



**WILSON ELECTRONICS TEST REPORT**

**FOR THE**

**IN-BUILDING WIRELESS IDEN SMARTTECH AMPLIFIER, 804006**

**FCC PART 90 AND RSS-131**

**COMPLIANCE**

**DATE OF ISSUE: JUNE 21, 2005**

**PREPARED FOR:**

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

P.O. No.: IBWI804006-1  
W.O. No.: 83307

**PREPARED BY:**

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

Date of test: June 13-14, 2005

**Report No.: FC05-034**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** June 13-14, 2005

**DATE OF RECEIPT:** June 13, 2005

**FREQUENCY RANGE TESTED:** 9 kHz-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 90, ANSI/TIA/EIA-603-B (200),  
RSS-212 and RSS-131

**PURPOSE OF TEST:** To demonstrate the compliance of the In-Building  
Wireless iDEN SmartTech Amplifier, 804006 with  
the requirements for FCC Part 90 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	90.205	RF Power Output
RSS 131	6.3	TIA/EIA	603	Non-Linearity (Intermodulation Attenuation)
RSS 131	6.4	47 CFR	90.210	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:**

**TEST PERSONNEL:**





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Joyce Walker, Quality Assurance Administrative Manager

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Randy Clark, EMC Engineer



## **EQUIPMENT UNDER TEST (EUT) DESCRIPTION**

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

## **EQUIPMENT UNDER TEST**

### **In-Building Wireless iDEN SmartTech Amplifier**

Manuf: Wilson Electronics  
Model: 804006  
Serial: 804006012  
FCC ID: PWO8040SB (pending)

## **PERIPHERAL DEVICES**

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

### **DC Power Supply**

Manuf: Topward  
Model: TPS-2000  
Serial: 920035

### **Signal Generator (2 each)**

Manuf: HP  
Model: E4433B  
Serial: US38440697 &  
MY41000298

**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

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

806-821 MHz Uplink, 851-866MHz Downlink

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

0.891 Watts Uplink, 0.794 Watts Downlink

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

Refer to "90.635 Limitations on power and antenna height" for maximum power rating for fixed equipment operating in the SMR band.

**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**

iDEN

**FCC 2.1033(c)(14)/2.1046/90.205 - RF POWER OUTPUT**

**RF Power Output Test Conditions:** EUT is a bi-directional amplifier for the 806 to 866 MHz band. Uplink frequency range 806 - 821MHz. Downlink frequency range 851 - 866MHz. 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. Minimum RF output power of 0.00 Watts is achieved with a 0.00 Watt RF input signal. Signal input level is varied from the maximum compression point to 20dB below maximum to ensure that the maximum output power is recorded.

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

**Uplink**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
806.025	iDEN	0.891
813.500	iDEN	0.794
820.975	iDEN	0.831

**Downlink**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
851.025	iDEN	0.724
858.500	iDEN	0.794
865.975	iDEN	0.776

**Test Equipment:**

<b>Description</b>	<b>Asset #</b>	<b>Manufacturer</b>	<b>Model #</b>	<b>Serial #</b>	<b>Cal Date</b>	<b>Cal Due</b>
Attenuator	P01577	Bird	25-AMFN-30	9724	5/18/05	5/18/07
Spectrum Analyzer-AF	Agilent	E4446A	US44300407	02660	1/12/05	1/12/07
Cable, 36" 40GHz-AF	Pasternack	35591-36	None	P05202	2/8/05	2/8/07

