



47 CFR PART 15B

TEST REPORT

of

CDMA 1X Digital Mobile Phone

Trade Name: ZTE

Brand Name: ZTE

Model Name: ZTE-C X991

Report No.: SZ10110077E02

FCC ID.: Q78-CX991

prepared for

ZTE Corporation

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

prepared by
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LAB CODE 20081223-00

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Change History		
Issue	Date	Reason for change
1.0	November 23, 2010	First edition

1. Test Result Certification

Equipment under Test: CDMA 1X Digital Mobile Phone

Trade Name: ZTE

Brand Name: ZTE

Model Name: ZTE-C X991

FCC ID: Q78-CX991

Applicant: ZTE Corporation

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

Manufacturer: ZTE Corporation

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

Emission Designator: 1M25F9W

Test Standards: 47 CFR Part 2

47 CFR Part 15 Subpart B

Test date: November 10, 2010 – November 17, 2010

Test Result: PASS

* We Hereby Certify That:

The equipment under test was tested by Shenzhen Morlab Communications Technology Co., Ltd. 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: Tian Junjie Dated: 2010.11.23
Tian Junjie

Reviewed by: Ni Yong Dated: 2010.11.23
Ni Yong

Approved by: Shu Luan Dated: 2010.11.23
Shu Luan



2. General Information

2.1 Equipment under Test (EUT) Description

Description: CDMA 1X Digital Mobile Phone
Model Name: ZTE-C X991
Serial No.....: N/A
Hardware Version: X991MB_B
Software Version: x991ve_v1.2
Modulation: CDMA 1X
Frequency: Tx: 824.7 – 848.31 MHz; Rx: 869.7-893.31MHz
Power Supply:: Battery
Brand name: ZTE
Model Name: Li3709T42P3h504047
Capacitance: 900mAh
Rated voltage: 3.7V
Charge limited: 4.2V
Manufacturer: ZTE
Manufacturer Address: ZTE Plaza, Keji Road South, Hi-Tech,
Industrial Park,Nanshan District,Shenzhen,Guangdong,P.R.China
Accessory Equipment:..... AC Adapter (Charger for Battery)
Brand Name: Ruide
Model Name: STC-A22O50U5-C
Rated Input: 100-240V~ 50/60Hz 200mA
Rated Output: 5V= 700mA
Manufacturer: Ruide Electrical Industrial Co., Ltd,
Wire Length: 120cm

NOTE:

1. The EUT is a model of CDMA 1X mobile station operating in Cellular band.
2. The normal configuration for the EUT is the Mobile Phone (MS) associated with ancillary equipments e.g. the Battery and/or the AC Adapter (Charger).
3. For detailed features about the EUT, please see user manual supplied by the applicant.



2.2 Test Standards and Results

The objective of the report is to perform tests according to 47 CFR Part 2, Part 15 Part 22 for FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2 (10-1-09 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 15 (10-1-09 Edition)	Radio Frequency Devices

Test detailed items and the results are as below:

No.	Rules	Test Type	Result
FCC Part 15 Requirement			
1	§15.107	Conducted Emissions	PASS
2	§15.109	Radiated Emissions	PASS

NOTE:

The tests were performed according to the method of measurements prescribed in ANSI C63.4 2003.

2.3 Facilities and Accreditations

2.3.1 Facilities

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L3572..

All measurement facilities used to collect the measurement data are located at 3/F, Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, 518055 P. R. China. The site was constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22, the FCC registration number is 741109.

2.3.2 Test Environment Conditions

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

Temperature:	15 - 25°C
Relative Humidity:	30 - 60%
Atmospheric Pressure:	86-106kPa

2.3.3 Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Uncertainty of Conducted Emission:	±1.8dB
Uncertainty of Radiated Emission:	±3.1dB

3. TEST CONDITIONS SETTING

3.1 General Information

3.1.1 Test Mode

The test modes of the EUT are showed as below:

(1) Call Mode:

The EUT configuration of the emission tests was MS + Battery + Charger +Headset.

Before the measurement, the lithium battery was completely discharge.

During the measurement, the lithium battery was installed into the MS, and the charger was connected to the MS. A communication link was established between the MS and a System Simulator (SS).

(2) USB Test Mode

The EUT configuration of the emission tests is TransFlash Card + EUT + Battery + PC.

