FCC CFR47 PART 22H & 24E
CERTIFICATION
TEST REPORT

FOR

SMARTPHONE

MODEL NUMBER: EXCA100

FCC ID: NM8EXCA

REPORT NUMBER: 06I10345-1, REVISION B

ISSUE DATE: JULY 19, 2006

Prepared for
HIGH TECH COMPUTER CORP.
23 HSIN HUA ROAD
TAOYUAN 330, TAIWAN R.O.C

Prepared by
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Revision History

Rev.	Issue Date	Revisions	Revised By
--	6/22/06	Initial Issue	Thu C.
B	7/19/06	Update section 6.1 to add explanation on two EUT models	Thu C.

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: HIGH TECH COMPUTER, CORP.
23, HSIN HUA ROAD
TAOYUAN 330, TAIWAN R.O.C.

EUT DESCRIPTION: SMARTPHONE

MODEL TESTED: EXCA100 (without Jog Bar)

SERIAL NUMBER: 01753

DATE TESTED: JUNE 07-10, 20065

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22 H and 24 E	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:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

CHIN PANG
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA/EIA 603A (2001), ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15 and FCC CFR 47 Part 22 and Part 24.

3. CROSS REFERENCE TO OTHER REPORTS ON THIS PRODUCT

Other FCC report applicable to this product includes CCS 05U3452-2.

4. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, 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.

5. CALIBRATION AND UNCERTAINTY

5.1. 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.

5.2. 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%.

6. EQUIPMENT UNDER TEST

6.1. DESCRIPTION OF EUT

The EUT is a SMARTPHONE with all auxiliary equipment as described below.

Auxiliary Equipment	Brand	Model No.
Li-Ion Rechargeable Battery	Celxpert	EXCA160
AC adaptor	Delta Electronic	ADP-5FH B
Earphone	NewTech	HTC-296

EUT has two models, one is with Jog Bar and the other without. The model EUT without Jog Bar was tested as a representative of the two model versions of EUT.

6.2. MAXIMUM OUTPUT POWER

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

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Output Power (dBm)	Conducted Output Power (mW)	ERP Output Power (dBm)	ERP Output Power (mW)
824.2 - 848.8	GSM	32.80	1905.46	28.70	741.31
824.2 - 848.8	GPRS	32.71	1866.38	28.20	660.69
824.2 - 848.8	EGPRS	28.73	746.45	23.50	223.87

1850 - 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	Conducted Output Power (dBm)	Conducted Output Power (mW)	EIRP Output Power (dBm)	EIRP Output Power (mW)
1850.2 - 1909.8	GSM	30.38	1091.44	31.60	1445.44
1850.2 - 1909.8	GPRS	30.09	1020.94	31.50	1412.54
1850.2 - 1909.8	EGPRS	29.67	926.83	29.50	891.25

6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a monopole antenna with a maximum gain of -1.9dBi for GSM850 and 1.68dBi for GSM1900 bands.

6.4. SOFTWARE AND FIRMWARE

The EUT is linked with CMU200 tester support equipment during testing.

6.5. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power. The highest measured conducted output powers were 824.2 MHz @ GSM850 and 1809.8 MHz @ GSM1900 modulation.

Preliminary test was done on both EUT with headphone and EUT with AC/DC adaptor at three orthogonal positions, and EUT with AC/DC adaptor on X-position was determined as the worst-case mode.

6.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	Delta Electronic	ADO-5FH B	5RW0619325915	DoC
Wireless Test Set	R & S	CMU200	1100.0008.02	3/21/07

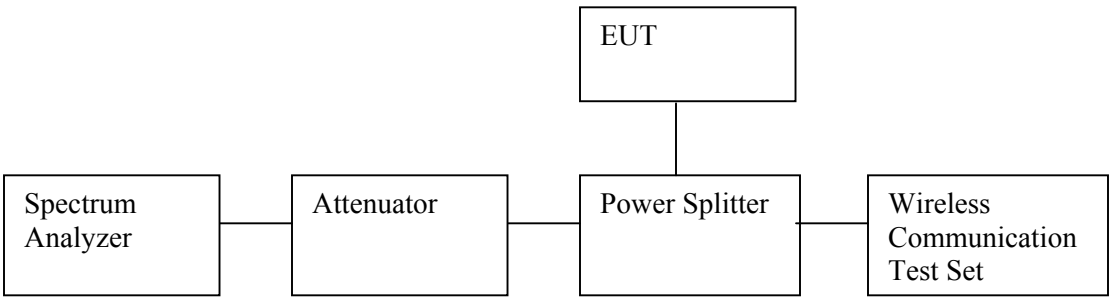
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	DC	1	DC	Unshielded	2m	No
2	DC or Headphone	1	Din	Un-shielded	2m	NA

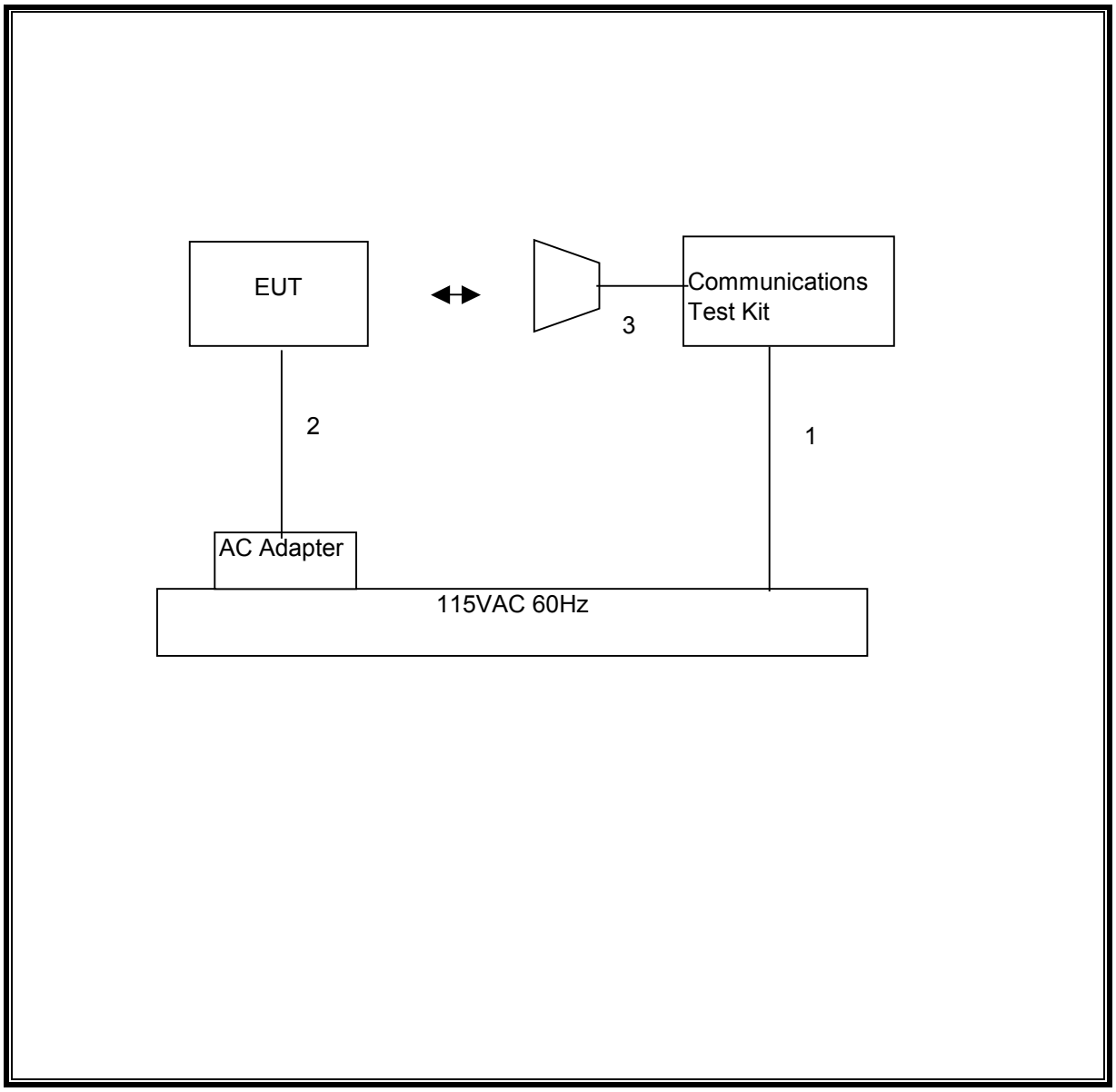
TEST SETUP

The EUT is installed as a stand-alone with AC/DC adapter or headphone device during the tests. The Wireless Communication test set exercised the EUT.

RF CONDUCTED TEST SETUP DIAGRAM



RF RADIATED TEST SETUP DIAGRAM



7. 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**
Signal Generator, 10 MHz ~ 20 GHz	HP	83732B	US34490599	7/7/05
Communication Tester	R & S	CMU 200	838114/032	3/21/07
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	9/3/06
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent / HP	E4446A	MY45300064	12/19/06
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	9001-3245	4/22/07
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	8/17/06
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/22/07
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	29800	6/10/06
Tuned Dipole Antenna 400~1000 MHz	ETS	3121C DB4	1629	5/7/07
2.7GHz HPF	MicroTronic	HPM13194	1	CNR
1.5GHz HPF	MicroTronic	HPM13193	2	CNR

8. LIMITS AND RESULTS

8.1. 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 Modulation

Channel	Frequency (MHz)	Bandwidth (KHz)
Low	824.2	310.61
Middle	836.4	303.74
High	848.8	322.30

GPRS850 Modulation

Channel	Frequency (MHz)	Bandwidth (KHz)
Low	824.2	294.73
Middle	836.4	306.02
High	848.8	312.80

EGPRS850 Modulation

Channel	Frequency (MHz)	Bandwidth (KHz)
Low	824.2	316.50
Middle	836.4	299.72
High	848.8	306.70

GSM1900 Modulation

Channel	Frequency (MHz)	Bandwidth (KHz)
Low	1850.2	313.51
Middle	1880.0	316.77
High	1909.8	304.00

GPRS1900Modulation

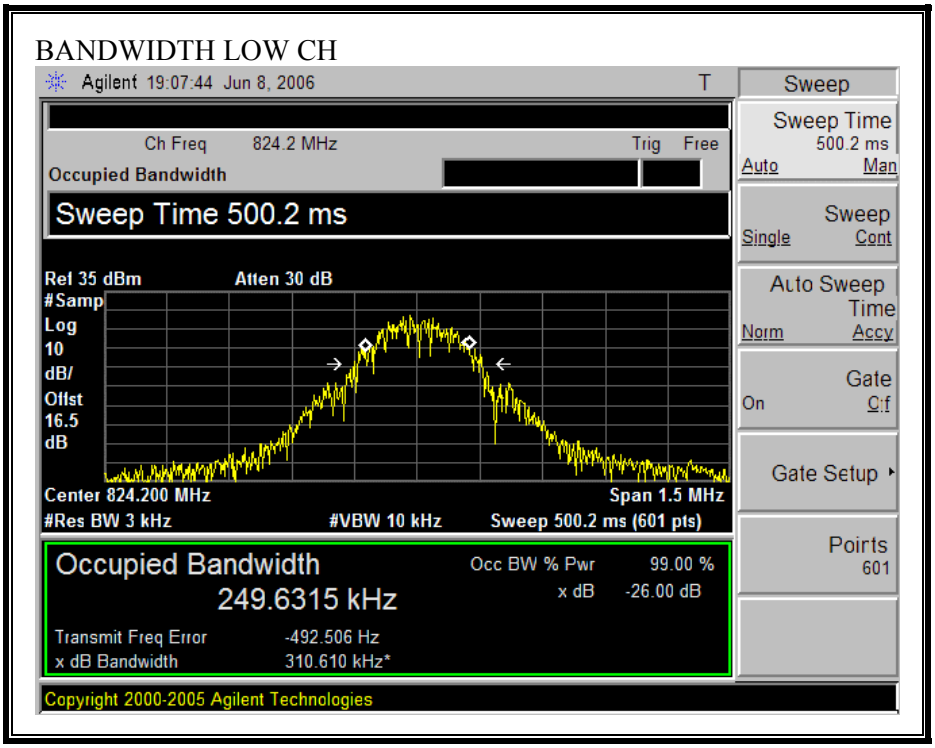
Channel	Frequency (MHz)	Bandwidth (KHz)
Low	1850.2	300.11
Middle	1880.0	311.45
High	1909.8	305.31

EGPRS1900 Modulation

Channel	Frequency (MHz)	Bandwidth (KHz)
Low	1850.2	290.98
Middle	1880.0	301.13
High	1909.8	295.09

GSM850 26 dB BANDWIDTH

BANDWIDTH LOW CH



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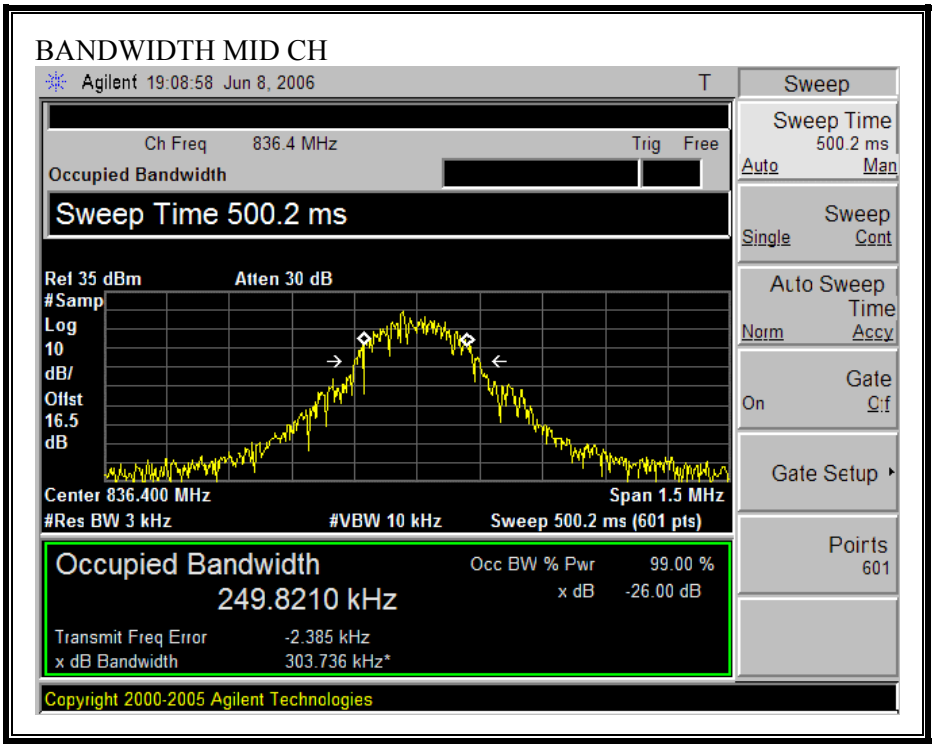

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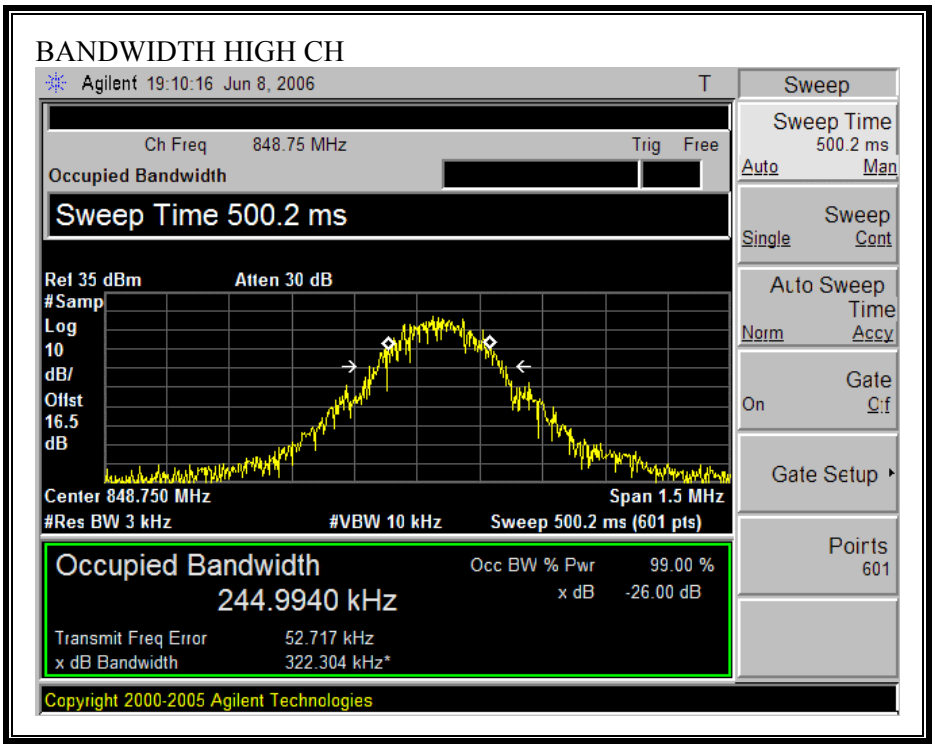
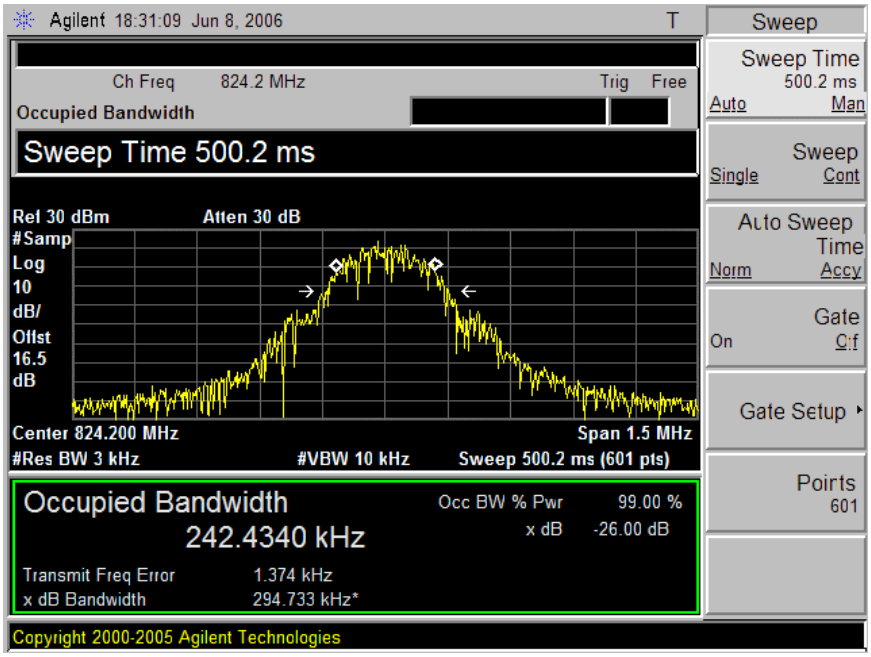


GPRS850 26 dB BANDWIDTH

BANDWIDTH LOW CH



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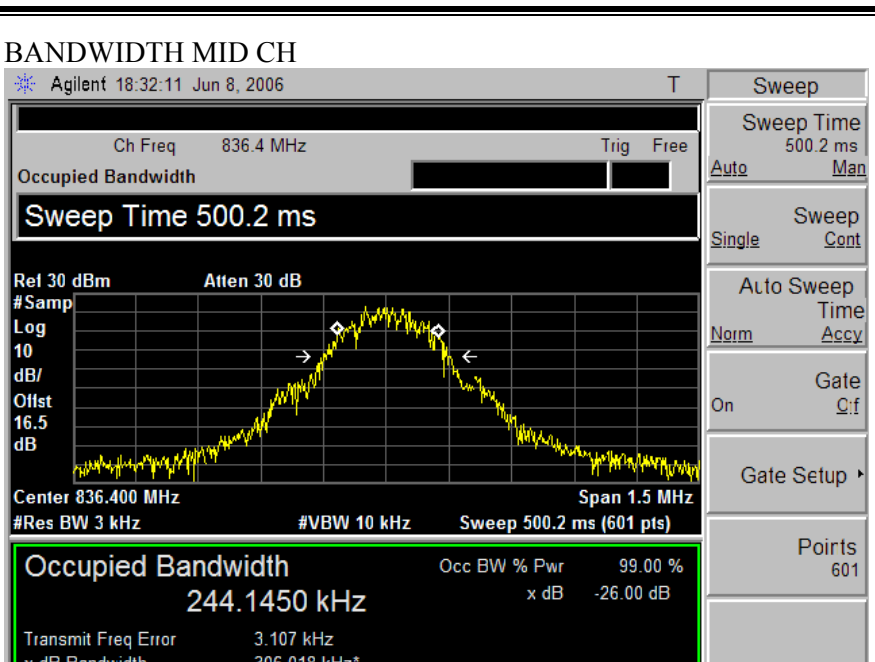

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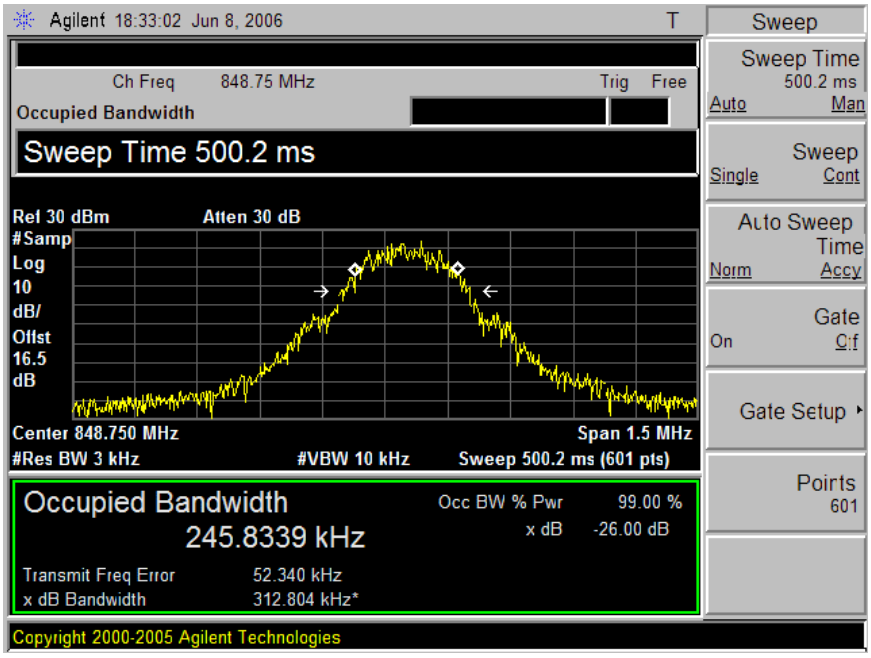
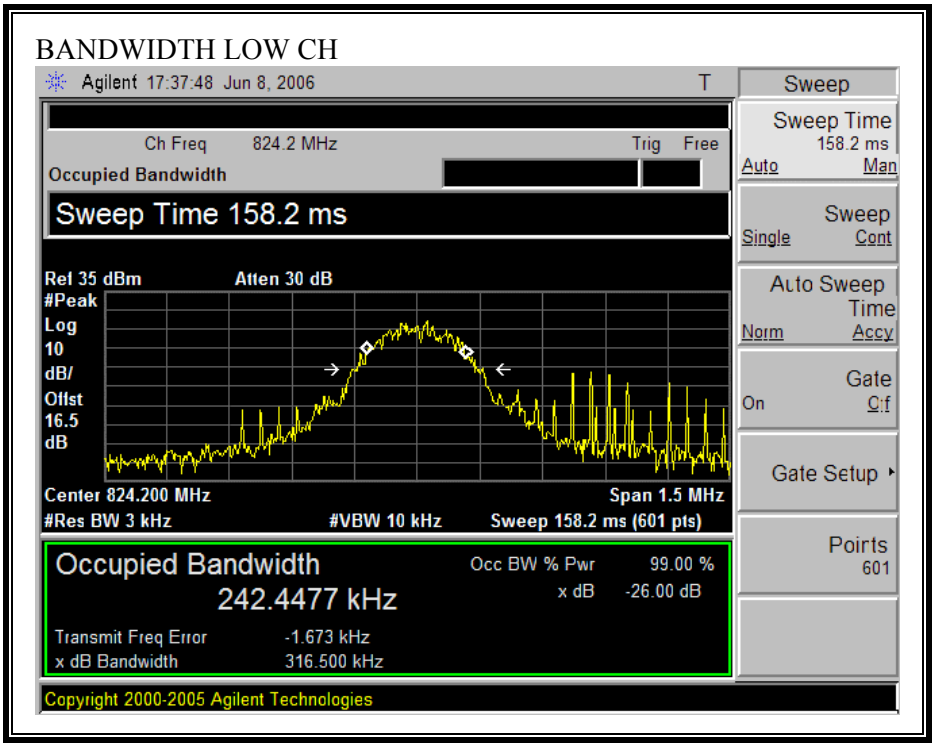


EGPRS850 26 dB BANDWIDTH

BANDWIDTH LOW CH



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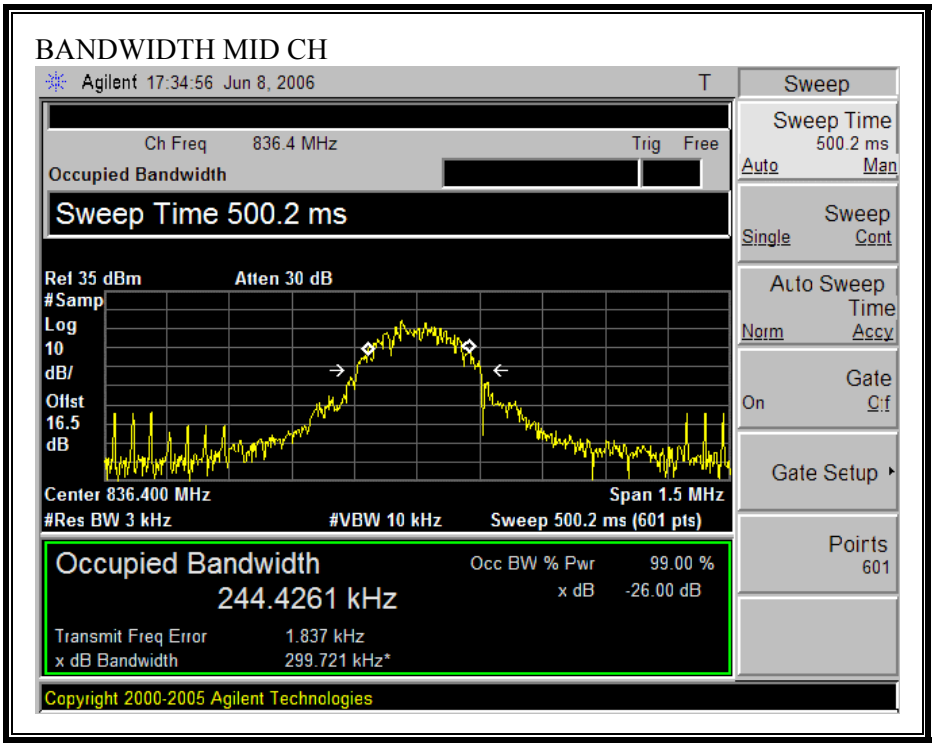

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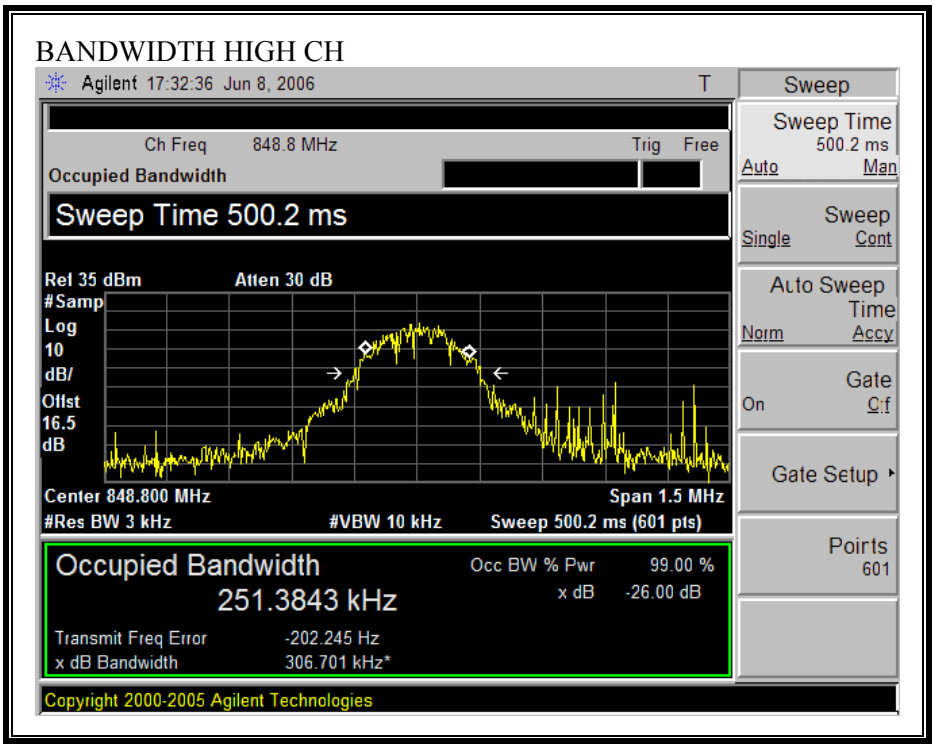
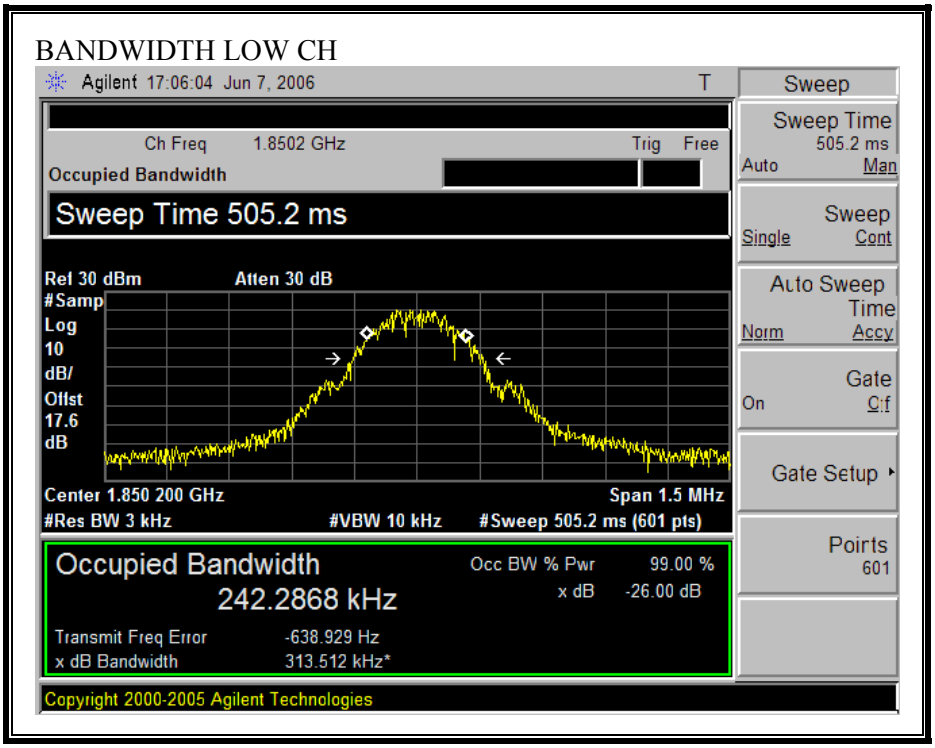


