

**SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd.**

Application  
For  
Certification  
**FCC ID: YGB-DVT513**

**DIGITAL VIDEO CAMERA**

**Model: DVT513**

Computer Peripheral

Report No.: SZ12060484-1

We hereby certify that the sample of the above item is considered to comply with the requirements of FCC Part 15, Subpart C for Intentional Radiator, mention 47 CFR [10-1-11]

Prepared and Checked by:

Approved by:

Sign on file

Eason He  
Engineer

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Billy Li  
Supervisor  
Date: 25 August, 2012

- 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.
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- 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\_b

**Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch**

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# INTERTEK TESTING SERVICES

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## LIST OF EXHIBITS

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# INTERTEK TESTING SERVICES

## MEASUREMENT / TECHNICAL REPORT

SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd.

MODEL: DVT513

FCC ID: YGB-DVT513

25 August, 2012

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

Equipment Type: JBP-Class B Computing Device Peripheral

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 [10-01-11 Edition] provision.

Report prepared by:

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TRF No.: FCC 15C\_PC\_b

FCC ID: YGB-DVT513

Report No.: SZ12060484-1

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# INTERTEK TESTING SERVICES

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## INTERTEK TESTING SERVICES

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### 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

# **INTERTEK TESTING SERVICES**

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## **EXHIBIT 1**

### **GENERAL DESCRIPTION**

## INTERTEK TESTING SERVICES

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### 1.0 **General Description**

#### 1.1 Product Description

The Equipment Under Test (EUT) is a DIGITAL VIDEO CAMERA. The device can be used to transfer data connecting PC by PC USB port. The EUT is powered by DC 3.7V Rechargeable battery and charged by PC USB port.

#### 1.2 Related Submittal(s) Grants

This is an application for certification of a computer peripheral.

## INTERTEK TESTING SERVICES

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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 (2009). 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 **Intertek 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 (Registration Number: 242492).



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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 (2009).

The device is powered by a 3.7V fully rechargeable battery and charged by PC USB port through 120V/50Hz during the test. 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 2GHz 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

There is a CD attached to exercise the device.

#### 2.3 Special Accessories

Shielded USB cable with one ferrite ring. Un-shielded AV cable with one ferrite ring.

#### 2.4 Equipment Modification

Any modifications installed previous to testing by SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd. 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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## INTERTEK TESTING SERVICES

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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	Lenovo	T61
Micro SD Card	SanDisk	406
Hard Disk	Smart.drive	HD-003
USB Cable	Smart.drive	shielded, Length 100cm
1394 Cable	Smart.drive	shielded, Length 180cm
USB Cable	Shuoying	Shielded with one ferrite ring, Length 80cm
AV out Cable	Shuoying	Un-shielded with one ferrite ring, Length 122cm
Dummy Load	MTC	DL-002

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 3**

### **EMISSION RESULTS**

## INTERTEK TESTING SERVICES

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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 $\mu$ V/m

RA = Receiver Amplitude (including preamplifier) in dB $\mu$ 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 $\mu$ 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 $\mu$ V/m. This value in dB $\mu$ V/m was converted to its corresponding level in  $\mu$ 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**

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### 3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission  
At  
156.560MHz (PC download Mode)

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



## INTERTEK TESTING SERVICES

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### 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 5.2dB margin (PC download Mode)

#### **TEST PERSONNEL:**

*Sign on file*

Eason He, Engineer  
*Typed/Printed Name*

25 August, 2012  
*Date*

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## INTERTEK TESTING SERVICES

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Company: SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd.

Date of Test: 25 August, 2012

Model: DVT513

Worst Operating Mode: PC Download

### Radiated Emissions (30MHz~2GHz)

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	143.556	46.1	20.0	8.3	34.4	43.5	-9.1
Horizontal	156.560	48.6	20.0	9.7	38.3	43.5	-5.2
Horizontal	469.760	41.7	20.0	18.0	39.7	46.0	-6.3
Vertical	156.620	42.4	20.0	9.7	32.1	43.5	-11.4
Vertical	182.775	38.9	20.0	9.4	28.3	43.5	-15.2
Vertical	652.740	39.7	20.0	20.8	40.5	46.0	-5.5
Vertical	1825.320	37.3	20.0	30.0	47.3	54.0	-6.7

#### NOTES:

1. Quasi-Peak detector is used for frequency up to 1GHz. Peak detector is used for frequency above 1GHz.
2. 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.
3. Negative value in the margin column shows emission below limit.
4. All emissions up to 1GHz are below the QP limit. All emissions above 1GHz are below the AV limit.

