CKC LABORATORIES, INC. Testing the Future

ACCREDITED
Certicate Numbers
803.01 - 803.06
EMC/SAFETY

WILSON ELECTRONICS TEST REPORT

FOR THE

REPEATER, BD800-AM

FCC PART 22 SUBPART H

COMPLIANCE

DATE OF ISSUE: OCTOBER 4, 2002

PREPARED FOR:

Wilson Electronics
3301 East Deseret Drive
St. George, UT 84790

P.O. No.: 5908
W.O. No.: 79405

PREPARED BY:

Mary Ellen Clayton
CKC Laboratories, Inc.
5473A Clouds Rest
Mariposa, CA 95338

Date of test: September 9-17, 2002

Report No.: FC02-079

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

DATE OF TEST:	September 9-17, 2002
DATE OF RECEIPT:	September 9, 2002
PURPOSE OF TEST:	To demonstrate the compliance of the Repeater, BD800-AM with the requirements for FCC Part 22 Subpart H devices.
TEST METHOD:	FCC Part 22 Subpart H
FREQUENCY RANGE TESTED:	9 kHz - 9 GHz
MANUFACTURER:	Wilson Electronics 3301 East Deseret Drive St. George, UT 84790
REPRESENTATIVE:	Jim Wilson
TEST LOCATION:	CKC Laboratories, Inc. 5473A Clouds Rest Mariposa, CA 95338

SUMMARY OF RESULTS

As received, the Wilson Electronics Repeater, BD800-AM was found to be fully compliant with the following standards and specifications:

United States

- FCC Part 22 Subpart H

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.
Conducted emissions not required for this device.

APPROVALS

QUALITY ASSURANCE:

Steve Behm, Director of Engineering Services

Joyce Walker, Quality Assurance Administrative Manager

Chuck Kendall, EMC/Lab Manager

TEST PERSONNEL:

Monika Brandle, EMC Engineer/ Evaluation Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The Repeater tested by CKC Laboratories was a production unit.

EQUIPMENT UNDER TEST

Repeater
Manuf: Wilson Electronics
Model: BD800-AM
Serial: 090602-001
FCC ID: pending

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

ESG-D Series Sig Gen
Manuf: Agilent
Model: E4432B
Serial: US40053764
FCC ID: DoC

Cell Site Test Set
Manuf: HP
Model: 8921A
Serial: 3519A01796
FCC ID: DoC

DC Power Supply
Manuf: HP
Model: 6205C
Serial: 2228A-01775
FCC ID: NA

Sig Gen
Manuf: HP
Model: 8656A
Serial: 2245A04338
FCC ID: DoC

CDMA Cellular Adapter
Manuf: HP
Model: 83205A
Serial: US37461985
FCC ID: DoC

AC-DC Adapter
Manuf: Wilson Electronics
Model: JOD-48U-36
Serial: 3G72 E149469
FCC ID: NA

TDMA/DCPD Cellular Adapter
Manuf: HP
Model: 83204A
Serial: US37460723
FCC ID: DoC

TEMPERATURE AND HUMIDITY DURING TESTING
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

2.1033(c)(3) USER'S MANUAL
The necessary information is contained in a separate document.

2.1033 (c)(4) TYPE OF EMISSIONS
25M0D76--

2.1033(c)(5) FREQUENCY RANGE
Downlink 869 MHz - 894 MHz, Uplink 824 MHz - 849 MHz.

2.1033(c)(6) OPERATING POWER
104.528 mW EIRP, 63.714 mW ERP Downlink; 1.228.908 mW EIRP, 749.065 mW ERP mW Uplink.

2.1033(c)(7) MAXIMUM POWER RATING
7 Watts.

2.1033(c)(8) DC VOLTAGES
6V, 500 mA

2.1033(c)(9) TUNE-UP PROCEDURE
Not applicable because this is a plug-in device.

2.1033(c)(10) SCHEMATICS AND CIRCUITRY DESCRIPTION
The necessary information is contained in a separate document.

2.1033(c)(11) LABEL AND PLACEMENT
The necessary information is contained in a separate document.

2.1033(c)(12) SUBMITTAL PHOTOS
The necessary information is contained in a separate document.

2.1033(c)(13) MODULATION INFORMATION
None.

2.1033(c)(14)/2.1046/22.913(a) - RF POWER OUTPUT

DOWNLINK

EIRP = Ant. Conducted (dBm) + Cust. Antenna Gain dBi

Watts	ANT. Cond (dBm)	Ant. Gain(dBi)	EIRP(dBm)	EIRP(mW)
0.074	18.6923172	1.5	20.1923172	104.52778

ERP = Ant. Conducted (dBm) + (Cust. Antenna Gain dBi+2.15dBi)

Watts	ANT. Cond (dBm)	Cust. Gain(dBi)	Cust Ant.-2.15	ERP(dBm)	ERP(mW)
0.074	18.6923172	1.5	-0.65	18.042317	63.71353766

ERP = EIRP/1.64		
ERP (mW)	EIRP(mW)	HalfWave Dipole Linear
63.73645	104.5277783	1.64

UPLINK

EIRP = Ant. Conducted (dBm) + Cust. Antenna Gain dBi

Watts	ANT. Cond (dBm)	Ant. Gain(dBi)	EIRP(dBm)	EIRP(mW)
0.87	29.39519253	1.5	30.89519253	1228.9077

ERP = Ant. Conducted (dBm) + (Cust. Antenna Gain dBi+2.15dBi)

Watts	ANT. Cond (dBm)	Cust. Gain(dBi)	Cust Ant.-2.15	ERP(dBm)	ERP(mW)
0.87	29.39519253	1.5	-0.65	28.745193	749.06456

ERP = EIRP/1.64		
ERP (mW)	EIRP(mW)	HalfWave Dipole Linear
749.333941	1228.907664	1.64

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.913**
Work Order #: **79405** Date: 09/16/2002
Test Type: **2.1046/TIA-EIA-603 2.2.1** Time: 13:27:42
Equipment: **Repeater** Sequence#: 9
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 091202-004

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	091202-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469

Test Conditions / Notes:

EUT is a bi-directional repeater amplifier. Phone port receives and amplifies AMPS signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies AMPS signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Low, Middle and High Channels were measured. Measurements of the modulated signal as well as the unmodulated signal were taken. RBW/VBW = 3MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	882.006M	125.7					+0.0	125.7	145.4 Modulated	-19.7	None
2	894.004M	125.5					+0.0	125.5	145.4 modulated	-19.9	None
3	882.004M	123.4					+0.0	123.4	145.4 Unmodulated	-22.0	None
4	894.003M	122.8					+0.0	122.8	145.4 Unmodulated	-22.6	None
5	869.004M	121.8					+0.0	121.8	145.4 modulated	-23.6	None
6	869.004M	118.7					+0.0	118.7	145.4 Unmodulated	-26.7	None

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.913**
Work Order #: **79405** Date: 09/16/2002
Test Type: **2.1046/TIA-EIA-603 2.2.1** Time: 13:31:10
Equipment: **Repeater** Sequence#: 9
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 091202-004

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	091202-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469

Test Conditions / Notes:

EUT is a bi-directional repeater amplifier. Phone port receives and amplifies CDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies CDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Low, Middle and High Channels were measured. Measurements of the modulated signal as well as the unmodulated signal were taken. RBW/VBW = 3MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	881.670M	125.0					+0.0	125.0	145.4 modulated	-20.4	None
2	894.040M	124.9					+0.0	124.9	145.4 modulated	-20.5	None
3	881.775M	123.1					+0.0	123.1	145.4 Unmodulated	-22.3	None
4	893.750M	122.4					+0.0	122.4	145.4 Unmodulated	-23.0	None
5	869.120M	121.3					+0.0	121.3	145.4 modulated	-24.1	None
6	868.825M	118.5					+0.0	118.5	145.4 Unmodulated	-26.9	None

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.913**
Work Order #: **79405** Date: 09/16/2002
Test Type: **2.1046/TIA-EIA-603 2.2.1** Time: 13:33:52
Equipment: **Repeater** Sequence#: 9
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 090602-001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater	Wilson Electronics	BD800-AM	091202-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469

Test Conditions / Notes:

EUT is a bi-directional repeater amplifier. Phone port receives and amplifies TDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies TDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Low, Middle and High Channels were measured. Measurements of the modulated signal as well as the unmodulated signal were taken. RBW/VBW = 3MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	881.810M	124.7					+0.0	124.7	145.4 modulated	-20.7	None
2	893.860M	124.3					+0.0	124.3	145.4 modulated	-21.1	None
3	881.845M	123.2					+0.0	123.2	145.4 Unmodulated	-22.2	None
4	893.840M	122.6					+0.0	122.6	145.4 Unmodulated	-22.8	None
5	869.080M	120.5					+0.0	120.5	145.4 modulated	-24.9	None
6	869.010M	118.4					+0.0	118.4	145.4 Unmodulated	-27.0	None

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.913**
Work Order #: **79405** Date: 09/12/2002
Test Type: **2.1046/TIA-EIA-603 2.2.1** Time: 13:18:44
Equipment: **Repeater** Sequence#: 12
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 091202-004

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	091202-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469

Test Conditions / Notes:

EUT is a bi-directional repeater amplifier. Phone port receives and amplifies AMPS signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies AMPS signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Low, Middle and High Channels were measured. Measurements of the modulated signal as well as the unmodulated signal were taken. RBW/VBW = 3MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	823.796M	136.0					+0.0	136.0	145.4 modulated	-9.4	None
2	835.886M	135.5					+0.0	135.5	145.4 modulated	-9.9	None
3	823.745M	135.1					+0.0	135.1	145.4 unmodulated	-10.3	None
4	835.799M	134.7					+0.0	134.7	145.4 unmodulated	-10.7	None
5	848.805M	132.2					+0.0	132.2	145.4 modulated	-13.2	None
6	848.742M	130.8					+0.0	130.8	145.4 unmodulated	-14.6	None

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer:	**Wilson Electronics**		
Specification:	**FCC 22.913**		
Work Order #:	**79405**	Date:	09/12/2002
Test Type:	**2.1046/TIA-EIA-603 2.2.1**	Time:	13:16:24
Equipment:	**Repeater**	Sequence#:	11
Manufacturer:	Wilson Electronics	Tested By:	Monika Brandle
Model:	BD800-AM		12VDC
S/N:	090602-004		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469

Test Conditions / Notes:

EUT is a bi-directional repeater amplifier. Phone port receives and amplifies CDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies CDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Low, Middle and High Channels were measured. Measurements of the modulated signal as well as the unmodulated signal were taken. RBW/VBW = 3MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	824.198M	136.4					+0.0	136.4	145.4 modulated	-9.0	None
2	845.448M	136.0					+0.0	136.0	145.4 modulated	-9.4	None
3	835.736M	135.5					+0.0	135.5	145.4 modulated	-9.9	None
4	845.886M	135.3					+0.0	135.3	145.4 unmodulated	-10.1	None
5	823.934M	135.0					+0.0	135.0	145.4 modulated	-10.4	None
6	835.886M	134.6					+0.0	134.6	145.4 unmodulated	-10.8	None

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.913**
Work Order #: **79405** Date: 09/12/2002
Test Type: **2.1046/TIA-EIA-603 2.2.1** Time: 13:11:51
Equipment: **Repeater** Sequence#: 10
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 091202-004

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	091202-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469

Test Conditions / Notes:

EUT is a bi-directional repeater amplifier. Phone port receives and amplifies TDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies TDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Low, Middle and High Channels were measured. Measurements of the modulated signal as well as the unmodulated signal were taken. RBW/VBW = 3MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	823.822M	136.3					+0.0	136.3	145.4 modulated	-9.1	None
2	845.892M	135.2					+0.0	135.2	145.4 unmodulated	-10.2	None
3	845.973M	135.2					+0.0	135.2	145.4 modulated	-10.2	None
4	823.786M	135.1					+0.0	135.1	145.4 unmodulated	-10.3	None
5	835.985M	134.6					+0.0	134.6	145.4 unmodulated	-10.8	None
6	835.940M	134.6					+0.0	134.6	145.4 modulated	-10.8	None

Test Equipment

Equipment	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
QP Adapter	HP	85650A	2811A01267	00478	1/30/02	1/30/03
S/A Display	HP	8566B	2403A08241	00489	1/30/02	1/30/03
Spectrum Analyzer	HP	8566B	2209A01404	00490	1/30/02	1/30/03

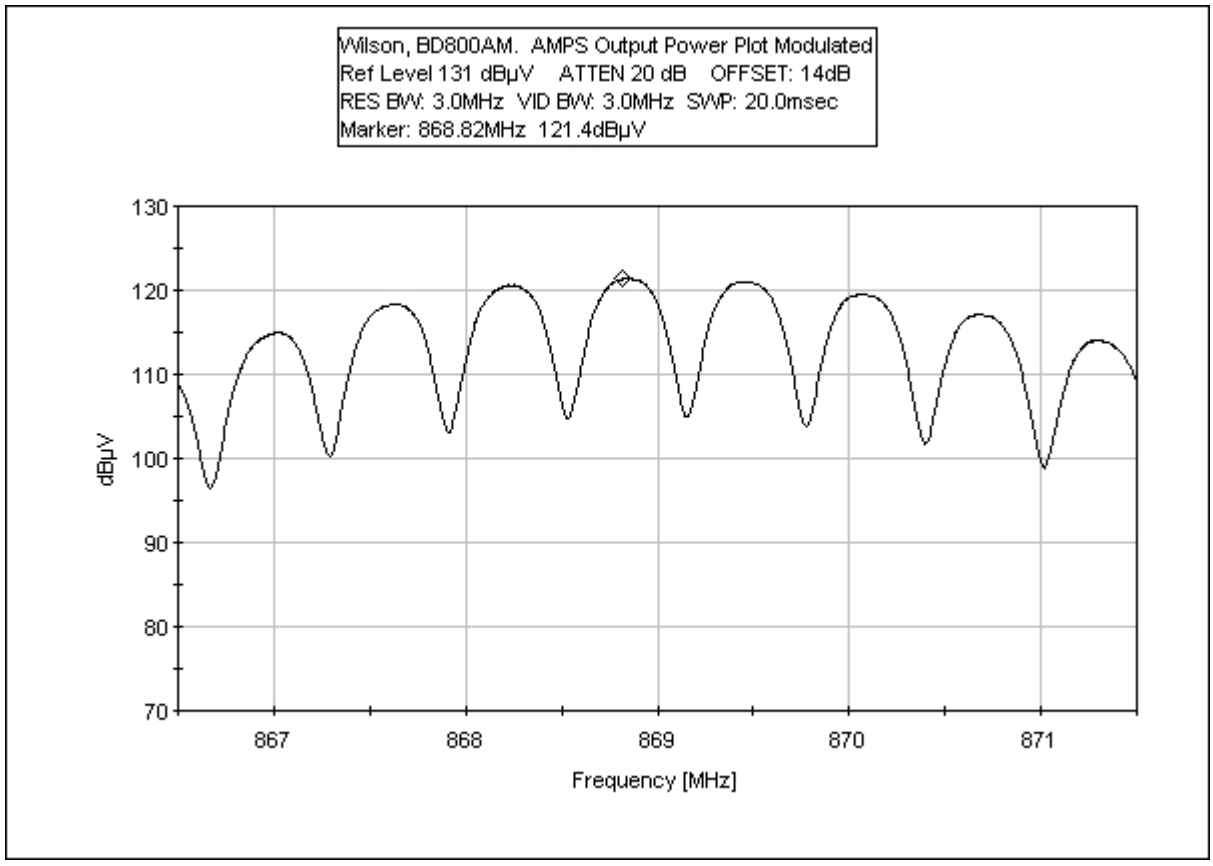
DOWNLINK OUTPUT POWER

UPLINK OUTPUT POWER

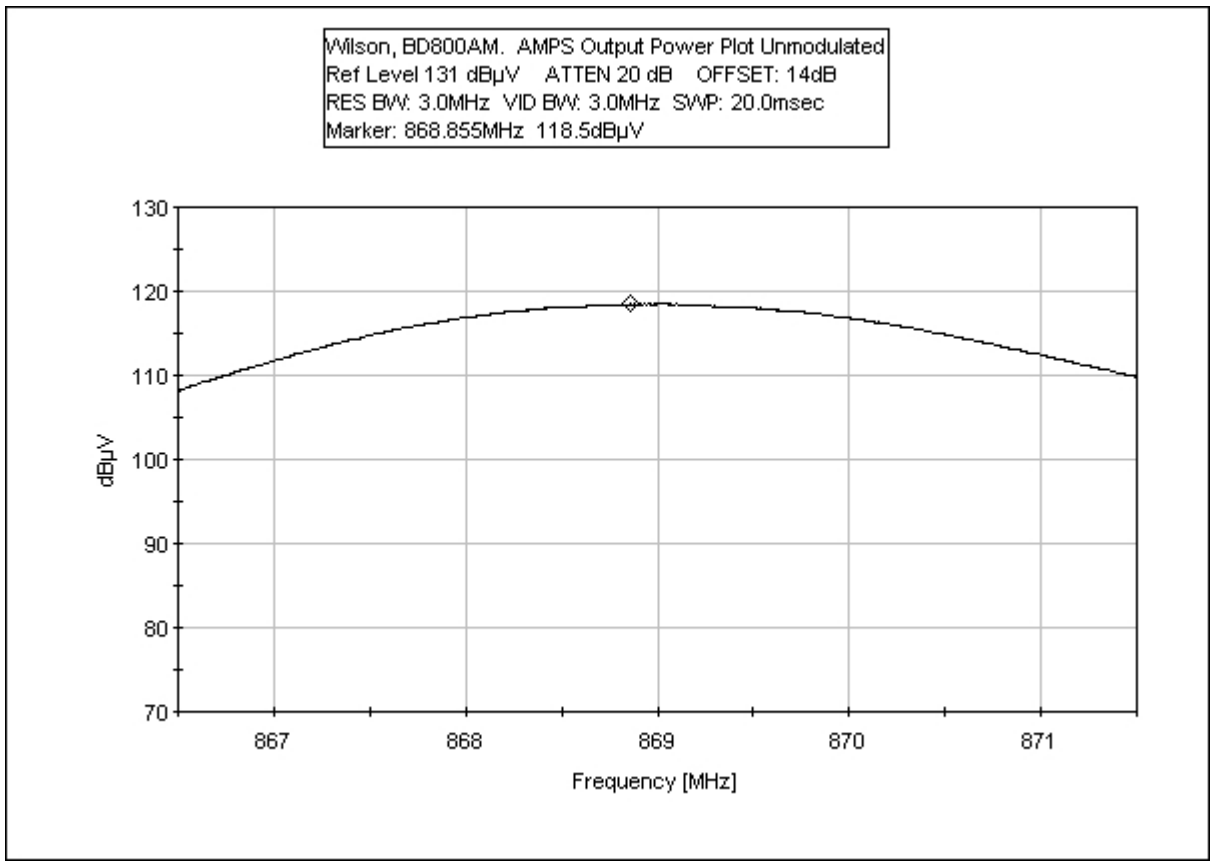
UPLINK OUTPUT POWER - TDMA

Test Conditions: EUT is a bi-directional repeater amplifier. Phone port receives and amplifies signals in the frequency range of 824-849 MHz. Antenna port receives and amplifies signals in the frequency range of 869-894 MHz. Each port retransmits signals received from the opposite port. A signal generator is set to supply a modulated signal that simulates actual signals used. The amplitude of the signal generator is set such that the output of the transmitter is at its rated maximum output power for the port being tested. This process is then performed again with an unmodulated signal.

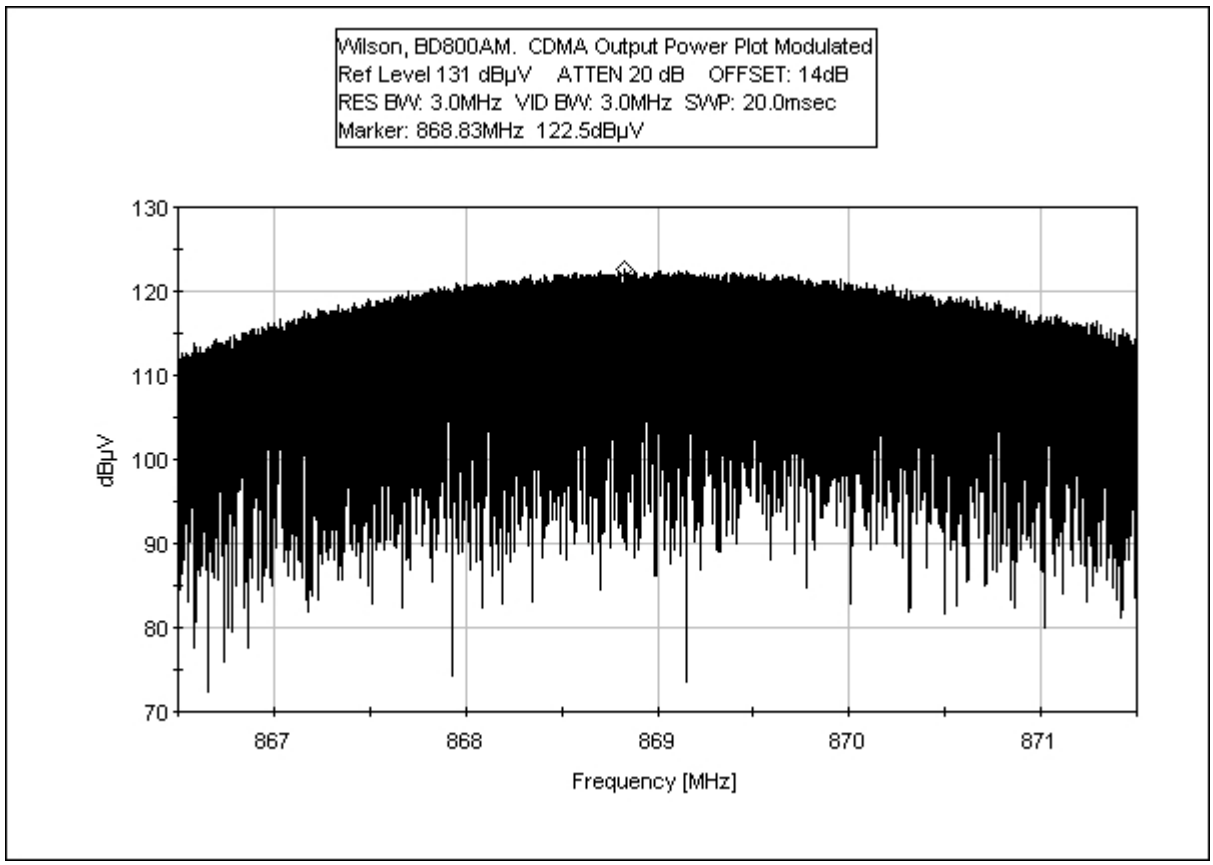
Downlink AMPS 869 MHz - Modulated Output Power



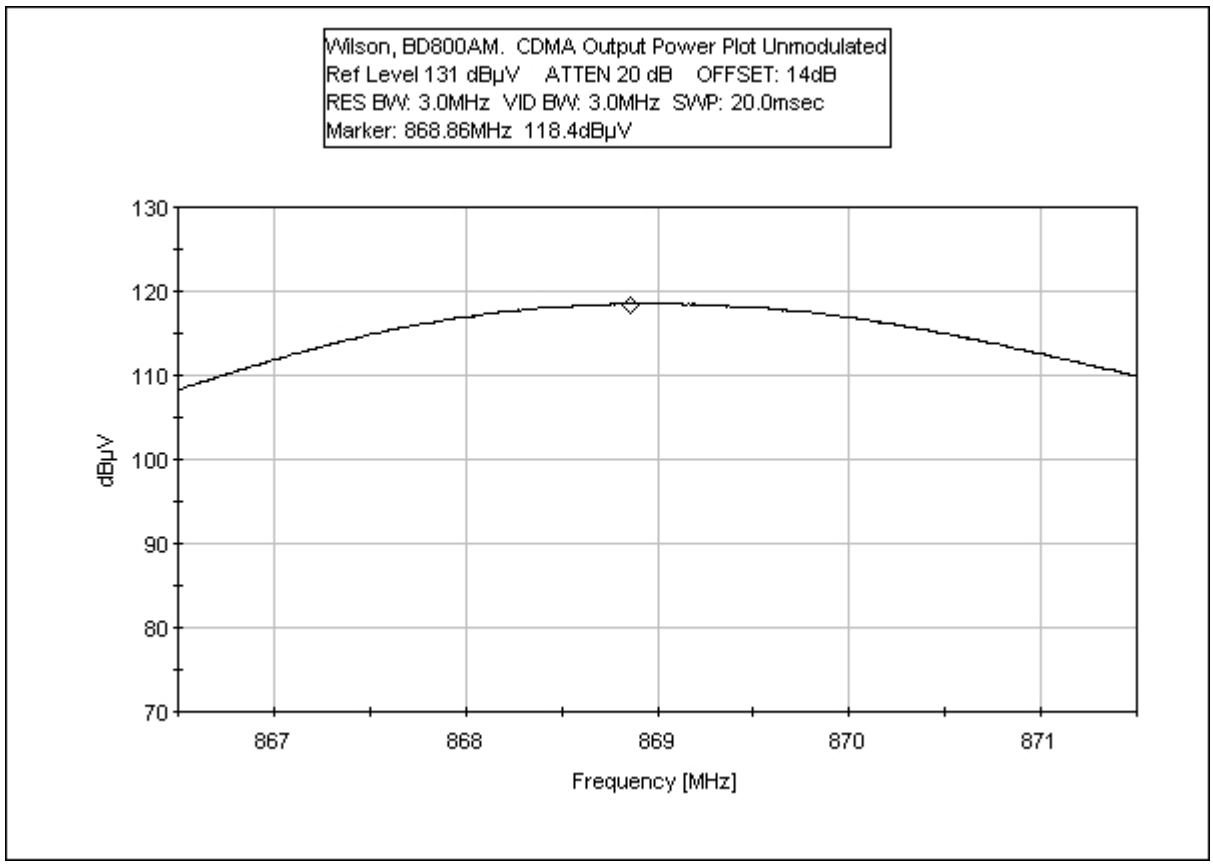
Downlink AMPS 869 MHz - Unmodulated Output Power



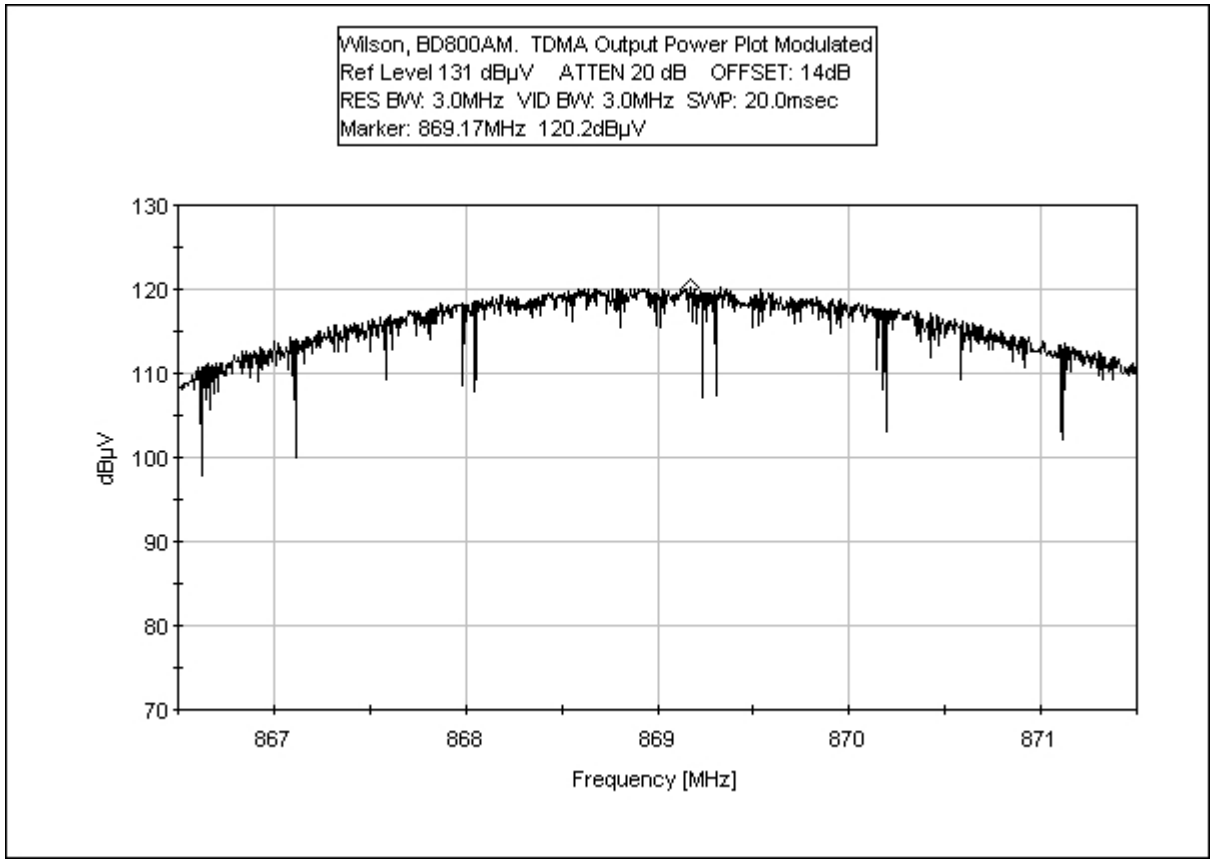
Downlink CDMA 869 MHz - Modulated Output Power



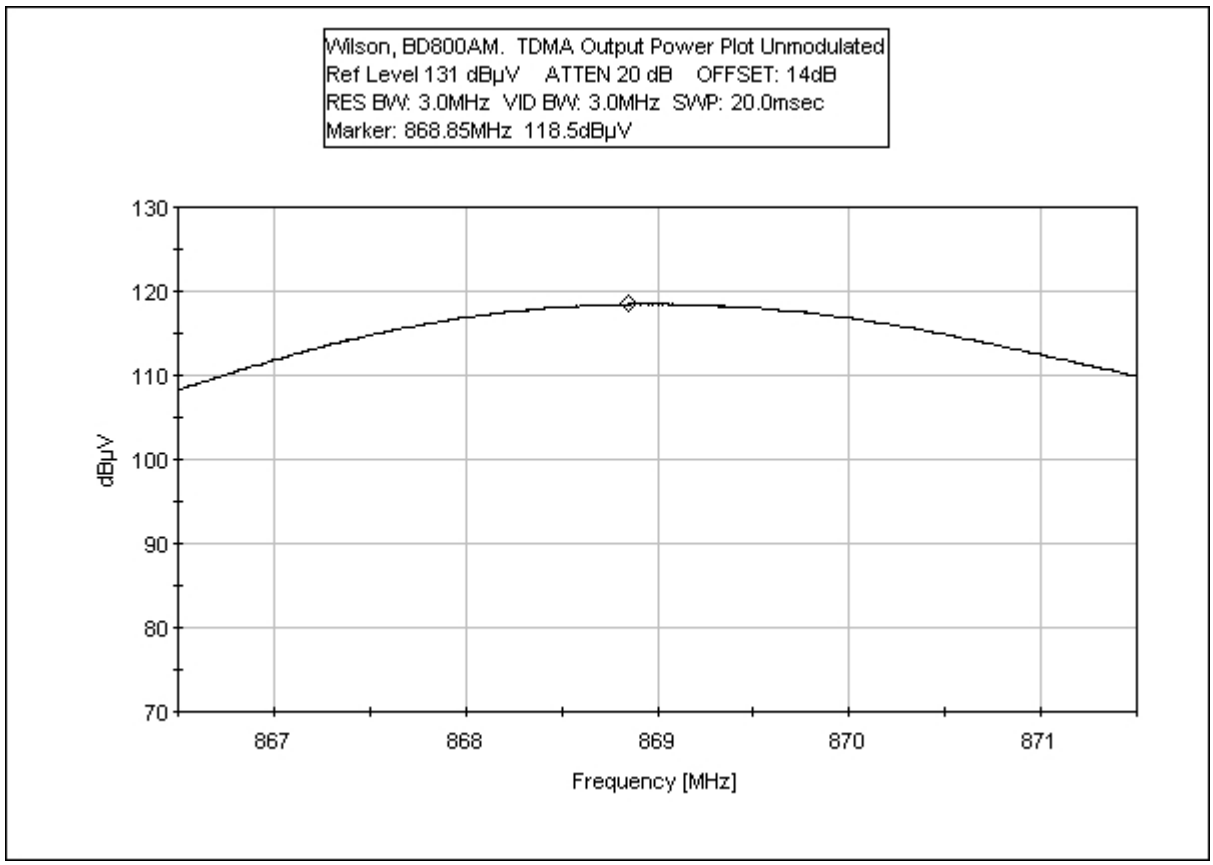
Downlink CDMA 869 MHz - Unmodulated Output Power



