47 CFR PART 22 SUBPART H

TEST REPORT

of

CDMA 1X digital mobile phone

Model Name: OT-E206C
Trade Name: ALCATEL
Report No.: SH08100027E02
FCC ID: R5CE206C

prepared for

TCL Mobile Communication Co., Ltd.
No.23 Zone, Zhongkai High-Technology Development Zone,
Huizhou, Guangdong, P.R.China

prepared by

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1. Test Result Certification

Equipment under Test:	CDMA 1X digital mobile phone
Trade Name:	ALCATEL
Model Name:	OT-E206C
FCC ID:	R5CE206C
Applicant:	TCL Mobile Communication Co., Ltd. No.23 Zone, Zhongkai High-Technology Development Zone, Huizhou, Guangdong, P.R.China
Manufacturer:	TCL Mobile Communication Co., Ltd. No.23 Zone, Zhongkai High-Technology Development Zone, Huizhou, Guangdong, P.R.China
Test Standards:	47 CFR Part 2 47 CFR Part 22 Subpart H
Test Result:	PASS

*** We Hereby Certify That:**

The equipment under test was tested by Shenzhen Morlab Communications Technology Co., Ltd. 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: 2008.11.12
Lou Qinchao

Reviewed by: Zhang Jun Dated: 2008.11.12
Zhang Jun

Approved by: Dated: 2008.11.12
Su Feng

2. General Information

2.1 Equipment under Test (EUT) Description

EUT1	
Description:	CDMA 1X digital mobile phone
Model No.:	OT-E206C
Modulation:	CDMA 1X
Frequency:	Tx: 824 MHz -849MHz; Rx: 869 MHz-894 MHz;
Serial No.:	N/A
Hardware Version:	CS01_V1.2
Software Version:	CS01_PRIS_V1.0
EUT2	
Description:	Lithium-ion Battery
Model No.:	TB-05BA
Serial No.:	N/A
Manufacturer:	BYD LITHIUM BATTERY CO., LTD.
Capacitance:	750mAh
Rated Voltage:	3.7V
Charge Limit:	4.2V
EUT3	
Description:	AC Adapter (Charger for Battery)
Model No.:	S003HV0500050
Serial No.:	N/A
Manufacturer:	BYD (HUIZHOU) COMPANY LIMITED
Rated Input:	AC 100/240V,50/60Hz
Rated Output:	DC 5+/-0.3V, 500+/-100mA
Length DC cable:	N/A

NOTE:

1. The EUT is a model of CDMA 1X mobile station operating in Cellular 800MHz .
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 22 for FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2 (10-1-05 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-05 Edition)	Public Mobile Services

Test detailed items and the results are as below:

No.	Rules	Test Type	Result	Date of Test
FCC Part 22 Requirement				
1	§2.106 §22.905	Frequencies	PASS	2008-10-20
2	§2.1046	Conducted RF Output Power at Antenna Terminal	PASS	2008-10-20
3	§2.1049	Occupied Bandwidth	PASS	2008-10-20
4	§2.1051 §2.1057 §22.917	Conducted Spurious Emission at Antenna Terminal	PASS	2008-10-20
5	§22.913	Transmitter Radiated Power (EIPR/ERP)	PASS	2008-10-21
6	§2.1053 §2.1057 §22.917	Radiated Spurious Emission	PASS	2008-10-21
7	§2.1055 §22.355	Frequency Stability	PASS	2008-10-22

2.3 Facilities and Accreditations

2.3.1 Facilities

Shenzhen Electronic Product Quality Testing Center (Morlab) 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, 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 Equipments

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2008.06	1year
Spectrum Analyzer	Agilent	E7405A	US44210471	2008.07	1year
Test Antenna Bi-Log	Schwarzbeck	VULB 9163	9163-274	2008.07	1year
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2008.07	1year
Power Splitter	Weinschel	1506A	NW521	(n.a.)	(n.a.)
Attenuator 1	Resnet	20dB	(n.a.)	(n.a.)	(n.a.)
Attenuator 2	Resnet	3dB	(n.a.)	(n.a.)	(n.a.)
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2007.08	2year
DC Power Supply	Good Will	GPS-3030DD	EF920938	2007.06	2year
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2008.03	1year

NOTE:

1. Equipments listed above have been calibrated and are in the period of validation.

2.3.3 Test Environment Conditions

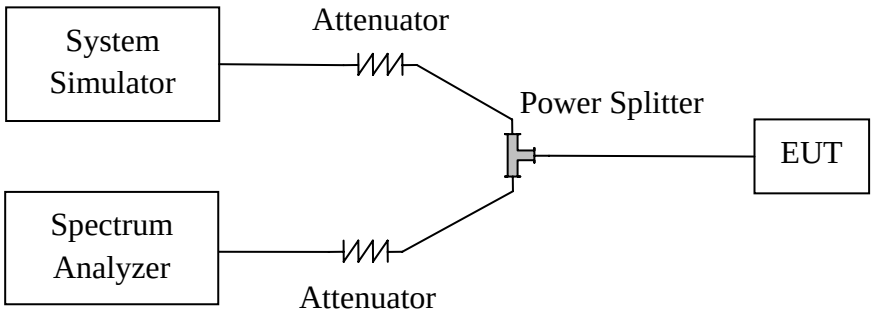
During the measurement, the environmental conditions were within the listed ranges:

Temperature:	20 - 25°C
Relative Humidity:	40 - 50%

Atmospheric Pressure:	960kPa

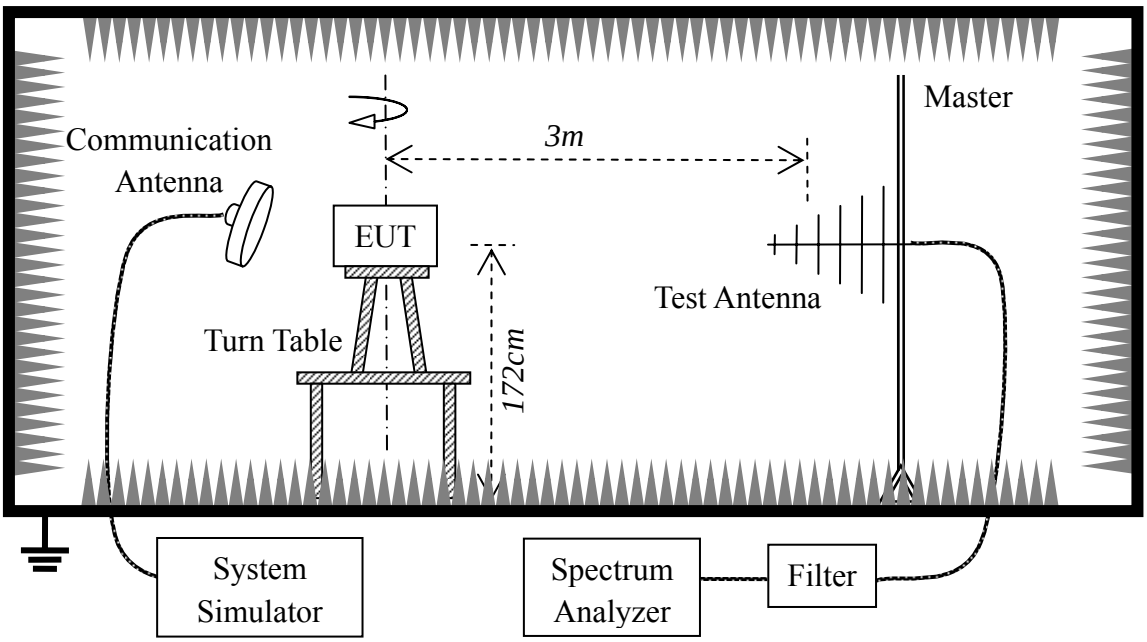
2.4 General Information

2.4.1 Conducted Related Tests



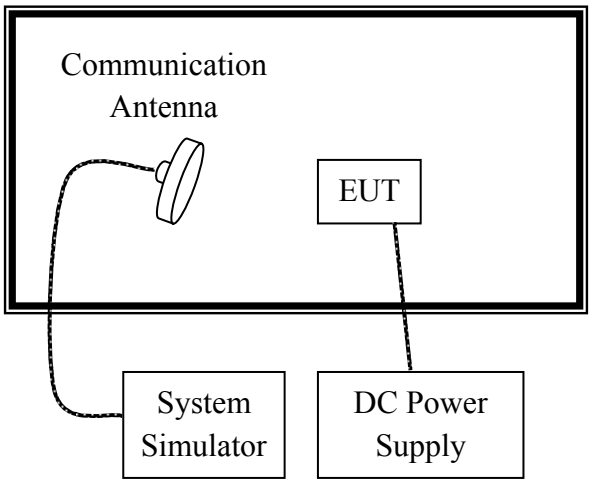
1. The EUT is coupled to the Spectrum Analyzer and the System Simulator with the suitable Attenuators through the Power Splitter; the path loss is calibrated to correct the reading.
2. The EUT is configured here as EUT + Battery + Charger.
3. The EUT is commanded via the System Simulator (SS) to operate at the maximum output power . A communication link is established between the EUT and the SS.
4. The Spectrum Analyzer is set to max-peak detector function and maximum hold mode.

