TESTING
No. L2264

Part 15B

TEST REPORT

Product Name	cdma2000 digital mobile phone
Model Name	one touch 710C
FCC ID	R5C710C
Client	Huizhou TCL Mobile Communication Co.,Ltd

TA Technology (Shanghai) Co., Ltd.

GENERAL SUMMARY

Product Name	cdma2000 digital mobile phone	**Model Name**	one touch 710C
FCC ID	R5C710C		
Report No.	RZA1110-1746EMC01R2		
Client	Huizhou TCL Mobile Communication Co.,Ltd		
Manufacturer	Huizhou TCL Mobile Communication Co.,Ltd		
Reference Standard(s)	**FCC Code CFR47 Part15B (2010-12)** Radio frequency device. **ANSI C63.4 (2003)** Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9 KHz to 40GHz.		
Conclusion	This portable wireless equipment has been measured in all cases requested by the relevant standards. Test results in Chapter 2 of this test report are below limits specified in the relevant standards. General Judgment : **Pass** **(Stamp)** **Date of issue: November 4th,2011**		
Comment	The test result only responds to the measured sample.		

Approved by 杨伟中 Director **Revised by** 范广翔 EMC Manager **Performed by** 刘伟 EMC Engineer

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1. General Information

1.1. Notes of the test report

TA Technology (Shanghai) Co., Ltd. guarantees the reliability of the data presented in this test report, which is the results of measurements and tests performed for the items under test on the date and under the conditions stated in this test report and is based on the knowledge and technical facilities available at TA Technology (Shanghai) Co., Ltd. at the time of execution of the test.

TA Technology (Shanghai) Co., Ltd. is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the items under test and the results of the test. This report only refers to the item that has undergone the test.

This report standalone dose not constitute or imply by its own an approval of the product by the certification Bodies or competent Authorities. This report can not be used partially or in full for publicity and/or promotional purposes without previous written approval of **TA Technology (Shanghai) Co., Ltd.** and the Accreditation Bodies, if it applies.

If the electrical report is inconsistent with the printed one, it should be subject to the latter.

1.2. Testing laboratory

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City:	Shanghai
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Country:	P. R. China
Contact:	Yang Weizhong
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	yangweizhong@ta-shanghai.com

1.3. Applicant Information

Company:	Huizhou TCL Mobile Communication Co.,Ltd
Address:	NO.23 Zone, ZhongKai High-Technology Development Zone
City:	/
Postal Code:	/
Country:	P.R.China
Contact:	Jianjun Ji
Telephone:	86-755-33035352
Fax:	86-755-33313007

1.4. Manufacturer Information

Company:	Huizhou TCL Mobile Communication Co.,Ltd
Address:	NO.23 Zone, ZhongKai High-Technology Development Zone
City:	/
Postal Code:	/
Country:	P.R.China
Telephone:	86-755-33035352
Fax:	86-755-33313007

1.5. Information of EUT

General information

Name of EUT:	cdma2000 digital mobile phone
MEID:	A100000864E0D4
Hardware Version:	V1.2
Software Version:	710C_OMH_V1.5_5
Antenna Type:	Internal Antenna
Used Host Product:	IBM T61

Auxiliary Equipment Details

AE1: Battery	
Model:	/
Manufacture:	BYD
S/N:	CAB3120000C1
AE1: Charger	
Model:	WIN350mA5V00_00
Manufacture:	BYD
S/N:	/

Equipment Under Test (EUT) is cdma2000 digital mobile phone. During the test, the EUT connect to the laptop IBM T61.

The sample under test was selected by the Client.

Components list please refer to documents of the manufacturer.

1.6. Test Date

The test is performed on October 31, 2011.

