Report No.:SZ11010075E01

47 CFR PART 15B

TEST REPORT

Issued to

Cellon Communications Technology (ShenZhen)Co., Ltd.

For

3G Mobile Phone

Model Name:	C8093, C8093P, ADR2100, ADR2100GT, ADR2100CL, ADR2100CLB, ADR2100CLR, ADR2100AL, ADR2100PO, ADR2100CA,ADR2100EN, ADR2100PR, ADR2100AR, ADR2100CP, ADR2100PA, ADR2100SV, ADR2100MV,ADR2100NI,ADR2100MX, ADR2100OM, ADR2100PE
Brand Name:	PCD, Cellon
FCC ID:	T38PCD8093P
Test Rule:	47 CFR Part 15 Subpart B
Test date:	February 20, 2011 – March 14, 2011

by

Shenzhen Morlab Communications Technology Co., Ltd.

Tested by Tian Junjie	*Approved by* Shu Luan	*Review by* Huang Pulong
Date 2011.3.18	*Date* 2011.3.18	*Date* 2011.3.18

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Change History		
Issue	Date	Reason for change
1.0	March 16, 2011	First edition

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type ..... 3G Mobile Phone
Serial No. ..... (n.a, marked #1 by test site)
Hardware Version..... C8093 Main PCB P4
Software Version 20110106
Applicant..... Cellon Communications Technology (ShenZhen)Co., Ltd.
13/F, Skyworth Building C Gaoxin S. Ave. 1st, High-Tech industrial Park NanShan, ShenZhen
Manufacturer..... Cellon Communications Technology (ShenZhen)Co., Ltd.
13/F, Skyworth Building C Gaoxin S. Ave. 1st, High-Tech industrial Park NanShan, ShenZhen
Modulation Type ..... GPRS/GSM Mode with GMSK Modulation
EDGE Mode with 8PSK Modulation
WCDMA Mode with QPSK Modulation
HSDPA Mode with QPSK Modulation
Power Supply ..... Battery
Model Name: BTR8093
Brand name: NA
Capacitance: 1200mAh
Rated voltage: 3.7V
Manufacturer: Ningbo Veken Battery Co.,Ltd
Manufacturer Address: Ningbo bonded area, Harbor-West, Road No. 5
Ancillary Equipment 1 ... AC Adapter (Charger for Battery)
Model Name: CNR2100 (DSC-3PFB-05 FUS 050065)
Brand Name: PCD
Serial No.: (n.a. marked #1 by test site)
Rated Input: ~ 100-240V, 50- 60Hz, 200mA
Rated Output: ⎓ 5.0V, 650mA
Manufacturer: DEE VAN ENTERPRISE CO., LTD.
Manufacturer Address: 4020 CLIPPER COURT FREMONT,CA 94538,U.S.A.

Note 1: The EUT is a GSM Mobile Phone; it supports GSM 850MHz, 900MHz, 1800MHz, 1900MHz, GPRS, EDGE, WCDMA 850MHz, WCDMA 1900MHz and HSDPA module. GSM 850MHz, 1900MHz, GPRS, EDGE, WCDMA 850MHz, 1900MHz, and HSDPA module are tested in this report.

Note 2: The EUT is equipped with a T-Flash card slot; equipped with a special port which can be connected to the ancillary equipments supplied by the manufacturer e.g. the AC Adapter and

the USB Adapter Cable. The EUT outfits an inner Camera.

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

1.2 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 (10-1-09 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

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

1.3 Facilities and Accreditations

1.3.1 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 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.

1.3.2 Test Environment Conditions

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

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

1.3.3 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

2. TEST CONDITIONS SETTING

2.1 Test Mode

1. **GSM Test Mode**

(1) The first test mode (GSM-850MHz)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

During the measurement of Traffic operating mode, a communication link was established between the EUT and a System Simulator (SS). The EUT operated at GSM 850MHz mid ARFCN (190) and maximum output power (level 5).

(2) The second test mode (GPRS-850MHz)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

In this test mode, a GPRS link was established between the EUT and a System Simulator (SS); data was transmitted between EUT and System Simulator (SS), and maintained during the measurement.

(3) The third test mode (EDGE-850MHz)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

In this test mode, an EDGE link was established between the EUT and a System Simulator (SS); data was transmitted between EUT and System Simulator (SS), and maintained during the measurement.

(4) The fourth test mode (GSM-1900MHz)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

During the measurement of Traffic operating mode, a communication link was established between the EUT and a System Simulator (SS). The EUT operated at GSM 1900MHz mid ARFCN (661) and maximum output power (level 0).

(5) The fifth test mode (GPRS-1900MHz)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

In this test mode, a GPRS link was established between the EUT and a System Simulator (SS); data was transmitted between EUT and System Simulator (SS), and maintained during the measurement.

(6) The sixth test mode (EDGE-1900MHz)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

In this test mode, an EDGE link was established between the EUT and a System Simulator (SS); data was transmitted between EUT and System Simulator (SS), and maintained during the measurement.

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

2. **WCDMA Test Mode**

(1) The first test mode (WCDMA-850MHz)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

During the measurement of Traffic operating mode, a communication link was established between the EUT and a System Simulator (SS). The EUT operated at WCDMA 850MHz mid channel (4175) and maximum output power.

(2) The second test mode (850MHz-HSDPA)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

In this test mode, a HSDPA link was established between the EUT and a System Simulator (SS); data was transmitted between EUT and System Simulator (SS), and maintained during the measurement.

(3) The third test mode (WCDMA-1900MHz)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

During the measurement of Traffic operating mode, a communication link was established between the EUT and a System Simulator (SS). The EUT operated at WCDMA 1900MHz mid channel (9400) and maximum output power.

(4) The fourth test mode (1900MHz-HSDPA)

The EUT configuration of the emission tests is EUT + Battery + AC Adapter.

In this test mode, a HSDPA link was established between the EUT and a System Simulator (SS); data was transmitted between EUT and System Simulator (SS), and maintained during the measurement.

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

3. Amusement Test Mode

(1) The first test mode (USB)

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 data is transmitting between the PC and the TransFlash Card of the EUT.

