

TEST REPORT

REPORT NUMBER: I12MQ0325-FCC-PART15B

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

AUG 20, 2012

Signature

A handwritten signature in black ink, appearing to read 'He Guili', written over a horizontal line.

He Guili
Director

FCC Part 15B
Equipment: W1981

REPORT NO.: I12MQ0325-FCC-PART15B

FCC ID: Y97WATCHW1981

Report Date: 2012-08-20

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.

CONTENTS

1 GENERAL INFORMATION	4
1.1 NOTES	4
1.2 TESTERS	5
1.3 TESTING LABORATORY INFORMATION	6
1.4 DETAILS OF APPLICANT OR MANUFACTURER	7
2 TEST ITEM	8
2.1 GENERAL INFORMATION.....	8
2.2 OUTLINE OF EUT	8
2.3 MODIFICATIONS INCORPORATED IN EUT.....	8
2.4 EQUIPMENT CONFIGURATION	8
2.5 OTHER INFORMATION	8
3 SUMMARY OF TEST RESULTS.....	9
4 TEST RESULTS	10
4.1 RADIATED EMISSION	10
4.2 CONDUCTED EMISSION.....	14
ANNEX C DEVIATIONS FROM PRESCRIBED TEST METHODS	19

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.

China Telecommunication Technology Labs.(CTTL) authorizes the applicant or manufacturer (see section 1.4) to reproduce this report provided, and the test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CTTL Mr. He Guili.

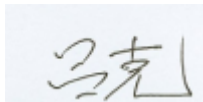
Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. CTTL accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

FCC Part 15B
Equipment: W1981

REPORT NO.: I12MQ0325-FCC-PART15B

1.2 Testers

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

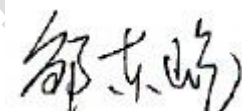


Editor of this test report:

Name: Pan yang
Position: Engineer
Department: Department of EMC test
Date: 2012-08-20
Signature:

Technical responsibility for area of testing:

Name: Zou Dongyi
Position: Manager
Department: Department of EMC test
Date: 2012-08-20
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: 8 Admiralty Street, #02-08 The Admirax, 757438
Country: Singapore
Telephone: (+86) 10 6472 2288
Fax: (+86) 106472 6134
Contact: Chunhui Dong
Telephone: (+86) 10 6472 2288
Email: chunhui.dong@watchdata.com

1.4.2 Manufacturer (if different from applicant in section 1.4.1)

Name: --
Address: --

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: 2012-08-20

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	Pkard Reader	Beijing HuaHuiXinTong Technology Co., Ltd.	TSS-PK 1	--	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 the 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	2012-08-09					
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:

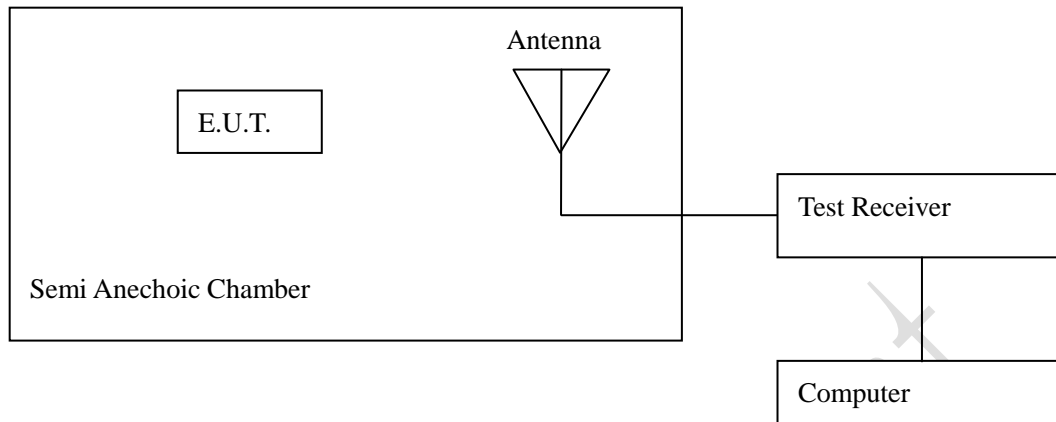
According to Part 15.109(a).

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.

