Engineering and Testing for EMC and Safety Compliance

CERTIFICATION APPLICATION REPORT
FCC PART 22 & INDUSTRY CANADA RSS-131

Test Lab:	Applicant Information:
Rhein Tech Laboratories, Inc. Phone: 703-689-0368 360 Herndon Parkway Fax: 703-689-2056 Suite 1400 Web Site: www.rheintech.com Herndon, VA 20170 E-Mail: ATCBINFO@rheintech.com	Mobile Communications Technologies Inc. (MCT, Inc.) Contact: John Vagas Phone: 905-726-3444 ext. 202 360 Industrial Pkwy South Fax: 905-726-4233 Unit 1 E-Mail: sales@smoothtalker.com Aurora, Ontario L4G 3V7 Canada

FCC ID:	OW5BST850	**GRANTEE FRN NUMBER:**	0007702509
PLAT FORM:	N/A	**RTL WORK ORDER NUMBER:**	2003050
MODEL (S):	BST850	**RTL QUOTE NUMBER:**	QRTL02-668
DATE OF TEST REPORT:	September 8, 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 22: Public Mobile Services
Industry Canada Standard:	RSS-131: Zone Enhancers for the Land Mobile Service
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
824-849	3	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 22, Industry Canada RSS-131, and ANSI C63.4.

Signature: _____ Date: September 8, 2003

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

TABLE OF CONTENTS

FIGURE INDEX

TABLE INDEX

PLOT INDEX

APPENDIX INDEX

PHOTOGRAPH INDEX

1 GENERAL INFORMATION

This Type Certification Report is prepared on behalf of **Mobile Communication Technologies, Inc. (MCT, Inc),** in accordance with the Federal Communications Commission and Industry Canada Rules and Regulations. The Equipment Under Test (EUT) is **Model BST850, FCC ID: OW5BST850**. 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

2.1 JUSTIFICATION

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

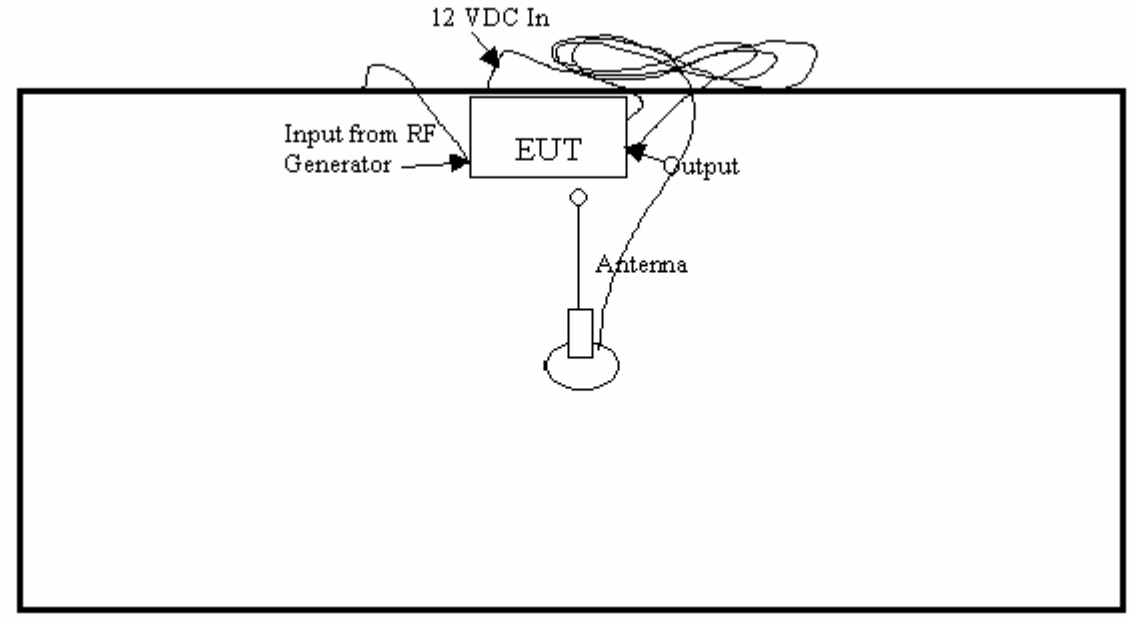
Listed below are the identifiers and descriptions of all equipment, cables, and internal devices used with the EUT for this test, as applicable.

2.2 SYSTEM COMPONENTS

PART	MANUFACTURER	MODEL	SERIAL NUMBER	FCC ID	CABLE DESCRIPTION	RTL BAR CODE
Amplifier	MCT, Inc.	BST850	#2	OW5BST850	Unshielded Power	15162
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

2.3 CONFIGURATION OF TESTED SYSTEM

FIGURE 1: 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

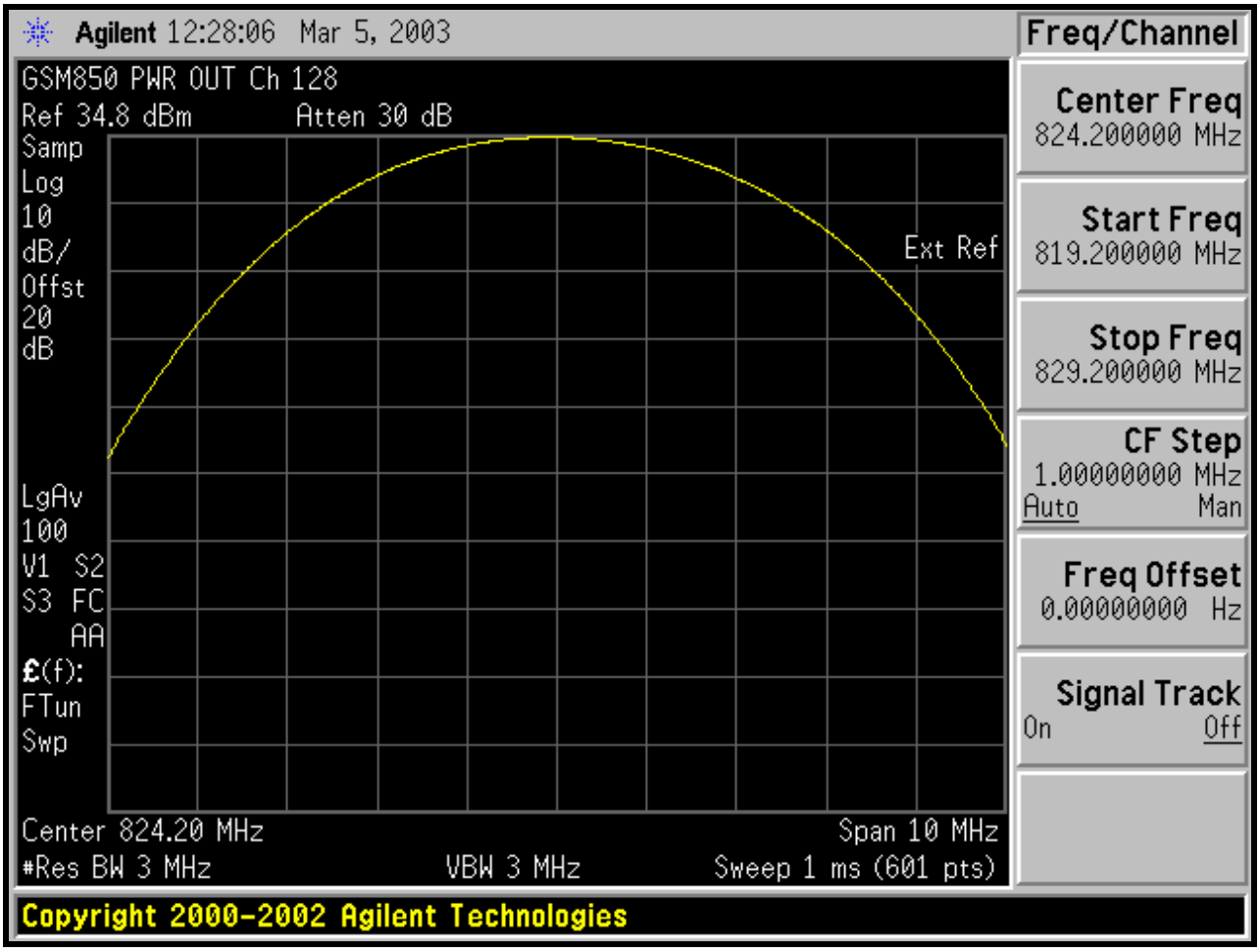
TIA/EIA/IS-98-A; CFR 22.913(a)

4.2 TEST DATA

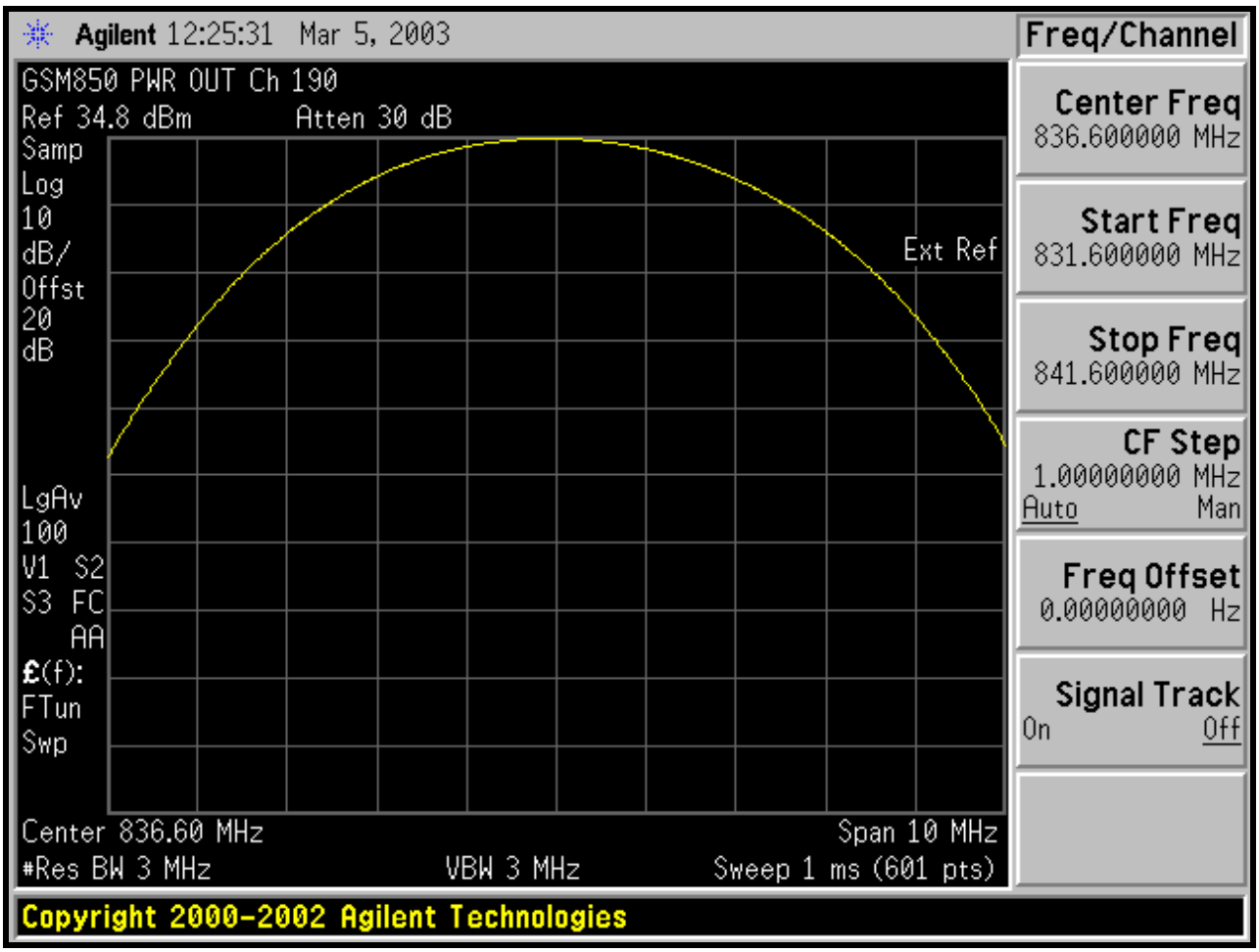
TABLE 4-1: RF POWER OUTPUT: CARRIER OUTPUT POWER (GSM)

Channel Number	Frequency (MHz)	Power (dBm)	RF Power Measured (Watt)
128	824.2	34.8	3.02
190	836.6	34.8	3.02
251	848.8	34.8	3.02

PLOT 4-1: GSM CHANNEL POWER (LOW CHANNEL 824.2 MHZ)



PLOT 4-2: GSM CHANNEL POWER (MID CHANNEL 836.6 MHZ)



PLOT 4-3: GSM CHANNEL POWER (HI CHANNEL 848.8 MHZ)

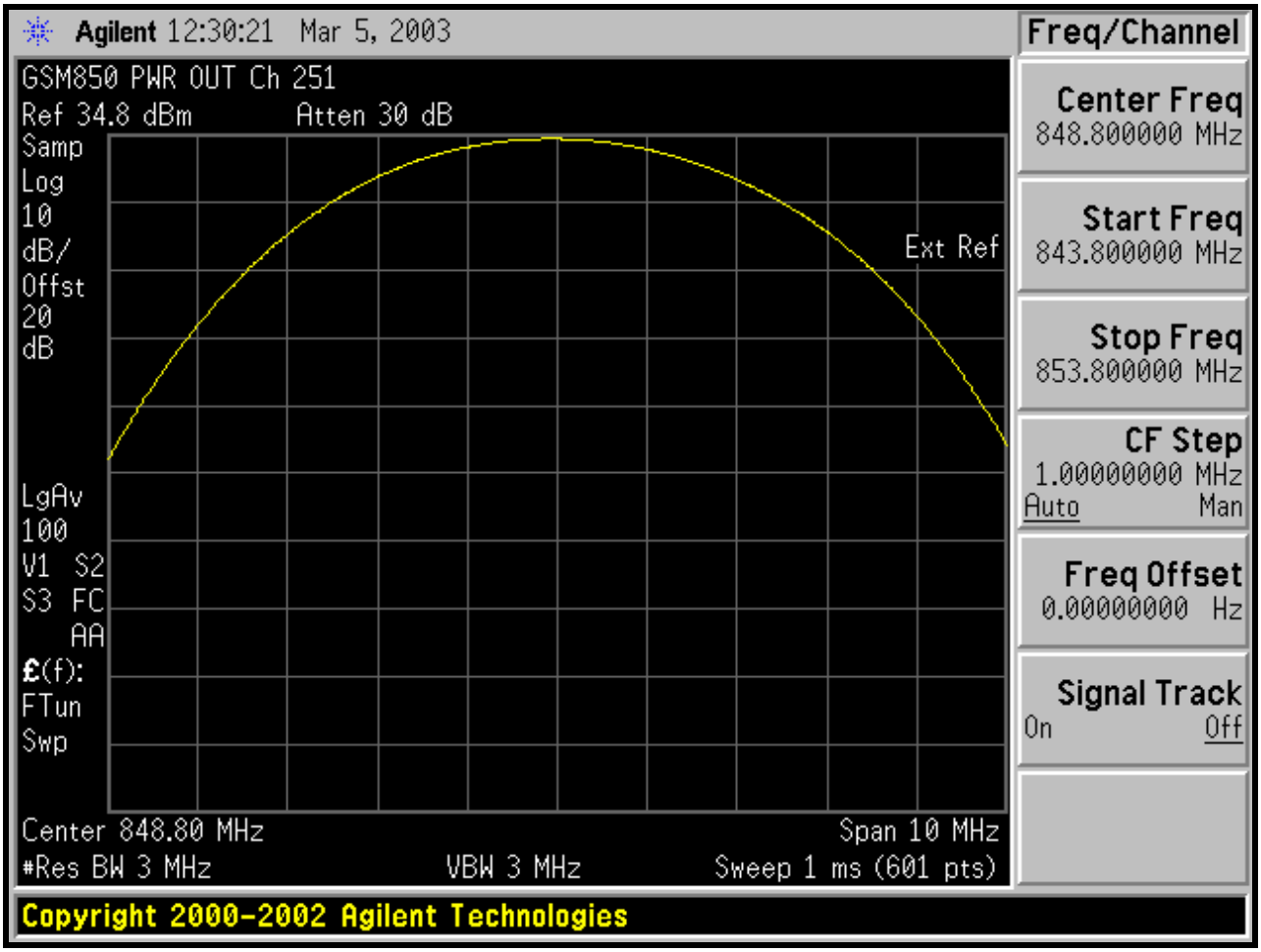
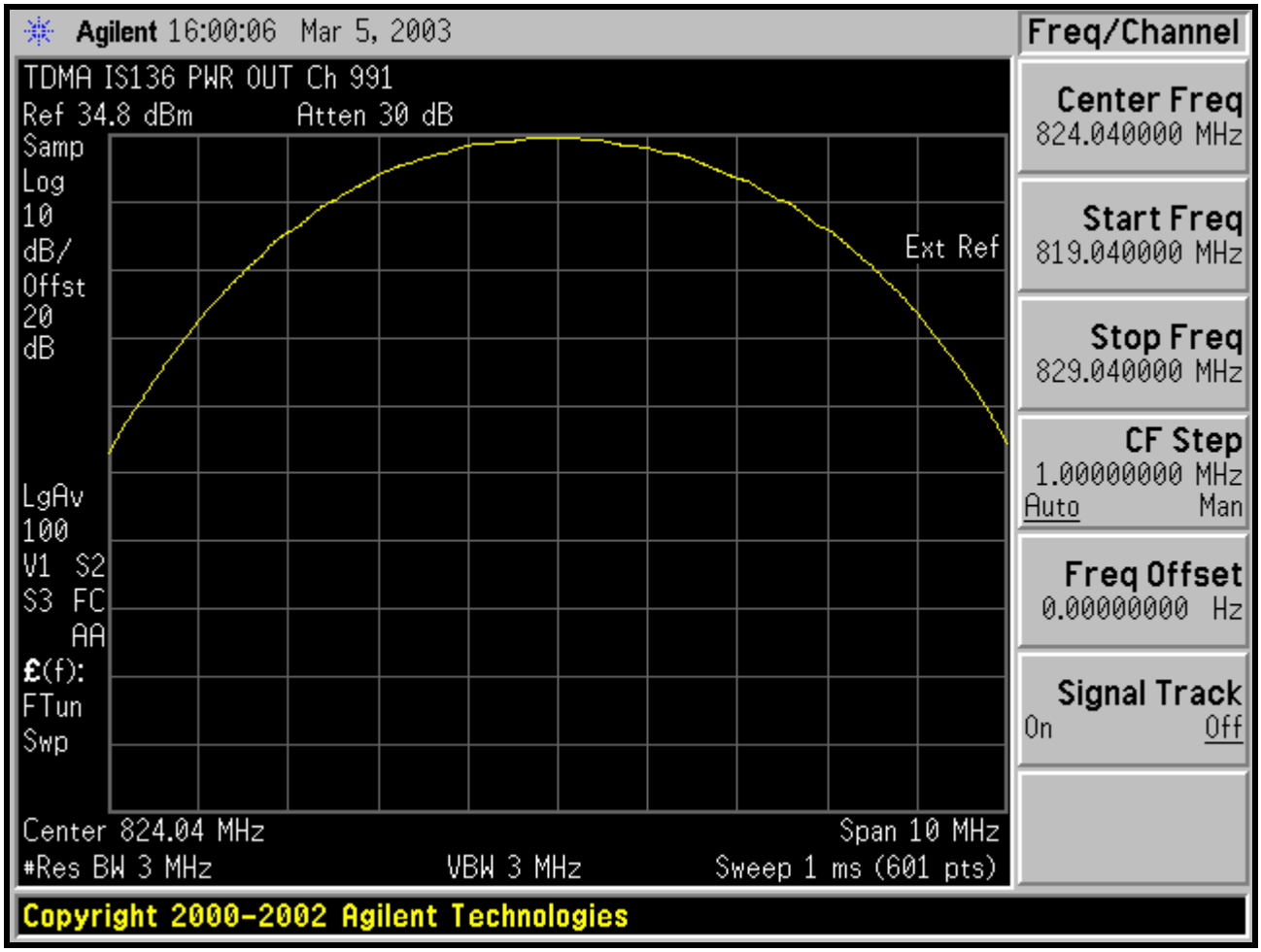


