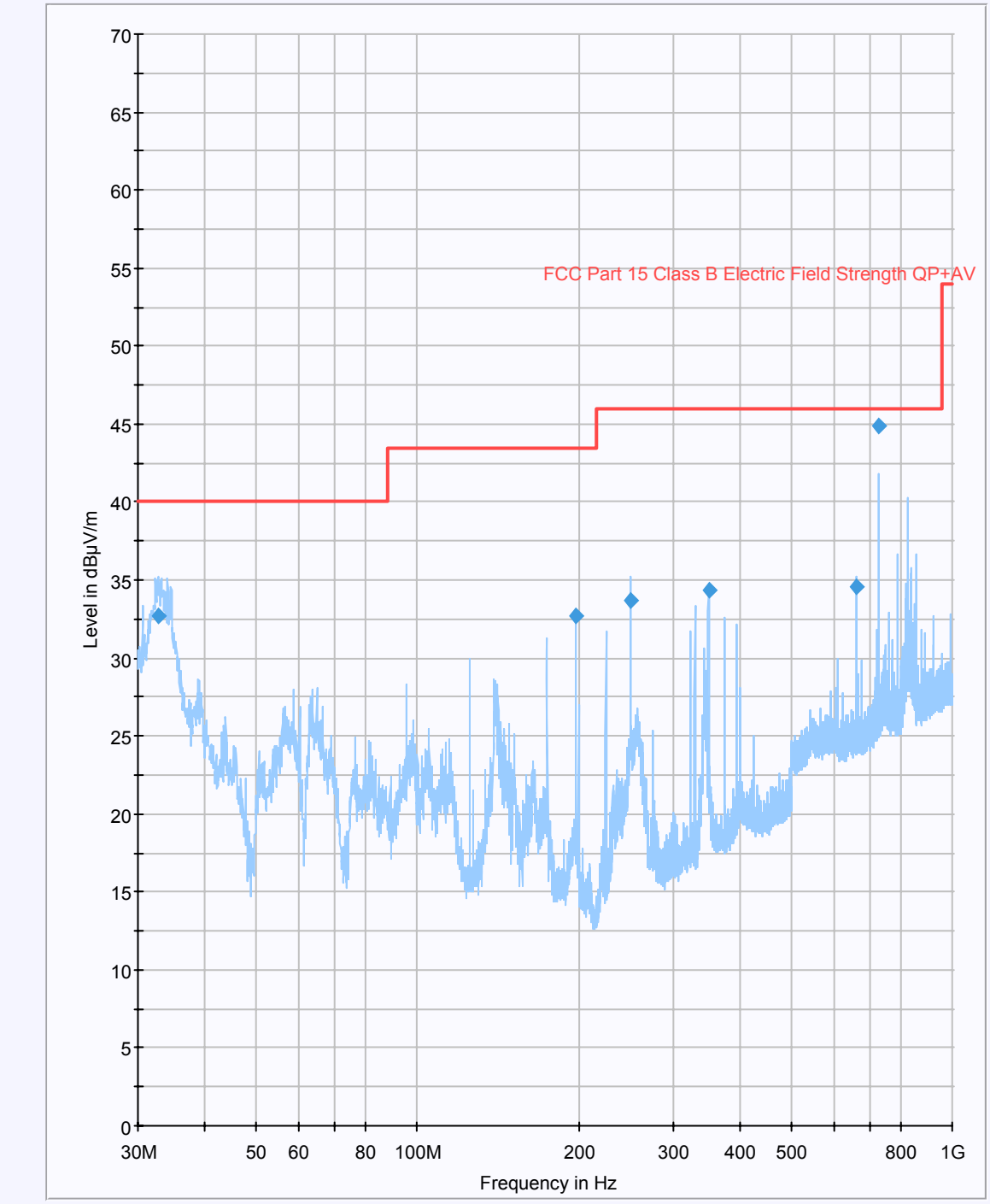

FCC Part 15 Class B Electric Field Strength QP+AV
Level in dBµV/m
Frequency in Hz
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
30M
50
60
80
100M
200
300
400
500
800
1G

