Engineering and Testing for EMC and Safety Compliance

CERTIFICATION APPLICATION REPORT
FCC PART 24 CERTIFICATION & INDUSTRY CANADA RSS-131 CERTIFICATION

Test Lab:	Applicant Information:
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FCC ID:	OW5BST1900	**GRANTEE FRN NUMBER:**	0007702509
PLAT FORM:	N/A	**RTL WORK ORDER NUMBER:**	2003051
MODEL(S):	BST1900	**RTL QUOTE NUMBER:**	QRTL02-669
DATE OF TEST REPORT:	July 9, 2003		

American National Standard Institute:	ANSI C63.4: Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
ANSI/TIA/EIA603- 1992	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
ANSI/TIA/EIA 603-1-1998	Addendum to ANSI/TIA/EIA 603-1992
TIA/EIA /IS-98-A	Recommended Minimum Performance standards for Dual-Mode Wideband Spectrum Cellular Mobile Stations
FCC Classification:	AMP - Amplifier
FCC Rule Part(s):	Part 24: Personal Communications Services
Industry Canada Standard:	RSS-131: Land and Subscriber Stations: Voice, Data and Tone Modulated, Angle Modulation Radiotelephone Transmitters and Receivers Operating in the Cellular Mobile Bands 1810-489 MHz and 869-894 MHz
Digital Interface Information	Digital Interface was found to be compliant
Receiver Information	Receiver was found to be compliant

Frequency Range (MHz)	Output Power (W)	Frequency Tolerance	Emission Designator
1850-1910	2	N/A	AMP

I, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards. Furthermore, there was no deviation from, additions to, or exclusions from the FCC Part 2, FCC Part 24, Industry Canada RSS-131, and ANSI C63.4.

Signature: _____ Date: July 9, 2003

Typed/Printed Name: Desmond A. Fraser Position: President

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1 GENERAL INFORMATION

This Type Certification Report is prepared on behalf of **Mobile Communication Technologies, Inc. (MCT, Inc),** in accordance with the Federal Communications Commissions and Industry Canada Rules and Regulations. The Equipment Under Test (EUT) is the **2W Cellular Booster Model BST1900, FCC ID: OW5BST1900**. The test results reported in this document relate only to the item that was tested.

All measurements contained in this application were conducted in accordance with FCC Rules and Regulations CFR 47, Industry Canada RSS-131, and ANSI C63.4 Methods of Measurement of Radio Noise Emissions, 1992. The instrumentation utilized for the measurements conforms to the ANSI C63.4 standard for EMI and Field Strength Instrumentation. Calibration checks are performed regularly on the instruments, and all accessories including high pass filter, coaxial attenuator, preamplifier and cables.

1.1 TEST FACILITY

The open area test site and conducted measurement facility used to collect the radiated data is located on the parking lot of Rhein Tech Laboratories, Inc. 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report dated March 3, 1994, submitted to and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 1992).

1.2 RELATED SUBMITTAL(S)/GRANT(S)

This is an original application report.

2 TESTED SYSTEM DETAILS

The EUT was tested in all three orthogonal planes in order to determine worst case emissions. The EUT was investigated and tested from 9 kHz to 20 GHz.

Listed below are the identifiers and descriptions of all equipment, cables, and internal devices used with the EUT for this test, as applicable.

2.1 SYSTEM COMPONENTS

PART	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID	CABLE DESCRIPTION	RTL BAR CODE
AMPLIFIER	MCT, INC.	BST1900	N/A	OW5BST1900	UNSHIELDED POWER	15102
Magnetic Mount Antenna	MCT, Inc.	SEM15MX	N/A	N/A	3 m RG 174 or 4.2 m RG 58 Shielded I/O	15104
Glass Mount Antenna	MCT, Inc.	SEM2X	N/A	N/A	3 m RG 174 or 4.2 m RG 58 Shielded I/O	15105

2.2 CONFIGURATION OF TESTED SYSTEM

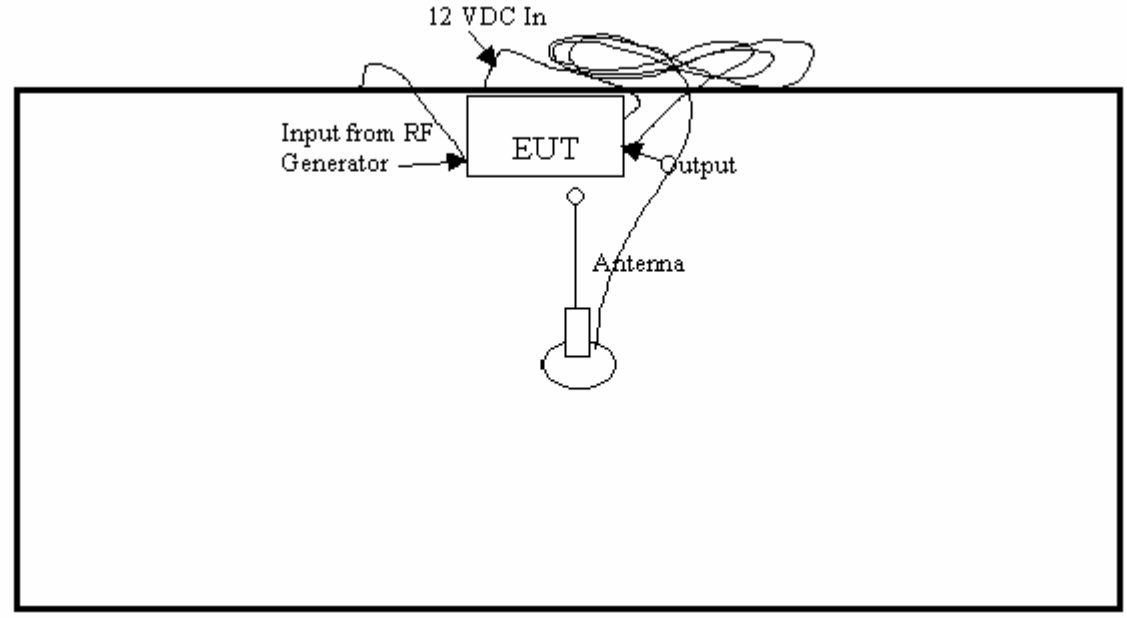


FIGURE 1: WORST CASE CONFIGURATION OF SYSTEM UNDER TEST

3 FCC PART 2.1033(C)(8); DC VOLTAGES AND CURRENTS

The DC voltages applied to, and DC currents into, the several elements of the final radio frequency amplifying device for normal operation over the power range.

13.8 volt; 1 Amp

The DC voltage and total input current of the entire final power amplifier module is 13.8 VDC and 1A.

4 FCC RULES AND REGULATIONS PART 2.1046 (A): RF POWER OUTPUT: CONDUCTED

4.1 TEST PROCEDURE

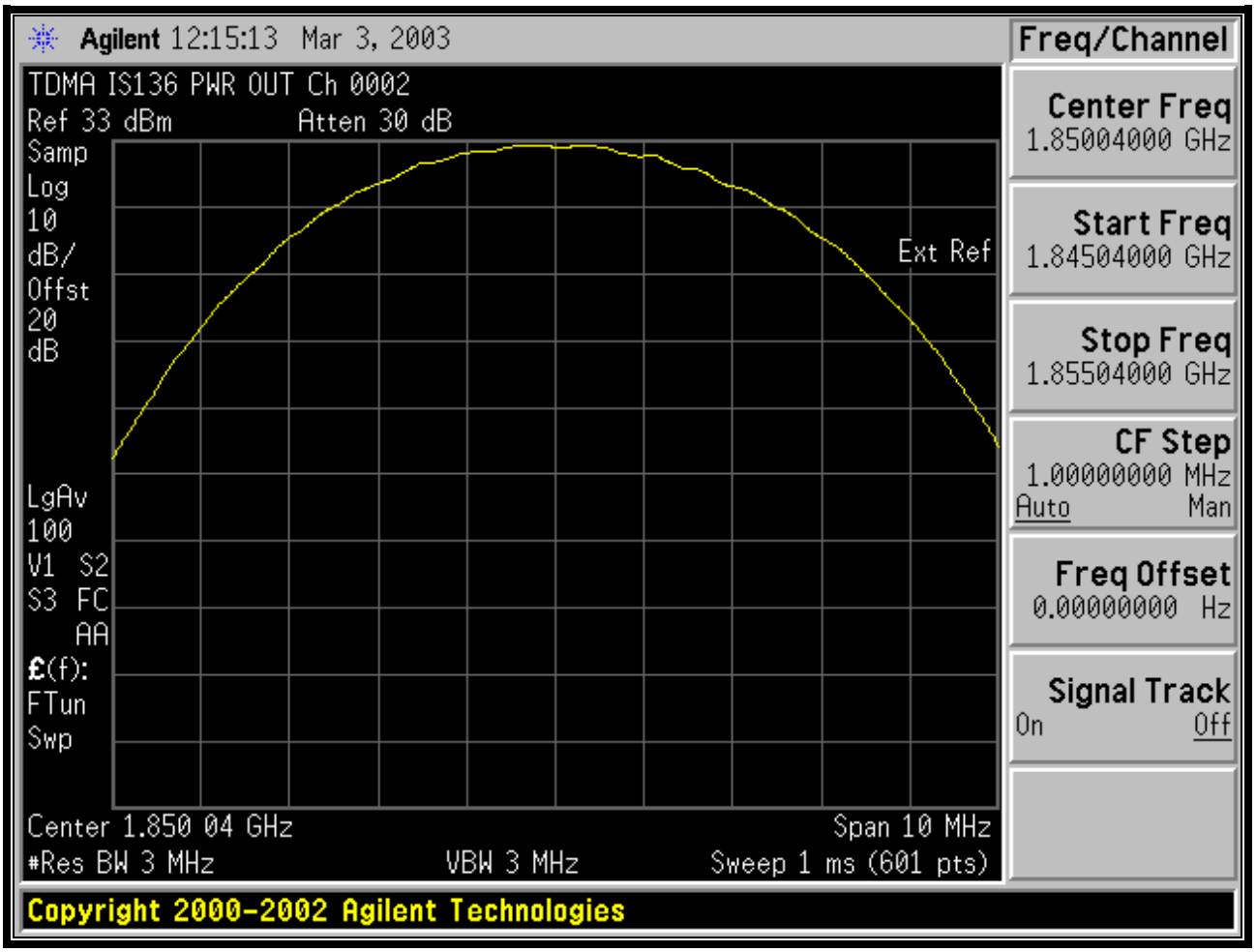
TIA/EIA/IS-98-A; CFR 24.232 (b). Conducted power tested and investigated; worst case power reported for CW and TDMA mode.

4.2 TEST DATA

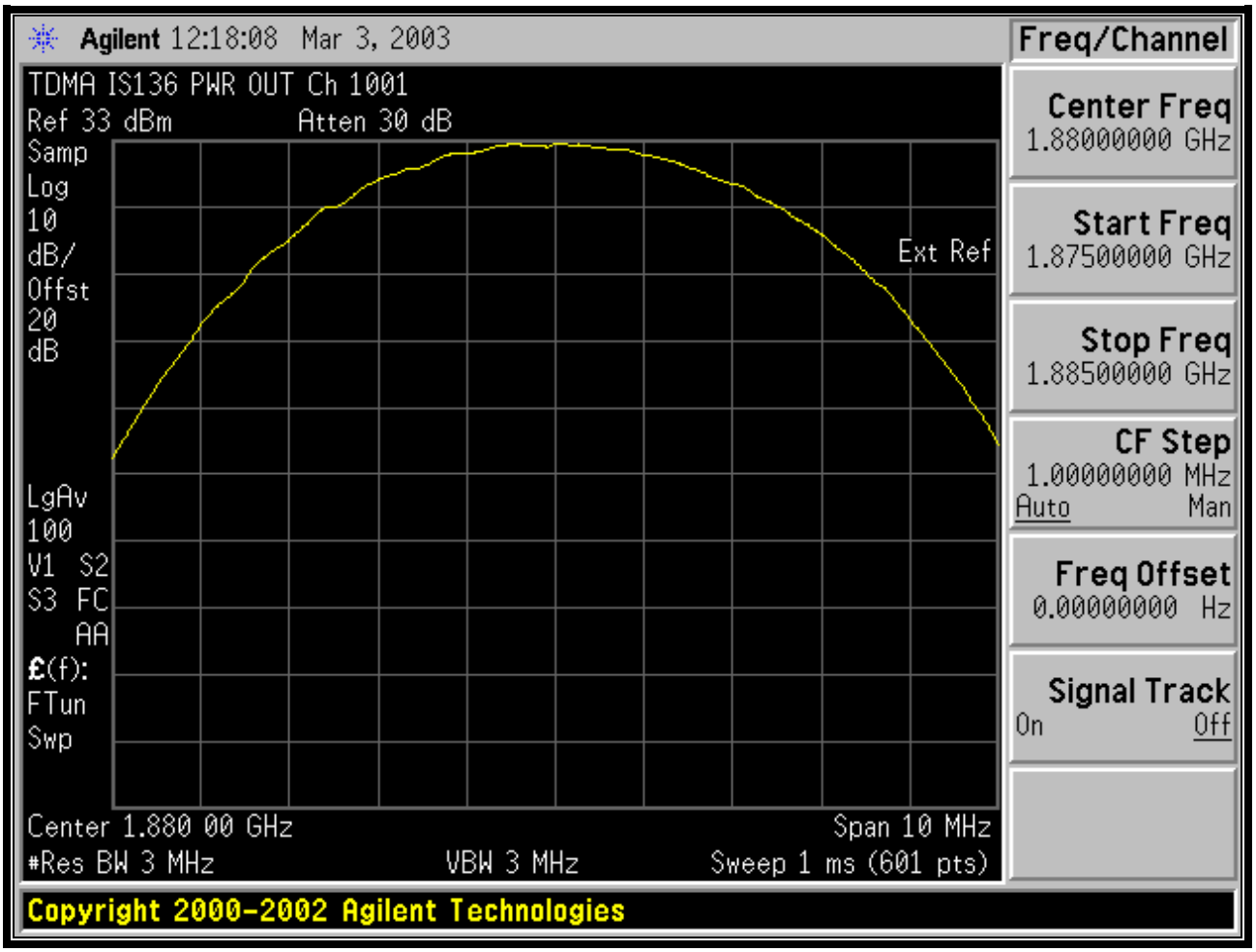
TABLE 4-1: RF POWER OUTPUT: CARRIER OUTPUT POWER (CW)

Frequency (MHz)	Input Power (dBm)	Power (dBm)	RF Power Measured (Watt)
1850.04	25.0	32.75	1.90
1880.00	25.3	32.79	1.90
1909.92	25.9	31.70	1.50

PLOT 4-1: TDMA; CHANNEL POWER (LOW CHANNEL 1,850.04 MHZ)



PLOT 4-2: TDMA; CHANNEL POWER (MID CHANNEL 1,880.0 GHZ)



PLOT 4-3: TDMA; CHANNEL POWER (HI CHANNEL 1,909.92 MHZ)

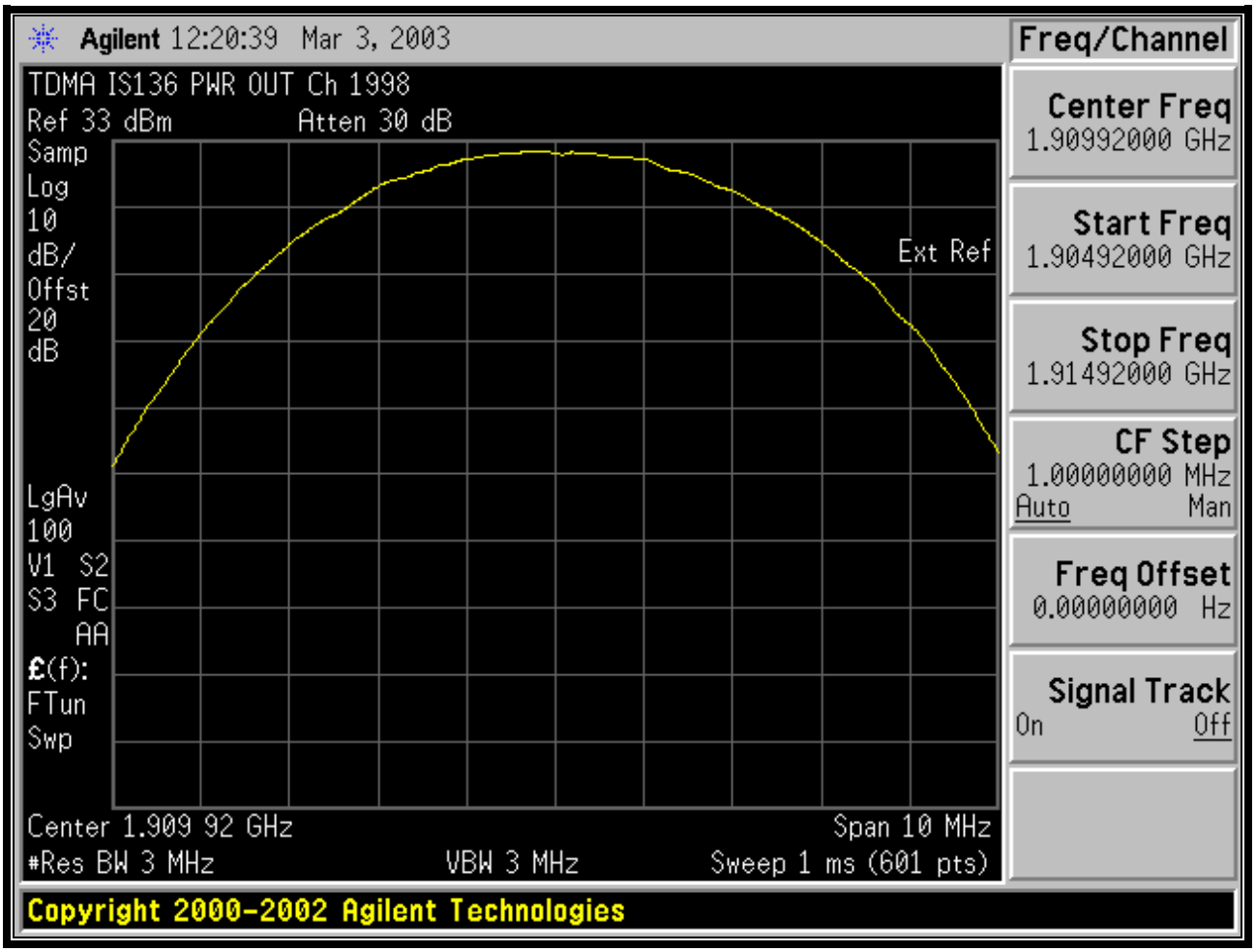


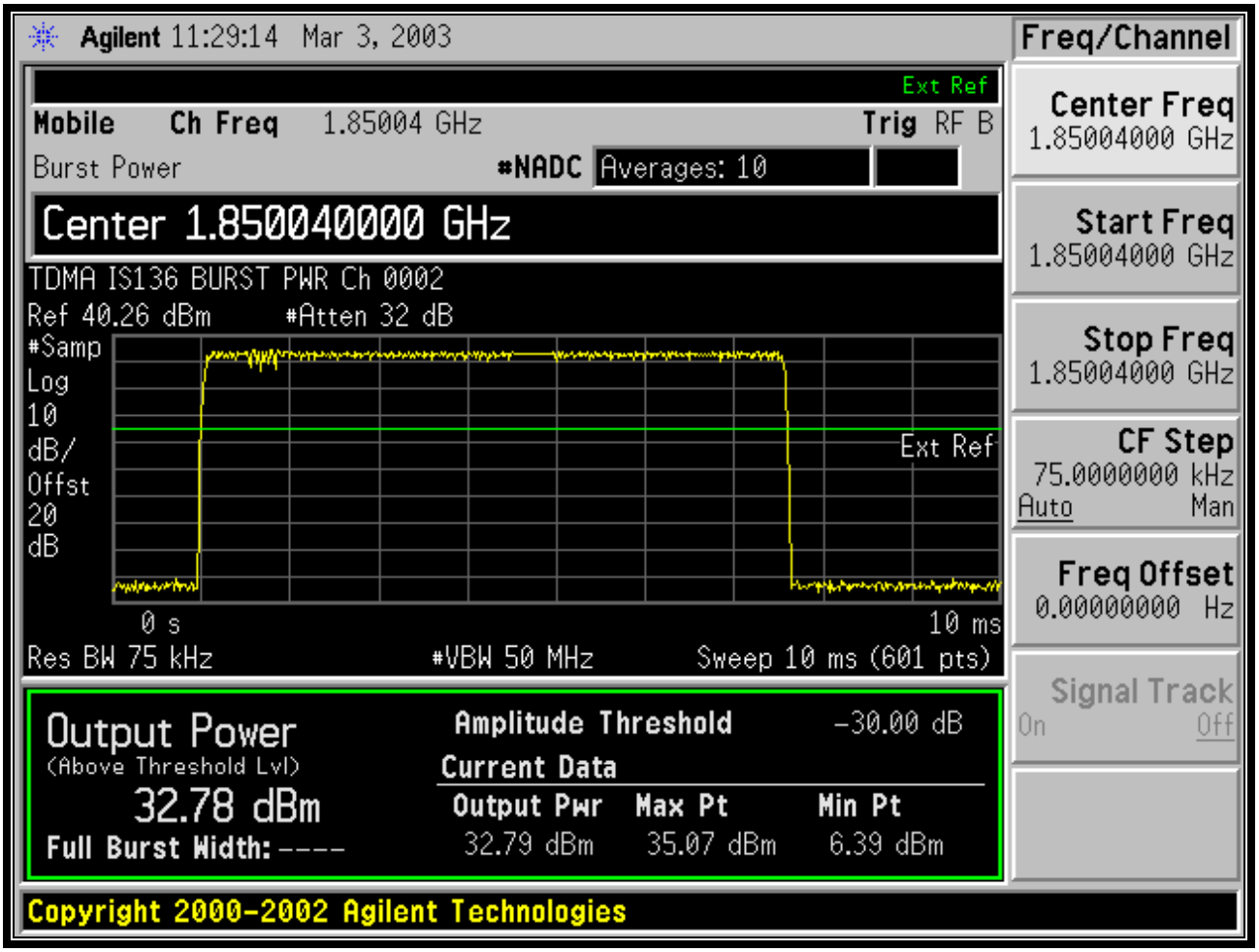
TABLE 4-2: RF BURST POWER OUTPUT: CARRIER OUTPUT POWER (TDMA)

