



ADDENDUM TO FC03-066

FOR THE

AMPS BI-DIRECTIONAL AMPLIFIER DIRECT CONNECT, 811101

FCC PARTS 22 AND 24 AND RSS 131

COMPLIANCE

DATE OF ISSUE: NOVEMBER 24, 2003

PREPARED FOR:

Wilson Electronics
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St. George, UT 84790

PREPARED BY:

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5473A Clouds Rest
Mariposa, CA 95338

P.O. No.: BD800ADC-FCC-10-2
W.O. No.: 81209

Date of test: October 13 - November 10, 2003

Report No.: FC03-066A

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TABLE OF CONTENTS

Administrative Information	3
Summary of Results	4
Conditions for Compliance	4
Approvals	4
Equipment Under Test (EUT) Description	5
Equipment Under Test	5
Peripheral Devices	5
Measurement Uncertainty	5
Temperature and Humidity During Testing.....	6
FCC 2.1033(c)(3) User’s Manual	6
FCC 2.1033(c)(4) Type of Emissions.....	6
FCC 2.1033(c)(5) Frequency Range.....	6
FCC 2.1033(c)(6) Operating Power.....	6
FCC 2.1033(c)(7) Maximum Power Rating	6
FCC 2.1033(c)(8) DC Voltages	6
FCC 2.1033(c)(9) Tune-Up Procedure	6
FCC 2.1033(c)(10) Schematics and Circuitry Description.....	6
FCC 2.1033(c)(11) Label and Placement	6
FCC 2.1033(c)(12) Submittal Photos	6
FCC 2.1033(c)(13) Modulation Information	6
FCC 2.1033(c)(14)/2.1046/22.913 - RF Power Output	7
FCC 2.1033(c)(14)/2.1051/22.917 - Spurious Emissions at Antenna Terminal.....	10
FCC 2.1033(c)(14)/2.1053/22.917 - Field Strength of Spurious Radiation	63
FCC 24.238 - Spurious Emissions at Antenna Terminal.....	68
FCC 2.1051 - Intermodulation Attenuation	72
FCC 2.1091 - MPE Calculations	85
Downlink Input Plots	87
Uplink Input Plots	97
Downlink Output Plots	107
Uplink Output Plots	117
RSS 131 20 dB Passband Downlink.....	128
RSS 131 20 dB Passband Gain 0-20 Downlink.....	129
RSS 131 20 dB Passband Uplink.....	130
RSS 131 20 dB Passband Gain 0-20 Uplink.....	131
RSS 131 20 dB Passband Gain 20-40 Uplink.....	132

ADMINISTRATIVE INFORMATION

DATE OF TEST: October 13 - November 10, 2003

DATE OF RECEIPT: October 13, 2003

PURPOSE OF TEST: To demonstrate the compliance of the Amps Bi-Directional Amplifier Direct Connect, 811101 with the requirements for FCC Parts 22 and 24 and RSS 131 devices.
Addendum A revised the frequency range on page 6, moved the intermodulation data sheets next to the plots, revised the Part 24 and 2.1053 test conditions and added test conditions for the input and output plots.

TEST METHOD: FCC Parts 22 and 24 and RSS 131

FREQUENCY RANGE TESTED: 30 MHz – 10 GHz

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

REPRESENTATIVE: Patrick Cook

TEST LOCATION: CKC Laboratories, Inc.
5473A Clouds Rest
Mariposa, CA 95338

SUMMARY OF RESULTS

As received, the Wilson Electronics Amps Bi-Directional Amplifier Direct Connect, 811101 was found to be fully compliant with the following standards and specifications:

Canadian Standard	Canadian Section	FCC Standard	FCC Section	Test Description
RSS 131	5.4	N/A	N/A	External Controls
RSS 131	5.5	47 CFR	1.1307	RF Exposure
RSS 131	6.1	N/A	N/A	Passband Gain and Bandwidth
RSS 131	6.2	47 CFR	22.913	RF Power Output
RSS 131	6.3	TIA/EIA	603	Non-Linearity (Intermodulation Attenuation)
RSS 131	6.4	47 CFR	22.917 / 24.238	Spurious Emissions Limitations
RSS 131	6.5	N/A	N/A	Frequency Stability (Band Translators)
IC 3082-B		90477		Site File No.

CONDITIONS FOR COMPLIANCE

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

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:



Randy Clark, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT tested by CKC Laboratories was a production unit
 The following model was tested by CKC Laboratories : **BD800A-DC**

Since the time of testing the manufacturer has chosen to use the following model name in its place. Any differences between the names does not affect their EMC characteristics and therefore complies to the level of testing equivalent to the tested model name shown on the data sheets: **811101**

EQUIPMENT UNDER TEST

Amplifier Power Supply

Manuf: Wilson Electronics
 Model: JOD-48U-36
 Serial: NA
 FCC ID: UL

Amps Bi-Directional Amplifier Direct Connect

Manuf: Wilson Electronics
 Model: 811101
 Serial: 5902
 FCC ID: pending

PERIPHERAL DEVICES

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

Signal Generator

Manuf: Marconi
 Model: 2022D
 Serial: 119259/016
 FCC ID: DoC

Signal Generator (2 each)

Manuf: HP
 Model: E4432B
 Serial: US40052283 & US38330168
 FCC ID: DoC

Signal Generator

Manuf: HP
 Model: 8921A
 Serial: 3519A01796
 FCC ID: DoC

Signal Generator (CDMA Adapter)

Manuf: HP
 Model: 83205A
 Serial: US37461985
 FCC ID: DoC

MEASUREMENT UNCERTAINTY

TEST	HIGHEST UNCERTAINTY
Radiated Emissions	+/- 2.94 dB
Conducted Emissions	+/- 1.56 dB

Note: Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k=2. Statements of compliance are based on the nominal values only.

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

FCC 2.1033(c)(3) USER'S MANUAL

The necessary information is contained in a separate document.

FCC 2.1033 (c)(4) TYPE OF EMISSIONS

FXW, GXW, F9W, F1D

FCC 2.1033 (c)(5) FREQUENCY RANGE

Downlink 869-894 MHz, uplink 824-849 MHz for Part 22 and downlink 1930-1990 MHz,
uplink 1800-1910 MHz for Part 24.

FCC 2.1033 (c)(6) OPERATING POWER

Downlink .00895 Watts, Uplink 2.97 Watts.

FCC 2.1033 (c)(7) MAXIMUM POWER RATING

7 Watts.

FCC 2.1033 (c)(8) DC VOLTAGES

TX: 5VDC, current 300 mA - 1.5 A; RX: 3.6VDC, current 50 mA.

FCC 2.1033 (c)(9) TUNE-UP PROCEDURE

Not applicable because it is factory set.

FCC 2.1033(c)(10) SCHEMATICS AND CIRCUITRY DESCRIPTION

The necessary information is contained in a separate document.

FCC 2.1033(c)(11) LABEL AND PLACEMENT

The necessary information is contained in a separate document.

FCC 2.1033(c)(12) SUBMITTAL PHOTOS

The necessary information is contained in a separate document.

FCC 2.1033 (c)(13) MODULATION INFORMATION

Not Applicable.

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

Test Conditions: EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Downlink band is designed for direct connection to a cellular telephone. Uplink band is designed for connection to a specified antenna.

RF Power Output Test: Only one signal is input to the amplifier. The input from the signal generator is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. RBW=VBW=1 MHz, RBW=VBW=3 MHz (CDMA only).

Uplink Output Ratings:
CDMA and TDMA formats: 3 Watts
AMPS: 1Watt

Downlink Output Ratings:
All: 10mW

RF power output of the amplifier is routed to a spectrum analyzer through suitable attenuation.

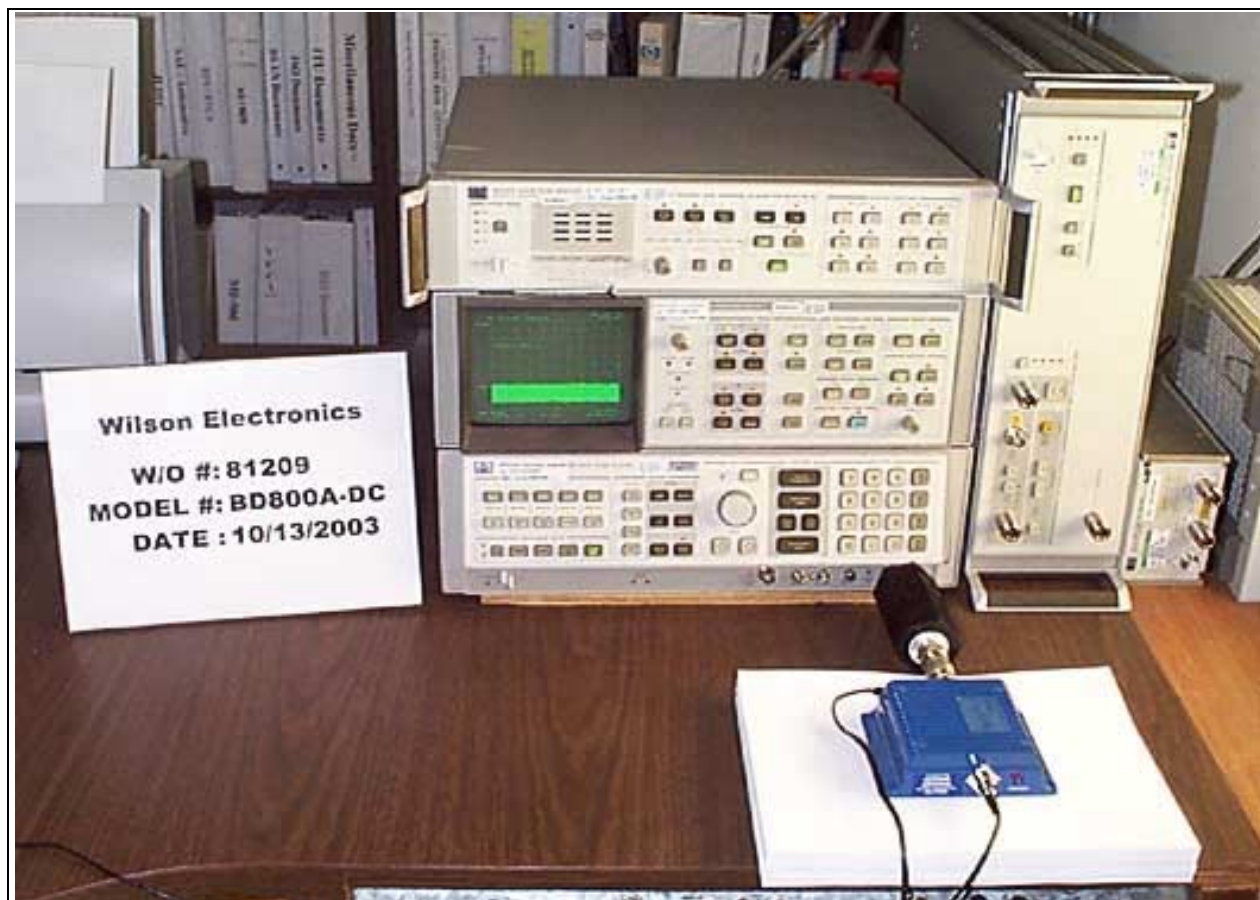
Downlink

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (milliWatts)</i>
881.50	CDMA	7.13
870.25	CDMA	8.17
892.75	CDMA	6.37
892.75	GSM	7.59
881.50	GSM	8.51
870.25	GSM	6.87
892.75	CDPD	7.68
881.50	CDPD	8.62
870.25	CDPD	8.95
869.09	AMPS	6.89
893.80	AMPS	8.79
881.50	AMPS	7.13

Uplink

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
825.49	CDMA	2.68
836.44	CDMA	2.97
847.97	CDMA	2.74
824.34	GSM	2.66
836.42	GSM	2.70
848.79	GSM	2.59
824.26	CDPD	2.76
836.48	CDPD	2.76
848.79	CDPD	2.69
824.10	AMPS	1.0
836.51	AMPS	1.0
847.90	AMPS	1.0

PHOTOGRAPH SHOWING DIRECT CONNECT EMISSIONS



Test Equipment

<i>Description</i>	<i>Asset #</i>	<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Cal Due</i>	<i>Cal Due</i>
Attenuator	P01577	Bird	25-AMFN-30	9724	5/9/03	5/8/04
RF Splitter / Combiner	P01313				NR	NR
Generator, Signal	01870	Marconi	2022D	119259/016	9/5/02	9/4/04
Generator, ESG	Avalon	HP	E4432B	US40052283	3/1/02	4/1/04
Generator, ESG	AES	HP	E4432B	US38330168	10/3/03	10/3/04
Spectrum Analyzer 100Hz - 22.5GHz	00490	HP	8566B	2209A01404	2/26/03	2/26/24
Spectrum Analyzer Display	00489	HP	8566B	2403A08241	2/26/03	2/26/04
Spectrum Analyzer QP Adapter	00478	HP	85650A	2811A01267	2/26/03	2/26/04

NR = Not Required

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

Bandwidth settings used: RBW=VBW=100 kHz.

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81209**

Date: 11/05/2003

Test Type: **Antenna Terminals**

Time: 14:52:30

Equipment: **Bi-directional Amplifier Repeater**

Sequence#: 1

Manufacturer: Wilson Electronics

Tested By: Randal Clark

Model: BD800A-DC

S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	Marconi	2022D	119259/016
Signal Generator	HP	E4432B	US40052283
Signal Generator	HP	8921A	3519A01796
Signal Generator (CDMA Adapter)	HP	83205A	US37461985

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Only one signal is input to the amplifier. The input from the signal generator is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 881.5 MHz, High - 892.75 MHz. Frequency Range Investigated: Fundamental. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt. Downlink Output Ratings: All: 10mW.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	Reading listed by margin.			Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	881.500M	86.0	+30.3				+0.0	116.3	117.0	-0.7	None
									DL - GSM		
2	892.750M	85.5	+30.3				+0.0	115.8	117.0	-1.2	None
									DL - GSM		
3	848.480M	110.0	+30.4				+0.0	140.4	141.7	-1.3	None
									UL - GSM		
4	870.250M	84.6	+30.3				+0.0	114.9	117.0	-2.1	None
									DL - GSM		
5	825.175M	108.9	+30.4				+0.0	139.3	141.7	-2.4	None
									UL - GSM		
6	836.430M	108.8	+30.4				+0.0	139.2	141.7	-2.5	None
									UL - GSM		
7	881.499M	83.8	+30.3				+0.0	114.1	117.0	-2.9	None
									DL - AMPS		
8	881.500M	83.8	+30.3				+0.0	114.1	117.0	-2.9	None
									DL - CDMA		
9	893.800M	83.5	+30.3				+0.0	113.8	117.0	-3.2	None
									DL - AMPS		
10	892.750M	83.1	+30.3				+0.0	113.4	117.0	-3.6	None
									DL - CDMA		
11	870.250M	82.9	+30.3				+0.0	113.2	117.0	-3.8	None
									DL - CDMA		
12	869.088M	82.6	+30.3				+0.0	112.9	117.0	-4.1	None
									DL - AMPS		

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/16/2003
 Test Type: **Antenna Terminals** Time: 08:55:41
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 6
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A-MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Only one signal is input to the amplifier. The input from the signal generator is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Frequencies Tested: Uplink. Frequency Range Investigated: Fundamental.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	848.785M	112.3	+30.3			+0.0	142.6	141.7	+0.9	None
TDMA (GSM)										
2	836.475M	111.5	+30.4			+0.0	141.9	141.7	+0.2	None
TDMA (CDPD)										
3	836.420M	111.4	+30.4			+0.0	141.8	141.7	+0.1	None
TDMA (GSM)										
4	824.335M	111.2	+30.4			+0.0	141.6	141.7	-0.1	None
TDMA (GSM)										

5	824.260M	110.9	+30.4	+0.0	141.3	141.7	-0.4	None
								TDMA (CDPD)
6	848.794M	110.7	+30.3	+0.0	141.0	141.7	-0.7	None
								TDMA (CDPD)
7	824.103M	110.4	+30.4	+0.0	140.8	141.7	-0.9	None
								AMPS
8	836.506M	110.2	+30.4	+0.0	140.6	141.7	-1.1	None
								AMPS
9	836.439M	110.3	+30.4	+0.0	140.7	145.4	-4.7	None
								CDMA
10	847.970M	110.1	+30.4	+0.0	140.5	145.4	-4.9	None
								CDMA
11	825.485M	110.0	+30.4	+0.0	140.4	145.4	-5.0	None
								CDMA
12	847.902M	105.8	+30.4	+0.0	136.2	141.7	-5.5	None
								AMPS

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/14/2003
 Test Type: **Antenna Terminals** Time: 9:38:25 AM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 5
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink Low - 870.25 MHz. Frequency Range Investigated: 30 MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	870.250M	84.6	+30.3				+0.0	114.9	117.0	-2.1	None
2	1784.520M	28.8	+30.3				+0.0	59.1	94.0	-34.9	None
3	2676.329M	27.0	+29.8				+0.0	56.8	94.0	-37.2	None
4	6671.792M	28.6	+27.2				+0.0	55.8	94.0	-38.2	None
5	4460.770M	26.1	+28.8				+0.0	54.9	94.0	-39.1	None

6	35.277M	22.6	+30.5	+0.0	53.1	94.0	-40.9	None
7	77.815M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
8	457.521M	22.6	+30.4	+0.0	53.0	94.0	-41.0	None
9	2757.575M	23.3	+29.7	+0.0	53.0	94.0	-41.0	None
10	58.129M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
11	158.161M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
12	322.621M	22.5	+30.4	+0.0	52.9	94.0	-41.1	None
13	2291.330M	22.7	+30.2	+0.0	52.9	94.0	-41.1	None
14	234.633M	22.3	+30.4	+0.0	52.7	94.0	-41.3	None
15	676.182M	22.2	+30.4	+0.0	52.6	94.0	-41.4	None
16	196.568M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
17	1218.350M	22.1	+30.3	+0.0	52.4	94.0	-41.6	None
18	1690.738M	22.2	+30.2	+0.0	52.4	94.0	-41.6	None
19	7544.520M	26.5	+25.8	+0.0	52.3	94.0	-41.7	None
20	3862.584M	22.5	+29.7	+0.0	52.2	94.0	-41.8	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/14/2003
 Test Type: **Antenna Terminals** Time: 9:28:55 AM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 4
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink Mid - 881.5 MHz. Frequency Range Investigated: 30 MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	881.500M	86.0	+30.3				+0.0	116.3	117.0	-0.7	None
Fundamental											
2	6669.906M	28.5	+27.2				+0.0	55.7	94.0	-38.3	None
3	6449.244M	27.9	+27.3				+0.0	55.2	94.0	-38.8	None
4	1785.700M	24.8	+30.3				+0.0	55.1	94.0	-38.9	None
5	6064.500M	26.7	+27.7				+0.0	54.4	94.0	-39.6	None

6	6545.430M	27.0	+27.2	+0.0	54.2	94.0	-39.8	None
7	6922.630M	27.0	+27.1	+0.0	54.1	94.0	-39.9	None
8	2676.329M	24.1	+29.8	+0.0	53.9	94.0	-40.1	None
9	1700.444M	23.3	+30.2	+0.0	53.5	94.0	-40.5	None
10	1549.113M	23.2	+30.2	+0.0	53.4	94.0	-40.6	None
11	164.252M	22.6	+30.5	+0.0	53.1	94.0	-40.9	None
12	4460.770M	24.3	+28.8	+0.0	53.1	94.0	-40.9	None
13	89.344M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
14	38.240M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
15	124.787M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
16	348.137M	22.2	+30.4	+0.0	52.6	94.0	-41.4	None
17	901.111M	22.3	+30.3	+0.0	52.6	94.0	-41.4	None
18	44.369M	21.9	+30.5	+0.0	52.4	94.0	-41.6	None
19	552.869M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
20	1107.800M	22.1	+30.3	+0.0	52.4	94.0	-41.6	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/05/2003
 Test Type: **Antenna Terminals** Time: 10:07:58
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 3
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US540052283
Signal Generator	HP	8921A	3519A01796
Signal Generator (TDMA Adapter)	HP	83204A	US37460723
Signal Generator (CDMA Adapter)	HP	83205A	US37461985
Signal Generator	Marconi	2022D	119259/016

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink High - 892.75 MHz. Frequency Range Investigated: 30 MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	892.750M	85.5	+30.3				+0.0	115.8	117.0	-1.2	None
Fundamental											
2	1785.487M	42.0	+30.3				+0.0	72.3	94.0	-21.7	None

3	4463.808M	36.1	+28.8	+0.0	64.9	94.0	-29.1	None
4	3571.056M	33.4	+29.8	+0.0	63.2	94.0	-30.8	None
5	6916.972M	28.0	+27.1	+0.0	55.1	94.0	-38.9	None
6	6684.994M	27.8	+27.2	+0.0	55.0	94.0	-39.0	None
7	2453.887M	23.5	+30.1	+0.0	53.6	94.0	-40.4	None
8	113.414M	22.6	+30.5	+0.0	53.1	94.0	-40.9	None
9	447.854M	22.5	+30.4	+0.0	52.9	94.0	-41.1	None
10	33.175M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
11	483.207M	22.4	+30.4	+0.0	52.8	94.0	-41.2	None
12	1734.417M	22.5	+30.3	+0.0	52.8	94.0	-41.2	None
13	79.434M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
14	129.044M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
15	724.362M	22.3	+30.4	+0.0	52.7	94.0	-41.3	None
16	9210.240M	27.5	+25.0	+0.0	52.5	94.0	-41.5	None
17	47.208M	21.9	+30.5	+0.0	52.4	94.0	-41.6	None
18	54.172M	21.8	+30.5	+0.0	52.3	94.0	-41.7	None
19	3843.612M	22.6	+29.7	+0.0	52.3	94.0	-41.7	None
20	217.943M	21.8	+30.4	+0.0	52.2	94.0	-41.8	None
21	1113.740M	21.8	+30.3	+0.0	52.1	94.0	-41.9	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/05/2003
 Test Type: **Antenna Terminals** Time: 10:27:57
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 12
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (GSM). Frequencies Tested: Downlink Low - 869.280 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	869.280M	84.6	+30.3			+0.0	114.9	117.0	-2.1	None
									Fundamental	
2	1737.505M	36.1	+30.3			+0.0	66.4	94.0	-27.6	None
3	5975.858M	27.3	+27.8			+0.0	55.1	94.0	-38.9	None
4	2465.719M	23.8	+30.1			+0.0	53.9	94.0	-40.1	None
5	254.481M	22.6	+30.4			+0.0	53.0	94.0	-41.0	None

6	2075.980M	22.7	+30.3	+0.0	53.0	94.0	-41.0	None
7	78.105M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
8	123.592M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
9	386.771M	22.3	+30.3	+0.0	52.6	94.0	-41.4	None
10	38.594M	22.0	+30.5	+0.0	52.5	94.0	-41.5	None
11	56.774M	21.9	+30.5	+0.0	52.4	94.0	-41.6	None
12	178.948M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
13	458.487M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
14	45.302M	21.8	+30.5	+0.0	52.3	94.0	-41.7	None
15	150.817M	21.8	+30.5	+0.0	52.3	94.0	-41.7	None
16	591.266M	21.9	+30.4	+0.0	52.3	94.0	-41.7	None
17	3379.852M	22.5	+29.7	+0.0	52.2	94.0	-41.8	None
18	1053.350M	21.7	+30.3	+0.0	52.0	94.0	-42.0	None
19	9570.600M	27.5	+24.5	+0.0	52.0	94.0	-42.0	None
20	4208.380M	22.7	+29.2	+0.0	51.9	94.0	-42.1	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/05/2003
 Test Type: **Antenna Terminals** Time: 10:23:32
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 13
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (GSM). Frequencies Tested: Downlink Mid - 881.50 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	881.500M	86.0	+30.3			+0.0	116.3	117.0	-0.7	None
									Fundamental	
2	1762.690M	44.7	+30.3			+0.0	75.0	94.0	-19.0	None
3	3524.250M	31.3	+29.8			+0.0	61.1	94.0	-32.9	None
4	6701.968M	28.2	+27.2			+0.0	55.4	94.0	-38.6	None
5	4404.370M	25.5	+28.9			+0.0	54.4	94.0	-39.6	None

6	602.157M	23.0	+30.4	+0.0	53.4	94.0	-40.6	None
7	1703.092M	23.0	+30.2	+0.0	53.2	94.0	-40.8	None
8	2868.007M	23.5	+29.6	+0.0	53.1	94.0	-40.9	None
9	64.400M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
10	33.407M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
11	93.719M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
12	459.868M	22.3	+30.4	+0.0	52.7	94.0	-41.3	None
13	146.713M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
14	191.773M	22.2	+30.4	+0.0	52.6	94.0	-41.4	None
15	45.532M	22.0	+30.5	+0.0	52.5	94.0	-41.5	None
16	121.977M	22.0	+30.5	+0.0	52.5	94.0	-41.5	None
17	1155.650M	22.2	+30.3	+0.0	52.5	94.0	-41.5	None
18	271.472M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
19	408.051M	22.0	+30.3	+0.0	52.3	94.0	-41.7	None
20	7501.680M	26.0	+25.9	+0.0	51.9	94.0	-42.1	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/05/2003
 Test Type: **Antenna Terminals** Time: 10:22:02
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 14
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (GSM) Frequencies Tested: Downlink High - 893.72 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	893.720M	85.5	+30.3				+0.0	115.8	117.0	-1.2	None
Fundamental											
2	1787.479M	40.3	+30.3				+0.0	70.6	94.0	-23.4	None
3	4468.560M	35.0	+28.8				+0.0	63.8	94.0	-30.2	None
4	3575.129M	32.5	+29.8				+0.0	62.3	94.0	-31.7	None
5	2678.695M	27.4	+29.8				+0.0	57.2	94.0	-36.8	None

6	6673.678M	28.4	+27.2	+0.0	55.6	94.0	-38.4	None
7	5836.294M	26.9	+27.8	+0.0	54.7	94.0	-39.3	None
8	133.407M	22.8	+30.5	+0.0	53.3	94.0	-40.7	None
9	1021.670M	23.0	+30.3	+0.0	53.3	94.0	-40.7	None
10	510.551M	22.6	+30.4	+0.0	53.0	94.0	-41.0	None
11	72.111M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
12	366.627M	22.5	+30.4	+0.0	52.9	94.0	-41.1	None
13	196.048M	22.4	+30.4	+0.0	52.8	94.0	-41.2	None
14	403.505M	22.5	+30.3	+0.0	52.8	94.0	-41.2	None
15	44.423M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
16	61.653M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
17	103.366M	22.0	+30.5	+0.0	52.5	94.0	-41.5	None
18	242.434M	22.1	+30.4	+0.0	52.5	94.0	-41.5	None
19	39.139M	21.9	+30.5	+0.0	52.4	94.0	-41.6	None
20	1566.320M	22.1	+30.2	+0.0	52.3	94.0	-41.7	None
21	7579.800M	26.6	+25.7	+0.0	52.3	94.0	-41.7	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/05/2003
 Test Type: **Antenna Terminals** Time: 1:16:48 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 29
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Frequencies Tested: Downlink Low - 869.1 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	869.100M	82.1	+30.3				+0.0	112.4	117.0	-4.6	None
Fundamental											
2	1737.064M	46.7	+30.3				+0.0	77.0	94.0	-17.0	None
3	6649.160M	28.8	+27.2				+0.0	56.0	94.0	-38.0	None
4	2605.337M	26.0	+29.9				+0.0	55.9	94.0	-38.1	None
5	2287.200M	23.2	+30.2				+0.0	53.4	94.0	-40.6	None

6	50.696M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
7	126.758M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
8	3863.638M	23.1	+29.7	+0.0	52.8	94.0	-41.2	None
9	94.299M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
10	35.500M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
11	179.063M	22.2	+30.4	+0.0	52.6	94.0	-41.4	None
12	310.122M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
13	156.044M	22.0	+30.5	+0.0	52.5	94.0	-41.5	None
14	455.173M	22.1	+30.4	+0.0	52.5	94.0	-41.5	None
15	604.003M	22.1	+30.4	+0.0	52.5	94.0	-41.5	None
16	1246.070M	22.3	+30.2	+0.0	52.5	94.0	-41.5	None
17	289.081M	21.8	+30.5	+0.0	52.3	94.0	-41.7	None
18	57.949M	21.7	+30.5	+0.0	52.2	94.0	-41.8	None
19	7584.840M	26.6	+25.6	+0.0	52.2	94.0	-41.8	None
20	9255.600M	26.9	+24.9	+0.0	51.8	94.0	-42.2	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/05/2003
 Test Type: **Antenna Terminals** Time: 1:33:55 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 30
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A-MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS Frequencies Tested: Downlink Mid - 881.5 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	880.874M	83.7	+30.3				+0.0	114.0	117.0	-3.0	None
2	1762.690M	53.6	+30.3				+0.0	83.9	94.0	-10.1	None
3	3524.250M	30.8	+29.8				+0.0	60.6	94.0	-33.4	None
4	4405.780M	29.1	+28.9				+0.0	58.0	94.0	-36.0	None
5	5282.800M	29.8	+28.1				+0.0	57.9	94.0	-36.1	None

6	6671.792M	29.4	+27.2	+0.0	56.6	94.0	-37.4	None
7	2642.410M	25.3	+29.9	+0.0	55.2	94.0	-38.8	None
8	2733.123M	23.7	+29.8	+0.0	53.5	94.0	-40.5	None
9	519.113M	22.7	+30.4	+0.0	53.1	94.0	-40.9	None
10	39.776M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
11	2220.530M	22.7	+30.2	+0.0	52.9	94.0	-41.1	None
12	1715.886M	22.6	+30.2	+0.0	52.8	94.0	-41.2	None
13	50.142M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
14	153.150M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
15	2863.274M	23.0	+29.6	+0.0	52.6	94.0	-41.4	None
16	65.737M	22.0	+30.5	+0.0	52.5	94.0	-41.5	None
17	1647.059M	22.3	+30.2	+0.0	52.5	94.0	-41.5	None
18	217.018M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
19	611.018M	21.9	+30.4	+0.0	52.3	94.0	-41.7	None
20	8996.040M	27.1	+25.2	+0.0	52.3	94.0	-41.7	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/05/2003
 Test Type: **Antenna Terminals** Time: 1:43:28 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 31
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Frequencies Tested: Downlink High - 893.9 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	893.214M	83.4	+30.3				+0.0	113.7	117.0	-3.3	None
Fundamental											
2	1787.470M	48.4	+30.3				+0.0	78.7	94.0	-15.3	None
3	4466.410M	39.6	+28.8				+0.0	68.4	94.0	-25.6	None
4	3573.788M	34.9	+29.8				+0.0	64.7	94.0	-29.3	None
5	2679.484M	27.2	+29.8				+0.0	57.0	94.0	-37.0	None

6	5356.120M	27.9	+28.0	+0.0	55.9	94.0	-38.1	None
7	6654.818M	28.5	+27.2	+0.0	55.7	94.0	-38.3	None
8	2874.318M	24.0	+29.6	+0.0	53.6	94.0	-40.4	None
9	54.497M	22.9	+30.5	+0.0	53.4	94.0	-40.6	None
10	2364.753M	23.1	+30.1	+0.0	53.2	94.0	-40.8	None
11	87.241M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
12	53.130M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
13	163.647M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
14	979.100M	22.4	+30.4	+0.0	52.8	94.0	-41.2	None
15	1370.427M	22.6	+30.2	+0.0	52.8	94.0	-41.2	None
16	1273.130M	22.5	+30.2	+0.0	52.7	94.0	-41.3	None
17	2588.772M	22.7	+30.0	+0.0	52.7	94.0	-41.3	None
18	234.479M	22.2	+30.4	+0.0	52.6	94.0	-41.4	None
19	1243.760M	22.4	+30.2	+0.0	52.6	94.0	-41.4	None
20	7557.120M	26.9	+25.7	+0.0	52.6	94.0	-41.4	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/31/2003
 Test Type: **Antenna Terminals** Time: 09:56:29
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 21
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (CDPD). Frequencies Tested: Downlink Low - 869.1 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	869.100M	85.0	+30.3				+0.0	115.3	117.0	-1.7	None
Fundamental											
2	1737.064M	59.0	+30.3				+0.0	89.3	94.0	-4.7	None
3	4343.740M	41.0	+29.0				+0.0	70.0	94.0	-24.0	None
4	3474.712M	38.9	+29.8				+0.0	68.7	94.0	-25.3	None
5	2605.337M	36.3	+29.9				+0.0	66.2	94.0	-27.8	None

6	6717.056M	28.5	+27.2	+0.0	55.7	94.0	-38.3	None
7	90.093M	22.9	+30.5	+0.0	53.4	94.0	-40.6	None
8	53.522M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
9	115.385M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
10	153.625M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
11	328.819M	22.5	+30.4	+0.0	52.9	94.0	-41.1	None
12	2310.210M	22.7	+30.2	+0.0	52.9	94.0	-41.1	None
13	1185.350M	22.5	+30.3	+0.0	52.8	94.0	-41.2	None
14	67.146M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
15	77.404M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
16	296.649M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
17	650.522M	22.3	+30.4	+0.0	52.7	94.0	-41.3	None
18	36.379M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
19	190.098M	22.2	+30.4	+0.0	52.6	94.0	-41.4	None
20	544.524M	21.8	+30.4	+0.0	52.2	94.0	-41.8	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/15/2003
 Test Type: **Antenna Terminals** Time: 3:48:25 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 22
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (CDPD). Frequencies Tested: Downlink Mid - 881.5 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	881.500M	85.0	+30.3			+0.0	115.3	117.0	-1.7	None
									Fundamental	
2	1762.690M	54.6	+30.3			+0.0	84.9	94.0	-9.1	None
3	4405.780M	49.2	+28.9			+0.0	78.1	94.0	-15.9	None
4	3524.250M	40.9	+29.8			+0.0	70.7	94.0	-23.3	None
5	2642.410M	35.0	+29.9			+0.0	64.9	94.0	-29.1	None