2.4.2 Radiated Power and Spurious Emission Tests



1. The test is performed in a full-Anechoic Chamber; the air loss of the site and the factors of the test system are pre-calibrated using the substitution method.
2. The EUT is configured as EUT + Battery + Charger.
3. The EUT is placed on the vertical axis of a Turn Table 1.72 meters above the ground.
4. The Test Antenna is a bi-log one or a horn one, and the Test Antenna is at the same height as the EUT.
5. The EUT is commanded via the System Simulator (SS) to operate at the maximum output power. A communication link is established between the EUT and the SS.
6. The Spectrum Analyzer is set to max-peak detector function and maximum hold mode.

2.4.3 Frequency Stability Test



1. The test is performed in a Temperature Chamber.
2. The EUT is configured as MS + DC Power Supply.

2.5 Frequencies

2.5.1 Requirement

According to FCC §22.905, the frequencies blocks assignment for the Cellular Radiotelephone Service are listed as below.

(a) Channel Block A:
Mobile 824 - 835MHz, Base 869 - 880MHz;
Mobile 845 - 846.5MHz, Base 890 - 891.5MHz

(b) Channel Block B:
Mobile 835 - 845 MHz, Base 880 - 890MHz;
Mobile 846.5 - 849 MHz, Base 891.5 - 894MHz

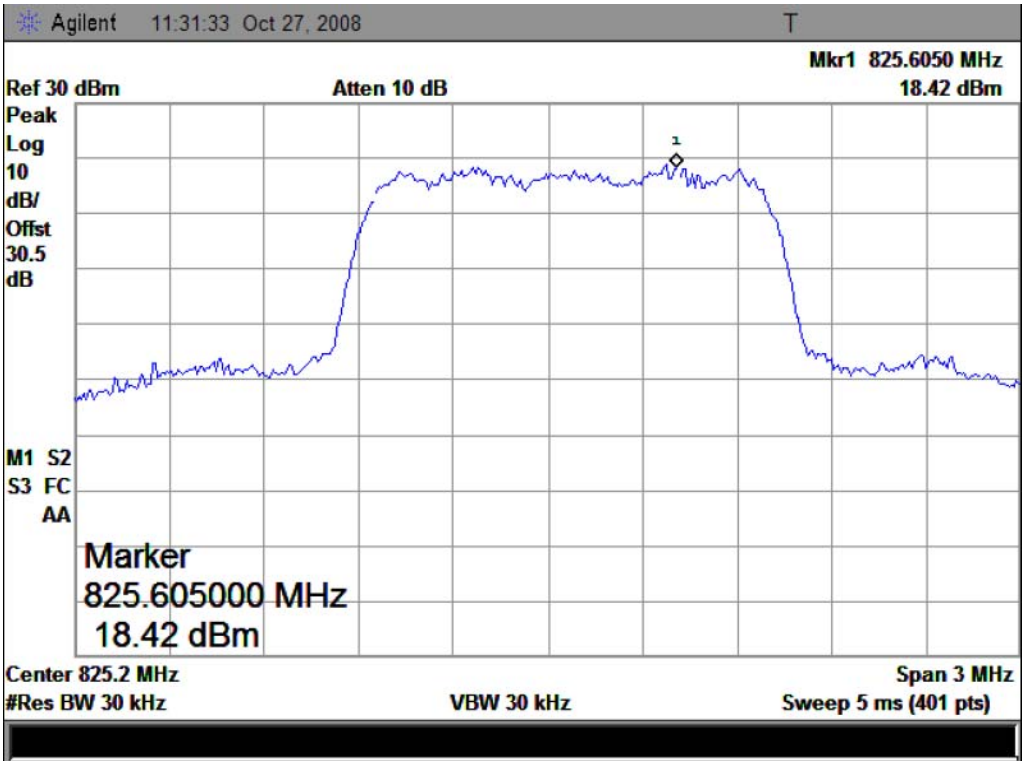
2.5.2 Procedure

1. Perform test system setup as section 2.4.1.
2. The resolution bandwidth (RBW) of the Spectrum Analyzer was set to at lease 1% of the emission bandwidth of the fundamental emission of the transmitter, e.g. for GSM modulated signal (here used): RBW=VBW=3kHz, for CDMA modulated signal: RBW=VBW=30kHz.
3. The lowest and the highest channel were selected to perform tests respectively. Channel No.9(lowest) and 758(highest) for cellular band.
4. The MS operated at the maximum output power. Set the Spectrum Analyzer suitably to capture the waveform, search peak and mark, and then record the plot.

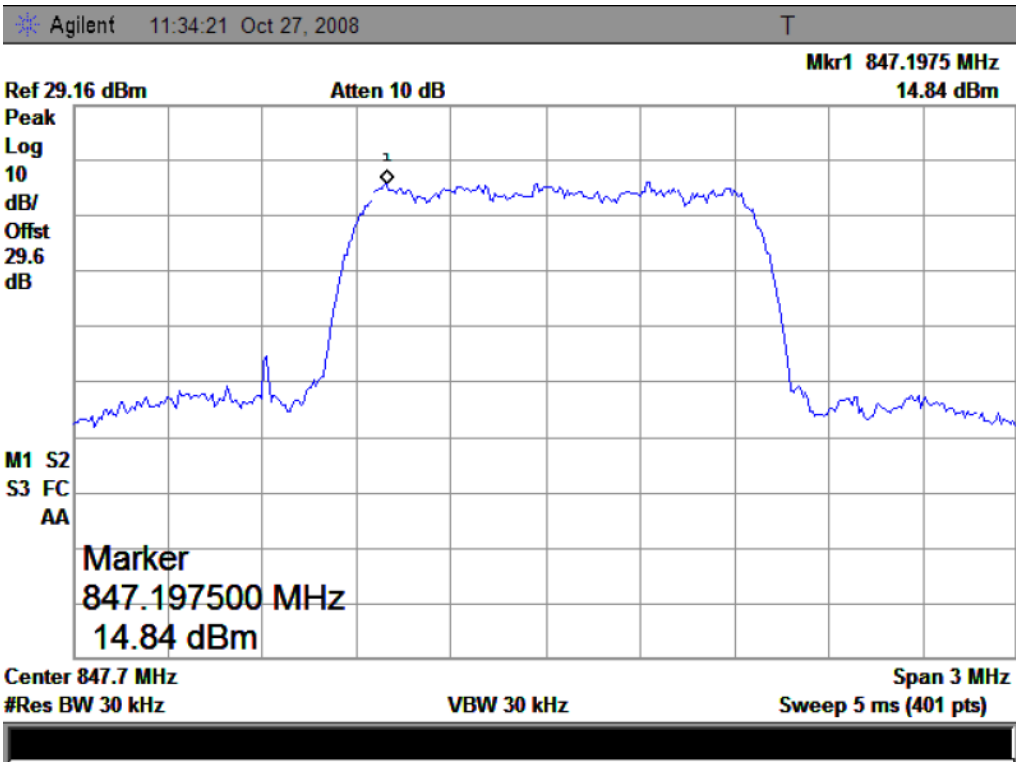
2.5.3 Test Result

The frequencies of the lowest channel and the highest channel are as the following figures.
I Cellular Band

1. Plot when the channel number set to 9



2. Plot when the channel number set to 758



2.6 Conducted RF Output Power

2.6.1 Requirement

According to FCC §2.1046 (a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in §2.1033 (c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

2.6.2 Test Procedure

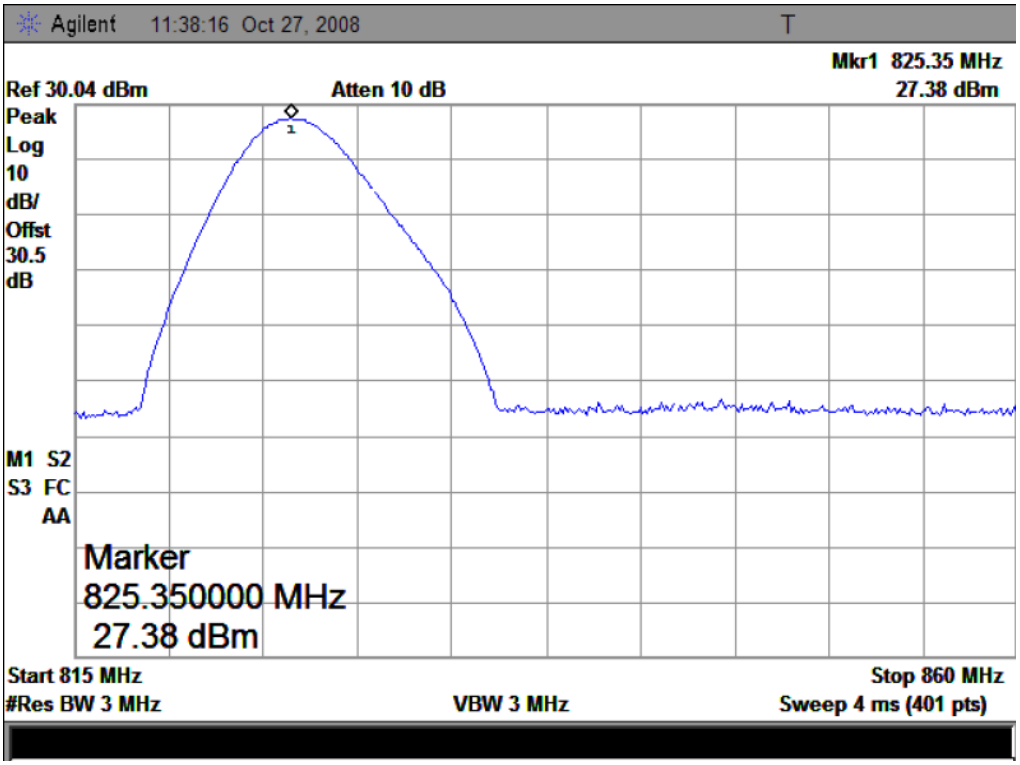
1. Perform test system setup as section 2.4.1 (the radio frequency load attached to the EUT antenna terminal is 50Ω).
2. The resolution bandwidth of the Spectrum Analyzer is set to be comparable to the emission bandwidth of the transmitter, e.g. for GSM modulated signal (here used): RBW=VBW=1MHz, for CDMA modulated signal: RBW=VBW=3MHz.
3. The lowest and the highest channel were selected to perform tests respectively. Channel No.9(lowest) 384(middle)and 758(highest) for cellular band。
4. Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak and mark it; finally record the peak and the plot.