Frequency (MHz)	Power (dBm)	RF Power Measured (Watt)
1850.04	32.78	1.9
1880.00	32.85	1.9
1909.92	31.80	1.5

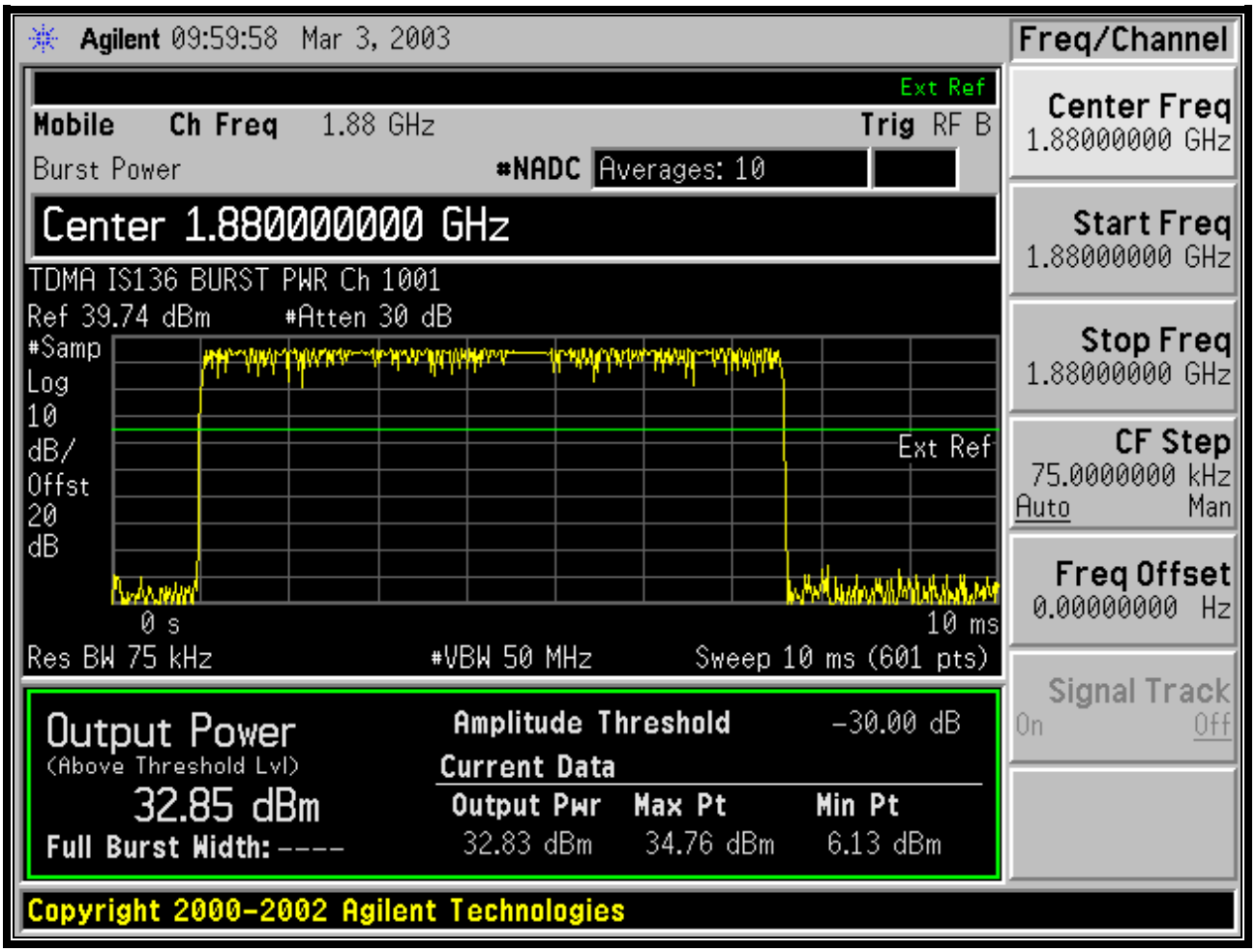
TABLE 4-3: RF POWER OUTPUT (RATED POWER)

Rated Power (W)
2.0

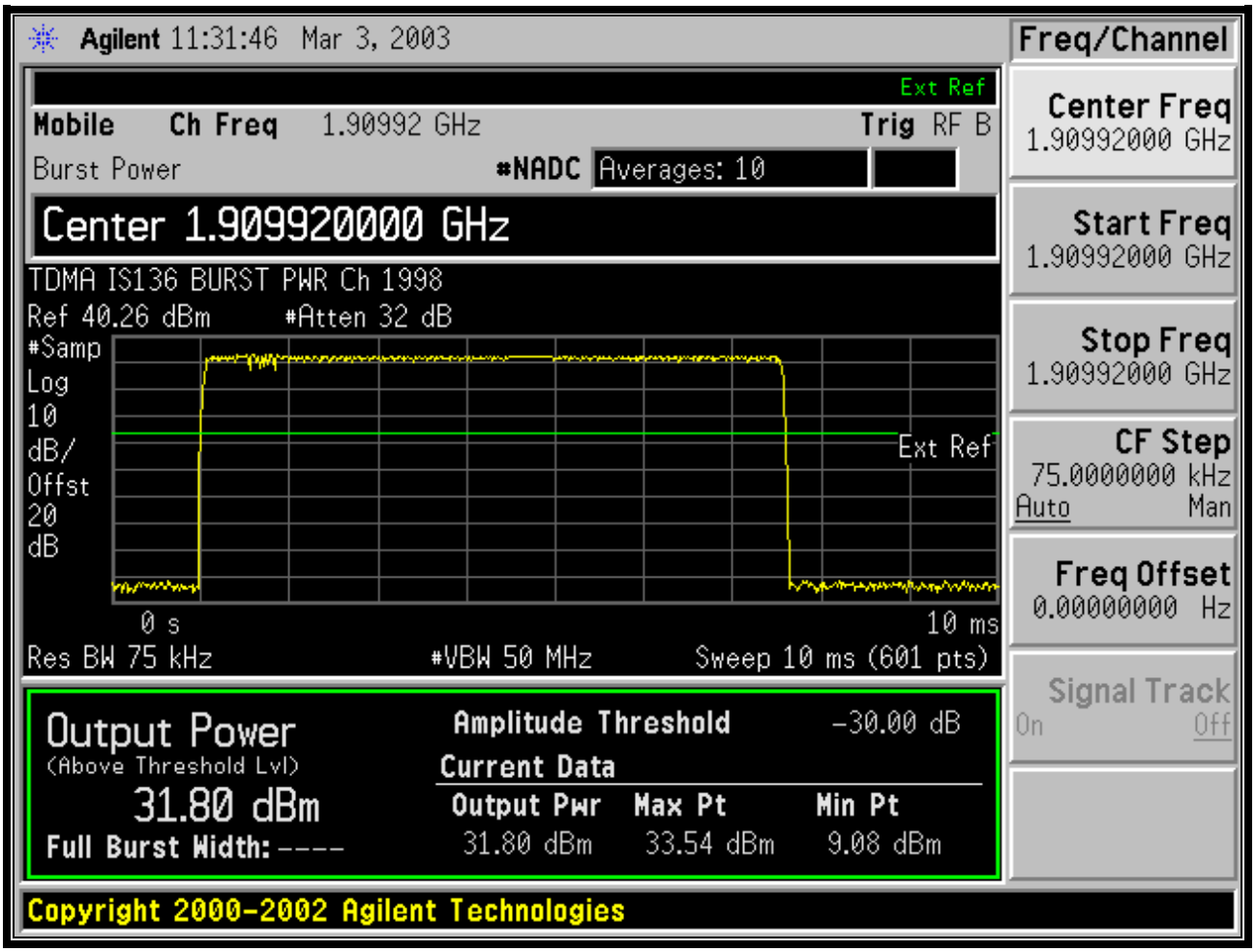
PLOT 4-4: TDMA; BURST POWER; (1850.04 MHZ)



PLOT 4-5: TDMA; BURST POWER; (1880.00 MHZ)



PLOT 4-6: TDMA; BURST POWER; (1909.92 MHZ)



4.3 TEST EQUIPMENT

TABLE 4-4: TEST EQUIPMENT USED FOR TESTING (RF POWER OUTPUT - CONDUCTED)

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
901184/901186	Agilent	E4416A/E9323A	Power meter / Sensor	GB41050573/US40410380	07/19/03
900917	Hewlett Packard	8648C	Signal Generator, 100 KHz - 3200 MHz	3537A01741	5/2/04
N/A	Agilent	E4438C	Signal Generator	MY42080661	10/17/03
N/A	Agilent	E4440A	Spectrum Analyzer	MY41000310	11/8/03

TEST PERSONNEL:

DANIEL BALTZELL — TEST ENGINEER

SIGNATURE

MARCH 3, 2003 & APRIL 29, 2003 — DATES OF TEST

5 FCC RULES AND REGULATIONS PART 2.1046 (A); CONDUCTED RF INPUT VS OUTPUT POWER

5.1 TEST PROCEDURE

ANSI/TIA/EIA-603-1992

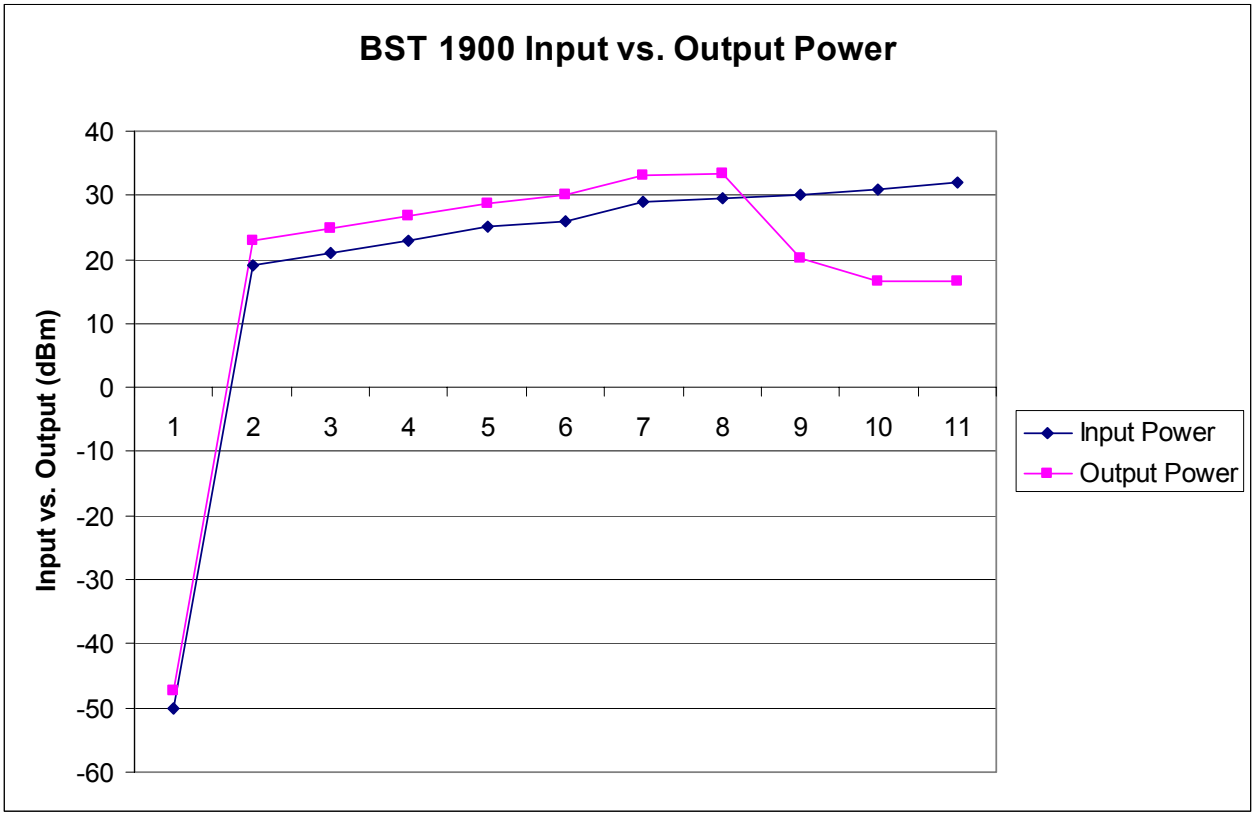
The EUT was set up at the middle channel frequency (850 MHz) to receive input power from a signal generator while the output was connected to a power meter. The input power (CW) from the signal generator was increased while observing the output power. The maximum power necessary to cause the EUT to saturate was recorded and plotted in the table and plot below.

5.2 TEST DATA

TABLE 5-1; CONDUCTED POWER INPUT VS OUTPUT POWER

EUT Input Power (dBm)	EUT Output Power (dBm)
-50.0	-47.3
19.0	22.8
21.0	24.8
23.0	26.8
25.0	28.7
27.0	30.2
29.0	33.2
29.5	33.5
30.0	20.1
31.0	16.6

PLOT 5-1: CONDUCTED POWER INPUT VS OUTPUT POWER



Measurement accuracy is +/- .5 dB

TEST PERSONNEL:

DANIEL BALTZELL		APRIL 21, 2003
TEST ENGINEER	SIGNATURE	DATE OF TEST

5.3 TEST EQUIPMENT

TABLE 5-2: TEST EQUIPMENT

RTL ASSET #	MANUFACTURER	MODEL	PART TYPE	SERIAL NUMBER	CALIBRATION DUE DATE
900877	Amplifier Research	25G144	Broadband Amp	5564558899	03/07/04
901184/901186	Agilent	E4416A/E9323A	Power meter / Sensor	GB41050573/US40410380	07/19/03
900917	Hewlett Packard	8648C	Signal Generator, 100 KHz - 3200 MHz	3537A01741	4/19/04

6 NON-LINEARITY RSS-131 §5.3

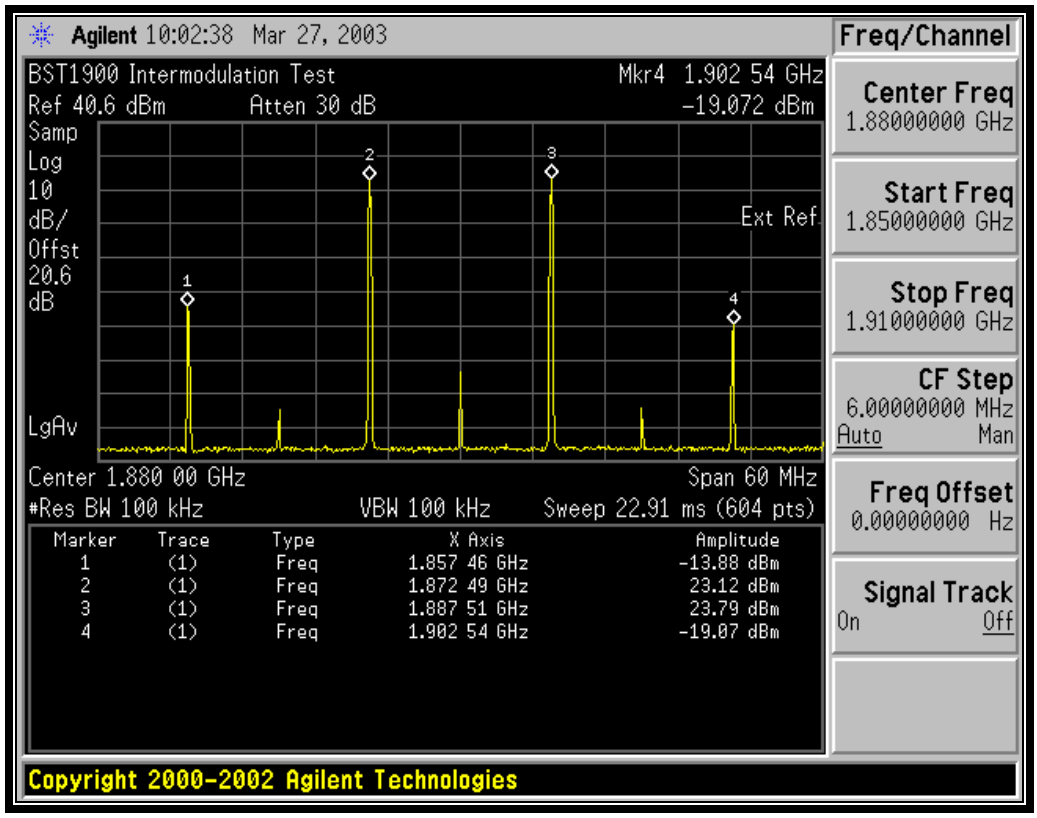
6.1 TEST PROCEDURE

Two-tone test: Two signal generators were connected to the input of the device under test (DUT), via a proper impedance matching network so that the two input signals were equal. A dummy load of suitable load rating to the enhancer output point was connected. A spectrum analyzer was connected to this output point via a coupling network and attenuator. The two generator frequencies f1 and f2 were set such that they and their third order intermodulation product frequencies, f3 = 2f1 – f2 and f4 = 2f2 – f1, are all within the passband of the DUT. The input level to the DUT was raised while observing the output tone levels, P_{01} and P_{02} , and the intermodulation product levels, P_{03} and P_{04}. In a two-tone test, the mean output power is given by P_{01} + 3 dB and the peak envelope power by P_{01} + 6 dB.