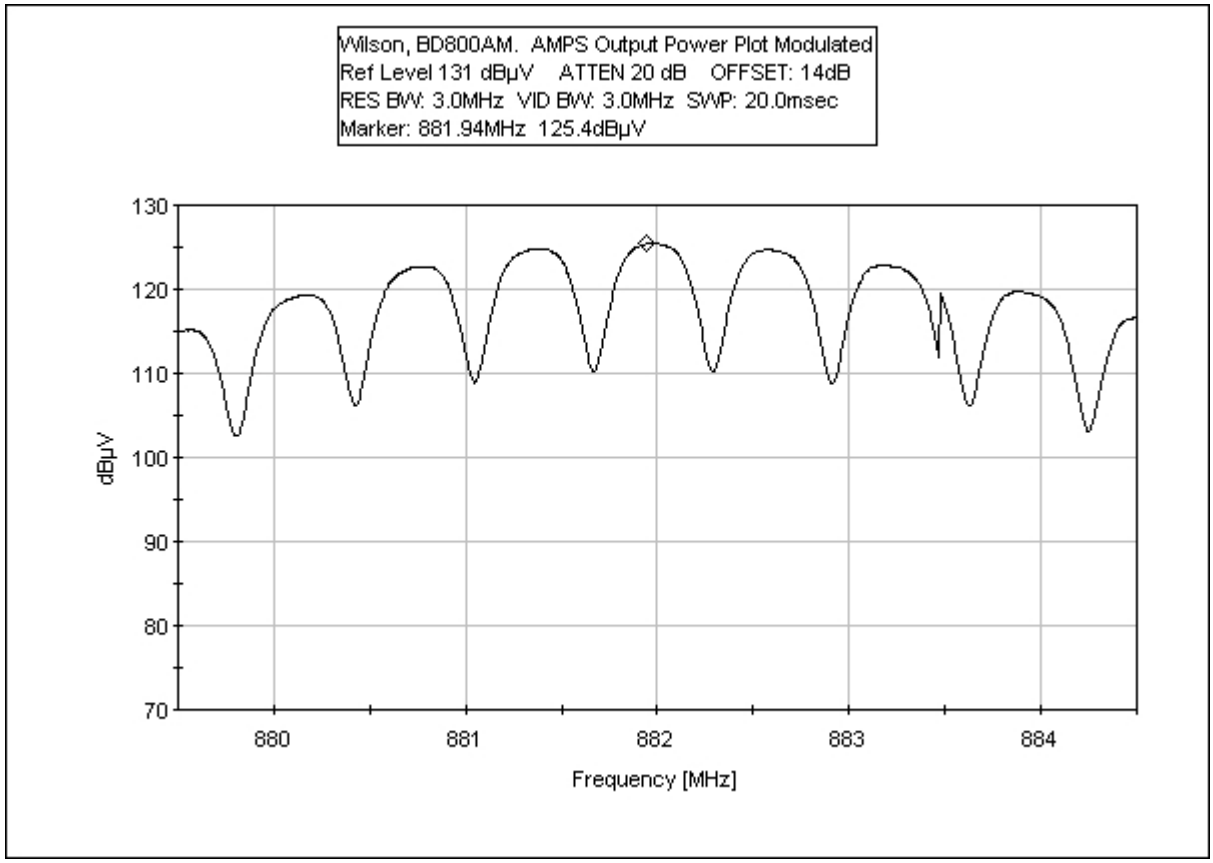
Downlink TDMA 869 MHz - Modulated Output Power



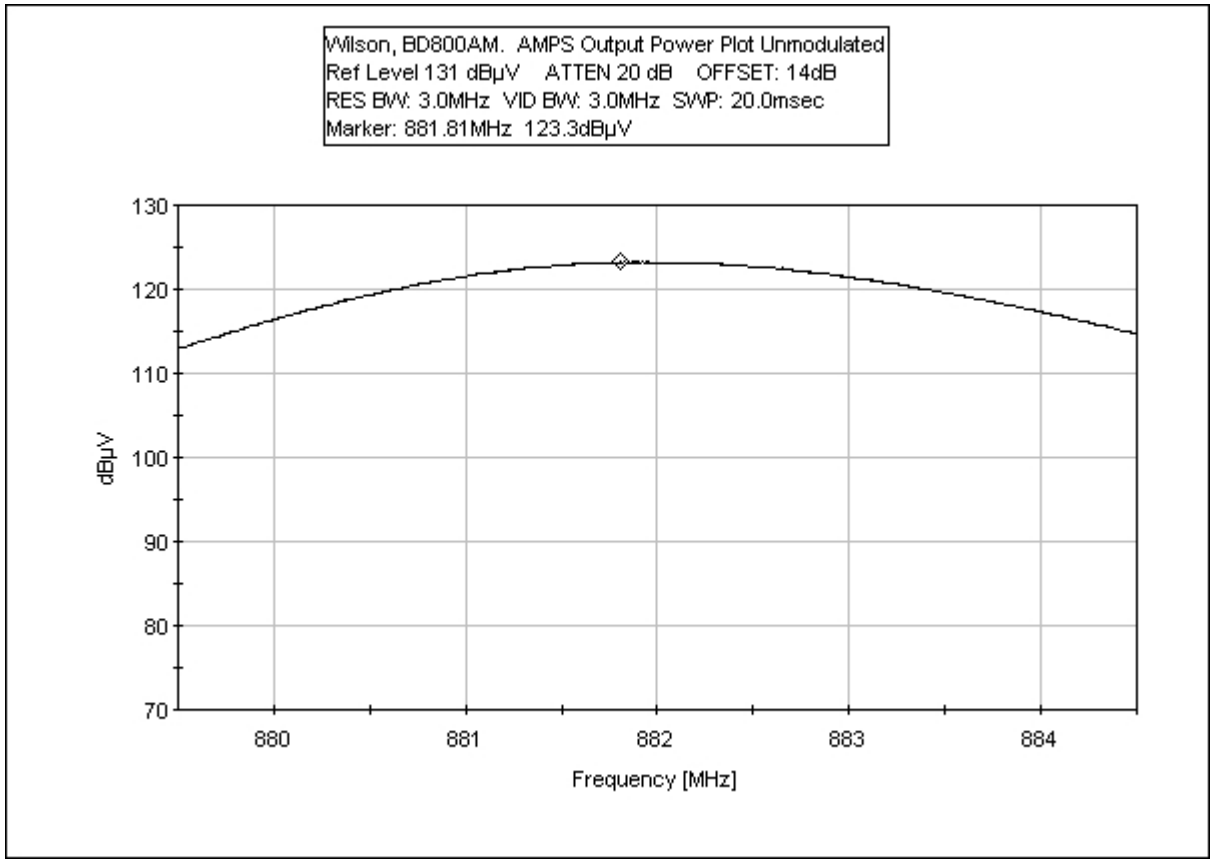
Downlink TDMA 869 MHz - Unmodulated Output Power



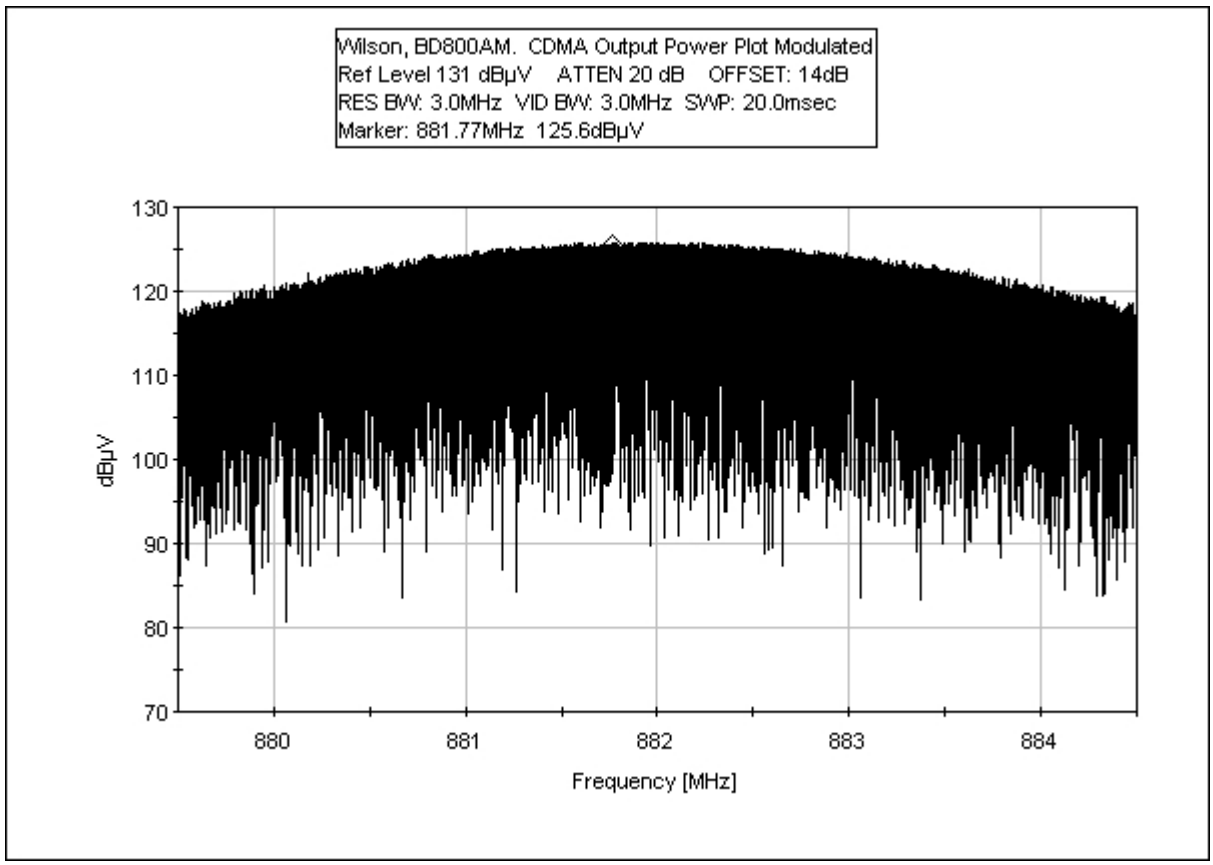
Downlink AMPS 882 MHz - Modulated Output Power



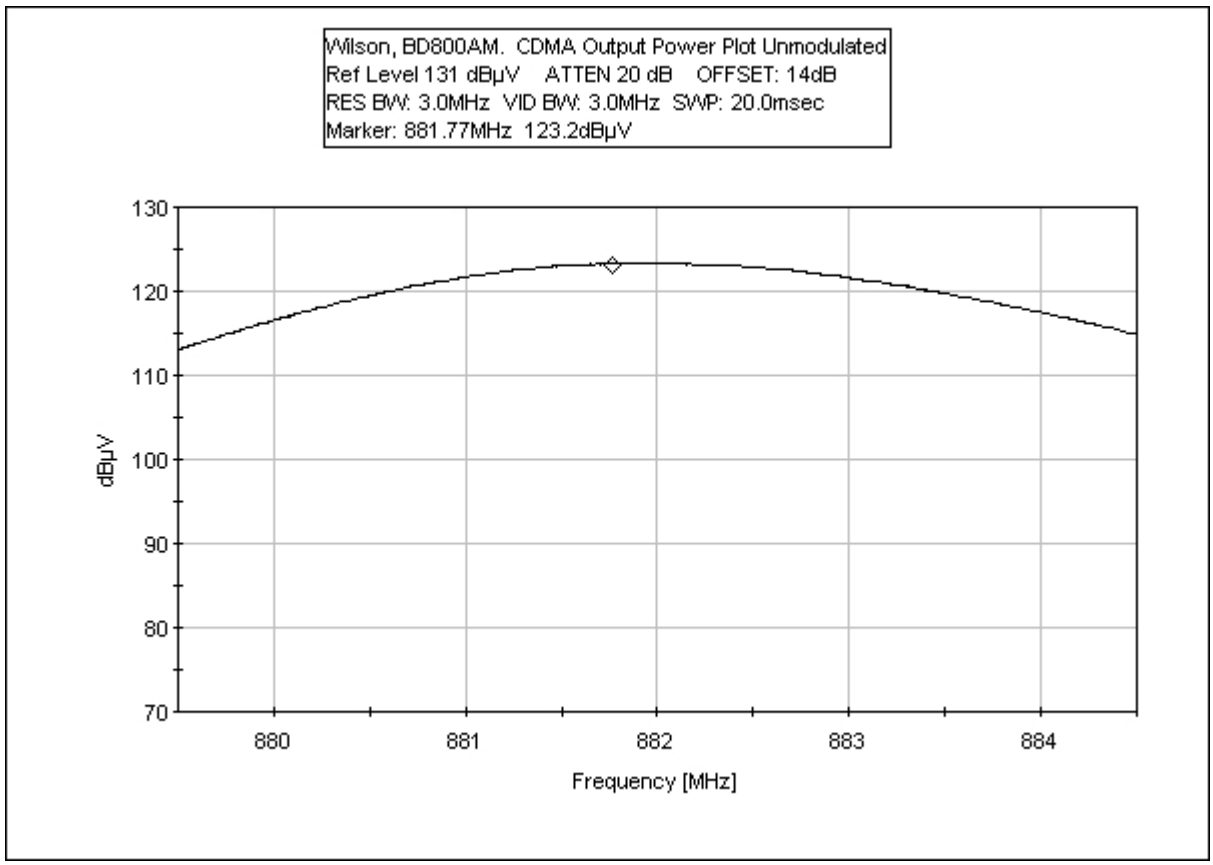
Downlink AMPS 882 MHz - Unmodulated Output Power



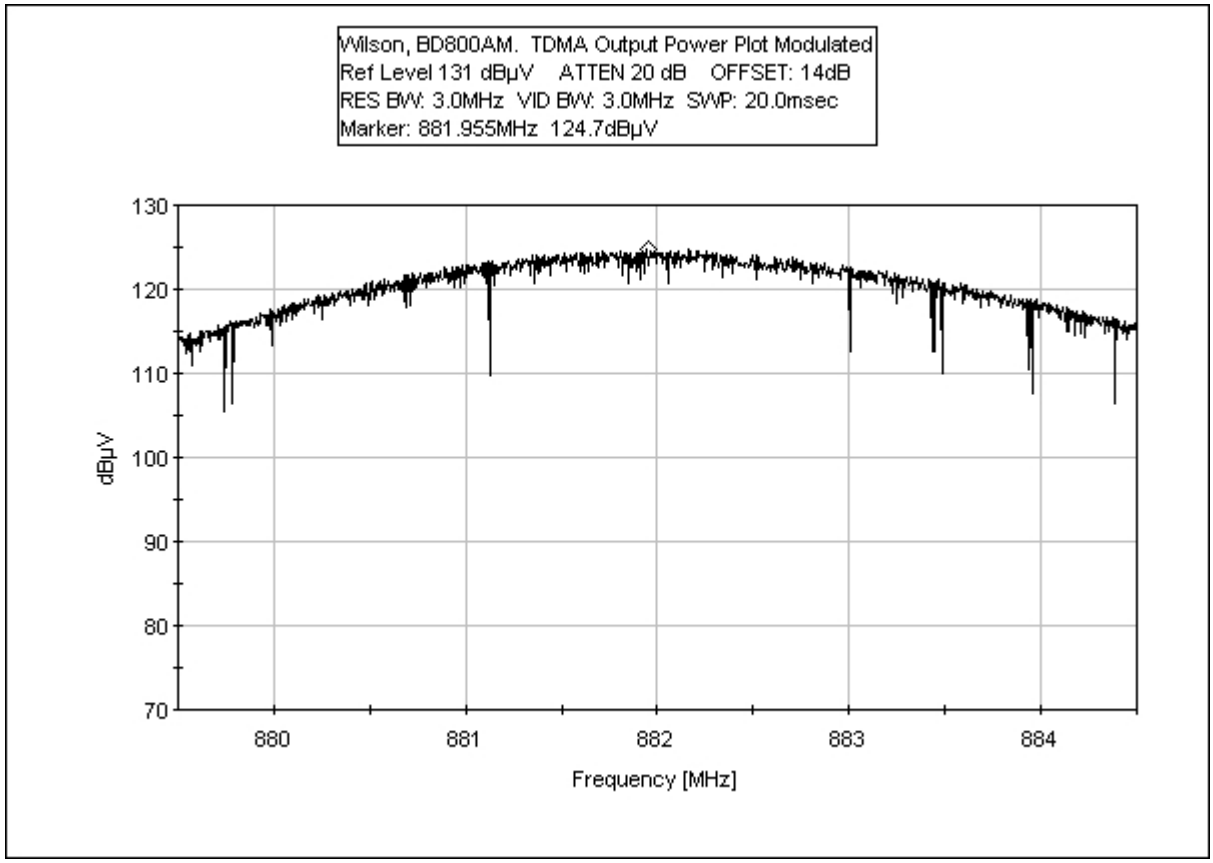
Downlink CDMA 882 MHz - Modulated Output Power



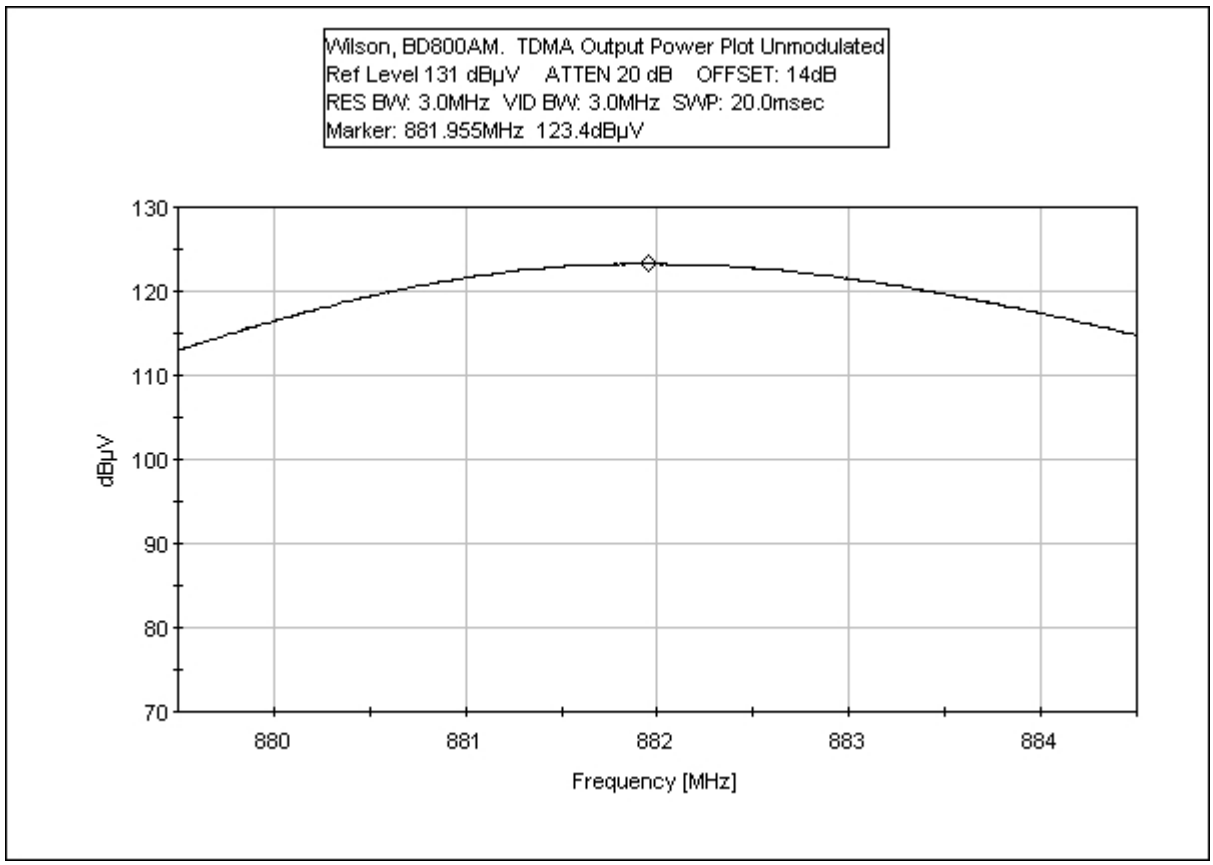
Downlink CDMA 882 MHz - Unmodulated Output Power



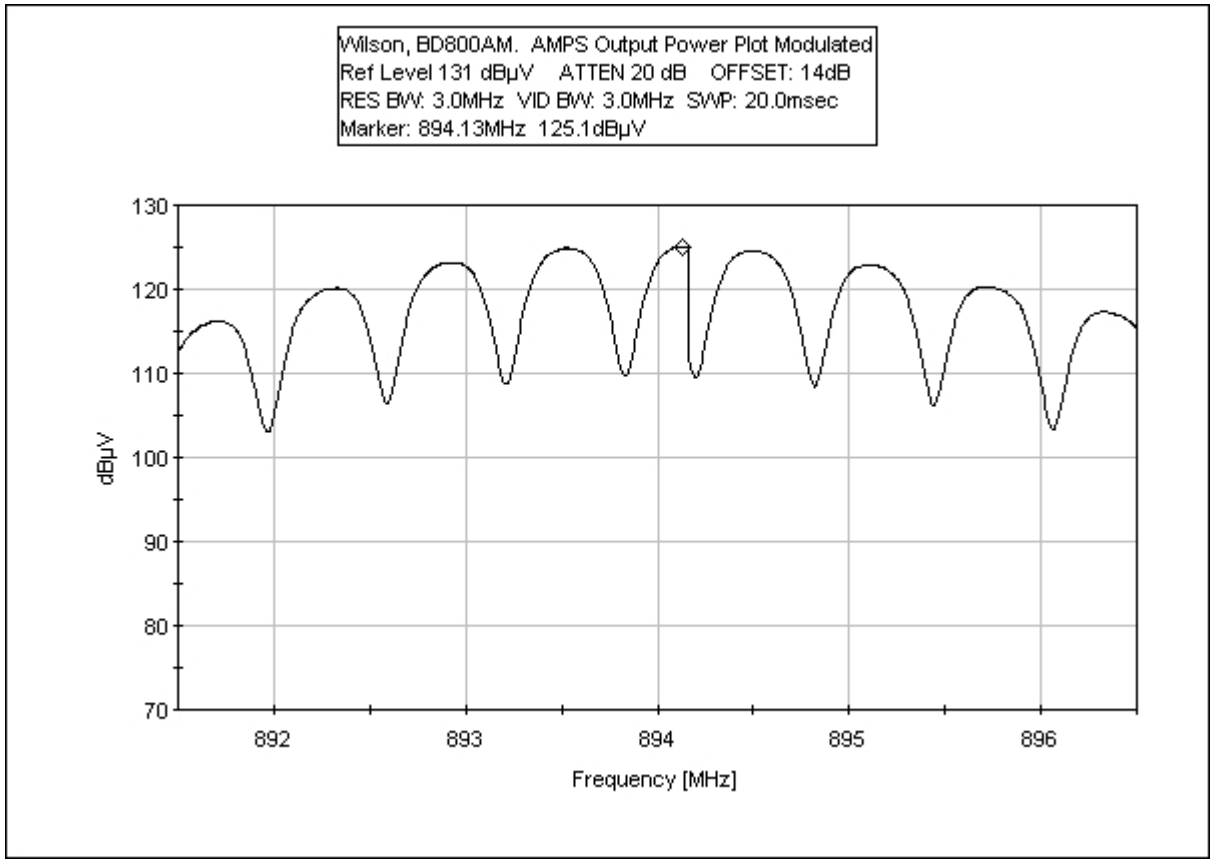
Downlink TDMA 882 MHz - Modulated Output Power



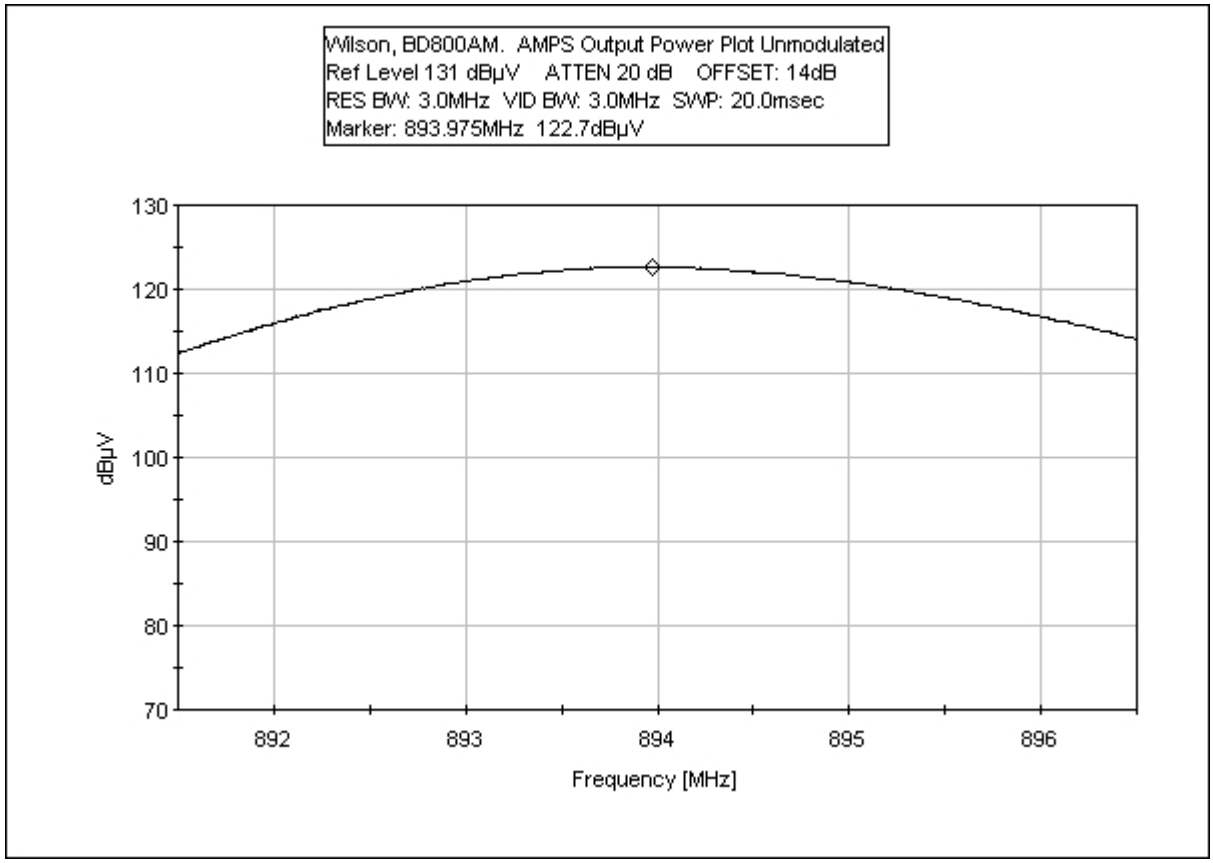
Downlink TDMA 882 MHz - Unmodulated Output Power



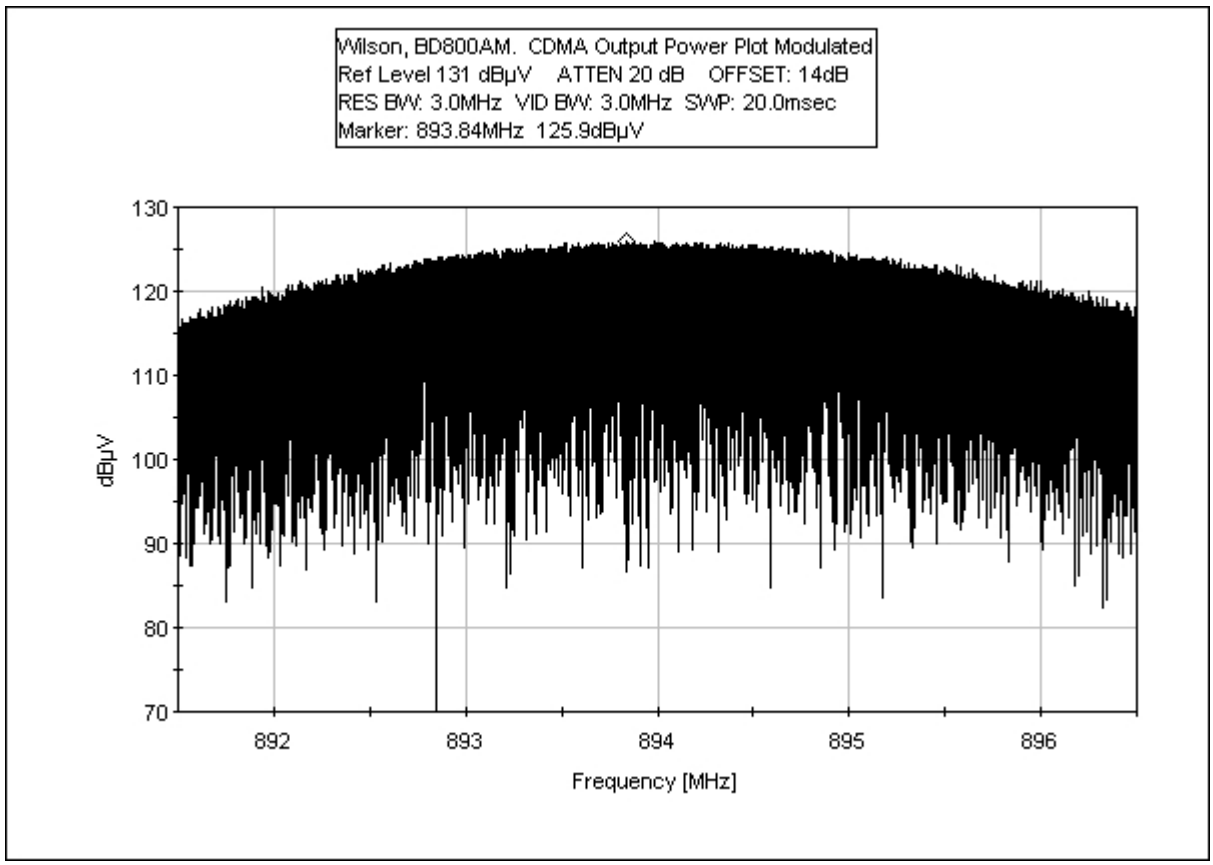
Downlink AMPS 894 MHz - Modulated Output Power



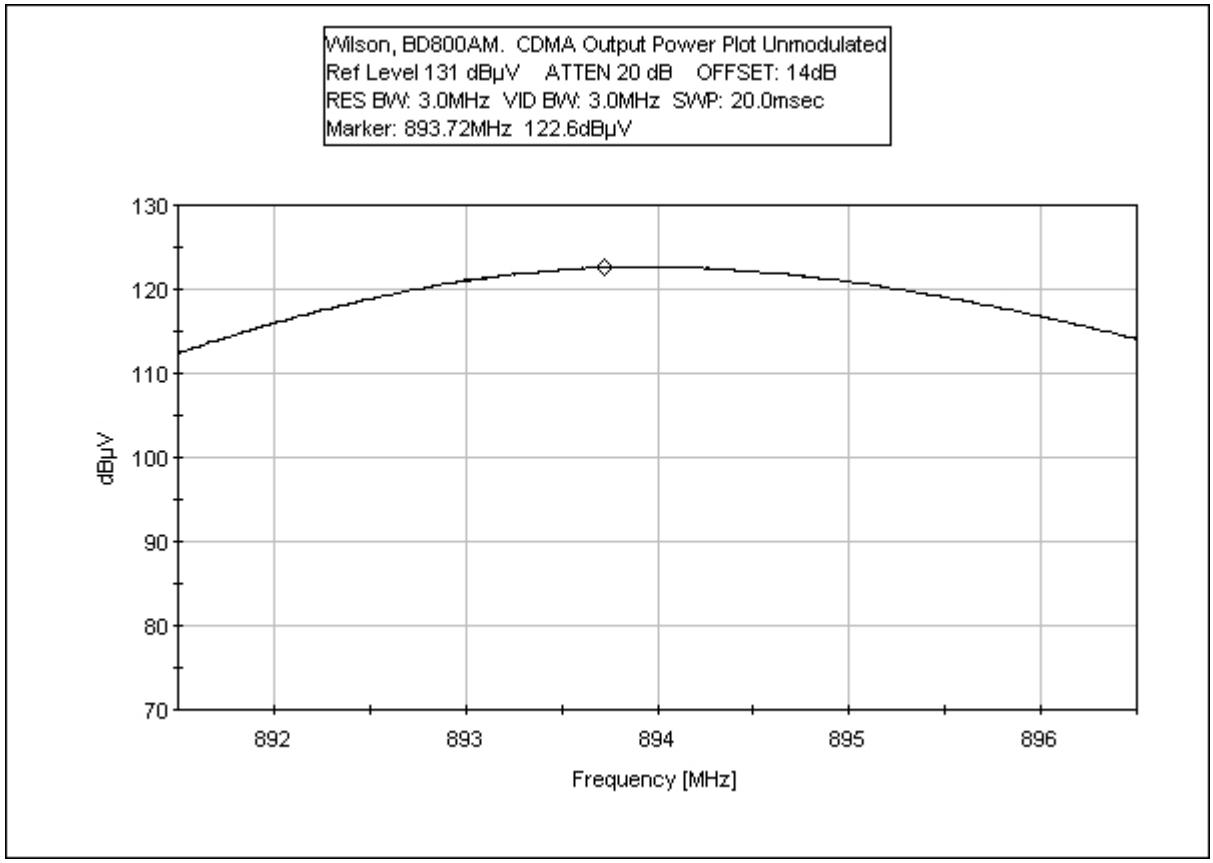
Downlink AMPS 894 MHz - Unmodulated Output Power



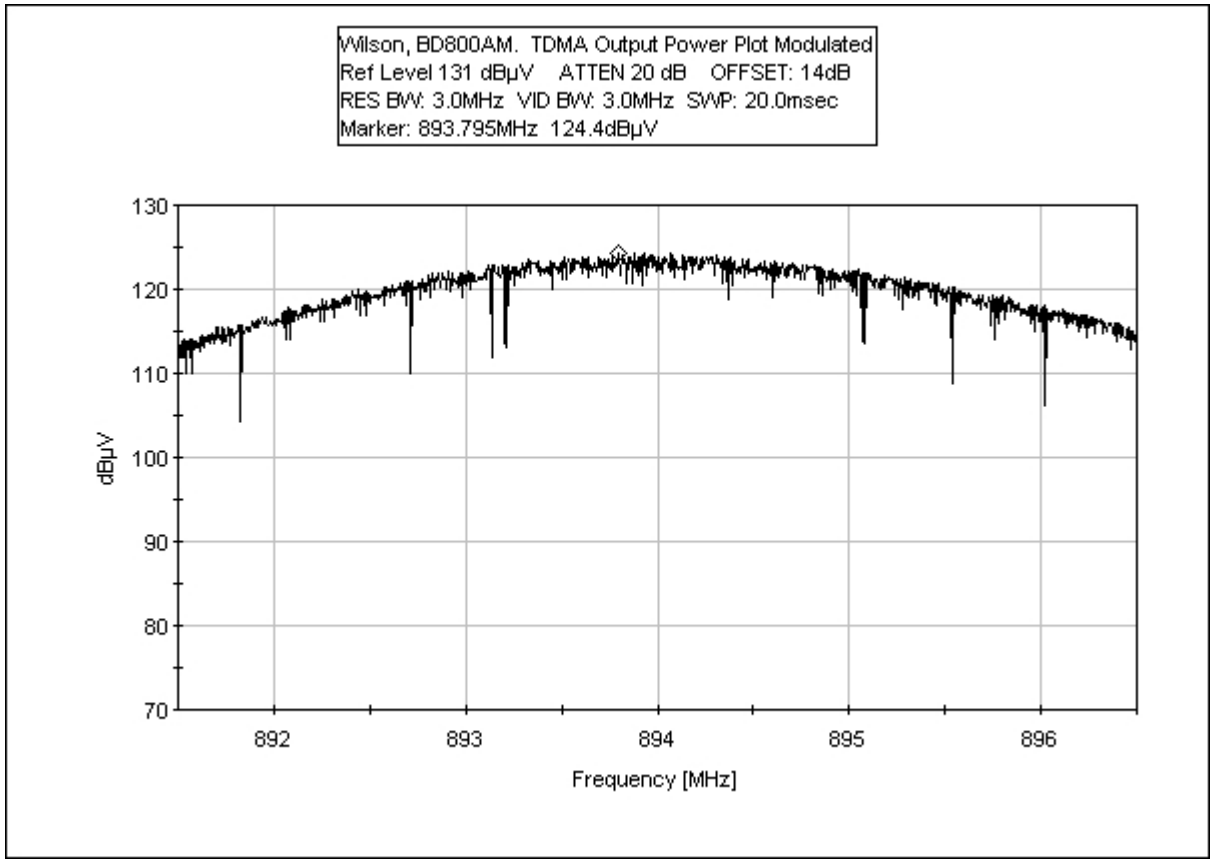
Downlink CDMA 894 MHz - Modulated Output Power