2.6.3 Test Result

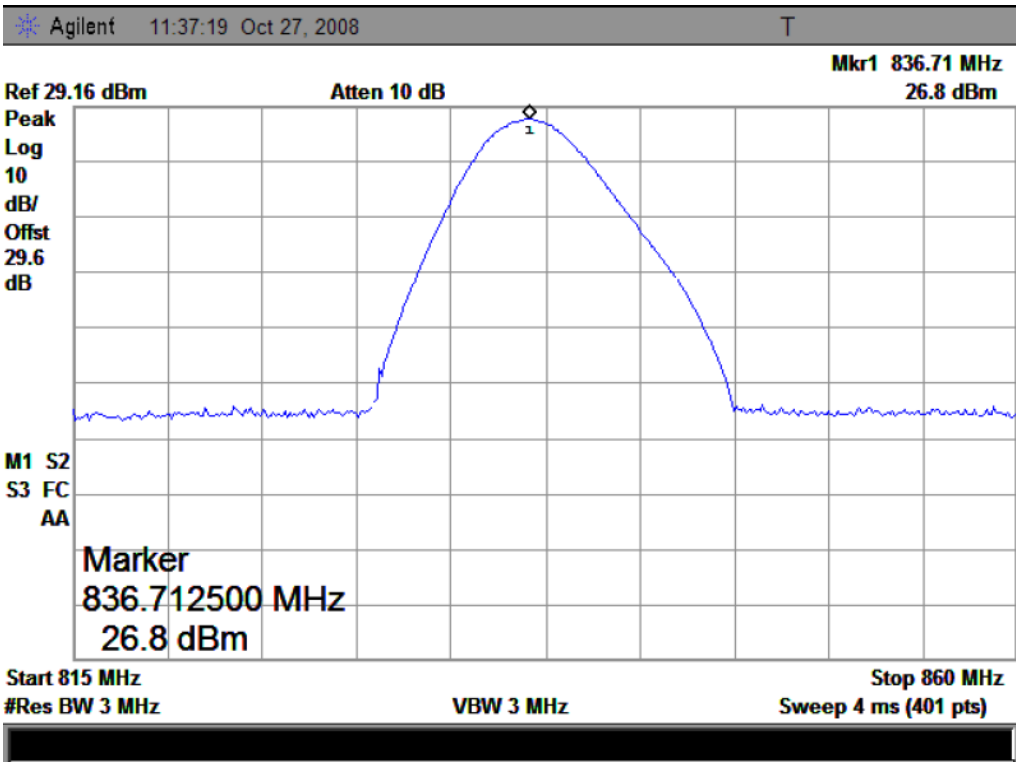
I Cellular Band

No.	Channel Number	Frequency (MHz)	Measured Power		Rated Power	
			dBm	W	dBm	W
1	9	825.35	27.38	0.547	33	7
2	384	836.71	26.80	0.479	33	7
3	758	847.74	24.84	0.305	33	7

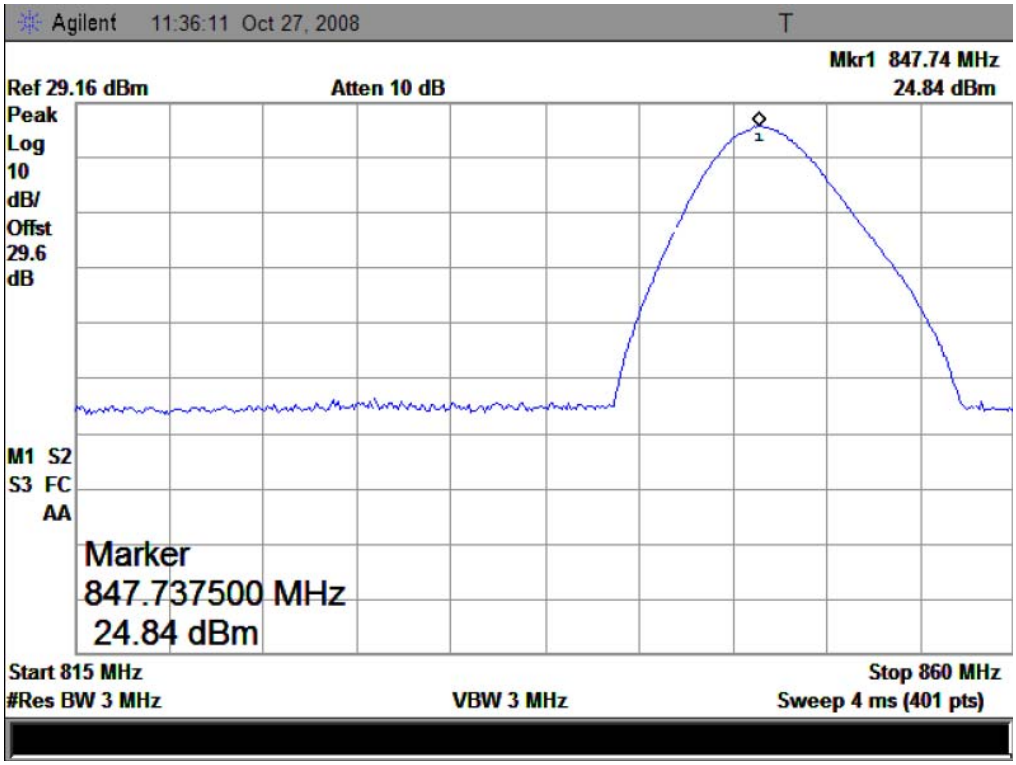
1 Plot when the channel number set to 9



2 Plot when the channel number set to 384



3 Plot when the channel number set to 758


Agilent 11:36:11 Oct 27, 2008
T
Mkr1 847.74 MHz
Ref 29.16 dBm
Atten 10 dB
24.84 dBm
Peak
Log
10
dB/
Offst
29.6
dB
M1 S2
S3 FC
AA
Marker
847.737500 MHz
24.84 dBm
Start 815 MHz
Stop 860 MHz
#Res BW 3 MHz
VBW 3 MHz
Sweep 4 ms (401 pts)

2.7 Occupied Bandwidth

2.7.1 Occupied Bandwidth Definition

According to FCC §2.1049, the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

2.7.2 Test Procedure

1 Perform test system setup as section 2.4.1 (the radio frequency load attached to the EUT antenna terminal is 50Ω).

2 The resolution bandwidth of the Spectrum Analyzer is set to be comparable to the emission bandwidth of the transmitter, e.g. for GSM modulated signal (here used): RBW=VBW=1MHz, for CDMA modulated signal: RBW=VBW=3MHz.

3 The lowest and the highest channel were selected to perform tests respectively. Channel No.9(lowest) 384(middle)and 758(highest) for cellular band.