6	6669.906M	28.3	+27.2	+0.0	55.5	94.0	-38.5	None
7	6926.402M	28.3	+27.1	+0.0	55.4	94.0	-38.6	None
8	7003.728M	28.3	+27.1	+0.0	55.4	94.0	-38.6	None
9	53.576M	22.8	+30.5	+0.0	53.3	94.0	-40.7	None
10	285.914M	22.7	+30.5	+0.0	53.2	94.0	-40.8	None
11	61.924M	22.6	+30.5	+0.0	53.1	94.0	-40.9	None
12	1105.160M	22.8	+30.3	+0.0	53.1	94.0	-40.9	None
13	52.494M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
14	35.884M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
15	50.358M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
16	55.112M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
17	101.104M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
18	152.977M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
19	1636.912M	22.6	+30.2	+0.0	52.8	94.0	-41.2	None
20	90.214M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/15/2003
 Test Type: **Antenna Terminals** Time: 16:07:38
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 23
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (CDPD). Frequencies Tested: Downlink High - 893.9 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	893.900M	84.8	+30.3			+0.0	115.1	117.0	-1.9	None
									Fundamental	
2	1787.811M	60.4	+30.3			+0.0	90.7	94.0	-3.3	None
3	4466.410M	56.5	+28.8			+0.0	85.3	94.0	-8.7	None
4	2679.484M	47.2	+29.8			+0.0	77.0	94.0	-17.0	None
5	3573.788M	38.3	+29.8			+0.0	68.1	94.0	-25.9	None

6	5356.120M	30.7	+28.0	+0.0	58.7	94.0	-35.3	None
7	6700.082M	28.9	+27.2	+0.0	56.1	94.0	-37.9	None
8	33.225M	22.8	+30.5	+0.0	53.3	94.0	-40.7	None
9	62.882M	22.7	+30.5	+0.0	53.2	94.0	-40.8	None
10	122.461M	22.7	+30.5	+0.0	53.2	94.0	-40.8	None
11	229.845M	22.7	+30.4	+0.0	53.1	94.0	-40.9	None
12	45.991M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
13	88.208M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
14	361.462M	22.6	+30.4	+0.0	53.0	94.0	-41.0	None
15	545.076M	22.6	+30.4	+0.0	53.0	94.0	-41.0	None
16	1538.083M	22.7	+30.2	+0.0	52.9	94.0	-41.1	None
17	668.982M	22.4	+30.4	+0.0	52.8	94.0	-41.2	None
18	1169.510M	22.5	+30.3	+0.0	52.8	94.0	-41.2	None
19	176.522M	22.1	+30.4	+0.0	52.5	94.0	-41.5	None
20	9041.400M	27.2	+25.2	+0.0	52.4	94.0	-41.6	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/14/2003
 Test Type: **Antenna Terminals** Time: 11:38:59 AM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 10
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A-MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Uplink Low - 825.25 MHz. Frequency Range Investigated: 30 MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	824.850M	110.0	+30.4				+0.0	140.4	141.7	-1.3	None
Fundamental											
2	1649.706M	54.2	+30.2				+0.0	84.4	94.0	-9.6	None
3	6634.072M	38.4	+27.2				+0.0	65.6	94.0	-28.4	None
4	2475.185M	33.9	+30.1				+0.0	64.0	94.0	-30.0	None

5	590.712M	32.9	+30.4	+0.0	63.3	94.0	-30.7	None
6	35.358M	32.4	+30.5	+0.0	62.9	94.0	-31.1	None
7	159.068M	32.4	+30.5	+0.0	62.9	94.0	-31.1	None
8	100.200M	32.3	+30.5	+0.0	62.8	94.0	-31.2	None
9	9273.240M	37.9	+24.9	+0.0	62.8	94.0	-31.2	None
10	703.687M	32.3	+30.4	+0.0	62.7	94.0	-31.3	None
11	1006.490M	32.4	+30.3	+0.0	62.7	94.0	-31.3	None
12	82.238M	32.1	+30.5	+0.0	62.6	94.0	-31.4	None
13	483.207M	32.2	+30.4	+0.0	62.6	94.0	-31.4	None
14	67.634M	32.0	+30.5	+0.0	62.5	94.0	-31.5	None
15	1887.180M	32.2	+30.3	+0.0	62.5	94.0	-31.5	None
16	3295.532M	32.9	+29.6	+0.0	62.5	94.0	-31.5	None
17	50.169M	31.9	+30.5	+0.0	62.4	94.0	-31.6	None
18	292.942M	31.9	+30.5	+0.0	62.4	94.0	-31.6	None
19	312.601M	31.9	+30.5	+0.0	62.4	94.0	-31.6	None
20	185.823M	31.8	+30.4	+0.0	62.2	94.0	-31.8	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/14/2003
 Test Type: **Antenna Terminals** Time: 11:28:42 AM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 9
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Uplink Mid - 836.5 MHz. Frequency Range Investigated: 30 MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	835.956M	110.3	+30.4				+0.0	140.7	141.7	-1.0	None
Fundamental											
2	1672.208M	56.3	+30.2				+0.0	86.5	94.0	-7.5	None
3	2508.314M	36.9	+30.1				+0.0	67.0	94.0	-27.0	None
4	6630.300M	38.3	+27.2				+0.0	65.5	94.0	-28.5	None

5	5013.490M	36.7	+28.3	+0.0	65.0	94.0	-29.0	None
6	4176.676M	34.1	+29.3	+0.0	63.4	94.0	-30.6	None
7	137.468M	32.7	+30.5	+0.0	63.2	94.0	-30.8	None
8	604.557M	32.8	+30.4	+0.0	63.2	94.0	-30.8	None
9	4184.410M	33.9	+29.3	+0.0	63.2	94.0	-30.8	None
10	92.486M	32.6	+30.5	+0.0	63.1	94.0	-30.9	None
11	245.754M	32.4	+30.4	+0.0	62.8	94.0	-31.2	None
12	1574.261M	32.6	+30.2	+0.0	62.8	94.0	-31.2	None
13	392.246M	32.4	+30.3	+0.0	62.7	94.0	-31.3	None
14	2081.880M	32.4	+30.3	+0.0	62.7	94.0	-31.3	None
15	218.000M	32.2	+30.4	+0.0	62.6	94.0	-31.4	None
16	34.742M	32.0	+30.5	+0.0	62.5	94.0	-31.5	None
17	53.901M	32.0	+30.5	+0.0	62.5	94.0	-31.5	None
18	123.495M	32.0	+30.5	+0.0	62.5	94.0	-31.5	None
19	1315.718M	32.3	+30.2	+0.0	62.5	94.0	-31.5	None
20	1532.347M	32.3	+30.2	+0.0	62.5	94.0	-31.5	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/14/2003
 Test Type: **Antenna Terminals** Time: 11:18:15 AM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 8
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Uplink High - 847.75 MHz. Frequency Range Investigated: 30 MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	847.750M	110.0	+30.4				+0.0	140.4	141.7	-1.3	None
									Fundamental		
2	1693.826M	49.0	+30.2				+0.0	79.2	94.0	-14.8	None
3	6671.792M	39.7	+27.2				+0.0	66.9	94.0	-27.1	None
4	5881.558M	37.6	+27.8				+0.0	65.4	94.0	-28.6	None

5	6949.034M	37.8	+27.1	+0.0	64.9	94.0	-29.1	None
6	2310.800M	33.1	+30.2	+0.0	63.3	94.0	-30.7	None
7	555.269M	32.7	+30.4	+0.0	63.1	94.0	-30.9	None
8	71.519M	32.5	+30.5	+0.0	63.0	94.0	-31.0	None
9	1958.570M	32.7	+30.3	+0.0	63.0	94.0	-31.0	None
10	2055.920M	32.7	+30.3	+0.0	63.0	94.0	-31.0	None
11	144.207M	32.4	+30.5	+0.0	62.9	94.0	-31.1	None
12	2198.700M	32.7	+30.2	+0.0	62.9	94.0	-31.1	None
13	177.908M	32.4	+30.4	+0.0	62.8	94.0	-31.2	None
14	311.362M	32.2	+30.5	+0.0	62.7	94.0	-31.3	None
15	96.807M	32.1	+30.5	+0.0	62.6	94.0	-31.4	None
16	1242.110M	32.4	+30.2	+0.0	62.6	94.0	-31.4	None
17	3662.324M	32.9	+29.7	+0.0	62.6	94.0	-31.4	None
18	452.825M	32.1	+30.4	+0.0	62.5	94.0	-31.5	None
19	2845.132M	32.9	+29.6	+0.0	62.5	94.0	-31.5	None
20	30.819M	31.9	+30.5	+0.0	62.4	94.0	-31.6	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/04/2003
 Test Type: **Antenna Terminals** Time: 3:19:28 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 16
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (GSM). Frequencies Tested: Uplink Low - 825.25 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	824.850M	108.1	+30.4				+0.0	138.5	141.7	-3.2	None
Fundamental											
2	6700.082M	48.2	+27.2				+0.0	75.4	94.0	-18.6	None
3	87.942M	42.9	+30.5				+0.0	73.4	94.0	-20.6	None
4	166.110M	42.6	+30.5				+0.0	73.1	94.0	-20.9	None

5	2844.343M	43.2	+29.6	+0.0	72.8	94.0	-21.2	None
6	1418.518M	42.5	+30.2	+0.0	72.7	94.0	-21.3	None
7	99.973M	42.1	+30.5	+0.0	72.6	94.0	-21.4	None
8	44.883M	42.0	+30.5	+0.0	72.5	94.0	-21.5	None
9	581.113M	42.1	+30.4	+0.0	72.5	94.0	-21.5	None
10	1928.480M	42.1	+30.3	+0.0	72.4	94.0	-21.6	None
11	419.958M	42.0	+30.3	+0.0	72.3	94.0	-21.7	None
12	3483.144M	42.5	+29.8	+0.0	72.3	94.0	-21.7	None
13	7544.520M	46.5	+25.8	+0.0	72.3	94.0	-21.7	None
14	66.622M	41.7	+30.5	+0.0	72.2	94.0	-21.8	None
15	568.191M	41.8	+30.4	+0.0	72.2	94.0	-21.8	None
16	997.910M	41.9	+30.3	+0.0	72.2	94.0	-21.8	None
17	31.901M	41.6	+30.5	+0.0	72.1	94.0	-21.9	None
18	313.944M	41.5	+30.5	+0.0	72.0	94.0	-22.0	None
19	216.556M	41.5	+30.4	+0.0	71.9	94.0	-22.1	None
20	9280.800M	46.9	+24.9	+0.0	71.8	94.0	-22.2	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/04/2003
 Test Type: **Antenna Terminals** Time: 2:30:17 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 16
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (GSM). Frequencies Tested: Uplink Mid - 836.5 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	836.203M	110.1	+30.4				+0.0	140.5	141.7	-1.2	None
									Fundamental		
2	6707.626M	48.3	+27.2				+0.0	75.5	94.0	-18.5	None
3	1672.208M	43.5	+30.2				+0.0	73.7	94.0	-20.3	None
4	2242.950M	43.3	+30.2				+0.0	73.5	94.0	-20.5	None

5	2423.124M	42.7	+30.1	+0.0	72.8	94.0	-21.2	None
6	72.159M	42.2	+30.5	+0.0	72.7	94.0	-21.3	None
7	286.146M	42.2	+30.5	+0.0	72.7	94.0	-21.3	None
8	107.340M	42.1	+30.5	+0.0	72.6	94.0	-21.4	None
9	525.742M	42.1	+30.4	+0.0	72.5	94.0	-21.5	None
10	128.742M	41.9	+30.5	+0.0	72.4	94.0	-21.6	None
11	399.993M	42.0	+30.3	+0.0	72.3	94.0	-21.7	None
12	654.399M	41.9	+30.4	+0.0	72.3	94.0	-21.7	None
13	34.529M	41.7	+30.5	+0.0	72.2	94.0	-21.8	None
14	40.800M	41.7	+30.5	+0.0	72.2	94.0	-21.8	None
15	1178.750M	41.9	+30.3	+0.0	72.2	94.0	-21.8	None
16	7544.520M	46.3	+25.8	+0.0	72.1	94.0	-21.9	None
17	203.905M	41.6	+30.4	+0.0	72.0	94.0	-22.0	None
18	409.600M	41.7	+30.3	+0.0	72.0	94.0	-22.0	None
19	3645.460M	42.2	+29.7	+0.0	71.9	94.0	-22.1	None
20	4205.560M	42.7	+29.2	+0.0	71.9	94.0	-22.1	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/04/2003
 Test Type: **Antenna Terminals** Time: 2:14:41 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 17
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (GSM). Frequencies Tested: Uplink High - 848.72 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	848.720M	107.9	+30.4				+0.0	138.3	141.7	-3.4	None
Fundamental											
2	1696.474M	47.0	+30.2				+0.0	77.2	94.0	-16.8	None
3	853.479M	46.8	+30.3				+0.0	77.1	94.0	-16.9	None
4	6752.890M	49.4	+27.1				+0.0	76.5	94.0	-17.5	None

5	7007.500M	48.4	+27.1	+0.0	75.5	94.0	-18.5	None
6	6933.946M	48.0	+27.1	+0.0	75.1	94.0	-18.9	None
7	88.909M	42.8	+30.5	+0.0	73.3	94.0	-20.7	None
8	714.209M	42.7	+30.4	+0.0	73.1	94.0	-20.9	None
9	131.679M	42.4	+30.5	+0.0	72.9	94.0	-21.1	None
10	154.230M	42.4	+30.5	+0.0	72.9	94.0	-21.1	None
11	1952.080M	42.5	+30.3	+0.0	72.8	94.0	-21.2	None
12	171.337M	42.2	+30.5	+0.0	72.7	94.0	-21.3	None
13	2580.095M	42.7	+30.0	+0.0	72.7	94.0	-21.3	None
14	37.795M	42.0	+30.5	+0.0	72.5	94.0	-21.5	None
15	1114.730M	42.2	+30.3	+0.0	72.5	94.0	-21.5	None
16	274.793M	41.9	+30.5	+0.0	72.4	94.0	-21.6	None
17	365.904M	42.0	+30.4	+0.0	72.4	94.0	-21.6	None
18	60.768M	41.8	+30.5	+0.0	72.3	94.0	-21.7	None
19	411.395M	42.0	+30.3	+0.0	72.3	94.0	-21.7	None
20	4081.816M	42.8	+29.4	+0.0	72.2	94.0	-21.8	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/16/2003
 Test Type: **Antenna Terminals** Time: 09:46:21
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 28
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Power output for this modulation is set to 1 Watt Maximum. Input Modulation: AMPS. Frequencies Tested: Uplink Low - 824.1 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	1648.171M	63.2	+30.2				+0.0	93.4	94.0	-0.6	None
2	824.097M	110.4	+30.4				+0.0	140.8	141.7 Fundamental	-0.9	None
3	2471.241M	50.3	+30.1				+0.0	80.4	94.0	-13.6	None
4	6643.502M	47.9	+27.2				+0.0	75.1	94.0	-18.9	None

5	5806.118M	46.9	+27.8	+0.0	74.7	94.0	-19.3	None
6	6405.866M	46.6	+27.3	+0.0	73.9	94.0	-20.1	None
7	6158.800M	46.2	+27.6	+0.0	73.8	94.0	-20.2	None
8	9270.720M	47.2	+24.9	+0.0	72.1	94.0	-21.9	None
9	674.889M	41.6	+30.4	+0.0	72.0	94.0	-22.0	None
10	977.372M	41.6	+30.4	+0.0	72.0	94.0	-22.0	None
11	51.724M	41.2	+30.5	+0.0	71.7	94.0	-22.3	None
12	106.532M	41.2	+30.5	+0.0	71.7	94.0	-22.3	None
13	1871.840M	41.4	+30.3	+0.0	71.7	94.0	-22.3	None
14	2334.400M	41.5	+30.2	+0.0	71.7	94.0	-22.3	None
15	134.055M	41.1	+30.5	+0.0	71.6	94.0	-22.4	None
16	222.102M	41.2	+30.4	+0.0	71.6	94.0	-22.4	None
17	277.728M	41.1	+30.5	+0.0	71.6	94.0	-22.4	None
18	389.250M	41.3	+30.3	+0.0	71.6	94.0	-22.4	None
19	2089.550M	41.3	+30.3	+0.0	71.6	94.0	-22.4	None
20	7519.320M	45.8	+25.8	+0.0	71.6	94.0	-22.4	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/16/2003
 Test Type: **Antenna Terminals** Time: 09:36:01
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 27
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Power output for this modulation is set to 1 Watt Maximum. Input Modulation: AMPS. Frequencies Tested: Uplink Mid - 836.5 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	836.493M	110.2	+30.4				+0.0	140.6	141.7	-1.1	None
Fundamental											
2	1673.009M	62.6	+30.2				+0.0	92.8	94.0	-1.2	None
3	2508.314M	48.5	+30.1				+0.0	78.6	94.0	-15.4	None
4	6664.248M	48.0	+27.2				+0.0	75.2	94.0	-18.8	None

5	5877.786M	47.0	+27.8	+0.0	74.8	94.0	-19.2	None
6	6096.562M	46.7	+27.7	+0.0	74.4	94.0	-19.6	None
7	4177.730M	44.2	+29.3	+0.0	73.5	94.0	-20.5	None
8	2419.180M	42.7	+30.1	+0.0	72.8	94.0	-21.2	None
9	2575.363M	42.7	+30.0	+0.0	72.7	94.0	-21.3	None
10	125.304M	41.5	+30.5	+0.0	72.0	94.0	-22.0	None
11	1810.480M	41.7	+30.3	+0.0	72.0	94.0	-22.0	None
12	714.209M	41.5	+30.4	+0.0	71.9	94.0	-22.1	None
13	302.982M	41.3	+30.5	+0.0	71.8	94.0	-22.2	None
14	534.166M	41.4	+30.4	+0.0	71.8	94.0	-22.2	None
15	44.761M	41.2	+30.5	+0.0	71.7	94.0	-22.3	None
16	34.903M	41.1	+30.5	+0.0	71.6	94.0	-22.4	None
17	90.722M	41.1	+30.5	+0.0	71.6	94.0	-22.4	None
18	219.849M	41.2	+30.4	+0.0	71.6	94.0	-22.4	None
19	56.413M	41.0	+30.5	+0.0	71.5	94.0	-22.5	None
20	7536.960M	45.6	+25.8	+0.0	71.4	94.0	-22.6	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/16/2003
 Test Type: **Antenna Terminals** Time: 09:38:51
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 26
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US540052283
Signal Generator	HP	8921A	3519A01796
Signal Generator (CDMA Adapter)	HP	83205A	US37461985
Signal Generator (TDMA Adapter)	HP	83204A	US37460723
Signal Generator	Marconi	2022D	119259/016

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Power output for this modulation is set to 1 Watt Maximum. Input Modulation: AMPS. Frequencies Tested: Uplink High - 848.9 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1696.915M	63.0	+30.2				+0.0	93.2	94.0	-0.8	None

2	848.894M	105.6	+30.3	+0.0	135.9	141.7	-5.8	None
						Fundamental		
3	2545.388M	46.0	+30.0	+0.0	76.0	94.0	-18.0	None
4	6651.046M	48.4	+27.2	+0.0	75.6	94.0	-18.4	None
5	71.411M	41.4	+30.5	+0.0	71.9	94.0	-22.1	None
6	71.869M	41.4	+30.5	+0.0	71.9	94.0	-22.1	None
7	2305.490M	41.6	+30.2	+0.0	71.8	94.0	-22.2	None
8	623.386M	41.3	+30.4	+0.0	71.7	94.0	-22.3	None
9	7534.440M	45.9	+25.8	+0.0	71.7	94.0	-22.3	None
10	33.791M	41.1	+30.5	+0.0	71.6	94.0	-22.4	None
11	41.678M	41.1	+30.5	+0.0	71.6	94.0	-22.4	None
12	467.878M	41.2	+30.4	+0.0	71.6	94.0	-22.4	None
13	110.151M	40.9	+30.5	+0.0	71.4	94.0	-22.6	None
14	199.803M	41.0	+30.4	+0.0	71.4	94.0	-22.6	None
15	2893.249M	41.9	+29.5	+0.0	71.4	94.0	-22.6	None
16	43.260M	40.8	+30.5	+0.0	71.3	94.0	-22.7	None
17	44.477M	40.8	+30.5	+0.0	71.3	94.0	-22.7	None
18	275.179M	40.8	+30.5	+0.0	71.3	94.0	-22.7	None
19	1002.200M	41.0	+30.3	+0.0	71.3	94.0	-22.7	None
20	9316.080M	46.3	+24.9	+0.0	71.2	94.0	-22.8	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/04/2003
 Test Type: **Antenna Terminals** Time: 4:34:05 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 20
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (CDPD). Frequencies Tested: Uplink Low - 825.1 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	824.850M	108.9	+30.4				+0.0	139.3	141.7	-2.4	None
Fundamental											
2	6624.642M	48.6	+27.2				+0.0	75.8	94.0	-18.2	None
3	2673.174M	43.4	+29.8				+0.0	73.2	94.0	-20.8	None
4	1649.265M	42.7	+30.2				+0.0	72.9	94.0	-21.1	None

5	1766.820M	42.4	+30.3	+0.0	72.7	94.0	-21.3	None
6	69.242M	42.0	+30.5	+0.0	72.5	94.0	-21.5	None
7	43.828M	41.9	+30.5	+0.0	72.4	94.0	-21.6	None
8	291.706M	41.9	+30.5	+0.0	72.4	94.0	-21.6	None
9	987.350M	42.0	+30.4	+0.0	72.4	94.0	-21.6	None
10	3670.756M	42.7	+29.7	+0.0	72.4	94.0	-21.6	None
11	378.817M	42.0	+30.3	+0.0	72.3	94.0	-21.7	None
12	7552.080M	46.6	+25.7	+0.0	72.3	94.0	-21.7	None
13	32.922M	41.7	+30.5	+0.0	72.2	94.0	-21.8	None
14	76.099M	41.6	+30.5	+0.0	72.1	94.0	-21.9	None
15	370.139M	41.7	+30.4	+0.0	72.1	94.0	-21.9	None
16	171.553M	41.5	+30.5	+0.0	72.0	94.0	-22.0	None
17	327.580M	41.6	+30.4	+0.0	72.0	94.0	-22.0	None
18	338.943M	41.6	+30.4	+0.0	72.0	94.0	-22.0	None
19	426.863M	41.7	+30.3	+0.0	72.0	94.0	-22.0	None
20	604.557M	41.6	+30.4	+0.0	72.0	94.0	-22.0	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/04/2003
 Test Type: **Antenna Terminals** Time: 4:42:13 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 19
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A-MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (CDPD). Frequencies Tested: Uplink Mid - 836.5 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	835.956M	109.3	+30.4				+0.0	139.7	141.7	-2.0	None
Fundamental											
2	6743.460M	48.9	+27.2				+0.0	76.1	94.0	-17.9	None
3	5857.040M	46.9	+27.8				+0.0	74.7	94.0	-19.3	None
4	6892.454M	47.5	+27.1				+0.0	74.6	94.0	-19.4	None

5	2856.175M	43.5	+29.6	+0.0	73.1	94.0	-20.9	None
6	1672.208M	42.2	+30.2	+0.0	72.4	94.0	-21.6	None
7	1562.349M	42.0	+30.2	+0.0	72.2	94.0	-21.8	None
8	9243.000M	47.0	+25.0	+0.0	72.0	94.0	-22.0	None
9	1980.990M	41.6	+30.3	+0.0	71.9	94.0	-22.1	None
10	4202.740M	42.7	+29.2	+0.0	71.9	94.0	-22.1	None
11	119.004M	41.1	+30.5	+0.0	71.6	94.0	-22.4	None
12	85.622M	41.0	+30.5	+0.0	71.5	94.0	-22.5	None
13	171.784M	41.0	+30.5	+0.0	71.5	94.0	-22.5	None
14	210.433M	41.1	+30.4	+0.0	71.5	94.0	-22.5	None
15	317.560M	41.0	+30.5	+0.0	71.5	94.0	-22.5	None
16	30.910M	40.9	+30.5	+0.0	71.4	94.0	-22.6	None
17	274.330M	40.9	+30.5	+0.0	71.4	94.0	-22.6	None
18	981.740M	41.0	+30.4	+0.0	71.4	94.0	-22.6	None
19	682.089M	40.9	+30.4	+0.0	71.3	94.0	-22.7	None
20	1636.912M	41.1	+30.2	+0.0	71.3	94.0	-22.7	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/04/2003
 Test Type: **Antenna Terminals** Time: 4:49:30 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 18
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A-MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Preamp Driver	Wilson Electronics	Prototype	N/A
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (CDPD). Frequencies Tested: Uplink High - 848.90 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	848.543M	109.2	+30.3				+0.0	139.5	141.7	-2.2	None
Fundamental											
2	852.739M	48.9	+30.3				+0.0	79.2	94.0	-14.8	None
3	1696.915M	45.3	+30.2				+0.0	75.5	94.0	-18.5	None
4	6660.476M	48.3	+27.2				+0.0	75.5	94.0	-18.5	None

5	1748.094M	42.7	+30.3	+0.0	73.0	94.0	-21.0	None
6	38.331M	42.3	+30.5	+0.0	72.8	94.0	-21.2	None
7	1821.100M	42.4	+30.3	+0.0	72.7	94.0	-21.3	None
8	34.277M	42.1	+30.5	+0.0	72.6	94.0	-21.4	None
9	35.540M	42.1	+30.5	+0.0	72.6	94.0	-21.4	None
10	38.806M	42.1	+30.5	+0.0	72.6	94.0	-21.4	None
11	55.527M	42.1	+30.5	+0.0	72.6	94.0	-21.4	None
12	498.536M	42.2	+30.4	+0.0	72.6	94.0	-21.4	None
13	1523.082M	42.4	+30.2	+0.0	72.6	94.0	-21.4	None
14	2858.542M	43.0	+29.6	+0.0	72.6	94.0	-21.4	None
15	35.682M	42.0	+30.5	+0.0	72.5	94.0	-21.5	None
16	232.703M	42.1	+30.4	+0.0	72.5	94.0	-21.5	None
17	1157.300M	42.1	+30.3	+0.0	72.4	94.0	-21.6	None
18	3200.672M	42.8	+29.6	+0.0	72.4	94.0	-21.6	None
19	49.831M	41.8	+30.5	+0.0	72.3	94.0	-21.7	None
20	7559.640M	46.6	+25.7	+0.0	72.3	94.0	-21.7	None

PHOTOGRAPH SHOWING DIRECT CONNECT EMISSIONS



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

Bandwidth settings used: RBW=VBW=100 kHz.

Test Conditions: Uplink: EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Antennas are mounted in a configuration representative of normal use. The 5 dBi gain mag-mount whip antenna is magnetically mounted to a 6 x 6 inch plate. The 13 dBi gain Yagi antenna is pole mounted at a height of 1.5 meters from the ground plane in a horizontal orientation with a vertical antenna polarity. Input Modulation: CDMA (representative of worst case configuration). Frequencies Tested: Uplink. Frequency Range Investigated: 30 MHz - 10 GHz.

Downlink: EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. RF output port is terminated into an RF shielded resistive load matching the characteristic impedance. Input Modulation: CDMA (representative of worst case configuration). Frequencies Tested: Downlink. Frequency Range Investigated: 30 MHz - 10 GHz. No EUT Emissions detected within 20 dB of the limit.

The following table represents the uplink testing. There were no EUT Emissions detected within 20 dB of the limit for the downlink testing. Test data is representative of all channels and modulations used with this device in all frequency ranges.

Operating Frequency: 824 MHz - 849 MHz
 Channels: Whip Antenna
 Highest Measured Output Power: 39.85 EIRP(dBm)= 9.65 EIRP(Watts)
 Distance: 3 meters
 Limit: 43+10Log(P) 52.85 dBc

Freq. (MHz)	Reference Level (dBm)	Antenna Polarity (H/V)	dBc
1,895.06	-18.80	Vert	58.65
1,895.06	-16.50	Vert	56.35
1,673.06	-27.60	Vert	67.45

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions with 13 dBi Yagi Antenna

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions with 5 dBi Whip Antenna

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions with Downlink RF Port Terminated

Test Equipment

<i>Description</i>	<i>Asset #</i>	<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Cal Date</i>	<i>Cal Due</i>
Antenna, Biconilog	01991	Chase	CBL6111C	2456	12/13/02	12/12/04
Antenna, Horn 18-26GHz	02046	ARA	MWH-1826/B	1005	7/1/03	6/30/04
Preamp	02010	HP	8449B	3008A00301	10/18/02	10/17/04
Preamp	00099	HP	8447D	1937A02604	3/7/03	3/6/04
Spectrum Analyzer 100Hz - 22.5GHz	00490	HP	8566B	2209A01404	2/26/03	2/26/04
Spectrum Analyzer Display	00489	HP	8566B	2403A08241	2/26/03	2/26/04
Spectrum Analyzer QP Adapter	00478	HP	85650A	2811A01267	2/26/03	2/26/04
Cable #1 (30')	P04271	Andrew	FSJ1-50A	HF-001-30	6/3/03	6/2/05
HF Cable, 2 foot	P01527	WL Gore	6011305-004	149047	4/10/03	4/9/04
HF Cable, 35 foot	P01352	Huber+Suhner		90148402	1/21/03	1/21/04

FCC 24.238 - SPURIOUS EMISSIONS AT ANTENNA TERMINAL

Bandwidth Settings Used: RBW=VBW=1 MHz.

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

Customer: **Wilson Electronics**
 Specification: **24.238 Downlink**
 Work Order #: **81209** Date: 11/07/2003
 Test Type: **Antenna Terminals** Time: 1:53:28 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 33
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A-	9724	05/08/2003	05/08/2005	P01577
MFN-30				

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bidirectional amplifier repeater for the 1800 - 1990 MHz band. Uplink frequency range 1800 - 1910 MHz. Downlink frequency range 1930 - 1990 MHz. This passband has 0dB gain through the amplifier. Spurious Emissions Test. One signal is input to the amplifier. The input signal is set to the maximum output before compression of the signal generator. Power output is directly proportional and exactly equal to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink. Mid - 1960 MHz. Frequency Range Investigated: 30 MHz - 20 GHz. **No EUT emissions detected within 20dB of the limit.** Harmonics of the fundamental are products of the signal source. Test data is representative of all channels and modulations used with this device in this frequency range.

Transducer Legend:

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

#	Freq MHz	Rdng dBµV	dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1960.001M	103.7					+0.0	103.7	119.0	-15.3	None
									Fundamental		

2	3917.902M	58.9	+0.0	58.9	94.0	-35.1	None
3	19950.700 M	47.4	+0.0	47.4	94.0	-46.6	None
4	18961.200 M	46.0	+0.0	46.0	94.0	-48.0	None
5	13790.500 M	41.8	+0.0	41.8	94.0	-52.2	None
6	6673.582M	39.0	+0.0	39.0	94.0	-55.0	None
7	9287.300M	37.6	+0.0	37.6	94.0	-56.4	None
8	1927.778M	33.6	+0.0	33.6	94.0	-60.4	None
9	1672.334M	33.1	+0.0	33.1	94.0	-60.9	None
10	2867.619M	32.4	+0.0	32.4	94.0	-61.6	None
11	1313.032M	32.3	+0.0	32.3	94.0	-61.7	None
12	887.252M	31.6	+0.0	31.6	94.0	-62.4	None
13	1212.596M	31.6	+0.0	31.6	94.0	-62.4	None
14	873.182M	29.4	+0.0	29.4	94.0	-64.6	None
15	836.413M	29.1	+0.0	29.1	94.0	-64.9	None
16	149.047M	23.0	+0.0	23.0	94.0	-71.0	None
17	576.875M	22.7	+0.0	22.7	94.0	-71.3	None
18	195.828M	22.6	+0.0	22.6	94.0	-71.4	None
19	107.383M	22.4	+0.0	22.4	94.0	-71.6	None
20	321.960M	22.0	+0.0	22.0	94.0	-72.0	None

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

Customer: **Wilson Electronics**
 Specification: **24.238 Uplink**
 Work Order #: **81209** Date: 11/07/2003
 Test Type: **Antenna Terminals** Time: 2:37:14 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 36
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. EUT additionally has a passband with 0dB gain in the 1900 MHz PCS band. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set to the maximum output before compression of the signal generator. Power output is directly proportional and exactly equal to the supplied RF input. Input Modulation: CDMA Frequencies Tested: Downlink Mid - 1960 MHz. Frequency Range Investigated: 30 MHz - 20 GHz. No EUT emissions detected within 20 dB of the limit. Harmonics of the fundamental are products of the signal source. Test data is representative of all channels and modulations used with this device in this frequency range.

