

FCC Part 15B TEST REPORT

of

GSM Dual-Band GPRS Wireless Data card (EDGE)

FCC ID : Q78-ZTEMZ16

Model No. : ZTE MZ16

Serial No. : MP0306480014557(INTEL)

Report No. : FCC07-8064

Date : September 4, 2007

Prepared for

ZTE Corporation

Zhongxing Bldg, Hi-Tech Park, Nanshan, Shenzhen, P.R.China

Prepared by

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1 Test Report Certification

Product: GSM Dual-Band GPRS Wireless Data card (EDGE)

FCC ID: Q78-ZTEMZ16

Model No.: ZTE MZ16

Applicant: ZTE Corporation

Applicant Address: Zhongxing Bldg, Hi-Tech Park, Nanshan, Shenzhen, P.R.China

Manufacturer: ZTE Corporation

Manufacturer Address: Zhongxing Bldg, Hi-Tech Park, Nanshan, Shenzhen, P.R.China

Test Standards: 47 CFR Part 15, Class B

Test Result: PASS

We, Shenzhen Electronic Product Quality Testing Center, hereby certify that the submitted samples of the above item, as detailed in chapter 2.1 of this report, has been tested in our facility. The test record, data evaluation and test configuration represented herein are true and accurate accounts of measurements of the sample's EMC characteristics under the conditions herein specified.

Tested by: Sheng Yongpan, Date: Dec, 4, 2007
Sheng Yongpan

Checked by: Smart Li, Date: Dec. 4, 2007
Smart Li

Approved by: Wu Li An, Date: Dec. 4, 2007
Wu Li An

2 General Information

2.1 Description of EUT

EUT1	
Description:	GSM Dual-Band GPRS Wireless Data card (EDGE)
Model No.:	ZTE MZ16
Serial No.:	MP0306480014557(INTEL)
Hardware Version:	V1.02
Software Version:	N60-v16.04_B03

NOTE:

1. The EUT is Quad-band GSM data card which supports GSM 850MHz and 1900MHz bands. Both Cellular 850MHz and PCS 1900MHz bands were tested in this report.
2. Please refer to Appendix I for the photographs of the EUT. For a more detailed features description about the EUT, please refer to User's Manual.

2.2 Objective

Perform EMC test according to FCC Part 15 Subpart B (Class B digital device).

2.3 Test Standards and Results

The EUT has been tested according to 47 CFR Part 15, Radio Frequency Devices (10-1-05 Edition).

Test items and the results are as bellow:

?	FCC Rules	Test Type	Result	Test Date
1	§15.107	Conducted Emission	N.A	2007.12.4
3	§15.109	Radiated Emission	PASS	2007.9.2

2.4 List of Equipments Used

Description	Manufacturer	Model No.	Cal. Due Date	Serial No.
Test Receiver	Schwarzbeck	FCKL1528	2007.06.05	A0304230
Test Receiver	Rohde & Schwarz	ESIB26	2007.06.05	A0304218
LISN	Schwarzbeck	NSLK8127	2007.06.05	A0304233
Ultra Broadband Ant.	Rohde & Schwarz	HL562	2007.06.05	A0304224
Universal Radio Communication Tester	Rohde & Schwarz	CMU200	2007.06.05	A0304212
Mobile Phone Tester	Willtek	4403	2007.02.10	0811211
3G Communication Antenna	European Antennas	PSA 75301R/170	2007.05.10	A0304213
Shield Room	Nanbo Tech	Site 3	2008.01.04	A9901141
Anechoic Chamber	Albatross	EMC12.8× 6.8× 6.4(m)	2007.04.10	A0304210

2.5 Test Facility

Shenzhen Electronic Product Quality Testing Center (SET) is a third party testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS), according to ISO/IEC 17025. The accreditation certificate number is L1659.

The EMC chamber site No.1 (EMC12.8×6.8×6.4(m)), and the radiated and conducted Emission test equipments of SET are constructed and calibrated to meet the FCC requirements ANSI C63.4:2001 and CISPR 22/EN 55022. The FCC Registration Number is **261302**.

The EMC chamber site No.1 (EMC12.8×6.8×6.4(m)) also complies with Canada standard RSS 212, and acceptable to Industry Canada for the performance of radiated measurements. The Industry Canada Registration Number is **IC 5915**.