The input level to the DUT was raised until the greater level of the I.M. products at the enhancer output terminals, P_{03} or P_{04} , equaled -43 dBW. All signal levels and their frequencies were recorded. The mean output power was calculated under this testing condition, given by: $P_{mean} = P_{01} + 3$ dB.

Minimum standard: Transmitter signals amplified by a non-linear device (enhancer or translator) will alter the occupied bandwidth of the transmitted signals; therefore, the extent of non-linearity shall be tested. Any intermodulation product level must be attenuated, relative to P, by at least:
43 + 10 Log P or 70 dB, whichever is less stringent, where P is the total RF output power of the test tones in watts.

6.2 TEST DATA



PLOT 6-1: INTERMODULATION PRODUCTS

TABLE 6-1: INTERMODULATION PRODUCTS

Frequency (MHz)	Signal Generator Level (Input) (dBm)	Amplitude (dBm)	Limit 43+10LogP (-13 dBm)	Margin	Comments
1857.46	18.5	-13.88	-13.0	-.88	P_{03}
1872.49	18.5	23.12			P_{01}
1887.51	18.5	23.79			P_{02}
1902.54	18.5	-19.07	-13.0	-6.07	P_{04}

Mean output power = P_{01} **+ 3 dB**
= 23.12 + 3
= 26.12 = 0.4 W < 3W

TEST PERSONNEL:

DANIEL W. BALTZELL		MARCH 27 & MAY 7, 2003
Test Engineer	Signature	Date of Test

7 FCC RULES AND REGULATIONS PART 2.1046 (A); RF POWER OUTPUT: RADIATED EIRP PER PART 24.913

7.1 TEST PROCEDURE

ANSI/TIA/EIA-603-1992, section 2.2.1

Substitution Method:

The EUT was set up at an antenna-to-EUT distance of 3 meters on an open area test site. The EUT was placed on a nonconductive turntable 1.0 meter above the ground plane. The physical arrangement of the EUT was varied through three orthogonal planes in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters in order to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations. Radiated emission was investigated for CW, TDMA and CW modes. Worst case CW mode reported.

The worst-case, maximum radiated emission was recorded and used as reference for the measurement. The EUT was then replaced with a horn antenna and polarized in accordance with the EUT's antenna polarization. The horn antenna was connected to an RF signal generator with a coaxial cable. The search antenna height, and search antenna polarity, were set to levels that produced the previously recorded maximum reading. The signal generator was adjusted to a level that produced this emission level. The signal generator level was recorded and corrected by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna. The signal generator corrected level is the EIRP level.

7.2 TEST DATA

TABLE 7-1: RF POWER OUTPUT: RADIATED EIRP MAGNETIC MOUNT ANTENNA

Frequency (MHz)	Signal Generator (dBm)	Cable Loss* (dB)	TX Antenna Gain (dBd)	EIRP (dBm)	EIRP (W)
1850.04	27.3	1.3	6.9	32.9	1.945
1880.00	27.2	1.3	7.0	32.8	1.919
1909.92	27.3	1.3	7.0	33.0	1.977

TABLE 7-2: RF POWER OUTPUT: RADIATED EIRP GLASS MOUNT ANTENNA

Frequency (MHz)	Signal Generator (dBm)	Cable Loss* (dB)	TX Antenna Gain (dBd)	EIRP (dBm)	EIRP (W)
1850.04	21.6	1.3	6.9	27.2	0.528
1880.00	20.0	1.3	7.0	25.7	0.367
1909.92	18.5	1.3	7.0	24.2	0.261

*cable loss from transmitting antenna to signal generator
Measurement accuracy is +/- .5 dB

TEST PERSONNEL:

DANIEL BALTZELL — TEST ENGINEER | SIGNATURE | APRIL 29, 2003 — DATE OF TEST

7.3 TEST EQUIPMENT

TABLE 7-3: TEST EQUIPMENT

RTL ASSET #	MANUFACTURER	MODEL	PART TYPE	SERIAL NUMBER	CALIBRATION DUE DATE
900889	Hewlett Packard	85685A	RF Preselector for HP 8566B or 8568B (20Hz-2GHz)	3146A01309	3/5/04
900931	Hewlett Packard	8566B	Spectrum Analyzer (100 Hz - 22 GHz)	3138A07771	5/10/04
900969	Hewlett Packard	85650A	Quasi-Peak Adapter	2412A00414	5/10/04
901053	Schaffner Chase	CBL6112B	Bi-Log Antenna (20 MHz - 2 GHz)	2648	6/17/04
900154	Compliance Design Inc,	Roberts Dipole	Adjustable Elements Dipole Antenna (30-1000MHz)	N/A	9/16/03
900917	Hewlett Packard	8648C	Signal Generator, 100 KHz - 3200 MHz	3537A01741	4/19/04

8 FCC RULES AND REGULATIONS PART 2.1049 (C) (1): OCCUPIED BANDWIDTH

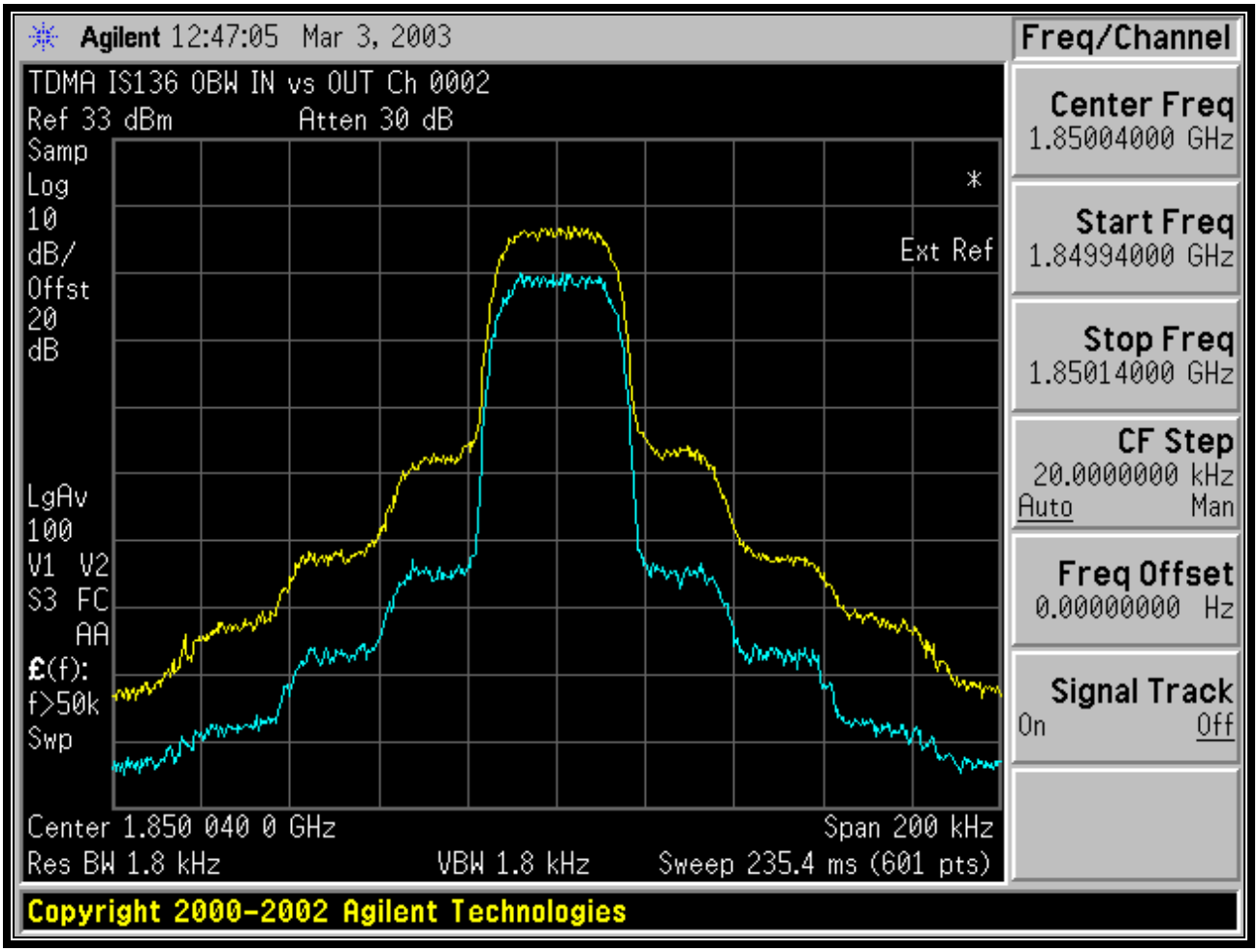
Occupied Bandwidth - Compliance with the Emission Masks

8.1 TEST PROCEDURE

TIA/EIA/IS-98-A; Peak measurements used.

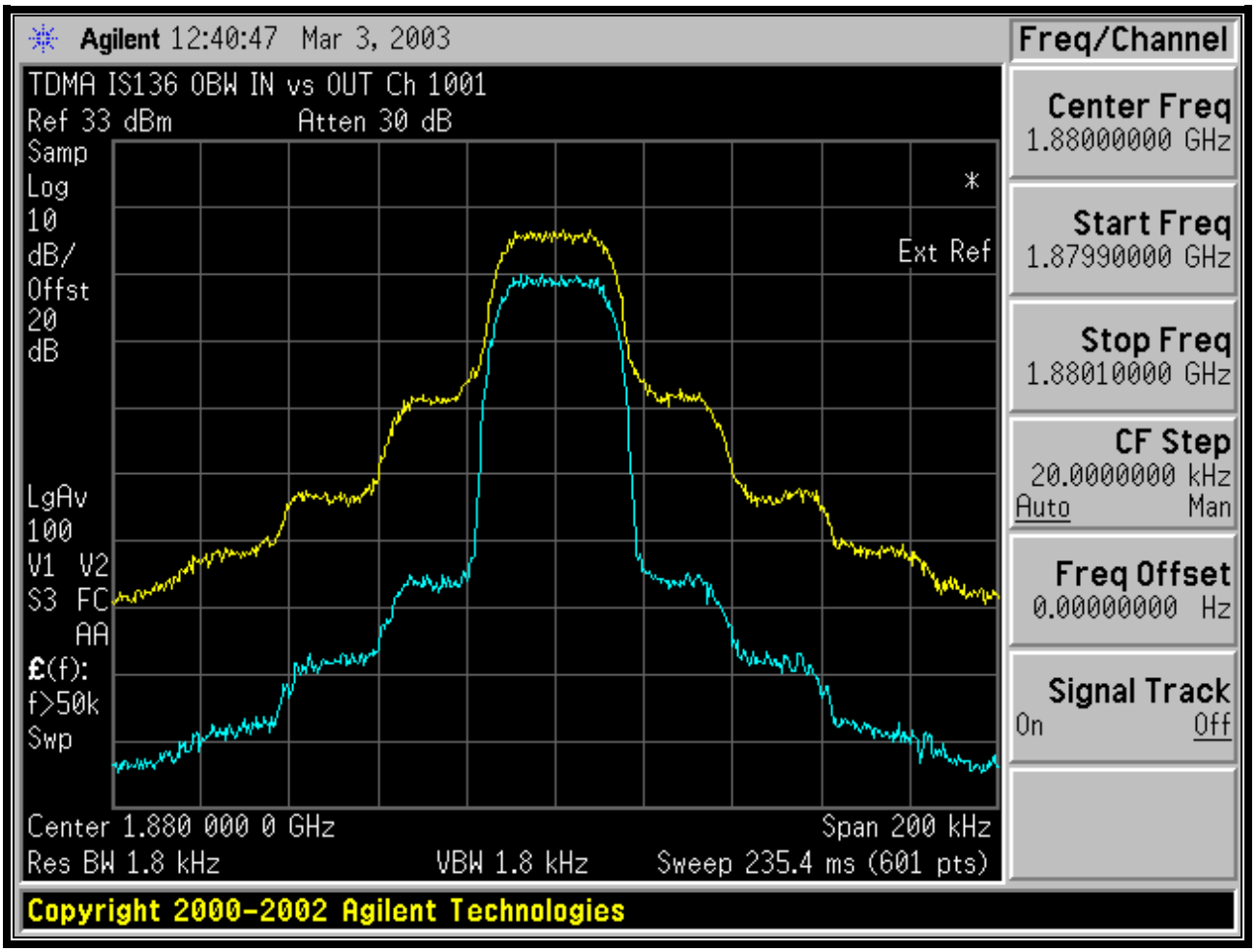
8.2 TEST DATA

PLOT 8-1: TDMA OCCUPIED BANDWIDTH; IN VS OUT; 1850.04 MHZ



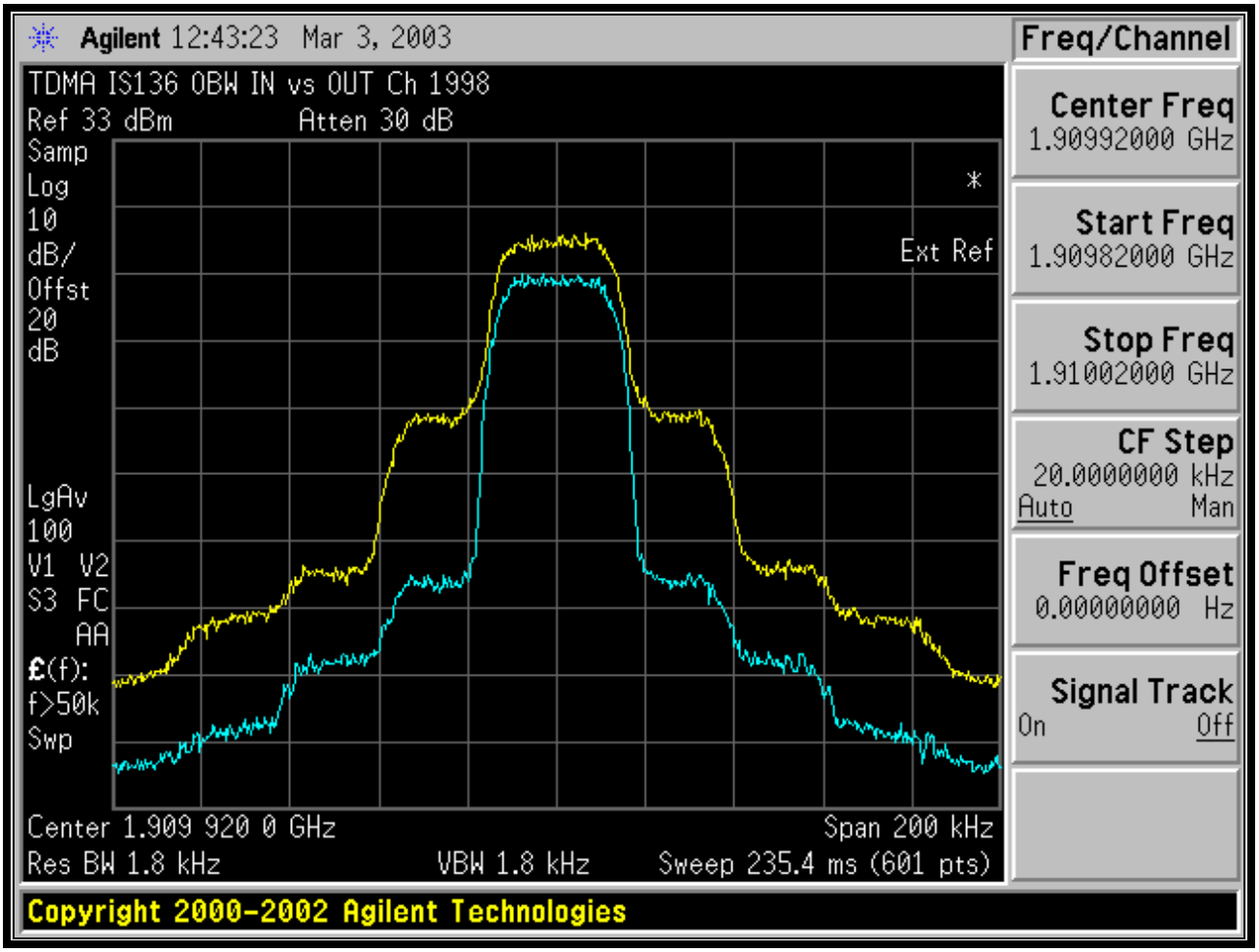
Output Level	20.0 dBm
Input Level	13.0 dBm
Amplification	7.0 dB

PLOT 8-2: TDMA OCCUPIED BANDWIDTH; IN VS. OUT 1880.0 MHZ



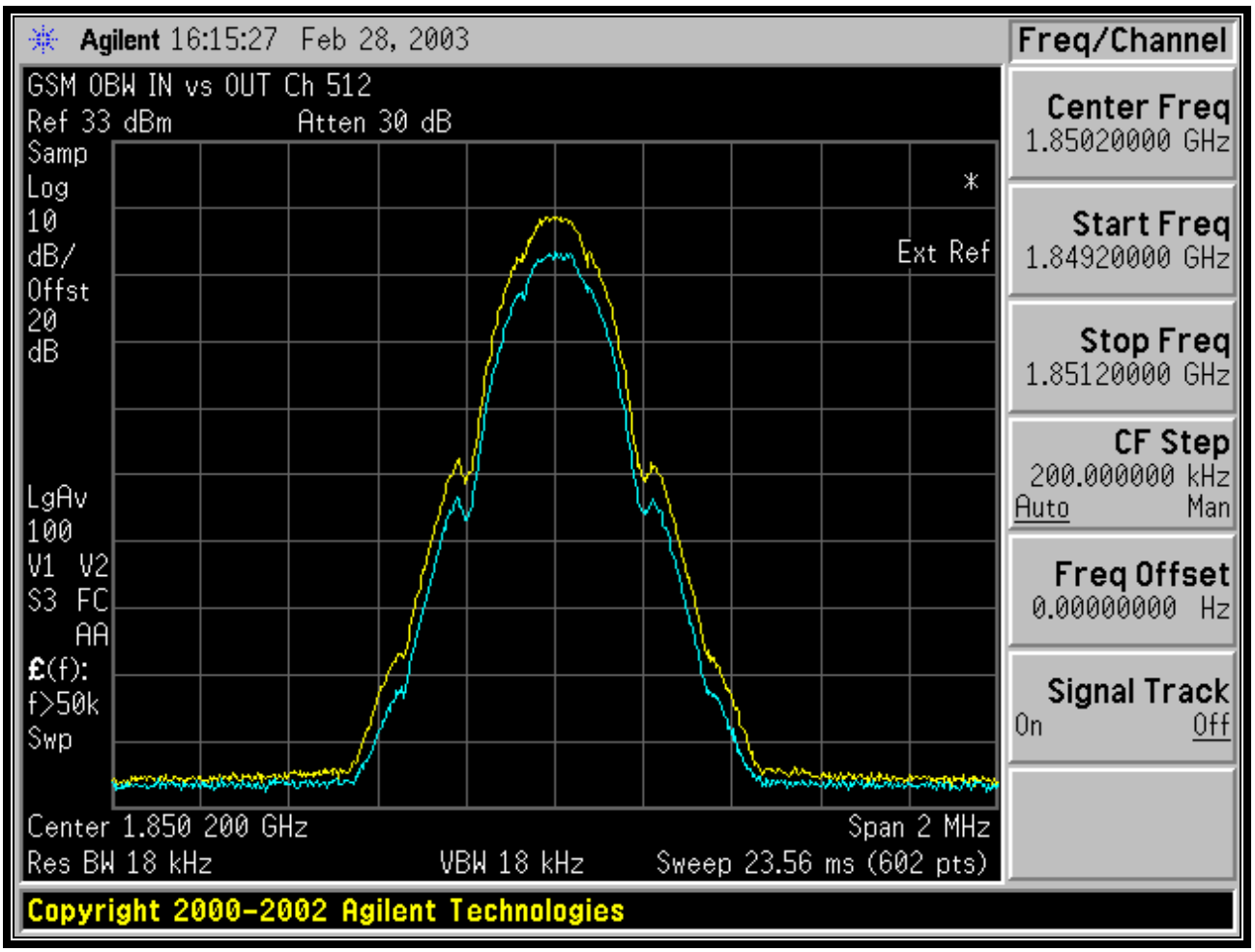
Output Level	19.8 dBm
Input Level	13.0 dBm
Amplification	6.8 dB

