

FCC 2.1051- INTERMODULATION ATTENUATION

ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	30 MHz	1000MHz	10 kHz
RADIATED EMISSIONS	1000MHz	10 GHz	100 kHz

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

Customer: **Wilson Electronics**

Specification: **FCC 22.917**

Work Order #: **83305**

Date: 03/25/2005

Test Type: **Antenna Terminals**

Time: 14:47:32

Equipment: **In Vehicle Wireless Dual Band Smart Amplifier**

Sequence#: 45

Manufacturer: Wilson Electronics

Tested By: Mike Wilkinson

Model: 801201

S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird	9949	05/09/2003	05/09/2005	P01572
25-A-MFN-30				

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Measurements were performed using the 2 tone method. Frequencies Tested: Downlink 869.03MHz 869.09MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:	Reading listed by margin.					Test Distance: None					
#	Freq MHz	Rdng dB μ V	T1 dB			Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant	
1	869.104M	79.6	+30.3			+0.0	109.9	117.0	-7.1	None	
								Fundamental			
2	868.956M	55.8	+30.3			+0.0	86.1	94.0	-7.9	None	
3	869.018M	77.0	+30.3			+0.0	107.3	117.0	-9.7	None	
								Fundamental			
4	2607.222M	40.6	+29.9			+0.0	70.5	94.0	-23.5	None	
5	869.166M	58.3	+30.3			+0.0	88.6	117.0	-28.4	None	
6	868.890M	32.7	+30.3			+0.0	63.0	94.0	-31.0	None	
7	3476.278M	29.0	+29.8			+0.0	58.8	94.0	-35.2	None	
8	868.826M	27.7	+30.3			+0.0	58.0	94.0	-36.0	None	
9	1738.110M	25.1	+30.3			+0.0	55.4	94.0	-38.6	None	
10	868.746M	14.6	+30.3			+0.0	44.9	94.0	-49.1	None	
11	4345.334M	9.2	+29.0			+0.0	38.2	94.0	-55.8	None	



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 15:16:43
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 46
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Measurements were performed using the 2 tone method. Frequencies Tested: Downlink 893.91MHz 893.97MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	894.066M	56.0	+30.3				+0.0	86.3	94.0	-7.7	None
2	893.896M	79.0	+30.3				+0.0	109.3	117.0	-7.7	None
									Fundamental		
3	893.984M	78.0	+30.3				+0.0	108.3	117.0	-8.7	None
									Fundamental		
4	2681.806M	46.2	+29.8				+0.0	76.0	94.0	-18.0	None

5	894.156M	39.9	+30.3	+0.0	70.2	94.0	-23.8	None
6	893.812M	57.4	+30.3	+0.0	87.7	117.0	-29.3	None
7	894.238M	31.6	+30.3	+0.0	61.9	94.0	-32.1	None
8	894.326M	27.2	+30.3	+0.0	57.5	94.0	-36.5	None
9	1787.876M	26.5	+30.3	+0.0	56.8	94.0	-37.2	None
10	1787.966M	24.6	+30.3	+0.0	54.9	94.0	-39.1	None
11	3575.730M	23.0	+29.8	+0.0	52.8	94.0	-41.2	None
12	894.414M	16.0	+30.3	+0.0	46.3	94.0	-47.7	None
13	894.504M	13.4	+30.3	+0.0	43.7	94.0	-50.3	None
14	894.588M	6.7	+30.3	+0.0	37.0	94.0	-57.0	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 09:18:53
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 10
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird	9949	05/09/2003	05/09/2005	P01572
25-A-MFN-30				

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Three signals are input to the amplifier through a combining network. The first two input signals are provided by the HP E4432B ESG. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Measurements were performed using the 3 tone method. Frequencies Tested: Downlink 870.25MHz, 872.75MHz, 892.75MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	892.720M	73.1	+30.3				+0.0	103.4	117.0	-13.6	None
Fundamental											
2	895.280M	46.2	+30.3				+0.0	76.5	94.0	-17.5	None
3	870.220M	69.1	+30.3				+0.0	99.4	117.0	-17.6	None
Fundamental											
4	872.840M	68.8	+30.3				+0.0	99.1	117.0	-17.9	None
Fundamental											

5	867.720M	42.6	+30.3	+0.0	72.9	94.0	-21.1	None
6	2678.000M	33.6	+29.8	+0.0	63.4	94.0	-30.6	None
7	912.880M	32.2	+30.3	+0.0	62.5	94.0	-31.5	None
8	2635.620M	28.1	+29.9	+0.0	58.0	94.0	-36.0	None
9	2658.380M	24.0	+29.9	+0.0	53.9	94.0	-40.1	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 14:01:31
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 26
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 25-A-MFN-30		05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Measurements were performed using the 2 tone method. Frequencies Tested: Downlink 869.3MHz, 869.9MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	869.900M	83.0	+30.3				+0.0	113.3	117.0	-3.7	None
Fundamental											
2	869.300M	82.1	+30.3				+0.0	112.4	117.0	-4.6	None
Fundamental											
3	2607.900M	28.4	+29.9				+0.0	58.3	94.0	-35.7	None
4	2609.690M	27.5	+29.9				+0.0	57.4	94.0	-36.6	None

5	868.980M	21.5	+30.3	+0.0	51.8	94.0	-42.2	None
6	3475.770M	21.1	+29.8	+0.0	50.9	94.0	-43.1	None
7	1739.810M	20.5	+30.3	+0.0	50.8	94.0	-43.2	None
8	1738.600M	20.0	+30.3	+0.0	50.3	94.0	-43.7	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 14:25:45
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 29
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Measurements were performed using the 2 tone method. Frequencies Tested: Downlink 893.1MHz, 893.7MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	893.100M	85.0	+30.3				+0.0	115.3	117.0	-1.7	None
Fundamental											
2	893.710M	85.0	+30.3				+0.0	115.3	117.0	-1.7	None
Fundamental											
3	2681.100M	43.3	+29.8				+0.0	73.1	94.0	-20.9	None
4	2679.310M	42.9	+29.8				+0.0	72.7	94.0	-21.3	None

5	1787.400M	27.3	+30.3	+0.0	57.6	94.0	-36.4	None
6	1786.200M	26.7	+30.3	+0.0	57.0	94.0	-37.0	None
7	3574.800M	18.4	+29.8	+0.0	48.2	94.0	-45.8	None
8	894.100M	14.7	+30.3	+0.0	45.0	94.0	-49.0	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 14:13:17
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 27
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 25-A-MFN-30		05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Measurements were performed using the 2 tone method. Frequencies Tested: Downlink 869.3MHz, 893.7MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	893.690M	84.8	+30.3				+0.0	115.1	117.0	-1.9	None
									Fundamental		
2	869.310M	82.2	+30.3				+0.0	112.5	117.0	-4.5	None
									Fundamental		
3	2607.900M	29.3	+29.9				+0.0	59.2	94.0	-34.8	None
4	3481.850M	20.8	+29.8				+0.0	50.6	94.0	-43.4	None
5	1738.610M	19.3	+30.3				+0.0	49.6	94.0	-44.4	None
6	868.970M	16.2	+30.3				+0.0	46.5	94.0	-47.5	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 10:13:01
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 20
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Measurements were performed using the 2 tone method. Frequencies Tested: Downlink 869.28MHz, 869.84MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

#	Freq MHz	Reading listed by margin.					Test Distance: None				
		Rdng dBμV	T1 dB	dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	869.480M	80.5	+30.3				+0.0	110.8	117.0	-6.2	None
2	870.060M	79.1	+30.3				+0.0	109.4	117.0	-7.6	None
3	2607.638M	24.4	+29.9				+0.0	54.3	94.0	-39.7	None
4	2608.018M	24.2	+29.9				+0.0	54.1	94.0	-39.9	None
5	2608.050M	24.1	+29.9				+0.0	54.0	94.0	-40.0	None
6	868.990M	17.4	+30.3				+0.0	47.7	94.0	-46.3	None
7	3477.298M	16.8	+29.8				+0.0	46.6	94.0	-47.4	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 10:36:57
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 21
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Measurements were performed using the 2 tone method. Frequencies Tested: Downlink 869.28MHz, 893.72MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	893.690M	77.9	+30.3				+0.0	108.2	117.0	-8.8	None
									Fundamental		
2	869.310M	71.8	+30.3				+0.0	102.1	117.0	-14.9	None
									Fundamental		
3	2681.360M	38.0	+29.8				+0.0	67.8	94.0	-26.2	None
4	1787.440M	25.5	+30.3				+0.0	55.8	94.0	-38.2	None
5	3575.080M	19.6	+29.8				+0.0	49.4	94.0	-44.6	None
6	1738.590M	9.1	+30.3				+0.0	39.4	94.0	-54.6	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 11:59:58
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 39
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Measurements were performed using the 2 tone method. Frequencies Tested: Uplink 824.03MHz, 824.09MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	823.990M	56.3	+30.4				+0.0	86.7	94.0	-7.3	None
2	823.944M	56.0	+30.4				+0.0	86.4	94.0	-7.6	None
3	824.076M	91.4	+30.4				+0.0	121.8	141.7	-19.9	None
									Fundamental		
4	824.018M	89.9	+30.4				+0.0	120.3	141.7	-21.4	None
									Fundamental		

5	823.874M	33.7	+30.4	+0.0	64.1	94.0	-29.9	None
6	823.812M	22.3	+30.4	+0.0	52.7	94.0	-41.3	None
7	3294.833M	20.7	+29.6	+0.0	50.3	94.0	-43.7	None
8	2470.502M	18.5	+30.1	+0.0	48.6	94.0	-45.4	None
9	1647.811M	17.8	+30.2	+0.0	48.0	94.0	-46.0	None
10	824.174M	57.6	+30.4	+0.0	88.0	141.7	-53.7	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 13:07:32
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 41
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 25-A-MFN-30		05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Measurements were performed using the 2 tone method. Frequencies Tested: Uplink 824.91MHz, 848.97MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	Margin			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	849.072M	57.6	+30.3				+0.0	87.9	94.0	-6.1	None
2	848.984M	90.9	+30.3				+0.0	121.2	141.7	-20.5	None
											Fundamental
3	848.898M	89.5	+30.3				+0.0	119.8	141.7	-21.9	None
											Fundamental
4	849.158M	40.8	+30.3				+0.0	71.1	94.0	-22.9	None

5	849.248M	24.9	+30.3	+0.0	55.2	94.0	-38.8	None
6	1699.536M	18.2	+30.2	+0.0	48.4	94.0	-45.6	None
7	2548.472M	16.7	+30.0	+0.0	46.7	94.0	-47.3	None
8	848.810M	56.4	+30.3	+0.0	86.7	141.7	-55.0	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 09:27:41
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 5
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Three signals are input to the amplifier through a combining network. The first two input signals are provided by the HP E4432B ESG. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Measurements were performed using the 3 tone method. Frequencies Tested: Uplink. 825.25MHz, 827.75MHz, 847.75MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	822.810M	29.1	+30.4				+0.0	59.5	94.0	-34.5	None
2	825.190M	74.8	+30.4				+0.0	105.2	141.7	-36.5	None
3	827.690M	73.6	+30.4				+0.0	104.0	141.7	-37.7	None
4	847.620M	72.2	+30.4				+0.0	102.6	141.7	-39.1	None

5	850.500M	23.9	+30.3	+0.0	54.2	94.0	-39.8	None
6	1601.600M	14.3	+30.2	+0.0	44.5	94.0	-49.5	None
7	845.310M	25.5	+30.4	+0.0	55.9	141.7	-85.8	None
8	830.000M	24.9	+30.4	+0.0	55.3	141.7	-86.4	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 15:56:37
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 33
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201 S/N: 801201000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949		05/09/2003	05/09/2005	P01572
25-A-MFN-30				

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	801201000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Measurements were performed using the 2 tone method. Frequencies Tested: Uplink 824.3MHz, 824.9MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	824.900M	101.3	+30.4				+0.0	131.7	141.7	-10.0	None
									Fundamental		
2	824.310M	99.9	+30.4				+0.0	130.3	141.7	-11.4	None
									Fundamental		
3	3370.970M	28.2	+29.7				+0.0	57.9	94.0	-36.1	None
4	4219.640M	27.3	+29.2				+0.0	56.5	94.0	-37.5	None
5	2522.270M	26.0	+30.1				+0.0	56.1	94.0	-37.9	None
6	1673.570M	25.7	+30.2				+0.0	55.9	94.0	-38.1	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 16:23:42
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 35
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Measurements were performed using the 2 tone method. Frequencies Tested: Uplink 848.1MHz, 848.7MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	848.700M	97.3	+30.3				+0.0	127.6	141.7	-14.1	None
									Fundamental		
2	848.100M	96.2	+30.4				+0.0	126.6	141.7	-15.1	None
									Fundamental		
3	849.010M	28.8	+30.3				+0.0	59.1	94.0	-34.9	None
4	823.700M	26.0	+30.4				+0.0	56.4	94.0	-37.6	None
5	1697.510M	24.8	+30.2				+0.0	55.0	94.0	-39.0	None
6	2546.010M	24.5	+30.0				+0.0	54.5	94.0	-39.5	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 16:14:58
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 34
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 25-A-MFN-30		05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Measurements were performed using the 2 tone method. Frequencies Tested: Uplink 824.3MHz, 848.7MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	Margin			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	824.310M	99.0	+30.4				+0.0	129.4	141.7	-12.3	None
2	848.690M	95.4	+30.3				+0.0	125.7	141.7	-16.0	None
3	2545.740M	32.2	+30.0				+0.0	62.2	94.0	-31.8	None
4	1697.040M	31.4	+30.2				+0.0	61.6	94.0	-32.4	None

5	3394.440M	30.0	+29.7	+0.0	59.7	94.0	-34.3	None
6	823.990M	26.1	+30.4	+0.0	56.5	94.0	-37.5	None
7	1648.290M	25.3	+30.2	+0.0	55.5	94.0	-38.5	None
8	849.010M	25.1	+30.3	+0.0	55.4	94.0	-38.6	None
9	2472.590M	25.1	+30.1	+0.0	55.2	94.0	-38.8	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 14:12:06
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 14
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird	9949	05/09/2003	05/09/2005	P01572
25-A-MFN-30				

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Measurements were performed using the 2 tone method. Frequencies Tested: Uplink 824.28MHz, 824.84MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	824.810M	77.0	+30.4				+0.0	107.4	141.7	-34.3	None
									Fundamental		
2	824.310M	76.6	+30.4				+0.0	107.0	141.7	-34.7	None
									Fundamental		
3	823.995M	24.6	+30.4				+0.0	55.0	94.0	-39.0	None
4	1647.235M	22.5	+30.2				+0.0	52.7	94.0	-41.3	None
5	1649.555M	17.9	+30.2				+0.0	48.1	94.0	-45.9	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 14:57:26
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 16
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird	9949	05/09/2003	05/09/2005	P01572
25-A-MFN-30				

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Measurements were performed using the 2 tone method. Frequencies Tested: Uplink 848.16MHz, 848.72MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dB μ V	T1 dB	Reading listed by margin.			Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
				dB	dB	dB					
1	849.010M	27.7	+30.3				+0.0	58.0	94.0	-36.0	None
2	848.190M	70.7	+30.4				+0.0	101.1	141.7	-40.6	None
									Fundamental		
3	848.750M	69.4	+30.3				+0.0	99.7	141.7	-42.0	None
									Fundamental		
4	1697.700M	18.7	+30.2				+0.0	48.9	94.0	-45.1	None
5	1696.580M	16.0	+30.2				+0.0	46.2	94.0	-47.8	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 14:44:24
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 15
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 25-A-MFN-30		05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Measurements were performed using the 2 tone method. Frequencies Tested: Uplink 824.28MHz, 848.72MHz. Frequency Range Investigated: 30MHz to 10 GHz.

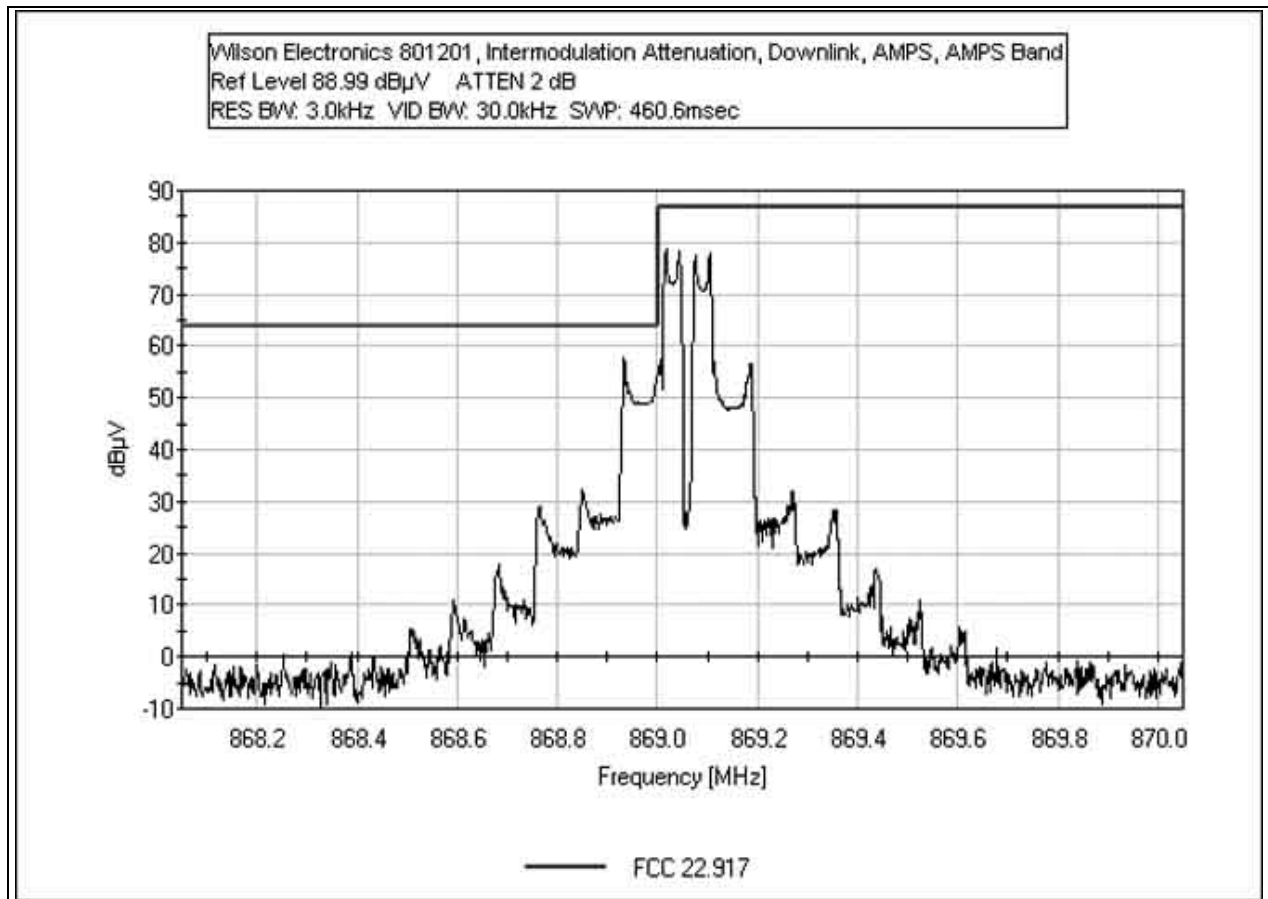
Transducer Legend:

T1=Pad 30dB

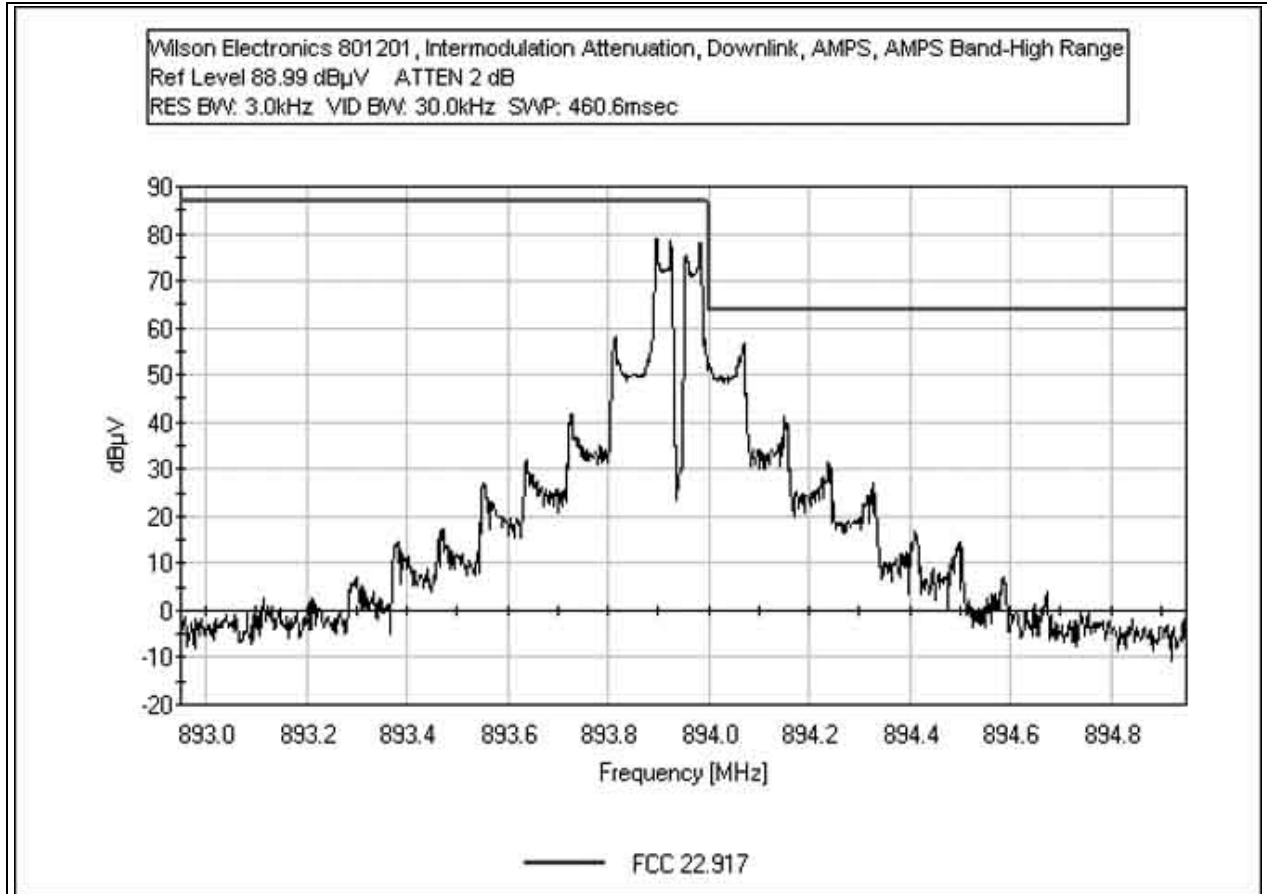
Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	824.330M	77.1	+30.4				+0.0	107.5	141.7	-34.2	None
									Fundamental		
2	848.660M	70.8	+30.3				+0.0	101.1	141.7	-40.6	None
									Fundamental		
3	823.980M	22.1	+30.4				+0.0	52.5	94.0	-41.5	None
4	849.010M	21.1	+30.3				+0.0	51.4	94.0	-42.6	None
5	1648.610M	20.9	+30.2				+0.0	51.1	94.0	-42.9	None
6	1697.425M	16.0	+30.2				+0.0	46.2	94.0	-47.8	None