GSM1900 26 dB BANDWIDTH

BANDWIDTH LOW CH



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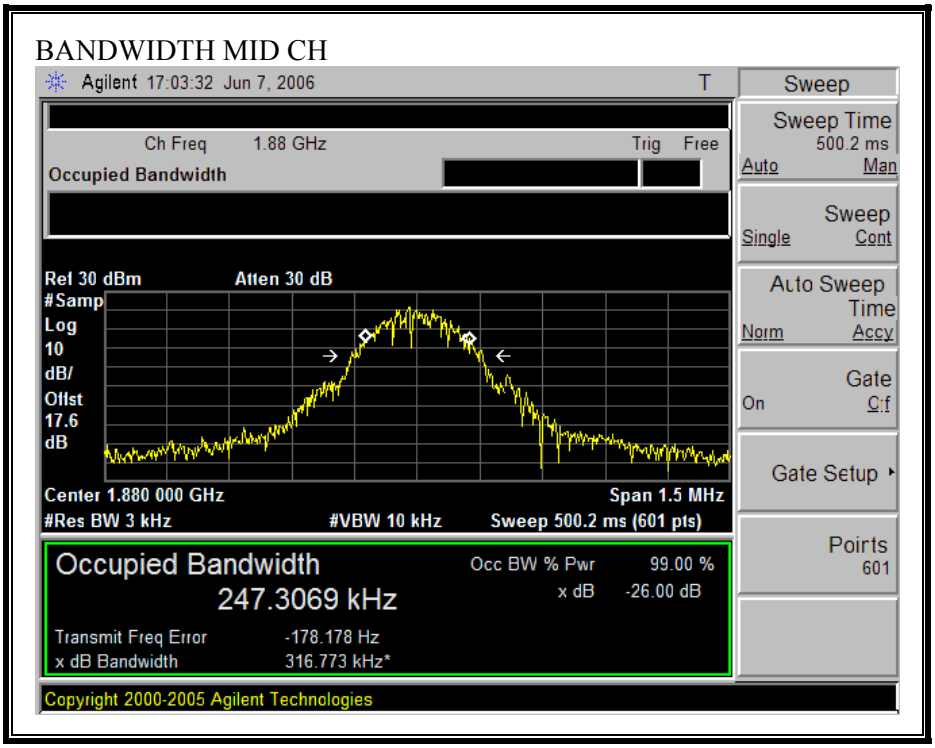

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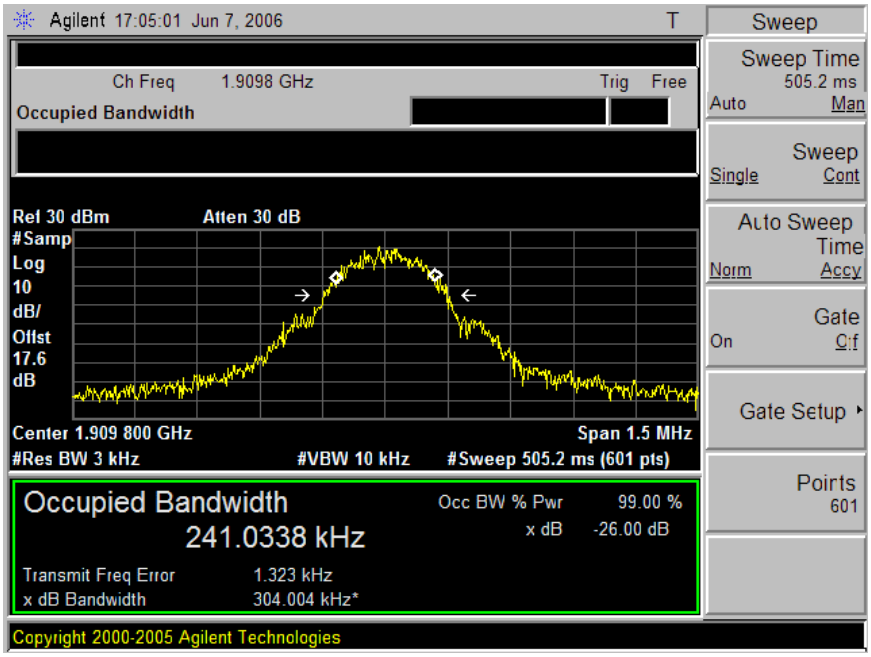
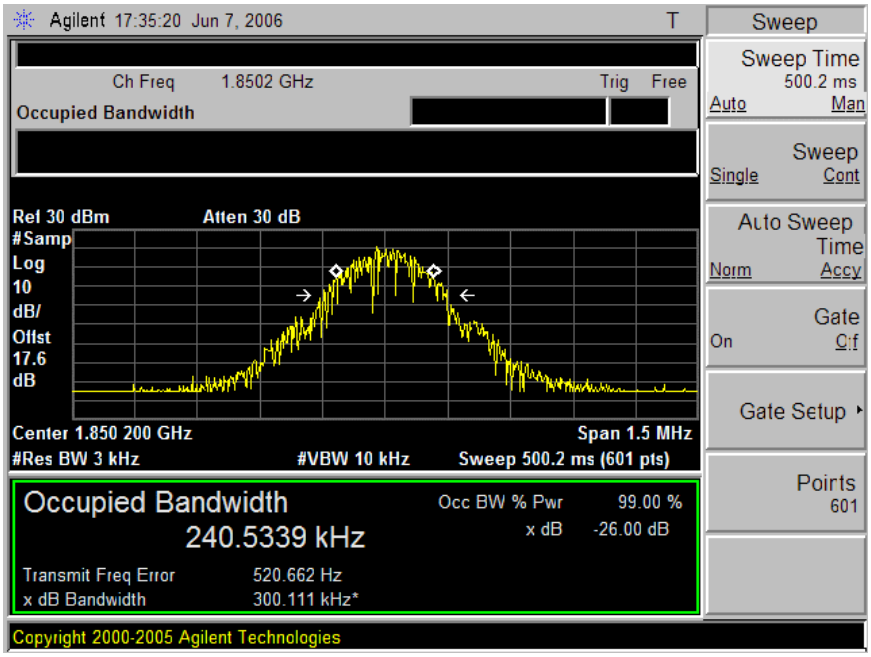


GPRS 1900 26 dB BANDWIDTH

BANDWIDTH LOW CH



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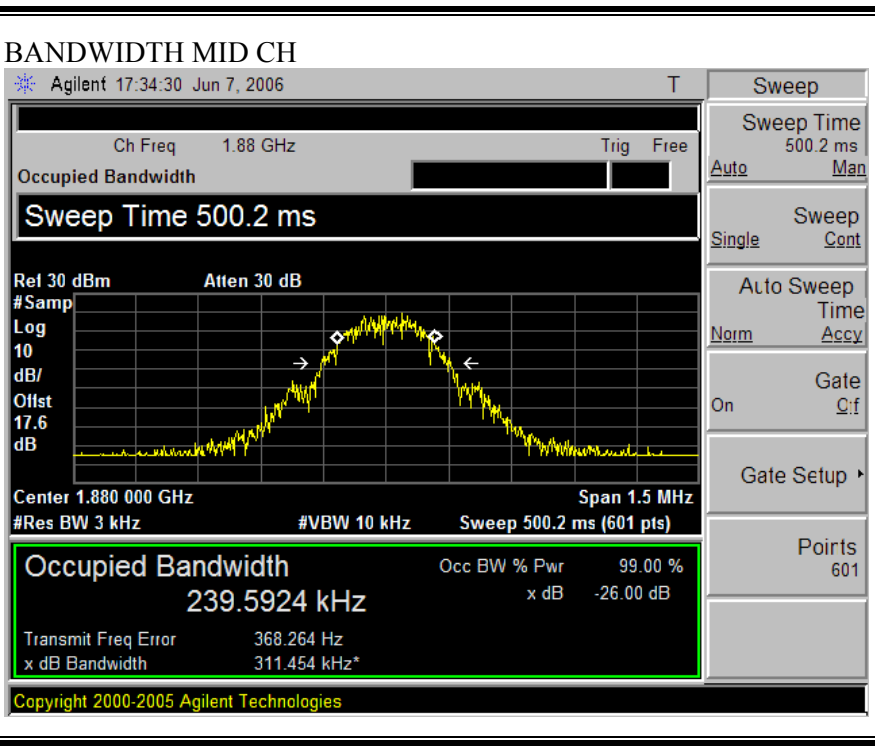

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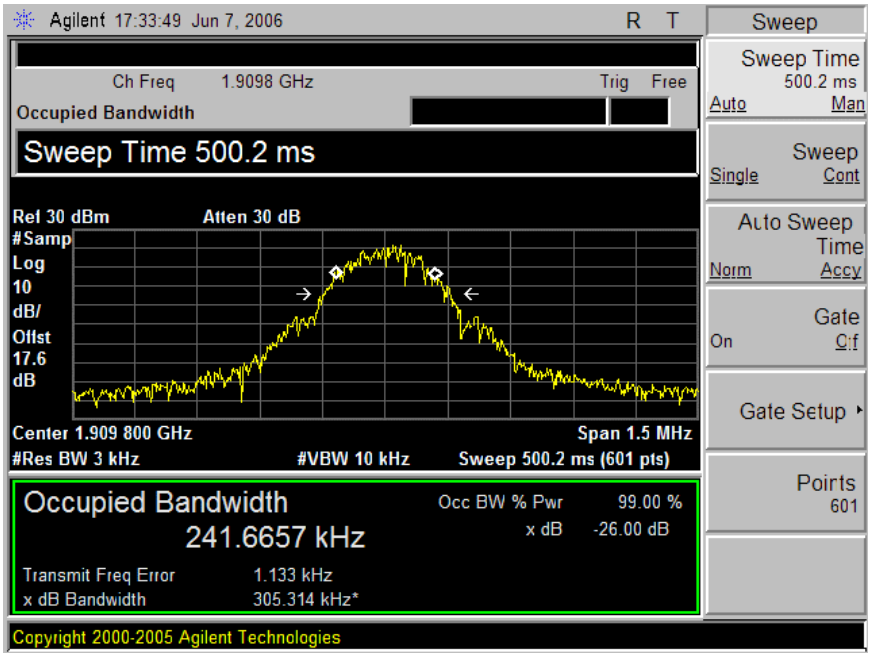
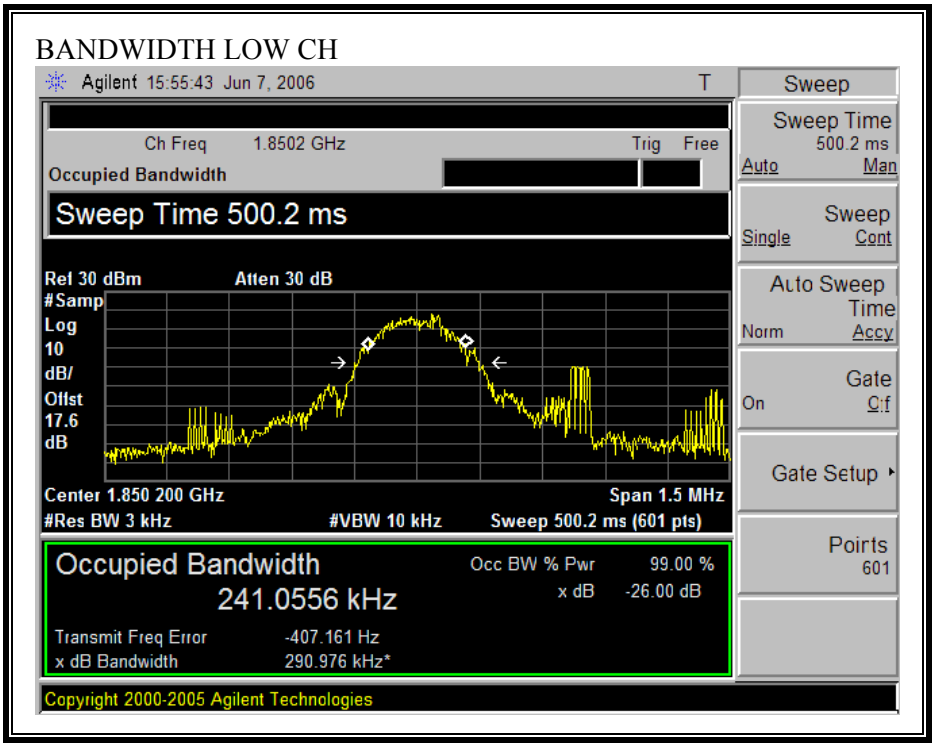


EGPRS1900 26 dB BANDWIDTH

BANDWIDTH LOW CH



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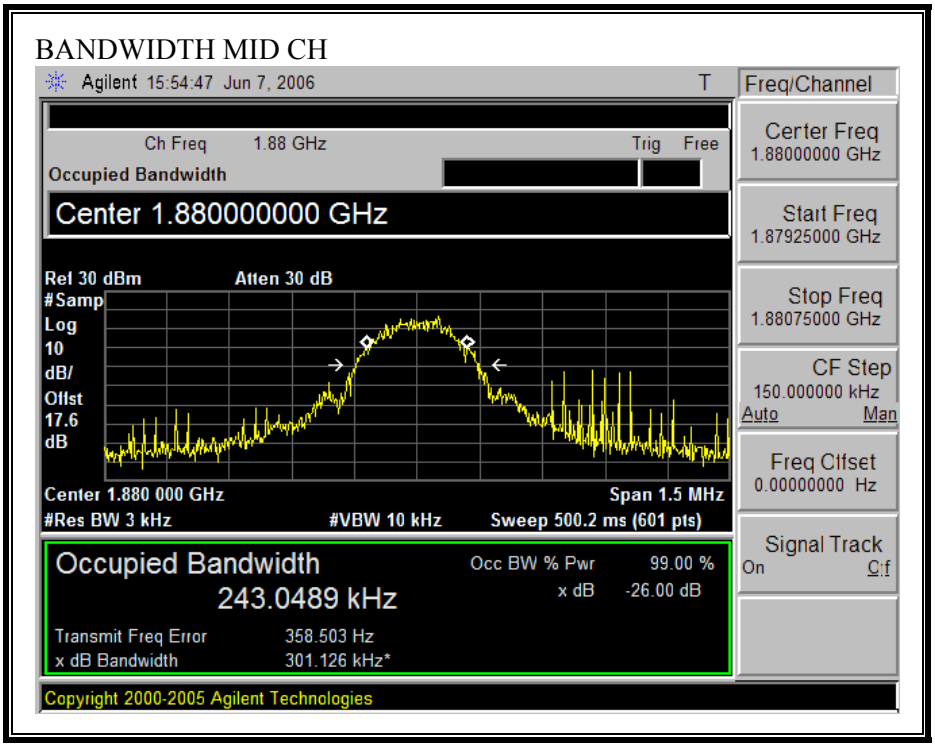

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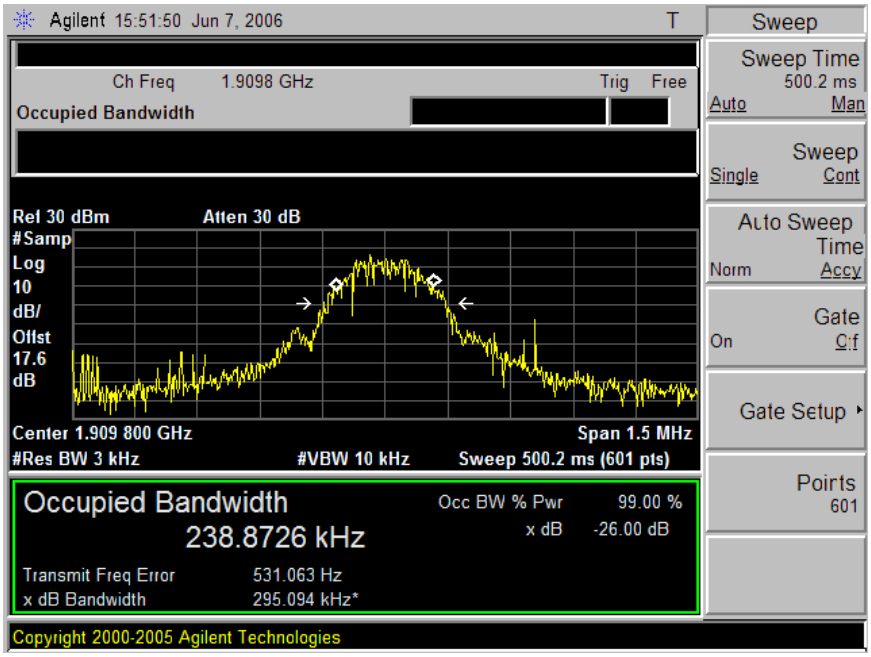


8.2. RF POWER OUTPUT

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.

824 to 849 MHz Authorized Band

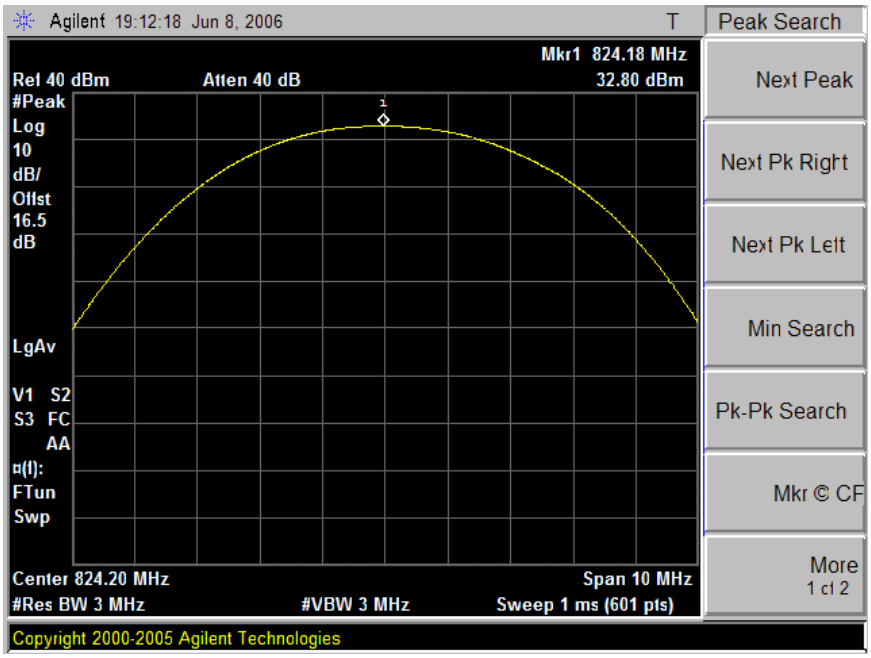
Frequency (MHz)	Modulation	Conducted Peak Output Power (dBm)	Radiated ERP (dBm)
824.2	GSM	32.80	28.20
836.4	GSM	32.74	28.70
848.8	GSM	32.61	27.00
824.2	GPRS	32.71	27.20
836.4	GPRS	32.63	28.20
848.8	GPRS	32.48	26.40
824.2	EGPRS	27.95	22.50
836.4	EGPRS	28.39	23.50
848.8	EGPRS	28.73	23.00

GSM1900, 1850 - 1910 MHz Authorized Band

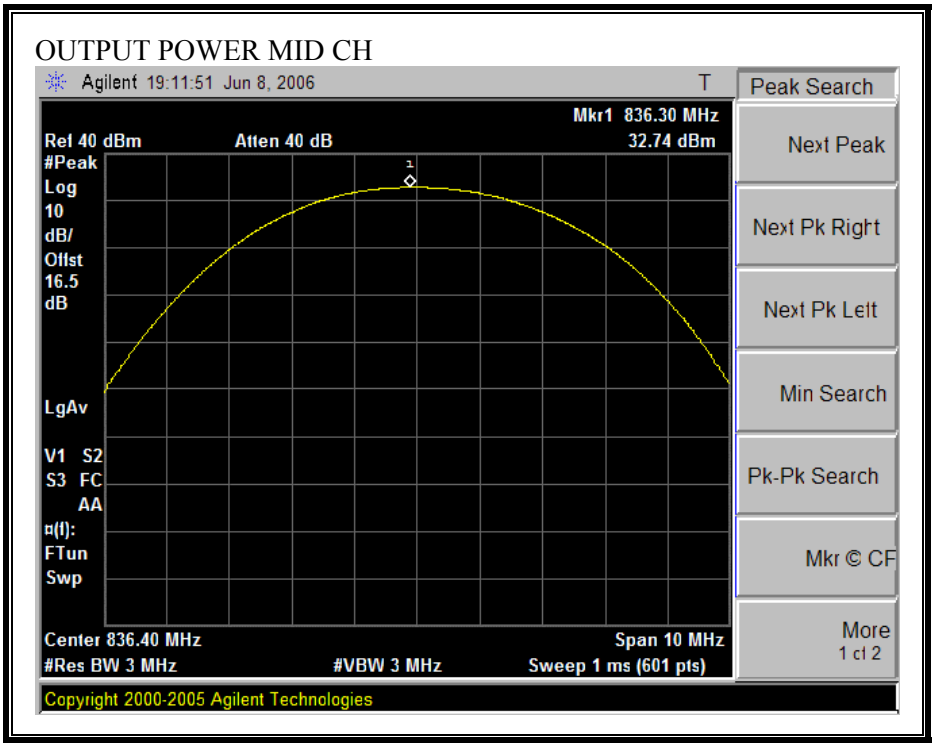
Frequency (MHz)	Modulation	Conducted Peak Output Power (dBm)	Radiated EIRP (dBm)
1850.2	GSM	30.20	30.70
1880	GSM	30.24	31.60
1909.8	GSM	30.38	31.50
1850.2	GPRS	29.97	30.50
1880	GPRS	29.98	31.20
1909.8	GPRS	30.09	31.50
1850.2	EGPRS	29.67	29.20
1880	EGPRS	29.31	29.50
1909.8	EGPRS	28.95	29.20

GSM850 (RF CONDUCTED OUTPUT POWER)

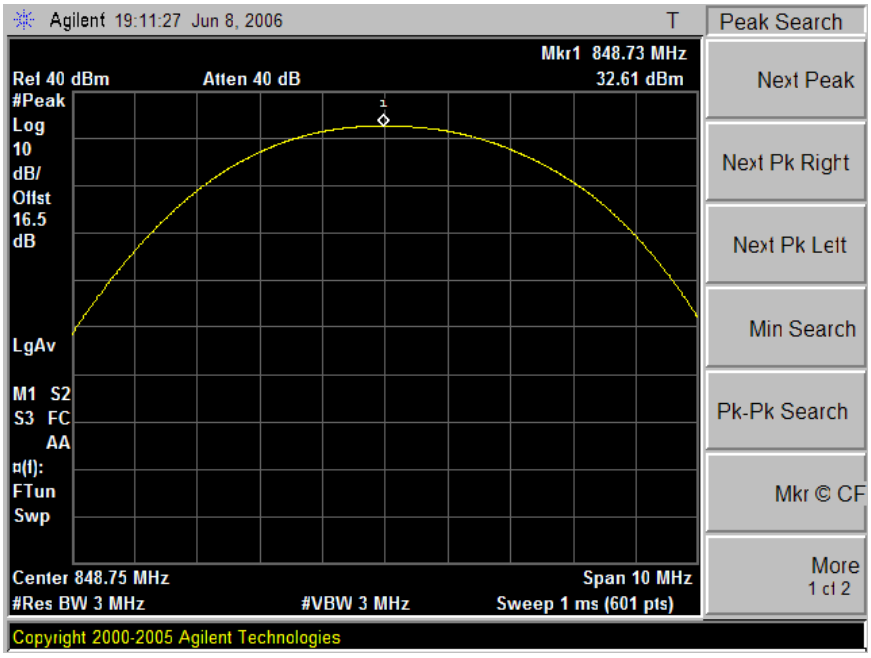
OUTPUT POWER LOW CH



OUTPUT POWER MID CH

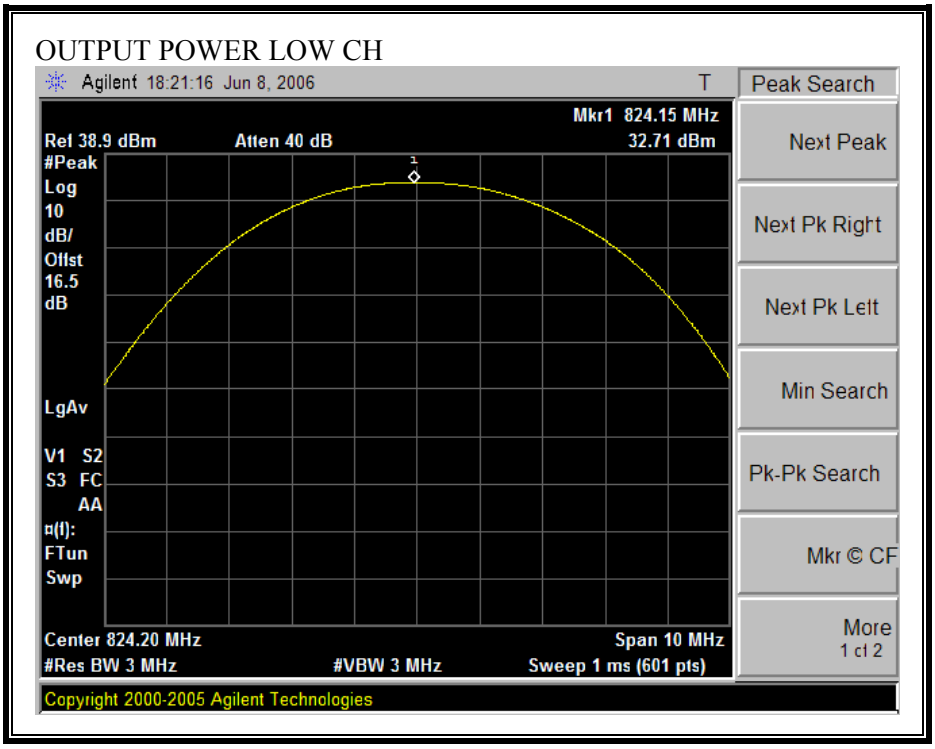


OUTPUT POWER HIGH CH

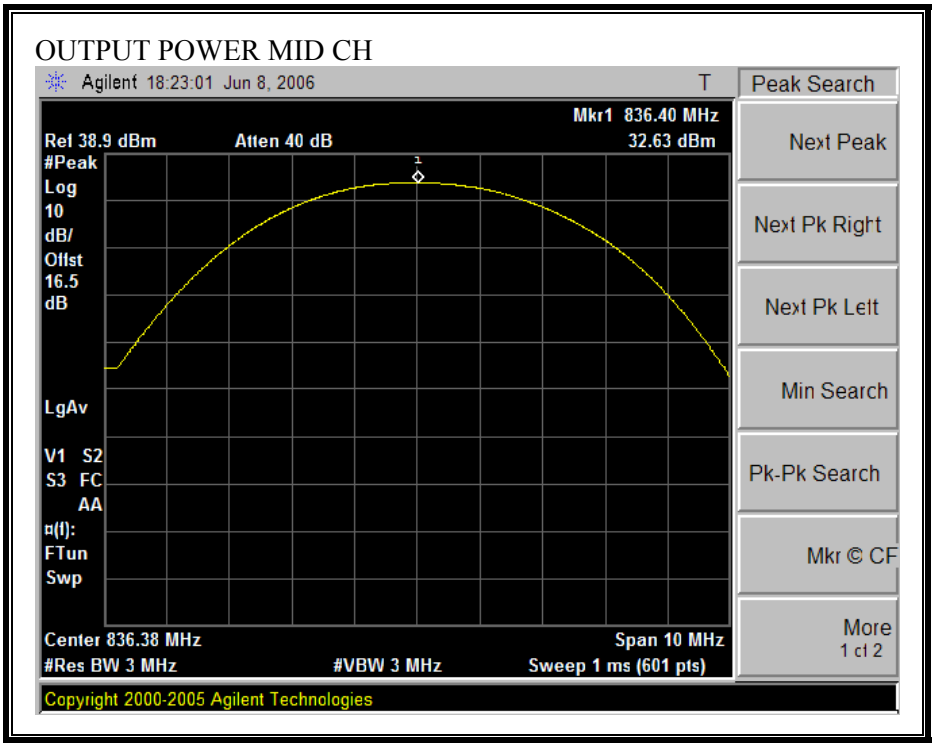


GPRS850 (RF CONDUCTED OUTPUT POWER)