Transducer Legend:

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

#	Freq MHz	Rdng dB μ V	dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	1894.096M	105.9					+0.0	105.9	119.0	-13.1	None
									Fundamental		
2	3788.524M	65.4					+0.0	65.4	94.0	-28.6	None
3	19936.690 M	46.1					+0.0	46.1	94.0	-47.9	None

4	18632.290 M	43.9	+0.0	43.9	94.0	-50.1	None
5	12810.100 M	41.2	+0.0	41.2	94.0	-52.8	None
6	6648.456M	38.8	+0.0	38.8	94.0	-55.2	None
7	9245.938M	37.5	+0.0	37.5	94.0	-56.5	None
8	7033.000M	37.3	+0.0	37.3	94.0	-56.7	None
9	1031.496M	35.5	+0.0	35.5	94.0	-58.5	None
10	1924.733M	34.2	+0.0	34.2	94.0	-59.8	None
11	2846.438M	31.8	+0.0	31.8	94.0	-62.2	None
12	830.424M	31.0	+0.0	31.0	94.0	-63.0	None
13	84.297M	27.2	+0.0	27.2	94.0	-66.8	None
14	299.854M	22.5	+0.0	22.5	94.0	-71.5	None
15	192.375M	22.3	+0.0	22.3	94.0	-71.7	None
16	667.480M	22.2	+0.0	22.2	94.0	-71.8	None
17	63.235M	22.1	+0.0	22.1	94.0	-71.9	None
18	269.046M	22.1	+0.0	22.1	94.0	-71.9	None
19	539.087M	22.1	+0.0	22.1	94.0	-71.9	None
20	723.569M	22.1	+0.0	22.1	94.0	-71.9	None

FCC 2.1051 INTERMODULATION ATTENUATION

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/14/2003
 Test Type: **Antenna Terminals** Time: 8:49:13 AM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 2
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283
Signal Generator	HP	8921A	3519A01796
Signal Generator (CDMA Adapter)	HP	83205A	US37461985

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Intermodulation Attenuation and Spurious Emissions Test: Three signals are input to the amplifier through a combining network. The first two input signals are provided by the HP E4432B ESG. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink 870.25 MHz, 872.75 MHz, 892.75 MHz. Frequency Range Investigated: 30 MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	872.482M	69.5	+30.3				+0.0	99.8	117.0	-17.2	None
Fundamental											

2	892.226M	68.0	+30.3	+0.0	98.3	117.0	-18.7	None
						Fundamental		
3	870.015M	66.6	+30.3	+0.0	96.9	117.0	-20.1	None
						Fundamental		
4	6726.486M	28.5	+27.2	+0.0	55.7	94.0	-38.3	None
5	44.193M	22.9	+30.5	+0.0	53.4	94.0	-40.6	None
6	2229.970M	23.0	+30.2	+0.0	53.2	94.0	-40.8	None
7	135.913M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
8	96.096M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
9	193.102M	22.2	+30.4	+0.0	52.6	94.0	-41.4	None
10	148.441M	22.0	+30.5	+0.0	52.5	94.0	-41.5	None
11	2987.116M	23.1	+29.4	+0.0	52.5	94.0	-41.5	None
12	683.012M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
13	1188.650M	22.1	+30.3	+0.0	52.4	94.0	-41.6	None
14	36.046M	21.8	+30.5	+0.0	52.3	94.0	-41.7	None
15	92.390M	21.8	+30.5	+0.0	52.3	94.0	-41.7	None
16	1693.385M	22.1	+30.2	+0.0	52.3	94.0	-41.7	None
17	69.568M	21.7	+30.5	+0.0	52.2	94.0	-41.8	None
18	236.410M	21.8	+30.4	+0.0	52.2	94.0	-41.8	None
19	448.268M	21.8	+30.4	+0.0	52.2	94.0	-41.8	None
20	343.591M	21.6	+30.4	+0.0	52.0	94.0	-42.0	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/14/2003
 Test Type: **Antenna Terminals** Time: 2:56:27 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 11
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US540052283
Signal Generator	HP	8921A	3519A01796
Signal Generator (TDMA Adapter)	HP	83204A	US37460723
Signal Generator (CDMA Adapter)	HP	83205A	US37461985
Signal Generator	Marconi	2022D	119259/016

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Intermodulation Attenuation and Spurious Emissions Test: Three signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (GSM). Frequencies Tested: Downlink 869.280 MHz, 870.120 MHz, 893.720 MHz. Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	870.120M	74.2	+30.3				+0.0	104.5	117.0	-12.5	None
Fundamental											

2	893.720M	73.7	+30.3	+0.0	104.0	117.0	-13.0	None
						Fundamental		
3	869.280M	73.3	+30.3	+0.0	103.6	117.0	-13.4	None
						Fundamental		
4	6709.512M	28.7	+27.2	+0.0	55.9	94.0	-38.1	None
5	1714.122M	24.6	+30.2	+0.0	54.8	94.0	-39.2	None
6	1762.690M	24.3	+30.3	+0.0	54.6	94.0	-39.4	None
7	1738.388M	23.4	+30.3	+0.0	53.7	94.0	-40.3	None
8	2168.610M	23.5	+30.2	+0.0	53.7	94.0	-40.3	None
9	233.320M	22.8	+30.4	+0.0	53.2	94.0	-40.8	None
10	56.088M	22.6	+30.5	+0.0	53.1	94.0	-40.9	None
11	74.044M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
12	96.225M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
13	393.589M	22.6	+30.3	+0.0	52.9	94.0	-41.1	None
14	2737.066M	23.1	+29.8	+0.0	52.9	94.0	-41.1	None
15	144.337M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
16	36.197M	22.1	+30.5	+0.0	52.6	94.0	-41.4	None
17	466.083M	22.1	+30.4	+0.0	52.5	94.0	-41.5	None
18	582.589M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
19	1226.930M	22.2	+30.2	+0.0	52.4	94.0	-41.6	None
20	7514.280M	26.5	+25.9	+0.0	52.4	94.0	-41.6	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 11/05/2003
 Test Type: **Antenna Terminals** Time: 4:30:24 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 32
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283
Signal Generator	HP	E4432B	US38330168
Signal Generator	Marconi	2022D	119259/016

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Intermodulation Attenuation and Spurious Emissions Test: Three signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Frequencies Tested: Downlink 869.100 MHz, 869.500 MHz, 893.900 MHz Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBµV	T1 dB				Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	892.967M	76.5	+30.3				+0.0	106.8	117.0	-10.2	None
Fundamental											
2	869.027M	76.0	+30.3				+0.0	106.3	117.0	-10.7	None
Fundamental											
3	1737.505M	42.6	+30.3				+0.0	72.9	94.0	-21.1	None

4	1762.690M	40.0	+30.3	+0.0	70.3	94.0	-23.7	None
5	1713.680M	34.4	+30.2	+0.0	64.6	94.0	-29.4	None
6	1786.880M	31.5	+30.3	+0.0	61.8	94.0	-32.2	None
7	2630.578M	27.9	+29.9	+0.0	57.8	94.0	-36.2	None
8	6749.118M	29.7	+27.1	+0.0	56.8	94.0	-37.2	None
9	6641.616M	29.5	+27.2	+0.0	56.7	94.0	-37.3	None
10	916.906M	24.4	+30.3	+0.0	54.7	94.0	-39.3	None
11	2109.610M	23.6	+30.3	+0.0	53.9	94.0	-40.1	None
12	2846.710M	23.8	+29.6	+0.0	53.4	94.0	-40.6	None
13	3524.250M	23.2	+29.8	+0.0	53.0	94.0	-41.0	None
14	73.754M	22.4	+30.5	+0.0	52.9	94.0	-41.1	None
15	131.982M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
16	4202.740M	23.6	+29.2	+0.0	52.8	94.0	-41.2	None
17	50.007M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
18	124.658M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
19	2735.489M	22.9	+29.8	+0.0	52.7	94.0	-41.3	None
20	2996.582M	23.2	+29.4	+0.0	52.6	94.0	-41.4	None

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **81209** Date: 10/15/2003
 Test Type: **Antenna Terminals** Time: 4:17:01 PM
 Equipment: **Bi-directional Amplifier Repeater** Sequence#: 24
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: BD800A-DC
 S/N: 5902

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA	2403A08241	02/26/2003	02/26/2004	00489
Display				
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478
Bird Attenuator, 25A- MFN-30	9724	05/08/2003	05/08/2005	P01577

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bi-directional Amplifier Repeater*	Wilson Electronics	BD800A-DC	5902

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4432B	US40052283
Signal Generator	HP	E4432B	US38330168
Signal Generator	HP	8921A	3519A01796
Signal Generator (TDMA Adapter)	HP	83204A	US37460723

Test Conditions / Notes:

EUT is a bi-directional amplifier repeater for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. Intermodulation Attenuation and Spurious Emissions Test: Three signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: TDMA (CDPD). Frequencies Tested: Downlink 869.1 MHz 869.5 MHz 893.9 MHz Frequency Range Investigated: 30 MHz - 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

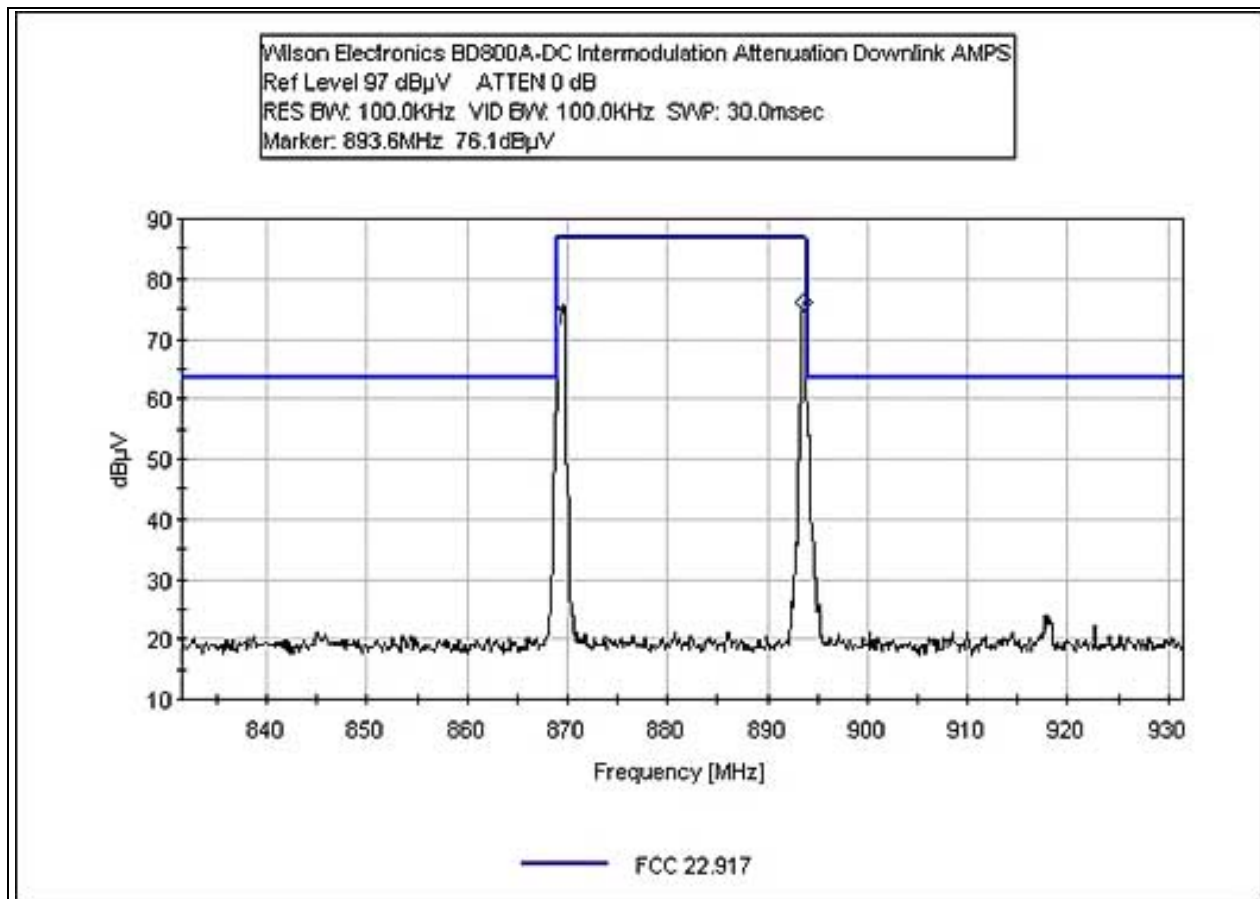
Reading listed by margin.

Test Distance: None

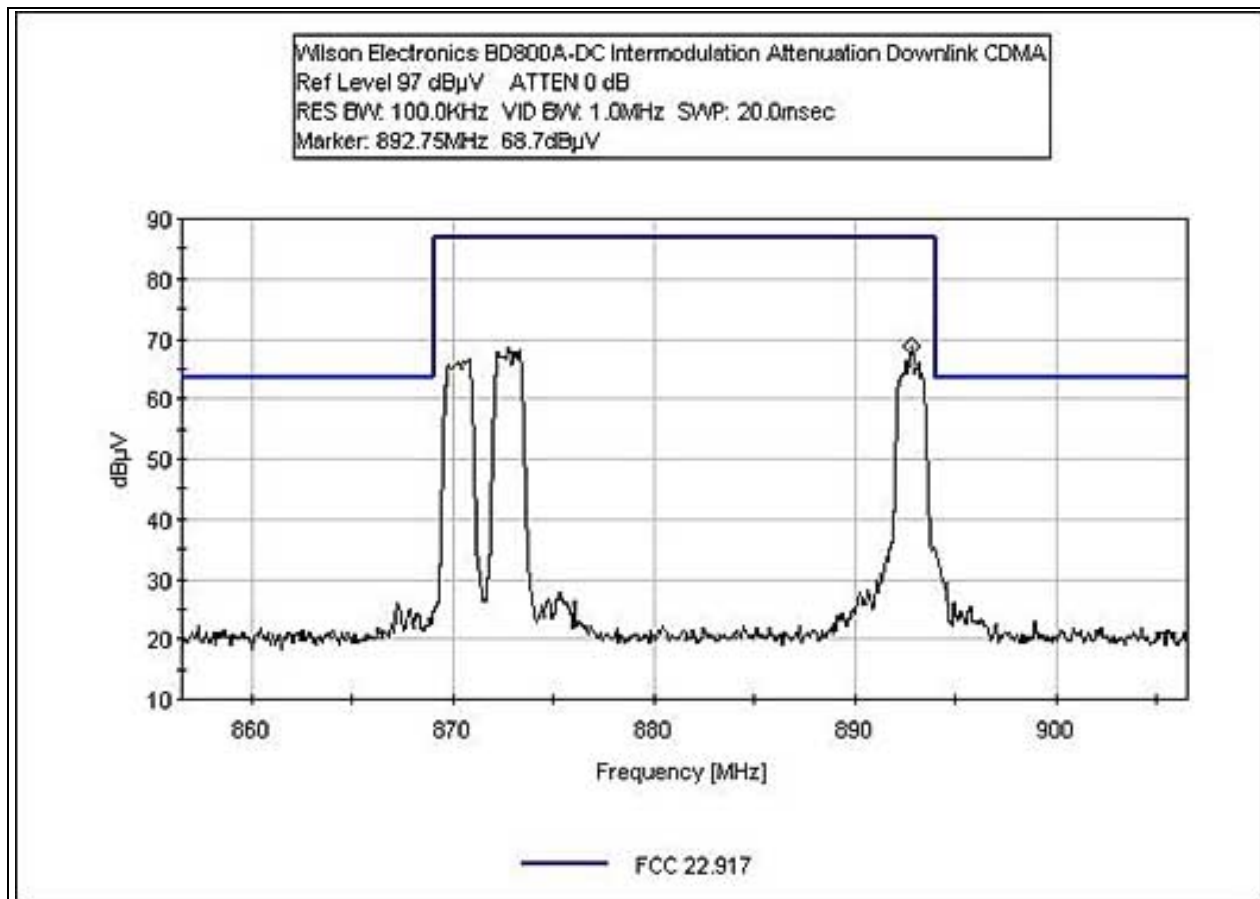
#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	869.027M	76.7	+30.3				+0.0	107.0	117.0	-10.0	None
									Fundamental		
2	893.214M	75.4	+30.3				+0.0	105.7	117.0	-11.3	None
									Fundamental		

3	869.100M	75.0	+30.3	+0.0	105.3	117.0	-11.7	None
						Fundamental		
4	1713.239M	28.4	+30.2	+0.0	58.6	94.0	-35.4	None
5	1737.946M	28.1	+30.3	+0.0	58.4	94.0	-35.6	None
6	6730.258M	28.2	+27.2	+0.0	55.4	94.0	-38.6	None
7	1762.690M	24.1	+30.3	+0.0	54.4	94.0	-39.6	None
8	722.332M	23.1	+30.4	+0.0	53.5	94.0	-40.5	None
9	2427.068M	23.0	+30.1	+0.0	53.1	94.0	-40.9	None
10	122.267M	22.5	+30.5	+0.0	53.0	94.0	-41.0	None
11	36.379M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
12	90.770M	22.3	+30.5	+0.0	52.8	94.0	-41.2	None
13	639.077M	22.4	+30.4	+0.0	52.8	94.0	-41.2	None
14	688.919M	22.4	+30.4	+0.0	52.8	94.0	-41.2	None
15	1218.680M	22.5	+30.3	+0.0	52.8	94.0	-41.2	None
16	138.937M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
17	143.214M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
18	162.913M	22.2	+30.5	+0.0	52.7	94.0	-41.3	None
19	191.195M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None
20	246.372M	22.0	+30.4	+0.0	52.4	94.0	-41.6	None

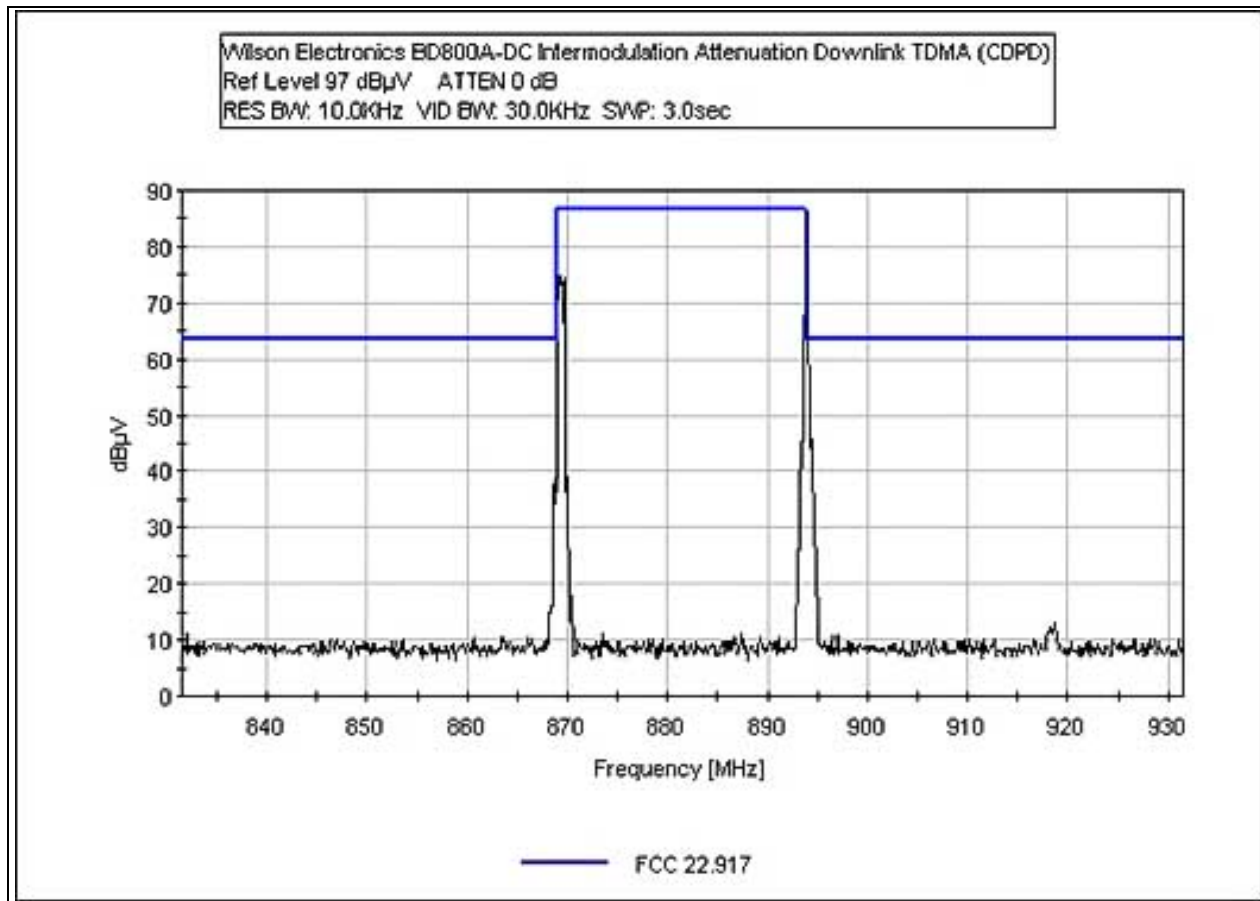
INTERMODULATION DOWNLINK AMPS



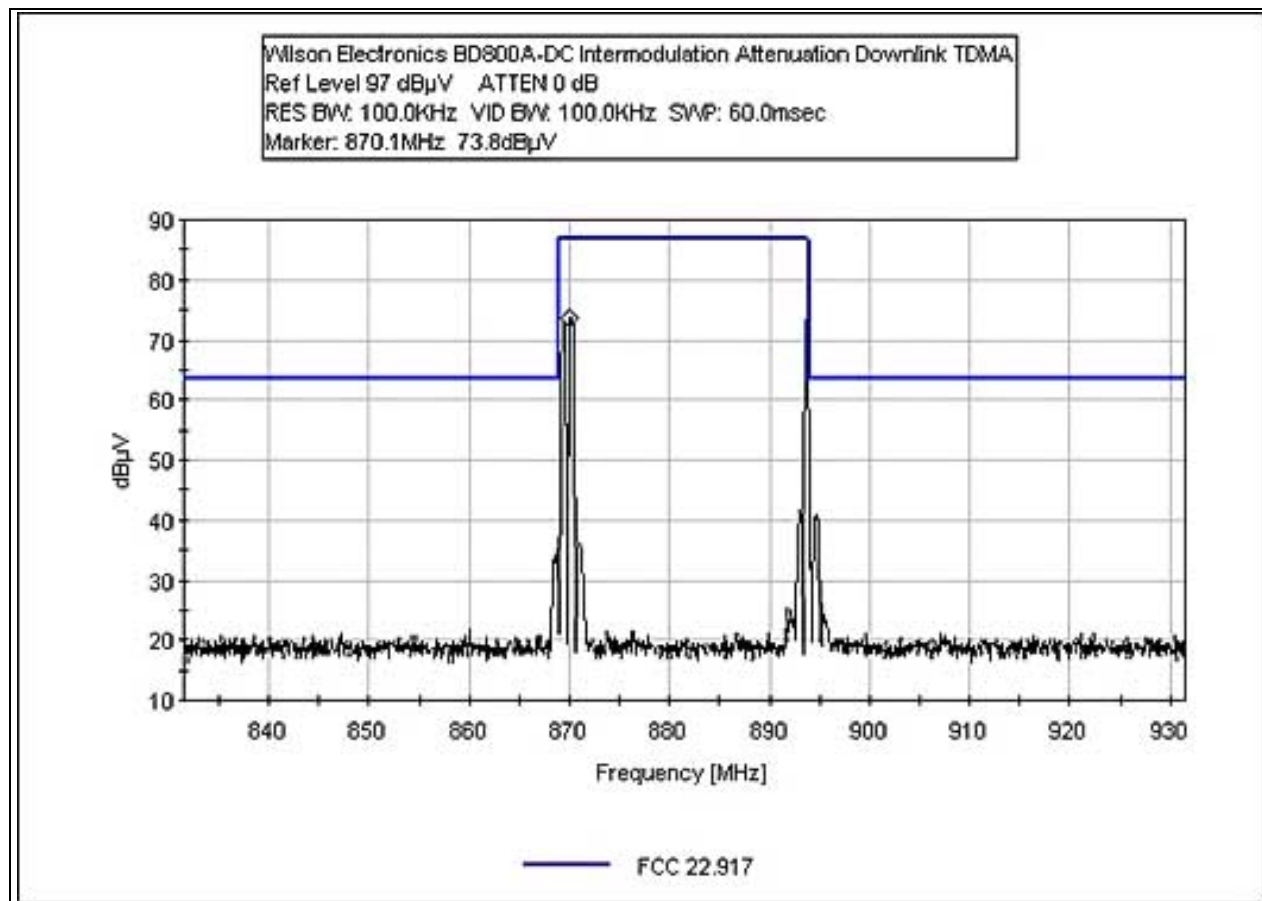
DOWNLINK INTERMODULATION CDMA



DOWNLINK INTERMODULATION TDMA (CDPD)



DOWNLINK INTERMODULATION TDMA (GSM)



PHOTOGRAPH SHOWING DIRECT CONNECT EMISSIONS



Test Equipment

<i>Description</i>	<i>Asset #</i>	<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Cal Due</i>	<i>Cal Due</i>
Attenuator	P01577	Bird	25-AMFN-30	9724	5/9/03	5/8/04
RF Splitter / Combiner	P01313				NR	NR
Generator, Signal	01870	Marconi	2022D	119259/016	9/5/02	9/4/04
Generator, ESG	Avalon	HP	E4432B	US40052283	3/1/02	4/1/04
Generator, ESG	AES	HP	E4432B	US38330168	10/3/03	10/3/04
Spectrum Analyzer 100Hz - 22.5GHz	00490	HP	8566B	2209A01404	2/26/03	2/26/24
Spectrum Analyzer Display	00489	HP	8566B	2403A08241	2/26/03	2/26/04
Spectrum Analyzer QP Adapter	00478	HP	85650A	2811A01267	2/26/03	2/26/04

NR = Not Required

FCC 2.1091 – MPE CALCULATIONS

Calculations prepared for:

Calculations prepared by:

Randal Clark
 CKC Laboratories, Inc.
 5473A Clouds Rest Road
 Mariposa, CA 95338

Model Number: BD800A-DC

Fundamental Operating Frequency: 824-849 Uplink

Antenna Gain and Type: +5.12 dBi Omni-Directional Whip
 Maximum Radiated Output Power: 39.89 dBm (ERP)
 Measured Output Power: 34.73 dBm

MPE Limit in accordance with 1.1310(b): Limits for general population/uncontrolled exposure

$$\begin{aligned} \text{MPE Limit} &= f / 1500 \text{ (mW/cm}^2\text{)} \\ &= 824 / 1500 \\ &= 0.54933 \sim 0.55 \text{ (mW/cm}^2\text{)} \end{aligned}$$

Note: Limit is calculated from the lower edge of the operating band

EIRP (mW)	Distance (cm)	Power Density (mW/cm ²)	Result
5985.49	29.43	0.550	Pass

$$\text{PowerDensity(mW / cm}^2\text{)} = \frac{\text{EIRP}}{4\pi d^2} \quad \text{Given: EIRP in mW and d in cm}$$

Under normal operating conditions, the antenna is designed to maintain a separation distance of approximately 0.5 meters from all persons. As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a distance of 29.43 cm and at an output power of 5985.49 mW. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

Maximum Permissible Exposure Calculations

Calculations prepared for:

Calculations prepared by:

Randal Clark
 CKC Laboratories, Inc.
 5473A Clouds Rest Road
 Mariposa, CA 95338

Model Number: BD800A-DC

Fundamental Operating Frequency: 824-849 Uplink

Antenna Gain and Type: +13 dBi Yagi
 Maximum Radiated Output Power: 45.77 dBm (ERP)
 Measured Output Power: 34.73 dBm

MPE Limit in accordance with 1.1310(b): Limits for general population/uncontrolled exposure

$$\begin{aligned} \text{MPE Limit} &= f / 1500 \text{ (mW/cm}^2\text{)} \\ &= 824 / 1500 \\ &= 0.54933 \sim 0.55 \text{ (mW/cm}^2\text{)} \end{aligned}$$

Note: Limit is calculated from the lower edge of the operating band

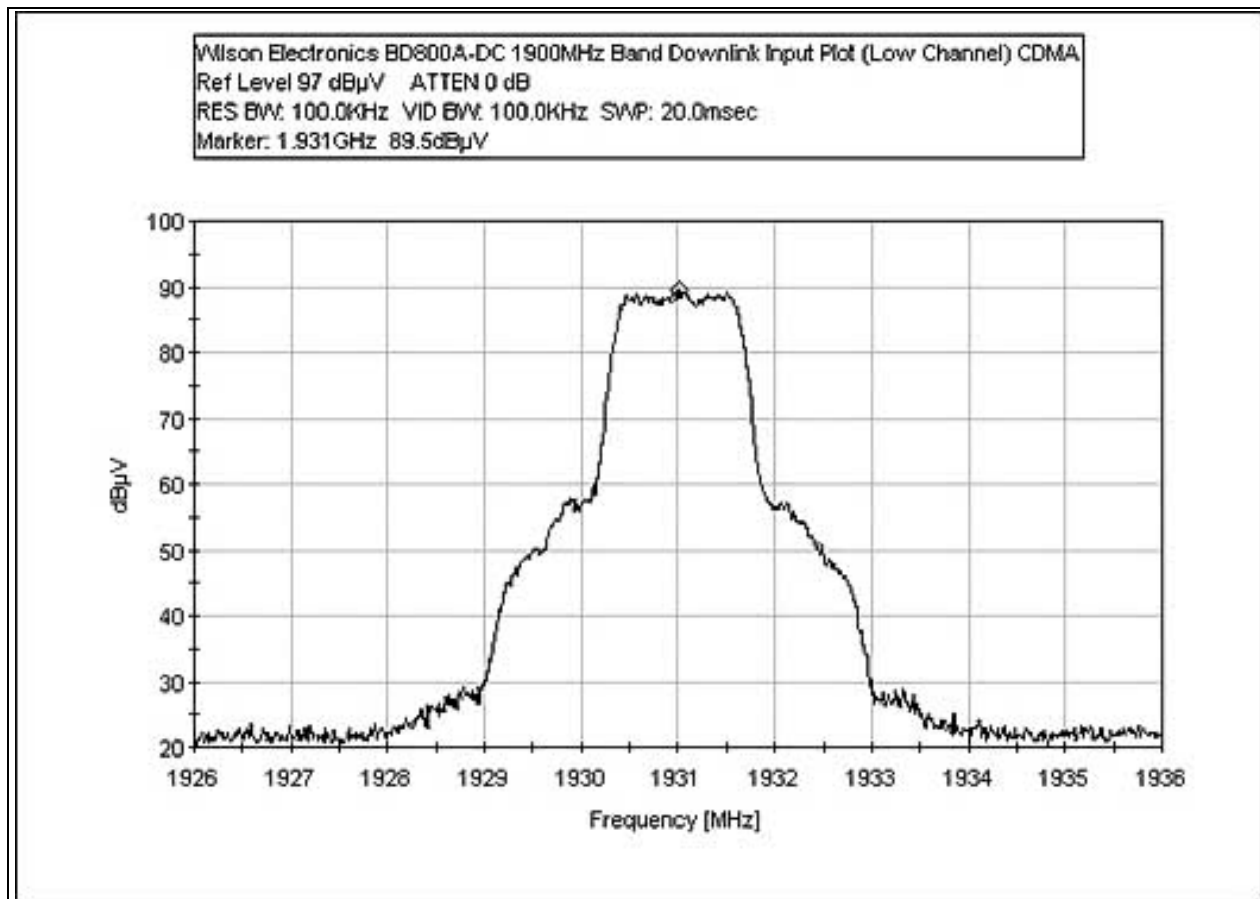
EIRP (mW)	Distance (cm)	Power Density (mW/cm ²)	Result
37757.22	73.91	0.550	Pass

$$\text{PowerDensity(mW / cm}^2\text{)} = \frac{\text{EIRP}}{4\pi d^2} \quad \text{Given: EIRP in mW and d in cm}$$

