



TEST REPORT

Report No.: SRTC2012-H024-E0031

Product Name: GSM/GPRS/EDGE/UMTS

Digital Mobile Phone with Bluetooth and WiFi

Product Model: ONE TOUCH 902S

Applicant: TCT Mobile Limited

Manufacturer: TCT Mobile Limited

Specification: FCC Part 27, Part 22H, Part 2

(October 1, 2009 edition)

IC RSS-132 (Issue 2, September 2005)

IC RSS-139 (Issue 2, February 2009)

IC RSS-Gen (Issue 3, December 2010)

FCC ID: RAD244

IC: 9238A-0010

The State Radio_monitoring_center Testing Center (SRTC)

No.80 Beilishi Road Xicheng District Beijing, China

Tel: 86-10-68009202 Fax: 86-10-68009205

CONTENTS

1. General information	3
1.1 Notes of the test report	3
1.2 Information about the testing laboratory	3
1.3 Applicant's details	3
1.4 Manufacturer's details	3
1.5 Application details	4
1.6 Reference specification	4
1.7 Information of EUT	4
1.7.1 General information	4
1.7.2 EUT details	5
1.7.3 Auxiliary equipment details	5
2. Test information	7
2.1 Summary of the test results	7
2.2 Test result	8
2.2.1 WCDMA Band IV	8
2.2.1.1 RF Power Output-FCC Part27.50(d)/IC RSS-139§6.4	8
2.2.1.2 Effective Isotropic Radiated Power-FCC Part27.50(d)/IC RSS-139§6.4	9
2.2.1.3 Occupied Bandwidth-FCC Part2.1049/IC RSS-Gen§4.6.1	12
2.2.1.4 Emission Bandwidth-FCC Part27.53(h)/IC RSS-Gen§4.6.1	16
2.2.1.5 Conducted Spurious Emissions-FCC Part2.1051/27.53(h)/IC RSS-139§6.5	20
2.2.1.6 Band Edges Compliance-FCC Part27.53(h)/IC RSS-139§6.5	24
2.2.1.7 Frequency Stability-FCC Part2.1055/27.54/IC RSS-139§6.3	27
2.2.1.8 Radiated Spurious Emissions-FCC Part2.1053/27.53(h)/IC RSS-139§6.5	29
2.2.1.9 Receiver Spurious Emissions-IC RSS-139§6.6	34
2.2.2 WCDMA Band V	36
2.2.2.1 RF Power Output-FCC Part22.913(a)/IC RSS-132§4.4	36
2.2.2.2 Effective Radiated Power-FCC Part22.913(a)/IC RSS-132§4.4	37
2.2.2.3 Occupied Bandwidth-FCC Part2.1049/IC RSS-Gen§4.6.1	40
2.2.2.4 Emission Bandwidth-FCC Part22.917(b)/IC RSS-Gen§4.6.1	44
2.2.2.5 Conducted Spurious Emissions-FCC Part2.1051/22.917/IC RSS-132§4.5	48
2.2.2.6 Band Edges Compliance-FCC Part 22.917(b)/IC RSS-132§4.5	52
2.2.2.7 Frequency Stability-FCC Part2.1055/22.355/IC RSS-132§4.3	55
2.2.2.8 Radiated Spurious Emissions- FCC Part2.1053/22.917(a)/IC RSS-132§4.5	57
2.2.2.9 Receiver Spurious Emissions-IC RSS-132§4.6	62
2.3 List of test equipments	64
Appendix	65

1. General information

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC).

The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
Address: No.80 Beilishi Road, Xicheng District, Beijing China
City: Beijing
Country or Region: China
Contacted person: Wang Junfeng
Tel: +86 10 68009181 +86 10 68009202
Fax: +86 10 68009195 +86 10 68009205
Email: wangjf@srrc.org.cn / wangjunfeng@srtc.org.cn

1.3 Applicant's details

Company: TCT Mobile Limited
Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area
City: Shanghai
Country or Region: P.R.China
Grantee Code: RAD
Contacted person: Gong Zhizhou
Tel: +86-21-61460890
Fax: +86-21-61460602
Email: zhizhou.gong@jrdcom.com

1.4 Manufacturer's details

Company: TCT Mobile Limited
Address: 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area
City: Shanghai
Country or Region: P.R.China
Contacted person: Gong Zhizhou
Tel: +86-21-61460890
Fax: +86-21-61460602
Email: zhizhou.gong@jrdcom.com

1.5 Application details

Date of reception of test sample: 6th Mar 2012

Date of test: 9th Mar 2012 to 29th Mar 2012

1.6 Reference specification

FCC Part 27, Part22H, Part 2 (October 1, 2009 edition)

IC RSS-132 (Issue 2, September 2005)

IC RSS-139 (Issue 2, February 2009)

IC RSS-Gen (Issue 3, December 2010)

1.7 Information of EUT

1.7.1 General information

Name of EUT	GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi
FCC ID	RAD244
IC	9238A-0010
Frequency range	WCDMA Band IV: Tx:1710~1755MHz Rx:2110~2155MHz WCDMA Band V: Tx:824~849MHz Rx:869~894MHz
Rated output power	WCDMA Band IV:24.0dBm WCDMA Band V:24.0dBm
Modulation type	QPSK
Emission Designator	4M50F9W
Duplex mode	FDD
Duplex spacing:	WCDMA Band IV:400MHz WCDMA Band V:45MHz
Antenna type	Fixed Internal
Power Supply	Battery or charger
Rated Power Supply Voltage	3.7V
Extreme Temperature	Lowest: -30°C Highest: +50°C
Extreme Voltage	Minimum: 3.5V Maximum: 4.2V
HW Version	PIO01
SW Version	SW134

1.7.2 EUT details

Product Name	Product Model	IMEI
GSM/GPRS/EDGE/UMTS Digital Mobile Phone with Bluetooth and WiFi	ONE TOUCH 902S	013023000020161

1.7.3 Auxiliary equipment details

Equipment	Charger
Manufacturer	HUIZHOU BYD ELECTRONIC CO., LTD.
Model Number	CBA3002AG0C1
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Charger
Manufacturer	HUIZHOU BYD ELECTRONIC CO., LTD.
Model Number	CBA3001AG0C1
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Charger
Manufacturer	HUIZHOU BYD ELECTRONIC CO., LTD.
Model Number	CBA3001AG0C2
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Charger
Manufacturer	Ten Pao International Ltd.
Model Number	CBA3000AG0C1
Input Voltage	100V-240V a.c.
Output Voltage	5.0V d.c.
Frequency	50/60Hz

Equipment	Battery
Manufacturer	SHENZHEN BAK BATTERY CO., LTD
Model Number	CAB31L0000C2
Capacity	1000mAh
Rated Voltage	3.7V d.c.

Equipment	Data Cable
Manufacturer	Shen Zhen Ju Wei Electronic Co., LTD
Model Number	CDA3122002C1

Equipment	Data Cable
Manufacturer	Huizhou Shenghua Industry Co., Ltd
Model Number	CDA3122002C2

Equipment	Data Cable
Manufacturer	Shen Zhen Ju Wei Electronic Co., LTD
Model Number	CDA3122005C1

Equipment	Data Cable
Manufacturer	Huizhou Shenghua Industry Co., Ltd
Model Number	CDA3122005C2


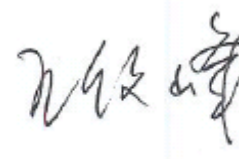
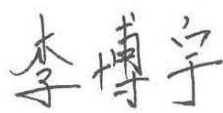
Note: As the information described above, there are four different models of charger manufactured by two different companies, and four different models of data cable manufactured by two different companies.

The relevant tests have been performed in order to verify in which combination case (EUT exercised by only one model of charger and one model of data cable) the EUT would have the worst features. So all the tests shown in this test report are performed when the EUT exercised by the charger CBA3000AG0C1 and the data cable CDA3122005C2.

2. Test information

2.1 Summary of the test results

No.	Test case	FCC and IC reference	Verdict
1	RF Power Output	FCC Part22.913(a)/27.50(d) IC RSS-132 § 4.4 IC RSS-139 § 6.4	Pass
2	Effective Radiated Power and Effective Isotropic Radiated Power	FCC Part22.913(a)/27.50(d) IC RSS-132 § 4.4 IC RSS-139 § 6.4	Pass
3	Occupied Bandwidth	FCC Part2.1049 IC RSS-Gen § 4.6.1	Pass
4	Emission Bandwidth	FCC Part22.917(b)/27.53(h) IC RSS-Gen § 4.6.1	Pass
5	Spurious Emissions at antenna terminal	FCC Part2.1051/22.917/27.53(h) IC RSS-132 § 4.5 IC RSS-139 § 6.5	Pass
6	Band Edges Compliance	FCC Part22.917(b)/27.53(h) IC RSS-132 § 4.5 IC RSS-139 § 6.5	Pass
7	Frequency Stability	FCC Part2.1055/22.355/27.54 IC RSS-132 § 4.3 IC RSS-139 § 6.3	Pass
8	Radiated Spurious Emissions	FCC Part2.1053/22.917(a)/27.53(h) IC RSS-132 § 4.5 IC RSS-139 § 6.5	Pass
9	Receiver Spurious Emissions	IC RSS-132 § 4.6 IC RSS-139 § 6.6	Pass

This Test Report Is Issued by: Mr. Song Qizhu Director of the test lab 	Checked by: Mr. Wang Junfeng Deputy director of the test lab 
Tested by: Mr. Li Boyu Test engineer 	Issued date: 2012.06.29

2.2 Test result

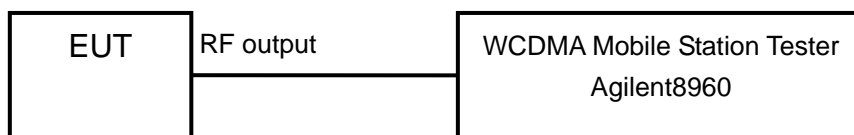
2.2.1 WCDMA Band IV

2.2.1.1 RF Power Output-FCC Part27.50(d)/IC RSS-139 § 6.4

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. Then the test data can be read at the tester screen. The loss between RF output port of the EUT and the input port of the tester will be taken into consideration.

The measurement will be conducted at three channels No1312, No1413 and No1513 (Bottom, middle and top channels of WCDMA band IV)

Limits	$\leq 24\text{dBm}$
--------	---------------------

Test result:

WCDMA Mode:

Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
1712.4	1312	23.1
1732.6	1413	23.1
1752.6	1513	23.0

HSDPA/HSUPA Mode:

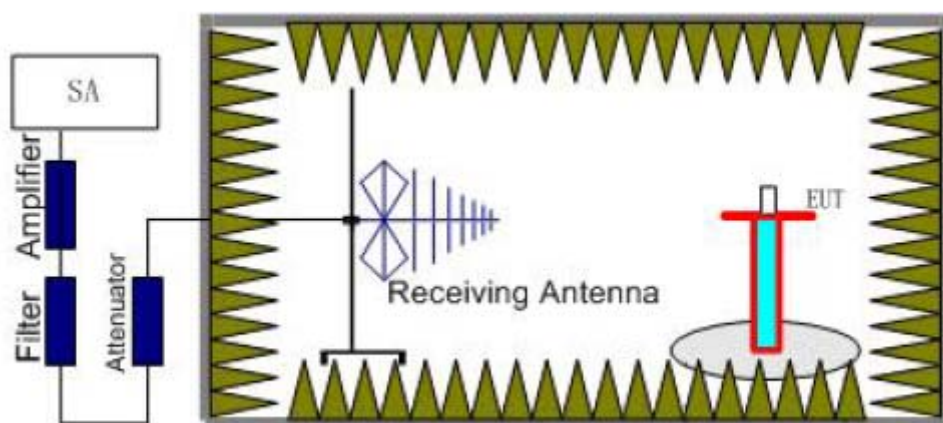
Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
1712.4	1312	23.0
1732.6	1413	23.1
1752.6	1513	23.0

2.2.1.2 Effective Isotropic Radiated Power-FCC Part27.50(d)/IC RSS-139 § 6.4

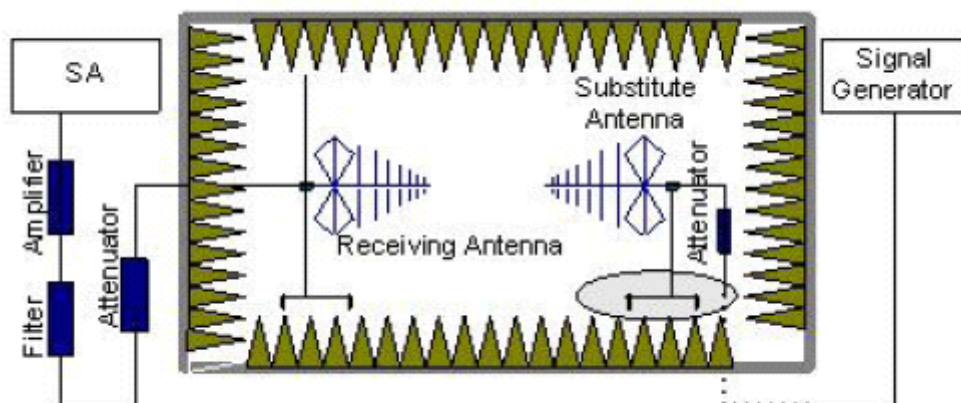
Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test setup:



Step 1



Step 2

Test procedure:

The measurements procedures in TIA-603C-2004 are used.

Step 1:

The measurement is carried out in the fully anechoic chamber. EUT was placed on a 2.4 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna

most 3 meters from the EUT. The height of receiving antenna is 2.4m and varies in certain range to find the maximum power value. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used and RBW is set to 3MHz. Then the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum power value on spectrum analyzer or receiver. And the maximum value of the receiver should be recorded as (Pr).

Step 2:

A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator. To repeat the same procedure as step1 and the level of signal generator will be adjusted till the same power value on the spectrum analyzer or receiver. The ERP/EIRP of the EUT can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

A power (P_{mea}) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (P_{mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

A “reference path loss” should be calculated after test. The attenuation of “reference path loss” is the cable loss between the Signal Source with the Substitution Antenna (P_{ca}) and the Substitution Antenna Gain (G_a).

The measurement results are obtained as described below:

$$\text{Power (EIRP)} = P_{mea} + P_{ca} + G_a$$

The measurement will be done at three channels No1312, No1413 and No1513 (Bottom, middle and top channels of WCDMA band IV).

Limits	≤ 30dBm
--------	---------

Test result:

WCMDA Mode:

Frequency (MHz)	Peak EIRP(dBm)	Pca Cable loss	Ga Antenna Gain (dB)	Pmea (dBm)	Polarization
1712.4	20.20	-5.0	8.6	16.60	Vertical
1732.6	20.92	-5.0	8.6	17.32	Vertical
1752.6	21.04	-5.0	8.6	17.44	Vertical

Frequency: 1732.6MHz

Peak EIRP(dBm) = Pmea(17.32dBm)+Pca(-5.0dB)+Ga(8.6dB) = 20.92dBm

HSDPA/HSUPA Mode:

Frequency (MHz)	Peak EIRP(dBm)	Pca Cable loss	Ga Antenna Gain (dB)	Pmea (dBm)	Polarization
1712.4	21.50	-5.0	8.6	17.90	Vertical
1732.6	22.20	-5.0	8.6	18.60	Vertical
1752.6	21.80	-5.0	8.6	18.20	Vertical

Frequency: 1712.4MHz

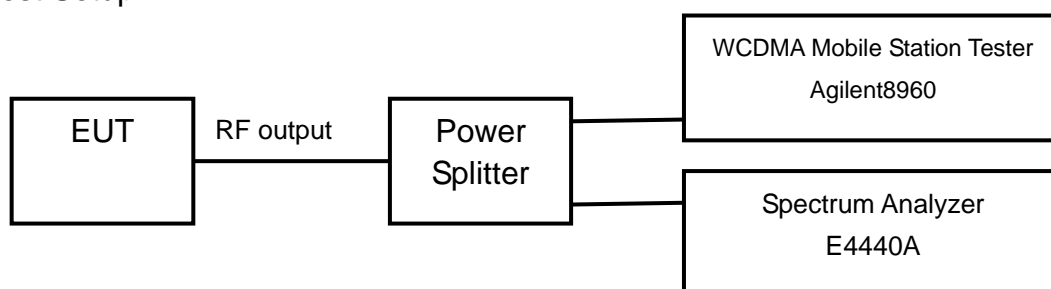
Peak EIRP(dBm) = Pmea(17.90dBm)+Pca(-5.0dB)+Ga(8.6dB) = 21.50dBm

2.2.1.3 Occupied Bandwidth-FCC Part2.1049/IC RSS-Gen § 4.6.1

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The occupied bandwidth is measured using spectrum analyzer. RBW is set to 30kHz on spectrum analyzer. The bandwidth of 99% power can be read on spectrum analyzer. The measurement will be conducted at three channels No1312, No1413 and No1513 (Bottom, middle and top channels of WCDMA band IV)

Limits: No specific occupied bandwidth requirements in FCC part 2.1049 and IC RSS-Gen § 4.6.1

Test result:

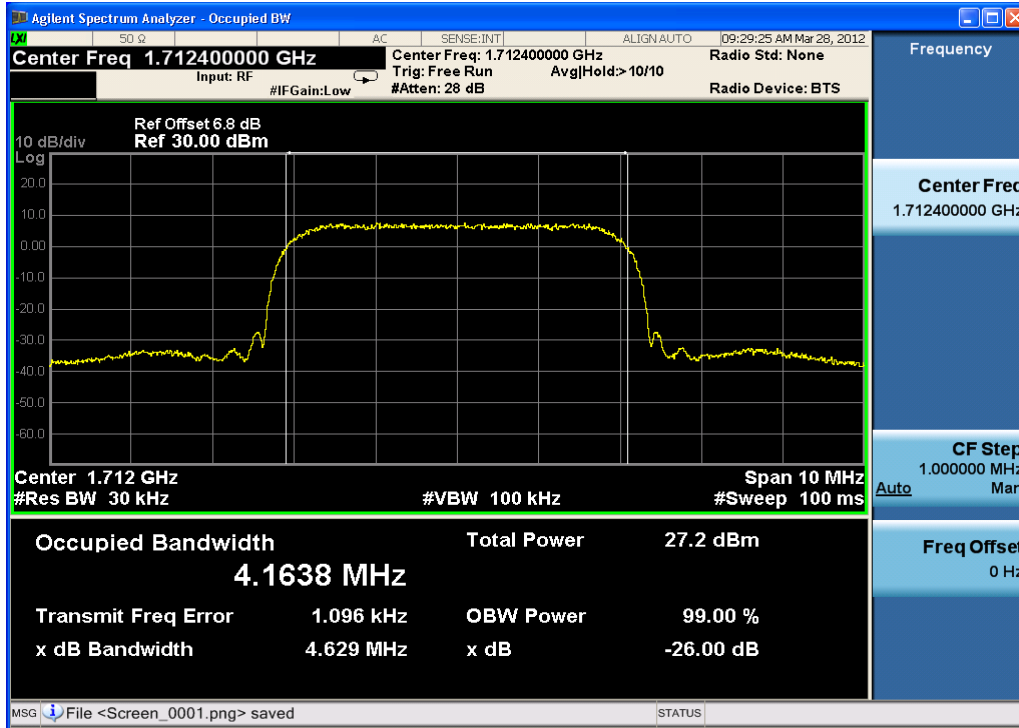
WCDMA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
1712.4	1312	4.1638
1732.6	1413	4.1696
1752.6	1513	4.1720

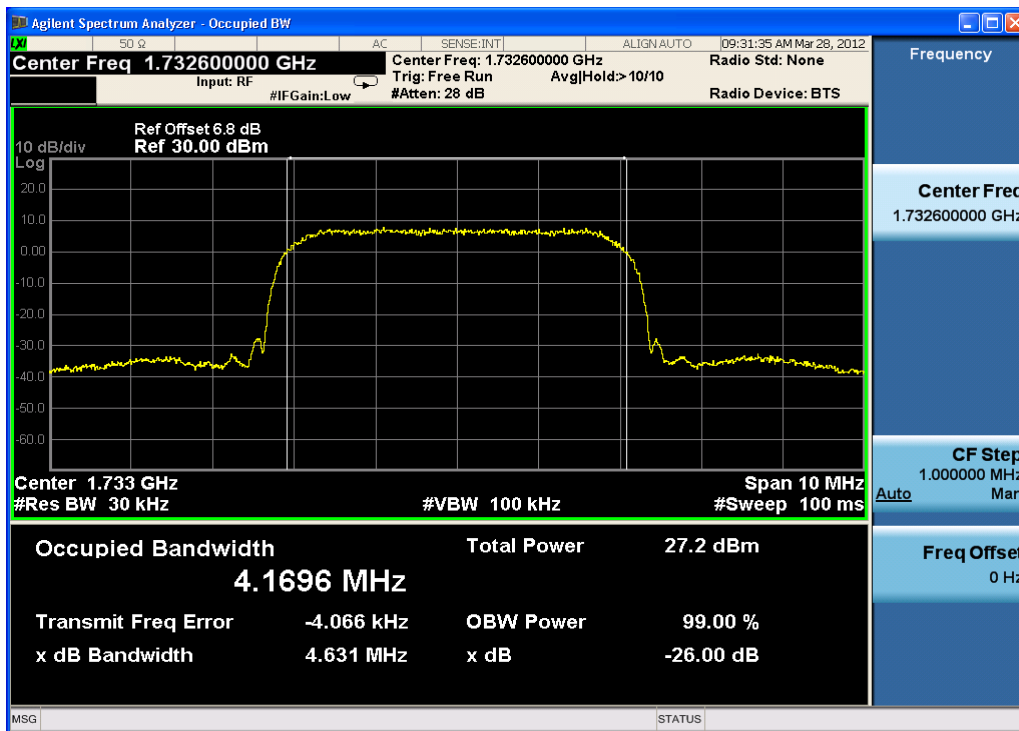
HSDPA/HSUPA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
1712.4	1312	4.1715
1732.6	1413	4.1617
1752.6	1513	4.1673

