



**FCC CFR47 PART 22 SUBPART H  
AND PART 24 SUBPART E  
CERTIFICATION TEST REPORT**

**FOR**

**CDMA CELL-PCS MODULE**

**MODEL NUMBER: PA3547E-1HSD**

**FCC ID: CJ6UPA3547G3**

**REPORT NUMBER: 07U10847-1**

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**NVLAP LAB CODE 200065-0**

Revision History

Rev.	Issue Date	Revisions	Revised By
--	03/05/07	Initial Issue	T.C.

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## 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** TOSHIBA CORPORATION  
OME COMPLEX, 2-9, SUEHIRO-CHO  
TOKYO, 198-8710, JAPAN

**EUT DESCRIPTION:** CDMA CELL-PCS MODULE

**MODEL:** PA3547E-1HSD

**SERIAL NUMBER:** LL171106200497

**DATE TESTED:** FEBRUARY 12-16, 2007

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22 SUBPART H	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:

Tested By:



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THU CHAN  
EMC SUPERVISOR  
COMPLIANCE CERTIFICATION SERVICES

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YU-CHIEN HO  
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COMPLIANCE CERTIFICATION SERVICES

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603C (2004), ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15 and FCC CFR 47 Part 22H and 24E.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a CDMA Cell-PCS Module installed in Toshiba Portege R400 Tablet

The module supports GSM, GPRS, EGPRS, WCDMA, and WCDMA+HSPDA. Device capabilities are documented in the theory of operation.

The radio module is manufactured by Tyco Electronics.

### 5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power and ERP as follows:

#### Part 22 (824 - 849MHz) & Part 24 (1850 - 1910MHz) Authorized Band:

Frequency Range (MHz)	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	ERP Peak Power (dBm)	ERP Peak Power (mW)
824.2 - 848.75	GPRS	32.25	1678.80	28.90	776.25
824.2 - 848.75	EGPRS	27.39	548.28	25.40	346.74
826.5 - 846.6	WCDMA	25.38	345.14	23.30	213.80
826.5 - 846.6	WCDMA+HSPDA	26.54	450.82	24.00	251.19

Frequency Range (MHz)	Modulation	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
1850.25 - 1909.8	GPRS	29.26	843.33	30.30	1071.52
1850.25 - 1909.8	EGPRS	27.38	547.02	27.60	575.44
1852.4 - 1907.6	WCDMA	26.06	403.65	25.60	363.08
1852.4 - 1907.6	WCDMA+HSPDA	26.27	423.64	25.80	380.19

### 5.3. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The major change under this application is that the subject approved module is being used in a different host.

### 5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes 2xDipole antennas, with a maximum gain of -1.38dBi for Cell band and 0.46dBi for PCS band.

## 5.5. SOFTWARE AND FIRMWARE

The test utility software used during testing was ProcommPlus 4.8 @ Copyright 1999 by Symantec Corporation, Build 71 for GSM and EDGE modulations, and the communication test set is used for WCDMA modulation to configure as below:

The following settings were used to configure the Wireless Communications Test Set, Agilent 8960 Series 10, E5515C.

### Instrument information: (by press SYSTEM CONFIG)

Application: WCDMA Lap App C  
E6703C C.03.11  
Format: WCDMA

### Call Control: (by press CALL SETUP)

2 of 4 Cell Parameters: PS Domain Information > Present  
ATT (IMSI Attach) Flag State > Set  
4 of 4 Security Info: Security Parameter - System Operations > None

### Call Params: (by press CALL SETUP)

1 of 3  
Channel Type: 12.2k RMC  
Paging Service: RB Test Mode

### HSDPA Parameters:

1 of 2  
HSDPA RB Test Mode Setup  
FRC Type > H-Set 5 QPSK  
CN Domain > PS Domain  
Uplink 64k DTCH for HSDPA Loopback State > On  
HS-DSCH Data Pattern > CCITT PRBS15  
RLC Header on HS-DSCH > Present

Channel (UARFCN) Params: DL Channel: 4357 / 4407 / 4458  
UL Channel: 4132 / 4182 / 4233  
UL Sep (Band) > 400MHz (Band 4)  
Freq Bnad Ind > On

2 of 3  
DL DTCH Data: ALL ONES  
RLC Reestablish: Off  
Call Limit State: Off  
Call Drop Timer: Off  
SRB Config.: 13.6k DCCH  
3 of 3  
UE Target Power: -5 dBm  
UL CL Pwr Ctrl Params: Active bits (Select "All Up bits" after linked to get maximum power)  
DL Channel: 9662 / 9800 / 9938 / 4357 / 4407 / 4458  
UL Channel: 9262 / 9400 / 9538 / 4132 / 4182 / 4233

## **5.6. WORST-CASE CONFIGURATION AND MODE**

Based on the above results from the different modulations, GSM850, GPRS, and WCDMA, WCDMA+HSDPA modulation is to be the worst-case scenario for all measurements.

The worst-case channel is determined as the channel with the highest output power. The highest measured output power was at high channel for GSM cell band and Low channel for GSM1900 band. For WCDMA+HSPDA modulation, the highest power was at high channel for Cellular band and low channel for PCS band.

Also the portable X,Y, Z and mobile positions have been investigated and the worst-case configuration has been evaluated on mobile position at both @ 850MHz and @ 1900MHz bands by comparing the fundamental ERP / EIRP output power.



## 5.7. DESCRIPTION OF TEST SETUP

### SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Toshiba	TROMEE-AAA11	76020116J	DoC
AC Adapter	Toshiba	PA3377E-2ACA	G71C0004A510	DoC
Wireless Communications Test Set	Agilent	E5515C	10092	DoC

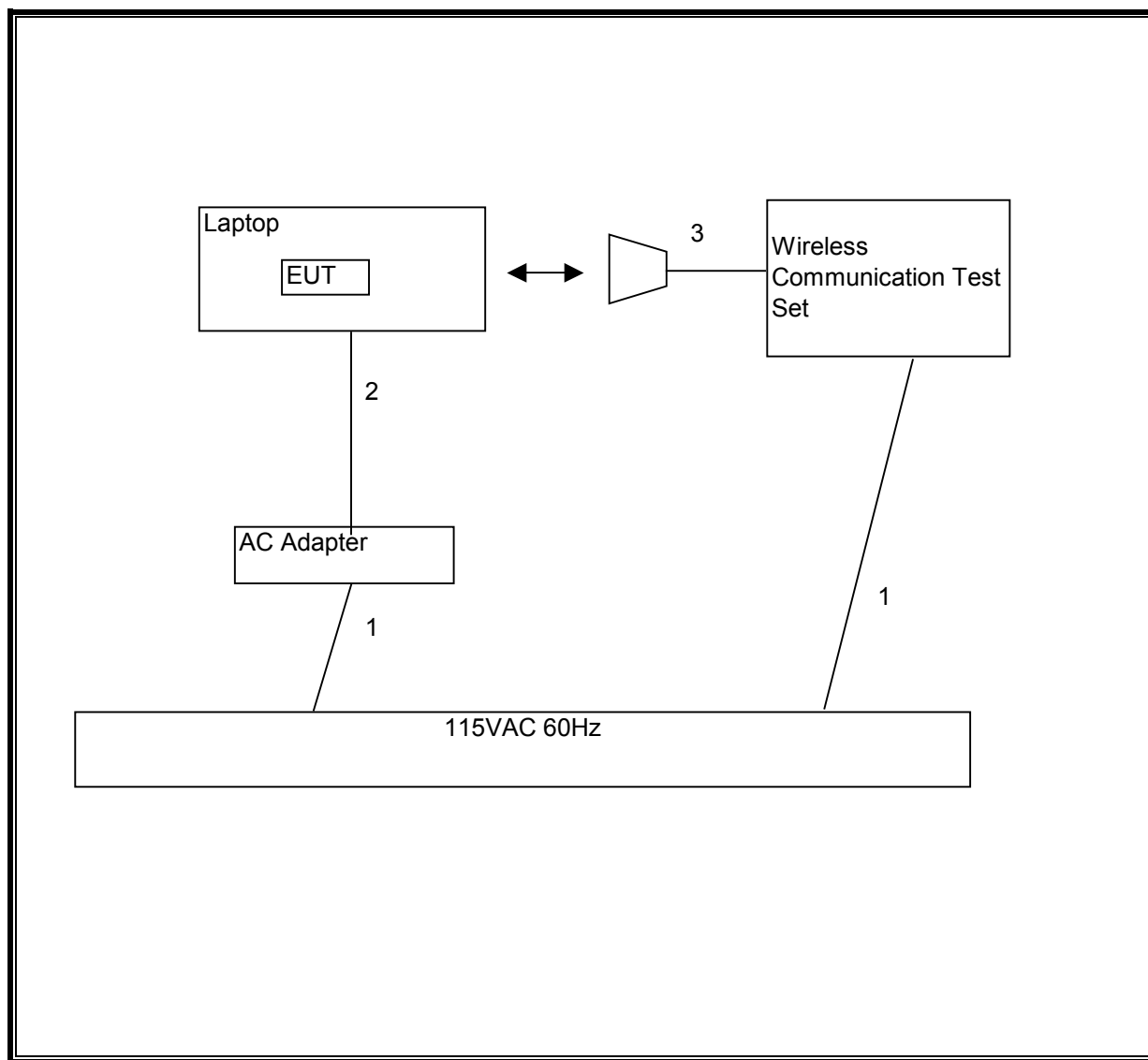
### I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	2	US 115V	Un-shielded	2m	NA
2	DC	1	D C	Un-shielded	2m	NA
3	RF In/Out	1	N-Type	Un-shielded	2m	To link EUT

### TEST SETUP

The EUT is installed in Toshiba Tablet laptop during the tests. The Wireless Communication test set exercised the EUT.

**SETUP DIAGRAM FOR TESTS**



## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	Cal Due
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent / HP	E4446A	MY43360112	05/03/07
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	04/22/07
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	04/22/07
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	08/17/07
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	09/03/07
EMI Receiver, 9 kHz ~ 2.9 GHz	Agilent / HP	8542E	3942A00286	05/04/07
RF Filter Section	Agilent / HP	85420E	3705A00256	05/04/07
Communications Test Set	Agilent	E5515C	US41070176	10/19/07
Wireless Communications Test Set	Agilent	E5515C	10092	10/19/07
2.7GHz HPF	MicroTronic	HPM13194	2	CNR
1.5GHz HPF	MicroTronic	HPM13195	1	CNR
Signal Generator 2 -40 GHz	R & S	SMP04	DE 34210	06/02/07
Signal Generator 1024 MHz	R & S	SMY01	DE 12311	05/11/07
Dipole	EMCO	3121C-DB2	22435	03/25/07

## 7. LIMITS AND RESULTS

### 7.1. OCCUPIED BANDWIDTH

#### LIMIT

None; for reporting purposes only.

#### TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the -26 dB bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal -26 dB bandwidth function is utilized.

#### RESULTS

No non-compliance noted:

##### GSM850 GPRS Modulation

Channel	Frequency (MHz)	26dB BW (KHz)	99% BW (KHz)
Low	824.2	317.97	237.707
Middle	837	318.81	236.970
High	848.8	316.35	238.270

##### GSM850 EGPRS Modulation

Channel	Frequency (MHz)	26dB BW (KHz)	99% BW (KHz)
Low	824.2	314.87	244.5544
Middle	837	296.53	242.2685
High	848.8	305.49	247.0517

WCDMA Cell Modulation

Channel	Frequency (MHz)	26dB BW (MHz)	99% BW (MHz)
Low	826.4	4.492	4.143
Middle	836.4	4.586	4.185
High	846.6	4.562	4.114

WCDMA + HSPDA Cell Modulation

Channel	Frequency (MHz)	26dB BW (MHz)	99% BW (MHz)
Low	826.4	4.649	4.1565
Middle	836.4	4.640	4.1693
High	846.6	4.641	4.147

GSM 1900 GPRS Modulation

Channel	Frequency (MHz)	26dB BW (KHz)	99% BW (KHz)
Low	1850.2	319.815	246.523
Middle	1880	324.743	244.127
High	1909.8	315.241	243.355

GSM1900 EGPRS Modulation

Channel	Frequency (MHz)	26dB BW (KHz)	99% BW (KHz)
Low	1850.2	315.743	240.553
Middle	1880	316.572	243.153
High	1909.8	317.156	238.429

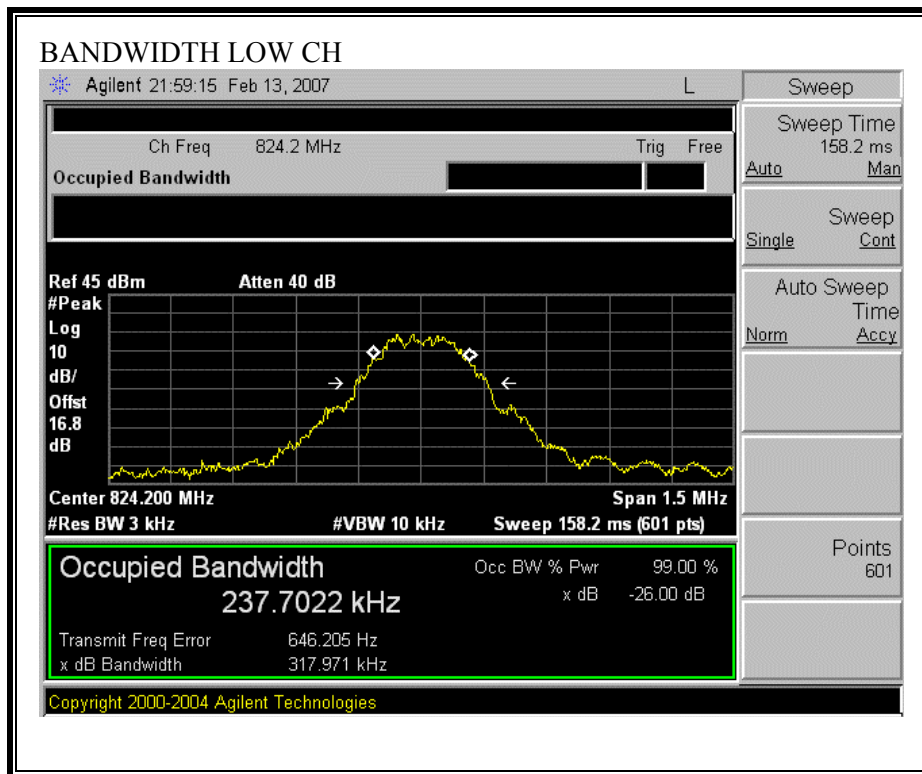
PCS Band WCDMA Modulation

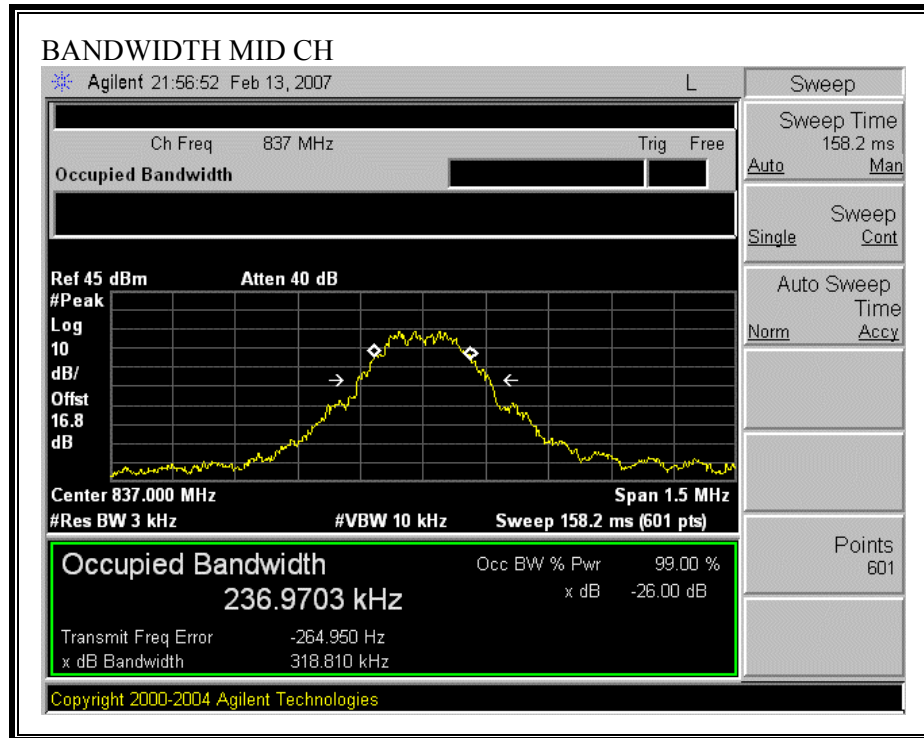
<b>Channel</b>	<b>Frequency (MHz)</b>	<b>26dB BW (MHz)</b>	<b>99% BW (MHz)</b>
Low	1852.4	4.595	4.278
Middle	1880	4.560	4.185
High	1907.6	4.614	4.220

PCS Band WCDMA+HSPDA Modulation

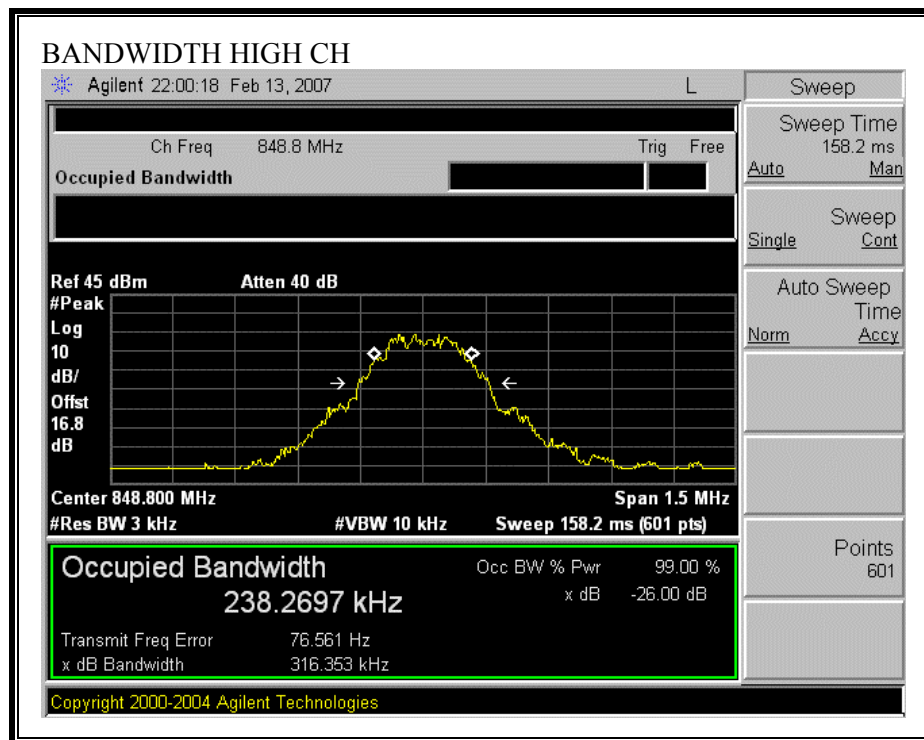
<b>Channel</b>	<b>Frequency (MHz)</b>	<b>26dB BW (MHz)</b>	<b>99% BW (MHz)</b>
Low	1852.4	4.667	4.170
Middle	1880	4.655	4.172
High	1907.6	4.636	4.161