2.6 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35°C
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

3 Conducted Emission Test

3.1 Limits of Conducted Emission

According to FCC §15.107, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μ H/50 ohms line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dBmV), Class B digital device	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

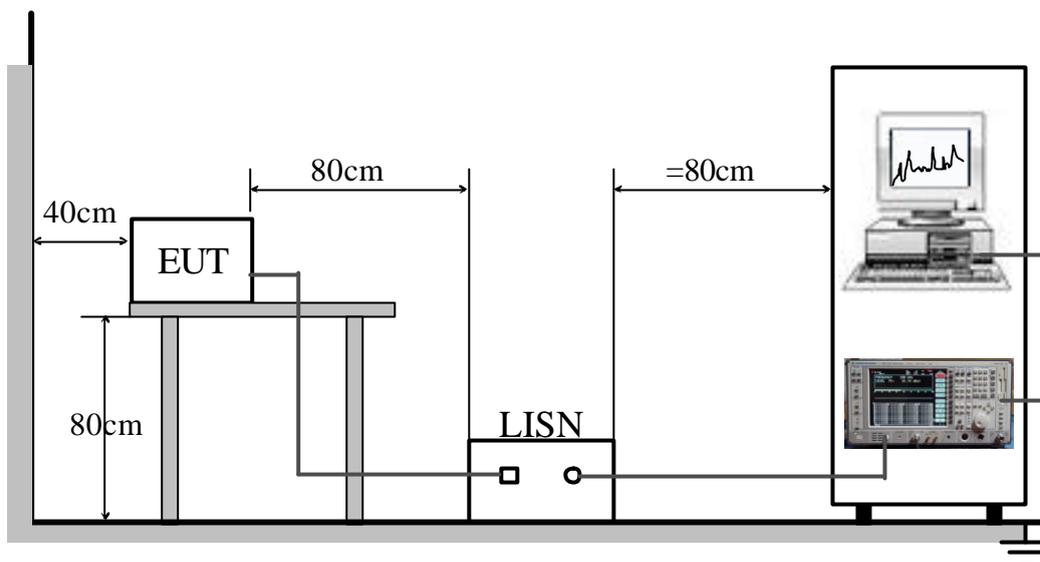
NOTE:

1. The lower limit shall apply at the band edges.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

3.2 Test Procedure

- a. The EUT was placed on a 0.8m high insulating table and kept 0.4 meters from the conducting wall of shielded room.
- b. The EUT was connected to the power mains through a line impedance stabilization network (LISN). The LISN provide 50 μ H of coupling impedance for the measuring instrument.
- c. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- d. The frequency range from 150 kHz to 30 MHz was searched using CISPR Quasi-Peak and Average detector.

3.3 Test Setup



For the actual test configuration, please refer to the related item - Photographs of the Test Configuration.

3.4 EUT Setup and Operating Conditions

The EUT configuration of the emission tests was MS + Notebook. A communication link was established between the MS and a System Simulator (SS). The MS operated at GSM/Edge (Cellular850MHz band or PCS 1900MHz band) mid channel and maximum output power. There for only the test data of the worse case- PCS was used for Radiated test.

3.5 Test Results

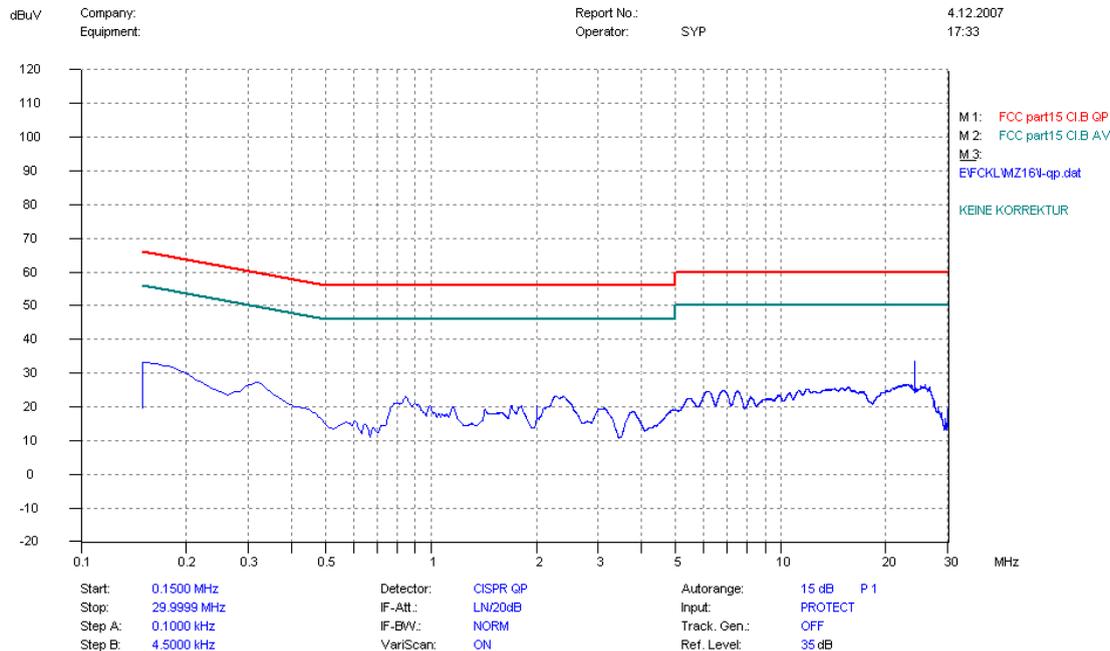
No.	Freq. (MHz)	Limit Value (dBmV)		Emission Level (dBmV)	
		QP	AV	QP	AV
1	0.1500	66	56	33.2	--
2	0.8475	56	46	23.0	--
3	2.2650	56	46	23.2	--
4	2.0040	56	46	20.4	
5	6.8370	60	50	23.0	--
6	24.0990	60	50	33.4	--