Figure 5.2-1

Table 5.2-1 - Final Measurement Detector 1 (Quasi-Peak)

Frequency (MHz)	QuasiPeak (dBµV/m)	Antenna height (cm)	Polarity	Turntable position (deg)	CF* (dB)	Limit (dBµV/m)	Margin (dB)
32.700000	32.6	99.0	V	299.0	16.4	40.0	7.4
198.000000	32.7	149.0	H	178.0	11.5	43.5	10.8
250.020000	33.7	99.0	H	178.0	14.1	46.0	12.3
350.040000	34.3	198.0	V	329.0	16.7	46.0	11.7
660.000000	34.6	149.0	V	298.0	21.2	46.0	11.4
726.000000	44.9	99.0	H	238.0	22.6	46.0	1.1

* CF is the antenna correction factor plus the cable loss.

Minimum Margin: 1.1 dBµV/m

Measurement Uncertainty: +/- 4.26 dB

Test Personnel:

November 30, 2007	Peter J. Walsh, NCE	
Date	Name	Signature

5.3 Test Instrumentation Used, Radiated Measurement

Type	Manufacturer/ Model No.	Serial Number
EMI Receiver	Rohde & Schwarz ESCS 30	825788/002
Spectrum Analyzer	Agilent E7405A	MY42000055
Preamplifier	Com-Power PA-122	181925
Notch Filter	Micro-tronics BRM50702-01	023
Antenna	Chase EMCCBL6112B	2579
Antenna	EMCO Horn Model 3115	9002-3393

Calibration and Traceability: All measuring and test equipment are calibrated and are traceable to the National Institute for Standards and Technology (NIST) and Methods.

5.4 Field Strength Calculation

The field strength is calculated by adding the antenna correction factor and cable loss and subtracting the amplifier gain (if any) from the measured reading.

The Rohde & Schwarz Model ESCS 30 receiver and Agilent E7405A spectrum analyzer have the capability of automatically performing the field strength calculations. The amplitude level displayed on the receiver or analyzer represents the total measured field strength. This level is directly compared to the appropriate FCC limit to determine the actual margin of the DUT.

5.5 Radiated Emissions Photographs

Photo 5.5-1 Front View

Photo 5.5-2 Rear View

6 LABELING AND USER'S GUIDE REQUIREMENTS

6.1 FCC Label Statement

The FCC compliance label shall include the following information:

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.

The FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

The FCC ID number is: PJZSZ1424.

The Industry Canada id number is IC: 3691A-SZ1424.

Figure 6.1-1 below shows a drawing of the label.

