REPORT ON

FCC CRF 47 Part 15B: 2008 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

COMMERCIAL-IN-CONFIDENCE

FCC ID: WIN-CPE722

Doc Number 57008049 Report 03 Issue 1 **August 2008**

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TUV Product Service Ltd, Beijing Branch,
Unit 918, Landmark Tower 2, No.8 North Dongsanhuan Road, Beijing 100004, P.R. China

REPORT ON FCC CRF 47 Part 15B:2008 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

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PREPARED FOR Beijing Xinwei Telecom Technology Inc.,
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PREPARED BY

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Project Engineer

APPROVED BY

Zhang Xiaoying
Authorised Signatory

DATED 2008-08-13

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CRF 47 Part 15B:2008. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineers;

Li Qun

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SECTION 1

REPORT SUMMARY

FCC CRF 47 Part 15B: 2008 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

1.1 STATUS

Equipment Under Test	Broadband Wireless desktop terminal McWiLL CPE722
Objective	To undertake measurements to determine the Equipment Under Test's (EUT's) compliance with the specification.
Name and Address of Client	Beijing Xinwei Telecom Technology Inc. Xinwei Building, No.7 Zhongguancun Software Park, No.8 Dongbeiwang West Road, Haidian District, Beijing China
Type	CPE722
Serial Number(s)	C5C0810011360A
Declared Variants	None
FCC ID Number	WIN-CPE722
Test Specification/Issue/Date	FCC CFR 47 Part15B: 2008
Number of Items Tested	One
Start of Test **Finish of Test**	26 July 2008 28 July 2008
Related Documents	- ANSI C63.4: 2003

1.2 INTRODUCTION

The information contained within this report is intended to show limited verification of compliance of the Beijing Xinwei Telecom Technology Inc. Broadband Wireless desktop terminal McWiLL CPE722 to the requirements of FCC Specification Part 15B: 2008.

1.2.1 Declaration of Build Status

MAIN EUT	
MANUFACTURING DESCRIPTION	Broadband Wireless desktop terminal McWiLL CPE722 operating with full power output on the frequencies of Bottom (699MHz), Middle (721MHz) and Top (745MHz)
MANUFACTURER	Beijing Xinwei Telecom Technology Inc.
TYPE	McWiLL CPE722
PART NUMBER	N/A
SERIAL NUMBER	C5C0810011360A
HARDWARE VERSION	CPE_M.PCB 72.20.00.00
SOFTWARE VERSION	CPE.om.1.4.5.9
Operating Frequency Range	698MHz – 746MHz
Duplex Mode	Time Division Duplex (TDD)
Access Method	CS-OFDMA
Modulation and Coding Scheme	QPSK, 8PSK QAM16, QAM64
Channel Bandwidth	1MHz
OUTPUT POWER (mW or dBm)	21.71dBm(ERP)
COUNTRY OF ORIGIN	China
INTERMEDIATE FREQUENCIES	None
FCC ID	WIN-CPE722
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	The Equipment Under Test (EUT) was a Broadband Wireless desktop terminal which provides broadband connections to Internet access service and voice service network.
POWER SUPPLY	
MANUFACTURING DESCRIPTION	The Broadband Wireless desktop terminal CPE722 were powered by a power supply: Model Type: UE15W1-050200SPAU; I/P: 100 ~ 240Va.c, 50/60Hz, 0.5A; O/P: 5.0Vd.c, 2.0A

TUV Product Service Limited Beijing Branch formally certifies that the manufacturer's declaration as reproduced in this report is a true and accurate record of the original received from the applicant.

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1.3 BRIEF SUMMARY OF RESULTS

A brief summary of the tests carried out is shown below:

Test	FCC Specification	Test Description	Result
2.1	Part 15.107(a)	Power Line Conducted Emissions	Pass
2.2	Part 15.109(a)	Enclosure Radiated Emissions	Pass

1.4 GENERAL INFORMATION

1.4.1 Information about the Testing Laboratory

Company Name:	TUV Product service Ltd Beijing Branch
Address:	Unit 918, Landmark Tower 2, No.8 North Dongsanhuan Road, Beijing 100004, P.R. China
Contact:	Zhang Xiaoying
Telephone No.:	86 10 - 65906186
Fax No.:	86 10 - 65906182
Email:	xiaoying.zhang@tuv-sud.cn

1.4.2 Applicant Details

Company Name:	Beijing Xinwei Telecom Technology Inc.
Address:	Xinwei Building, No.7 Zhongguancun Software Park, No.8 Dongbeiwang West Road, Haidian District, Beijing China

1.4.3 Manufacturer Details

Company Name:	Beijing Xinwei Telecom Technology Inc.
Address:	Xinwei Building, No.7 Zhongguancun Software Park, No.8 Dongbeiwang West Road, Haidian District, Beijing China

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1.4 GENERAL INFORMATION—continued

1.4.4 Technical Description

The Equipment Under Test (EUT) was Broadband Wireless desktop terminal working in the 698MHz – 746MHz band which provides broadband connections to Internet access service and voice service network.