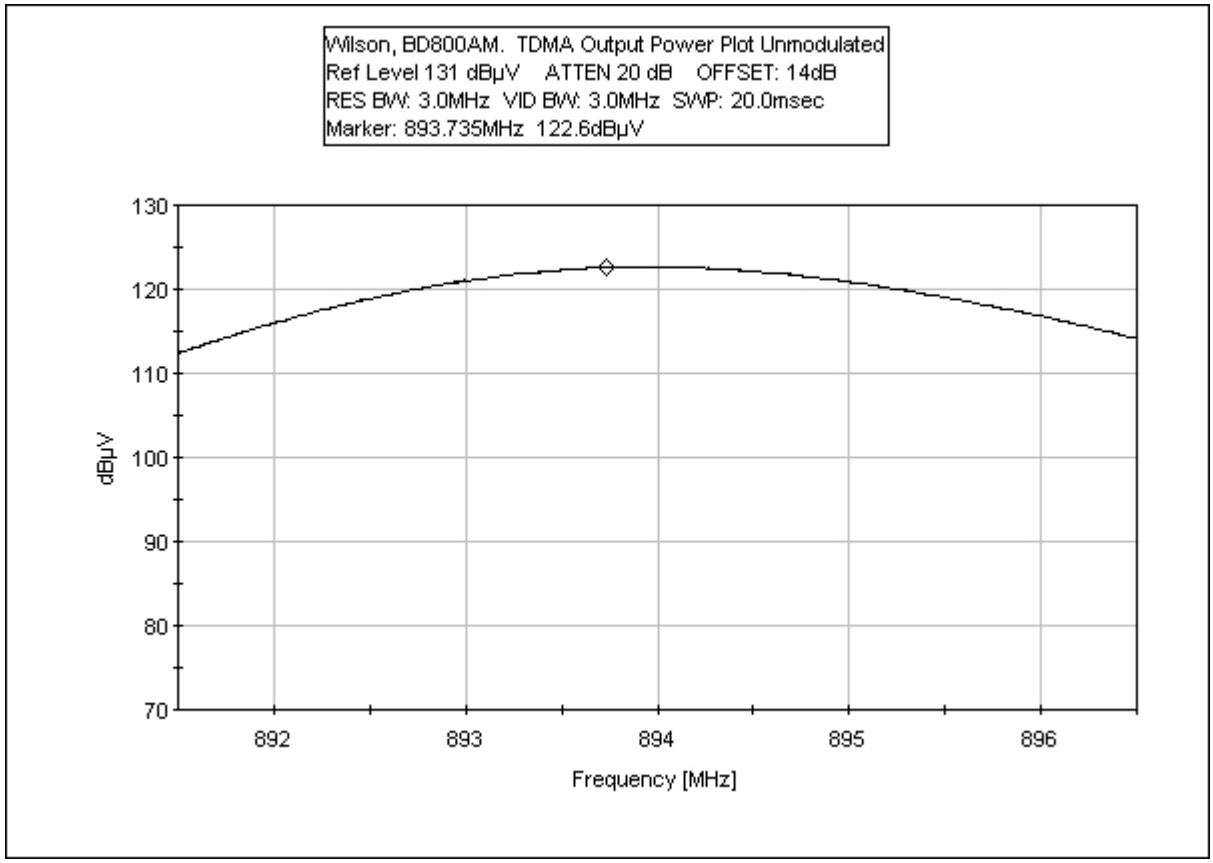
Downlink CDMA 894 MHz - Unmodulated Output Power



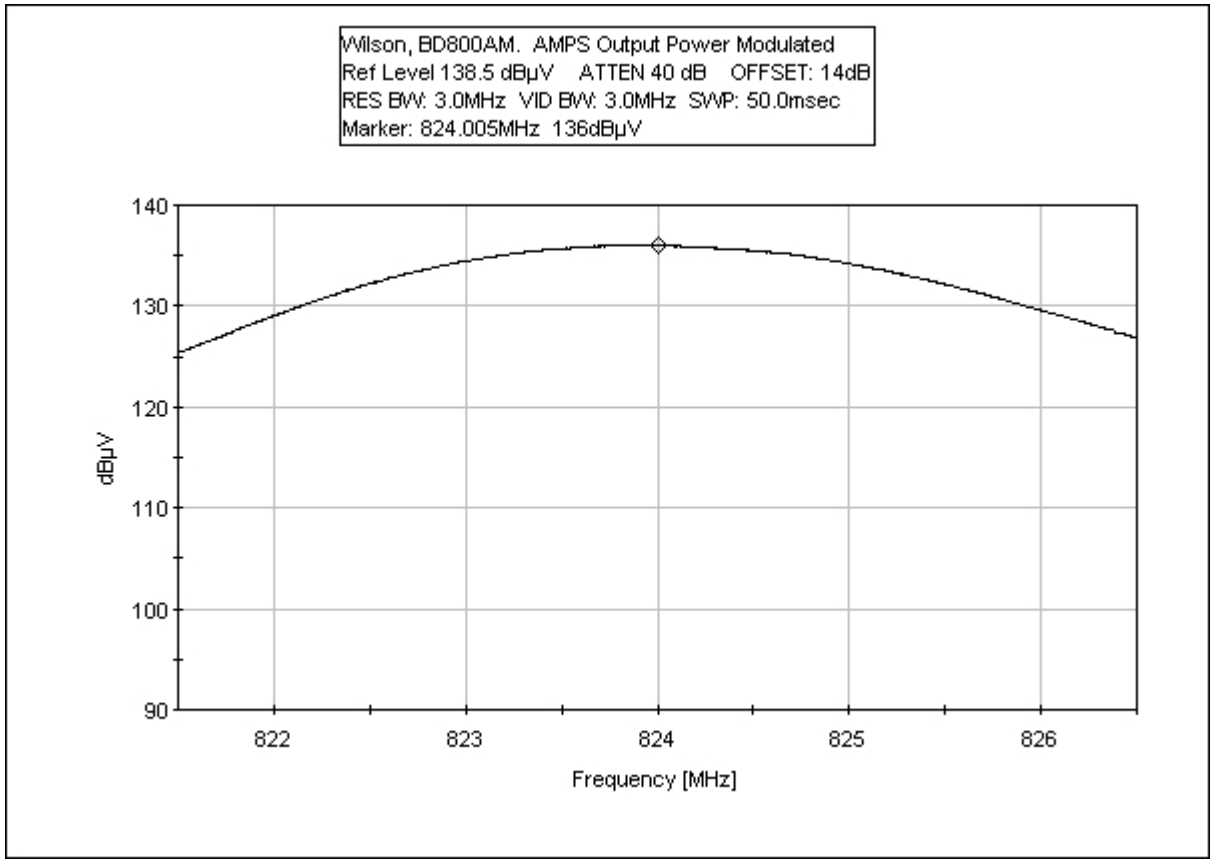
Downlink TDMA 894 MHz - Modulated Output Power



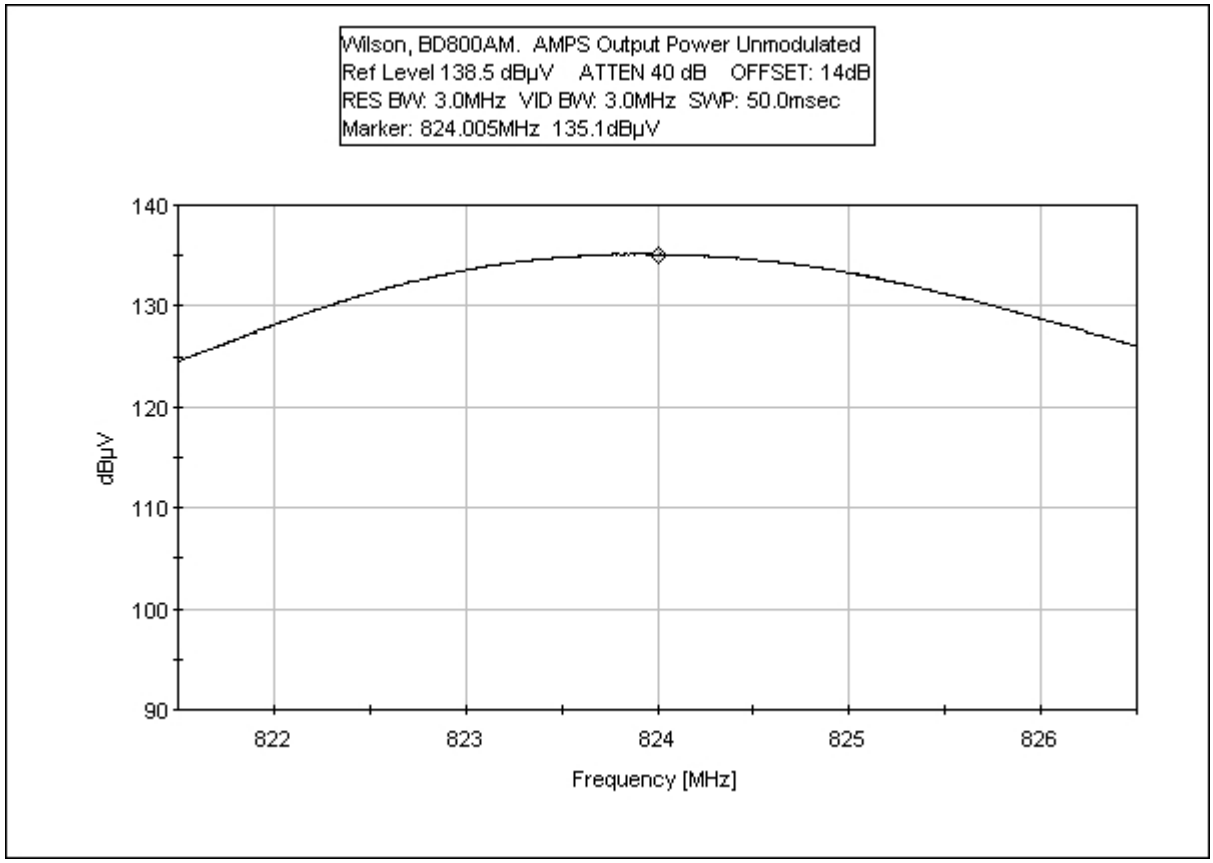
Downlink TDMA 894 MHz - Unmodulated Output Power



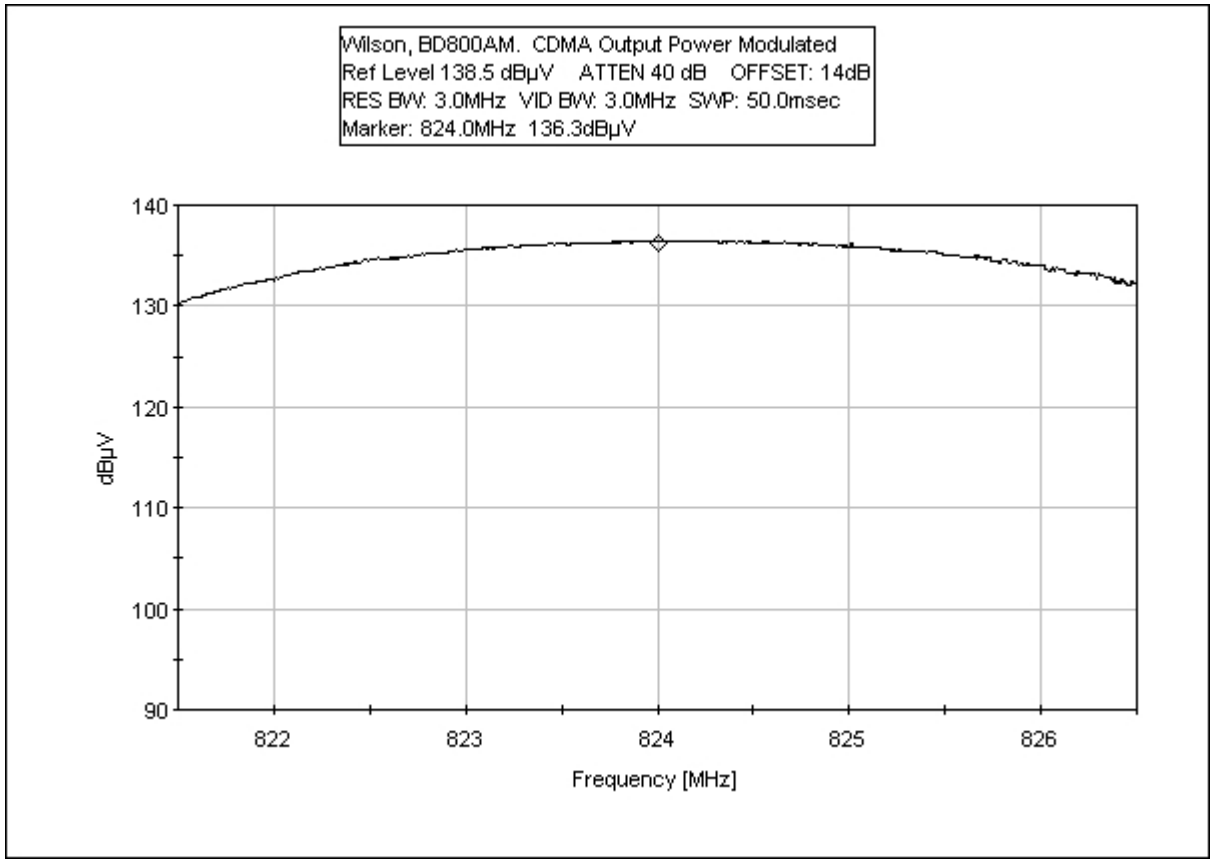
Uplink AMPS 824 MHz - Modulated Output Power



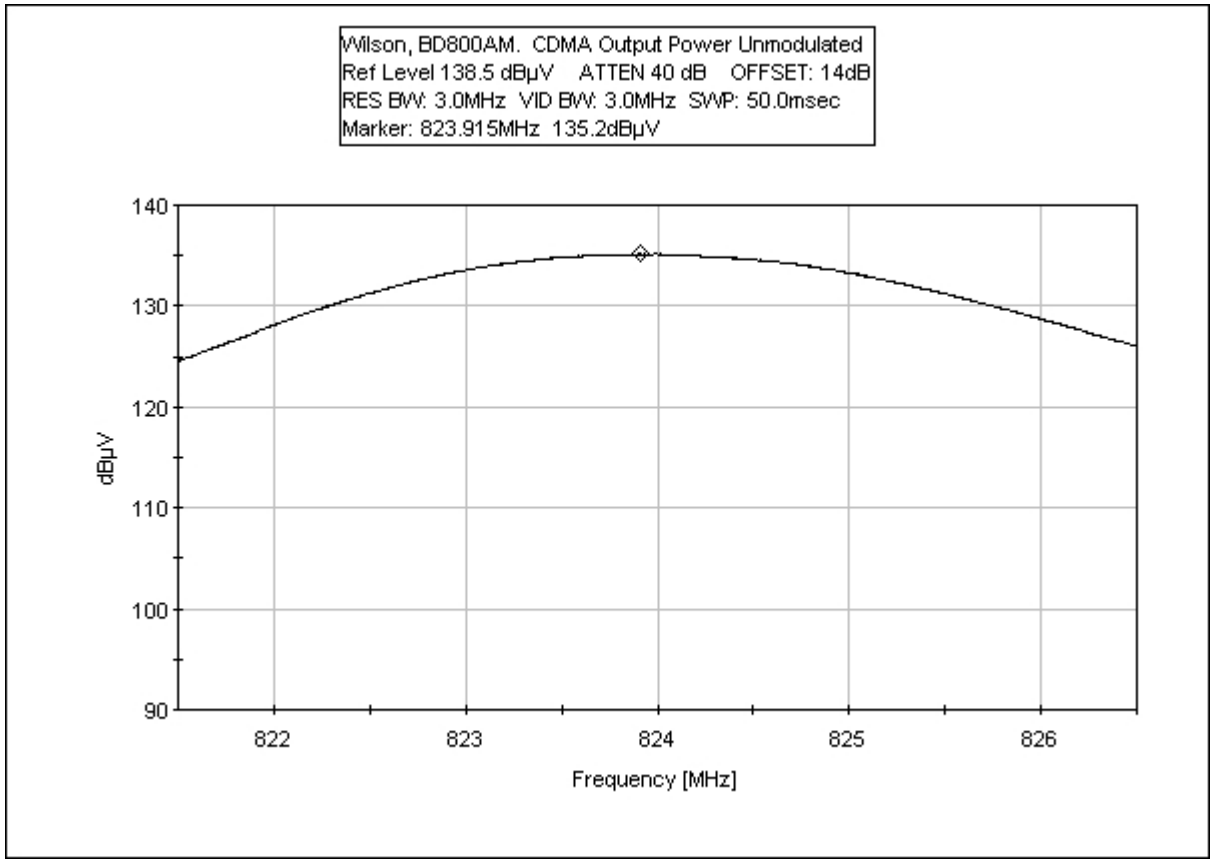
Uplink AMPS 824 MHz - Unmodulated Output Power



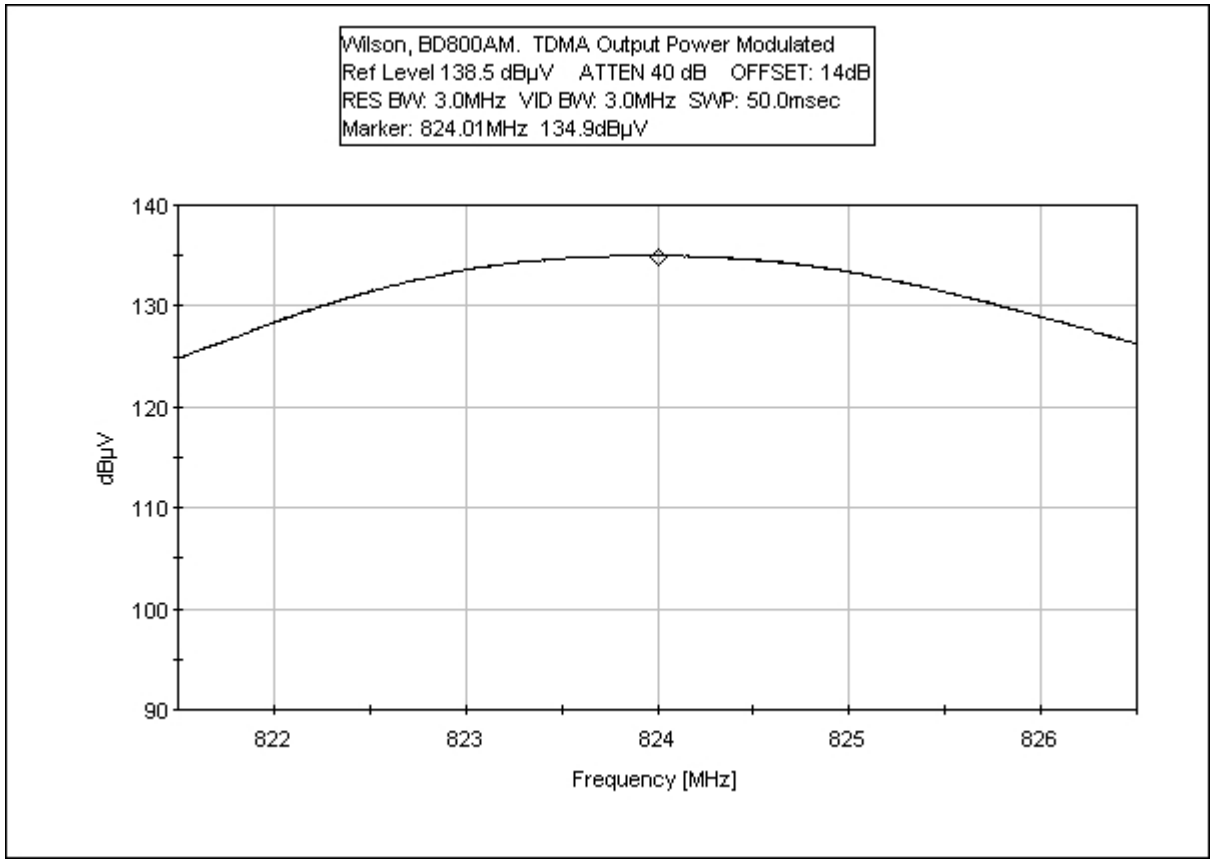
Uplink CDMA 824 MHz - Modulated Output Power



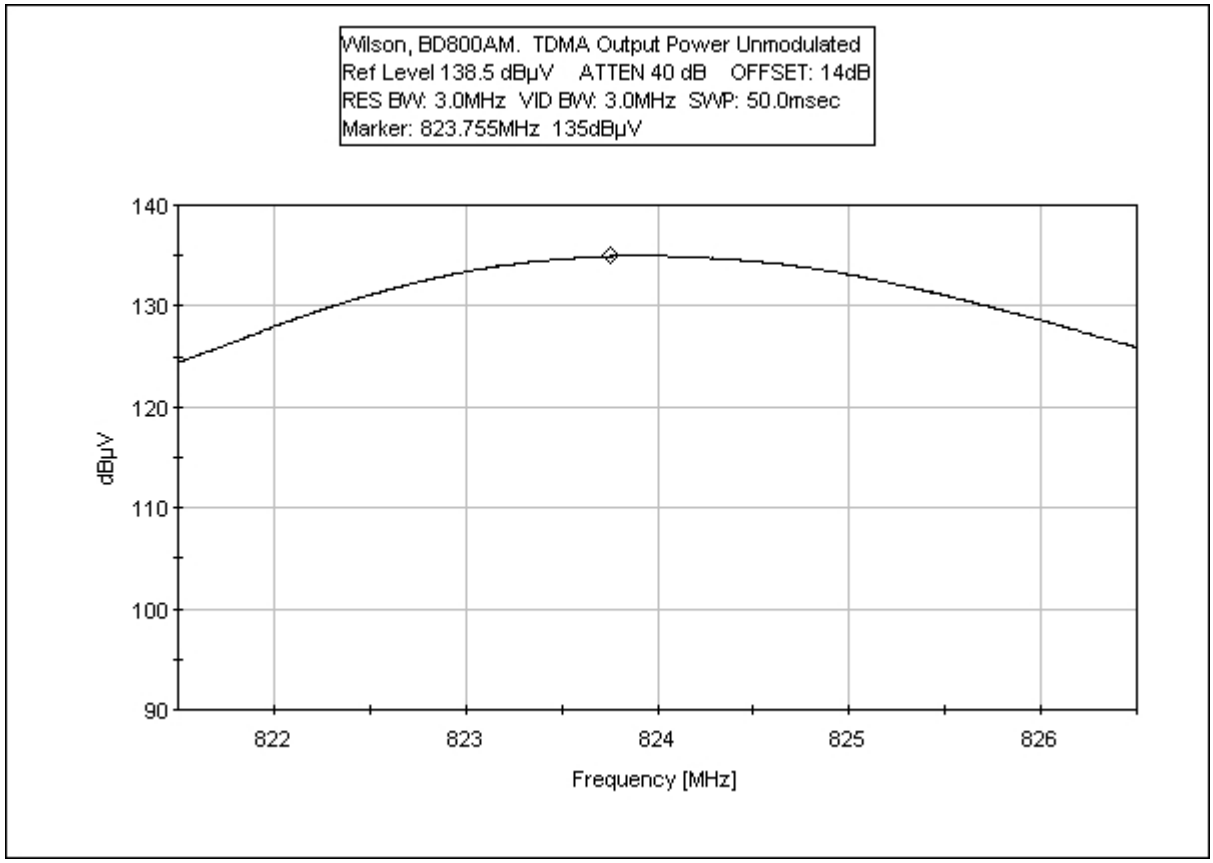
Uplink CDMA 824 MHz - Unmodulated Output Power



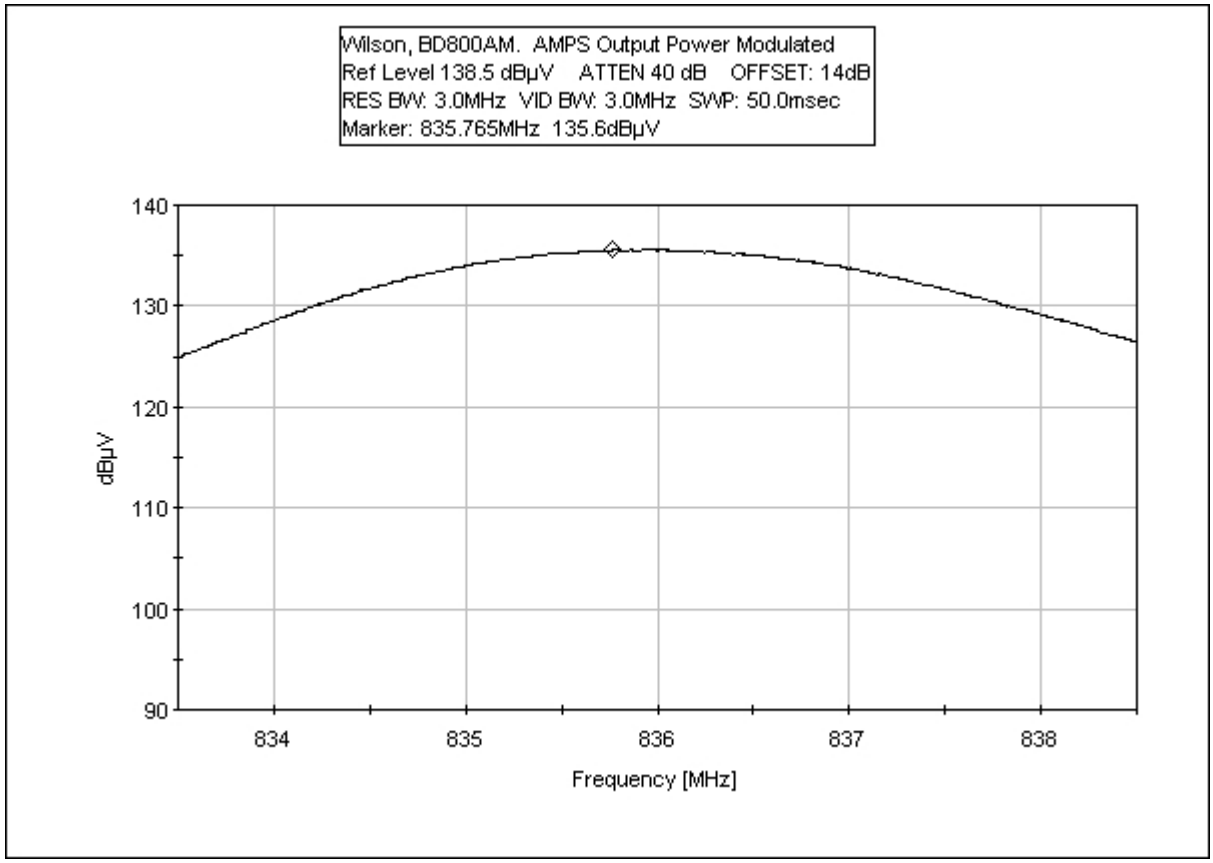
Uplink TDMA 824 MHz - Modulated Output Power



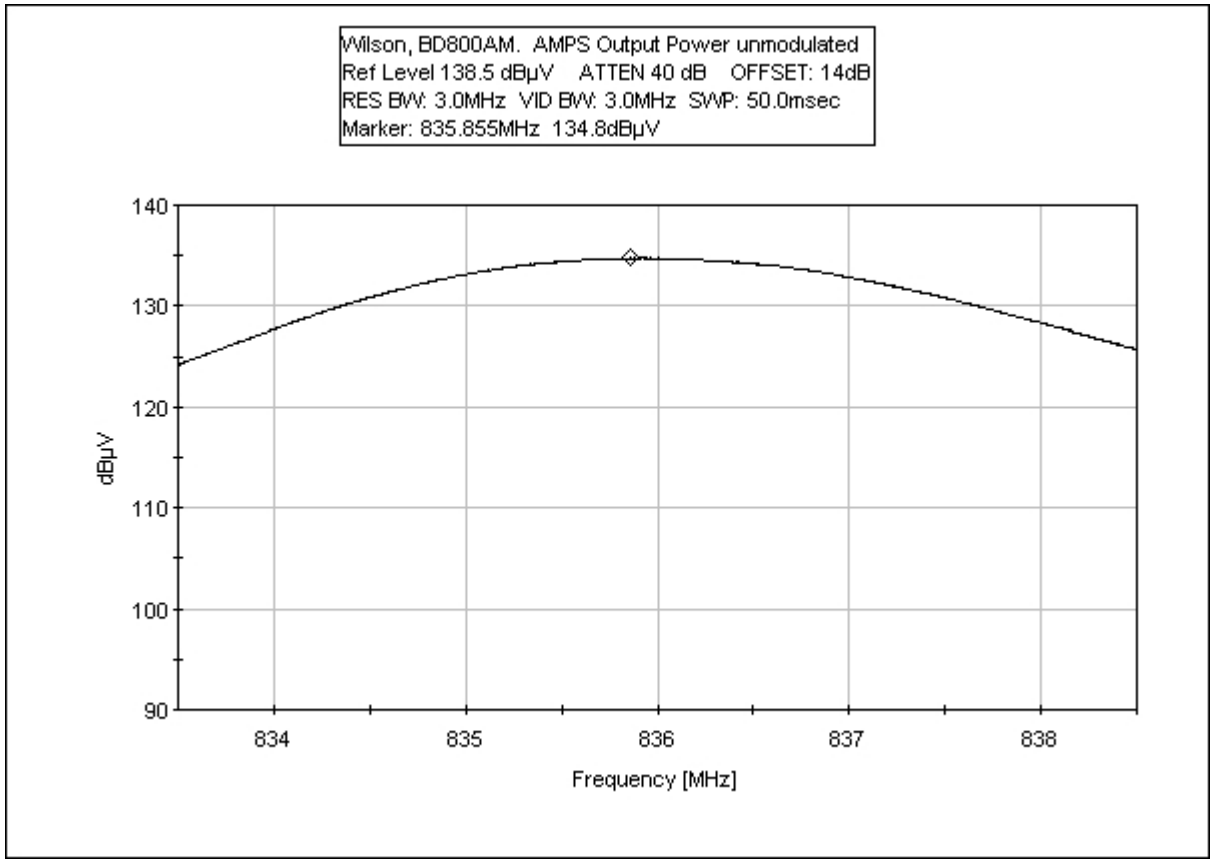
Uplink TDMA 824 MHz - Unmodulated Output Power



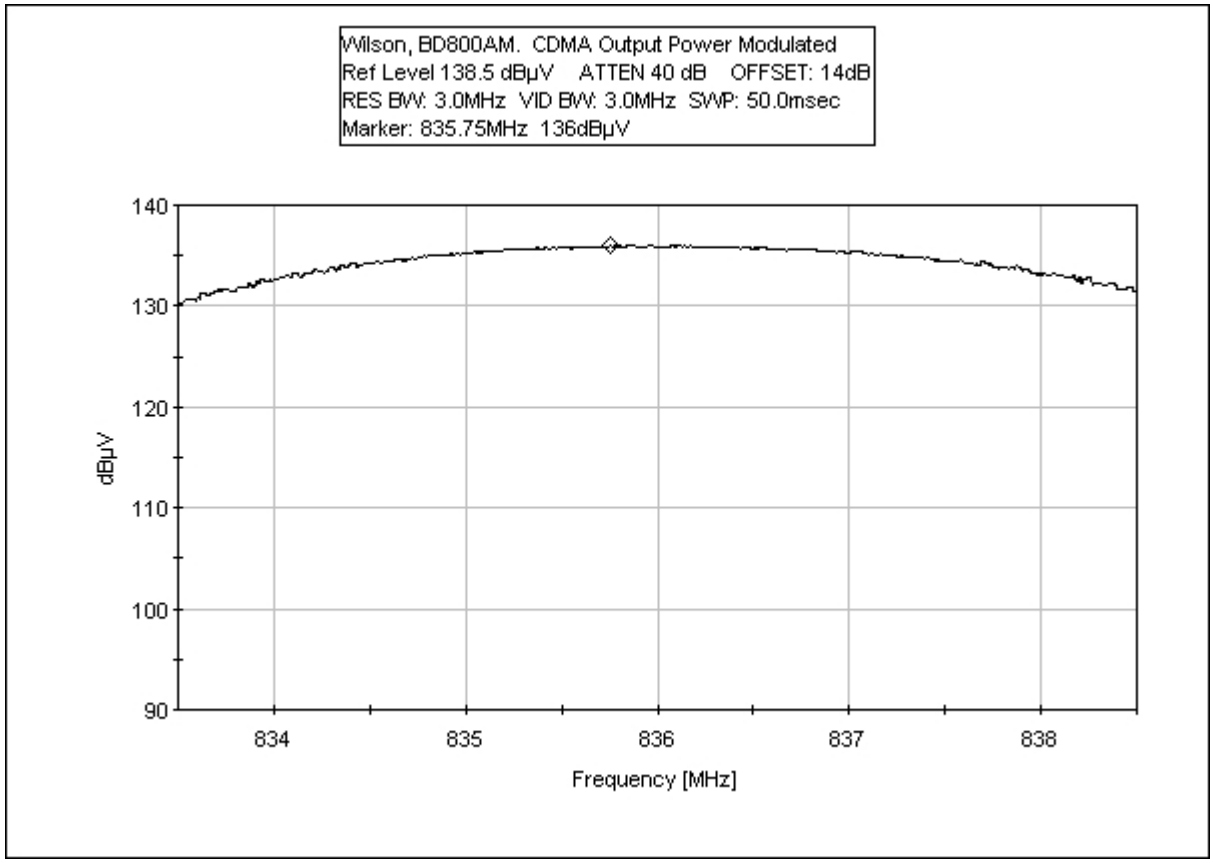
Uplink AMPS 836 MHz - Modulated Output Power