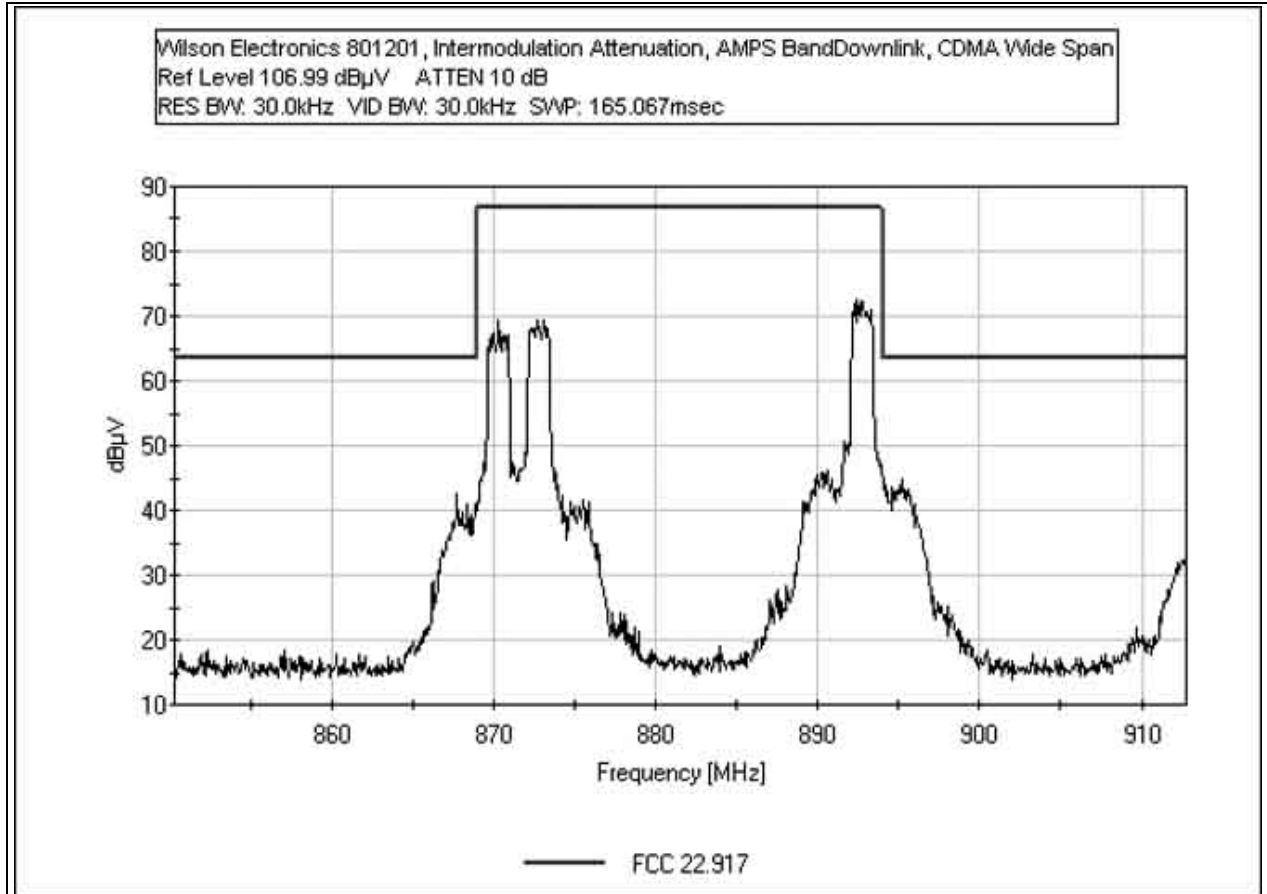
INTERMODULATION ATTENUATION DOWNLINK AMPS - AMPS BAND LOW RANGE



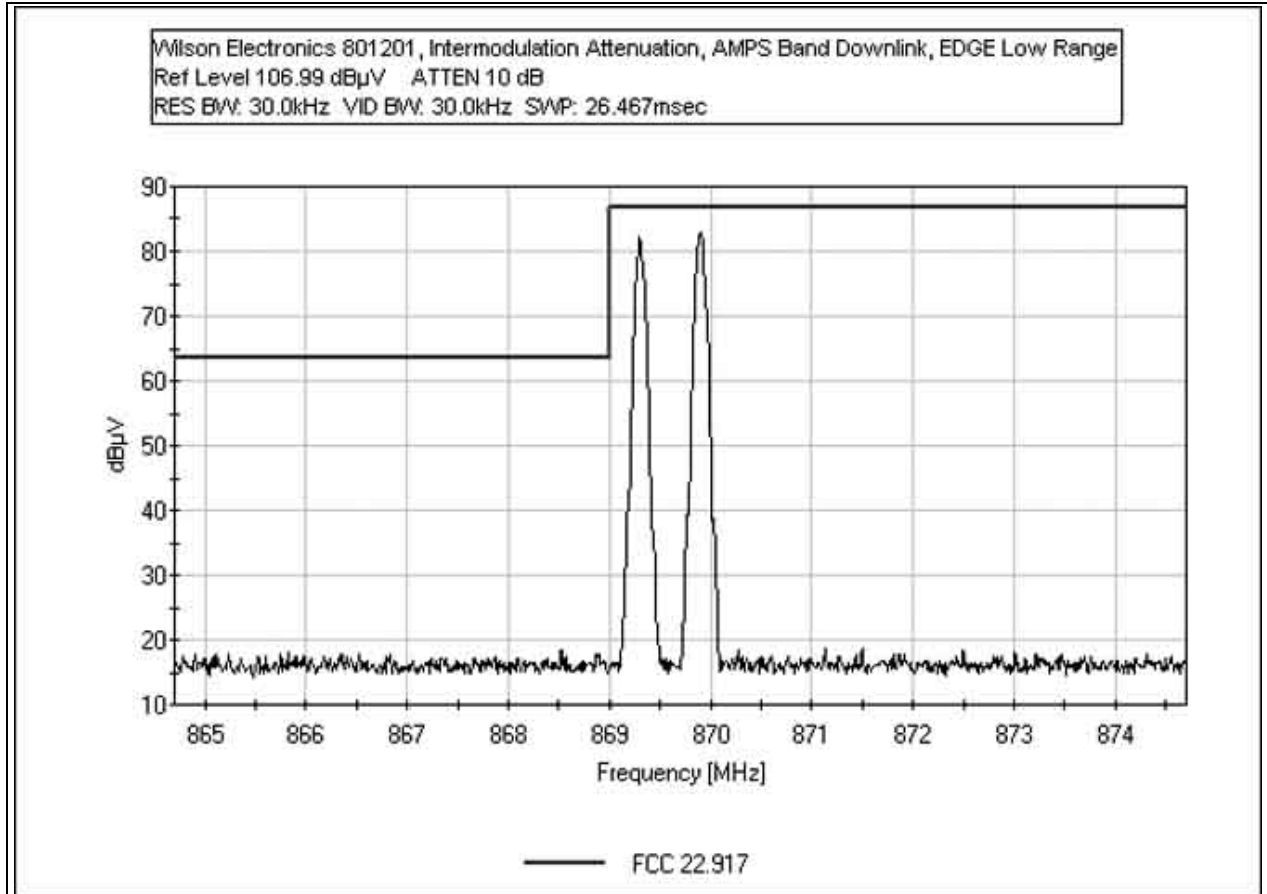
INTERMODULATION ATTENUATION DOWNLINK AMPS - AMPS BAND HIGH RANGE



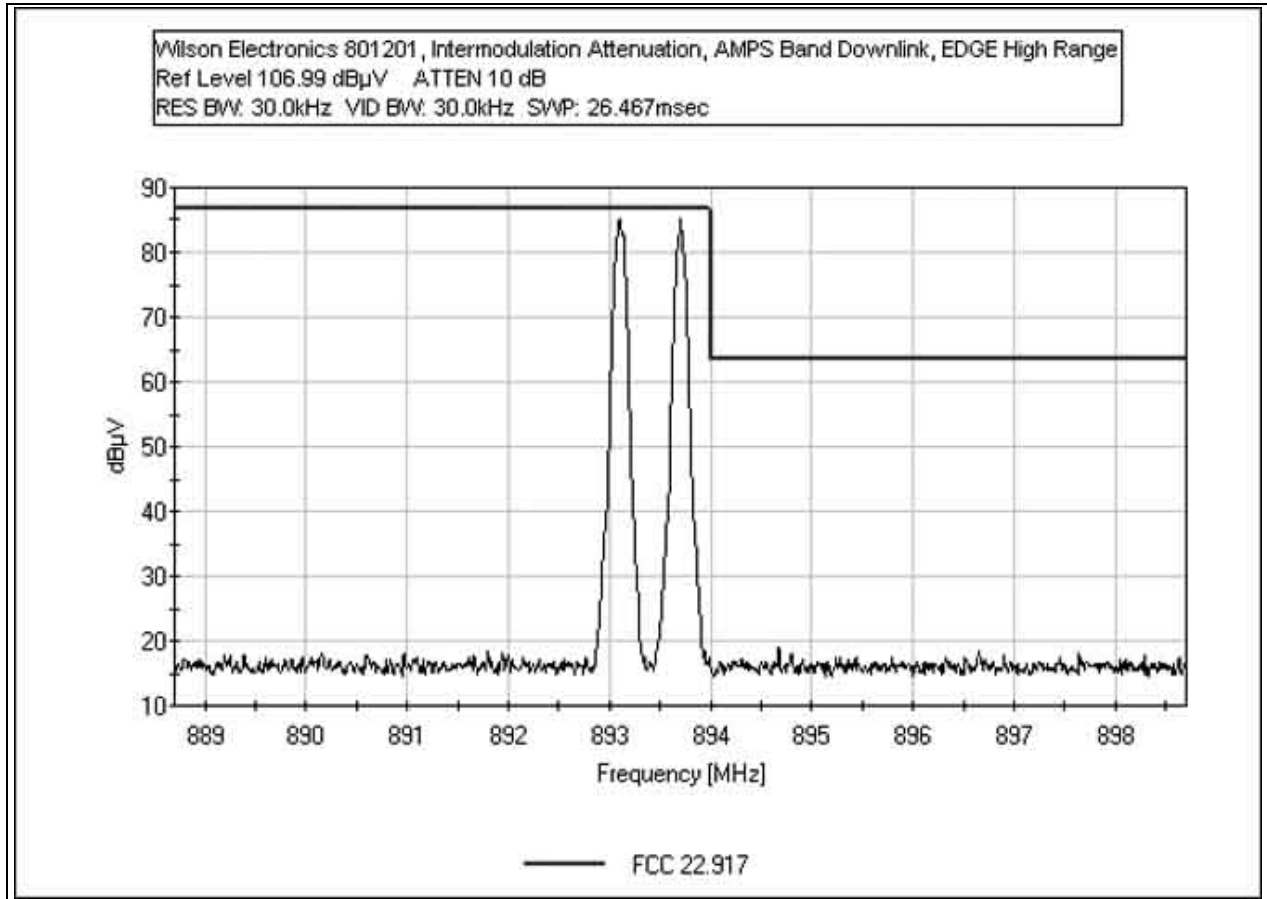
INTERMODULATION ATTENUATION DOWNLINK CDMA - AMPS BAND WIDE SPAN



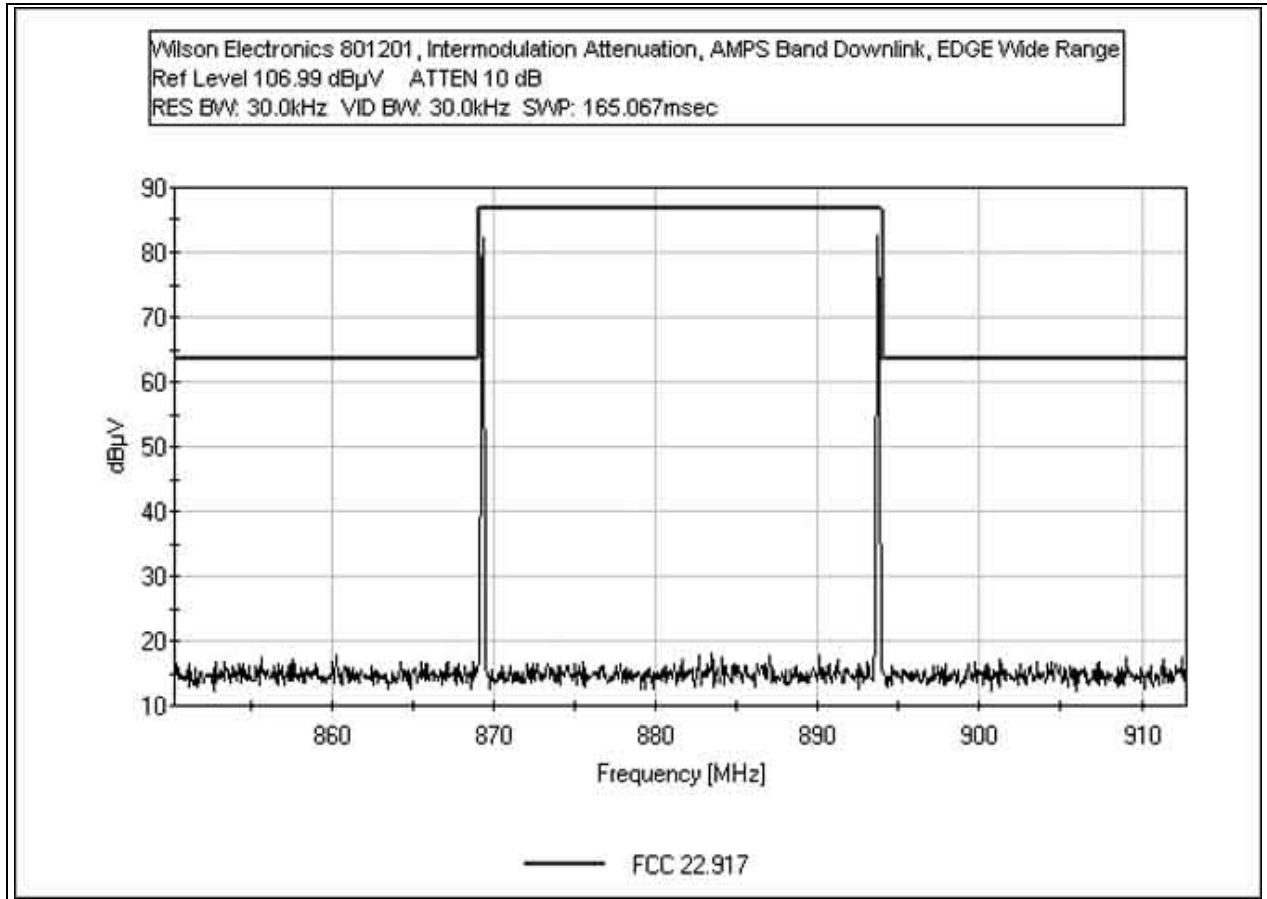
**INTERMODULATION ATTENUATION DOWNLINK EDGE - AMPS BAND
LOW RANGE**



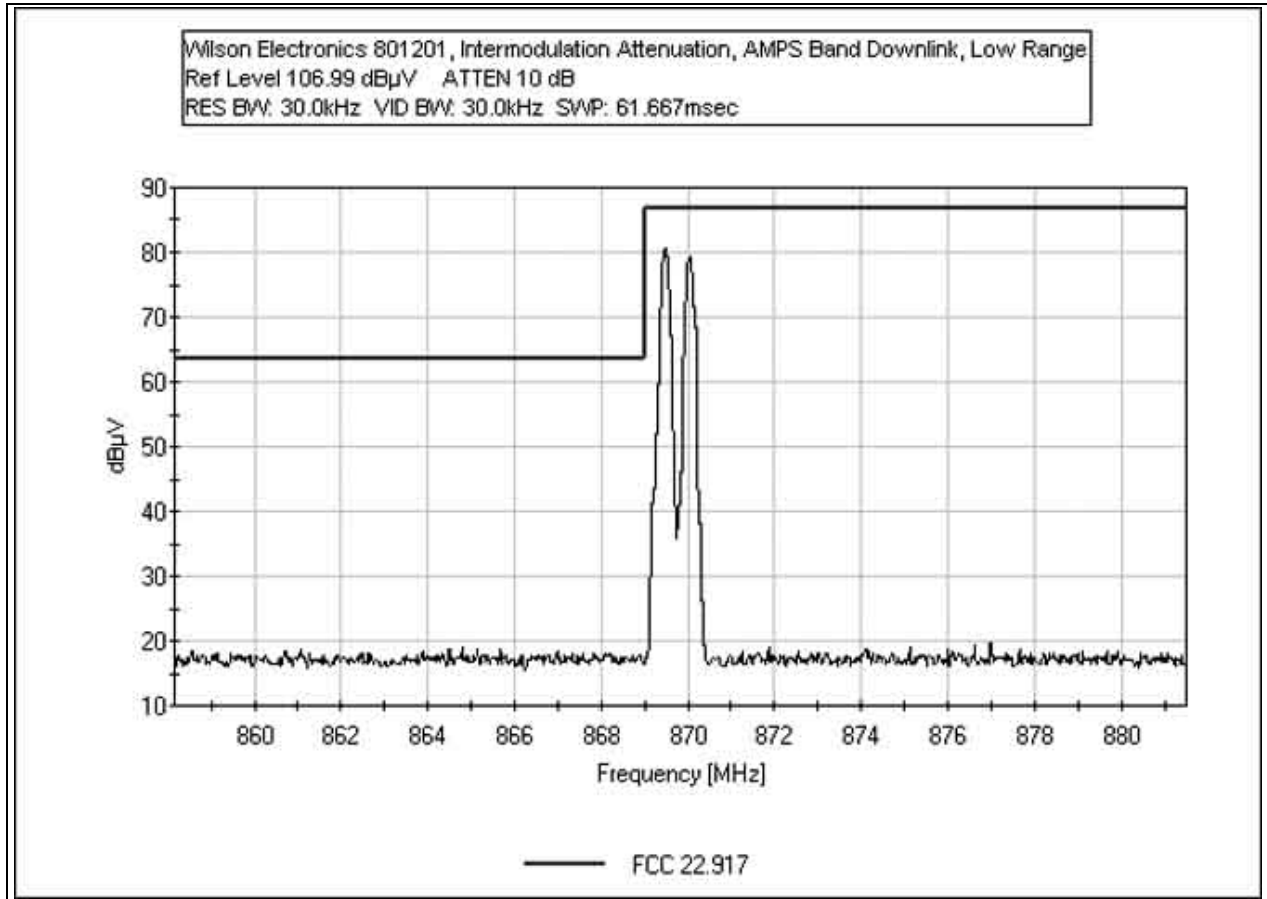
**INTERMODULATION ATTENUATION DOWNLINK EDGE - AMPS BAND
HIGH RANGE**



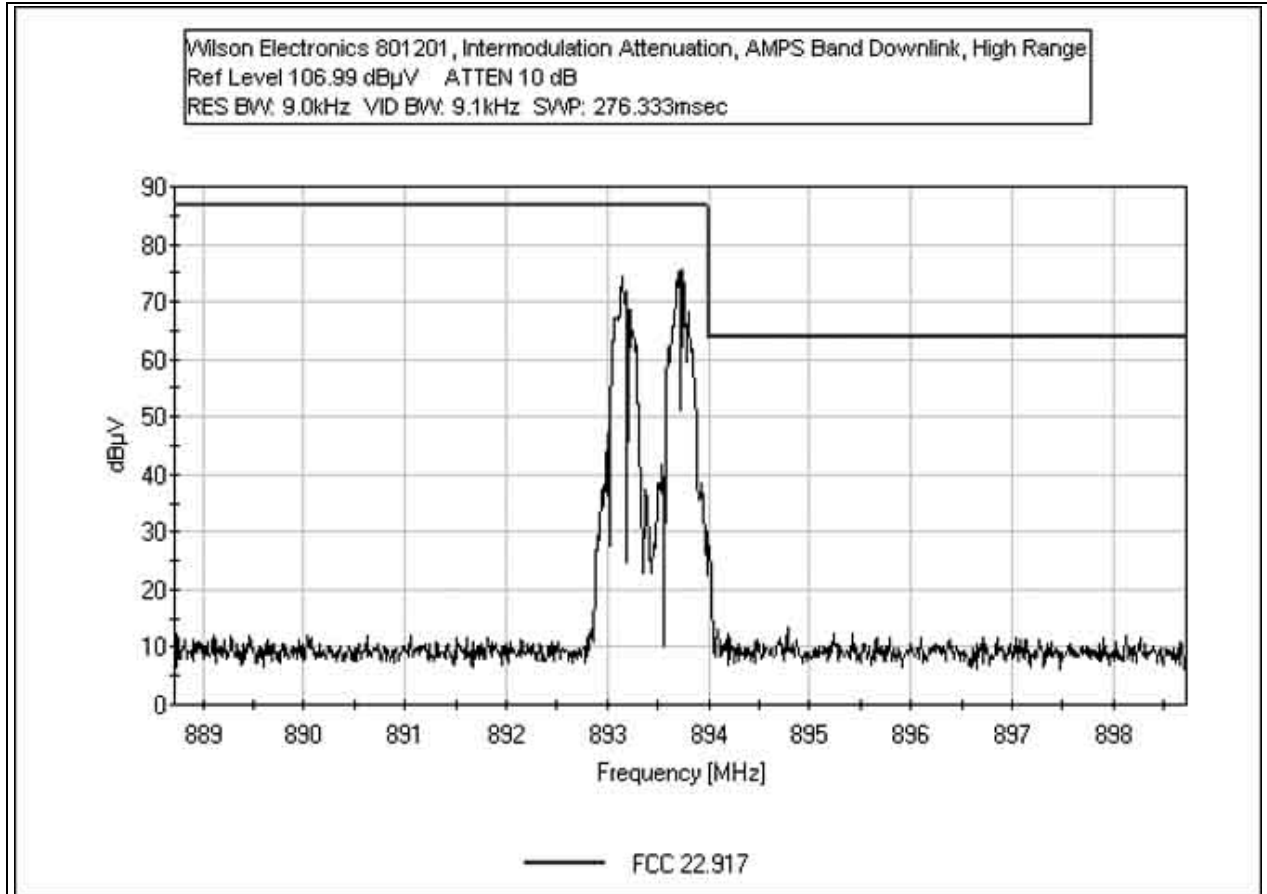
**INTERMODULATION ATTENUATION DOWNLINK EDGE - AMPS BAND
WIDE RANGE**



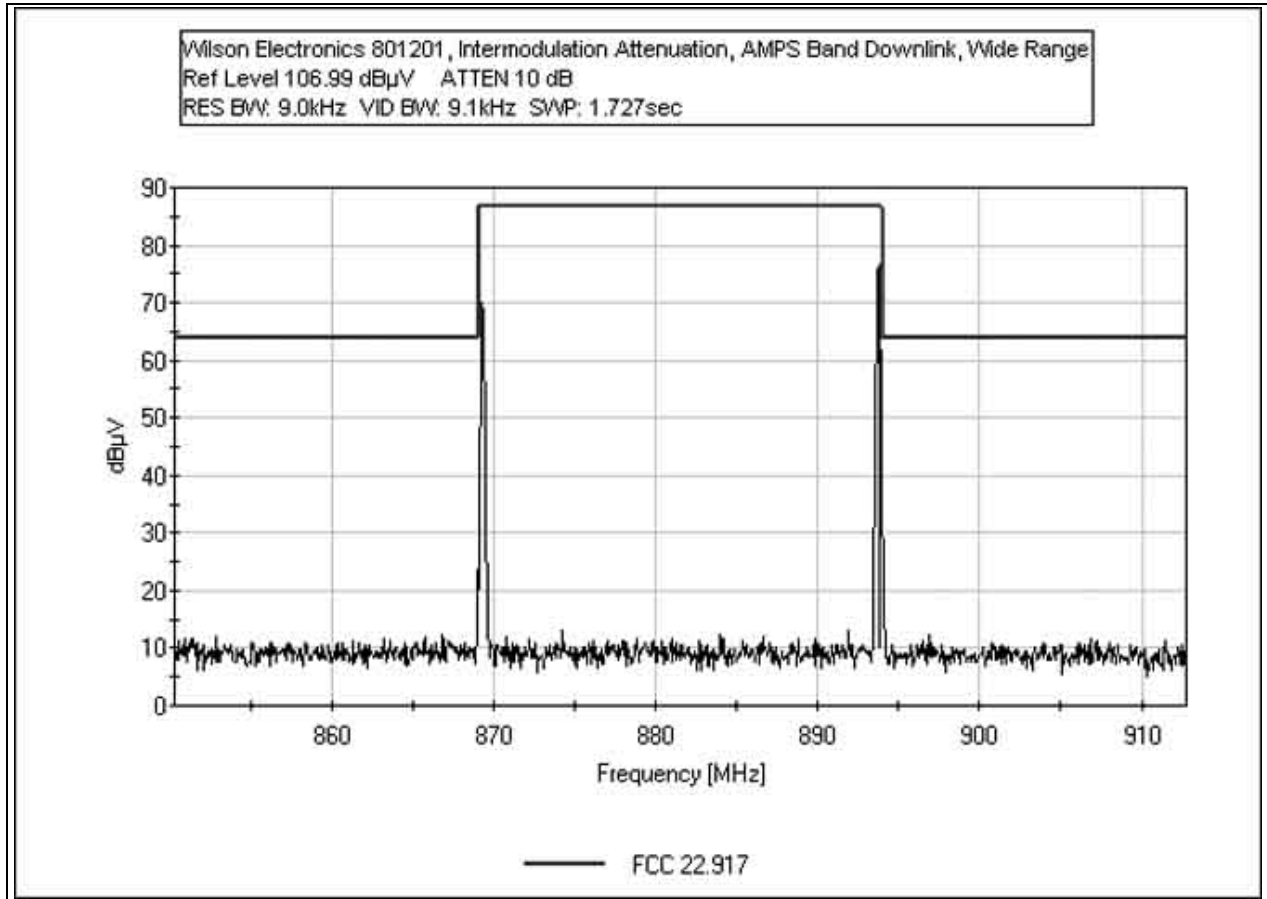
**INTERMODULATION ATTENUATION DOWNLINK GSM - AMPS BAND
LOW RANGE**



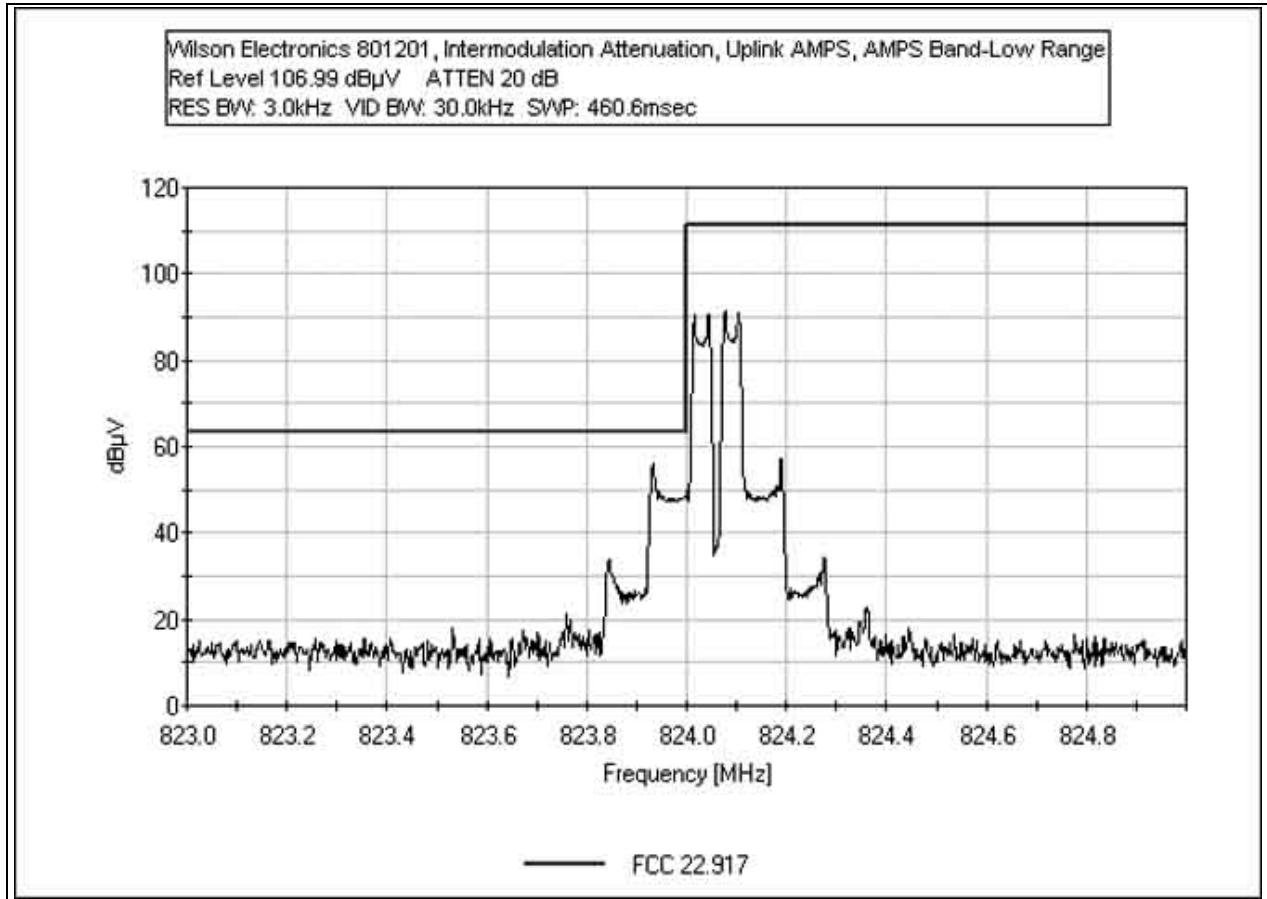
**INTERMODULATION ATTENUATION DOWNLINK GSM - AMPS BAND
HIGH RANGE**



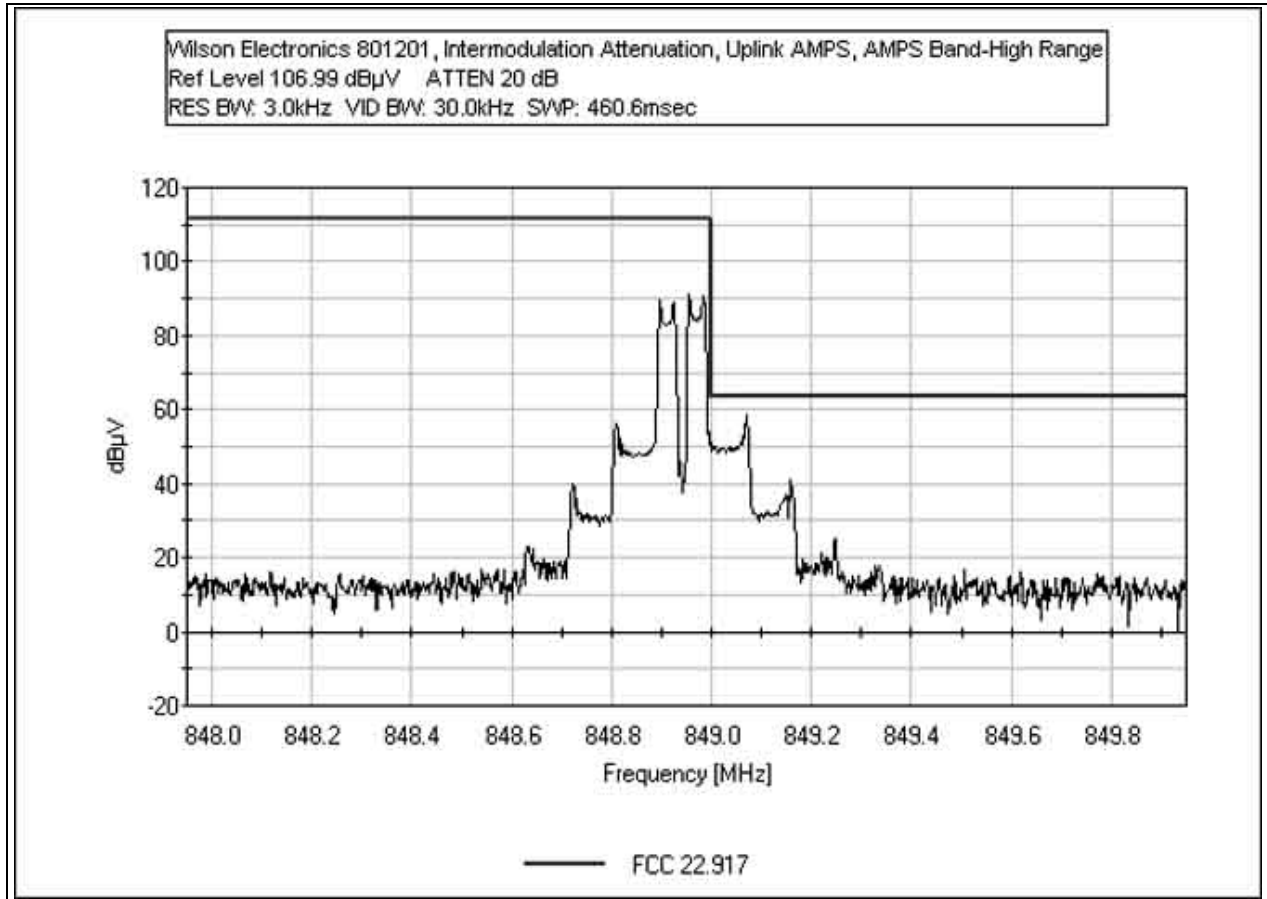