1.4.5 Reference Specification

The EUT was Broadband Wireless desktop terminal operating on frequency 698MHz-746MHz, according to the specifications from the manufacturer; it should comply with the requirement of following standards:

FCC CFR 47 Part15B: 2008

All tests have been performed and recorded as per the above standard.

1.4.6 Test Configuration

The Broadband Wireless desktop terminal was powered by 5Vdc, 2.0A power supply and made in continuous transmitting under full power output or Idle mode by a console computer during the testing.

1.4.7 EUT Details

EUT	Serial Number	Hardware Version	Software Verison
EUT	C5C0810011360A	CPE_M.PCB 72.20.00.00	CPE.om.1.4.5.9

1.4.8 Description of Support Device

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support devices were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.
1	Laptop	DELL	PP17L	3915740949
2	BTS	Xinwei	XW5000-07	C510407110222
3	TTA	Xinwei	TTA5000-07	C251808040062
4	BTS Power Supply	Shi Jiazhuang Guoyao Electronic	GYZ720-220S24C2	GY200612T010007006

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1.4 GENERAL INFORMATION—continued

1.4.9 Test Environment

Enviroment	Temperature (°C)	Humidity (%)	Atmospheric Pressure (mbar)
Ambient	24	32.1	1006

Normal Supply Voltage (Vdc)	5

1.4.10 Description of Test Modes

McWiLL CPE722 supports frequency band of 698MHz-746MHz with one Ethernet interface connected to terminal. It supports QPSK, 8PSK, QAM16, QAM64 modulation over a bandwidth of 1 MHz.

The test results presented in following section are tested from below modes:

Test mode	Modulation Type	Channel	Transmitter status
A	QPSK	Automatic	TX
B	Automatic	Automatic	Idle

Where TX: Continuous transmitting

1.5 TEST CONDITIONS

The EUT was set-up simulating a typical user installation at the Test Laboratory, as listed in Section 1.2.1and tested in accordance with the applicable specification.

For all tests, the wireless Broadband Wireless desktop terminal was powered by 5Vdc, 2.0A power supply.

1.6 DEVIATIONS FROM THE STANDARD

Not Applicable

1.7 MODIFICATION RECORD

Not Applicable

1.8 ALTERNATIVE TEST SITE

Testing has been performed under the following site accreditations:

FCC Registration No.612767

The State Radio Spectrum Monitoring and Testing Center

No.80 Beilishi Road Xicheng District Beijing, China

SECTION 2

TEST RESULTS

FCC CRF 47 Part 15B: 2008 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

2.1 Power Line Conducted Emissions

2.1.1 Specification Reference

FCC 47 CFR Part 15 Subpart B, Section 15.107

2.1.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode A described in section 1.4.10.

2.1.3 Date of Test

28 Jul. 2008

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Procedure

The test was applied in accordance with the test method requirements of ANSI C63.4-2003.

The EUT was placed 0.4 meters from the conducting wall of the shield room with the Ethernet port of the EUT being connected to a notebook which was connected to the power mains through an artificial mains network (AMN). The distance between the computer and AMN was 80cm. The EUT was connected to the power mains through another AMN. The two AMNs provide 50 Ohm/ 50Uh of coupling impedance for the measuring instrument.

Both lines of the power mains connected to the notebook were checked for maximum conducted interface.

Measurements were made over the frequency range 0.15MHz to 30MHz.

2.1.6 Test Results

The EUT satisfied the Class B requirements of FCC 47 CFR Part 15 subpart B for Conducted Emissions on the AC Power Ports.

Test results are shown in the following tables.

