

# FCC Part22H&24E Test Report

Product Name : HSPA/UMTS/GSM/GPRS/EDGE Mobile  
Phone with Bluetooth  
Model No. : HUAWEI U8850-5/U8850-5  
Marketing Name : HUAWEI U8850/ U8850/ HUAWEI VISION/  
Huawei Vision/ HUAWEI VISION U8850  
FCC ID : QISU8850-5

Applicant : Huawei Technologies Co., Ltd.  
Address : Administration Building, Huawei Base, Bantian, Longgang  
District, Shenzhen 518129

Date of Receipt : 23/11/2011  
Test Date : 23/11/2011~06/12/2011  
Issued Date : 12/12/2011  
Report No. : 11BS064R-HP-US-P07V01  
Report Version : V 2.1

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by TAF, NVLAP, NIST or any agency of the Government.

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# Test Report Certification

Issued Date : 12/12/2011

Report No. : 11BS064R-HP-US-P07V01



Product Name : HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth  
 Applicant : Huawei Technologies Co., Ltd.  
 Address : Administration Building, Huawei Base, Bantian, Longgang District, Shenzhen 518129  
 Manufacturer : Huawei Technologies Co., Ltd.  
 Address : Administration Building, Huawei Base, Bantian, Longgang District, Shenzhen 518129  
 Model No. : HUAWEI U8850-5/U8850-5  
 Marketing Name : HUAWEI U8850/ U8850/ HUAWEI VISION/ Huawei Vision/ HUAWEI VISION U8850  
 FCC ID : QISU8850-5  
 EUT Voltage : DC: 3.7V  
 Brand Name : HUAWEI  
 Applicable Standard : FCC CFR Title 47 Part 2, TIA/EIA 603-C  
 FCC Part22 Subpart H, FCC Part24 Subpart E  
 Test Result : Complied  
 Performed Location : Quietek Corporation (Linkou Laboratory)  
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## Laboratory Information

We, **QuietTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

<b>Taiwan R.O.C.</b>	<b>: BSMI, NCC, TAF</b>
<b>Germany</b>	<b>: TUV Rheinland</b>
<b>Norway</b>	<b>: Nemko, DNV</b>
<b>USA</b>	<b>: FCC, NVLAP</b>
<b>Japan</b>	<b>: VCCI</b>

The related certificate for our laboratories about the test site and management system can be downloaded from QuietTek Corporation's Web Site : <http://www.quietek.com/tw/ctg/cts/accreditations.htm>  
 The address and introduction of QuietTek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>  
 If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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1. General Information

1.1. EUT Description

Product Name	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth
Model No.	HUAWEI U8850-5/U8850-5
Marketing Name	HUAWEI VISION/ Huawei Vision/ HUAWEI VISION U8850/ UAWEI U8850-5/ U8850-5
IMEI	862446010004712
Hardware Version	PR2
Software Version	U8850V100R001C00B237SP00
Device Category	Portable
RF Exposure Environment	Uncontrolled
Antenna Type	Internal
<b>GPS</b>	
Operate Frequency	1575.42MHz
Type of modulation	BPSK
<b>2G</b>	
Support Band	GSM850/GSM900/DCS1800/PCS1900
GPRS Type	Class B
GPRS Class	Class 10
Tx Frequency Range	GSM 850: 824~849MHz PCS 1900: 1850~1910MHz
Rx Frequency Range	GSM 850: 869~894MHz PCS 1900: 1930~1990MHz
Release Version	GSM: R99
Type of modulation	GMSK for GSM/GPRS; 8PSK for EDGE
Antenna Gain	-0.77dBi for 824~849MHz 1.6dBi for 1850~1910MHz
Max. Output Power (Avg. Power)	GSM850: 32.65 dBm PCS1900: 29.55 dBm
Max. Output Power (Radiated)	GSM850: 30.86 dBm- ERP PCS1900: 30.65 dBm- EIRP
<b>3G</b>	
Support Band	WCDMA Band II/WCDMA BAND V
Frequency Range Tx	WCDMA Band V: 824~849MHz

	WCDMA Band II: 1850~1910MHz
Frequency Range Rx	WCDMA Band V: 869~894MHz WCDMA Band II: 1930~1990MHz
UE Category	HSDPA: Category 10 HSUPA: Category 6
Release Version	UMTS FDD: Rel-6
Type of modulation(Uplink)	QPSK
Antenna Gain	-0.77dBi for 824~849MHz 1.6dBi for 1850~1910MHz
Max. Output Power (Avg. Power)	WCDMA Band II: 23.51dBm WCDMA Band V: 23.47 dBm
Max. Output Power (Radiated)	WCDMA Band II: 23.93 dBm- EIRP WCDMA Band V: 21.45 dBm- ERP
<b>Bluetooth</b>	
Bluetooth Frequency	2402~2480MHz
Bluetooth Version	V2.1 + EDR
Type of modulation	FHSS
Data Rate	1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK)
Antenna Gain	0.5dBi
<b>Wi-Fi</b>	
Wi-Fi Frequency	2412~2462MHz
Hotspots Function	YES
Type of modulation	802.11b: DSSS; 802.11g/n: OFDM
Data Rate	802.11b: 1/2/5.5/11 Mbps
	802.11g: 6/9/12/18/24/36/48/54 Mbps
	802.11n: up to 65 Mbps
Antenna Gain	0.5dBi
Max. Output Power (Avg. Power)	Wi-Fi: 14.39 dBm
<b>Components</b>	
Headset #1	Manufacturer: Jiangxi Lianchuang Hongsheng Electronic Co., LTD M/N: MEMD1532A726012
Headset #2	Manufacturer: QUANCHENG ELECTRONIC CO., LTD M/N: MEMD1532A726012
Battery	Brand Name: HUAWEI

	M/N: HB5K1H Rated Voltage and Capacitance: 3.7V/1400mAh
Adapter #1	Manufacturer: SHENZHEN HUNTKEY ELECTRIC CO., LTD M/N: HW-050100U1W Input: 100-240V~50/60Hz 0.2A Output: 5Vdc, 1.0A
Adapter #2	Manufacturer: TECH-POWER INTERNATIONAL CO., LTD. M/N: HW-050100U1W Input: 100-240V~50/60Hz 0.2A Output: 5Vdc, 1.0A

Note 1: Each adapter has two different labels (Show in EUT photo).

2: Adapter #1 was used for RF test.

**1.2. Mode of Operation**

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: GSM 850 Link
Mode 2: PCS 1900 Link
Mode 3: EDGE 850 Link
Mode 4: EDGE 1900 Link
Mode 5: WCDMA Band II Link
Mode 6: WCDMA Band V Link
Mode 7: HSDPA Band II Link
Mode 8: HSDPA Band V Link
Mode 9: HSUPA Band II Link
Mode 10: HSUPA Band V Link

Note:

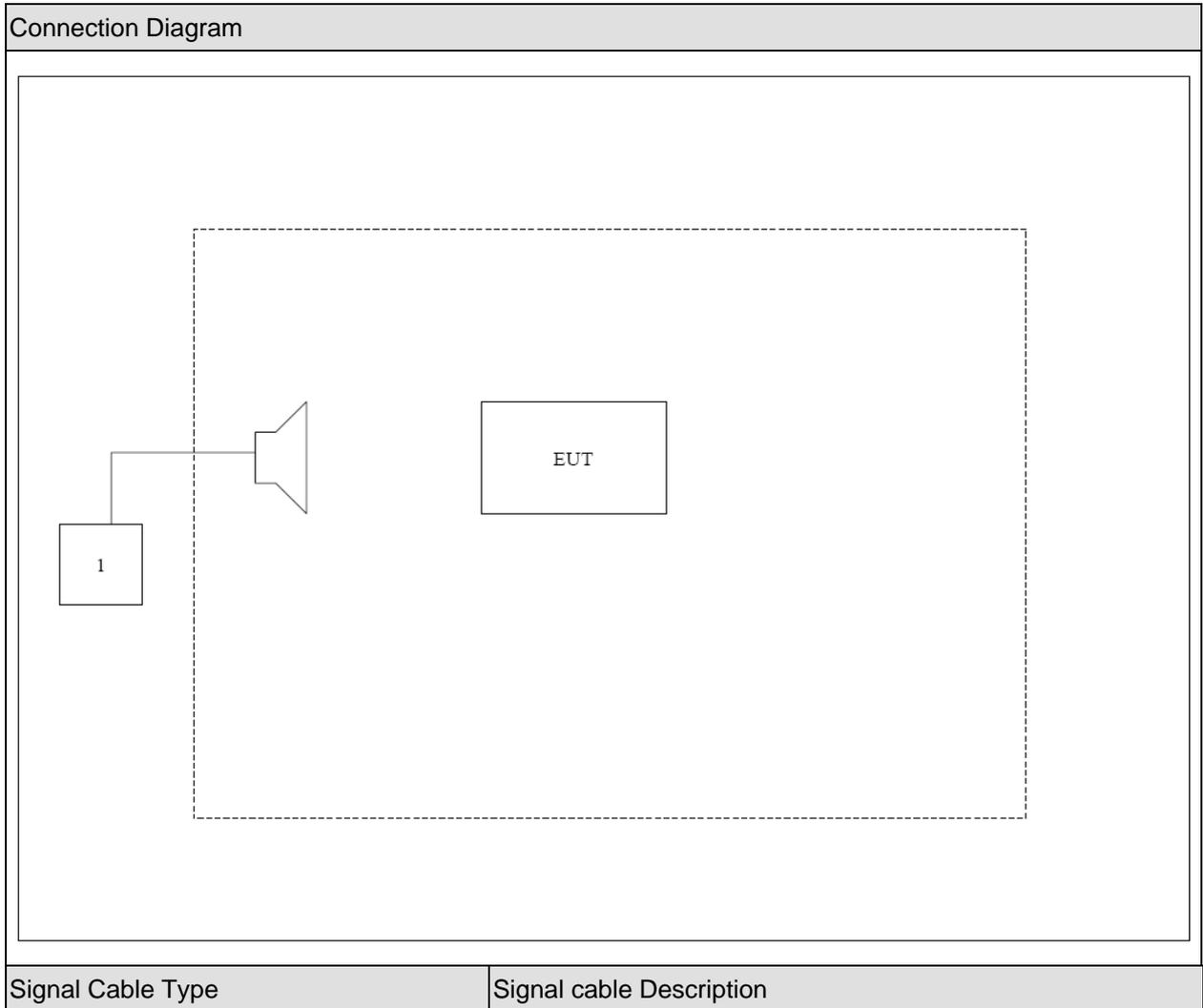
1. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. Radiated power output working at GSM link was higher than that working at GPRS link, so all of test items were done working at GSM mode. Refer to peak power output for more details.
3. For the ERP/EIRP and radiated emission test, every axis (X, Y, Z) was verified, and show the worst result on this report.
4. This device is a composite device in accordance with Part 15 Subpart B regulations. The report number is 11BS064R-RF-US-P01V01.

**1.3. Tested System Details**

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	CMU200	R&S	CMU200	N/A	N/A

1.4. Configuration of Tested System



**1.5. EUT Exercise Software**

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of all equipment.
3	EUT Communicate with CMU200, then select channel to test.

**2. Technical Test**

**2.1. Summary of Test Result**

- No deviations from the test standards
- Deviations from the test standards as below description:

For GSM 850/WCDMA Band V (FCC Part 22H & Part 2)

Emission			
Performed Item	Normative References	Test Performed	Deviation
Peak Output Power	FCC Part 22.913(a)(2) and Part 2.1046	Yes	No
Modulation Characteristic	FCC Part 2.1047(d)	Yes	No
Occupied Bandwidth	FCC Part 2.1049	Yes	No
Spurious Emission At Antenna Terminals (+/- 1MHz)	FCC Part 22.917(a) and Part 2.1049	Yes	No
Spurious Emission	FCC Part 22.917(b) and Part 2.1051, 2.1053	Yes	No
Frequency Stability Under Temperature & Voltage Variations	FCC Part 22.355 and 2.1055	Yes	No

For PCS 1900/WCDMA Band II (FCC Part 24E & Part 2)

Emission			
Performed Item	Normative References	Test Performed	Deviation
Peak Output Power	FCC Part 24.232(b) and Part 2.1046	Yes	No
Modulation Characteristic	FCC Part 2.1047(d)	Yes	No
Occupied Bandwidth	FCC Part 24.238(b) and Part 2.1049	Yes	No
Spurious Emission At Antenna Terminals (+/- 1MHz)	FCC Part 24.238(a) and Part 2.1049	Yes	No
Spurious Emission	FCC Part 24.238(b) and Part 2.1051, 2.1053	Yes	No
Frequency Stability Under Temperature & Voltage Variations	FCC Part 24.235 and 2.1055	Yes	No

**2.2. Test Environment**

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	23
Humidity (%RH)	25-75	52
Barometric pressure (mbar)	860-1060	950-1000

### 3. Peak Output Power

#### 3.1. Test Equipment

##### Conducted Output Power / CTR

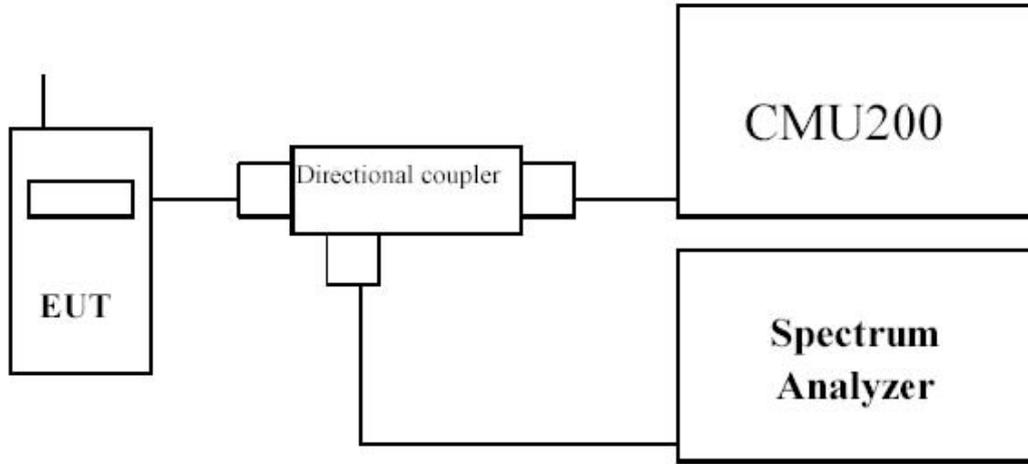
Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Spectrum Analyzer	Agilent	E4440A	MY46185846	2012/11/30
Universal Radio Communication Tester	R & S	CMU200	104846	2012/05/19
Directional coupler	Agilent	87300C	MY44300353	2012/09/15
Directional coupler	Agilent	778D-012	50550	2012/09/15

##### Peak Output Power / OATS 1

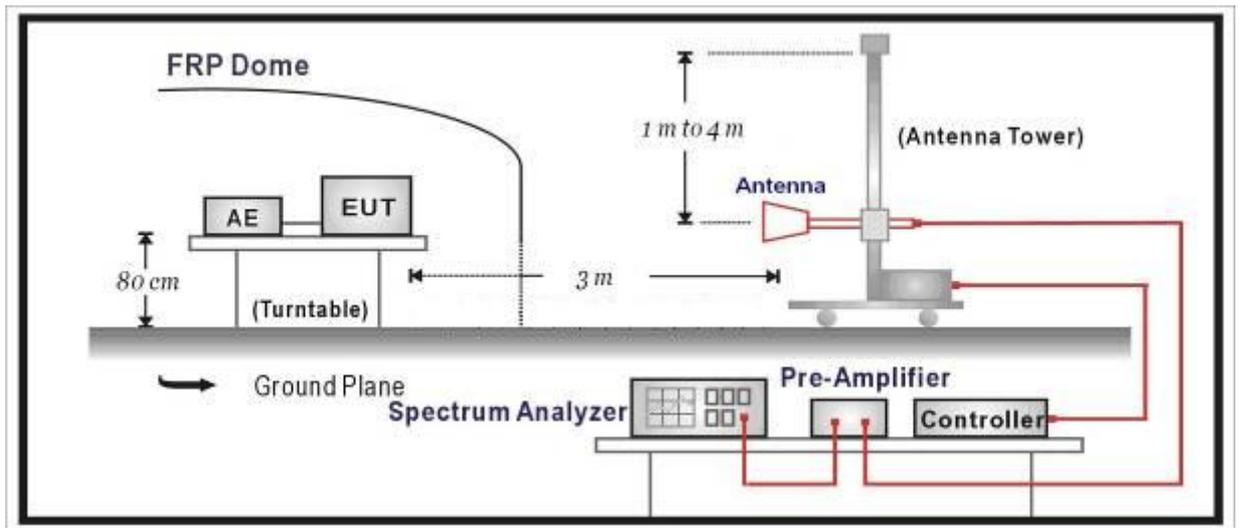
Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Test Receiver	R & S	ESCS 30	100121	2012/12/06
Universal Radio Communication Tester	R & S	CMU200	104846	2012/05/19
Spectrum Analyzer	Agilent	E4408B	MY45102743	2012/11/06
Pre-Amplifier	QTK	AP-180C	CHM/071920	2012/07/12
Bilog Antenna	SCHAFFNER	CBL6112B	2916	2012/07/21
Horn Antenna	Schwarzbeck	BBHA9120D	497	2012/11/03
Pre-Amplifier	QTK	AP-025C	0506002	2012/07/07

**3.2. Test Setup**

Conducted Power Measurement:



Radiated Power Measurement:



**3.3. Limit**

**For FCC Part 22.913(a)(2):**

The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

**For FCC Part 24.232(b):**

The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 2 Watts.

**3.4. Test Procedure**

**Conducted Power Measurement:**

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMU200 by a Directional Couple.
- c) EUT Communicate with CMU200, then selects a channel for testing.
- d) Add a correction factor to the display of spectrum, and then test.

**Radiated Power Measurement:**

- e) The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
- f) The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
- g) The output of the test antenna shall be connected to the measuring receiver.
- h) The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.
- i) The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
- j) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- k) The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
- l) The maximum signal level detected by the measuring receiver shall be noted.
- m) The transmitter shall be replaced by a substitution antenna.
- n) The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
- o) The substitution antenna shall be connected to a calibrated signal generator.
- p) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- q) The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
- r) The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
- s) The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
- t) The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if

necessary.

- u) Test site anechoic chamber refer to ANSI C63.4: 2003.

### **3.5. Uncertainty**

The measurement uncertainty is defined as for Conducted Power Measurement  $\pm 1.2$  dB,  
for Radiated Power Measurement  $\pm 3.2$  dB

3.6. Test Result

Table 1

No. of timeslots	1	2	3	4
Duty Cycle	1 : 8	1 : 4	1 : 2.66	1 : 2
Timebased avg. power compared to slotted avg. power	-9 dB	-6 dB	-4.25 dB	-3 dB

The EUT just supports GPRS class 10.

The following table shows the conducted power measured and time based average power calculated:

Table 2

GSM850

Channel No.	Frequency (MHz)	Modulation	Avg. Burst Power (dBm)	Duty Cycle Factor (dB)	Frame Power (dBm)	ERP (dBm)	Limit (dBm)
128	824.2	GMSK	32.65	-9	23.65	29.17	38.50
189	836.4	GMSK	32.28	-9	23.18	29.55	38.50
251	848.8	GMSK	32.41	-9	23.41	30.86	38.50

PCS1900

Channel No.	Frequency (MHz)	Modulation	Avg. Burst Power (dBm)	Duty Cycle Factor (dB)	Frame Power (dBm)	EIRP (dBm)	Limit (dBm)
512	1850.2	GMSK	29.17	-9	20.17	30.14	33.00
661	1880.0	GMSK	29.36	-9	20.36	30.65	33.00
810	1909.8	GMSK	29.55	-9	20.55	30.23	33.00

GPRS 850

Channel No.	Frequency (MHz)	Modulation	Avg. Burst Power (dBm)	Duty Cycle Factor (dB)	Frame Power (dBm)	ERP (dBm)	Limit (dBm)
128	824.2	GMSK	32.30	-9	23.30	28.20	38.50
189	836.4	GMSK	32.19	-9	23.29	29.03	38.50
251	848.8	GMSK	32.40	-9	23.40	30.55	38.50

## GPRS1900

Channel No.	Frequency (MHz)	Modulation	Avg. Burst Power (dBm)	Duty Cycle Factor (dB)	Frame Power (dBm)	EIRP (dBm)	Limit (dBm)
512	1850.2	GMSK	29.07	-9	20.07	29.97	33.00
661	1880.0	GMSK	29.18	-9	20.18	30.48	33.00
810	1909.8	GMSK	29.37	-9	20.37	30.01	33.00

## EDGE850

Channel No.	Frequency (MHz)	Modulation	Avg. Burst Power (dBm)	Duty Cycle Factor (dB)	Frame Power (dBm)	ERP (dBm)	Limit (dBm)
128	824.2	8PSK	26.16	-9	17.16	24.23	38.50
189	836.4	8PSK	26.08	-9	17.08	25.19	38.50
251	848.8	8PSK	25.96	-9	16.96	24.38	38.50

## EDGE1900

Channel No.	Frequency (MHz)	Modulation	Avg. Burst Power (dBm)	Duty Cycle Factor (dB)	Frame Power (dBm)	EIRP (dBm)	Limit (dBm)
512	1850.2	8PSK	25.24	-9	16.24	26.58	33.00
661	1880.0	8PSK	25.22	-9	16.22	25.56	33.00
810	1909.8	8PSK	25.40	-9	16.40	26.34	33.00

Note: All conducted measurements are based on a peak detector.

WCDMA/HSDPA/HSUPA

Mode	3GPP Subtest	Band II (1900MHz) Channel						MPR
		Conducted Power (dBm)			EIRP (dBm)			
		9262	9400	9538	9262	9400	9538	
WCDMA R99	1	23.38	23.01	23.51	23.88	22.79	22.86	N/A
Rel5 HSDPA	1	23.42	23.12	23.22	23.93	23.15	23.09	0
	2	23.39	23.07	23.15	---	---	---	0
	3	22.97	22.48	22.85	---	---	---	0.5
	4	22.93	22.37	22.76	---	---	---	0.5
Rel6 HSUPA	1	23.26	23.11	23.30	23.82	22.89	22.76	0.0
	2	21.27	21.26	21.43	---	---	---	2.0
	3	22.02	21.87	22.19	---	---	---	1.0
	4	21.19	21.20	21.47	---	---	---	2.0
	5	23.11	23.08	23.25	---	---	---	0.0

Mode	3GPP Subtest	Band V (850MHz) Channel						MPR
		Conducted Power (dBm)			ERP (dBm)			
		4132	4182	4233	4132	4182	4233	
WCDMA R99	1	23.47	23.17	23.06	21.45	20.29	20.88	N/A
Rel5 HSDPA	1	23.28	23.25	23.12	21.19	20.30	20.90	0
	2	23.20	23.21	23.10	---	---	---	0
	3	22.70	22.82	22.83	---	---	---	0.5
	4	22.64	22.74	22.80	---	---	---	0.5
Rel6 HSUPA	1	23.33	23.26	23.15	21.10	20.00	20.79	0.0
	2	21.41	21.16	21.22	---	---	---	2.0
	3	22.54	22.19	22.03	---	---	---	1.0
	4	21.39	21.08	21.30	---	---	---	2.0
	5	23.30	23.18	23.11	---	---	---	0.0

Note: All conducted measurements are based on a RMS detector.

Radiated Measurement

GSM850

Frequency (MHz)	SA Reading (dBm)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
824.2	-2.68	H	31.00	1.76	-0.02	29.22	38.50	-9.28
824.2	-8.00	V	26.42	1.76	-0.02	24.64	38.50	-13.86
Middle Channel 189 (836.40MHz)								
836.4	-3.19	H	30.59	1.75	0.10	28.94	38.50	-9.56
836.4	-7.70	V	26.95	1.75	0.10	25.30	38.50	-13.20
High Channel 251 (848.80MHz)								
848.8	-4.22	H	29.77	1.78	0.13	28.12	38.50	-10.38
848.8	-6.95	V	27.63	1.78	0.13	25.98	38.50	-12.52

PCS1900

Frequency (MHz)	SA Reading (dBm)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
1850.2	24.40	H	22.56	2.68	10.40	30.28	33.00	-2.72
1850.2	10.00	V	7.90	2.68	10.40	15.62	33.00	-17.38
Middle Channel 661 (1880.00MHz)								
1880.0	23.50	H	21.59	2.68	10.43	29.34	33.00	-3.66
1880.0	11.00	V	8.75	2.68	10.43	16.50	33.00	-16.50
High Channel 810 (1909.80MHz)								
1909.8	24.20	H	22.52	2.70	10.44	30.26	33.00	-2.74
1909.8	8.90	V	6.76	2.70	10.44	14.50	33.00	-18.50

GPRS 850

Frequency (MHz)	SA Reading (dBm)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
824.2	-2.84	H	30.84	1.76	-0.02	29.06	38.50	-9.44
824.2	-6.99	V	27.43	1.76	-0.02	25.65	38.50	-12.85
Middle Channel 189 (836.40MHz)								
836.4	-3.34	H	30.45	1.75	0.10	28.80	38.50	-9.70
836.4	-8.89	V	25.76	1.75	0.10	24.11	38.50	-14.39
High Channel 251 (848.80MHz)								
848.8	-3.79	H	30.20	1.78	0.13	28.55	38.50	-9.95
848.8	-9.08	V	25.50	1.78	0.13	23.85	38.50	-14.65

GPRS1900

Frequency (MHz)	SA Reading (dBm)	Ant .Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
1850.2	24.84	H	22.91	2.68	10.40	30.63	33.00	-2.37
1850.2	11.18	V	9.06	2.68	10.40	16.78	33.00	-16.22
Middle Channel 661 (1880.00MHz)								
1880.0	23.73	H	21.78	2.68	10.43	29.53	33.00	-3.47
1880.0	11.14	V	8.85	2.68	10.43	16.60	33.00	-16.40
High Channel 810 (1909.80MHz)								
1909.8	24.19	H	22.25	2.70	10.44	29.99	33.00	-3.01
1909.8	8.93	V	6.65	2.70	10.44	14.39	33.00	-18.61

EDGE 850

Frequency (MHz)	SA Reading (dBm)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
824.2	-7.66	H	26.01	1.76	-0.02	24.23	38.50	-14.27
824.2	-11.70	V	22.72	1.76	-0.02	20.94	38.50	-17.56
Middle Channel 189 (836.40MHz)								
836.4	-7.95	H	26.84	1.75	0.10	25.19	38.50	-13.31
836.4	-12.32	V	22.32	1.75	0.10	20.67	38.50	-17.83
High Channel 251 (848.80MHz)								
848.8	-7.95	H	26.03	1.78	0.13	24.38	38.50	-14.12
848.8	-14.78	V	19.80	1.78	0.13	18.15	38.50	-20.35

EDGE1900

Frequency (MHz)	SA Reading (dBm)	Ant .Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
1850.2	20.79	H	18.86	2.68	10.40	26.58	33.00	-6.42
1850.2	7.40	V	5.28	2.68	10.40	13.00	33.00	-20.00
Middle Channel 661 (1880.00MHz)								
1880.0	19.76	H	17.81	2.68	10.43	25.56	33.00	-7.44
1880.0	7.27	V	4.98	2.68	10.43	12.73	33.00	-20.27
High Channel 810 (1909.80MHz)								
1909.8	20.37	H	18.6	2.70	10.44	26.34	33.00	-6.66
1909.8	5.25	V	3.04	2.70	10.44	10.78	33.00	-22.22

WCDMA Band II

Frequency (MHz)	SA Reading (dBm)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	ERIP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
1852.4	18.09	H	17.03	3.55	10.40	23.88	33.00	-9.12
1852.4	4.39	V	3.14	3.55	10.40	9.99	33.00	-23.01
Middle Channel 9400 (1880.00MHz)								
1880.0	17.00	H	15.89	3.53	10.43	22.79	33.00	-11.21
1880.0	3.58	V	2.14	3.53	10.43	9.04	33.00	-23.96
High Channel 9538 (1907.60MHz)								
1907.6	16.95	H	15.98	3.56	10.44	22.86	33.00	-10.14
1907.6	2.04	V	0.63	3.56	10.44	7.51	33.00	-25.49

WCDMA Band V

Frequency (MHz)	SA Reading (dBm)	Ant .Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
826.4	-10.44	H	24.03	2.56	-0.02	21.45	38.50	-17.05
826.4	-16.73	V	18.51	2.56	-0.02	15.93	38.50	-22.57
Middle Channel 4182 (836.40MHz)								
836.4	-11.77	H	22.78	2.59	0.10	20.29	38.50	-18.21
836.4	-17.32	V	18.13	2.59	0.10	15.64	38.50	-22.86
High Channel 4233 (846.60MHz)								
846.6	-11.36	H	23.29	2.54	0.13	20.88	38.50	-17.62
846.6	-17.22	V	18.12	2.54	0.13	15.71	38.50	-22.79

HSDPA Band II

Frequency (MHz)	SA Reading (dBm)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
1852.4	18.14	H	17.08	3.55	10.40	23.93	33.00	-8.07
1852.4	6.13	V	4.87	3.55	10.40	11.72	33.00	-21.28
Middle Channel 9400 (1880.00MHz)								
1880.0	17.35	H	16.25	3.53	10.43	23.15	33.00	-10.85
1880.0	3.58	V	2.14	3.53	10.43	9.04	33.00	-23.96
High Channel 9538 (1907.60MHz)								
1907.6	17.17	H	16.21	3.56	10.44	23.09	33.00	-9.91
1907.6	2.06	V	0.66	3.56	10.44	7.54	33.00	-25.46

HSDPA Band V

Frequency (MHz)	SA Reading (dBm)	Ant .Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
826.4	-10.70	H	23.77	2.56	-0.02	21.19	38.50	-17.31
826.4	-15.04	V	20.21	2.56	-0.02	17.63	38.50	-20.87
Middle Channel 4182 (836.40MHz)								
836.4	-11.77	H	22.79	2.59	0.10	20.30	38.50	-18.20
836.4	-16.38	V	19.08	2.59	0.10	16.59	38.50	-21.91
High Channel 4233 (846.60MHz)								
846.6	-11.35	H	23.31	2.54	0.13	20.90	38.50	-17.60
846.6	-15.91	V	19.42	2.54	0.13	17.01	38.50	-21.49

HSUPA Band II

Frequency (MHz)	SA Reading (dBm)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
1852.4	18.03	H	16.97	3.55	10.40	23.82	33.00	-8.18
1852.4	5.91	V	4.64	3.55	10.40	11.49	33.00	-21.51
Middle Channel 9400 (1880.00MHz)								
1880.0	16.99	H	15.89	3.53	10.43	22.79	33.00	-11.21
1880.0	3.79	V	2.35	3.53	10.43	9.25	33.00	-23.75
High Channel 9538 (1907.60MHz)								
1907.6	16.85	H	15.88	3.56	10.44	22.76	33.00	-10.24
1907.6	2.04	V	0.64	3.56	10.44	7.52	33.00	-25.48

HSUPA Band V

Frequency (MHz)	SA Reading (dBm)	Ant .Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
826.4	-10.79	H	23.68	2.56	-0.02	21.10	38.50	-17.40
826.4	-15.43	V	19.81	2.56	-0.02	17.23	38.50	-21.27
Middle Channel 4182 (836.40MHz)								
836.4	-12.08	H	22.49	2.59	0.10	20.00	38.50	-18.50
836.4	-16.06	V	19.39	2.59	0.10	16.90	38.50	-21.60
High Channel 4233 (846.60MHz)								
846.6	-11.46	H	23.20	2.54	0.13	20.79	38.50	-17.71
846.6	-16.39	V	18.94	2.54	0.13	16.53	38.50	-21.97

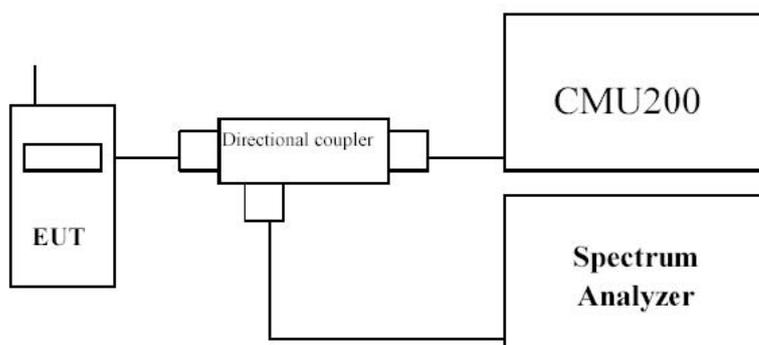
**4. Modulation Characteristic**

**4.1. Test Equipment**

Modulation Characteristic / CTR

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Spectrum Analyzer	Agilent	E4440A	MY46185846	2012/11/30
Universal Radio Communication Tester	R & S	CMU200	104846	2012/05/19
Directional coupler	Agilent	87300C	MY44300353	2012/09/15
Directional coupler	Agilent	778D-012	50550	2012/09/15

**4.2. Test Setup**



**4.3. Limit**

N/A

**4.4. Uncertainty**

The measurement uncertainty is defined as 0.1%

**4.5. Test Result**

The modulation of GSM/WCDMA were verified and confirmed compliance with requirement.