INTERMODULATION ATTENUATION DOWNLINK GSM - AMPS BAND WIDE RANGE



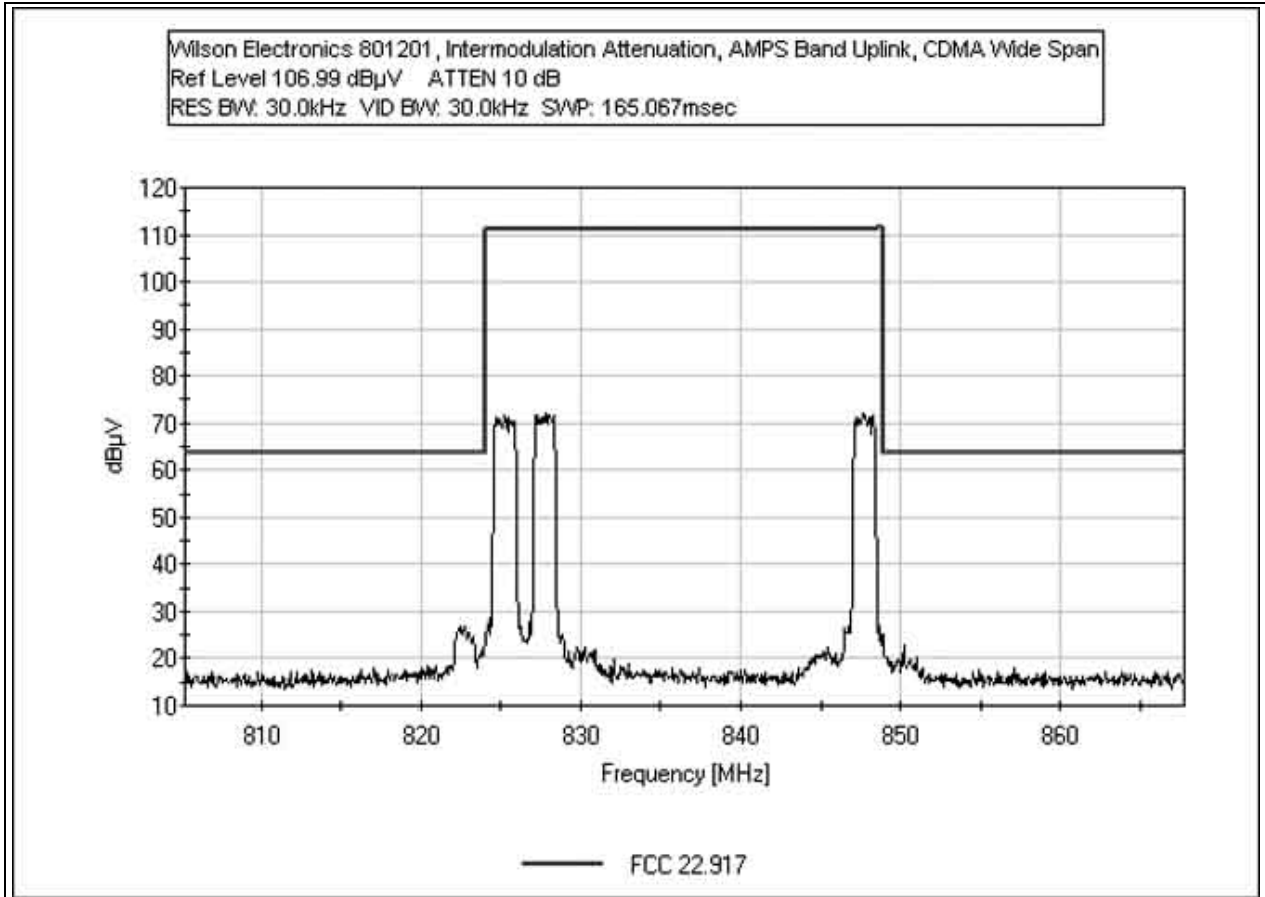
INTERMODULATION ATTENUATION UPLINK AMPS - AMPS BAND LOW RANGE



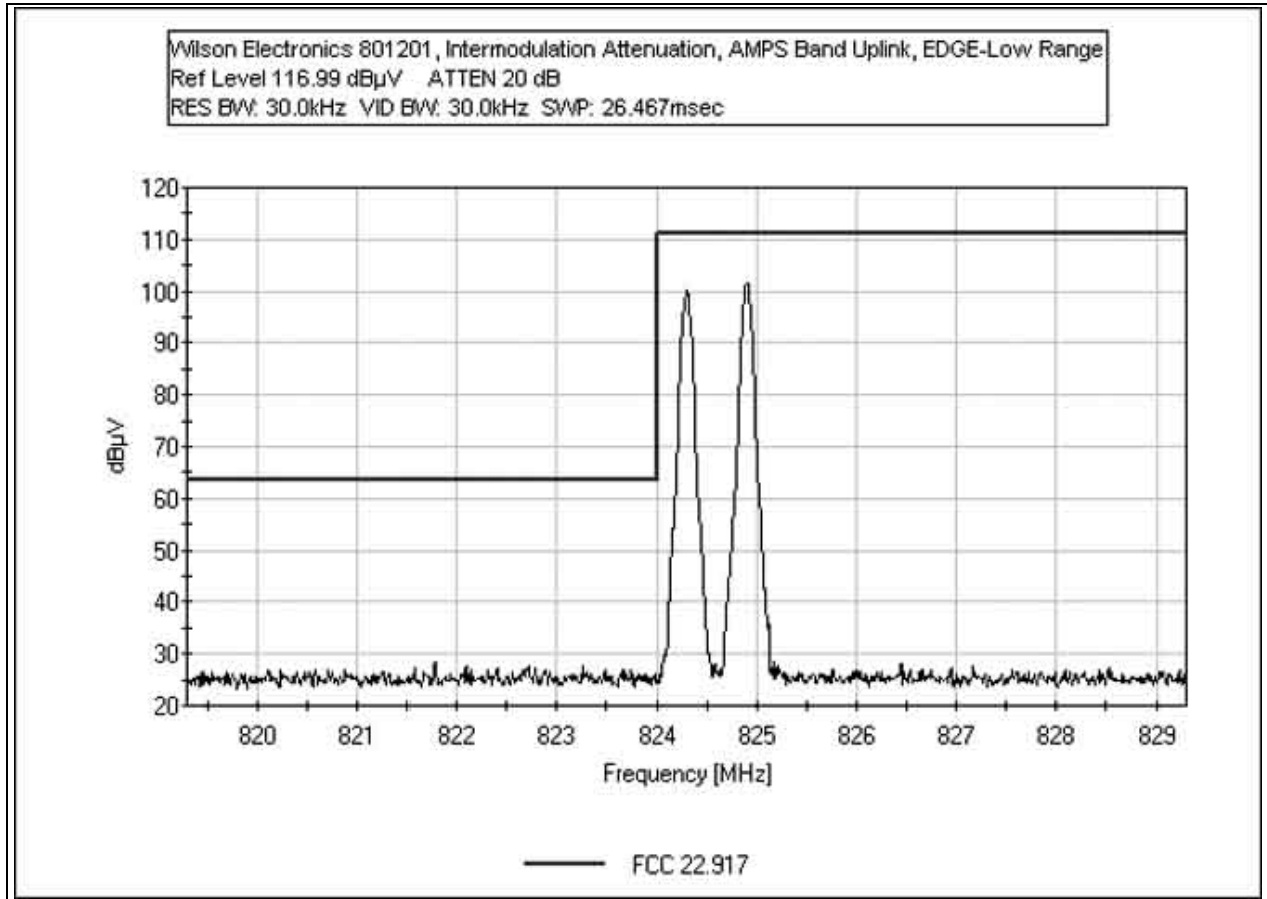
INTERMODULATION ATTENUATION UPLINK AMPS - AMPS BAND HIGH RANGE



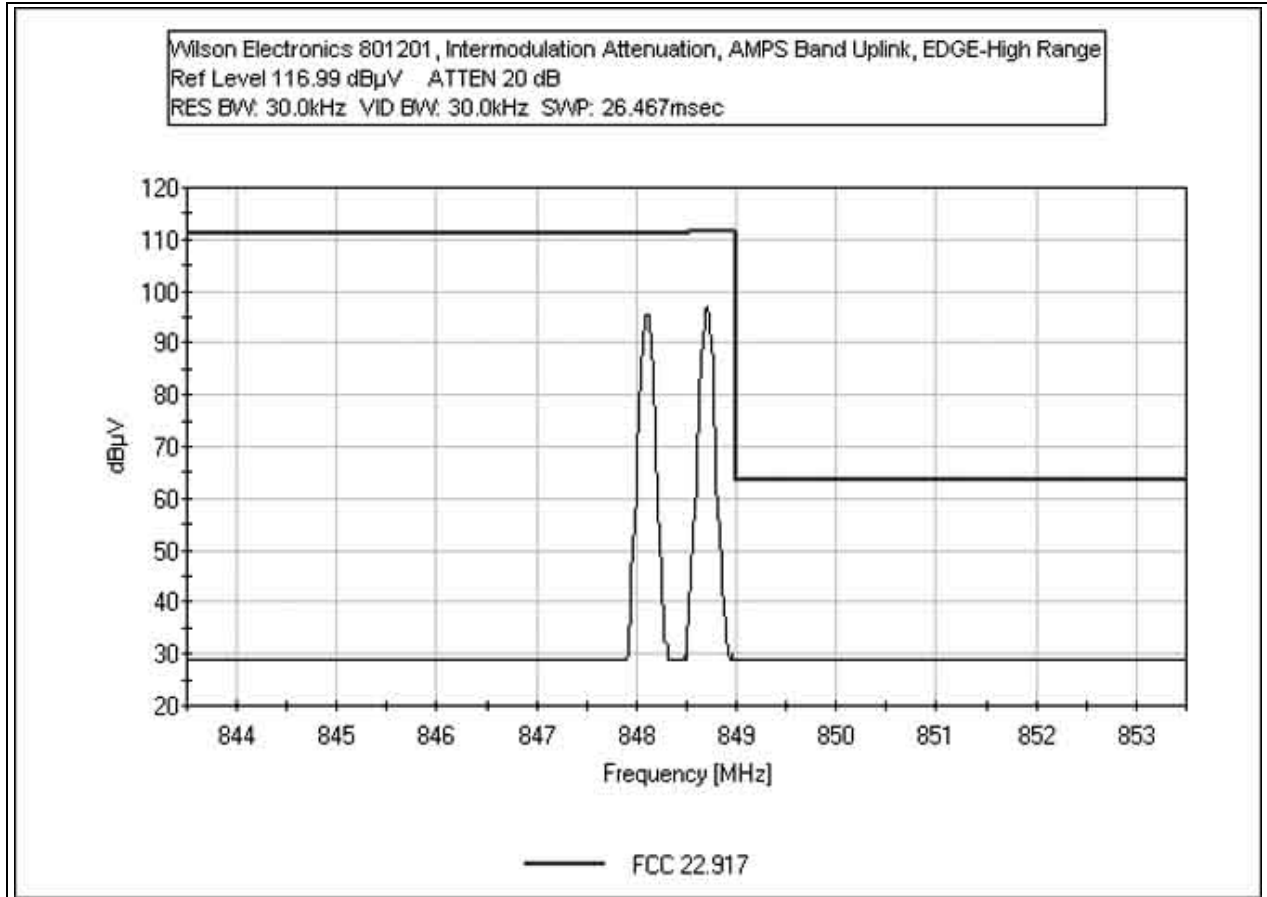
INTERMODULATION ATTENUATION UPLINK CDMA - AMPS BAND WIDE SPAN



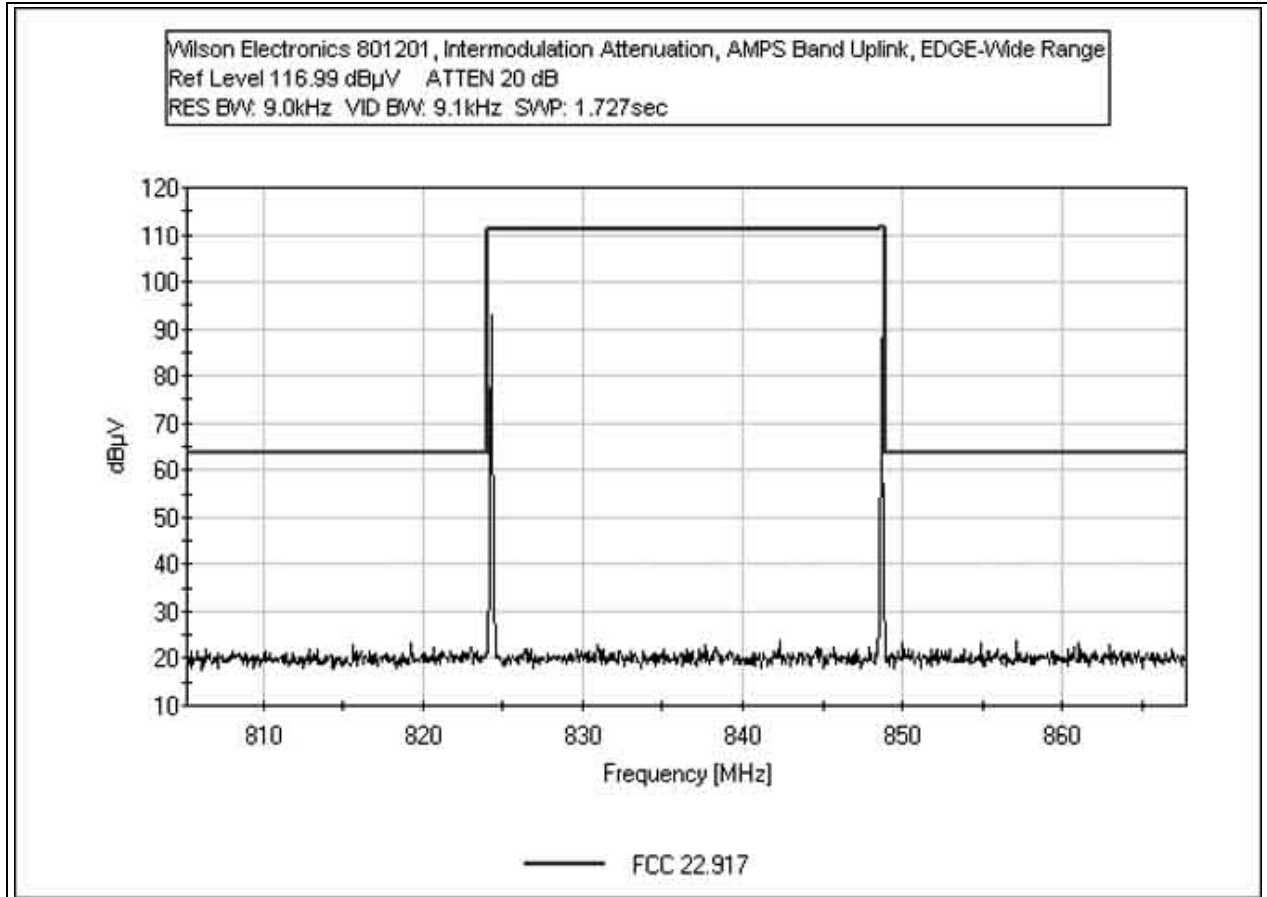
INTERMODULATION ATTENUATION UPLINK EDGE - AMPS BAND LOW RANGE



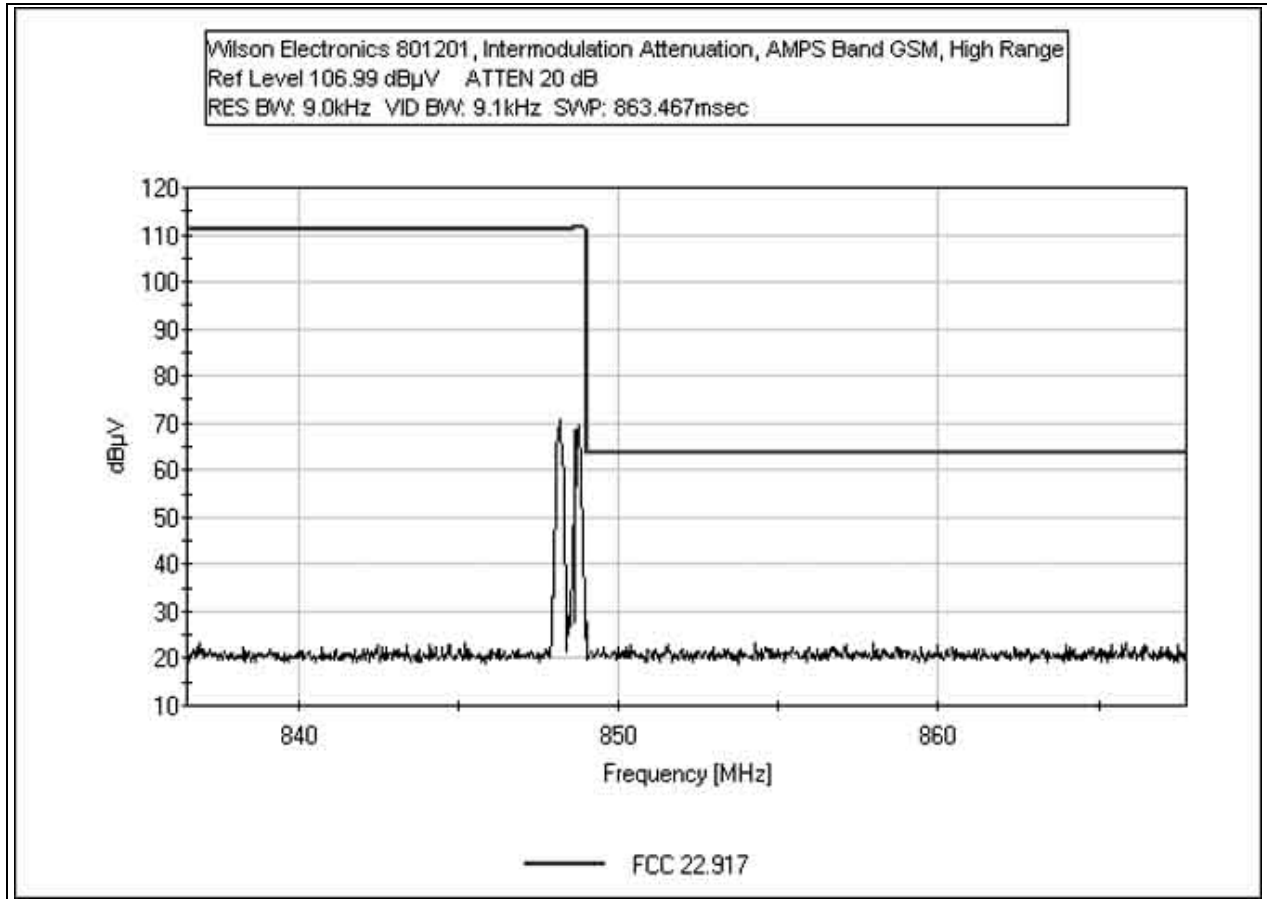
INTERMODULATION ATTENUATION UPLINK EDGE - AMPS BAND HIGH RANGE



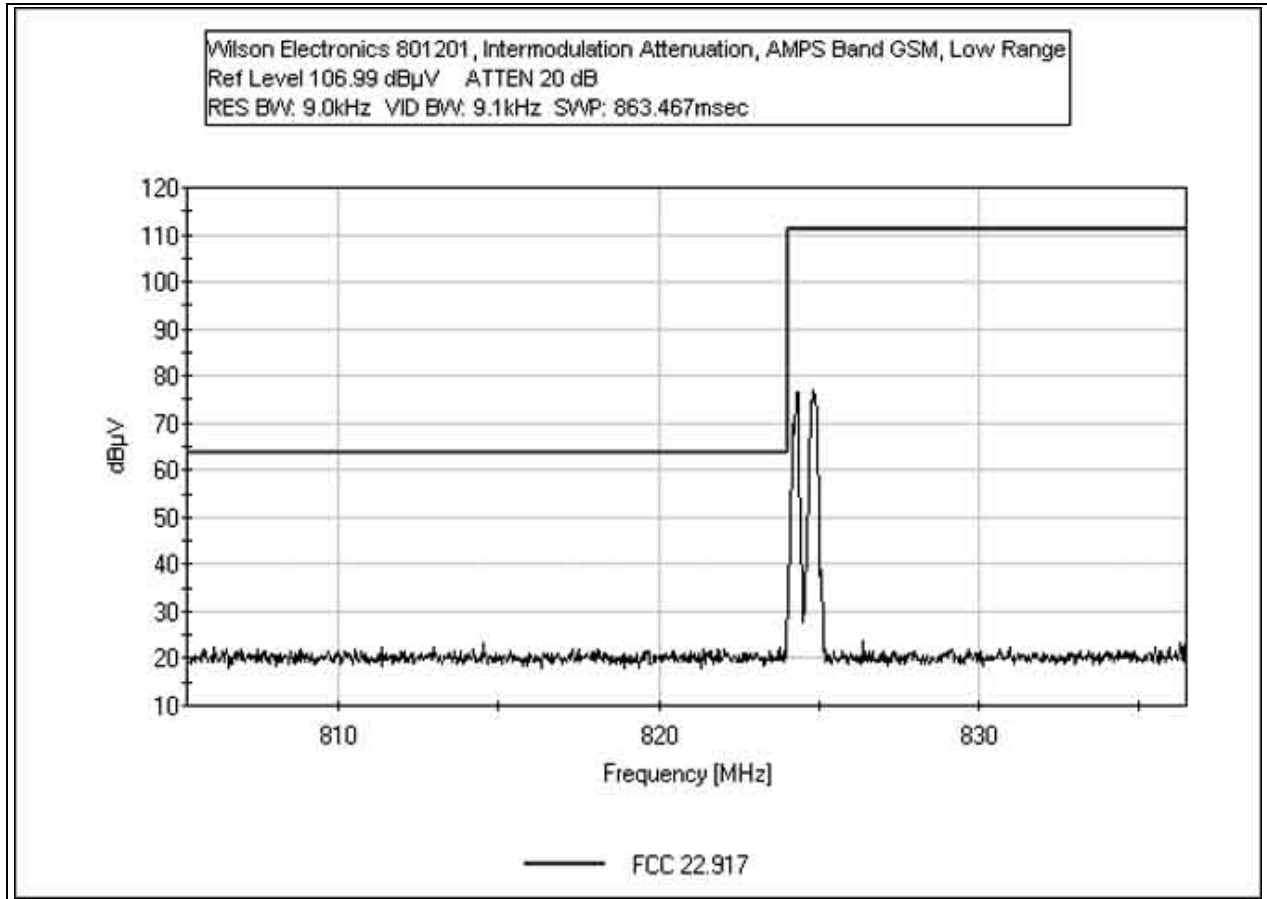
INTERMODULATION ATTENUATION UPLINK EDGE - AMPS BAND WIDE RANGE



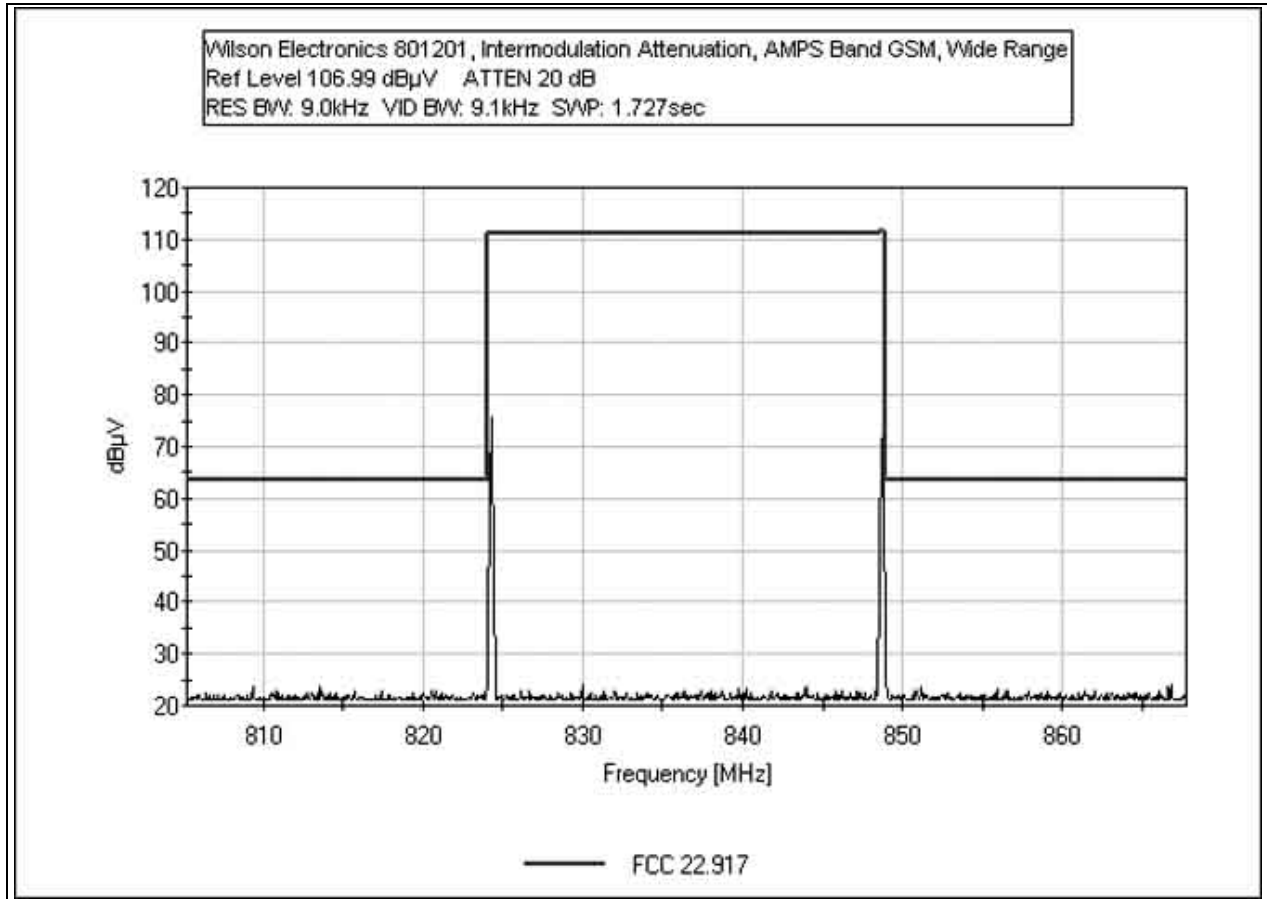
INTERMODULATION ATTENUATION UPLINK GSM - AMPS BAND HIGH RANGE



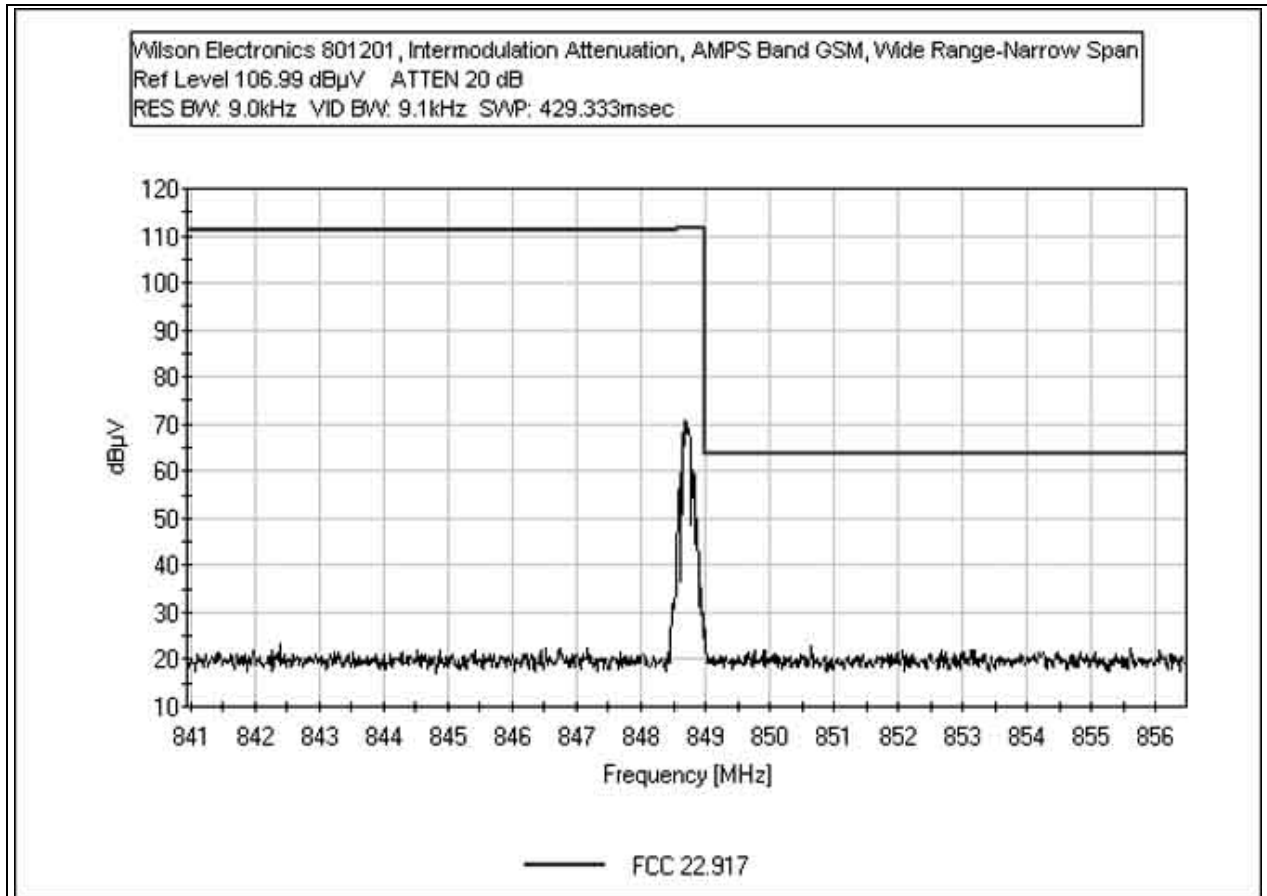
INTERMODULATION ATTENUATION UPLINK GSM - AMPS BAND LOW RANGE



INTERMODULATION ATTENUATION UPLINK GSM - AMPS BAND WIDE RANGE



**INTERMODULATION ATTENUATION UPLINK GSM - AMPS BAND WIDE RANGE -
NARROW SPAN**



PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP





FCC 2.1051 – SELF-COLLOCATION INTERMODULATION

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

Customer: **Wilson Electronics**
 Specification: **FCC 2.1051**
 Work Order #: **83305** Date: 05/02/2005
 Test Type: **Antenna Terminals** Time: 16:45:04
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 93
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 25-A-MFN-30		05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035

Test Conditions / Notes:

EUT is a dual band bidirectional amplifier for the 824 to 894MHz and the 1850 to 1990MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink 1960MHz and 881.5MHz. This mode represents the worst case of emissions. Frequency Range Investigated: 30 MHz to 20 GHz.