Live Line Test Results

Frequency MHz	Quasi-Peak Level dBµV	Quasi-Peak Limit dBµV	Margin dB	Average Level dBµV	Average Limit dBµV	Margin dB
4.015500	49.78	56.00	-6.22	40.0	46.00	-6.0
4.182000	45.77	56.00	-10.23	37.6	46.00	-8.4

Neutral Line Test Results

Frequency MHz	Quasi-Peak Level dBµV	Quasi-Peak Limit dBµV	Margin dB	Average Level dBµV	Average Limit dBµV	Margin dB
4.015500	44.64	56.00	-11.36	38.80	46.00	-7.2
4.182000	41.61	56.00	-14.39	36.5	46.00	-9.5

The margin between the specification requirements and all other emissions was 15dB or more below the specified Quasi-Peak and 20dB or more below the specified Average limit

2.1.7 Conducted Limits

Limit for conducted emissions

Frequency range	Limit (quasi-peak)	Limit (average)
0.15MHz to 0.5MHz	66dBµV to 56dBµV	56dBµV to 46dBµV
0.5MHz to 5MHz	56dBµV	46dBµV
5MHz to 30MHz	60dBµV	50dBµV

2.2 Enclosure Radiated Emissions

2.2.1 Specification Reference

FCC 47 CFR Part 15 Subpart B, Section 15.109

2.2.2 Equipment under Test

Broadband Wireless desktop terminal McWiLL CPE722 on frequency 698-746MHz working in test mode B described in section 1.4.10.

2.2.3 Date of Test

26 Jul. 2008

2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.5 Test Procedure

The test set-up was made in accordance to the general provisions of ANSI C63.4-2003.

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna.

The radiated emissions measurements were made in a typical installation configuration.

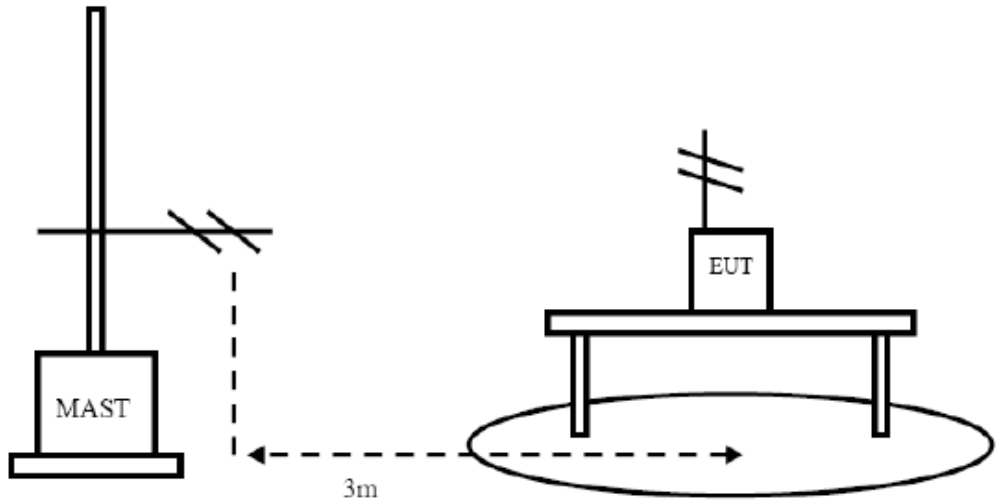
Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz or above, using receive log period antenna HL562 or Ridge horn antenna HF906.

Frequency Range	RBW	VBW
30 – 1000MHz	120kHz	300kHz
1G – 8GHz	1MHz	3MHz

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level.

The measurements shall be repeated with orthogonal polarization of the test antenna.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.



2.2.6 Test Results

The equipment complies with the radiated spurious limits of 15.109(a) for all frequencies in the range 30 MHz- 8000MHz on enclosure.

Radiated emissions at fundamental frequency and harmonics.

Frequency (MHz)	Average Field Strength			Height cm	Azimuth Deg.	Polarization	Verdict
	Level dBµV/m	Limit dBµV/m	Margin dB				
41.362725	16.08	40.0	-23.92	300.0	270.00	H	Pass
73.206413	18.60	40.0	-21.4	300.00	0.00	V	Pass
168.136273	11.90	43.5	-31.6	100.00	270.00	V	Pass
184.168337	8.10	43.5	-35.4	400.00	90.00	V	Pass
516.032064	11.90	46.0	-34.1	400.00	0.00	H	Pass
936.873747	24.3	46.0	-21.7	100.00	0.00	V	Pass

Note: 1) Negative sign (-) in Margin column signify levels below the limits.
2) All other emission not reported are below the equipment noise floor which is at least 6dB below the limit.

The test plots in section 4.2 show the resultant display from the Spectrum Analyser.