2. Test Information

2.1. Summary of test results

Number	Test Case	Clause in FCC Rules	Verdict
1	Radiated Emission	15.109, ANSI C63.4-2003	PASS
2	Conducted Emission	15.107, ANSI C63.4-2003	PASS

2.2. Radiated Emission

Ambient condition

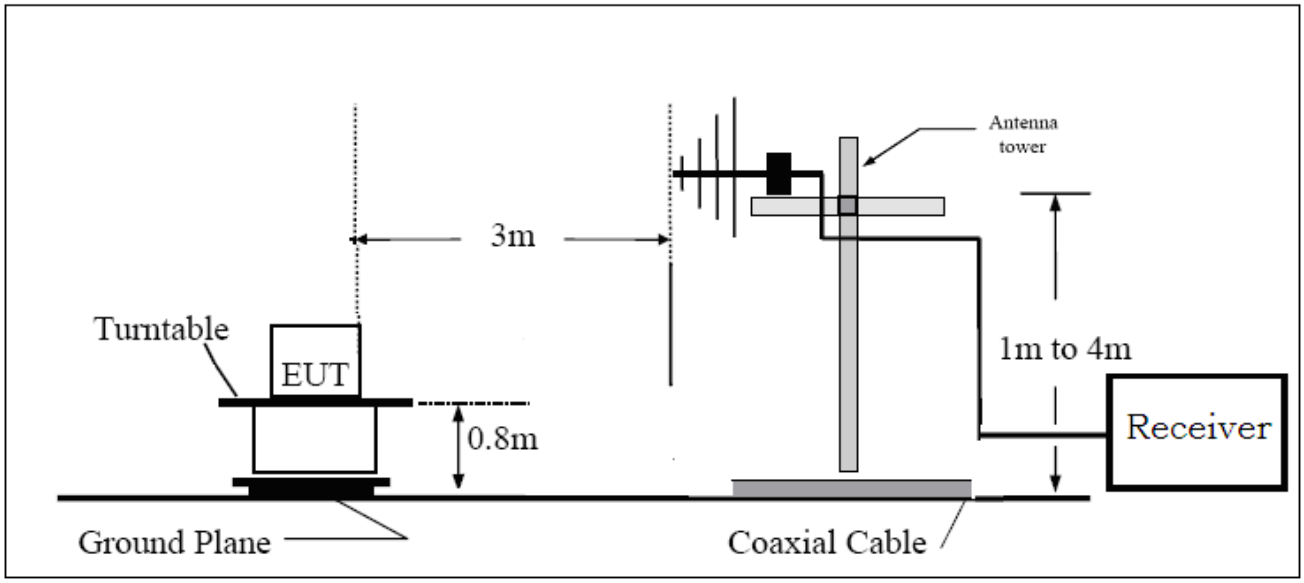
Temperature	Relative humidity	Pressure
24°C~26°C	45%~50%	102.5kPa

Methods of Measurement

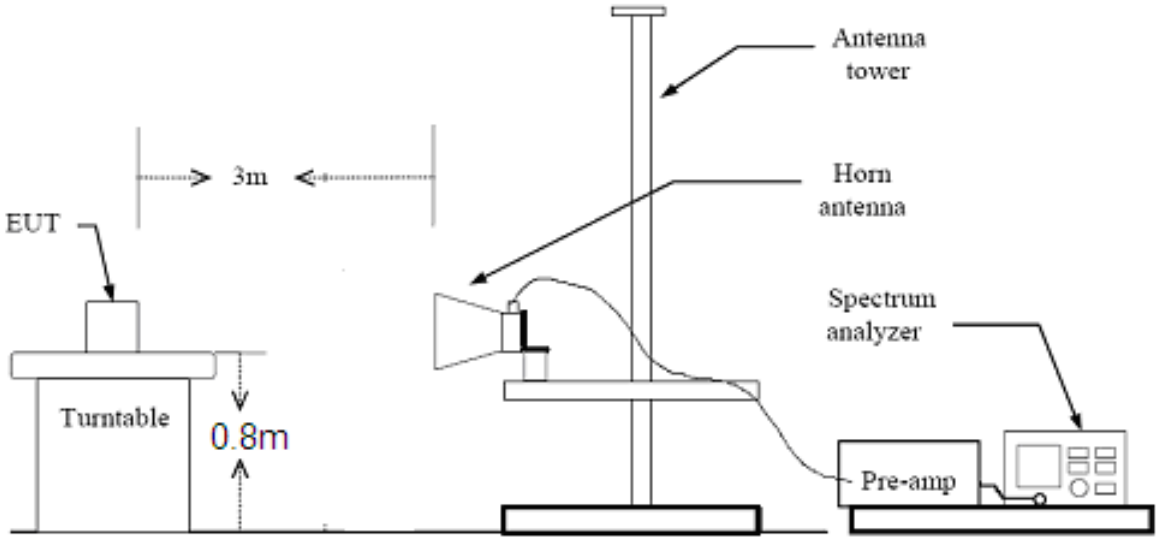
The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The distance between EUT and receive antenna should be 3 meters. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. Sweep the whole frequency band through the range from 30MHz to 10GHz. 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. During the test, EUT is connected to a laptop via a USB cable in the case of USB mode. The EUT is used as the peripheral equipment of the PC. The model of laptop is IBM T61 8892-BAC and the serial number of laptop is L3-C9644. The phone modem drivers were installed on the laptop to be able to communicate with the EUT by continuously sending a querying text file (AT Command) to the phone using Hyper Terminal during the test.
The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. During the test, the EUT is worked at maximum output power.
Set the spectrum analyzer in the following:
Below 1GHz:
RBW=100kHz / VBW=300kHz / Sweep=AUTO
Above 1GHz:
(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

