588 West Jindu Road, Songjiang District, Shanghai, China

Telephone: +86 (0) 21 6191 5666 Report No.: SHEMO10090121601

Fax: +86 (0) 21 6191 5655 Page 1 of 13

Tino.Pan@sgs.com

EMC TEST REPORT

Application No.: SHEMO10090121601

Applicant: Lenovo Mobile Communication Technology LTD.

Equipment Under Test (EUT):

NOTE: The following sample(s) submitted was/were identified on behalf of the client as

Product Name: GSM/GPRS Mobile

Brand Name: LANIX Model Name: T90

Standards: FCC PART 15:2008 Section B

Date of Receipt: Sep 25, 2010

Date of Test: Sep 26, 2010 to Oct 14, 2010

Date of Issue: Oct 14, 2010

Test Result : PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Tino Pan

E&E Section Manager

SGS-CSTC(Shanghai) Co., Ltd.

Thunder Jin

E&E Project Engineer

Thunder Jin

SGS-CSTC(Shanghai)Co.,Ltd

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2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result	
Radiated Emission	CFR 47 Part 15.109	ANSI C63.4: 2003	Class B	PASS	
30MHz-1000MHz	CFR 4/ Part 13.109	ANSI C03.4: 2003	Class B	PASS	
Conducted Emission	CED 47 D- + 15 107	ANGL CC2 4, 2002	Class D	DACC	
150KHz-30MHz	CFR 47 Part 15.107	ANSI C63.4: 2003	Class B	PASS	

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4 General Information

4.1 Client Information

Applicant: Lenovo Mobile Communication Technology LTD.

Address of Applicant: No.999,Qishan North 2nd Road,Information&Optoelectronics

Park, Torch Hi-tech Industry Development Zone, Xiamen, P.R. China

P.C:361006

Manufacturer: Lenovo Mobile Communication Technology LTD.

Address of No.999,Qishan North 2nd Road,Information&Optoelectronics

Manufacturer: Park,Torch Hi-tech Industry Development Zone,Xiamen,P.R.China

P.C:361006

4.2 General Description of E.U.T.

Product Name: T90

Brand Name: LANIX

Support Frequency Band: GSM 850/1900

Hardware Version: H402

Software Version: LANIX T90 S107 100830

Charger: T90-C, 100-240V~ 50/60Hz 150mA Battery: T90-BAT, 3.7V 880mAh / 3.25Wh

4.3 Details of support units

Name / Function Model No. Remark

Notebook 2374 IBM ThinkPad T42

4.4 Standards Applicable for Testing

The standards used were CFR 47 Part 15B:

Table 1: Tests Carried Out Under CFR 47 Part 15B:

Standard	Status
FCC Part 15 Subpart B Radiated Emission	$\sqrt{}$
FCC Part 15 Subpart B Conducted Emission	V

✓ Indicates that the test is not applicable
 ✓ Indicates that the test is applicable

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4.5 Test Location

All the tests were performance at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5655

4.6 Test Confident level

The test facility is recognized, certified, or accredited by the following organizations:

• CNAS (No. CNAS L0599)

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2011-07-29.

• FCC – Registration No.: 402683

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2012-03-17.

• Industry Canada (IC) – IC Assigned Code: 8617A

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2011-09-29.

• VCCI (Member No.: 3061)

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3172 and C-3514 respectively. Date of Registration: 2009-11-30. Date of Expiry: 2012-03-17.

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5 Equipment Used during Test

Radiated Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2010-06-03	2011-06-02
2	ANTENNA	SCHWARZBECK	VULB9168	9168-313	2010-06-03	2011-06-02
3	ANTENNA	SCHWARZBECK	BBHA9120D	9120D-679	2010-06-03	2011-06-02
4	ANTENNA	SCHWARZBECK	BBHA9170	9170-373	2010-06-03	2011-06-02
5	TURNTABLE	INNCO	DS 2000S-1T	/	/	/
6	UNIVERSAL RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMU 200	112012	2010-08-25	2011-08-24

Conducted Emission

	Conducted Emission	1	•	•	•	,
Item	Test Equipment	Test Equipment Manufacturer Model No.		Serial No.	Cal. Date	Cal. Due
1	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2010-06-04	2011-06-03
2	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127-490	2010-05-07	2011-05-06
4	UNIVERSAL RADIO COMMUNICATION TESTER	Rohde & Schwarz	CMU 200	112012	2010-08-25	2011-08-24