NOTE:

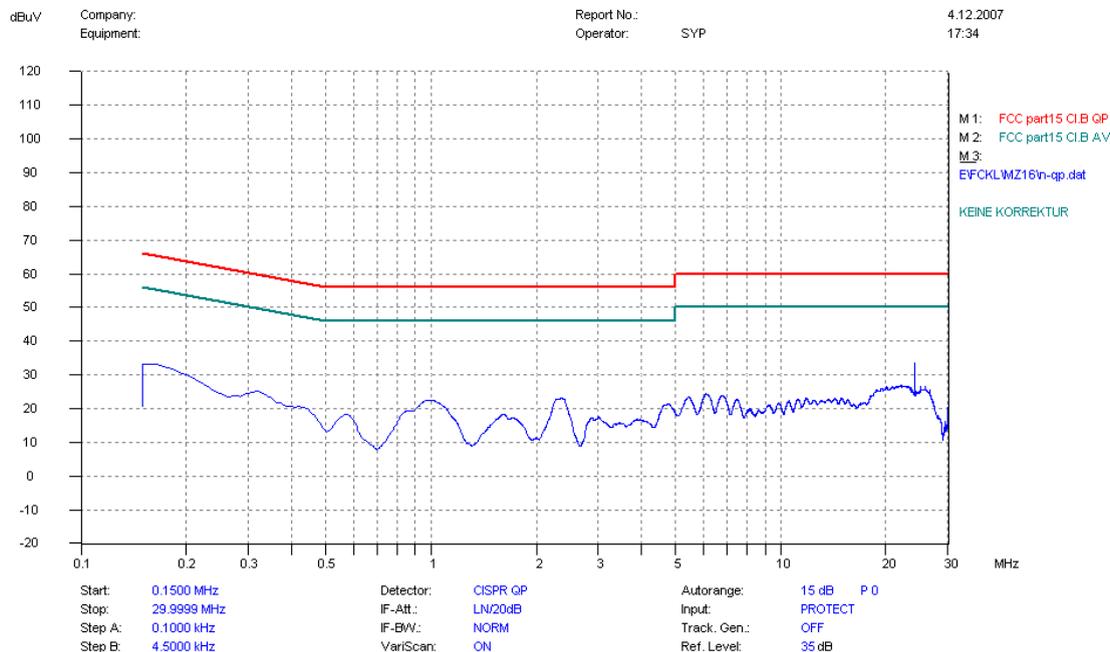
1. QP and AV are abbreviations of the quasi-peak and average individually.
2. If the emission levels measured with QP detector are lower than AV limits, there is unnecessary to measure with AV detector.
3. The emission levels recorded above is the larger ones of both L phase and N phase.



1. Mains terminal disturbance voltage, L phase



2. Mains terminal disturbance voltage, N phase



4 Radiated Emission Test

4.1 Limits of Radiated Emission

According to FCC §15.109, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength ($\mu\text{V/m}$)	Field Strength ($\text{dB}\mu\text{V/m}$)
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