(2) The second test mode (PC Web Camera)

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

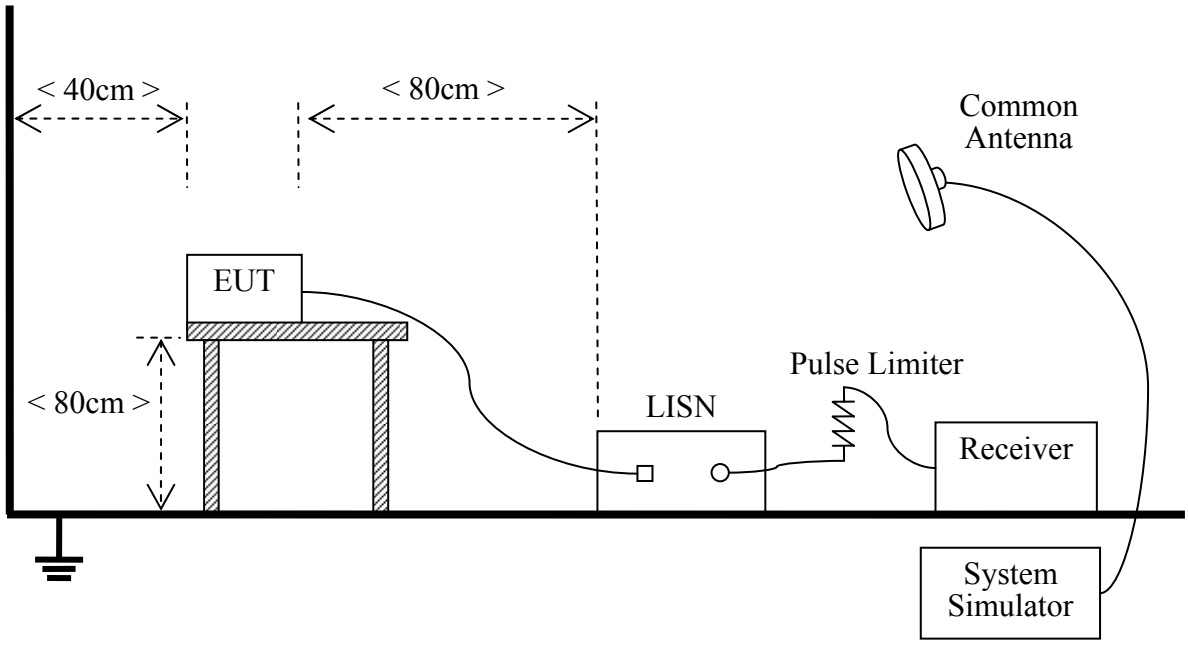
The EUT supports PC Web Camera function. During the measurement, the EUT was connected with a PC via a special USB cable supplied by applicant, and the EUT working by way of the PC Web Camera.

NOTE: These test modes are performed, only the worst cases are recorded in this report.

2.2 Test Setup and Equipments List

2.2.1 Conducted Emission

A. Test Setup:



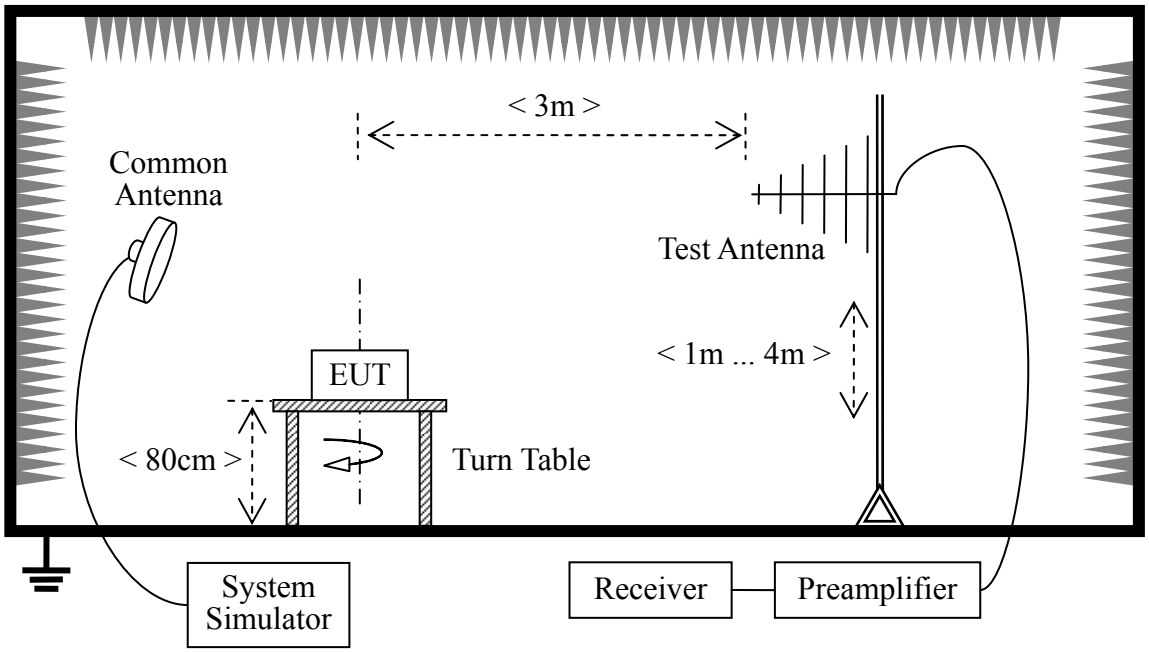
The EUT is placed on a 0.8m high insulating table, which stands on the grounded conducting floor, and keeps 0.4m away from the grounded conducting wall. The EUT is connected to the power mains through a LISN which provides 50Ω/50μH of coupling impedance for the measuring instrument. The Common Antenna 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
Receiver	Agilent	E7405A	US44210471	2010.09
LISN	Schwarzbeck	NSLK 8127	812744	2010.09
Pulse Limiter (20dB)	Schwarzbeck	VTSD 9561-D	9391	(n.a.)
System Simulator	Agilent	E5515C	GB43130131	2010.09
Personal Computer	IBM	IBM_T20	(n.a)	(n.a.)
Bluetooth-Headset	Nokia	HS-36W	(n.a.)	(n.a.)
T-Flash Card	SanDisk	256MB	(n.a.)	(n.a.)

2.2.2 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
Receiver	Agilent	E7405A	US44210471	2010.09
Semi-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2010.09
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2010.09
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2010.09
System Simulator	Agilent	E5515C	GB43130131	2010.09
Personal Computer	IBM	IBM_T20	(n.a)	(n.a.)
Bluetooth-Headset	Nokia	HS-36W	(n.a.)	(n.a.)
T-Flash Card	SanDisk	256MB	(n.a.)	(n.a.)

3. 47 CFR PART 15B REQUIREMENTS

3.1 Conducted Emission

3.1.1 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 50μH/50Ω line impedance stabilization network (LISN).

