



WILSON ELECTRONICS TEST REPORT

FOR THE

**MOBILE WIRELESS DUAL BAND CELLULAR/
PCS SMART TECHNOLOGY AMPLIFIER, 801201**

FCC PART 22 AND RSS-131

COMPLIANCE

DATE OF ISSUE: MARCH 31, 2005

PREPARED FOR:

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

P.O. No.: DBW801201-1
W.O. No.: 83305

PREPARED BY:

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

Date of test: March 21-31, 2005

Report No.: FC05-015

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ADMINISTRATIVE INFORMATION

DATE OF TEST: March 21-31, 2005

DATE OF RECEIPT: March 21, 2005

FREQUENCY RANGE TESTED: 30 MHz-10 GHz

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 22, TIA/EIA 603 and RSS-131

PURPOSE OF TEST: To demonstrate the compliance of the Mobile Wireless Dual Band Cellular/PCS Smart Technology Amplifier, 801201 with the requirements for FCC Part 22 and 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	22.913	RF Power Output
RSS-131	6.3	TIA/EIA	603	Non-Linearity (Intermodulation Attenuation)
RSS-131	6.4	47 CFR	22.917	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

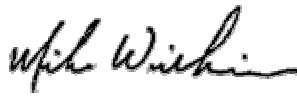
Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:



Mike Wilkinson, Lab Manager



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 Dual Band Cellular/PCS Smart Technology Amplifier

EQUIPMENT UNDER TEST

Mobile Wireless Dual Band Cellular/PCS Smart Technology Amplifier

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

F1D, GXW, G7W, F9W

FCC 2.1033 (c)(5) FREQUENCY RANGE

Downlink 869-894MHz, Uplink 824-849MHz

FCC 2.1033 (c)(6) OPERATING POWER

Downlink, 12.58 mW, Uplink, 1.23 Watts

FCC 2.1033 (c)(7) MAXIMUM POWER RATING

Downlink 15 mW, Uplink 3 Watts

FCC 2.1033 (c)(8) DC VOLTAGES

The necessary information is contained in a separate document.

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

The necessary information is contained in a separate document.

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

The necessary information is contained in a separate document.

FCC 2.1033(c)(11) LABEL AND PLACEMENT

The necessary information is contained in a separate document.

FCC 2.1033(c)(12) SUBMITTAL PHOTOS

The necessary information is contained in a separate document.

FCC 2.1033 (c)(13) MODULATION INFORMATION

AMPS, GSM, EDGE, CDMA

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

EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz.

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, AMPS and TDMA (EDGE & GSM) formats: 3Watts

Downlink Output Ratings:

All: 15mW

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

Downlink

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (milliWatts)</i>
870.25	CDMA	8.91
881.5	CDMA	7.58
892.75	CDMA	10.00
869.28	GSM	9.77
881.5	GSM	9.55
893.72	GSM	12.58
869.28	EDGE	10.00
881.5	EDGE	9.33
893.72	EDGE	12.30
869.03	AMPS	9.33
881.5	AMPS	8.91
893.97	AMPS	10.71

Uplink

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
825.25	CDMA	.954
836.5	CDMA	1.23
847.75	CDMA	.602
824.28	GSM	.977
836.5	GSM	1.0
848.72	GSM	.467
824.28	EDGE	.933
836.5	EDGE	1.09
848.72	EDGE	.466
824.03	AMPS	.997
836.5	AMPS	1.04
848.97	AMPS	.416

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.

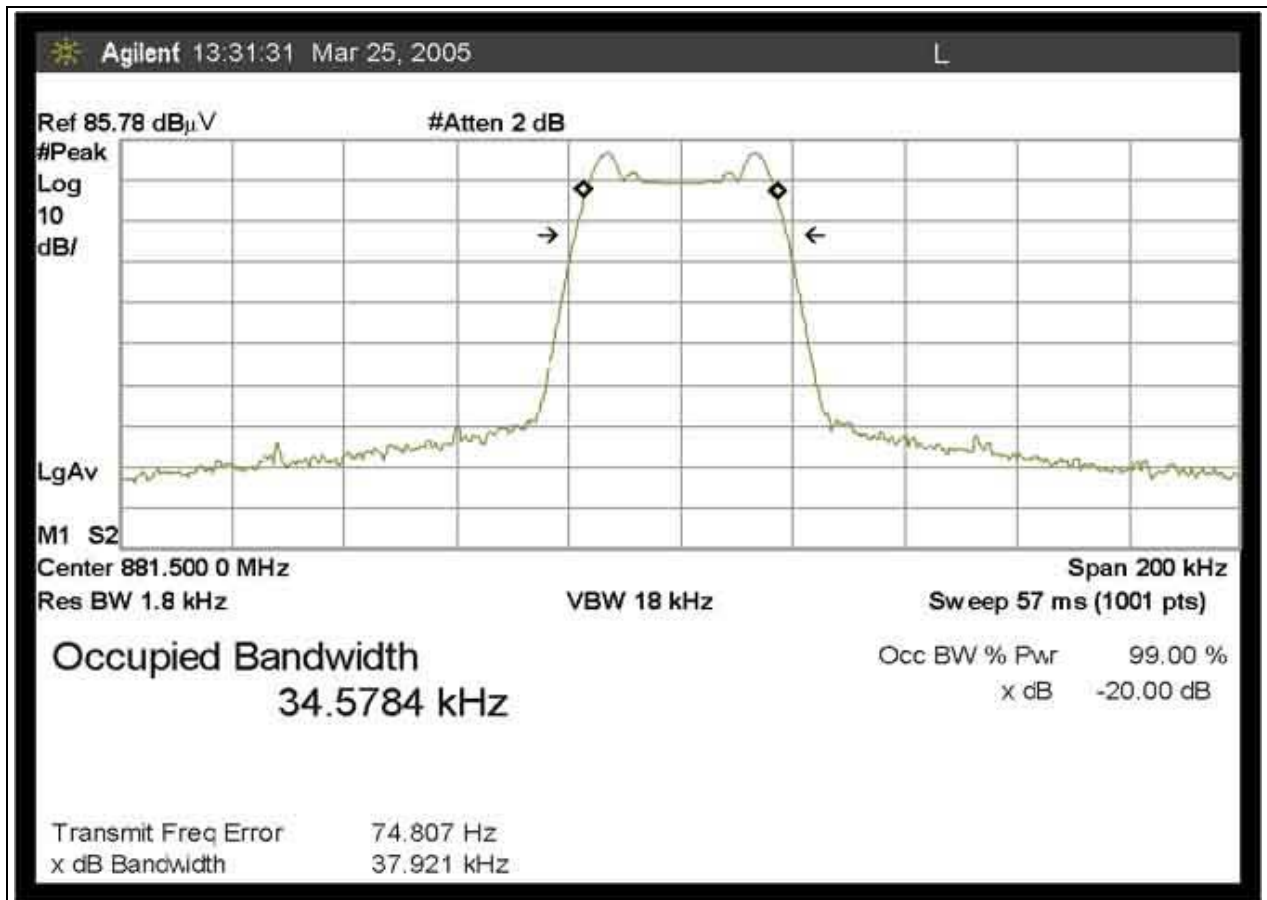
**FCC 2.1033(c)(14)/2.1047(b) MODULATION CHARACTERISTICS- Modulation
Limiting Response**

Not applicable to this unit.

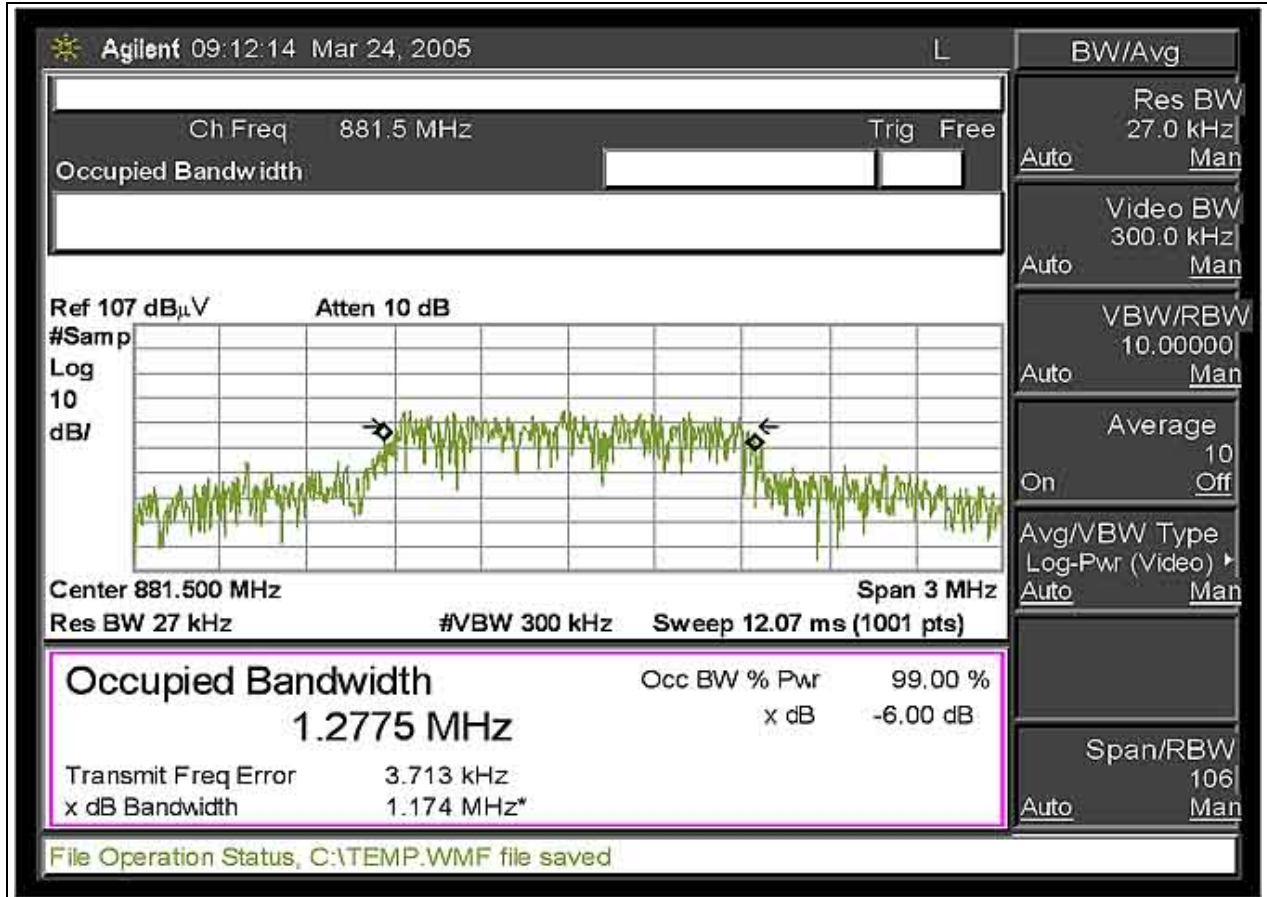
FCC 2.1033(c)(14)/2.1049(i)- OCCUPIED BANDWIDTH