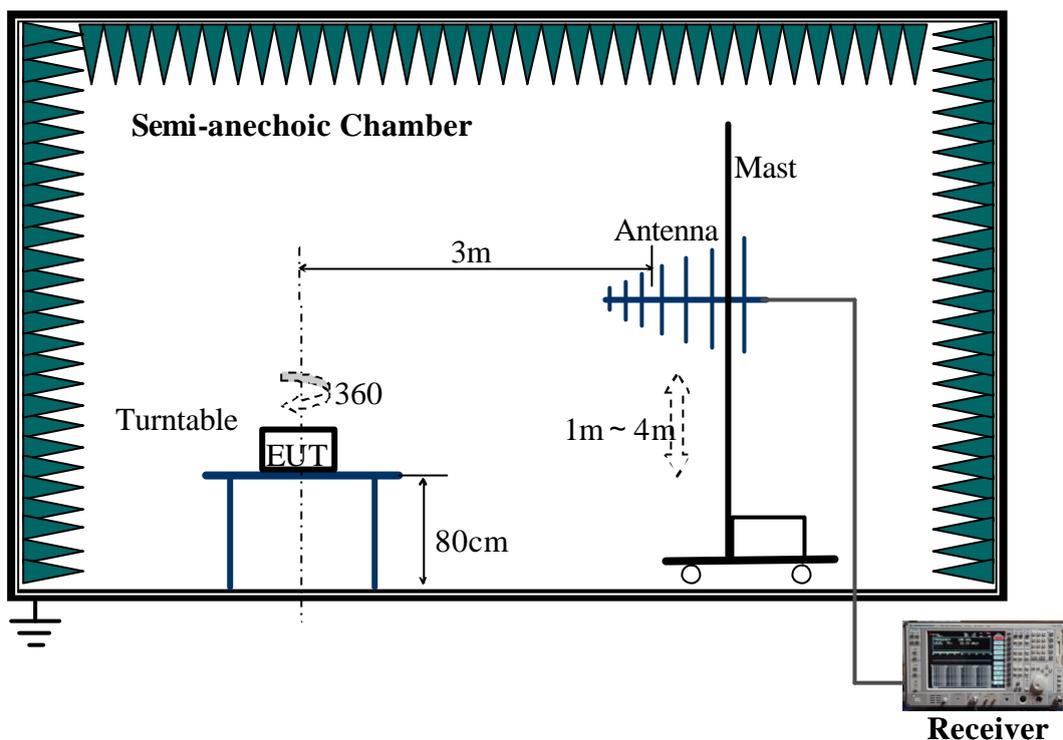
NOTE:

1. Field Strength ($\text{dB}\mu\text{V/m}$) = $20\log$ Field Strength ($\mu\text{V/m}$).
2. In the emission tables above, the tighter limit applies at the band edges.

4.2 Test Procedure

- a. The EUT was placed on the top of a ratable 0.8 meters above the ground at a semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meter above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to the heights from 1 to 4 meters and the ratable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detector Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emission that did not have 10 dB margins would be retested one by one using the quasi-peak method.

4.3 Test Setup



For the actual test configuration, please refer to the related item-Photographs of the Test Configuration.

4.4 EUT Setup and Operating Conditions

The EUT configuration of the emission tests was MS + Notebook. A communication link was established between the MS and a System Simulator (SS). The MS operated at GSM/Edge (Cellular850MHz band or PCS 1900MHz band) mid channel and maximum output power. There for only the test data of the worse case- PCS was used for Radiated test.

4.5 Test Results

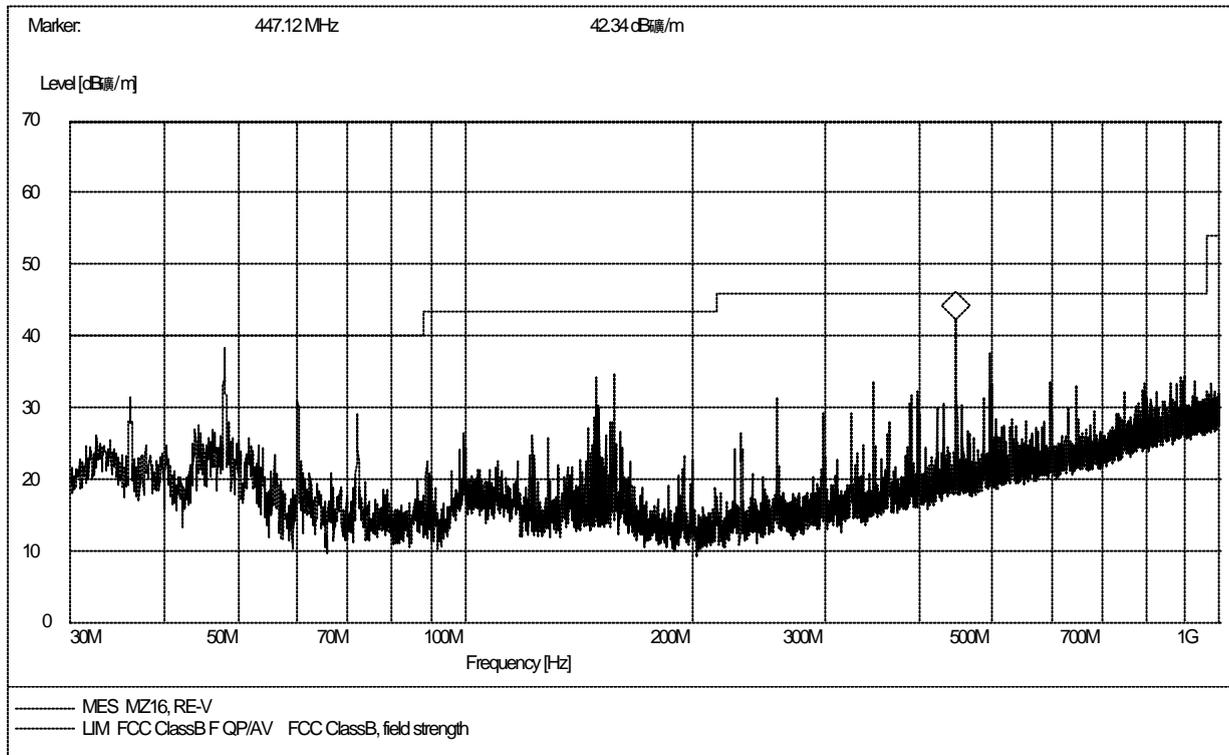
No.	Frequency (MHz)	Antenna Polarization	QP Limits (dBmV/m)	Emission Level (dBmV/m)
1	48.00	Vertical	40	34.98
2	60.00	Vertical	40	36.18
3	157.62	Vertical	43.5	30.90
4	447.12	Vertical	46	20.67
5	48.00	Horizontal	40	24.44
6	60.00	Horizontal	40	33.38
7	72.00	Horizontal	40	37.66