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

NOTE:

a) The limit subjects to the Class B digital device.

b) The lower limit shall apply at the band edges.

c) The limit decreases linearly with the logarithm of the frequency in the range 0.15 - 0.50MHz.

3.1.2 Test Description

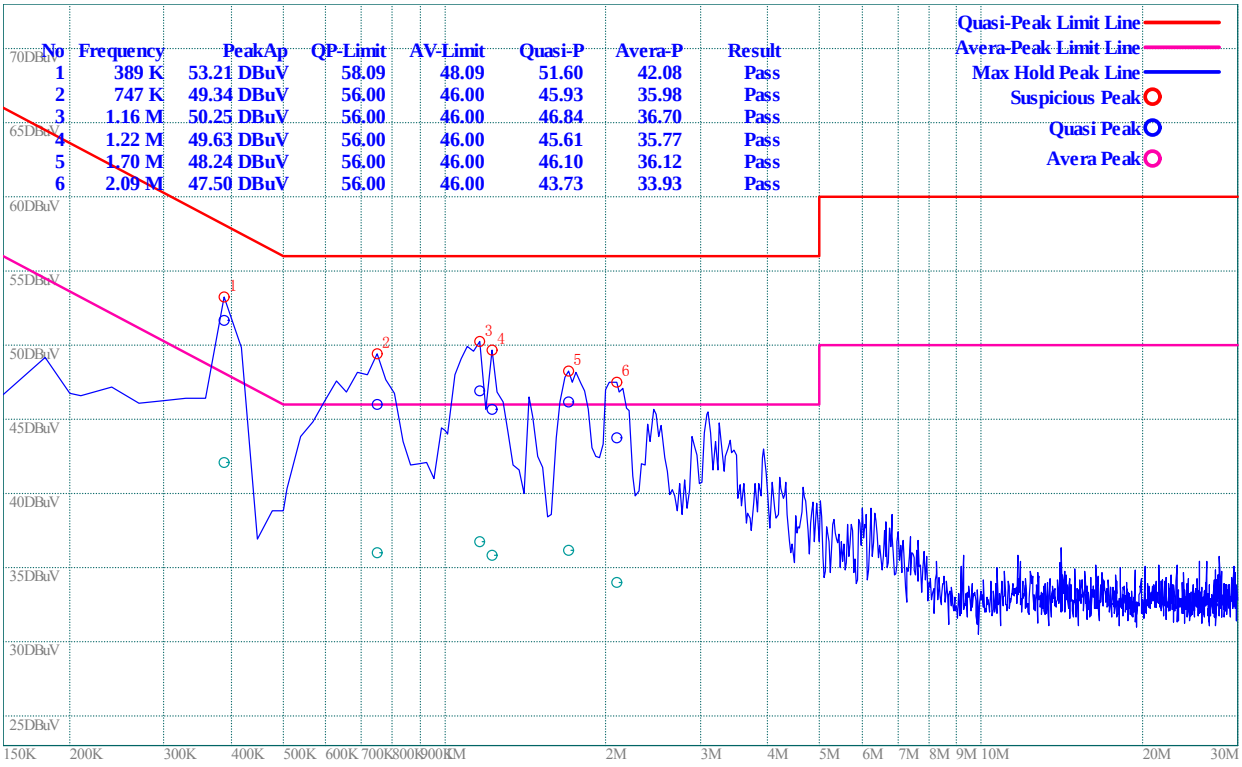
See section 2.2.1 of this report.

3.1.3 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.

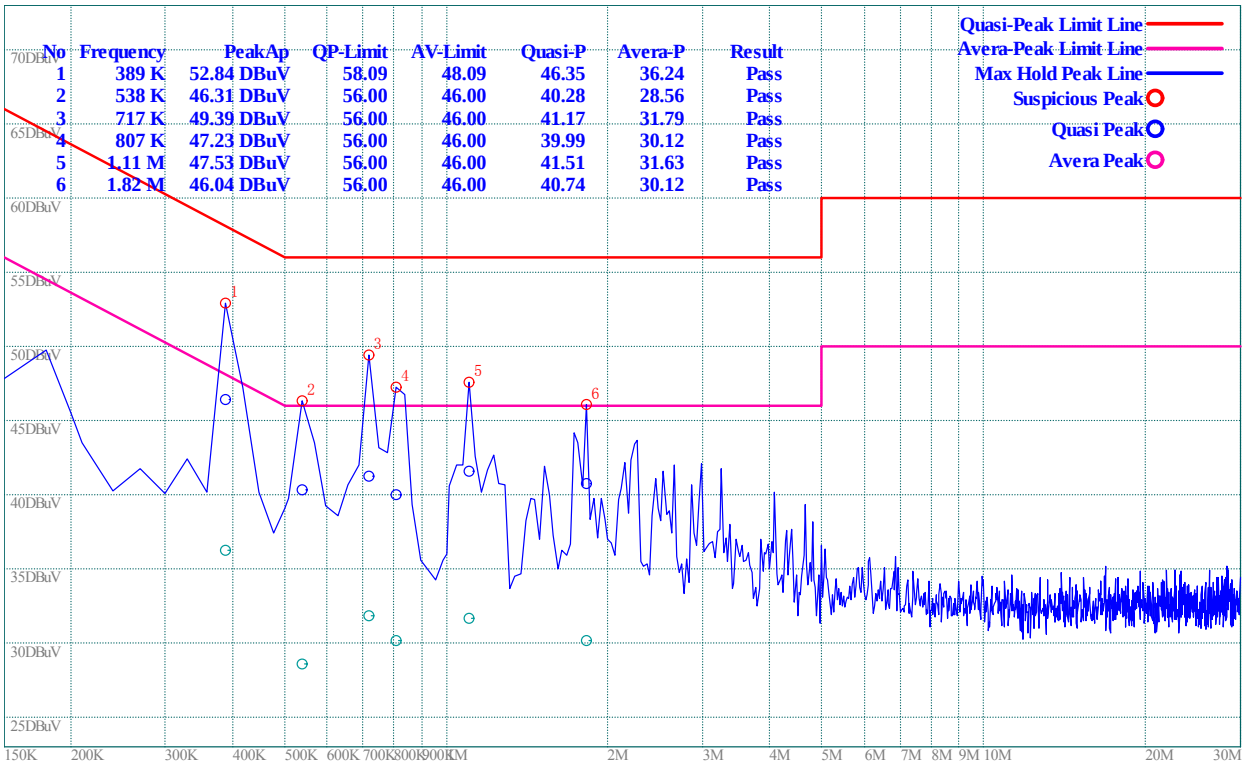
3.1.3.1 GSM Test Mode

A. Test Plot and Suspicious Points:



No	Frequency	PeakAp	QP-Limit	AV-Limit	Quasi-P	Avera-P	Result
1	389 K	53.21 DBuV	58.09	48.09	51.60	42.08	Pass
2	747 K	49.34 DBuV	56.00	46.00	45.93	35.98	Pass
3	1.16 M	50.25 DBuV	56.00	46.00	46.84	36.70	Pass
4	1.22 M	49.63 DBuV	56.00	46.00	45.61	35.77	Pass
5	1.70 M	48.24 DBuV	56.00	46.00	46.10	36.12	Pass
6	2.09 M	47.50 DBuV	56.00	46.00	43.73	33.93	Pass

