



47 CFR PART 15 SUBPART B

# TEST REPORT

of

**GSM Dual-mode Digital Wireless Data Terminal(CARD)(EDGE)**

Model Name: Vodafone K2525  
Brand Name: ZTE  
Report No.: SH08060021E01  
FCC ID: Q78-VDFK2525

*prepared for*

**ZTE CORPORATION**

ZTE Plaza, Keji Road South, Hi-Tech Industrial Park, Nanshan  
District, Shenzhen, Guangdong, 518057, P.R. China



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### 1. TEST CERTIFICATION

Equipment under Test: GSM Dual-mode Digital Wireless Data Terminal(CARD)(EDGE)

Brand Name: ZTE  
Model Name: Vodafone K2525  
FCC ID: Q78-VDFK2525  
Applicant: ZTE CORPORATION  
ZTE Plaza Keji Road South, Hi-Tech Industrial Park,Nanshan District,Shenzhen,Guangdong,518057,P.R.China  
Manufacturer: ZTE CORPORATION  
ZTE Plaza Keji Road South, Hi-Tech Industrial Park,Nanshan District,Shenzhen,Guangdong,518057,P.R.China

Test Standards: 47 CFR Part 15 Subpart B

Test Date(s): June 23, 2008 – June 28, 2008

Test Result: PASS

**\* We Hereby Certify That:**

The equipment under test was tested by Shenzhen Electronic Product Quality Testing Center Morlab Laboratory. The test data, data evaluation, test procedures and equipment configurations shown in this report were made in accordance with the requirement of related FCC rules.

The test results of this report only apply for the tested sample equipment identified above. The test report shall be invalid without all the signatures of the test engineer, the reviewer and the approver.

Tested by: Lou Qinchao Dated: 2008.07.01  
Lou Qinchao

Reviewed by: Zhang Jun Dated: 2008.07.01  
Zhang Jun

Approved by: Su Feng Dated: 08.07.01  
Su Feng



## 2. GENERAL INFORMATION

### 2.1 EUT Description

EUT Type.....: GSM Dual-mode Digital Wireless Data Terminal(CARD)(EDGE)  
Model Name .....: Vodafone K2525  
Serial No.....: (n.a, marked #1 by test site)  
IMEI .....: 353895020006462  
Hardware Version .....: g5eB  
Software Version .....: VDF-K2525B04  
Modulation Type.....: GSM  
Power Supply.....: Battery  
Brand name: (n.a)  
Mode no.: (n.a)  
Capacitance: (n.a)  
Rated voltage: (n.a)  
Charge limited: (n.a)  
Manufacturer: (n.a)  
Manufacturer Address: (n.a)  
Ancillary Equipment 1 .....: AC Adapter (Charger for Battery)  
Model Name: (n.a)  
Brand Name: (n.a)  
Serial No.: (n.a)  
Rated Input: (n.a)  
Rated Output: (n.a)  
Manufacturer: (n.a)  
Wire Length: (n.a)

*Note 1:* The EUT is a GSM Dual-mode Digital Wireless Data Terminal(CARD)(EDGE) ; it supports GSM 850MHz, 900MHz, 1800MHz, 1900MHz bands, GSM 850MHz, 1900MHz bands are tested in this report.

*Note 2:* A communication link between the EUT and the System Simulator (SS)are established at the start of the test, and maintained during the all test in this report.

*Note 3:* For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.



## Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart B:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-05 Edition)	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	15.107	Conducted Emission	PASS
2	15.109	Radiated Emission	PASS



## 2.2 Facilities and Accreditations

### 2.2.1 Facilities

Shenzhen Electronic Product Quality Testing Center Morlab Laboratory is a testing organization accredited by China National Accreditation Board for Laboratories (CNAL) according to ISO/IEC 17025. The accreditation certificate number is L1659.

All measurement facilities used to collect the measurement data are located at Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen 518055 CHINA. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 741109.

### 2.2.2 Test Environment Conditions

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

Temperature (°C):	20 - 25
Relative Humidity (%):	40 - 60
Atmospheric Pressure (kPa):	960

### 3. TEST CONDITIONS SETTING

#### 3.1 Test Mode

1. During the measurement, the GSM radio is working. The test modes of the EUT are showed as below:

The EUT configuration of the emission tests is EUT + Notebook

A communication link was established between the EUT and a System Simulator (SS). The EUT operated at GSM/Edge(Cellular 850MHz bandor PCS 1900MHz band) and maximum output power .There for only the test data of the worse case-850MHz was used for Radiated test.

