CKC LABORATORIES, INC. Testing the Future

ACCREDITED
Certicate Numbers
803.01 - 803.06
EMC/SAFETY

ADDENDUM TO WILSON ELECTRONICS, INC. TEST REPORT FC04-004

FOR THE

IN-BUILDING BIDIRECTIONAL AMPLIFIER, 801102

FCC PART 22 AND RSS 131

COMPLIANCE

DATE OF ISSUE: MARCH 4, 2004

PREPARED FOR:

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

P.O. No.: PWO824WB56
W.O. No.: 81644

PREPARED BY:

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

Date of test: December 11-31, 2003

Report No.: FC04-004A

TABLE OF CONTENTS

ADMINISTRATIVE INFORMATION

DATE OF TEST:	December 11-31, 2003
DATE OF RECEIPT:	December 11, 2003
PURPOSE OF TEST:	To demonstrate the compliance of the In-Building Bidirectional Amplifier, 801102 with the requirements for FCC Part 22 and RSS 131 devices. **Addendum A** is to update the calibration due dates on pages 94 & 95.
TEST METHOD:	FCC Part 22 and RSS 131
FREQUENCY RANGE TESTED:	30 MHz - 10 GHz
MANUFACTURER:	Wilson Electronics, Inc. 3301 East Deseret Drive St. George, UT 84790
REPRESENTATIVE:	Patrick Cook
TEST LOCATION:	CKC Laboratories, Inc. 5473A Clouds Rest, Mariposa, CA 95338 1120 Fulton Place, Fremont, CA 94539

SUMMARY OF RESULTS

As received, the Wilson Electronics, Inc. In-Building Bidirectional Amplifier, 801102 was found to be fully compliant with the following standards and specifications:

FCC Standard	FCC Section	Canadian Standard	Canadian Section	Test Description
N/A	N/A	RSS 131	5.4	External Controls
	2.1091	RSS 131	5.5	RF Exposure
N/A	N/A	RSS 131	6.1	Passband Gain and Bandwidth
47 CFR	22.913	RSS 131	6.2	RF Power Output
TIA/EIA	603	RSS 131	6.3	Non-Linearity (Intermodulation Attenuation)
47 CFR	22.917	RSS 131	6.4	Spurious Emissions Limitations
N/A	N/A	RSS 131	6.5	Frequency Stability (Band Translators)
	803.01 & 803.06		IC 3082-B	Site Filing No.

CONDITIONS FOR COMPLIANCE
No modifications to the EUT were necessary to comply.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:

Matthew Pettersen, EMC Test Engineer

Randy Clark, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT tested by CKC Laboratories was a production unit

EQUIPMENT UNDER TEST

Amplifier Power Supply

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

In-Building Bidirectional Amplifier

Manuf: Wilson Electronics, Inc.
Model: 801102
Serial: 001
FCC ID: pending

PERIPHERAL DEVICES

The EUT was not tested with peripheral devices.

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
F9W, GXW, FXW, F1D.

FCC 2.1033 (c)(5) FREQUENCY RANGE
824 – 894 MHz.

FCC 2.1033 (c)(6) OPERATING POWER
3 Watts.

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

FCC 2.1033 (c)(8) DC VOLTAGES
The necessary information is contained in a separate document.

FCC 2.1033 (c)(9) TUNE-UP PROCEDURE
The necessary information is contained in a separate document.

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
AMPS, CDMA, TDMA(CDPD), TDMA(GSM).

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

EUT is an in-building bi-directional amplifier 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. A specific antenna could be connected to either end of the amplifier at the same time.

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.

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

Downlink Output Ratings:
All: 10mW.

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

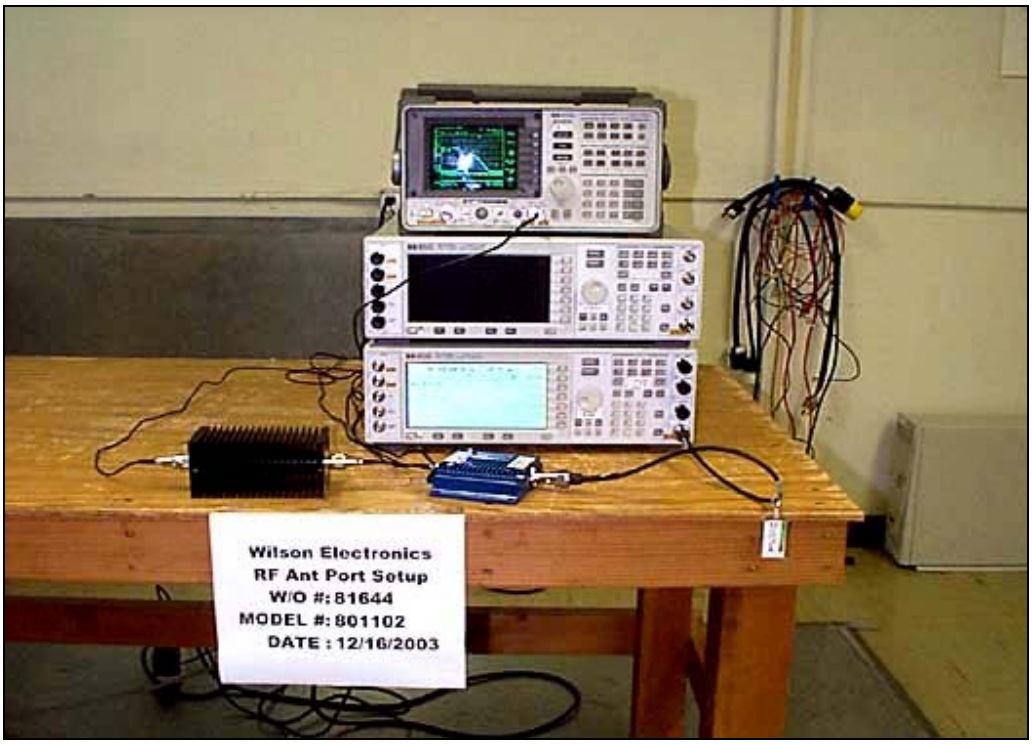
Downlink

Frequency (MHz)	*Modulation*	*Power Output (milliWatts)*
881.35	CDMA	9.98
870.10	CDMA	2.69
893.10	CDMA	3.64
892.97	GSM	2.71
880.97	GSM	9.20
869.97	GSM	2.06
893.10	CDPD	2.70
881.50	CDPD	9.73
870.10	CDPD	2.05
869.00	AMPS	2.34
893.80	AMPS	2.65
881.05	AMPS	10.0

Uplink

Frequency (MHz)	*Modulation*	*Power Output (Watts)*
828.20	CDMA	2.98
836.44	CDMA	2.66
848.42	CDMA	1.93
826.42	GSM	2.75
836.50	GSM	2.32
848.80	GSM	1.88
824.57	CDPD	2.42
828.05	CDPD	2.70
848.80	CDPD	1.81
824.57	AMPS	1.0
831.55	AMPS	1.0
848.80	AMPS	1.0

PHOTOGRAPH SHOWING DIRECT CONNECT



***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Not applicable to this unit.

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

Not applicable to this unit.

FCC 2.1033(c)(14)/2.1051 - INTERMODULATION ATTENUATION

Bandwidth settings used: RBW=1MHz, VBW=1MHz.

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer:	**Wilson Electronics**		
Specification:	**FCC 2.1051 Intermodulation Attenuation Low Edge**		
Work Order #:	**81644**	Date:	12/17/2003
Test Type:	**Spurious Emissions Antenna Terminals**	Time:	09:27:00
Equipment:	**In-building Bidirectional Amplifier**	Sequence#:	6
Manufacturer:	Wilson Electronics	Tested By:	Matthew Pettersen
Model:	801102		
S/N:	001		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Signal Generator E4432B	US38330168	10/03/2003	10/03/2004	0

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

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is an in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz – 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Intermodulation Attenuation. Two Signal Method.

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	882.000M	73.8	+30.3				+0.0	104.1	113.0 TDMA(CDPD)	-8.9	Direc

2	882.120M	73.4	+30.3	+0.0	103.7	113.0 AMPS	-9.3	Direc
3	881.870M	71.6	+30.3	+0.0	101.9	113.0 CDMA	-11.1	Direc
4	882.120M	71.2	+30.3	+0.0	101.5	113.0 TDMA(GSM)	-11.5	Direc
5	895.000M	37.8	+30.3	+0.0	68.1	94.0 TDMA(CDPD)	-25.9	Direc
6	895.000M	37.2	+30.3	+0.0	67.5	94.0 AMPS	-26.5	Direc
7	895.000M	32.5	+30.3	+0.0	62.8	94.0 TDMA(GSM)	-31.2	Direc
8	895.000M	42.5	+30.3	+0.0	72.8	113.0 CDMA	-40.2	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 2.1051 Intermodulation Attenuation Low Edge**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:01:39
Equipment: **In-building Bidirectional Amplifier** Sequence#: 8
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Signal Generator E4432B	US38330168	10/03/2003	10/03/2004	0

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

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz – 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Intermodulation Attenuation. Two Signal Method.

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	869.000M	73.4	+30.3				+0.0	103.7	113.0 AMPS	-9.3	Direc
2	869.750M	72.0	+30.3				+0.0	102.3	113.0 TDMA(CDPD)	-10.7	Direc
3	869.870M	71.9	+30.3				+0.0	102.2	113.0 TDMA(GSM)	-10.8	Direc

4	872.500M	70.9	+30.3	+0.0	101.2	113.0 CDMA	-11.8	Direc
5	875.000M	45.8	+30.3	+0.0	76.1	94.0 CDMA	-17.9	Direc
6	877.000M	42.6	+30.3	+0.0	72.9	94.0 AMPS	-21.1	Direc
7	875.250M	41.5	+30.3	+0.0	71.8	94.0 TDMA(CDPD)	-22.2	Direc
8	875.250M	41.2	+30.3	+0.0	71.5	94.0 TDMA(GSM)	-22.5	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 2.1051 Intermodulation Attenuation High Edge**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 09:41:17
Equipment: **In-building Bidirectional Amplifier** Sequence#: 7
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Signal Generator E4432B	US38330168	10/03/2003	10/03/2004	0

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

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz – 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Intermodulation Attenuation. Two Signal Method.

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	882.000M	73.2	+30.3				+0.0	103.5	113.0 TDMA(GSM)	-9.5	Direc
2	882.000M	73.2	+30.3				+0.0	103.5	113.0 AMPS	-9.5	Direc
3	882.000M	73.1	+30.3				+0.0	103.4	113.0 TDMA(CDPD)	-9.6	Direc

4	882.000M	71.9	+30.3	+0.0	102.2	113.0 CDMA	-10.8	Direc
5	870.870M	45.6	+30.3	+0.0	75.9	94.0 CDMA	-18.1	Direc
6	870.000M	43.9	+30.3	+0.0	74.2	94.0 TDMA(GSM)	-19.8	Direc
7	870.000M	43.8	+30.3	+0.0	74.1	94.0 AMPS	-19.9	Direc
8	870.000M	43.7	+30.3	+0.0	74.0	94.0 TDMA(CDPD)	-20.0	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 2.1051 Intermod Atten Low Edge-Uplink**
Work Order #: **81644** Date: 12/16/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 15:28:39
Equipment: **In-building Bidirectional Amplifier** Sequence#: 3
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Signal Generator E4432B	US38330168	10/03/2003	10/03/2004	0

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

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Intermodulation Attenuation. Two Signal Method.

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	847.500M	63.5	+30.4				+0.0	93.9	94.0 TDMA (CDPD)	-0.1	Direc
2	847.700M	62.7	+30.4				+0.0	93.1	94.0 AMPS	-0.9	Direc
3	847.900M	62.4	+30.4				+0.0	92.8	94.0 TDMA (GSM)	-1.2	Direc
4	848.200M	54.2	+30.4				+0.0	84.6	94.0 CDMA	-9.4	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 2.1051 Intermod Atten Low Close Edge**
Work Order #: **81644** Date: 12/16/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 16:43:21
Equipment: **In-building Bidirectional Amplifier** Sequence#: 5
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Signal Generator E4432B	US38330168	10/03/2003	10/03/2004	0

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

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Intermodulation Attenuation. Two Signal Method.

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	830.080M	62.2	+30.4				+0.0	92.6	94.0 TDMA (GSM)	-1.4	Direc
2	830.080M	60.8	+30.4				+0.0	91.2	94.0 TDMA(CDPD)	-2.8	Direc

3	823.980M	59.7	+30.4	+0.0	90.1	94.0	-3.9	Direc TDMA(CDPD)
4	823.980M	58.5	+30.4	+0.0	88.9	94.0	-5.1	Direc TDMA (GSM)
5	830.080M	55.3	+30.4	+0.0	85.7	94.0	-8.3	Direc CDMA
6	823.900M	52.2	+30.4	+0.0	82.6	94.0	-11.4	Direc CDMA
7	823.980M	33.7	+30.4	+0.0	64.1	94.0	-29.9	Direc AMPS
8	830.080M	23.1	+30.4	+0.0	53.5	94.0	-40.5	Direc AMPS

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 2.1051 Intermod Attenuation High Edge**
Work Order #: **81644** Date: 12/16/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 15:41:42
Equipment: **In-building Bidirectional Amplifier** Sequence#: 4
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Signal Generator E4432B	US38330168	10/03/2003	10/03/2004	0

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

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Intermodulation Attenuation. Two Signal Method.

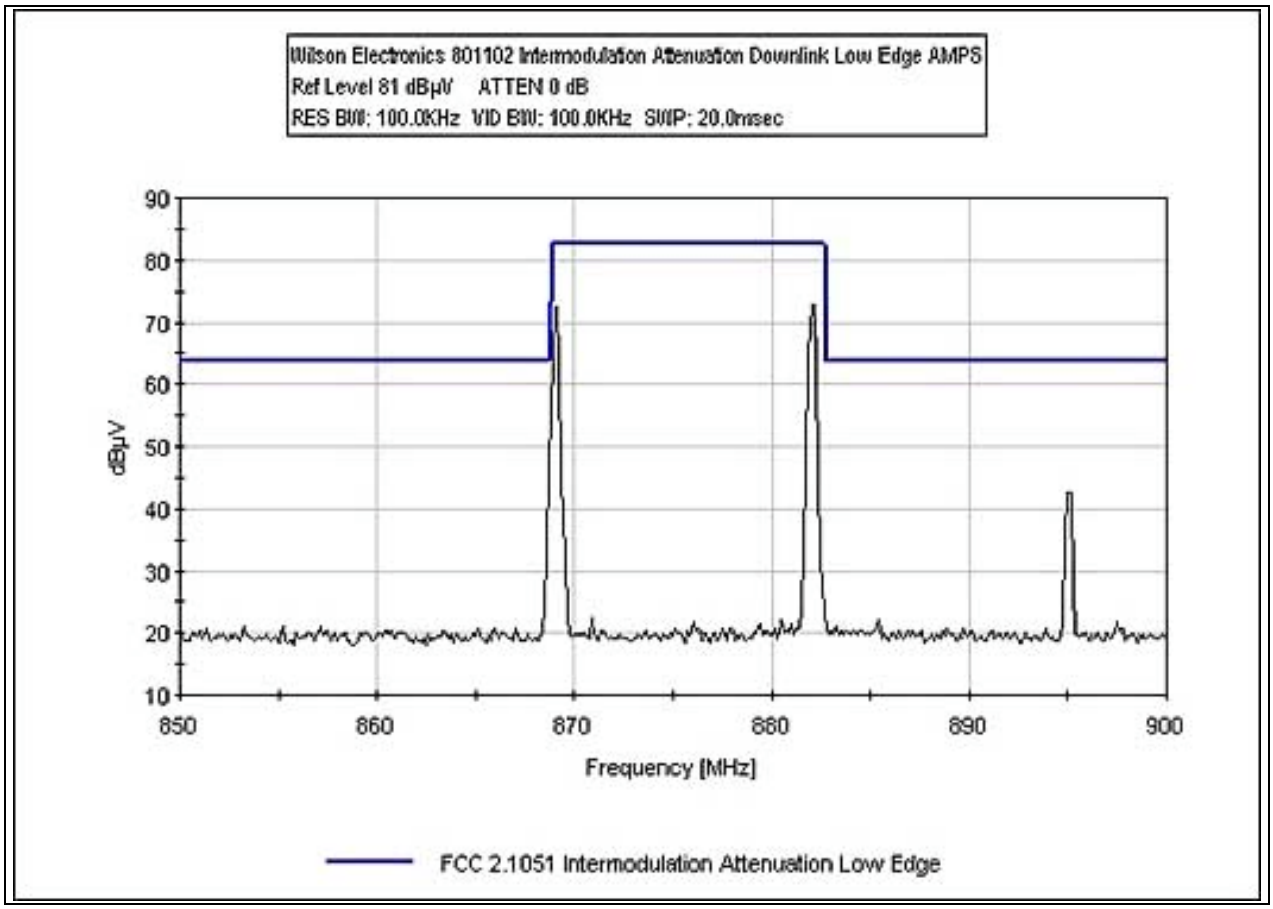
Transducer Legend:

T1=Pad 30dB

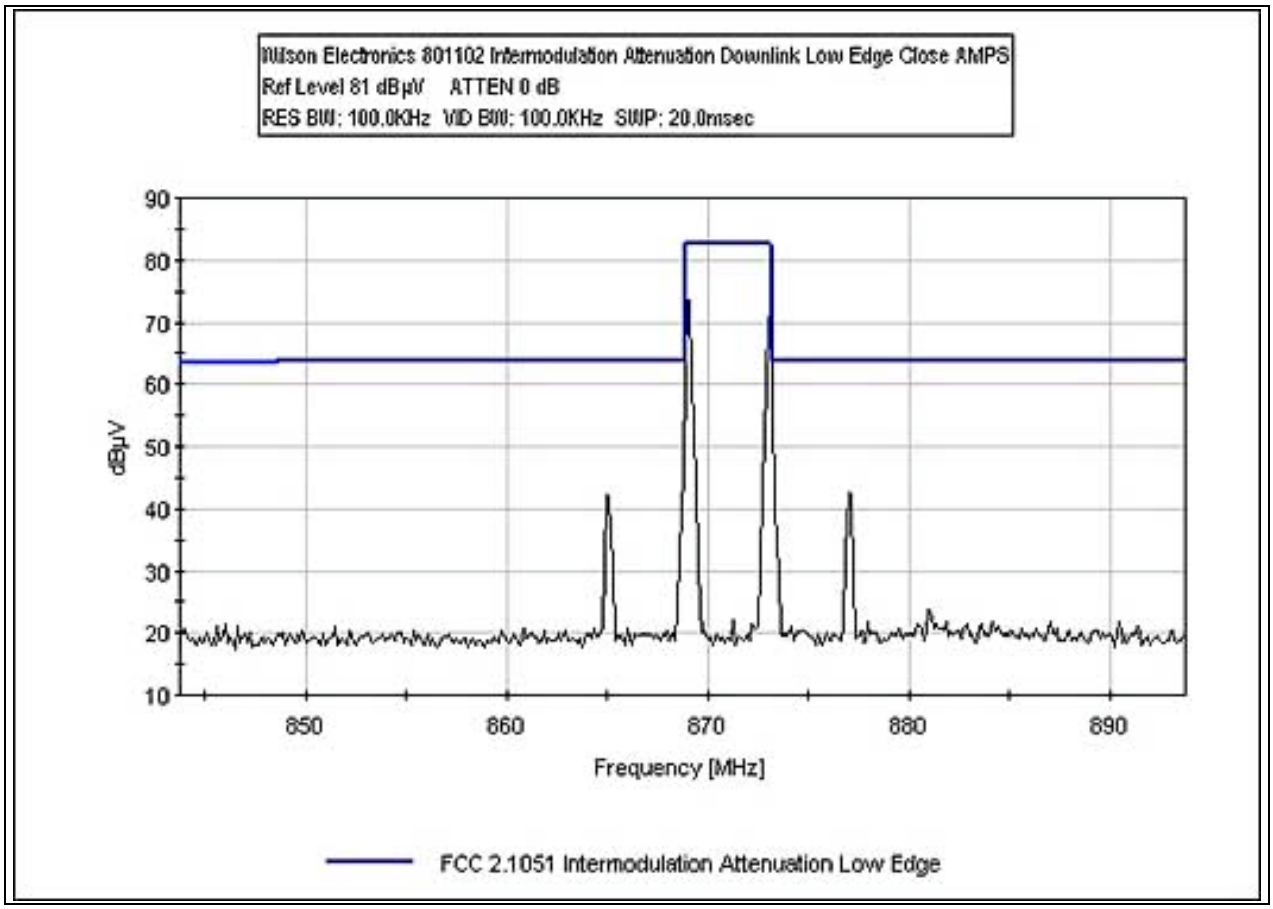
Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	824.200M	63.1	+30.4				+0.0	93.5	94.0 TDMA (CDPD)	-0.5	Direc
2	824.200M	63.0	+30.4				+0.0	93.4	94.0 CDMA	-0.6	Direc
3	824.200M	62.9	+30.4				+0.0	93.3	94.0 TDMA (GSM)	-0.7	Direc
4	824.200M	62.0	+30.4				+0.0	92.4	94.0 AMPS	-1.6	Direc

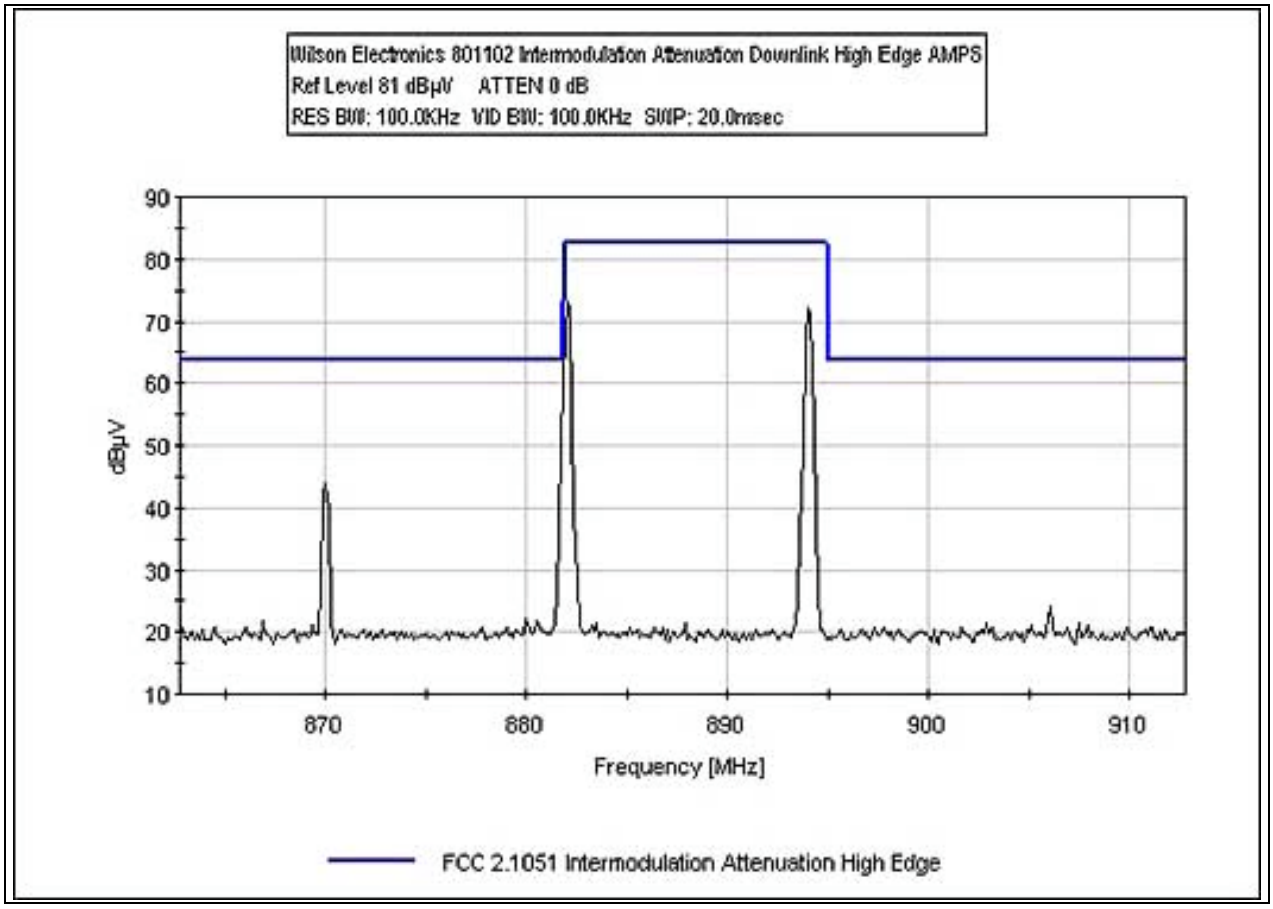
Downlink Intermodulation Attenuation AMPS Low



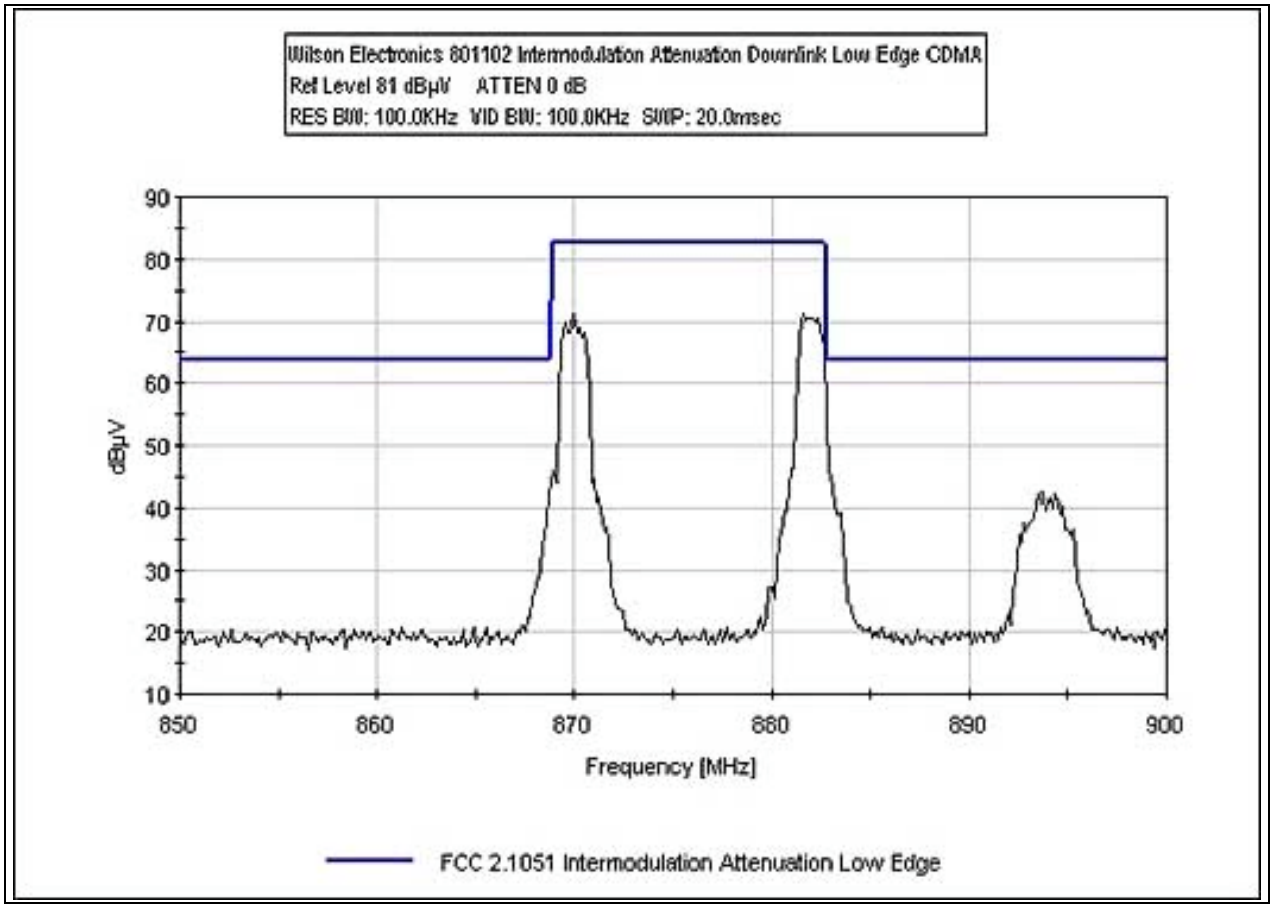
Downlink Intermodulation Attenuation AMPS Low Close



