

TEST REPORT

REPORT NUMBER: I12MQ0325-FCC-PART15B_Rev1

ON

Type of Equipment: W1981 Contact Smartcard Reader
Type of Designation: W1981
Manufacturer: Watchdata Technologies Pte Ltd.

ACCORDING TO
Part 15B: Radio Frequency Devices, Oct 1, 2011

China Telecommunication Technology Labs.

Month date, year

June 7, 2012

Signature

A handwritten signature in black ink, appearing to be 'He Guili'.

He Guili
Director

FCC Part 15B
Equipment: W1981

REPORT NO.: I12MQ0325-FCC-PART15B_Rev1

FCC ID: Y97WATCHW1981

Report Date: 2012-06-07

Test Firm Name: China Telecommunication Technology Labs

Registration Number: 840587

Statement

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 15B. The sample tested was found to comply with the requirements defined in the applied rules.

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1 General Information

1.1 Notes

All reported tests were carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Parts 15B.

The test results of this test report relate exclusively to the item(s) tested as specified in section 2.

The following deviation from, additions to, or exclusions from the test specifications have been made. See Annex C.

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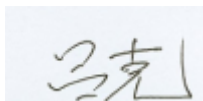
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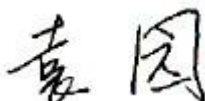
1.2 Testers

Name: Lu Ke
Position: Engineer
Department: Department of EMC test
Signature:



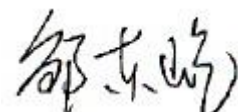
Editor of this test report:

Name: Yuan Yuan
Position: Engineer
Department: Department of EMC test
Date: 2012-05-11
Signature:



Technical responsibility for area of testing:

Name: Zou Dongyi
Position: Manager
Department: Department of EMC test
Date: 2012-05-11
Signature:



1.3 Testing Laboratory information

1.3.1 Location

Name: China Telecommunication Technology Labs.
Address: No. 11, Yue Tan Nan Jie, Xi Cheng District
BEIJING
P. R. CHINA, 100083
Tel: +86 10 68094053
Fax: +86 10 68011404
Email: emc@chinattl.com

1.3.2 Details of accreditation status

Accredited by: China National Accreditation Service for Conformity
Assessment (CNAS)
Registration number: CNAS Registration No. CNAS L0570
Standard: ISO/IEC 17025:2005

1.3.3 Test location, where different from section 1.3.1

Name: -----
Street: -----
City: -----
Country: -----
Telephone: -----
Fax: -----
Postcode: -----

1.4 Details of applicant or manufacturer

1.4.1 Applicant

Name: Watchdata Technologies Pte Ltd
Address: 84 Genting Lane, #02-01 Cityneon Design Centre, Si
Country: Singapore
Telephone: (+65) 6572 9300
Fax: (+65) 6779 2460
Contact: Chunguang Fang
Telephone: (+65) 6572 9300
Email: chunguang.fang@watchdata.com.sg

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name: Beijing Watchdata System Co., Ltd.
Address: 7F Qiming International Mansion, No.101,Wangjing
Lize Middle Park,Chaoyang District,Beijing,P.R.China
Contact: Chunhui Dong
Telephone: (+86) 10 64722288
Email: chunhui.dong@watchdata.com

2 Test Item

2.1 General Information

Manufacturer: Watchdata Technologies Pte Ltd.
Name: W1981 Contact Smartcard Reader
Model Number: W1981
Serial Number: --
Production Status: Product
Receipt date of test item: 2012-05-07

2.2 Outline of EUT

EUT is a Card Reader.

2.3 Modifications Incorporated in EUT

The EUT has not been modified from what is described by the brand name and unique type identification stated above.