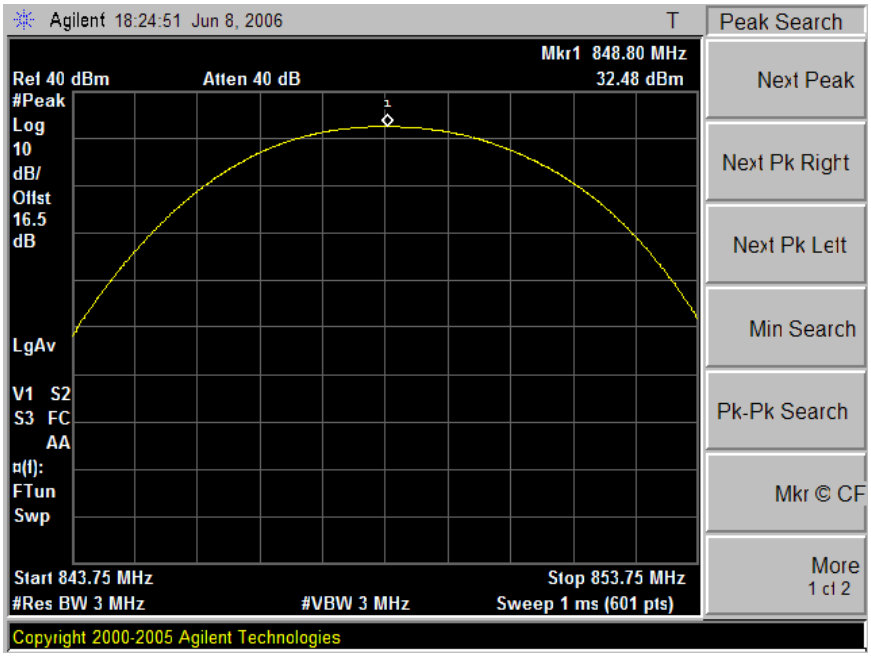
OUTPUT POWER LOW CH



OUTPUT POWER MID CH



OUTPUT POWER HIGH CH



EGPRS850 (RF CONDUCTED OUTPUT POWER)

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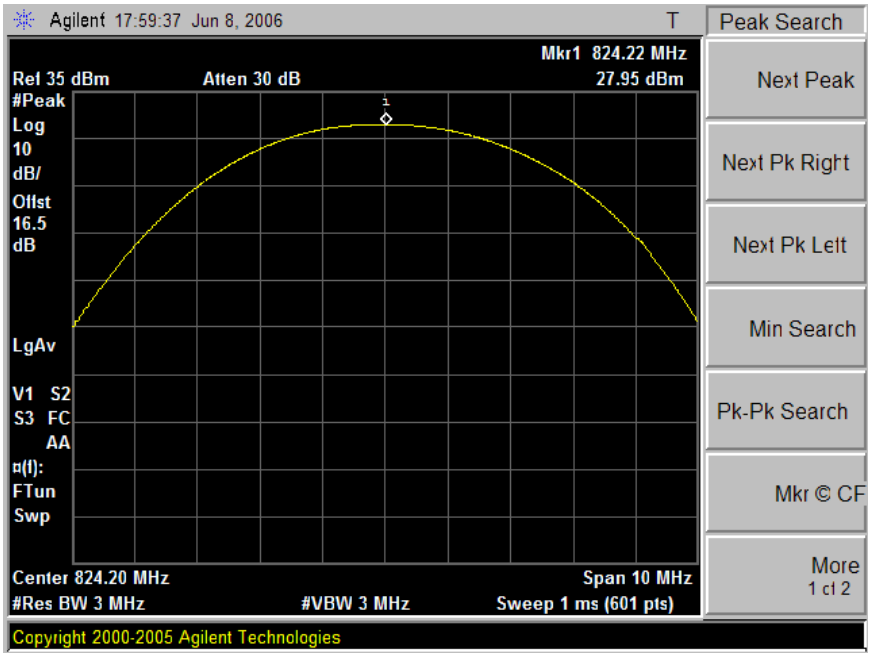
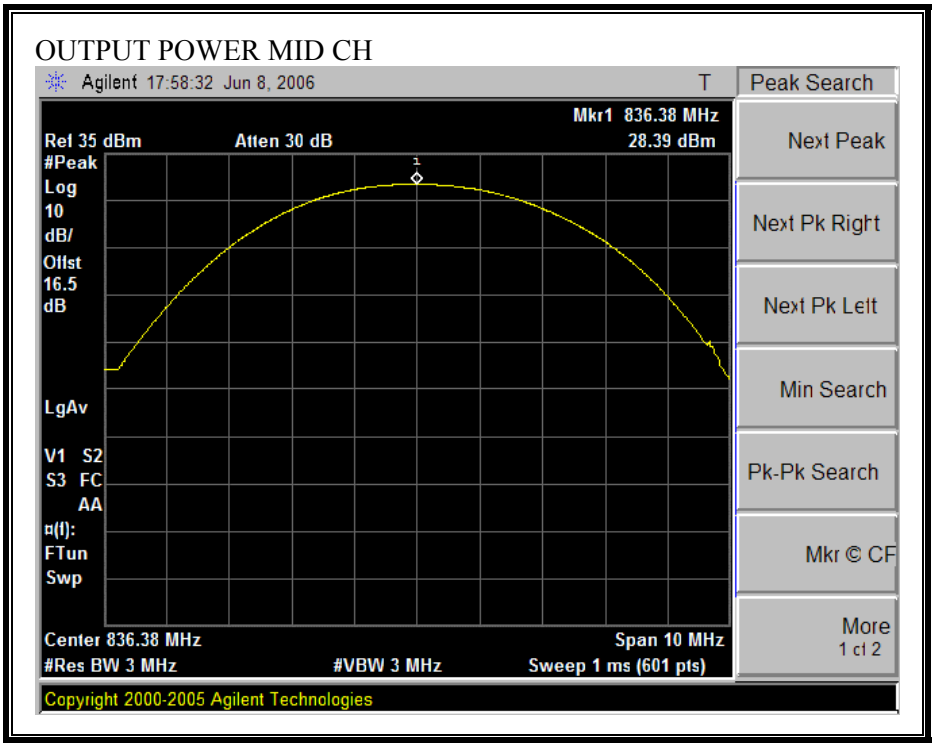
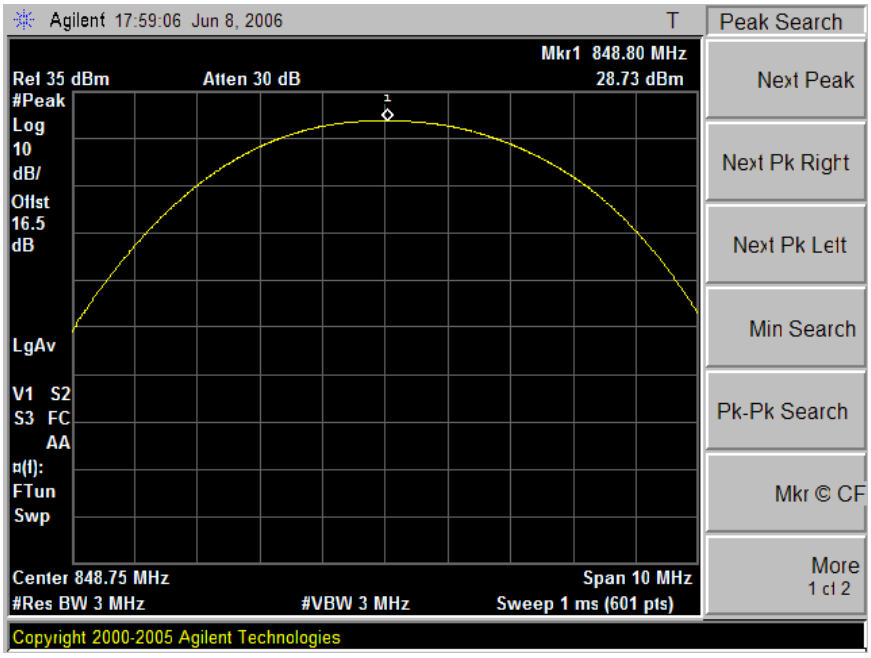


OUTPUT POWER MID CH

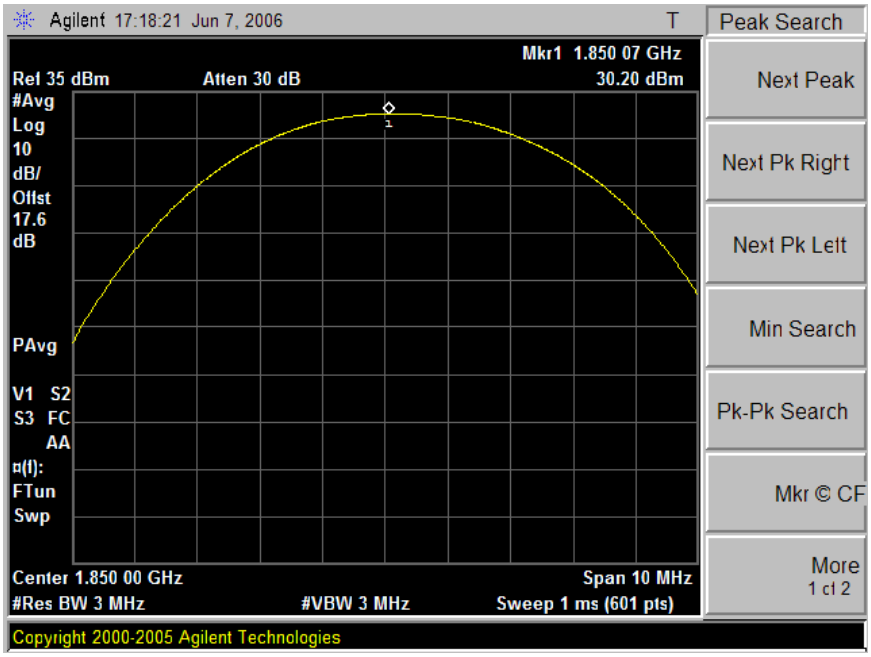


OUTPUT POWER HIGH CH

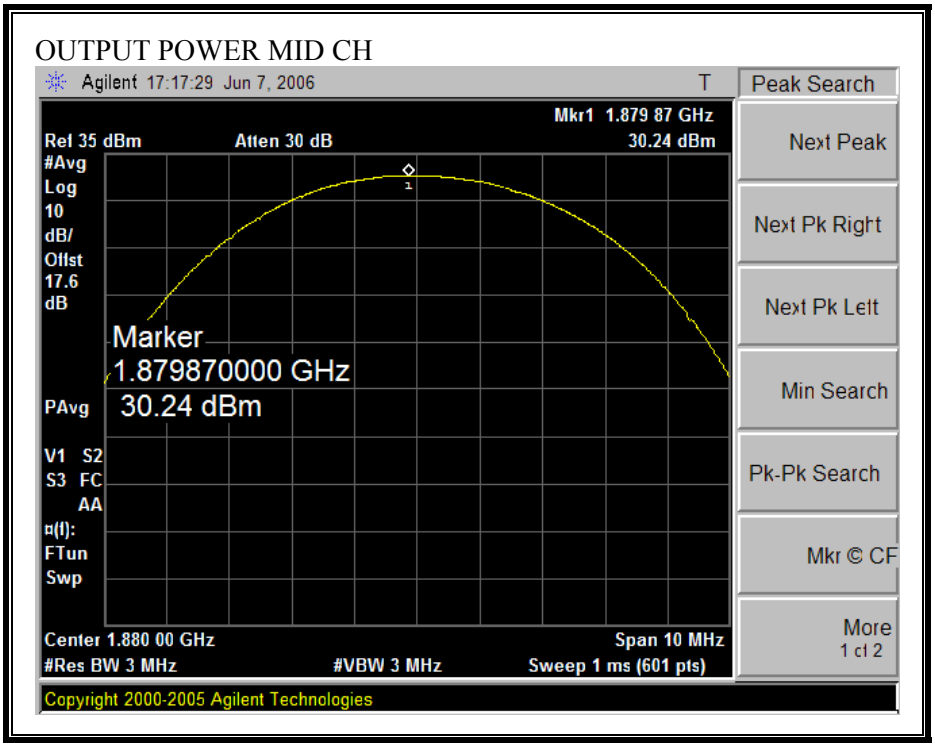


GSM1900 (RF CONDUCTED OUTPUT POWER)

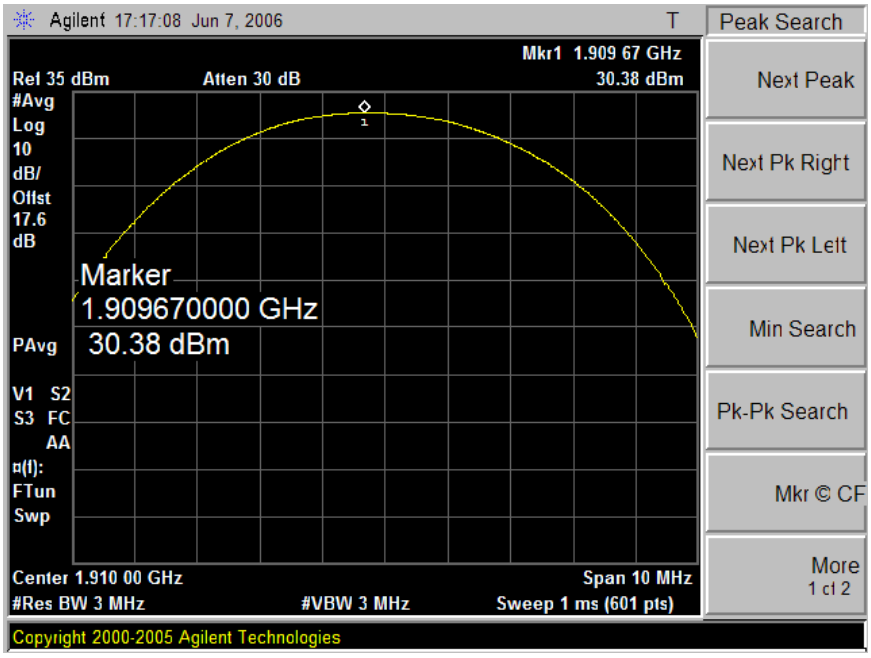
OUTPUT POWER LOW CH



OUTPUT POWER MID CH

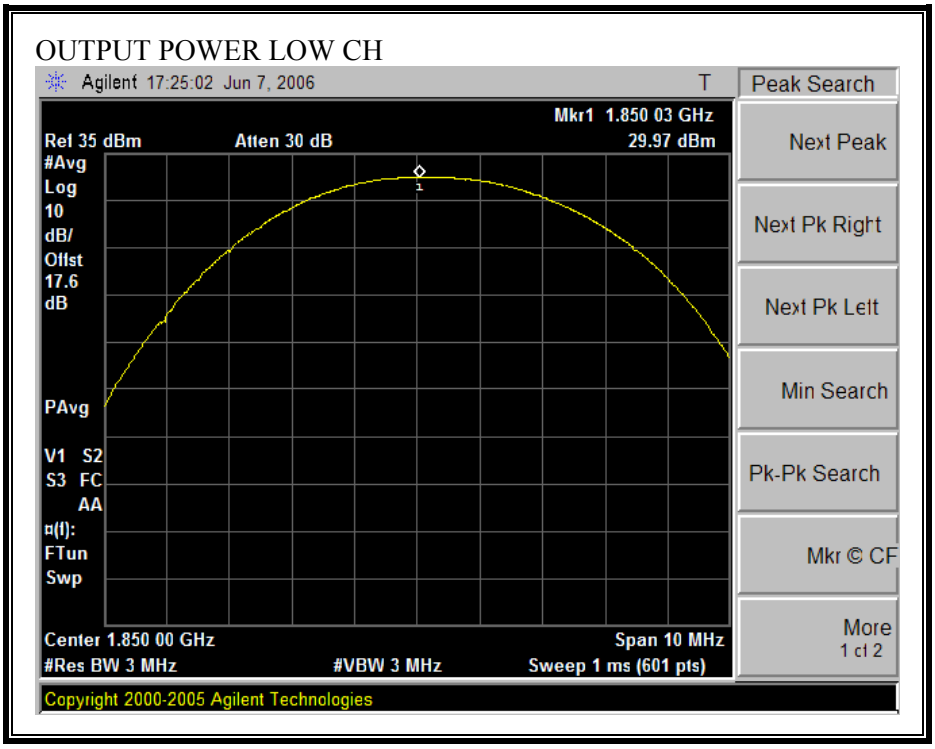


OUTPUT POWER HIGH CH

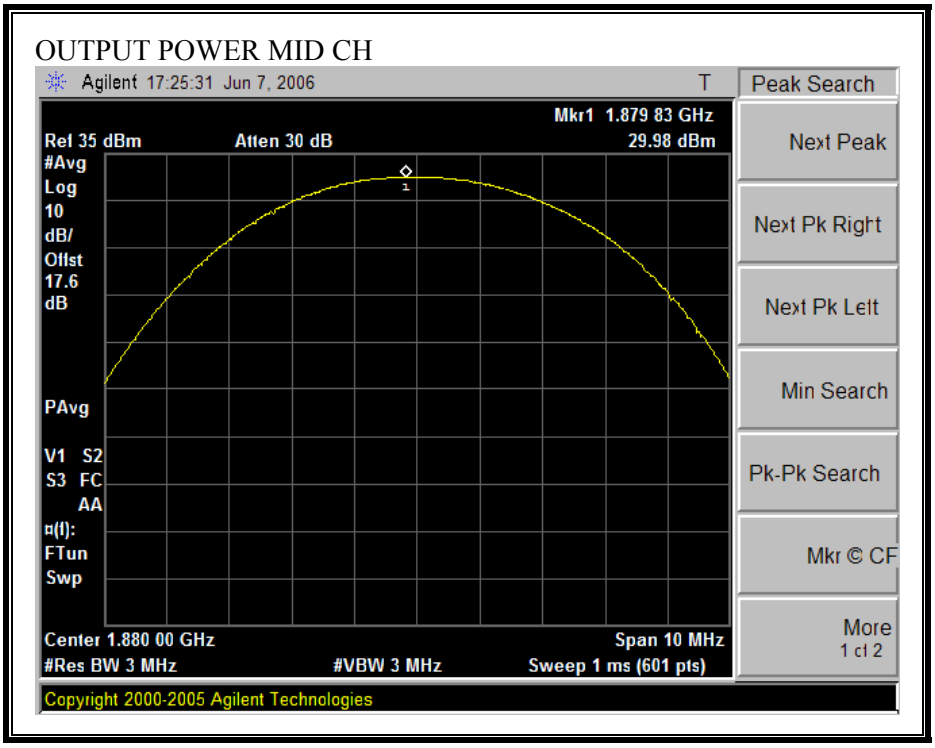


GPRS1900 CONDUCTED OUTPUT POWER)

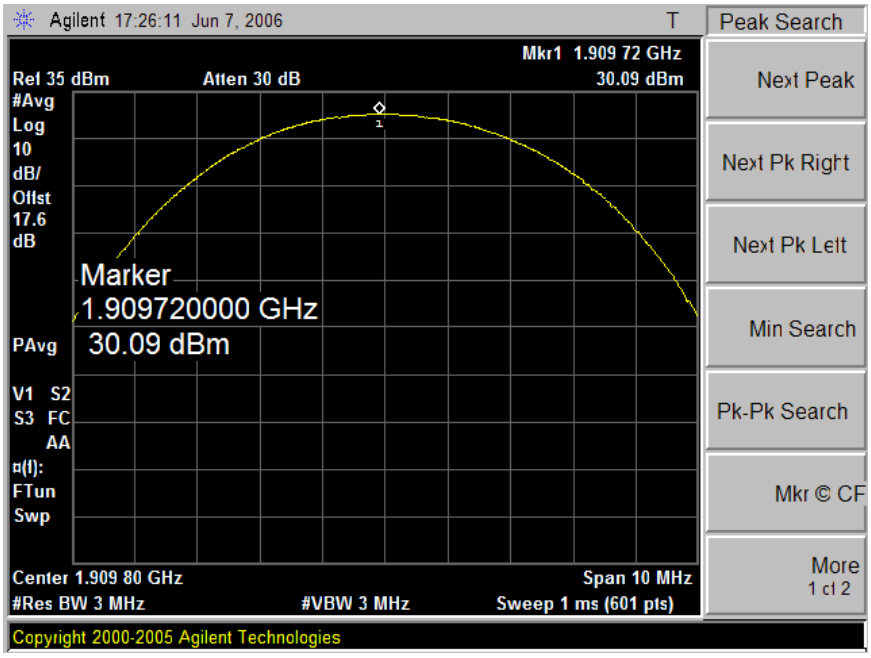
OUTPUT POWER LOW CH



OUTPUT POWER MID CH

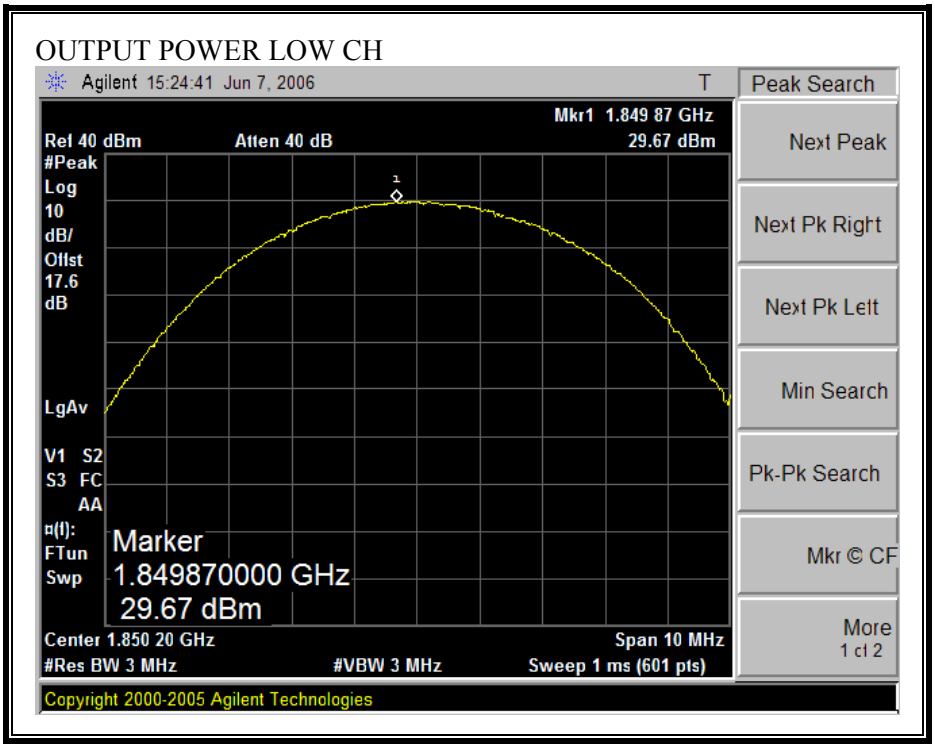


OUTPUT POWER HIGH CH

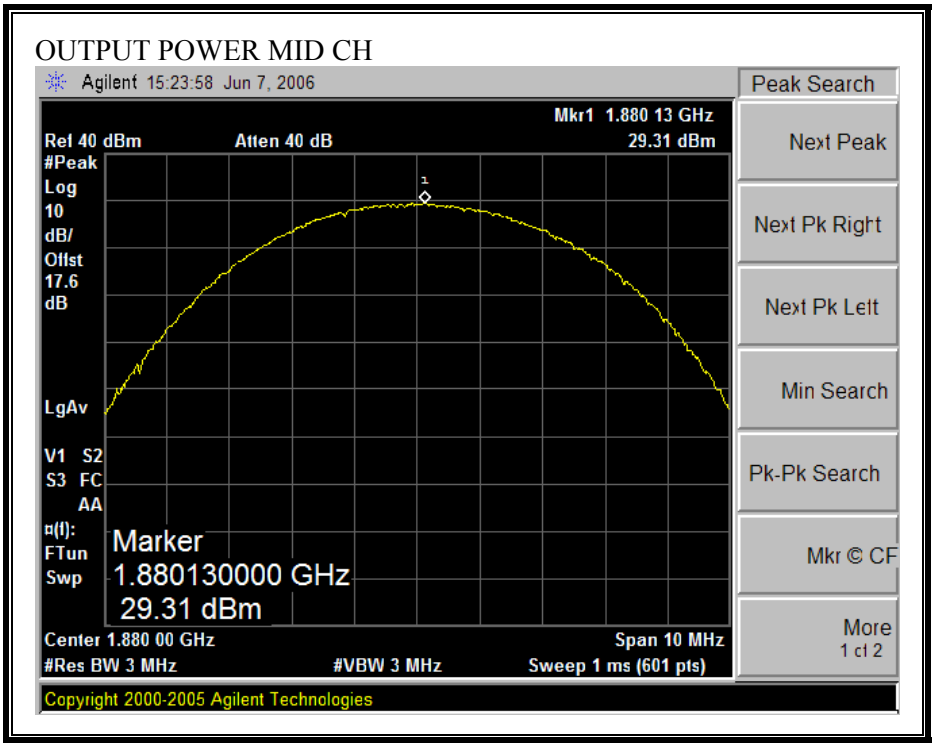


EGPRS1900 (RF CONDUCTED OUTPUT POWER)

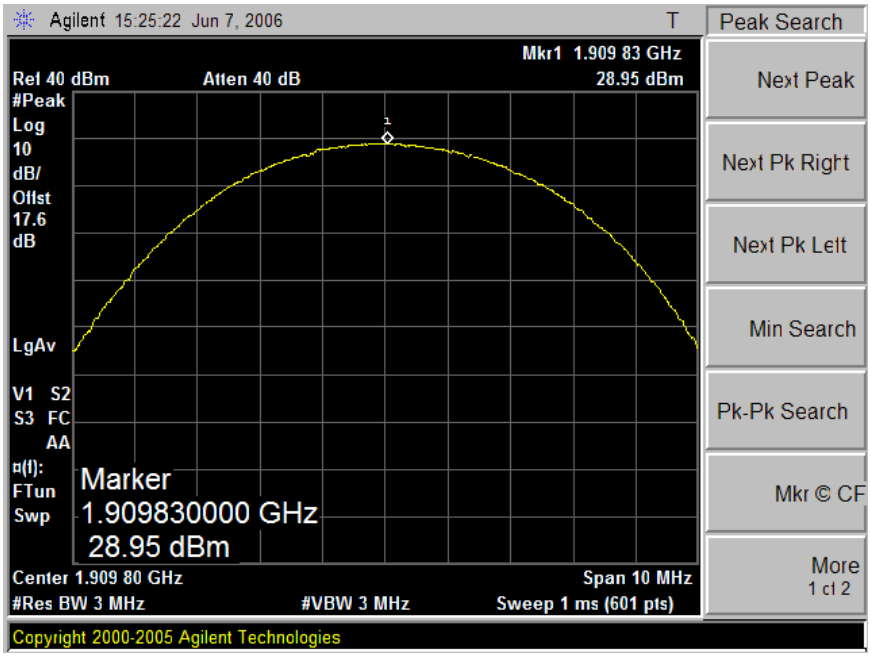
OUTPUT POWER LOW CH



OUTPUT POWER MID CH



OUTPUT POWER HIGH CH



GSM850 Output Power (ERP)

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
824.20	102.9	V	26.9	0.6	0.0	26.3	38.5	-12.1	
824.20	107.0	H	28.8	0.6	0.0	28.2	38.5	-10.2	
Mid Ch									
836.40	103.4	V	28.0	0.7	0.0	27.3	38.5	-11.1	
836.40	107.5	H	29.4	0.7	0.0	28.7	38.5	-9.8	
High Ch									
848.80	100.7	V	25.3	0.7	0.0	24.6	38.5	-13.8	
848.80	105.8	H	27.7	0.7	0.0	27.0	38.5	-11.4	

GPRS850 Output Power (ERP)

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
X Pos									
Low Ch									
824.20	102.2	V	26.2	0.6	0.0	25.6	38.5	-12.9	
824.20	106.0	H	27.8	0.6	0.0	27.2	38.5	-11.2	
Mid Ch									
836.40	103.1	V	27.7	0.7	0.0	27.0	38.5	-11.4	
836.50	107.0	H	28.9	0.7	0.0	28.2	38.5	-10.2	
High Ch									
848.80	100.4	V	25.0	0.7	0.0	24.3	38.5	-14.1	
848.80	105.2	H	27.1	0.7	0.0	26.4	38.5	-12.0	

EGPRS850 Output Power (ERP)

f MHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
824.20	95.8	V	19.8	0.6	0.0	19.2	38.5	-19.2	
824.20	101.3	H	23.1	0.6	0.0	22.5	38.5	-15.9	
Mid Ch									
836.40	96.1	V	20.7	0.7	0.0	20.0	38.5	-18.4	
836.40	102.3	H	24.2	0.7	0.0	23.5	38.5	-14.9	
High Ch									
848.80	96.6	V	21.2	0.7	0.0	20.5	38.5	-17.9	
848.80	101.8	H	23.7	0.7	0.0	23.0	38.5	-15.4	

GSM1900 Output Power (EIRP)

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1.850	100.5	H	23.3	0.9	8.3	30.7	33.0	-2.3	
1.850	95.6	V	18.2	0.9	8.3	25.6	33.0	-7.4	
Mid Ch									
1.880	101.0	H	24.1	0.9	8.3	31.6	33.0	-1.5	
1.880	96.0	V	18.3	0.9	8.3	25.8	33.0	-7.3	
High Ch									
1.910	100.6	H	24.0	0.9	8.4	31.5	33.0	-1.5	
1.910	93.5	V	16.5	0.9	8.4	24.0	33.0	-9.0	

GPRS1900 Output Power (EIRP)

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1.850	100.3	H	23.1	0.9	8.3	30.5	33.0	-2.5	
1.850	95.4	V	18.0	0.9	8.3	25.4	33.0	-7.6	
Mid Ch									
1.880	100.6	H	23.7	0.9	8.3	31.2	33.0	-1.9	
1.880	94.0	V	16.3	0.9	8.3	23.8	33.0	-9.3	
High Ch									
1.910	100.6	H	24.0	0.9	8.4	31.5	33.0	-1.5	
1.910	93.7	V	16.7	0.9	8.4	24.2	33.0	-8.8	

EGPRS1900 Output Power (EIRP)

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
1.850	99.0	H	21.8	0.9	8.3	29.2	33.0	-3.8	
1.850	93.4	V	16.0	0.9	8.3	23.4	33.0	-9.6	
Mid Ch									
1.880	98.9	H	22.0	0.9	8.3	29.5	33.0	-3.5	
1.880	91.3	V	13.6	0.9	8.3	21.1	33.0	-12.0	
High Ch									
1.910	98.3	H	21.7	0.9	8.4	29.2	33.0	-3.8	
1.910	90.4	V	13.4	0.9	8.4	20.9	33.0	-12.1	

8.3. 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.