Test Engineer: Eason He

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## INTERTEK TESTING SERVICES

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Company: SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd.

Date of Test: 25 August, 2012

Model: DVT513

Operating Mode: Play back

### Radiated Emissions (30MHz~2GHz)

Polarization	Frequency (MHz)	Reading (dBμV)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
Horizontal	156.560	38.7	20.0	9.7	28.4	43.5	-15.1
Horizontal	443.705	33.8	20.0	17.7	31.5	46.0	-14.5
Horizontal	913.670	32.8	20.0	25.1	37.9	46.0	-8.1
Vertical	156.585	37.2	20.0	9.7	26.9	43.5	-16.6
Vertical	548.000	33.0	20.0	19.1	32.1	46.0	-13.9
Vertical	966.050	29.1	20.0	26.3	35.4	54.0	-18.6
Vertical	1422.000	37.5	20.0	27.8	45.3	54.0	-8.7

#### NOTES:

1. Quasi-Peak detector is used for frequency up to 1GHz. Peak detector is used for frequency above 1GHz.
2. 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.
3. Negative value in the margin column shows emission below limit.
4. All emissions up to 1GHz are below the QP limit. All emissions above 1GHz are below the AV limit.

Test Engineer: Eason He

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## INTERTEK TESTING SERVICES

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Company: SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd.

Date of Test: 25 August, 2012

Model: DVT513

Operating Mode: AV Out

### Radiated Emissions (30MHz~2GHz)

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	208.480	40.3	20.0	8.4	28.7	43.5	-14.8
Horizontal	339.430	44.2	20.0	15.4	39.6	46.0	-6.4
Horizontal	365.800	44.6	20.0	15.7	40.3	46.0	-5.7
Vertical	220.420	48.9	20.0	9.2	38.1	46.0	-7.9
Vertical	652.740	35.4	20.0	20.8	36.2	46.0	-9.8
Vertical	966.050	29.8	20.0	26.3	36.1	54.0	-17.9
Vertical	1452.320	39.1	20.0	28.9	48.0	54.0	-6.0

#### NOTES:

1. Quasi-Peak detector is used for frequency up to 1GHz. Peak detector is used for frequency above 1GHz.
2. 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.
3. Negative value in the margin column shows emission below limit.
4. All emissions up to 1GHz are below the QP limit. All emissions above 1GHz are below the AV limit.

Test Engineer: Eason He

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## INTERTEK TESTING SERVICES

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Company: SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd.

Date of Test: 25 August, 2012

Model: DVT513

Operating Mode: Video play

### Radiated Emissions (30MHz~2GHz)

Polarization	Frequency (MHz)	Reading (dB $\mu$ V)	Pre-Amp Gain (dB)	Antenna Factor (dB)	Net at 3m (dB $\mu$ V/m)	Limit at 3m (dB $\mu$ V/m)	Margin (dB)
Horizontal	130.400	42.6	20.0	7.7	30.3	43.5	-13.2
Horizontal	652.740	34.3	20.0	20.8	35.1	46.0	-10.9
Horizontal	966.050	30.6	20.0	26.3	36.9	54.0	-17.1
Vertical	130.520	37.9	20.0	7.7	25.6	43.5	-17.9
Vertical	156.585	34.4	20.0	9.7	24.1	43.5	-19.4
Vertical	652.680	34.6	20.0	20.8	35.4	46.0	-10.6
Vertical	1745.220	40.4	20.0	27.8	48.2	54.0	-5.8

#### NOTES:

1. Quasi-Peak detector is used for frequency up to 1GHz. Peak detector is used for frequency above 1GHz.
2. 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.
3. Negative value in the margin column shows emission below limit.
4. All emissions up to 1GHz are below the QP limit. All emissions above 1GHz are below the AV limit.

