



July 23, 2009

SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.
NO.1 Shuoying Rd., Hebei Industry Area, Dalang, Longhua Town,
Baoan, Shenzhen, China

Dear Tony Pan,

Enclosed you will find your file copy of a Part 15 report (FCC ID: XJNDV0370003).

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
Assistant Manager

Enclosure



SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.

Application
For
Certification
(FCC ID: XJNDV0370003)
Computer Peripheral

Billy Li

SZ09060336-1

Billy Li

July 23, 2009

- 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: XJNDV0370003

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

INTERTEK TESTING SERVICES

LIST OF EXHIBITS

INTRODUCTION

<i>EXHIBIT 1:</i>	General Description
<i>EXHIBIT 2:</i>	System Test Configuration
<i>EXHIBIT 3:</i>	Emission Results
<i>EXHIBIT 4:</i>	Equipment Photographs
<i>EXHIBIT 5:</i>	Product Labeling
<i>EXHIBIT 6:</i>	Technical Specifications
<i>EXHIBIT 7:</i>	Instruction Manual
<i>EXHIBIT 8:</i>	Miscellaneous Information
<i>EXHIBIT 9:</i>	Test Equipment List

INTERTEK TESTING SERVICES

MEASUREMENT / TECHNICAL REPORT

SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD. – MODEL: DV037

Additional Model: VC120, VC120DG, VC120CB

FCC ID: XJNDV0370003

July 23, 2009

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 [10-1-08 Edition] provision.

Report prepared by:

Shawn Xing
Intertek Testing Services Shenzhen Ltd.
Kejiyuan Branch
6F, D Block, Huahan Building, Langshan Road
Nanshan District, Shenzhen, P. R. China
Phone: (86 755) 8601 6288
Fax: (86 755) 8601 6751

INTERTEK TESTING SERVICES

Table of Contents

1.0	<u>General Description</u>	2
1.1	Product Description	2
1.2	Related Submittal(s) Grants	2
1.3	Test Methodology	3
1.4	Test Facility	3
2.0	<u>System Test Configuration</u>	5
2.1	Justification	5
2.2	EUT Exercising Software	5
2.3	Special Accessories	5
2.4	Equipment Modification	5
2.5	Measurement Uncertainty	6
2.6	Support Equipment List and Description	6
3.0	<u>Emission Results</u>	8
3.1	Field Strength Calculation	9
3.2	Radiated Emission Configuration Photograph	11
3.3	Radiated Emission Data	12
3.4	Conducted Emission Configuration Photograph	16
3.5	Conducted Emission Data	17
4.0	<u>Equipment Photographs</u>	20
5.0	<u>Product Labelling</u>	22
6.0	<u>Technical Specifications</u>	24
7.0	<u>Instruction Manual</u>	26
8.0	<u>Miscellaneous Information</u>	28
8.1	Emissions Test Procedures	29
9.0	<u>Test Equipment List</u>	32

INTERTEK TESTING SERVICES

List of attached file

Exhibit Type	File Description	Filename
Test Report	Test Report	report.pdf
Test Setup Photo	Radiated Emission	radiated photos.pdf
Test Setup Photo	Conducted Emission	conducted photos.pdf
External Photo	External Photo	external photos.pdf
Internal Photo	Internal Photo	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
Equipment List	Test Equipment List	equipment list.pdf

INTERTEK TESTING SERVICES

EXHIBIT 1

GENERAL DESCRIPTION

INTERTEK TESTING SERVICES

1.0 **General Description**

1.1 Product Description

The Equipment Under Test (EUT) is a Digital Camcorder. The device is powered by USB port for data transfer mode (USB connected mode with SD Card or MMC Card and PC Camera mode) and powered by D.C. 4.5V (3 x AAA) batteries for other modes.

The Model: VC120, VC120DG, VC120CB are the same as the tested Model: DV037 in hardware and software aspect. The only differences are the appearance, trade name and model no. for trading purpose.

1.2 Related Submittal(s) Grants

This is an application for certification of a computer peripheral.

INTERTEK TESTING SERVICES

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 conducted measurement facility used to collect the radiated data is **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.

INTERTEK TESTING SERVICES

EXHIBIT 2

SYSTEM TEST CONFIGURATION

INTERTEK TESTING SERVICES

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 USB port for data transfer mode (USB connected mode with SD Card or MMC Card and PC Camera mode) and powered by D.C. 4.5V (3 x AAA) batteries for other modes. 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 1GHz 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 software CD attached to exercise the device.

2.3 Special Accessories

The device is tested with an USB extended cable with ferrite bead and AV Line with ferrite Ring. They are marked together with the device.

2.4 Equipment Modification

Any modifications installed previous to testing by SHUOYING INDUSTRIAL (SHENZHEN) 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.

INTERTEK TESTING SERVICES

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:

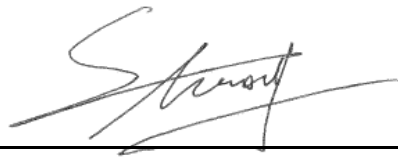
Refer List:

Description	Manufacturer	Model No.
Test PC	Lenovo	T61
Test PC	HP	AJ411AV
Hard Disk	Smart.drive	HD3-SU2FW
USB Cable	Smart.drive	Length 155cm
1394 Cable	Smart.drive	Length 180cm
SD Card	Sandisk	1G/ BB0723011986D
MMC Card	Sandisk	1G/ BB0756301145B
Load Terminal	MTC	TL-01
Load Terminal	MTC	TL-02
Test TV	KONKA	LC1700T

All the items listed under section 2.0 of this report are

Confirmed by:

Shawn Xing
Assistant Manager
Intertek Testing Services Shenzhen Ltd.
Kejiyuan Branch
Agent for SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.



