



September 14, 2011

KEEN HIGH HOLDING (HK) LIMITED
Unit 13,7/F technology park,18 on lai street shati
HongKong

Dear Michael Chang,

Enclosed you will find your file copy of a Part 15 report (FCC ID: ZYQWR780).

For your reference, TCB will normally take another one week for reviewing the report.
Approval will then be granted when no query is sorted.

Please contact me if you have any questions regarding the enclosed material.

Sincerely,

A handwritten signature in black ink, appearing to read "Shawn Xing", with a long horizontal stroke extending to the right.

Shawn Xing
Manager

Enclosure

Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch

6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China
Tel: (86 755) 8601 6288 Fax: (86 755) 8601 6751 Website: www.china.intertek-etlsemko.com



KEEN HIGH HOLDING (HK) LIMITED

Application
For
Certification
(FCC ID: ZYQWR780)
Wifi E-book

SZ11090046-2

Billy Li

September 14, 2011

- The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
- This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results referenced from this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.
- For Terms And Conditions of the services, it can be provided upon request.
- The evaluation data of the report will be kept for 3 years from the date of issuance.

TRF No.: FCC 15C_PC_a
FCC ID: ZYQWR780

Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch

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INTERTEK TESTING SERVICES

LIST OF EXHIBITS

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INTERTEK TESTING SERVICES

MEASUREMENT / TECHNICAL REPORT

KEEN HIGH HOLDING (HK) LIMITED – MODEL: WR780
Additional Model: WR781, WR782, WR783, WR784, WR785, WR786,
WR787, WR788, WR789
FCC ID: ZYQWR780

September 14, 2011

This report concerns (check one:) Original Grant ☒ Class II Change ☐

Equipment Type: JBC-Class B Computing Device / Personal Computer

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes ☐ No ☒

If yes, defer until: _____
date

Company Name agrees to notify the Commission by: _____
date

of the intended date of announcement of the product so that the grant can be issued on that date.

Transition Rules Request per 15.37? Yes ☐ No ☒

If no, assumed Part 15, Subpart C for intentional radiator – the new 47 CFR [10-1-10 Edition] provision.

Report prepared by:

Shawn Xing
Intertek Testing Services Shenzhen Ltd.
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INTERTEK TESTING SERVICES

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INTERTEK TESTING SERVICES

List of attached file

Exhibit Type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated photos	radiated photos.pdf
Test Setup Photo	Conducted photos	conducted photos.pdf
External Photo	External Photos	external photos.pdf
Internal Photo	Internal Photos	internal photos.pdf
Block Diagram	Block Diagram	block.pdf
ID Label / Location	Label Artwork and Location	label.pdf
User Manual	User Manual	manual.pdf
Cover Letter	Letter of Agency	agency.pdf
Cover Letter	Certification Agreement	agreement.pdf

INTERTEK TESTING SERVICES

EXHIBIT 1

GENERAL DESCRIPTION

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1.0 **General Description**

1.1 Product Description

The Equipment Under Test (EUT) is a WiFi E-book with data transfer function. The EUT has a Keyboard and Optical Finger Navigation. The device is powered by 1 X 3.7V rechargeable battery or an AC/DC Adapter (INPUT: AC100-240, 50/60Hz; OUTPUT: DC 5V, 2.0A). For more detailed features description, please refer to the user's manual.

The Models: WR781, WR782, WR783, WR784, WR785, WR786, WR787, WR788, WR789 are the same as the Model: WR780 in hardware aspect. The difference in model number serves as marketing strategy.

1.2 Related Submittal(s) Grants

This is an application for certification of a Personal Computer.

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1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2003). Radiated emission measurement was performed in Semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans were performed in the semi-anechoic chamber only to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application.

1.4 Test Facility

The Semi-anechoic chamber and shielding room used to collect the radiated data and conducted data are **Interterk Testing Services Shenzhen Ltd. Kejiyuan Branch** and located at 6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China. This test facility and site measurement data have been fully placed on file with the FCC.

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EXHIBIT 2

SYSTEM TEST CONFIGURATION

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2.0 **System Test Configuration**

2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2003).

The device is powered by AC/DC Adapter (INPUT: AC100-240, 50/60Hz, 0.4A; OUTPUT: DC 5V, 2.0A) and 1 X 3.7V fully charged battery. The worst case data was reported in this report.

