



ADDENDUM TO WILSON ELECTRONICS, INC. TEST REPORT FC04-001

FOR THE

IN-BUILDING BIDIRECTIONAL AMPLIFIER, 801103

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

W.O. No.: 81645

PREPARED BY:

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

Date of test: December 19-31, 2003

Report No.: FC04-001A

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ADMINISTRATIVE INFORMATION

DATE OF TEST: December 19-31, 2003

DATE OF RECEIPT: December 19, 2003

PURPOSE OF TEST: To demonstrate the compliance of the In-building Bidirectional Amplifier, 801103 with the requirements for FCC Part 22 and RSS 131 devices. **Addendum A** is to update the calibration due dates on page 69.

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, 801103 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
47 CFR	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: 801103
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

F1D, FXW, GXW, F9W.

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 - 849MHz. Downlink frequency range 869 - 894MHz. 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.

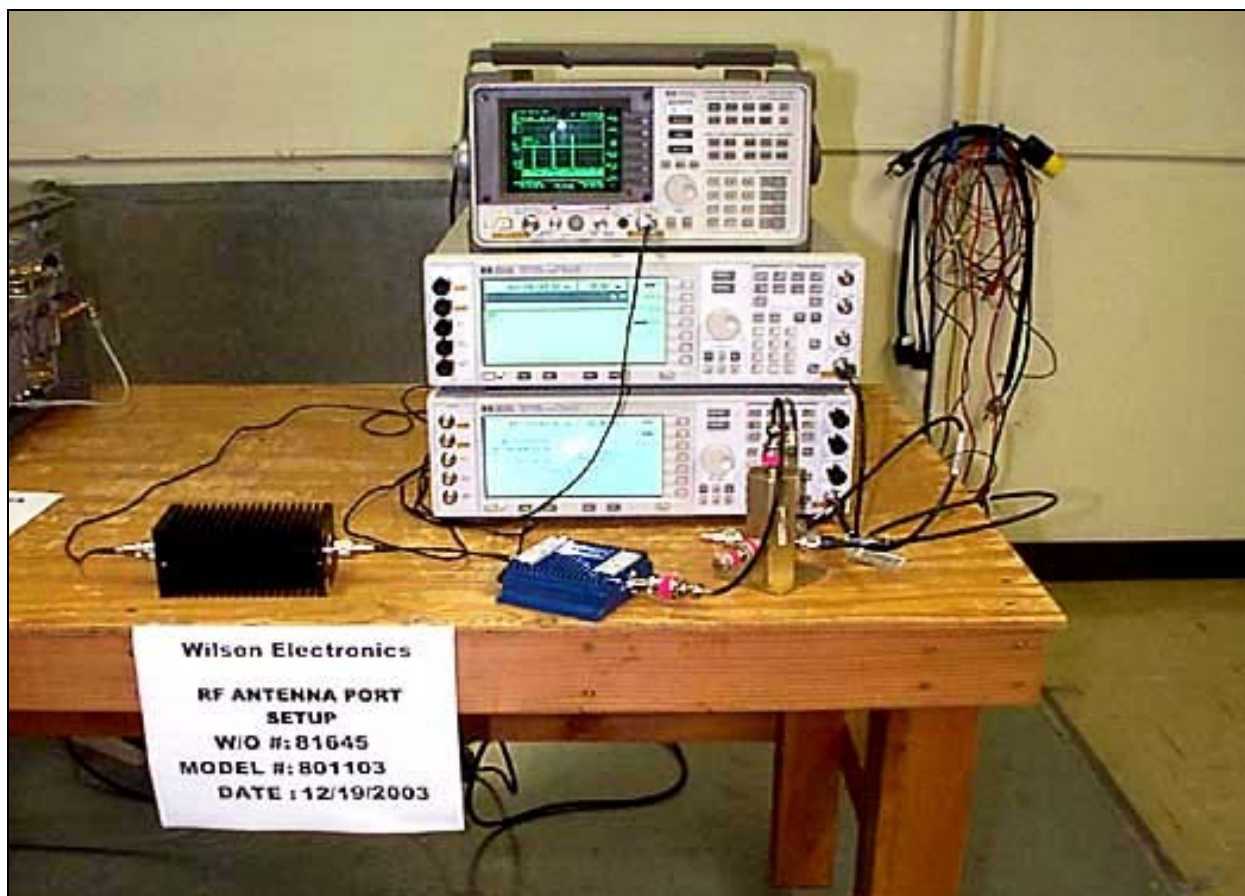
Downlink

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (milliWatts)</i>
880.47	CDMA	10.0
870.10	CDMA	2.65
893.10	CDMA	3.73
892.90	GSM	3.01
880.57	GSM	10.0
869.96	GSM	2.23
893.10	CDPD	2.13
880.50	CDPD	7.87
870.00	CDPD	1.62
869.00	AMPS	2.35
893.90	AMPS	2.58
880.50	AMPS	10.0

Uplink

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
825.10	CDMA	2.42
832.05	CDMA	2.96
847.85	CDMA	1.76
824.50	GSM	2.07
831.97	GSM	2.65
847.95	GSM	1.13
824.51	CDPD	2.23
832.00	CDPD	2.56
848.10	CDPD	1.12
825.10	AMPS	1.0
832.00	AMPS	1.0
848.10	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- 9724 MFN-30		05/08/2003	05/08/2005	0
Directional Coupler 3804		10/16/2003	10/16/2004	744
AR Amplifier 18694		07/16/2003	07/16/2004	1368
30W1000M7				

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 #: **81645** Date: 12/29/2003
 Test Type: **Spurious Emissions Antenna Terminals** Time: 14:18:15
 Equipment: **In-building Bidirectional Amplifier** Sequence#: 30
 Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
 Model: 801103
 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	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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	881.250M	76.3	+30.3				+0.0	106.6	113.0 CDMA	-6.4	Direc
2	882.120M	76.3	+30.3				+0.0	106.6	113.0 AMPS	-6.4	Direc

3	882.120M	76.2	+30.3	+0.0	106.5	113.0	-6.5	Direc
						TDMA(CDPD)		
4	882.250M	75.2	+30.3	+0.0	105.5	113.0	-7.5	Direc
						TDMA(GSM)		
5	893.250M	53.8	+30.3	+0.0	84.1	94.0	-9.9	Direc
						CDMA		
6	895.120M	43.3	+30.3	+0.0	73.6	94.0	-20.4	Direc
						AMPS		
7	895.120M	43.1	+30.3	+0.0	73.4	94.0	-20.6	Direc
						TDMA(CDPD)		
8	895.000M	40.8	+30.3	+0.0	71.1	94.0	-22.9	Direc
						TDMA(GSM)		

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 #: **81645**

Date: 12/29/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 14:36:24

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 31

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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- 9724 MFN-30		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	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	869.070M	77.2	+30.3				+0.0	107.5	113.0	-5.5	Direc
									TDMA(CDPD)		
2	869.070M	77.2	+30.3				+0.0	107.5	113.0	-5.5	Direc
									AMPS		
3	869.070M	77.1	+30.3				+0.0	107.4	113.0	-5.6	Direc
									TDMA(GSM)		

4	865.290M	57.1	+30.3	+0.0	87.4	94.0	-6.6	Direc
						TDMA(CDPD)		
5	865.290M	57.1	+30.3	+0.0	87.4	94.0	-6.6	Direc
						AMPS		
6	865.500M	56.8	+30.3	+0.0	87.1	94.0	-6.9	Direc
						TDMA(GSM)		
7	872.630M	75.7	+30.3	+0.0	106.0	113.0	-7.0	Direc
						CDMA		
8	875.350M	53.8	+30.3	+0.0	84.1	94.0	-9.9	Direc
						CDMA		

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 #: **81645**

Date: 12/29/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 15:15:01

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 32

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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- 9724 MFN-30		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	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	882.000M	81.9	+30.3				+0.0	112.2	113.0	-0.8	Direc
									AMPS		
2	882.000M	81.9	+30.3				+0.0	112.2	113.0	-0.8	Direc
									TDMA(CDPD)		
3	882.000M	81.8	+30.3				+0.0	112.1	113.0	-0.9	Direc
									TDMA(GSM)		

4	870.000M	61.4	+30.3	+0.0	91.7	94.0	-2.3	Direc
						AMPS		
5	870.000M	61.4	+30.3	+0.0	91.7	94.0	-2.3	Direc
						TDMA(CDPD)		
6	870.000M	61.4	+30.3	+0.0	91.7	94.0	-2.3	Direc
						TDMA(GSM)		
7	883.120M	78.6	+30.3	+0.0	108.9	113.0	-4.1	Direc
						CDMA		
8	871.870M	56.0	+30.3	+0.0	86.3	94.0	-7.7	Direc
						CDMA		

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 #: **81645** Date: 12/29/2003
 Test Type: **Spurious Emissions Antenna Terminals** Time: 11:24:50
 Equipment: **In-building Bidirectional Amplifier** Sequence#: 27
 Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
 Model: 801103
 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
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA

Support Devices:

Function	Manufacturer	Model #	S/N
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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	844.750M	62.5	+30.4				+0.0	92.9	94.0	-1.1	Direc
									CDMA		
2	848.000M	62.4	+30.4				+0.0	92.8	94.0	-1.2	Direc
									AMPS		
3	848.000M	61.6	+30.4				+0.0	92.0	94.0	-2.0	Direc
									TDMA(CDPD)		
4	848.120M	61.2	+30.4				+0.0	91.6	94.0	-2.4	Direc
									TDMA(GSM)		

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 #: **81645** Date: 12/29/2003
 Test Type: **Spurious Emissions Antenna Terminals** Time: 11:39:18
 Equipment: **In-building Bidirectional Amplifier** Sequence#: 28
 Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
 Model: 801103
 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- 9724 MFN-30		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	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	830.080M	63.4	+30.4				+0.0	93.8	94.0	-0.2	Direc
									TDMA(CDPD)		
2	830.080M	63.0	+30.4				+0.0	93.4	94.0	-0.6	Direc
									AMPS		

3	830.080M	59.4	+30.4	+0.0	89.8	94.0	-4.2	Direc
						TDMA(GSM)		
4	830.150M	53.4	+30.4	+0.0	83.8	94.0	-10.2	Direc
						CDMA		
5	823.760M	52.0	+30.4	+0.0	82.4	94.0	-11.6	Direc
						CDMA		
6	824.110M	63.9	+30.4	+0.0	94.3	141.7	-47.4	Direc
						AMPS		
7	824.110M	63.7	+30.4	+0.0	94.1	141.7	-47.6	Direc
						TDMA(CDPD)		
8	824.040M	59.0	+30.4	+0.0	89.4	141.7	-52.3	Direc
						TDMA(GSM)		

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 #: **81645** Date: 12/29/2003
 Test Type: **Spurious Emissions Antenna Terminals** Time: 11:54:01
 Equipment: **In-building Bidirectional Amplifier** Sequence#: 29
 Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
 Model: 801103
 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	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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.

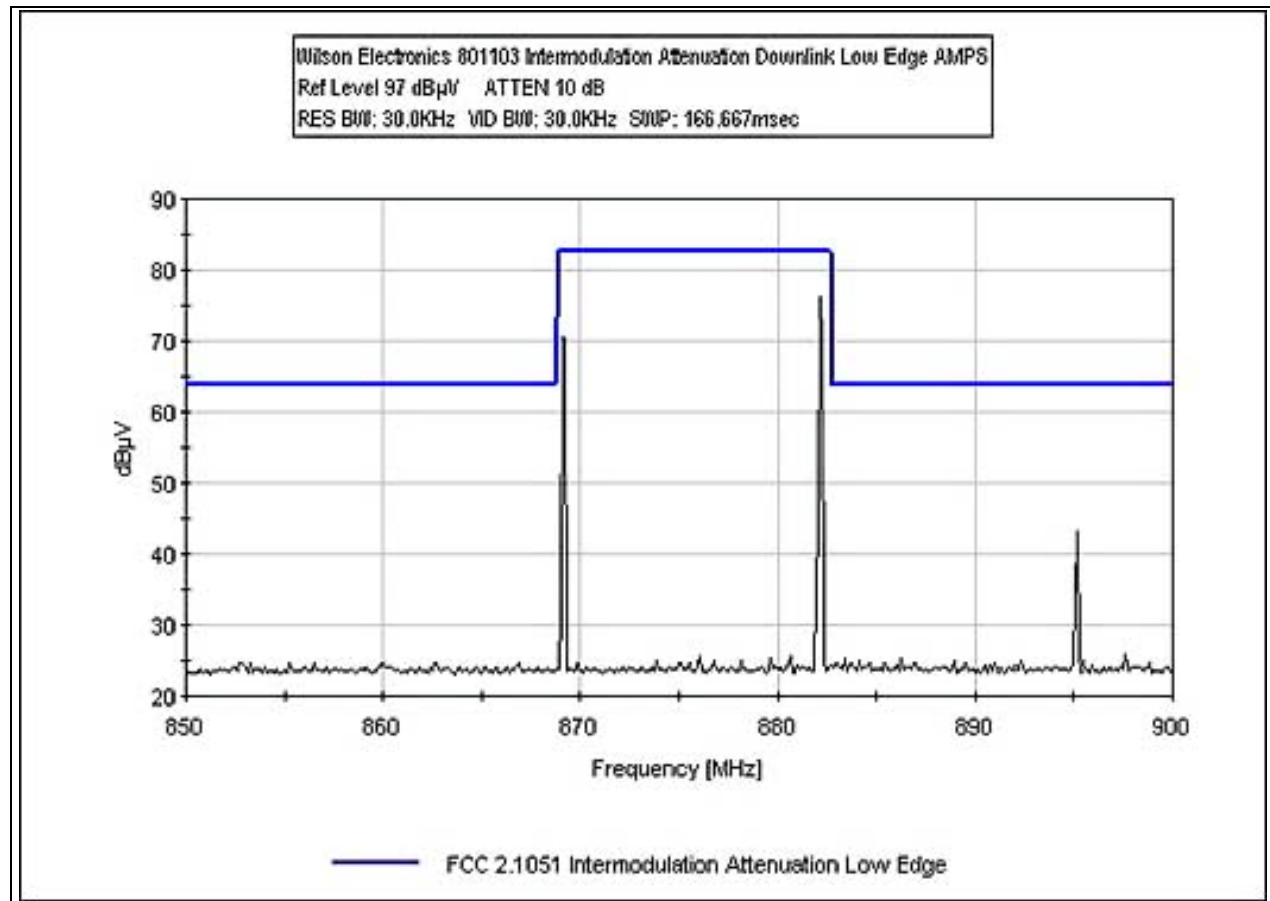
Transducer Legend:

T1=Pad 30dB

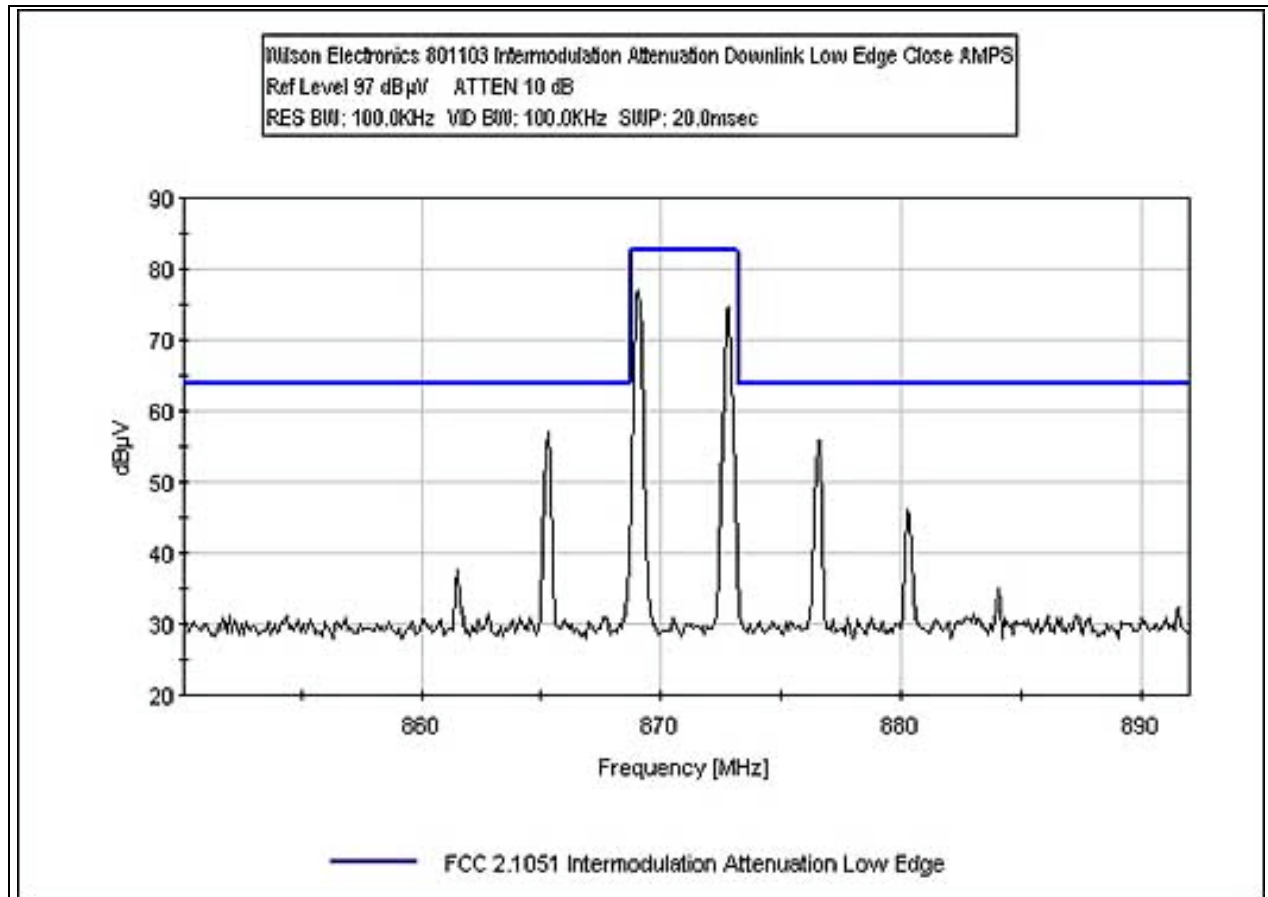
Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB		Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	824.500M	62.8	+30.4		+0.0	93.2	94.0	-0.8	Direc
							TDMA(CDPD)		
2	824.500M	62.8	+30.4		+0.0	93.2	94.0	-0.8	Direc
							AMPS		
3	824.500M	60.9	+30.4		+0.0	91.3	94.0	-2.7	Direc
							TDMA(GSM)		
4	824.200M	59.2	+30.4		+0.0	89.6	94.0	-4.4	Direc
							CDMA		

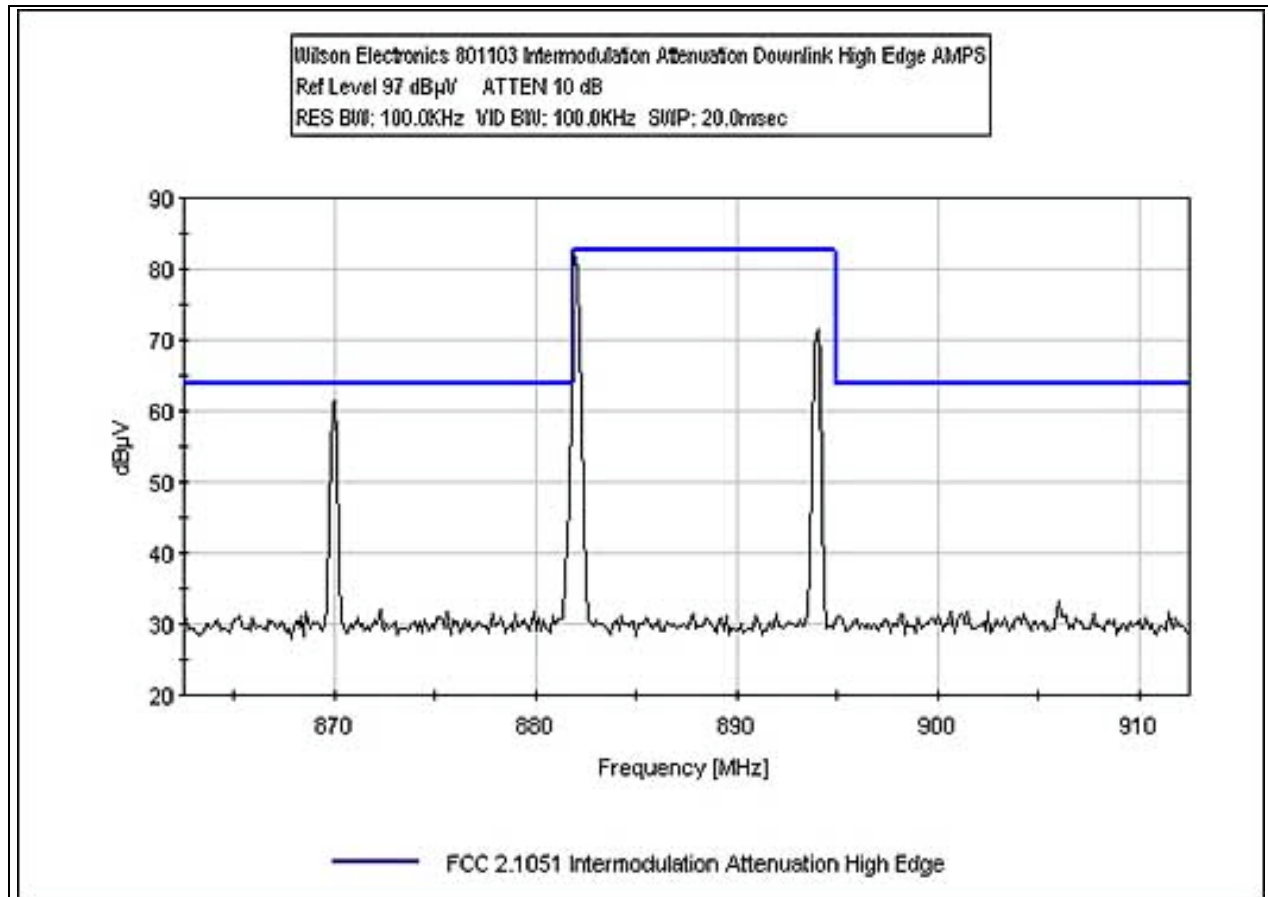
Downlink Intermodulation Attenuation AMPS Low



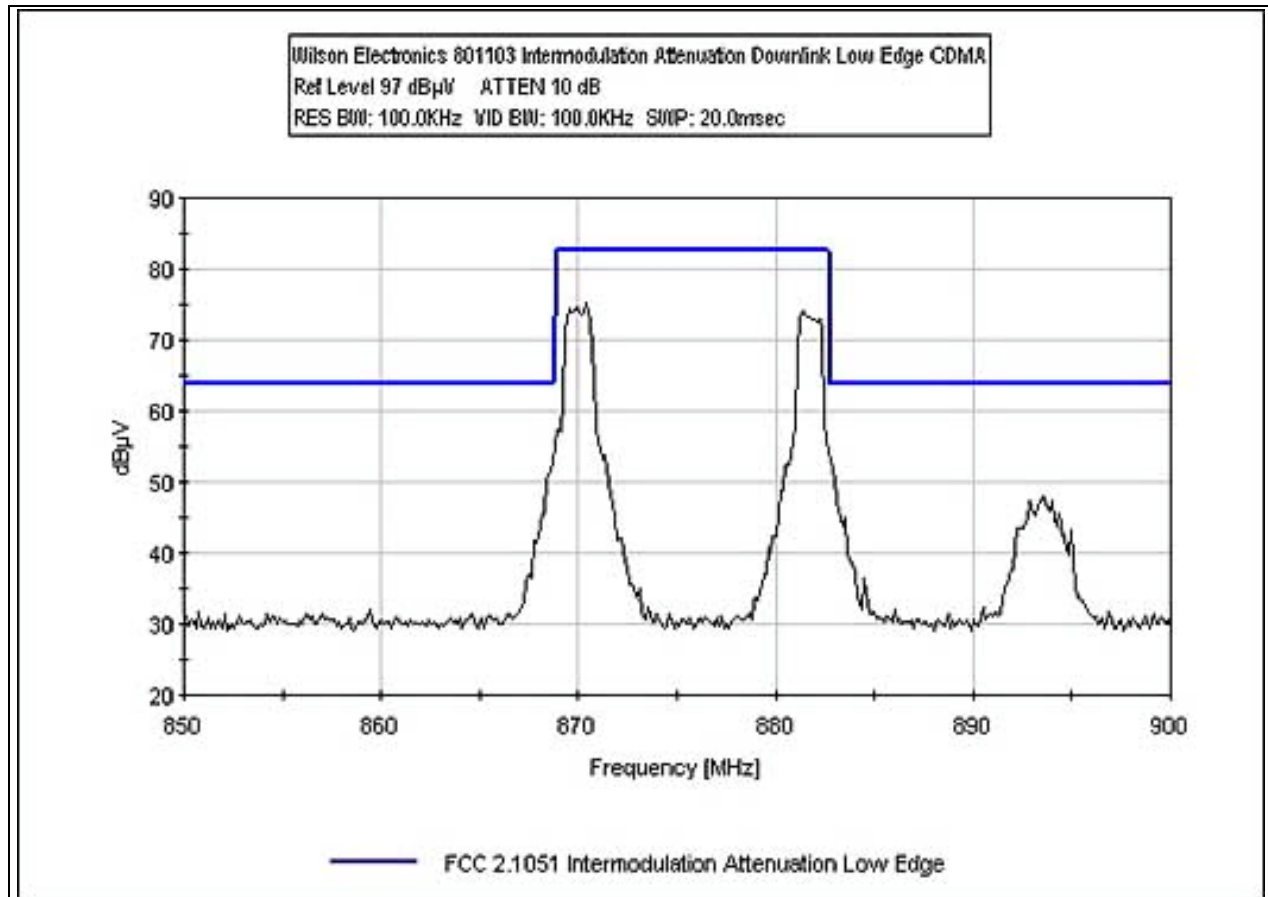
Downlink Intermodulation Attenuation AMPS Low Close



