FCC PART 15B, CLASS B

TEST REPORT

For

LZeal Information Technology Co., Ltd.

F18, Unit 2, 530 Building, No.100, Dicui Road, Liyuan Development Zone, Wuxi City, Jiangsu Province, China

FCC ID: A7JEZS128

Report Type:	**Product Type:**
Original Report	Wi-Fi SD Card

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Report Number:	R1SH121227050-00B
Report Date:	2013-01-10
Reviewed By:	Ivan Cao RF Leader
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TABLE OF CONTENTS

GENERAL INFORMATION **3**
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT) 3
OBJECTIVE 3
RELATED SUBMITTAL(S)/GRANT(S) 3
TEST FACILITY 3
SYSTEM TEST CONFIGURATION **4**
JUSTIFICATION 4
EUT EXERCISE SOFTWARE 4
EQUIPMENT MODIFICATIONS 4
SUPPORT EQUIPMENT LIST AND DETAILS 4
EXTERNAL CABLE 4
PRINTER 4
KEYBOARD 4
BLOCK DIAGRAM OF TEST SETUP 5
SUMMARY OF TEST RESULTS **6**
FCC §15.107 – AC LINE CONDUCTED EMISSIONS **7**
MEASUREMENT UNCERTAINTY 7
EUT SETUP 7
EMI TEST RECEIVER SETUP 7
TEST PROCEDURE 8
TEST EQUIPMENT LIST AND DETAILS 8
TEST RESULTS SUMMARY 8
TEST DATA 8
FCC §15.109 - RADIATED EMISSIONS **11**
MEASUREMENT UNCERTAINTY 11
EUT SETUP 11
EMI TEST RECEIVER SETUP 11
TEST PROCEDURE 12
CORRECTED AMPLITUDE & MARGIN CALCULATION 12
TEST EQUIPMENT LIST AND DETAILS 12
TEST RESULTS SUMMARY 12
TEST DATA 13
DECLARATION LETTER **15**

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *LZeal Information Technology Co., Ltd.*'s product, model number: *DS100-4G (FCC ID: A7JEZS128)* (the "EUT") in this report was a *Wi-Fi SD Card*, which was measured approximately: 3.2 cm (L) x 2.4 cm (W) x 0.2 cm (H), rated input voltage: DC3.3 V from system.The highest working frequency is 96MHz.

Note: model DS100(DS100-4G, DS100-8G, DS100-16G, DS100-32G) are electrically identical, we selected all model for test, and the difference between them please refers to the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 121227050 (Assigned by BACL.Dongguan). The EUT was received on 2012-12-28.*

Objective

This report is prepared on behalf of *LZeal Information Technology Co., Ltd.* in accordance with Part 2, Subpart J, Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine compliance with FCC Part 15B, Class B.

Related Submittal(s)/Grant(s)

FCC Part 15C DTS submissions with FCC ID: *A7JEZS128* for Wi-Fi.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

EUT Exercise Software

The software 'WINTHRAX.EXE' was used in the testing.

Equipment Modifications

No modification was made to the EUT.