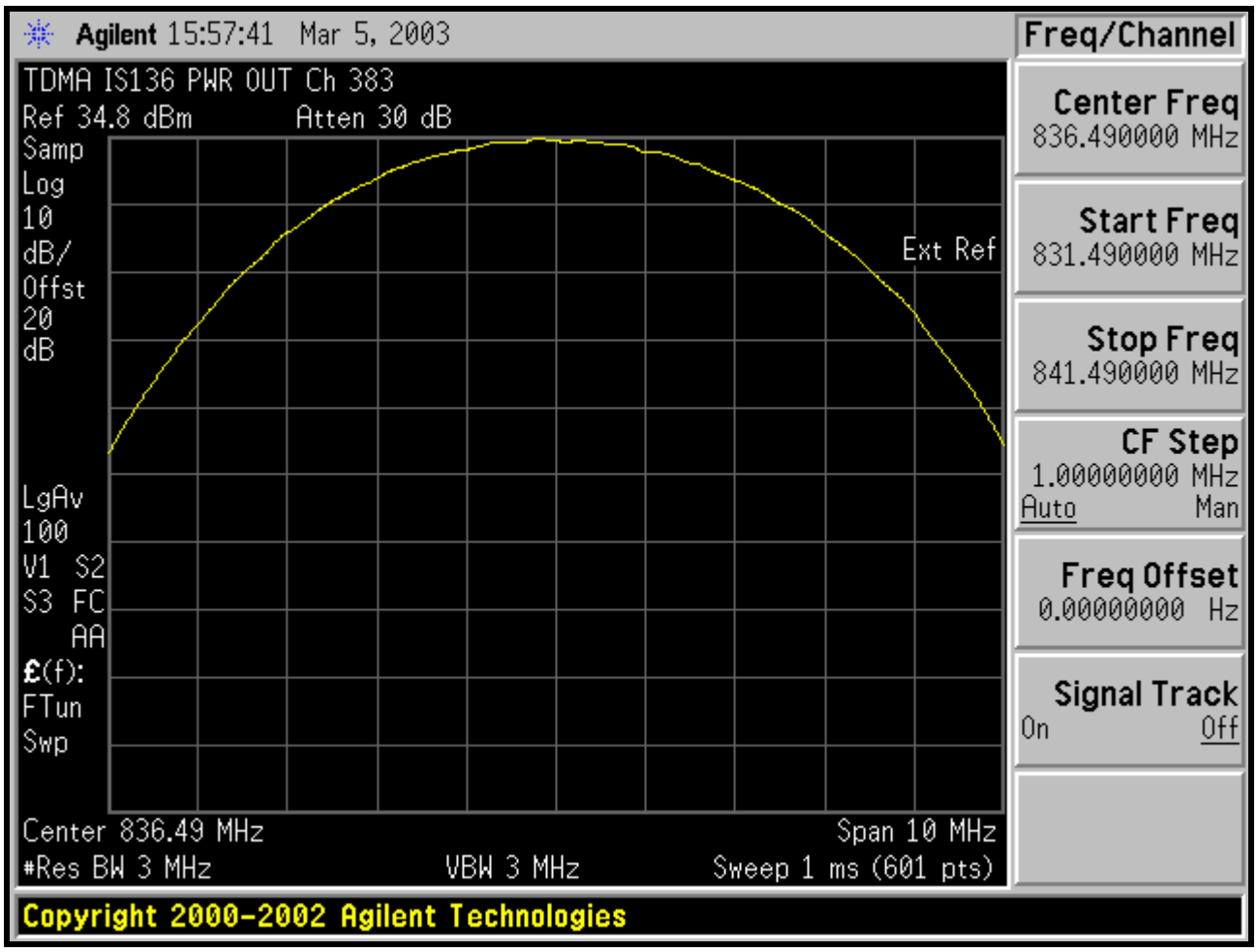
TABLE 4-2: RF POWER OUTPUT: CARRIER OUTPUT POWER (TDMA)

Channel Number	Frequency (MHz)	Power (dBm)	RF Power Measured (Watt)
991	824.0	34.8	3.02
383	836.5	34.8	3.02
799	848.9	34.8	3.02

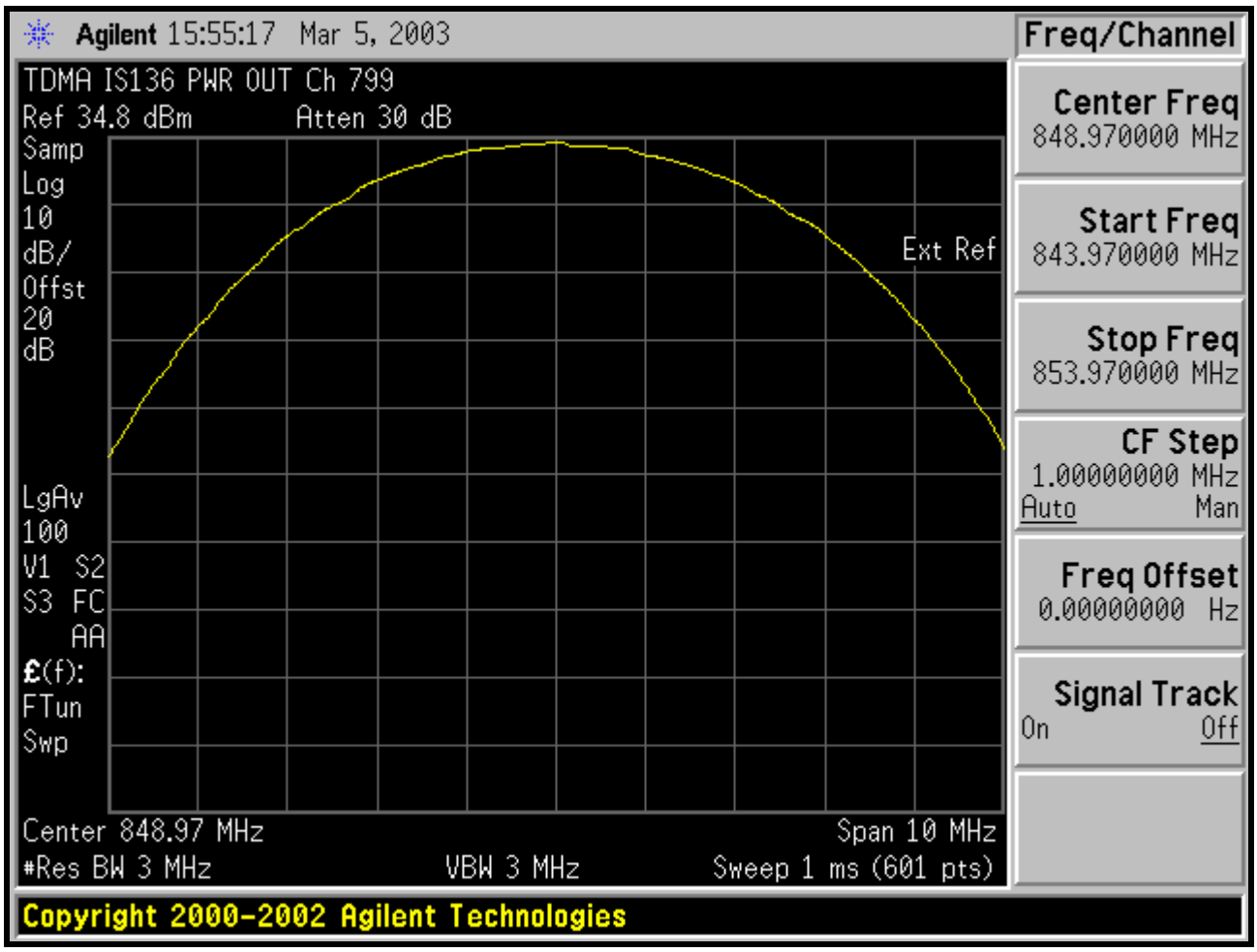
PLOT 4-4: TDMA CHANNEL POWER (LOW CHANNEL 824 MHZ)



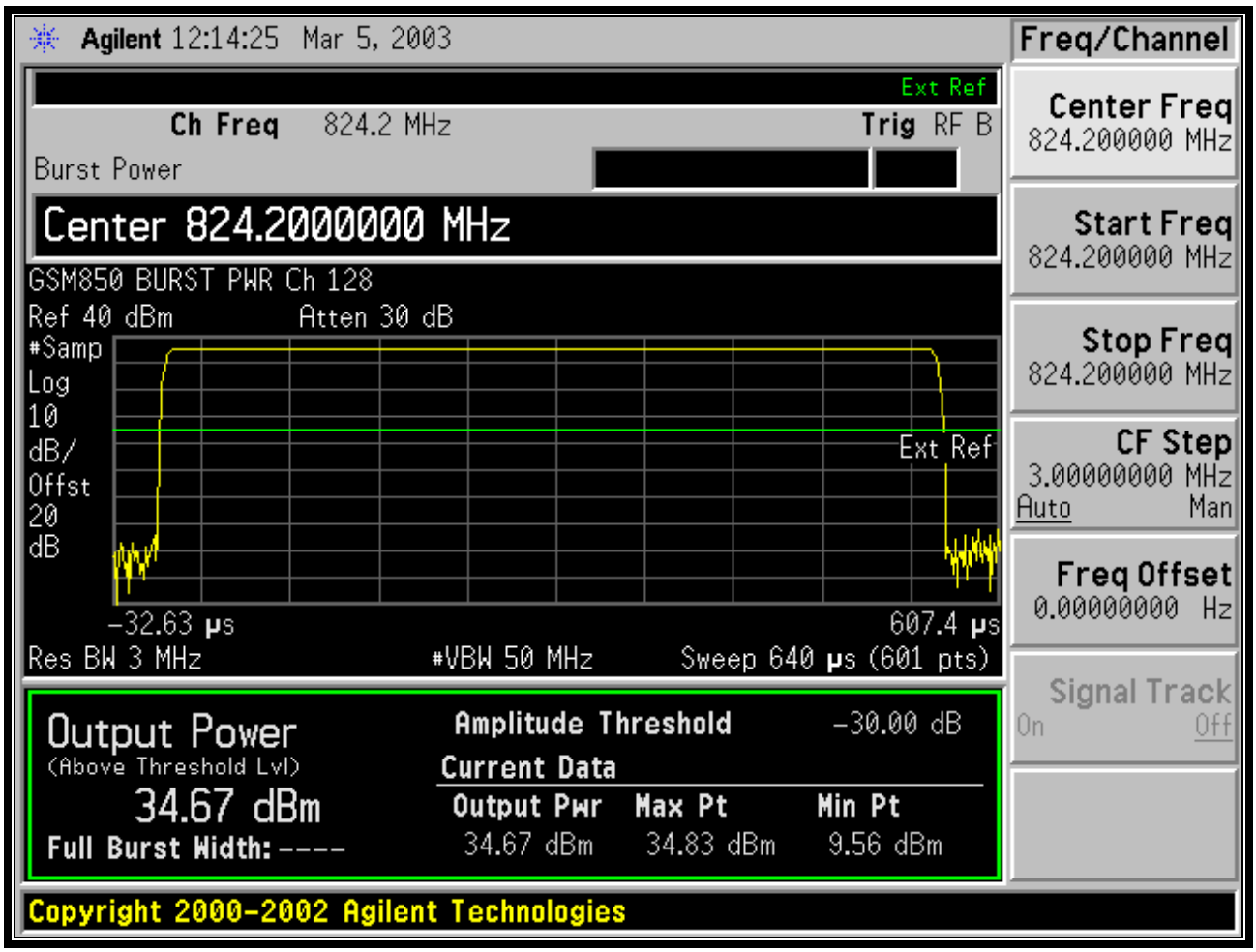
PLOT 4-5: TDMA CHANNEL POWER (MID CHANNEL 836.5 MHZ)



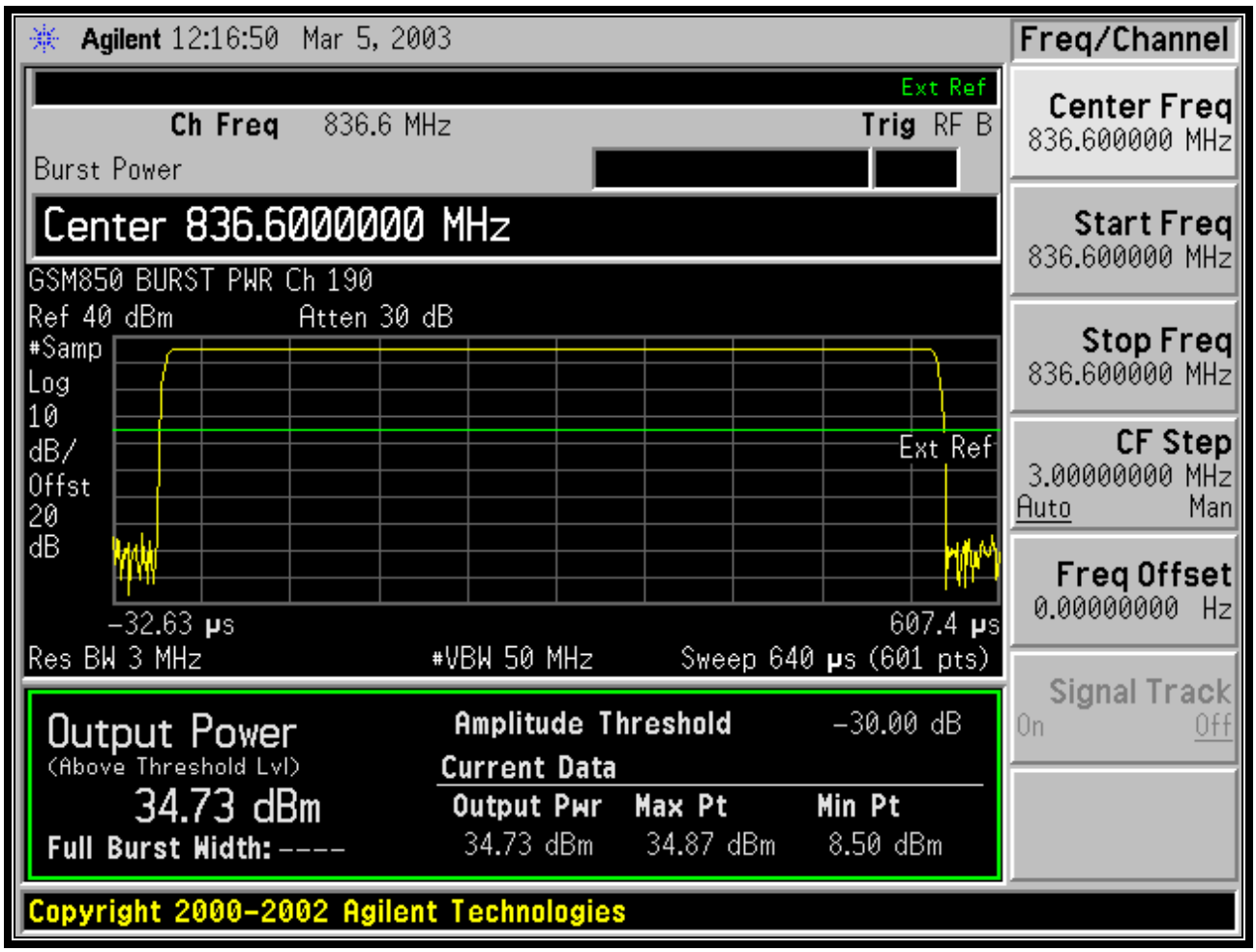
PLOT 4-6: TDMA CHANNEL POWER (HI CHANNEL 848.9 MHZ)



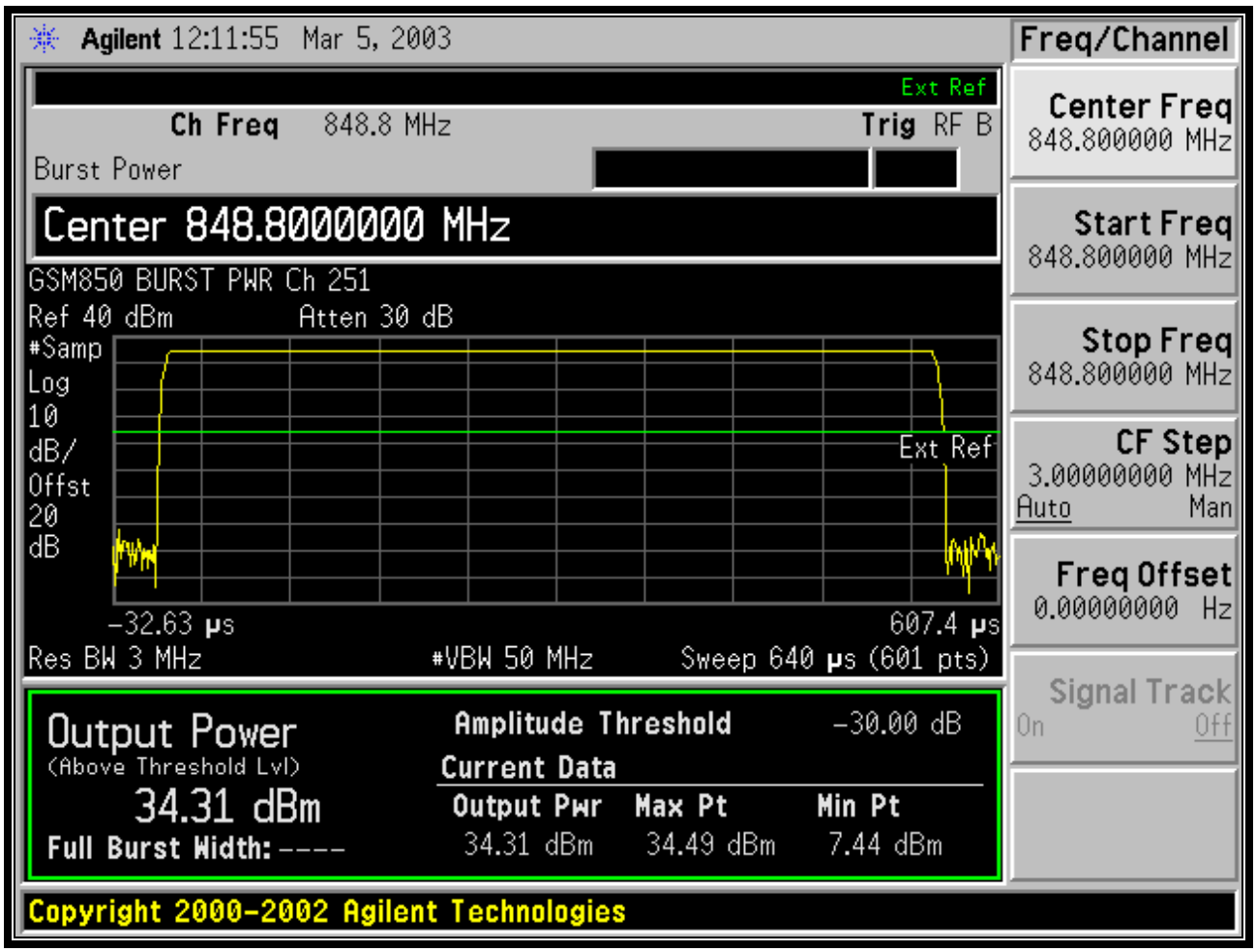
PLOT 4-7: GSM BURST POWER (824.2 MHZ)



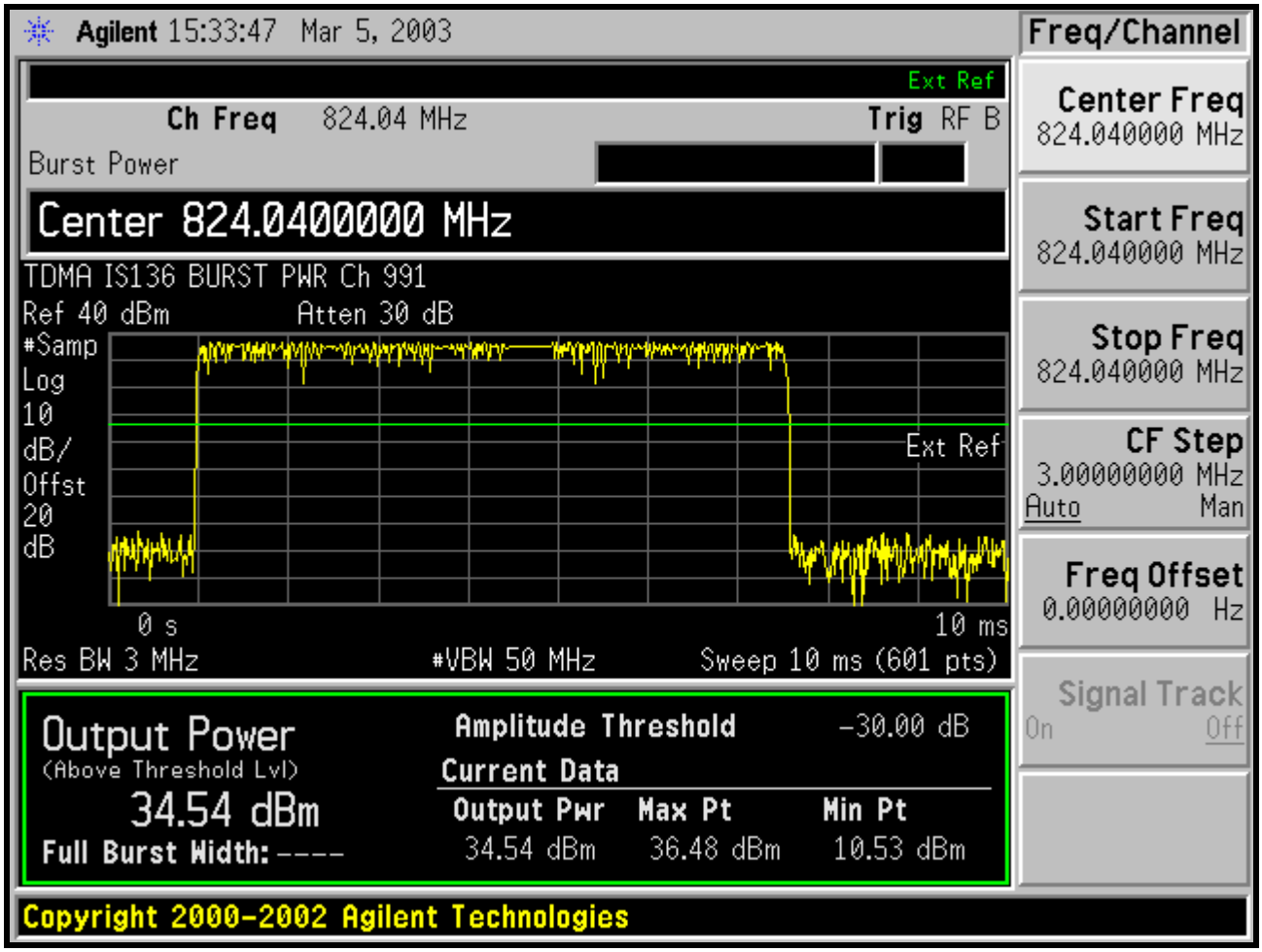
PLOT 4-8: GSM BURST POWER (836.6 MHZ)