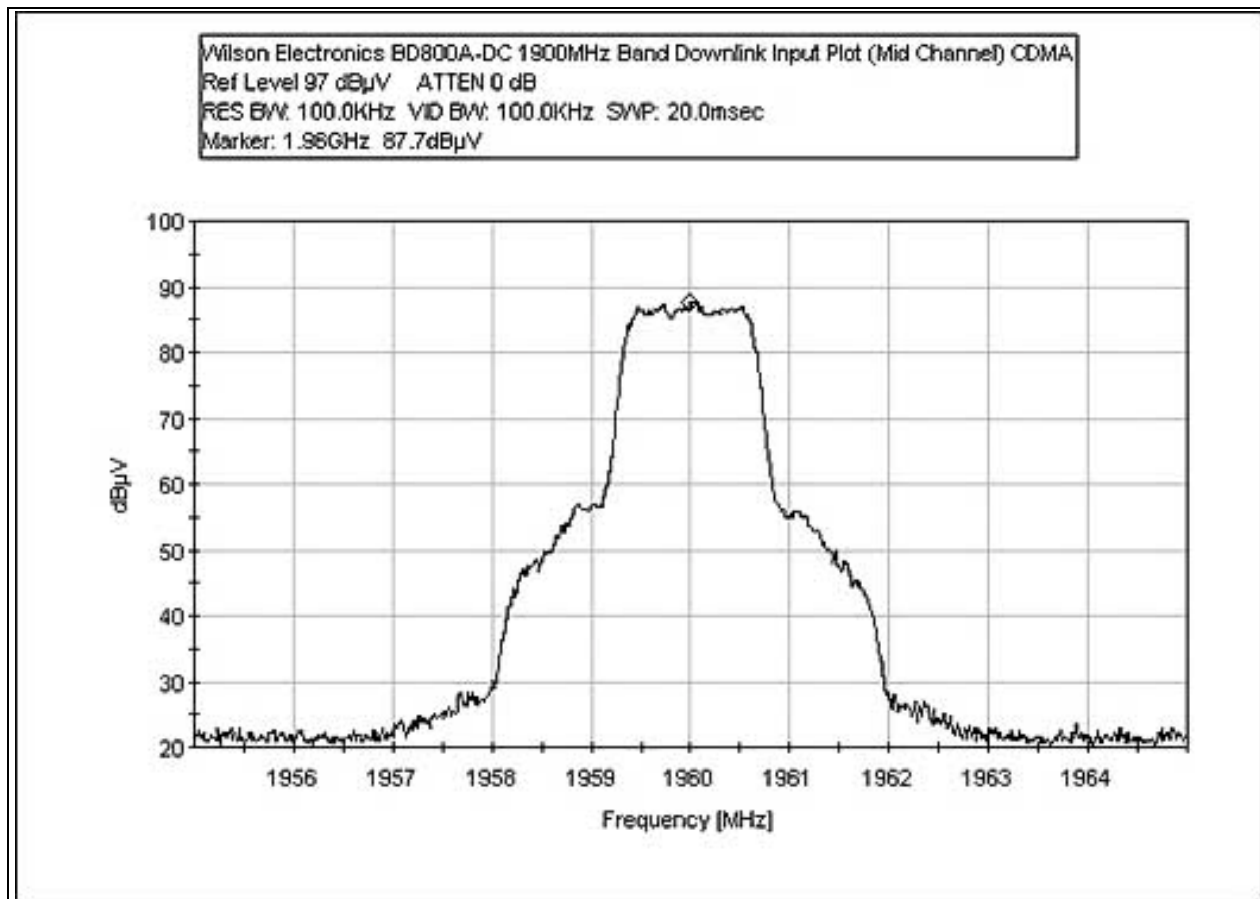
As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a distance of 73.91 cm and at an output power of 37757mW. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

DOWNLINK INPUT PLOT CDMA LOW CHANNEL - 1900 MHz

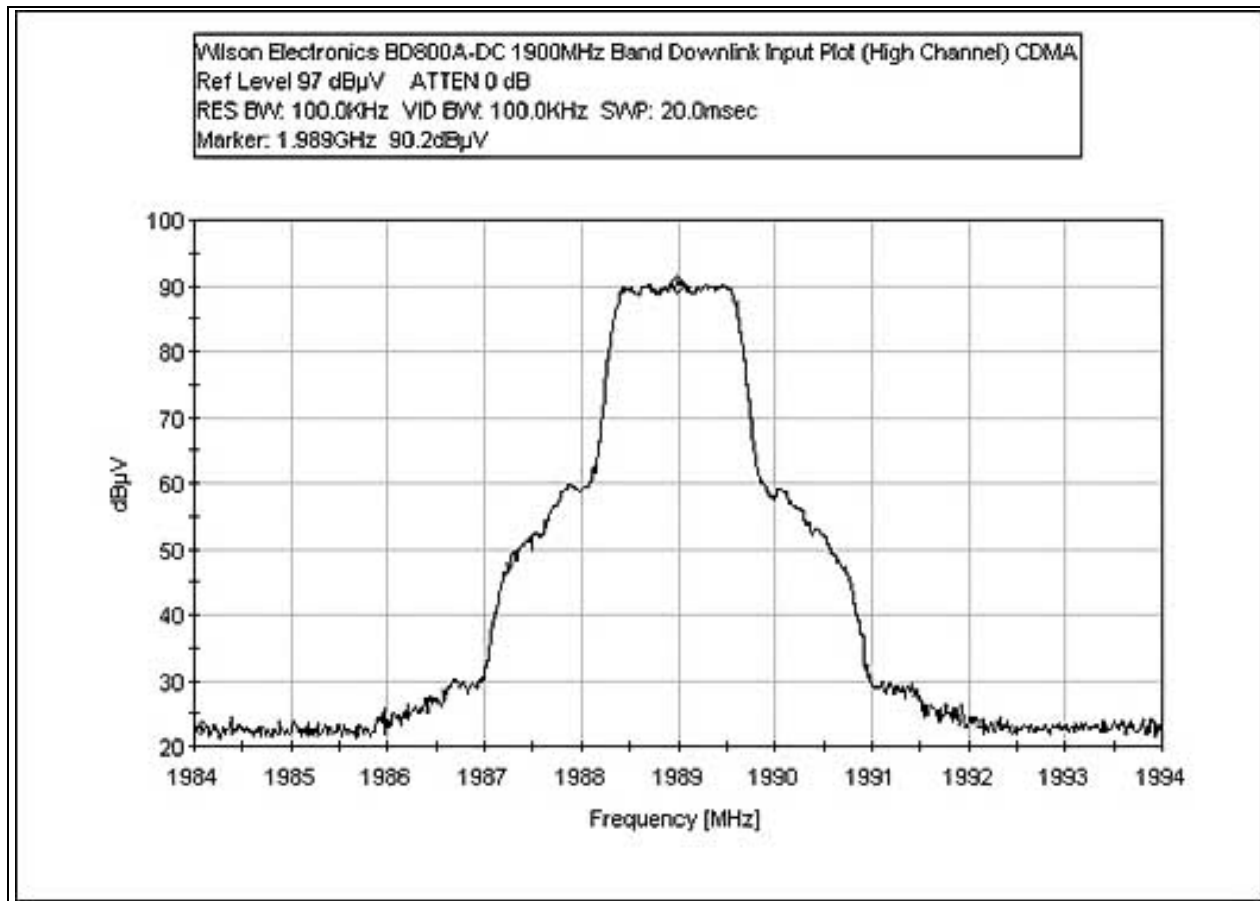
Test Conditions: Signal Generator output is fed to a spectrum analyzer.



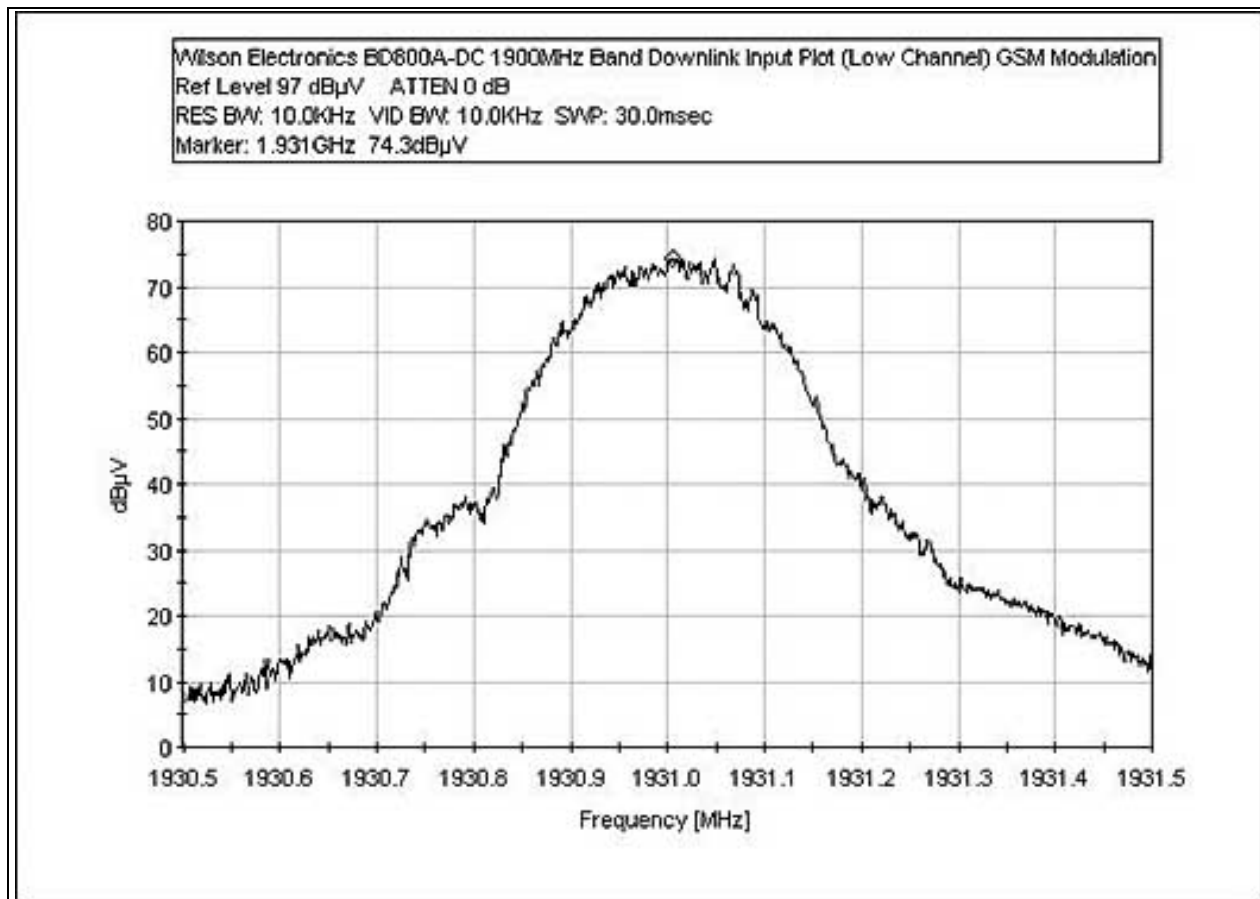
DOWNLINK INPUT PLOT CDMA MID CHANNEL - 1900 MHz



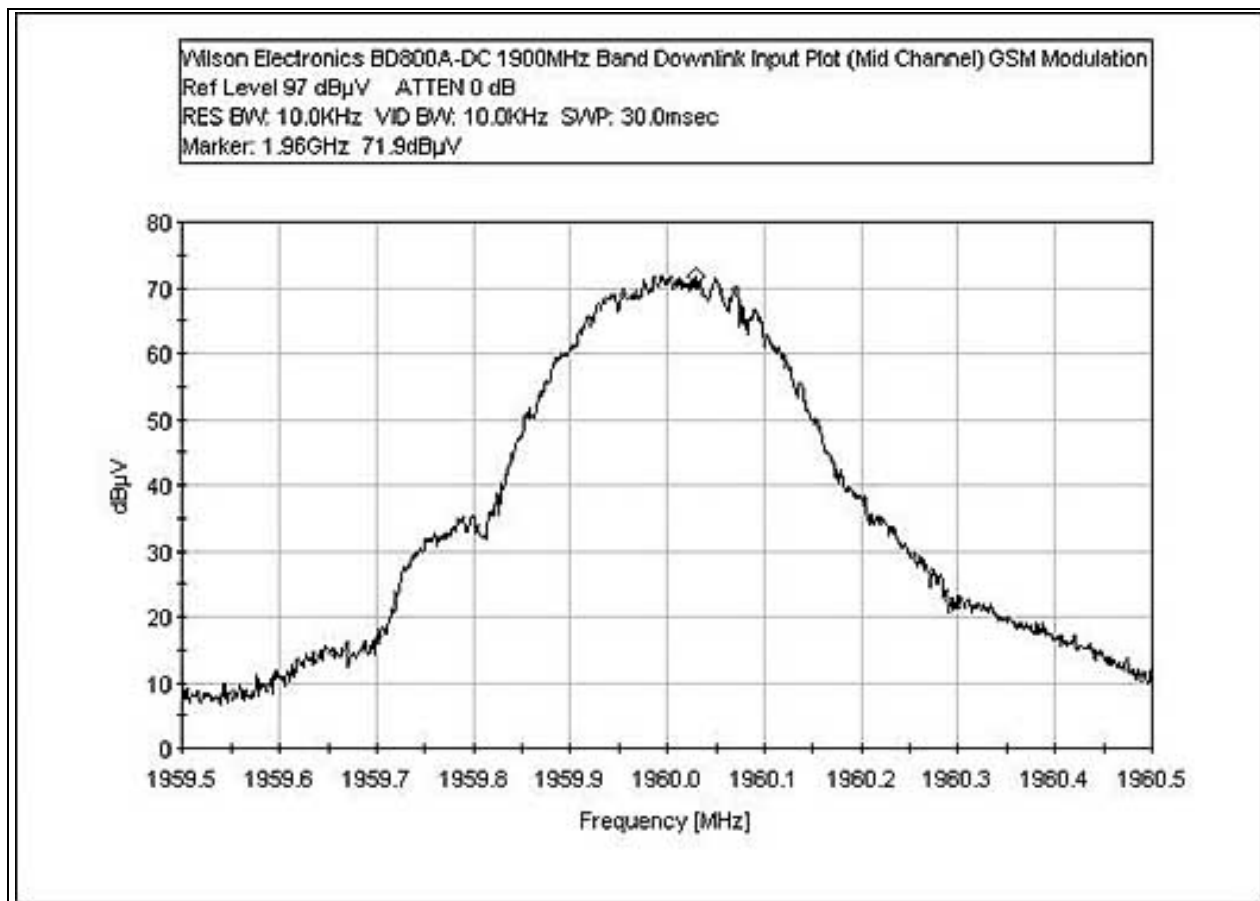
DOWNLINK INPUT PLOT CDMA HIGH CHANNEL - 1900 MHz



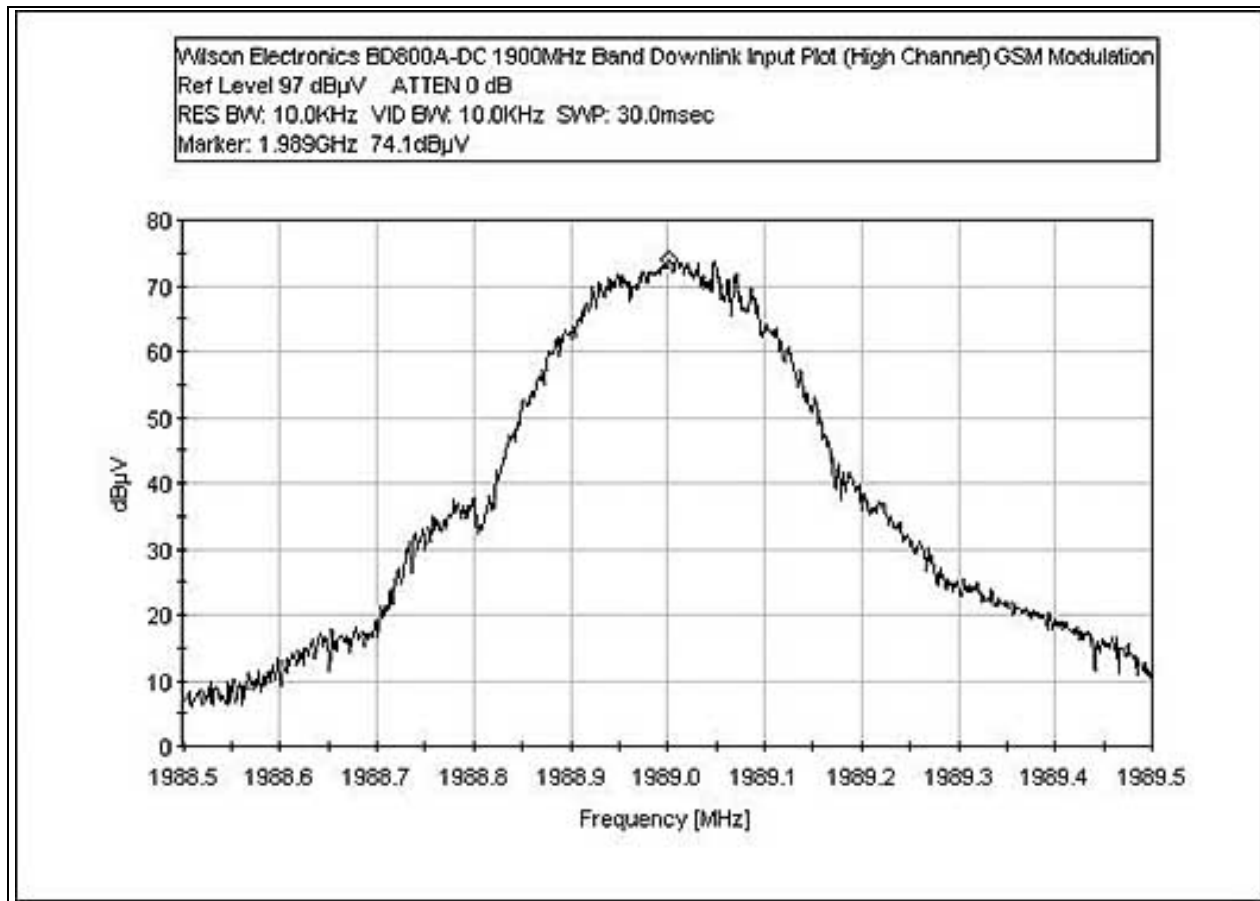
DOWNLINK INPUT PLOT GSM LOW CHANNEL - 1900 MHz



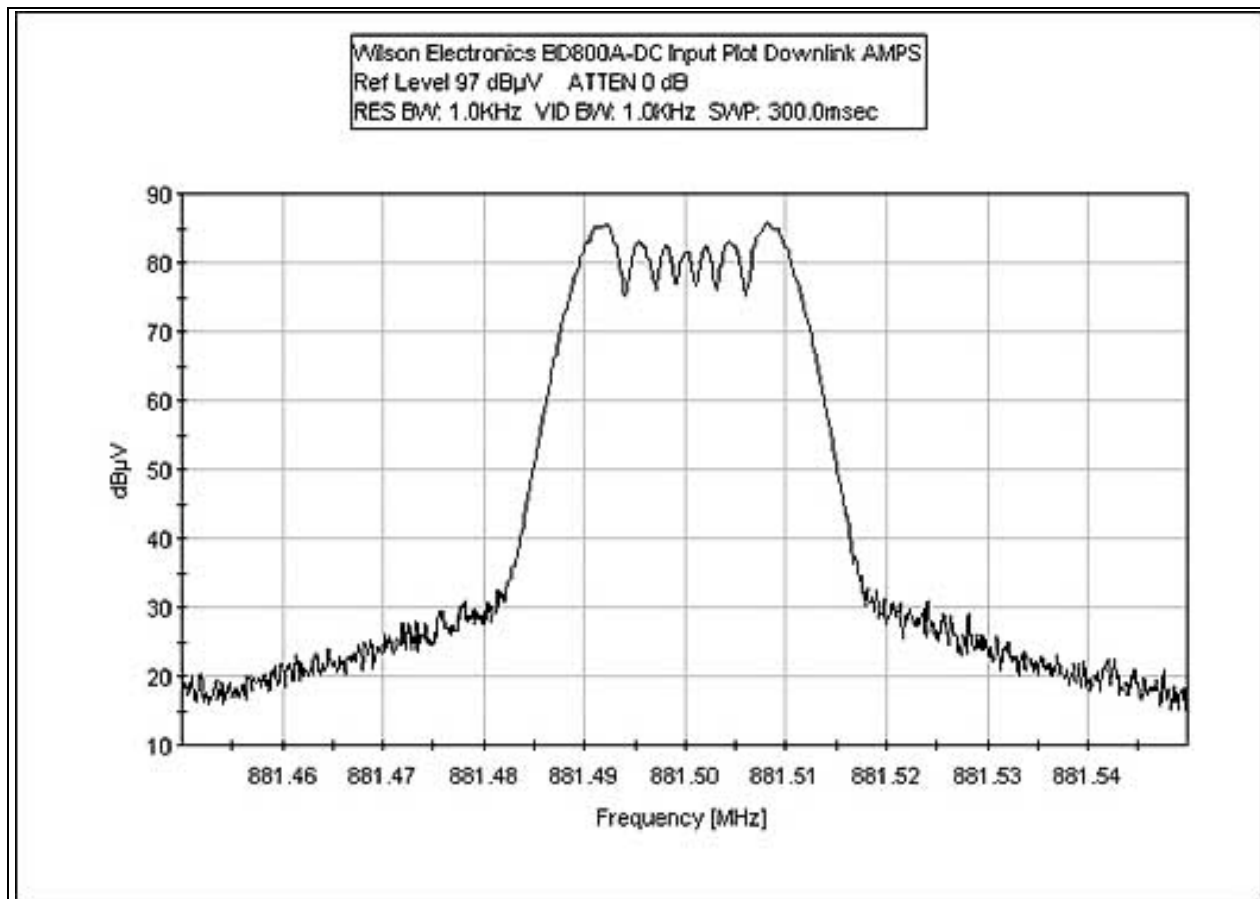
DOWNLINK INPUT PLOT GSM MID CHANNEL - 1900 MHz



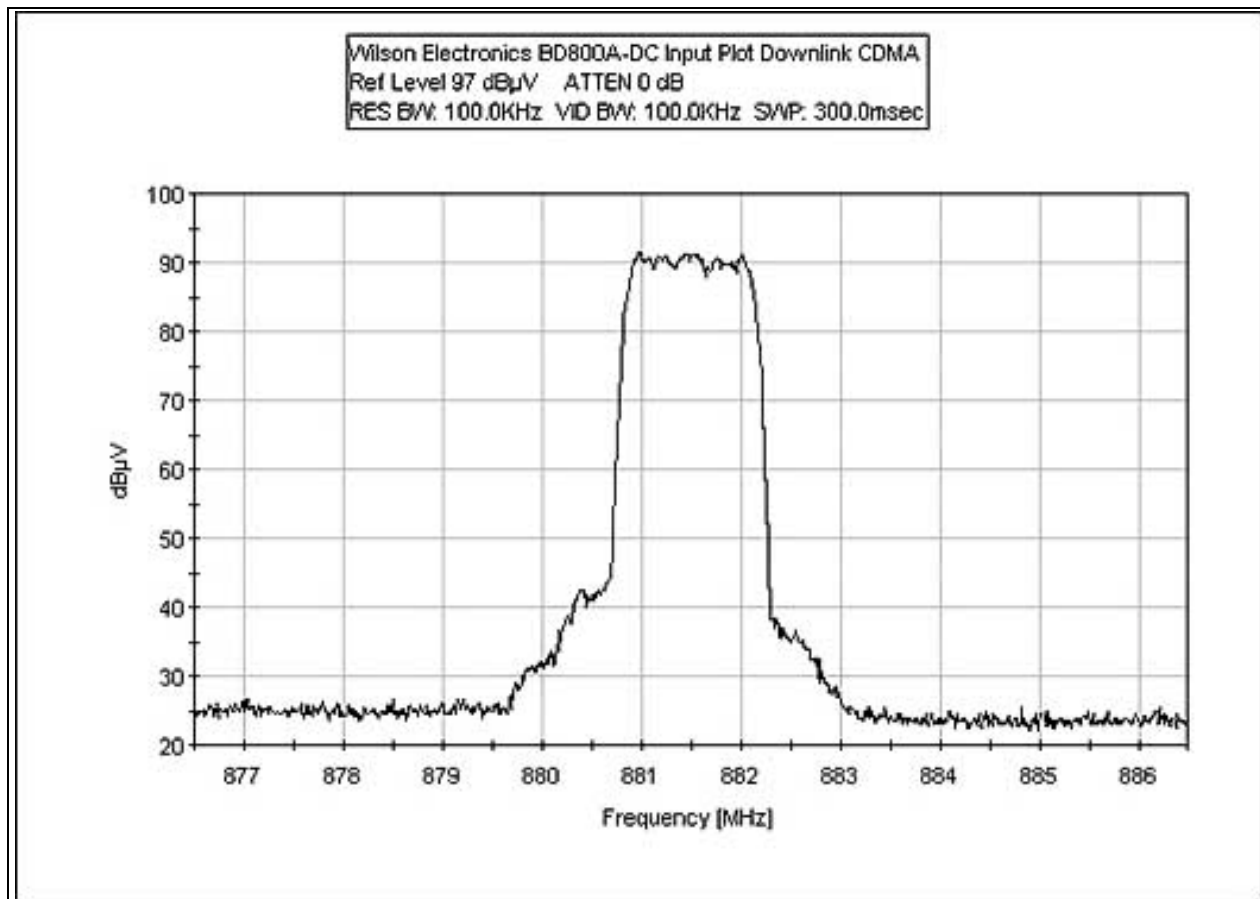
DOWNLINK INPUT PLOT GSM HIGH CHANNEL - 1900 MHz



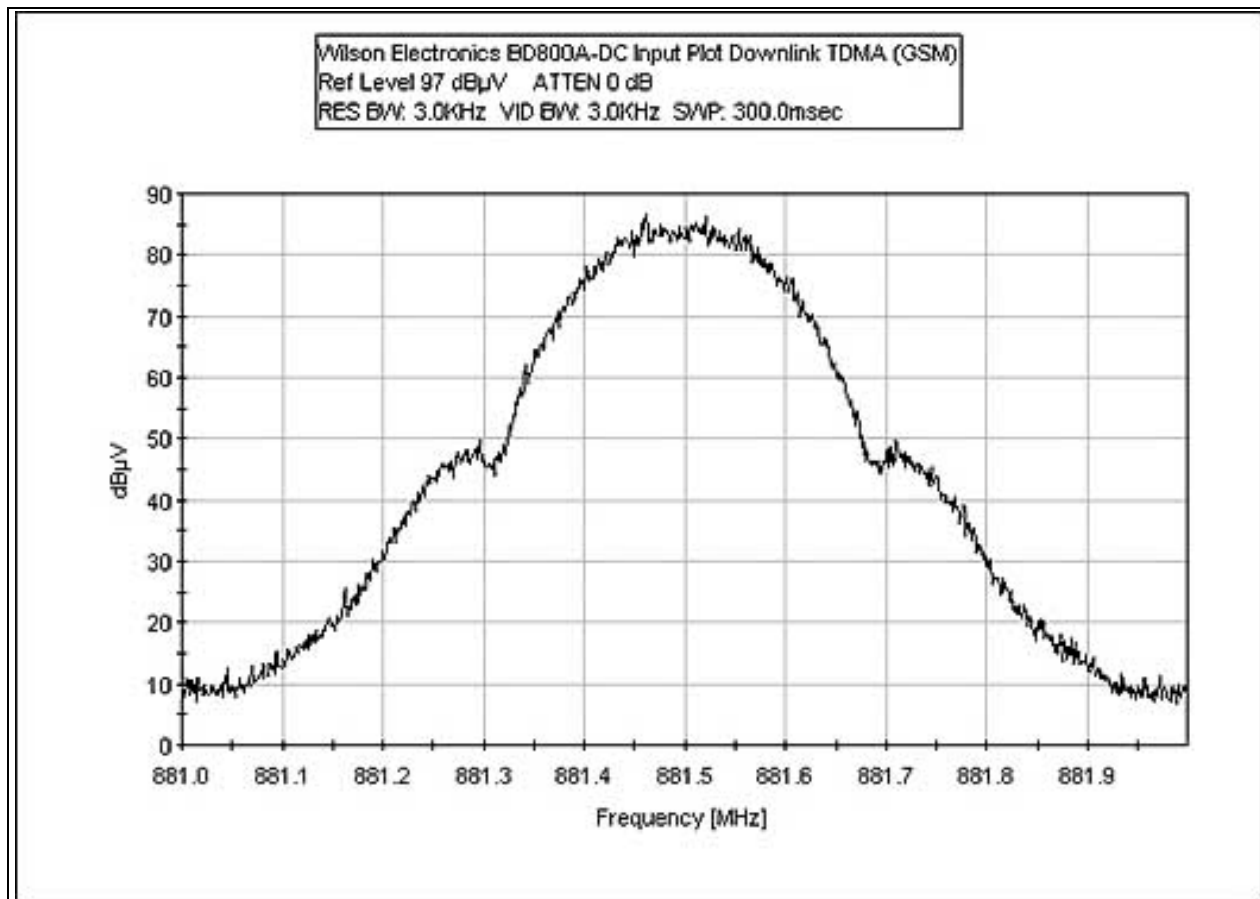
DOWNLINK INPUT PLOT AMPS



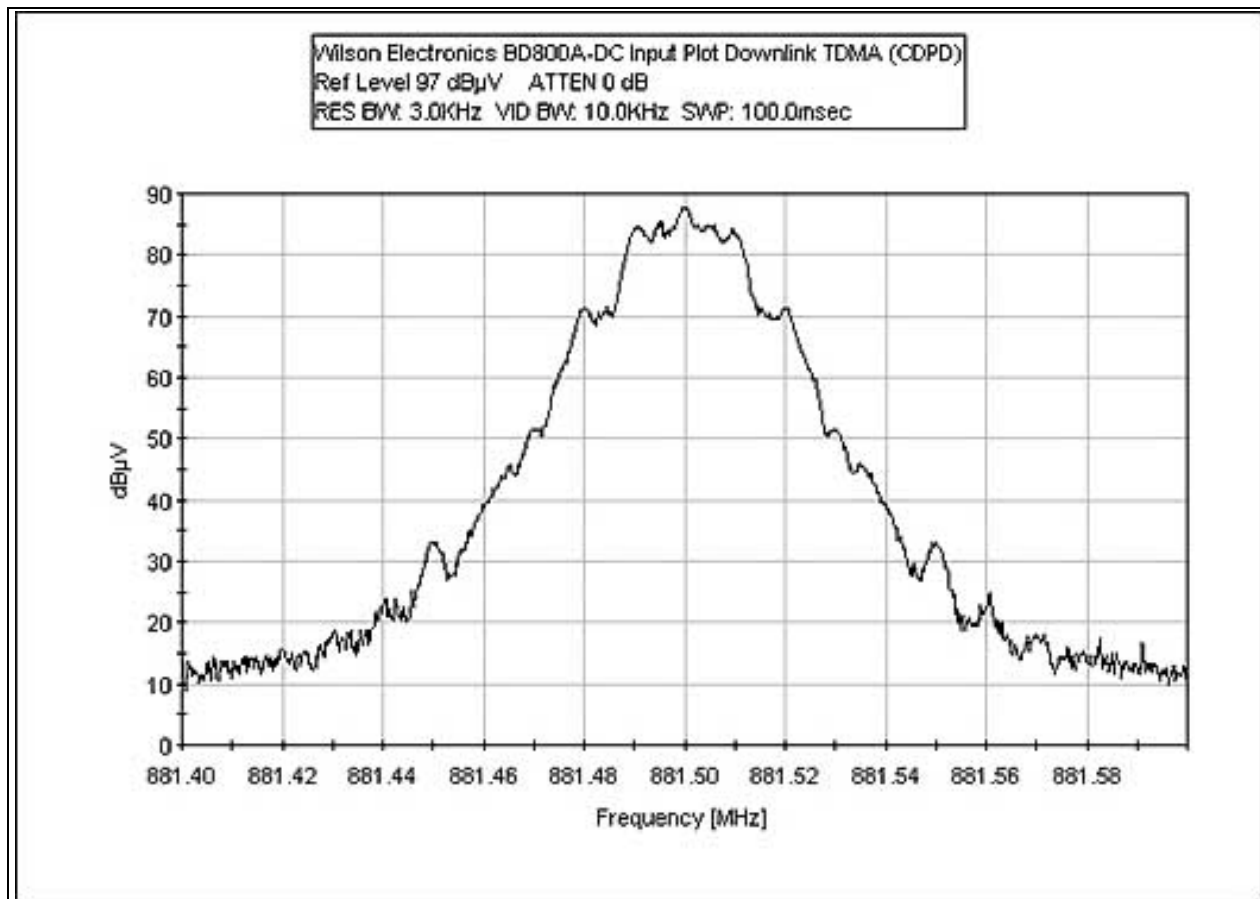
DOWNLINK INPUT PLOT CDMA



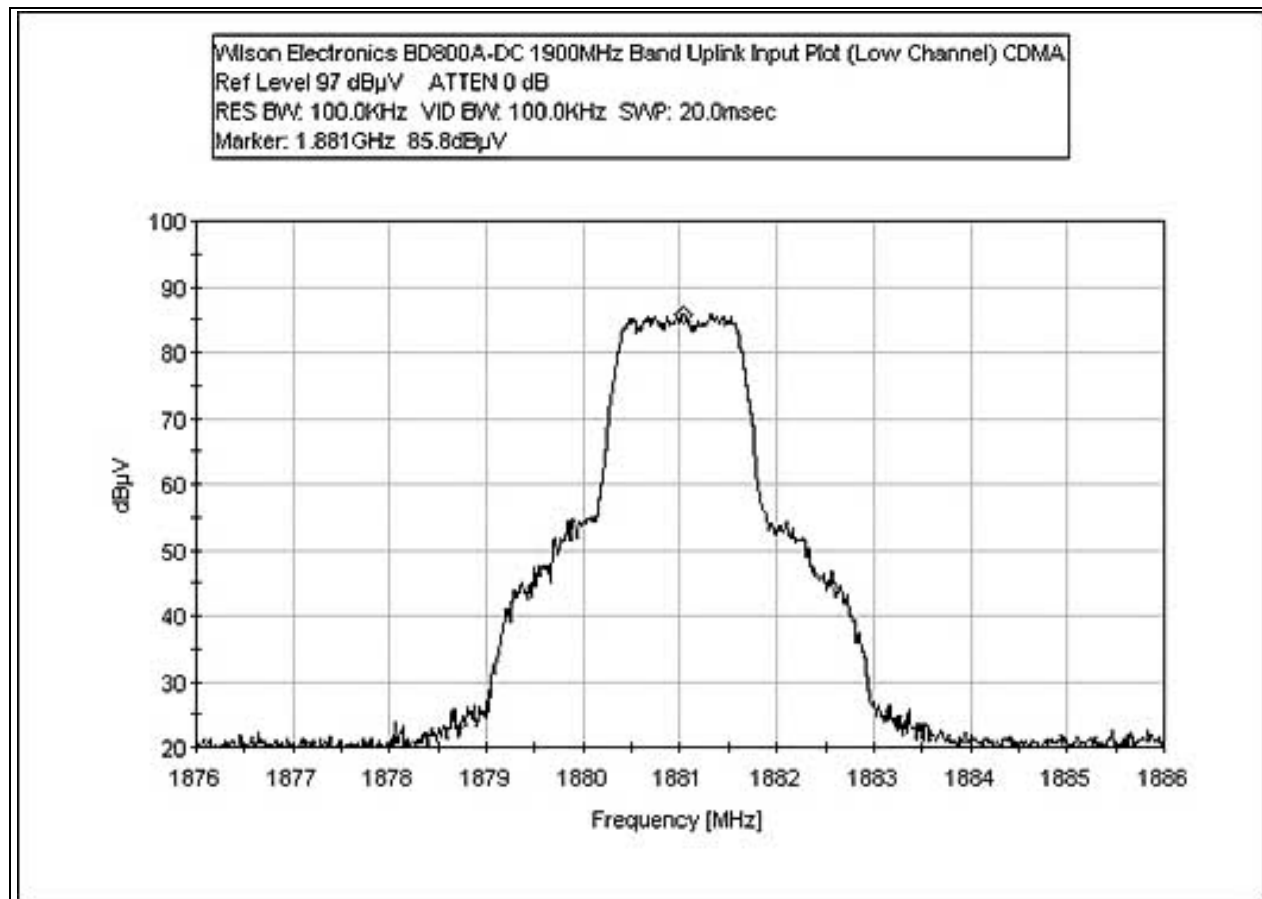
DOWNLINK INPUT PLOT TDMA (GSM)