2.2.7 Radiated emission limits

Limits for radiated emission for except of class A digital devices at a measuring distance of 3m

Frequency range(MHz)	Quasi-peak limits(dBµV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54

SECTION 3

TEST EQUIPMENT

FCC CRF 47 Part 15B: 2008 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

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3.1 Test Equipment

List of absolute measuring and other principal items of test equipment.

Item	Instrument	Manufacturer	Type No.	Serial No.	Cal. Due
1	Test Receiver	Rohde & Schwarz	ESI 40	100015	2007-08-20
2	Ultra log test antenna	R&S	HL562	100016	2007-09-20
3	Double-Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF 906	100030	2007-09-20
4	Antenna master	FRANKONIA	MA 260	--	TU
5	Relay Switch Unit	R&S	331.1601.31	338965002	TU
6	Turn Table	FRANKONIA	PS2000	--	2007-08-20
7	Controller	HD	HD100	100/746	TU
8	EMI test software	Rohde & Schwarz	ES-K1	--	TU
9	Semi-Anechoic Chamber	FRANKONIA	23.18m×16.88 m×9.60m	--	2007-09-24
10	EMI Test Receiver	Rohde & Schwarz	ESCS	100029	2007-08-20
11	LISN	Rohde & Schwarz	ESH3-Z5	100020	2007-08-20

TU Traceability Unscheduled
O/P MON Output Monitored

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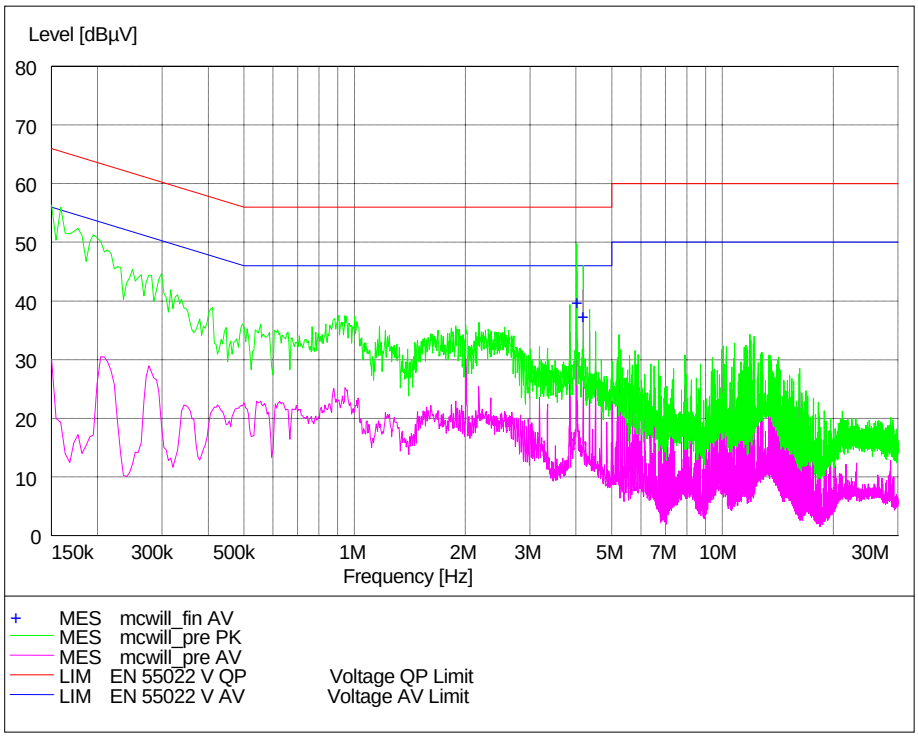
SECTION 4