GSM 850

Reference Frequency: AMPS Mid Channel 836.490000MHz @ 25*C Limit: ± 2.5 ppm = 2090.999 Hz				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
(Vdc)	**Temperature (*C)**	**(MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.70	50	836.39941	0.017	± 2.5
3.70	40	836.39941	0.013	± 2.5
3.70	30	836.39941	0.019	± 2.5
3.70	***25***	***836.39942***	***0***	***± 2.5***
3.70	20	836.39941	0.017	± 2.5
3.70	10	836.39940	0.033	± 2.5
3.70	0	836.39940	0.030	± 2.5
3.70	-10	836.39940	0.024	± 2.5
3.70	-20	836.39940	0.025	± 2.5
3.70	-30	836.39941	0.022	± 2.5
3.26	25	836.39940	0.024	± 2.5
4.26	25	836.39940	0.024	± 2.5

GSM 1900

Reference Frequency: PCS Mid Channel 1880MHz @ 25*C Limit: to stay within the authorized block				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
(Vdc)	**Temperature (*C)**	**(MHz)**	**Delta (ppm)**	**Limit (ppm)**
3.70	50	1879.99986	0.011	± 2.5
3.70	40	1879.99986	0.010	± 2.5
3.70	30	1879.99986	0.010	± 2.5
3.70	***25***	***1879.99988***	0.000	***± 2.5***
3.70	20	1879.99991	-0.017	± 2.5
3.70	10	1879.99983	0.026	± 2.5
3.70	0	1879.99985	0.015	± 2.5
3.70	-10	1879.99986	0.013	± 2.5
3.70	-20	1879.99986	0.010	± 2.5
3.70	-30	1879.99986	0.009	± 2.5
3.145	25	1879.99986	0.011	± 2.5
4.255	25	1879.99986	0.011	± 2.5

8.4. SPURIOUS EMISSION AT ANTENNA TERMINAL

LIMIT

§§22.917 (a) §24.238 (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 3.2.13, FCC 22.917 (b) & FCC 24.238 (b)

RESULTS

No non-compliance noted.
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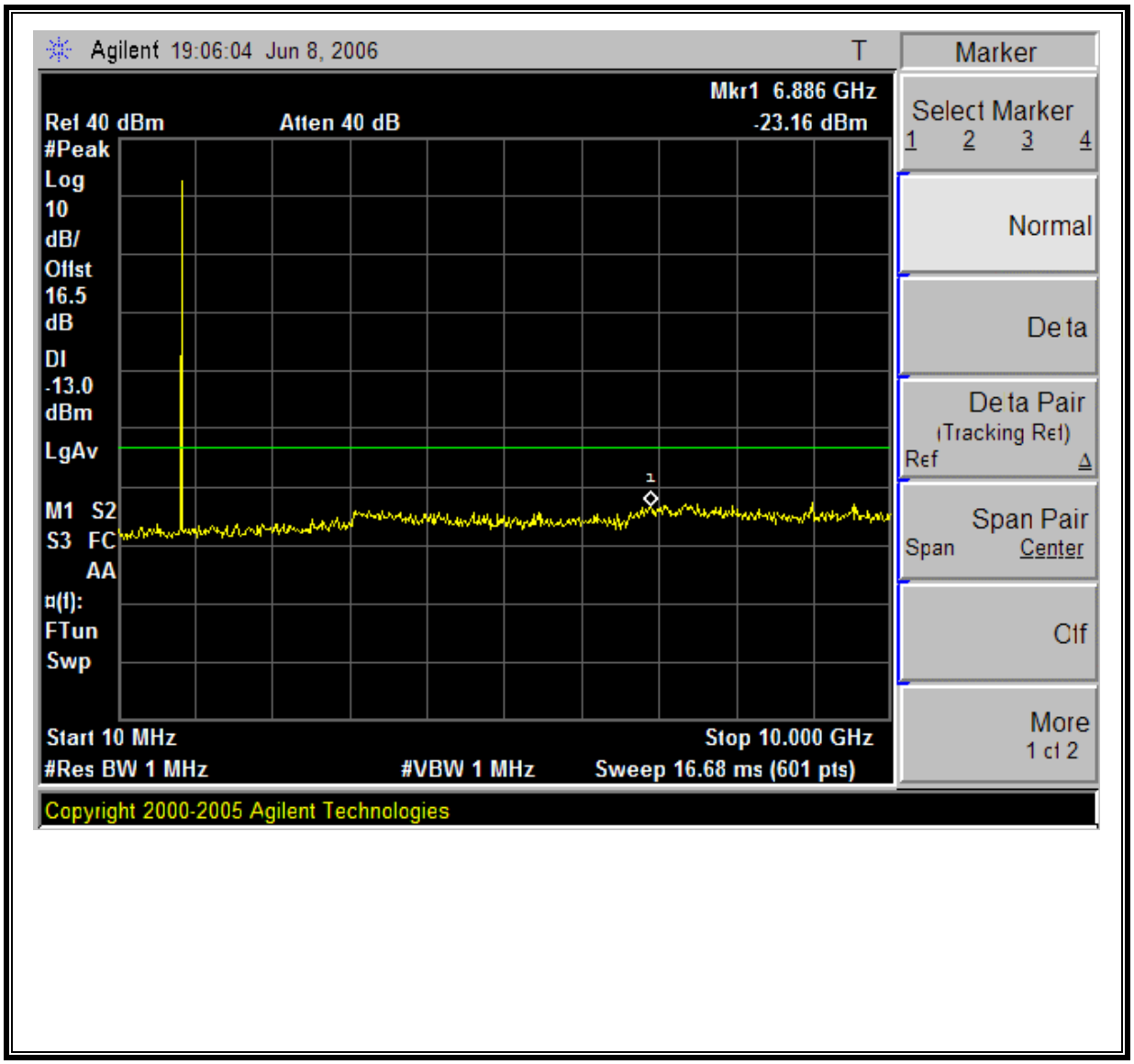
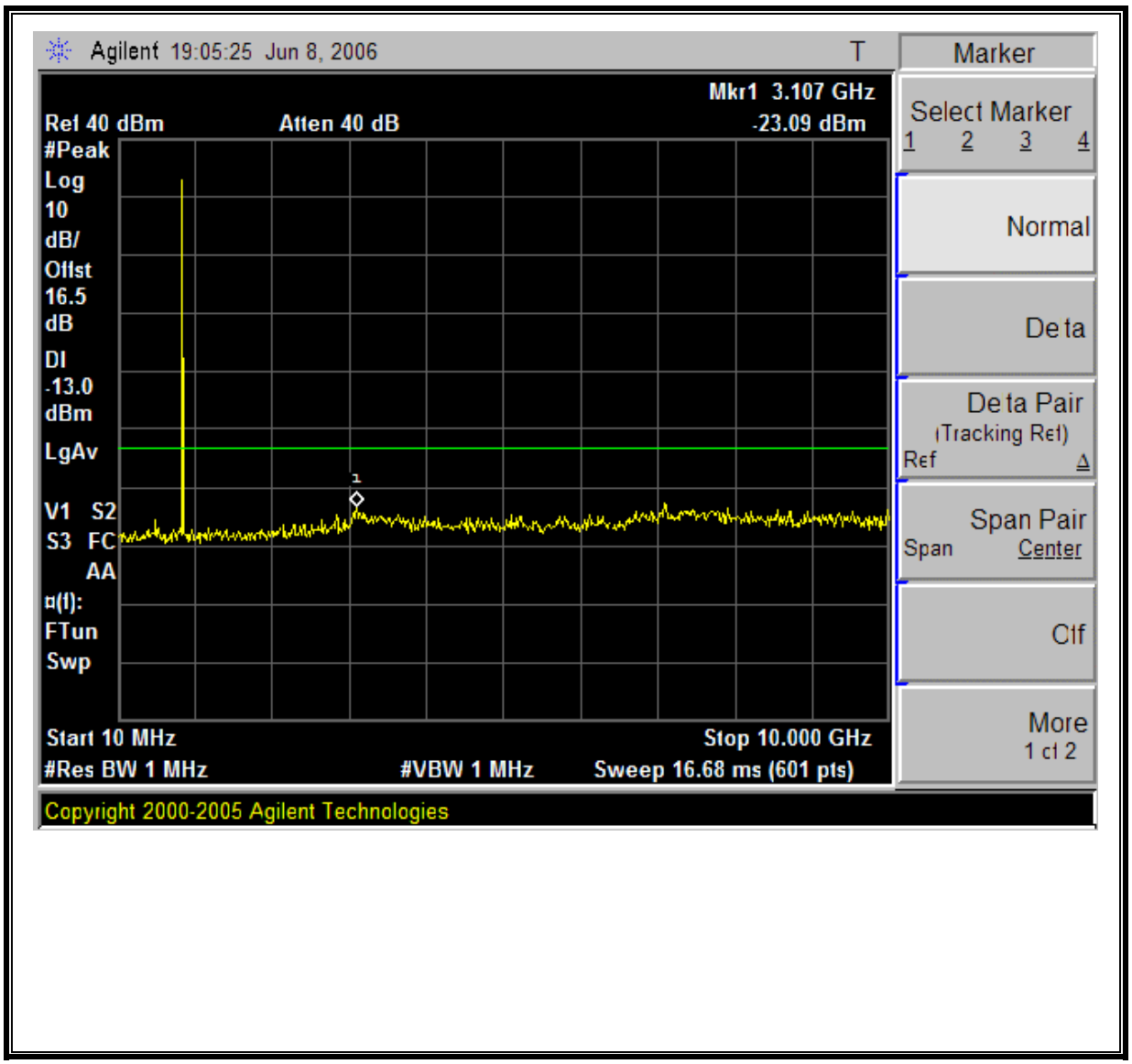
GSM850 MODULATION RESULTS

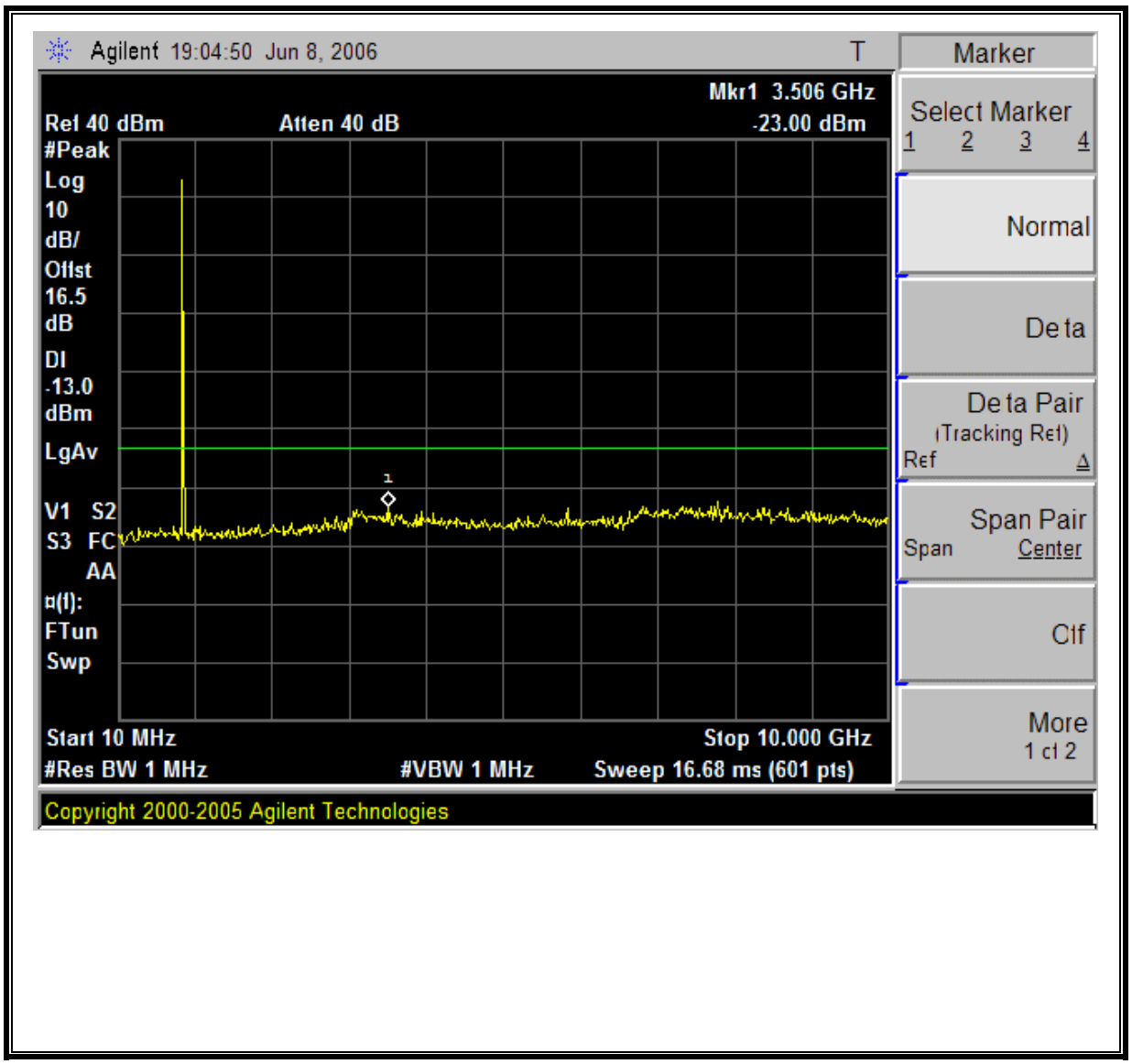
GSM850 Modulation: Low Channel, Out-Of-Band Emissions



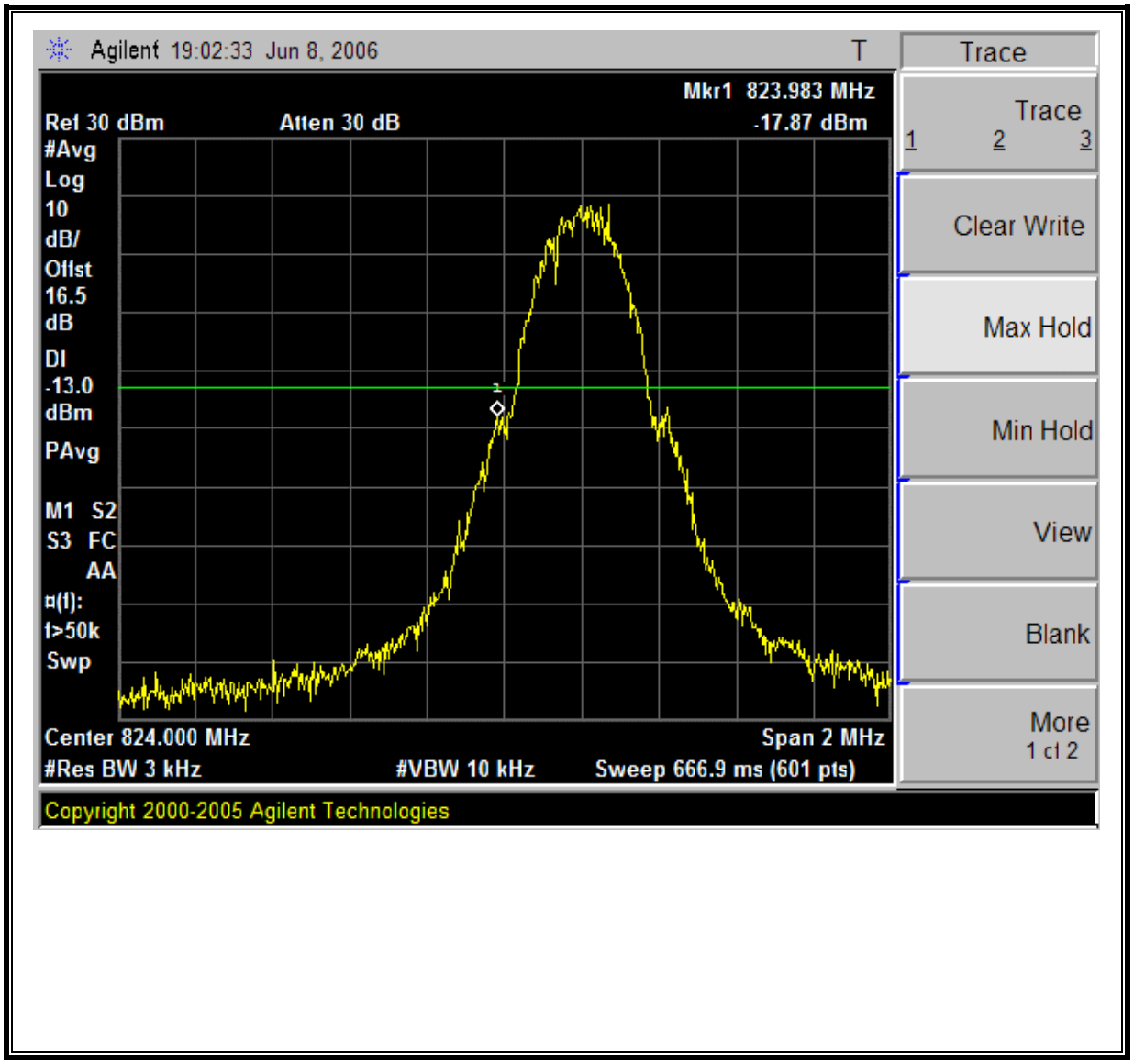
GSM850 Modulation: Mid Channel, Out-Of-Band Emissions



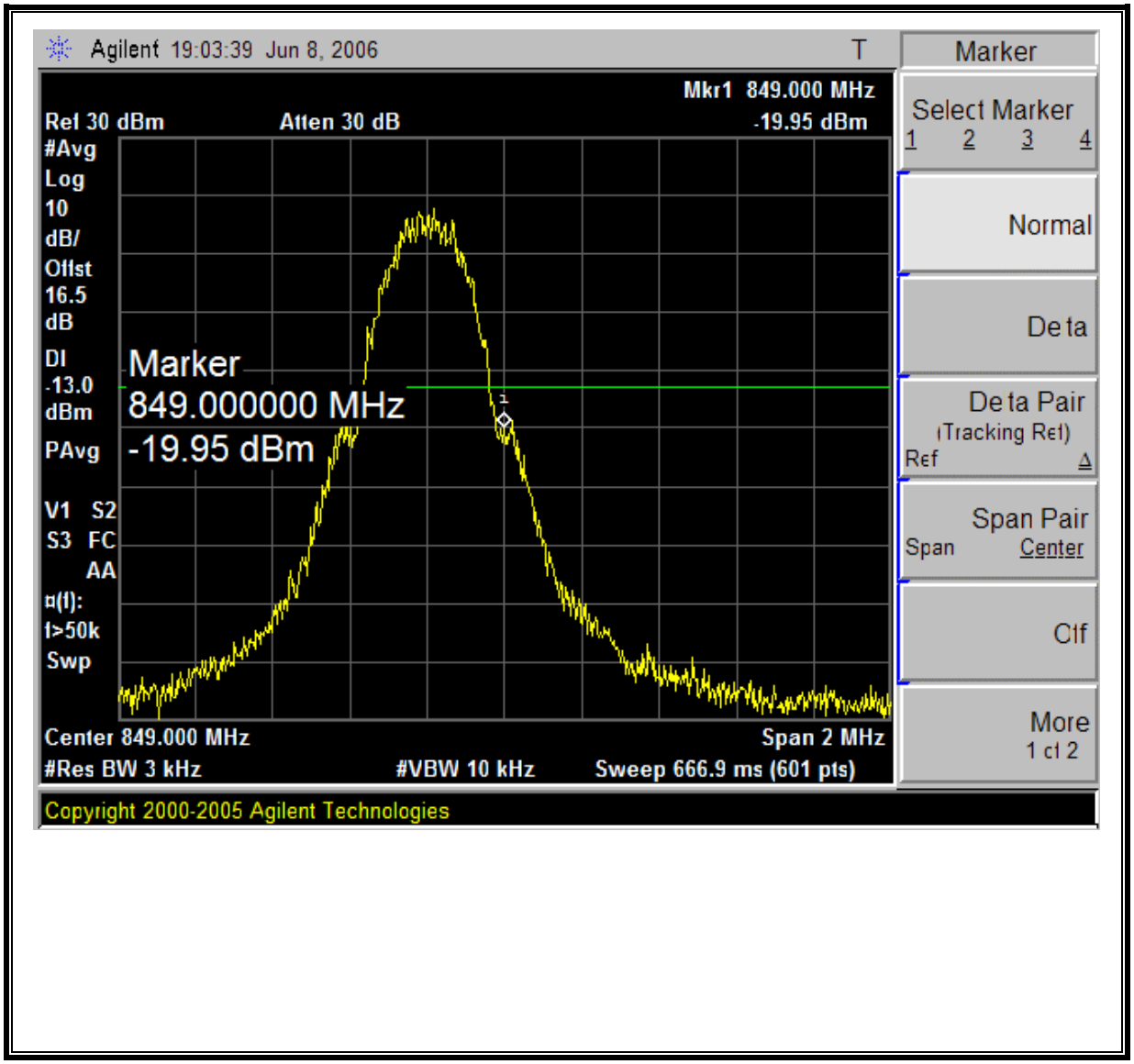
GSM850 Modulation: High Channel, Out-Of-Band Emissions



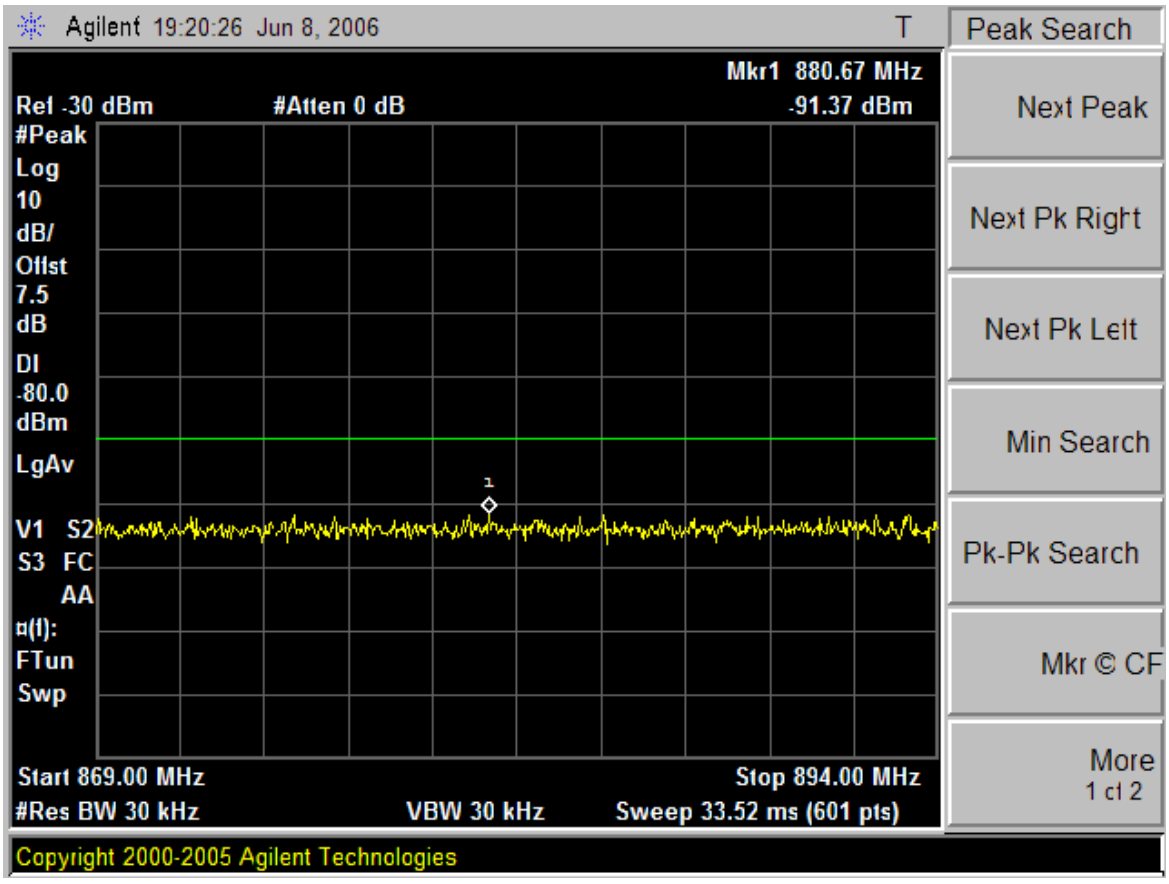
GSM850 Modulation: Low Channel Band Edge



