



**WILSON ELECTRONICS TEST REPORT**

**FOR THE**

**MOBILE WIRELESS CELLULAR/PCS  
SMARTTECH AMPLIFIER, 801201-A**

**FCC PART 24 & RSS-131**

**COMPLIANCE**

**DATE OF ISSUE: JANUARY 17, 2006**

**PREPARED FOR:**

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

P.O. No.: DBW801201-3  
W.O. No.: 84511

**PREPARED BY:**

Mary Ellen Clayton  
CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

Date of test: March 21 – December 20, 2005

**Report No.: FC06-012**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** March 21 – December 20, 2005

**DATE OF RECEIPT:** March 21, 2005

**FREQUENCY RANGE TESTED:** 30MHz-20GHz

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

**REPRESENTATIVE:** Riki Kline

**TEST LOCATION:** CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

**TEST METHOD:** FCC Part 24, TIA/EIA 603 & RSS-131

**PURPOSE OF TEST:** The EUT contains both uplink and downlink capabilities and was previously certified as model 801201. The EUT was modified as model 801201-A with only changes to the uplink portion of the EUT. This report contains new testing for the uplink and the old downlink data (identified as the old model 801201) because that portion of the EUT has not changed. Therefore this report shows complete compliance for the Mobile Wireless Cellular/PCS SmartTech Amplifier, 801201-A with the requirements for FCC Part 24 & RSS-131 devices.

**FCC TO CANADA STANDARD CORRELATION MATRIX**

Canadian Standard	Canadian Section	FCC Standard	FCC Section	Test Description
RSS-131	5.4	N/A	N/A	External Controls
RSS-131	5.5	47 CFR	1.1307	RF Exposure
RSS-131	6.1	N/A	N/A	Passband Gain and Bandwidth
RSS-131	6.2	47 CFR	24.232	RF Power Output
RSS-131	6.3	TIA/EIA	603	Non-Linearity (Intermodulation Attenuation)
RSS-131	6.4	47 CFR	24.238	Spurious Emissions Limitations
RSS-131	6.5	N/A	N/A	Frequency Stability (Band Translators)
IC 3082-D		784962		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:**



Mike Wilkinson, Lab Manager



Randy Clark, EMC Engineer



Ryan Rutledge, EMC Test Technologist



## EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

The following equipment name has been used during testing by CKC Laboratories:

### **In Vehicle Wireless Dual Band Smart Amplifier**

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

### **Mobile Wireless Cellular/PCS SmartTech Amplifier**

The models number 801201 and 801201-A both appear in this test report. The manufacturer declares that the difference between 801201 and 801201-A is a redesign of the uplink path only and that the downlink circuitry and schematics remain unchanged. Therefore, the data regarding only the downlink path of the 801201 is used to demonstrate compliance for the 801201-A. This test report contains the new data for the uplink path of the 801201-A with which compliance is demonstrated.

## EQUIPMENT UNDER TEST

### Mobile Wireless Cellular/PCS SmartTech Amplifier

Manuf: Wilson Electronics  
Model: 801201  
Serial: 8012010000006  
FCC ID: PWO8012SM

### Mobile Wireless Cellular/PCS SmartTech Amplifier

Manuf: Wilson Electronics  
Model: 801201-A  
Serial: 8012010112702  
FCC ID: PWO8012ASM (pending)



## PERIPHERAL DEVICES

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

### Signal Generator

Manuf: HP  
Model: E4433B  
Serial: US38440697  
FCC ID: DoC

### DC Power Supply

Manuf: Topward  
Model: TPS-2000  
Serial: 920035  
FCC ID: NA

### Signal Generator

Manuf: HP  
Model: E4432B  
Serial: MY41000298 &  
US40052968  
FCC ID: DoC

### Load

Manuf: JFW  
Model: 50T-022  
Serial: P04243  
FCC ID: DoC

**TEMPERATURE AND HUMIDITY DURING TESTING**

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

**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**

GXW, G7W, F9W

**FCC 2.1033 (c)(5) FREQUENCY RANGE**

Downlink 1930-1990MHz, Uplink 1850-1910MHz

**FCC 2.1033 (c)(6) OPERATING POWER**

Downlink, 8.31 mWatts (EIRP), Uplink, 1.81 Watts (EIRP)

**FCC 2.1033 (c)(7) MAXIMUM POWER RATING**

Downlink 15 mW, Uplink 2 Watts EIRP

**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**

GSM, EDGE, CDMA



**FCC 2.1033(c)(14)/2.1046/24.232 - RF POWER OUTPUT**

EUT is a bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz.

**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. Minimum RF output power of 0.00 Watts is achieved with a 0.00 Watt RF input signal.

**Uplink Output Ratings:**

CDMA and TDMA (EDGE & GSM) formats: 2Watts EIRP

**Downlink Output Ratings:**

All: 15mW

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

**Downlink – Conducted Power**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (milliWatts)</i>
1931.25	CDMA	6.60
1960.0	CDMA	9.77
1988.75	CDMA	8.71
1930.28	GSM	6.30
1960.0	GSM	9.77
1989.72	GSM	8.51
1930.28	EDGE	6.30
1960.0	EDGE	9.12
1989.72	EDGE	8.51



**Downlink – EIRP Power**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (milliWatts)</i>
1931.25	CDMA	5.62
1960.0	CDMA	8.31
1988.75	CDMA	7.41
1930.28	GSM	5.37
1960.0	GSM	8.31
1989.72	GSM	7.24
1930.3	EDGE	5.37
1960.0	EDGE	7.76
1989.7	EDGE	6.91

Note: Downlink EIRP calculated using 3.2 dBi gain antenna – 3.9 dB coax loss = -0.7 dBi as declared by Wilson Electronics.

**Uplink – Conducted Power**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
1851.25	CDMA	1.66
1880.0	CDMA	1.99
1908.75	CDMA	1.17
1850.28	GSM	1.62
1880.0	GSM	1.66
1909.72	GSM	1.02
1850.28	EDGE	1.51
1880.0	EDGE	1.62
1909.72	EDGE	1.07

**Uplink – EIRP**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
1851.25	CDMA	1.50
1880.0	CDMA	1.81
1908.75	CDMA	1.06
1850.28	GSM	1.47
1880.0	GSM	1.50
1909.72	GSM	0.93
1850.28	EDGE	1.37
1880.0	EDGE	1.47
1909.72	EDGE	0.97

The above values are calculated based on the gain of the antenna minus the manufacturer's declared nominal cable loss of 6.55dB:  
 $6.12\text{dBi} - 6.55\text{dB} = -0.43\text{dBi}$

**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**



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

**Not applicable to this unit.**

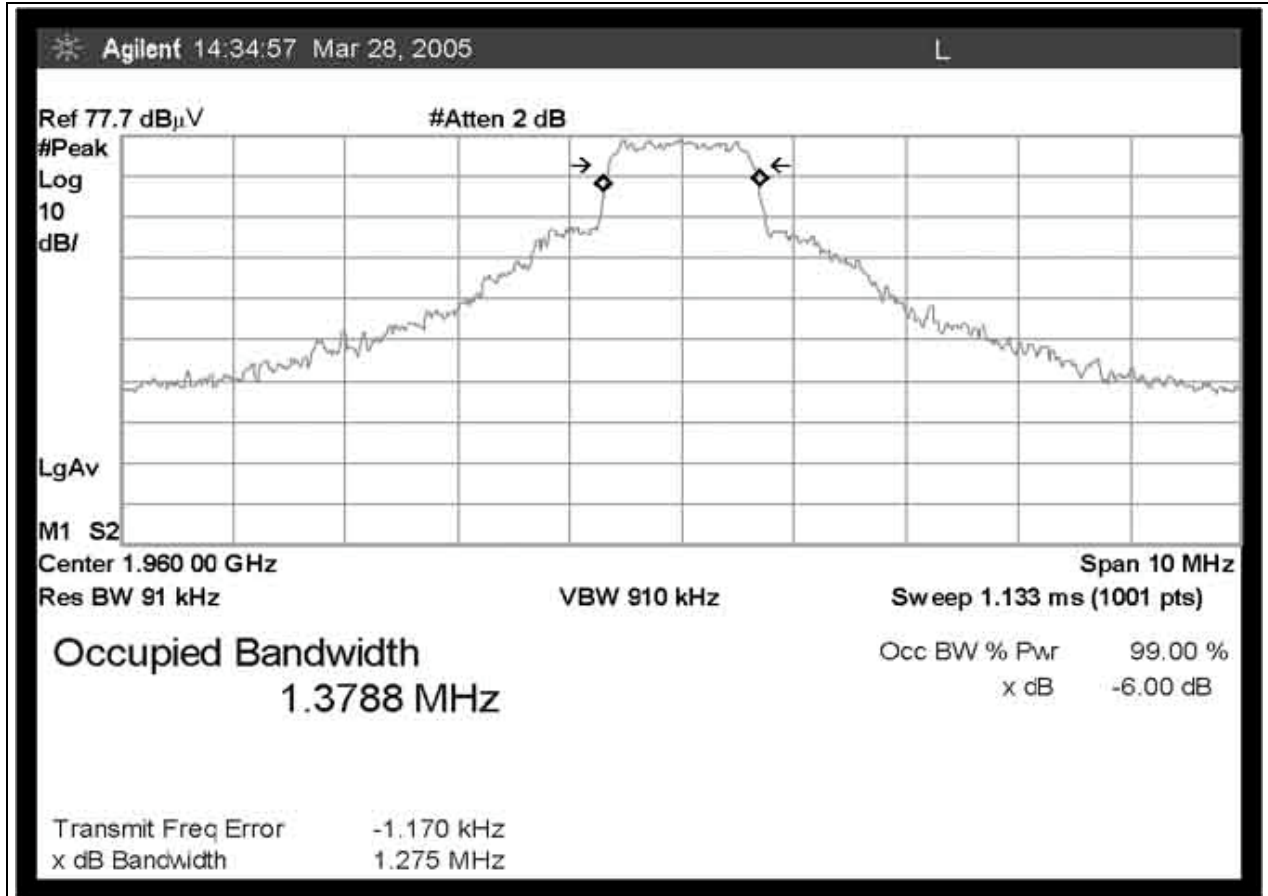
**FCC 2.1033(c)(14)/2.1047(b) MODULATION CHARACTERISTICS- Modulation  
Limiting Response**

**Not applicable to this unit.**

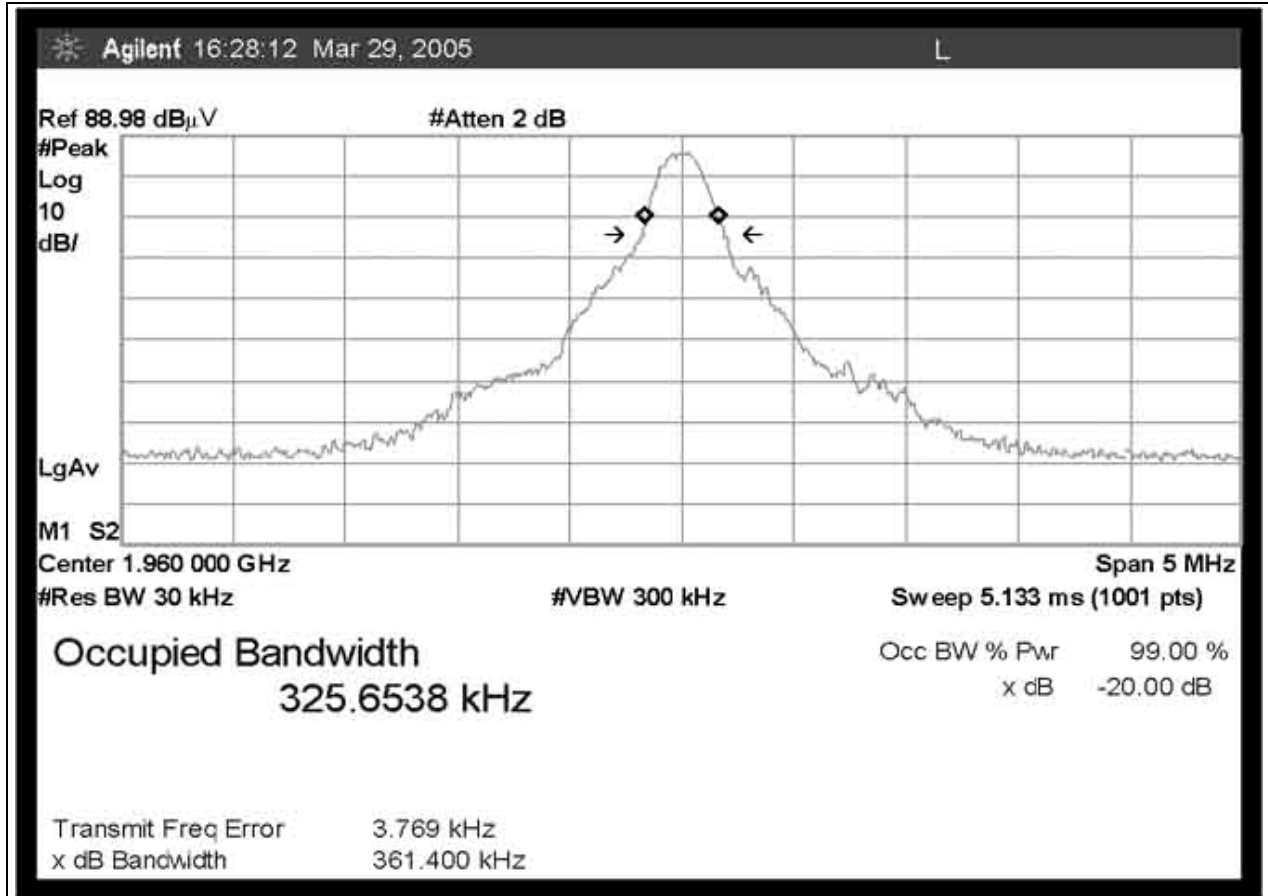
**FCC 2.1033(c)(14)/2.1049(i)- OCCUPIED BANDWIDTH**

**Test Conditions:** EUT is a bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. 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. Frequency Range Investigated: 30MHz to 20GHz.

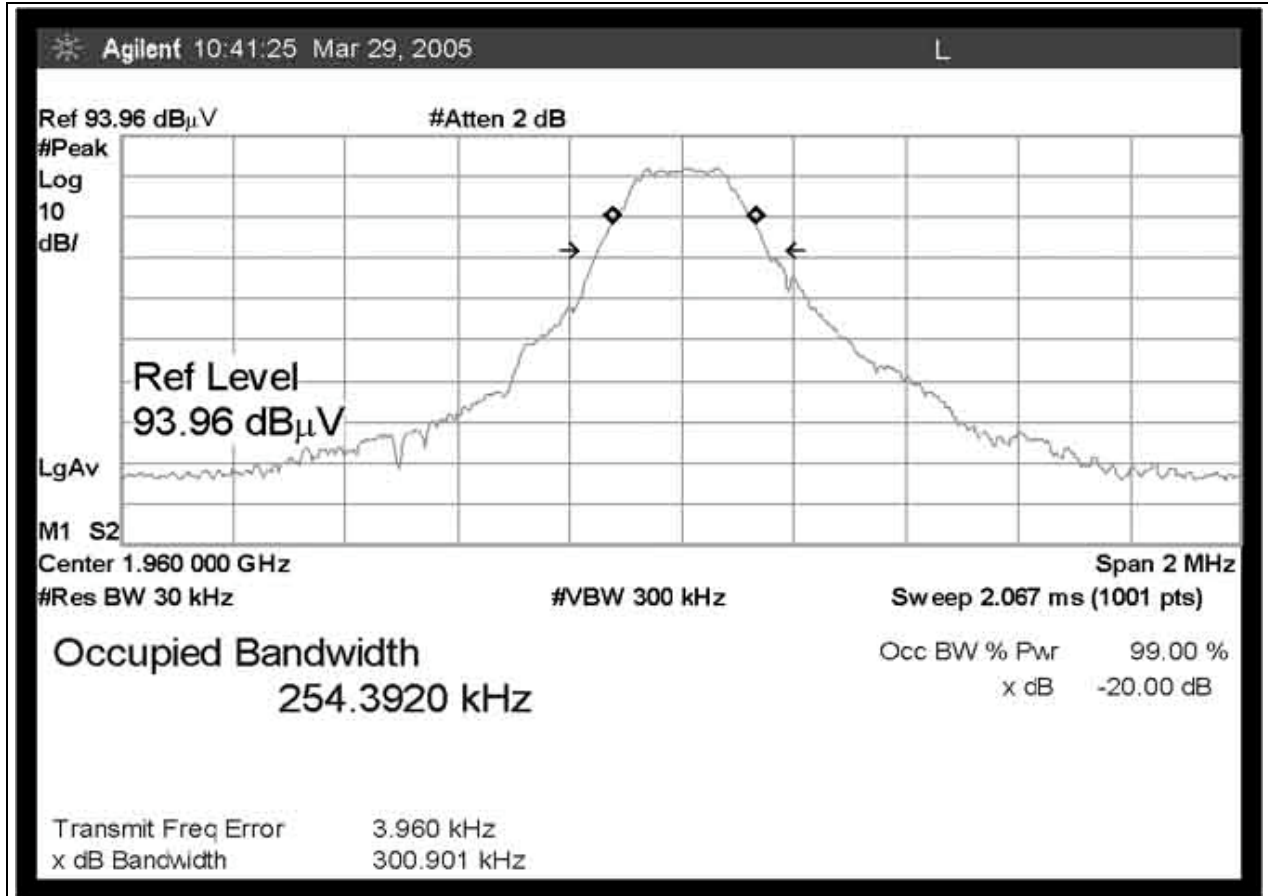
FCC 2.1049 DOWNLINK OCCUPIED BANDWIDTH CDMA - PCS BAND



FCC 2.1049 DOWNLINK OCCUPIED BANDWIDTH EDGE - PCS BAND



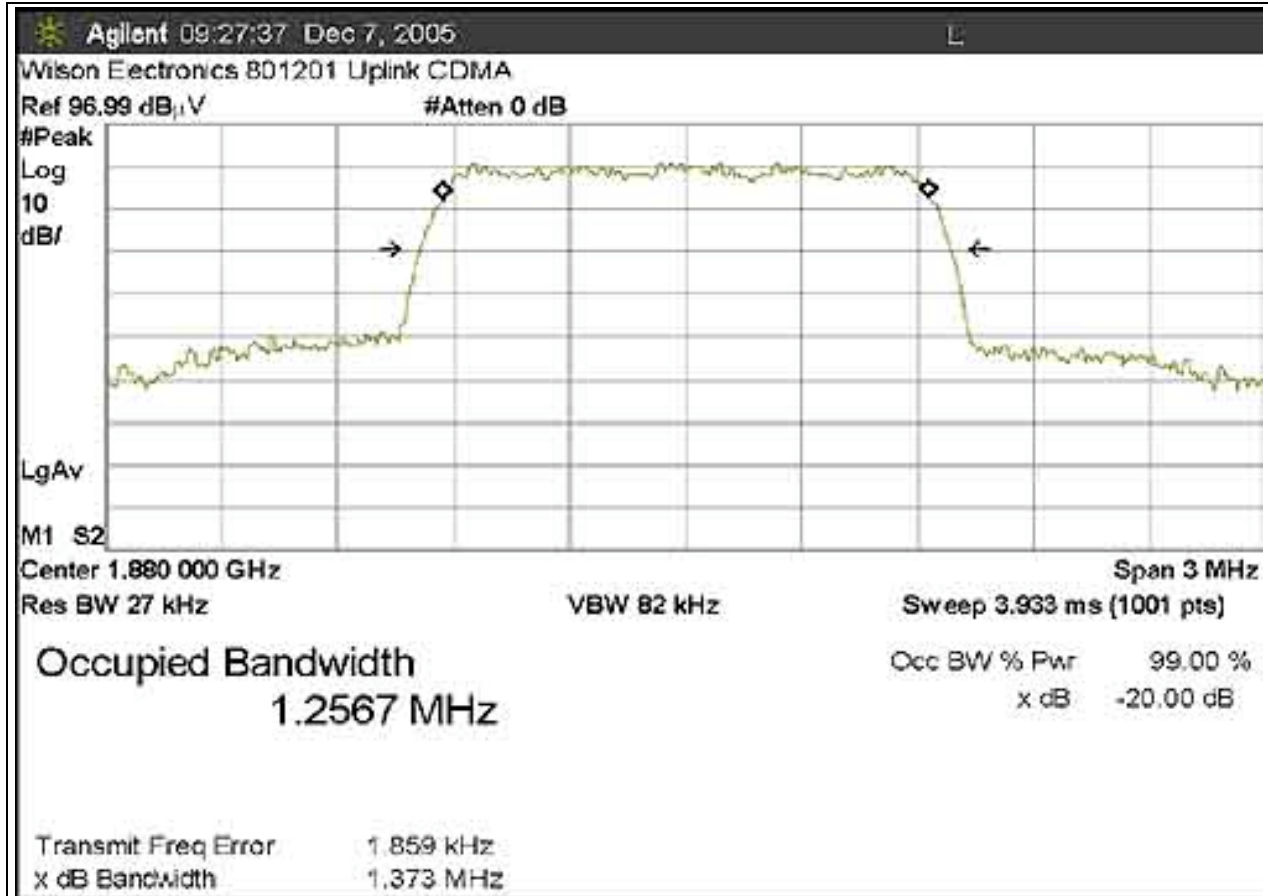
**FCC 2.1049 DOWNLINK OCCUPIED BANDWIDTH GSM - PCS BAND**



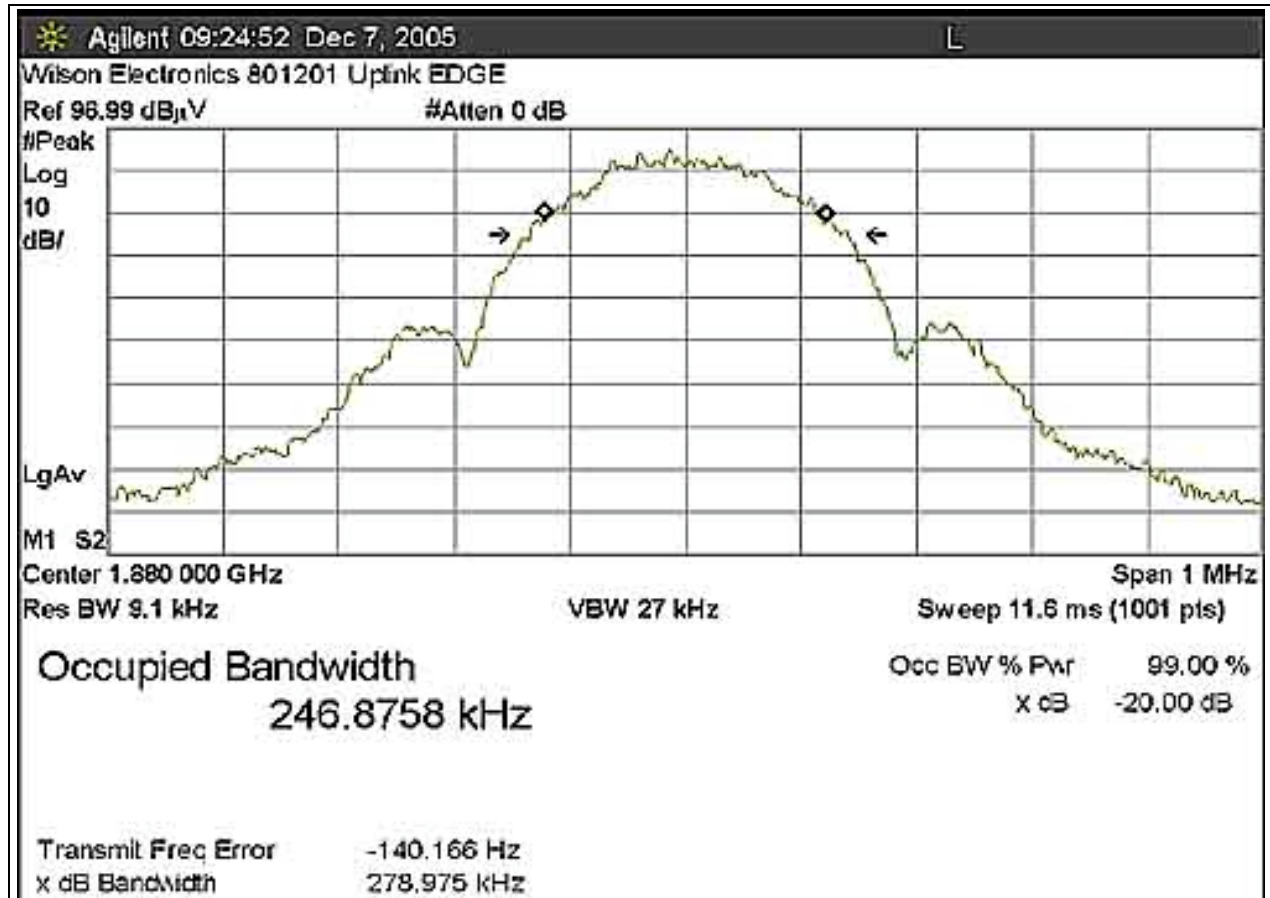
**Test Equipment:**

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

### FCC 2.1049 UPLINK OCCUPIED BANDWIDTH - CDMA

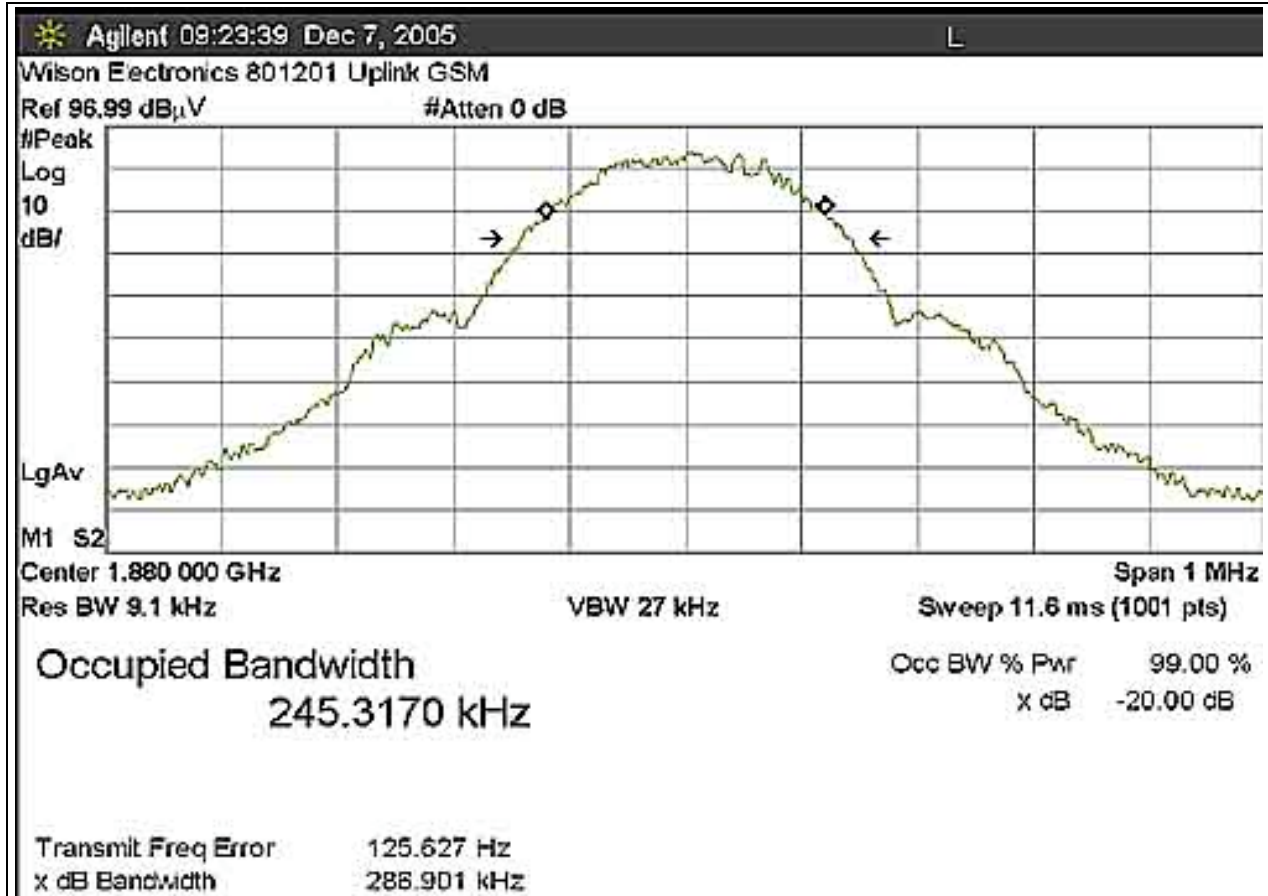


### FCC 2.1049 UPLINK OCCUPIED BANDWIDTH - EDGE





FCC 2.1049 UPLINK OCCUPIED BANDWIDTH - GSM



**Test Equipment:**

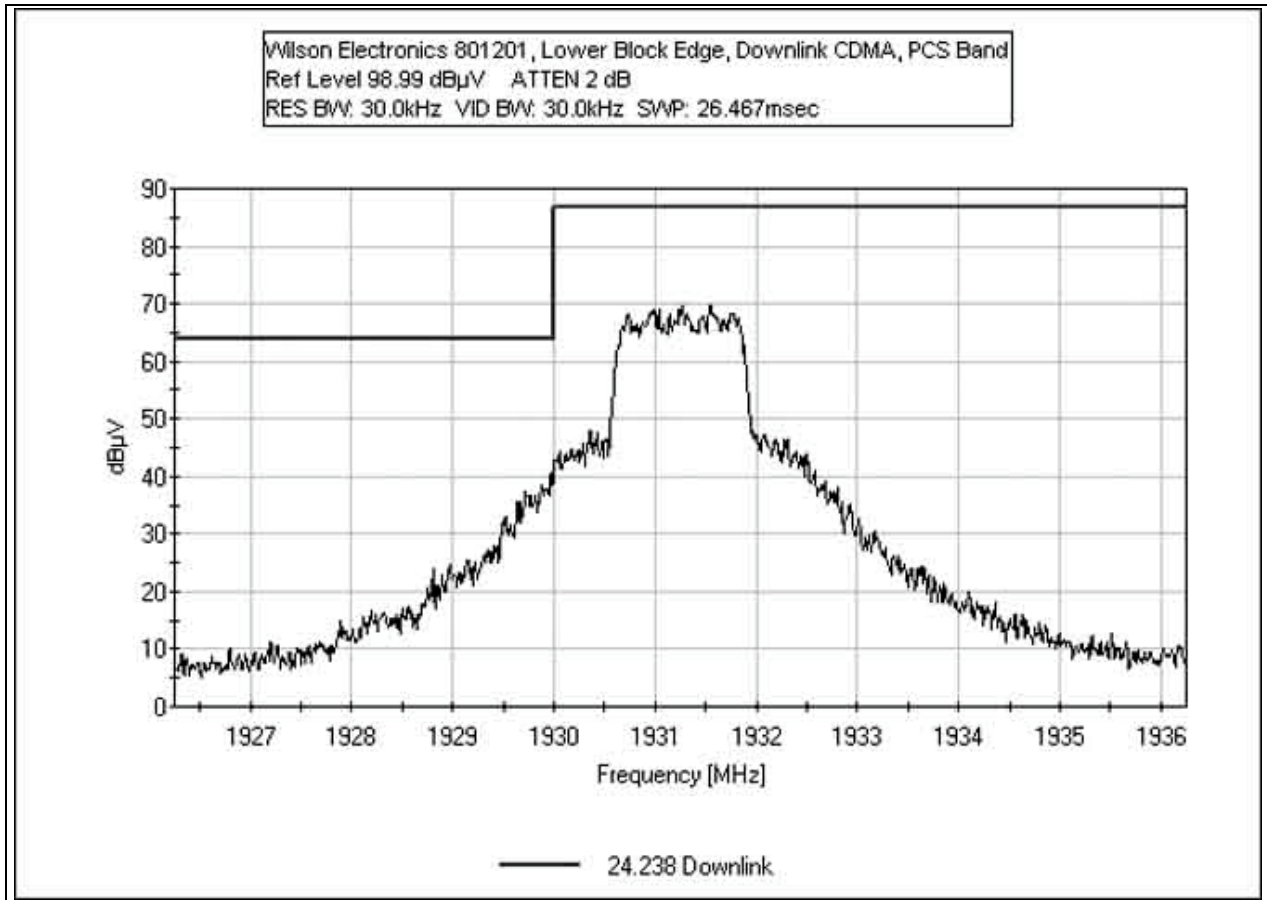
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**

