Jinpin Electrical Company Ltd. ZhuHai S.E.Z.

Application
For
Certification
FCC ID: 2AAHY32DF2013393

LED TV

Model: IQ32
Additional Models: E32DF2210, E32DF2##0 ("#"can be A-Z or 0-9 or blank)

Brand Name: IQ, JPE

Computer Peripheral

Report No.: 161024030SZN-001

Prepared and Checked by:	Approved by:
Sign on file	Digitally signed by Kidd Yang Location: Intertek Testing Services
Jenner Liu Engineer	Kidd Yang Senior Project Engineer Date: November 11, 2016

TRF No.: FCC 15C_PC_b

LIST OF EXHIBITS

MEASUREMENT / TECHNICAL REPORT

Jinpin Electrical Company Ltd. ZhuHai S.E.Z.
MODEL: IQ32
Additional Models: E32DF2210, E32DF2##0 ("#"can be A-Z or 0-9 or blank)

Manufacturer: CEC INTERNATIONAL INVESTMENT LIMITED
ROOM 1905, 19/F., KOWLOON BUILDING, 555 NATHAN ROAD, MONG KOK, KOWLOON, HONGKONG

FCC ID: 2AAHY32DF2013393

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

Equipment Type: JBP-Class B Computing Device Peripheral

Deferred grant requested per 47 CFR 0.457(d)(1)(ii)? Yes _____ No ___X___

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 ___X___

If no, assumed Part 15, Subpart B for unintentional radiator – the new 47 CFR [10-01-15 Edition] provision.

Report prepared by:

Jenner Liu
Intertek Testing Services Shenzhen Ltd.
Kejiyuan Branch
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Nanshan District, Shenzhen, P. R. China
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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	Confidential Letter	request.pdf
Cover Letter	Letter of Agency	agency.pdf

EXHIBIT 1

GENERAL DESCRIPTION

1.0 General Description

1.1 Product Description

The Equipment Under Test (EUT) is a LED TV. The device can be used to connect PC by VGA port and HDMI port. The EUT is powered by AC100-240V, 50/60Hz, 60W.

The Model: E32DF2210, E32DF2##0 ("#"can be A-Z or 0-9 or blank) are the same as the Model: IQ32 in hardware and electrical aspect. The models are difference in packaging and marketing purpose only.

1.2 Related Submittal(s) Grants

This is an application for certification of a computer peripheral. Other digital functions were reported in the verification report: 161024028SZN-002.

1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.4 (2014). 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).

EXHIBIT 2

SYSTEM TEST CONFIGURATION

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 (2014).

The device was powered by AC 120V/60Hz during the test. Only 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 turn table, 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

N/A

2.3 Special Accessories

N/A

2.4 Equipment Modification

Any modifications installed previous to testing by Jinpin Electrical Company Ltd. ZhuHai S.E.Z. 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.

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	ProBook 430 G1
Hard Disk	Smart.drive	HD-003
RJ45 Cable	N/A	Unshielded, Length 450cm
USB Cable	Smart.drive	Unshielded, Length 155cm
USB Memory	TOSHIBA	UHYBS-004G-BL
Dummy Load	N/A	N/A
HDMI Cable*2	N/A	UnShielded, Length 180cm
AV Cable*2	N/A	Unshielded, Length 120cm
VGA Cable	N/A	UnShielded, Length 180cm
PC Audio Cable	N/A	UnShielded, Length 180cm
Headphone	N/A	Unshielded, Length 120cm
Tuner Resister	N/A	75ohm
Remote controller	TCL	N/A

EXHIBIT 3

EMISSION RESULTS

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.