**GSM850 GPRS 26 dB BANDWIDTH**

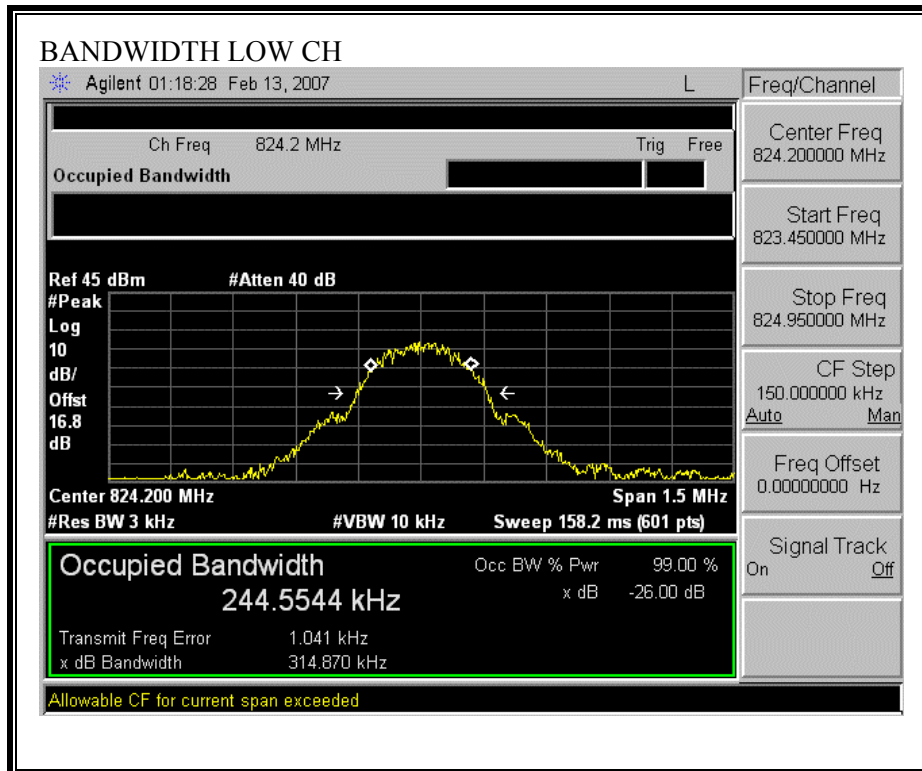


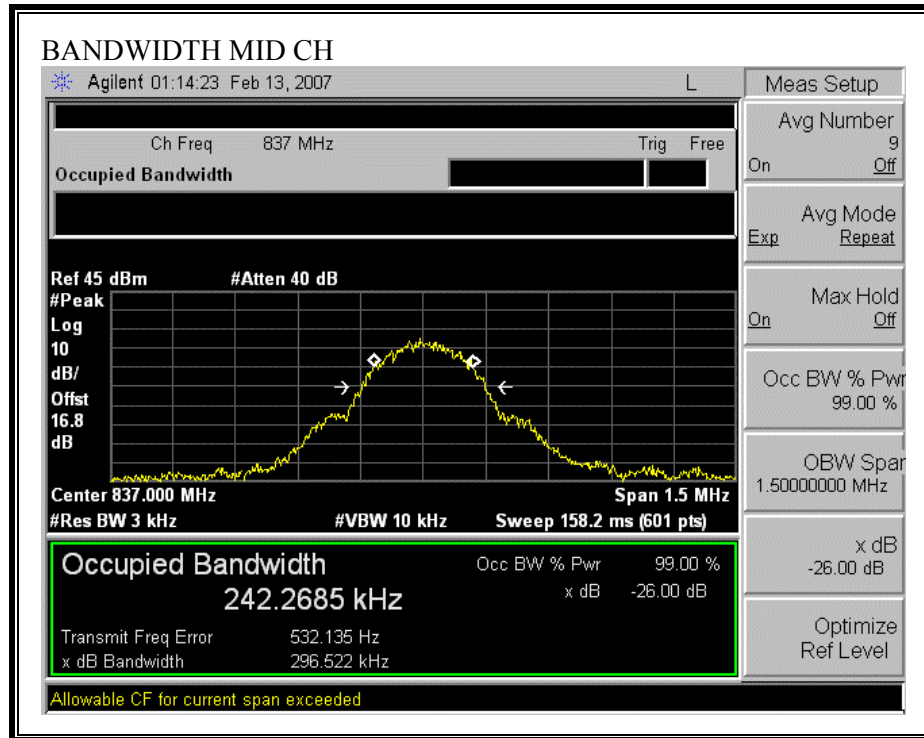


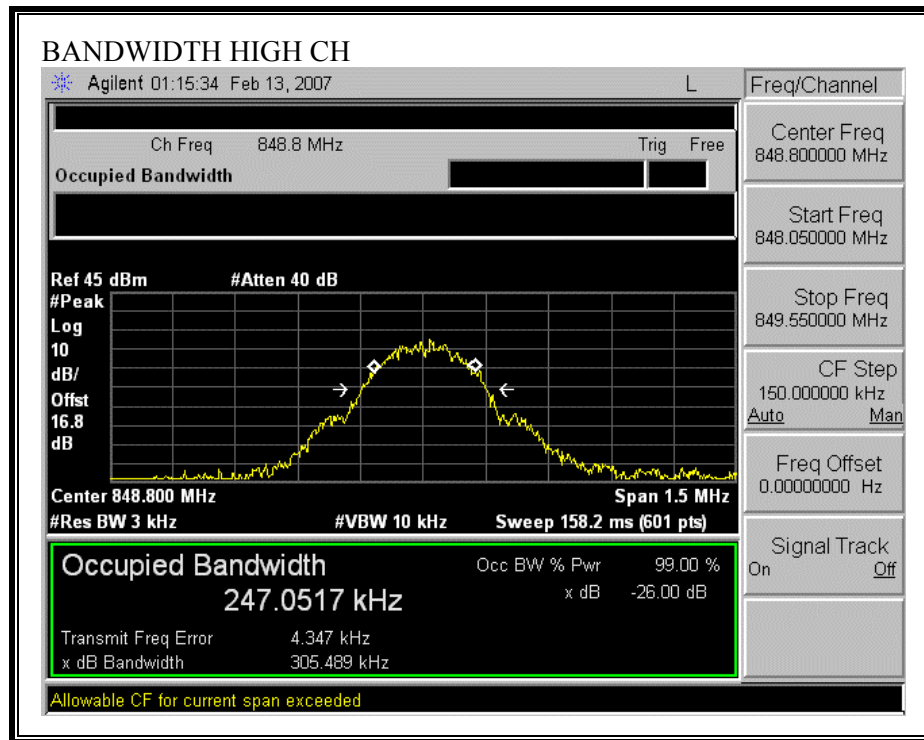




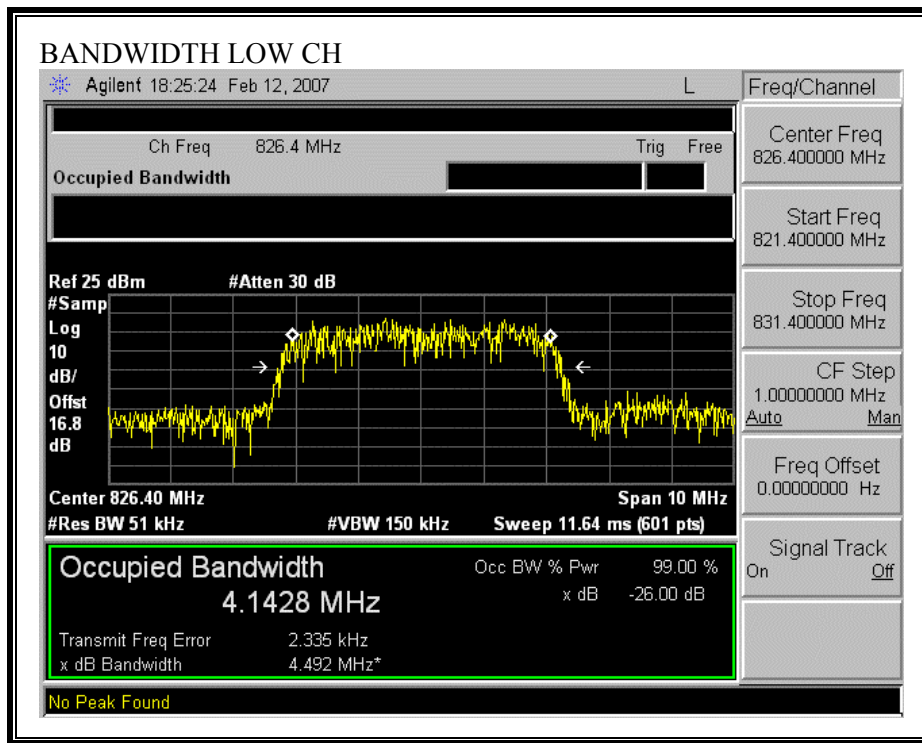
**GSM850 EGPRS 26 dB BANDWIDTH**

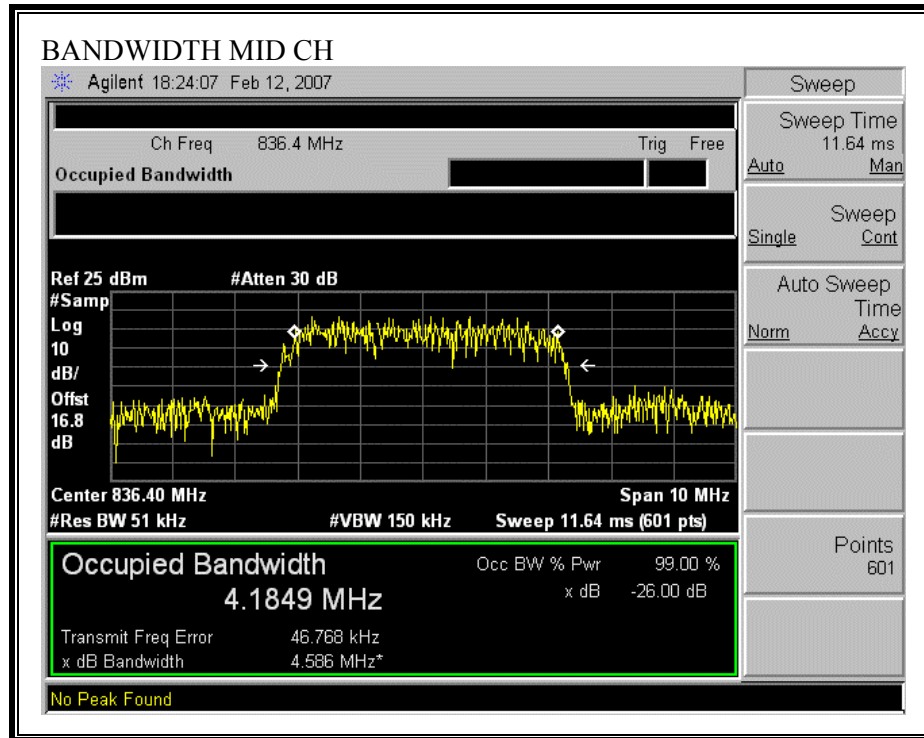


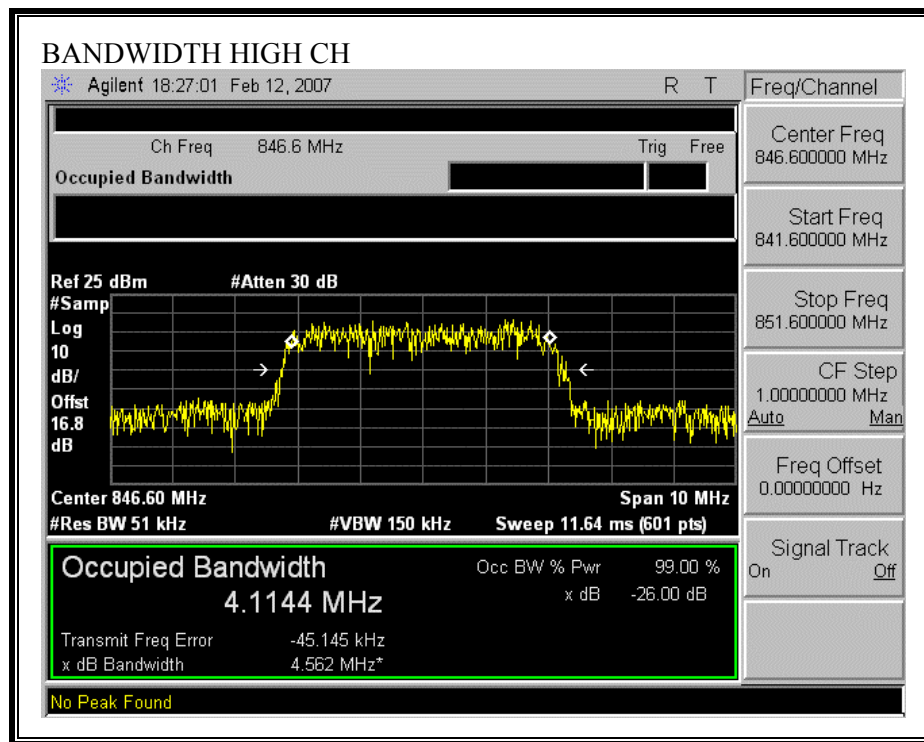




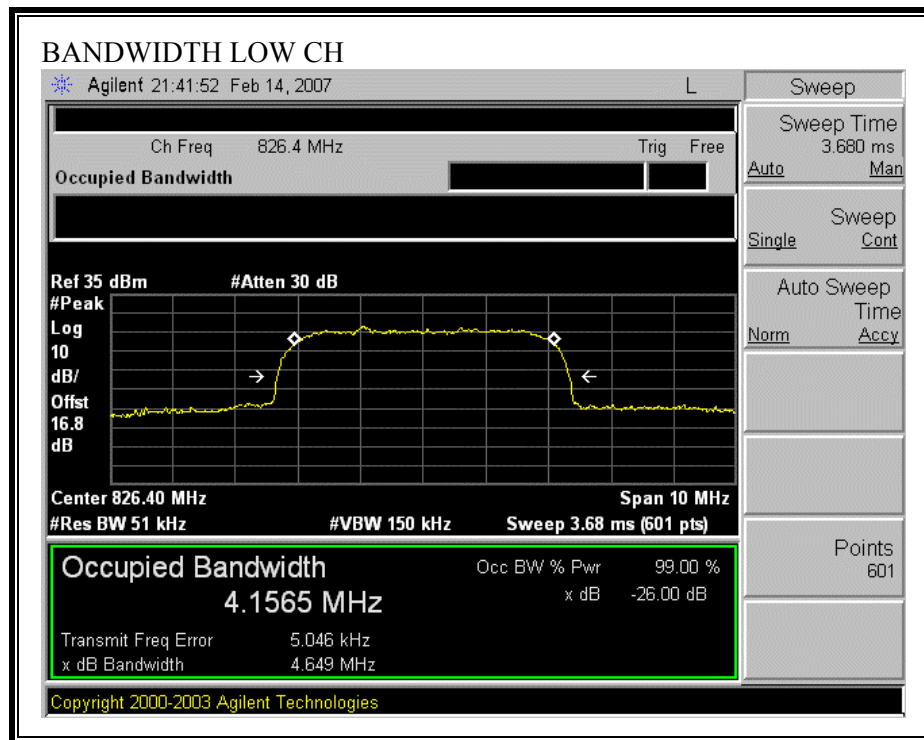
**WCDMA Cell 26 dB BANDWIDTH**



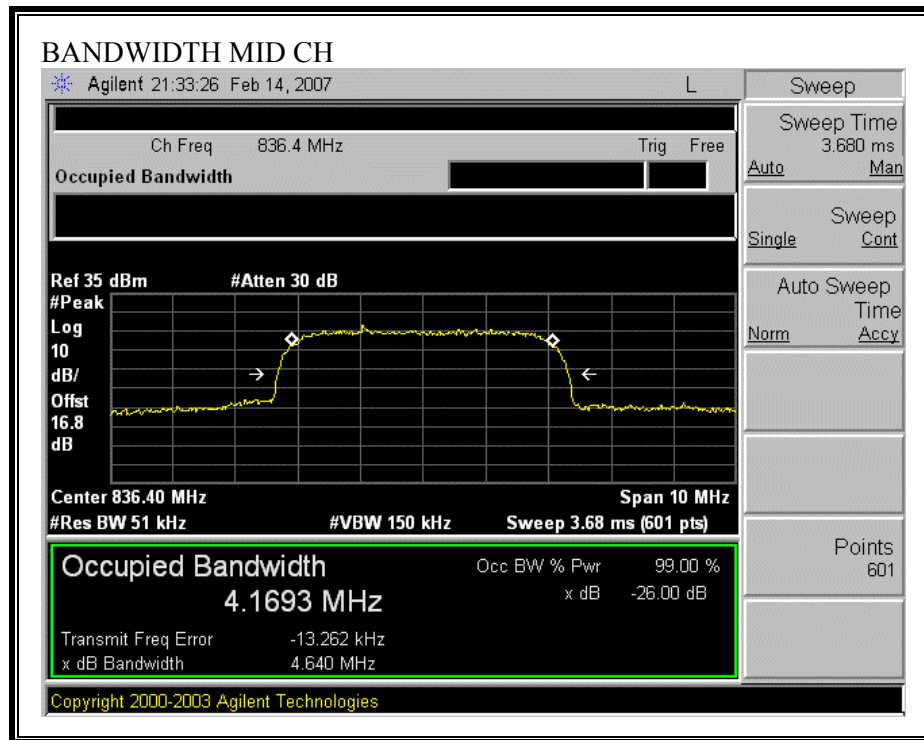


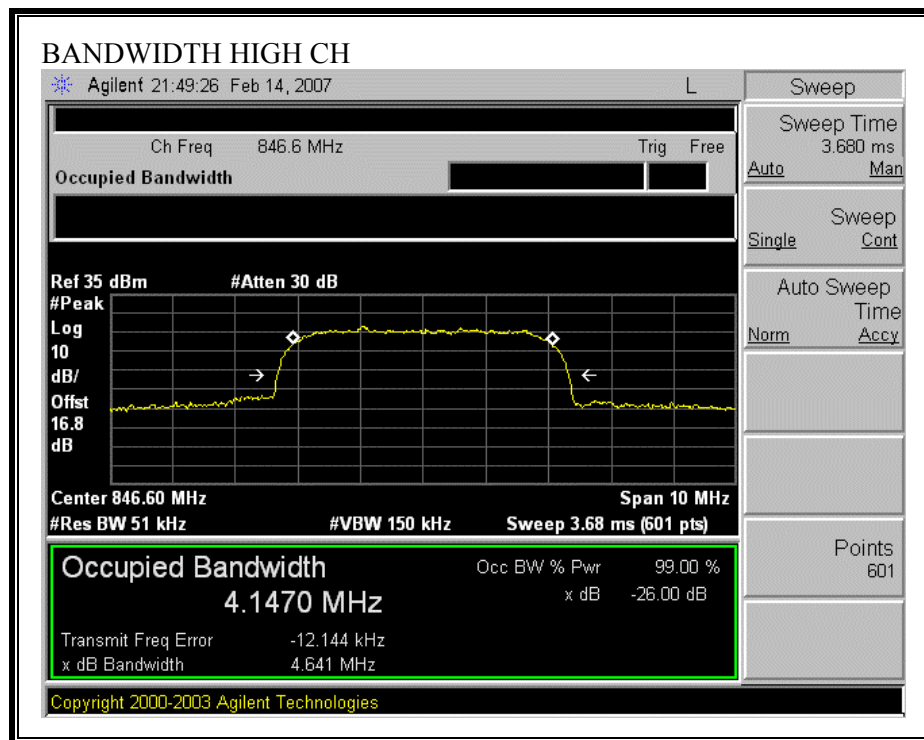


**WCDMA + HSPDA Cell 26 dB BANDWIDTH**

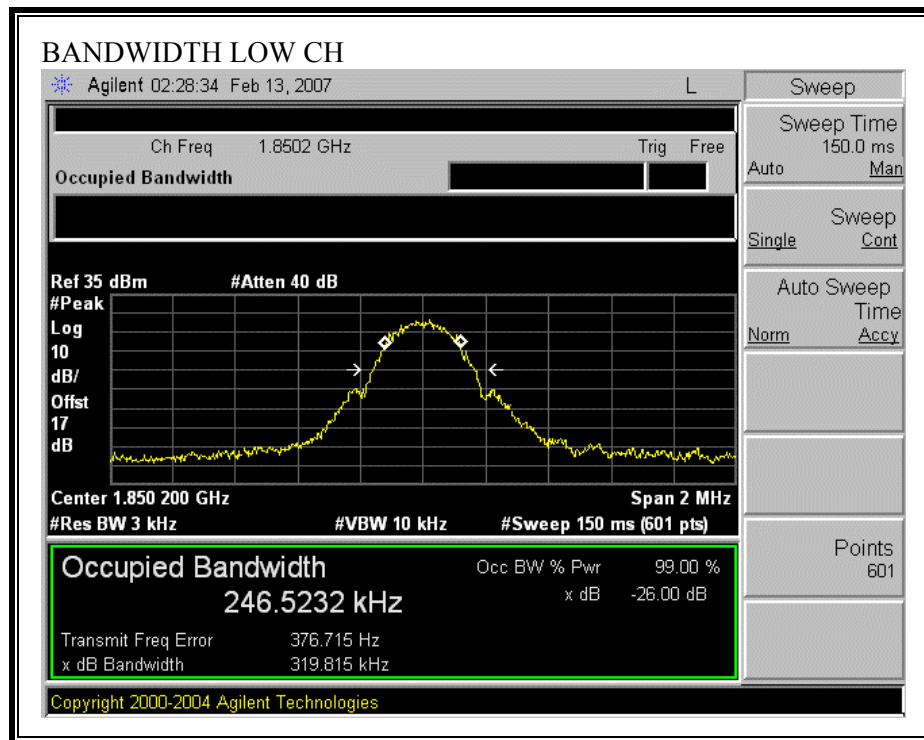


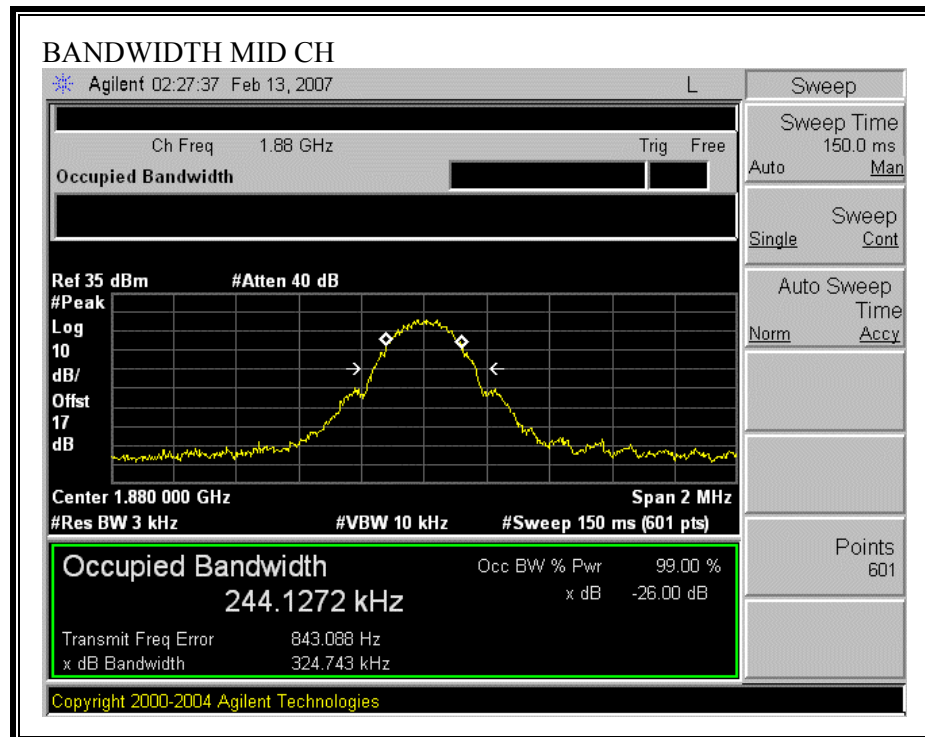


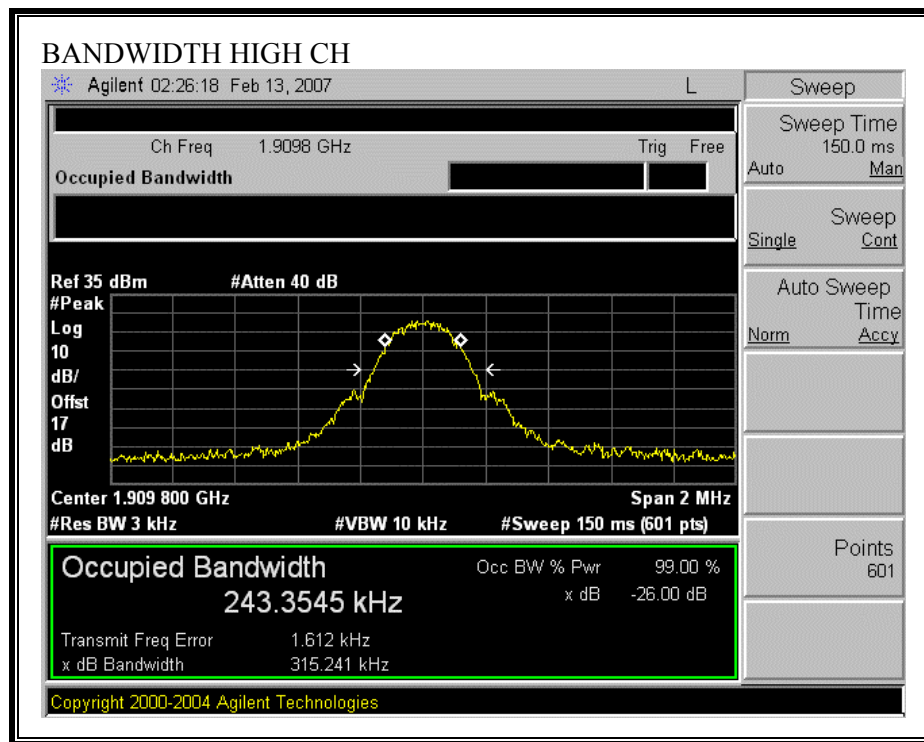




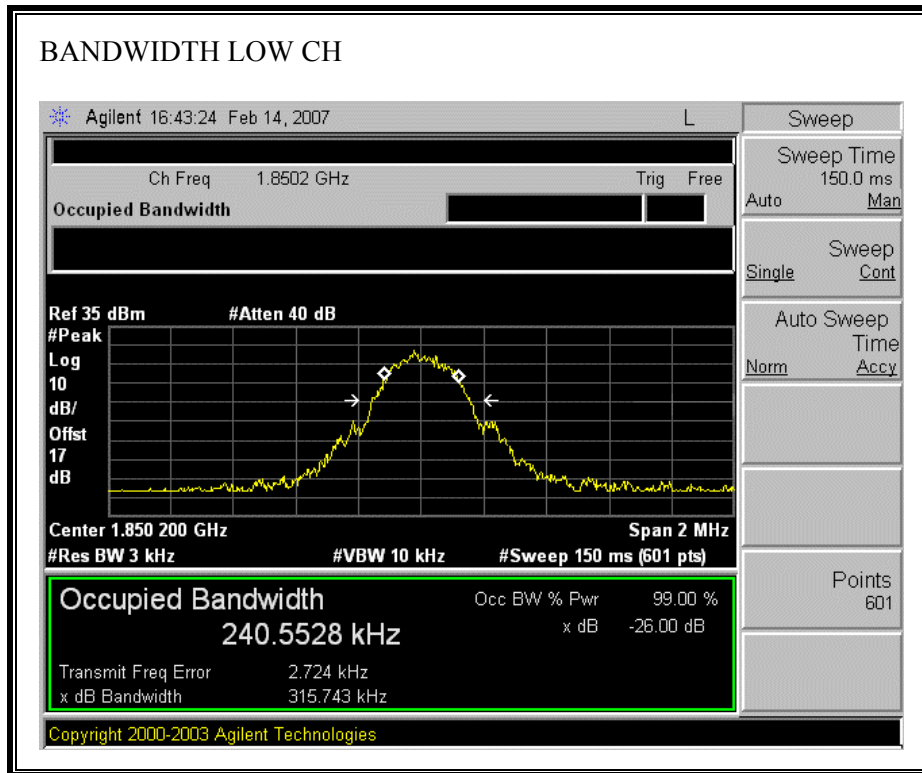
**GSM1900 GPRS 26 dB BANDWIDTH**

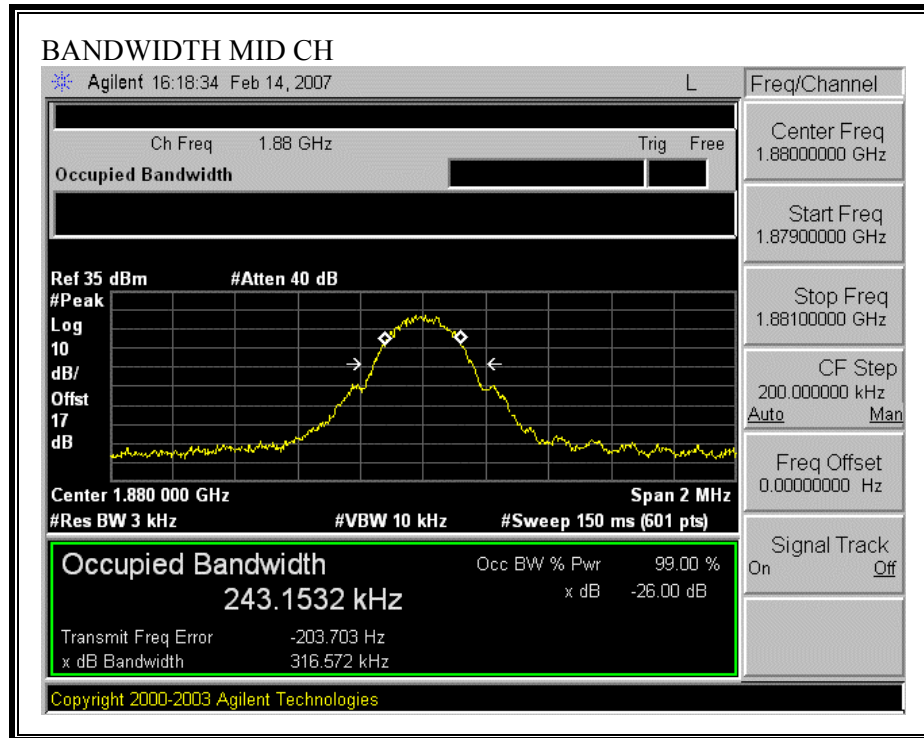


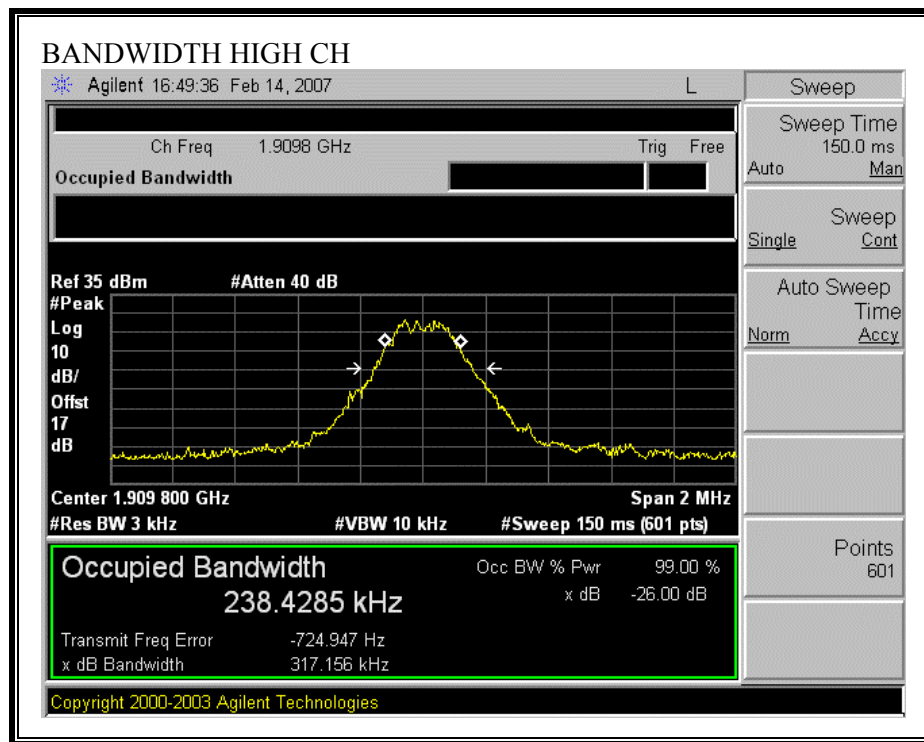




**GSM1900 EGPRS 26 dB BANDWIDTH**

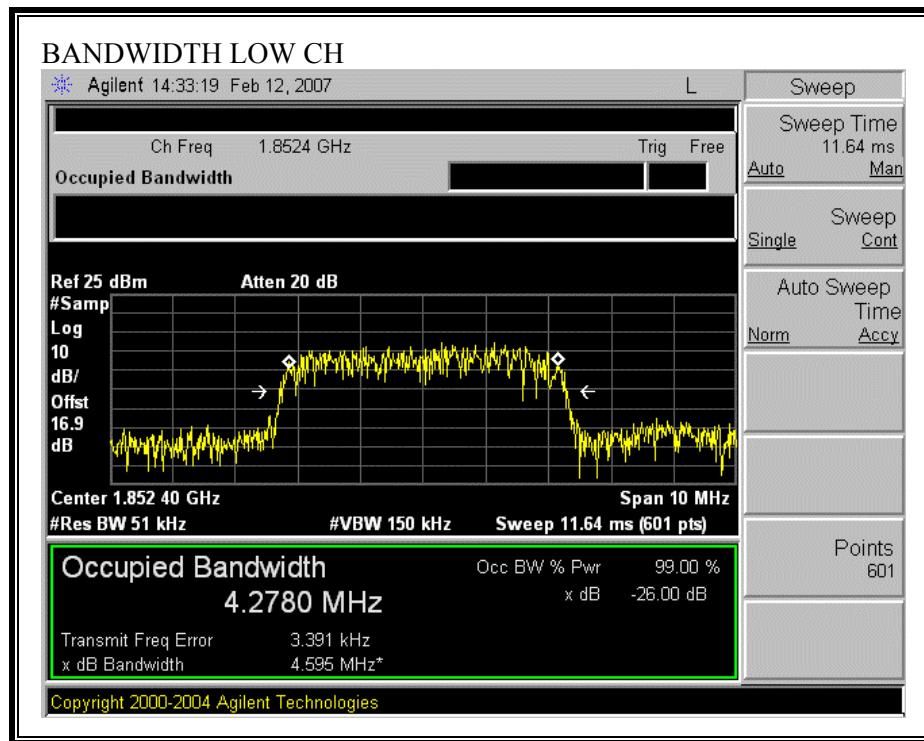


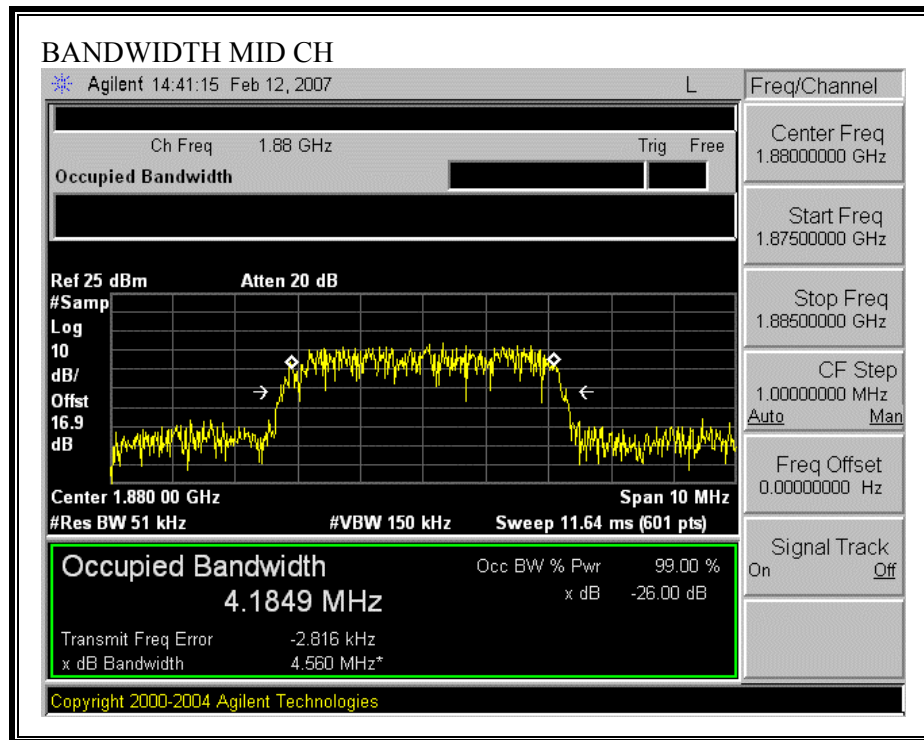


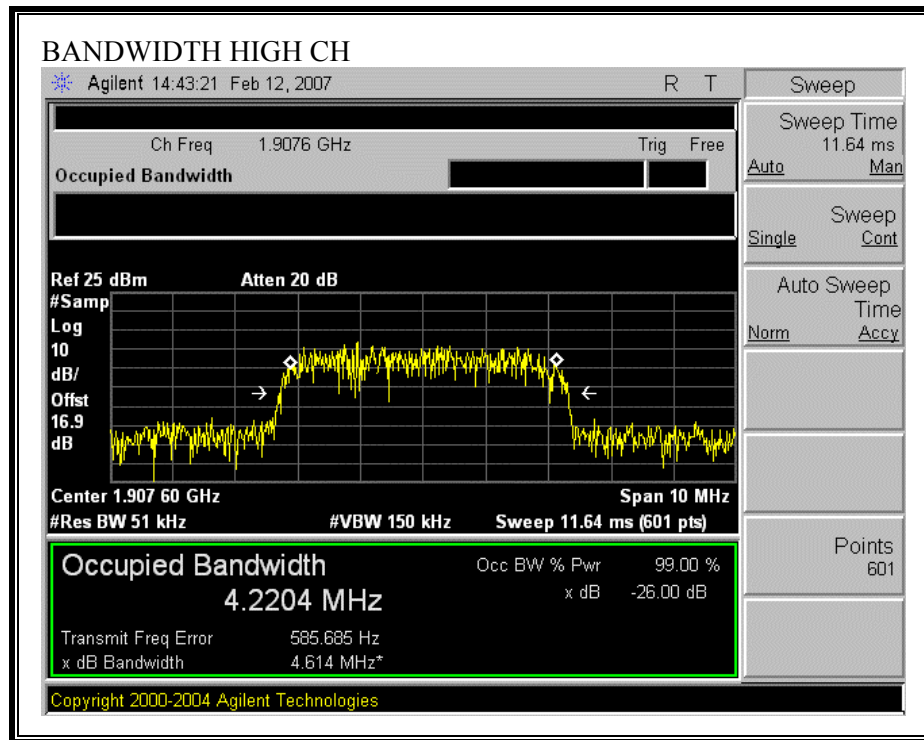




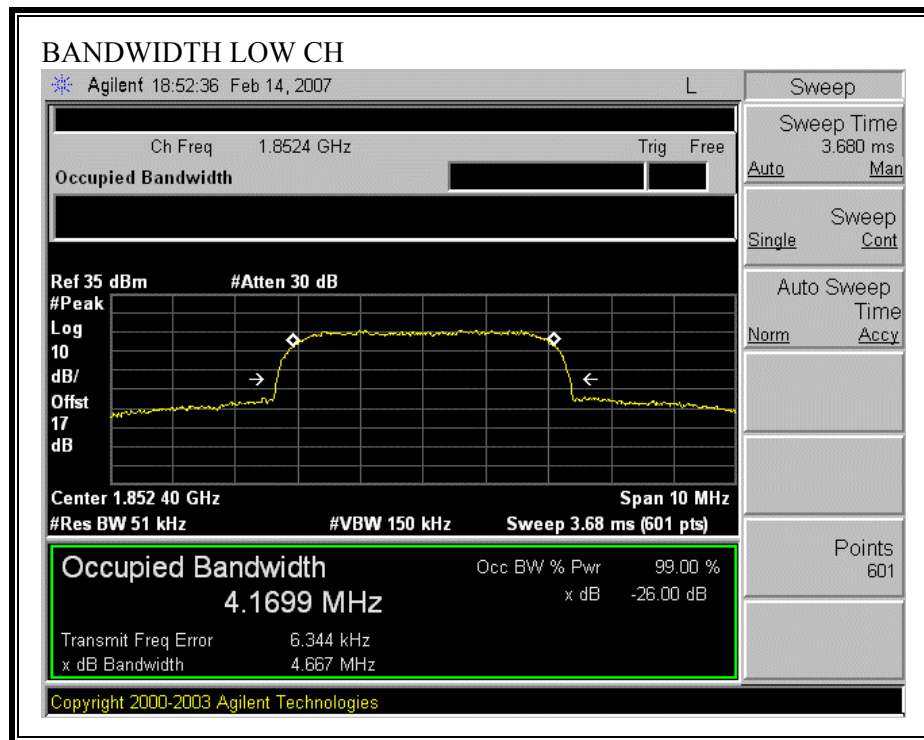
**WCDMA 1900MHz 26 dB BANDWIDTH**

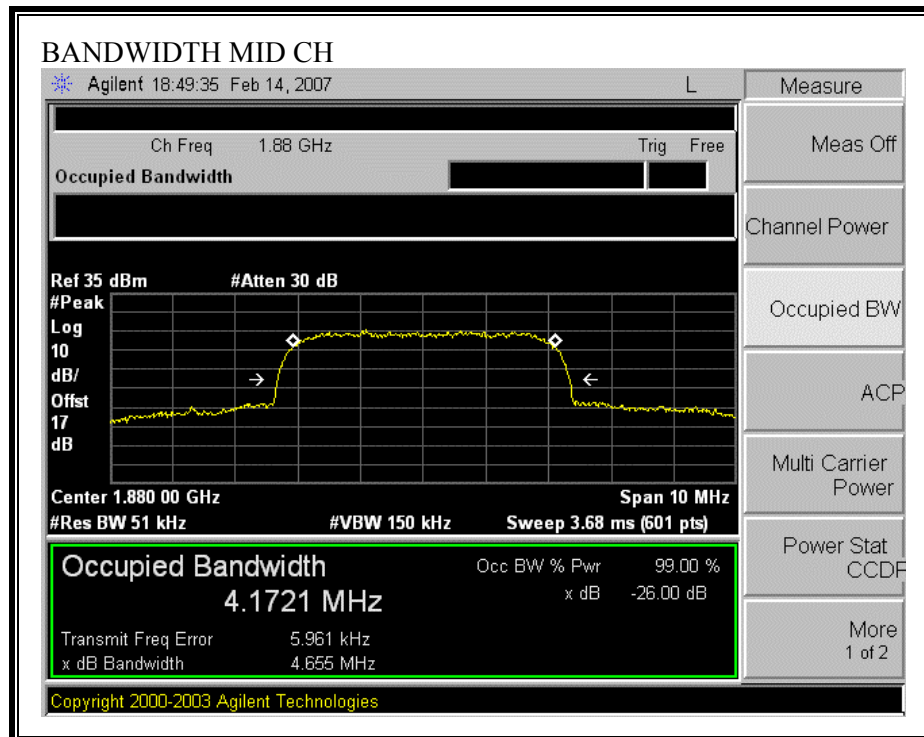


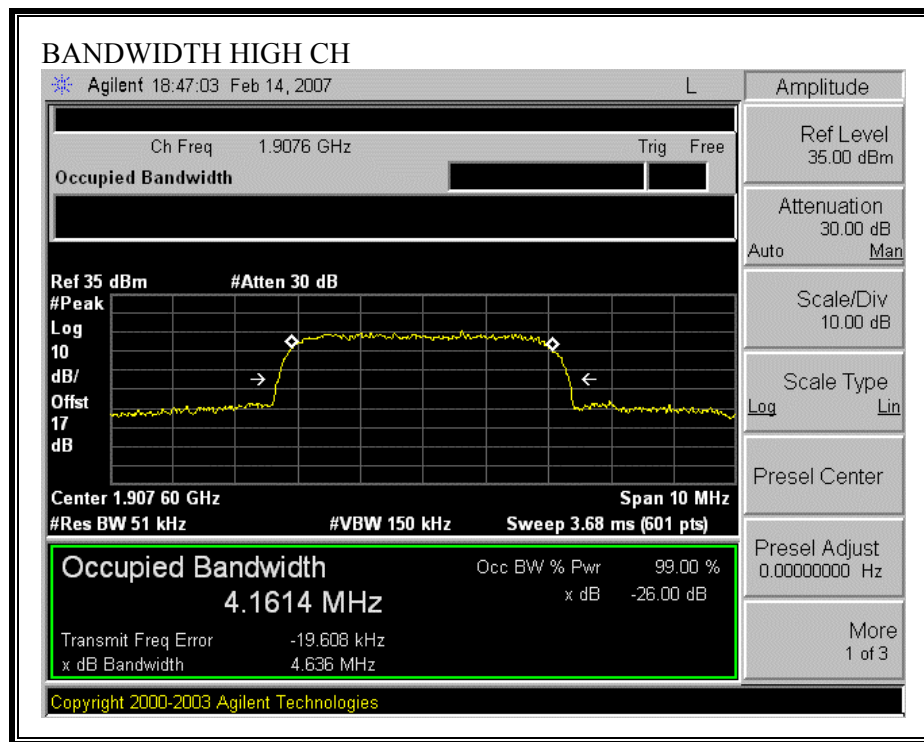




**WCDMA + HSPDA 1900MHz 26 dB BANDWIDTH**







## 7.2. RF POWER OUTPUT

### LIMIT

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.  
24.232(b) Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

### TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17

### RESULTS

No non-compliance noted.

#### GSM850 CELL GPRS Modulation

Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	32.10	1621.81	26.10	407.38
Middle	837.0	32.22	1667.25	28.90	776.25
High	848.8	32.25	1678.80	27.90	616.60

#### GSM850 CELL EGPRS Modulation

Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	824.2	27.35	543.25	25.10	323.59
Middle	837.0	27.39	548.28	25.40	346.74
High	848.8	27.35	543.25	25.30	338.84

1900MHz GPRS PCS Modulation

Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.20	29.26	843.33	30.30	1071.52
Middle	1880.00	29.14	820.35	28.90	776.25
High	1909.80	29.10	812.83	30.10	1023.29

1900MHz EGPRS PCS Modulation

Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1850.20	27.31	538.27	27.20	524.81
Middle	1880.00	27.38	547.02	26.10	407.38
High	1909.80	27.33	540.75	27.60	575.44

WCDMA CELL CDMA Modulation

Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	826.4	25.26	335.74	22.60	181.97
Middle	836.4	25.38	345.14	22.40	173.78
High	848.6	25.23	333.43	23.30	213.80

WCDMA PCS CDMA Modulation

Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1852.40	26.06	403.65	25.60	363.08
Middle	1880.00	25.38	345.14	25.10	323.59
High	1907.60	25.23	333.43	24.60	288.40



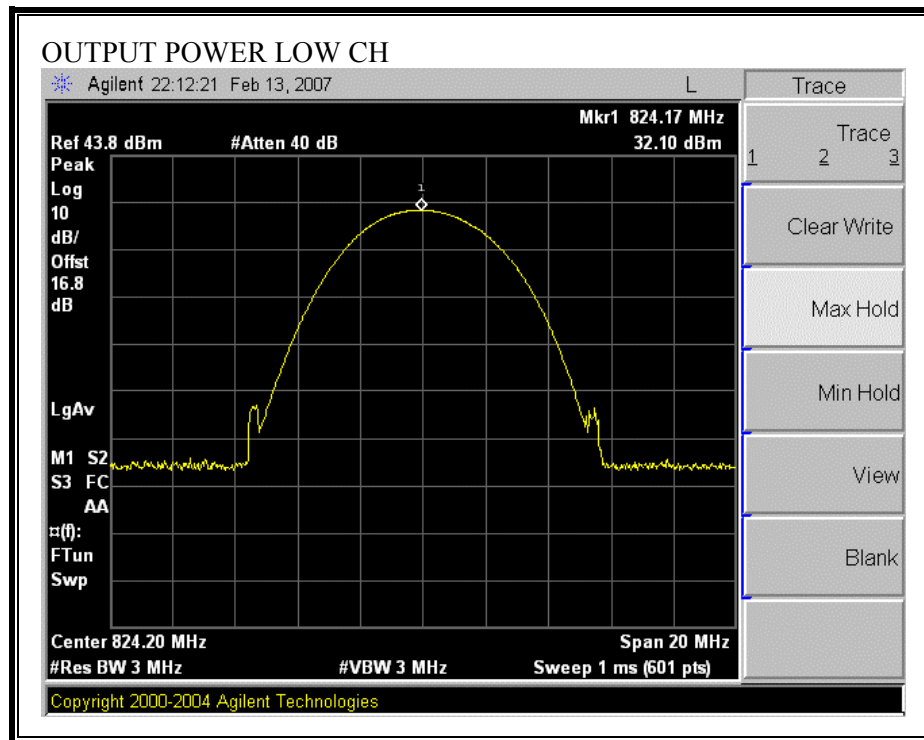
WCDMA+HSPDA CELL CDMA Modulation

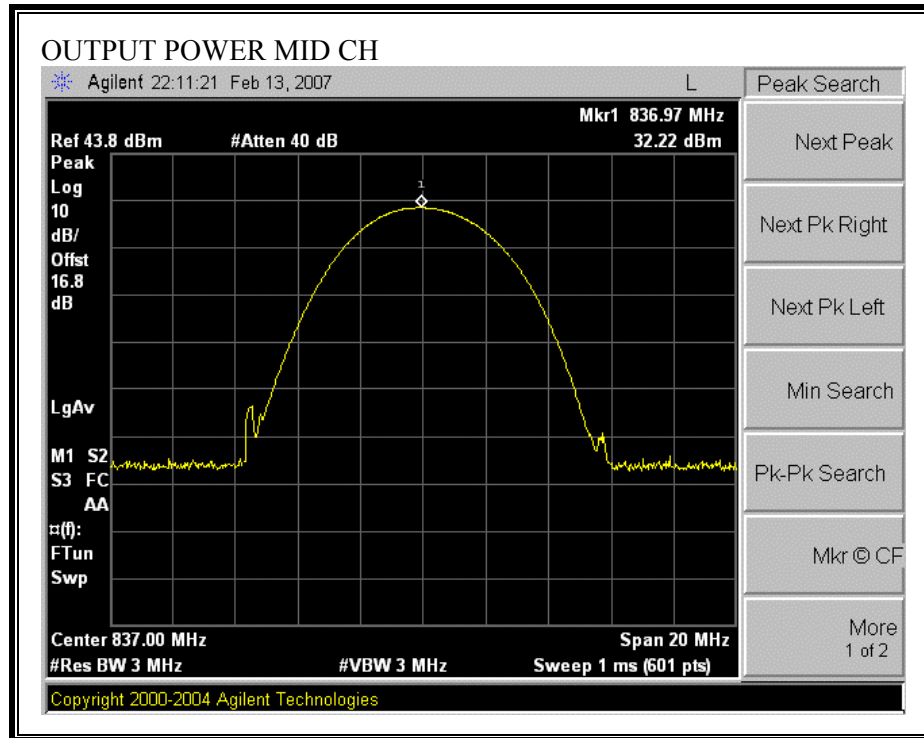
Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	ERP Peak Power (dBm)	ERP Peak Power (mW)
Low	826.4	26.47	443.61	23.30	213.80
Middle	836.4	26.47	443.61	23.40	218.78
High	848.6	26.54	450.82	24.00	251.19

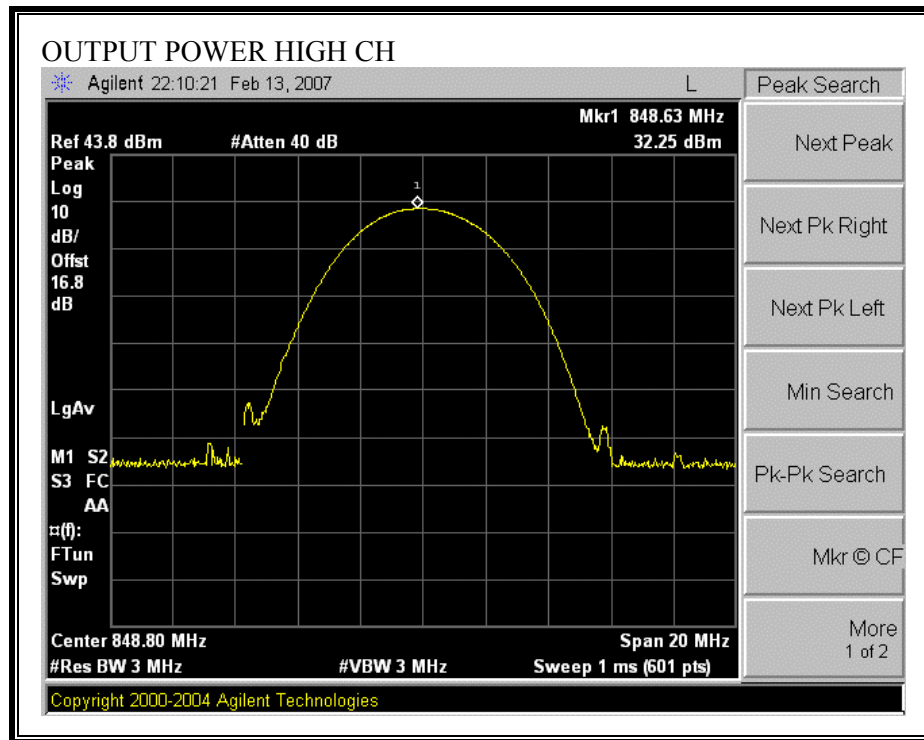
WCDMA+HSPDA PCS CDMA Modulation

Channel	Frequency (MHz)	Conducted Peak Power (dBm)	Conducted Peak Power (mW)	EIRP Peak Power (dBm)	EIRP Peak Power (mW)
Low	1852.40	26.27	423.64	25.80	380.19
Middle	1880.00	25.99	397.19	25.20	331.13
High	1907.60	25.81	381.07	25.60	363.08

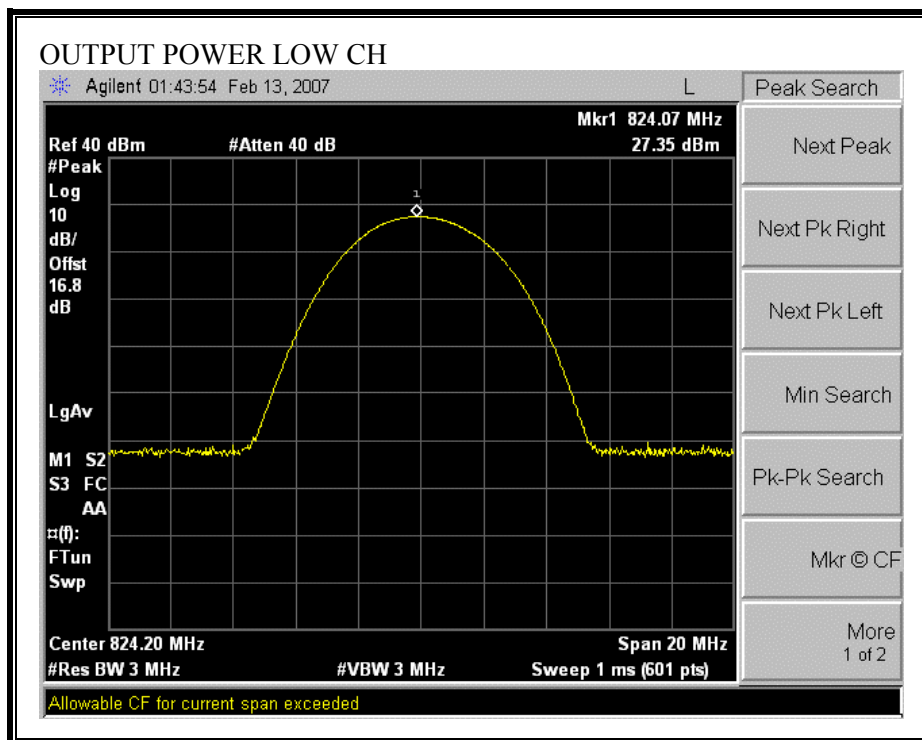
**GSM850 GPRS CELLULAR (RF CONDUCTED OUTPUT POWER)**

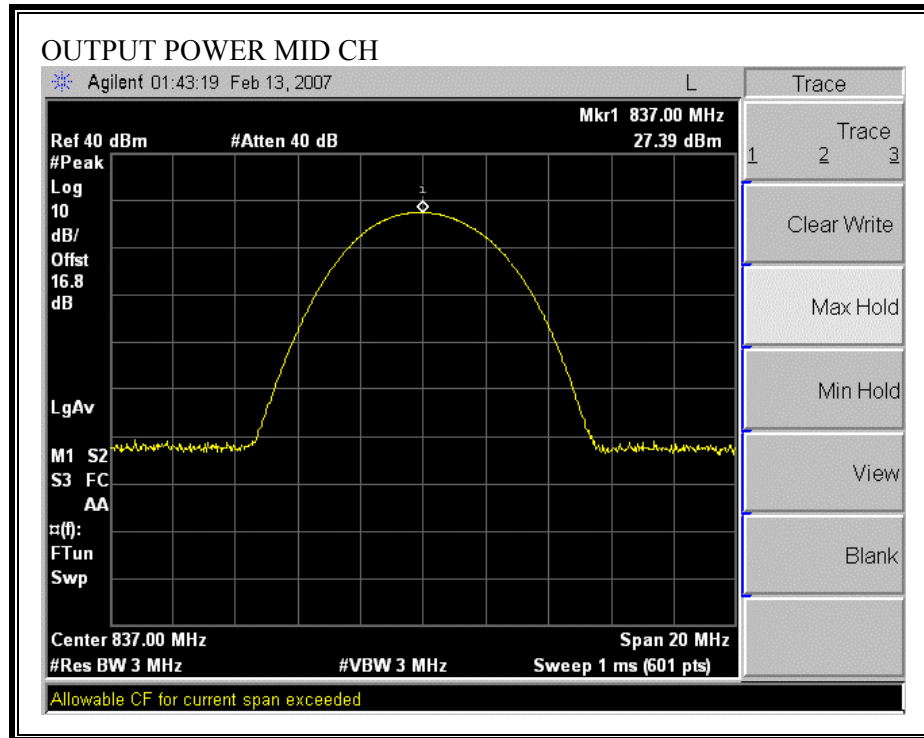


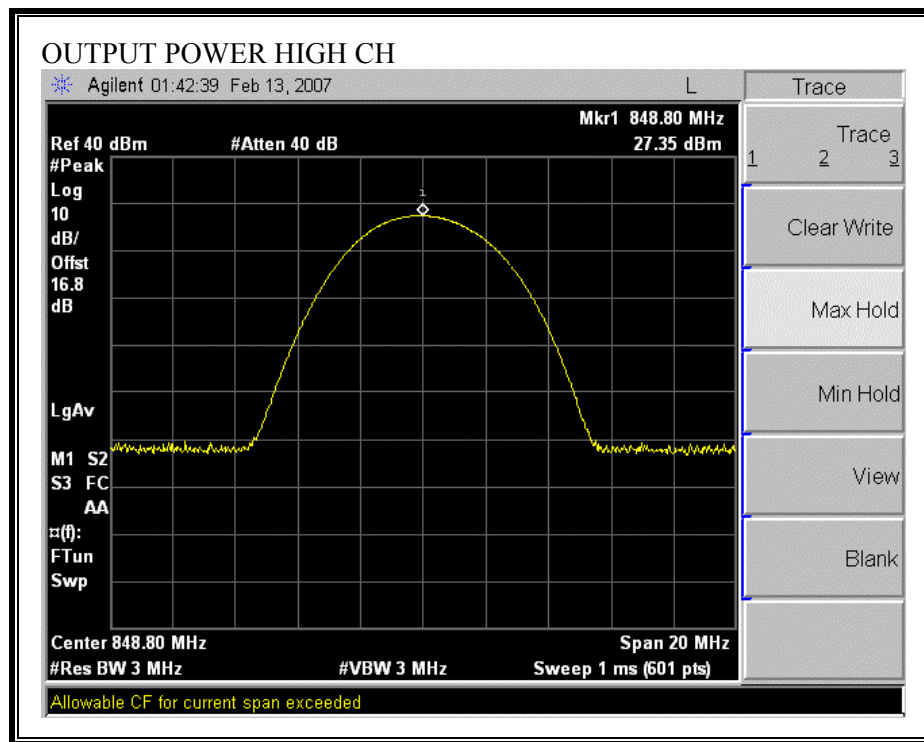




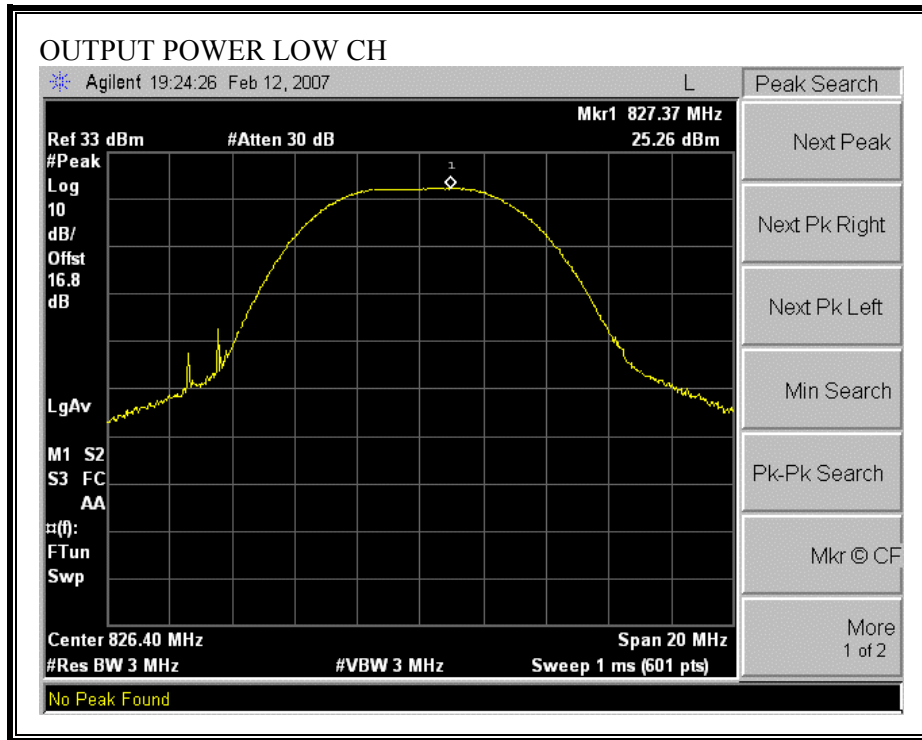
**GSM850 EGPRS CELLULAR (RF CONDUCTED OUTPUT POWER)**