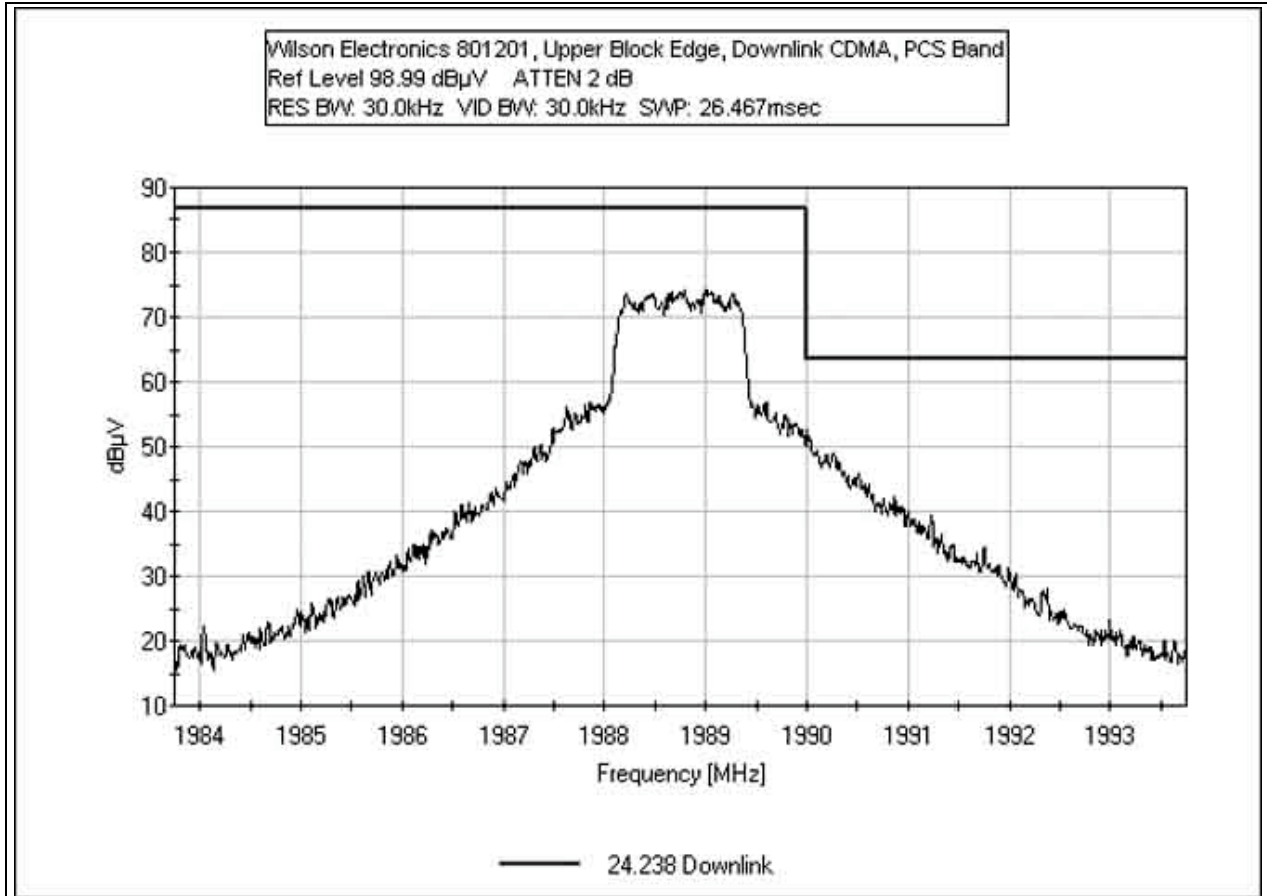


**FCC 2.1033(C)(14)/2.1051/24.238 - DOWNLINK LOWER BLOCK EDGE CDMA - PCS BAND**

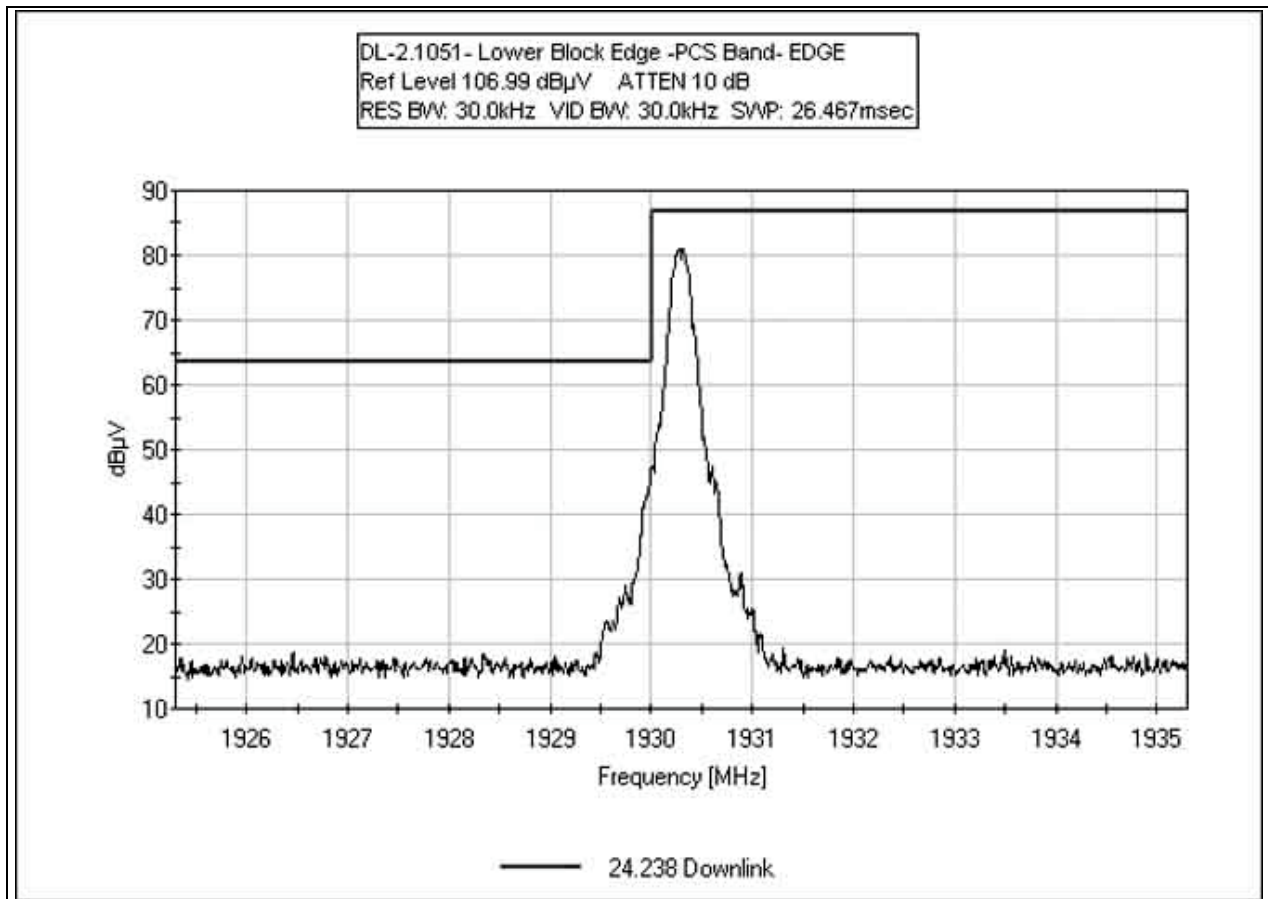
**Test Conditions:** EUT is a bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal 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. Frequency Range Investigated: 30MHz to 20GHz.



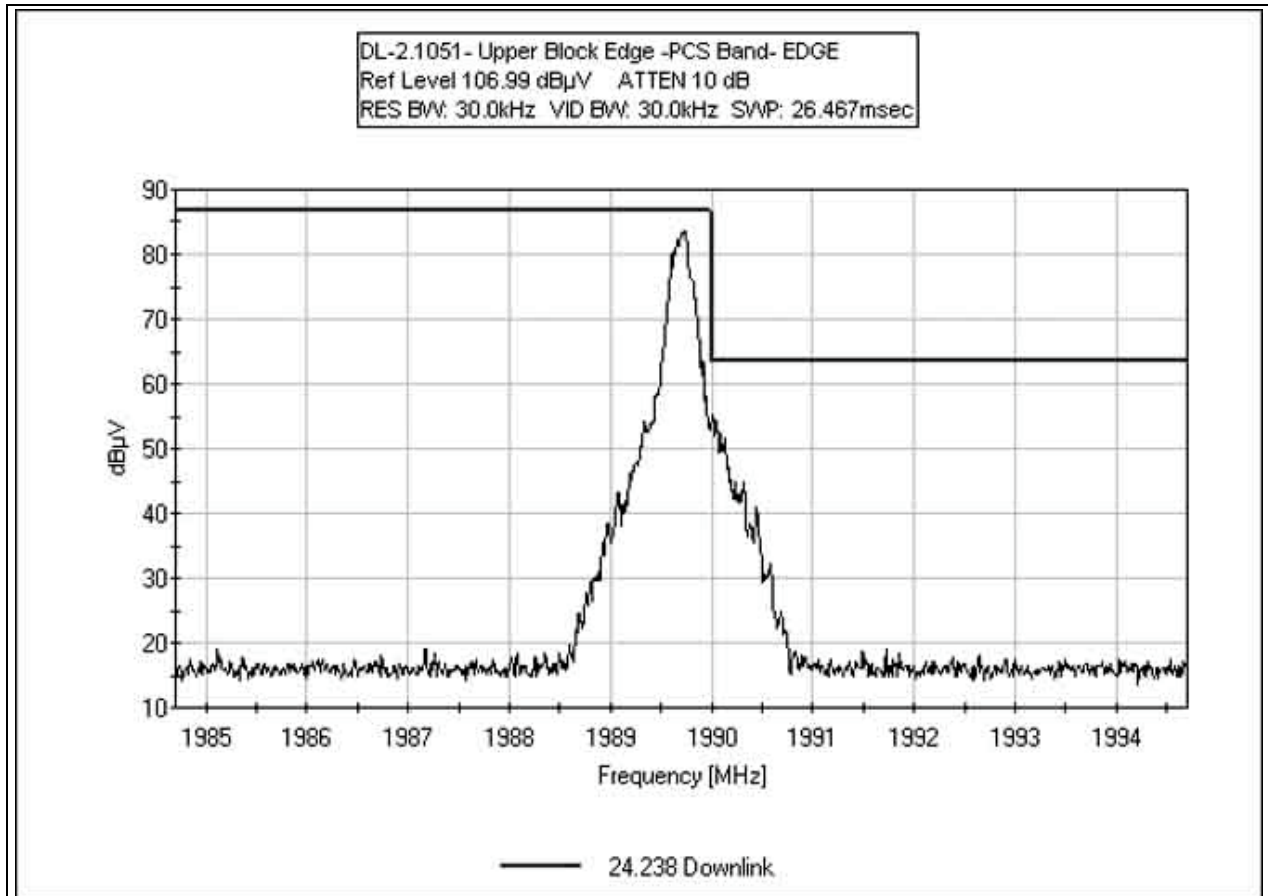
**FCC 2.1033(C)(14)/2.1051/24.238 - DOWNLINK UPPER BLOCK EDGE CDMA - PCS BAND**



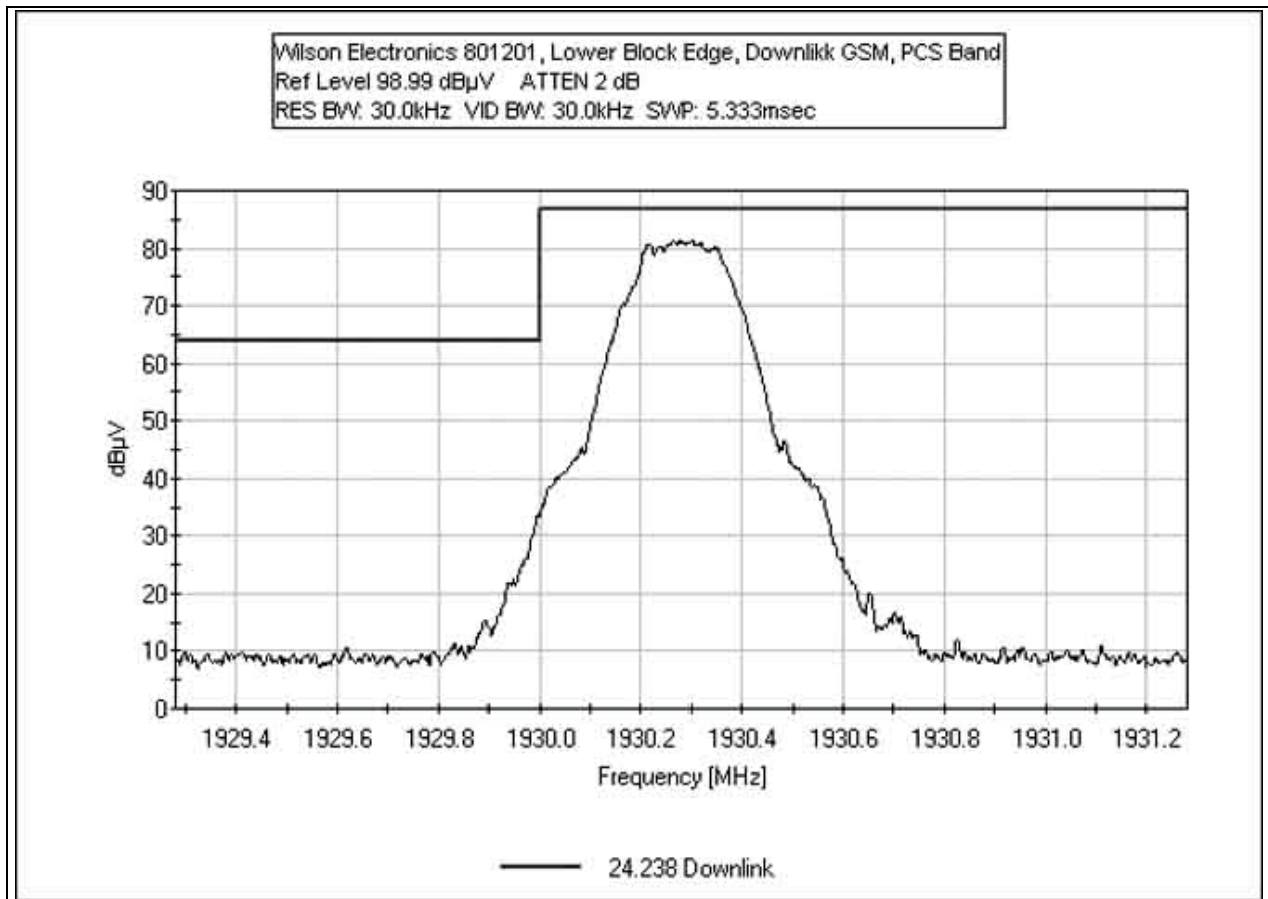
**FCC 2.1033(C)(14)/2.1051/24.238 - DOWNLINK LOWER BLOCK EDGE EDGE - PCS BAND**



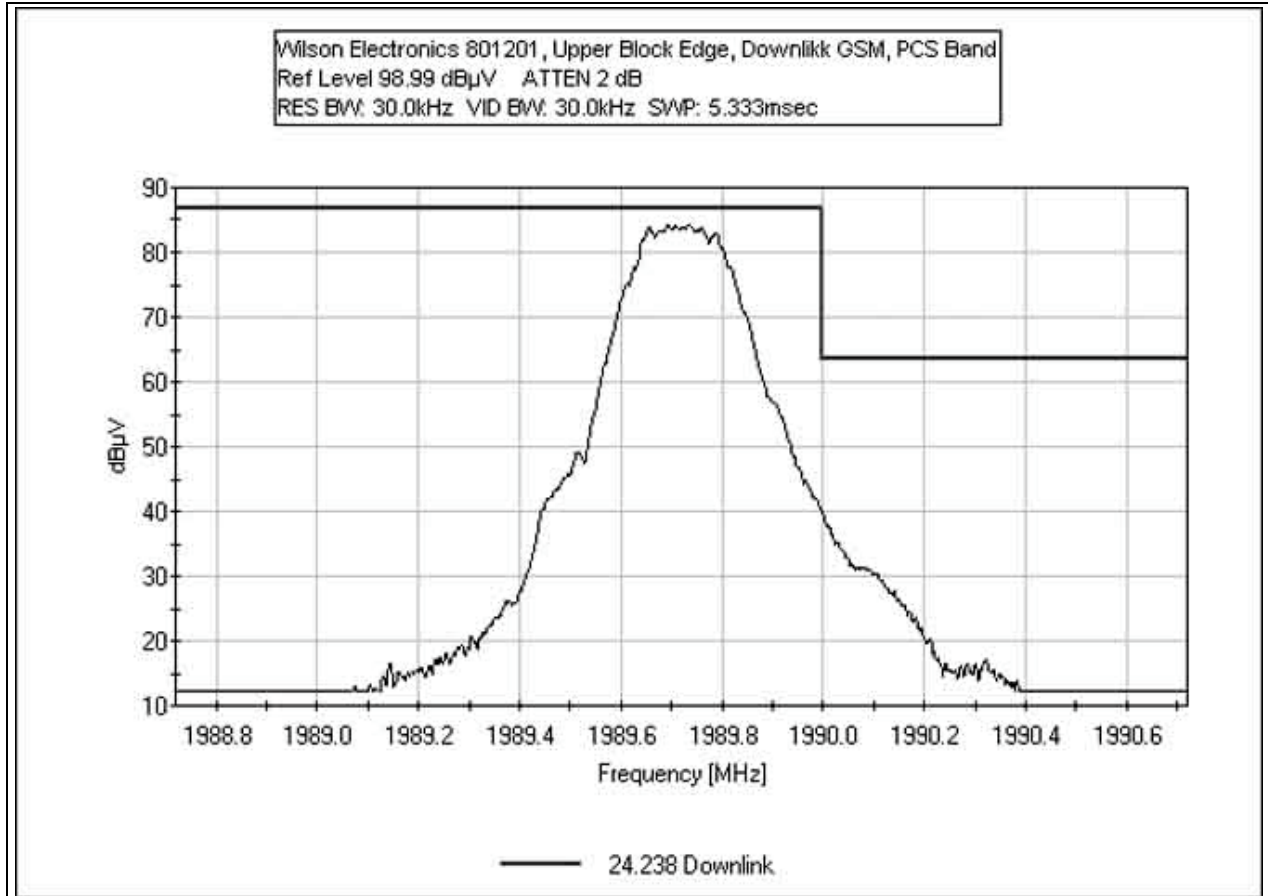
**FCC 2.1033(C)(14)/2.1051/24.238 - DOWNLINK UPPER BLOCK EDGE EDGE - PCS BAND**



**FCC 2.1033(C)(14)/2.1051/24.238 - DOWNLINK LOWER BLOCK EDGE GSM - PCS BAND**



**FCC 2.1033(C)(14)/2.1051/24.238 - DOWNLINK UPPER BLOCK EDGE GSM - PCS BAND**



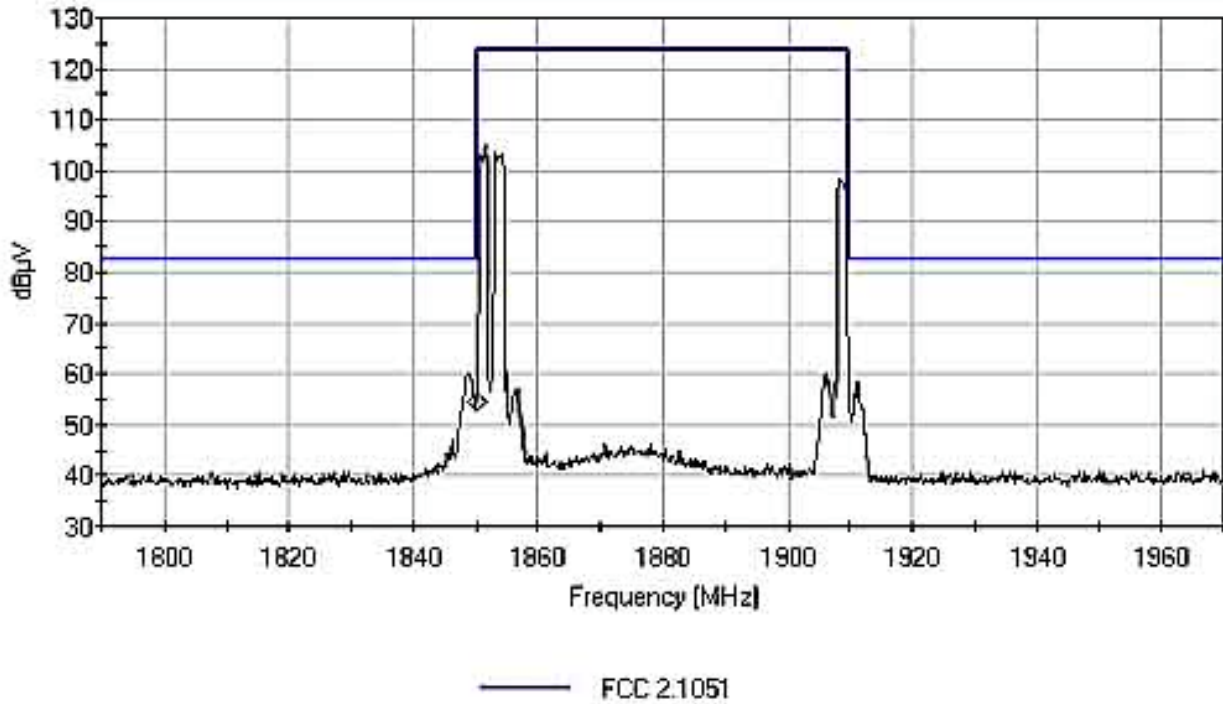
**Test Equipment:**

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

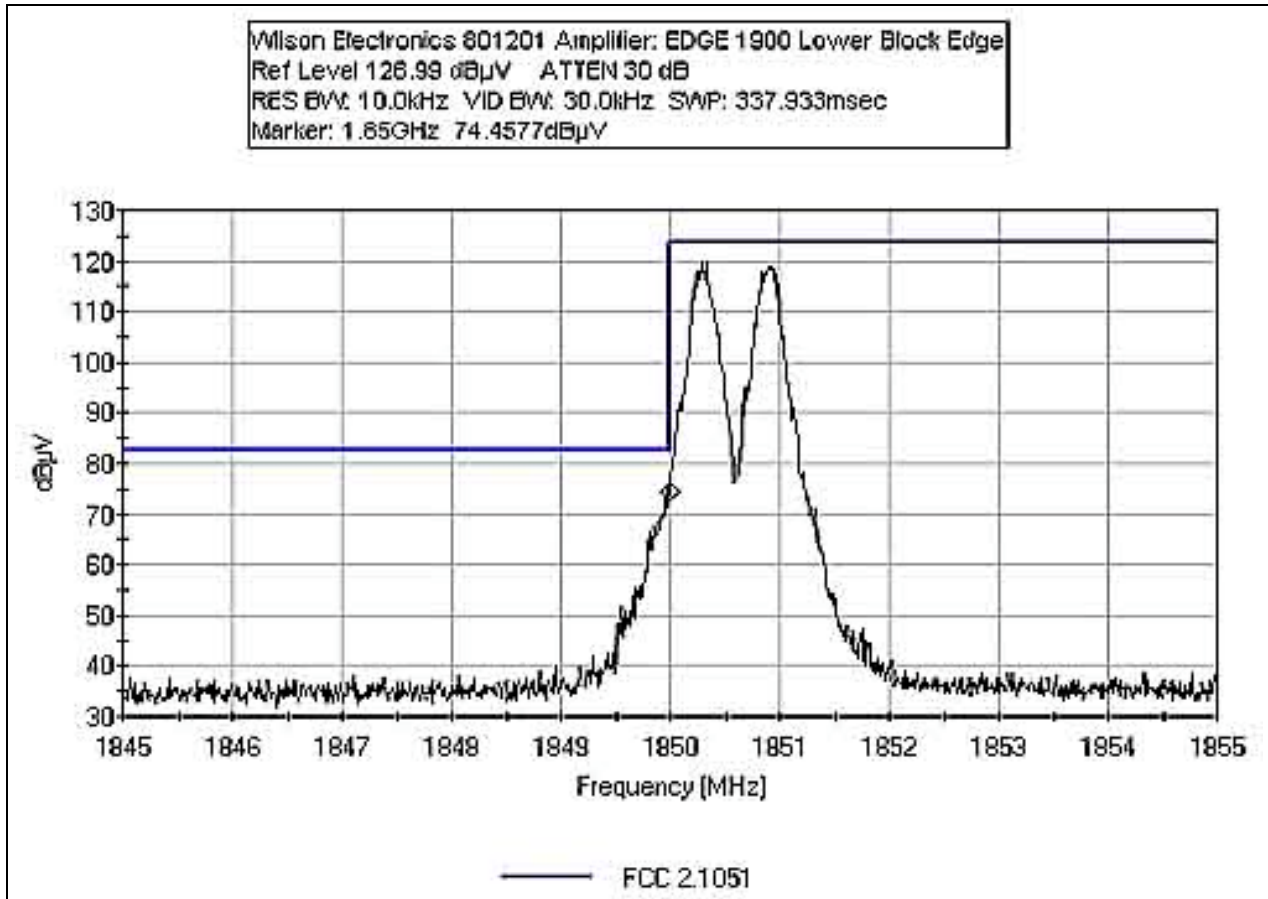


**FCC 2.1033(C)(14)/2.1051/24.238 - UPLINK INTERMODULATION AND BLOCK EDGE  
CDMA**

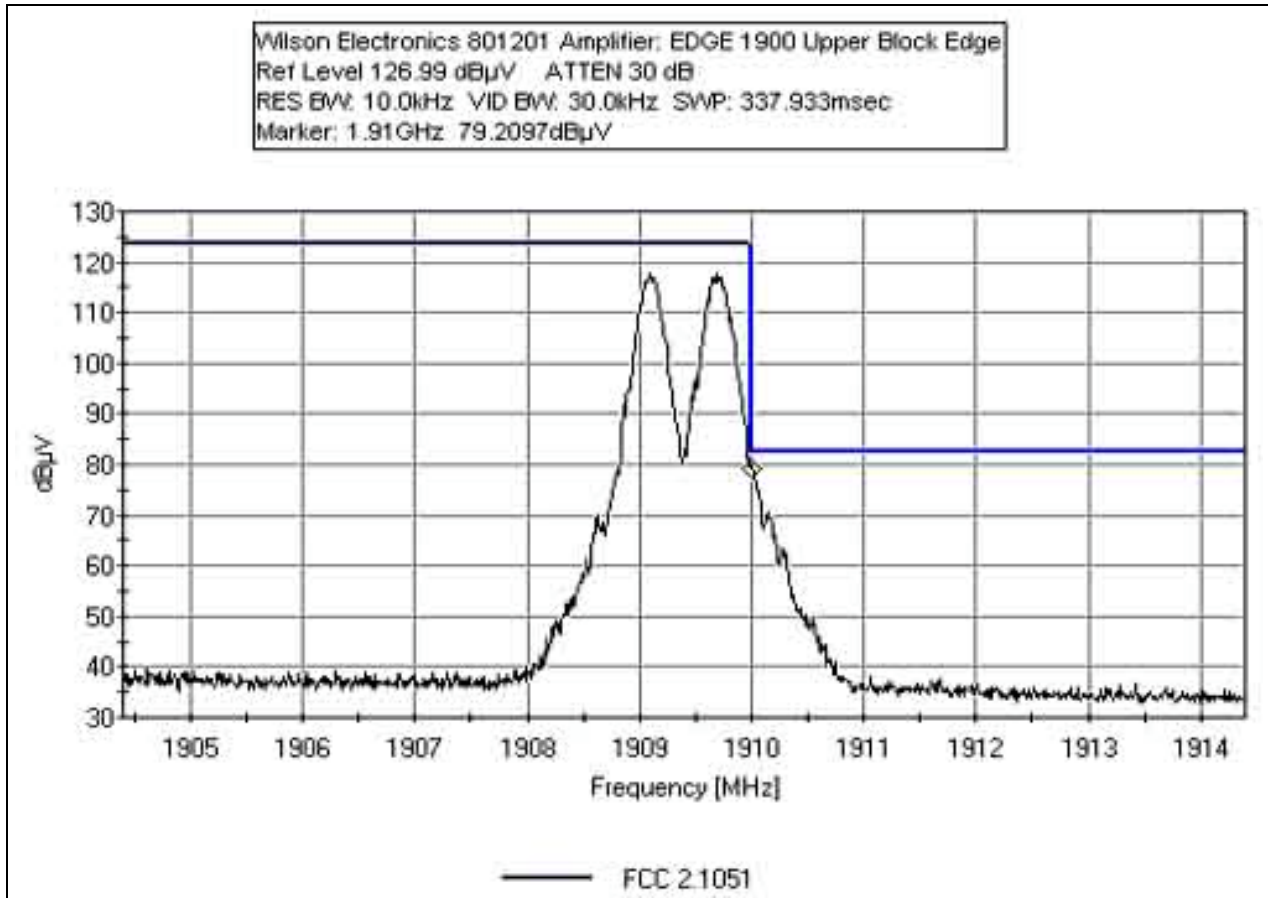
Wilson Electronics 801201 Amplifier: CDMA 1900 Intermodulation and Block Edges  
Ref Level 126.99 dB $\mu$ V ATTEN 30 dB  
RES BW: 30.0kHz VID BW: 91.0kHz SWP: 675.267msec  
Marker: 1.85GHz 54.4717dB $\mu$ V