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

where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB/m
AG = Amplifier Gain 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

3.1 Field Strength Calculation (cont'd)

Example

Assume a receiver reading of 62.0dBμV is obtained. The antenna factor of 7.4dB/m and cable factor of 1.6dB is added. The amplifier gain of 29dB is subtracted. The net field strength for comparison to the appropriate emission limit is 42dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

RA = 62.0dBμV
AF = 7.4dB/m
CF = 1.6dB
AG = 29.0dB

FS = 62 + 7.4 + 1.6 – 29 = 42dBμV/m

Level in μV/m = Common Antilogarithm [(42dBμV/m)/20] = 125.9μV/m

3.2 Radiated Emission Configuration Photograph

Worst Case Radiated Emission
At
75.255MHz (VGA 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 3.2dB margin (VGA Mode)

TEST PERSONNEL:

Sign on file

Jenner Liu, Engineer
Typed/Printed Name

November 09, 2016
Date

Company: Jinpin Electrical Company Ltd. ZhuHai S.E.Z.
Date of Test: November 09, 2016
Model: IQ32
Operating Mode: VGA

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	84.320	46.0	20.0	8.9	34.9	40.0	-5.1
Horizontal	250.190	43.1	20.0	14.1	37.2	46.0	-8.8
Horizontal	322.552	41.6	20.0	16.0	37.6	46.0	-8.4
Horizontal	1200.000	26.0	20.0	24.0	30.0	54.0	-24.0
Horizontal	1400.000	24.9	20.0	25.2	30.1	54.0	-23.9
Horizontal	1998.000	20.1	20.0	29.8	29.9	54.0	-24.1
Vertical	75.255	48.4	20.0	8.4	36.8	40.0	-3.2
Vertical	84.320	46.2	20.0	8.9	35.1	40.0	-4.9
Vertical	241.571	45.2	20.0	13.6	38.8	46.0	-7.2
Vertical	1401.000	25.0	20.0	25.0	30.0	54.0	-24.0
Vertical	1896.000	21.9	20.0	28.4	30.3	54.0	-23.7
Vertical	1998.000	21.9	20.0	29.1	31.0	54.0	-23.0

NOTES:

1. Quasi-Peak detector is used for frequency up to 1GHz and Peak detector is used for frequency from 1-2GHz.

2. All measurements were made at 3 meters.

3. Negative value in the margin column shows emission below limit.

4. All emissions up to 1GHz are below the QP limit and all emissions between 1-2GHz are below the AV limit.

Test Engineer: Jenner Liu

Company: Jinpin Electrical Company Ltd. ZhuHai S.E.Z.
Date of Test: November 09, 2016
Model: IQ32
Operating Mode: HDMI In

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	191.505	48.0	20.0	11.2	39.2	43.5	-4.3
Horizontal	323.425	42.8	20.0	16.1	38.9	46.0	-7.1
Horizontal	430.000	38.2	20.0	18.9	37.1	46.0	-8.9
Horizontal	1200.000	26.5	20.0	24.0	30.5	54.0	-23.5
Horizontal	1600.000	24.4	20.0	26.6	31.0	54.0	-23.0
Horizontal	1890.000	26.1	20.0	29.0	35.1	54.0	-18.9
Vertical	38.635	41.5	20.0	13.4	34.9	40.0	-5.1
Vertical	191.020	43.8	20.0	11.2	35.0	43.5	-8.5
Vertical	416.545	35.1	20.0	18.9	34.0	46.0	-12.0
Vertical	1196.000	29.4	20.0	23.6	33.0	54.0	-21.0
Vertical	1896.000	26.9	20.0	28.4	35.3	54.0	-18.7
Vertical	1998.000	21.1	20.0	29.1	30.2	54.0	-23.8

NOTES:

1. Quasi-Peak detector is used for frequency up to 1GHz and Peak detector is used for frequency from 1-2GHz.

2. All measurements were made at 3 meters.

3. Negative value in the margin column shows emission below limit.

4. All emissions up to 1GHz are below the QP limit and all emissions between 1-2GHz are below the AV limit.

Test Engineer: Jenner Liu

3.4 Conducted Emission at Mains Terminal

3.5 Conducted Emission Configuration Photograph

Worst Case Conducted Configuration
at
17.182 MHz(VGA Mode)

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

3.6 Conducted Emission Data

Judgement: Passed by 3.4 dB margin(VGA Mode)