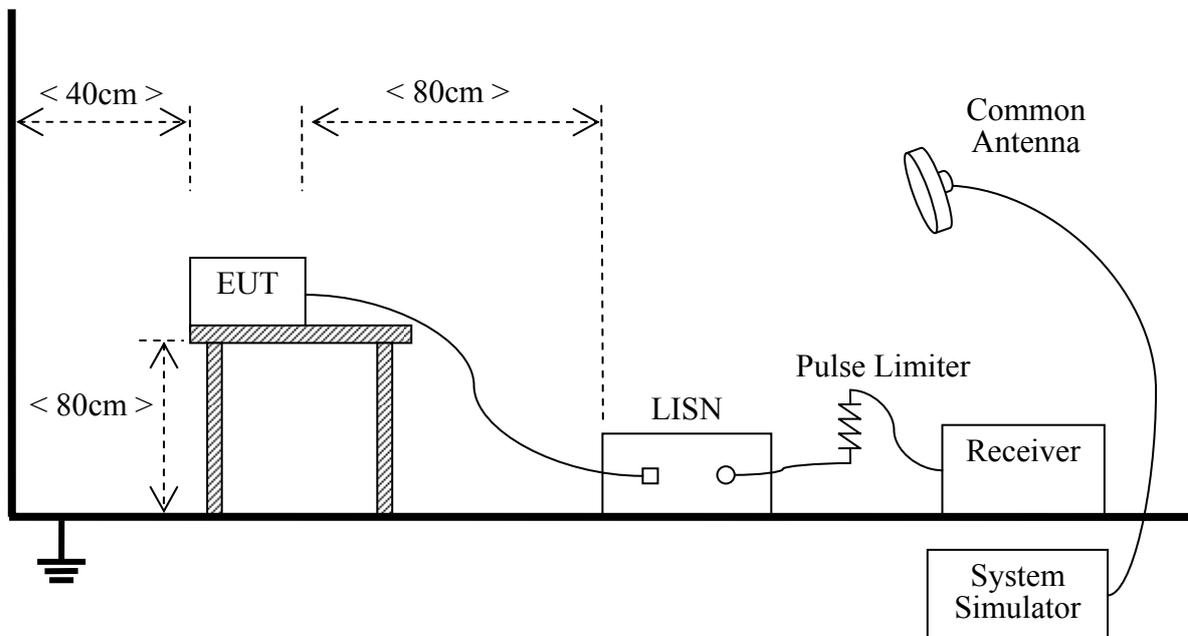
#### NOTE:

All test modes are performed, only the worst cases are recorded in this report.

### 3.2 Test Setup and Equipments List

#### 3.2.1 Conducted Emission

##### A. Test Setup:



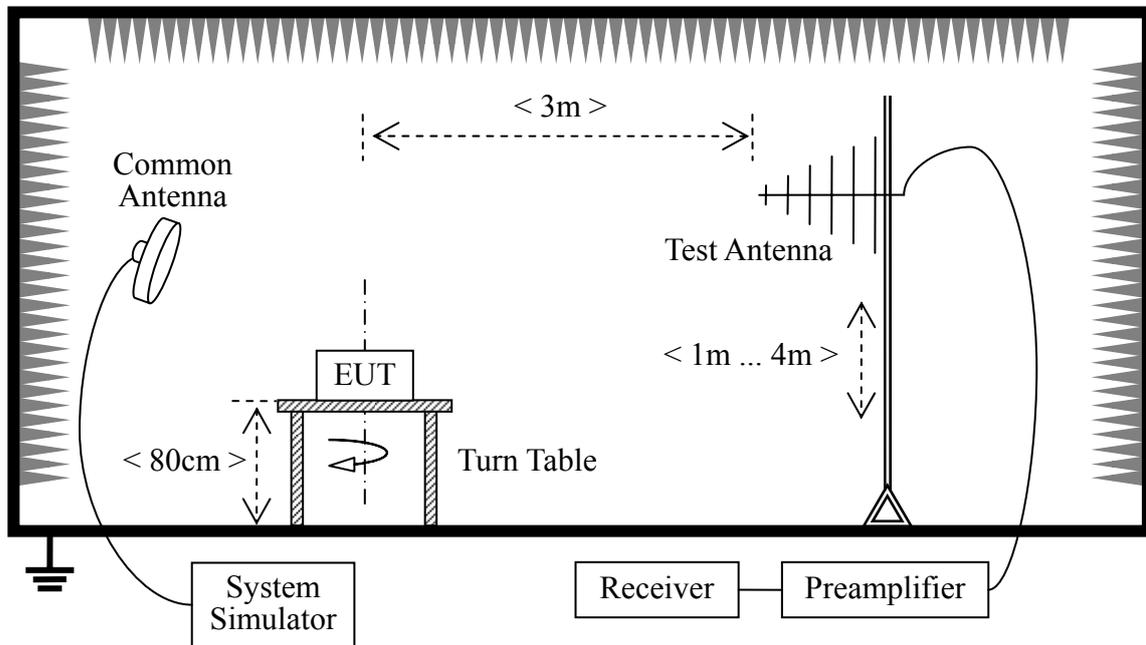
The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides 50Ω/50μH of coupling impedance for the measuring instrument. The Common Antenna is used for the call between the EUT and the System Simulator (SS). A Pulse Limiter is used to protect the measuring instrument. The factors of the whole test system are calibrated to correct the reading.