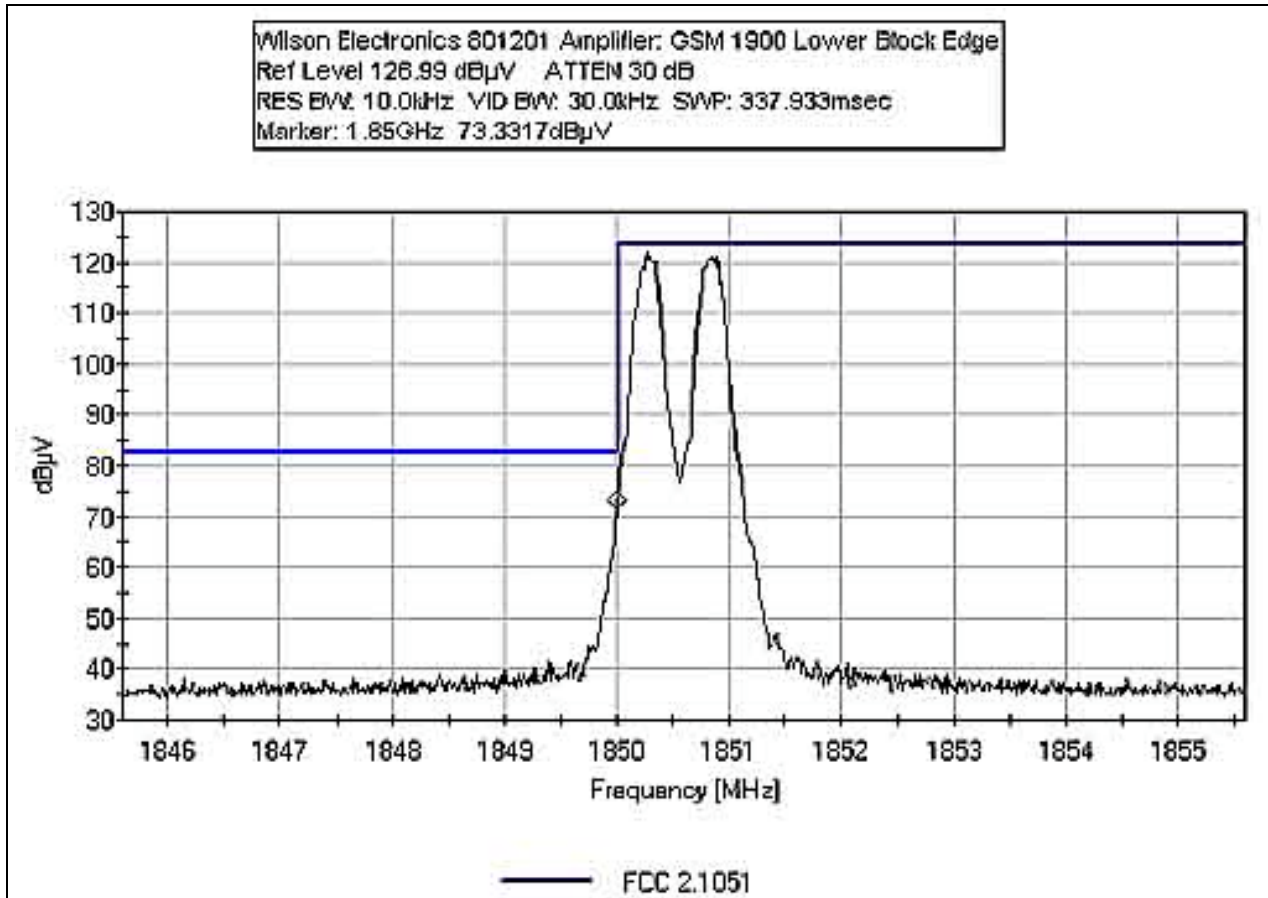
**FCC 2.1033(C)(14)/2.1051/24.238 - UPLINK LOWER BLOCK EDGE - EDGE**



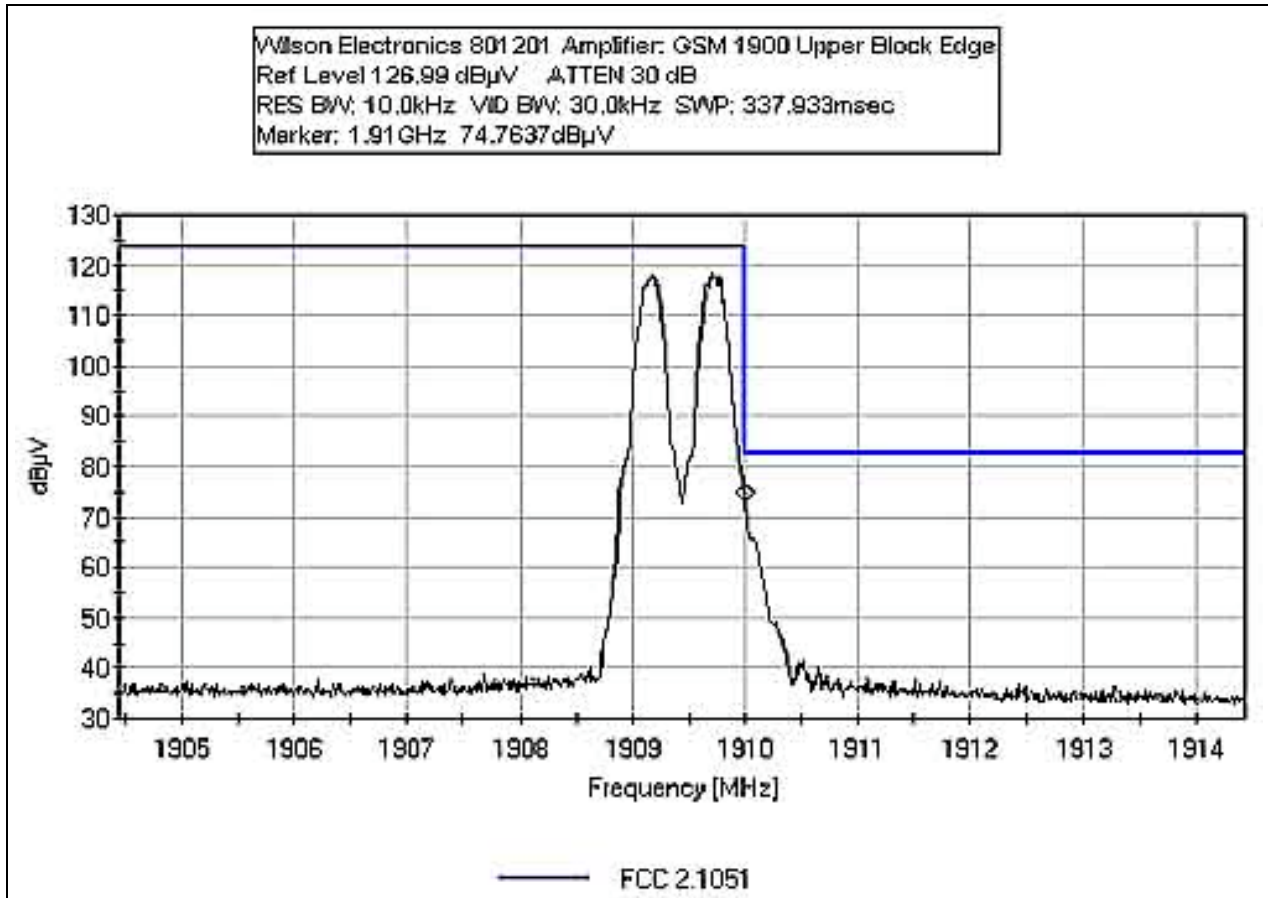
**FCC 2.1033(C)(14)/2.1051/24.238 - UPLINK UPPER BLOCK EDGE - EDGE**



**FCC 2.1033(C)(14)/2.1051/24.238 - UPLINK LOWER BLOCK EDGE - GSM**



**FCC 2.1033(C)(14)/2.1051/24.238 - UPLINK UPPER BLOCK EDGE - GSM**



***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 UPLINK**  
 Work Order #: **84511** Date: 12/15/2005  
 Test Type: **Antenna Terminals** Time: 10:06:10  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 24  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968
Signal Generator	HP	E4432B	US400053750

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz 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: As Indicated. Frequencies Tested: Uplink 1900MHz Band. This mode represents the worst case of emissions. Frequency Range Investigated: 30 MHz to 20 GHz..

**Transducer Legend:**

T1=Pad 10dB	T2=Cable 40 GHz 48"
-------------	---------------------

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

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	1910.000M	79.9	+10.2	+1.2			+0.0	91.3	94.0	-2.7	None
									EDGE 1900 Upper Block Edge		
2	1850.000M	77.6	+10.2	+1.2			+0.0	89.0	94.0	-5.0	None
									EDGE 1900 Lower Block Edge		

3	1910.000M	74.8	+10.2	+1.2	+0.0	86.2	94.0	-7.8	None
							GSM 1900 Upper Block Edge		
4	1850.000M	73.3	+10.2	+1.2	+0.0	84.7	94.0	-9.3	None
							GSM 1900 Lower Block Edge		
5	1850.000M	55.5	+10.2	+1.2	+0.0	66.9	94.0	-27.1	None
							CDMA 1900 Lower Block Edge		
6	1910.000M	55.4	+10.2	+1.2	+0.0	66.8	94.0	-27.2	None
							CDMA 1900 Upper Block Edge		



**FCC 2.1033(C)(14)/2.1051/24.238 - INTERMODULATION ATTENUATION**

<b>ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE</b>			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	30MHz	1000MHz	10 kHz
RADIATED EMISSIONS	1000MHz	20GHz	100 kHz

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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/28/2005  
 Test Type: **Antenna Terminals** Time: 15:48:54  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 54  
 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

***Test Conditions / Notes:***

EUT is a bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Intermodulation Attenuation and Spurious Emissions Test: Three signals are input to the amplifier through a combining network. The first two input signals are provided by the HP E4432B ESG. The input signals are set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink 1931.25MHz, 1933.75MHz, 1988.75MHz. Frequency Range Investigated: 30MHz to 20GHz.

***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	1934.200M	69.8	+30.3				+0.0	100.1	117.0	-16.9	None
Fundamental											

2	1988.600M	69.0	+30.3	+0.0	99.3	117.0	-17.7	None
						Fundamental		
3	1931.800M	66.2	+30.3	+0.0	96.5	117.0	-20.5	None
						Fundamental		
4	1929.200M	42.3	+30.3	+0.0	72.6	94.0	-21.4	None
5	1991.400M	39.8	+30.3	+0.0	70.1	94.0	-23.9	None
6	3868.400M	26.0	+29.7	+0.0	55.7	94.0	-38.3	None
7	3977.450M	23.9	+29.6	+0.0	53.5	94.0	-40.5	None
8	1936.800M	44.0	+30.3	+0.0	74.3	117.0	-42.7	None
9	1986.000M	42.7	+30.3	+0.0	73.0	117.0	-44.0	None
10	5966.350M	18.2	+27.8	+0.0	46.0	94.0	-48.0	None



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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/30/2005  
 Test Type: **Antenna Terminals** Time: 08:36:04  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 73  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 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: EDGE. Frequencies Tested: Downlink 1930.3MHz, 1930.9MHz. Frequency Range Investigated: 30MHz to 20GHz.

**Transducer Legend:**

T1=Pad 30dB
-------------

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1930.920M	81.7	+30.3			+0.0	112.0	117.0	-5.0	None
								Fundamental		
2	1930.300M	81.0	+30.3			+0.0	111.3	117.0	-5.7	None
								Fundamental		
3	1929.980M	46.0	+30.3			+0.0	76.3	94.0	-17.7	None
4	3860.640M	42.6	+29.7			+0.0	72.3	94.0	-21.7	None
5	3861.860M	41.9	+29.7			+0.0	71.6	94.0	-22.4	None

6	1931.160M	49.7	+30.3	+0.0	80.0	117.0	-37.0	None
7	5792.720M	26.5	+27.8	+0.0	54.3	94.0	-39.7	None
8	5790.820M	25.9	+27.8	+0.0	53.7	94.0	-40.3	None
9	7720.860M	24.2	+25.2	+0.0	49.4	94.0	-44.6	None
10	9655.420M	22.5	+24.2	+0.0	46.7	94.0	-47.3	None



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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 05/02/2005  
 Test Type: **Antenna Terminals** Time: 16:56:48  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 74  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 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: EDGE Frequencies Tested: Downlink 1989.1 MHz 1989.7 MHz 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 dB $\mu$ V	T1 dB	dB	dB	dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	1990.000M	57.1	+30.3				+0.0	87.4	94.0	-6.6	None
2	1990.158M	51.1	+30.3				+0.0	81.4	94.0	-12.6	None
3	1990.444M	43.7	+30.3				+0.0	74.0	94.0	-20.0	None

4	3979.450M	35.8	+29.6	+0.0	65.4	94.0	-28.6	None
5	3978.000M	34.6	+29.6	+0.0	64.2	94.0	-29.8	None
6	5967.410M	22.4	+27.8	+0.0	50.2	94.0	-43.8	None
7	5968.930M	20.6	+27.8	+0.0	48.4	94.0	-45.6	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)  
 Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/29/2005  
 Test Type: **Antenna Terminals** Time: 12:03:44  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 63  
 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

**Test Conditions / Notes:**

EUT is a bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 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: GSM. Frequencies Tested: Downlink 1930.28MHz, 1930.81MHz. Frequency Range Investigated: 30MHz to 20GHz.

**Transducer Legend:**

T1=Pad 30dB

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

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	dB	dB	dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	1930.270M	80.2	+30.3				+0.0	110.5	117.0	-6.5	None
									Fundamental		
2	1930.830M	78.1	+30.3				+0.0	108.4	117.0	-8.6	None
									Fundamental		
3	3860.690M	36.5	+29.7				+0.0	66.2	94.0	-27.8	None
4	1929.980M	27.9	+30.3				+0.0	58.2	94.0	-35.8	None
5	3861.610M	26.5	+29.7				+0.0	56.2	94.0	-37.8	None
6	5790.840M	18.4	+27.8				+0.0	46.2	94.0	-47.8	None
7	9651.960M	9.9	+24.2				+0.0	34.1	94.0	-59.9	None



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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/29/2005  
 Test Type: **Antenna Terminals** Time: 13:01:07  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 64  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 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: GSM. Frequencies Tested: Downlink 1989.16MHz, 1989.72MHz. Frequency Range Investigated: 30MHz to 20GHz.

**Transducer Legend:**

T1=Pad 30dB
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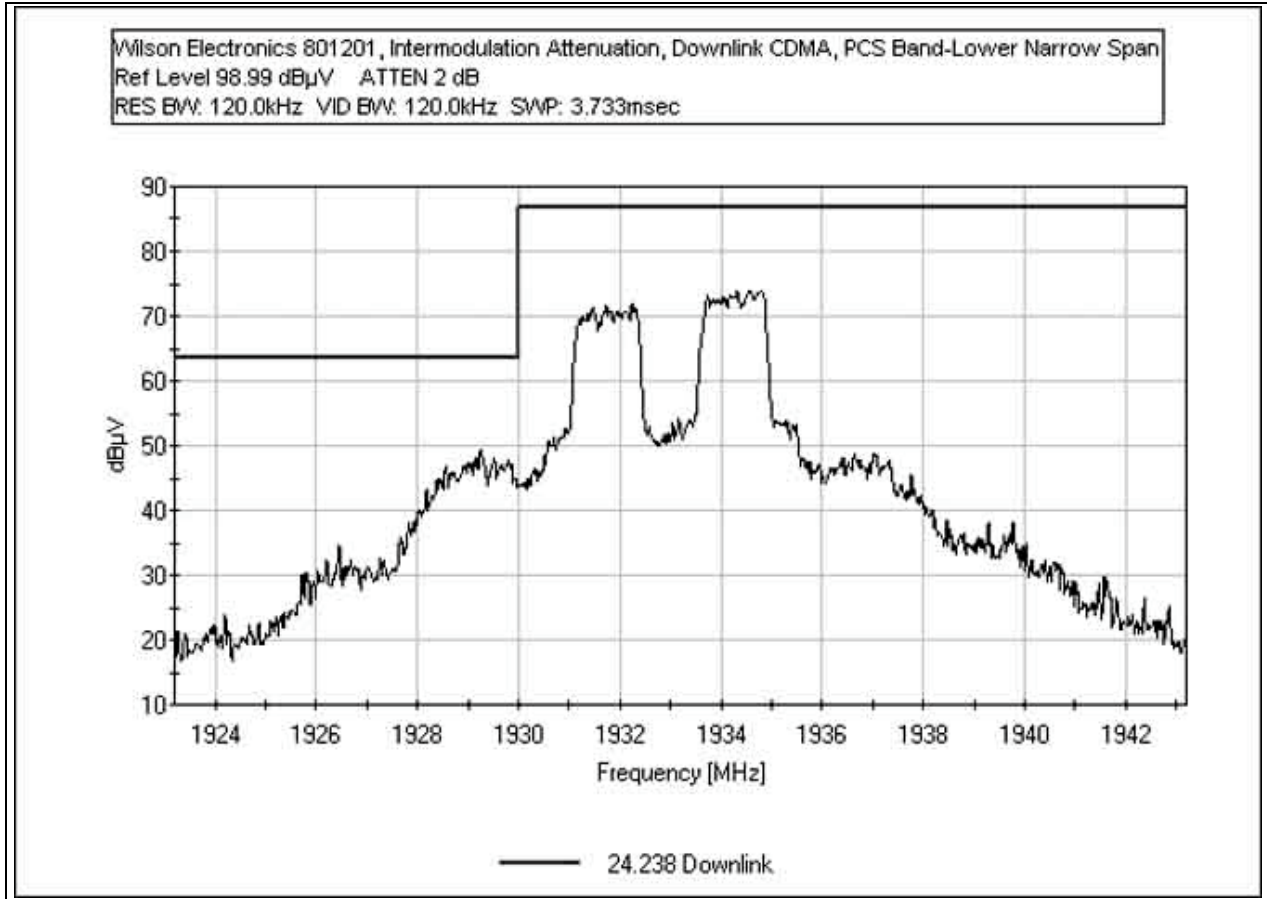
**Measurement Data:** Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1989.170M	83.5	+30.3				+0.0	113.8	117.0	-3.2	None
2	1989.720M	82.7	+30.3				+0.0	113.0	117.0	-4.0	None
3	1990.010M	39.1	+30.3				+0.0	69.4	94.0	-24.6	None
4	3979.490M	37.5	+29.6				+0.0	67.1	94.0	-26.9	None
5	3978.180M	36.8	+29.6				+0.0	66.4	94.0	-27.6	None

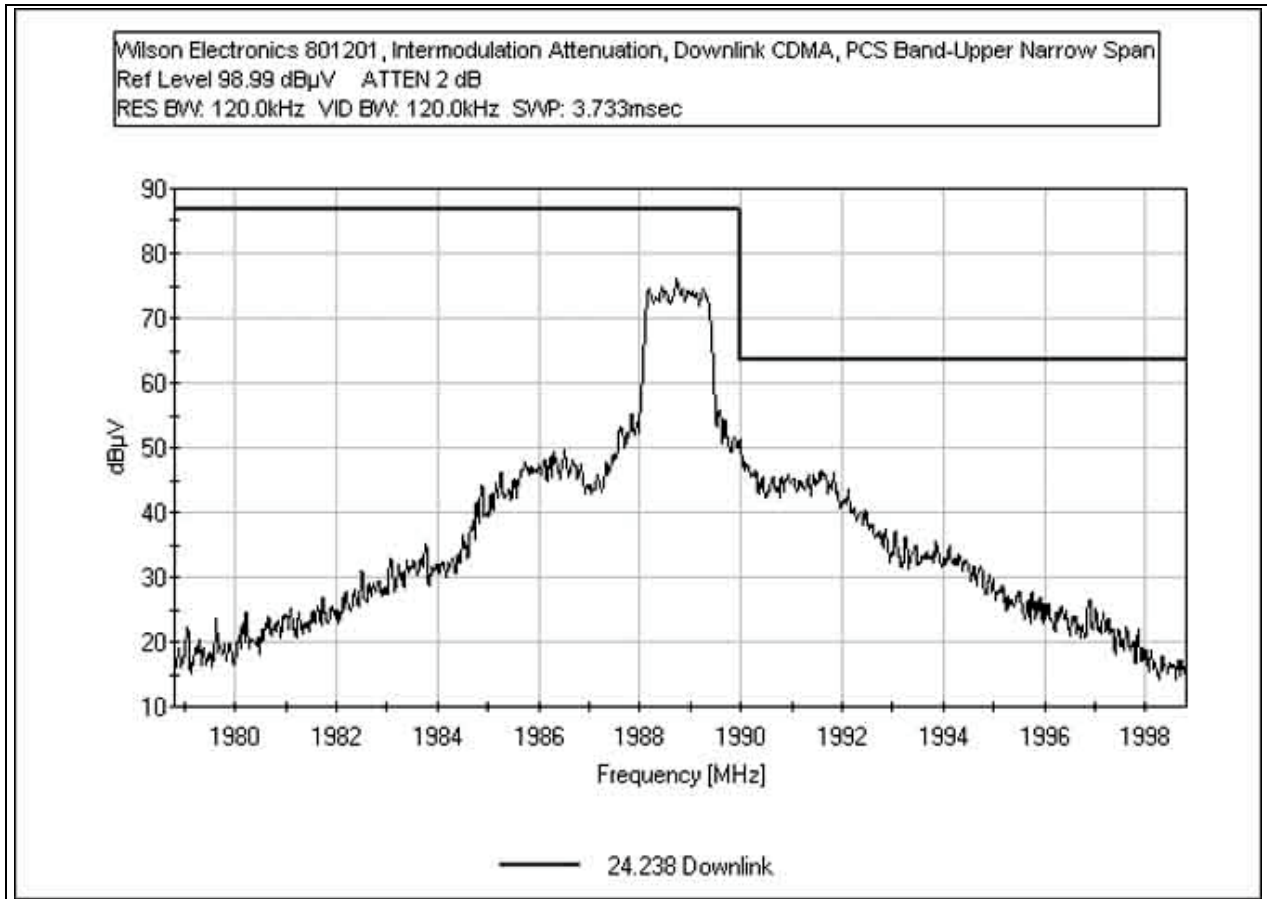


6	5967.300M	24.2	+27.8	+0.0	52.0	94.0	-42.0	None
7	5969.330M	22.9	+27.8	+0.0	50.7	94.0	-43.3	None
8	7956.630M	21.3	+24.5	+0.0	45.8	94.0	-48.2	None
9	7959.150M	19.5	+24.5	+0.0	44.0	94.0	-50.0	None
10	9948.600M	11.0	+23.2	+0.0	34.2	94.0	-59.8	None