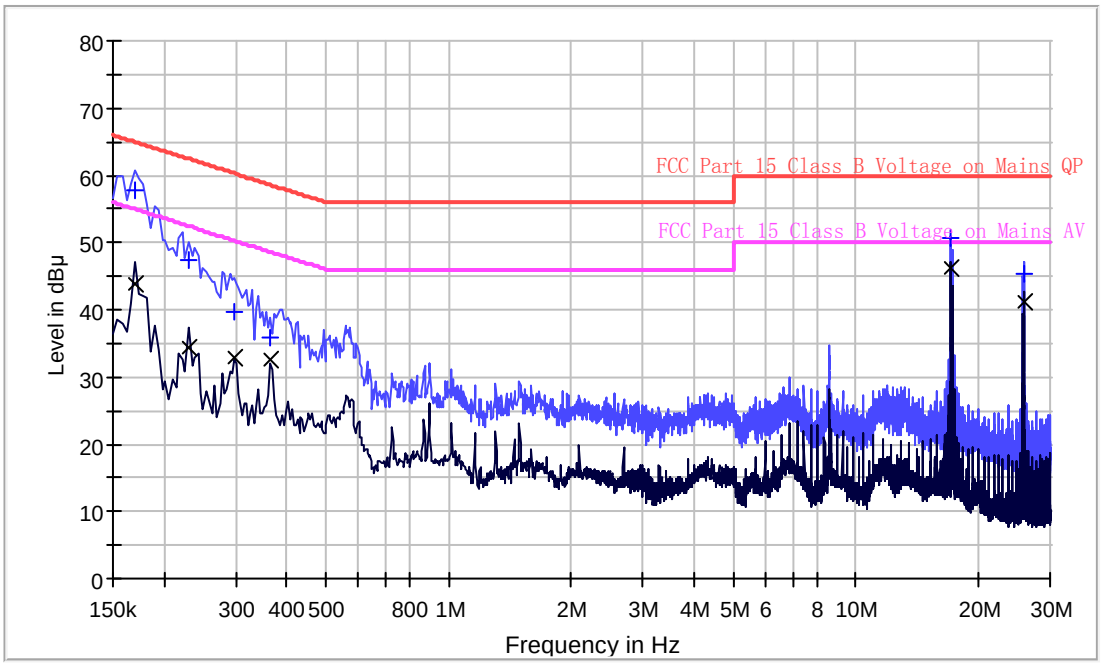
TEST PERSONNEL:

Sign on file

Jenner Liu, Engineer
Typed/Printed Name

November 09, 2016
Date

Company: Jinpin Electrical Company Ltd. ZhuHai S.E.Z.
Date of Test: November 09, 2016
Model: IQ32
Operating Mode: VGA
Phase: Live
Conducted Emission Test - FCC