GSM850 Modulation: High Channel Band Edge

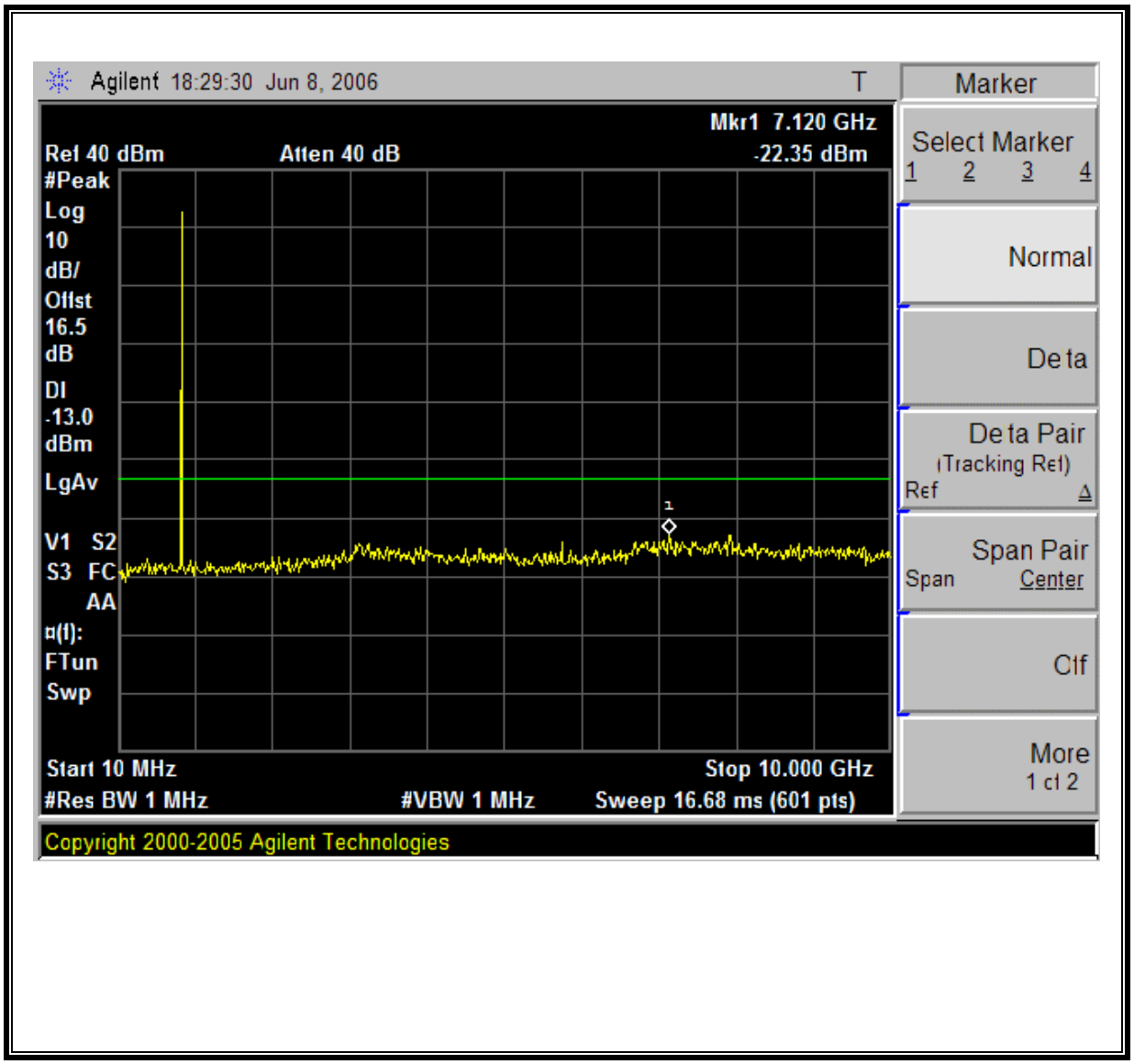


GSM850 Mobile Emissions in Base Frequency Range

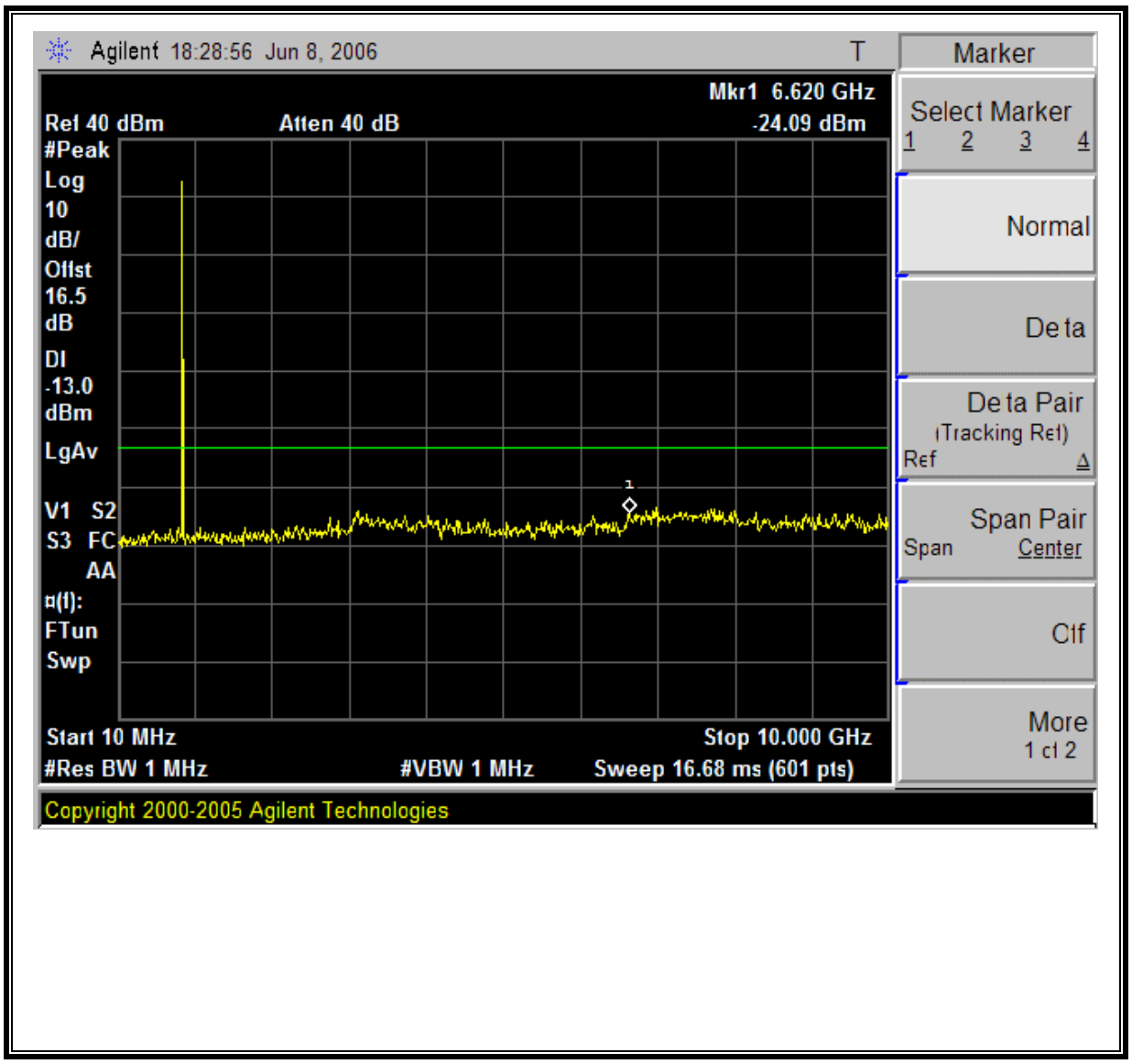


GPRSM850 MODULATION RESULTS

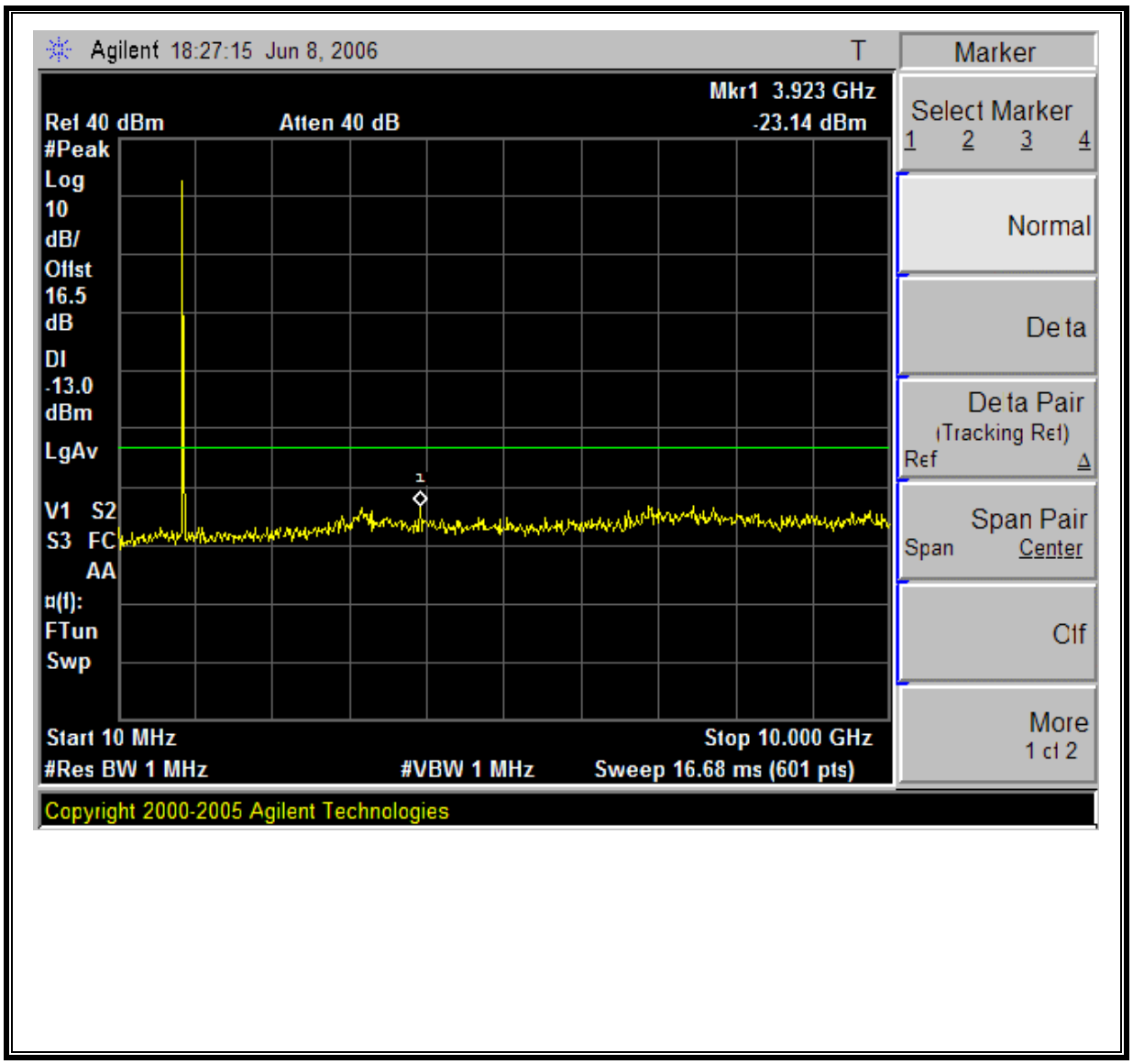
GPRS850 Modulation: Low Channel, Out-Of-Band Emissions



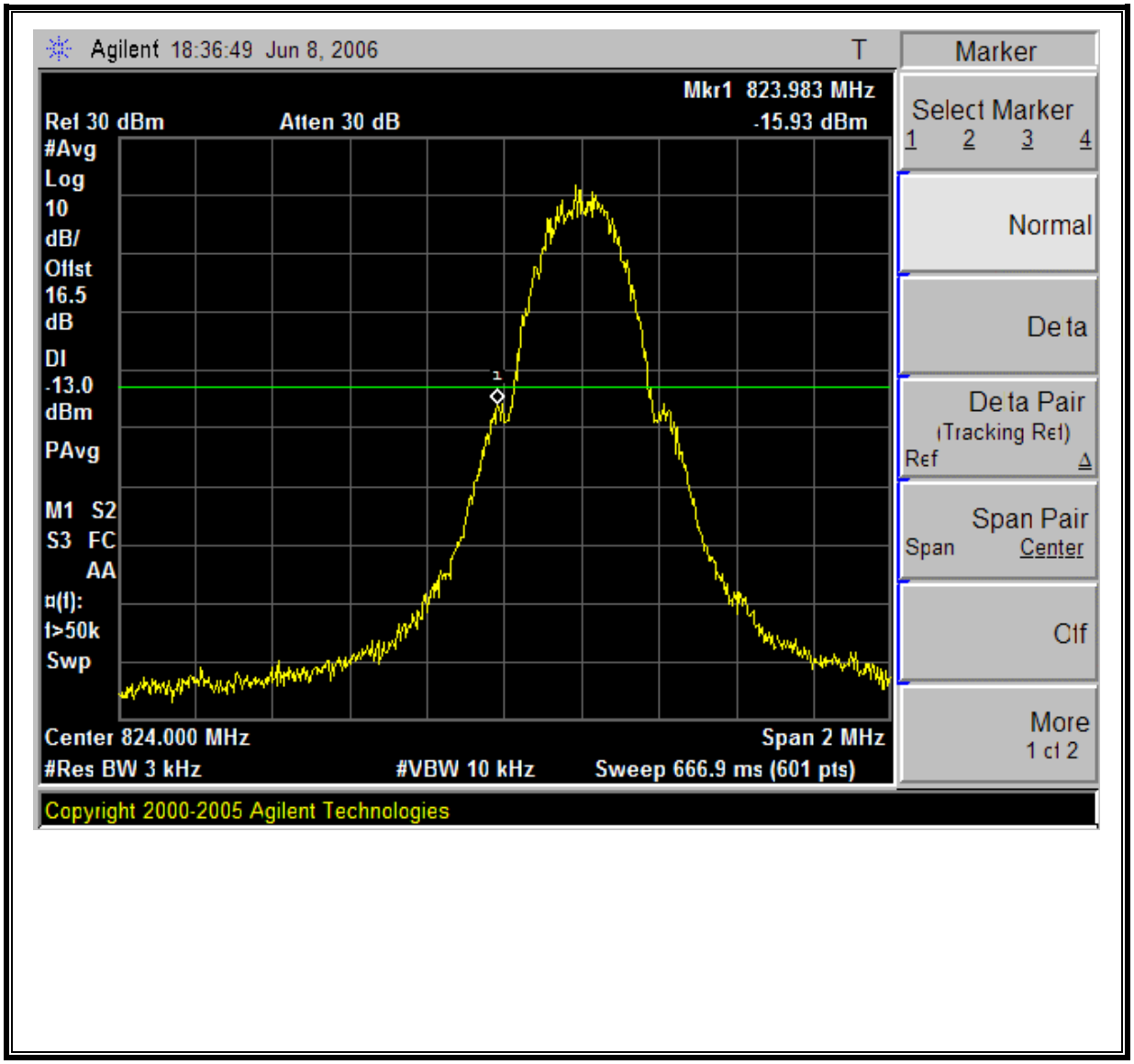
GPRS850 Modulation: Mid Channel, Out-Of-Band Emissions



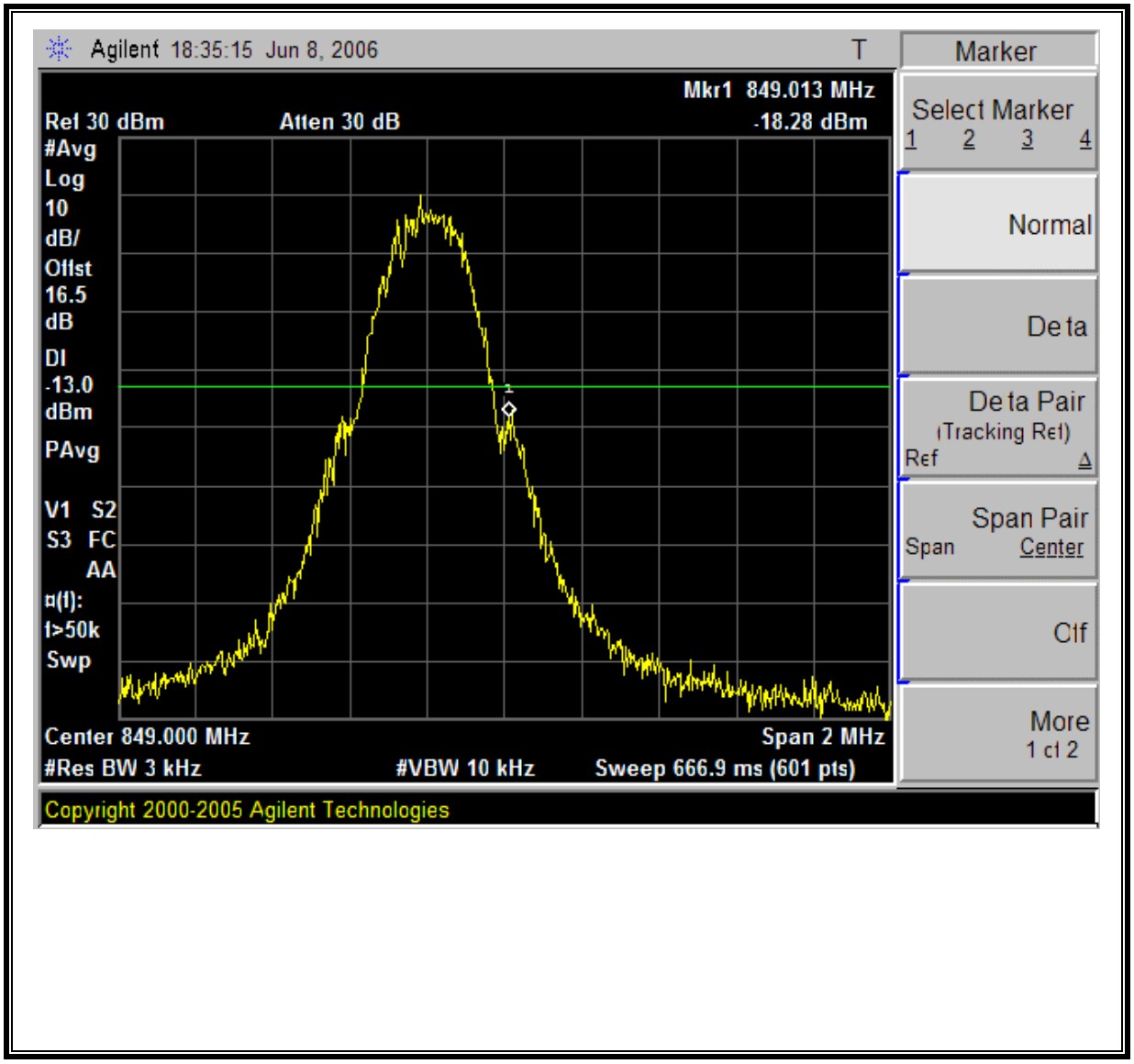
GPRSM850 Modulation: High Channel, Out-Of-Band Emissions



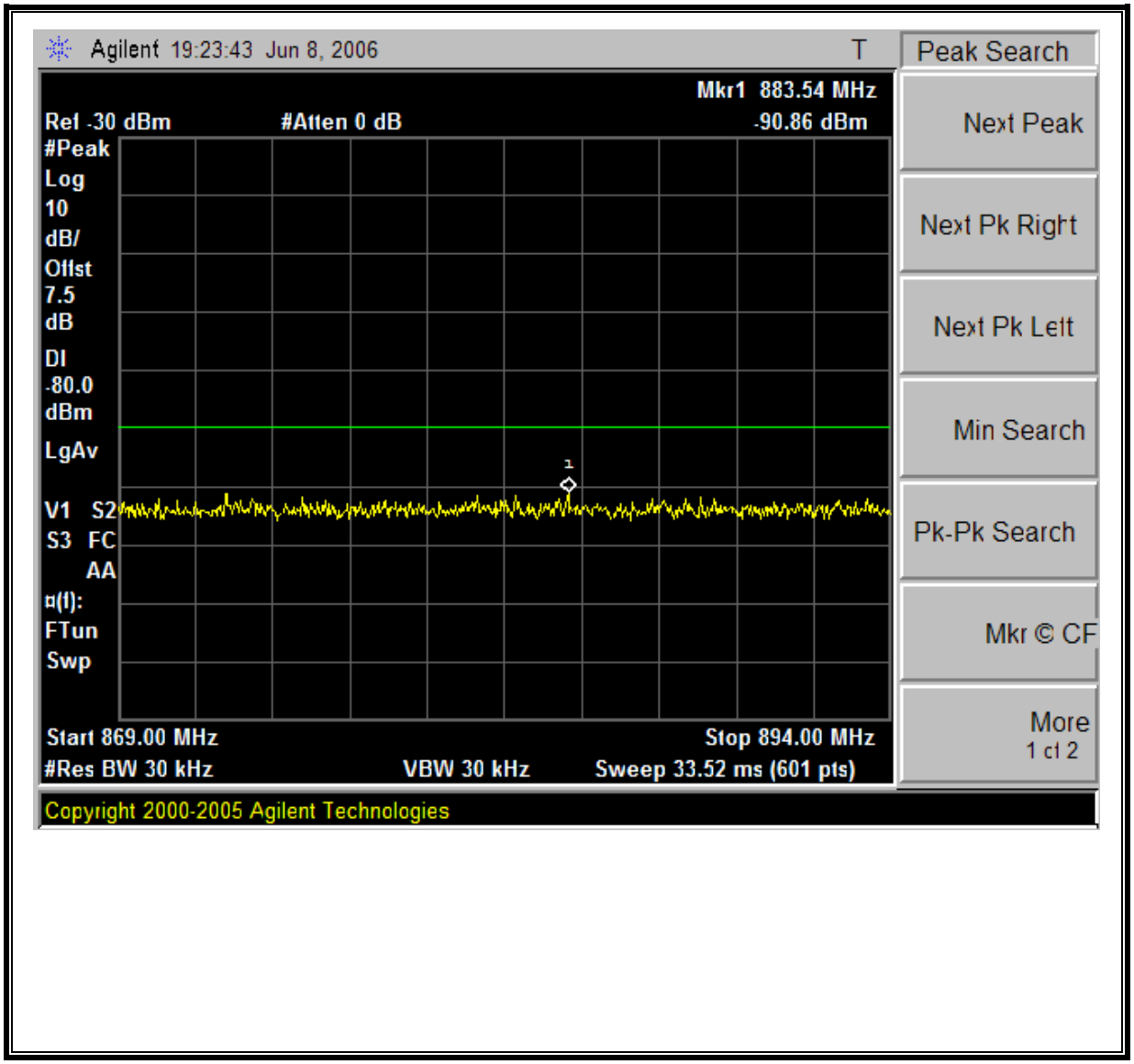
GPRS850 Modulation: Low Channel Band Edge



GPRS850 Modulation: High Channel Band Edge

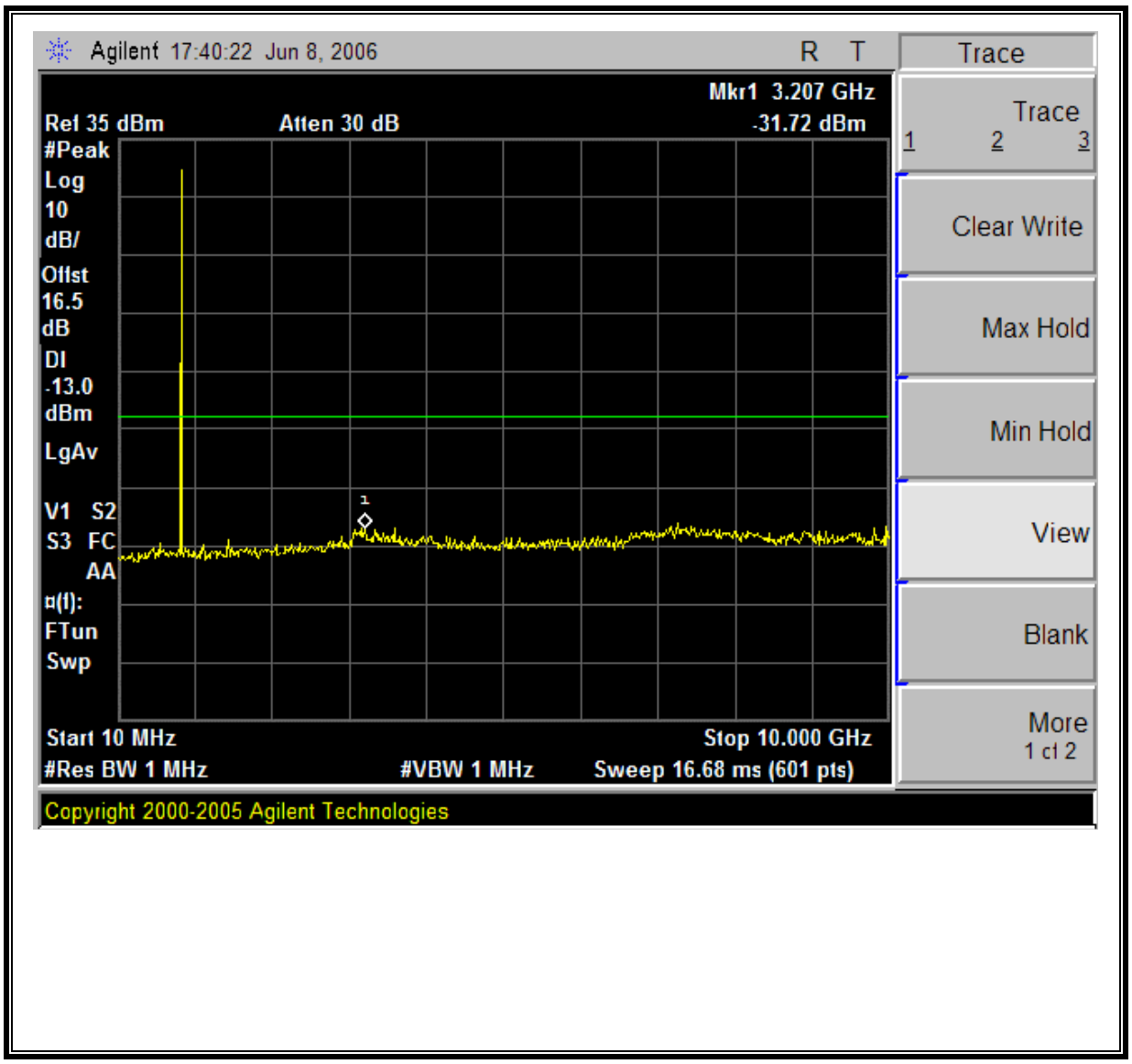


GPRS850 Mobile Emissions in Base Frequency Range

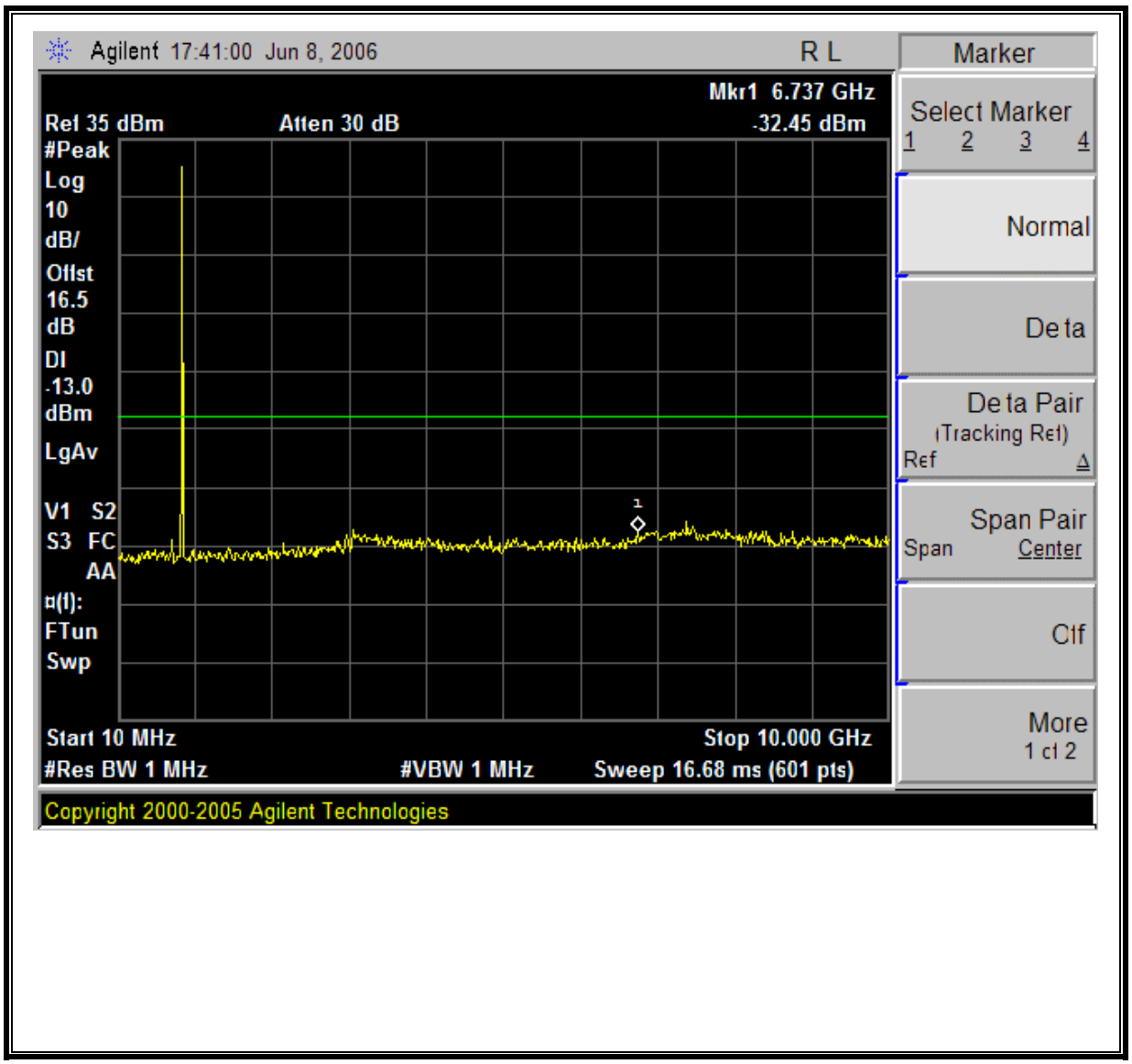


EGPRSM850 MODULATION RESULTS

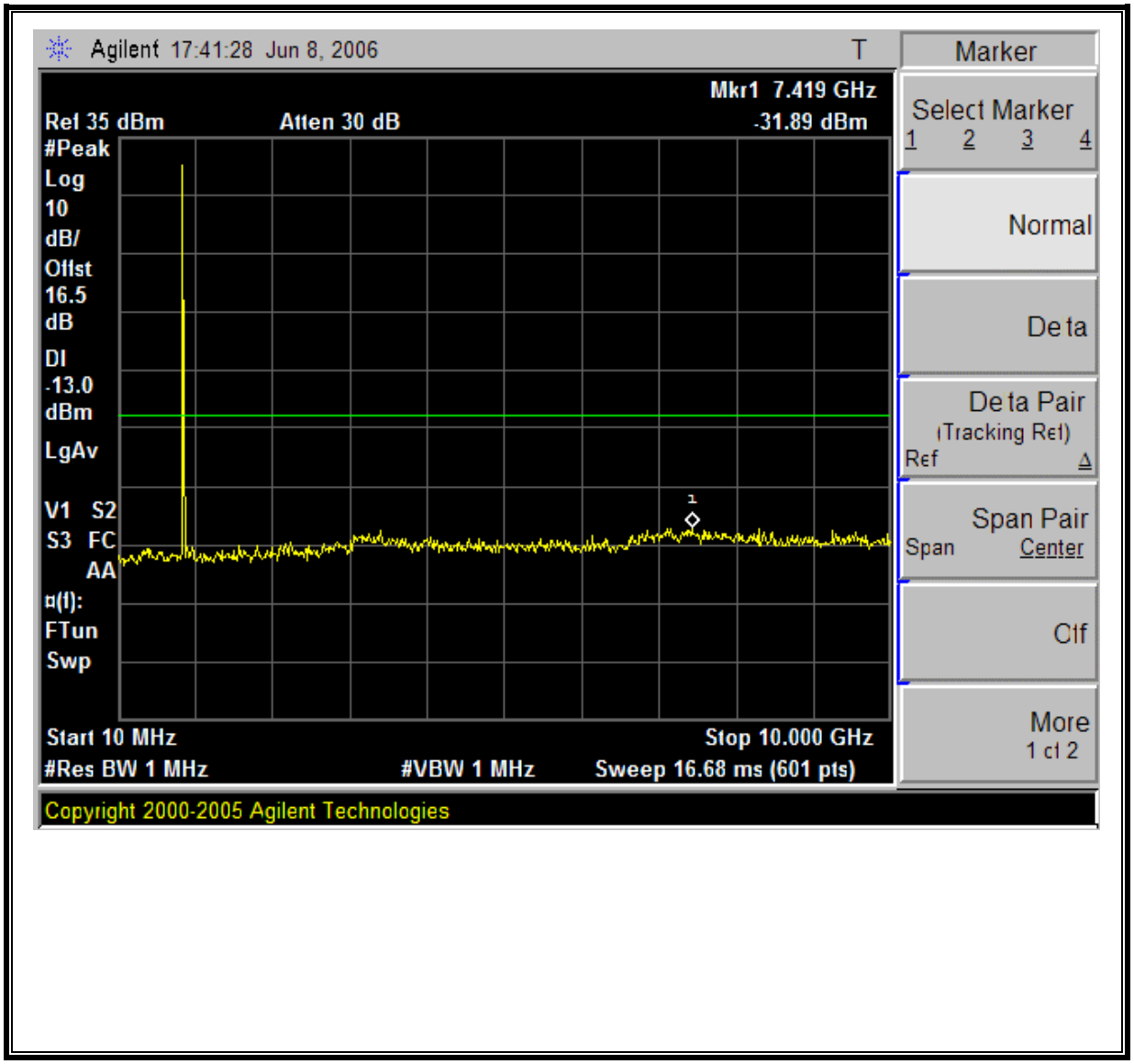
EGPRS850 Modulation: Low Channel Out-Of-Band Emissions