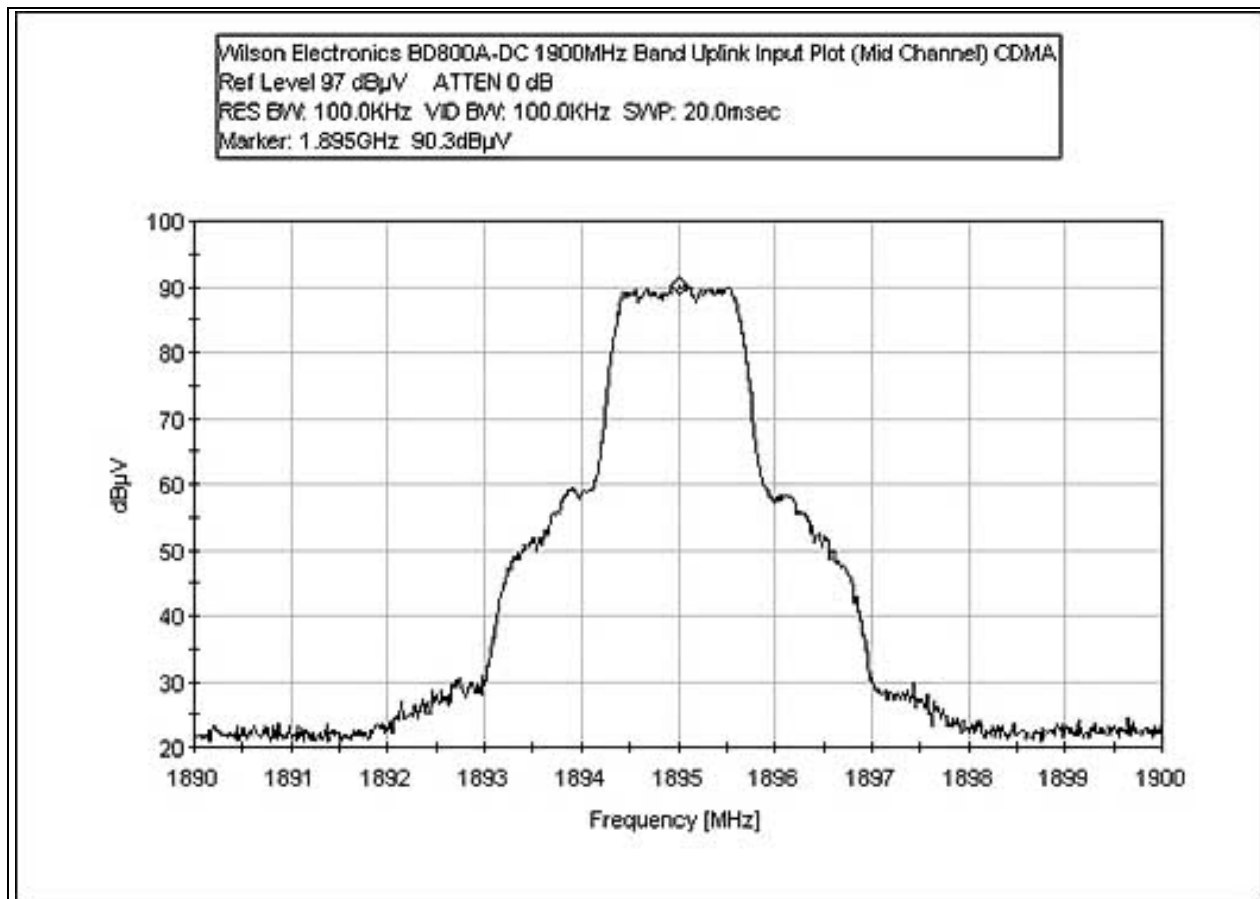
DOWNLINK INPUT PLOT TDMA (CDPD)



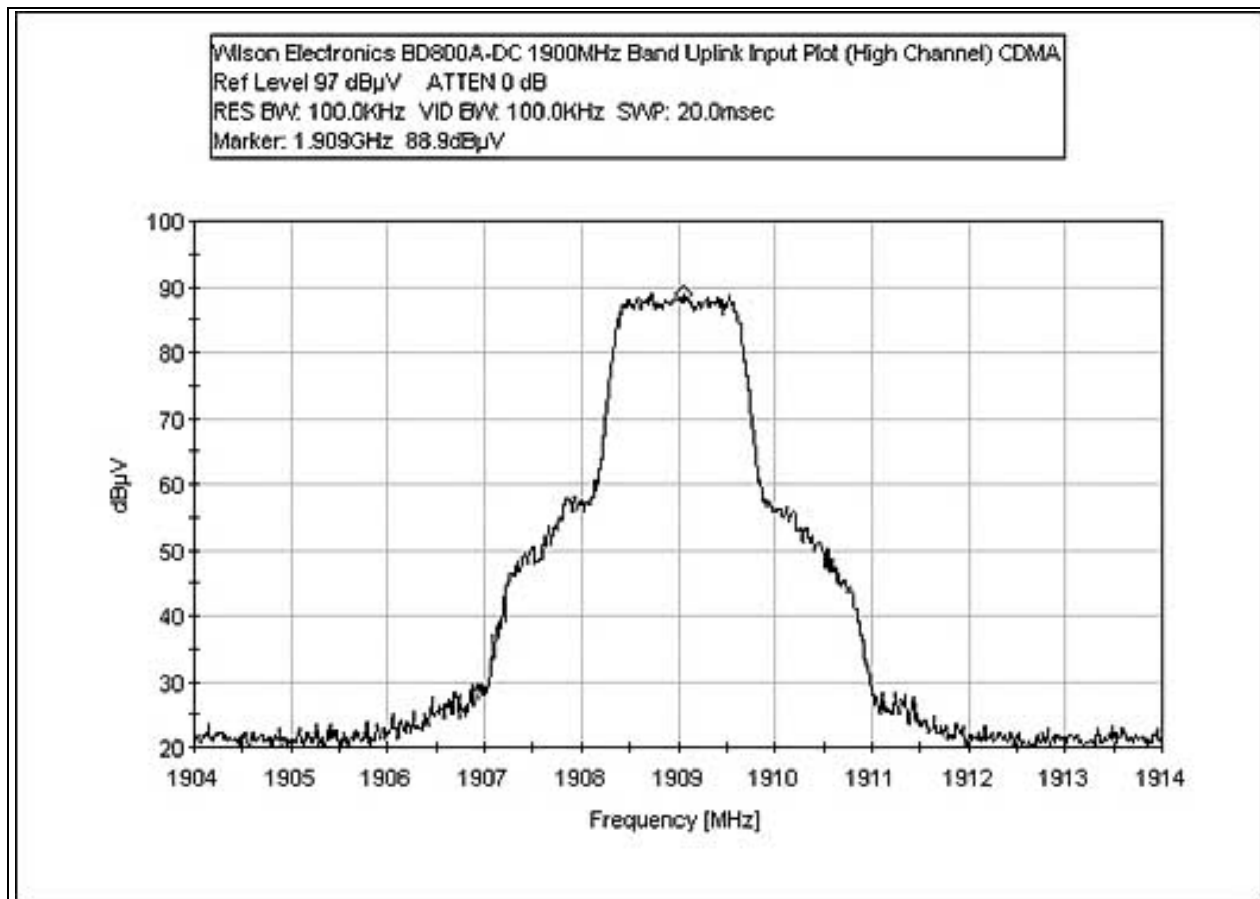
UPLINK INPUT PLOT CDMA LOW CHANNEL - 1900 MHz



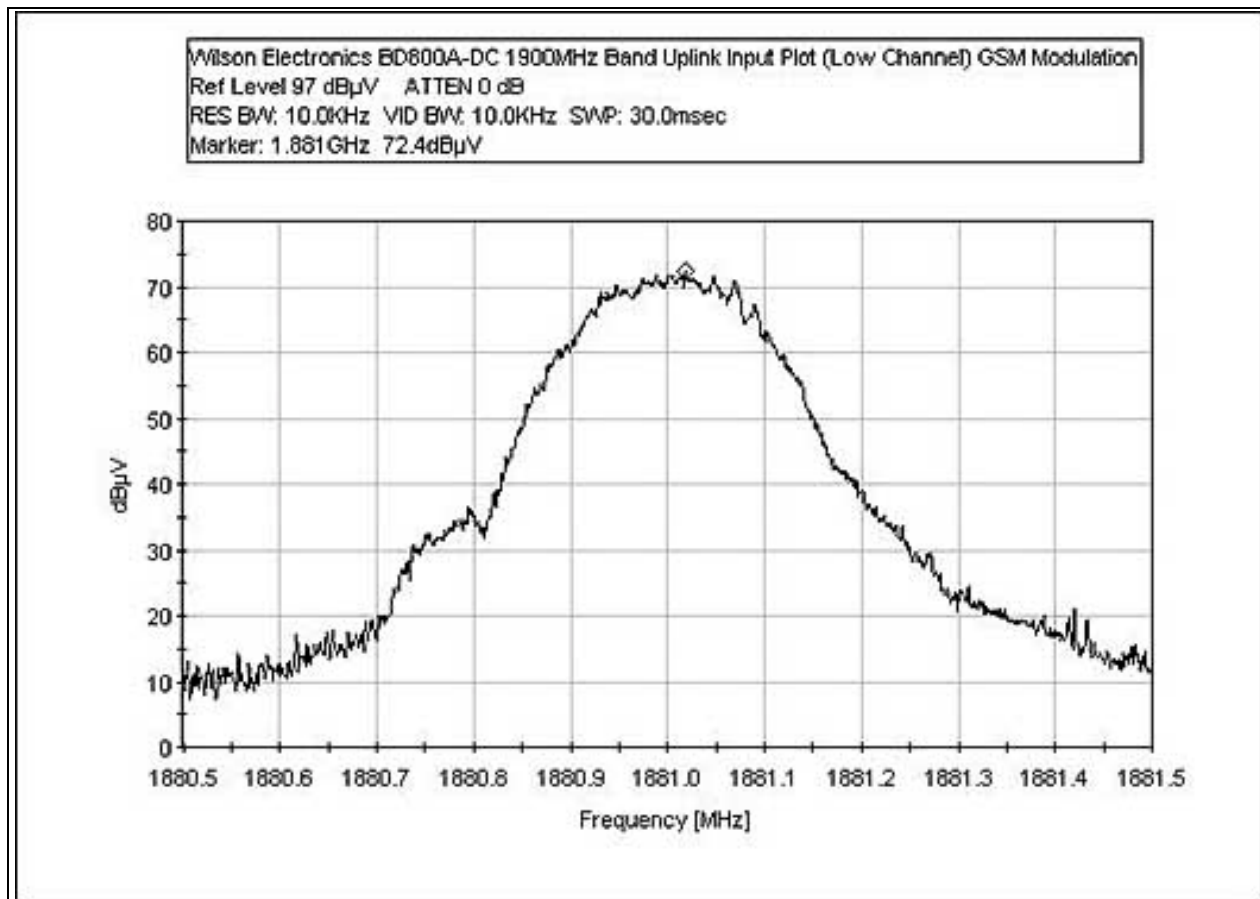
UPLINK INPUT PLOT CDMA MID CHANNEL - 1900 MHz



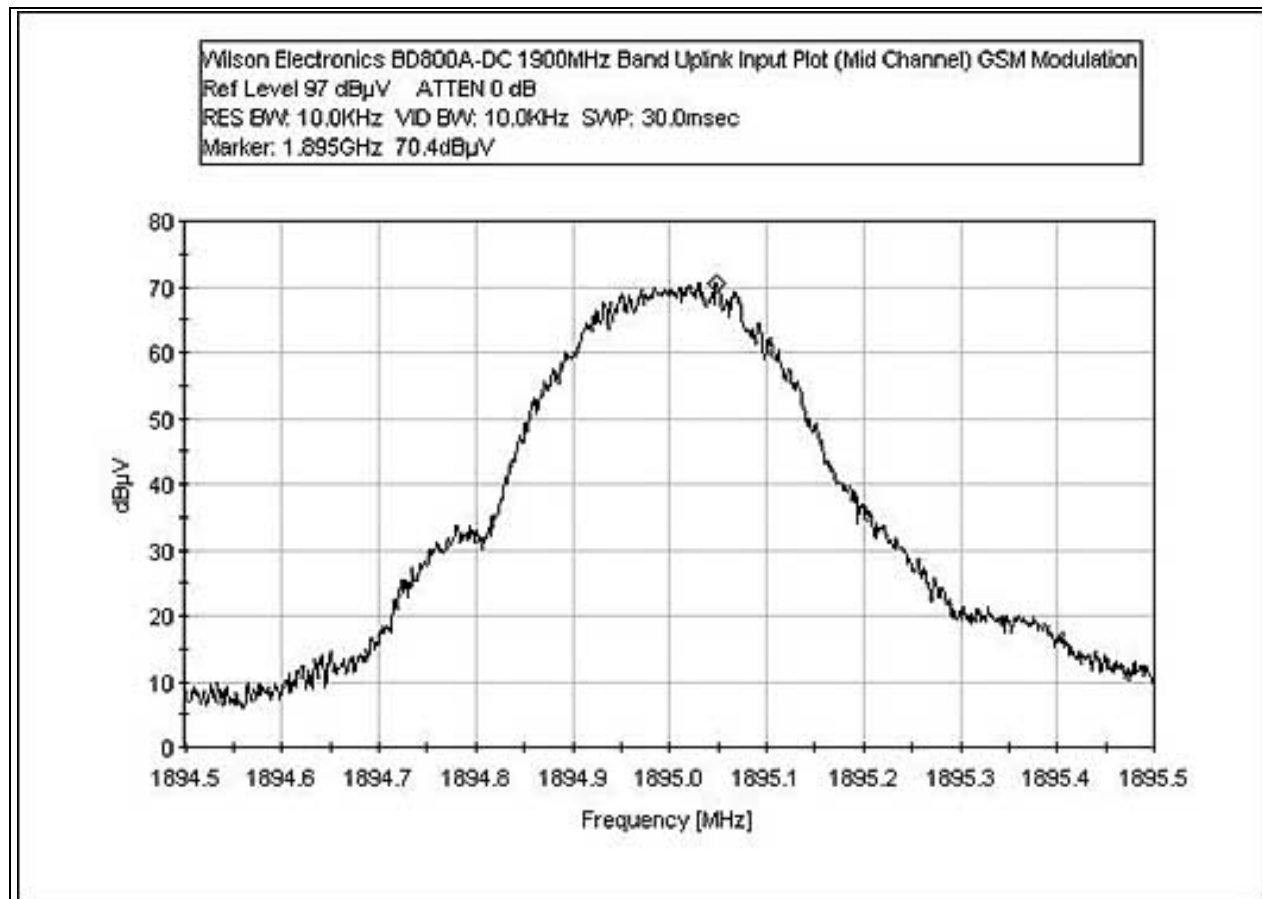
UPLINK INPUT PLOT CDMA HIGH CHANNEL - 1900 MHz



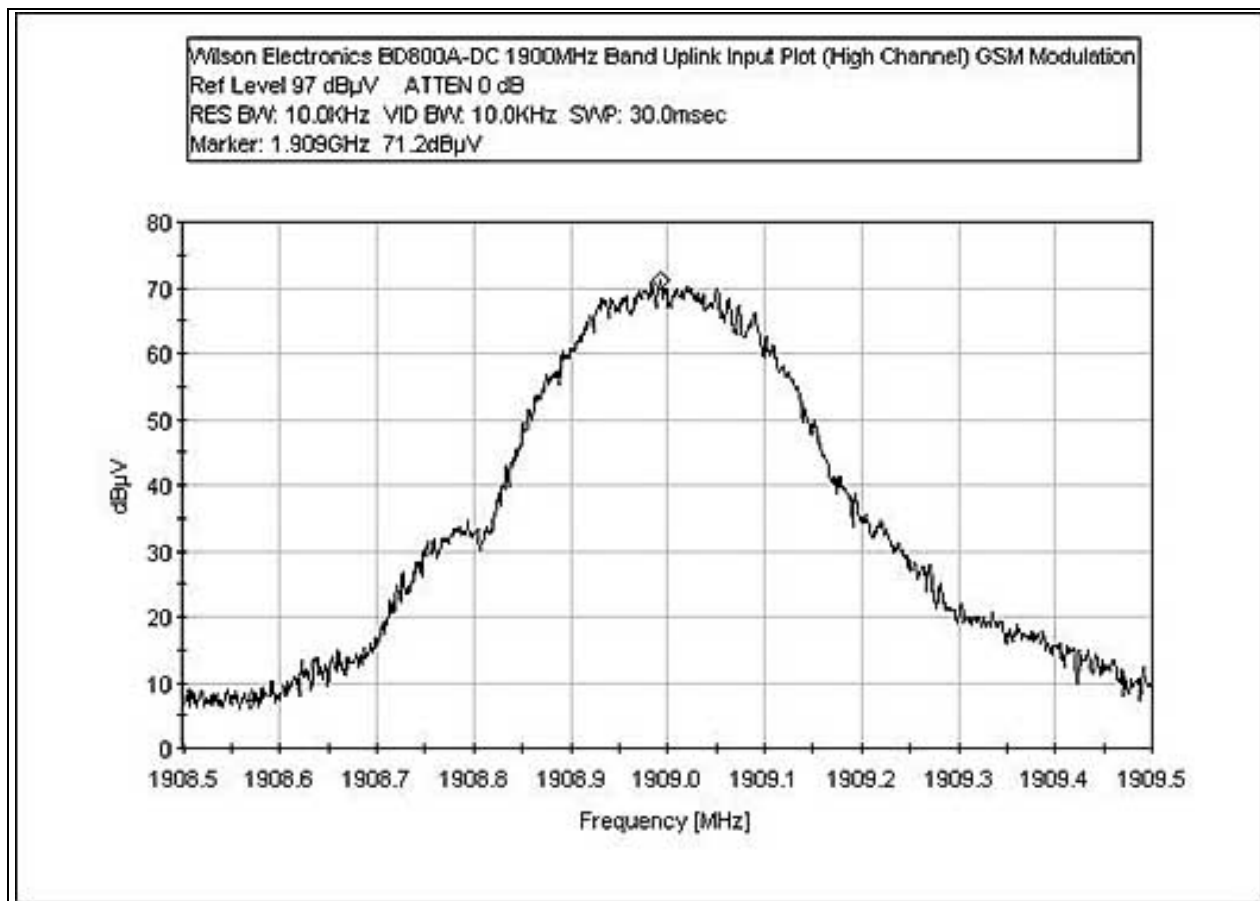
UPLINK INPUT PLOT GSM LOW CHANNEL - 1900 MHz



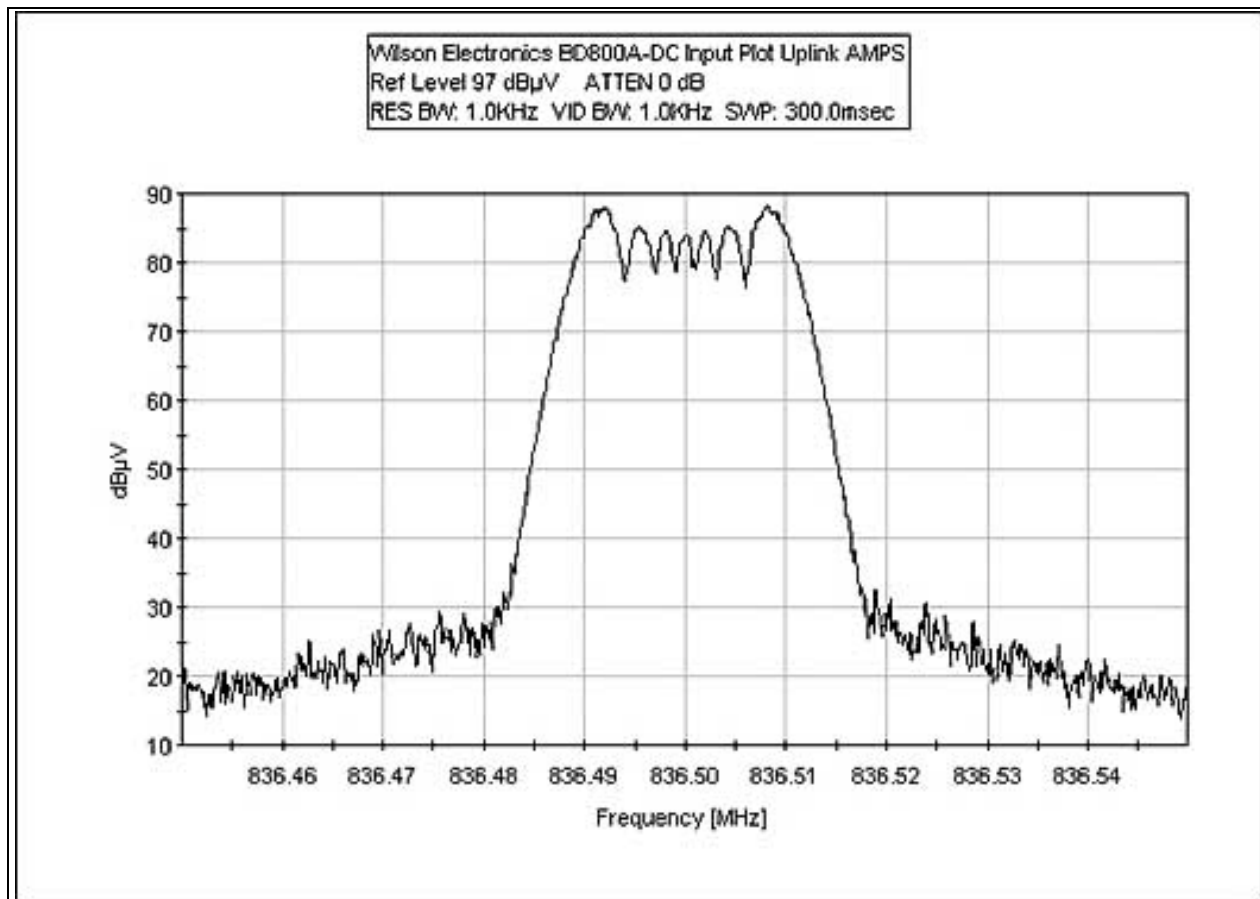
UPLINK INPUT PLOT GSM MID CHANNEL - 1900 MHz



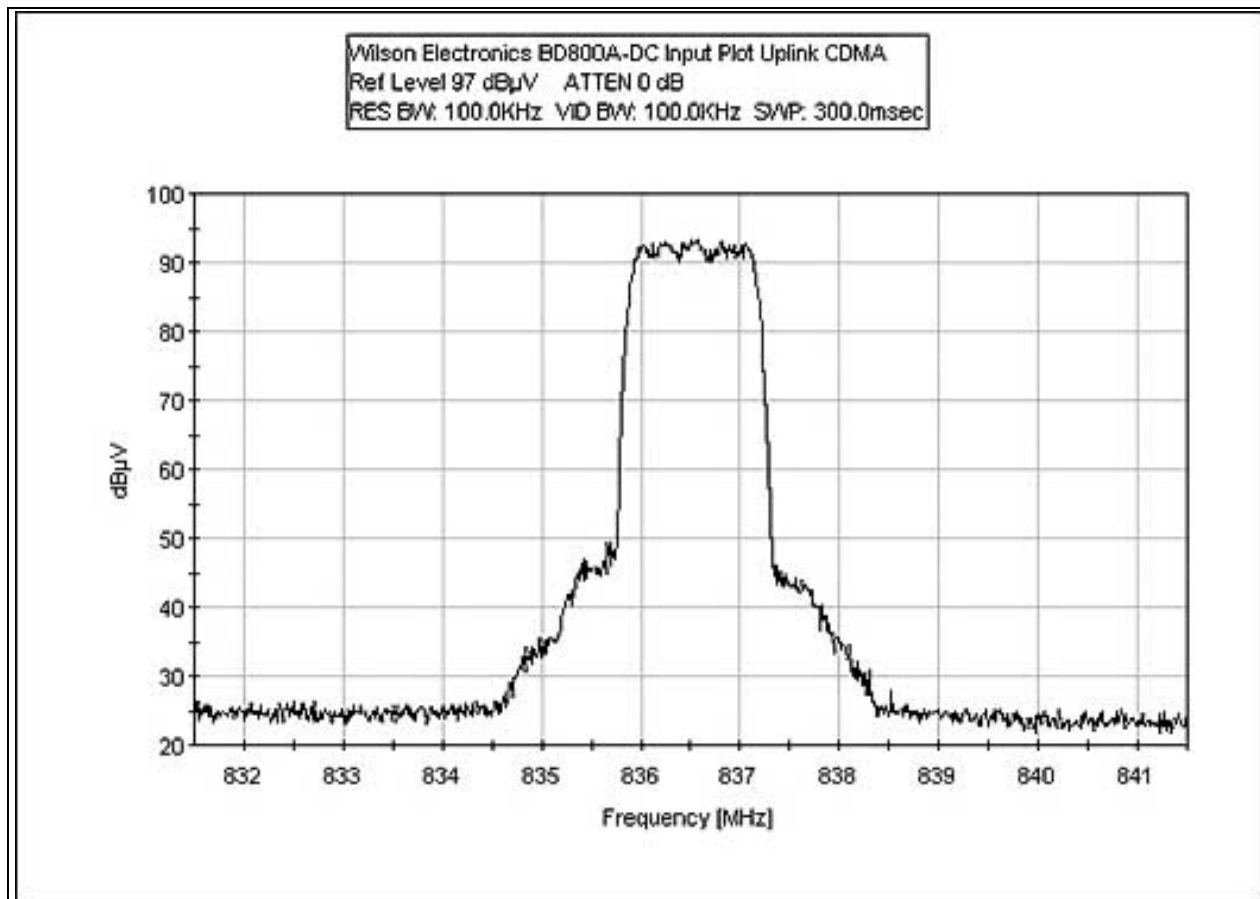
UPLINK INPUT PLOT GSM HIGH CHANNEL - 1900 MHz



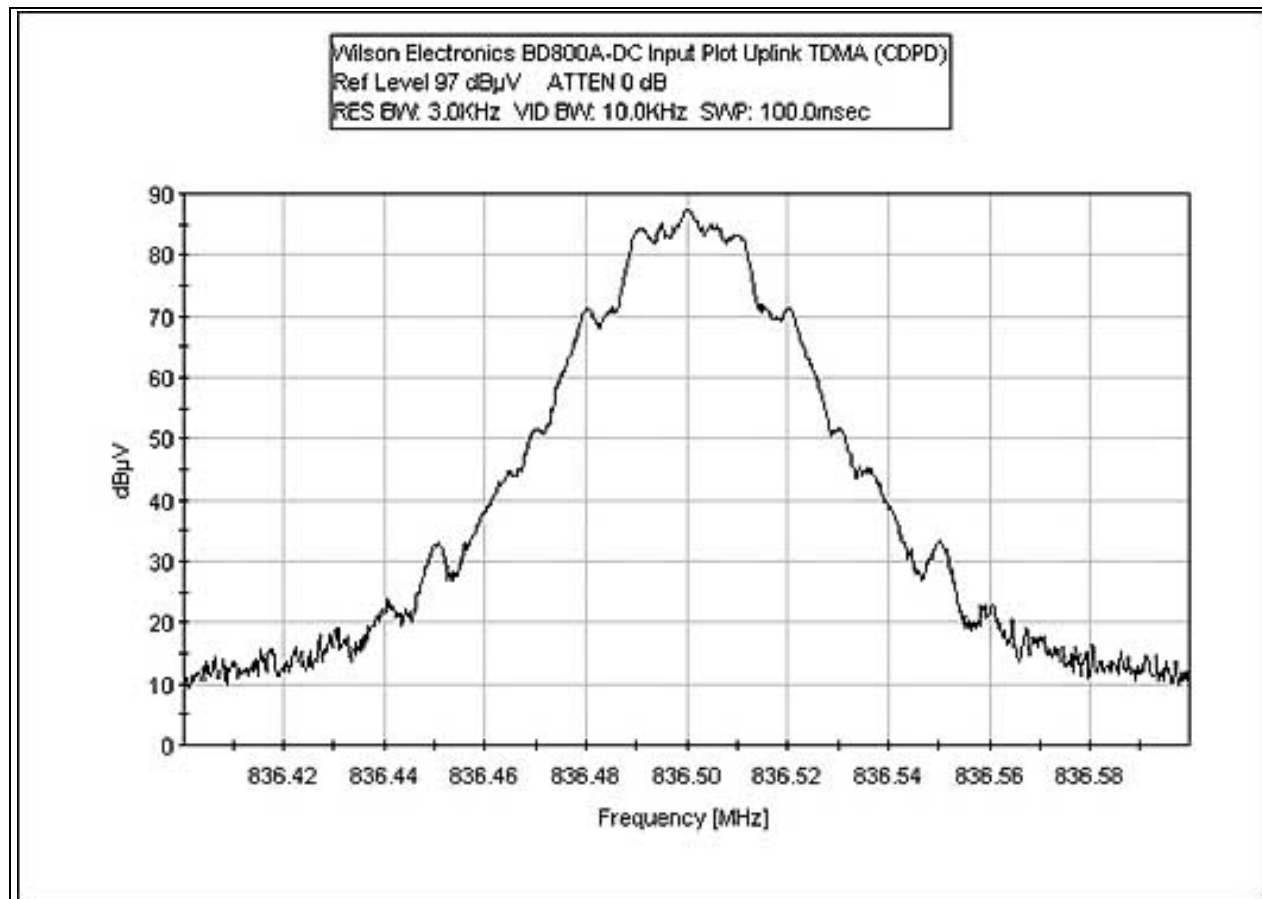
UPLINK INPUT PLOT AMPS



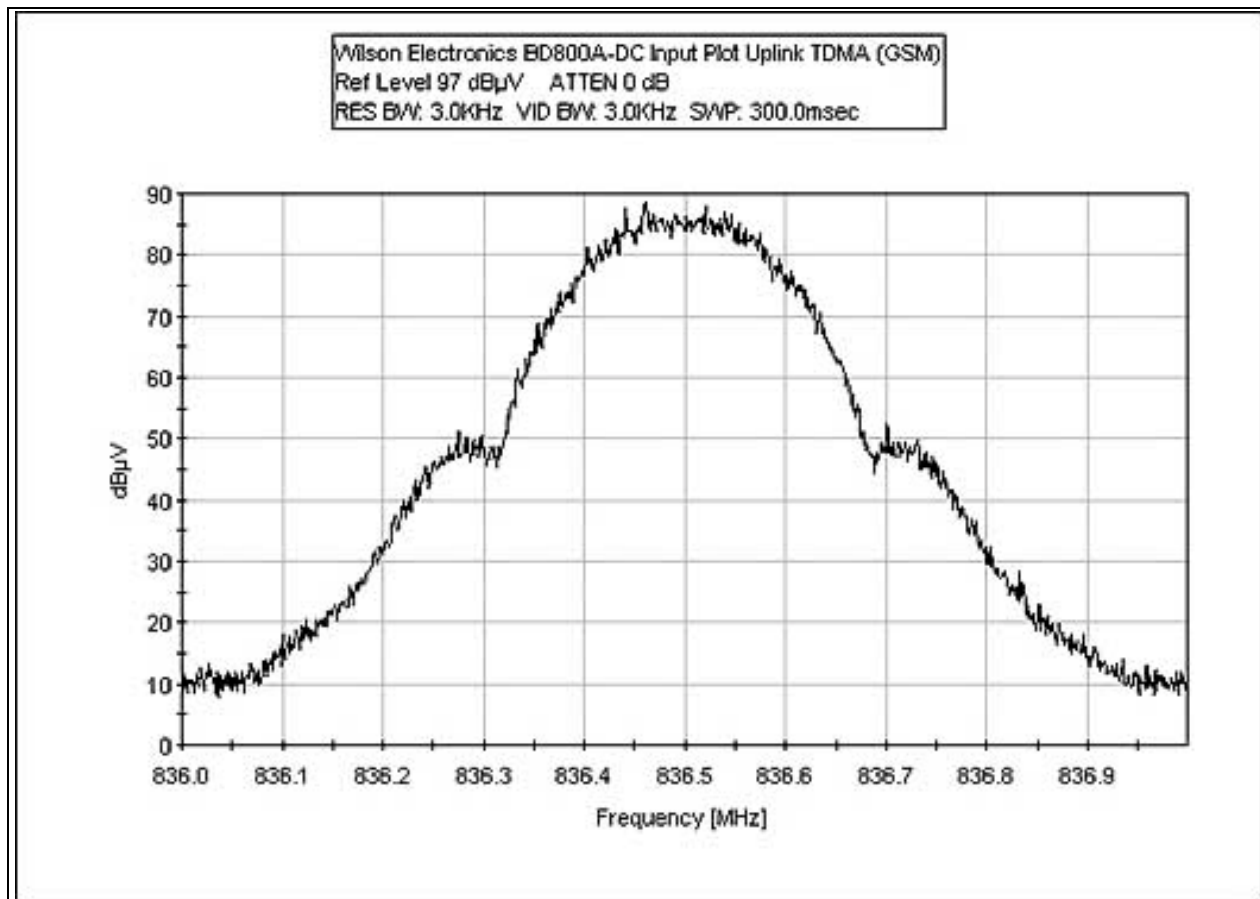
UPLINK INPUT PLOT CDMA



UPLINK INPUT PLOT TDMA (CDPD)