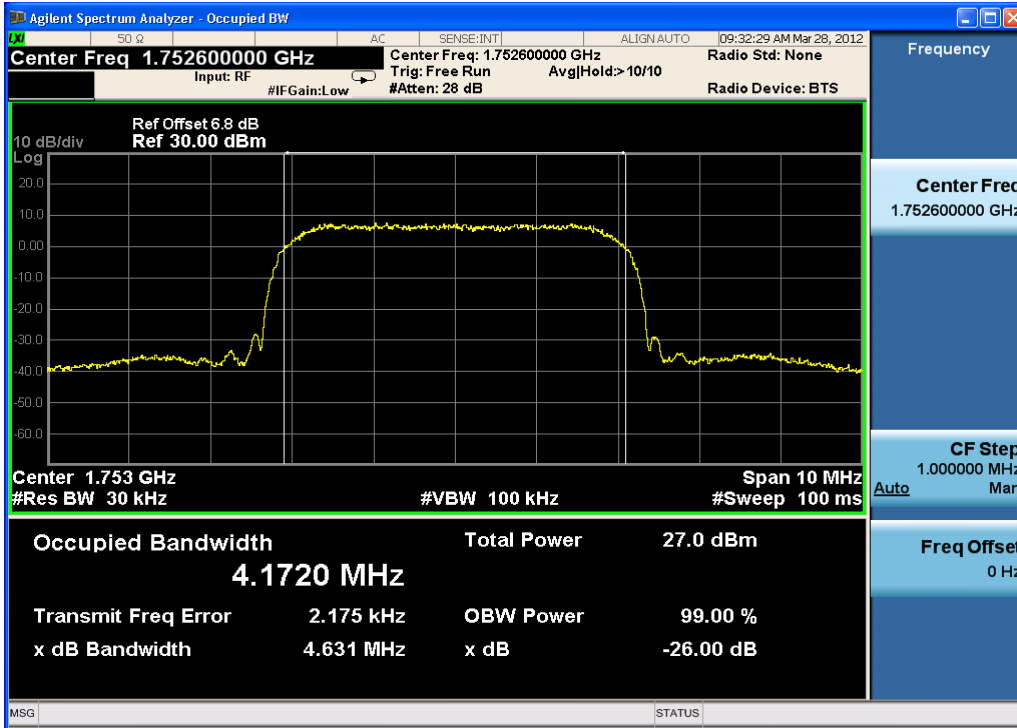
WCDMA Mode:



Channel 1312

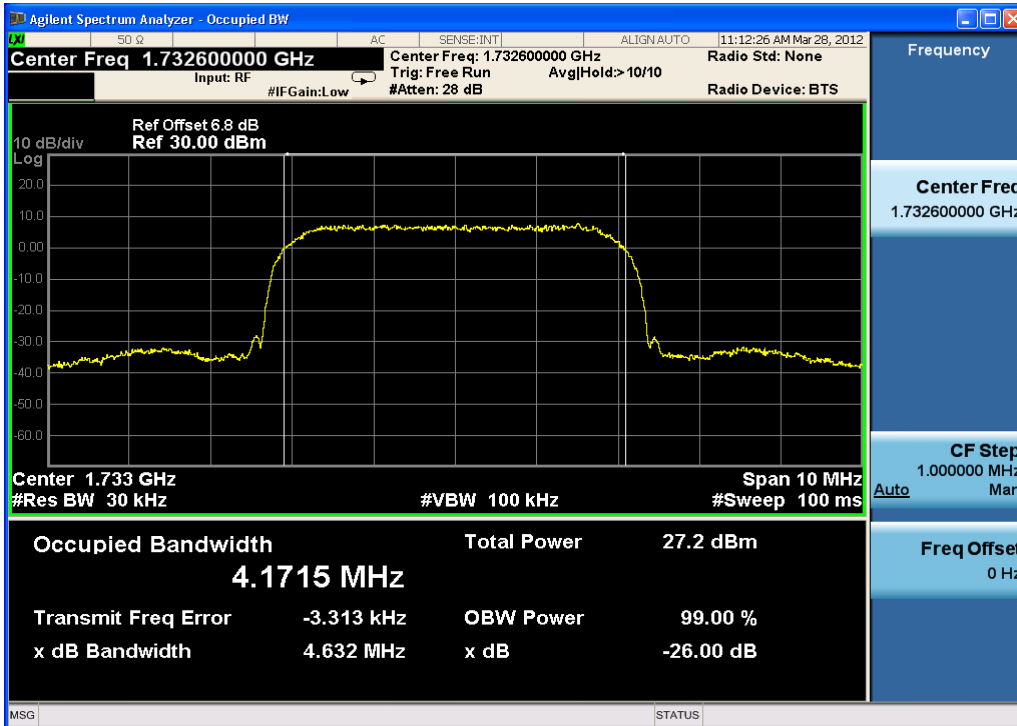


Channel 1413

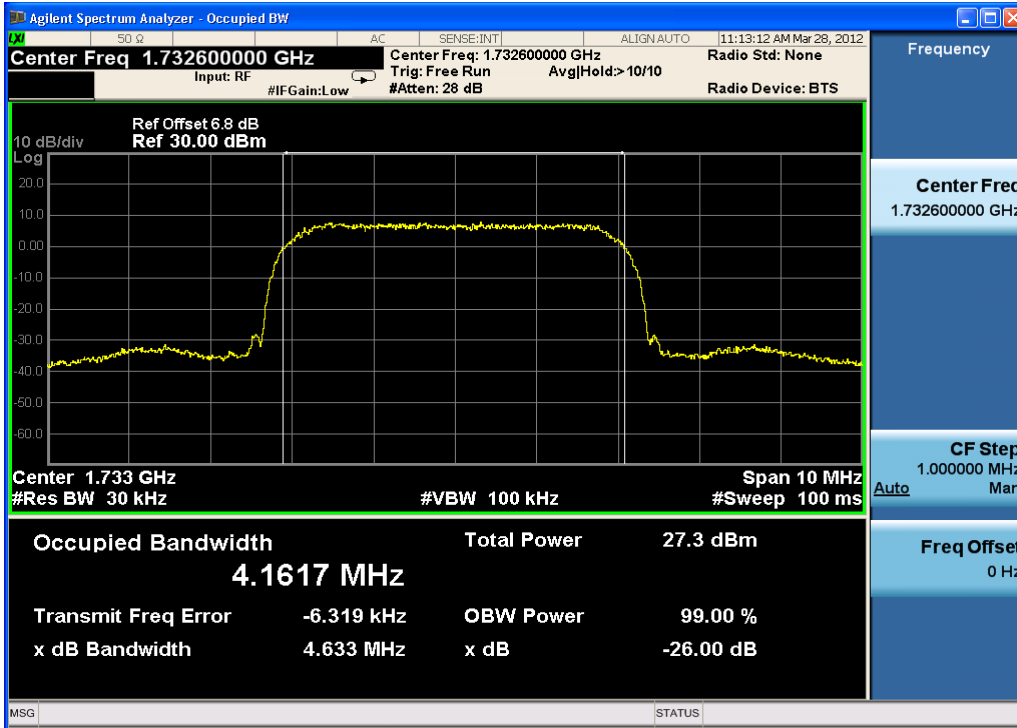


Channel 1513

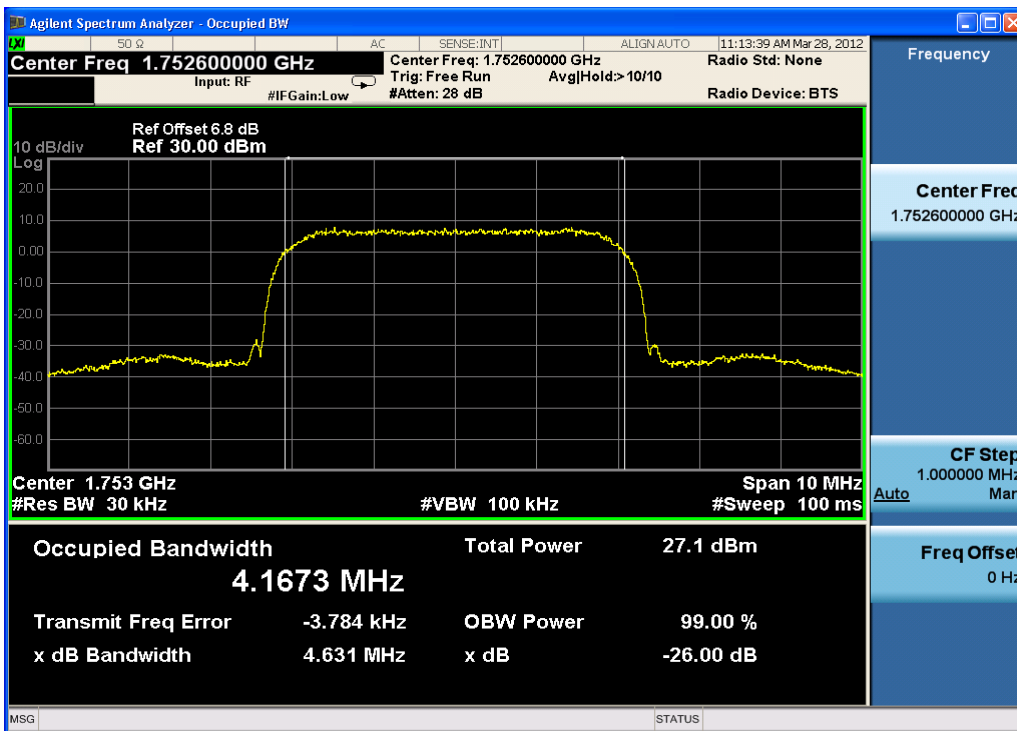
HSDPA/HSUPA Mode:



Channel 1312



Channel 1413



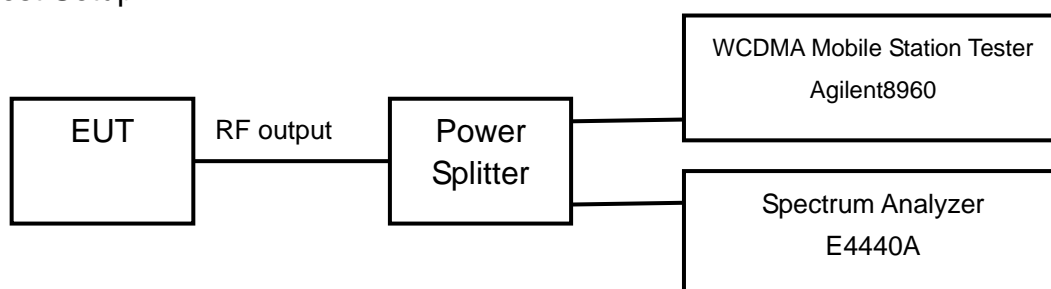
Channel 1513

2.2.1.4 Emission Bandwidth-FCC Part27.53(h)/IC RSS-Gen § 4.6.1

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The emission bandwidth is measured using spectrum analyzer. RBW is set to 30kHz on spectrum analyzer. The bandwidth of -26dBc power can be read on spectrum analyzer. The measurement will be conducted at three channels No1312, No1413 and No1513 (Bottom, middle and top channels of WCDMA band IV)

Limits: No specific emission bandwidth requirements in FCC part 27.53(h) and IC RSS-Gen § 4.6.1

Test result:

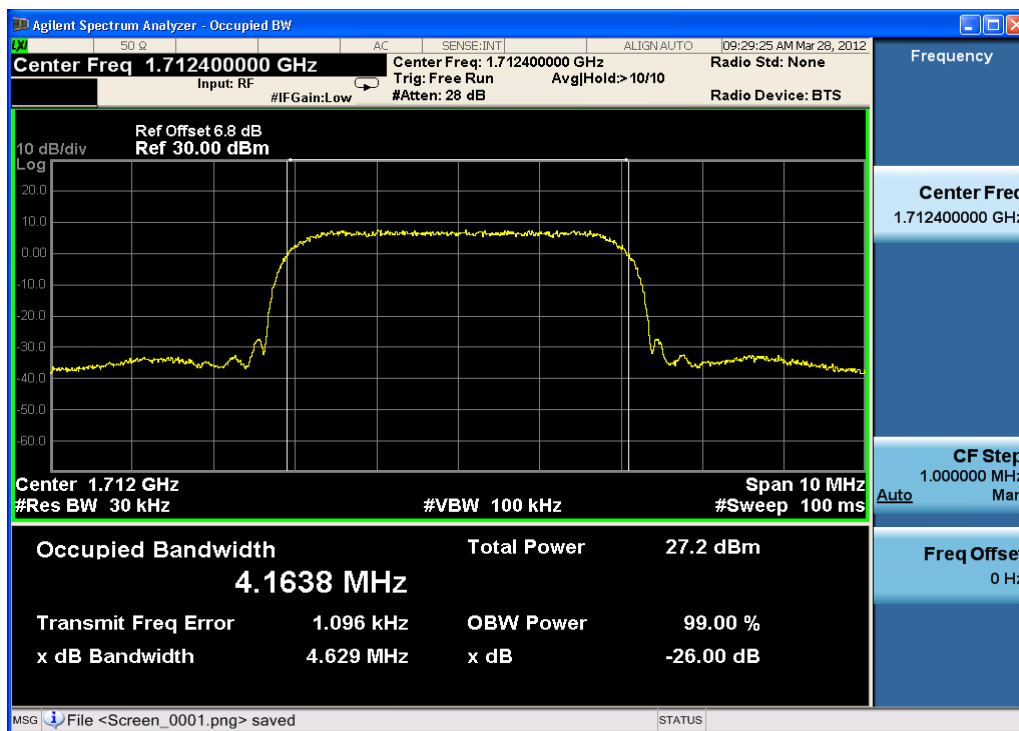
WCDMA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
1712.4	1312	4.629
1732.6	1413	4.631
1752.6	1513	4.631

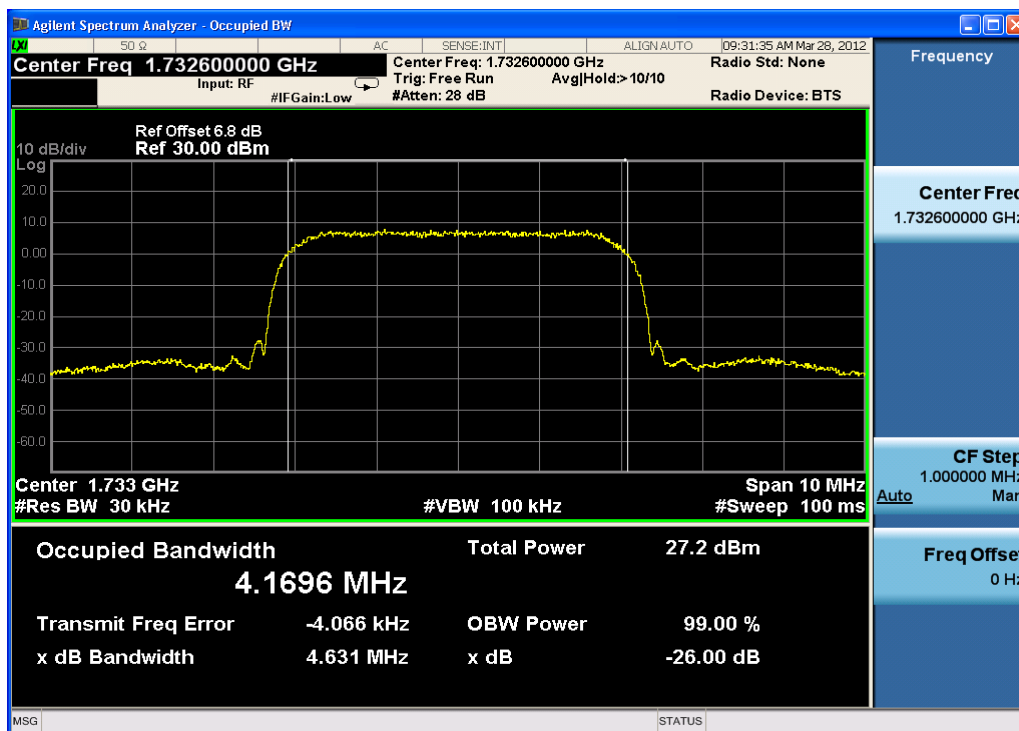
HSDPA/HSUPA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
1712.4	1312	4.632
1732.6	1413	4.633
1752.6	1513	4.631

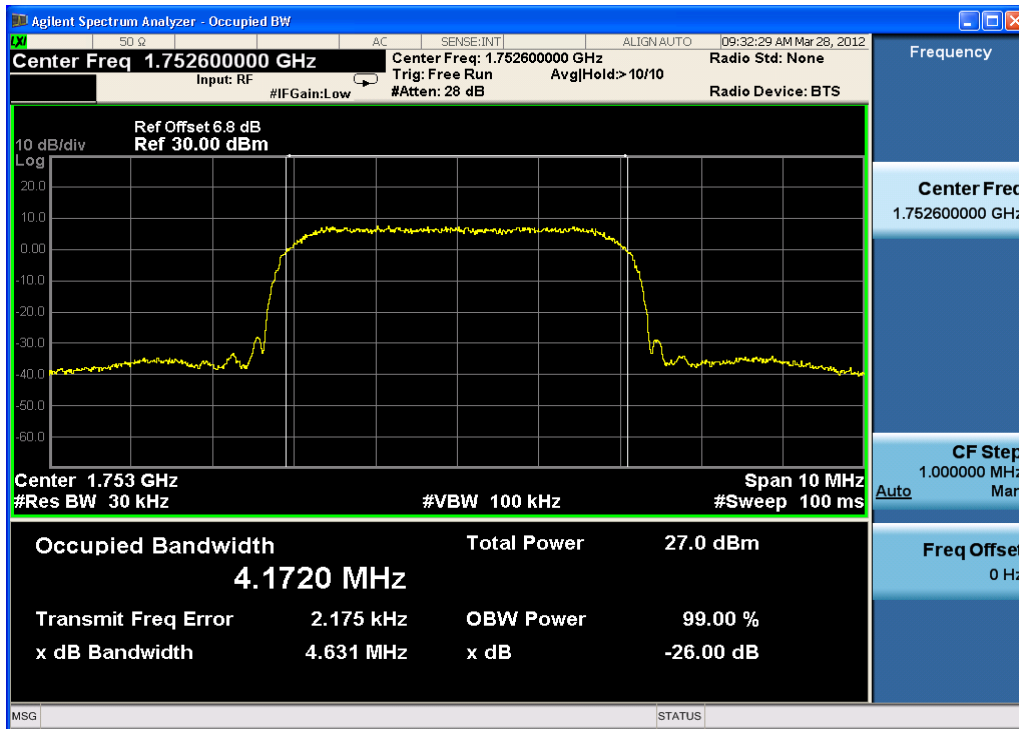
WCDMA Mode:



Channel 1312

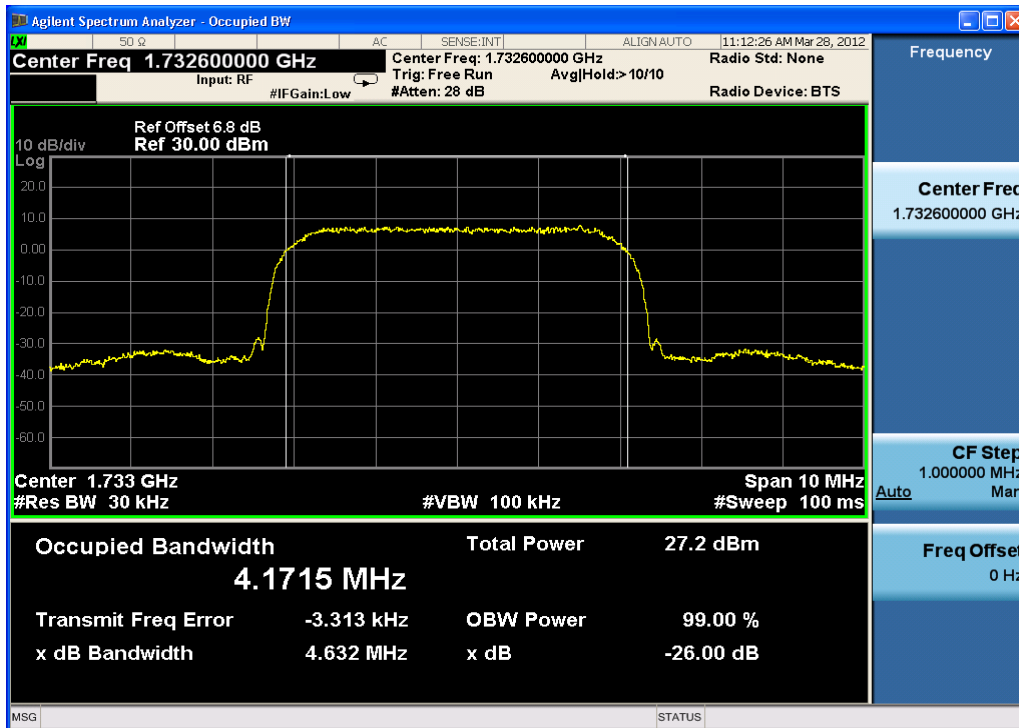


Channel 1413

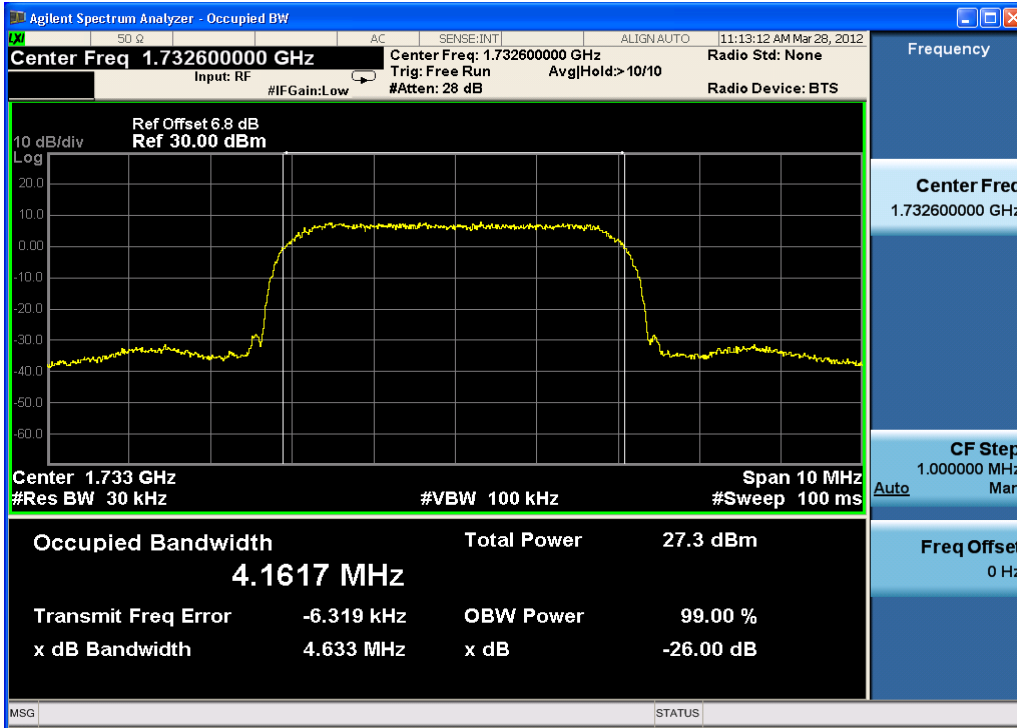


Channel 1513

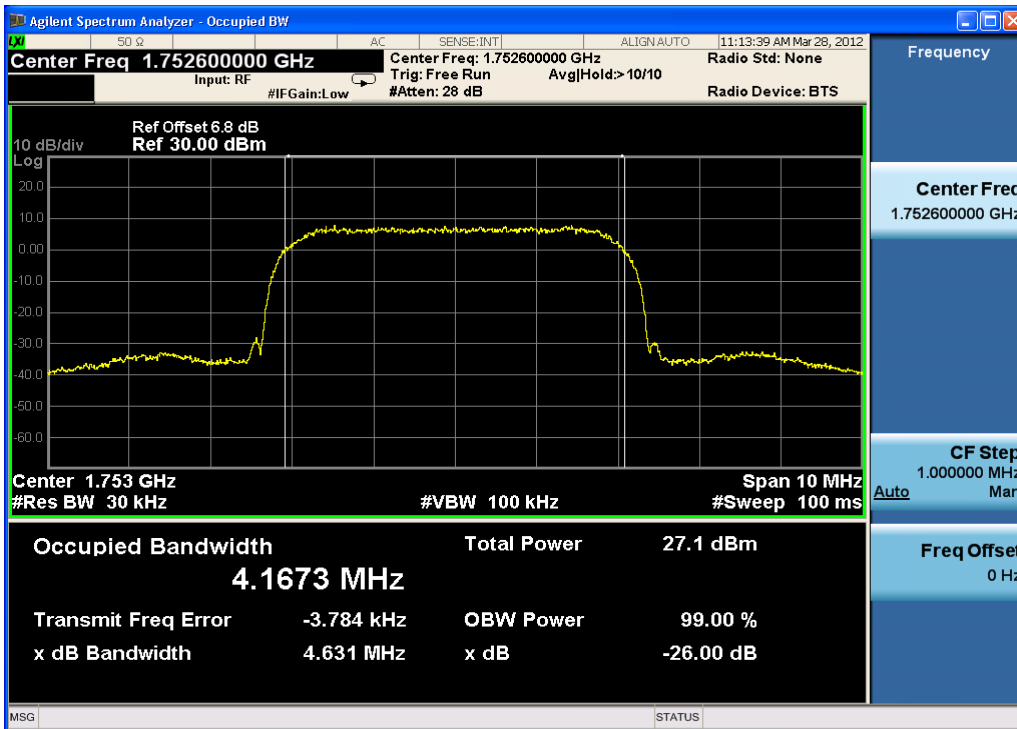
HSDPA/HSUPA Mode:



Channel 1312



Channel 1413



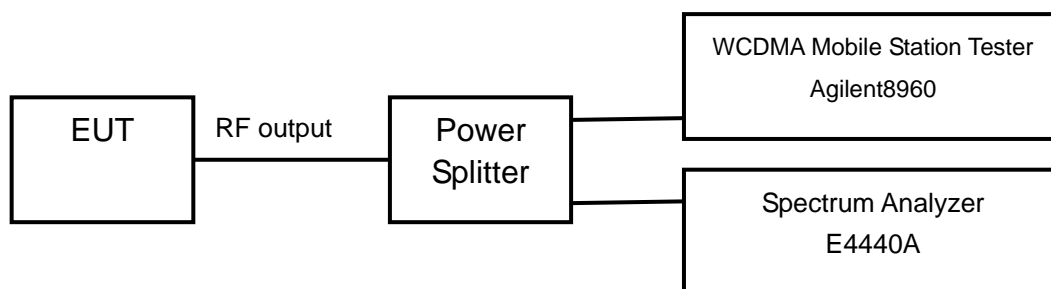
Channel 1513

2.2.1.5 Conducted Spurious Emissions-FCC Part2.1051/27.53(h)/IC RSS-139 § 6.5

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to 20GHz (higher than the 10th harmonic of the carrier). The peak detector is used and RBW is set to 1MHz on spectrum analyzer.

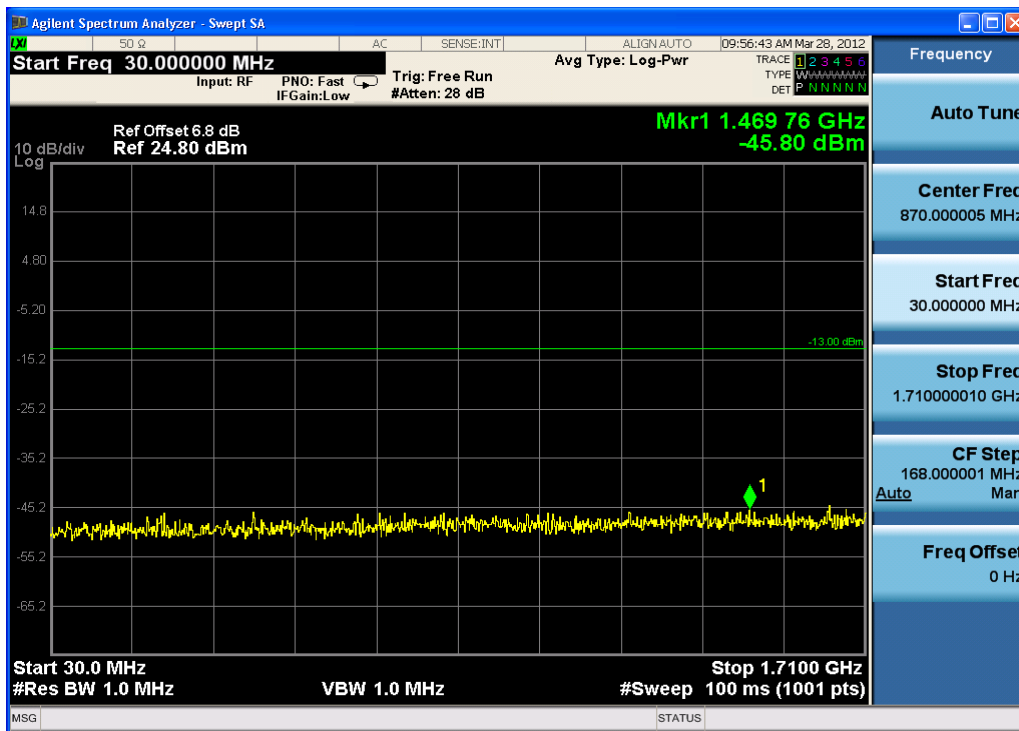
The measurement will be conducted at one channel No 1413 (middle channel of WCDMA band IV)

Limits	≤ -13dBm
--------	----------

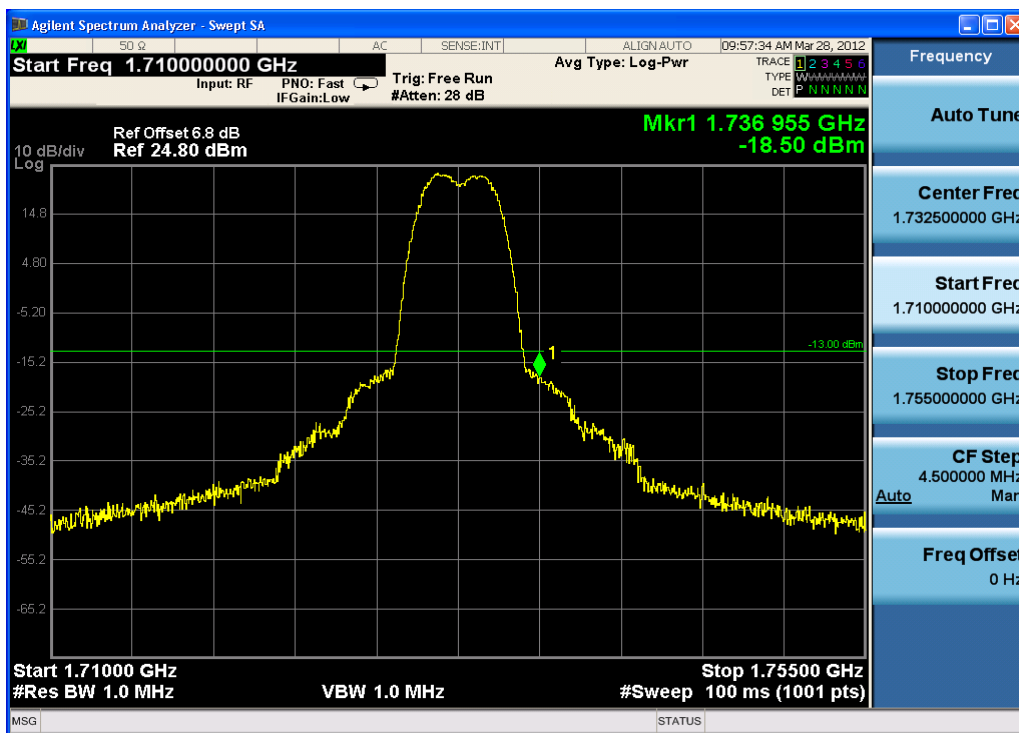
Test result:

Refer to the following figures.

WCDMA Mode:

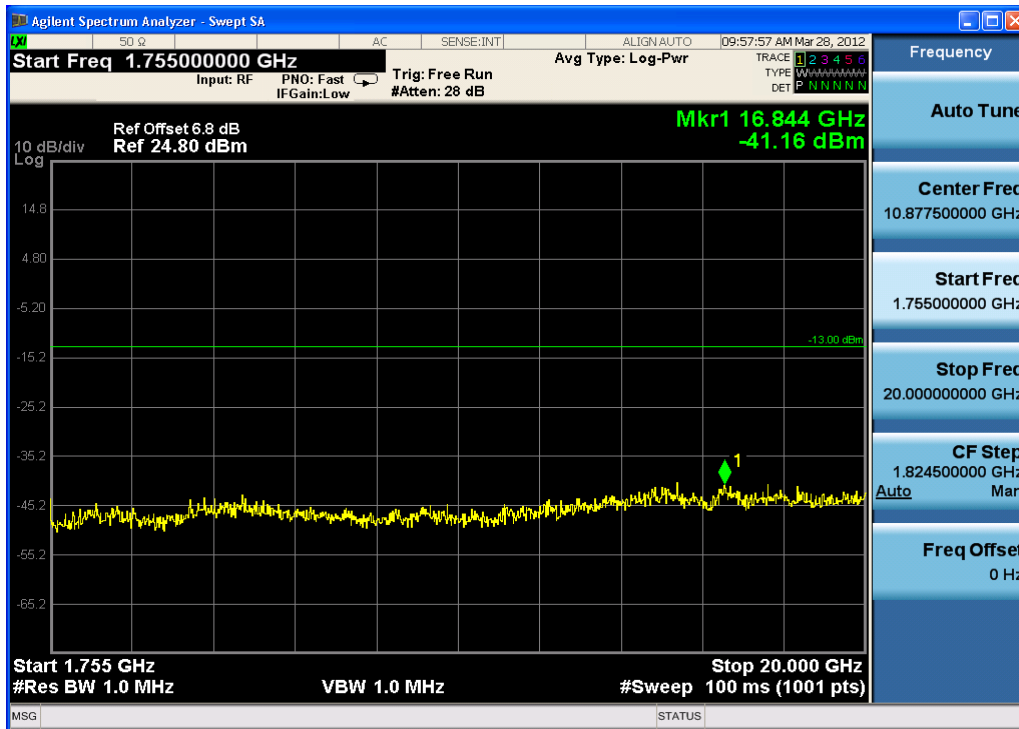


Channel 1413, 30MHz~1710MHz



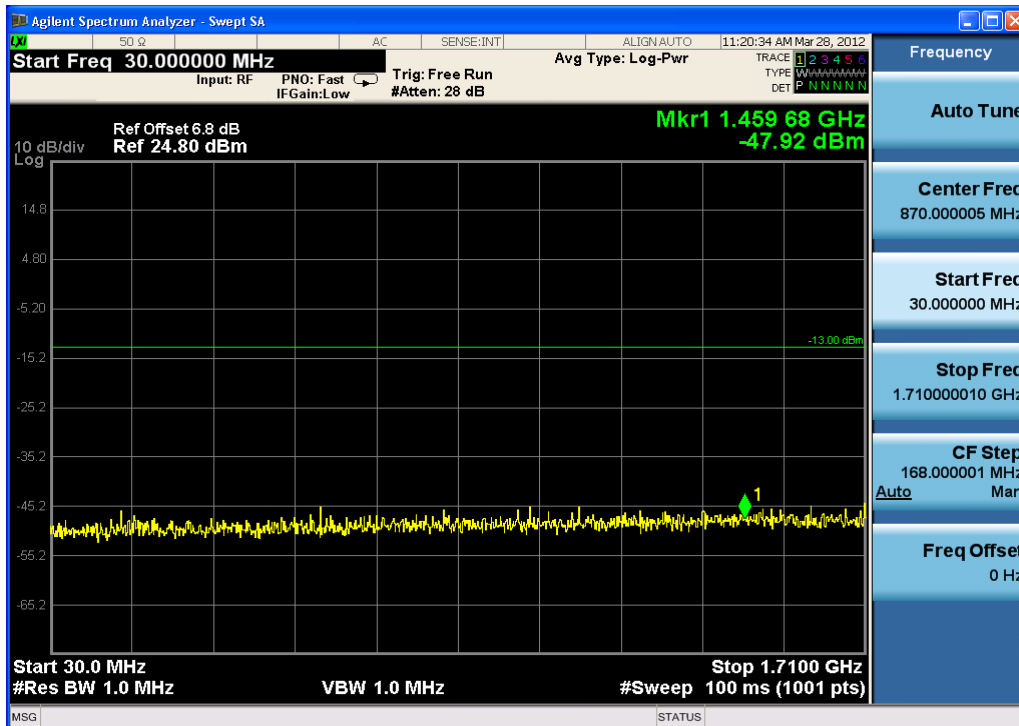
Channel 1413, 1710MHz~1755MHz

Note: The signal beyond the limit is the base station simulator carrier.

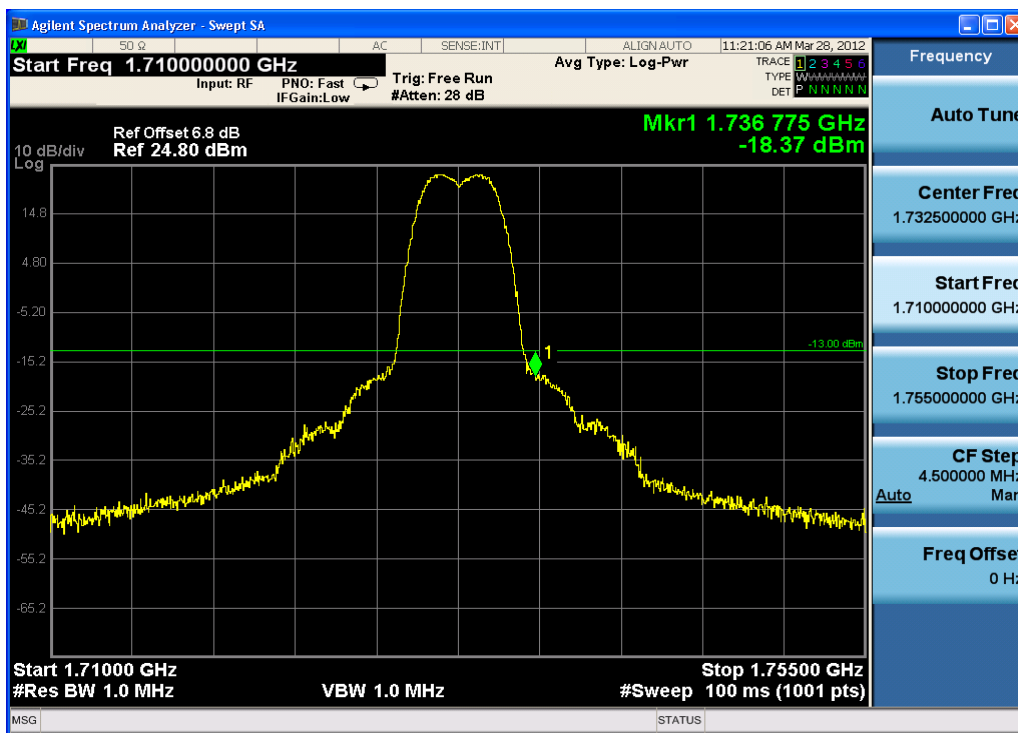


Channel 1413, 1755MHz~20GHz

HSDPA/HSUPA Mode:

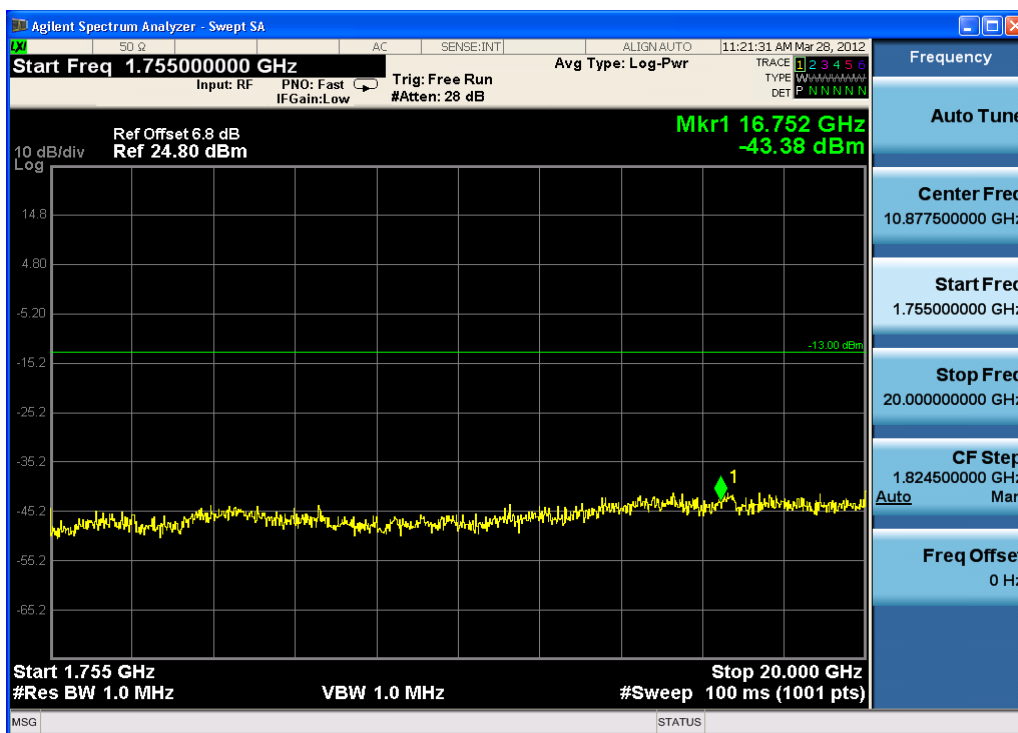


Channel 1413, 30MHz~1710MHz



Channel 1413, 1710MHz~1755MHz

Note: The signal beyond the limit is the base station simulator carrier.



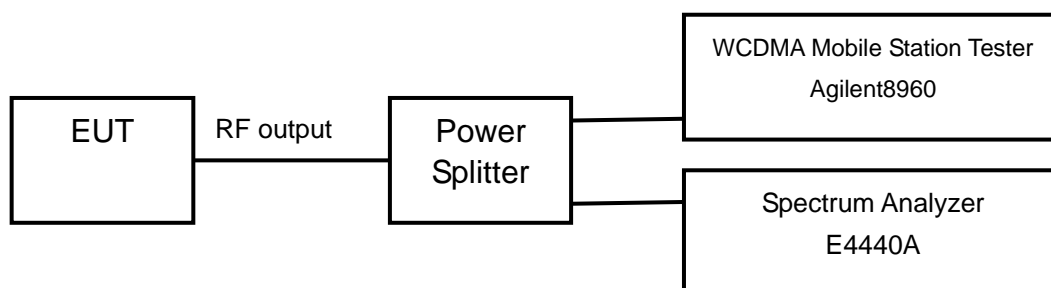
Channel 1413, 1755MHz~20GHz

2.2.1.6 Band Edges Compliance-FCC Part27.53(h)/IC RSS-139 § 6.5

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer. The peak detector is used and RBW is set to at least 1% of the emission bandwidth on spectrum analyzer.