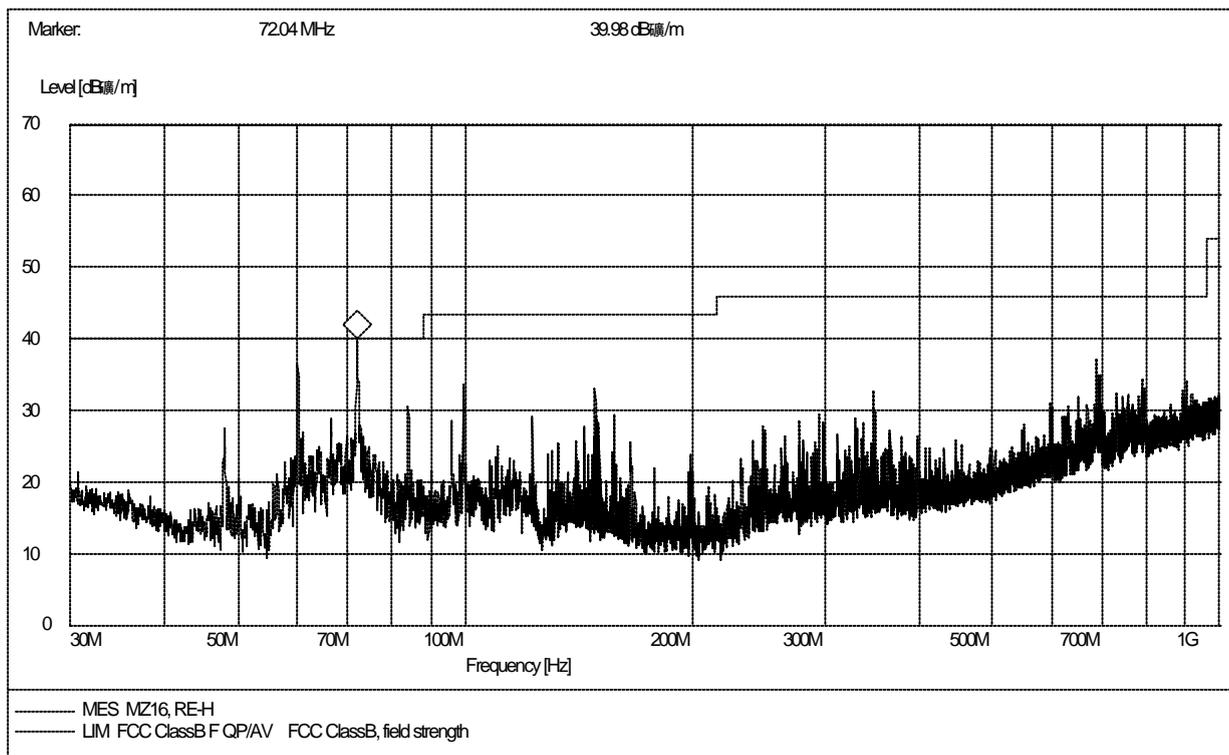
8	99.68	Horizontal	43.5	31.60
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Test Plots