Test Setup

Below 1GHz



Above 1GHz



Limits

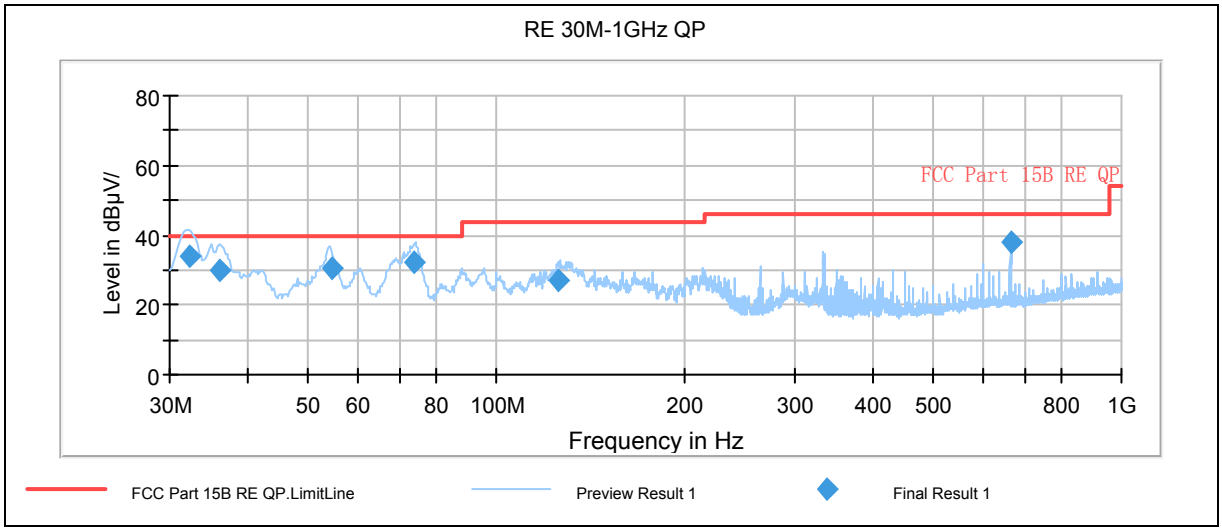
Frequency (MHz)	Field Strength (dBμV/m)	Detector
30 -88	40.0	Quasi-peak
88-216	43.5	Quasi-peak
216 – 960	46.0	Quasi-peak
960-1000	54.0	Quasi-peak
1000-5th harmonic of the highest frequency or 40GHz,which is lower	54 74	Average Peak

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96. U= 3.92 dB.