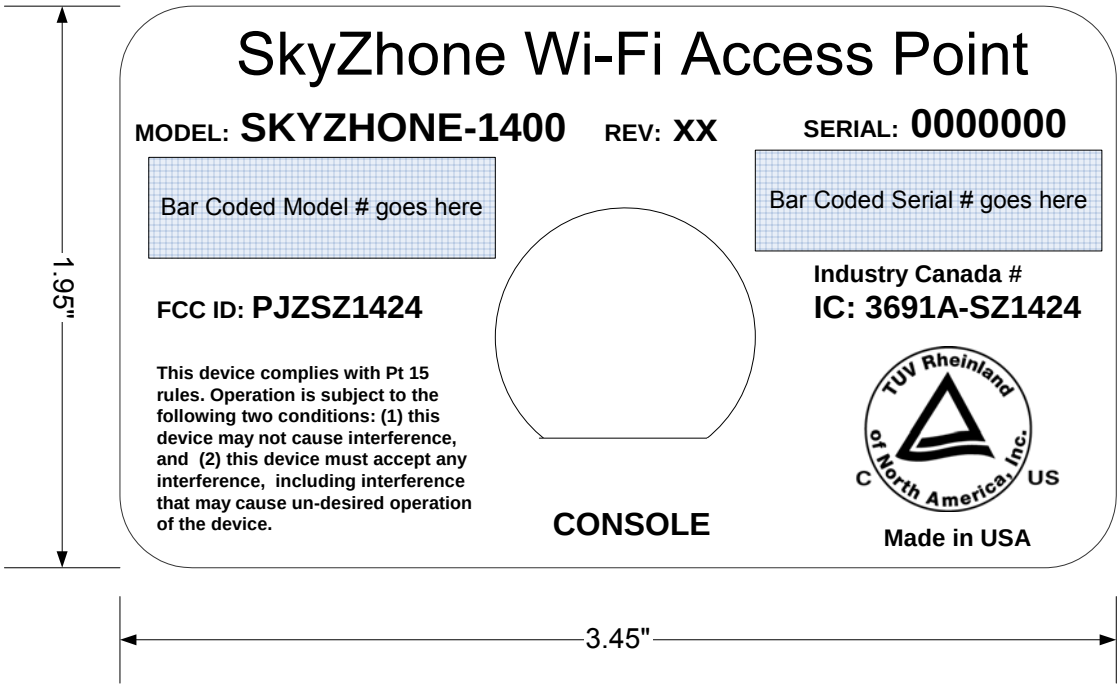


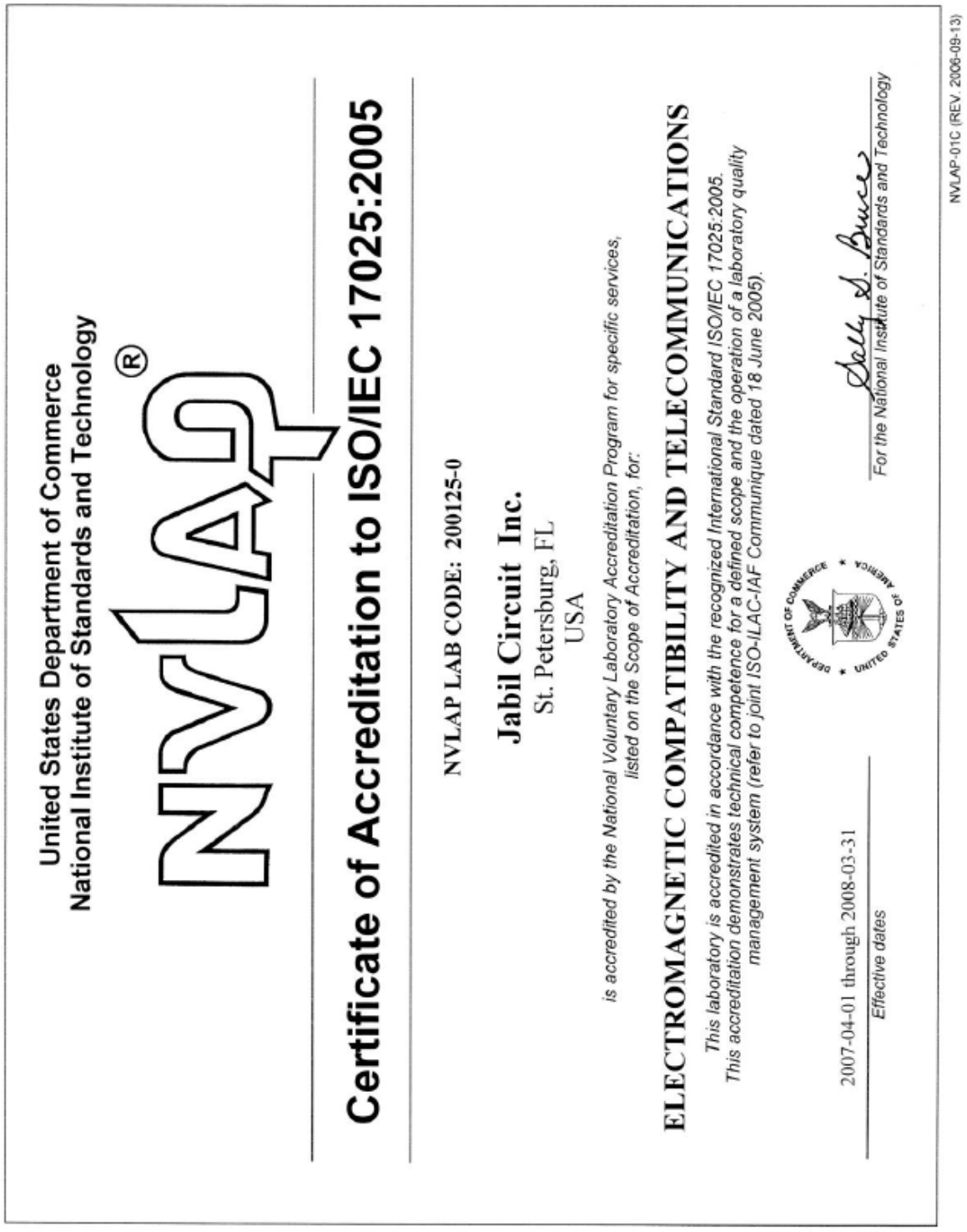
Figure 6.1-1 Sample Label

6.2 Instruction Manual Statements

The instruction manual must contain the following statement:

Changes or modifications not expressly approved by the responsible party could void the user's authority to operate the equipment.

ANNEX A NVLAP CERTIFICATE of ACCREDITATION



United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200125-0

Jabil Circuit Inc.
St. Petersburg, FL
USA

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated 18 June 2005).

2007-04-01 through 2008-03-31
Effective dates

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2006-09-13)

ANNEX B NVLAP SCOPE of ACCREDITATION

NVLAP® National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

Jabil Circuit Inc.
10800 Roosevelt Boulevard
St. Petersburg, FL 33716
USA
Mr. Peter Walsh, NCE
Phone: 727-803-5953 Fax:
E-Mail: peter_walsh@jabil.com
URL: http://www.jabil.com

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS **NVLAP LAB CODE 200125-0**

NVLAP Code	*Designation / Description*
Emissions Test Methods:	
12/CIS22	IEC/CISPR 22 (1997) & EN 55022 (1998) + A1(2000): Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a	IEC/CISPR 22 (1993) and EN 55022 (1994): Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1 (1995) and Amendment 2 (1996)
12/CIS22b	CNS 13438 (1997): Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/CIS22e1	IEC/CISPR 22, Edition 5 (2005) and EN 55022 (1998): Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
12/CIS22e3	IEC/CISPR 22, Edition 5 (2005) + A1(2005): Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