##### B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Rohde&Schwarz	ESCI3	100666	2007.11	1year
LISN	Rohde&Schwarz	ENV216	812744	2007.11	1year
System Simulator	Rohde&Schwarz	CMU200	105571	2007.11	1year
Personal Computer	Lenovo	(n.a.)	(n.a.)	(n.a.)	(n.a.)

### 3.2.2 Radiated Emission

#### C. Test Setup:



The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor, cable loss and so on of the site (factors) is calculated to correct the reading. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower. The Common Antenna is used for the call between the EUT and the System Simulator (SS).

#### D. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Rohde&Schwarz	ESCI3	100666	2007.11	1year
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2007.11	1year
Test Antenna - Bi-Log	Rohde&Schwarz	HL562	100385	2007.11	1year
System Simulator	Rohde&Schwarz	CMU200	105571	2007.11	1year
Personal Computer	Lenovo	(n.a.)	(n.a.)	(n.a.)	(n.a.)

## 4. 47 CFR PART 15B REQUIREMENTS

### 4.1 Conducted Emission

#### 4.1.1 Requirement

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

Frequency range (MHz)	Conducted Limit (dB $\mu$ V)	
	Quai-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
0.50 - 30	60	50

NOTE:

- The limit subjects to the Class B digital device.
- The lower limit shall apply at the band edges.
- The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

#### 4.1.2 Test Description

See section 3.2.1 of this report.

#### 4.1.3 Test Result

The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed. All test modes are considered, refer to recorded points and plots below.

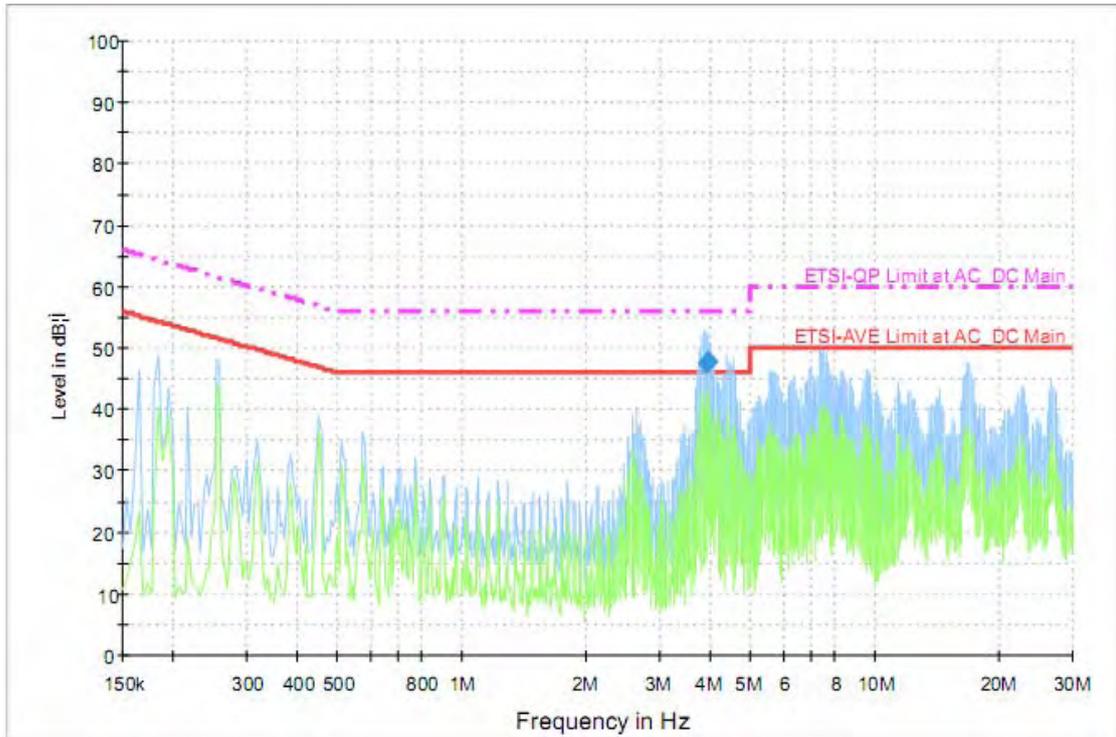
The EUT configuration of the emission tests is EUT + Notebook