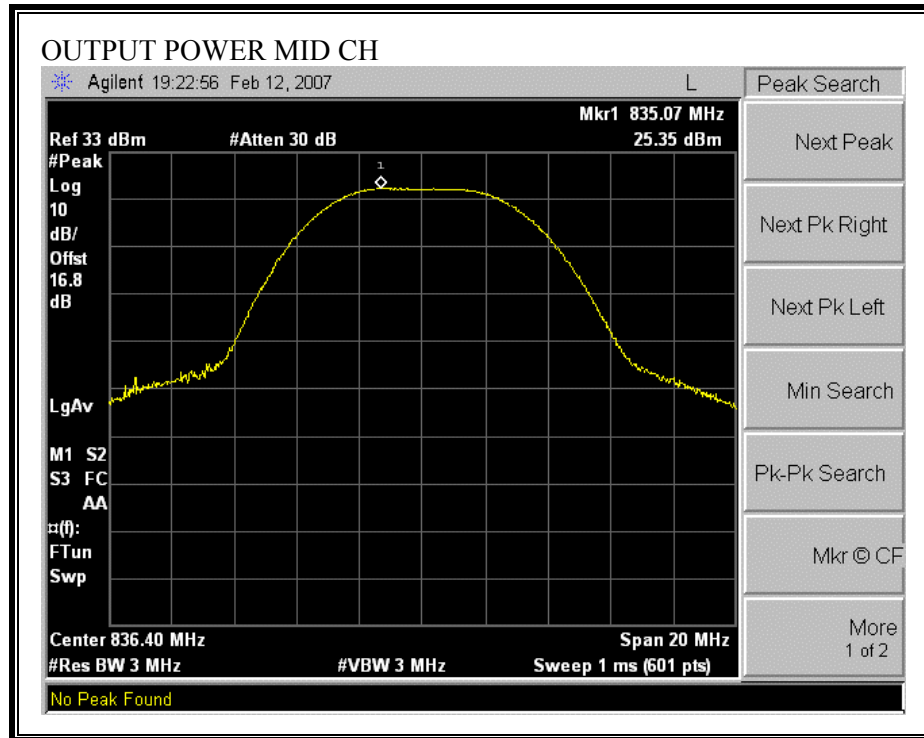


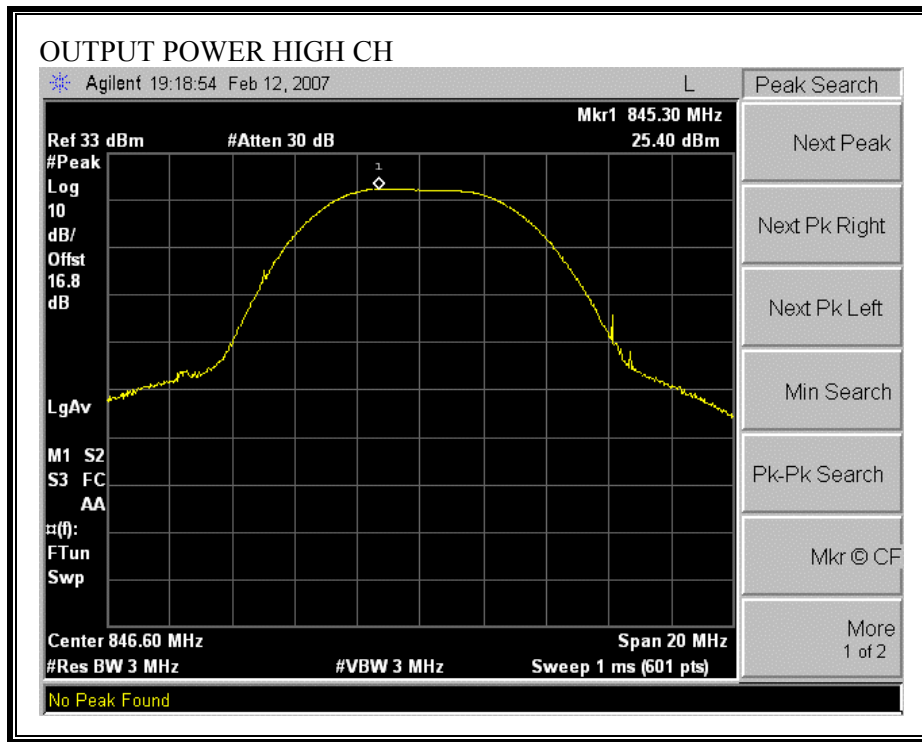


**WCDMA CELLULAR (RF CONDUCTED OUTPUT POWER)**

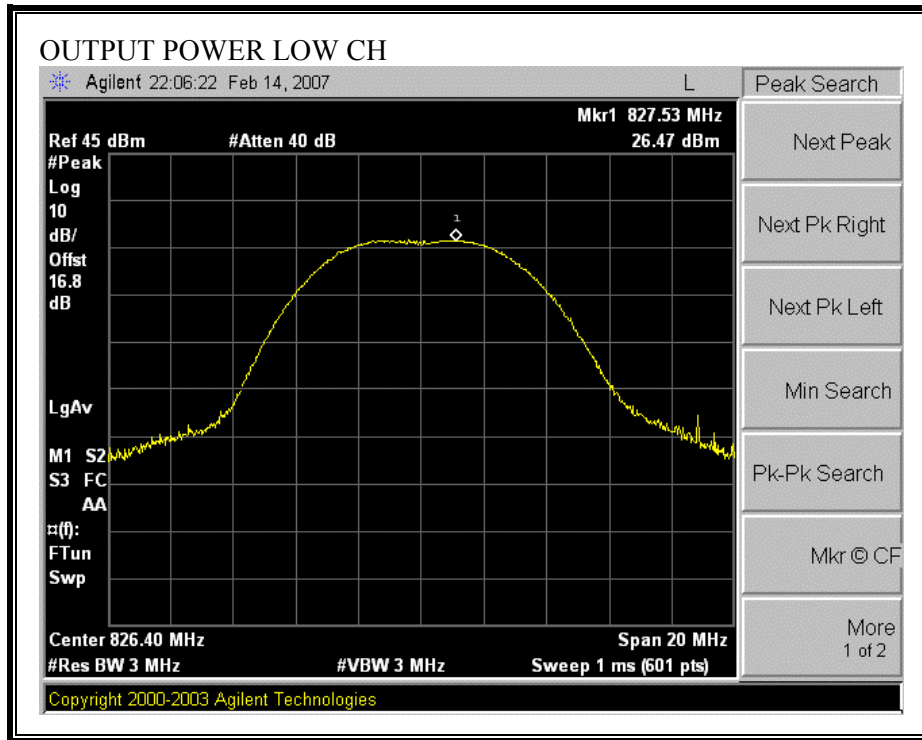


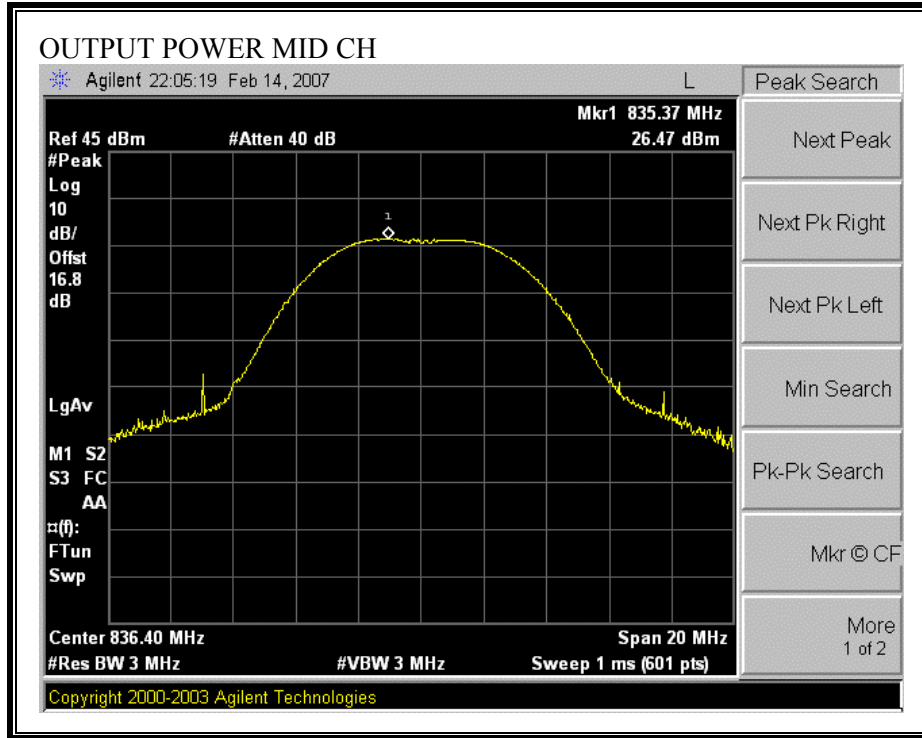


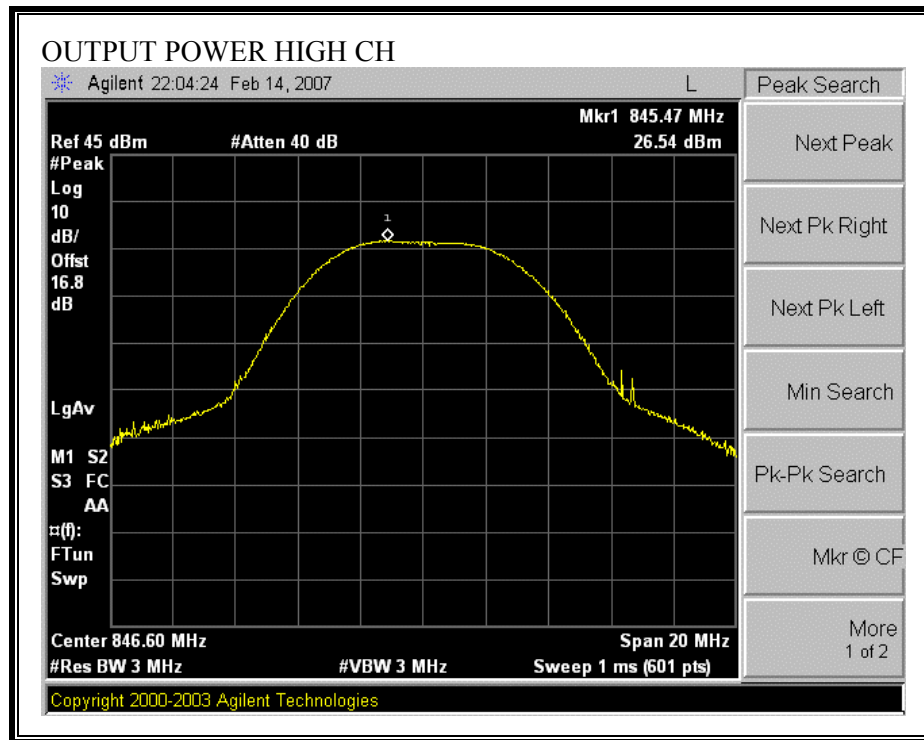




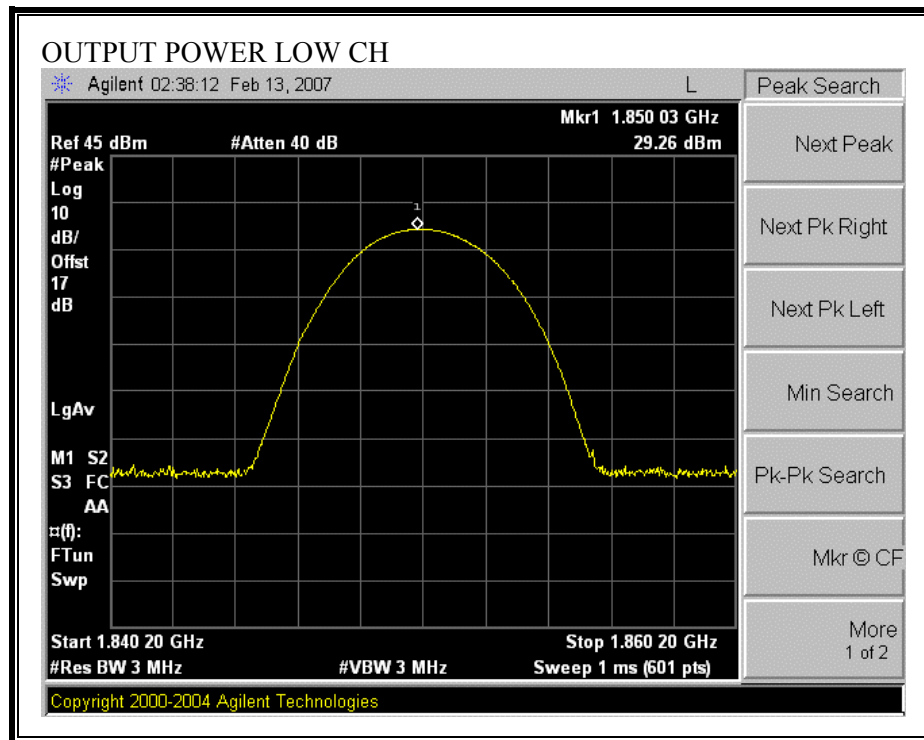
**WCDMA+HSPDA CELLULAR (RF CONDUCTED OUTPUT POWER)**

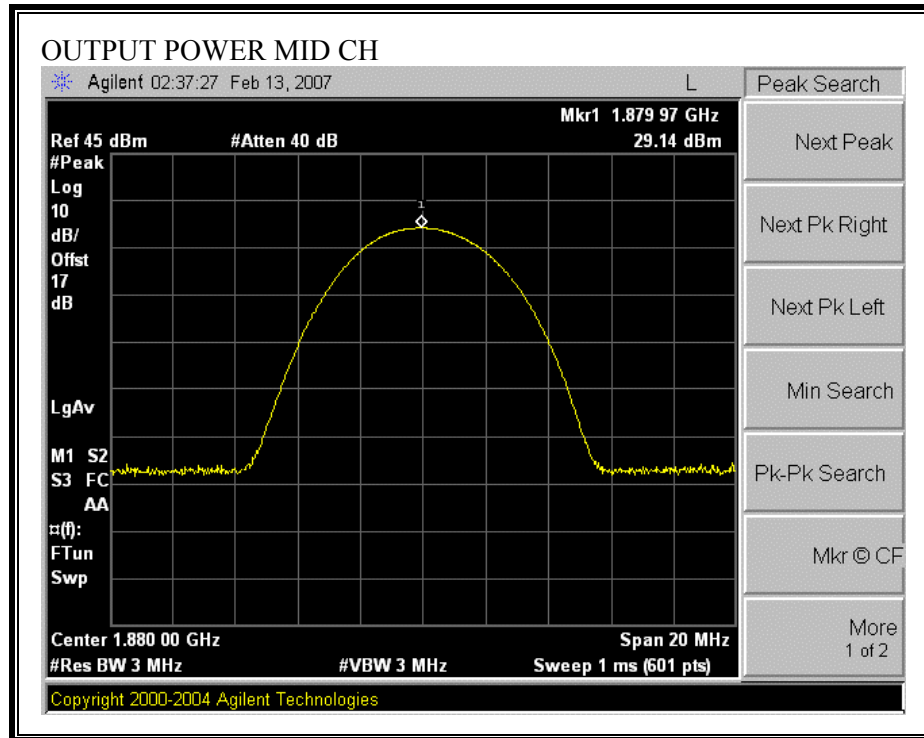


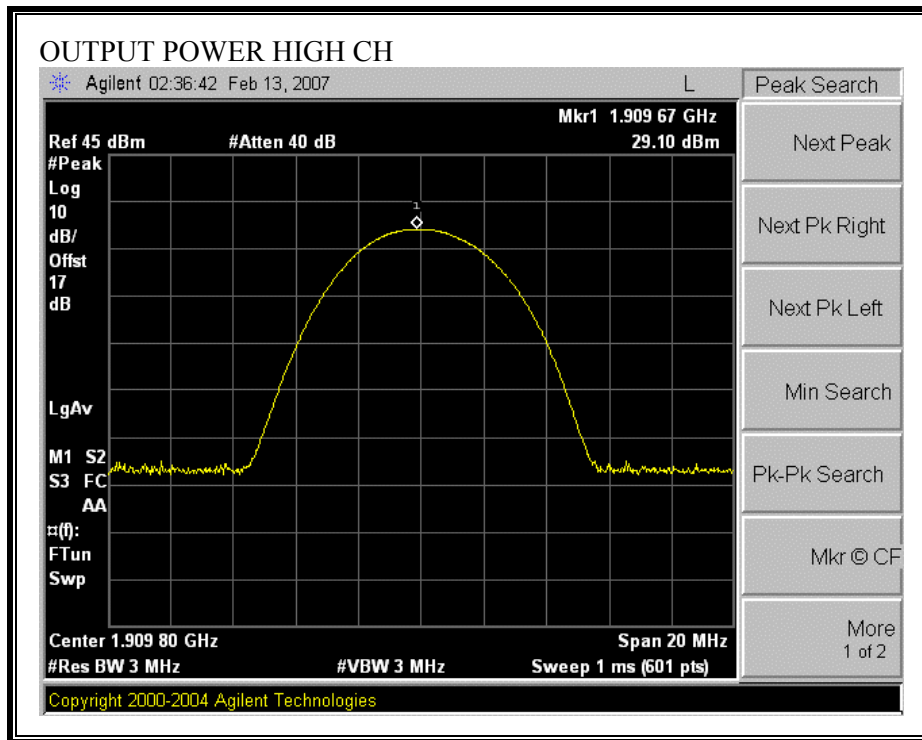




**GSM1900MHz GPRS PCS (RF CONDUCTED OUTPUT POWER)**

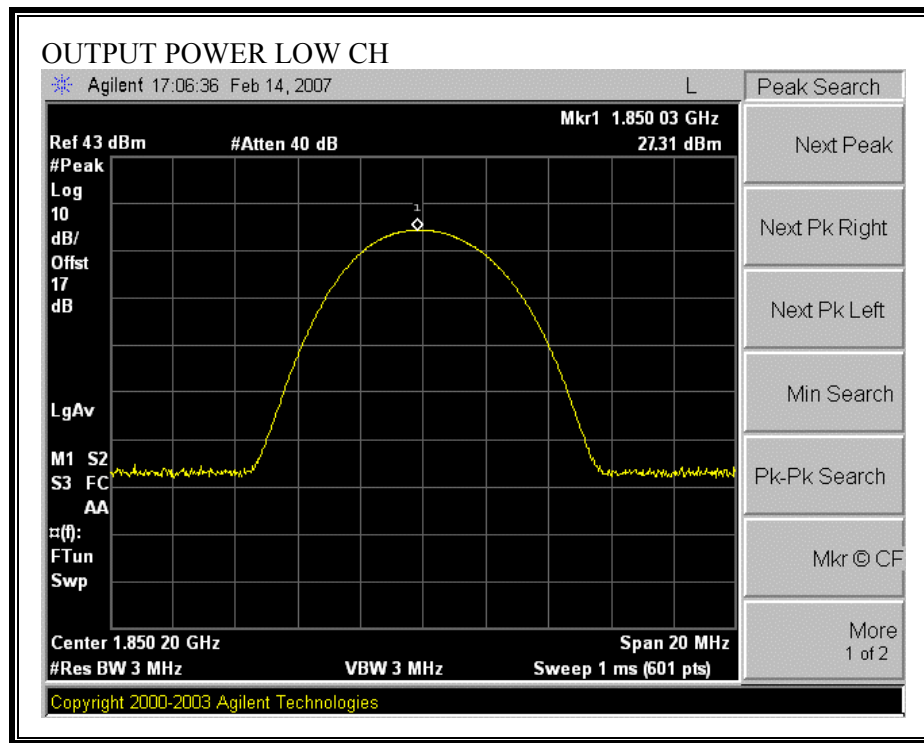


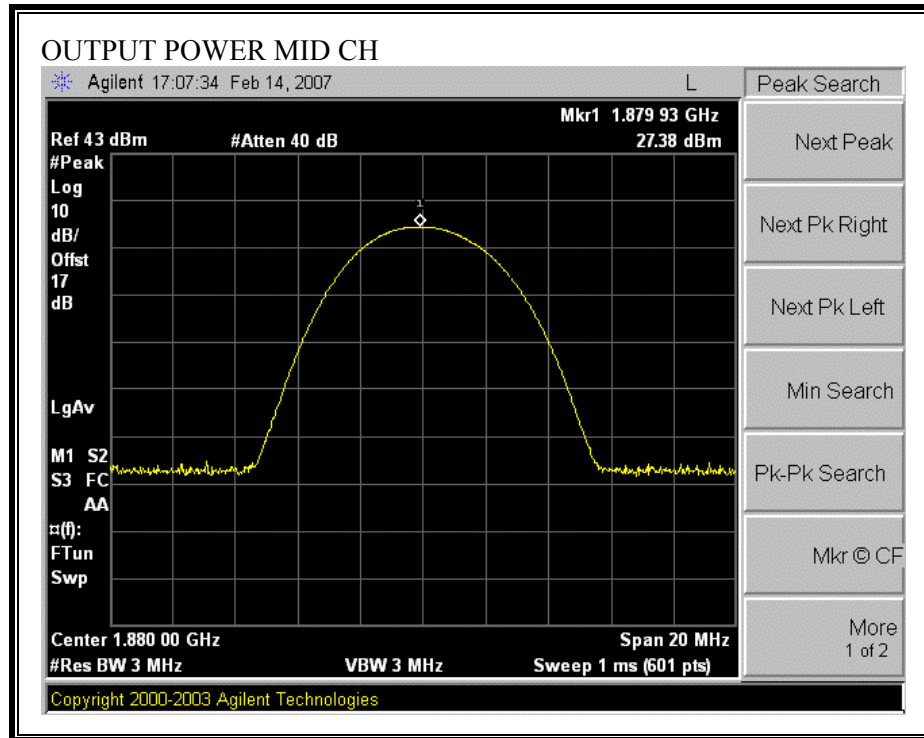


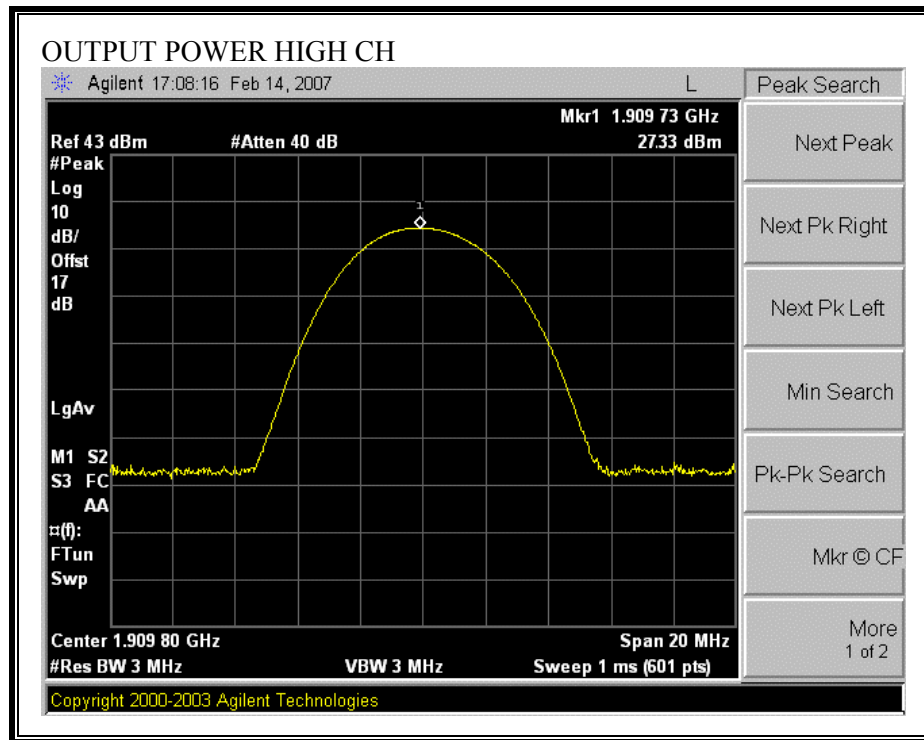




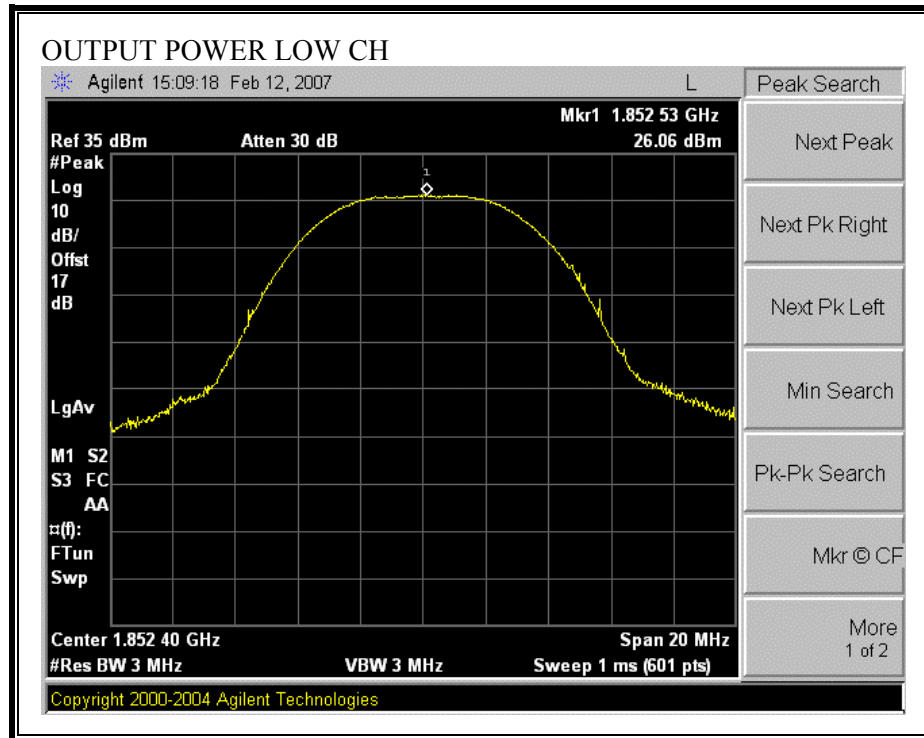
**GSM1900MHz EGPRS PCS (RF CONDUCTED OUTPUT POWER)**

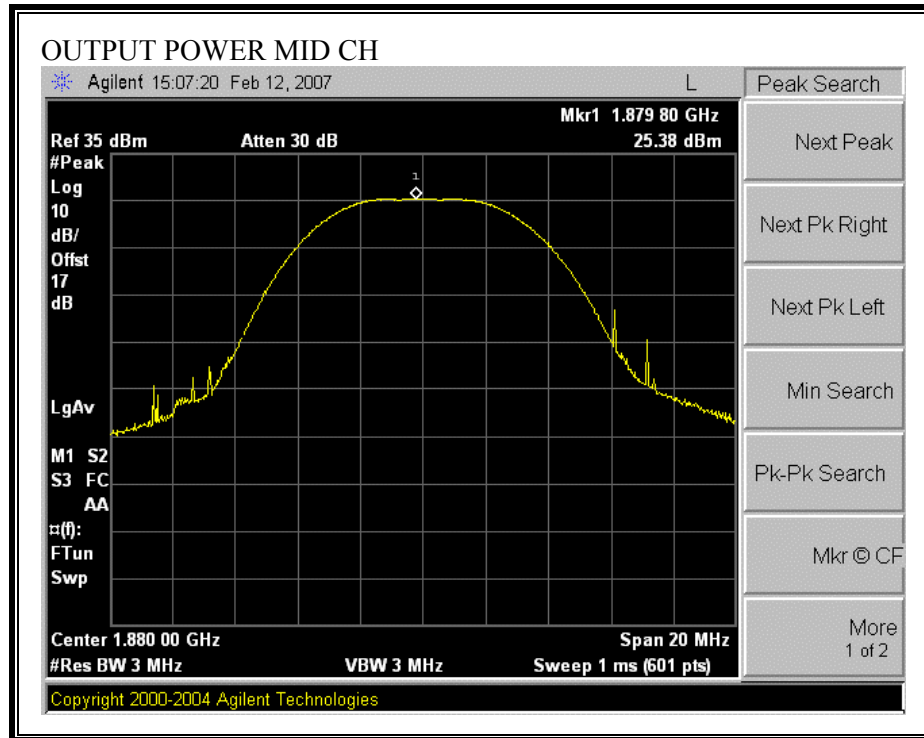


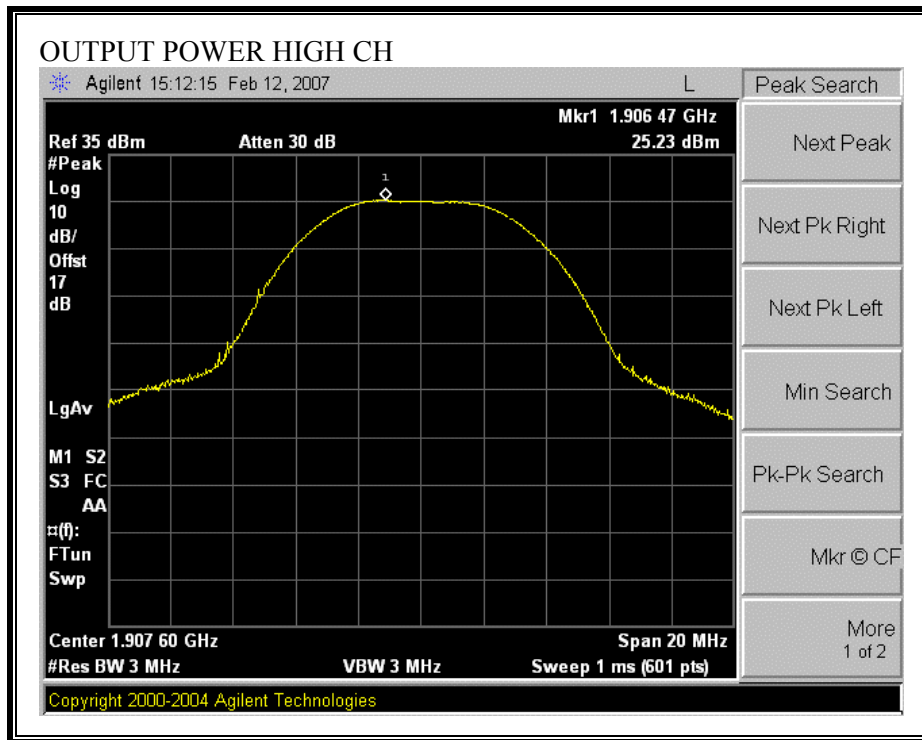




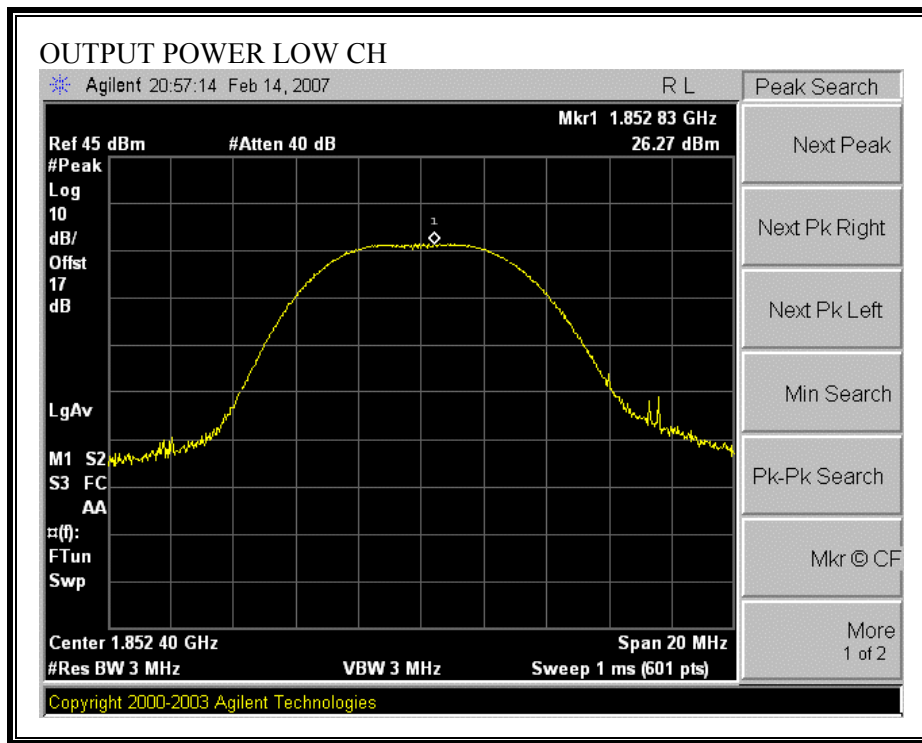
**WCDMA PCS (RF CONDUCTED OUTPUT POWER)**

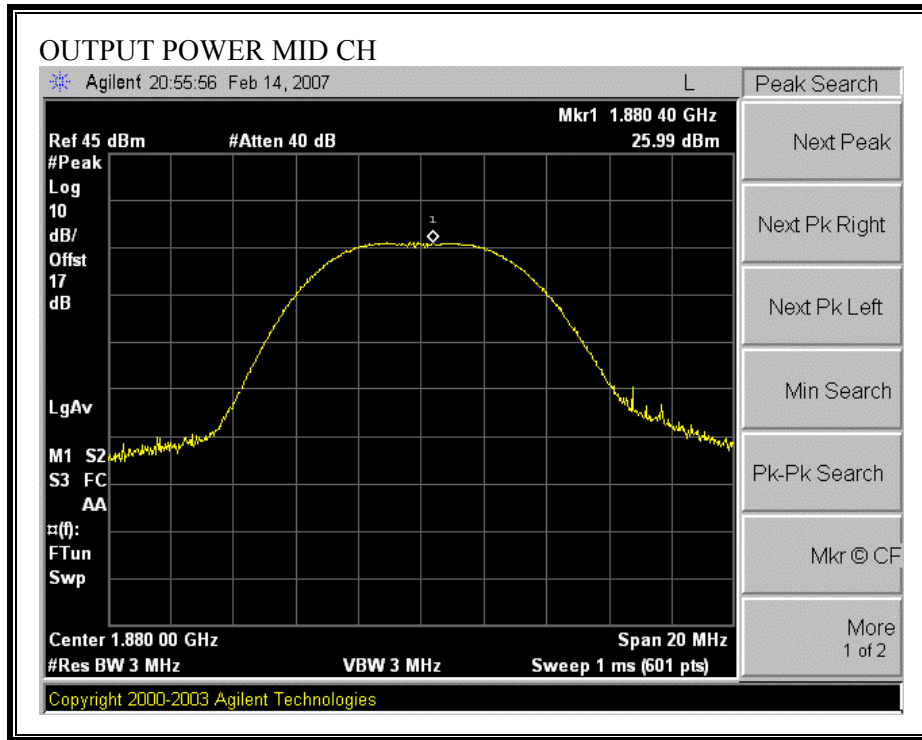




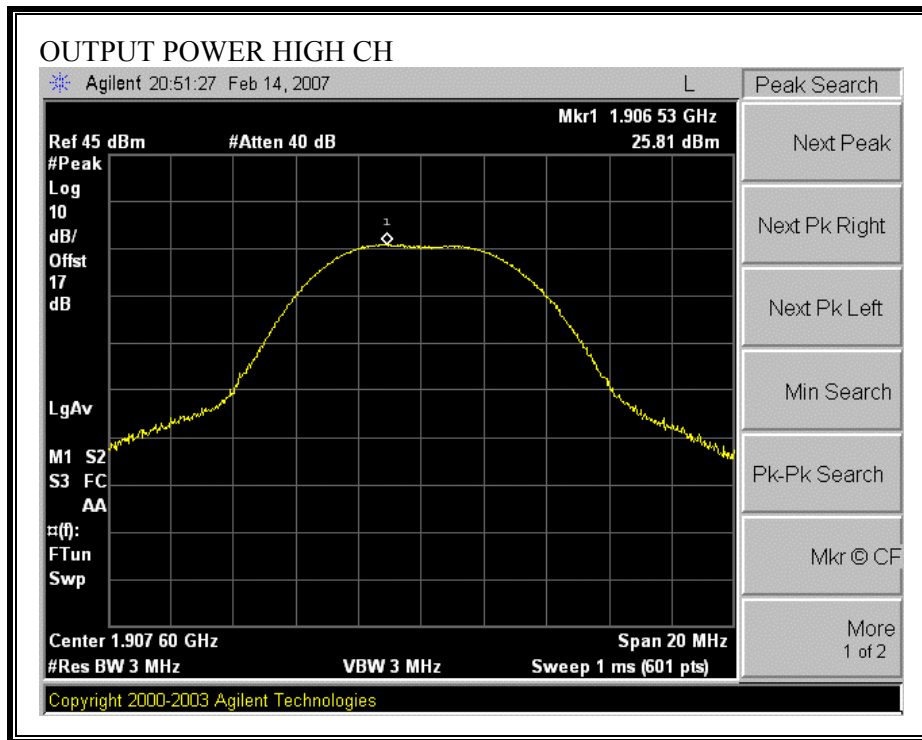


**WCDMA+HSPDA PCS (RF CONDUCTED OUTPUT POWER)**









**GSM850 GPRS Output Power (ERP)**

<p align="center"><b>High Frequency Substitution Measurement</b>  <b>Compliance Certification Services, Fremont Hill 5m Chamber Site</b></p> <p>Company: Toshiba America Information Systems, Inc.  Project #: 07U10847  Date: 02/14/2007  Test Engineer: Mengistu Mekuria  Configuration: EUT Only  Mode: Cell, TX, GPRS</p> <p><u>Test Equipment:</u>  Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)  Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002</p>									
f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>									
824.20	100.3	V	26.7	0.6	0.0	26.1	38.5	-12.3	
824.20	98.3	H	23.0	0.6	0.0	22.4	38.5	-16.1	
<b>Mid Channel</b>									
837.00	102.5	V	29.5	0.6	0.0	28.9	38.5	-9.6	
837.00	99.2	H	24.1	0.6	0.0	23.5	38.5	-15.0	
<b>High Channel</b>									
848.80	101.7	V	28.5	0.6	0.0	27.9	38.5	-10.6	
848.80	99.8	H	24.3	0.6	0.0	23.7	38.5	-14.8	
Rev. 1.24.7									

**GSM850 EGPRS Output Power (ERP)**

**High Frequency Substitution Measurement**  
**Compliance Certification Services, Fremont Hill 5m Chamber Site**

Company: Toshiba America Information Systems, Inc.  
Project #: 07U10847  
Date: 02/14/2007  
Test Engineer: Mengistu Mekuria  
Configuration: EUT Only  
Mode: Cell, TX, EGPRS

**Test Equipment:**

Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)  
Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>									
824.20	99.3	V	25.7	0.6	0.0	25.1	38.5	-13.3	
824.20	96.1	H	20.8	0.6	0.0	20.2	38.5	-18.2	
<b>Mid Channel</b>									
837.00	99.0	V	26.0	0.6	0.0	25.4	38.5	-13.0	
837.00	95.6	H	20.5	0.6	0.0	19.9	38.5	-18.5	
<b>High Channel</b>									
848.80	99.1	V	25.9	0.6	0.0	25.3	38.5	-13.1	
848.80	96.3	H	20.8	0.6	0.0	20.2	38.5	-18.2	
Rev. 1.24.7									

**CELL Band WCDMA Output Power (ERP)**

<p align="center"><b>High Frequency Substitution Measurement</b>  <b>Compliance Certification Services, Fremont Hill 5m Chamber Site</b></p> <p>Company: Toshiba America Information Systems, Inc.  Project #: 07U10847  Date: 02/09/2007  Test Engineer: Mengistu Mekuria  Configuration: EUT Only  Mode: Cell, TX, WCDMA-12.2K RMC</p> <p><b>Test Equipment:</b>  Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)  Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002</p>									
f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch Mobile</b>									
826.40	96.8	V	23.2	0.6	0.0	22.6	38.5	-15.8	
826.40	91.1	H	15.8	0.6	0.0	15.2	38.5	-23.2	
<b>Mid Ch Mobile</b>									
836.40	96.0	V	23.0	0.6	0.0	22.4	38.5	-16.0	
836.40	91.9	H	16.8	0.6	0.0	16.2	38.5	-22.2	
<b>High Ch Mobile</b>									
846.50	97.1	V	23.9	0.6	0.0	23.3	38.5	-15.1	
846.50	92.1	H	16.6	0.6	0.0	16.0	38.5	-22.4	
Rev. 1.24.7									

**Cell Band WCDMA+HSPDA Output Power (ERP)**

<p align="center"><b>High Frequency Substitution Measurement</b>  Compliance Certification Services, Fremont Hill 5m Chamber Site</p> <p>Company: Toshiba America Information Systems, Inc.  Project #: 07U10847  Date: 02/13/2007  Test Engineer: Mengistu Mekuria  Configuration: EUT Only  Mode: Cell, TX, WCDMA+ HSDPA</p> <p><u>Test Equipment:</u>  Receiving: Sunol T122, and 5m Chamber N-type Cable (Setup this one for testing EUT)  Substitution: Dipole S/N: 00022117, and 4ft SMA Cable Warehouse S/N: 177081002</p>									
f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch</b>									
826.40	97.5	V	23.9	0.6	0.0	23.3	38.5	-15.1	
826.40	96.0	H	20.7	0.6	0.0	20.1	38.5	-18.3	
<b>Mid Channel</b>									
836.40	97.0	V	24.0	0.6	0.0	23.4	38.5	-15.0	
836.40	94.8	H	19.7	0.6	0.0	19.1	38.5	-19.3	
<b>High Channel</b>									
846.50	97.8	V	24.6	0.6	0.0	24.0	38.5	-14.4	
846.50	94.2	H	18.7	0.6	0.0	18.1	38.5	-20.3	
Rev. 1.24.7									

**GSM1900 Band GPRS Output Power (EIRP)**

**High Frequency Fundamental Measurement**  
**Compliance Certification Services,Fremont 5m Chamber Site**

**Company:** Toshiba America Information Systems, Inc.  
**Project #:** 07U10847  
**Date:** 02/14/2007  
**Test Engineer:** Mengistu Mekuria  
**Configuration:** EUT Only  
**Mode:** PCS, TX, GPRS

**Test Equipment:**

**Receiving:** Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)  
**Substitution:** Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Channel</b>									
1.850	96.3	V	22.9	0.9	8.3	30.3	33.0	-2.7	
1.850	91.4	H	17.4	0.9	8.3	24.8	33.0	-8.2	
<b>Mid Channel</b>									
1.880	95.8	V	21.5	0.9	8.3	28.9	33.0	-4.1	
1.880	92.4	H	17.6	0.9	8.3	25.0	33.0	-8.0	
<b>High Channel</b>									
1.910	96.0	V	22.7	0.9	8.3	30.1	33.0	-2.9	
1.910	91.4	H	18.5	0.9	8.3	25.9	33.0	-7.1	

Rev. 1.24.7

**GSM1900 Band EGPRS Output Power (EIRP)**

<p align="center"><b>High Frequency Fundamental Measurement</b>  Compliance Certification Services,Fremont 5m Chamber Site</p> <p>Company: Toshiba America Information Systems, Inc.  Project #: 07U10847  Date: 02/14/2007  Test Engineer: Mengistu Mekuria  Configuration: EUT Only  Mode: PCS, TX, EGPRS</p> <p><b>Test Equipment:</b>  Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)  Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002</p>									
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Channel</b>									
1.850	93.2	V	19.8	0.9	8.3	27.2	33.0	-5.8	
1.850	88.5	H	14.6	0.9	8.3	22.0	33.0	-11.0	
<b>Mid Channel</b>									
1.880	93.0	V	18.7	0.9	8.3	26.1	33.0	-6.9	
1.880	89.6	H	14.8	0.9	8.3	22.2	33.0	-10.8	
<b>High Channel</b>									
1.910	93.5	V	20.2	0.9	8.3	27.6	33.0	-5.4	
1.910	88.8	H	16.0	0.9	8.3	23.4	33.0	-9.6	
Rev. 1.24.7									

**PCS Band WCDMA Output Power (EIRP)**

**High Frequency Fundamental Measurement**  
**Compliance Certification Services, Fremont 5m Chamber Site**

**Company:** Toshiba America Information Systems, Inc.  
**Project #:** 07U10847  
**Date:** 02/12/2007  
**Test Engineer:** Mengistu Mekuria  
**Configuration:** EUT Only  
**Mode:** PCS, TX, WCDMA-12.2K RMC

**Test Equipment:**

**Receiving:** Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)  
**Substitution:** Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Channel</b>									
1.852	91.6	V	18.2	0.9	8.3	25.6	33.0	-7.4	
1.852	90.5	H	16.6	0.9	8.3	24.0	33.0	-9.0	
<b>Mid Channel</b>									
1.880	92.0	V	17.7	0.9	8.3	25.1	33.0	-7.9	
1.880	90.3	H	15.5	0.9	8.3	22.9	33.0	-10.1	
<b>High Channel</b>									
1.908	90.5	V	17.2	0.9	8.3	24.6	33.0	-8.4	
1.908	88.7	H	15.9	0.9	8.3	23.3	33.0	-9.7	

Rev. 1.24.7



**PCS Band WCDMA + HSPDA Output Power (EIRP)**

**High Frequency Fundamental Measurement  
Compliance Certification Services, Fremont 5m Chamber Site**

Company: Toshiba America Information Systems, Inc.  
Project #: 07U10847  
Date: 02/13/2007  
Test Engineer: Mengistu Mekuria  
Configuration: EUT Only  
Mode: PCS, TX, WCDMA+ HSDPA

**Test Equipment:**

Receiving: Horn T73, and 12ft S/N: 197209005 (Setup this one for testing EUT)  
Substitution: Horn T60 Substitution, 4ft SMA Cable Warehouse S/N: 177081002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Channel</b>									
1.852	88.3	V	14.9	0.9	8.3	22.3	33.0	-10.7	
1.852	92.3	H	18.4	0.9	8.3	25.8	33.0	-7.2	
<b>Mid Channel</b>									
1.880	86.4	V	12.1	0.9	8.3	19.5	33.0	-13.5	
1.880	92.6	H	17.8	0.9	8.3	25.2	33.0	-7.8	
<b>High Channel</b>									
1.908	86.7	V	13.4	0.9	8.3	20.8	33.0	-12.2	
1.908	91.0	H	18.2	0.9	8.3	25.6	33.0	-7.4	

Rev. 1.24.7

### **7.3. FREQUENCY STABILITY**

#### **LIMIT**

§22.355 Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

For Mobile devices operating in the 824 to 849 MHz band at a power level less than or equal to 3 Watts, the limit specified in Table C-1 is +/- 2.5 ppm.

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

#### **TEST PROCEDURE**

ANSI / TIA / EIA 603 Clause 2.3.1 and 2.3.2

#### **RESULTS**

No non-compliance noted.