2.4 Equipment Configuration

Equipment configuration list:

Item	Generic Description	Manufacturer	Type	Serial No.	Remarks
A	Contact Smartcard Reader	Beijing Watchdata System Co., Ltd.	W1981	--	None
B	Computer	HP	--	--	None
C	Monitor	HP	LP2001	--	None
D	Mouse	HP	--	--	None
E	Keyboard	HP	--	--	None
F	Printer	HP	C6414A	--	None
G	Iphone	--	--	--	None

Cables:

Item	Cable Type	Manufacturer	Length	Shield	Quantity	Remarks
--	--	--	--	--	--	None

2.5 Other Information

2.6 E.U.T Photographs:

See Annex A and B for external and internal photos.

3 Summary of Test Results

A brief summary of the tests carried out is shown as following.

Specification Clause	Name of Test	Result
15.109	Radiated Emission	Pass
15.107	Conducted Emission	Pass
Note: The EUT complies with the requirements of the Class B digital devices.		

4 Test Results

4.1 Radiated Emission

Specifications:	15.109, ANSI C63.4-2003					
Date of Tests	2012-05-10					
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa					
Operation Mode	Transfer data					
Test Results:	Pass					
Test equipment Used:						
Asset Number	Description	Manufacturer	Model Number	Serial Number	Cal Due	State
7805	EMI Test Receiver	R/S	ESIB26	100211	2013-01-10	Normal
7330	Ultra Broadband Antenna	SCHWARZBECK	VULB 9160	--	2013-11-24	Normal
7330	Double-Ridged Horn Antenna	R/S	HF906	100037	2013-01-24	Normal
713	Fully-Anechoic Chamber	ETS	11.8m×6.5m×6.3m	--	2013-11-16	Normal

Limit Level Construction:

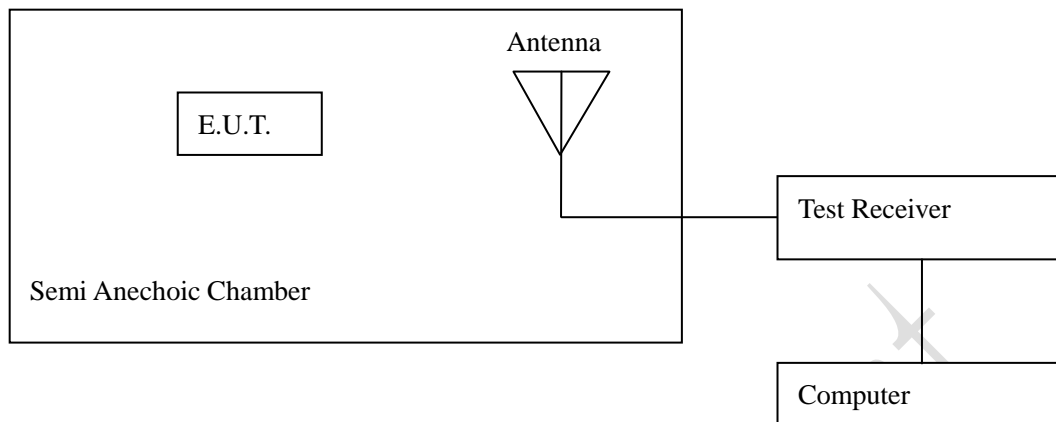
According to Part 15.109(a).

Limits

Frequency [MHz]	Field Strength [μ V/m]	Field Strength [dB μ V/m]	Measurement distance [m]
30 -88	100	40.0	3
88-216	150	43.5	3
216 - 960	200	46.0	3
Above 960	500	54.0	3

Note: The tighter limit applies at the band edges.

Test Configuration



The measuring distance between E.U.T and antenna is 3m.

Test Setup:

The EUT was placed in an anechoic chamber, see figure RE. The EUT is tested as tabletop EUT. The EUT is positioned on an 80cm height wood table.

The EUT is used as the peripheral equipment of the PC.

The setup is according to Figure 11a of ANSI C63.4-2003.