#### A. Test Verdict Recorded for Suspicious Points:

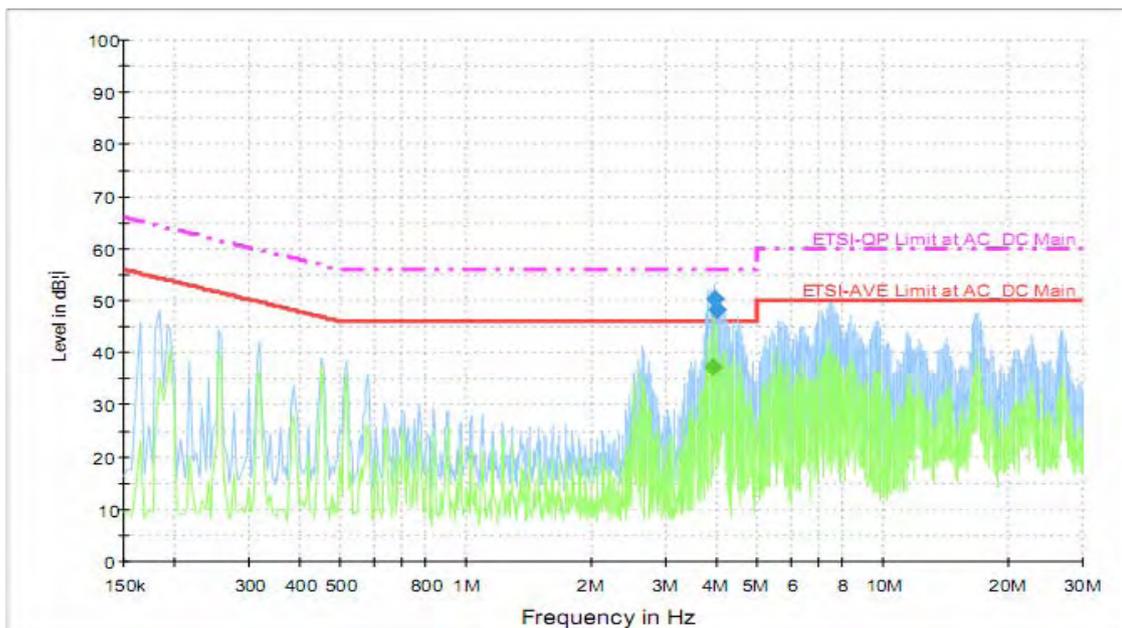
No.	@Frequency (MHz)	Measured Emission Level (dB $\mu$ V)				Limit (dB $\mu$ V)		Verdict
		PK	QP	AV	Phase	QP	AV	
1	3.868	53.2	47.7	34.1	L	56.0	46.0	PASS
2	3.924	53.4	47.9	25.7	L	56.0	46.0	PASS
3	3.914	53.5	50.2	22.2	N	56.0	46.0	PASS

No.	@Frequency (MHz)	Measured Emission Level (dB $\mu$ V)				Limit (dB $\mu$ V)		Verdict
		PK	QP	AV	Phase	QP	AV	
4	3.957	53.1	48.2	21.6	N	56.0	46.0	PASS

**B. Test Plot:**



(Plot A: L Phase)



(Plot B: N Phase)

## 4.2 Radiated Emission

### 4.2.1 Requirement

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

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

NOTE:

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

### 4.2.2 Test Description

See section 3.2.2 of this report.

### 4.2.3 Test Result

The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with AV and QP detectors. Both the vertical and the horizontal polarizations of the Test Antenna are considered to perform the tests. All test modes are considered, refer to recorded points and plots below.

#### The first test mode

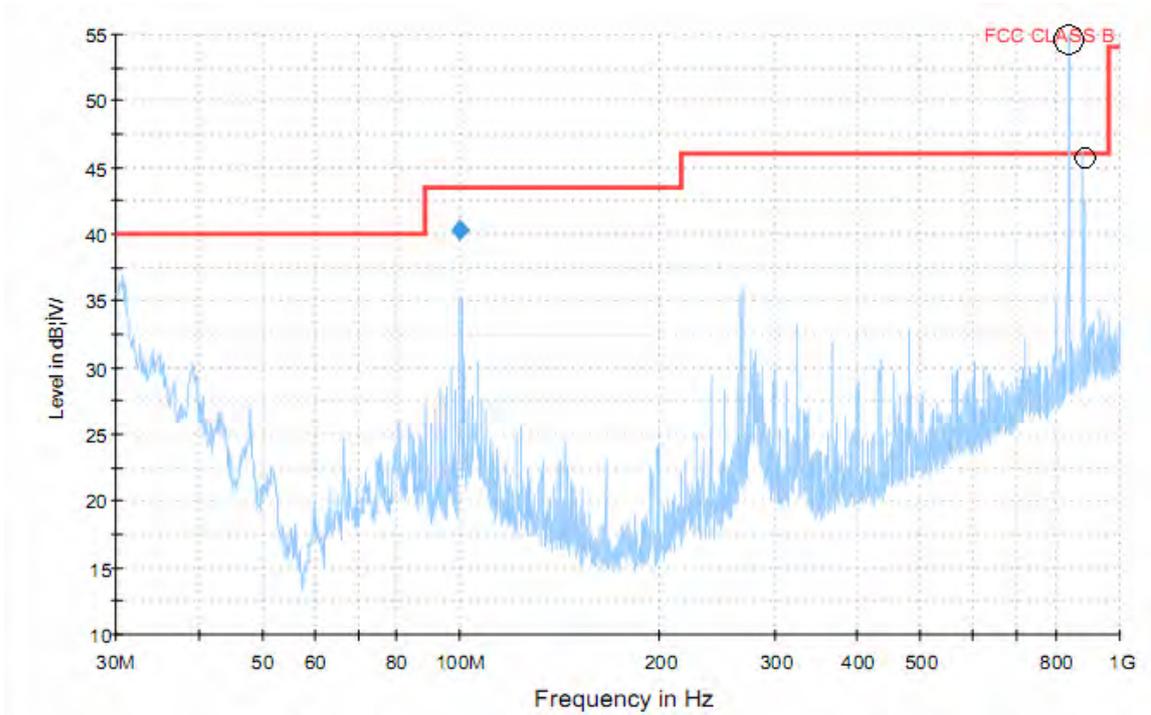
The EUT configuration of the emission tests is EUT + Notebook