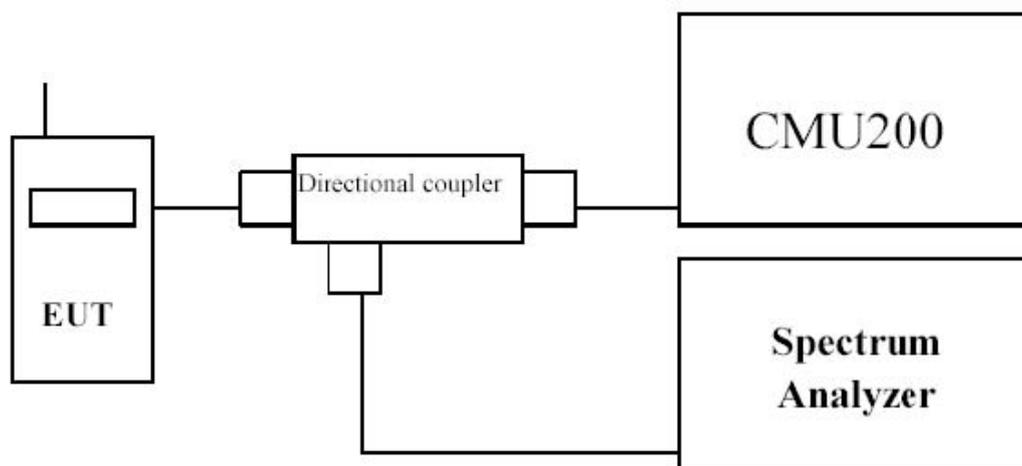
## 5. Occupied Bandwidth

### 5.1. Test Equipment

Occupied Bandwidth / CTR

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Spectrum Analyzer	Agilent	E4440A	MY46185846	2012/11/30
Universal Radio Communication Tester	R & S	CMU200	104846	2012/05/19
Directional coupler	Agilent	87300C	MY44300353	2012/09/15
Directional coupler	Agilent	778D-012	50550	2012/09/15

### 5.2. Test Setup



**5.3. Limit**

N/A

**5.4. Test Procedure**

Using Occupied Bandwidth measurement function of spectrum analyzer, and setting as follows:

For GSM/GPRS/EDGE 850/1900 test --- RBW = 3 kHz and VBW = 10 kHz

For WCDMA/HSDPA/HSUPA FDD Band II/V test --- RBW = 50 kHz and VBW = 200 kHz

**5.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 10$  Hz

5.6. Test Result

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: GSM850 Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
128	824.20	314.05	244.95
189	836.40	311.71	242.97
251	848.80	313.19	242.01

Figure Channel 128 (824.20MHz)

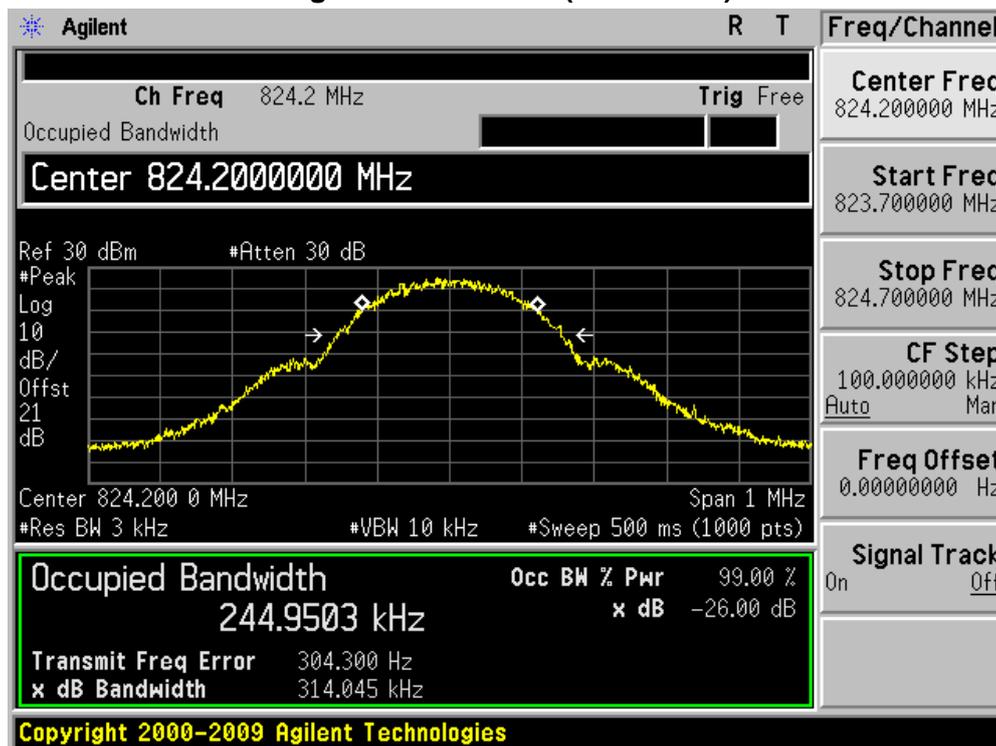


Figure Channel 189 (836.40MHz)

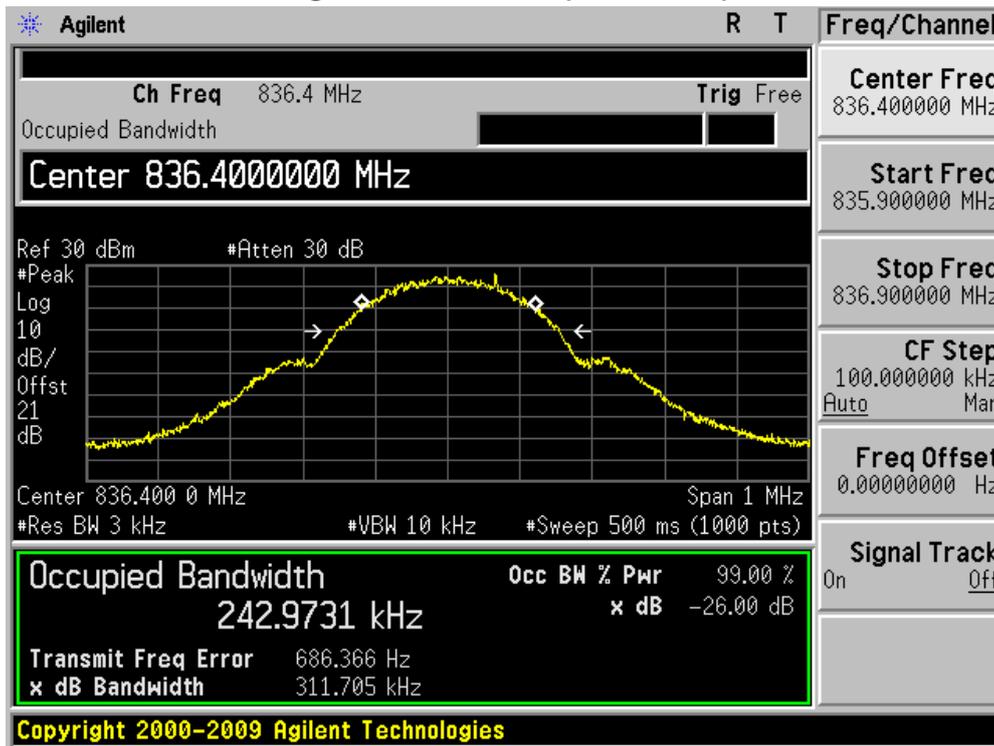
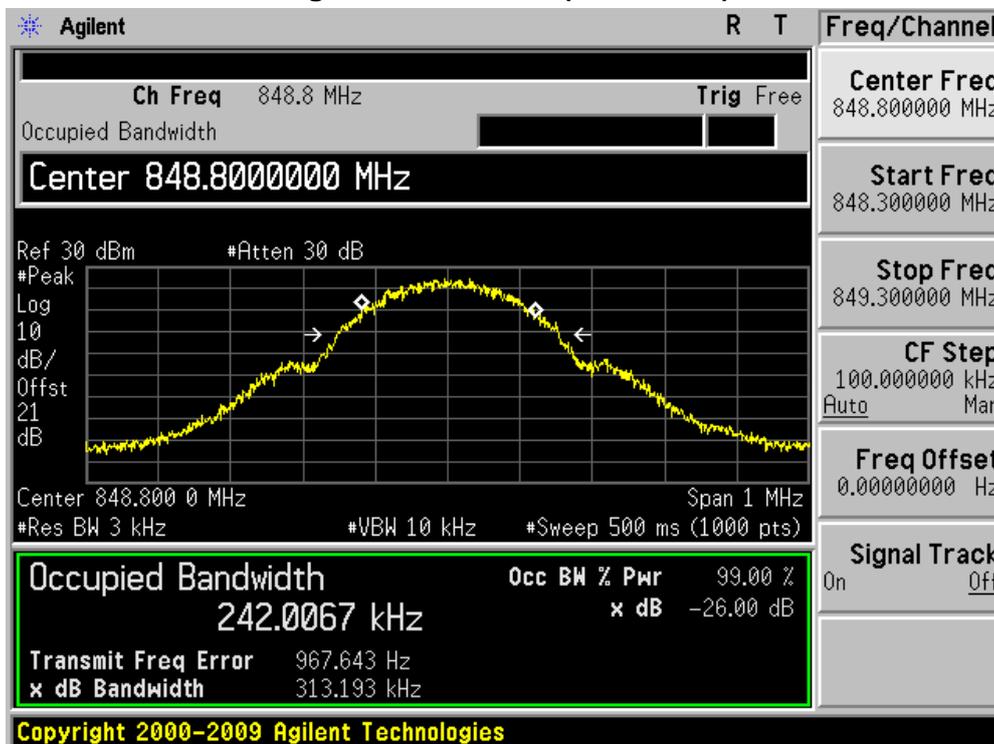


Figure Channel 251 (848.80MHz)



Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Occupied Bandwidth		
Test Mode	Mode 2: PCS 1900 Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
512	1850.20	316.17	246.30
661	1880.00	313.25	243.83
810	1909.80	310.17	246.59

**Figure Channel 512 (1850.20MHz)**

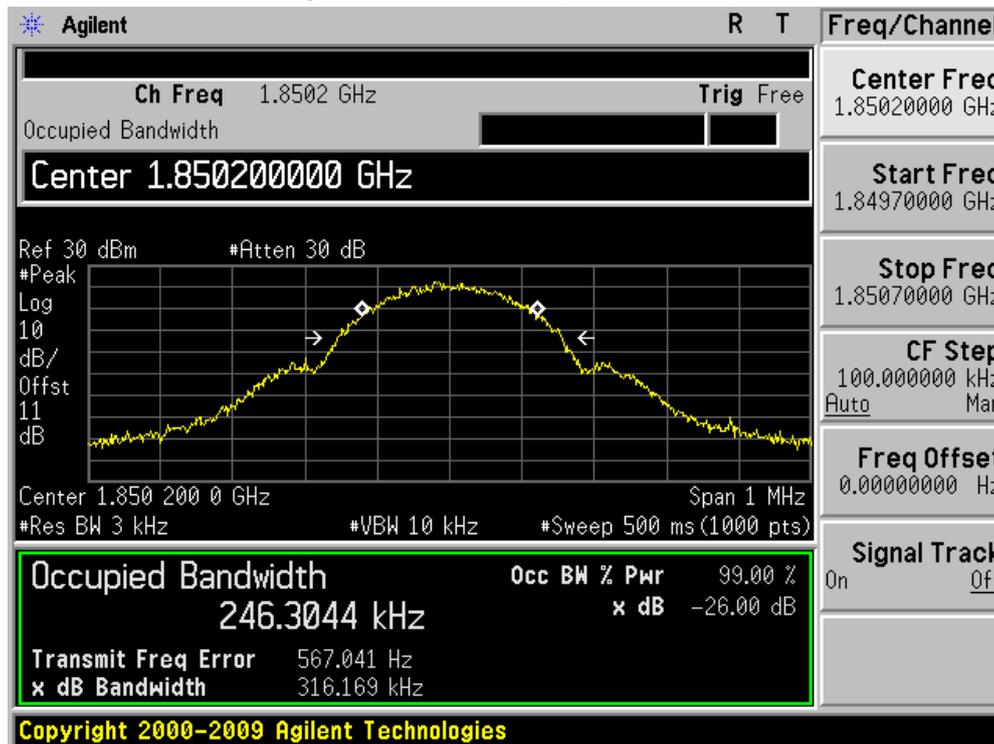


Figure Channel 661 (1880.00MHz)

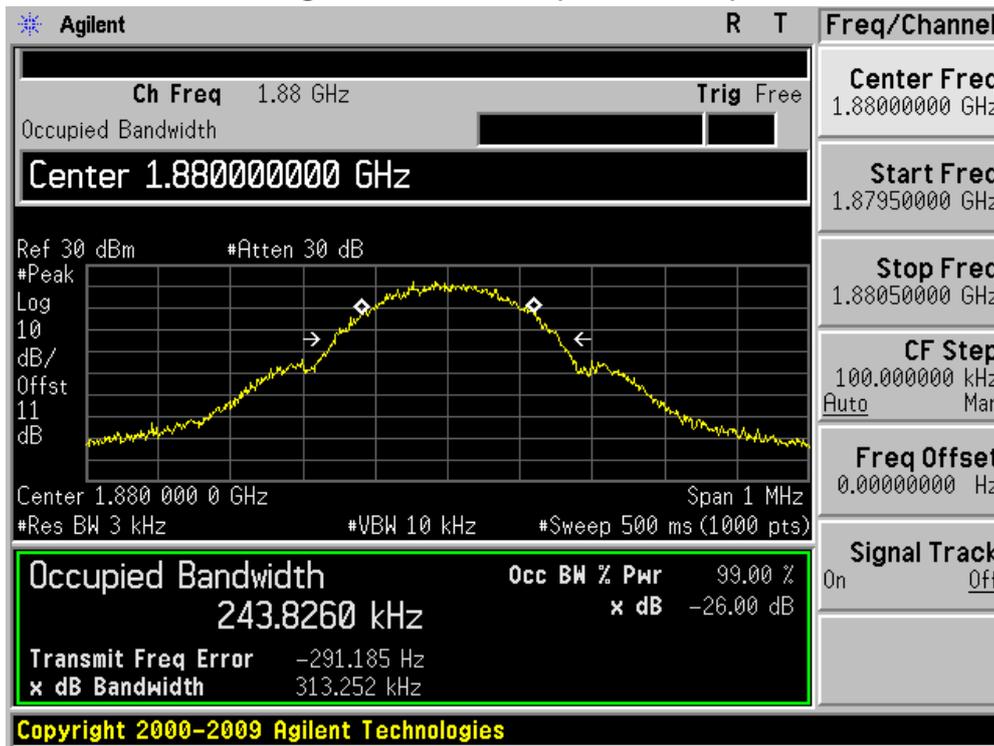
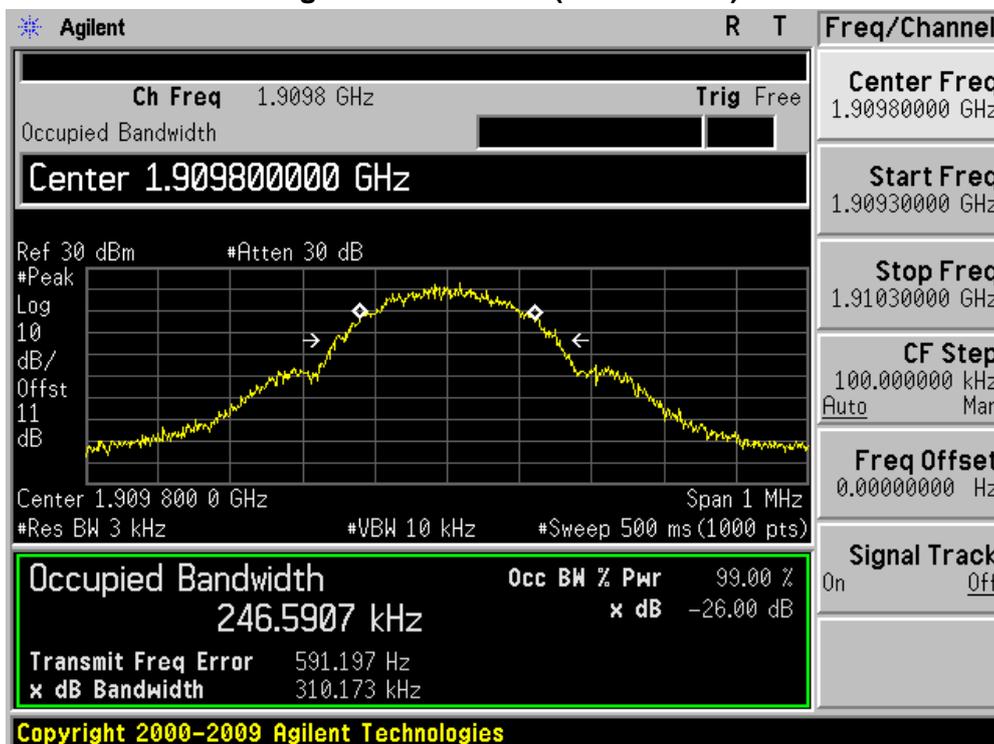


Figure Channel 810 (1909.80MHz)



Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Occupied Bandwidth		
Test Mode	Mode 3: EDGE850 Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
128	824.20	314.91	239.81
189	836.40	313.89	244.13
251	848.80	307.01	242.06

Figure Channel 128 (824.20MHz)

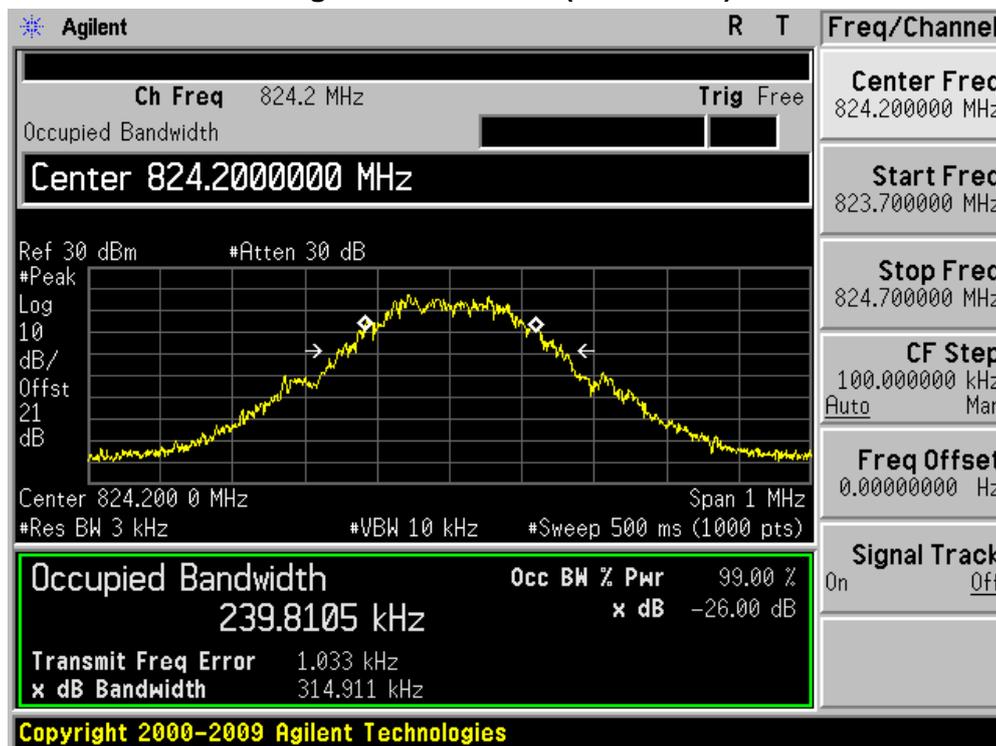


Figure Channel 189 (836.40MHz)

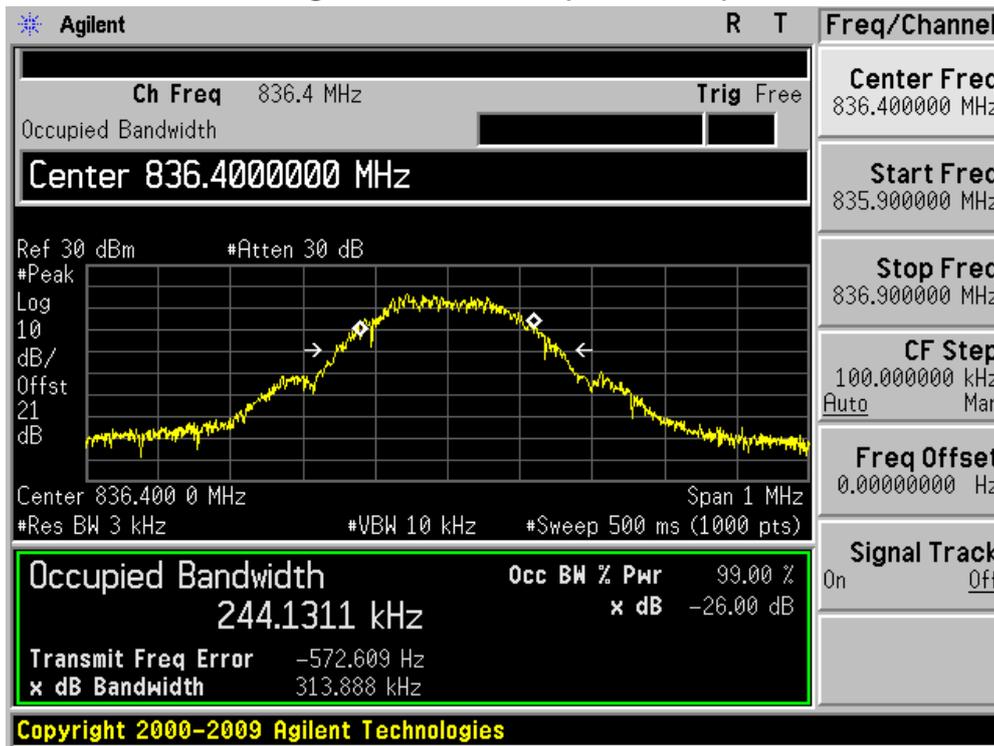
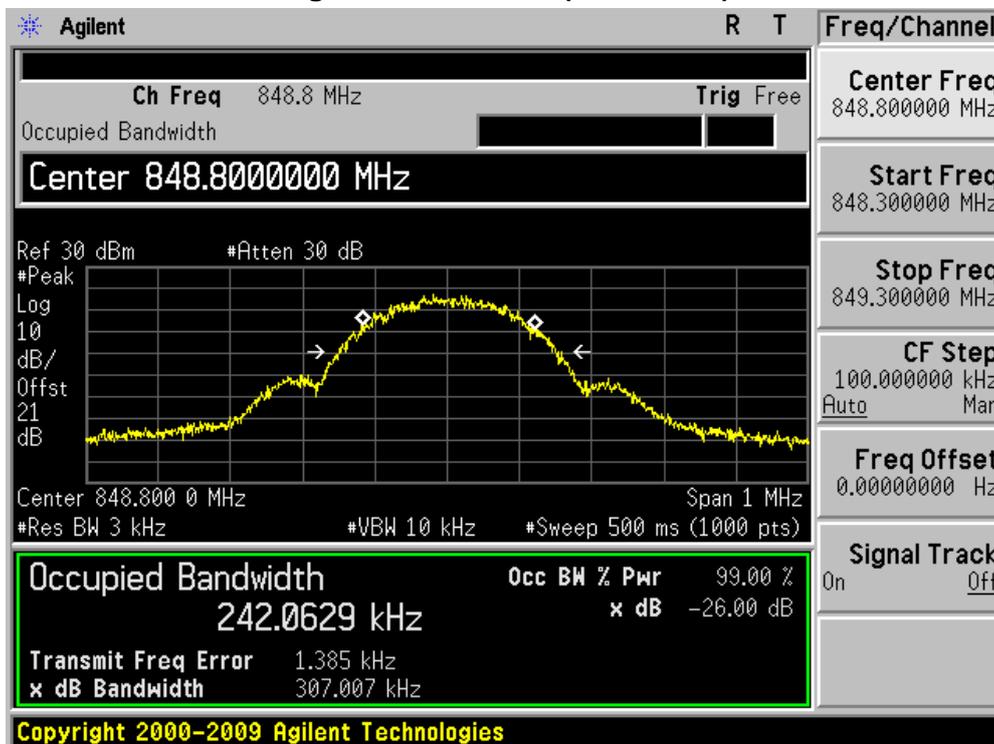


Figure Channel 251 (848.80MHz)



Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Occupied Bandwidth		
Test Mode	Mode 4: EDGE 1900 Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
512	1850.20	305.94	243.56
661	1880.00	311.39	243.32
810	1909.80	310.15	243.93

**Figure Channel 512 (1850.20MHz)**

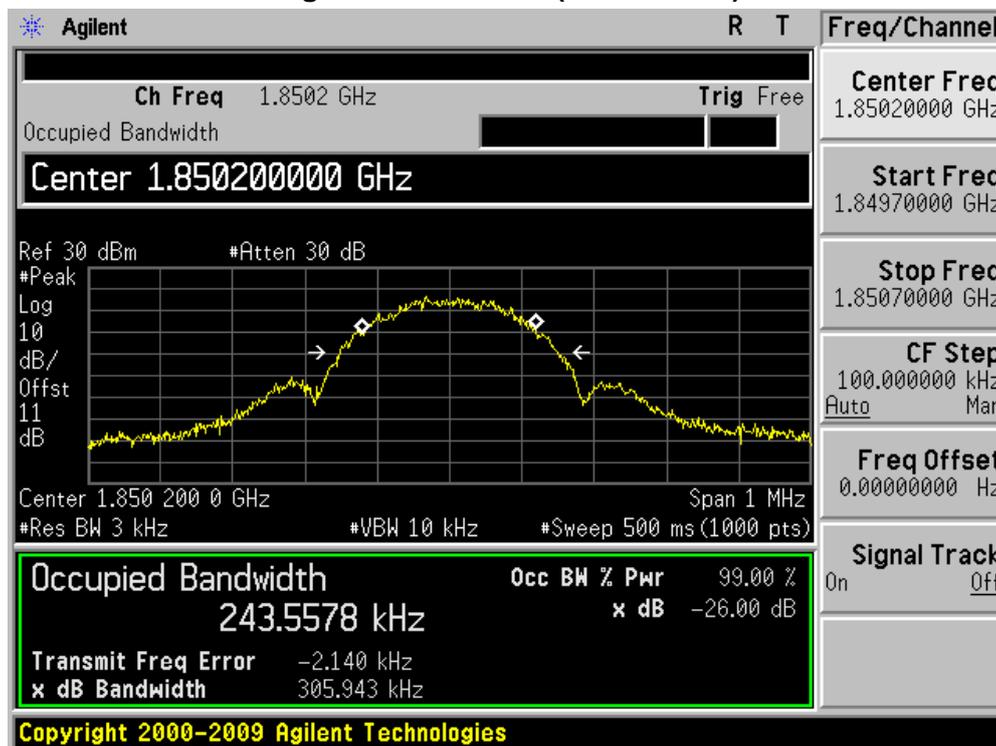


Figure Channel 661 (1880.00MHz)



Figure Channel 810 (1909.80MHz)



Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Occupied Bandwidth		
Test Mode	Mode 5: WCDMA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
9262	1852.4	4622.00	4151.30
9400	1880.0	4641.00	4147.10
9538	1907.6	4632.00	4133.20

**Figure Channel 9262 (1852.40MHz)**

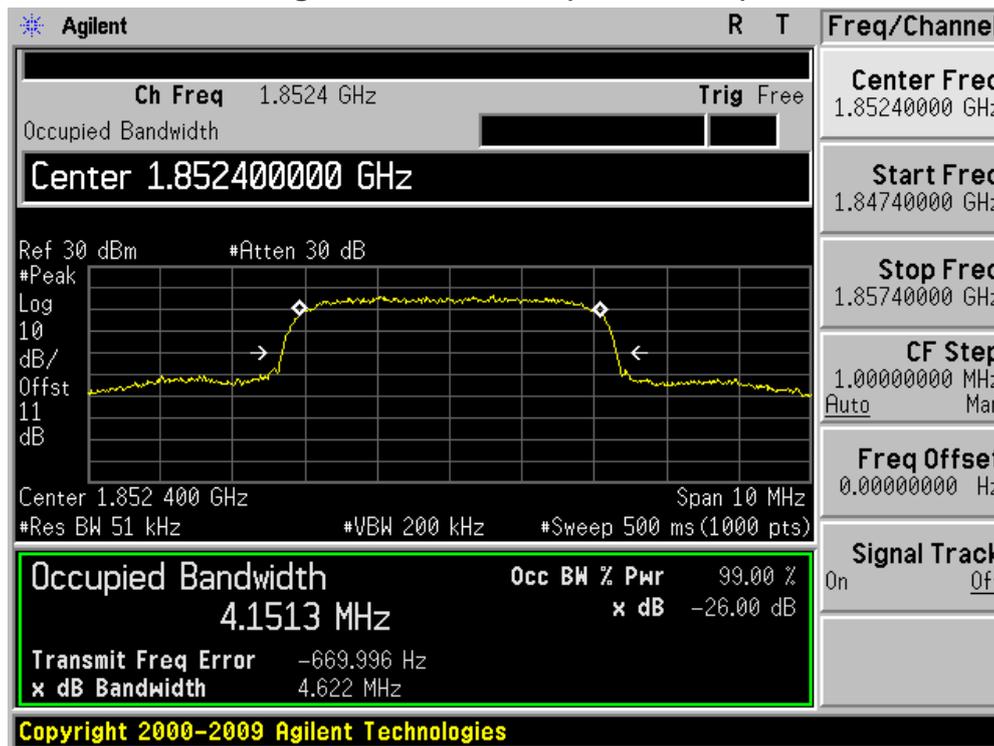


Figure Channel 9400 (1880MHz)

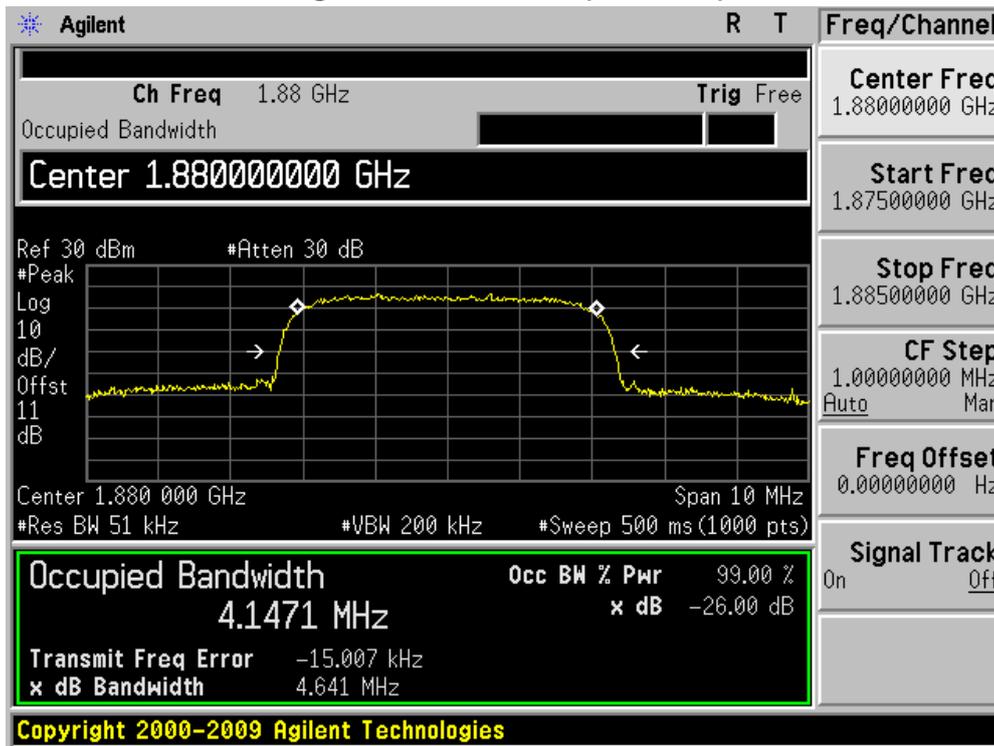
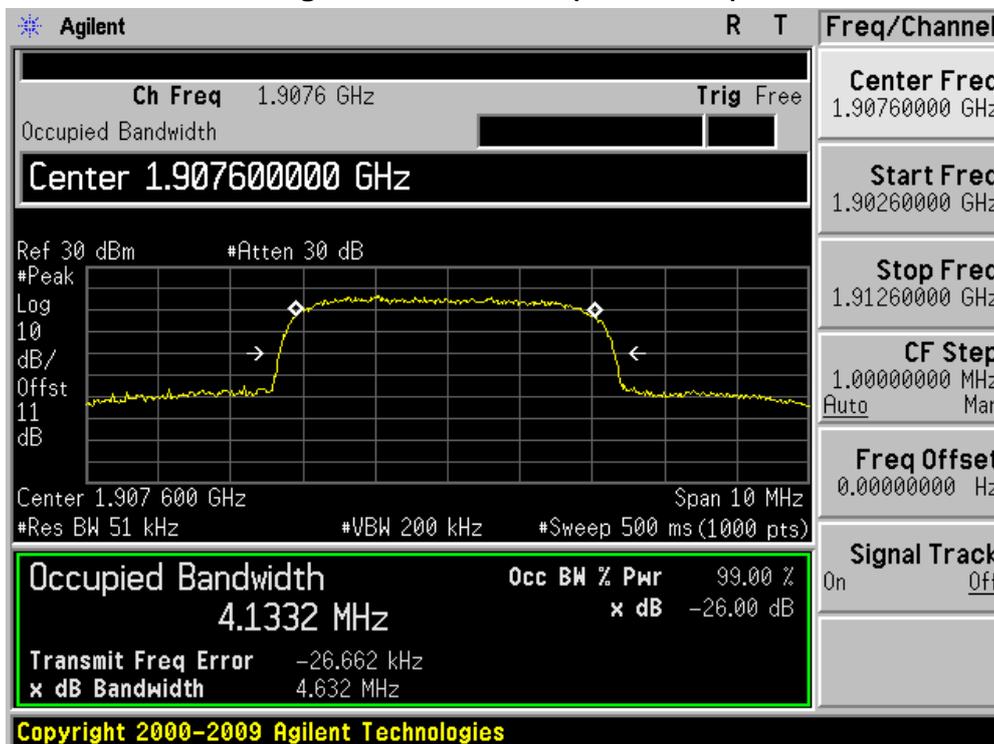


Figure Channel 9538 (1907.6MHz)



Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Occupied Bandwidth		
Test Mode	Mode 6: WCDMA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
4132	826.4	4621.00	4133.30
4182	836.4	4626.00	4139.30
4233	846.6	4614.00	4136.30

Figure Channel 4132 (826.4MHz)

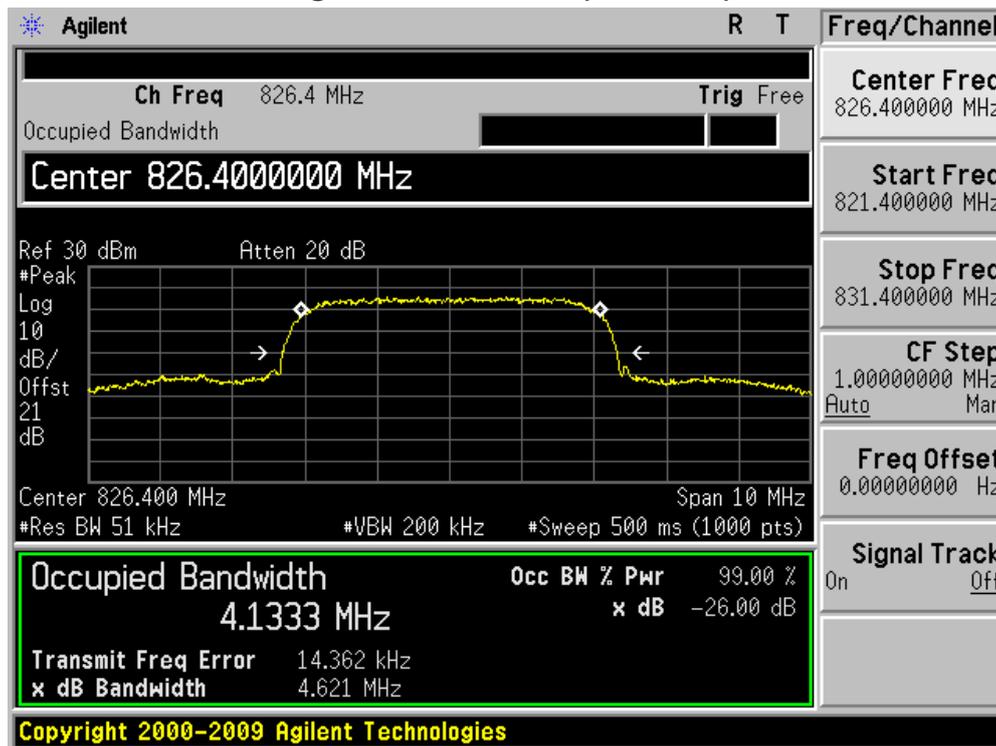


Figure Channel 4182 (836.400MHz)

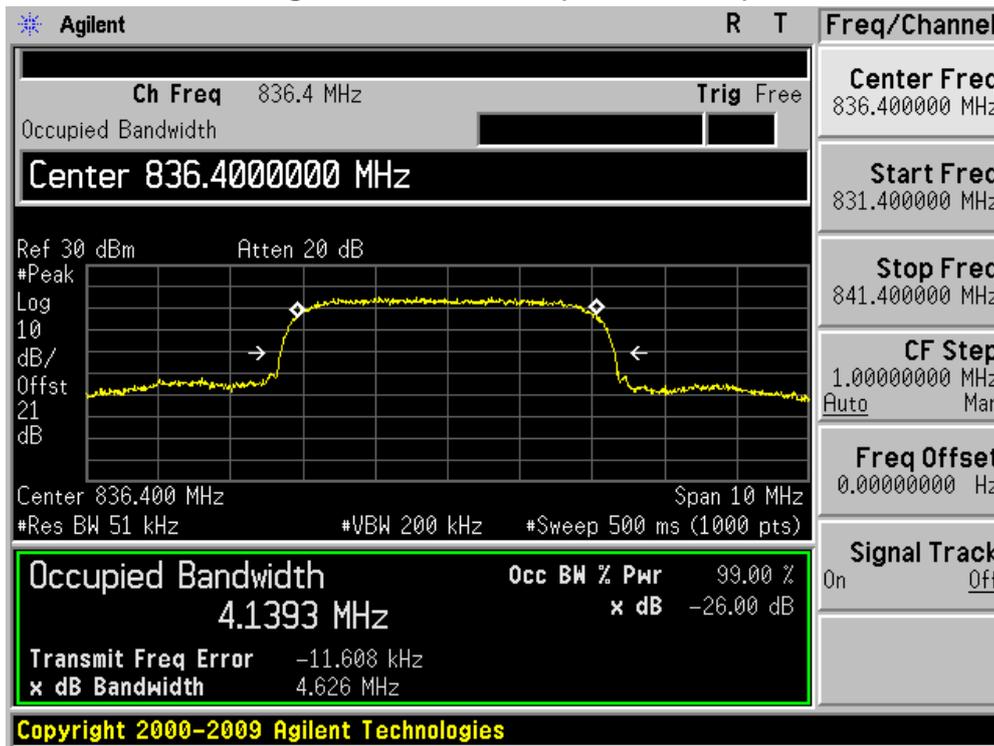
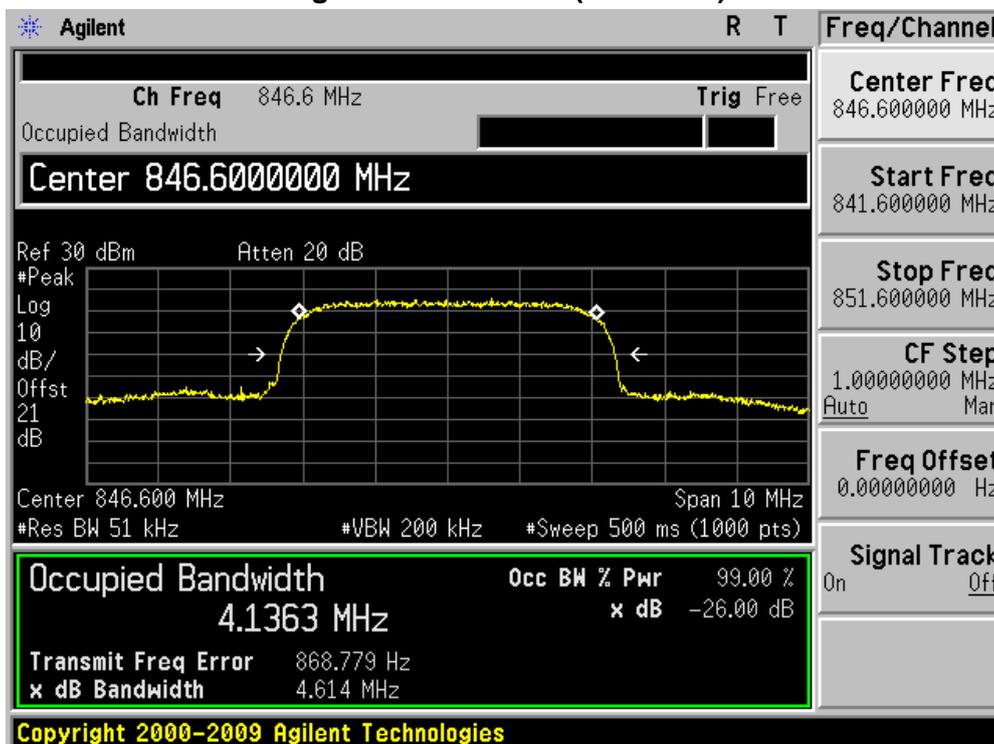