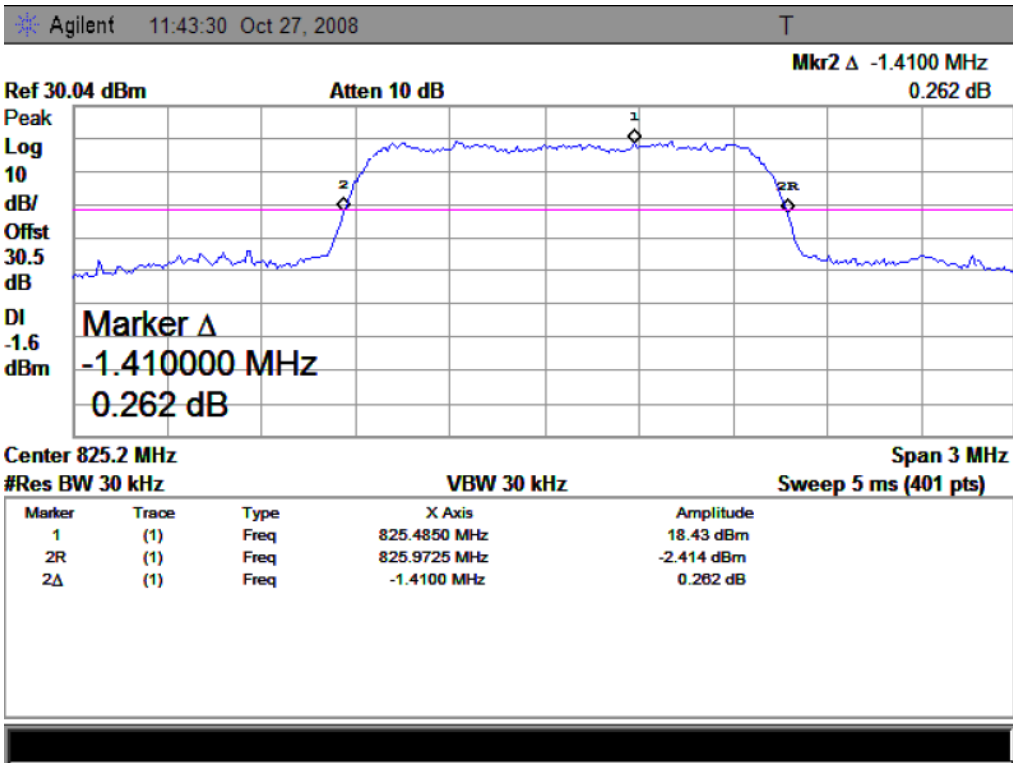
4 Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak and mark it; finally record the peak and the plot.

2.7.3 Test Result

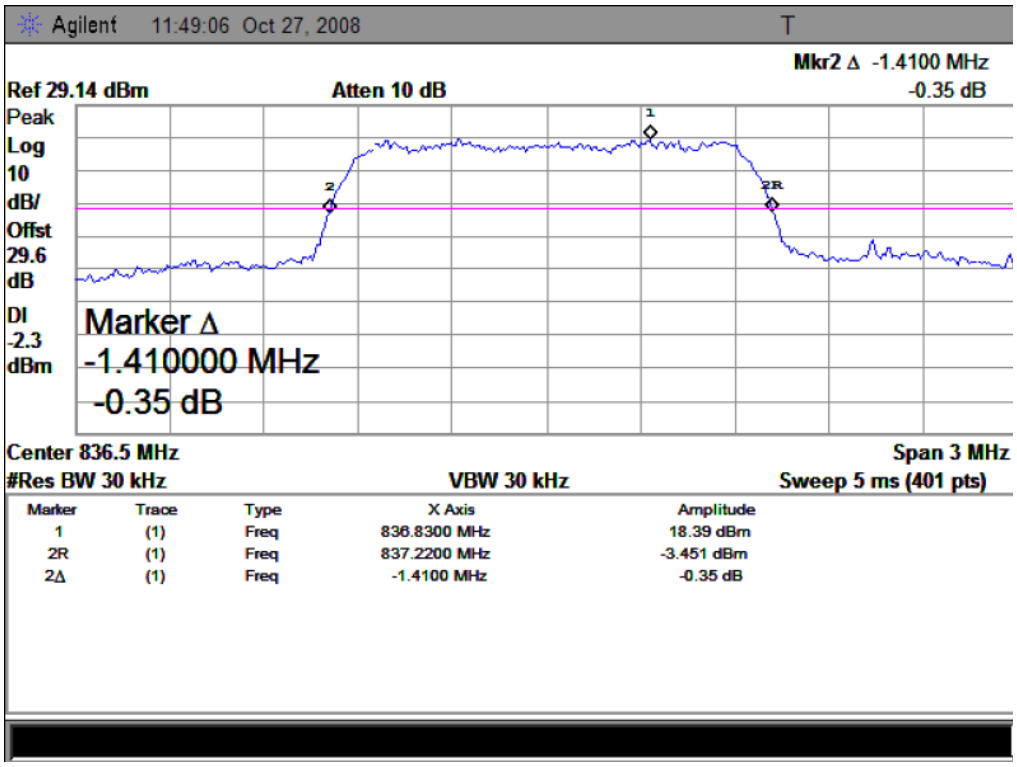
I Cellular Band

No.	Channel Number	Frequency (MHz)	Measured Occupied Bandwidth (MHz)
1	9	825.2	1.410
2	384	836.5	1.410
3	758	847.7	1.402

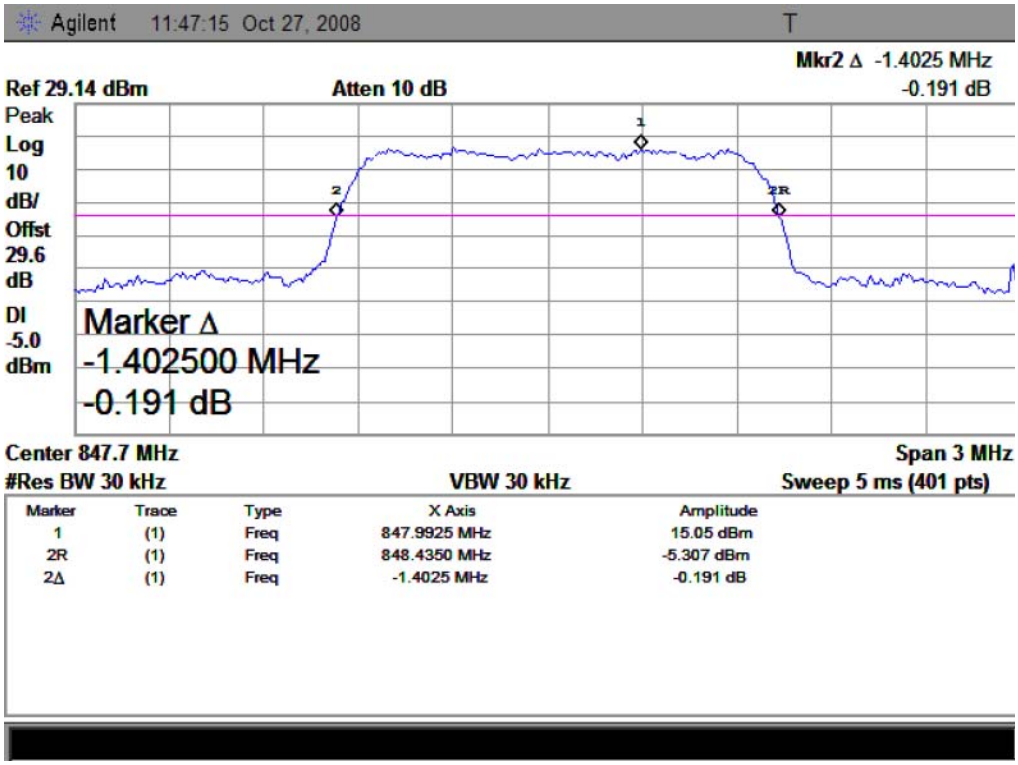
1 Plot when the channel number set to 9



2 Plot when the channel number set to 384



3 Plot when the channel number set to 758


Agilent 11:47:15 Oct 27, 2008
T
Mkr2 Δ -1.4025 MHz
-0.191 dB
Ref 29.14 dBm
Atten 10 dB
Peak
Log
10
dB/
Offst
29.6
dB
Dl
-5.0
dBm
Marker Δ
-1.402500 MHz
-0.191 dB
Center 847.7 MHz
Span 3 MHz
#Res BW 30 kHz
VBW 30 kHz
Sweep 5 ms (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 847.9925 MHz 15.05 dBm
2R (1) Freq 848.4350 MHz -5.307 dBm
2Δ (1) Freq -1.4025 MHz -0.191 dB

2.8 Conducted Spurious Emission

2.8.1 Requirement

According to FCC §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

According to FCC §22.917 (b), in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. Thus the 26dB emission bandwidth is measurement for showing compliance at the band-edge.

2.8.2 Test Procedure

1. Perform test system setup as section 2.4.1.
2. Make a limit line whose value is -13dBm on the Spectrum Analyzer.
3. The lowest and the highest channel were selected to perform tests respectively. Channel No.9(lowest) 384(middle)and 758(highest) for cellular band.
4. Set the RBW of the Spectrum Analyzer to 1MHz, and the measuring frequency range from 9kHz to 10^{th} harmonic of the fundamental frequency (here used 26.5GHz); mark the fundamental frequency and the harmonics thereof; finally record the harmonics and the plot. Note, the measuring frequency range can be divided into several parts to perform tests.
5. In the 1MHz bands immediately outside and adjacent to the frequency black, the RBW of the Spectrum Analyzer was set to at least one percent of the emission bandwidth of the fundamental emission of the transmitter, e.g. for GSM modulated signal (here used): RBW=3kHz, for CDMA modulated signal: RBW=30kHz.
6. Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak and mark it; finally record the peak and the plot.