#### A. Test Verdict Recorded for Suspicious Points:

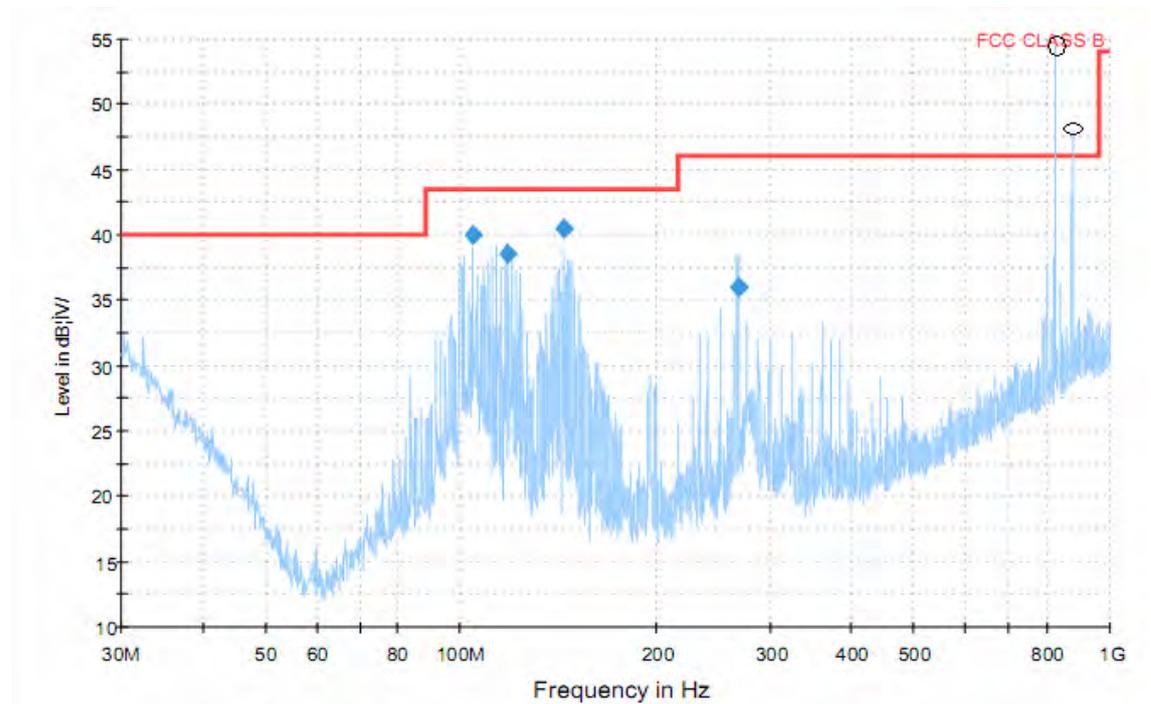
No.	@Frequency (MHz)	Emission Level ( $\text{dB}\mu\text{V/m}$ )			Quasi-Peak Limit ( $\text{dB}\mu\text{V/m}$ )	Result
		PK	QP	Antenna Polarization		
1	100.182	35.1	40.3	Vertical	43.5	PASS
2	104.291	38.2	40.0	Horizontal	43.5	PASS
3	118.456	37.2	38.5	Horizontal	43.5	PASS
4	143.809	38.1	40.6	Horizontal	43.5	PASS
5	267.138	37.6	36.1	Horizontal	46	PASS

**B. Test Plot:**

Note: Following is the plots for emission measurement; please note that marked spikes with circle should be ignored because they are MS and SS carrier frequency.