Test Engineer: Eason He

## **INTERTEK TESTING SERVICES**

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### 3.4 Conducted Emission Configuration Photograph

Worst Case Live-Conducted Configuration  
at  
0.158 MHz (PC Download Mode)

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

## INTERTEK TESTING SERVICES

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### 3.5 Conducted Emission Data

Judgement: Passed by 8.4 dB margin (PC Download Mode)

#### **TEST PERSONNEL:**

*Sign on file*

Eason He, Engineer  
*Typed/Printed Name*

25 August, 2012  
*Date*

## INTERTEK TESTING SERVICES

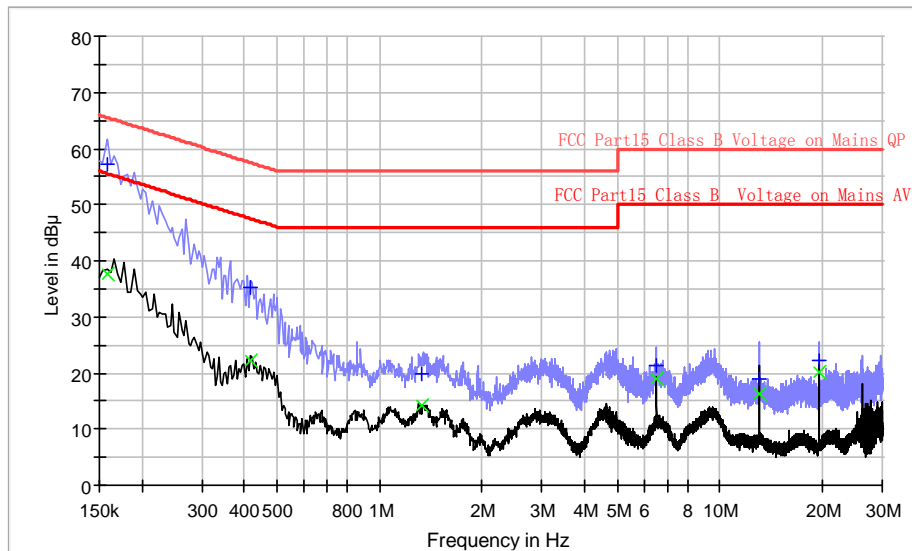
Company: SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd.

Date of Test: 25 August, 2012

Model: DVT513

Worst Operating Mode: PC Download

### Conducted Emission Test - FCC



### Result Table QP

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.158	57.2	L1	9.6	8.4	65.6
0.418	35.2	L1	9.6	22.3	57.5
1.334	19.8	L1	9.7	36.2	56.0
6.526	21.2	L1	9.8	38.8	60.0
13.054	19.1	L1	10.2	40.9	60.0
19.574	22.2	L1	10.2	37.8	60.0

### Result Table AV

Frequency (MHz)	Average (dB $\mu$ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.158	37.5	L1	9.6	18.1	55.6
0.418	22.3	L1	9.6	25.2	47.5
1.334	14.2	L1	9.7	31.8	46.0
6.526	19.0	L1	9.8	31.0	50.0
13.054	16.4	L1	10.2	33.6	50.0
19.574	20.1	L1	10.2	29.9	50.0