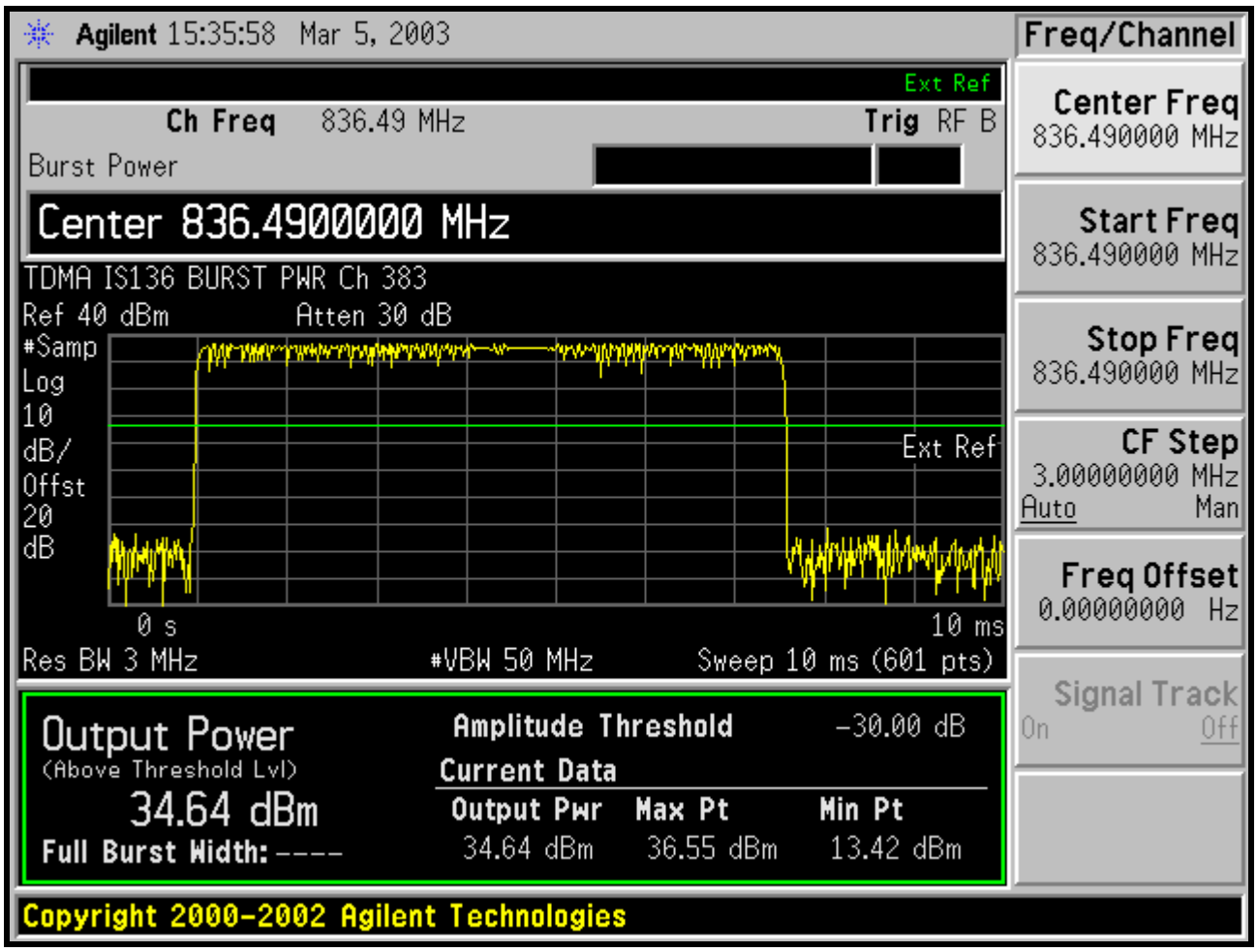
PLOT 4-9: GSM BURST POWER (848.8 MHZ)



PLOT 4-10: TDMA BURST POWER (824.0 MHZ)



PLOT 4-11: TDMA BURST POWER (836.5 MHZ)



PLOT 4-12: TDMA BURST POWER (848.9 MHZ)

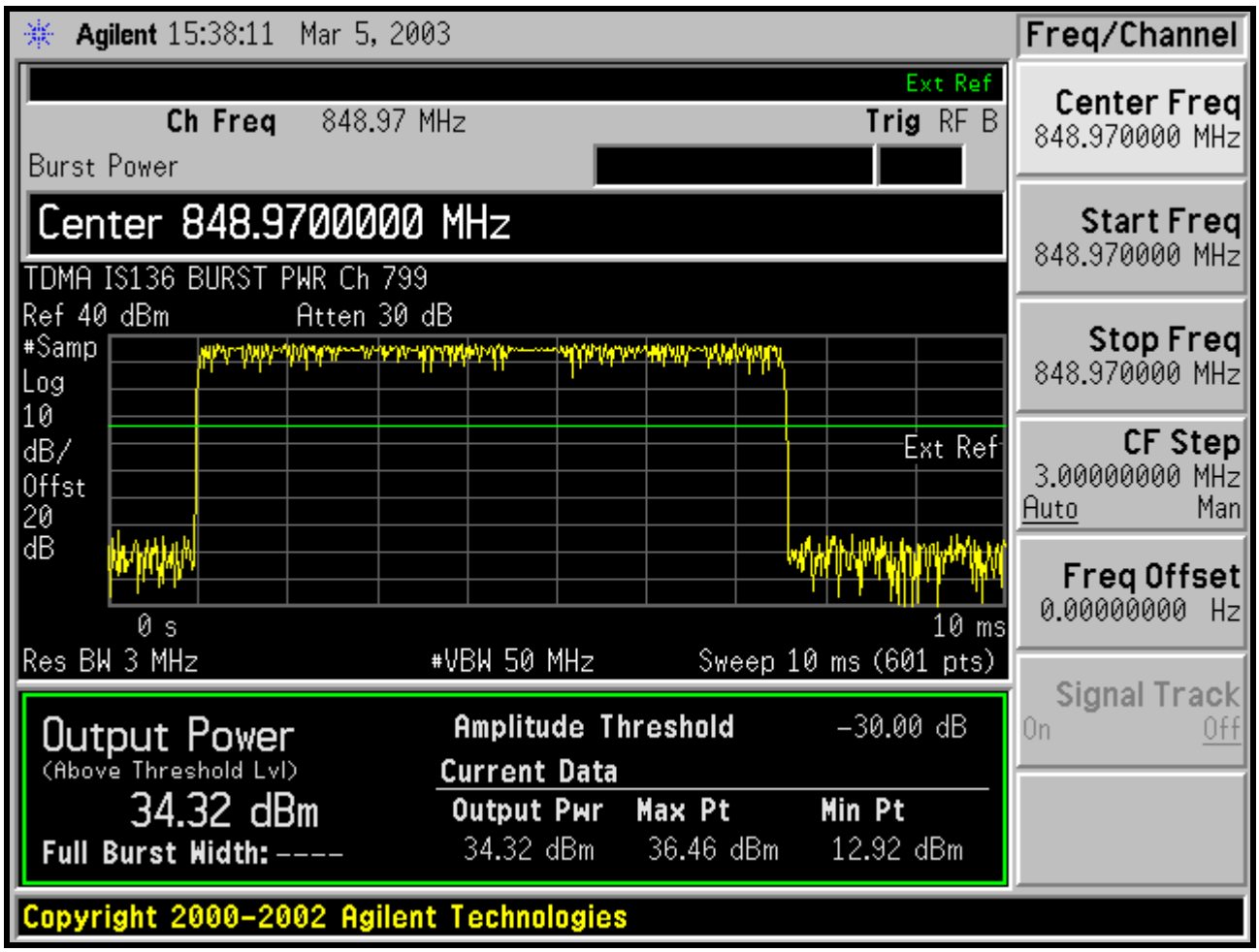


TABLE 4-3: RF POWER OUTPUT: CARRIER OUTPUT POWER (CW)

Frequency (MHz)	Input Power (dBm)	Power (dBm)	RF Power Measured (Watt)
824.2	27.93	34.77	3.0
836.6	29.13	34.77	3.0
848.8	31.53	34.77	3.0

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

Rated Power (W)
3.0

4.3 TEST EQUIPMENT

TABLE 4-5: 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	05/2/04
N/A	Agilent	E4438C	Signal Generator	MY42080012	03/29/04
N/A	Agilent	E4440A	Spectrum Analyzer	US40420959	09/27/03

TEST PERSONNEL:

DANIEL W. BALTZELL — TEST ENGINEER

SIGNATURE

MARCH 5 & APRIL 18, 2003 — DATE 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

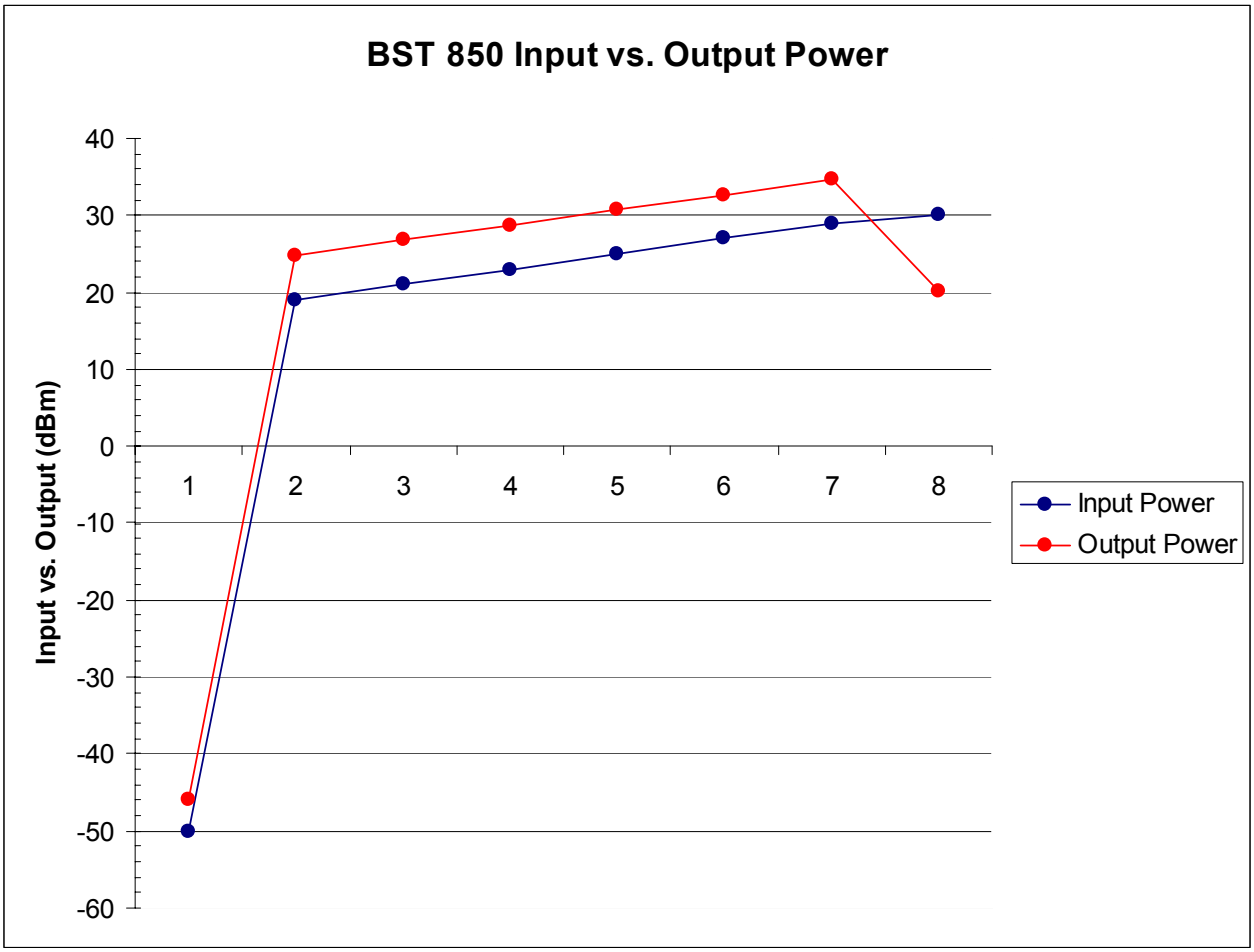
The EUT was set up at the middle channel frequency 850 MHz to receive input power from a signal generator while the output was connected to a power meter. The input power (CW) from the signal generator was increased while observing the output power. The maximum power necessary to cause the EUT to saturate 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	-46.0
19	24.7
21	26.8
23	28.6
25	30.8
27	32.7
29	34.7
30	20.1

PLOT 5-1: CONDUCTED POWER INPUT VS OUTPUT POWER



Measurement accuracy is +/- .5 dB

TEST PERSONNEL:

DANIEL BALTZELL
TEST ENGINEER

SIGNATURE

APRIL 21, 2003
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

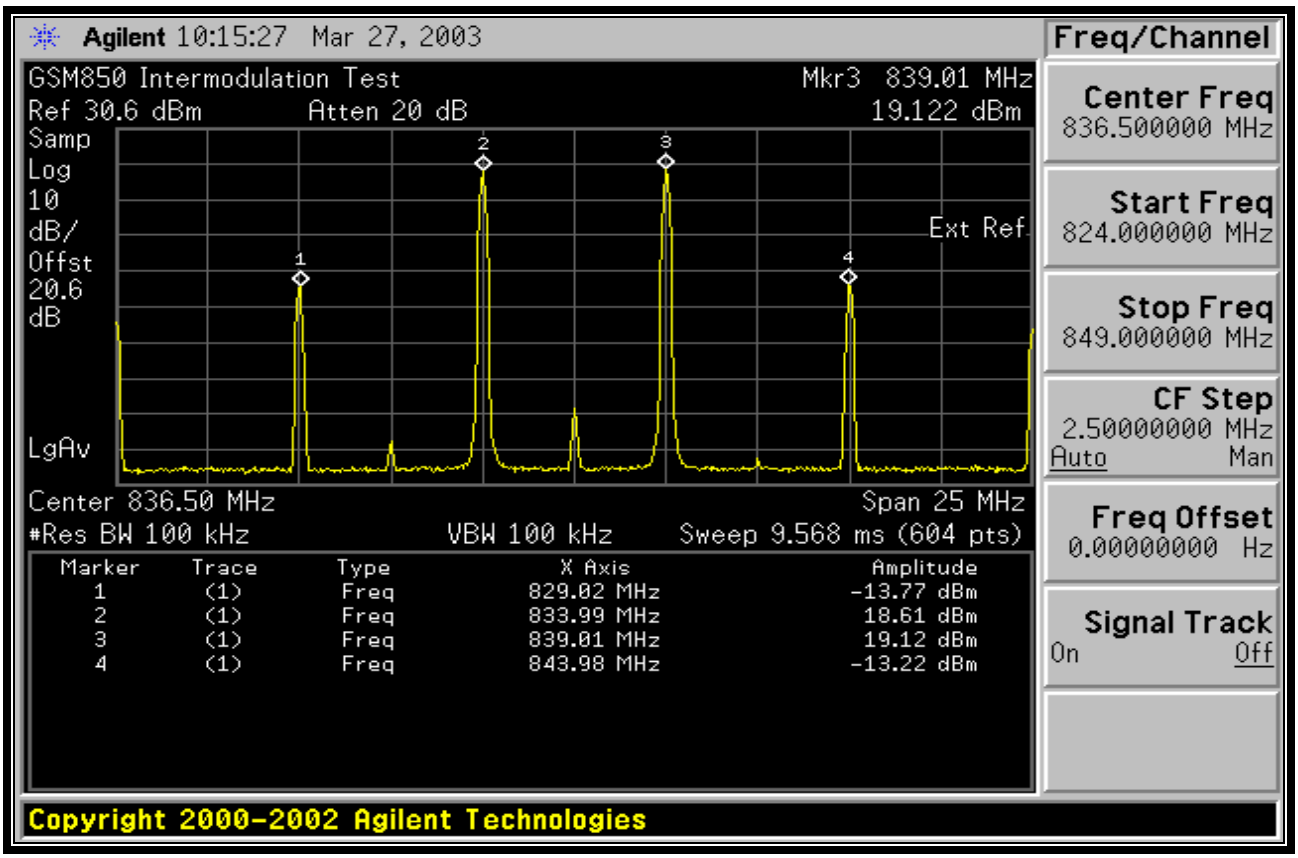


TABLE 6-1: INTERMODULATION PRODUCTS

Frequency (MHz)	Signal Generator Level (Input) (dBm)	Amplitude (dBm)	Limit 43+10LogP (-13 dBm)	Margin	Comments
829.02	11.5	-13.77	-13.0	-0.77	P_{03}
833.99	11.5	18.61			P_{01}
839.01	11.5	19.12			P_{02}
843.98	11.5	-13.22	-13.0	-0.22	P_{04}

Mean output power = P_{01} **+ 3 dB**
= 18.65+ 3
= 21.65 = 0.2 W < 3W

TEST PERSONNEL:

DANIEL W. BALTZELL
Test Engineer

Signature

MARCH 27 & MAY 7, 2003
Dates Of Test

7 FCC RULES AND REGULATIONS PART 2.1046 (A); RF POWER OUTPUT: RADIATED ERP PER PART 22.913

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.

The worst-case, maximum radiated emission was recorded and used as reference for the measurement. The EUT was then replaced with a ½ wave dipole antenna and polarized in accordance with the EUT's antenna polarization. The ½ wave dipole antenna was connected to a RF signal generator with a coaxial cable. The search antenna height, and search antenna polarity was 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 used relative to an ideal ½ wave dipole antenna. The signal generator corrected level is the ERP level.

7.2 TEST DATA

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

Frequency (MHz)	Signal Generator (dBm)	Cable Loss* (dB)	TX Antenna Gain (dBd)	Corrected Signal Generator (dBm)	ERP (W)
824.2	35.8	0.4	-1.3	34.1	2.6
836.6	32.9	0.3	-1.2	31.4	1.4
848.8	28.1	0.4	-1.2	26.5	0.5

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

Frequency (MHz)	Signal Generator (dBm)	Cable Loss* (dB)	TX Antenna Gain (dBd)	Corrected Signal Generator (dBm)	ERP (W)
824.2	35.0	0.4	-1.3	33.3	2.1
836.6	35.8	0.3	-1.2	34.3	2.7
848.8	32.0	0.4	-1.2	30.4	1.1

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

TEST PERSONNEL:

DANIEL BALTZELL — TEST ENGINEER | SIGNATURE | APRIL 21, 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 (20 Hz – 2 GHz)	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 – 1000 MHz)	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

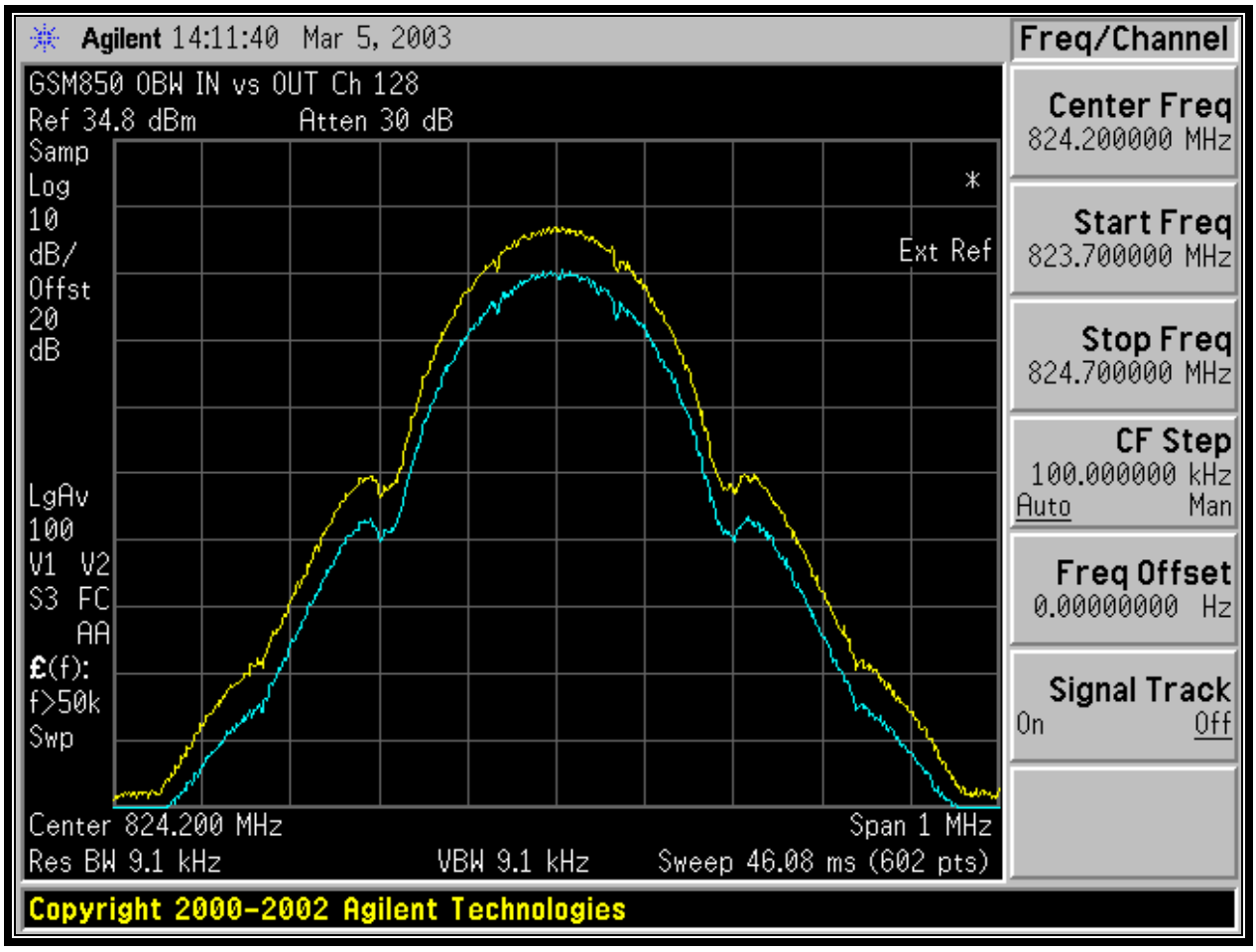
Occupied Bandwidth - Compliance with the Emission Masks