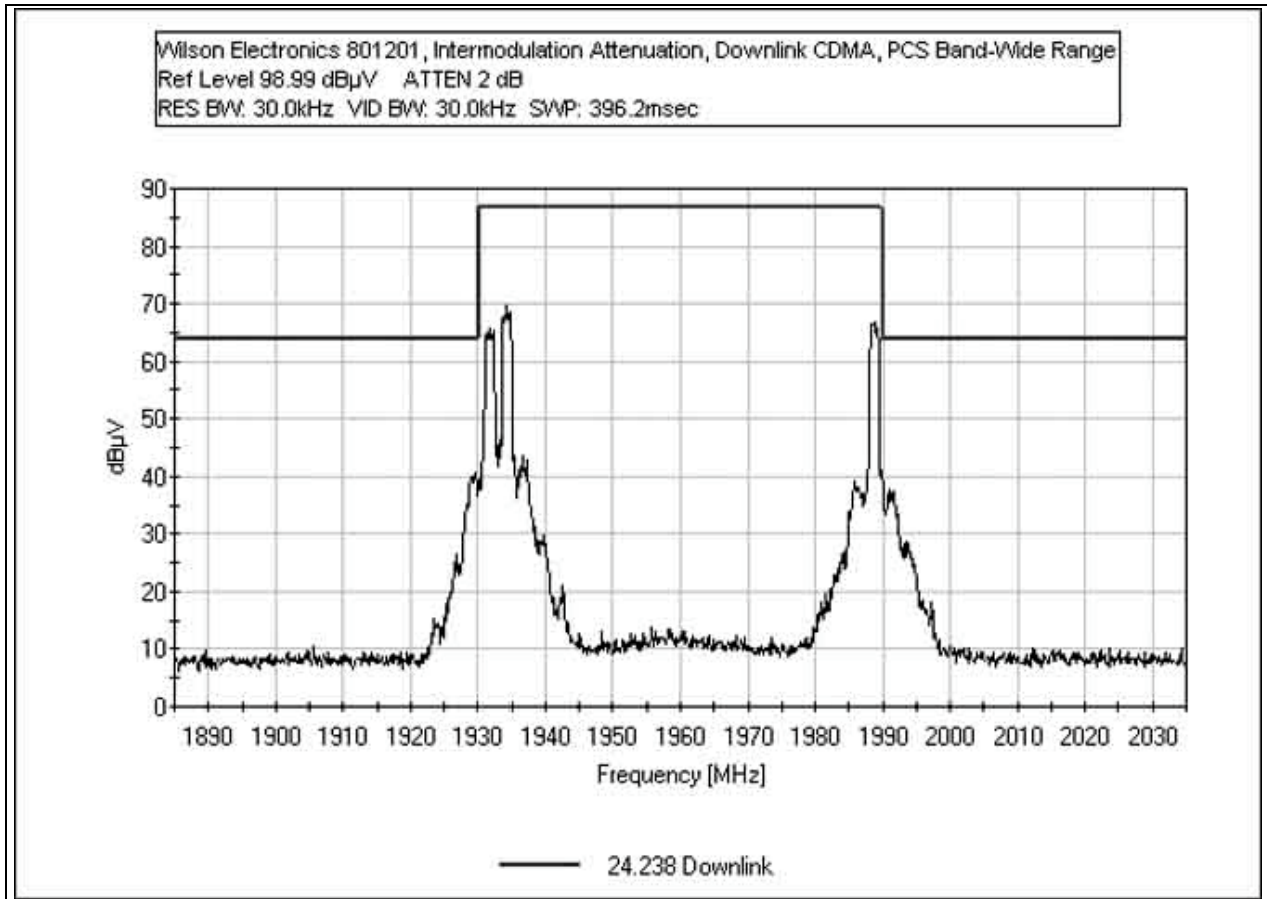
**INTERMODULATION ATTENUATION DOWNLINK CDMA - PCS BAND  
LOWER NARROW SPAN**



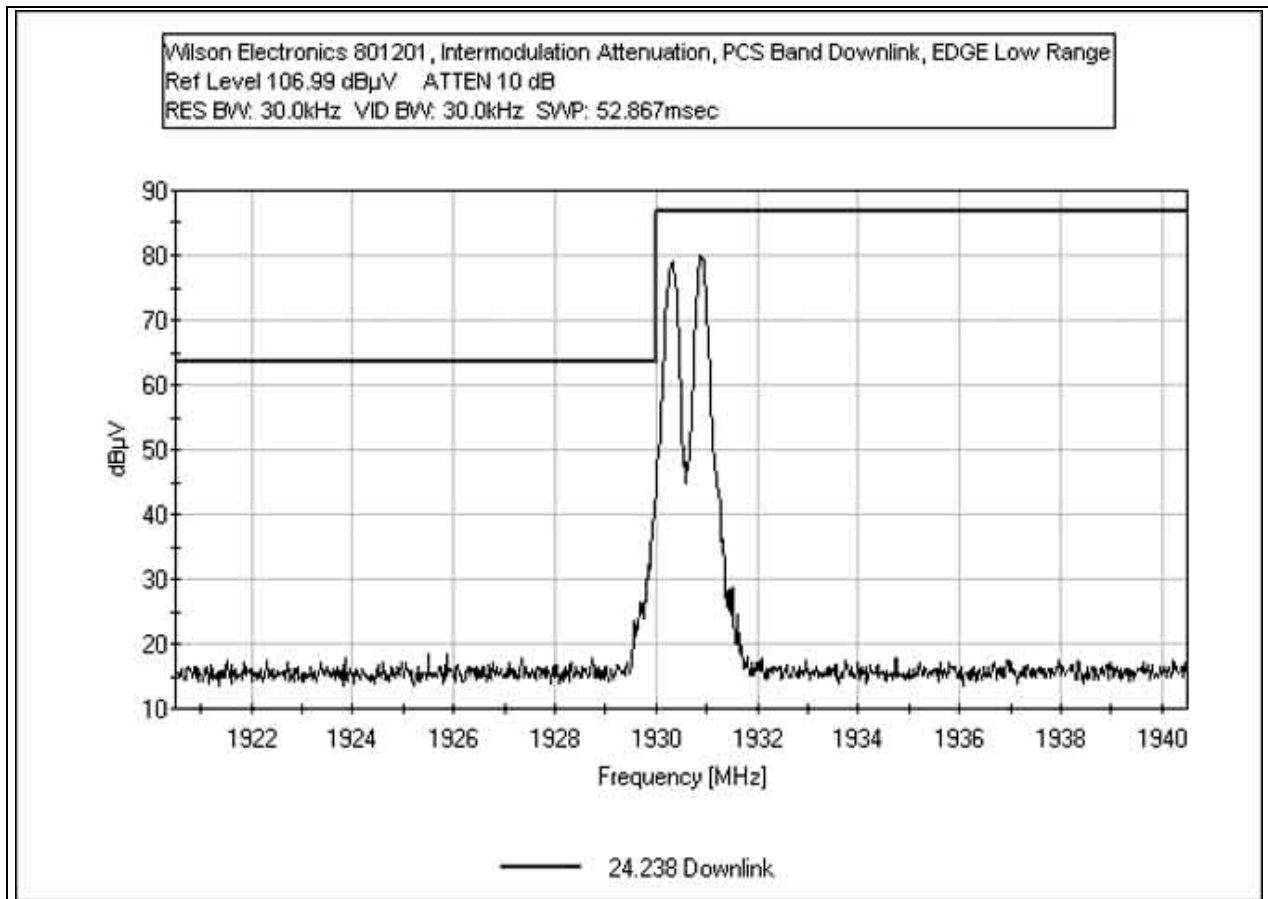
**INTERMODULATION ATTENUATION DOWNLINK CDMA - PCS BAND  
UPPER NARROW SPAN**



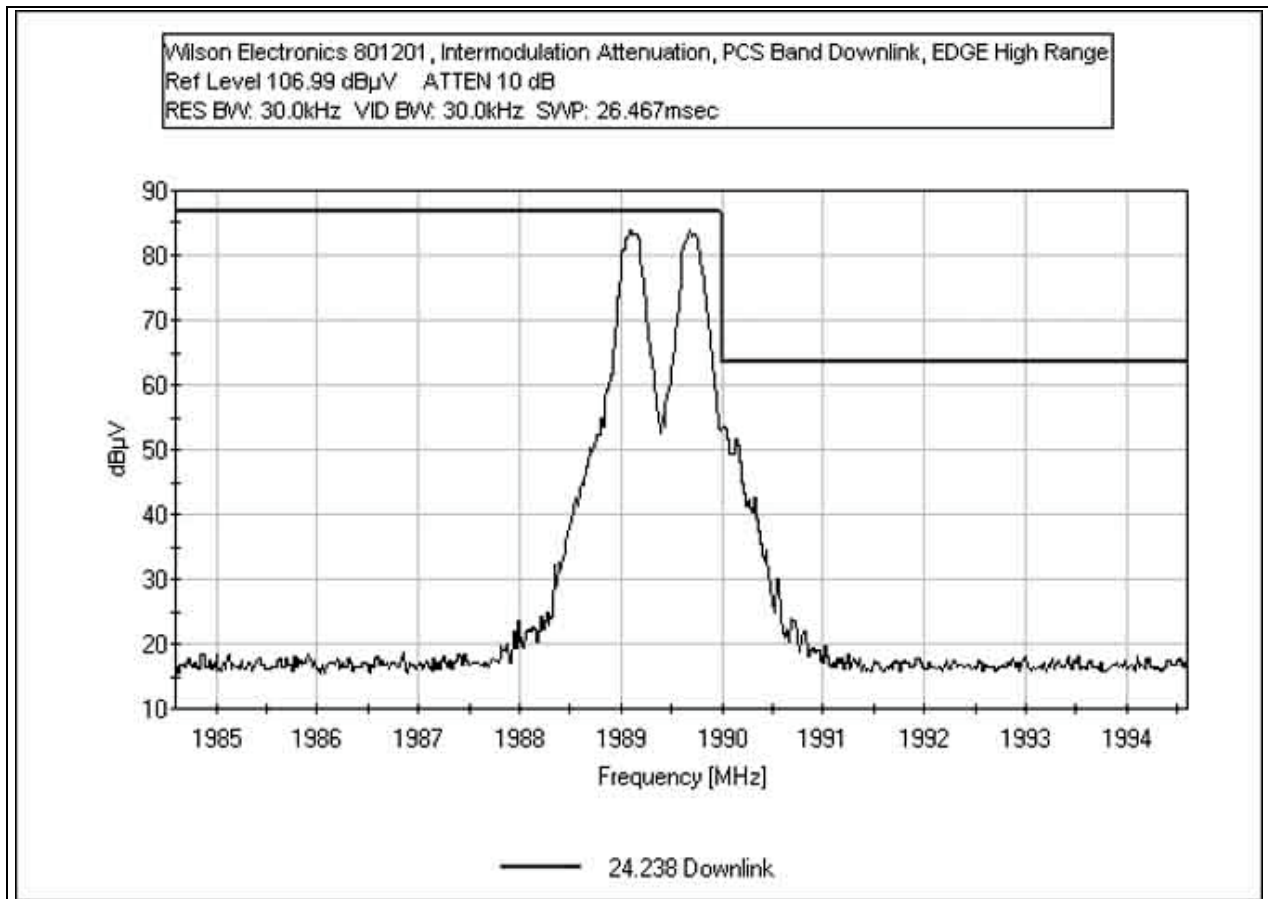
### INTERMODULATION ATTENUATION DOWNLINK CDMA - PCS BAND WIDE RANGE



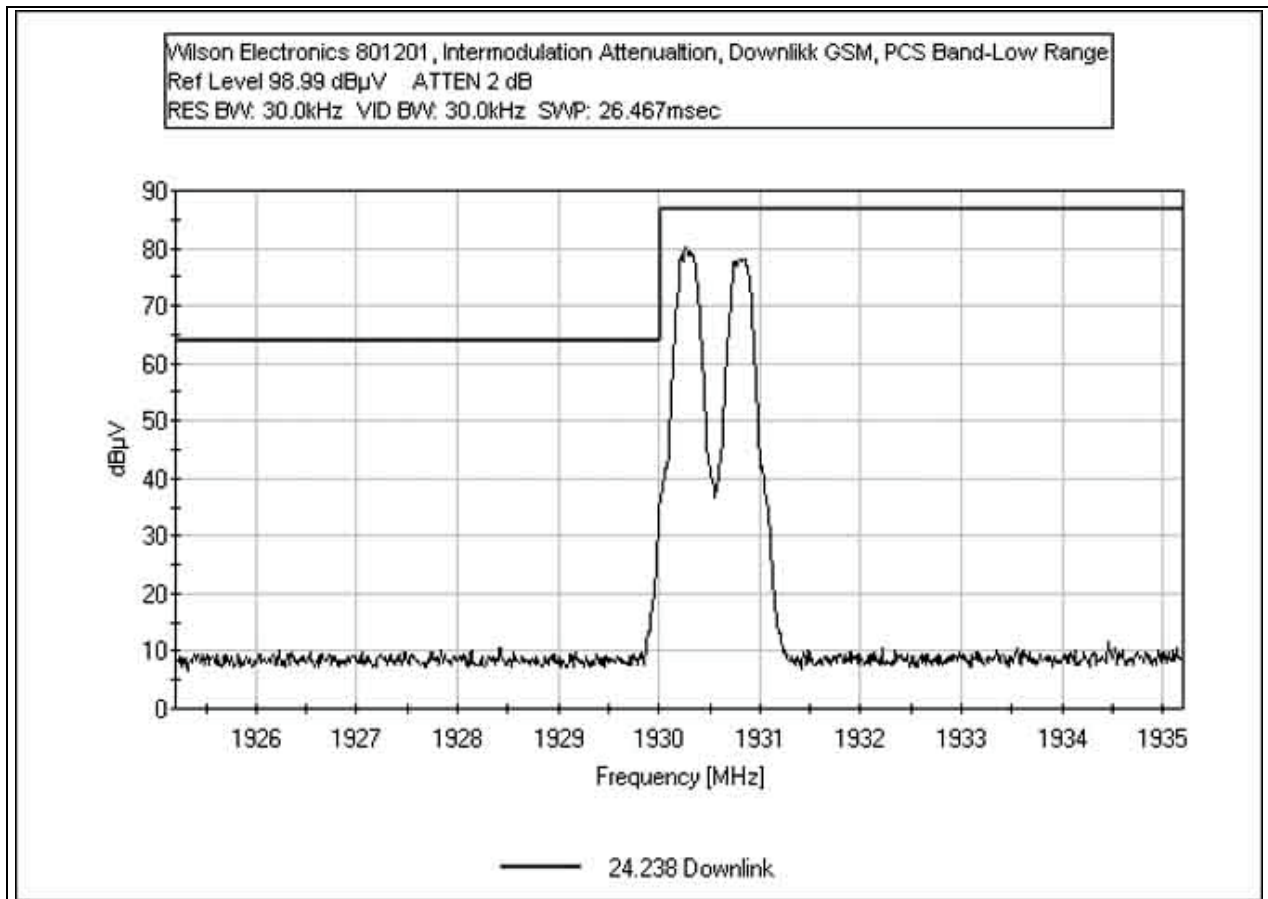
### INTERMODULATION ATTENUATION DOWNLINK EDGE - PCS BAND LOW RANGE



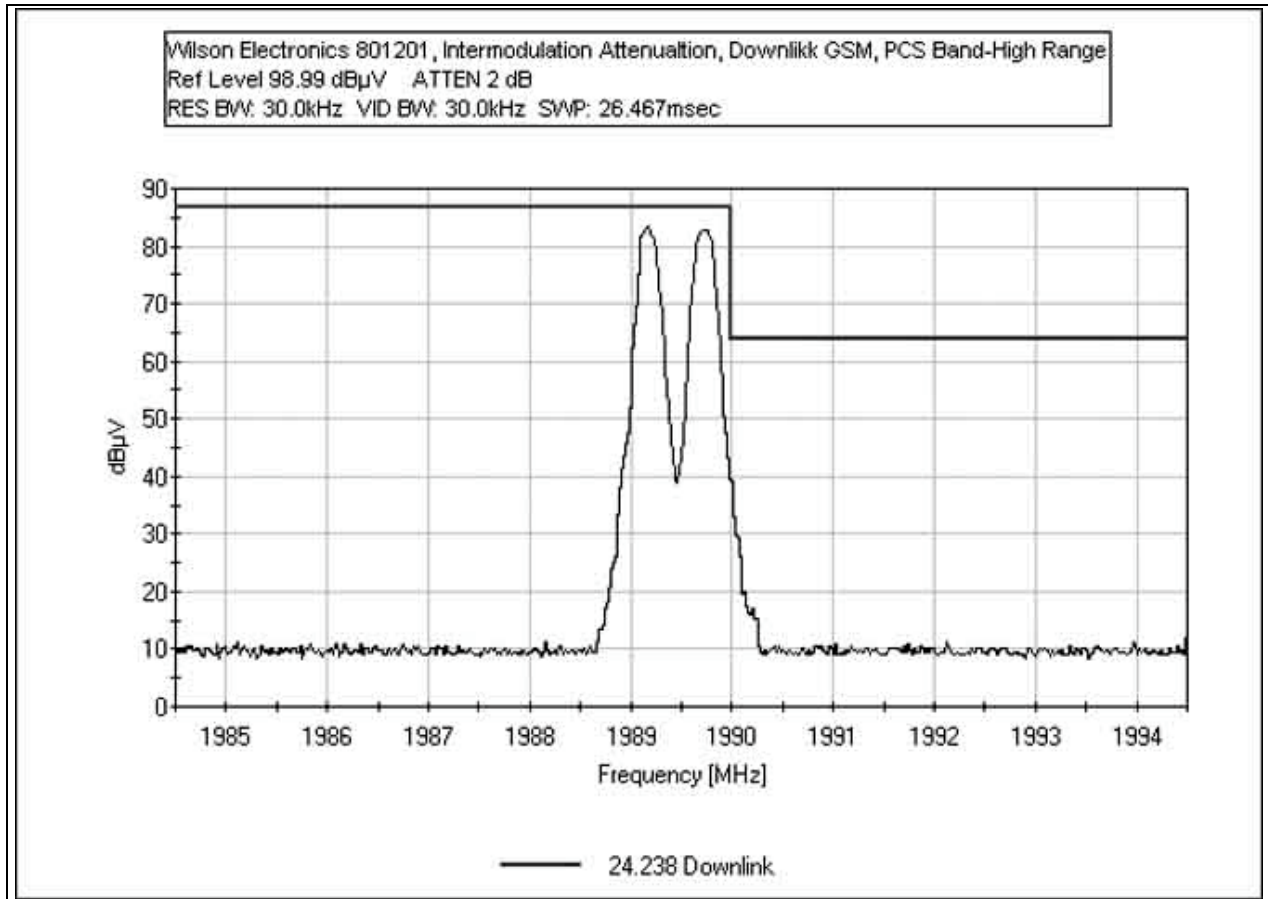
**INTERMODULATION ATTENUATION DOWNLINK EDGE - PCS BAND  
HIGH RANGE**



### INTERMODULATION ATTENUATION DOWNLINK GSM - PCS BAND LOW RANGE



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





***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**





**FCC 2.1033(c)(14)/2.1051/24.238 - SPURIOUS EMISSIONS AT ANTENNA TERMINAL - DOWNLINK**

<b>ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE</b>			
TEST	BEGINNING FREQUENCY	ENDING FREQUENCY	BANDWIDTH SETTING
RADIATED EMISSIONS	30MHz	1000MHz	10 kHz
RADIATED EMISSIONS	1000MHz	20GHz	100 kHz

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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/28/2005  
 Test Type: **Antenna Terminals** Time: 15:23:53  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 52  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink Mid - 1960.0MHz. Frequency Range Investigated: 30MHz to 20GHz.

**Transducer Legend:**

T1=Pad 30dB

<b>Measurement Data:</b>		Reading listed by margin.				Test Distance: None					
#	Freq MHz	Rdng dB $\mu$ V	T1 dB				Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	1960.020M	86.6	+30.3				+0.0	116.9	117.0	-0.1	None
									Fundamental		
2	3920.150M	35.8	+29.6				+0.0	65.4	94.0	-28.6	None
3	7840.000M	28.1	+24.9				+0.0	53.0	94.0	-41.0	None
4	5880.170M	21.3	+27.8				+0.0	49.1	94.0	-44.9	None
5	9800.020M	16.1	+23.7				+0.0	39.8	94.0	-54.2	None



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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/28/2005  
 Test Type: **Antenna Terminals** Time: 15:15:14  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 51  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink Low - 1931.25MHz. Frequency Range Investigated: 30MHz to 20GHz.

**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	1931.250M	84.9	+30.3				+0.0	115.2	117.0	-1.8	None
Fundamental											
2	1929.990M	44.4	+30.3				+0.0	74.7	94.0	-19.3	None
3	3862.790M	28.1	+29.7				+0.0	57.8	94.0	-36.2	None
4	7725.290M	16.7	+25.2				+0.0	41.9	94.0	-52.1	None
5	5794.040M	12.5	+27.8				+0.0	40.3	94.0	-53.7	None
6	9656.540M	15.2	+24.2				+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: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/28/2005  
 Test Type: **Antenna Terminals** Time: 15:29:55  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 53  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Downlink High - 1988.75MHz. Frequency Range Investigated: 30MHz to 20GHz.

**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	1988.690M	86.1	+30.3				+0.0	116.4	117.0	-0.6	None
Fundamental											
2	3977.470M	33.1	+29.6				+0.0	62.7	94.0	-31.3	None
3	5966.510M	20.7	+27.8				+0.0	48.5	94.0	-45.5	None
4	7954.960M	23.1	+24.5				+0.0	47.6	94.0	-46.4	None
5	11932.620M	18.1	+19.9				+0.0	38.0	94.0	-56.0	None
6	9943.650M	14.3	+23.2				+0.0	37.5	94.0	-56.5	None



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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/30/2005  
 Test Type: **Antenna Terminals** Time: 08:07:37  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 70  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Frequencies Tested: Downlink Low - 1930.3MHz. Frequency Range Investigated: 30MHz to 20GHz.

**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	1930.320M	84.7	+30.3				+0.0	115.0	117.0	-2.0	None
Fundamental											
2	1929.980M	58.3	+30.3				+0.0	88.6	94.0	-5.4	None
3	3860.510M	43.7	+29.7				+0.0	73.4	94.0	-20.6	None
4	5790.950M	34.2	+27.8				+0.0	62.0	94.0	-32.0	None
5	7721.270M	34.9	+25.2				+0.0	60.1	94.0	-33.9	None
6	9651.670M	25.3	+24.2				+0.0	49.5	94.0	-44.5	None



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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/30/2005  
 Test Type: **Antenna Terminals** Time: 08:14:46  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 71  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Frequencies Tested: Downlink Mid - 1960.0MHz. Frequency Range Investigated: 30MHz to 20GHz.

**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	1960.040M	86.3	+30.3				+0.0	116.6	117.0	-0.4	None
Fundamental											
2	3920.000M	44.4	+29.6				+0.0	74.0	94.0	-20.0	None
3	7840.190M	47.2	+24.9				+0.0	72.1	94.0	-21.9	None
4	5879.820M	35.8	+27.8				+0.0	63.6	94.0	-30.4	None
5	9800.230M	30.6	+23.7				+0.0	54.3	94.0	-39.7	None
6	11760.270M	26.1	+20.1				+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: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/30/2005  
 Test Type: **Antenna Terminals** Time: 08:23:26  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 72  
 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

**Test Conditions / Notes:**

EUT is a bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Frequencies Tested: Downlink High - 1989.7MHz. Frequency Range Investigated: 30MHz to 20GHz.

**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	1989.720M	86.0	+30.3				+0.0	116.3	117.0	-0.7	None
Fundamental											
2	1990.090M	59.6	+30.3				+0.0	89.9	94.0	-4.1	None
3	3979.570M	40.3	+29.6				+0.0	69.9	94.0	-24.1	None
4	7958.820M	35.1	+24.5				+0.0	59.6	94.0	-34.4	None
5	5969.140M	27.6	+27.8				+0.0	55.4	94.0	-38.6	None
6	9948.520M	24.6	+23.2				+0.0	47.8	94.0	-46.2	None
7	11938.220M	23.1	+19.9				+0.0	43.0	94.0	-51.0	None





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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/29/2005  
 Test Type: **Antenna Terminals** Time: 11:11:57  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 60  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Frequencies Tested: Downlink Low - 1930.28MHz. Frequency Range Investigated: 30MHz to 20GHz.

**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	1930.282M	84.7	+30.3				+0.0	115.0	117.0	-2.0	None
Fundamental											
2	3860.700M	46.6	+29.7				+0.0	76.3	94.0	-17.7	None
3	1929.998M	35.2	+30.3				+0.0	65.5	94.0	-28.5	None
4	5790.640M	30.0	+27.8				+0.0	57.8	94.0	-36.2	None
5	7721.376M	27.1	+25.2				+0.0	52.3	94.0	-41.7	None
6	9651.654M	14.7	+24.2				+0.0	38.9	94.0	-55.1	None



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

Customer: **Wilson Electronics**  
 Specification: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/29/2005  
 Test Type: **Antenna Terminals** Time: 11:17:23  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 61  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Frequencies Tested: Downlink Mid - 1960.0MHz. Frequency Range Investigated: 30MHz to 20GHz.

**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	1959.934M	86.6	+30.3				+0.0	116.9	117.0	-0.1	None
Fundamental											
2	3920.132M	39.4	+29.6				+0.0	69.0	94.0	-25.0	None
3	7840.286M	41.7	+24.9				+0.0	66.6	94.0	-27.4	None
4	5879.796M	35.7	+27.8				+0.0	63.5	94.0	-30.5	None
5	9799.710M	21.7	+23.7				+0.0	45.4	94.0	-48.6	None
6	11759.290M	16.9	+20.1				+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: **24.238 Downlink**  
 Work Order #: **83305** Date: 03/29/2005  
 Test Type: **Antenna Terminals** Time: 11:24:30  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 62  
 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 bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Frequencies Tested: Downlink High-1989.72MHz. Frequency Range Investigated: 30MHz to 20GHz.

**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	1989.736M	86.0	+30.3				+0.0	116.3	117.0	-0.7	None
Fundamental											
2	1990.002M	36.1	+30.3				+0.0	66.4	94.0	-27.6	None
3	3979.584M	34.1	+29.6				+0.0	63.7	94.0	-30.3	None
4	7959.164M	35.0	+24.5				+0.0	59.5	94.0	-34.5	None
5	5968.956M	29.4	+27.8				+0.0	57.2	94.0	-36.8	None
6	9949.446M	18.5	+23.2				+0.0	41.7	94.0	-52.3	None



**FCC 2.1033(c)(14)/2.1051/24.238 - SPURIOUS EMISSIONS AT ANTENNA TERMINAL - UPLINK**

Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 Uplink**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 14:01:34  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 14  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Input Channel: Low. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz.

**Transducer Legend:**

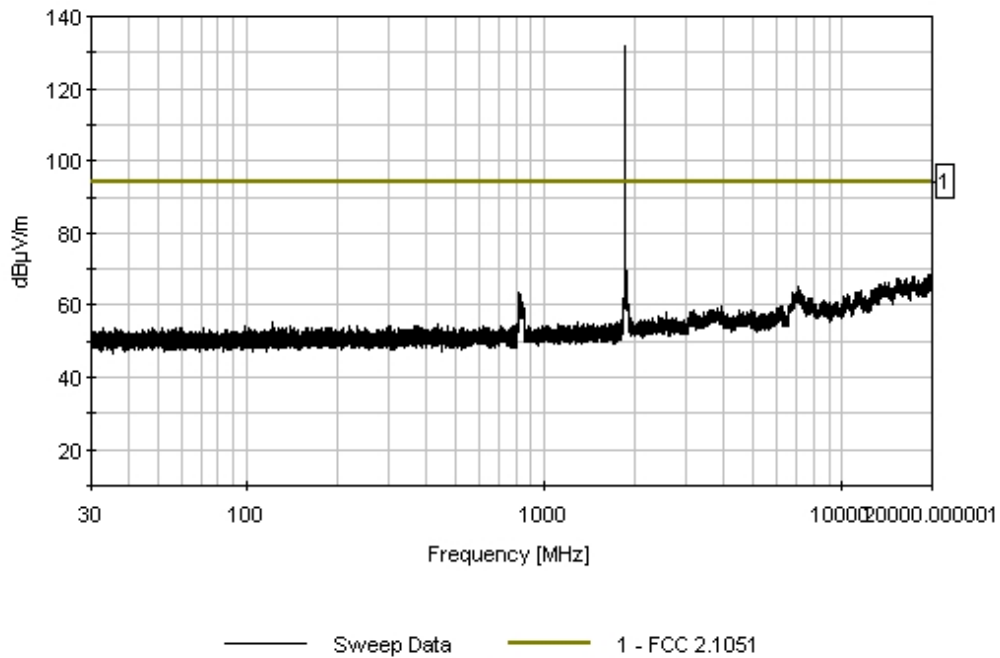
T1=Pad 10dB	T2=Cable 40 GHz 48"
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**Measurement Data:** Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1851.300M	120.2	+10.2	+1.2			+0.0	131.6	94.0	+37.6	None
Carrier											

2	1850.000M Ave	73.8	+10.2	+1.2	+0.0	85.2	94.0	-8.8	None
^	1850.000M	77.0	+10.2	+1.2	+0.0	88.4	94.0	-5.6	None
4	821.900M	49.6	+9.7	+0.9	+0.0	60.2	94.0	-33.8	None
5	3702.480M	45.9	+10.4	+1.7	+0.0	58.0	94.0	-36.0	None

CKC Laboratories Date: 12/8/2005 Time: 14:01:34 Wilson Electronics WO#: 84511  
 FCC 2.1051 Test Distance: None Sequence#: 14  
 Wilson Electronics M/N 801201 1900 MHz Band CDMA Low Channel





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 Uplink**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 14:09:13  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 15  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Input Channel: Mid. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz.

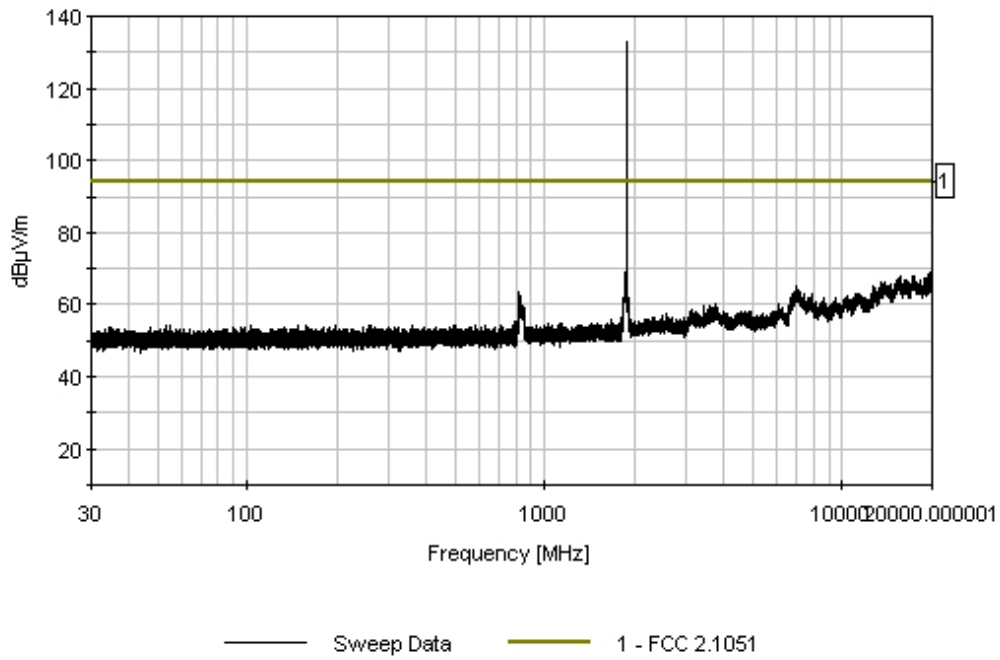
**Transducer Legend:**

T1=Pad 10dB	T2=Cable 40 GHz 48"
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**Measurement Data:** Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1879.950M	121.3	+10.2	+1.2	+0.0	132.7	94.0 Carrier	+38.7	None
2	822.610M	53.8	+9.7	+0.9	+0.0	64.4	94.0	-29.6	None

CKC Laboratories Date: 12/8/2005 Time: 14:09:13 Wilson Electronics WO#: 84511  
 FCC 2.1051 Test Distance: None Sequence#: 15  
 Wilson Electronics MN 801201 1900 MHz Band CDMA Mid Channel





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 UPLINK**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 14:21:45  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 16  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Input Channel: High. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz.

**Transducer Legend:**

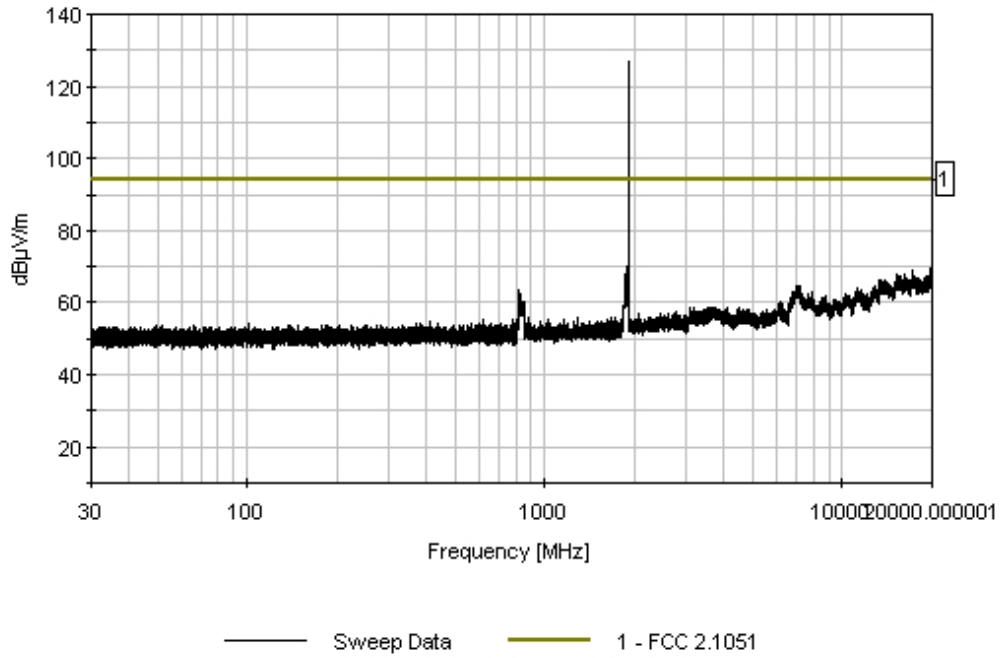
T1=Pad 10dB	T2=Cable 40 GHz 48"
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**Measurement Data:** Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1908.790M	115.4	+10.2	+1.2	+0.0	126.8	94.0 Carrier	+32.8	None
2	821.700M	53.1	+9.7	+0.9	+0.0	63.7	94.0	-30.3	None



CKC Laboratories Date: 12/8/2005 Time: 14:21:45 Wilson Electronics WO#: 84511  
FCC 2.1051 Test Distance: None Sequence#: 16  
Wilson Electronics MN 801201 1900 MHz Band CDMA High Channel





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 UPLINK**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 2:22:48 PM  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 17  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Input Channel: Low. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz. **No EUT emissions detected within 20dB of the limit.**

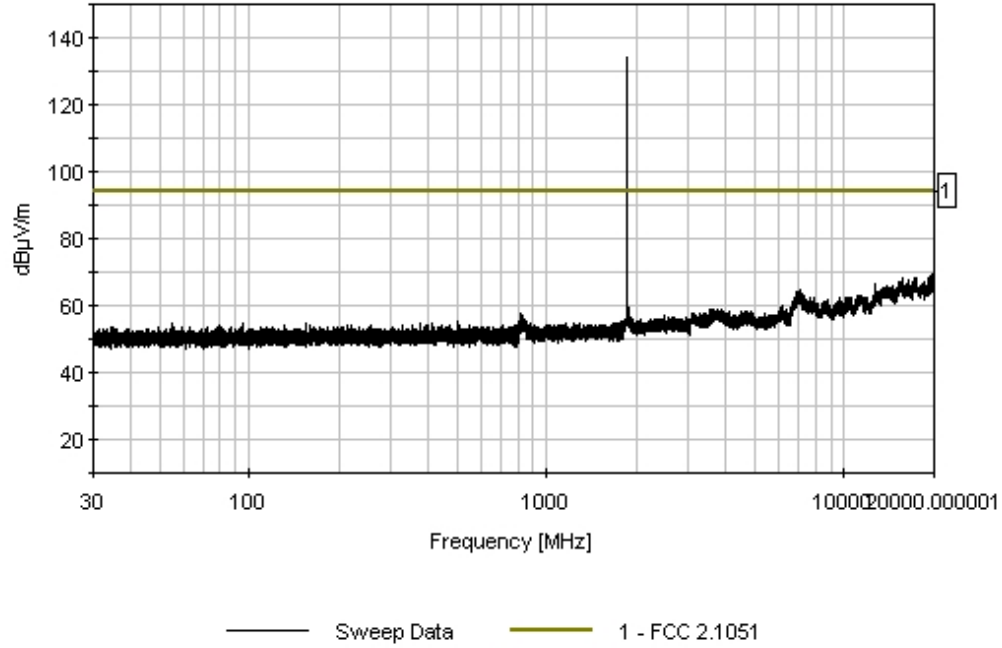
**Transducer Legend:**

T1=Pad 10dB	T2=Cable 40 GHz 48"
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**Measurement Data:** Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist Table dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1850.250M	122.5	+10.2	+1.2	+0.0	133.9	94.0 Carrier	+39.9	None

CKC Laboratories Date: 12/8/2005 Time: 2:22:48 PM Wilson Electronics WO#: 84511  
 FCC 2.1051 Test Distance: None Sequence#: 17  
 Wilson Electronics MN 801201 1900 MHz Band GSM Low Channel





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 UPLINK**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 2:30:27 PM  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 18  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Input Channel: Mid. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz. **No EUT emissions detected within 20dB of the limit.**