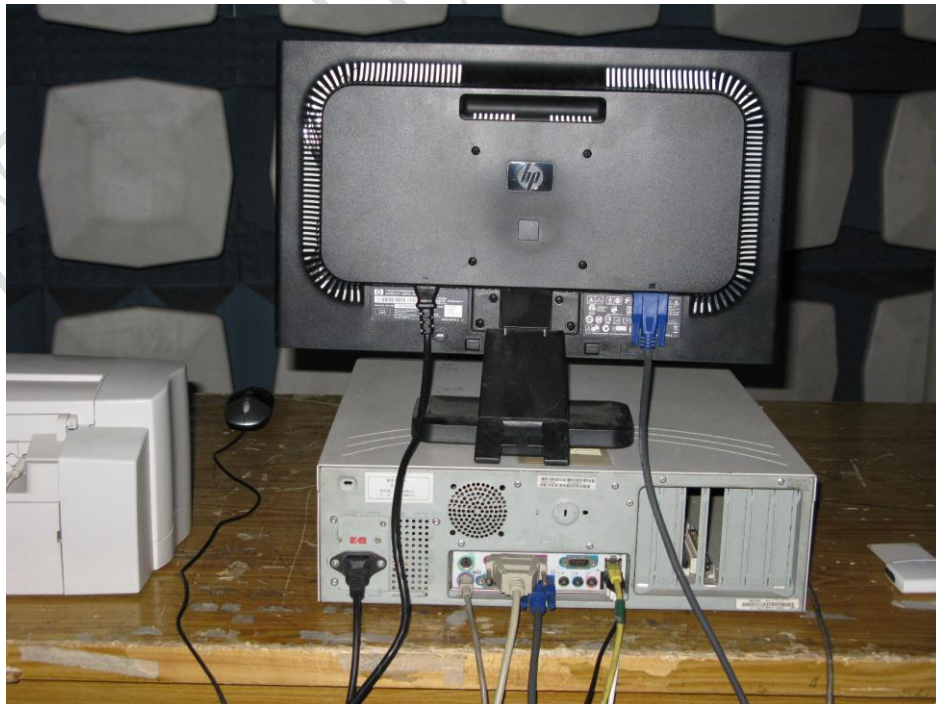


Figure: Ports



Figure RE

Test Method

During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. The measurement was done by the automated test system.

RBW:100kHz

Test Data:

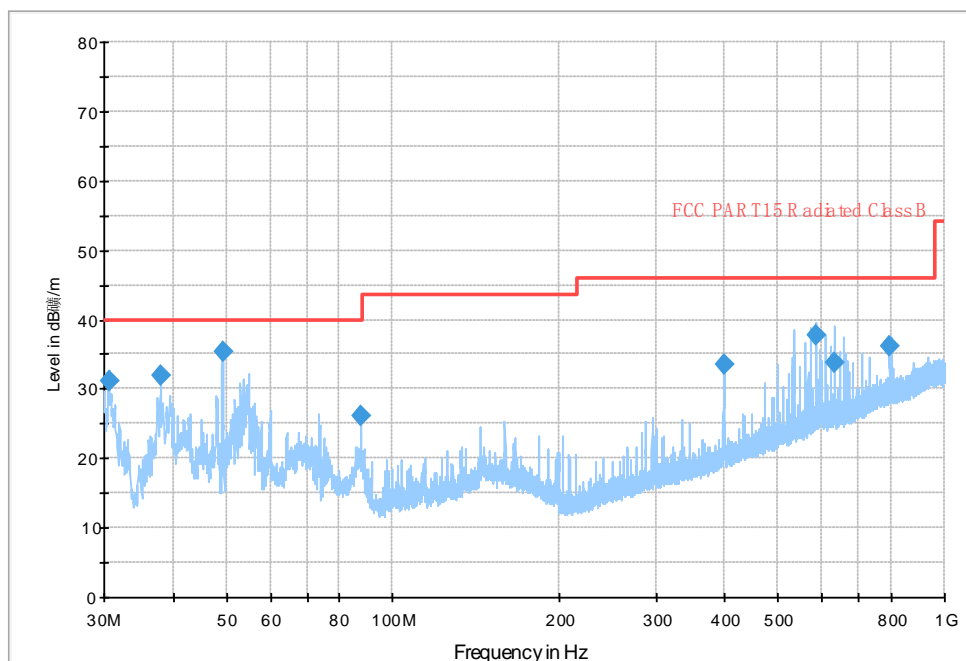
Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Antenna Height [cm]	Turntable Azimuth [degree]	Antenna Polarisation (V/H)
30.600000	31.2	40.0	225.0	124.0	V
37.960000	32.0	40.0	125.0	-16.0	V
49.160000	35.4	40.0	100.0	270.0	V
87.640000	26.2	40.0	175.0	171.0	V
399.720000	33.6	46.0	100.0	185.0	V
583.760000	37.6	46.0	100.0	14.0	V
632.920000	33.9	46.0	100.0	267.0	V
795.320000	36.1	46.0	192.0	203.0	V
212.520000	29.0	46.0	250.0	165.0	H
212.680000	30.1	46.0	250.0	164.0	H
213.080000	29.9	46.0	246.0	180.0	H
219.120000	31.5	46.0	150.0	315.0	H
219.600000	32.0	46.0	167.0	315.0	H
220.200000	30.4	46.0	250.0	-31.0	H
Remarks: --					