**GSM850MHz CELLULAR – MID CHANNEL**

Reference Frequency: CELLULAR Mid Channel 836.868893MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2092.172 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
115.00	50	836.868846	0.056	2.5
115.00	40	836.868862	0.037	2.5
115.00	30	836.868855	0.045	2.5
115.00	<b>20</b>	<b>836.868893</b>	<b>0</b>	2.5
115.00	10	836.868865	0.033	2.5
115.00	0	836.868933	-0.048	2.5
115.00	-10	836.868833	0.072	2.5
115.00	-20	836.868852	0.049	2.5
115.00	-30	836.868848	0.054	2.5
Reference Frequency: Cellular Mid Channel 836.868893MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2092.172 Hz				
DC Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>100%</b>	<b>20</b>	<b>836.868893</b>	<b>0</b>	<b>2.5</b>
85%	20	836.868875	0.022	2.5
115%	20	836.868857	0.043	2.5

**GSM1900MHz PCS – MID CHANNEL**

Reference Frequency: PCS Mid Channel 1879.863880MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4699.660 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
115.00	50	1879.863922	-0.022	2.5
115.00	40	1879.863935	-0.029	2.5
115.00	30	1879.863912	-0.017	2.5
115.00	<b>20</b>	<b>1879.863880</b>	<b>0</b>	<b>2.5</b>
115.00	10	1879.863928	-0.026	2.5
115.00	0	1879.863905	-0.013	2.5
115.00	-10	1879.863828	0.028	2.5
115.00	-20	1879.863824	0.030	2.5
115.00	-30	1879.863808	0.038	2.5

Reference Frequency: PCS Mid Channel 1879.863880MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4699.660 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>100%</b>	<b>20</b>	<b>1879.863880</b>	<b>0</b>	<b>2.5</b>
85%	20	1879.863858	0.012	2.5
115%	20	1879.863846	0.018	2.5

**WCDMA 850MHz CELLULAR – MID CHANNEL**

Reference Frequency: CELLULAR Mid Channel 834.1126253MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2085.316 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
115.00	50	834.126293	-0.048	2.5
115.00	40	834.126288	-0.042	2.5
115.00	30	834.126280	-0.032	2.5
115.00	<b>20</b>	<b>834.126253</b>	<b>0</b>	2.5
115.00	10	834.126267	-0.017	2.5
115.00	0	834.126283	-0.036	2.5
115.00	-10	834.126238	0.018	2.5
115.00	-20	834.126205	0.058	2.5
115.00	-30	834.126198	0.066	2.5
Reference Frequency: Cellular Mid Channel 834.126253MHz @ 20°C				
Limit: to stay +/- 2.5 ppm = 2085.316 Hz				
DC Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>100%</b>	<b>20</b>	<b>834.126253</b>	<b>0</b>	<b>2.5</b>
85%	20	834.126278	-0.030	2.5
115%	20	834.126276	-0.028	2.5

**WCDMA 1900MHz PCS – MID CHANNEL**

Reference Frequency: PCS Mid Channel 1877.765224MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4694.413 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
115.00	50	1877.765120	0.055	2.5
115.00	40	1877.765195	0.015	2.5
115.00	30	1877.765220	0.002	2.5
115.00	<b>20</b>	<b>1877.765224</b>	<b>0</b>	<b>2.5</b>
115.00	10	1877.765275	-0.027	2.5
115.00	0	1877.765330	-0.056	2.5
115.00	-10	1877.765262	-0.020	2.5
115.00	-20	1877.765268	-0.023	2.5
115.00	-30	1877.765257	-0.018	2.5

Reference Frequency: PCS Mid Channel 1877.765224MHz @ 20°C				
Limit: within the authorized block or +/- 2.5 ppm = 4694.413 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
<b>100%</b>	<b>20</b>	<b>1877.765224</b>	<b>0</b>	<b>2.5</b>
85%	20	1877.765346	-0.065	2.5
115%	20	1877.765188	0.019	2.5

## 7.4. MAXIMUM PERMISSIBLE EXPOSURE

### LIMITS

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	30

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
30–300 .....	27.5	0.073	0.2	30
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

f = frequency in MHz

\* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

## **CALCULATIONS**

Given

$$E = \sqrt{(30 * P * G) / d}$$

and

$$S = E^2 / 3770$$

where

E = Field Strength in Volts/meter

P = Power in Watts

G = Numeric antenna gain

d = Distance in meters

S = Power Density in milliwatts/square centimeter

Combining equations and rearranging the terms to express the distance as a function of the remaining variables yields:

$$d = \sqrt{((30 * P * G) / (3770 * S))}$$

Changing to units of Power to mW and Distance to cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = 100 * d \text{ (m)}$$

yields

$$d = 100 * \sqrt{((30 * (P / 1000) * G) / (3770 * S))}$$

$$d = 0.282 * \sqrt{(P * G / S)}$$

where

d = distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power Density in mW/cm<sup>2</sup>

Substituting the logarithmic form of power and gain using:

$$P \text{ (mW)} = 10^{(P \text{ (dBm)} / 10)} \text{ and}$$

$$G \text{ (numeric)} = 10^{(G \text{ (dBi)} / 10)}$$

yields

$$d = 0.282 * 10^{((P + G) / 20)} / \sqrt{S} \quad \text{Equation (1)}$$

where

d = MPE distance in cm

P = Power in dBm

G = Antenna Gain in dBi

S = Power Density Limit in mW/cm<sup>2</sup>

Equation (1) and the measured peak power is used to calculate the MPE distance.



## **LIMITS**

From §1.1310 Table 1 (B),  $S = 1.0 \text{ mW/cm}^2$

## **RESULTS**

No non-compliance noted: (MPE distance equals 20 cm)

<b>Mode</b>	<b>MPE Distance (cm)</b>	<b>Output Power (dBm)</b>	<b>Antenna Gain (dBi)</b>	<b>Power Density (mW/cm<sup>2</sup>)</b>
GSM850MHz Celllar	20.0	32.25	-1.38	0.24
GSM1900 MHz PCS	20.0	29.26	0.46	0.19
WCDMA+HSPDA Celllar	20.0	26.54	-1.38	0.07
WCDMA+HSPDA PCS	20.0	26.27	0.46	0.09

NOTE: For mobile or fixed location transmitters, the minimum separation distance is 20 cm, even if calculations indicate that the MPE distance would be less.

## **7.5. SPURIOUS EMISSION AT ANTENNA TERMINAL**

### **LIMIT**

§22.917 (e) Out of band emissions. 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.

### **TEST PROCEDURE**

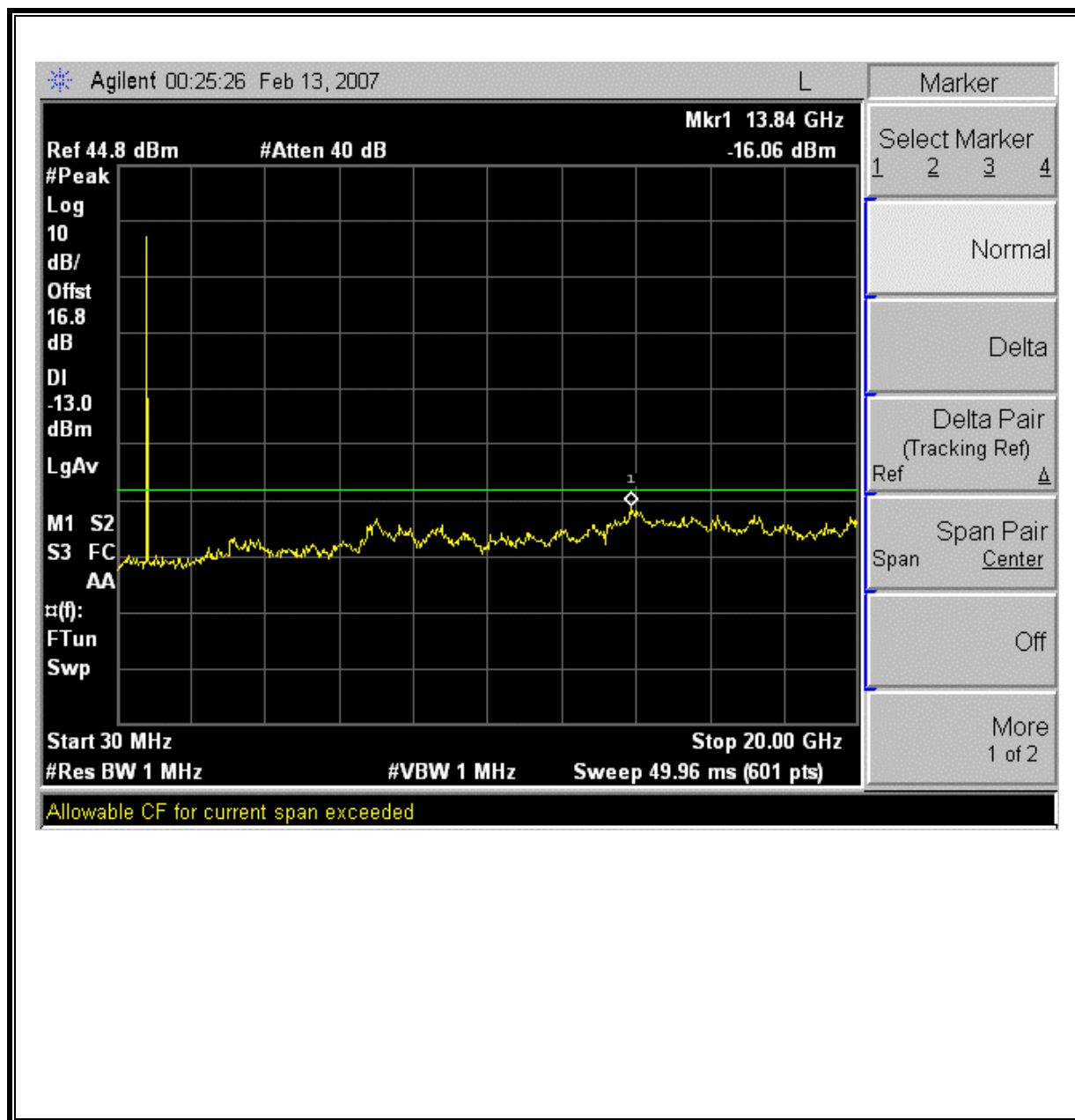
ANSI / TIA / EIA 603 Clause 3.2.13 & FCC 22.917 (h)

### **RESULTS**

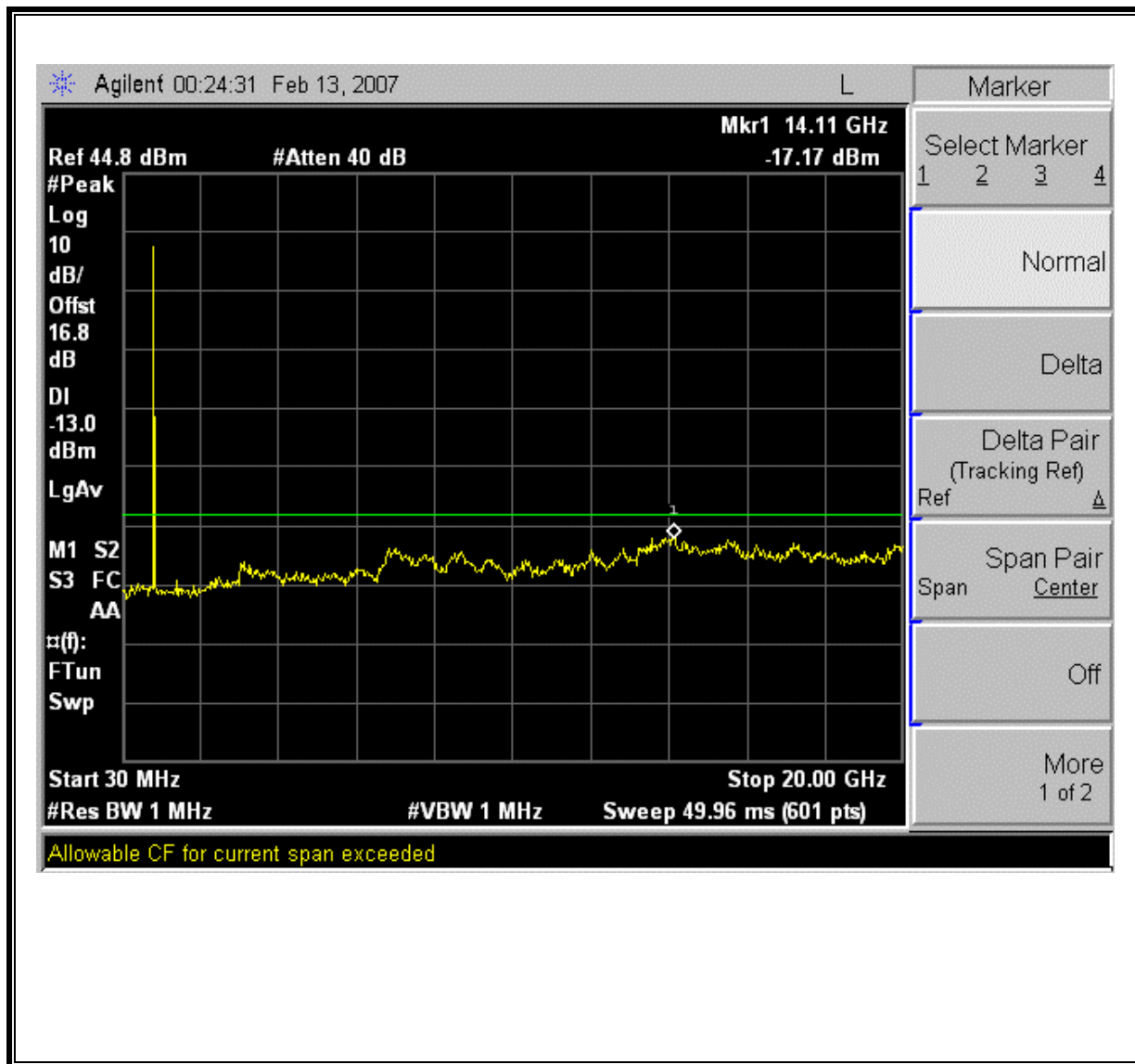
No non-compliance noted.

## GSM850 GPRS MODULATION RESULTS

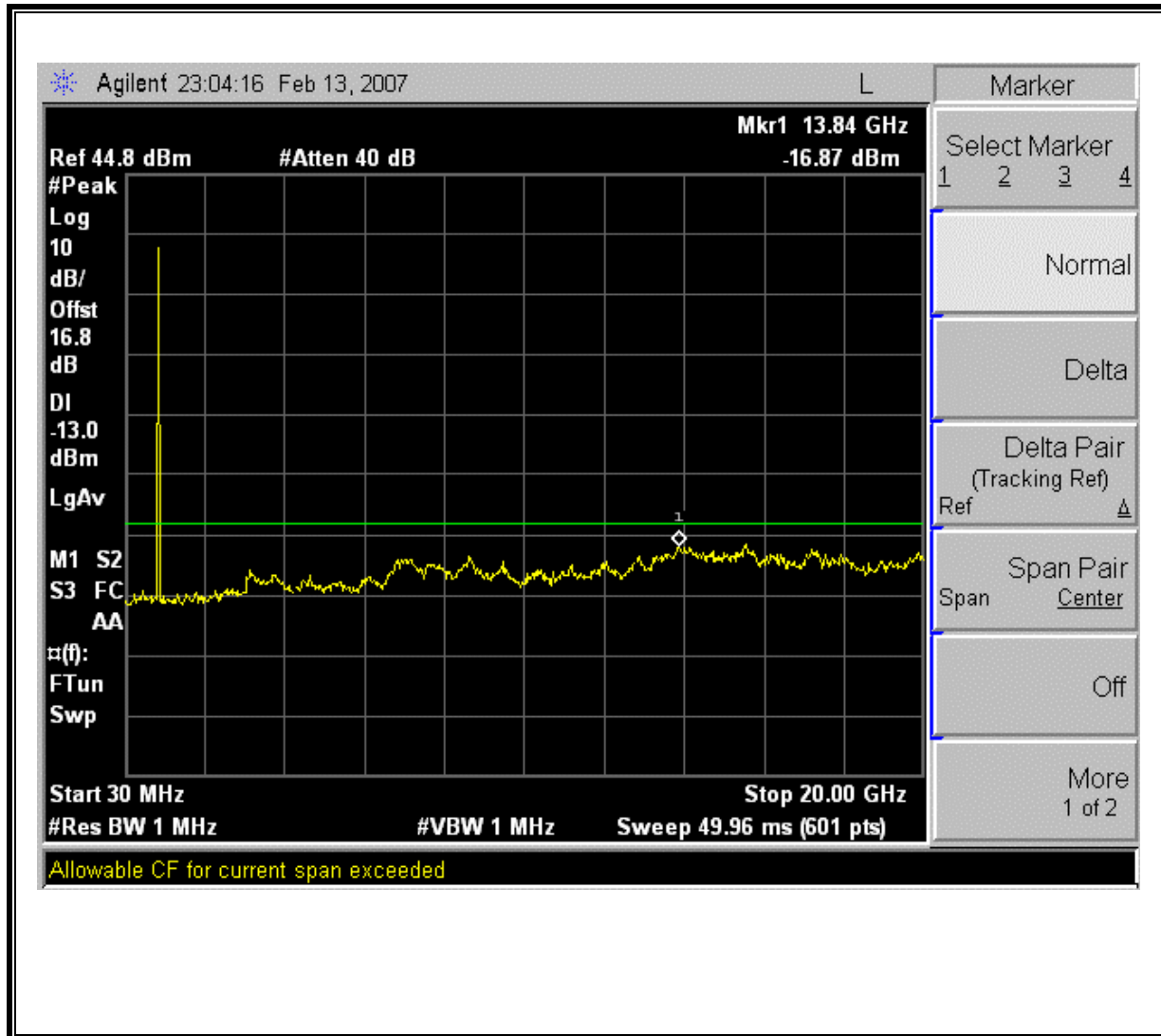
### Low Channel, Out-Of-Band Emissions



**Mid Channel, Out-Of-Band Emissions**

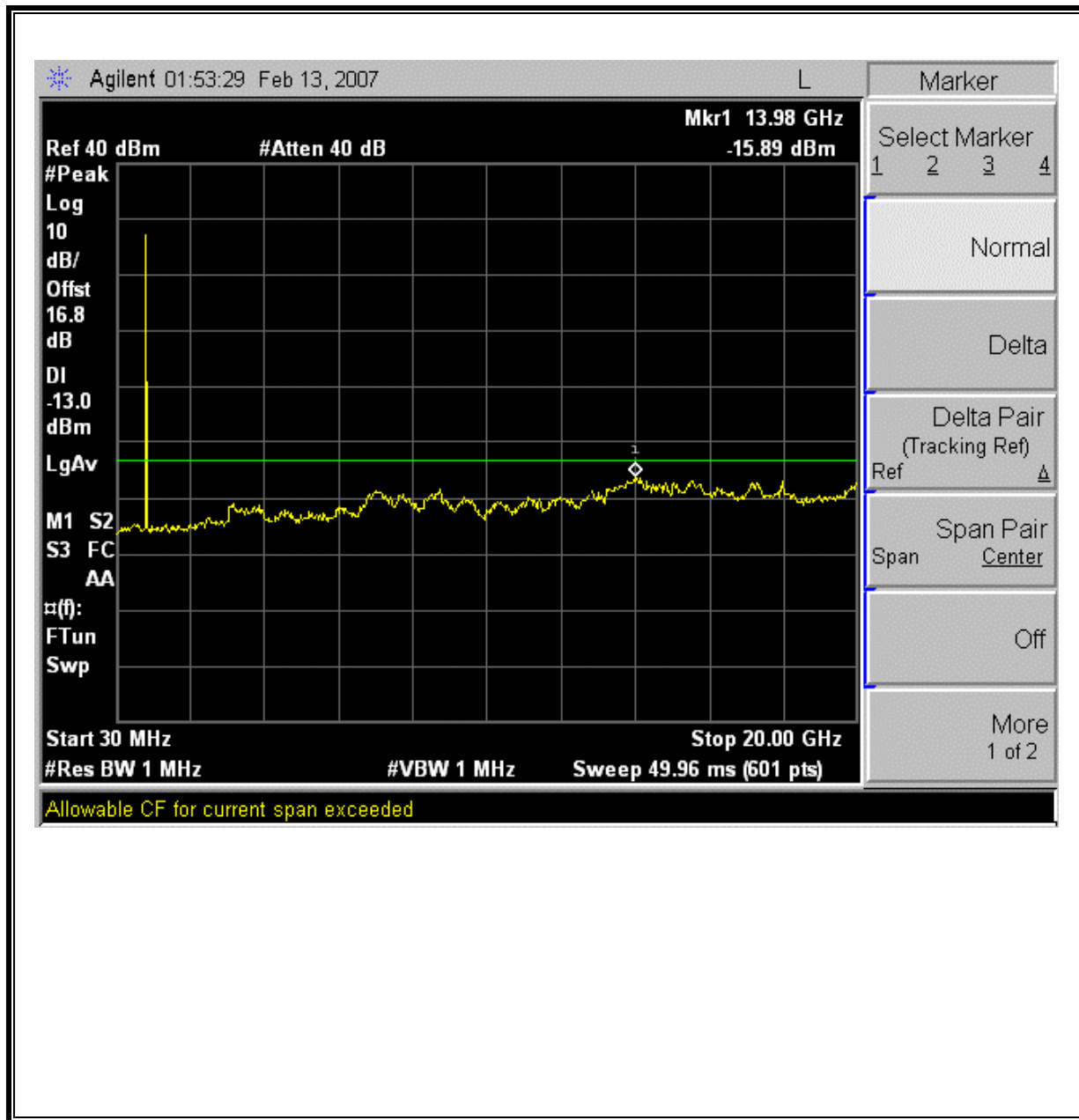


**High Channel, Out-Of-Band Emissions**

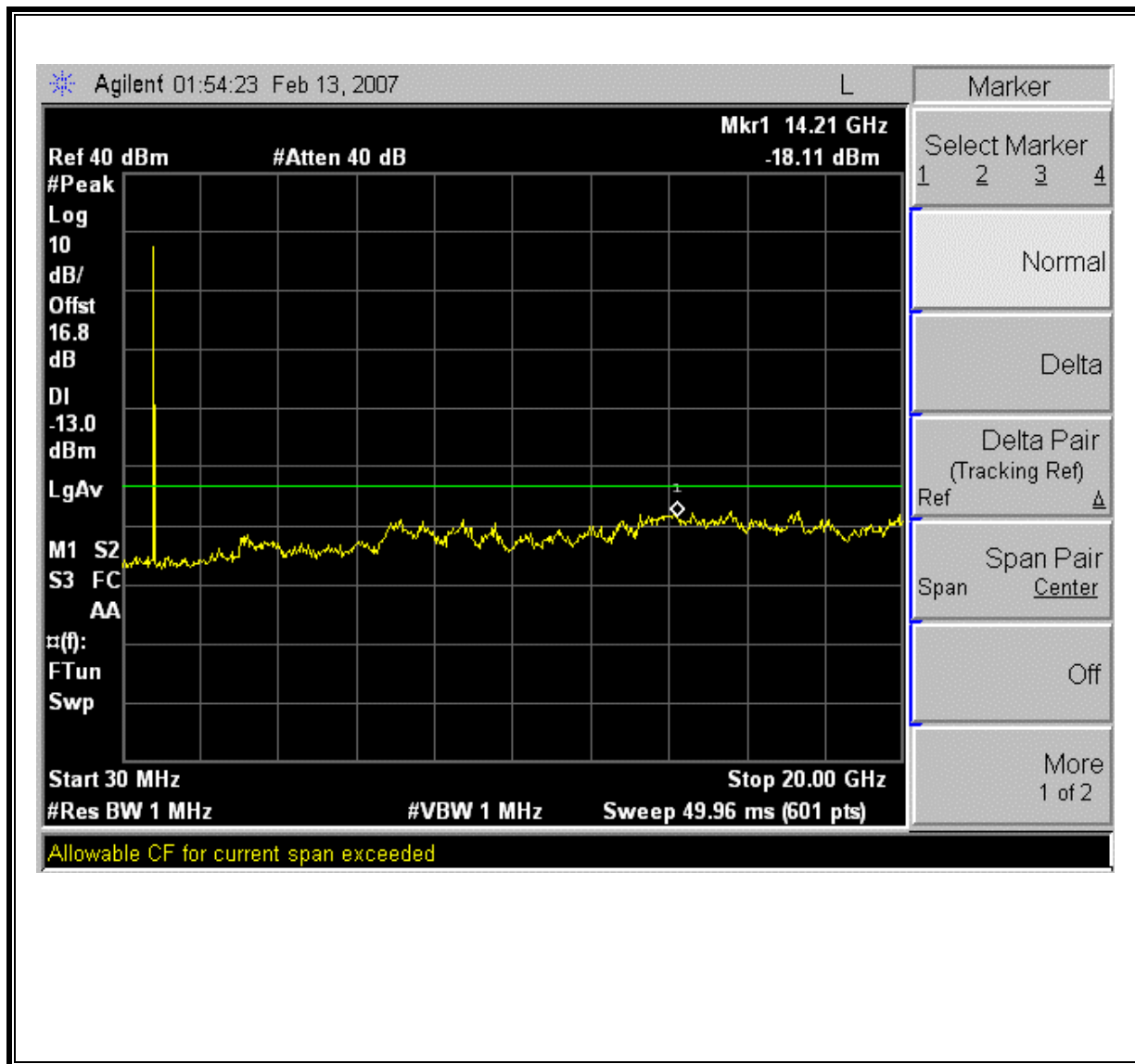


**GSM850 EGPRS Modulation:**

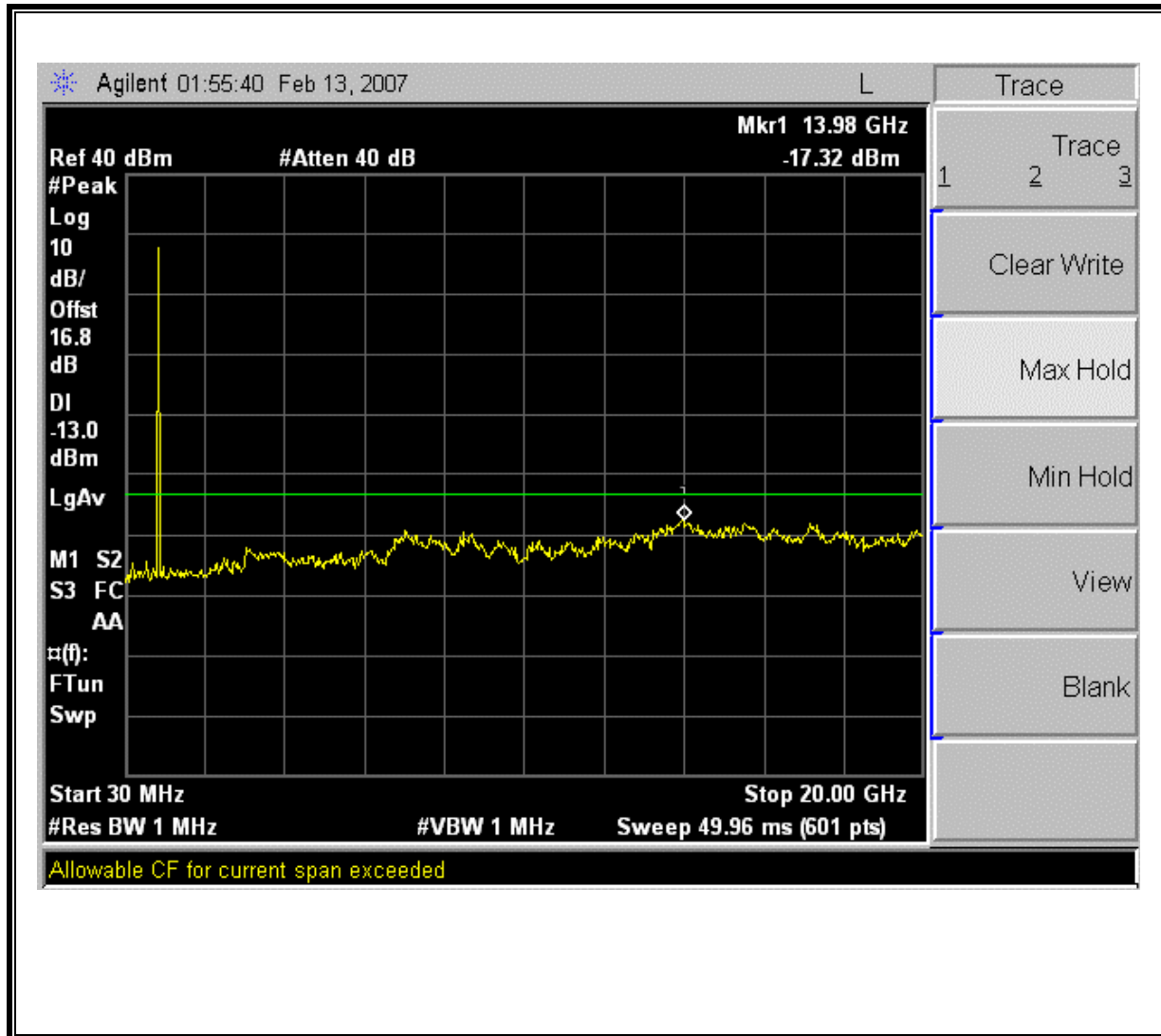
**Low Channel, Out-Of-Band Emissions**



**Mid Channel, Out-Of-Band Emissions**

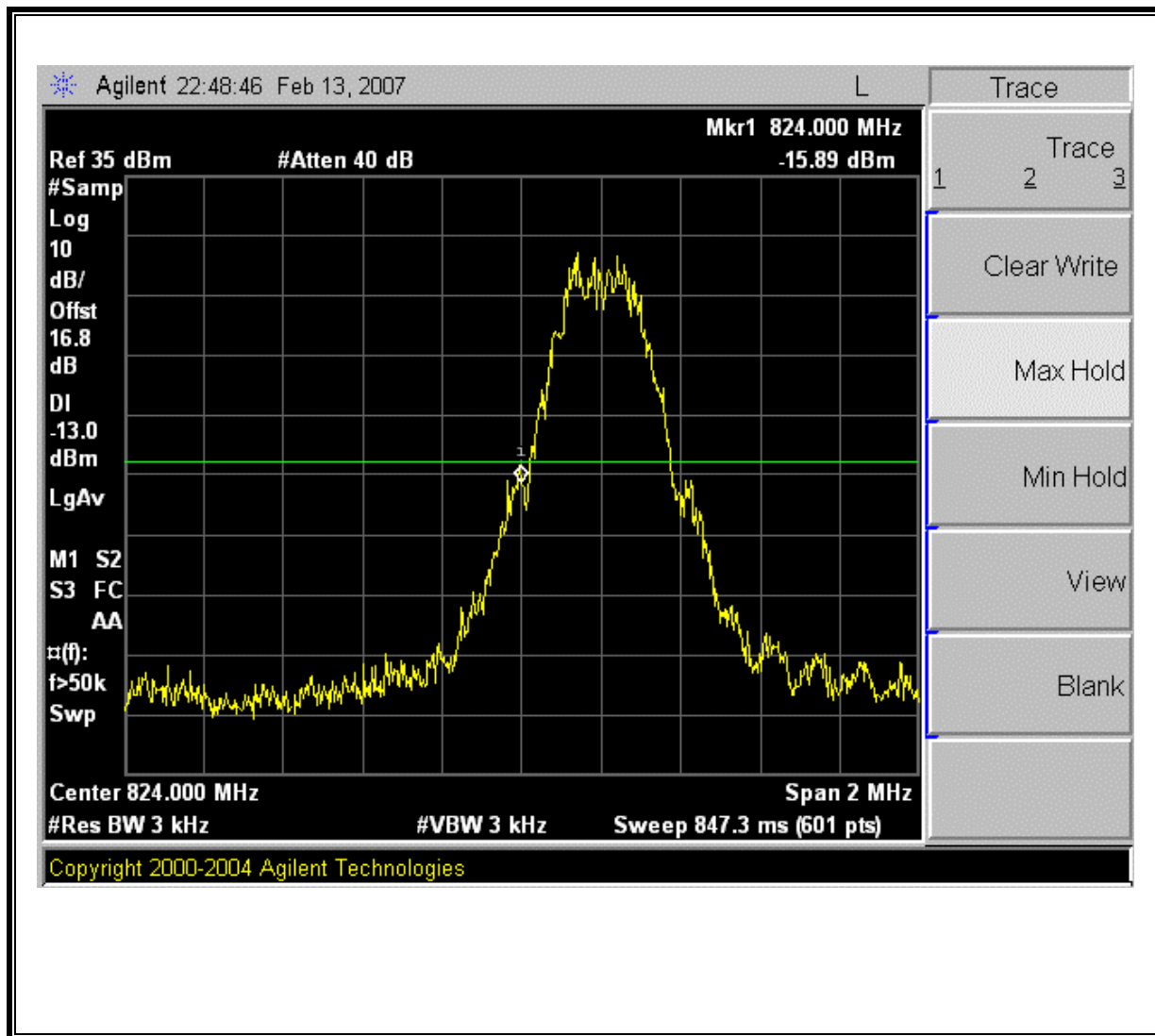


**High Channel, Out-Of-Band Emissions**

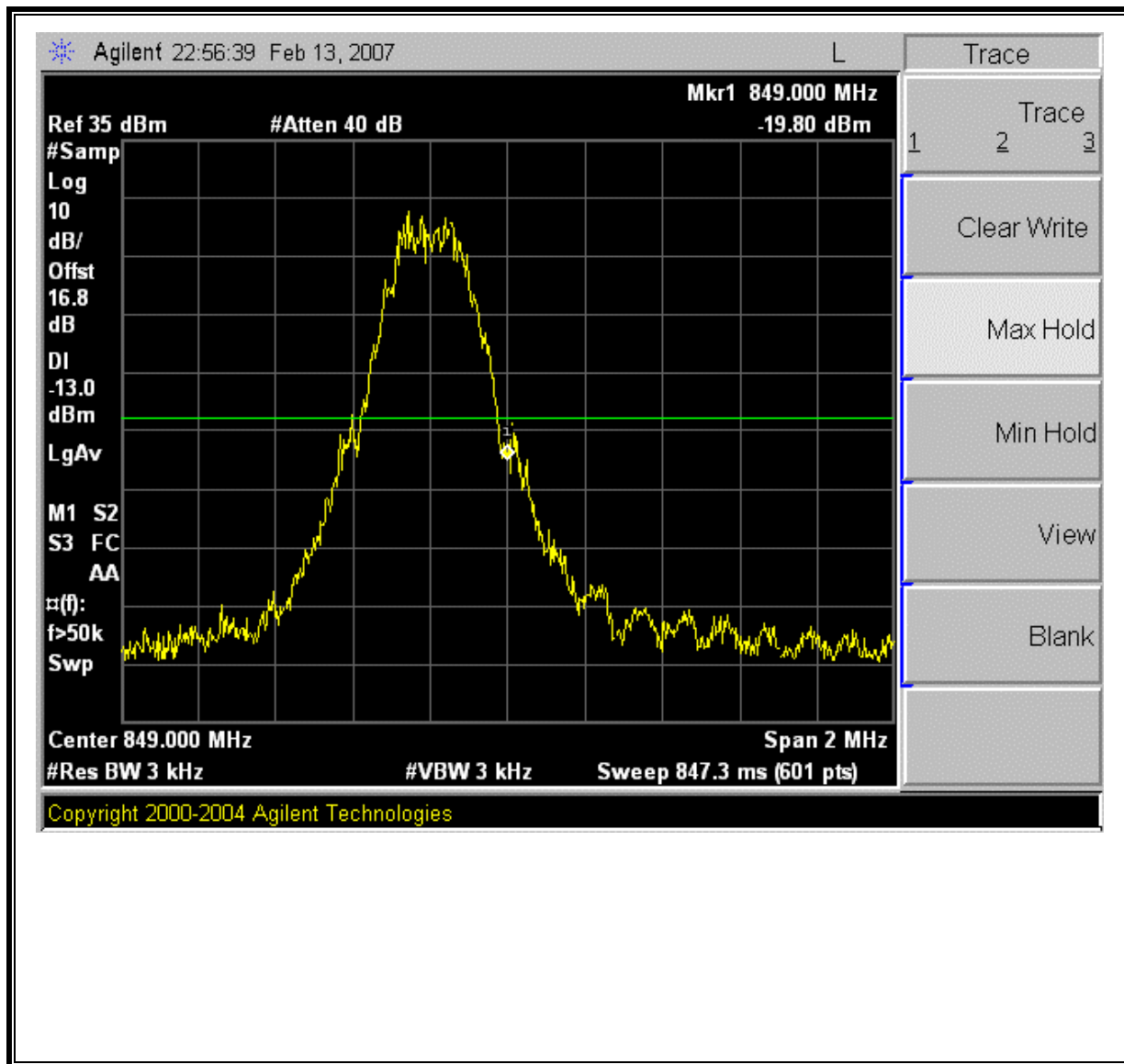




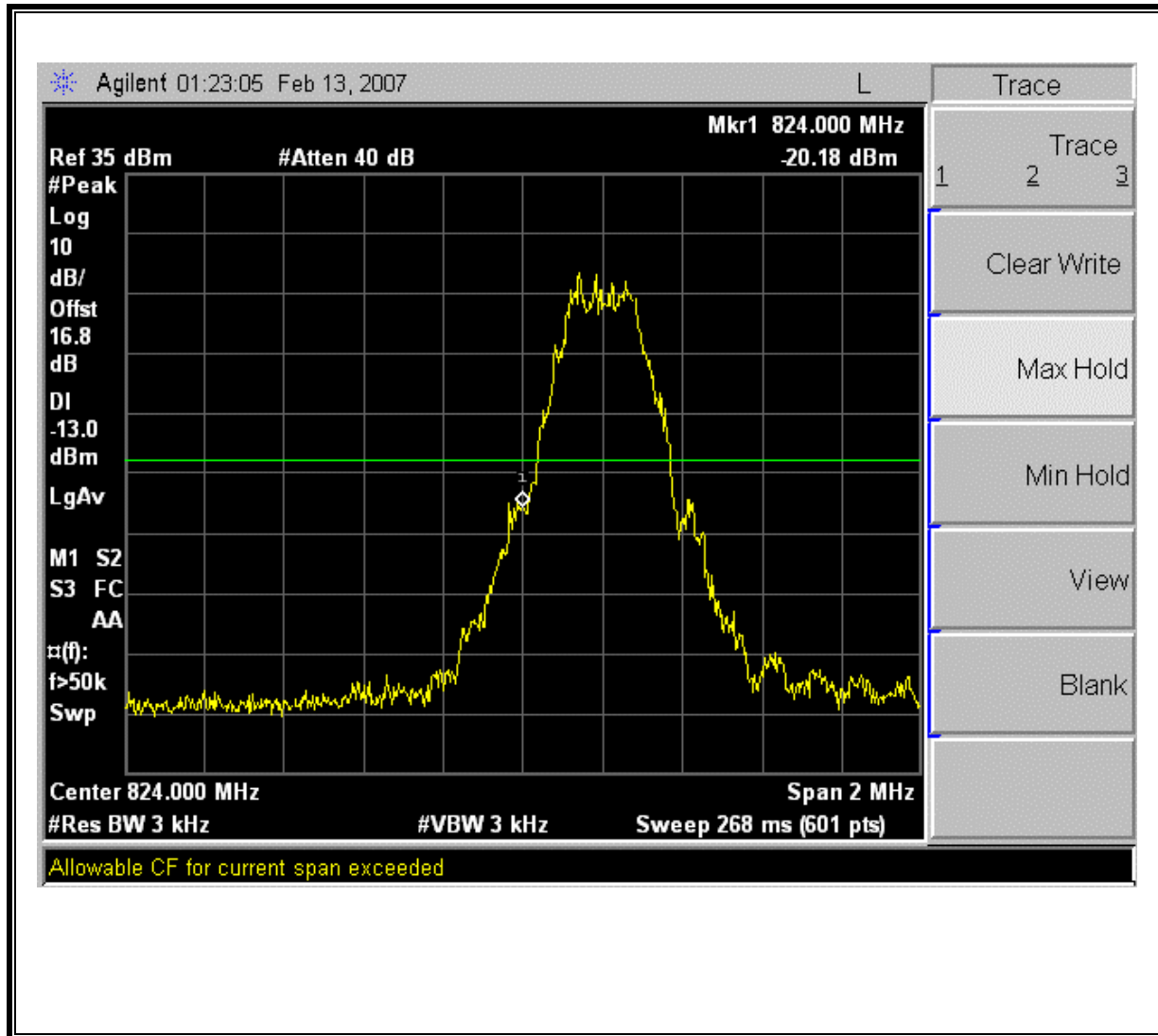
**GSM850 GPRS Modulation: Low Channel Band Edge**



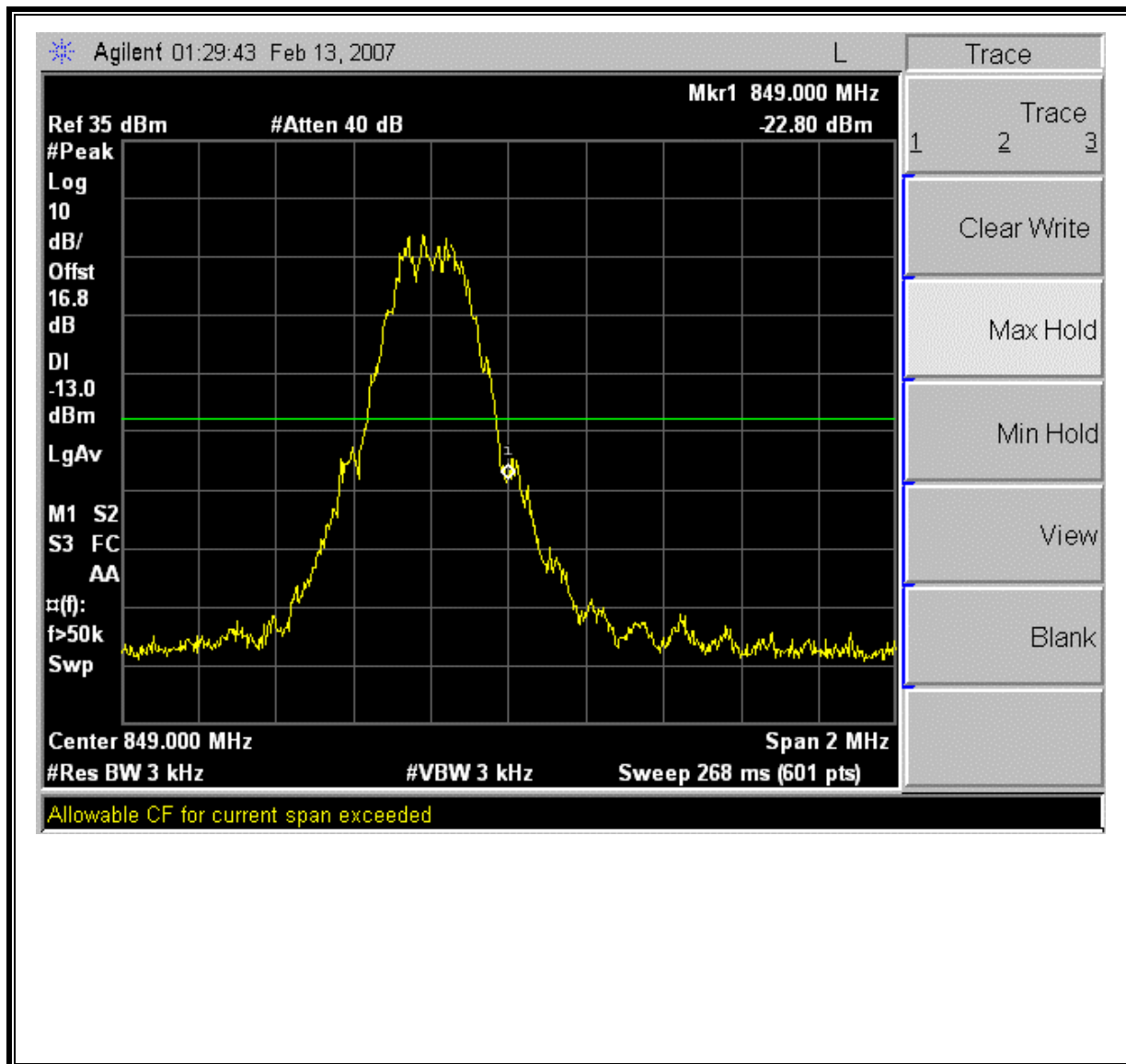
**GSM850 GPRS Modulation High Channel Band Edge**