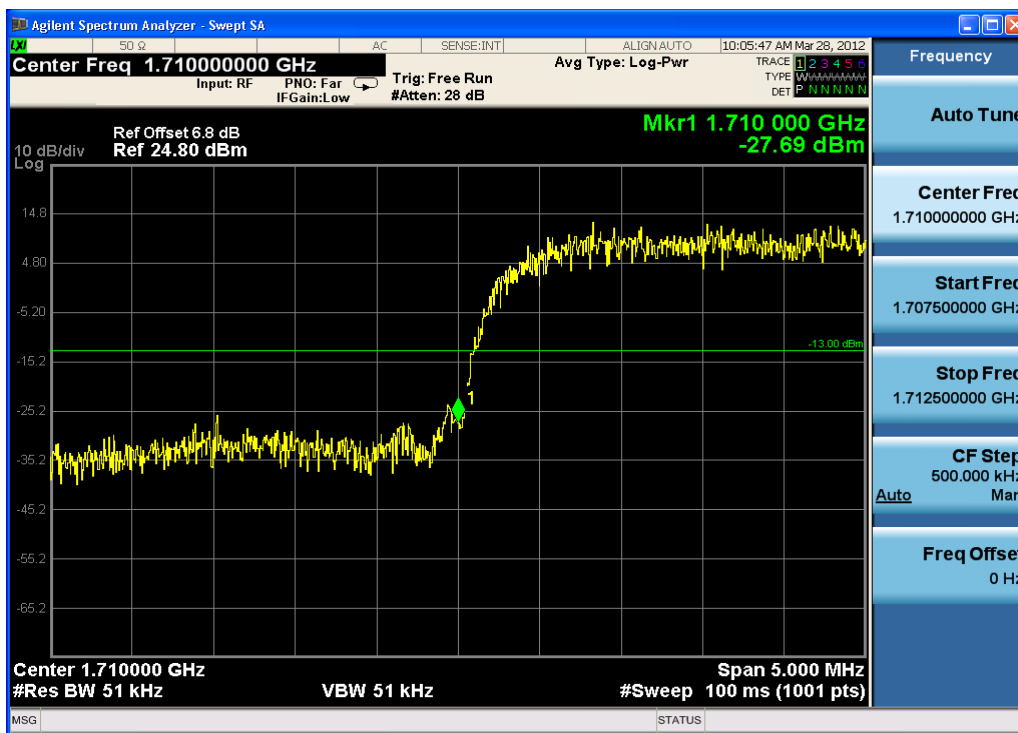
The measurement will be conducted at two channels No1312 and No1513 (Bottom and top channels of WCDMA band IV)

Limits	$\leq -13\text{dBm}$
--------	----------------------

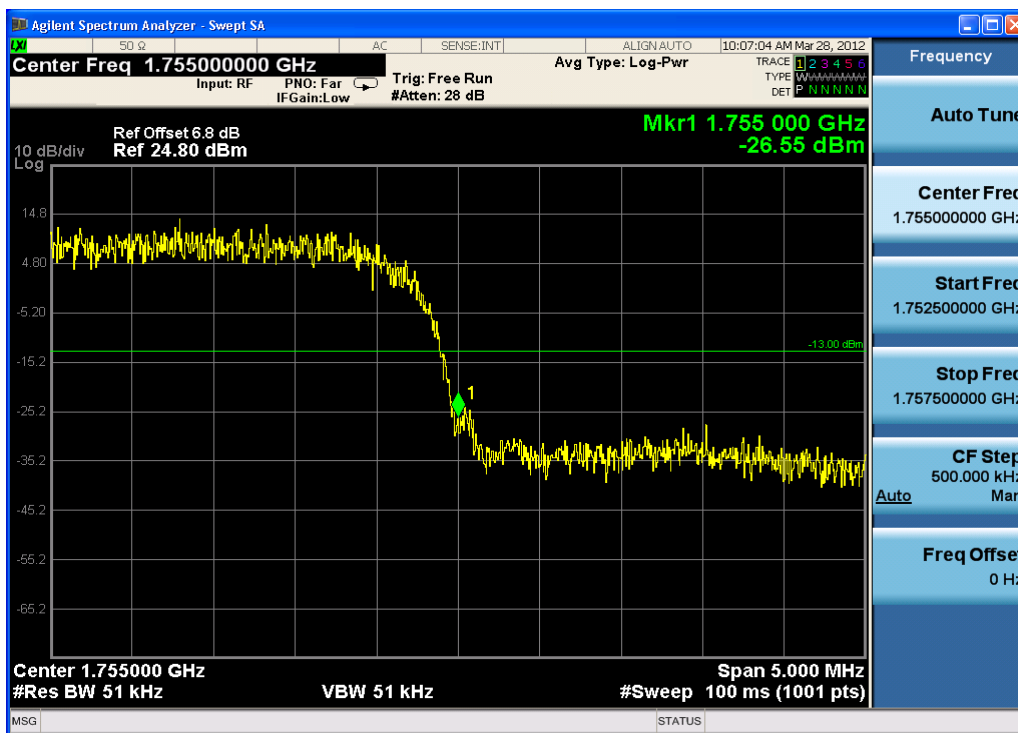
Test result:

Refer to the following figures.

WCDMA Mode:

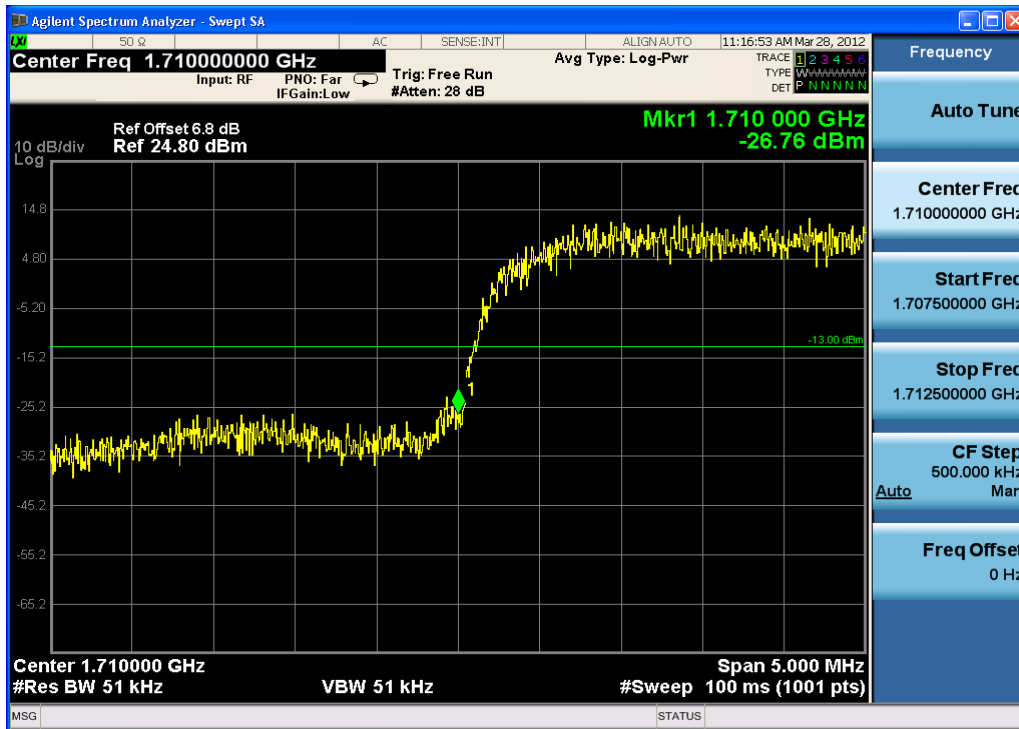


Channel 1312

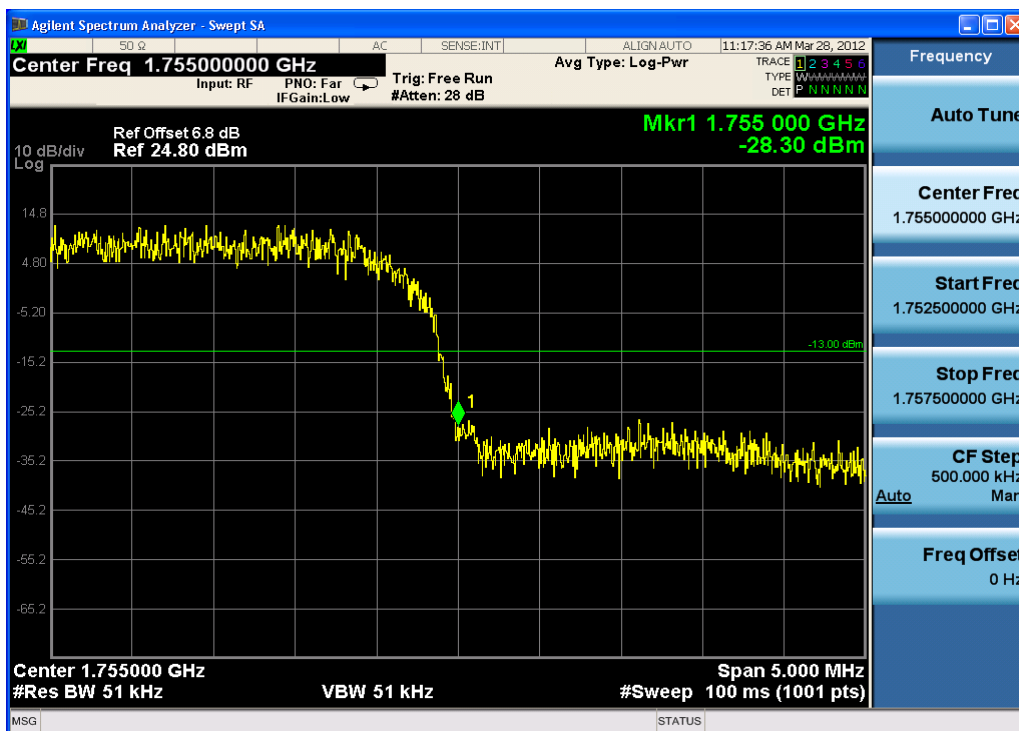


Channel 1513

HSDPA/HSUPA Mode:



Channel 1312



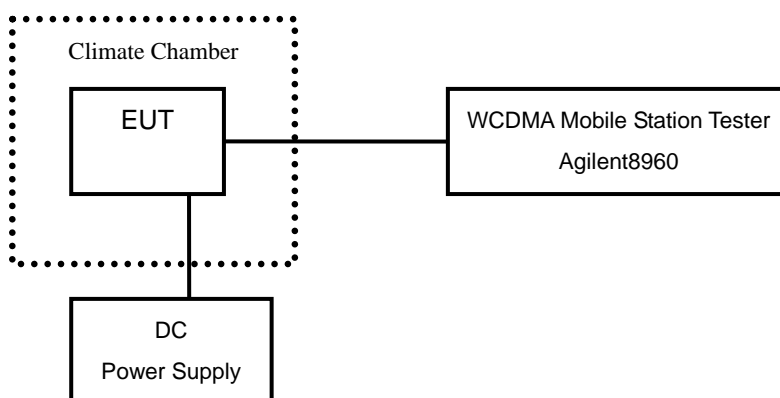
Channel 1513

2.2.1.7 Frequency Stability-FCC Part2.1055/27.54/IC RSS-139 § 6.3

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test setup:



Test Procedure:

A radio link shall be established between EUT and Tester. The tester will sample the transmitter RF output signal and measure its frequency. The temperature inside the climate chamber is varied from -30 to +50° C in 10° C step size, and also the DC power supply voltage to the EUT is varied from 3.5 to 4.2 V. The measurement will be conducted at three channels No1312, No1413 and No1513 (Bottom, middle and top channels of WCDMA band IV).

Limits:

No specific frequency stability requirements in FCC part 2.1055, part 27.54 and IC RSS-139 § 6.3.

Test result:

WCDMA Mode:

Temperature(°C)	Test Result (ppm)@3.7V		
	Channel 1312	Channel 1413	Channel 1513
-30	0.002	0.003	0.002
-20	0.003	0.003	0.000
-10	0.002	0.001	0.002
0	0.003	0.001	0.004
+10	0.001	0.002	0.003
+20	0.002	0.003	0.001
+30	0.001	0.002	0.003
+40	0.002	0.001	0.004
+50	0.001	0.002	0.002

Voltage (V)	Test Result (ppm)@20°C		
	Channel 1312	Channel 1413	Channel 1513
3.5	0.002	0.003	0.002
4.2	0.001	0.002	0.001

HSDPA/HSUPA Mode:

Temperature(°C)	Test Result (ppm)@3.7V		
	Channel 1312	Channel 1413	Channel 1513
-30	0.002	0.003	0.001
-20	0.003	0.002	0.001
-10	0.002	0.001	0.002
0	0.001	0.003	0.003
+10	0.002	0.002	0.002
+20	0.002	0.001	0.001
+30	0.003	0.001	0.003
+40	0.001	0.001	0.002
+50	0.002	0.002	0.001

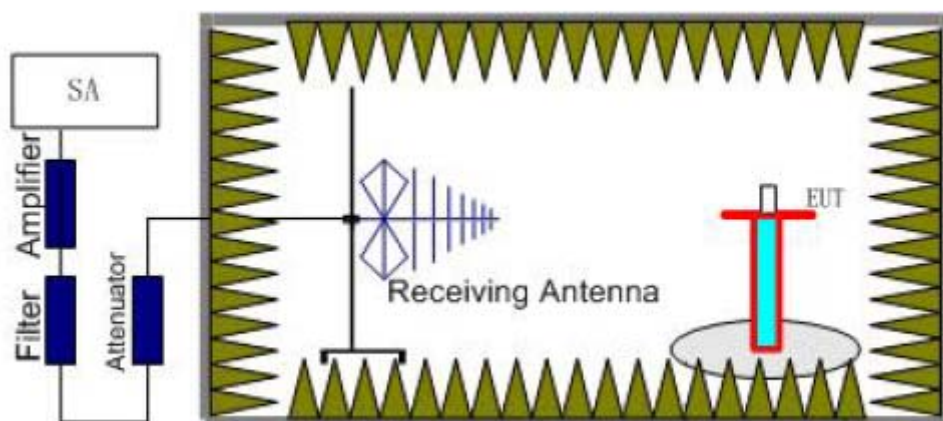
Voltage (V)	Test Result (ppm)@20°C		
	Channel 1312	Channel 1413	Channel 1513
3.5	0.001	0.001	0.002
4.2	0.001	0.000	0.001

2.2.1.8 Radiated Spurious Emissions-FCC Part2.1053/27.53(h)/IC RSS-139 § 6.5

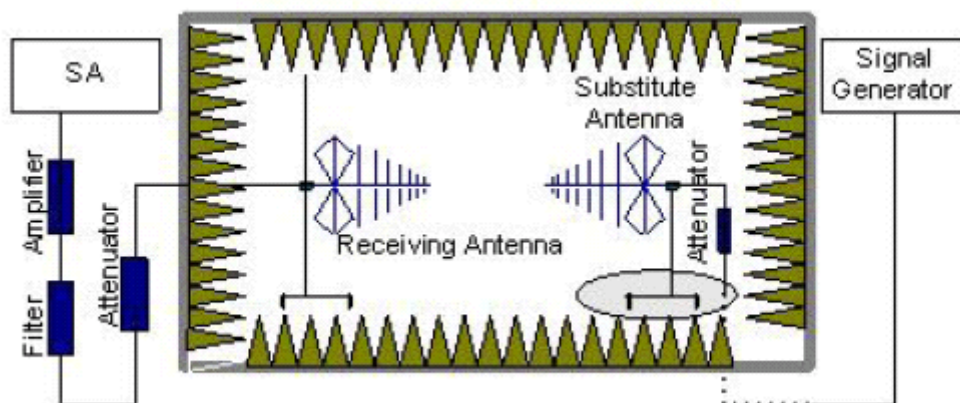
Ambient condition

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Step 1



Step 2

Test procedure:

The measurements procedures in TIA-603C-2004 are used.

The spectrum was scanned from 30MHz to the 10th harmonic of the highest frequency generated within the equipment.

Step 1:

The measurement is carried out in the fully anechoic chamber. EUT was

placed on a 2.4 meter high non-conductive table at a 3 meter test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The height of receiving antenna is 2.4m and varies in certain range to find the maximum power value. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer or receiver. The spectrum analyzer scans from 30MHz to 20GHz (higher than the 10th harmonic of the carrier). The peak detector is used and RBW is set to 1MHz on spectrum analyzer. Then the antenna height and turn table rotation is adjusted till the maximum power value is founded on spectrum analyzer or receiver. A notch filter is necessary in the band near to the carrier frequency. A high pass filter is needed to avoid the distortion of the testing equipment in the band above the carrier frequency.

Step 2:

A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

A power (P_{mea}) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

A “reference path loss” should be calculated after test. The attenuation of “reference path loss” is the cable loss between the Signal Source with the Substitution Antenna (P_{ca}) and the Substitution Antenna Gain (G_a).

Calculation procedure:

The data of cable loss and antenna gain has been calibrated in full testing frequency range before the testing.

The power of the Radiated Spurious Emissions is calculated by adding the cable loss and antenna gain. The basic equation with a sample calculation is as followed:

$$\text{Power(EIRP)} = P_{mea} + P_{ca} + G_a$$

This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $ERP = EIRP - 2.15 \text{ (dB)}$.

Assumed the power of signal source record is -20dBm. A cable loss of -30dB, and an antenna gain of 11dB are added.

$$P = P_{\text{mea}} + P_{\text{ca}} + G_a = (-20\text{dBm}) + (-30\text{dB}) + (11\text{dB}) = -39\text{dBm}$$

The measurement will be done at carrier frequencies that pertain to bottom (Channel 1312), middle (Channel 1413) and top (Channel 1513) channels of WCDMA band IV.

Test result:

WCDMA Mode:

Channel 1312:

Frequency (MHz)	Power (dBm)	Pca Cable loss (dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2056.57	-44.48	-5.6	8.6	-43.68	-13	Vertical
2556.15	-44.66	-5.7	8.6	-43.76	-13	Vertical
2762.56	-38.69	-5.8	8.9	-37.99	-13	Vertical
6992.41	-42.71	-8.6	12.7	-46.81	-13	Horizontal
10023.58	-40.86	-11.8	13.6	-42.66	-13	Vertical
17865.29	-35.67	-13.9	12.3	-34.07	-13	Vertical

Channel 1413:

Frequency (MHz)	Power (dBm)	Pca Cable loss (dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2056.24	-44.14	-5.6	8.6	-43.34	-13	Vertical
2556.40	-43.80	-5.7	8.6	-42.90	-13	Vertical
2763.43	-39.03	-5.8	8.9	-38.33	-13	Vertical
6993.52	-43.88	-8.6	12.7	-47.98	-13	Horizontal
9987.93	-39.35	-13.7	13.8	-39.45	-13	Vertical
10023.28	-41.61	-11.8	13.6	-43.41	-13	Vertical

Channel 1513:

Frequency (MHz)	Power (dBm)	Pca Cable loss (dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2067.92	-44.23	-5.6	8.6	-43.43	-13	Vertical
2552.28	-44.11	-5.7	8.6	-43.21	-13	Vertical
2776.26	-39.58	-5.8	8.9	-38.88	-13	Vertical
6993.42	-43.45	-8.6	12.7	-47.55	-13	Horizontal
10005.23	-41.68	-11.8	13.6	-43.48	-13	Horizontal
17863.69	-34.88	-13.9	12.3	-33.28	-13	Vertical

HSDPA/HSUPA Mode:

Channel 1312:

Frequency (MHz)	Power (dBm)	Pca Cable loss (dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2633.67	-39.1	-5.7	8.7	-42.1	-13	Vertical
2828.05	-39.1	-5.8	8.9	-42.2	-13	Vertical
2960.22	-36.4	-5.9	8.9	-39.4	-13	Horizontal
6991.48	-43.7	-8.6	12.7	-47.8	-13	Horizontal
10042.48	-41.8	-11.8	13.6	-43.6	-13	Horizontal
17867.34	-43.2	-13.9	12.3	-41.6	-13	Vertical

Channel 1413:

Frequency (MHz)	Power (dBm)	Pca Cable loss (dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2344.51	-40.11	-5.6	8.6	-43.11	-13	Vertical
2554.91	-40.75	-5.7	8.6	-43.65	-13	Vertical
2761.62	-39.55	-5.8	8.9	-42.65	-13	Vertical
6793.99	-40.22	-8.6	12.7	-44.32	-13	Horizontal
9973.97	-41.59	-13.7	13.8	-41.69	-13	Horizontal
10029.05	-43.47	-11.8	13.6	-45.27	-13	Horizontal

Channel 1513:

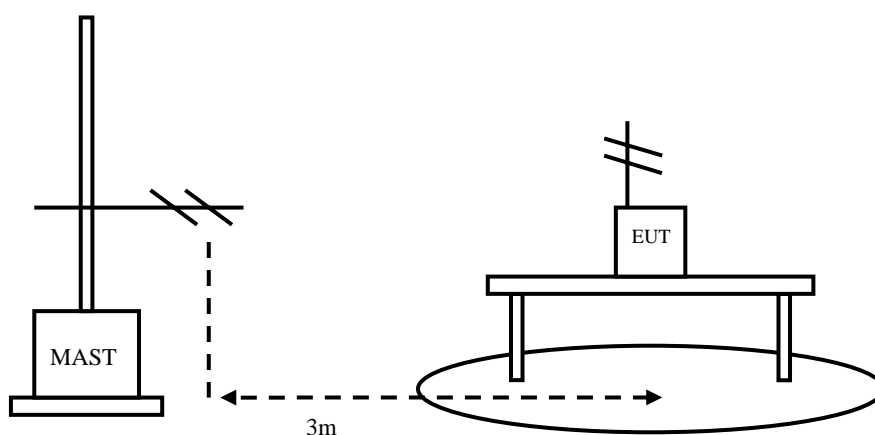
Frequency (MHz)	Power (dBm)	Pca Cable loss (dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2367.92	-39.90	-5.6	8.6	-42.90	-13	Vertical
2522.28	-37.92	-5.7	8.6	-40.82	-13	Vertical
2773.26	-40.24	-5.8	8.9	-43.34	-13	Horizontal
6993.42	-39.89	-8.6	12.7	-43.99	-13	Horizontal
10025.99	-42.79	-11.8	13.6	-44.59	-13	Horizontal
17560.01	-43.44	-13.9	12.3	-41.84	-13	Horizontal

2.2.1.9 Receiver Spurious Emissions-IC RSS-139 § 6.6

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	54%	101.5kPa

Test Setup:



Test Procedure:

The EUT should be placed on a non-metallic table 80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.