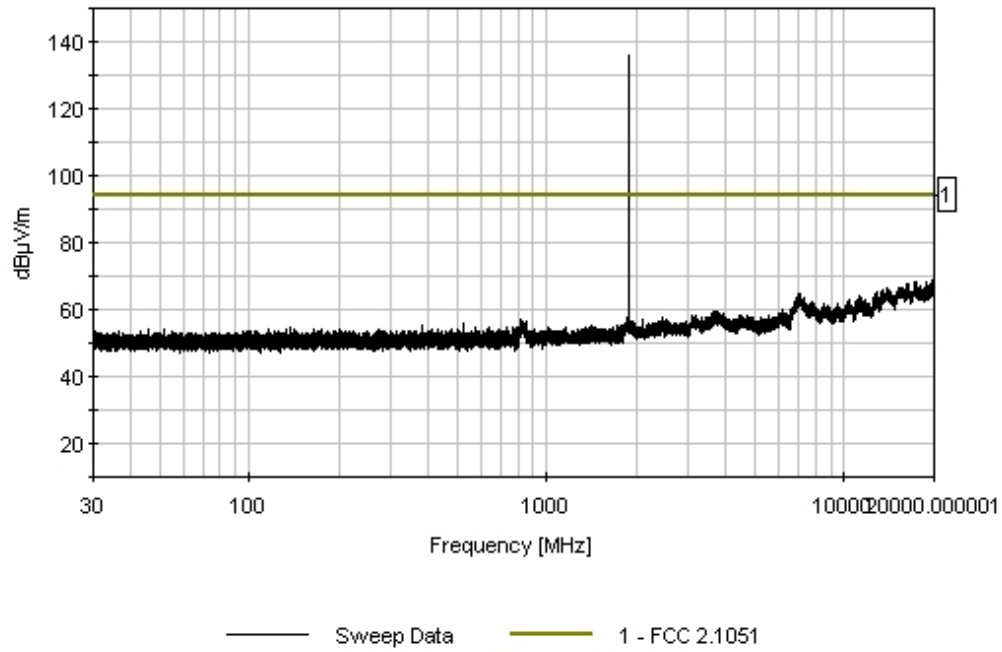
**Transducer Legend:**

T1=Pad 10dB	T2=Cable 40 GHz 48"
-------------	---------------------

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1880.100M	124.3	+10.2	+1.2	+0.0	135.7	94.0 Carrier	+41.7	None

CKC Laboratories Date: 12/8/2005 Time: 2:30:27 PM Wilson Electronics WO#: 84511  
 FCC 2.1051 Test Distance: None Sequence#: 18  
 Wilson Electronics MN 801201 1900 MHz Band GSM Mid Channel





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 UPLINK**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 2:39:26 PM  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 19  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: GSM. Input Channel: High. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz. **No EUT emissions detected within 20dB of the limit.**

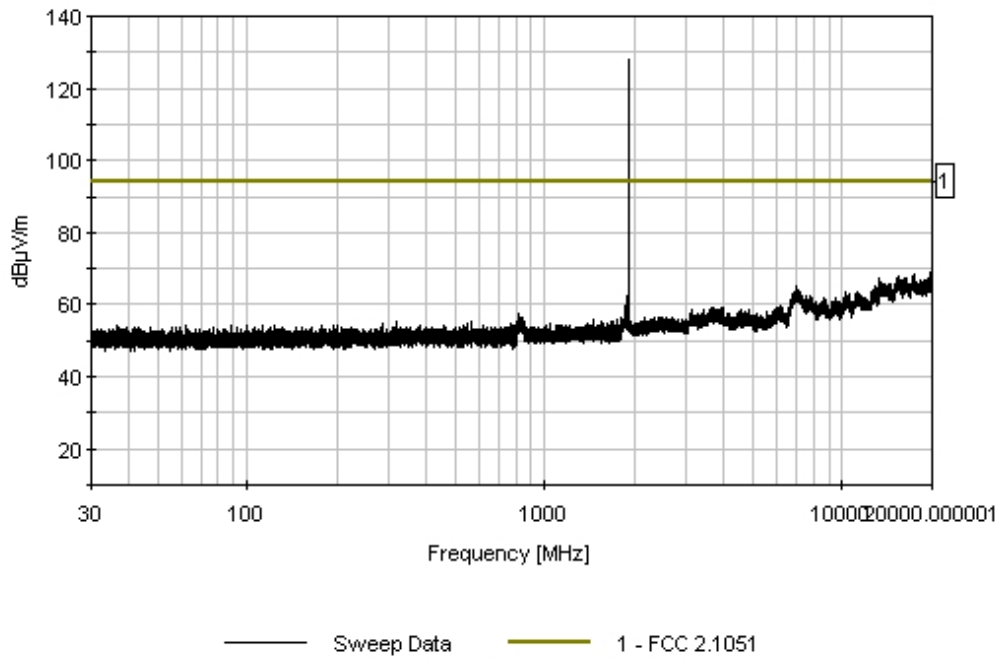
**Transducer Legend:**

T1=Pad 10dB	T2=Cable 40 GHz 48"
-------------	---------------------

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1909.800M	116.8	+10.2	+1.2		+0.0	128.2	94.0 Carrier	+34.2	None

CKC Laboratories Date: 12/8/2005 Time: 2:39:26 PM Wilson Electronics WO#: 84511  
 FCC 2.1051 Test Distance: None Sequence#: 19  
 Wilson Electronics MN 801201 1900 MHz Band GSM High Channel





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 UPLINK**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 2:46:05 PM  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 20  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Input Channel: Low. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz. **No EUT emissions detected within 20dB of the limit.**

**Transducer Legend:**

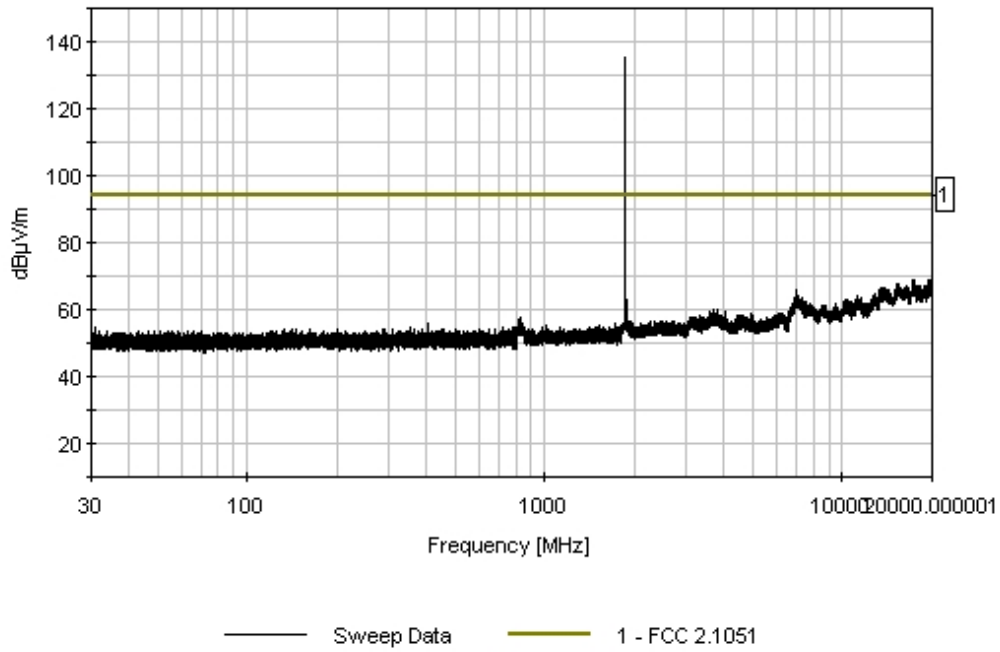
T1=Pad 10dB	T2=Cable 40 GHz 48"
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**Measurement Data:** Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist Table dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1850.250M	124.0	+10.2	+1.2	+0.0	135.4	94.0 Carrier	+41.4	None



CKC Laboratories Date: 12/8/2005 Time: 2:46:05 PM Wilson Electronics WO#: 84511  
FCC 2.1051 Test Distance: None Sequence#: 20  
Wilson Electronics MN 801201 1900 MHz Band EDGE Low Channel





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 UPLINK**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 2:53:23 PM  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 21  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Input Channel: Mid. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz. **No EUT emissions detected within 20dB of the limit.**

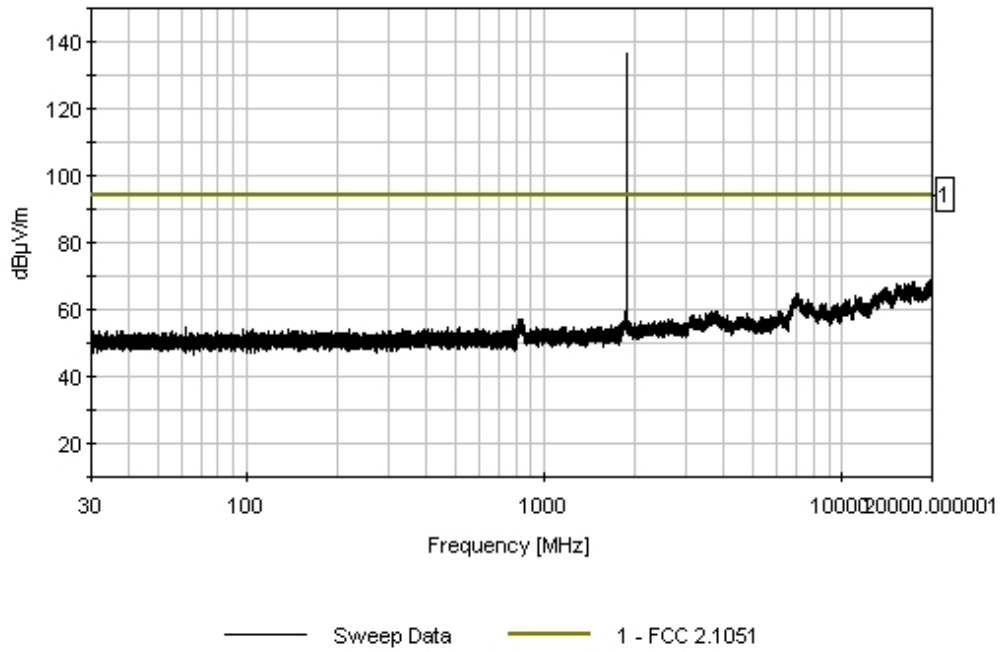
**Transducer Legend:**

T1=Pad 10dB	T2=Cable 40 GHz 48"
-------------	---------------------

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1879.950M	125.2	+10.2	+1.2	+0.0	136.6	94.0 Carrier	+42.6	None

CKC Laboratories Date: 12/8/2005 Time: 2:53:23 PM Wilson Electronics WO#: 84511  
 FCC 2.1051 Test Distance: None Sequence#: 21  
 Wilson Electronics MN 801201 1900 MHz Band EDGE Mid Channel





Test Location: CKC Laboratories •5046 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **24.238 UPLINK**  
 Work Order #: **84511** Date: 12/8/2005  
 Test Type: **Antenna Terminals** Time: 15:30:48  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 22  
 Manufacturer: Wilson Electronics Tested By: Ryan Rutledge  
 Model: 801201-A  
 S/N: 8012010112702

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

**Test Conditions / Notes:**

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Spurious Emissions Test: The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: EDGE. Input Channel: High. Frequencies Tested: Uplink 1900 MHz Band. Frequency Range Investigated: 30 MHz to 20 GHz.

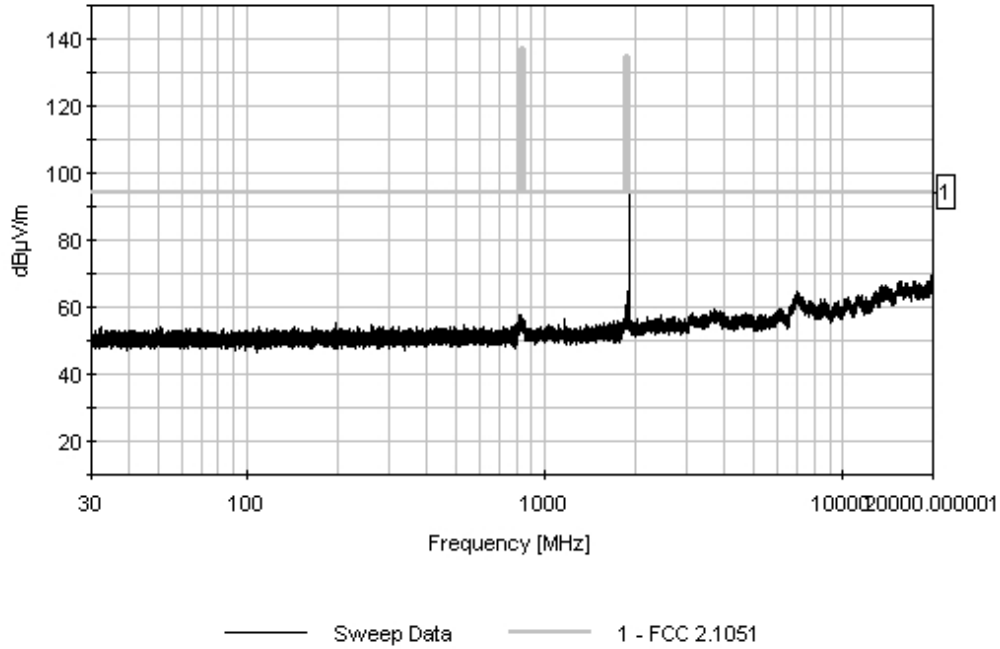
**Transducer Legend:**

T1=Pad 10dB	T2=Cable 40 GHz 48"
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**Measurement Data:** Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	1909.650M	119.6	+10.2	+1.2	+0.0	131.0	94.0 Carrier	+37.0	None
2	1877.150M	52.6	+10.2	+1.2	+0.0	64.0	94.0	-30.0	None

CKC Laboratories Date: 12/8/2005 Time: 15:30:48 Wilson Electronics WO#: 84511  
FCC 2.1051 Test Distance: None Sequence#: 22  
Wilson Electronics M/N 801201 1900 MHz Band EDGE High Channel





**FCC 2.1033(c)(14)/2.1051/24.238 – 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 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

***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..

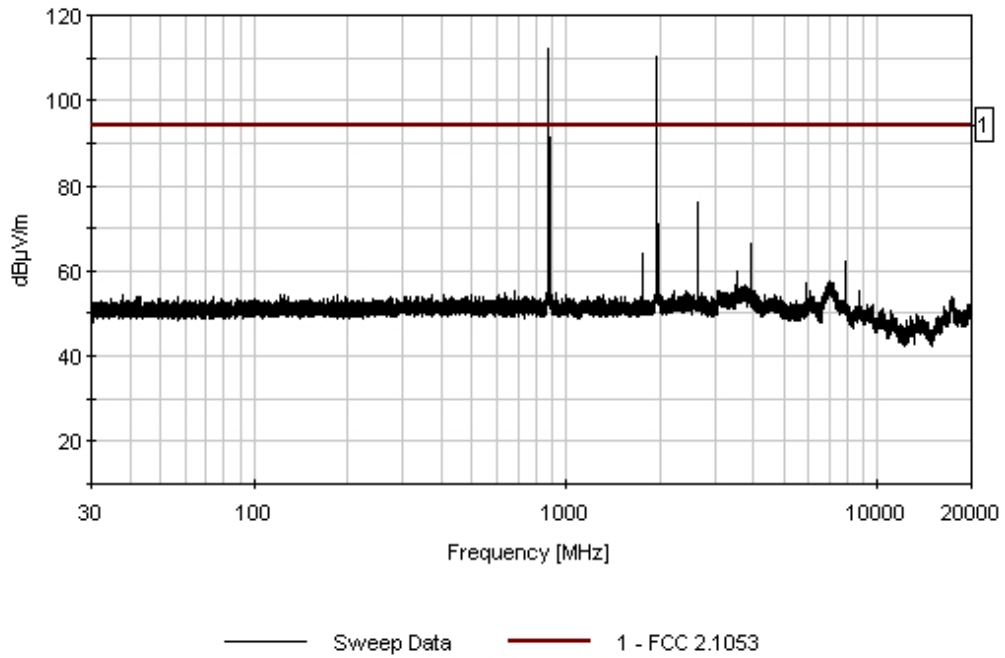
***Transducer Legend:***

T1=Pad 30dB

#	Freq MHz	Reading listed by margin.					Test Distance: None				
		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 WVO#: 83305  
 FCC 2.1053 Test Distance: None Sequence#: 93  
 Wilson Electronics MN 801201





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	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

**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
-------------

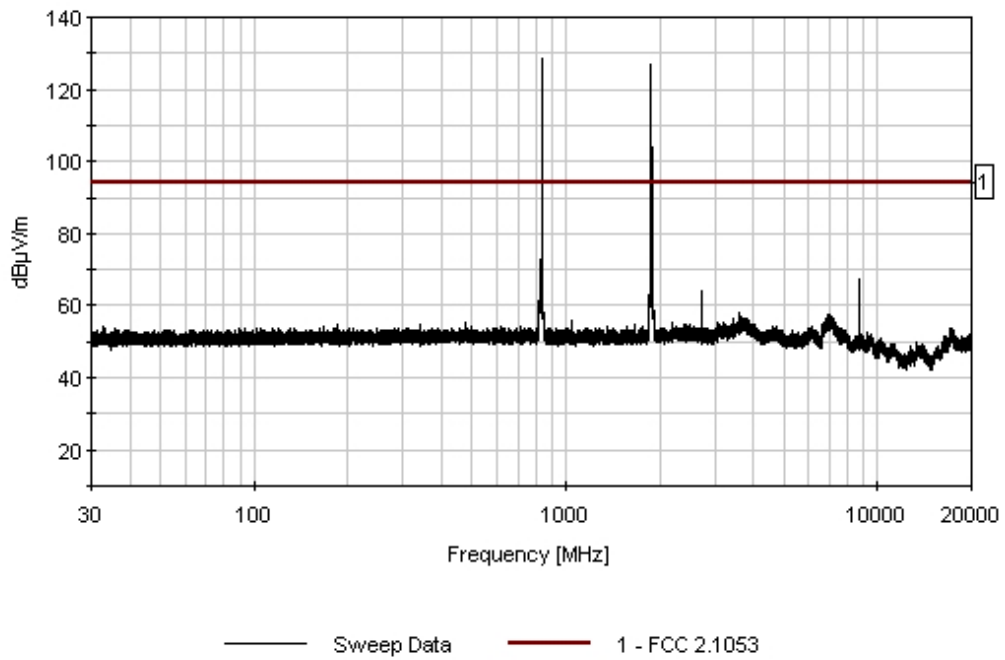
**Measurement Data:** Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	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 WVO#: 83305  
 FCC 2.1053 Test Distance: None Sequence#: 92  
 Wilson Electronics MN 801201



**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**





**FCC 2.1033(c)(14)/2.1053/24.238 - FIELD STRENGTH OF SPURIOUS RADIATION**

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1053**  
 Work Order #: **84511** Date: 12/15/2005  
 Test Type: **Antenna Terminals** Time: 08:14:08  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 25  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801201-A  
 S/N: 8012010112702

***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Chase CBL6111C Bilog	2456	06/07/2005	06/07/2007	01991
EMCO 3115 Horn Antenna	9307-4085	04/29/2005	04/29/2007	00656
ARA MWH-1826/B Horn Antenna	1005	11/05/2004	11/05/2006	02046
HP 8447D Preamp	1937A02604	03/11/2005	03/11/2007	00099
HP 8449B Preamp	3008A00301	12/14/2004	12/14/2006	2010
Cable, Andrews Hardline HF-005-20	NA	05/27/2005	05/27/2007	P04275

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

Function	Manufacturer	Model #	S/N
In Vehicle Wireless Dual Band Smart Amplifier*	Wilson Electronics	801201-A	8012010112702

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward	TPS-2000	920035
Signal Generator	HP	E4432B	US40052968

***Test Conditions / Notes:***

EUT is a dual band bidirectional amplifier for the 824 to 894 MHz and the 1850 to 1990 MHz bands. Uplink frequency range 824 - 849MHz and 1850 - 1910MHz. Downlink frequency range 869 - 894MHz and 1930 - 1990MHz. Radiated Spurious Emissions Test: 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. The EUT output port is terminated into a resistive load. Input Modulation: CDMA. Frequencies Tested: Uplink 800MHz and 1900MHz Bands. This mode represents the worst case of emissions. Frequency Range Investigated: 30 MHz to 20 GHz. **No EUT Emissions were detected within 20dB 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



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

Customer: **Wilson Electronics**  
 Specification: **24.238**  
 Work Order #: **83305** Date: 03/31/2005  
 Test Type: **Antenna Terminals** Time: 10:04:08  
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 87  
 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 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. 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, 1850.28 & 1850.84MHz and then 1909.16 & 1909.72MHz. Data represents measured worst case and represents all modulation types. Input Modulation: GSM. Frequencies Tested: Uplink. Frequency Range Investigated: 30MHz to 10GHz. 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**



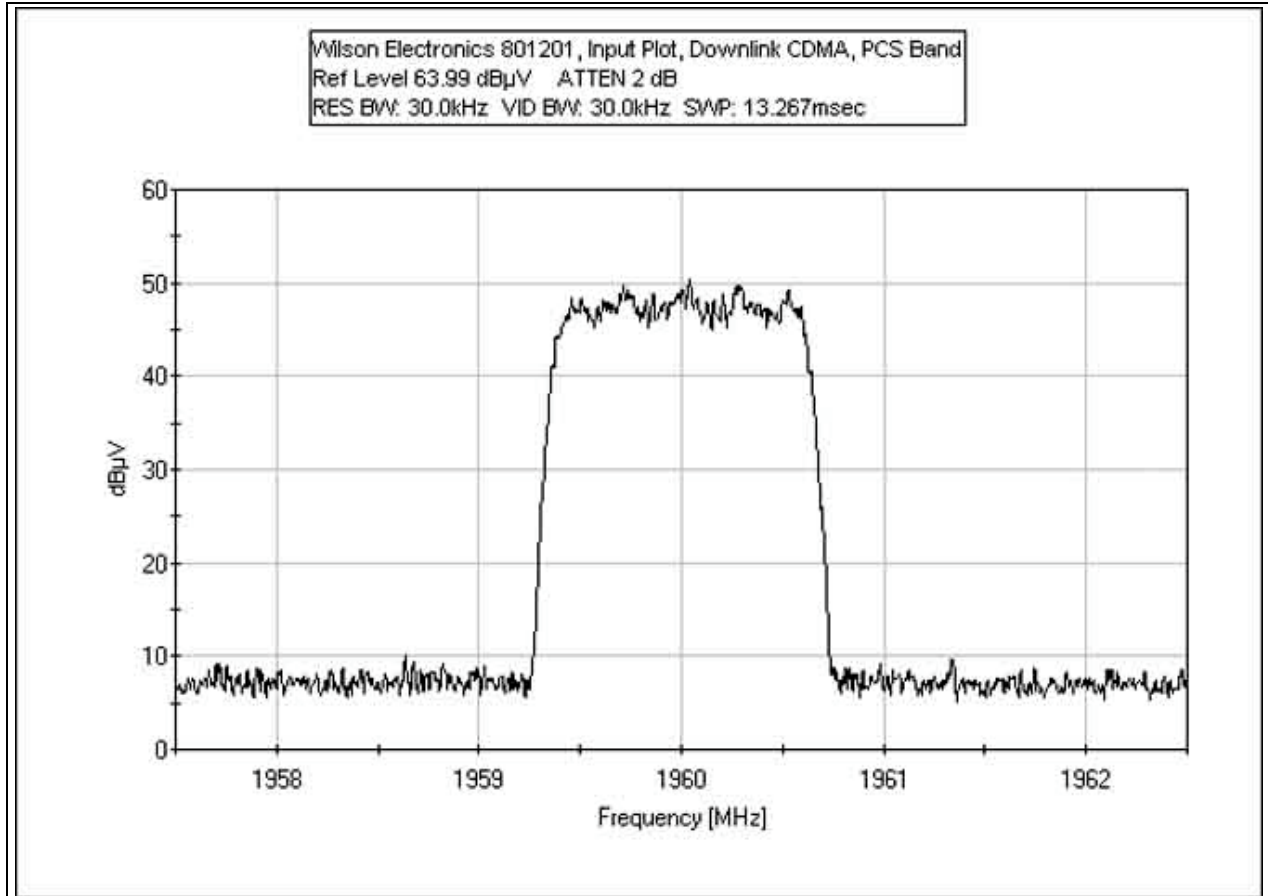
Radiated Emissions - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**