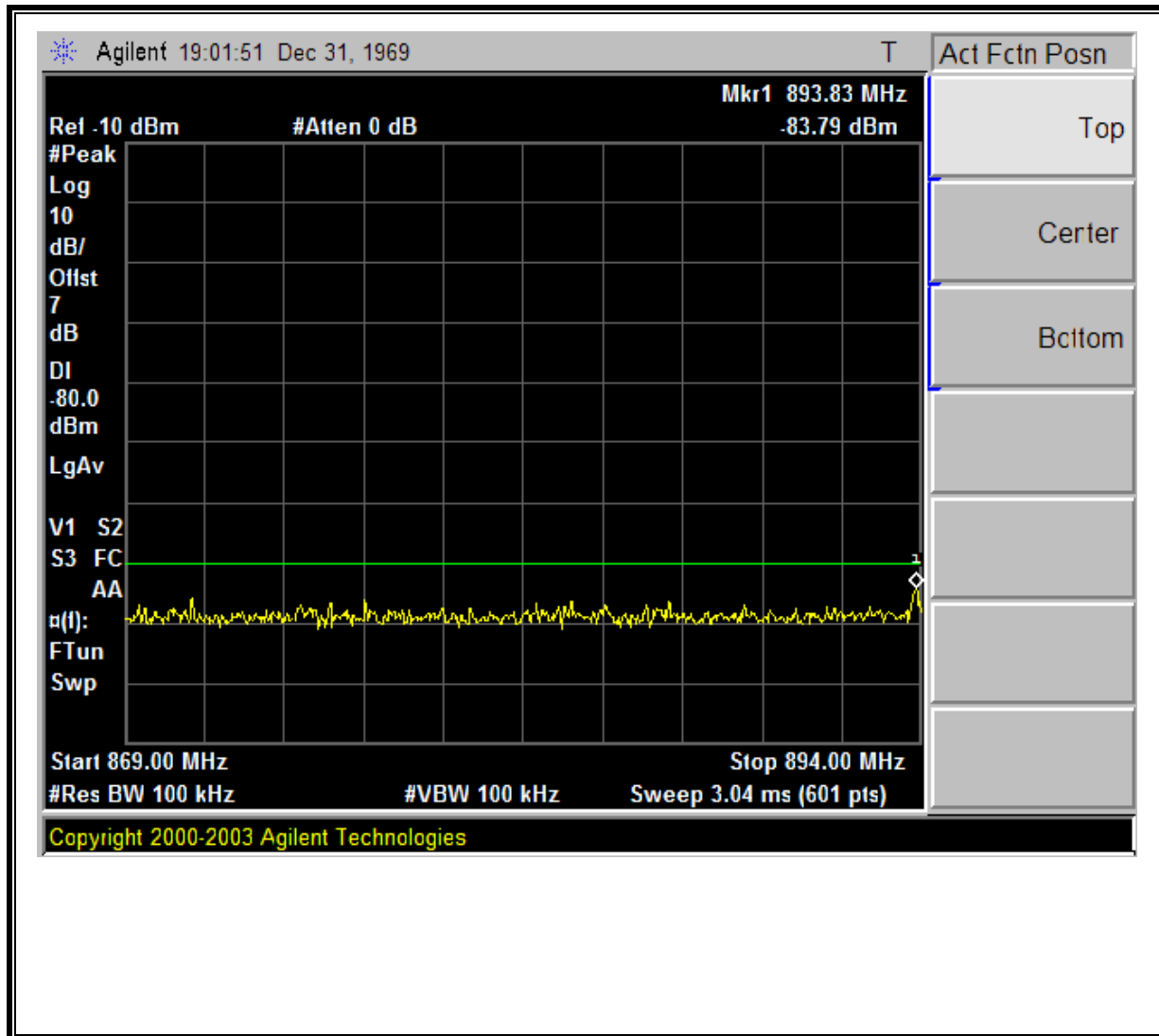
**GSM850 EGPRS Modulation: Low Channel Band Edge**



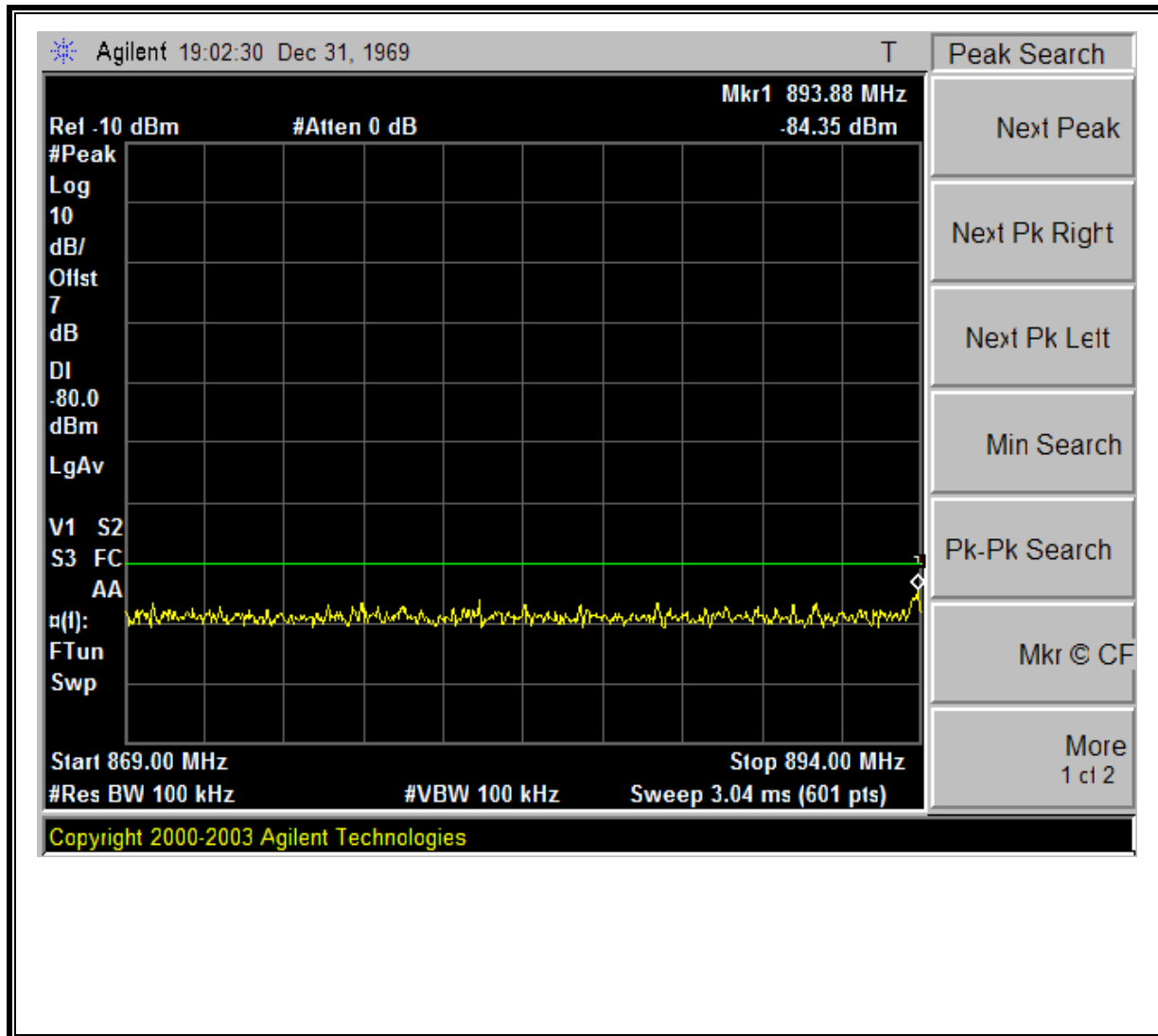
**GSM850 EGPRS Modulation High Channel Band Edge**



**GSM850 GPRS Mobile Emissions in Base Frequency Range**

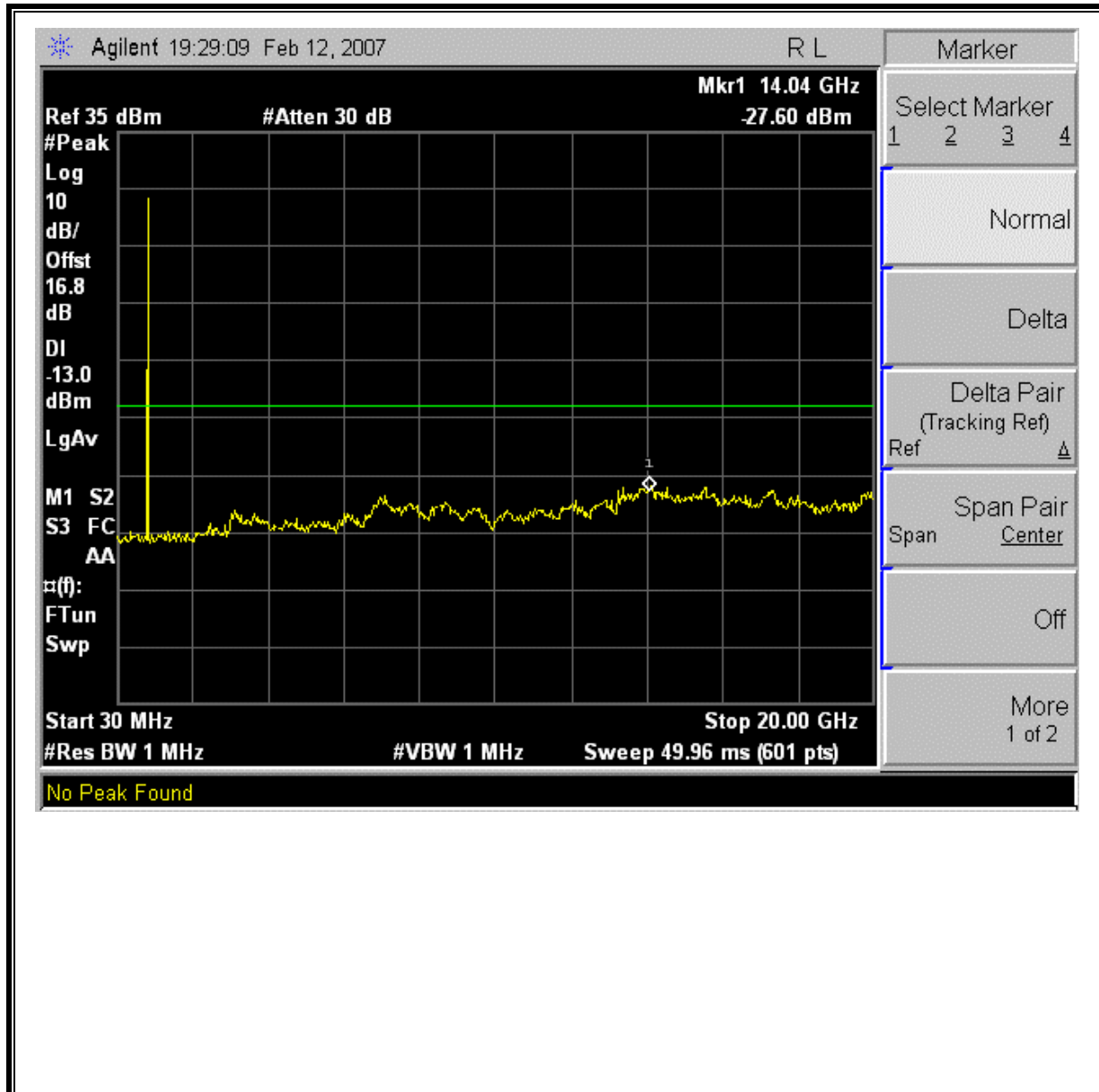


**GSM850 EGPRS Mobile Emissions in Base Frequency Range**

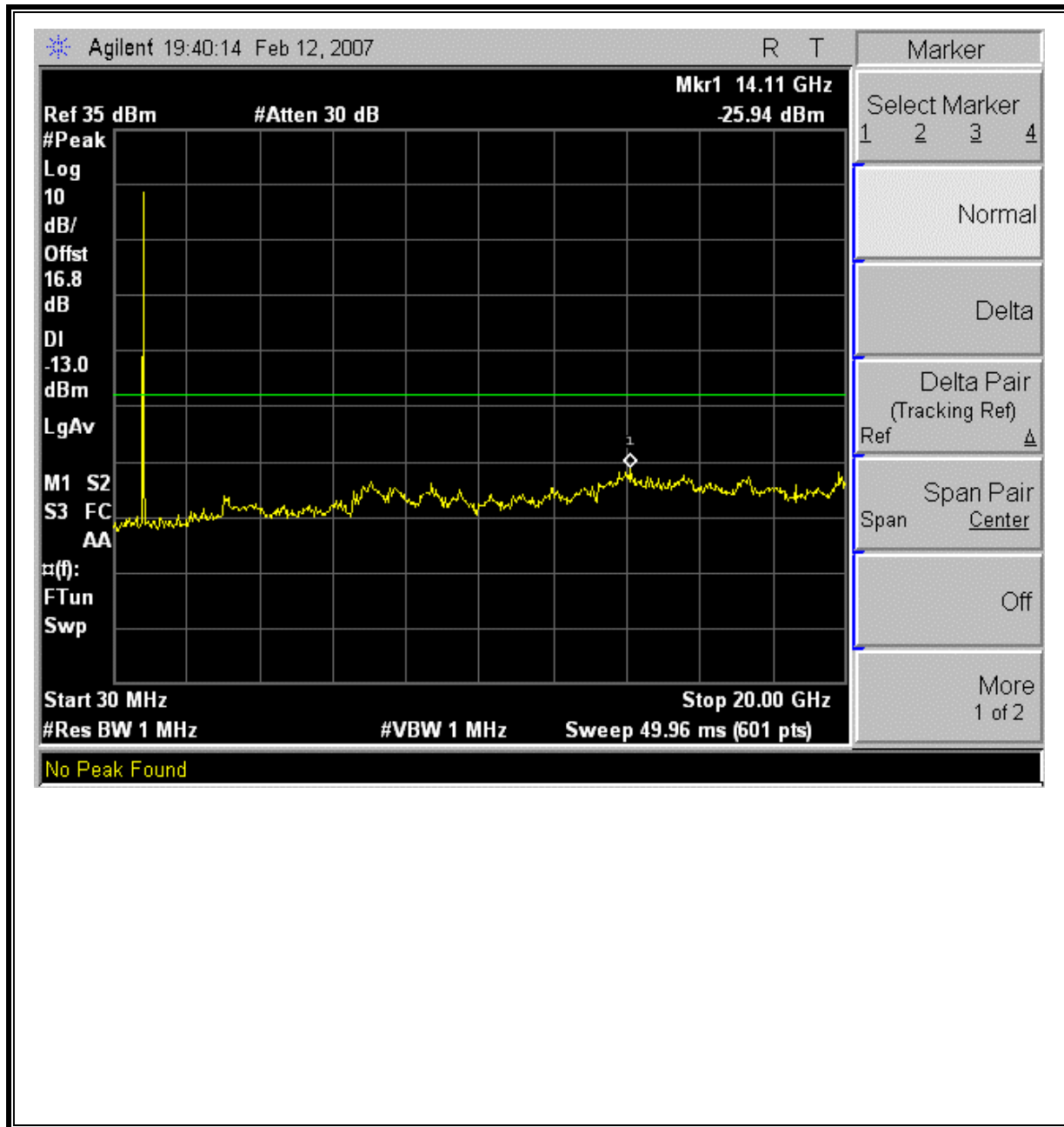


## WCDMA MODULATION RESULTS

### Low Channel Out-Of-Band Emissions

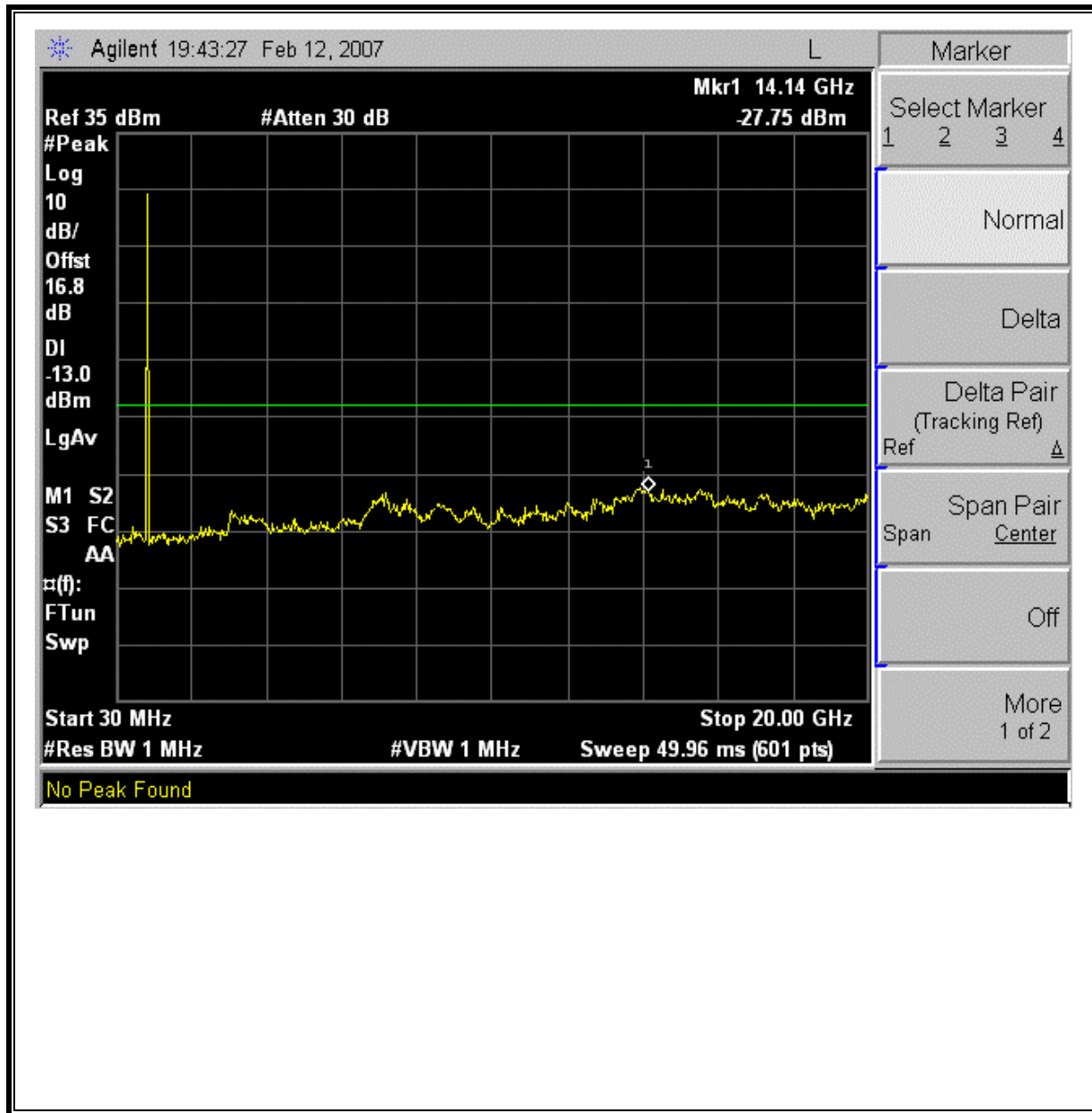


**Mid Channel Out-Of-Band Emissions**

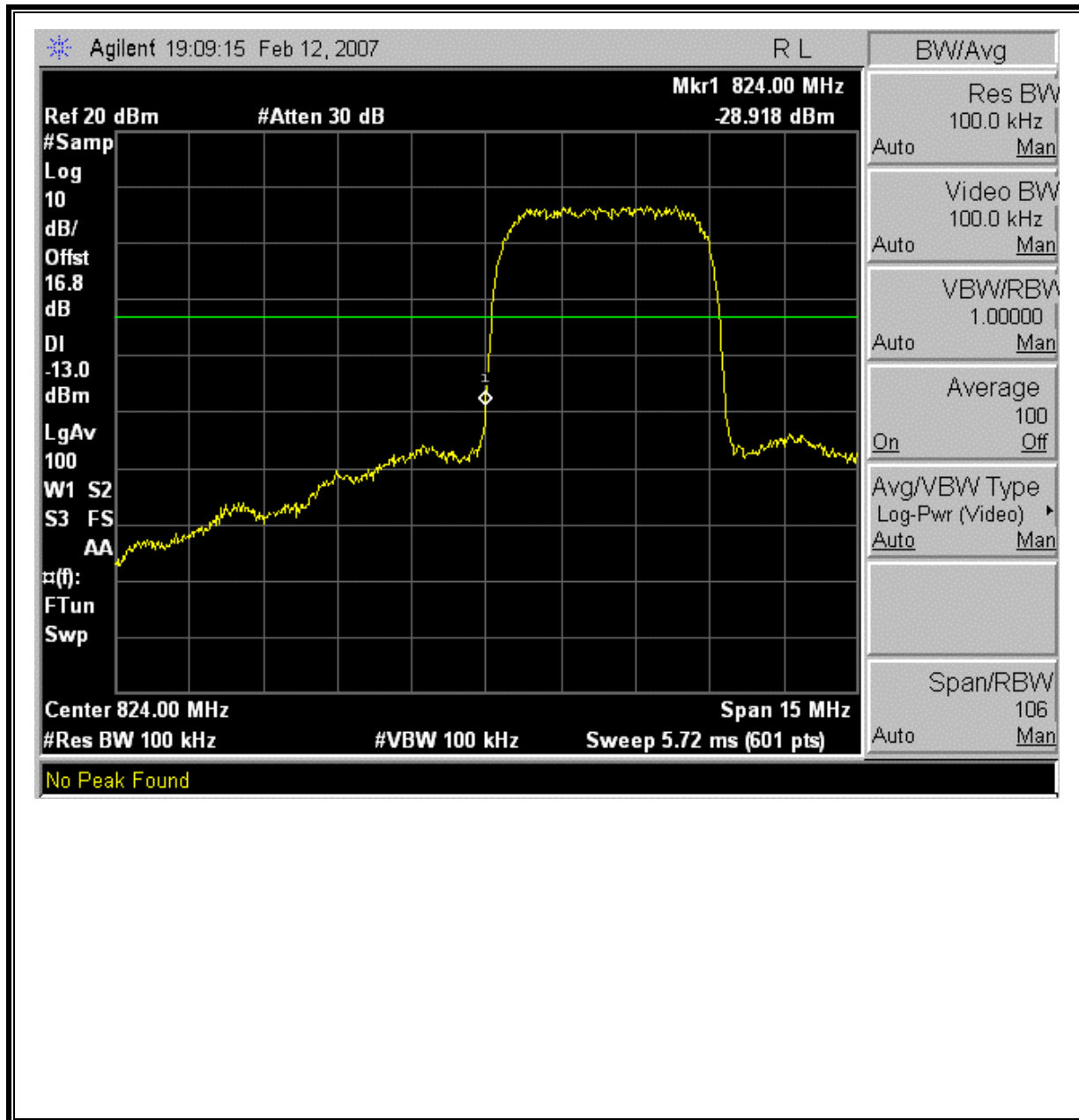




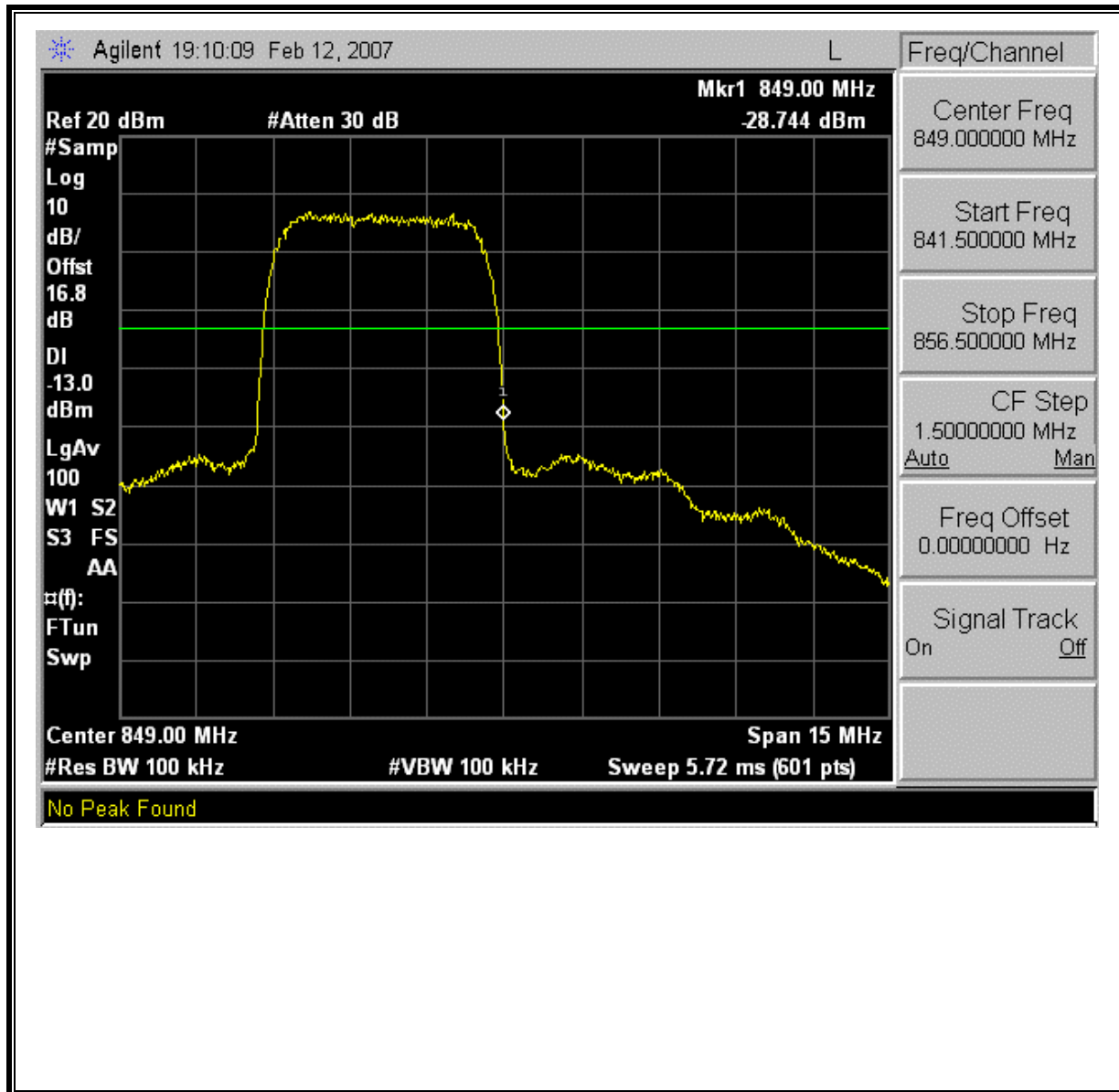
**High Channel Out-Of-Band Emissions**



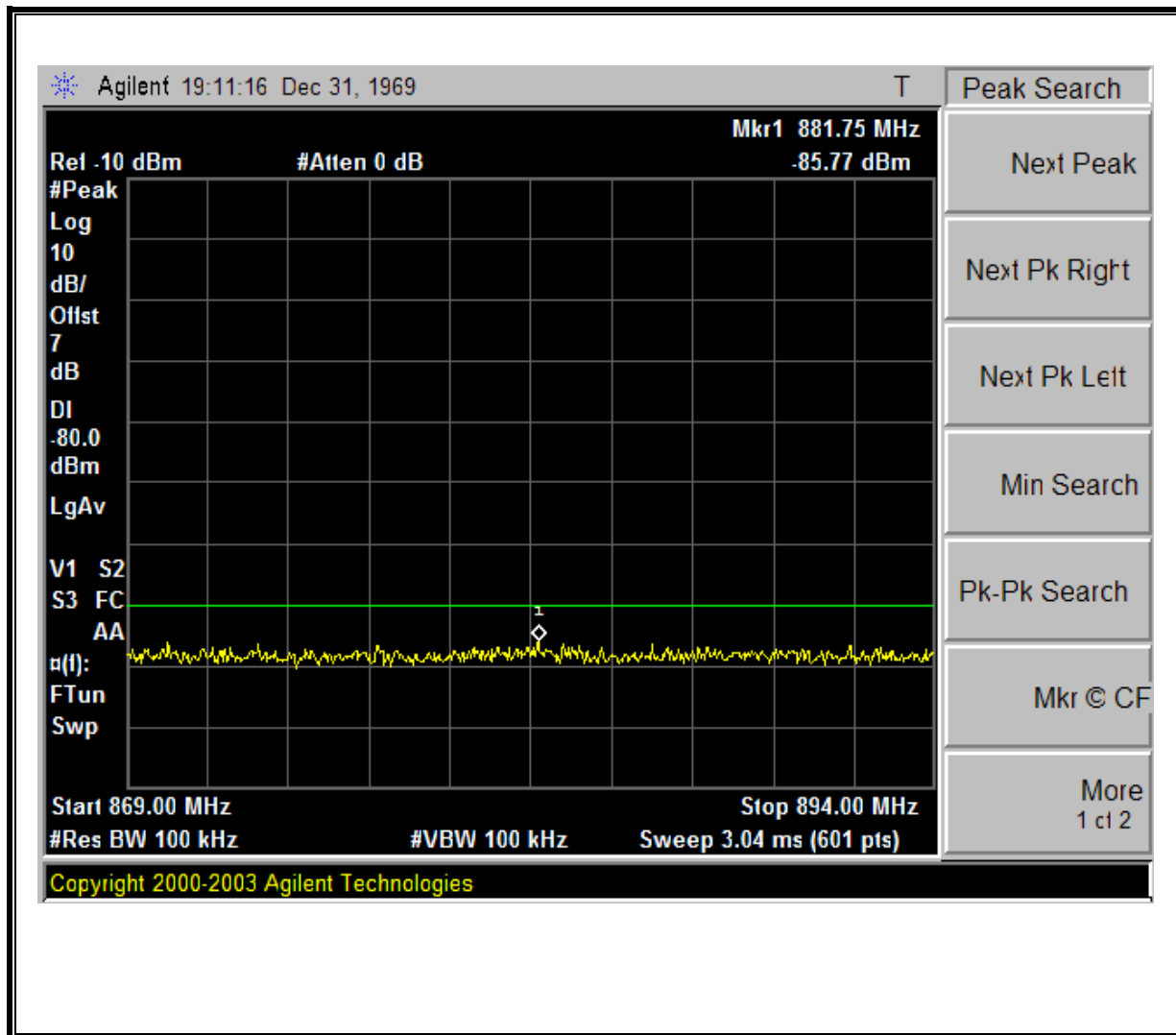
**WCDMA Modulation: Low Channel Band Edge**