Figure Channel 4233(846.6MHz)



Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Occupied Bandwidth		
Test Mode	Mode 7: HSDPA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
9262	1852.4	4620.00	4144.60
9400	1880.0	4622.00	4144.40
9538	1907.6	4620.00	4137.00

**Figure Channel 9262 (1852.4MHz)**

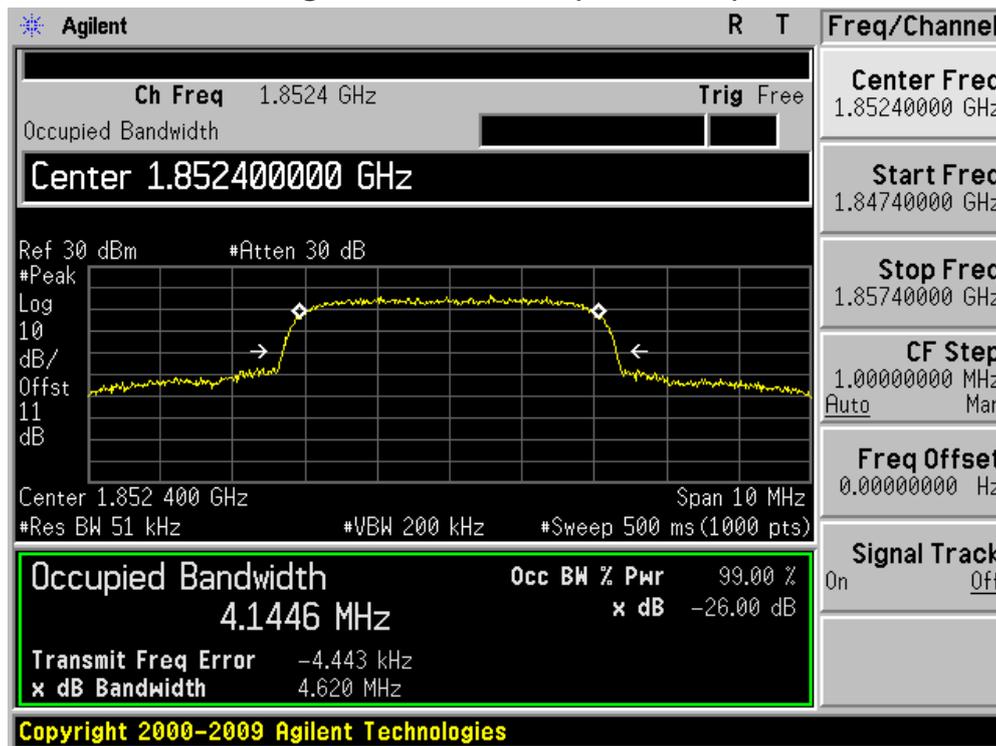


Figure Channel 9400 (1880MHz)

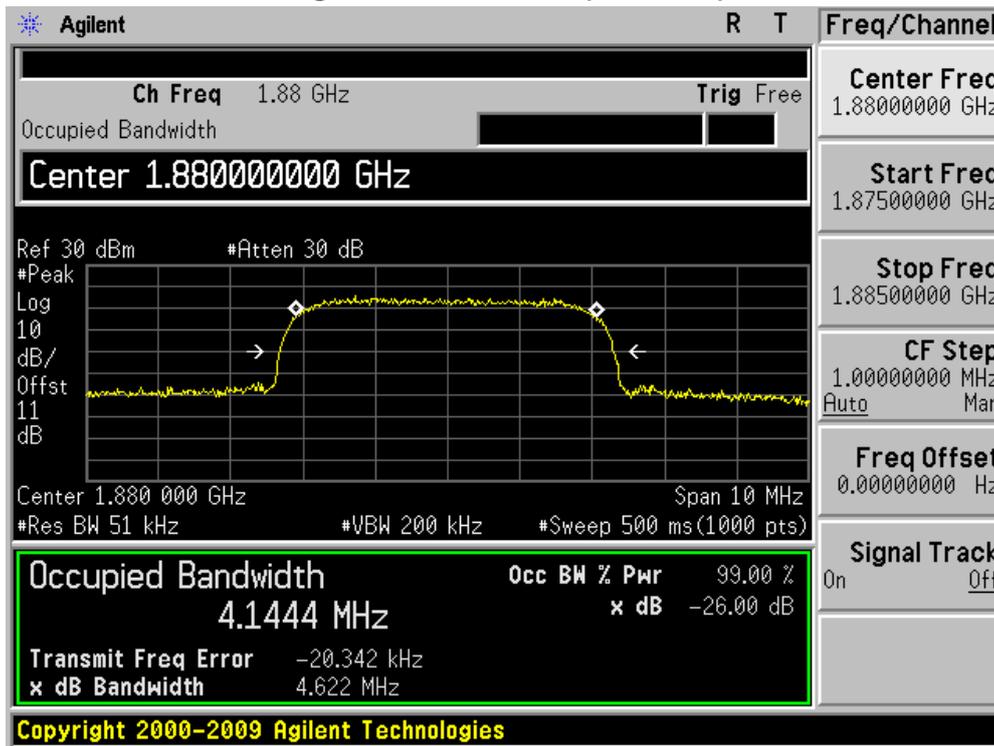
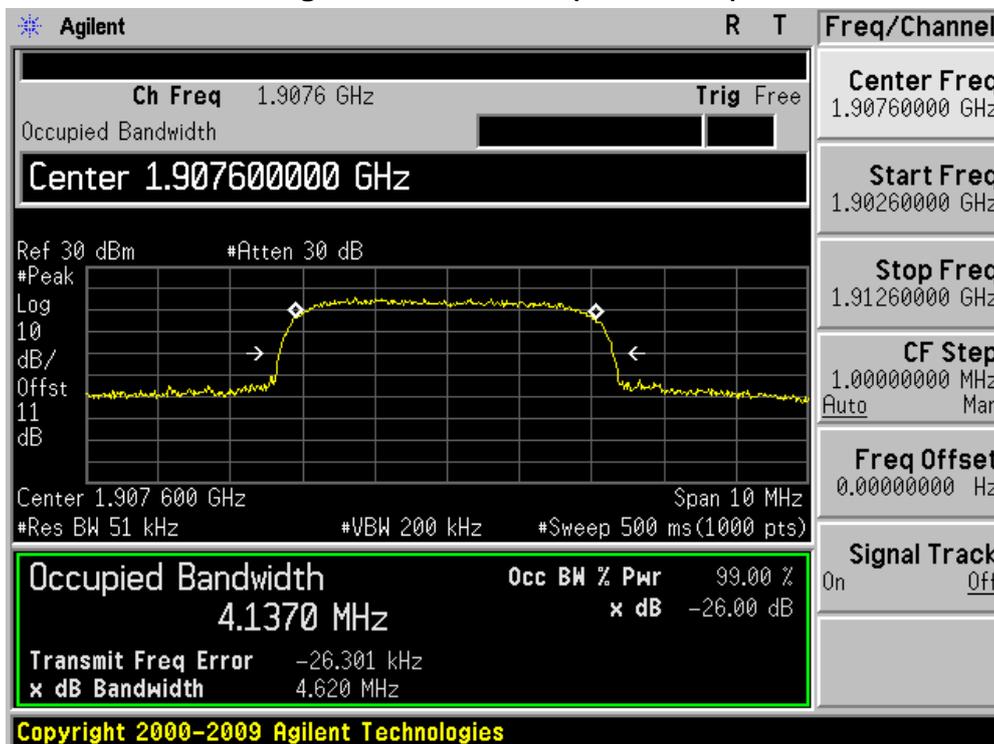


Figure Channel 9538 (1907.6MHz)



Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Occupied Bandwidth		
Test Mode	Mode 8: HSDPA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
4132	826.4	4625.00	4136.80
4182	836.4	4623.00	4146.40
4233	846.6	4621.00	4118.10

Figure Channel 4132 (826.4MHz)

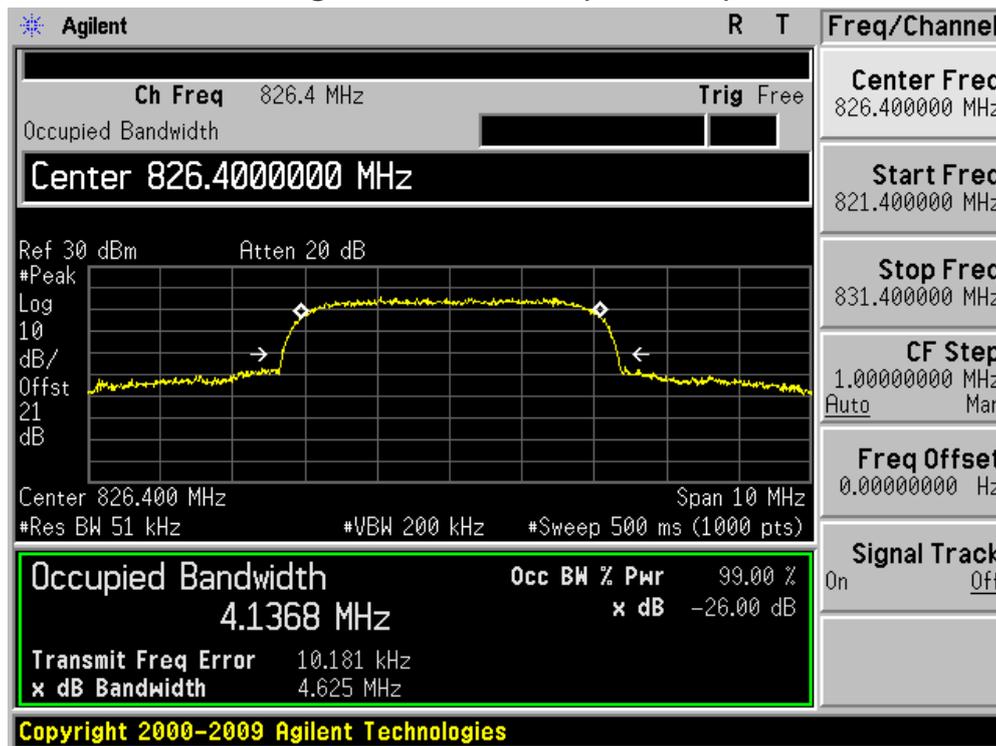


Figure Channel 4182 (836.4MHz)

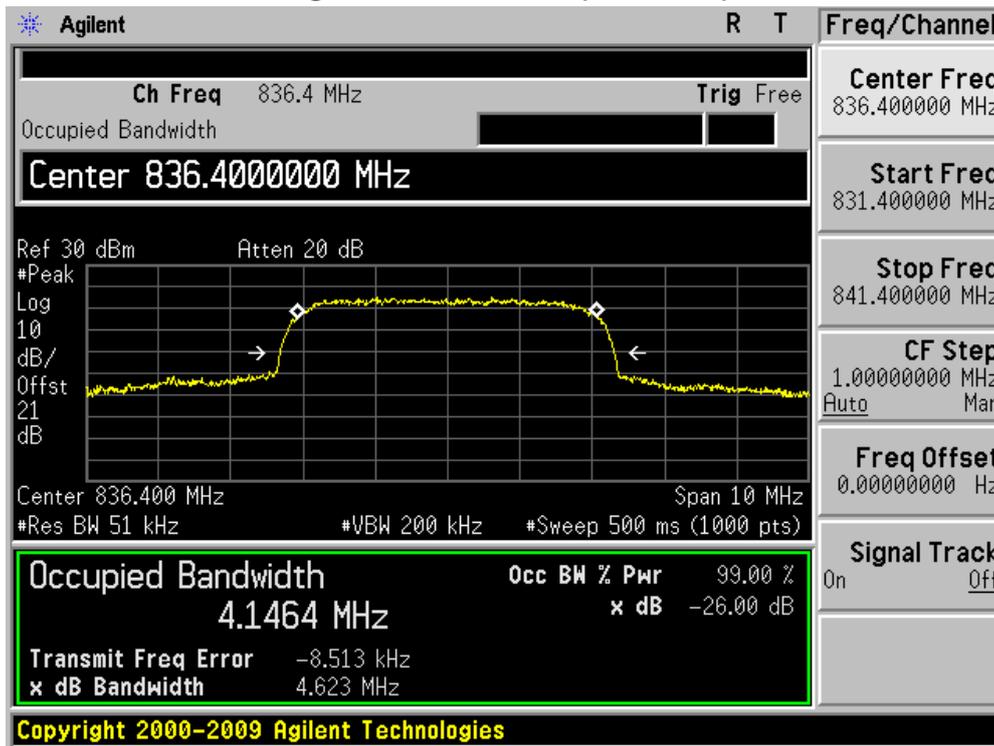
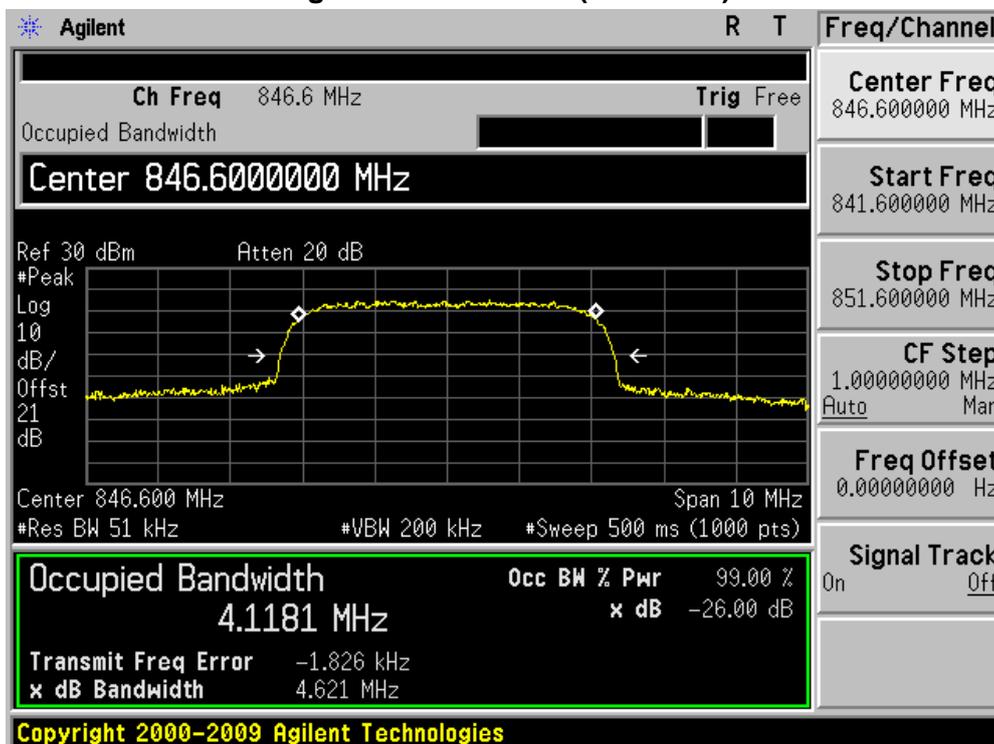


Figure Channel 4233 (846.6MHz)



Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Occupied Bandwidth		
Test Mode	Mode 9: HSUPA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
9262	1852.4	4622.00	4155.70
9400	1880.0	4632.00	4144.60
9538	1907.6	4631.00	4126.10

Figure Channel 9262 (1852.4MHz)

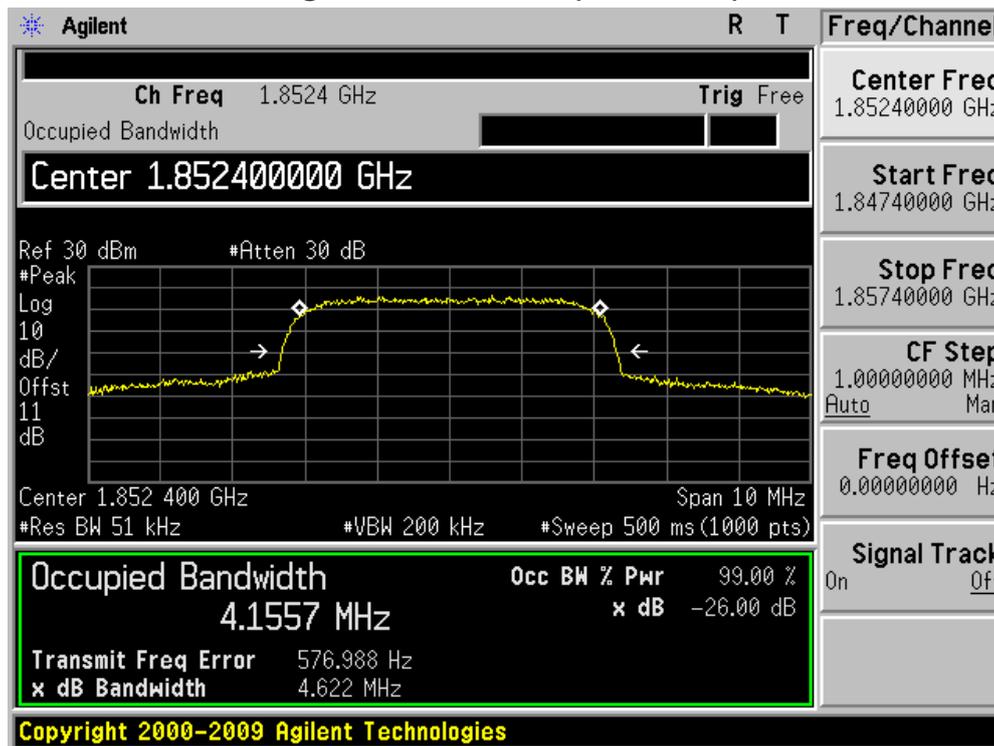


Figure Channel 9400 (1880MHz)

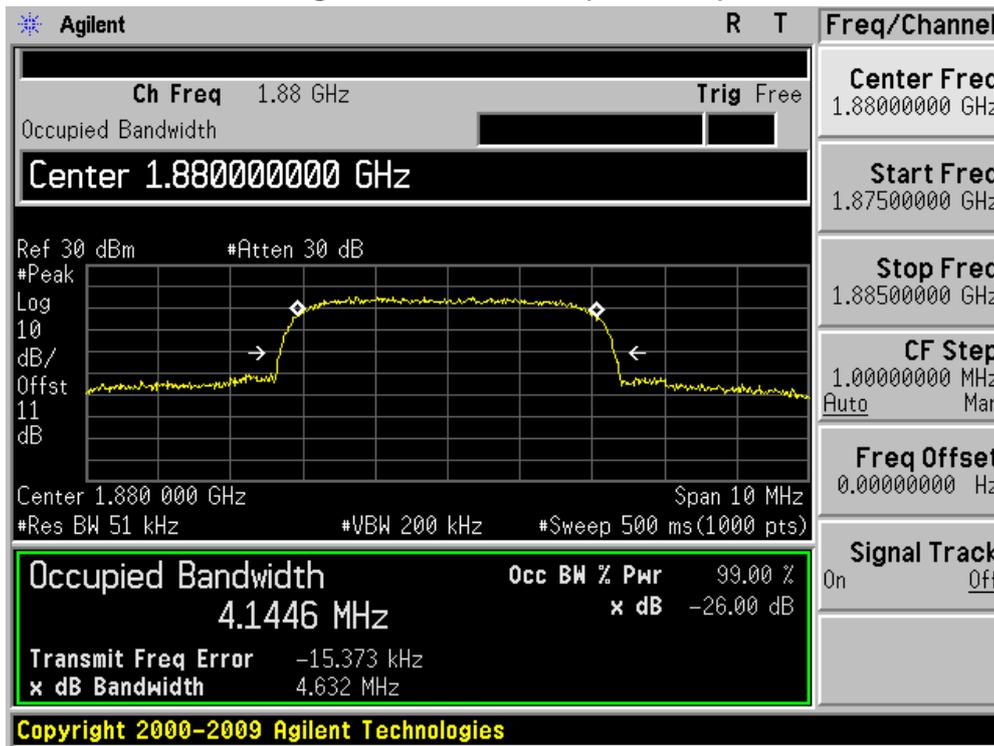
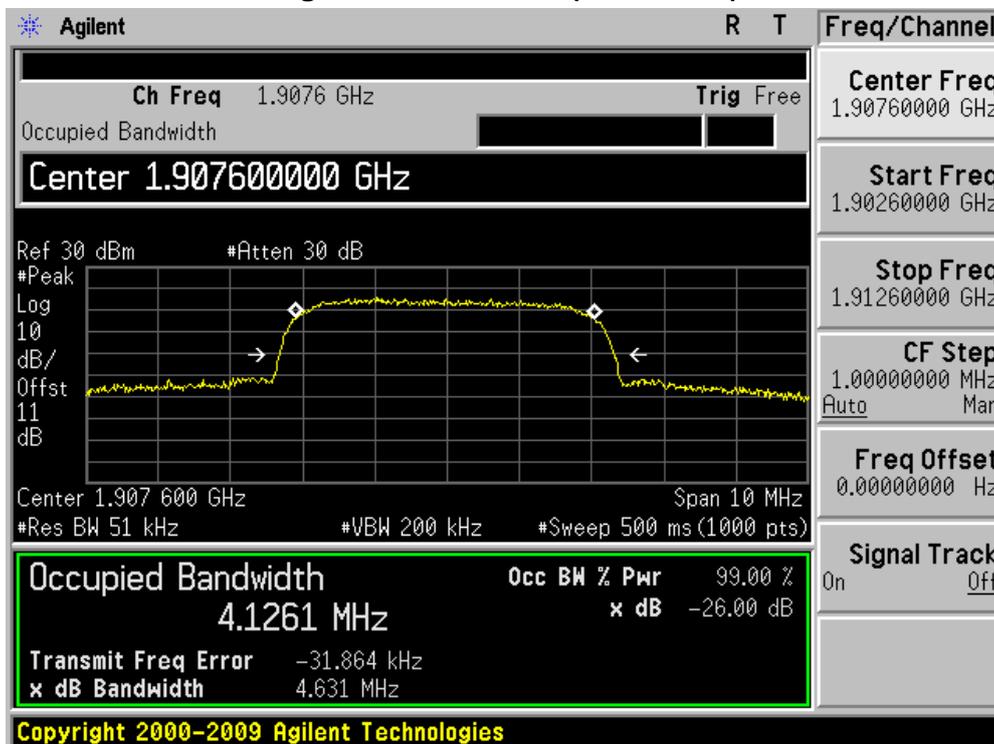


Figure Channel 9538 (1907.6MHz)



Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Occupied Bandwidth		
Test Mode	Mode 10: HSUPA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
4132	826.4	4629.00	4133.60
4182	836.4	4626.00	4138.30
4233	846.6	4619.00	4132.80

**Figure Channel 4132 (826.4MHz)**

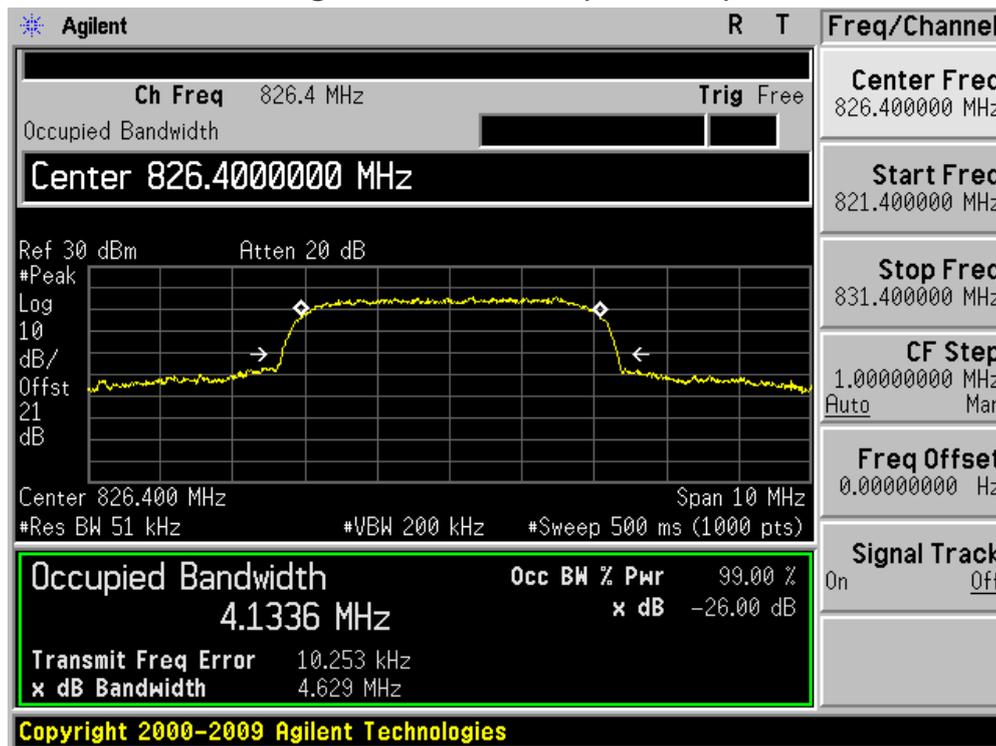


Figure Channel 4182 (836.4MHz)

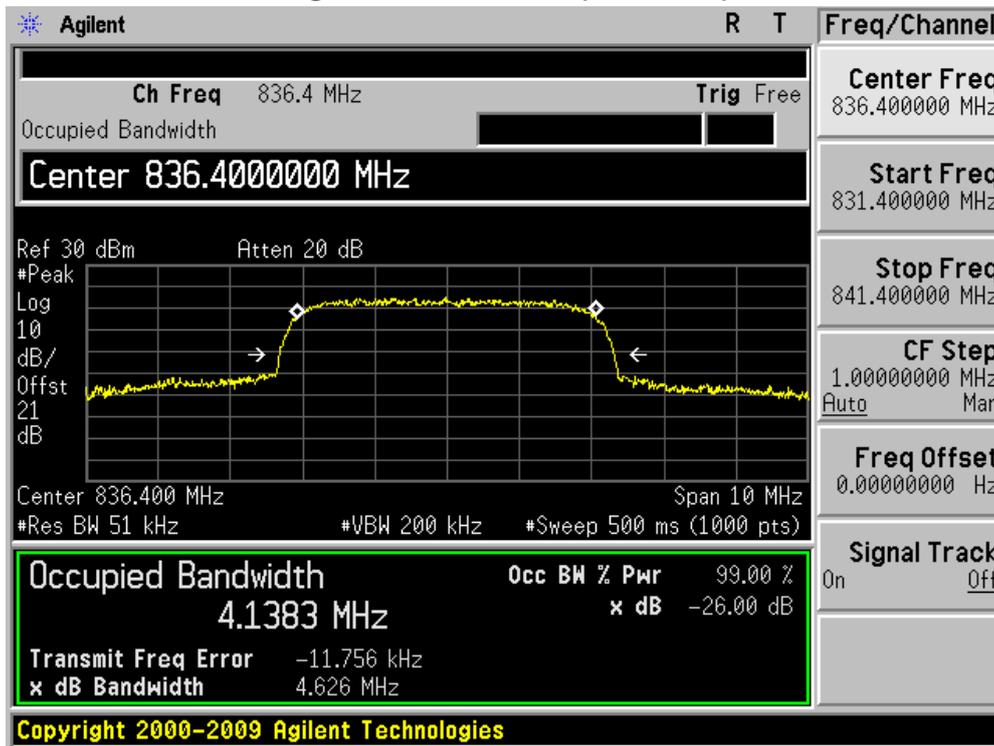
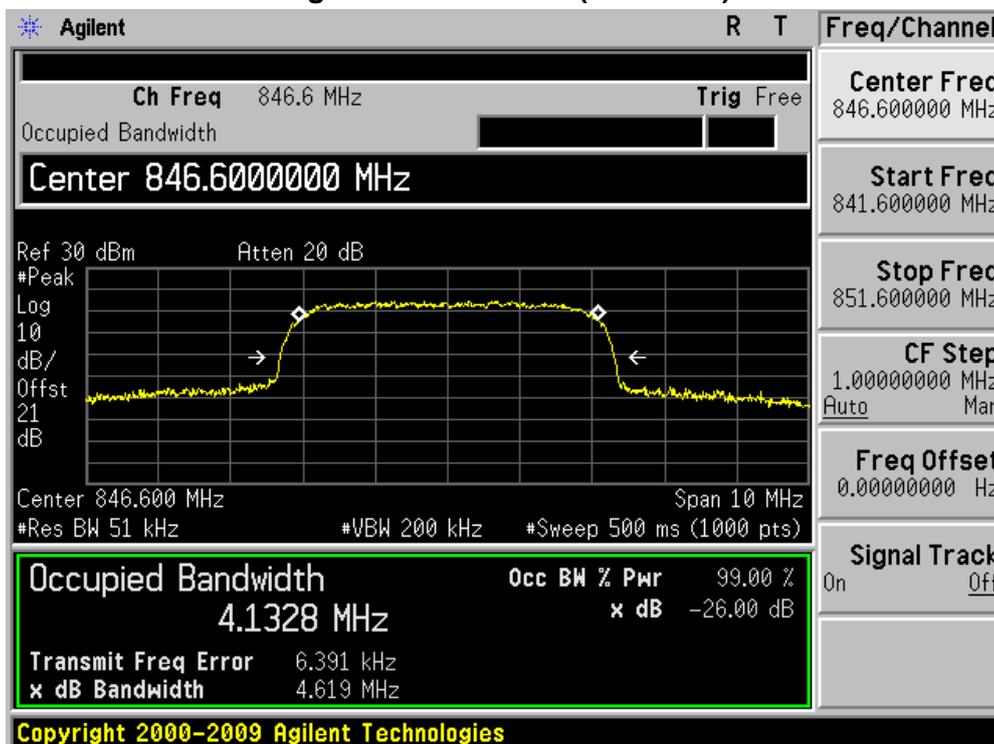


Figure Channel 4233 (846.6MHz)



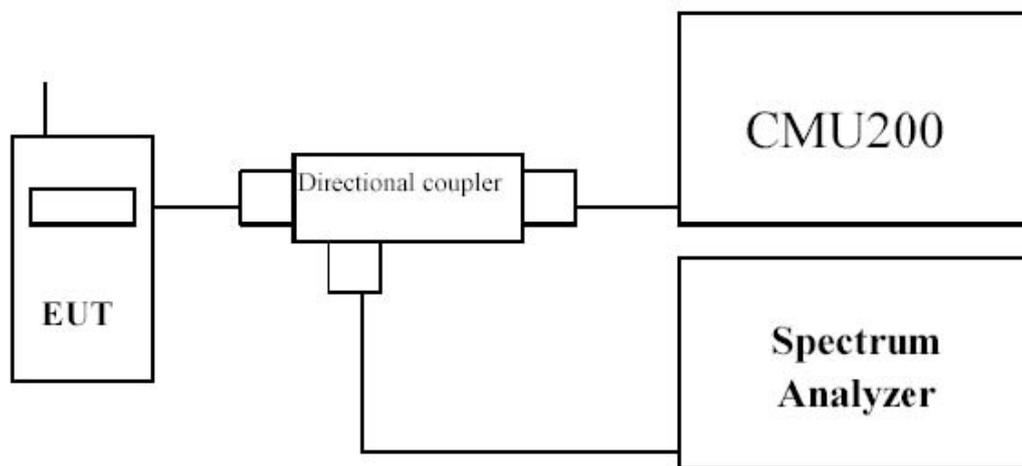
**6. Spurious Emission At Antenna Terminals (+/- 1MHz)**

**6.1. Test Equipment**

Spurious Emission At Antenna Terminals (+/- 1MHz) / CTR

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Spectrum Analyzer	Agilent	E4440A	MY46185846	2012/11/30
Universal Radio Communication Tester	R & S	CMU200	104846	2012/05/19
Directional coupler	Agilent	87300C	MY44300353	2012/09/15
Directional coupler	Agilent	778D-012	50550	2012/09/15

**6.2. Test Setup**



**6.3. Limit**

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.

**6.4. Test Procedure**

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 to measure the out of band Emissions.

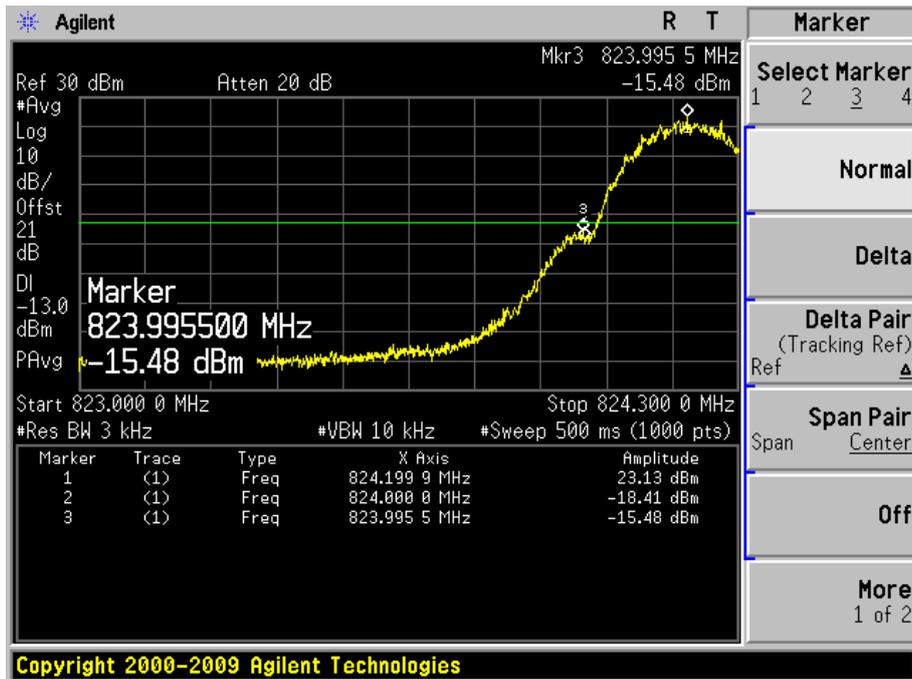
**6.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 1.2$  dB.