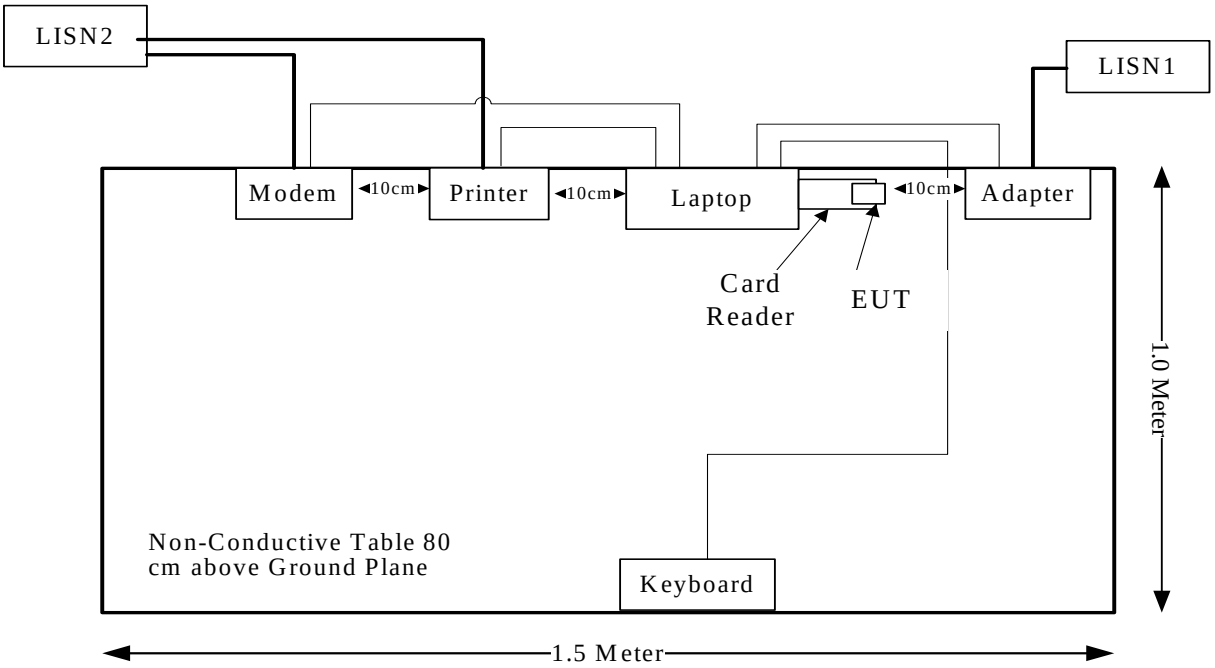
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017
HP	Printer	C3941A	JPTVOB2337
DELL	Keyboard	L100	CNORH656658907BL05DC
SAST	Modem	AEM-2100	0293
Chuanyu	Card Reader	/	/

External Cable

Cable Description	Length (m)	From Port	To
Shielded Detachable Printer Cable	1.2	Parallel Port of Laptop	Printer
Shielded Detachable Serial Cable	1.2	Serial Port of Laptop	Modem
Shielded Detachable Keyboard Cable	1.5	Keyboard Port of Laptop	Keyboard

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

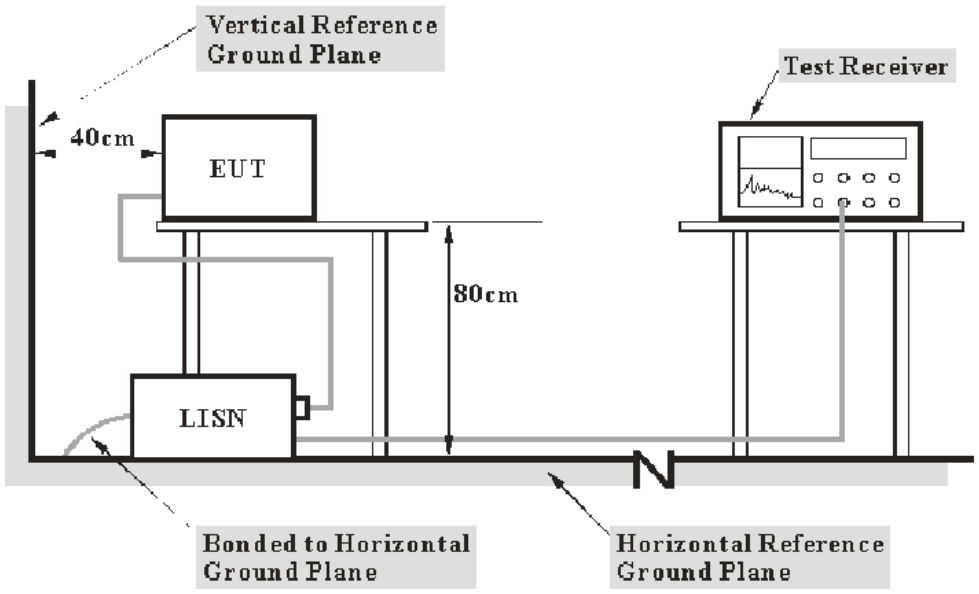
FCC §15.107 – AC LINE CONDUCTED EMISSIONS

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are Receiver, cable loss, and LISN.

Based on CISPR 16-4-2, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB, and the uncertainty will not be taken into consideration for all test data recorded in the report.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.107 Class B limits.