Test Results

USB Mode



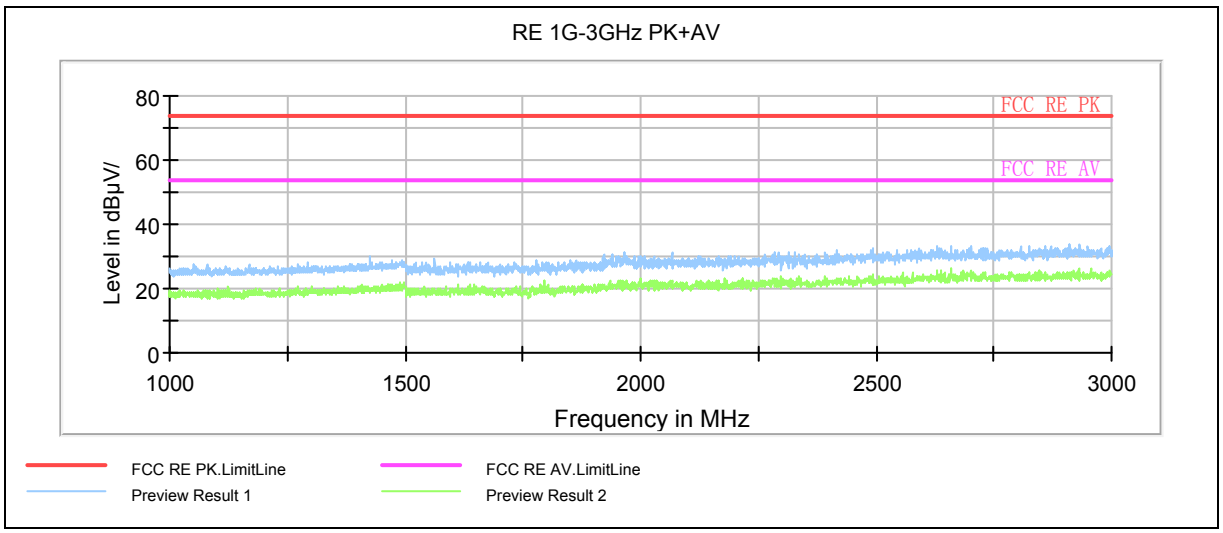
Radiated Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
32.262044	33.8	221.0	V	138.0	56.6	-22.8	6.2	40.0
35.972344	29.7	175.0	V	161.0	52.9	-23.2	10.3	40.0
54.385625	30.4	100.0	V	281.0	55.3	-24.9	9.6	40.0
73.949662	32.1	197.0	V	8.0	62.3	-30.2	7.9	40.0
125.956819	27.0	100.0	V	302.0	57.2	-30.2	16.5	43.5
666.132500	38.3	100.0	V	20.0	57.2	-18.9	7.7	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

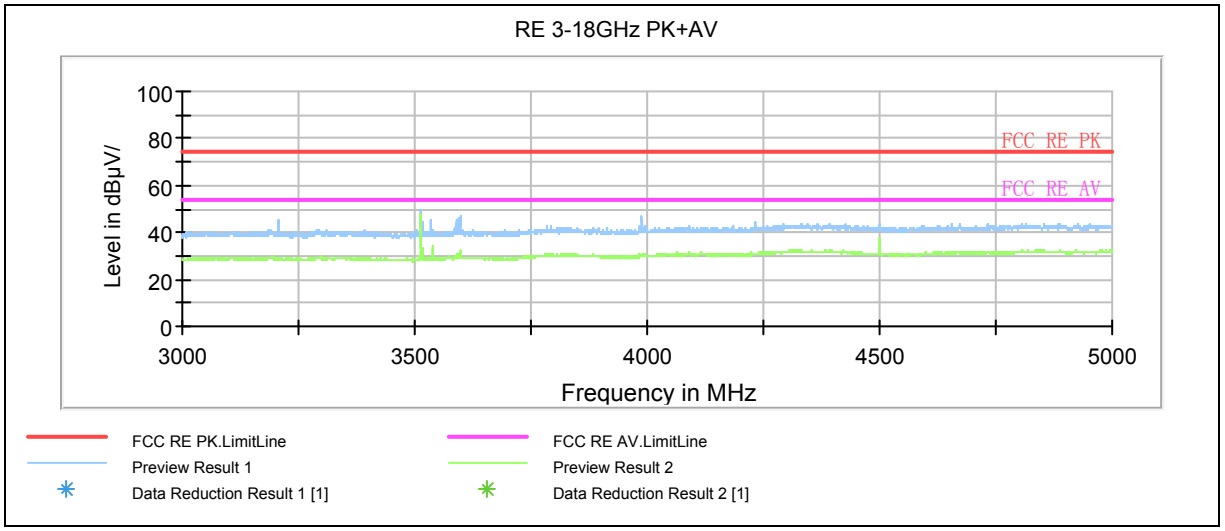
2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak



Note: Blue trace uses the peak detection Green trace uses the average detection

Radiated Emission from 1GHz to 3GHz



Note: Blue trace uses the peak detection Green trace uses the average detection

Radiated Emission from 3GHz to 5GHz

2.3. Conducted Emission

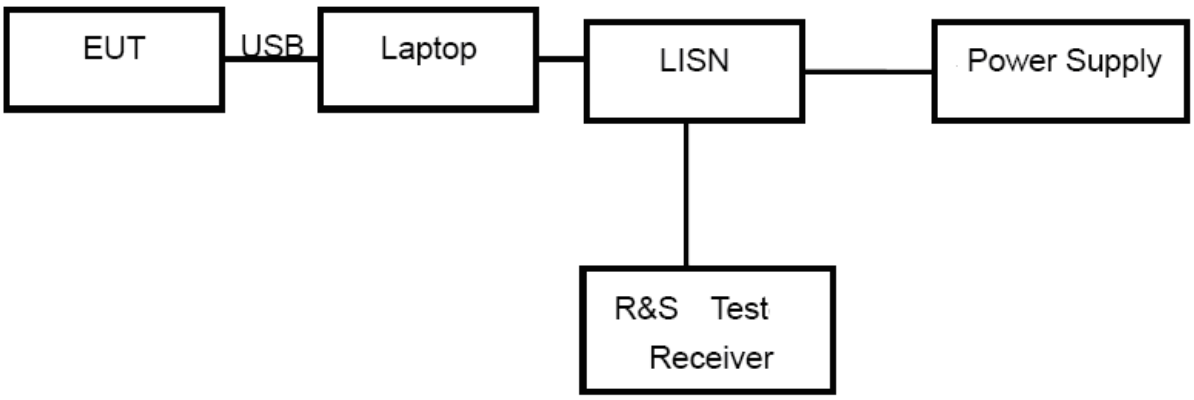
Ambient condition

Temperature	Relative humidity	Pressure
24°C ~26°C	50%~55%	102.5kPa

Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.4-2003. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz.The measurement result should include both L line and N line. During the test, EUT is connected to a laptop via a USB cable in the case of USB mode. The EUT is used as the peripheral equipment of the PC. The model of laptop is IBM T61 8892-BAC and the serial number of laptop is L3-C9644. The phone modem drivers were installed on the laptop to be able to communicate with the EUT by continuously sending a querying text file (AT Command) to the phone using Hyper Terminal during the test, and the EUT is worked at maximum output power.

Test Setup



Note: Power Supply is AC Power source and it is used to change the voltage from 220V/50Hz to 110V/60Hz.