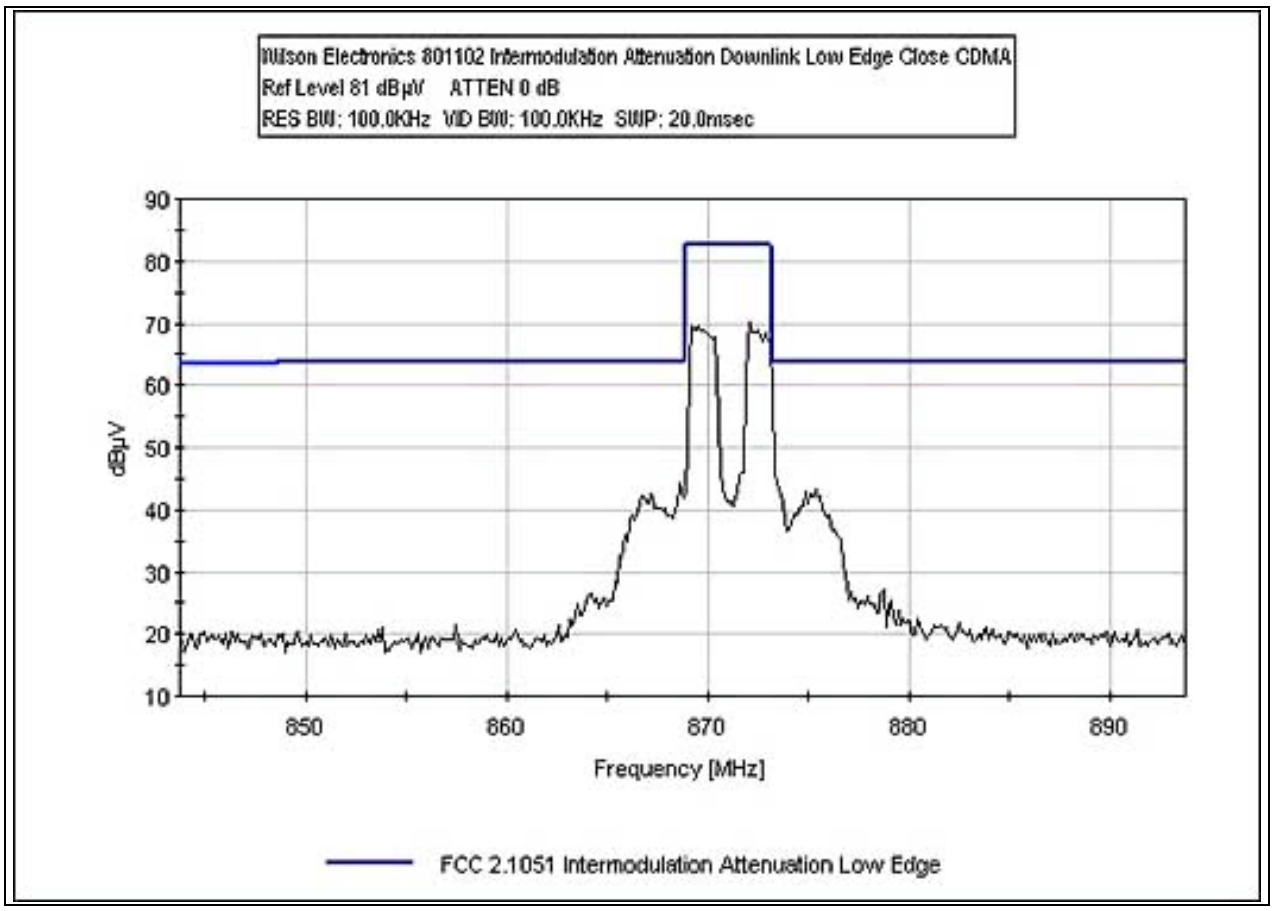
Downlink Intermodulation Attenuation AMPS High



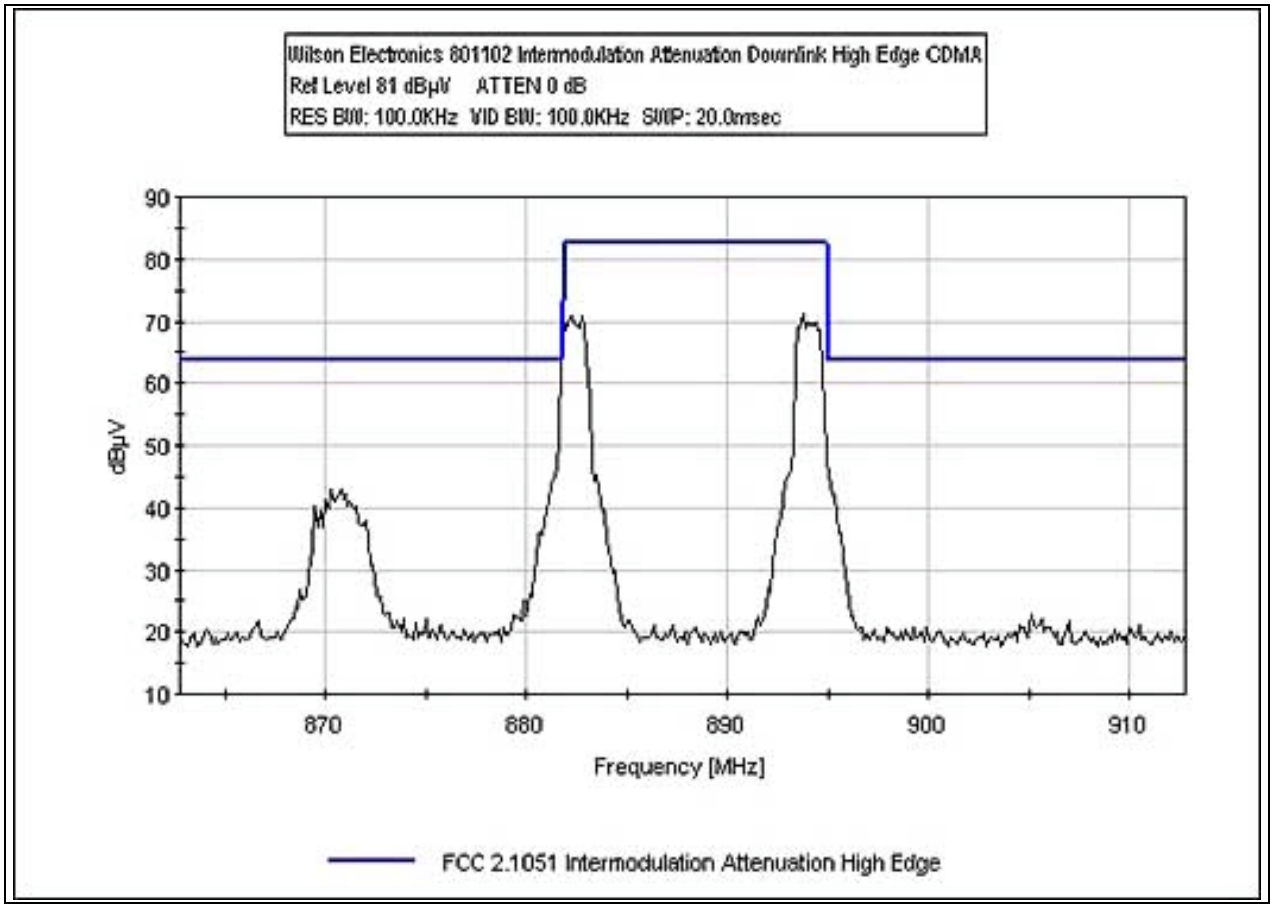
Downlink Intermodulation Attenuation CDMA Low



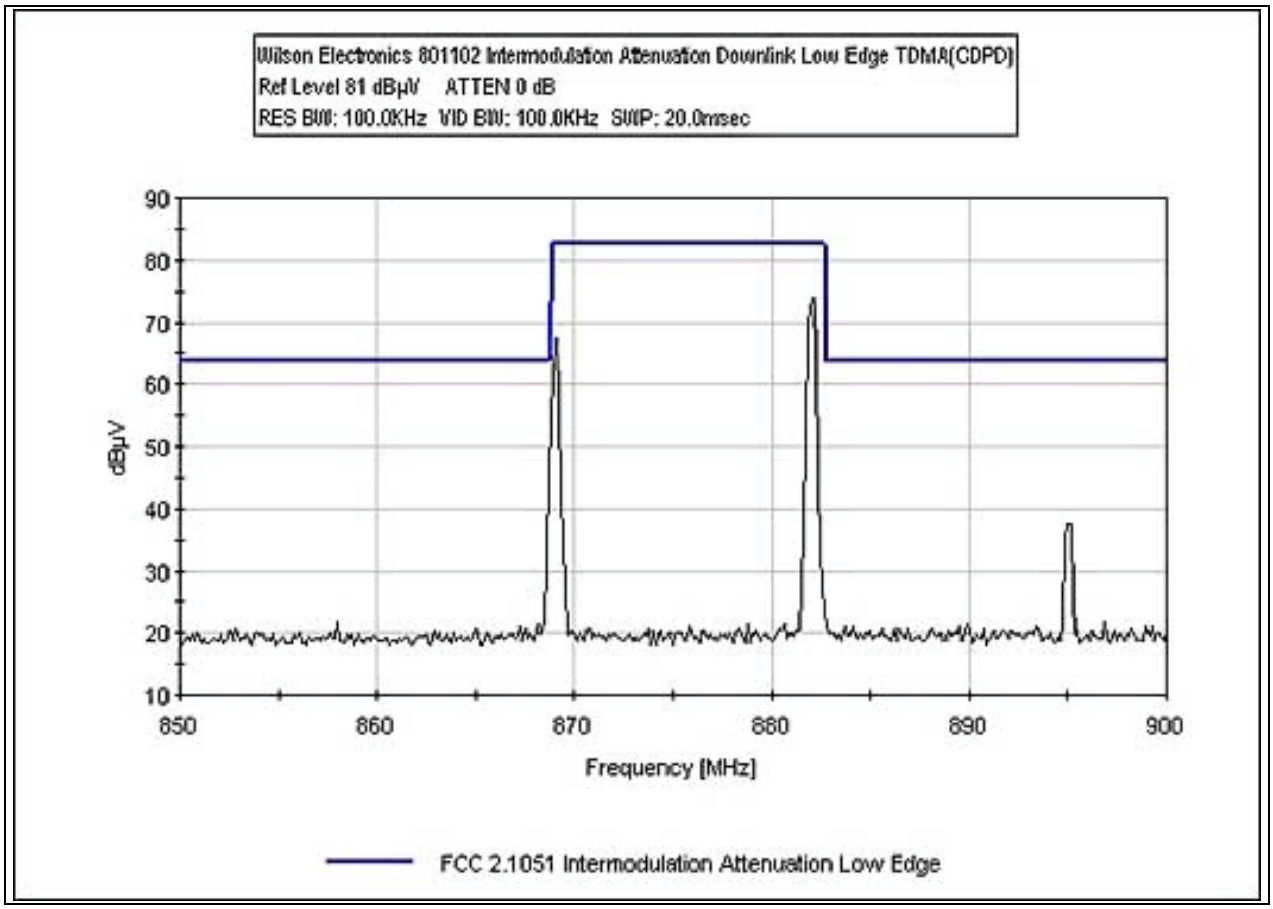
Downlink Intermodulation Attenuation CDMA Low Close



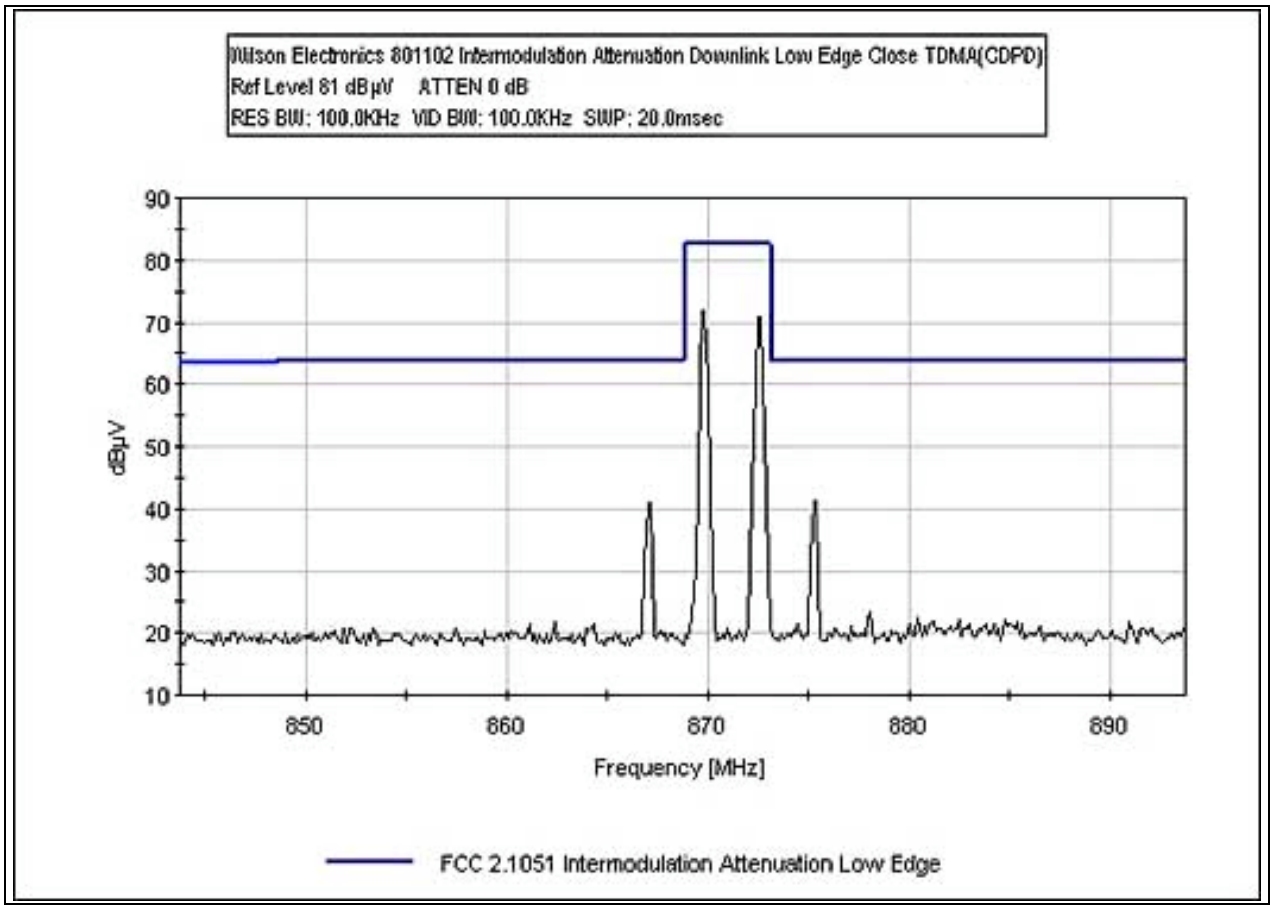
Downlink Intermodulation Attenuation CDMA High



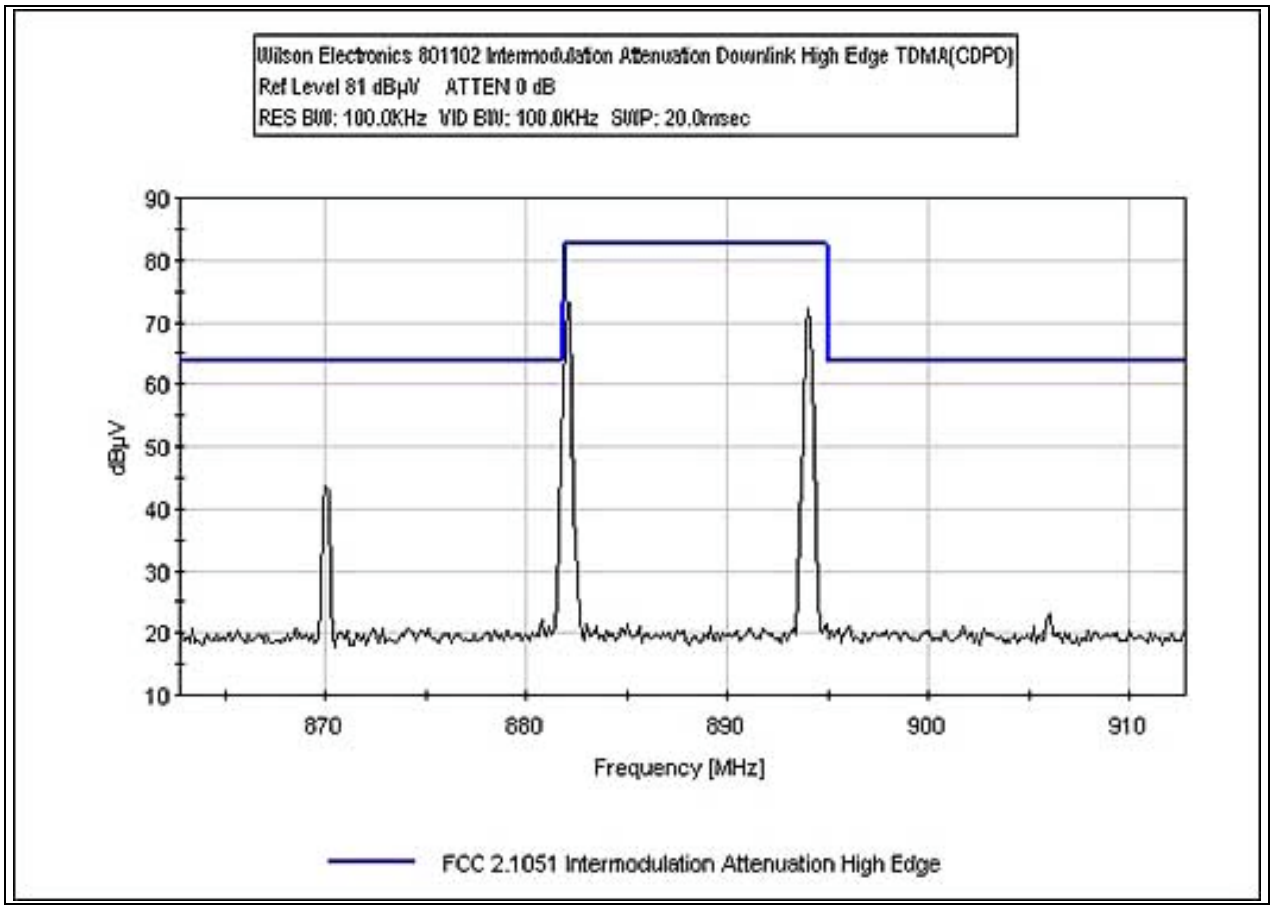
Downlink Intermodulation Attenuation TDMA(CDPD) Low



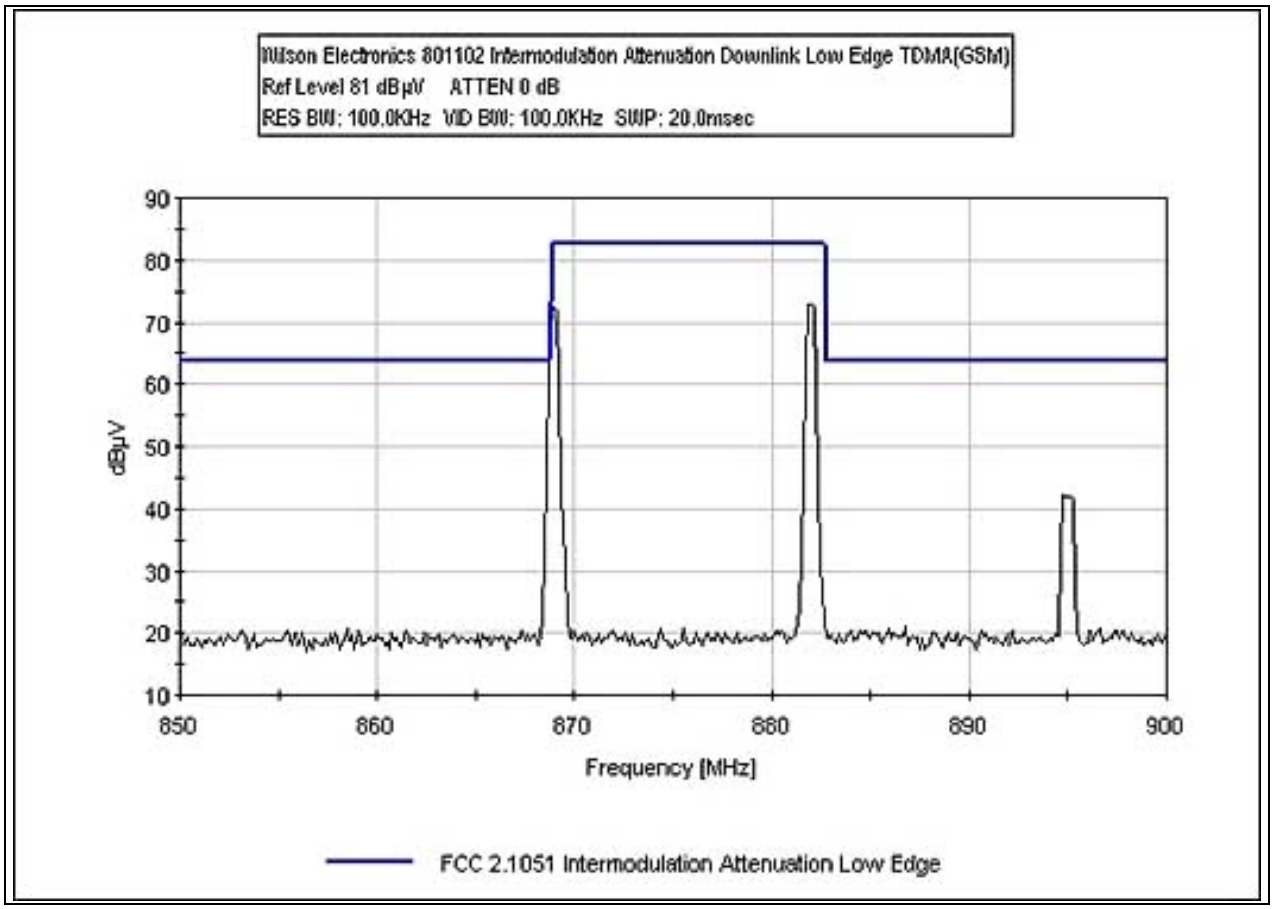
Downlink Intermodulation Attenuation TDMA(CDPD) Low Close



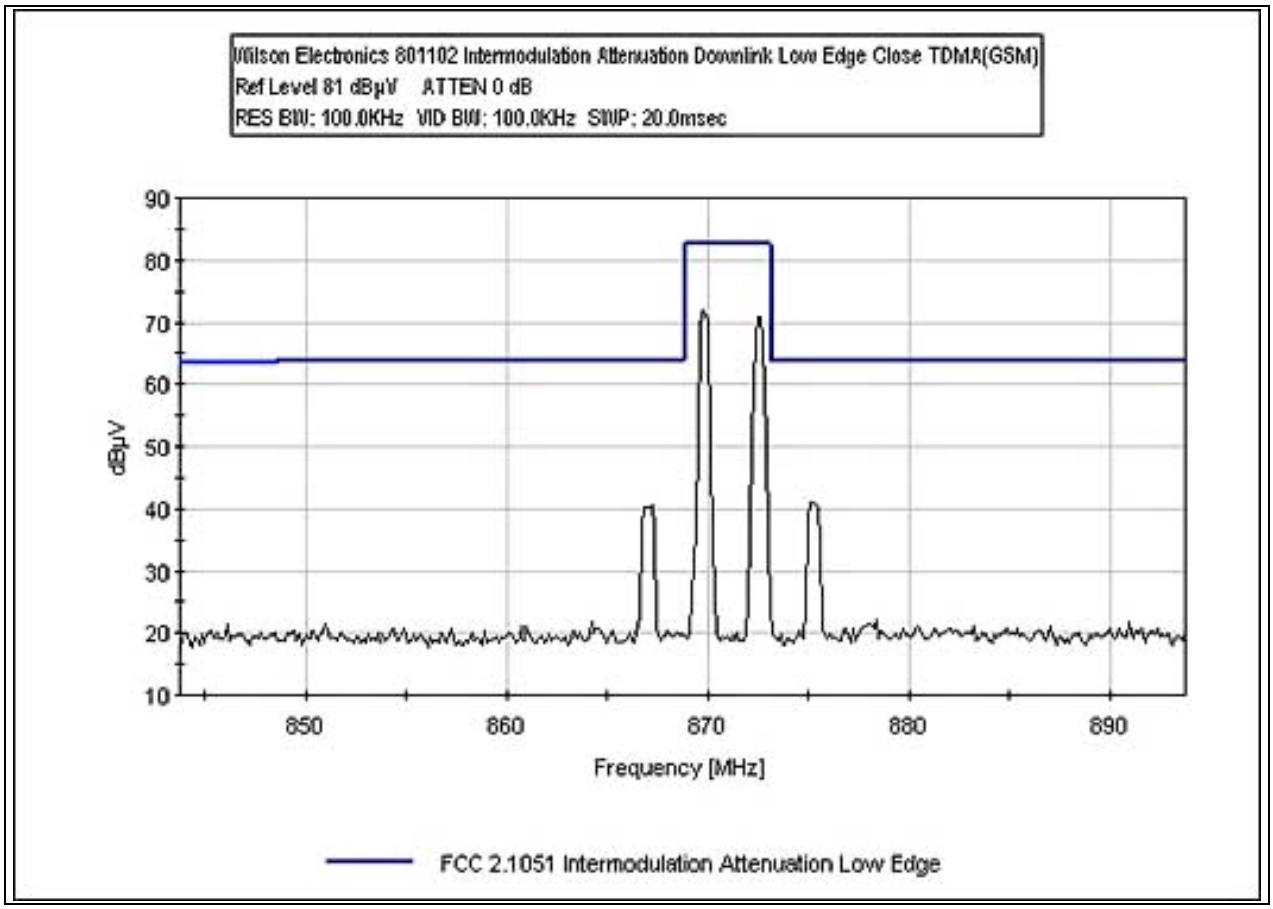
Downlink Intermodulation Attenuation TDMA(CDPD) High



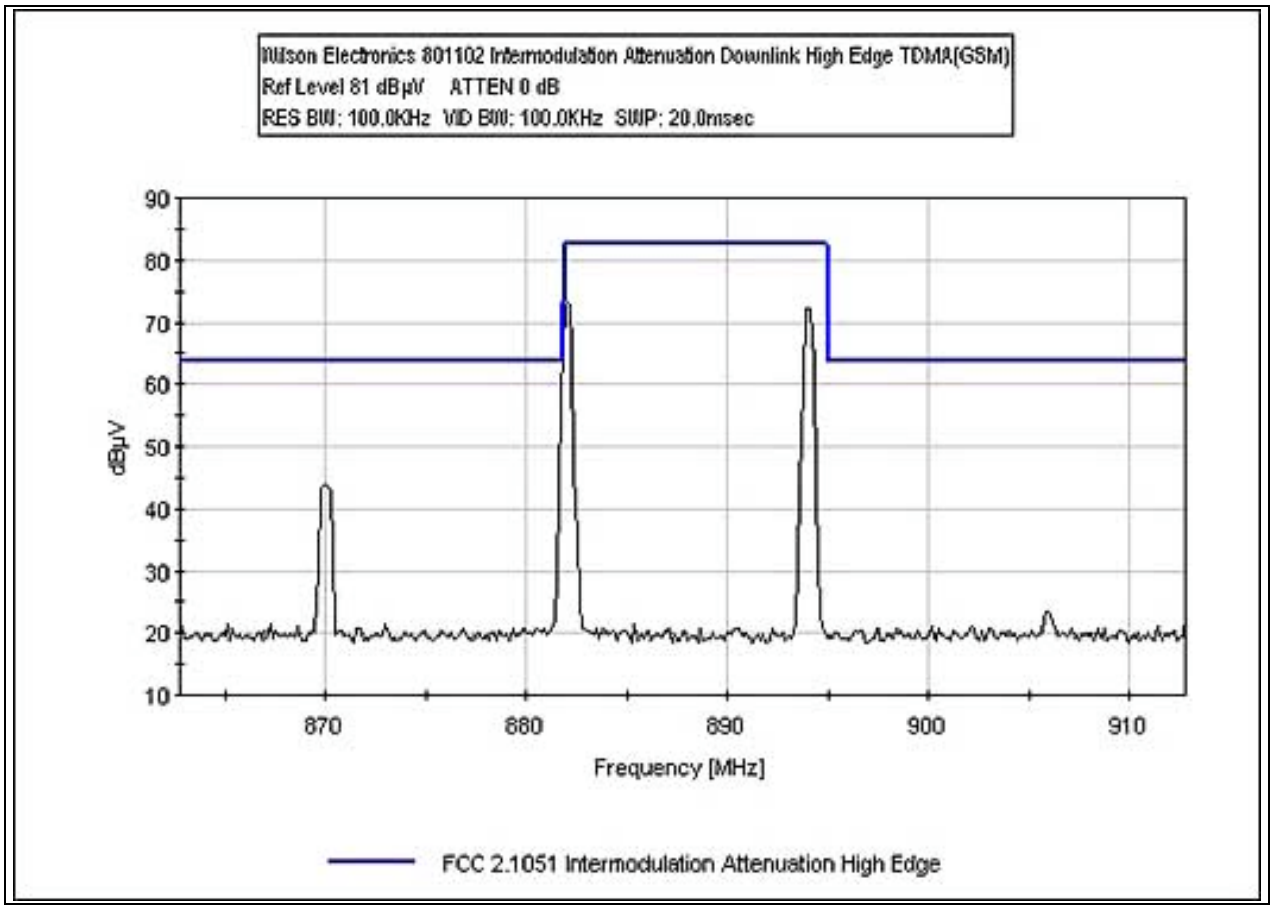
Downlink Intermodulation Attenuation TDMA(GSM) Low