8.1 TEST PROCEDURE

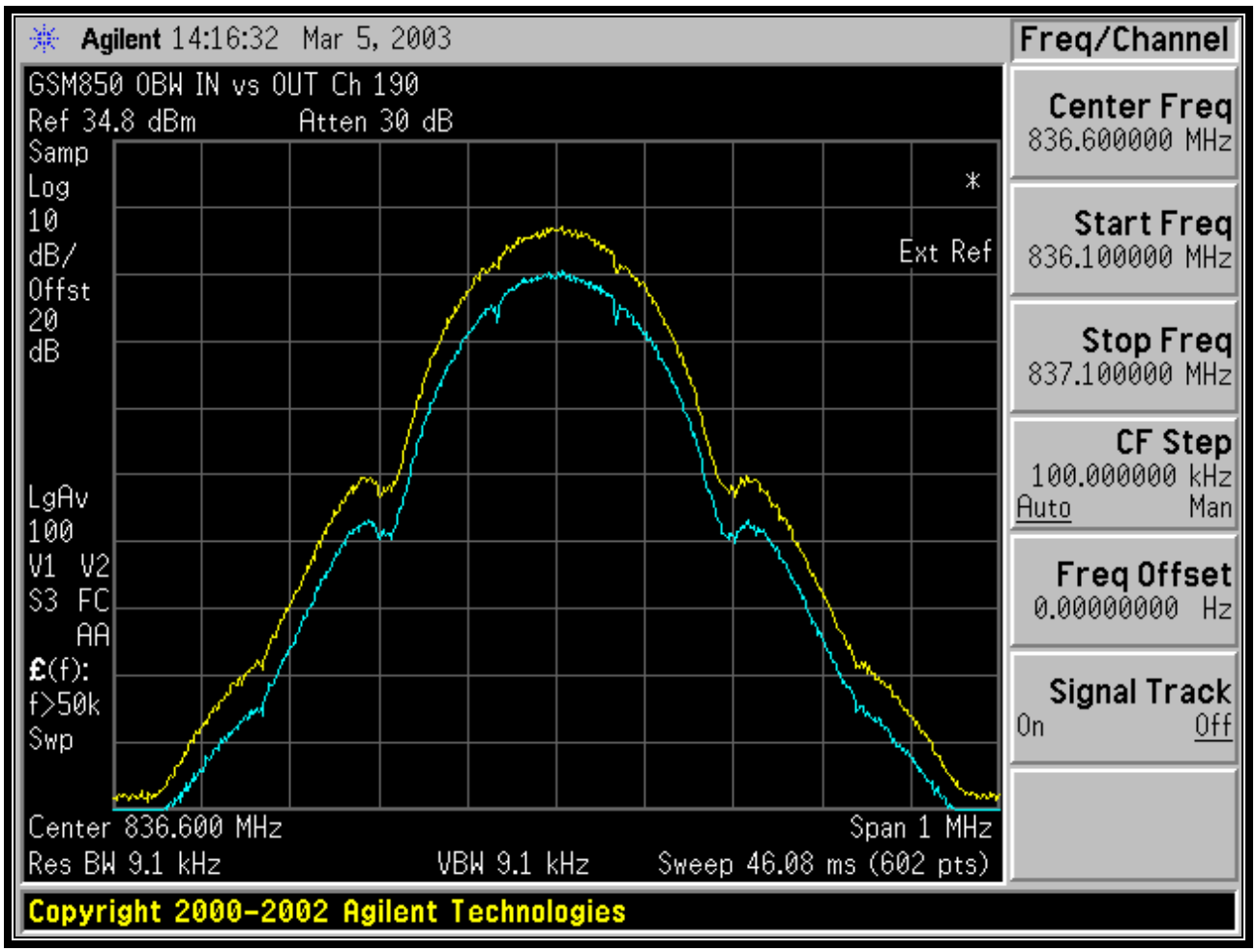
TIA/EIA/IS-98-A; Peak measurements used.

8.2 TEST DATA

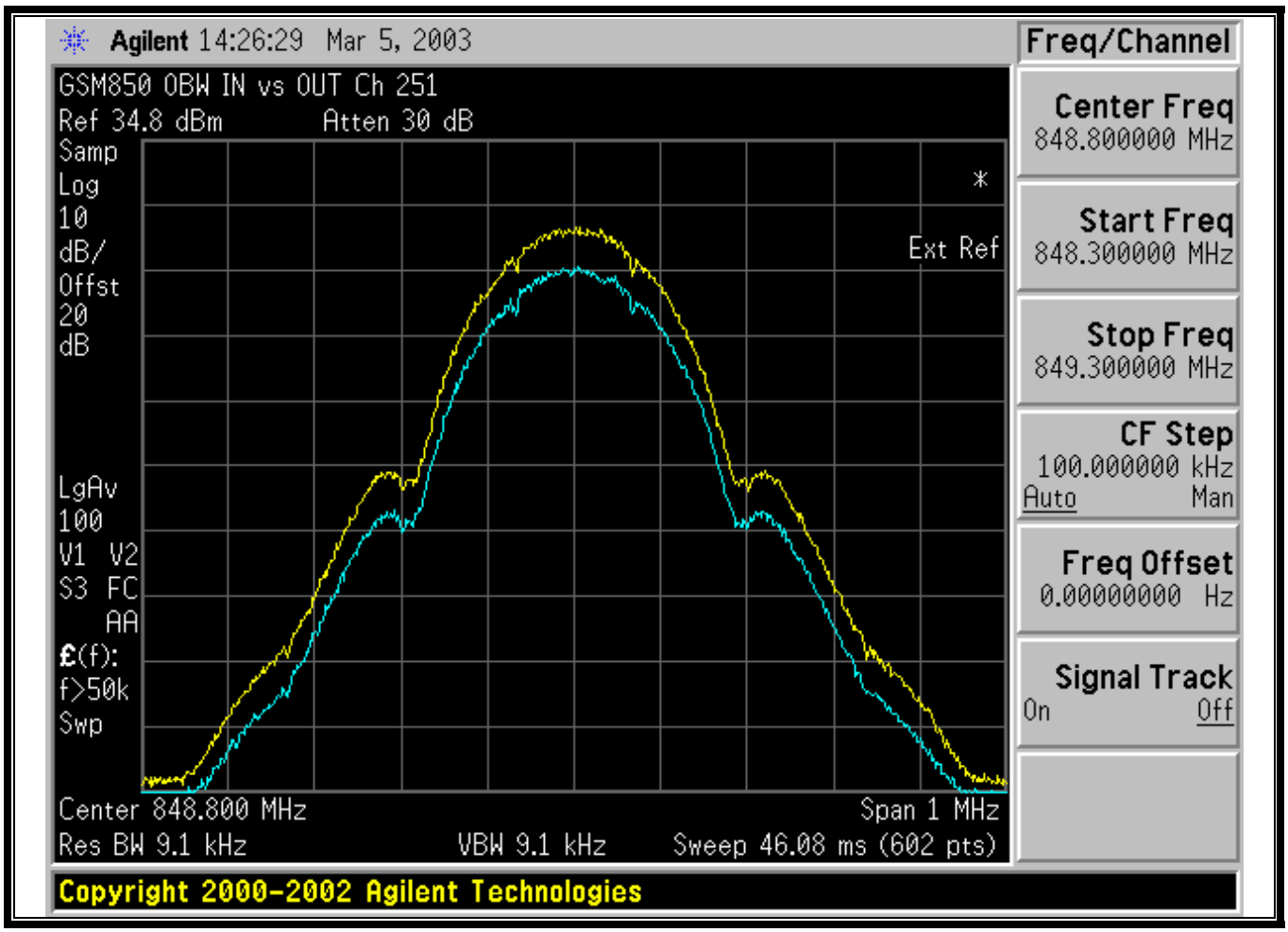
PLOT 8-1: GSM IN VS. OUT; (824.2 MHZ)



PLOT 8-2: GSM/EDGE; IN VS. OUT (836.6 MHZ)

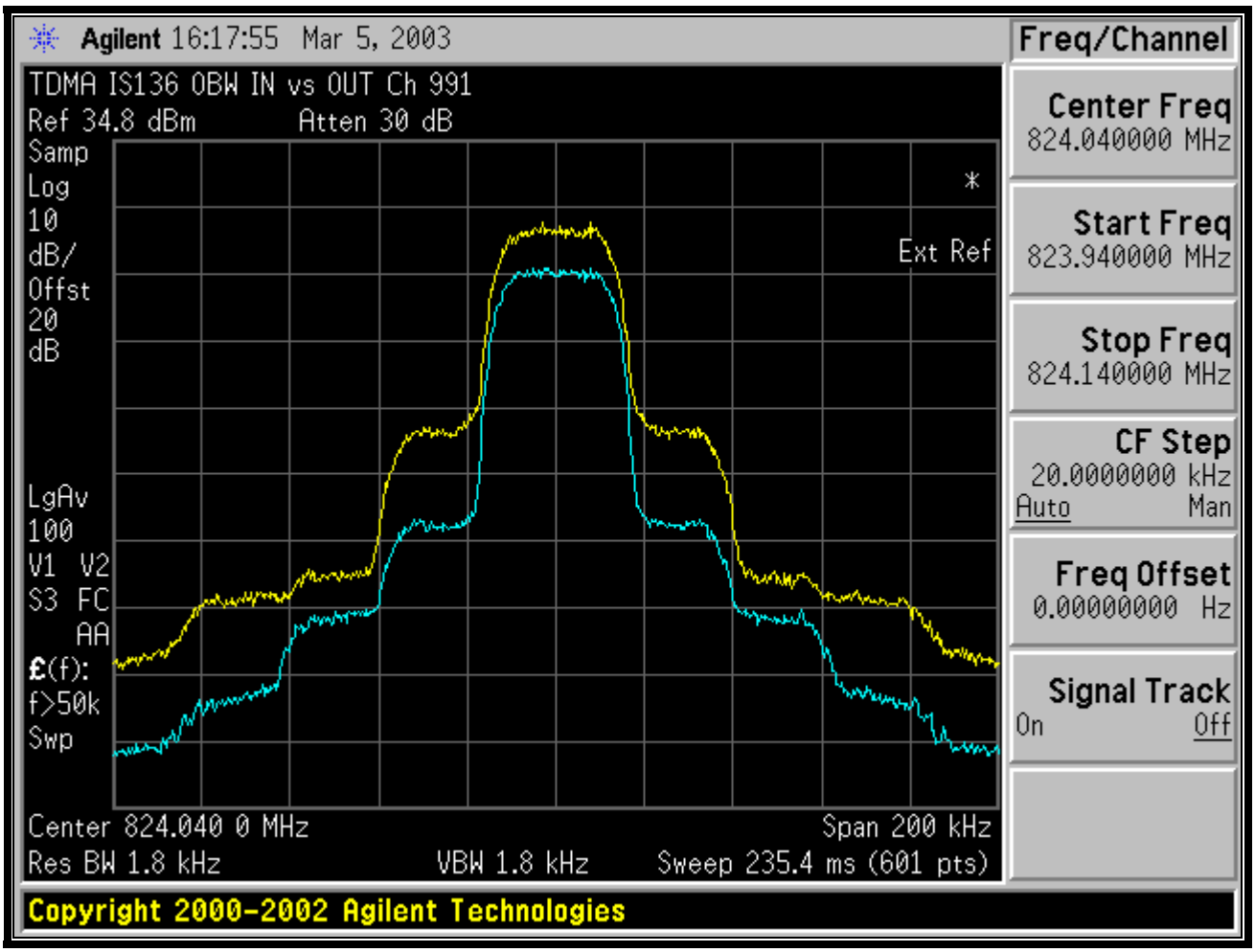


PLOT 8-3: GSM/EDGE; IN VS. OUT (848.8 MHZ)

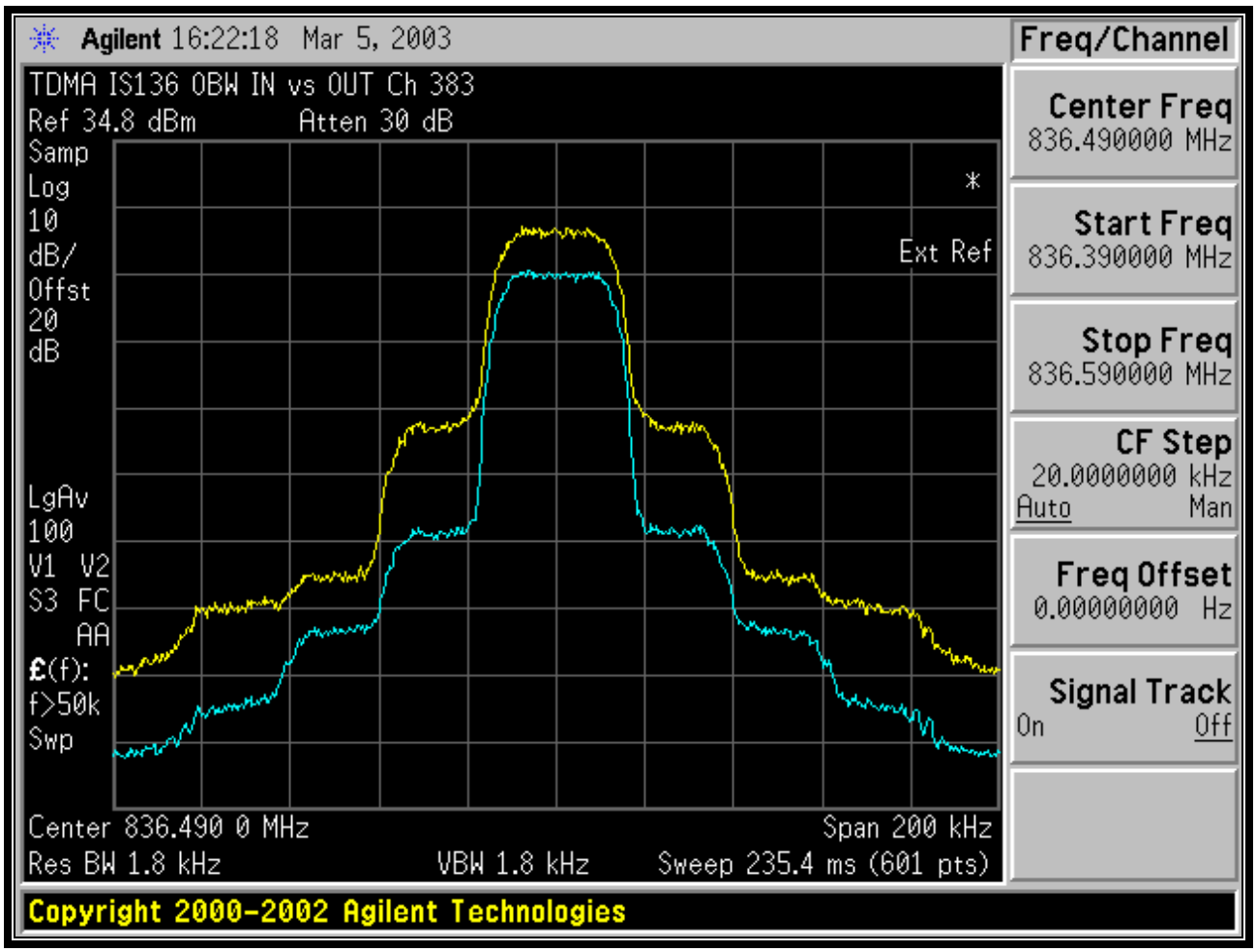


Output Level	21.9 dBm
Input level	14.9 dBm
Amplification	7.0 dB

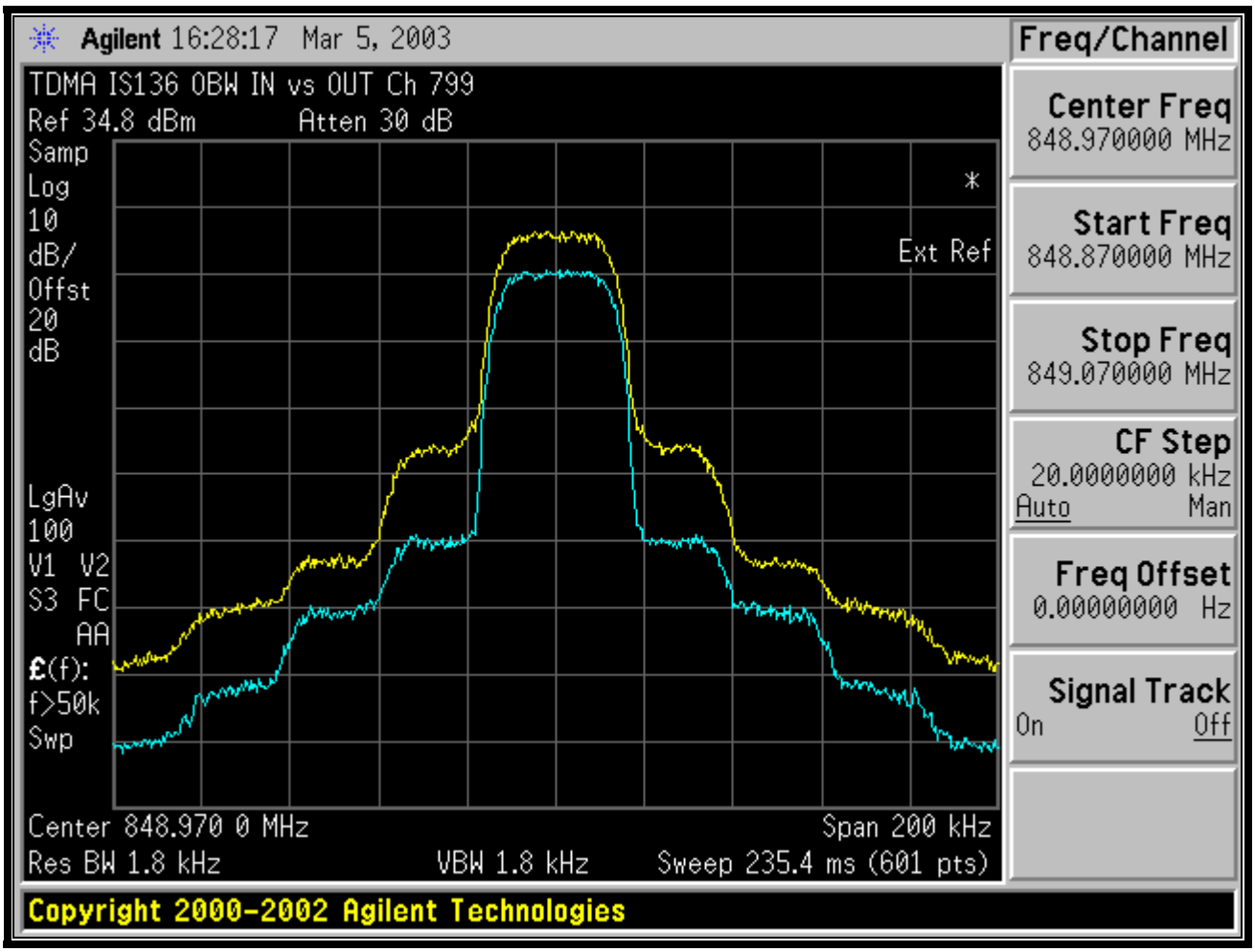
PLOT 8-4: TDMA IN VS. OUT; (824.04 MHZ)



PLOT 8-5: TDMA IN VS. OUT; (836.49MHZ)



PLOT 8-6: TDMA IN VS. OUT; (848.97 MHZ)



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

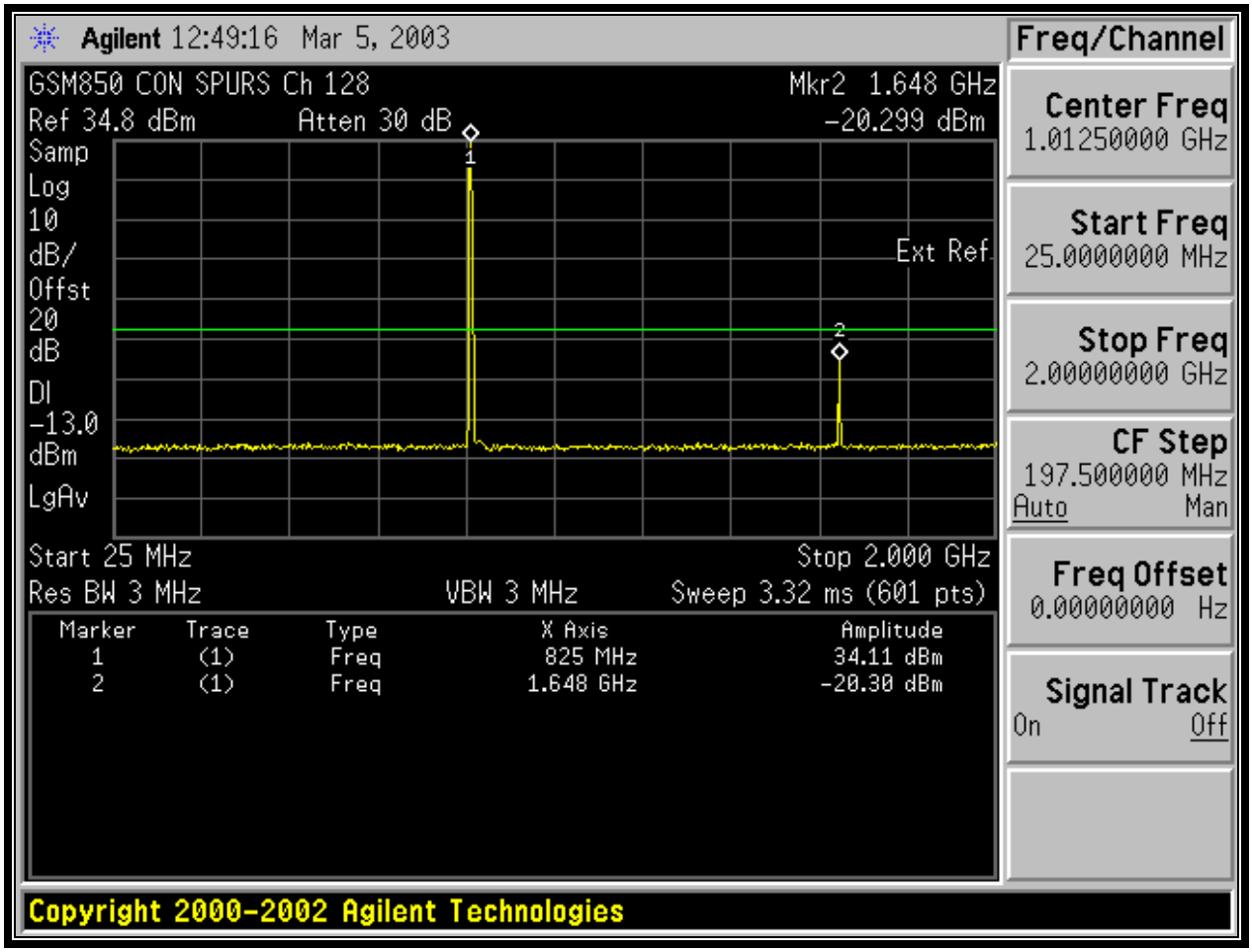
ANSI/TIA/EIA-603-1992, Section 2.2.13

The transmitter is terminated with a 50 Ω load and interfaced with a spectrum analyzer.