For maximizing emissions, the EUT 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. The step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

The rear of unit shall be flushed with the rear of the table.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was placed on turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

The frequency range from 30MHz to 5GHz was searched for spurious emissions from the device. Only those emissions reported were detected. All other emissions were at least 20 dB below the applicable limits.

2.2 EUT Exercising Software

N/A.

2.3 Special Accessories

There are one AC Adapter (Model: AD-050200-US) with one ferrite core attached and one shielding USB cable with one ferrite core attached.

2.4 Equipment Modification

Any modifications installed previous to testing by KEEN HIGH HOLDING (HK) LIMITED will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch.

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2.5 Measurement Uncertainty

When determining the test conclusion, the Measurement Uncertainty of test has been considered.

2.6 Support Equipment List and Description

This product was tested in the following configuration:

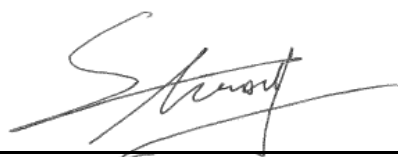
Refer List:

Description	Manufacturer	Model No.
Laptop	HP	2510P
Laptop	Lenovo	T61
Hard Disk	Smart.drive	HD-003
USB Cable	Smart.drive	Unshielded, Length 155cm
1394 Cable	Smart.drive	Unshielded, Length 180cm
SD Card	Sandisk	1G/ BB0723011986D
Earphone	KEEN HIGH	Unshielded, Length 120cm
Adapter with one ferrite core	KEEN HIGH	AD-050200-US (INPUT: 100-240, 50/60Hz, 0.4A; OUTPUT: DC 5V-2.0A)
USB Cable with one ferrite core	KEEN HIGH	Shielded, Length 120cm

All the items listed under section 2.0 of this report are

Confirmed by:

Shawn Xing
Manager
Intertek Testing Services Shenzhen Ltd.
Kejiyuan Branch
Agent for KEEN HIGH HOLDING (HK) LIMITED



September 14, 2011

Signature
Date

INTERTEK TESTING SERVICES

EXHIBIT 3

EMISSION RESULTS

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3.0 **Emission Results**

Data is included worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

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3.1 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

$$FS = RA + AF + CF - AG + PD + AV$$

where FS = Field Strength in dB μ V/m

RA = Receiver Amplitude (including preamplifier) in dB μ V

CF = Cable Attenuation Factor in dB

AF = Antenna Factor in dB

AG = Amplifier Gain in dB

PD = Pulse Desensitization in dB

AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

$$FS = RA + AF + CF - AG + PD + AV$$

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3.1 Field Strength Calculation (cont'd)

Example

Assume a receiver reading of 62.0dB μ V is obtained. The antenna factor of 7.4dB and cable factor of 1.6dB is added. The amplifier gain of 29dB is subtracted. The pulse desensitization factor of the spectrum analyzer was 0dB, and the resultant average factor was -10dB. The net field strength for comparison to the appropriate emission limit is 32dB μ V/m. This value in dB μ V/m was converted to its corresponding level in μ V/m.

$$RA = 62.0\text{dB}\mu\text{V}$$

$$AF = 7.4\text{dB}$$

$$CF = 1.6\text{dB}$$

$$AG = 29.0\text{dB}$$

$$PD = 0\text{dB}$$

$$AV = -10\text{dB}$$

$$FS = 62 + 7.4 + 1.6 - 29 + 0 + (-10) = 32\text{dB}\mu\text{V/m}$$

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(32\text{dB}\mu\text{V/m})/20] = 39.8\mu\text{V/m}$$

INTERTEK TESTING SERVICES

3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
At
4824.530MHz (Transfer data Mode)

For electronic filing, the worst case radiated emission configuration photograph is saved with filename: radiated photos.pdf.

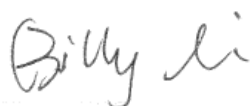
INTERTEK TESTING SERVICES

3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgement: Passed by 2.2dB margin (Transfer data Mode)

TEST PERSONNEL:



Signature

Billy Li, Team Leader
Typed / Printed Name

September 14, 2011
Date

INTERTEK TESTING SERVICES

Company: KEEN HIGH HOLDING (HK) LIMITED

Date of Test: September 14, 2011

Model: WR780

Worst Case Operating Mode: Transfer data

Table 2

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	228.850	40.5	20.0	11.1	31.6	46.0	-14.4
Horizontal	353.495	40.2	20.0	16.3	36.5	46.0	-9.5
Horizontal	437.400	49.3	20.0	8.9	38.2	46.0	-7.8
Vertical	100.000	39.8	20.0	9.1	28.9	43.5	-14.6
Vertical	423.580	38.9	20.0	15.8	34.7	46.0	-11.3
Vertical	463.790	36.6	20.0	18.0	34.6	46.0	-11.4
Vertical	1653.125	37.0	20.0	28.3	45.3	54.0	-8.7
Vertical	4824.530	53.8	36.1	34.1	51.8	54.0	-2.2