12/CIS22e4	EN 55022 (1998) + A1(2000) + A2(2003): Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement

2007-04-01 through 2008-03-31
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

Page 1 of 3

NVLAP-01S (REV. 2005-05-19)

NVLAP® **National Voluntary Laboratory Accreditation Program**

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

NVLAP LAB CODE 200125-0

NVLAP Code	***Designation / Description***
12/FCC15b	ANSI C63.4 (2003) with FCC Method 47 CFR Part 15, Subpart B: Unintentional Radiators
12/FCC15c3	KDB Pub. No. 200433 Millimeter Wave Test Procedures: with FCC Method - 47 CFR Part 15, Subpart C: Intentional Radiators
12/T51a	AS/NZS CISPR 22 (2004): Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
12/VCCIb	Agreement of VCCI V-3 (2006.04): Agreement of Voluntary Control Council for Interference by Information Technology Equipment - Technical Requirements: V-3/2006.04

Radio Test Methods

12/BETS7a	Document AT-34-04-RT: Testing Procedures for Type Approval testing per BETS-7, Issue 1 (November 1, 1996)

Telecommunications Test Methods:

12/CS03a	Industry Canada CS-03, Issue 9, Amendment 1 (2005): Compliance Specification for Terminal Equipment, Terminal Systems, Network Protection Devices, Connection Arrangements and Hearing Aids Compatibility
12/T01	Terminal Equipment Network Protection Standards, FCC/ACTA Method - 47 CFR Part 68 - Analog and Digital
12/T01a	68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection
12/T01b	68.316 and 68.317 Hearing Aid Compatibility: technical standards
12/T01c	68.302 Environmental simulation (Par. a,b)
12/TIA968	ANSI/TIA-968-A (2003): Telephone Terminal Equipment, Technical Requirements for Connection of Terminal Equipment to the Telephone Network