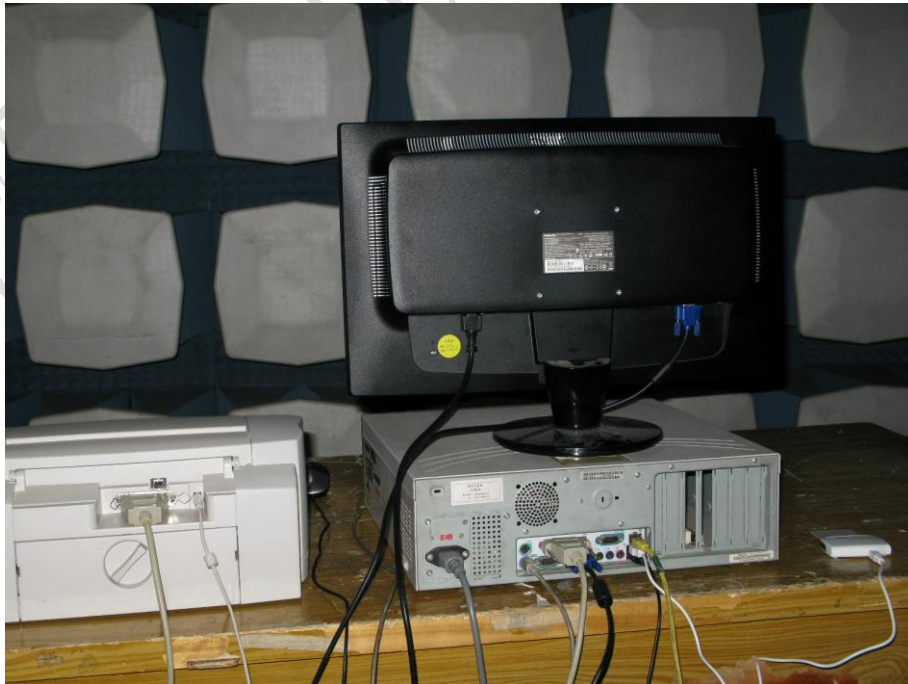


Figure: Ports



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:

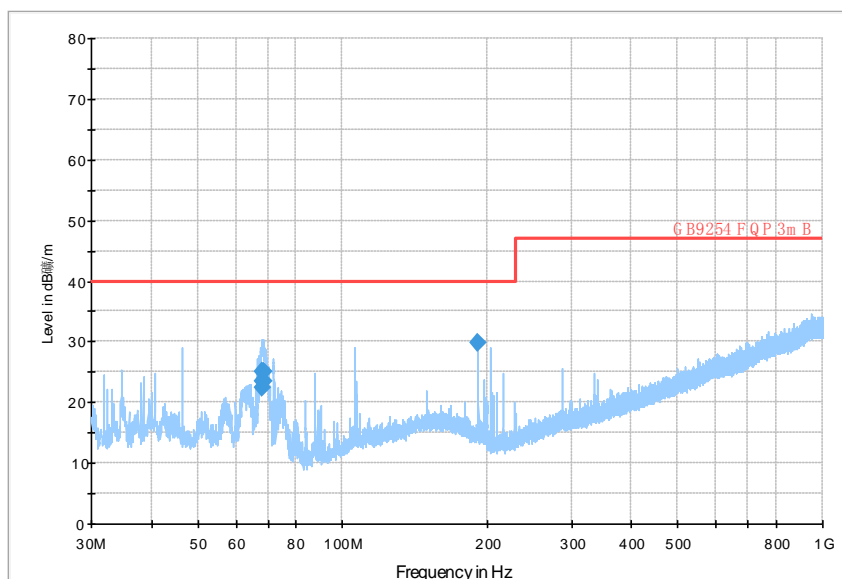
Frequency [MHz]	Level [dB μ V/m]	Limit [dB μ V/m]	Antenna Height [cm]	Turntable Azimuth [degree]	Antenna Polarisation (V/H)
67.920000	23.5	40	100	225	V
68.160000	22.4	40	305	128	V
68.320000	25.1	40	100	245	V
68.520000	23.5	40	100	238	V
68.800000	25.0	40	100	275	V
191.600000	29.8	40	125	177	V
68.160000	22.2	40	292	197	H
68.280000	23.0	40	325	202	H
68.360000	23.3	40	325	189	H
191.640000	32.3	40	100	95	H
203.600000	33.7	40	100	95	H
215.600000	29.2	40	100	87	H
Remarks: --					