The adapter was connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***IF B/W***
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2012-11-29	2013-11-28
R&S	LISN1	ESH3-Z5	843331/015	2012-09-17	2013-09-16
R&S	LISN2	ESH3-Z5	100113	2012-11-29	2013-11-28

Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

15.53 dB at **1.960MHz** in the **Line** conducted mode

Test Data

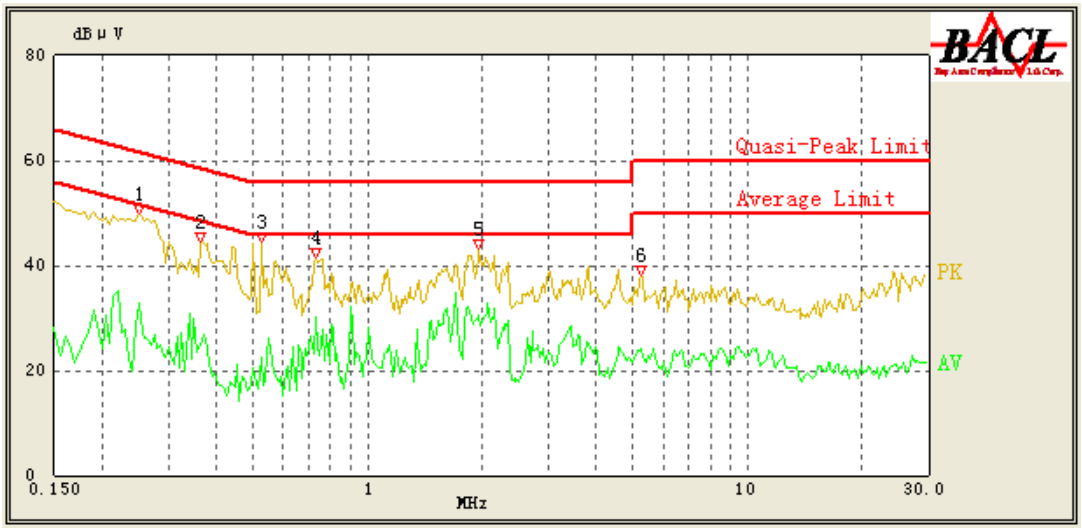
Environmental Conditions

Temperature:	20.1 °C
Relative Humidity:	41 %
ATM Pressure:	101.4kPa

The testing was performed by Leon Chen on 2013-01-09.

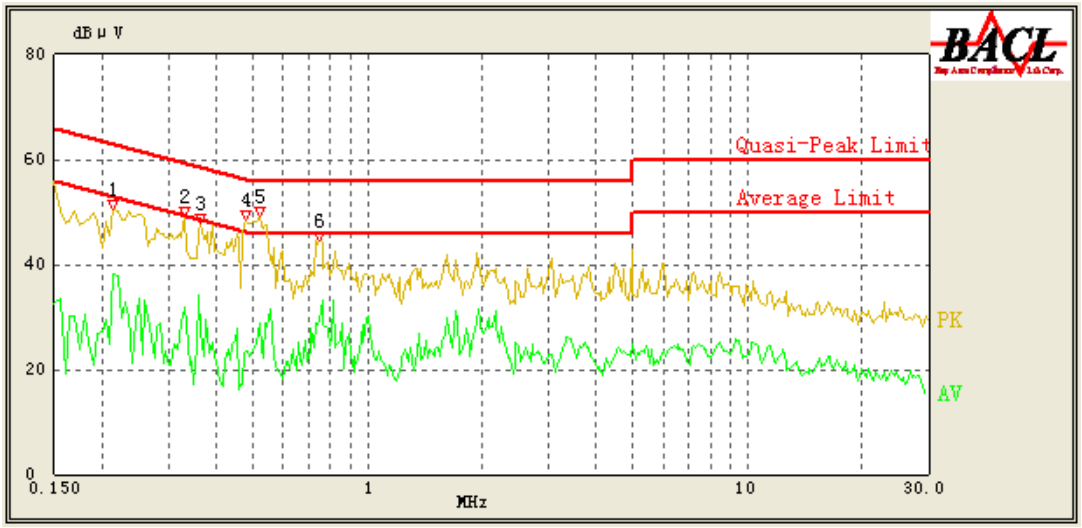
Test mode: Downloading (DS100-4G was the worst)