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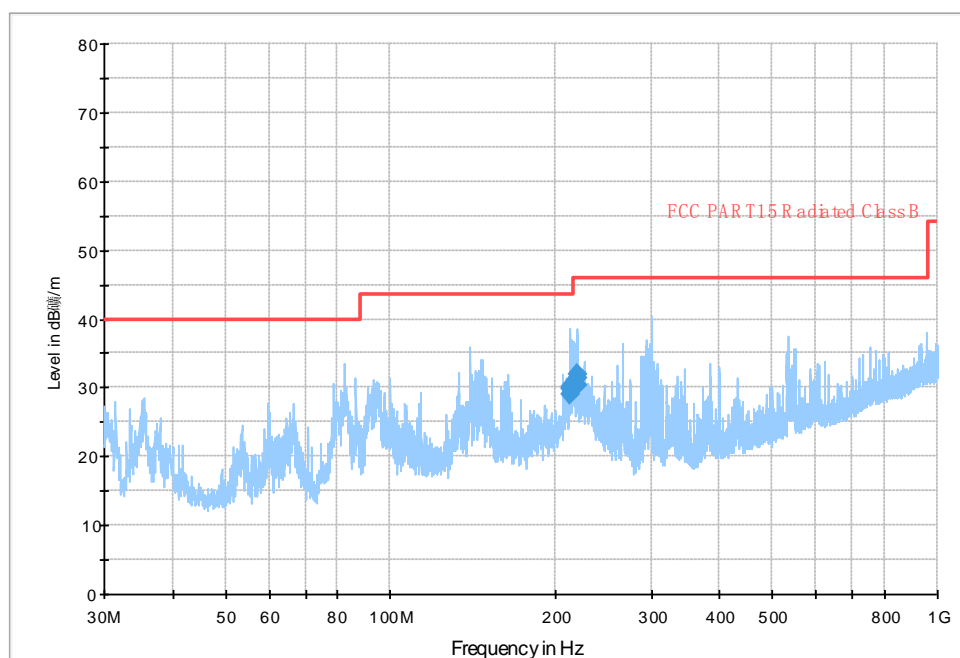
Graphical Results:

FCC



Graphical results vertical

EN55022 Radiated



Graphical results horizontal

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4.2 Conducted Emission

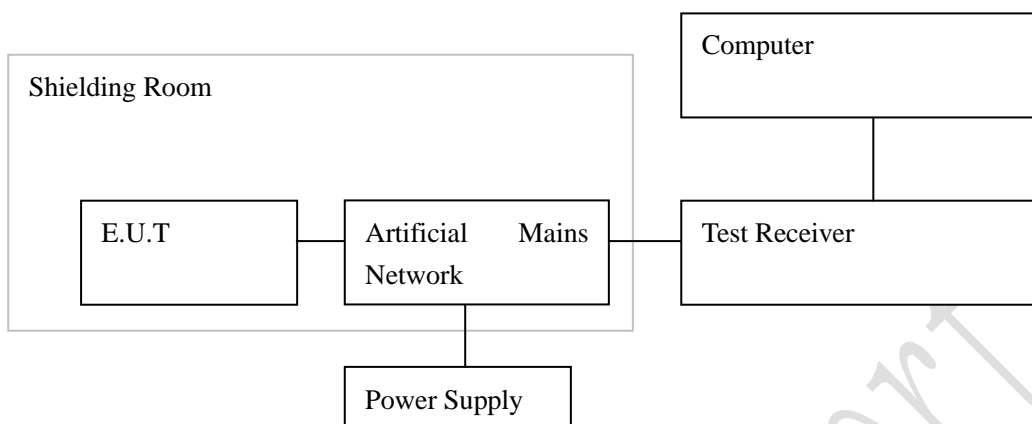
Specifications:	15.107, ANSI C63.4-2003					
Date of Tests	2012-05-11					
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa					
Operation Mode	Transfer data					
Test Results:	Pass					
Test equipment Used:						
Asset Number	Description	Manufacturer	Model Number	Serial Number	Cal Due	State
7330	EMI Test Receiver	R/S	ESI40	839283/007	2012-02-15	Normal
7330	Artificial Mains Network	R/S	ESH2-Z5	837480/002	2013-04-06	Normal
7330	Artificial Mains Network	R/S	ESH2-Z5	100268	2013-01-28	Normal
714	Shielding Room	ETS	--	19003	2013-11-15	Normal

Limit Level Construction:
According to Part 15.107 (a)

Limits for Conducted Emission		
Frequency of Emission [MHz]	Conducted limit [dB μ V]	
	Quasi-peak	Average
0.15 - 0.5	66 to 56*	56 to 46*
0.5 - 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

Test Configuration



Test Setup:

The EUT was placed in a shielding room, see figure CE. The EUT is positioned on an 80cm height wood table. The EUT is used as the peripheral equipment of the PC.

The setup is according to Figure 10a of ANSI C63.4-2003.



Figure CE

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Test Method:

During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. The AC power line of the Notebook was connected to the artificial mains network then to EMI receiver. The measurement was done by the automated test system.

RBW: 9kHz

Line N:

Detector (QP/AV)	Frequency (MHz)	Level (dBμV)	Transducer (dB)	Limit (dB)	PE
AV	0.586500	40.70	9.9	46	Grounded
AV	2.350500	40.40	10.2	46	Grounded
AV	3.264000	39.50	10.2	46	Grounded

Remarks: The test result is the worst case.

Line L:

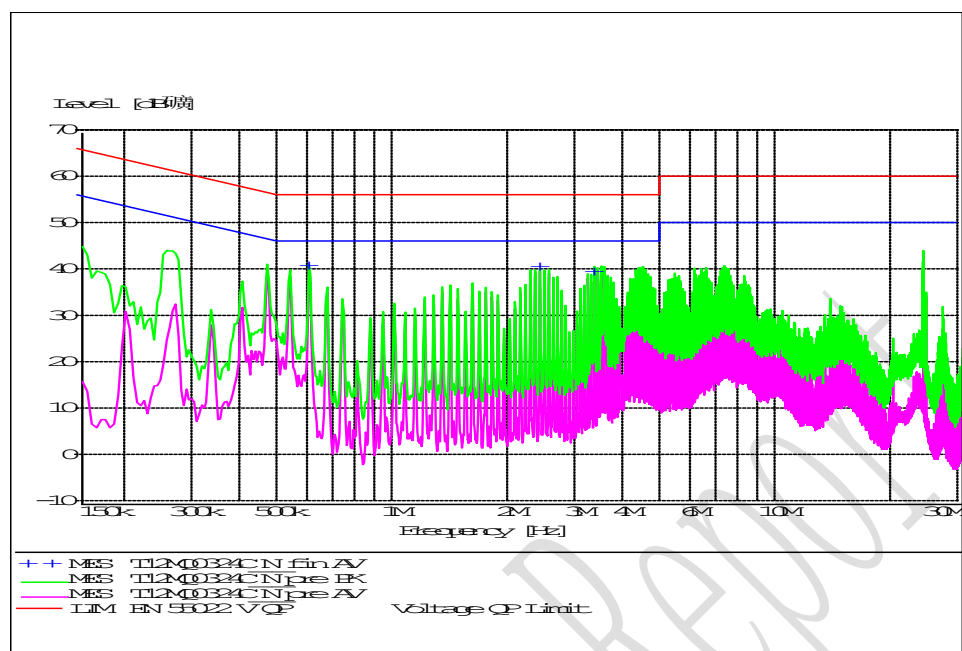
Detector (QP/AV)	Frequency (MHz)	Level (dBμV)	Transducer (dB)	Limit (dB)	PE
AV	0.586500	40.50	9.9	46	Grounded
AV	2.152500	37.30	10.2	46	Grounded
AV	2.220000	40.00	10.2	46	Grounded
AV	2.350500	40.30	10.2	46	Grounded
AV	3.264000	40.00	10.2	46	Grounded
AV	3.331500	39.30	10.2	46	Grounded

Remarks: The test result is the worst case.

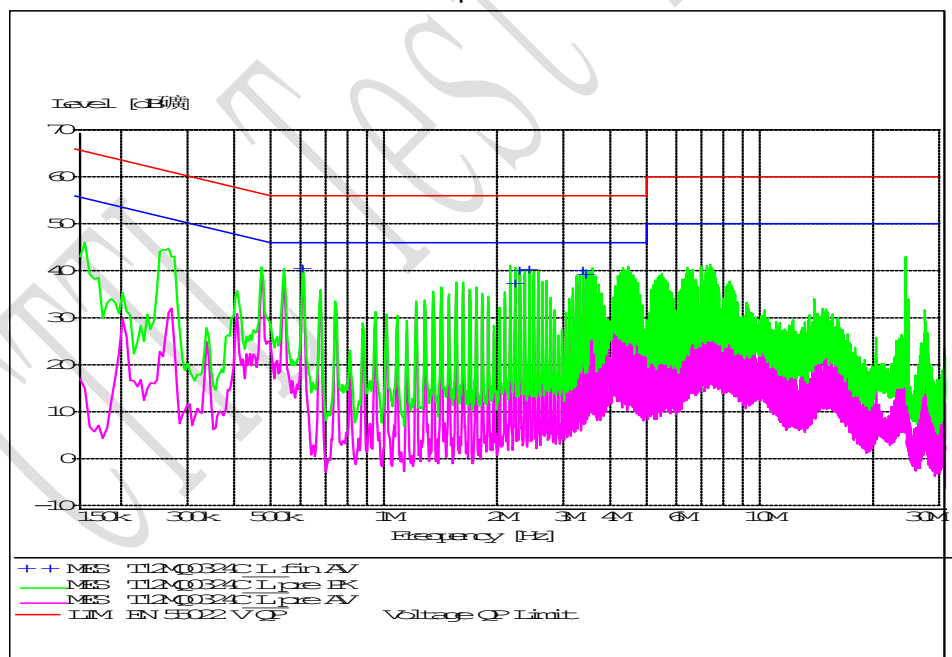
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Graphical results:



Graphical results Line N



Graphical results Line L

ANNEX C Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

_____ The End of this Report _____

CTL Test Report