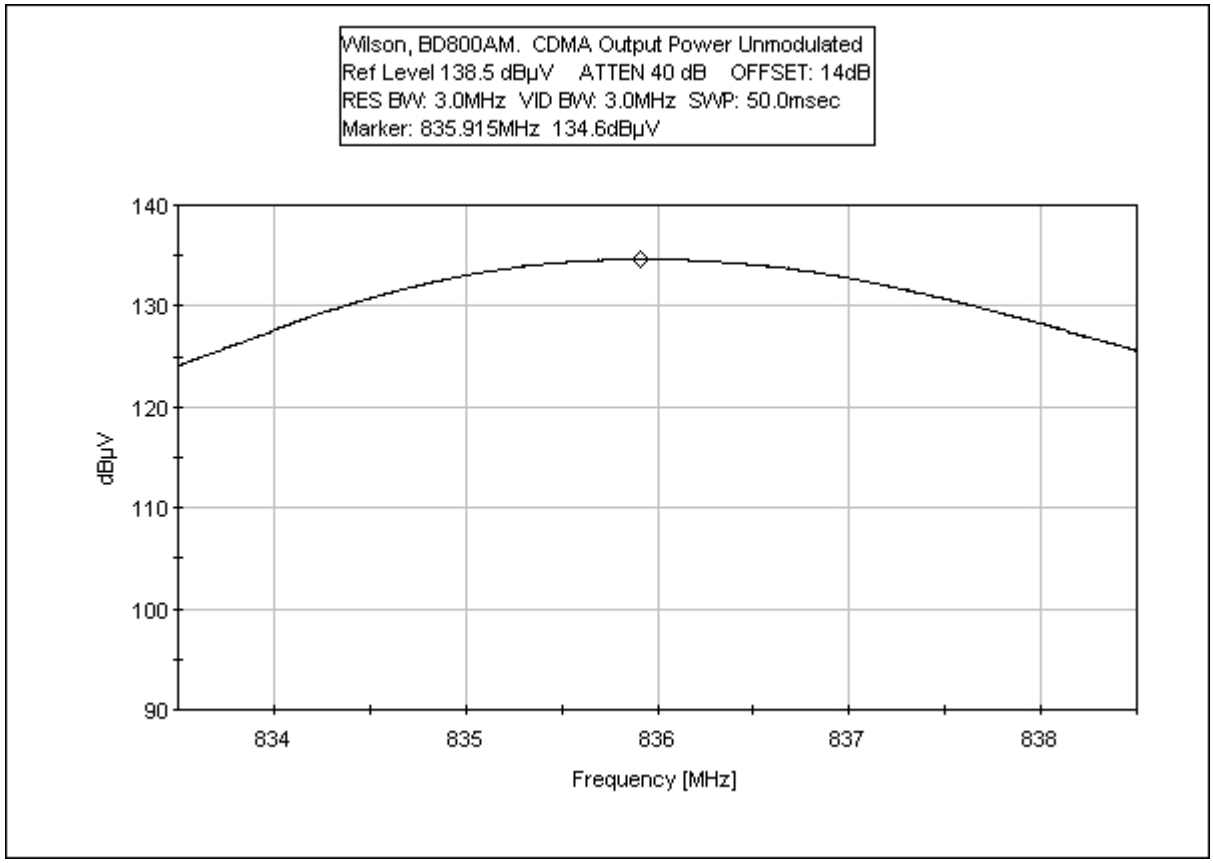
Uplink AMPS 836 MHz - Unmodulated Output Power



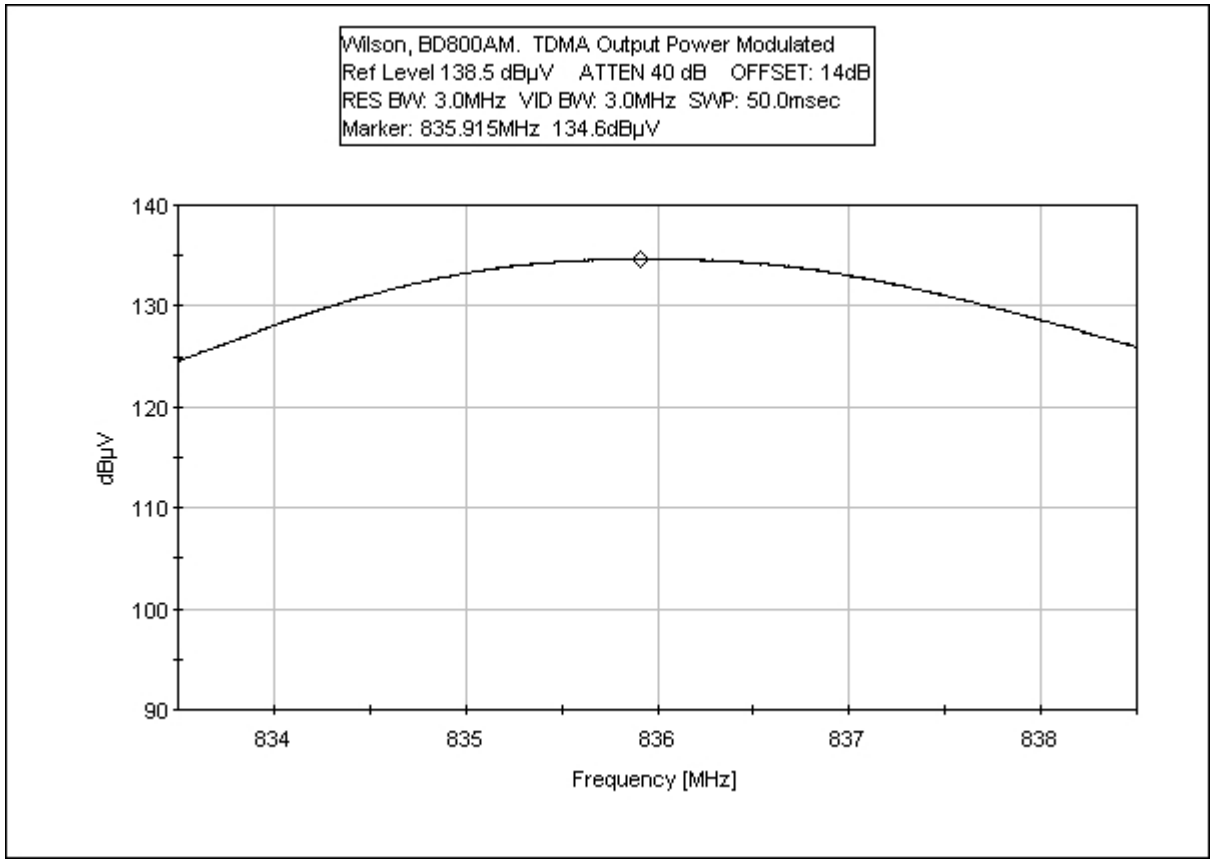
Uplink CDMA 836 MHz - Modulated Output Power



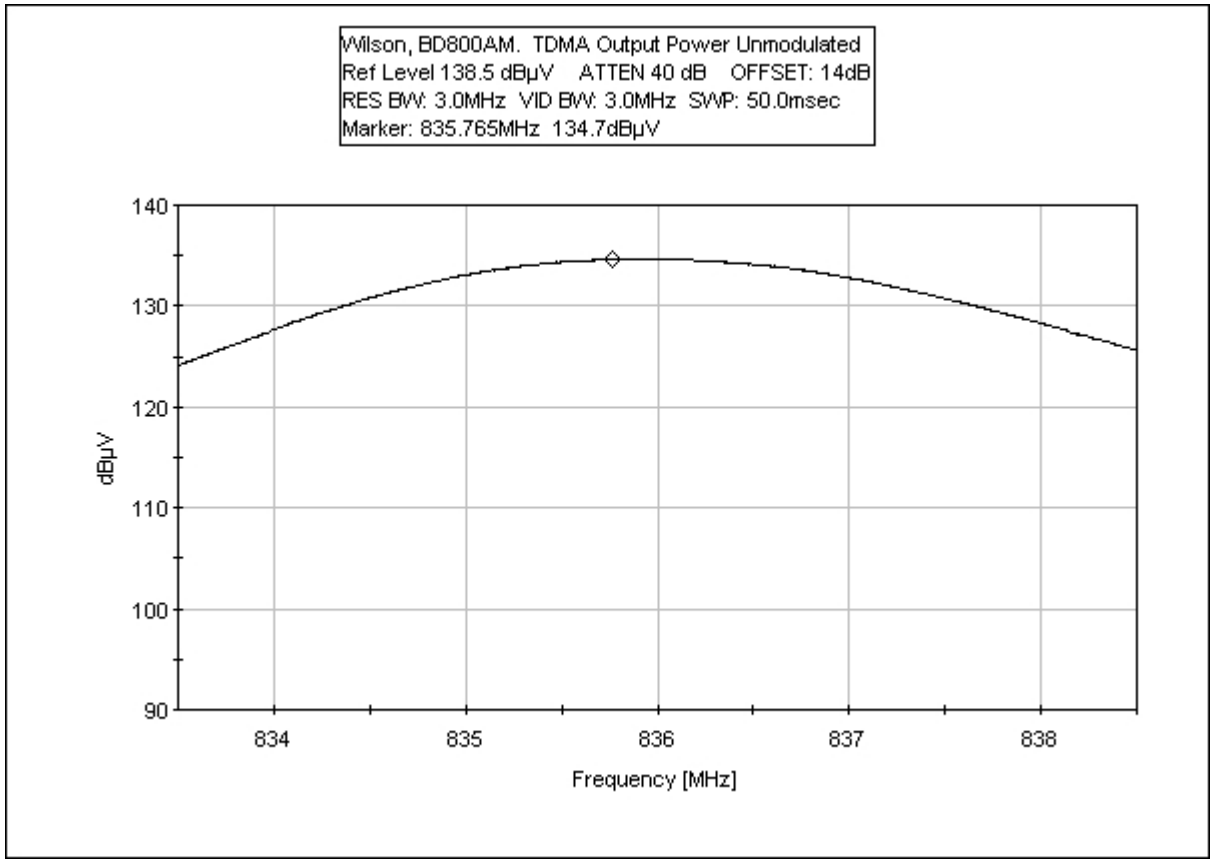
Uplink CDMA 836 MHz - Unmodulated Output Power



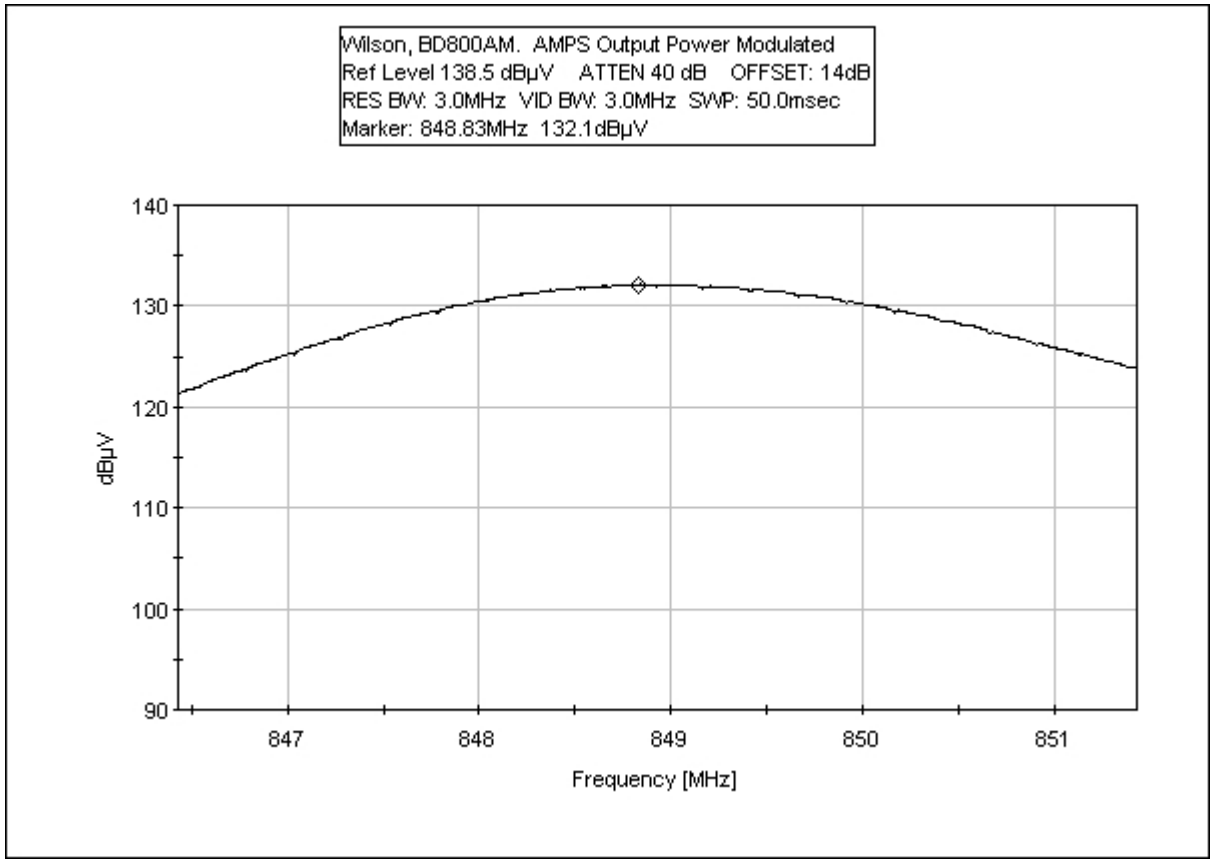
Uplink TDMA 836 MHz - Modulated Output Power



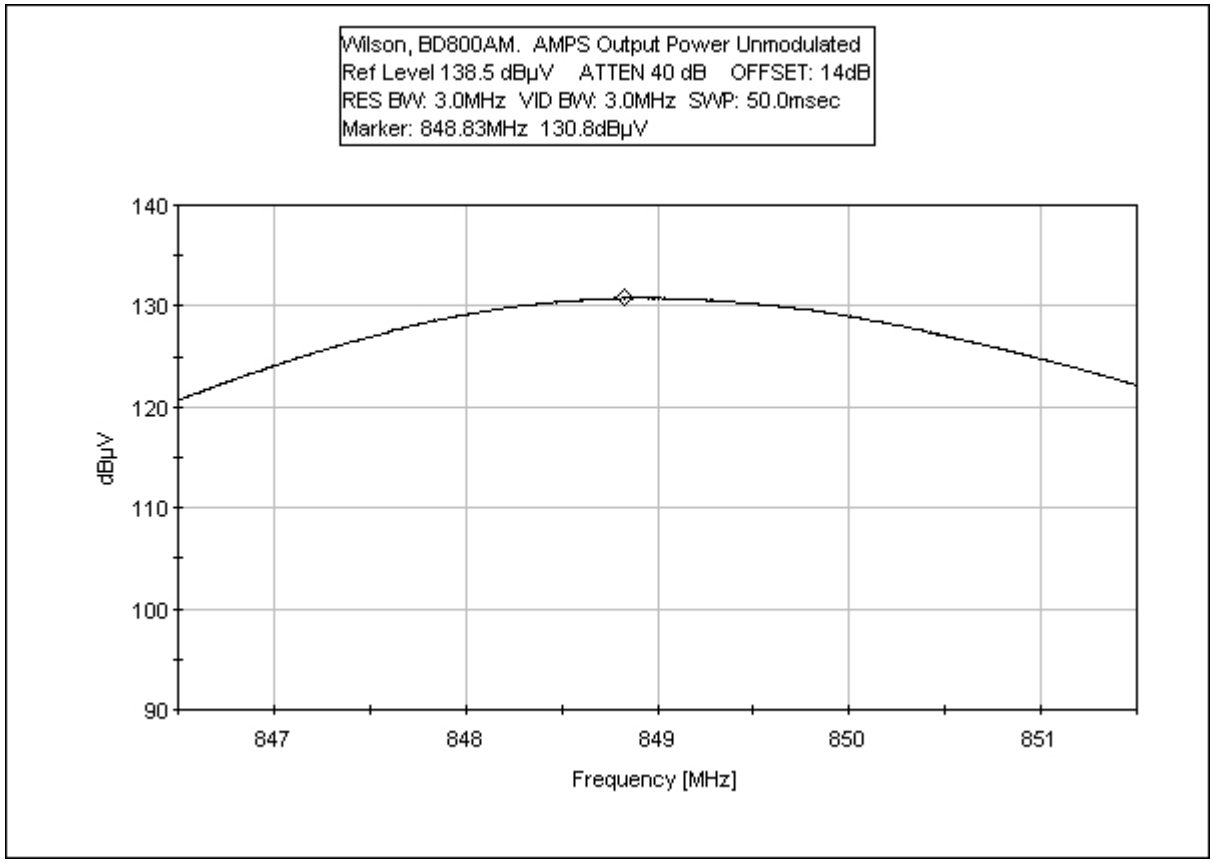
Uplink TDMA 836 MHz - Unmodulated Output Power



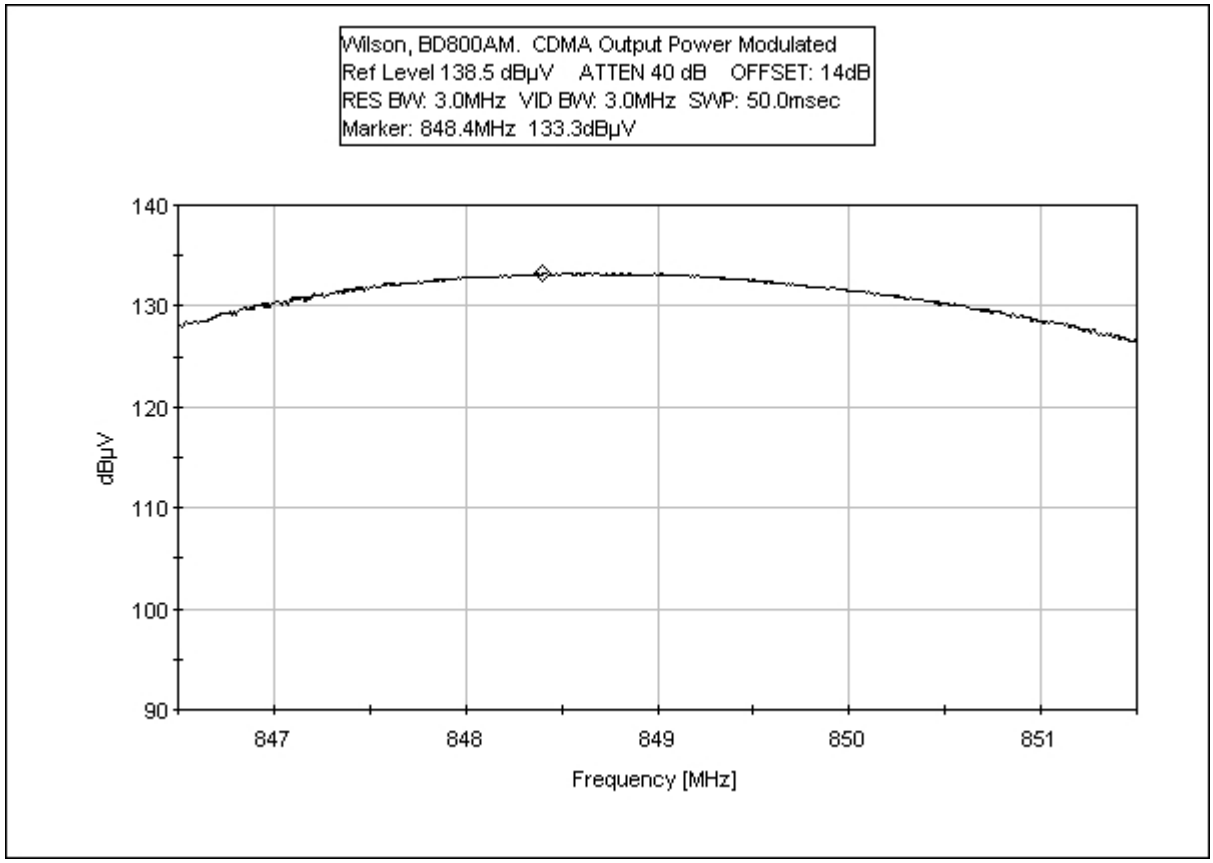
Uplink AMPS 849 MHz - Modulated Output Power



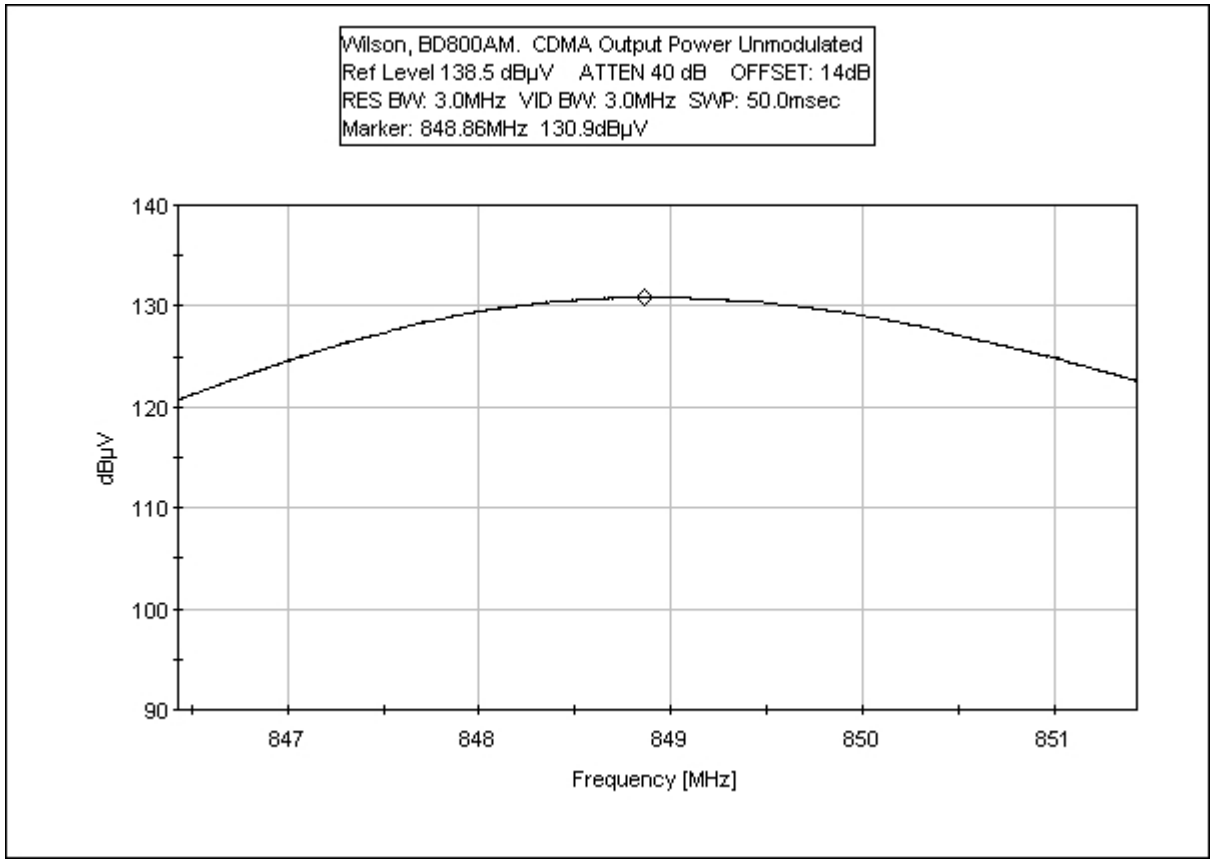
Uplink AMPS 849 MHz - Unmodulated Output Power



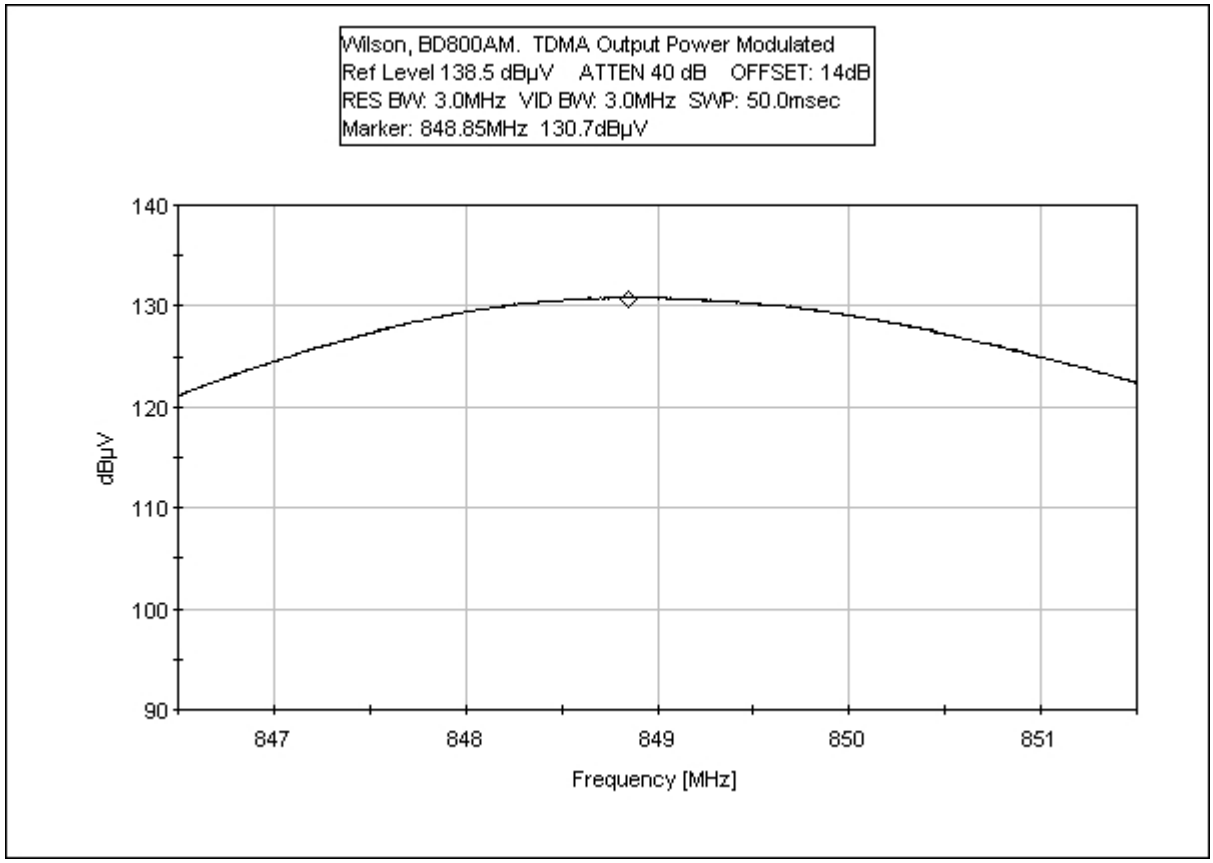
Uplink CDMA 849 MHz - Modulated Output Power



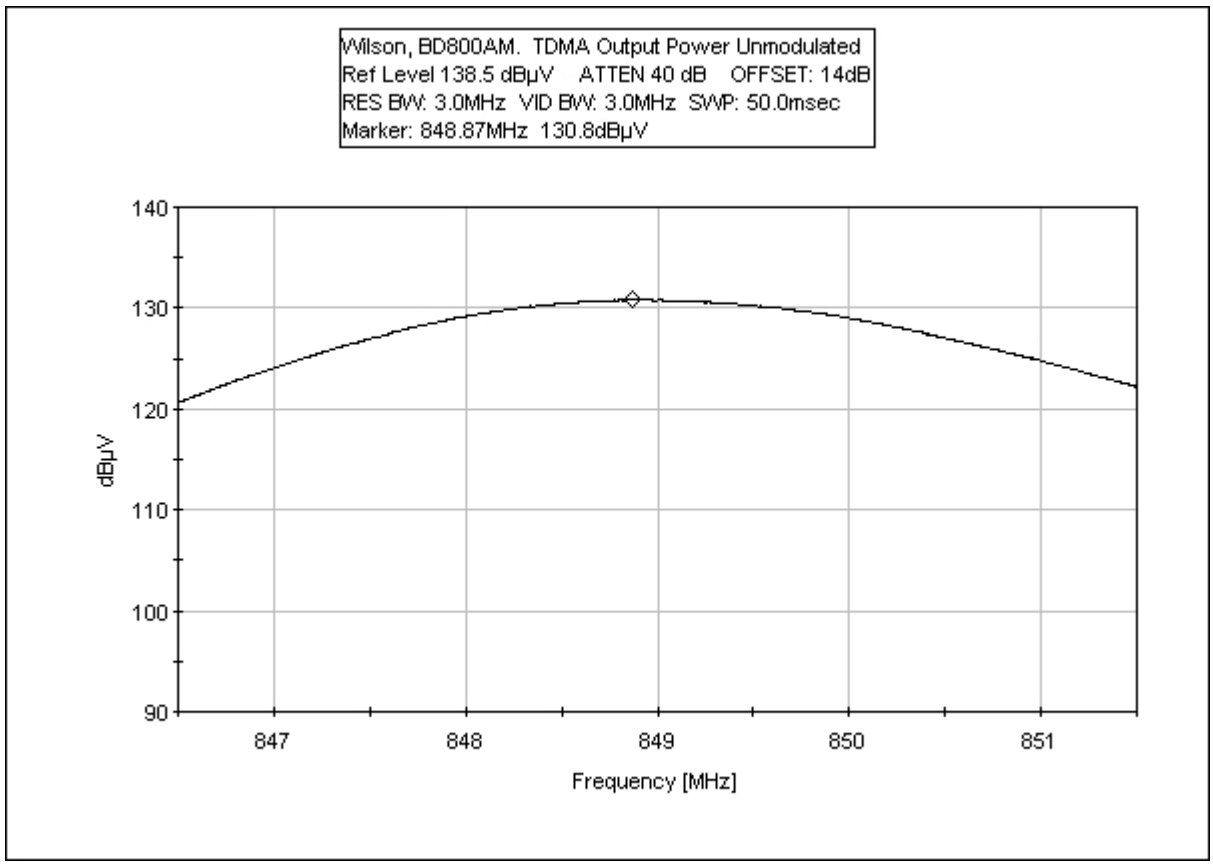
Uplink CDMA 849 MHz - Unmodulated Output Power



Uplink TDMA 849 MHz - Modulated Output Power



Uplink TDMA 849 MHz - Unmodulated Output Power



Test Equipment

Equipment	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
QP Adapter	HP	85650A	2811A01267	00478	1/30/02	1/30/03
S/A Display	HP	8566B	2403A08241	00489	1/30/02	1/30/03
Spectrum Analyzer	HP	8566B	2209A01404	00490	1/30/02	1/30/03

DOWNLINK OUTPUT POWER

UPLINK OUTPUT POWER

UPLINK OUTPUT POWER - TDMA

2.1033(c)(14)/2.1047(a) - MODULATION CHARACTERISTICS - AUDIO FREQUENCY RESPONSE

Not applicable to this unit.

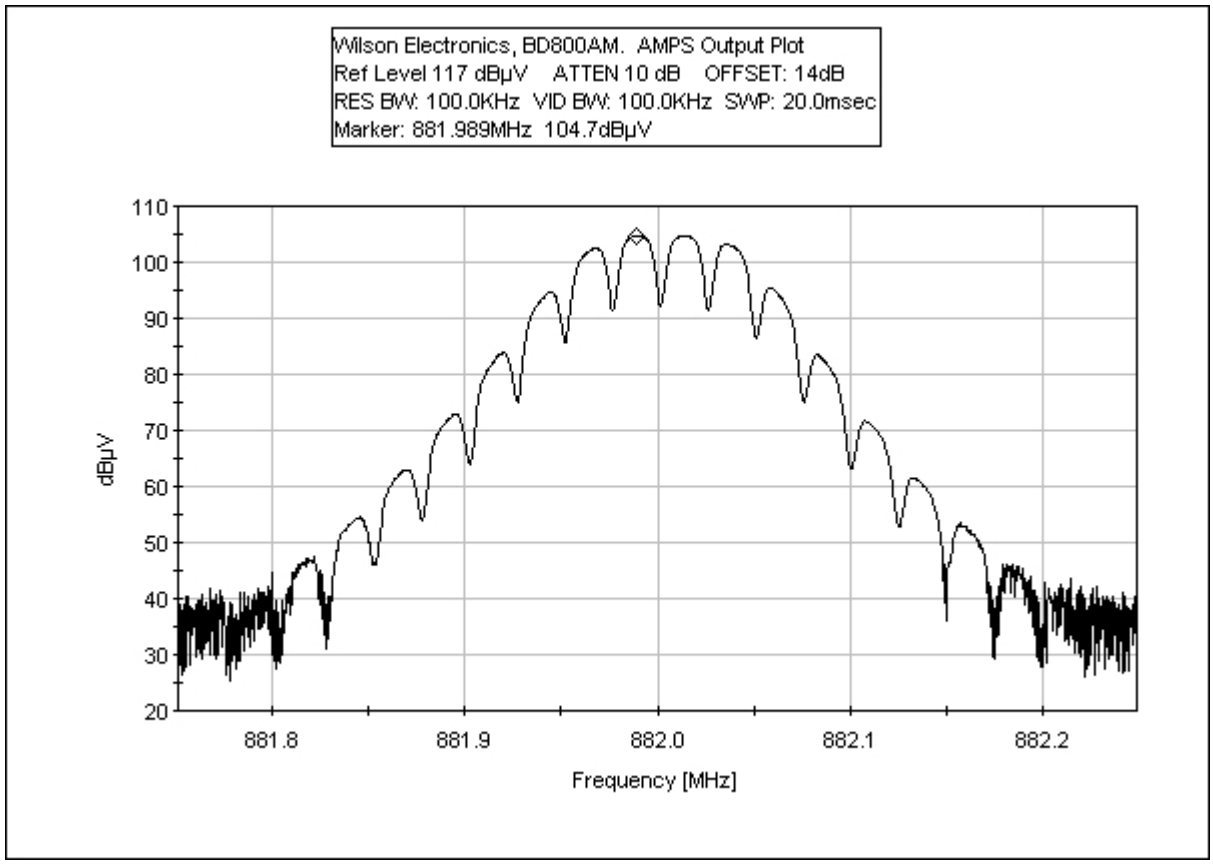
2.1033(c)(14)/2.1047(b) MODULATION CHARACTERISTICS – Modulation Limiting Response

Not applicable to this unit.