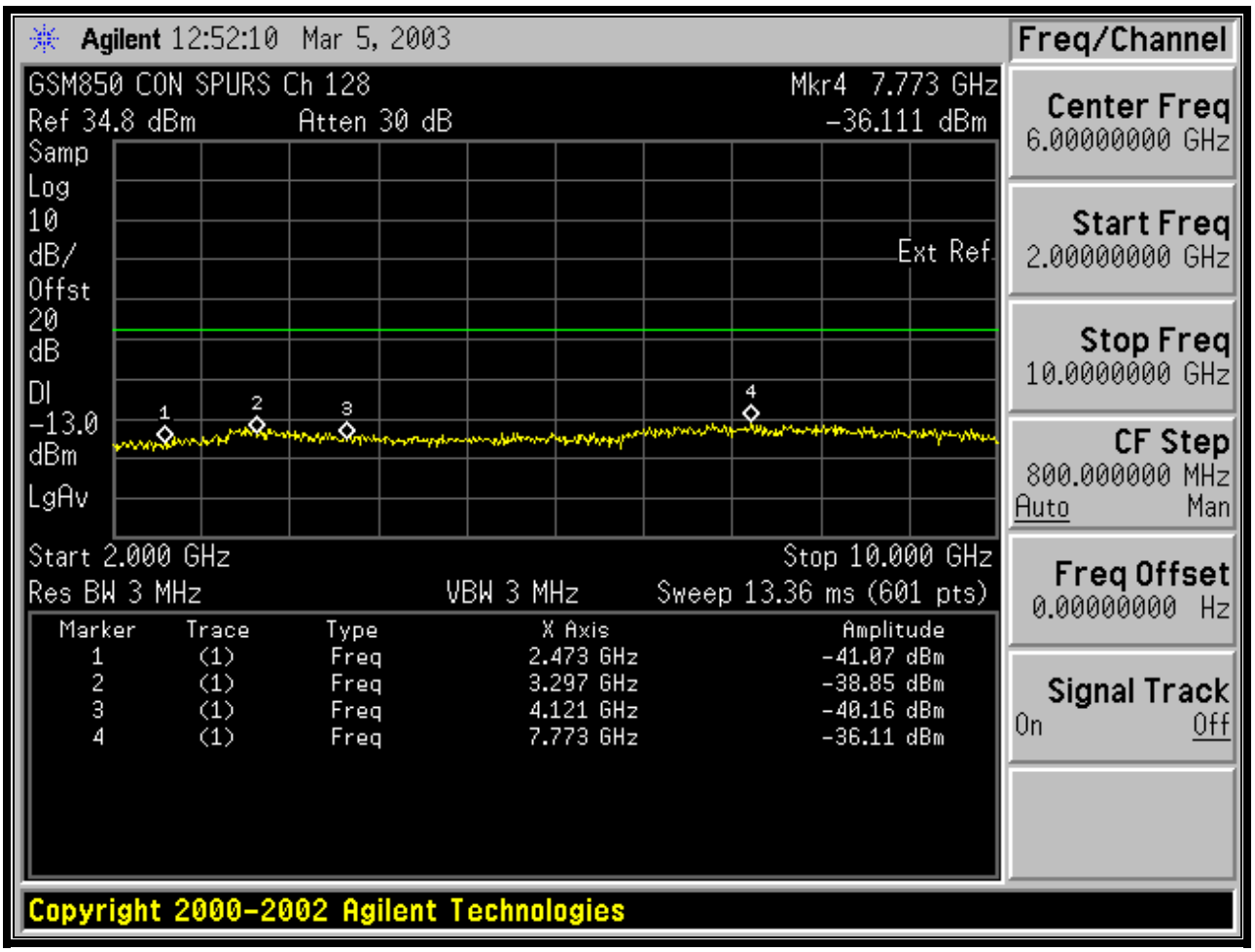
Digital Modulation: Modulated to its maximum extent using a pseudo random data sequence - 9600bps