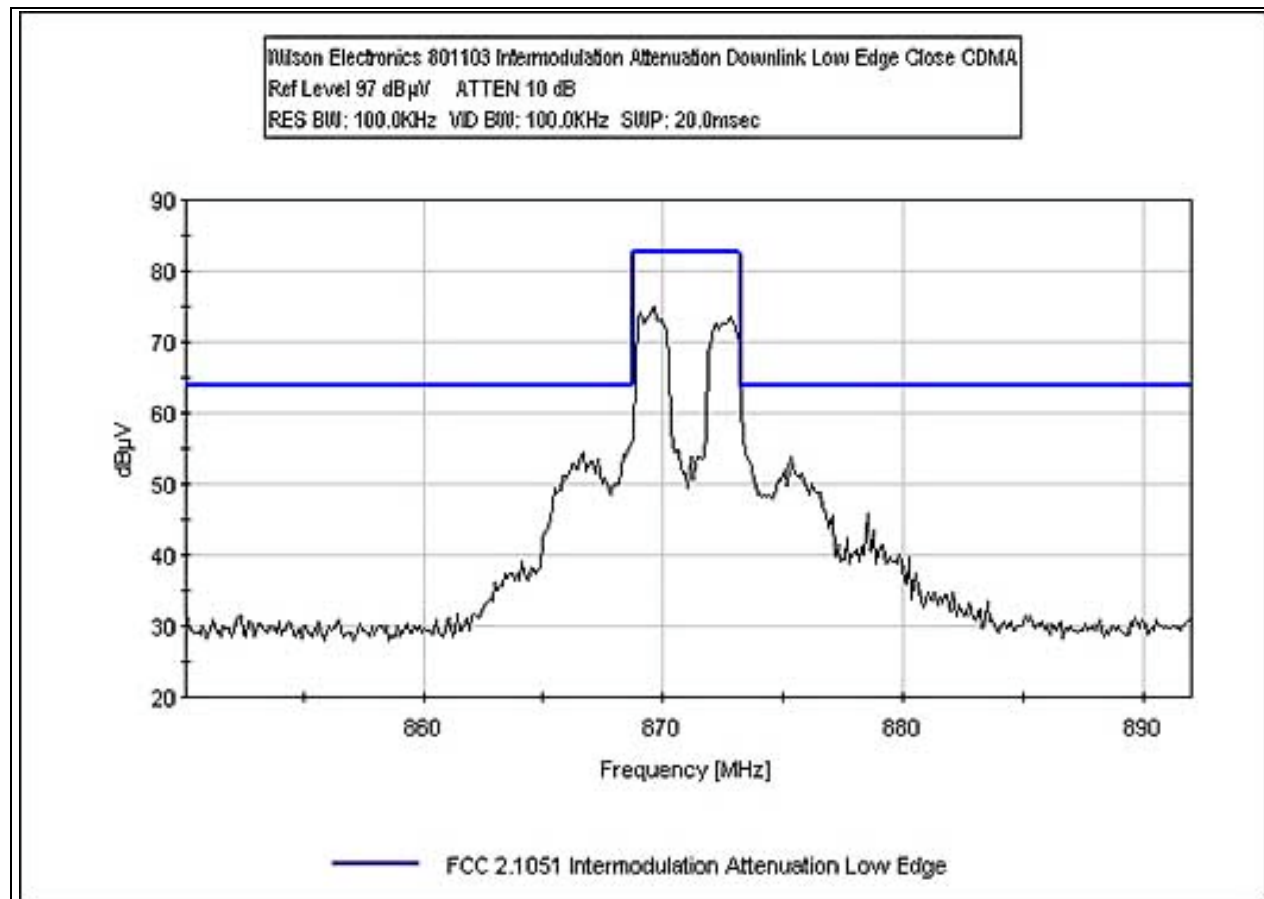
Downlink Intermodulation Attenuation AMPS High



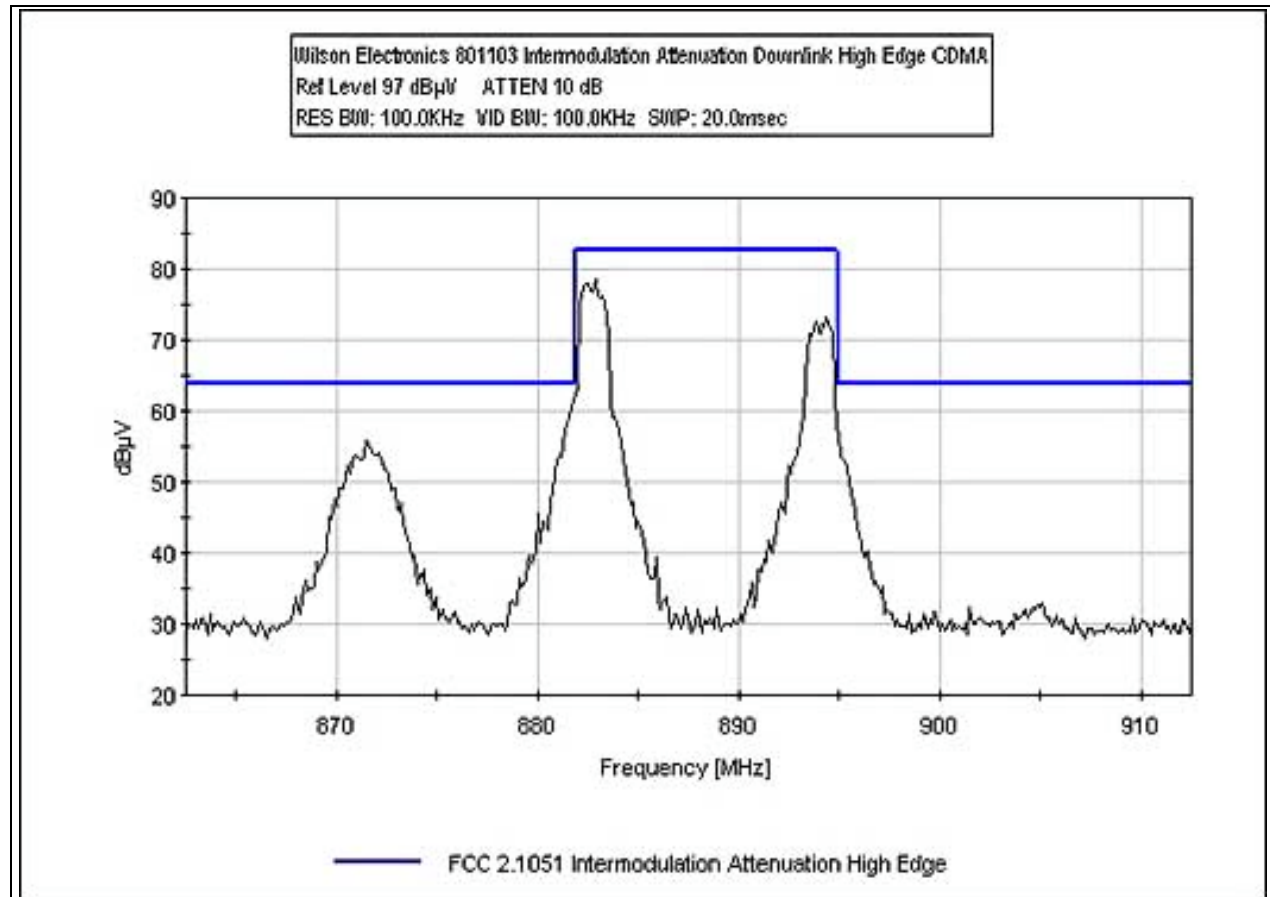
Downlink Intermodulation Attenuation CDMA Low



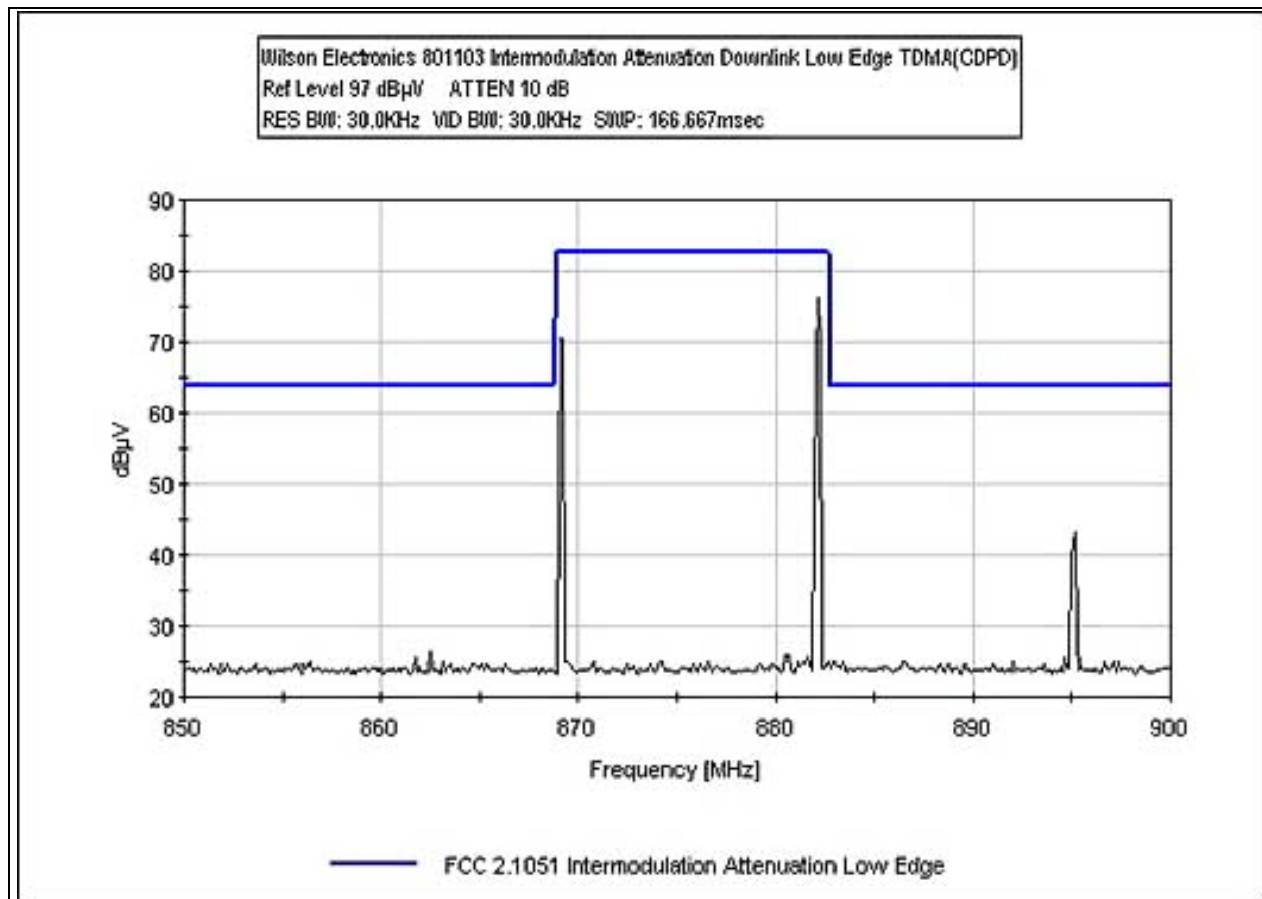
Downlink Intermodulation Attenuation CDMA Low Close



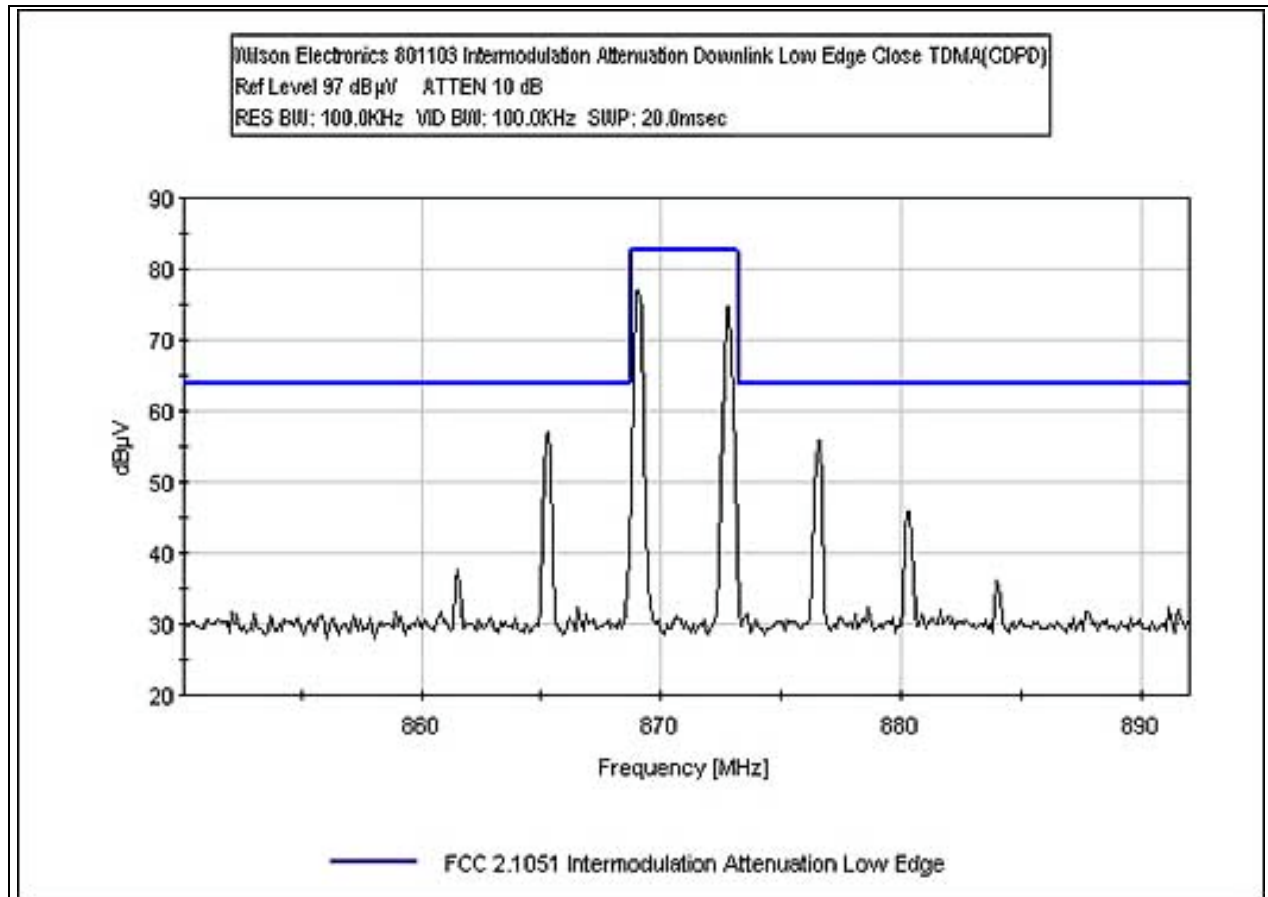
Downlink Intermodulation Attenuation CDMA High



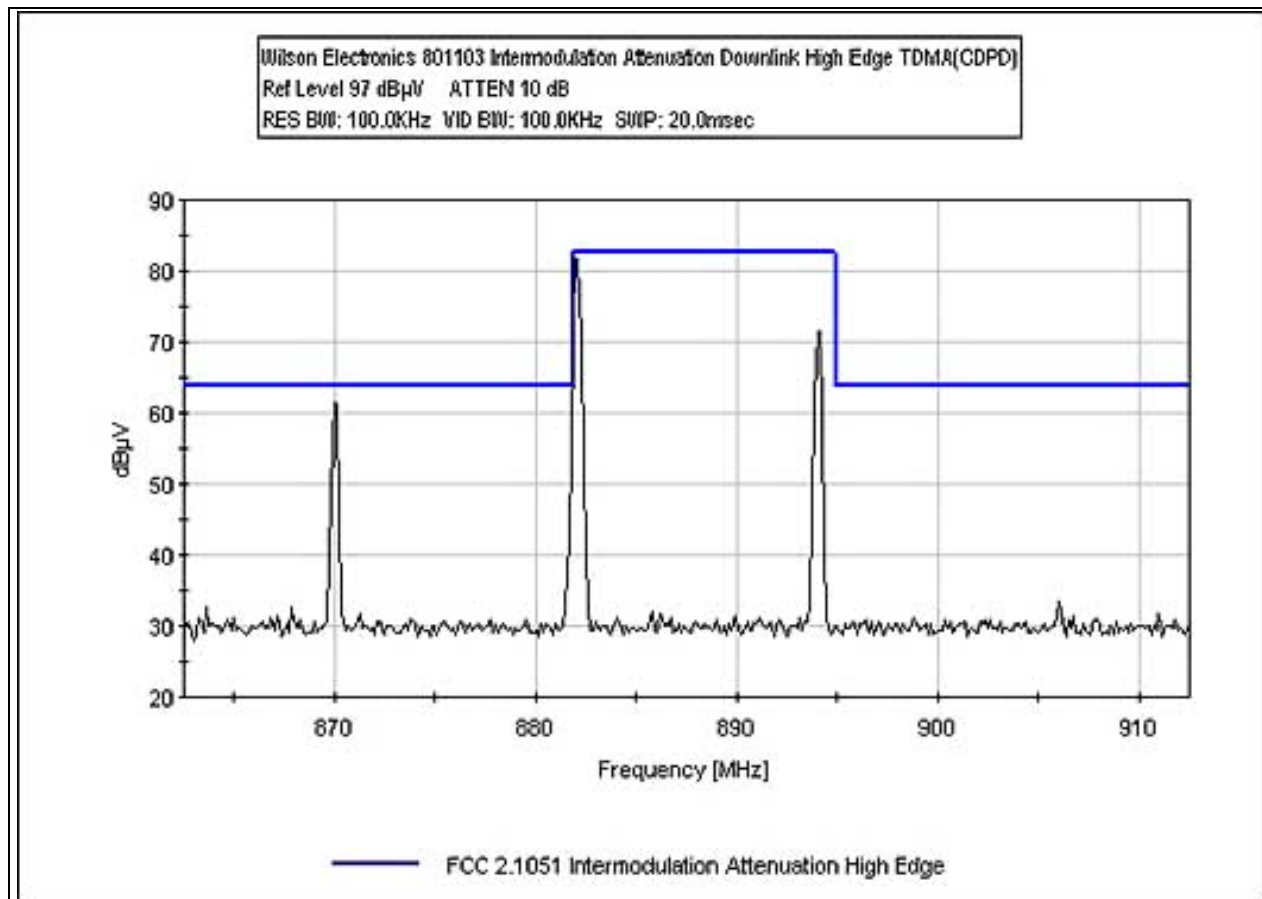
Downlink Intermodulation Attenuation TDMA(CDPD) Low



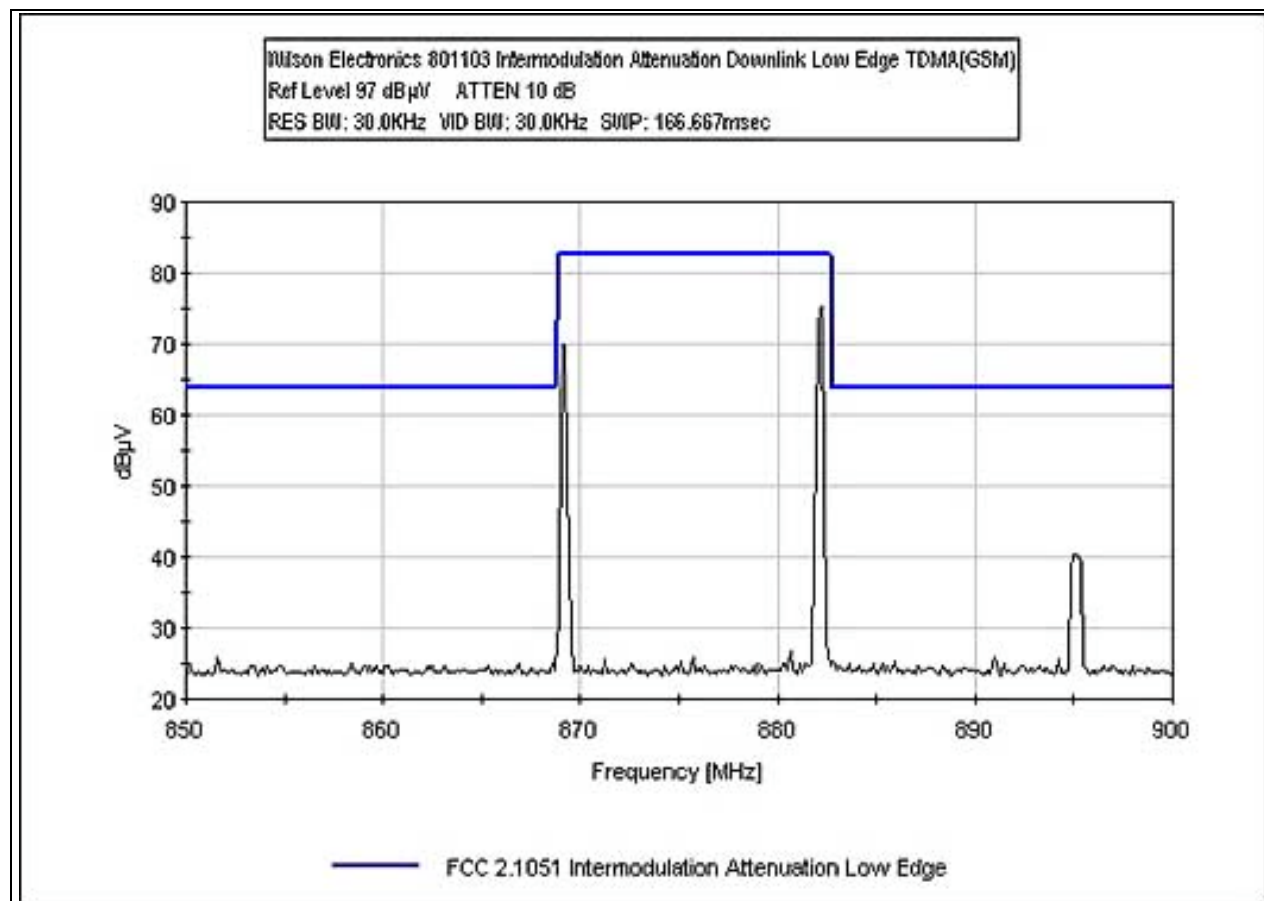
Downlink Intermodulation Attenuation TDMA(CDPD) Low Close



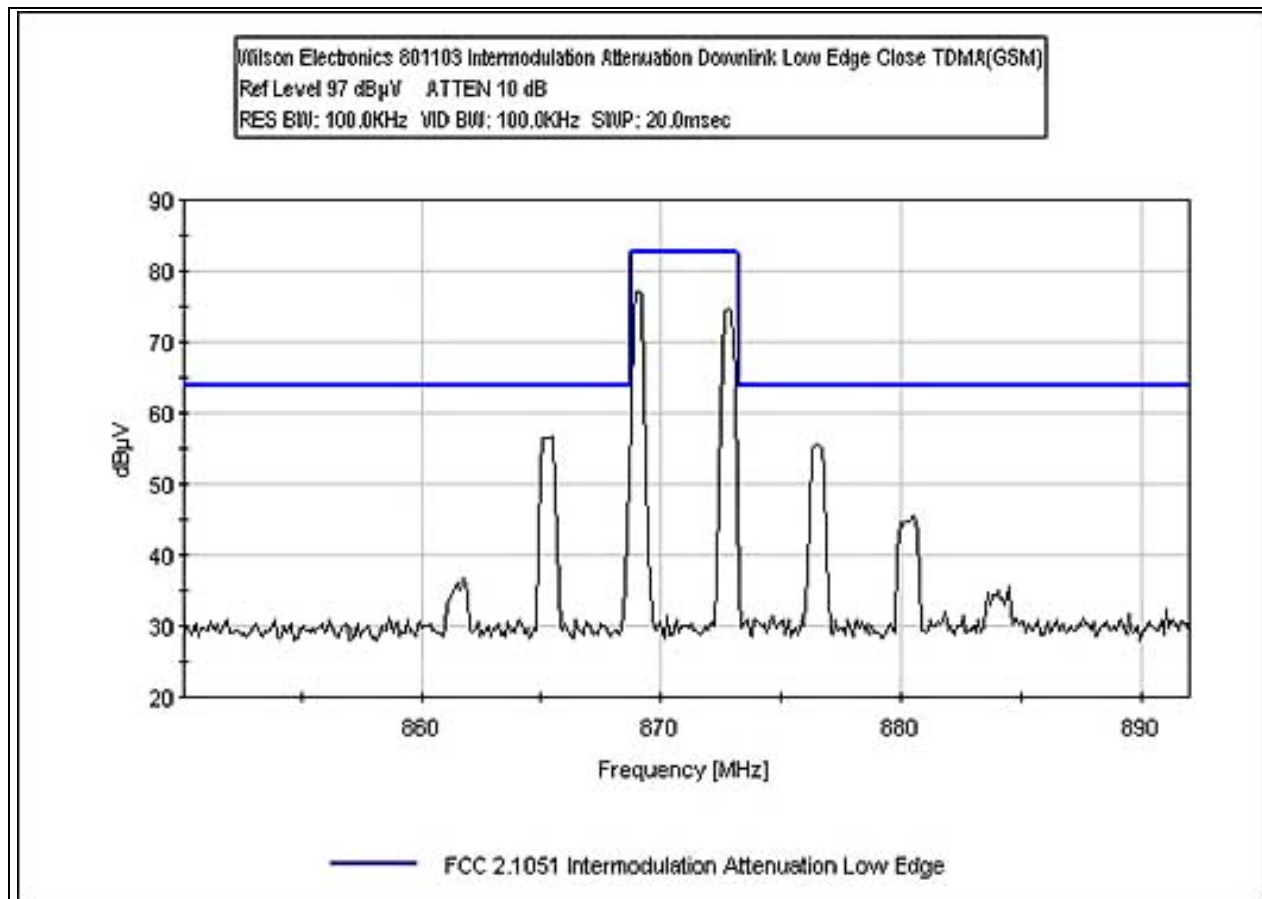
Downlink Intermodulation Attenuation TDMA(CDPD) High



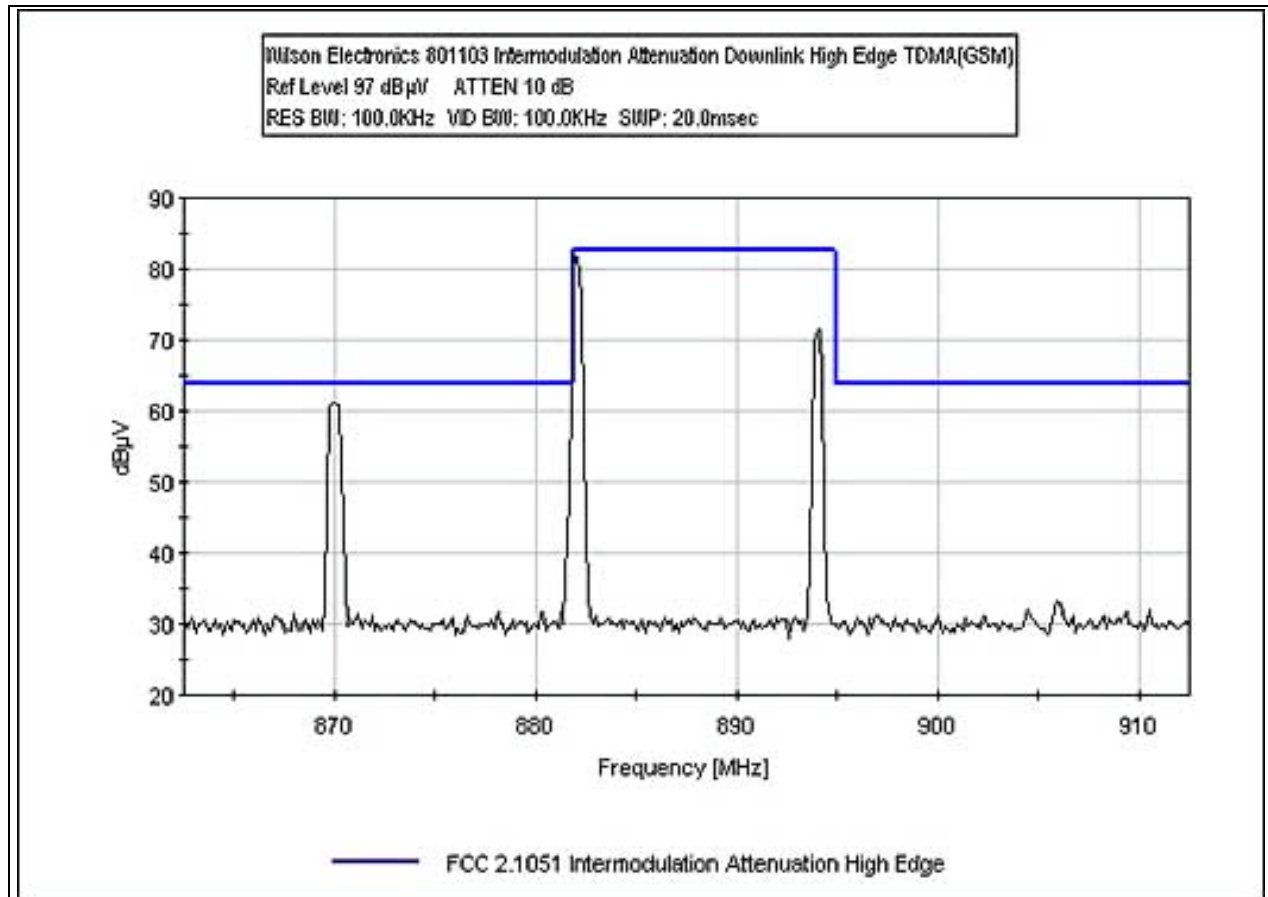
Downlink Intermodulation Attenuation TDMA(GSM) Low