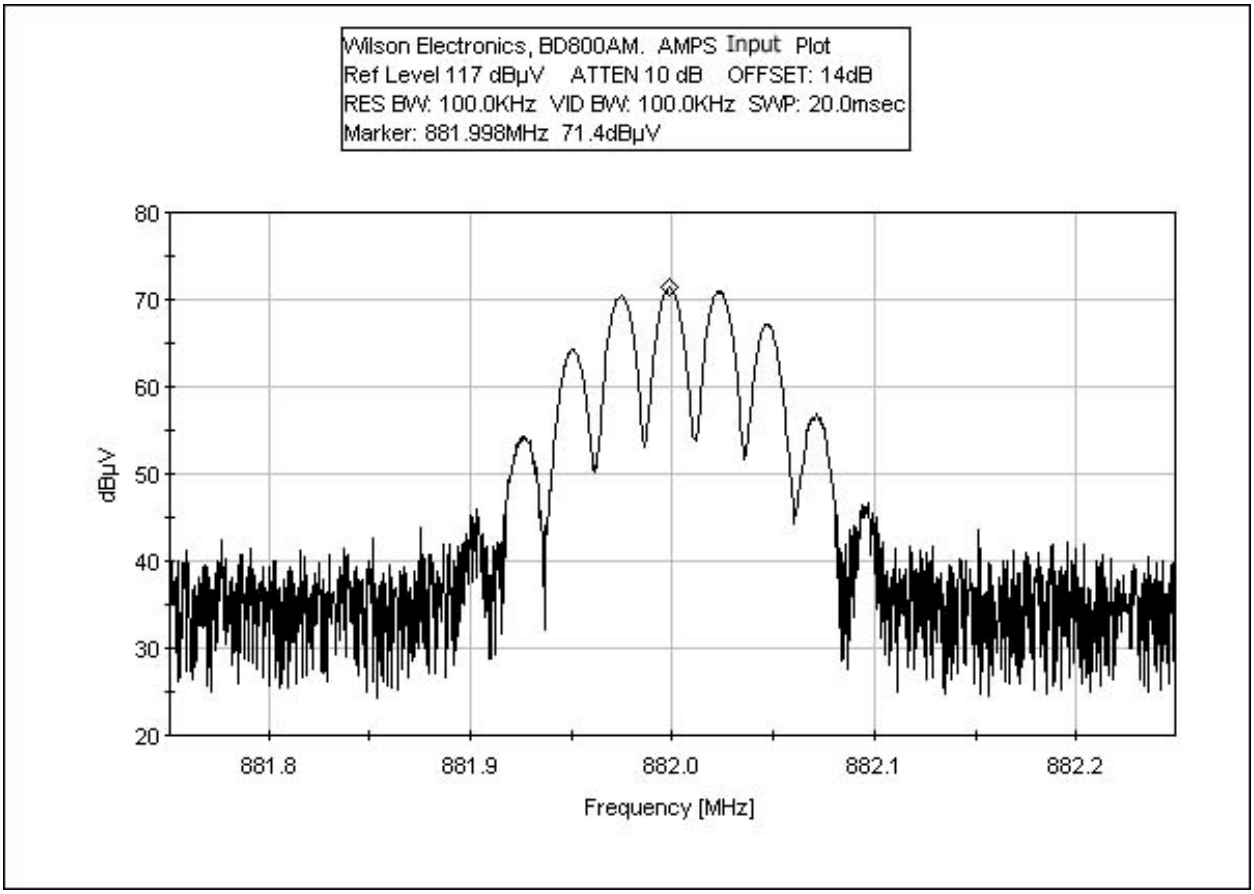
2.1033(c)(14)/2.1049/22.917- OCCUPIED BANDWIDTH

Test Conditions: EUT is a bi-directional repeater amplifier. Phone port receives and amplifies signals in the frequency range of 824-849 MHz. Antenna port receives and amplifies signals in the frequency range of 869-894 MHz. Each port retransmits signals received from the opposite port. A signal generator is set to supply a modulated signal that simulates actual signals used. The amplitude of the signal generator is set such that the output of the transmitter is at its rated maximum output power for the port being tested. The occupied bandwidth was measured by comparison of input to the output signal. This was done in order to determine if there was any degradation to the output signal due to the amplification through the repeater.

