



July 27, 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: XJNDV0210001).

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: XJNDV0210001)

Computer Peripheral

Billy Li

SZ09060407-1

Billy Li

July 27, 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: XJNDV0210001

Intertek Testing Services Shenzhen Ltd. Kejiyuan Branch

6F, D Block, Huahan Building, Langshan Road, Nanshan District, Shenzhen, P. R. China

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INTERTEK TESTING SERVICES

LIST OF EXHIBITS

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INTERTEK TESTING SERVICES

MEASUREMENT / TECHNICAL REPORT

SHUOYING INDUSTRIAL (SHENZHEN) CO., LTD. – MODEL: DV021

Additional Model: VC110

FCC ID: XJNDV0210001

July 27, 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
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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 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

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1.0 **General Description**

1.1 Product Description

The Equipment Under Test (EUT) is a Digital Video Camera. The device is powered by USB port for data transfer mode (USB connected mode with SD Card or MMC Card) and powered by D.C. 3V (2 x AA) batteries for other modes.

The Model: VC110 is the same as the tested Model: DV021 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.

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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 powered by D.C. 3V (2 x AA) 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 AV Line with ferrite Ring and an USB extended cable with ferrite bead. 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:

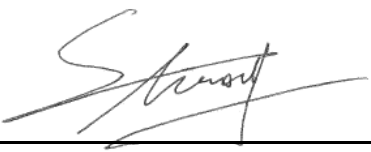
Refer List:

| 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 27, 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.

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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.

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

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

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

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

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

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

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

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

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3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
At
371.925MHz (Download Mode)

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

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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 5.1dB margin (Download Mode)

TEST PERSONNEL:



Signature

Billy Li Compliance Engineer
Typed / Printed Name

July 27, 2009
Date

INTERTEK TESTING SERVICES

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

Date of Test: July 27, 2009

Model: DV021

Worst Case Operating Mode: Download(with SD Card)

Table 1

Radiated Emissions

| 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 | 353.987 | 42.1 | 20.0 | 18.7 | 40.8 | 46.0 | -5.2 |
| Horizontal | 371.925 | 53.2 | 20.0 | 7.7 | 40.9 | 46.0 | -5.1 |
| Horizontal | 395.698 | 48.4 | 20.0 | 11.3 | 39.7 | 46.0 | -6.3 |
| Vertical | 204.146 | 33.0 | 20.0 | 13.0 | 26.0 | 43.5 | -17.5 |
| Vertical | 324.001 | 25.4 | 20.0 | 24.6 | 30.0 | 46.0 | -16.0 |
| Vertical | 341.997 | 24.2 | 20.0 | 27.4 | 31.6 | 46.0 | -14.4 |

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 27, 2009

Model: DV021

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 | 39.562 | 26.6 | 20.0 | 19.0 | 25.6 | 40.0 | -14.4 |
| Horizontal | 55.236 | 31.0 | 20.0 | 15.3 | 26.3 | 40.0 | -13.7 |
| Horizontal | 60.213 | 36.1 | 20.0 | 10.0 | 26.1 | 40.0 | -13.9 |
| Vertical | 32.425 | 22.1 | 20.0 | 21.4 | 23.5 | 40.0 | -16.5 |
| Vertical | 46.005 | 12.6 | 20.0 | 23.7 | 16.3 | 40.0 | -23.7 |
| Vertical | 104.205 | 8.3 | 20.0 | 27.0 | 15.3 | 43.5 | -28.2 |

- 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 are below the QP limit.

Test Engineer: Billy Li

INTERTEK TESTING SERVICES

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

Date of Test: July 27, 2009

Model: DV021

Worst Case Operating Mode: Video Recording

Table 3

Radiated Emissions

| 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 | 162.022 | 35.9 | 20.0 | 10.5 | 26.4 | 43.5 | -17.1 |
| Horizontal | 215.992 | 40.8 | 20.0 | 16.8 | 37.6 | 43.5 | -5.9 |
| Horizontal | 270.001 | 37.6 | 20.0 | 19.8 | 37.4 | 46.0 | -8.6 |
| Vertical | 32.423 | 26.9 | 20.0 | 16.7 | 23.6 | 40.0 | -16.4 |
| Vertical | 50.379 | 26.4 | 20.0 | 18.6 | 25.0 | 40.0 | -15.0 |
| Vertical | 55.222 | 23.6 | 20.0 | 24.7 | 28.3 | 40.0 | -11.7 |

- 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
23.896 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 20.1 dB margin

TEST PERSONNEL:



Signature

Billy Li, Compliance Engineer
Typed/Printed Name

July 27, 2009
Date

INTERTEK TESTING SERVICES

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

Date of Test: July 27, 2009

Model: DV021

Worst Case Operating Mode: Download

Table 4

Conducted Emissions

Live Line Data

| Frequency (MHz) | Quasi-Peak | | Average | |
|--------------------|--------------------------------------|------------------------------------|--------------------------------------|------------------------------------|
| | Disturbance level dB(μ V) | Permitted limit dB(μ V) | Disturbance level dB(μ V) | Permitted limit dB(μ V) |
| 0.204 | 35.8 | 63.4 | 24.0 | 53.4 |
| 0.213 | 39.0 | 63.1 | 21.2 | 53.1 |
| 15.382 | 28.8 | 60.0 | 22.8 | 50.0 |
| 17.358 | 30.5 | 60.0 | 26.2 | 50.0 |
| 20.590 | 33.0 | 60.0 | 27.6 | 50.0 |
| 23.901 | 28.2 | 60.0 | 26.8 | 50.0 |

Neutral Line Data

| Frequency (MHz) | Quasi-Peak | | Average | |
|--------------------|--------------------------------------|------------------------------------|--------------------------------------|------------------------------------|
| | Disturbance level dB(μ V) | Permitted limit dB(μ V) | Disturbance level dB(μ V) | Permitted limit dB(μ V) |
| 0.198 | 41.2 | 63.7 | 23.9 | 53.7 |
| 0.204 | 38.1 | 63.4 | 23.6 | 53.4 |
| 15.222 | 28.2 | 60.0 | 22.4 | 50.0 |
| 17.947 | 32.2 | 60.0 | 28.1 | 50.0 |
| 20.502 | 31.0 | 60.0 | 25.7 | 50.0 |
| 23.896 | 30.8 | 60.0 | 29.9 | 50.0 |

Test Engineer: Billy Li

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EXHIBIT 4

EQUIPMENT PHOTOGRAPHS

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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

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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.

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EXHIBIT 6

TECHNICAL SPECIFICATIONS

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6.0 Technical Specifications

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

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

INTERTEK TESTING SERVICES

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 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.

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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

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