2.8.3 Test Result

I Cellular Band

Table for the Harmonics and Plots for the Spurious Emission

1. Table for the Harmonics:

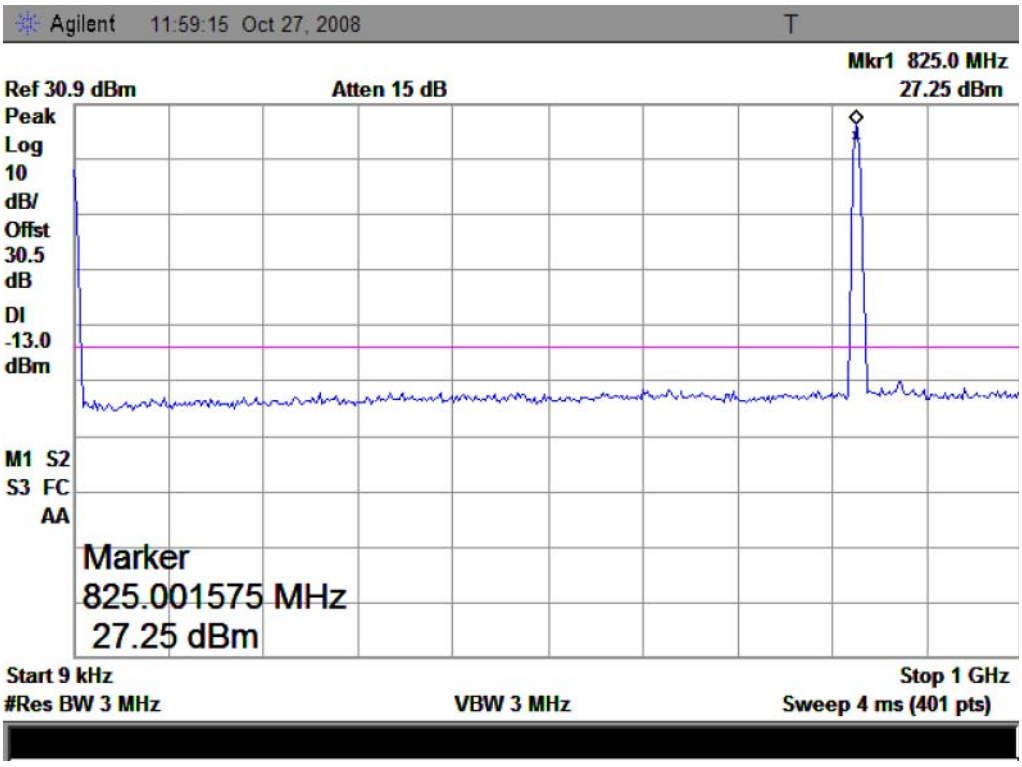
No.	Channel	Frequency(MHz)	Measured Max Spurious Emission(dBm)	Limit(dBm)
1.	9	2980	<-15	-13
2.	384	2980	<-20	-13
3.	758	2980	<-20	-13

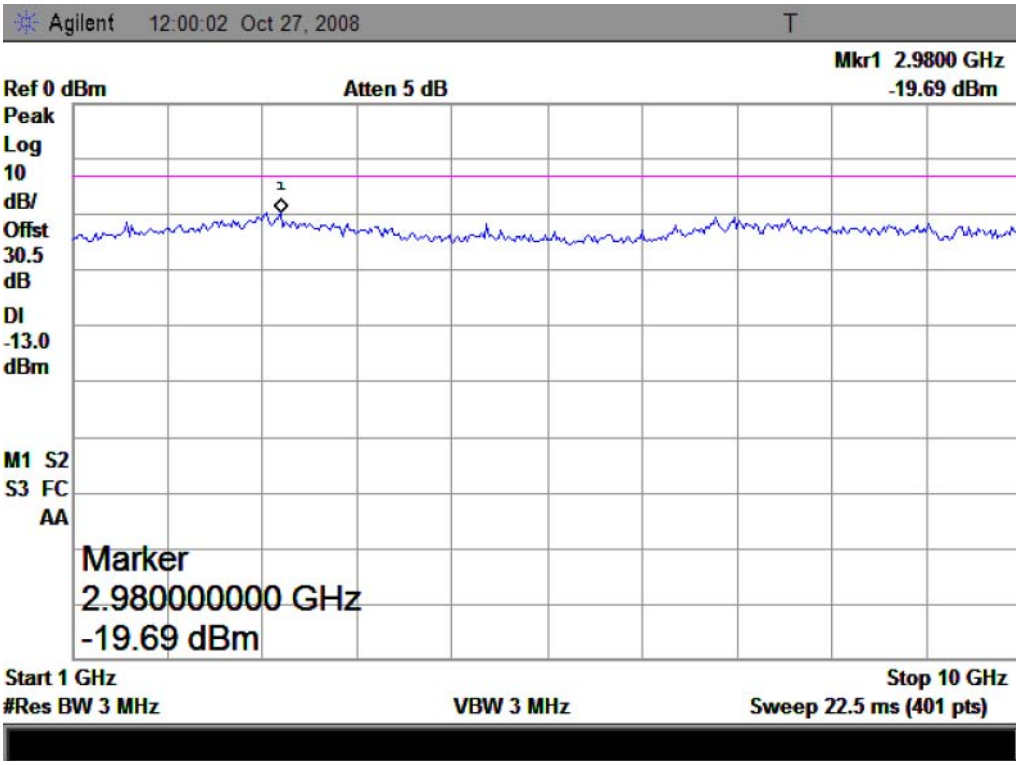
2. Plot for Spurious Emission:

The measuring frequency range was from 9kHz to 10GHz.

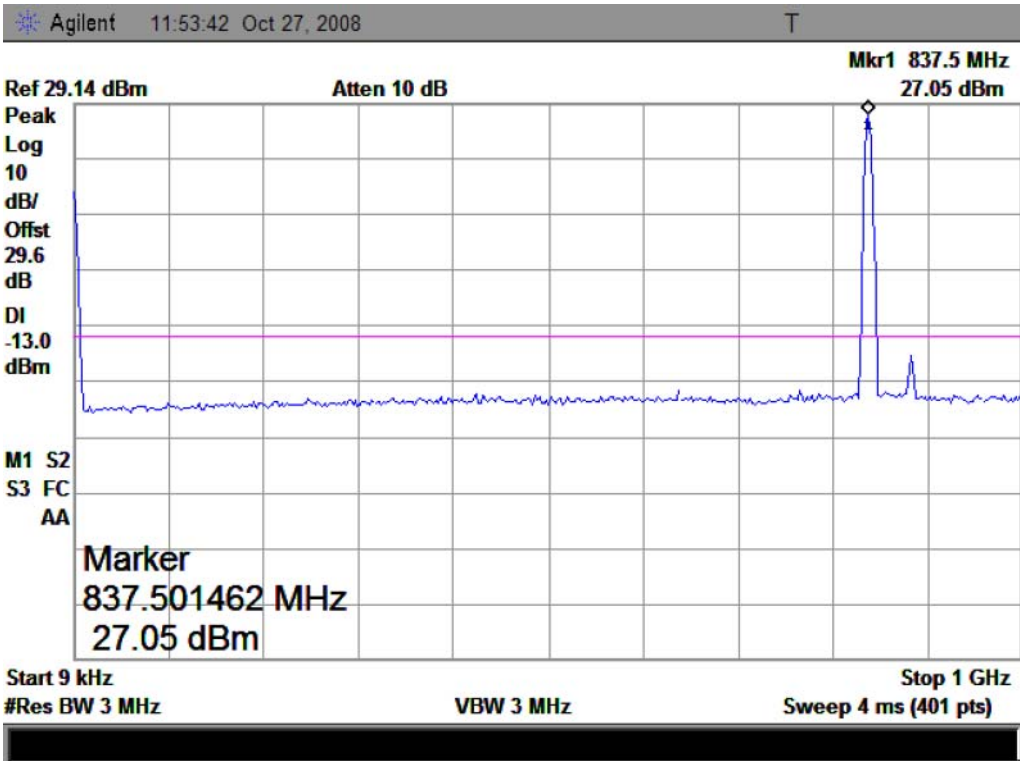
NOTE: The marker points are the Mobile Phone and/or System Simulator transmitting frequencies which should be ignored.