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**





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

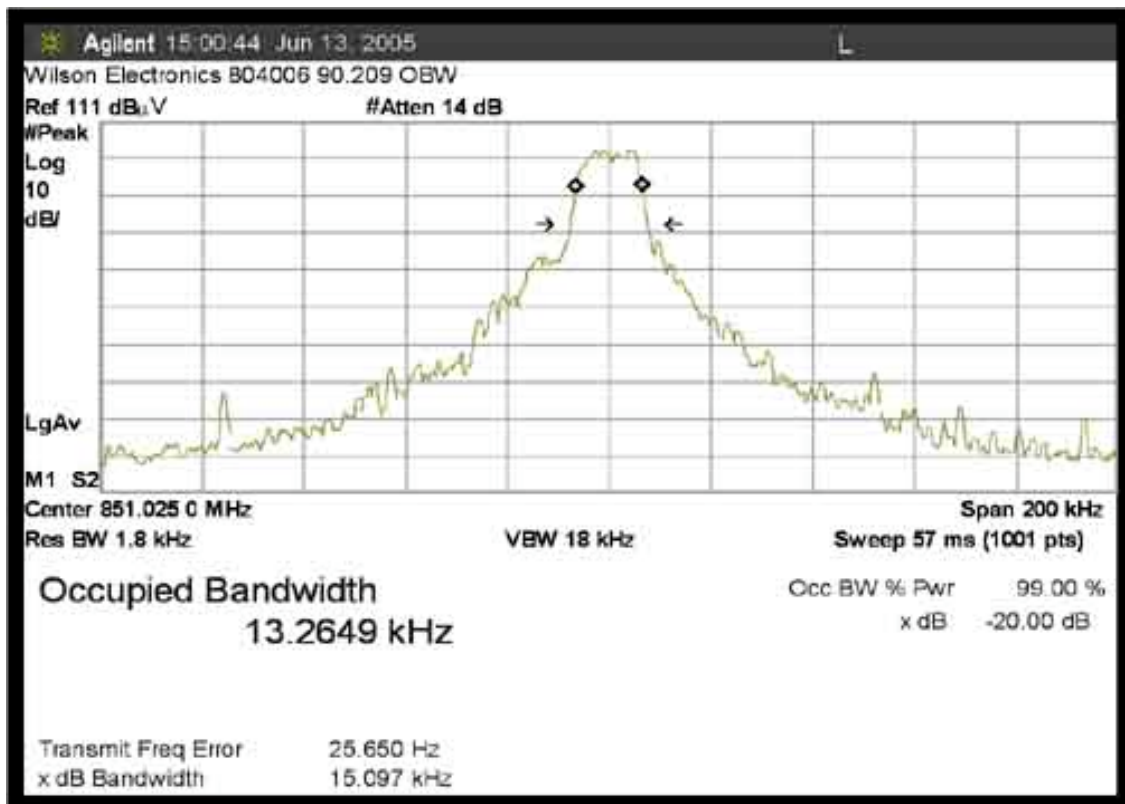
Not applicable to this unit.

**FCC 2.1033(c)(14)/2.1047(b) MODULATION CHARACTERISTICS- MODULATION LIMITING RESPONSE**

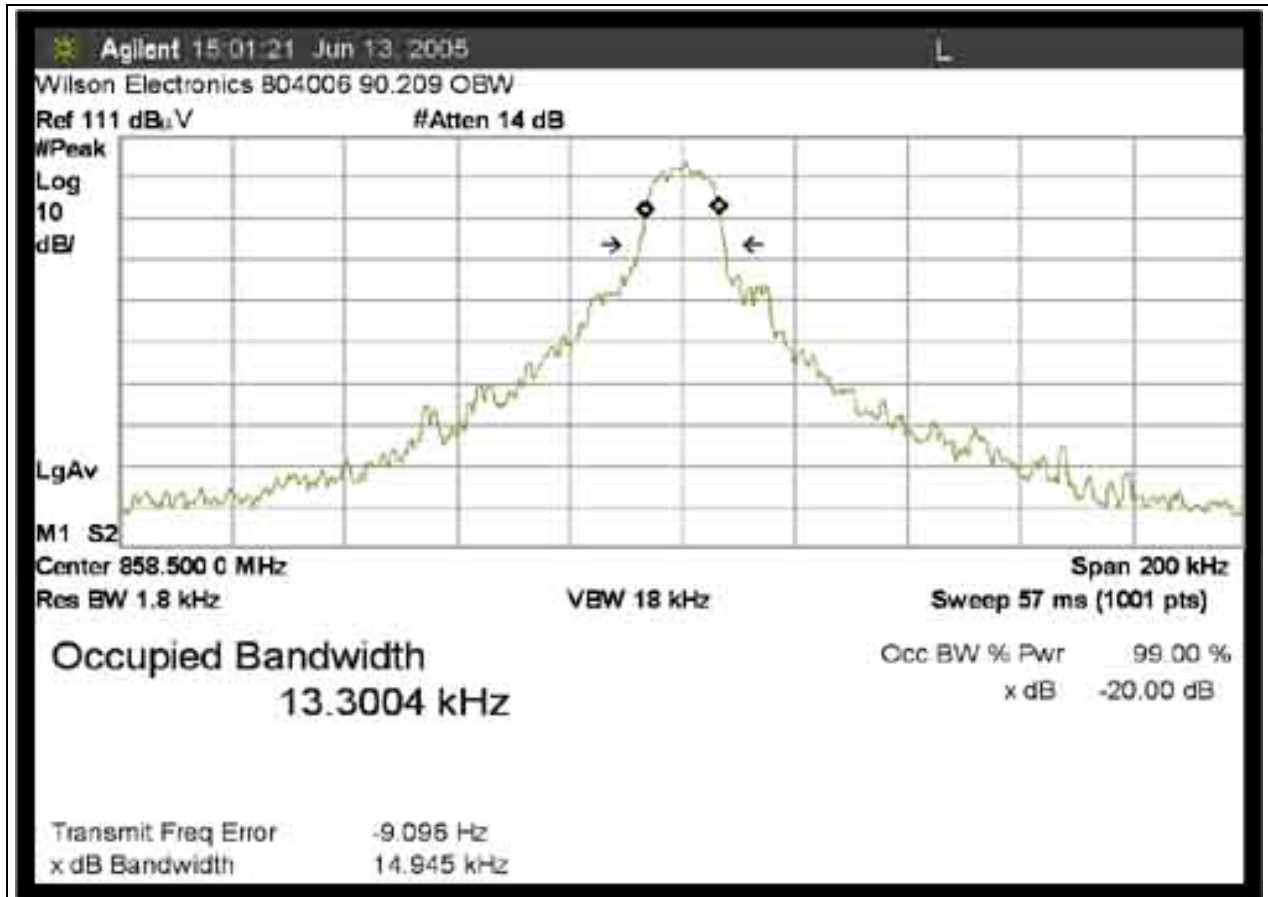
Not applicable to this unit.