Test Engineer: Eason He

TRF No.: FCC 15C\_PC\_b

FCC ID: YGB-DVT513

Report No.: SZ12060484-1



## INTERTEK TESTING SERVICES

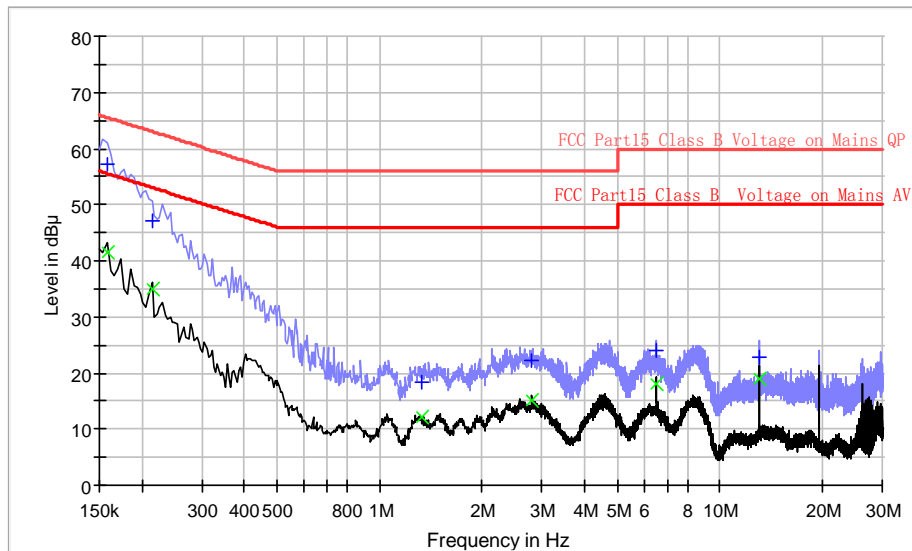
Company: SHUOYING DIGITAL SCIENCE&TECHNOLOGY (CHINA) Co., Ltd.

Date of Test: 25 August, 2012

Model: DVT513

Worst Operating Mode: PC Download

### Conducted Emission Test - FCC



### Result Table QP

Frequency (MHz)	QuasiPeak (dB $\mu$ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.158	57.1	N	9.6	8.5	65.6
0.214	47.2	N	9.6	15.8	63.0
1.334	18.3	N	9.7	37.7	56.0
2.810	22.1	N	9.7	33.9	56.0
6.526	24.1	N	9.9	35.9	60.0
13.050	22.8	N	10.2	37.2	60.0

### Result Table AV

Frequency (MHz)	Average (dB $\mu$ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB $\mu$ V)
0.158	41.4	N	9.6	14.2	55.6
0.214	35.1	N	9.6	17.9	53.0
1.334	12.1	N	9.7	33.9	46.0
2.810	15.2	N	9.7	30.8	46.0
6.526	18.2	N	9.9	31.8	50.0
13.050	18.9	N	10.2	31.1	50.0

Test Engineer: Eason He

TRF No.: FCC 15C\_PC\_b

FCC ID: YGB-DVT513

Report No.: SZ12060484-1

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 4**

### **EQUIPMENT PHOTOGRAPHS**

## INTERTEK TESTING SERVICES

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### 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

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### 5.0 **Product Labelling**

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

## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 6**

### **TECHNICAL SPECIFICATIONS**

## INTERTEK TESTING SERVICES

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### 6.0 **Technical Specifications**

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

# **INTERTEK TESTING SERVICES**

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## **EXHIBIT 7**

### **INSTRUCTION MANUAL**



## INTERTEK TESTING SERVICES

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### 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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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 8**

### **MISCELLANEOUS INFORMATION**

## INTERTEK TESTING SERVICES

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### 8.0 **Miscellaneous Information**

This miscellaneous information includes emission measuring procedure.

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## INTERTEK TESTING SERVICES

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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 – 2009.

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. Detector function for radiated emissions are in PK&AV mode from the frequency band above 1GHz 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 2GHz. For line-conducted emissions, the range scanned is 150kHz to 30MHz.

## **INTERTEK TESTING SERVICES**

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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 – 2009.

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## **INTERTEK TESTING SERVICES**

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### **EXHIBIT 9**

### **TEST EQUIPMENT LIST**

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## INTERTEK TESTING SERVICES

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### 9.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	30-Jun-12	30-Jun-13
SZ185-01	EMI Receiver	R&S	ESCI	100547	11-Mar-12	11-Mar-13
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	03-Mar-12	03-Mar-13
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	12-Nov-11	12-Nov-12
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	12-Nov-11	12-Nov-12
SZ188-03	Shielding Room	ETS	RFD-100	4100	16-Sep-11	16-Sep-12