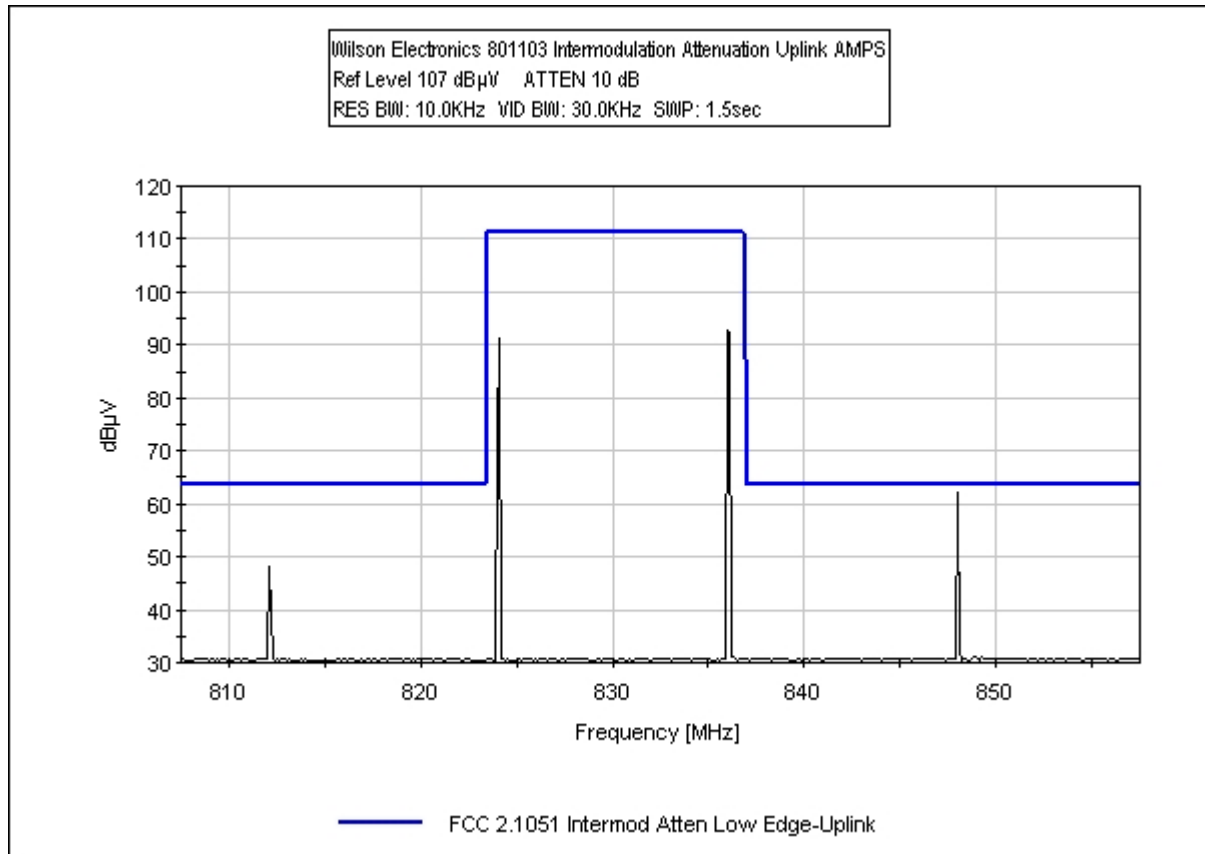
Downlink Intermodulation Attenuation TDMA(GSM) Low Close



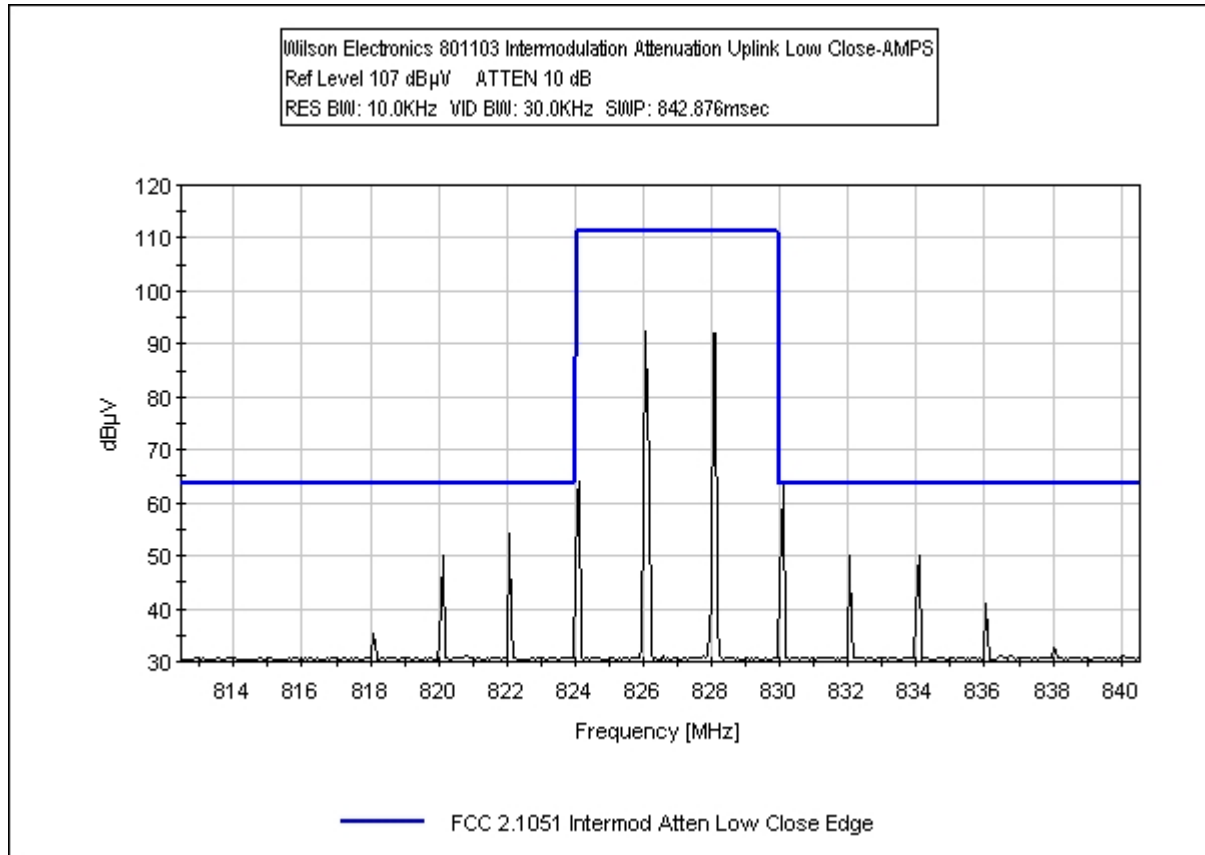
Downlink Intermodulation Attenuation TDMA(GSM) High



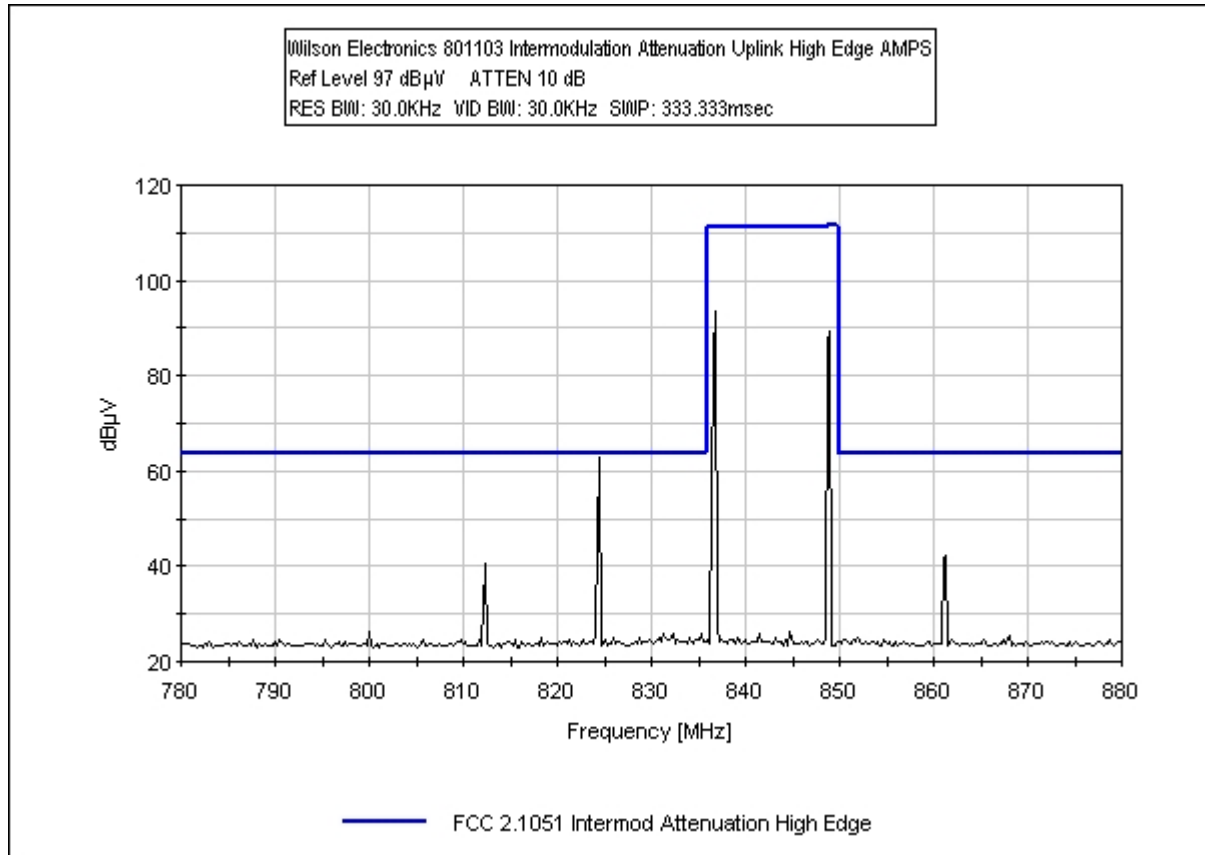
Uplink Intermodulation Attenuation AMPS Low



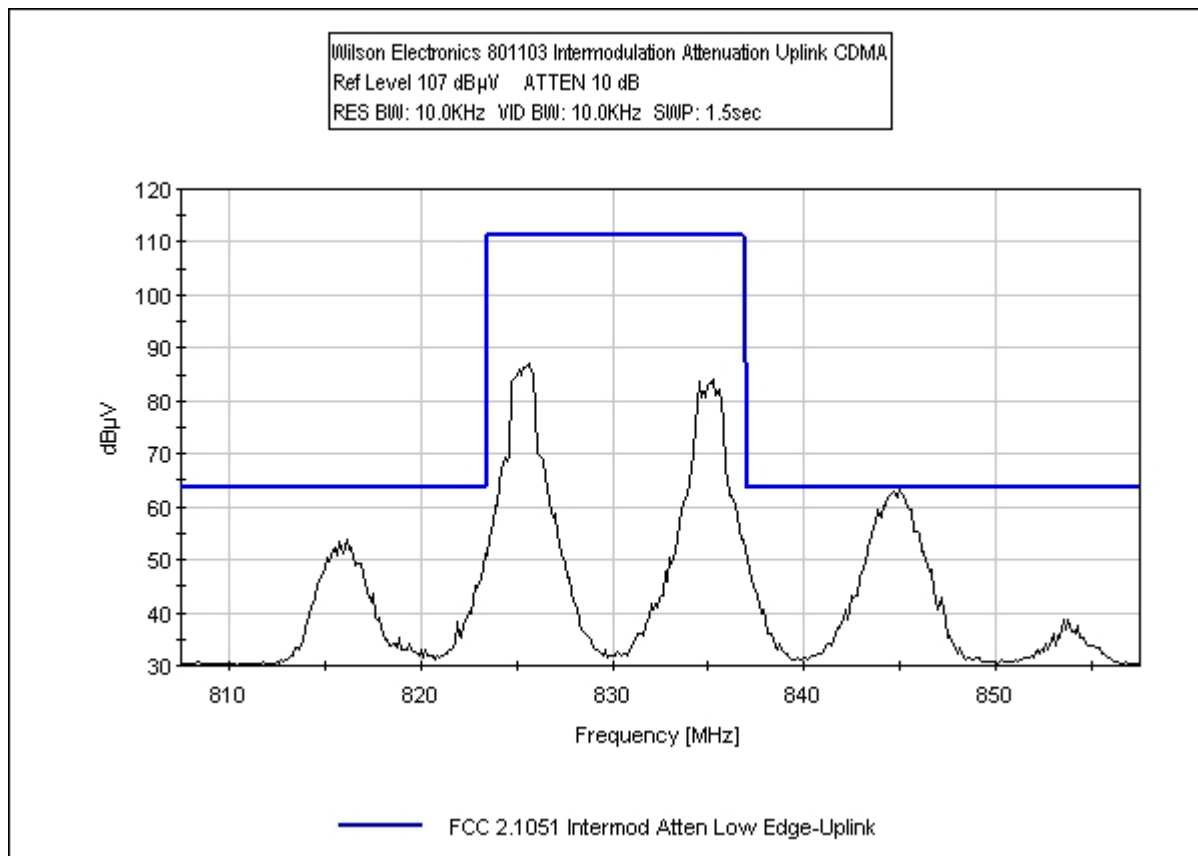
Uplink Intermodulation Attenuation AMPS Low Close



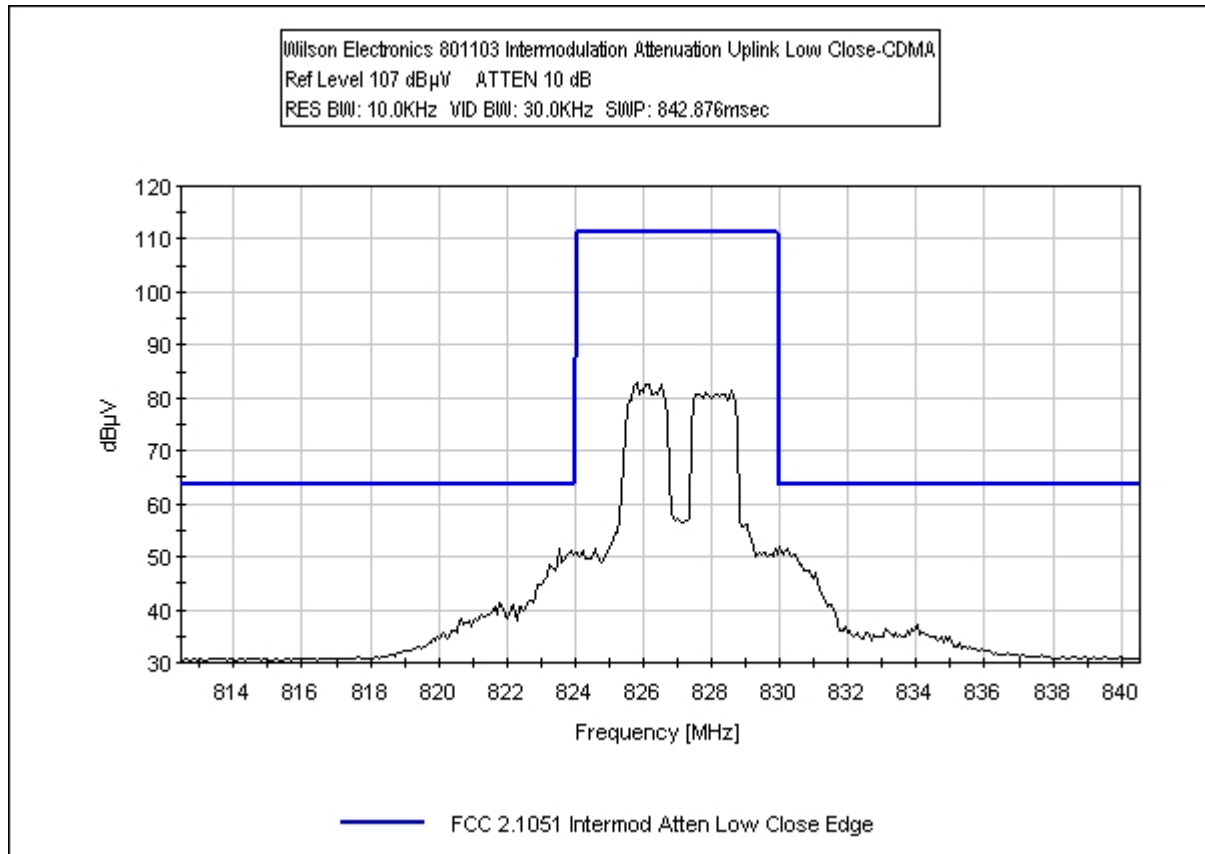
Uplink Intermodulation Attenuation AMPS High



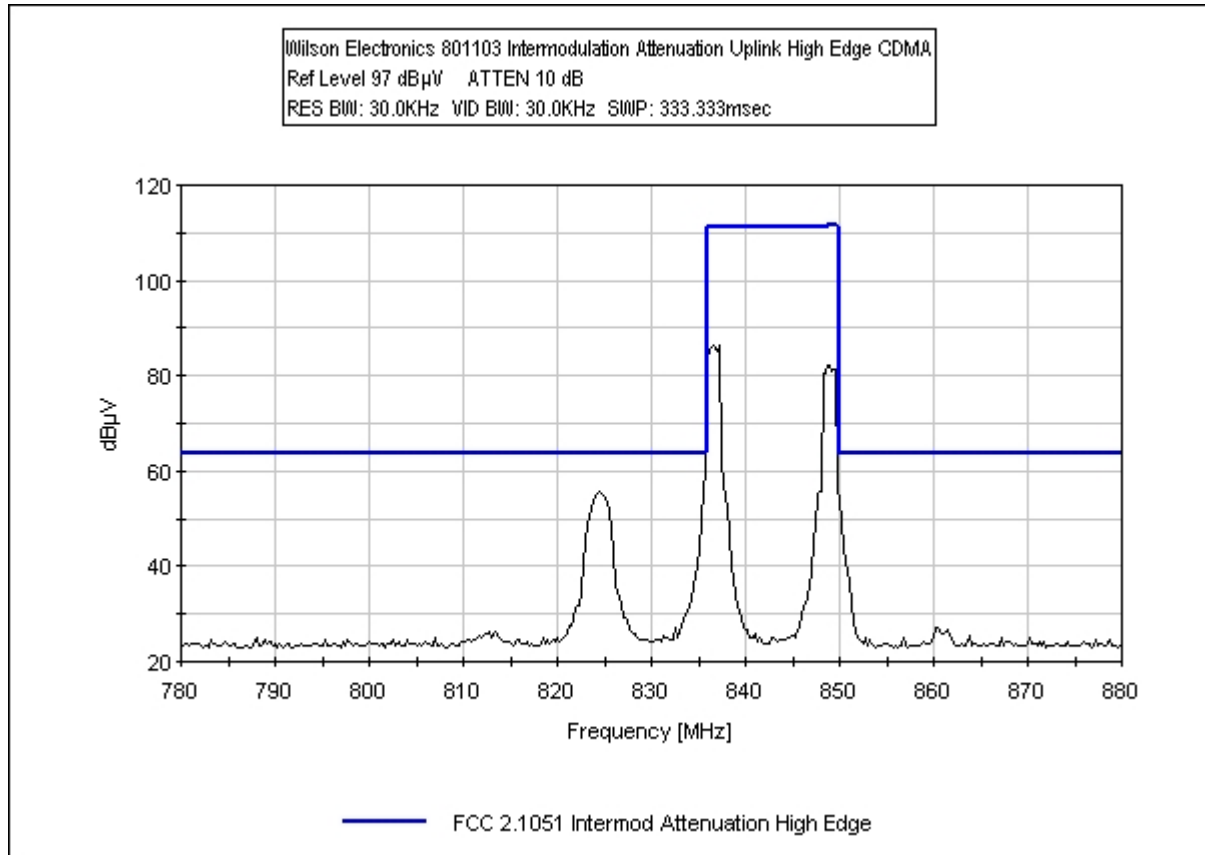
Uplink Intermodulation Attenuation CDMA Low



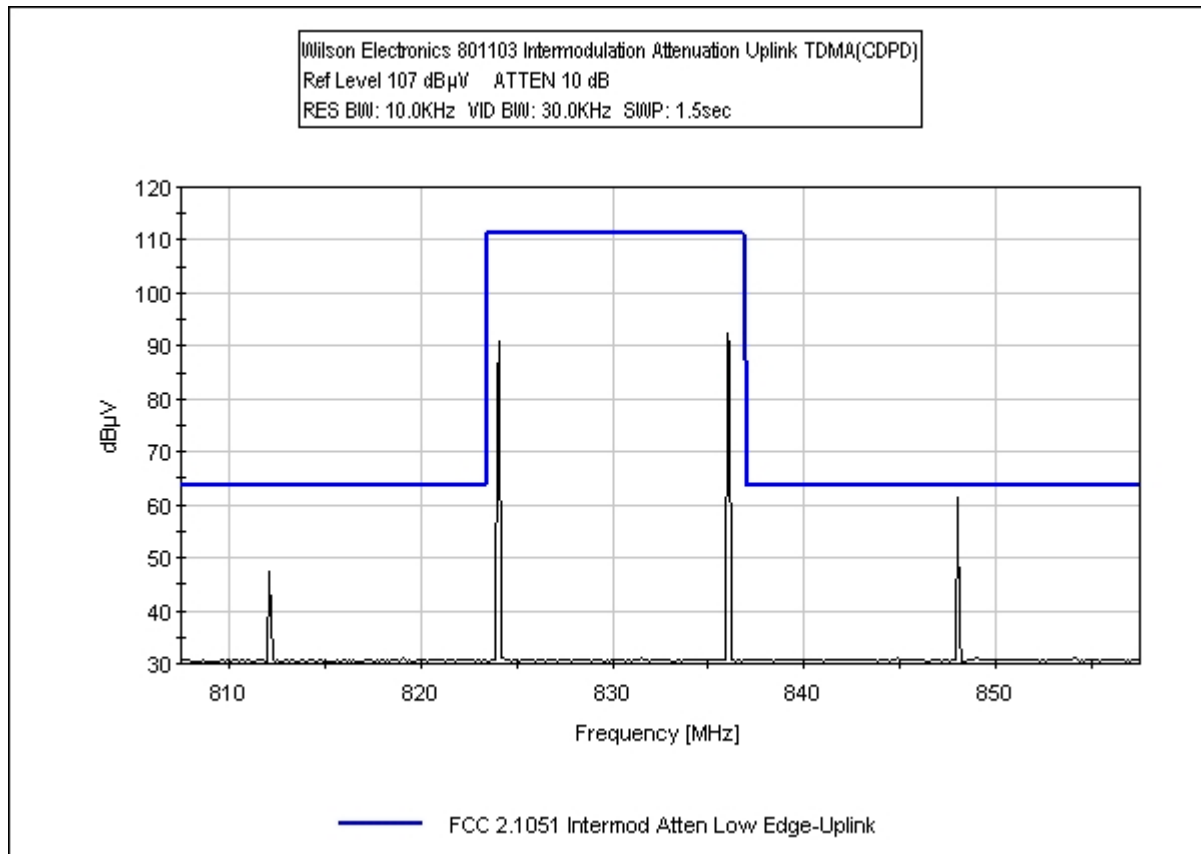
Uplink Intermodulation Attenuation CDMA Low Close



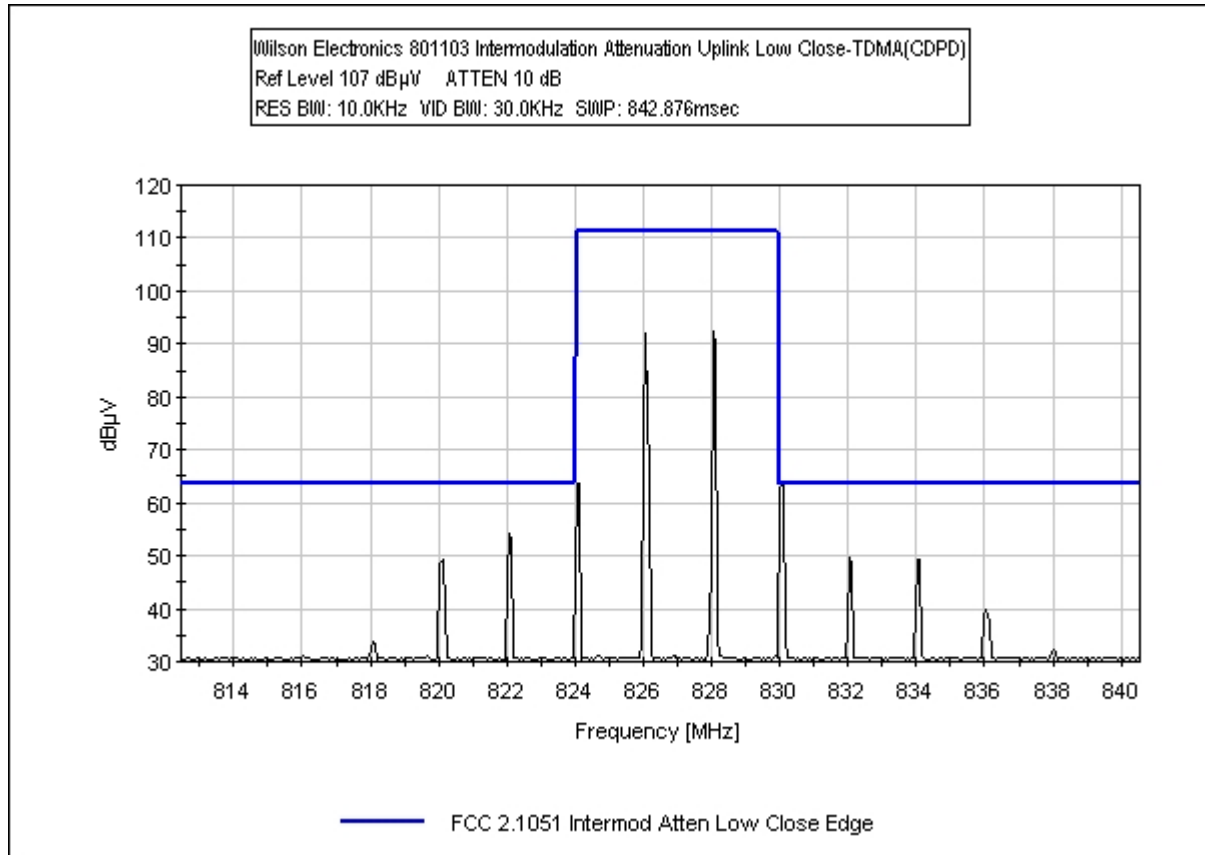
Uplink Intermodulation Attenuation CDMA High