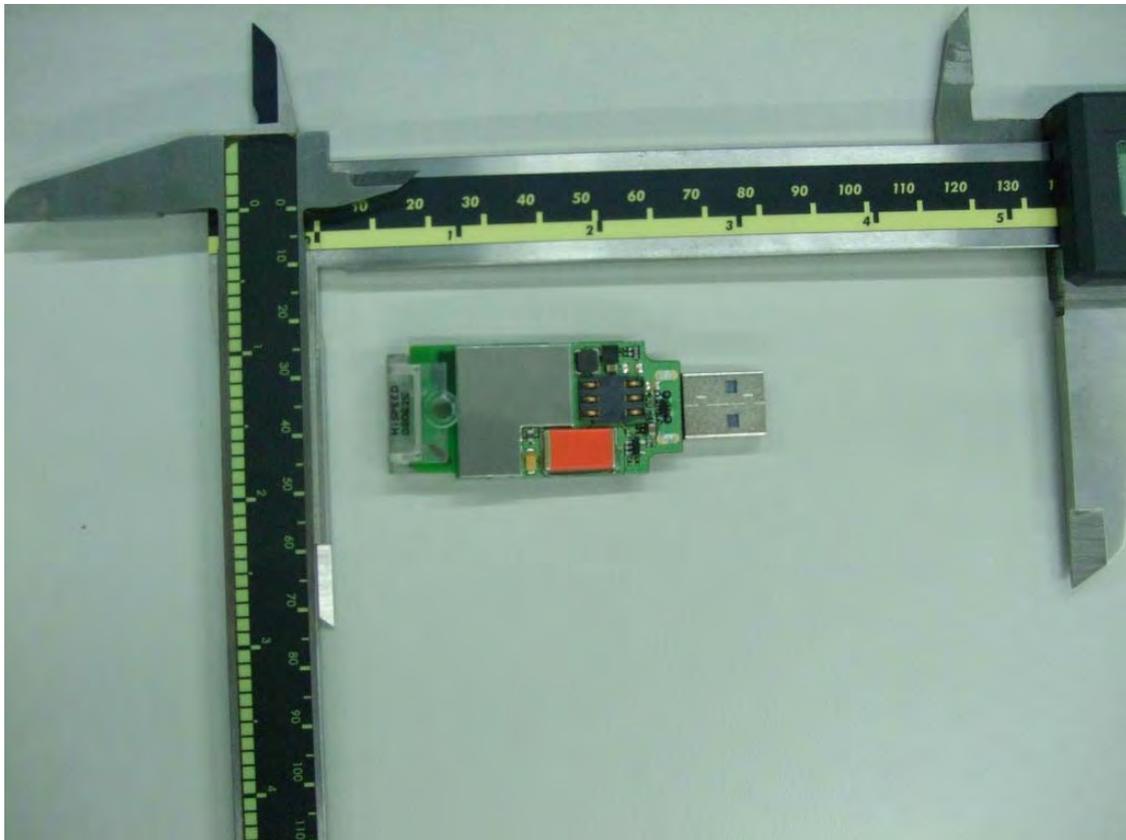
(Plot A: Test Antenna Vertical)