In this test mode, the EUT with a TransFlash Card embedded is connected with a PC via a special USB cable supplied by applicant. During the measurement, a communication link was established between the EUT and a System Simulator (SS), simultaneity, the date is transmitting between the PC and the TransFlash Card of the EUT.

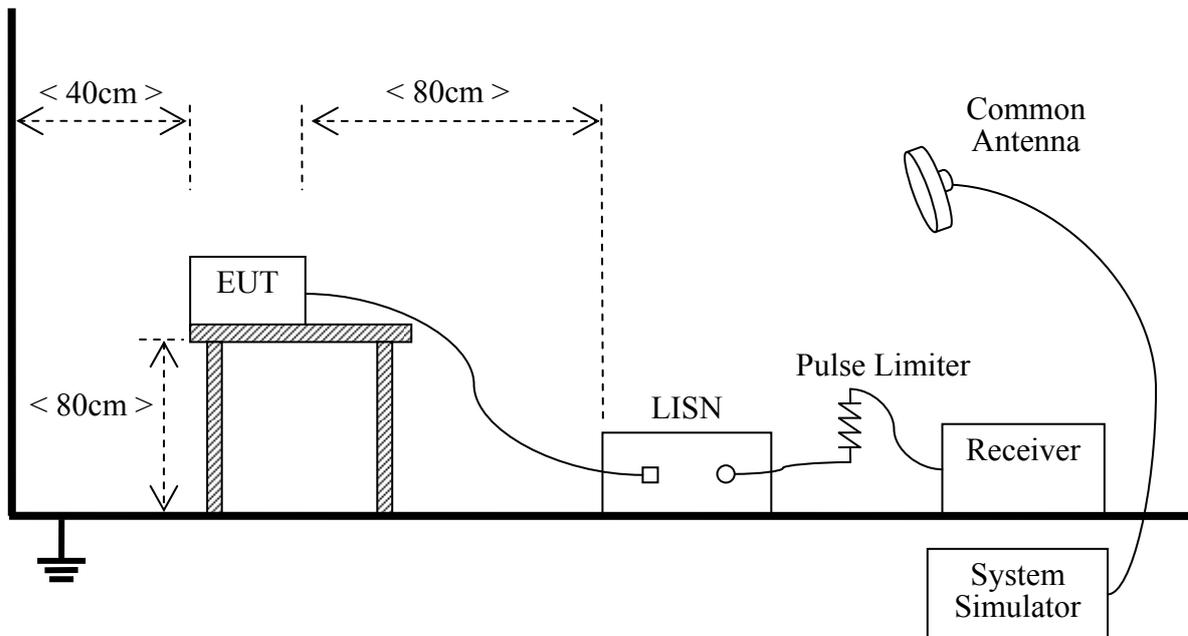
NOTE:

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

3.2 Test Setup

3.2.1 Conducted Emission

A. Test Setup:



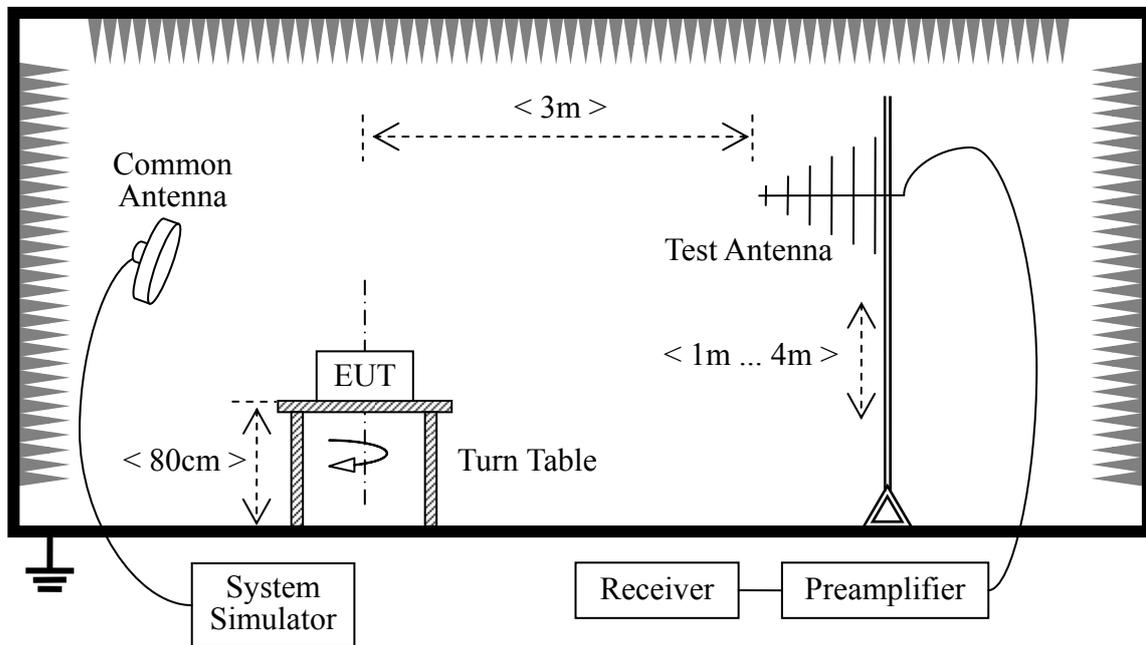
The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides 50Ω/50μH of coupling impedance for the measuring instrument. The Common Antenna 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	Agilent	E7405A	US44210471	2009.09	2year
LISN	Schwarzbeck	NSLK 8127	812744	2009.09	2year
Pulse Limiter (20dB)	Schwarzbeck	VTSD 9561-D	9391	(n.a.)	(n.a.)
System Simulator	Agilent	E5515C	GB43130131	2009.09	2year
Personal Computer	IBM	IBM T20	(n.a.)	(n.a.)	(n.a.)
Bluetooth-Headset	Nokia	HS-36W	(n.a.)	(n.a.)	(n.a.)
T-Flash Card	SanDisk	256MB	(n.a.)	(n.a.)	(n.a.)

3.2.2 Radiated Emission

A. 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).

B. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Receiver	Agilent	E7405A	US44210471	2009.09	2year
Semi-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2009.09	2year
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2009.09	2year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2009.09	2year
System Simulator	Agilent	E5515C	GB43130131	2009.09	2year
Personal Computer	IBM	IBM_T20	(n.a.)	(n.a.)	(n.a.)
Bluetooth-Headset	Nokia	HS-36W	(n.a.)	(n.a.)	(n.a.)
T-Flash Card	SanDisk	256MB	(n.a.)	(n.a.)	(n.a.)

3.3 Conducted Emission

3.3.1 Requirement

According to FCC §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 μ H/50 Ω line impedance stabilization network (LISN).

Frequency range (MHz)	Conducted Limit (dB μ V)	
	Quasi-peak	Average
0.15 - 0.50	66 to 56	56 to 46
0.50 - 5	56	46
5 - 30	60	50

NOTE:

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

3.3.2 Test Procedure

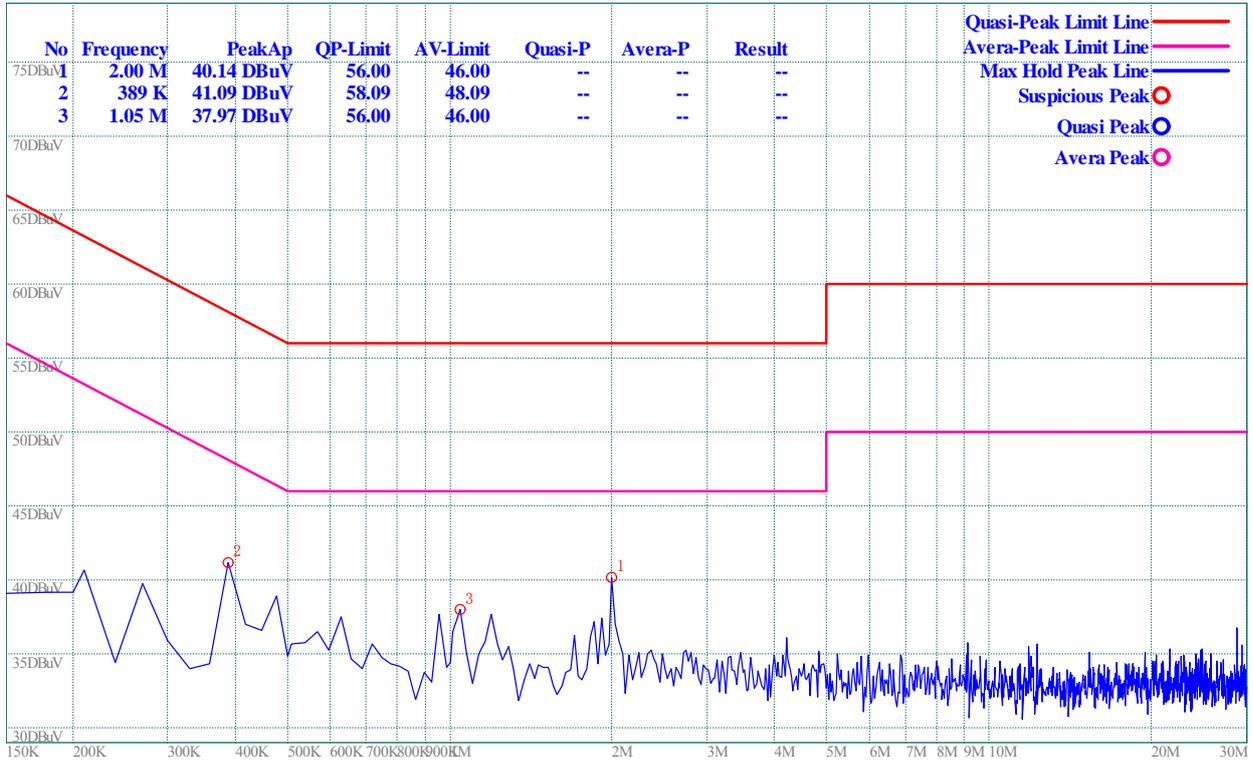
1. Perform test setup as described in section 3.2.1.
2. Each test mode in section 3.1.1 should be applied. At each test mode, the frequency range from 150 kHz to 30MHz is searched using the CISPR Quasi-Peak and/or the Average detector of the Receiver. If the emission levels measured with Quasi-Peak detector are lower than the Average Limit, it's not necessary to measure with Average detector.
3. The emission levels at both L phase and N phase should be tested.
4. Record the test result plot and distinct points.
5. In the test report show the worst test data.