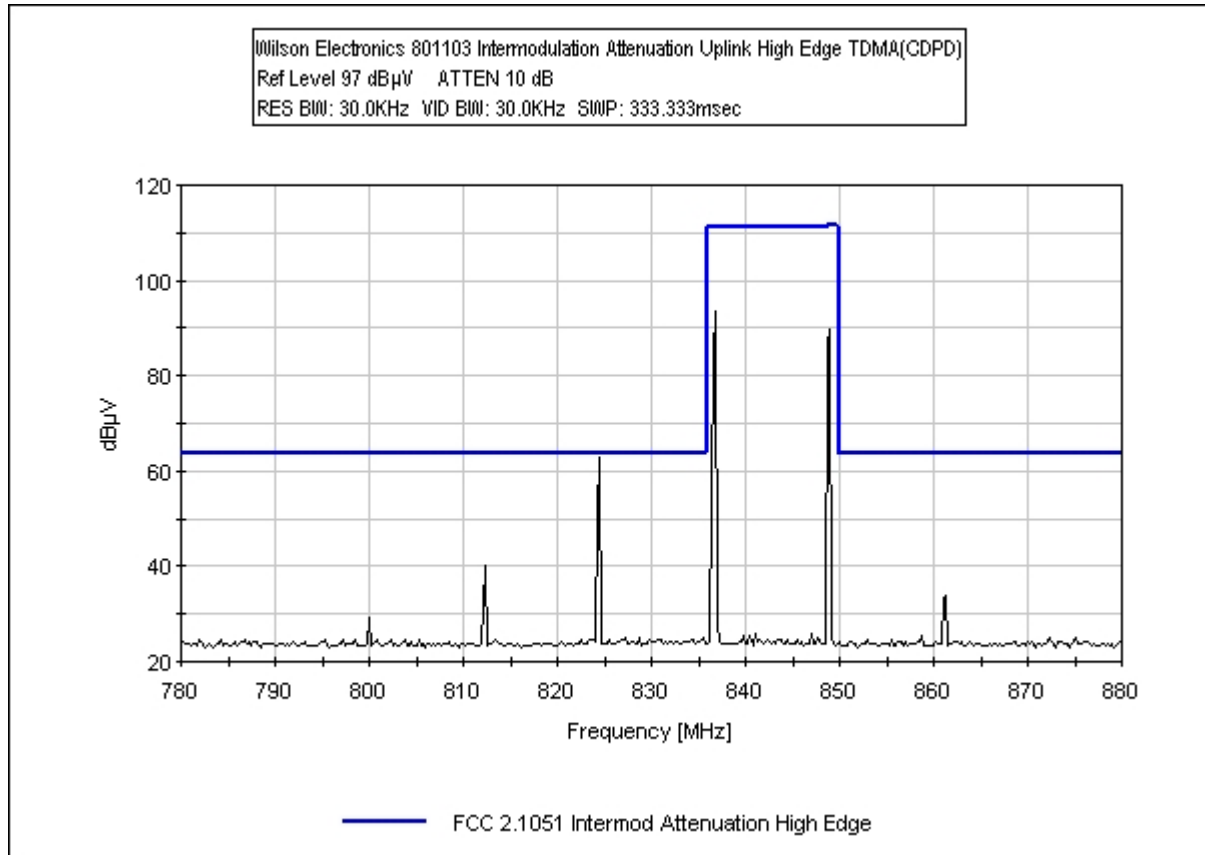
Uplink Intermodulation Attenuation TDMA(CDPD) Low



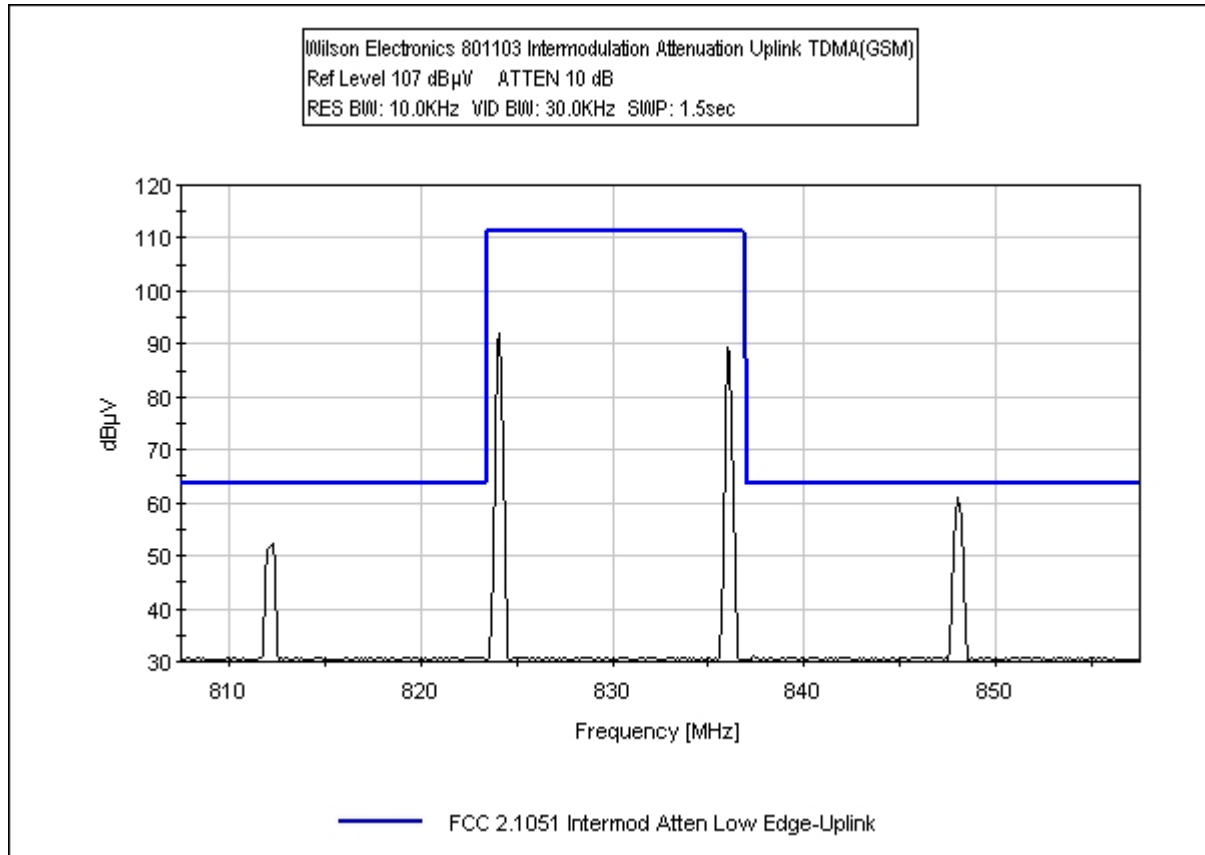
Uplink Intermodulation Attenuation TDMA(CDPD) Low Close



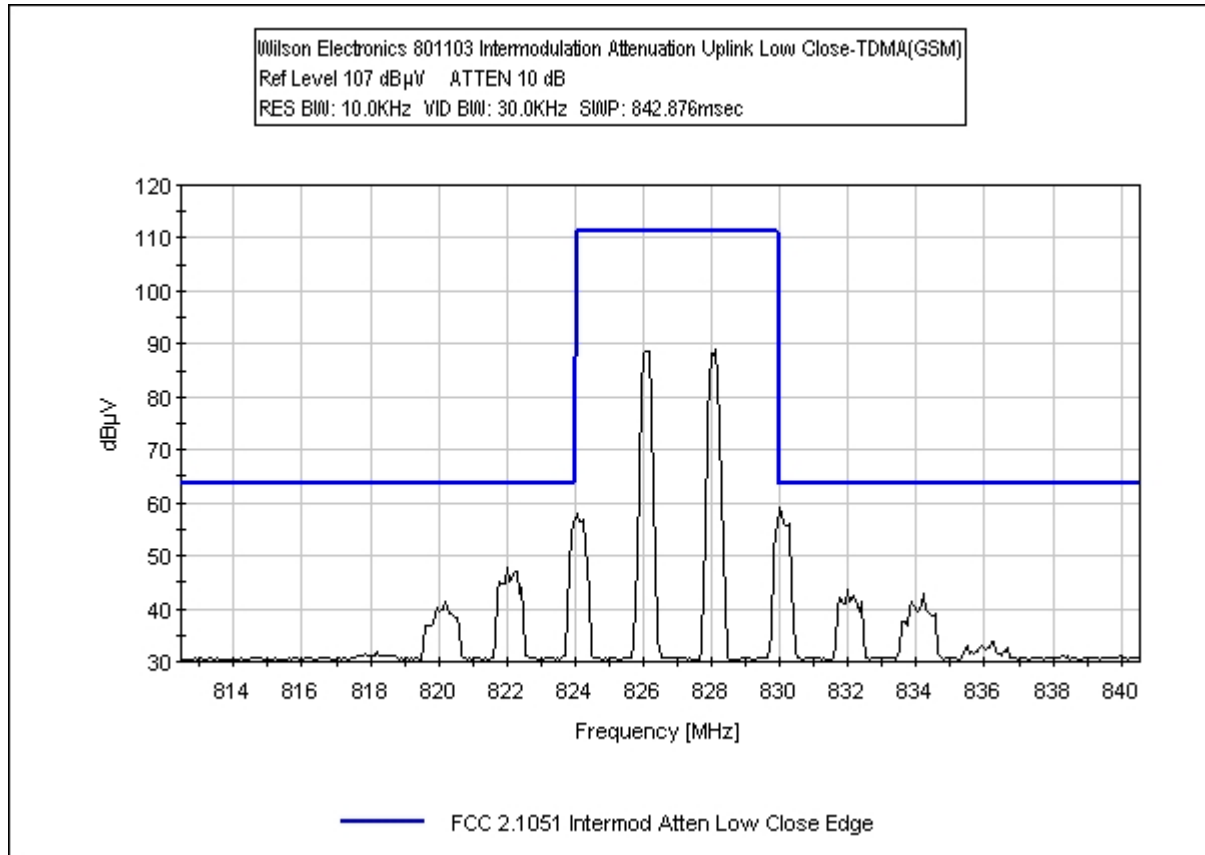
Uplink Intermodulation Attenuation TDMA(CDPD) High



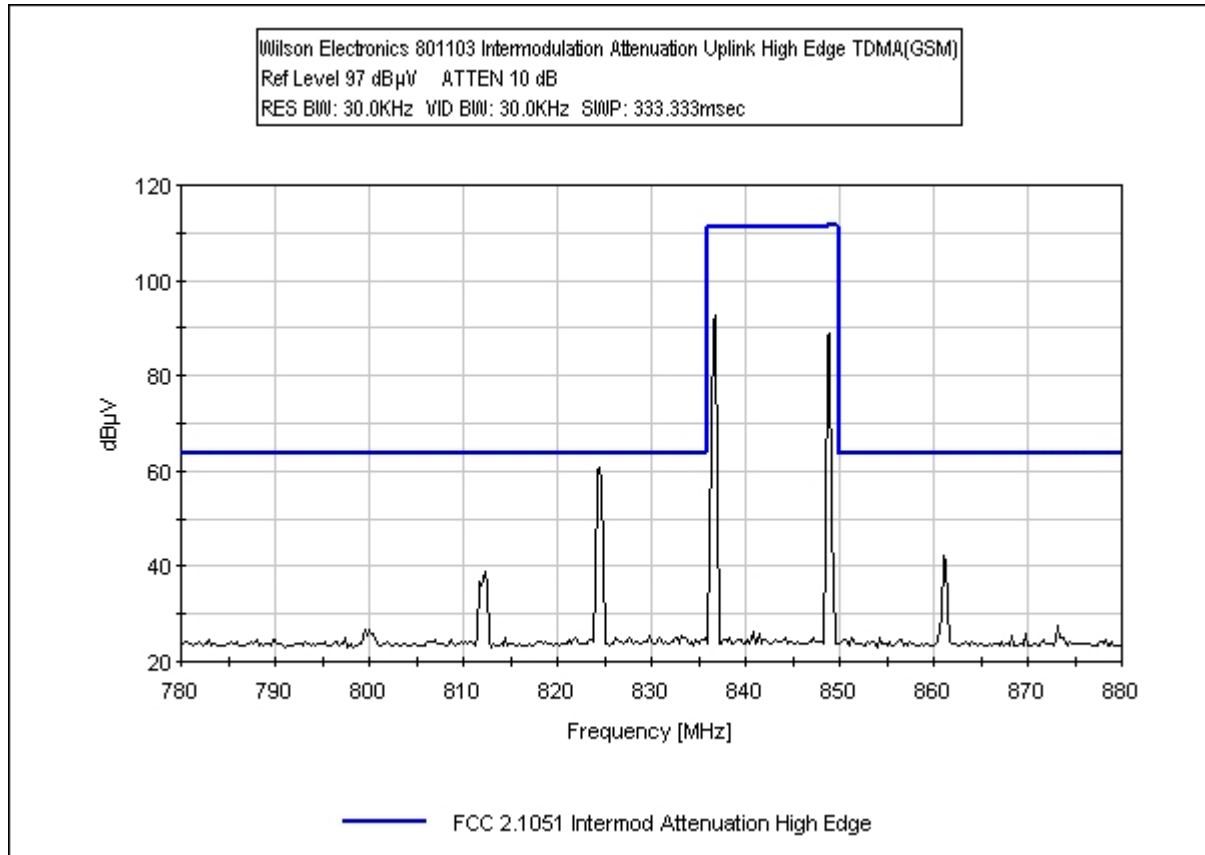
Uplink Intermodulation Attenuation TDMA(GSM) Low



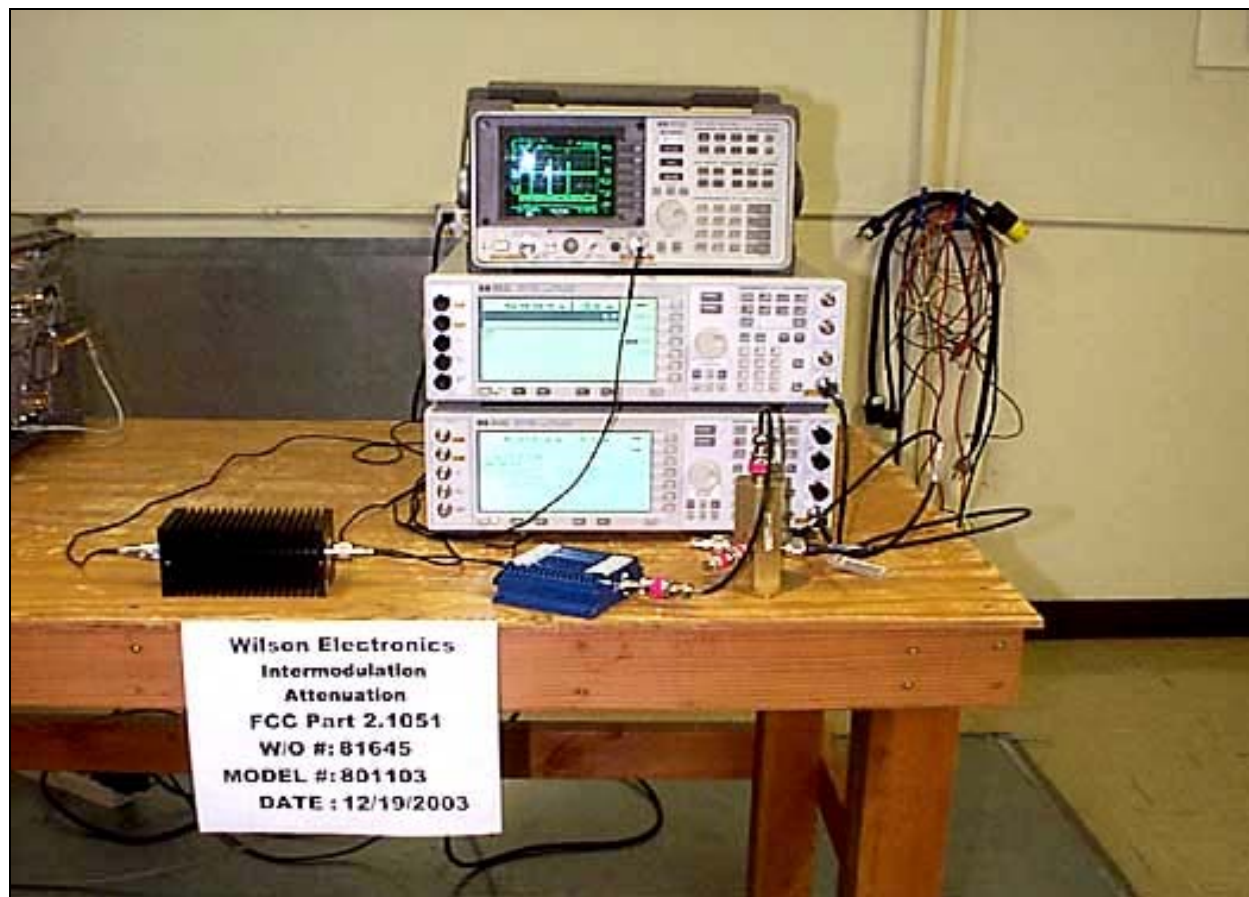
Uplink Intermodulation Attenuation TDMA(GSM) Low Close



Uplink Intermodulation Attenuation TDMA(GSM) High



PHOTOGRAPH SHOWING INTERMODULATION ATTENUATION



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 #: **81645** Date: 12/19/2003
 Test Type: **Spurious Emissions Antenna Terminals** Time: 3:03:48 PM
 Equipment: **In-building Bidirectional Amplifier** Sequence#: 14
 Manufacturer: Wilson Electronics Tested By: Matthew Pettersen
 Model: 801103
 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
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 870.25MHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	870.790M	73.2	+30.3				+0.0	103.5	117.0	-13.5	Direc

2	675.201M	29.8	+30.4	+0.0	60.2	94.0	-33.8	Direc
3	121.522M	28.8	+30.5	+0.0	59.3	94.0	-34.7	Direc
4	2314.853M	28.3	+30.2	+0.0	58.5	94.0	-35.5	Direc
5	1684.865M	27.8	+30.2	+0.0	58.0	94.0	-36.0	Direc
6	6871.631M	30.1	+27.1	+0.0	57.2	94.0	-36.8	Direc
7	296.365M	26.2	+30.5	+0.0	56.7	94.0	-37.3	Direc
8	227.183M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
9	35.844M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
10	8820.451M	31.4	+24.6	+0.0	56.0	94.0	-38.0	Direc
11	3483.770M	26.0	+29.8	+0.0	55.8	94.0	-38.2	Direc
12	85.821M	25.1	+30.5	+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 #: **81645**

Test Type: **Spurious Emissions Antenna
Terminals**

Date: 12/19/2003

Time: 2:57:11 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 13

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 880MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	880.266M	80.1	+30.3				+0.0	110.4	117.0	-6.6	Direc
2	674.771M	29.1	+30.4				+0.0	59.5	94.0	-34.5	Direc

3	2482.439M	28.8	+30.1	+0.0	58.9	94.0	-35.1	Direc
4	603.146M	28.4	+30.4	+0.0	58.8	94.0	-35.2	Direc
5	2322.385M	28.6	+30.2	+0.0	58.8	94.0	-35.2	Direc
6	85.021M	27.6	+30.5	+0.0	58.1	94.0	-35.9	Direc
7	1327.408M	27.4	+30.2	+0.0	57.6	94.0	-36.4	Direc
8	6786.131M	30.4	+27.1	+0.0	57.5	94.0	-36.5	Direc
9	149.539M	26.6	+30.5	+0.0	57.1	94.0	-36.9	Direc
10	381.676M	26.3	+30.3	+0.0	56.6	94.0	-37.4	Direc
11	259.496M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
12	64.596M	25.7	+30.5	+0.0	56.2	94.0	-37.8	Direc
13	39.387M	25.3	+30.5	+0.0	55.8	94.0	-38.2	Direc
14	9290.070M	30.8	+24.9	+0.0	55.7	94.0	-38.3	Direc
15	3951.411M	25.9	+29.6	+0.0	55.5	94.0	-38.5	Direc
16	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 #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 2:32:01 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 12

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 892.75MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	892.944M	75.0	+30.3				+0.0	105.3	117.0	-11.7	Direc
2	674.771M	30.6	+30.4				+0.0	61.0	94.0	-33.0	Direc

3	1729.641M	28.2	+30.2	+0.0	58.4	94.0	-35.6	Direc
4	2435.075M	27.9	+30.1	+0.0	58.0	94.0	-36.0	Direc
5	93.384M	26.8	+30.5	+0.0	57.3	94.0	-36.7	Direc
6	3130.959M	27.8	+29.5	+0.0	57.3	94.0	-36.7	Direc
7	317.136M	26.2	+30.5	+0.0	56.7	94.0	-37.3	Direc
8	6555.883M	29.5	+27.2	+0.0	56.7	94.0	-37.3	Direc
9	175.680M	26.1	+30.4	+0.0	56.5	94.0	-37.5	Direc
10	9290.070M	31.3	+24.9	+0.0	56.2	94.0	-37.8	Direc
11	64.520M	25.4	+30.5	+0.0	55.9	94.0	-38.1	Direc
12	448.935M	25.4	+30.4	+0.0	55.8	94.0	-38.2	Direc
13	42.423M	25.1	+30.5	+0.0	55.6	94.0	-38.4	Direc
14	4051.917M	25.7	+29.5	+0.0	55.2	94.0	-38.8	Direc
15	9999.999M	30.4	+23.0	+0.0	53.4	94.0	-40.6	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 1:02:53 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 3

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 870.25MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	870.034M	71.0	+30.3				+0.0	101.3	117.0	-15.7	Direc
2	674.771M	29.2	+30.4				+0.0	59.6	94.0	-34.4	Direc

3	2165.218M	28.9	+30.2	+0.0	59.1	94.0	-34.9	Direc
4	1269.295M	27.6	+30.2	+0.0	57.8	94.0	-36.2	Direc
5	2908.713M	28.2	+29.5	+0.0	57.7	94.0	-36.3	Direc
6	6594.258M	29.9	+27.2	+0.0	57.1	94.0	-36.9	Direc
7	285.078M	26.4	+30.5	+0.0	56.9	94.0	-37.1	Direc
8	88.833M	26.1	+30.5	+0.0	56.6	94.0	-37.4	Direc
9	141.955M	26.1	+30.5	+0.0	56.6	94.0	-37.4	Direc
10	382.727M	26.3	+30.3	+0.0	56.6	94.0	-37.4	Direc
11	78.465M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
12	43.310M	25.2	+30.5	+0.0	55.7	94.0	-38.3	Direc
13	3839.081M	25.2	+29.7	+0.0	54.9	94.0	-39.1	Direc
14	10000.000 M	30.4	+23.0	+0.0	53.4	94.0	-40.6	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 1:14:03 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 4

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 880MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	880.266M	77.1	+30.3				+0.0	107.4	117.0	-9.6	Direc
2	674.771M	29.7	+30.4				+0.0	60.1	94.0	-33.9	Direc

3	2019.277M	28.3	+30.3	+0.0	58.6	94.0	-35.4	Direc
4	2460.578M	28.1	+30.1	+0.0	58.2	94.0	-35.8	Direc
5	1099.106M	27.7	+30.3	+0.0	58.0	94.0	-36.0	Direc
6	6910.848M	30.2	+27.1	+0.0	57.3	94.0	-36.7	Direc
7	156.922M	26.4	+30.5	+0.0	56.9	94.0	-37.1	Direc
8	123.390M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
9	432.120M	26.0	+30.3	+0.0	56.3	94.0	-37.7	Direc
10	293.821M	25.6	+30.5	+0.0	56.1	94.0	-37.9	Direc
11	30.467M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
12	8915.918M	31.1	+24.9	+0.0	56.0	94.0	-38.0	Direc
13	61.034M	25.4	+30.5	+0.0	55.9	94.0	-38.1	Direc
14	3998.708M	26.1	+29.6	+0.0	55.7	94.0	-38.3	Direc
15	10000.000 M	30.4	+23.0	+0.0	53.4	94.0	-40.6	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 13:45:20

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 5

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 892.75MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	892.900M	73.2	+30.3				+0.0	103.5	117.0	-13.5	Direc
2	674.771M	32.2	+30.4				+0.0	62.6	94.0	-31.4	Direc

3	1421.495M	28.5	+30.2	+0.0	58.7	94.0	-35.3	Direc
4	1992.334M	28.3	+30.3	+0.0	58.6	94.0	-35.4	Direc
5	2471.509M	28.2	+30.1	+0.0	58.3	94.0	-35.7	Direc
6	6507.916M	30.6	+27.2	+0.0	57.8	94.0	-36.2	Direc
7	125.850M	26.0	+30.5	+0.0	56.5	94.0	-37.5	Direc
8	504.634M	26.1	+30.4	+0.0	56.5	94.0	-37.5	Direc
9	231.971M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
10	154.528M	25.8	+30.5	+0.0	56.3	94.0	-37.7	Direc
11	72.250M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
12	32.849M	25.1	+30.5	+0.0	55.6	94.0	-38.4	Direc
13	3969.147M	26.0	+29.6	+0.0	55.6	94.0	-38.4	Direc
14	10000.000 M	30.1	+23.0	+0.0	53.1	94.0	-40.9	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 2:11:21 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 9

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 870.25MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	869.549M	73.3	+30.3				+0.0	103.6	117.0	-13.4	Direc
2	675.201M	31.7	+30.4				+0.0	62.1	94.0	-31.9	Direc

3	141.177M	31.5	+30.5	+0.0	62.0	94.0	-32.0	Direc
4	2321.987M	28.6	+30.2	+0.0	58.8	94.0	-35.2	Direc
5	1640.690M	28.2	+30.2	+0.0	58.4	94.0	-35.6	Direc
6	8081.951M	32.7	+24.2	+0.0	56.9	94.0	-37.1	Direc
7	79.539M	26.3	+30.5	+0.0	56.8	94.0	-37.2	Direc
8	295.502M	26.1	+30.5	+0.0	56.6	94.0	-37.4	Direc
9	209.374M	25.9	+30.4	+0.0	56.3	94.0	-37.7	Direc
10	45.967M	25.6	+30.5	+0.0	56.1	94.0	-37.9	Direc
11	3774.110M	26.0	+29.7	+0.0	55.7	94.0	-38.3	Direc
12	5830.685M	26.4	+27.8	+0.0	54.2	94.0	-39.8	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 2:18:03 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 10

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 880MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	879.473M	80.1	+30.3				+0.0	110.4	117.0	-6.6	Direc
2	675.201M	29.3	+30.4				+0.0	59.7	94.0	-34.3	Direc

3	2735.768M	28.9	+29.8	+0.0	58.7	94.0	-35.3	Direc
4	1779.526M	28.1	+30.3	+0.0	58.4	94.0	-35.6	Direc
5	6574.180M	30.1	+27.2	+0.0	57.3	94.0	-36.7	Direc
6	111.320M	26.1	+30.5	+0.0	56.6	94.0	-37.4	Direc
7	251.066M	26.2	+30.4	+0.0	56.6	94.0	-37.4	Direc
8	79.981M	25.8	+30.5	+0.0	56.3	94.0	-37.7	Direc
9	223.876M	25.6	+30.4	+0.0	56.0	94.0	-38.0	Direc
10	35.218M	25.3	+30.5	+0.0	55.8	94.0	-38.2	Direc
11	9035.847M	30.5	+25.2	+0.0	55.7	94.0	-38.3	Direc
12	3659.184M	25.7	+29.7	+0.0	55.4	94.0	-38.6	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 2:23:55 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 11