Transducer Legend:

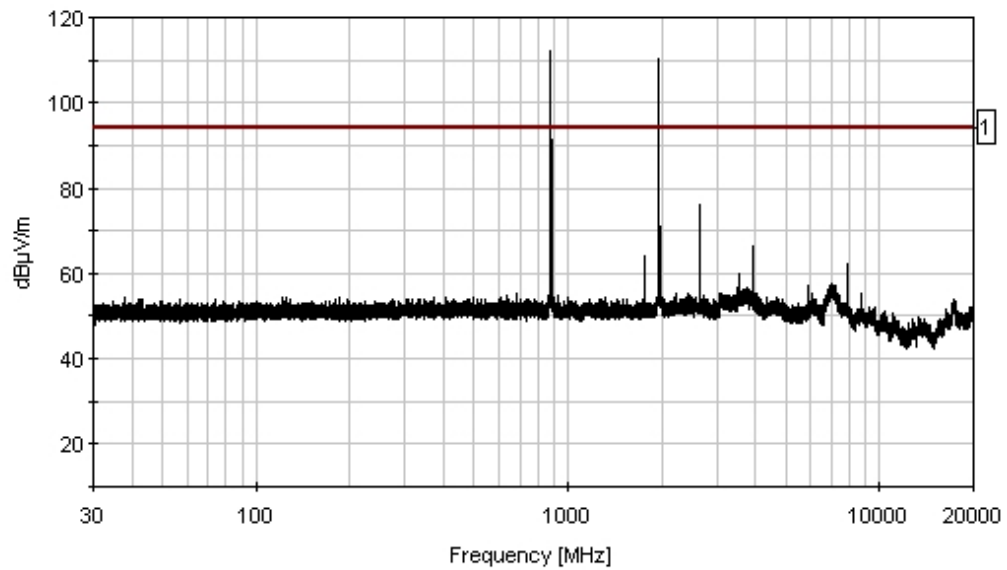
T1=Pad 30dB

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

#	Freq MHz	Rdng dBµV	T1 dB	dB			Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	881.432M	81.8	+30.3				+0.0	112.1	117.0	-4.9	None
									Carrier		
2	1959.641M	79.8	+30.3				+0.0	110.1	117.0	-6.9	None
									Carrier		

3	2644.350M	46.8	+29.9	+0.0	76.7	94.0	-17.3	None
4	3920.080M	39.3	+29.6	+0.0	68.9	94.0	-25.1	None
5	7839.978M	41.1	+24.9	+0.0	66.0	94.0	-28.0	None
6	1762.664M	34.6	+30.3	+0.0	64.9	94.0	-29.1	None
7	5879.230M	30.5	+27.8	+0.0	58.3	94.0	-35.7	None

CKC Laboratories Date: 05/02/2005 Time: 16:45:04 Wilson Electronics W/O#: 83305
 FCC 2.1053 Test Distance: None Sequence#: 93
 Wilson Electronics M/N 801201



— Sweep Data — 1 - FCC 2.1053



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

Customer: **Wilson Electronics**
 Specification: **FCC 2.10531**
 Work Order #: **83305** Date: 05/02/2005
 Test Type: **Antenna Terminals** Time: 16:24:36
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 92
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 25-A-MFN-30		05/09/2003	05/09/2005	P01572

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035

Test Conditions / Notes:

EUT is a dual band bidirectional amplifier for the 824 to 894MHz and the 1850 to 1990MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Intermodulation Attenuation and Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Uplink 1880MHz and 836.5MHz. This mode represents the worst case of emissions. Frequency Range Investigated: 30 MHz to 20 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

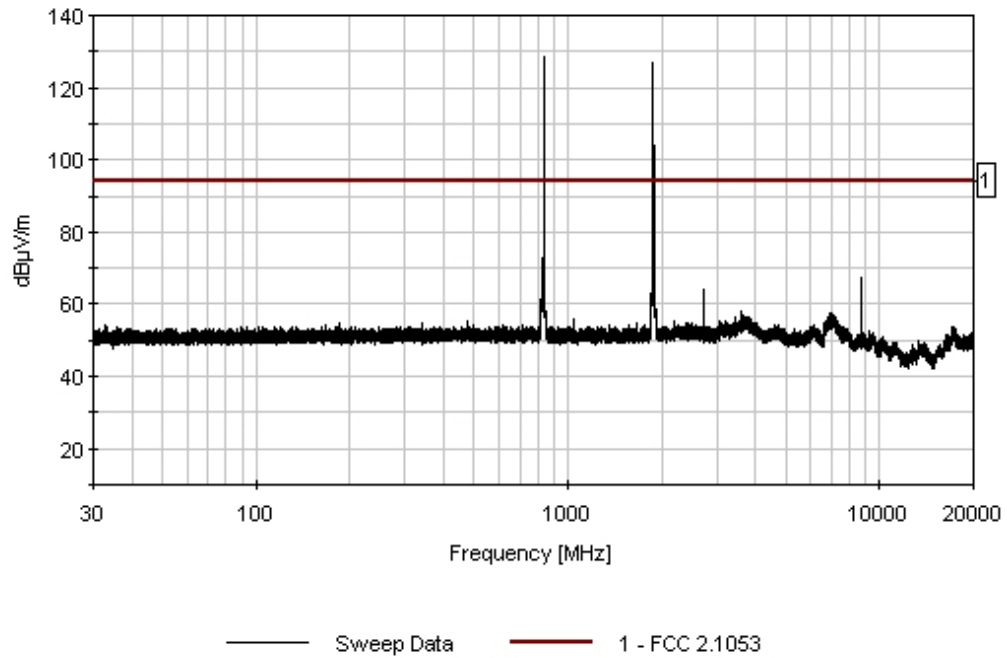
Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	Margin			Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	836.496M	98.1	+30.4				+0.0	128.5	140.0	-11.5	None
									Carrier		
2	1879.816M	96.5	+30.3				+0.0	126.8	140.0	-13.2	None
									Carrier		
3	1883.680M	42.4	+30.3				+0.0	72.7	94.0	-21.3	None
4	1885.270M	39.3	+30.3				+0.0	69.6	94.0	-24.4	None

5	8765.240M	43.4	+24.4	+0.0	67.8	94.0	-26.2	None
6	2716.385M	36.6	+29.8	+0.0	66.4	94.0	-27.6	None
7	830.350M	34.8	+30.4	+0.0	65.2	94.0	-28.8	None
8	818.280M	32.7	+30.4	+0.0	63.1	94.0	-30.9	None

CKC Laboratories Date: 05/02/2005 Time: 16:24:36 Wilson Electronics WO#: 83305
 FCC 2.1053 Test Distance: None Sequence#: 92
 Wilson Electronics M/N 801201



PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP





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

Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/31/2005
 Test Type: **Maximized Emissions** Time: 09:25:25
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 85
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HP 8447D Preamp	1937A02604	03/11/2005	03/11/2007	00099
Chase CBL6111C Bilog	2456	06/26/2003	06/26/2005	01991
EMCO 3115 Horn Antenna	9006-3413	03/08/2005	03/08/2007	327
HP 8449B Preamp	3008A00301	12/14/2004	12/14/2006	2010
ARA MWH-1826/B Horn Antenna	1005	11/05/2004	11/05/2006	02046

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298
Load	JFW	50T-022	P04243

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Radiated Intermodulation /Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output per channel is provided at the antenna terminals. The internal ALC of the amplifier limits the combined maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Test setup is in accordance with TIA/EIA 603. Signal generators were remotely located under the ground plane. Two input frequency configurations were investigated as follows, 869.28 & 869.84MHz and then 893.16 & 893.72MHz. Data represents measured worst case and represents all modulation types. Input Modulation: GSM. Frequencies Tested: Downlink Frequency Range Investigated: 30MHz to 10 GHz. Measurement Bandwidth Settings: 10MHz to 1000MHz - RBW=VBW=10kHz, 1000MHz to 10000MHz - RBW=VBW=1MHz. **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/m	Spec dBµV/m	Margin dB	Polar Ant



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/31/2005
 Test Type: **Maximized Emissions** Time: 09:44:07
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 86
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201
 S/N: 8012010000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HP 8447D Preamp	1937A02604	03/11/2005	03/11/2007	00099
Chase CBL6111C Bilog	2456	06/26/2003	06/26/2005	01991
EMCO 3115 Horn Antenna	9006-3413	03/08/2005	03/08/2007	327
HP 8449B Preamp	3008A00301	12/14/2004	12/14/2006	2010
ARA MWH-1826/B Horn Antenna	1005	11/05/2004	11/05/2006	02046

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201	8012010000006

Support Devices:

Function	Manufacturer	Model #	S/N
Signal Generator	HP	E4433B	US38440697
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	MY41000298
Load	JFW	50T-022	P04243

Test Conditions / Notes:

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Radiated Intermodulation /Spurious Emissions Test: Two signals are input to the amplifier through a combining network. The input signals are set such that the maximum output per channel is provided at the antenna terminals. The internal ALC of the amplifier limits the combined maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Test setup is in accordance with TIA/EIA 603. Signal generators were remotely located under the ground plane. Two input frequency configurations were investigated as follows, 824.28 & 824.84MHz and then 848.16 & 848.72MHz. Data represents measured worst case and represents all modulation types. Input Modulation: GSM. Frequencies Tested: Uplink Frequency Range Investigated: 30MHz to 10 GHz. Measurement Bandwidth Settings: 10MHz to 1000MHz - RBW=VBW=10kHz, 1000MHz to 10000MHz - RBW=VBW=1MHz. **No EUT Emissions detected within 20dBc of the limit.**

Transducer Legend:

--

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

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

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View

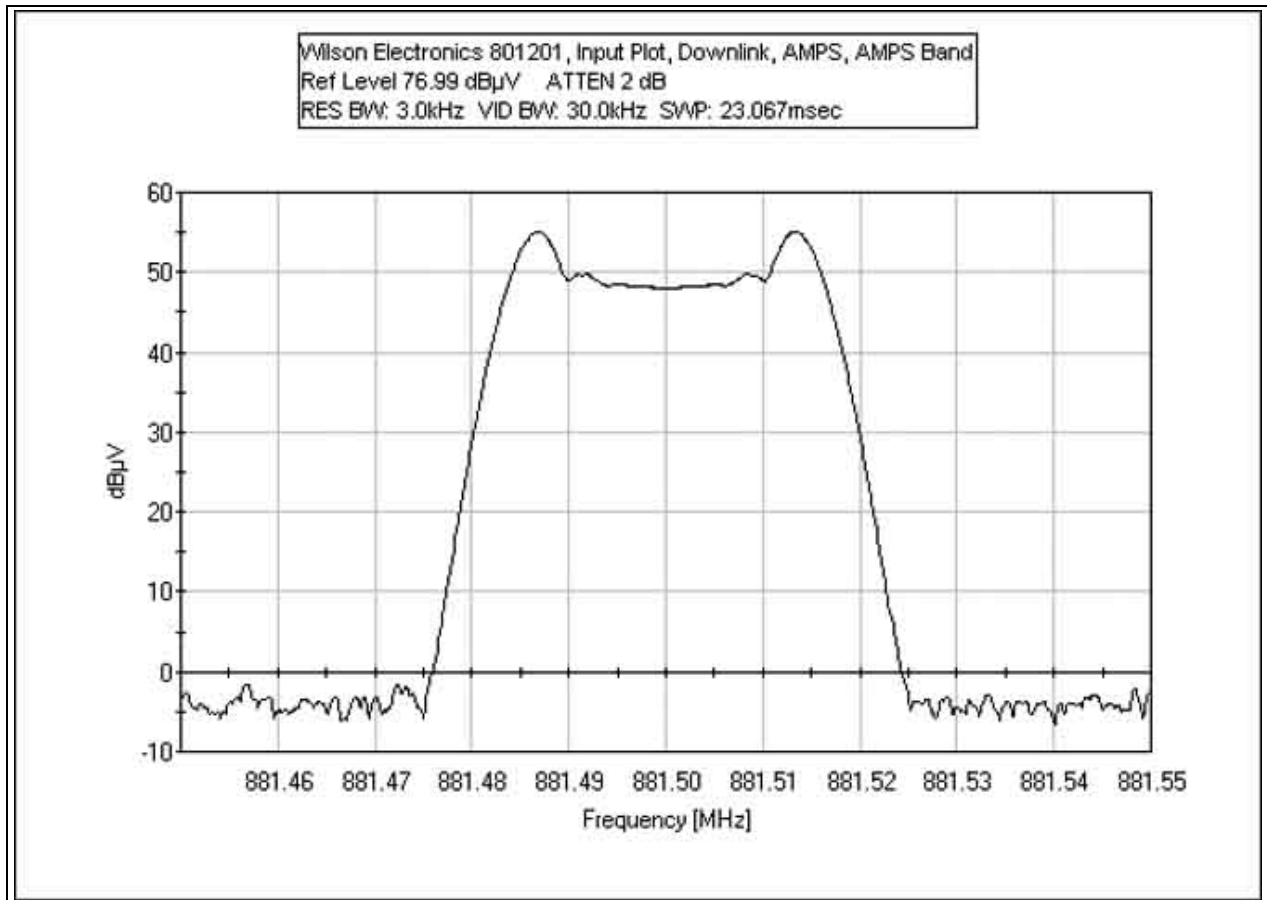
PHOTOGRAPH SHOWING RADIATED EMISSIONS



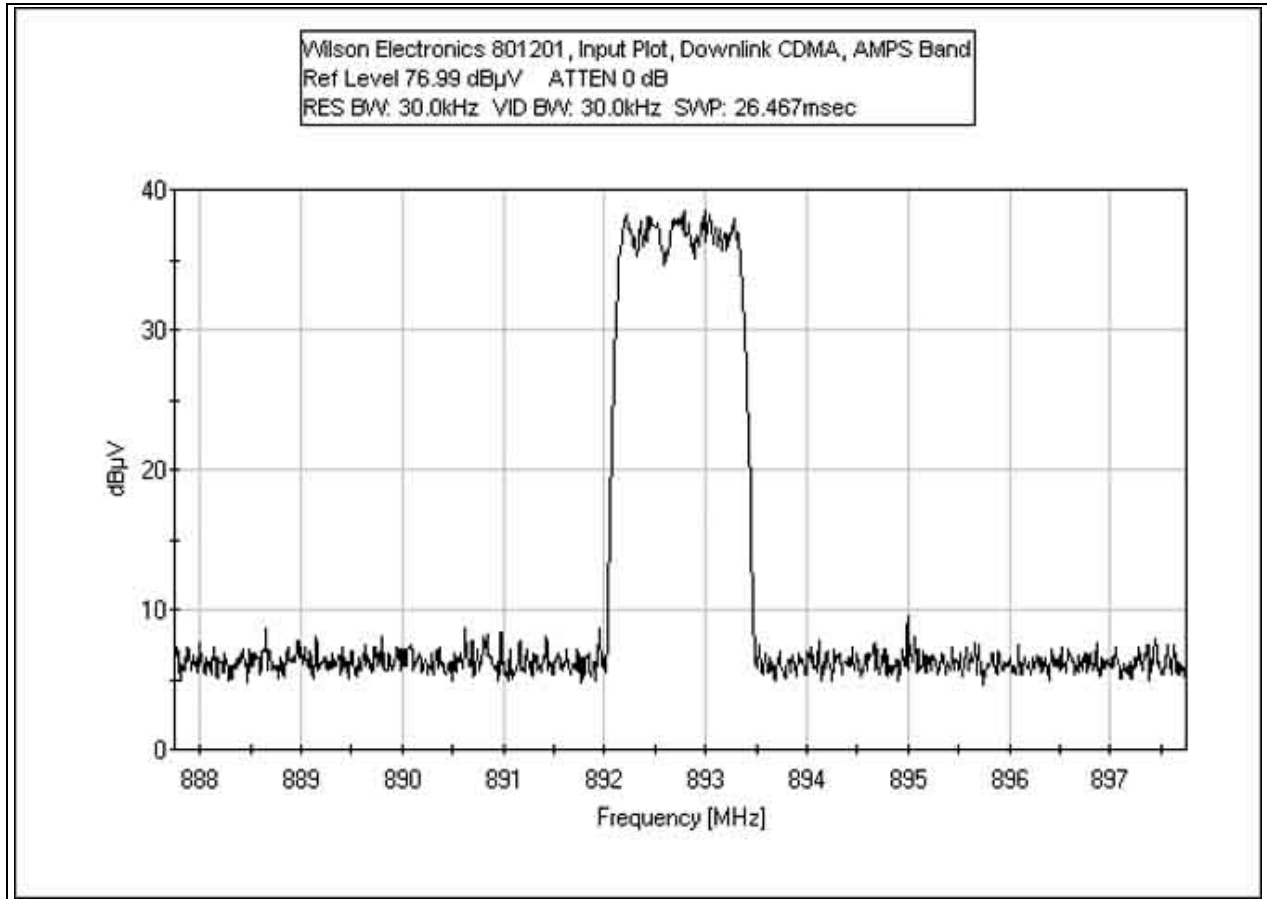
Radiated Emissions - Back View

INPUT DOWNLINK AMPS - AMPS BAND

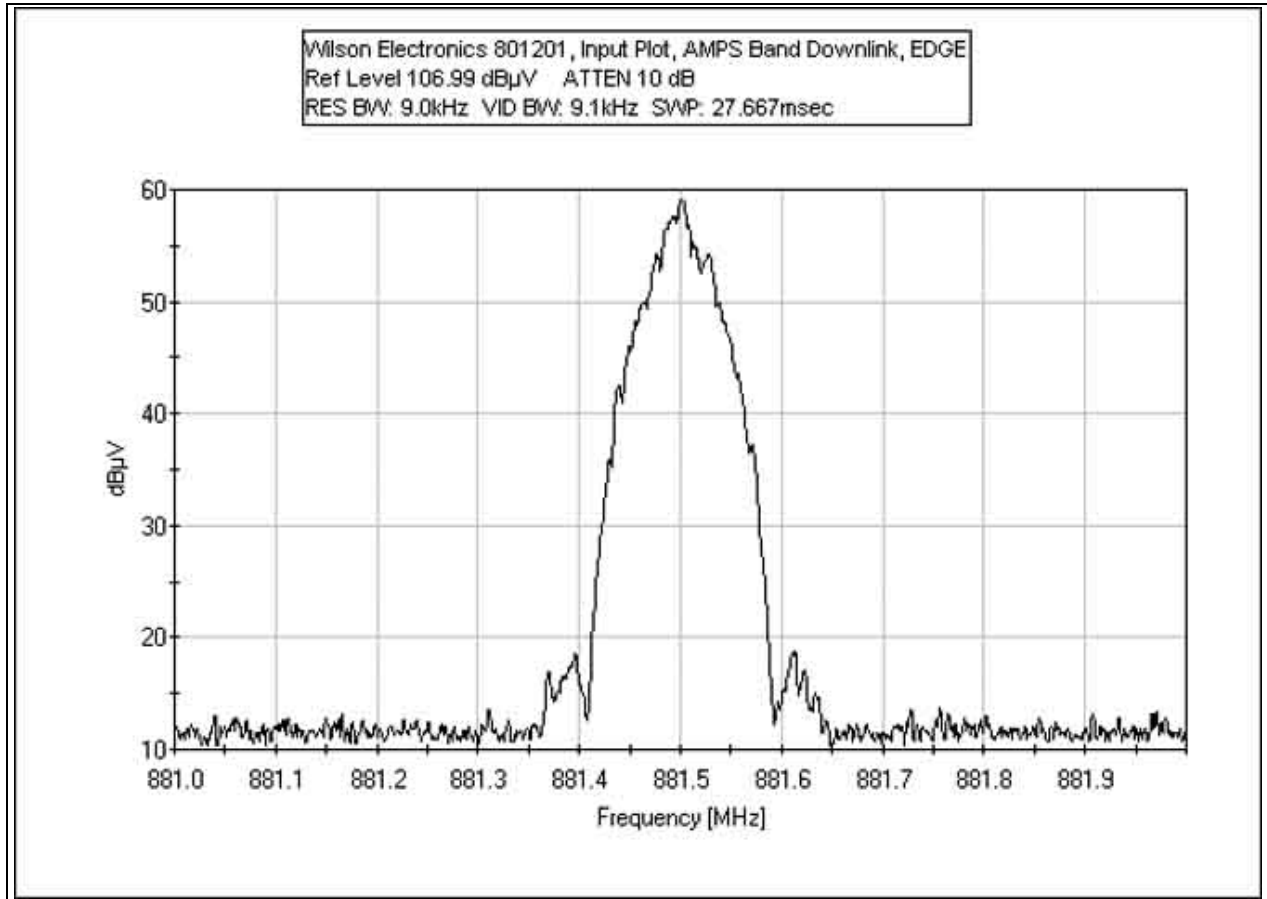
Test Conditions: EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input.