(Plot A: L Phase)



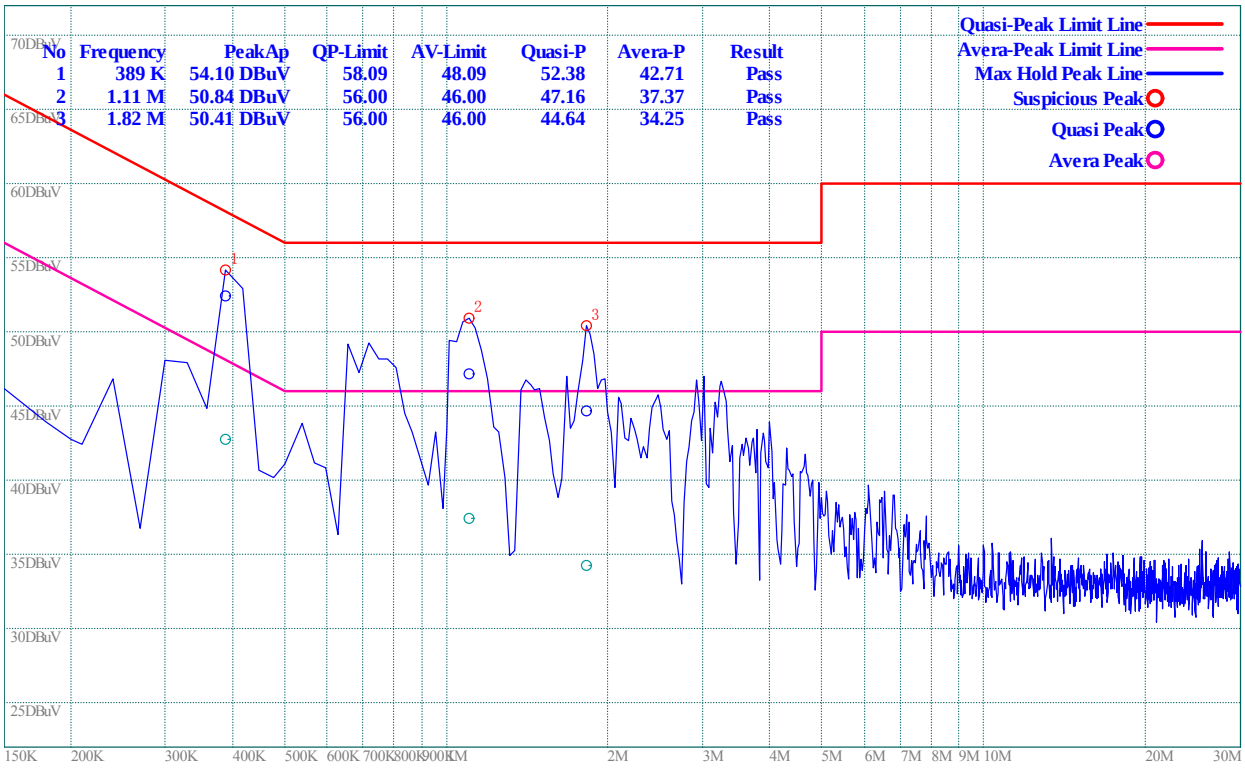
No	Frequency	PeakAp	QP-Limit	AV-Limit	Quasi-P	Avera-P	Result
1	389 K	52.84 DBuV	58.09	48.09	46.35	36.24	Pass
2	538 K	46.31 DBuV	56.00	46.00	40.28	28.56	Pass
3	717 K	49.39 DBuV	56.00	46.00	41.17	31.79	Pass
4	807 K	47.23 DBuV	56.00	46.00	39.99	30.12	Pass
5	1.11 M	47.53 DBuV	56.00	46.00	41.51	31.63	Pass
6	1.82 M	46.04 DBuV	56.00	46.00	40.74	30.12	Pass

(Plot B: N Phase)