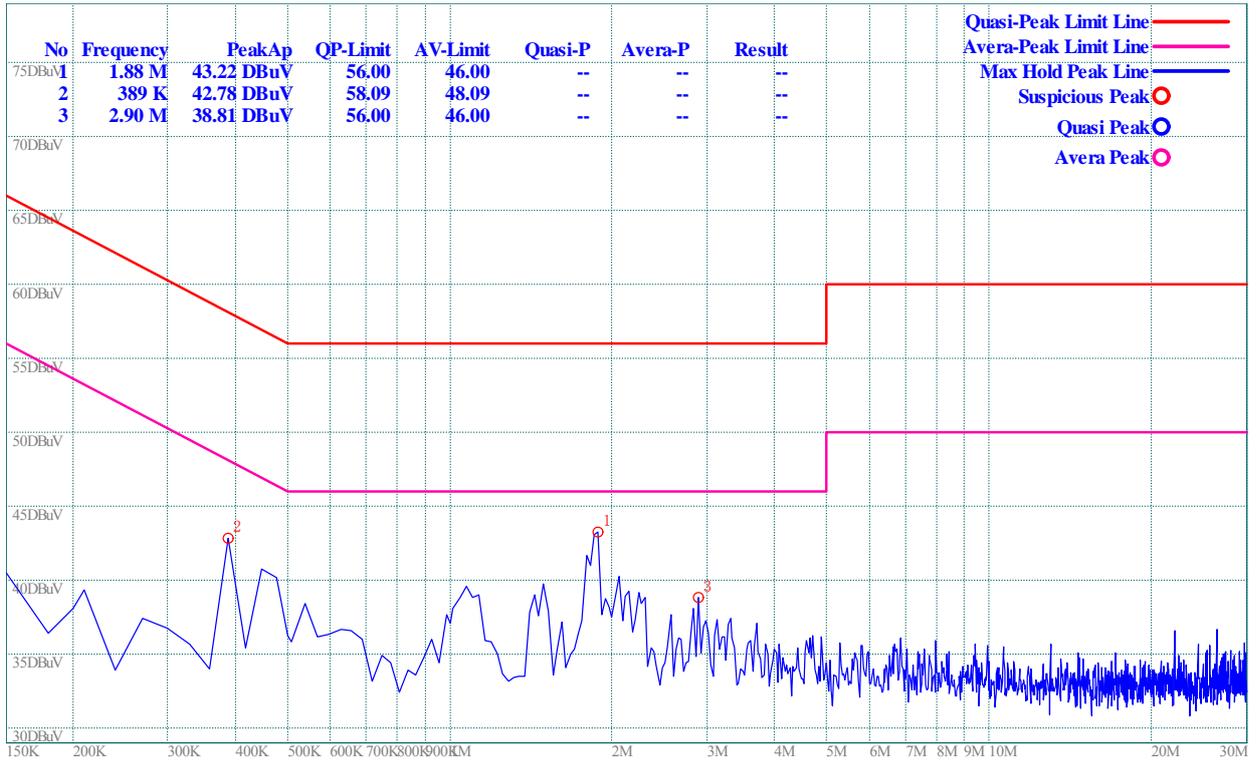
3.3.3 Test Result

Call Mode

A. Test Plots and Suspicious Points:



(Plot A: L Phase)



(Plot B: N Phase)

3.4 Radiated Emission

3.4.1 Requirement

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 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:

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

3.4.2 Test Procedure

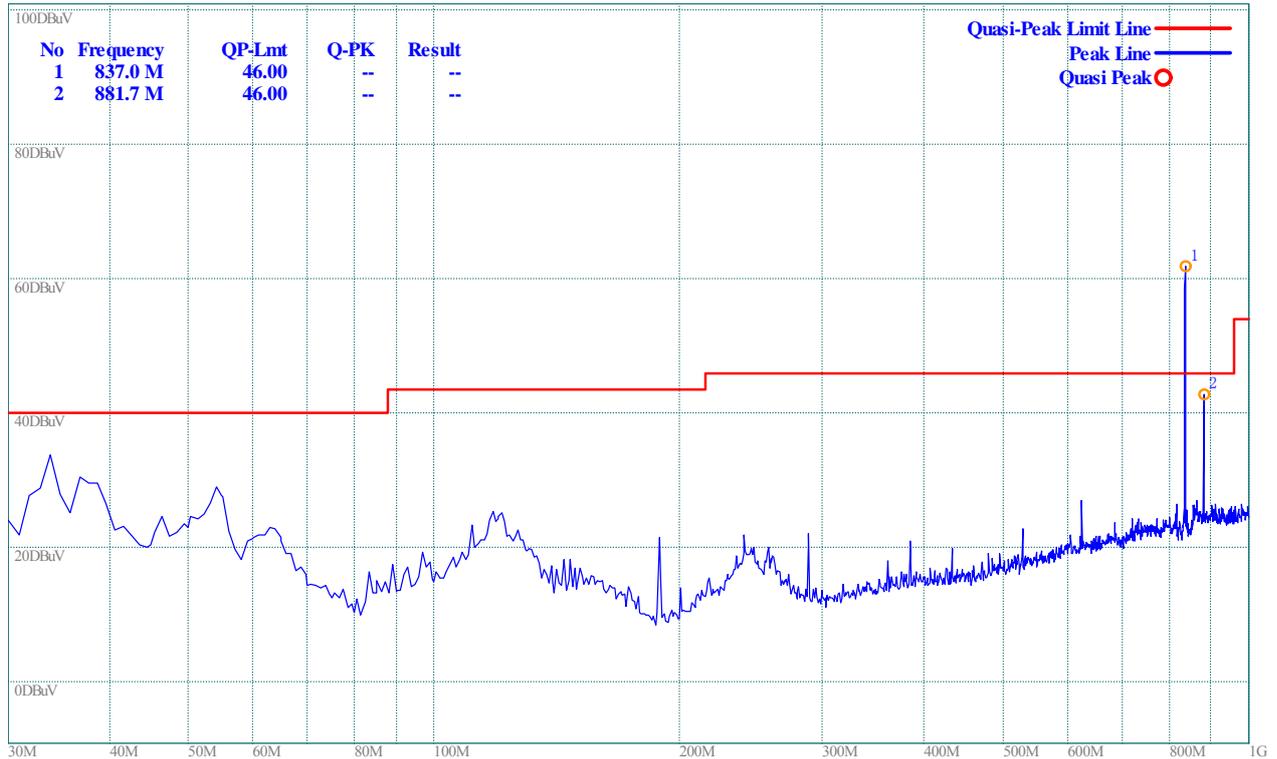
1. Perform test setup as described in section 3.2.
2. Each test mode in section 3.1.1 should be applied. At each test mode, the Turn Table turns from 0 degrees to 360 degrees to find the maximum reading; for the suspected points, the Test Antenna varies from 1 meter to 4 meters to determine the maximum value of the field strength.
3. The Receiver is set to Peak Detector function and specified bandwidth with maximum hold mode. If the emission level of the EUT in peak mode is 6dB lower than the limit specified, then testing could be stopped and the peak values would be reported; otherwise the emission less than 6dB margins would be retested one by one using the quasi-peak method.
4. The emission levels at both horizontal and vertical polarizations should be tested.
5. Record the test result plot and distinct points.
6. In the test report show the worst test data.