1. Radiation disturbances, maxpeak detector, antenna polarization: Vertical



2. Radiation disturbances, maxpeak detector, antenna polarization: Horizontal

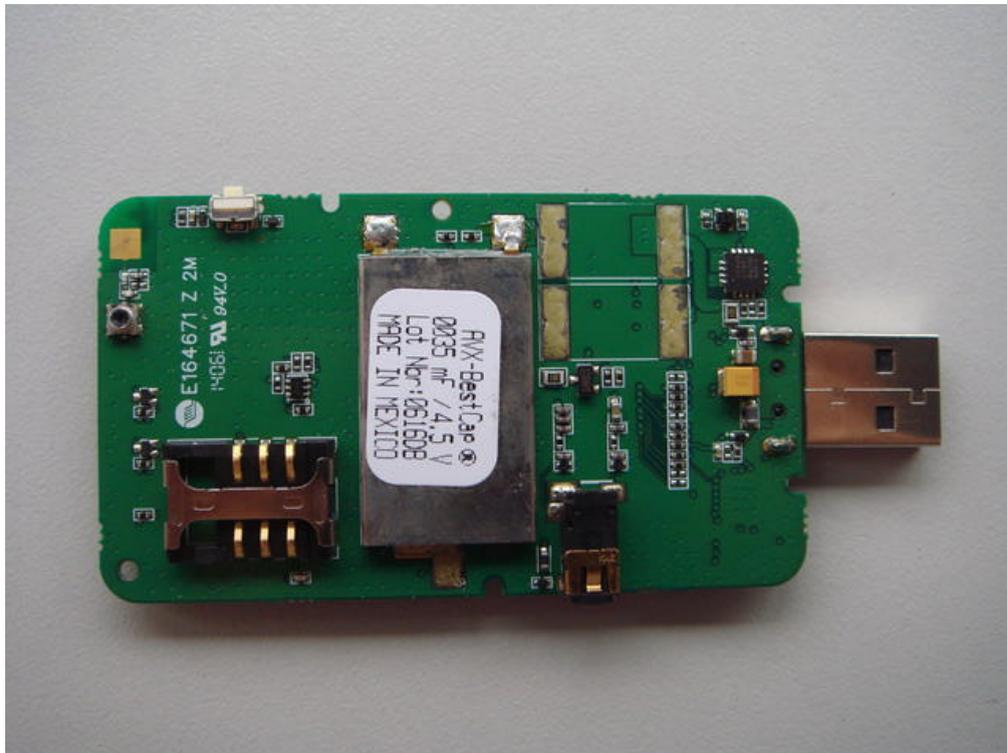
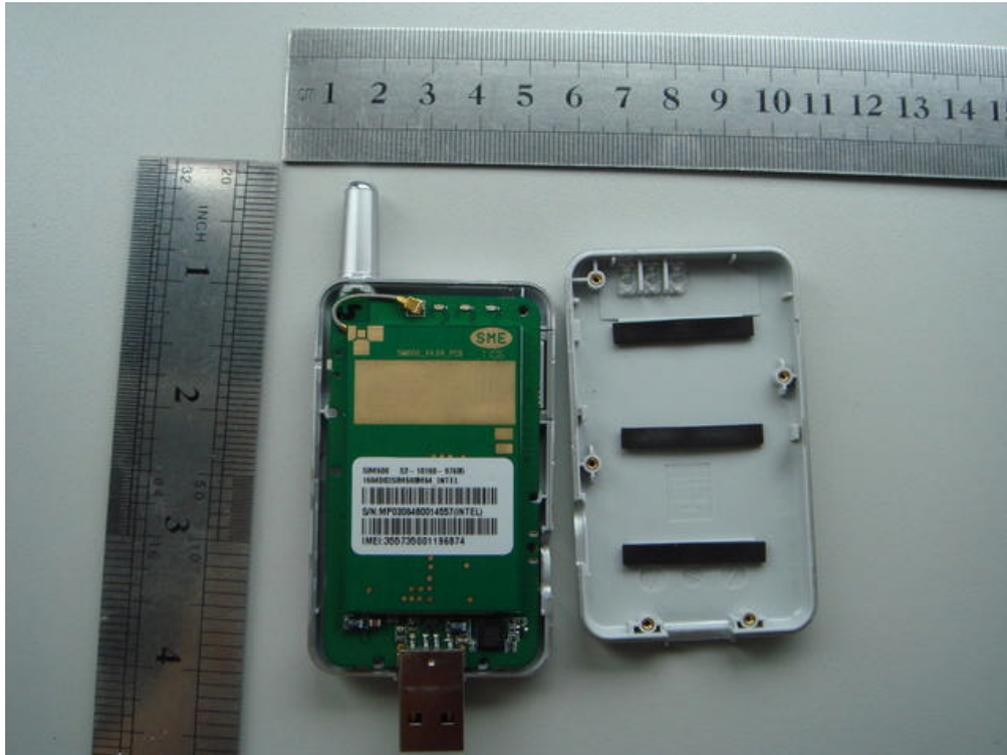