PLOT 8-3: TDMA OCCUPIED BANDWIDTH; IN VS. OUT 1909.92 MHZ



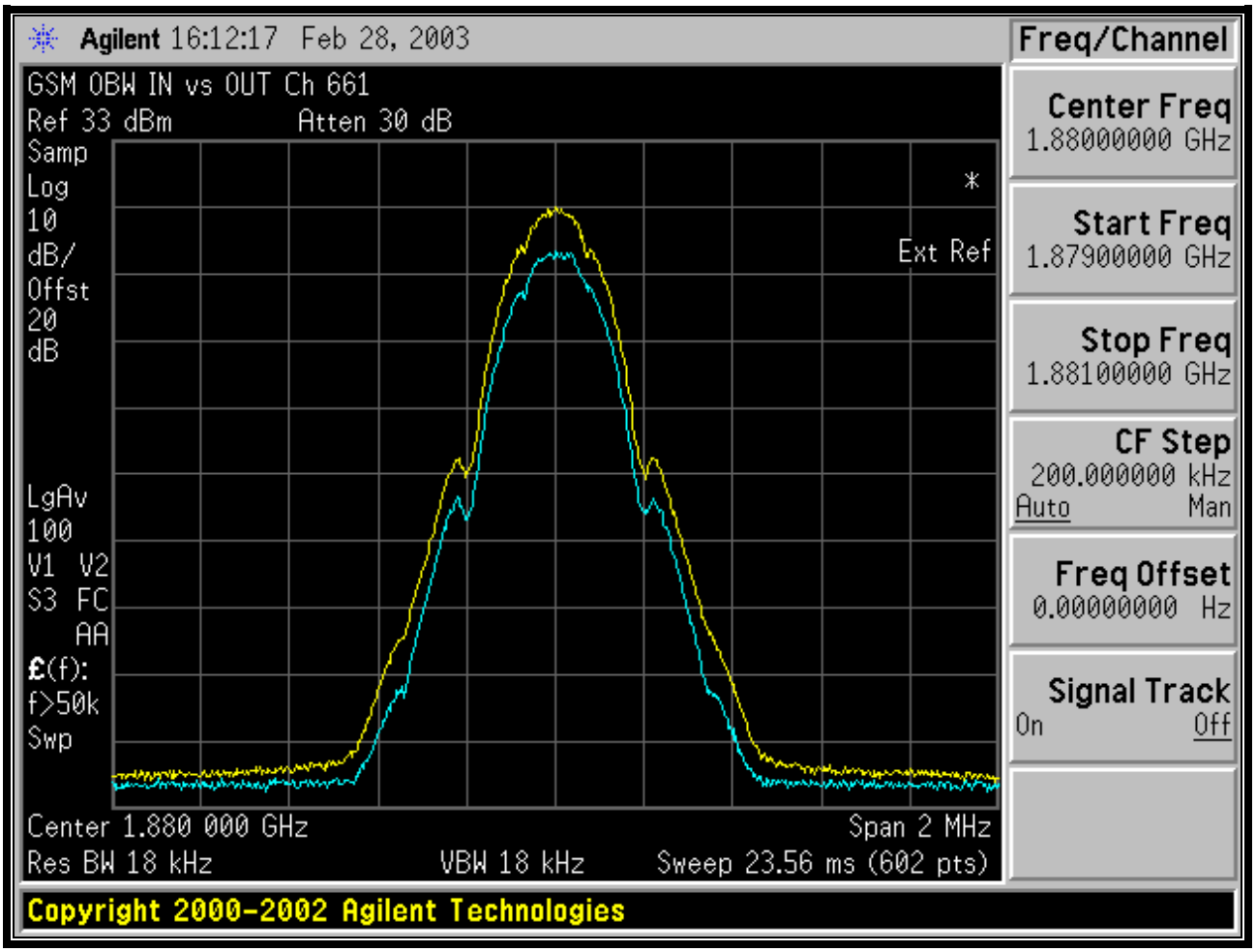
Output Level	19.5 dBm
Input Level	13.0 dBm
Amplification	6.5 dB

PLOT 8-4: GSM OCCUPIED BANDWIDTH; IN VS. OUT 1850.04 MHZ



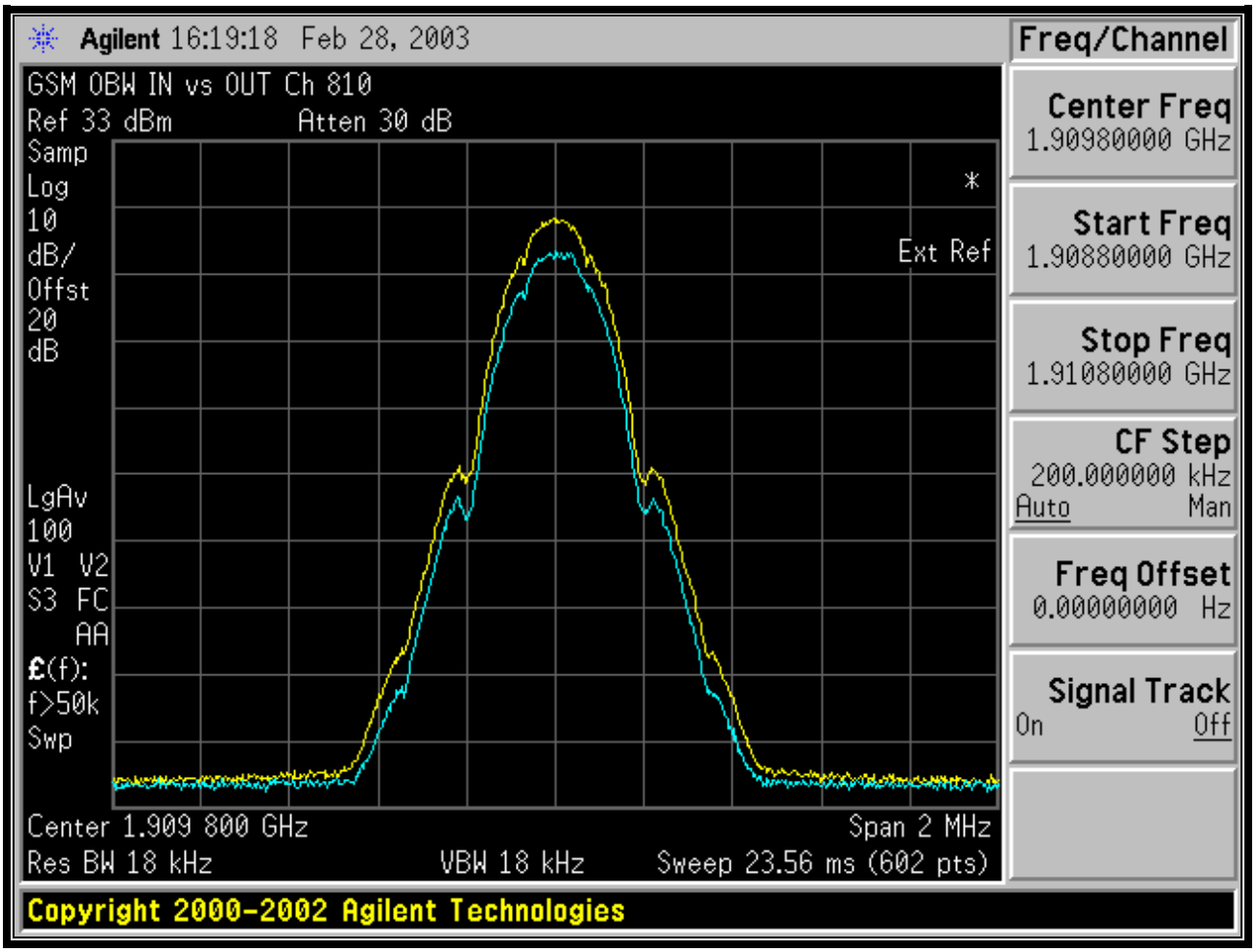
Output Level	22.5 dBm
Input Level	14.5 dBm
Amplification	8.0 dB

PLOT 8-5: GSM OCCUPIED BANDWIDTH; IN VS. OUT 1880.00 MHZ



Output Level	23.0 dBm
Input Level	14.5 dBm
Amplification	8.5 dB

PLOT 8-6: GSM OCCUPIED BANDWIDTH; IN VS. OUT 1909.92 MHZ



Output Level	19.0 dBm
Input Level	14.5 dBm
Amplification	4.5 dB

8.3 TEST EQUIPMENT

TABLE 8-1: TEST EQUIPMENT USED FOR TESTING (RF POWER OUTPUT - CONDUCTED)

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
N/A	Agilent	E4438C	Signal Generator	MY42080661	10/17/03
N/A	Agilent	E4440A	Spectrum Analyzer	MY41000310	11/8/03

9 FCC RULES AND REGULATIONS PART 2.1051: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

9.1 TEST PROCEDURE

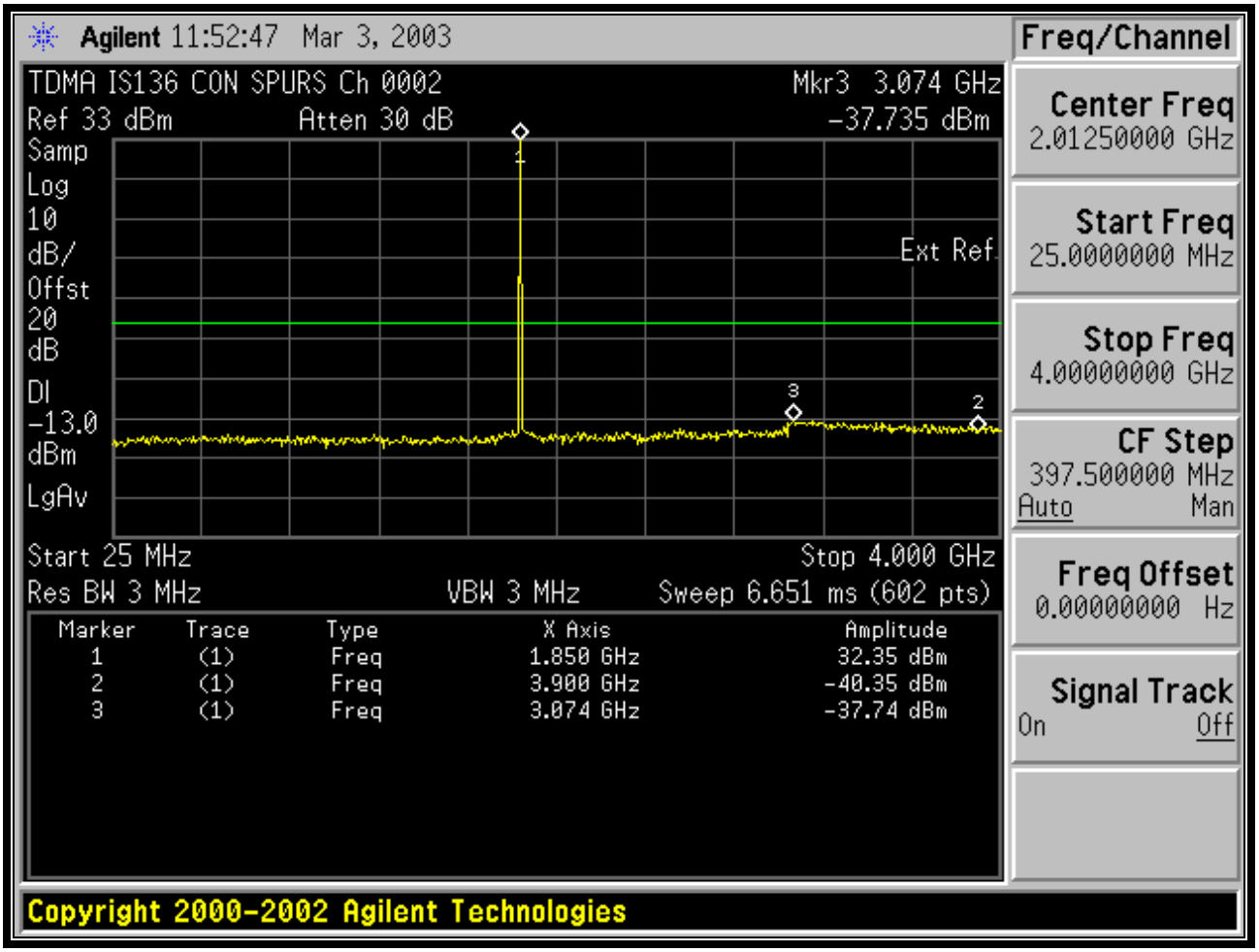
ANSI/TIA/EIA-603-1992, Section 2.2.13

The transmitter is terminated with a 50 Ω load and interfaced with a spectrum analyzer.
The transmitter is modulated with a 2,500 Hz sine wave at an input level 16 dB greater than that required to produce 50% of the rated system deviation at 1000 Hz.

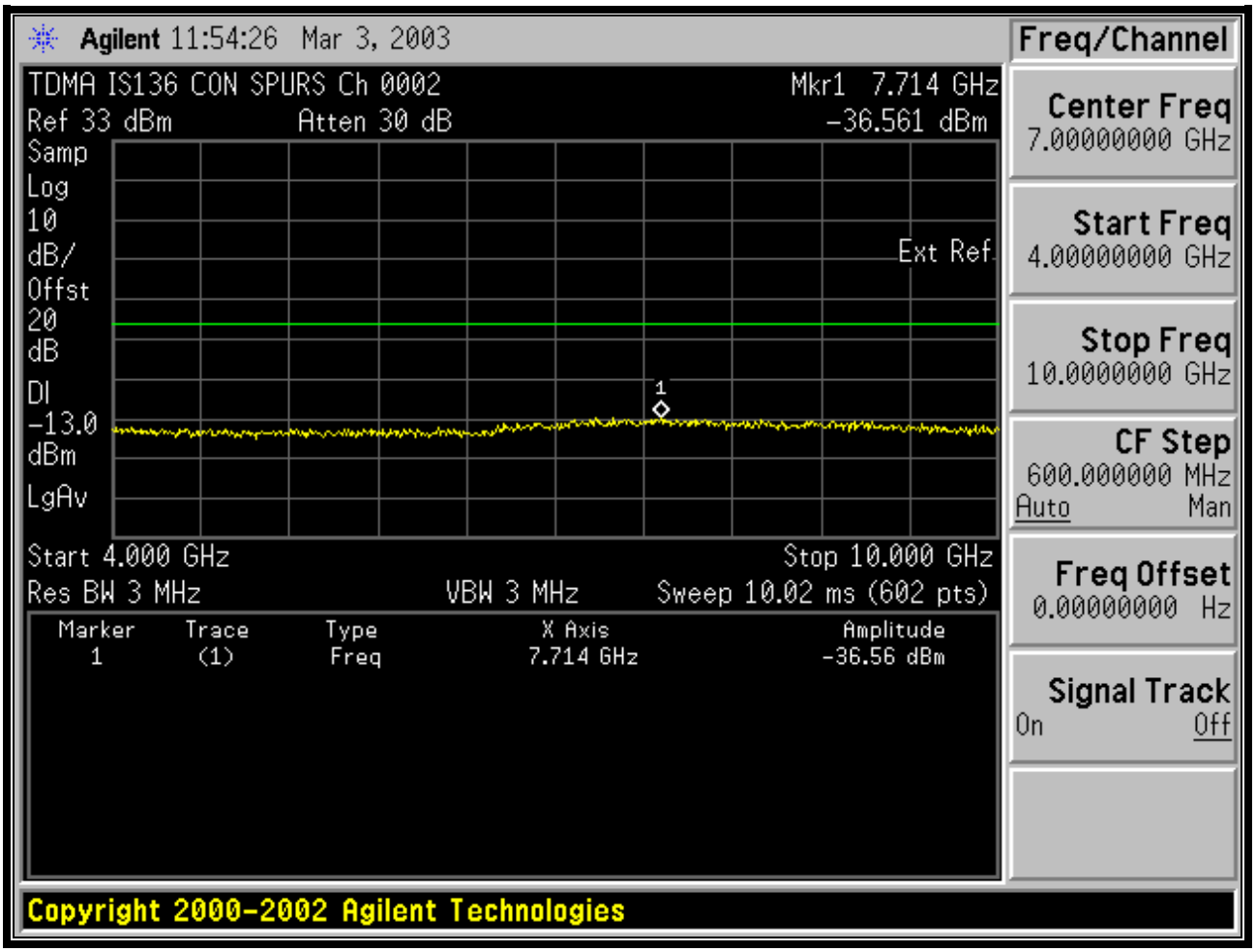
Digital Modulation: Modulated to its maximum extent using a TDMA IS136 signal