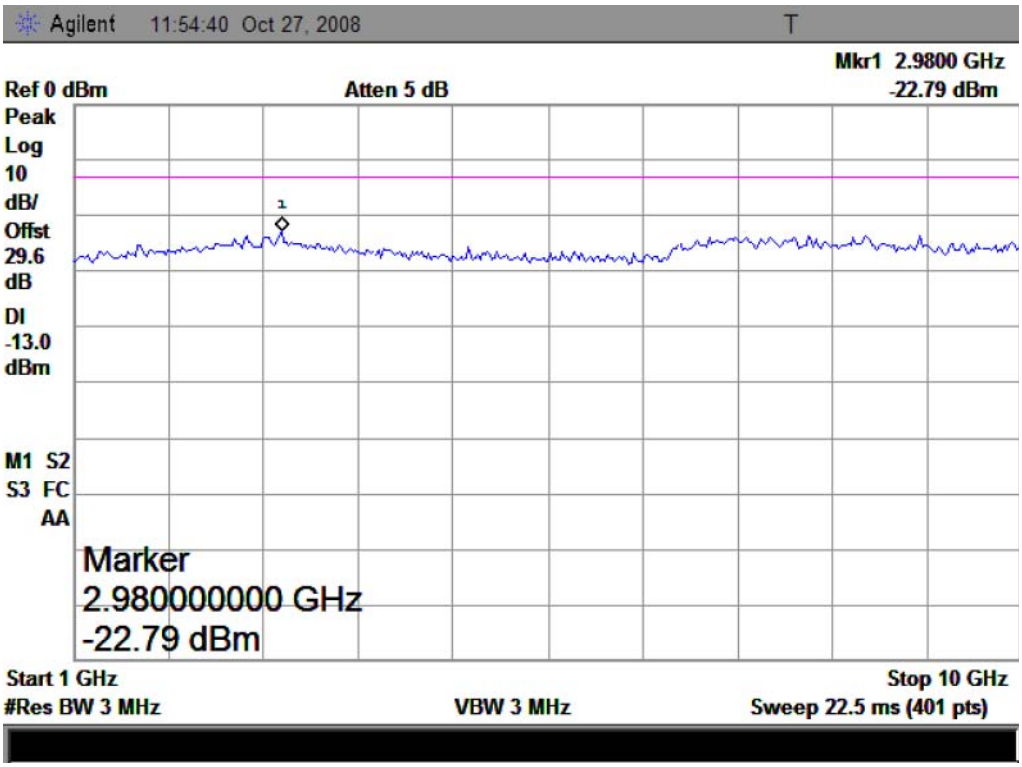
2.1 Plot when the channel number set to 9



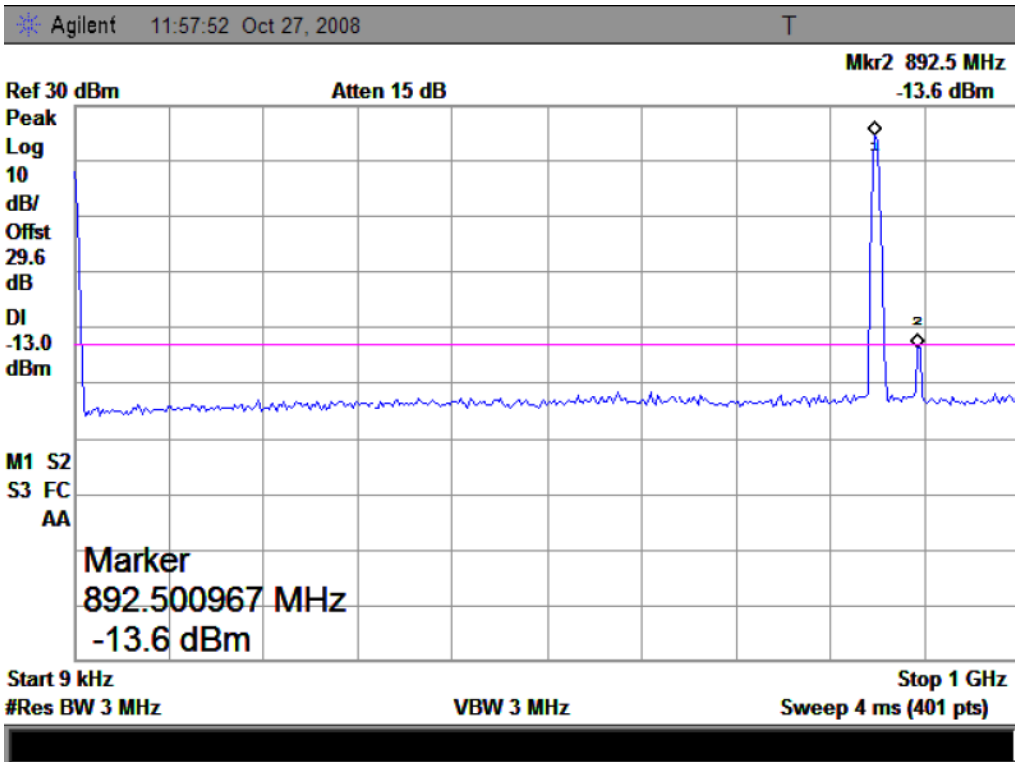


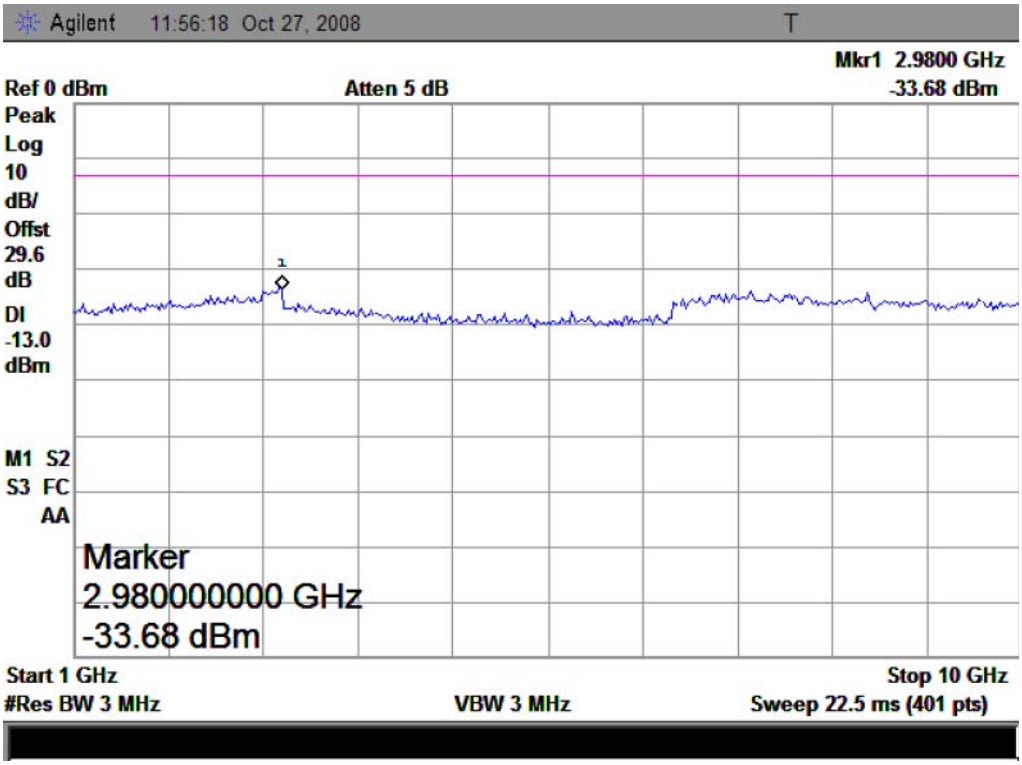
2.2 Plot when the channel number set to 384





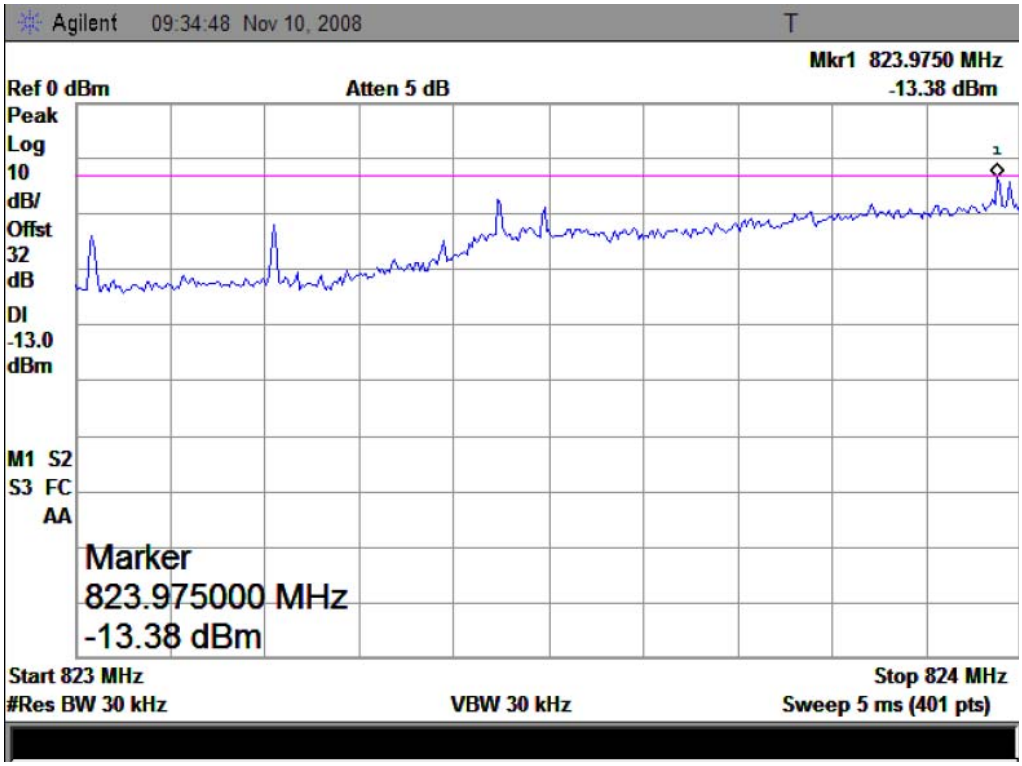
2.3 Plot when the channel number set to 758