Appendix I : Photographs of the EUT

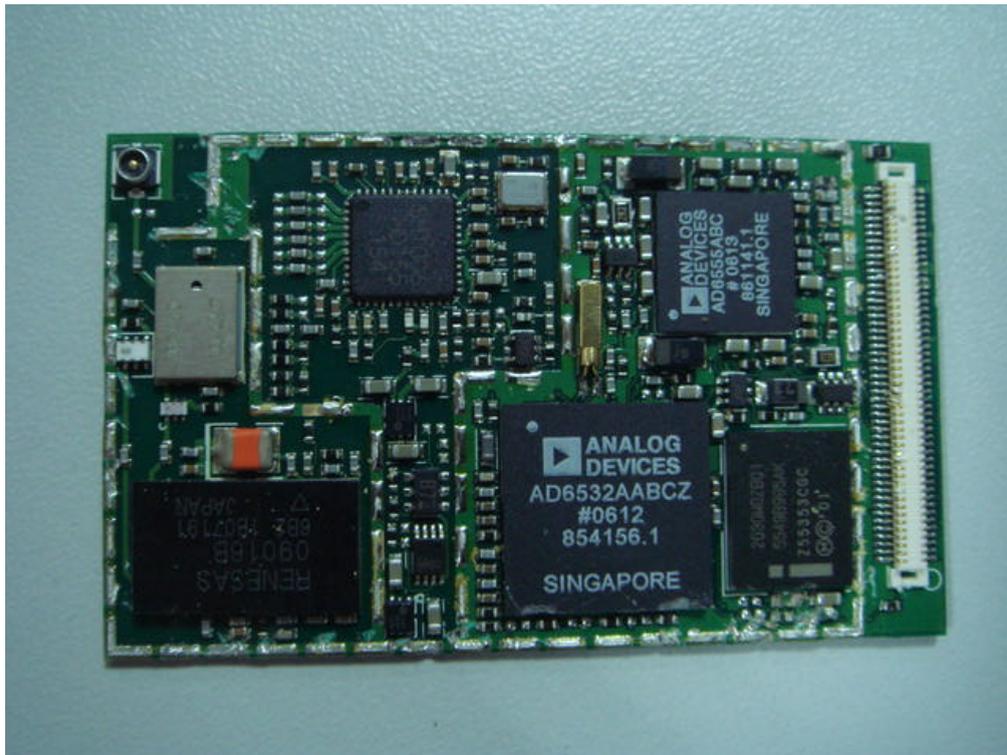
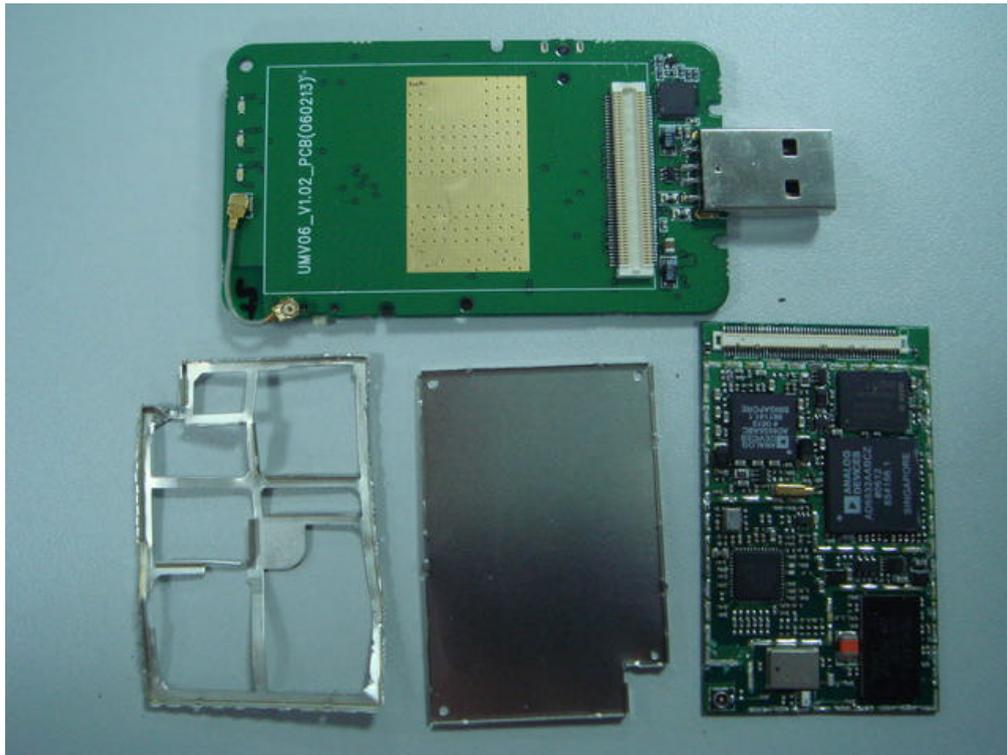
1. Appearance of the MS