**FCC 2.1033(c)(14)/2.1049(i)/90.209- OCCUPIED BANDWIDTH - DOWNLINK LOW CHANNEL**

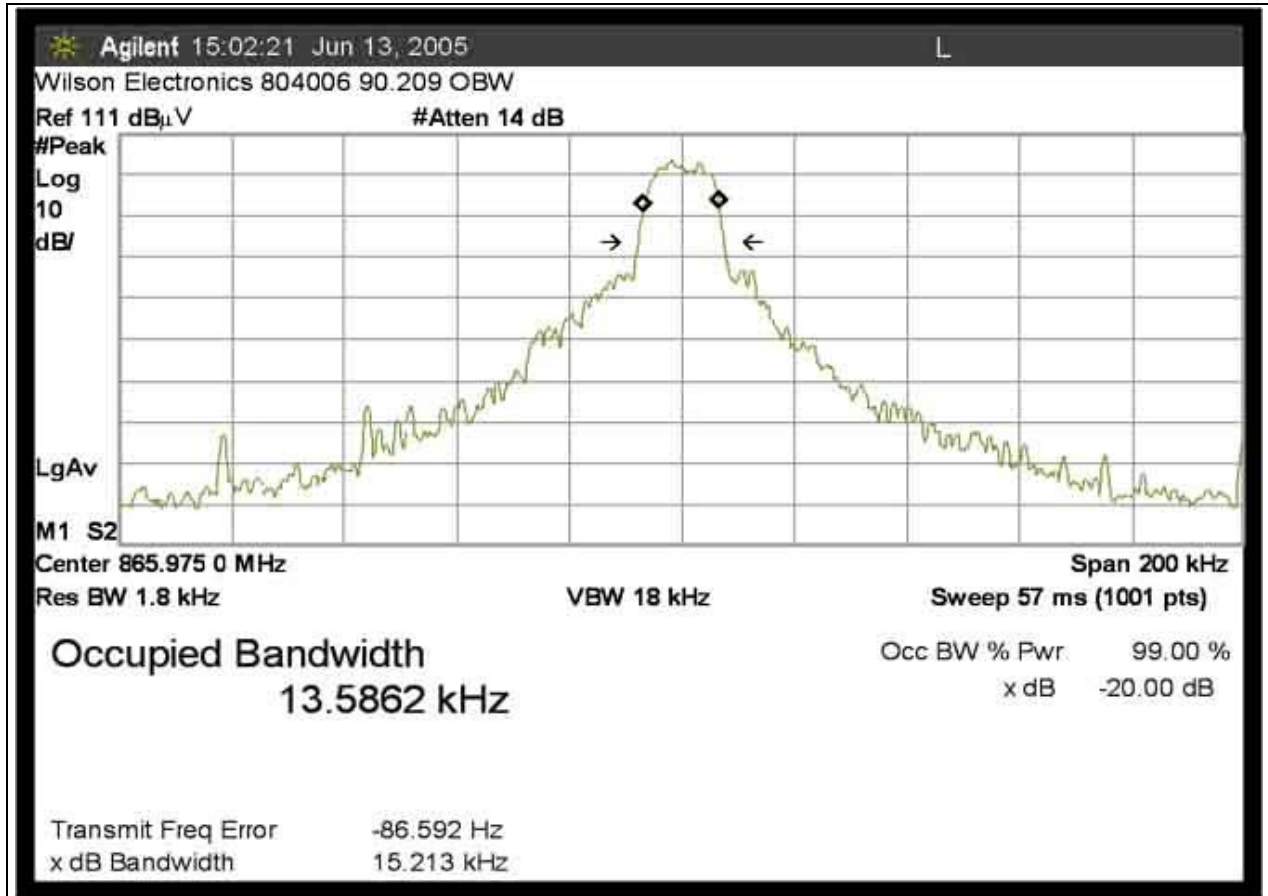
**Test Conditions:** EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Temperature: 24°C, Relative Humidity: 68%.