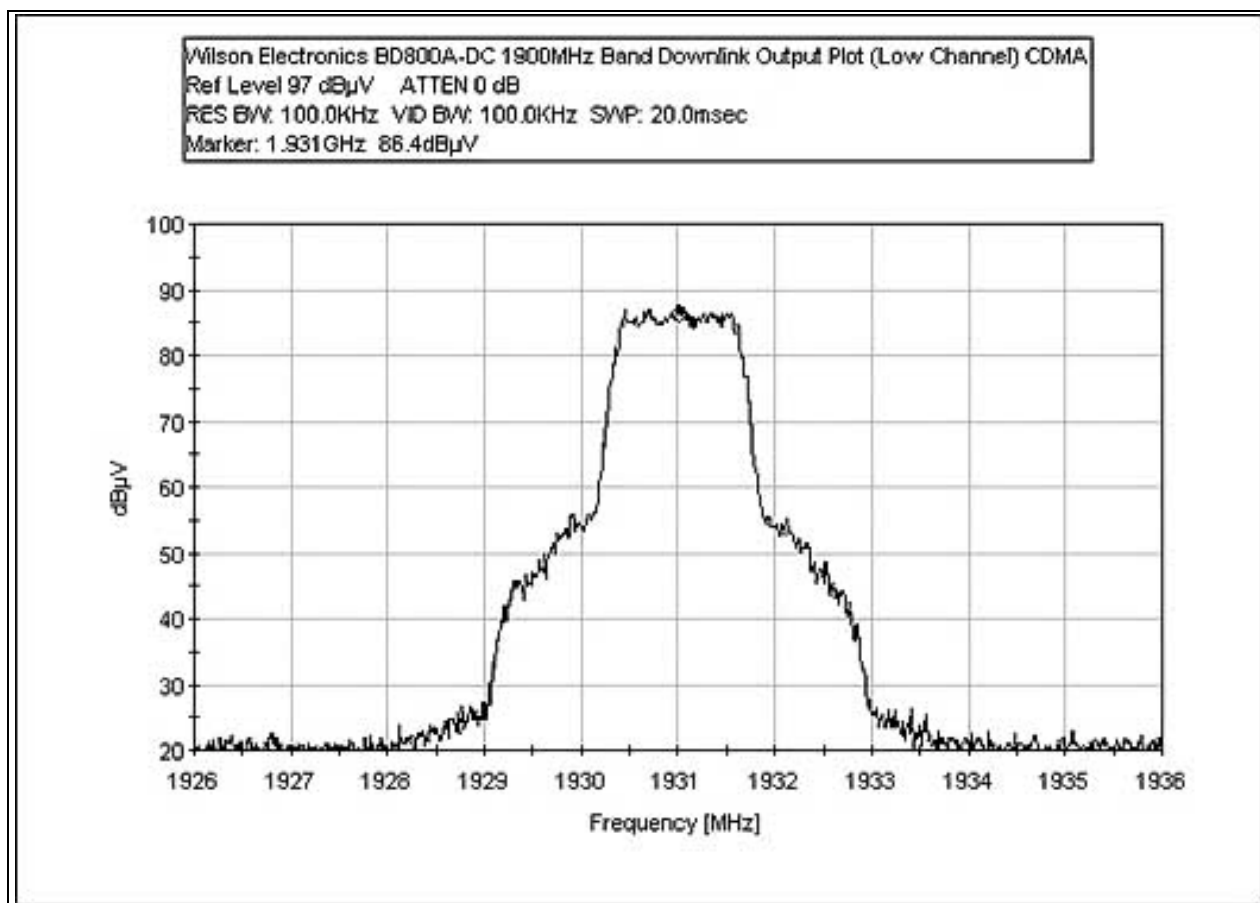


UPLINK INPUT PLOT TDMA (GSM)

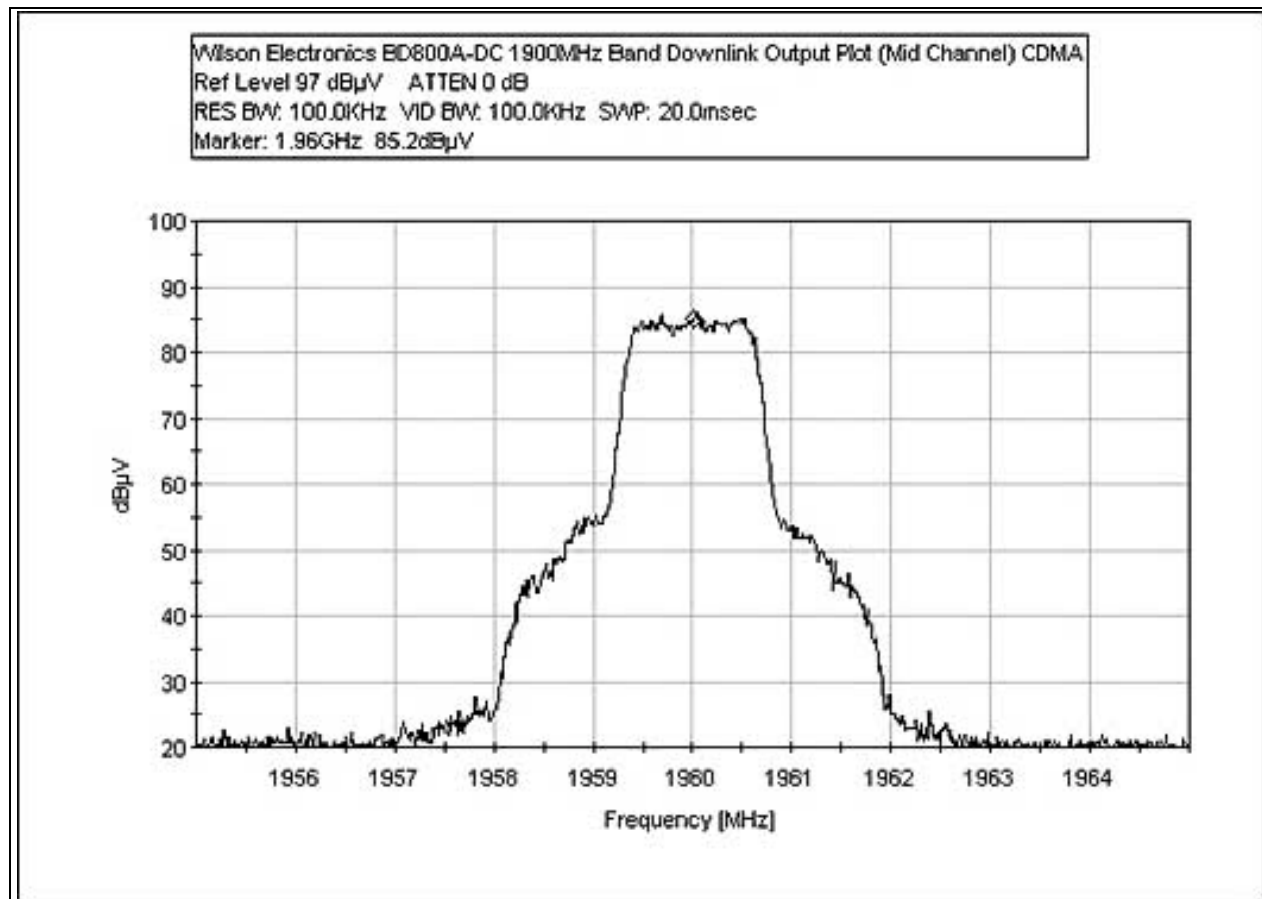


DOWNLINK OUTPUT PLOT CDMA LOW CHANNEL - 1900 MHz

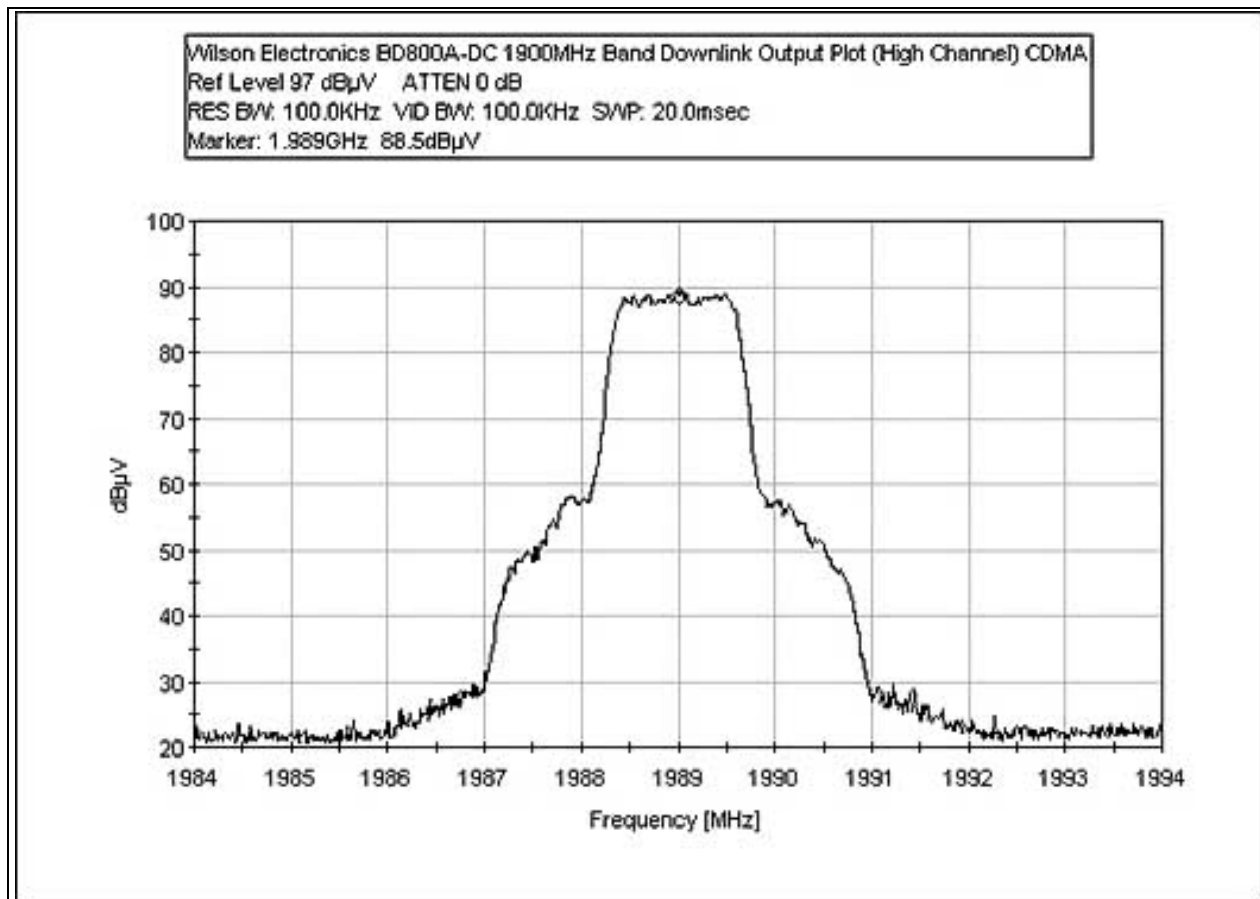
Test Conditions: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. RF port is fed to a spectrum analyzer via suitable attenuation.



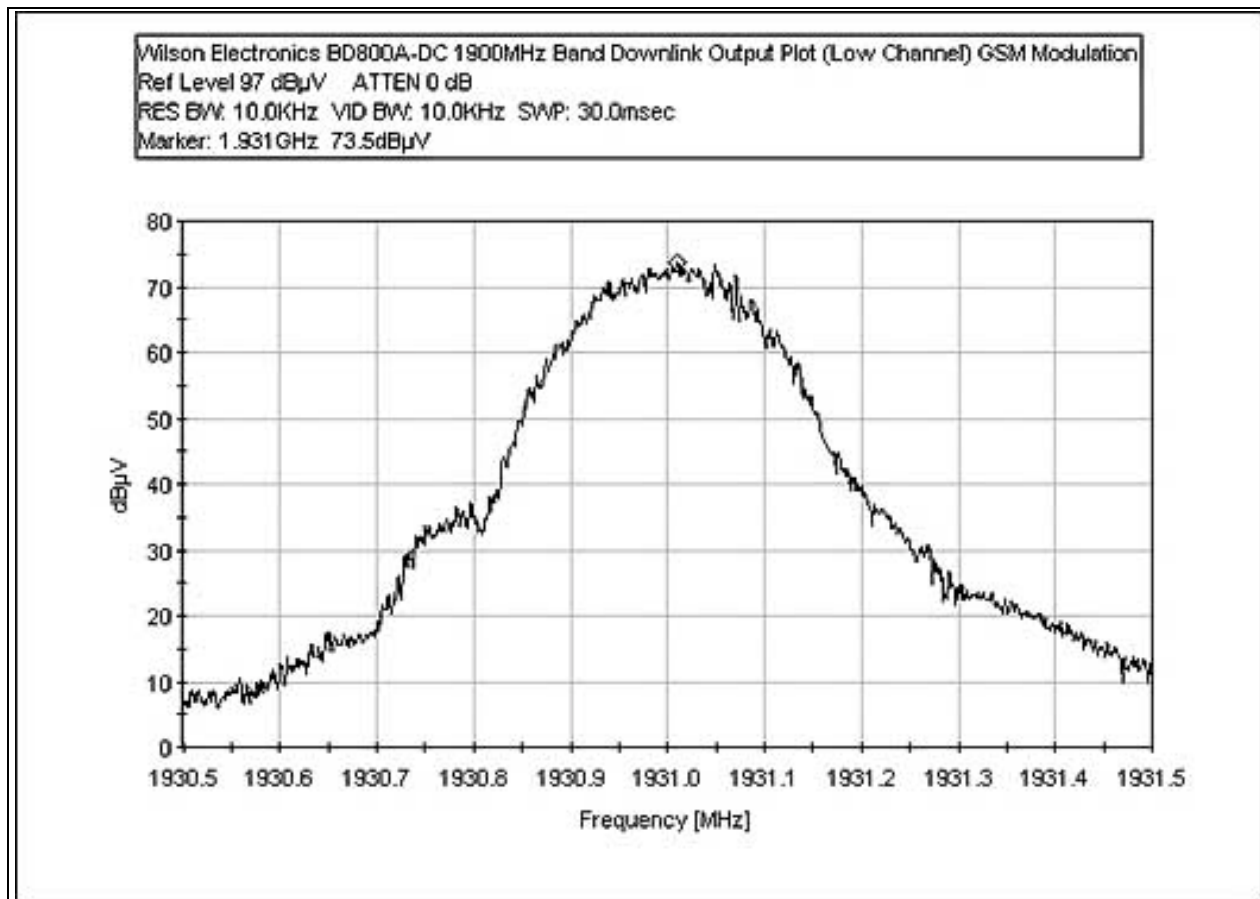
DOWNLINK OUTPUT PLOT CDMA MID CHANNEL - 1900 MHz



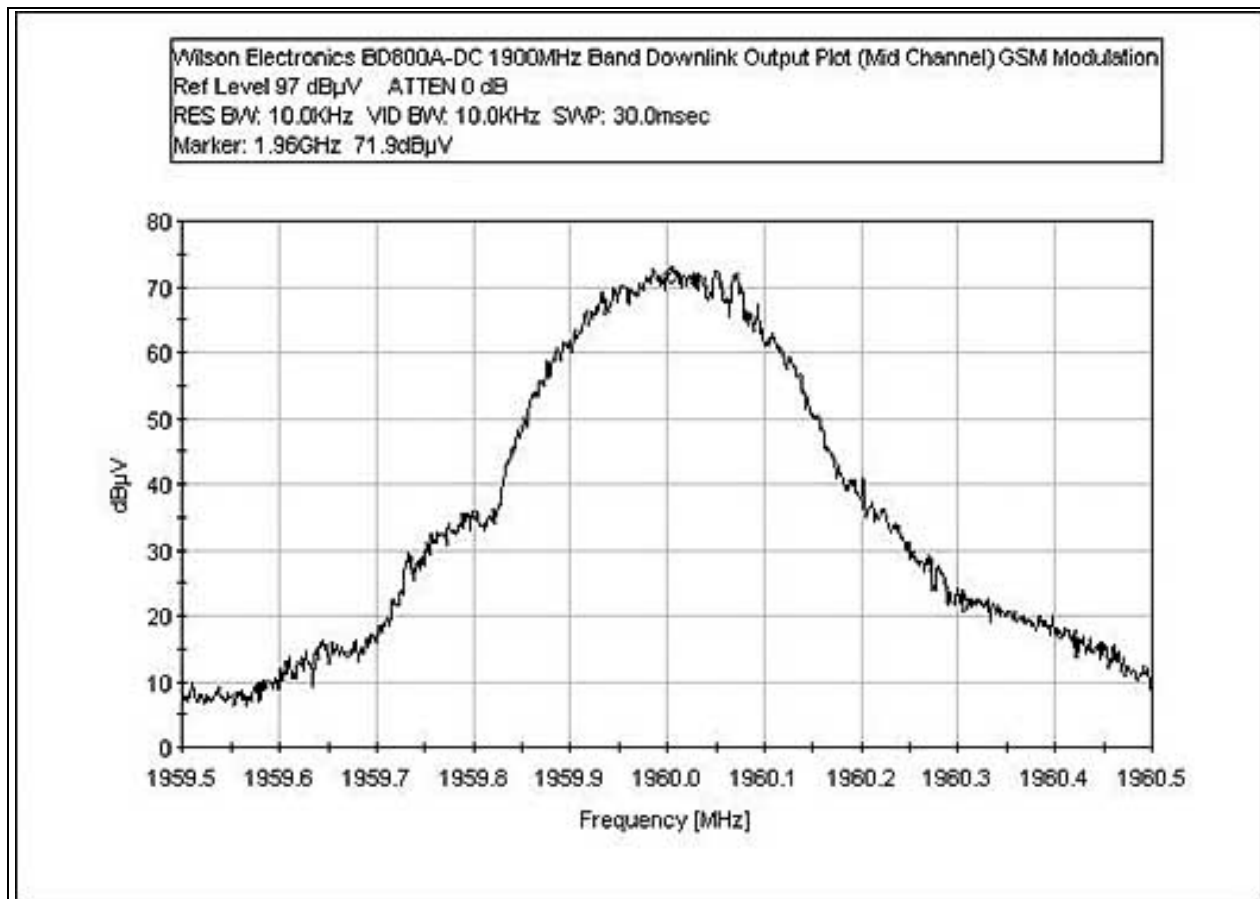
DOWNLINK OUTPUT PLOT CDMA HIGH CHANNEL - 1900 MHz



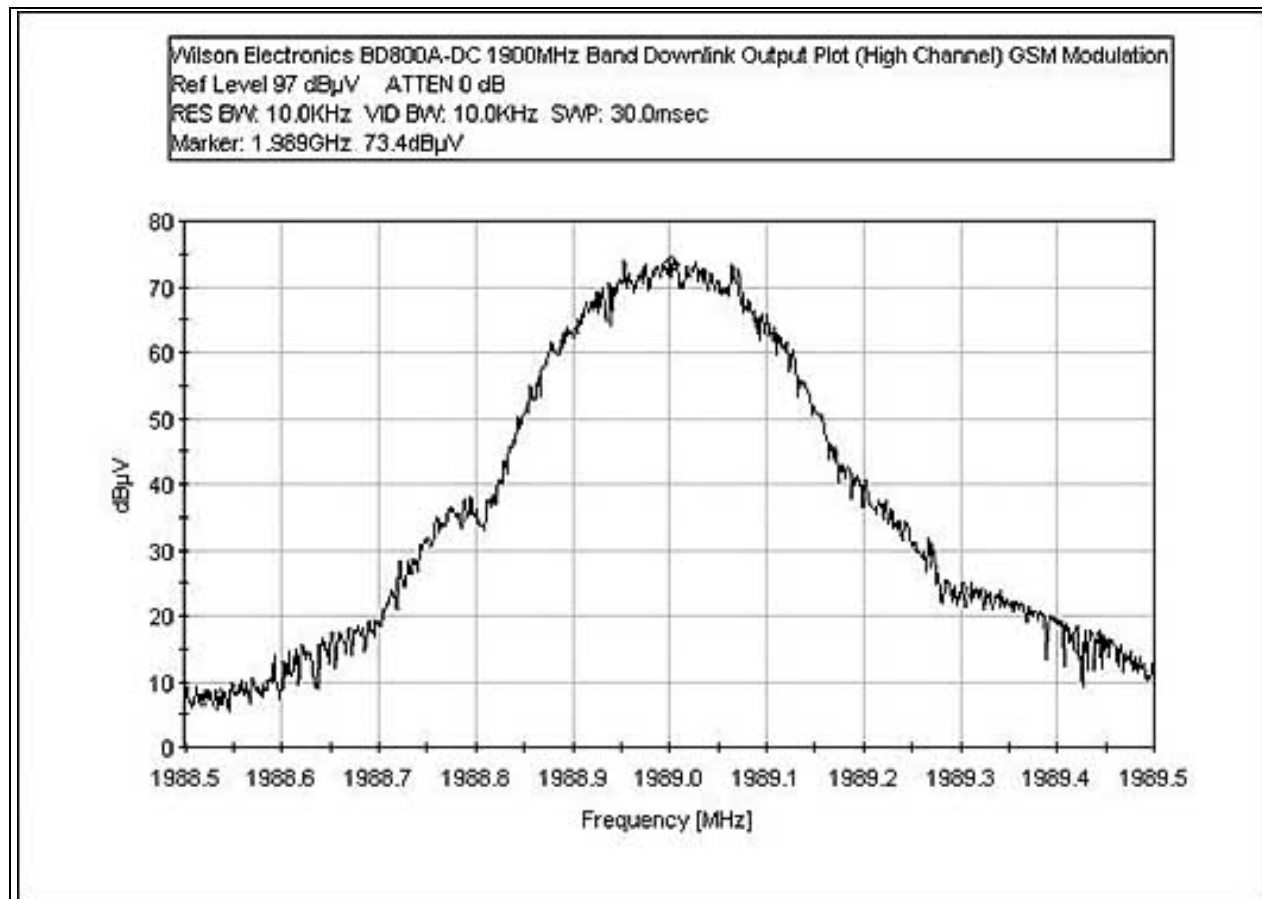
DOWNLINK OUTPUT PLOT GSM LOW CHANNEL - 1900 MHz



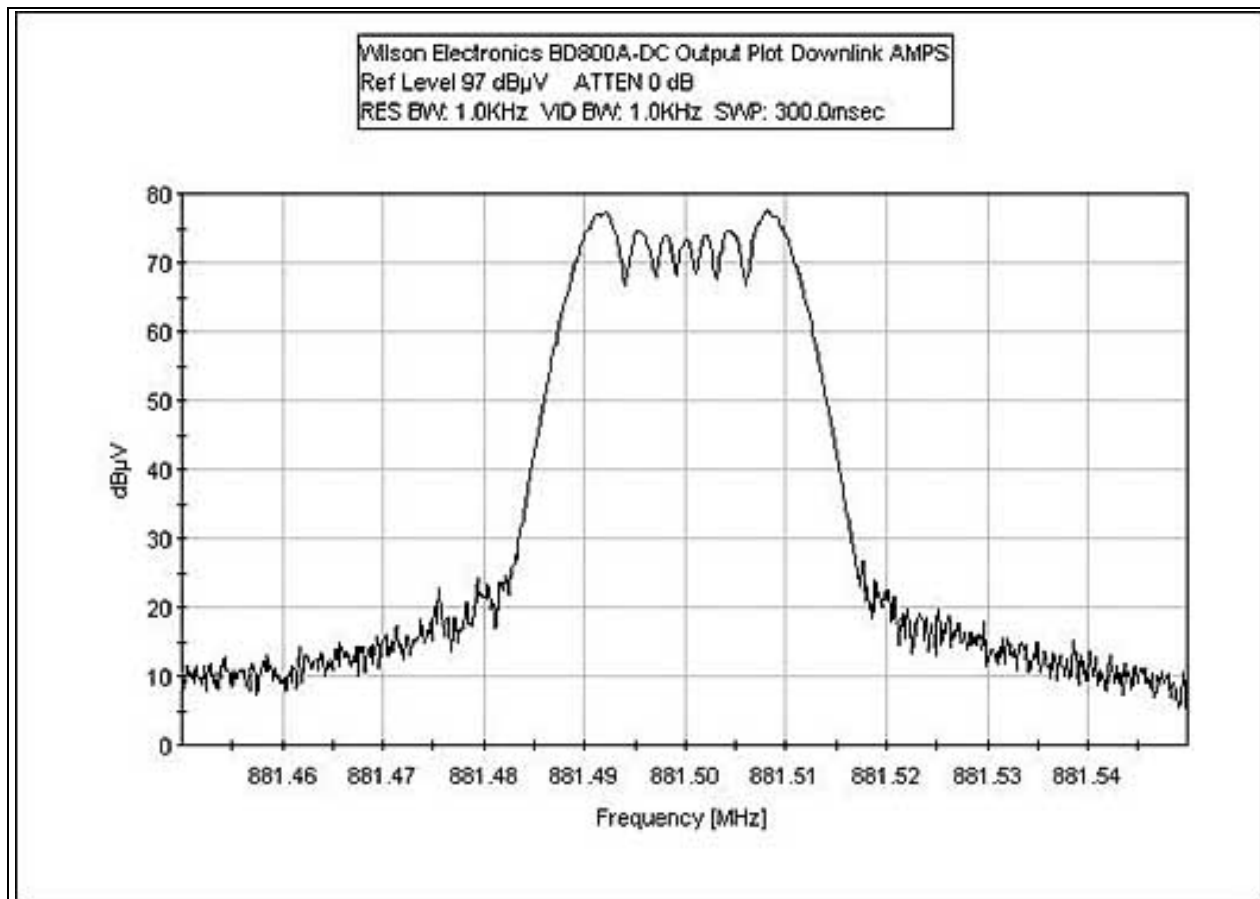
DOWNLINK OUTPUT PLOT GSM MID CHANNEL - 1900 MHz



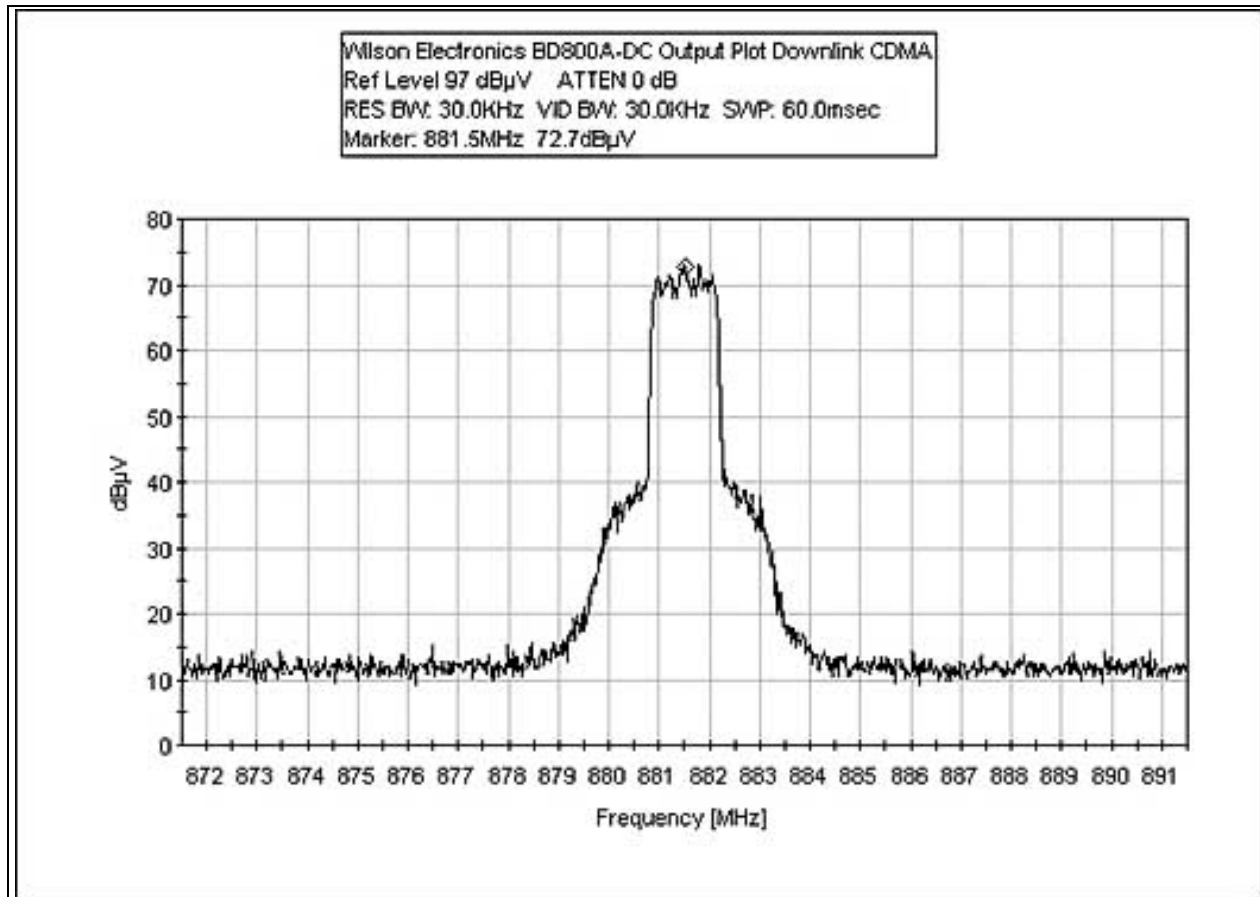
DOWNLINK OUTPUT PLOT GSM HIGH CHANNEL - 1900 MHz



