

Weifang GoerTek Electronics Co.,Ltd

Application
For
Certification

FCC ID: SZGCECHYA0082

Wireless Adaptor

Model: CECHYA-0082

Report No.: 130916050SZN-004

Prepared and Checked by:

Approved by:

Sign on file

Leo Lai
Project Engineer

Andy Yan
Project Engineer
Date: October 30, 2013

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TRF No.: FCC 15C_PC_b

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INTERTEK TESTING SERVICES

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MEASUREMENT / TECHNICAL REPORT

FCC ID: SZGCECHYA0082

Model: CECHYA-0082

October 30, 2013

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

Equipment Type: JBP-Part 15 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 B for unintentional radiator – the new 47 CFR [10-01-12 Edition] provision.

Report prepared by:

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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
Cover Letter	Confidentiality Letter	request.pdf

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EXHIBIT 1

GENERAL DESCRIPTION

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1.0 General Description

1.1 Product Description

The equipment under test (EUT) is a Wireless Adaptor. It can connect to PlayStation, PC (with Windows or Mac OS), televisions, and portable media players. The EUT is operated by D.C. 5V from USB port. For more information, please refer to user manual.

1.2 Related Submittal(s) Grants

This is an application for certification of a computer Peripheral.

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 Test 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 Test in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.4 (2009).

The EUT was powered by D.C. 5V PC USB port (the PC was powered by AC120V/60Hz) during the test.

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 Test 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.

2.2 EUT Exercising Software

N/A

2.3 Special Accessories

N/A.

2.4 Equipment Modification

Any modifications installed previous to Test by Weifang GoerTek Electronics Co.,Ltd Will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Test 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
Hard Disk	Smart.drive	HD-003
USB Cable	Smart.drive	Unshielded, Length 155cm
1394 Cable	Smart.drive	Unshielded, Length 180cm
Wireless Stereo Headset	Sony	CECHYA-0083

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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:

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

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
30.489MHz (Data transfer Mode)

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

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 9.1dB margin (Data transfer Mode)

TEST PERSONNEL:

Sign on file

Leo Lai Project Engineer
Typed/Printed Name

Sept. 26, 2013
Date

INTERTEK TESTING SERVICES

Applicant: Weifang GoerTek Electronics Co.,Ltd

Date of Test: Sept. 26, 2013

Model: CECHYA-0082

Worst case operating Mode: Data transfer

Radiated Emissions (30MHz~1GHz)

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	202.988	25.2	20.0	18.6	21.1	43.5	-22.4
Horizontal	240.005	25.1	20.0	13.0	23.8	46.0	-22.2
Horizontal	480.010	29.2	20.0	17.0	29.7	46.0	-16.3
Vertical	30.489	24.4	20.0	18.2	30.9	40.0	-9.1
Vertical	50.370	19.6	20.0	7.1	23.4	40.0	-16.6
Vertical	191.990	32.6	20.0	22.1	21.6	43.5	-21.9

NOTES:

1. Quasi-Peak detector is used except for others stated.
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.

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3.4 Conducted Emission Configuration Photograph

Worst Case Neutral-Conducted Configuration
at
0.450 MHz (Data transfer Mode)

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

3.5 Conducted Emission Data

Judgement: Passed by 18.3 dB margin (Data transfer Mode)

TEST PERSONNEL:

Sign on file

Leo Lai Project Engineer
Typed/Printed Name

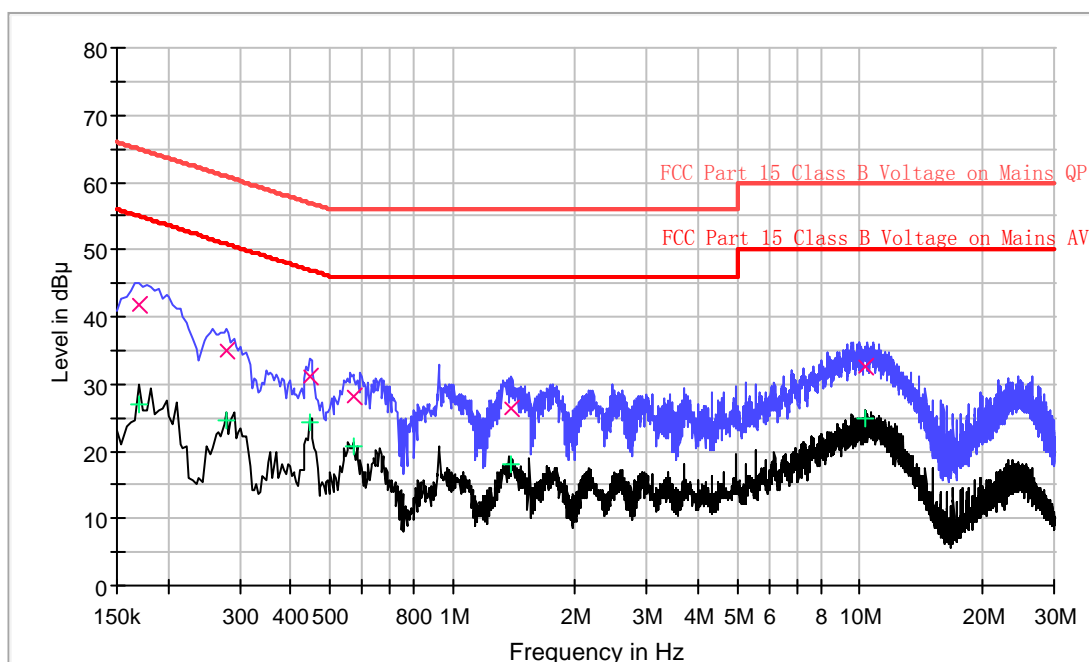
Sept. 26, 2013
Date

INTERTEK TESTING SERVICES

Applicant: Weifang GoerTek Electronics Co.,Ltd
 Model: CECHYA-0082
 Worst case operating Mode: Data transfer