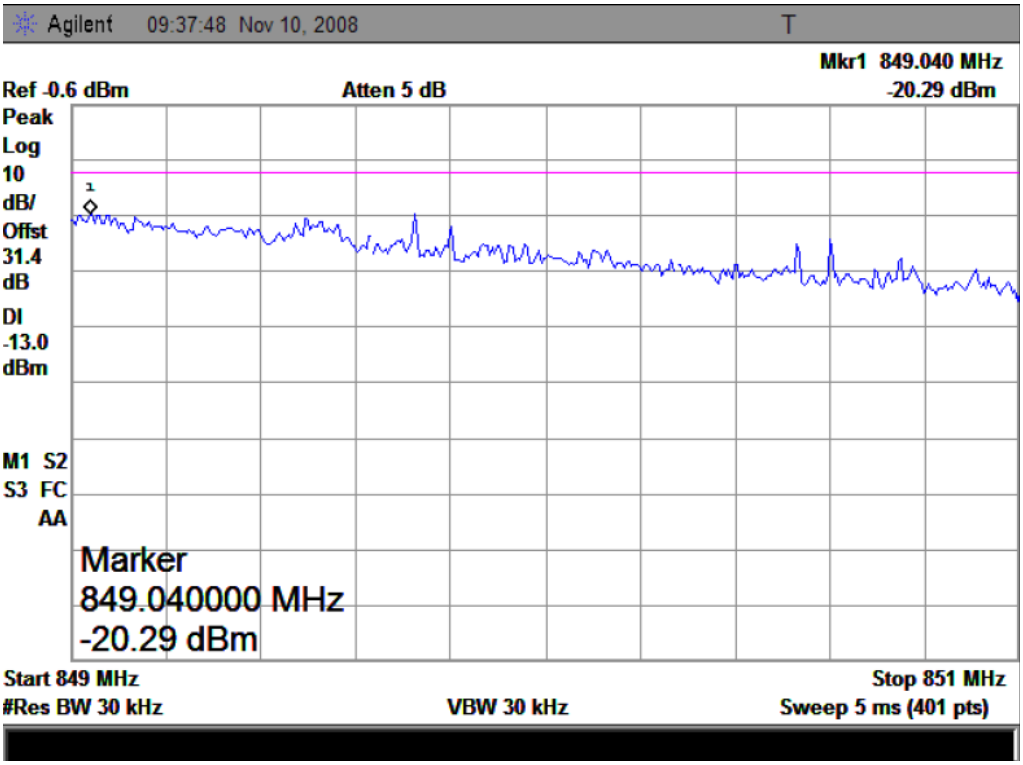


3 Plot for Band-edge

3.1 Plot when the channel number set to 9



3.2 Plot when the channel number set to 758



2.9 Transmitter Radiated Power (EIRP/ERP)

2.9.1 Requirement

According to FCC §22.913, the ERP of Cellular mobile transmitters must not exceed 7 Watts (38.5dBm).

2.9.2 Test Procedure

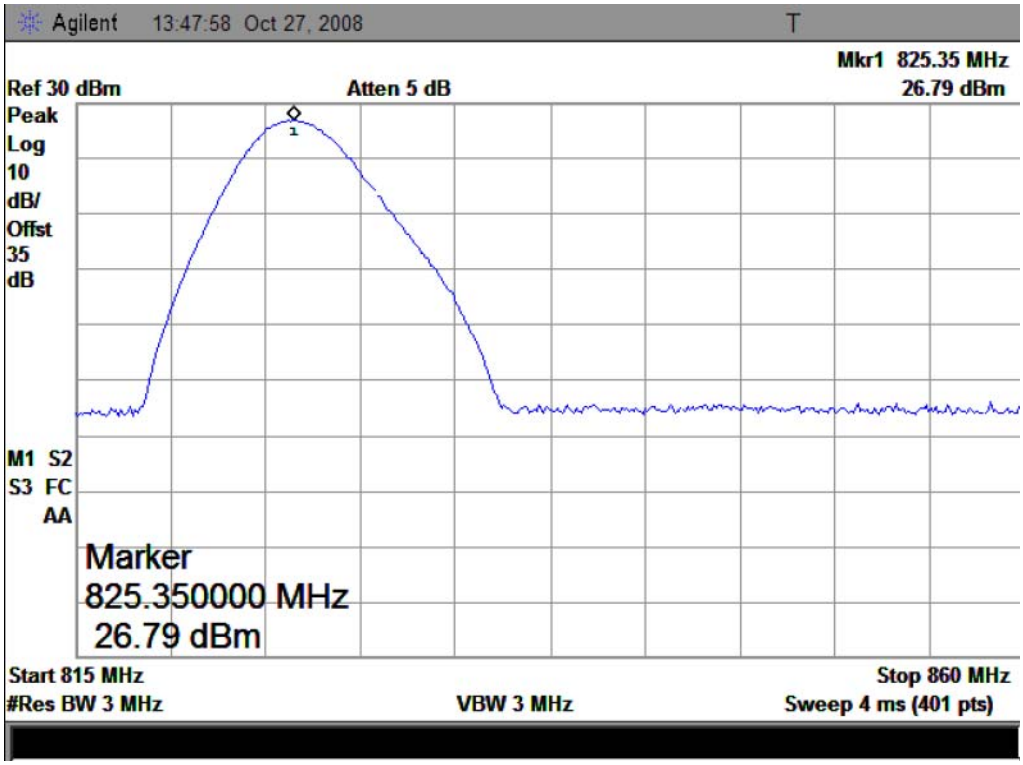
1. Perform test system setup as section 2.4.2.
2. The resolution bandwidth of the Spectrum Analyzer is set to be comparable to the emission bandwidth of the transmitter, e.g. for GSM modulated signal (here used): RBW=VBW=1MHz, for CDMA modulated signal: RBW=VBW=3MHz.
3. The lowest and the highest channel were selected to perform tests respectively. Channel No.9(lowest) 384(middle)and 758(highest) for cellular band..
4. Employ the bi-log Test Antenna as the test system receiving antenna; set the polarization of the Test Antenna to be the same as that of the EUT transmitting antenna.
5. Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; actuate the Turn Table to turn from 0 degrees to 360 degrees to find the maximum reading via the Spectrum Analyzer, mark the peak; finally record the peak and the plot.
6. Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak and mark it; finally record the peak and the plot.

2.9.3 Test Result

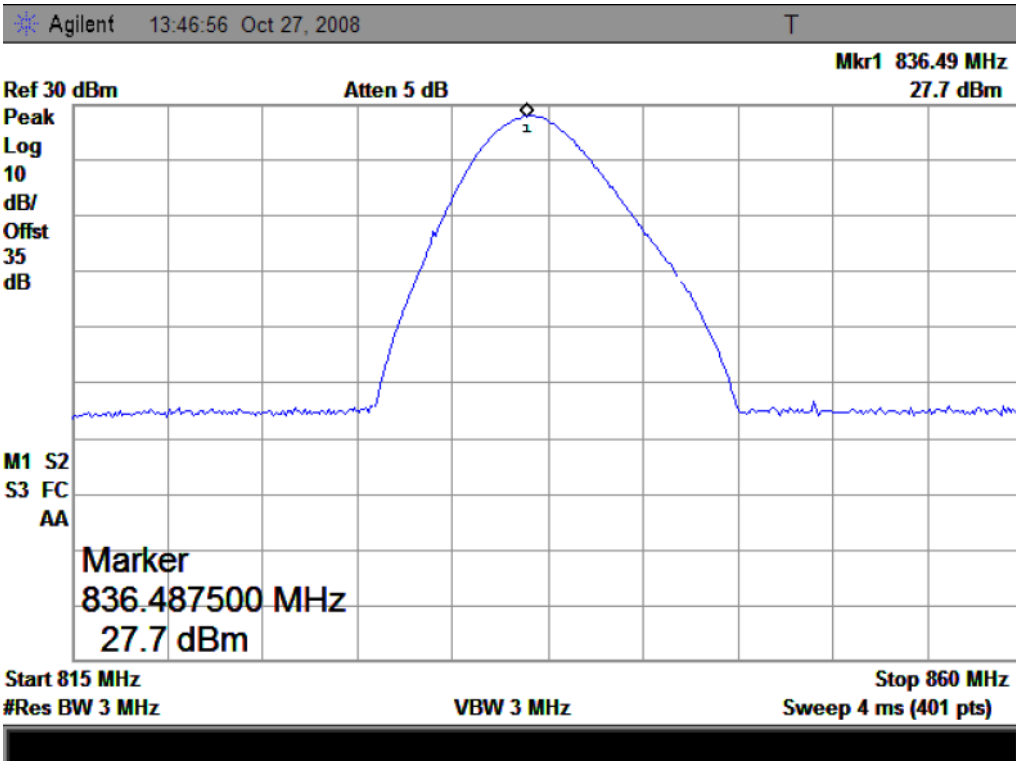
I Cellular Band

No.	Channel	Frequency (MHz)	Measured ERP		Limit ERP	
			dBm	W	dBm	W
1	9	825.35	26.79	0.478	< 38.5	< 7
2	384	836.49	27.70	0.589	< 38.5	< 7
3	758	847.96	26.15	0.412	< 38.5	< 7