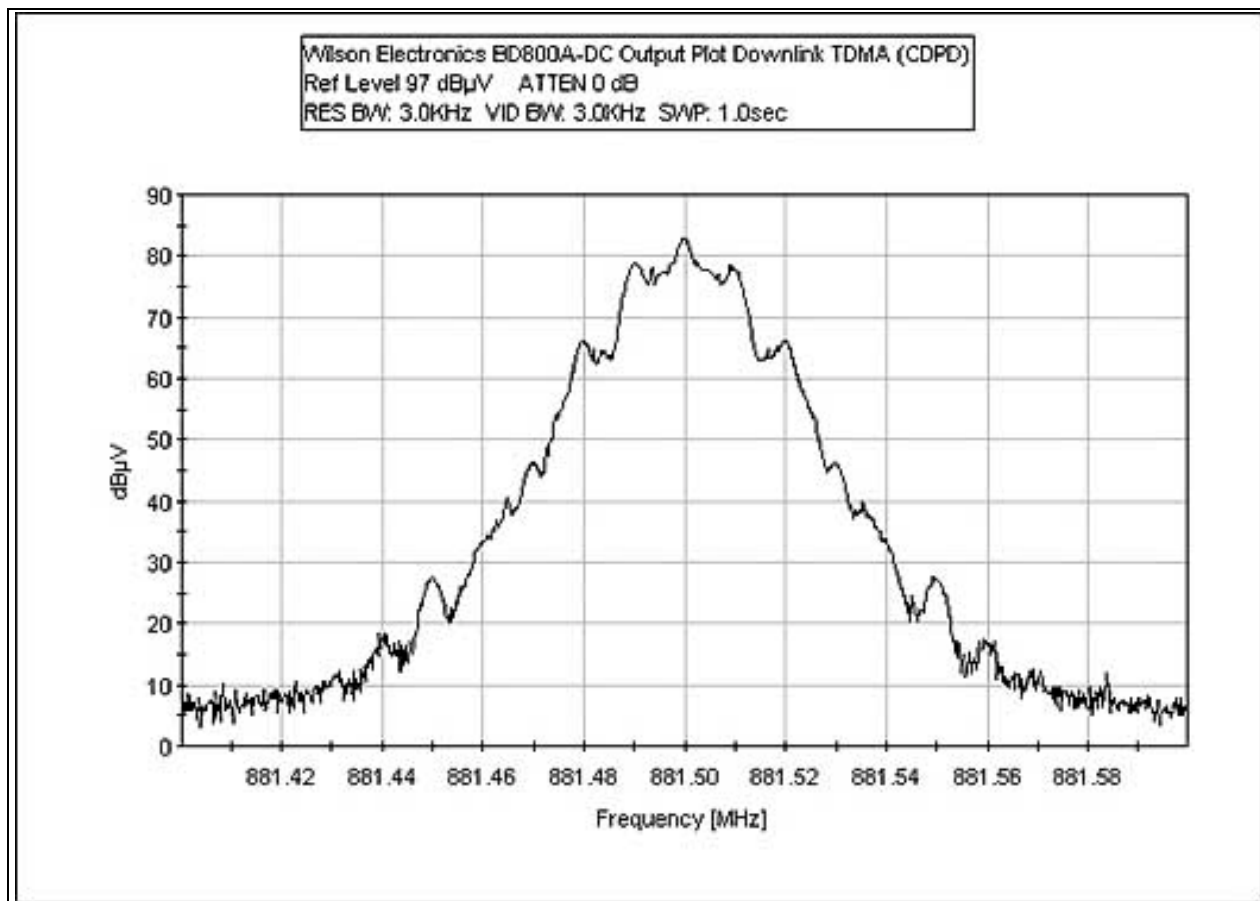
DOWNLINK OUTPUT PLOT AMPS



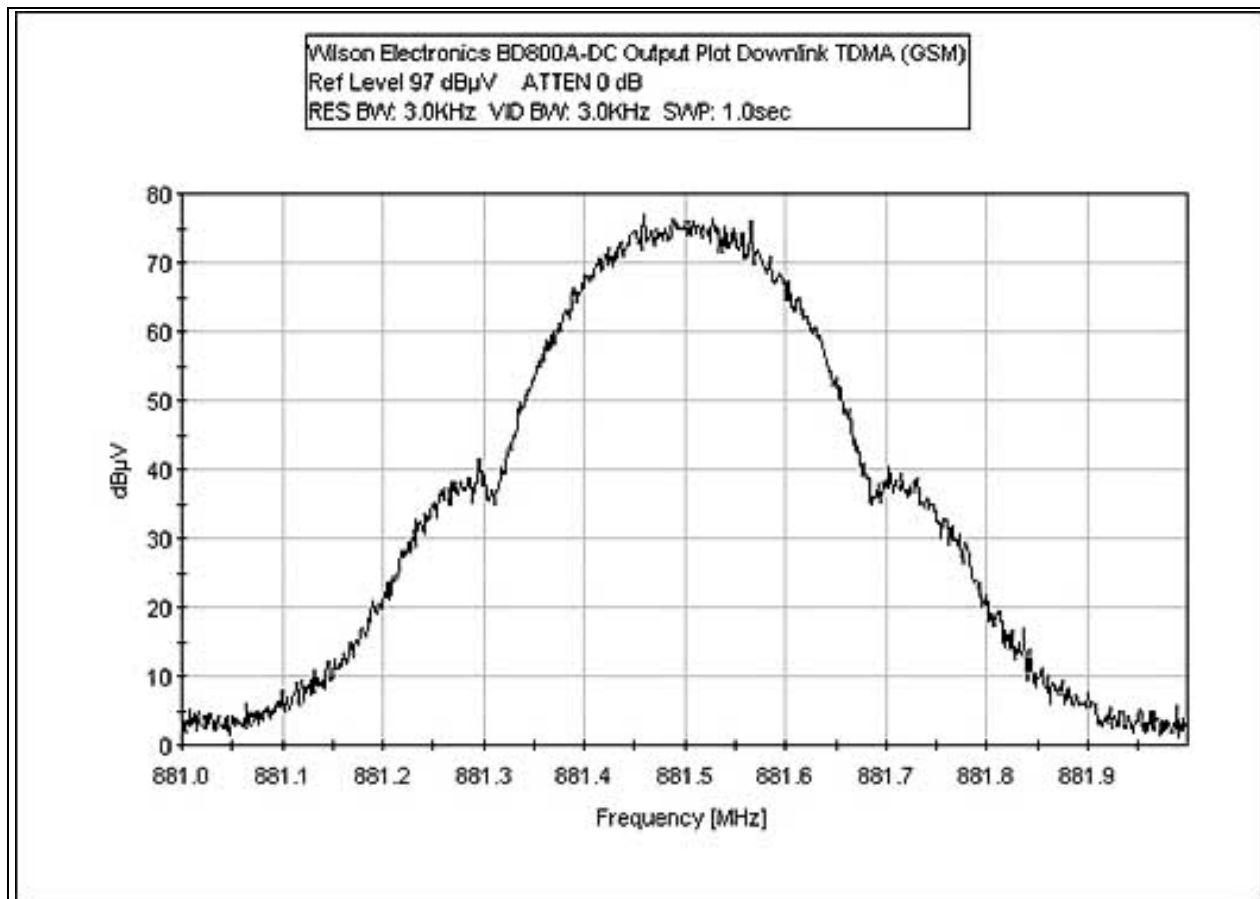
DOWNLINK OUTPUT PLOT CDMA



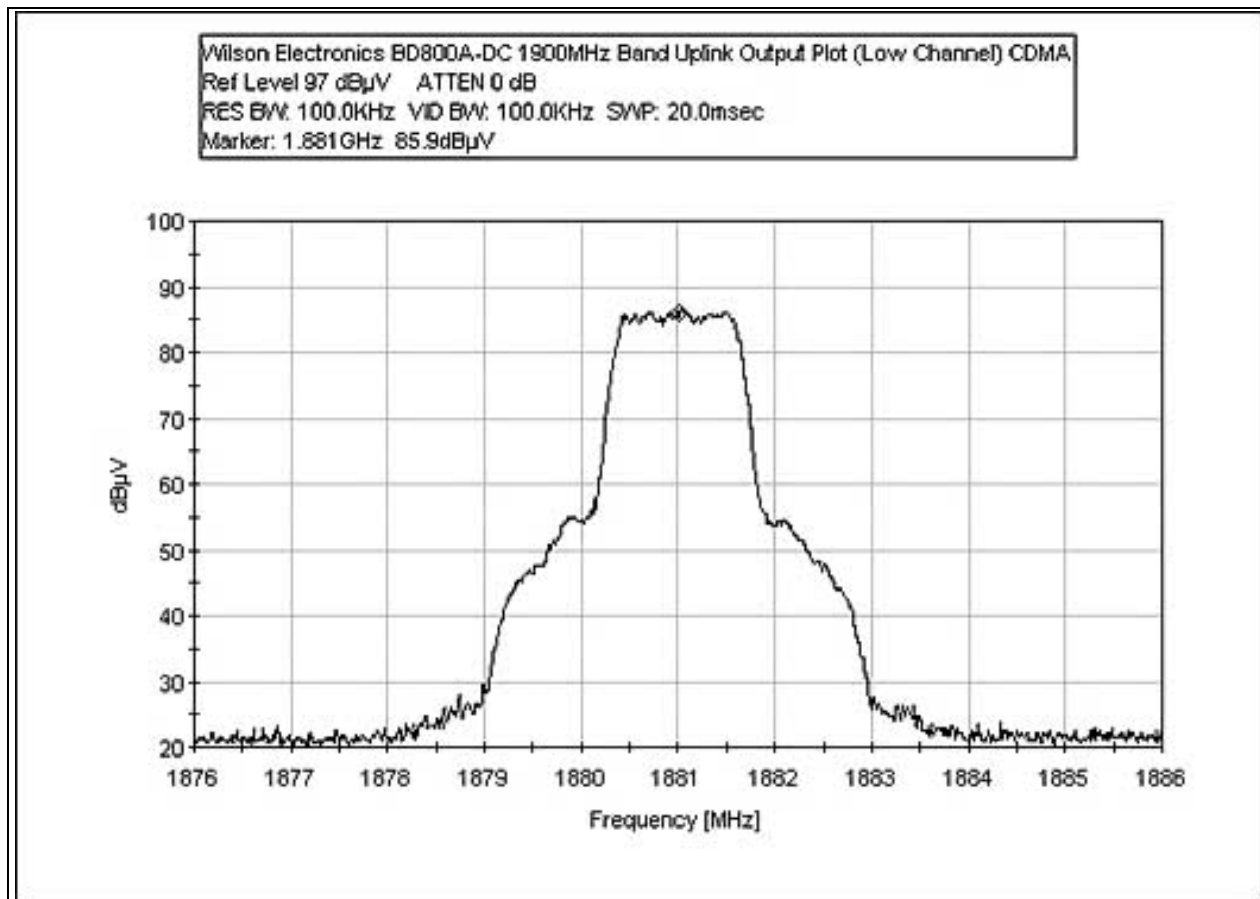
DOWNLINK OUTPUT PLOT TDMA (CDPD)



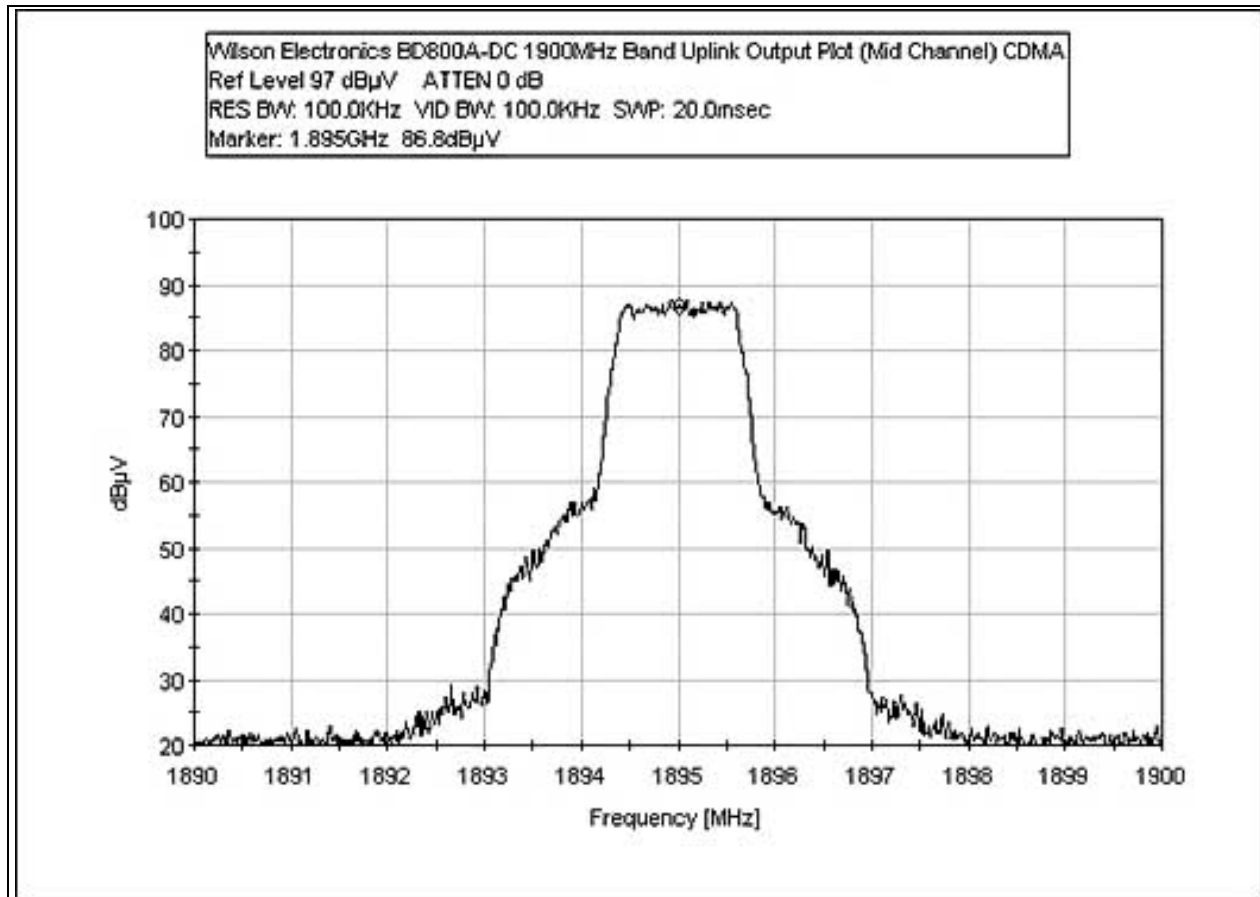
DOWNLINK OUTPUT PLOT TDMA (GSM)



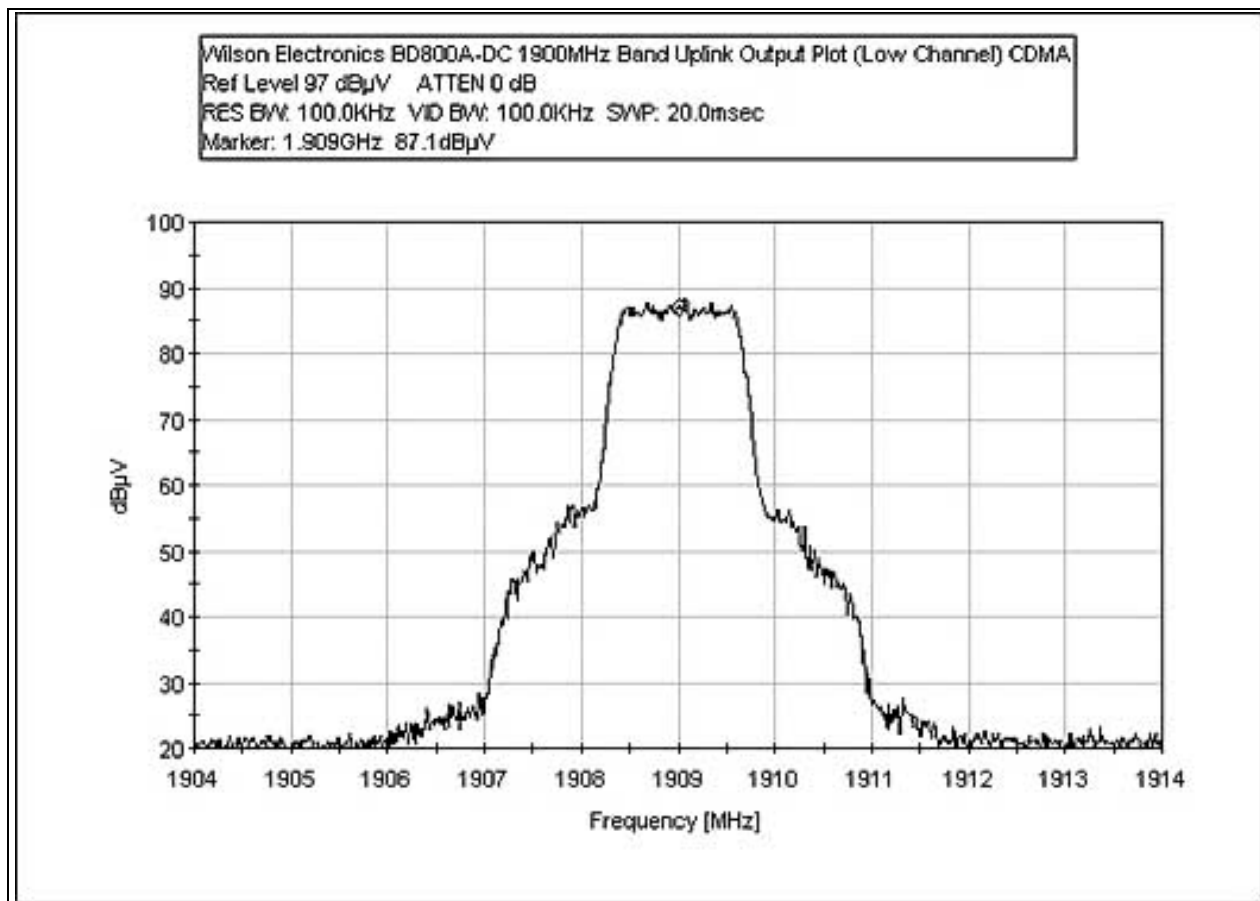
UPLINK OUTPUT PLOT CDMA LOW CHANNEL - 1900 MHz



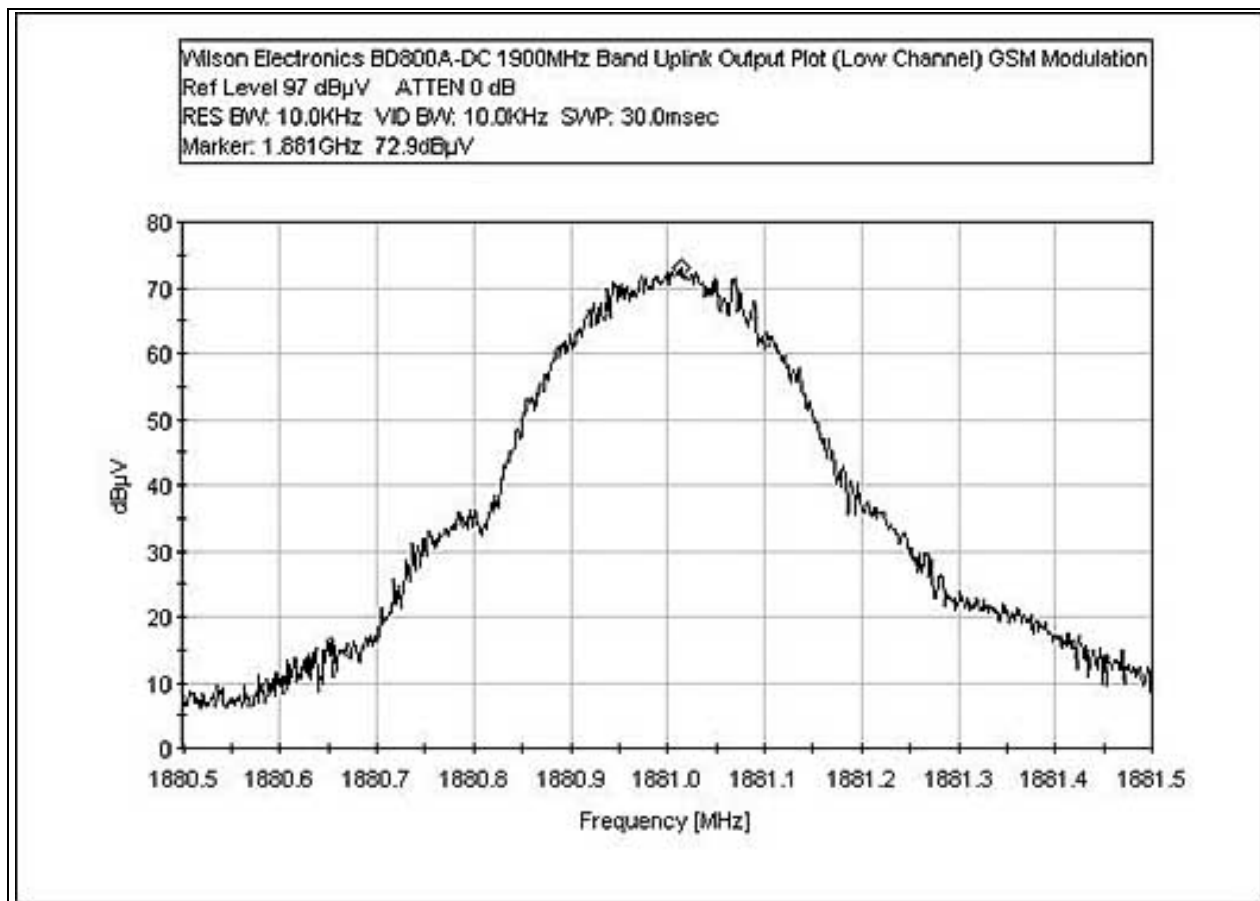
UPLINK OUTPUT PLOT CDMA MID CHANNEL - 1900 MHz



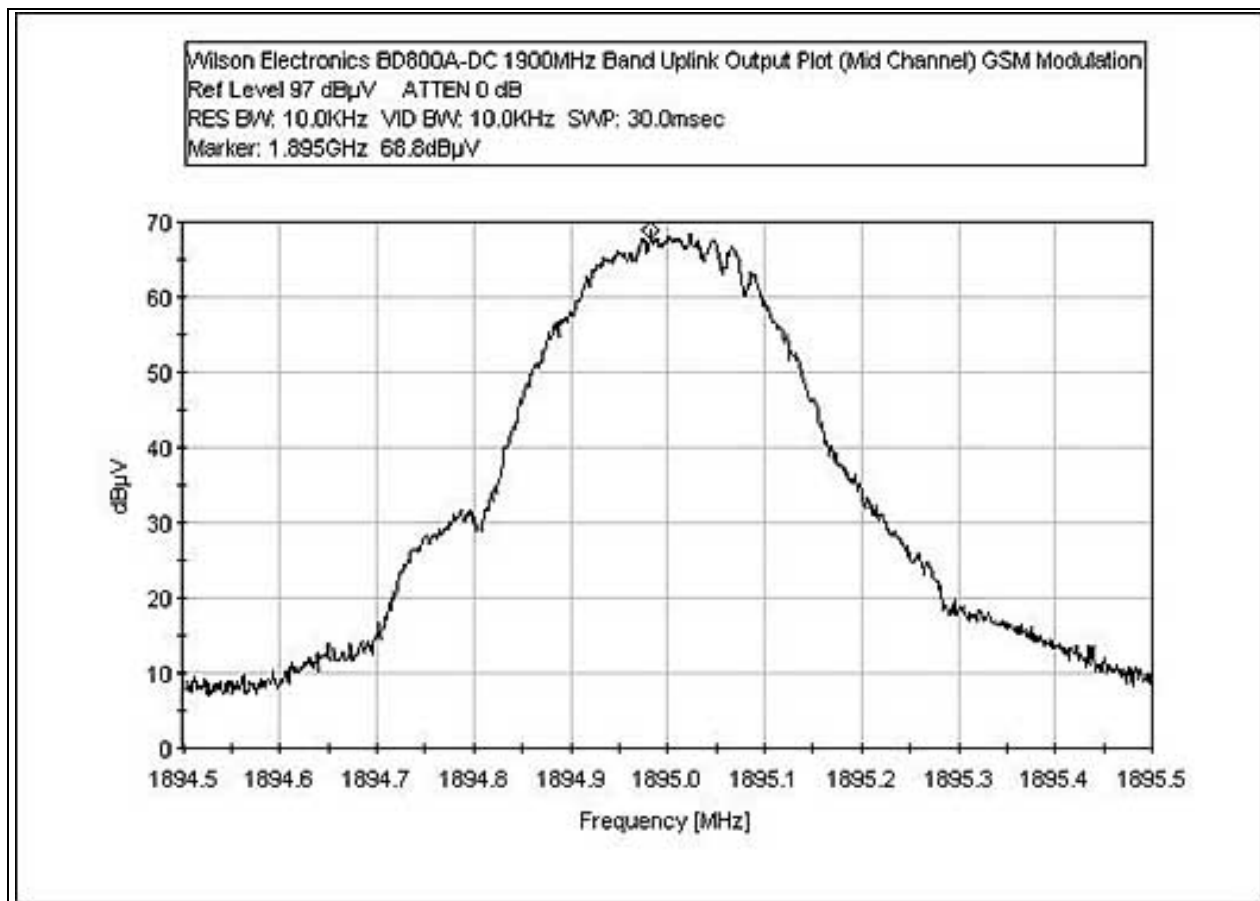
UPLINK OUTPUT PLOT CDMA HIGH CHANNEL - 1900 MHz



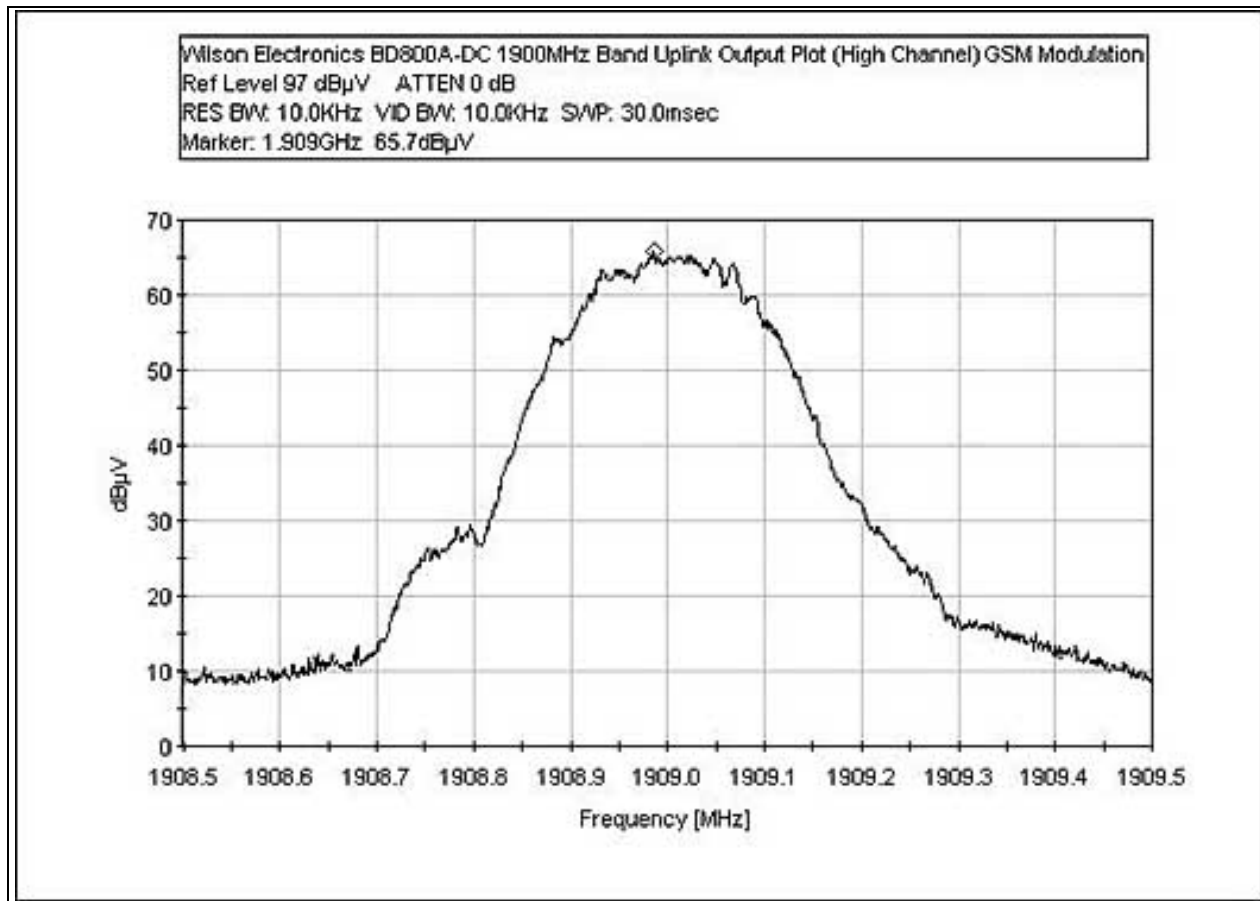
UPLINK OUTPUT PLOT GSM LOW CHANNEL - 1900 MHz



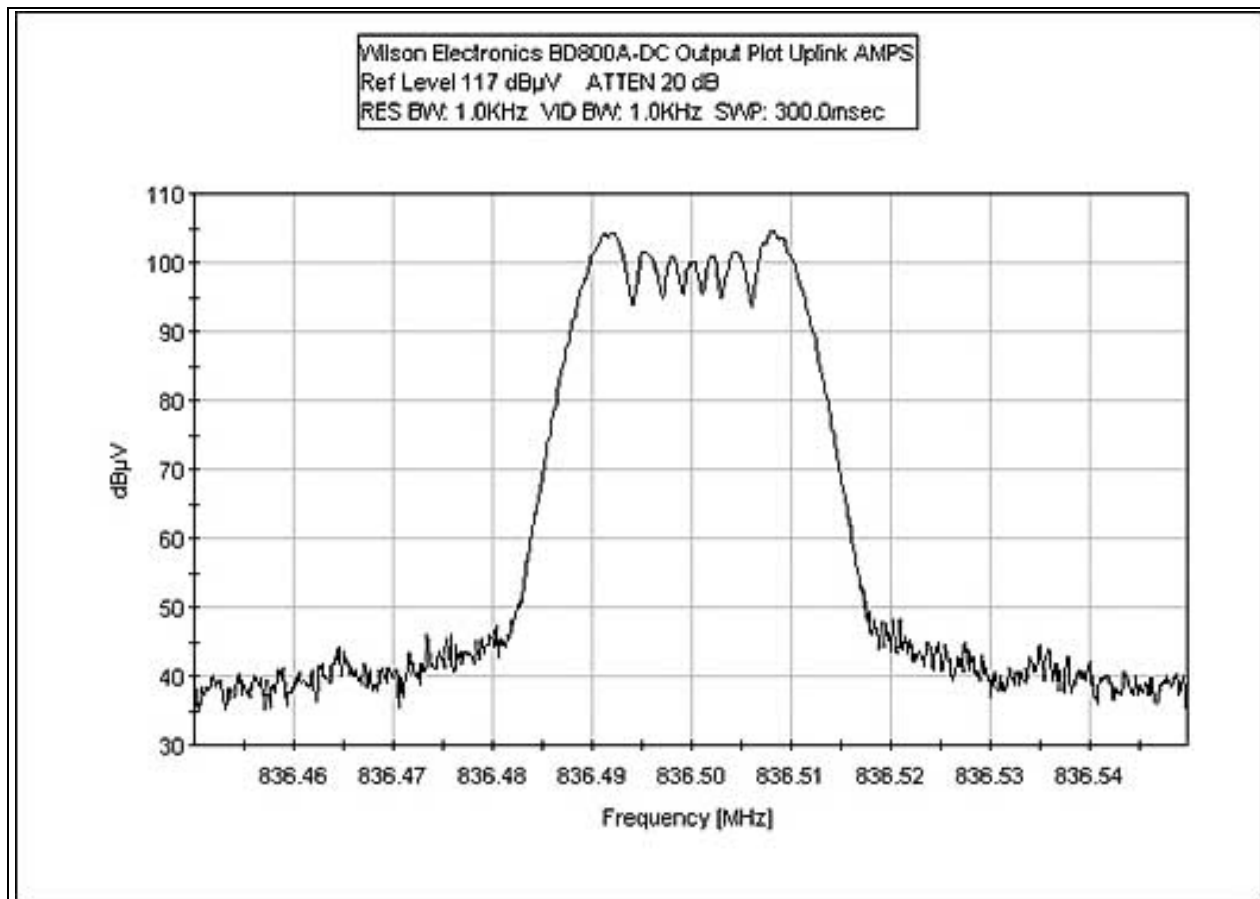
UPLINK OUTPUT PLOT GSM MID CHANNEL - 1900 MHz