120 V, 60 Hz, Line:



Frequency (MHz)	Cord. Reading (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/AV/QP)
0.250	42.57	0.42	63.14	20.57	QP
0.250	32.99	0.42	53.14	20.15	AV
0.365	39.88	0.42	59.86	19.98	QP
0.365	24.85	0.42	49.86	25.01	AV
0.525	39.69	0.42	56.00	16.31	QP
0.525	22.66	0.42	46.00	23.34	AV
0.730	35.00	0.44	56.00	21.00	QP
0.735	30.11	0.44	46.00	15.89	AV
1.965	36.56	0.48	56.00	19.44	QP
1.960	30.47	0.48	46.00	15.53	AV
5.275	30.20	0.51	60.00	29.80	QP
5.230	24.01	0.51	50.00	25.99	AV

120 V, 60 Hz, Neutral:



Frequency (MHz)	Cord. Reading (dBµV)	Correction Factor (dB)	Limit (dBµV)	Margin (dB)	Detector (PK/AV/QP)
0.215	42.26	0.42	64.14	21.88	QP
0.215	38.26	0.42	54.14	15.88	AV
0.330	40.11	0.42	60.86	20.75	QP
0.330	31.98	0.42	50.86	18.88	AV
0.365	38.95	0.42	59.86	20.91	QP
0.365	27.04	0.42	49.86	22.82	AV
0.480	39.00	0.42	56.57	17.57	QP
0.475	23.04	0.42	46.71	23.67	AV
0.520	39.67	0.42	56.00	16.33	QP
0.520	28.90	0.42	46.00	17.10	AV
0.745	37.01	0.44	56.00	18.99	QP
0.750	29.47	0.44	46.00	16.53	AV

FCC §15.109 - RADIATED EMISSIONS

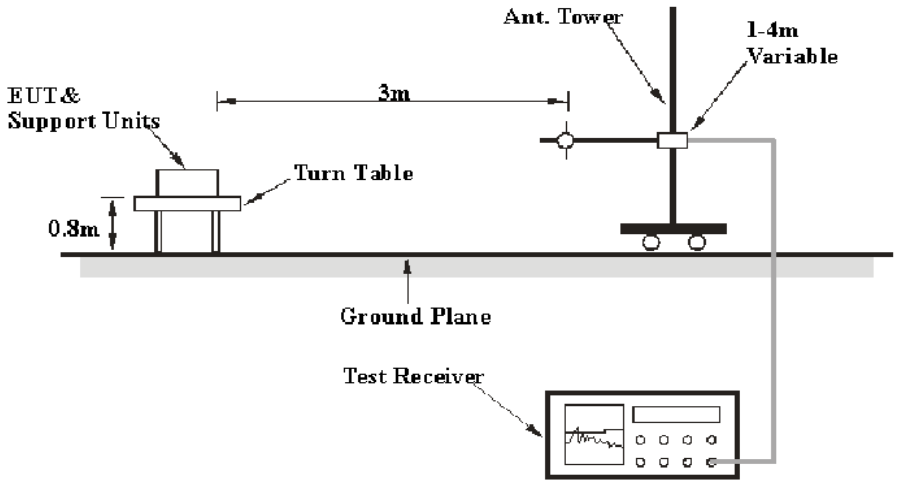
Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2-2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:
30M~200MHz: 5.0 dB
200M~1GHz: 6.2 dB
And the uncertainty will not be taken into consideration for all test data recorded in the report.

EUT Setup

Below 1 GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15.109, Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The adapter connected to a 120 VAC/60 Hz power source.

EMI Test Receiver Setup

According to FCC 15.33 requirements, the system was measured from 30 MHz to 1 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	***RBW***	***Video B/W***	***Detector***
30MHz – 1000 MHz	120 kHz	300 kHz	QP

Test Procedure

For the radiated emissions test, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Loss + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2012-05-14	2013-05-13
Sunol Sciences	Hybrid Antennas	JB3	A060611-1	2011-09-06	2013-09-05
HP	Pre-amplifier	8447E	2434A02181	2012-10-08	2013-10-07

Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109, Class B, with the worst margin reading of:

0.80 dB at **432.5500 MHz** in the **Horizontal** polarization

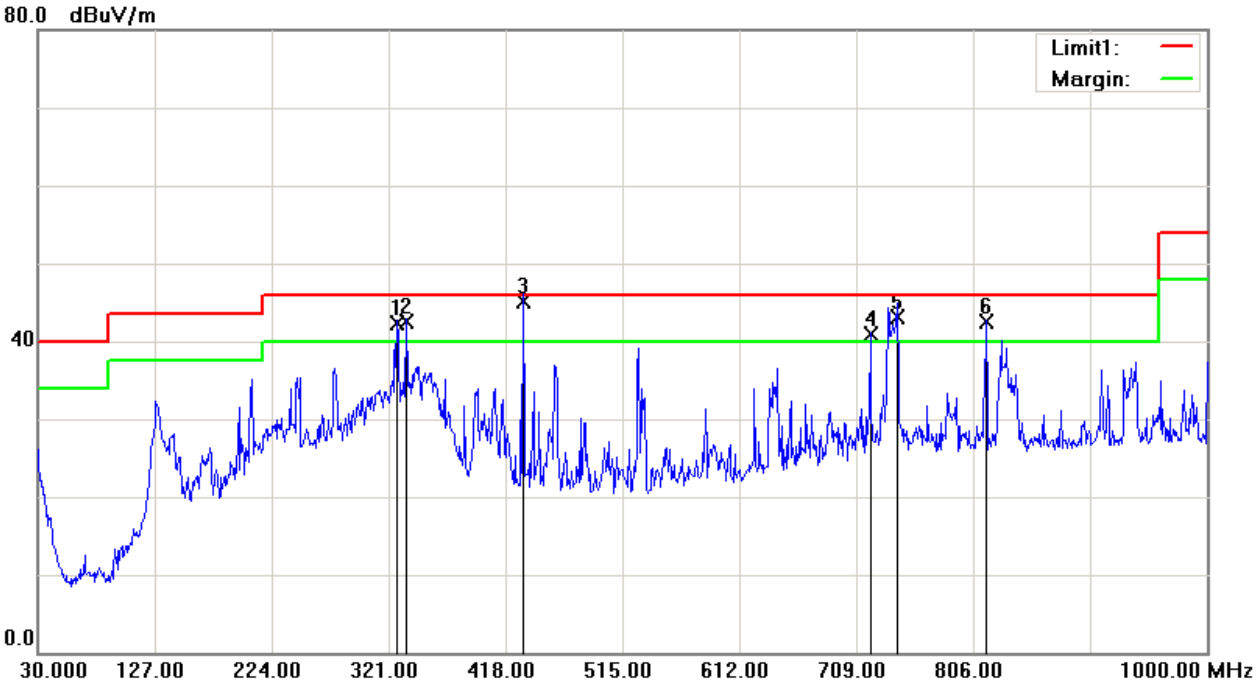
Test Data

Environmental Conditions

Temperature:	21.3°C
Relative Humidity:	54 %
ATM Pressure:	101.4kPa

The testing was performed by Leon Chen on 2013-01-09.