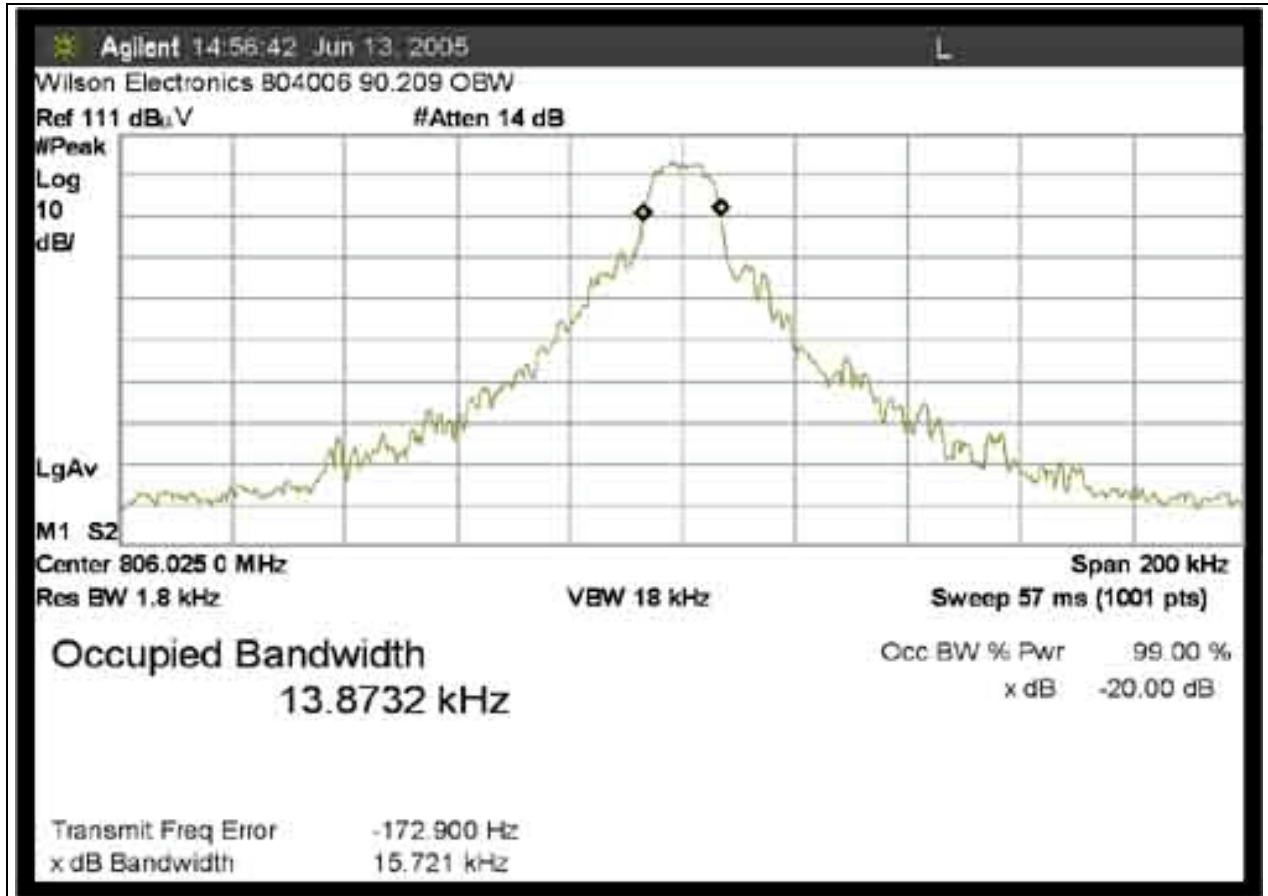
FCC 90.209 OCCUPIED BANDWIDTH - DOWNLINK MID CHANNEL