The EUT should work in idle mode. The accessories of the EUT are connected with the EUT such as headset etc.

Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.

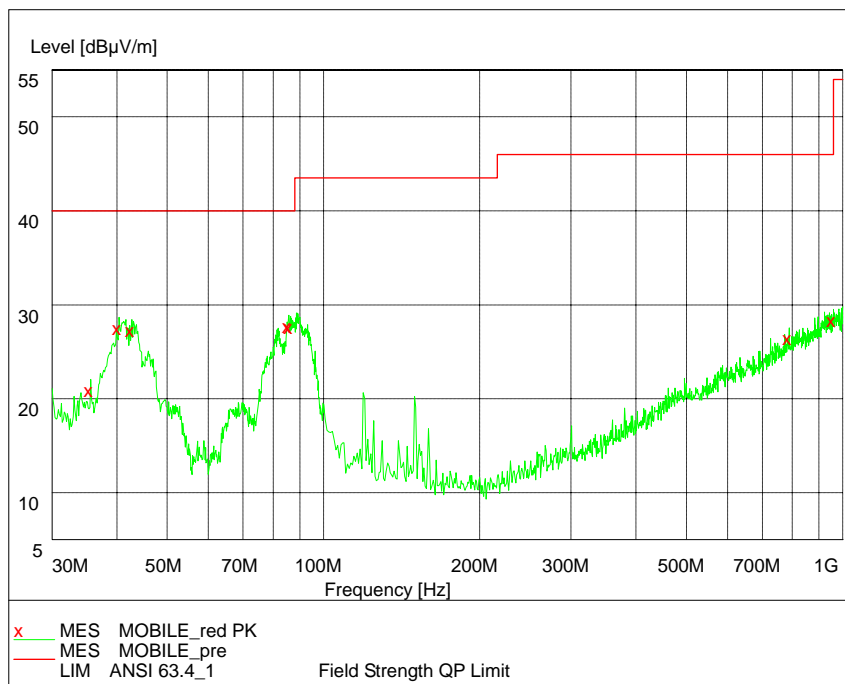
During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The EUT is laid in two modes as follow: 1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Limit:

Spurious Frequency (MHz)	Field Strength at 3 metres		
	Detector	Unit (microvolts/m)	Unit (dB μ V/m)
30~88	Quasi-peak	100	40
88~216	Quasi-peak	150	43.5
216~960	Quasi-peak	200	46
960~1000	Quasi-peak	500	54
Above 1000	Average	500	54

Test result:



WCDMA band IV

Note: For measurement above 1GHz, all emissions level measured were more than 10dB below the limit.

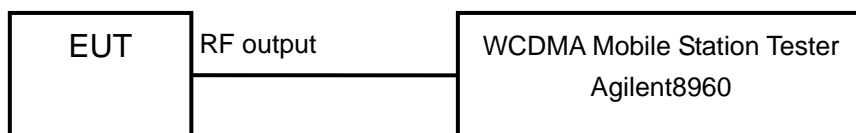
2.2.2 WCDMA Band V

2.2.2.1 RF Power Output-FCC Part22.913(a)/IC RSS-132 § 4.4

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. Then the test data can be read at the tester screen. The loss between RF output port of the EUT and the input port of the tester will be taken into consideration.

The measurement will be conducted at three channels No4132, No4183 and No4233 (Bottom, middle and top channels of WCDMA band V)

Limits	$\leq 24\text{dBm}$
--------	---------------------

Test result:

WCDMA Mode:

Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
826.4	4132	23.1
836.6	4183	23.1
846.6	4233	23.1

HSDPA/HSUPA Mode:

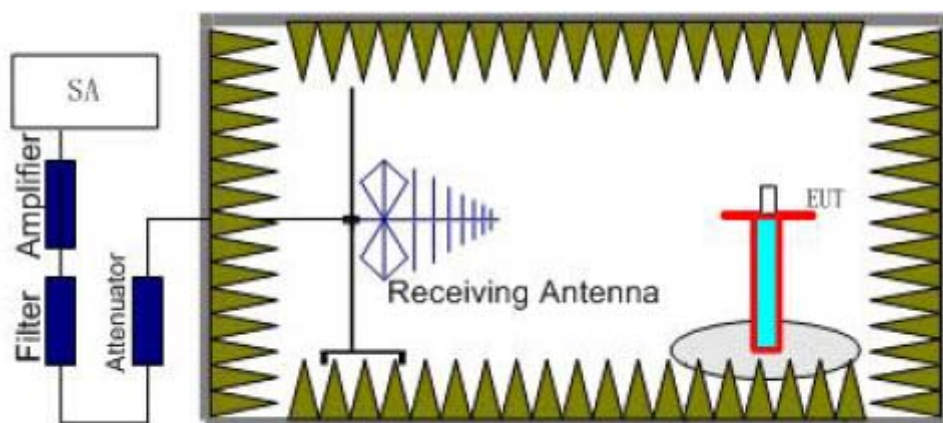
Carrier frequency (MHz)	Channel No.	RF Power Output (dBm)
826.4	4132	23.1
836.6	4183	23.1
846.6	4233	23.2

2.2.2.2 Effective Radiated Power-FCC Part22.913(a)/IC RSS-132 § 4.4

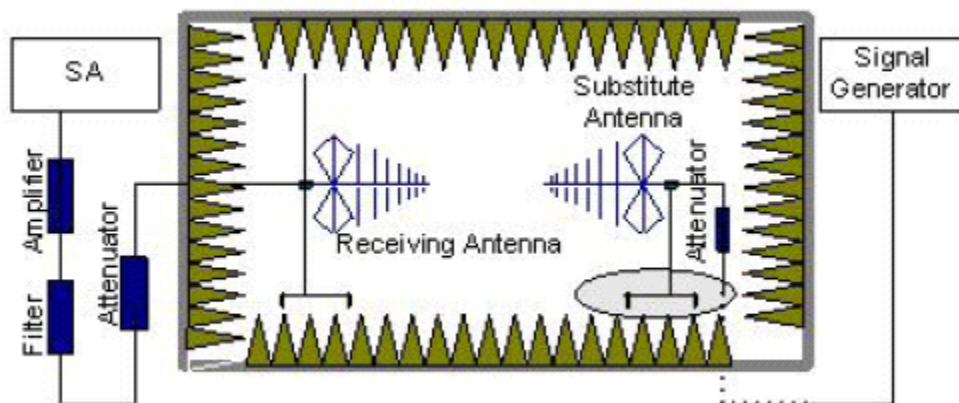
Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test setup:



Step 1



Step 2

Test procedure:

The measurements procedures in TIA-603C-2004 are used.

Step 1:

The measurement is carried out in the fully anechoic chamber. EUT was placed on a 2.4 meters high non-conductive table at a 3 meters test distance from the test receive antenna. A receiving antenna was placed on the antenna

most 3 meters from the EUT. The height of receiving antenna is 2.4m and varies in certain range to find the maximum power value. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. A peak detector is used and RBW is set to 3MHz. Then the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum power value on spectrum analyzer or receiver. And the maximum value of the receiver should be recorded as (Pr).

Step 2:

A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator. To repeat the same procedure as step1 and the level of signal generator will be adjusted till the same power value on the spectrum analyzer or receiver. The ERP/EIRP of the EUT can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

A power (P_{mea}) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (P_{mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

A “reference path loss” should be calculated after test. The attenuation of “reference path loss” is the cable loss between the Signal Source with the Substitution Antenna (P_{ca}) and the Substitution Antenna Gain (G_a).

The measurement results are obtained as described below:

$$\text{Power (EIRP)} = P_{mea} + P_{ca} + G_a$$

This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP – 2.15 (dB).

The measurement will be done at three channels No4132, No4183 and No4233 (Bottom, middle and top channels of WCDMA band V)

Limits	≤ 38.5dBm
--------	-----------

Test result:

WCDMA Mode:

Frequency (MHz)	Peak ERP (dBm)	Pca Cable loss (dB)	Ga Antenna Gain (dB)	Correction (dB)	Pmea (dBm)	Polarization
826.4	22.46	-3.8	8.6	2.15	19.81	Vertical
836.6	22.79	-3.8	8.6	2.15	20.14	Vertical
846.6	23.48	-3.8	8.6	2.15	20.83	Vertical

Frequency: 826.4MHz

Peak ERP(dBm) = Pmea(19.81dBm)+Pca(-3.8dB)+Ga(8.6dB)-2.15dB = 22.46dBm

HSDPA/HSUPA Mode:

Frequency (MHz)	Peak ERP (dBm)	Pca Cable loss (dB)	Ga Antenna Gain (dB)	Correction (dB)	Pmea (dBm)	Polarization
826.4	21.50	-3.8	8.6	2.15	18.85	Vertical
836.6	21.95	-3.8	8.6	2.15	19.30	Vertical
846.6	22.33	-3.8	8.6	2.15	19.68	Vertical

Frequency: 846.6MHz

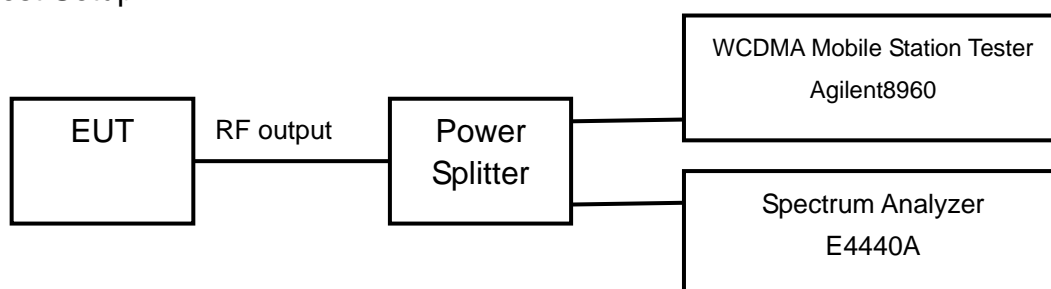
Peak ERP(dBm) = Pmea(19.68dBm)+Pca(-3.8dB)+Ga(8.6dB)-2.15dB = 22.33dBm

2.2.2.3 Occupied Bandwidth-FCC Part2.1049/IC RSS-Gen § 4.6.1

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The occupied bandwidth is measured using spectrum analyzer. RBW is set to 30kHz on spectrum analyzer. The bandwidth of 99% power can be read on spectrum analyzer. The measurement will be conducted at three channels No4132, No4183 and No4233 (Bottom, middle and top channels of WCDMA band V)

Limits: No specific occupied bandwidth requirements in FCC part 2.1049 and IC RSS-Gen § 4.6.1

Test result:

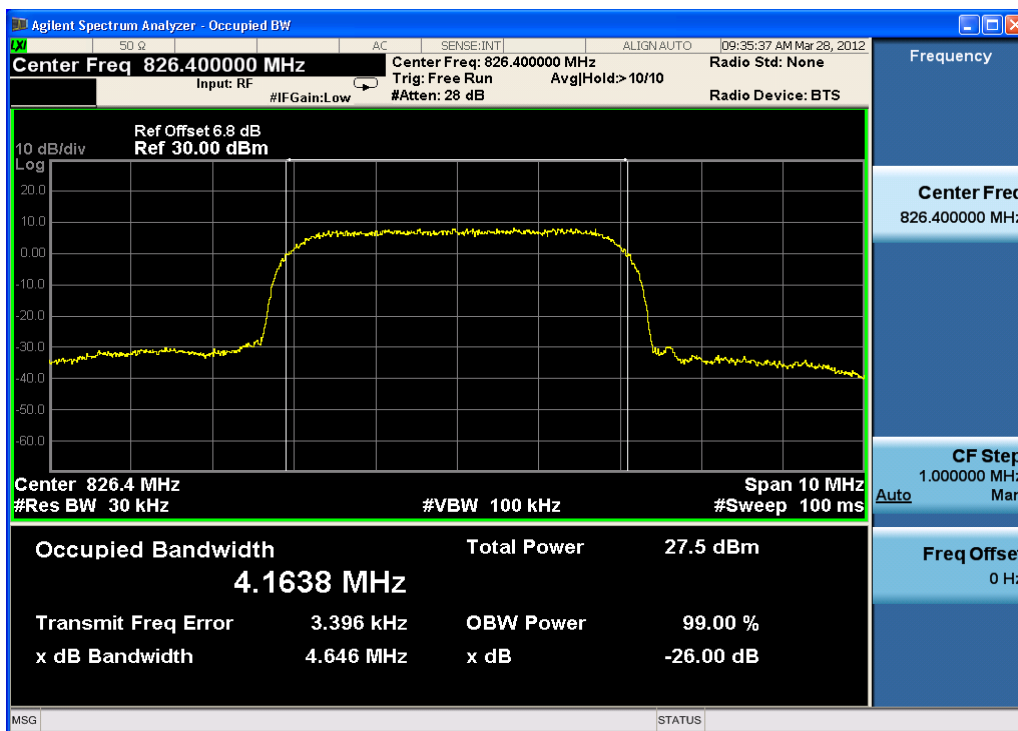
WCDMA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
826.4	4132	4.1638
836.6	4183	4.1770
846.6	4233	4.1698

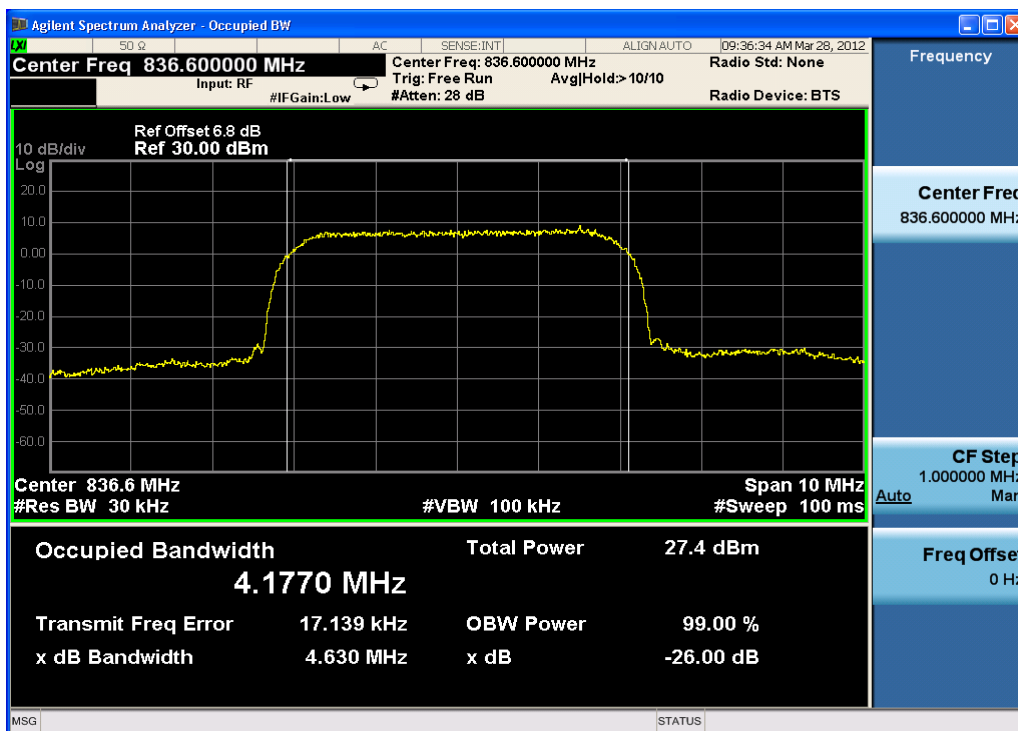
HSDPA/HSUPA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of 99% Power (MHz)
826.4	4132	4.1609
836.6	4183	4.1738
846.6	4233	4.1648

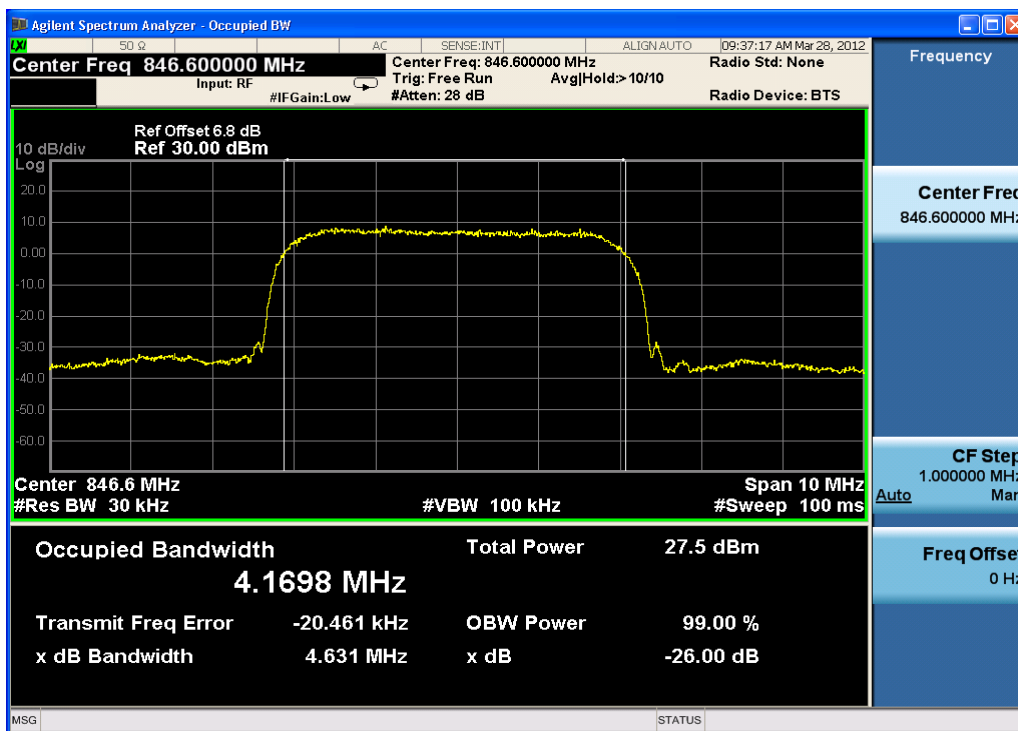
WCDMA Mode:



Channel 4132

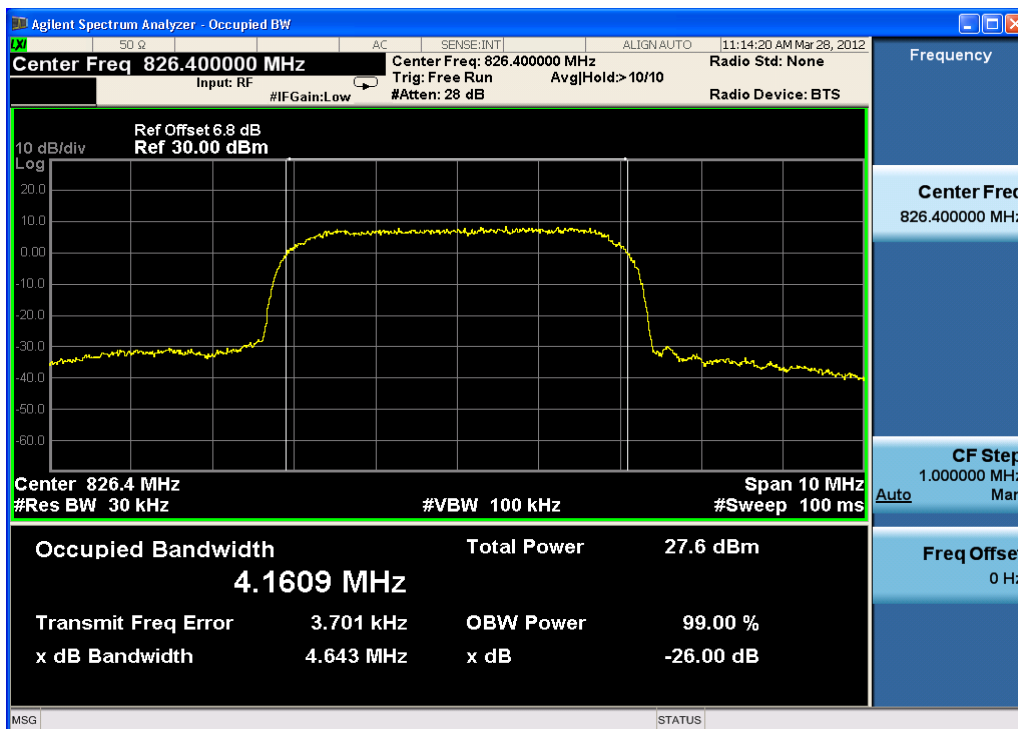


Channel 4183

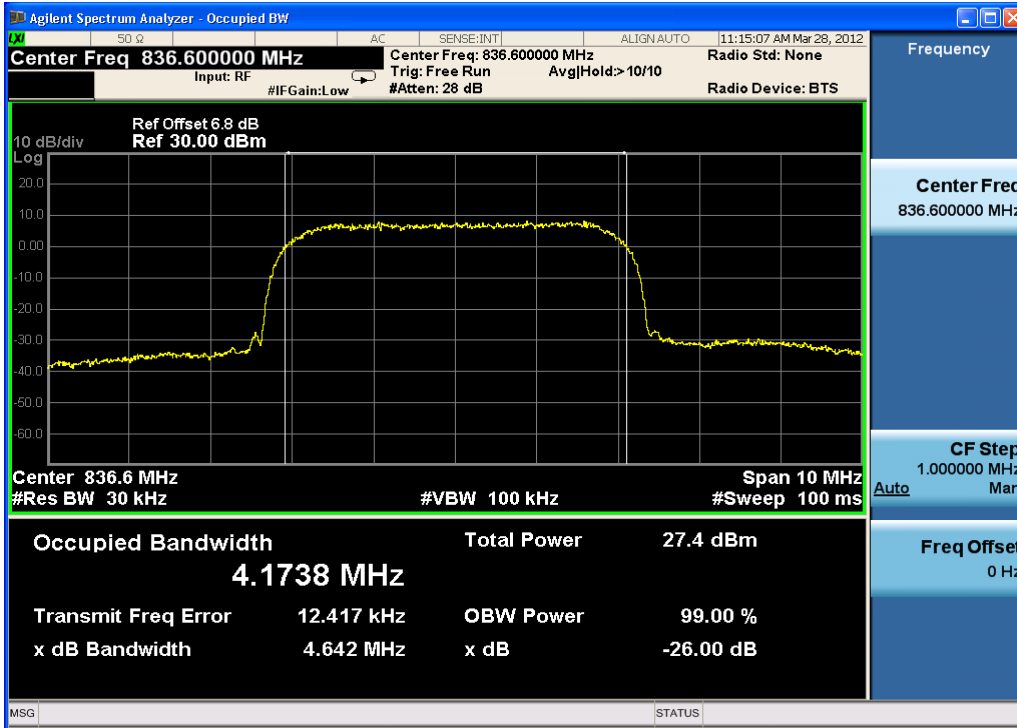


Channel 4233

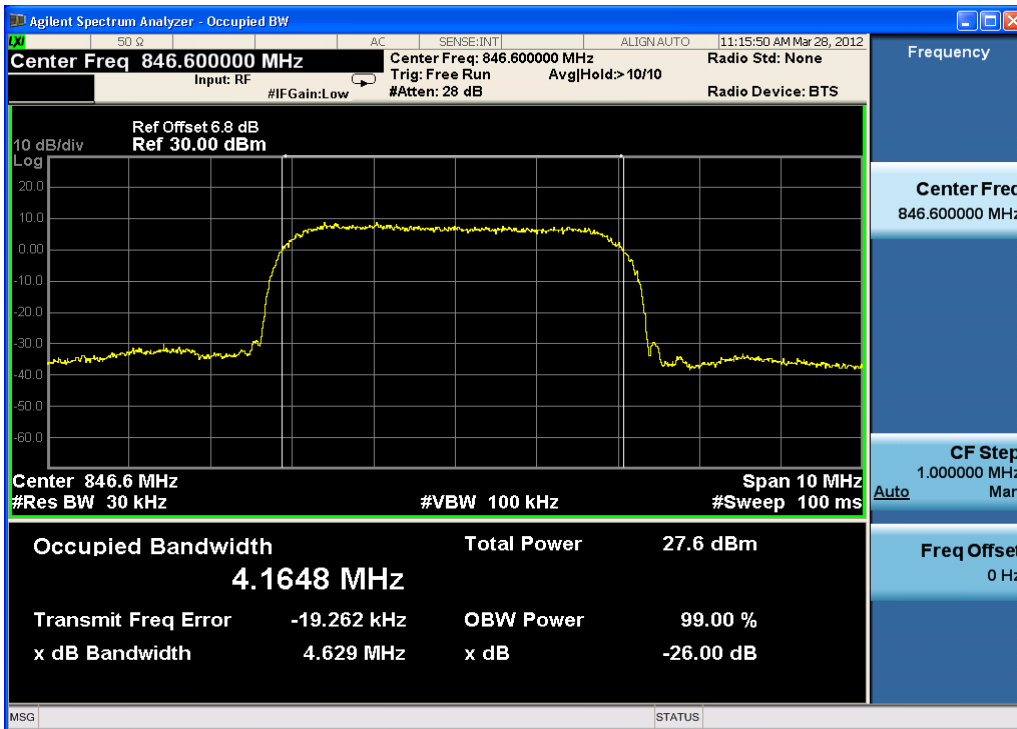
HSDPA/HSUPA Mode:



Channel 4132



Channel 4183



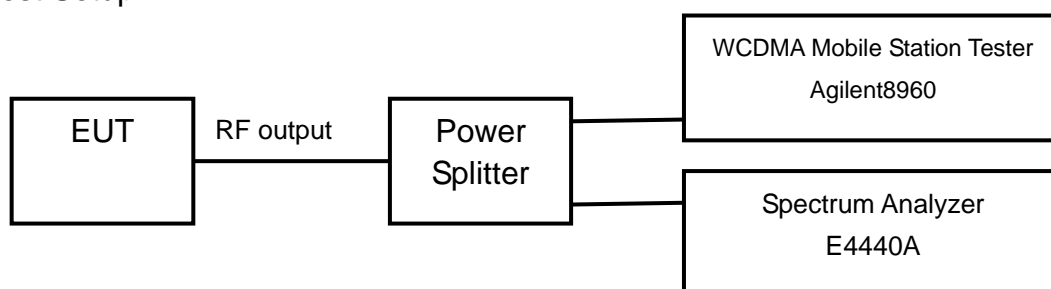
Channel 4233

2.2.2.4 Emission Bandwidth-FCC Part22.917(b)/IC RSS-Gen § 4.6.1

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The occupied bandwidth is measured using spectrum analyzer. RBW is set to 30kHz on spectrum analyzer. The bandwidth of -26dBc power can be read on spectrum analyzer. The measurement will be conducted at three channels No9262, No9400 and No9538 (Bottom, middle and top channels of WCDMA band V)

Limits: No specific emission bandwidth requirements in FCC part 22.917(b) and IC RSS-Gen § 4.6.1

Test result:

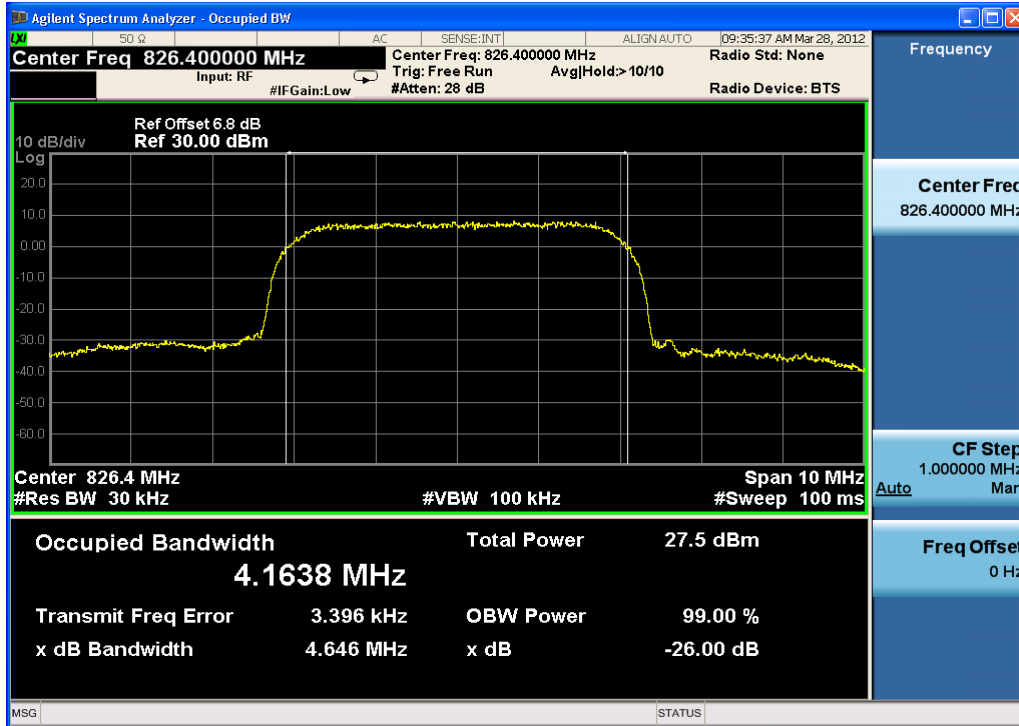
WCDMA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
826.4	4132	4.646
836.6	4183	4.630
846.6	4233	4.631

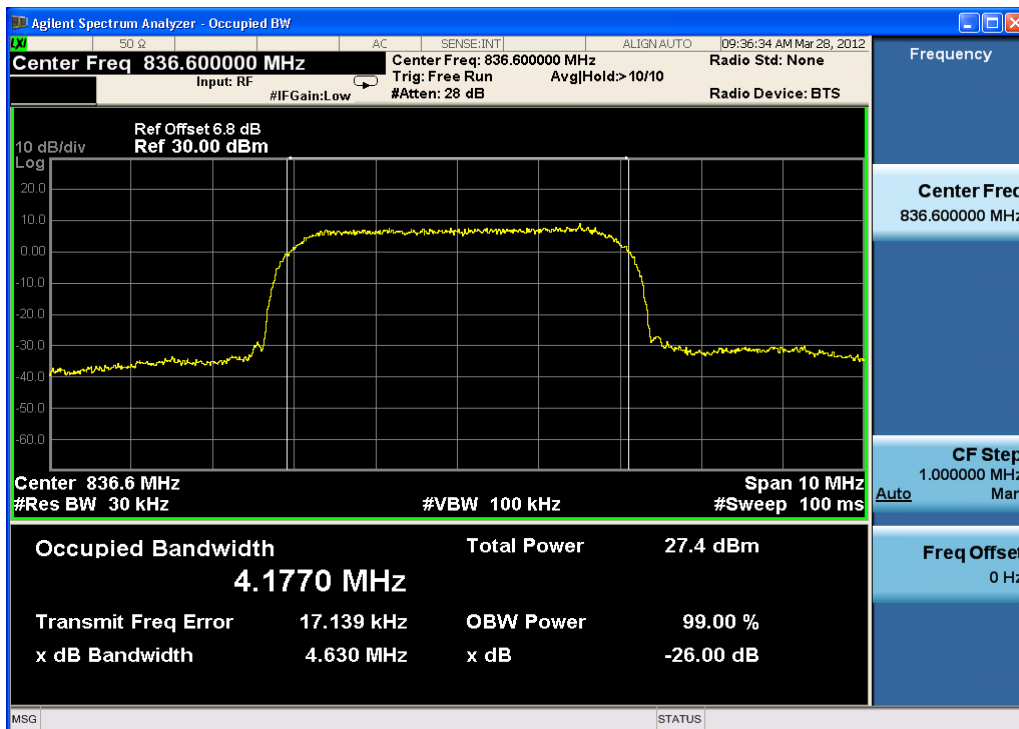
HSDPA/HSUPA Mode:

Carrier frequency (MHz)	Channel No.	Bandwidth of -26dBc Power (MHz)
826.4	4132	4.643
836.6	4183	4.642
846.6	4233	4.629

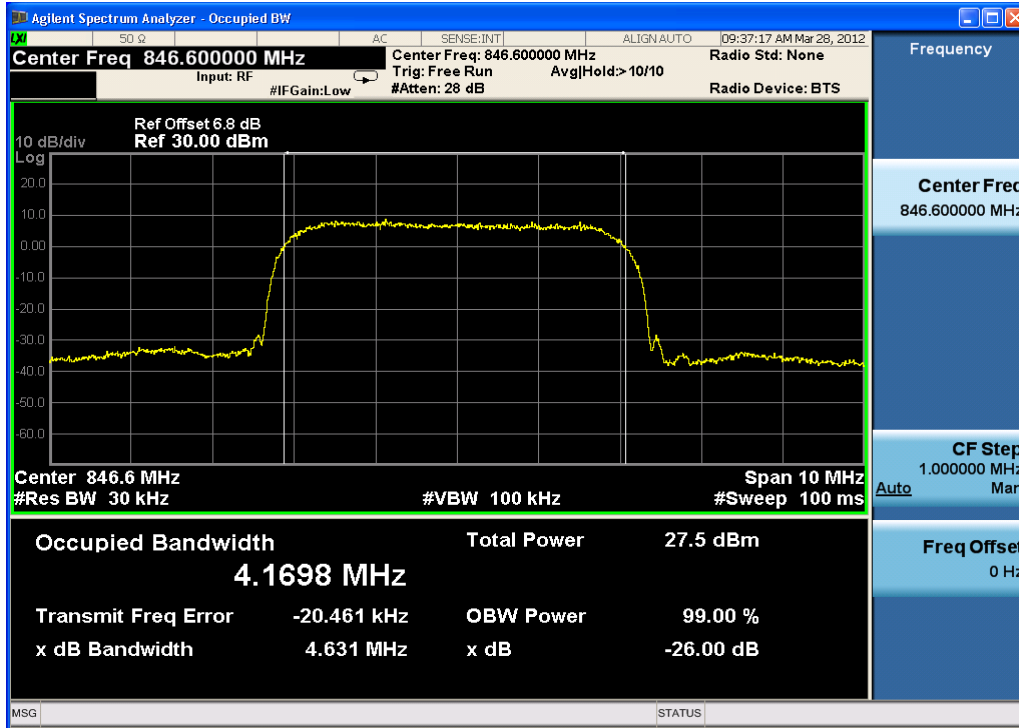
WCDMA Mode:



Channel 4132

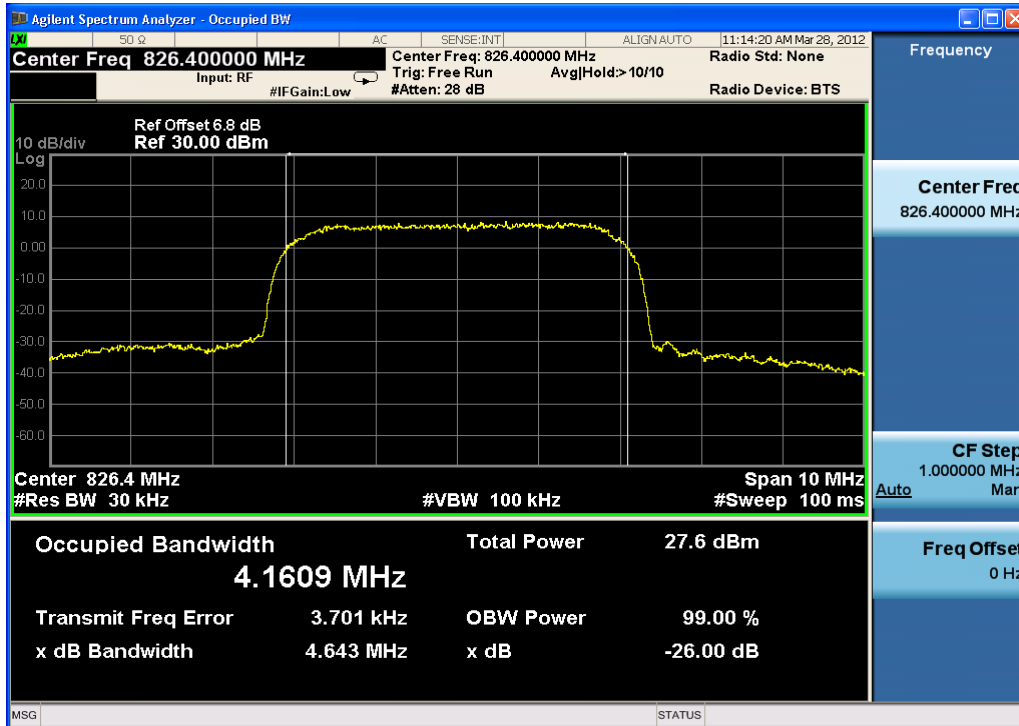


Channel 4183

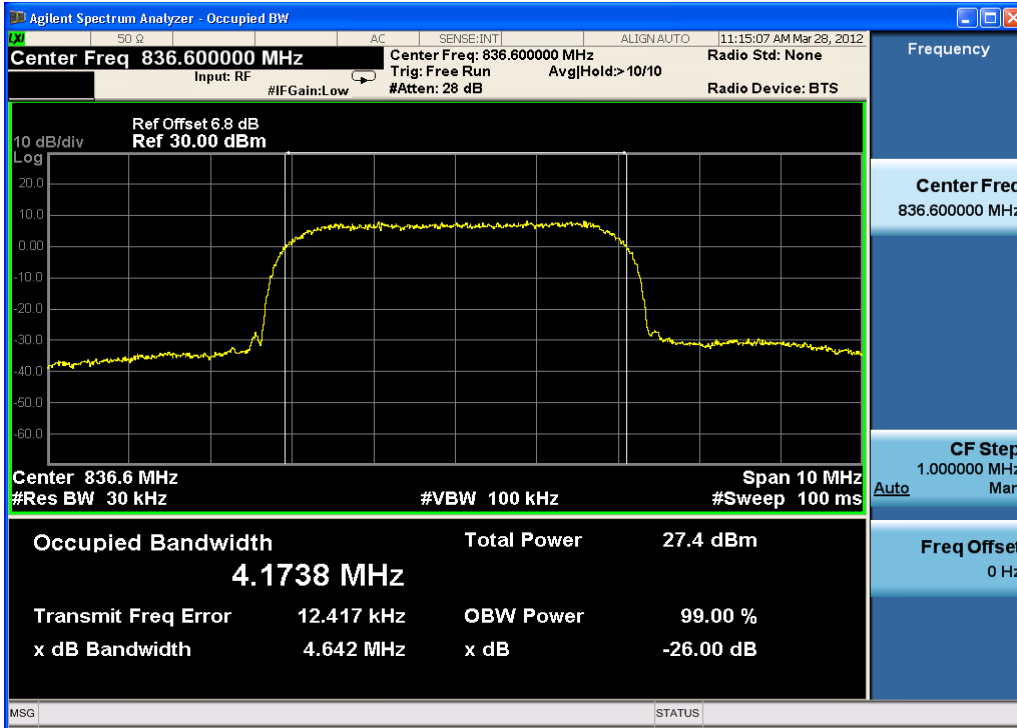


Channel 4233

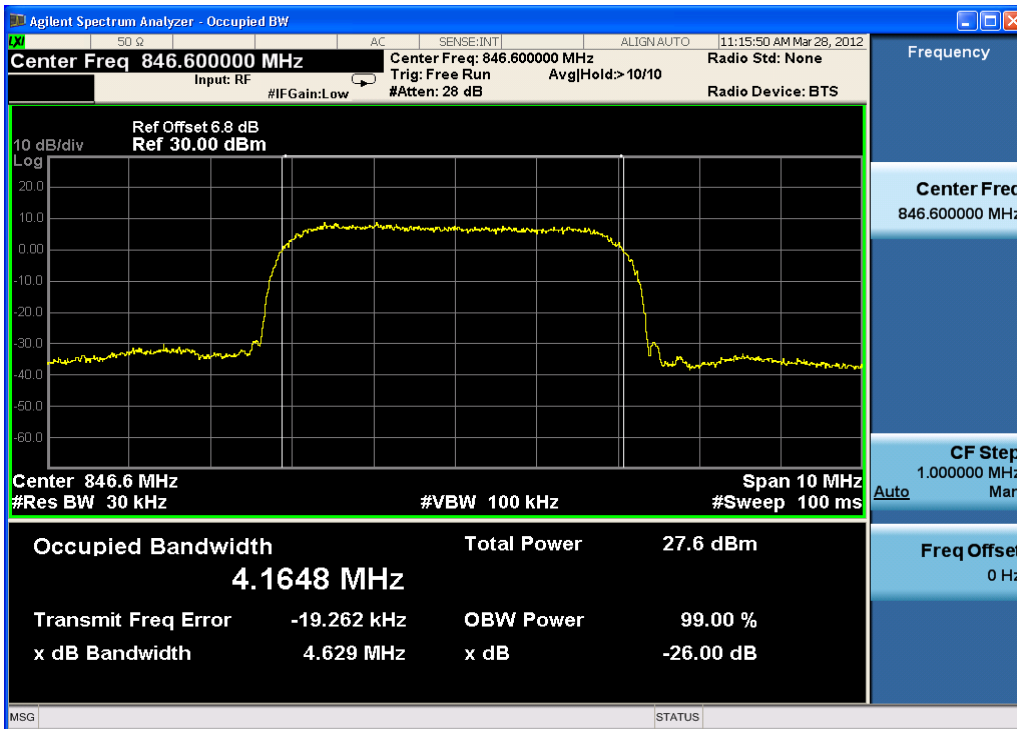
HSDPA/HSUPA Mode:



Channel 4132



Channel 4183



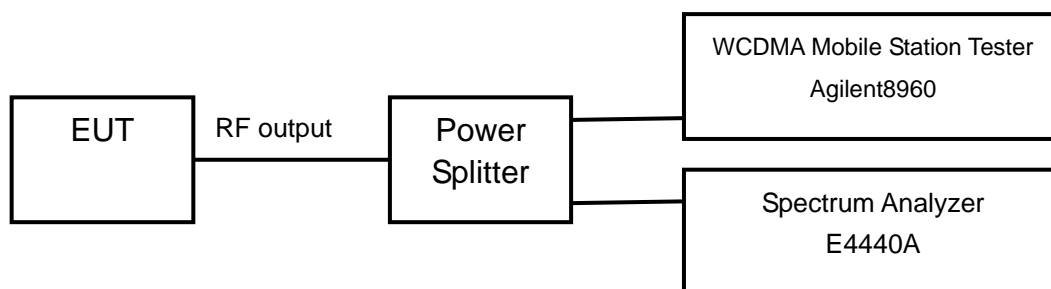
Channel 4233

2.2.2.5 Conducted Spurious Emissions-FCC Part2.1051/22.917/IC RSS-132 § 4.5

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer. The spectrum analyzer scans from 30MHz to 9GHz (higher than the 10th harmonic of the carrier). The peak detector is used and RBW is set to 1MHz on spectrum analyzer.