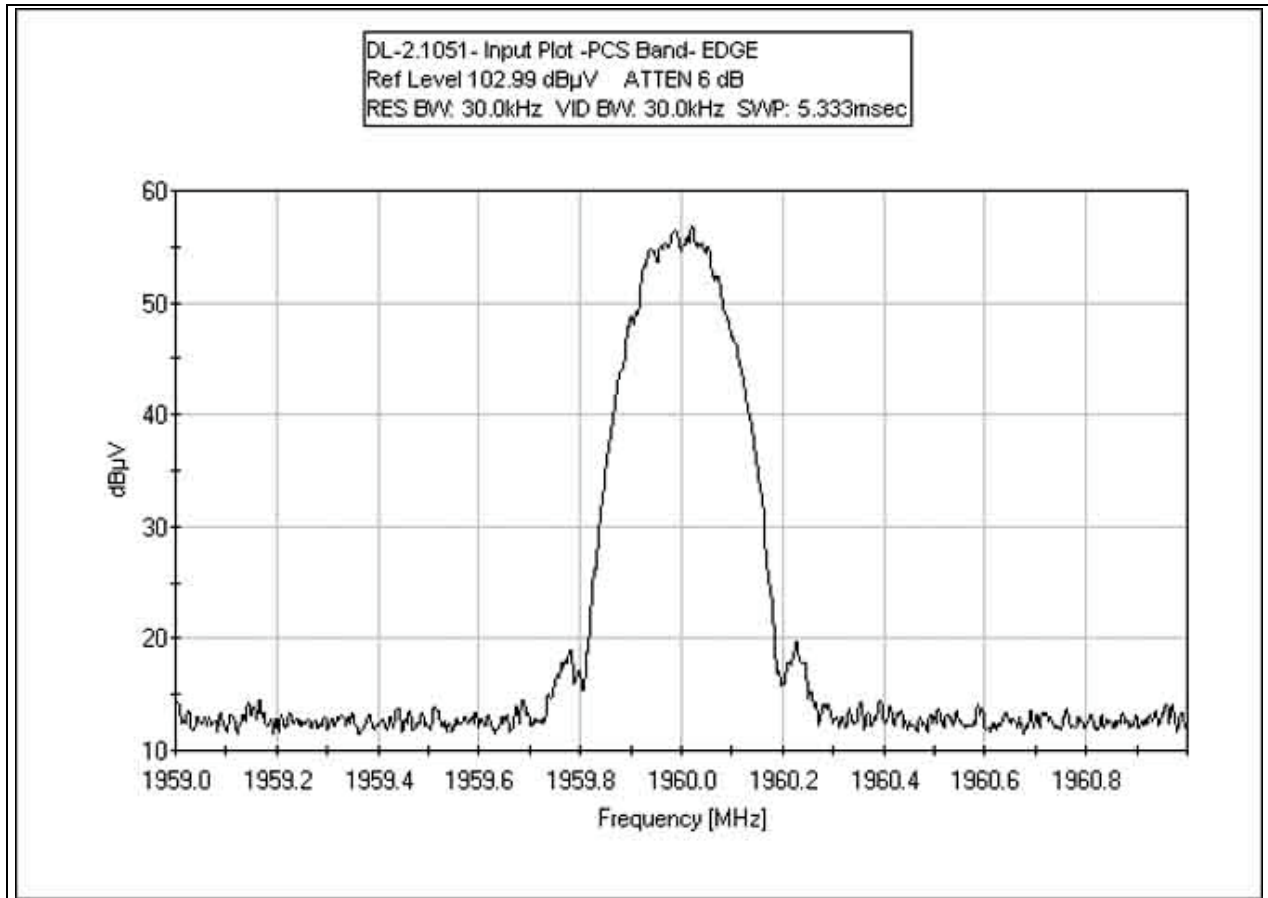


Radiated Emissions - Back View

### INPUT DOWNLINK CDMA

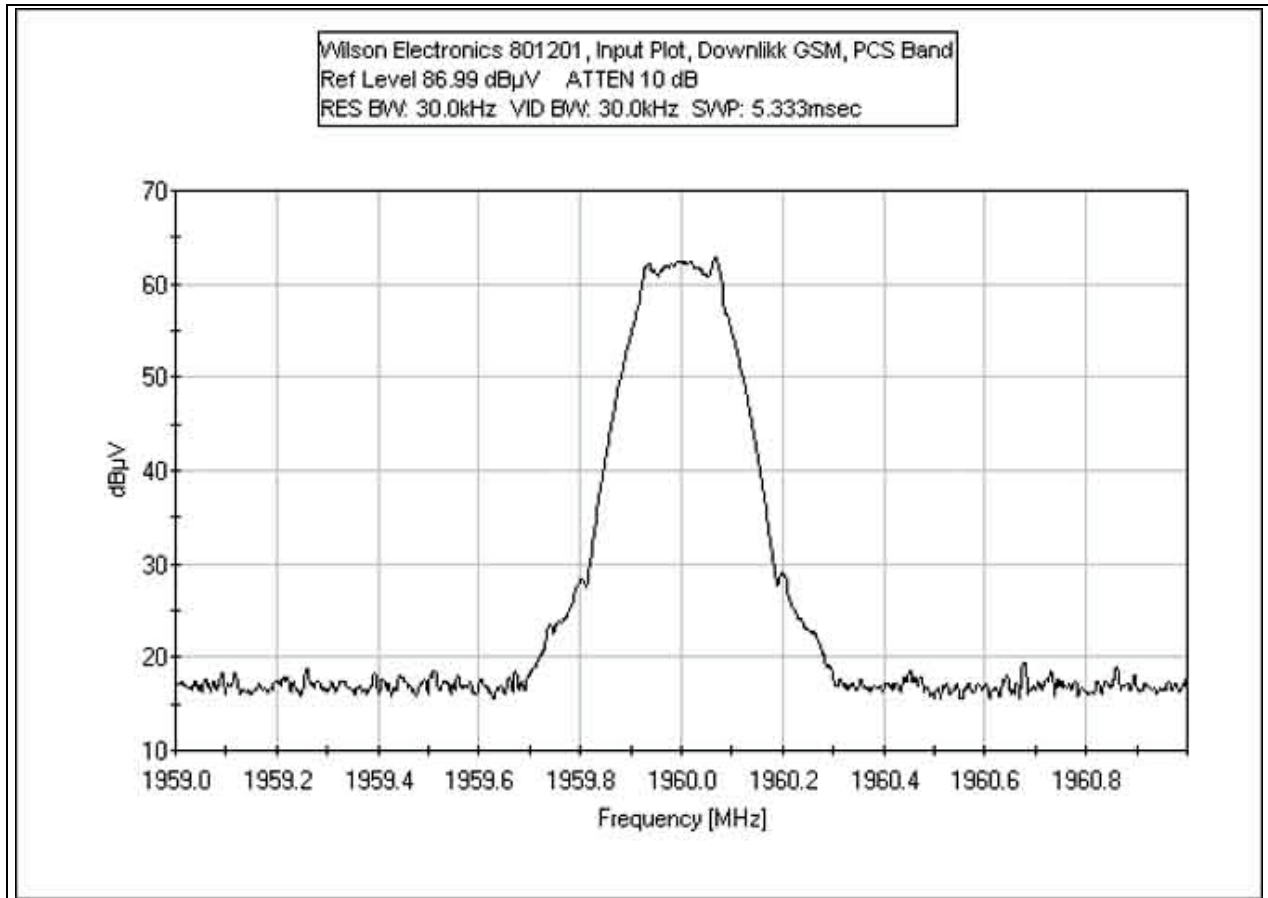


### INPUT DOWNLINK EDGE





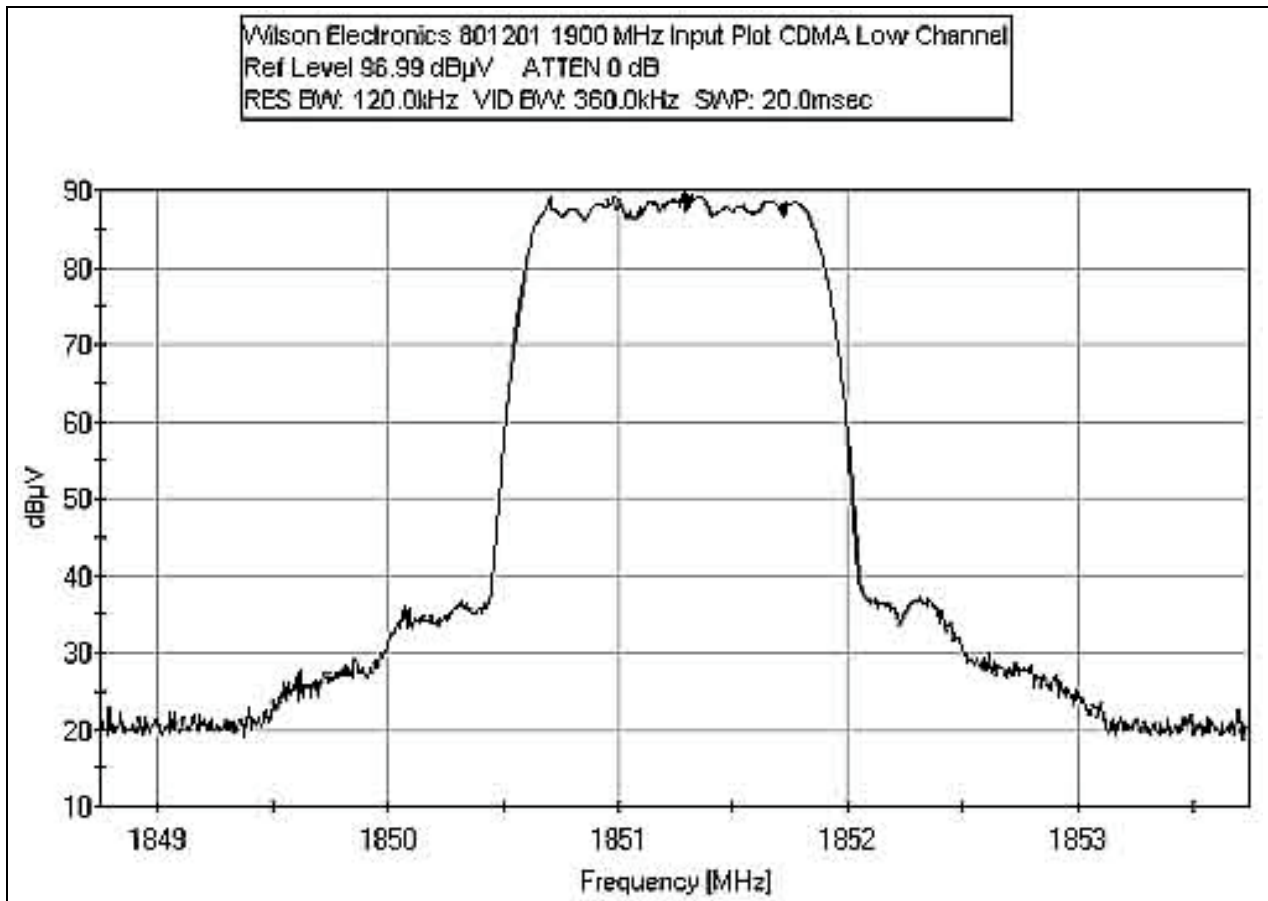
### INPUT DOWNLINK GSM



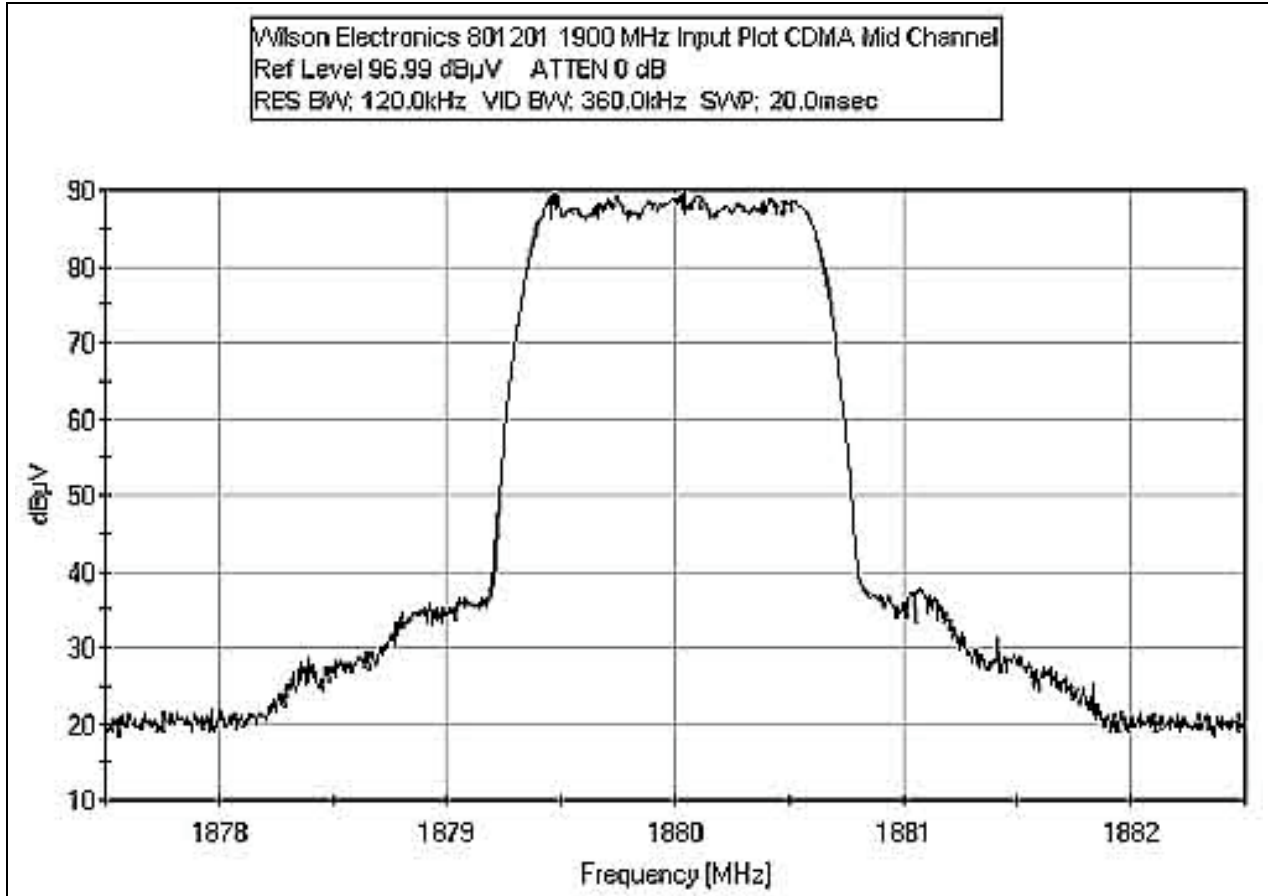
**Test Equipment:**

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

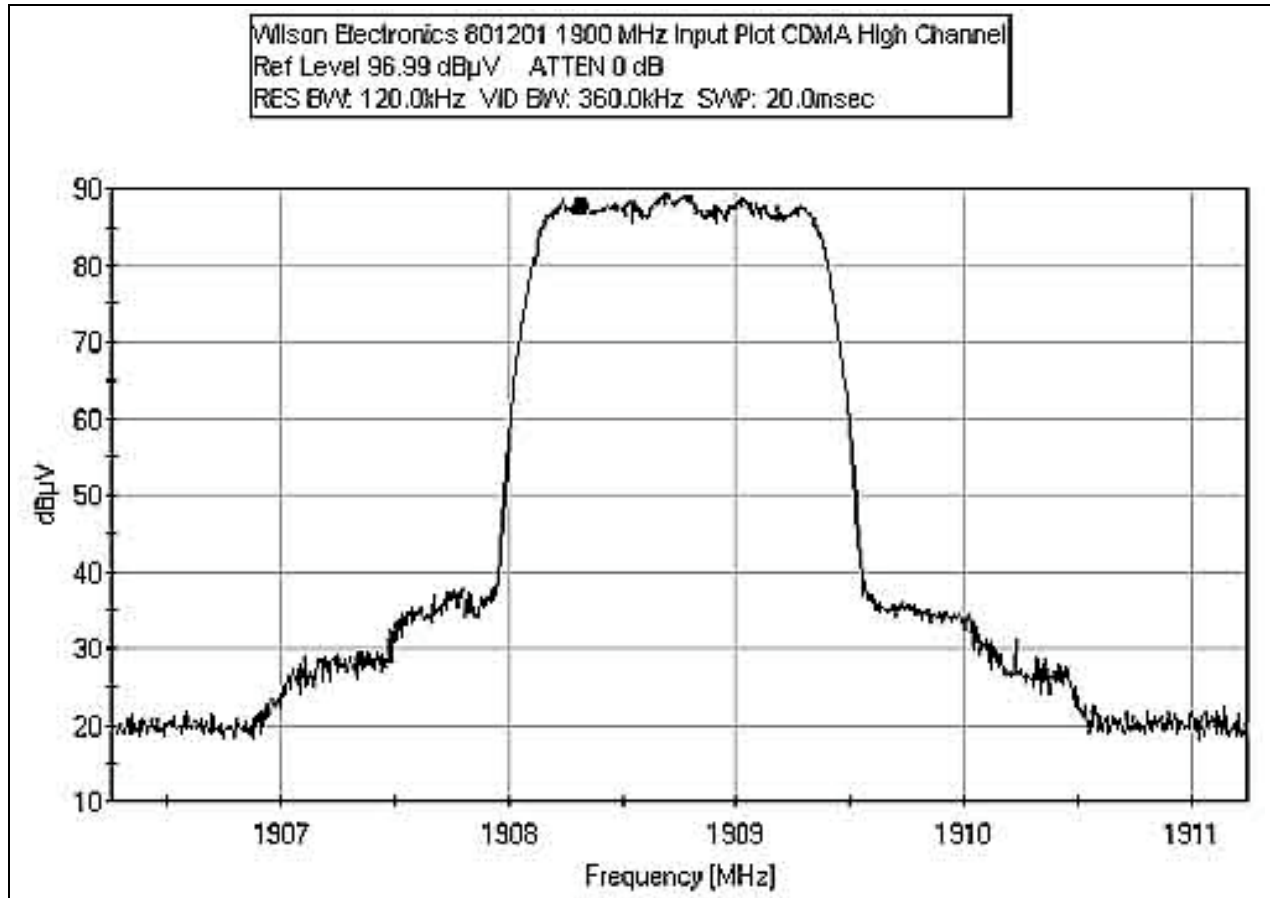
### INPUT UPLINK CDMA LOW CHANNEL



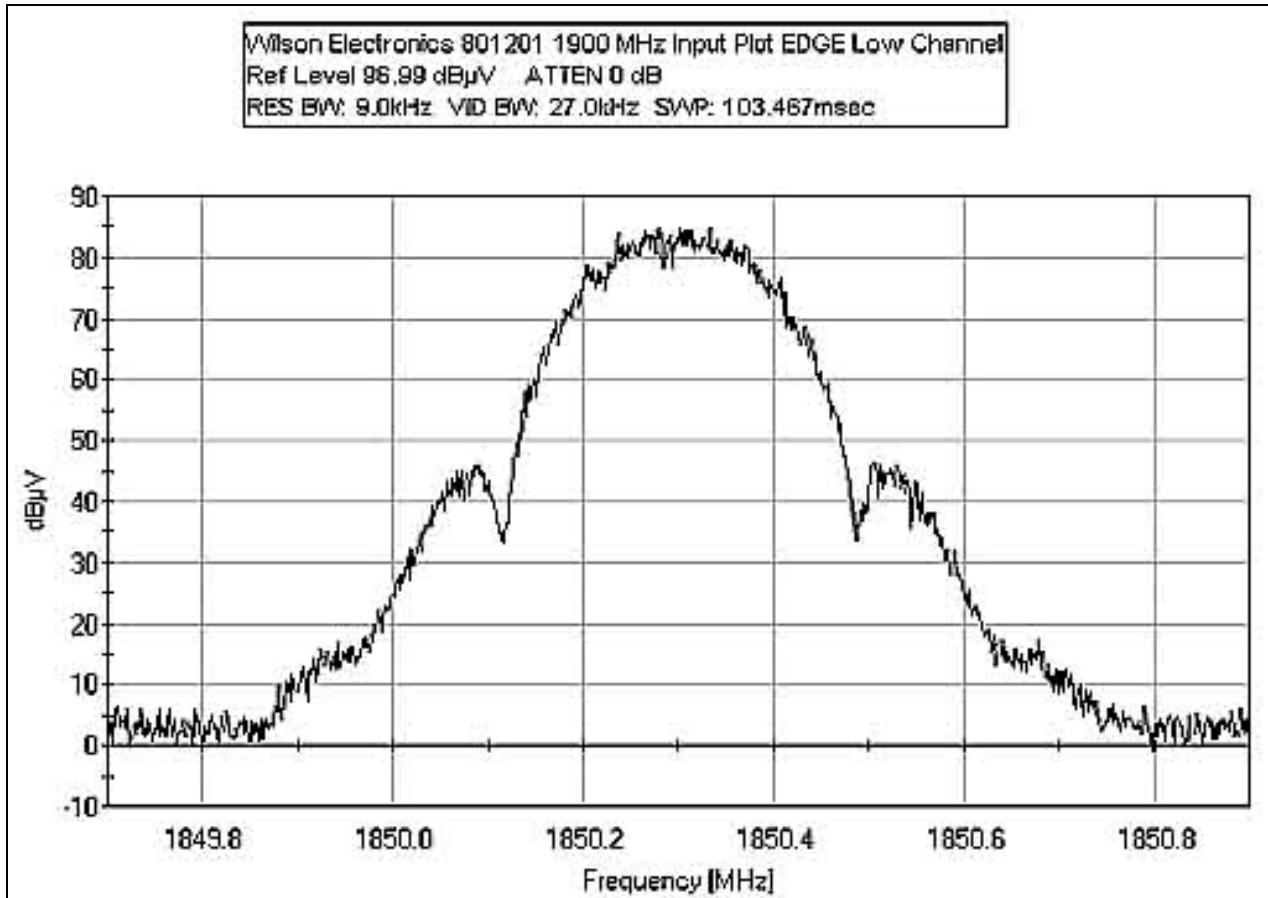
### INPUT UPLINK CDMA MID CHANNEL



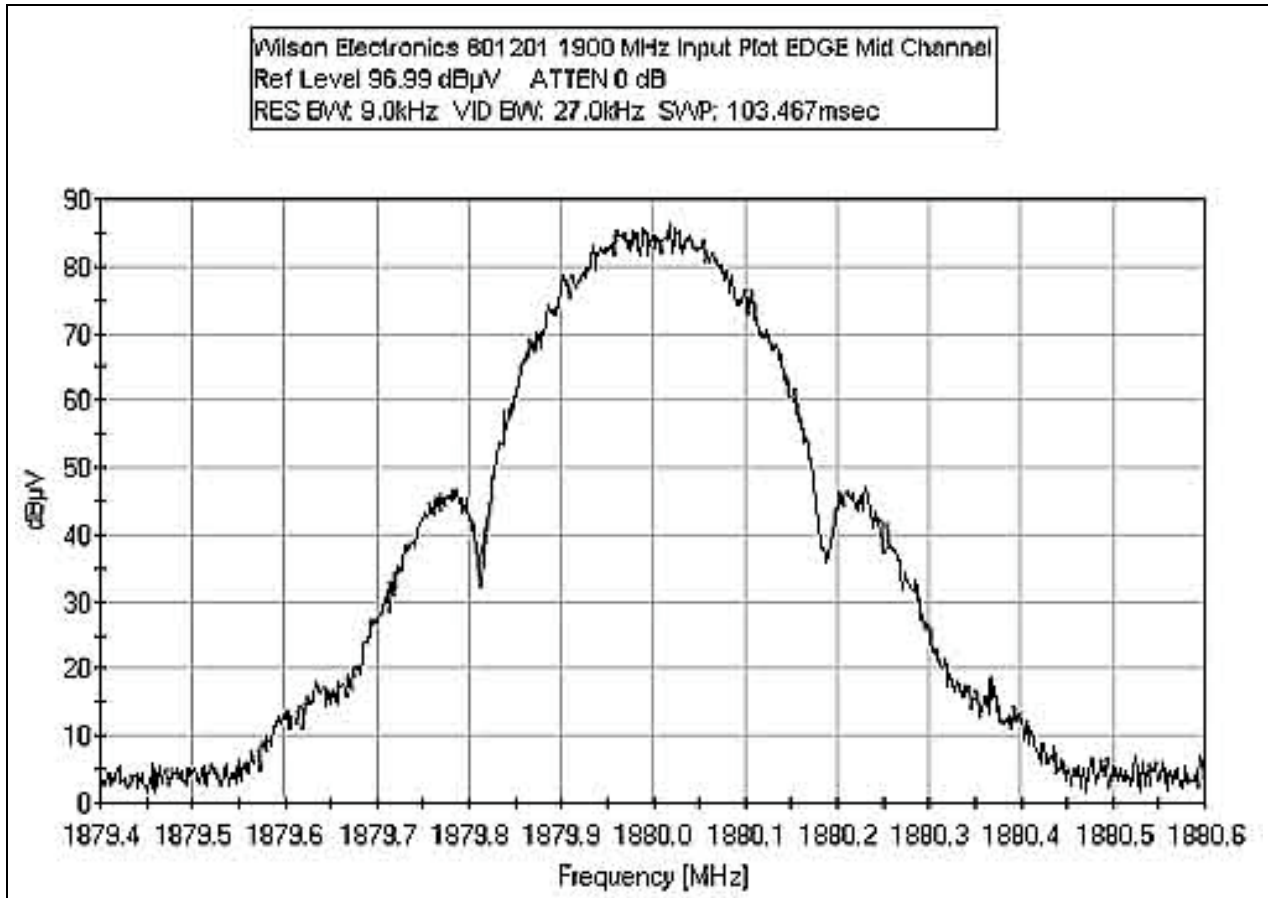
### INPUT UPLINK CDMA HIGH CHANNEL



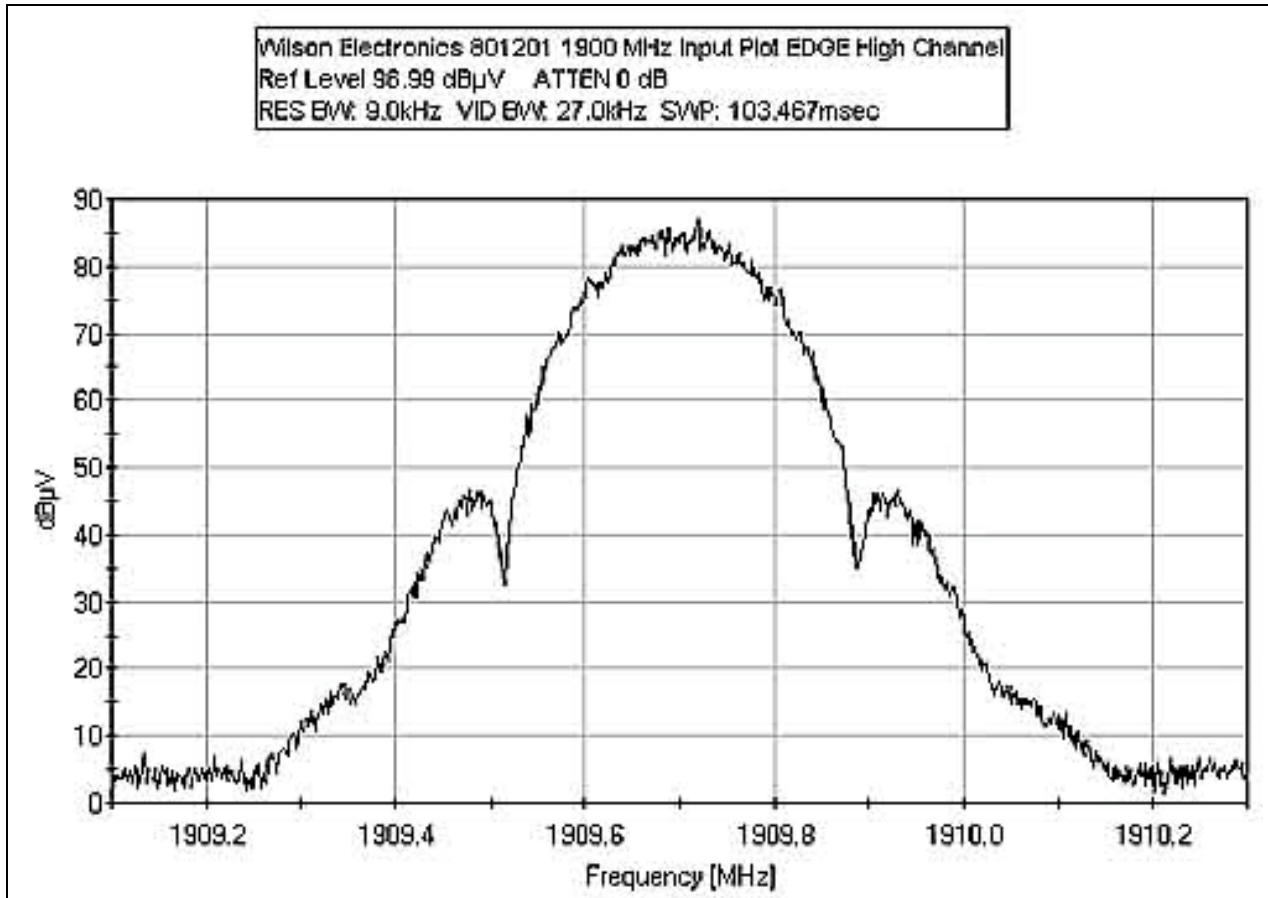
**INPUT UPLINK EDGE LOW CHANNEL**



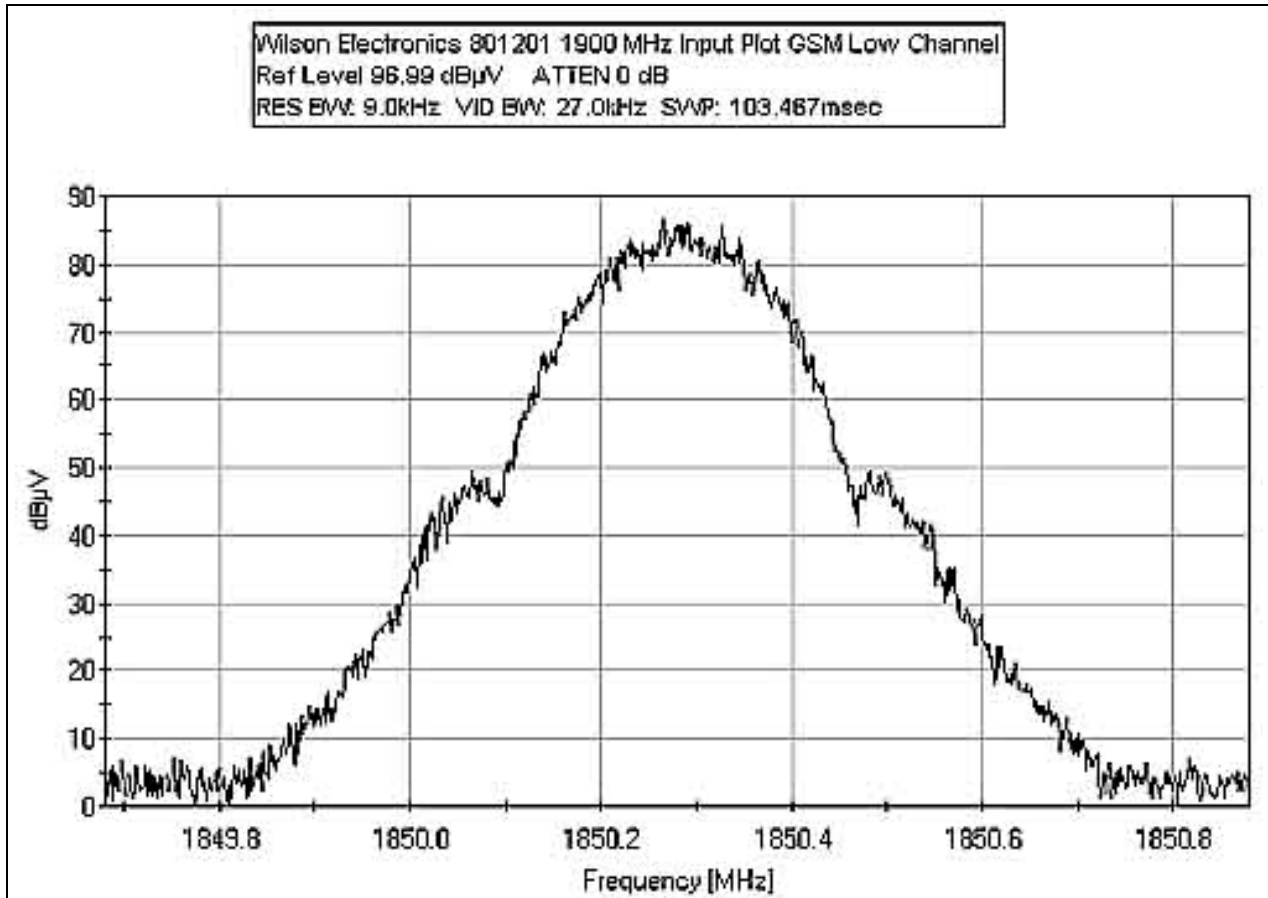
### INPUT UPLINK EDGE MID CHANNEL



**INPUT UPLINK EDGE HIGH CHANNEL**

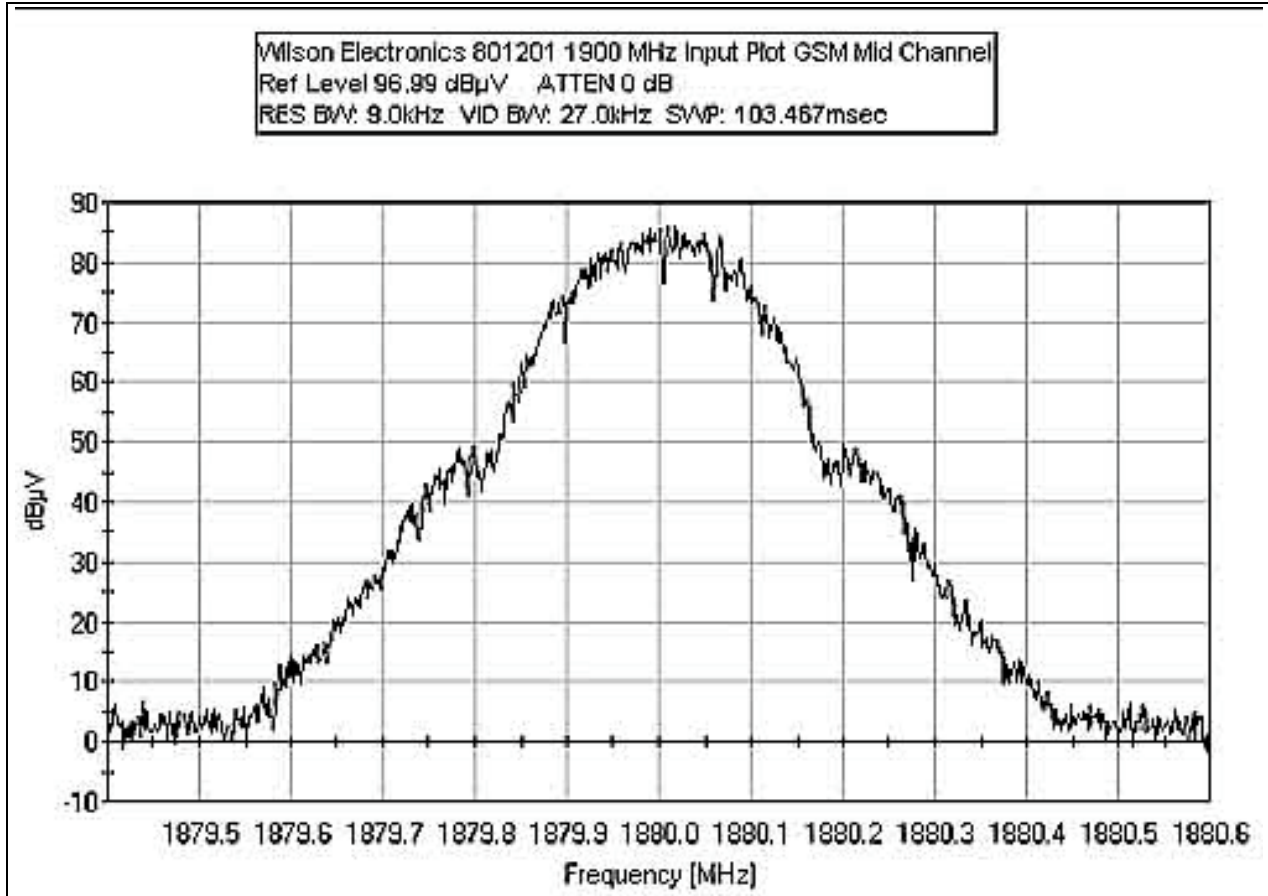


### INPUT UPLINK GSM LOW CHANNEL

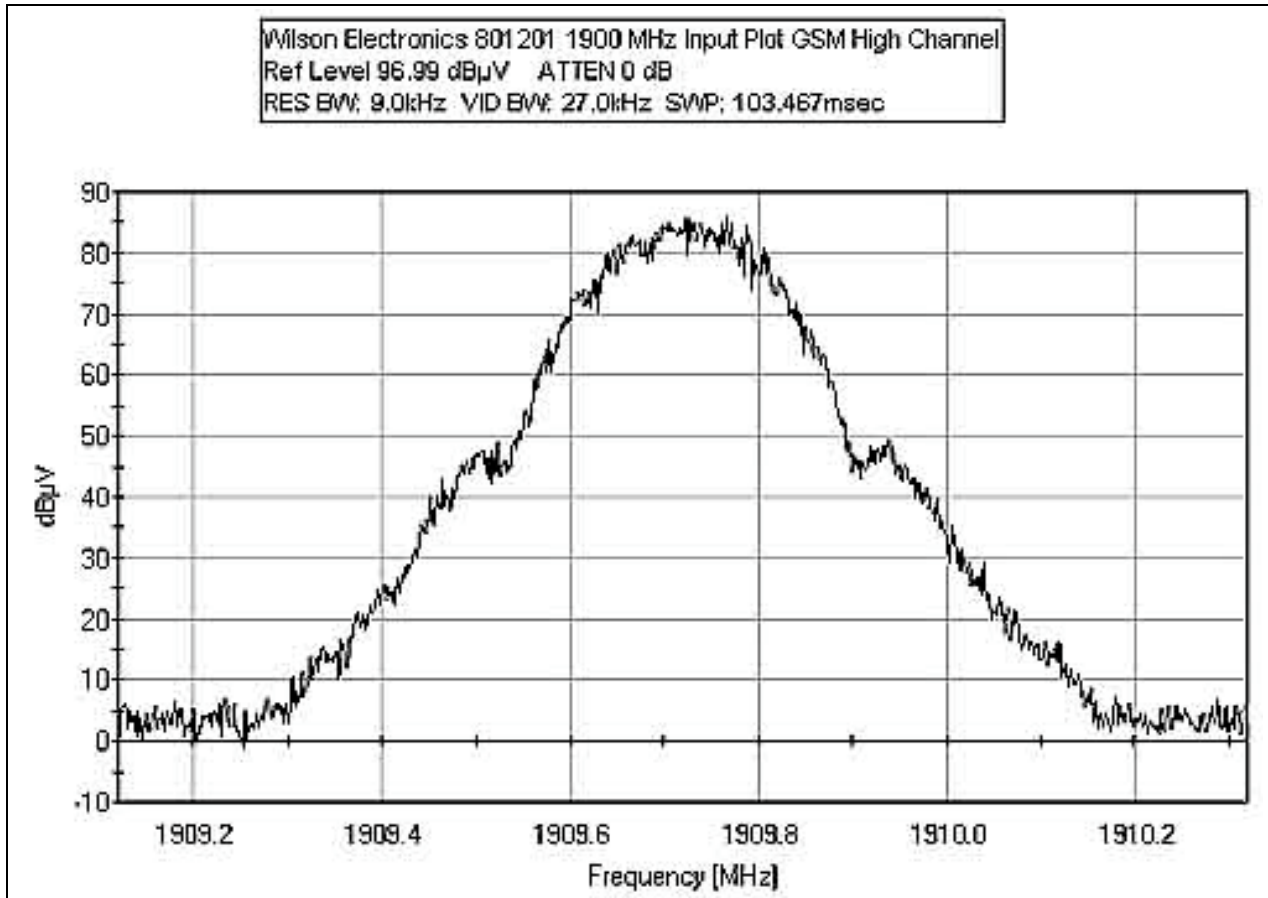




### INPUT UPLINK GSM MID CHANNEL



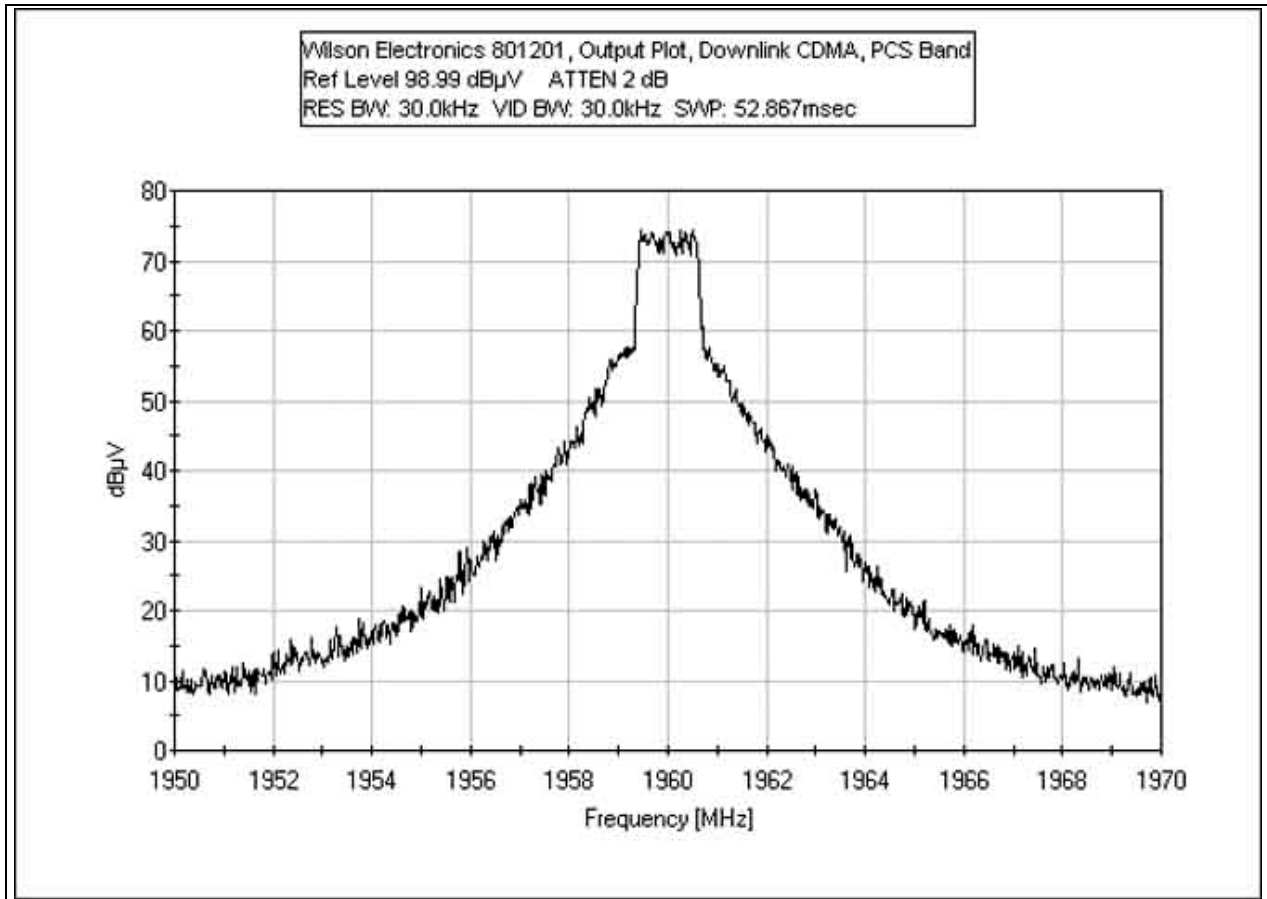
### INPUT UPLINK GSM HIGH CHANNEL



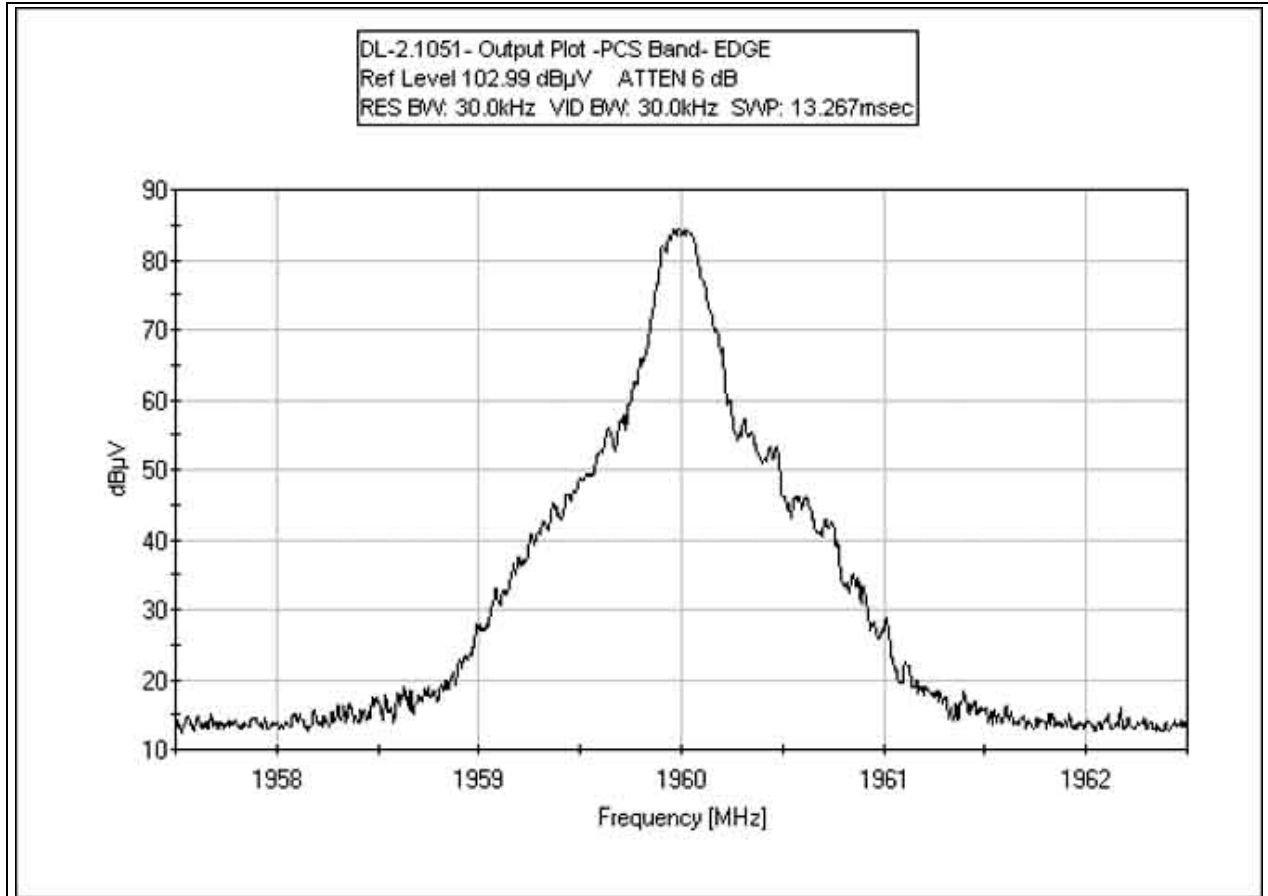
**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