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

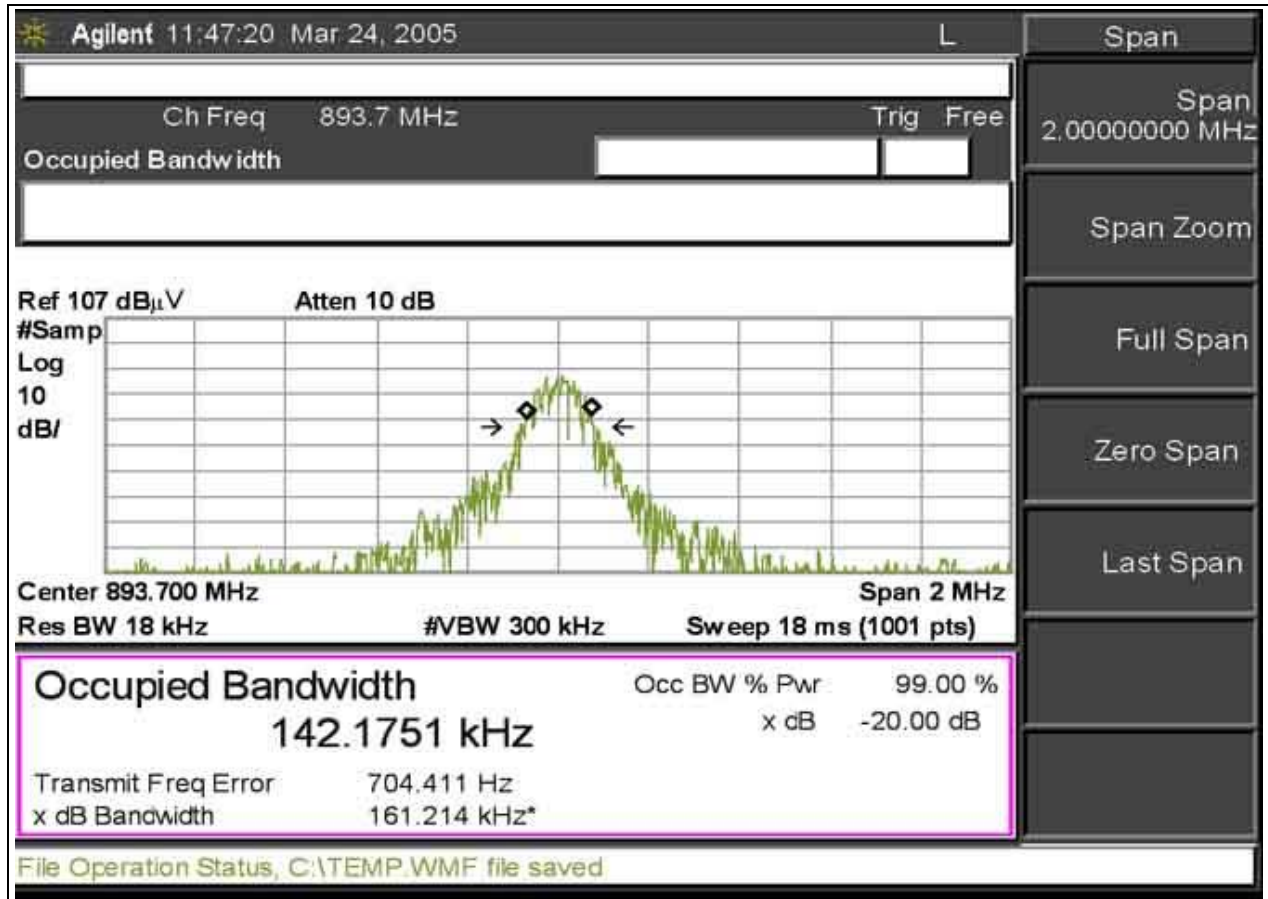
FCC 2.1049 DOWNLINK OCCUPIED BANDWIDTH AMPS - AMPS BAND



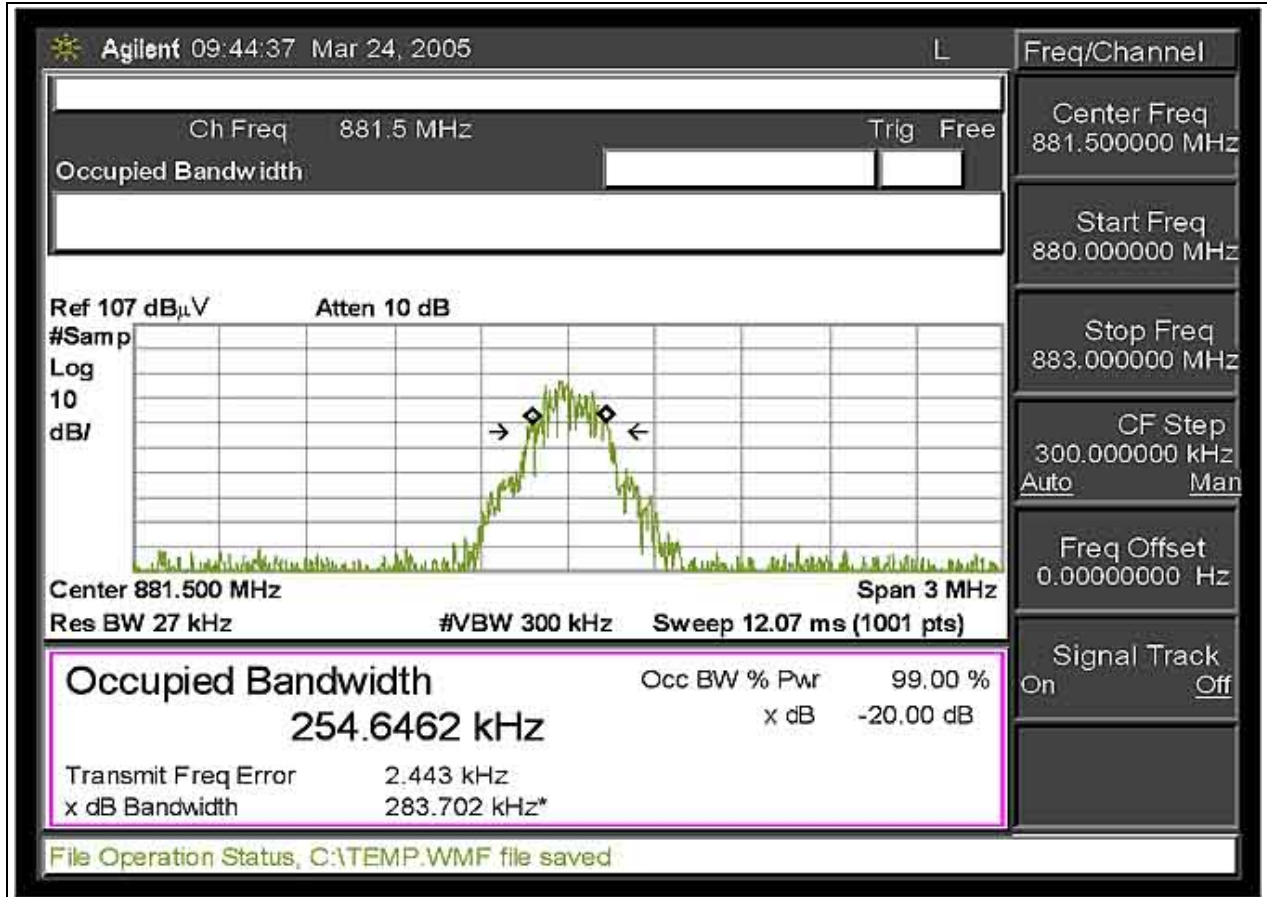
FCC 2.1049 DOWNLINK OCCUPIED BANDWIDTH CDMA - AMPS BAND



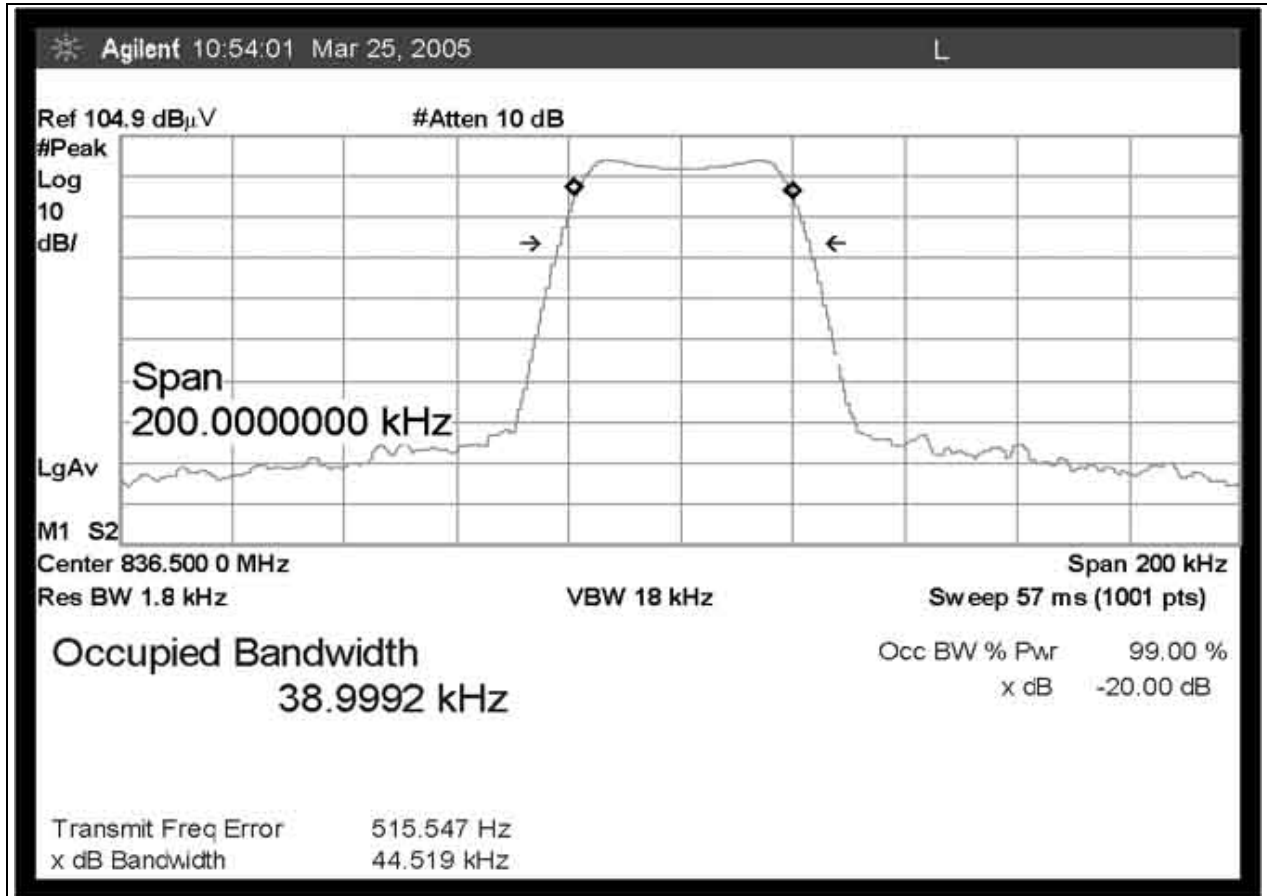
FCC 2.1049 DOWNLINK OCCUPIED BANDWIDTH EDGE - AMPS BAND



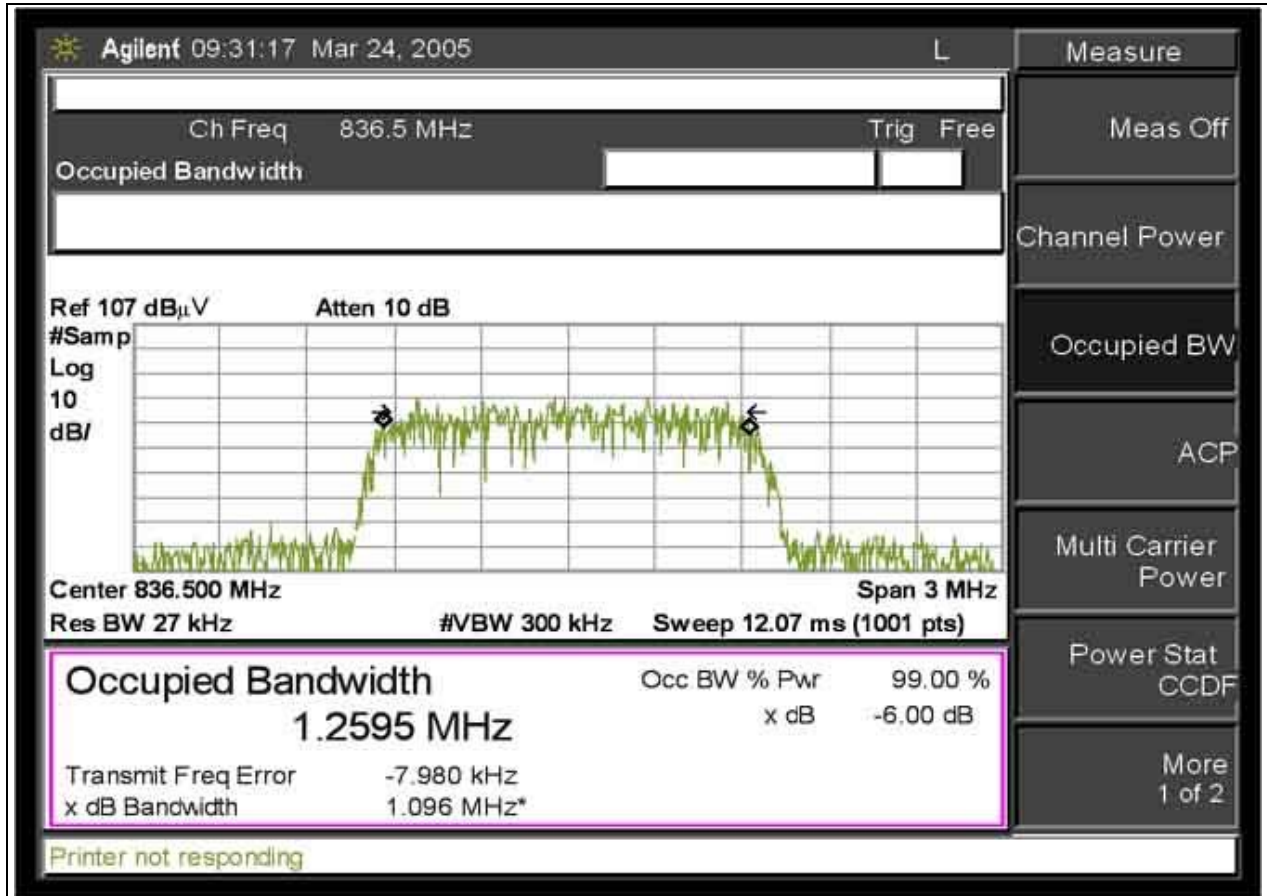
FCC 2.1049 DOWNLINK OCCUPIED BANDWIDTH GSM - AMPS BAND



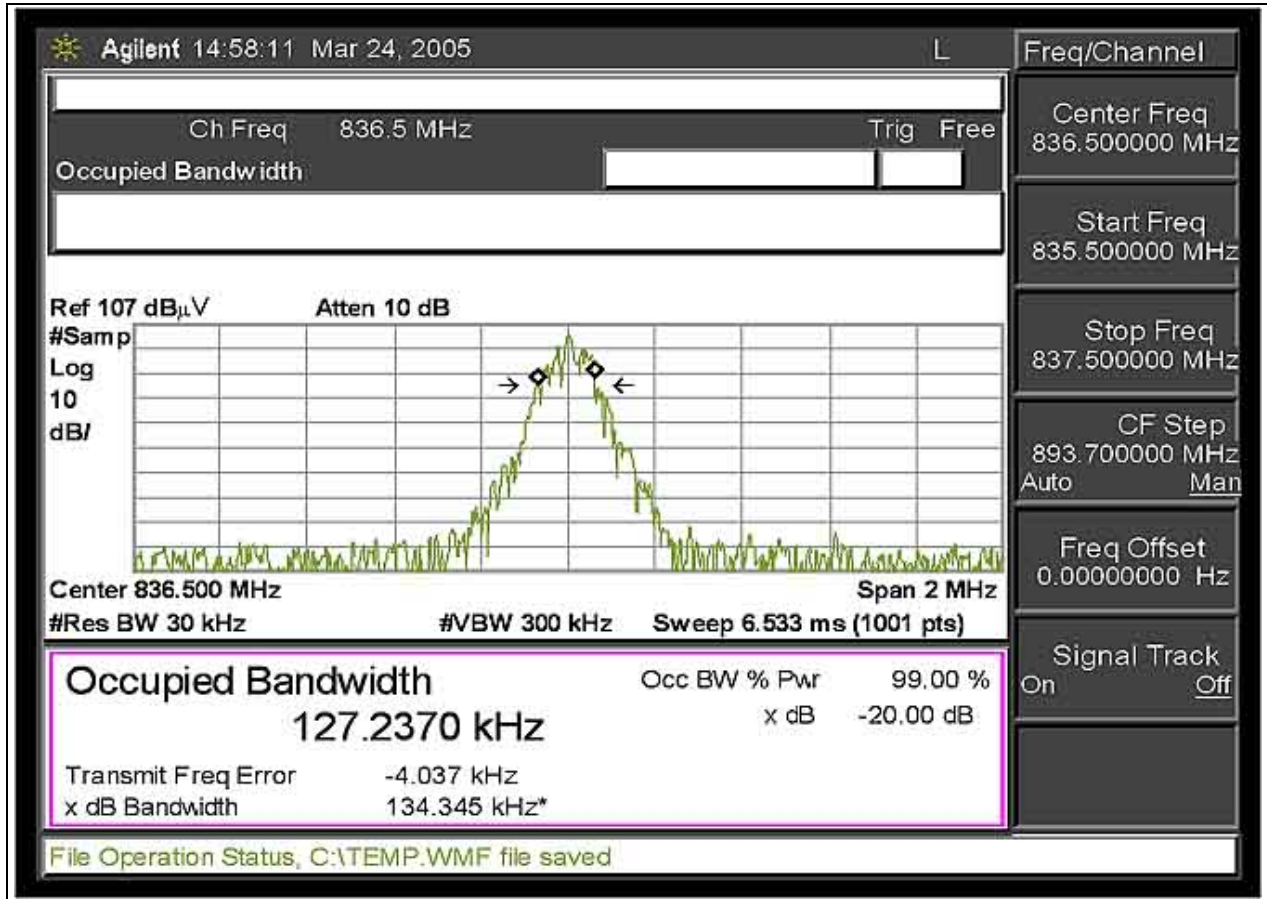
FCC 2.1049 UPLINK OCCUPIED BANDWIDTH AMPS - AMPS BAND