Date of Test: Sept. 26, 2013

Conducted Emission Test – FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.170000	41.9	L1	9.7	23.1	65.0
0.278000	34.9	L1	9.7	26.0	60.9
0.446000	31.2	L1	9.7	25.7	56.9
0.570000	28.1	L1	9.7	27.9	56.0
1.398000	26.5	L1	9.8	29.5	56.0
10.310000	32.5	L1	10.0	27.5	60.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.170000	27.0	L1	9.7	28.0	55.0
0.278000	24.5	L1	9.7	26.4	50.9
0.446000	24.2	L1	9.7	22.7	46.9
0.570000	20.7	L1	9.7	25.3	46.0
1.398000	18.0	L1	9.8	28.0	46.0
10.310000	24.7	L1	10.0	25.3	50.0

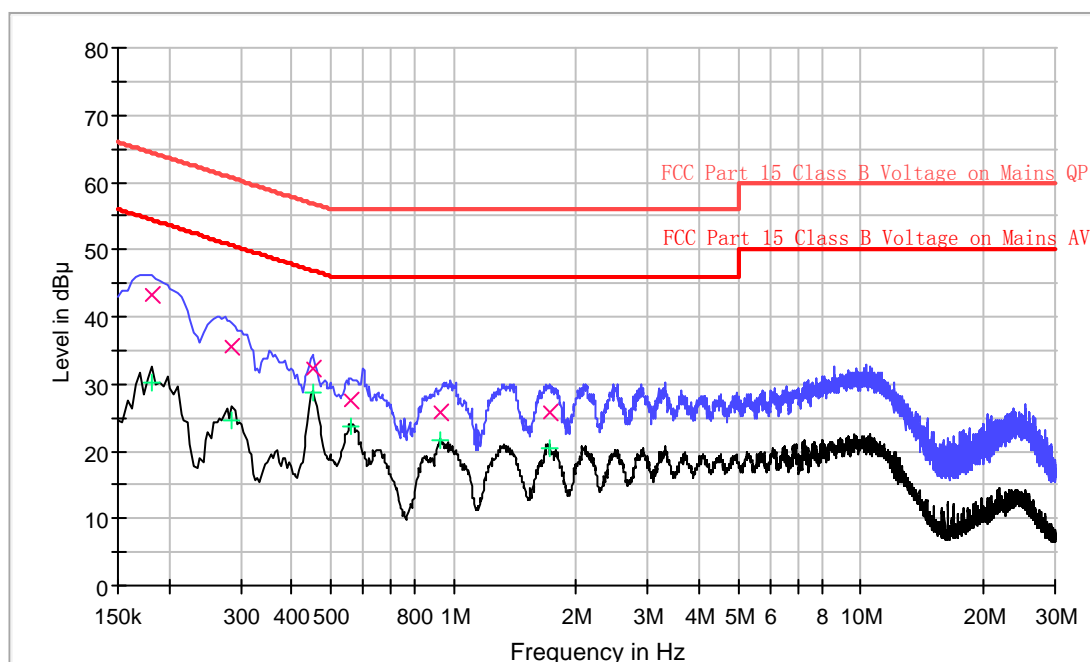
TRF No.: FCC 15C_PC_b
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 Report No.: 130916050SZN-004

INTERTEK TESTING SERVICES

Applicant: Weifang GoerTek Electronics Co.,Ltd
 Model: CECHYA-0082
 Worst case operating Mode: Data transfer

Date of Test: Sept. 26, 2013

Conducted Emission Test – FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.182000	43.3	N	10.2	21.1	64.4
0.286000	35.6	N	10.2	25.0	60.6
0.450000	32.3	N	10.2	24.6	56.9
0.558000	27.7	N	10.2	28.3	56.0
0.926000	25.7	N	10.3	30.3	56.0
1.718000	25.7	N	10.3	30.3	56.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.182000	30.3	N	10.2	24.1	54.4
0.286000	24.7	N	10.2	25.9	50.6
0.450000	28.6	N	10.2	18.3	46.9
0.558000	23.8	N	10.2	22.2	46.0
0.926000	21.7	N	10.3	24.3	46.0
1.718000	20.4	N	10.3	25.6	46.0

TRF No.: FCC 15C_PC_b
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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.

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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.

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EXHIBIT 7

INSTRUCTION MANUAL

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7.0 Instruction Manual

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

8.1 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Test 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 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 Test 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 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 - 2009.

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EXHIBIT 9
CONFIDENTIALITY REQUEST

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9.0 **Confidentiality Request**

For electronic filing, the confidentiality request of the tested EUT is saved with filename: request.pdf.

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EXHIBIT 10 TEST EQUIPMENT LIST

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10.0 Test Equipment List

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-03	BiConiLog Antenna	ETS	3142C	00066460	29-Jun-13	29-Jun-14
SZ185-01	EMI Receiver	R&S	ESCI	100547	12-Mar-13	12-Mar-14
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	2-Mar-13	2-Mar-14
SZ062-02	RF Cable	RADIALL	RG 213U	--	20-Jul-13	20-Jan-14
SZ062-12	RF Cable	RADIALL	R288531262	--	22-Apr-13	22-Oct-13
SZ062-19	RF Cable	HUBER+SUHNER	SF104	--	20-Jul-13	20-Jan-14
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	5-Nov-12	5-Nov-13
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	5-Nov-12	5-Nov-13
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	5-Nov-12	5-Nov-13
SZ188-03	Shielding Room	ETS	RFD-100	4100	23-Aug-13	23-Aug-14