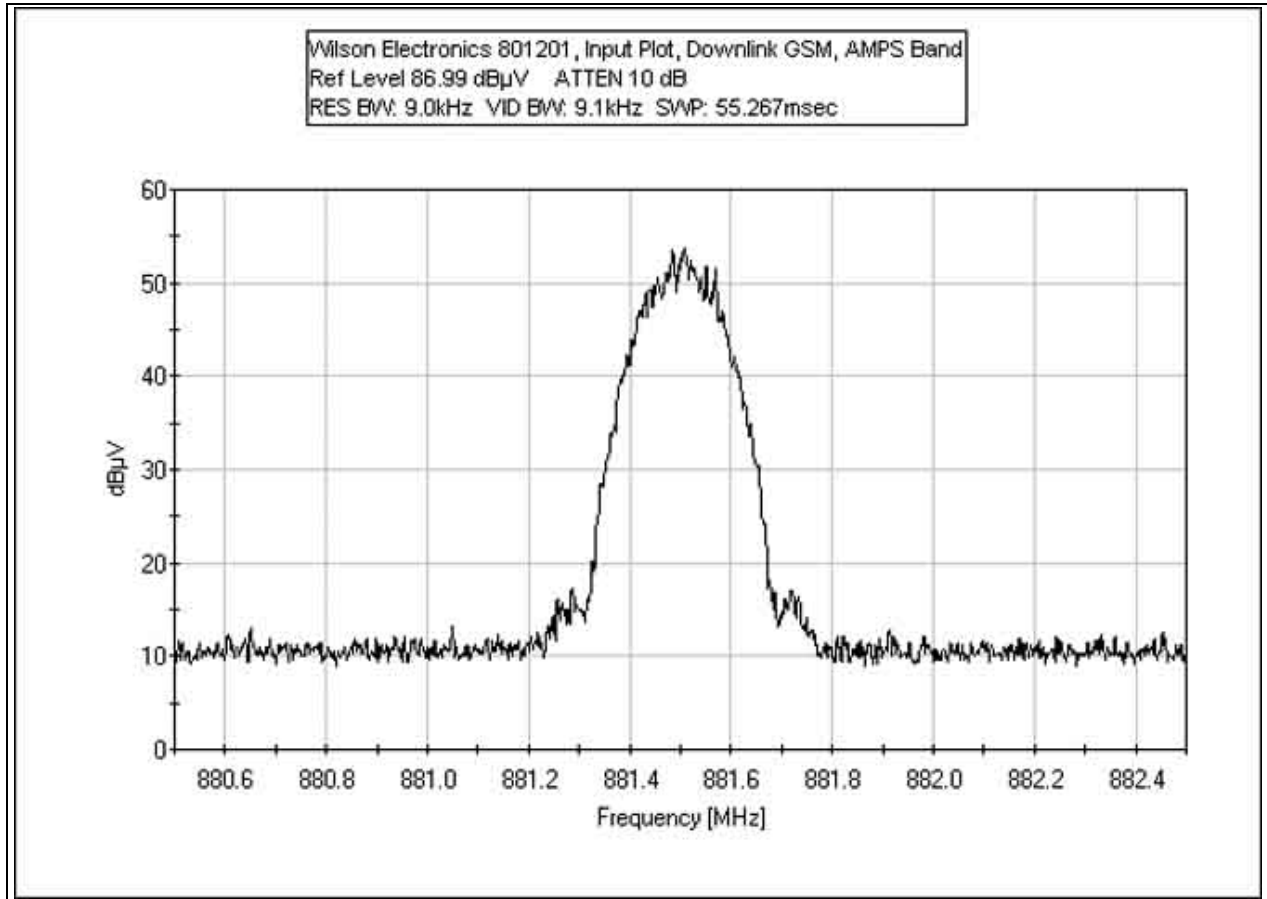
INPUT DOWNLINK CDMA - AMPS BAND



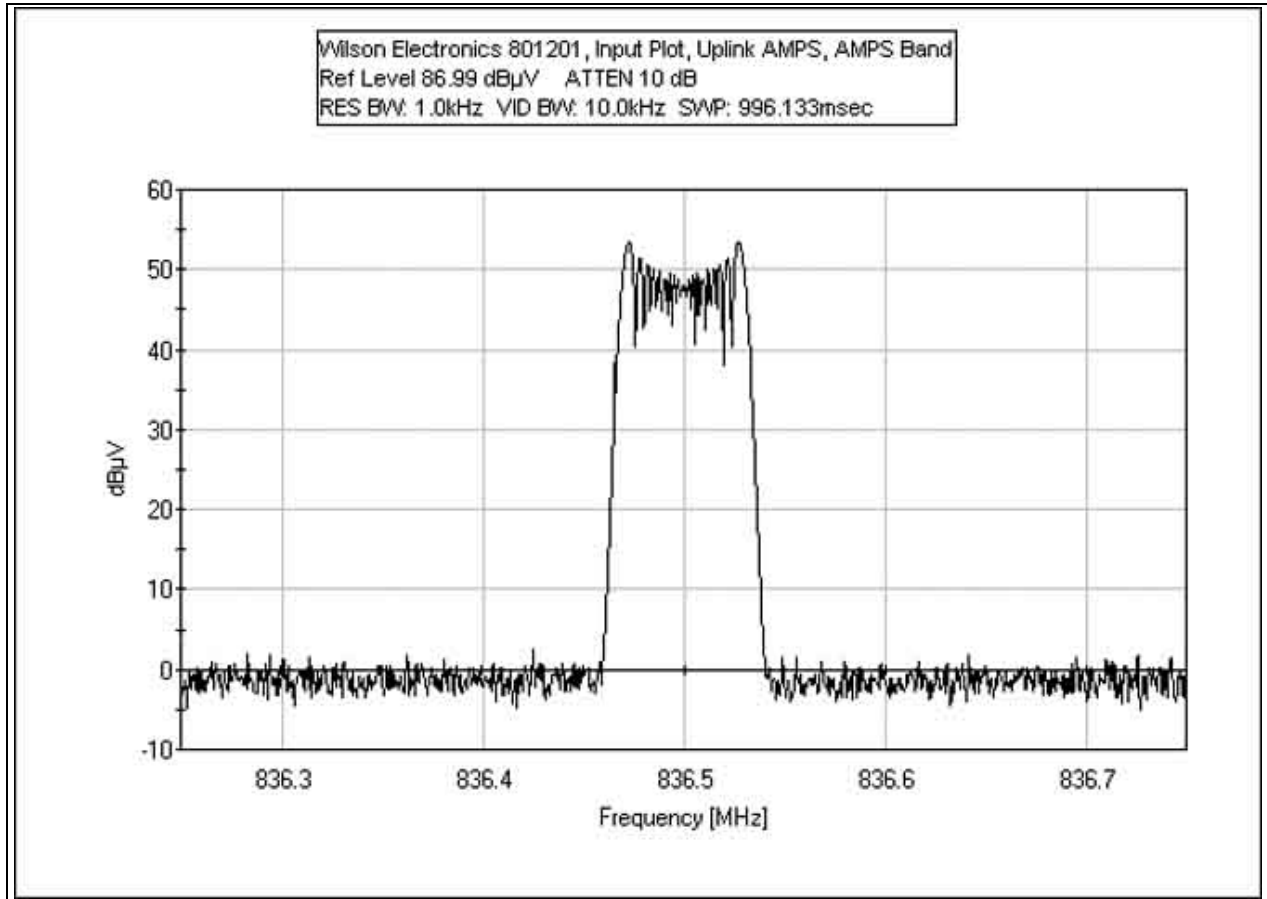
INPUT DOWNLINK EDGE - AMPS BAND



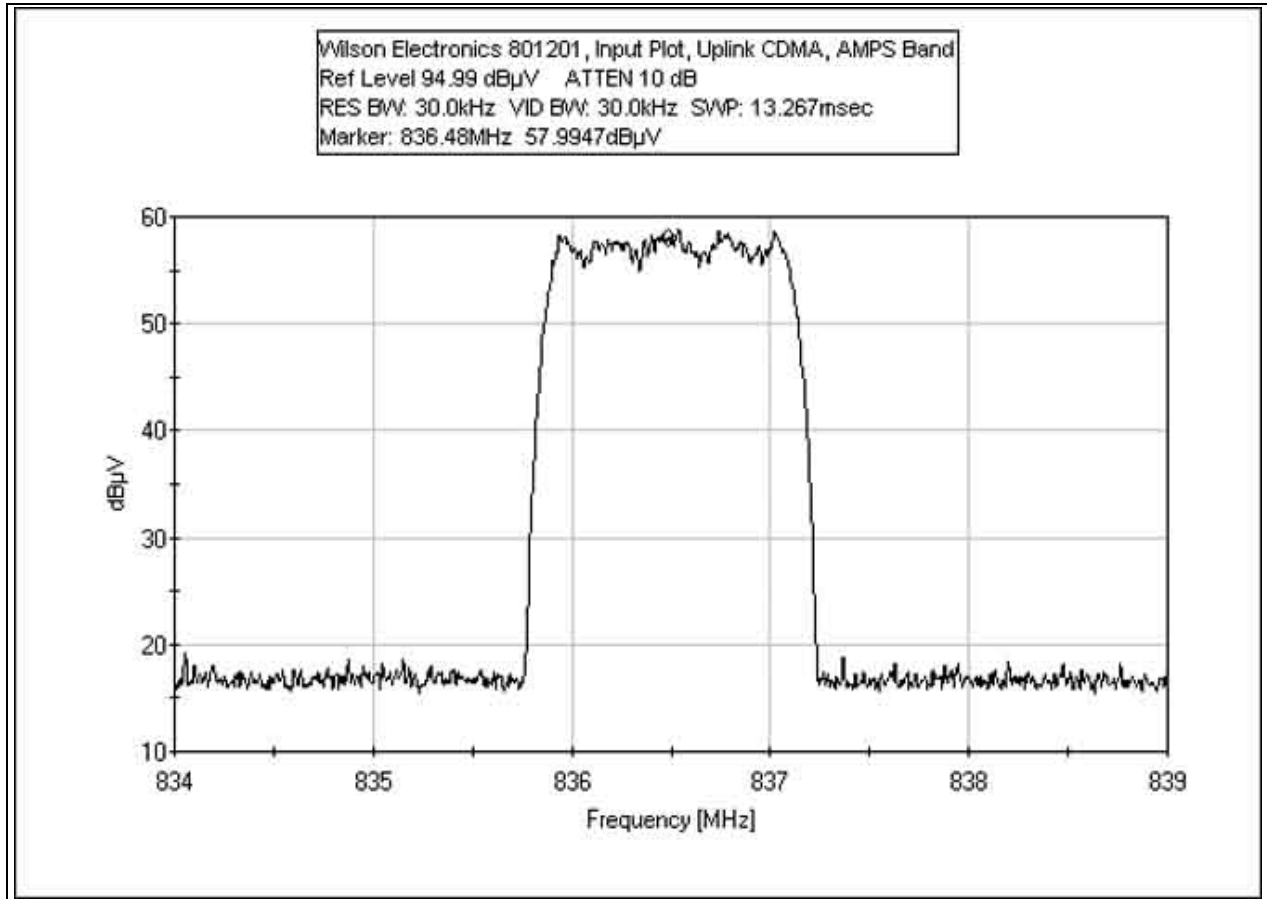
INPUT DOWNLINK GSM - AMPS BAND



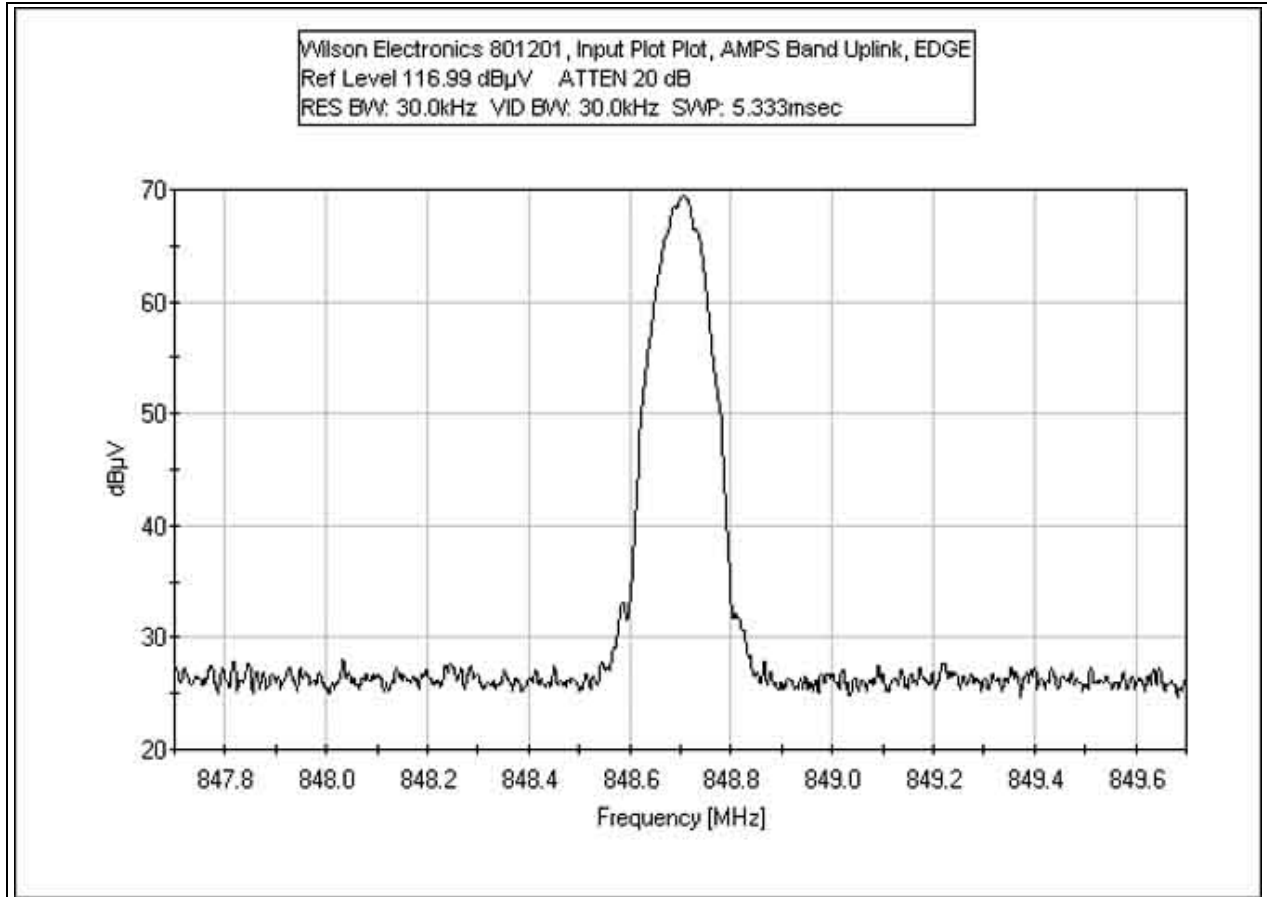
INPUT UPLINK AMPS - AMPS BAND



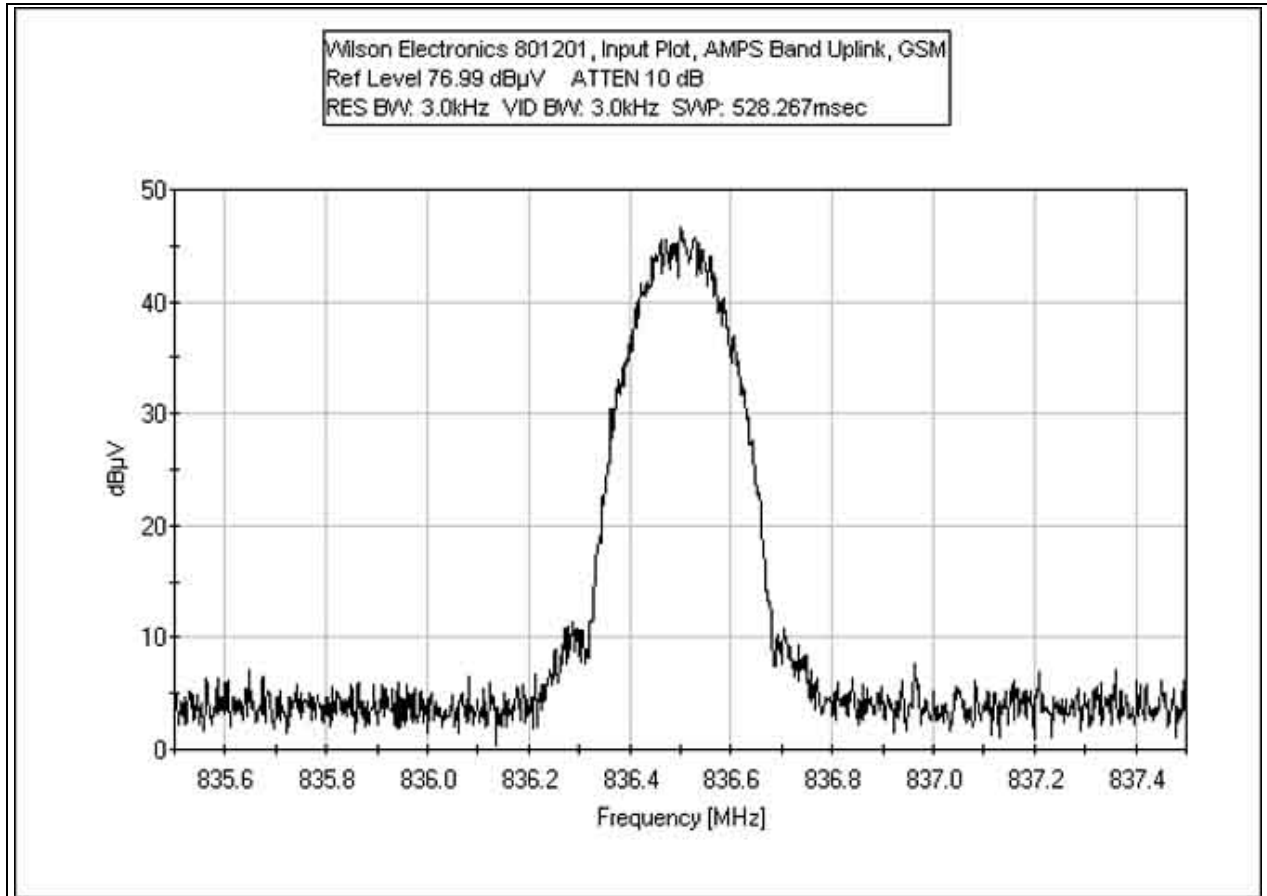
INPUT UPLINK CDMA - AMPS BAND



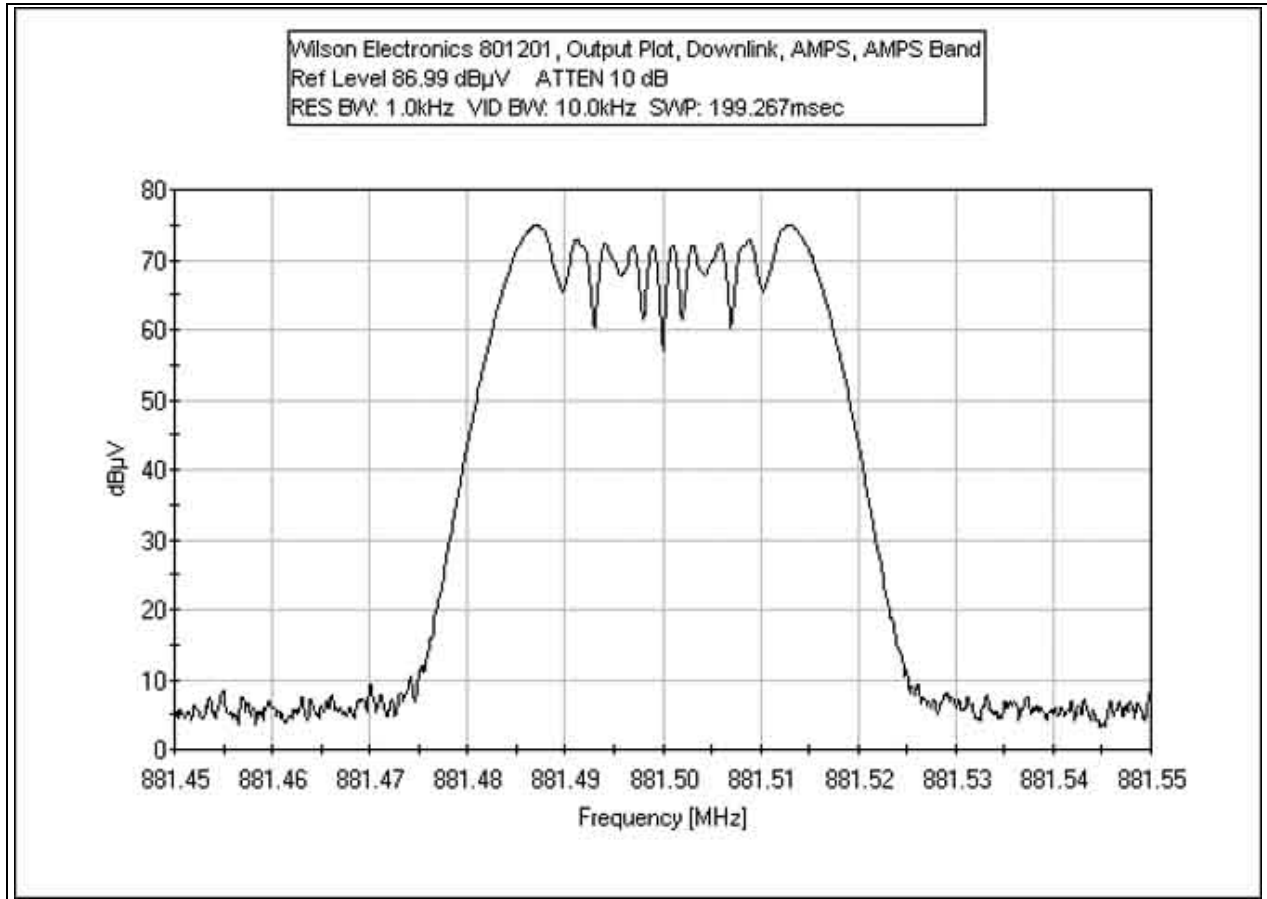
INPUT UPLINK EDGE - AMPS BAND



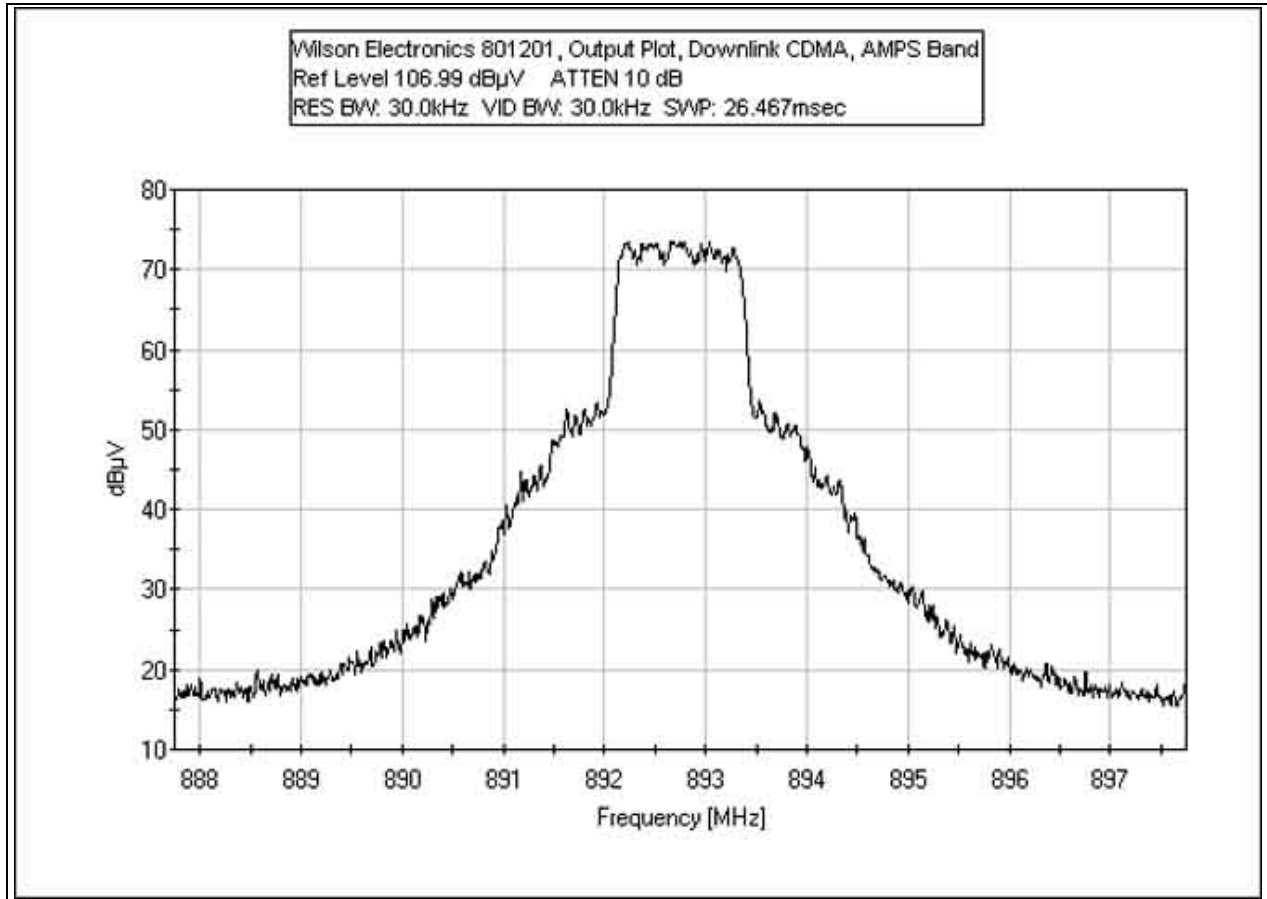
INPUT UPLINK GSM - AMPS BAND



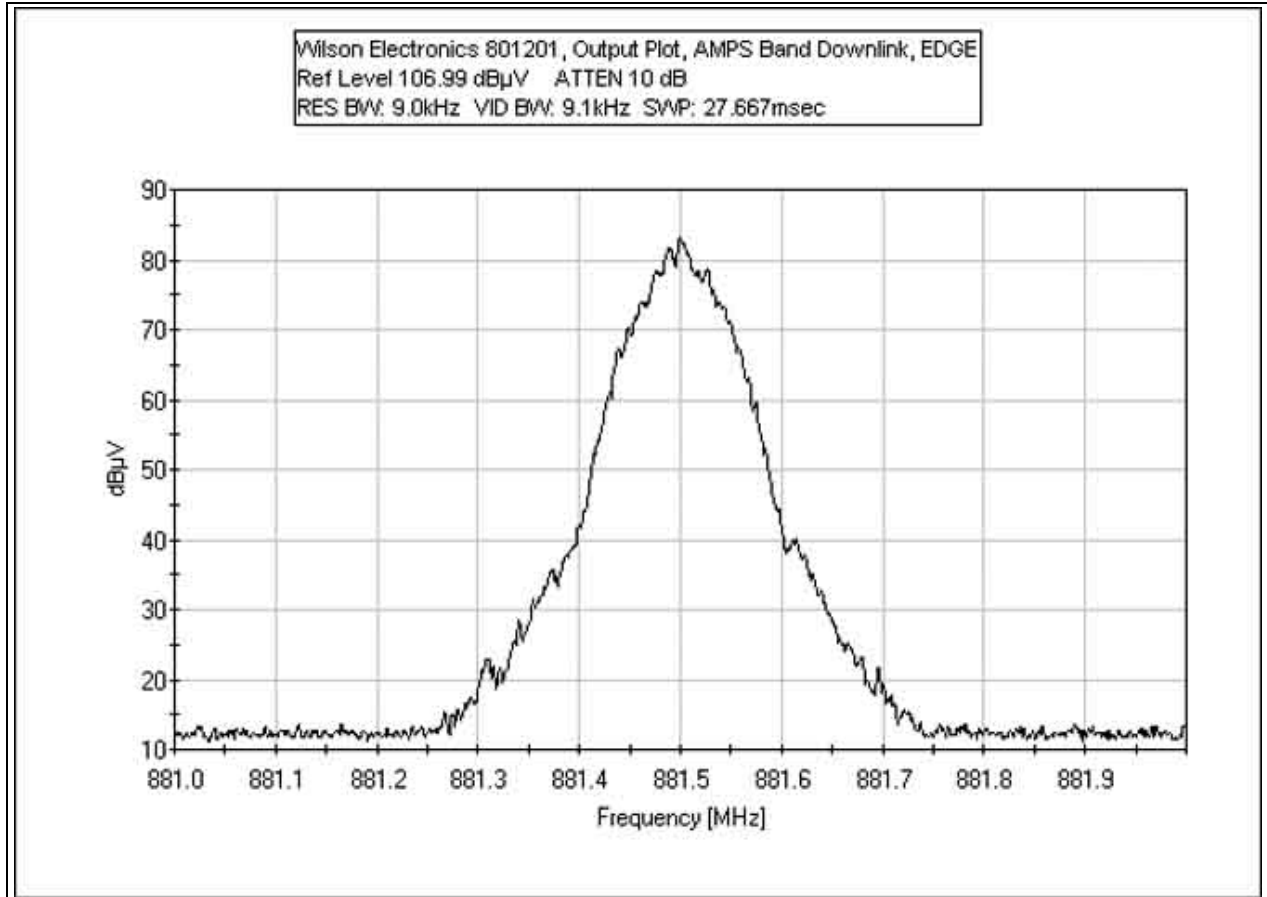
OUTPUT DOWNLINK AMPS - AMPS BAND