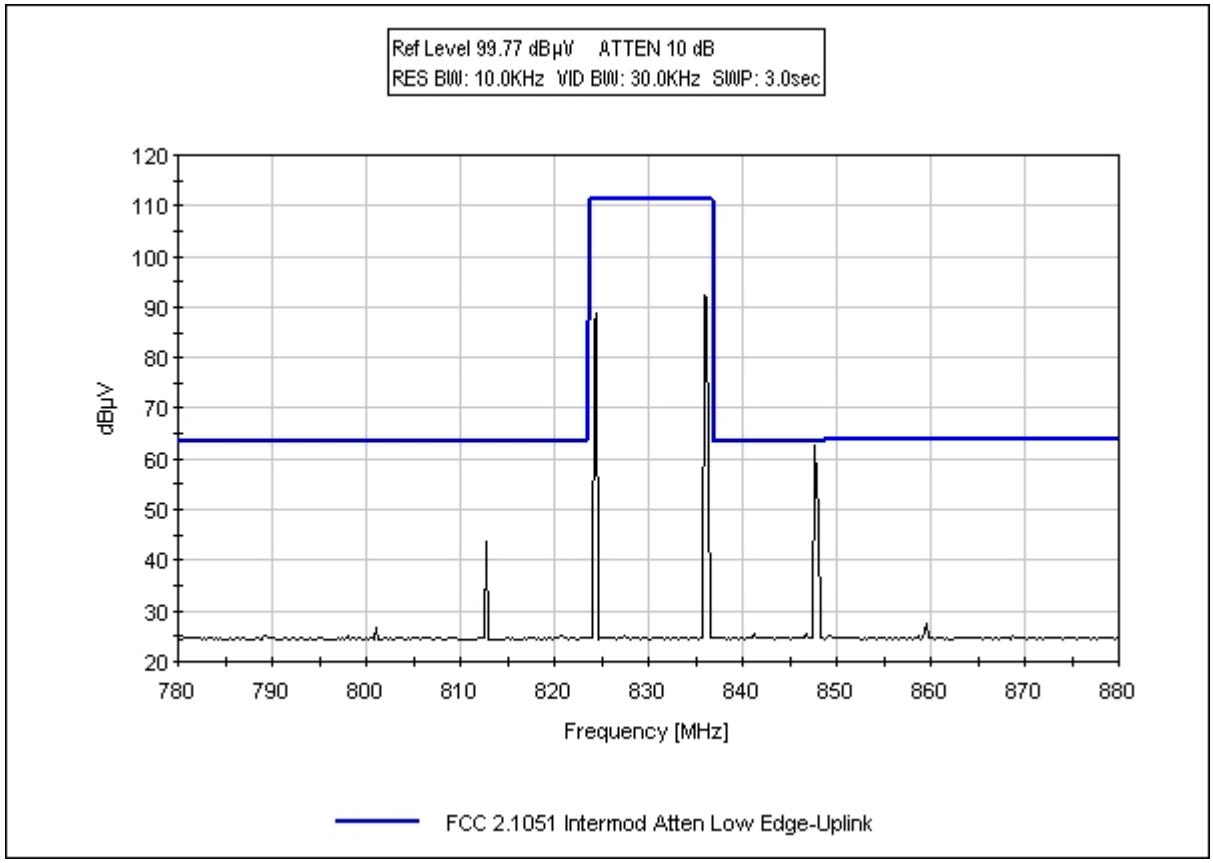
Downlink Intermodulation Attenuation TDMA(GSM) Low Close



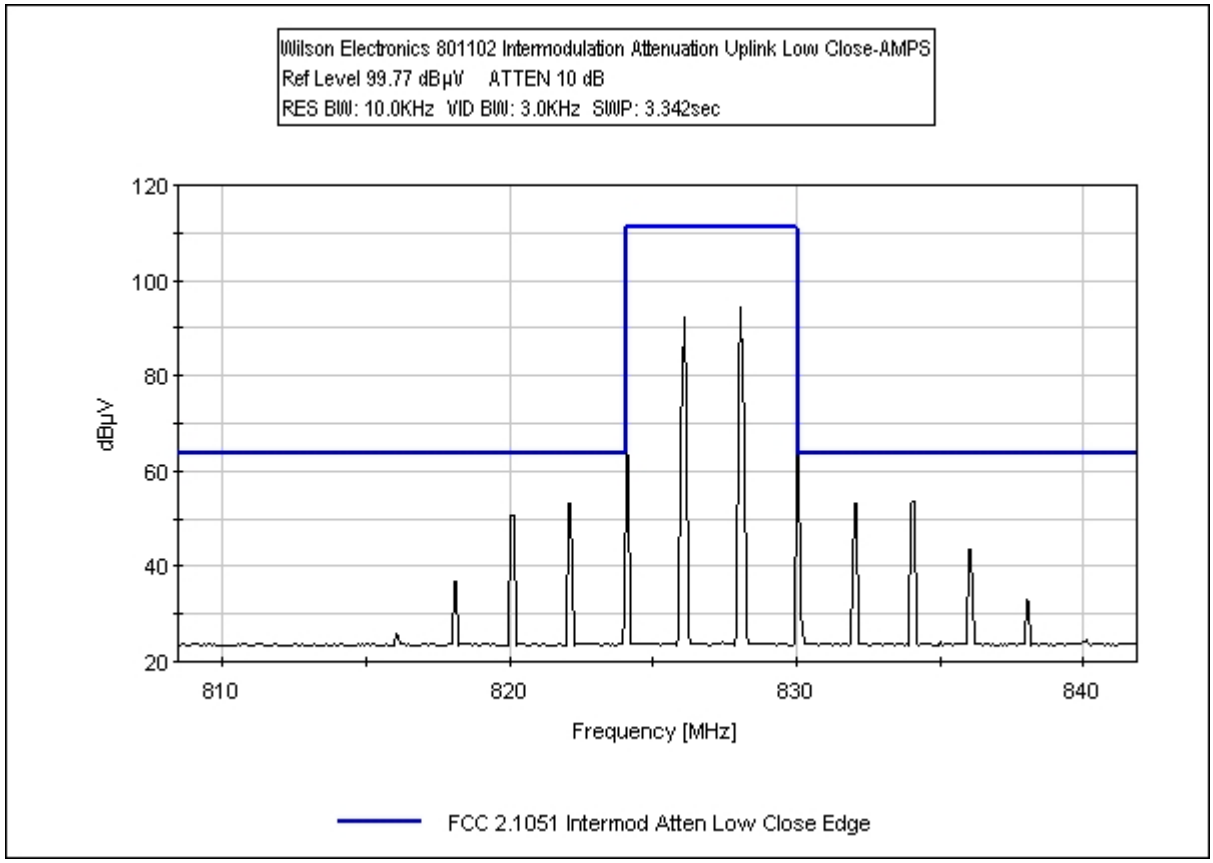
Downlink Intermodulation Attenuation TDMA(GSM) High



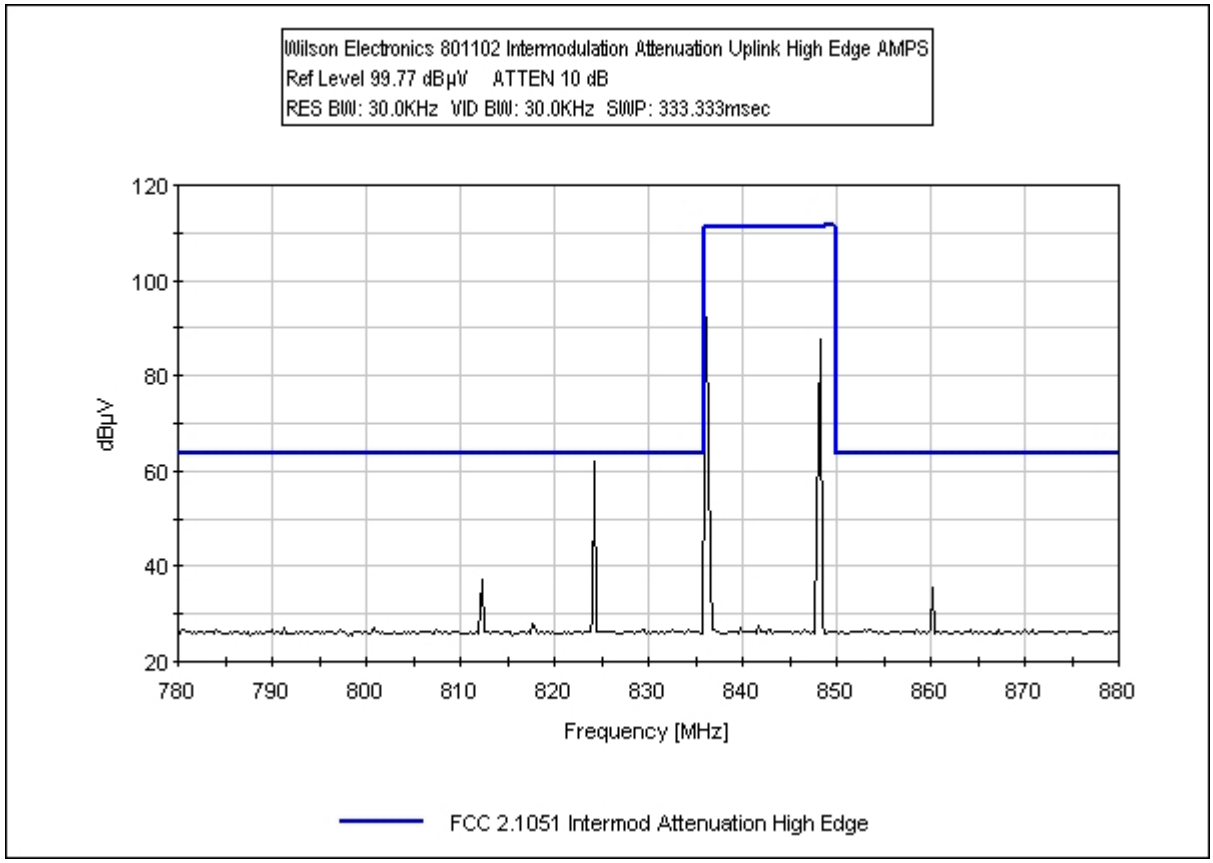
Uplink Intermodulation Attenuation AMPS Low



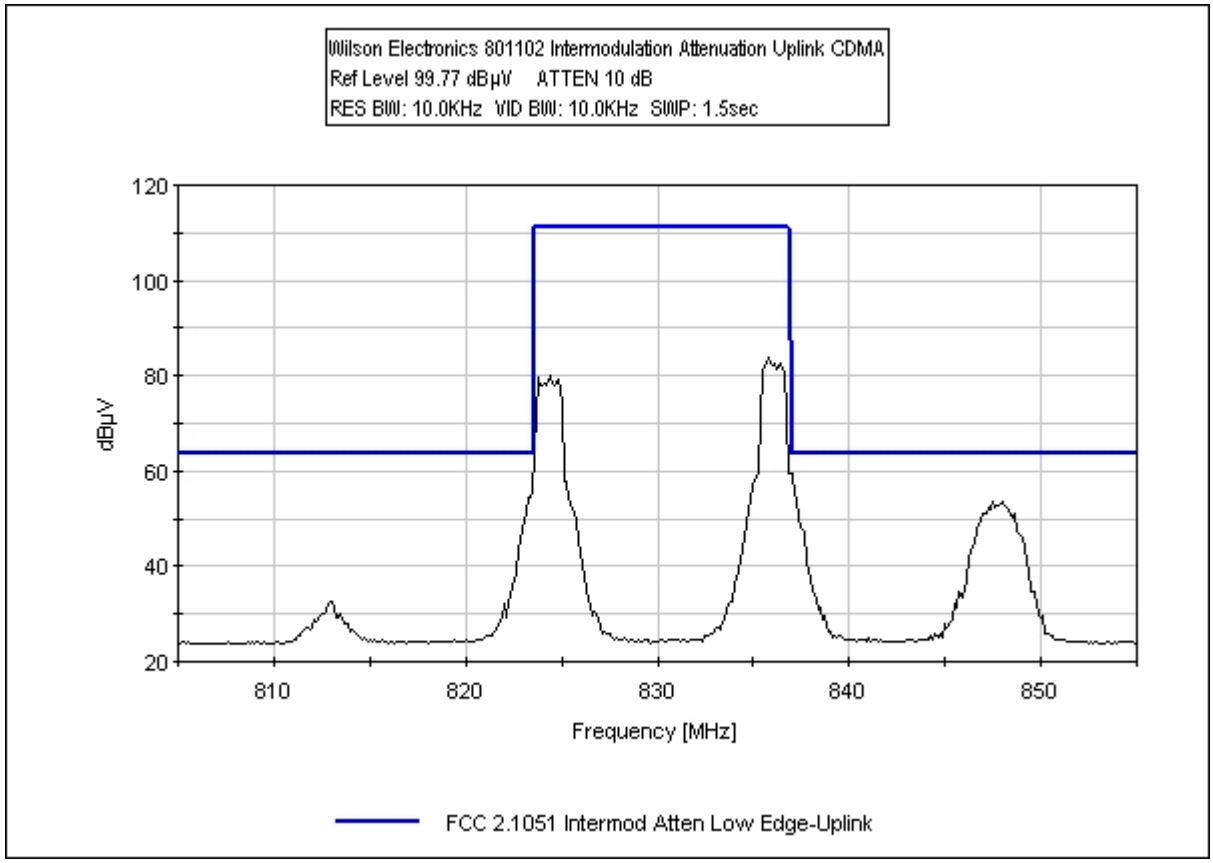
Uplink Intermodulation Attenuation AMPS Low Close



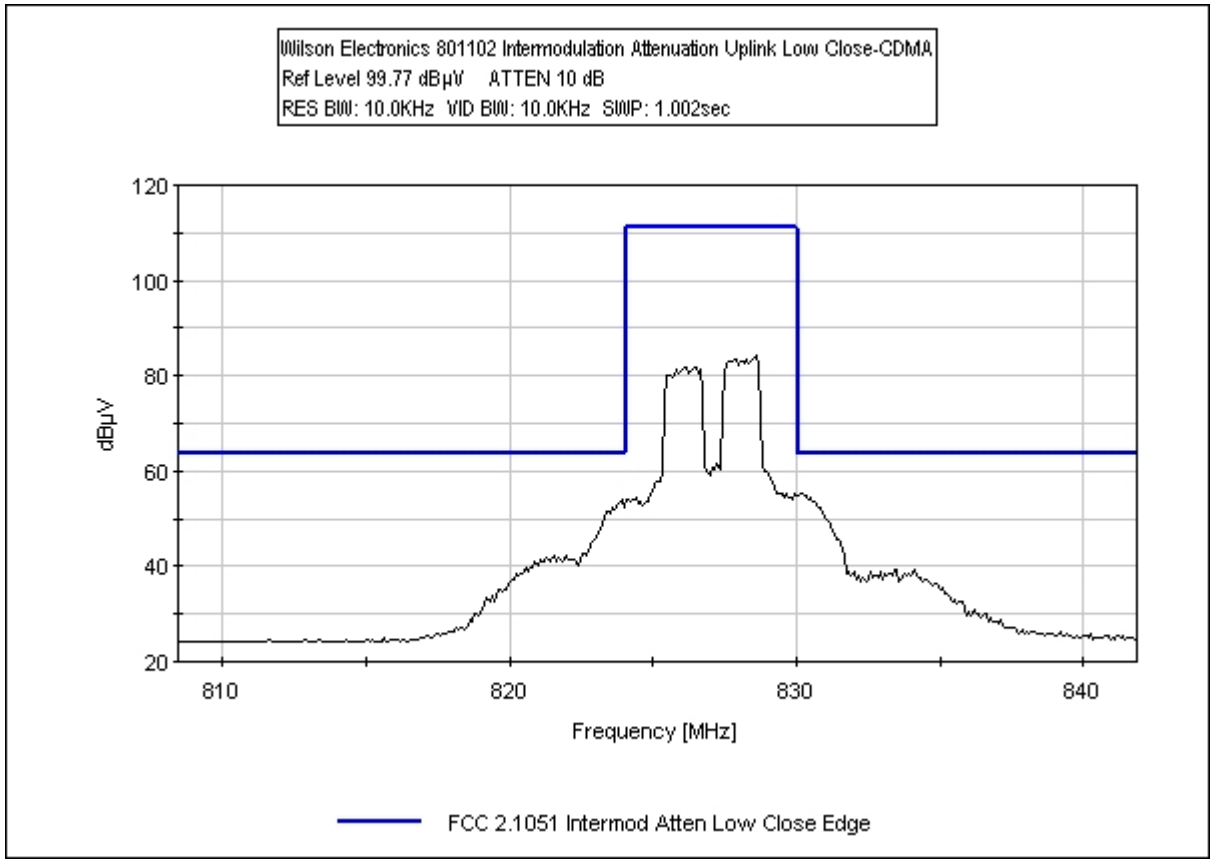
Uplink Intermodulation Attenuation AMPS High



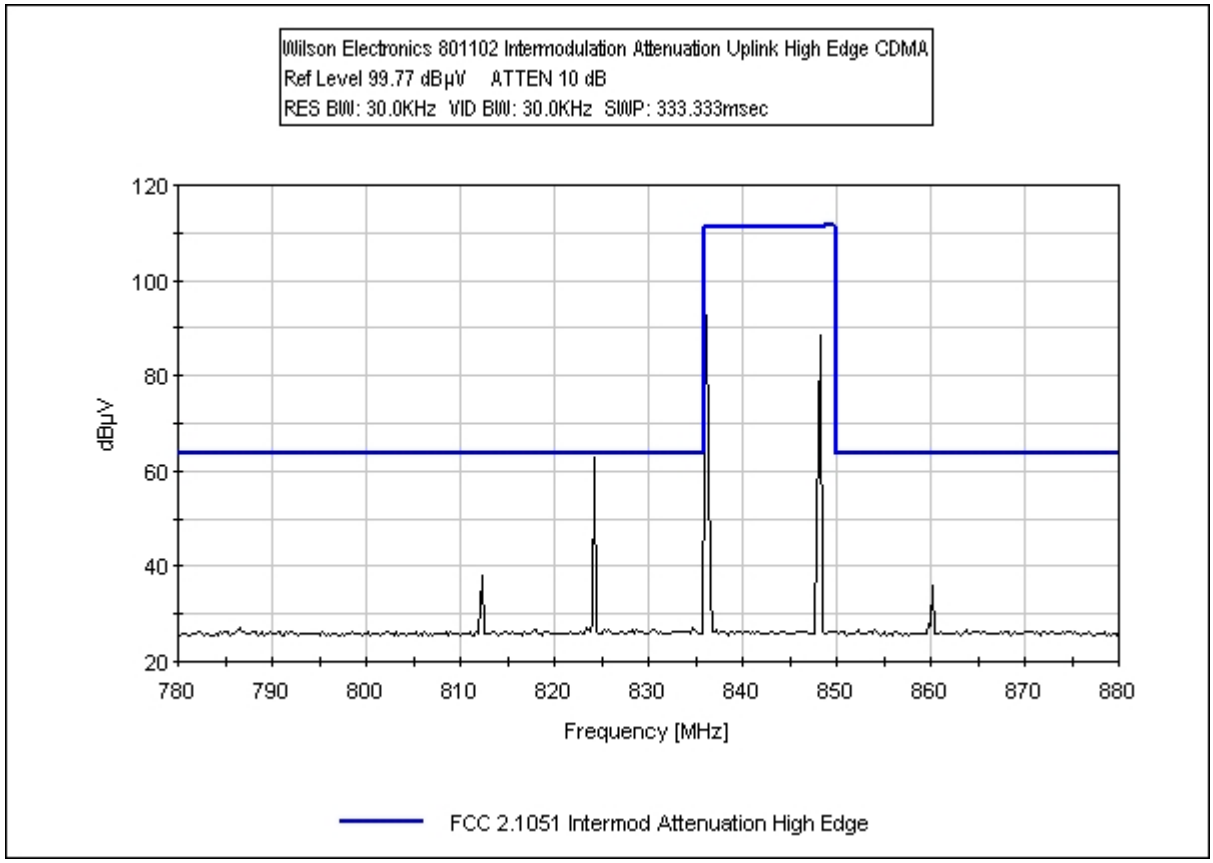
Uplink Intermodulation Attenuation CDMA Low



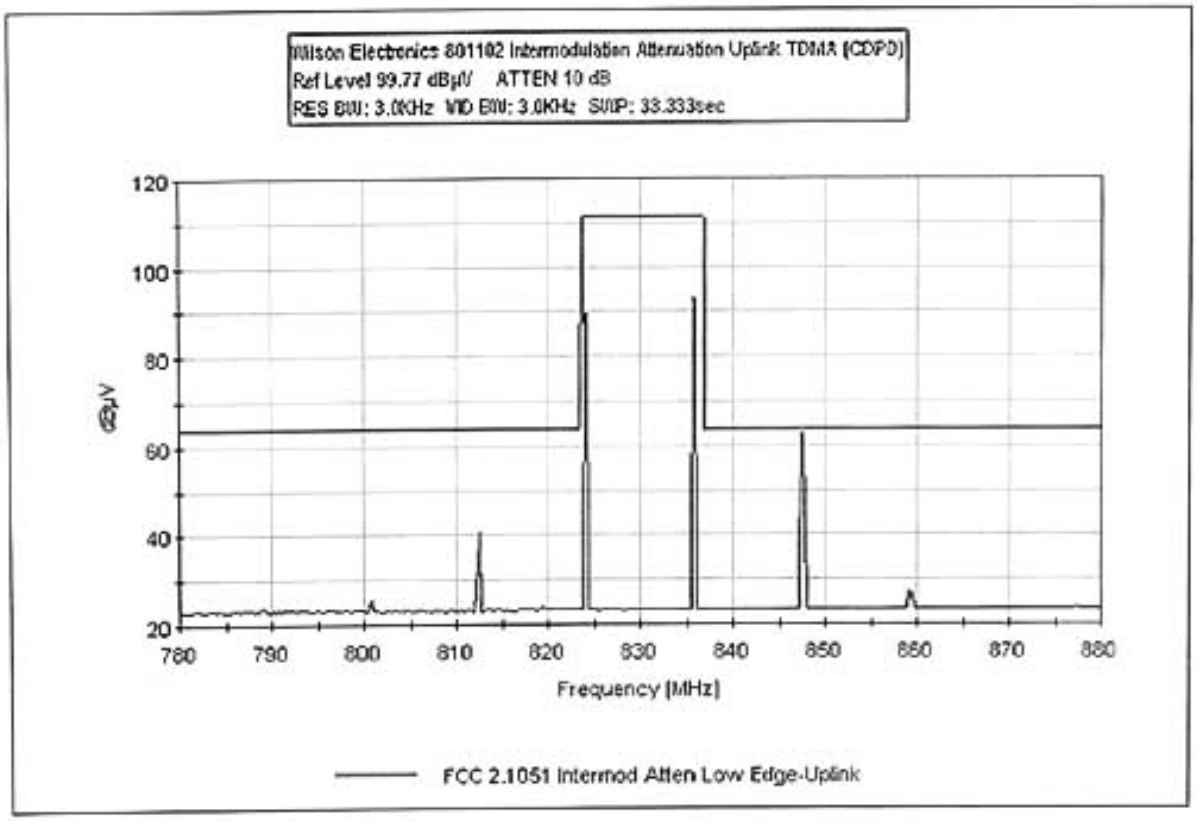
Uplink Intermodulation Attenuation CDMA Low Close



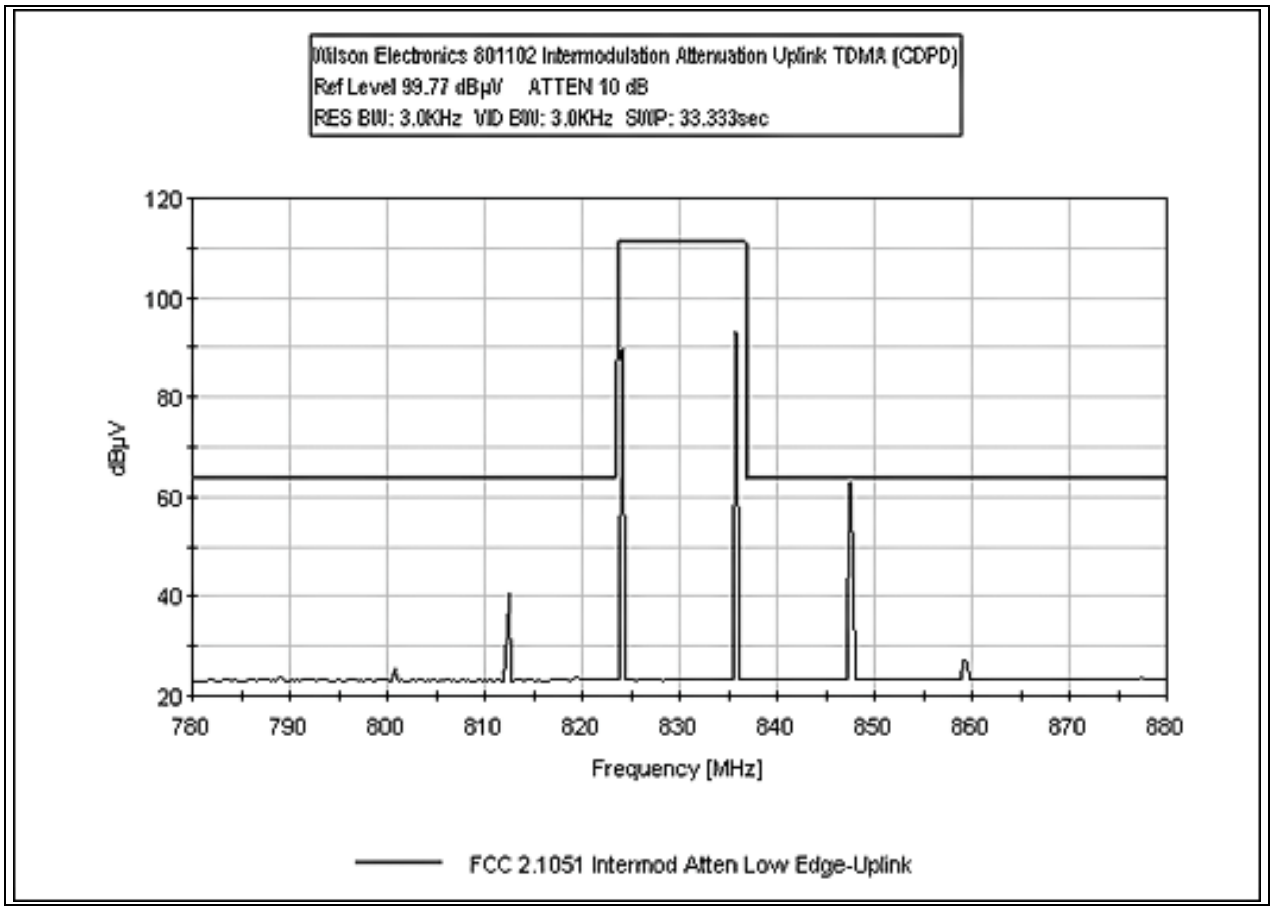
Uplink Intermodulation Attenuation CDMA High



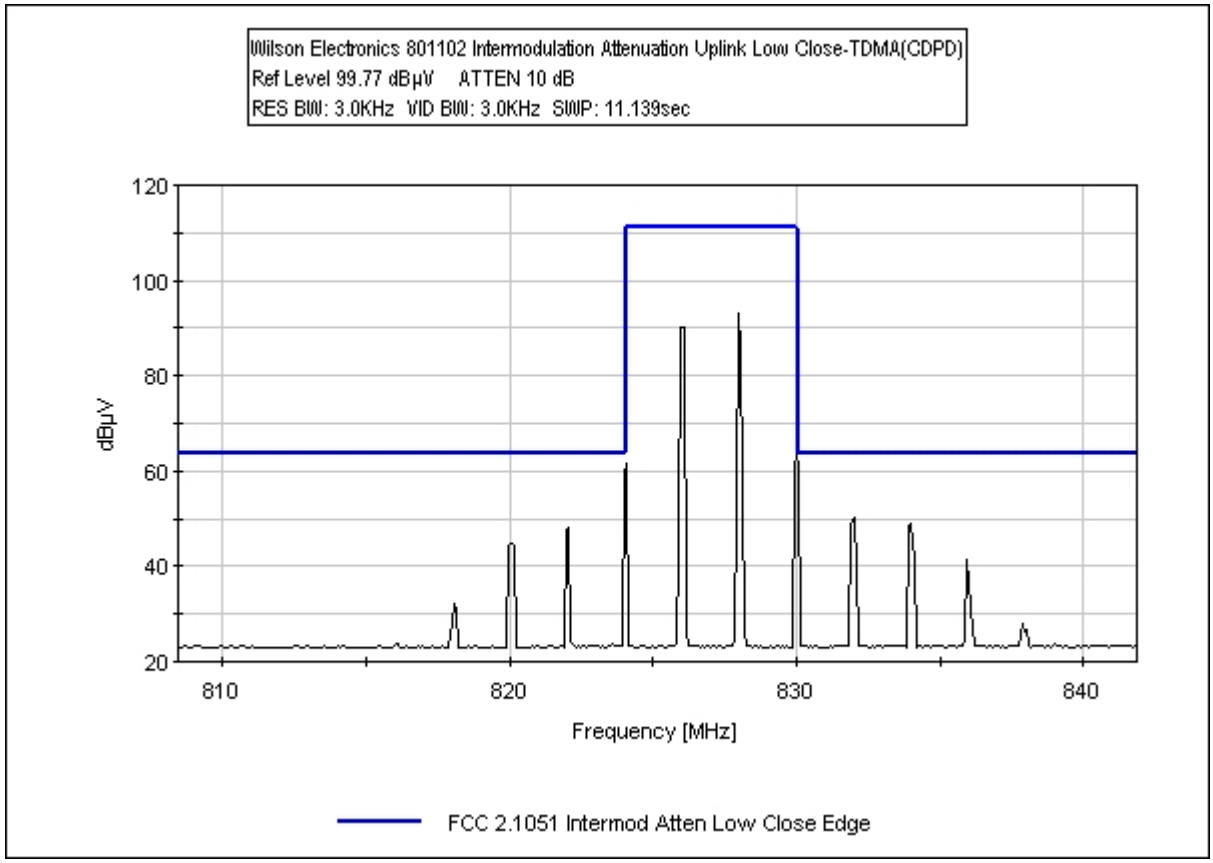
Uplink Intermodulation Attenuation TDMA(CDPD) Low