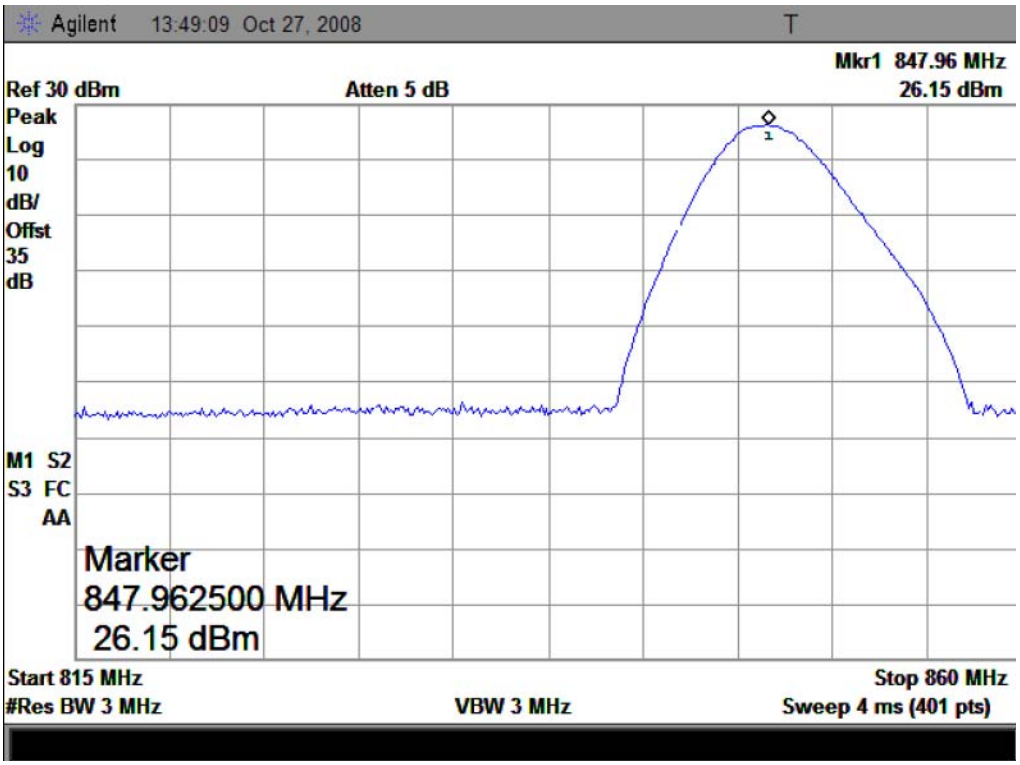
1. Plot when the channel number set to 9



2. Plot when the channel number set to 384:



3. Plot when the channel number set to 758:



2.10 Radiated Spurious Emission

2.10.1 Requirement

According to FCC §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43+10*log(P)dB. This calculated to be -13dBm.

2.10.2 Test Procedure

1. Perform test system setup as section 2.4.2
2. Make a limit line whose value is -13dBm on the Spectrum Analyzer, and set the RBW of the Spectrum Analyzer to 1MHz.
3. The lowest and the highest channel were selected to perform tests respectively. Channel No.9(lowest) 384(middle)and 758(highest) for cellular band.
4. Employ the bi-log Test Antenna as the test system receiving antenna and set the frequency range of the Spectrum Analyzer from 30MHz to 3GHz.
5. The measurement is performed with the Test Antenna at both horizontal and vertical polarization respectively. Set the polarization of the Test Antenna to be horizontal.
6. Actuate the Turn Table to turn from 0 degrees to 360 degrees to find the maximum reading via the Spectrum Analyzer, mark the fundamental frequency and the harmonics thereof, after then record the harmonics and the plot.
7. Set the polarization of the Test Antenna to be vertical, then repeat step 6.
8. Employ the horn Test Antenna as the test system receiving antenna and set the frequency range of the Spectrum Analyzer from 3GHz to 10^{th} harmonic of the fundamental frequency (here used 10GHz), then repeat step 5 to 7.
9. Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak and mark it; finally record the peak and the plot.

2.10.3 Test Result

2.10.3.1 Table for the Harmonics

NOTE: "---" in the table following means that the emission power was too small to be measured and was at least 12dB below the limit.

I Cellular Band

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 9 (825.27MHz)				
1	1650.54	-42.45	-44.65	-13
2	2475.81	---	---	-13
3	3301.08	---	---	-13
4	4126.35	---	---	-13
5	4951.62	---	---	-13
6	5776.89	---	---	-13
7	6602.16	---	---	-13
8	7427.43	---	---	-13
9	8252.70	---	---	-13
TCH number set to 384 (836.52MHz)				
10	1673.04	-42.36	-44.57	-13
11	2509.56	---	---	-13
12	2509.56	---	---	-13
13	3346.08	---	---	-13
14	4182.6	---	---	-13
15	5855.64	---	---	-13
16	6692.16	---	---	-13
17	7528.68	---	---	-13
18	8365.20	---	---	-13
TCH number set to 758 (847.74MHz)				
19	1695.48	-42.06	-44.57	-13
20	2543.22	---	---	-13
21	3390.96	---	---	-13
22	4238.70	---	---	-13
23	5086.44	---	---	-13
24	5934.18	---	---	-13
25	6781.92	---	---	-13
26	7629.66	---	---	-13
27	8477.40	---	---	-13

II PCS Band

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
TCH number set to 25 (1851.25MHz)				
1	3702.50	-38.25	-37.65	-13
2	5553.75	---	---	-13
3	7405.00	---	---	-13

No.	Frequency (MHz)	Emission Power (dBm)		Limit (dBm)
		Test Antenna Vertical	Test Antenna Horizontal	
4	9256.25	---	---	-13
5	11107.50	---	---	-13
6	12958.75	---	---	-13
7	14810.00	---	---	-13
8	16661.25	---	---	-13
9	18512.50	---	---	-13
TCH number set to 600 (1880.00MHz)				
10	3760.00	-37.88	-38.57	-13
11	5640.00	---	---	-13
12	7520.00	---	---	-13
13	9400.00	---	---	-13
14	11280.00	---	---	-13
15	13160.00	---	---	-13
16	15040.00	---	---	-13
17	16920.00	---	---	-13
18	18800.00	---	---	-13
TCH number set to 1175 (1908.75MHz)				
19	3817.50	-41.06	-40.57	-13
20	5726.25	---	---	-13
21	7635.00			
22	9543.75	---	---	-13
23	11452.50	---	---	-13
24	13361.25	---	---	-13
25	15270.00	---	---	-13
26	17178.75	---	---	-13
27	19087.50	---	---	-13

2.11 Frequency Stability

2.11.1 Frequency Stability Requirement

According to FCC §22.355, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

According to FCC §2.1055, the test conditions are:

(a) Temperature:
The temperature is varied from -30°C to +50°C at intervals of not more than 10°C.

(b) Primary Supply Voltage:
For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

2.11.2 Test Procedure

1. Perform test system setup as section 2.4.3.
2. Set the voltage of the DC Power Supply to normal supply voltage (here used 3.7V) and the temperature of the Temperature Chamber to vary from -30°C to +50°C at intervals of 10°C.
3. At each temperature level, the EUT is powered off and kept in the Temperature Chamber for two hours. After sufficient stabilization, turn on the EUT, command it via the System Simulator (SS) to operate at the maximum output power i.e. A communication link is established between the EUT and the SS.
4. The lowest and the highest channel were selected to perform tests respectively. Channel No.1013(lowest) 384(middle)and 777(highest) for cellular band; channel No.25 (lowest) 600(middle) and 1175(highest) for PCS band..
5. The frequency deviation is measured (directly read from the SS, which can report the parameter) within three minutes.
6. Set the frequency range of the Spectrum Analyzer suitably to capture the waveform; search peak and mark it; finally record the peak and the plot.
7. Adjust the temperature of the Temperature Chamber as specified in step 2, then repeat step 3 to 7.
8. Set the voltage of the DC Power Supply to high extreme supply voltage (here used 4.2V) and the temperature of the Temperature Chamber to normal (here used +22°C), then repeat step 3 to 8.
9. Set the voltage of the DC Power Supply to low extreme supply voltage (here used 3.3V) and the temperature of the Temperature Chamber to normal (here used +22°C), then repeat step 3 to 8.

2.11.3 Test Result

I Cellular Band

No.	Test Conditions		Frequency Deviation (Hz) at Channels Used			
	Voltage	Temperature	1013	384	777	Limit
1	3.7V	-30°C	-8.57	8.35	7.47	9CH, ±2067Hz 384CH, ±2087Hz 758CH, ±2120Hz
2		-20°C	-9.25	-5.70	7.27	
3		-10°C	-10.25	7.92	6.51	
4		0°C	7.06	8.61	6.89	
5		+10°C	6.63	5.44	4.57	
6		+20°C	9.11	5.87	2.15	
7		+30°C	9.67	6.11	2.86	
8		+40°C	10.07	-4.09	278	
9		+50°C	10.57	5.26	2.49	
10	4.2V	+22°C	9.29	8.31	2.25	
11	3.3V	+22°C	9.62	4.88	2.06	
Result: PASS						

** END OF REPORT **