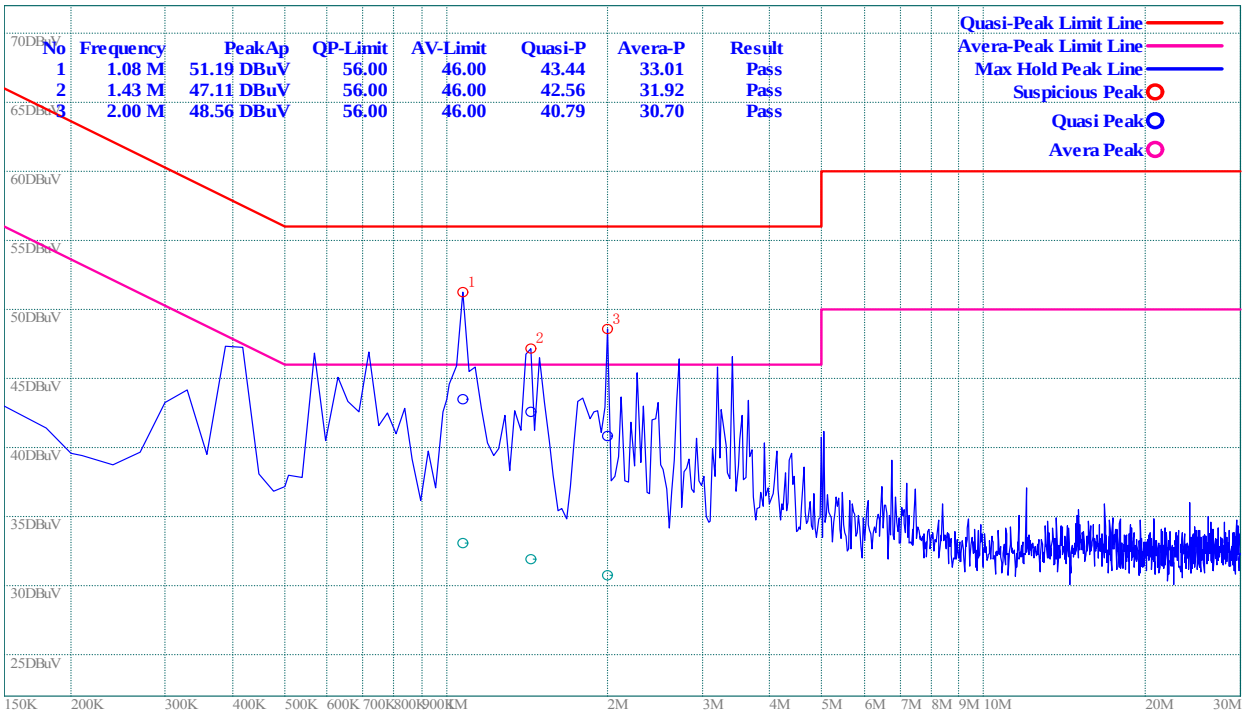
Test Result :PASS

3.1.3.2 WCDMA Test Mode

Test Plots and Suspicious Point



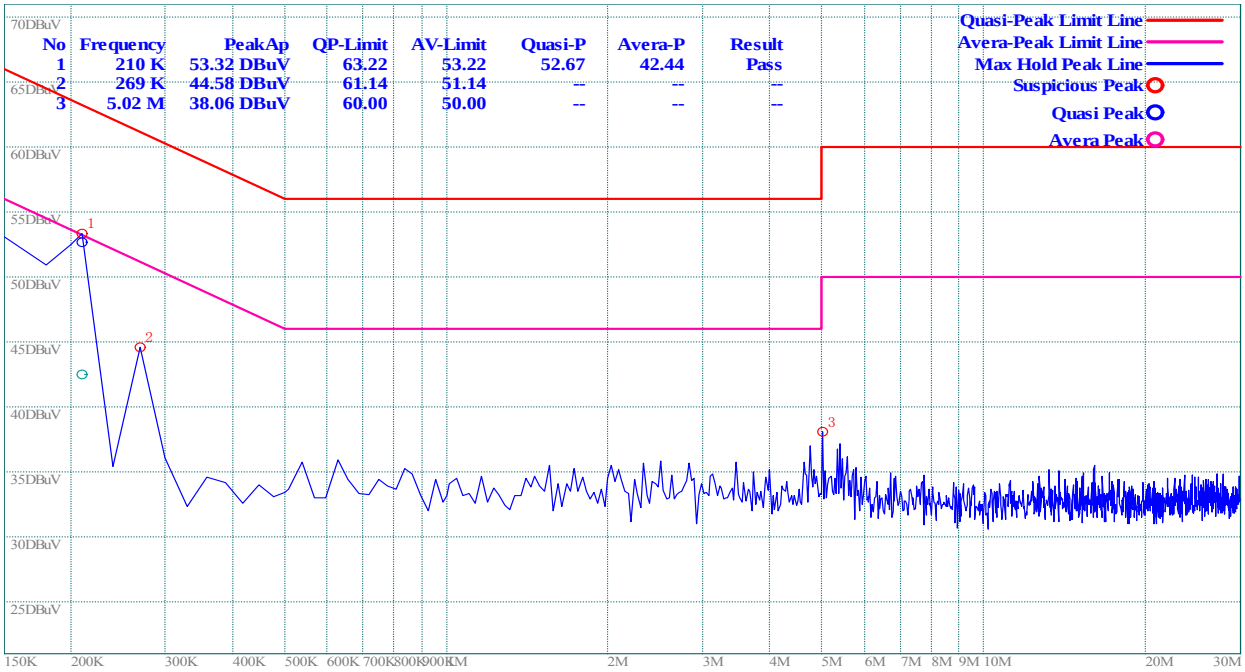
(Plot A: L Phase)



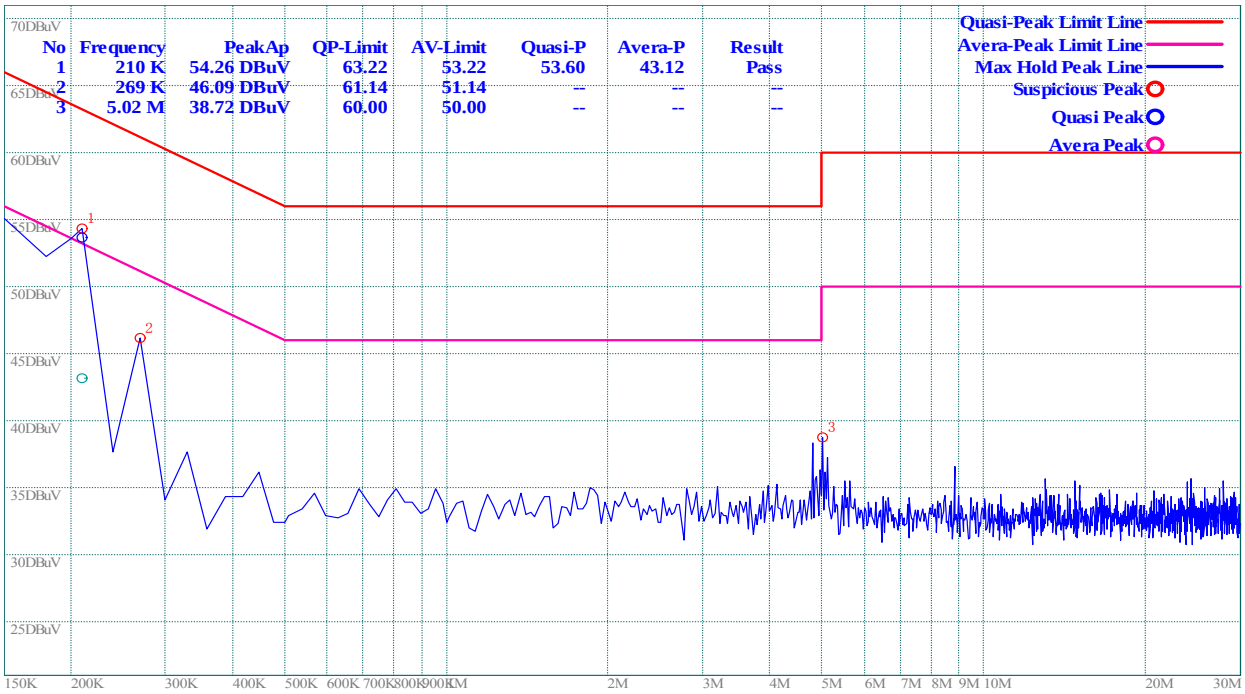
(Plot B: N Phase)

3.1.3.3 Amusement Test Mode

A. Test Plot and Suspicious Points:



(Plot A: L Phase)



(Plot B: N Phase)

Test Result :PASS

3.2 Radiated Emission

3.2.1 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	
	μV/m	dBμV/m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

NOTE:

a) Field Strength (dBμV/m) = 20*log[Field Strength (μV/m)].

b) In the emission tables above, the tighter limit applies at the band edges.