9.2 TEST DATA

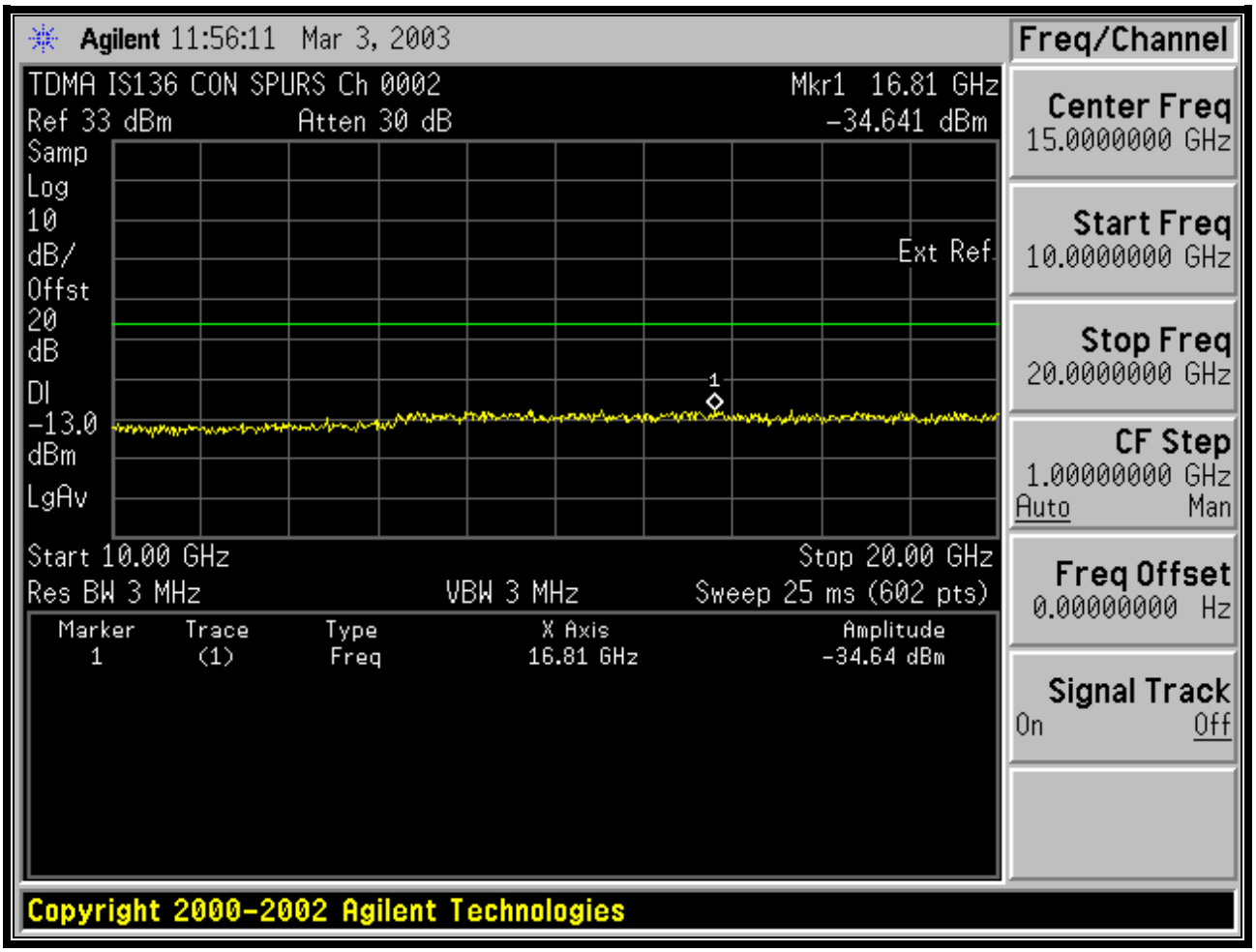
PLOT 9-1: CELLULAR TDMA CONDUCTED SPURIOUS LOW CHANNEL



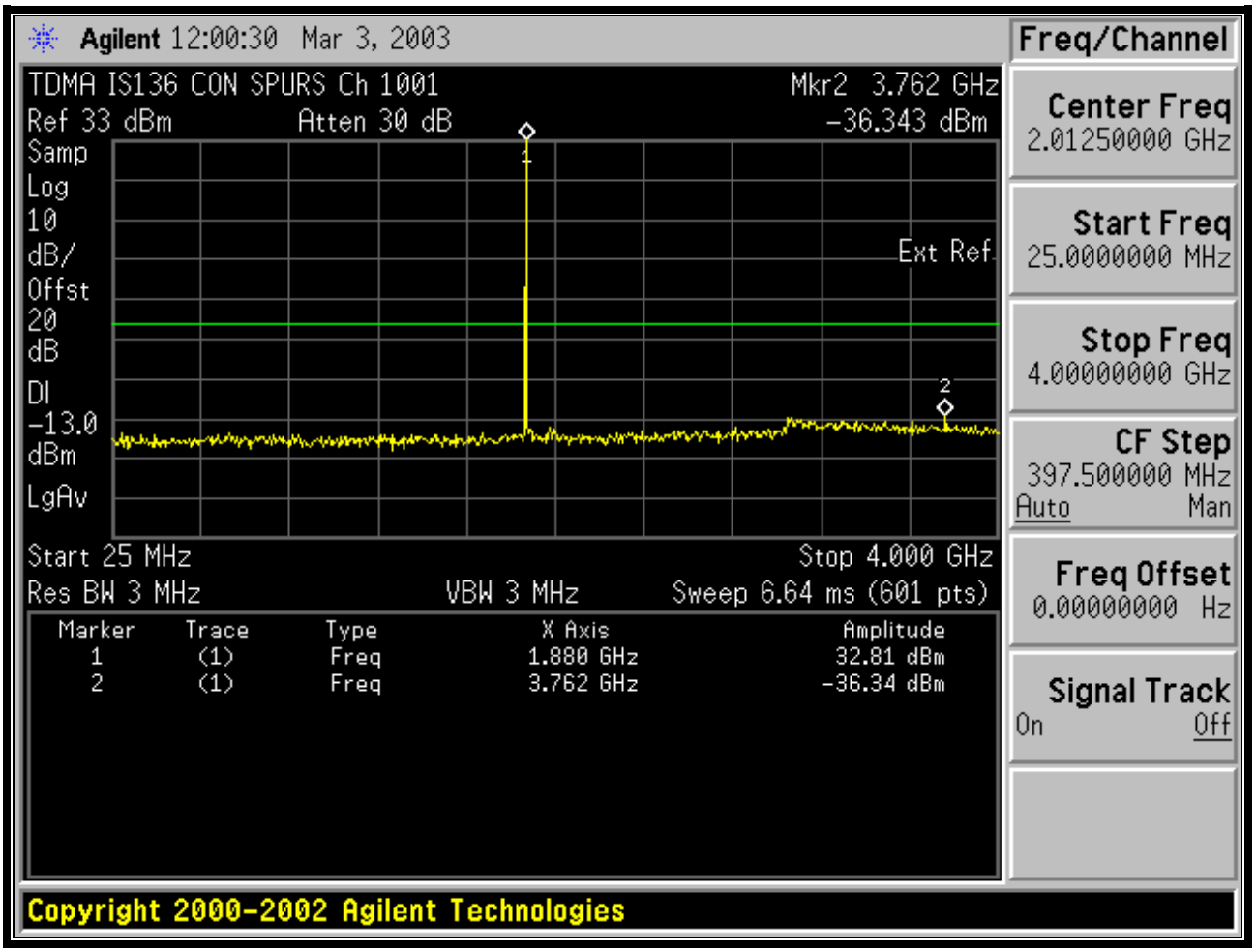
PLOT 9-2: CELLULAR TDMA CONDUCTED SPURIOUS LOW CHANNEL



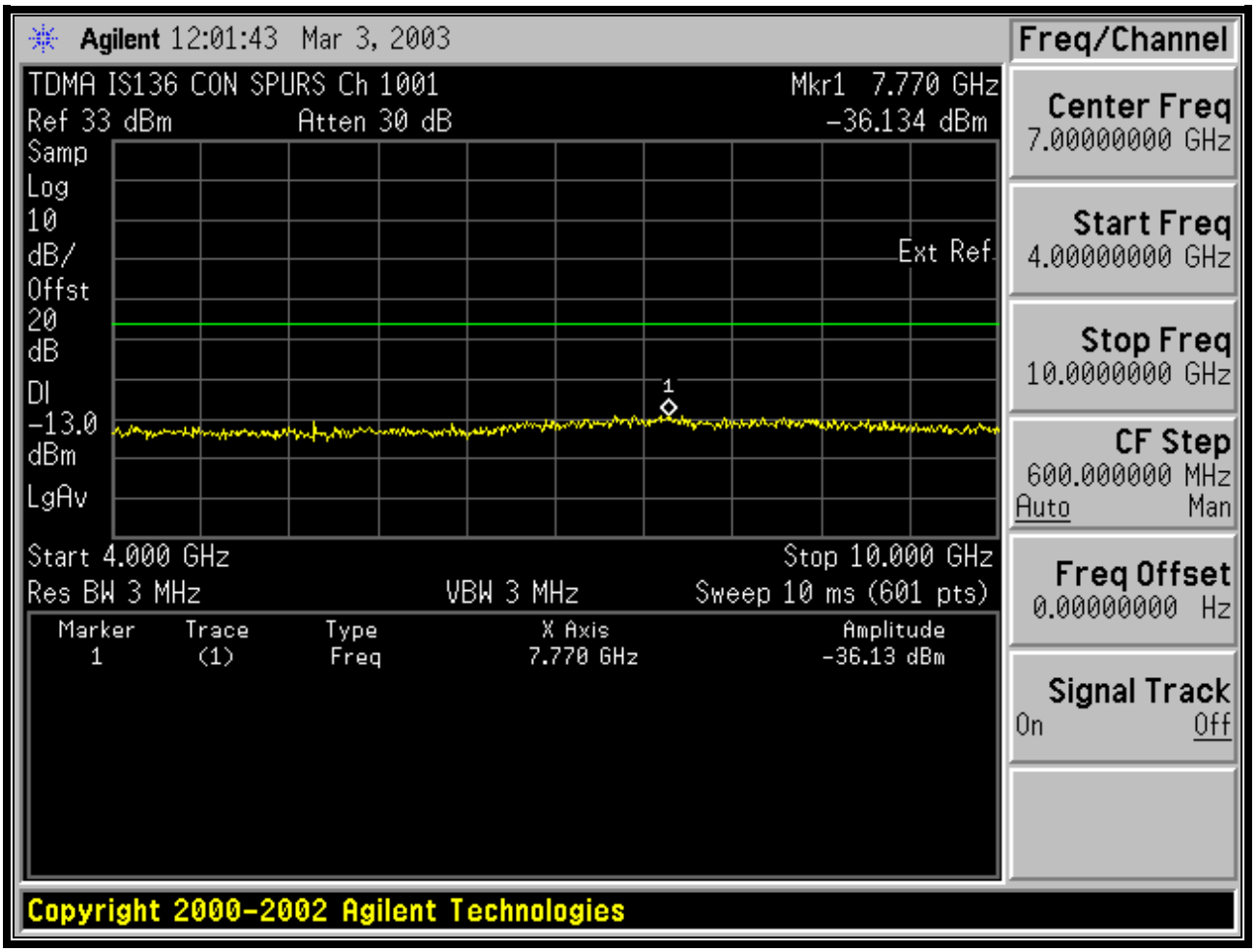
PLOT 9-3: C ELLULAR TDMA CONDUCTED SPURIOUS LOW CHANNEL



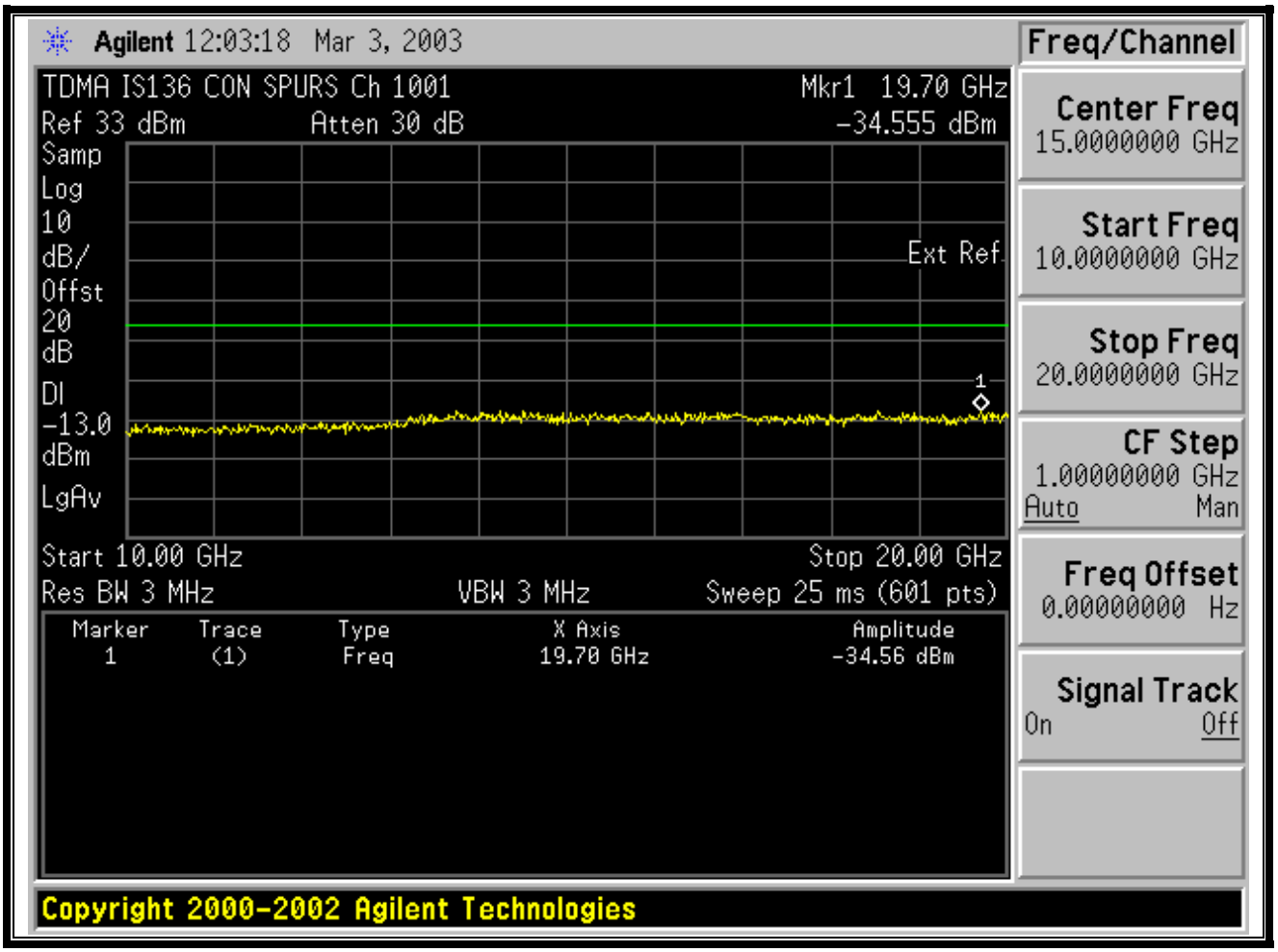
PLOT 9-4: CELLULAR TDMA CONDUCTED SPURIOUS MID CHANNEL



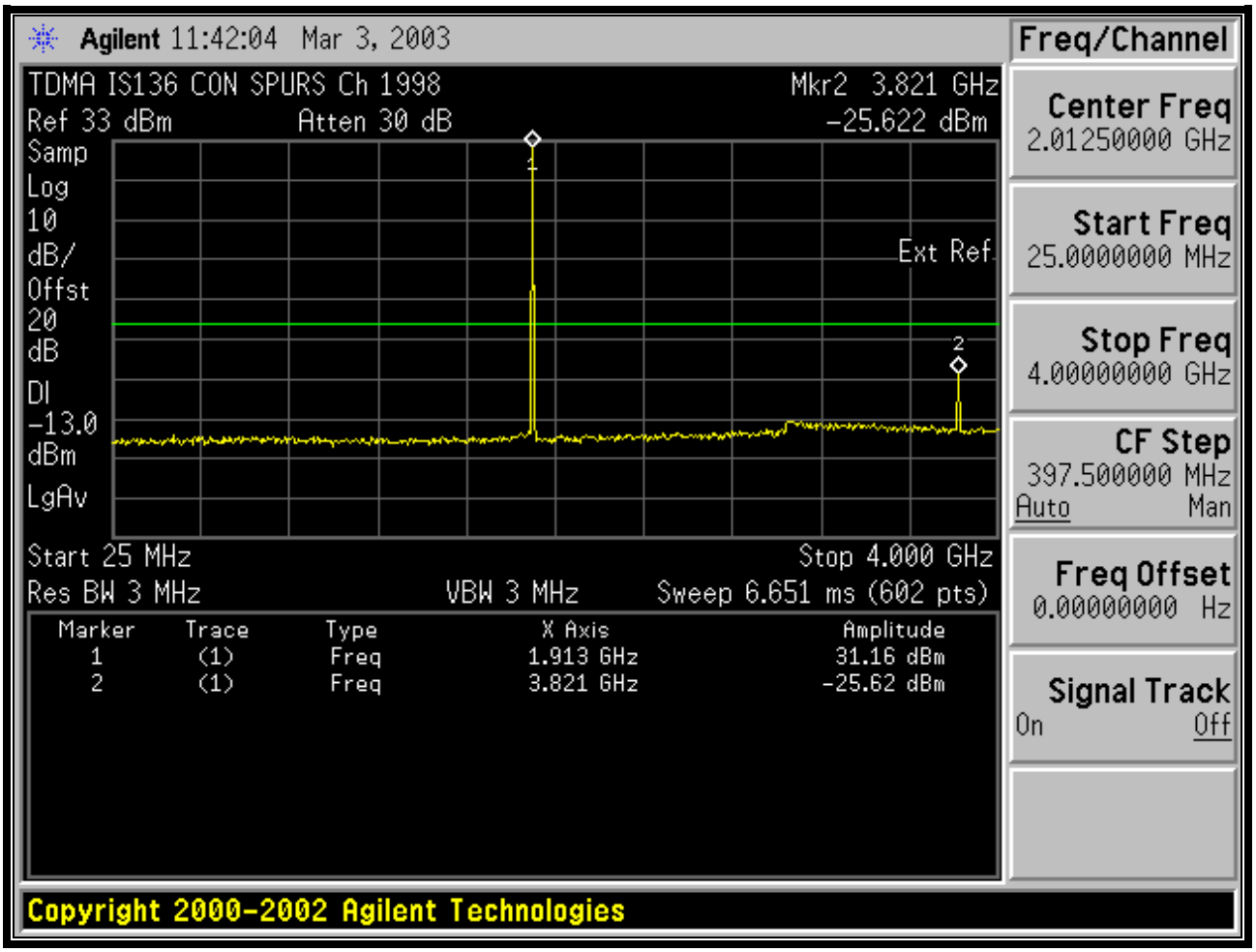
PLOT 9-5: CELLULAR TDMA CONDUCTED SPURIOUS MID CHANNEL



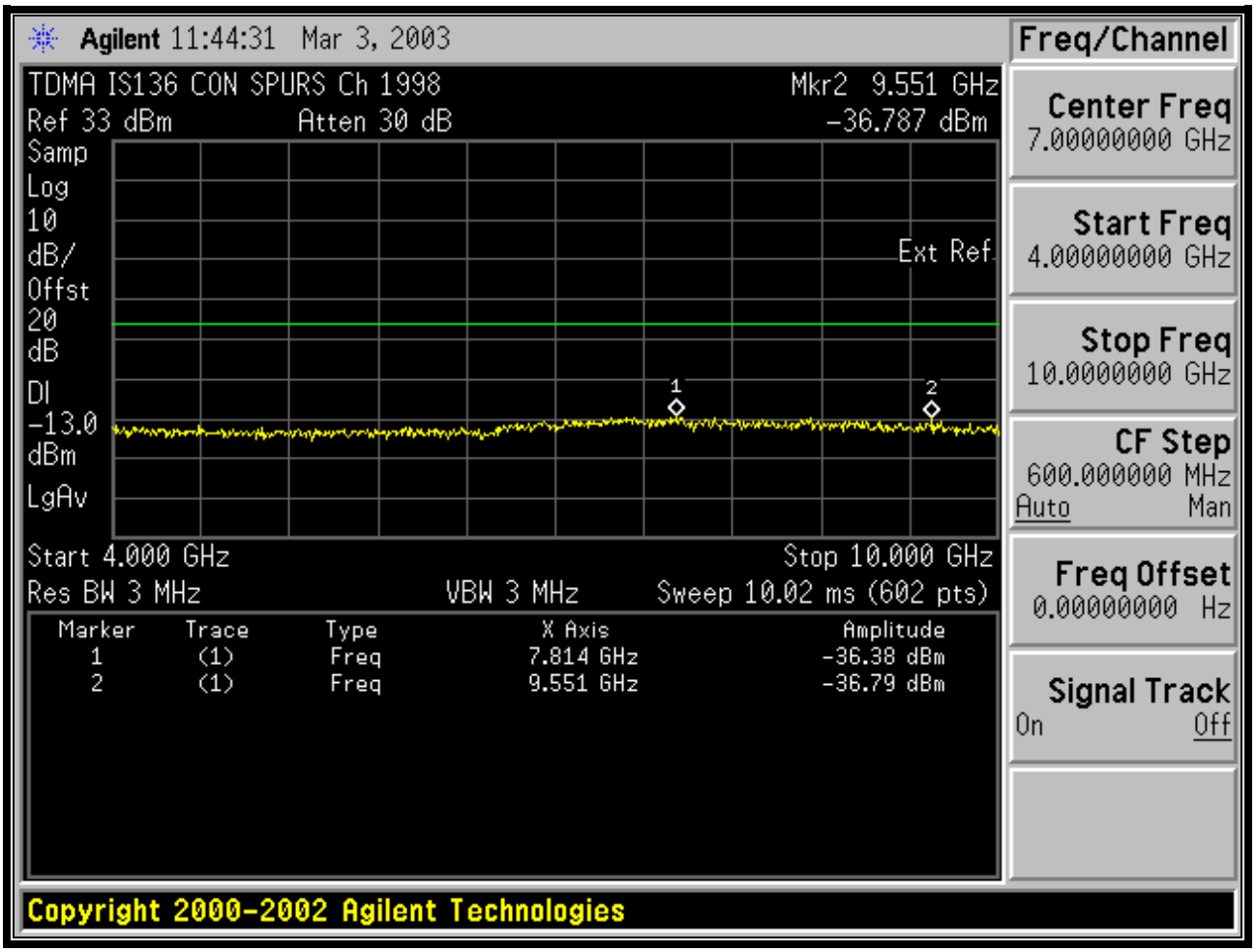
PLOT 9-6: CELLULAR TDMA CONDUCTED SPURIOUS MID CHANNEL