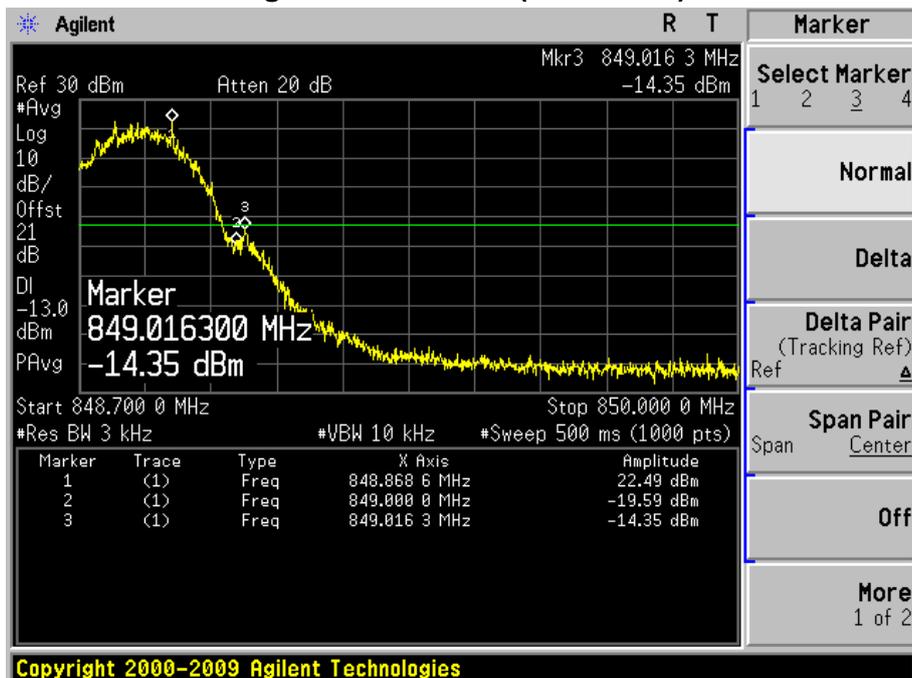
## 6.6. Test Result

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 1: GSM 850 Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 128 (824.20MHz)**

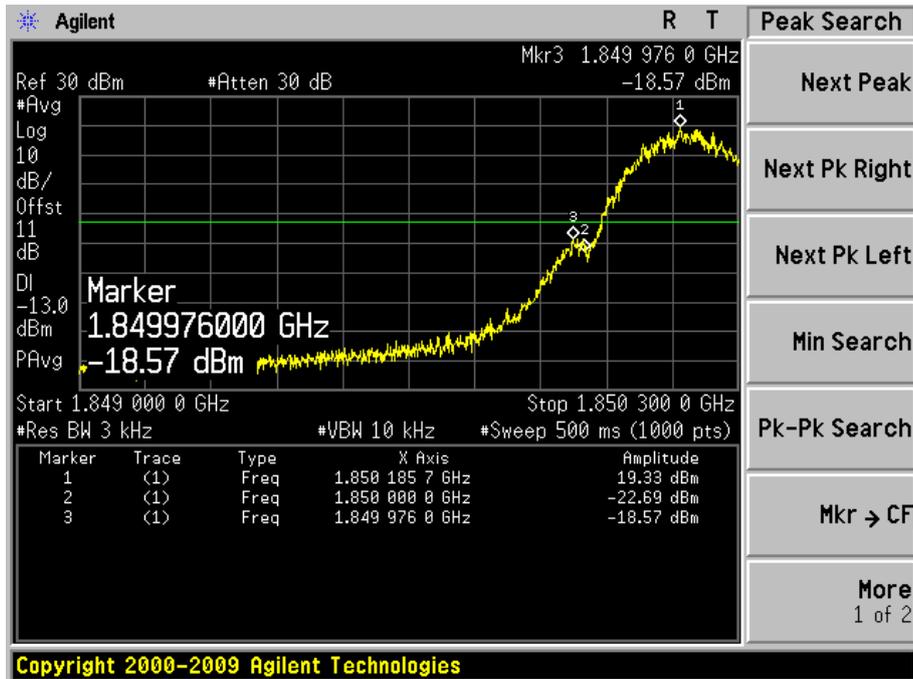


**Figure Channel 251 (848.80MHz)**

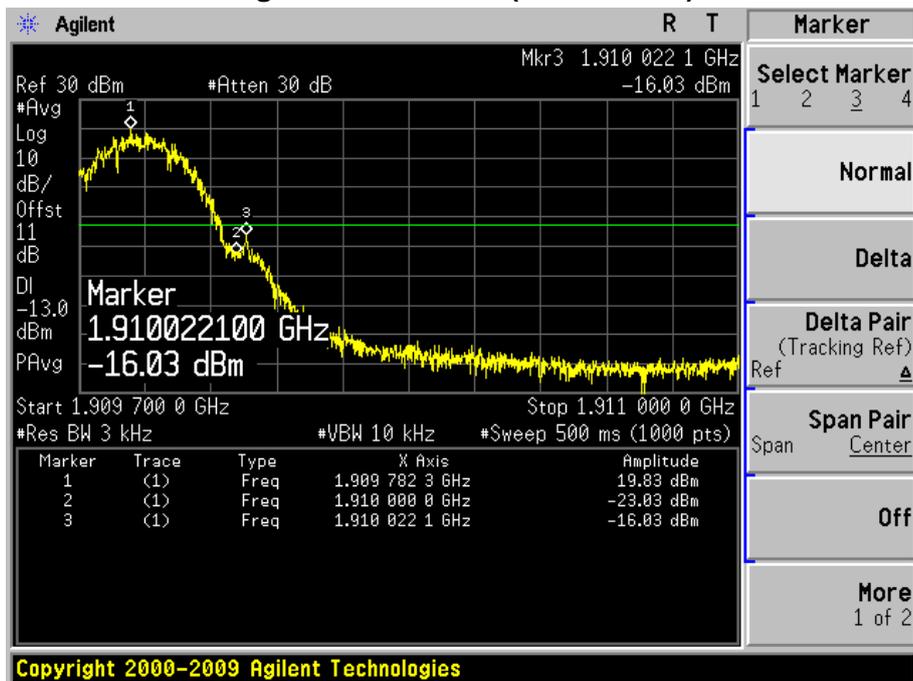


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 2: PCS1900 Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 512 (1850.20MHz)**

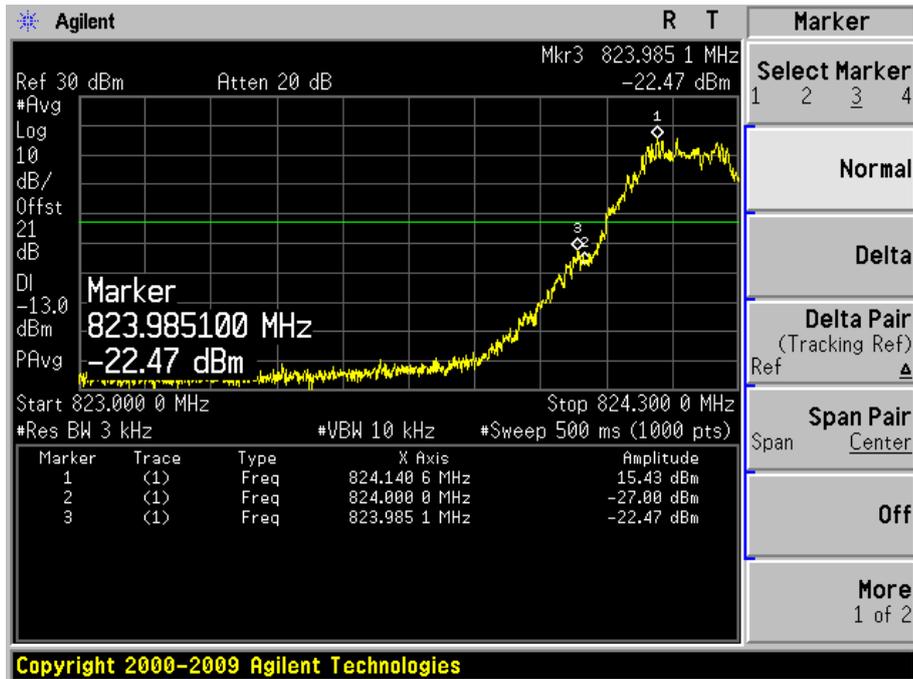


**Figure Channel 810 (1909.80MHz)**

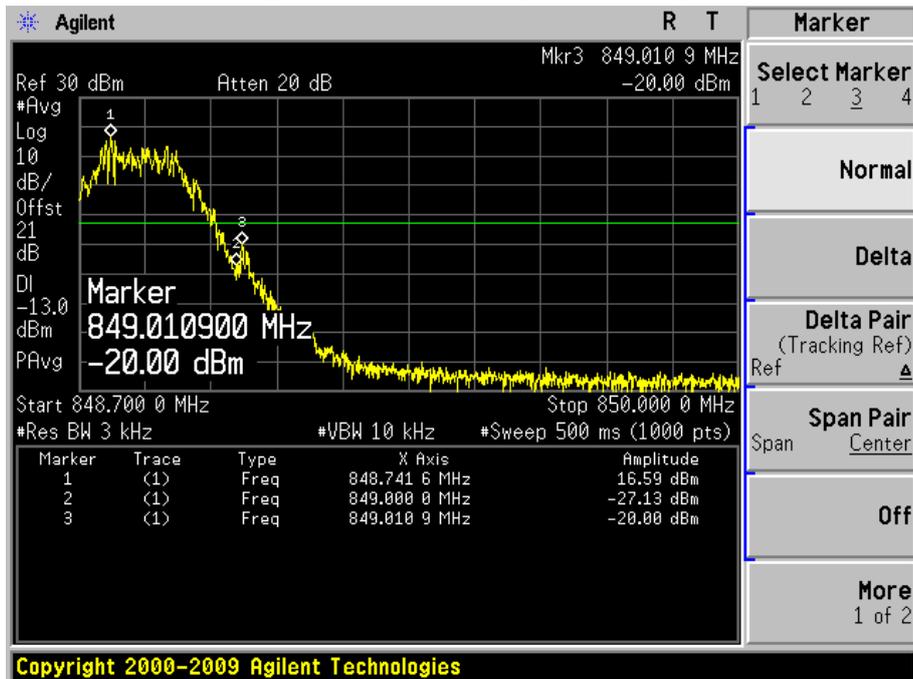


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 3: EDGE 850 Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 128 (824.20MHz)**

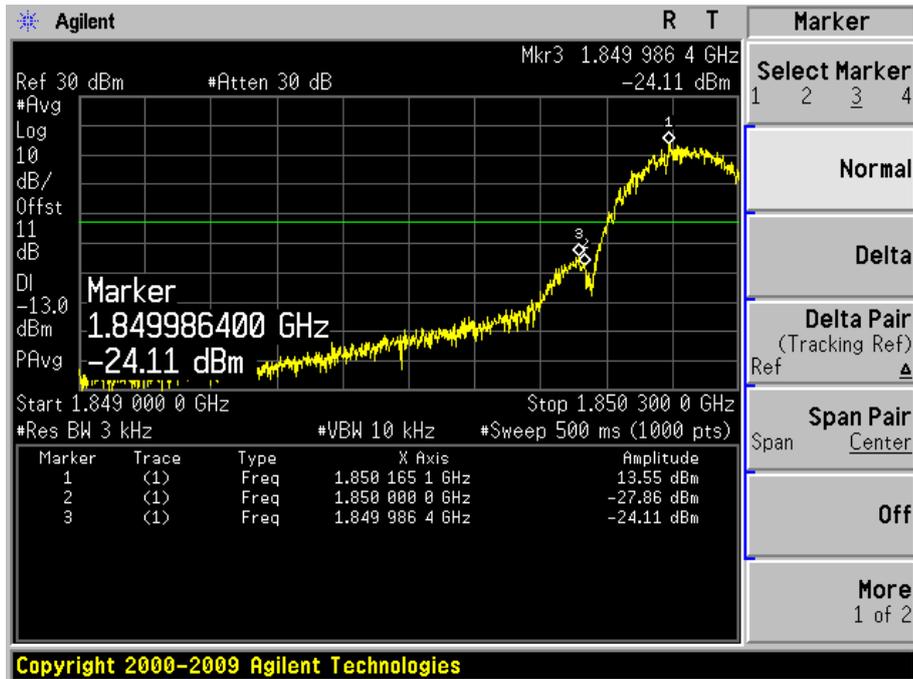


**Figure Channel 251 (848.80MHz)**

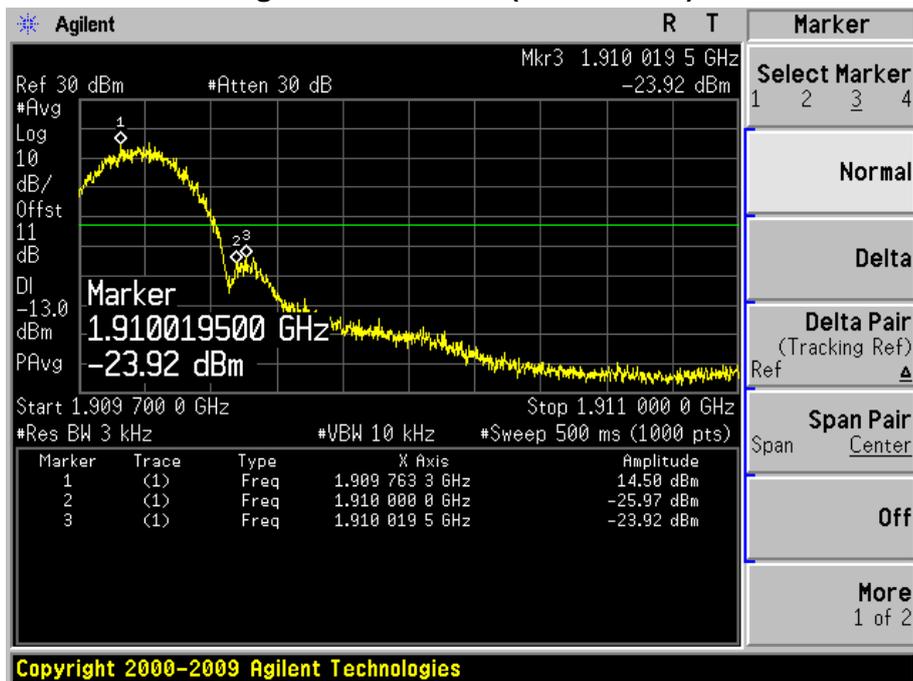


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 4: EDGE1900 Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 512 (1850.20MHz)**

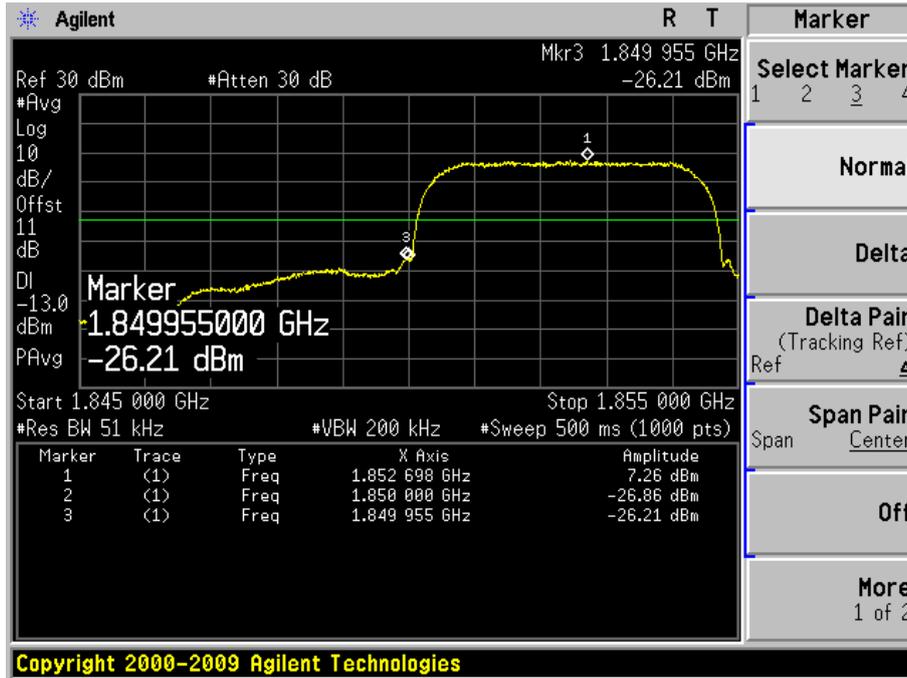


**Figure Channel 810 (1909.80MHz)**

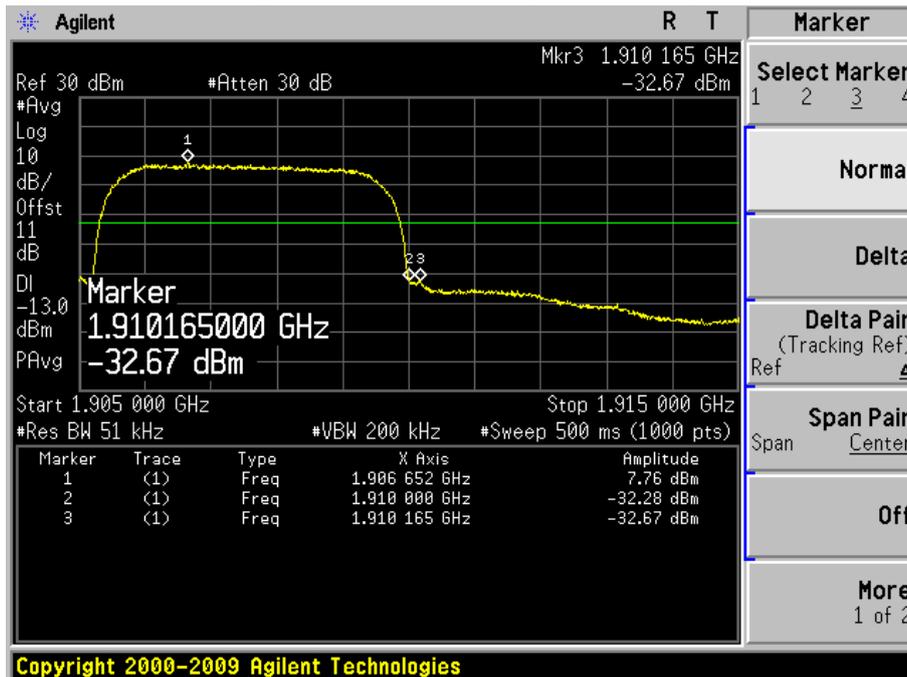


Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 5: WCDMA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 9262 (1852.4MHz)**



**Figure Channel 9538 (1907.6MHz)**



Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 6: WCDMA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

Figure Channel 4132 (826.4MHz)

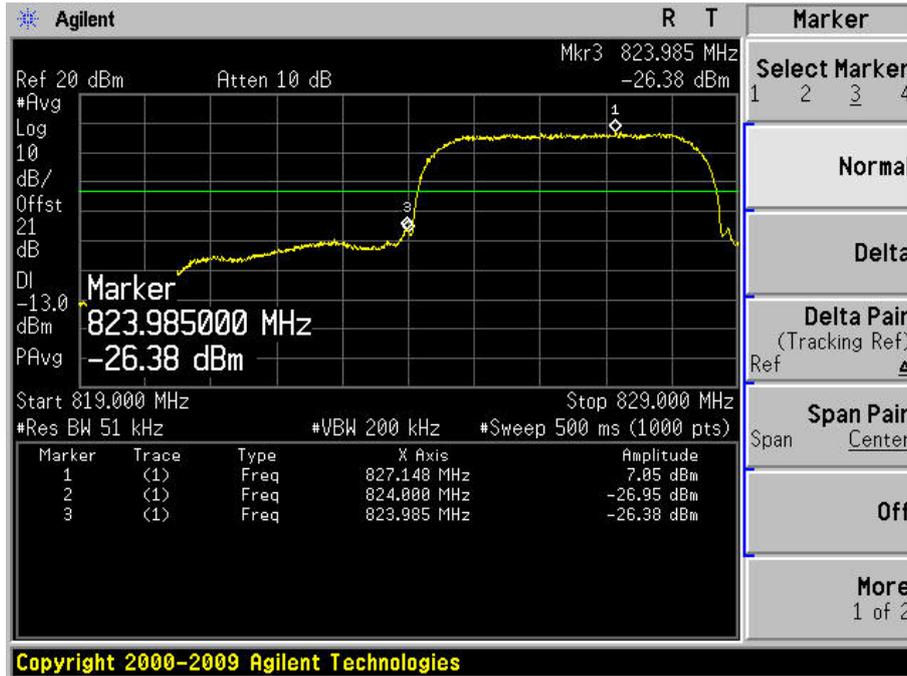
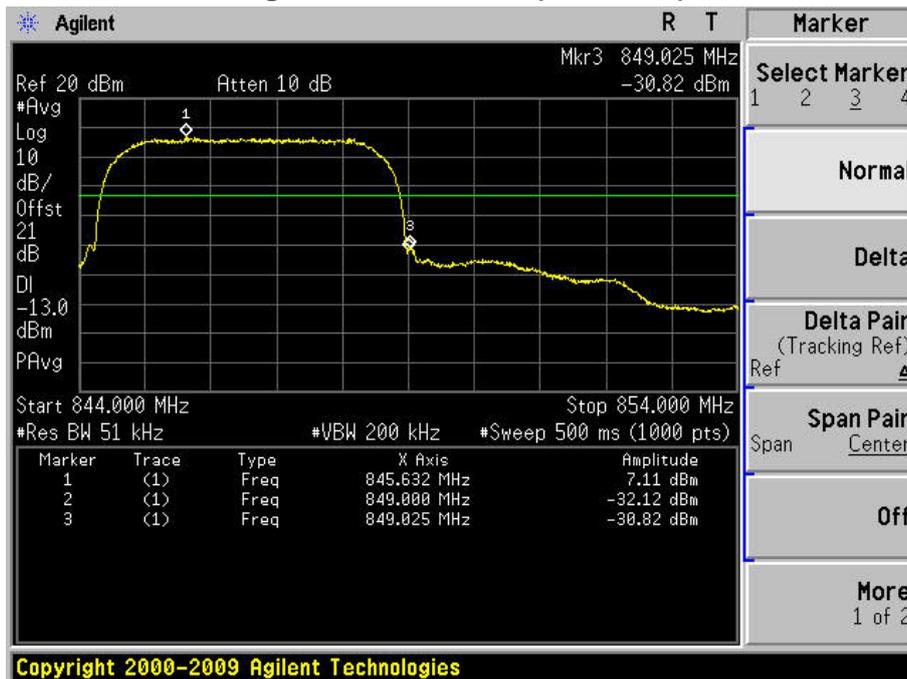
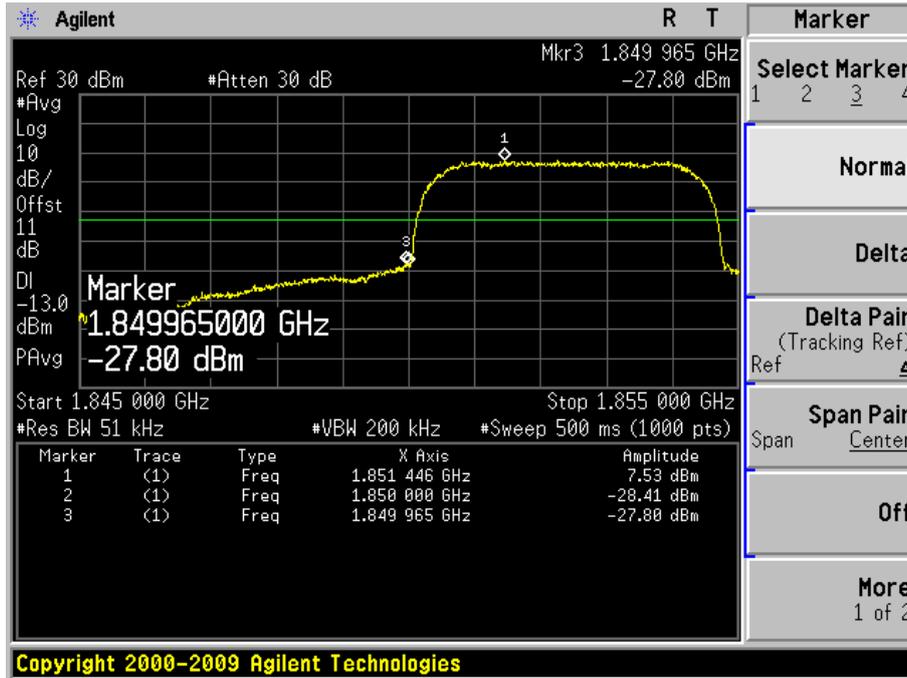


Figure Channel 4233 (846.6MHz)

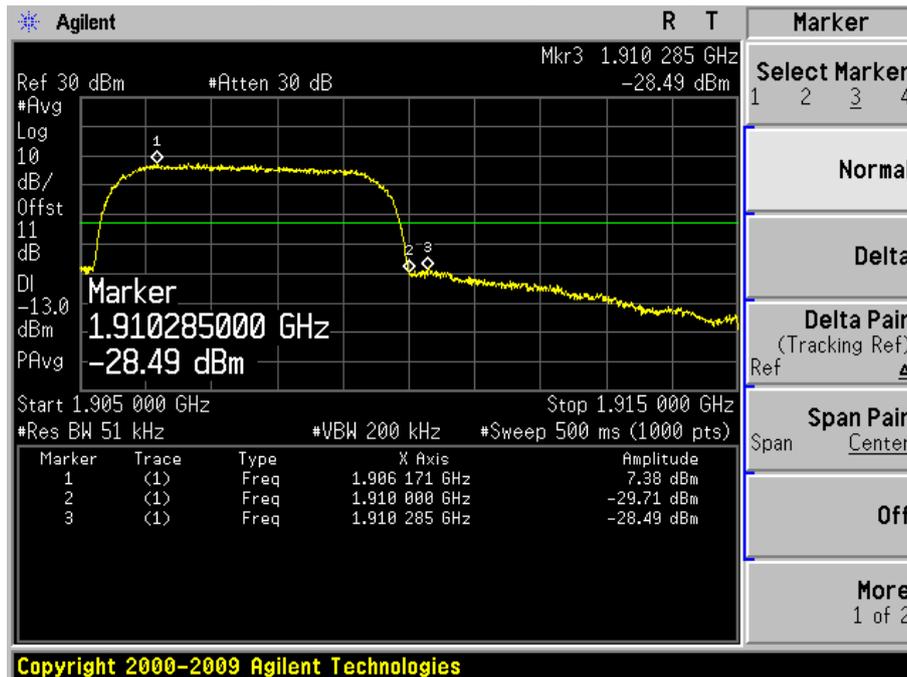


Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 7: HSDPA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 9262 (1852.4MHz)**

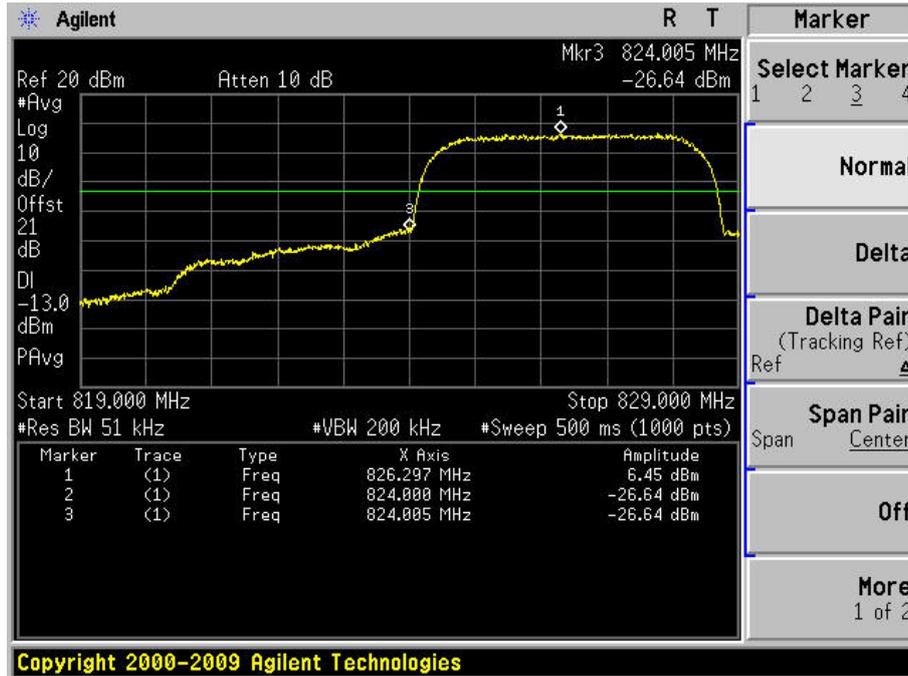


**Figure Channel 9538 (1907.6MHz)**

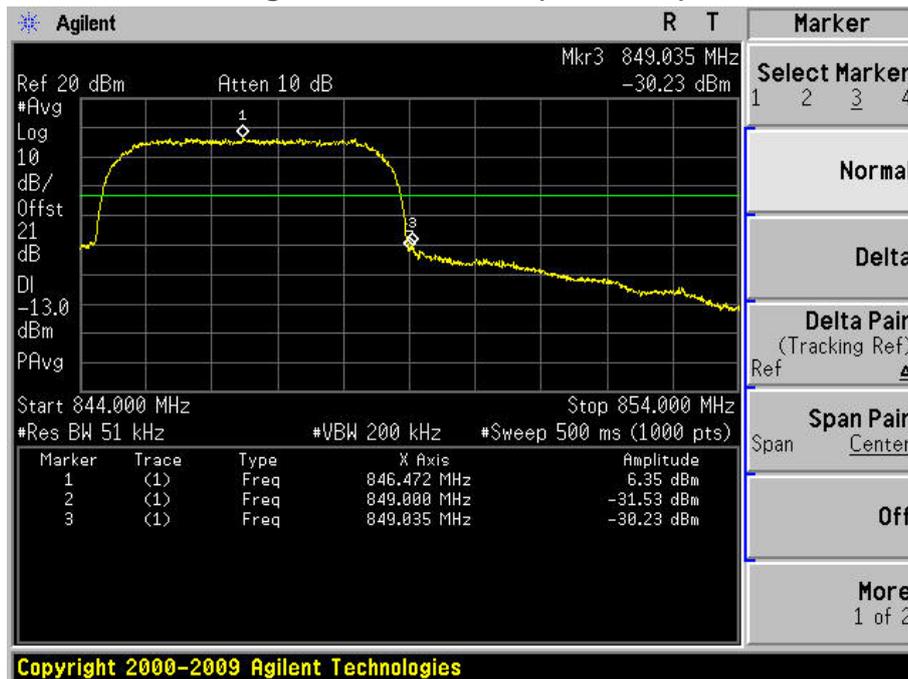


Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 8: HSDPA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 4132 (826.4MHz)**

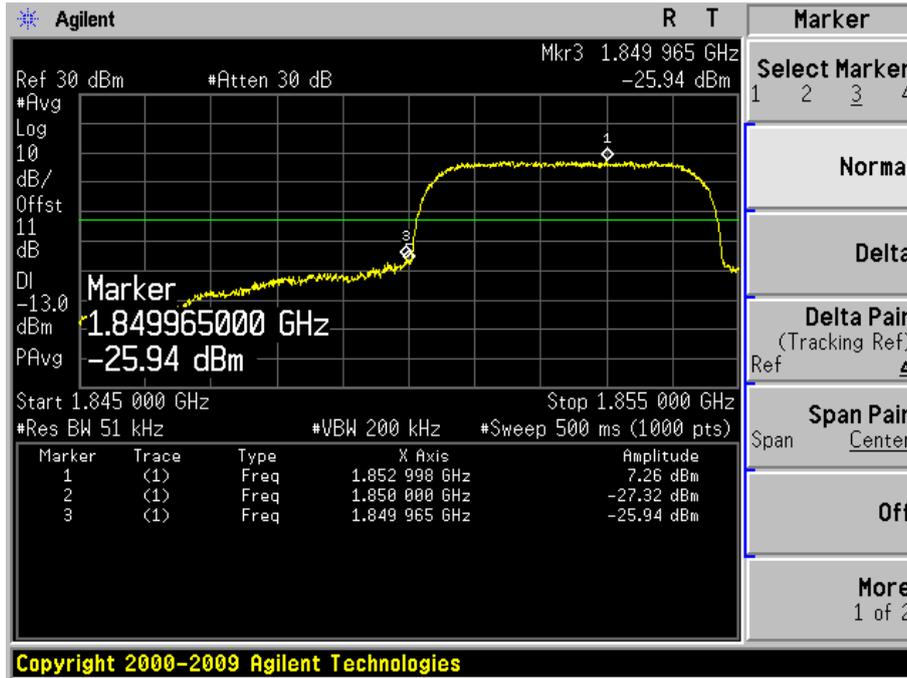


**Figure Channel 4233 (846.6MHz)**

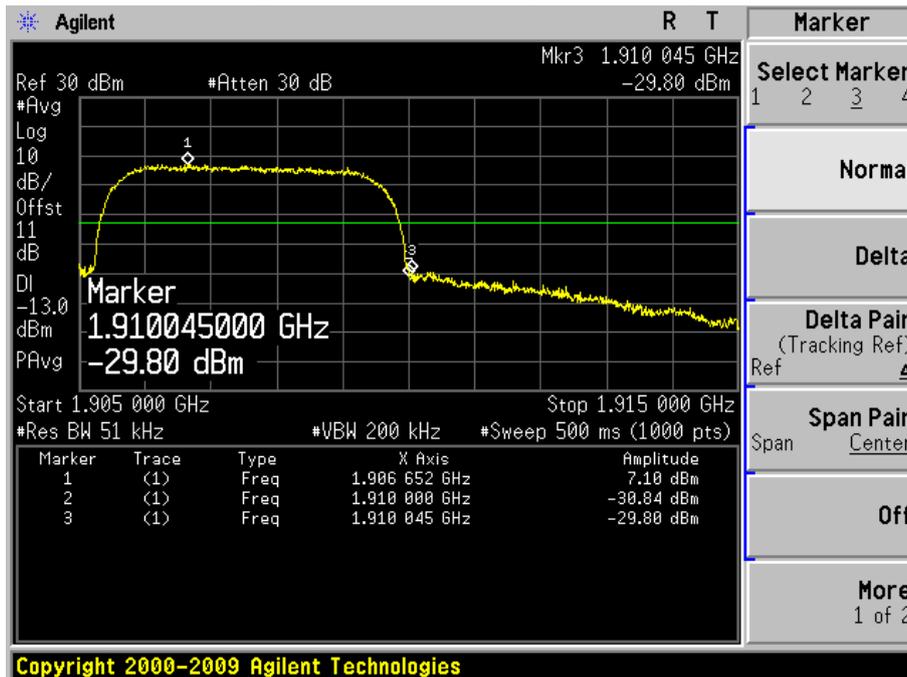


Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 9: HSUPA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 9262 (1852.4MHz)**

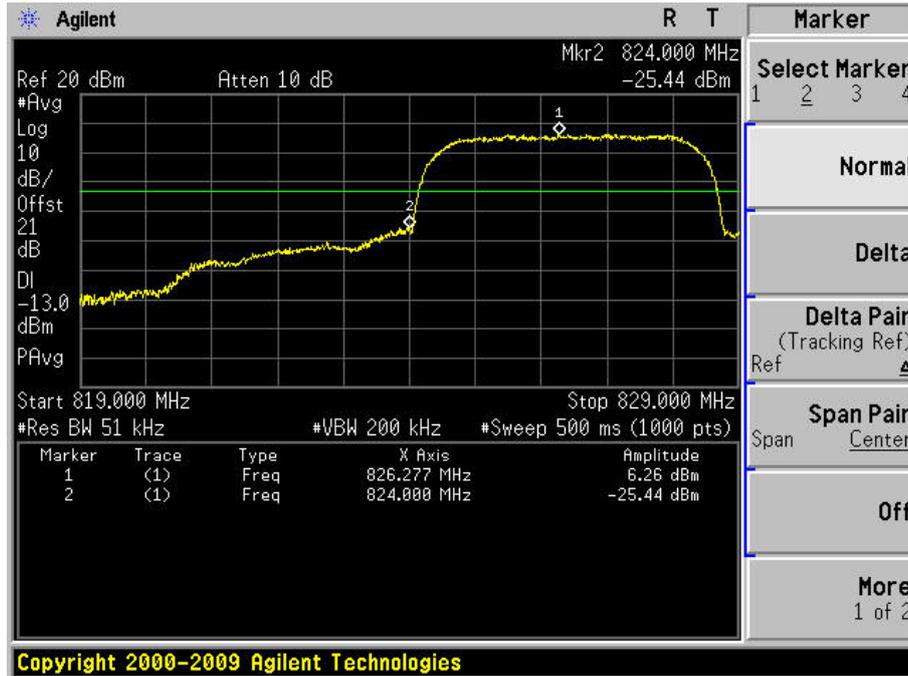


**Figure Channel 9538 (1907.6MHz)**

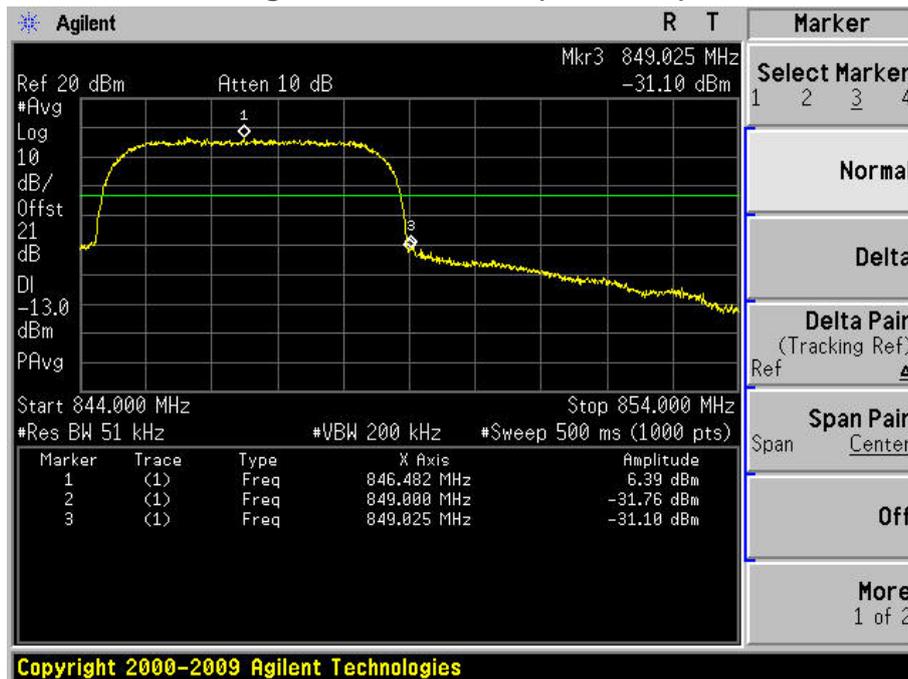


Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission At Antenna Terminals (+/- 1MHz)		
Test Mode	Mode 10: HSUPA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

**Figure Channel 4132 (826.4MHz)**



**Figure Channel 4233 (846.6MHz)**



**7. Spurious Emission**

**7.1. Test Equipment**

Conducted Spurious Emission / CTR

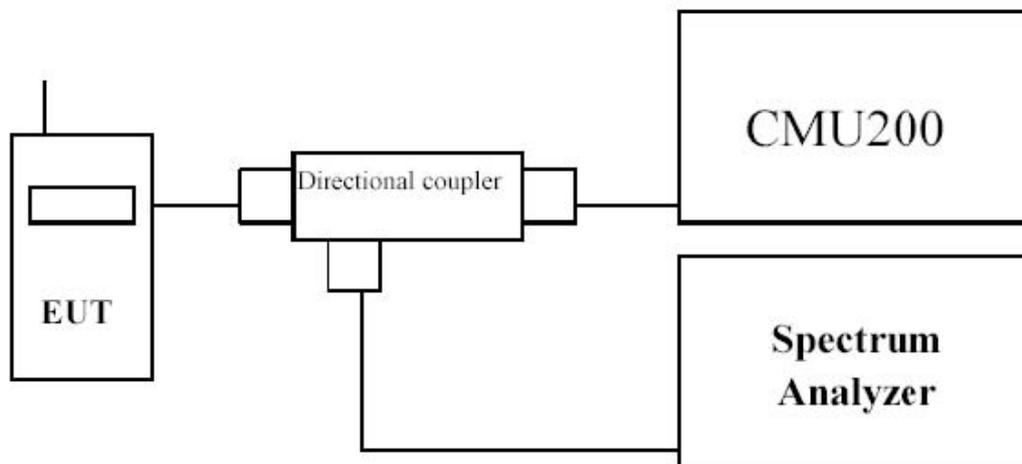
Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Spectrum Analyzer	Agilent	E4440A	MY46185846	2012/11/30
Universal Radio Communication Tester	R & S	CMU200	104846	2012/05/19
Directional coupler	Agilent	87300C	MY44300353	2012/09/15
Directional coupler	Agilent	778D-012	50550	2012/09/15