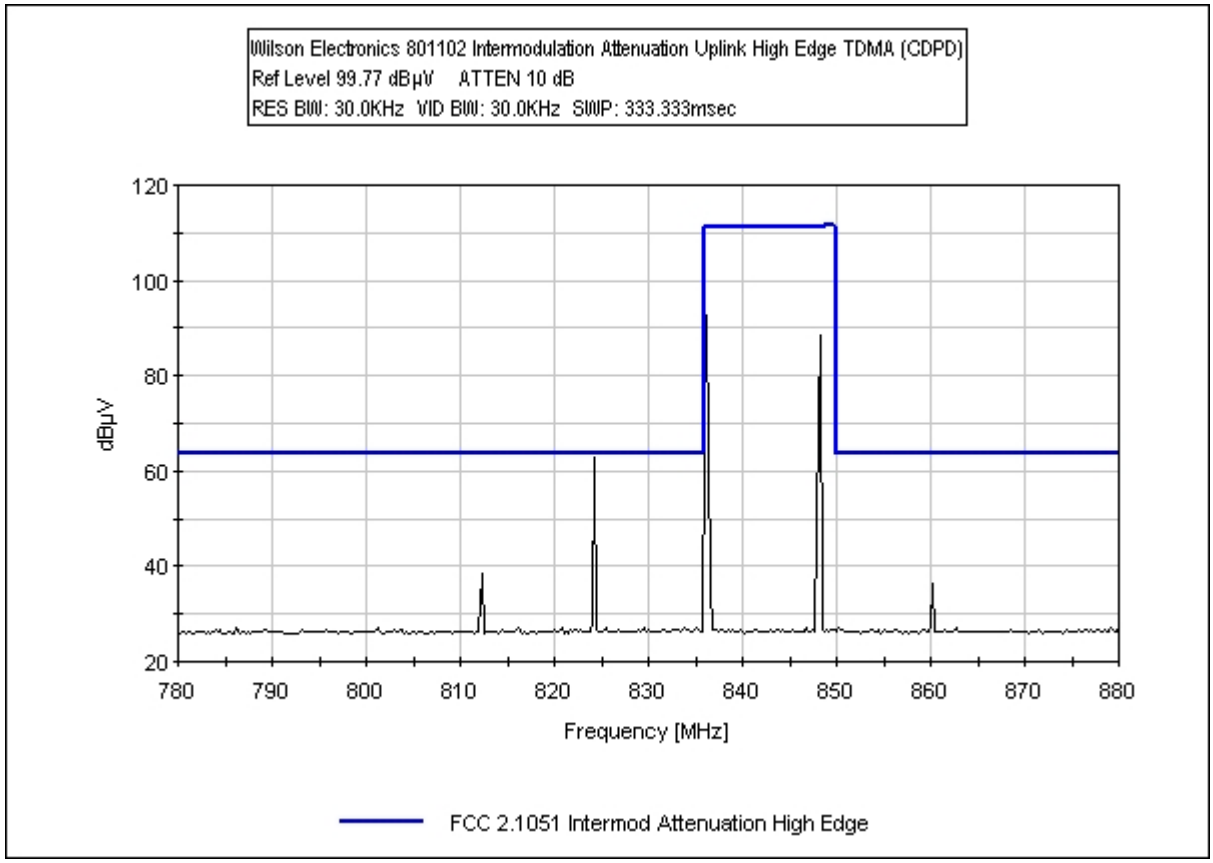
Uplink Intermodulation Attenuation TDMA(CDPD) Low



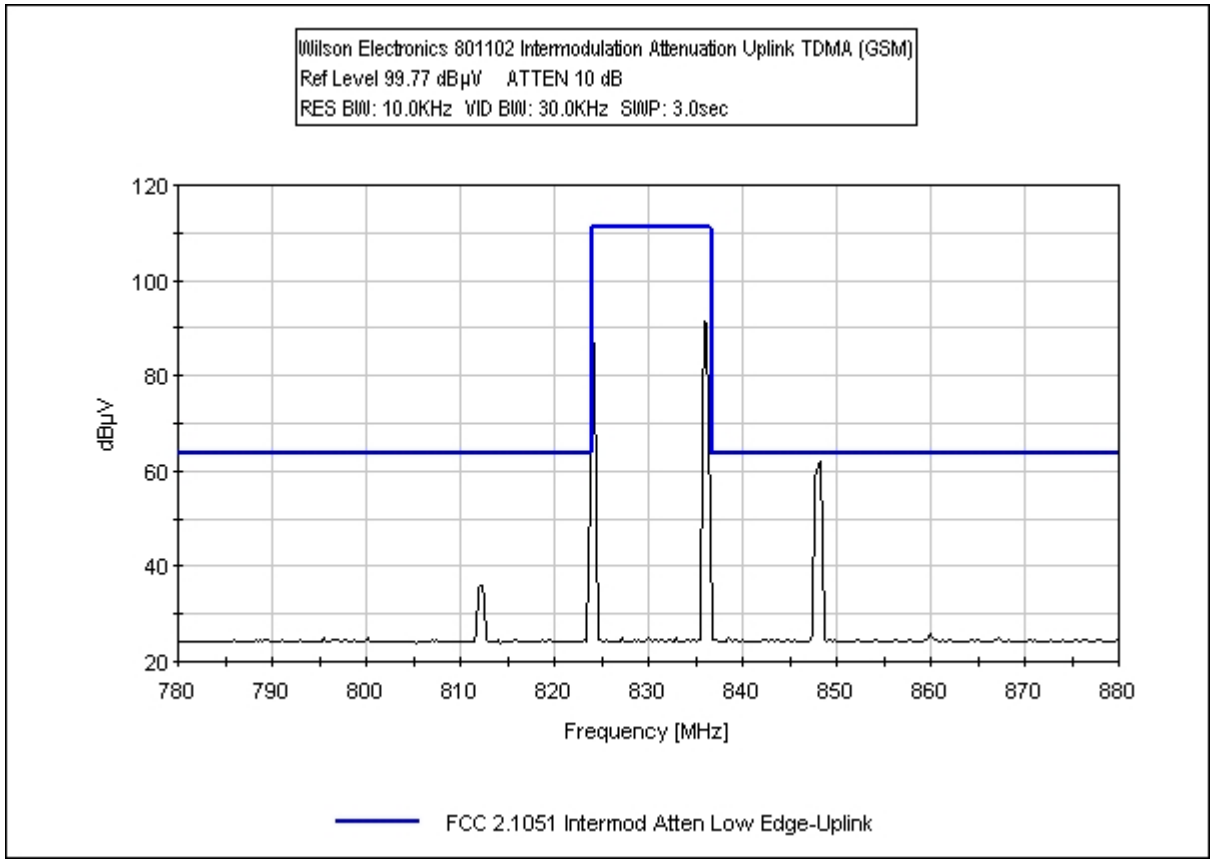
Uplink Intermodulation Attenuation TDMA(CDPD) Low Close



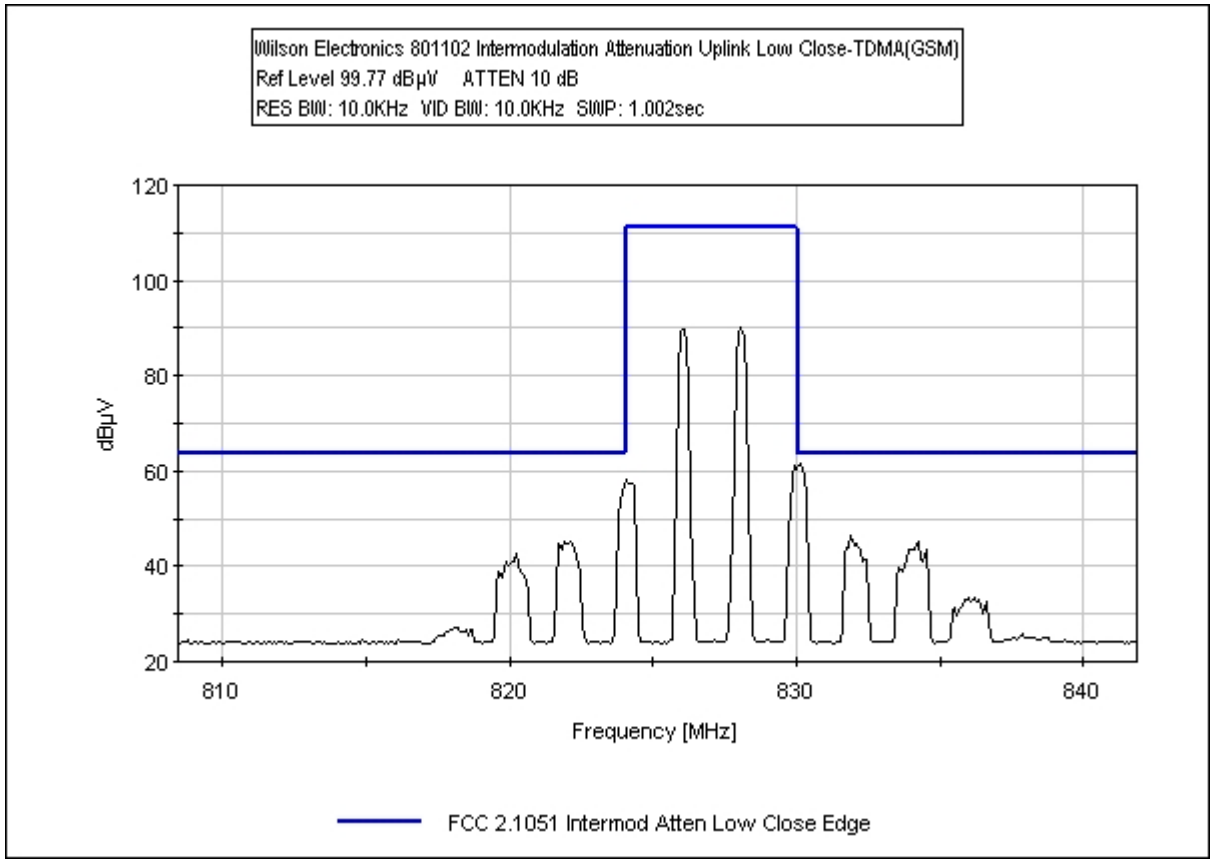
Uplink Intermodulation Attenuation TDMA(CDPD) High



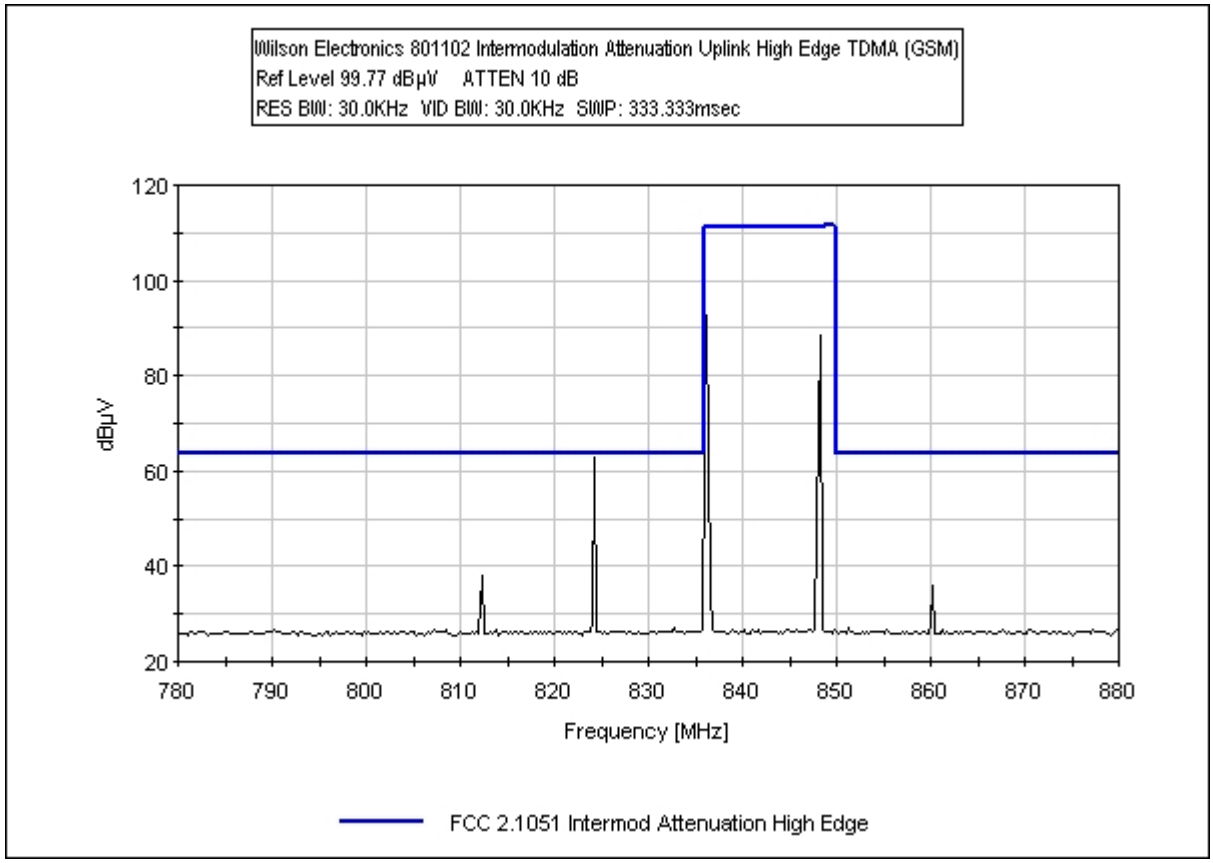
Uplink Intermodulation Attenuation TDMA(GSM) Low



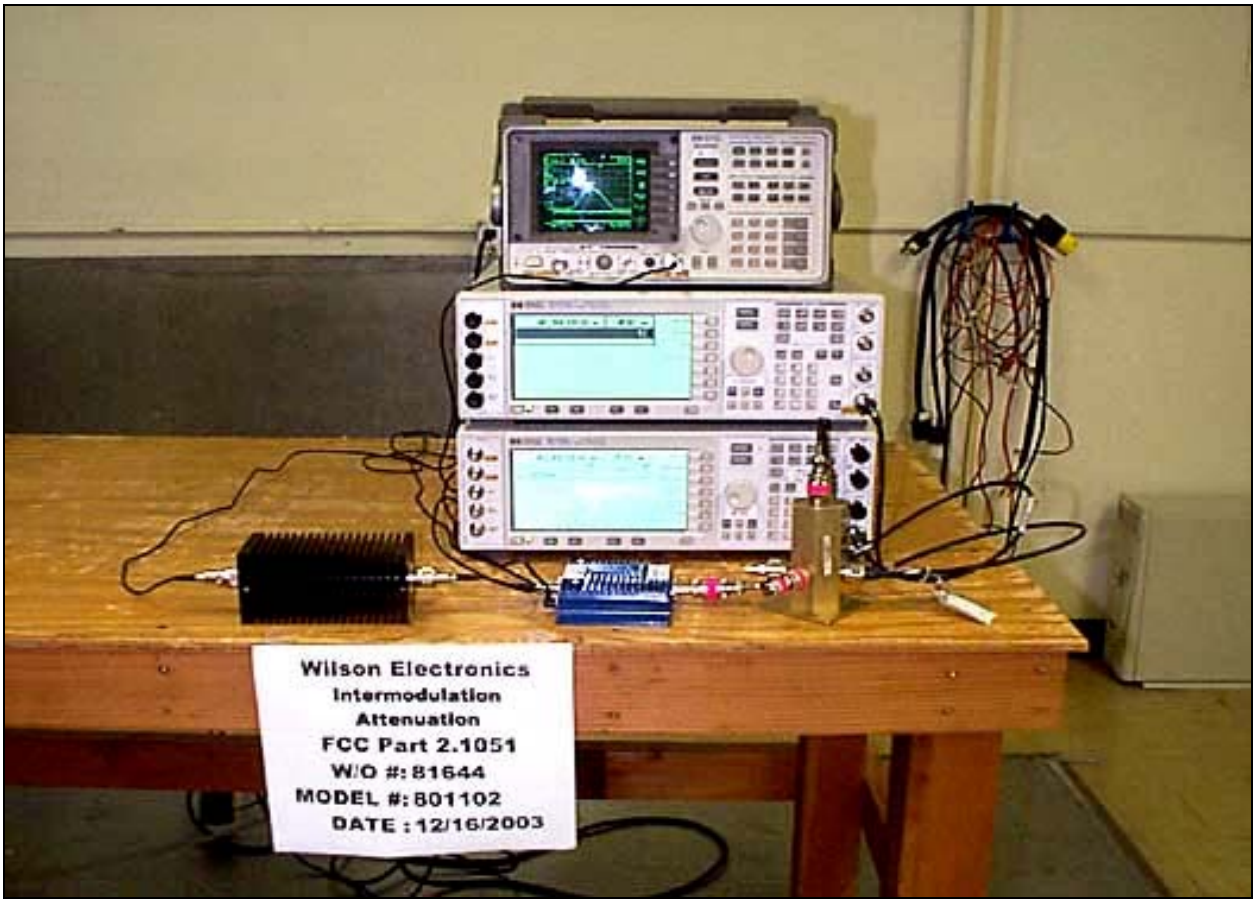
Uplink Intermodulation Attenuation TDMA(GSM) Low Close



Uplink Intermodulation Attenuation TDMA(GSM) High



PHOTOGRAPH SHOWING INTERMODULATION ATTENUATION SETUP



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

Test Conditions: Block edges were investigated and where emissions were found are recorded in the tabular data. Bandwidth setting used: 100 kHz.

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer:	**Wilson Electronics**		
Specification:	**FCC 22.917**		
Work Order #:	**81644**	Date:	12/17/2003
Test Type:	**Spurious Emissions Antenna Terminals**	Time:	2:03:24 PM
Equipment:	**In-building Bidirectional Amplifier**	Sequence#:	9
Manufacturer:	Wilson Electronics	Tested By:	Matthew Pettersen
Model:	801102		
S/N:	001		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz – 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink AMPS Low Channel 869 MHz.

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	869.181M	80.7	+30.3				+0.0	111.0	117.0	-6.0	Direc
2	2606.313M	30.4	+29.9				+0.0	60.3	94.0	-33.7	Direc
3	2311.159M	28.7	+30.2				+0.0	58.9	94.0	-35.1	Direc
4	1375.835M	28.1	+30.2				+0.0	58.3	94.0	-35.7	Direc
5	6613.445M	30.3	+27.2				+0.0	57.5	94.0	-36.5	Direc
6	300.945M	26.2	+30.5				+0.0	56.7	94.0	-37.3	Direc
7	105.312M	26.0	+30.5				+0.0	56.5	94.0	-37.5	Direc
8	201.623M	26.1	+30.4				+0.0	56.5	94.0	-37.5	Direc
9	78.465M	25.9	+30.5				+0.0	56.4	94.0	-37.6	Direc
10	3910.026M	26.6	+29.6				+0.0	56.2	94.0	-37.8	Direc
11	412.678M	25.6	+30.3				+0.0	55.9	94.0	-38.1	Direc
12	9328.444M	31.0	+24.9				+0.0	55.9	94.0	-38.1	Direc
13	38.733M	25.3	+30.5				+0.0	55.8	94.0	-38.2	Direc
14	9999.999M	31.0	+23.0				+0.0	54.0	94.0	-40.0	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 1:48:10 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 10
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz – 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink AMPS Mid Channel 880 MHz.

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	879.413M	83.9	+30.3				+0.0	114.2	117.0	-2.8	Direc
2	2639.104M	32.6	+29.9				+0.0	62.5	94.0	-31.5	Direc

3	2320.140M	28.9	+30.2	+0.0	59.1	94.0	-34.9	Direc
4	1370.301M	27.6	+30.2	+0.0	57.8	94.0	-36.2	Direc
5	6709.382M	30.0	+27.2	+0.0	57.2	94.0	-36.8	Direc
6	179.472M	26.6	+30.4	+0.0	57.0	94.0	-37.0	Direc
7	109.494M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
8	414.780M	26.0	+30.3	+0.0	56.3	94.0	-37.7	Direc
9	65.051M	25.6	+30.5	+0.0	56.1	94.0	-37.9	Direc
10	30.420M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
11	238.448M	25.5	+30.4	+0.0	55.9	94.0	-38.1	Direc
12	4099.214M	26.0	+29.4	+0.0	55.4	94.0	-38.6	Direc
13	10000.000 M	30.9	+23.0	+0.0	53.9	94.0	-40.1	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 14:22:17
Equipment: **In-building Bidirectional Amplifier** Sequence#: 11
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink AMPS High Channel 894 MHz.

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	893.986M	80.3	+30.3				+0.0	110.6	117.0	-6.4	Direc
2	2679.181M	37.0	+29.8				+0.0	66.8	94.0	-27.2	Direc

3	2311.159M	28.9	+30.2	+0.0	59.1	94.0	-34.9	Direc
4	6632.633M	30.3	+27.2	+0.0	57.5	94.0	-36.5	Direc
5	493.600M	26.6	+30.4	+0.0	57.0	94.0	-37.0	Direc
6	215.456M	26.3	+30.4	+0.0	56.7	94.0	-37.3	Direc
7	166.501M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
8	815.463M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
9	66.491M	25.6	+30.5	+0.0	56.1	94.0	-37.9	Direc
10	43.684M	25.3	+30.5	+0.0	55.8	94.0	-38.2	Direc
11	124.743M	25.3	+30.5	+0.0	55.8	94.0	-38.2	Direc
12	9117.385M	30.7	+25.1	+0.0	55.8	94.0	-38.2	Direc
13	3827.256M	26.0	+29.7	+0.0	55.7	94.0	-38.3	Direc
14	10000.000 M	30.2	+23.0	+0.0	53.2	94.0	-40.8	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 3:02:38 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 14
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink CDMA Low Channel 870.25 MHz.

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	870.790M	76.7	+30.3				+0.0	107.0	117.0	-10.0	Direc
2	1819.495M	28.5	+30.3				+0.0	58.8	94.0	-35.2	Direc

3	2129.365M	28.5	+30.2	+0.0	58.7	94.0	-35.3	Direc
4	702.269M	26.5	+30.4	+0.0	56.9	94.0	-37.1	Direc
5	295.934M	26.3	+30.5	+0.0	56.8	94.0	-37.2	Direc
6	6543.409M	29.6	+27.2	+0.0	56.8	94.0	-37.2	Direc
7	242.449M	26.3	+30.4	+0.0	56.7	94.0	-37.3	Direc
8	90.314M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
9	31.200M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
10	63.170M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
11	4052.353M	25.7	+29.5	+0.0	55.2	94.0	-38.8	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 2:42:32 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 13
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink CDMA Mid Channel 880 MHz.

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	880.266M	81.1	+30.3				+0.0	111.4	117.0	-5.6	Direc
2	2131.539M	28.7	+30.2				+0.0	58.9	94.0	-35.1	Direc

3	2639.104M	28.1	+29.9	+0.0	58.0	94.0	-36.0	Direc
4	1341.244M	27.6	+30.2	+0.0	57.8	94.0	-36.2	Direc
5	6680.601M	30.3	+27.2	+0.0	57.5	94.0	-36.5	Direc
6	263.058M	26.4	+30.4	+0.0	56.8	94.0	-37.2	Direc
7	354.351M	26.1	+30.4	+0.0	56.5	94.0	-37.5	Direc
8	85.267M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
9	194.040M	25.9	+30.4	+0.0	56.3	94.0	-37.7	Direc
10	3844.993M	26.5	+29.7	+0.0	56.2	94.0	-37.8	Direc
11	69.446M	25.6	+30.5	+0.0	56.1	94.0	-37.9	Direc
12	9213.321M	30.7	+25.0	+0.0	55.7	94.0	-38.3	Direc
13	45.646M	24.9	+30.5	+0.0	55.4	94.0	-38.6	Direc
14	10000.000 M	31.1	+23.0	+0.0	54.1	94.0	-39.9	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 14:41:12
Equipment: **In-building Bidirectional Amplifier** Sequence#: 12
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink CDMA High Channel 892.75 MHz.

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	894.239M	59.0	+30.3				+0.0	89.3	94.0	-4.7	Direc
2	2675.537M	30.5	+29.8				+0.0	60.3	94.0	-33.7	Direc

3	1841.903M	28.5	+30.3	+0.0	58.8	94.0	-35.2	Direc
4	546.146M	26.6	+30.4	+0.0	57.0	94.0	-37.0	Direc
5	6594.258M	29.7	+27.2	+0.0	56.9	94.0	-37.1	Direc
6	122.652M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
7	70.204M	25.7	+30.5	+0.0	56.2	94.0	-37.8	Direc
8	276.335M	25.7	+30.5	+0.0	56.2	94.0	-37.8	Direc
9	195.636M	25.6	+30.4	+0.0	56.0	94.0	-38.0	Direc
10	33.363M	25.4	+30.5	+0.0	55.9	94.0	-38.1	Direc
11	8839.169M	31.0	+24.6	+0.0	55.6	94.0	-38.4	Direc
12	3868.641M	25.4	+29.7	+0.0	55.1	94.0	-38.9	Direc
13	9999.999M	30.9	+23.0	+0.0	53.9	94.0	-40.1	Direc
14	887.940M	31.7	+30.3	+0.0	62.0	117.0	-55.0	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 3:51:23 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 15
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink TDMA(GSM) Low Channel 870.25 MHz.

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	870.790M	79.9	+30.3				+0.0	110.2	117.0	-6.8	Direc
2	65.294M	34.9	+30.5				+0.0	65.4	94.0	-28.6	Direc

3	2478.939M	29.2	+30.1	+0.0	59.3	94.0	-34.7	Direc
4	1417.710M	28.1	+30.2	+0.0	58.3	94.0	-35.7	Direc
5	6820.346M	30.4	+27.1	+0.0	57.5	94.0	-36.5	Direc
6	311.033M	26.2	+30.5	+0.0	56.7	94.0	-37.3	Direc
7	459.388M	26.1	+30.4	+0.0	56.5	94.0	-37.5	Direc
8	215.735M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
9	88.364M	25.8	+30.5	+0.0	56.3	94.0	-37.7	Direc
10	45.236M	25.4	+30.5	+0.0	55.9	94.0	-38.1	Direc
11	3834.598M	26.1	+29.7	+0.0	55.8	94.0	-38.2	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 3:58:18 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 16
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink TDMA(GSM) Mid Channel 880 MHz.

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	880.714M	83.7	+30.3				+0.0	114.0	117.0	-3.0	Direc
2	2639.457M	31.5	+29.9				+0.0	61.4	94.0	-32.6	Direc

3	1421.917M	28.2	+30.2	+0.0	58.4	94.0	-35.6	Direc
4	6728.034M	30.6	+27.2	+0.0	57.8	94.0	-36.2	Direc
5	277.382M	26.0	+30.5	+0.0	56.5	94.0	-37.5	Direc
6	213.445M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
7	9035.847M	31.1	+25.2	+0.0	56.3	94.0	-37.7	Direc
8	45.862M	25.7	+30.5	+0.0	56.2	94.0	-37.8	Direc
9	83.432M	25.7	+30.5	+0.0	56.2	94.0	-37.8	Direc
10	141.927M	25.7	+30.5	+0.0	56.2	94.0	-37.8	Direc
11	602.775M	25.6	+30.4	+0.0	56.0	94.0	-38.0	Direc
12	3804.354M	26.2	+29.7	+0.0	55.9	94.0	-38.1	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 4:05:05 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 17
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink TDMA(GSM) High Channel 892.75 MHz.

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	893.119M	80.7	+30.3				+0.0	111.0	117.0	-6.0	Direc
2	2678.695M	33.8	+29.8				+0.0	63.6	94.0	-30.4	Direc

3	1804.769M	28.4	+30.3	+0.0	58.7	94.0	-35.3	Direc
4	79.981M	28.0	+30.5	+0.0	58.5	94.0	-35.5	Direc
5	6697.263M	30.2	+27.2	+0.0	57.4	94.0	-36.6	Direc
6	219.805M	26.9	+30.4	+0.0	57.3	94.0	-36.7	Direc
7	390.847M	26.9	+30.3	+0.0	57.2	94.0	-36.8	Direc
8	3586.599M	26.6	+29.8	+0.0	56.4	94.0	-37.6	Direc
9	424.272M	26.0	+30.3	+0.0	56.3	94.0	-37.7	Direc
10	47.897M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
11	109.969M	25.4	+30.5	+0.0	55.9	94.0	-38.1	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 4:26:17 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 20
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink TDMA(CDPD) Low Channel 870.25 MHz.