3.4.3 Test Result

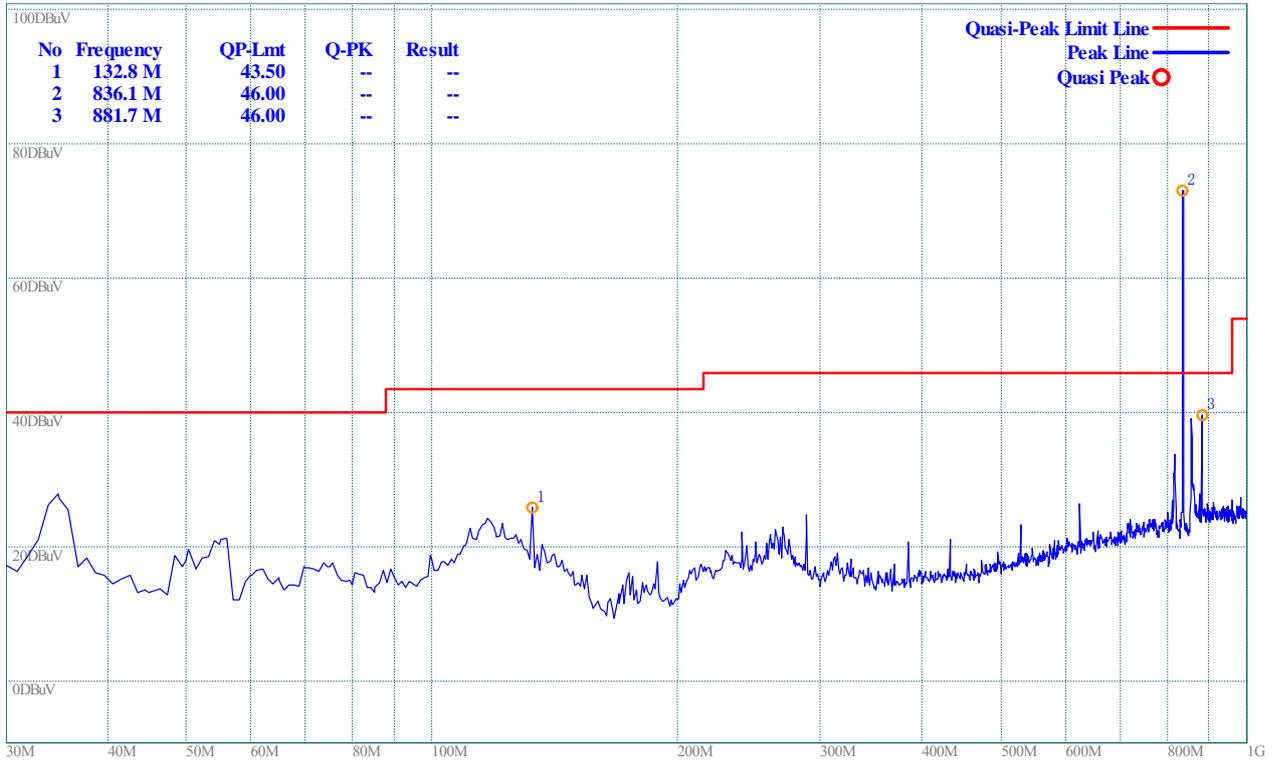
Call Mode

A. Test Plots and Suspicious Points:

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)

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