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 892.75MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	892.944M	75.0	+30.3				+0.0	105.3	117.0	-11.7	Direc
2	675.624M	29.4	+30.4				+0.0	59.8	94.0	-34.2	Direc

3	2129.294M	28.5	+30.2	+0.0	58.7	94.0	-35.3	Direc
4	2453.292M	28.4	+30.1	+0.0	58.5	94.0	-35.5	Direc
5	603.999M	27.7	+30.4	+0.0	58.1	94.0	-35.9	Direc
6	6603.852M	29.7	+27.2	+0.0	56.9	94.0	-37.1	Direc
7	321.669M	26.2	+30.5	+0.0	56.7	94.0	-37.3	Direc
8	363.810M	26.0	+30.4	+0.0	56.4	94.0	-37.6	Direc
9	145.747M	25.7	+30.5	+0.0	56.2	94.0	-37.8	Direc
10	47.420M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
11	77.858M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
12	87.358M	25.1	+30.5	+0.0	55.6	94.0	-38.4	Direc
13	4046.005M	25.9	+29.5	+0.0	55.4	94.0	-38.6	Direc
14	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 #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 1:59:41 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 8

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 870.25MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	869.549M	73.3	+30.3				+0.0	103.6	117.0	-13.4	Direc
2	675.201M	31.1	+30.4				+0.0	61.5	94.0	-32.5	Direc

3	2468.238M	29.1	+30.1	+0.0	59.2	94.0	-34.8	Direc
4	1949.917M	28.4	+30.3	+0.0	58.7	94.0	-35.3	Direc
5	209.628M	26.4	+30.4	+0.0	56.8	94.0	-37.2	Direc
6	271.774M	26.2	+30.4	+0.0	56.6	94.0	-37.4	Direc
7	6738.291M	29.4	+27.2	+0.0	56.6	94.0	-37.4	Direc
8	9005.076M	31.4	+25.2	+0.0	56.6	94.0	-37.4	Direc
9	131.574M	25.7	+30.5	+0.0	56.2	94.0	-37.8	Direc
10	48.367M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
11	71.487M	25.1	+30.5	+0.0	55.6	94.0	-38.4	Direc
12	3762.013M	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 #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 1:53:24 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 7

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 880MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	879.473M	80.0	+30.3				+0.0	110.3	117.0	-6.7	Direc
2	675.201M	30.2	+30.4				+0.0	60.6	94.0	-33.4	Direc

3	1825.805M	28.5	+30.3	+0.0	58.8	94.0	-35.2	Direc
4	2311.286M	28.5	+30.2	+0.0	58.7	94.0	-35.3	Direc
5	6676.749M	30.3	+27.2	+0.0	57.5	94.0	-36.5	Direc
6	260.126M	26.4	+30.4	+0.0	56.8	94.0	-37.2	Direc
7	68.567M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
8	138.776M	25.9	+30.5	+0.0	56.4	94.0	-37.6	Direc
9	176.808M	25.9	+30.4	+0.0	56.3	94.0	-37.7	Direc
10	3870.890M	26.5	+29.6	+0.0	56.1	94.0	-37.9	Direc
11	35.740M	25.3	+30.5	+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 #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 1:46:12 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 6

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 892.75MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	893.119M	74.8	+30.3				+0.0	105.1	117.0	-11.9	Direc
2	675.201M	32.4	+30.4				+0.0	62.8	94.0	-31.2	Direc

3	1928.881M	28.4	+30.3	+0.0	58.7	94.0	-35.3	Direc
4	2314.853M	28.2	+30.2	+0.0	58.4	94.0	-35.6	Direc
5	6728.034M	30.2	+27.2	+0.0	57.4	94.0	-36.6	Direc
6	216.498M	26.2	+30.4	+0.0	56.6	94.0	-37.4	Direc
7	270.048M	26.2	+30.4	+0.0	56.6	94.0	-37.4	Direc
8	38.662M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
9	66.621M	25.5	+30.5	+0.0	56.0	94.0	-38.0	Direc
10	3610.794M	26.2	+29.8	+0.0	56.0	94.0	-38.0	Direc
11	109.069M	25.3	+30.5	+0.0	55.8	94.0	-38.2	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Test Type: **Maximized Emissions**

Equipment: **Bidirectional Amplifier**

Manufacturer: Wilson Electronics

Model: 801103

S/N: 001

Date: 12/31/2003

Time: 15:18:44

Sequence#: 72

Tested By: Randal Clark

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	801103	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 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:

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

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
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Test Location: CKC Laboratories, Inc. • 1100 Fulton Place • Fremont, CA. 94538 • 510-249-1170

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 3:27:27 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 15

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 825.25MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	826.131M	99.1	+30.4				+0.0	129.5	141.7	-12.2	Direc
2	1651.208M	48.7	+30.2				+0.0	78.9	94.0	-15.1	Direc

3	1916.259M	48.6	+30.3	+0.0	78.9	94.0	-15.1	Direc
4	1386.156M	48.4	+30.2	+0.0	78.6	94.0	-15.4	Direc
5	2318.420M	47.7	+30.2	+0.0	77.9	94.0	-16.1	Direc
6	6625.464M	49.7	+27.2	+0.0	76.9	94.0	-17.1	Direc
7	224.639M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
8	130.824M	45.7	+30.5	+0.0	76.2	94.0	-17.8	Direc
9	59.189M	45.4	+30.5	+0.0	75.9	94.0	-18.1	Direc
10	702.269M	45.5	+30.4	+0.0	75.9	94.0	-18.1	Direc
11	37.148M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
12	268.323M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
13	3846.695M	45.8	+29.7	+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 #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 3:34:57 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 16

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 836MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	836.055M	99.5	+30.4				+0.0	129.9	141.7	-11.8	Direc
2	1440.849M	48.0	+30.2				+0.0	78.2	94.0	-15.8	Direc

3	2321.987M	47.5	+30.2	+0.0	77.7	94.0	-16.3	Direc
4	7138.312M	50.3	+26.8	+0.0	77.1	94.0	-16.9	Direc
5	450.609M	46.0	+30.4	+0.0	76.4	94.0	-17.6	Direc
6	237.869M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
7	76.708M	45.3	+30.5	+0.0	75.8	94.0	-18.2	Direc
8	319.230M	45.3	+30.5	+0.0	75.8	94.0	-18.2	Direc
9	130.824M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
10	35.270M	44.9	+30.5	+0.0	75.4	94.0	-18.6	Direc
11	3556.355M	45.6	+29.8	+0.0	75.4	94.0	-18.6	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 3:40:08 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 17

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 847.75MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	848.460M	97.0	+30.4				+0.0	127.4	141.7	-14.3	Direc
2	1695.383M	48.5	+30.2				+0.0	78.7	94.0	-15.3	Direc

3	2318.420M	48.2	+30.2	+0.0	78.4	94.0	-15.6	Direc
4	265.303M	46.6	+30.4	+0.0	77.0	94.0	-17.0	Direc
5	6687.006M	49.7	+27.2	+0.0	76.9	94.0	-17.1	Direc
6	247.537M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
7	75.026M	45.7	+30.5	+0.0	76.2	94.0	-17.8	Direc
8	109.069M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
9	3695.476M	46.1	+29.7	+0.0	75.8	94.0	-18.2	Direc
10	580.097M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
11	46.749M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
12	5606.881M	45.8	+27.9	+0.0	73.7	94.0	-20.3	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 3:54:00 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 20

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 825.25MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	826.131M	97.8	+30.4				+0.0	128.2	141.7	-13.5	Direc
2	1670.140M	47.8	+30.2				+0.0	78.0	94.0	-16.0	Direc

3	2157.902M	47.6	+30.2	+0.0	77.8	94.0	-16.2	Direc
4	613.017M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
5	6522.895M	49.1	+27.2	+0.0	76.3	94.0	-17.7	Direc
6	90.464M	45.6	+30.5	+0.0	76.1	94.0	-17.9	Direc
7	66.886M	45.3	+30.5	+0.0	75.8	94.0	-18.2	Direc
8	226.675M	45.4	+30.4	+0.0	75.8	94.0	-18.2	Direc
9	321.819M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
10	35.948M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
11	8984.563M	50.5	+25.1	+0.0	75.6	94.0	-18.4	Direc
12	3520.063M	45.5	+29.8	+0.0	75.3	94.0	-18.7	Direc
13	5679.466M	45.9	+27.9	+0.0	73.8	94.0	-20.2	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 3:49:02 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 19

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 836MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	836.055M	98.5	+30.4				+0.0	128.9	141.7	-12.8	Direc
2	1819.495M	48.5	+30.3				+0.0	78.8	94.0	-15.2	Direc

3	2757.171M	48.4	+29.7	+0.0	78.1	94.0	-15.9	Direc
4	6892.145M	50.4	+27.1	+0.0	77.5	94.0	-16.5	Direc
5	405.946M	46.2	+30.3	+0.0	76.5	94.0	-17.5	Direc
6	227.692M	45.8	+30.4	+0.0	76.2	94.0	-17.8	Direc
7	522.303M	45.7	+30.4	+0.0	76.1	94.0	-17.9	Direc
8	132.325M	45.0	+30.5	+0.0	75.5	94.0	-18.5	Direc
9	76.973M	44.9	+30.5	+0.0	75.4	94.0	-18.6	Direc
10	3889.036M	45.8	+29.6	+0.0	75.4	94.0	-18.6	Direc
11	30.731M	44.8	+30.5	+0.0	75.3	94.0	-18.7	Direc
12	8984.563M	50.2	+25.1	+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 #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 3:44:40 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 18

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 847.75MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	848.460M	96.7	+30.4				+0.0	127.1	141.7	-14.6	Direc
2	1981.471M	48.1	+30.3				+0.0	78.4	94.0	-15.6	Direc

3	2182.871M	47.7	+30.2	+0.0	77.9	94.0	-16.1	Direc
4	276.951M	46.0	+30.5	+0.0	76.5	94.0	-17.5	Direc
5	536.934M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
6	185.713M	45.8	+30.4	+0.0	76.2	94.0	-17.8	Direc
7	6533.152M	49.0	+27.2	+0.0	76.2	94.0	-17.8	Direc
8	7589.618M	50.5	+25.6	+0.0	76.1	94.0	-17.9	Direc
9	110.719M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
10	46.019M	45.4	+30.5	+0.0	75.9	94.0	-18.1	Direc
11	3768.062M	46.0	+29.7	+0.0	75.7	94.0	-18.3	Direc
12	69.364M	44.9	+30.5	+0.0	75.4	94.0	-18.6	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 3:59:02 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 21

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 825.25MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	826.414M	100.0	+30.4				+0.0	130.4	141.7	-11.3	Direc
2	2054.456M	48.3	+30.3				+0.0	78.6	94.0	-15.4	Direc

3	1655.415M	47.7	+30.2	+0.0	77.9	94.0	-16.1	Direc
4	6769.062M	49.3	+27.1	+0.0	76.4	94.0	-17.6	Direc
5	397.318M	46.0	+30.3	+0.0	76.3	94.0	-17.7	Direc
6	491.577M	45.7	+30.4	+0.0	76.1	94.0	-17.9	Direc
7	204.031M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
8	3828.549M	45.9	+29.7	+0.0	75.6	94.0	-18.4	Direc
9	69.806M	44.9	+30.5	+0.0	75.4	94.0	-18.6	Direc
10	135.025M	44.9	+30.5	+0.0	75.4	94.0	-18.6	Direc
11	38.714M	44.4	+30.5	+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 #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 4:03:28 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 22

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 836MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	836.363M	101.6	+30.4				+0.0	132.0	141.7	-9.7	Direc
2	1691.176M	48.5	+30.2				+0.0	78.7	94.0	-15.3	Direc

3	2475.372M	48.0	+30.1	+0.0	78.1	94.0	-15.9	Direc
4	7569.104M	51.4	+25.7	+0.0	77.1	94.0	-16.9	Direc
5	548.639M	45.8	+30.4	+0.0	76.2	94.0	-17.8	Direc
6	90.314M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
7	313.191M	45.3	+30.5	+0.0	75.8	94.0	-18.2	Direc
8	190.293M	45.3	+30.4	+0.0	75.7	94.0	-18.3	Direc
9	69.983M	44.9	+30.5	+0.0	75.4	94.0	-18.6	Direc
10	40.592M	44.6	+30.5	+0.0	75.1	94.0	-18.9	Direc
11	3604.745M	44.9	+29.8	+0.0	74.7	94.0	-19.3	Direc
12	6122.874M	46.2	+27.6	+0.0	73.8	94.0	-20.2	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 4:07:29 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 23

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 847.75MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	848.460M	99.0	+30.4				+0.0	129.4	141.7	-12.3	Direc
2	1655.415M	48.6	+30.2				+0.0	78.8	94.0	-15.2	Direc

3	2304.152M	48.2	+30.2	+0.0	78.4	94.0	-15.6	Direc
4	6687.006M	49.7	+27.2	+0.0	76.9	94.0	-17.1	Direc
5	541.323M	46.0	+30.4	+0.0	76.4	94.0	-17.6	Direc
6	209.120M	45.7	+30.4	+0.0	76.1	94.0	-17.9	Direc
7	52.641M	45.4	+30.5	+0.0	75.9	94.0	-18.1	Direc
8	276.951M	45.2	+30.5	+0.0	75.7	94.0	-18.3	Direc
9	33.809M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
10	94.665M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
11	3852.744M	45.9	+29.7	+0.0	75.6	94.0	-18.4	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 4:21:07 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 26

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 825.25MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	826.131M	99.2	+30.4				+0.0	129.6	141.7	-12.1	Direc
2	1636.483M	48.0	+30.2				+0.0	78.2	94.0	-15.8	Direc

3	2903.421M	48.7	+29.5	+0.0	78.2	94.0	-15.8	Direc
4	6758.805M	49.8	+27.1	+0.0	76.9	94.0	-17.1	Direc
5	229.982M	46.3	+30.4	+0.0	76.7	94.0	-17.3	Direc
6	289.894M	45.9	+30.5	+0.0	76.4	94.0	-17.6	Direc
7	490.845M	46.0	+30.4	+0.0	76.4	94.0	-17.6	Direc
8	48.054M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
9	115.971M	45.0	+30.5	+0.0	75.5	94.0	-18.5	Direc
10	3568.453M	45.6	+29.8	+0.0	75.4	94.0	-18.6	Direc
11	81.132M	44.7	+30.5	+0.0	75.2	94.0	-18.8	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 4:16:11 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 25

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 836MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	836.363M	100.7	+30.4				+0.0	131.1	141.7	-10.6	Direc
2	2318.420M	48.3	+30.2				+0.0	78.5	94.0	-15.5	Direc

3	1512.371M	47.5	+30.2	+0.0	77.7	94.0	-16.3	Direc
4	6687.006M	49.5	+27.2	+0.0	76.7	94.0	-17.3	Direc
5	667.153M	45.9	+30.4	+0.0	76.3	94.0	-17.7	Direc
6	414.143M	45.9	+30.3	+0.0	76.2	94.0	-17.8	Direc
7	85.113M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
8	98.266M	45.5	+30.5	+0.0	76.0	94.0	-18.0	Direc
9	229.982M	45.4	+30.4	+0.0	75.8	94.0	-18.2	Direc
10	3526.111M	45.6	+29.8	+0.0	75.4	94.0	-18.6	Direc
11	36.105M	44.5	+30.5	+0.0	75.0	94.0	-19.0	Direc
12	6245.958M	46.5	+27.5	+0.0	74.0	94.0	-20.0	Direc

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **81645**

Date: 12/19/2003

Test Type: **Spurious Emissions Antenna
Terminals**

Time: 4:11:58 PM

Equipment: **In-building Bidirectional Amplifier**

Sequence#: 24

Manufacturer: Wilson Electronics

Tested By: Matthew Pettersen

Model: 801103

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

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Amplifier Power Supply	Wilson Electronics	JOD-48U-36	NA
In-building Bidirectional Amplifier*	Wilson Electronics	801103	001

Support Devices:

Function	Manufacturer	Model #	S/N
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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 847.75MHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

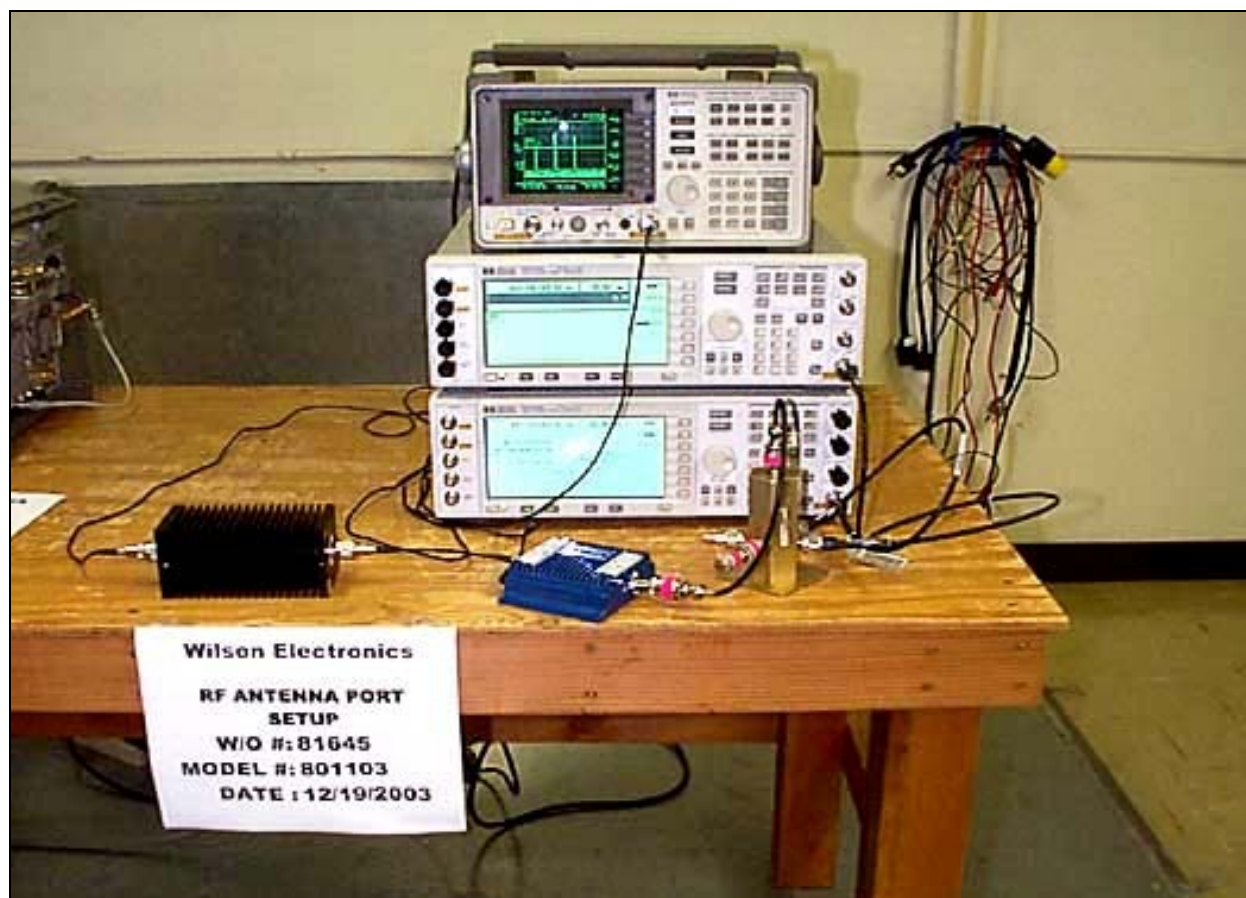
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	848.460M	98.1	+30.4				+0.0	128.5	141.7	-13.2	Direc
2	1695.383M	48.4	+30.2				+0.0	78.6	94.0	-15.4	Direc

3	2464.670M	48.0	+30.1	+0.0	78.1	94.0	-15.9	Direc
4	247.028M	46.0	+30.4	+0.0	76.4	94.0	-17.6	Direc
5	6615.208M	49.0	+27.2	+0.0	76.2	94.0	-17.8	Direc
6	79.804M	45.6	+30.5	+0.0	76.1	94.0	-17.9	Direc
7	497.429M	45.7	+30.4	+0.0	76.1	94.0	-17.9	Direc
8	412.849M	45.4	+30.3	+0.0	75.7	94.0	-18.3	Direc
9	95.866M	45.1	+30.5	+0.0	75.6	94.0	-18.4	Direc
10	49.932M	44.7	+30.5	+0.0	75.2	94.0	-18.8	Direc
11	3634.989M	45.5	+29.7	+0.0	75.2	94.0	-18.8	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 #: **81645** Date: 12/31/2003
 Test Type: **Maximized Emissions** Time: 15:45:20
 Equipment: **Bidirectional Amplifier** Sequence#: 75
 Manufacturer: Wilson Electronics Tested By: Randal Clark
 Model: 801103
 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	4/25/2003	4/25/2005	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	801103	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 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:

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Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq MHz	Rdng dBμV	dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
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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: 801103

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

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

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

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

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

As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a distance of 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: 801103

Fundamental Operating Frequency: 824-849 Uplink

Antenna Gain and Type: +13 dBi Yagi

Maximum Radiated Output Power: 46.61 dBm (EIRP)

Measured Output Power: 33.61 dBm

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

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

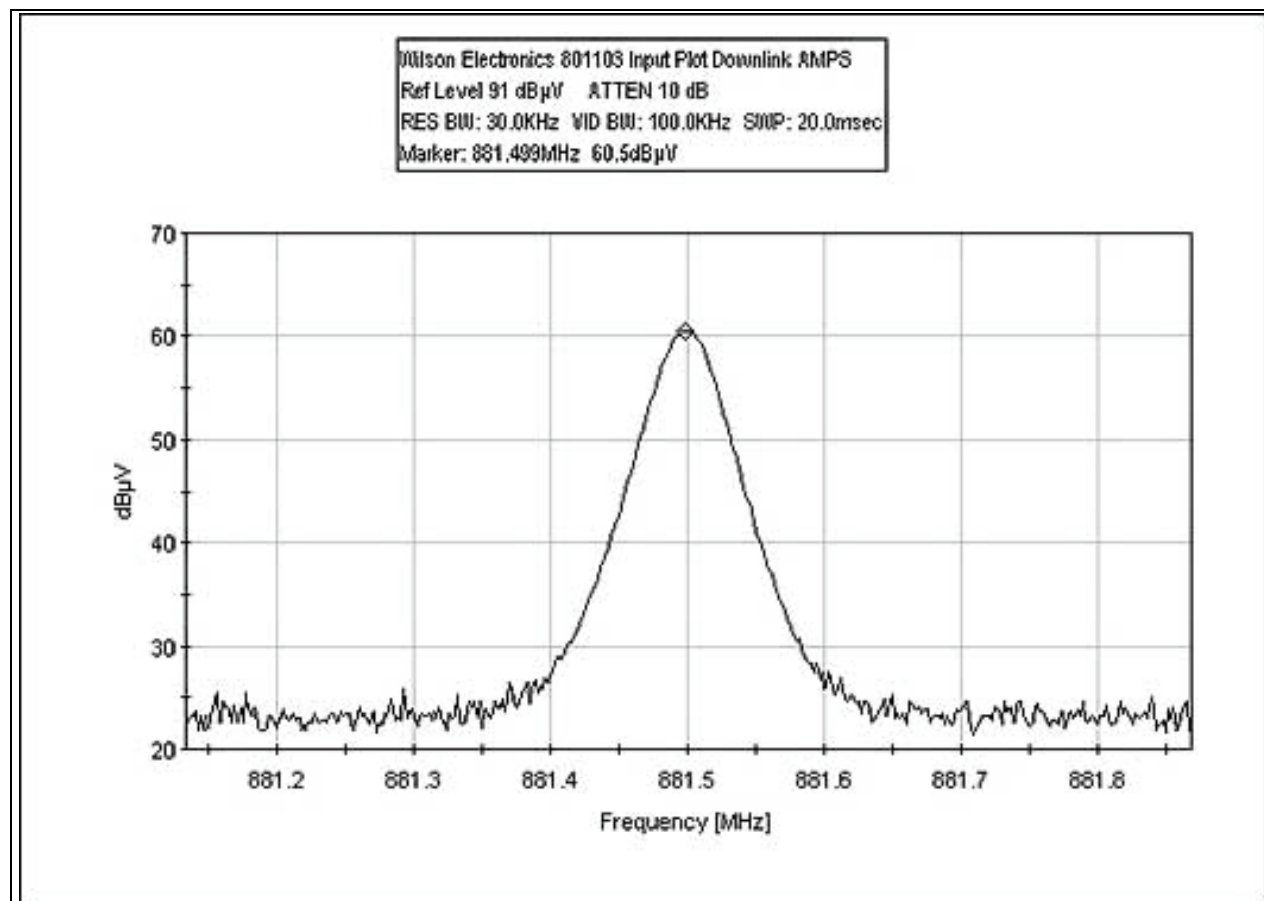
Note: Limit is calculated from the lower edge of the operating band

EIRP (mW)	Distance (cm)	Power Density (mW/cm ²)	Result
45814.19	81.42	0.550	Pass

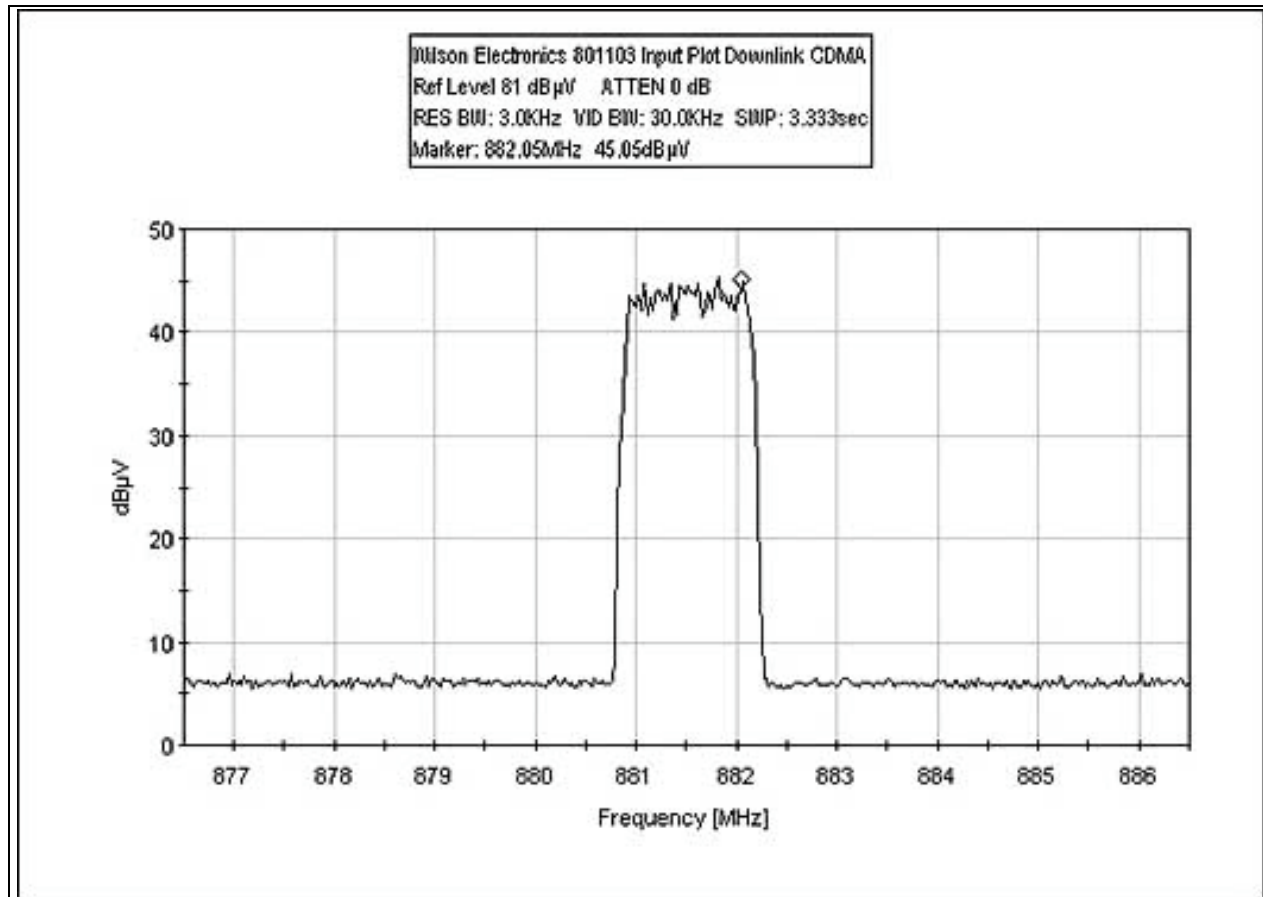
$$\text{PowerDensity(mW / cm}^2\text{)} = \frac{\text{EIRP}}{4\pi d^2} \quad \text{Given: EIRP in mW and d in cm}$$

As can be seen from the MPE results, this device passes the limits specified in 1.1310 at a distance of 81.42 cm and at a output power of 45814 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.