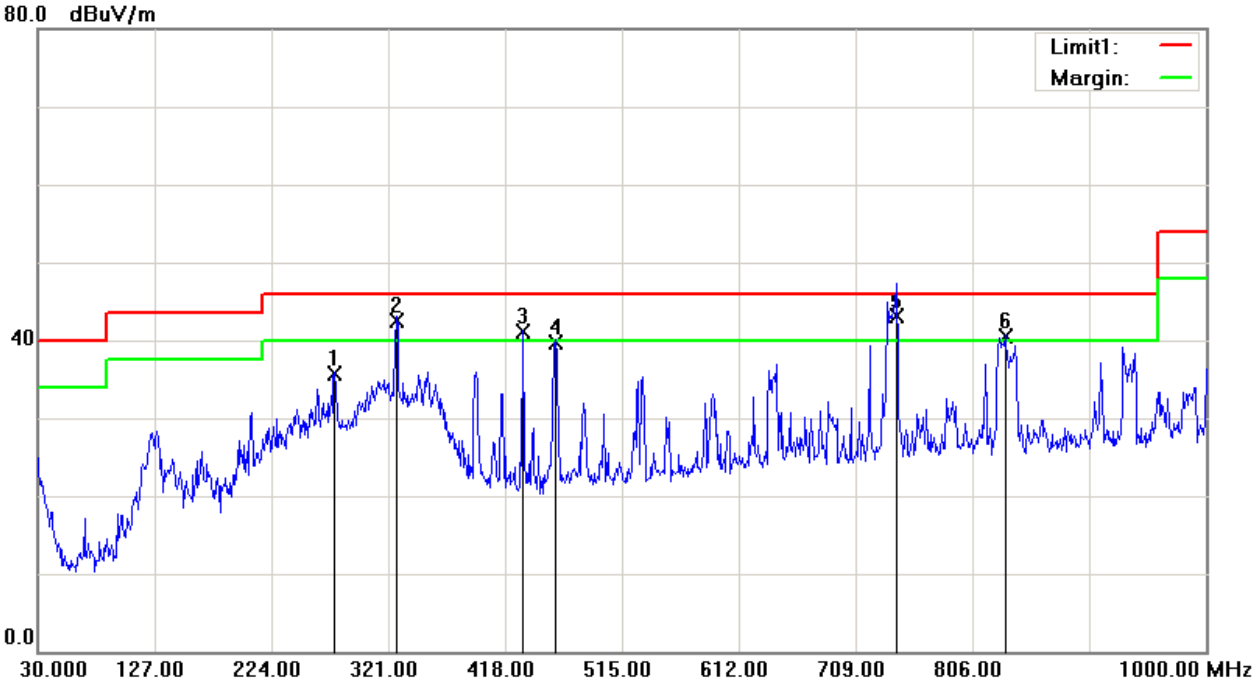
Test mode: Downloading (DS100-4G was the worst)



Frequency (MHz)	Receiver Reading (dBuV/m)	Detector (PK/QP/Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
432.5500	48.70	QP	-3.50	45.20	46.00	0.80*
742.9500	42.03	QP	1.07	43.10	46.00	2.90*
335.5500	48.14	QP	-5.54	42.60	46.00	3.40*
816.6700	40.57	QP	1.93	42.50	46.00	3.50*
327.7900	48.02	QP	-5.62	42.40	46.00	3.60*
720.6400	40.39	QP	0.61	41.00	46.00	5.00*

*Within measurement uncertainty!

Vertical:



Frequency (MHz)	Receiver Reading (dBuV/m)	Detector (PK/QP/Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
742.9500	42.13	QP	1.07	43.20	46.00	2.80*
327.7900	48.22	QP	-5.62	42.60	46.00	3.40*
432.5500	44.60	QP	-3.50	41.10	46.00	4.90*
833.1600	38.34	QP	2.16	40.50	46.00	5.50*
459.7100	42.60	QP	-2.80	39.80	46.00	6.20
276.3800	42.17	QP	-6.47	35.70	46.00	10.30

*Within measurement uncertainty!

DECLARATION LETTER

LZeal Information Technology Co., Ltd.
Address: F18, Unit 2, 530 Building, No.100, Dicui Road, Liyuan Development Zone, Wuxi City, Jiangsu Province, China
Tel: +86 510 81170199 Fax: +86 510 81170187

DECLARATION OF SIMILARITY

December 27, 2012

To:
Bay Area Compliance Laboratories Corp. (Dongguan)
No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China
Tel: +86 769 86858888 Fax: +86 769 86858891
http://www.baclcorp.com

Dear Sir or Madam:

We, LZeal Information Technology Co., Ltd., hereby declare that product: Wi-Fi SD Card, model(s): DS100 (DS100-4G, DS100-8G, DS100-16G, DS100-32G) are electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics. And they were tested by BACL, the results of which are featured in BACL project: R1SH121227050, R1SH121227051, R1SH121227053, R1SH121227054
The only difference is inside capacity of the TF card:
Model no. DS100-4G with 4G TF card (4G microSD card)
Model no. DS100-8G with 8G TF card (8G microSD card)
Model no. DS100-16G with 16G TF card (16G microSD card)
Model no. DS100-32G with 32G TF card (32G microSD card)

Please contact me should there be need for any additional clarification or information.

Best Regards,

Signature: Wu, JunAn

Typed or Printed Name: Wu. Junan
Title: HW Director

***** END OF REPORT *****