**WCDMA Modulation: High Channel Band Edge**

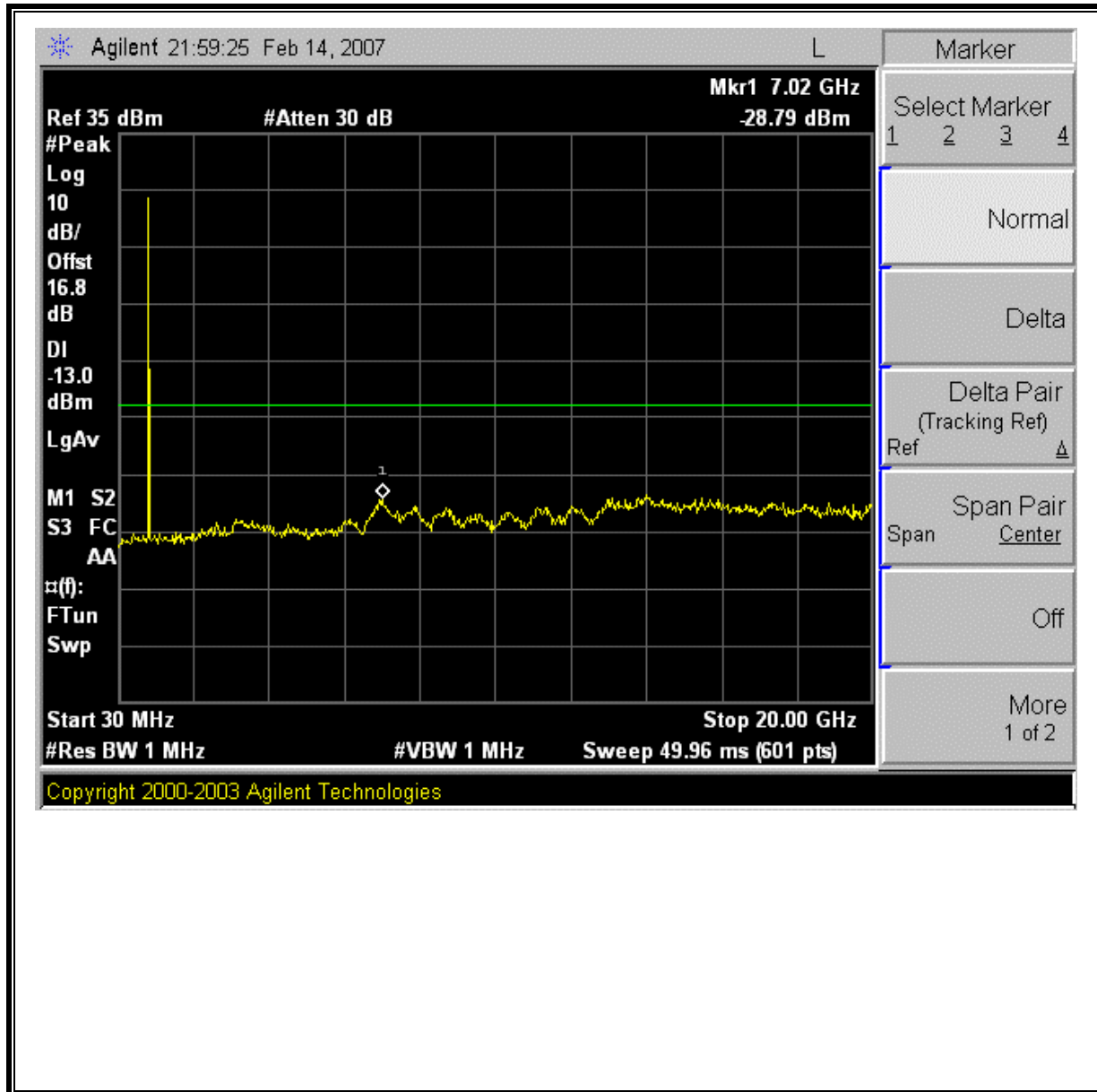


**Cell Band WCDMA Mobile Emissions in Base Frequency Range**

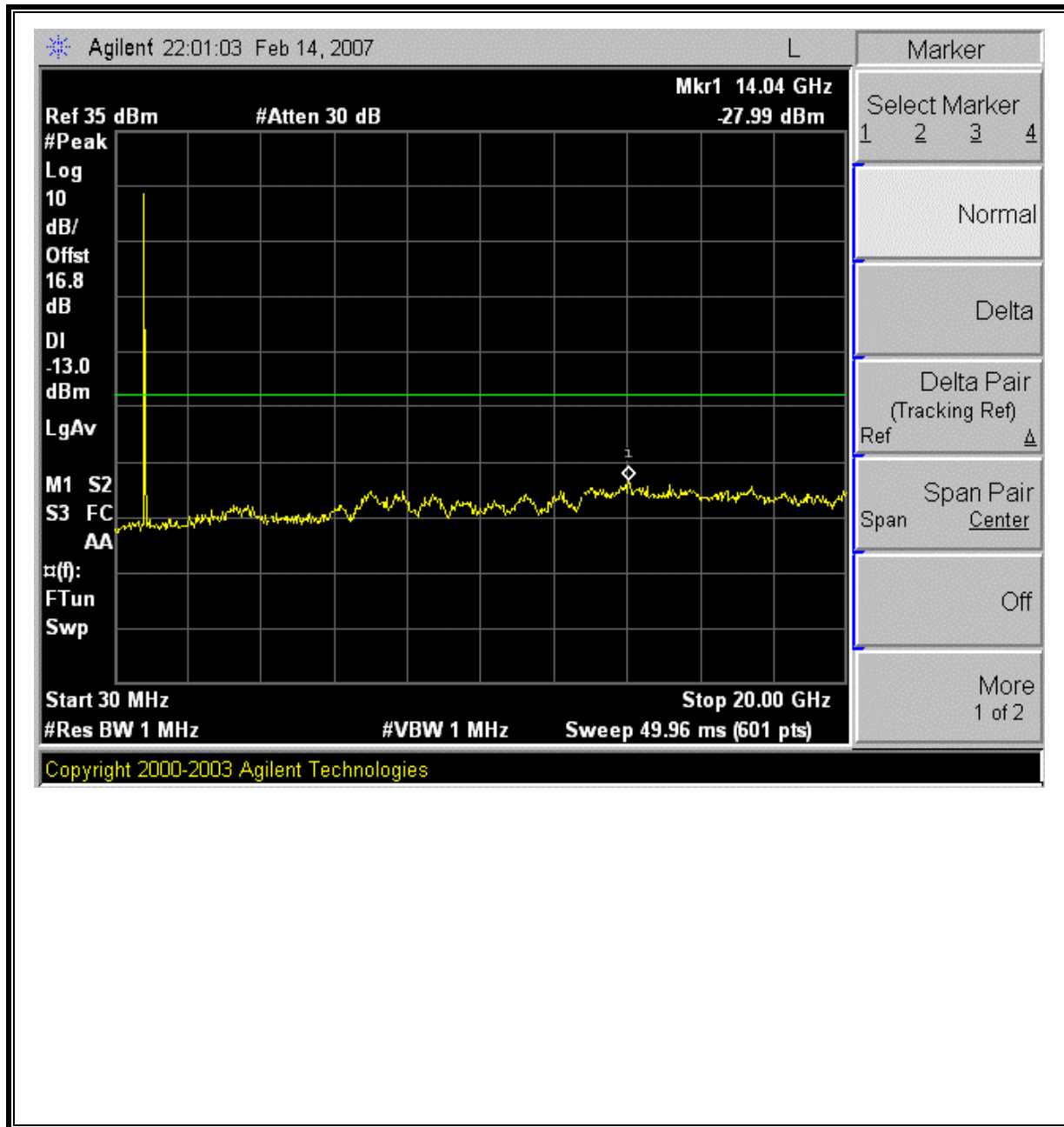


**CELL Band WCDMA+HSPDA Modulation**

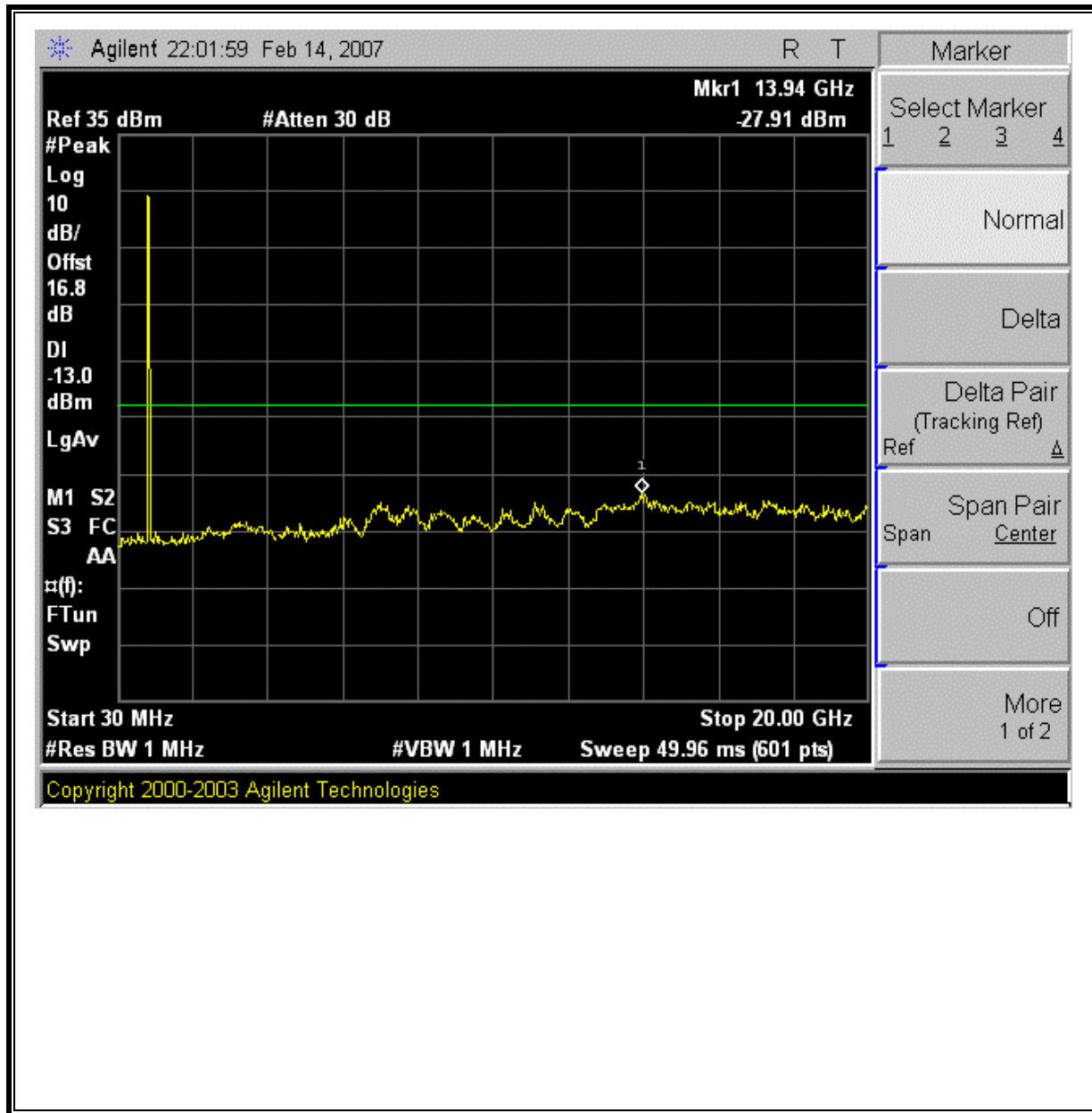
**Low Channel Out-Of-Band Emissions**



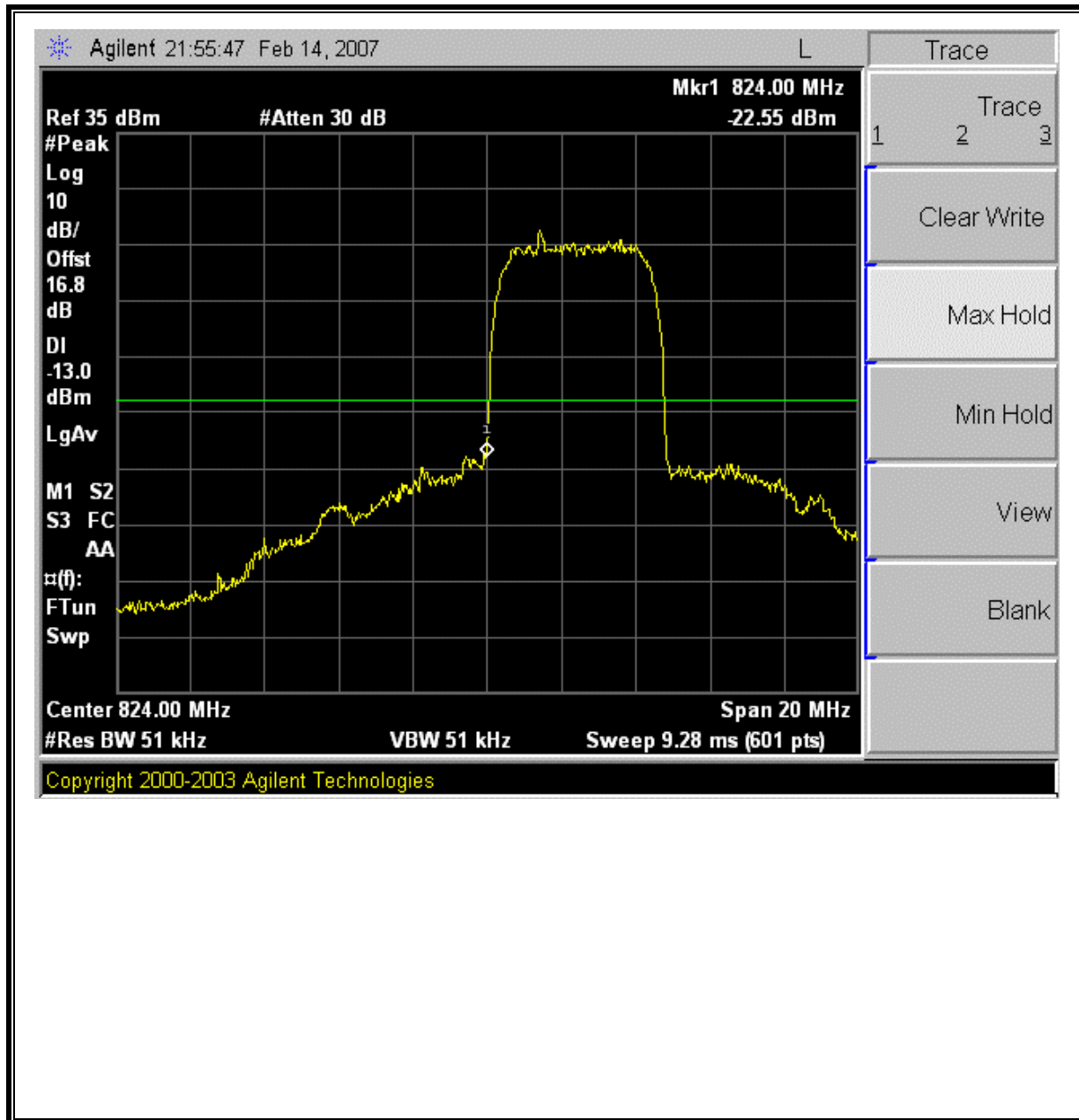
**Mid Channel Out-Of-Band Emissions**



**High Channel Out-Of-Band Emissions**

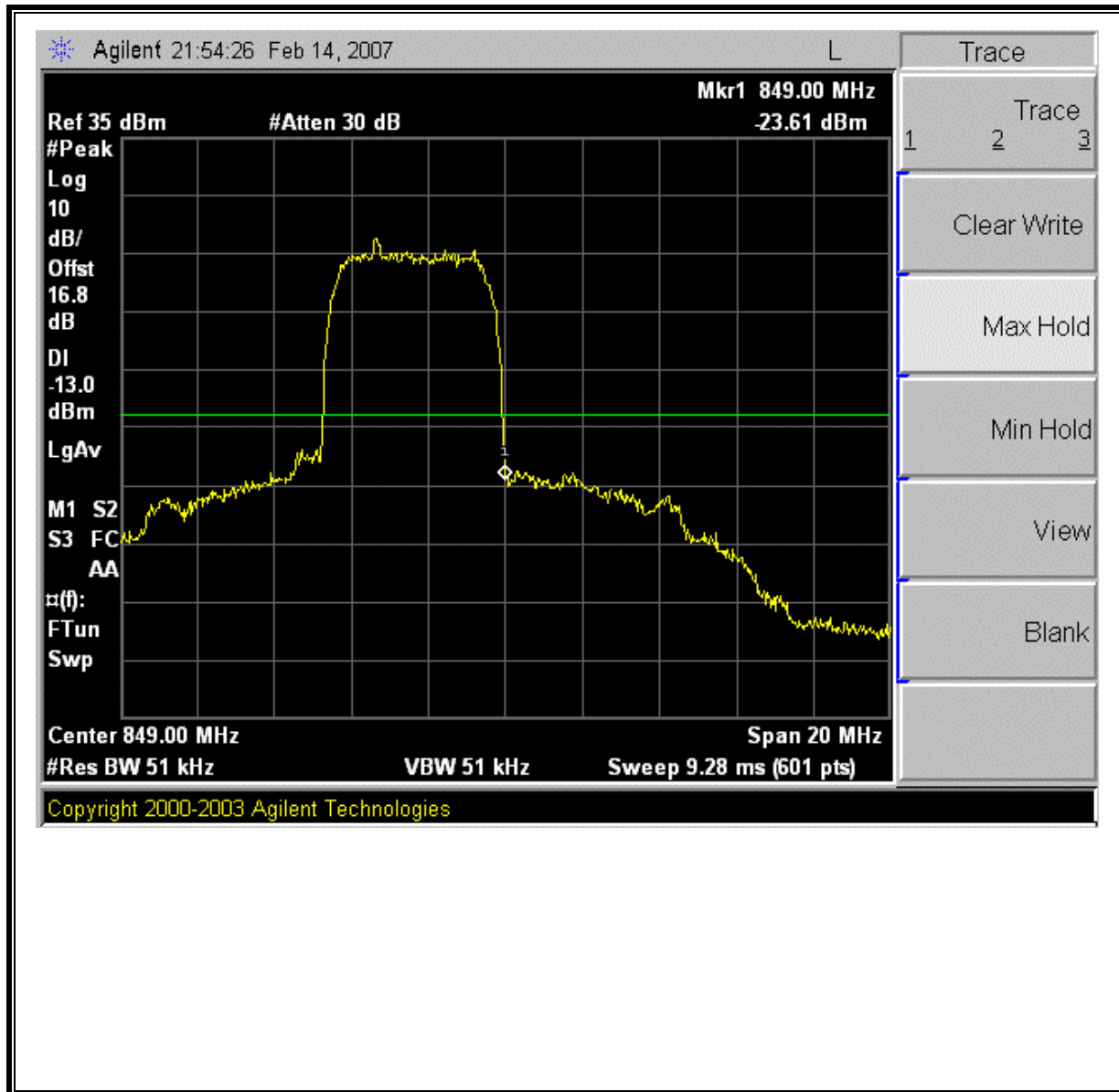


**Low Channel Band Edge**

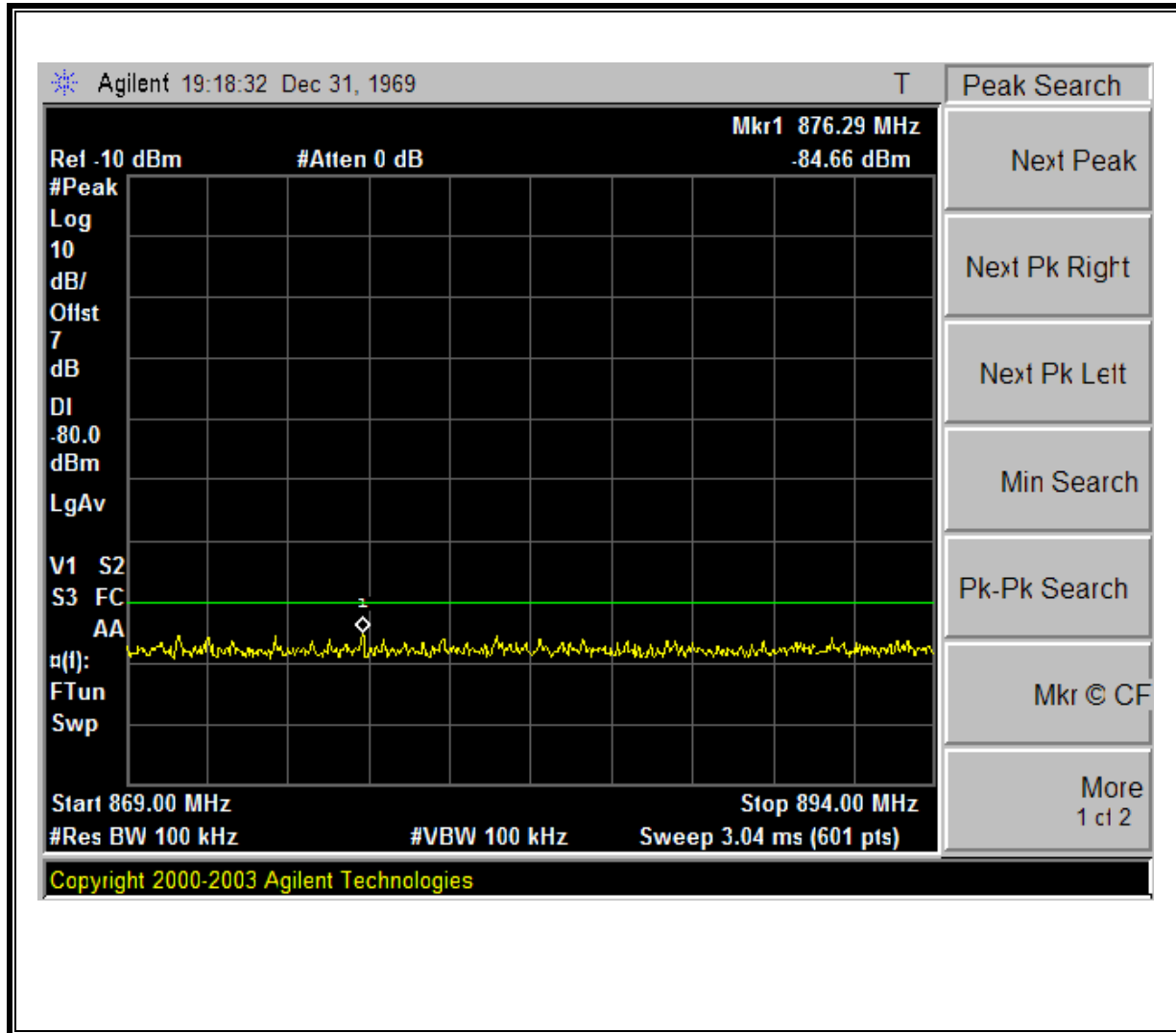




**High Channel Band Edge**

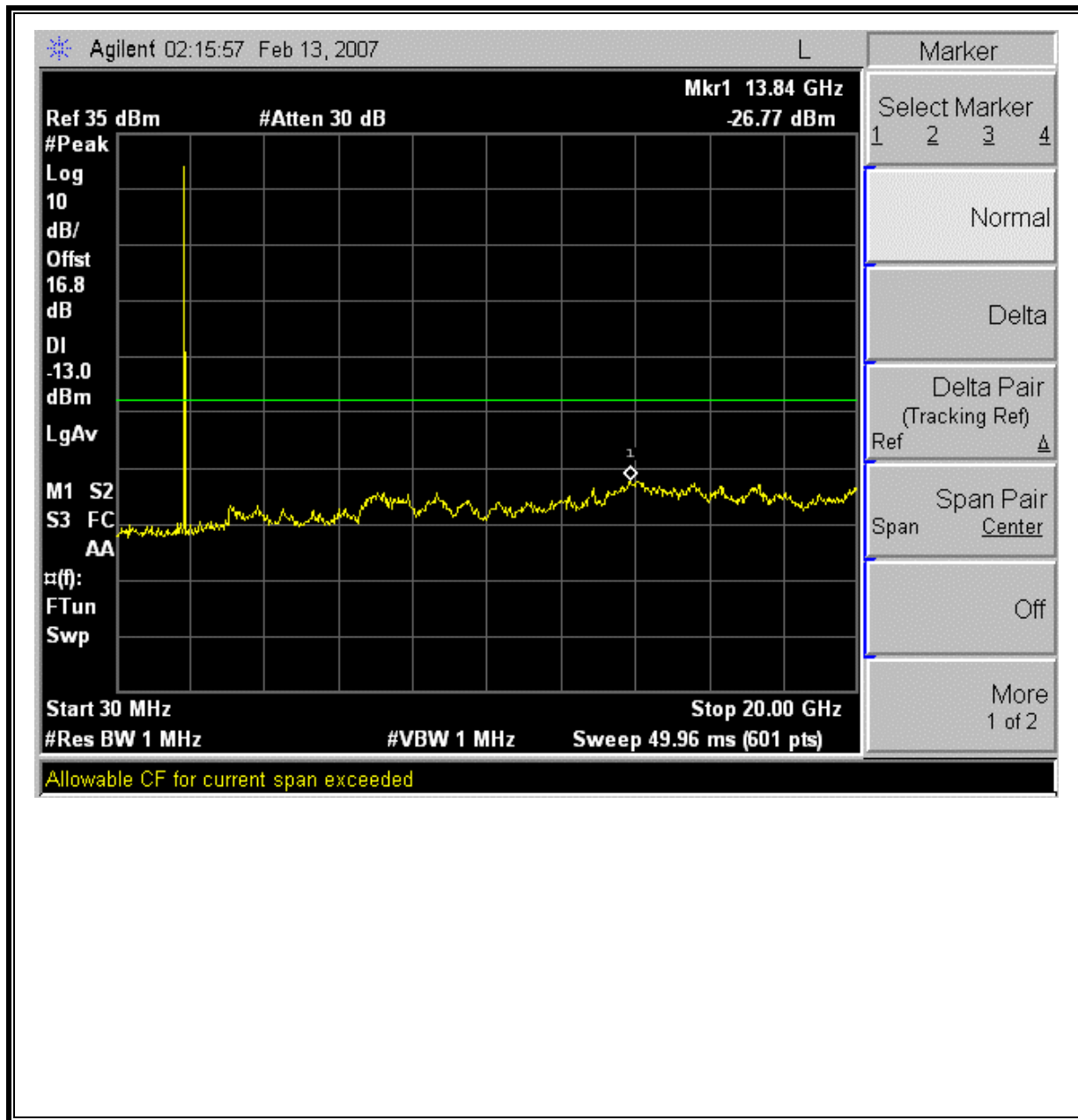


**Cell Band WCDMA+HSPDA Mobile Emissions in Base Frequency Range**

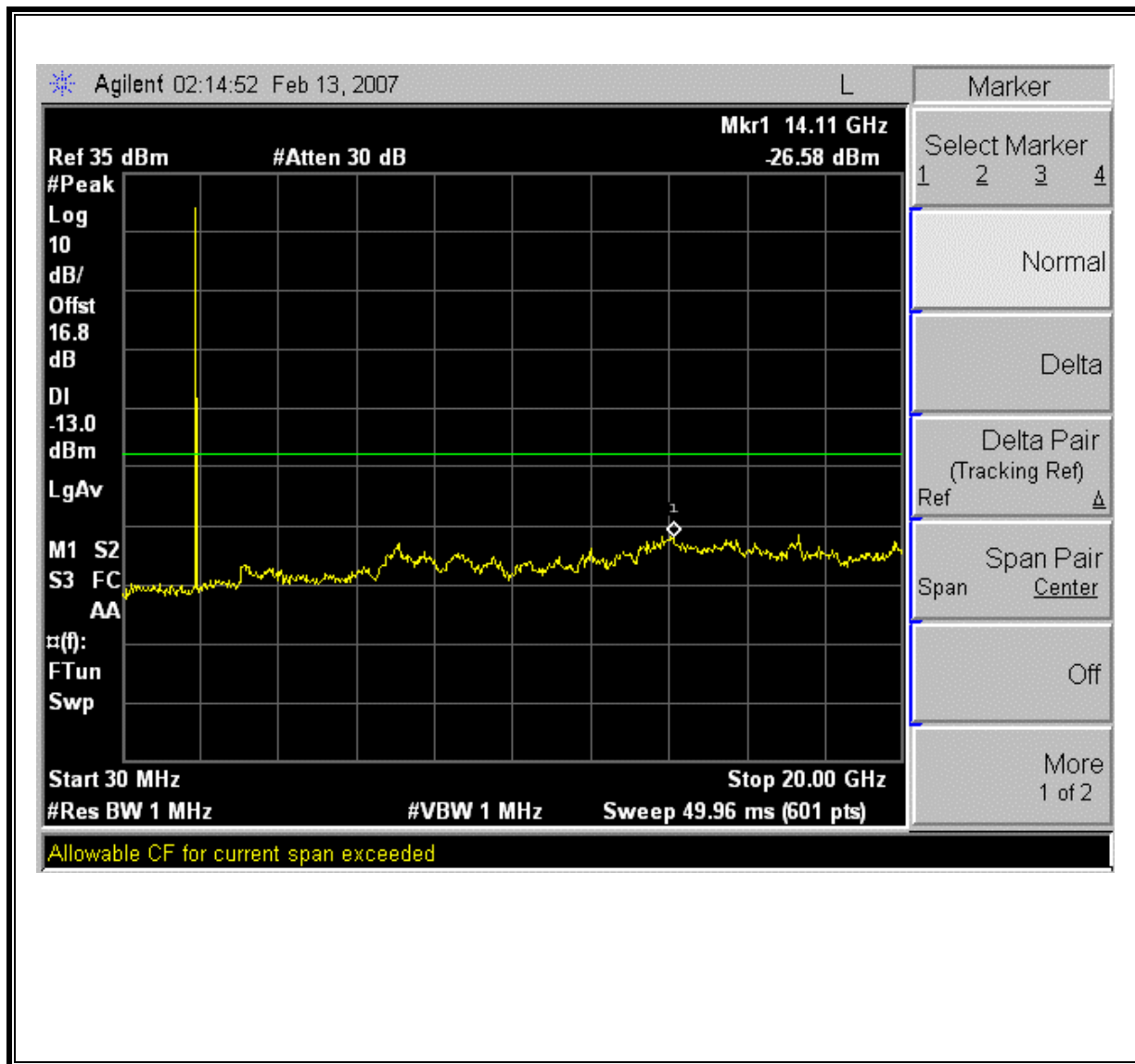


## GSM1900 GPRS MODULATION RESULTS

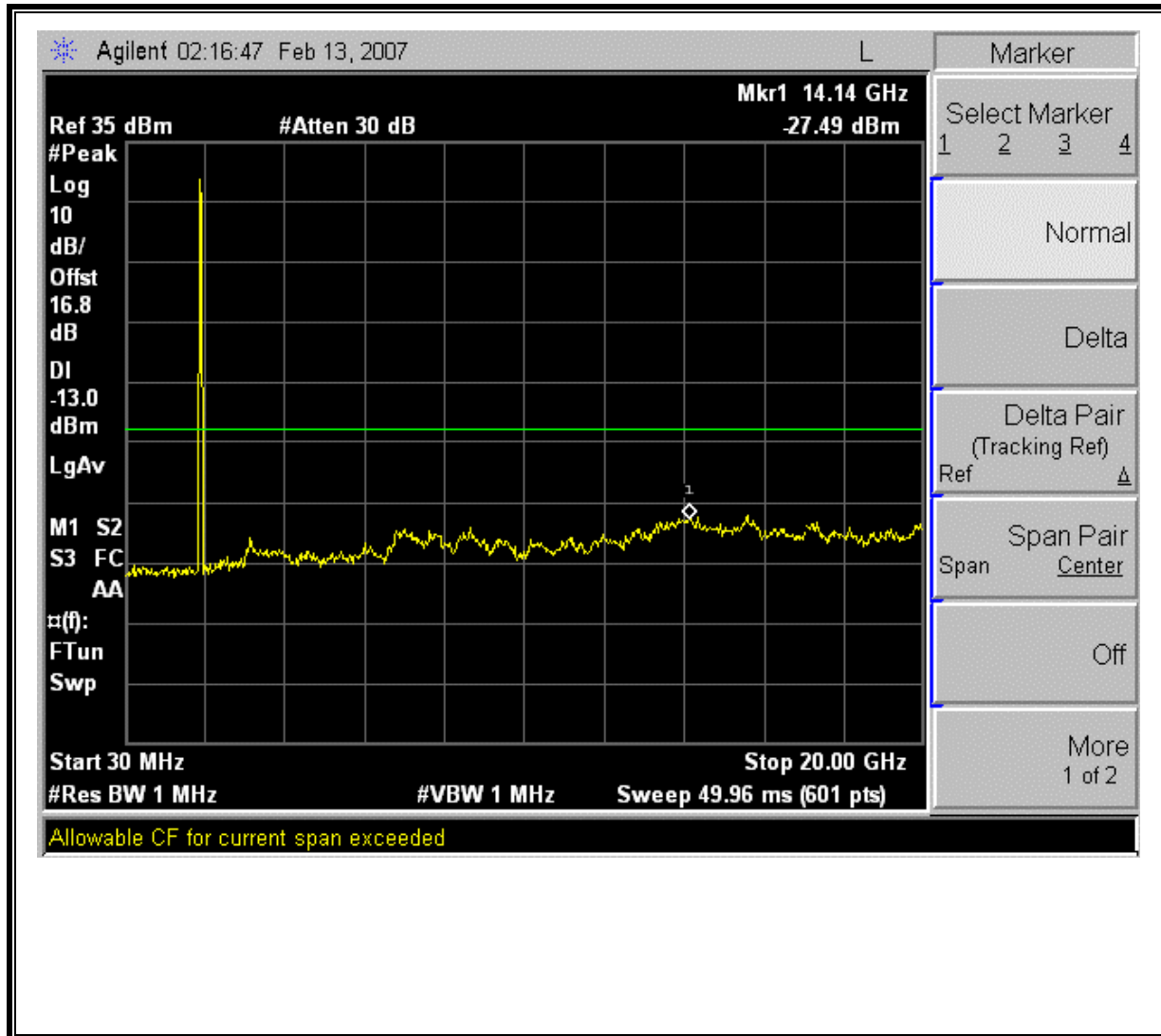
### Low Channel, Out-Of-Band Emissions



**Mid Channel, Out-Of-Band Emissions**

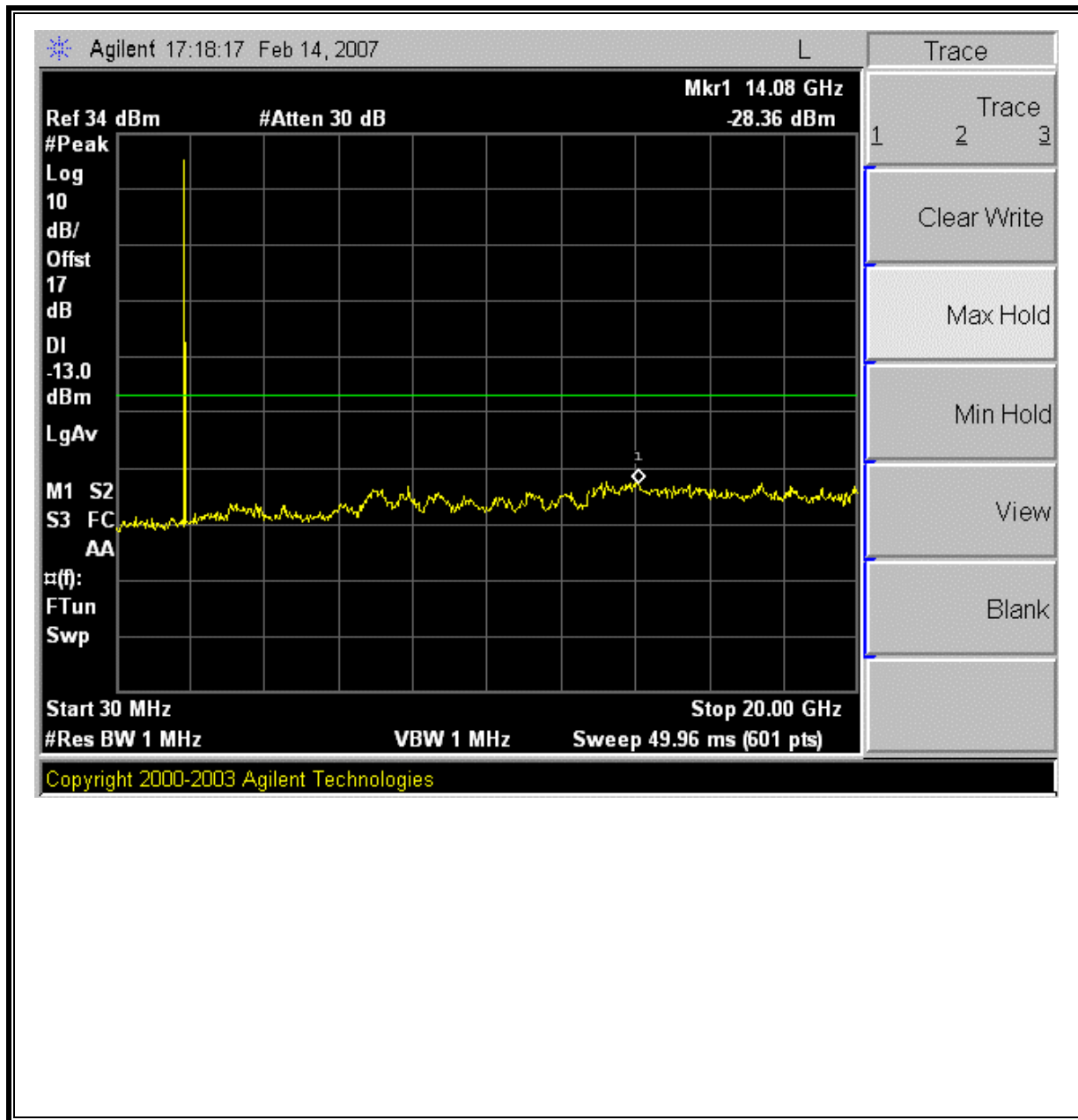


**High Channel, Out-Of-Band Emissions**

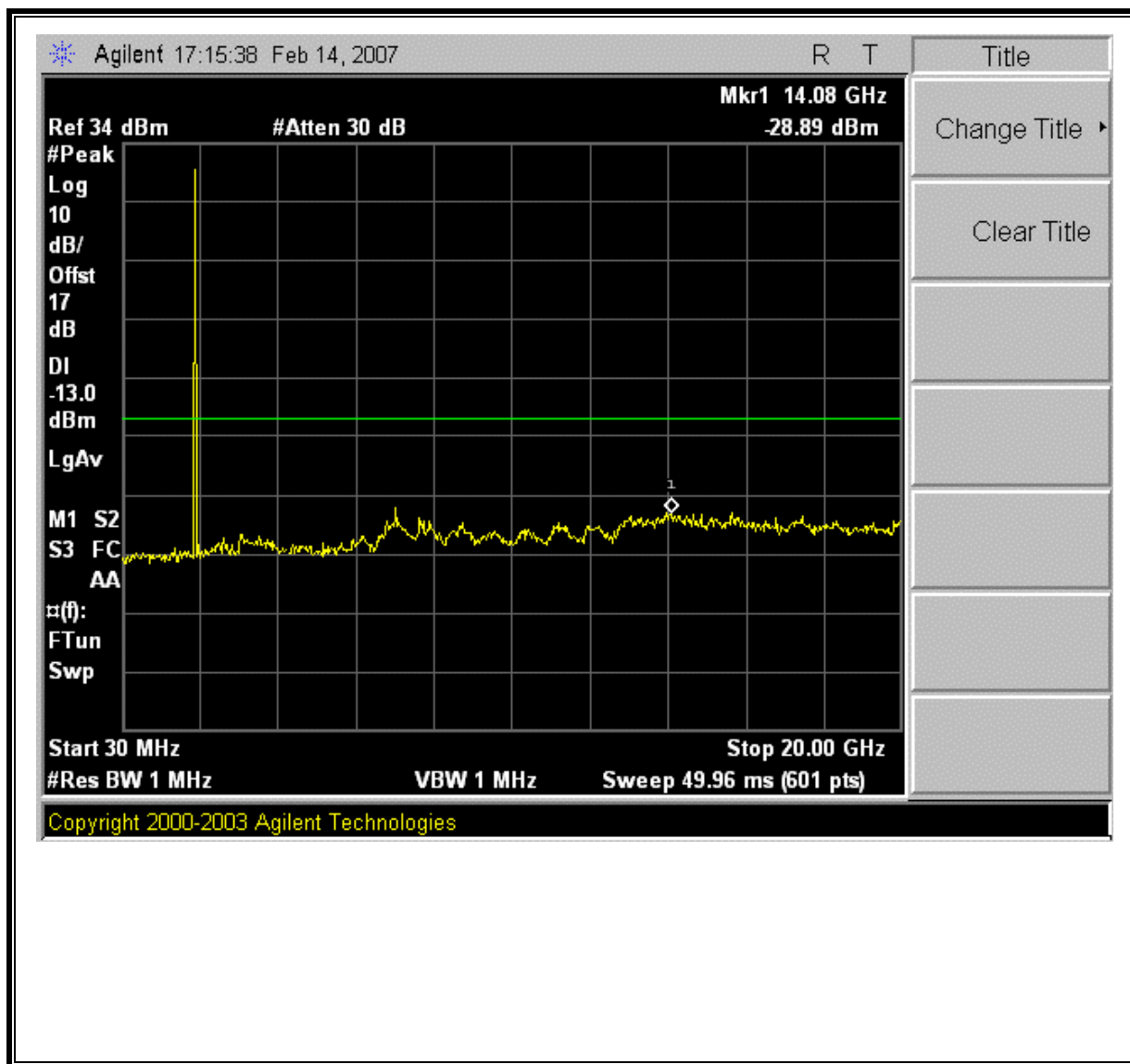


**GSM1900 EGPRS Modulation:**

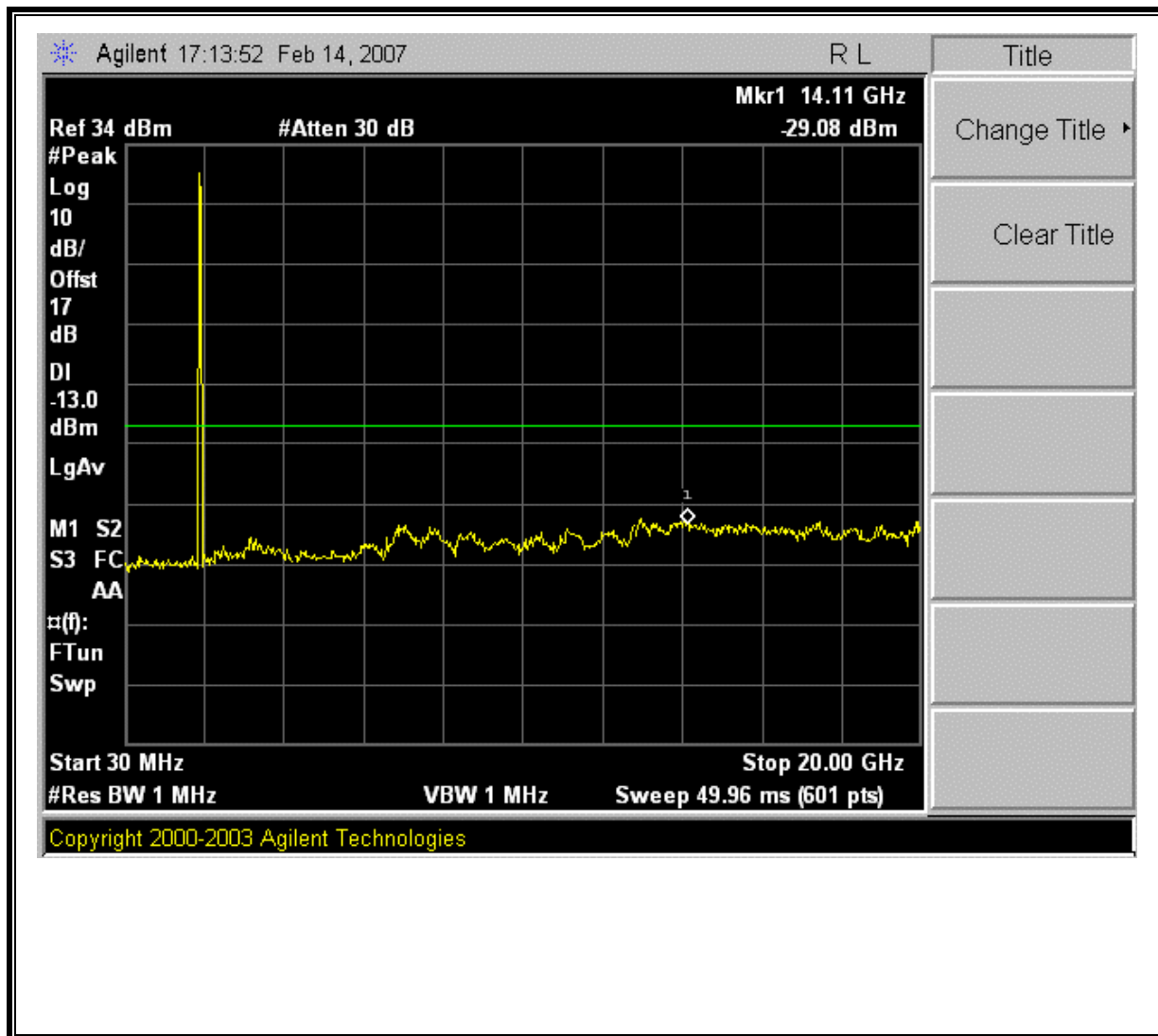
**Low Channel, Out-Of-Band Emissions**



**Mid Channel, Out-Of-Band Emissions**

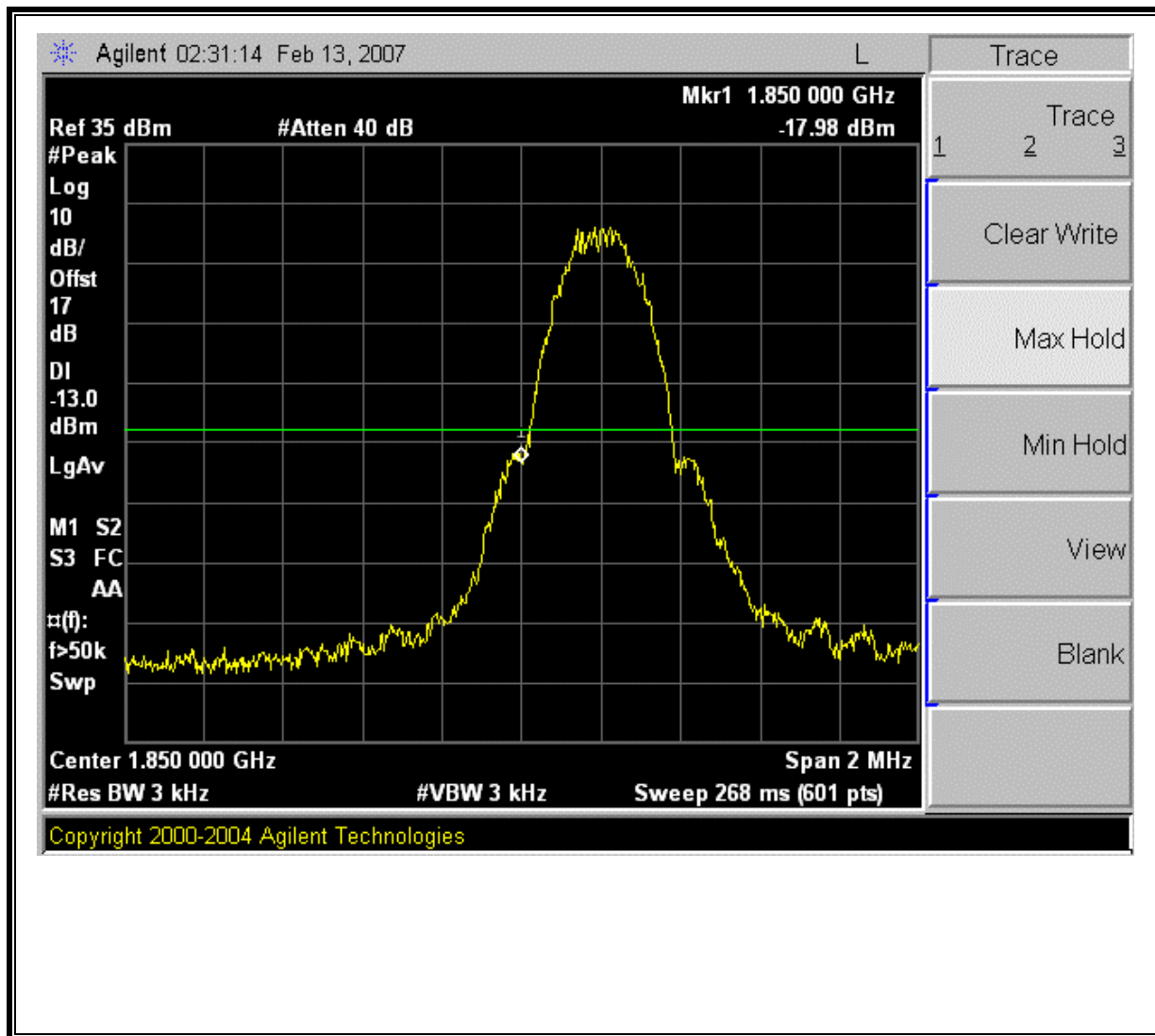


**High Channel, Out-Of-Band Emissions**

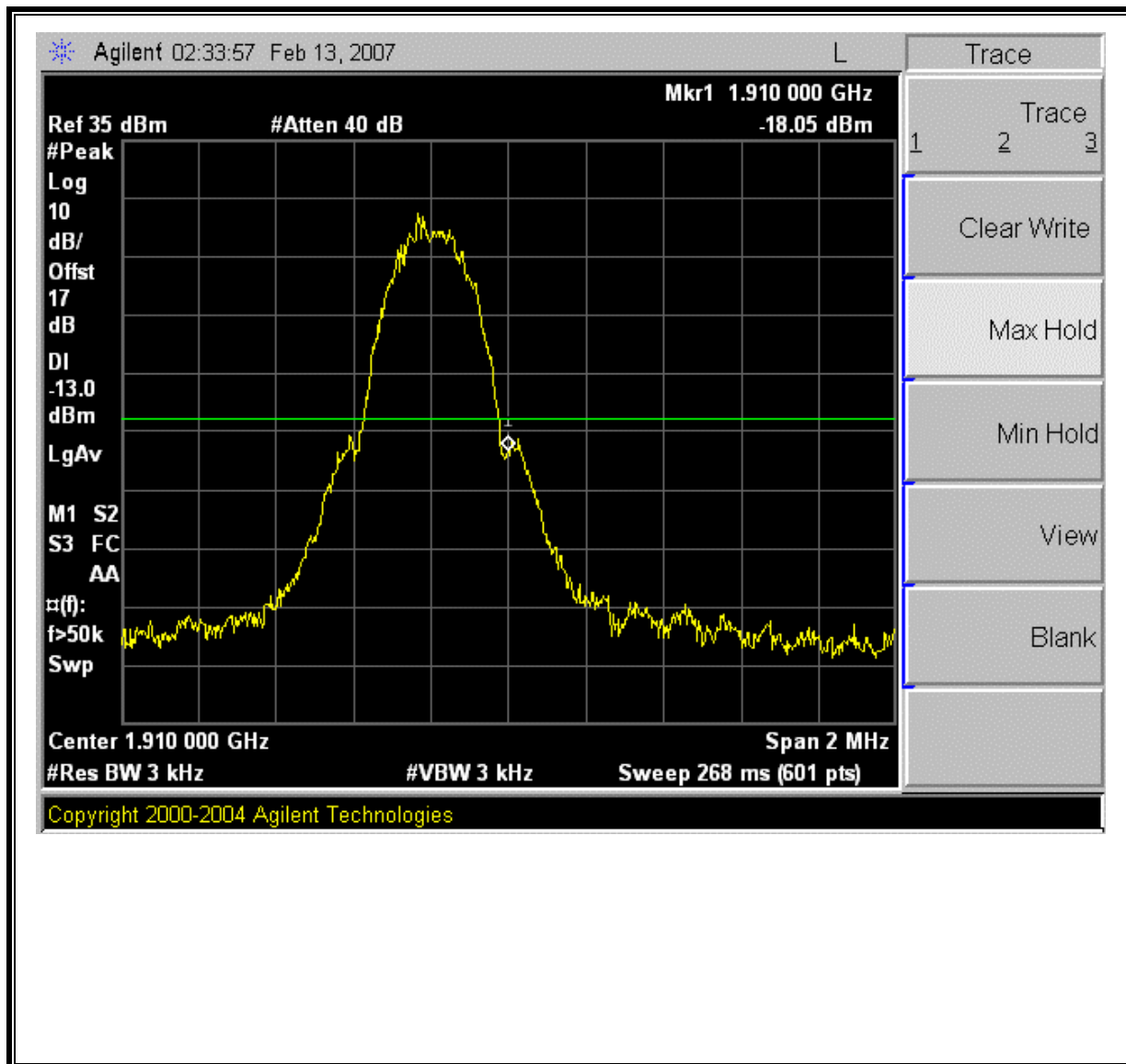




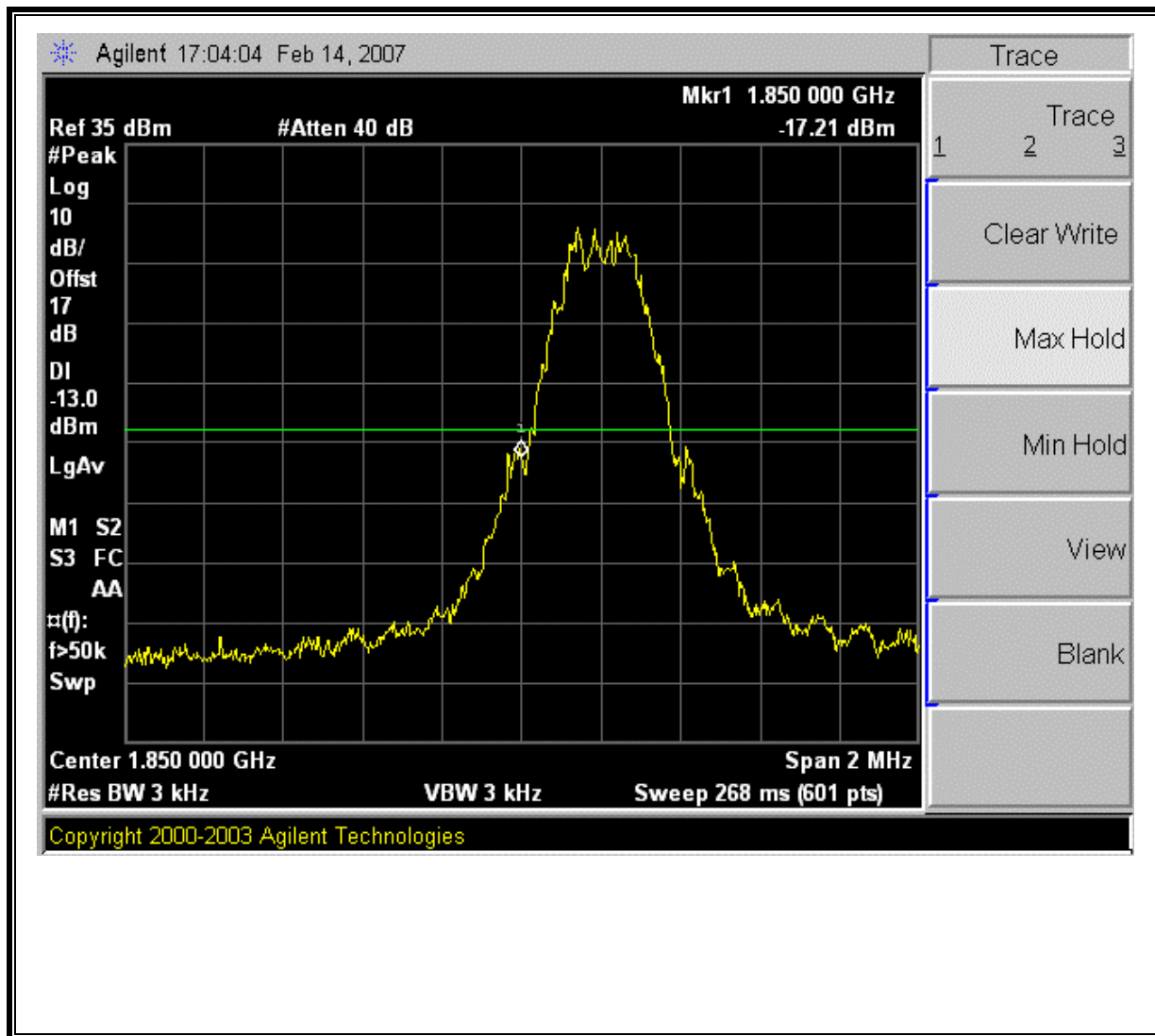
**GSM1900 GPRS Modulation Low Channel Band Edge**