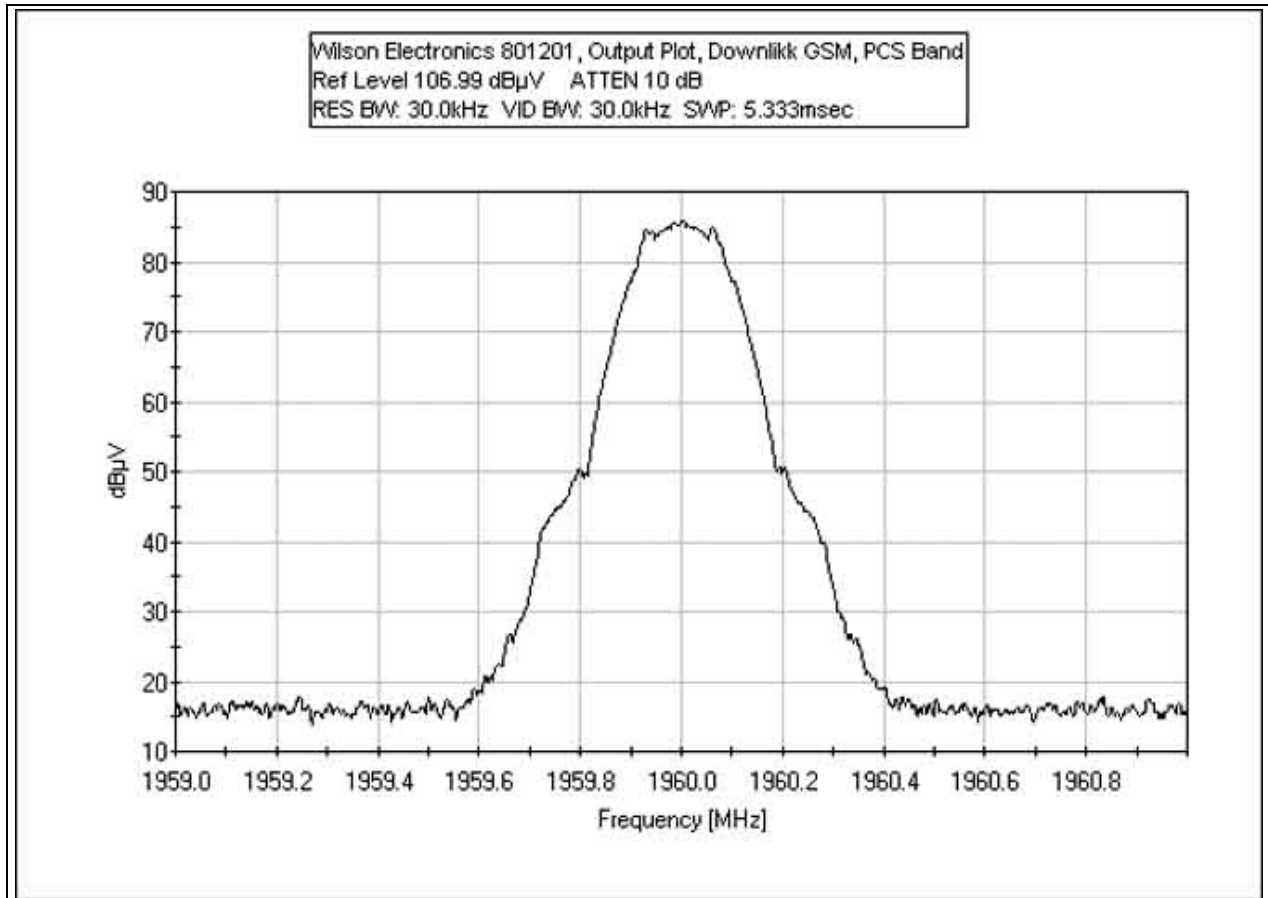
### OUTPUT DOWNLINK CDMA



### OUTPUT DOWNLINK EDGE



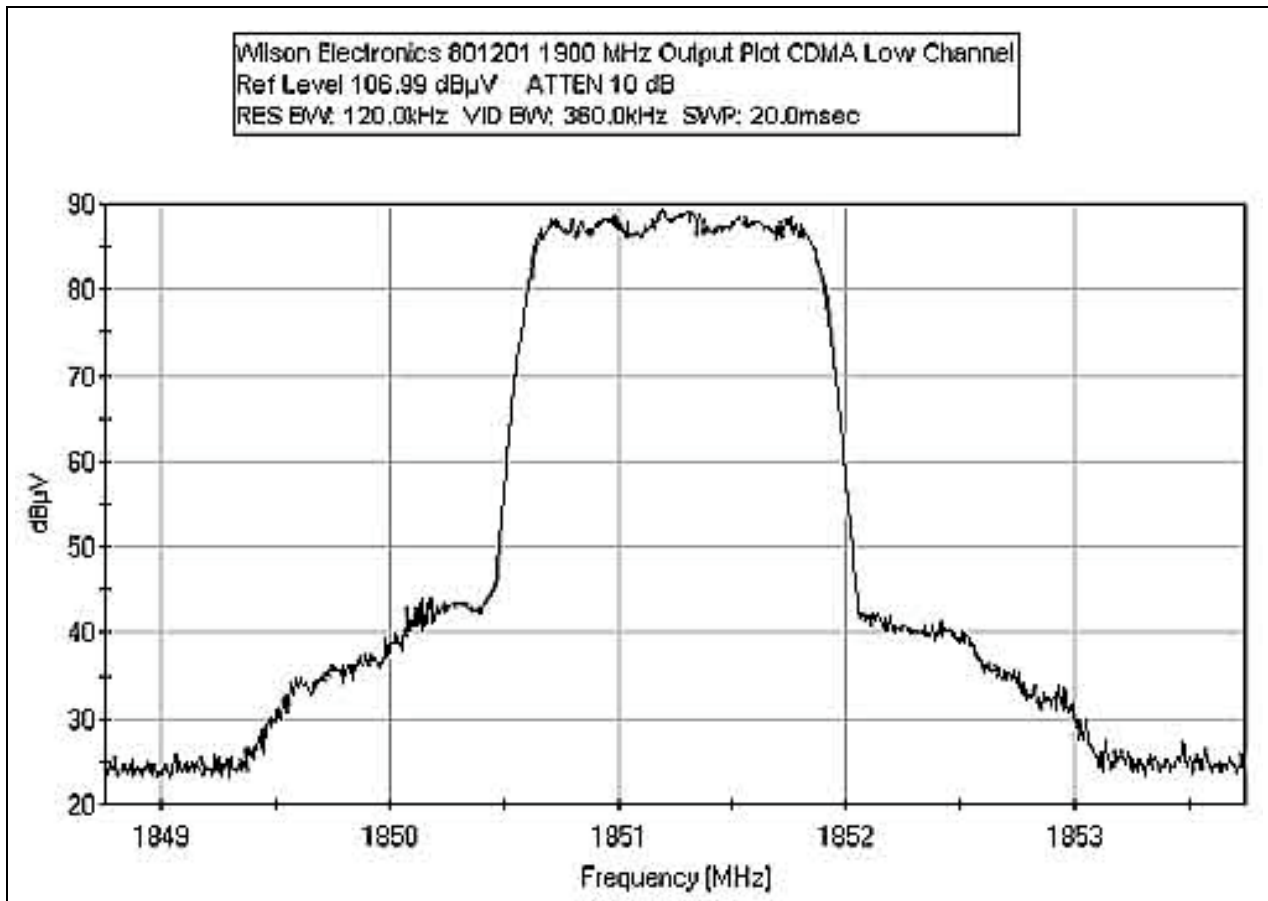
### OUTPUT DOWNLINK GSM



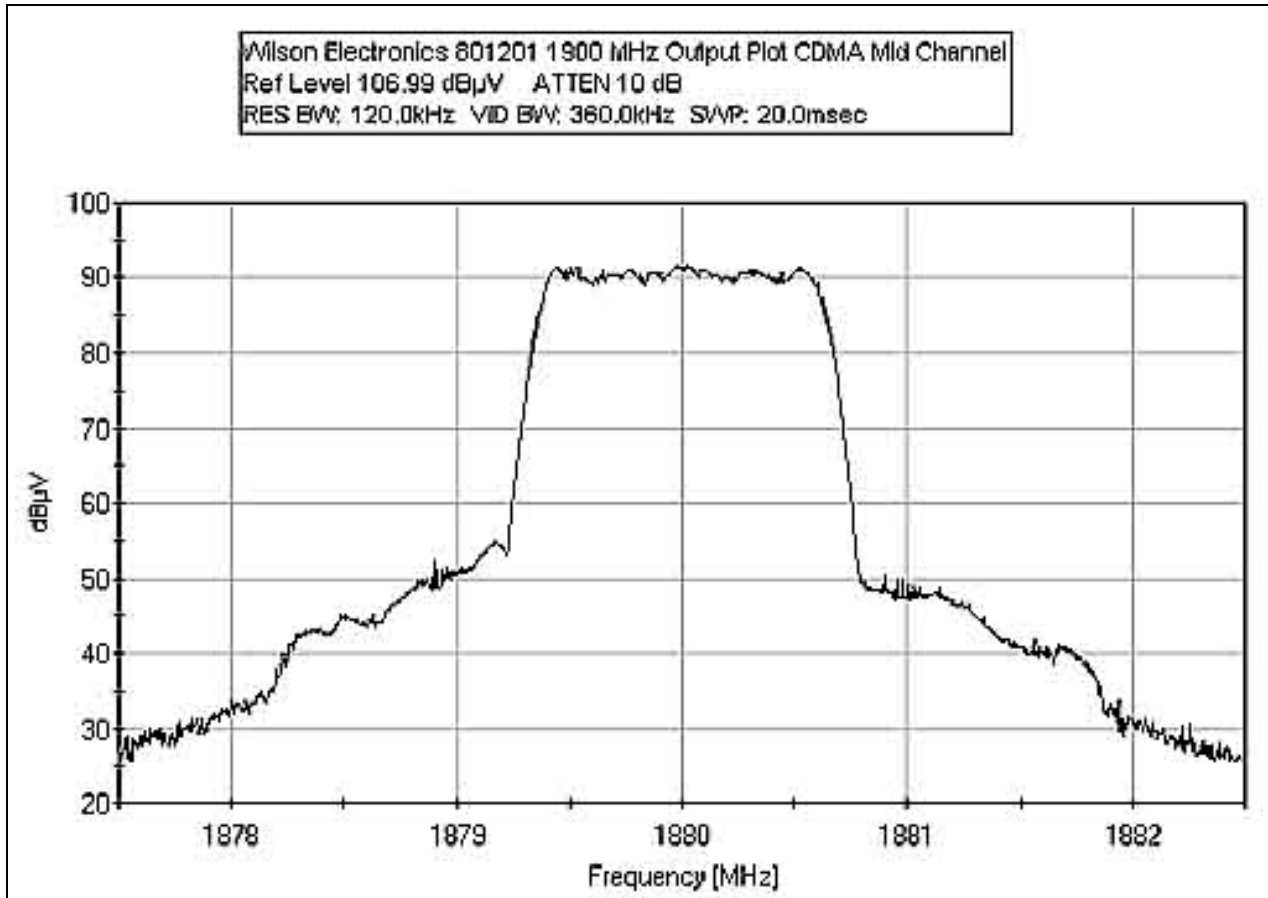
**Test Equipment:**

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				

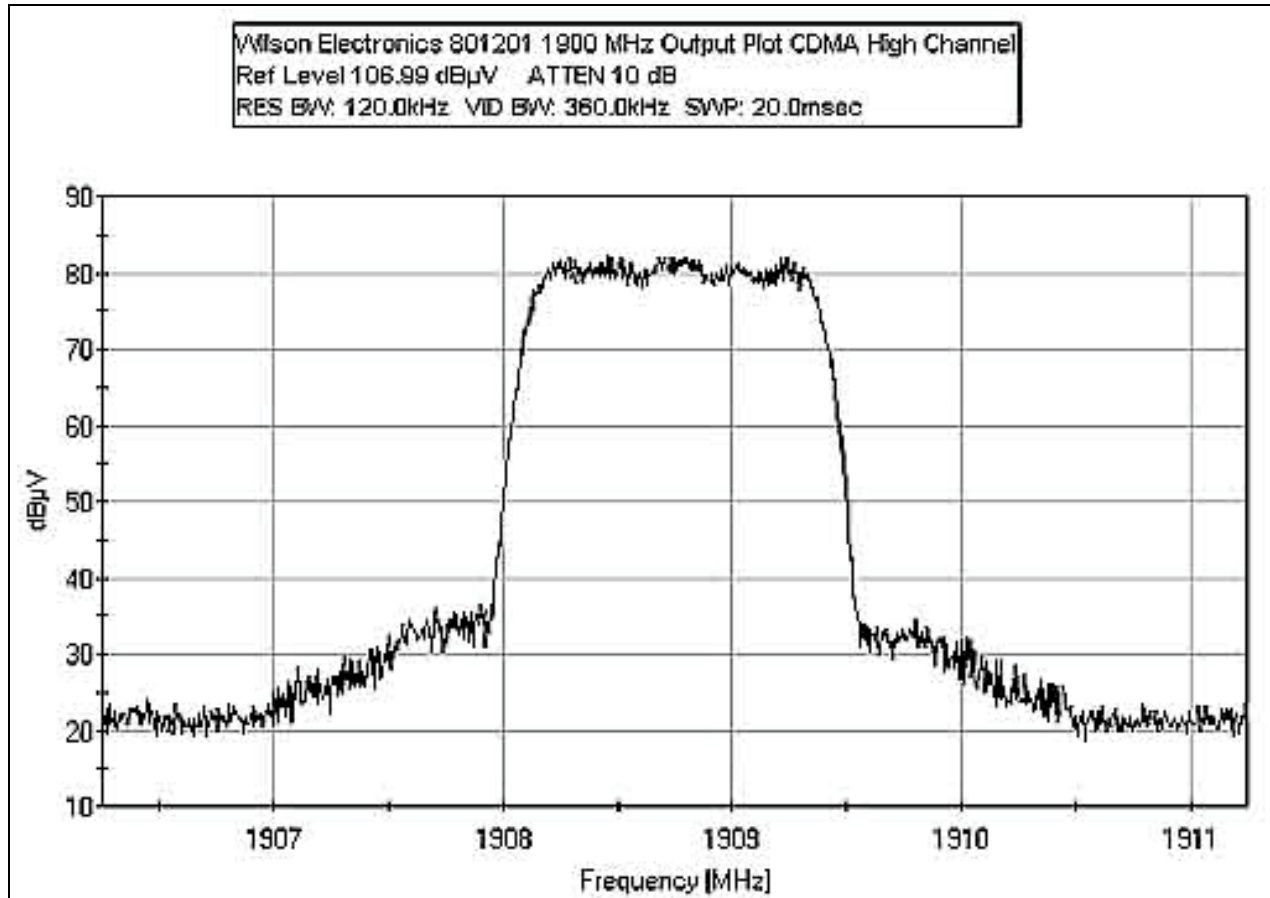
### OUTPUT UPLINK CDMA LOW CHANNEL



### OUTPUT UPLINK CDMA MID CHANNEL

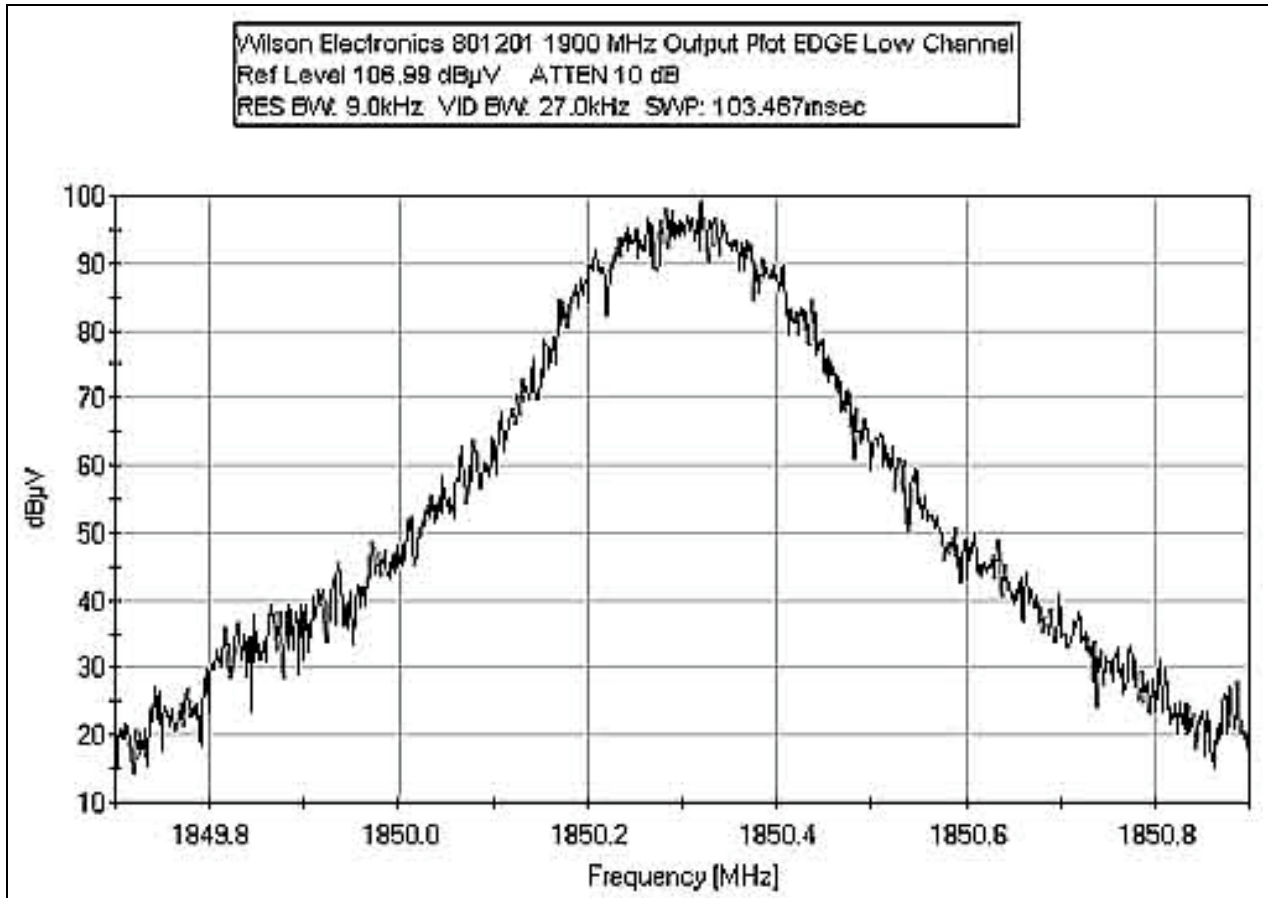


### OUTPUT UPLINK CDMA HIGH CHANNEL

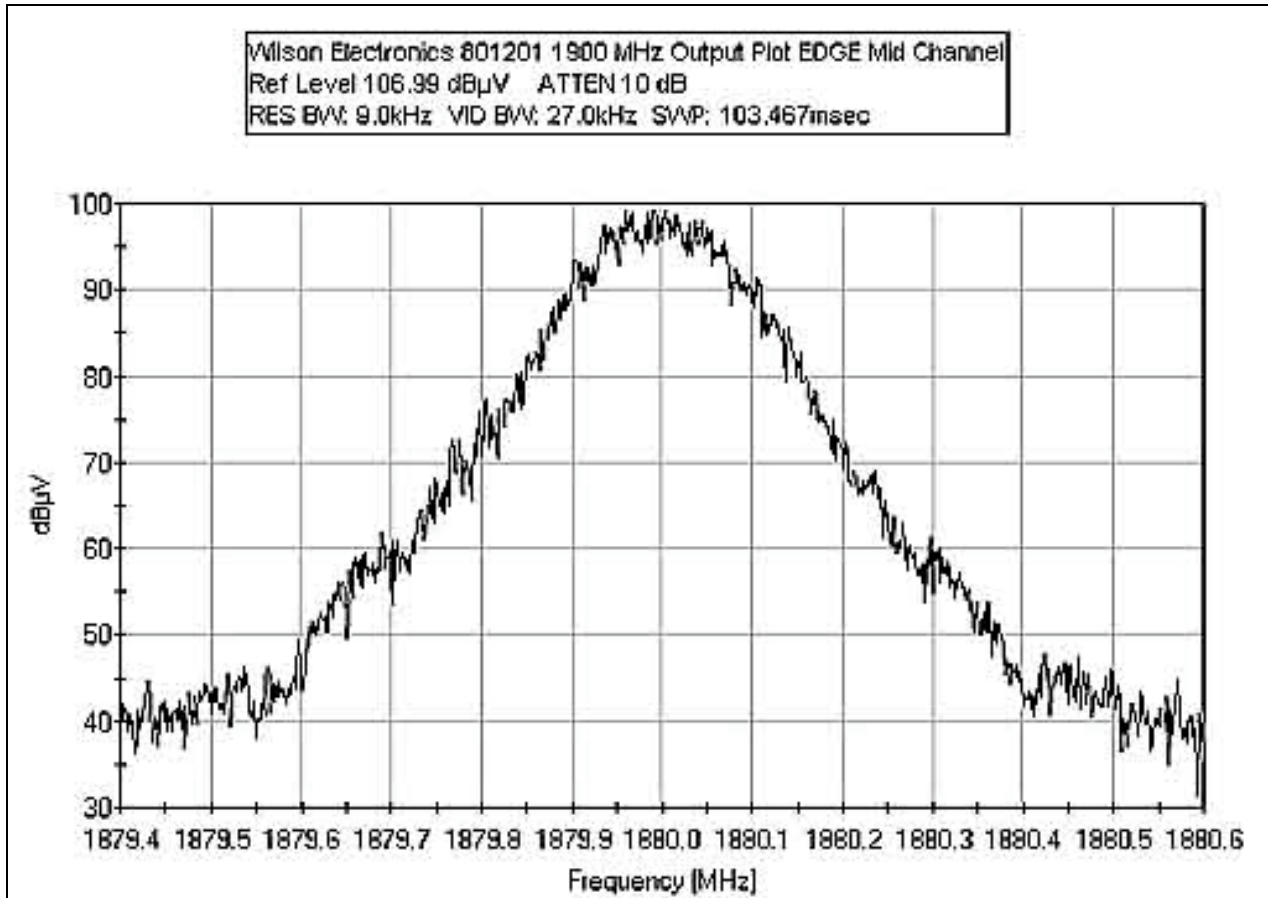




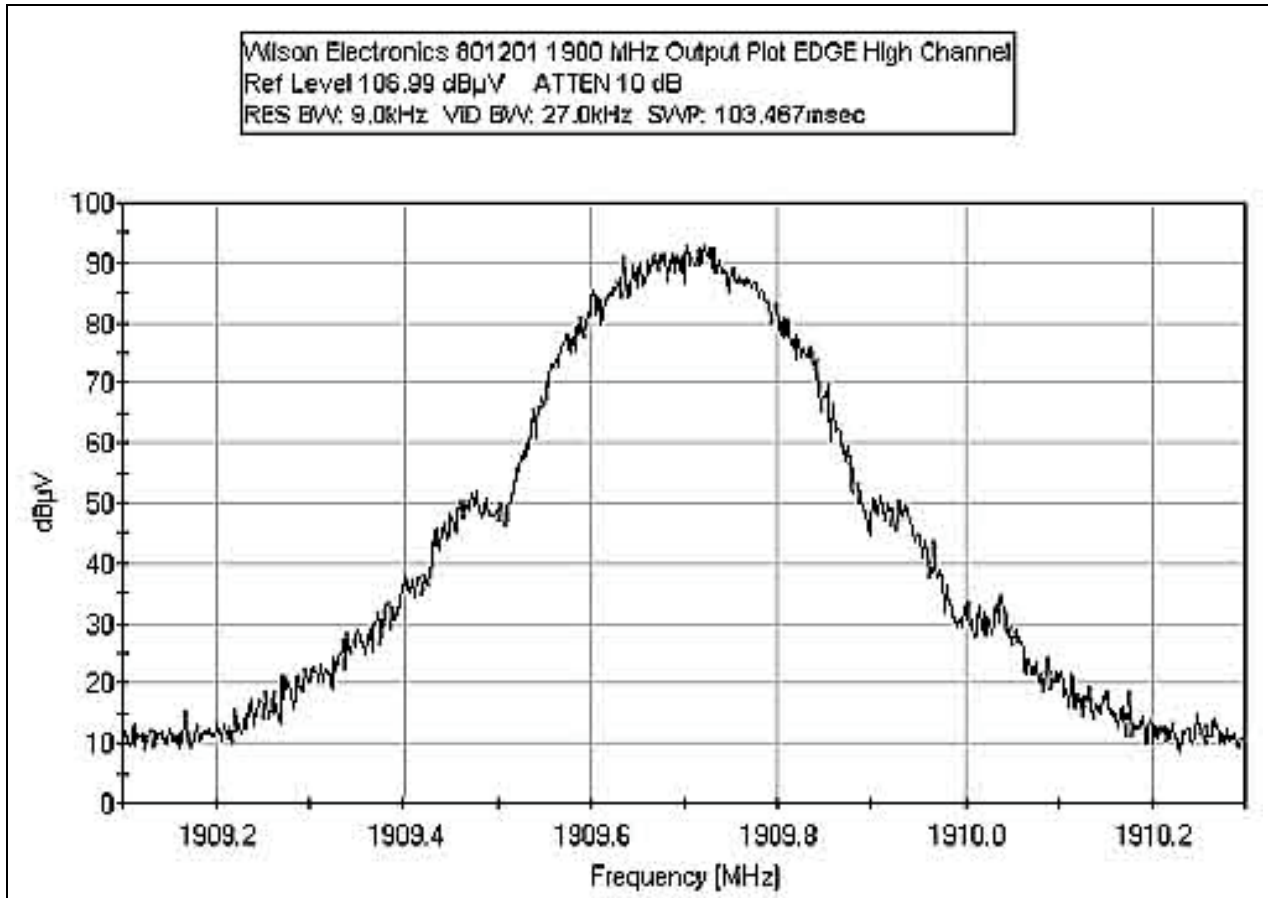
**OUTPUT UPLINK EDGE LOW CHANNEL**



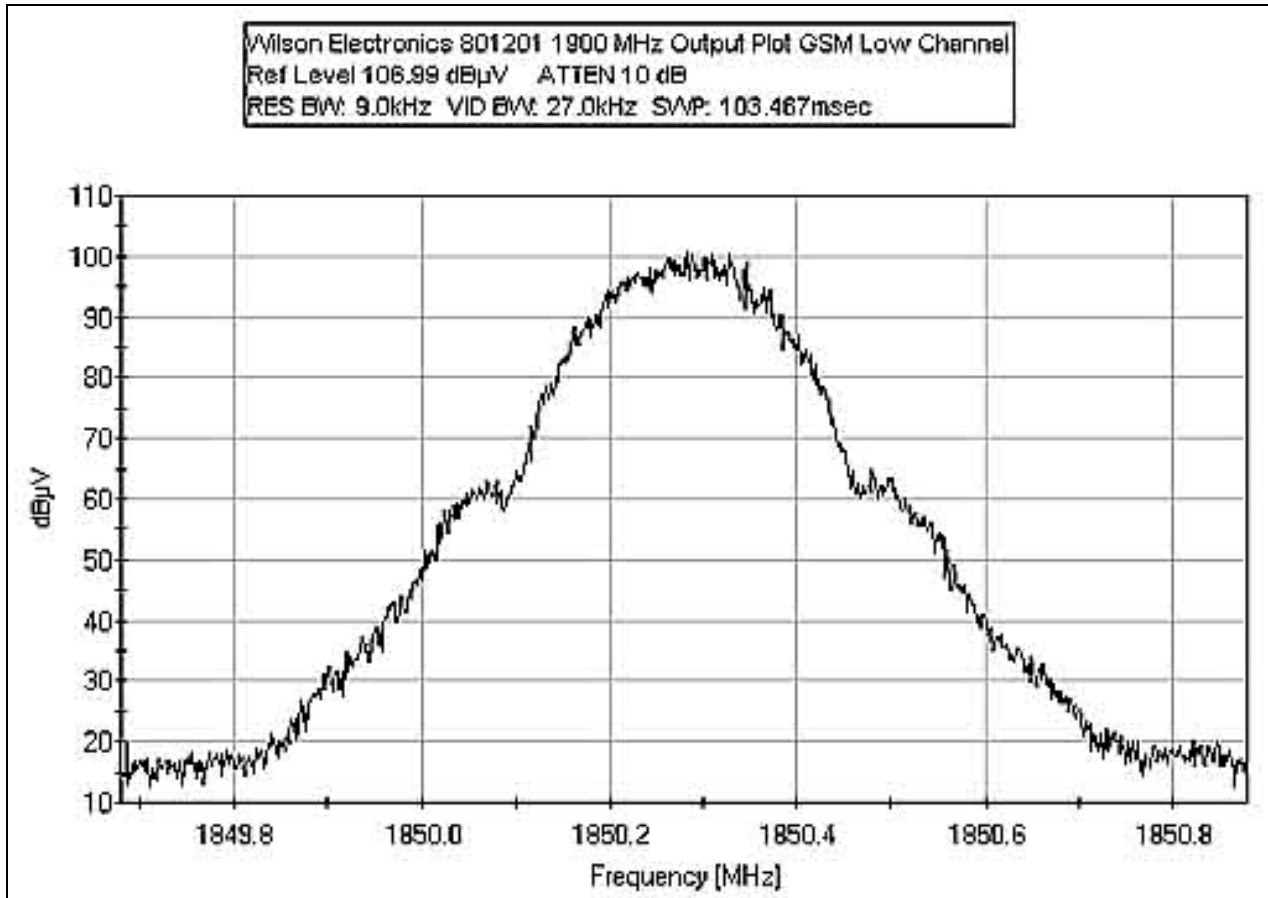
### OUTPUT UPLINK EDGE MID CHANNEL



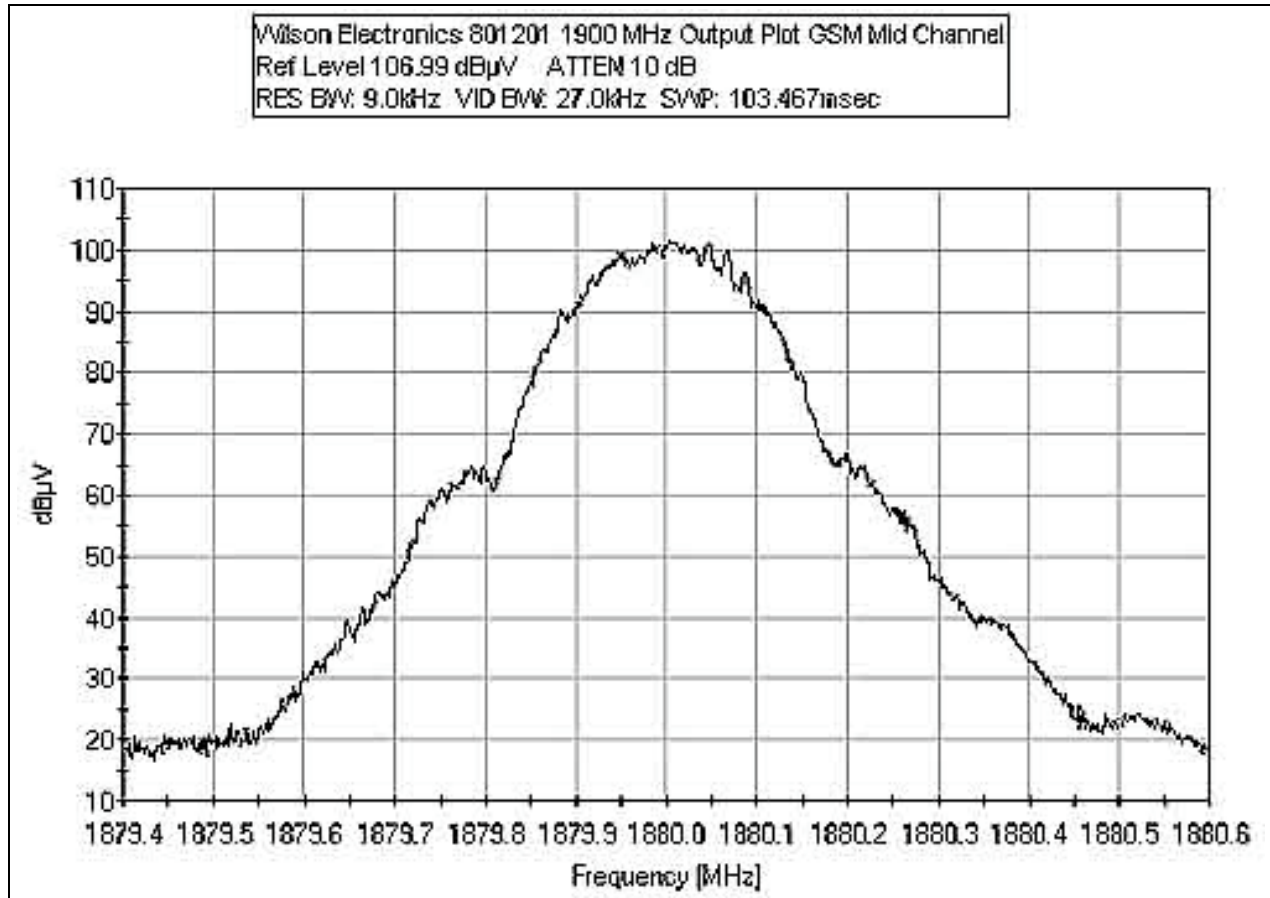
### OUTPUT UPLINK EDGE HIGH CHANNEL



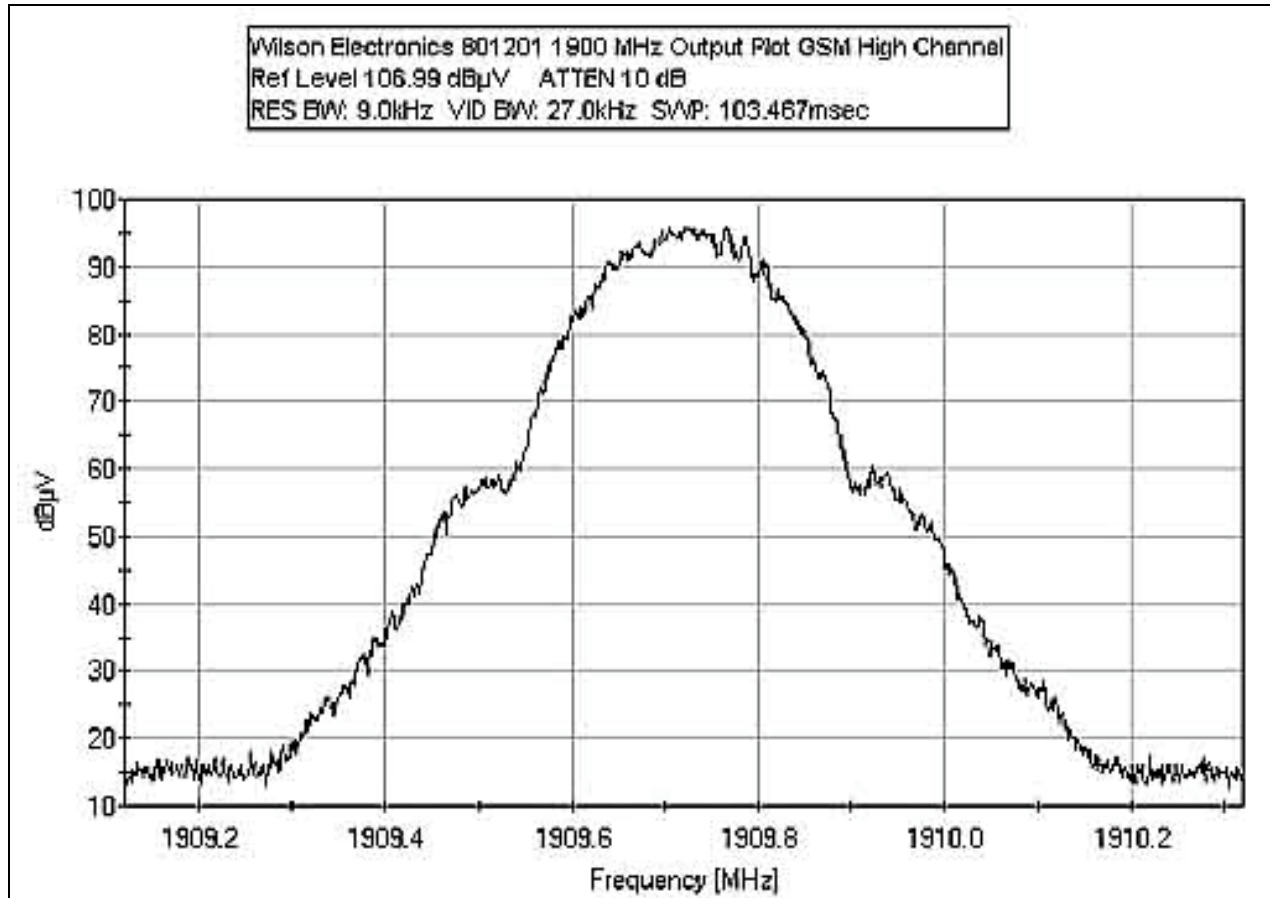
### OUTPUT UPLINK GSM LOW CHANNEL



### OUTPUT UPLINK GSM MID CHANNEL



### OUTPUT UPLINK GSM HIGH CHANNEL



***Test Equipment:***

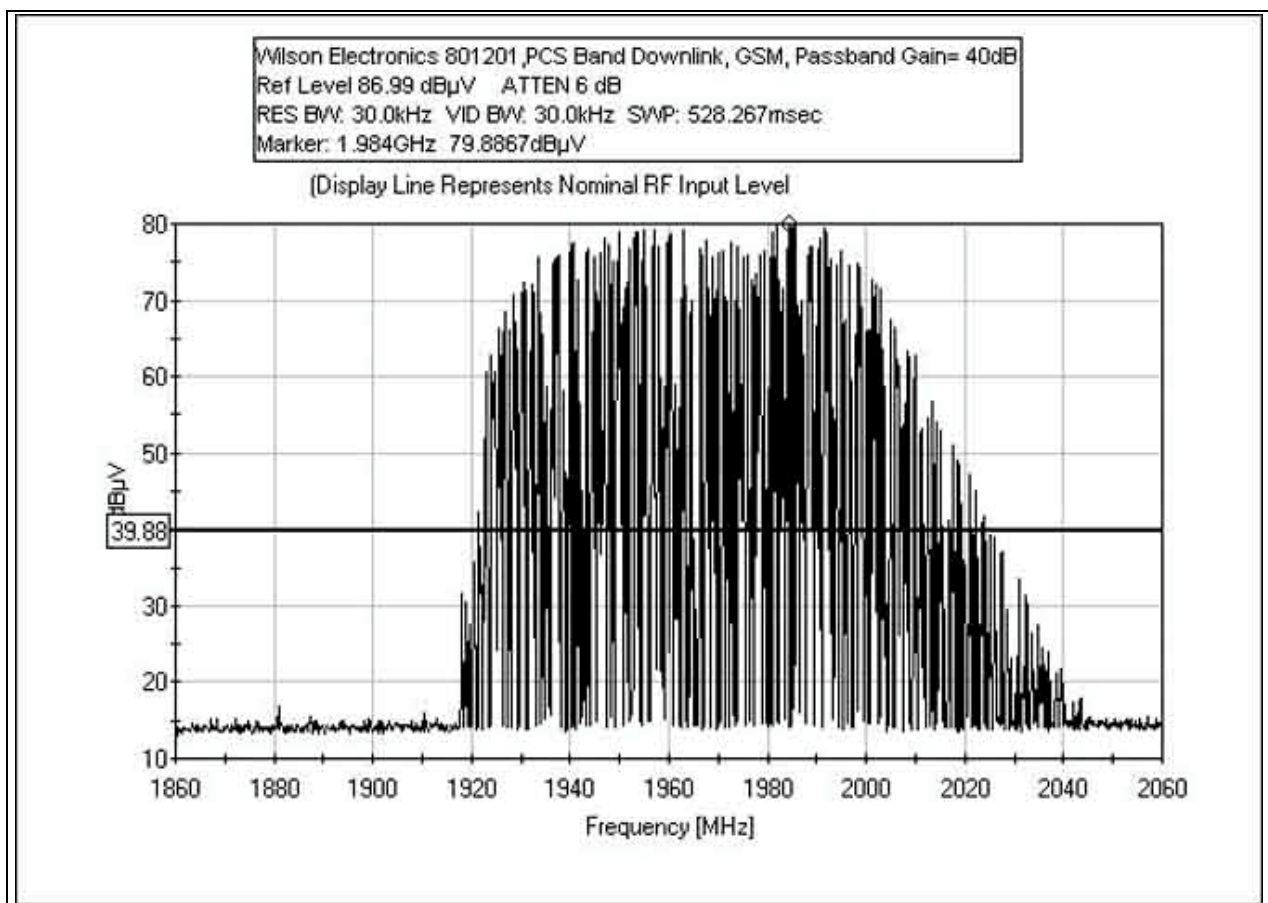
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**



### RSS-131 DOWNLINK PASSBAND GAIN GSM

**Test Conditions:** EUT is a bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. 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. Frequency Range Investigated: 30MHz to 20GHz.



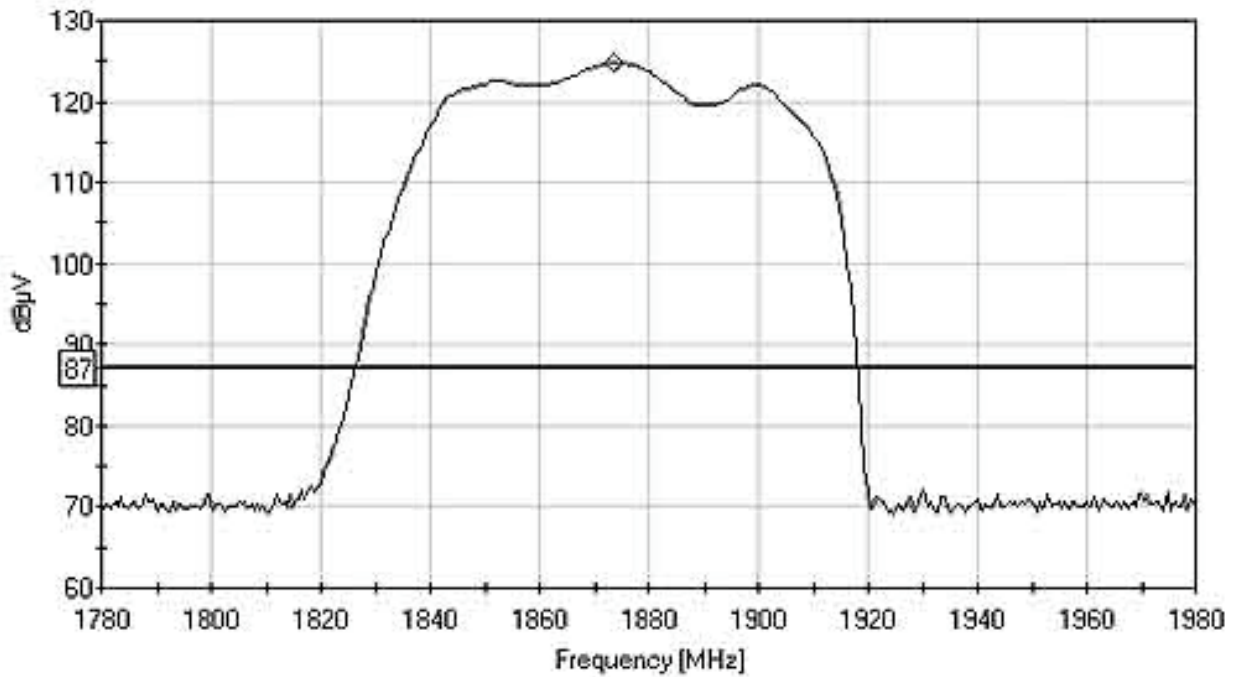