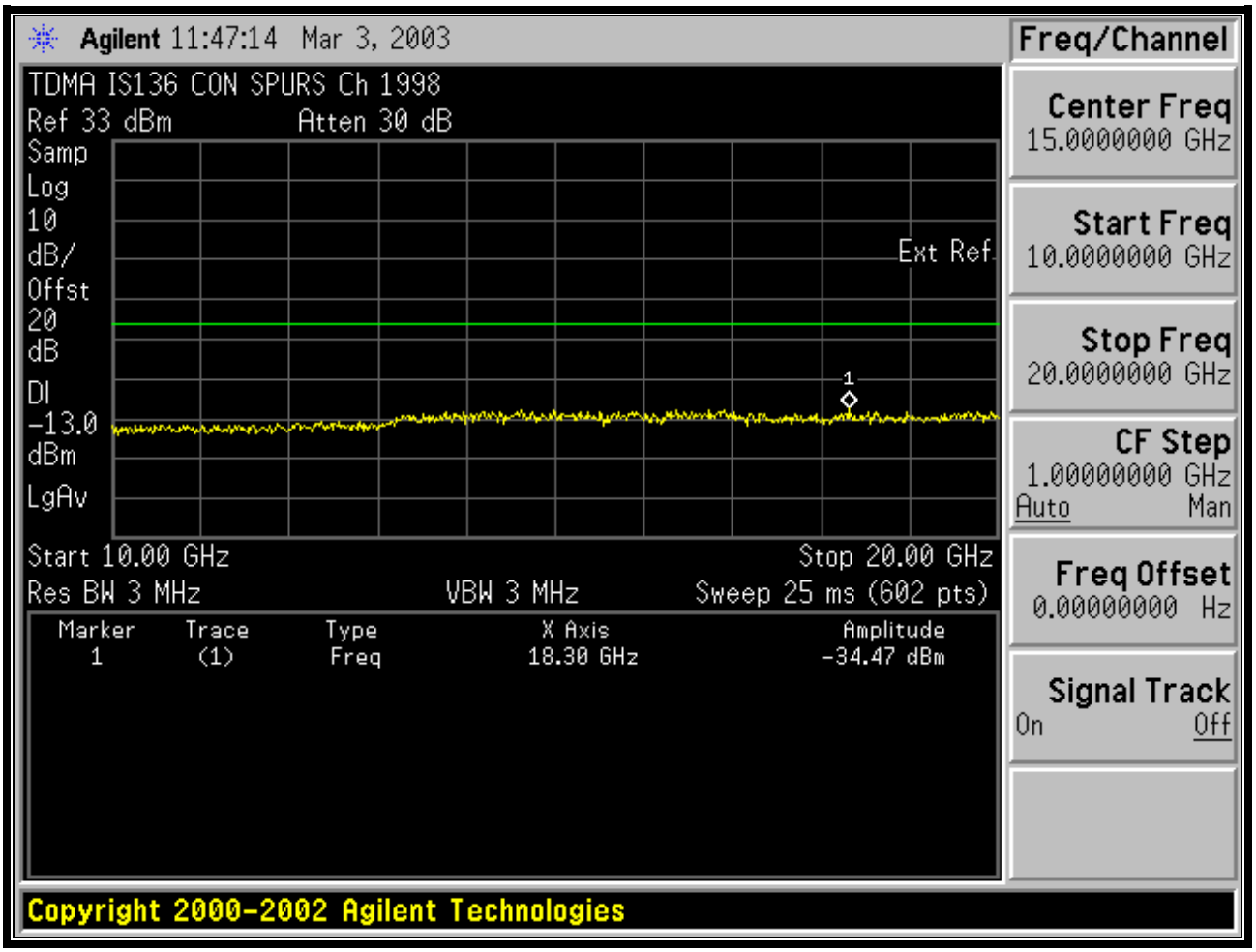
PLOT 9-7: CELLULAR TDMA CONDUCTED SPURIOUS HI CHANNEL



PLOT 9-8: CELLULAR TDMA CONDUCTED SPURIOUS HI CHANNEL



PLOT 9-9: CELLULAR TDMA CONDUCTED SPURIOUS HI CHANNEL



Frequency range of measurement per Part 2.1057: 9kHz to 10 x Fc

Limits: Mask B (dBm): P(dBm) – (43+10xLOG P(W))

The following channels (in MHz) were investigated: 1850, 1880, and 1910 MHz. The worst case (unwanted emissions) channels are shown. The magnitude of emissions attenuated more than 20 dB below the FCC limit need not be recorded.

TABLE 9-1: CONDUCTED SPURIOUS EMISSIONS LOWER FREQUENCY – 1850.04 MHZ

(1850.04 MHz); Conducted power = 1.9 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin (dB)
3074.00	70.1	45.8	-24.3
3700.08	64.7	45.8	-18.9
3900.00	72.7	45.8	-26.9
5550.12	92.1	45.8	-46.3
7400.16	75.5	45.8	-29.7
7714.00	68.9	45.8	-23.1
9250.20	107.2	45.8	-61.4
11100.24	97.3	45.8	-51.5
12950.28	111.1	45.8	-65.3
14800.32	119.1	45.8	-73.3
16650.36	119.6	45.8	-73.8
16810.00	67.0	45.8	-21.2
18500.40	120.1	45.8	-74.3

TABLE 9-2: CONDUCTED SPURIOUS EMISSIONS MIDDLE FREQUENCY – 1880.00 MHZ

(1880 MHz); Conducted power = 1.9 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin (dB)
3760.00	69.2	45.8	-23.3
5640.00	76.2	45.8	-30.4
7520.00	80.3	45.8	-34.5
7770.00	68.9	45.8	-23.1
9400.00	132.1	45.8	-86.3
11280.00	109.5	45.8	-63.7
13160.00	117.0	45.8	-71.2
15040.00	116.5	45.8	-70.7
16920.00	118.0	45.8	-72.2

TABLE 9-3: CONDUCTED SPURIOUS EMISSIONS UPPER FREQUENCY – 1909.92 MHZ

(1909.92 MHz); Conducted power = 1.5 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin (dB)
3819.84	75.4	44.8	-31.6
5729.76	80.6	44.8	-36.8
7639.68	77.2	44.8	-33.4
7814.00	67.5	44.8	-23.8
9549.60	123.0	44.8	-79.2
9551.00	68.0	44.8	-23.2
11459.52	129.9	44.8	-85.1
13369.44	125.4	44.8	-81.6
15279.36	115.1	44.8	-70.3
17189.28	115.4	44.8	-70.6
18300.00	65.6	44.8	-20.8
19099.20	116.1	44.8	-71.3

TEST PERSONNEL:

DANIEL BALTZELL — Test Engineer
Signature
APRIL 29, 2003 — Date of Test

9.3 TEST EQUIPMENT

TABLE 9-4: TEST EQUIPMENT USED FOR TESTING (CONDUCTED SPURIOUS EMISSIONS)

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900889	Hewlett Packard	85685A	RF Preselector for HP 8566B or 8568B (20Hz-2GHz)	3146A01309	11/21/03
900931	Hewlett Packard	8566B	Spectrum Analyzer (100 Hz - 22 GHz)	3138A07771	5/10/04
900917	Hewlett Packard	8648C	Signal Generator, 100 KHz - 3200 MHz	3537A01741	5/2/04
N/A	Agilent	E4438C	Signal Generator	MY42080661	10/17/03
N/A	Agilent	E4440A	Spectrum Analyzer	MY41000310	11/8/03

10 FCC RULES AND REGULATIONS PART 2.1053 (A): FIELD STRENGTH OF SPURIOUS RADIATION

10.1 TEST PROCEDURE

ANSI/TIA/EIA-603-1992, section 2.2.12

Substitution Method:

The EUT was set up at an antenna-to-EUT distance of 3 meters on an open area test site. The EUT was placed on a nonconductive turntable 1.0 meter above the ground plane.

The physical arrangement of the EUT was varied through three orthogonal planes in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. At each frequency, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters in order to determine the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarizations.

The worst-case maximum radiated emission was recorded in the CW mode and used as a reference for the measurement.

The EUT was then replaced by a horn antenna and polarized in accordance with the EUT's antenna polarization. The horn antenna was connected to an RF signal generator with a coaxial cable.

The search antenna height and search antenna polarity was set to levels that produced the maximum reading. The signal generator was adjusted to a level that produced the radiated emission level.

The signal generator level was recorded and corrected by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna. The signal generator corrected level is the spurious radiation emission level.

Digital Modulation: Modulated to its maximum extent using a TDMA IS136 source.

10.2 TEST DATA

Frequency range of measurement per Part 2.1057: 9kHz to 10 x Fc

Limits: Mask B (dBm): P(dBm) – (43+10xLOG P(W))

The magnitude of emissions attenuated more than 20 dB below the FCC limit need not be recorded.

TABLE 10-1: RADIATED SPURIOUS EMISSIONS MIDDLE FREQUENCY – 1880 MHZ

Frequency (MHz)	Signal Generator (dBm)	Cable Loss (dB)	Antenna Gain (dBi)	Corrected Signal Generator (dBc)	Limit (dBc)	Margin (dB)
3760.00	-32.4	1.7	8.1	58.9	45.8	-13.1
5640.00	-53.1	1.1	8.7	78.4	45.8	-32.6
7520.00	-43.9	1.4	9.7	68.5	45.8	-22.7
9400.00	-60.5	1.4	10.3	84.5	45.8	-38.7
11280.00	-56.3	1.4	10.7	79.9	45.8	-34.1
13160.00	-66.3	1.5	12.5	88.2	45.8	-42.4
15040.00	-85.6	1.5	10.8	109.2	45.8	-63.4
16920.00	-87.1	1.7	13.2	108.5	45.8	-62.7
18800.00	-85.3	1.8	16.8	103.2	45.8	-57.4

10.3 TEST EQUIPMENT

TABLE 10-2: TEST EQUIPMENT USED FOR TESTING (FIELD STRENGTH OF SPURIOUS RADIATION)

RTL Asset #	Manufacturer	Model	Part Type	Serial Number	Calibration Due Date
900791	Schaffner-Chase	CBL6112	Antenna (25MHz – 2GHz)	2099	08/23/03
900932	Hewlett Packard	8449B OPT H02	Preamplifier (1-26.5 GHz)	3008A00505	4/22/04
900917	Hewlett Packard	8648C	Synthesized. Signal Generator (9 KHz to 3200 MHz)	3537A01741	5/2/04
900928	Hewlett Packard	83752A	Synthesized Sweeper, (0.01 to 20 GHz)	3610A00866	06/19/04
900889	Hewlett Packard	85685A	RF Preselector for HP 8566B or 8568B (20Hz-2GHz)	3146A01309	3/5/04
900931	Hewlett Packard	8566B	Spectrum Analyzer (100 Hz - 22 GHz)	3138A07771	5/10/04
900154	Compliance Design Inc,	Roberts Dipole	Adjustable Elements Dipole Antenna (30-1000MHz)	N/A	9/16/03
901218	EMCO	3301B	Horn Antenna (18-26 GHz)	960281-003	7/30/04
900772	EMCO	3161-02	Horn Antenna (2 - 4 GHz)	9804-1044	7/30/04
900323	EMCO	3160-07	Horn Antenna, (8.2-12.4 GHz)	9605-1054	7/30/04
900321	EMCO	3161-03	Horn Antenna, (4.0-8.2 GHz)	9508-1020	7/30/04
900917	Hewlett Packard	8648C	Signal Generator, (100 KHz - 3200 MHz)	3537A01741	4/19/04

TEST PERSONNEL:

DANIEL BALTZELL — Test Engineer
Signature
APRIL 29, 2003 — Date of Test

11 FCC RULES AND REGULATIONS PART 24.901(D): BAND-EDGE COMPLIANCE

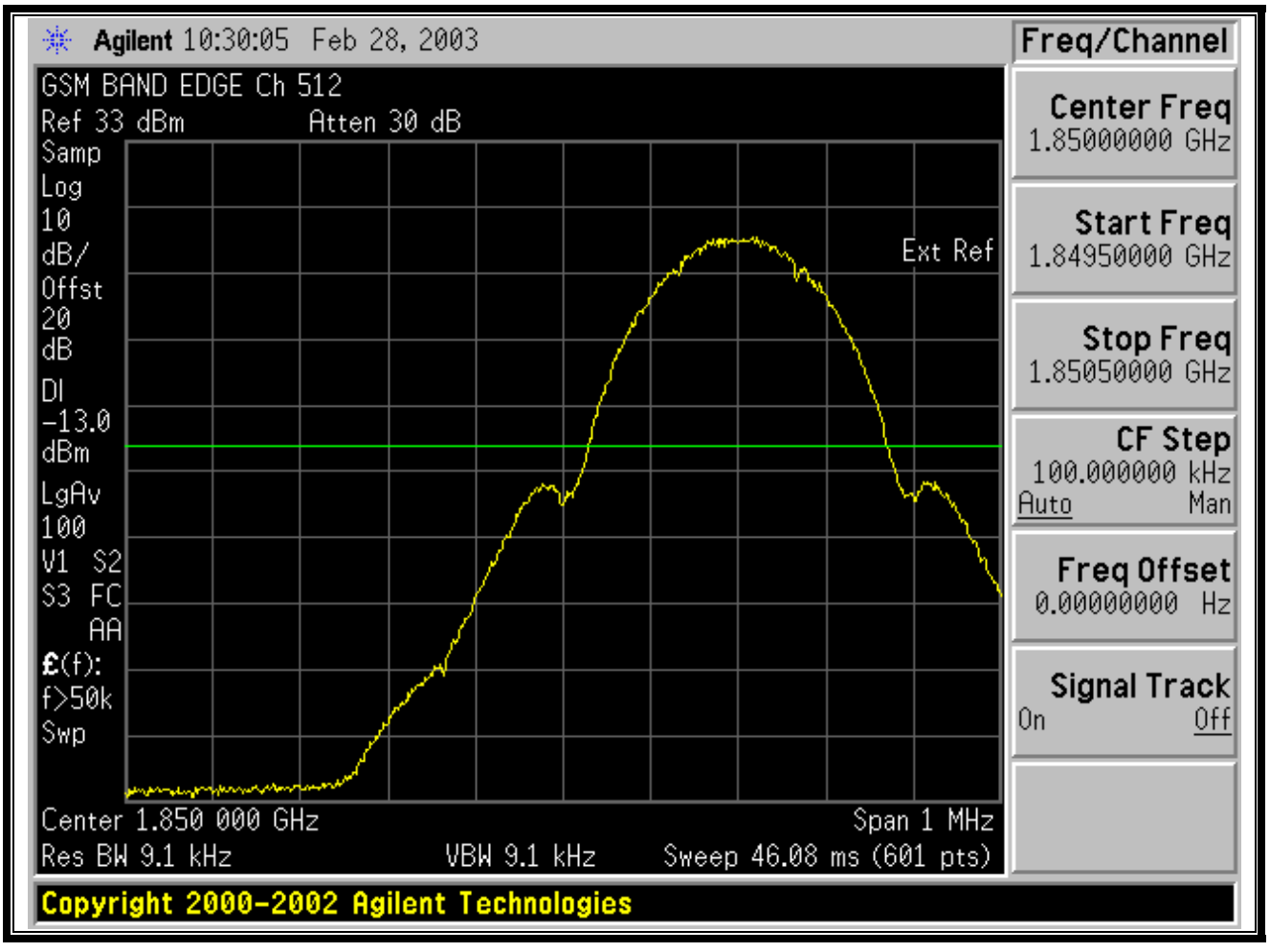
11.1 TEST PROCEDURE

Compliance with the band edges was performed using the FCC's "Radiated Measurement at a Band Edge" guidance document.

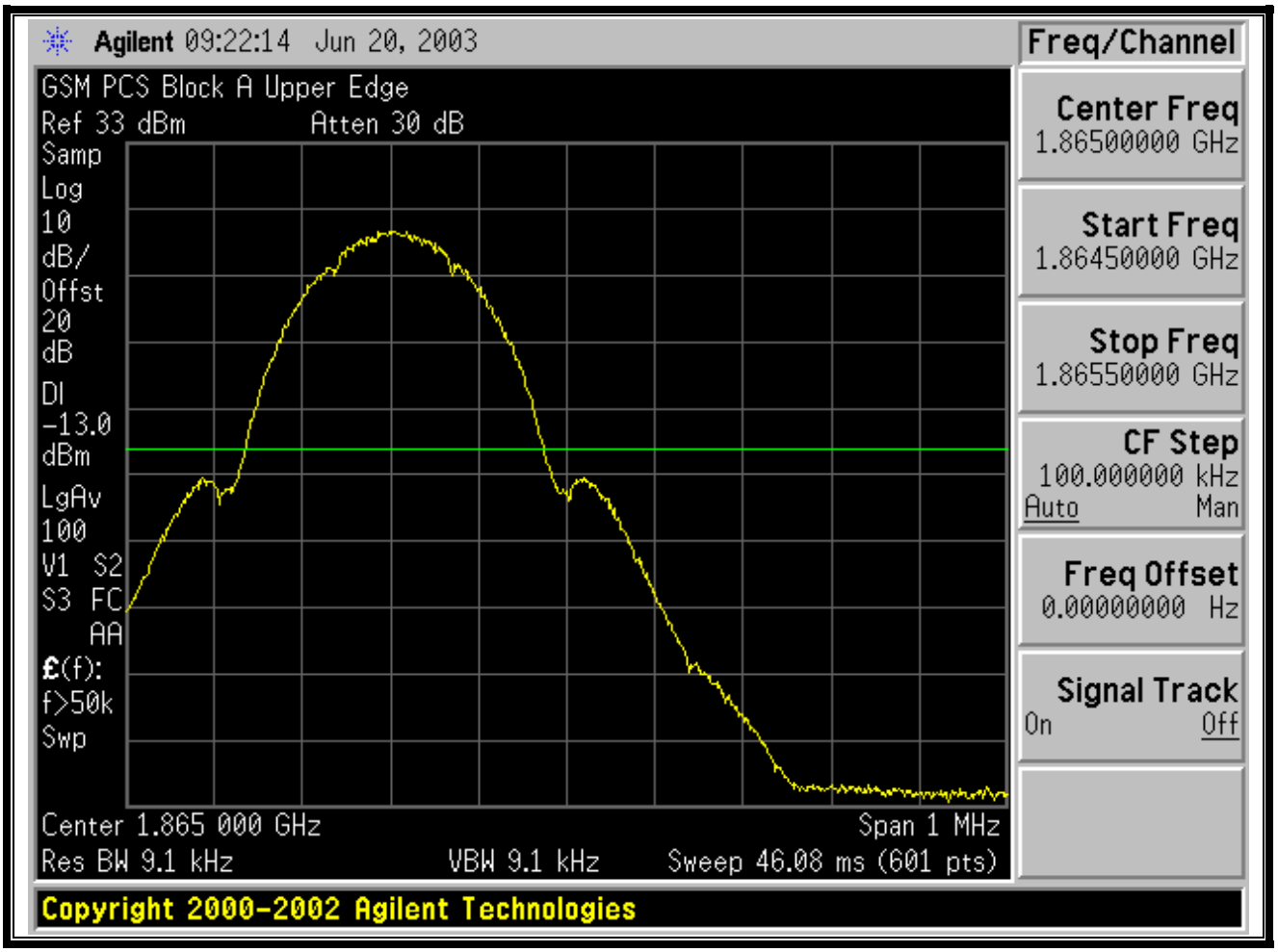
11.2 TEST DATA

The following plots were made using radiated measurements. The center frequency of the spectrum analyzer display was set to frequency channels of block edges A and B for GSM modulation since it produced the worst case bandwidth.