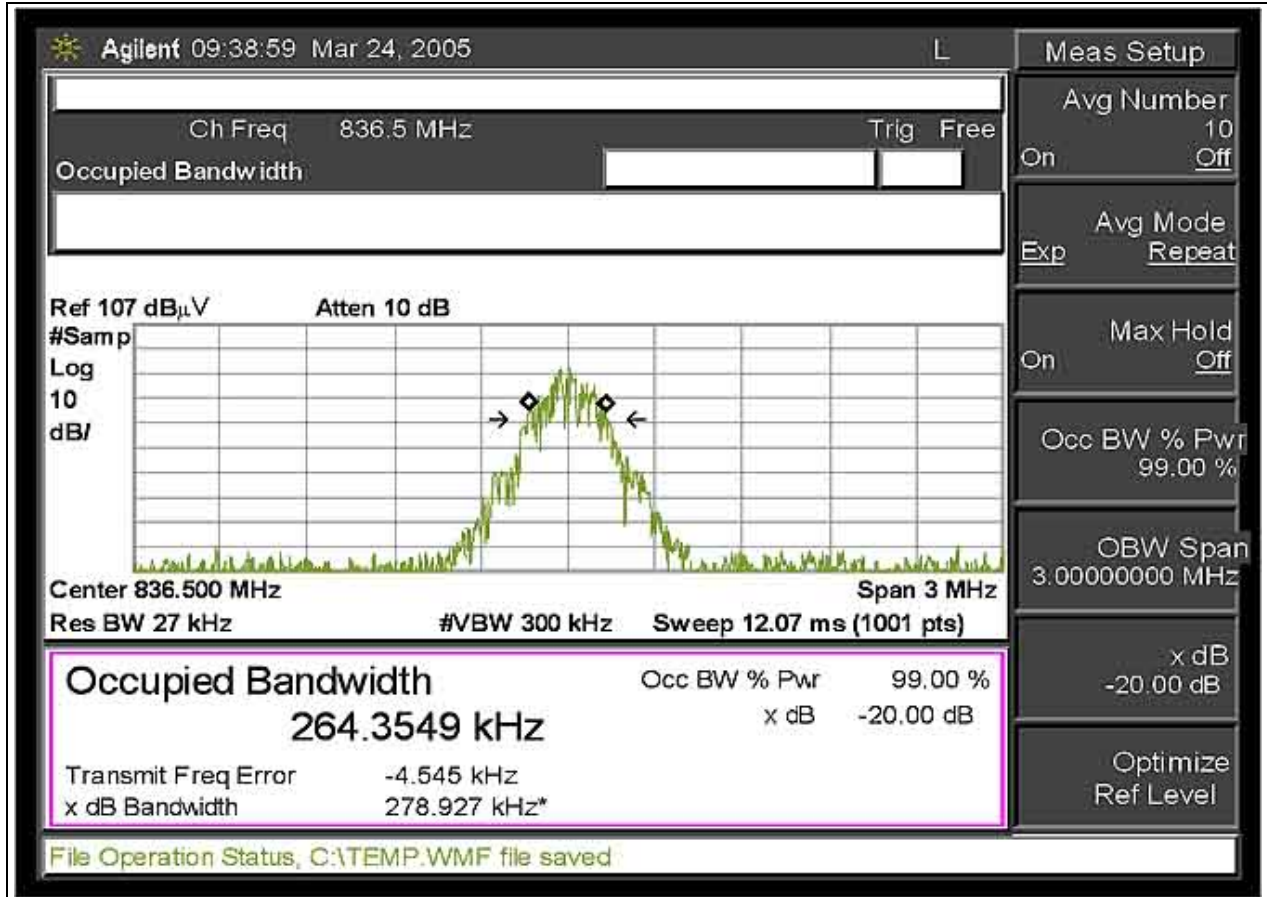
FCC 2.1049 UPLINK OCCUPIED BANDWIDTH CDMA - AMPS BAND



FCC 2.1049 UPLINK OCCUPIED BANDWIDTH EDGE- AMPS BAND



FCC 2.1049 UPLINK OCCUPIED BANDWIDTH GSM AMPS BAND



Test Equipment:

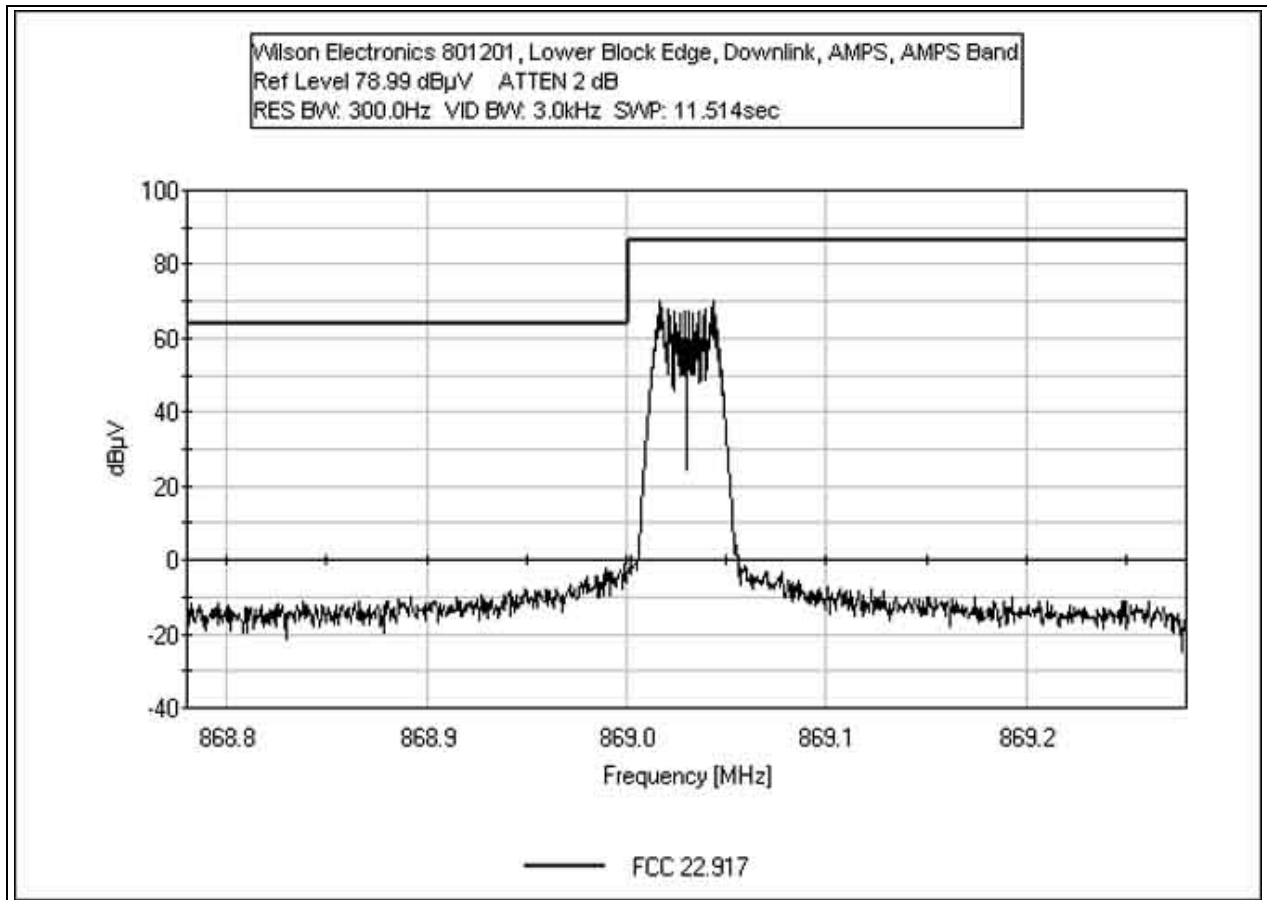
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 25-A-MFN-30	9949	05/09/2003	05/09/2005	P01572