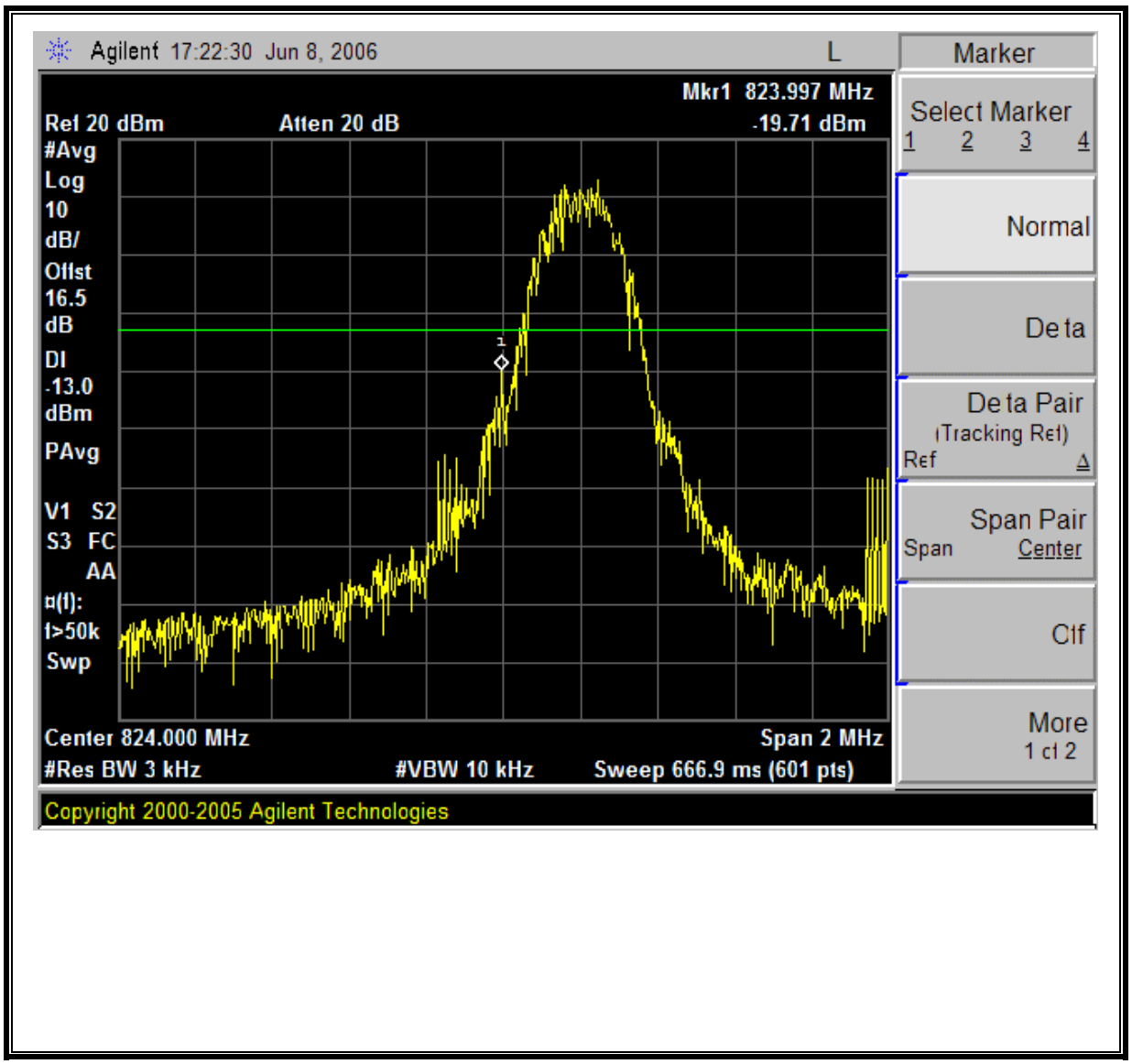
EGPRS850 Modulation: Mid Channel Out-Of-Band Emissions



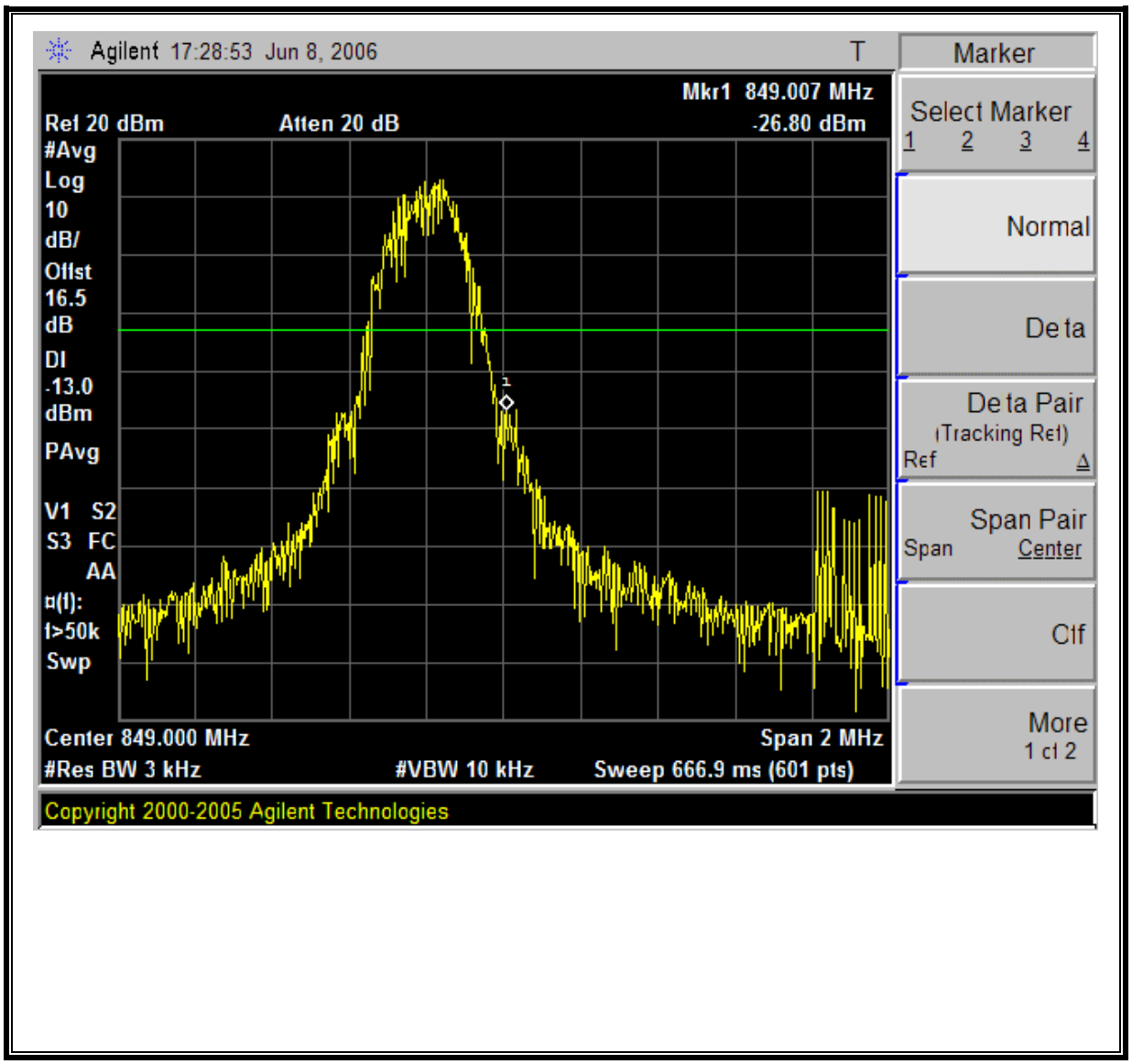
EGPRS850 Modulation: High Channel Out-Of-Band Emissions



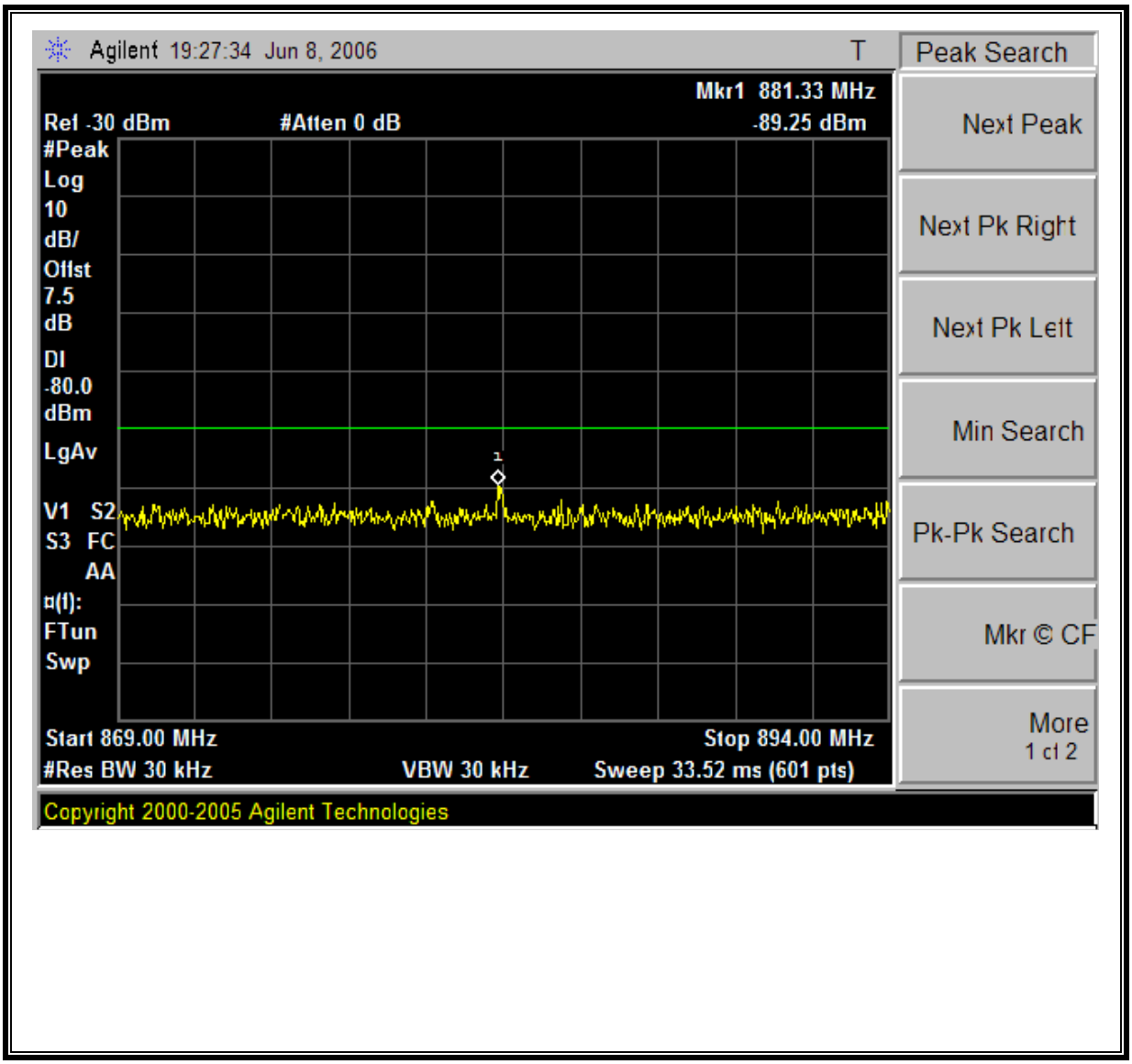
EGPRS850 Modulation: Low Channel Band Edge