2007-04-01 through 2008-03-31
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

Page 2 of 3

NVLAP-01S (REV. 2005-05-19)

NVLAP® **National Voluntary Laboratory Accreditation Program**

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

NVLAP LAB CODE 200125-0

NVLAP Code	*Designation / Description*
12/TIA968a	ANSI/TIA-968-A-1 (2003): Telephone Terminal Equipment, Technical Requirements for Connection of Terminal Equipment to the Telephone Network - Addendum 1
12/TIA968b	ANSI/TIA-968-A-2 (2004): Telephone Terminal Equipment, Technical Requirements for Connection of Terminal Equipment to the Telephone Network - Addendum 2
12/TIA968c	ANSI/TIA-968-A-3 (2005): Telephone Terminal Equipment, Technical Requirements for Connection of Terminal Equipment to the Telephone Network - Addendum 3

2007-04-01 through 2008-03-31
Effective dates

Sally S. Bruce
For the National Institute of Standards and Technology

Page 3 of 3

NVLAP-01S (REV. 2005-05-19)

ANNEX C DISCLOSURE STATEMENT

Jabil Circuit Inc. represents to the client that testing was done in accordance with standard procedures as applicable and that reported test results are accurate within generally accepted commercial ranges of accuracy. Jabil Circuit Inc. test reports only apply to the specific sample(s) tested. This report is the property of the client. This report shall not be reproduced except in full without the expressed written approval of Jabil Circuit, Inc.

TERMS and CONDITIONS

ARTICLE 1 *- Services, Jabil Circuit will:*

1.1 Act for Client in a professional manner, using the degree of care and skill ordinarily exercised by and consistent with the standards of the profession.

1.2 Provide only those services that lie within the technical and professional area of expertise and capability of the Lab.

1.3 Perform all technical services in accordance with accepted laboratory test principles and practices.

1.4 Use test equipment which has been calibrated within a period not exceeding the manufacturer's recommendation and which is traceable to the NIST.

1.6 Consider all reports to be the confidential property of the client, and distribute reports only to those persons designated by the client.

ARTICLE 2 *- Client's Responsibilities, The Client will:*

2.1 Provide all information necessary for proper performance of technical services.

2.2 Designate a person who is authorized to transmit instructions, receive information and test data reports, interpret and define Client's policies, and make decisions regarding technical services, as may be required at Clients expense.

2.3 Deliver without cost, representative samples of product for technical evaluation, together with any relevant data.

2.4 Furnish such labor and equipment necessary to handle sample product and to facilitate the technical evaluation.

2.5 The Client shall provide prior to the start of evaluation testing a signed Purchase Order for the amount agreed to by both parties.

ARTICLE 3 *- General Requirements.*

3.1 The only warranty made by Jabil Circuit, in connection with services performed thereunder is that it will use that degree of care and skill as stated in Article 1.1 and 1.3 above. No other warranty, expressed or implied, is made or intended for services provided thereunder.

3.2 Jabil Circuit shall supply technical services and prepare reports based solely on product samples submitted. The Client understands that application of the data to other devices is highly speculative and should be applied with extreme caution.

3.3 Jabil Circuit agrees to exercise ordinary care in receiving, preserving, and shipping any test sample to be tested, but assumes no responsibility for damages, either direct or consequential, which arise or are alleged to arise from loss, damage or destruction of the sample due to the act of examination, modification or testing, or technical analysis, or circumstances beyond our control.

3.4 The Client recognizes that generally accepted error variances apply and agrees to consider such error variances in its use of test data.

3.5 It is agreed between Jabil Circuit and Client that no distribution of any test reports, etc. shall be made to any third party without the prior written consent of both parties.

3.6 Test Reports may not be used by the Client to claim product endorsement by NVLAP or any agency of the U.S. Government.

ARTICLE 4 *- Payment.*

4.1 The Client agrees to pay for services and expenses as covered in the Purchase order or modified by Article 2.2. Jabil Circuit will present an invoice at the completion of work and will be paid within 30 days of receipt by Client unless the testing services are included with development services covered under a different agreement.