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	870.790M	80.1	+30.3				+0.0	110.4	117.0	-6.6	Direc
2	2618.055M	28.9	+29.9				+0.0	58.8	94.0	-35.2	Direc

3	1817.391M	28.0	+30.3	+0.0	58.3	94.0	-35.7	Direc
4	6717.777M	30.7	+27.2	+0.0	57.9	94.0	-36.1	Direc
5	138.476M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
6	194.872M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
7	457.193M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
8	250.634M	25.9	+30.4	+0.0	56.3	94.0	-37.7	Direc
9	54.234M	25.6	+30.5	+0.0	56.1	94.0	-37.9	Direc
10	50.193M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
11	3526.111M	25.8	+29.8	+0.0	55.6	94.0	-38.4	Direc
12	8717.882M	31.4	+24.2	+0.0	55.6	94.0	-38.4	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 4:19:01 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 19
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink TDMA(CDPD) Mid Channel 880 MHz.

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	879.473M	83.8	+30.3				+0.0	114.1	117.0	-2.9	Direc
2	2639.457M	33.6	+29.9				+0.0	63.5	94.0	-30.5	Direc

3	1651.208M	28.5	+30.2	+0.0	58.7	94.0	-35.3	Direc
4	7015.229M	29.7	+27.1	+0.0	56.8	94.0	-37.2	Direc
5	141.927M	26.0	+30.5	+0.0	56.5	94.0	-37.5	Direc
6	258.400M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
7	79.893M	25.8	+30.5	+0.0	56.3	94.0	-37.7	Direc
8	223.367M	25.7	+30.4	+0.0	56.1	94.0	-37.9	Direc
9	463.046M	25.5	+30.4	+0.0	55.9	94.0	-38.1	Direc
10	31.096M	25.3	+30.5	+0.0	55.8	94.0	-38.2	Direc
11	3544.258M	26.0	+29.8	+0.0	55.8	94.0	-38.2	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/17/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 4:12:00 PM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 18
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Downlink TDMA(CDPD) High Channel 892.75 MHz.

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	893.119M	80.9	+30.3				+0.0	111.2	117.0	-5.8	Direc
2	2678.695M	34.5	+29.8				+0.0	64.3	94.0	-29.7	Direc

3	2023.542M	28.2	+30.3	+0.0	58.5	94.0	-35.5	Direc
4	7702.444M	31.6	+25.3	+0.0	56.9	94.0	-37.1	Direc
5	111.169M	26.1	+30.5	+0.0	56.6	94.0	-37.4	Direc
6	282.991M	26.0	+30.5	+0.0	56.5	94.0	-37.5	Direc
7	465.972M	26.1	+30.4	+0.0	56.5	94.0	-37.5	Direc
8	194.109M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
9	40.331M	25.2	+30.5	+0.0	55.7	94.0	-38.3	Direc
10	84.759M	25.2	+30.5	+0.0	55.7	94.0	-38.3	Direc
11	3713.623M	25.9	+29.7	+0.0	55.6	94.0	-38.4	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:55:33 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 32
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink AMPS Low Channel 825.25 MHz.

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	826.414M	100.3	+30.4				+0.0	130.7	141.7	-11.0	Direc
2	1348.291M	47.9	+30.2				+0.0	78.1	94.0	-15.9	Direc

3	2464.670M	47.4	+30.1	+0.0	77.5	94.0	-16.5	Direc
4	6522.895M	50.0	+27.2	+0.0	77.2	94.0	-16.8	Direc
5	140.877M	46.1	+30.5	+0.0	76.6	94.0	-17.4	Direc
6	238.632M	46.1	+30.4	+0.0	76.5	94.0	-17.5	Direc
7	339.076M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
8	488.651M	45.7	+30.4	+0.0	76.1	94.0	-17.9	Direc
9	80.424M	45.4	+30.5	+0.0	75.9	94.0	-18.1	Direc
10	3816.451M	45.9	+29.7	+0.0	75.6	94.0	-18.4	Direc
11	41.427M	44.6	+30.5	+0.0	75.1	94.0	-18.9	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:51:01 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 31
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink AMPS Mid Channel 836 MHz.

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	837.606M	100.9	+30.4				+0.0	131.3	141.7	-10.4	Direc
2	2339.823M	48.0	+30.2				+0.0	78.2	94.0	-15.8	Direc

3	1665.933M	47.5	+30.2	+0.0	77.7	94.0	-16.3	Direc
4	605.702M	46.3	+30.4	+0.0	76.7	94.0	-17.3	Direc
5	507.671M	46.2	+30.4	+0.0	76.6	94.0	-17.4	Direc
6	152.384M	45.8	+30.5	+0.0	76.3	94.0	-17.7	Direc
7	6584.437M	49.1	+27.2	+0.0	76.3	94.0	-17.7	Direc
8	145.078M	45.7	+30.5	+0.0	76.2	94.0	-17.8	Direc
9	285.579M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
10	60.073M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
11	3622.891M	45.7	+29.7	+0.0	75.4	94.0	-18.6	Direc
12	49.150M	44.5	+30.5	+0.0	75.0	94.0	-19.0	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:46:56 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 30
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink AMPS High Channel 847.75 MHz.

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	848.460M	99.2	+30.4				+0.0	129.6	141.7	-12.1	Direc
2	1495.542M	48.1	+30.2				+0.0	78.3	94.0	-15.7	Direc

3	2311.286M	47.9	+30.2	+0.0	78.1	94.0	-15.9	Direc
4	6922.916M	49.8	+27.1	+0.0	76.9	94.0	-17.1	Direc
5	7681.930M	51.4	+25.3	+0.0	76.7	94.0	-17.3	Direc
6	389.121M	46.1	+30.3	+0.0	76.4	94.0	-17.6	Direc
7	65.736M	45.8	+30.5	+0.0	76.3	94.0	-17.7	Direc
8	214.208M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
9	479.140M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
10	35.792M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
11	101.417M	45.0	+30.5	+0.0	75.5	94.0	-18.5	Direc
12	3580.550M	45.5	+29.8	+0.0	75.3	94.0	-18.7	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:24:45 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 27
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink CDMA Low Channel 825.25 MHz.

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	826.131M	97.2	+30.4				+0.0	127.6	141.7	-14.1	Direc
2	1764.801M	47.8	+30.3				+0.0	78.1	94.0	-15.9	Direc

3	2332.688M	47.8	+30.2	+0.0	78.0	94.0	-16.0	Direc
4	184.187M	46.6	+30.4	+0.0	77.0	94.0	-17.0	Direc
5	310.171M	46.1	+30.5	+0.0	76.6	94.0	-17.4	Direc
6	626.917M	46.2	+30.4	+0.0	76.6	94.0	-17.4	Direc
7	6728.034M	49.1	+27.2	+0.0	76.3	94.0	-17.7	Direc
8	109.069M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
9	74.142M	45.4	+30.5	+0.0	75.9	94.0	-18.1	Direc
10	44.558M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
11	3477.721M	45.7	+29.8	+0.0	75.5	94.0	-18.5	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:33:51 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 28
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink CDMA Mid Channel 836 MHz.

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	837.295M	98.0	+30.4				+0.0	128.4	141.7	-13.3	Direc
2	2293.451M	48.9	+30.2				+0.0	79.1	94.0	-14.9	Direc

3	1920.467M	48.2	+30.3	+0.0	78.5	94.0	-15.5	Direc
4	6851.117M	49.7	+27.1	+0.0	76.8	94.0	-17.2	Direc
5	605.702M	46.1	+30.4	+0.0	76.5	94.0	-17.5	Direc
6	126.923M	45.8	+30.5	+0.0	76.3	94.0	-17.7	Direc
7	167.649M	45.8	+30.5	+0.0	76.3	94.0	-17.7	Direc
8	84.051M	45.6	+30.5	+0.0	76.1	94.0	-17.9	Direc
9	3467.020M	46.0	+29.8	+0.0	75.8	94.0	-18.2	Direc
10	265.303M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
11	3544.258M	45.8	+29.8	+0.0	75.6	94.0	-18.4	Direc
12	45.288M	44.5	+30.5	+0.0	75.0	94.0	-19.0	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:40:55 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 29
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink CDMA High Channel 847.75 MHz.

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	848.460M	96.1	+30.4				+0.0	126.5	141.7	-15.2	Direc
2	1617.550M	48.1	+30.2				+0.0	78.3	94.0	-15.7	Direc

3	2329.121M	47.9	+30.2	+0.0	78.1	94.0	-15.9	Direc
4	6676.749M	50.3	+27.2	+0.0	77.5	94.0	-16.5	Direc
5	3310.068M	47.2	+29.7	+0.0	76.9	94.0	-17.1	Direc
6	128.124M	45.9	+30.5	+0.0	76.4	94.0	-17.6	Direc
7	441.830M	46.0	+30.3	+0.0	76.3	94.0	-17.7	Direc
8	237.869M	45.8	+30.4	+0.0	76.2	94.0	-17.8	Direc
9	330.447M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
10	36.366M	45.0	+30.5	+0.0	75.5	94.0	-18.5	Direc
11	59.189M	44.6	+30.5	+0.0	75.1	94.0	-18.9	Direc
12	4167.279M	45.5	+29.3	+0.0	74.8	94.0	-19.2	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:14:38 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 26
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink TDMA(GSM) Low Channel 825.25 MHz.

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	826.414M	100.2	+30.4				+0.0	130.6	141.7	-11.1	Direc
2	2453.969M	47.9	+30.1				+0.0	78.0	94.0	-16.0	Direc

3	1659.622M	47.7	+30.2	+0.0	77.9	94.0	-16.1	Direc
4	6666.492M	49.4	+27.2	+0.0	76.6	94.0	-17.4	Direc
5	75.823M	45.9	+30.5	+0.0	76.4	94.0	-17.6	Direc
6	8861.479M	51.6	+24.7	+0.0	76.3	94.0	-17.7	Direc
7	38.766M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
8	100.367M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
9	279.108M	45.3	+30.5	+0.0	75.8	94.0	-18.2	Direc
10	237.869M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
11	480.603M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
12	3622.891M	45.2	+29.7	+0.0	74.9	94.0	-19.1	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:09:26 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 25
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink TDMA(GSM) Mid Channel 836 MHz.

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	837.606M	100.7	+30.4				+0.0	131.1	141.7	-10.6	Direc
2	1962.538M	48.9	+30.3				+0.0	79.2	94.0	-14.8	Direc

3	1920.467M	48.3	+30.3	+0.0	78.6	94.0	-15.4	Direc
4	2325.554M	48.3	+30.2	+0.0	78.5	94.0	-15.5	Direc
5	6574.180M	50.0	+27.2	+0.0	77.2	94.0	-16.8	Direc
6	276.951M	46.0	+30.5	+0.0	76.5	94.0	-17.5	Direc
7	107.569M	45.8	+30.5	+0.0	76.3	94.0	-17.7	Direc
8	231.000M	45.5	+30.4	+0.0	75.9	94.0	-18.1	Direc
9	41.479M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
10	559.613M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
11	84.140M	44.8	+30.5	+0.0	75.3	94.0	-18.7	Direc
12	3562.404M	45.0	+29.8	+0.0	74.8	94.0	-19.2	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 10:02:50 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 24
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink TDMA(GSM) High Channel 847.75 MHz.

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	848.460M	99.0	+30.4				+0.0	129.4	141.7	-12.3	Direc
2	2147.200M	48.4	+30.2				+0.0	78.6	94.0	-15.4	Direc

3	1592.307M	47.9	+30.2	+0.0	78.1	94.0	-15.9	Direc
4	300.679M	46.0	+30.5	+0.0	76.5	94.0	-17.5	Direc
5	435.978M	46.0	+30.3	+0.0	76.3	94.0	-17.7	Direc
6	6728.034M	49.1	+27.2	+0.0	76.3	94.0	-17.7	Direc
7	85.113M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
8	229.473M	45.4	+30.4	+0.0	75.8	94.0	-18.2	Direc
9	41.636M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
10	109.069M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
11	3798.305M	45.6	+29.7	+0.0	75.3	94.0	-18.7	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 9:40:42 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 21
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink TDMA(CDPD) Low Channel 825.25 MHz.

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	826.414M	100.6	+30.4				+0.0	131.0	141.7	-10.7	Direc
2	2061.590M	48.0	+30.3				+0.0	78.3	94.0	-15.7	Direc

3	2048.785M	47.6	+30.3	+0.0	77.9	94.0	-16.1	Direc
4	6728.034M	49.9	+27.2	+0.0	77.1	94.0	-16.9	Direc
5	3501.917M	47.2	+29.8	+0.0	77.0	94.0	-17.0	Direc
6	148.822M	45.8	+30.5	+0.0	76.3	94.0	-17.7	Direc
7	3876.939M	46.6	+29.6	+0.0	76.2	94.0	-17.8	Direc
8	117.321M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
9	270.048M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
10	548.639M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
11	71.487M	44.9	+30.5	+0.0	75.4	94.0	-18.6	Direc
12	34.696M	44.6	+30.5	+0.0	75.1	94.0	-18.9	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 9:49:42 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 22
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink TDMA(CDPD) Mid Channel 836 MHz.

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	837.606M	101.0	+30.4				+0.0	131.4	141.7	-10.3	Direc
2	1989.885M	48.1	+30.3				+0.0	78.4	94.0	-15.6	Direc

3	2329.121M	48.2	+30.2	+0.0	78.4	94.0	-15.6	Direc
4	6563.923M	49.4	+27.2	+0.0	76.6	94.0	-17.4	Direc
5	201.233M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
6	657.643M	45.8	+30.4	+0.0	76.2	94.0	-17.8	Direc
7	106.068M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
8	71.310M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
9	319.230M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
10	3876.939M	45.8	+29.6	+0.0	75.4	94.0	-18.6	Direc
11	49.828M	44.6	+30.5	+0.0	75.1	94.0	-18.9	Direc

Test Location: CKC Laboratories, Inc. •1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/18/2003
Test Type: **Spurious Emissions Antenna Terminals** Time: 9:53:52 AM
Equipment: **In-building Bidirectional Amplifier** Sequence#: 23
Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

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

Function	Manufacturer	Model #	S/N
In-building Bidirectional Amplifier*	Wilson Electronics	801102	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. RF Power Output Test: Two signals are input to the amplifier. The inputs from the signal generators 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. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Spurious Emissions Antenna Terminals Uplink TDMA(CDPD) High Channel 847.75 MHz.

Transducer Legend:

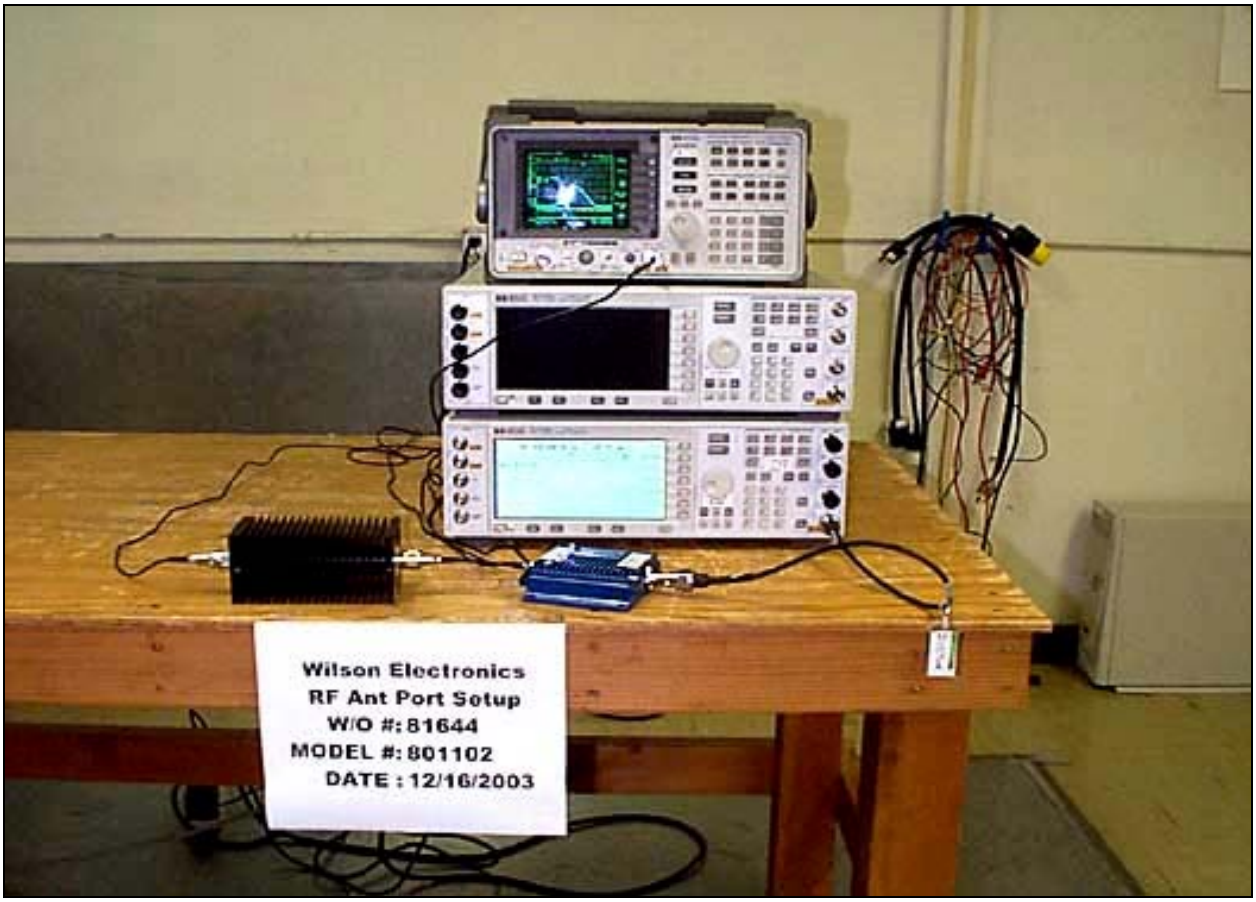
T1=Pad 30dB

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	848.460M	99.3	+30.4				+0.0	129.7	141.7	-12.0	Direc
2	2289.884M	47.9	+30.2				+0.0	78.1	94.0	-15.9	Direc

3	2013.024M	47.4	+30.3	+0.0	77.7	94.0	-16.3	Direc
4	6533.152M	49.7	+27.2	+0.0	76.9	94.0	-17.1	Direc
5	184.695M	46.2	+30.4	+0.0	76.6	94.0	-17.4	Direc
6	450.609M	45.4	+30.4	+0.0	75.8	94.0	-18.2	Direc
7	42.419M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
8	3864.841M	45.9	+29.7	+0.0	75.6	94.0	-18.4	Direc
9	118.821M	45.0	+30.5	+0.0	75.5	94.0	-18.5	Direc
10	263.146M	45.1	+30.4	+0.0	75.5	94.0	-18.5	Direc
11	79.716M	44.9	+30.5	+0.0	75.4	94.0	-18.6	Direc

PHOTOGRAPH SHOWING DIRECT CONNECT



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

Bandwidth settings used: RBW=VBW=300 Hz for frequencies less than 60 kHz removed from the carrier. RBW=VBW=30 kHz for frequencies greater than 60 kHz removed from the carrier.

Test Location:	CKC Laboratories, Inc. •5473A Clouds Rest • Mariposa CA 95338 • 800-500-4EMC (4362)		
Customer:	**Wilson Electronics**		
Specification:	**FCC 22.917**		
Work Order #:	**81644**	Date:	12/31/2003
Test Type:	**Maximized Emissions**	Time:	15:20:32
Equipment:	**Bidirectional Amplifier**	Sequence#:	73
Manufacturer:	Wilson Electronics	Tested By:	Randal Clark
Model:	801102		
S/N:	001		

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable, SemiFlex	58758-23	01/21/2003	01/21/2004	P01403
Cable H&S 35'	90148402	01/21/2003	01/21/2004	P01352
Cable, WL Gore 2'	149047	04/10/2003	04/10/2004	P01527
Cable, Andrews Hardline	NA	06/04/2003	06/04/2005	P00740
Chase CBL6111C Bilog	2456	12/13/2002	12/13/2004	01991
EMCO 3115 Horn Antenna	9006-3413	04/25/2003	04/25/2005	327
HP 8447D Preamp	1937A02604	03/07/2003	03/07/2004	00099
HP 8449B Preamp	3008A00301	10/21/2002	10/18/2004	2010
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA Display	2403A08241	02/26/2003	02/26/2004	00489
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478

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

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bidirectional Amplifier*	Wilson Electronics	801102	001

Support Devices:

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

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Radiated Spurious Emissions Test: Two Signals are is input to the amplifier. Both signals are generated via support ESG. 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. RF output is terminated into a shielded resistive load. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Radiated Spurious Emissions - Downlink CDMA. CDMA was determined to be the worst case modulation - data is representative of all modulations for high middle and low channels. **No EUT Emissions detected within 20dBc of the limit.**

Transducer Legend:

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

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

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

Customer: **Wilson Electronics**
Specification: **FCC 22.917**
Work Order #: **81644** Date: 12/31/2003
Test Type: **Maximized Emissions** Time: 15:45:57
Equipment: **Bidirectional Amplifier** Sequence#: 76
Manufacturer: Wilson Electronics Tested By: Randal Clark
Model: 801102
S/N: 001

***Test Equipment*:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable, SemiFlex	58758-23	01/21/2003	01/21/2004	P01403
Cable H&S 35'	90148402	01/21/2003	01/21/2004	P01352
Cable, WL Gore 2'	149047	04/10/2003	04/10/2004	P01527
Cable, Andrews Hardline	NA	06/04/2003	06/04/2005	P00740
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HP 8447D Preamp	1937A02604	03/07/2003	03/07/2004	00099
HP 8449B Preamp	3008A00301	10/21/2002	10/18/2004	2010
HP 8566B SA	2209A01404	02/26/2003	02/26/2004	00490
HP 8566B SA Display	2403A08241	02/26/2003	02/26/2004	00489
HP 85650A QPA	2811A01267	02/26/2003	02/26/2004	00478

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

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
Bidirectional Amplifier*	Wilson Electronics	801102	001

Support Devices:

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

Test Conditions / Notes:

EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Radiated Spurious Emissions Test: Two Signals are is input to the amplifier. Both signals are generated via support ESG. 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. RF output is terminated into a shielded resistive load. Frequencies Tested: Downlink Low - 870.25 MHz, Mid - 880 MHz, High - 892.75 MHz. Frequencies Tested: Uplink Low - 825.25 MHz, Mid - 836 MHz, High - 847.75 MHz. Frequency Range Investigated: 30 MHz - 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW. Radiated Spurious Emissions - Uplink CDMA. CDMA was determined to be the worst case modulation - data is representative of all modulations for high middle and low channels. **No EUT Emissions detected within 20dBc of the limit.**

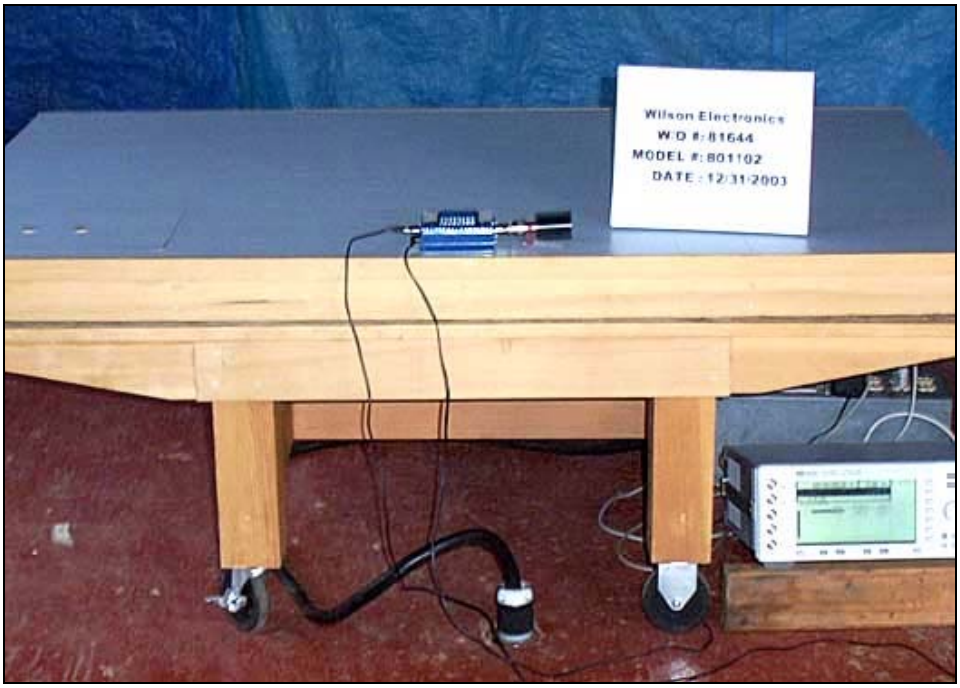
Transducer Legend:

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

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

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Front View



Radiated Emissions - Back View

FCC 2.1091 – MPE CALCULATIONS

Date of Report: January 5, 2004

Calculations prepared for:

Calculations prepared by:

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

Model Number: 801102

Fundamental Operating Frequency: 869-894 Downlink

Antenna Gain and Type: +5.12dBi Omni-Directional Whip
Maximum Radiated Output Power: 15.12 dBm (EIRP)
Measured Output Power: 10 dBm
Note EIRP calculated with the highest gain antenna of this type used with this device.