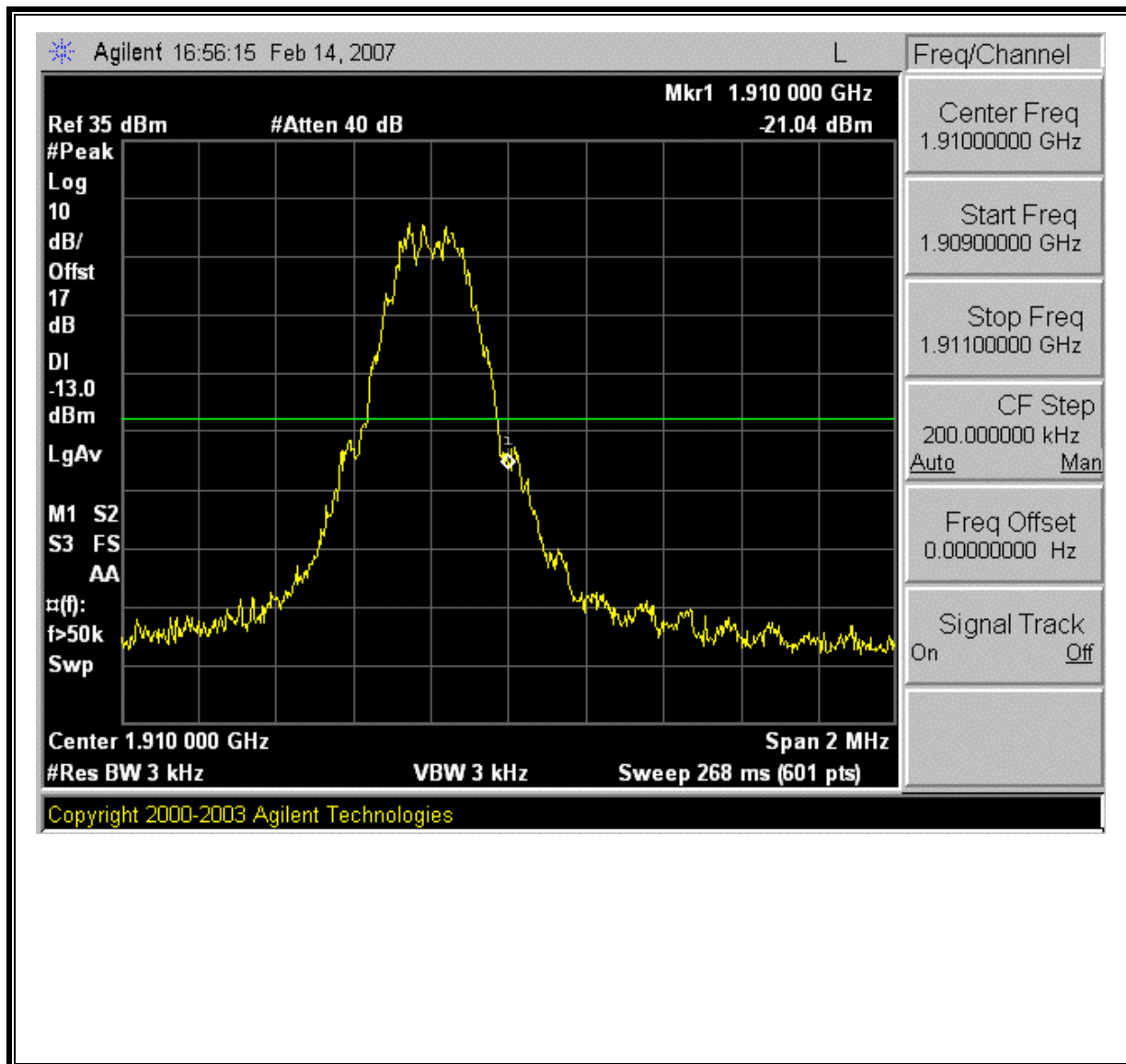
**GSM1900 GPRS Modulation High Channel Band Edge**



**GSM1900 EGPRS Modulation: Low Channel Band Edge**

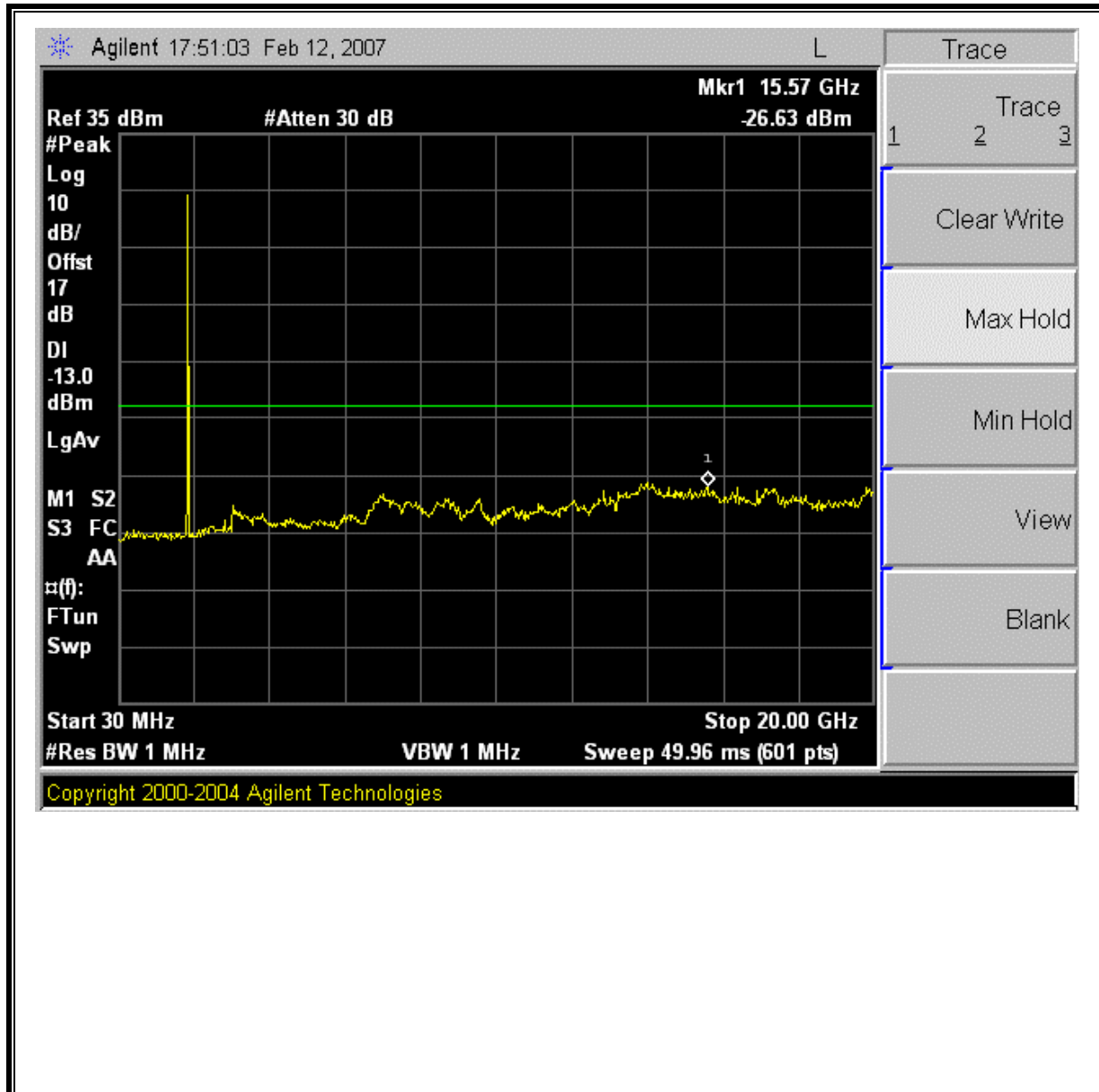


**GSM1900 EGPRS Modulation High Channel Band Edge**

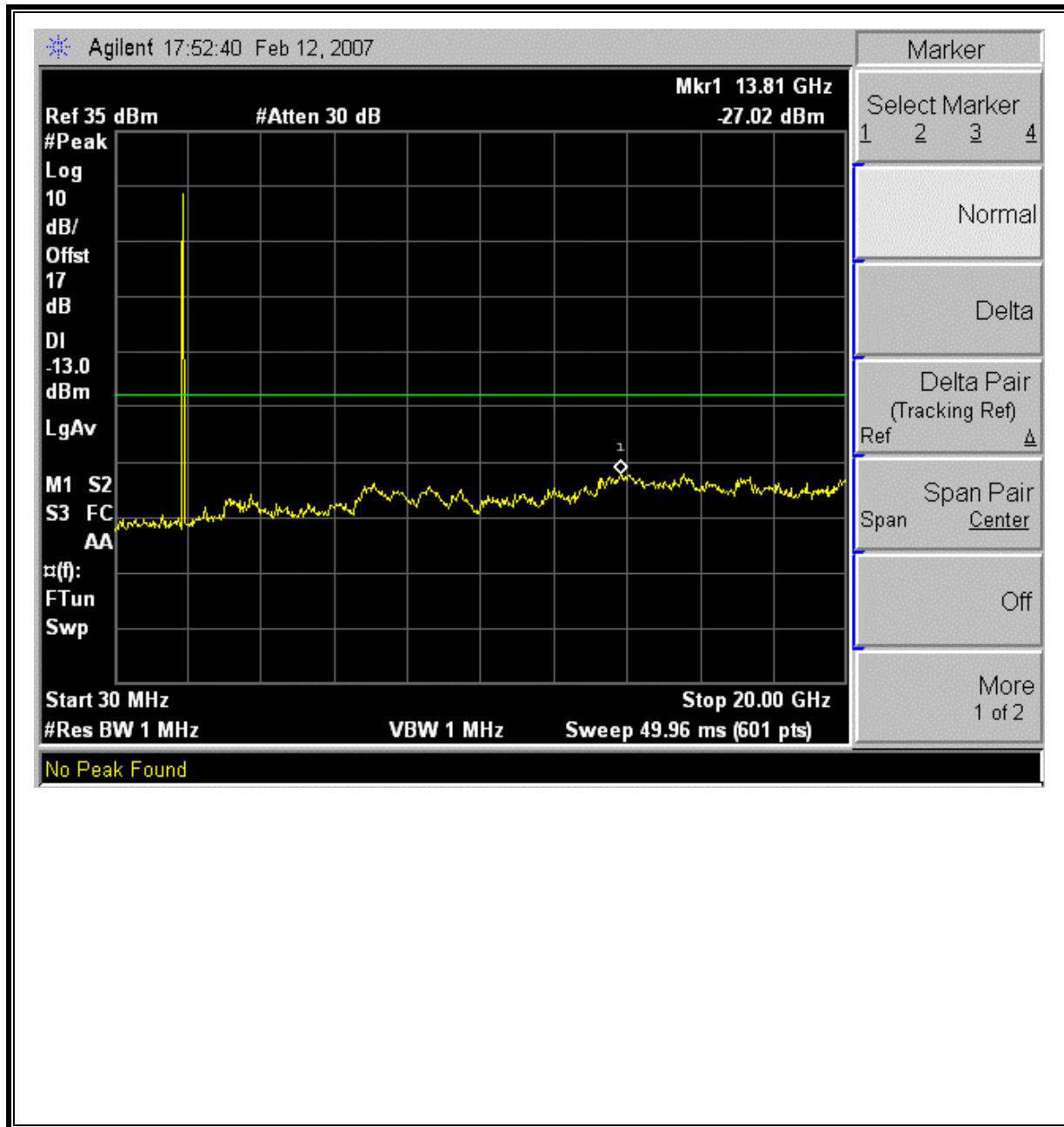


## PCS Band WCDMA MODULATION

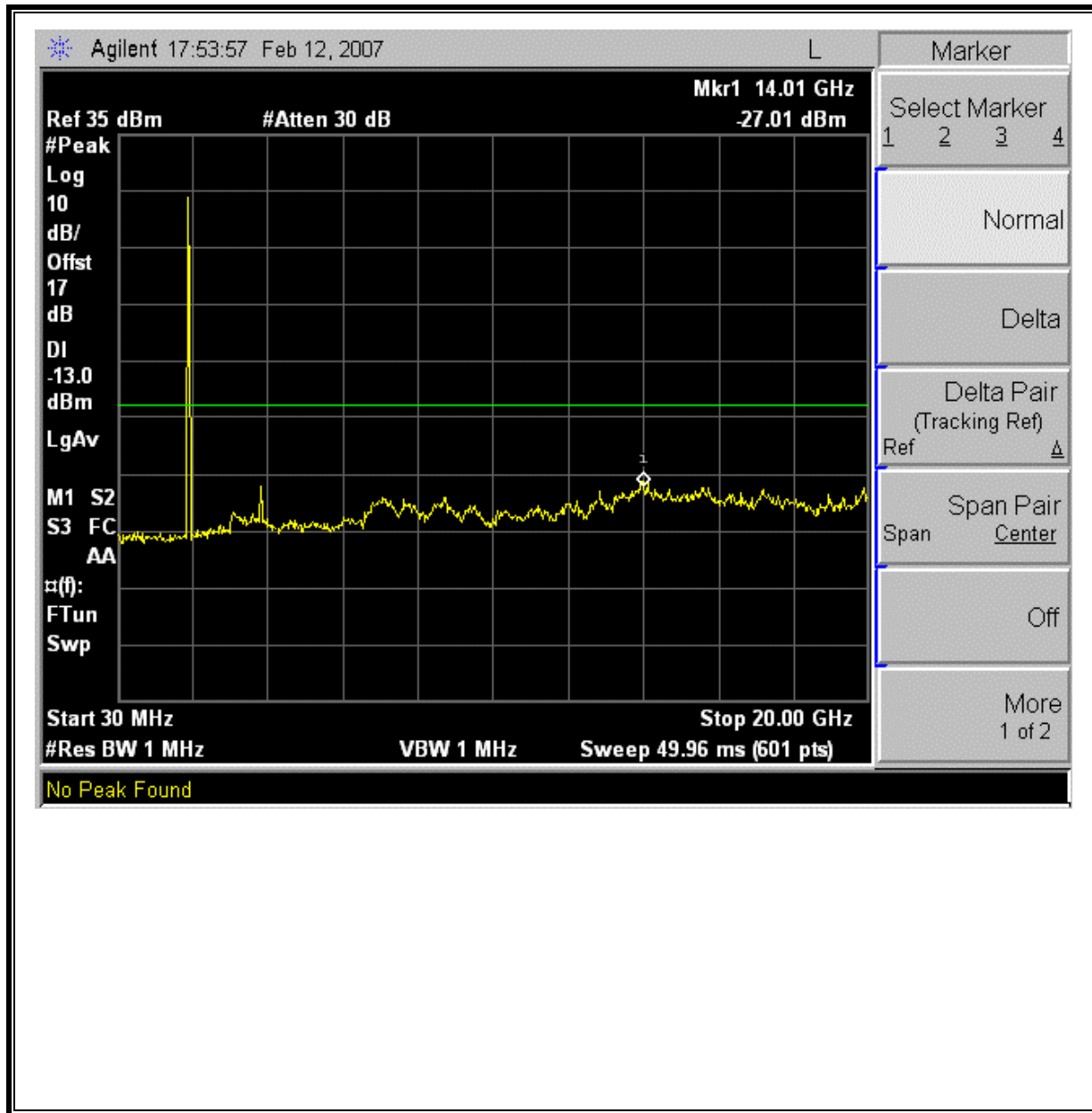
### Low Channel Out-Of-Band Emissions



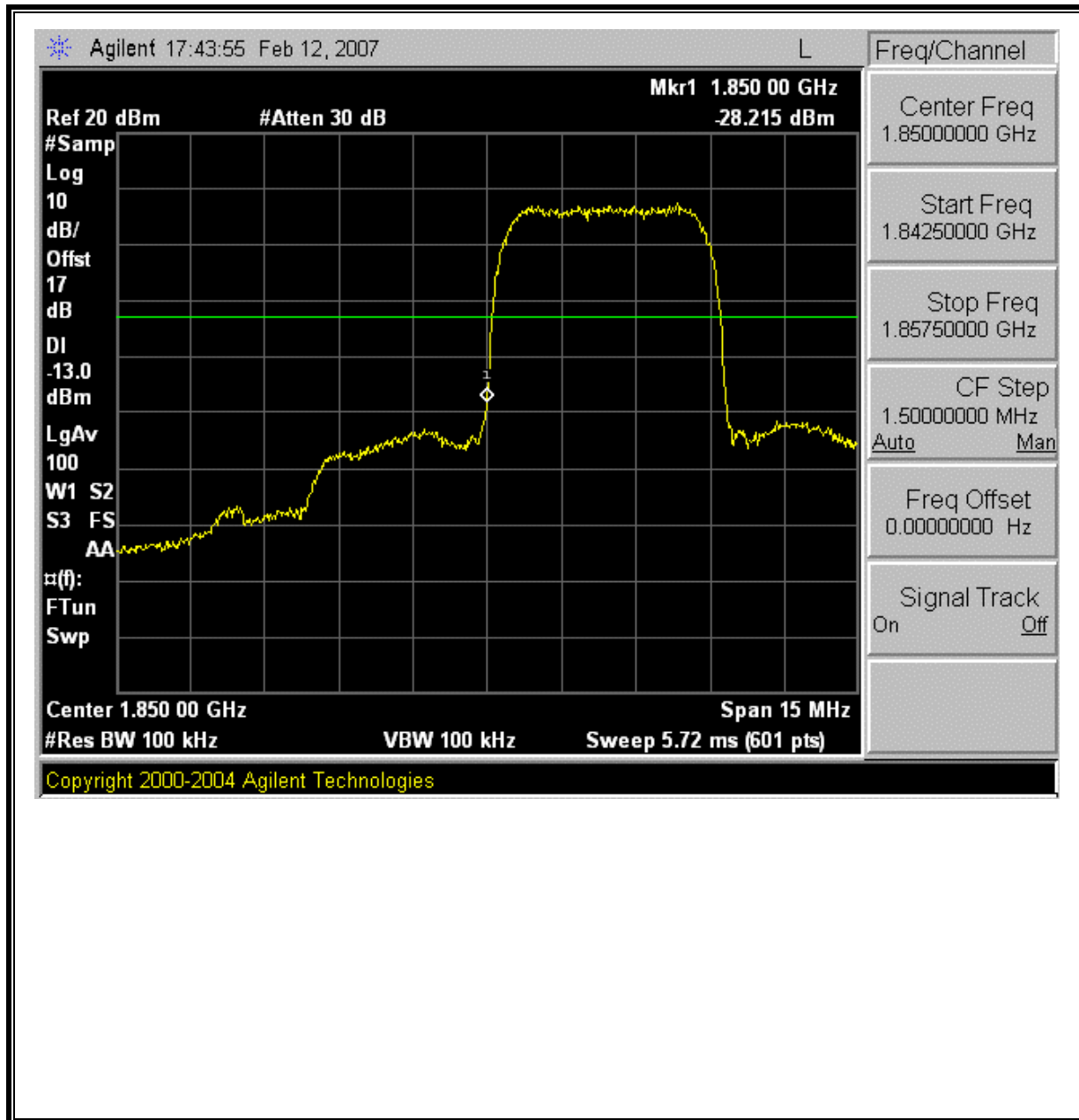
**Mid Channel Out-Of-Band Emissions**



**High Channel Out-Of-Band Emissions**

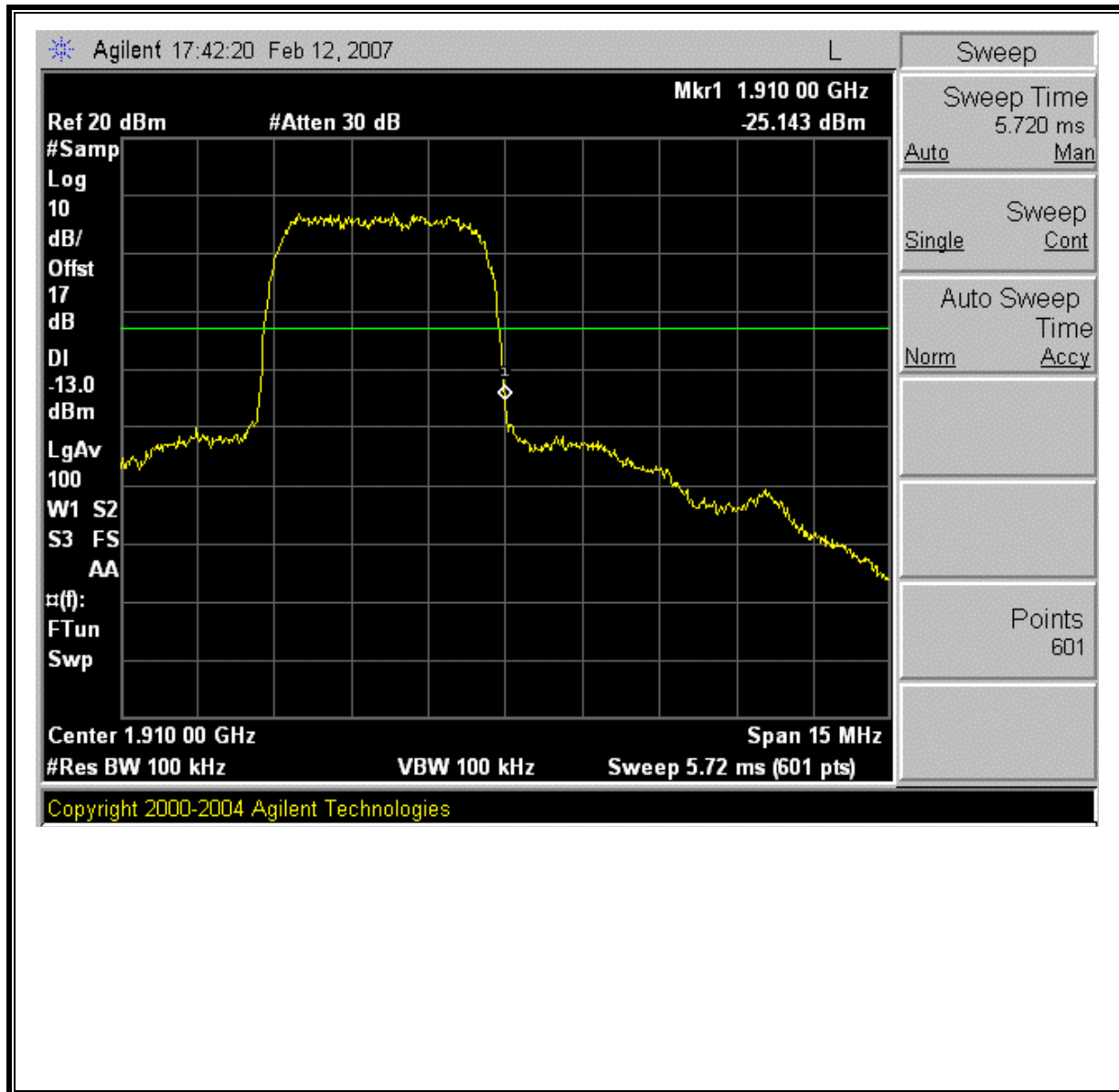


**WCDMA Modulation: Low Channel Band Edge**



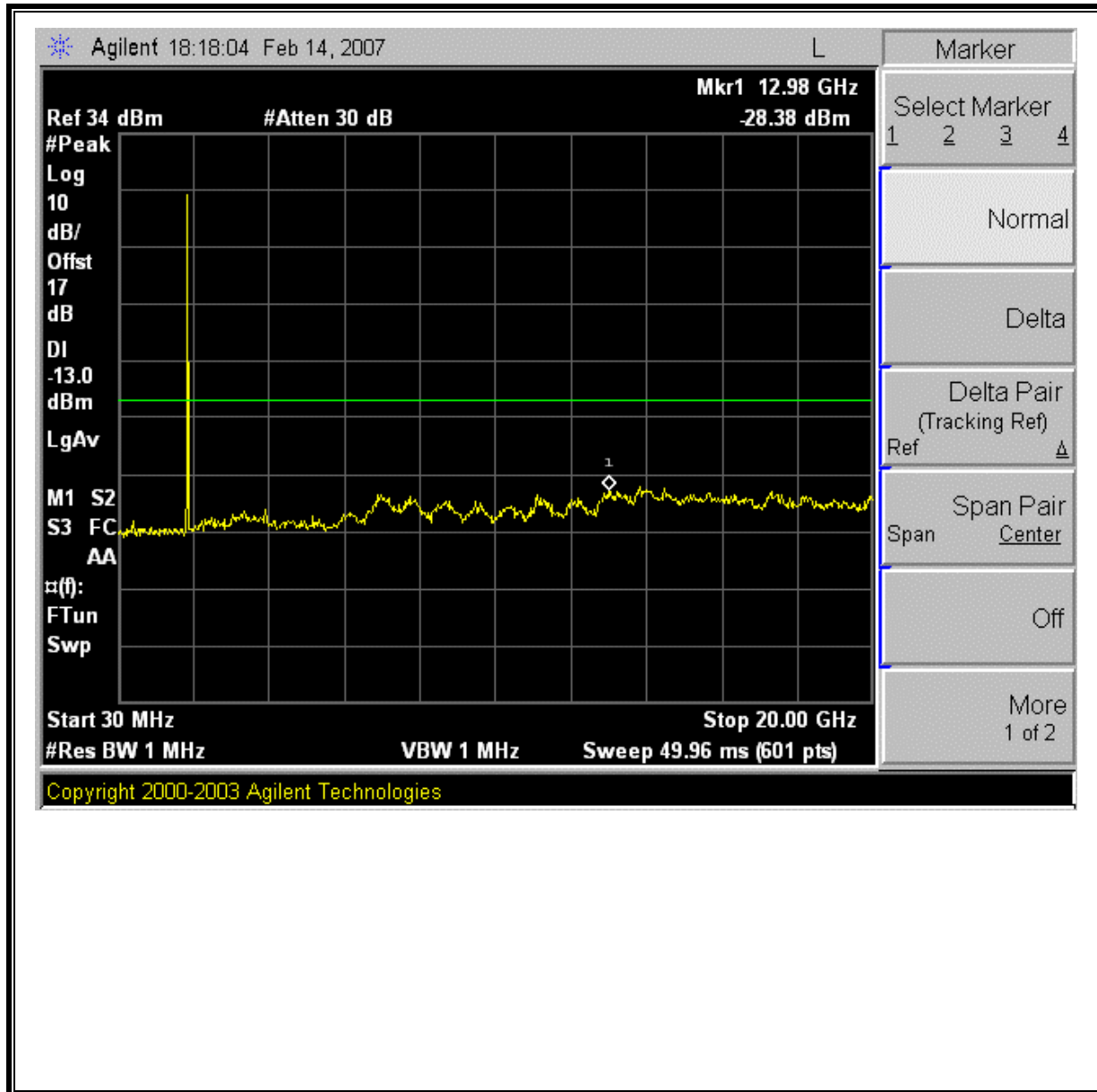


**WCDMA Modulation: High Channel Band Edge**

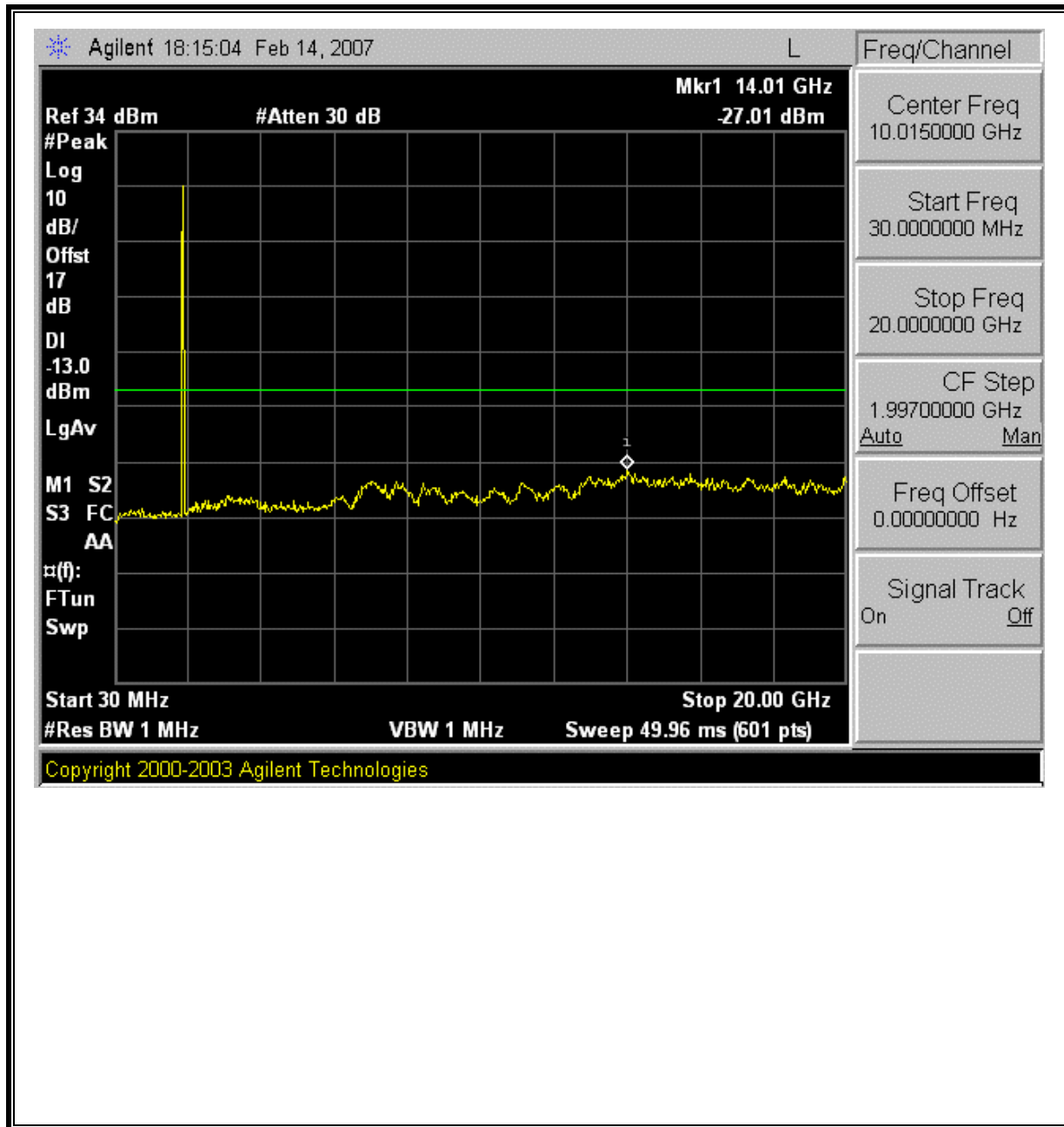


**PCS Band WCDMA+HSPDA Modulation**

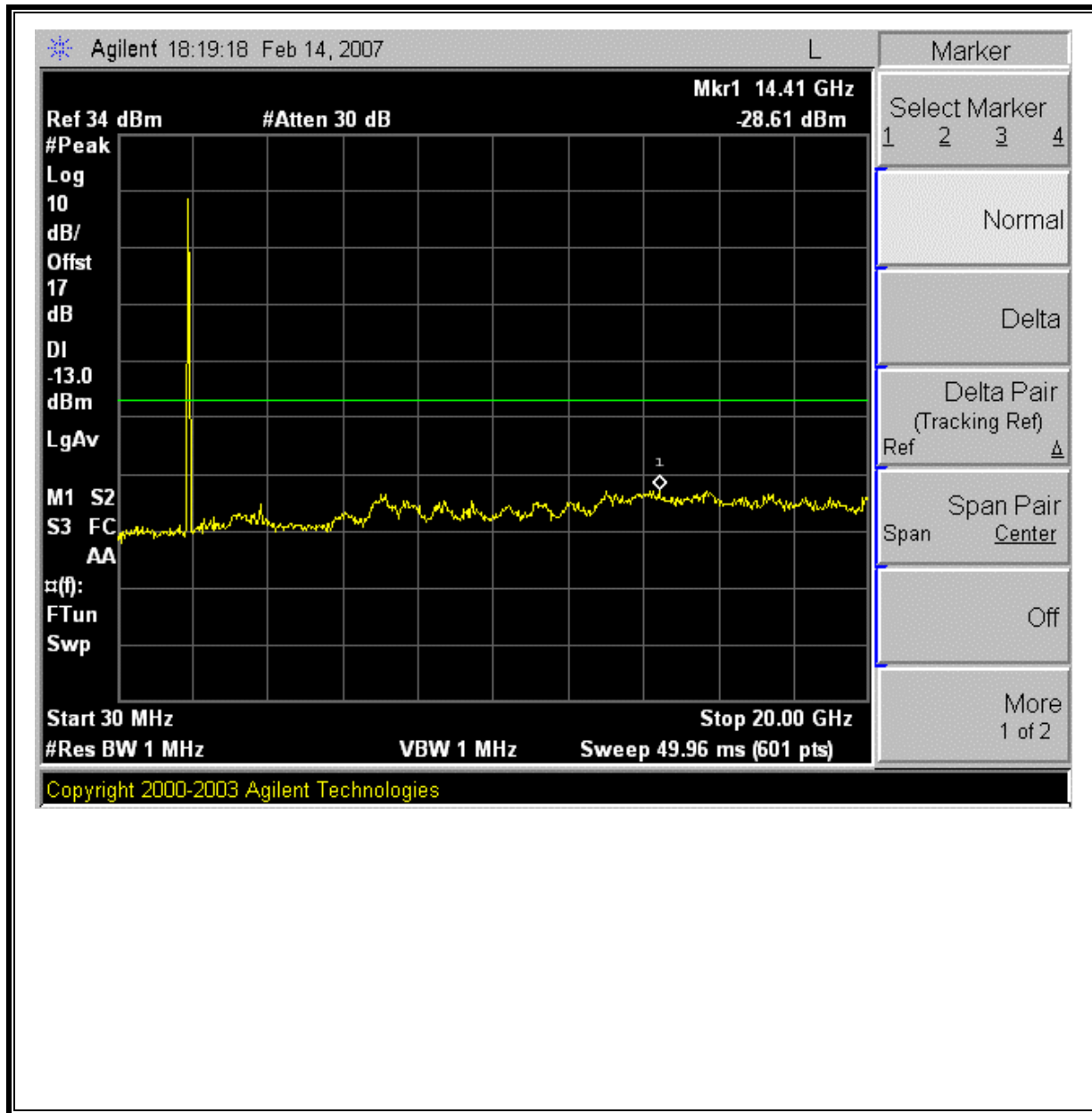
**Low Channel Out-Of-Band Emissions**



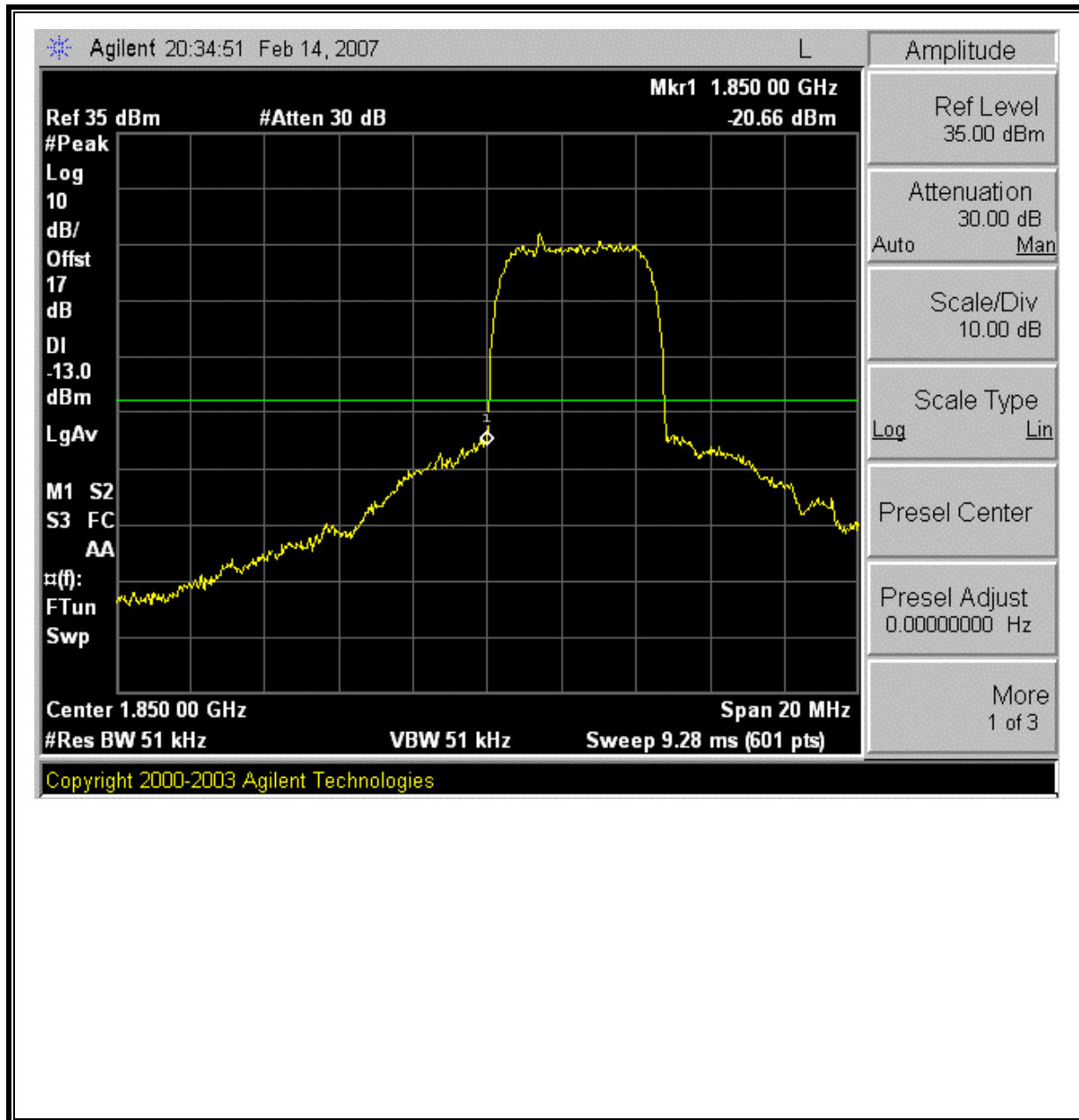
**Mid Channel Out-Of-Band Emissions**



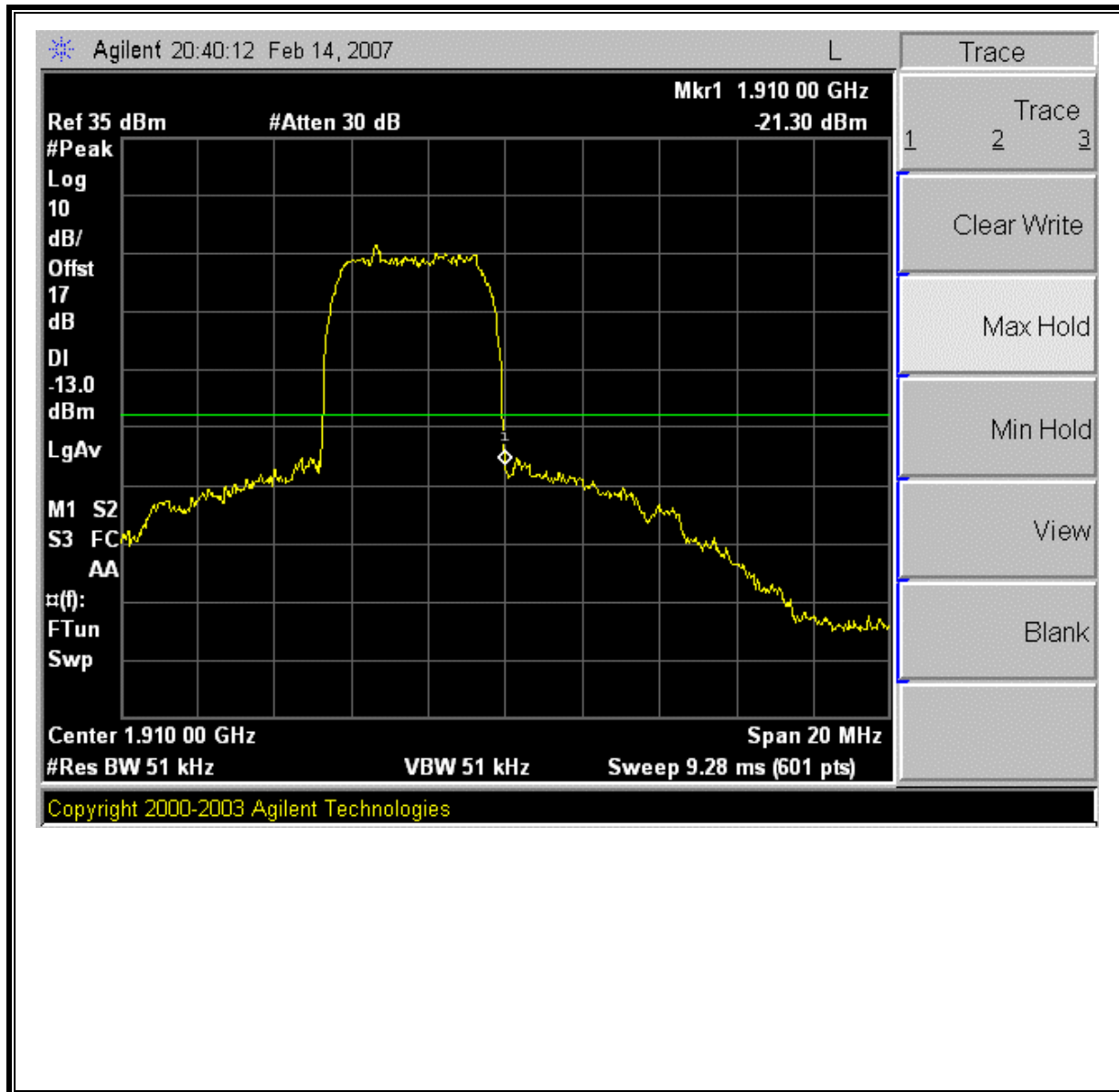
# **High Channel Out-Of-Band Emissions**



**WCDMA+HSPDA Modulation: Low Channel Band Edge**



**WCDMA+HSPDA Modulation: High Channel Band Edge**



## **7.6. FIELD STRENGTH OF SPURIOUS RADIATION**

### **LIMIT**

§22.917 (a) Out of band emissions. 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.