Peak Output Power / OATS 1

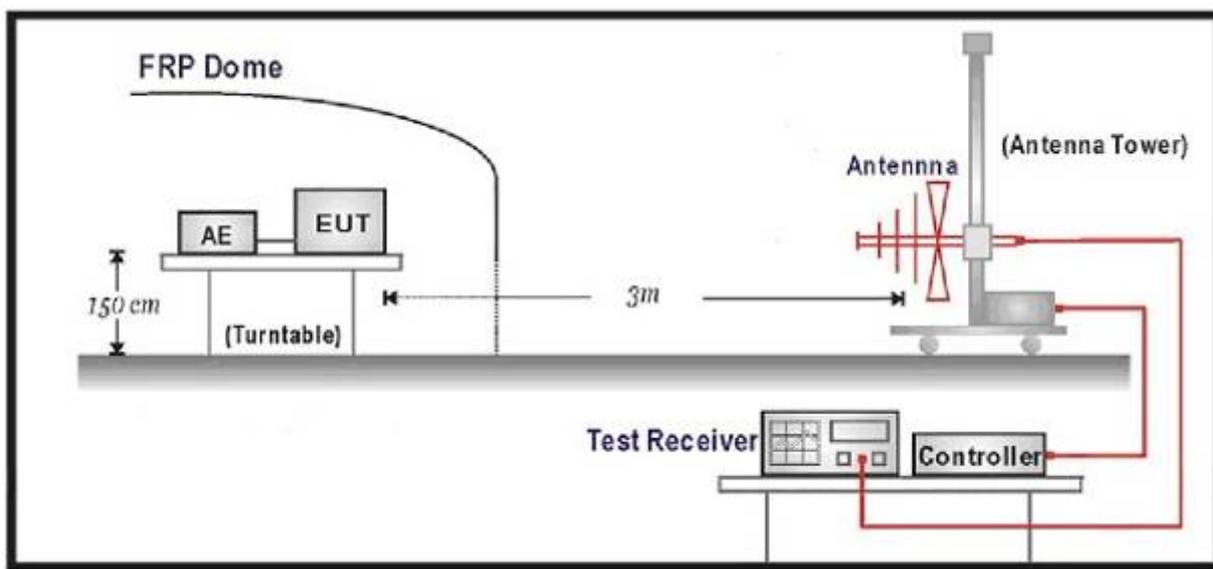
Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Test Receiver	R & S	ESCS 30	100121	2012/12/06
Universal Radio Communication Tester	R & S	CMU200	104846	2012/05/19
Spectrum Analyzer	Agilent	E4408B	MY45102743	2012/11/06
Pre-Amplifier	QTK	AP-180C	CHM/071920	2012/07/12
Bilog Antenna	SCHAFFNER	CBL6112B	2916	2012/07/21
Horn Antenna	Schwarzbeck	BBHA9120D	497	2012/11/03
Pre-Amplifier	QTK	AP-025C	0506002	2012/07/07

### 7.2. Test Setup

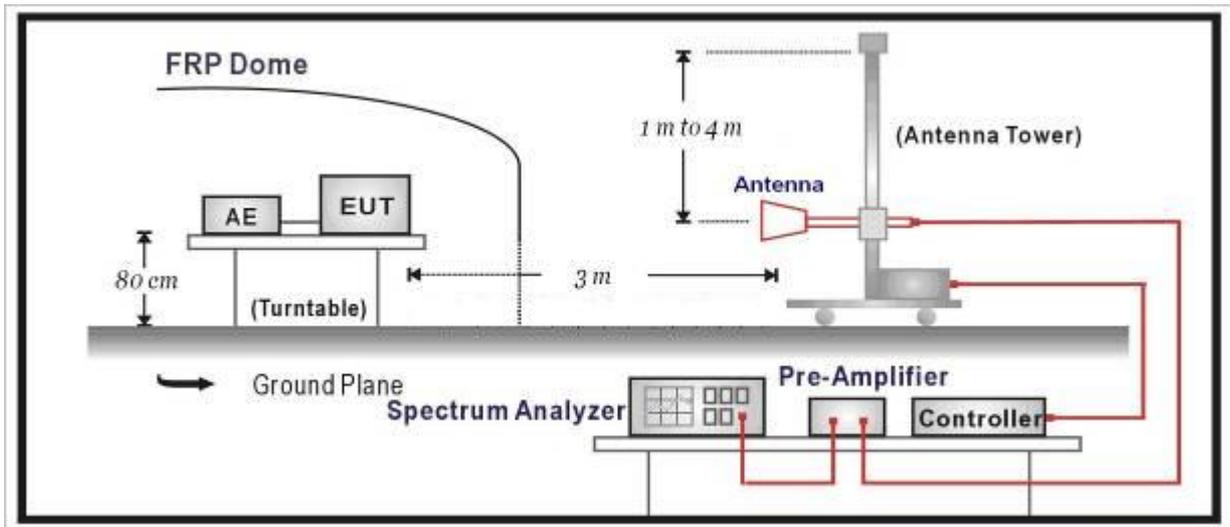
Conducted Spurious Emission Measurement:



Radiated Spurious Measurement: below 1GHz



Radiated Spurious Measurement: above 1GHz



7.3. Limit

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.

7.4. Test Procedure

**Conducted Spurious Measurement:**

- a) Place the EUT on a bench and set it in transmitting mode.
- b) Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMU200 by a Directional Couple.
- c) EUT Communicate with CMU200, then select a channel for testing.
- d) Add a correction factor to the display of spectrum, and then test.
- e) The resolution bandwidth of the spectrum analyzer was set at 1 MHz, sufficient scans were taken to show the out of band Emission if any up to 10<sup>th</sup> harmonic.

**Radiated Spurious Measurement:**

- a) The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
- b) The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
- c) The output of the test antenna shall be connected to the measuring receiver.

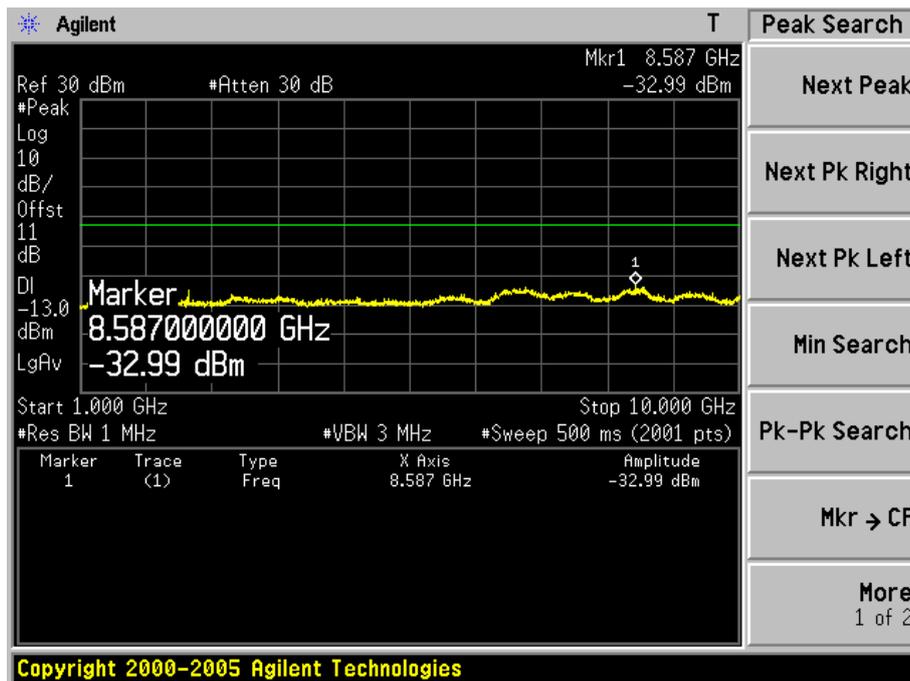
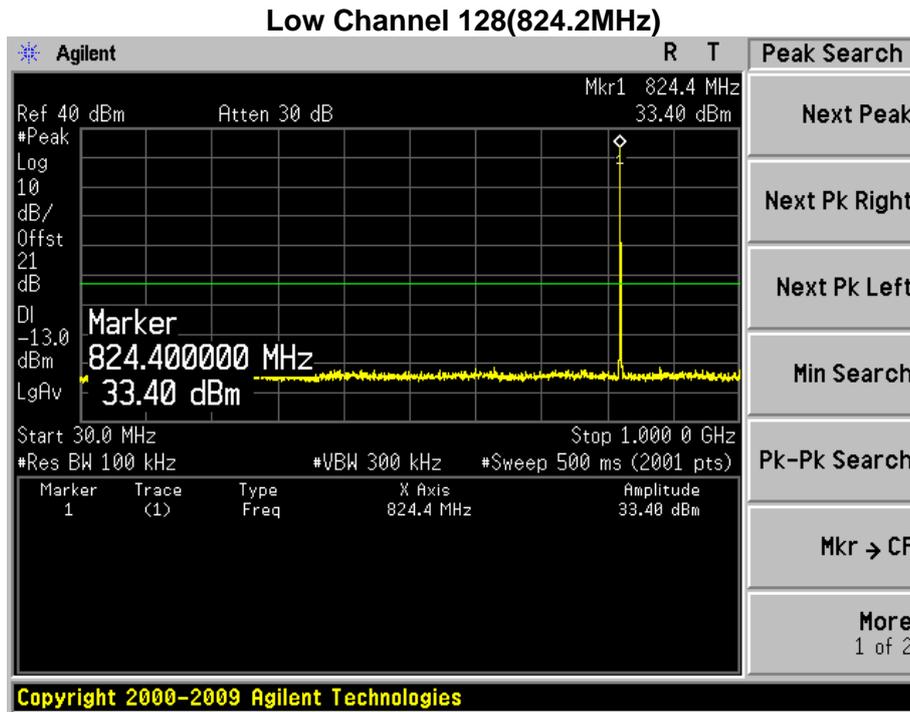
- d) The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.
- e) The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
- f) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- g) The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
- v) The maximum signal level detected by the measuring receiver shall be noted.
- h) The transmitter shall be replaced by a substitution antenna.
- i) The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
- j) The substitution antenna shall be connected to a calibrated signal generator.
- k) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- l) The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
- m) The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
- n) The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
- o) The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.
- p) The frequency range was checked up to 10<sup>th</sup> harmonic.
- q) Test site anechoic chamber refer to ANSI C63.4: 2003

## 7.5. Uncertainty

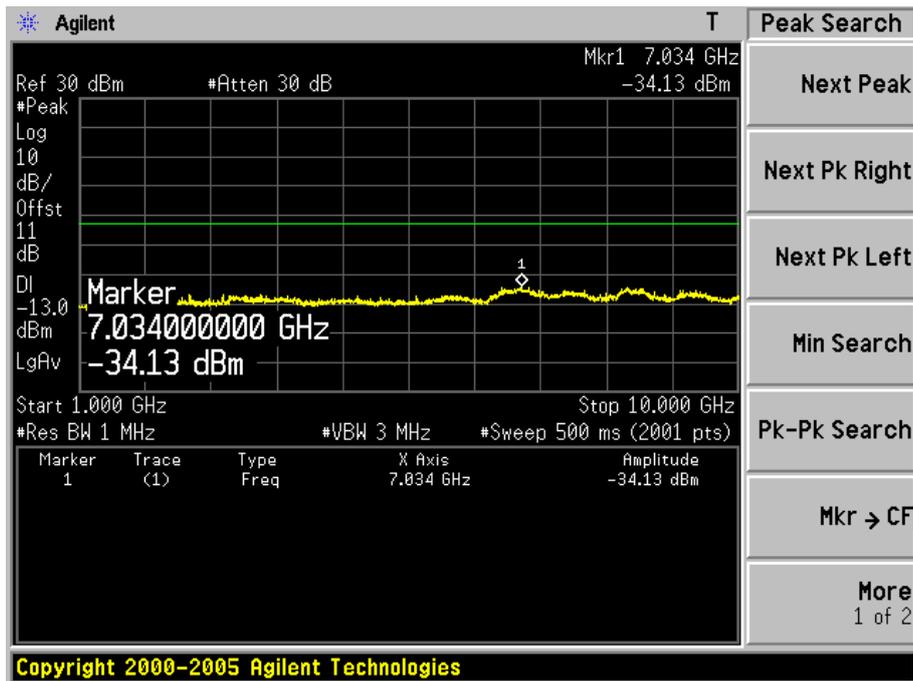
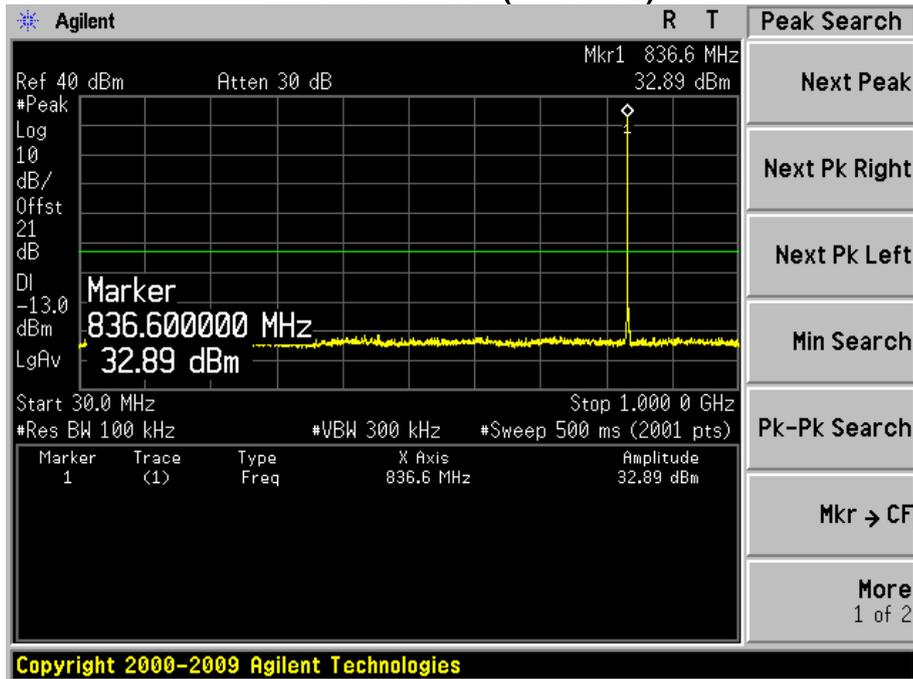
The measurement uncertainty is defined as 3.2 dB for Radiated Power Measurement.

7.6. Test Result

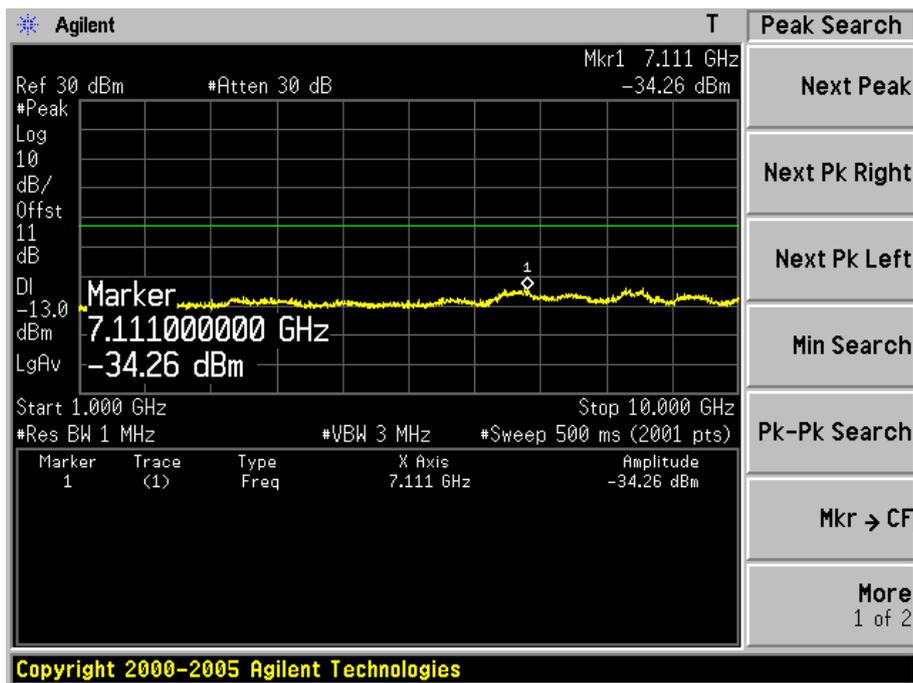
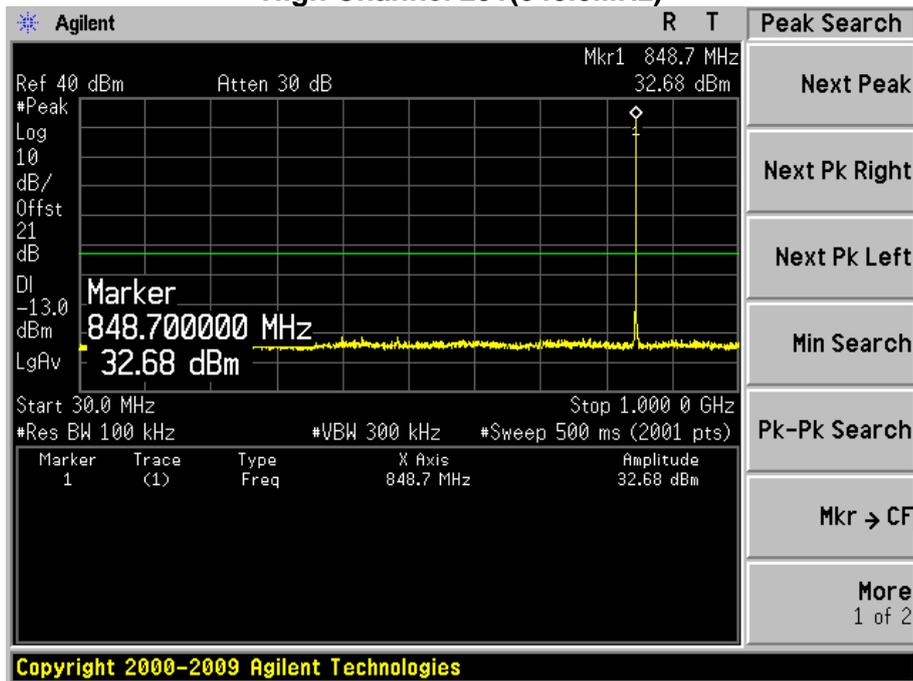
Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 1: GSM 850 Link		
Date of Test	2011/12/07	Test Site	CTR



Mid Channel 189(836.4MHz)

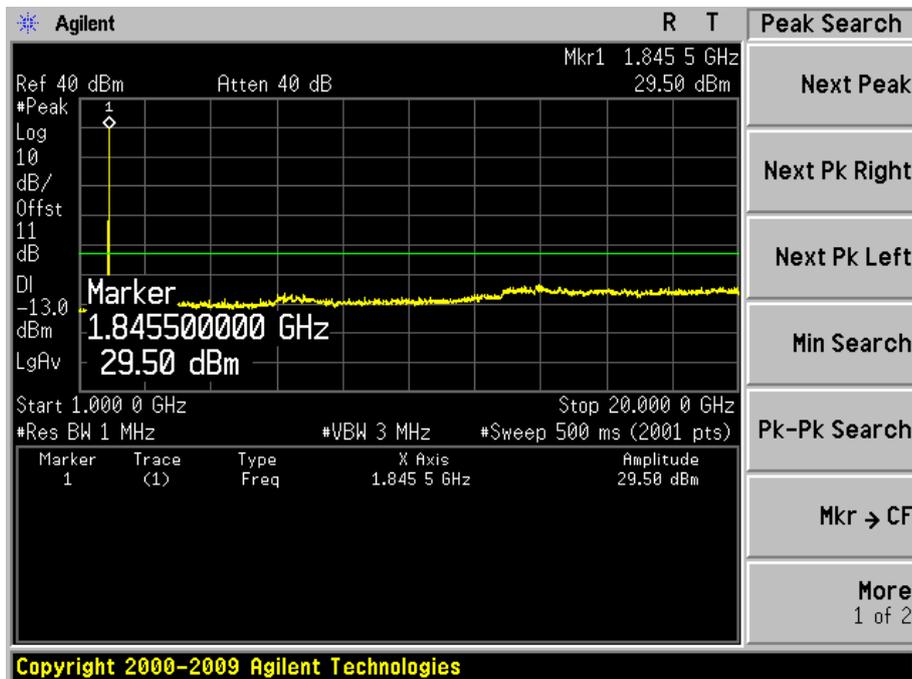
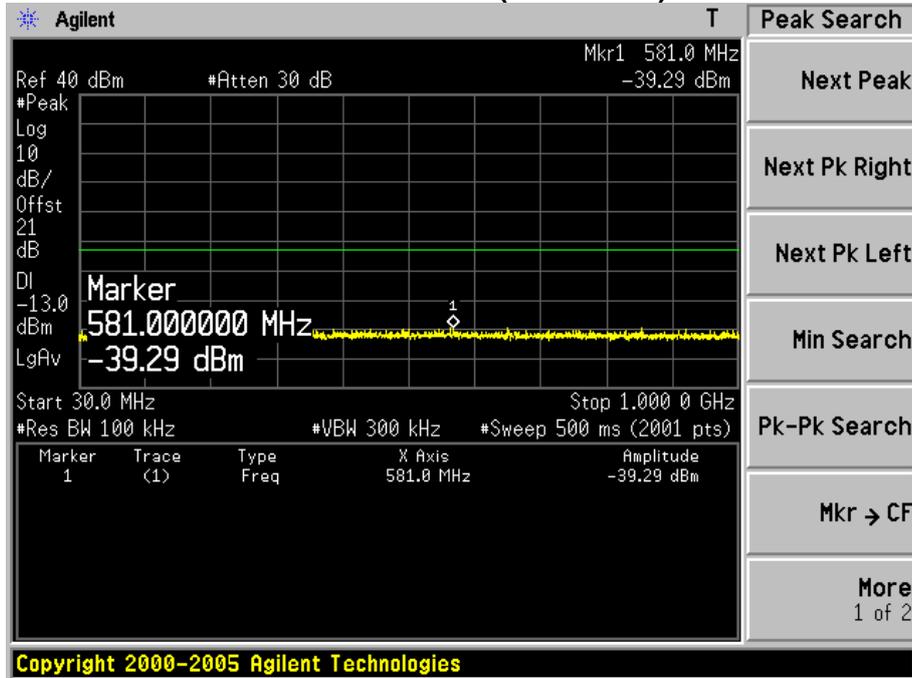


High Channel 251(848.8MHz)

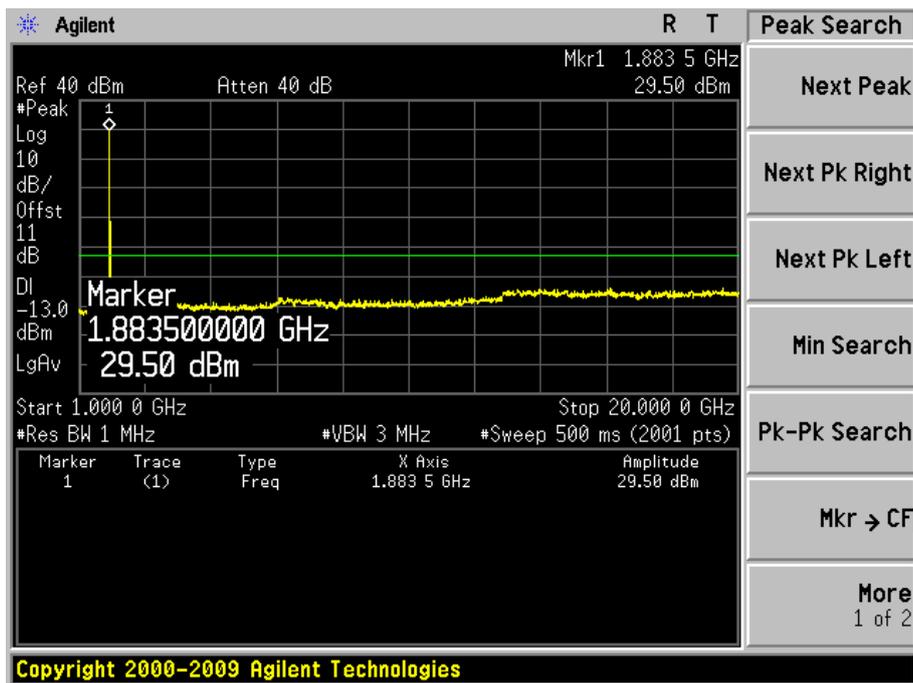
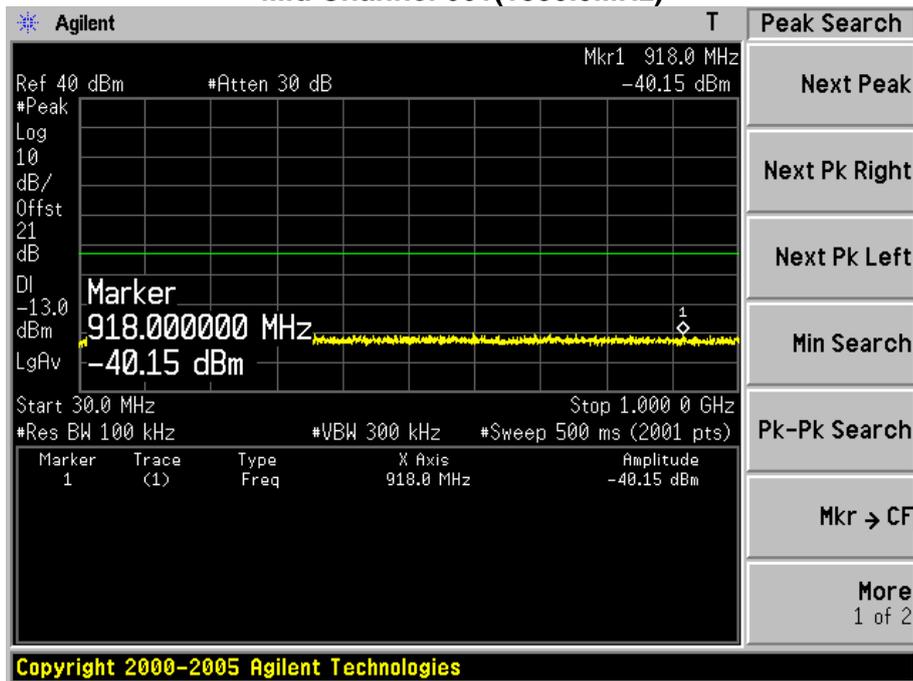


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 2: PCS1900 Link		
Date of Test	2011/12/07	Test Site	CTR

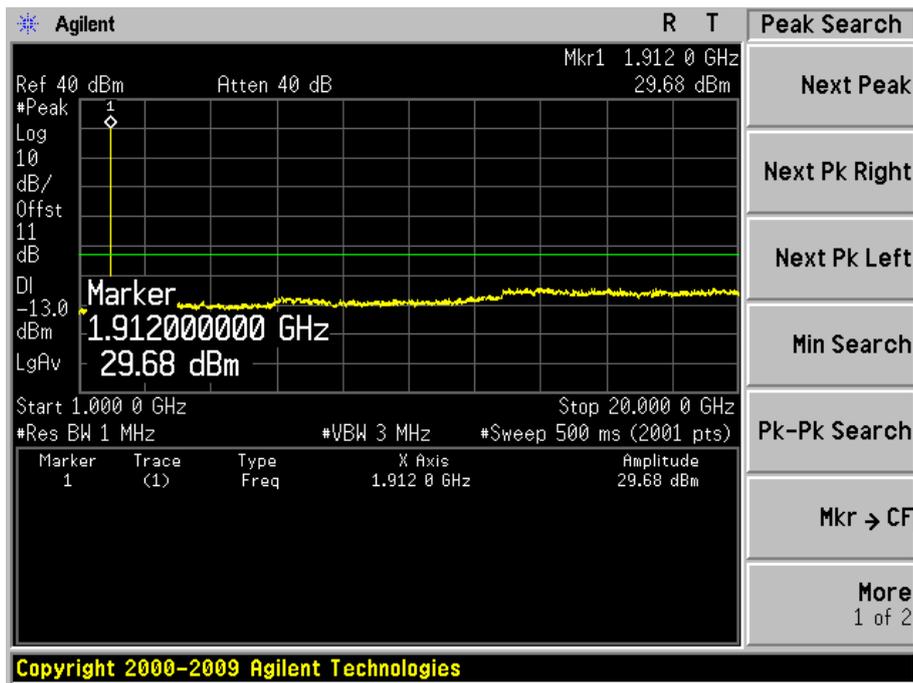
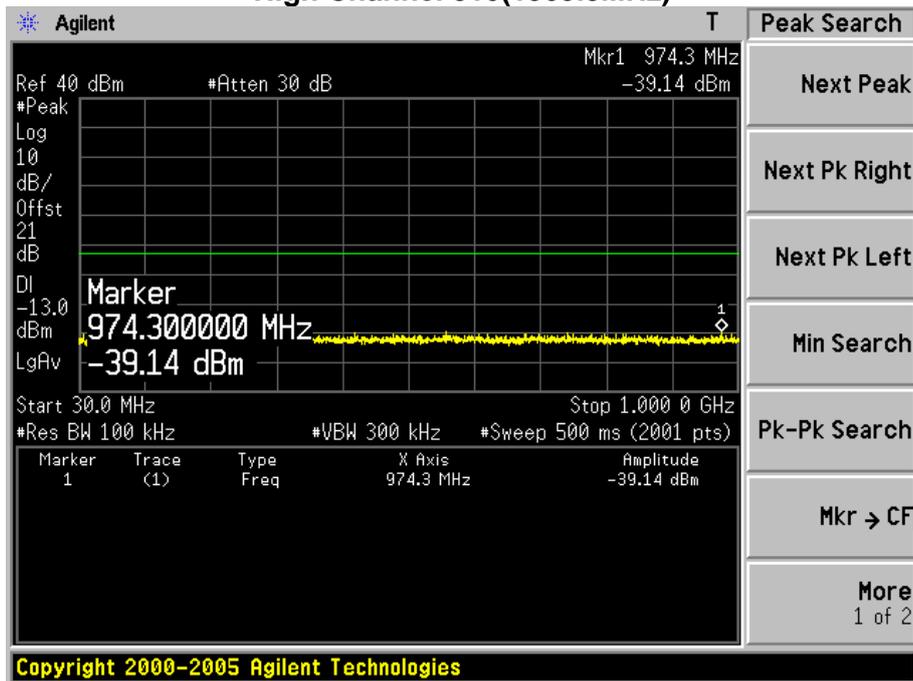
### Low Channel 512(1850.2MHz)



Mid Channel 661(1880.0MHz)

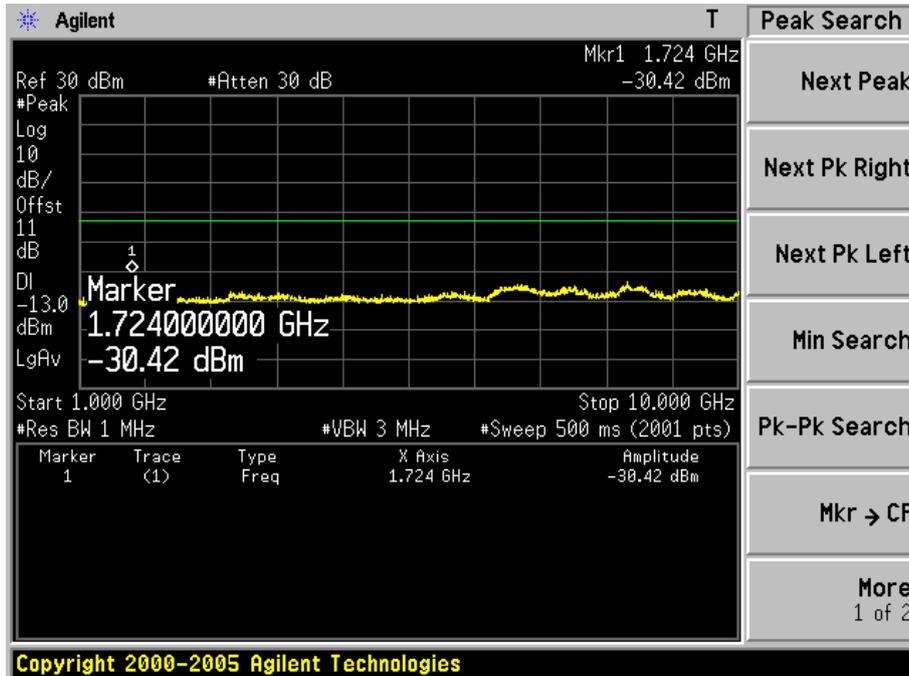
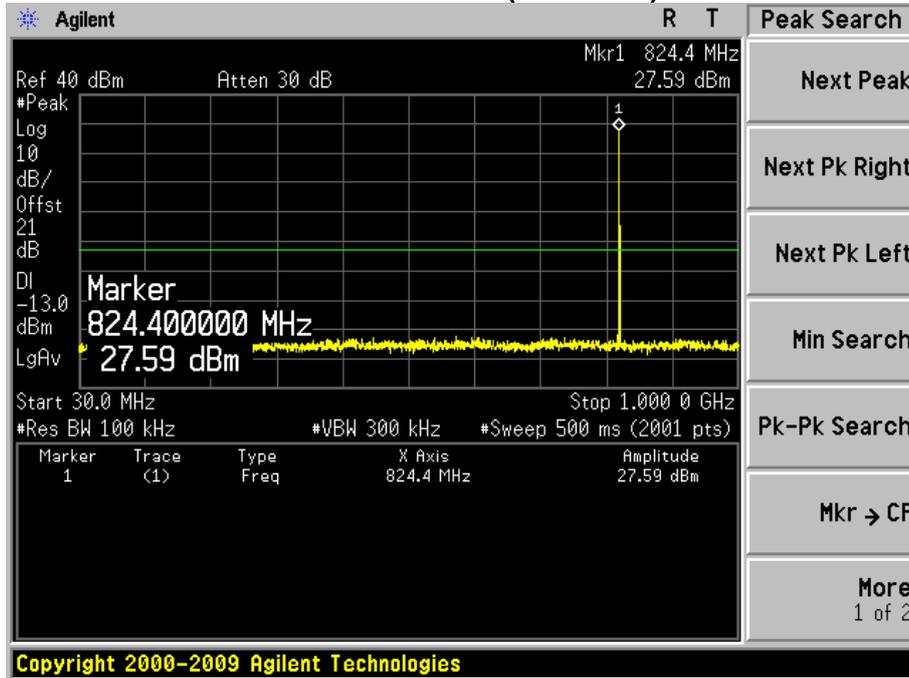


High Channel 810(1909.8MHz)

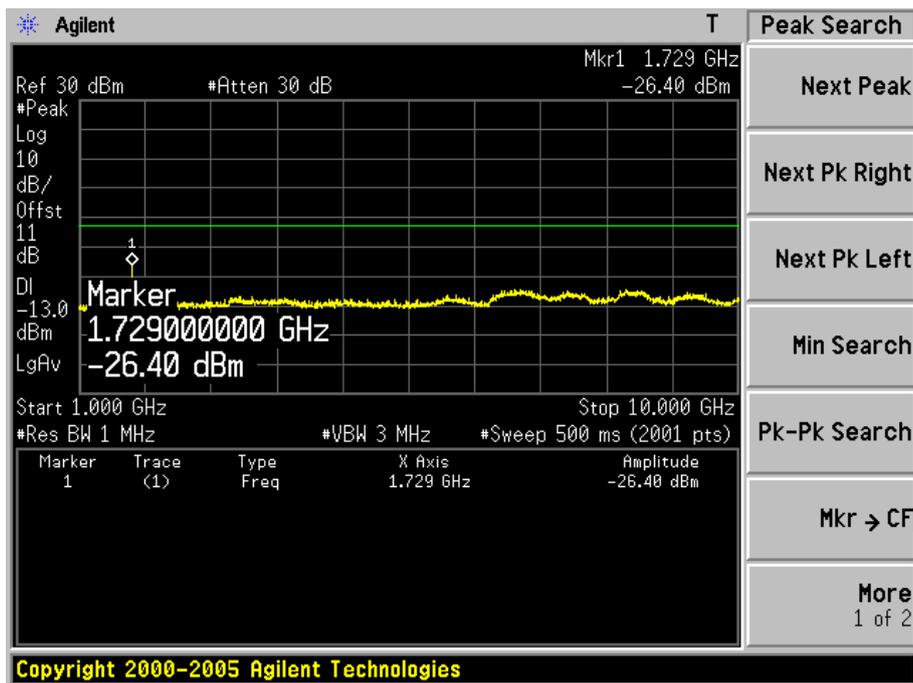
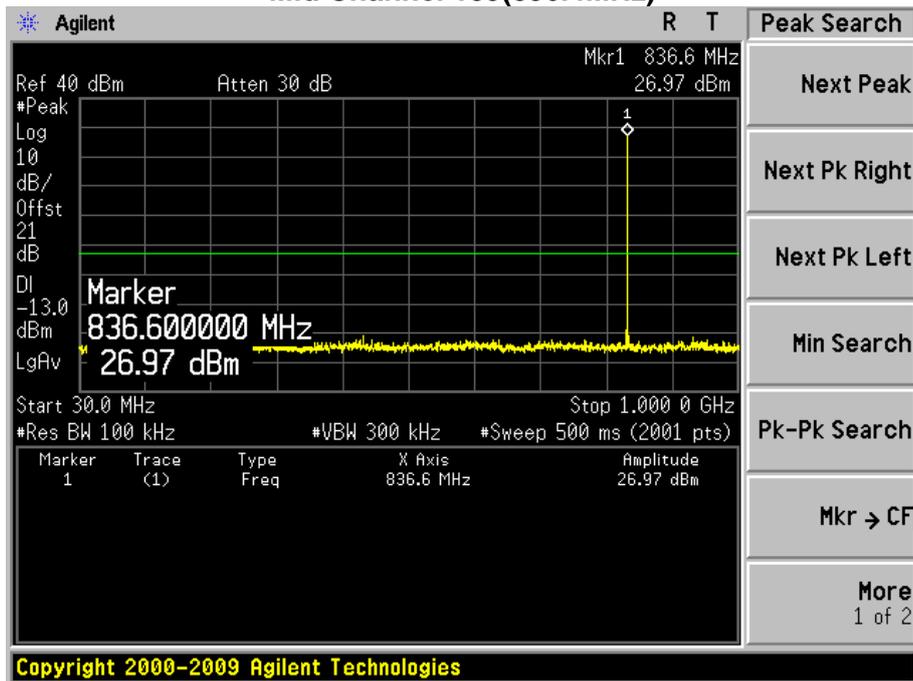