EGPRS850 Modulation: High Channel Band Edge

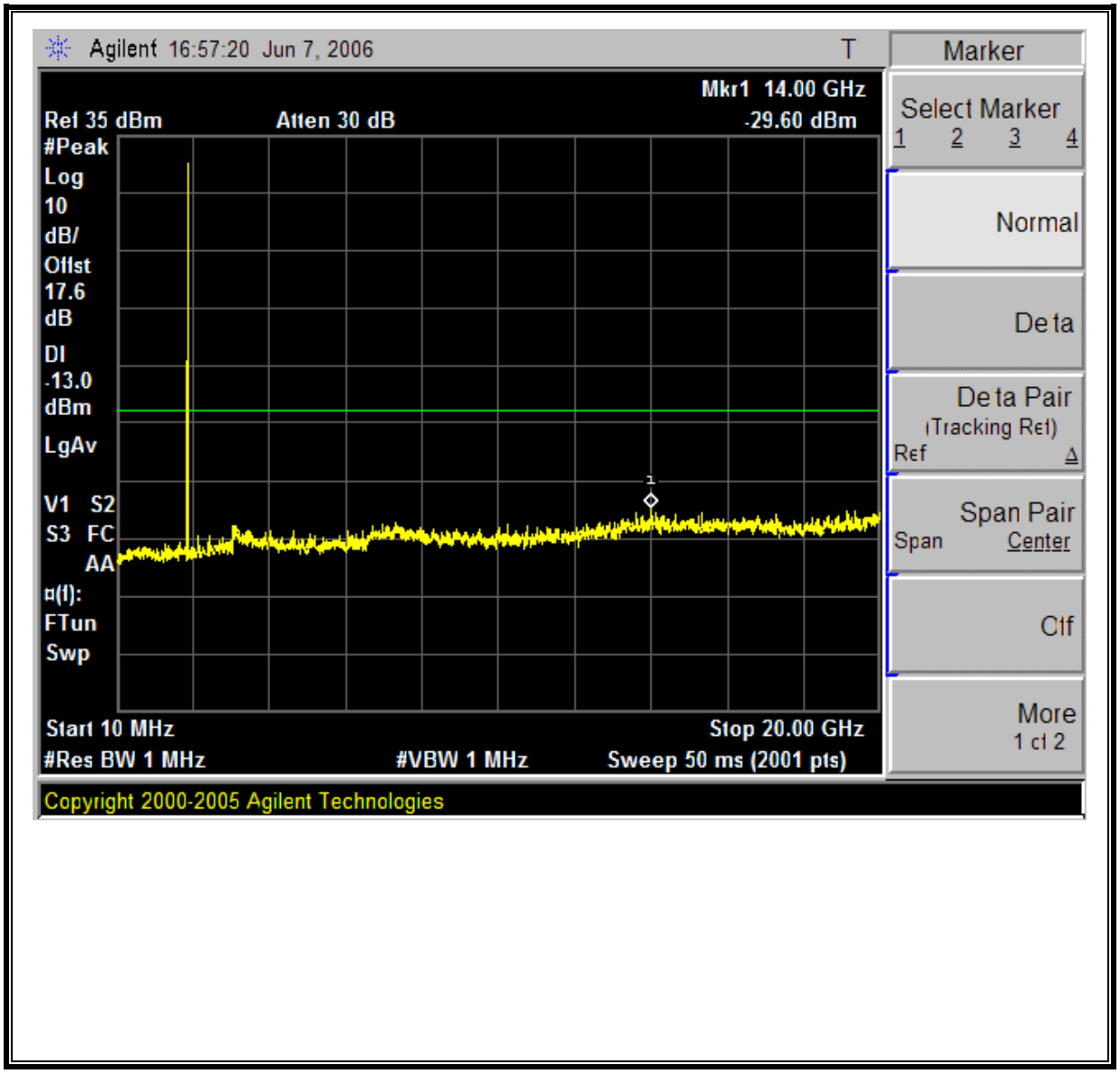


EGPRS850 Mobile Emissions in Base Frequency Range

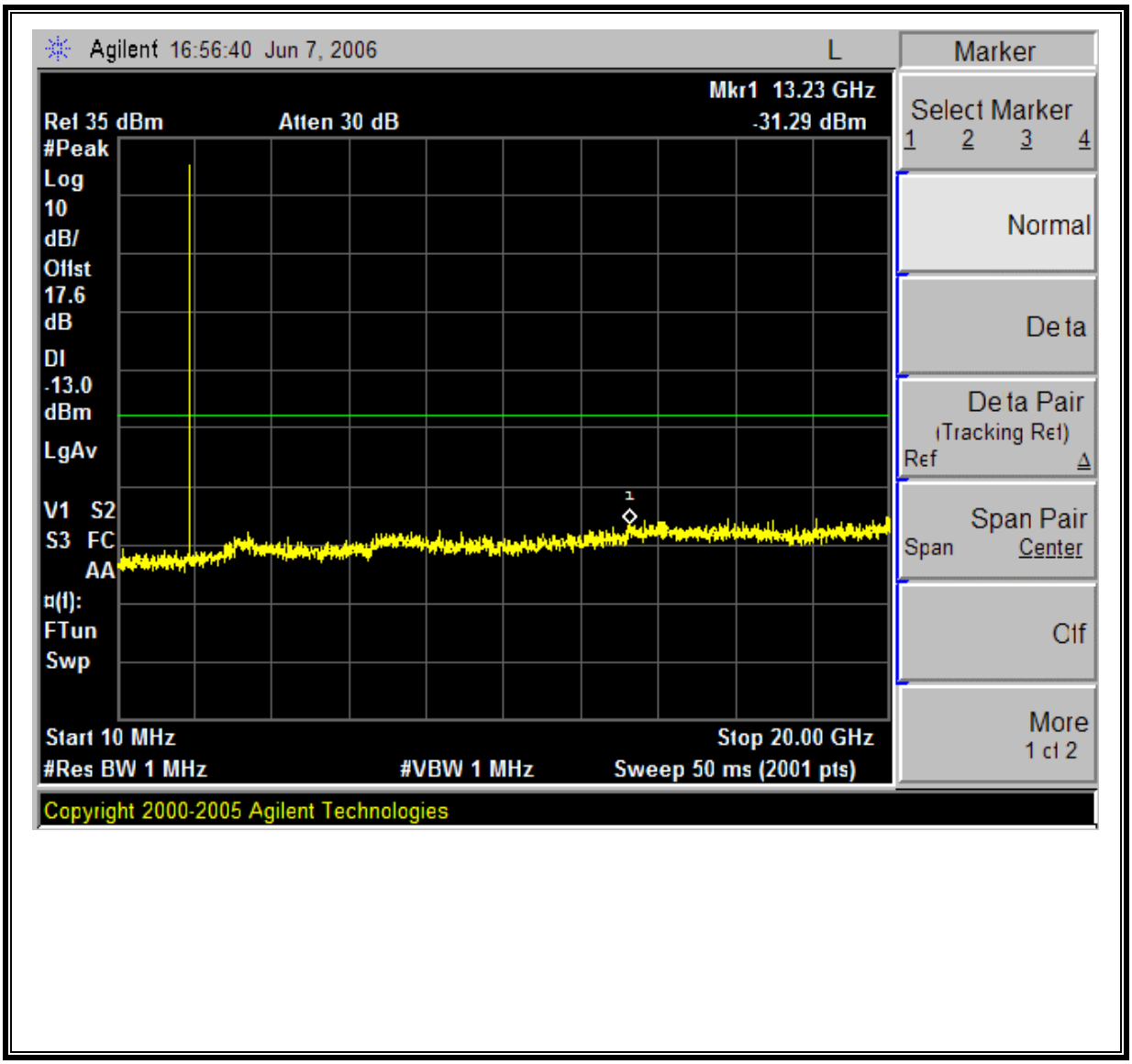


PCS GSM1900 MODULATION RESULTS

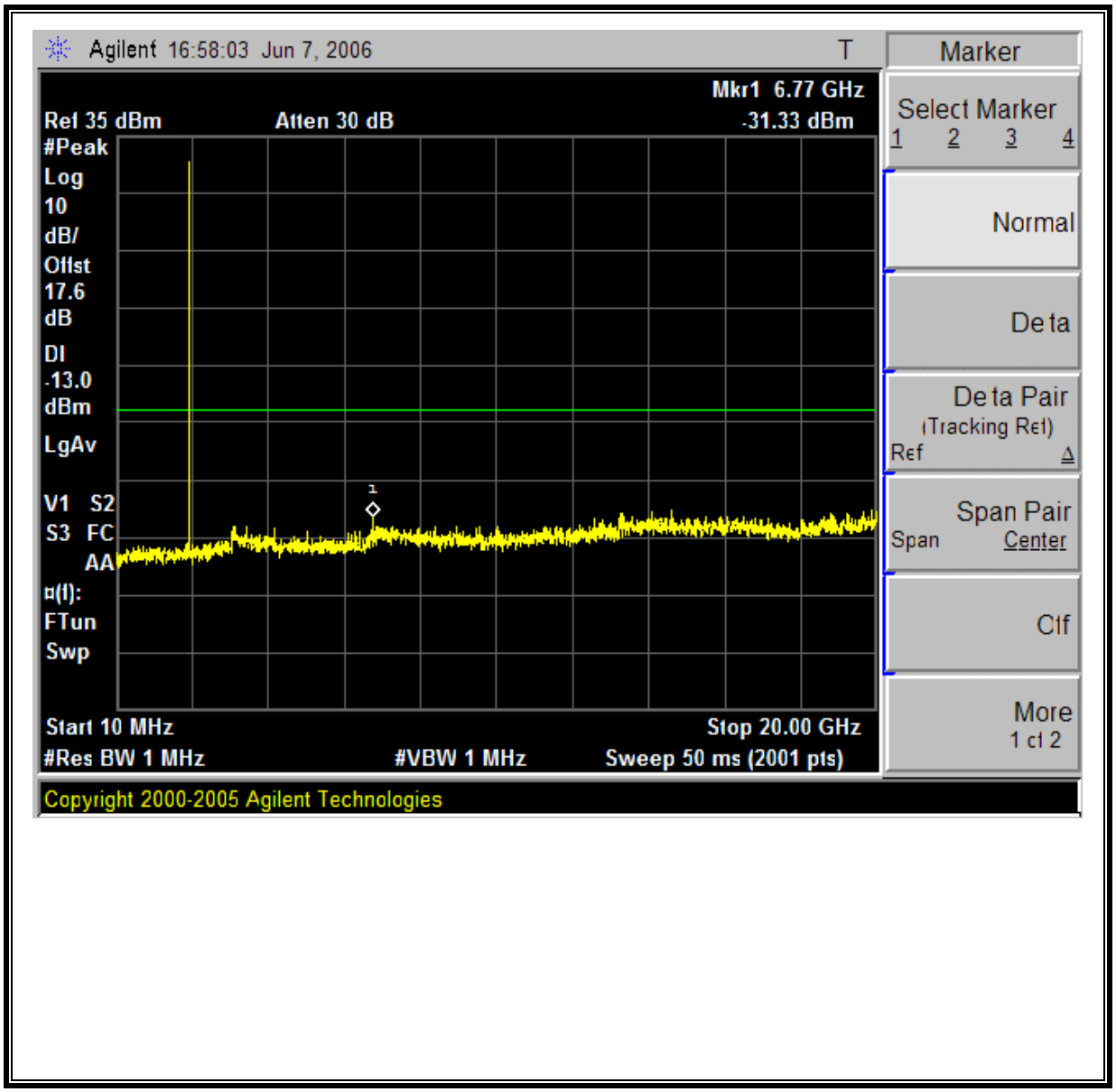
Low Channel, Out-Of-Band Emissions



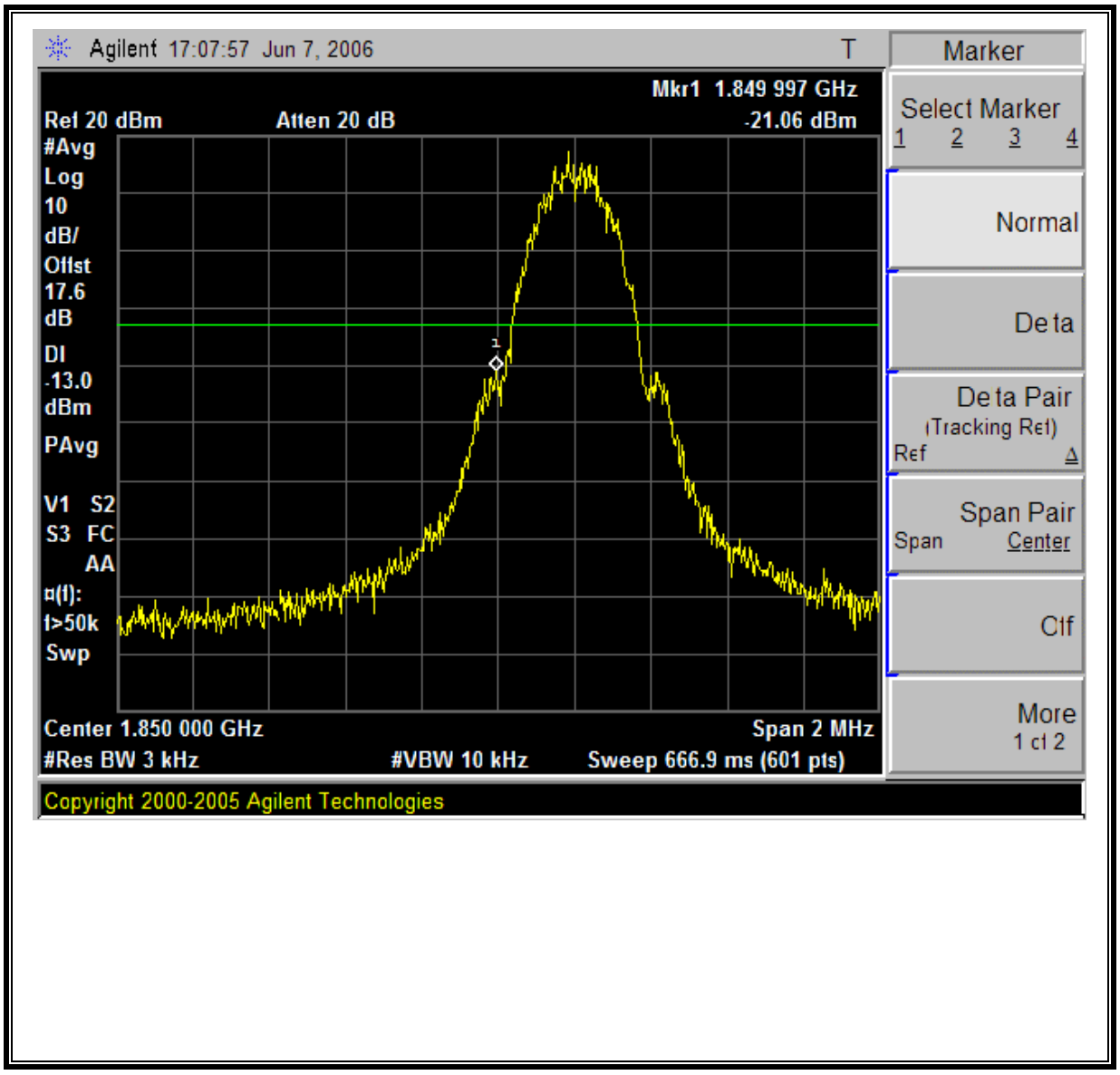
Mid Channel, Out-Of-Band Emissions



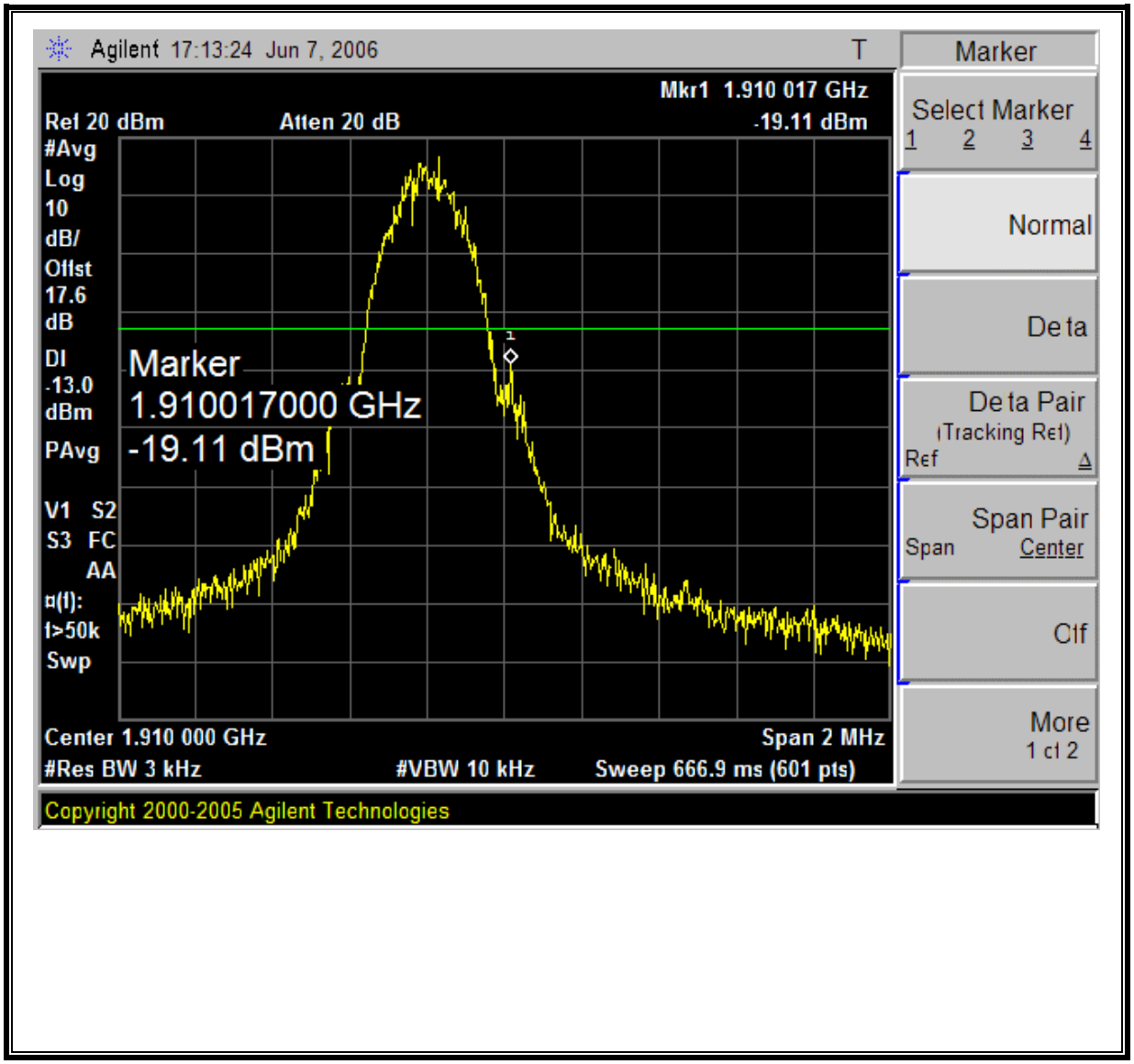
High Channel, Out-Of-Band Emissions



Low Channel Band Edge

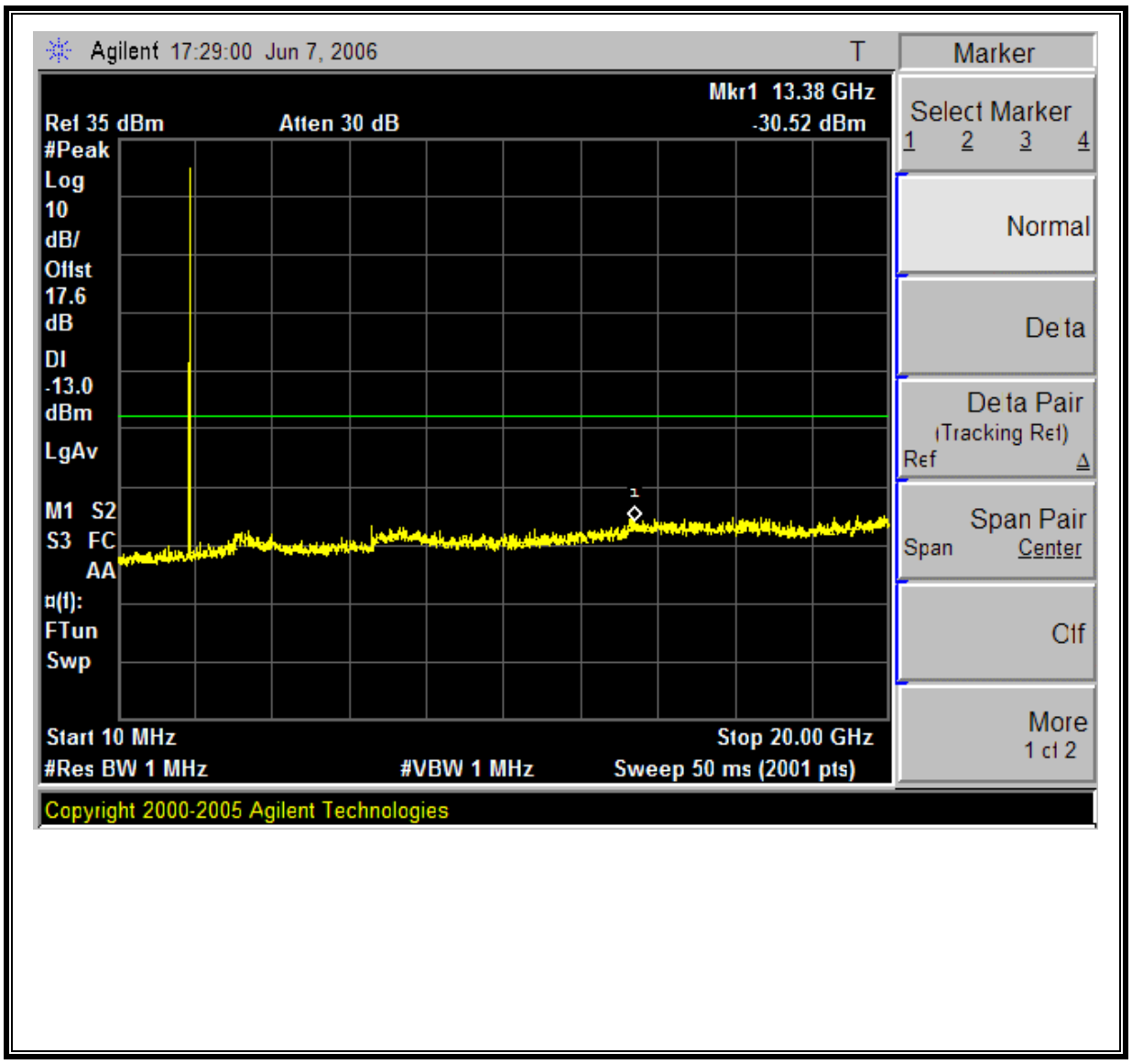


High Channel Band Edge

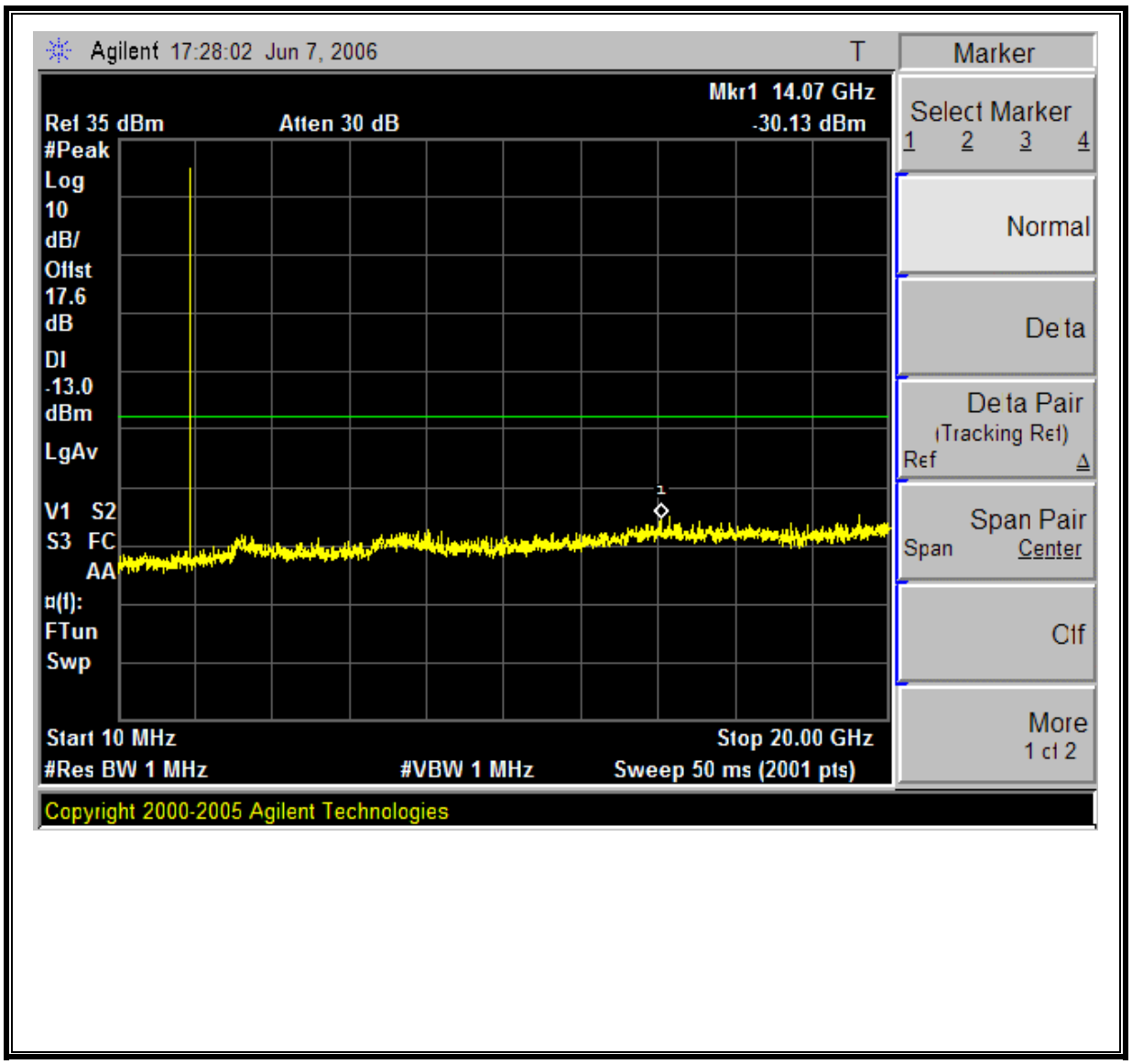


PCS GPRS 1900 MODULATION RESULTS

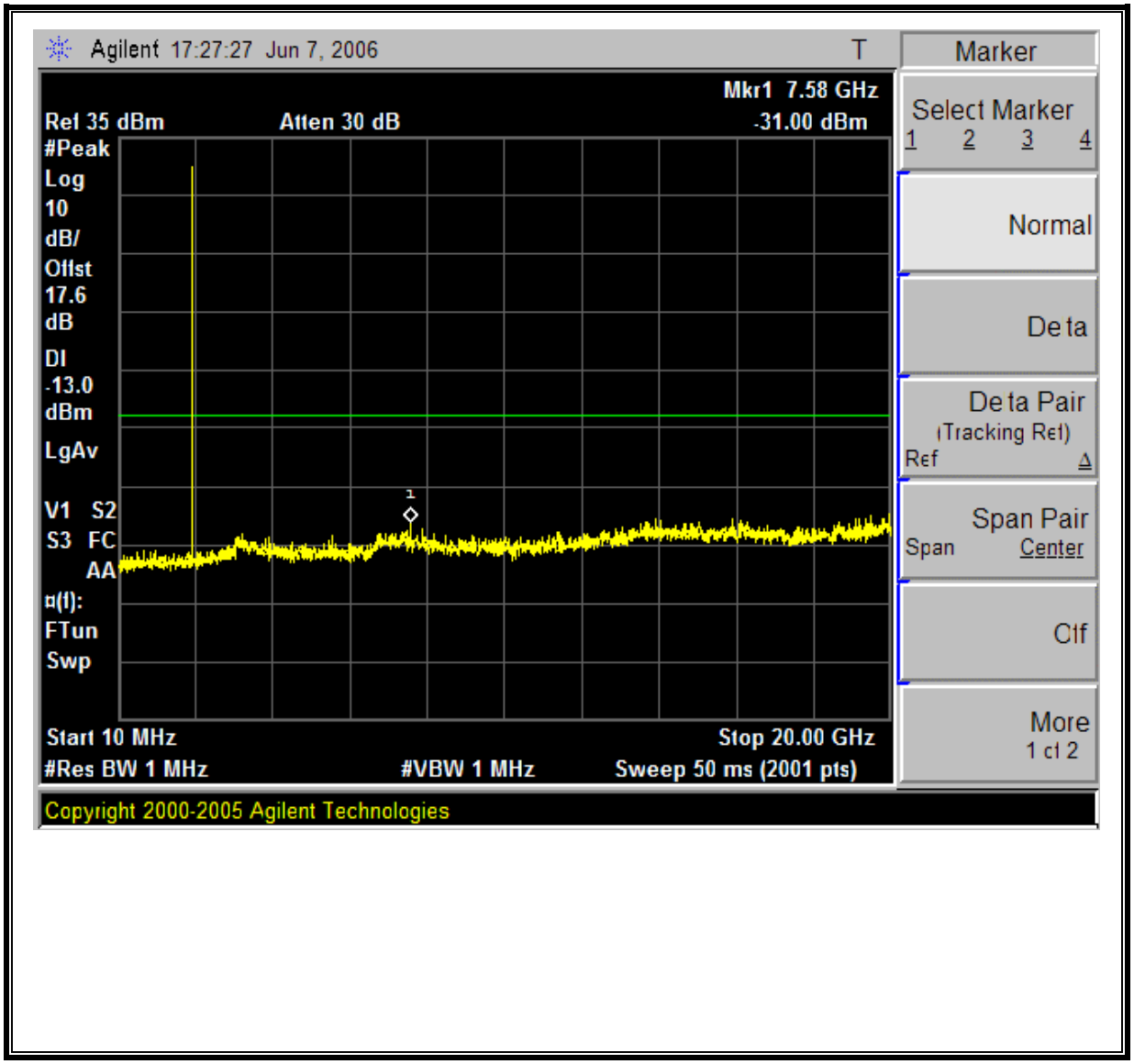
Low Channel, Out-Of-Band Emissions



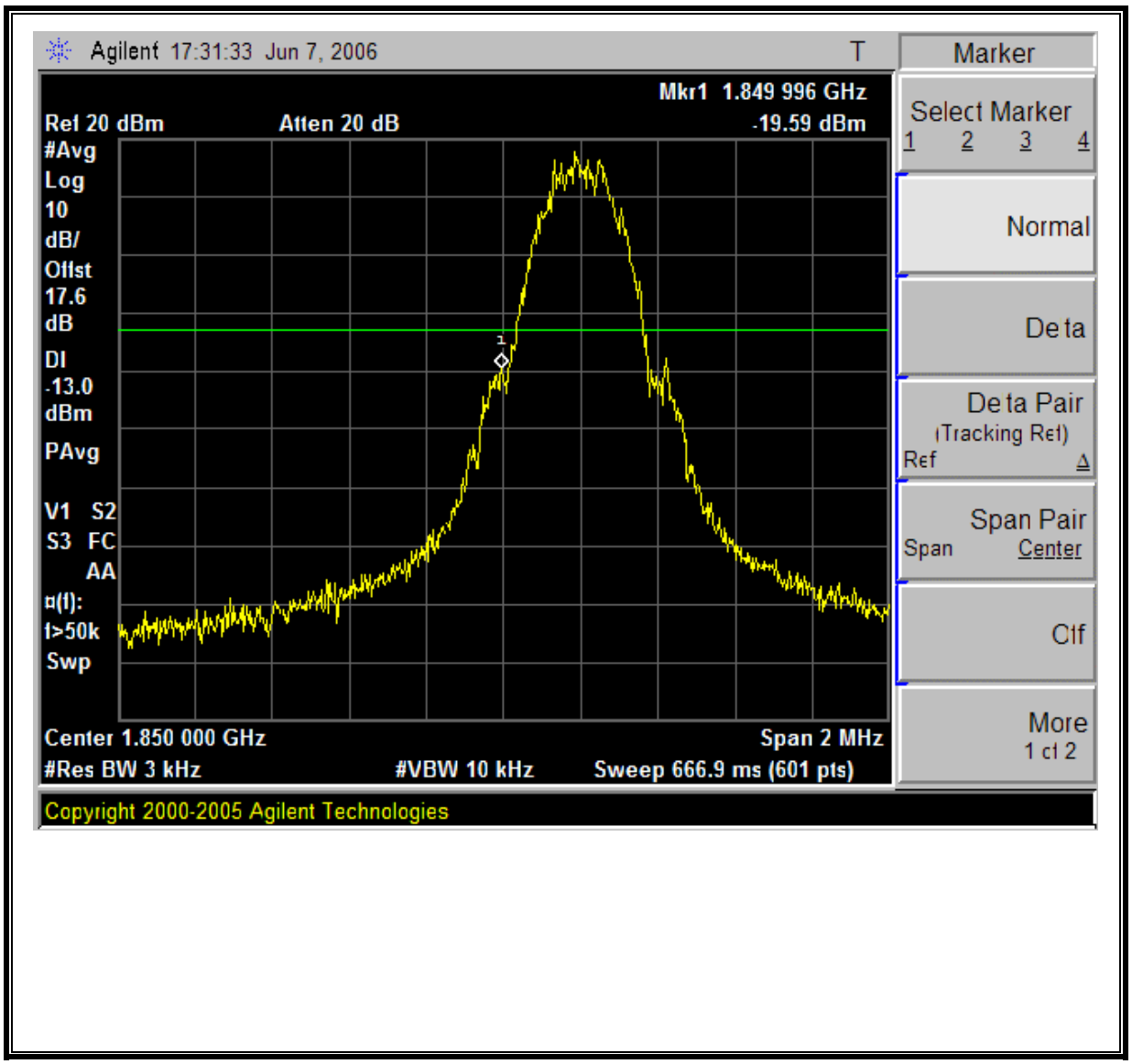
Mid Channel, Out-Of-Band Emissions



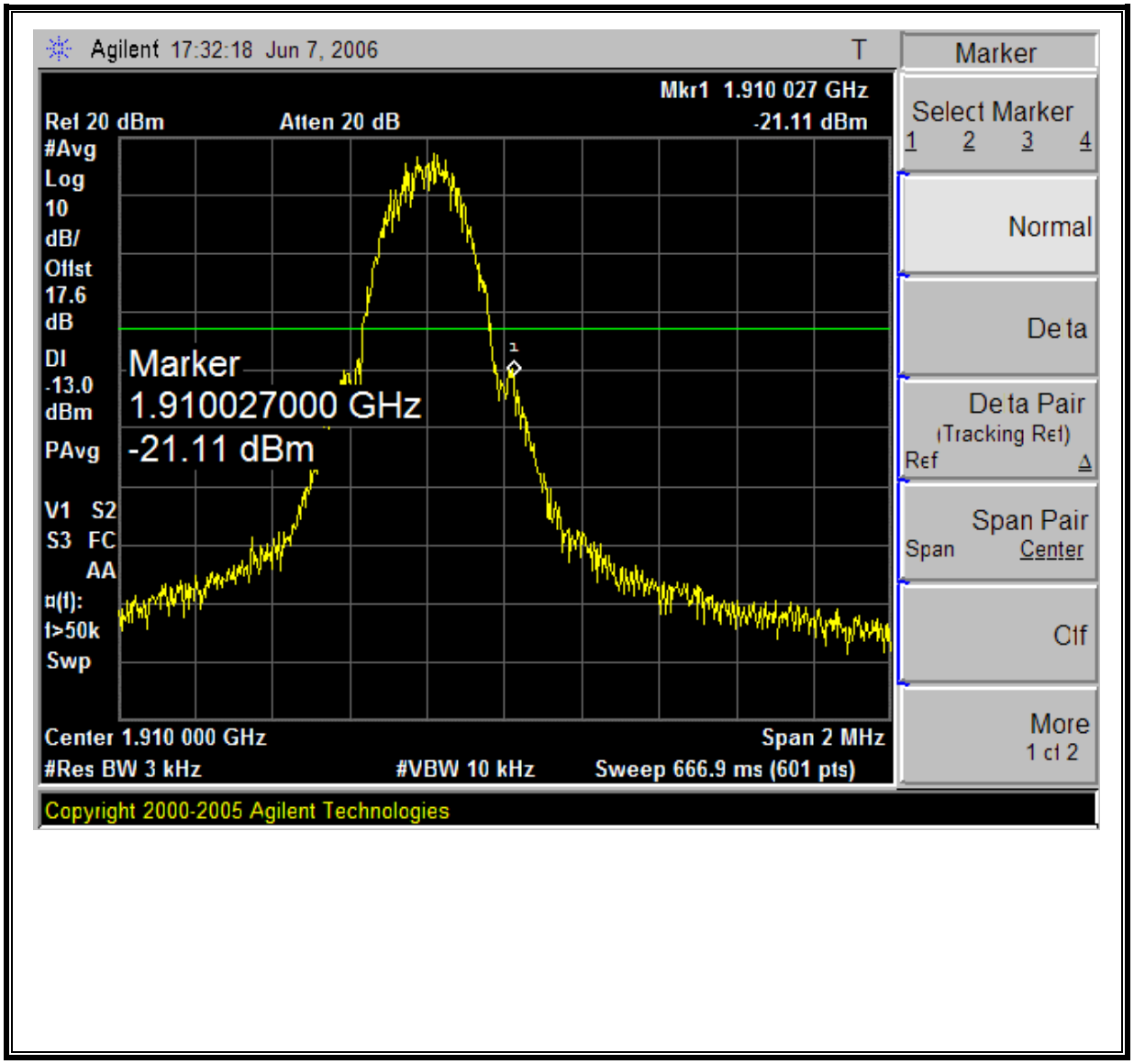
High Channel, Out-Of-Band Emissions



Low Channel Band Edge

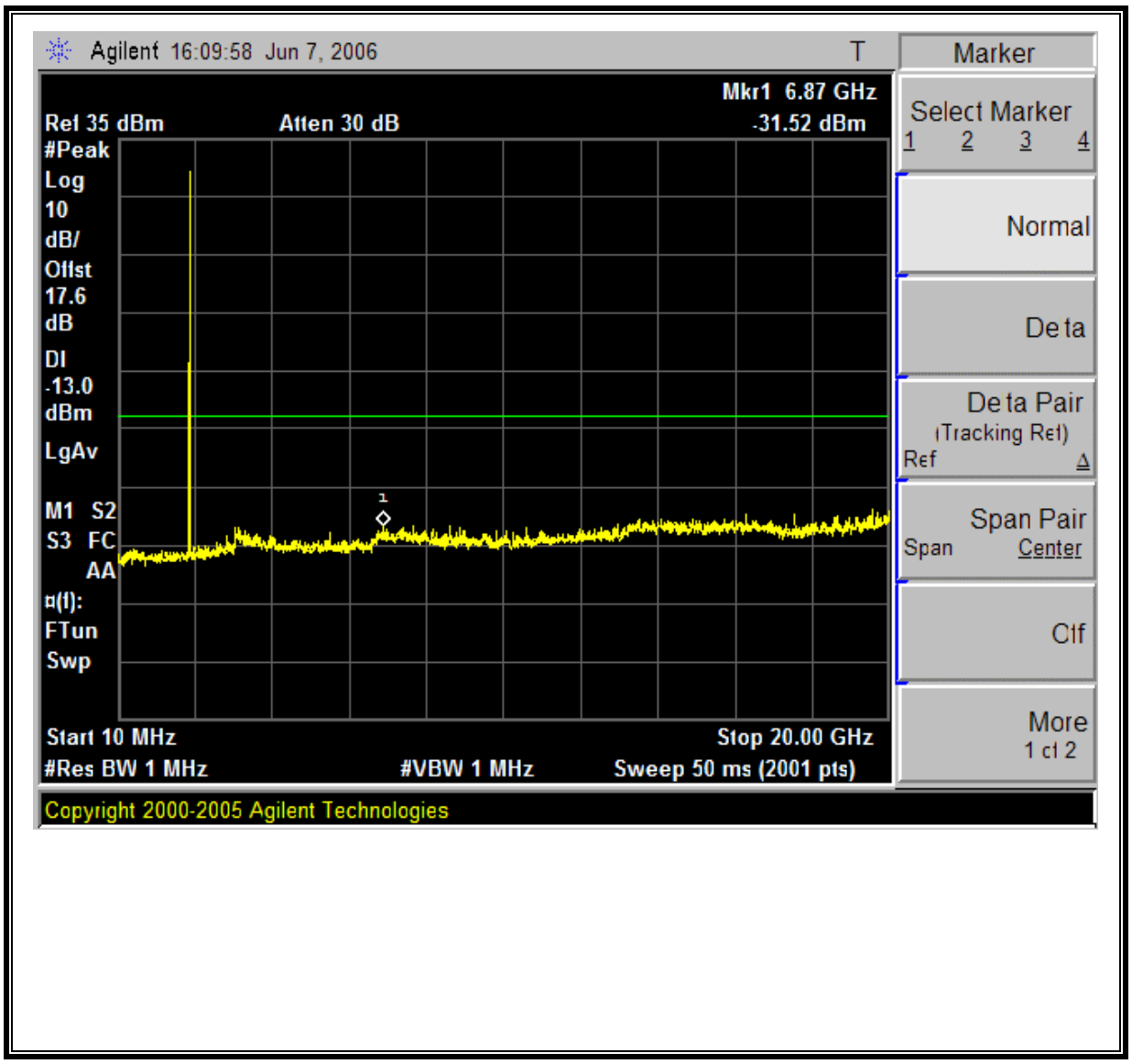


High Channel Band Edge

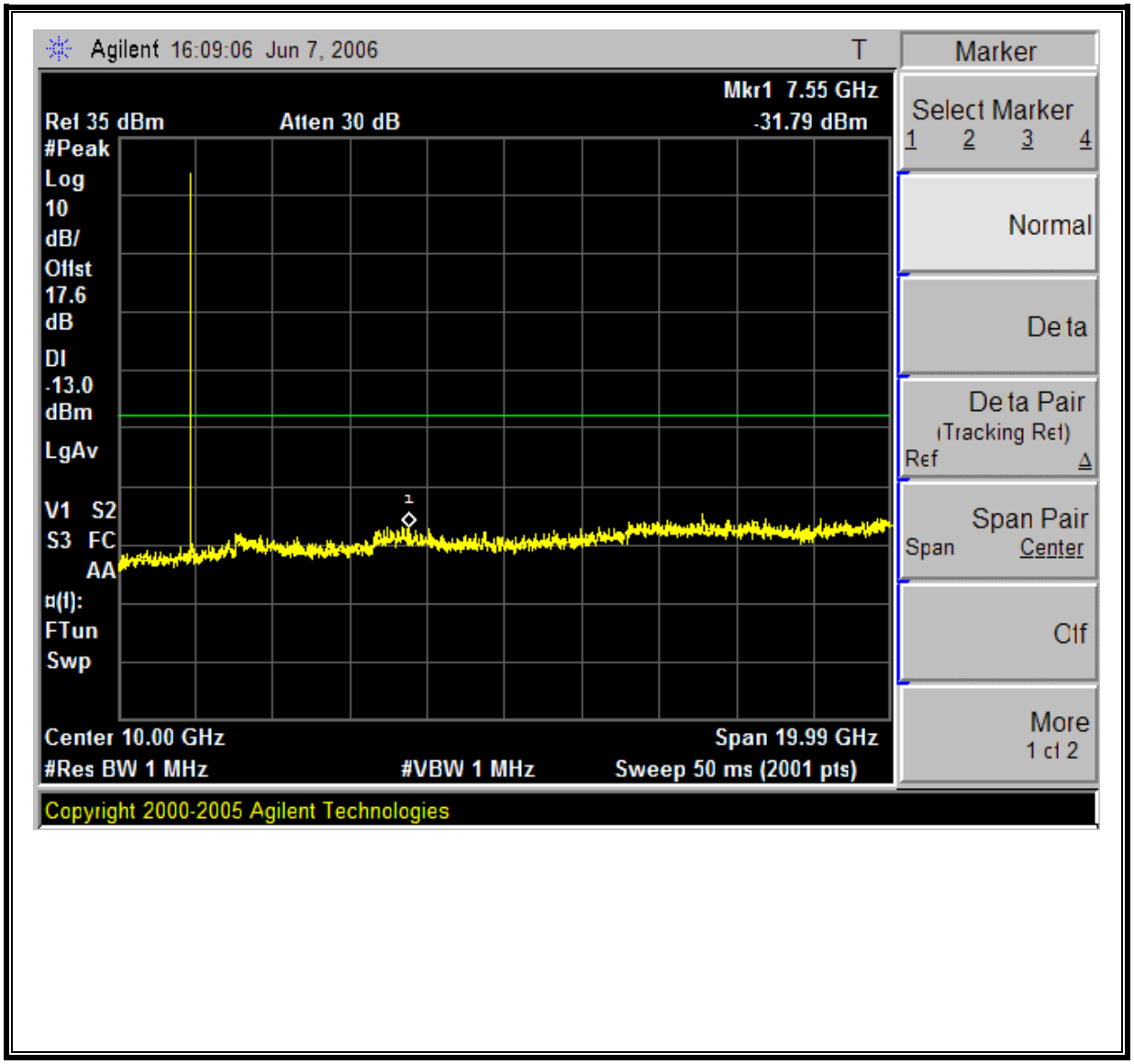


PCS EGPRS 1900 MODULATION RESULTS

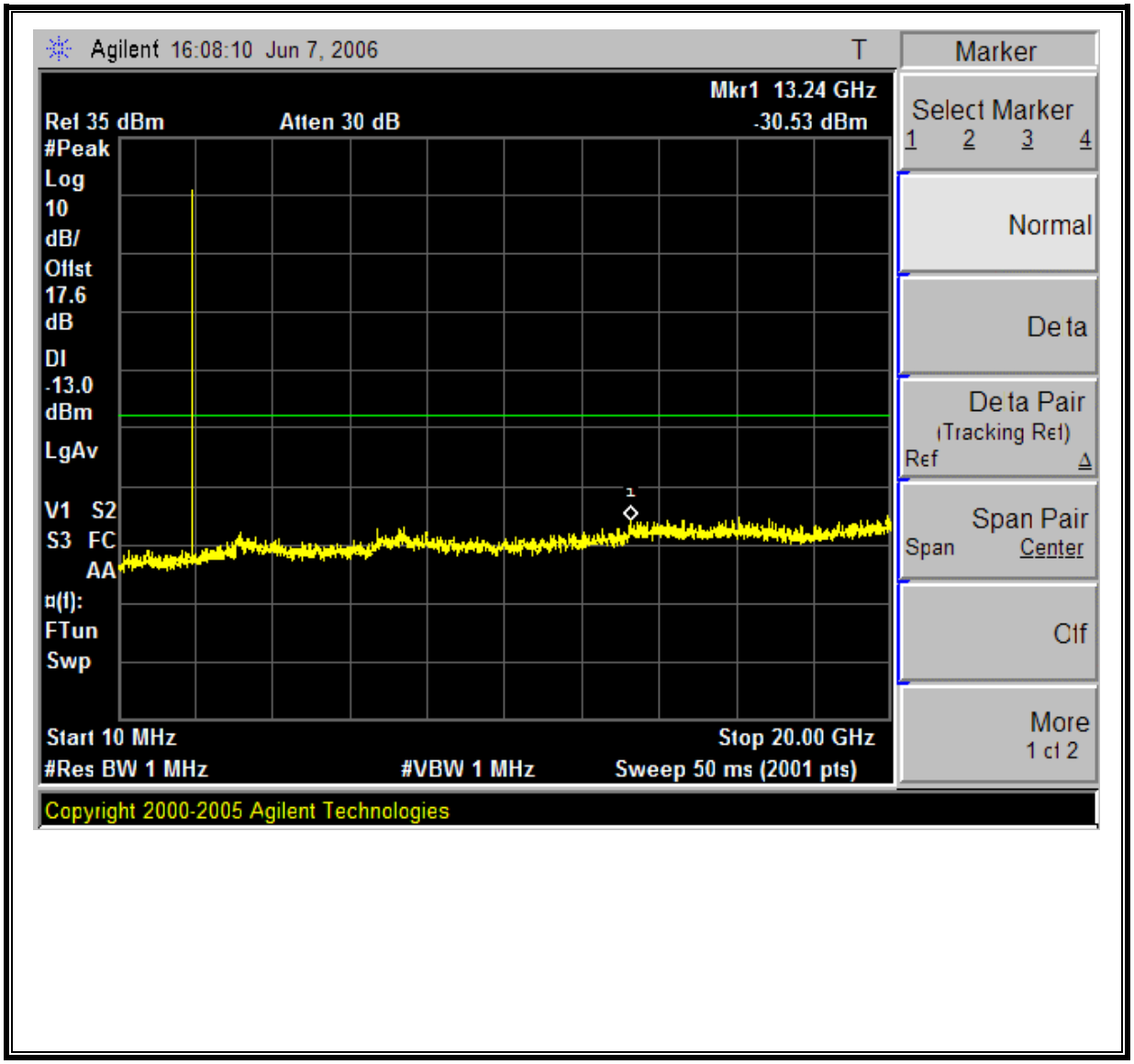
Low Channel, Out-Of-Band Emissions



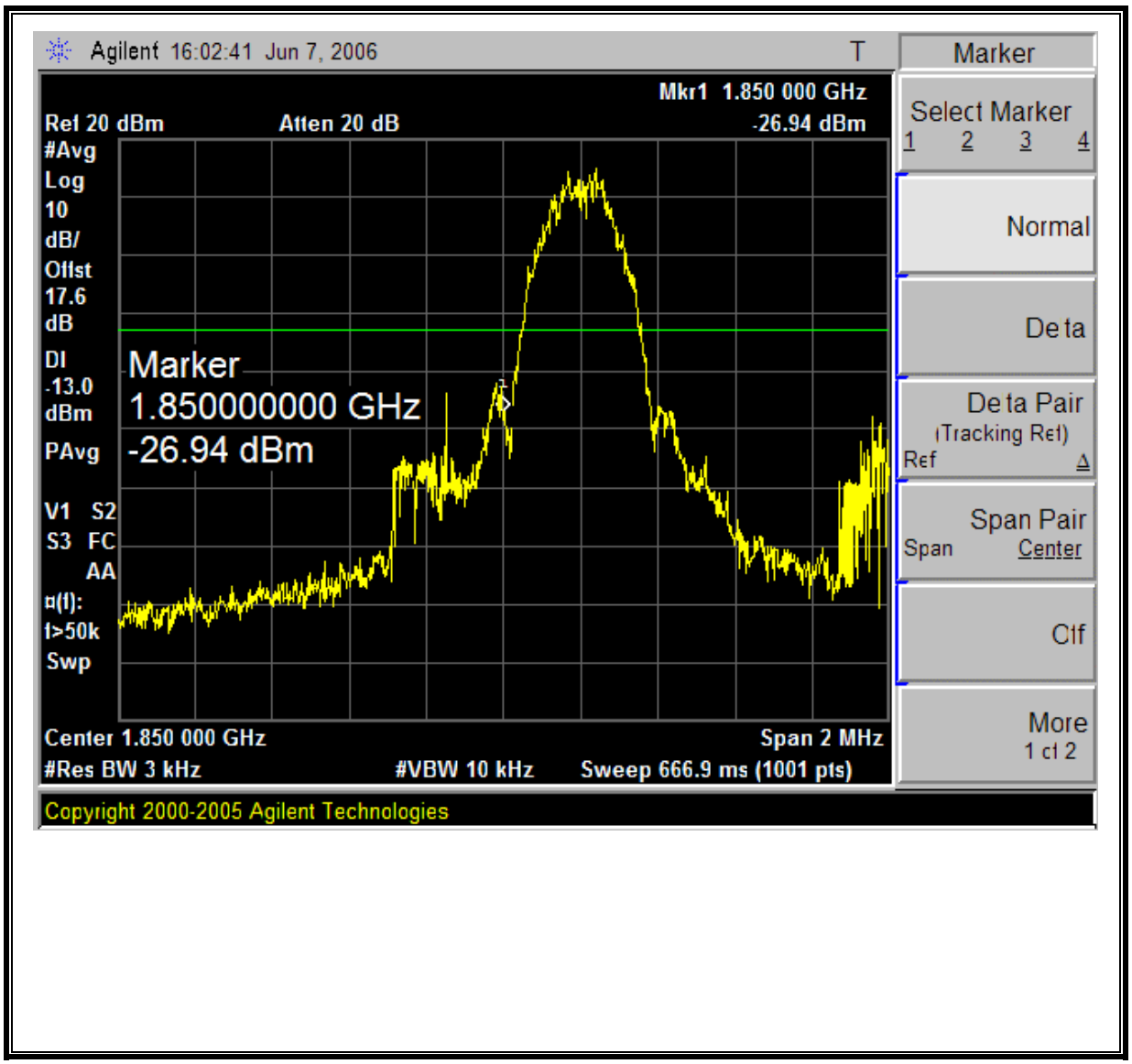
Mid Channel, Out-Of-Band Emissions



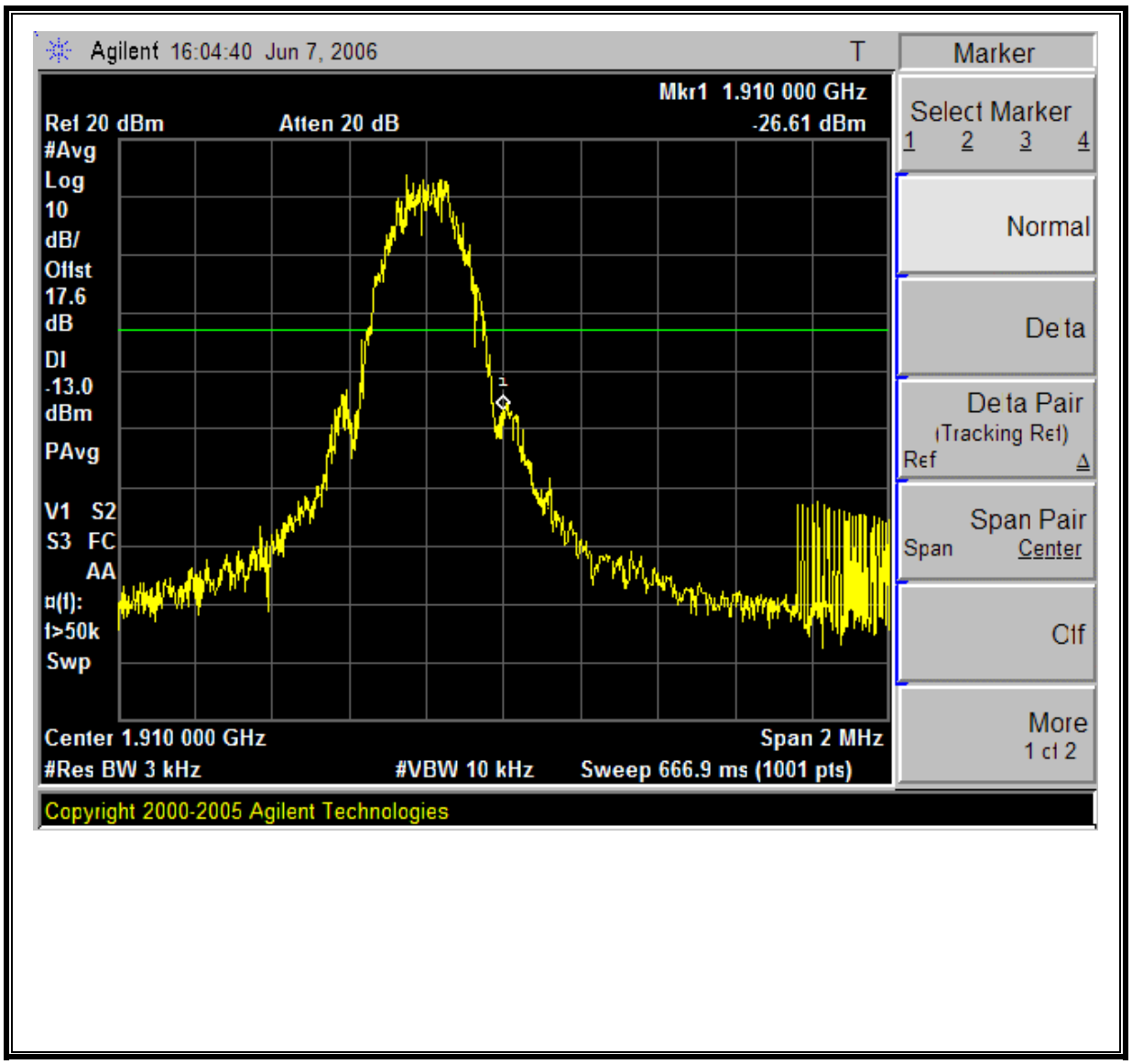
High Channel, Out-Of-Band Emissions



Low Channel Band Edge



High Channel Band Edge



8.5. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (a) & §24.238 (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) & FCC 24.238 (b)

RESULTS

No non-compliance noted.

Note: No spurious emissions were found within 30-1000MHz of 20dB below the system noise.

GSM850 Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: High Tech Computer
Project #: 06I10345
Date: 6/8/2006
Test Engineer: Chin Pang
Configuration: EUT only
Mode: TX, GSM 850

Test Equipment:
Receiving: Horn T59, Pre-amp T34, Chin SMA Cables 2 & 12 ft
Substitution: Horn T60, 6ft SMA Cable Warehouse S/N: 208947 002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel									
1.649	56.6	V	-56.7	0.8	4.9	-52.6	-13.0	-39.6	
2.474	54.4	V	-56.0	1.0	7.1	-49.8	-13.0	-36.8	
5.769	47.0	V	-55.6	1.7	9.2	-48.1	-13.0	-35.1	
7.418	43.7	V	-57.2	1.8	9.8	-49.2	-13.0	-36.2	
8.242	44.6	V	-55.2	1.9	9.9	-47.2	-13.0	-34.2	
1.649	62.0	H	-52.3	0.8	4.9	-48.2	-13.0	-35.2	
2.474	53.0	H	-57.7	1.0	7.1	-51.5	-13.0	-38.5	
3.299	45.0	H	-62.4	1.2	7.3	-56.3	-13.0	-43.3	
5.769	43.0	H	-58.8	1.7	9.2	-51.2	-13.0	-38.2	
6.594	42.6	H	-58.1	1.8	9.8	-50.1	-13.0	-37.1	
Mid Channel									
1.673	57.5	V	-55.6	0.8	5.0	-51.4	-13.0	-38.4	
2.510	53.6	V	-55.8	1.0	7.1	-49.7	-13.0	-36.7	
5.856	46.0	V	-56.3	1.7	9.4	-48.6	-13.0	-35.6	
1.673	60.8	H	-53.4	0.8	5.0	-49.2	-13.0	-36.2	
2.510	54.0	H	-57.0	1.0	7.1	-50.9	-13.0	-37.9	
4.183	46.0	H	-59.5	1.4	7.9	-53.0	-13.0	-40.0	
High Channel									
1.697	53.0	V	-59.9	0.8	5.1	-55.6	-13.0	-42.6	
2.545	50.6	V	-58.2	1.0	7.1	-52.0	-13.0	-39.0	
3.393	46.4	V	-60.1	1.2	7.4	-53.9	-13.0	-40.9	
5.093	47.6	V	-55.3	1.5	8.9	-48.0	-13.0	-35.0	
5.941	48.7	V	-53.4	1.7	9.5	-45.6	-13.0	-32.6	
1.697	60.0	H	-53.7	0.8	5.1	-49.4	-13.0	-36.4	
2.545	54.2	H	-57.1	1.0	7.1	-51.0	-13.0	-38.0	
4.242	45.6	H	-59.7	1.4	8.0	-53.1	-13.0	-40.1	
5.941	43.3	H	-58.2	1.7	9.5	-50.4	-13.0	-37.4	

Note: No other emissions were detected above the system noise floor.

GPRS850 Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: High Tech Computer
Project #: 06I10345
Date: 6/8/2006
Test Engineer: Chin Pang
Configuration: EUT only
Mode: TX, GPRS 850 mode

Test Equipment:
Receiving: Horn T59, Pre-amp T34, Chin SMA Cables 2 & 12 ft
Substitution: Horn T60, 6ft SMA Cable Warehouse S/N: 208947 002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel									
1.649	55.4	V	-57.9	0.8	4.9	-53.8	-13.0	-40.8	
2.474	47.3	V	-63.1	1.0	7.1	-56.9	-13.0	-43.9	
3.297	45.0	V	-57.6	1.7	9.2	-50.1	-13.0	-37.1	
1.649	56.8	H	-57.5	0.8	4.9	-53.4	-13.0	-40.4	
2.474	48.0	H	-62.7	1.0	7.1	-56.5	-13.0	-43.5	
5.769	43.0	H	-58.8	1.7	9.2	-51.2	-13.0	-38.2	
Mid Channel									
1.673	55.0	V	-58.1	0.8	5.0	-53.9	-13.0	-40.9	
2.510	48.6	V	-60.8	1.0	7.1	-54.7	-13.0	-41.7	
5.856	45.0	V	-57.3	1.7	9.4	-49.6	-13.0	-36.6	
1.673	57.8	H	-56.4	0.8	5.0	-52.2	-13.0	-39.2	
2.510	50.5	H	-60.5	1.0	7.1	-54.4	-13.0	-41.4	
4.183	43.0	H	-62.5	1.4	7.9	-56.0	-13.0	-43.0	
High Channel									
1.697	55.7	V	-57.2	0.8	5.1	-52.9	-13.0	-39.9	
2.545	50.4	V	-58.4	1.0	7.1	-52.2	-13.0	-39.2	
3.393	45.3	V	-61.2	1.2	7.4	-55.0	-13.0	-42.0	
1.697	57.4	H	-56.3	0.8	5.1	-52.0	-13.0	-39.0	
2.545	54.2	H	-57.1	1.0	7.1	-51.0	-13.0	-38.0	
4.242	43.8	H	-61.5	1.4	8.0	-54.9	-13.0	-41.9	

Note: No other emissions were detected above the system noise floor.

EGPRS850 Spurious & Harmonic (ERP)

Cellular Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: High Tech Computer
Project #: 06I10345
Date: 6/8/2006
Test Engineer: Chin Pang
Configuration: EUT only
Mode: TX, EGPRS 850 mode

Test Equipment:
Receiving: Horn T59, Pre-amp T34, Chin SMA Cables 2 & 12 ft
Substitution: Horn T60, 6ft SMA Cable Warehouse S/N: 208947 002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel									
1.649	52.0	V	-61.3	0.8	4.9	-57.2	-13.0	-44.2	
2.474	48.5	V	-61.9	1.0	7.1	-55.7	-13.0	-42.7	
3.297	44.2	V	-58.4	1.7	9.2	-50.9	-13.0	-37.9	
1.649	54.3	H	-60.0	0.8	4.9	-55.9	-13.0	-42.9	
2.474	56.2	H	-54.5	1.0	7.1	-48.3	-13.0	-35.3	
5.769	44.8	H	-57.0	1.7	9.2	-49.4	-13.0	-36.4	
Mid Channel									
1.673	51.3	V	-61.8	0.8	5.0	-57.6	-13.0	-44.6	
2.510	47.2	V	-62.2	1.0	7.1	-56.1	-13.0	-43.1	
5.856	43.0	V	-59.3	1.7	9.4	-51.6	-13.0	-38.6	
1.673	54.0	H	-60.2	0.8	5.0	-56.0	-13.0	-43.0	
2.510	56.7	H	-54.3	1.0	7.1	-48.2	-13.0	-35.2	
4.183	45.0	H	-60.5	1.4	7.9	-54.0	-13.0	-41.0	
High Channel									
1.697	51.7	V	-61.2	0.8	5.1	-56.9	-13.0	-43.9	
2.545	48.3	V	-60.5	1.0	7.1	-54.3	-13.0	-41.3	
3.393	44.3	V	-62.2	1.2	7.4	-56.0	-13.0	-43.0	
1.697	53.8	H	-59.9	0.8	5.1	-55.6	-13.0	-42.6	