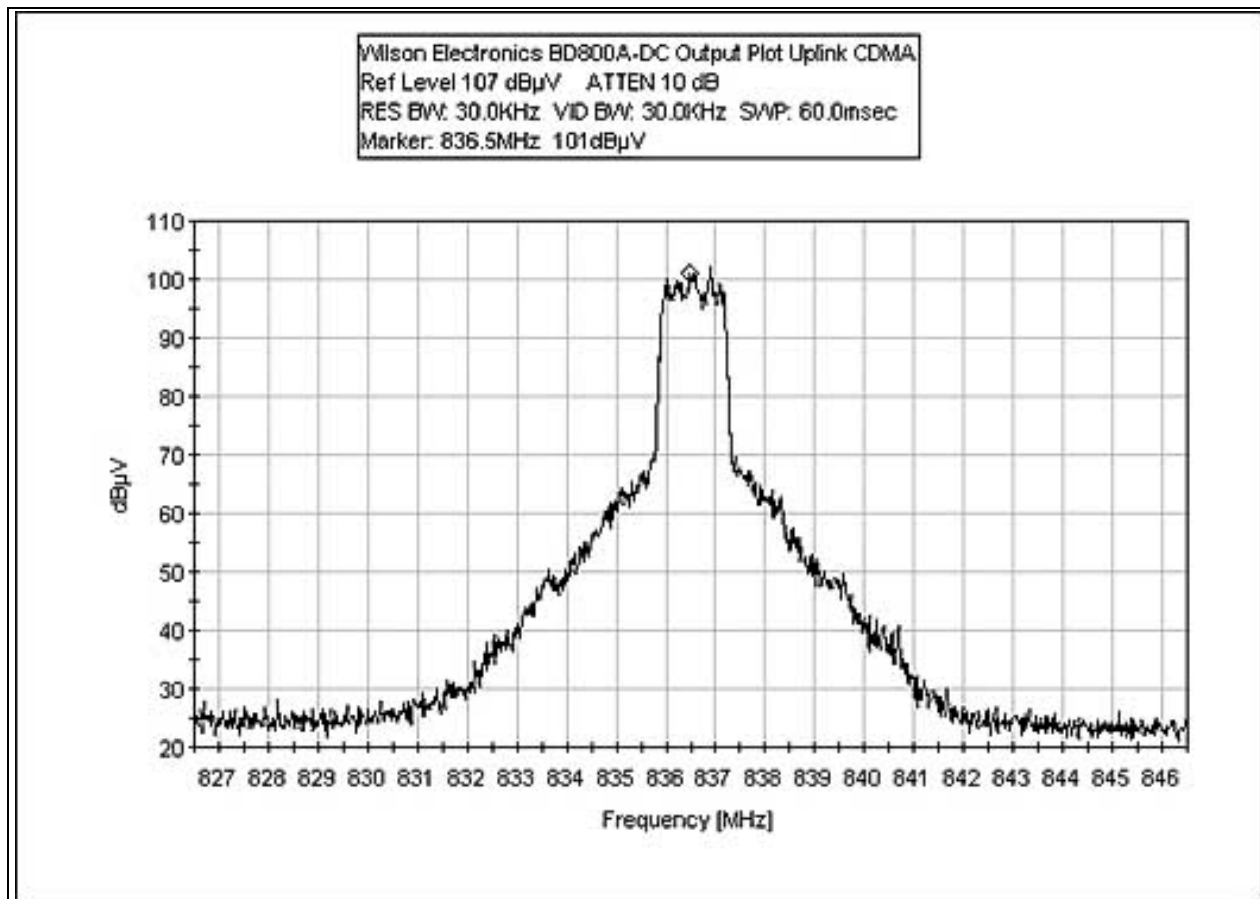
UPLINK OUTPUT PLOT GSM HIGH CHANNEL - 1900 MHz



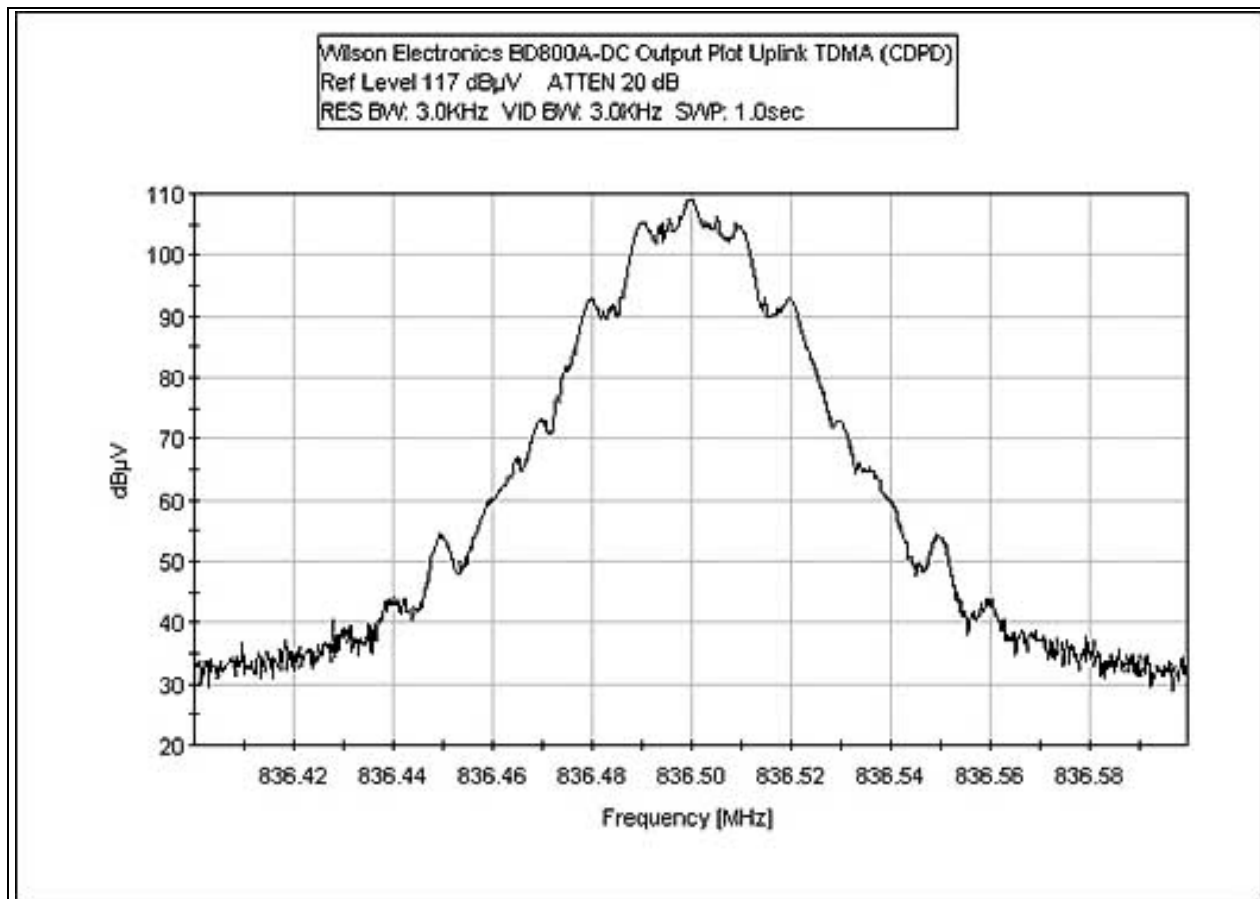
UPLINK OUTPUT PLOT AMPS



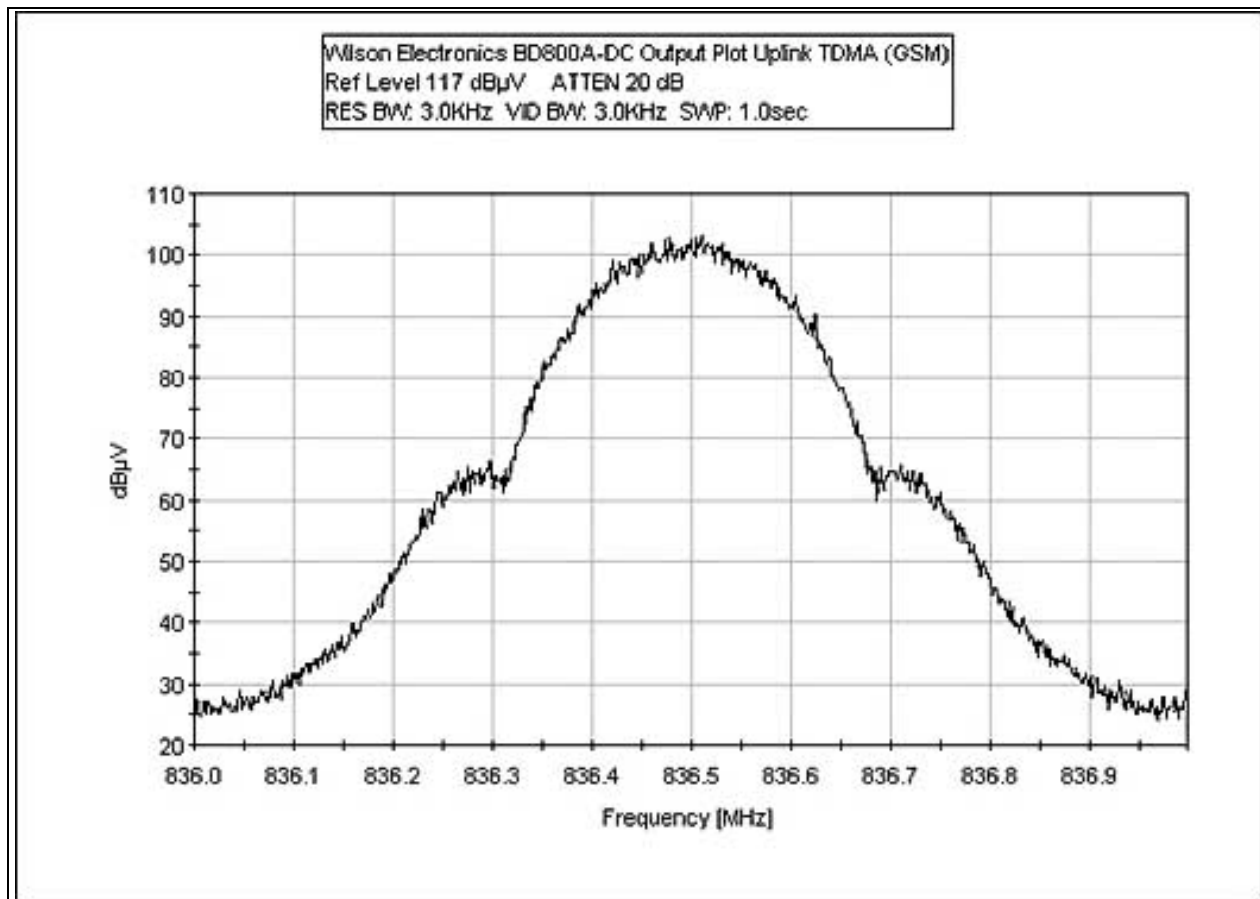
UPLINK OUTPUT PLOT CDMA



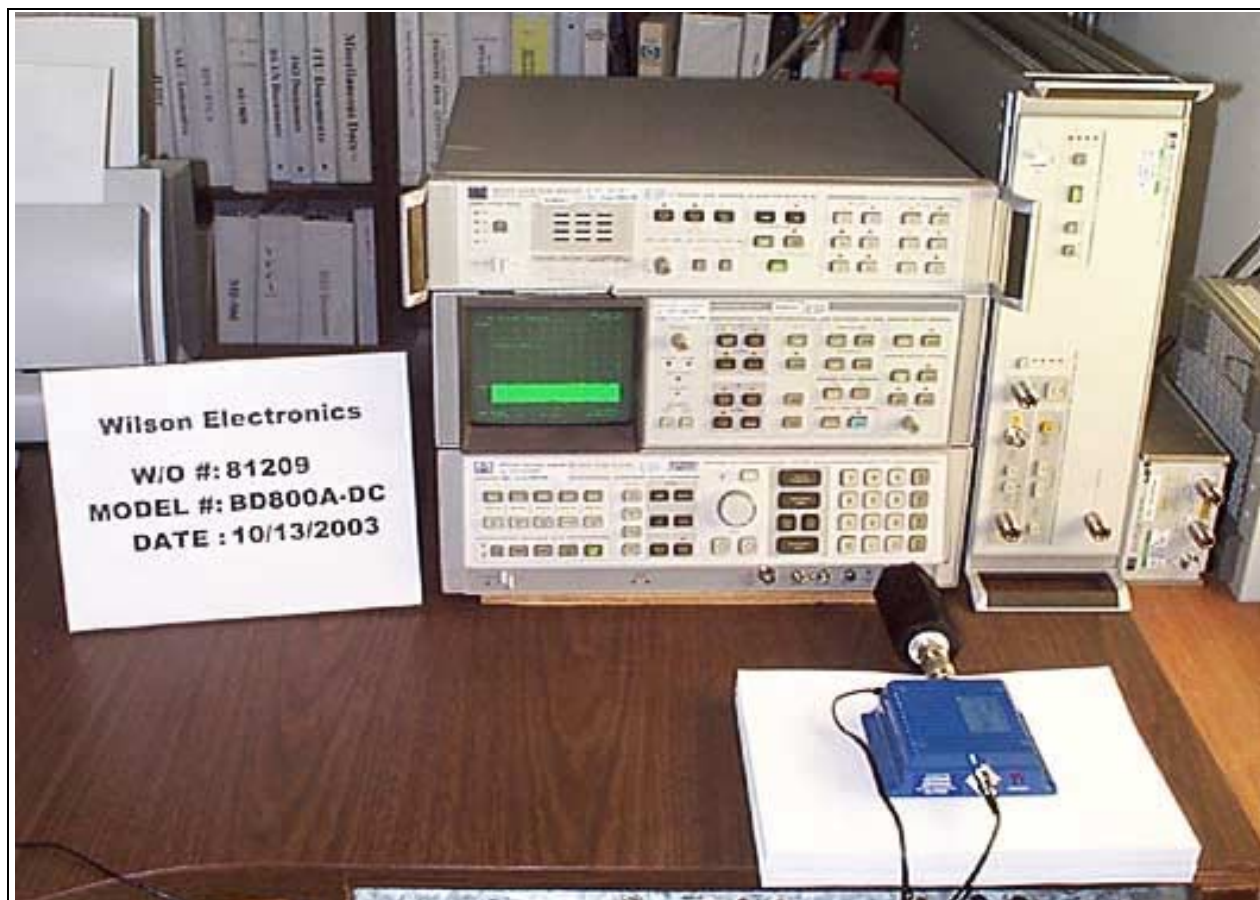
UPLINK OUTPUT PLOT TDMA (CDPD)



UPLINK OUTPUT PLOT TDMA (GSM)



PHOTOGRAPH SHOWING DIRECT CONNECT EMISSIONS

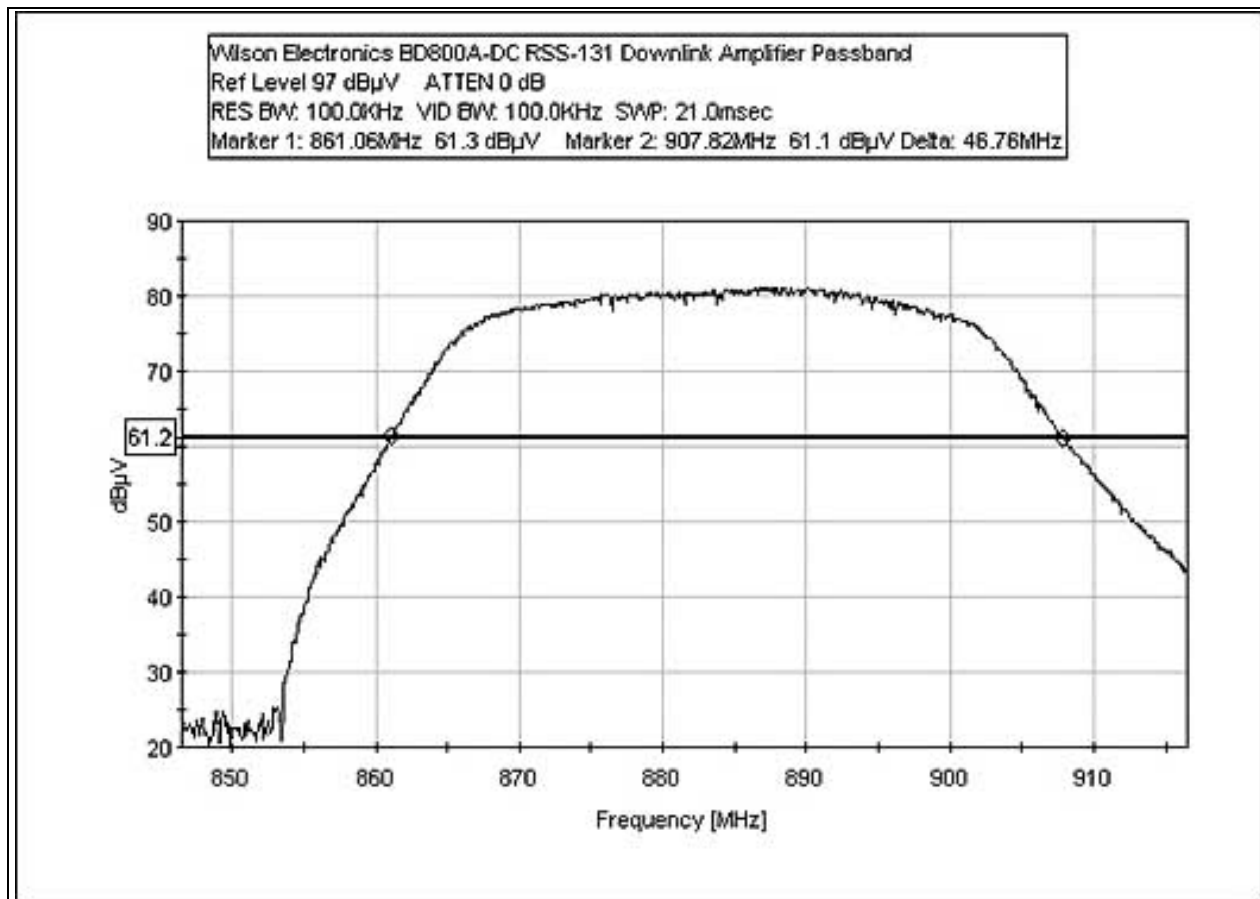


Test Equipment

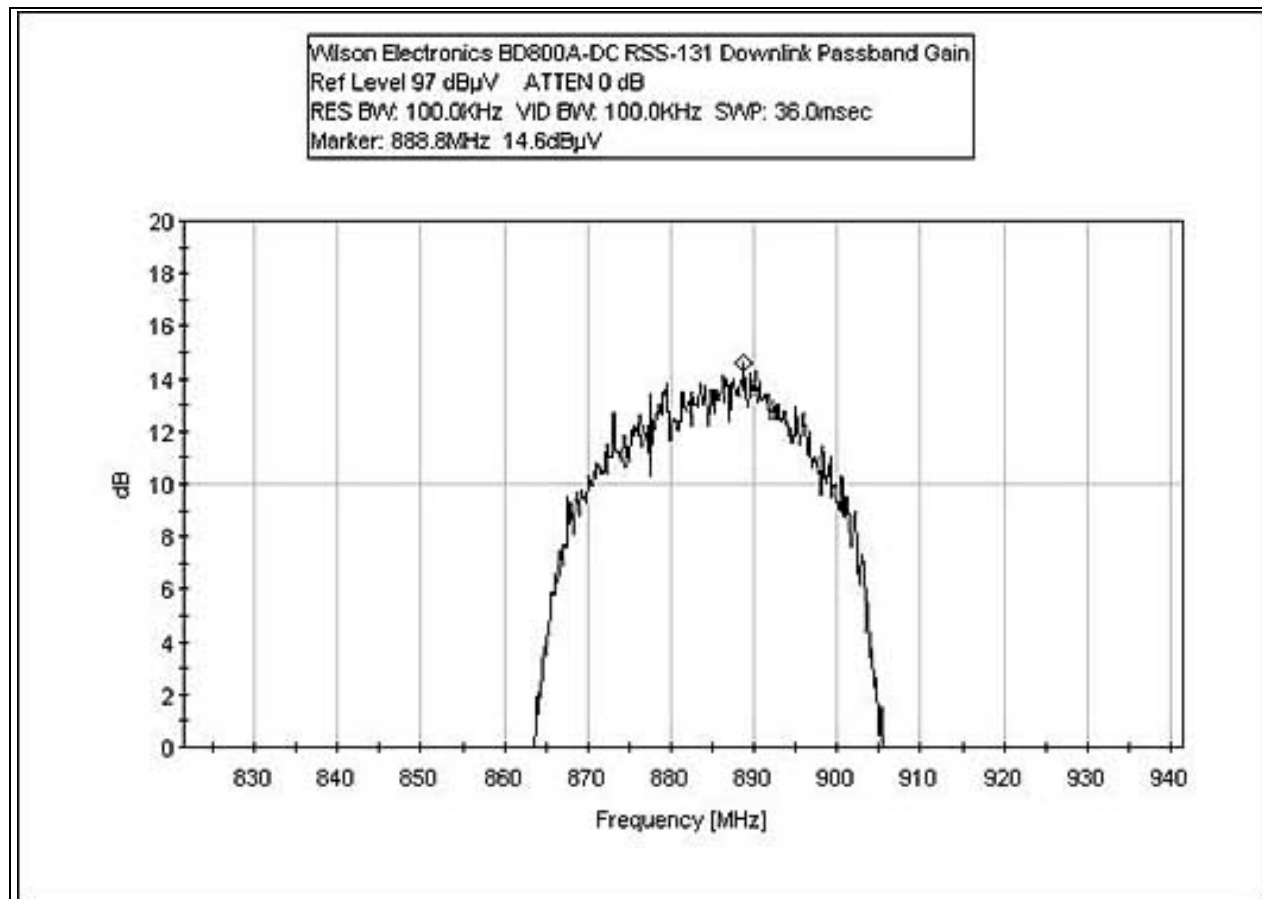
<i>Description</i>	<i>Asset #</i>	<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Cal Due</i>	<i>Cal Due</i>
Attenuator	P01577	Bird	25-AMFN-30	9724	5/9/03	5/8/04
RF Splitter / Combiner	P01313				NR	NR
Generator, Signal	01870	Marconi	2022D	119259/016	9/5/02	9/4/04
Generator, ESG	Avalon	HP	E4432B	US40052283	3/1/02	4/1/04
Generator, ESG	AES	HP	E4432B	US38330168	10/3/03	10/3/04
Spectrum Analyzer 100Hz - 22.5GHz	00490	HP	8566B	2209A01404	2/26/03	2/26/24
Spectrum Analyzer Display	00489	HP	8566B	2403A08241	2/26/03	2/26/04
Spectrum Analyzer QP Adapter	00478	HP	85650A	2811A01267	2/26/03	2/26/04

NR = Not Required

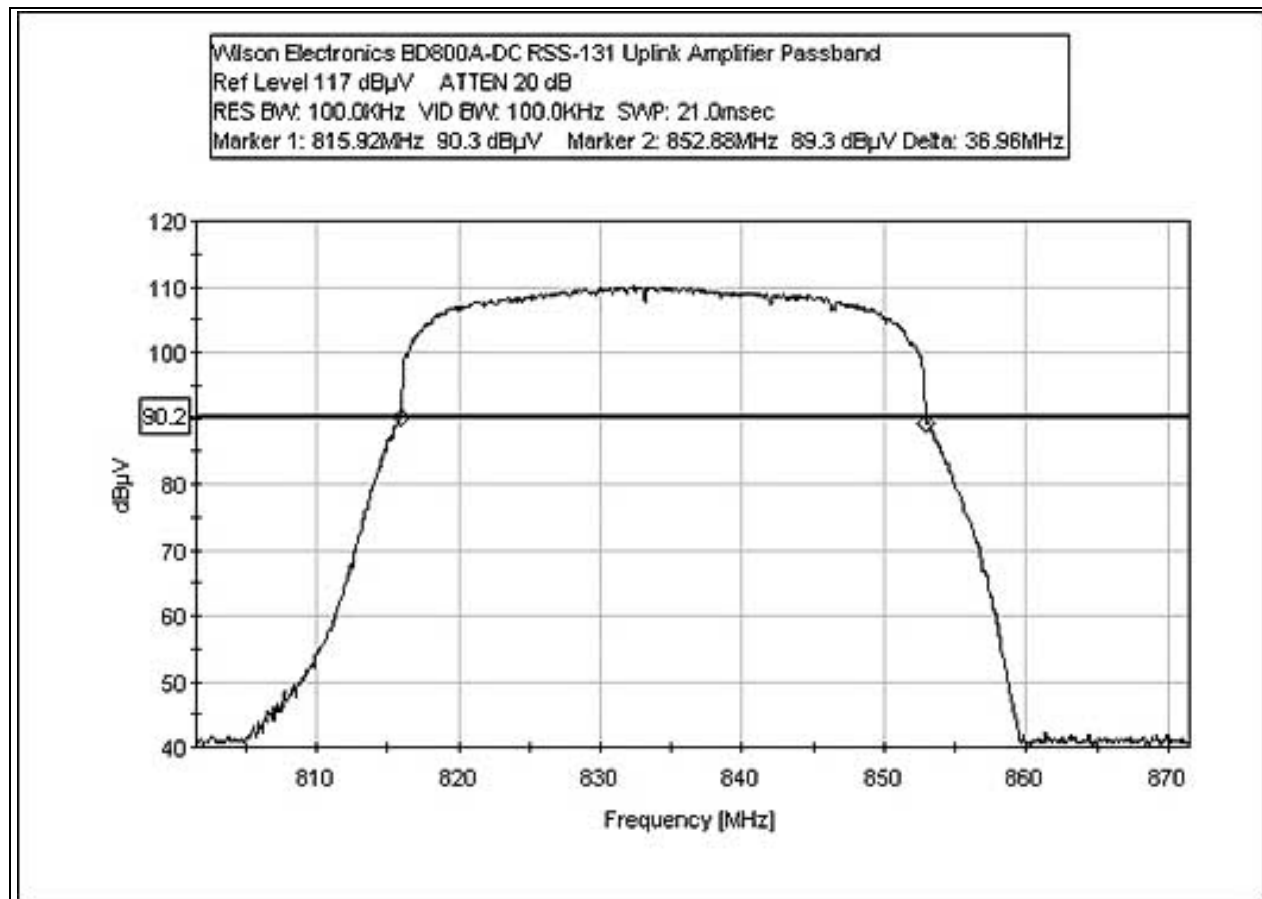
RSS 131 20 dB PASSBAND DOWNLINK



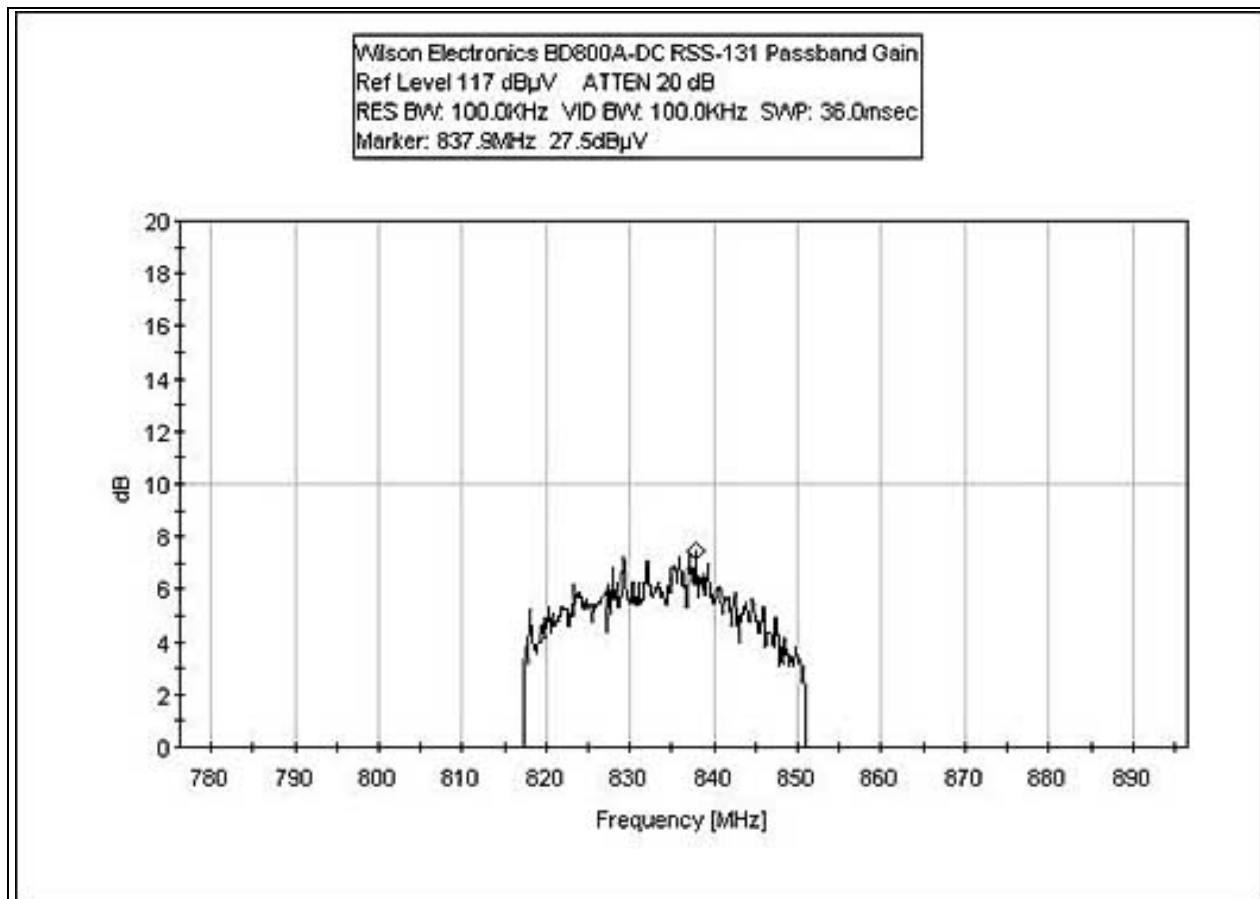
RSS 131 20 dB PASSBAND GAIN 0-20 DOWNLINK



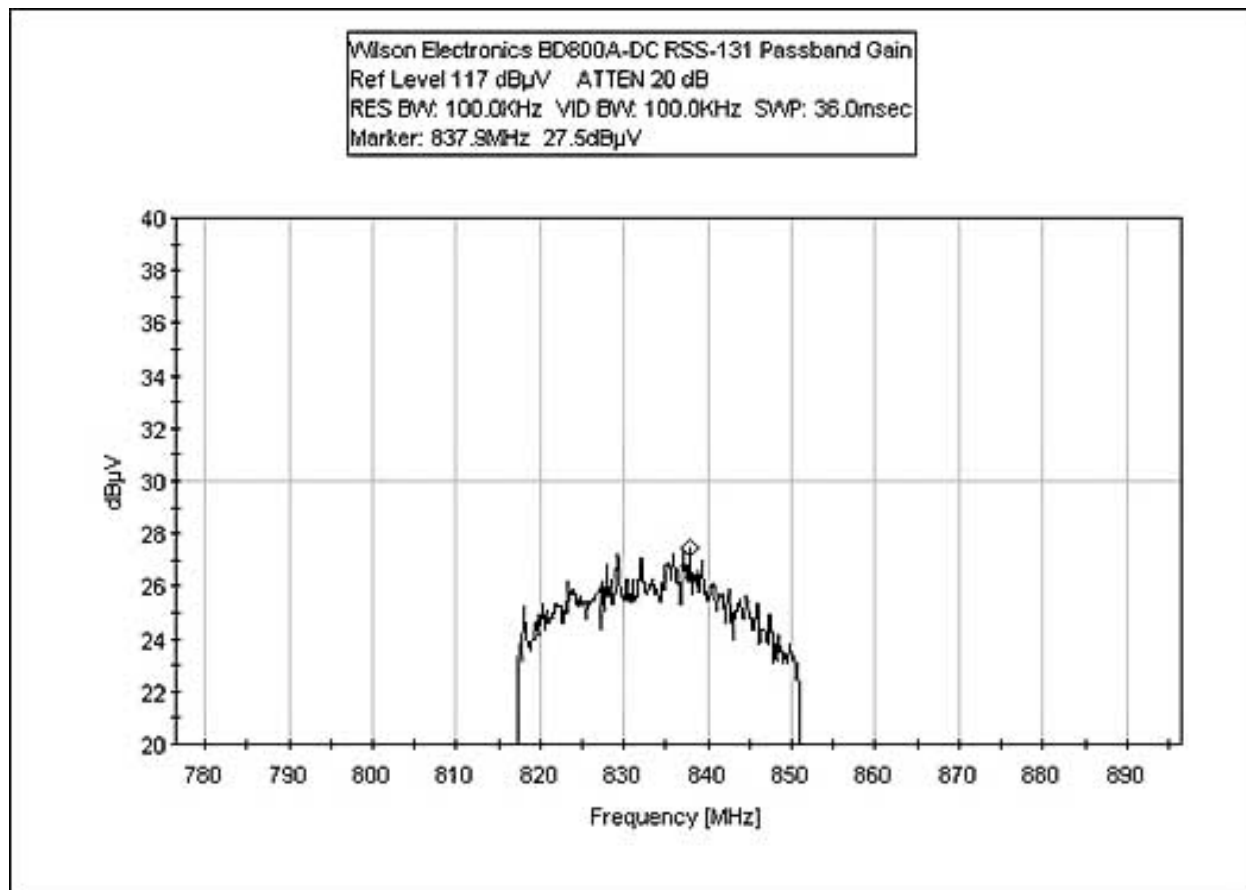
RSS 131 20 dB PASSBAND UPLINK



RSS 131 20 dB PASSBAND GAIN 0-20 UPLINK



RSS 131 20 dB PASSBAND GAIN 20-40 UPLINK



PHOTOGRAPH SHOWING DIRECT CONNECT EMISSIONS



Test Equipment

<i>Description</i>	<i>Asset #</i>	<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Cal Due</i>	<i>Cal Due</i>
Attenuator	P01577	Bird	25-AMFN-30	9724	5/9/03	5/8/04
RF Splitter / Combiner	P01313				NR	NR
Generator, Signal	01870	Marconi	2022D	119259/016	9/5/02	9/4/04
Generator, ESG	Avalon	HP	E4432B	US40052283	3/1/02	4/1/04
Generator, ESG	AES	HP	E4432B	US38330168	10/3/03	10/3/04
Spectrum Analyzer 100Hz - 22.5GHz	00490	HP	8566B	2209A01404	2/26/03	2/26/24
Spectrum Analyzer Display	00489	HP	8566B	2403A08241	2/26/03	2/26/04
Spectrum Analyzer QP Adapter	00478	HP	85650A	2811A01267	2/26/03	2/26/04

NR = Not Required