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

$$\text{MPE Limit} = f / 1500 \ (mW/cm^2)$$
$$= 869 / 1500$$
$$= 0.57933 \sim 0.58 \ (mW/cm^2)$$

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

EIRP (mW)	Distance (cm)	Power Density (mW/cm^2)	Result
32.51	2.11	0.580	Pass

$$PowerDensity(mW/cm^2) = \frac{EIRP}{4\pi d^2}$$ 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 less than 20 cm and at a output power of 32.51 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
Date of Report: January 5, 2004

Calculations prepared for:

Calculations prepared by:

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

Model Number: 801102

Fundamental Operating Frequency: 824-849 Uplink

Antenna Gain and Type: +13 dBi Yagi (Outdoor Antenna)
Maximum Radiated Output Power: 47.74 dBm (EIRP)
Measured Output Power: 34.74 dBm

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

MPE Limit = f / 1500 (mW/cm^2)
= 824 / 1500
= 0.54933 ~ 0.55 (mW/cm^2)
Note: Limit is calculated from the lower edge of the operating band

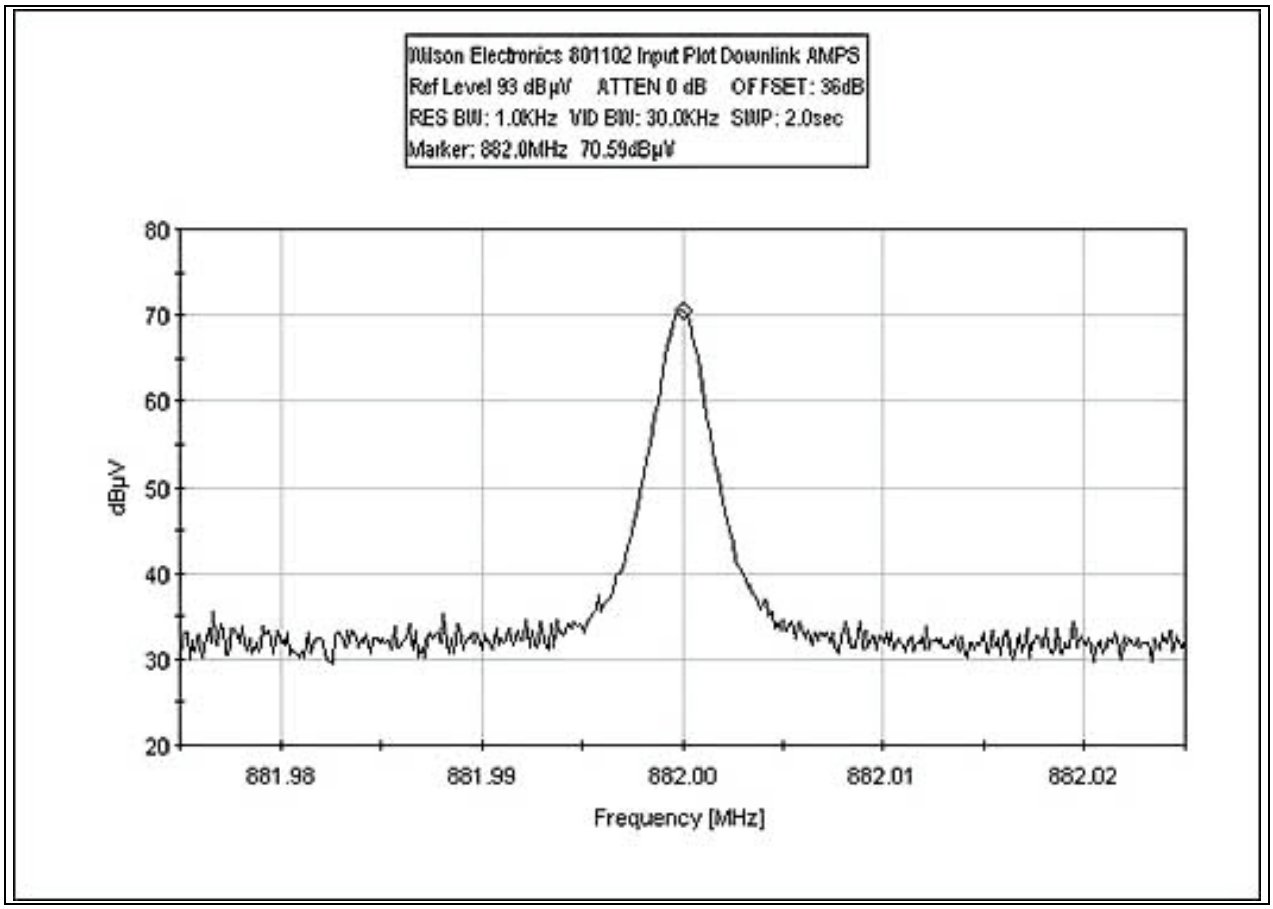
EIRP (mW)	Distance (cm)	Power Density (mW/cm^2)	Result
59429.22	92.73	0.550	Pass

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

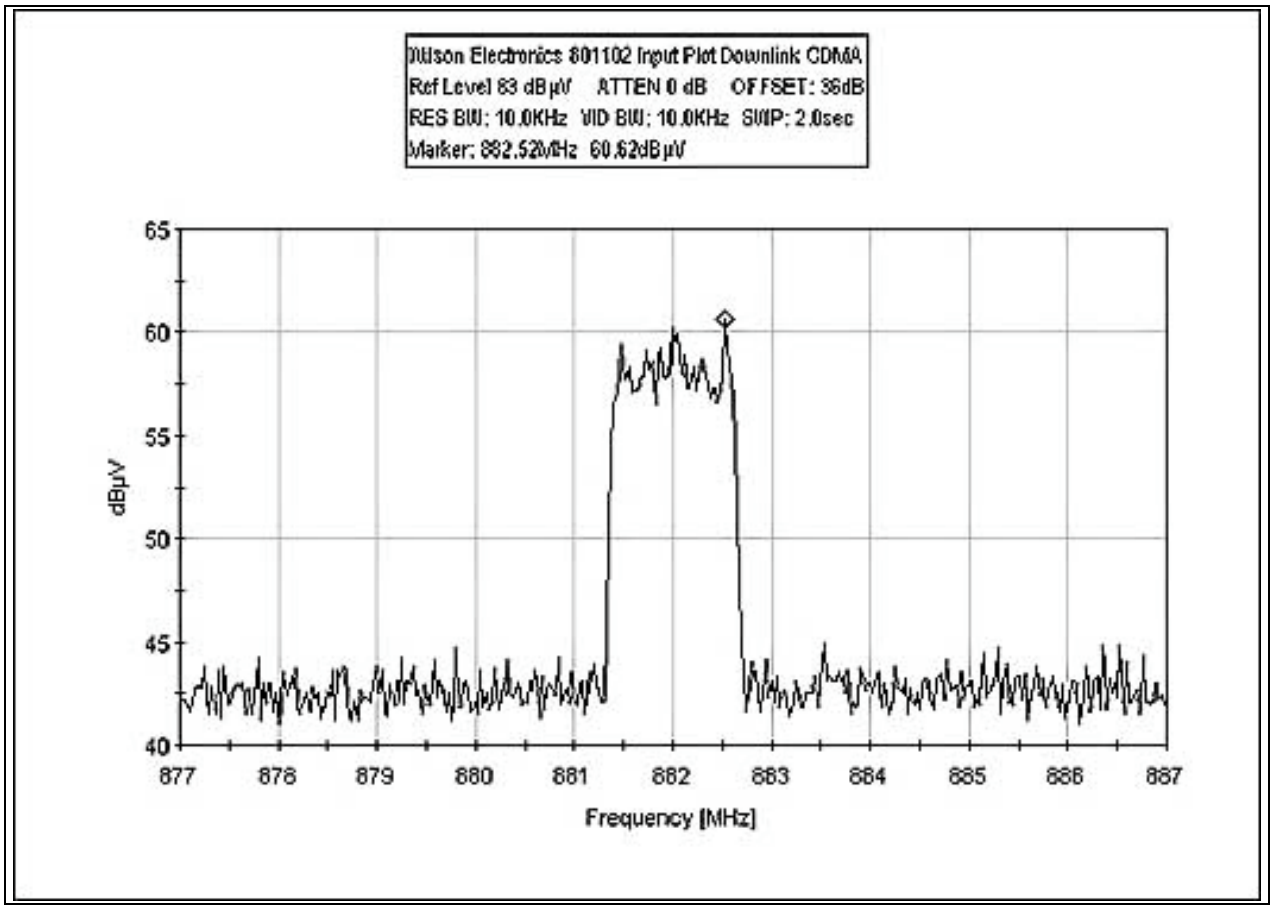
As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a distance of 92.73 cm and at a output power of 59426 mW. Antenna used for uplink frequencies must be mounted on outdoor permanent structures. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

Downlink Input AMPS

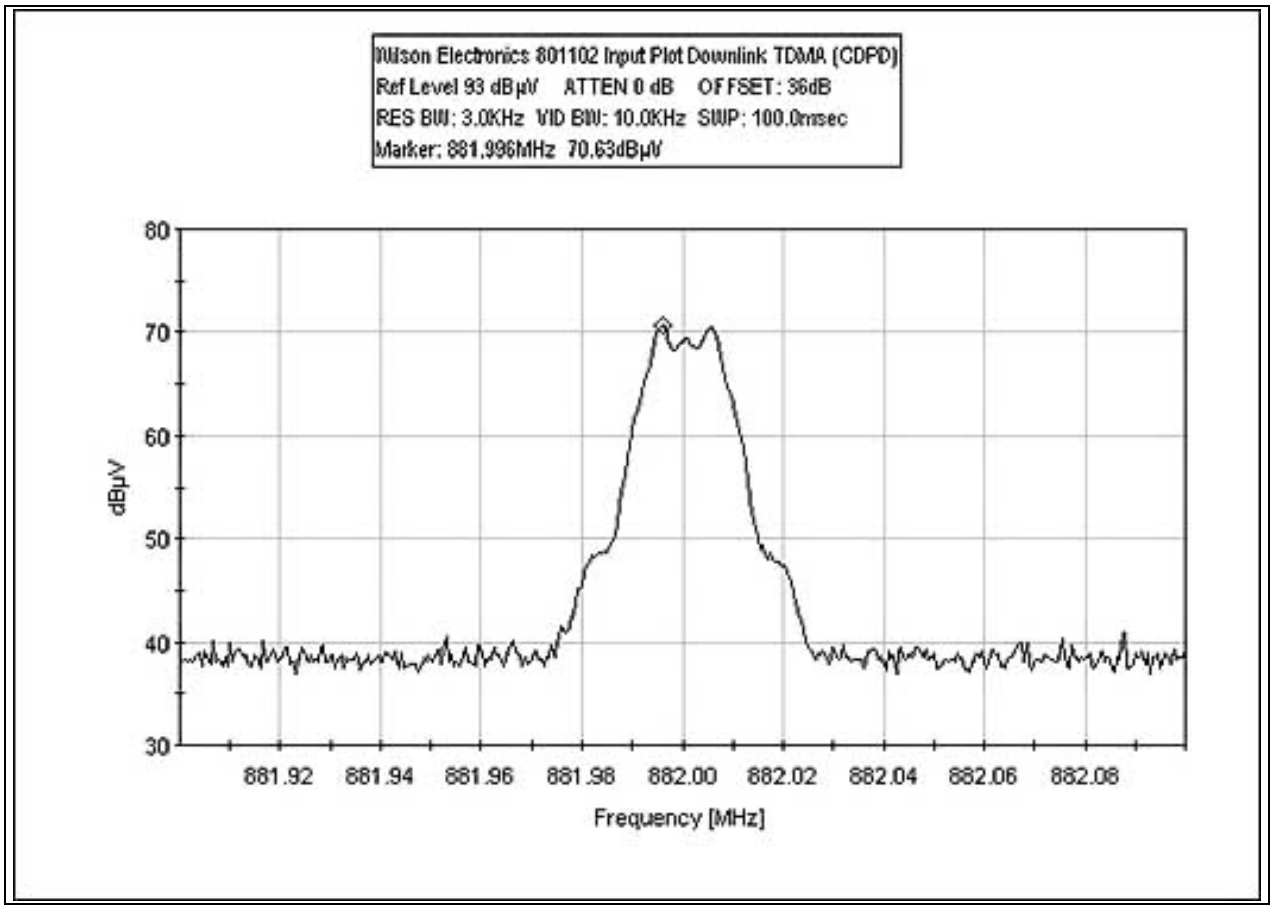
Test Conditions: EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. RF Power Output Test: Only one signal is input to the amplifier. The input from the signal generator is set such that the maximum output 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz – 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW.



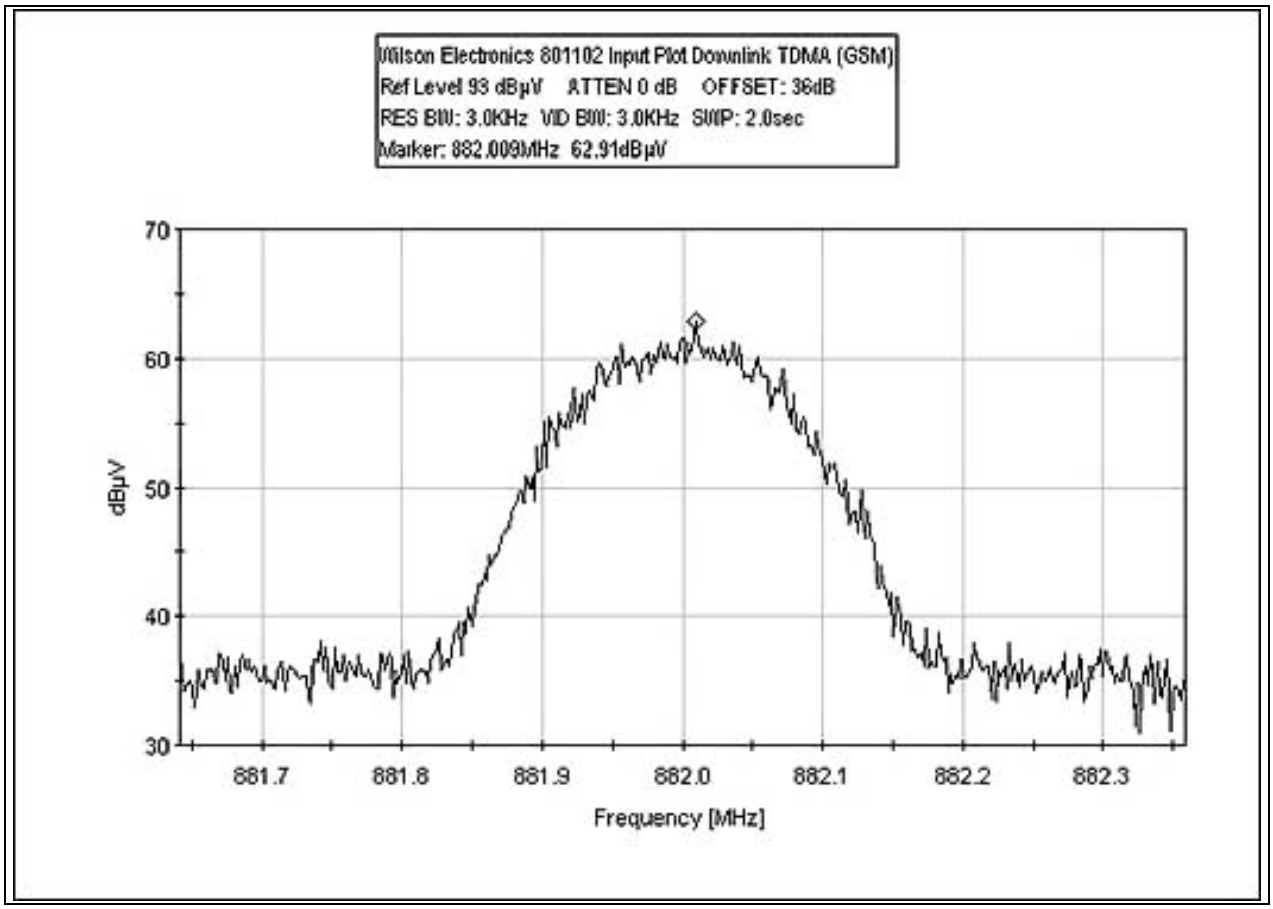
Downlink Input CDMA



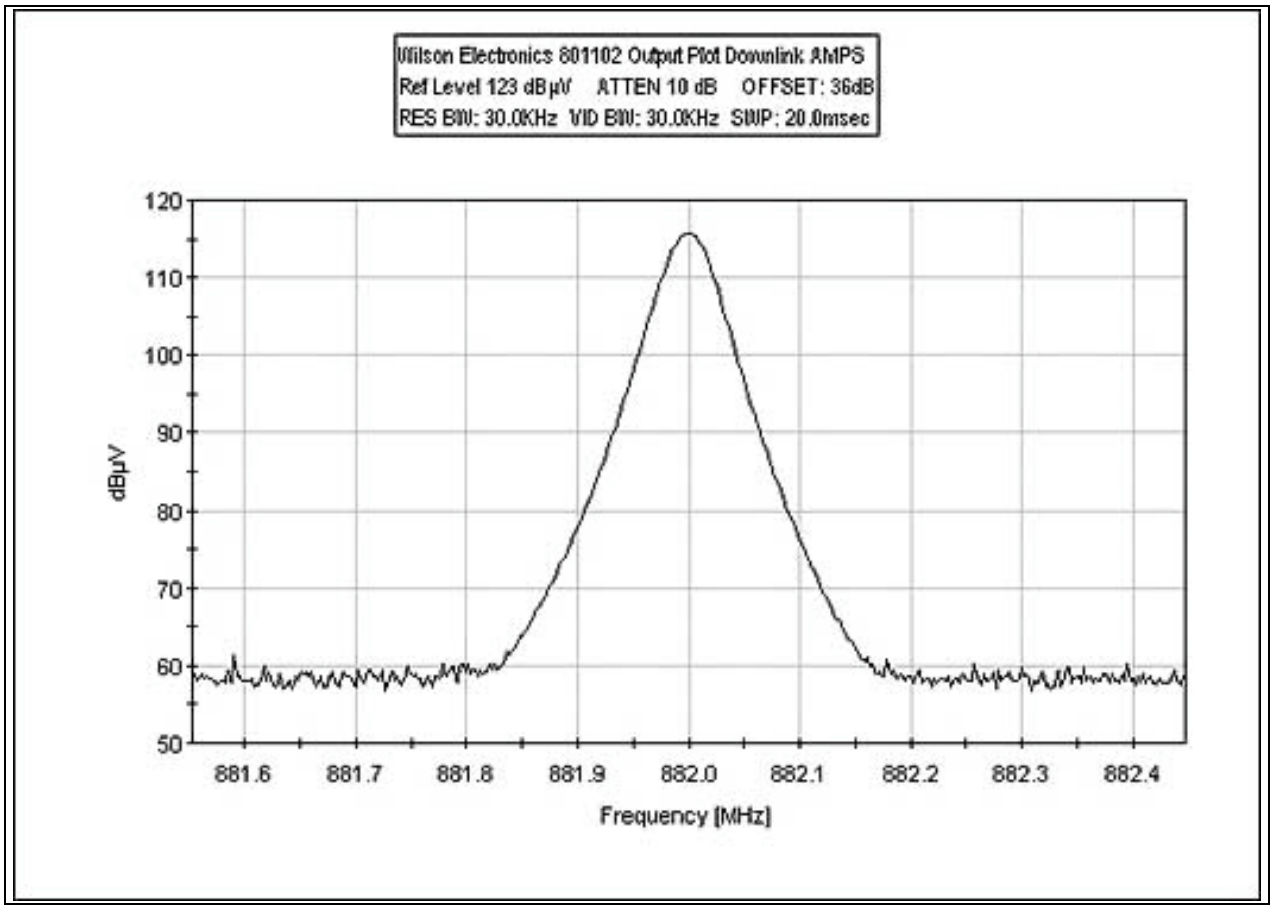
Downlink Input TDMA(CDPD)



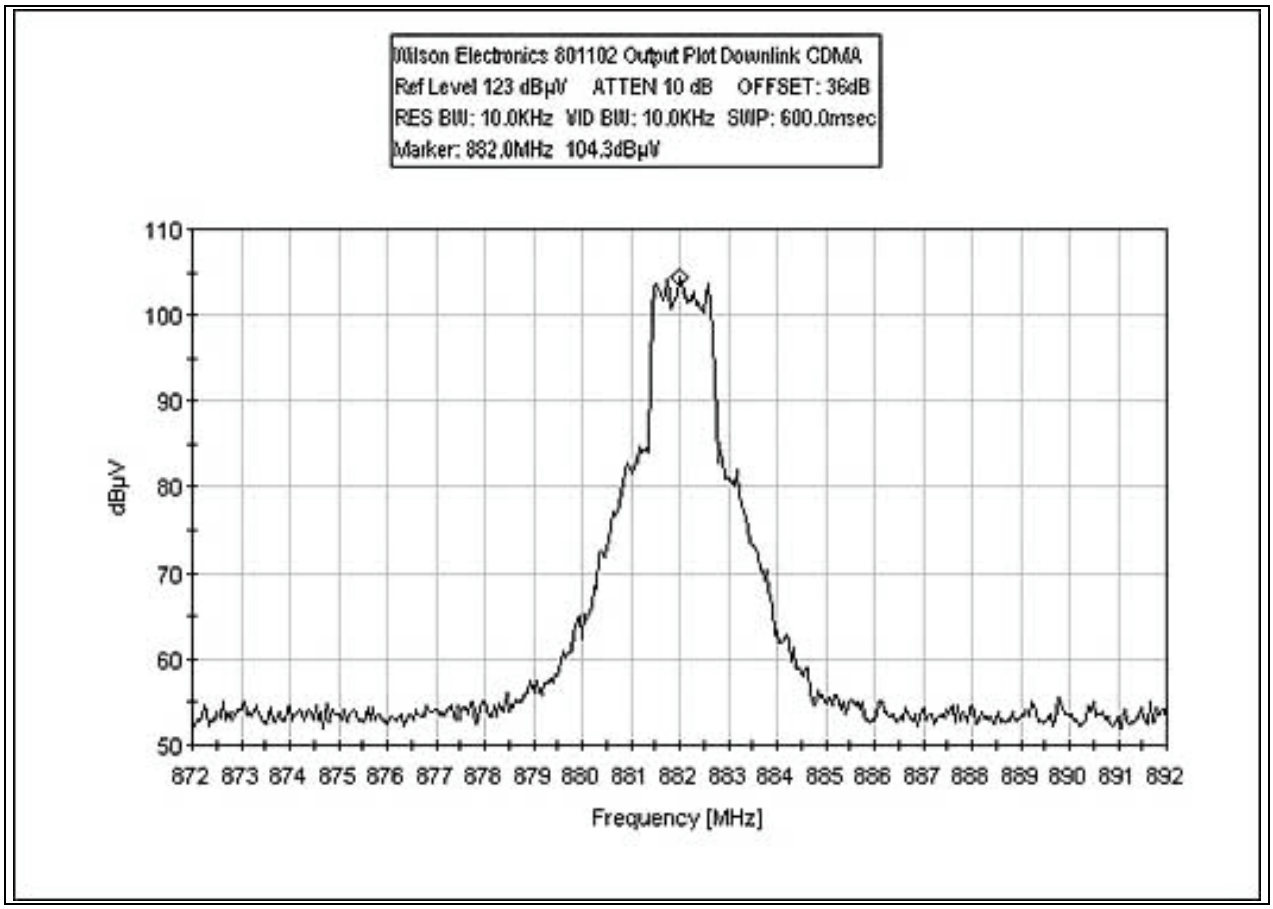
Downlink Input TDMA(GSM)



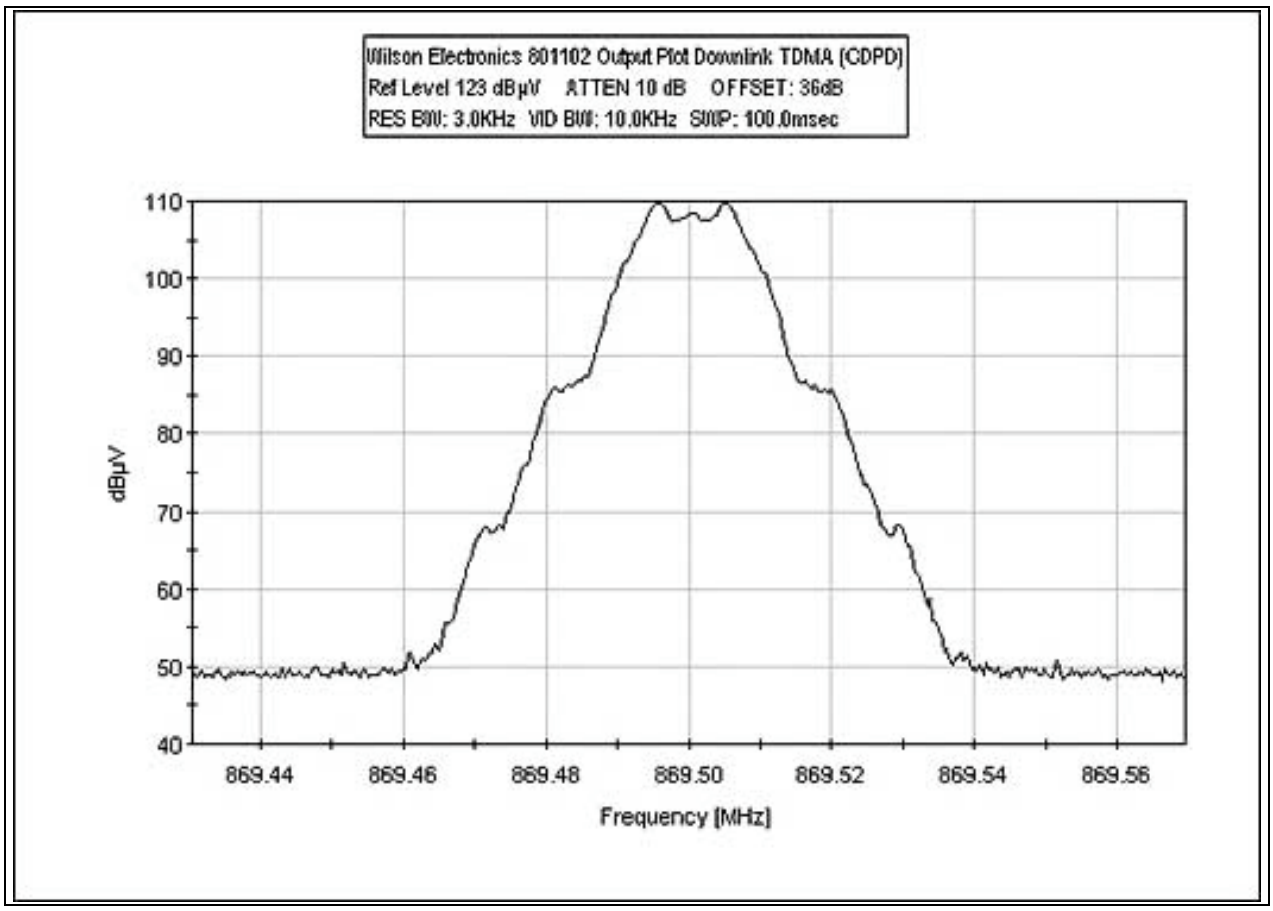
Downlink Output AMPS



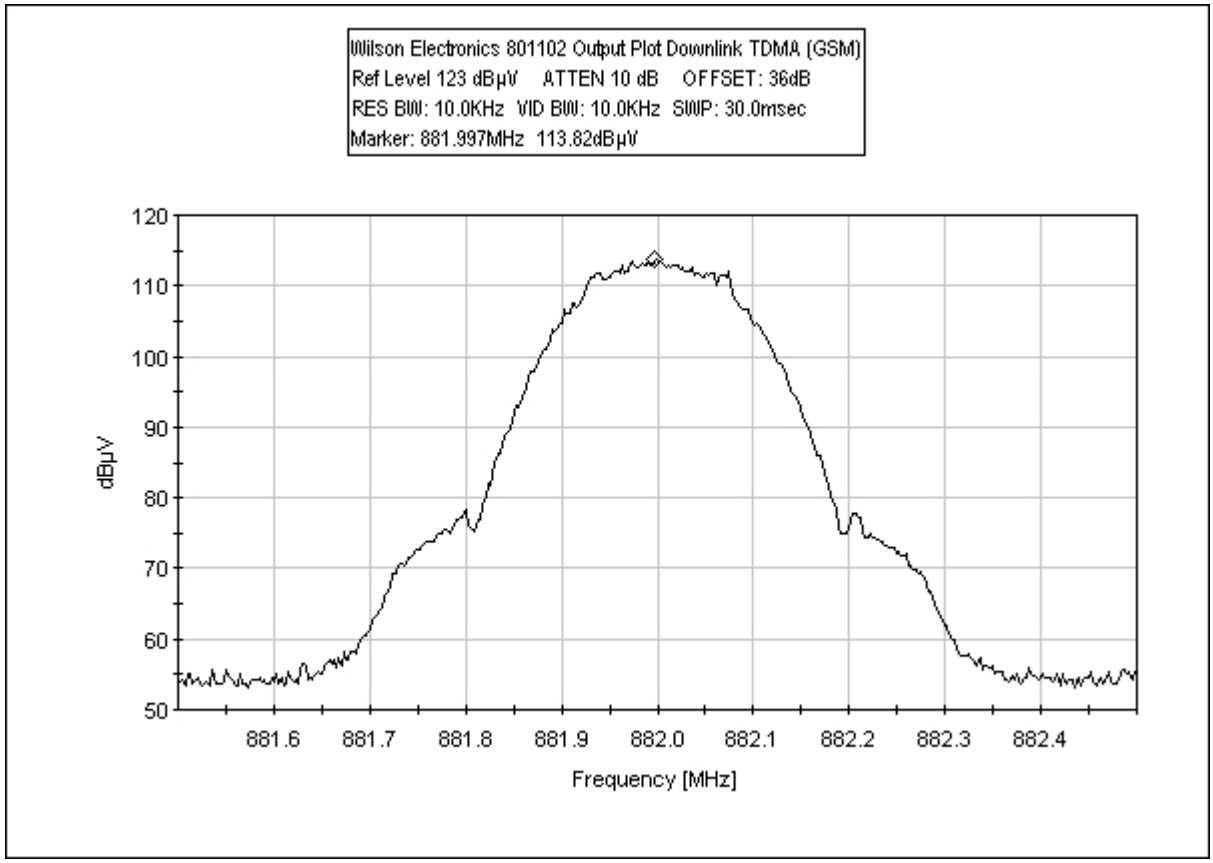
Downlink Output CDMA



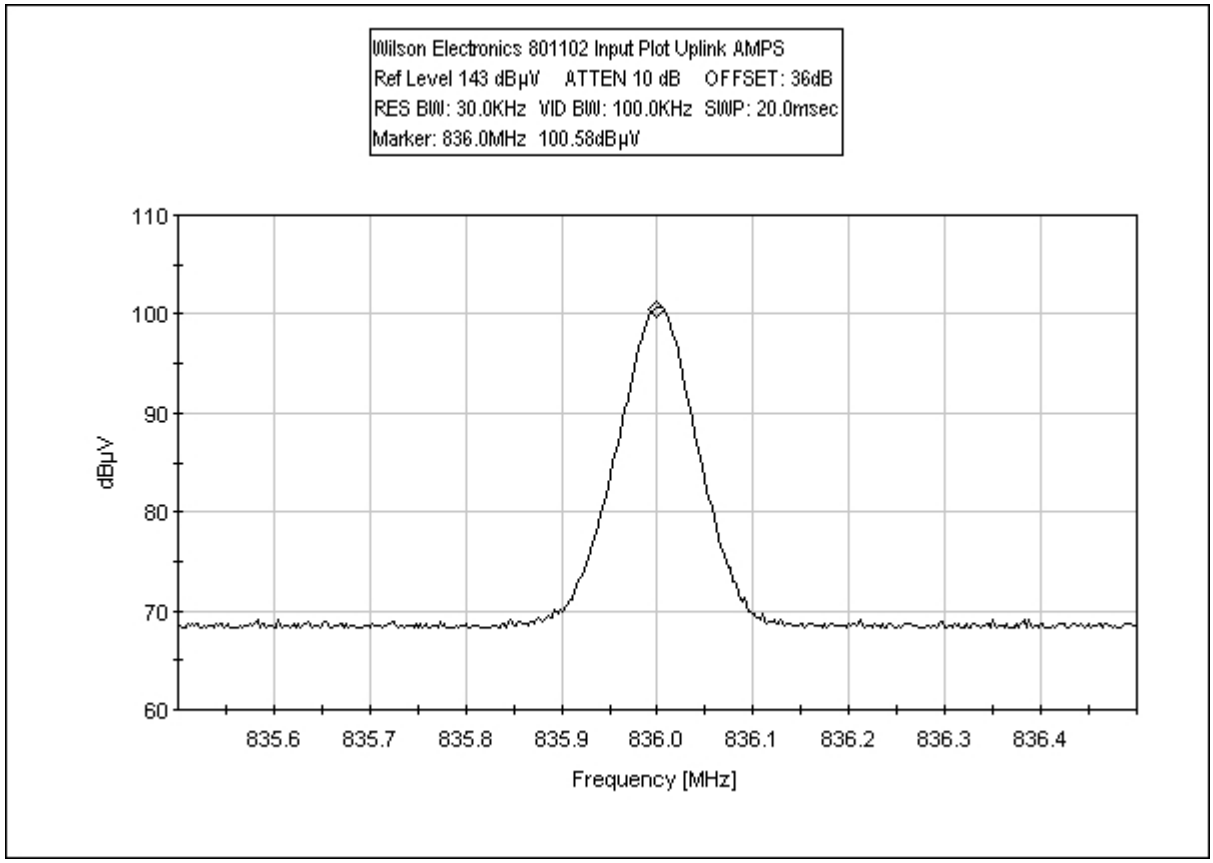
Downlink Output TDMA(CDPD)