Limits

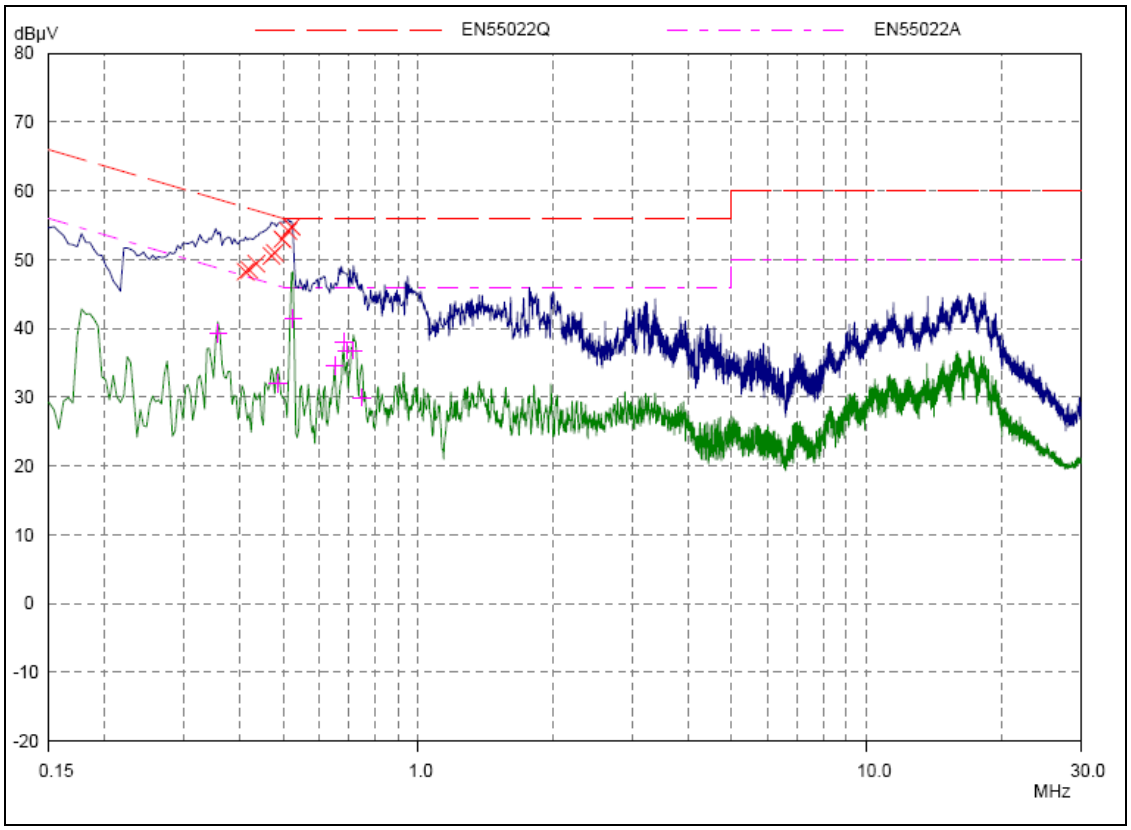
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96. U= 2.69 dB.