FCC Part 15B
Equipment: W1981

REPORT NO.: I12MQ0325-FCC-PART15B

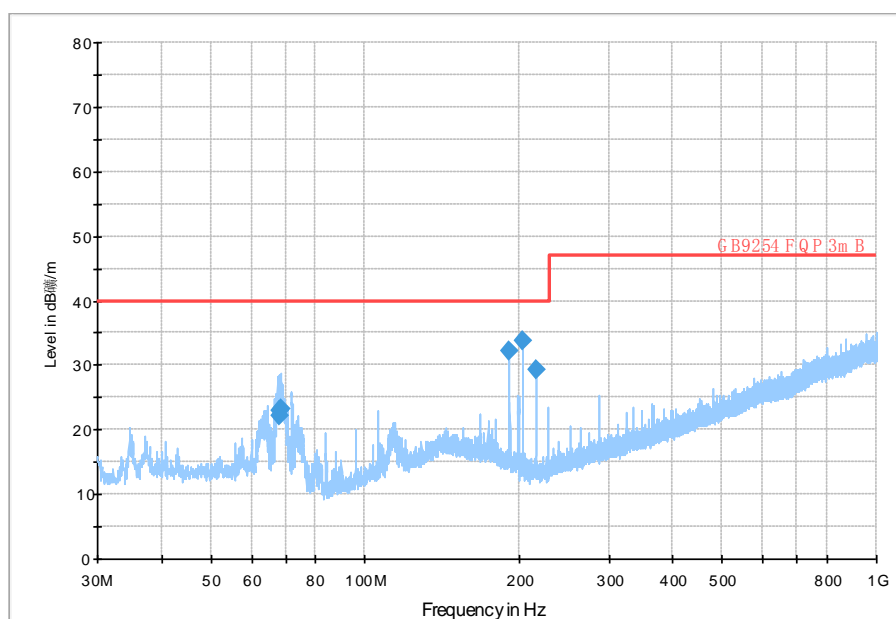
Graphical Results:

GB 9254



Graphical results vertical

GB 9254



Graphical results horizontal

FCC Part 15B
Equipment: W1981

REPORT NO.: I12MQ0325-FCC-PART15B

4.2 Conducted Emission

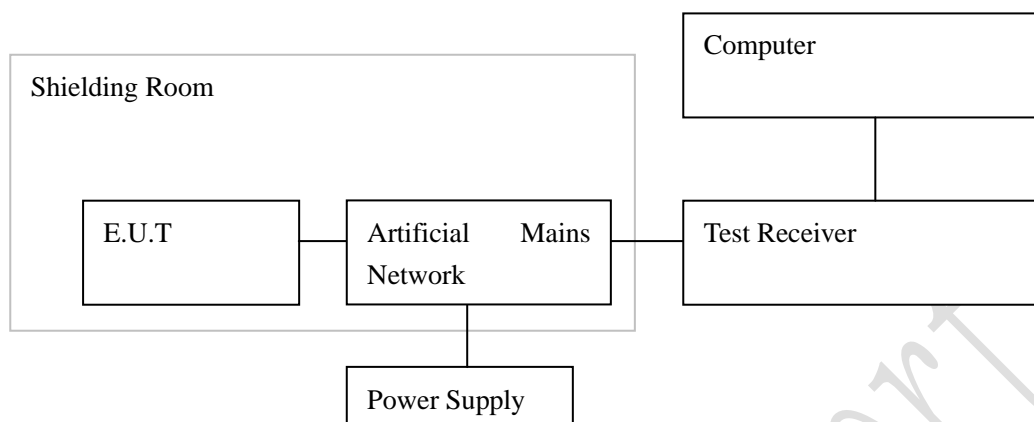
Specifications:	15.107, ANSI C63.4-2003					
Date of Tests	2012-08-09					
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-60% Air pressure: 86-106kPa					
Operation Mode	Transfer data					
Test Results:	Pass					
Test equipment Used:						
Asset Number	Description	Manufacturer	Model Number	Serial Number	Cal Due	State
7330	EMI Test Receiver	R/S	ESI40	839283/007	2013-02-08	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

FCC Part 15B
Equipment: W1981

REPORT NO.: I12MQ0325-FCC-PART15B



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 (dB μ V)	Transducer (dB)	Limit (dB)	PE
AV	4.065000	20.70	10.2	46	GND
AV	4.249500	21.40	10.2	46	GND
AV	4.434000	20.10	10.3	46	GND
AV	4.618500	18.10	10.3	46	GND
AV	4.803000	16.40	10.3	46	GND
AV	4.987500	14.90	10.3	46	GND
QP	0.231000	40.20	9.9	62	GND
QP	0.586500	36.00	9.9	56	GND
QP	1.320000	36.50	10.2	56	GND
QP	4.434000	24.00	10.3	56	GND

Remarks: The test result is the worst case.