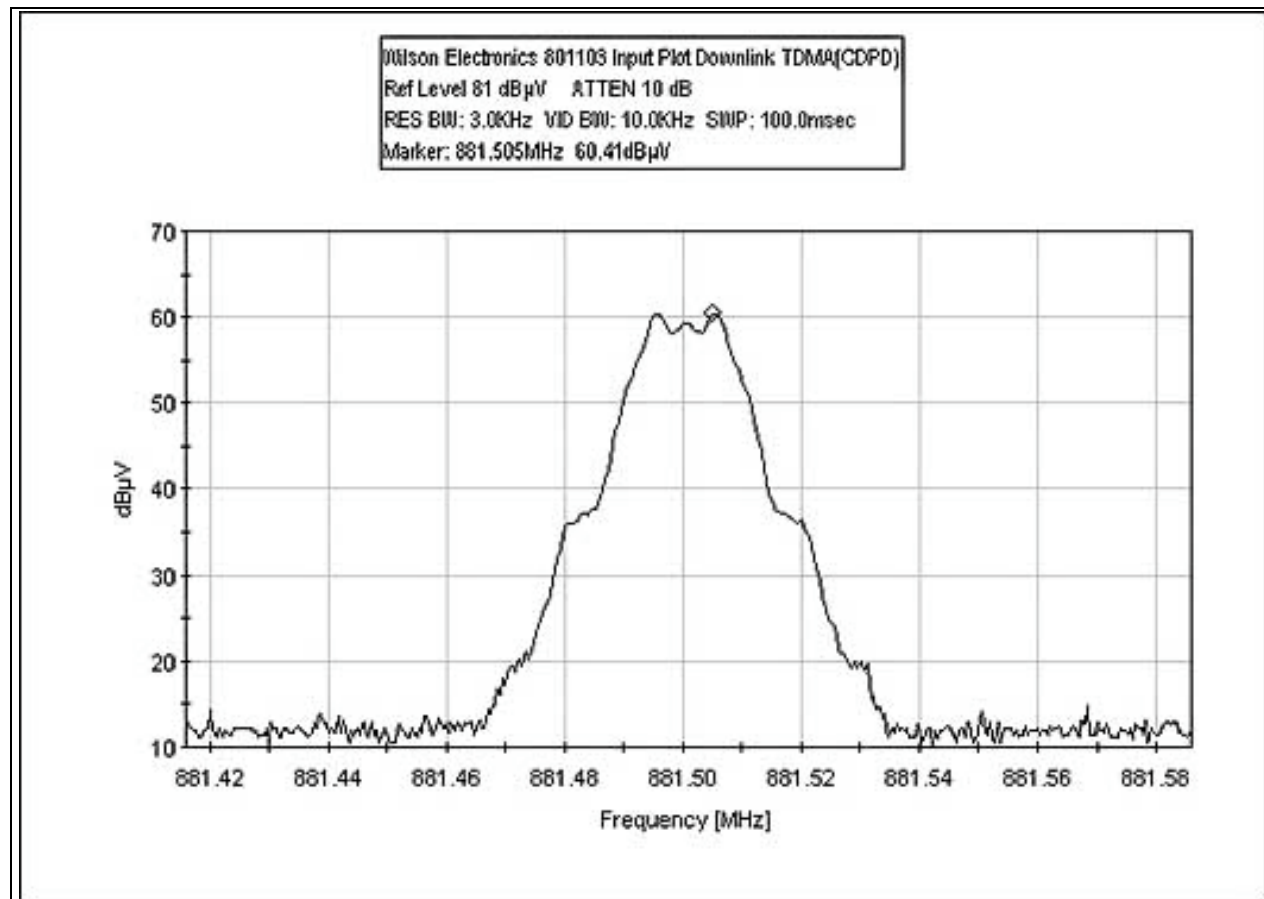
Downlink Input AMPS



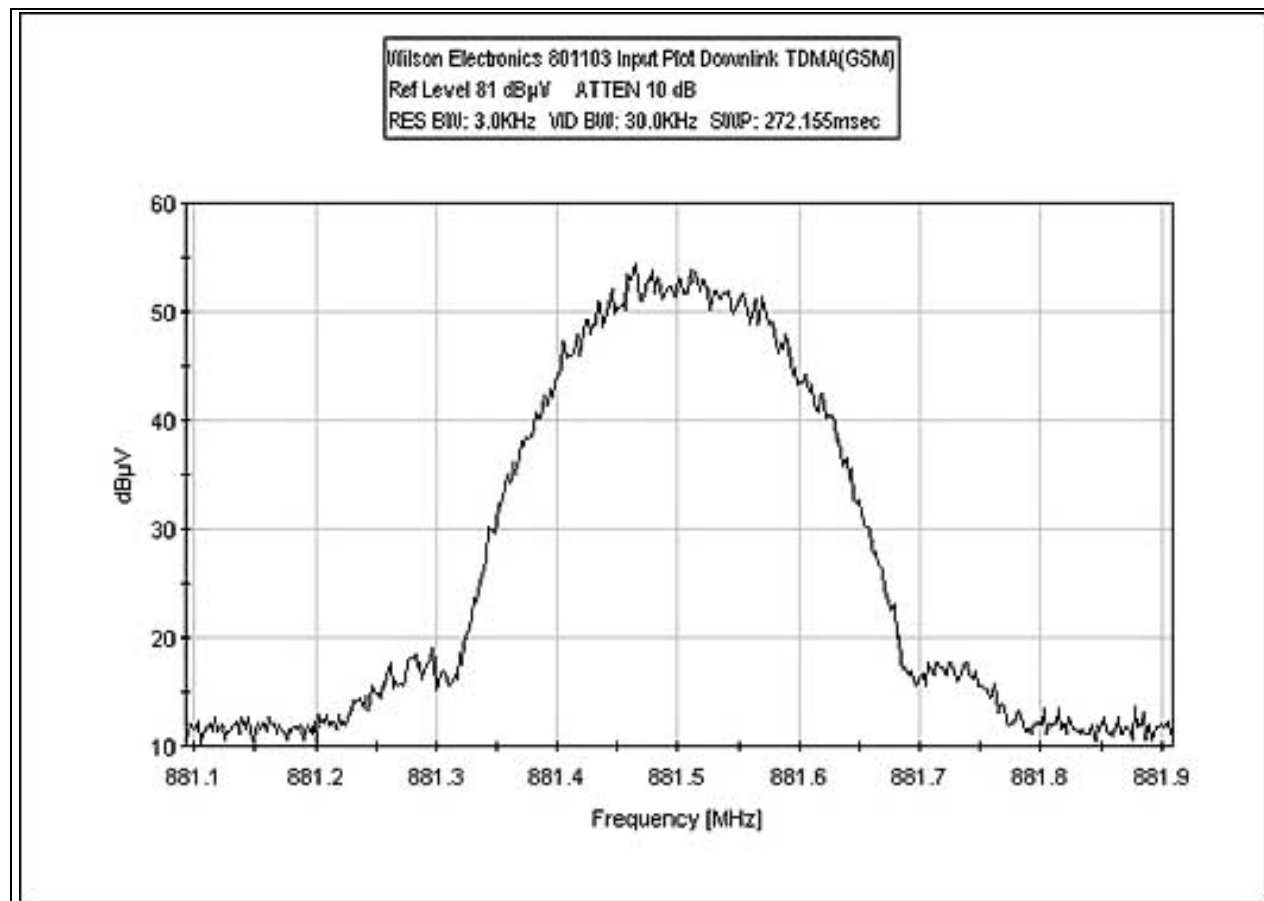
Downlink Input CDMA



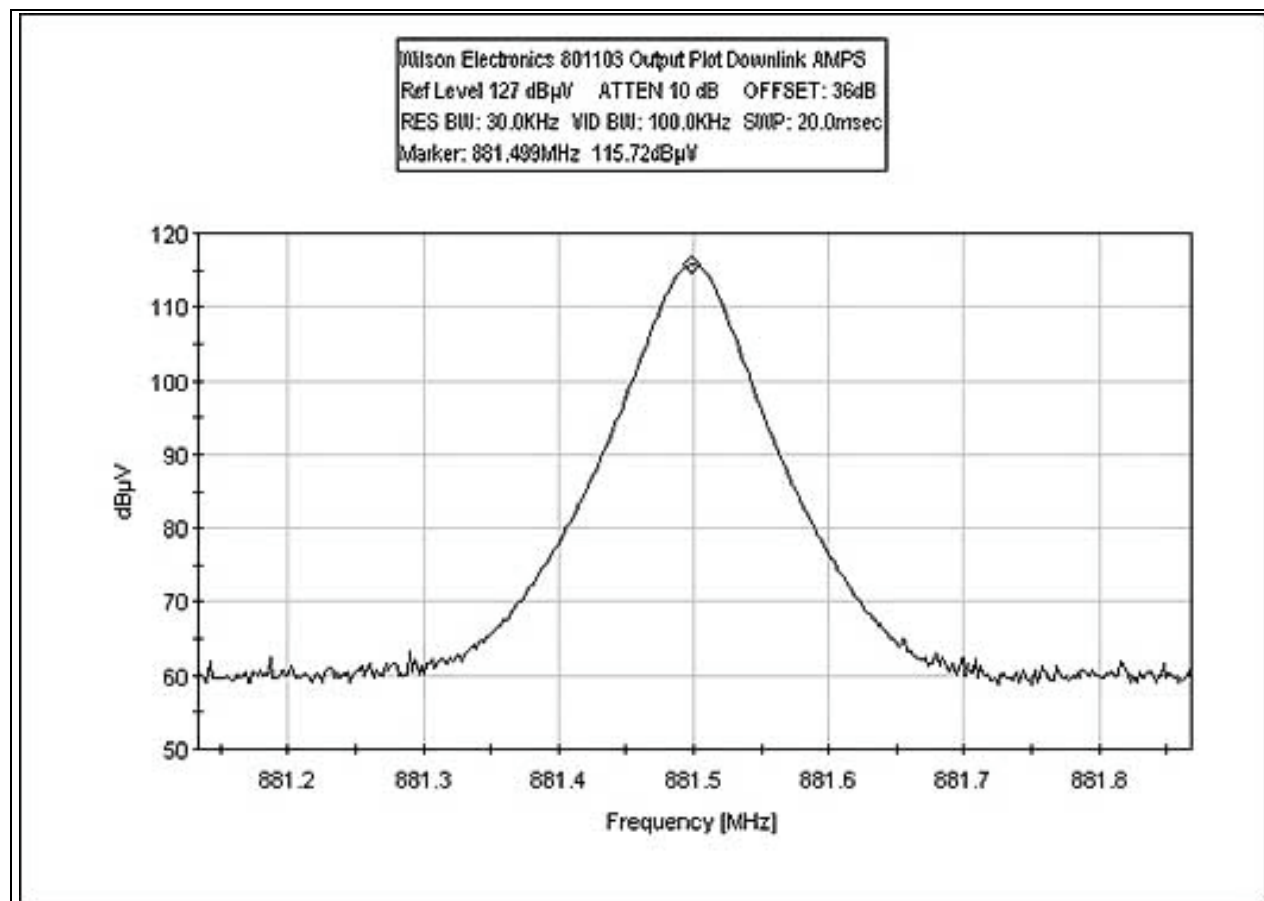
Downlink Input TDMA(CDPD)



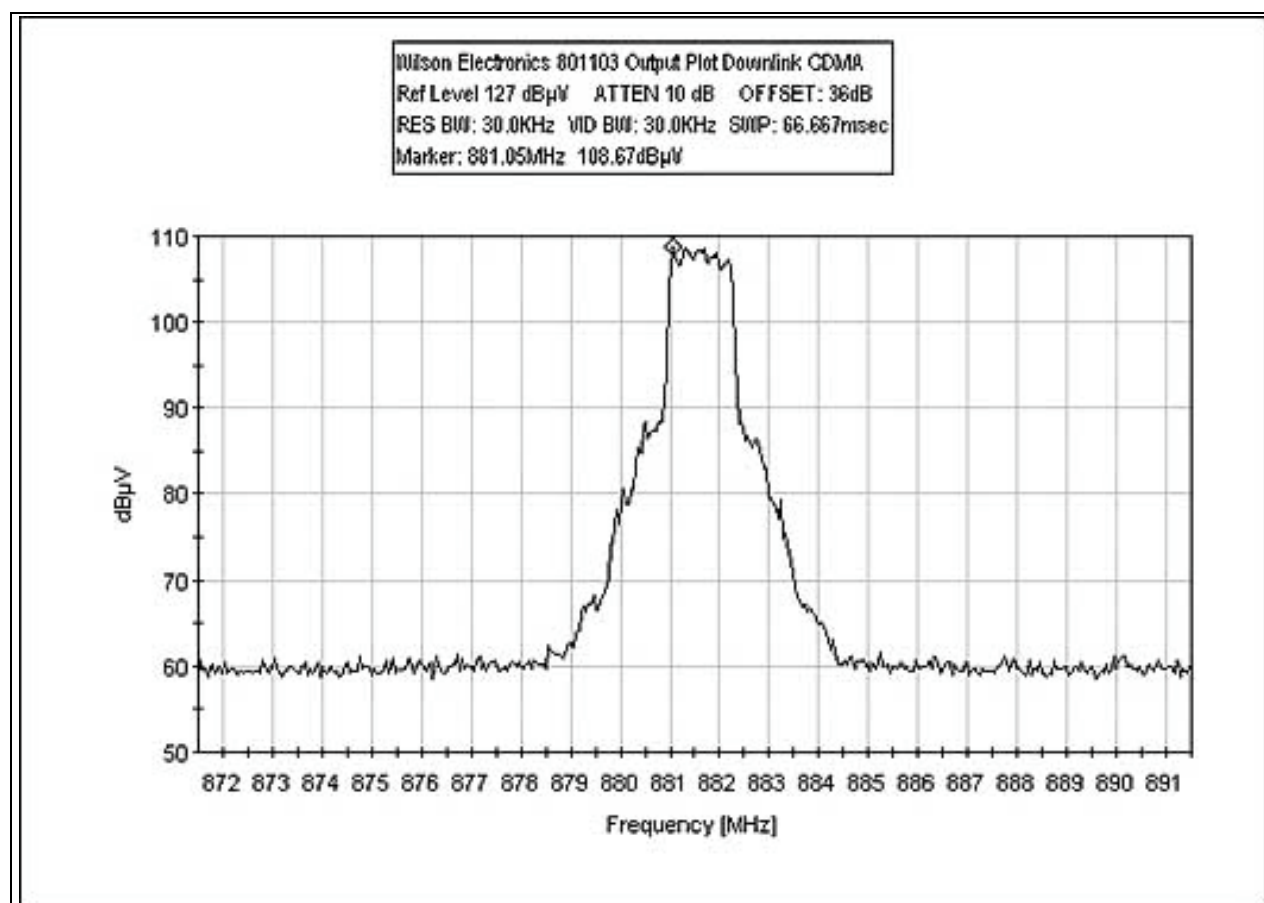
Downlink Input TDMA(GSM)



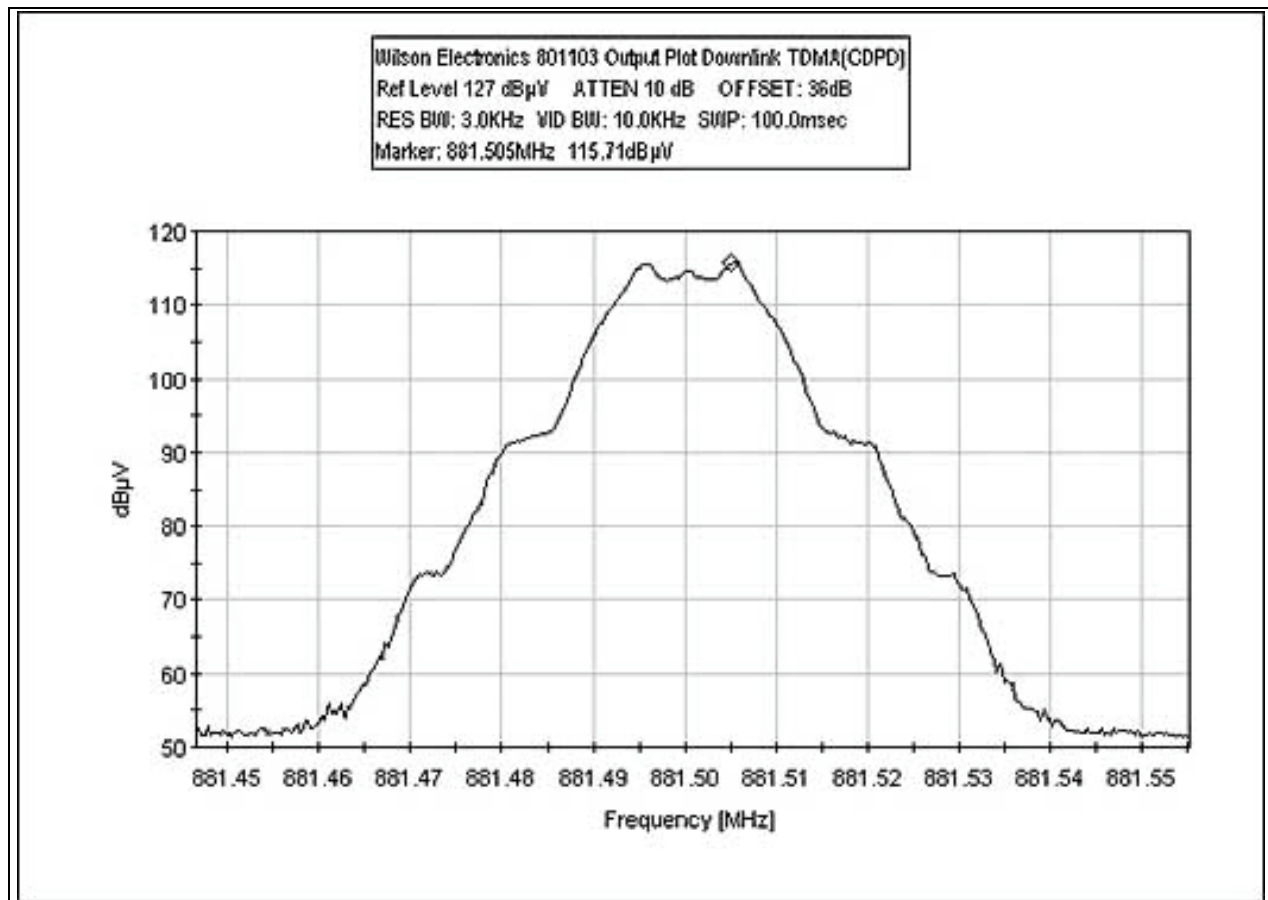
Downlink Output AMPS



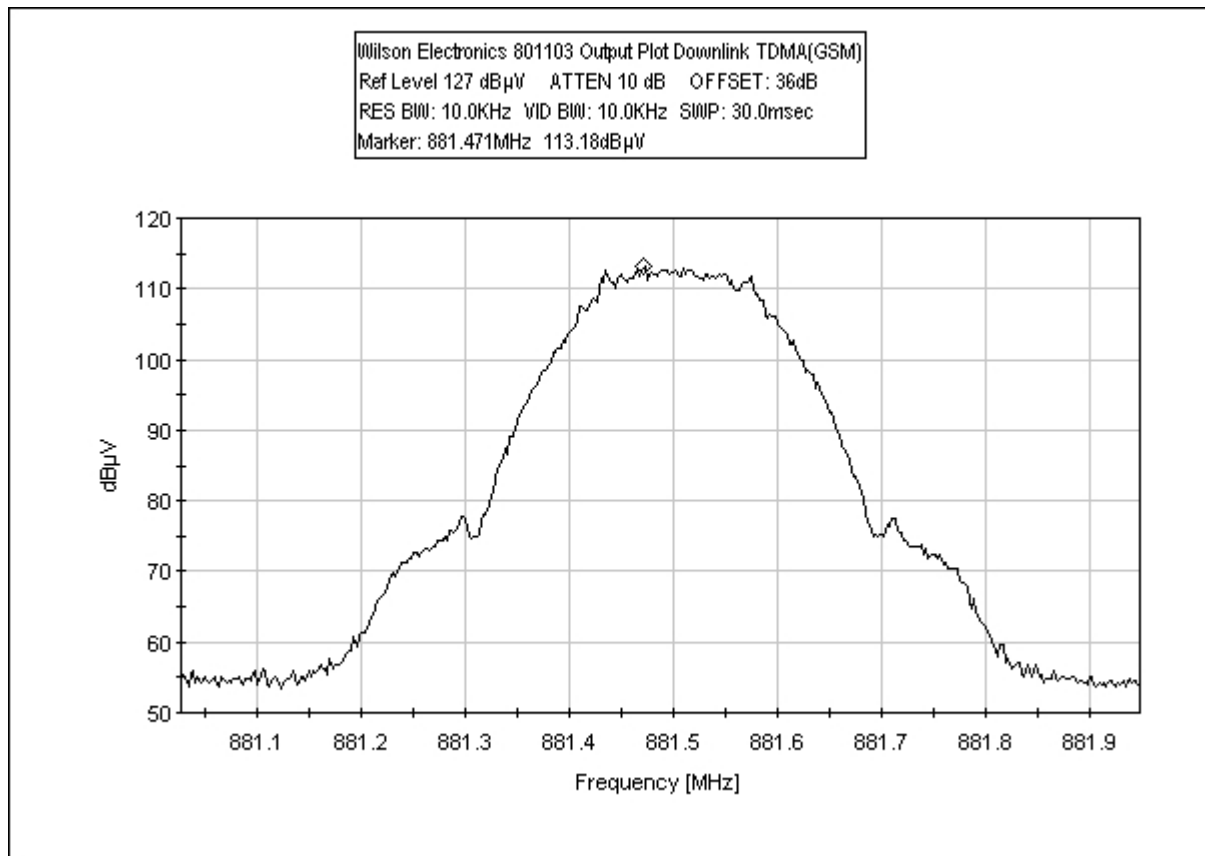
Downlink Output CDMA



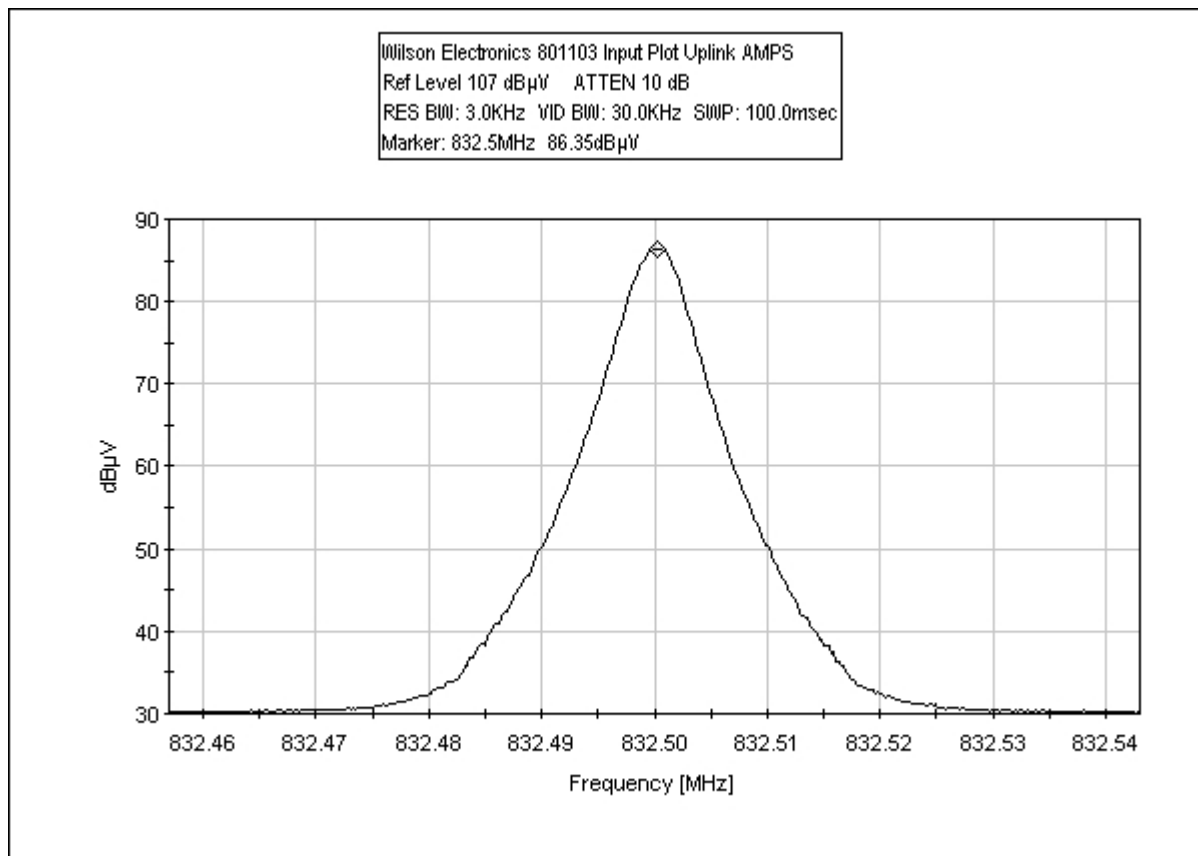
Downlink Output TDMA(CDPD)