Test Results

USB Mode

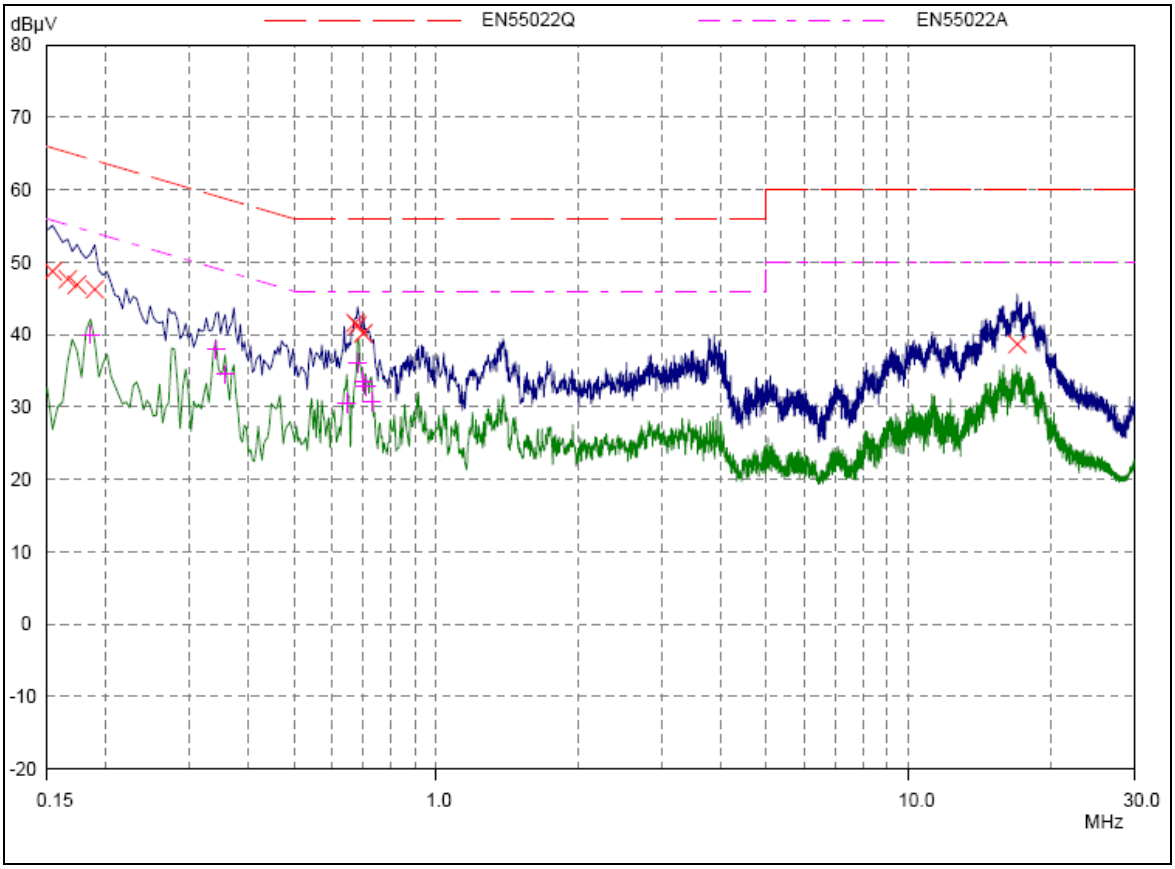


L line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.41171	48.26	57.61	9.35	L1
0.41953	48.52	57.46	8.94	L1
0.43515	49.42	57.15	7.73	L1
0.47031	50.56	56.51	5.95	L1
0.47812	51.02	56.37	5.35	L1
0.49765	52.98	56.04	3.06	L1
0.51327	54.16	56.00	1.84	L1
0.52109	54.80	56.00	1.20	L1

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.35703	39.27	48.80	9.53	L1
0.48593	32.00	46.24	14.24	L1
0.525	41.47	46.00	4.53	L1
0.65	34.60	46.00	11.40	L1
0.68125	38.09	46.00	7.91	L1
0.69296	36.81	46.00	9.19	L1
0.7164	36.81	46.00	9.19	L1
0.74765	29.98	46.00	16.02	L1



N line

Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB	Phase -
0.1539	48.76	65.79	17.03	N
0.16562	47.66	65.18	17.52	N
0.17343	46.90	64.79	17.89	N
0.18906	46.26	64.08	17.82	N
0.67343	41.64	56.00	14.36	N
0.68125	41.26	56.00	14.74	N
0.70078	40.20	56.00	15.80	N
16.97812	38.68	60.00	21.32	N

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB	Phase -
0.18515	40.03	54.25	14.22	N
0.3414	37.95	49.17	11.22	N
0.35703	34.55	48.80	14.25	N
0.64609	30.54	46.00	15.46	N
0.68125	36.05	46.00	9.95	N
0.70078	33.55	46.00	12.45	N
0.70859	32.87	46.00	13.13	N
0.72812	30.79	46.00	15.21	N

3. Main Test Instruments

No.	Name	Type	Manufacturer	Serial Number	Calibration Date	Valid Period
01	Signal Analyzer	FSV	R&S	100815	2011-06-27	One year
02	EMI Test Receiver	ESCI	R&S	100948	2011-06-30	One year
03	Trilog Antenna	VULB 9163	SCHWARZBECK	9163-201	2011-06-29	Two years
04	Horn Antenna	HF907	R&S	100126	2011-07-01	Two years
05	EMI Test Receiver	ESCS30	R&S	100138	2011-01-17	One year
06	LISN	ENV216	R&S	101171	2010-04-16	Two years
07	Semi-Anechoic Chamber	9.6*6.7*6.6m	ETS-Lindgren	NA	NA	NA
08	EMI test software	ES-K1	R&S	NA	NA	NA

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

ANNEX A： The EUT Appearance and Test Setup

A.1 EUT Appearance

a: EUT

b: Battery

Picture 1 EUT

A.2 Test Setup

Picture 2 Radiated Emission Test Setup

Picture 3 Conducted Emission Test Setup