9.2 TEST DATA

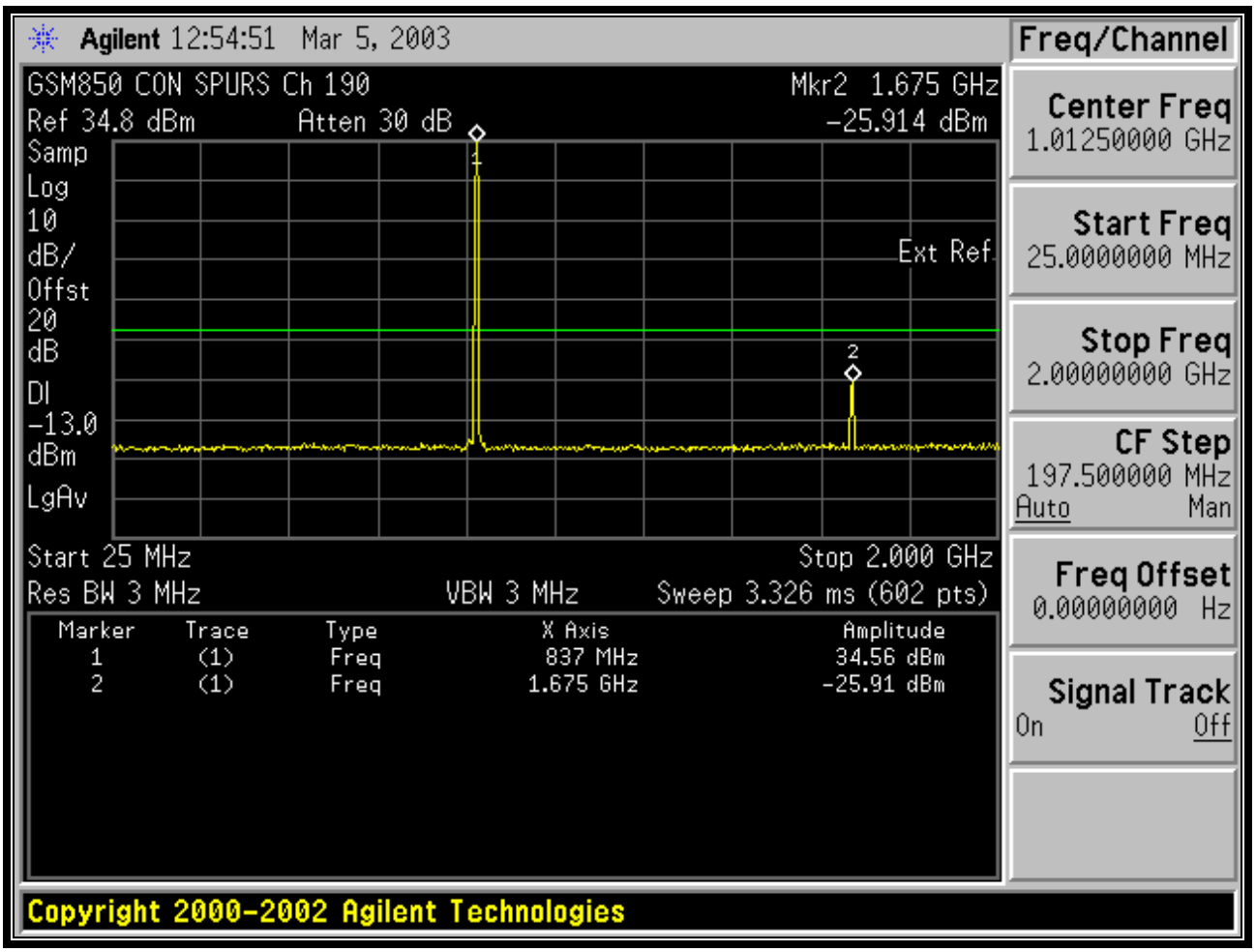
PLOT 9-1: CELLULAR GSM CONDUCTED SPURIOUS LOW CHANNEL



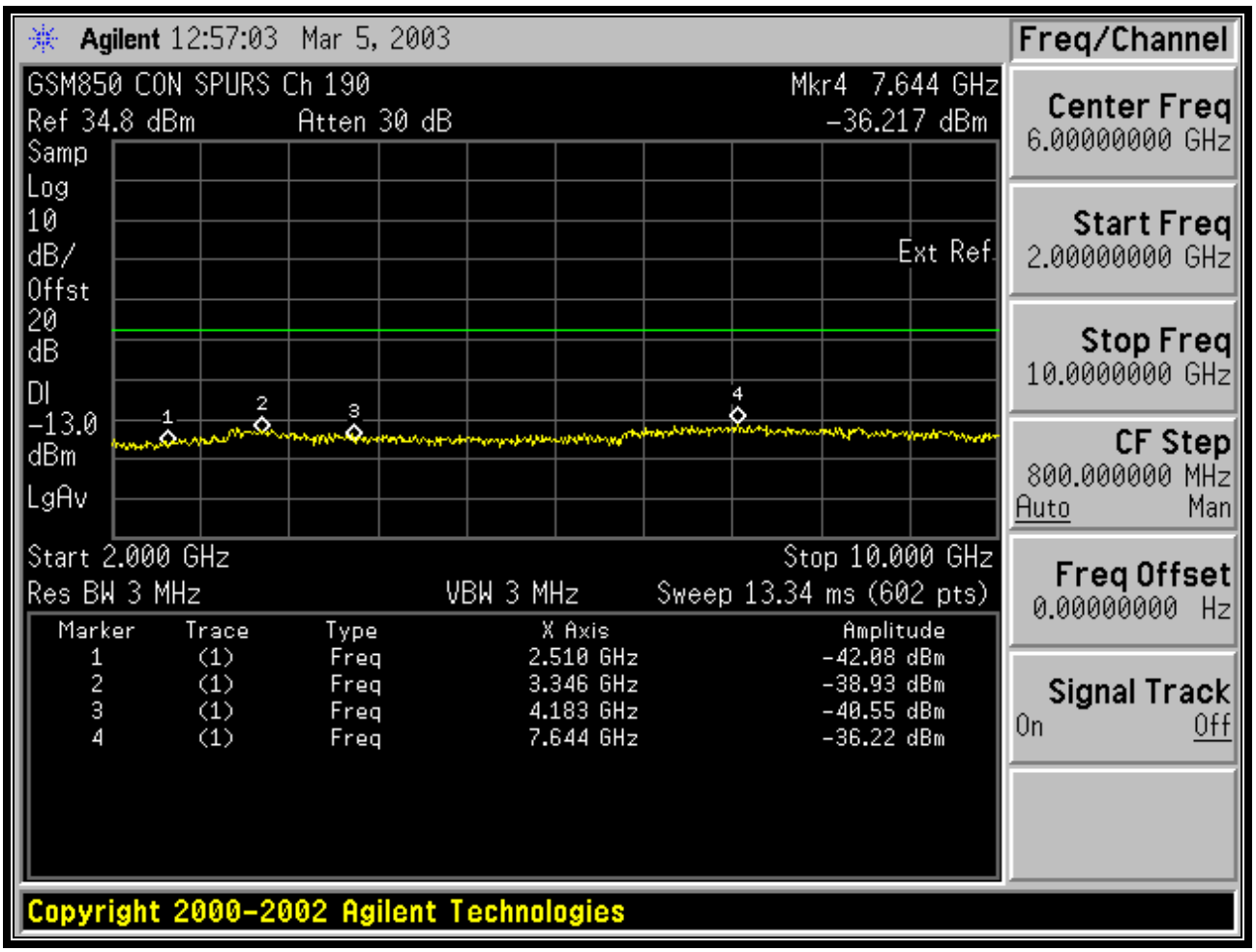
PLOT 9-2: CELLULAR GSM CONDUCTED SPURIOUS LOW CHANNEL



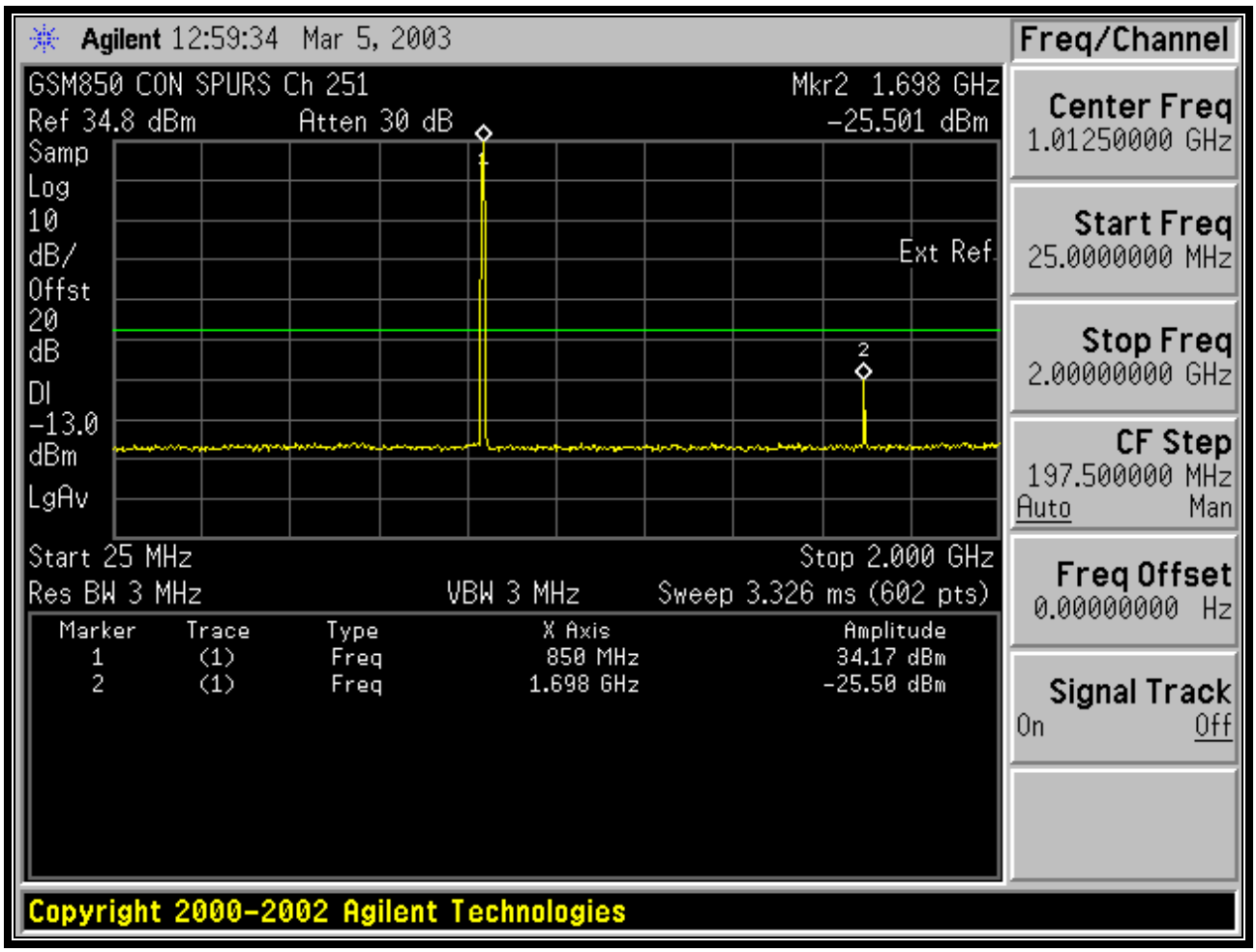
PLOT 9-3: CELLULAR GSM CONDUCTED SPURIOUS MID CHANNEL



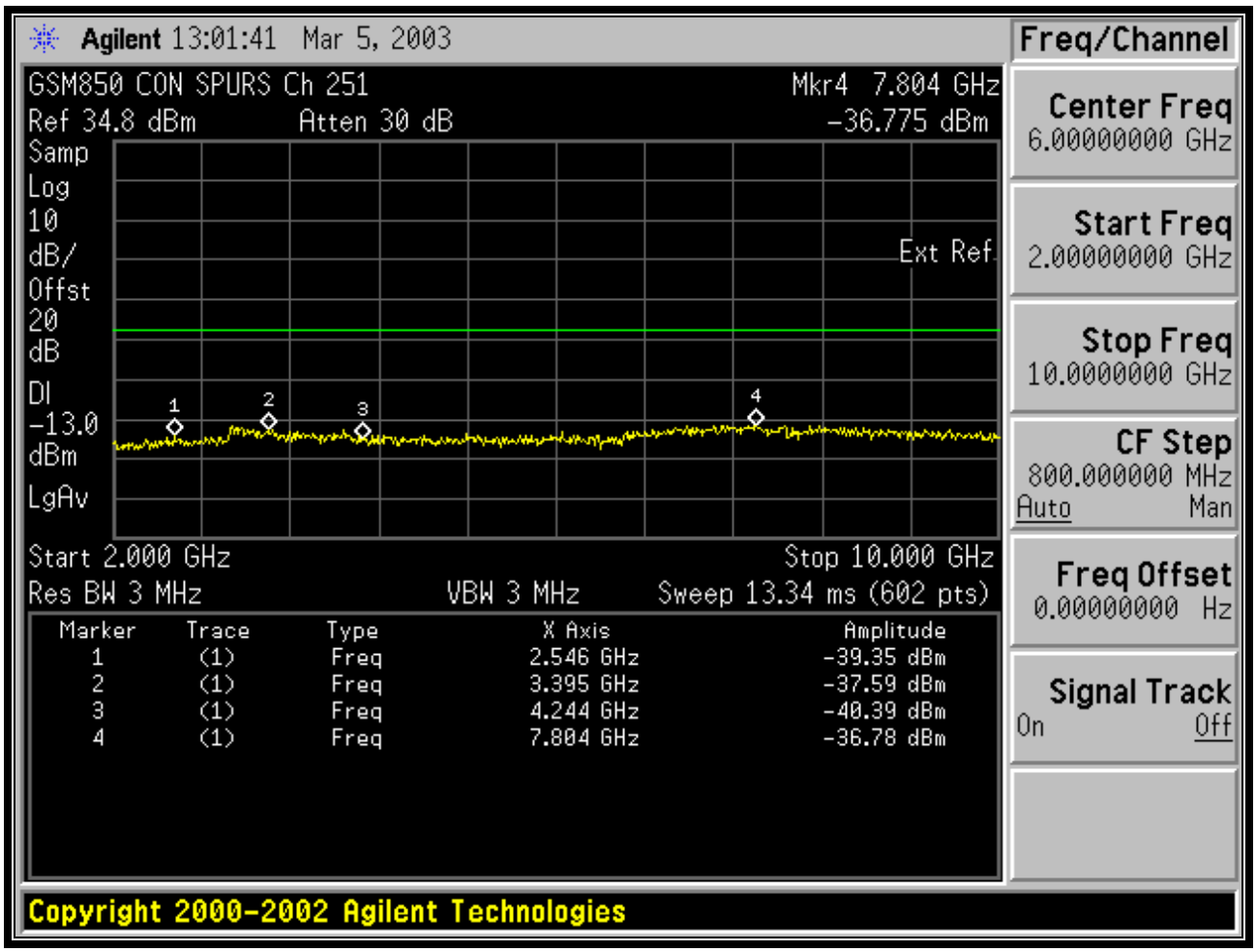
PLOT 9-4: CELLULAR GSM CONDUCTED SPURIOUS MID CHANNEL



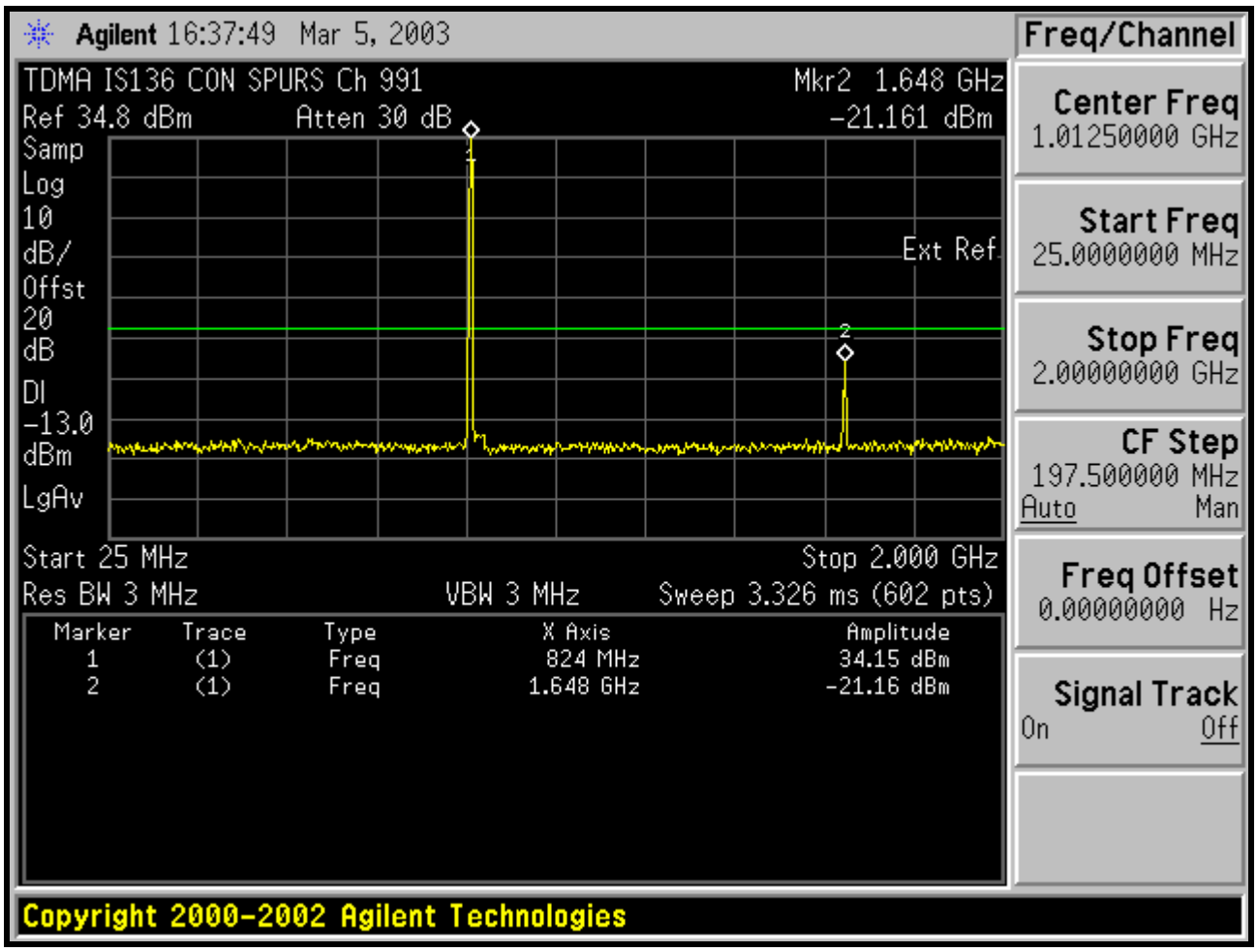
PLOT 9-5: CELLULAR GSM CONDUCTED SPURIOUS UPPER CHANNEL



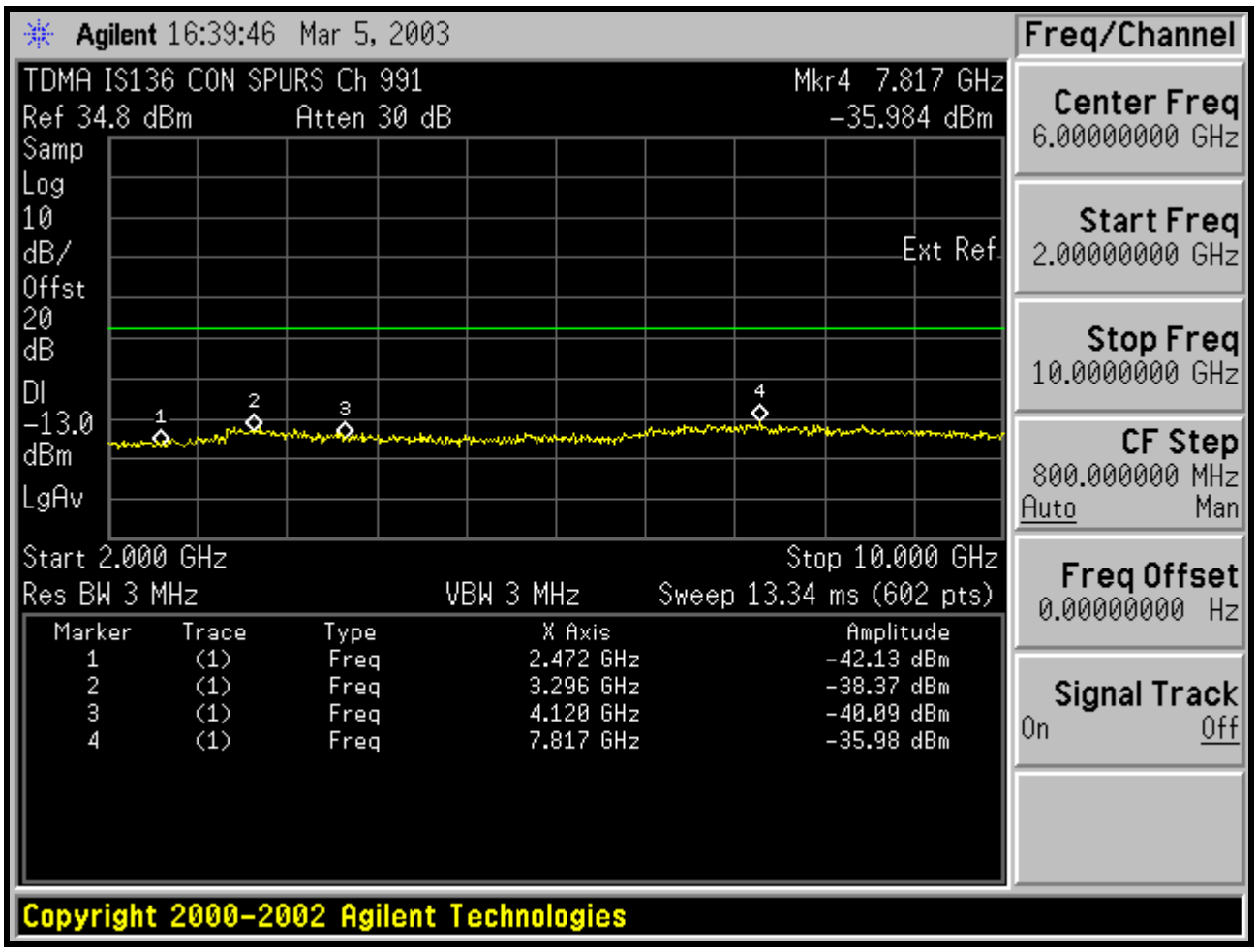
PLOT 9-6: CELLULAR GSM CONDUCTED SPURIOUS UPPER CHANNEL



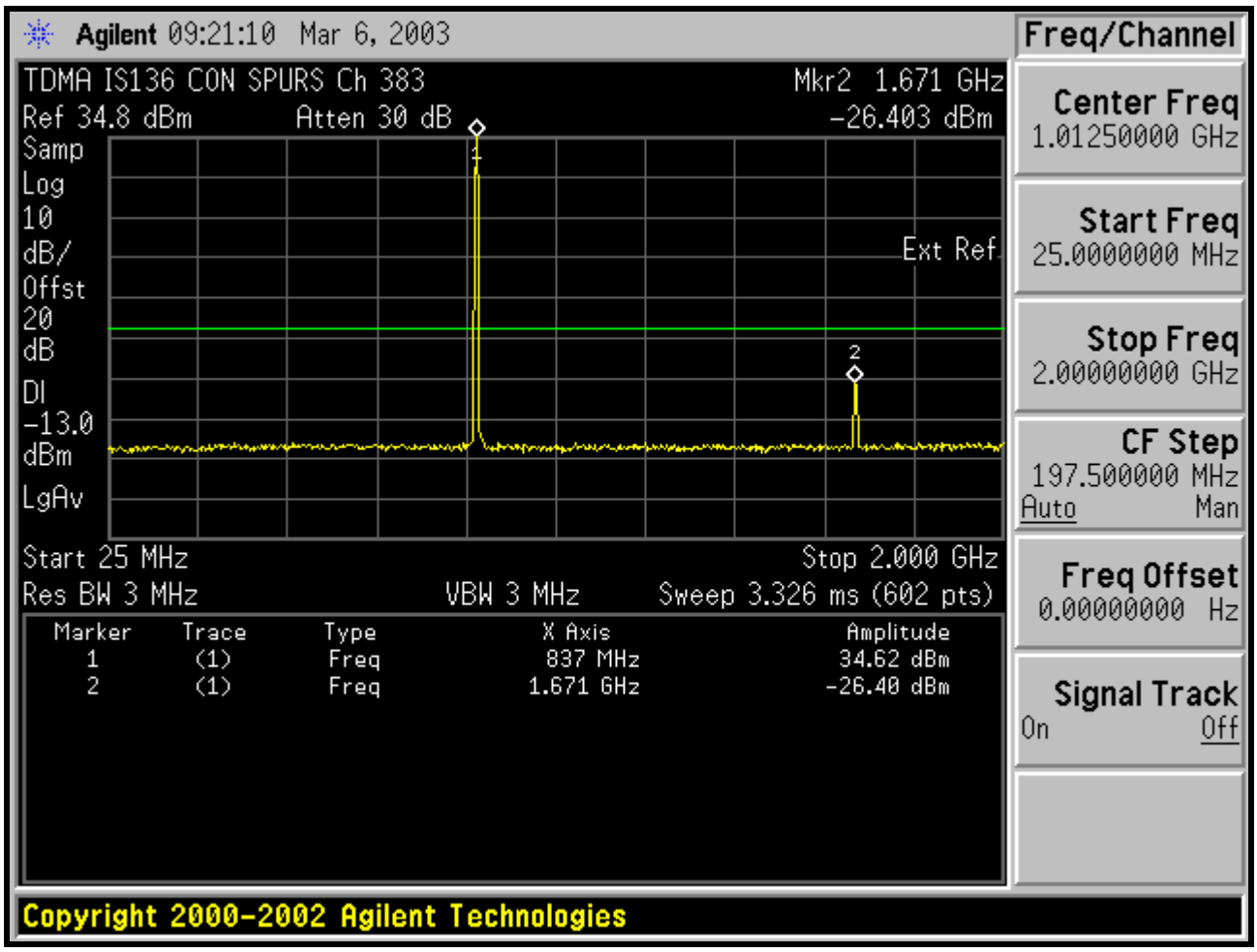
PLOT 9-7: CELLULAR TDMA CONDUCTED SPURIOUS LOWER CHANNEL



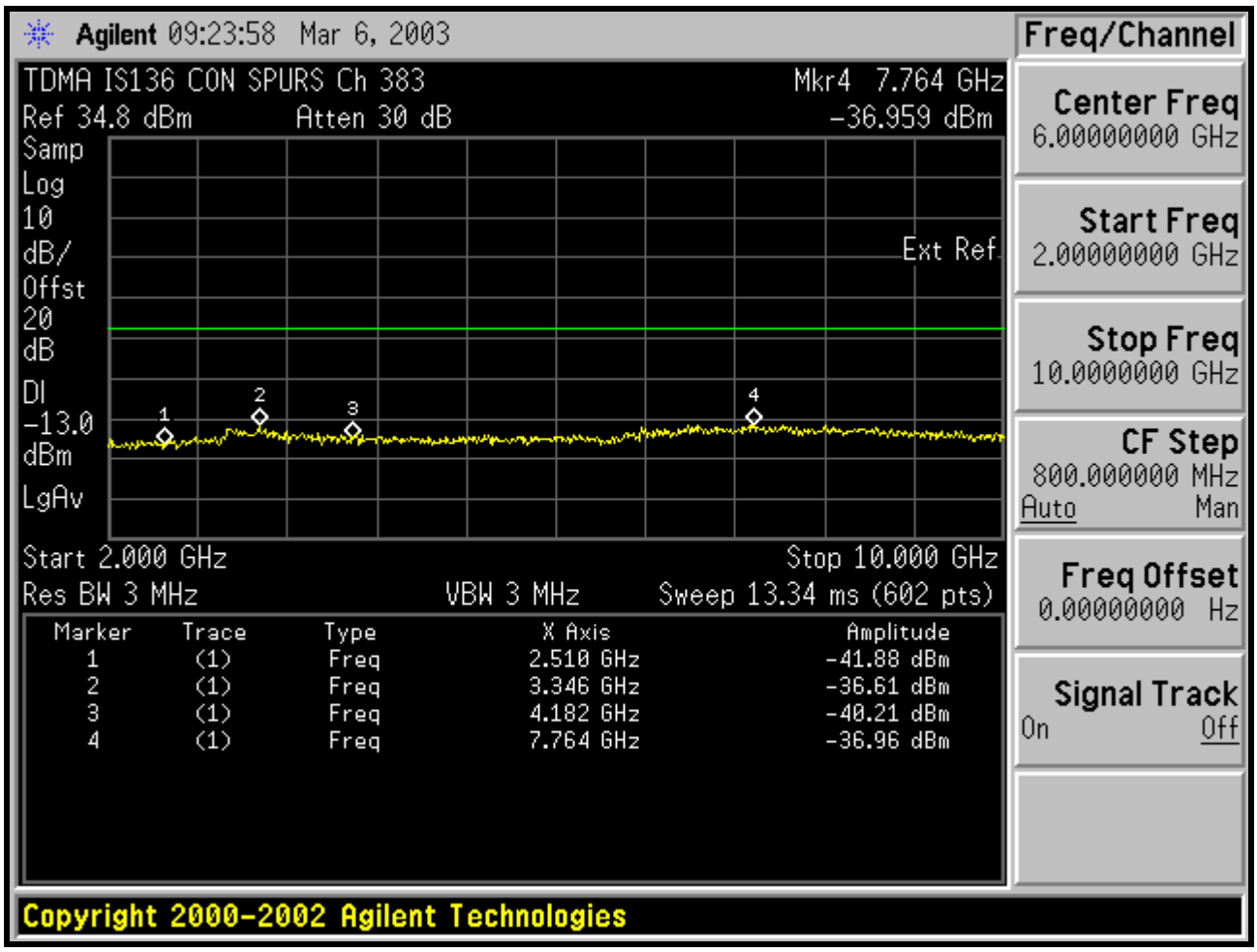
PLOT 9-8: CELLULAR TDMA CONDUCTED SPURIOUS LOWER CHANNEL



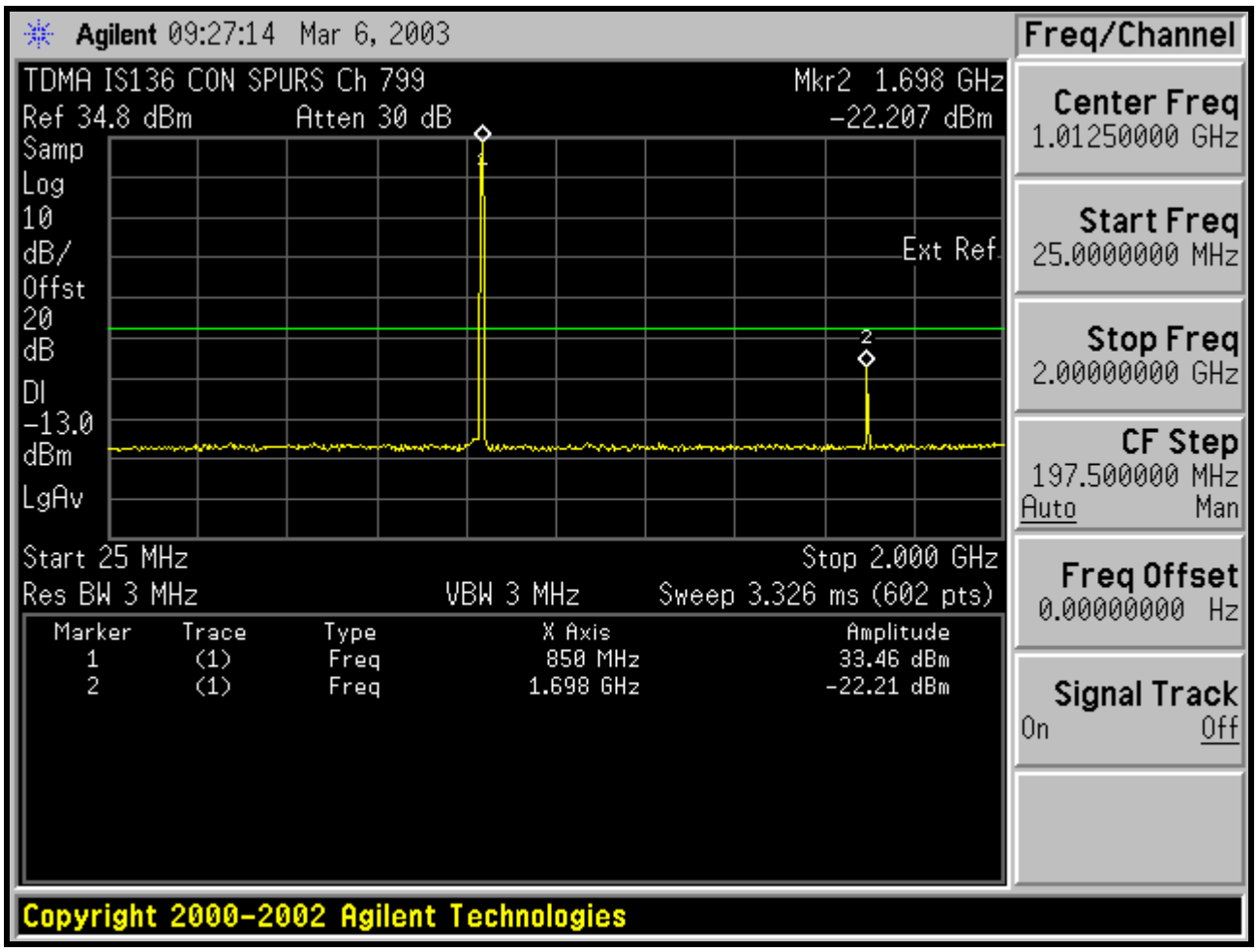
PLOT 9-9: CELLULAR TDMA CONDUCTED SPURIOUS MIDDLE CHANNEL



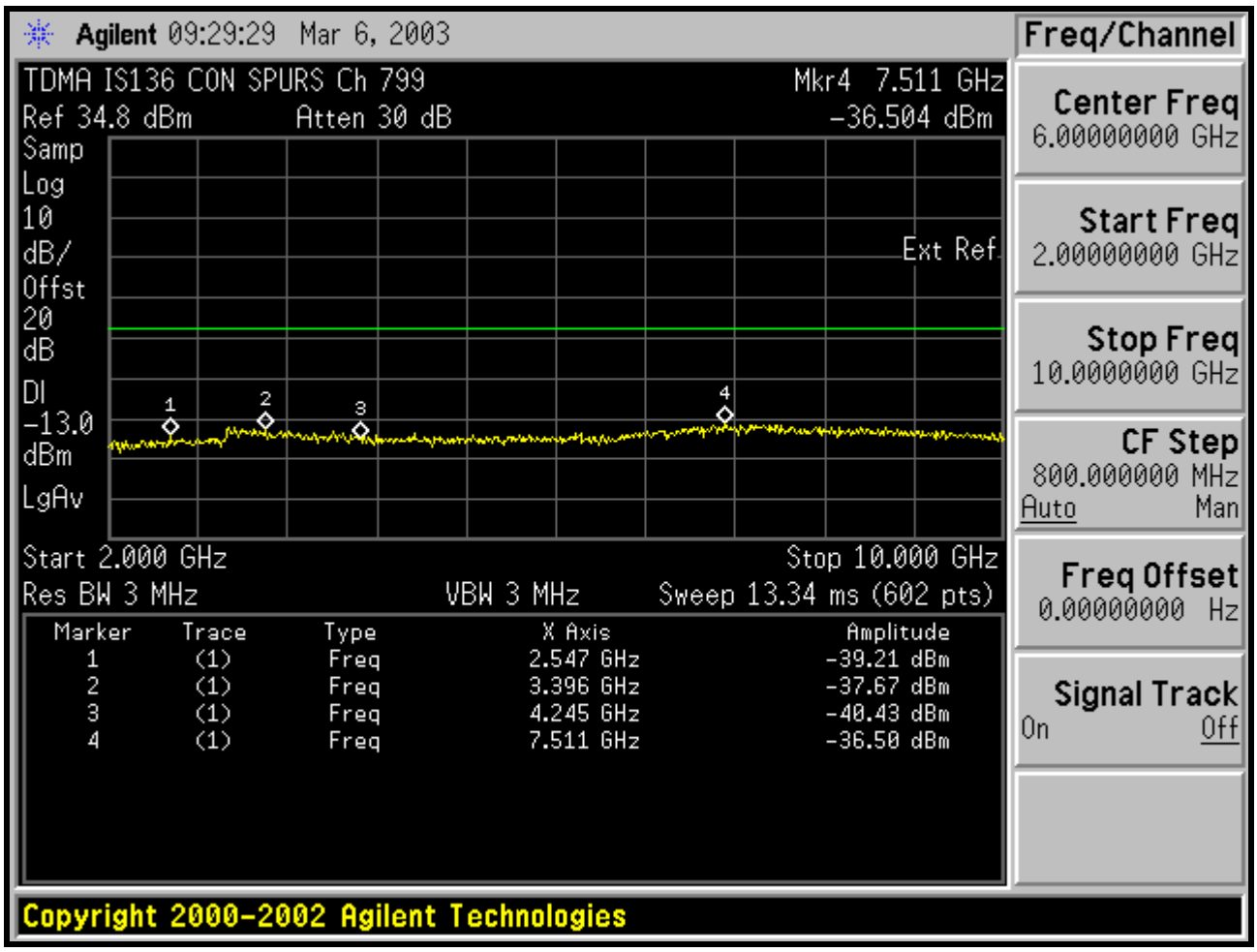
PLOT 9-10: CELLULAR TDMA CONDUCTED SPURIOUS MIDDLE CHANNEL



PLOT 9-11: CELLULAR TDMA CONDUCTED SPURIOUS UPPER CHANNEL



PLOT 9-12: CELLULAR TDMA CONDUCTED SPURIOUS UPPER 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: 824.2, 836.6, and 848.8 MHz. The worse 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 – 824.2 MHZ

(824.2MHz); Conducted power = 3 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin (dB)
1648.40	55.1	47.8	-7.3
2472.60	75.8	47.8	-28.1
3296.80	73.6	47.8	-25.9
4121.00	74.9	47.8	-27.2
7773.00	70.9	47.8	-23.1

TABLE 9-2: CONDUCTED SPURIOUS EMISSIONS MIDDLE FREQUENCY – 836.6 MHZ

(836.6 MHz); Conducted power = 3 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin (dB)
1673.20	60.7	47.8	-12.9
2509.80	76.9	47.8	-29.1
3346.40	73.7	47.8	-25.9
4183.00	75.3	47.8	-27.6
7644.00	71.0	47.8	-23.2

TABLE 9-3: CONDUCTED SPURIOUS EMISSIONS UPPER FREQUENCY – 848.8 MHZ

(849.8MHz); Conducted power = 3 W

Frequency (MHz)	Level (dBc)	Limit (dBc)	Margin (dB)
1697.60	60.3	47.8	-12.5
2546.40	74.1	47.8	-26.4
3395.20	72.4	47.8	-24.6
4244.00	75.2	47.8	-27.4
7804.00	71.6	47.8	-23.8

TEST PERSONNEL:

DANIEL BALTZELL
Test Engineer

Signature

MARCH 5 & APRIL 30, 2002
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 (20 Hz – 2 GHz)	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 and used as a reference for the measurement.