Result Table QP

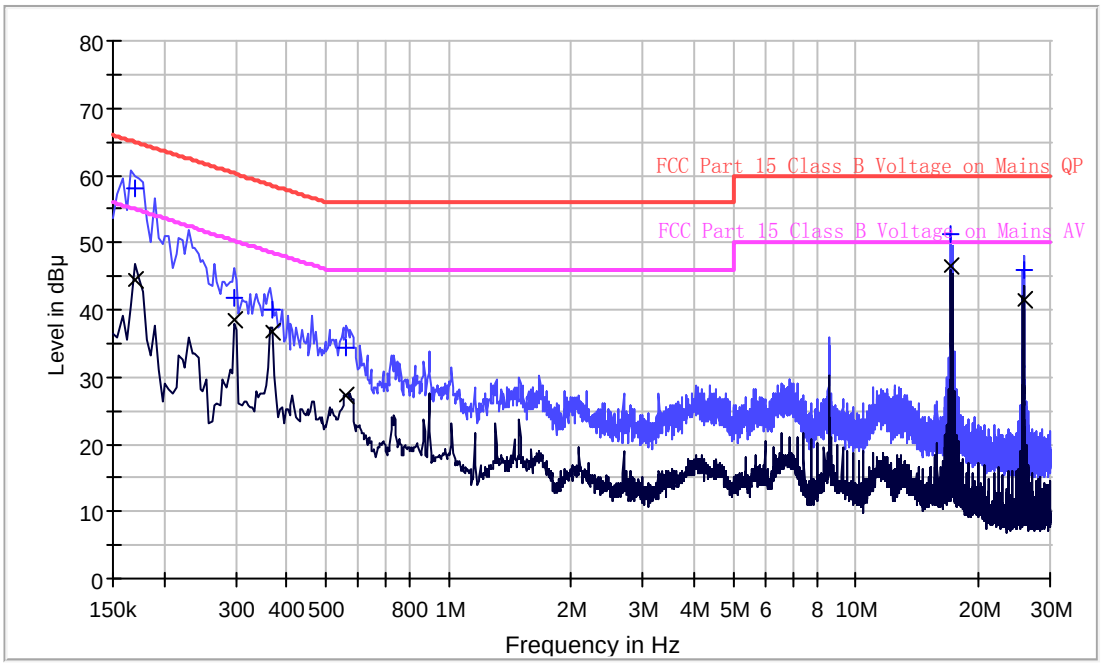
Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.170	57.9	L1	9.6	7.1	65.0
0.230	47.5	L1	9.7	14.9	62.4
0.298	39.8	L1	9.7	20.5	60.3
0.366	35.8	L1	9.7	22.8	58.6
17.182	50.7	L1	10.2	9.3	60.0
25.822	45.5	L1	10.7	14.5	60.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.170	44.0	L1	9.6	11.0	55.0
0.230	34.4	L1	9.7	18.0	52.4
0.298	33.0	L1	9.7	17.3	50.3
0.366	32.5	L1	9.7	16.1	48.6
17.182	46.2	L1	10.2	3.8	50.0
25.822	41.0	L1	10.7	9.0	50.0

Test Engineer: Jenner Liu

Company: Jinpin Electrical Company Ltd. ZhuHai S.E.Z.
Date of Test: November 09, 2016
Model: IQ32
Operating Mode: VGA
Phase: Neutral
Conducted Emission Test - FCC



Result Table QP

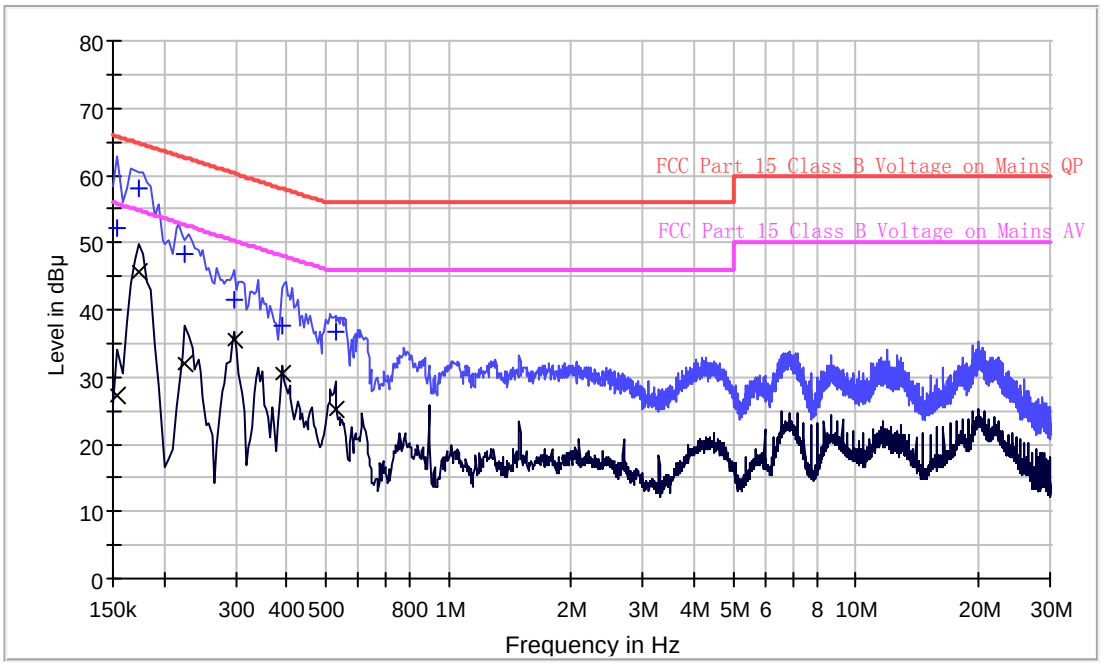
Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.170	58.0	N	9.6	7.0	65.0
0.298	41.8	N	9.7	18.5	60.3
0.370	40.0	N	9.7	18.5	58.5
0.562	34.4	N	9.7	21.6	56.0
17.182	51.2	N	10.2	8.8	60.0
25.822	45.9	N	10.7	14.1	60.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.170	44.3	N	9.6	10.7	55.0
0.298	38.5	N	9.7	11.8	50.3
0.370	36.6	N	9.7	11.9	48.5
0.562	27.4	N	9.7	18.6	46.0
17.182	46.6	N	10.2	3.4	50.0
25.822	41.5	N	10.7	8.5	50.0