3.2.2 Test Description

See section 2.2.2 of this report.

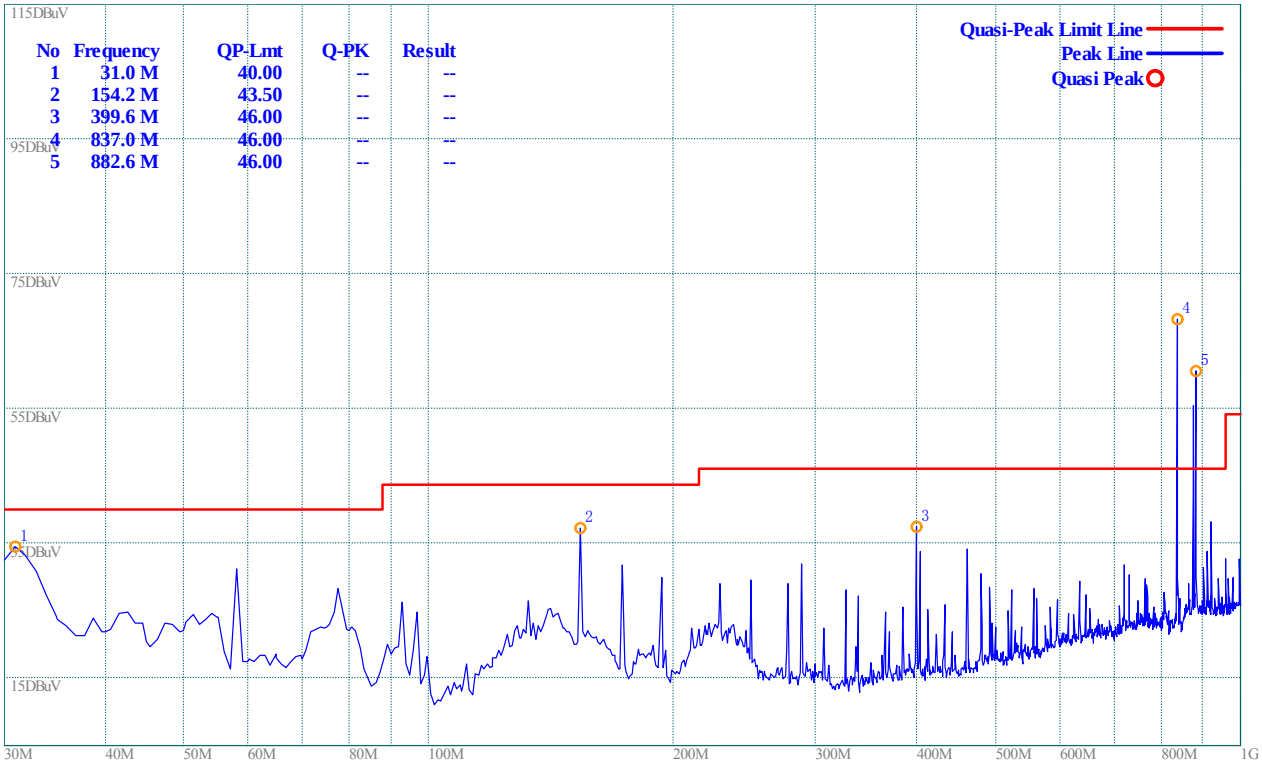
3.2.3 Test Result

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.