The EUT was then replaced by a ½ wave dipole antenna and polarized in accordance with the EUT's antenna polarization. The ½ wave dipole 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 used relative to an ideal ½ wave dipole antenna. The signal generator corrected level is the spurious radiation emission level.

The transmitter is terminated with a 50 Ω load and interfaced with a spectrum analyzer.

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 – 836.6 MHZ

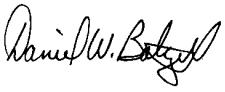
Frequency (MHz)	Signal Generator (dBm)	Cable Loss (dB)	Antenna Gain (dBd)	Corrected Signal Generator (dBc)	Limit (dBc)	Margin (dB)
1673.20	-29.3	0.5	4.7	59.9	47.8	-12.1
2509.80	-30.7	0.6	5.2	60.9	47.8	-13.1
3346.40	-51.8	0.8	6.0	81.4	47.8	-33.6
4183.00	-49.7	0.9	6.3	79.1	47.8	-31.3
5019.60	-45.9	1.0	6.9	74.8	47.8	-27.0
5856.20	-41.8	1.4	6.6	71.4	47.8	-23.6
6692.80	-30.8	1.5	7.8	59.3	47.8	-11.5
7529.40	-32.3	1.4	7.6	60.9	47.8	-13.1
8366.00	-34.1	1.4	8.4	61.9	47.8	-14.1

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 (25 MHz – 2 GHz)	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 - 3200 MHz)	3537A01741	5/2/04
900928	Hewlett Packard	83752A	Synthesized Sweeper (0.01 - 20 GHz)	3610A00866	06/19/04
900889	Hewlett Packard	85685A	RF Preselector for HP 8566B or 8568B (20 Hz -2 GHz)	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 - 1000 MHz)	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 28, 2003 — Date Of Test

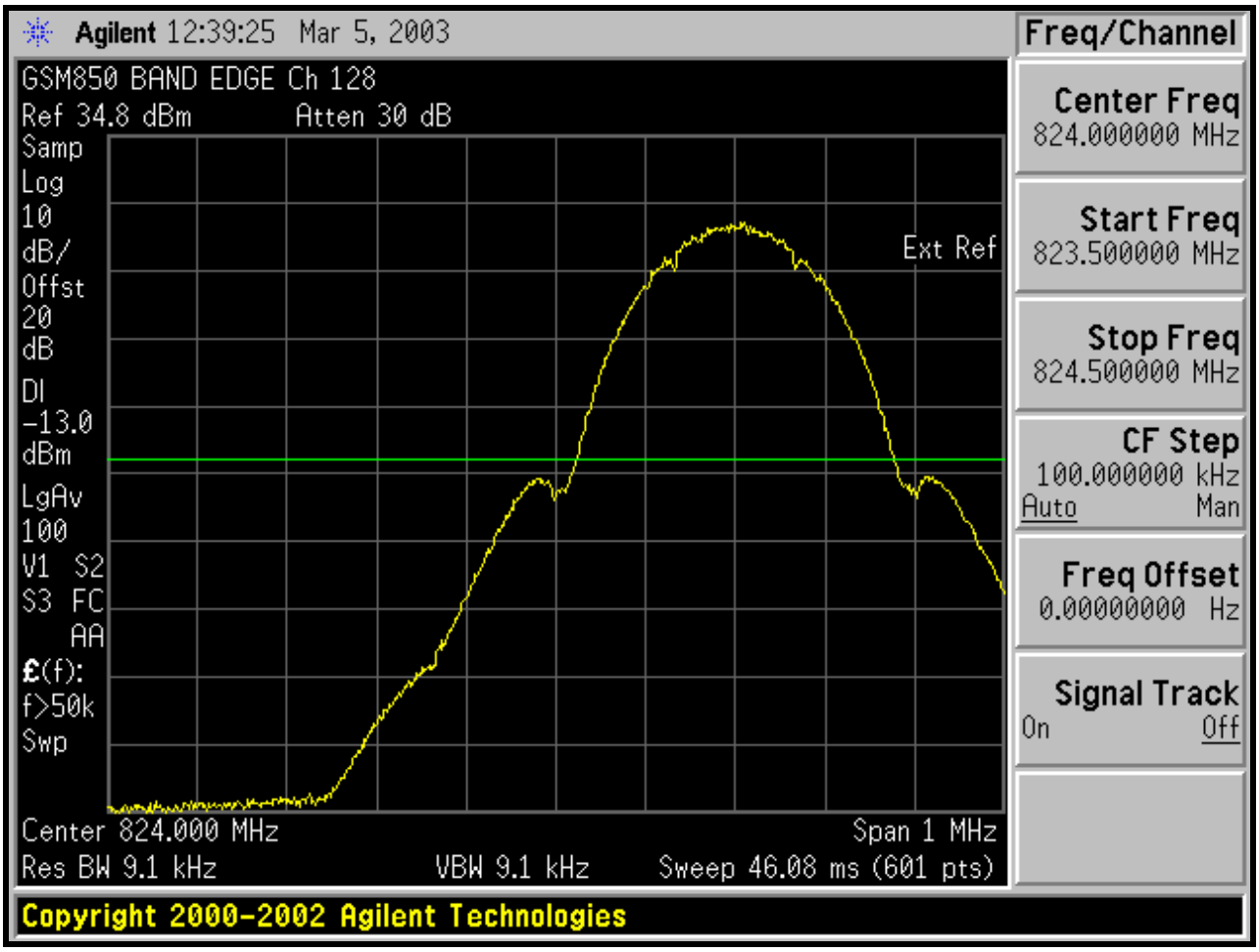
11 TEST PROCEDURE FCC RULES AND REGULATIONS PART 22.901(D): BAND EDGE COMPLIANCE

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

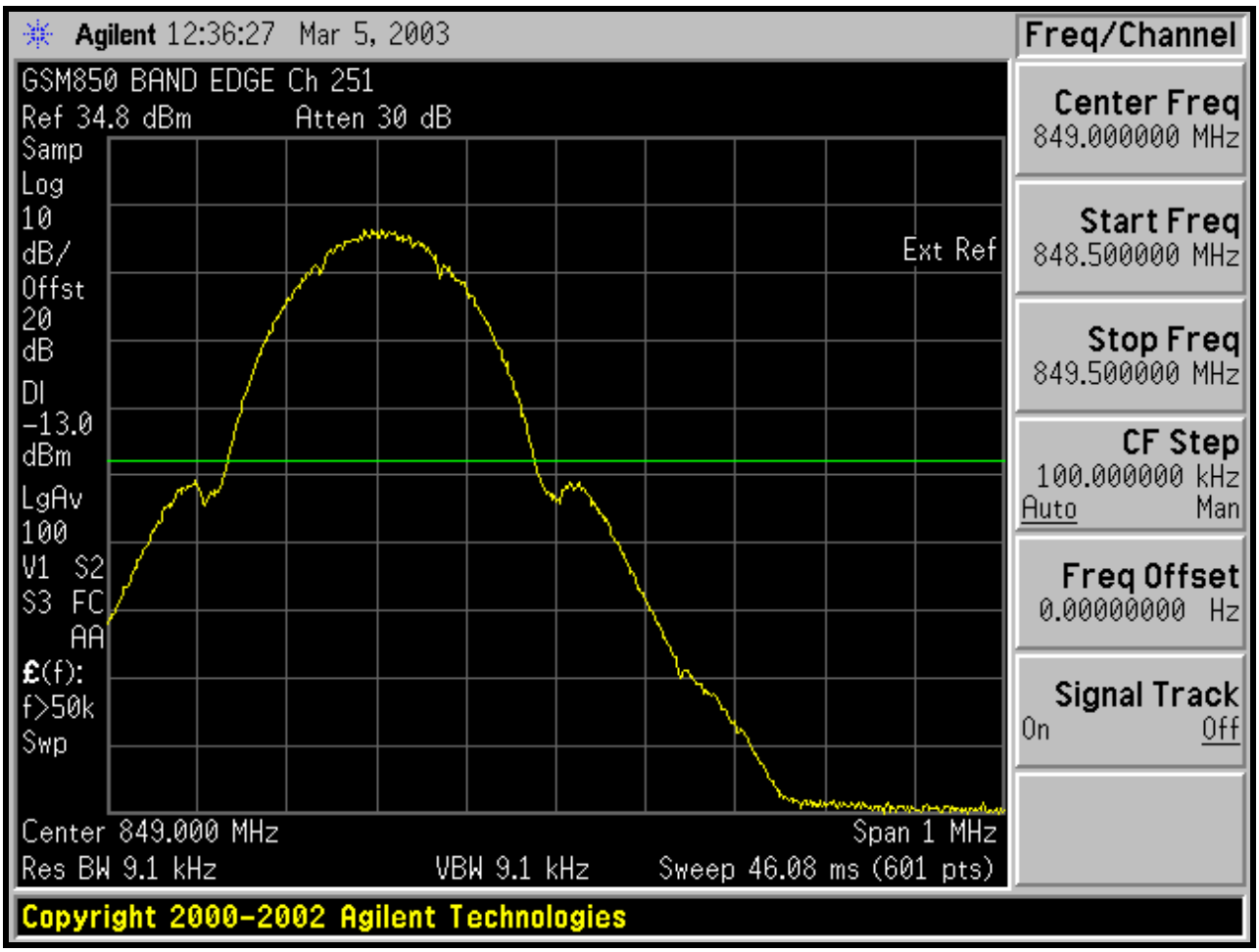
11.1 TEST DATA

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.

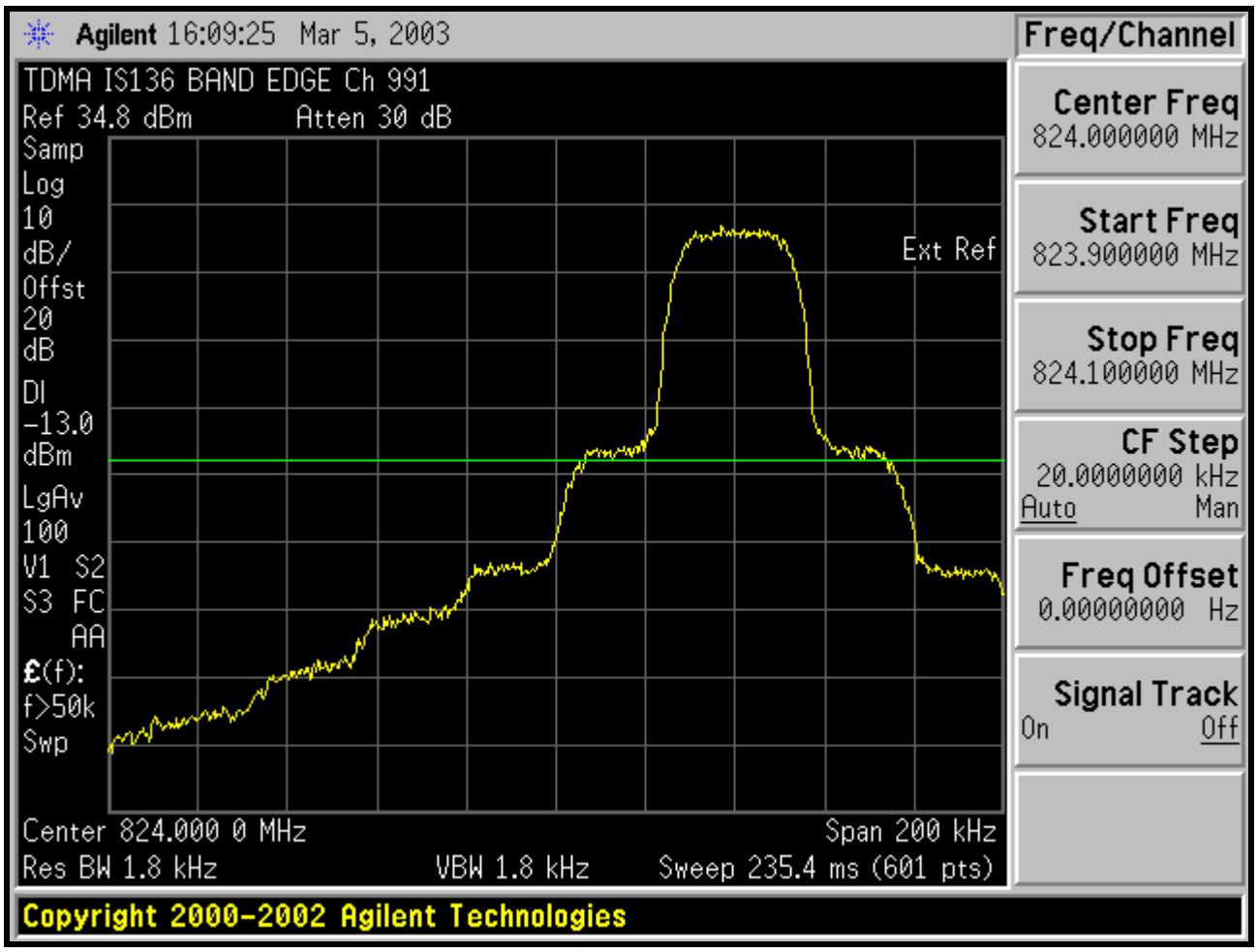
PLOT 11-1 LOWER BAND EDGE A1 824 MHZ GSM



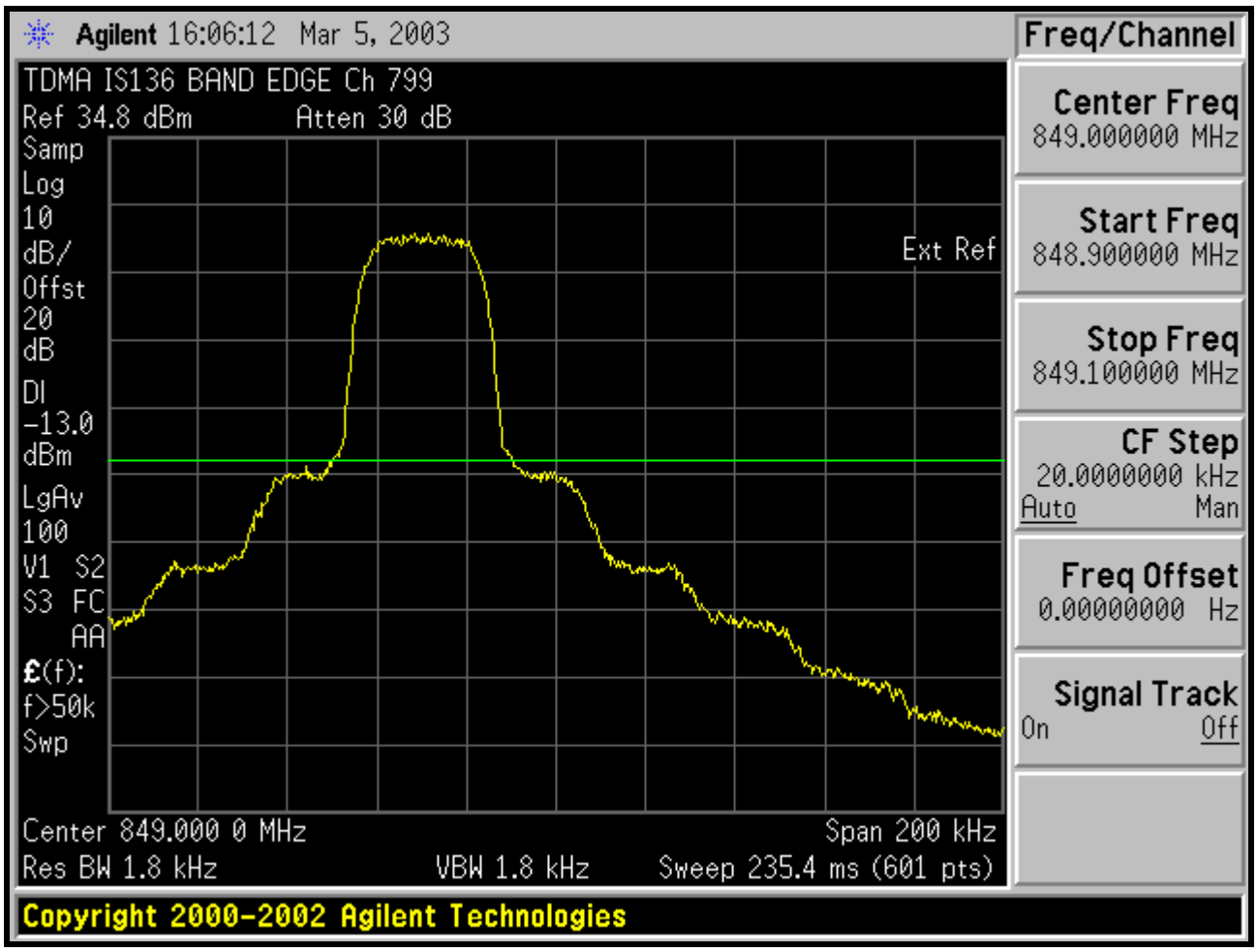
PLOT 11-2: UPPER BAND EDGE D2 849 MHZ GSM



PLOT 11-3 LOWER BAND EDGE A1 824 MHZ TDMA



PLOT 11-4 UPPER BAND EDGE A1 849 MHZ TDMA



TEST PERSONNEL:

DANIEL BALTZELL		MARCH 5 & JUNE 20, 2003
Test Engineer	Signature	Dates Of Test

11.2 TEST EQUIPMENT

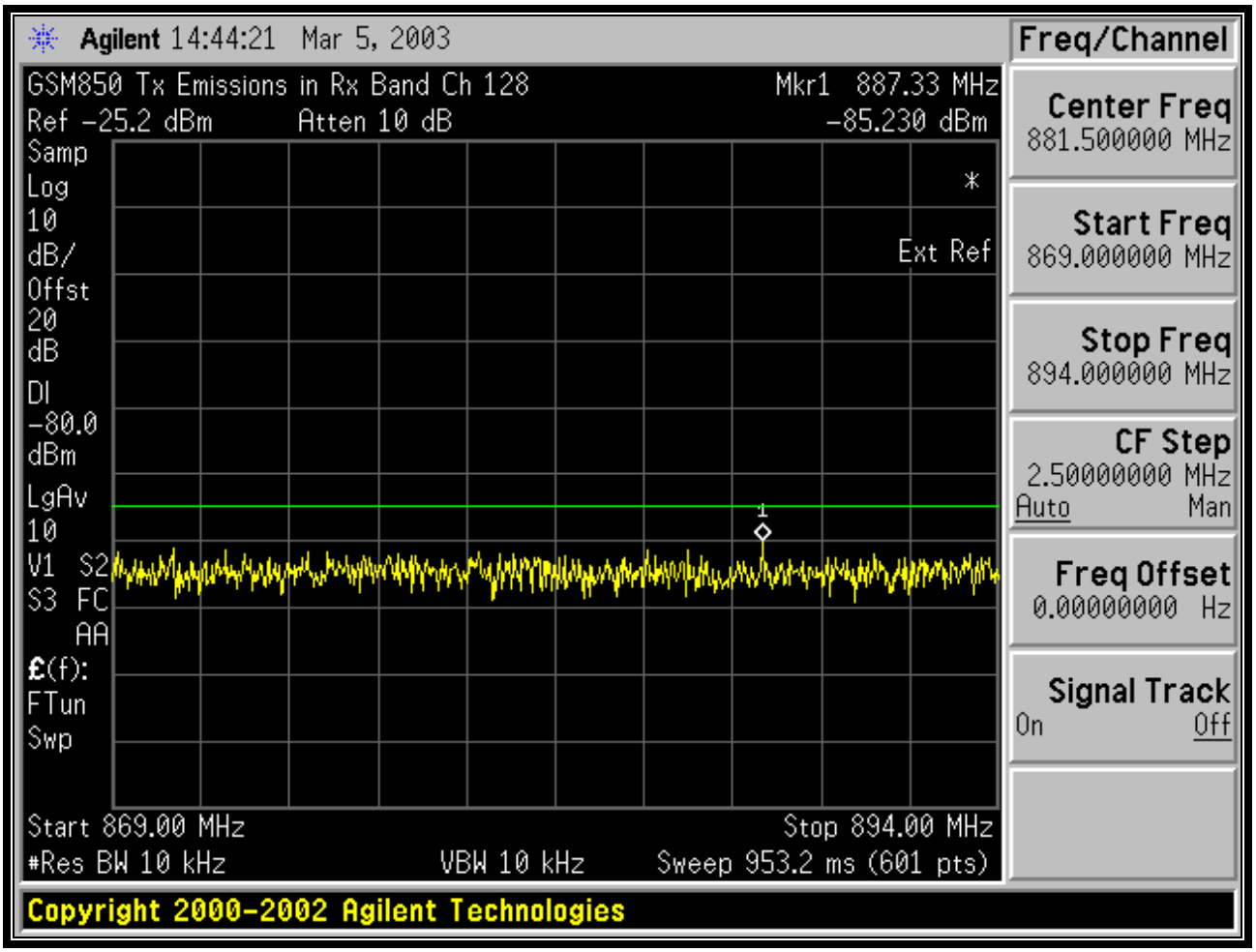
TABLE 11-1: TEST EQUIPMENT USED FOR TESTING (BANDEDGE COMPLIANCE)