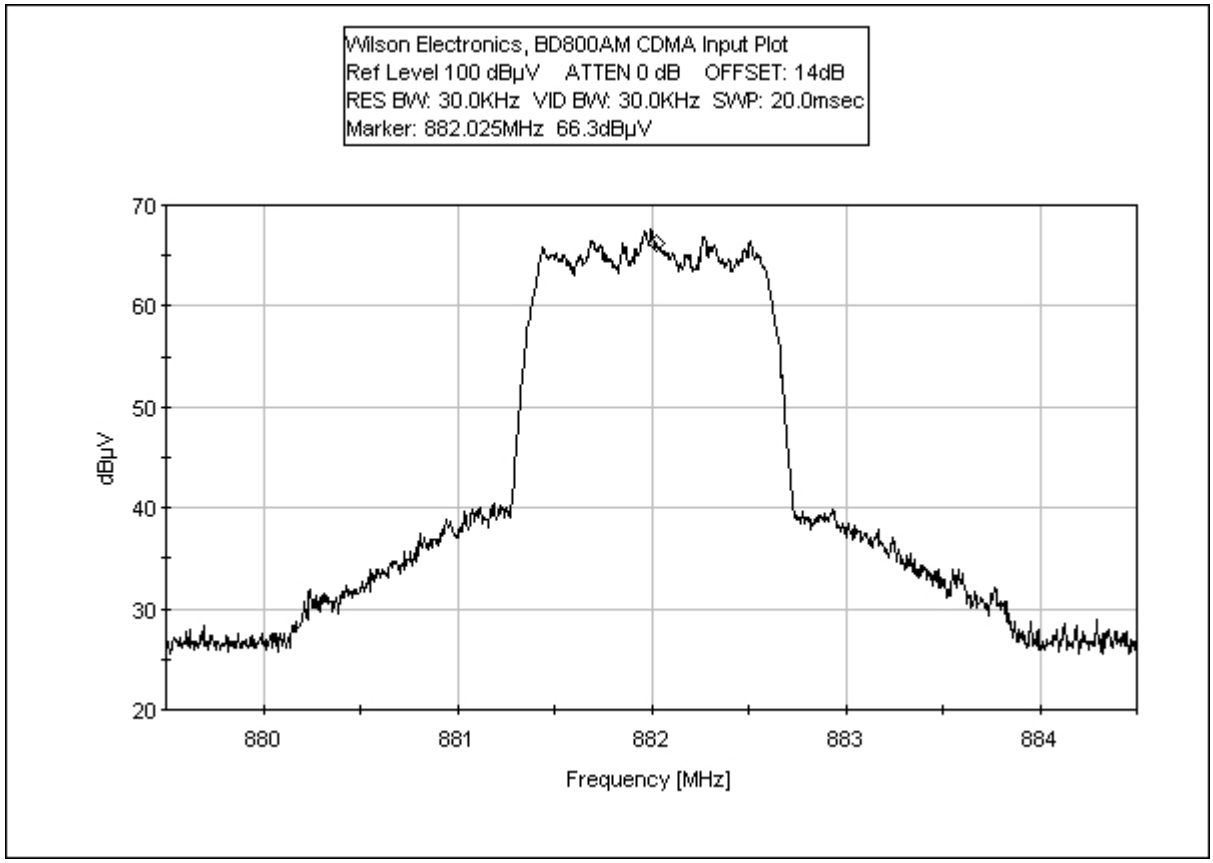
Downlink AMPS 882 MHz - Output Plot



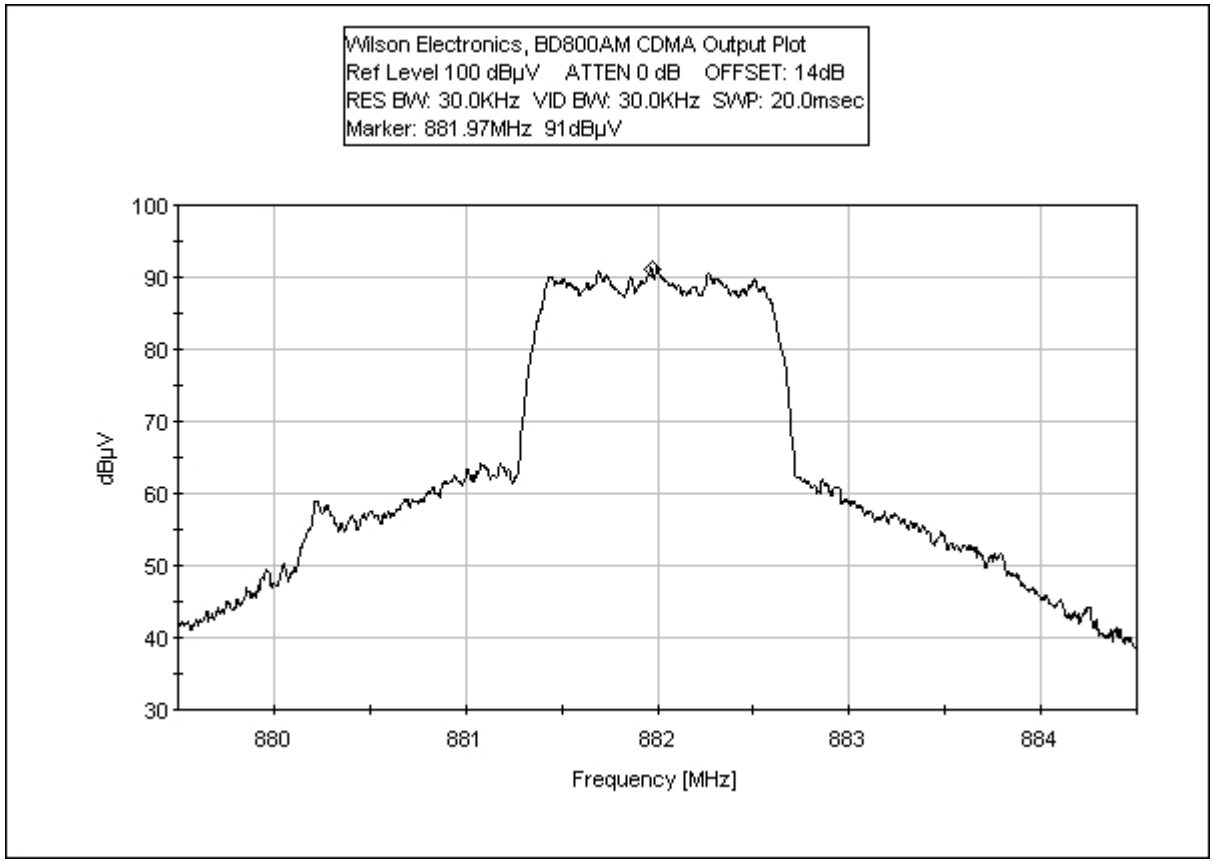
Downlink AMP 882 MHz - Input Plot



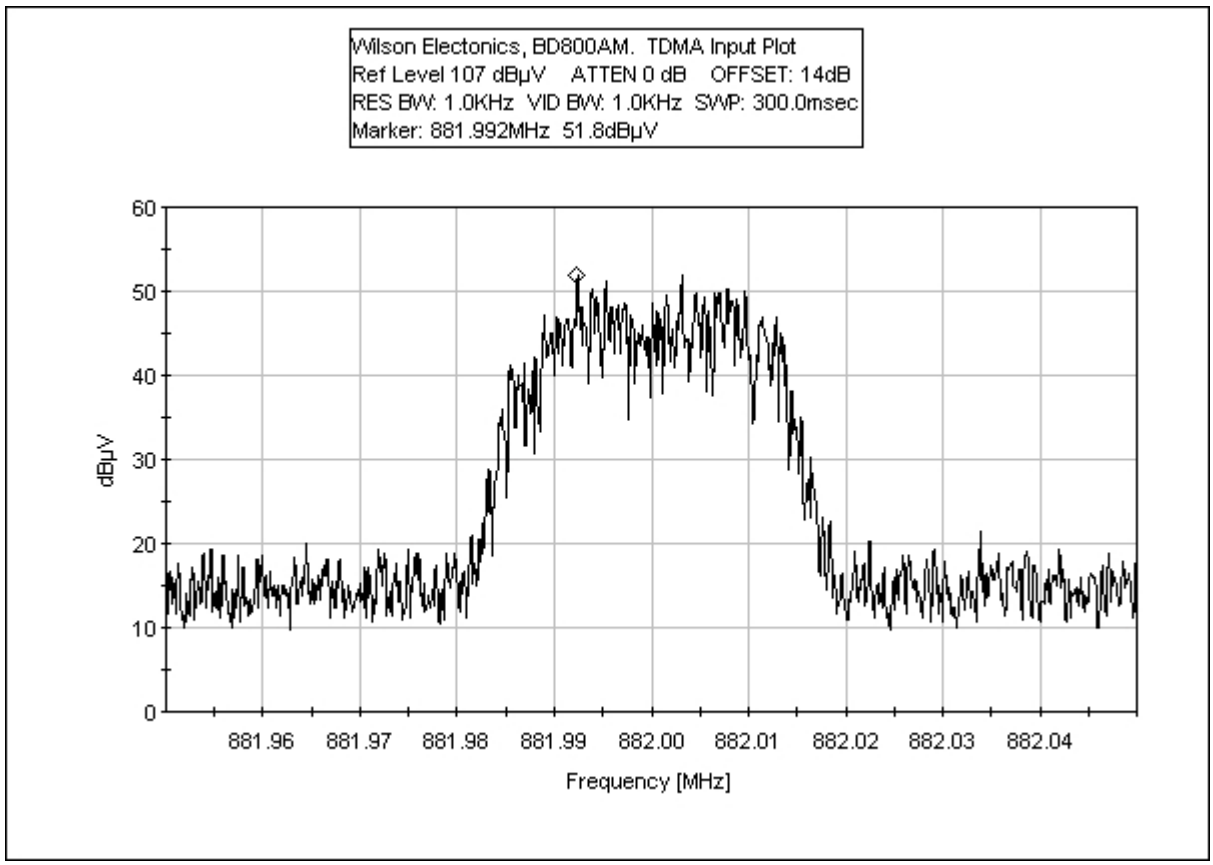
Downlink CDMA 882 MHz - Input Plot



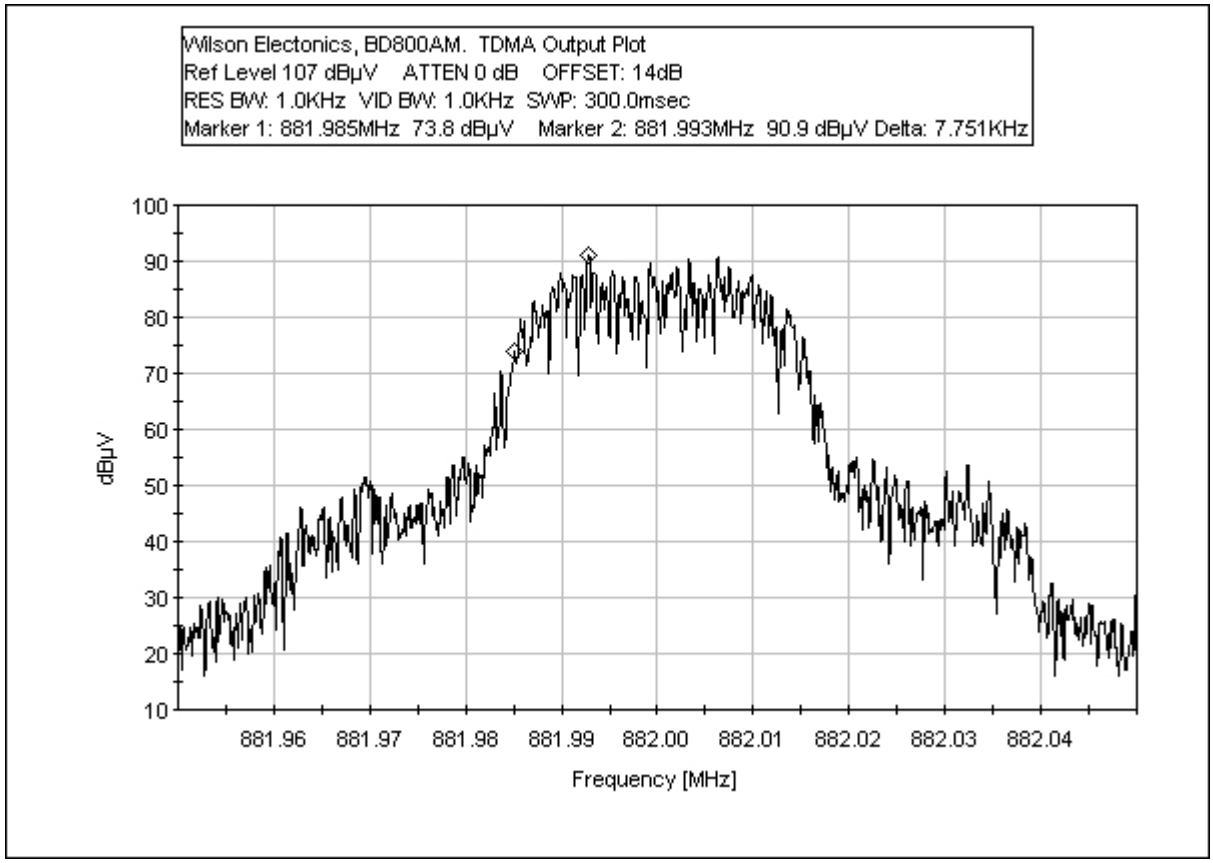
Downlink CDMA 882 MHz - Output Plot



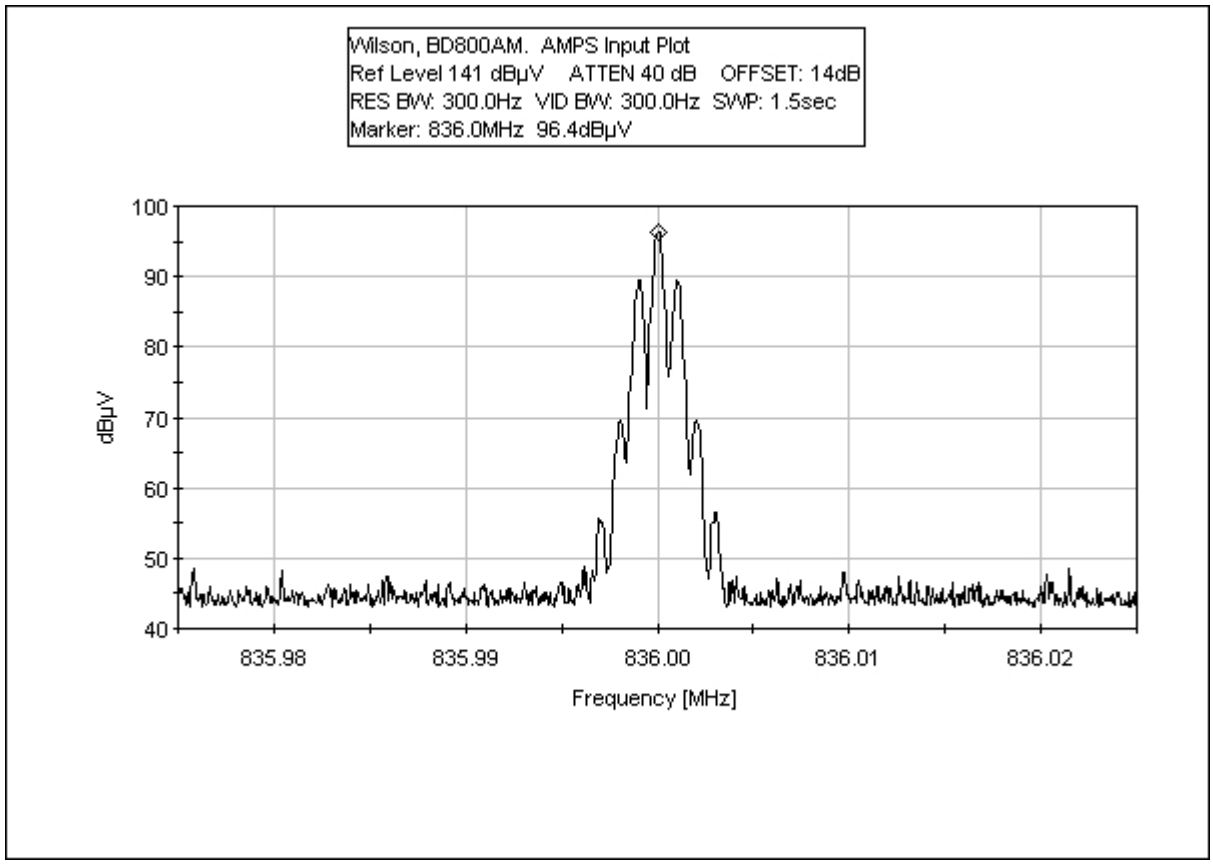
Downlink TDMA 882 MHz - Input Plot



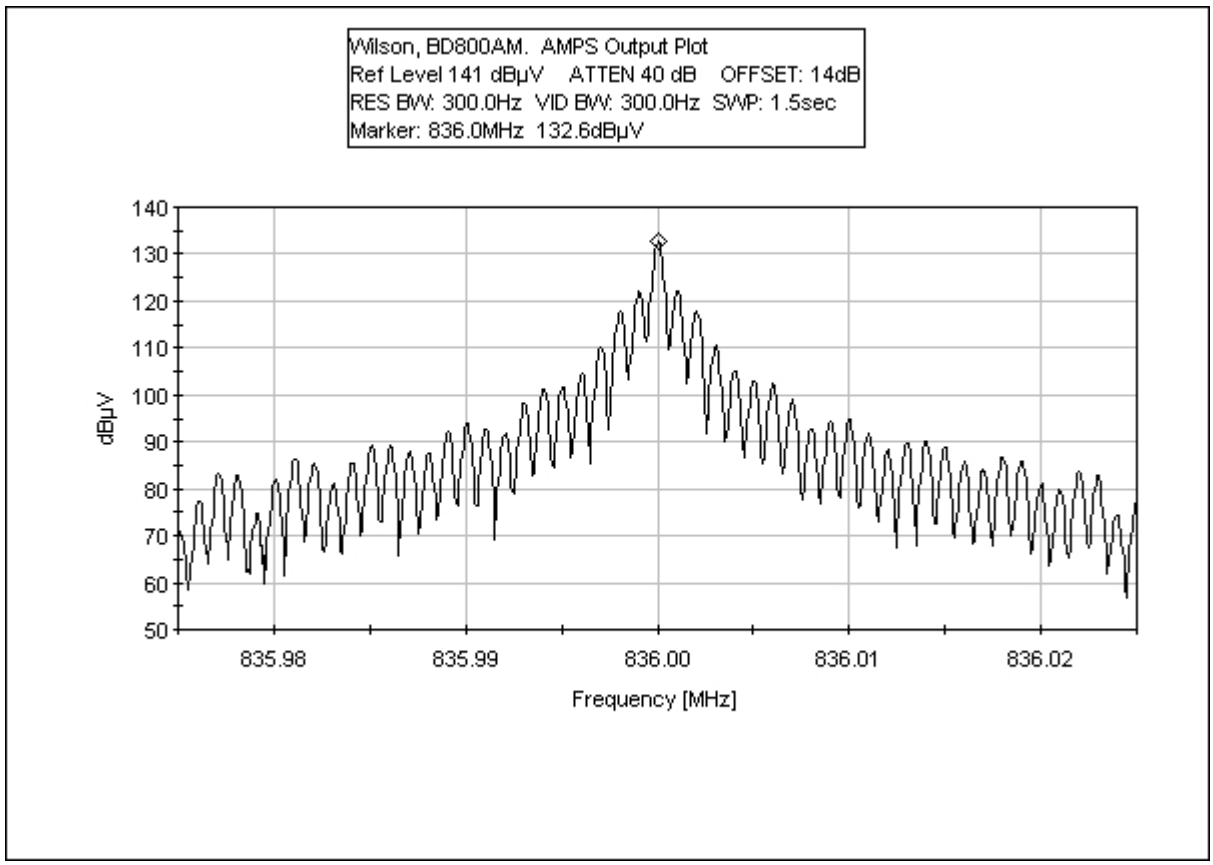
Downlink TDMA 882 MHz - Output Plot



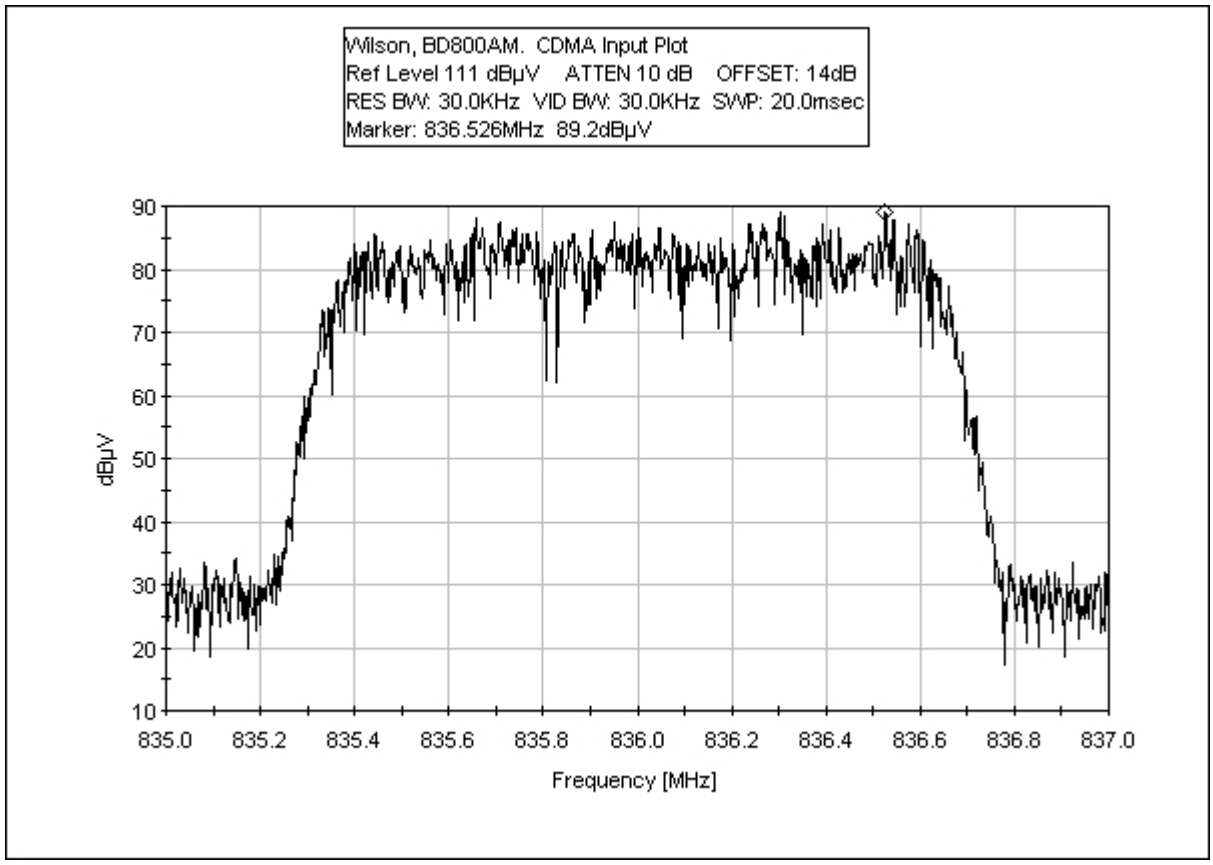
Uplink AMPS 836 MHz - Input Plot



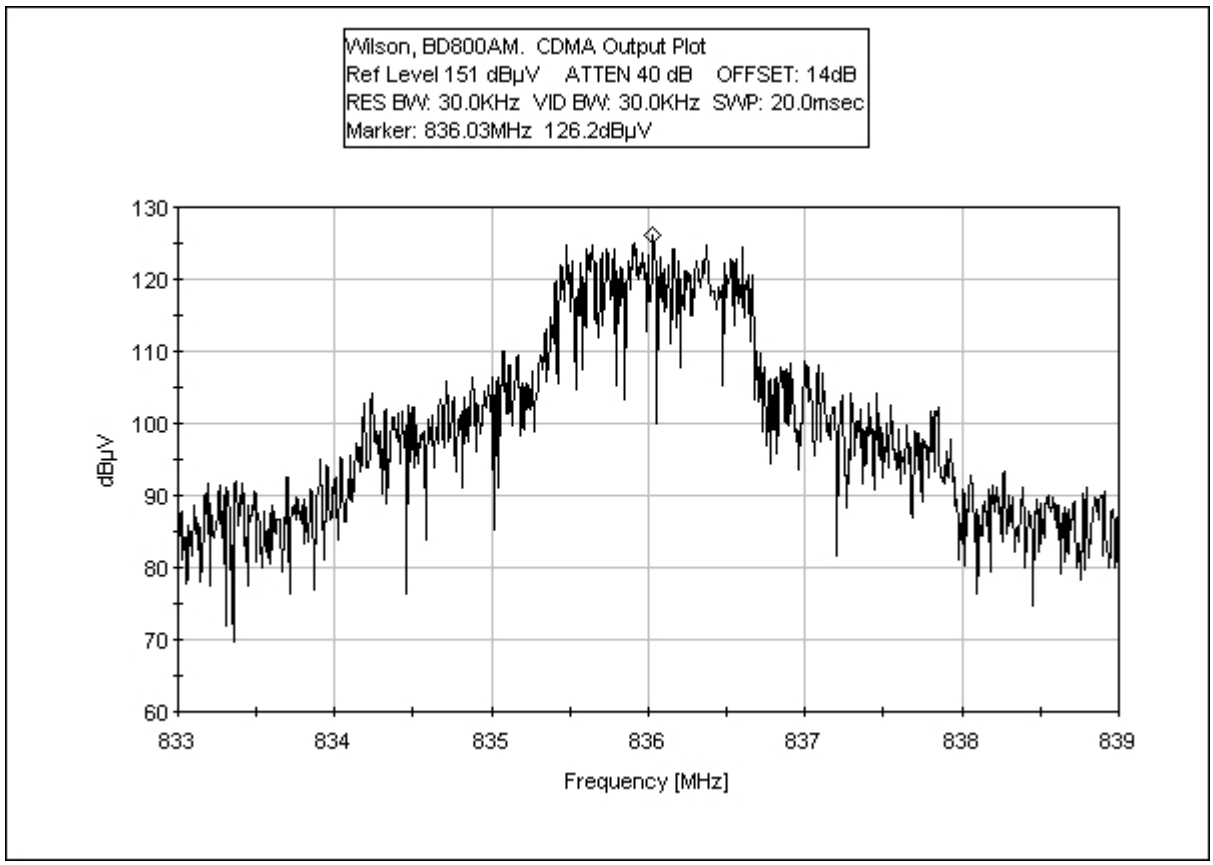
Uplink AMPS 836 MHz - Output Plot



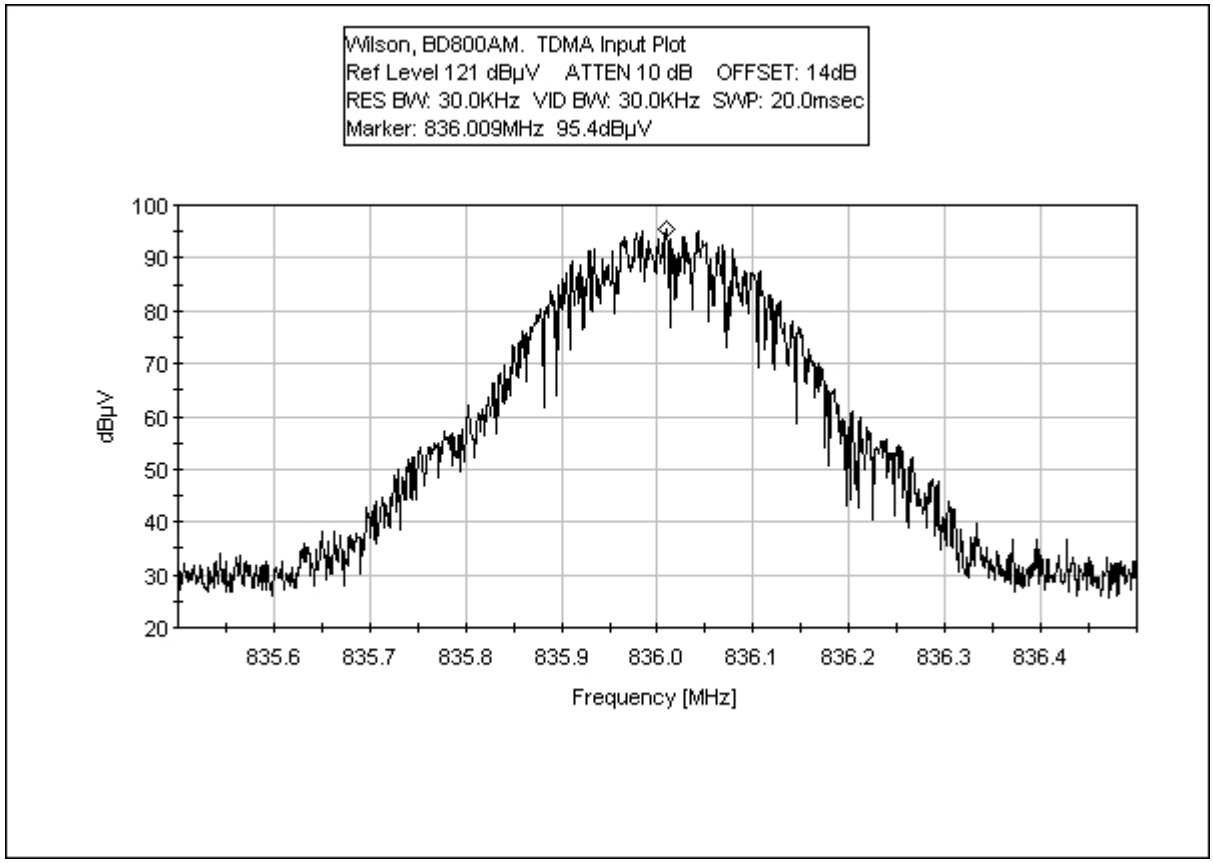
Uplink CDMA 836 MHz - Input Plot



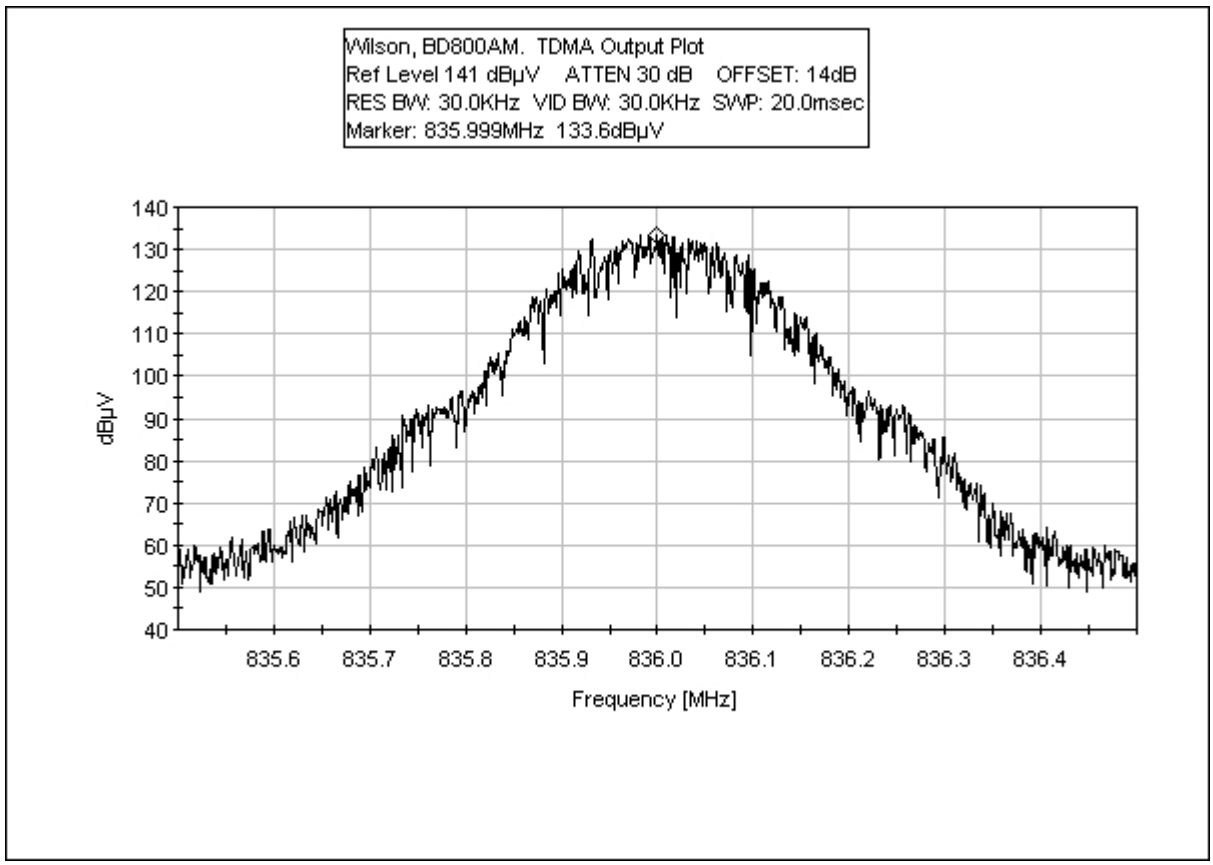
Uplink CDMA 836 MHz - Output Plot



Uplink TDMA 836 MHz - Input Plot



Uplink TDMA 836 MHz - Output Plot



Test Equipment

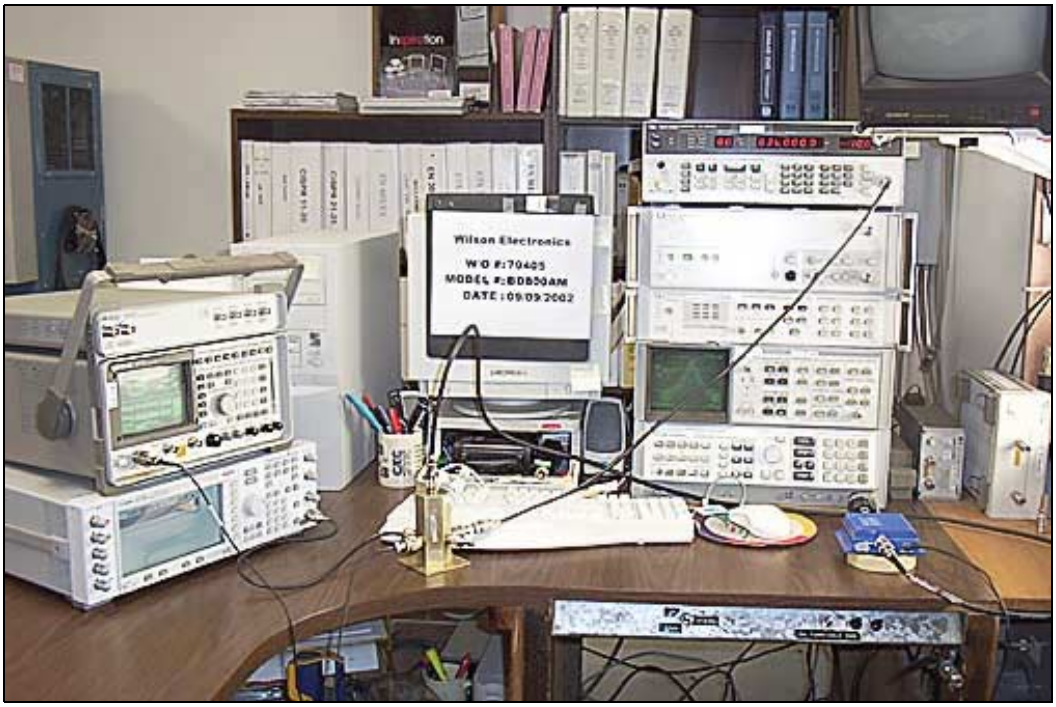
Equipment	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
QP Adapter	HP	85650A	2811A01267	00478	1/30/02	1/30/03
S/A Display	HP	8566B	2403A08241	00489	1/30/02	1/30/03
Spectrum Analyzer	HP	8566B	2209A01404	00490	1/30/02	1/30/03

DOWNLINK DIRECT CONNECT - AMPS

DOWNLINK DIRECT CONNECT - CDMA

DOWNLINK DIRECT CONNECT - TDMA

UPLINK DIRECT CONNECT - AMPS



UPLINK DIRECT CONNECT - CDMA

UPLINK DIRECT CONNECT - TDMA

2.1033(c)(14)/2.1051/22.917(e)(f)- SPURIOUS EMISSIONS AT ANTENNA TERMINAL

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	0.009000	0.150000	200 Hz
RADIATED EMISSIONS	0.150000	30.000000	9 kHz
RADIATED EMISSIONS	30.000000	823.940000	30 kHz
RADIATED EMISSIONS	823.940000	849.060000	300 Hz
RADIATED EMISSIONS	849.060000	1,000.000000	30 kHz
RADIATED EMISSIONS	1,000.000000	10,000.000000	30 kHz

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.917 MOBILE**
Work Order #: **79405** Date: 09/10/2002
Test Type: **2.1051/TIA-EIA 603 2.2.13** Time: 9:49:18 AM
Equipment: **Repeater** Sequence#: 8
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 090602-001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-001

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
Sig Gen	HP	8656A	2245A04338
CDMA Cellular Adapter	HP	83205A	US37461985
DC Power Supply	HP	6205C	2228A-01775

Test Conditions / Notes:

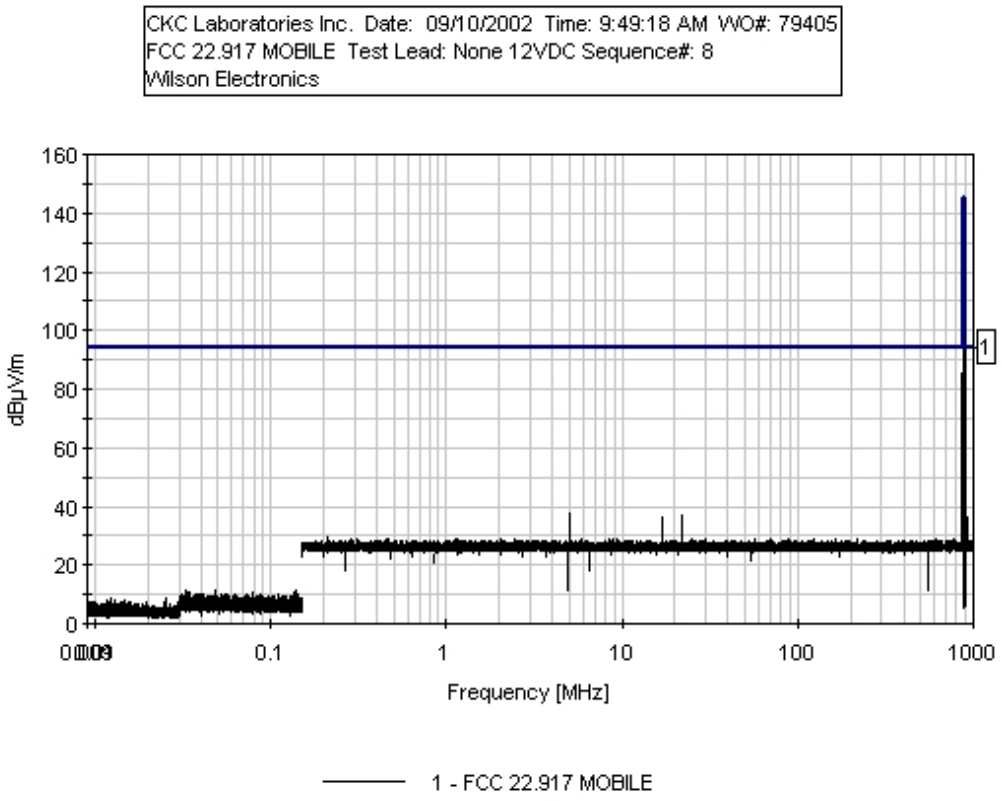
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies AMPS signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies AMPS signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 9 kHz-1 GHz. No spurious emissions within 20dB of the limit were found. Transmit frequencies are 870 MHz, 872 MHz and 892 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	901.950M	62.3					+0.0	62.3	94.0	-31.7	None
2	859.475M	55.6					+0.0	55.6	94.0	-38.4	None

3	898.876M	50.8	+0.0	50.8	94.0	-43.2	None
4	857.699M	48.8	+0.0	48.8	94.0	-45.2	None
5	867.671M	47.5	+0.0	47.5	94.0	-46.5	None
6	868.627M	47.2	+0.0	47.2	94.0	-46.8	None
7	852.645M	43.0	+0.0	43.0	94.0	-51.0	None
8	861.387M	41.9	+0.0	41.9	94.0	-52.1	None
9	847.590M	41.5	+0.0	41.5	94.0	-52.5	None



Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer:	**Wilson Electronics**		
Specification:	**FCC 22.917 MOBILE**		
Work Order #:	**79405**	Date:	09/09/2002
Test Type:	**2.1051/TIA-EIA 603 2.2.13**	Time:	9:41:59 AM
Equipment:	**Repeater**	Sequence#:	8
Manufacturer:	Wilson Electronics	Tested By:	Monika Brandle
Model:	BD800-AM		12VDC
S/N:	090602-001		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-001

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
DC Power Supply	HP	6205C	2228A-01775
Sig Gen	HP	8656A	2245A04338
CDMA Cellular Adapter	HP	83205A	US37461985

Test Conditions / Notes:

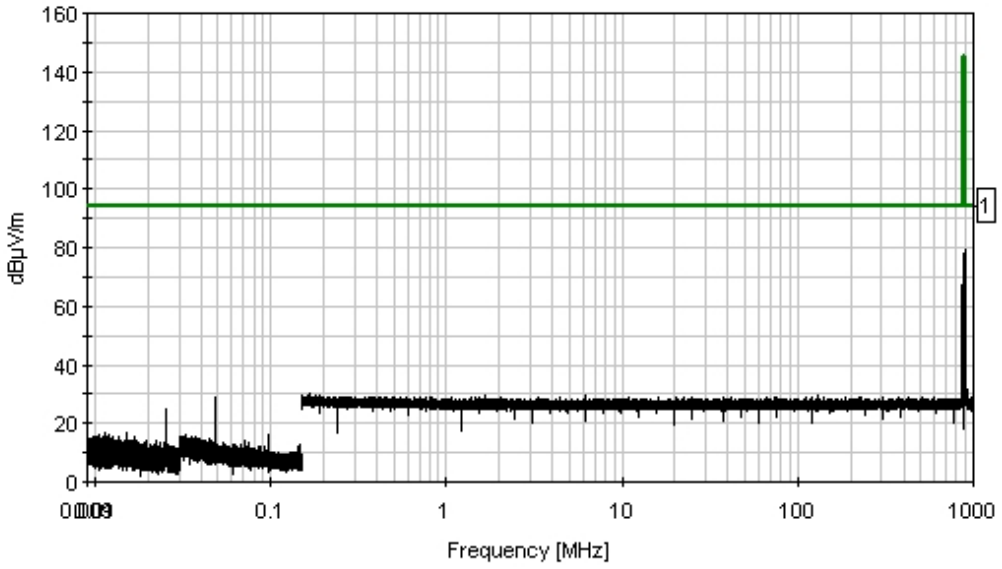
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies CDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies CDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 9 kHz – 1 GHz. No spurious emissions within 20dB of the limit were found. Transmit frequencies are 869 MHz, 870.25 MHz and 892.75 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq	Rdng					Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant

CKC Laboratories Inc. Date: 09/09/2002 Time: 9:41:59 AM WO#: 79405
FCC 22.917 MOBILE Test Lead: None 12VDC Sequence#: 8
Wilson Electronics



1 - FCC 22.917 MOBILE

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer:	**Wilson Electronics**		
Specification:	**FCC 22.917 MOBILE**		
Work Order #:	**79405**	Date:	09/10/2002
Test Type:	**2.1051/TIA-EIA 603 2.2.13**	Time:	4:25:41 PM
Equipment:	**Repeater**	Sequence#:	8
Manufacturer:	Wilson Electronics	Tested By:	Monika Brandle
Model:	BD800-AM		12VDC
S/N:	090602-001		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-001

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
DC Power Supply	HP	6205C	2228A-01775
TDMA/CDPD Cellular Adapter	HP	83204A	US37460723

Test Conditions / Notes:

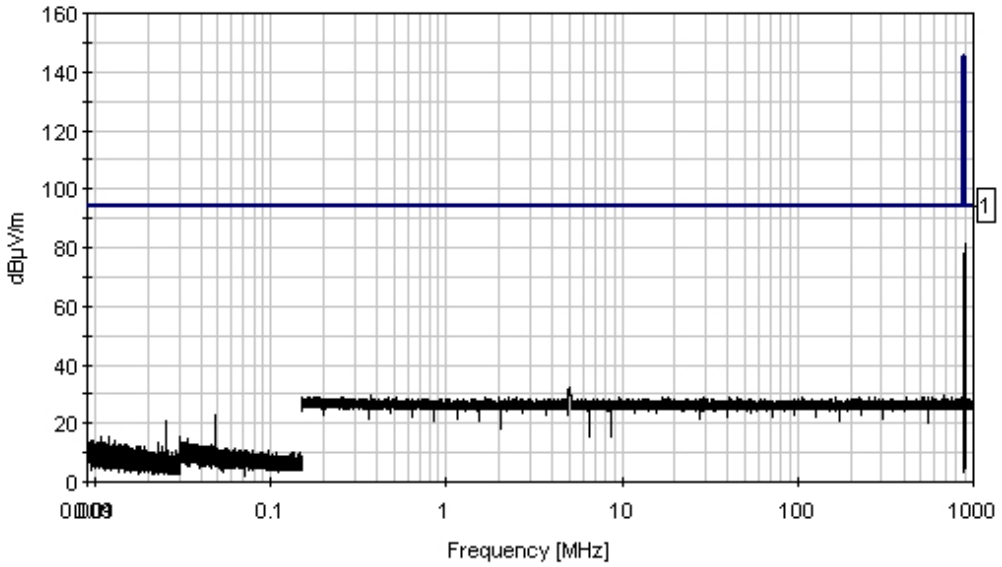
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies TDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies TDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 9 kHz –1 GHz. No spurious emissions within 20dB of the limit were found. Transmit frequencies are 871 MHz and 873 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq	Rdng					Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant

CKC Laboratories Inc. Date: 09/10/2002 Time: 4:25:41 PM WO#: 79405
FCC 22.917 MOBILE Test Lead: None 12VDC Sequence#: 8
Wilson Electronics



Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.917 MOBILE**
Work Order #: **79405** Date: 09/10/2002
Test Type: **2.1051/TIA-EIA 603 2.2.13** Time: 10:09:50 AM
Equipment: **Repeater** Sequence#: 6
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 090602-001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-001

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
CDMA Cellular Adapter	HP	83205A	US37461985
DC Power Supply	HP	6205C	2228A-01775

Test Conditions / Notes:

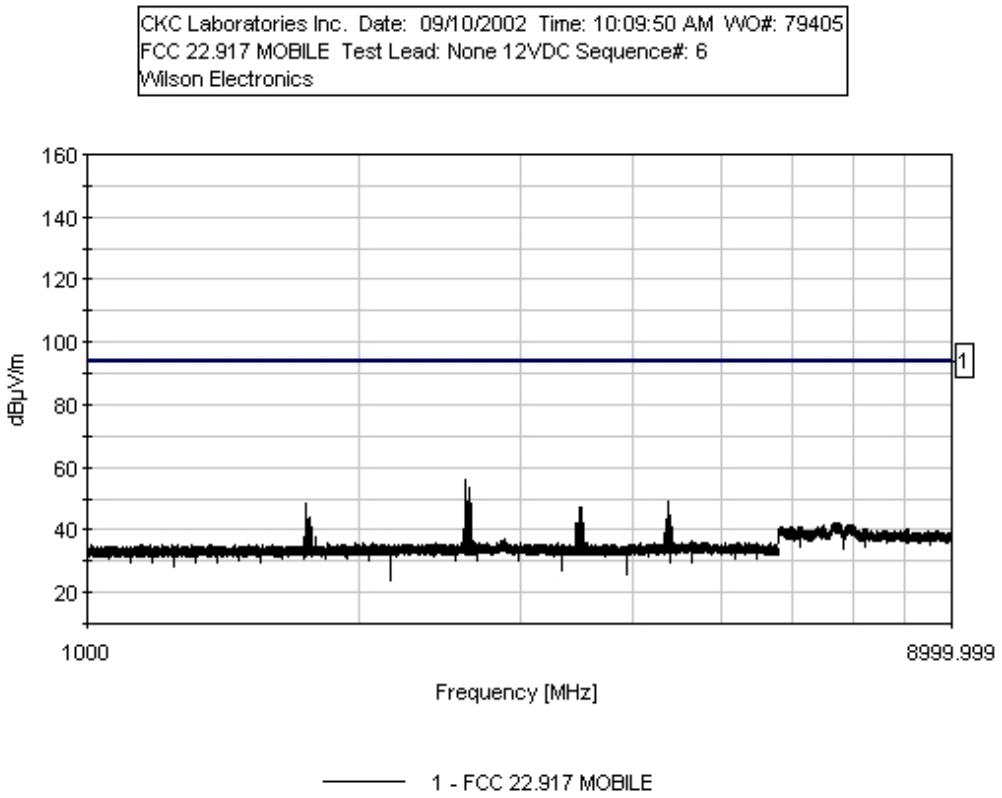
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies AMPS signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies AMPS signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 1-9 GHz. No spurious emissions were found 20dB below the limits. Transmit frequencies are 869 MHz, 870.25 MHz and 892.75 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2614.851M	55.8					+0.0	55.8	94.0	-38.2	None
2	2636.822M	53.4					+0.0	53.4	94.0	-40.6	None
3	2619.877M	52.1					+0.0	52.1	94.0	-41.9	None
4	2641.848M	51.8					+0.0	51.8	94.0	-42.2	None
5	4381.020M	49.3					+0.0	49.3	94.0	-44.7	None
6	2609.825M	49.1					+0.0	49.1	94.0	-44.9	None
7	2631.796M	48.9					+0.0	48.9	94.0	-45.1	None
8	1739.874M	48.6					+0.0	48.6	94.0	-45.4	None
9	2653.767M	48.4					+0.0	48.4	94.0	-45.6	None

10	1744.960M	47.5	+0.0	47.5	94.0	-46.5	None
11	3489.747M	46.9	+0.0	46.9	94.0	-47.1	None
12	3506.766M	46.9	+0.0	46.9	94.0	-47.1	None
13	3511.683M	44.8	+0.0	44.8	94.0	-49.2	None
14	2658.793M	44.6	+0.0	44.6	94.0	-49.4	None
15	4403.166M	44.6	+0.0	44.6	94.0	-49.4	None
16	1761.977M	44.3	+0.0	44.3	94.0	-49.7	None
17	3501.660M	44.1	+0.0	44.1	94.0	-49.9	None
18	4364.292M	43.6	+0.0	43.6	94.0	-50.4	None
19	1749.947M	43.5	+0.0	43.5	94.0	-50.5	None
20	4386.203M	43.3	+0.0	43.3	94.0	-50.7	None



Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.917 MOBILE**
Work Order #: **79405** Date: 09/06/2002
Test Type: **2.1051/TIA-EIA 603 2.2.13** Time: 3:23:28 PM
Equipment: **Repeater** Sequence#: 5
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 090602-001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-001

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
DC Power Supply	HP	6205C	2228A-01775
Sig Gen	HP	8656A	2245A04338
CDMA Cellular Adapter	HP	83205A	US37461985

Test Conditions / Notes:

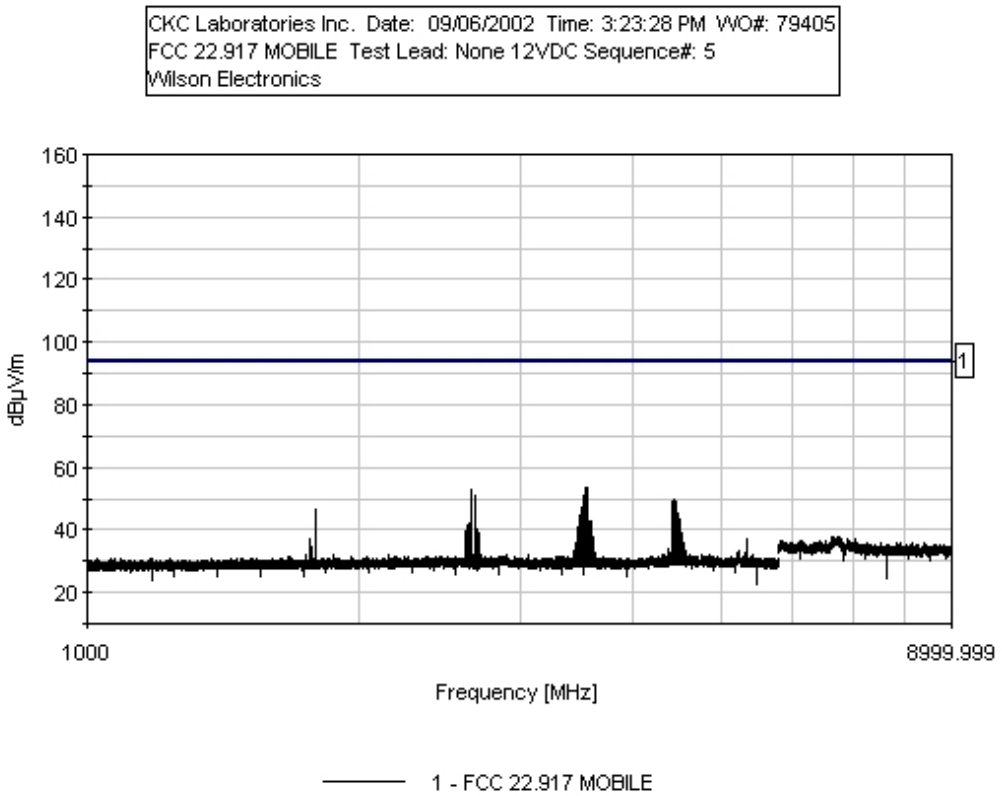
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies CDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies CDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 1-9 GHz. No spurious emissions found within 20dB of limit. Transmit frequencies are 870 MHz, 872 MHz and 892 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	3570.750M	53.7					+0.0	53.7	94.0	-40.3	None
2	3549.382M	53.3					+0.0	53.3	94.0	-40.7	None
3	2656.782M	53.0					+0.0	53.0	94.0	-41.0	None
4	2678.035M	51.0					+0.0	51.0	94.0	-43.0	None
5	3527.567M	50.7					+0.0	50.7	94.0	-43.3	None
6	4441.283M	49.8					+0.0	49.8	94.0	-44.2	None
7	4419.887M	48.8					+0.0	48.8	94.0	-45.2	None
8	4463.675M	48.8					+0.0	48.8	94.0	-45.2	None
9	3504.875M	47.3					+0.0	47.3	94.0	-46.7	None

10	1785.449M	46.7	+0.0	46.7	94.0	-47.3	None
11	4485.818M	45.6	+0.0	45.6	94.0	-48.4	None
12	4506.220M	43.5	+0.0	43.5	94.0	-50.5	None
13	3591.918M	43.0	+0.0	43.0	94.0	-51.0	None
14	2634.094M	42.3	+0.0	42.3	94.0	-51.7	None
15	3482.183M	40.6	+0.0	40.6	94.0	-53.4	None
16	2698.730M	40.3	+0.0	40.3	94.0	-53.7	None
17	2613.559M	39.4	+0.0	39.4	94.0	-54.6	None
18	4530.105M	39.0	+0.0	39.0	94.0	-55.0	None
19	6679.873M	38.0	+0.0	38.0	94.0	-56.0	None
20	3615.683M	37.6	+0.0	37.6	94.0	-56.4	None



Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.917 MOBILE**
Work Order #: **79405** Date: 09/10/2002
Test Type: **2.1051/TIA-EIA 603 2.2.13** Time: 4:49:48 PM
Equipment: **Repeater** Sequence#: 8
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 090602-001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-001

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
DC Power Supply	HP	6205C	2228A-01775
TDMA/CDPD Cellular Adapter	HP	83204A	US37460723

Test Conditions / Notes:

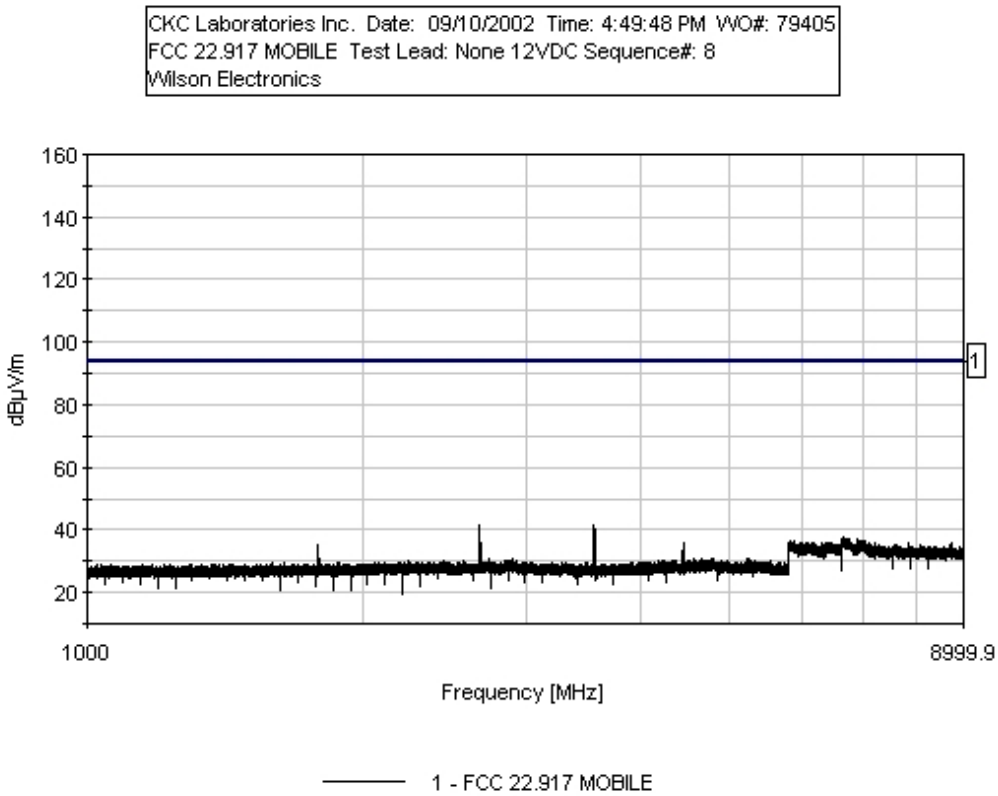
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies TDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies TDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 1-9 GHz. No spurious emissions within 20dB of the limit were found. Transmit frequencies are 871 MHz and 873 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2676.876M	41.8					+0.0	41.8	94.0	-52.2	None
2	3565.580M	41.2					+0.0	41.2	94.0	-52.8	None
3	2671.798M	39.1					+0.0	39.1	94.0	-54.9	None
4	3560.966M	38.3					+0.0	38.3	94.0	-55.7	None
5	6664.649M	37.9					+0.0	37.9	94.0	-56.1	None
6	3570.656M	37.4					+0.0	37.4	94.0	-56.6	None
7	6908.353M	37.0					+0.0	37.0	94.0	-57.0	None
8	5881.297M	36.6					+0.0	36.6	94.0	-57.4	None
9	6925.492M	36.6					+0.0	36.6	94.0	-57.4	None

10	5837.272M	36.4	+0.0	36.4	94.0	-57.6	None
11	4464.910M	36.1	+0.0	36.1	94.0	-57.9	None
12	6302.619M	36.1	+0.0	36.1	94.0	-57.9	None
13	6405.417M	36.0	+0.0	36.0	94.0	-58.0	None
14	8721.332M	36.0	+0.0	36.0	94.0	-58.0	None
15	2681.836M	35.9	+0.0	35.9	94.0	-58.1	None
16	6099.484M	35.9	+0.0	35.9	94.0	-58.1	None
17	7828.618M	35.8	+0.0	35.8	94.0	-58.2	None
18	7096.943M	35.7	+0.0	35.7	94.0	-58.3	None
19	7193.851M	35.6	+0.0	35.6	94.0	-58.4	None
20	8059.121M	35.4	+0.0	35.4	94.0	-58.6	None



Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.917 MOBILE**
Work Order #: **79405** Date: 09/16/2002
Test Type: **2.1051/TIA-EIA-603 2.2.13** Time: 08:57:03
Equipment: **Repeater** Sequence#: 11
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 091202-004

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	091202-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469
TDMA/CDPD Cellular Adapter	HP	83204A	US37460723
Sig Gen	HP	8656A	2245A04338
CDMA Cellular Adapter	HP	83205A	US37461985

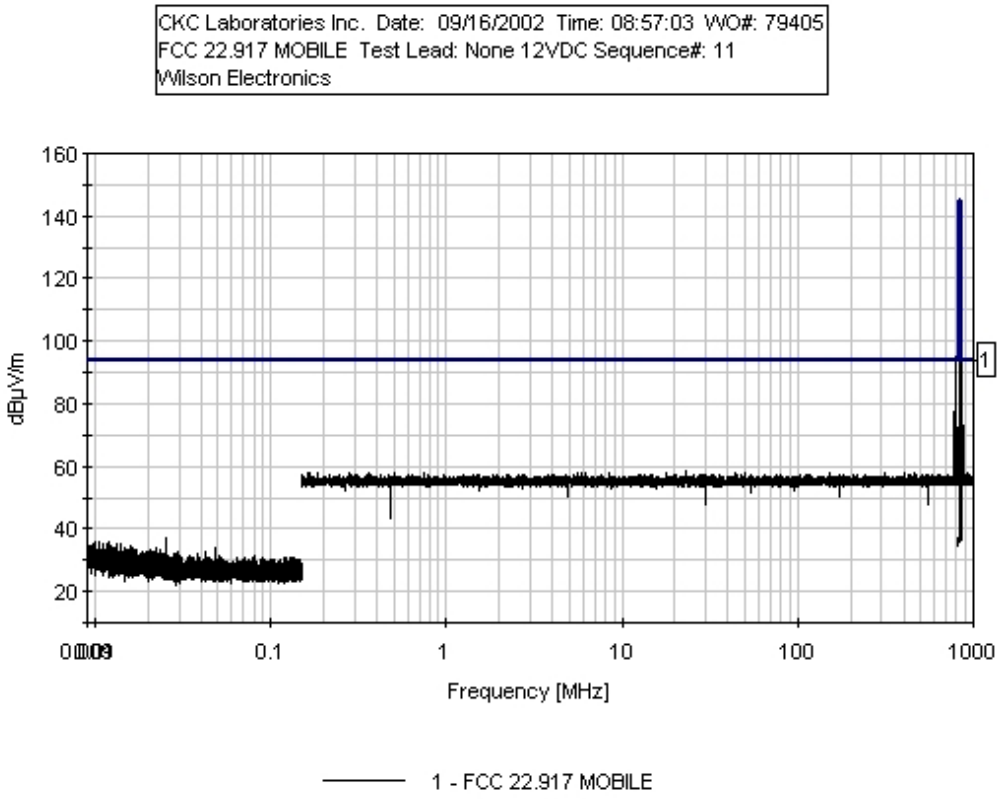
Test Conditions / Notes:

Average power measurement was taken with an HP435 avenge power meter. Average power reading was 16dBm. EUT is a bi-directional repeater amplifier. Phone port receives and amplifies AMPS signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies AMPS signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 9 kHz-1000 MHz. TX Frequencies are 825.04 MHz, 825.12 MHz and 848.96 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	802.070M Ave	83.6					+0.0	83.6	94.0	-10.4	None
^	802.070M	95.0					+0.0	95.0	94.0	+1.0	None
3	778.879M	77.2					+0.0	77.2	94.0	-16.8	None
4	870.895M	73.0					+0.0	73.0	94.0	-21.0	None
5	823.071M	72.6					+0.0	72.6	94.0	-21.4	None
6	820.862M	72.2					+0.0	72.2	94.0	-21.8	None