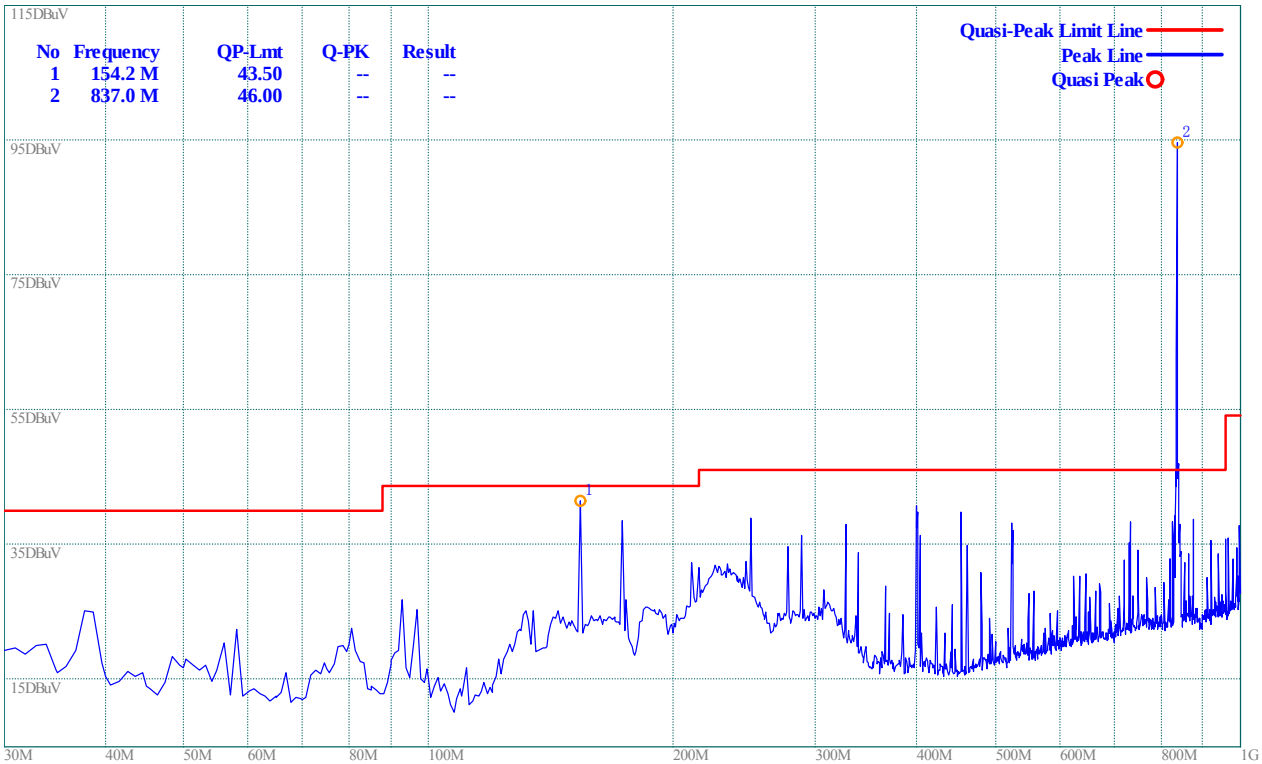
3.2.3.1 GSM Test Mode

A. Test Plots and Suspicious Points:

Note: Following is the plots for emission measurement; please note that marked spikes near 850MHz with circle should be ignored because they are MS and SS carrier frequency.



(Plot A: Test Antenna Vertical)

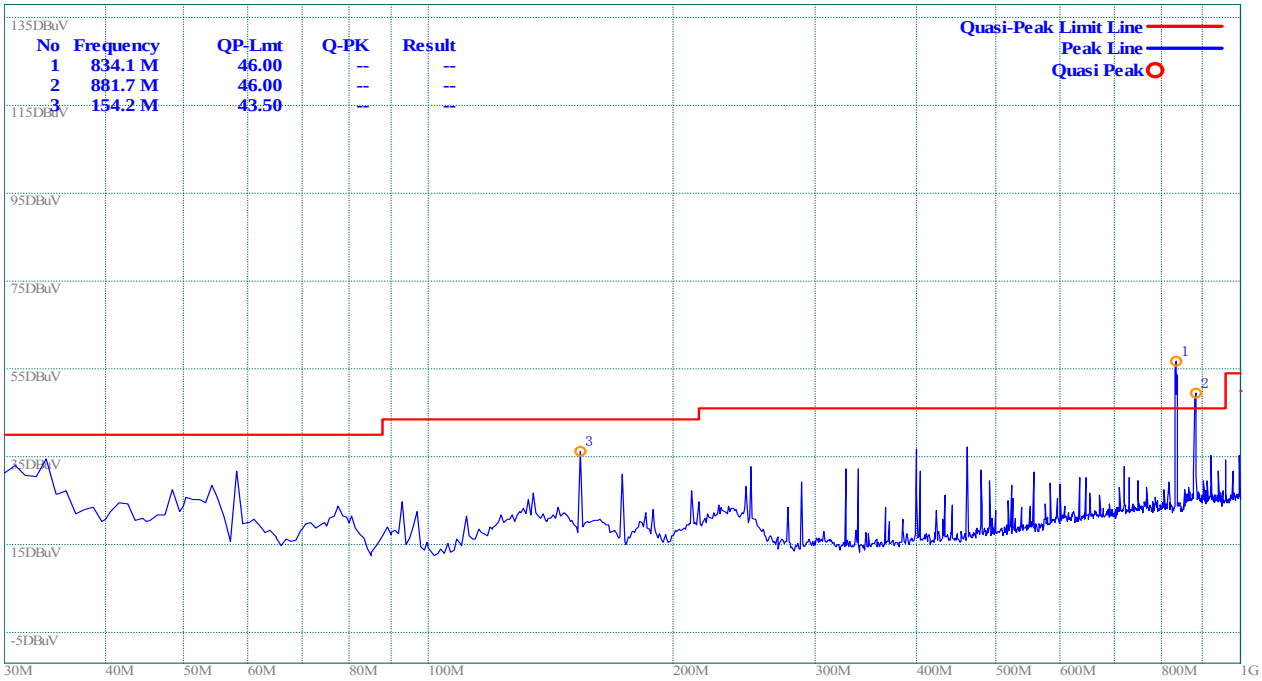


(Plot B: Test Antenna Horizontal)

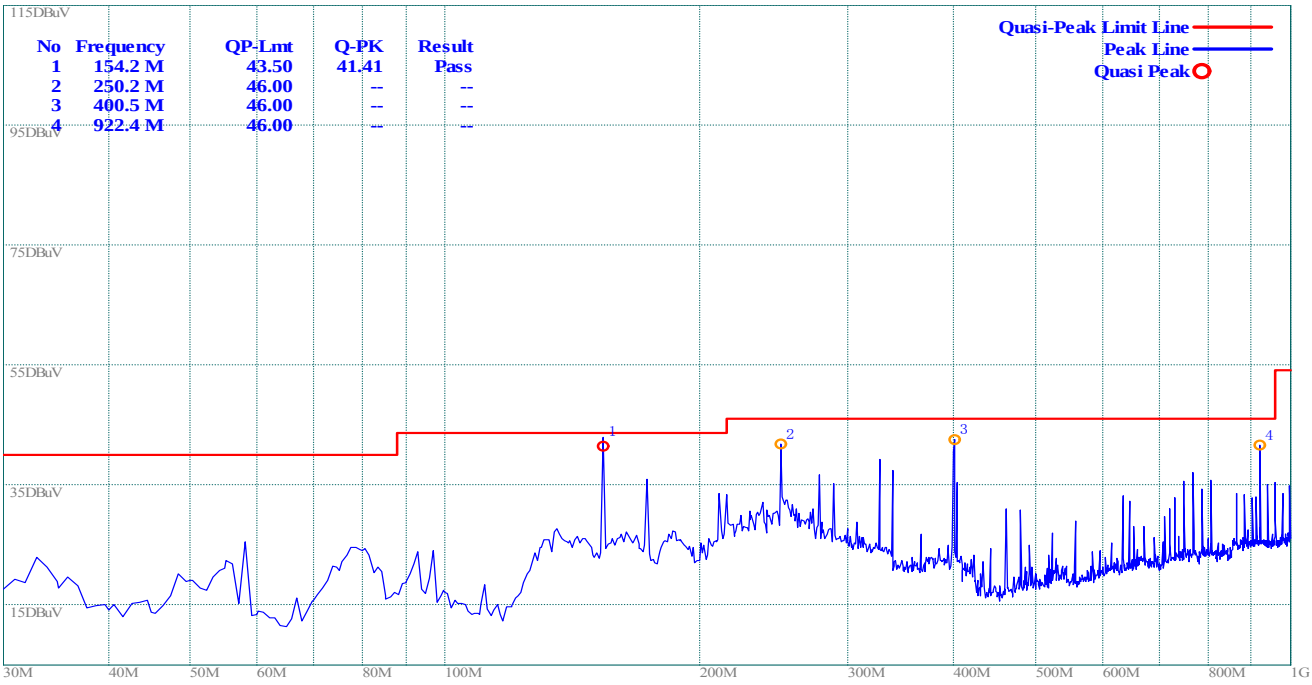
3.2.3.2 WCDMA Test Mode

Note: Following is the plots for emission measurement; please note that marked spikes near 850MHz with circle should be ignored because they are MS and SS carrier frequency.