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

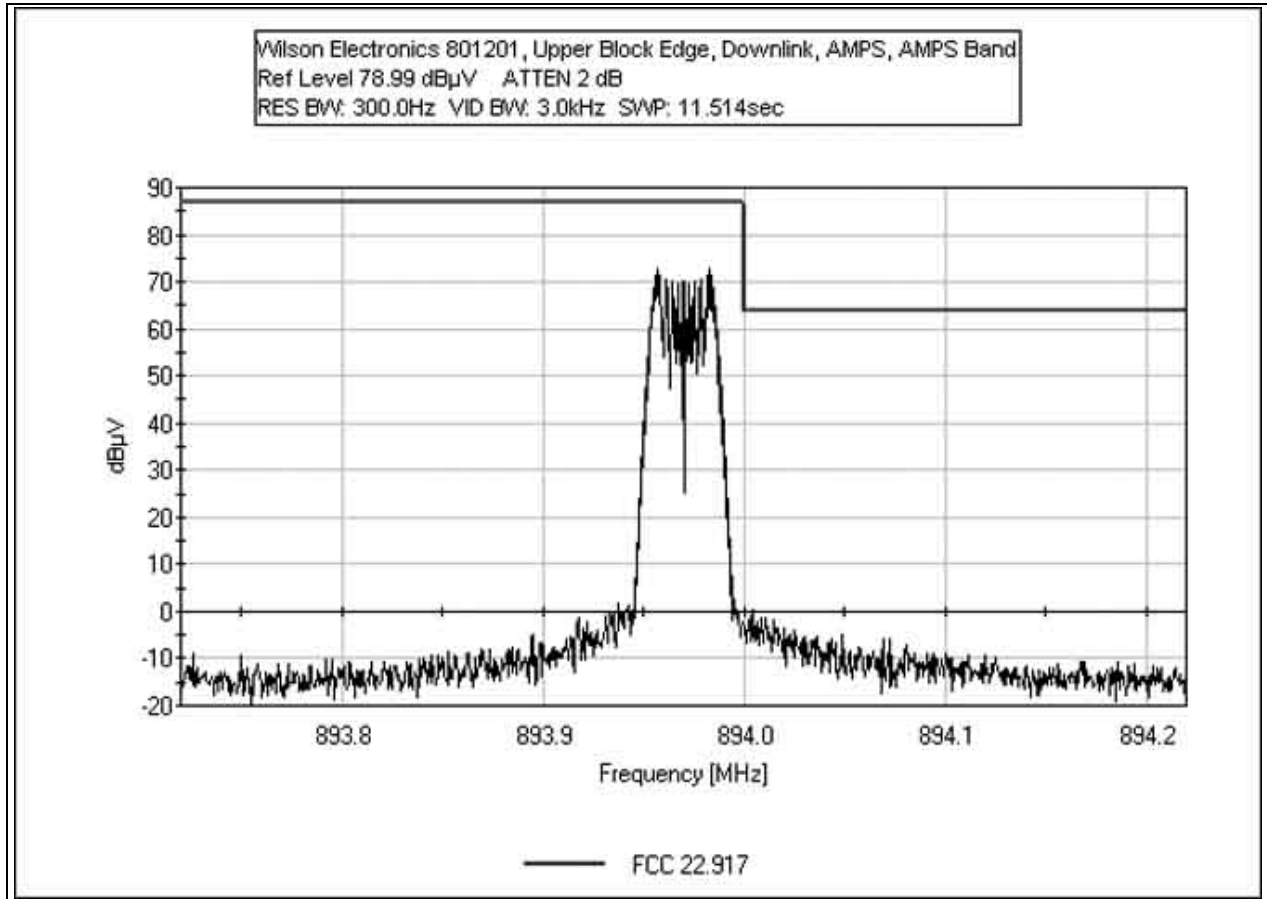


FCC 2.1051 DOWNLINK LOWER BLOCK EDGE AMPS - AMPS BAND

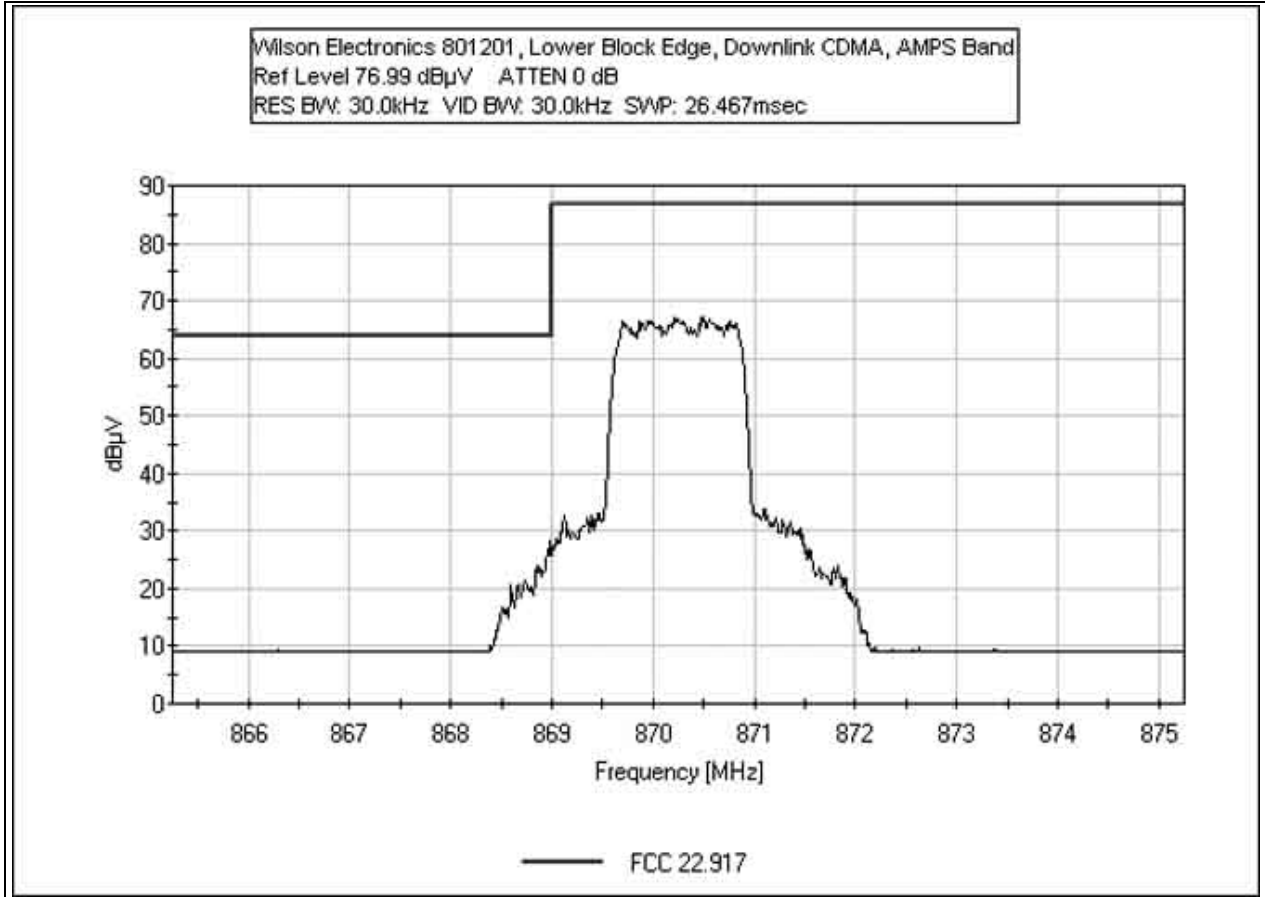
Test Conditions: EUT is a bidirectional amplifier for the 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of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