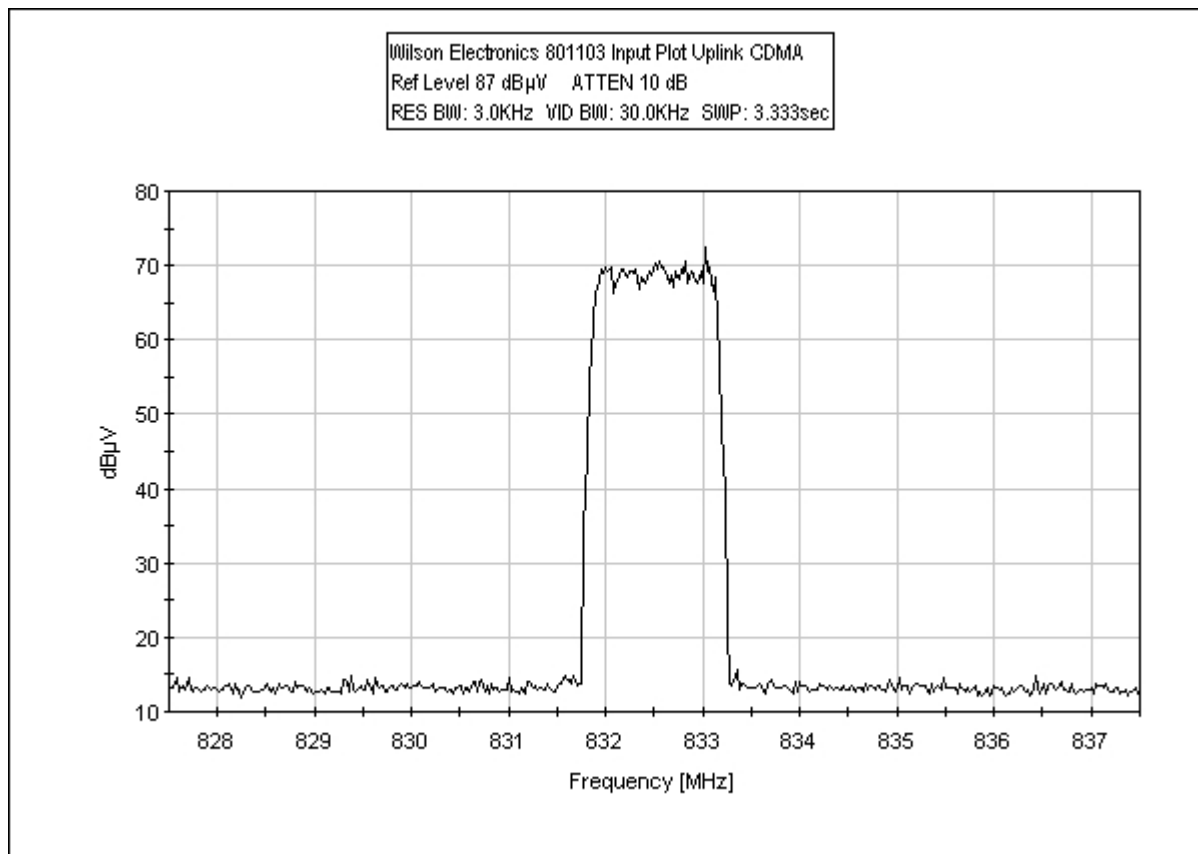
Downlink Output TDMA(GSM)



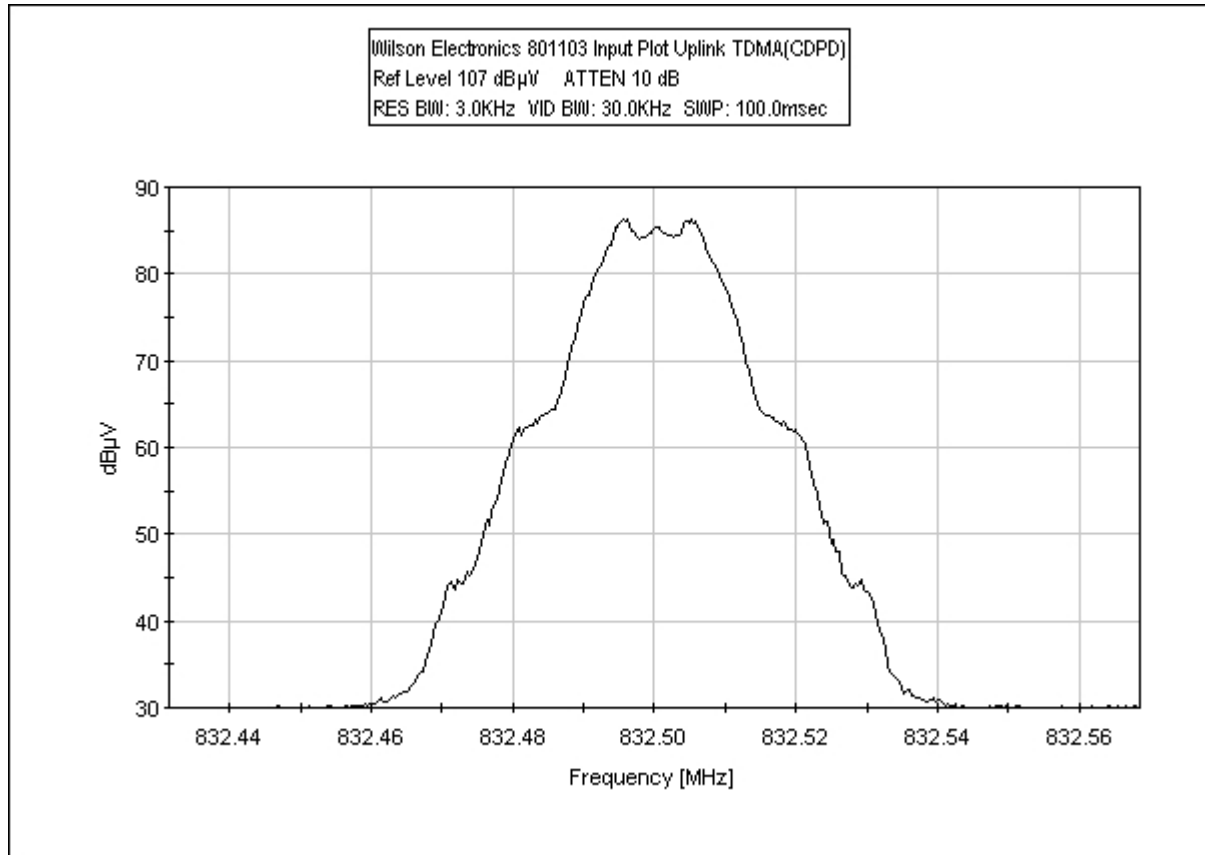
Uplink Input AMPS



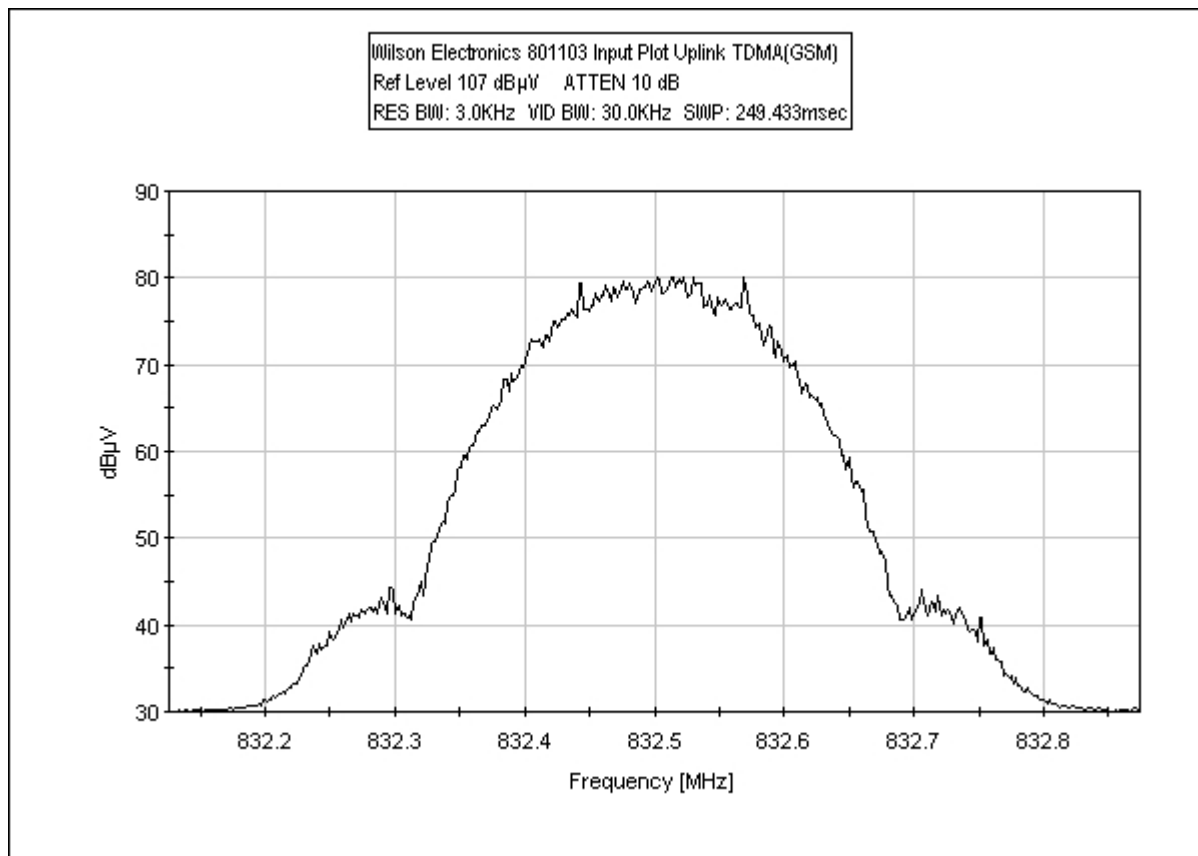
Uplink Input CDMA



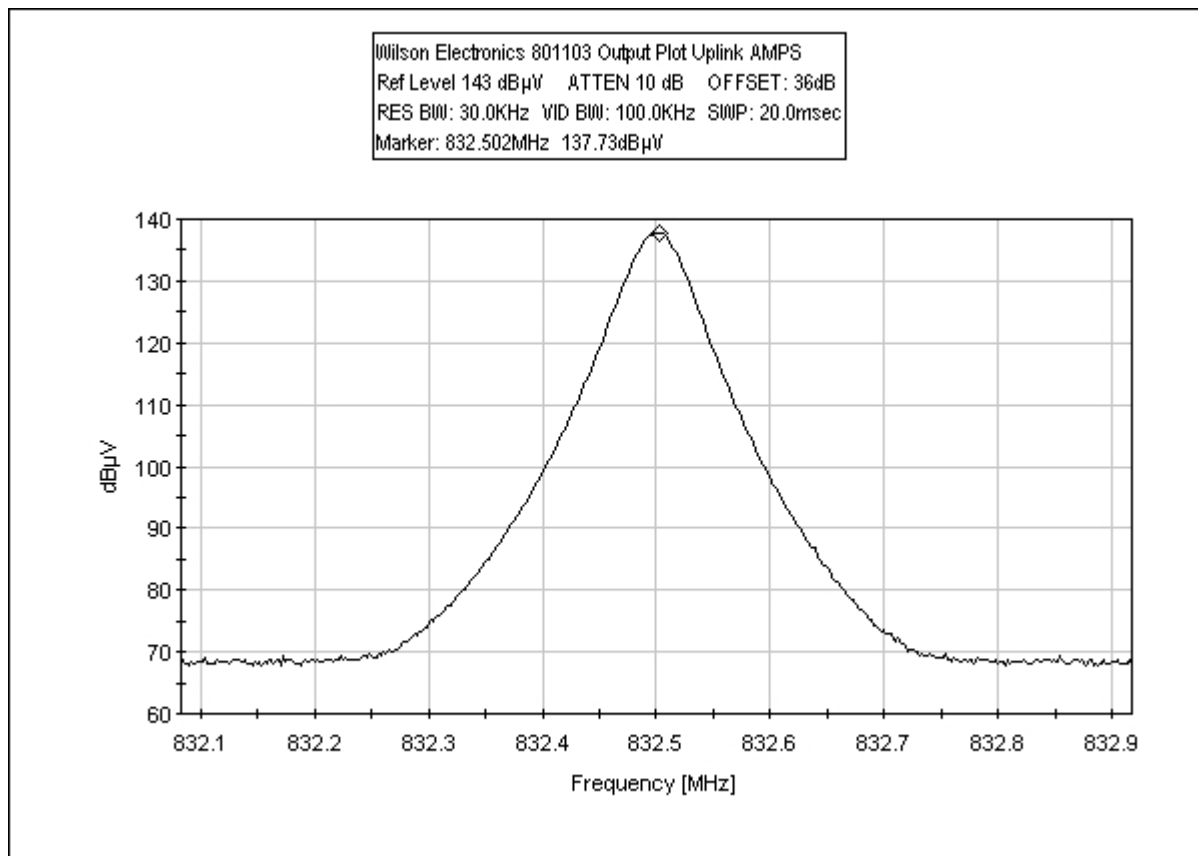
Uplink Input TDMA(CDPD)



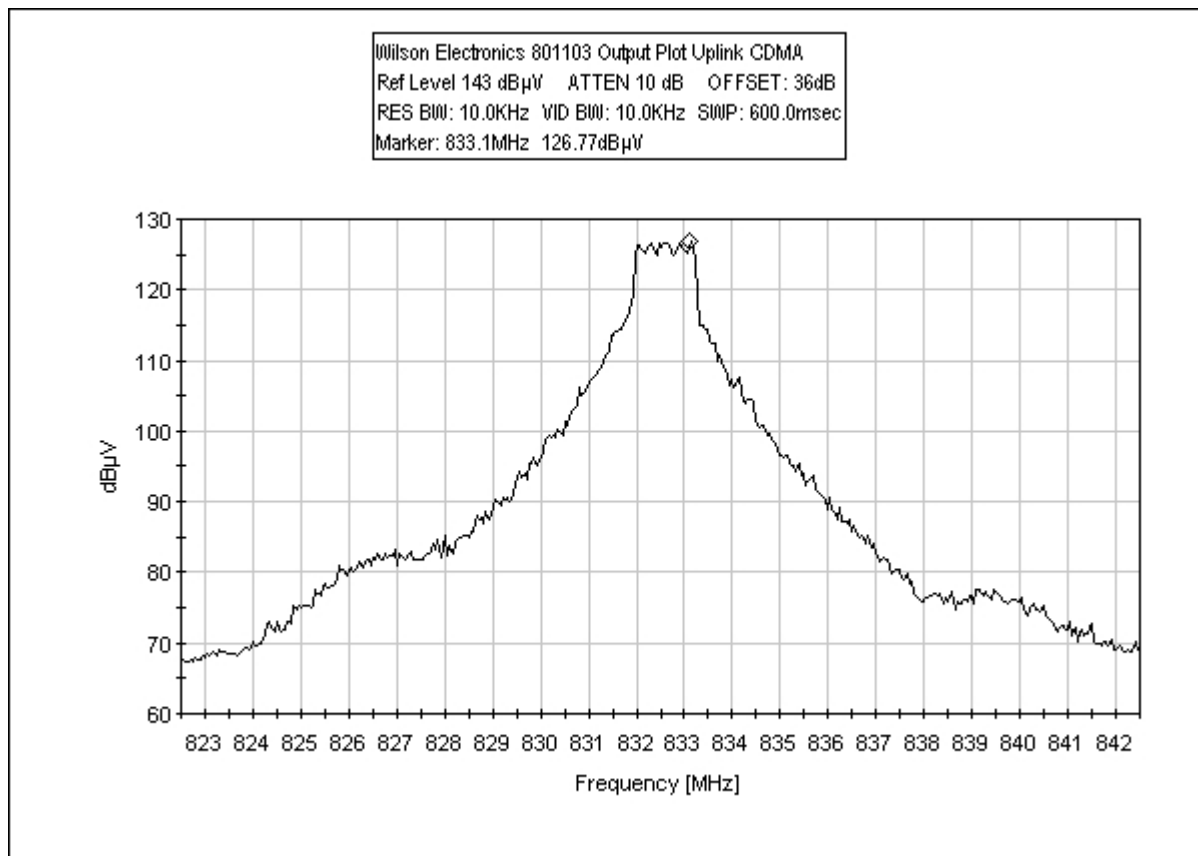
Uplink Input TDMA(GSM)



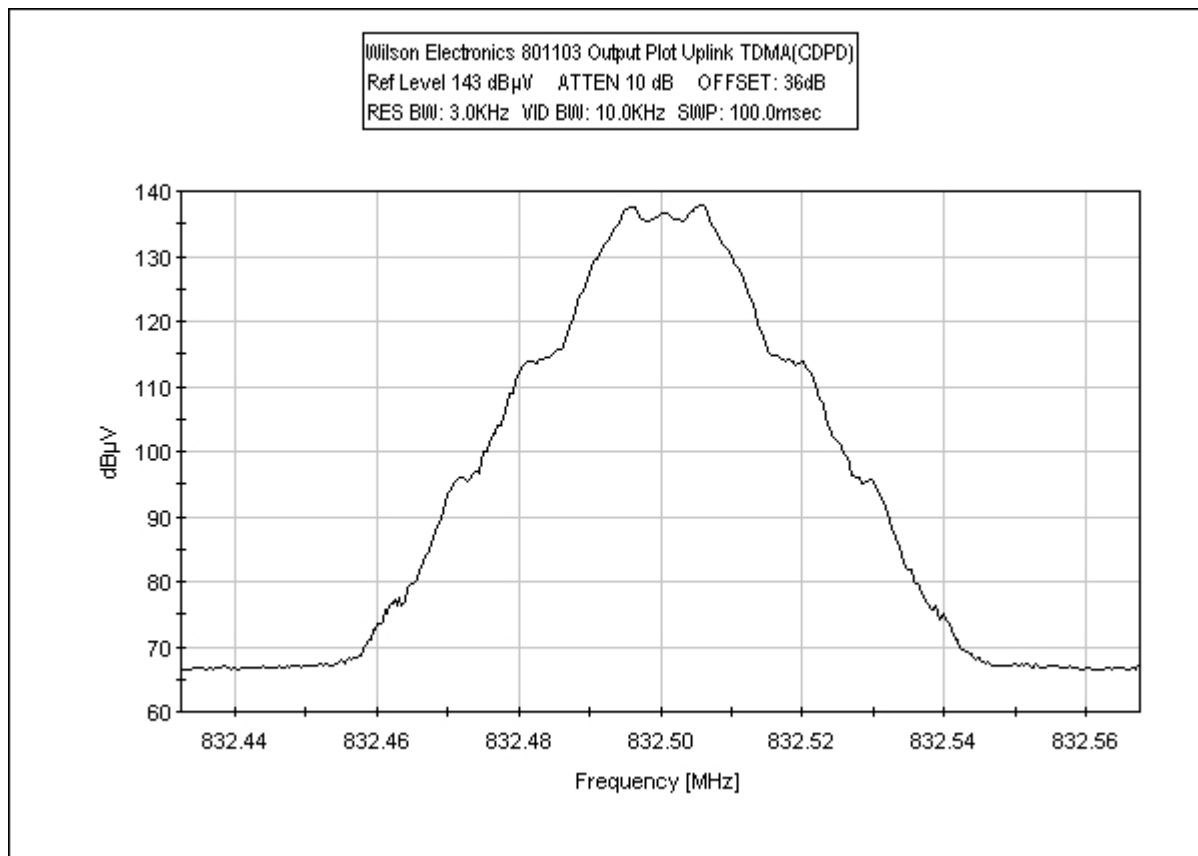
Uplink Output AMPS



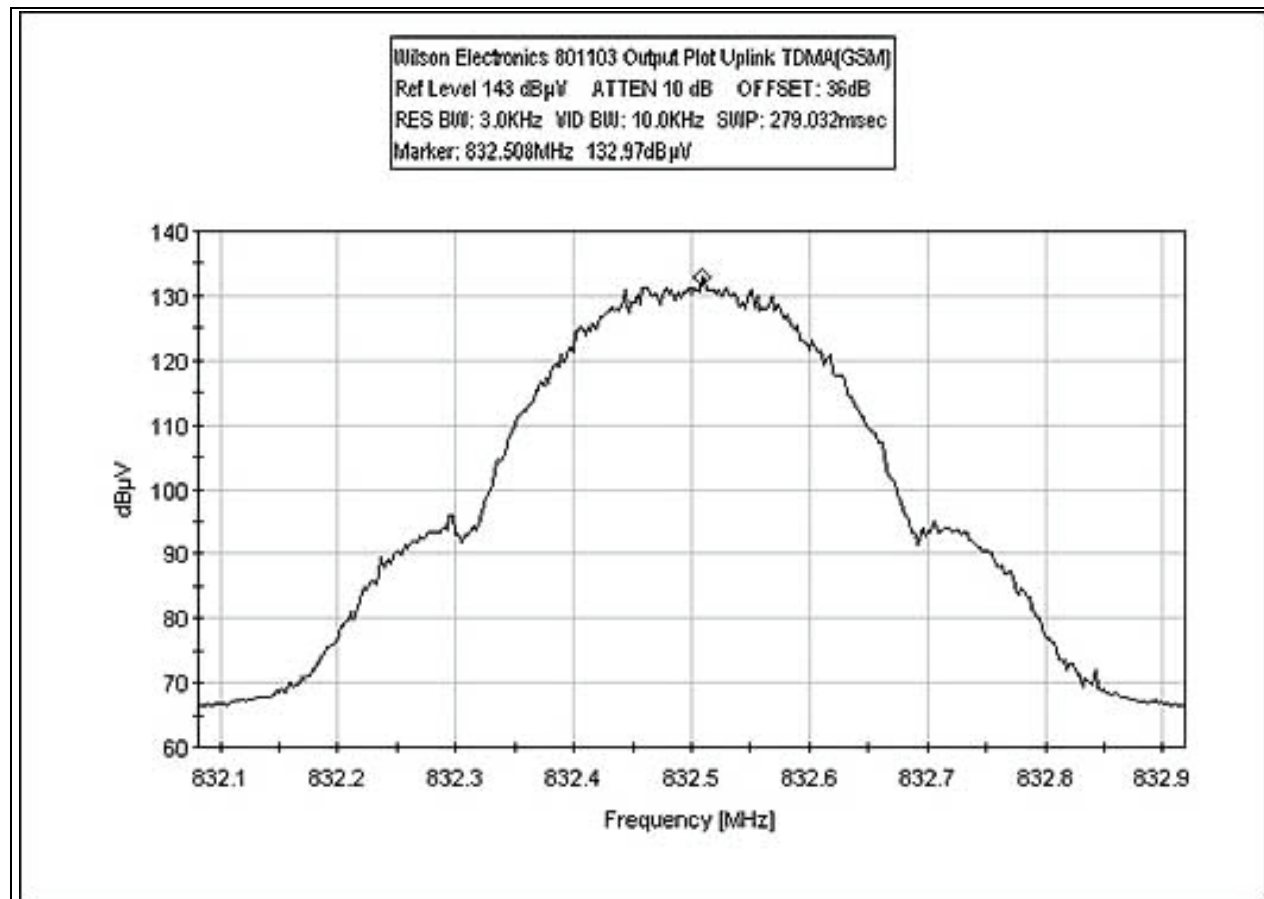
Uplink Output CDMA



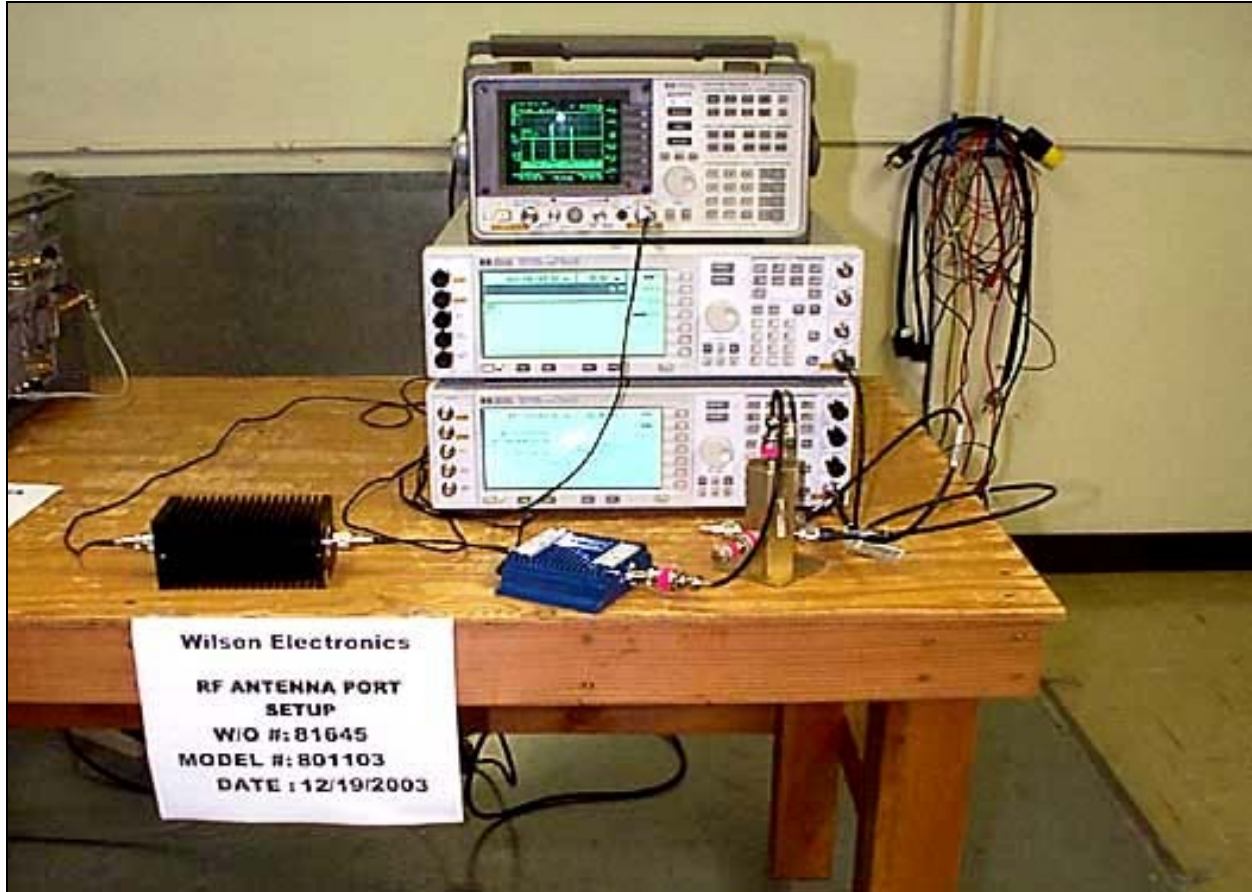
Uplink Output TDMA(CDPD)



Uplink Output TDMA(GSM)