Test Engineer: Jenner Liu

Company: Jinpin Electrical Company Ltd. ZhuHai S.E.Z.
Date of Test: November 09, 2016
Model: IQ32
Operating Mode: HDMI In
Phase: Live
Conducted Emission Test - FCC



Result Table QP

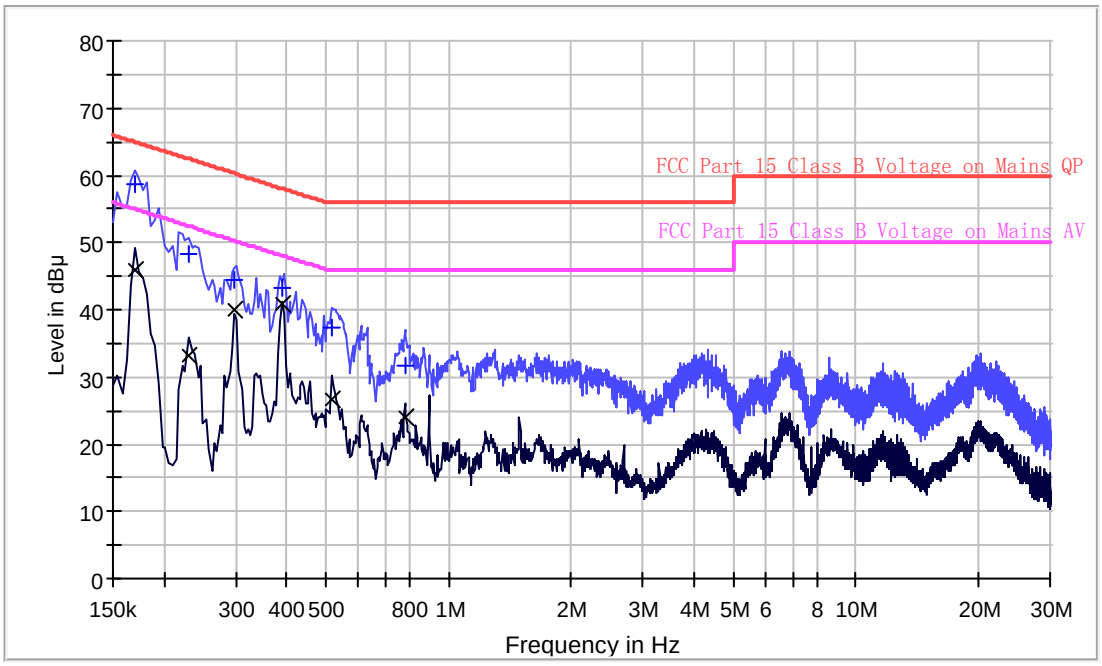
Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.154	52.3	L1	9.6	13.5	65.8
0.174	58.0	L1	9.7	6.8	64.8
0.226	48.3	L1	9.7	14.3	62.6
0.298	41.5	L1	9.7	18.8	60.3
0.390	37.8	L1	9.7	20.3	58.1
0.526	36.7	L1	9.7	19.3	56.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.154	27.2	L1	9.6	28.6	55.8
0.174	45.7	L1	9.7	9.1	54.8
0.226	32.0	L1	9.7	20.6	52.6
0.298	35.6	L1	9.7	14.7	50.3
0.390	30.6	L1	9.7	17.5	48.1
0.526	25.1	L1	9.7	20.9	46.0