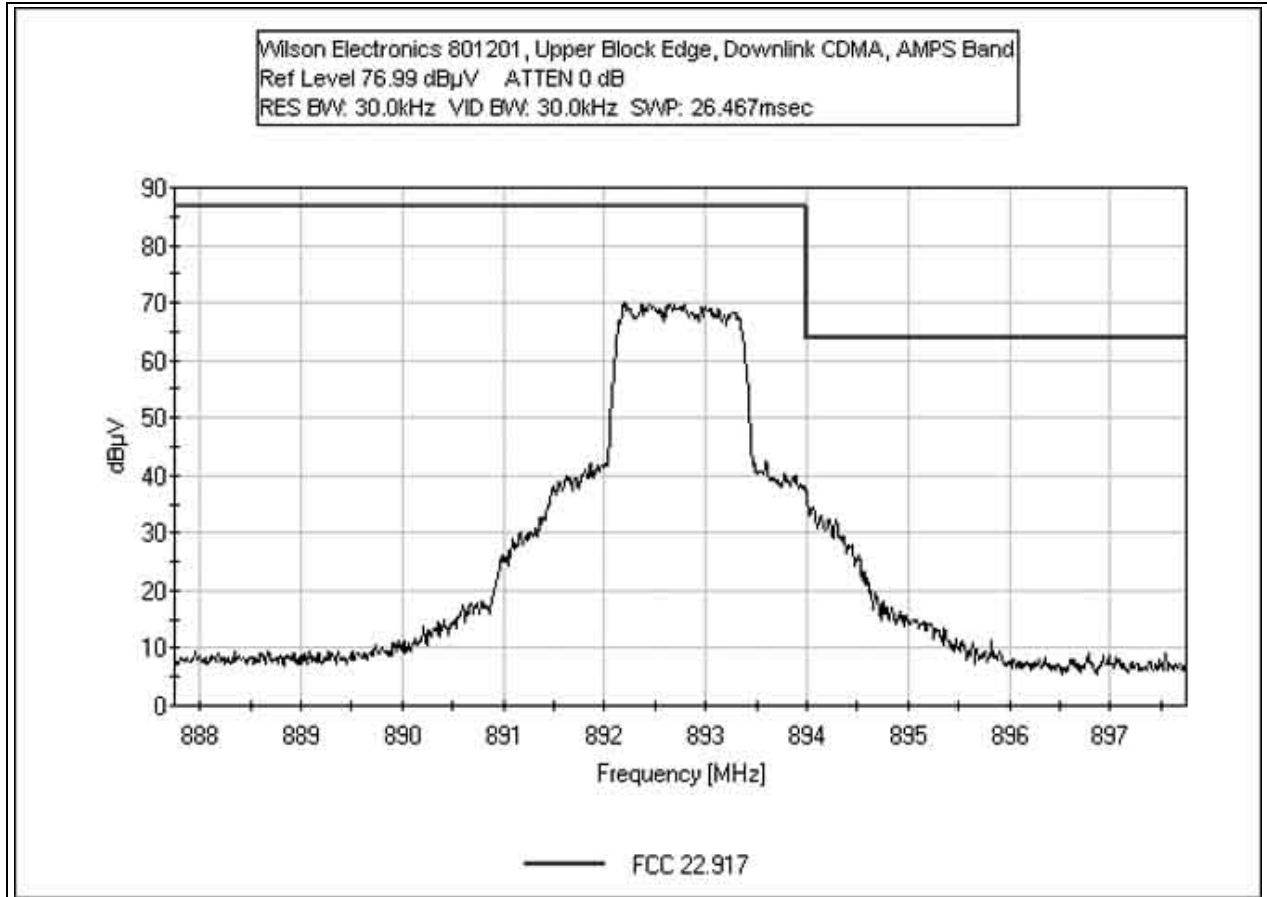
FCC 2.1051 DOWNLINK UPPER BLOCK EDGE AMPS - AMPS BAND



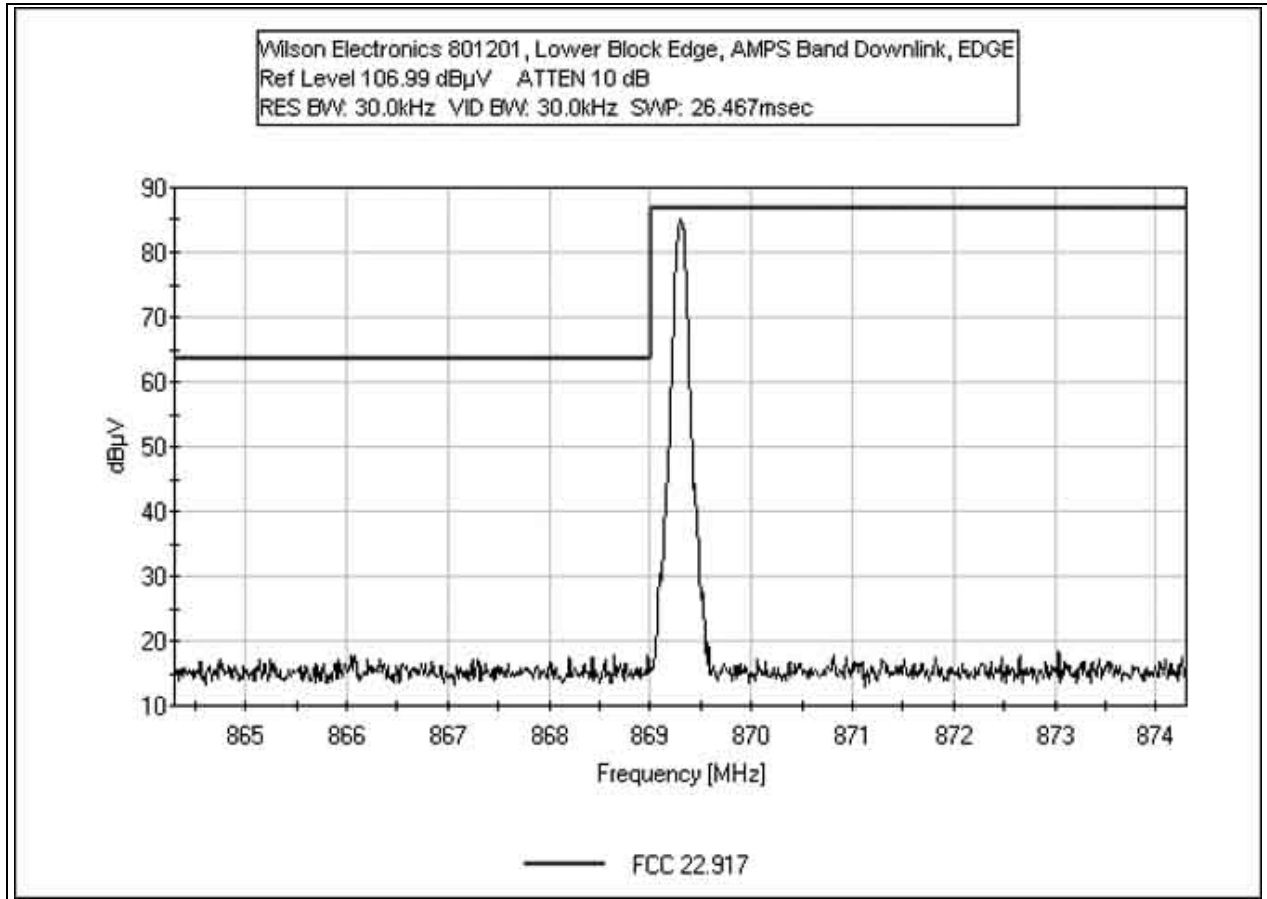
FCC 2.1051 DOWNLINK LOWER BLOCK EDGE CDMA - AMPS BAND



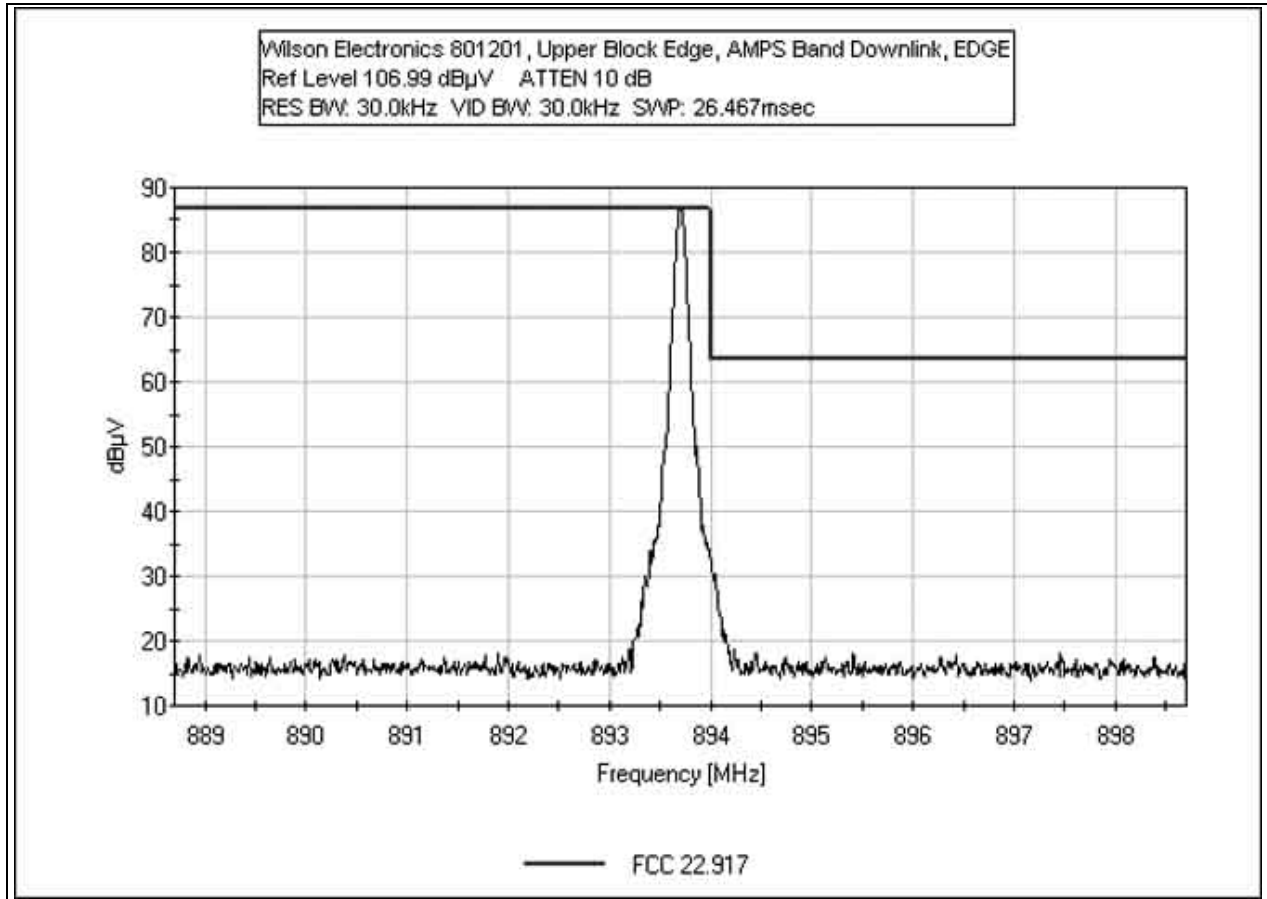
FCC 2.1051 DOWNLINK UPPER BLOCK EDGE CDMA - AMPS BAND



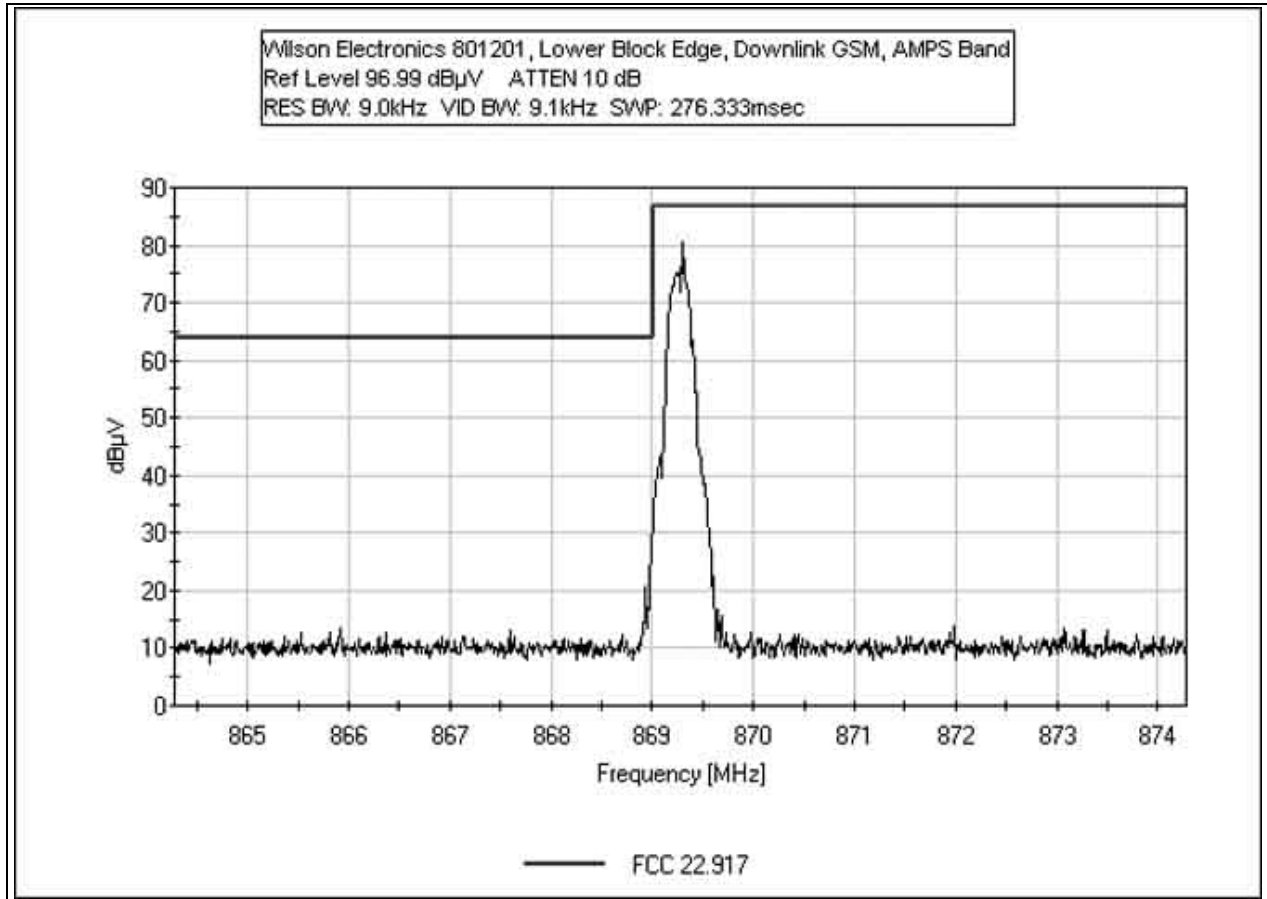
FCC 2.1051 DOWNLINK LOWER BLOCK EDGE EDGE - AMPS BAND



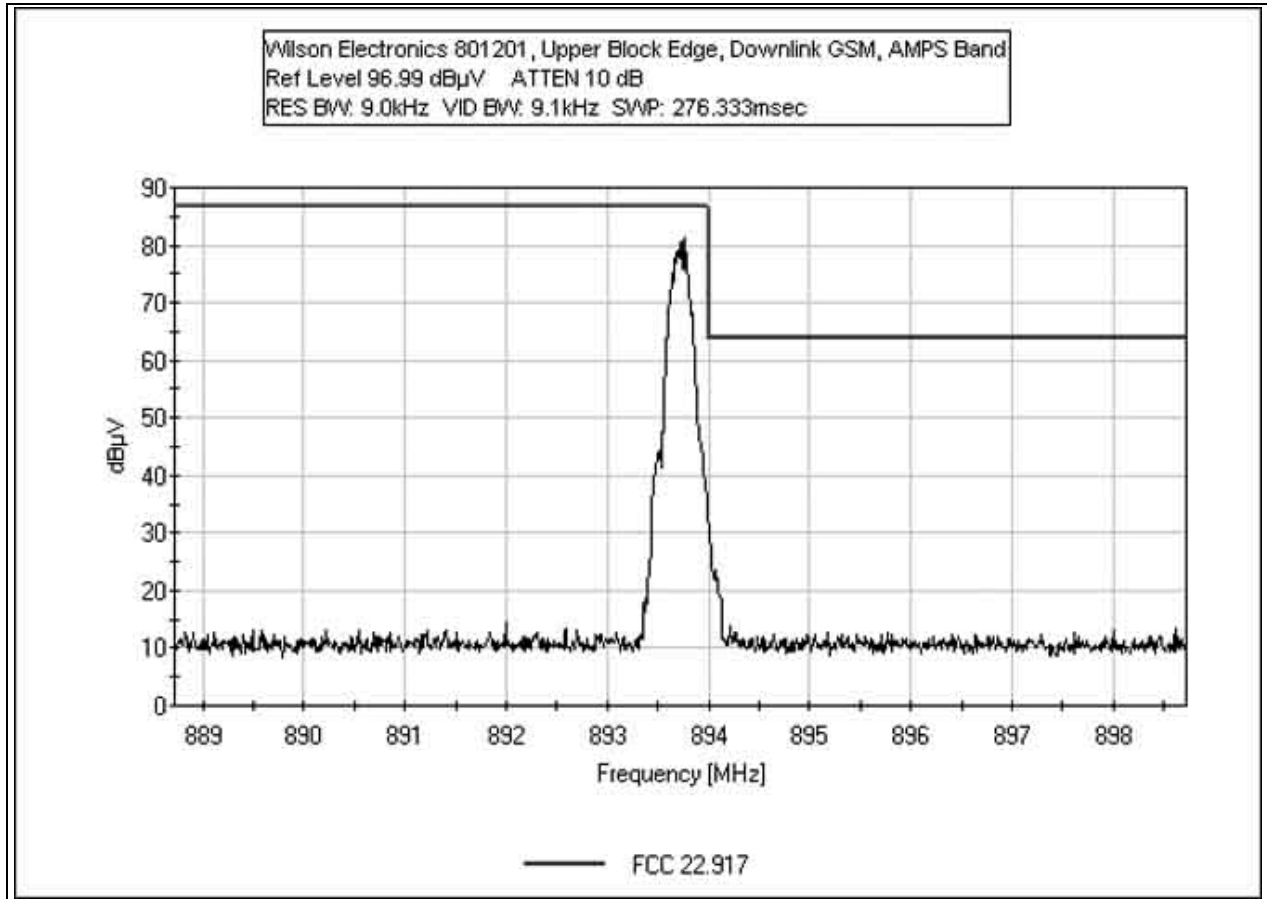
FCC 2.1051 DOWNLINK UPPER BLOCK EDGE EDGE - AMPS BAND