- NOTES:
1. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
 2. Negative value in the margin column shows emission below limit.
 3. All emissions below 1000MHz are below the QP limit and all emissions above 1000MHz are below the AV limit.
 4. Peak detector was used when the frequency above 1000MHz and QP detector was used when the frequency below 1000MHz.

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

Company: KEEN HIGH HOLDING (HK) LIMITED

Date of Test: September 14, 2011

Model: WR780

Worst Case Operating Mode: Playing Video

Table 3

Radiated Emissions

Polarization	Frequency (MHz)	Reading (dB μ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB μ V/m)	Limit at 3m (dB μ V/m)	Margin (dB)
Horizontal	70.365	38.1	20.0	7.2	25.3	40.0	-14.7
Horizontal	162.300	38.3	20.0	8.4	26.7	43.5	-16.8
Horizontal	325.482	39.6	20.0	15.8	35.4	46.0	-10.6
Vertical	33.257	28.4	20.0	16.9	25.3	40.0	-14.7
Vertical	36.532	30.1	20.0	15.3	25.4	40.0	-14.6
Vertical	400.120	28.8	20.0	16.3	25.1	46.0	-20.9
Vertical	1650.020	36.8	20.0	28.3	45.1	54.0	-8.9
Vertical	4824.320	52.2	36.1	34.1	50.2	54.0	-3.8

- NOTES:
1. All measurements were made at 3 meters. Harmonic emissions not detected at the 3-meter distances were measured at 0.3-meter and an inverse proportional extrapolation was performed to compare the signal level to the 3-meter limit. No other harmonic emissions than those reported were detected at a test distance of 0.3-meter.
 2. Negative value in the margin column shows emission below limit.
 3. All emissions below 1000MHz are below the QP limit and all emissions above 1000MHz are below the AV limit.
 4. Peak detector was used when the frequency above 1000MHz and QP detector was used when the frequency below 1000MHz.

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

3.4 Conducted Emission Configuration Photograph

Worst Case Neutral-Conducted Configuration
at
0.550 MHz

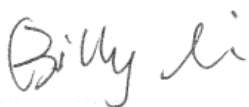
For electronic filing, the worst case conducted emission configuration photograph is saved with filename: conducted photos.pdf.

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3.5 Conducted Emission Data

Judgement: Passed by 10.5 dB margin

TEST PERSONNEL:



Signature

Billy Li, Team Leader

Typed/Printed Name

September 14, 2011

Date

INTERTEK TESTING SERVICES

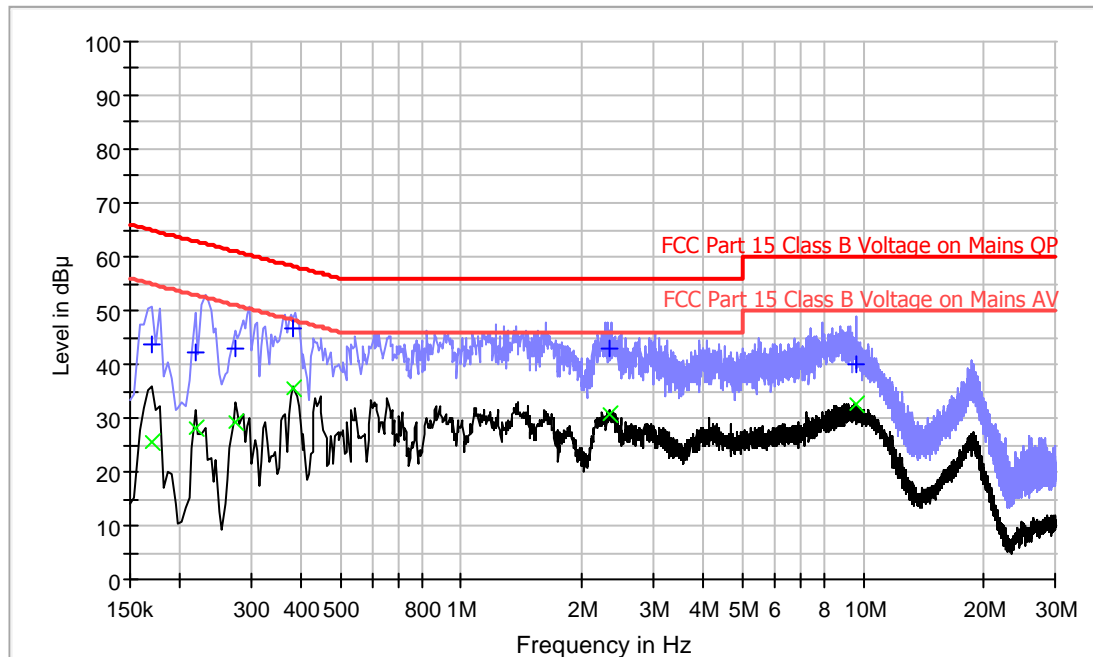
Company: KEEN HIGH HOLDING (HK) LIMITED

Date of Test: September 14, 2011

Model: WR780

Worst Case Operating Mode: Transfer data

Conducted Emission Test - FCC



Result Table-QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.170000	43.8	L1	9.6	21.2	65.0
0.218000	42.3	L1	9.6	20.6	62.9
0.274000	42.9	L1	9.6	18.1	61.0
0.382000	46.9	L1	9.6	11.4	58.2
2.338000	43.1	L1	9.8	12.9	56.0
9.582000	40.0	L1	9.9	20.0	60.0

Result Table-AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.170000	25.7	L1	9.6	29.3	55.0
0.218000	28.1	L1	9.6	24.8	52.9
0.274000	29.1	L1	9.6	21.9	51.0
0.382000	35.6	L1	9.6	12.6	48.2
2.338000	30.9	L1	9.8	15.1	46.0
9.582000	32.5	L1	9.9	17.5	50.0

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

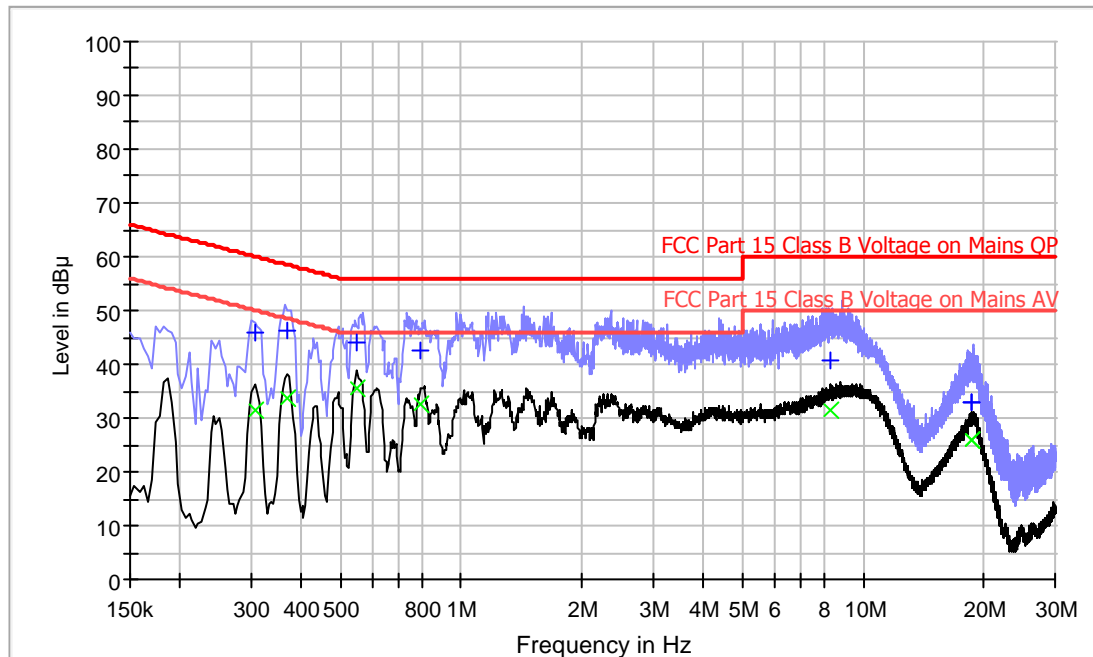
Company: KEEN HIGH HOLDING (HK) LIMITED

Date of Test: September 14, 2011

Model: WR780

Worst Case Operating Mode: Transfer data

Conducted Emission Test - FCC



Result Table-QP

Frequency (MHz)	QuasiPeak (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.306000	46.0	N	9.6	14.1	60.1
0.370000	46.2	N	9.6	12.3	58.5
0.550000	44.1	N	9.6	11.9	56.0
0.794000	42.7	N	9.7	13.3	56.0
8.302000	40.6	N	10.0	19.4	60.0
18.674000	32.9	N	10.1	27.1	60.0
18.674000	32.9	N	10.1	27.1	60.0