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

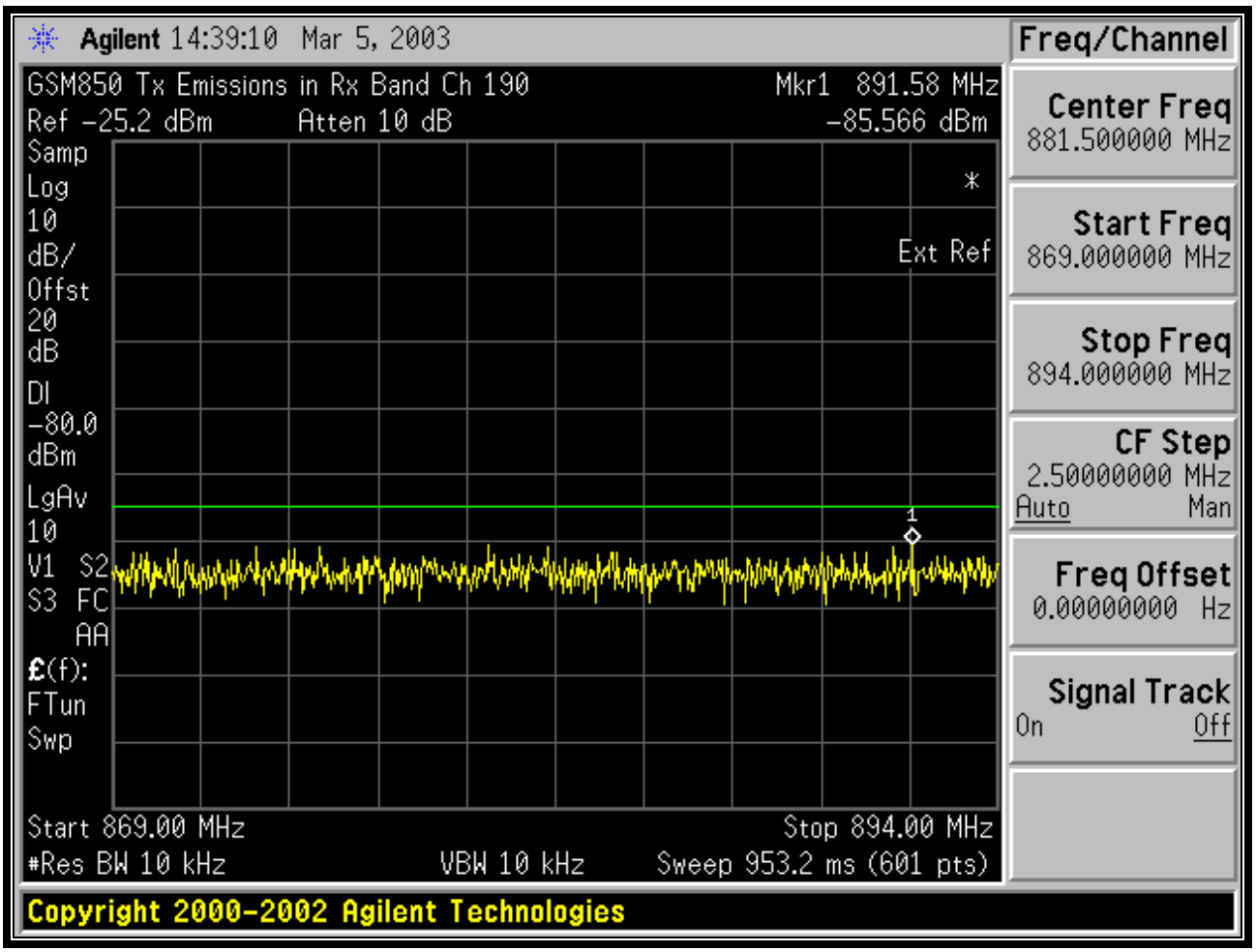
12 FCC RULES AND REGULATIONS PART 22.917(F): EMISSIONS IN BASE STATION FREQUENCY BAND FROM MOBILES

12.1 TEST DATA

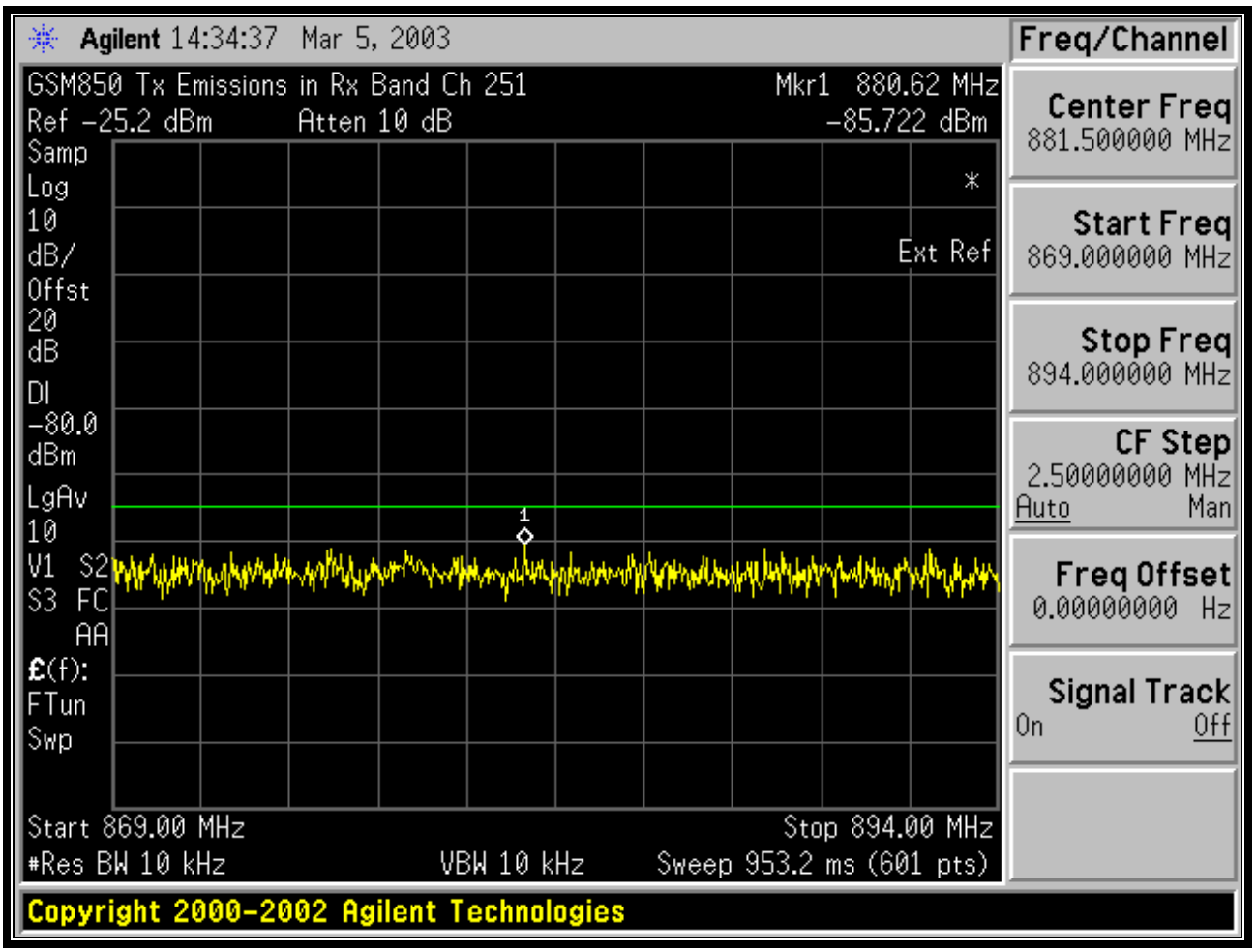
PLOT 12-1: MOBILE EMISSIONS IN BASE STATION BAND; 824.2 MHZ GSM



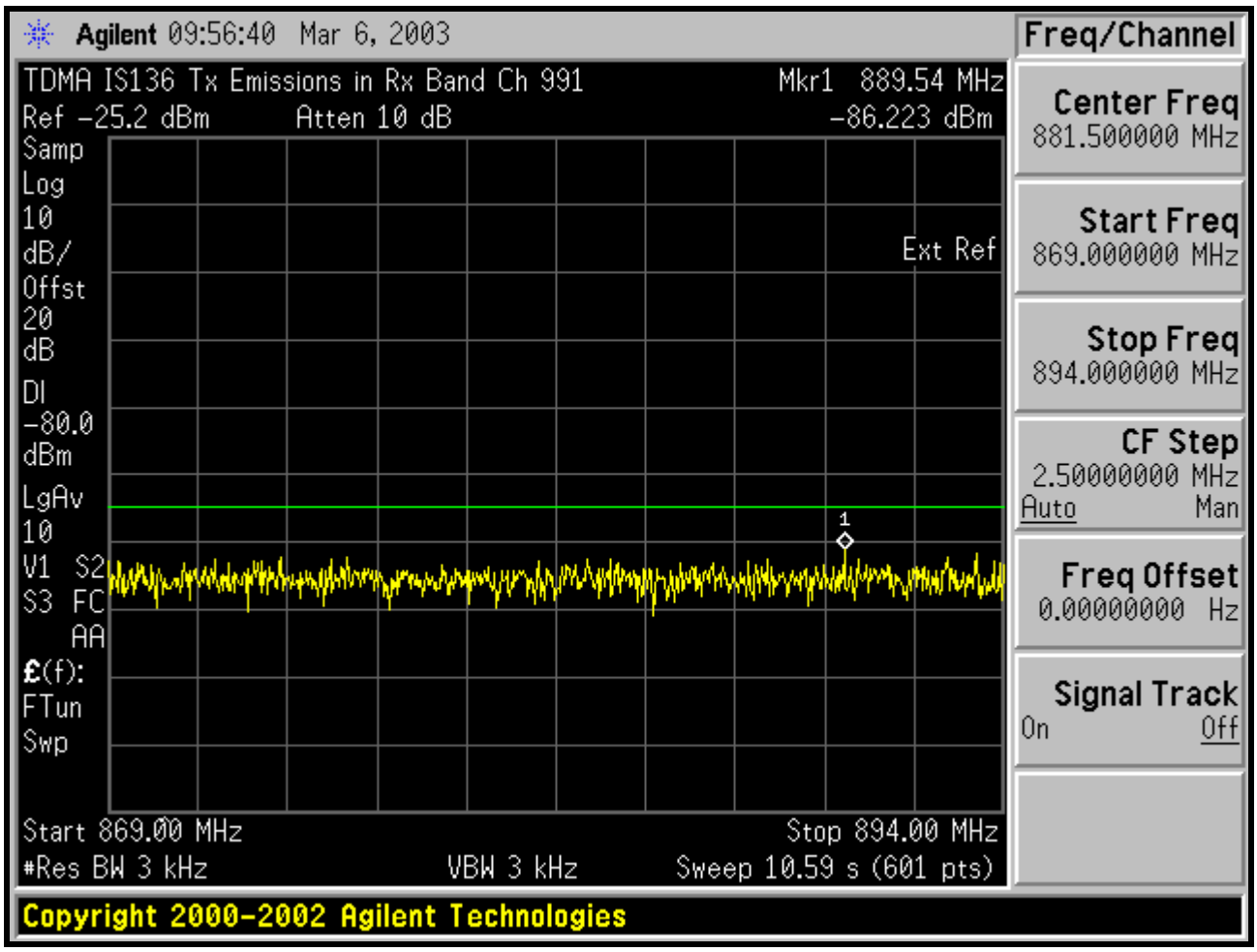
PLOT 12-2: MOBILE EMISSIONS IN BASE STATION BAND; 836.6 MHZ GSM



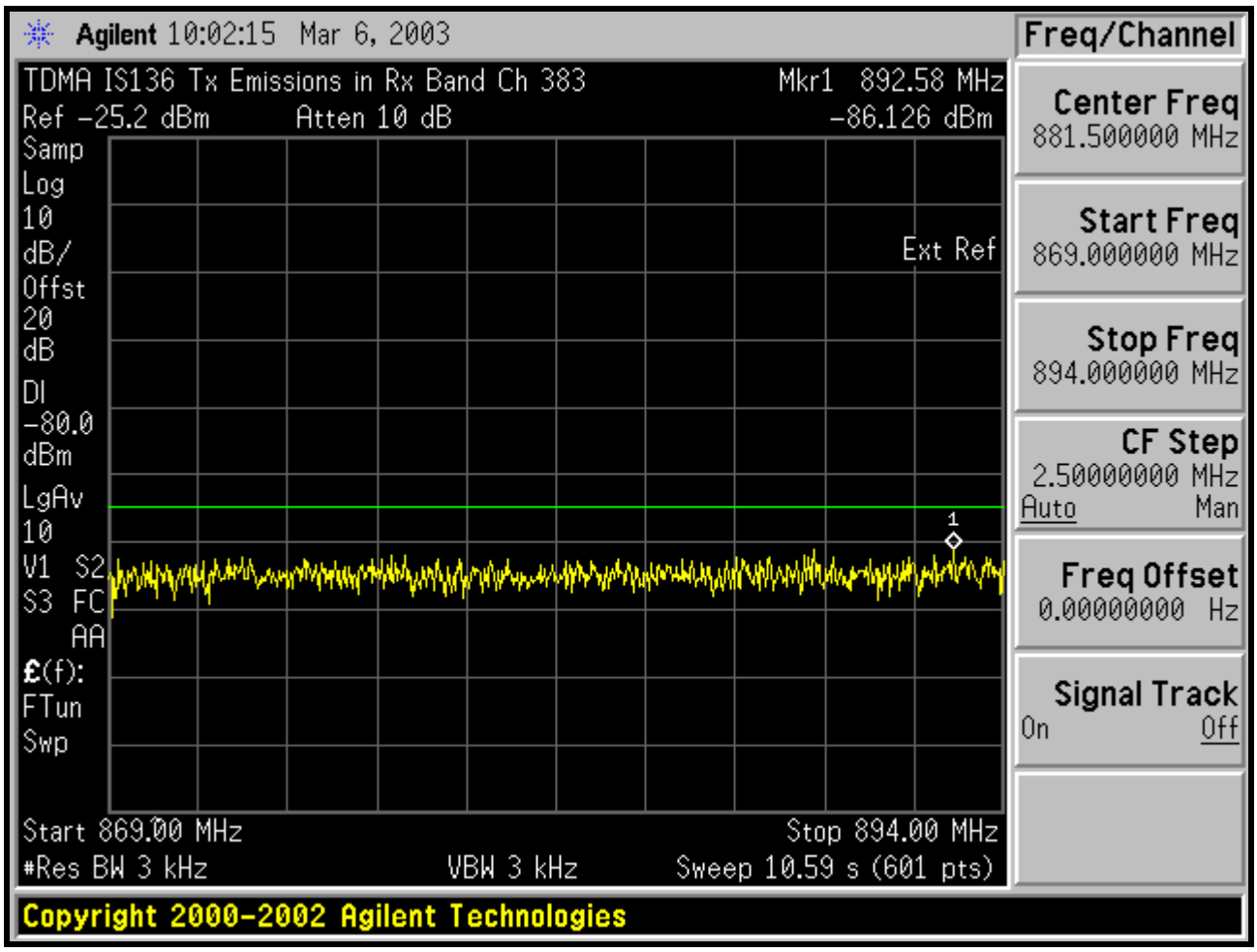
PLOT 12-3: MOBILE EMISSIONS IN BASE STATION BAND; 848.8 MHZ GSM



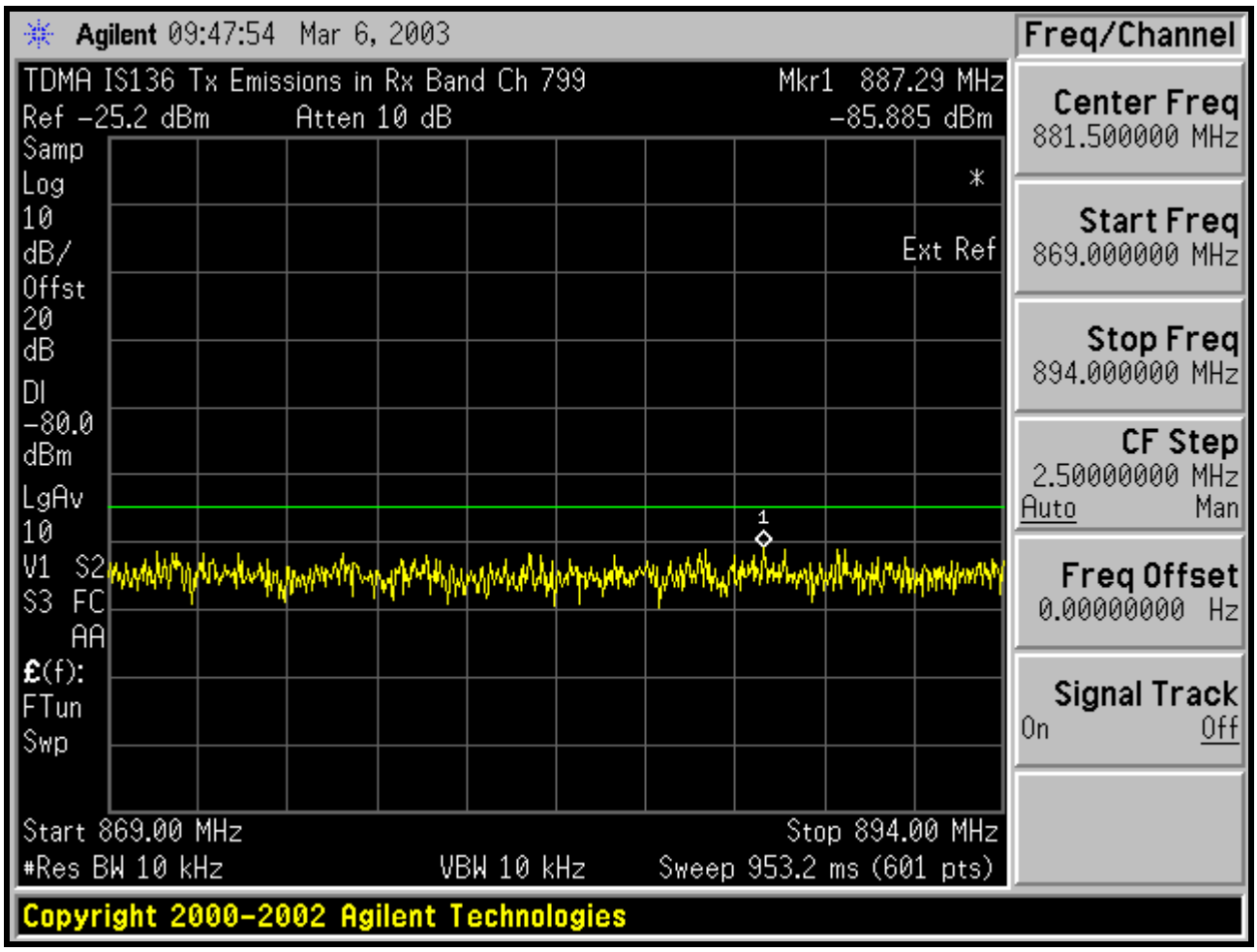
PLOT 12-4: MOBILE EMISSIONS IN BASE STATION BAND; 824 MHZ TDMA



PLOT 12-5: MOBILE EMISSIONS IN BASE STATION BAND; 836 MHZ TDMA



PLOT 12-6: MOBILE EMISSIONS IN BASE STATION BAND; 848.8 MHZ TDMA



TEST PERSONNEL:

DANIEL BALTZELL		MARCH 5 & MARCH 6, 2003
Test Engineer	Signature	Dates Of Test

12.2 TEST EQUIPMENT

TABLE 12-1: 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

13 CONCLUSION

The data in this measurement report shows that the Mobile Communications Technologies, Inc. Model BST850, FCC ID: OW5BST850, complies with all the requirements of Part 22 of the FCC Rules and Industry Canada RSS-131.