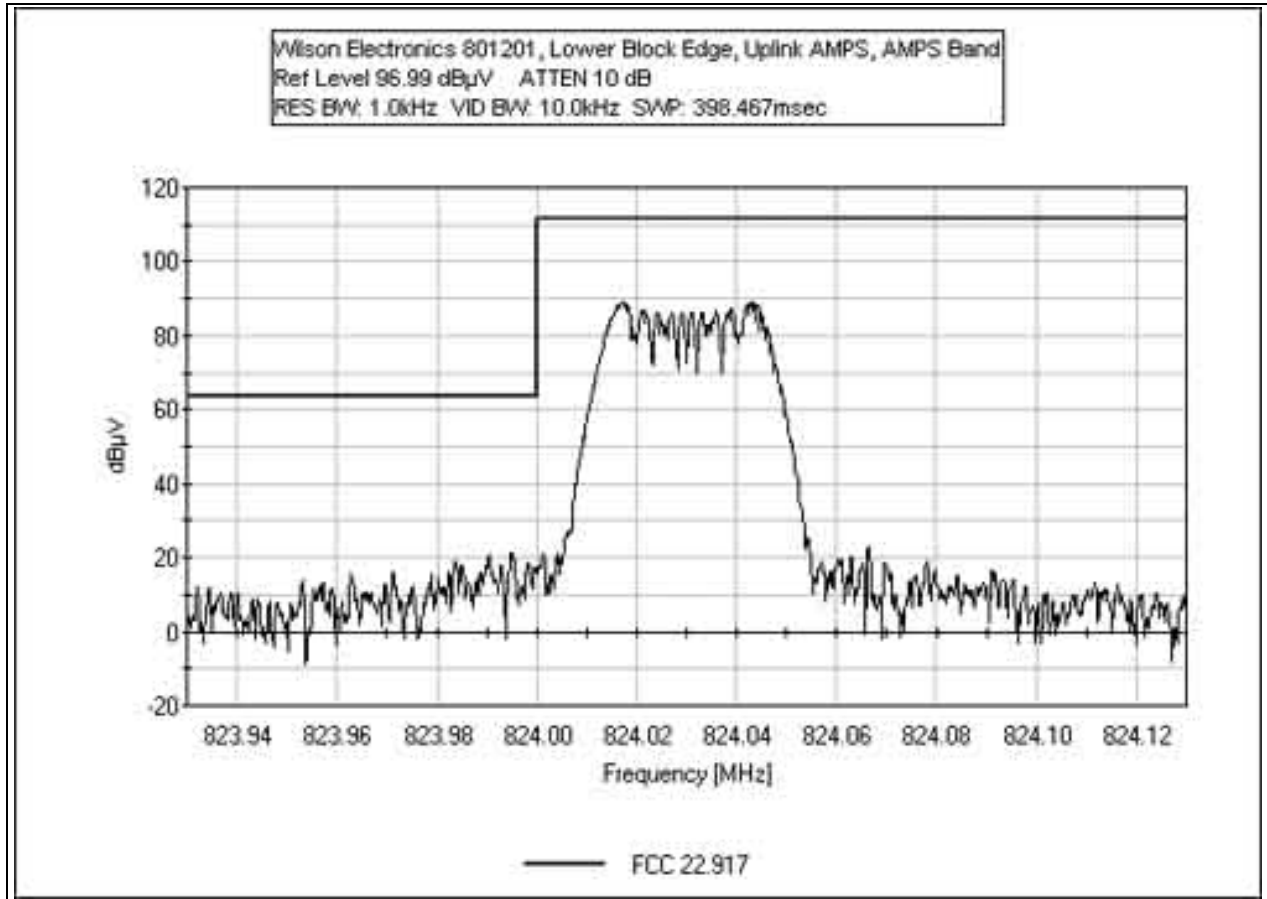
FCC 2.1051 DOWNLINK LOWER BLOCK EDGE GSM - AMPS BAND



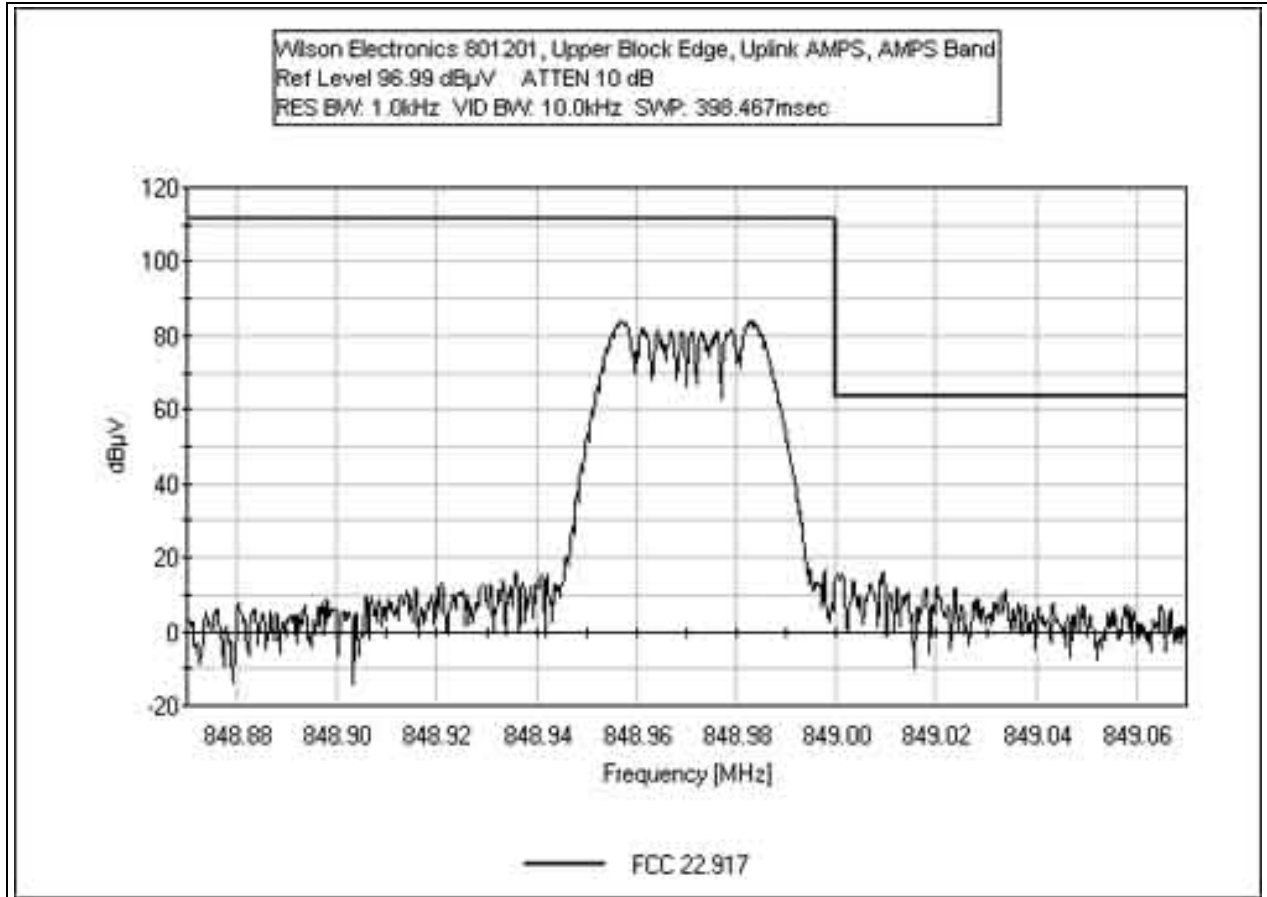
FCC 2.1051 DOWNLINK UPPER BLOCK EDGE GSM - AMPS BAND



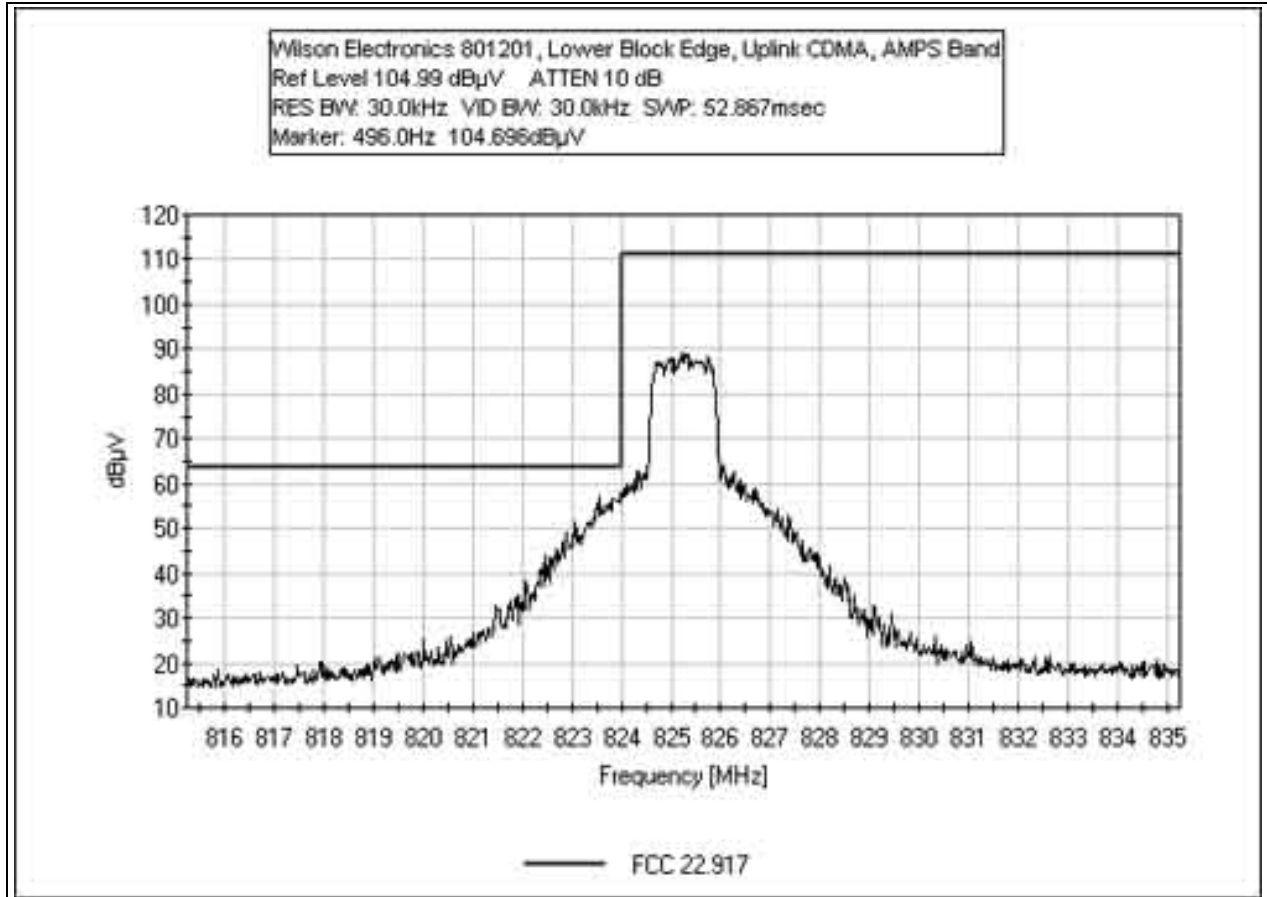
FCC 2.1051 UPLINK LOWER BLOCK EDGE AMPS - AMPS BAND



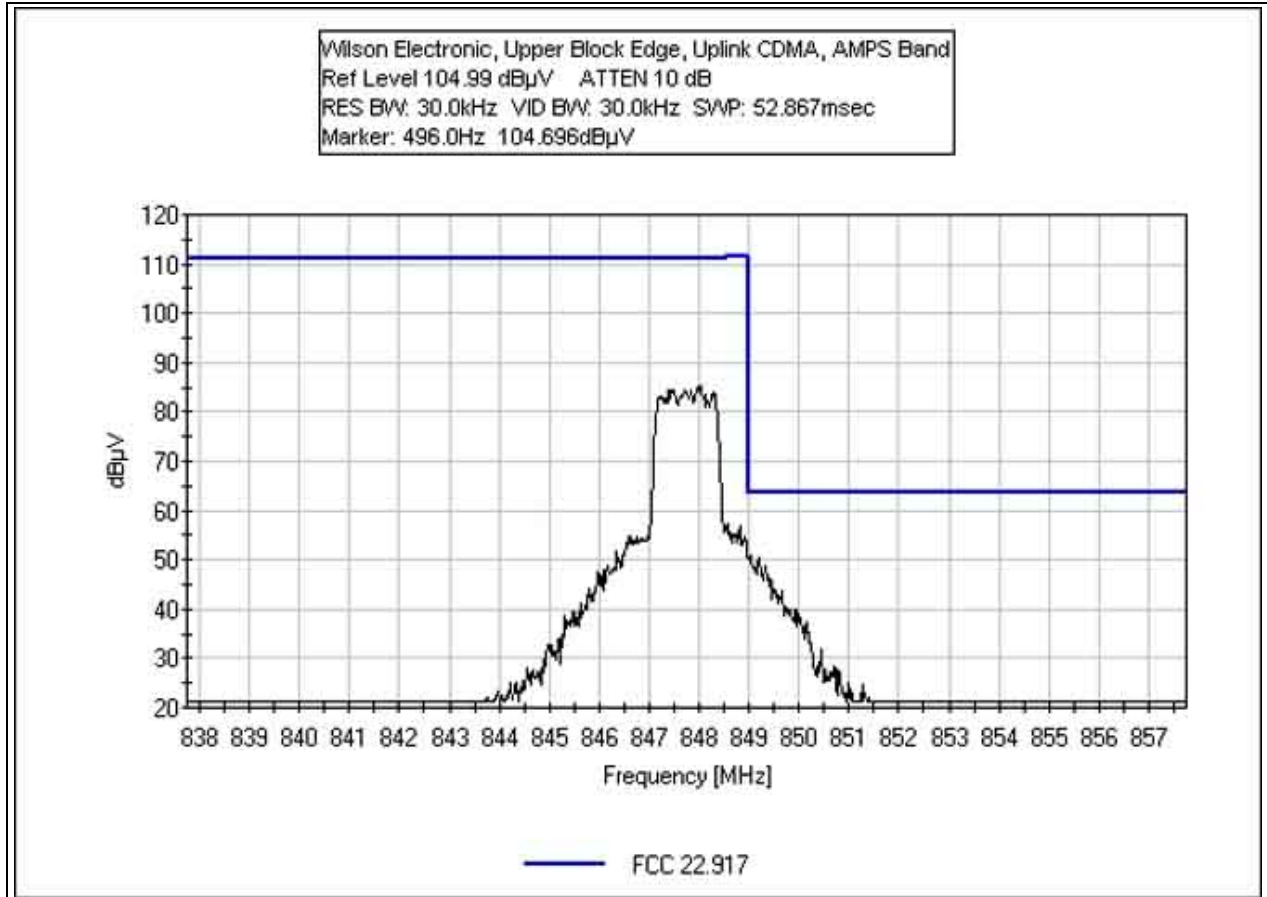
FCC 2.1051 UPLINK UPPER BLOCK EDGE AMPS - AMPS BAND



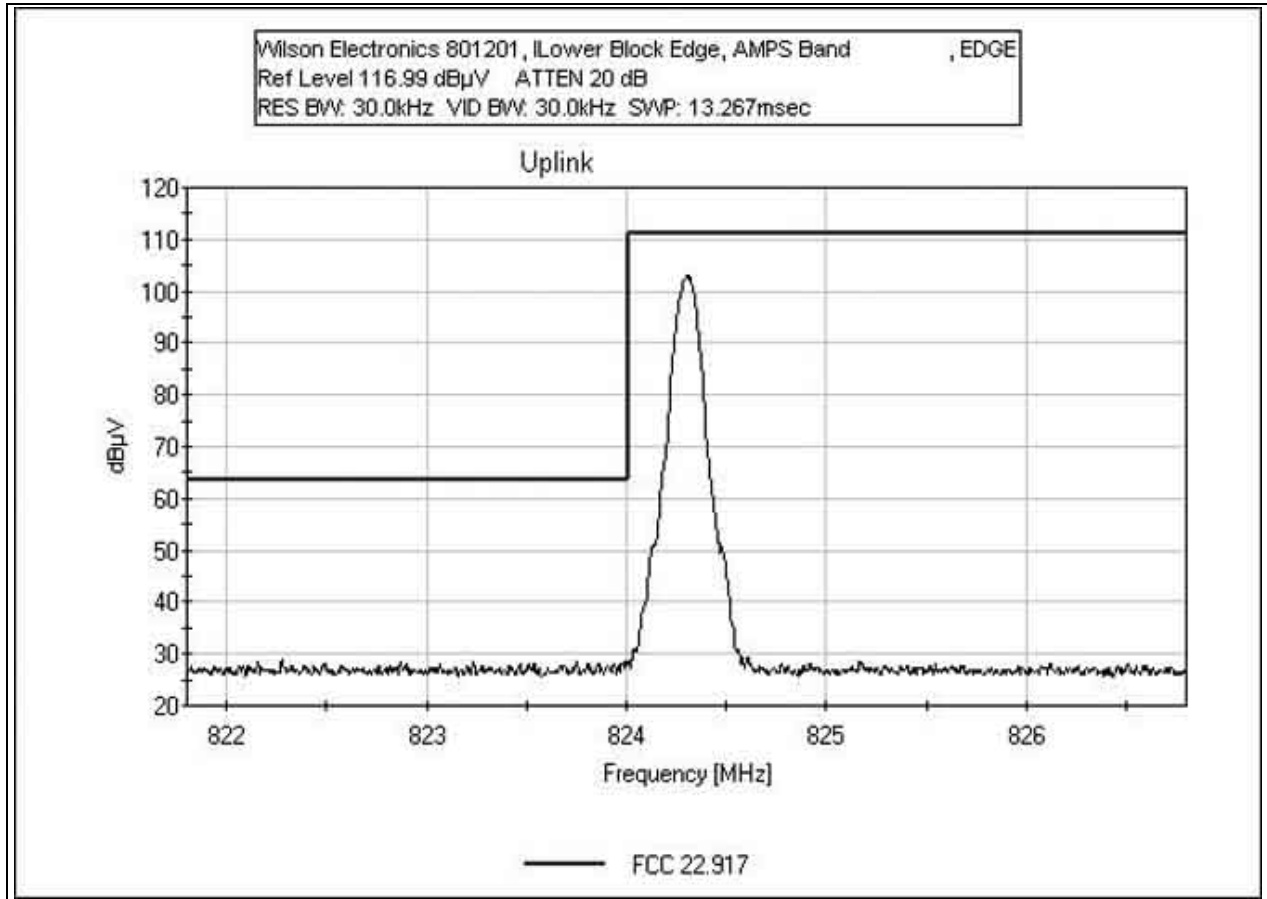
FCC 2.1051 UPLINK LOWER BLOCK EDGE CDMA - AMPS BAND