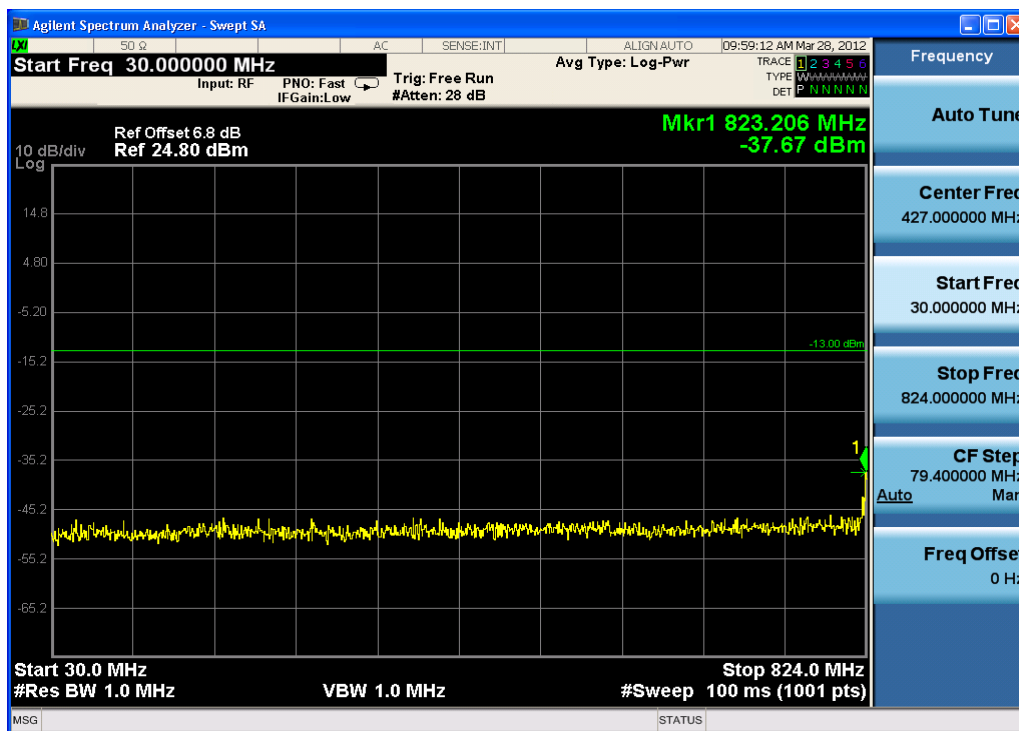
The measurement will be conducted at one channel No 4183 (middle channel of WCDMA band V)

Limits	≤ -13dBm
--------	----------

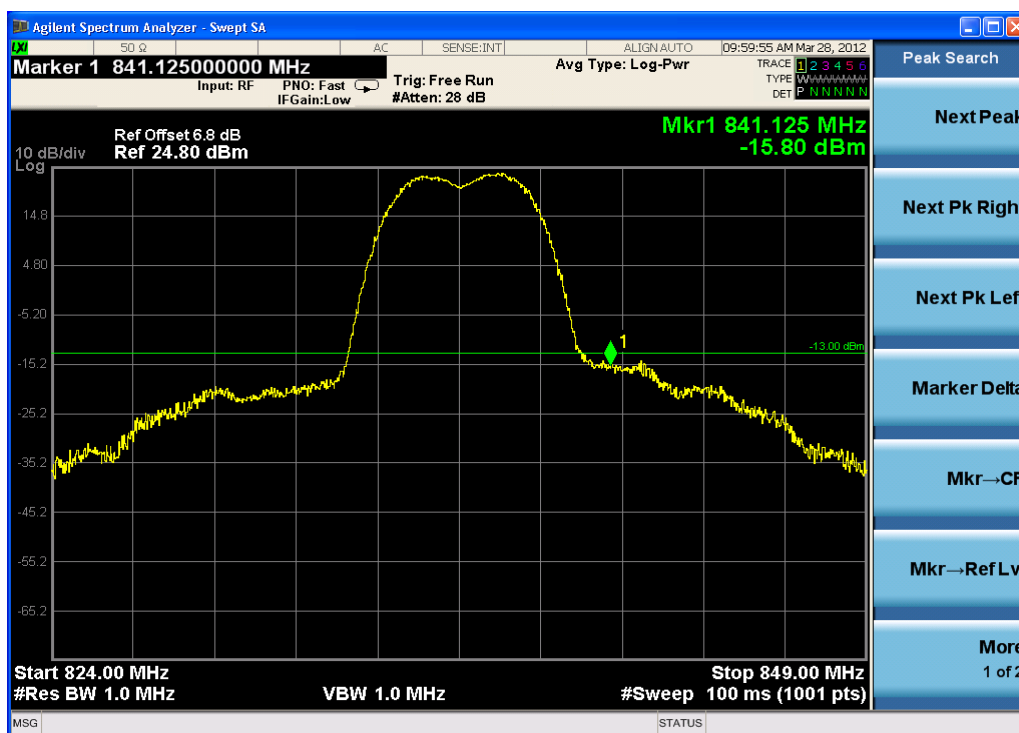
Test result:

Refer to the following figures.

WCDMA Mode:

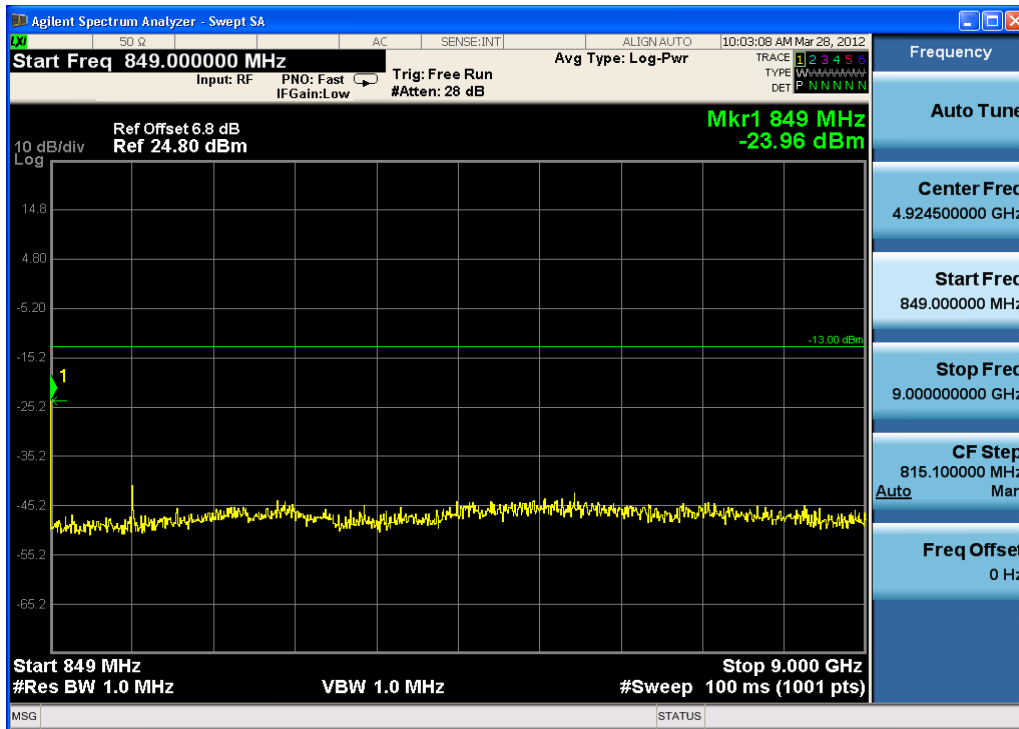


Channel 4183, 30MHz~824MHz



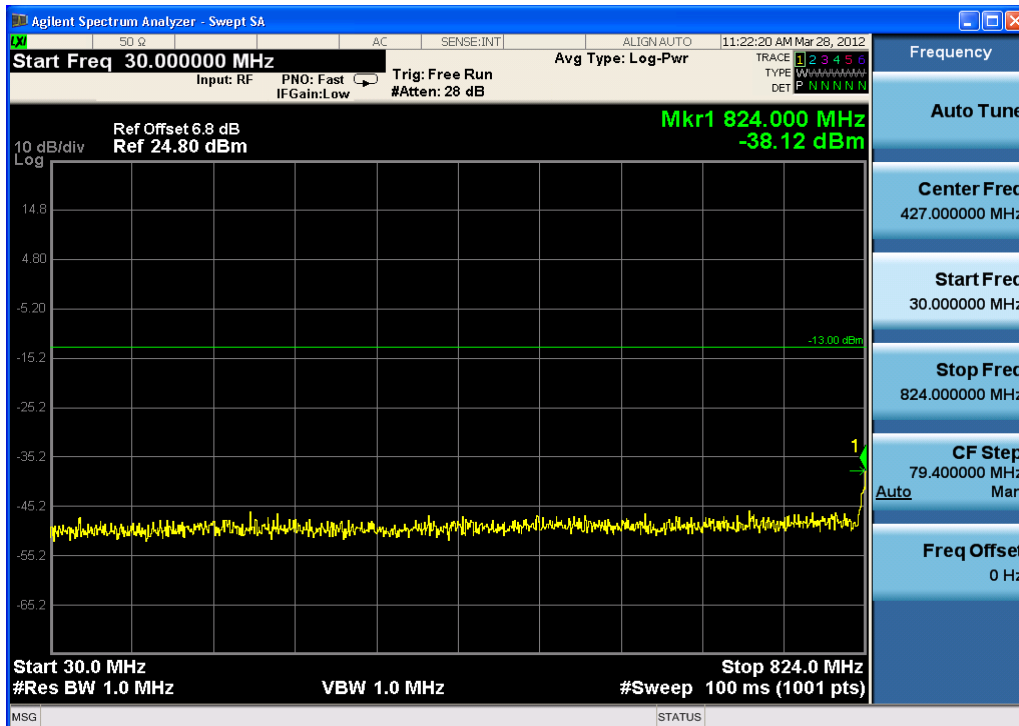
Channel 4183, 824MHz~849MHz

Note: The signal beyond the limit is the base station simulator carrier.

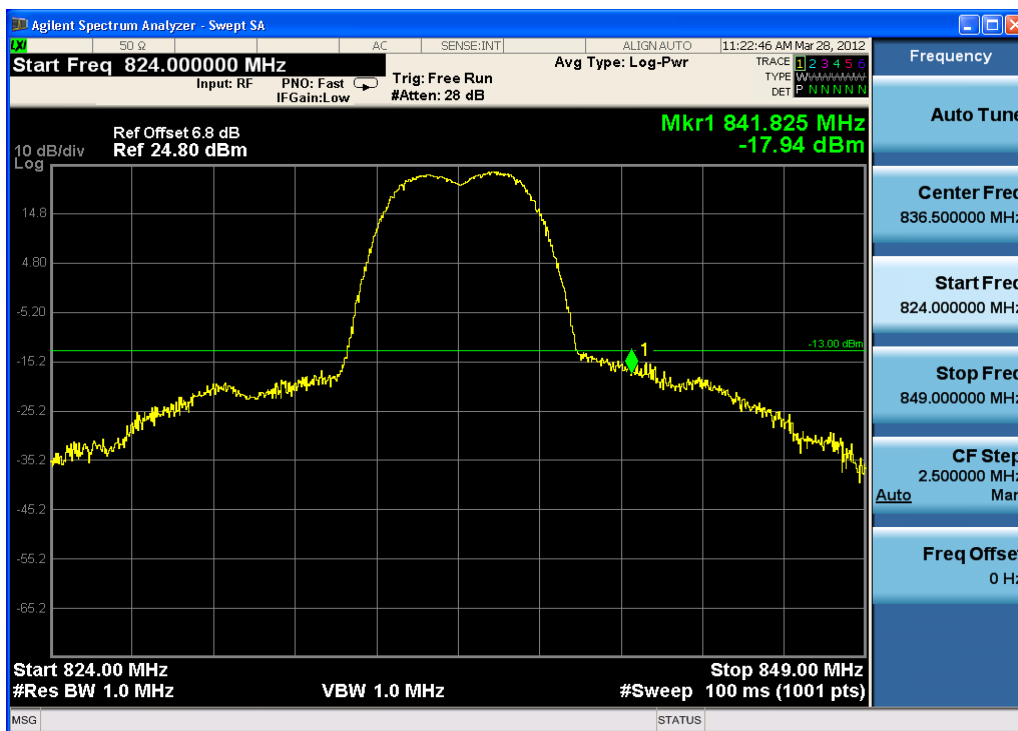


Channel 4183, 849MHz~9GHz

HSDPA/HSUPA Mode:

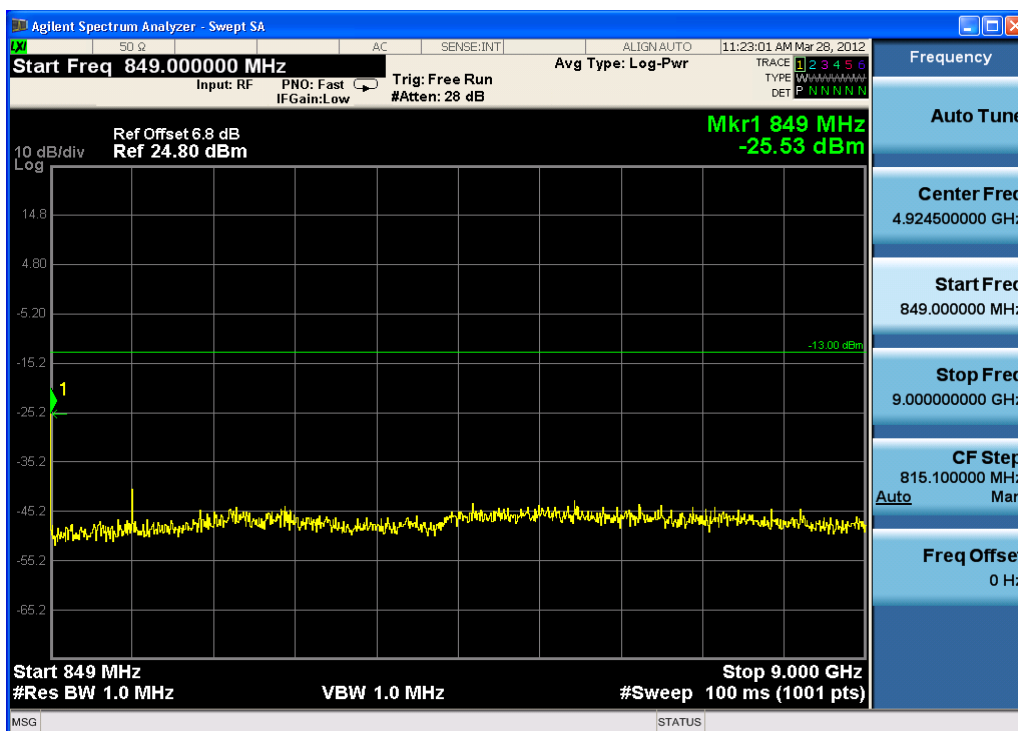


Channel 4183, 30MHz~824MHz



Channel 4183, 824MHz~849MHz

Note: The signal beyond the limit is the base station simulator carrier.



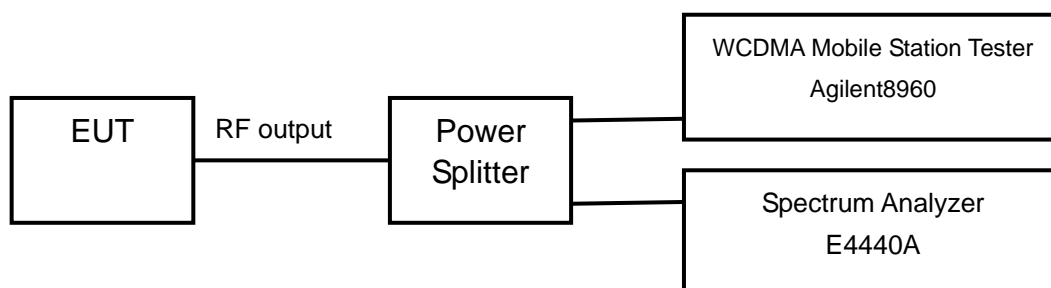
Channel 4183, 849MHz~9GHz

2.2.2.6 Band Edges Compliance-FCC Part 22.917(b)/IC RSS-132 § 4.5

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Test procedure:

After a radio link has been established between EUT and Tester, the output power of the cell signal of the testing equipment will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer. The peak detector is used and RBW is set to at least 1% of the emission bandwidth on spectrum analyzer.

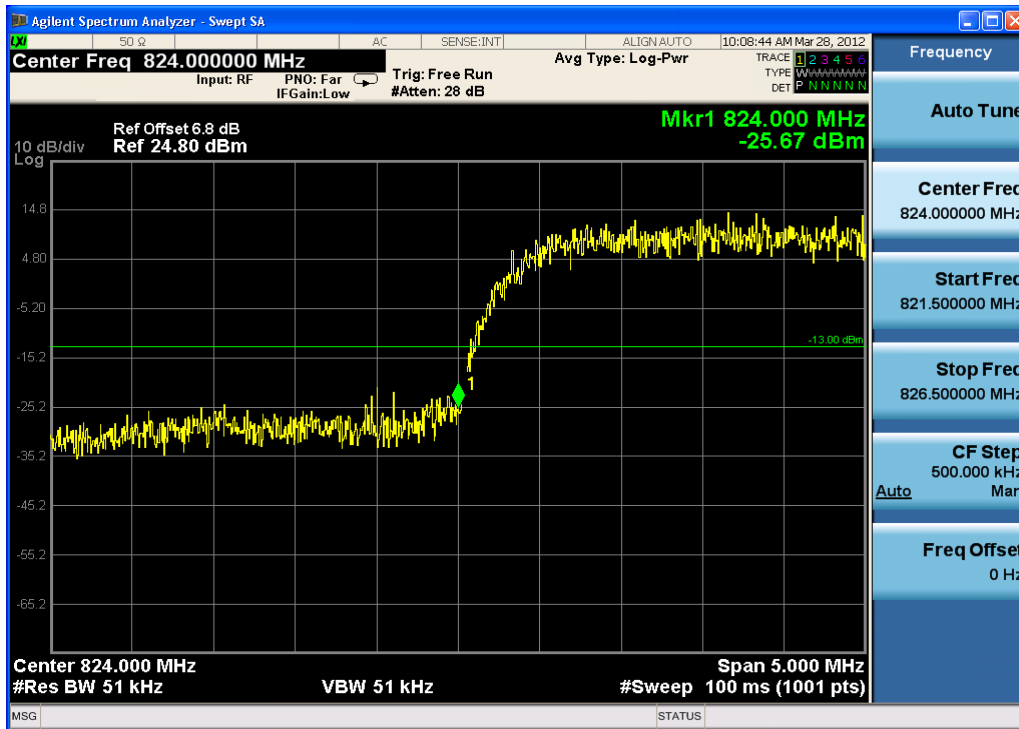
The measurement will be conducted at two channels No4132 and No4233 (Bottom and top channels of WCDMA band V)

Limits	≤ -13dBm
--------	----------

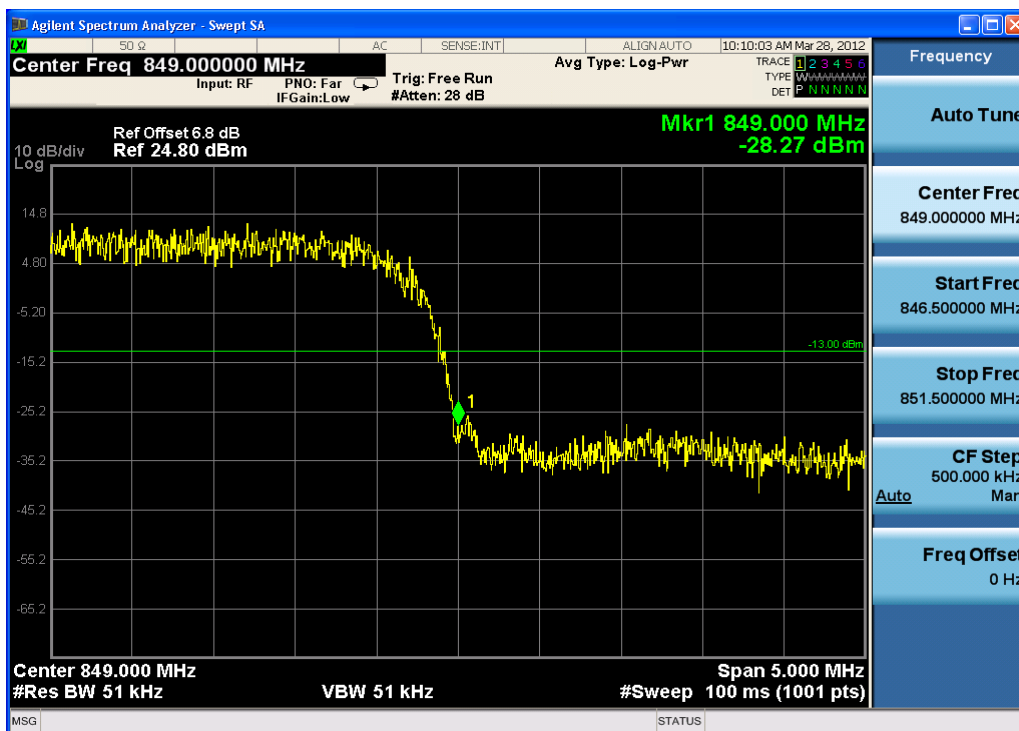
Test result:

Refer to the following figures.