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General Equipment

General Equipment								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date		
1	Atmosphere pressure meter	Shanghai ZhongXuan Electronic Co;Ltd	BY-2003P	/	2009-10-15	2010-10-14		
2	Digital Multimeter	FLUKE	17B	10560713	2010-09-16	2011-09-15		
3	Thermo-Hygrometer	ZHICHEN	ZC1-2	01050033	2009-10-21	2010-10-20		
4	Digital illuminance meter	TES electrical electronic Corp.	TES-1330A	050602219	2009-10-16	2010-10-15		

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6 Emission Test Results

6.1 Radiated Emissions

Test Requirement: CFR 47 Part 15.109 Test Method: ANSI C63.4:2003

Test Date: Sep 27, 2010 to Sep 30, 2010

Frequency Range: 30MHz to 1GHz

Measurement Distance: 3m

Detector: Peak for pre-scan (120kHz resolution bandwidth)

Result: PASS

6.1.1 E.U.T. Operation

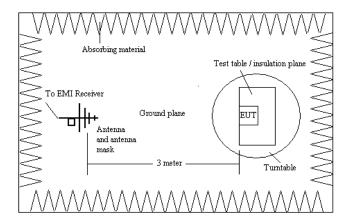
Operating Environment:

Temperature: 24.0 °C Humidity: 45 % RH Atmospheric Pressure: 1012 mbar

EUT Operation: The EUT is in the GSM idle mode connected with charger, earphone.

The EUT is connected with PC mode.
The EUT is in the FM receiver mode.

6.1.2 Test setup:



Note: All test modes have been tested, and the worst case is shown below.

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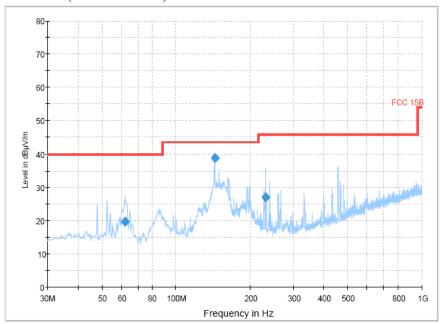
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6.1.3 Measurement Data:

Test in be connected with PC mode.

Horizontal(30MHz -1GHz):



Freq. (MHz)	Readin g Level (dBµV)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Turntable position (deg)
61.86992	30.1	19.7	1000	120	250	182
144.02976	47.4	38.9	1000	120	206	324
232.37824	37.2	27.1	1000	120	250	248

Freq. (MHz)	Cable loss (dB)	Preamp factor (dB)	Antenna Factor (dB/m)	Corr. (dB)	Limit (dBµV/m)	Margin (dB)
61.86992	0.75	-24.6	13.50	-10.4	40.0	20.3
144.02976	1.30	-24.6	14.80	-8.5	43.5	4.6
232.37824	1.80	-24.5	12.60	-10.1	46.0	18.9

Note: Corr. = Antenna factor + Cable loss + Preamp factor

QuasiPeak = Reading Level + Corr.

Margin = Limit - QuasiPeak

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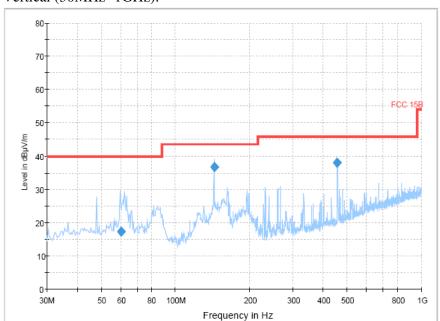
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Vertical (30MHz -1GHz):



Freq. (MHz)	Reading Level (dBµV)	QuasiPeak (dBµV/m)	Meas. Time (ms)	Bandwidth (kHz)	Antenna height (cm)	Turntable position (deg)
60.06512	27.2	17.2	1000	120	202	53
144.01728	45.3	36.8	1000	120	150	95
455.08384	42.3	38.1	1000	120	236	200

Freq. (MHz)	Cable loss (dB)	Preamp factor (dB)	Antenna Factor (dB/m)	Corr. (dB)	Limit (dBµV/m)	Margin (dB)
60.06512	0.78	-24.6	13.78	-10.0	40.0	22.8
144.01728	1.30	-24.6	14.80	-8.5	43.5	6.7
455.08384	2.43	-24.3	17.65	-4.2	46.0	7.9

Note: Corr. = Antenna factor + Cable loss + Preamp factor

QuasiPeak = Reading Level + Corr.