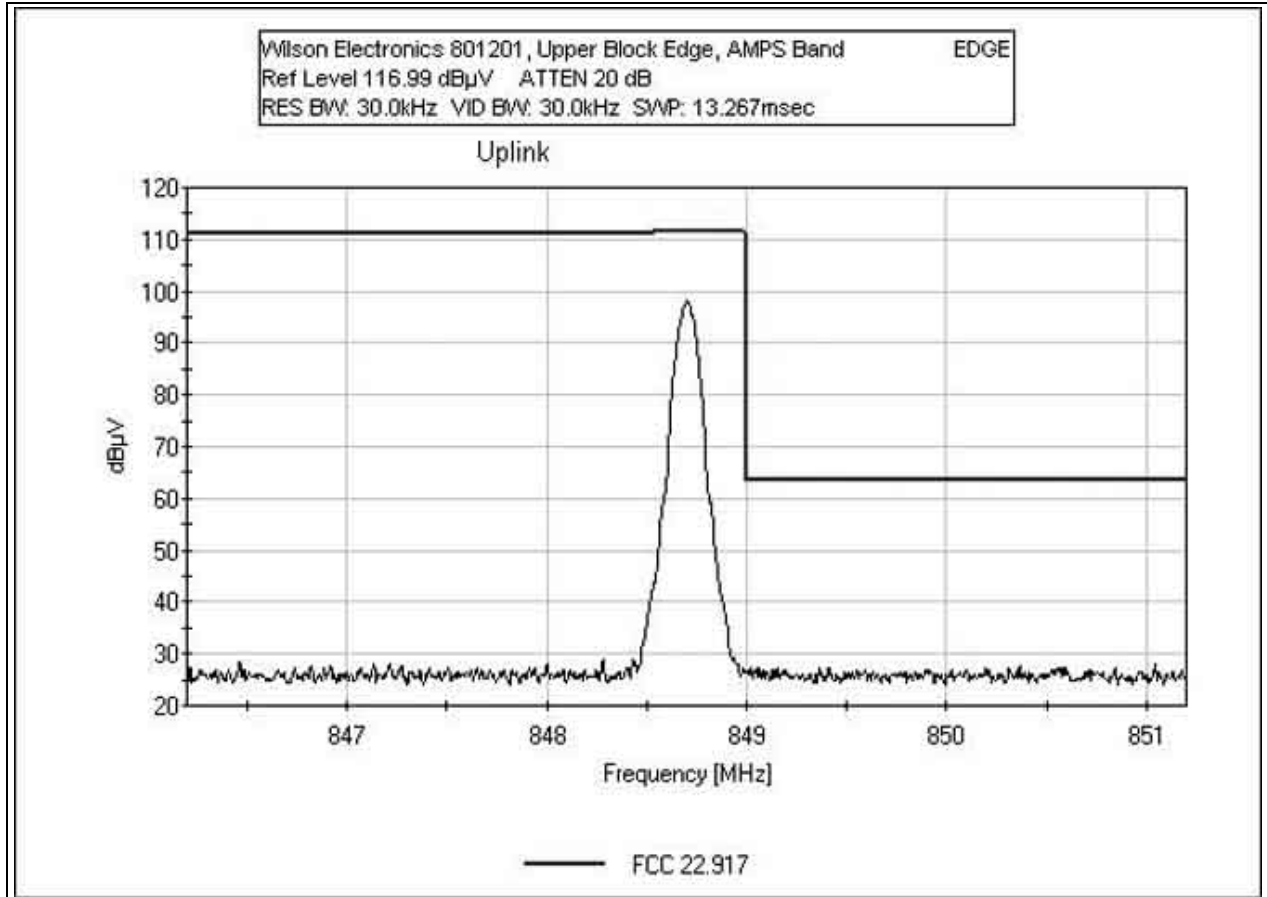
FCC 2.1051 UPLINK UPPER BLOCK EDGE CDMA - AMPS BAND



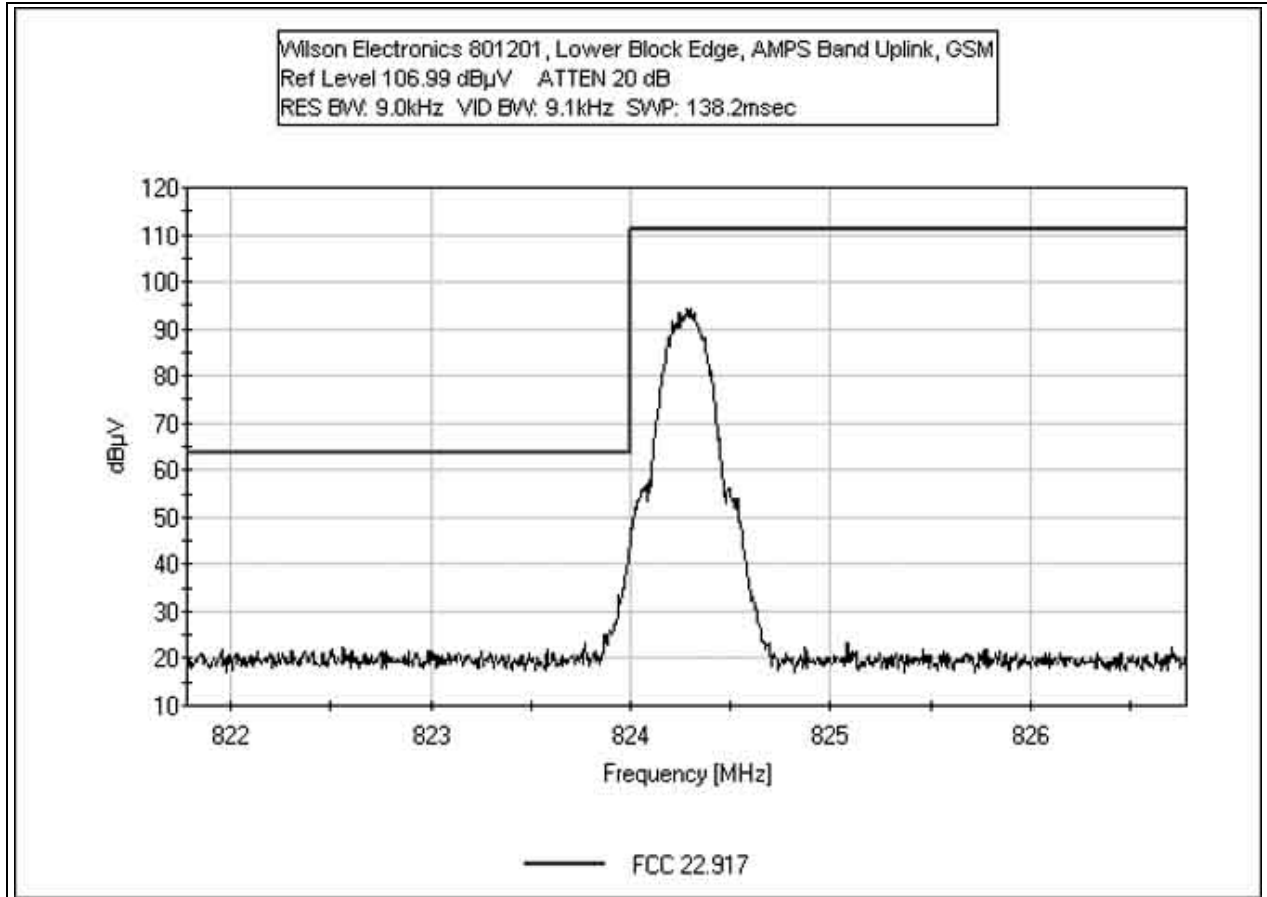
FCC 2.1051 UPLINK LOWER BLOCK EDGE EDGE - AMPS BAND



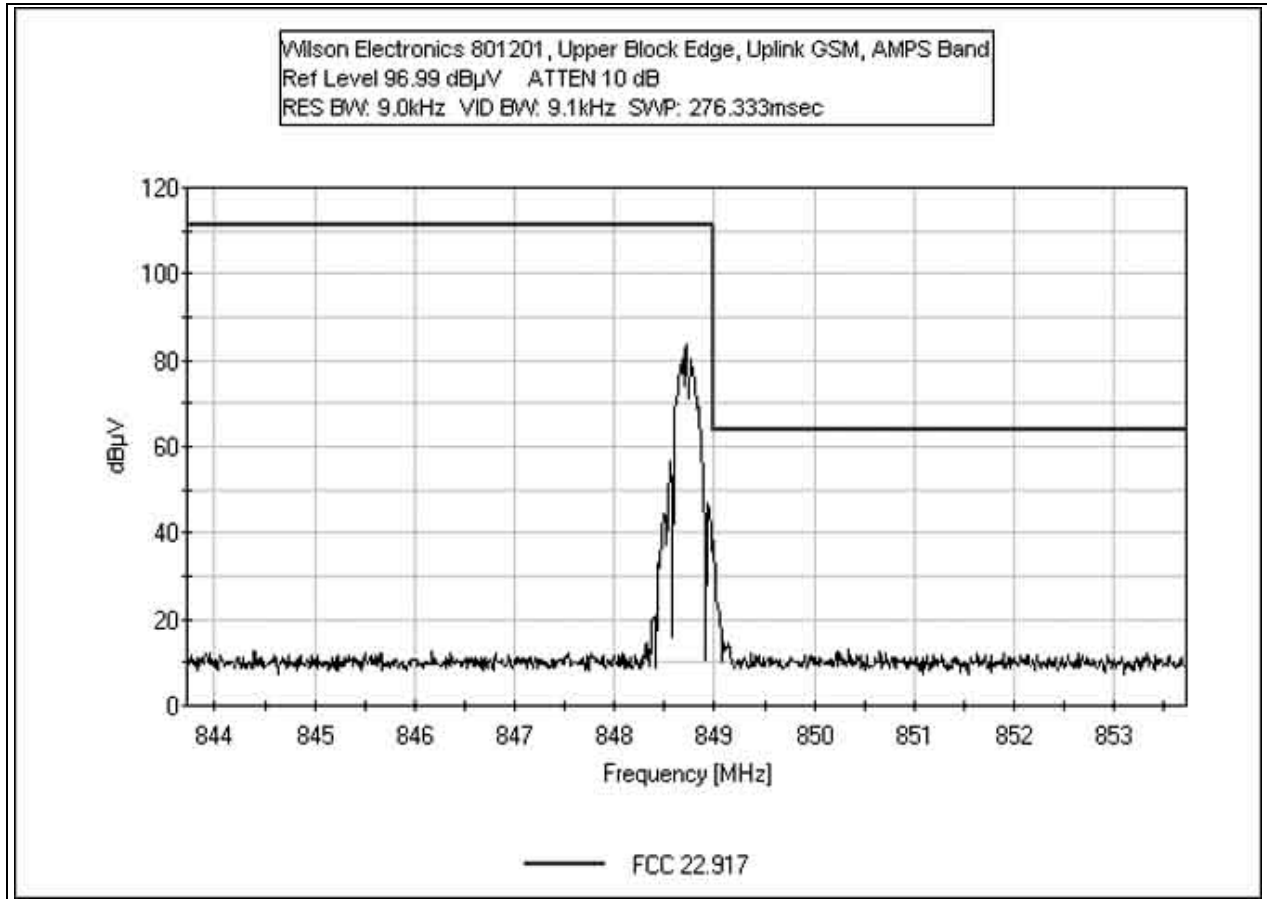
FCC 2.1051 UPLINK UPPER BLOCK EDGE EDGE - AMPS BAND



FCC 2.1051 UPLINK LOWER BLOCK EDGE GSM - AMPS BAND



FCC 2.1051 UPLINK UPPER BLOCK EDGE GSM - AMPS BAND



Test Equipment:

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

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP





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

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

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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 14:09:01
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 42
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Frequencies Tested: Downlink Low - 869.03MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

#	Freq MHz	Reading listed by margin.					Test Distance: None				
		Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	869.043M	86.4	+30.3				+0.0	116.7	117.0	-0.3	None
Fundamental											

2	2607.115M	26.2	+29.9	+0.0	56.1	94.0	-37.9	None
3	868.922M	19.0	+30.3	+0.0	49.3	94.0	-44.7	None
4	1738.084M	18.8	+30.3	+0.0	49.1	94.0	-44.9	None
5	3476.163M	-2.5	+29.8	+0.0	27.3	94.0	-66.7	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 14:21:51
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 43
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Frequencies Tested: Downlink Mid - 881.5MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	Reading listed by margin.			Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
				dB	dB	dB					
1	881.502M	86.2	+30.3				+0.0	116.5	117.0	-0.5	None
Fundamental											
2	2644.506M	37.9	+29.9				+0.0	67.8	94.0	-26.2	None
3	1763.004M	29.9	+30.3				+0.0	60.2	94.0	-33.8	None
4	3525.946M	24.7	+29.8				+0.0	54.5	94.0	-39.5	None
5	4407.448M	9.7	+28.9				+0.0	38.6	94.0	-55.4	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 14:26:30
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 44
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Frequencies Tested: Downlink High- 893.97MHz. Frequency Range Investigated: 30MHz to 10GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBµV	T1 dB	dB			Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	893.970M	87.0	+30.3				+0.0	117.3	117.0	+0.3	None
Fundamental											
2	2681.910M	42.4	+29.8				+0.0	72.2	94.0	-21.8	None
3	894.040M	32.2	+30.3				+0.0	62.5	94.0	-31.5	None
4	1787.940M	28.6	+30.3				+0.0	58.9	94.0	-35.1	None
5	3575.880M	19.6	+29.8				+0.0	49.4	94.0	-44.6	None
6	4469.850M	11.8	+28.8				+0.0	40.6	94.0	-53.4	None
7	5363.820M	6.7	+28.0				+0.0	34.7	94.0	-59.3	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305**
 Test Type: **Antenna Terminals**
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier**
 Manufacturer: Wilson Electronics
 Model: 801201

Date: 03/22/2005
 Time: 16:26:14
 Sequence#: 8
 Tested By: Mike Wilkinson
 S/N: 801201000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 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	801201000006

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

Transducer Legend:

T1=Pad 30dB

Measurement Data:		Reading listed by margin.					Test Distance: None				
#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	881.460M	85.5	+30.3				+0.0	115.8	117.0	-1.2	None
Fundamental											
2	2644.500M	29.6	+29.9				+0.0	59.5	94.0	-34.5	None
3	1763.000M	20.3	+30.3				+0.0	50.6	94.0	-43.4	None
4	3526.300M	17.1	+29.8				+0.0	46.9	94.0	-47.1	None
5	857.500M	9.2	+30.3				+0.0	39.5	94.0	-54.5	None
6	748.500M	7.0	+30.4				+0.0	37.4	94.0	-56.6	None
7	5289.300M	5.3	+28.1				+0.0	33.4	94.0	-60.6	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/22/2005
 Test Type: **Antenna Terminals** Time: 16:19:05
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 7
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201 S/N: 801201000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 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	801201000006