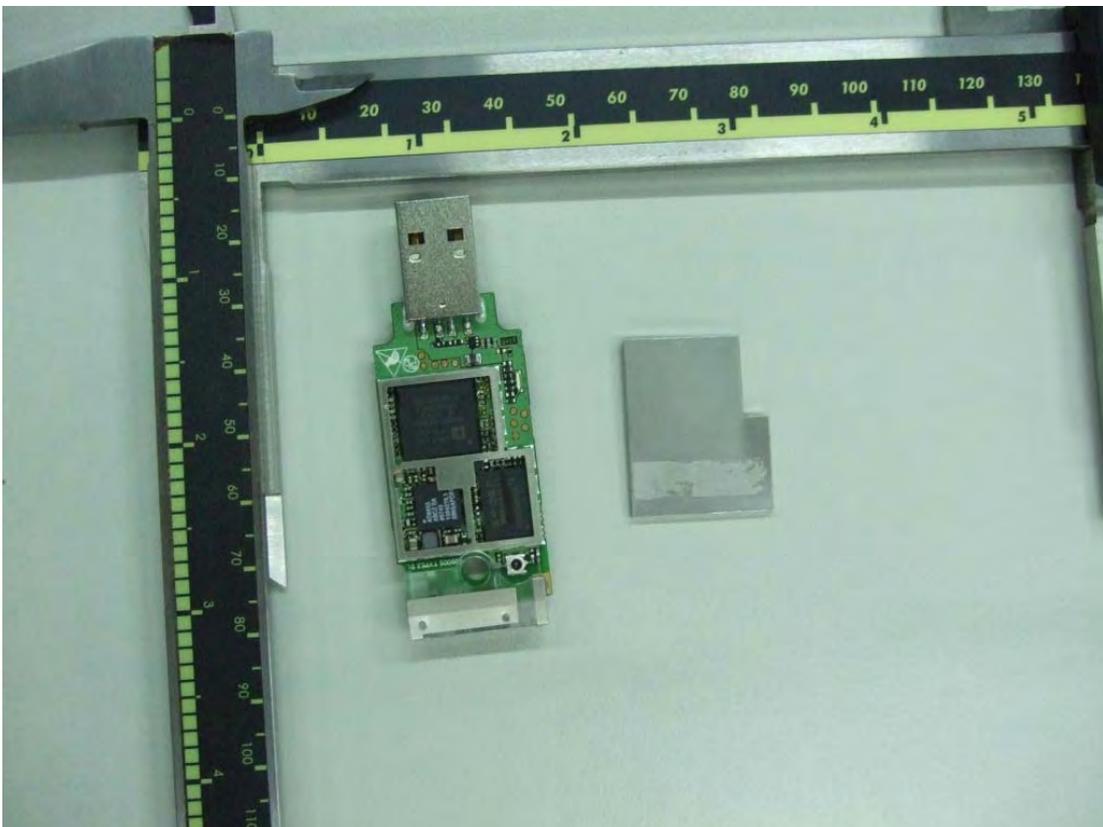
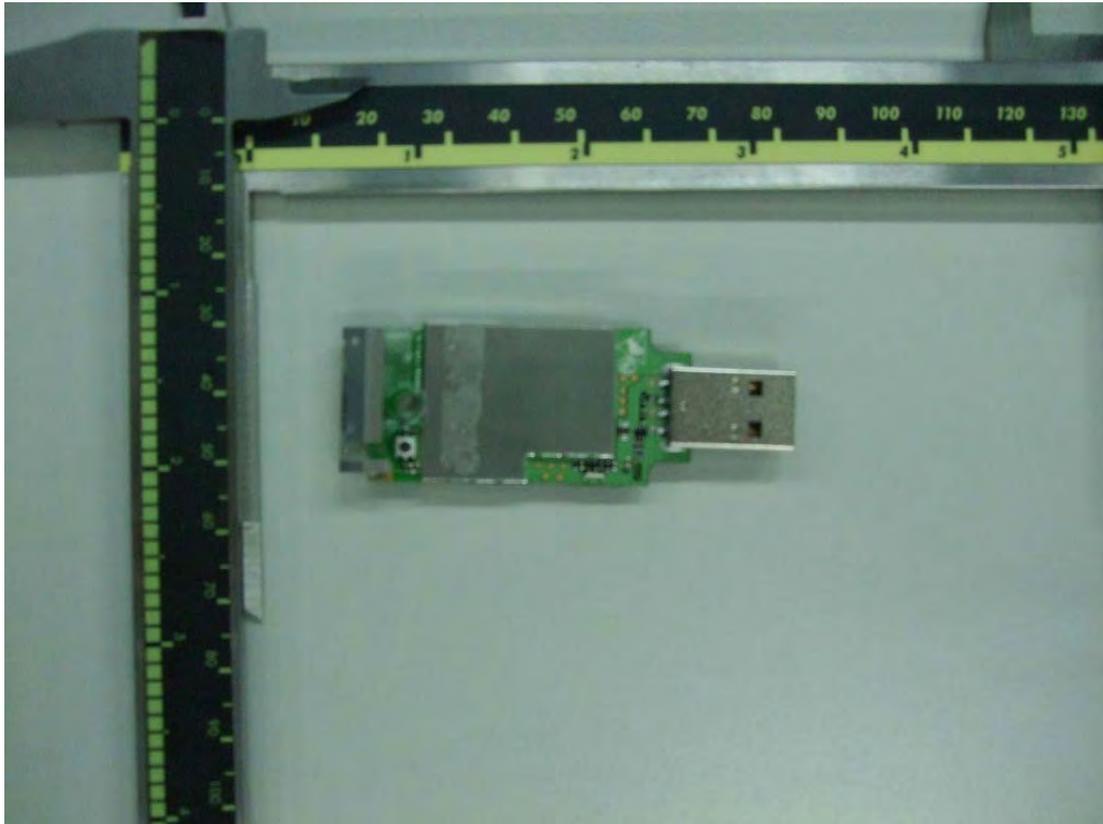