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 3: EDGE 850 Link		
Date of Test	2011/12/07	Test Site	CTR

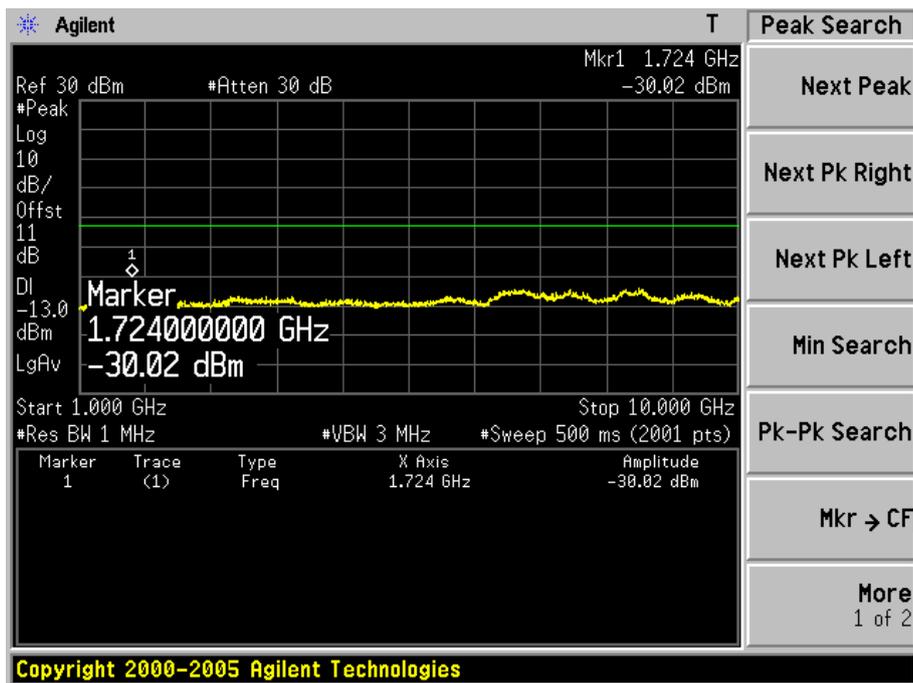
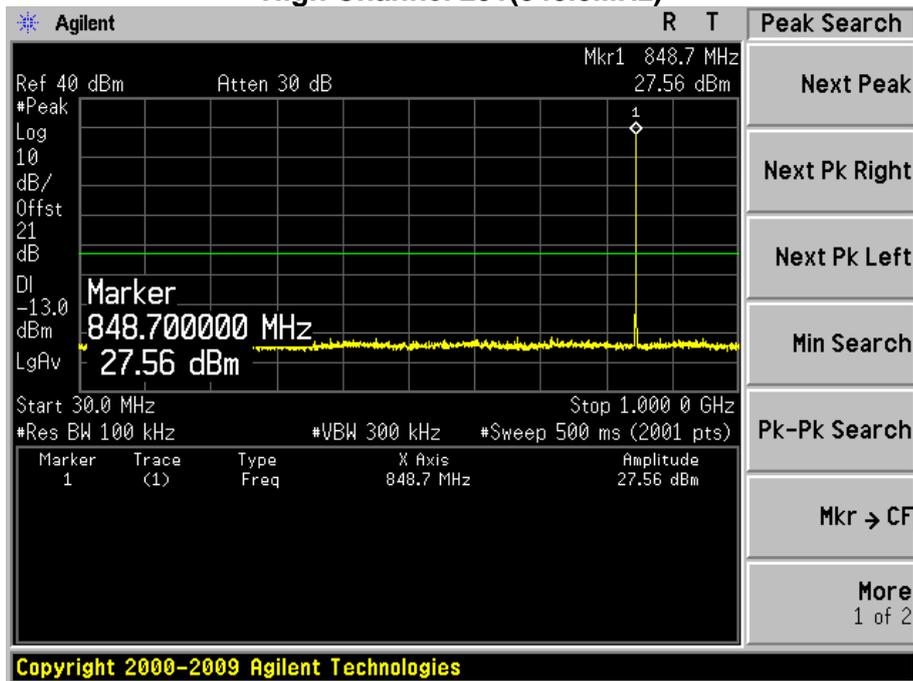
### Low Channel 128(824.2MHz)



Mid Channel 189(836.4MHz)

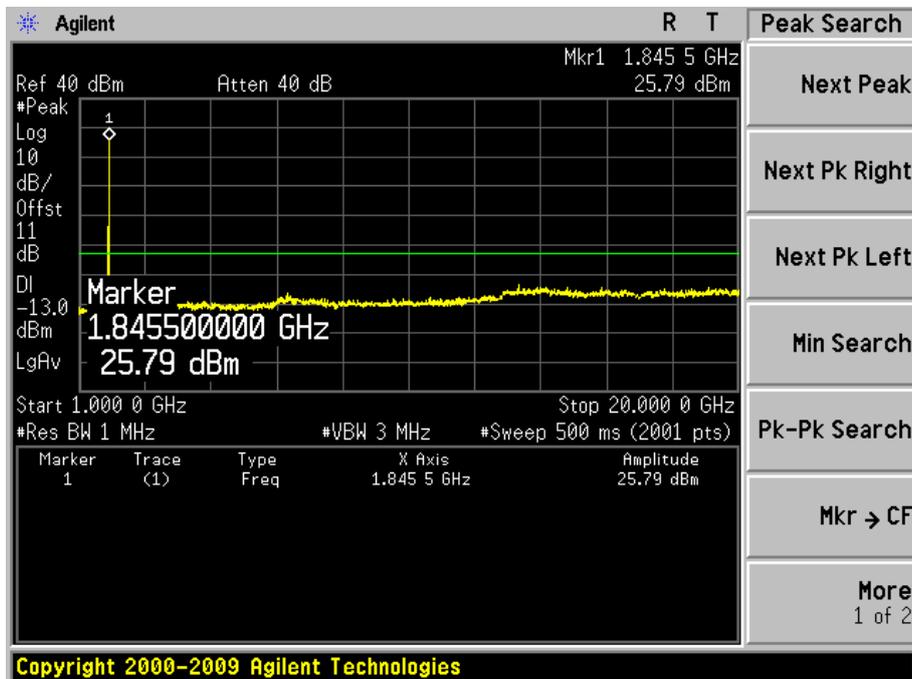
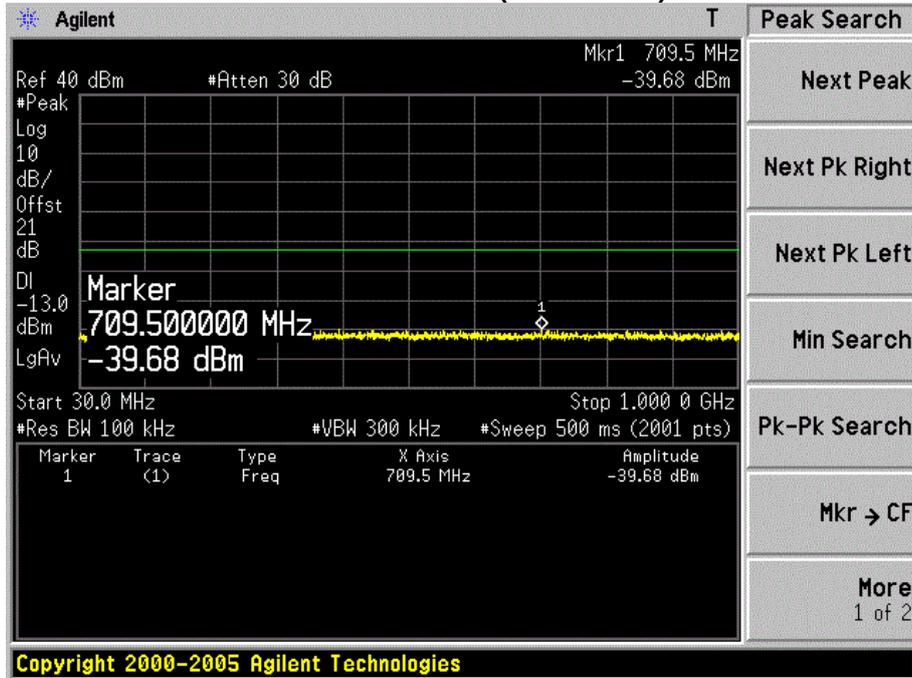


High Channel 251(848.8MHz)

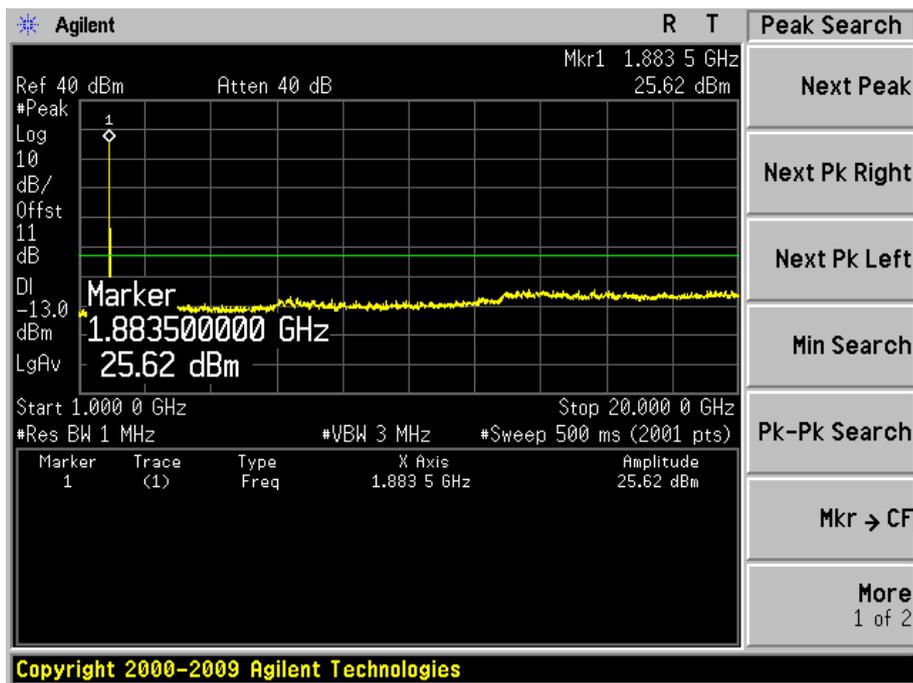
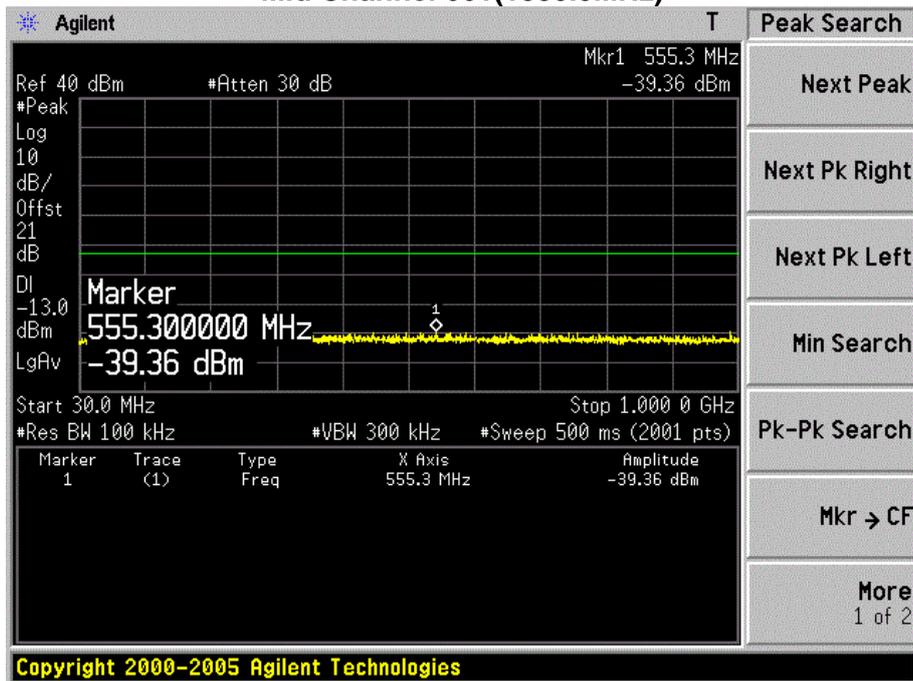


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 4: EDGE1900 Link		
Date of Test	2011/12/07	Test Site	CTR

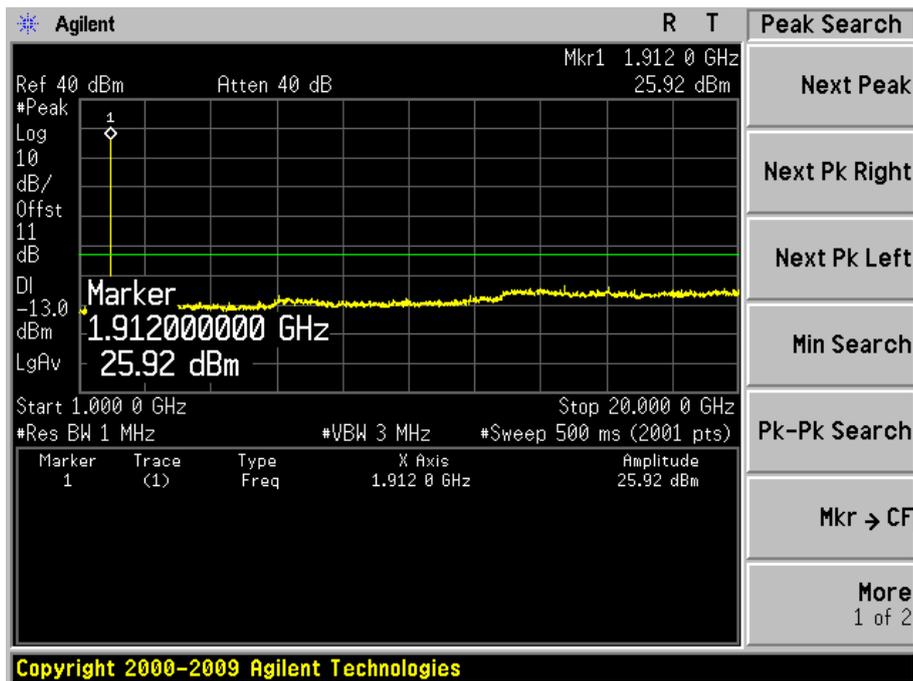
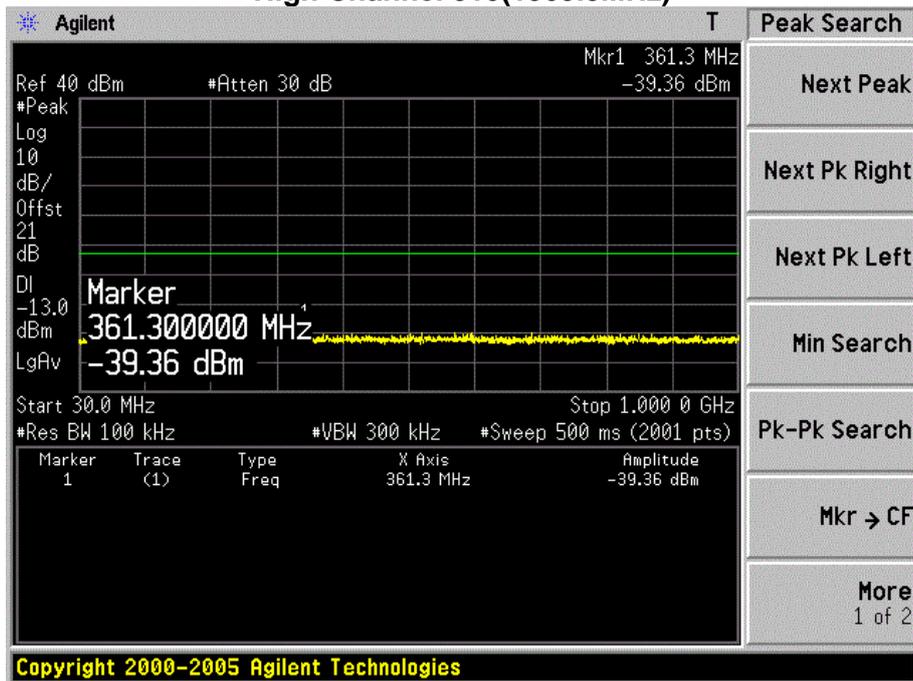
### Low Channel 512(1850.2MHz)



Mid Channel 661(1880.0MHz)

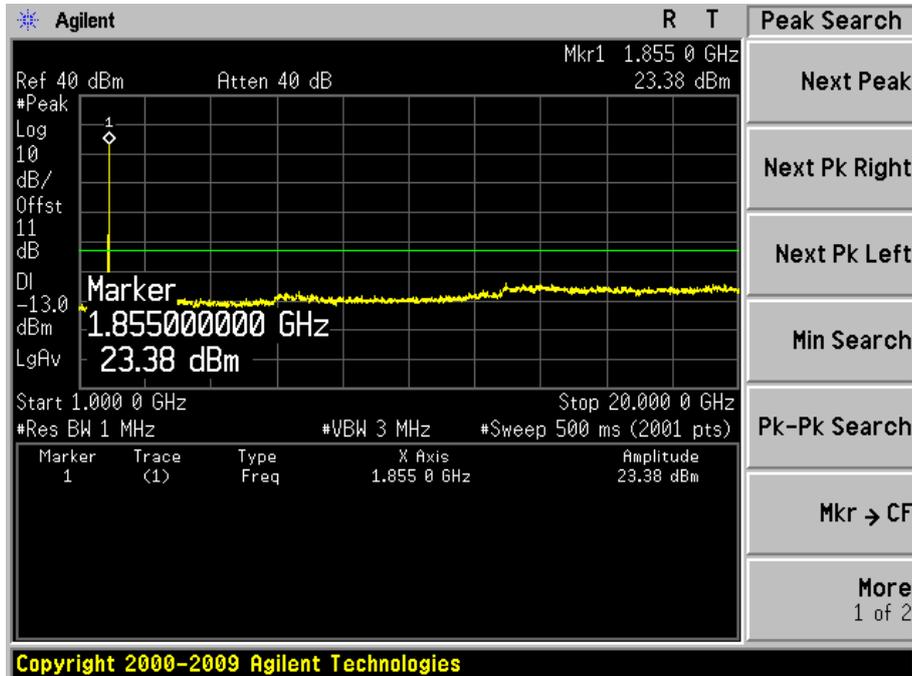
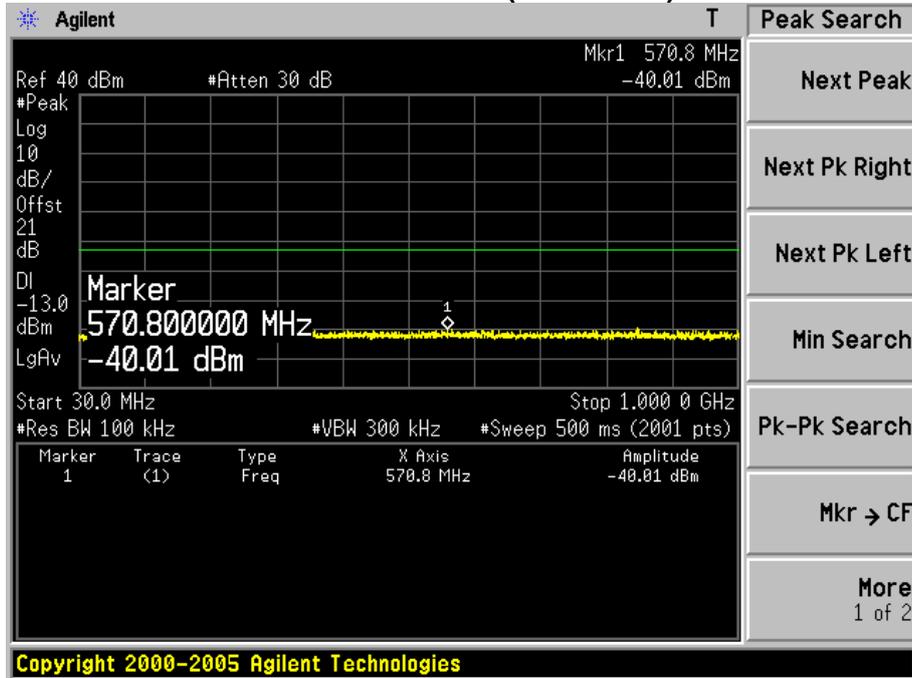


High Channel 810(1909.8MHz)

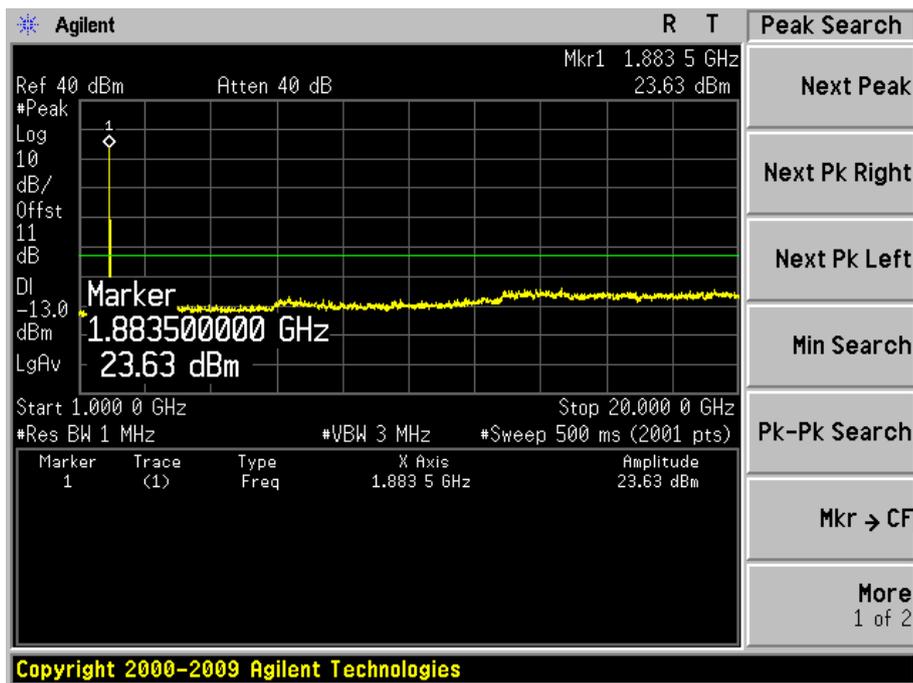
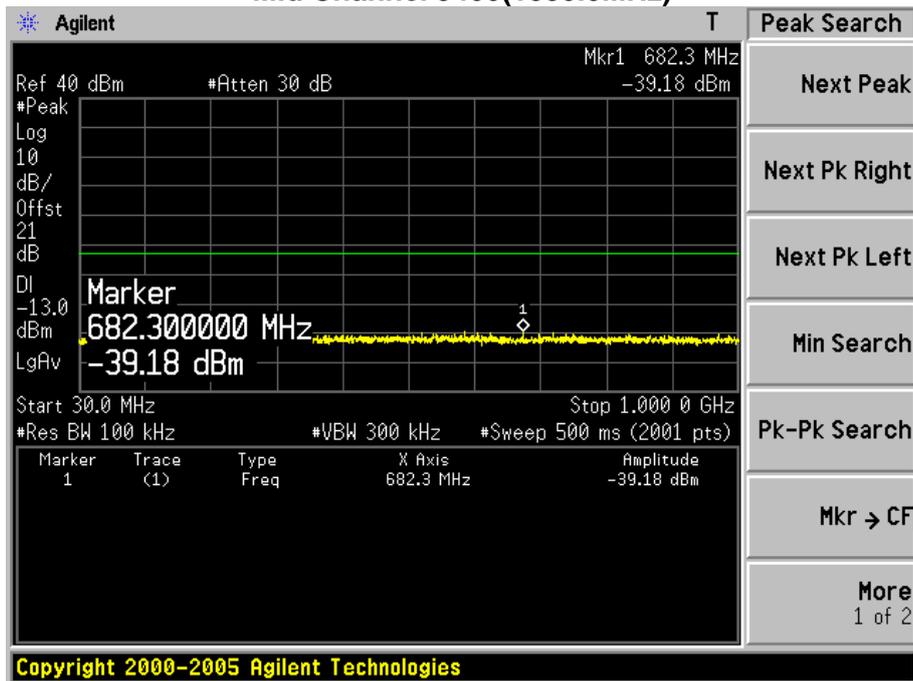


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 5: WCDMA Band II Link		
Date of Test	2011/12/07	Test Site	CTR

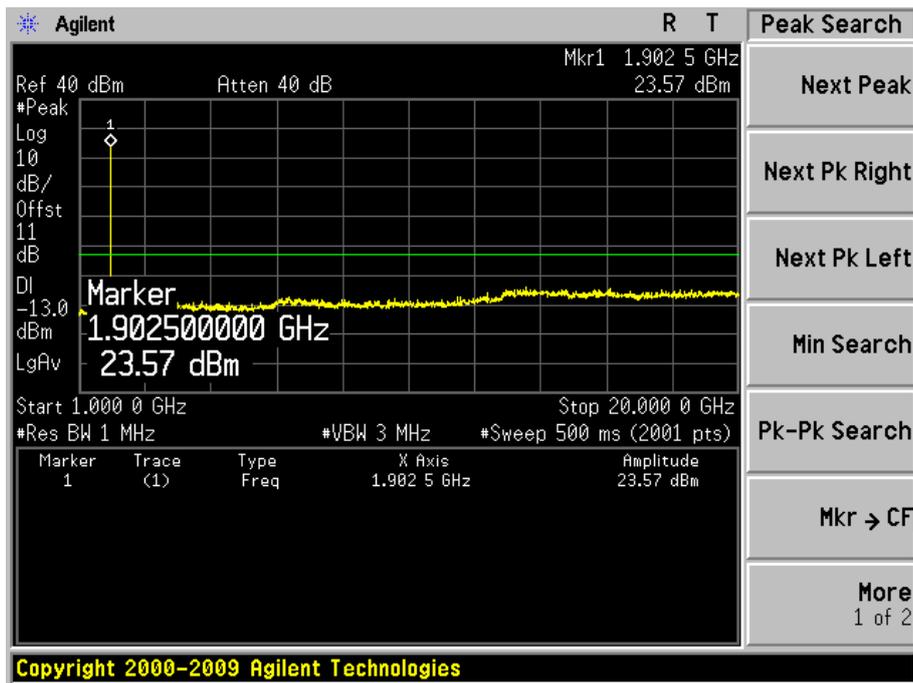
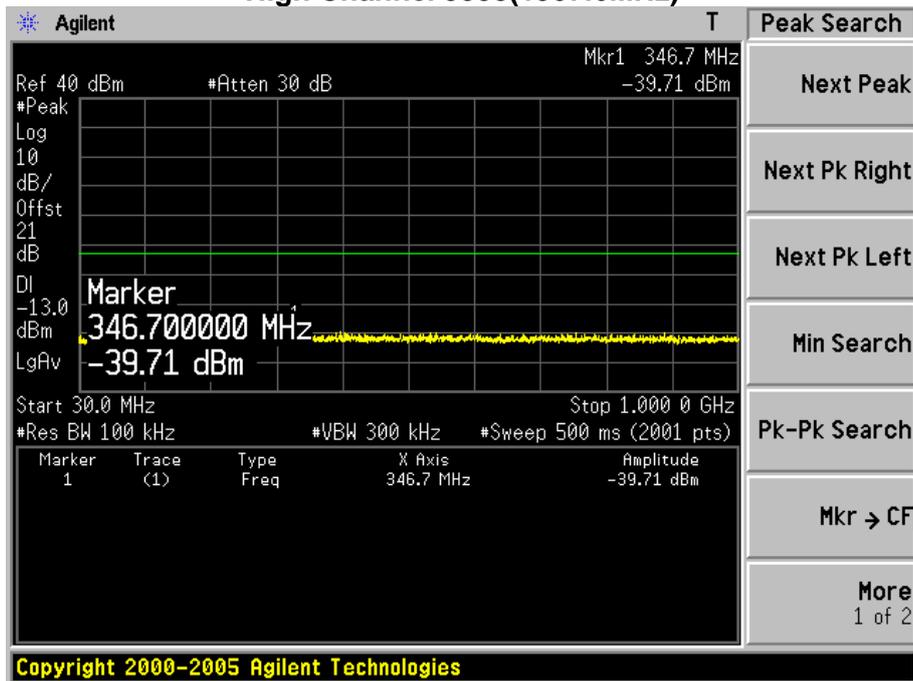
### Low Channel 9262(1852.4MHz)



Mid Channel 9400(1880.0MHz)

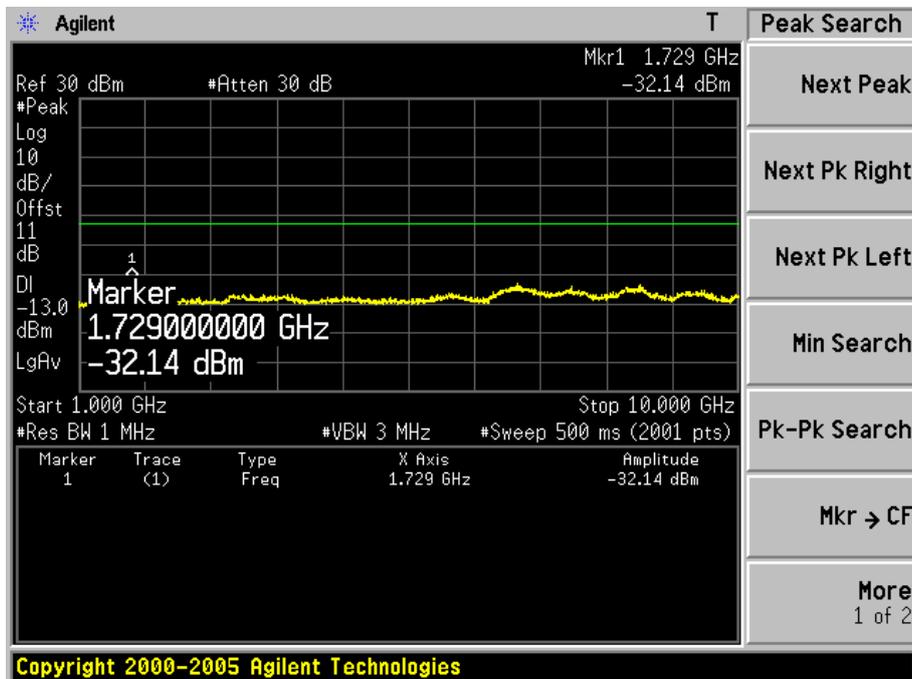
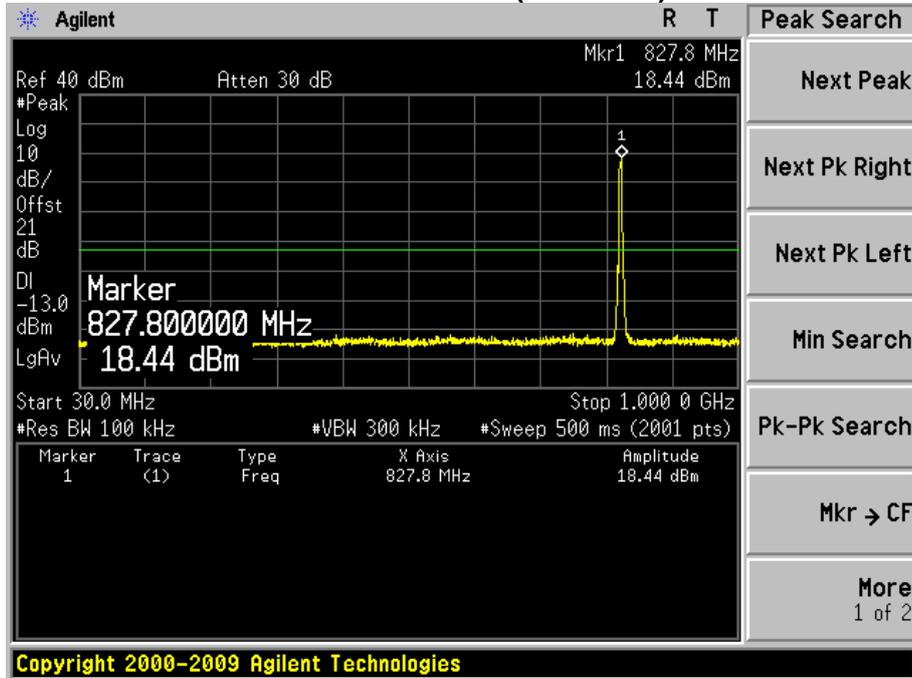


High Channel 9538(1907.6MHz)

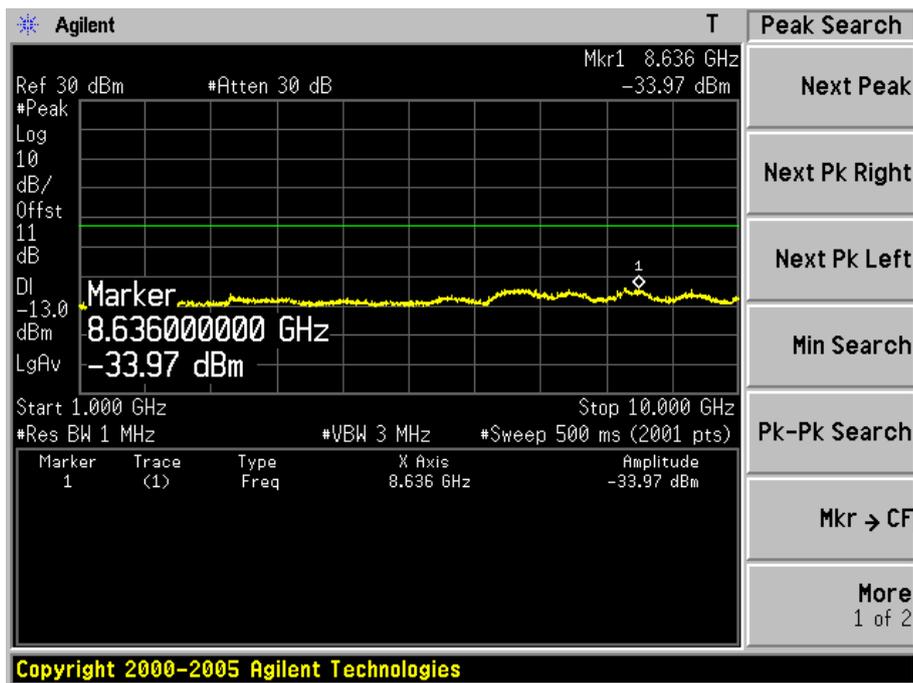
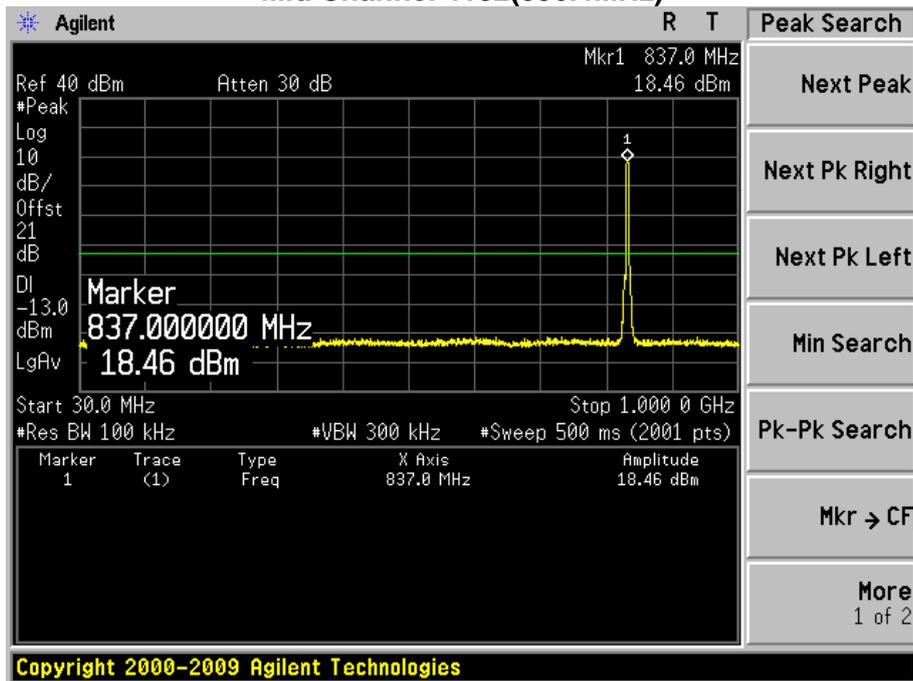