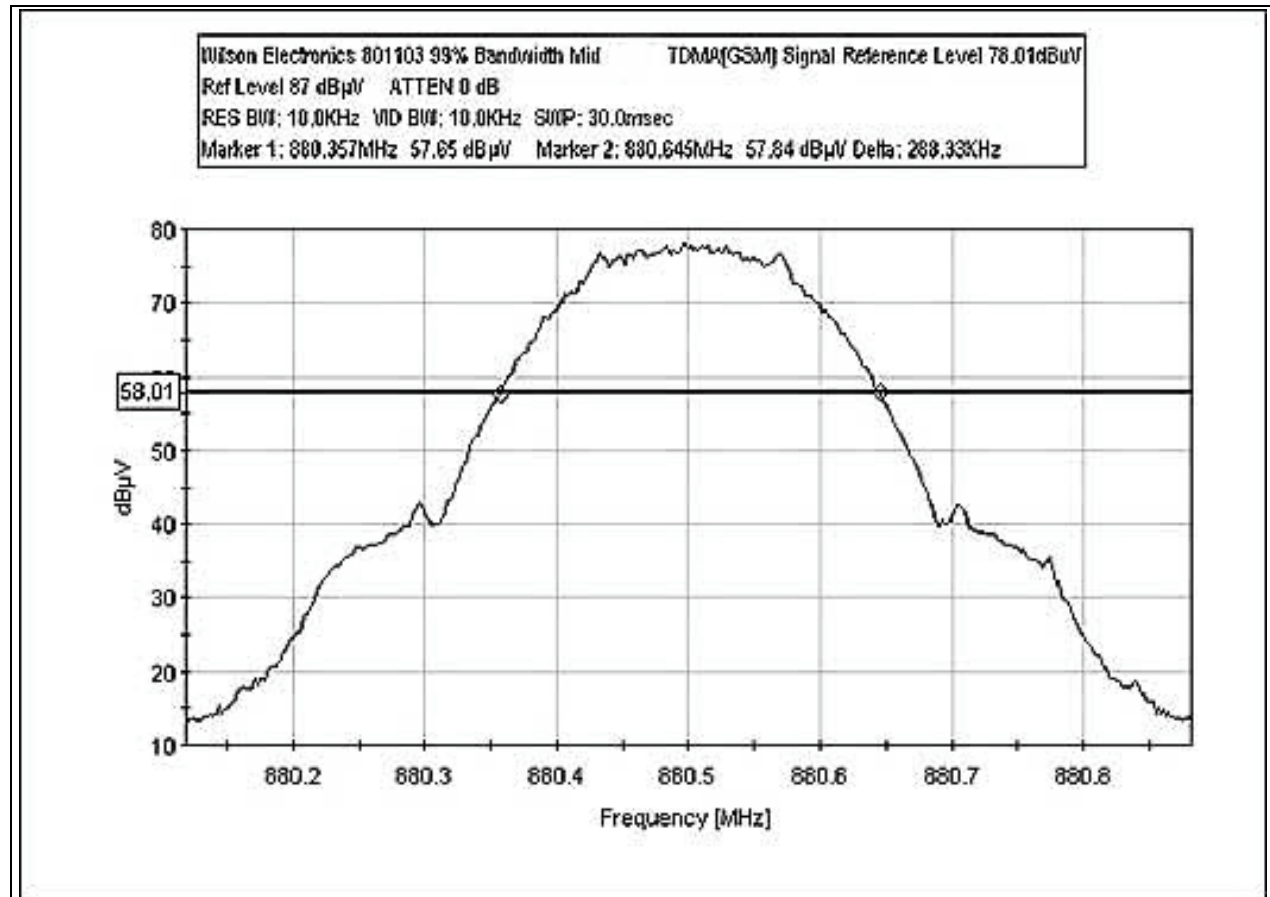
PHOTOGRAPH SHOWING DIRECT CONNECT



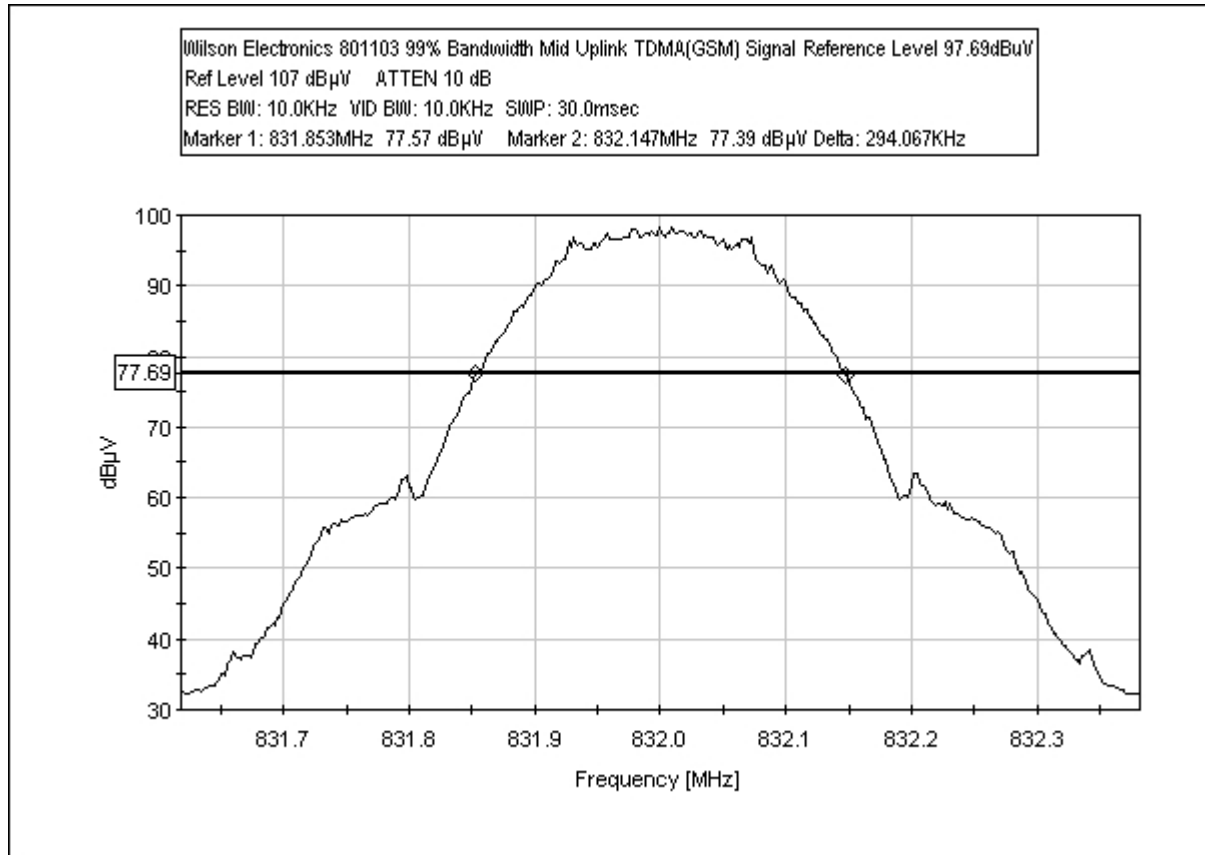
Test Equipment:

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 AR Amplifier	3804	10/16/2003	10/16/2004	744
30W1000M7	18694	07/16/2003	07/16/2004	1368

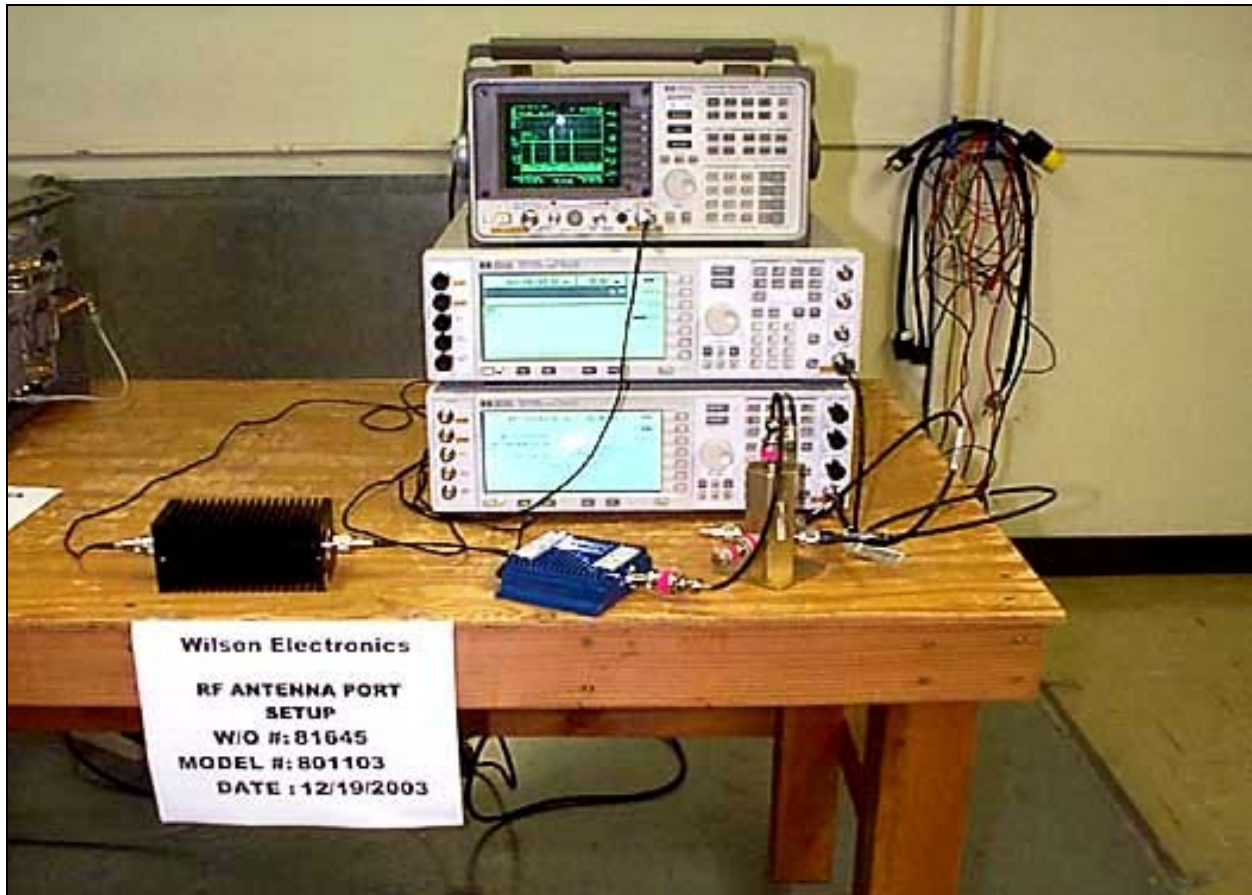
RSS 131 Downlink 99% Bandwidth Plot



RSS 131 Uplink 99% Bandwidth Plot



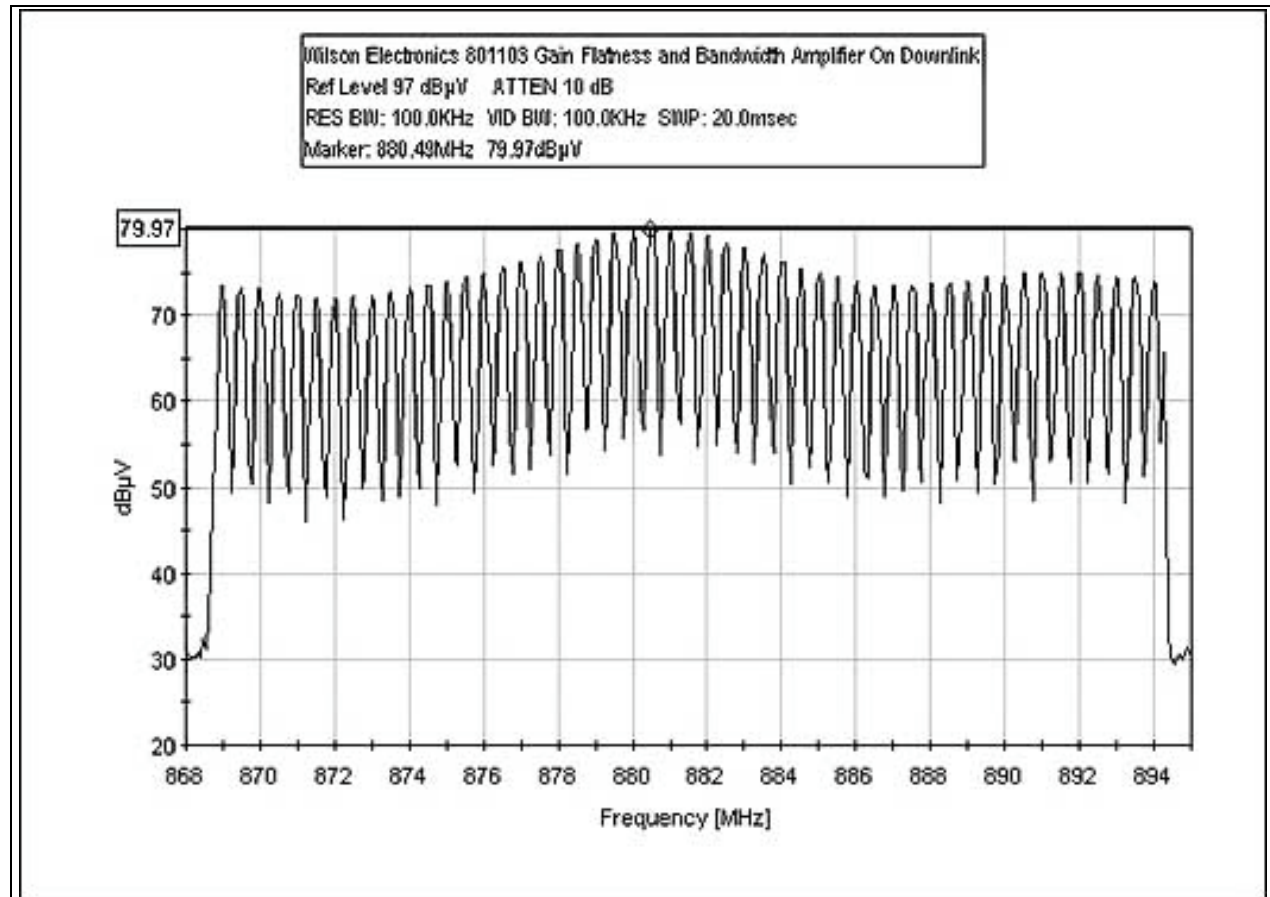
PHOTOGRAPH SHOWING DIRECT CONNECT



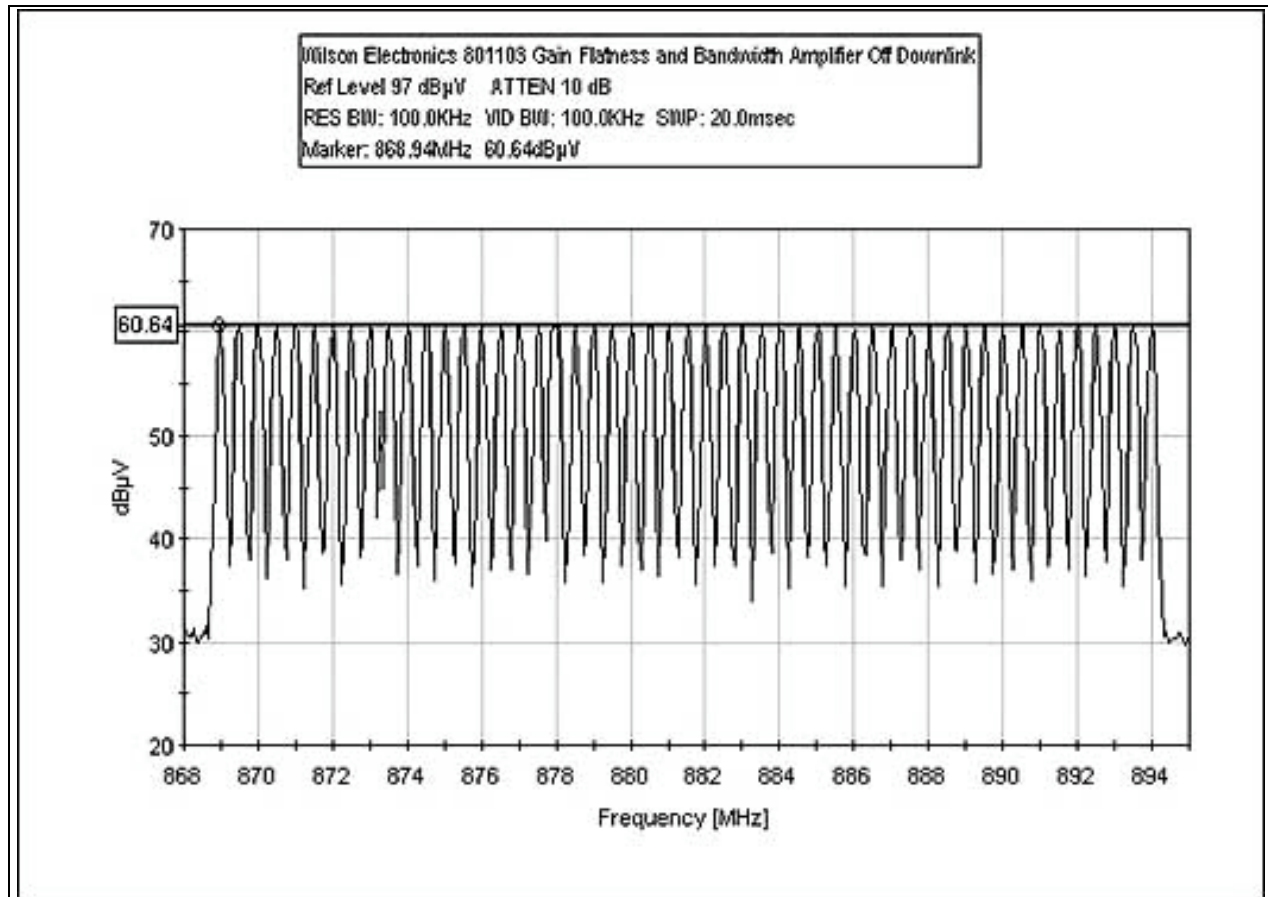
Test Equipment:

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

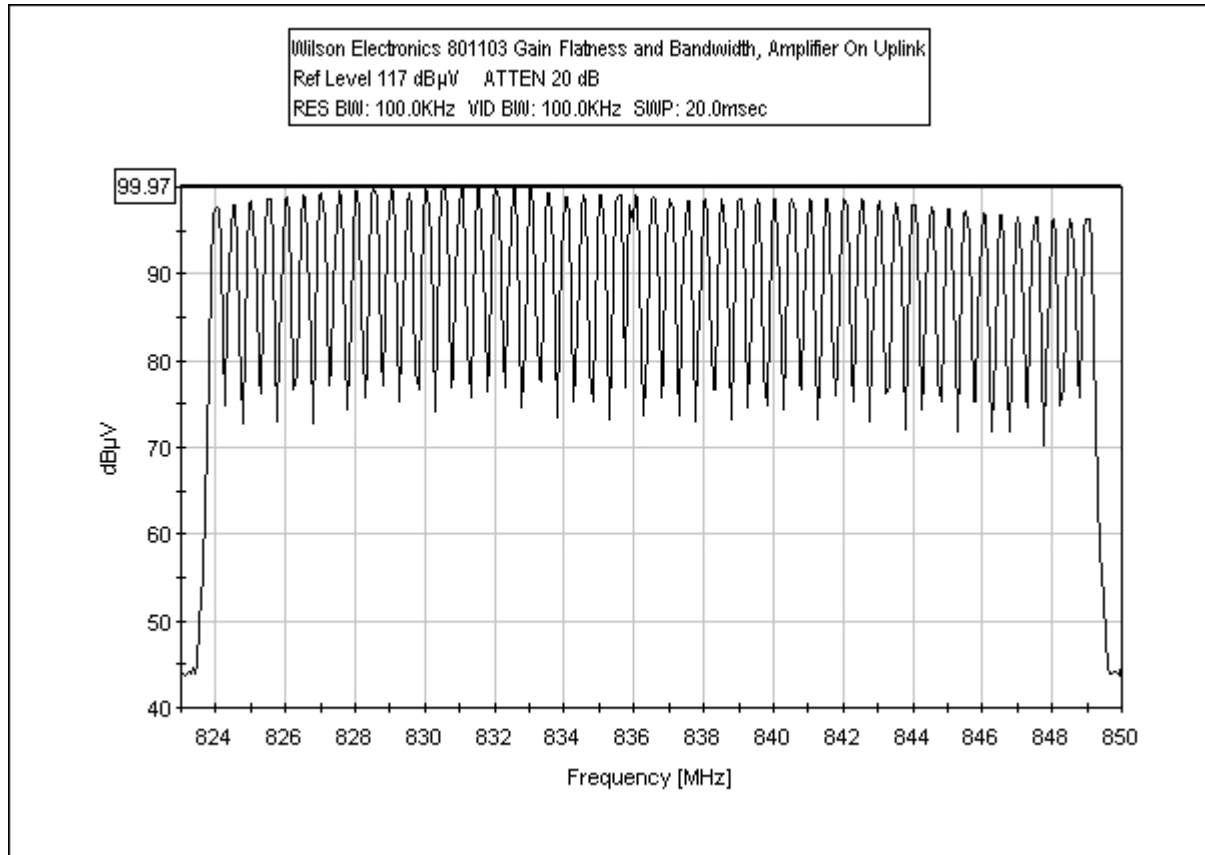
RSS 131 Downlink Gain Flatness and Bandwidth Amplifier On



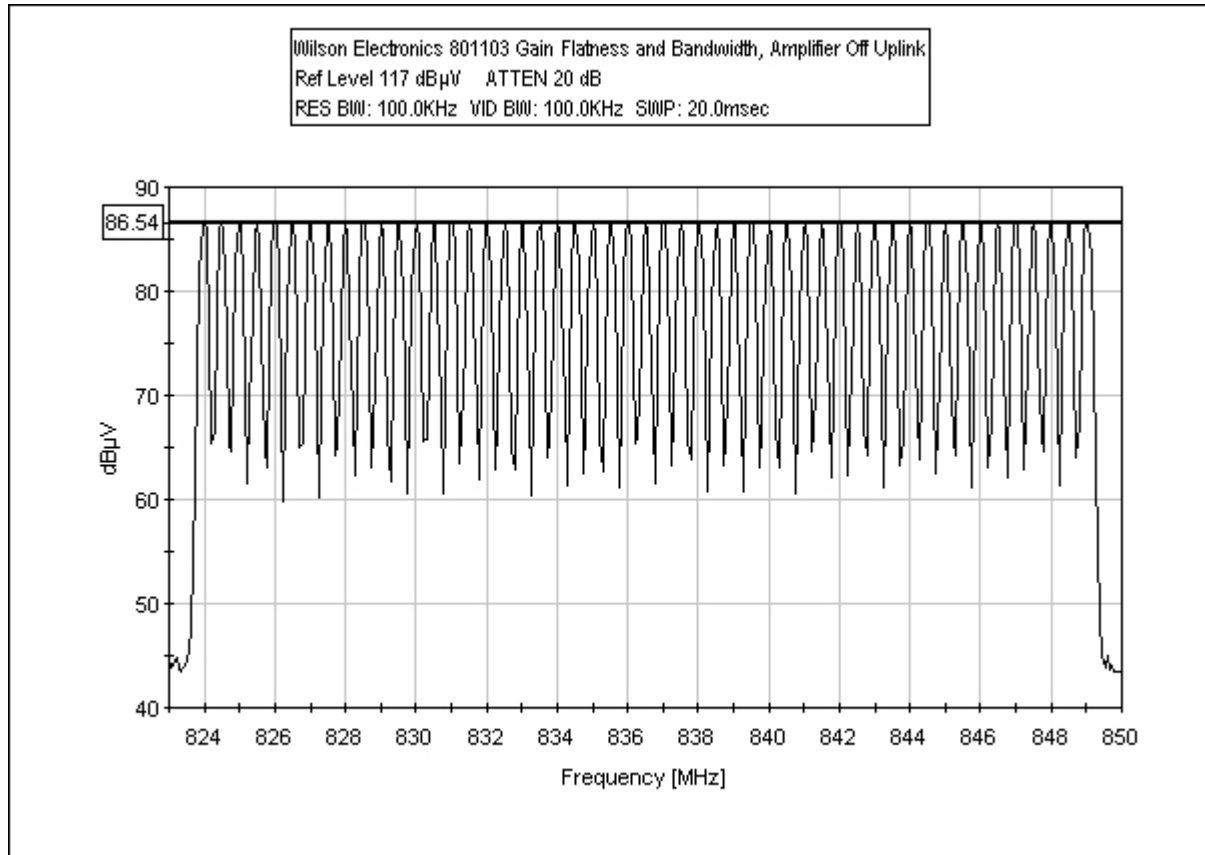
RSS 131 Downlink Gain Flatness and Bandwidth Amplifier Off



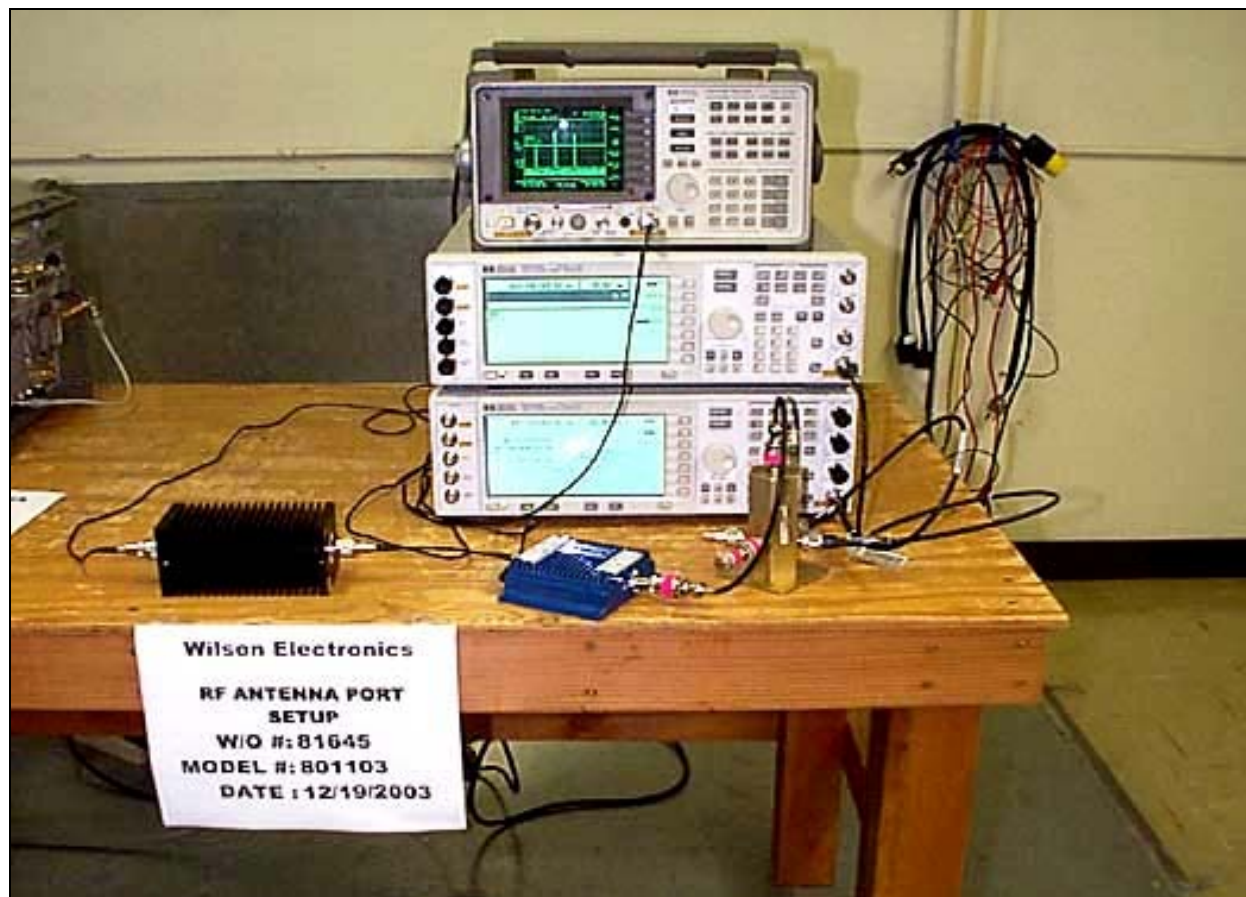
RSS 131 Uplink Gain Flatness and Bandwidth, Amplifier On



RSS 131 Uplink Gain Flatness and Bandwidth Amplifier Off



PHOTOGRAPH SHOWING DIRECT CONNECT



Test Equipment:

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 AR Amplifier	3804	10/16/2003	10/16/2004	744
30W1000M7	18694	07/16/2003	07/16/2004	1368