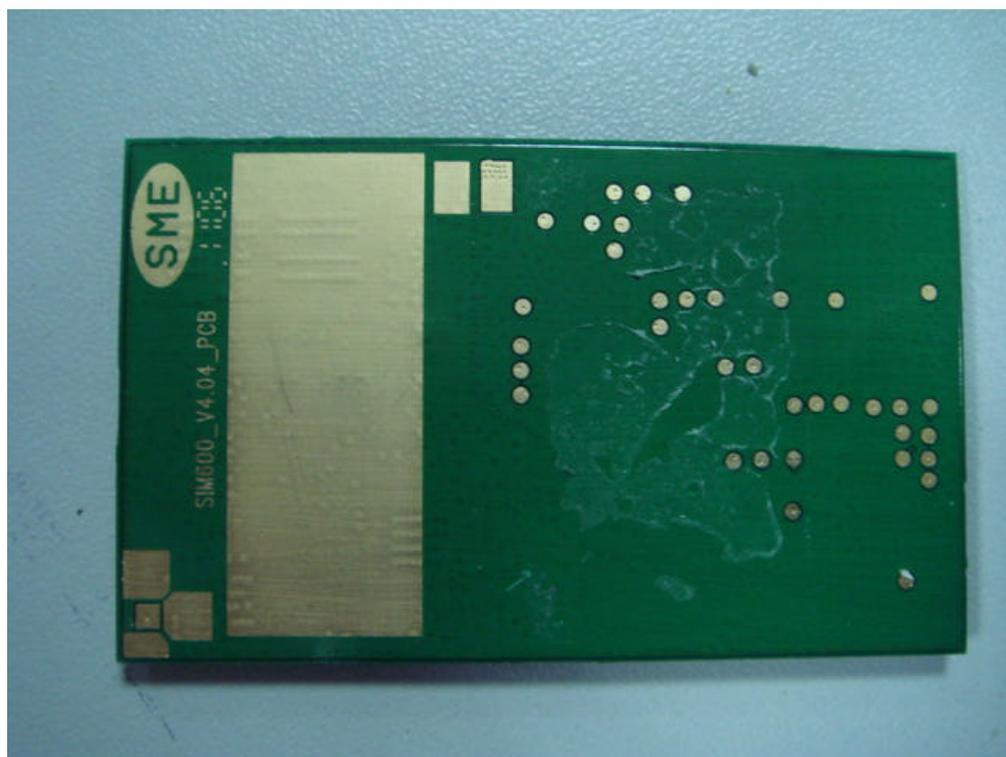


2. Inside of the MS



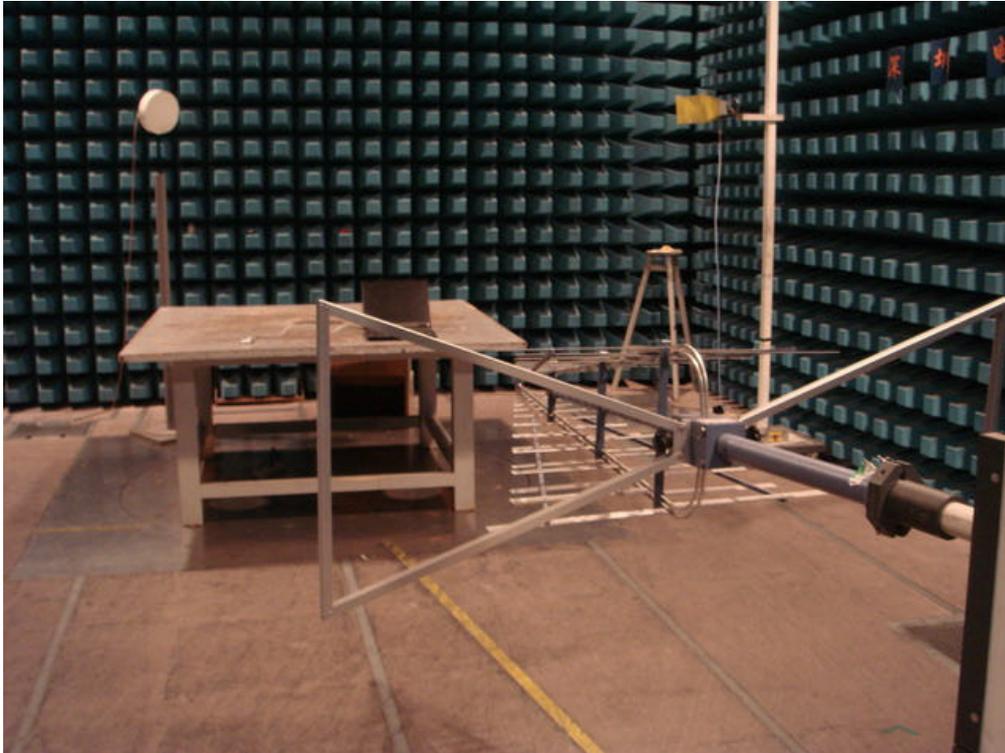






Appendix II : Photographs of the Test Configuration

1. Radiated Emission Test



2. Conducted Emission Test