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 6: WCDMA Band V Link		
Date of Test	2011/12/07	Test Site	CTR

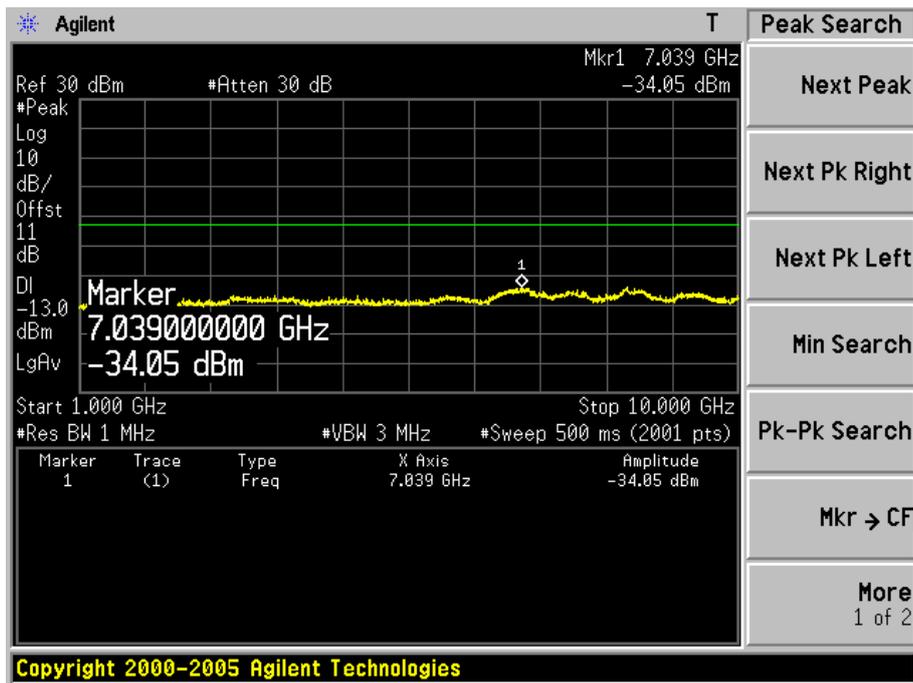
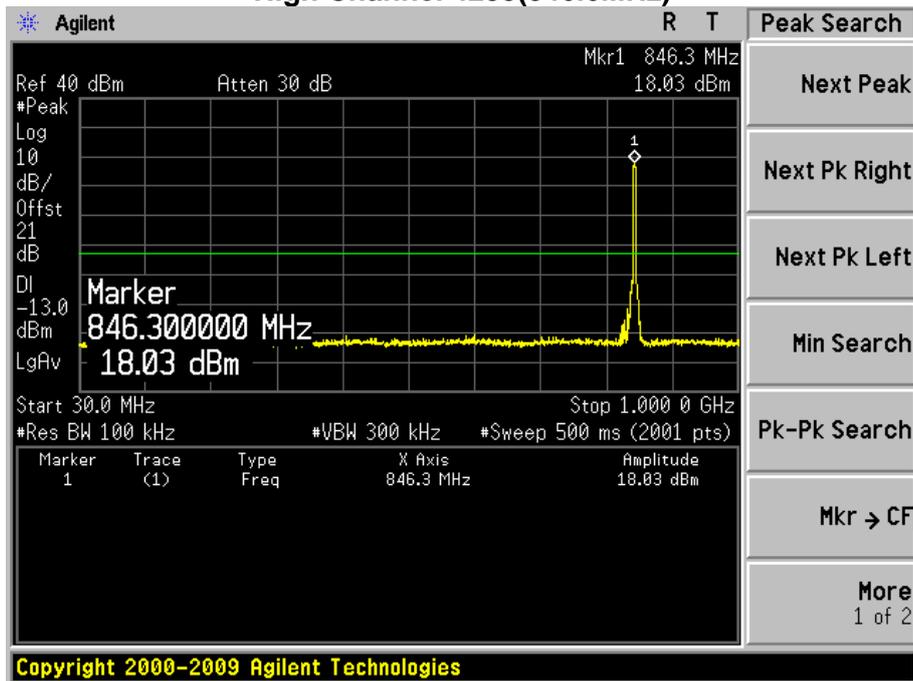
### Low Channel 4132(826.4MHz)



Mid Channel 4182(836.4MHz)

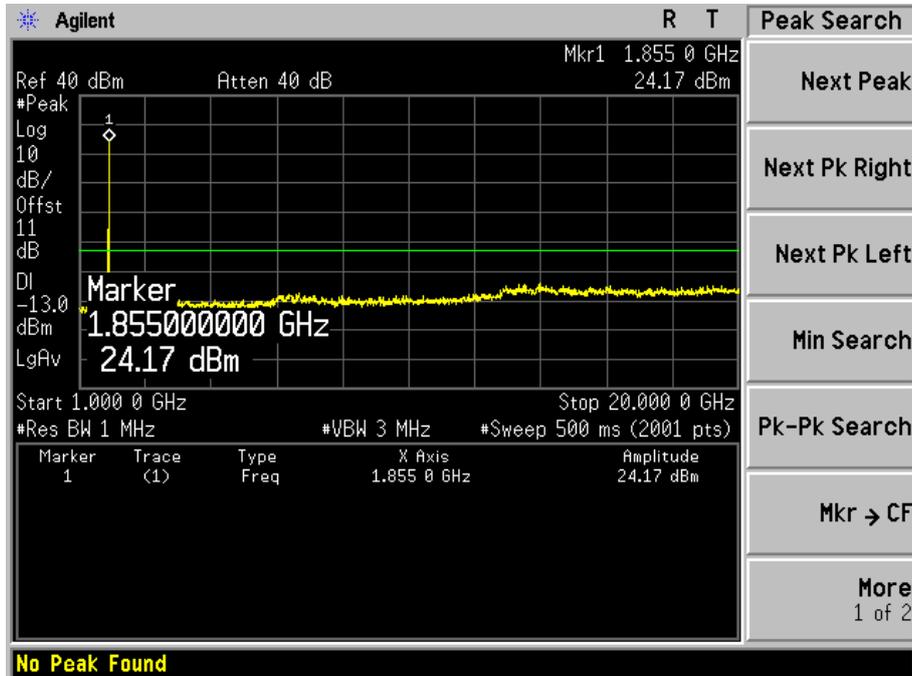
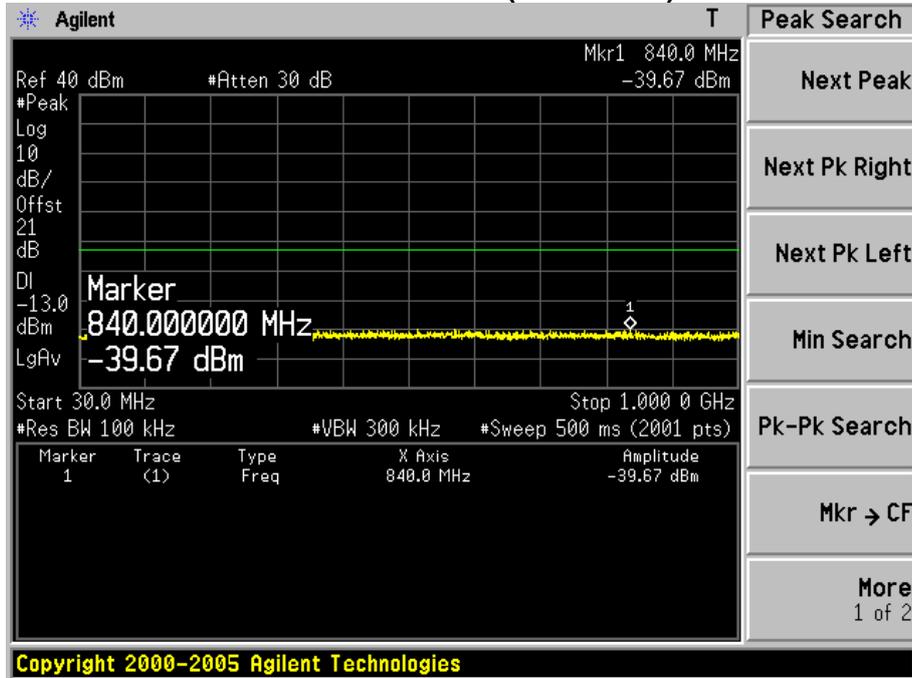


High Channel 4233(846.6MHz)

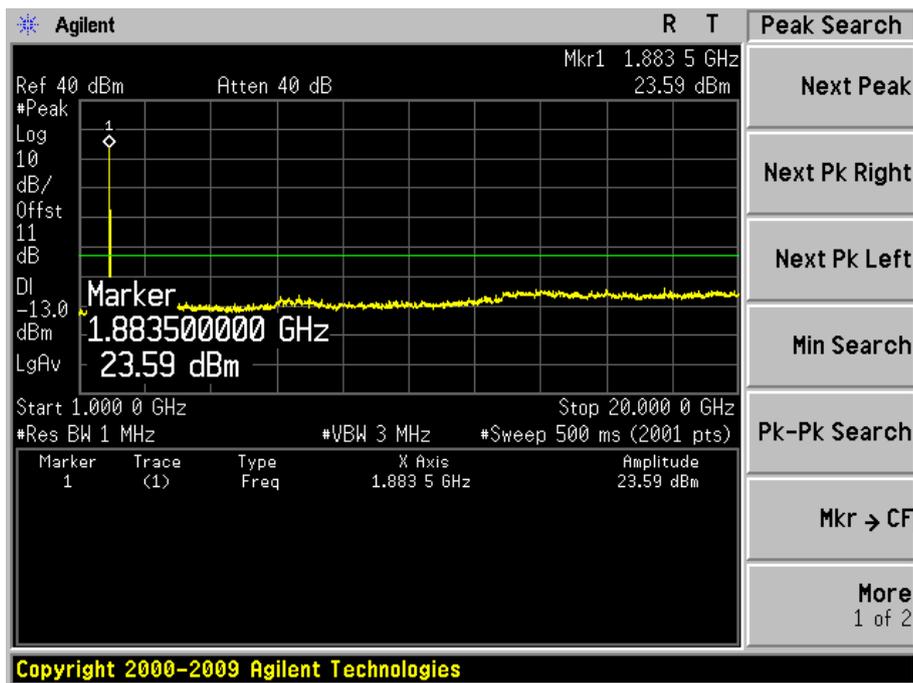
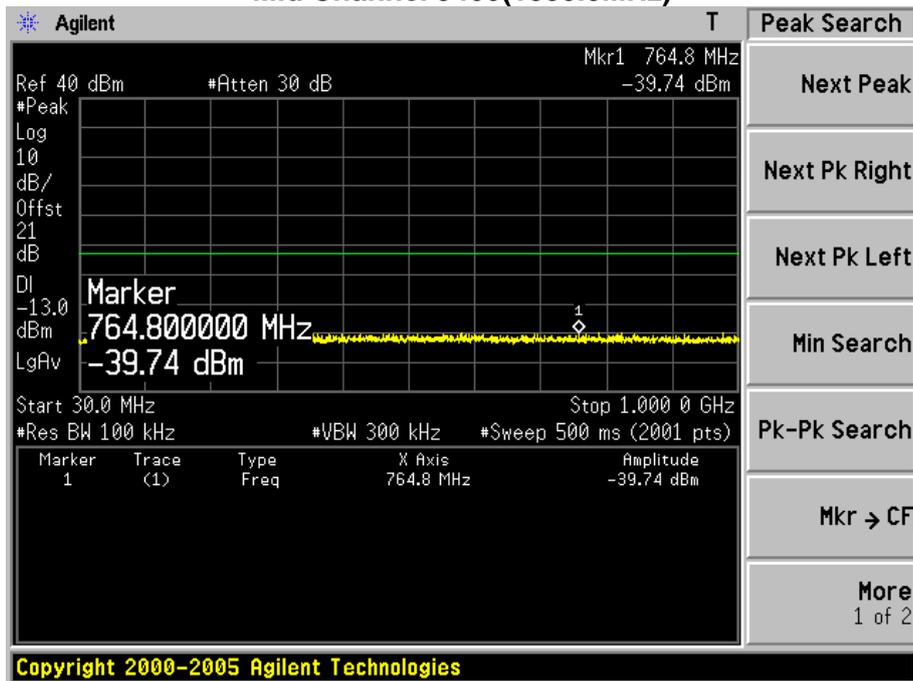


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 7: HSDPA Band II Link		
Date of Test	2011/12/07	Test Site	CTR

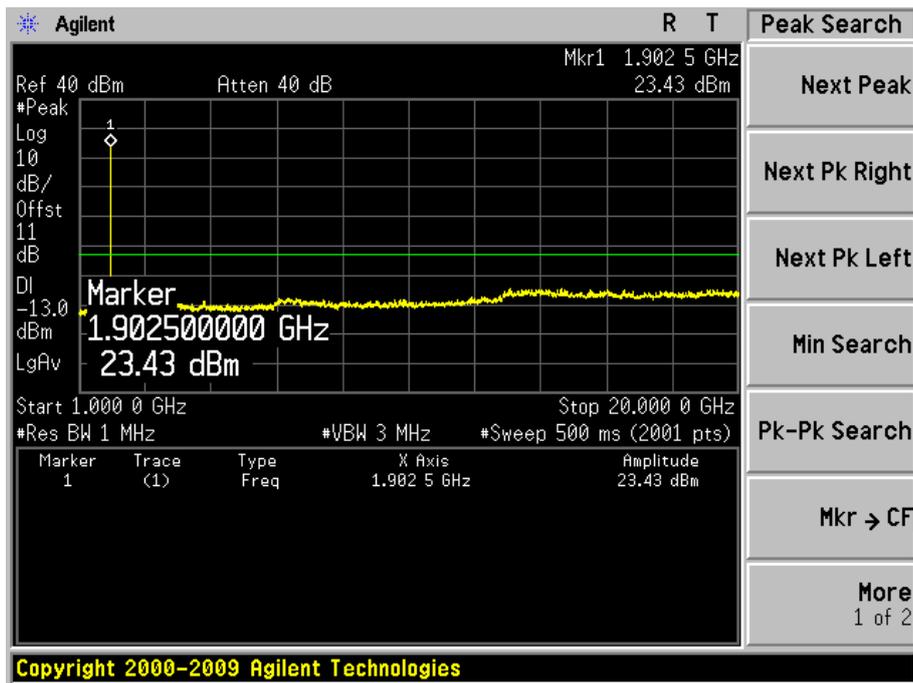
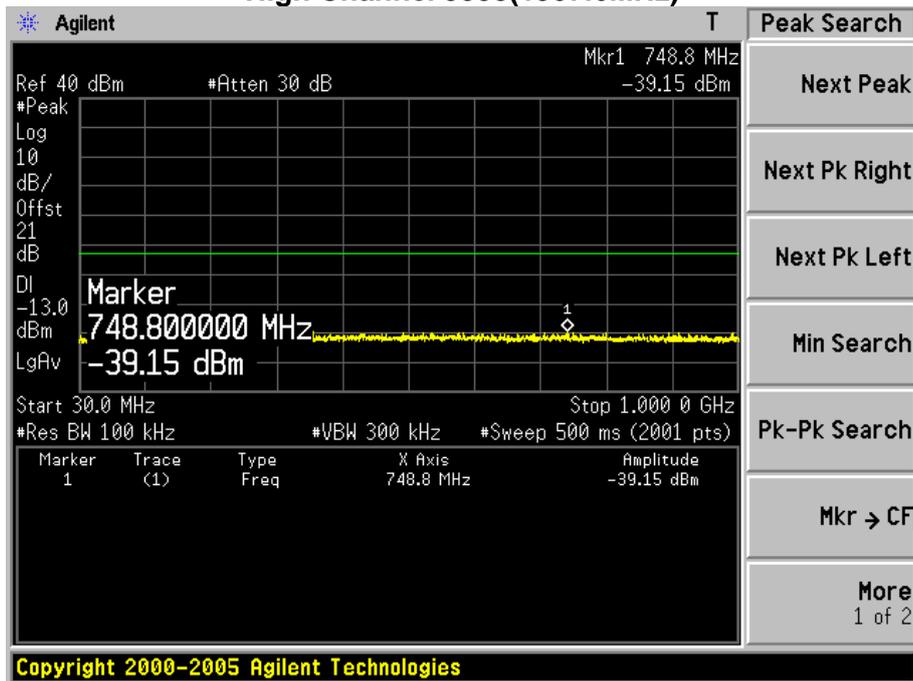
### Low Channel 9262(1852.4MHz)



Mid Channel 9400(1880.0MHz)

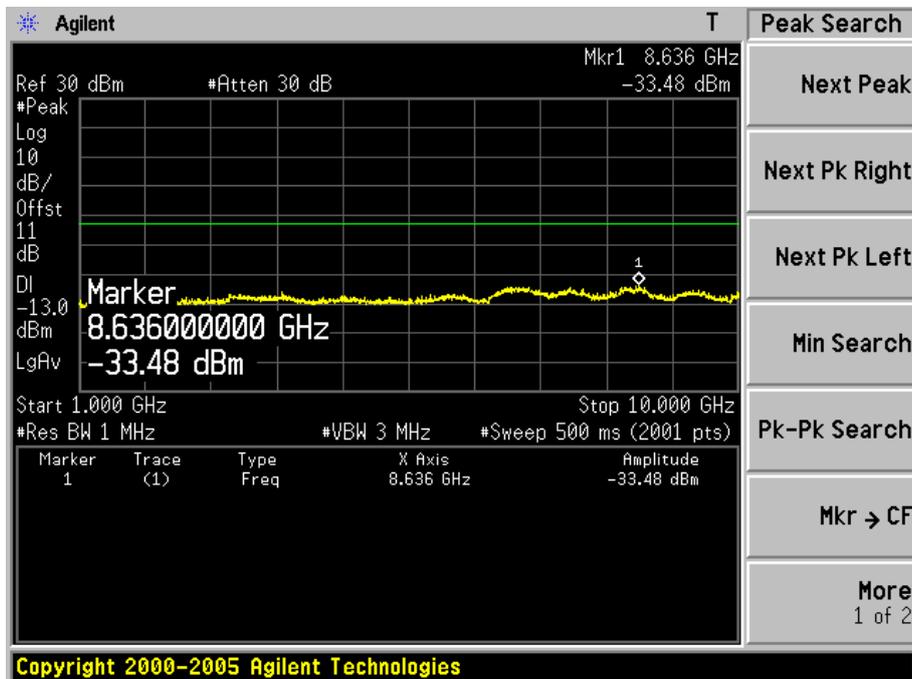
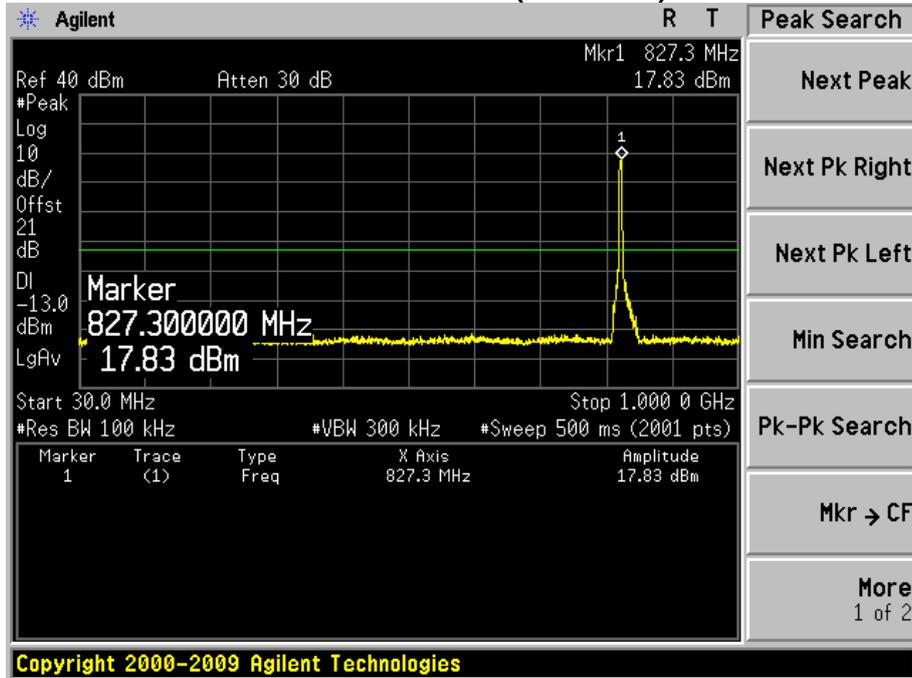


High Channel 9538(1907.6MHz)

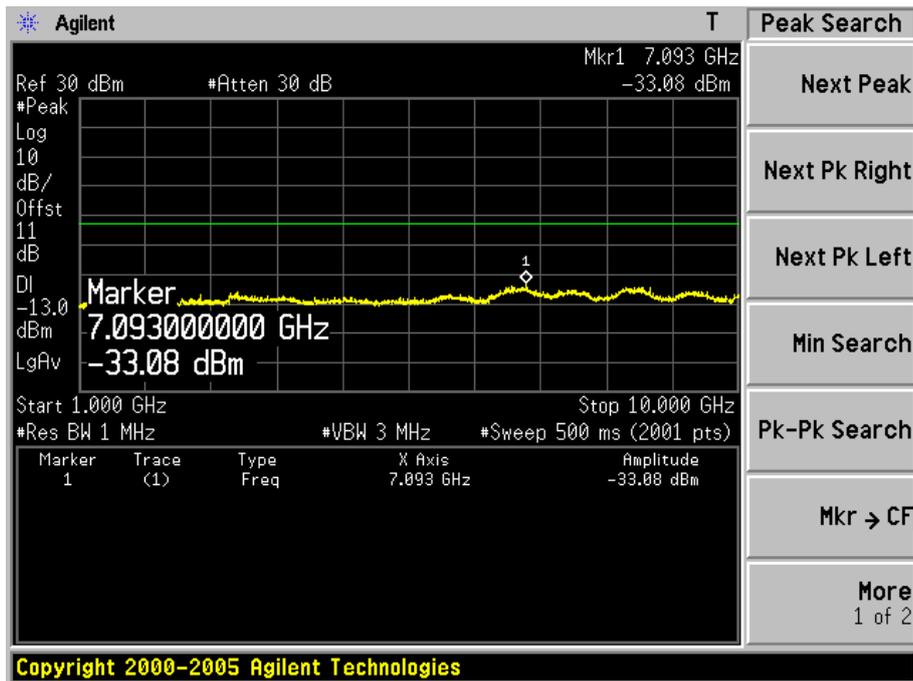
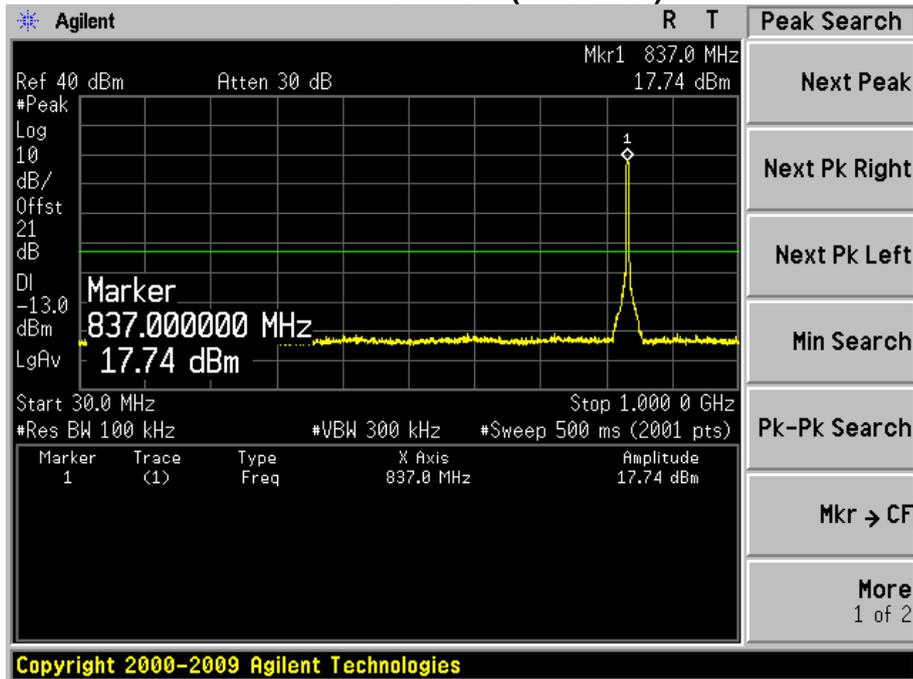


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 8: HSDPA Band V Link		
Date of Test	2011/12/07	Test Site	CTR

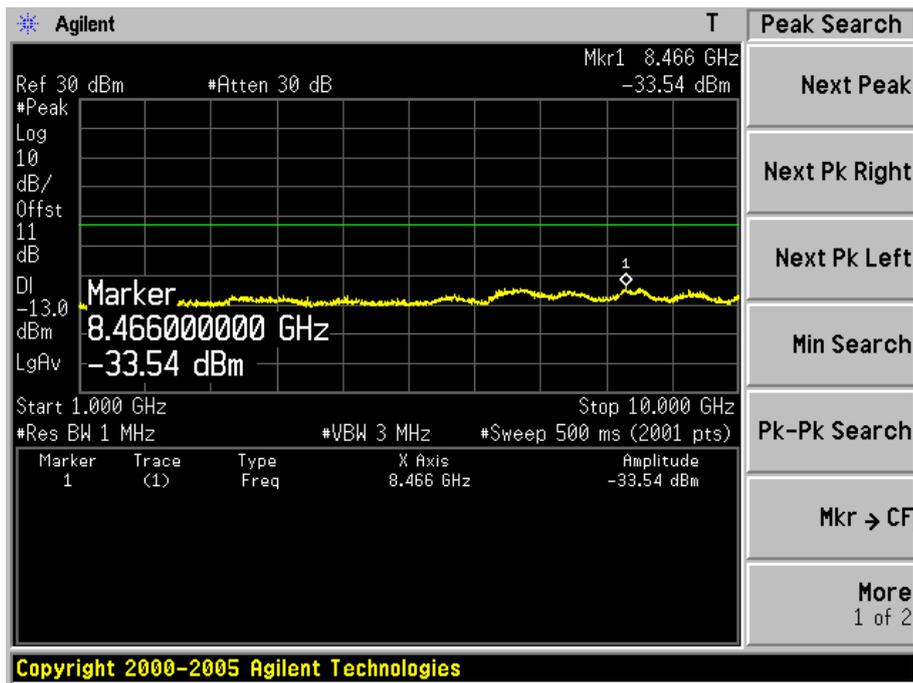
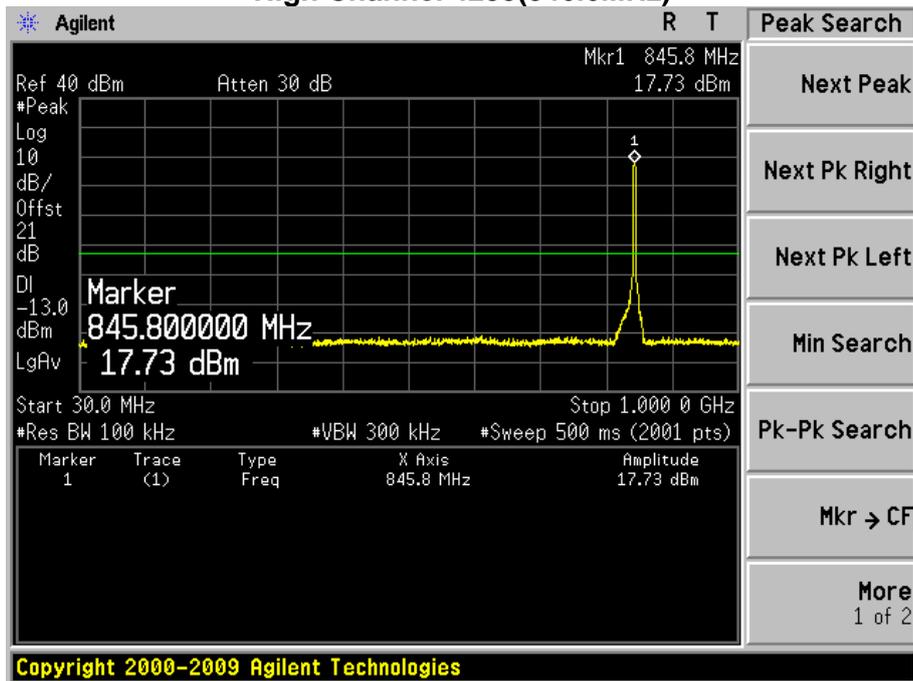
### Low Channel 4132(826.4MHz)



Mid Channel 4182(836.4MHz)

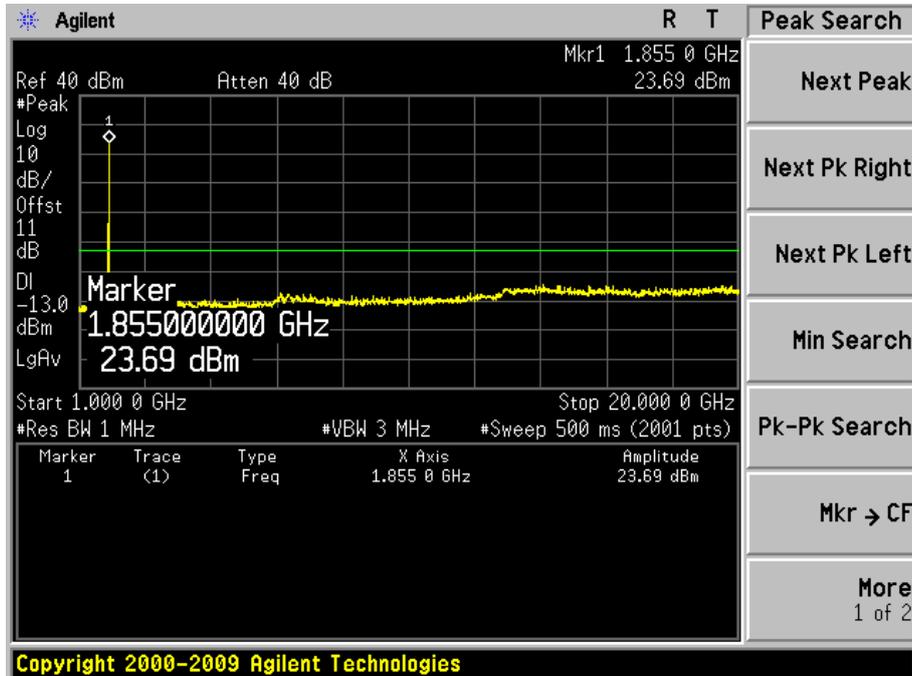
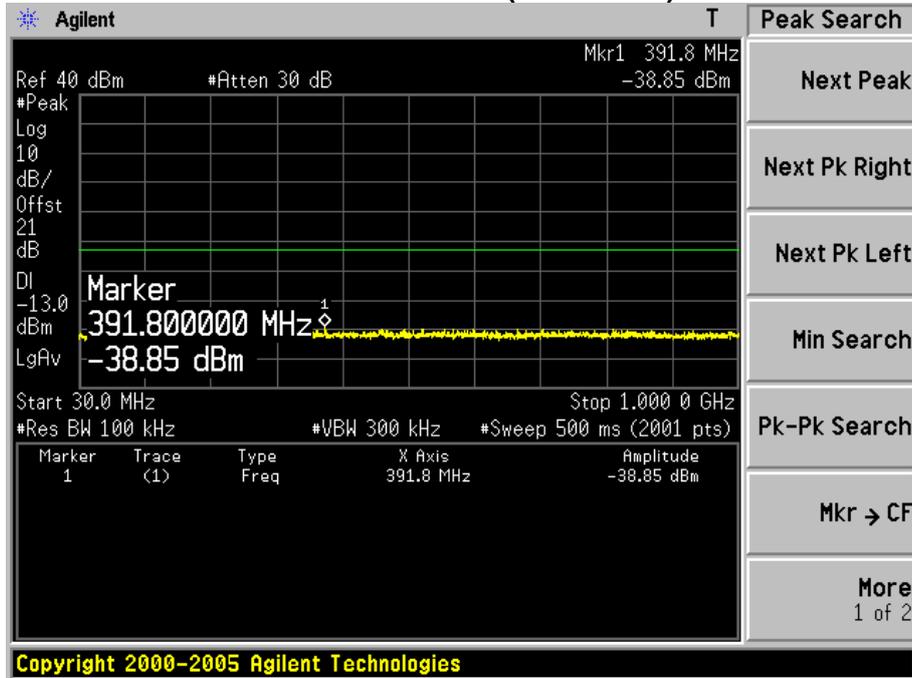


High Channel 4233(846.6MHz)

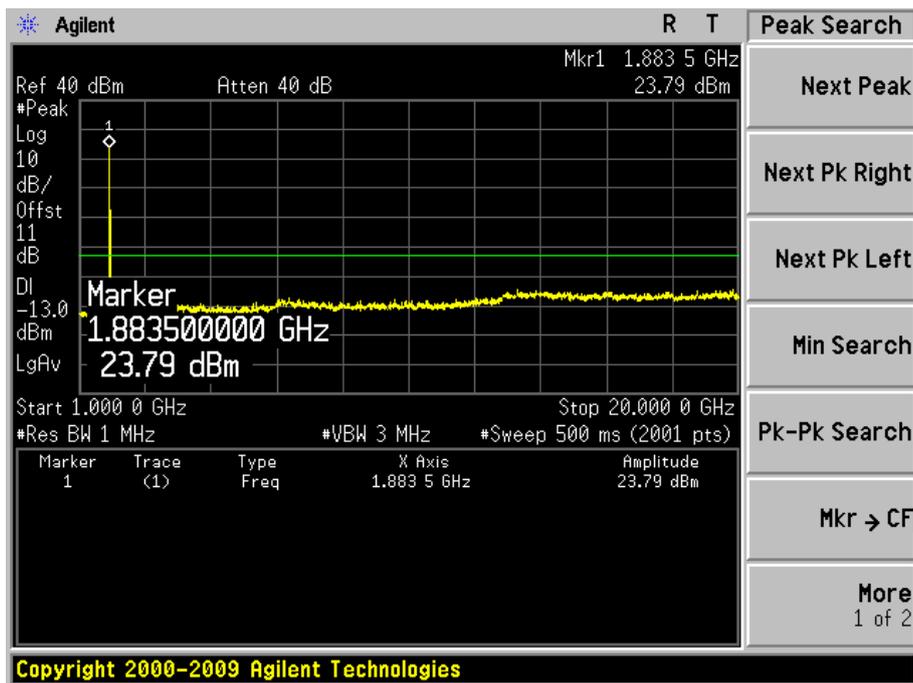
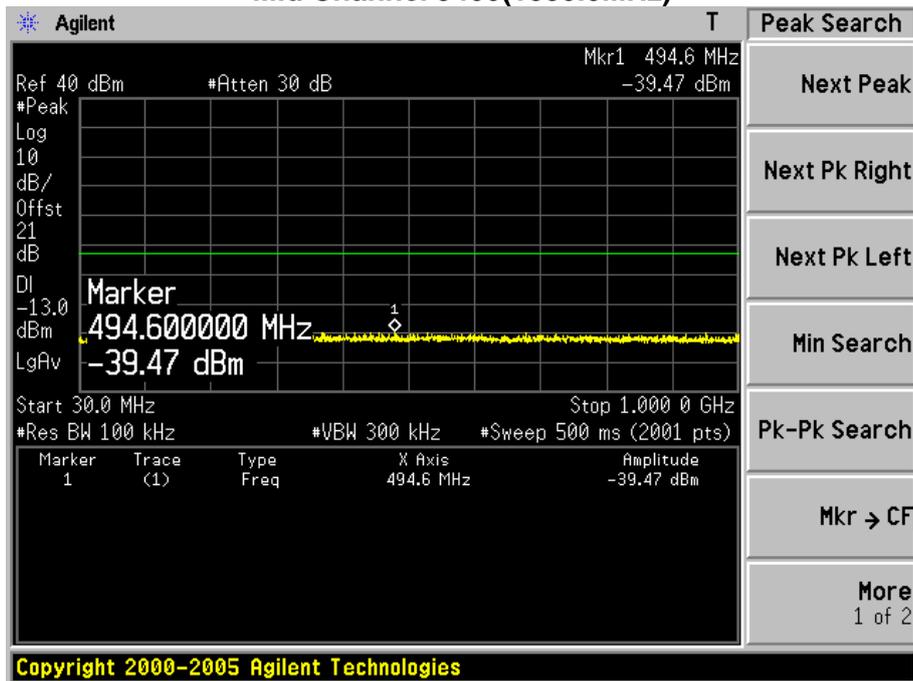