July 23, 2009

Signature
Date

INTERTEK TESTING SERVICES

EXHIBIT 3

EMISSION RESULTS

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

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:

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

INTERTEK TESTING SERVICES

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
718.705MHz (Download 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 8.2dB margin (Download Mode)

TEST PERSONNEL:



Signature

Billy Li Compliance Engineer
Typed / Printed Name

July 23, 2009
Date

INTERTEK TESTING SERVICES

Company: SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.

Date of Test: July 23, 2009

Model: DV037

Worst Case Operating Mode: Download(with SD Card)

Table 1

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	30.985	24.5	20.0	18.7	23.2	40.0	-16.8
Horizontal	66.375	31.6	20.0	7.7	19.3	40.0	-20.7
Horizontal	199.756	30.7	20.0	11.3	22.0	43.5	-21.5
Vertical	41.157	30.7	20.0	13.0	23.7	40.0	-16.3
Vertical	718.705	33.2	20.0	24.6	37.8	46.0	-8.2
Vertical	999.981	32.8	20.0	27.4	40.2	54.0	-13.8

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 are below the QP limit.

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

Company: SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.

Date of Test: July 23, 2009

Model: DV037

Worst Case Operating Mode: Play Back Mode(with TV via AV output)

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	30.506	24.4	20.0	19.0	23.4	40.0	-16.6
Horizontal	36.826	24.4	20.0	15.3	19.7	40.0	-20.3
Horizontal	95.487	24.6	20.0	10.0	14.6	43.5	-28.9
Vertical	576.412	33.6	20.0	21.4	35.0	46.0	-11.0
Vertical	672.248	33.5	20.0	23.7	37.2	46.0	-8.8
Vertical	960.231	30.0	20.0	27.0	37.0	54.0	-17.0

- 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 are below the QP limit.

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

Company: SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.

Date of Test: July 23, 2009

Model: DV037

Worst Case Operating Mode: Video Recording

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	155.605	24.2	20.0	10.5	14.7	43.5	-28.8
Horizontal	324.862	23.9	20.0	16.8	20.7	46.0	-25.3
Horizontal	472.568	24.0	20.0	19.8	23.8	46.0	-22.2
Vertical	324.385	24.0	20.0	16.7	20.7	46.0	-25.3
Vertical	422.046	24.0	20.0	18.6	22.6	46.0	-23.4
Vertical	768.209	29.5	20.0	24.7	34.2	46.0	-11.8

- 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 are below the QP limit.

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

3.4 Conducted Emission Configuration Photograph

Worst Case Neutral-Conducted Configuration
at
17.650 MHz

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

INTERTEK TESTING SERVICES

3.5 Conducted Emission Data

Judgement: Passed by 15.7 dB margin

TEST PERSONNEL:



Signature

Billy Li, Compliance Engineer

Typed/Printed Name

July 23, 2009

Date

INTERTEK TESTING SERVICES

Company: SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD.

Date of Test: July 23, 2009

Model: DV037

Worst Case Operating Mode: Download

Table 4

Conducted Emissions

Live Line Data

Frequency (MHz)	Quasi-Peak		Average	
	Disturbance level dB(μV)	Permitted limit dB(μV)	Disturbance level dB(μV)	Permitted limit dB(μV)
0.190	35.3	64.0	19.0	54.0
0.204	35.8	63.4	24.0	53.4
0.262	31.4	61.4	18.9	51.4
17.358	30.5	60.0	26.2	50.0
19.794	39.9	60.0	32.2	50.0
23.901	28.2	60.0	26.8	50.0

Neutral Line Data

Frequency (MHz)	Quasi-Peak		Average	
	Disturbance level dB(μV)	Permitted limit dB(μV)	Disturbance level dB(μV)	Permitted limit dB(μV)
0.202	38.9	63.5	23.6	53.5
0.204	38.1	63.4	23.6	53.4
0.270	33.9	61.1	20.5	51.1
17.650	39.5	60.0	34.3	50.0
17.947	32.2	60.0	28.1	50.0
23.896	30.8	60.0	29.9	50.0

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

EXHIBIT 8

MISCELLANEOUS INFORMATION

INTERTEK TESTING SERVICES

8.0 **Miscellaneous Information**

This miscellaneous information includes emission measuring procedure.

INTERTEK TESTING SERVICES

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 is in QP mode from the frequency band 30MHz to 1GHz and RBW setting is 120kHz. 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 1GHz. For line-conducted emissions, the range scanned is 150kHz to 30MHz.

INTERTEK TESTING SERVICES

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.

INTERTEK TESTING SERVICES

EXHIBIT 9

TEST EQUIPMENT LIST

INTERTEK TESTING SERVICES

9.0 **Test Equipment List**

For electronic filing, the test equipment list of the tested EUT is saved with filename: equipment list.pdf.