WCDMA Mode:

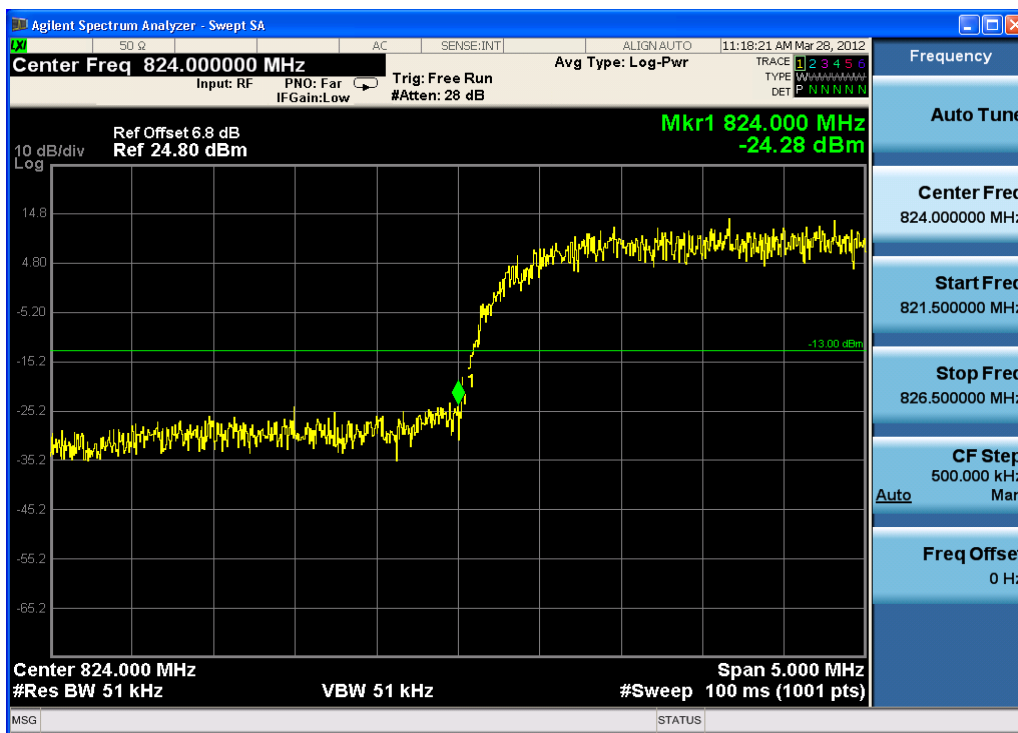


Channel 4132

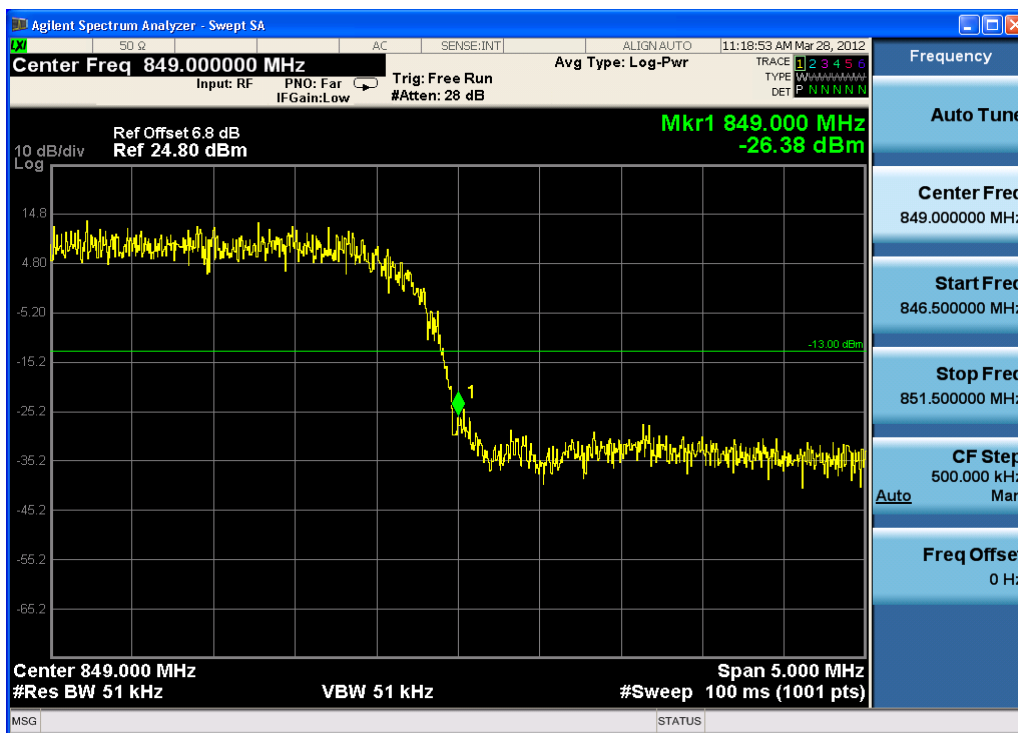


Channel 4233

HSDPA/HSUPA Mode:



Channel 4132



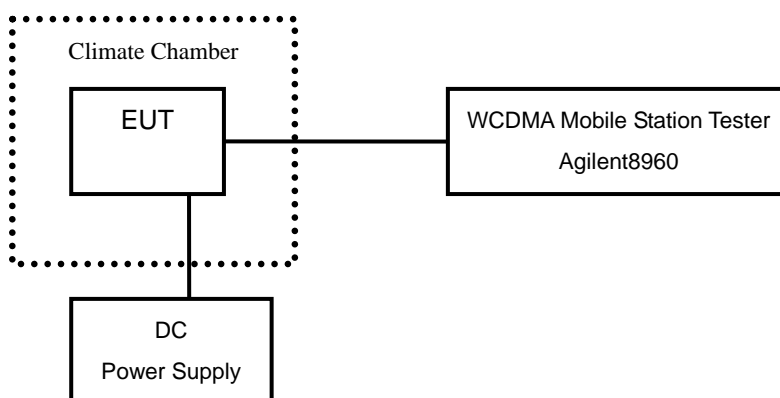
Channel 4233

2.2.2.7 Frequency Stability-FCC Part2.1055/22.355/IC RSS-132 § 4.3

Ambient condition:

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test setup:



Test Procedure:

A radio link shall be established between EUT and Tester. The tester will sample the transmitter RF output signal and measure its frequency. The temperature inside the climate chamber is varied from -30 to +50° C in 10° C step size, and also the DC power supply voltage to the EUT is varied from 3.5 to 4.2 V. The measurement will be conducted at three channels No4132, No4183 and No4233 (Bottom, middle and top channels of WCDMA band V).

Limits:

No specific frequency stability requirements in FCC part 2.1055 and part 22.355. According to the standard of IC RSS-132 § 4.3, the carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

Test result:

WCDMA Mode:

Temperature(°C)	Test Result (ppm)@3.7V		
	Channel 4132	Channel 4183	Channel 4233
-30	0.002	0.002	0.006
-20	0.002	0.003	0.003
-10	0.003	0.004	0.002
0	0.002	0.002	0.001
+10	0.001	0.002	0.001
+20	0.004	0.003	0.004
+30	0.002	0.003	0.002
+40	0.003	0.004	0.004
+50	0.003	0.005	0.002

Voltage (V)	Test Result (ppm)@20°C		
	Channel 4132	Channel 4183	Channel 4233
3.5	0.003	0.002	0.001
4.2	0.002	0.005	0.004

HSDPA/ HSUPA Mode:

Temperature(°C)	Test Result (ppm)@3.7V		
	Channel 4132	Channel 4183	Channel 4233
-30	0.002	0.004	0.003
-20	0.004	0.003	0.004
-10	0.005	0.005	0.002
0	0.003	0.001	0.005
+10	0.004	0.004	0.006
+20	0.002	0.003	0.007
+30	0.001	0.002	0.004
+40	0.002	0.006	0.003
+50	0.007	0.002	0.005

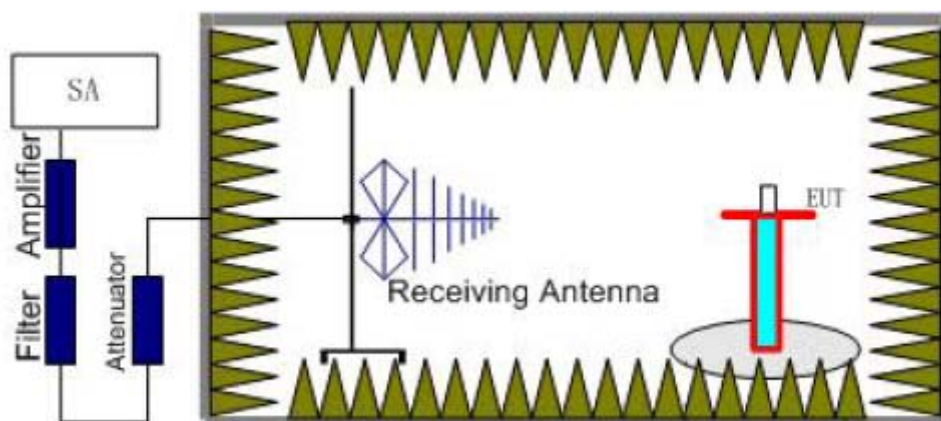
Voltage (V)	Test Result (ppm)@20°C		
	Channel 4132	Channel 4183	Channel 4233
3.5	0.002	0.003	0.002
4.2	0.003	0.004	0.006

2.2.2.8 Radiated Spurious Emissions- FCC Part2.1053/22.917(a)/IC RSS-132 § 4.5

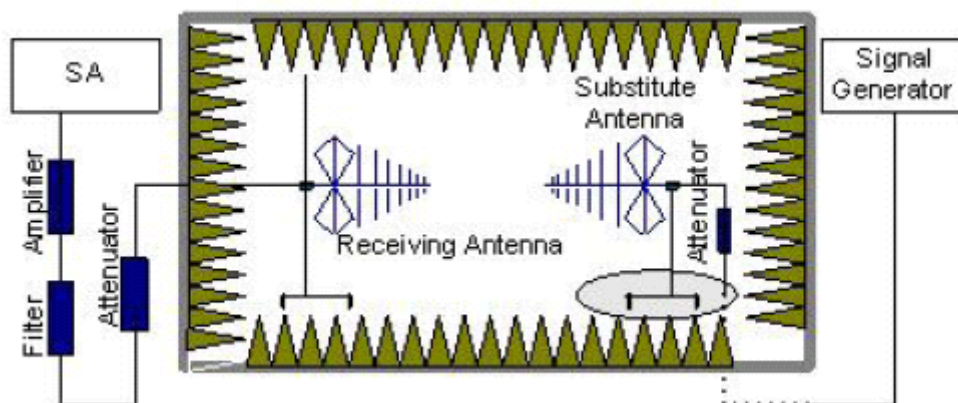
Ambient condition

Temperature	Relative humidity	Pressure
21°C	44%	101.5kPa

Test Setup:



Step 1



Step 2

Test procedure:

The measurements procedures in TIA-603C-2004 are used.

The spectrum was scanned from 30MHz to the 10th harmonic of the highest frequency generated within the equipment.

Step 1:

The measurement is carried out in the fully anechoic chamber. EUT was

placed on a 2.4 meter high non-conductive table at a 3 meter test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The height of receiving antenna is 2.4m and varies in certain range to find the maximum power value. A radio link shall be established between EUT and Tester. The output power of the cell signal of the tester will be decreased until the output power of the EUT reach a maximum value. The measurement is carried out using a spectrum analyzer or receiver. The spectrum analyzer scans from 30MHz to 20GHz (higher than the 10th harmonic of the carrier). The peak detector is used and RBW is set to 1MHz on spectrum analyzer. Then the antenna height and turn table rotation is adjusted till the maximum power value is founded on spectrum analyzer or receiver. A notch filter is necessary in the band near to the carrier frequency. A high pass filter is needed to avoid the distortion of the testing equipment in the band above the carrier frequency.

Step 2:

A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.

A power (P_{mea}) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

A “reference path loss” should be calculated after test. The attenuation of “reference path loss” is the cable loss between the Signal Source with the Substitution Antenna (P_{ca}) and the Substitution Antenna Gain (G_a).

Calculation procedure:

The data of cable loss and antenna gain has been calibrated in full testing frequency range before the testing.

The power of the Radiated Spurious Emissions is calculated by adding the cable loss and antenna gain. The basic equation with a sample calculation is as followed:

$$\text{Power(EIRP)} = P_{mea} + P_{ca} + G_a$$

This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $ERP = EIRP - 2.15 \text{ (dB)}$.

Assumed the power of signal source record is -20dBm. A cable loss of -30dB, and an antenna gain of 11dB are added.

$$P = P_{\text{mea}} + P_{\text{ca}} + G_a = (-20\text{dBm}) + (-30\text{dB}) + (11\text{dB}) = -39\text{dBm}$$

The measurement will be done at carrier frequencies that pertain to bottom (Channel 4132), middle (Channel 4183) and top (Channel 4233) channels of WCDMA band V.

Test result:

WCDMA Mode:

Channel 4132

Frequency (MHz)	Power (dBm)	Pca Cable loss(dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2077.84	-45.06	-5.6	8.6	-44.26	-13	Vertical
2557.41	-43.92	-5.7	8.6	-43.02	-13	Horizontal
2774.72	-39.09	-5.8	8.9	-38.39	-13	Vertical
6995.49	-43.95	-8.6	12.7	-48.05	-13	Vertical
9993.51	-41.32	-11.8	13.6	-43.12	-13	Vertical
17872.27	-33.54	-13.9	12.3	-31.94	-13	Horizontal

Channel 4183

Frequency (MHz)	Power (dBm)	Pca Cable loss(dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2068.37	-43.45	-5.6	8.6	-42.65	-13	Vertical
2552.53	-43.28	-5.7	8.6	-42.38	-13	Horizontal
2775.38	-38.63	-5.8	8.9	-37.93	-13	Vertical
6993.65	-44.57	-8.6	12.7	-48.67	-13	Vertical
10005.7	-41.46	-11.8	13.6	-43.26	-13	Vertical
17863.5	-33.72	-13.9	12.3	-32.12	-13	Vertical

Channel 4233

Frequency (MHz)	Power (dBm)	Pca Cable loss(dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2067.92	-43.28	-5.6	8.6	-42.48	-13	Vertical
2552.62	-44.11	-5.7	8.6	-43.21	-13	Horizontal
2776.46	-39.19	-5.8	8.9	-38.49	-13	Vertical
6993.28	-44.53	-8.6	12.7	-48.63	-13	Horizontal
10005.93	-40.10	-11.8	13.6	-41.90	-13	Horizontal
17863.12	-34.68	-13.9	12.3	-33.08	-13	Vertical

HSDPA/HSUPA Mode:

Channel 4132

Frequency (MHz)	Power (dBm)	Pca Cable loss(dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2376.95	-40.02	-5.6	8.6	-43.02	-13	Vertical
2556.71	-38.48	-5.7	8.6	-41.38	-13	Horizontal
2772.75	-40.61	-5.8	8.9	-43.71	-13	Vertical
6993.99	-42.49	-8.6	12.7	-46.59	-13	Horizontal
9983.97	-42.46	-11.8	13.6	-44.26	-13	Vertical
17879.76	-43.26	-13.9	12.3	-41.66	-13	Horizontal

Channel 4183

Frequency (MHz)	Power (dBm)	Pca Cable loss(dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2368.53	-38.93	-5.6	8.6	-41.93	-13	Vertical
2573.55	-37.93	-5.7	8.6	-40.83	-13	Horizontal
2772.74	-41.43	-5.8	8.9	-44.53	-13	Vertical
6993.99	-39.88	-8.6	12.7	-43.98	-13	Horizontal
10024.05	-40.72	-11.8	13.6	-42.52	-13	Horizontal
17859.72	-43.99	-13.9	12.3	-42.39	-13	Horizontal

Channel 4233

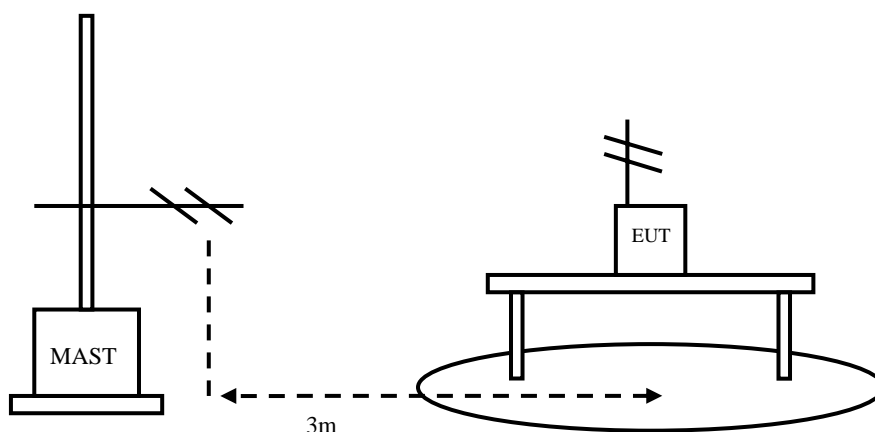
Frequency (MHz)	Power (dBm)	Pca Cable loss(dB)	Ga Antenna Gain (dB)	Pmea (dBm)	Limited (dBm)	Polarization
2365.73	-39.38	-5.6	8.6	-42.38	-13	Vertical
2553.91	-37.69	-5.7	8.6	-40.59	-13	Vertical
2775.55	-39.67	-5.8	8.9	-42.77	-13	Vertical
6991.98	-40.65	-8.6	12.7	-44.75	-13	Horizontal
10004.01	-41.95	-11.8	13.6	-43.75	-13	Horizontal
17879.76	-43.01	-13.9	12.3	-41.41	-13	Horizontal

2.2.2.9 Receiver Spurious Emissions-IC RSS-132 § 4.6

Ambient condition:

Temperature	Relative humidity	Pressure
25°C	54%	101.5kPa

Test Setup:



Test Procedure:

The EUT should be placed on a non-metallic table 80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.

The EUT should work in idle mode. The accessories of the EUT are connected with the EUT such as headset etc.

Then start the test software ES-K1. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna HL562.

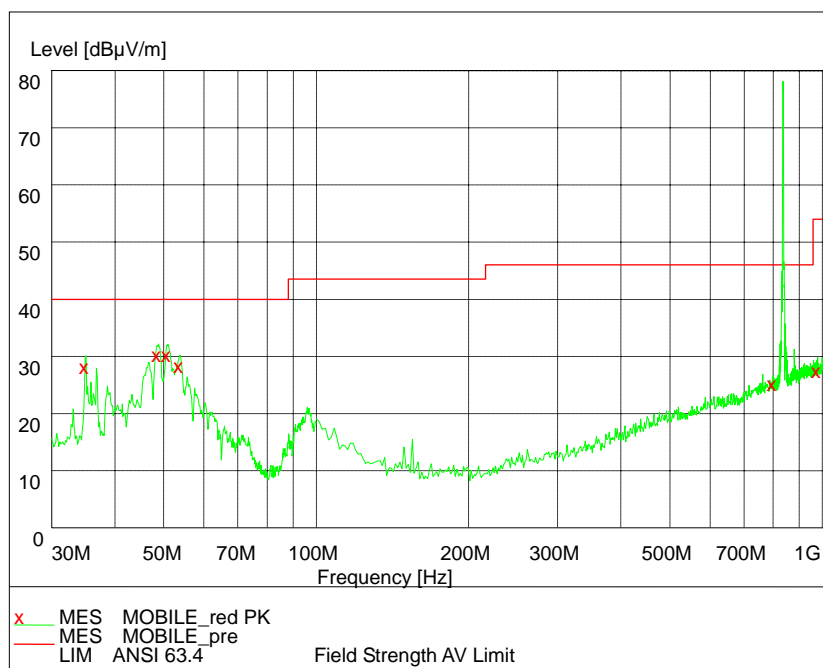
During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The EUT is laid in two modes as follow: 1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.

The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Limit:

Spurious Frequency (MHz)	Field Strength at 3 metres		
	Detector	Unit (microvolts/m)	Unit (dB μ V/m)
30~88	Quasi-peak	100	40
88~216	Quasi-peak	150	43.5
216~960	Quasi-peak	200	46
960~1000	Quasi-peak	500	54
Above 1000	Average	500	54

Test result:



WCDMA band V

Note: The signal beyond the limit is the base station simulator carrier.

For measurement above 1GHz, all emissions level measured were more than 10dB below the limit.

2.3 List of test equipments

No.	Name/Model	Manufacturer	S/N	Calibration Due Date
1	E5515C(8960) Mobile Station Tester	Agilent	MY48367401	2012.8
2	N9020A Spectrum Analyzer	Agilent	MY48010771	2012.8
3	DC Power Supply E3645A	Agilent	MY40000740	2012.8
4	Power Splitter 11850C	Agilent	026057	2012.8
5	12.65m×8.03m×7.50m Fully-Anechoic Chamber	FRANKONIA	-----	-----
6	Turn table Diameter:1m	HD	-----	-----
7	Antenna master FAC(MA4.0)	MATURO	-----	-----
8	HF 906 Double-Ridged Waveguide Horn Antenna	R&S	100030	2012.8
9	HL562 Ultra log antenna	R&S	100016	2012.8
10	3160-09 Receive antenna	SCHWARZ-BECK	002058-002	2012.8
11	ESI 40 EMI test receiver	R&S	100015	2012.8
12	CMU 200 Radio tester	R&S	114667	2012.8
13	23.18m×16.88m×9.60m Semi-Anechoic Chamber	FRANKONIA	-----	2012.8
14	SH-241 Climatic Chamber	ESPEC	92000390	2012.8

Appendix

Appendix1 Test Setup