CKC Laboratories Inc. Date: 09/16/2002 Time: 08:57:03 WO#: 79405
FCC 22.917 MOBILE Test Lead: None 12VDC Sequence#: 11
Wilson Electronics
160
140
120
100
80
60
40
20
dBµV/m
0.1
1
10
100
1000
Frequency [MHz]
1
1 - FCC 22.917 MOBILE

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer:	**Wilson Electronics**		
Specification:	**FCC 22.917 MOBILE**		
Work Order #:	**79405**	Date:	09/16/2002
Test Type:	**2.1051/TIA-EIA-603 2.2.13**	Time:	11:10:30 AM
Equipment:	**Repeater**	Sequence#:	12
Manufacturer:	Wilson Electronics	Tested By:	Monika Brandle
Model:	BD800-AM		12VDC
S/N:	090602-001		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater	Wilson Electronics	BD800-AM	090602-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469
CDMA Cellular Adapter	HP	83205A	US37461985

Test Conditions / Notes:

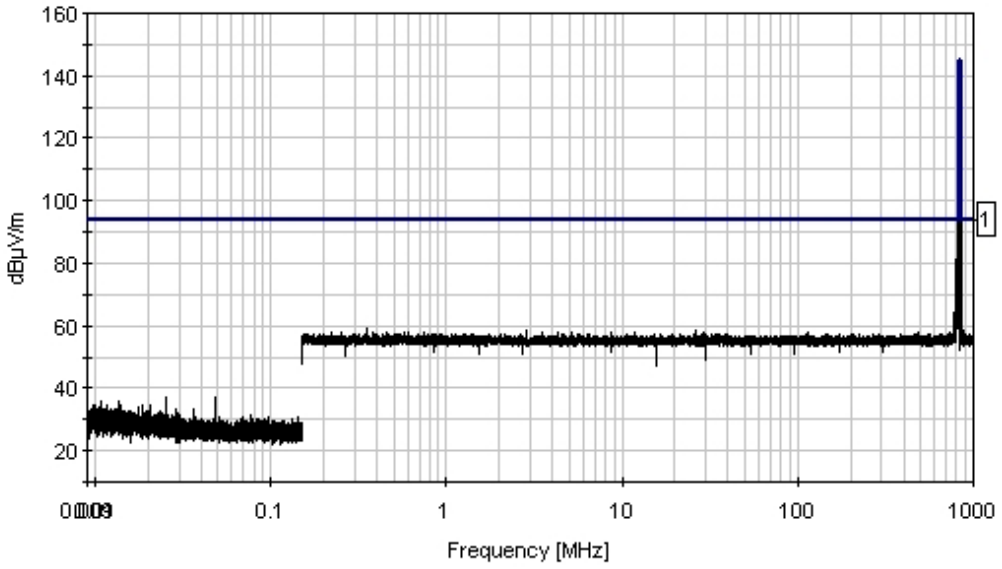
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies CDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies CDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 9 kHz – 1000 MHz. No other spurious emissions were found 20dB within the limit. Transmit frequencies are 825.25 MHz, 827.75 MHz, 847.75 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	803.461M	81.5					+0.0	81.5	94.0	-12.5	None

CKC Laboratories Inc. Date: 09/16/2002 Time: 11:10:30 AM WO#: 79405
FCC 22.917 MOBILE Test Lead: None 12VDC Sequence#: 12
Wilson Electronics



1 - FCC 22.917 MOBILE

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer:	**Wilson Electronics**		
Specification:	**FCC 22.917 MOBILE**		
Work Order #:	**79405**	Date:	09/16/2002
Test Type:	**2.1051/TIA-EIA-603 2.2.13**	Time:	9:24:44 AM
Equipment:	**Repeater**	Sequence#:	13
Manufacturer:	Wilson Electronics	Tested By:	Monika Brandle
Model:	BD800-AM		12VDC
S/N:	090602-004		

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469
TDMA/CDPD Cellular Adapter	HP	83204A	US37460723
Sig Gen	HP	8656A	2245A04338

Test Conditions / Notes:

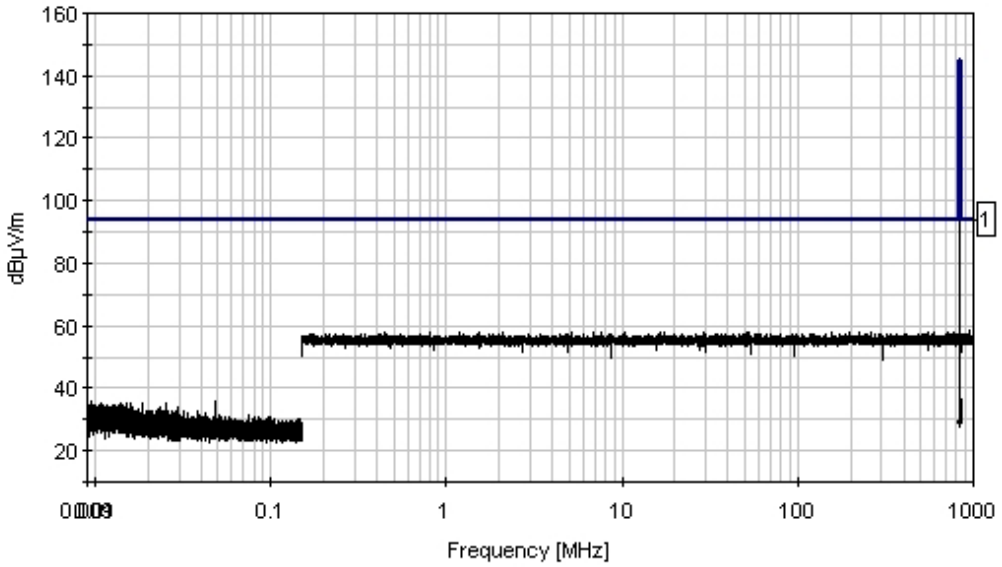
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies TDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies TDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 1000 MHz-9 GHz. No spurious emissions within 20dB of limit were found. Transmit frequencies are 825.030 MHz and 825.12 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq	Rdng					Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant

CKC Laboratories Inc. Date: 09/16/2002 Time: 9:24:44 AM WO#: 79405
FCC 22.917 MOBILE Test Lead: None 12VDC Sequence#: 13
Wilson Electronics



Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.917 MOBILE**
Work Order #: **79405** Date: 09/16/2002
Test Type: **2.1051/TIA-EIA-603 2.2.13** Time: 9:00:35 AM
Equipment: **Repeater** Sequence#: 12
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 090602-004

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469
TDMA/CDPD Cellular Adapter	HP	83204A	US37460723
Sig Gen	HP	8656A	2245A04338

Test Conditions / Notes:

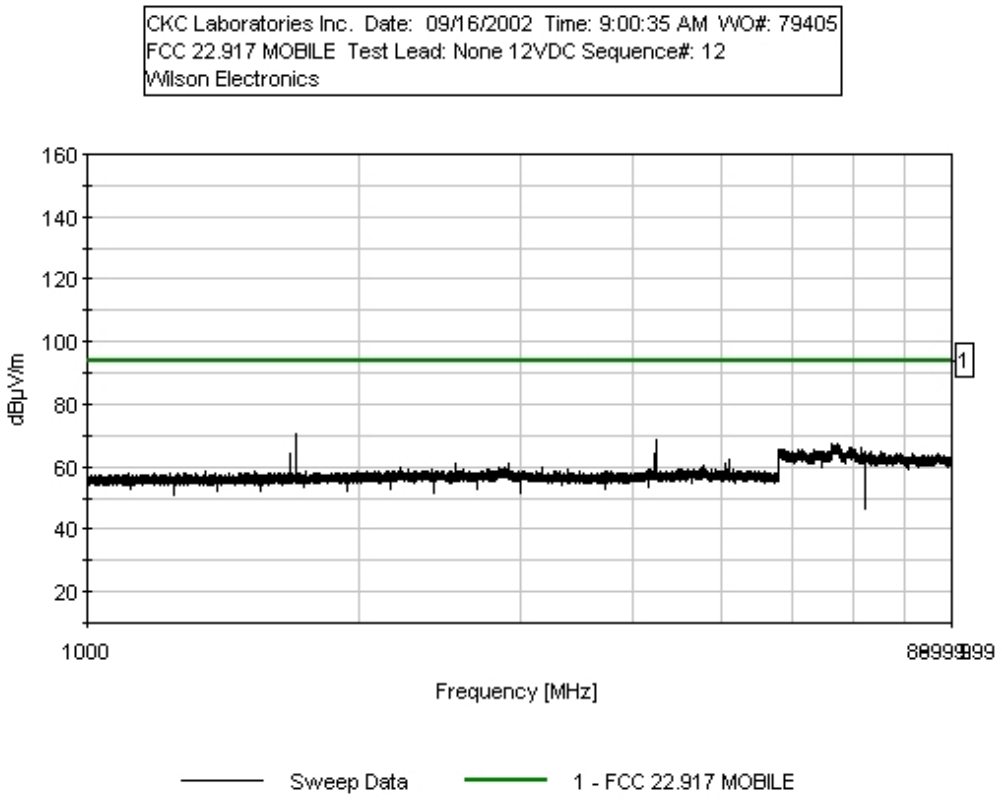
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies AMPS signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies AMPS signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 1-9 GHz. No spurious emissions found within 20dB of the limit. TX Frequencies are 825.04 MHz, 825.12 MHz and 848.96 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1695.780M	70.4					+0.0	70.4	94.0	-23.6	None
2	4239.885M	68.9					+0.0	68.9	94.0	-25.1	None
3	6638.352M	67.1					+0.0	67.1	94.0	-26.9	None
4	6146.353M	65.7					+0.0	65.7	94.0	-28.3	None
5	6328.197M	65.6					+0.0	65.6	94.0	-28.4	None
6	5802.194M	65.5					+0.0	65.5	94.0	-28.5	None
7	8999.999M	65.1					+0.0	65.1	94.0	-28.9	None
8	6399.588M	64.9					+0.0	64.9	94.0	-29.1	None

9	5988.080M	64.7	+0.0	64.7	94.0	-29.3	None
10	7232.990M	64.6	+0.0	64.6	94.0	-29.4	None
11	7519.089M	64.6	+0.0	64.6	94.0	-29.4	None
12	8999.999M	64.6	+0.0	64.6	94.0	-29.4	None
13	4217.118M	64.5	+0.0	64.5	94.0	-29.5	None
14	8999.999M	64.5	+0.0	64.5	94.0	-29.5	None
15	8999.999M	64.5	+0.0	64.5	94.0	-29.5	None
16	1672.894M	64.4	+0.0	64.4	94.0	-29.6	None
17	7918.453M	64.4	+0.0	64.4	94.0	-29.6	None
18	8683.431M	64.4	+0.0	64.4	94.0	-29.6	None
19	8999.999M	64.1	+0.0	64.1	94.0	-29.9	None
20	8999.999M	64.1	+0.0	64.1	94.0	-29.9	None


CKC Laboratories Inc. Date: 09/16/2002 Time: 9:00:35 AM WO#: 79405
FCC 22.917 MOBILE Test Lead: None 12VDC Sequence#: 12
Wilson Electronics
160
140
120
100
80
60
40
20
dBµV/m
1
1000
Frequency [MHz]
Sweep Data
1 - FCC 22.917 MOBILE

Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.917 MOBILE**
Work Order #: **79405** Date: 09/16/2002
Test Type: **2.1051/TIA-EIA-603 2.2.13** Time: 11:21:27 AM
Equipment: **Repeater** Sequence#: 13
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 090602-004

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-004

Support Devices:

Function	Manufacturer	Model #	S/N
ESG-D Series Sig Gen	Agilent	E4432B	US40053764
Cell Site Test Set	HP	8921A	3519A01796
AC-DC Adapter	Wilson Electronics	JOD-48U-36	3G72 E149469
CDMA Cellular Adapter	HP	83205A	US37461985

Test Conditions / Notes:

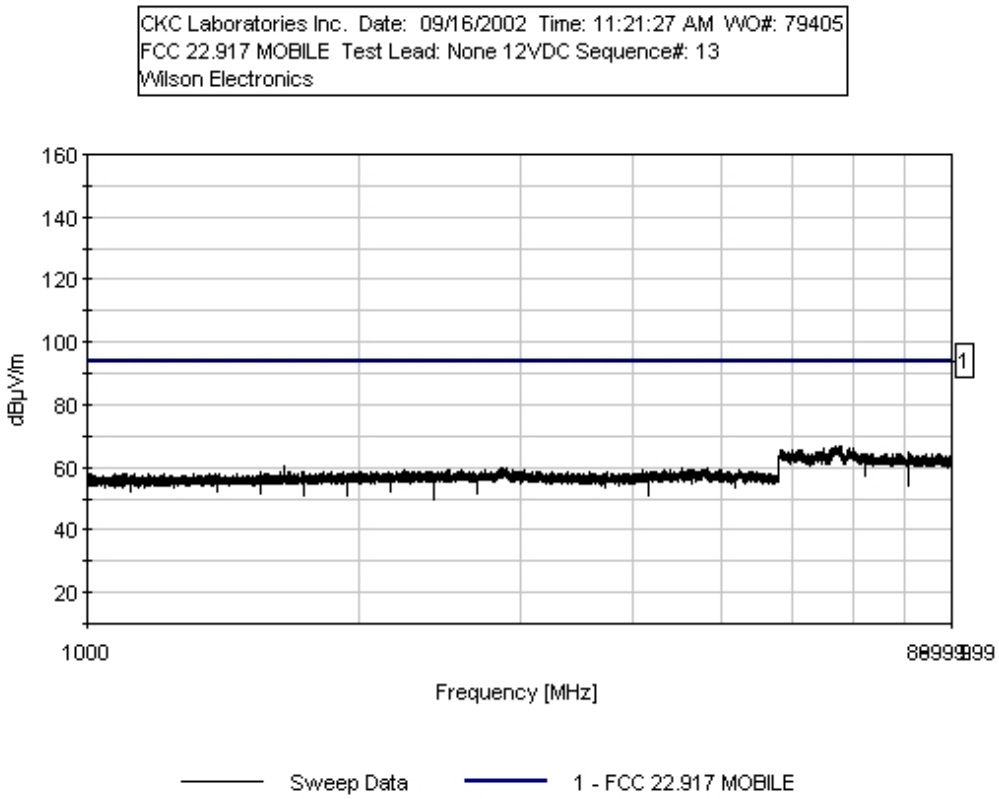
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies CDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies CDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 1000 MHz- 9 GHz. No spurious emissions found within 20dB of limit. Transmit frequencies are 825.25 MHz, 827.75 MHz and 847.75 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	6693.970M	66.8					+0.0	66.8	94.0	-27.2	None
2	6941.247M	66.1					+0.0	66.1	94.0	-27.9	None
3	6503.815M	65.8					+0.0	65.8	94.0	-28.2	None
4	6120.086M	65.6					+0.0	65.6	94.0	-28.4	None
5	8080.454M	64.7					+0.0	64.7	94.0	-29.3	None
6	8999.999M	64.5					+0.0	64.5	94.0	-29.5	None
7	8999.999M	64.5					+0.0	64.5	94.0	-29.5	None
8	7189.275M	64.4					+0.0	64.4	94.0	-29.6	None
9	7237.185M	64.4					+0.0	64.4	94.0	-29.6	None

10	8999.999M	64.3	+0.0	64.3	94.0	-29.7	None
11	1651.451M	60.4	+0.0	60.4	94.0	-33.6	None
12	2873.247M	60.0	+0.0	60.0	94.0	-34.0	None
13	2855.139M	59.9	+0.0	59.9	94.0	-34.1	None
14	2904.467M	59.9	+0.0	59.9	94.0	-34.1	None
15	4542.150M	59.6	+0.0	59.6	94.0	-34.4	None
16	4826.870M	59.6	+0.0	59.6	94.0	-34.4	None
17	3034.133M	59.0	+0.0	59.0	94.0	-35.0	None
18	2587.703M	58.9	+0.0	58.9	94.0	-35.1	None
19	4106.434M	58.9	+0.0	58.9	94.0	-35.1	None
20	5253.423M	58.9	+0.0	58.9	94.0	-35.1	None



Test Location: CKC Laboratories Inc. •5473A Clouds Rest • Mariposa CA 95338 • 1 800 500 4EMC (4362)

Customer: **Wilson Electronics**
Specification: **FCC 22.917 MOBILE**
Work Order #: **79405** Date: 09/16/2002
Test Type: **2.1051/TIA-EIA-603 2.2.13** Time: 9:35:31 AM
Equipment: **Repeater** Sequence#: 14
Manufacturer: Wilson Electronics Tested By: Monika Brandle
Model: BD800-AM 12VDC
S/N: 090602-001

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Repeater*	Wilson Electronics	BD800-AM	090602-001

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

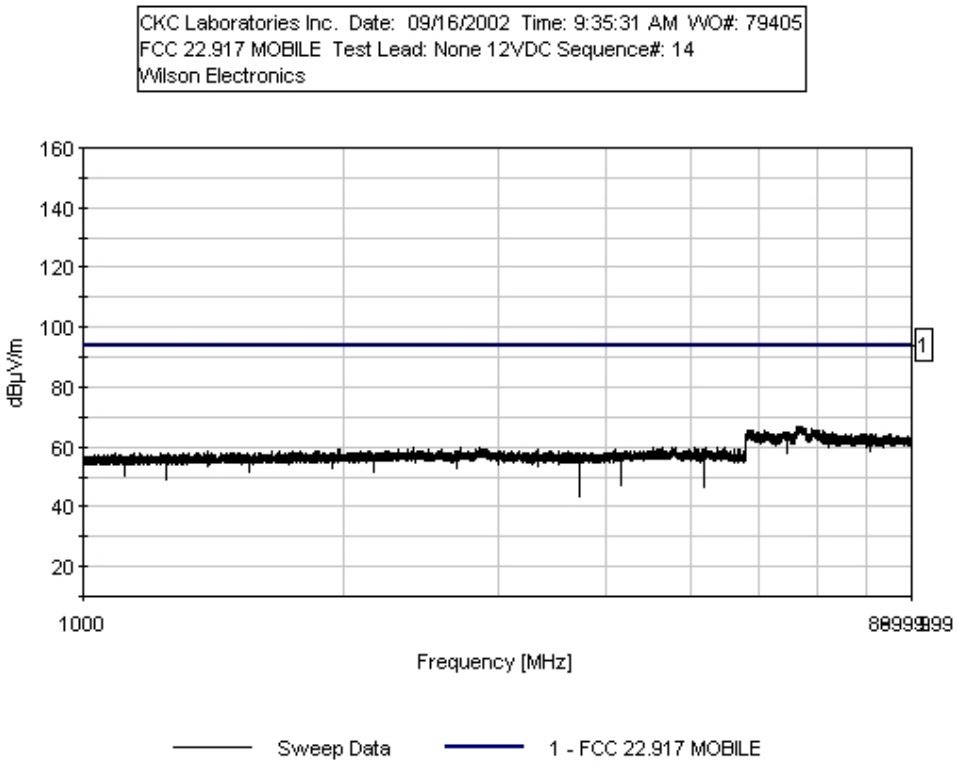
EUT is a bi-directional repeater amplifier. Phone port receives and amplifies TDMA signals in the frequency range of 869-894 MHz. Antenna port receives and amplifies TDMA signals in the frequency range of 824-849 MHz. Each port retransmits signals received from the opposite port. Frequency Range investigated 9 kHz – 1000 MHz. No spurious emissions within 20dB of limit were found. Transmit frequencies are 825.030 MHz and 825.12 MHz.

Transducer Legend:

Measurement Data: Reading listed by margin. Test Lead: None

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	6666.161M	67.0					+0.0	67.0	94.0	-27.0	None
2	5885.035M	65.6					+0.0	65.6	94.0	-28.4	None
3	6432.590M	65.1					+0.0	65.1	94.0	-28.9	None
4	7276.618M	64.6					+0.0	64.6	94.0	-29.4	None
5	6322.136M	64.5					+0.0	64.5	94.0	-29.5	None
6	8999.999M	64.4					+0.0	64.4	94.0	-29.6	None
7	8530.813M	64.3					+0.0	64.3	94.0	-29.7	None
8	8496.171M	64.2					+0.0	64.2	94.0	-29.8	None
9	8170.338M	64.0					+0.0	64.0	94.0	-30.0	None
10	8663.769M	63.8					+0.0	63.8	94.0	-30.2	None
11	5220.839M	59.8					+0.0	59.8	94.0	-34.2	None

12	2401.935M	59.7	+0.0	59.7	94.0	-34.3	None
13	2724.327M	59.7	+0.0	59.7	94.0	-34.3	None
14	2858.886M	59.7	+0.0	59.7	94.0	-34.3	None
15	5054.463M	59.7	+0.0	59.7	94.0	-34.3	None
16	5477.888M	59.7	+0.0	59.7	94.0	-34.3	None
17	4530.041M	59.6	+0.0	59.6	94.0	-34.4	None
18	2924.448M	59.4	+0.0	59.4	94.0	-34.6	None
19	4107.302M	59.4	+0.0	59.4	94.0	-34.6	None
20	1970.142M	59.3	+0.0	59.3	94.0	-34.7	None



Test Equipment

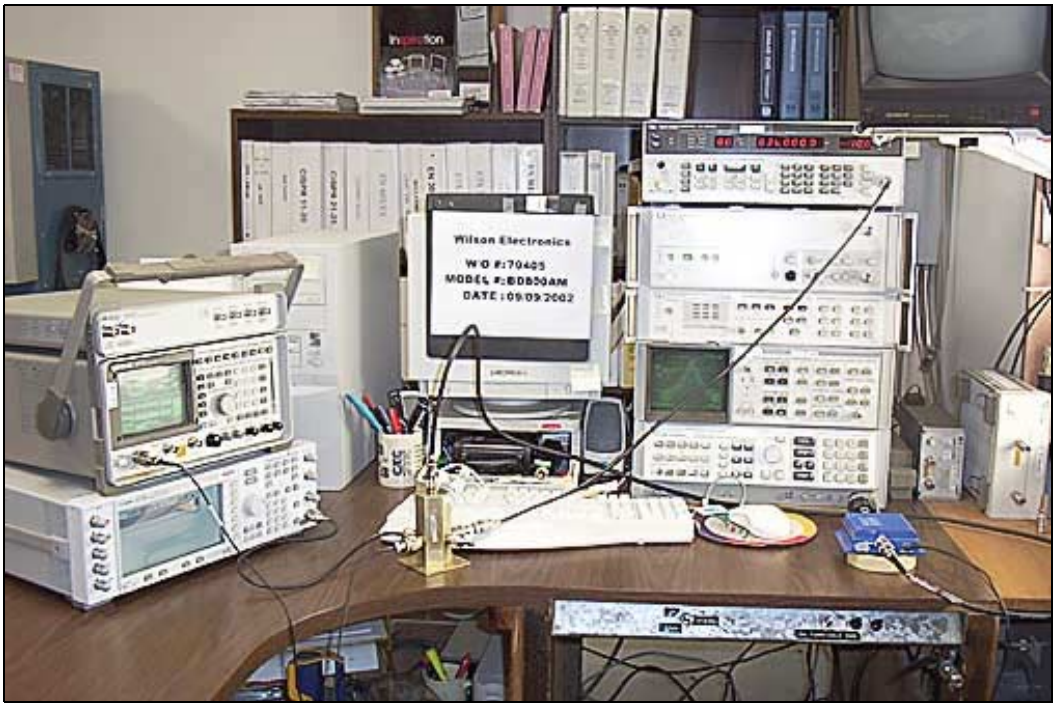
Equipment	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
QP Adapter	HP	85650A	2811A01267	00478	1/30/02	1/30/03
S/A Display	HP	8566B	2403A08241	00489	1/30/02	1/30/03
Spectrum Analyzer	HP	8566B	2209A01404	00490	1/30/02	1/30/03

DOWNLINK DIRECT CONNECT - AMPS

DOWNLINK DIRECT CONNECT - CDMA

DOWNLINK DIRECT CONNECT - TDMA

UPLINK DIRECT CONNECT - AMPS

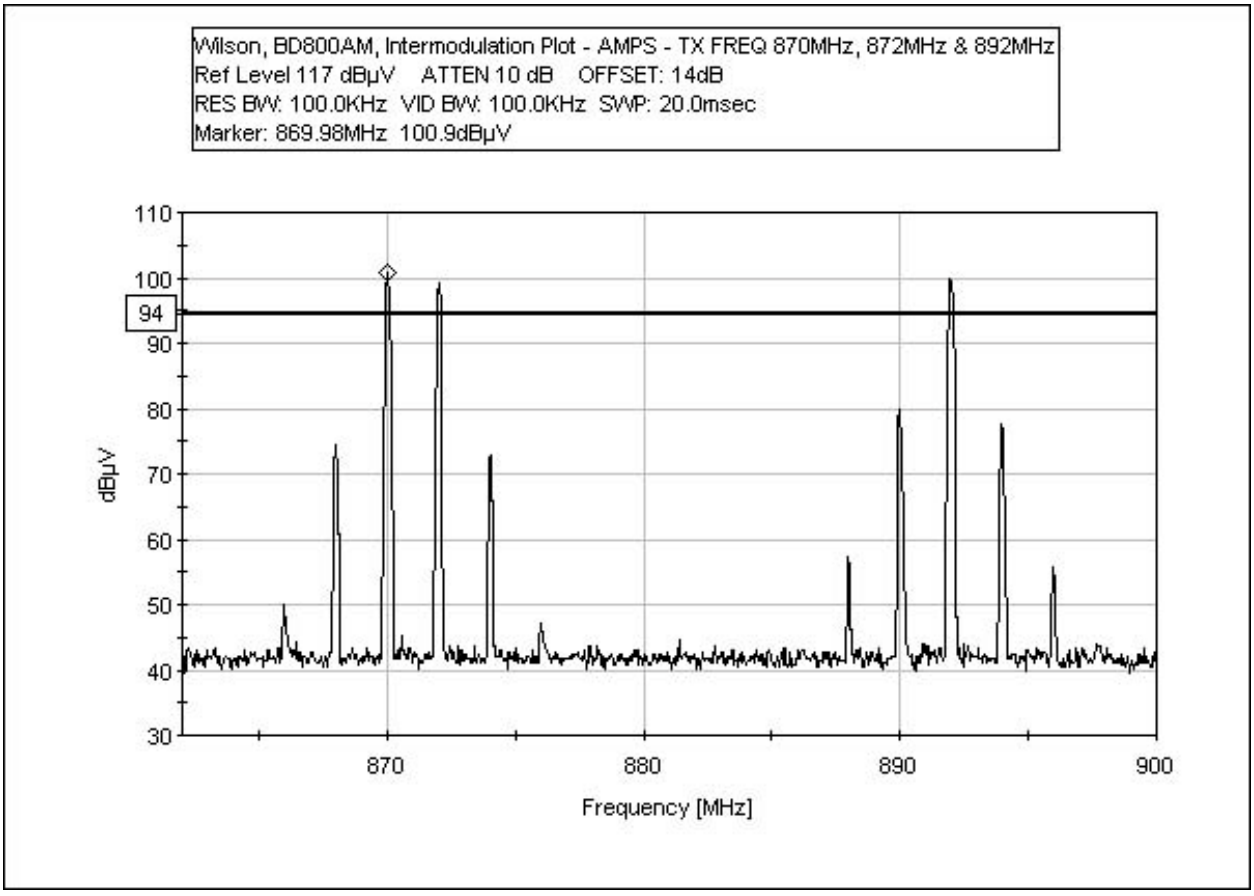


UPLINK DIRECT CONNECT - CDMA

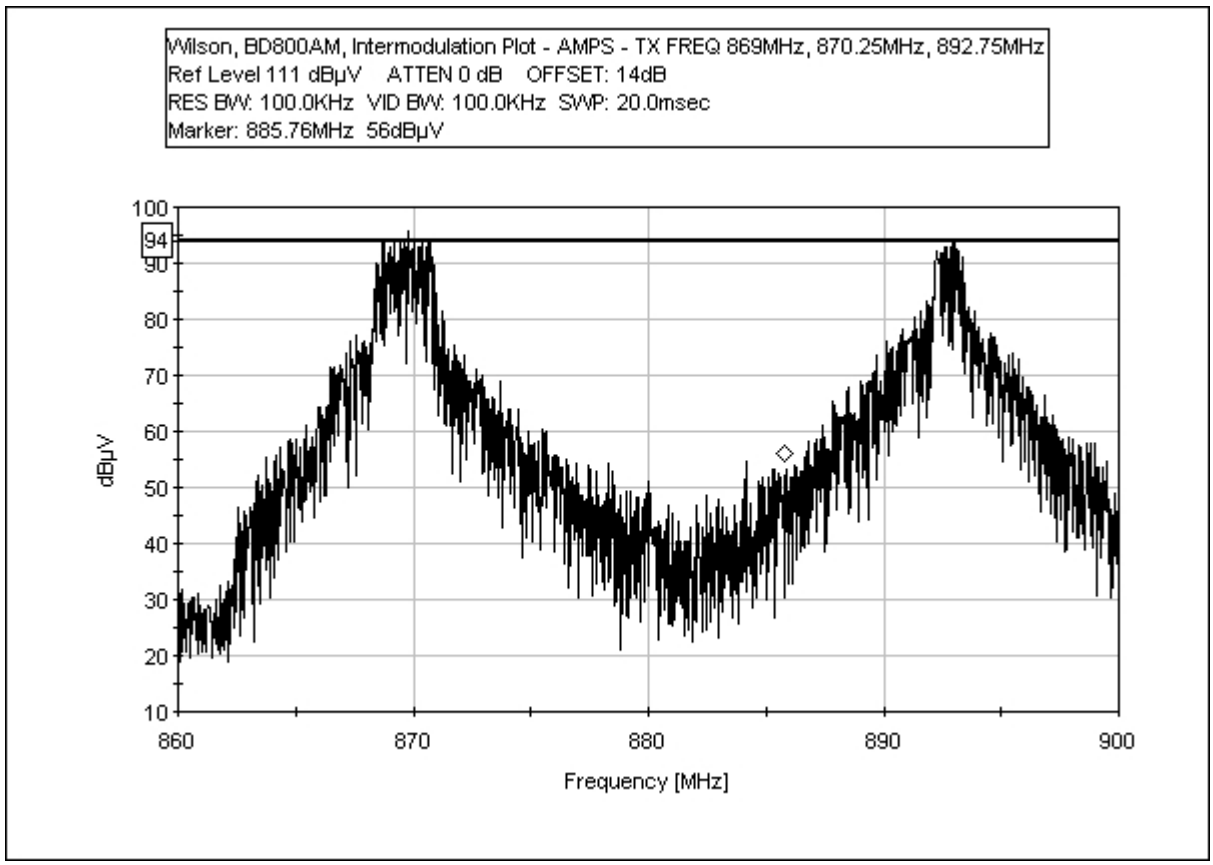
UPLINK DIRECT CONNECT - TDMA

Test Conditions: EUT is a bi-directional repeater amplifier. Phone port receives and amplifies signals in the frequency range of 824-849 MHz. Antenna port receives and amplifies signals in the frequency range of 869-894 MHz. Each port retransmits signals received from the opposite port. A signal generator is set to supply a modulated signal that simulates actual signals used. The amplitude of the signal generator is set such that the output of the transmitter is at its rated maximum output power for the port being tested.