Result Table-AV

Frequency (MHz)	Average (dB μ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)
0.306000	31.6	N	9.6	18.5	50.1
0.370000	33.8	N	9.6	14.7	48.5
0.550000	35.5	N	9.6	10.5	46.0
0.794000	32.6	N	9.7	13.4	46.0
8.302000	31.6	N	10.0	18.4	50.0
18.674000	26.0	N	10.1	24.0	50.0
18.674000	26.0	N	10.1	24.0	50.0

Test Engineer: Billy Li

TRF No.: FCC 15C_PC_a

FCC ID: ZYQWR780

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EXHIBIT 4

EQUIPMENT PHOTOGRAPHS

INTERTEK TESTING SERVICES

4.0 **Equipment Photographs**

For electronic filing, photographs of the tested EUT are saved with filename: external photos.pdf and internal photos.pdf.

EXHIBIT 5
PRODUCT LABELLING

INTERTEK TESTING SERVICES

5.0 **Product Labelling**

For electronics filing, the FCC ID label artwork and the label location are saved with filename: label.pdf.

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EXHIBIT 6

TECHNICAL SPECIFICATIONS

INTERTEK TESTING SERVICES

6.0 **Technical Specifications**

For electronic filing, the block diagram of the tested EUT is saved with filename: block.pdf.

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EXHIBIT 7

INSTRUCTION MANUAL

INTERTEK TESTING SERVICES

7.0 **Instruction Manual**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: manual.pdf.

This manual will be provided to the end-user with each unit sold / leased in the United States.

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EXHIBIT 8

MISCELLANEOUS INFORMATION

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8.0 **Miscellaneous Information**

This miscellaneous information includes emission measuring procedure.

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8.1 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services in the measurements of computer peripheral operating under Part 15, Subpart B rules.

The test set-up and procedures described below are designed to meet the requirements of ANSI C63.4 – 2003.

The computer peripheral equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately one meter in height above the ground plane. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The antenna height and polarization are varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

Detector function for radiated emissions are in QP mode from the frequency band 30MHz to 1GHz with RBW setting 120kHz and in PK & AV mode from frequency band 1GHz to 5GHz with RBW setting 1MHz. Detector function for conducted emissions are in QP & AV mode and IFBW setting is 9kHz from the frequency band 150kHz to 30MHz.

For radiated emission, the frequency range scanned is 30MHz to 5GHz. For line-conducted emissions, the range scanned is 150kHz to 30MHz.

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8.1 Emissions Test Procedures (cont'd)

The EUT is warmed up for 15 minutes prior to the test.

Conducted measurements are made as described in ANSI C63.4 – 2003.

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EXHIBIT 9

TEST EQUIPMENT LIST

INTERTEK TESTING SERVICES

9.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	02-Jul-11	02-Jan-13
SZ185-01	EMI Receiver	R&S	ESCI	100547	08-Mar-11	08-Mar-12
SZ061-08	Horn Antenna	ETS	3115	00092346	15-Mar-10	15-Sep-11
SZ056-03	Spectrum Analyzer	R&S	FSP 30	101148	08-Mar-11	08-Mar-12
SZ181-04	Preamplifier	Agilent	8449B	3008A02474	08-Mar-11	08-Mar-12
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	15-Jan-11	15-Jan-12
SZ062-02	RF Cable	RADIAL	RG 213U	--	25-Mar-11	25-Sep-11
SZ062-06	RF Cable	RADIAL	0.04-26.5GHz	--	16-Sep-10	16-Sep-11
SZ062-12	RF Cable	RADIAL	0.04-26.5GHz	--	16-Sep-10	16-Sep-11
SZ067-04	Notch Filter	Micro-Tronics	BRM5070 2-02	--	15-Jul-11	15-Jul-12
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	12-Nov-10	12-Nov-11
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	12-Nov-10	12-Nov-11
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	12-Nov-10	12-Nov-11
SZ188-03	Shielding Room	ETS	RFD-100	4100	16-Sep-10	16-Sep-13