**Test Equipment:**

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				



### RSS-131 UPLINK PASSBAND GAIN

Wilson Electronics 801201 RSS 131 1900 MHz Passband Gain is 37.85dB (Display line shows input level)  
Ref Level 137 dB $\mu$ V ATTEN 40 dB  
RES BW: 300.0kHz VID BW: 1.0MHz SWP: 20.0msec  
Marker: 1.874GHz 124.85dB $\mu$ V



**Test Equipment:**

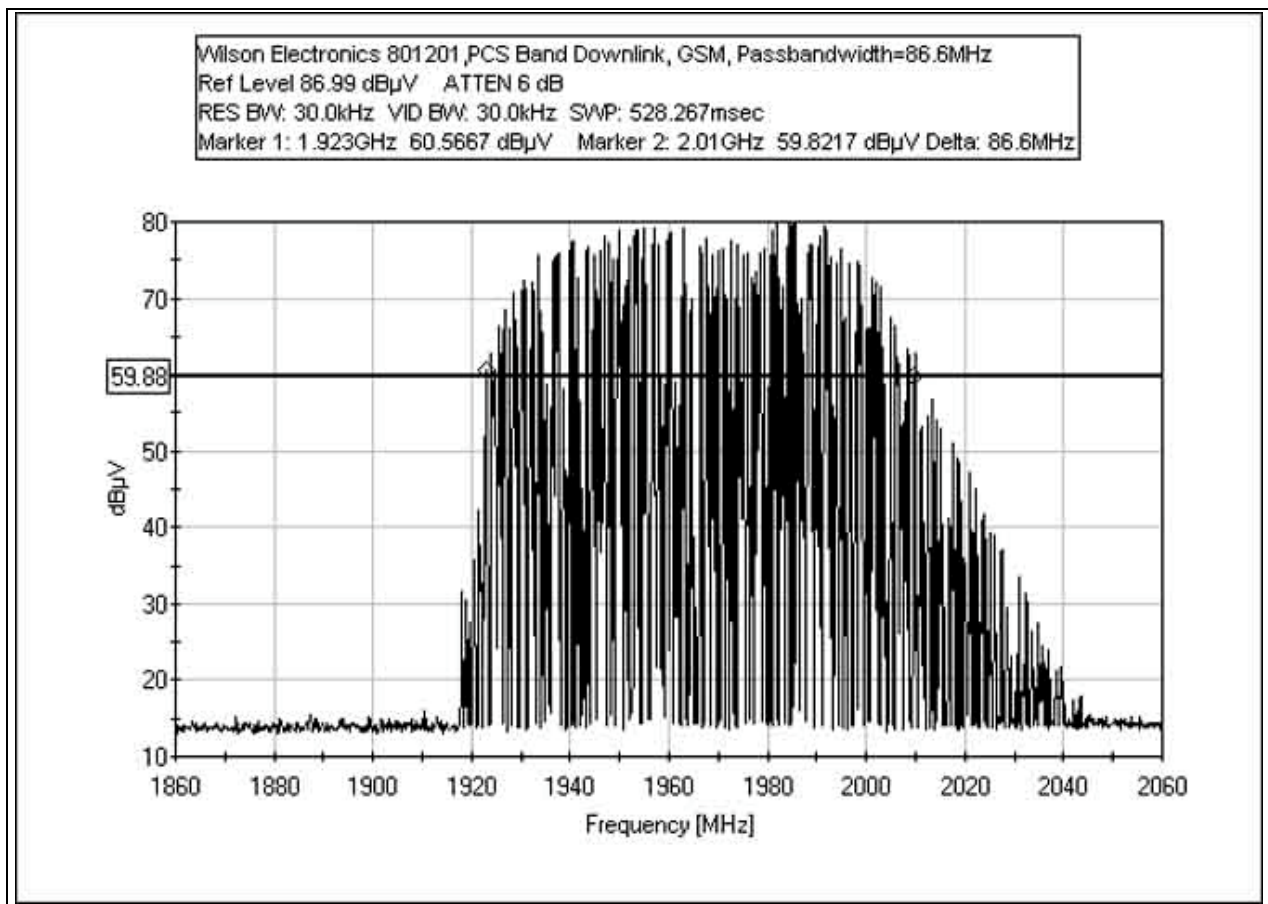
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**



### RSS-131 DOWNLINK PASSBANDWIDTH GSM

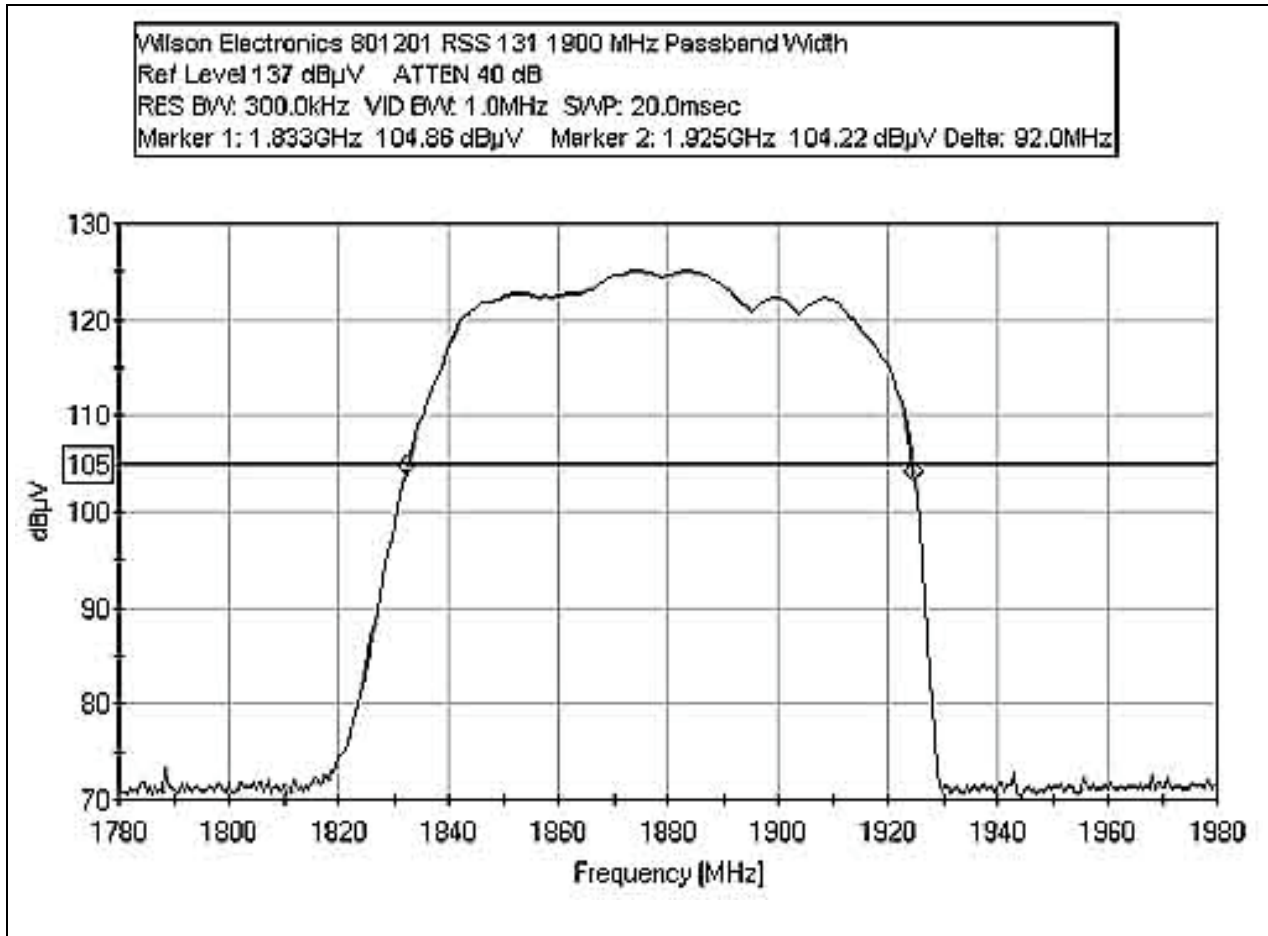
**Test Conditions:** EUT is a bidirectional amplifier for the 1850 to 1990MHz band. Uplink frequency range 1850 - 1910MHz. Downlink frequency range 1930 - 1990MHz. One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal 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. Frequency Range Investigated: 30MHz to 20GHz.



**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

### RSS-131 UPLINK PASSBAND WIDTH



**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
HF Cable		02/08/2005	02/08/2007	P05203
Weinchel 10dB attenuator	AH5409	05/23/2005	05/23/2007	P01681

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**