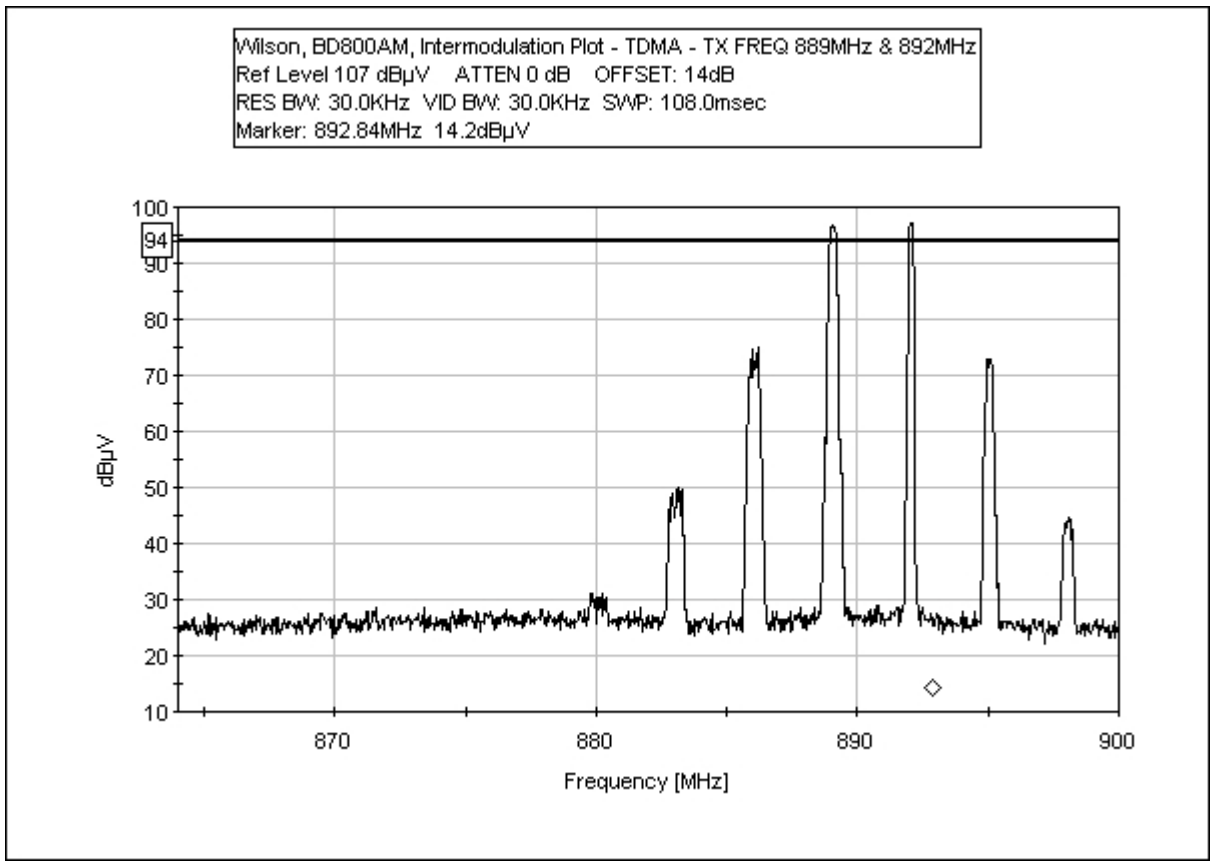
Downlink AMPS 870 MHz, 872 MHz & 892 MHz - Intermodulation



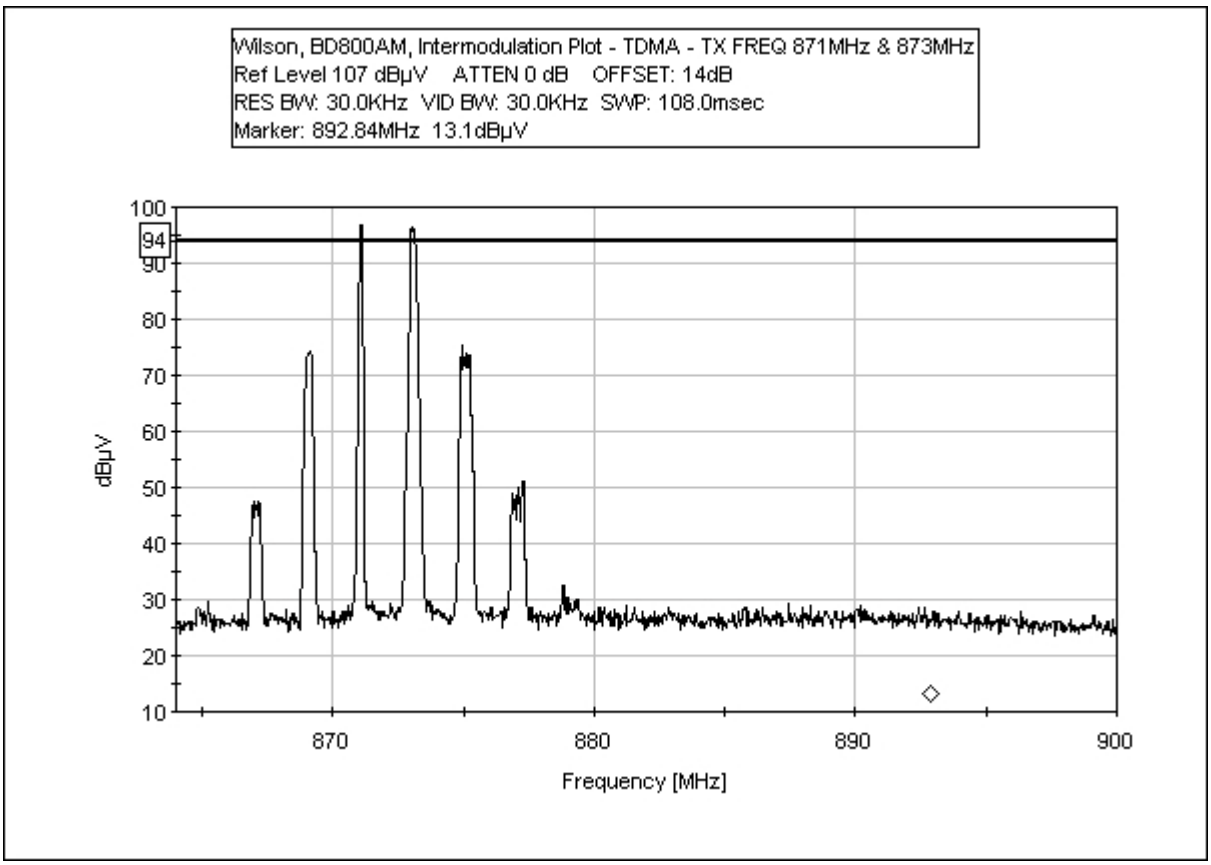
Downlink CDMA - AMPS 869 MHz, 8720.25 MHz & 892.25 MHz - Intermodulation



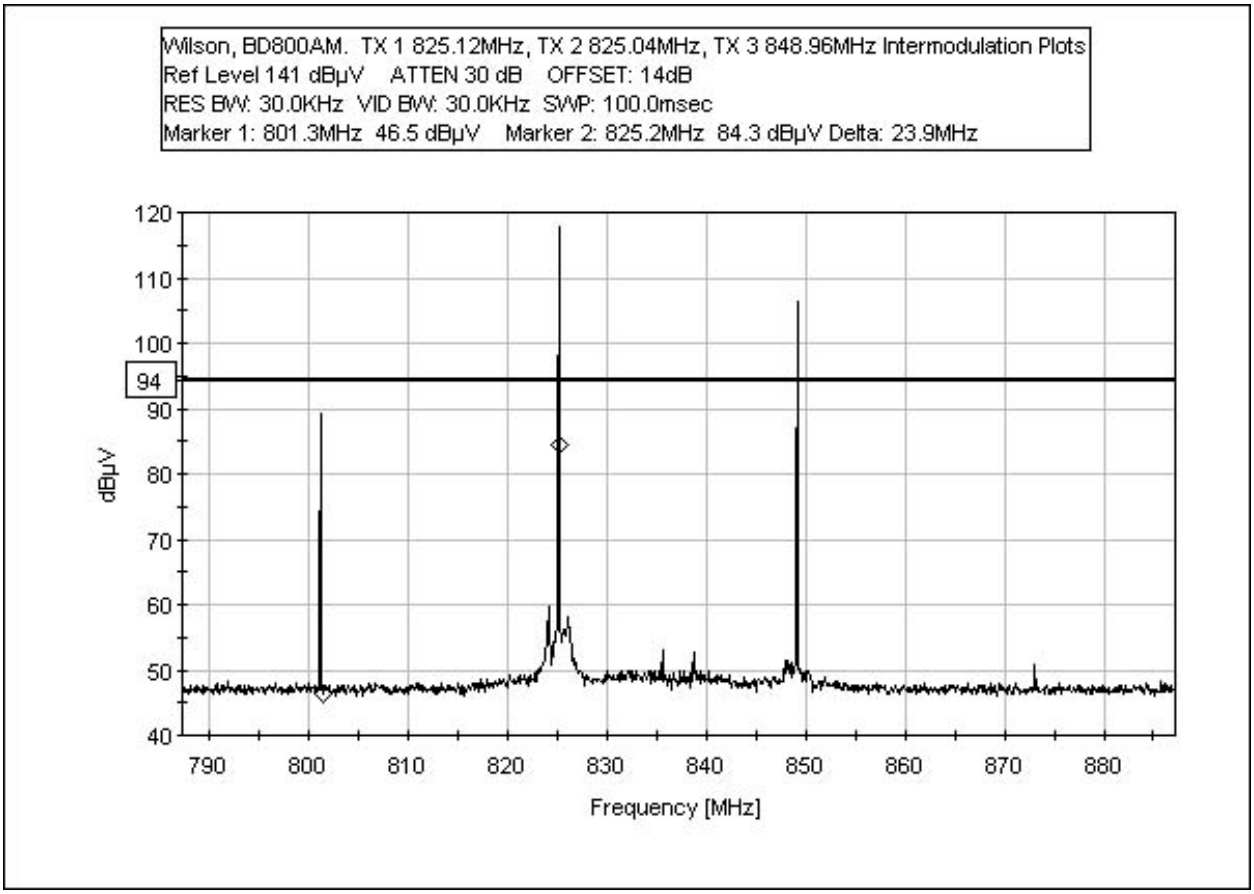
Downlink TDMA 869 MHz & 892 MHz - Intermodulation



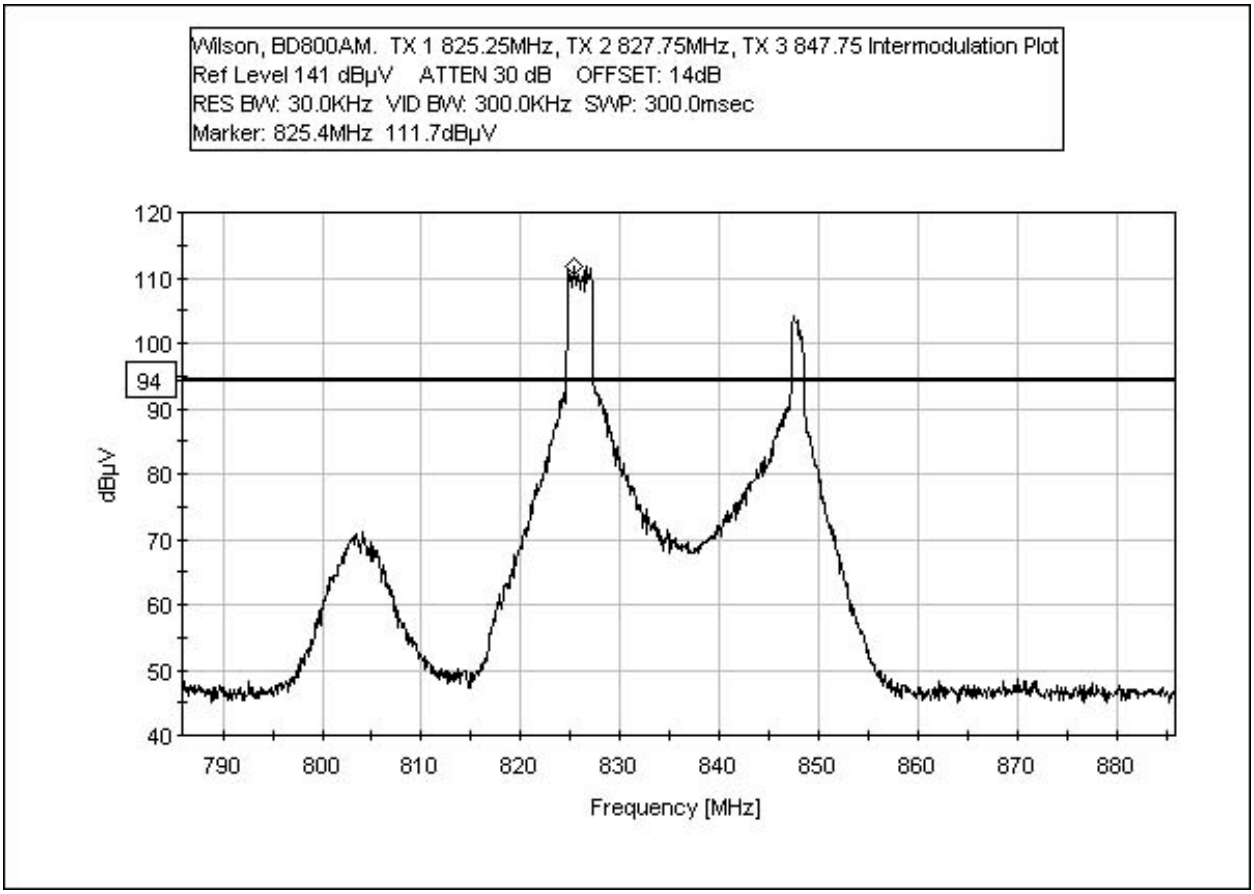
Downlink TDMA 871 MHz & 873 MHz - Intermodulation



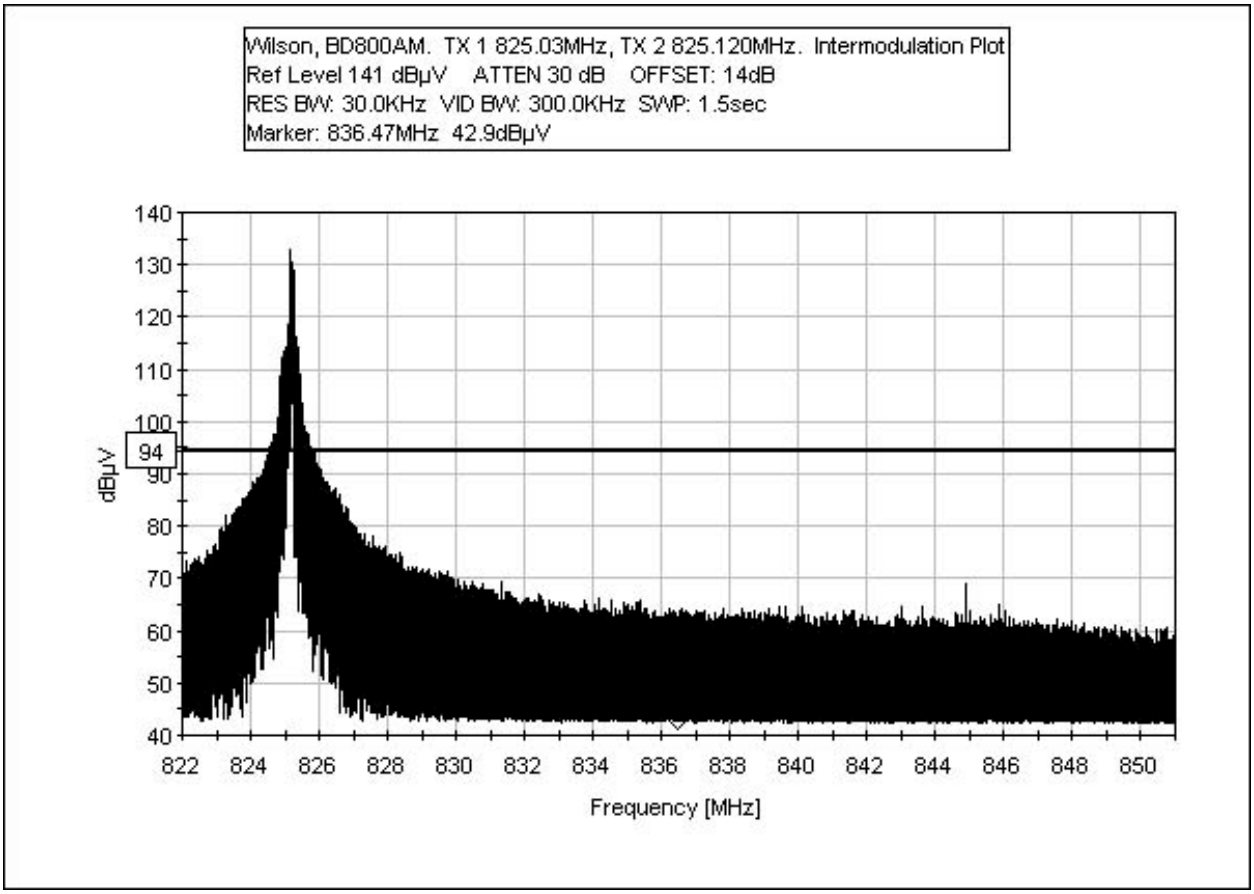
Uplink AMPS 825.12 MHz, 825.04 MHz & 848.96 MHz - Intermodulation



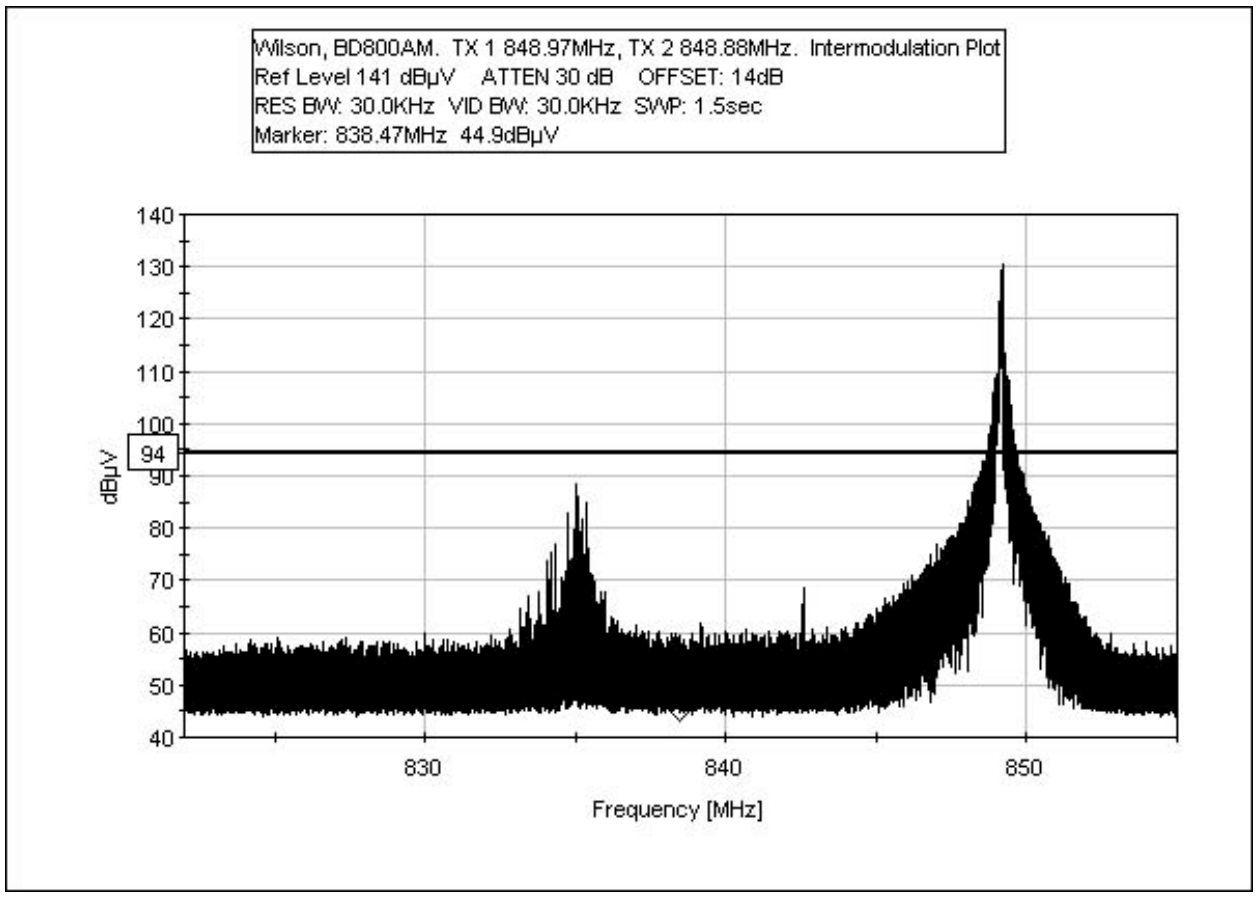
Uplink CDMA 825.25 MHz, 827.75 MHz & 847.75 MHz - Intermodulation



Uplink TDMA 825.03 MHz & 825.12 MHz - Intermodulation



Uplink TDMA 848.97 MHz & 848.88 MHz - Intermodulation



Test Equipment

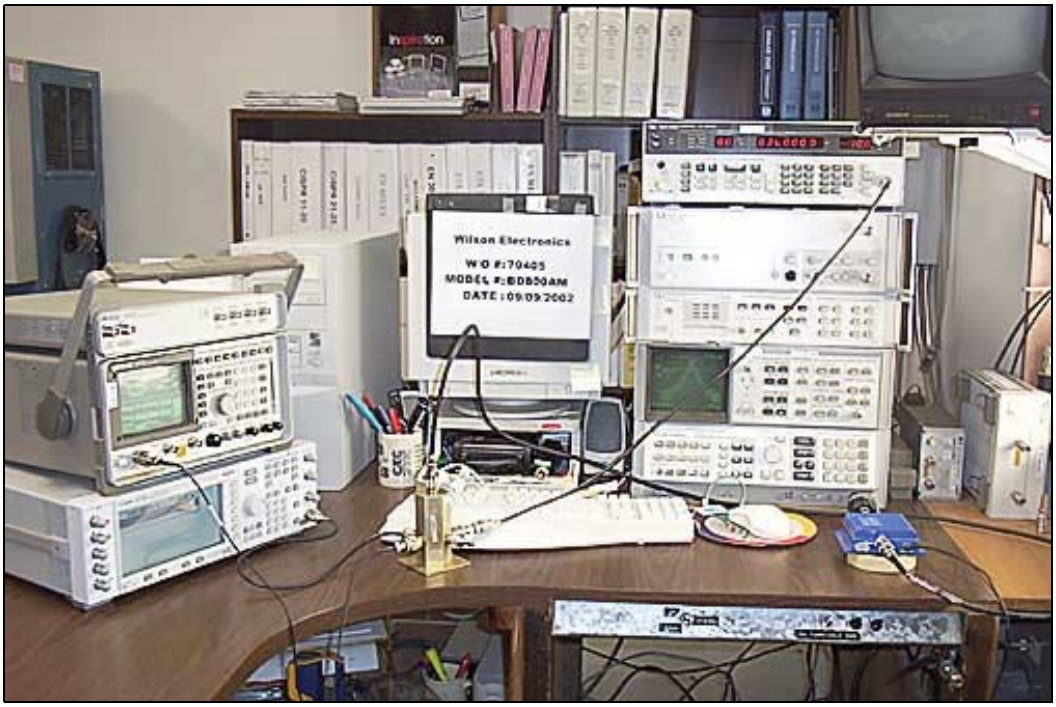
Equipment	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
QP Adapter	HP	85650A	2811A01267	00478	1/30/02	1/30/03
S/A Display	HP	8566B	2403A08241	00489	1/30/02	1/30/03
Spectrum Analyzer	HP	8566B	2209A01404	00490	1/30/02	1/30/03

DOWNLINK DIRECT CONNECT - AMPS

DOWNLINK DIRECT CONNECT - CDMA

DOWNLINK DIRECT CONNECT - TDMA

UPLINK DIRECT CONNECT - AMPS



UPLINK DIRECT CONNECT - CDMA

UPLINK DIRECT CONNECT - TDMA

2.1033(c)(14)/2.1053/22.917(e)- FIELD STRENGTH OF SPURIOUS RADIATION

Test Conditions: Testing was performed at the frequency range of 9 kHz to 9 GHz**. Downlink**: No spurious emissions within 20dB of the limit were found. Transmit frequencies are 869 MHz, 870.25 MHz and 892.75MHz. **Uplink**: No spurious emissions found within 20 dB of limit. Three AMPS tones are being generated. Antenna port is terminated with a 50 ohm load. The AMPS modulation was found to produce the most intermodulation products.

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	0.009000	0.150000	200 Hz
RADIATED EMISSIONS	0.150000	30.000000	9 kHz
RADIATED EMISSIONS	30.000000	823.940000	30 kHz
RADIATED EMISSIONS	823.940000	849.060000	300 Hz
RADIATED EMISSIONS	849.060000	1,000.000000	30 kHz
RADIATED EMISSIONS	1,000.000000	10,000.000000	30 kHz

Downlink

Operating Frequency: 869 MHz, 882 MHz and 894 MHz
Channels: Low, middle, high
Highest Measured Output Power: 12.41 ERP(dBm)= 0.017419 ERP(Watts)
Distance: 3 meters
Limit: 43+10Log(P) 25.41 dBc

Freq. (MHz)	Reference Level (dBm)	Antenna Polarity (H/V)	dBc
1,761.86	-83.1	Horiz	95.51
2,650.06	-85.40	Horiz	97.81
3,519.12	-90.10	Horiz	102.51
1,767.16	-90.30	Vert	102.71
2,637.96	-90.40	Vert	102.81
3,533.28	-91.40	Vert	103.81

Uplink

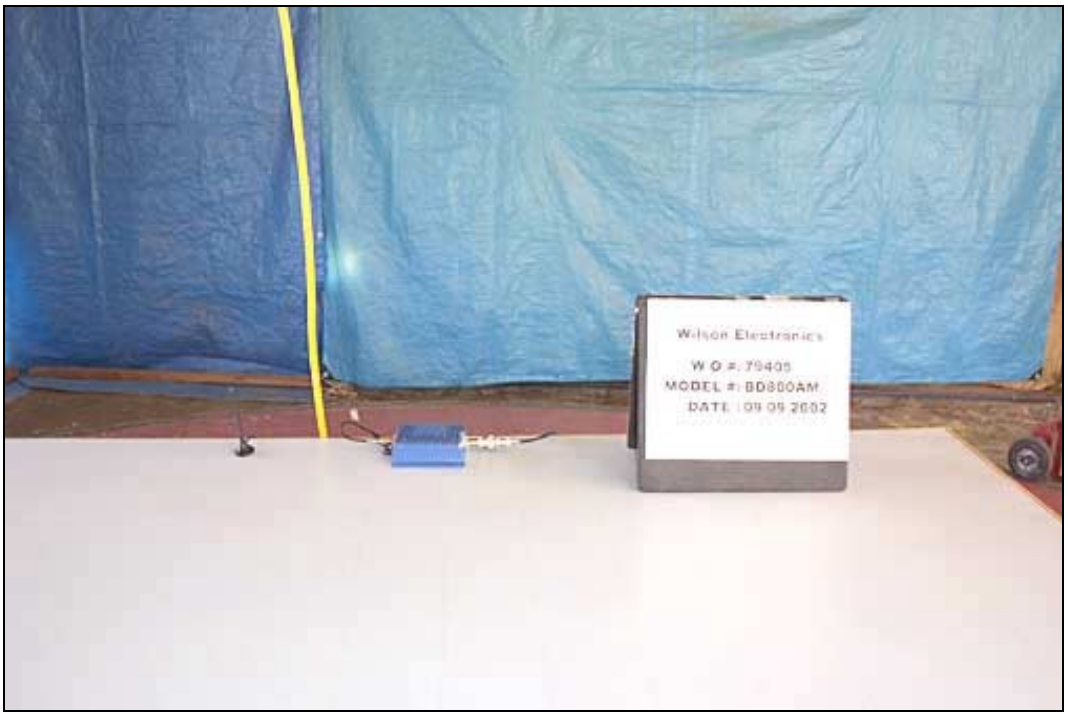
Operating Frequency: 825.04 MHz, 825.12 MHz and 847.75 MHz
Channels: Low, middle, high
Highest Measured Output Power: 32.71 ERP(dBm)= 1.866509 ERP(Watts)
Distance: 3 meters
Limit: 43+10Log(P) 45.71 dBc

Freq. (MHz)	Reference Level (dBm)	Antenna Polarity (H/V)	dBc
2,451.90	-41.8	Vert	74.51
3,280.74	-42.40	Horiz	75.11
3,314.71	-42.50	Vert	75.21
2,497.95	-42.50	Horiz	75.21
1,631.22	-43.40	Vert	76.11
1,665.54	-43.50	Horiz	76.21

Test Equipment

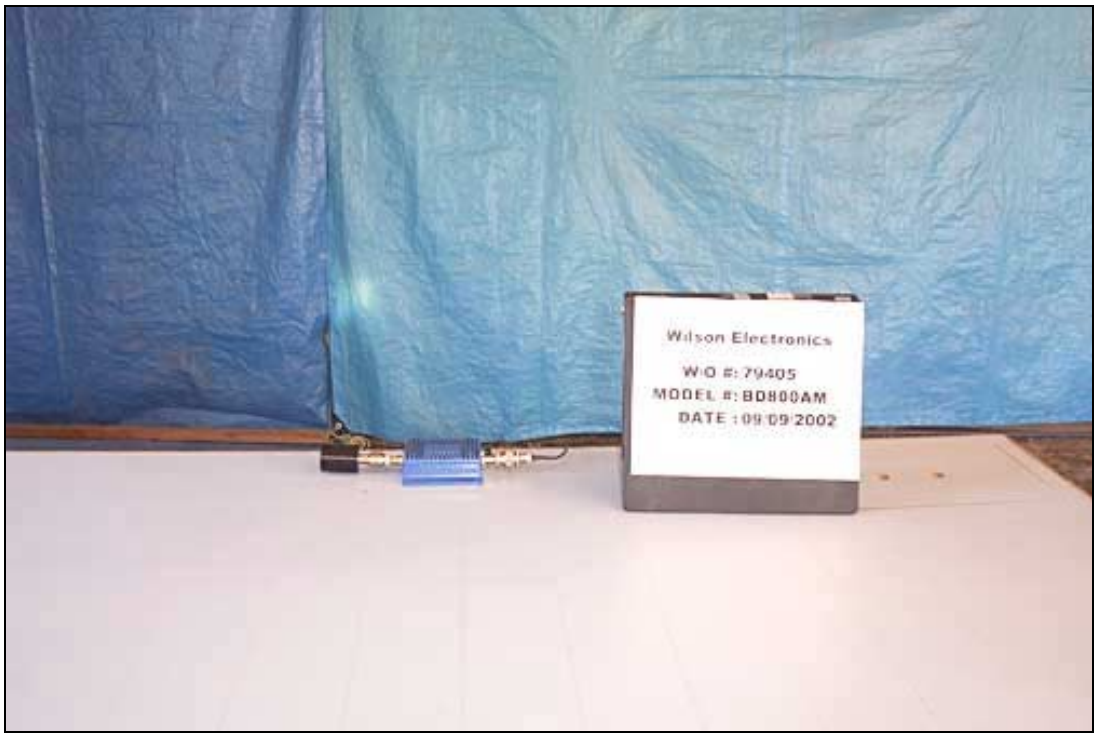
Equipment	*Manufacturer*	*Model #*	*Serial #*	*Asset #*	*Cal Date*	*Cal Due*
Antenna, Bicon	A&H	SAS-200/542	156	00225	12/06/01	12/6/02
Antenna, Log	A&H	SAS-200/510	154	01330	6/19/02	6/19/03
Antenna, Loop	EMCO	6502	1074	00226	5/31/02	5/31/03
Preamp	HP	8447D	1937A02604	00099	3/21/02	3/21/03
Preamp	HP	8449B	3008A00301	02010	10/19/01	10/19/02
QP Adapter	HP	85650A	2811A01267	00478	1/30/02	1/30/03
S/A Display	HP	8566B	2403A08241	00489	1/30/02	1/30/03
Spectrum Analyzer	HP	8566B	2209A01404	00490	1/30/02	1/30/03
Antenna, Horn	EMCO	3115	4085	00656	03/19/02	03/19/03

DOWNLINK OATS

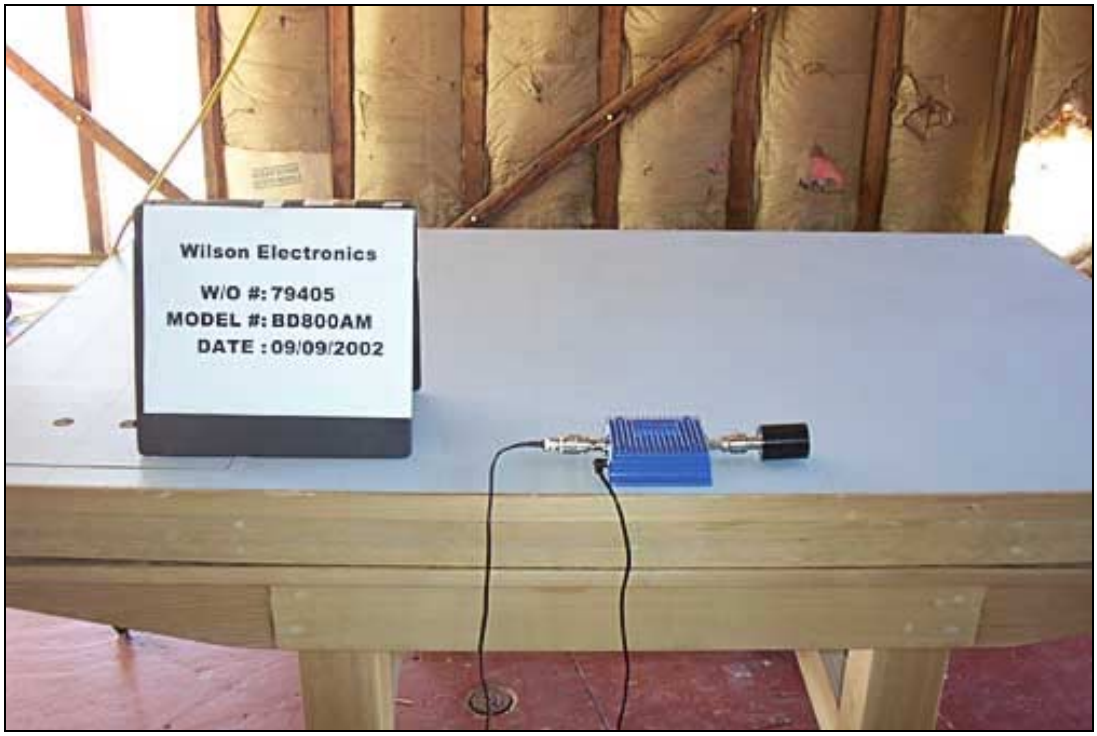


DOWNLINK OATS

UPLINK OATS



UPLINK OATS



2.1033(c)(14)/2.1055/ - FREQUENCY STABILITY

Not applicable to this unit.

2.1091- MPE CALCULATIONS

Model Number: BD800AM
FCC Identification: Not Provided
824-869MHz
Maximum Rated Output Power(Ant Cond): 1 Watts
Measured Output Power (Ant Conducted): 870mWatts
869-894MHz
Maximum Rated Output Power (Ant Cond): 74mWatts
Measured Output Power (Ant Conducted): 74mWatts

EIRP = COND PWR (dB) + Cust Ant. (dBi)
For the 824-869 range, EIRP = 29.4dBm + 1.5dBi = 30.9 or 1229mW
For the 869-894 range, EIRP = 18.7dBm + 1.5dBi = 20.2 or 104mW
Power Output and Operating Frequency Information used for these calculations were from:
CKC Laboratories, Inc.

824-849MHz	869-894MHz
ERP = 0.74933	ERP = 0.06374
EIRP = 1.22891	EIRP = 0.10453

MPE Limit = f/1500, where f = Frequency in MHz
MPE Limit for 824 MHz = 824/1500- 849/1500 = **0.549333mW/cm^2 -.566mW/cm^2**
MPE Limit for 869 MHz = 869/1500- 894/1500 = **0.57933mW/cm^2 -.596mW/cm^2**

Frequency Range	Power Output (EIRP mW)	Power Density Limit (mW/cm^2)	Minimum Distance (Centimeters)
824-8849 MHz UP	1229	**0.549333**	13.5
869-894Hz DOWN	104	**0.57933**	3.8

Power Density (mW/cm^2) = (EIRP) / (d^2 * 4* π)

$$d(cm) = \sqrt{\frac{EIRP}{4\pi S}}$$

EIRP = Measured or Calculated EIRP, in mWatts
d = Distance in centimeters
This device can be installed in a vehicle. Under normal operating conditions, the antenna is designed to maintain a separation distance of 13.5 centimeters from all persons. As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a rated output power of 870mWatts at a distance of 13.5 cm.