Margin = Limit - QuasiPeak

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6.2 Conducted Emissions

Test Requirement: CFR 47 part 15.107 Test Method: ANSI C63.4:2003

Test Date: Oct 10, 2010

Frequency Range: 150kHz to 30MHz

Limit:

Frequency of Emission (MHz)	Conducted I	Limit (dBµV)
	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.

Result: PASS

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0°C Humidity: 45% RH Atmospheric Pressure: 1010 mbar

EUT Operation: The EUT is in the GSM idle mode connected with charger.

The EUT is connected with PC mode.

6.2.2 Test Result and Measurement Data

Note: 1. All test modes have been tested, and the worst case is shown below.

2. Insertion loss and cable loss of the test equipments:

Port N:

1 010 1 11													
Frequency (MHz)	0.1	0.2	0.5	0.7	1	2	5	7	10	15	20	25	30
Insertion Loss (dB)	-0.07	-0.06	-0.03	-0.02	-0.06	-0.05	-0.04	-0.17	-0.28	-0.26	-0.33	-0.32	-0.31
Cable Loss (dB)	-0.15	-0.16	-0.18	-0.18	-0.19	-0.2	-0.24	-0.5	-0.73	-0.78	-1.04	-1.35	-1.53

Port L:

Frequency (MHz)	0.1	0.2	0.5	0.7	1	2	5	7	10	15	20	25	30
Insertion Loss (dB)	-0.02	-0.06	-0.05	-0.06	-0.07	-0.04	-0.05	-0.16	-0.23	-0.25	-0.34	-0.32	-0.35
Cable Loss (dB)	-0.15	-0.16	-0.18	-0.18	-0.19	-0.2	-0.24	-0.5	-0.73	-0.78	-1.04	-1.35	-1.53

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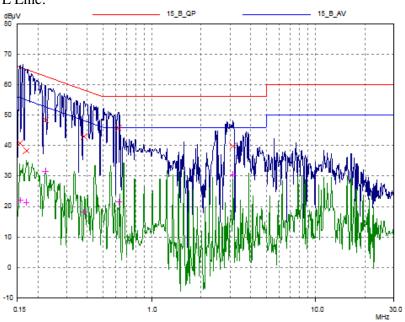
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Tino.Pan@sgs.com

Test in be connected with PC mode:

L Line:



Final Measurement Results

Frequency	QP Level	QP Limit	QP Delta
MHz	dBµV	dBμV	dB
0.15609	40.78	65.67	24.89
0.17039	38.32	64.94	26.62
0.22341	48.50	62.69	14.19
0.38409	43.02	58.19	15.17
0.62449	45.81	56.00	10.19
3.12287	39.89	56.00	16.11
Frequency	AV Level	AV Limit	AV Delta
MHz	dBμV	dΒμV	dB
0.15609	21.99	55.67	33.68
0.17039	21.33	54.94	33.61
0.22341	31.41	52.69	21.28
0.38409	18.14	48.19	30.05
0.62449	21.41	46.00	24.59
3.12287	30.47	46.00	15.53

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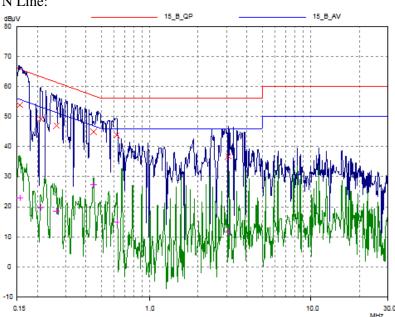
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Tino.Pan@sgs.com

N Line:



Final Measurement Results

3.07349

Frequency	QP Level	QP Limit	QP Delta
MHz	dBµV	dBµV	dB
	•	•	
0.15609	53.86	65.67	11.81
0.20962	49.18	63.22	14.04
0.26411	46.93	61.30	14.37
0.44687	44.92	56.93	12.01
0.62449	43.73	56.00	12.27
3.07349	36.71	56.00	19.29
Frequency	AV Level	AV Limit	AV Delta
MHz	dBµ∨	dBµ∨	dB
0.15609	22.85	55.67	32.82
0.20962	19.61	53.22	33.61
0.26411	18.54	51.30	32.76
0.44687	27.22	46.93	19.71
0.62449	14.89	46.00	31.11

46.00

11.62

End of Report~

34.38

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