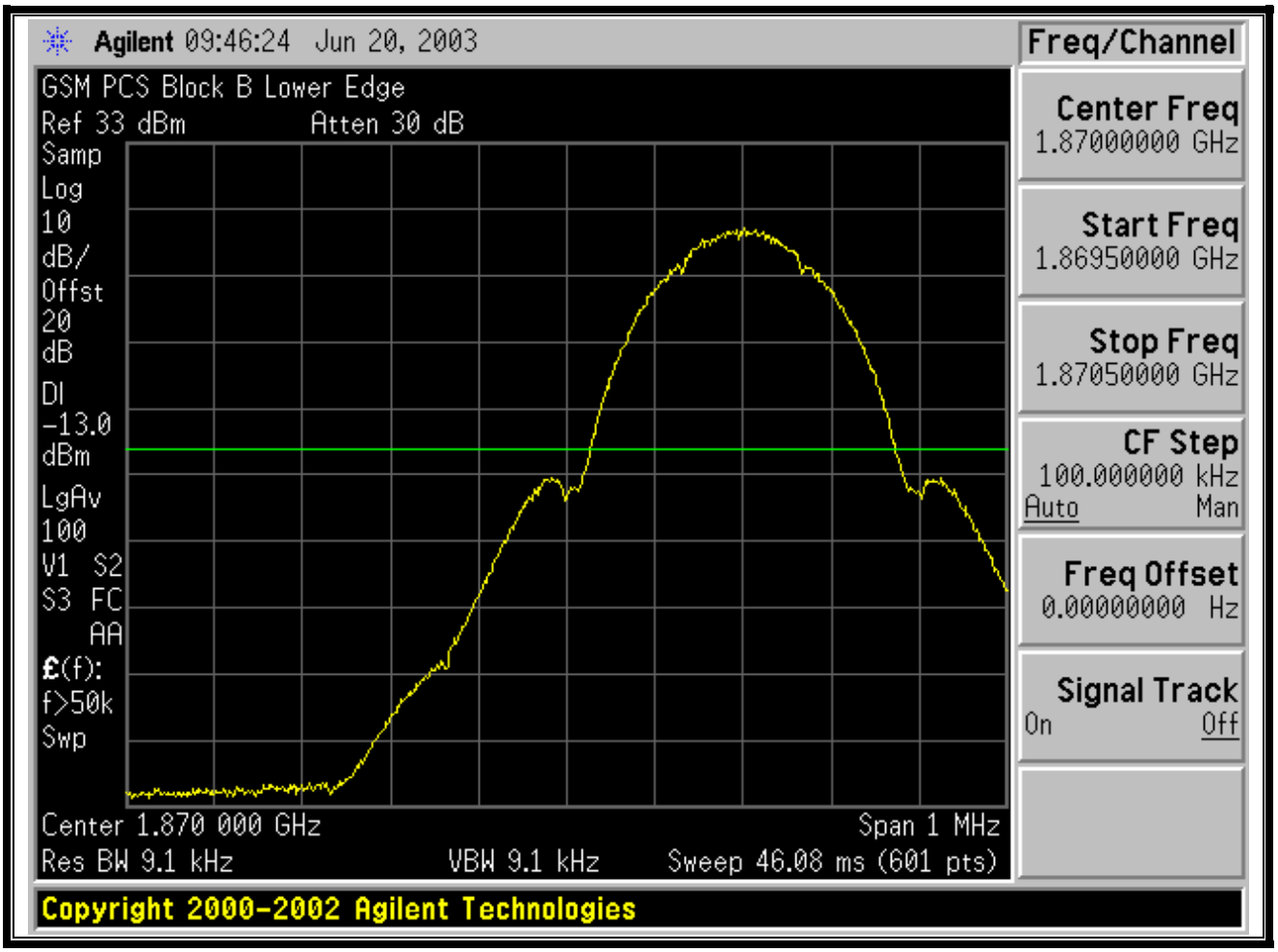
PLOT 11-1: GSM LOWER BAND EDGE A



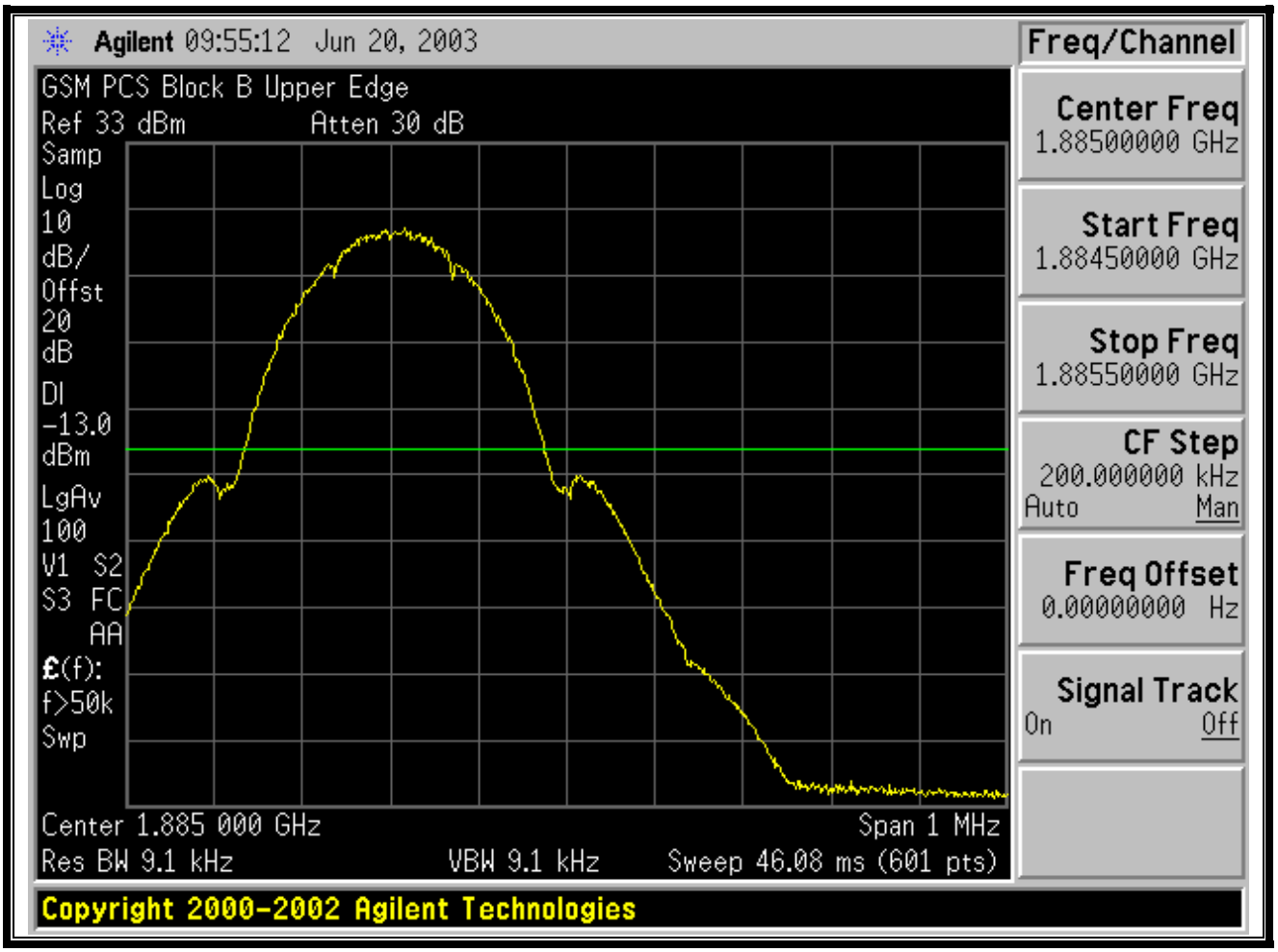
PLOT 11-2: GSM UPPER BAND EDGE A



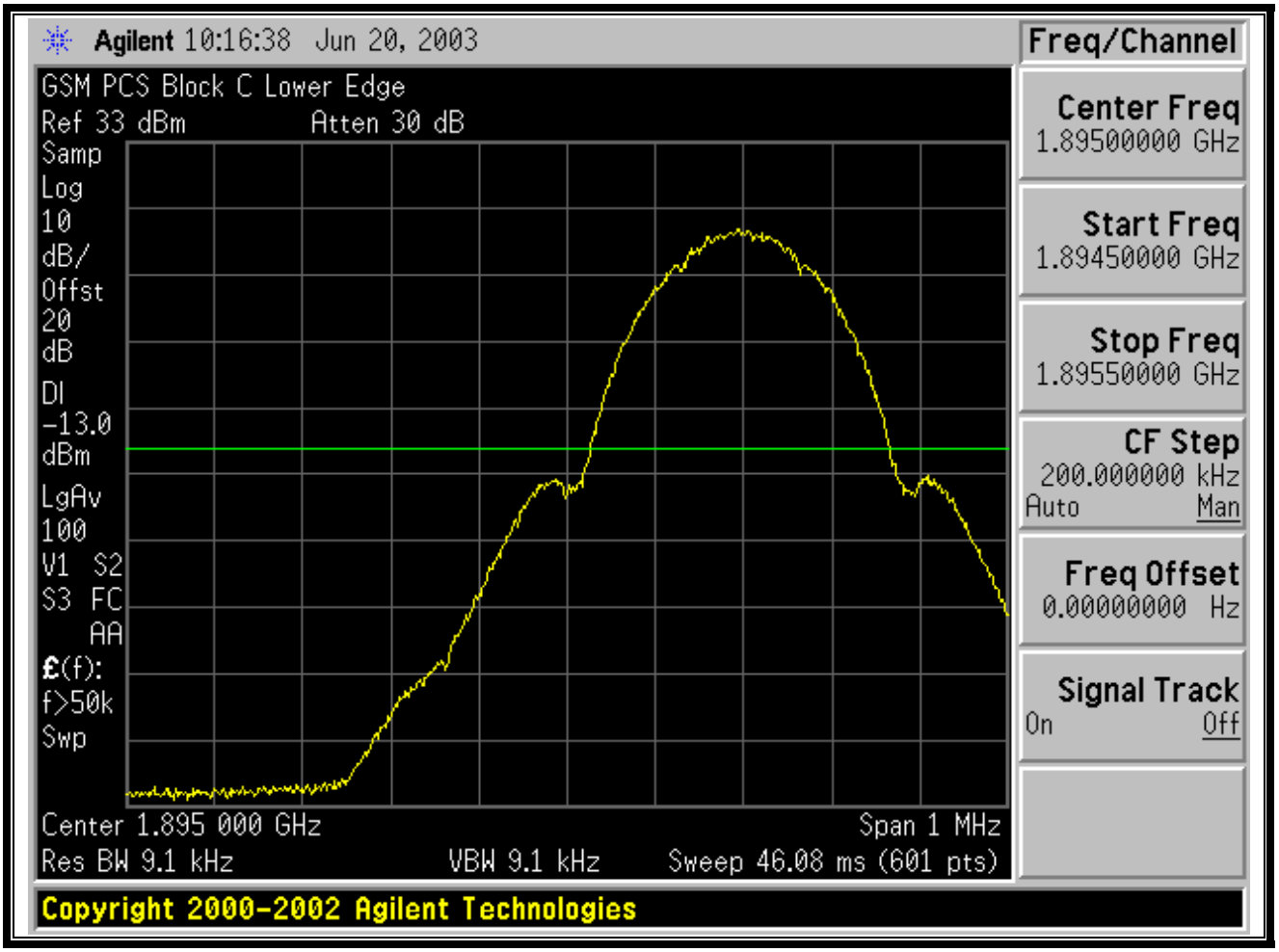
PLOT 11-3: GSM LOWER BAND EDGE B



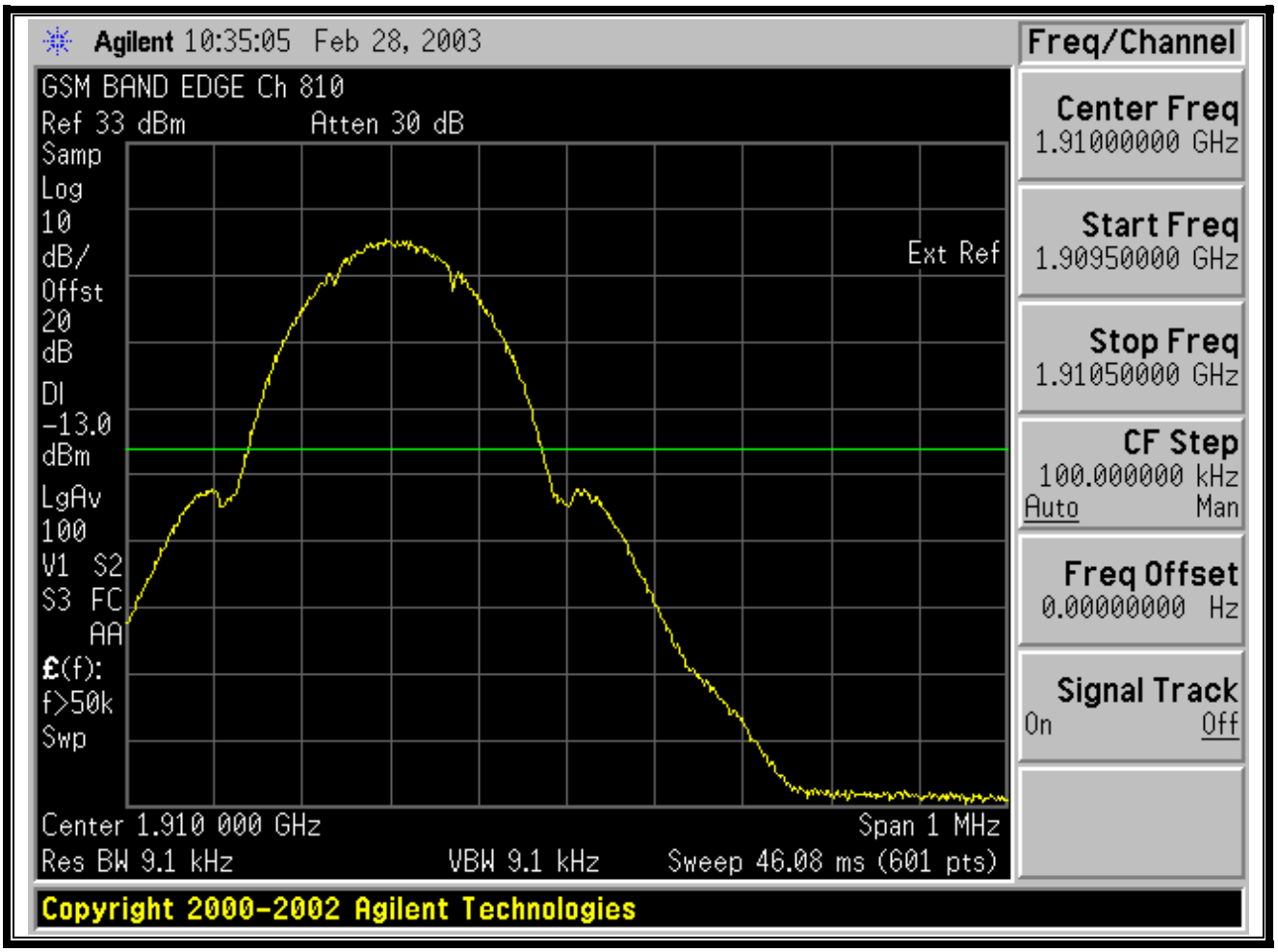
PLOT 11-4: GSM UPPER BAND EDGE B



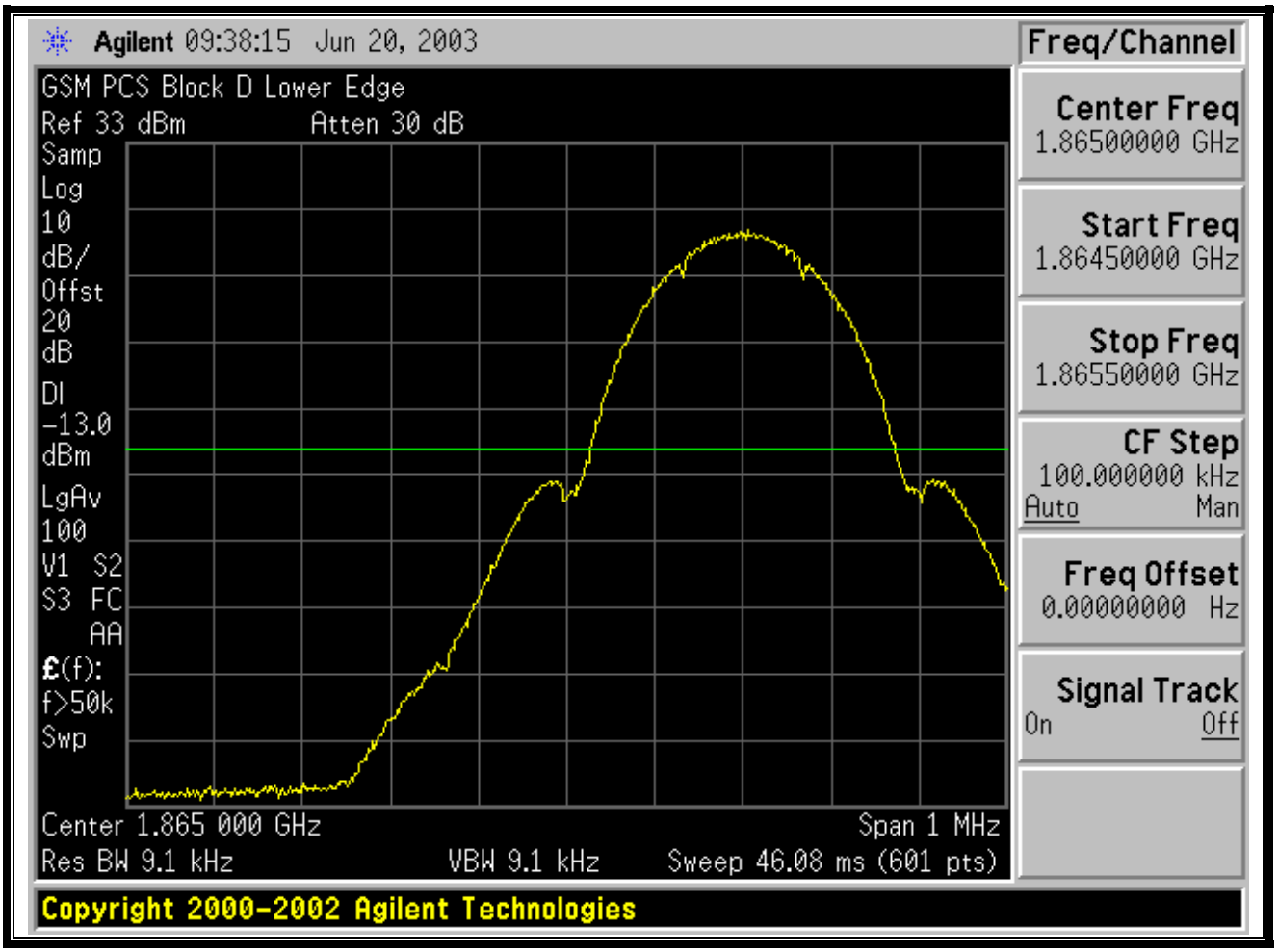
PLOT 11-5: GSM LOWER BAND EDGE C



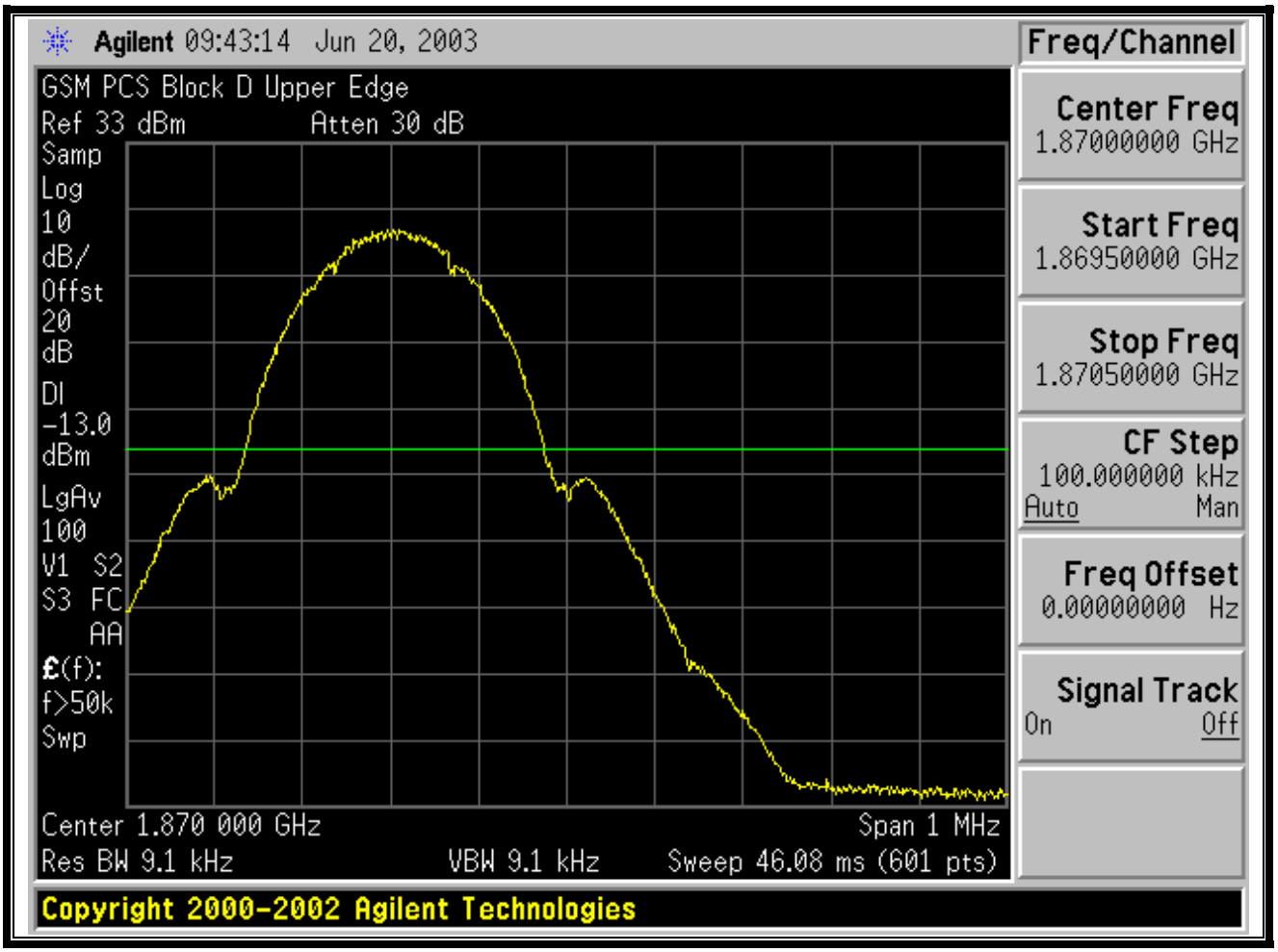
PLOT 11-6: GSM UPPER BAND EDGE C



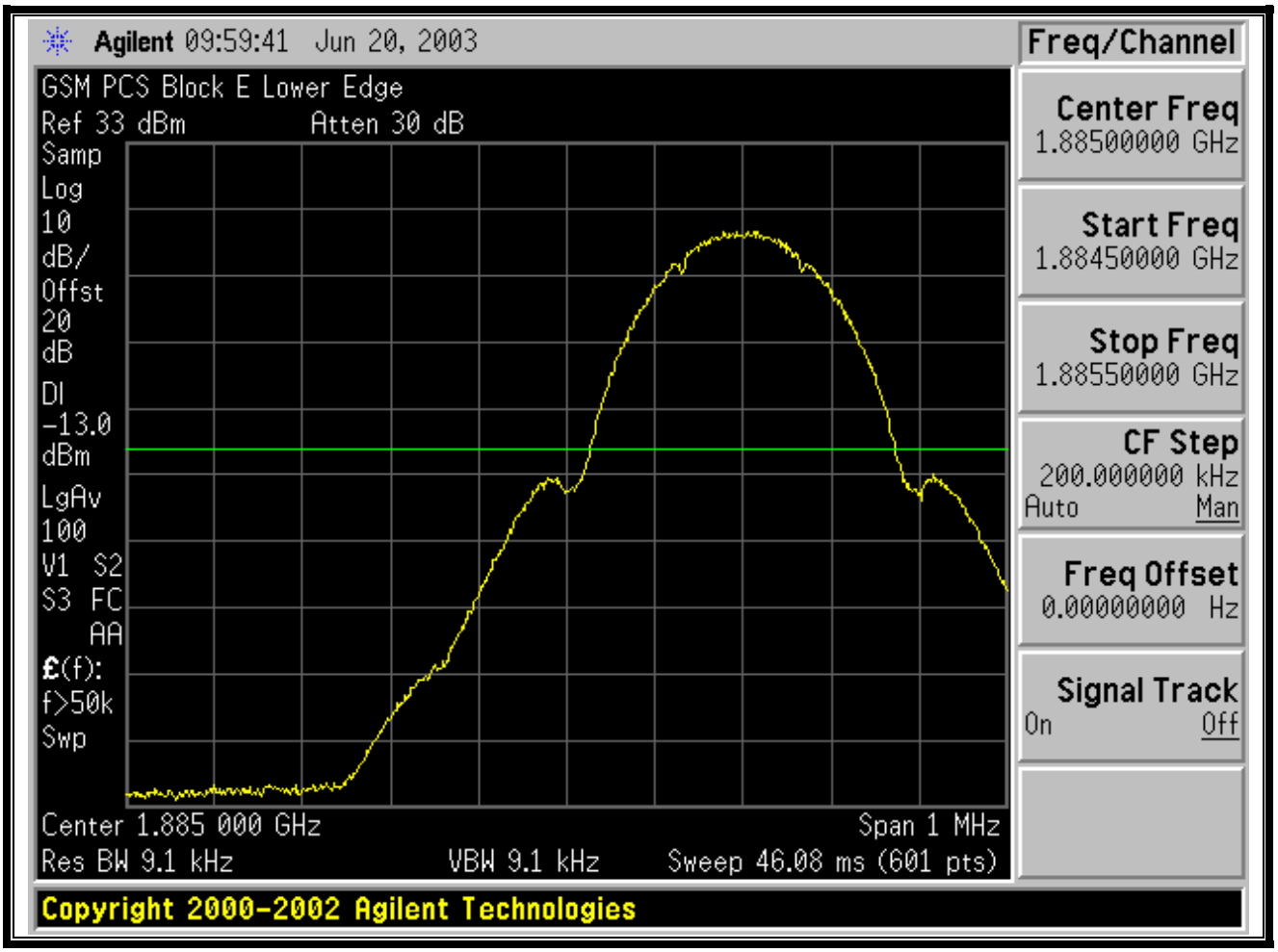
PLOT 11-7: GSM LOWER BAND EDGE D



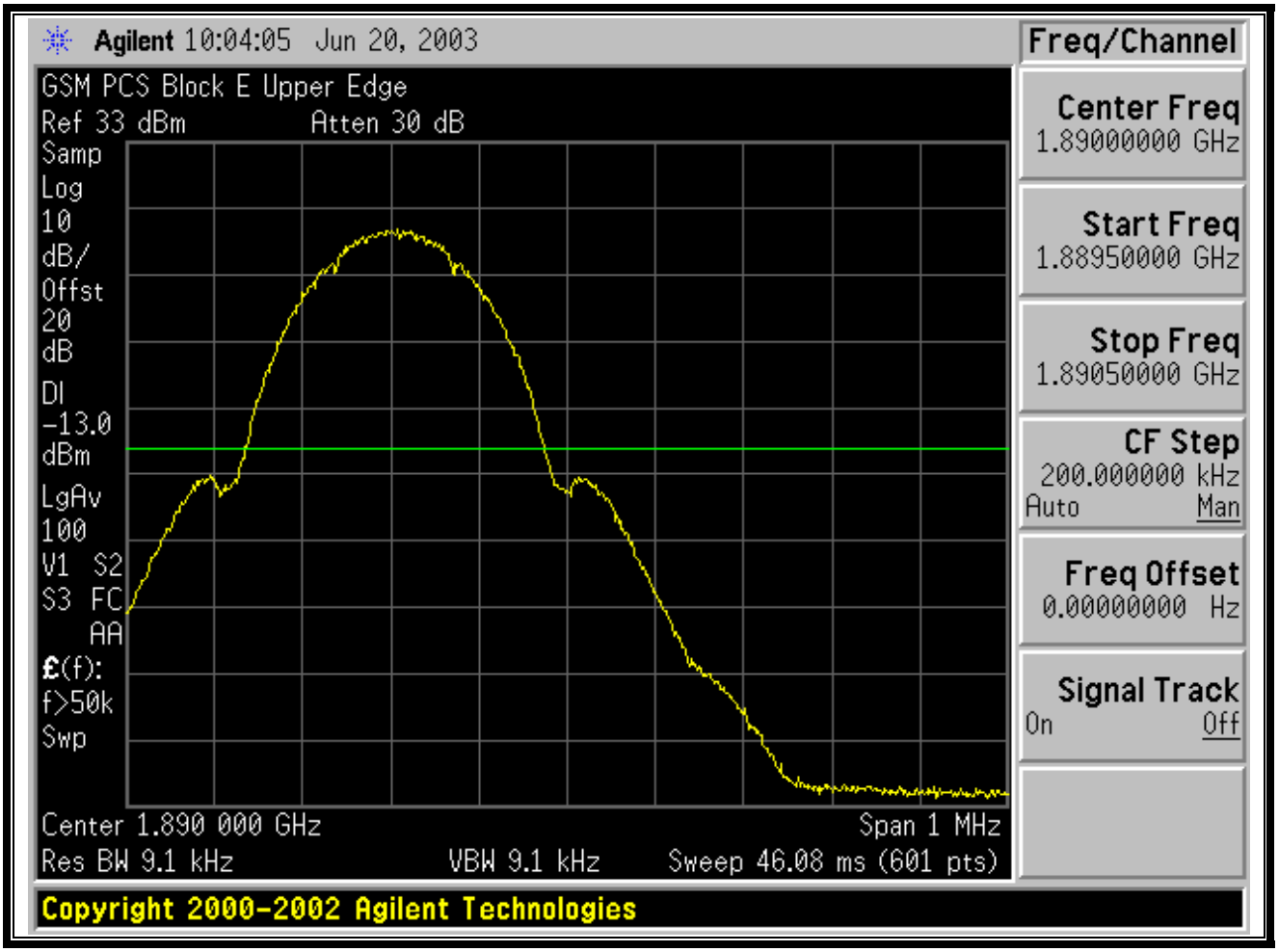
PLOT 11-8: GSM UPPER BAND EDGE D



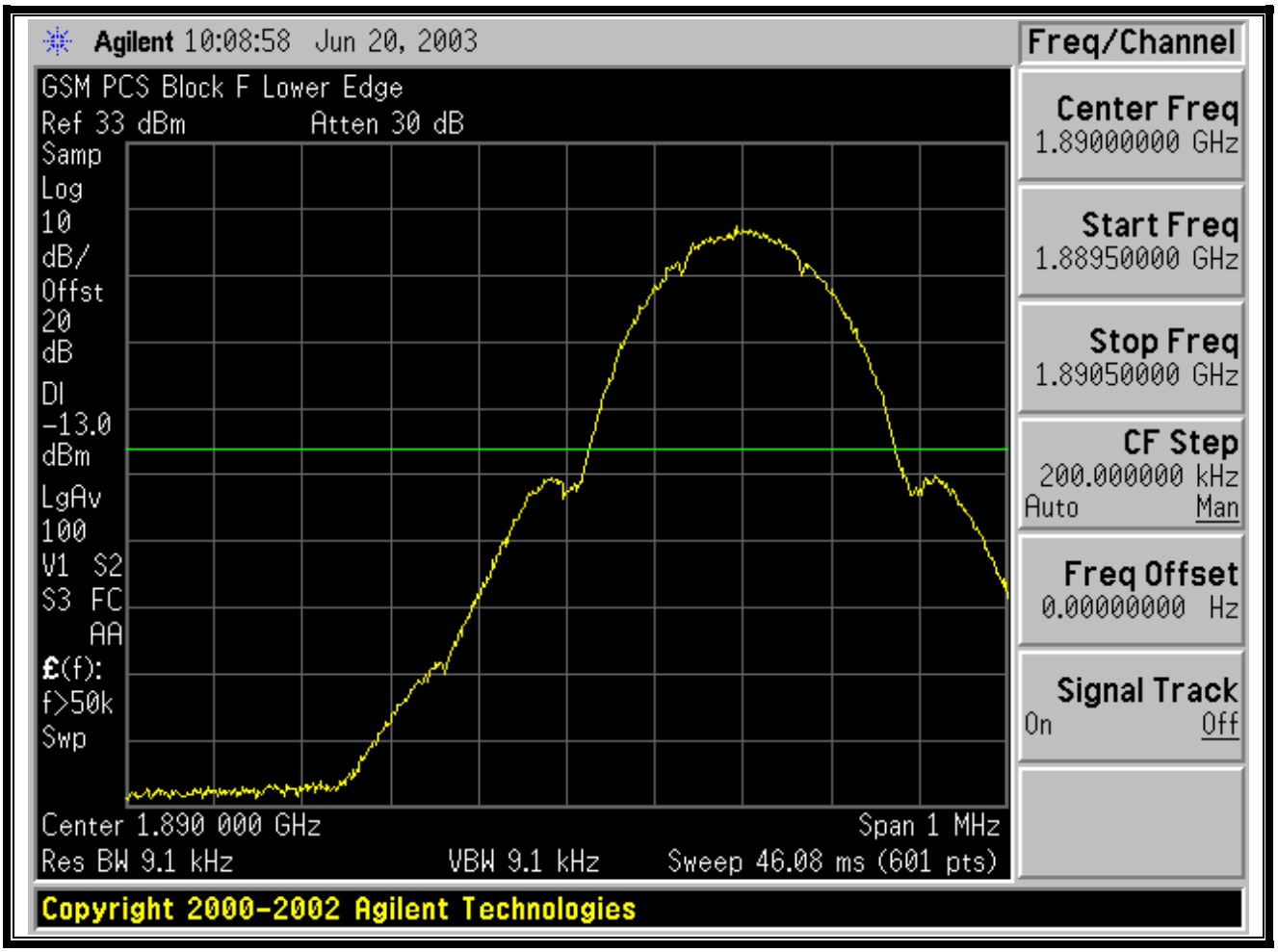
PLOT 11-9: GSM LOWER BAND EDGE E



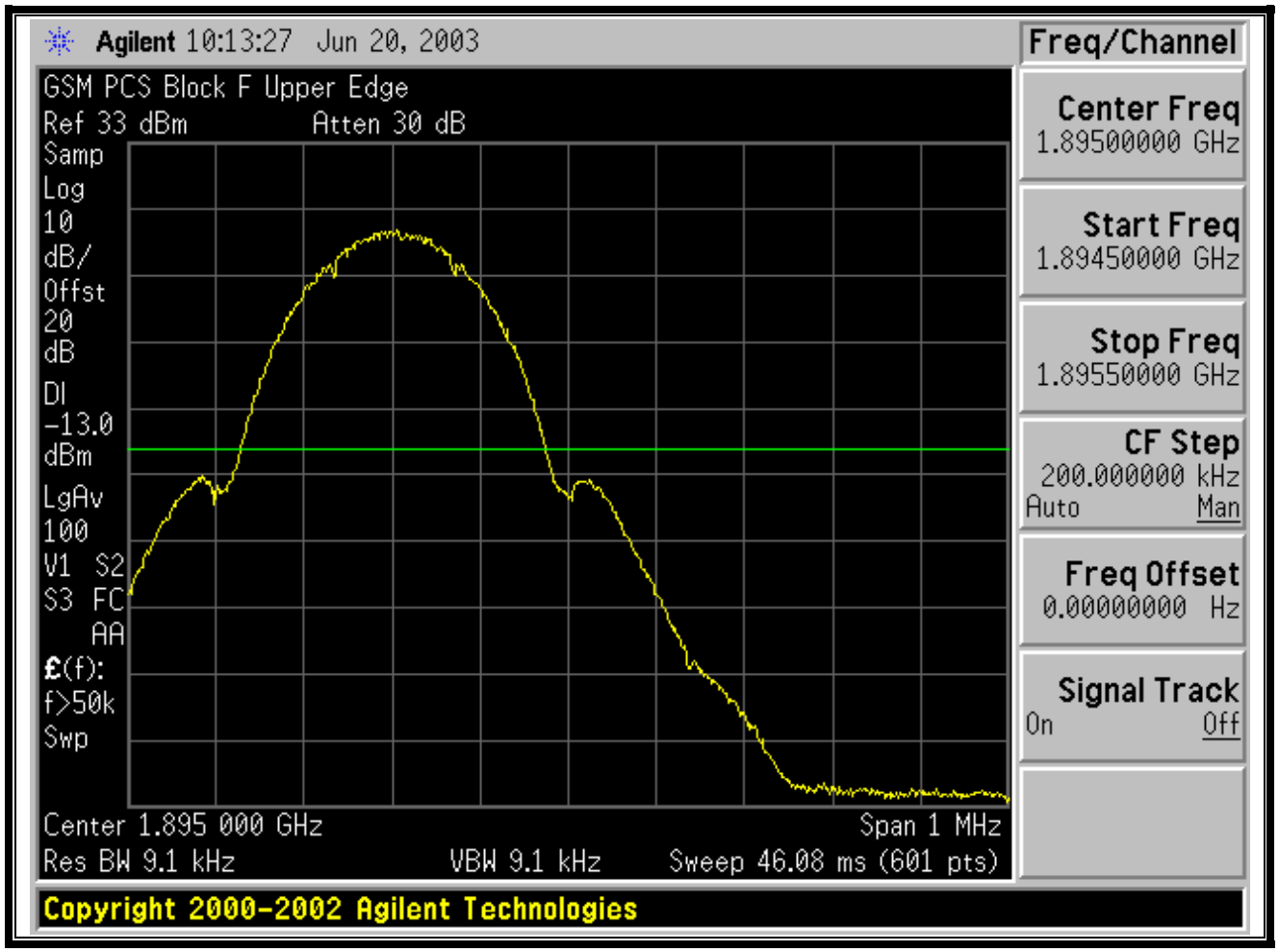
PLOT 11-10: GSM UPPER BAND EDGE E



PLOT 11-11: GSM LOWER BAND EDGE F



PLOT 11-12: GSM UPPER BAND EDGE F



TEST PERSONNEL:

DANIEL BALTZELL		FEBRUARY 28 & JUNE 20, 2003
Test Engineer	Signature	Date of Test

11.3 TEST EQUIPMENT

TABLE 11-1: TEST EQUIPMENT USED FOR TESTING (OCCUPIED BANDWIDTH)

RTL ASSET #	MANUFACTURER	MODEL	PART TYPE	SERIAL NUMBER	CALIBRATION DUE DATE
N/A	Agilent	E4438C	Signal Generator	MY42080661	10/17/03
N/A	Agilent	E4440A	Spectrum Analyzer	MY41000310	11/8/03

12 CONCLUSION

The data in this measurement report shows that the Mobile Communications Technologies, Inc. 2W Mobile Amplifier, FCC ID: OW5BST1900, complies with all the requirements of Part 24 of the FCC Rules and Industry Canada RSS-131.