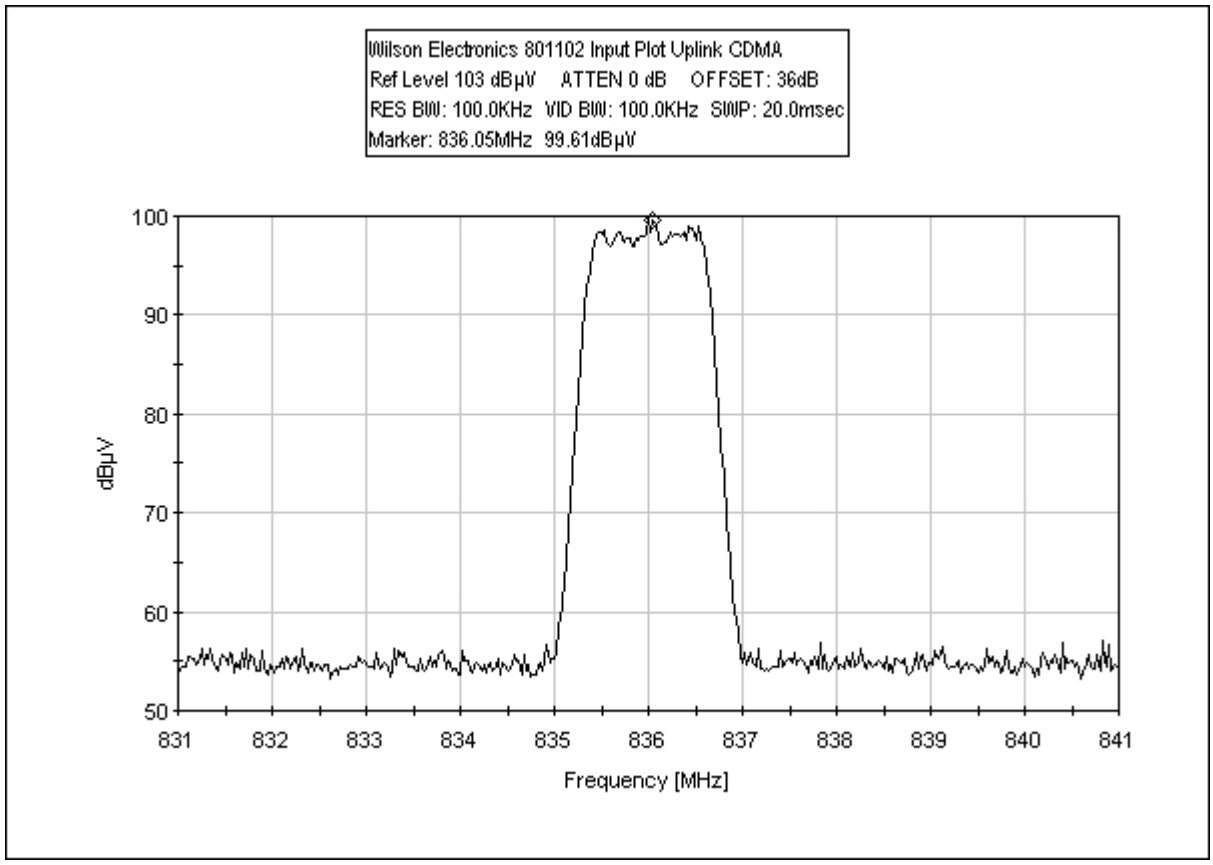
Downlink Output TDMA(GSM)



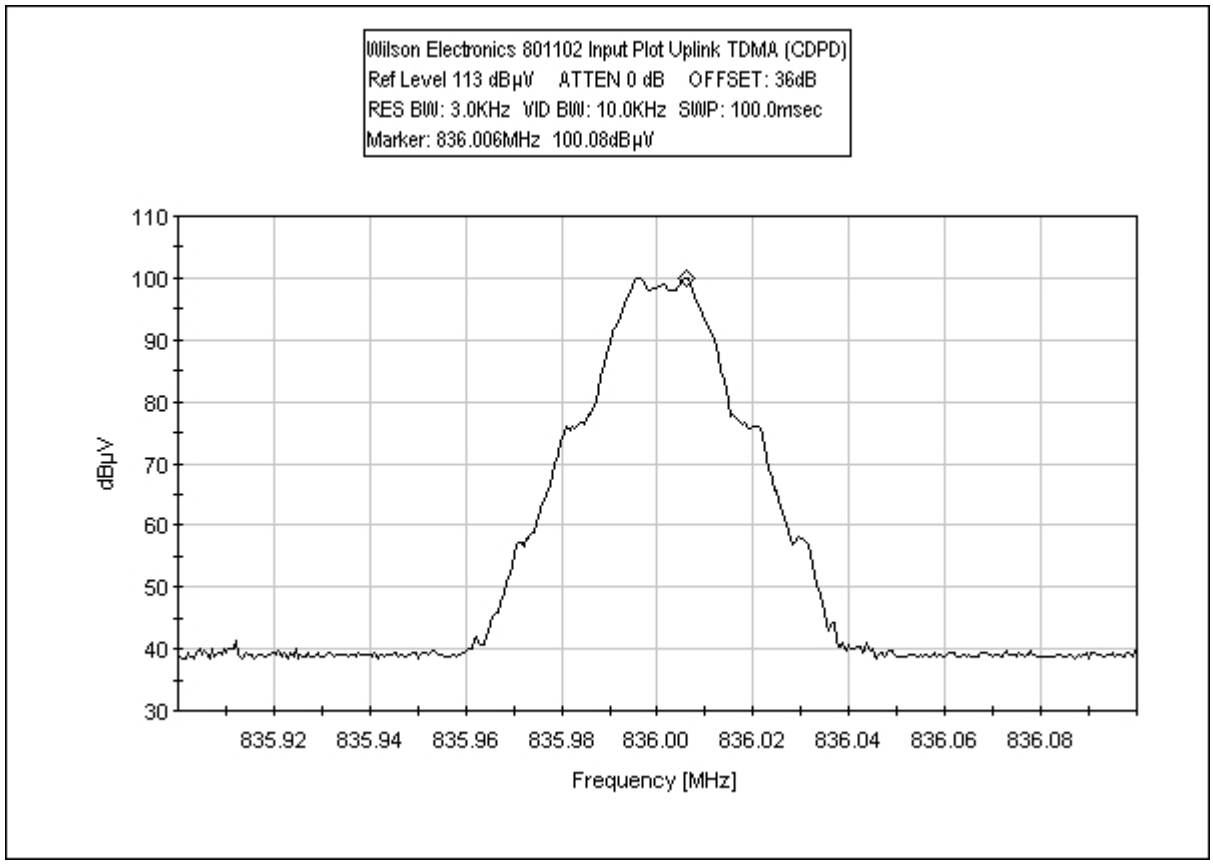
Uplink Input AMPS



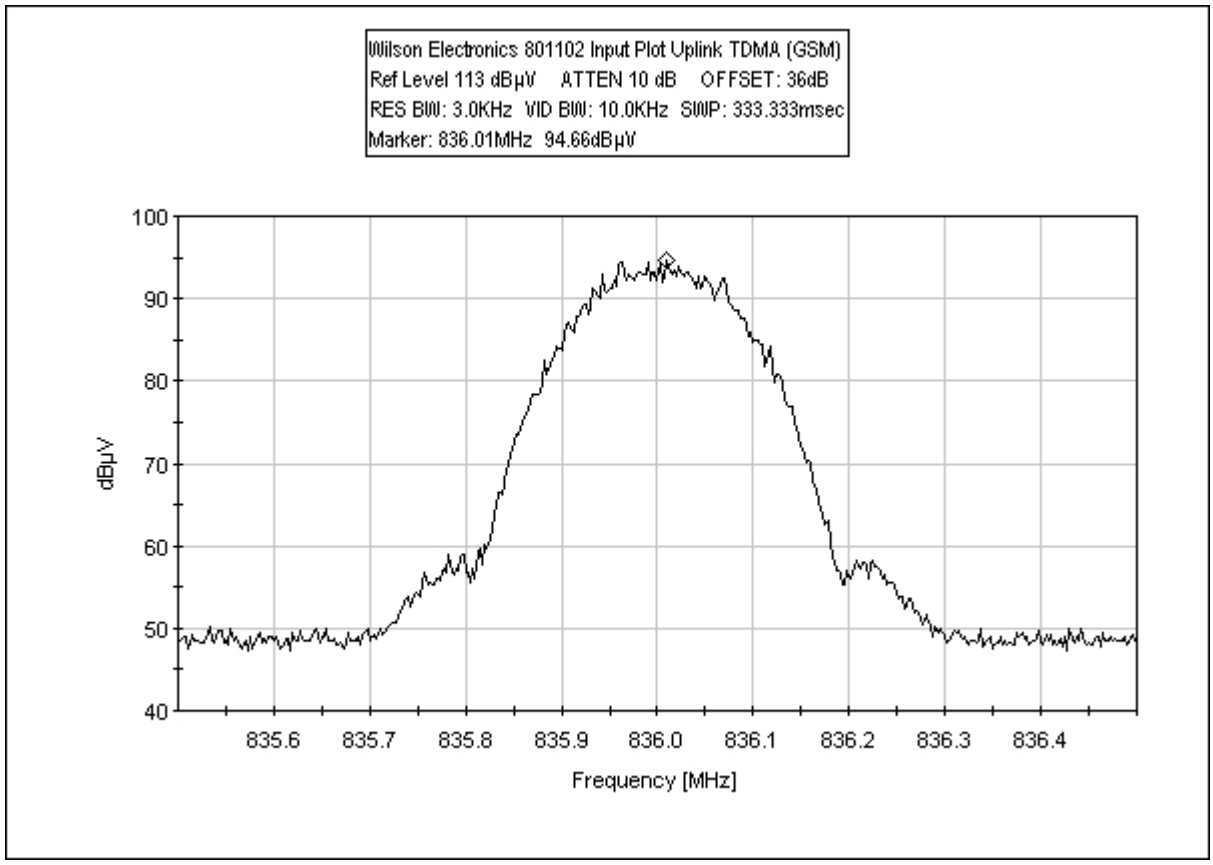
Uplink Input CDMA



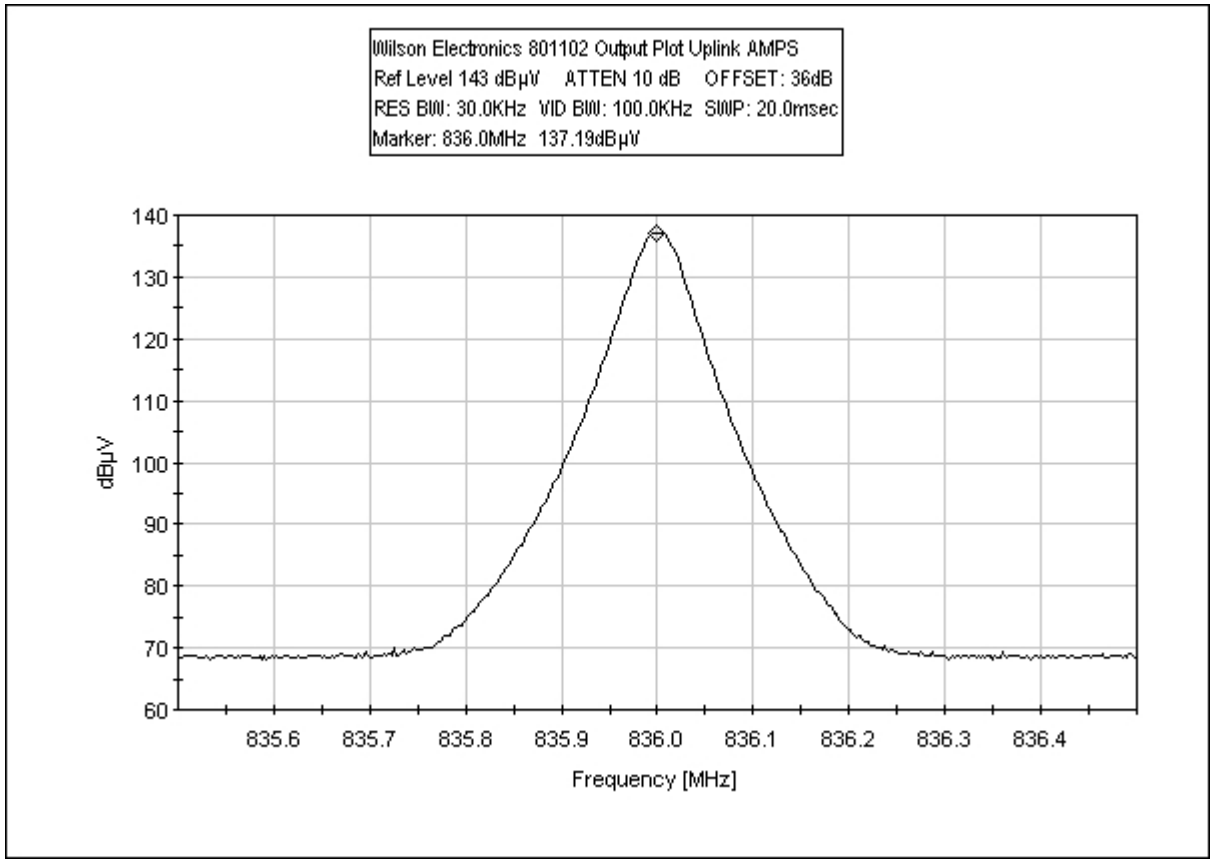
Uplink Input TDMA(CDPD)



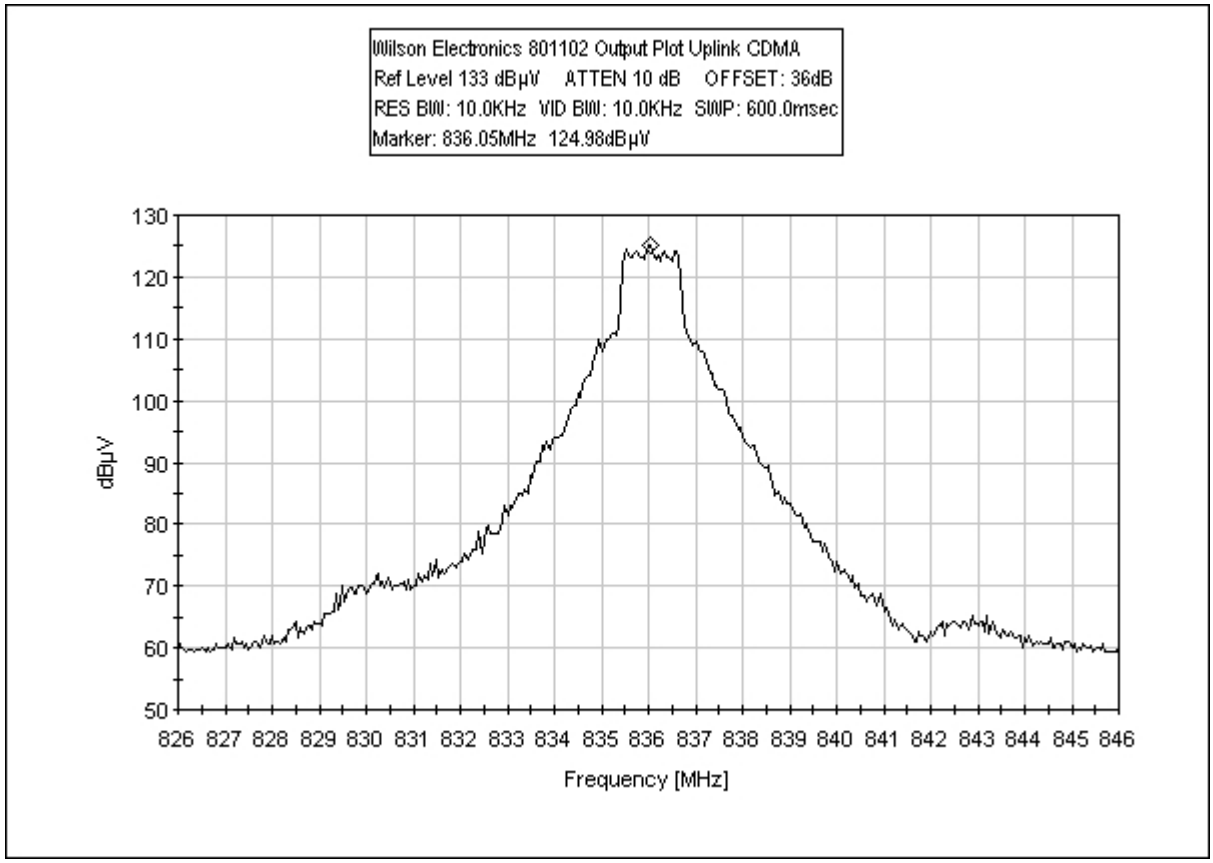
Uplink Input TDMA(GSM)



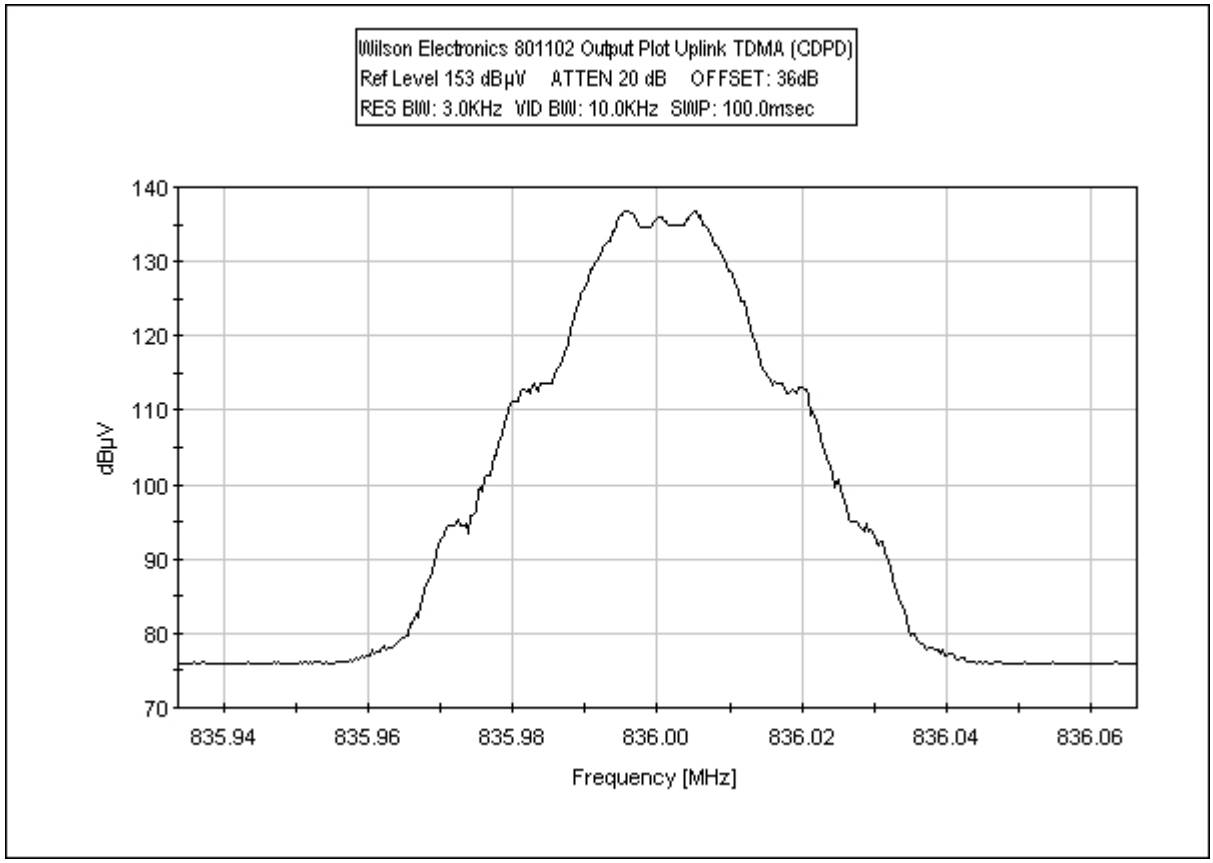
Uplink Output AMPS



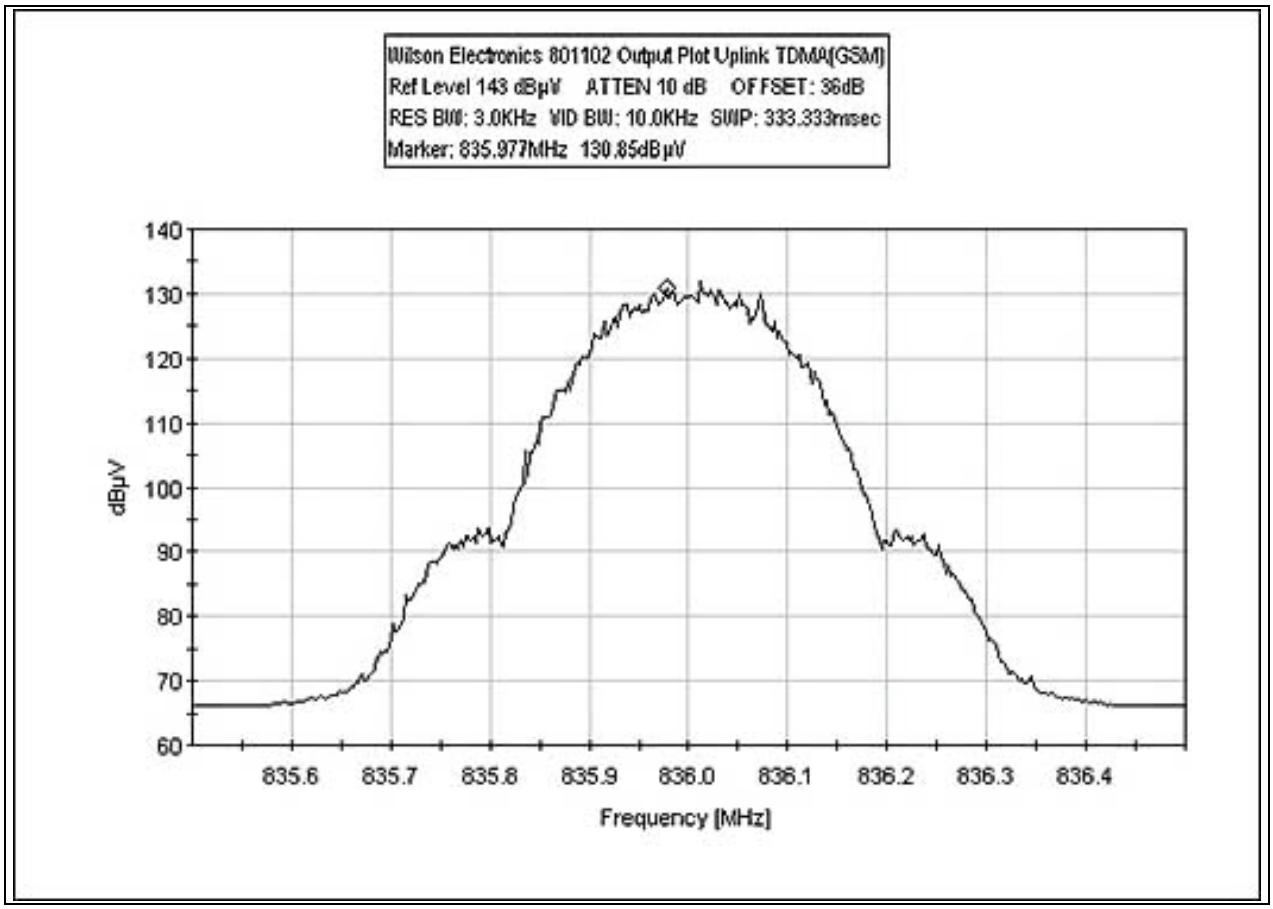
Uplink Output CDMA



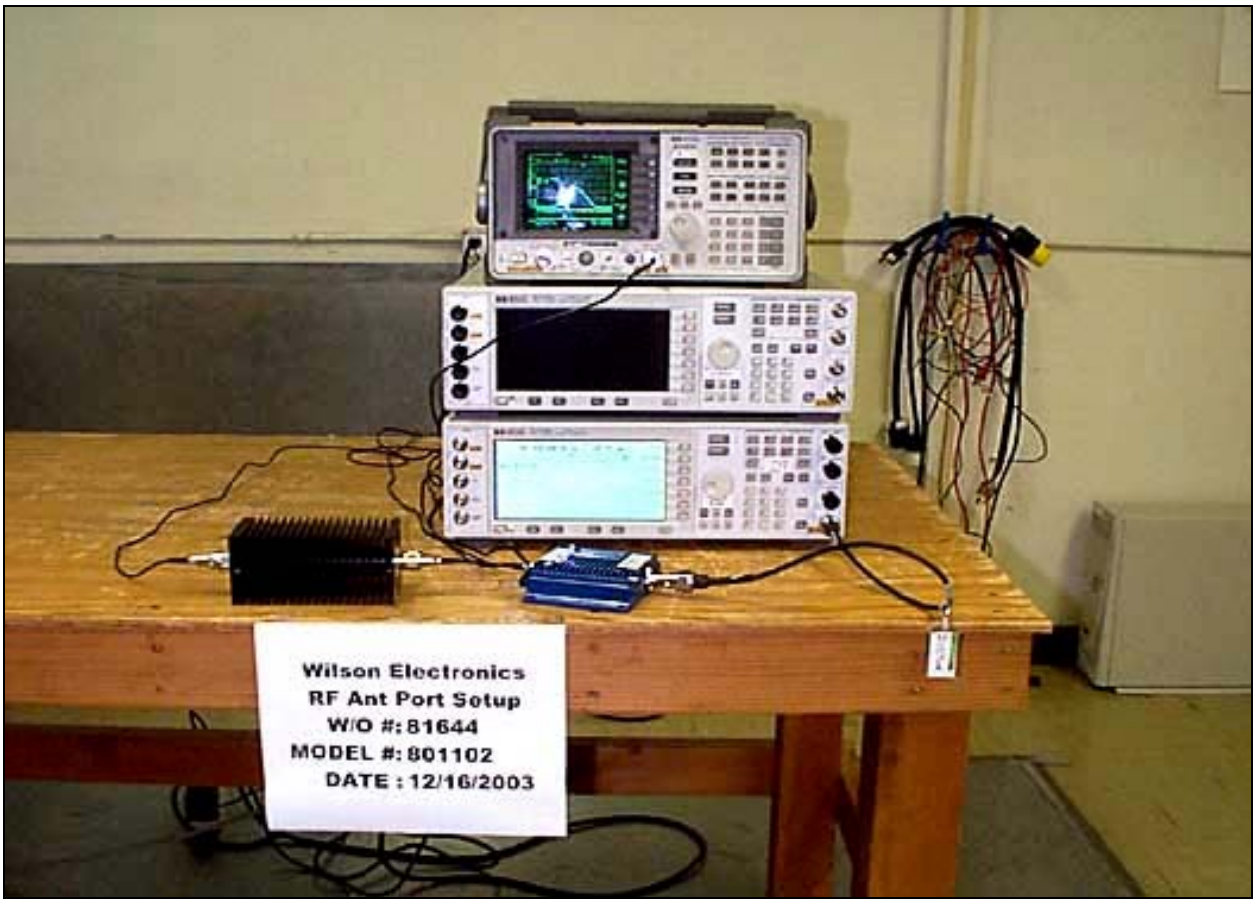
Uplink Output TDMA(CDPD)



Uplink Output TDMA(GSM)