Test Engineer: Jenner Liu

Company: Jinpin Electrical Company Ltd. ZhuHai S.E.Z.
Date of Test: November 09, 2016
Model: IQ32
Operating Mode: HDMI In
Phase: Neutral
Conducted Emission Test - FCC



Result Table QP

Frequency (MHz)	QuasiPeak (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.170	58.5	N	9.6	6.5	65.0
0.230	48.2	N	9.7	14.2	62.4
0.298	44.3	N	9.7	16.0	60.3
0.390	43.3	N	9.7	14.8	58.1
0.518	37.3	N	9.7	18.7	56.0
0.786	31.6	N	9.7	24.4	56.0

Result Table AV

Frequency (MHz)	Average (dB µ V)	Line	Corr. (dB)	Margin (dB)	Limit (dB µ V)
0.170	45.8	N	9.6	9.2	55.0
0.230	33.3	N	9.7	19.1	52.4
0.298	40.0	N	9.7	10.3	50.3
0.390	40.9	N	9.7	7.2	48.1
0.518	26.7	N	9.7	19.3	46.0
0.786	24.0	N	9.7	22.0	46.0

Test Engineer: Jenner Liu

EXHIBIT 4

EQUIPMENT PHOTOGRAPHS

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

5.0 **Product Labelling**

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

EXHIBIT 6

TECHNICAL SPECIFICATIONS

6.0 Technical Specifications

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

EXHIBIT 7

INSTRUCTION MANUAL

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.

EXHIBIT 8

MISCELLANEOUS INFORMATION

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 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 – 2014.

The computer peripheral equipment under test (EUT) is placed on a styrene turntable which is four feet in diameter and approximately 0.8 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 2GHz 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 with RBW setting 9KHz.

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 – 2014.

EXHIBIT 9

TEST EQUIPMENT LIST

9.0 **Test Equipment List**

Equipment No.	Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due Date
SZ061-12	Biconilog Antenna	ETS	3142E	00166158	09-Sep-2016	09-Sep-2017
SZ061-08	Horn Antenna	ETS	3115	00092346	12-Oct-2016	12-Oct-2017
SZ056-03	Spectrum Analyzer	R&S	FSP30	101148	14-Jun-2016	14-Jun-2017
SZ185-01	EMI Receiver	R & S	ESCI	100547	23-Jan-2016	23-Jan-2017
SZ188-01	Anechoic Chamber	ETS	RFD-F/A-100	4102	16-Apr-2016	16-Apr-2018
SZ062-02	RF Cable	RADIALL	RG 213U	--	08-Jul-2016	08-Jan-2017
SZ062-05	RF Cable	RADIALL	0.04-26.5GHz	--	26-Sep-2016	26-Mar-2017
SZ062-12	RF Cable	RADIALL	0.04-26.5GHz	--	26-Sep-2016	26-Mar-2017
SZ185-02	EMI Test Receiver	R&S	ESCI	100692	01-Nov-2016	01-Nov-2017
SZ187-01	Two-Line V-Network	R&S	ENV216	100072	01-Nov-2016	01-Nov-2017
SZ187-02	Two-Line V-Network	R&S	ENV216	100073	01-Jul-2016	01-Jul-2017
SZ188-03	Shielding Room	ETS	RFD-100	4100	17-Aug-2016	17-Aug-2018