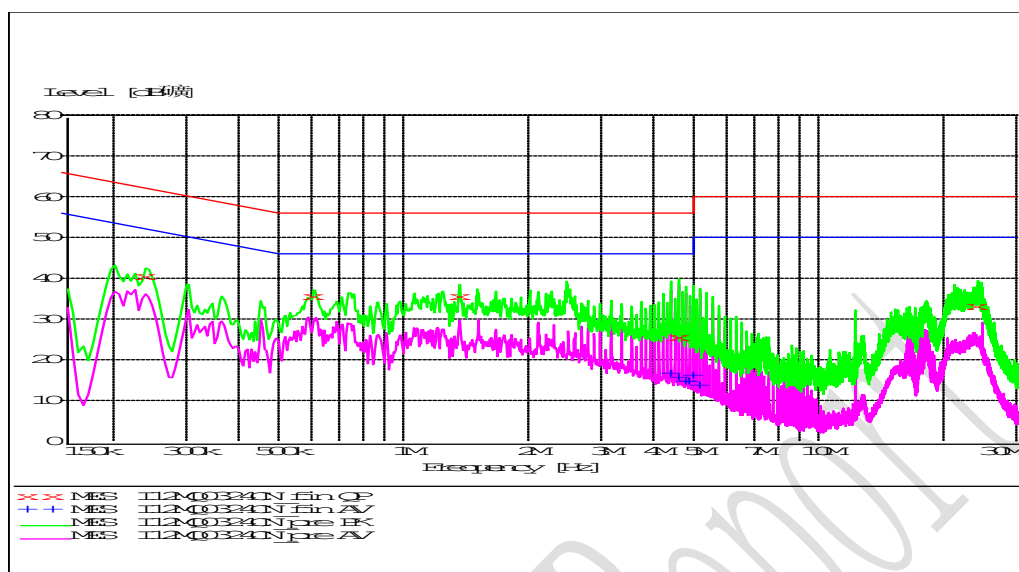
Line L:

Detector (QP/AV)	Frequency (MHz)	Level (dBμV)	Transducer (dB)	Limit (dB)	PE
AV	4.263000	16.70	10.2	46	GND
AV	4.447500	15.70	10.3	46	GND
AV	4.632000	14.60	10.3	46	GND
AV	4.726500	14.70	10.3	46	GND
AV	4.821000	16.10	10.3	46	GND
AV	5.005500	13.70	10.3	50	GND
QP	0.231000	40.50	9.9	62	GND
QP	0.586500	35.70	9.9	56	GND
QP	1.320000	35.70	10.2	56	GND
QP	4.447500	25.50	10.3	56	GND
QP	23.329500	33.10	10.3	60	GND
Remarks: The test result is the worst case.					

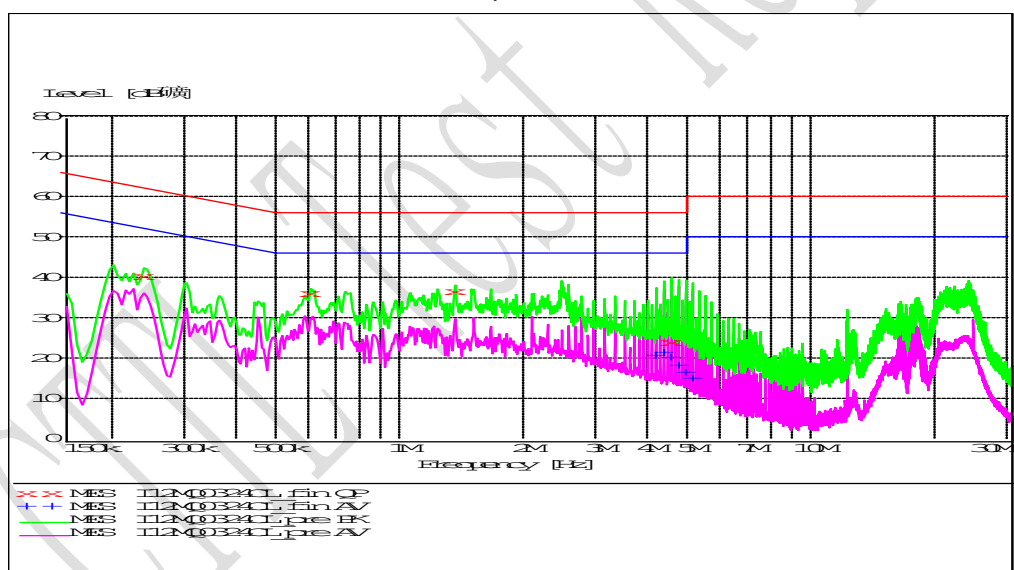
FCC Part 15B
Equipment: W1981

REPORT NO.: I12MQ0325-FCC-PART15B

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