PHOTOGRAPH SHOWING DIRECT CONNECT

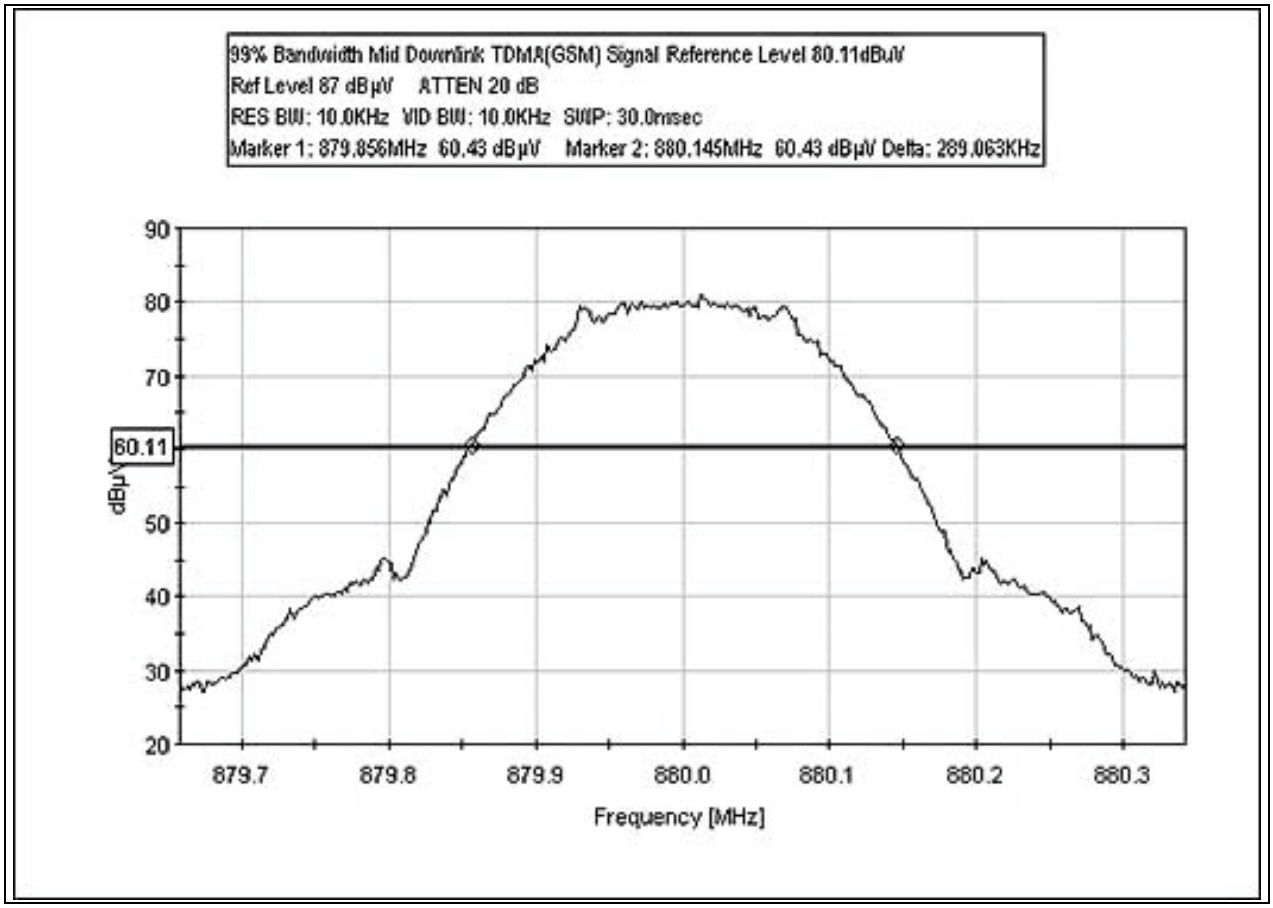


***Test Equipment*:**

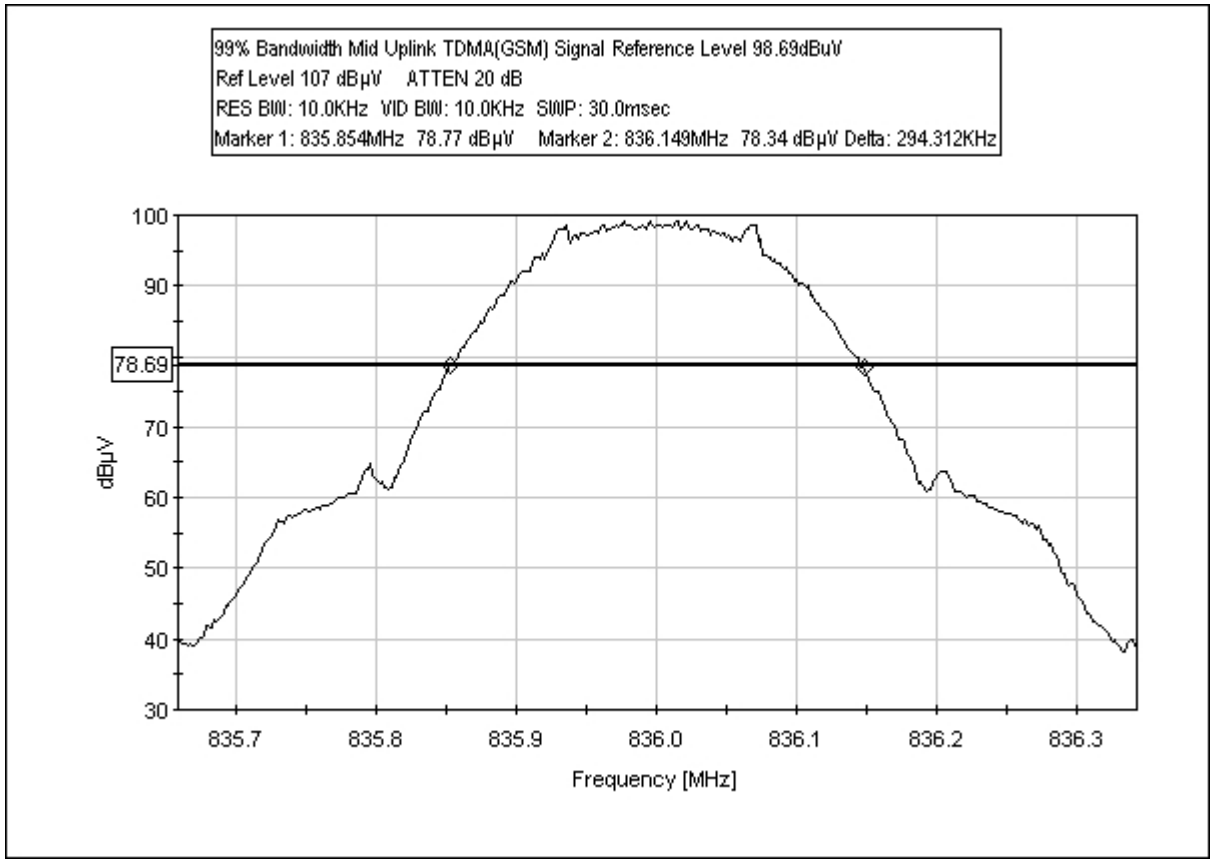
Function	S/N	Calibration Date	Cal Due Date	Asset #
HP Spectrum Analyzer 8596E	3346A00209	01/19/2003	01/19/2004	784
Signal Generator E4432B	US40052283	03/01/2002	03/01/2004	0
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

RSS 131 Downlink 99% Bandwidth Plot Mid TDMA (GSM)

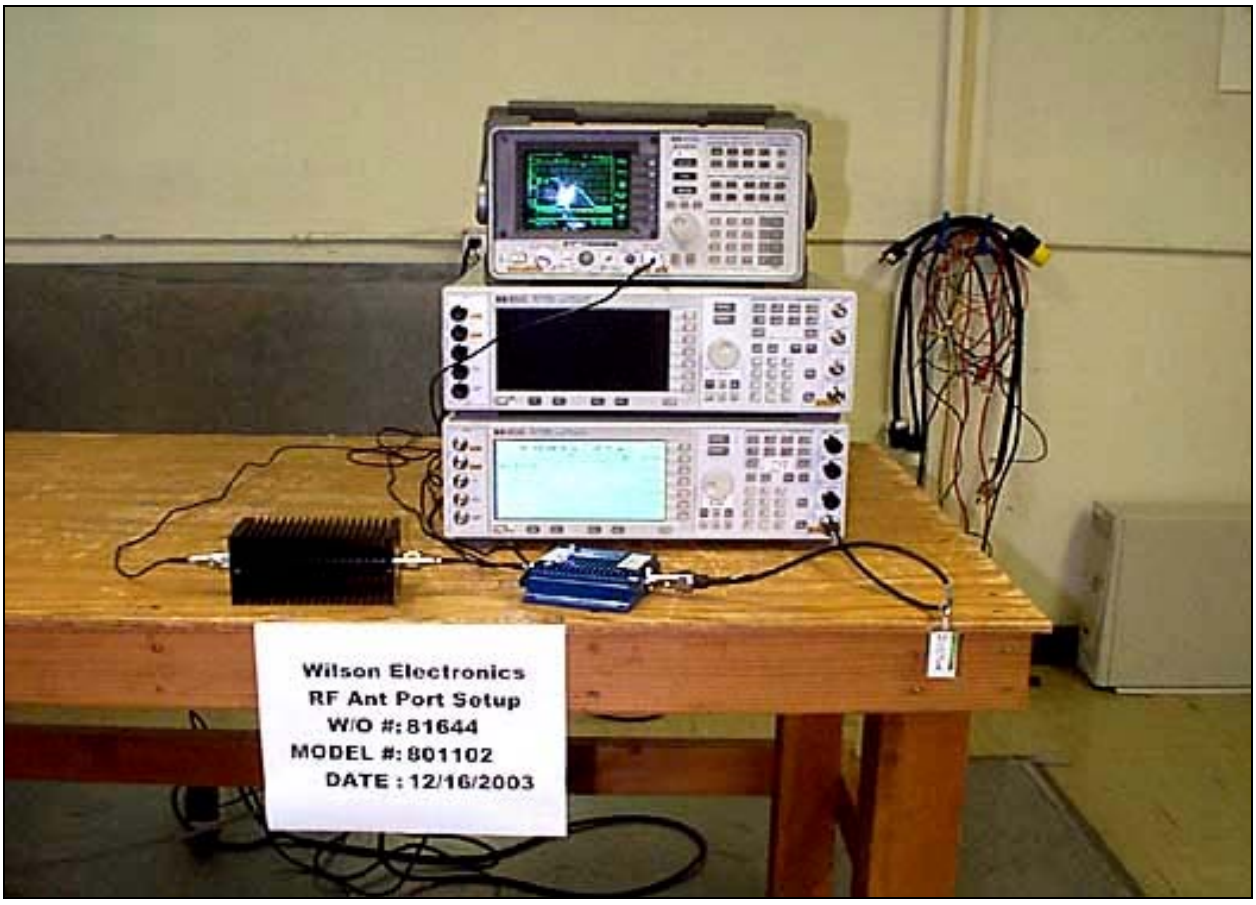
Test Conditions: EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. RF Power Output Test: Only one signal is input to the amplifier. The input from the signal generator is set such that the maximum output 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz – 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW.



RSS 131 Uplink 99% Bandwidth Plot Mid TDMA(GSM)



PHOTOGRAPH SHOWING DIRECT CONNECT



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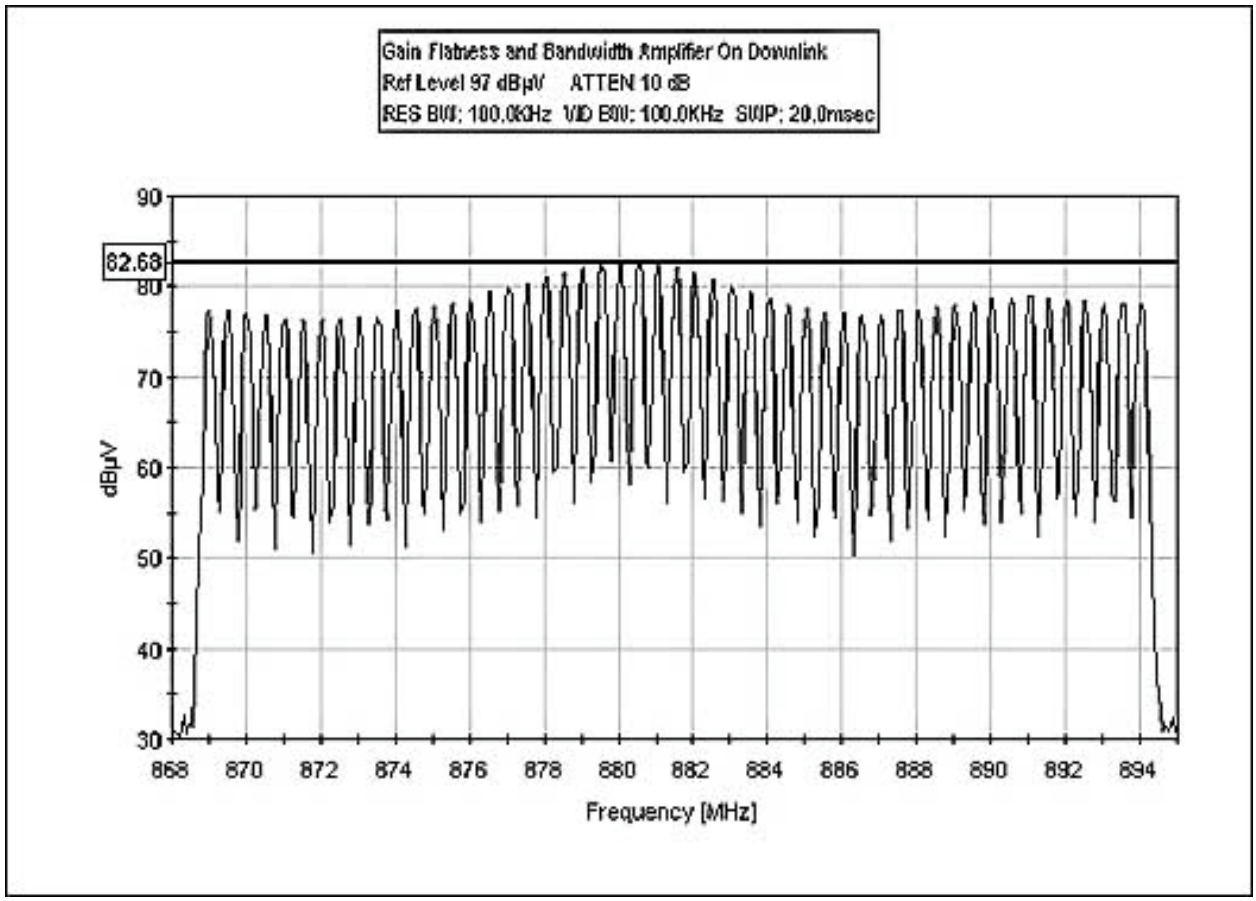
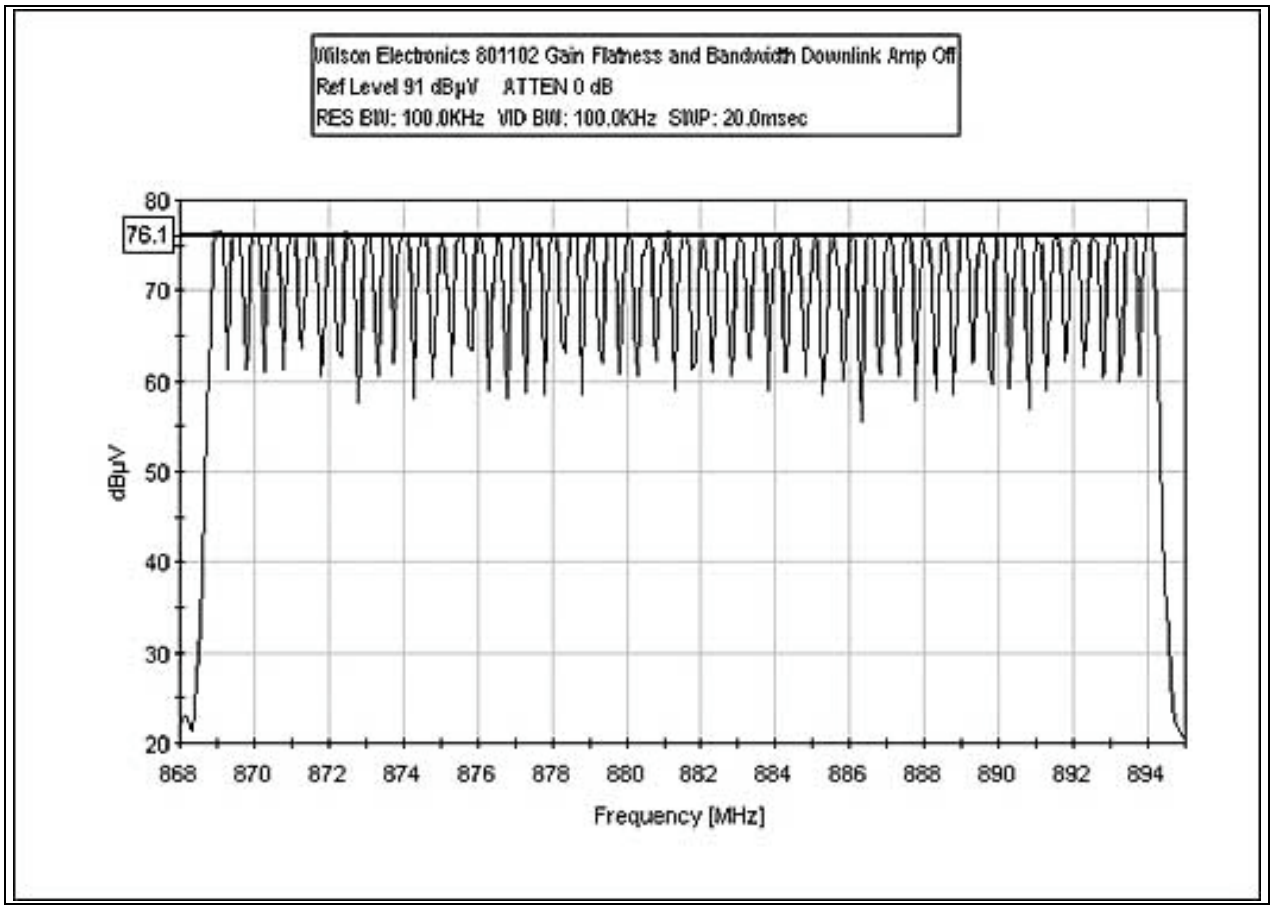
Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368

RSS 131 Downlink Gain Flatness and Bandwidth, Amplifier On

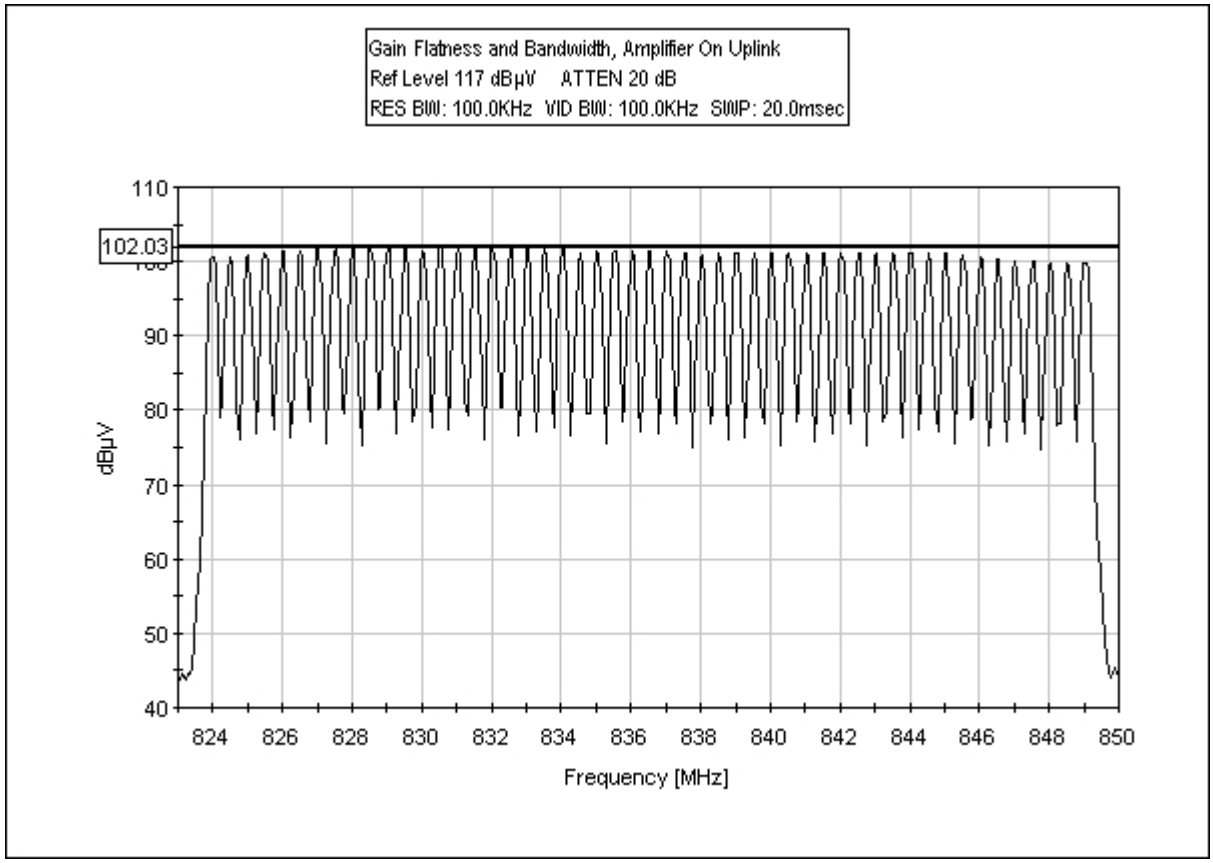
Test Conditions: EUT is a in-building bidirectional amplifier for the 824 to 894 MHz band. Uplink frequency range 824 – 849 MHz. Downlink frequency range 869 – 894 MHz. RF Power Output Test: Only one signal is input to the amplifier. The input from the signal generator is set such that the maximum output 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 - 880 MHz, High - 892.75 MHz. Frequency Range Investigated: 30 MHz – 10 GHz. Uplink Output Ratings: TDMA and CDMA formats: 3Watts, AMPS: 1Watt, Downlink Output Ratings: All: 10mW.



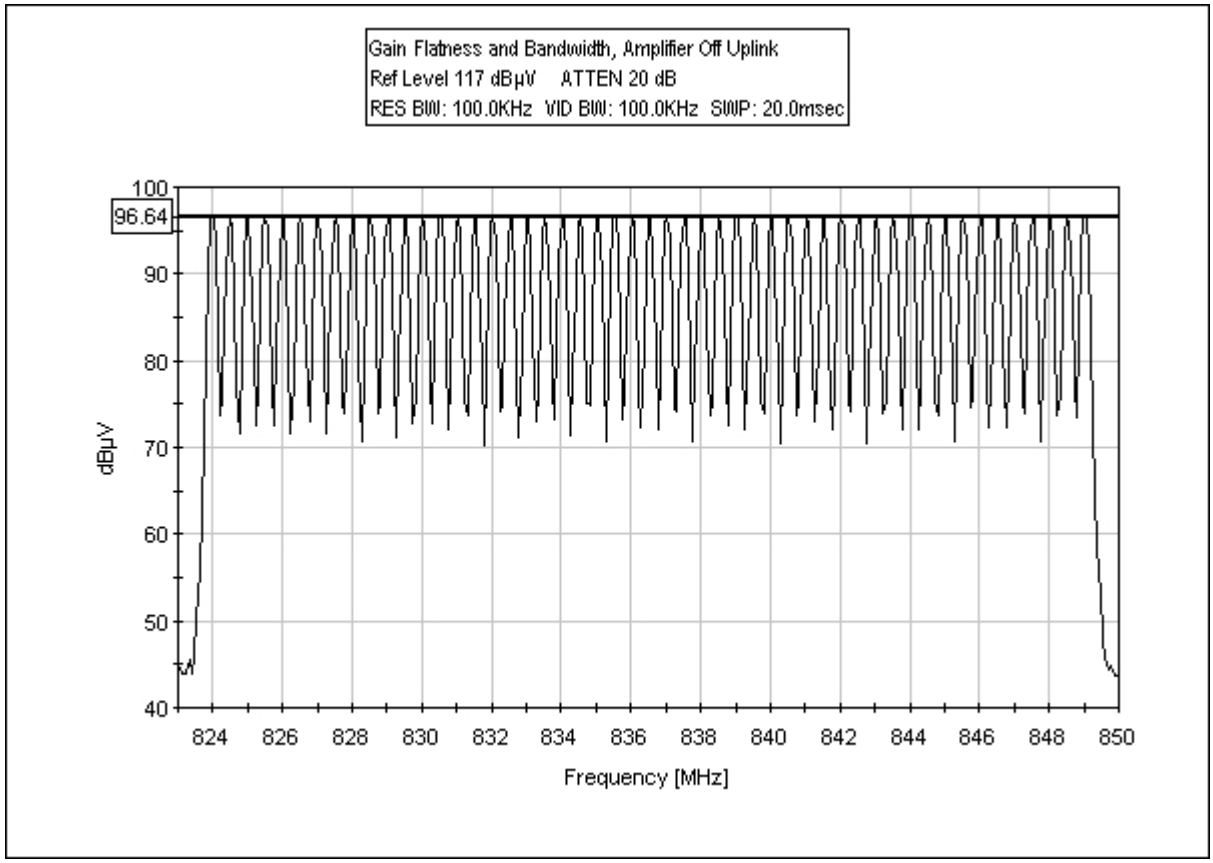
RSS 131 Downlink Gain Flatness and Bandwidth, Amplifier Off



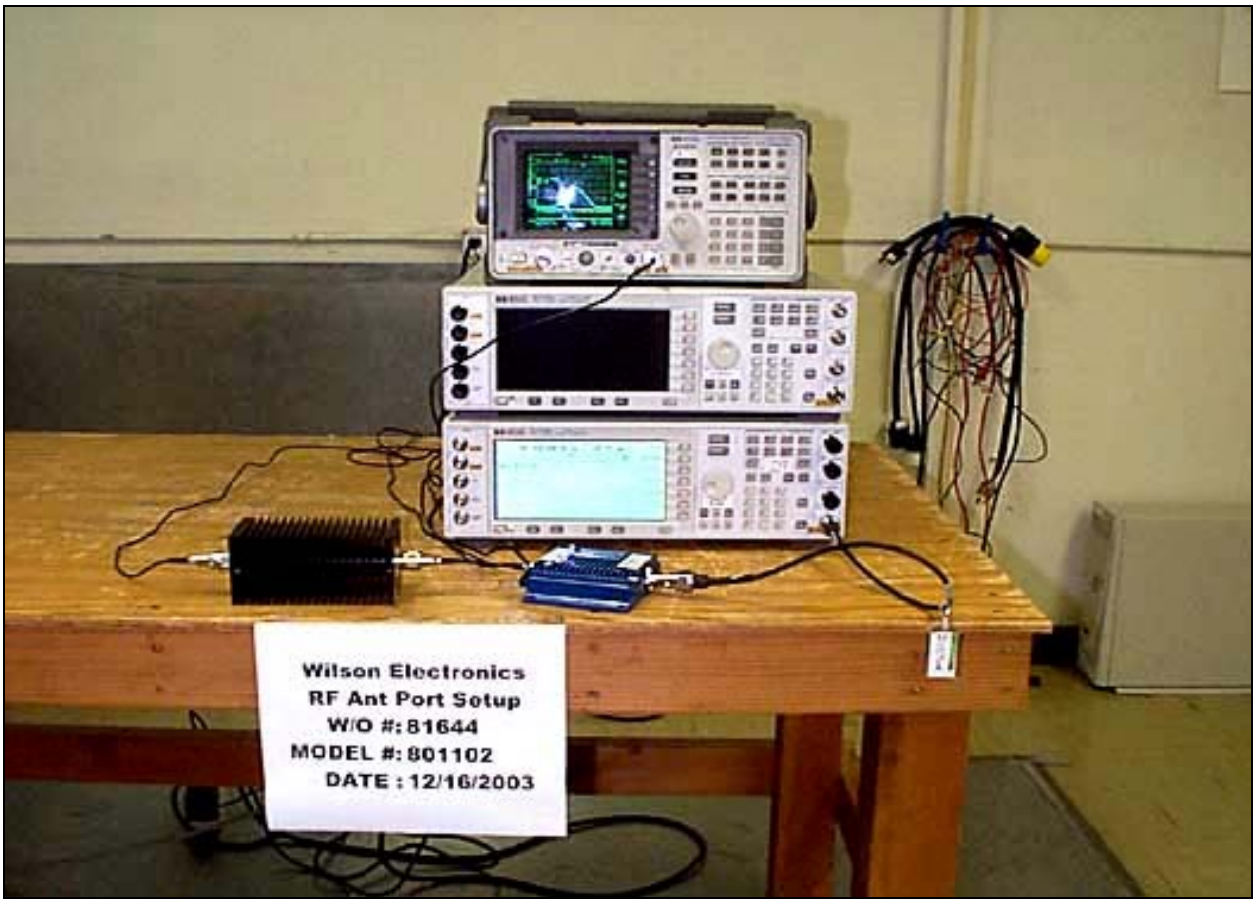
RSS 131 Uplink Gain Flatness and Bandwidth, Amplifier On



RSS 131 Uplink Gain Flatness and Bandwidth Amplifier Off



PHOTOGRAPH SHOWING DIRECT CONNECT



***Test Equipment*:**

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Bird Attenuator 25-A-MFN-30	9724	05/08/2003	05/08/2005	0
Directional Coupler	3804	10/16/2003	10/16/2004	744
AR Amplifier 30W1000M7	18694	07/16/2003	07/16/2004	1368