2.545	56.5	H	-54.8	1.0	7.1	-48.7	-13.0	-35.7	
4.242	43.0	H	-62.3	1.4	8.0	-55.7	-13.0	-42.7	

Note: No other emissions were detected above the system noise floor.

GSM1900 Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: High Tech Computer
Project #: 06I10345
Date: 6/8/2006
Test Engineer: Chin Pang
Configuration: EUT only
Mode: TX, GSM 1900 Mode

Test Equipment:
Receiving: Horn T59, Pre-amp T34, and Chin SMA Cables 2 & 12 ft
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel									
3.703	66.3	V	-38.7	1.2	9.7	-30.3	-13.0	-17.3	
5.554	55.5	V	-47.0	1.6	11.0	-37.6	-13.0	-24.6	
7.405	46.8	V	-52.8	1.9	12.0	-42.7	-13.0	-29.7	
9.256	48.6	V	-49.2	2.1	12.7	-38.6	-13.0	-25.6	
11.108	47.5	V	-49.2	2.3	13.8	-37.7	-13.0	-24.7	
3.703	69.3	H	-37.2	1.2	9.7	-28.8	-13.0	-15.8	
5.554	56.0	H	-46.0	1.6	11.0	-36.6	-13.0	-23.6	
7.405	48.5	H	-50.2	1.9	12.0	-40.1	-13.0	-27.1	
9.256	50.0	H	-46.7	2.1	12.7	-36.0	-13.0	-23.0	
11.108	51.4	H	-44.7	2.3	13.8	-33.2	-13.0	-20.2	
Mid Channel									
3.760	67.8	V	-36.7	1.3	9.7	-28.3	-13.0	-15.3	
5.640	56.5	V	-46.3	1.7	11.2	-36.8	-13.0	-23.8	
9.400	48.0	V	-48.5	2.1	12.7	-37.9	-13.0	-24.9	
11.280	54.8	V	-41.0	2.3	13.9	-29.5	-13.0	-16.5	
3.760	70.4	H	-35.7	1.3	9.7	-27.2	-13.0	-14.2	
5.640	53.0	H	-48.9	1.7	11.2	-39.4	-13.0	-26.4	
9.400	47.0	H	-48.8	2.1	12.7	-38.1	-13.0	-25.1	
11.280	46.6	H	-49.0	2.3	13.9	-37.5	-13.0	-24.5	
High Channel									
3.818	67.2	V	-37.0	1.3	9.7	-28.6	-13.0	-15.6	
5.726	55.7	V	-46.8	1.7	11.3	-37.2	-13.0	-24.2	
7.635	48.4	V	-51.6	1.9	12.0	-41.4	-13.0	-28.4	
9.544	47.6	V	-48.0	2.1	12.7	-37.4	-13.0	-24.4	
11.453	55.7	V	-39.5	2.4	14.0	-27.9	-13.0	-14.9	
3.818	69.0	H	-36.4	1.3	9.7	-27.9	-13.0	-14.9	
5.726	52.5	H	-49.7	1.7	11.3	-40.1	-13.0	-27.1	
7.635	47.8	H	-51.1	1.9	12.0	-41.0	-13.0	-28.0	
9.544	51.0	H	-44.6	2.1	12.7	-34.0	-13.0	-21.0	
11.453	56.0	H	-39.2	2.4	14.0	-27.6	-13.0	-14.6	

Note: No other emissions were detected above the system noise floor.

GPRS1900 Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: High Tech Computer
Project #: 06I10345
Date: 6/8/2006
Test Engineer: Chin Pang
Configuration: EUT only
Mode: TX, GPRS 1900 mode

Test Equipment:
Receiving: Horn T59, Pre-amp T34, and Chin SMA Cables 2 & 12 ft
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel									
3.703	65.6	V	-39.4	1.2	9.7	-31.0	-13.0	-18.0	
5.554	58.2	V	-44.3	1.6	11.0	-34.9	-13.0	-21.9	
7.405	46.2	V	-53.4	1.9	12.0	-43.3	-13.0	-30.3	
9.256	52.0	V	-45.8	2.1	12.7	-35.2	-13.0	-22.2	
11.108	50.2	V	-46.5	2.3	13.8	-35.0	-13.0	-22.0	
3.703	69.5	H	-37.0	1.2	9.7	-28.6	-13.0	-15.6	
5.554	53.4	H	-48.6	1.6	11.0	-39.2	-13.0	-26.2	
7.405	46.8	H	-51.9	1.9	12.0	-41.8	-13.0	-28.8	
9.256	51.6	H	-45.1	2.1	12.7	-34.4	-13.0	-21.4	
11.108	54.5	H	-41.6	2.3	13.8	-30.1	-13.0	-17.1	
Mid Channel									
3.760	65.0	V	-39.5	1.3	9.7	-31.1	-13.0	-18.1	
5.640	59.0	V	-43.8	1.7	11.2	-34.3	-13.0	-21.3	
7.520	47.0	V	-49.5	2.1	12.7	-38.9	-13.0	-25.9	
9.400	48.6	V	-47.9	2.1	12.7	-37.3	-13.0	-24.3	
11.280	54.8	V	-41.0	2.3	13.9	-29.5	-13.0	-16.5	
3.760	69.0	H	-37.1	1.3	9.7	-28.6	-13.0	-15.6	
5.640	50.0	H	-51.9	1.7	11.2	-42.4	-13.0	-29.4	
7.520	48.5	H	-47.3	2.1	12.7	-36.6	-13.0	-23.6	
9.400	50.6	H	-45.2	2.1	12.7	-34.5	-13.0	-21.5	
11.280	56.0	H	-39.6	2.3	13.9	-28.1	-13.0	-15.1	
High Channel									
3.818	66.7	V	-37.5	1.3	9.7	-29.1	-13.0	-16.1	
5.726	56.6	V	-45.9	1.7	11.3	-36.3	-13.0	-23.3	
7.635	50.4	V	-49.6	1.9	12.0	-39.4	-13.0	-26.4	
9.544	49.3	V	-46.3	2.1	12.7	-35.7	-13.0	-22.7	
11.453	53.5	V	-41.7	2.4	14.0	-30.1	-13.0	-17.1	
3.818	68.2	H	-37.2	1.3	9.7	-28.7	-13.0	-15.7	
5.726	55.0	H	-47.2	1.7	11.3	-37.6	-13.0	-24.6	
7.635	49.3	H	-49.6	1.9	12.0	-39.5	-13.0	-26.5	
9.544	48.7	H	-46.9	2.1	12.7	-36.3	-13.0	-23.3	
11.453	55.5	H	-39.7	2.4	14.0	-28.1	-13.0	-15.1	

Note: No other emissions were detected above the system noise floor.

EGPRS1900 Spurious & Harmonic (EIRP)

PCS Harmonic Substitution Measurement
Compliance Certification Services, Morgan Hill Immunity Chamber

Company: High Tech Computer
Project #: 06I10345
Date: 6/8/2006
Test Engineer: Chin Pang
Configuration: EUT only
Mode: TX, EGPRS 1900 mode

Test Equipment:
Receiving: Horn T59, Pre-amp T34, and Chin SMA Cables 2 & 12 ft
Substitution: Horn T60, and 6ft SMA Cable Warehouse S/N: 208947 002

f GHz	SA reading (dBuV/m)	Ant. Pol. (H/V)	SG reading (dBm)	CL (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Channel									
3.700	54.8	V	-50.2	1.2	9.7	-41.8	-13.0	-28.8	
5.554	52.0	V	-50.5	1.6	11.0	-41.1	-13.0	-28.1	
7.405	46.2	V	-53.4	1.9	12.0	-43.3	-13.0	-30.3	
9.256	47.0	V	-50.8	2.1	12.7	-40.2	-13.0	-27.2	
11.108	48.3	V	-48.4	2.3	13.8	-36.9	-13.0	-23.9	
3.703	57.0	H	-49.5	1.2	9.7	-41.1	-13.0	-28.1	
5.554	49.0	H	-53.0	1.6	11.0	-43.6	-13.0	-30.6	
7.405	46.8	H	-51.9	1.9	12.0	-41.8	-13.0	-28.8	
9.251	45.3	H	-51.4	2.1	12.7	-40.7	-13.0	-27.7	
11.108	51.6	H	-44.5	2.3	13.8	-33.0	-13.0	-20.0	
Mid Channel									
3.760	58.0	V	-46.5	1.3	9.7	-38.1	-13.0	-25.1	
5.640	49.4	V	-53.4	1.7	11.2	-43.9	-13.0	-30.9	
7.520	50.0	V	-46.5	2.1	12.7	-35.9	-13.0	-22.9	
9.400	48.7	V	-47.8	2.1	12.7	-37.2	-13.0	-24.2	
11.280	48.7	V	-47.1	2.3	13.9	-35.6	-13.0	-22.6	
3.760	60.0	H	-46.1	1.3	9.7	-37.6	-13.0	-24.6	
5.640	51.0	H	-50.9	1.7	11.2	-41.4	-13.0	-28.4	
9.400	44.1	H	-51.7	2.1	12.7	-41.0	-13.0	-28.0	
11.280	52.0	H	-43.6	2.3	13.9	-32.1	-13.0	-19.1	
High Channel									
3.818	57.4	V	-46.8	1.3	9.7	-38.4	-13.0	-25.4	
5.726	48.3	V	-54.2	1.7	11.3	-44.6	-13.0	-31.6	
7.639	47.4	V	-52.6	1.9	12.0	-42.4	-13.0	-29.4	
9.544	46.5	V	-49.1	2.1	12.7	-38.5	-13.0	-25.5	
11.453	48.0	V	-47.2	2.4	14.0	-35.6	-13.0	-22.6	
3.818	59.0	H	-46.4	1.3	9.7	-37.9	-13.0	-24.9	
5.726	52.0	H	-50.2	1.7	11.3	-40.6	-13.0	-27.6	
7.639	52.1	H	-46.8	1.9	12.0	-36.7	-13.0	-23.7	
9.544	46.6	H	-49.0	2.1	12.7	-38.4	-13.0	-25.4	
11.453	51.8	H	-43.4	2.4	14.0	-31.8	-13.0	-18.8	

Note: No other emissions were detected above the system noise floor.