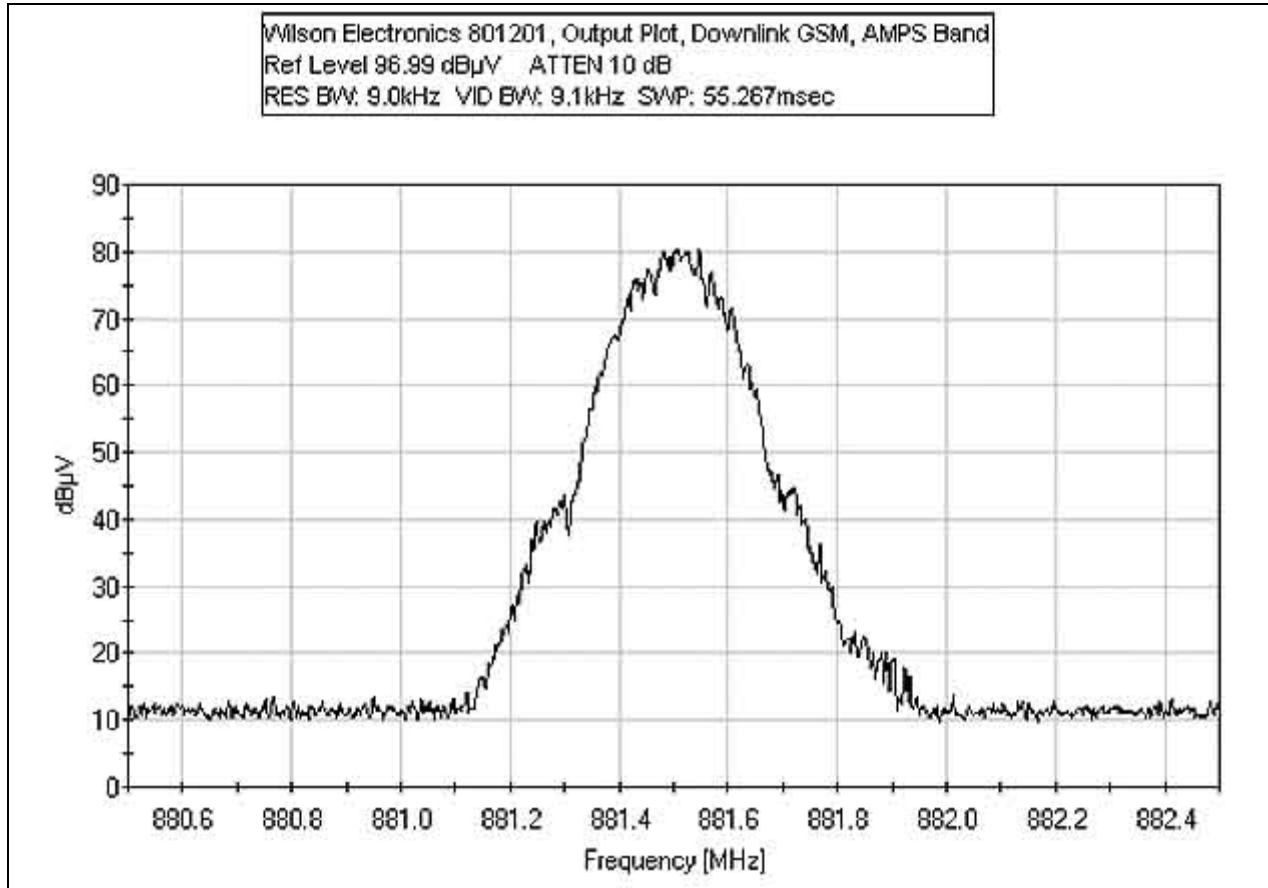
OUTPUT DOWNLINK CDMA - AMPS BAND



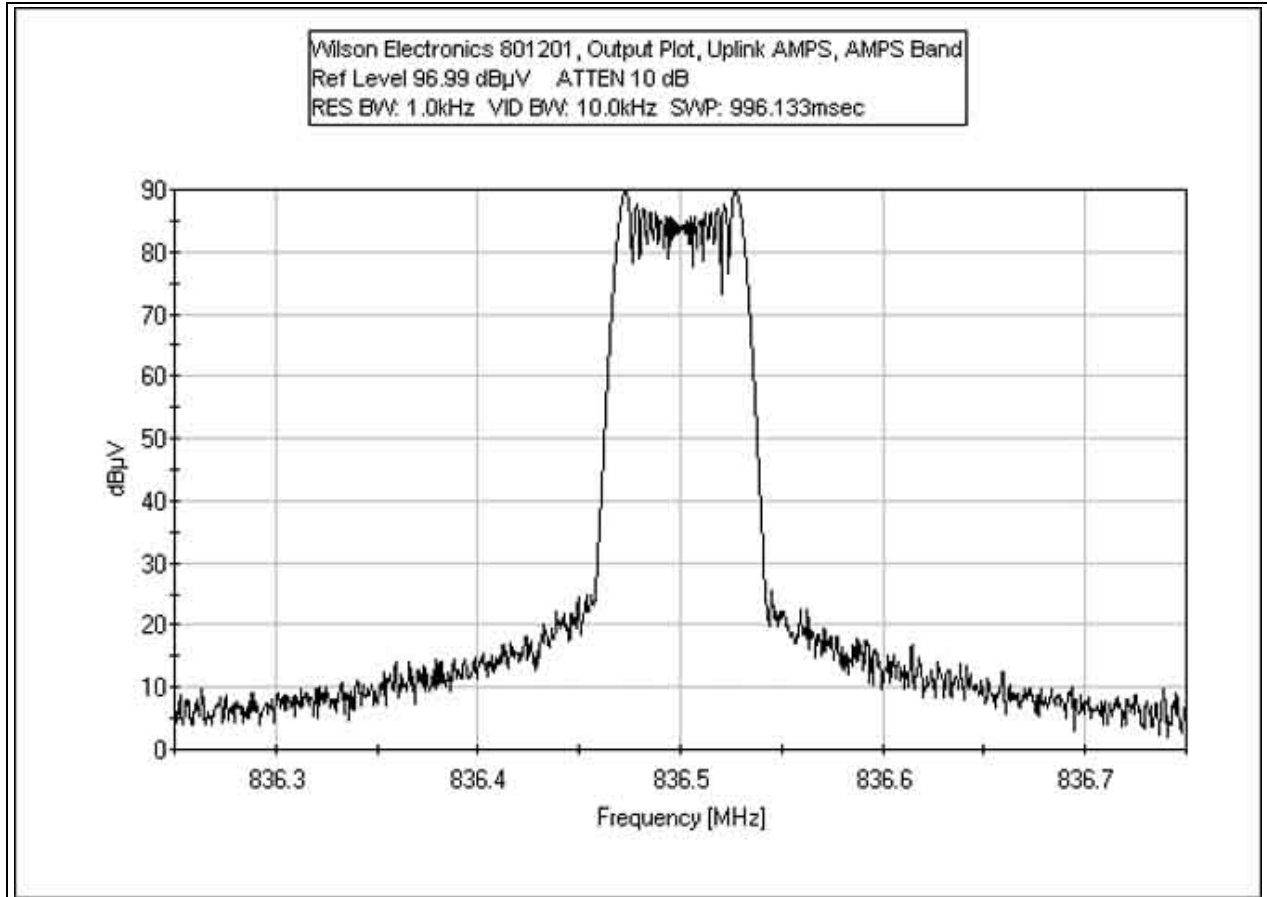
OUTPUT DOWNLINK EDGE - AMPS BAND



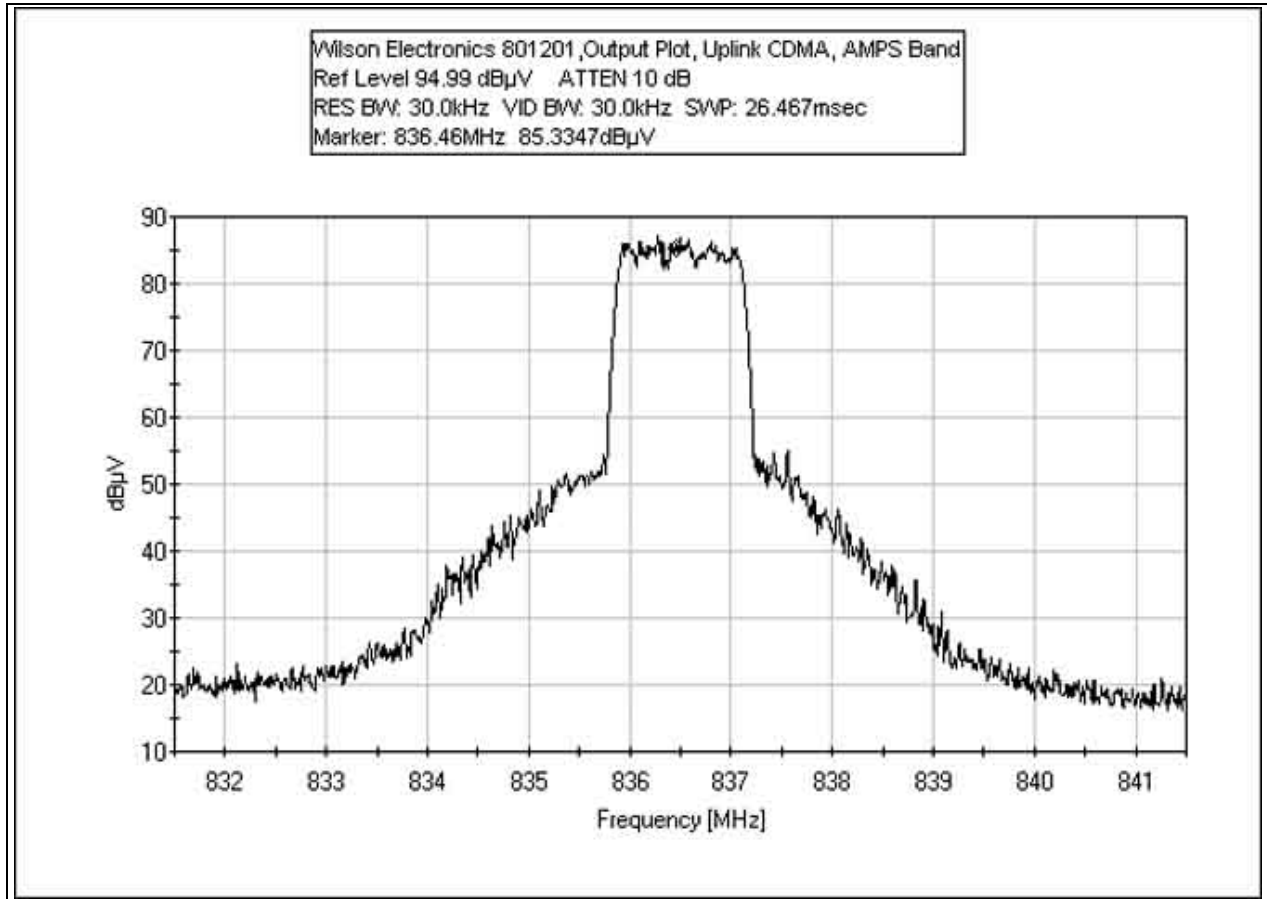
OUTPUT DOWNLINK GSM - AMPS BAND



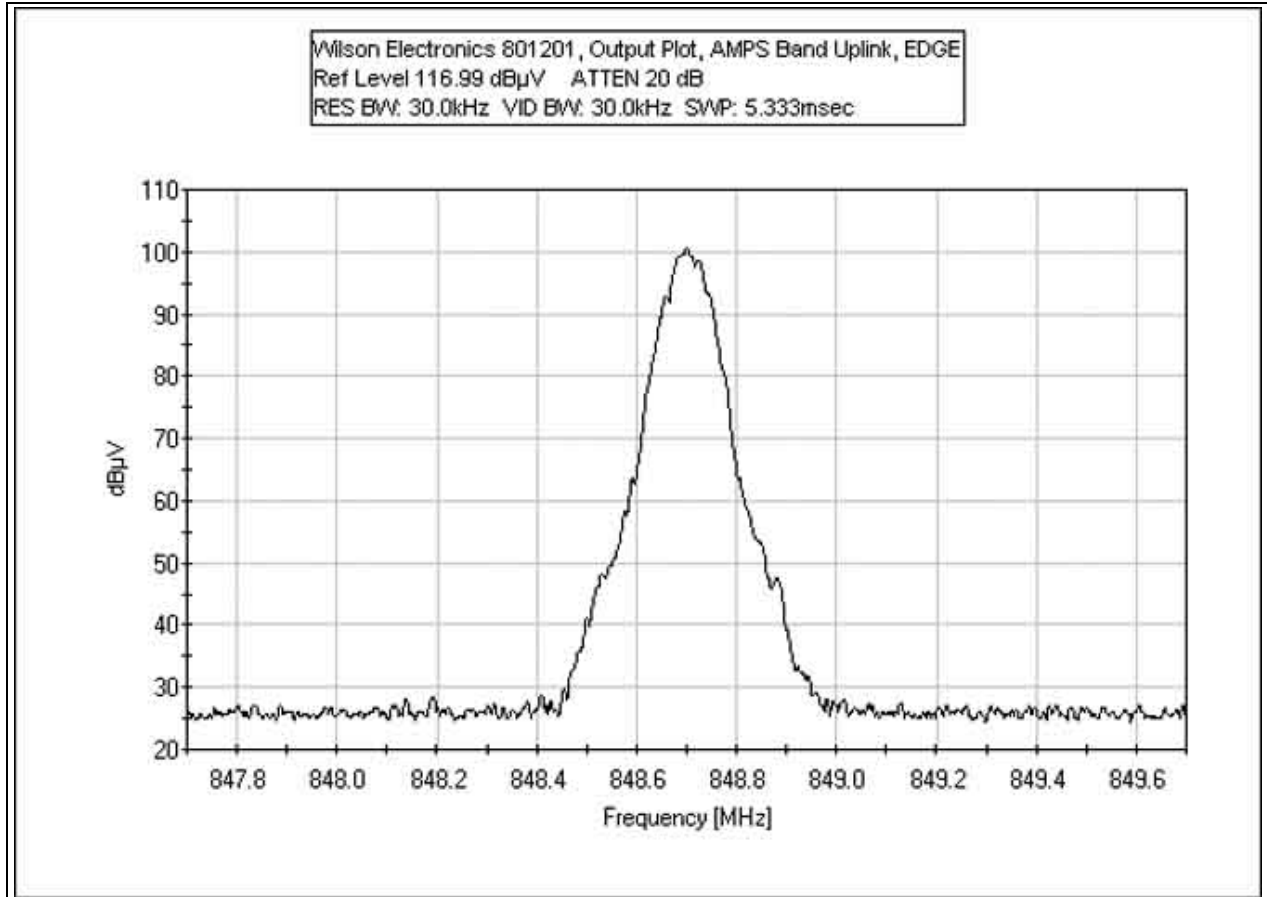
OUTPUT UPLINK AMPS - AMPS BAND



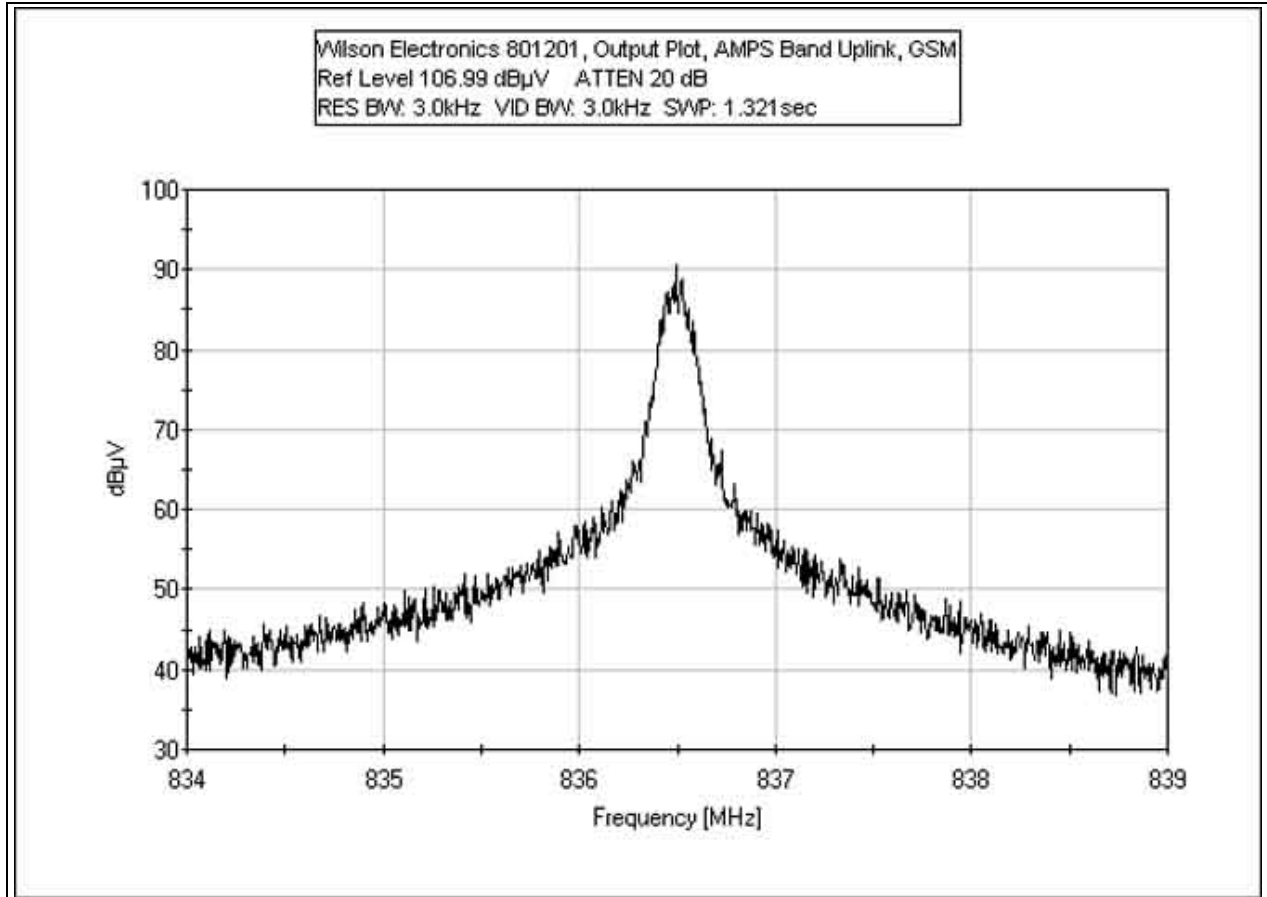
OUTPUT UPLINK CDMA - AMPS BAND



OUTPUT UPLINK EDGE - AMPS BAND



OUTPUT UPLINK GSM - AMPS BAND



Test Equipment:

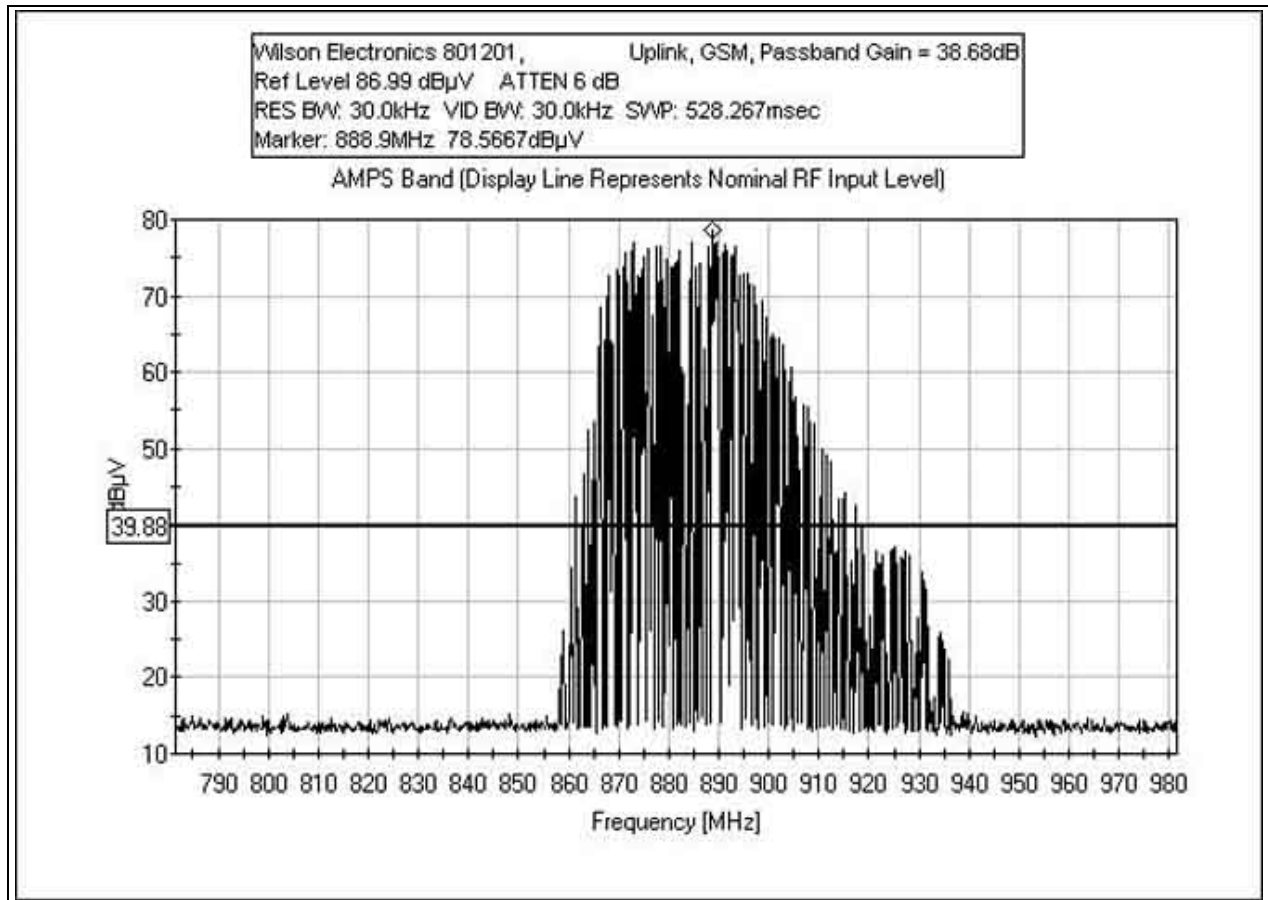
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

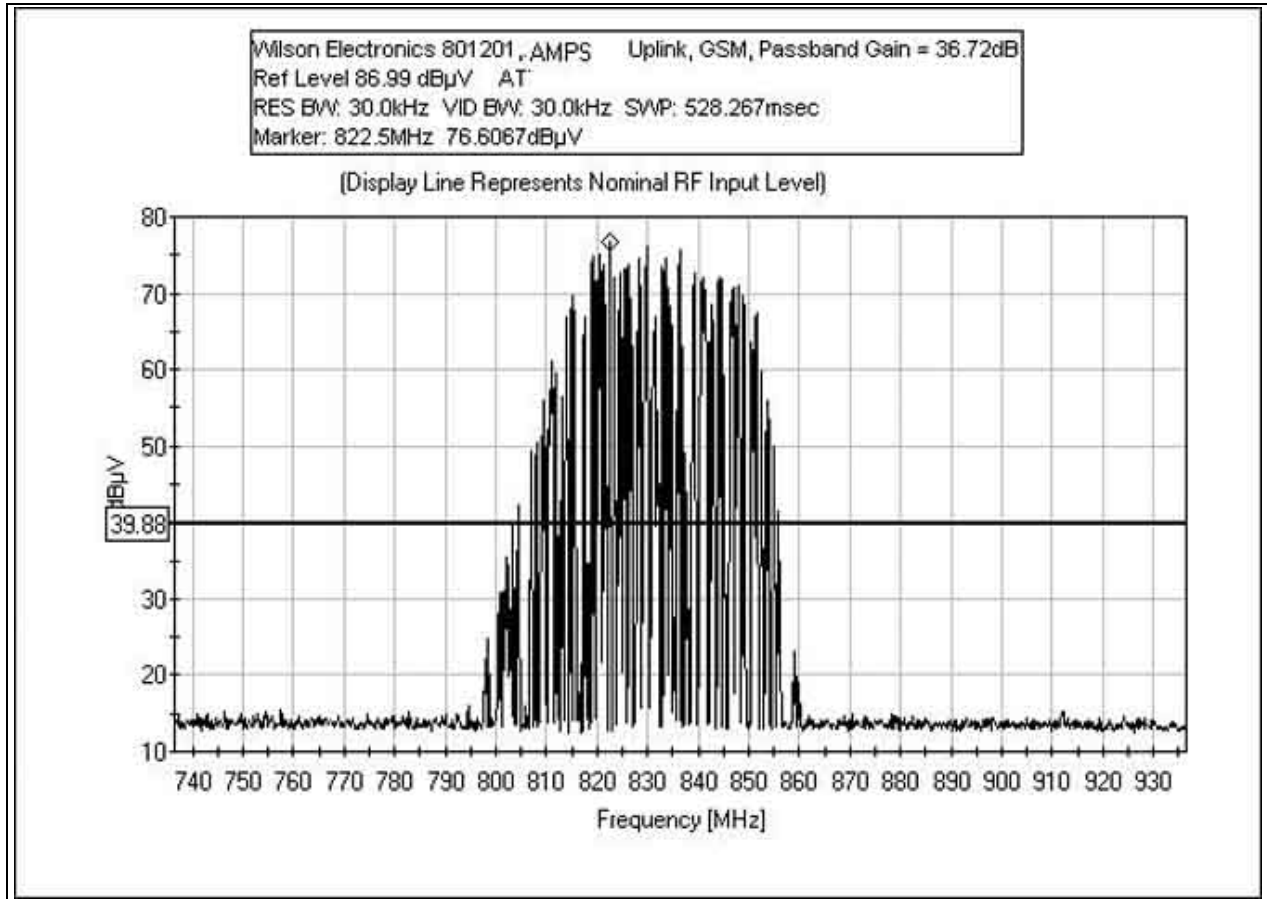