### **TEST PROCEDURE**

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b)

### **RESULTS**

No non-compliance noted.

**GSM850 GPRS Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement										
Compliance Certification Services, B- 5m Chamber Fremont Site										
Company: Toshiba Project #: 07U10847 Date: 2/15/07 Test Engineer: Yu-Chien Ho Configuration: Laptop only. Mode: GSM850, GPRS										
<b>Test Equipment:</b>										
EMCO Horn 1-18GHz T60; S/N: 2238 @3m		Horn > 18GHz		Limit FCC 22		<input checked="" type="checkbox"/> High Pass Filter				
Hi Frequency Cables <input type="checkbox"/> (2 ft) <input checked="" type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)				Pre-amplifier 1-26GHz T34 HP 8449B		Pre-amplifier 26-40GHz				
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch (824.2 MHz)</b>										
1.648	50.6	V	-54.6	4.2	7.1	4.9	-53.8	-13.0	-40.8	
2.473	46.2	V	-56.2	5.2	9.3	7.1	-54.3	-13.0	-41.3	
3.297	48.8	V	-49.4	6.0	9.4	7.3	-48.1	-13.0	-35.1	
4.121	45.2	V	-49.6	6.8	10.0	7.8	-48.6	-13.0	-35.6	
4.945	45.4	V	-48.2	7.5	11.0	8.8	-47.0	-13.0	-34.0	
1.648	51.0	H	-53.5	4.2	7.1	4.9	-52.7	-13.0	-39.7	
2.473	46.8	H	-55.4	5.2	9.3	7.1	-53.5	-13.0	-40.5	
3.297	48.4	H	-49.7	6.0	9.4	7.3	-48.3	-13.0	-35.3	
4.121	45.7	H	-48.8	6.8	10.0	7.8	-47.8	-13.0	-34.8	
4.945	44.9	H	-48.4	7.5	11.0	8.8	-47.1	-13.0	-34.1	
<b>Mid Ch (837 MHz)</b>										
1.674	49.6	V	-55.5	4.2	7.2	5.0	-54.7	-13.0	-41.7	
2.511	47.7	V	-54.4	5.2	9.3	7.1	-52.6	-13.0	-39.6	
3.348	57.4	V	-40.5	6.0	9.5	7.3	-39.3	-13.0	-26.3	
4.185	45.8	V	-49.0	6.8	10.0	7.9	-47.9	-13.0	-34.9	
5.022	48.0	V	-44.2	7.6	11.0	8.9	-42.9	-13.0	-29.9	
1.674	47.6	H	-56.9	4.2	7.2	5.0	-56.0	-13.0	-43.0	
2.511	47.5	H	-54.4	5.2	9.3	7.1	-52.6	-13.0	-39.6	
3.348	45.5	H	-52.3	6.0	9.5	7.3	-51.0	-13.0	-38.0	
4.185	44.4	H	-50.1	6.8	10.0	7.9	-49.0	-13.0	-36.0	
5.022	43.9	H	-47.3	7.6	11.0	8.9	-46.0	-13.0	-33.0	
<b>High Ch (848.8 MHz)</b>										
1.698	45.0	V	-60.1	4.2	7.2	5.1	-59.2	-13.0	-46.2	
2.546	41.4	V	-60.5	5.3	9.3	7.1	-58.7	-13.0	-45.7	
3.395	42.2	V	-55.5	6.1	9.5	7.3	-54.2	-13.0	-41.2	
4.244	41.8	V	-52.8	6.9	10.1	8.0	-51.7	-13.0	-38.7	
1.698	46.3	H	-58.0	4.2	7.2	5.1	-57.2	-13.0	-44.2	
2.546	43.9	H	-57.9	5.3	9.3	7.1	-56.1	-13.0	-43.1	
3.395	43.9	H	-53.8	6.1	9.5	7.3	-52.5	-13.0	-39.5	
4.244	42.8	H	-51.5	6.9	10.1	8.0	-50.4	-13.0	-37.4	
Rev. 1.24.7										



# **GSM850 EGPRS Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement										
Compliance Certification Services, B- 5m Chamber Fremont Site										
Company: Toshiba Project #: 07U10847 Date: 2/15/07 Test Engineer: Yu-Chien Ho Configuration: Laptop only. Mode: GSM850, EGPRS										
<b>Test Equipment:</b>										
EMCO Horn 1-18GHz		Horn > 18GHz		Limit		<input checked="" type="checkbox"/> High Pass Filter				
T60; S/N: 2238 @3m				FCC 22						
Hi Frequency Cables <input type="checkbox"/> (2 ft) <input checked="" type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)				Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz				
				T34 HP 8449B						
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch (824.2 MHz)</b>										
1.648	60.7	V	-44.5	4.2	7.1	4.9	-43.8	-13.0	-30.8	
2.473	46.9	V	-55.5	5.2	9.3	7.1	-53.6	-13.0	-40.6	
3.297	47.1	V	-51.1	6.0	9.4	7.3	-49.7	-13.0	-36.7	
4.121	46.3	V	-48.5	6.8	10.0	7.8	-47.5	-13.0	-34.5	
1.648	59.2	H	-45.4	4.2	7.1	4.9	-44.6	-13.0	-31.6	
2.473	47.0	H	-55.2	5.2	9.3	7.1	-53.3	-13.0	-40.3	
3.297	46.0	H	-52.0	6.0	9.4	7.3	-50.7	-13.0	-37.7	
4.121	44.7	H	-49.8	6.8	10.0	7.8	-48.8	-13.0	-35.8	
<b>Mid Ch (837 MHz)</b>										
1.674	44.8	V	-60.4	4.2	7.2	5.0	-59.5	-13.0	-46.5	
2.511	40.9	V	-61.3	5.2	9.3	7.1	-59.4	-13.0	-46.4	
3.348	42.4	V	-55.5	6.0	9.5	7.3	-54.2	-13.0	-41.2	
4.185	41.6	V	-53.2	6.8	10.0	7.9	-52.1	-13.0	-39.1	
1.674	45.8	H	-58.6	4.2	7.2	5.0	-57.8	-13.0	-44.8	
2.511	43.2	H	-58.8	5.2	9.3	7.1	-56.9	-13.0	-43.9	
3.348	43.5	H	-54.3	6.0	9.5	7.3	-53.0	-13.0	-40.0	
4.185	42.2	H	-52.2	6.8	10.0	7.9	-51.2	-13.0	-38.2	
5.022	40.9	H	-50.3	7.6	11.0	8.9	-49.0	-13.0	-36.0	
<b>High Ch (848.8 MHz)</b>										
1.698	59.6	V	-45.5	4.2	7.2	5.1	-44.6	-13.0	-31.6	
2.546	47.7	V	-54.2	5.3	9.3	7.1	-52.4	-13.0	-39.4	
3.395	57.4	V	-40.3	6.1	9.5	7.3	-39.1	-13.0	-26.1	
4.244	45.8	V	-48.9	6.9	10.1	8.0	-47.8	-13.0	-34.8	
1.698	59.6	H	-44.8	4.2	7.2	5.1	-43.9	-13.0	-30.9	
2.546	47.5	H	-54.2	5.3	9.3	7.1	-52.4	-13.0	-39.4	
3.395	45.5	H	-52.1	6.1	9.5	7.3	-50.8	-13.0	-37.8	
4.244	44.360	H	-50.0	6.9	10.1	8.0	-48.9	-13.0	-35.9	
Rev. 1.24.7										

**CELL Band WCDMA Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement										
Compliance Certification Services, B- 5m Chamber Fremont Site										
Company: Toshiba Project #: 07U10847 Date: 2/15/07 Test Engineer: Yu-Chien Ho Configuration: Laptop only. Mode: WCDMA, Cell, 12.2k RMC.										
<b>Test Equipment:</b>										
EMCO Horn 1-18GHz T60; S/N: 2238 @3m			Horn > 18GHz			Limit FCC 22		<input checked="" type="checkbox"/> High Pass Filter		
Hi Frequency Cables <input type="checkbox"/> (2 ft) <input checked="" type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)				Pre-amplifier 1-26GHz T34 HP 8449B		Pre-amplifier 26-40GHz				
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch (826.4 MHz)</b>										
1.653	44.8	V	-60.4	4.2	7.1	4.9	-59.7	-13.0	-46.7	
2.479	40.9	V	-61.5	5.2	9.3	7.1	-59.5	-13.0	-46.5	
3.306	42.4	V	-55.7	6.0	9.4	7.3	-54.4	-13.0	-41.4	
4.132	41.6	V	-53.2	6.8	10.0	7.8	-52.2	-13.0	-39.2	
4.958	41.3	V	-52.3	7.6	11.0	8.9	-51.0	-13.0	-38.0	
1.653	45.8	H	-58.7	4.2	7.1	4.9	-57.9	-13.0	-44.9	
2.479	43.2	H	-59.0	5.2	9.3	7.1	-57.0	-13.0	-44.0	
3.306	43.5	H	-54.5	6.0	9.4	7.3	-53.2	-13.0	-40.2	
4.132	42.2	H	-52.3	6.8	10.0	7.8	-51.3	-13.0	-38.3	
<b>Mid Ch (836.4 MHz)</b>										
1.673	45.0	V	-60.2	4.2	7.2	5.0	-59.4	-13.0	-46.4	
2.509	41.4	V	-60.7	5.2	9.3	7.1	-58.9	-13.0	-45.9	
3.346	42.2	V	-55.7	6.0	9.5	7.3	-54.4	-13.0	-41.4	
4.182	41.8	V	-52.9	6.8	10.0	7.9	-51.9	-13.0	-38.9	
1.673	46.3	H	-58.1	4.2	7.2	5.0	-57.3	-13.0	-44.3	
2.509	43.9	H	-58.1	5.2	9.3	7.1	-56.3	-13.0	-43.3	
3.346	43.9	H	-54.0	6.0	9.5	7.3	-52.7	-13.0	-39.7	
4.182	42.8	H	-51.6	6.8	10.0	7.9	-50.5	-13.0	-37.5	
<b>High Ch (846.6 MHz)</b>										
1.693	45.4	V	-59.7	4.2	7.2	5.1	-58.8	-13.0	-45.8	
2.540	41.8	V	-60.2	5.3	9.3	7.1	-58.4	-13.0	-45.4	
3.386	42.5	V	-55.3	6.1	9.5	7.3	-54.0	-13.0	-41.0	
4.233	42.0	V	-52.7	6.9	10.1	7.9	-51.7	-13.0	-38.7	
1.693	46.7	H	-57.7	4.2	7.2	5.1	-56.8	-13.0	-43.8	
2.540	44.0	H	-57.8	5.3	9.3	7.1	-56.0	-13.0	-43.0	
3.386	44.0	H	-53.6	6.1	9.5	7.3	-52.4	-13.0	-39.4	
4.233	43.3	H	-51.0	6.9	10.1	7.9	-50.0	-13.0	-37.0	
Rev. 1.24.7										

**CELL Band WCDMA+HSPDA Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement										
Compliance Certification Services, B- 5m Chamber Fremont Site										
Company: Toshiba										
Project #: 07U10847										
Date: 2/15/07										
Test Engineer: Yu-Chien Ho										
Configuration: Laptop only.										
Mode: WCDMA + HSDPA, Cell, 12.2k RMC										
Test Equipment:										
EMCO Horn 1-18GHz T60; S/N: 2238 @3m			Horn > 18GHz			Limit FCC 22		<input checked="" type="checkbox"/> High Pass Filter		
HI Frequency Cables <input type="checkbox"/> (2 ft) <input checked="" type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)				Pre-amplifier 1-26GHz T34 HP 8449B		Pre-amplifier 26-40GHz				
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch (826.4 MHz)										
1.598	60.6	V	-33.2	4.1	6.9	4.7	-32.6	-13.0	-19.6	
1.653	46.2	V	-59.0	4.2	7.1	4.9	-58.2	-13.0	-45.2	
2.125	48.8	V	-45.4	4.8	8.6	6.5	-43.8	-13.0	-30.8	
3.306	45.4	V	-52.7	6.0	9.4	7.3	-51.4	-13.0	-38.4	
1.598	61.0	H	-31.8	4.1	6.9	4.7	-31.2	-13.0	-18.2	
1.653	46.8	H	-57.7	4.2	7.1	4.9	-56.9	-13.0	-43.9	
2.125	48.4	H	-44.8	4.8	8.6	6.5	-43.1	-13.0	-30.1	
3.306	44.9	H	-53.1	6.0	9.4	7.3	-51.8	-13.0	-38.8	
Mid Ch (836.4 MHz)										
1.598	59.6	V	-45.8	4.1	6.9	4.7	-45.1	-13.0	-32.1	
1.673	47.7	V	-57.4	4.2	7.2	5.0	-56.6	-13.0	-43.6	
1.762	57.4	V	-47.5	4.3	7.5	5.3	-46.5	-13.0	-33.5	
2.662	48.0	V	-53.3	5.4	9.3	7.1	-51.6	-13.0	-38.6	
3.306	44.2	V	-53.9	6.0	9.4	7.3	-52.6	-13.0	-39.6	
1.598	59.6	H	-45.1	4.1	6.9	4.7	-44.4	-13.0	-31.4	
1.673	47.5	H	-56.9	4.2	7.2	5.0	-56.1	-13.0	-43.1	
3.306	44.360	H	-53.6	6.0	9.4	7.3	-52.3	-13.0	-39.3	
High Ch (846.6 MHz)										
1.598	60.7	V	-33.1	4.1	6.9	4.7	-32.5	-13.0	-19.5	
1.693	46.9	V	-58.2	4.2	7.2	5.1	-57.3	-13.0	-44.3	
2.125	47.1	V	-47.1	4.8	8.6	6.5	-45.4	-13.0	-32.4	
3.386	45.7	V	-52.0	6.1	9.5	7.3	-50.7	-13.0	-37.7	
1.598	59.2	H	-33.7	4.1	6.9	4.7	-33.0	-13.0	-20.0	
2.125	46.0	H	-47.2	4.8	8.6	6.5	-45.5	-13.0	-32.5	
2.540	44.7	H	-57.1	5.3	9.3	7.1	-55.2	-13.0	-42.2	
3.386	44.3	H	-53.4	6.1	9.5	7.3	-52.1	-13.0	-39.1	
Rev. 1.24.7										

**GSM1900 Band GPRS Spurious & Harmonic (ERP)**

High Frequency Substitution Measurement										
Compliance Certification Services, B- 5m Chamber Fremont Site										
Company: Toshiba Project #: 07U10847 Date: 2/15/07 Test Engineer: Yu-Chien Ho Configuration: Laptop only. Mode: GSM1900, GPRS										
<b>Test Equipment:</b>										
EMCO Horn 1-18GHz T60; S/N: 2238 @3m		Horn > 18GHz		Limit FCC 24		<input checked="" type="checkbox"/> High Pass Filter				
Hi Frequency Cables <input type="checkbox"/> (2 ft) <input checked="" type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)				Pre-amplifier 1-26GHz T34 HP 8449B		Pre-amplifier 26-40GHz				
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch (1.8502 GHz)</b>										
3.700	45.2	V	-51.2	6.4	9.7	7.5	-48.0	-13.0	-35.0	
5.551	44.6	V	-46.0	8.0	11.0	8.9	-43.0	-13.0	-30.0	
7.401	44.1	V	-43.0	9.0	12.0	9.8	-40.0	-13.0	-27.0	
9.251	47.3	V	-38.6	10.1	12.7	10.5	-36.0	-13.0	-23.0	
3.700	44.3	H	-52.1	6.4	9.7	7.5	-48.8	-13.0	-35.8	
5.551	43.3	H	-46.3	8.0	11.0	8.9	-43.2	-13.0	-30.2	
7.401	40.5	H	-45.9	9.0	12.0	9.8	-42.9	-13.0	-29.9	
9.251	41.7	H	-44.2	10.1	12.7	10.5	-41.7	-13.0	-28.7	
<b>Mid Ch (1.88 GHz)</b>										
5.640	46.0	V	-44.7	8.1	11.2	9.0	-41.6	-13.0	-28.6	
9.400	53.4	V	-31.7	10.3	12.7	10.6	-29.3	-13.0	-16.3	
11.280	46.4	V	-32.9	12.4	13.9	11.8	-31.4	-13.0	-18.4	
13.160	48.7	V	-28.8	13.3	15.2	13.1	-26.9	-13.0	-13.9	
3.760	45.4	H	-50.7	6.4	9.7	7.5	-47.5	-13.0	-34.5	
7.520	44.1	H	-41.9	9.1	12.0	9.8	-39.0	-13.0	-26.0	
5.640	44.0	H	-45.7	8.1	11.2	9.0	-42.6	-13.0	-29.6	
9.400	49.0	H	-36.1	10.3	12.7	10.6	-33.7	-13.0	-20.7	
<b>High Ch (1.9098 GHz)</b>										
3.820	45.7	V	-50.2	6.5	9.7	7.6	-47.0	-13.0	-34.0	
5.729	44.4	V	-46.4	8.1	11.3	9.2	-43.2	-13.0	-30.2	
7.639	42.8	V	-43.8	9.1	12.0	9.8	-40.9	-13.0	-27.9	
9.549	41.2	V	-43.0	10.5	12.7	10.6	-40.8	-13.0	-27.8	
3.820	45.1	H	-50.7	6.5	9.7	7.6	-47.5	-13.0	-34.5	
5.729	43.0	H	-46.8	8.1	11.3	9.2	-43.6	-13.0	-30.6	
7.639	39.9	H	-45.8	9.1	12.0	9.8	-42.9	-13.0	-29.9	
9.549	40.8	H	-43.4	10.5	12.7	10.6	-41.2	-13.0	-28.2	
Rev. 1.24.7										

**GSM1900 Band EGPRS Spurious & Harmonic (EIRP)**

High Frequency Substitution Measurement											
Compliance Certification Services, B- 5m Chamber Fremont Site											
<b>Company:</b> Toshiba <b>Project #:</b> 07U10847 <b>Date:</b> 2/15/07 <b>Test Engineer:</b> Yu-Chien Ho <b>Configuration:</b> Laptop only. <b>Mode:</b> GSM1900, EGPRS											
<b>Test Equipment:</b>											
<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">EMCO Horn 1-18GHz</div> <div style="border: 1px solid black; padding: 2px;">T60; S/N: 2238 @3m</div>		<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Horn &gt; 18GHz</div> <div style="border: 1px solid black; padding: 2px;"></div>		<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Limit</div> <div style="border: 1px solid black; padding: 2px;">FCC 24</div>		<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;"><input checked="" type="checkbox"/> High Pass Filter</div>					
<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Hi Frequency Cables</div> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> (2 ft)</div> <div style="border: 1px solid black; padding: 2px;"><input checked="" type="checkbox"/> (2 ~ 3 ft)</div> <div style="border: 1px solid black; padding: 2px;"><input type="checkbox"/> (4 ~ 6 ft)</div> <div style="border: 1px solid black; padding: 2px;"><input checked="" type="checkbox"/> (12 ft)</div> </div>				<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Pre-amplifier 1-26GHz</div> <div style="border: 1px solid black; padding: 2px;">T34 HP 8449B</div>		<div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Pre-amplifier 26-40GHz</div> <div style="border: 1px solid black; padding: 2px;"></div>					
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
<b>Low Ch (1.8502 GHz)</b>											
3.700	43.6	V	-52.8	6.4	9.7	7.5	-49.6	-13.0	-36.6		
7.401	47.2	V	-39.9	9.0	12.0	9.8	-36.9	-13.0	-23.9		
5.640	46.0	V	-44.7	8.1	11.2	9.0	-41.6	-13.0	-28.6		
9.400	53.4	V	-31.7	10.3	12.7	10.6	-29.3	-13.0	-16.3		
3.700	44.2	H	-52.1	6.4	9.7	7.5	-48.9	-13.0	-35.9		
7.401	46.1	H	-40.2	9.0	12.0	9.8	-37.2	-13.0	-24.2		
5.640	44.0	H	-45.7	8.1	11.2	9.0	-42.6	-13.0	-29.6		
9.400	49.0	H	-36.1	10.3	12.7	10.6	-33.7	-13.0	-20.7		
<b>Mid Ch (1.88 GHz)</b>											
3.760	46.3	V	-49.8	6.4	9.7	7.5	-46.6	-13.0	-33.6		
5.640	43.5	V	-47.2	8.1	11.2	9.0	-44.1	-13.0	-31.1		
7.520	42.8	V	-44.1	9.1	12.0	9.8	-41.1	-13.0	-28.1		
9.400	41.2	V	-43.9	10.3	12.7	10.6	-41.4	-13.0	-28.4		
3.760	45.1	H	-51.0	6.4	9.7	7.5	-47.7	-13.0	-34.7		
5.640	43.0	H	-46.7	8.1	11.2	9.0	-43.6	-13.0	-30.6		
7.520	39.9	H	-46.1	9.1	12.0	9.8	-43.2	-13.0	-30.2		
9.400	40.8	H	-44.3	10.3	12.7	10.6	-41.8	-13.0	-28.8		
<b>High Ch (1.9098 GHz)</b>											
3.820	45.4	V	-50.6	6.5	9.7	7.6	-47.3	-13.0	-34.3		
5.729	44.1	V	-46.7	8.1	11.3	9.2	-43.5	-13.0	-30.5		
7.639	41.1	V	-45.4	9.1	12.0	9.8	-42.5	-13.0	-29.5		
9.549	42.6	V	-41.6	10.5	12.7	10.6	-39.4	-13.0	-26.4		
3.820	45.5	H	-50.3	6.5	9.7	7.6	-47.1	-13.0	-34.1		
5.729	44.2	H	-45.6	8.1	11.3	9.2	-42.4	-13.0	-29.4		
7.639	43.2	H	-42.5	9.1	12.0	9.8	-39.6	-13.0	-26.6		
9.549	41.9	H	-42.3	10.5	12.7	10.6	-40.1	-13.0	-27.1		
Rev. 1.24.7											

**PCS Band WCDMA Spurious & Harmonic (EIRP)**

High Frequency Substitution Measurement										
Compliance Certification Services, B- 5m Chamber Fremont Site										
Company: Toshiba Project #: 07U10847 Date: 2/15/07 Test Engineer: Yu-Chien Ho Configuration: Laptop only. Mode: WCDMA, PCS, 12.2k RMC.										
<b>Test Equipment:</b>										
EMCO Horn 1-18GHz T60; S/N: 2238 @3m		Horn > 18GHz		Limit FCC 24		<input checked="" type="checkbox"/> High Pass Filter				
Hi Frequency Cables <input type="checkbox"/> (2 ft) <input checked="" type="checkbox"/> (2 ~ 3 ft) <input type="checkbox"/> (4 ~ 6 ft) <input checked="" type="checkbox"/> (12 ft)				Pre-amplifier 1-26GHz T34 HP 8449B		Pre-amplifier 26-40GHz				
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch (1.8524 GHz)</b>										
3.705	41.7	V	-54.7	6.4	9.7	7.5	-51.4	-13.0	-38.4	
5.557	41.5	V	-49.1	8.0	11.0	8.9	-46.1	-13.0	-33.1	
7.410	42.4	V	-44.7	9.0	12.0	9.8	-41.7	-13.0	-28.7	
9.262	40.5	V	-45.3	10.1	12.7	10.6	-42.8	-13.0	-29.8	
3.705	40.7	H	-55.6	6.4	9.7	7.5	-52.3	-13.0	-39.3	
5.557	40.9	H	-48.7	8.0	11.0	8.9	-45.7	-13.0	-32.7	
7.410	39.9	H	-46.4	9.0	12.0	9.8	-43.4	-13.0	-30.4	
9.262	40.8	H	-45.0	10.1	12.7	10.6	-42.5	-13.0	-29.5	
<b>Mid Ch (1.88 GHz)</b>										
3.760	42.2	V	-53.9	6.4	9.7	7.5	-50.7	-13.0	-37.7	
5.640	42.1	V	-48.6	8.1	11.2	9.0	-45.5	-13.0	-32.5	
7.520	42.8	V	-44.1	9.1	12.0	9.8	-41.1	-13.0	-28.1	
9.400	41.2	V	-43.9	10.3	12.7	10.6	-41.4	-13.0	-28.4	
3.760	41.4	H	-54.7	6.4	9.7	7.5	-51.5	-13.0	-38.5	
5.640	41.8	H	-47.9	8.1	11.2	9.0	-44.8	-13.0	-31.8	
7.520	40.5	H	-45.5	9.1	12.0	9.8	-42.6	-13.0	-29.6	
9.400	41.7	H	-43.4	10.3	12.7	10.6	-41.0	-13.0	-28.0	
<b>High Ch (1.9076 GHz)</b>										
3.815	42.7	V	-53.3	6.5	9.7	7.6	-50.0	-13.0	-37.0	
5.723	42.7	V	-48.1	8.1	11.3	9.1	-44.9	-13.0	-31.9	
7.630	43.2	V	-43.3	9.1	12.0	9.8	-40.5	-13.0	-27.5	
9.538	41.9	V	-42.4	10.5	12.7	10.6	-40.1	-13.0	-27.1	
3.815	42.1	H	-53.8	6.5	9.7	7.6	-50.5	-13.0	-37.5	
5.723	42.7	H	-47.1	8.1	11.3	9.1	-43.9	-13.0	-30.9	
7.630	41.1	H	-44.6	9.1	12.0	9.8	-41.8	-13.0	-28.8	
9.538	42.6	H	-41.7	10.5	12.7	10.6	-39.4	-13.0	-26.4	
Rev. 1.24.7										

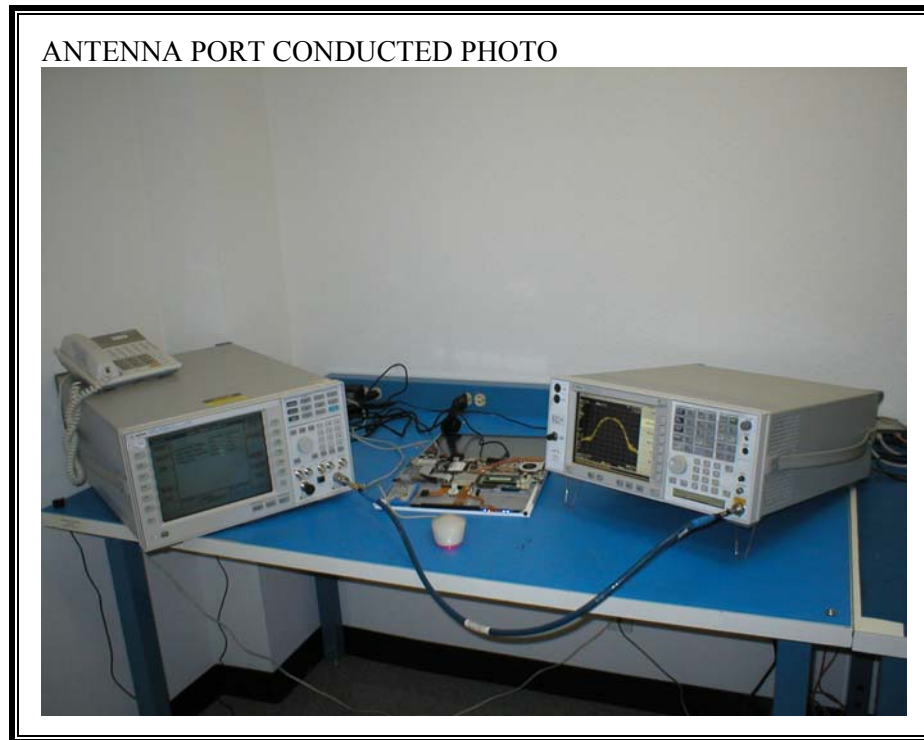


**PCS Band WCDMA+HSPDA Spurious & Harmonic (EIRP)**

High Frequency Substitution Measurement										
Compliance Certification Services, B- 5m Chamber Fremont Site										
<b>Company:</b> Toshiba <b>Project #:</b> 07U10847 <b>Date:</b> 2/15/07 <b>Test Engineer:</b> Yu-Chien Ho <b>Configuration:</b> Laptop only. <b>Mode:</b> WCDMA + HSDPA, PCS, 12.2k RMC										
<b>Test Equipment:</b>										
EMCO Horn 1-18GHz		Horn > 18GHz		Limit		<input checked="" type="checkbox"/> High Pass Filter				
T60; S/N: 2238 @3m				FCC 24						
Hi Frequency Cables <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <span><input type="checkbox"/> (2 ft)</span> <span><input checked="" type="checkbox"/> (2 ~ 3 ft)</span> <span><input type="checkbox"/> (4 ~ 6 ft)</span> <span><input checked="" type="checkbox"/> (12 ft)</span> </div>										
				Pre-amplifier 1-26GHz		Pre-amplifier 26-40GHz				
				T34 HP 8449B						
f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
<b>Low Ch (1.8524 GHz)</b>										
3.705	44.3	V	-52.1	6.4	9.7	7.5	-48.8	-13.0	-35.8	
5.557	43.2	V	-47.3	8.0	11.0	8.9	-44.3	-13.0	-31.3	
3.705	45.7	H	-50.7	6.4	9.7	7.5	-47.4	-13.0	-34.4	
5.557	42.6	H	-47.0	8.0	11.0	8.9	-44.0	-13.0	-31.0	
<b>Mid Ch (1.88 GHz)</b>										
3.760	45.9	V	-50.3	6.4	9.7	7.5	-47.0	-13.0	-34.0	
5.640	45.2	V	-45.5	8.1	11.2	9.0	-42.4	-13.0	-29.4	
3.760	46.0	H	-50.1	6.4	9.7	7.5	-46.9	-13.0	-33.9	
5.640	44.8	H	-44.9	8.1	11.2	9.0	-41.8	-13.0	-28.8	
<b>High Ch (1.9076 GHz)</b>										
3.815	46.6	V	-49.4	6.5	9.7	7.6	-46.1	-13.0	-33.1	
5.723	42.7	V	-48.1	8.1	11.3	9.1	-44.9	-13.0	-31.9	
3.815	45.2	H	-50.6	6.5	9.7	7.6	-47.4	-13.0	-34.4	
5.723	43.3	H	-46.5	8.1	11.3	9.1	-43.3	-13.0	-30.3	
Rev. 1.24.7										

## 8. SETUP PHOTOS

### ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP

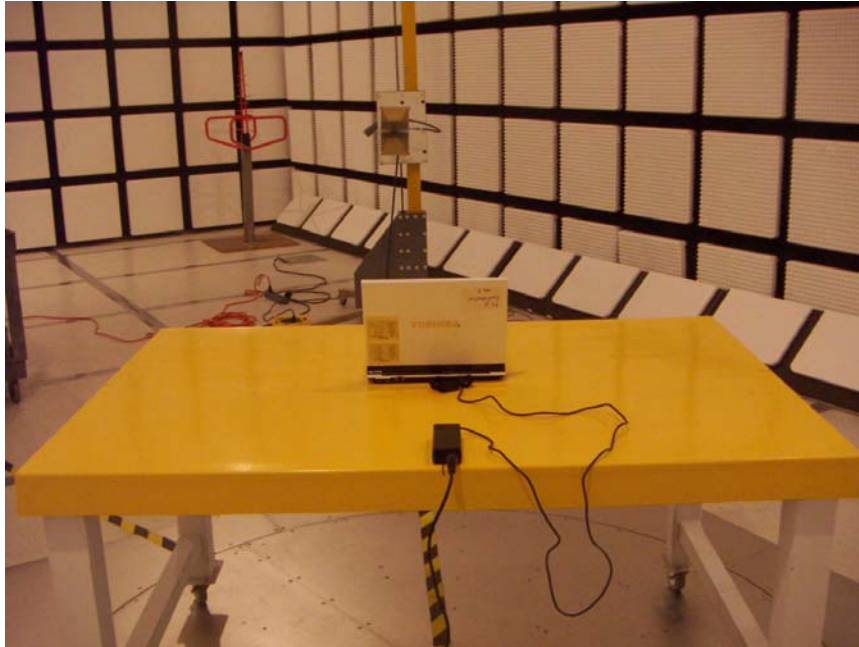




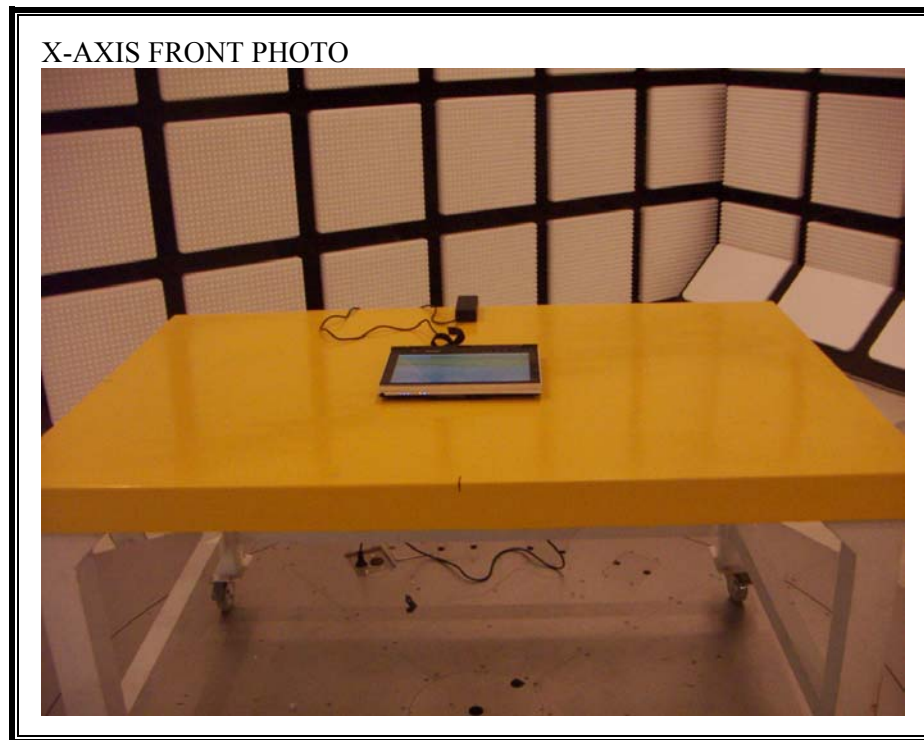
**RADIATED RF MEASUREMENT SETUP FOR MOBILE CONFIGURATION**



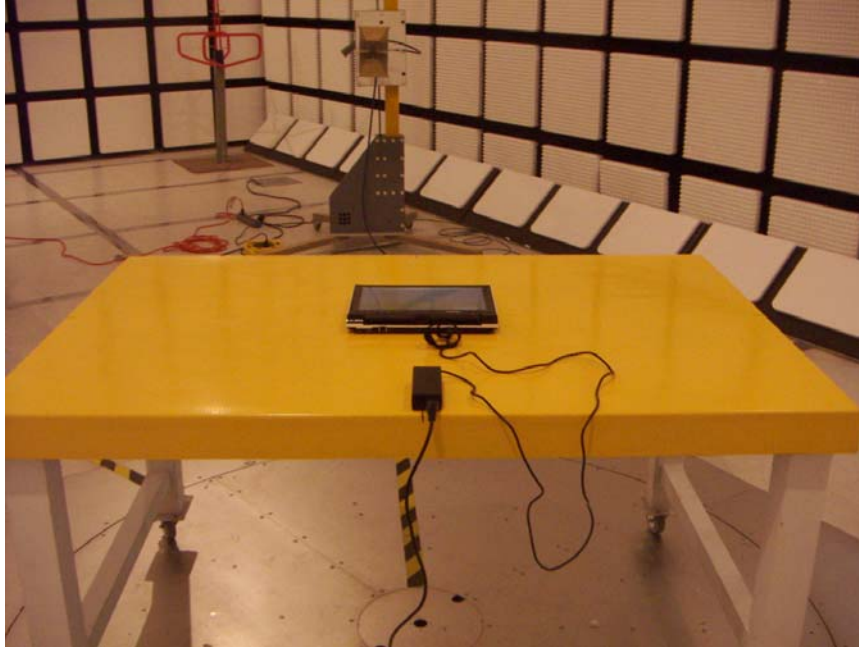
RADIATED BACK PHOTO



**RADIATED RF MEASUREMENT SETUP FOR PORTABLE CONFIGURATION**



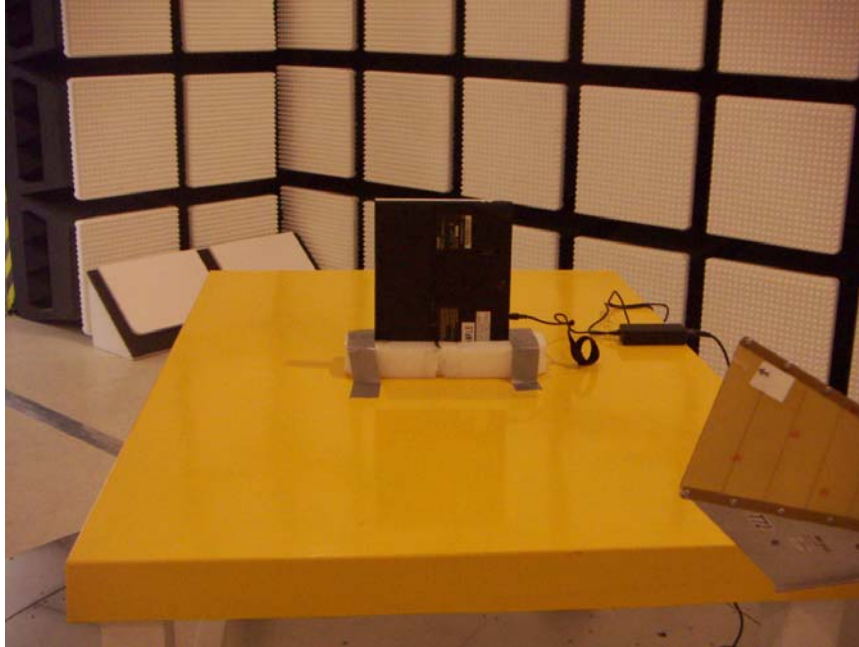
X-AXIS BACK PHOTO



Y-AXIS FRONT PHOTO



Y-AXIS BACK PHOTO

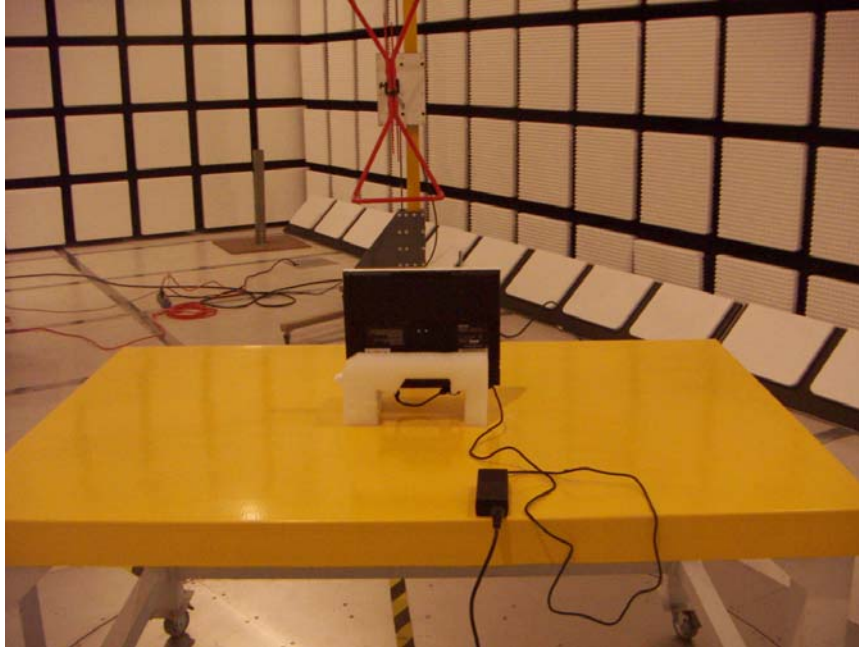




Z-AXIS FRONT PHOTO

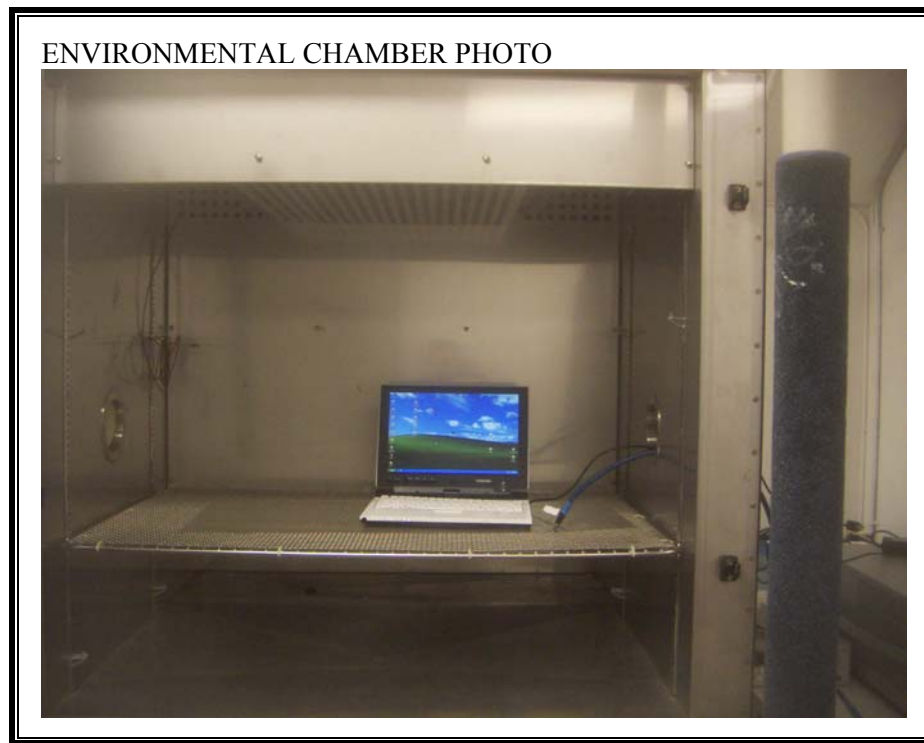


Z-AXIS BACK PHOTO





**RF CONDUCTED MEASUREMENT OVER NORMAL AND EXTREME CONDITIONS**



**END OF REPORT**