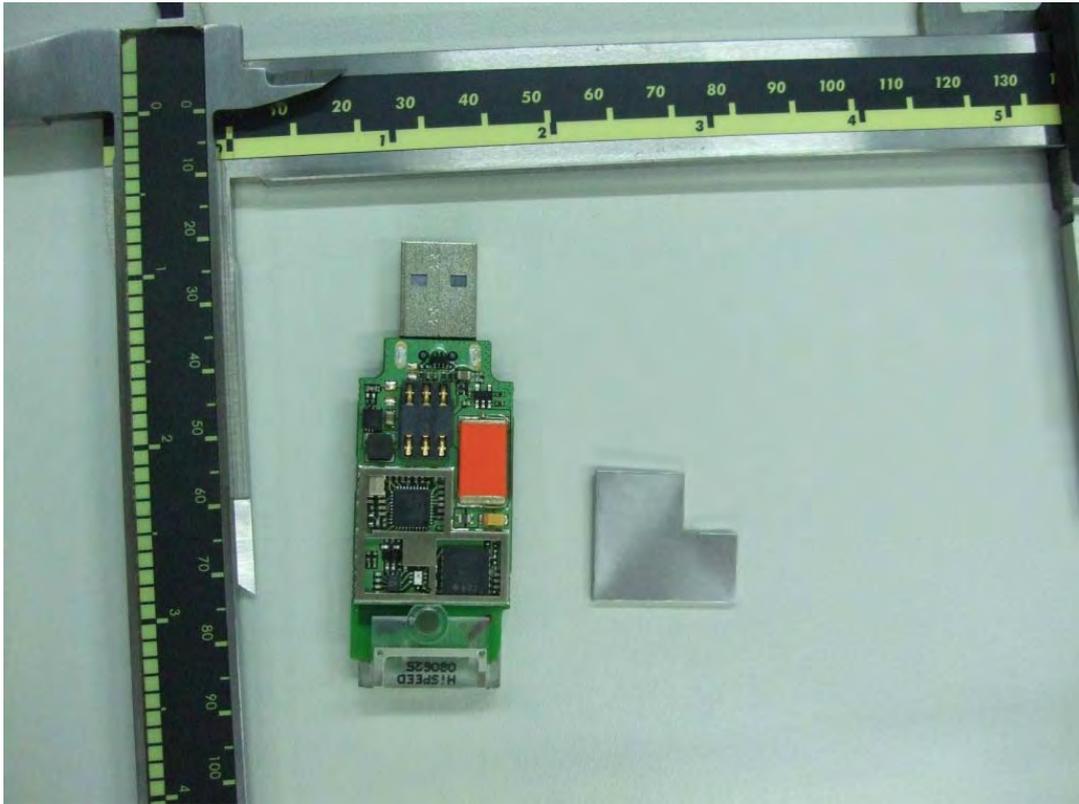
(Plot B: Test Antenna Horizontal)

Appendix I: Photographs of the EUT

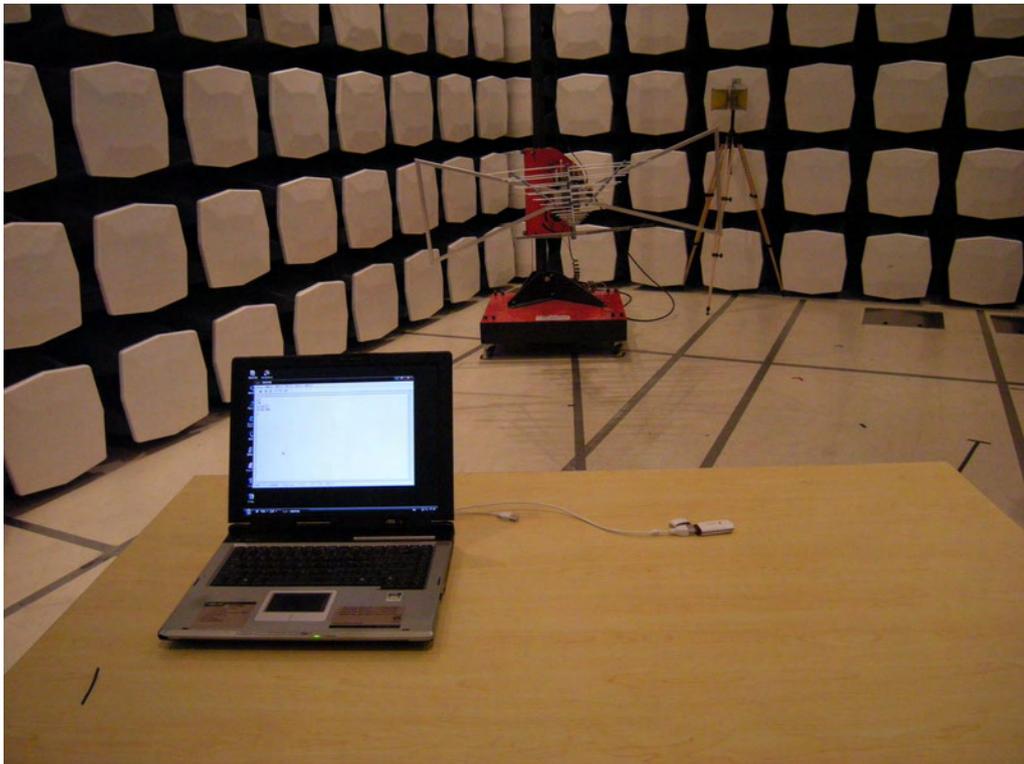








Appendix II: Photographs of the Test Configuration  
1 Radiated Emission Test



2 Conducted Emission Test



\*\* END OF REPORT \*\*