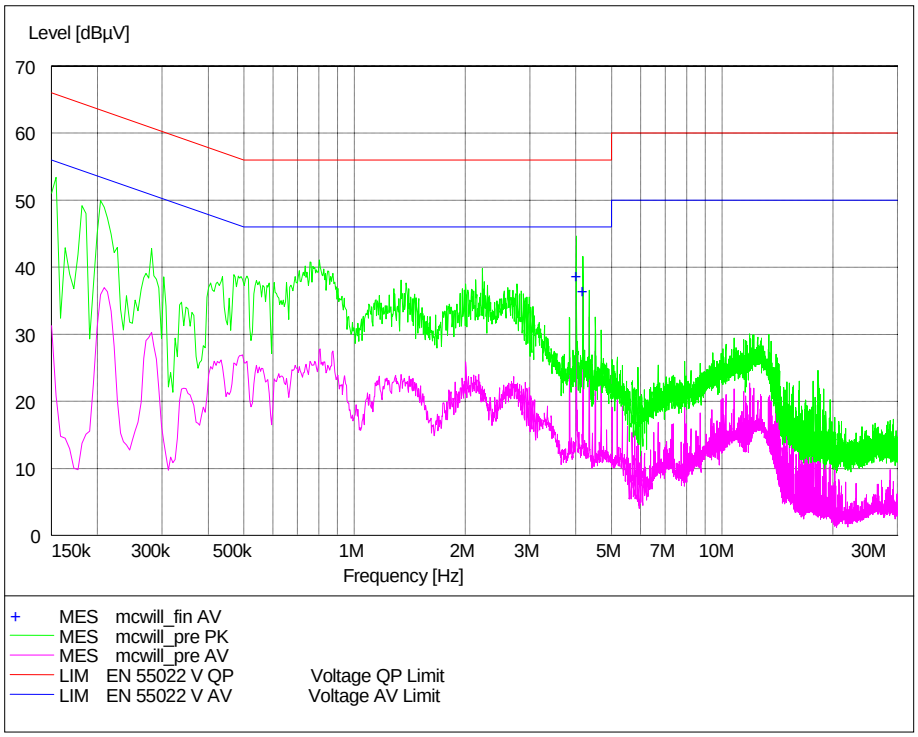
TEST RESULTS REPRESENTED BY PLOTS

FCC CRF 47 Part 15: 2008 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

4.1 Power Line Conducted Emissions

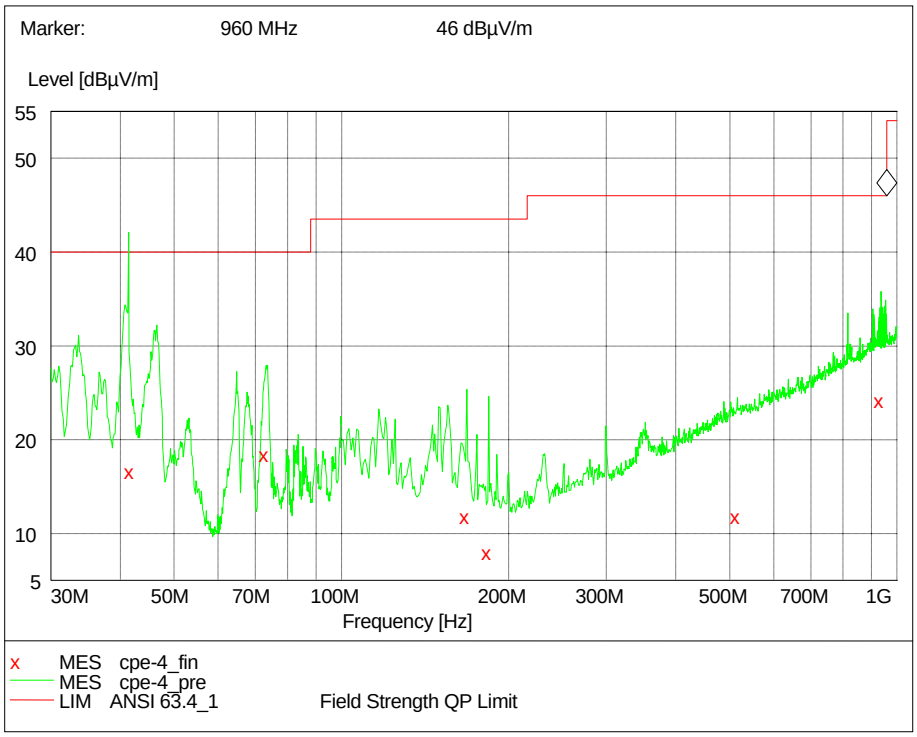


Plot 1 Power Line Conducted Emissions – L Line

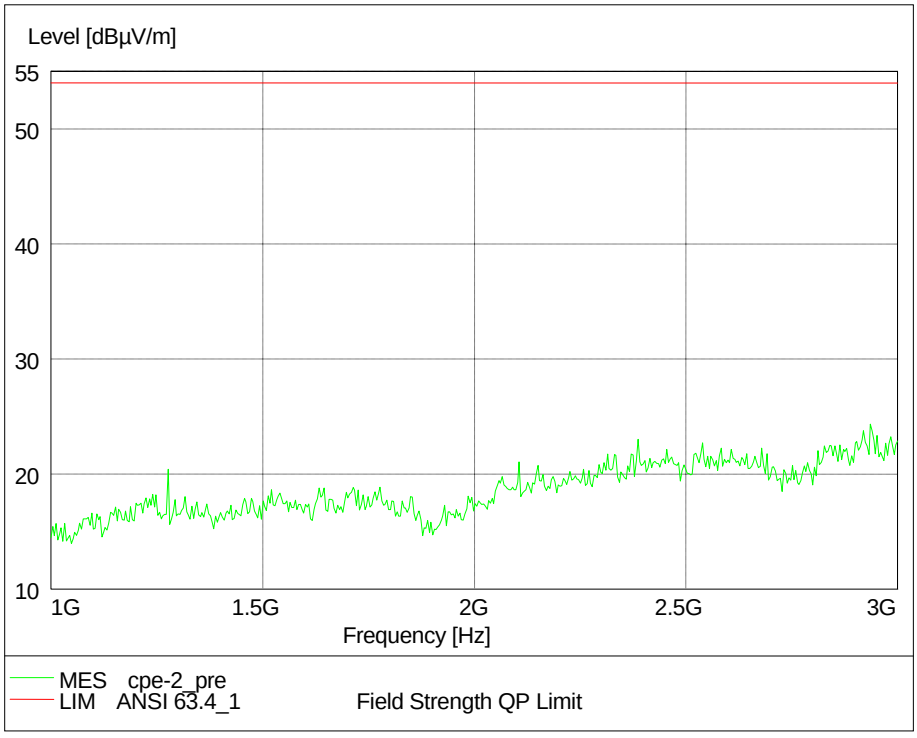


Plot 2 Power Line Conducted Emissions – N Line

4.2 Enclosure Radiated Emissions

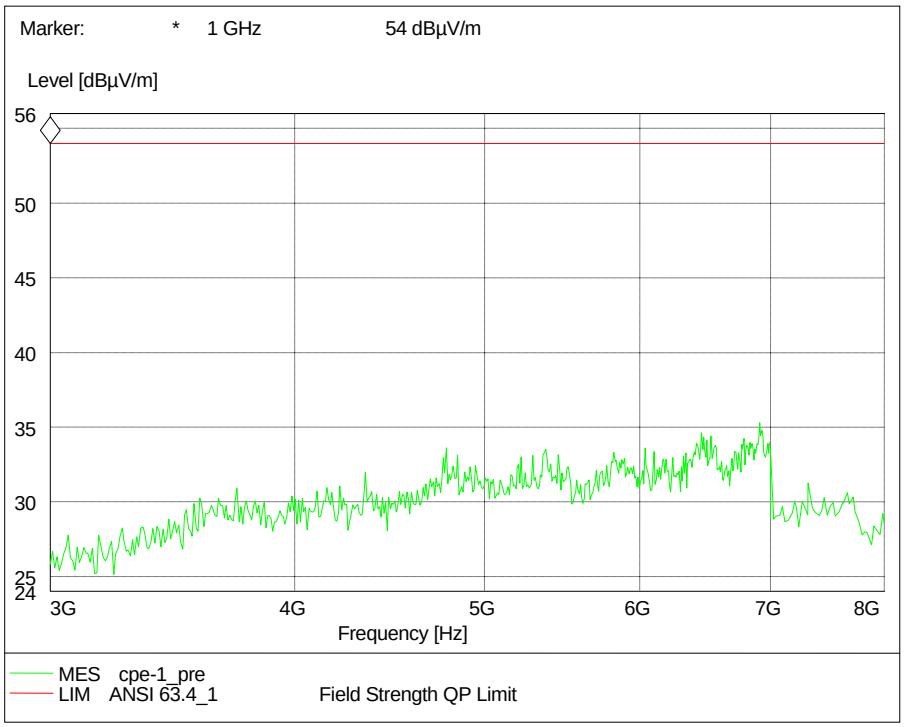


Plot 3 Radiated Emissions 30MHz–1GHz



Plot 4 Radiated Emissions 1GHz – 3GHz

4.7 Enclosure Radiated Emissions-continued



Plot 5 Radiated Emissions 3GHz – 8GHz

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SECTION 5

DISCLAIMERS AND COPYRIGHT

FCC CRF 47 Part 15: 2008 Testing of the Beijing Xinwei Telecom Technology Inc., Broadband Wireless desktop terminal McWiLL CPE722

5.1 DISCLAIMER AND COPYRIGHT

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APPENDIX

Appendix1 test setup