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 9: HSUPA Band II Link		
Date of Test	2011/12/07	Test Site	CTR

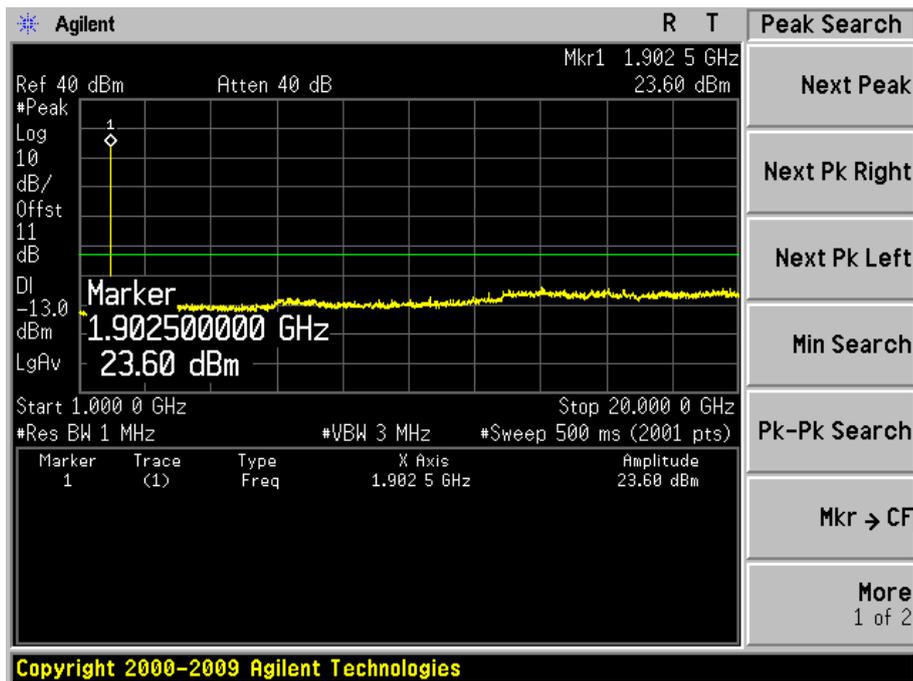
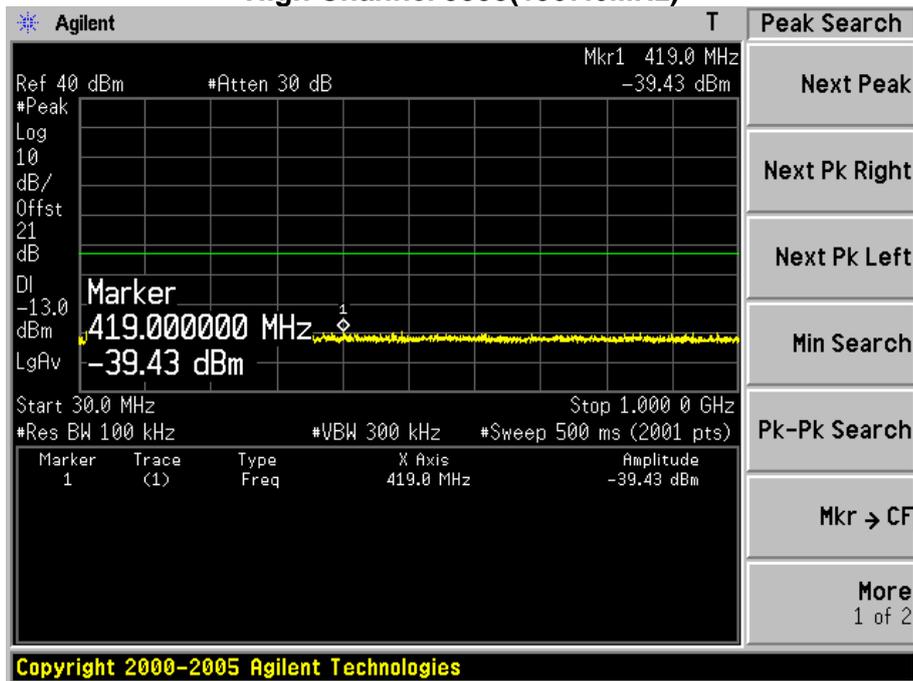
### Low Channel 9262(1852.4MHz)



Mid Channel 9400(1880.0MHz)

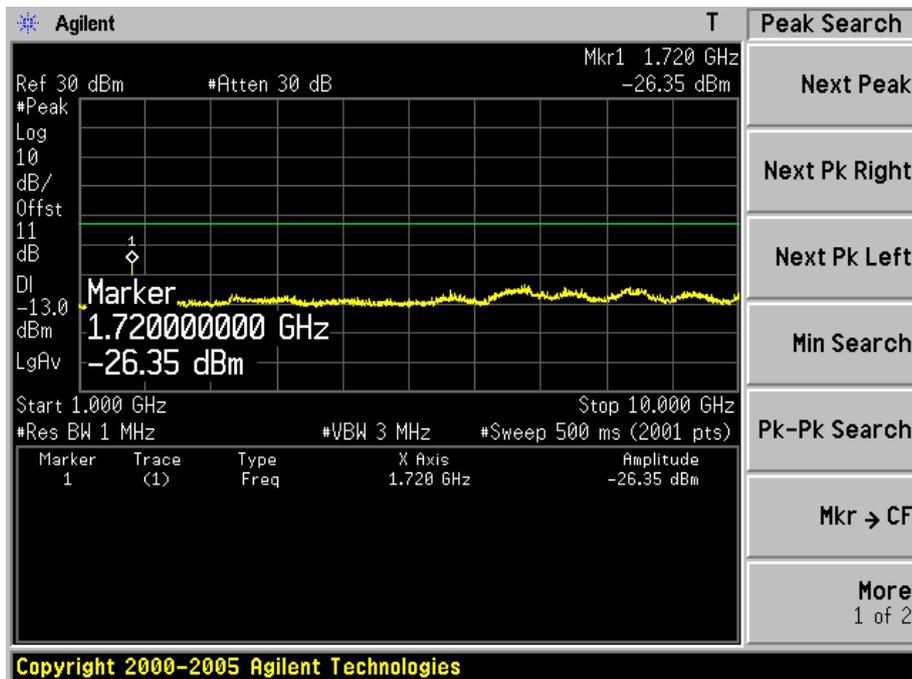
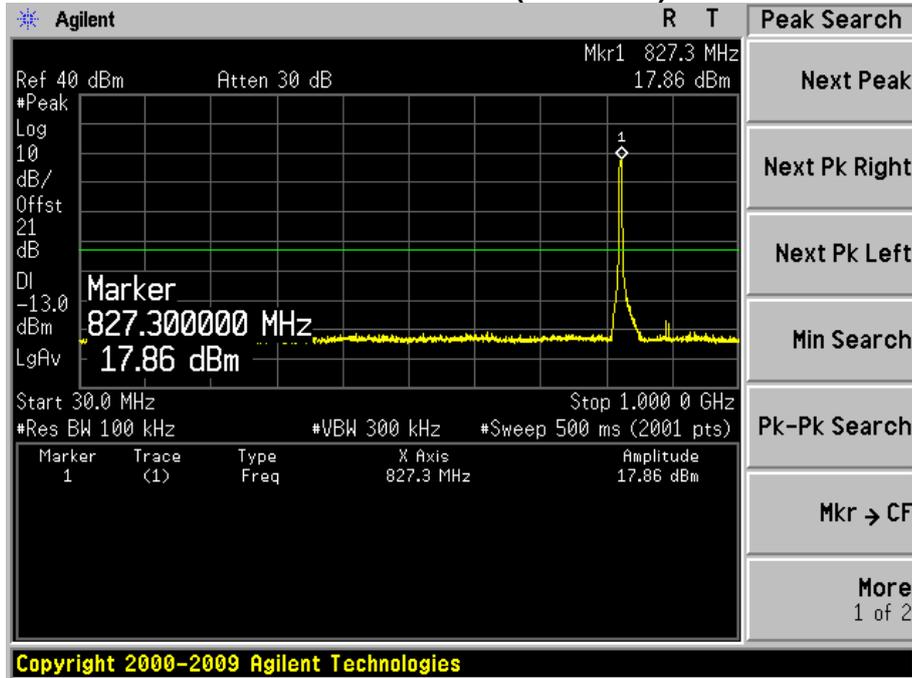


High Channel 9538(1907.6MHz)

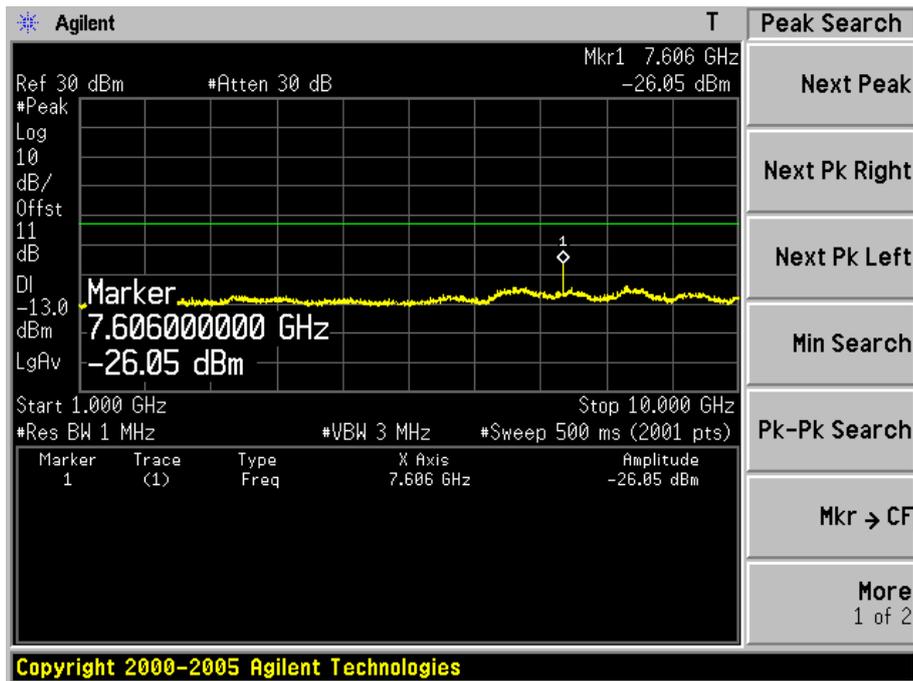
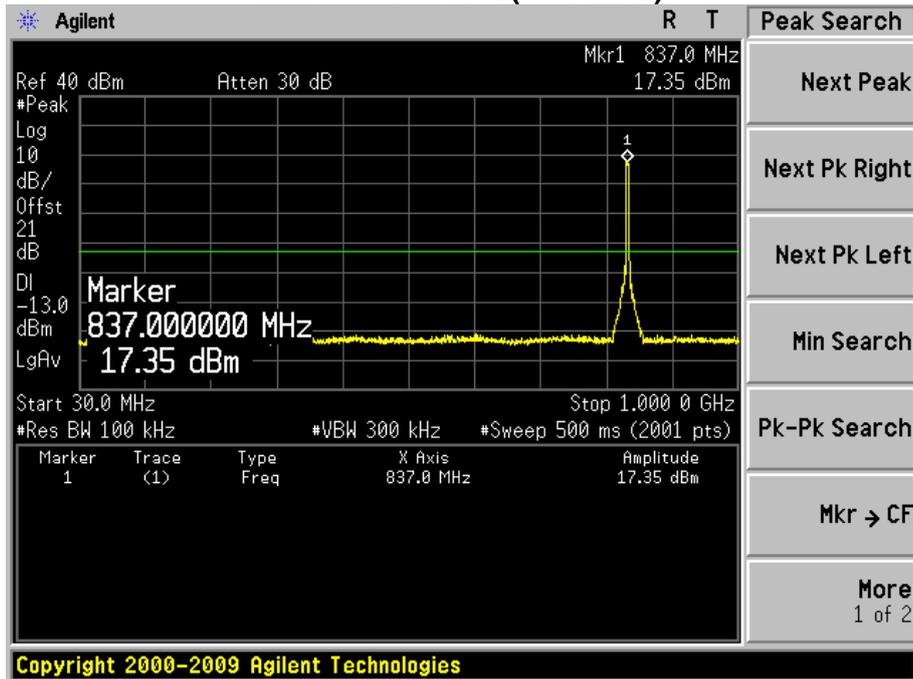


Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 10: HSUPA Band V Link		
Date of Test	2011/12/07	Test Site	CTR

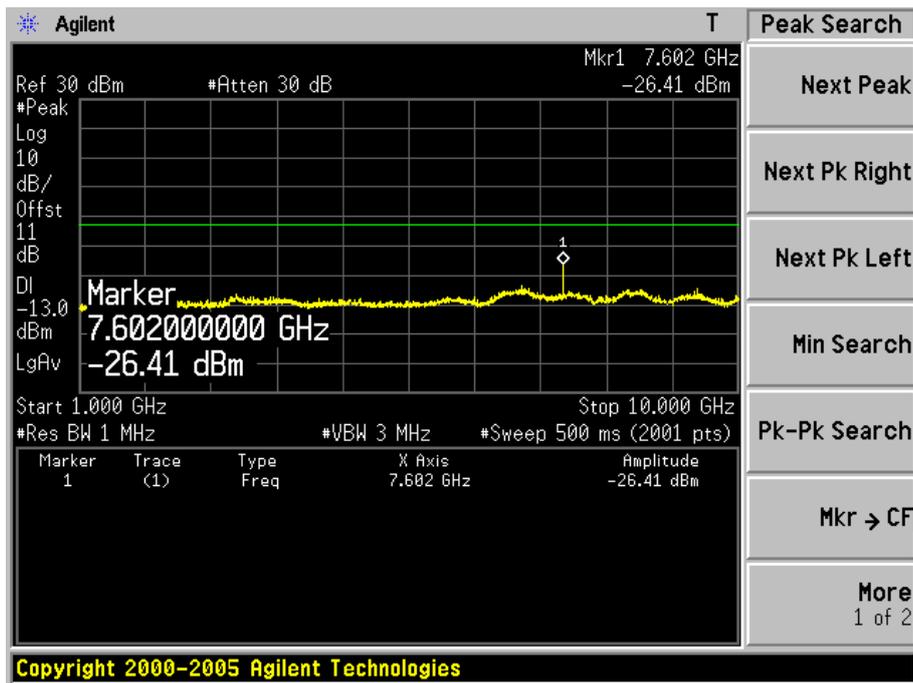
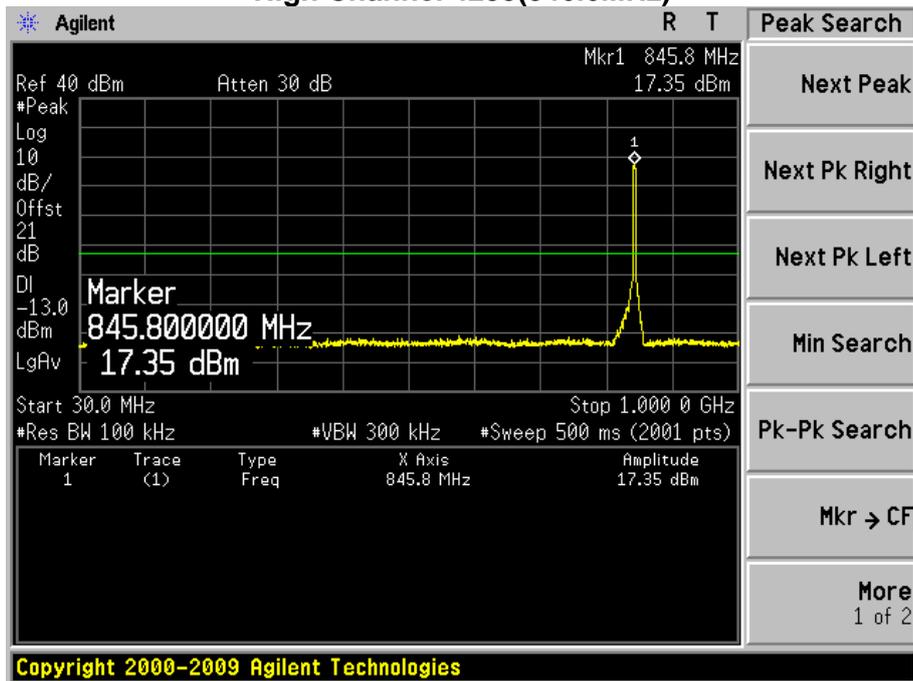
### Low Channel 4132(826.4MHz)



Mid Channel 4182(836.4MHz)



High Channel 4233(846.6MHz)



Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 1: GSM850 Link		
Date of Test	2011/11/28	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
1646.00	-52.56	V	-55.22	2.50	9.75	-47.97	-13.00	-34.97
2470.50	-50.29	V	-49.18	3.12	10.48	-41.82	-13.00	-28.82
1646.00	-55.90	H	-58.56	2.50	9.75	-51.31	-13.00	-38.31
2470.50	-47.10	H	-45.99	3.12	10.48	-38.63	-13.00	-25.63
Middle Channel 189 (836.40MHz)								
1671.50	-46.87	V	-49.54	2.52	9.95	-42.11	-13.00	-29.11
2513.00	-59.21	V	-58.52	3.18	10.62	-51.08	-13.00	-38.08
1671.50	-54.62	H	-57.04	2.52	9.95	-49.61	-13.00	-36.61
2513.00	-55.45	H	-54.38	3.18	10.62	-46.94	-13.00	-33.94
High Channel 251 (848.80MHz)								
1697.00	-43.09	V	-45.82	2.54	10.06	-38.30	-13.00	-25.30
2547.00	-59.72	V	-58.15	3.14	10.68	-50.61	-13.00	-37.61
1697.00	-49.92	H	-51.92	2.54	10.06	-44.40	-13.00	-31.40
2547.00	-57.46	H	-55.64	3.14	10.68	-48.10	-13.00	-35.10

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 2: PCS1900 Link		
Date of Test	2011/11/28	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
3703.00	-57.36	V	-53.90	3.84	12.69	-45.05	-13.00	-32.05
5547.50	-61.46	V	-52.96	4.82	13.15	-44.63	-13.00	-31.63
3703.00	-57.36	H	-53.98	3.84	12.69	-45.13	-13.00	-32.13
5547.50	-61.46	H	-53.57	4.82	13.15	-45.24	-13.00	-32.24
Middle Channel 661 (1880.00MHz)								
3762.50	-59.41	V	-56.19	3.73	12.72	-47.20	-13.00	-34.20
5641.00	-58.89	V	-50.95	4.93	13.14	-42.74	-13.00	-29.74
3762.50	-56.90	H	-53.60	3.73	12.72	-44.61	-13.00	-31.61
5641.00	-60.20	H	-52.59	4.93	13.14	-44.38	-13.00	-31.38
High Channel 810 (1909.80MHz)								
3822.00	-58.42	V	-54.70	4.02	12.73	-45.99	-13.00	-32.99
5726.00	-58.19	V	-49.58	4.87	13.11	-41.34	-13.00	-28.34
3822.00	-56.66	H	-52.79	4.02	12.73	-44.08	-13.00	-31.08
5726.00	-61.08	H	-52.84	4.87	13.11	-44.60	-13.00	-31.60

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 3: EDGES850 Link		
Date of Test	2011/11/28	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
1646.00	-56.48	V	-59.05	2.50	9.75	-51.80	-13.00	-38.80
2470.50	-60.64	V	-59.68	3.12	10.48	-52.32	-13.00	-39.32
1646.00	-53.22	H	-55.88	2.50	9.75	-48.63	-13.00	-35.63
2470.50	-62.24	H	-61.13	3.12	10.48	-53.77	-13.00	-40.77
Middle Channel 189 (836.40MHz)								
1671.50	-51.71	V	-54.37	2.52	9.95	-46.94	-13.00	-33.94
2513.00	-59.20	V	-58.51	3.18	10.62	-51.07	-13.00	-38.07
1671.50	-49.01	H	-51.43	2.52	9.95	-44.00	-13.00	-31.00
2513.00	-58.61	H	-57.54	3.18	10.62	-50.10	-13.00	-37.10
High Channel 251 (848.80MHz)								
1697.00	-49.16	V	-51.89	2.54	10.06	-44.37	-13.00	-31.37
2547.00	-60.25	V	-58.68	3.14	10.68	-51.14	-13.00	-38.14
1697.00	-46.33	H	-48.33	2.54	10.06	-40.81	-13.00	-27.81
2547.00	-57.55	H	-55.73	3.14	10.68	-48.19	-13.00	-35.19

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Radiated Spurious Emission		
Test Mode	Mode 4: EDGE1900 Link		
Date of Test	2011/11/28	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
3703.00	-60.47	V	-57.01	3.84	12.69	-48.16	-13.00	-35.16
5547.50	-61.80	V	-53.30	4.82	13.15	-44.97	-13.00	-31.97
3703.00	-58.11	H	-54.74	3.84	12.69	-45.89	-13.00	-32.89
5547.50	-64.53	H	-57.30	4.82	13.15	-48.97	-13.00	-35.97
Middle Channel 661 (1880.00MHz)								
3762.50	-60.71	V	-57.49	3.73	12.72	-48.50	-13.00	-35.50
5641.00	-63.61	V	-55.67	4.93	13.14	-47.46	-13.00	-34.46
3762.50	-57.97	H	-54.67	3.73	12.72	-45.68	-13.00	-32.68
5641.00	-64.17	H	-56.82	4.93	13.14	-48.61	-13.00	-35.61
High Channel 810 (1909.80MHz)								
3822.00	-61.08	V	-57.36	4.02	12.73	-48.65	-13.00	-35.65
5726.00	-62.77	V	-54.16	4.87	13.11	-45.92	-13.00	-32.92
3822.00	-58.44	H	-54.57	4.02	12.73	-45.86	-13.00	-32.86
5726.00	-63.34	H	-55.10	4.87	13.11	-46.86	-13.00	-33.86

Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission		
Test Mode	Mode 5: WCDMA Band II Link		
Date of Test	2011/11/28	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
3704.80	-58.32	V	-53.93	4.78	12.69	-46.02	-13.00	-33.02
5557.20	-65.26	V	-56.76	4.82	13.15	-48.43	-13.00	-35.43
3704.80	-58.54	H	-54.22	4.78	12.69	-46.31	-13.00	-33.31
5557.20	-65.58	H	-57.70	4.82	13.15	-49.37	-13.00	-36.37
Middle Channel 9400 (1880.00MHz)								
3760.00	-63.22	V	-58.71	5.03	12.72	-51.02	-13.00	-38.02
5640.00	-65.90	V	-56.97	5.93	13.14	-49.76	-13.00	-36.76
3760.00	-64.68	H	-60.10	5.03	12.72	-52.41	-13.00	-39.41
5640.00	-65.52	H	-56.90	5.93	13.14	-49.69	-13.00	-36.69
High Channel 9538 (1907.60MHz)								
3815.20	-62.06	V	-57.32	5.03	12.73	-49.62	-13.00	-36.62
5722.80	-65.36	V	-56.35	4.87	13.11	-48.11	-13.00	-35.11
3815.20	-62.16	H	-57.25	5.03	12.73	-49.55	-13.00	-36.55
5722.80	-65.67	H	-57.16	4.87	13.11	-48.92	-13.00	-35.92

Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission		
Test Mode	Mode 6: WCDMA Band V Traffic		
Date of Test	2011/11/24	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
1652.80	-58.12	V	-59.87	3.28	9.75	-53.40	-13.00	-40.40
3312.00	-50.41	V	-46.25	4.10	10.48	-39.87	-13.00	-26.87
1652.80	-59.74	H	-61.50	3.28	9.75	-55.03	-13.00	-42.03
3312.00	-49.86	H	-45.56	4.10	10.48	-39.18	-13.00	-26.18
Middle Channel 4182 (836.40MHz)								
1672.80	-60.56	V	-62.42	3.32	9.95	-55.79	-13.00	-42.79
3346.00	-51.51	V	-47.49	4.31	10.62	-41.18	-13.00	-28.18
1672.80	-61.46	H	-62.91	3.32	9.95	-56.28	-13.00	-43.28
3346.00	-50.44	H	-46.27	4.31	10.62	-39.96	-13.00	-26.96
High Channel 4233 (846.60MHz)								
1693.20	-58.68	V	-60.61	3.35	10.06	-53.90	-13.00	-40.90
2539.80	-47.18	V	-43.39	3.91	10.33	-36.97	-13.00	-23.97
2538.50	-54.69	H	-52.03	4.19	10.68	-45.54	-13.00	-32.54
3388.50	-44.46	H	-40.89	4.33	10.79	-34.43	-13.00	-21.43

Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission		
Test Mode	Mode 7: HSDPA Band II Traffic		
Date of Test	2011/11/24	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
3704.80	-58.52	V	-54.12	4.78	12.69	-46.21	-13.00	-33.21
5557.20	-64.31	V	-55.96	4.82	13.15	-47.63	-13.00	-34.63
3704.80	-59.68	H	-55.36	4.78	12.69	-47.45	-13.00	-34.45
5557.20	-65.06	H	-56.61	4.82	13.15	-48.28	-13.00	-35.28
Middle Channel 9400 (1880.00MHz)								
3760.00	-62.51	V	-58.04	5.03	12.72	-50.35	-13.00	-37.35
5640.00	-64.27	V	-55.18	5.93	13.14	-47.97	-13.00	-34.97
3760.00	-63.81	H	-59.23	5.03	12.72	-51.54	-13.00	-38.54
5640.00	-66.24	H	-57.62	5.93	13.14	-50.41	-13.00	-37.41
High Channel 9538 (1907.60MHz)								
3815.20	-61.98	V	-57.24	5.03	12.73	-49.54	-13.00	-36.54
5722.80	-65.88	V	-57.97	4.87	13.11	-49.73	-13.00	-36.73
3815.20	-61.79	H	-56.89	5.03	12.73	-49.19	-13.00	-36.19
5722.80	-65.72	H	-57.50	4.87	13.11	-49.26	-13.00	-36.26

Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission		
Test Mode	Mode 8: HSDPA Band V Traffic		
Date of Test	2011/11/24	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
1652.80	-59.32	V	-61.07	3.28	9.75	-54.60	-13.00	-41.60
3312.00	-51.12	V	-46.93	4.10	10.48	-40.55	-13.00	-27.55
1652.80	-59.97	H	-61.72	3.28	9.75	-55.25	-13.00	-42.25
3312.00	-50.83	H	-46.53	4.10	10.48	-40.15	-13.00	-27.15
Middle Channel 4182 (836.40MHz)								
1672.80	-59.82	V	-61.68	3.32	9.95	-55.05	-13.00	-42.05
3346.00	-50.26	V	-46.75	3.81	10.62	-39.94	-13.00	-26.94
1672.80	-61.13	H	-62.99	3.32	9.95	-56.36	-13.00	-43.36
3346.00	-48.26	H	-44.54	3.81	10.62	-37.73	-13.00	-24.73
High Channel 4233 (846.60MHz)								
2538.50	-56.74	V	-54.59	3.35	10.06	-47.88	-13.00	-34.88
3380.00	-46.34	V	-42.60	4.19	10.68	-36.11	-13.00	-23.11
2538.50	-53.04	H	-50.39	3.35	10.06	-43.68	-13.00	-30.68
3380.00	-42.59	H	-39.05	4.19	10.68	-32.56	-13.00	-19.56

Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission		
Test Mode	Mode 9: HSUPA Band II Traffic		
Date of Test	2011/11/24	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.40MHz)								
3704.80	-58.52	V	-54.12	4.78	12.69	-46.21	-13.00	-33.21
5557.20	-64.31	V	-55.96	4.82	13.15	-47.63	-13.00	-34.63
3704.80	-59.68	H	-55.36	4.78	12.69	-47.45	-13.00	-34.45
5557.20	-65.06	H	-56.61	4.82	13.15	-48.28	-13.00	-35.28
Middle Channel 9400 (1880.00MHz)								
3760.00	-62.51	V	-58.04	5.03	12.72	-50.35	-13.00	-37.35
5640.00	-64.27	V	-55.18	5.93	13.14	-47.97	-13.00	-34.97
3760.00	-63.81	H	-59.23	5.03	12.72	-51.54	-13.00	-38.54
5640.00	-66.24	H	-57.62	5.93	13.14	-50.41	-13.00	-37.41
High Channel 9538 (1907.60MHz)								
3815.20	-61.98	V	-57.24	5.03	12.73	-49.54	-13.00	-36.54
5722.80	-65.88	V	-57.97	4.87	13.11	-49.73	-13.00	-36.73
3815.20	-61.79	H	-56.89	5.03	12.73	-49.19	-13.00	-36.19
5722.80	-65.72	H	-57.50	4.87	13.11	-49.26	-13.00	-36.26

Product	HSDPA/HSUPA/GSM/GPRS/EDGE Mobile Phone with Bluetooth; HUAWEI VISION;VISION;U8850		
Test Item	Spurious Emission		
Test Mode	Mode 10: HSUPA Band V Traffic		
Date of Test	2011/11/24	Test Site	OATS 1

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)								
1652.80	-59.30	V	-61.05	3.28	9.75	-54.58	-13.00	-41.58
3312.00	-48.91	V	-44.71	4.10	10.48	-38.33	-13.00	-25.33
1652.80	-60.75	H	-62.53	3.28	9.75	-56.06	-13.00	-43.06
3312.00	-48.40	H	-44.10	4.10	10.48	-37.72	-13.00	-24.72
Middle Channel 4182 (836.40MHz)								
1672.80	-60.30	V	-62.17	3.32	9.95	-55.54	-13.00	-42.54
3346.00	-48.95	V	-45.39	3.81	10.62	-38.58	-13.00	-25.58
1672.80	-59.54	H	-60.79	3.32	9.95	-54.16	-13.00	-41.16
3346.00	-48.13	H	-44.46	3.81	10.62	-37.65	-13.00	-24.65
High Channel 4233 (846.60MHz)								
2538.50	-57.22	V	-54.83	3.35	10.06	-48.12	-13.00	-35.12
3380.00	-46.60	V	-42.89	4.19	10.68	-36.40	-13.00	-23.40
2538.50	-52.88	H	-50.44	3.35	10.06	-43.73	-13.00	-30.73
3380.00	-42.97	H	-39.43	4.19	10.68	-32.94	-13.00	-19.94

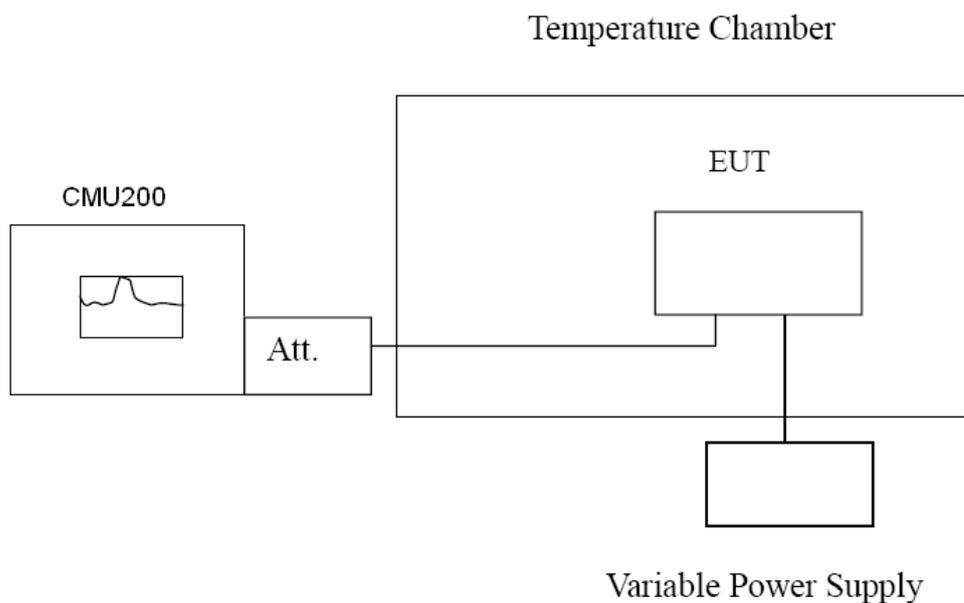
## 8. Frequency Stability Under Temperature & Voltage Variations

### 8.1. Test Equipment

Frequency Stability Under Temperature & Voltage Variations / CTR

Instrument	Manufacturer	Type No.	Serial No	Cali. Due Date
Universal Radio Communication Tester	R & S	CMU200	104846	2012/05/19
Standard Temperature & Humidity Chamber	WIT	TH-1S-B	108210	2012/09/15
DC Power Supply	Agilent	87421A	MY44350304	2012/04/12

### 8.2. Test Setup



**8.3. Limit**

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Limit	$< \pm 2.5 \text{ ppm}$
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**8.4. Test Procedure**

**Frequency Stability Under Temperature Variations:**

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -10°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

(Note: The EUT can not normal working below -10°C.)

**Frequency Stability Under Voltage Variations:**

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ( $\pm 15\%$ ) and endpoint, record the maximum frequency change.

**8.5. Uncertainty**

The measurement uncertainty is defined as  $\pm 10 \text{ Hz}$ .

**8.6. Test Result**

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 1: GSM 850 Link		
Date of Test	2011/11/28	Test Site	CTR

Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	836.40	89	± 2091
0	836.40	63	± 2091
10	836.40	55	± 2091
20	836.40	35	± 2091
30	836.40	-36	± 2091
40	836.40	56	± 2091
50	836.40	-73	± 2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	836.40	67	± 2091
3.700	836.40	43	± 2091
3.500	836.40	-33	± 2091

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 2: PCS1900 Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	1880.00	66	± 4700
0	1880.00	-42	± 4700
10	1880.00	-18	± 4700
20	1880.00	12	± 4700
30	1880.00	30	± 4700
40	1880.00	42	± 4700
50	1880.00	57	± 4700

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	1880.00	-37	± 4700
3.700	1880.00	-33	± 4700
3.500	1880.00	-26	± 4700

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 3: EDGE 850 Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	836.40	-87	± 2091
0	836.40	-66	± 2091
10	836.40	-54	± 2091
20	836.40	-43	± 2091
30	836.40	-29	± 2091
40	836.40	-12	± 2091
50	836.40	25	± 2091

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	836.40	48	± 2091
3.700	836.40	35	± 2091
3.500	836.40	-16	± 2091

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 4: EDGE1900 Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	1880.00	-78	± 4700
0	1880.00	-61	± 4700
10	1880.00	-42	± 4700
20	1880.00	-37	± 4700
30	1880.00	-21	± 4700
40	1880.00	8	± 4700
50	1880.00	19	± 4700

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	1880.00	-44	± 4700
3.700	1880.00	-15	± 4700
3.500	1880.00	29	± 4700

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 5: WCDMA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	1880.00	-89	± 4700
0	1880.00	-65	± 4700
10	1880.00	-46	± 4700
20	1880.00	-24	± 4700
30	1880.00	-11	± 4700
40	1880.00	34	± 4700
50	1880.00	58	± 4700

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	1880.00	22	± 4700
3.700	1880.00	46	± 4700
3.500	1880.00	19	± 4700

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 6: WCDMA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	836.40	-67	± 2091
0	836.40	-46	± 2091
10	836.40	-27	± 2091
20	836.40	-11	± 2091
30	836.40	20	± 2091
40	836.40	33	± 2091
50	836.40	45	± 2091

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	836.40	-11	± 2091
3.700	836.40	-27	± 2091
3.500	836.40	-39	± 2091

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 7: HSDPA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	1880.00	-63	± 4700
0	1880.00	46	± 4700
10	1880.00	-39	± 4700
20	1880.00	-16	± 4700
30	1880.00	-17	± 4700
40	1880.00	36	± 4700
50	1880.00	49	± 4700

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	1880.00	-41	± 4700
3.700	1880.00	-32	± 4700
3.500	1880.00	-20	± 4700

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 8: HSDPA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	836.40	-60	± 2091
0	836.40	-44	± 2091
10	836.40	-28	± 2091
20	836.40	-13	± 2091
30	836.40	20	± 2091
40	836.40	35	± 2091
50	836.40	54	± 2091

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	836.40	-17	± 2091
3.700	836.40	-32	± 2091
3.500	836.40	-49	± 2091

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 9: HSUPA Band II Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	1880.00	-74	± 4700
0	1880.00	-58	± 4700
10	1880.00	-35	± 4700
20	1880.00	-21	± 4700
30	1880.00	-9	± 4700
40	1880.00	15	± 4700
50	1880.00	42	± 4700

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	1880.00	-54	± 4700
3.700	1880.00	-37	± 4700
3.500	1880.00	-22	± 4700

Product	HSPA/UMTS/GSM/GPRS/EDGE Mobile Phone with Bluetooth		
Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 10: HSUPA Band V Link		
Date of Test	2011/11/28	Test Site	CTR

### Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-10	836.40	-69	± 2091
0	836.40	-46	± 2091
10	836.40	-35	± 2091
20	836.40	-21	± 2091
30	836.40	19	± 2091
40	836.40	30	± 2091
50	836.40	46	± 2091

### Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
4.200	836.40	-25	± 2091
3.700	836.40	-10	± 2091
3.500	836.40	15	± 2091