A. Test Plots and Suspicious Points:



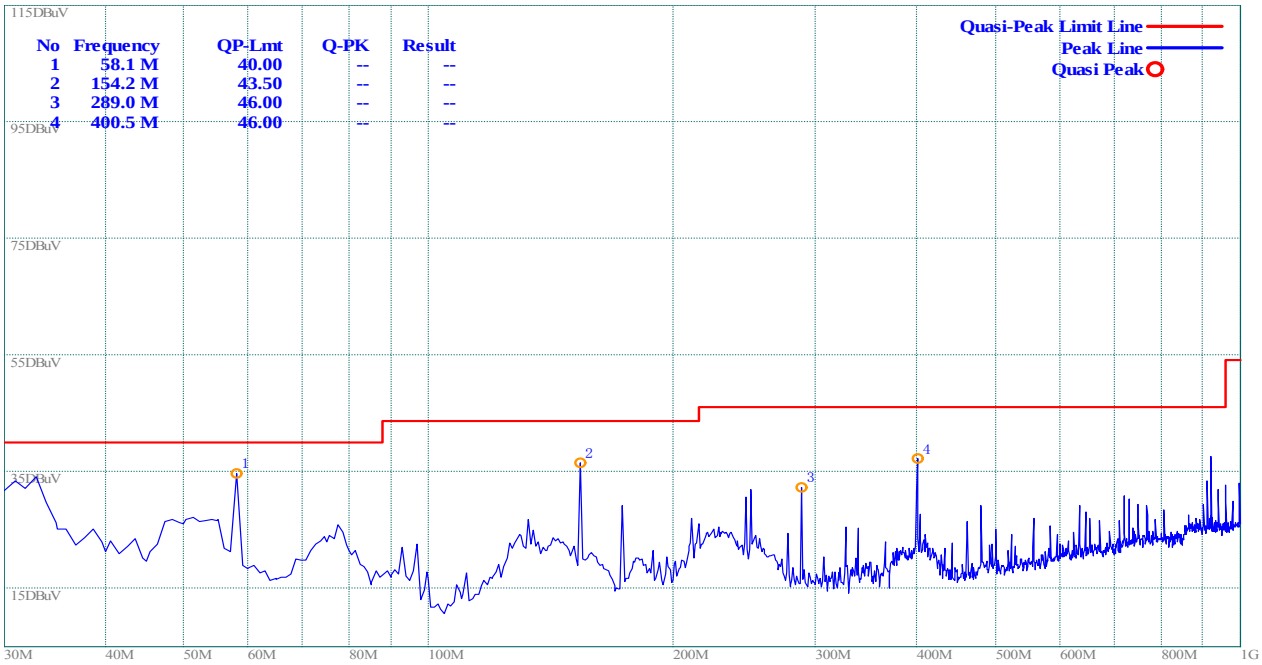
(Plot A: Test Antenna Vertical)



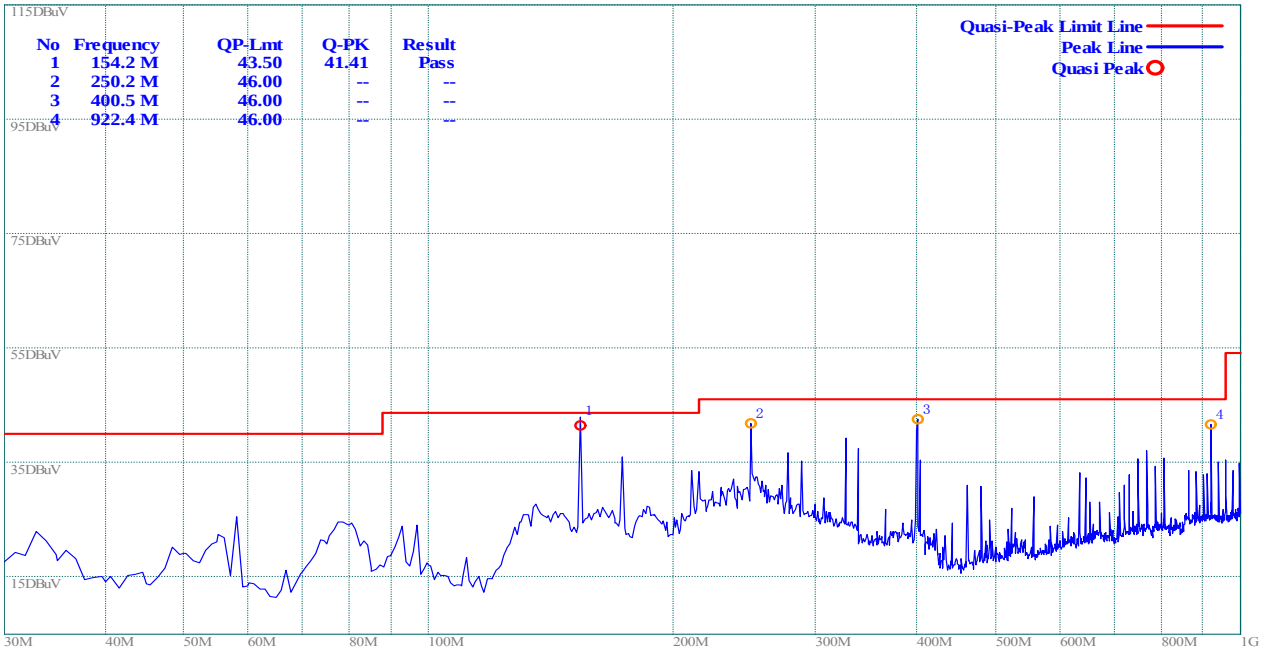
(Plot B: Test Antenna Horizontal)

3.2.3.3 Amusement Test Mode

B. Test Plots and Suspicious Points:



(Plot A: Test Antenna Vertical)



(Plot B: Test Antenna Horizontal)

Test Result :PASS

** END OF REPORT **