RSS-131 DOWNLINK PASSBAND GAIN GSM

Test Conditions: EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input.



RSS-131 UPLINK PASSBAND GAIN GSM



Test Equipment:

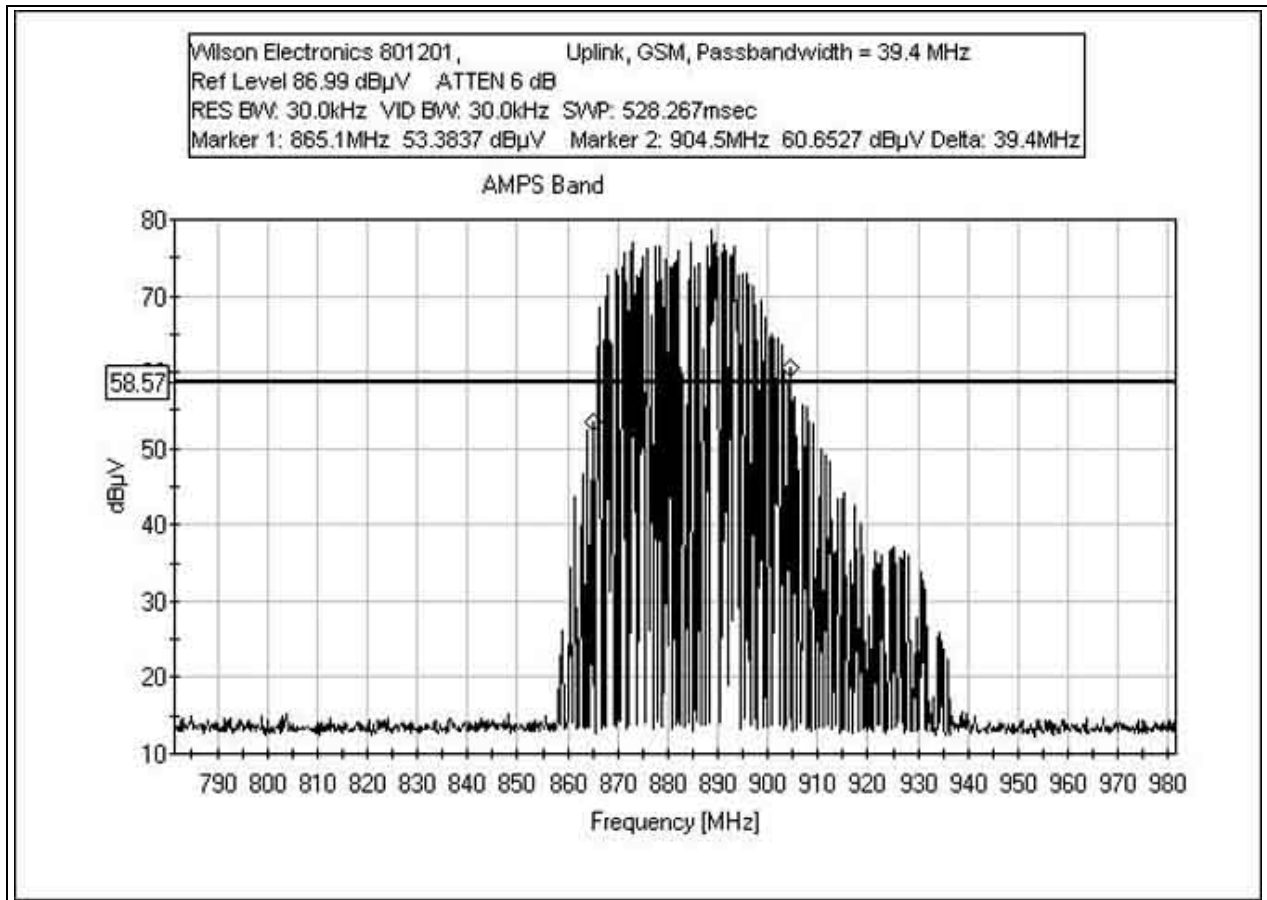
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949		05/09/2003	05/09/2005	P01572
25-A-MFN-30				

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

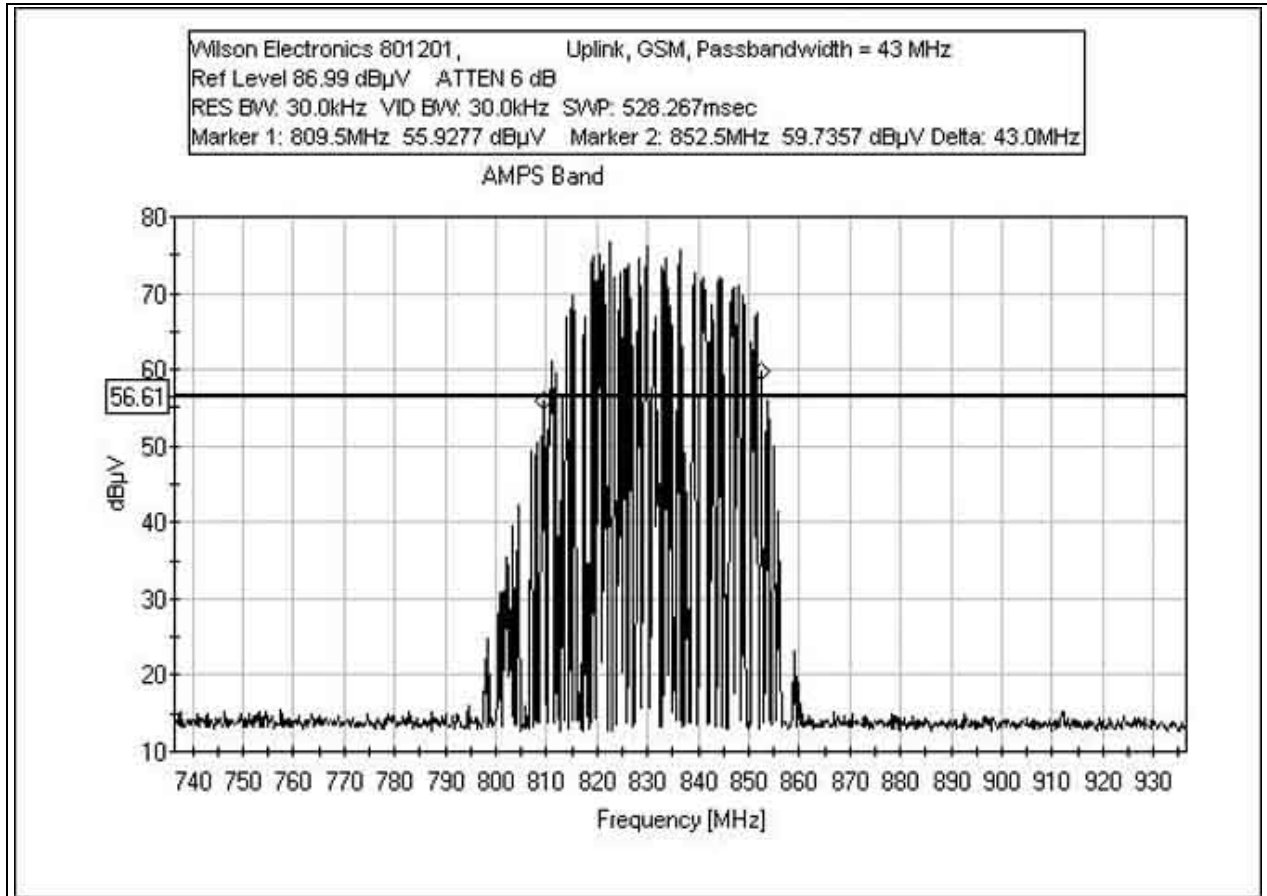


RSS-131 DOWNLINK PASSBANDWIDTH GSM

Test Conditions: EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input.



RSS-131 UPLINK PASSBANDWIDTH GSM



PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