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

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	870.250M	86.2	+30.3				+0.0	116.5	117.0	-0.5	None
Fundamental											
2	1740.500M	14.0	+30.3				+0.0	44.3	94.0	-49.7	None
3	3481.000M	14.3	+29.8				+0.0	44.1	94.0	-49.9	None
4	642.200M	8.3	+30.4				+0.0	38.7	94.0	-55.3	None
5	854.200M	7.1	+30.3				+0.0	37.4	94.0	-56.6	None
6	8702.500M	11.7	+24.1				+0.0	35.8	94.0	-58.2	None
7	6091.750M	6.0	+27.7				+0.0	33.7	94.0	-60.3	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/22/2005
 Test Type: **Antenna Terminals** Time: 16:32:55
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 9
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201 S/N: 801201000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 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	801201000006

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

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	891.420M	87.0	+30.3				+0.0	117.3	117.0	+0.3	None
Fundamental											
2	2678.005M	36.4	+29.8				+0.0	66.2	94.0	-27.8	None
3	1785.485M	20.5	+30.3				+0.0	50.8	94.0	-43.2	None
4	3571.000M	17.0	+29.8				+0.0	46.8	94.0	-47.2	None
5	754.800M	7.1	+30.4				+0.0	37.5	94.0	-56.5	None
6	6249.250M	4.5	+27.5				+0.0	32.0	94.0	-62.0	None
7	872.800M	8.1	+30.3				+0.0	38.4	117.0	-78.6	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 13:11:05
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 23
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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 - 869.3MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB				Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	869.300M	86.6	+30.3				+0.0	116.9	117.0	-0.1	None
Fundamental											
2	2607.900M	49.1	+29.9				+0.0	79.0	94.0	-15.0	None
3	3477.190M	39.0	+29.8				+0.0	68.8	94.0	-25.2	None
4	1738.620M	31.5	+30.3				+0.0	61.8	94.0	-32.2	None
5	4346.820M	24.5	+29.0				+0.0	53.5	94.0	-40.5	None
6	868.950M	17.7	+30.3				+0.0	48.0	94.0	-46.0	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 13:30:28
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 24
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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 - 869.3MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	Reading listed by margin.			Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
				dB	dB	dB					
1	881.500M	86.5	+30.3				+0.0	116.8	117.0	-0.2	None
Fundamental											
2	2644.460M	51.0	+29.9				+0.0	80.9	94.0	-13.1	None
3	1763.010M	40.1	+30.3				+0.0	70.4	94.0	-23.6	None
4	3526.000M	39.6	+29.8				+0.0	69.4	94.0	-24.6	None
5	4409.810M	25.1	+28.9				+0.0	54.0	94.0	-40.0	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 13:42:54
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 25
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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 - 893.7MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dB μ V	T1 dB	dB	dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	893.705M	87.7	+30.3				+0.0	118.0	117.0	+1.0	None
									Fundamental		
2	894.015M	39.7	+30.3				+0.0	70.0	94.0	-24.0	None
3	3538.515M	24.5	+29.8				+0.0	54.3	94.0	-39.7	None
4	4418.240M	23.5	+28.8				+0.0	52.3	94.0	-41.7	None
5	2657.015M	22.3	+29.9				+0.0	52.2	94.0	-41.8	None
6	1775.515M	21.4	+30.3				+0.0	51.7	94.0	-42.3	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 16:33:58
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 17
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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 - 869.28MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	869.232M	86.6	+30.3				+0.0	116.9	117.0	-0.1	None
Fundamental											
2	2607.916M	43.9	+29.9				+0.0	73.8	94.0	-20.2	None
3	868.996M	40.3	+30.3				+0.0	70.6	94.0	-23.4	None
4	3477.270M	39.5	+29.8				+0.0	69.3	94.0	-24.7	None
5	1738.636M	27.1	+30.3				+0.0	57.4	94.0	-36.6	None
6	792.800M	12.9	+30.4				+0.0	43.3	94.0	-50.7	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 16:39:46
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 18
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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 - 881.5MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB				Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	881.505M	86.5	+30.3				+0.0	116.8	117.0	-0.2	None
Fundamental											
2	2644.300M	46.1	+29.9				+0.0	76.0	94.0	-18.0	None
3	3526.000M	34.8	+29.8				+0.0	64.6	94.0	-29.4	None
4	1762.865M	33.8	+30.3				+0.0	64.1	94.0	-29.9	None
5	659.500M	13.8	+30.4				+0.0	44.2	94.0	-49.8	None
6	4409.510M	14.8	+28.9				+0.0	43.7	94.0	-50.3	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 16:46:10
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 19
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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 - 893.72MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	893.722M	87.7	+30.3				+0.0	118.0	117.0	+1.0	None
Fundamental											
2	2681.336M	52.1	+29.8				+0.0	81.9	94.0	-12.1	None
3	1787.576M	33.9	+30.3				+0.0	64.2	94.0	-29.8	None
4	894.010M	32.3	+30.3				+0.0	62.6	94.0	-31.4	None
5	3574.880M	32.1	+29.8				+0.0	61.9	94.0	-32.1	None
6	4467.696M	14.8	+28.8				+0.0	43.6	94.0	-50.4	None
7	662.200M	10.7	+30.4				+0.0	41.1	94.0	-52.9	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 11:06:04
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 36
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Low - 824.03MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	824.043M	106.5	+30.4				+0.0	136.9	141.7	-4.8	None
Fundamental											
2	823.999M	30.3	+30.4				+0.0	60.7	94.0	-33.3	None
3	1648.088M	17.3	+30.2				+0.0	47.5	94.0	-46.5	None
4	3296.177M	12.2	+29.6				+0.0	41.8	94.0	-52.2	None
5	2472.049M	10.0	+30.1				+0.0	40.1	94.0	-53.9	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 11:16:16
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 37
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. Mid - 836.5MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	Reading listed by margin.			Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
				dB	dB	dB					
1	836.514M	106.8	+30.4				+0.0	137.2	141.7	-4.5	None
Fundamental											
2	1672.087M	16.1	+30.2				+0.0	46.3	94.0	-47.7	None
3	2508.117M	4.8	+30.1				+0.0	34.9	94.0	-59.1	None
4	3344.255M	5.0	+29.7				+0.0	34.7	94.0	-59.3	None
5	4180.285M	4.9	+29.3				+0.0	34.2	94.0	-59.8	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/25/2005
 Test Type: **Antenna Terminals** Time: 11:36:26
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 38
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: AMPS. High - 848.97MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	848.957M	102.9	+30.3				+0.0	133.2	141.7	-8.5	None
Fundamental											
2	849.018M	30.4	+30.3				+0.0	60.7	94.0	-33.3	None
3	1697.911M	11.9	+30.2				+0.0	42.1	94.0	-51.9	None
4	2546.714M	8.5	+30.0				+0.0	38.5	94.0	-55.5	None
5	3395.684M	5.3	+29.7				+0.0	35.0	94.0	-59.0	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/22/2005
 Test Type: **Antenna Terminals** Time: 13:50:31
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 2
 Manufacturer: Wilson Electronics Tested By: Mike Wilkinson
 Model: 801201 S/N: 801201000006

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Attenuator 30dB, Bird 9949 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	801201000006

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

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	825.245M	106.4	+30.4				+0.0	136.8	141.7	-4.9	None
Fundamental											
2	1650.540M	25.7	+30.2				+0.0	55.9	94.0	-38.1	None
3	726.000M	24.8	+30.4				+0.0	55.2	94.0	-38.8	None
4	787.500M	24.5	+30.4				+0.0	54.9	94.0	-39.1	None
5	3301.040M	24.4	+29.6				+0.0	54.0	94.0	-40.0	None
6	4126.290M	21.6	+29.4				+0.0	51.0	94.0	-43.0	None
7	2475.790M	20.7	+30.1				+0.0	50.8	94.0	-43.2	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/22/2005
 Test Type: **Antenna Terminals** Time: 13:58:22
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 3
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Uplink Mid - 836.5MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	834.730M	107.5	+30.4				+0.0	137.9	141.7	-3.8	None
									Fundamental		
2	822.700M	29.2	+30.4				+0.0	59.6	94.0	-34.4	None
3	1672.940M	25.8	+30.2				+0.0	56.0	94.0	-38.0	None
4	763.700M	25.3	+30.4				+0.0	55.7	94.0	-38.3	None
5	3346.040M	22.5	+29.7				+0.0	52.2	94.0	-41.8	None
6	6692.240M	22.2	+27.2				+0.0	49.4	94.0	-44.6	None
7	9201.890M	21.0	+25.0				+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: **FCC 22.917**
 Work Order #: **83305** Date: 03/22/2005
 Test Type: **Antenna Terminals** Time: 14:10:02
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 4
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. Spurious Emissions Test: One signal is input to the amplifier. The input signal is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Input Modulation: CDMA. Frequencies Tested: Uplink High – 847.75MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBµV	T1 dB				Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	848.230M	104.4	+30.4				+0.0	134.8	141.7	-6.9	None
Fundamental											
2	3391.480M	24.1	+29.7				+0.0	53.8	94.0	-40.2	None
3	858.400M	22.6	+30.3				+0.0	52.9	94.0	-41.1	None
4	2543.730M	22.5	+30.0				+0.0	52.5	94.0	-41.5	None
5	6782.480M	24.7	+27.1				+0.0	51.8	94.0	-42.2	None
6	1695.980M	21.6	+30.2				+0.0	51.8	94.0	-42.2	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 15:33:30
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 30
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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: Uplink Low - 824.3MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	848.705M	106.3	+30.3				+0.0	136.6	141.7	-5.1	None
Fundamental											
2	2470.935M	42.0	+30.1				+0.0	72.1	94.0	-21.9	None
3	3306.920M	36.2	+29.7				+0.0	65.9	94.0	-28.1	None
4	4112.820M	35.4	+29.4				+0.0	64.8	94.0	-29.2	None
5	1648.605M	30.7	+30.2				+0.0	60.9	94.0	-33.1	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 15:38:23
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 31
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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: Uplink Mid - 836.5MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	836.500M	107.0	+30.4				+0.0	137.4	141.7	-4.3	None
Fundamental											
2	3346.580M	36.4	+29.7				+0.0	66.1	94.0	-27.9	None
3	1673.580M	34.5	+30.2				+0.0	64.7	94.0	-29.3	None
4	2510.080M	33.0	+30.1				+0.0	63.1	94.0	-30.9	None
5	4183.080M	31.9	+29.3				+0.0	61.2	94.0	-32.8	None



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

Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/24/2005
 Test Type: **Antenna Terminals** Time: 15:43:53
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 32
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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: Uplink High - 848.7MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	Reading listed by margin.			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
				dB	dB	dB					
1	848.710M	103.0	+30.3				+0.0	133.3	141.7	-8.4	None
Fundamental											
2	3394.810M	33.8	+29.7				+0.0	63.5	94.0	-30.5	None
3	2546.110M	31.6	+30.0				+0.0	61.6	94.0	-32.4	None
4	1697.410M	31.4	+30.2				+0.0	61.6	94.0	-32.4	None
5	4243.510M	31.4	+29.1				+0.0	60.5	94.0	-33.5	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 13:15:33
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 11
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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: Uplink Low - 824.28MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	824.270M	106.5	+30.4				+0.0	136.9	141.7	-4.8	None
Fundamental											
2	822.700M	49.9	+30.4				+0.0	80.3	94.0	-13.7	None
3	816.700M	26.6	+30.4				+0.0	57.0	94.0	-37.0	None
4	761.700M	23.4	+30.4				+0.0	53.8	94.0	-40.2	None
5	2471.045M	22.7	+30.1				+0.0	52.8	94.0	-41.2	None
6	3295.325M	20.9	+29.6				+0.0	50.5	94.0	-43.5	None
7	1648.550M	19.0	+30.2				+0.0	49.2	94.0	-44.8	None



Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Wilson Electronics**
 Specification: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 13:23:50
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 12
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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: Uplink Mid – 836.5MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

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

#	Freq MHz	Rdng dBµV	T1 dB	dB			Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	836.480M	106.6	+30.4				+0.0	137.0	141.7	-4.7	None
Fundamental											
2	803.500M	23.7	+30.4				+0.0	54.1	94.0	-39.9	None
3	2509.480M	22.5	+30.1				+0.0	52.6	94.0	-41.4	None
4	820.500M	21.3	+30.4				+0.0	51.7	94.0	-42.3	None
5	590.500M	20.5	+30.4				+0.0	50.9	94.0	-43.1	None
6	3345.980M	18.8	+29.7				+0.0	48.5	94.0	-45.5	None
7	1672.980M	18.2	+30.2				+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: **FCC 22.917**
 Work Order #: **83305** Date: 03/23/2005
 Test Type: **Antenna Terminals** Time: 13:30:25
 Equipment: **In Vehicle Wireless Dual Band Smart Amplifier** Sequence#: 13
 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 824 to 894MHz band. Uplink frequency range 824 - 849MHz. Downlink frequency range 869 - 894MHz. 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: Uplink High - 848.72MHz. Frequency Range Investigated: 30MHz to 10 GHz.

Transducer Legend:

T1=Pad 30dB

Measurement Data:

Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBµV	T1 dB	Reading listed by margin.			Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
				dB	dB	dB					
1	848.692M	103.4	+30.3				+0.0	133.7	141.7	-8.0	None
Fundamental											
2	3848.702M	21.7	+29.7				+0.0	51.4	94.0	-42.6	None
3	1848.702M	20.6	+30.3				+0.0	50.9	94.0	-43.1	None
4	2848.702M	21.1	+29.6				+0.0	50.7	94.0	-43.3	None

5	766.200M	20.2	+30.4	+0.0	50.6	94.0	-43.4	None
6	860.700M	20.0	+30.3	+0.0	50.3	94.0	-43.7	None
7	942.200M	19.0	+30.3	+0.0	49.3	94.0	-44.7	None
8	4848.702M	19.4	+28.4	+0.0	47.8	94.0	-46.2	None

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