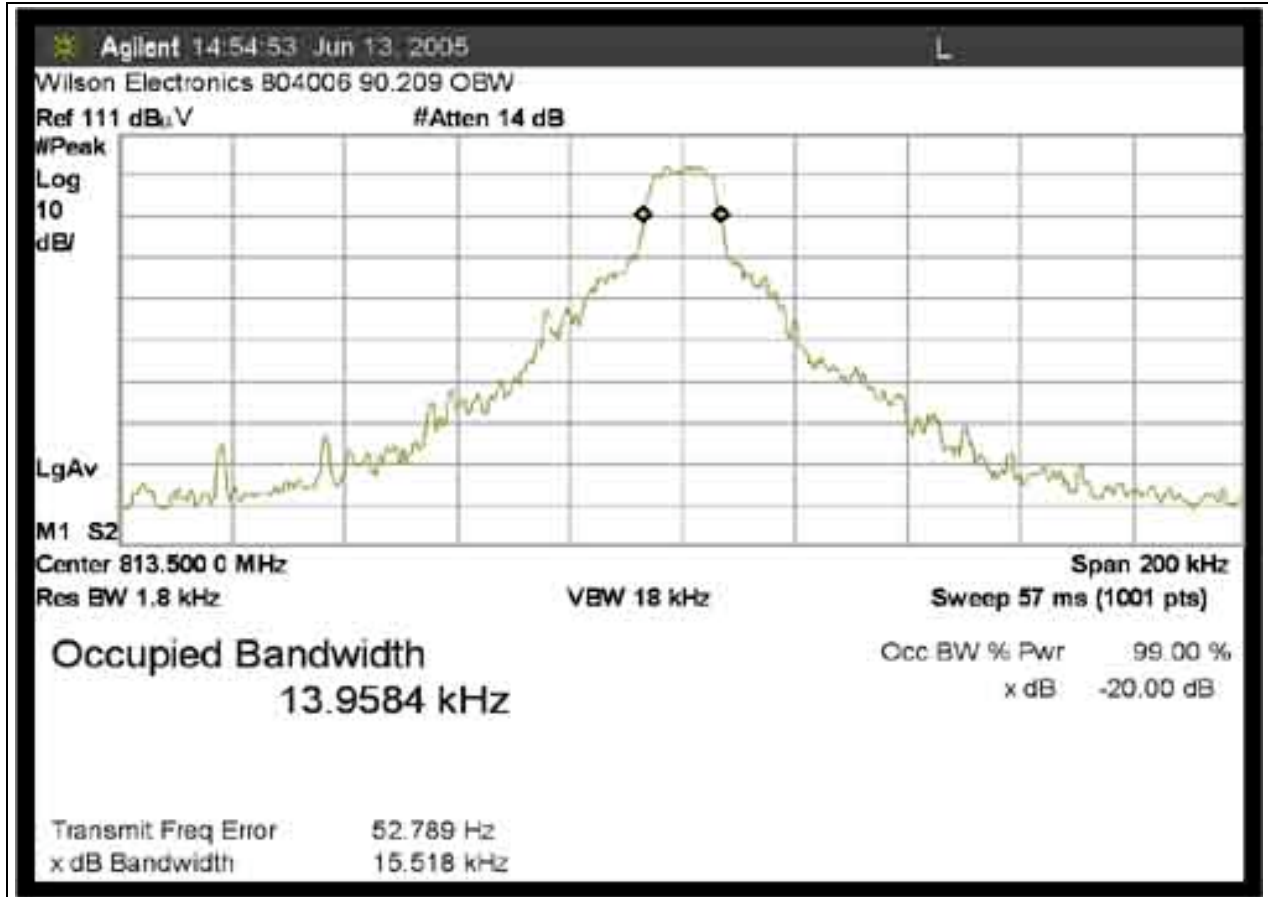
**FCC 90.209 OCCUPIED BANDWIDTH - DOWNLINK HIGH CHANNEL**



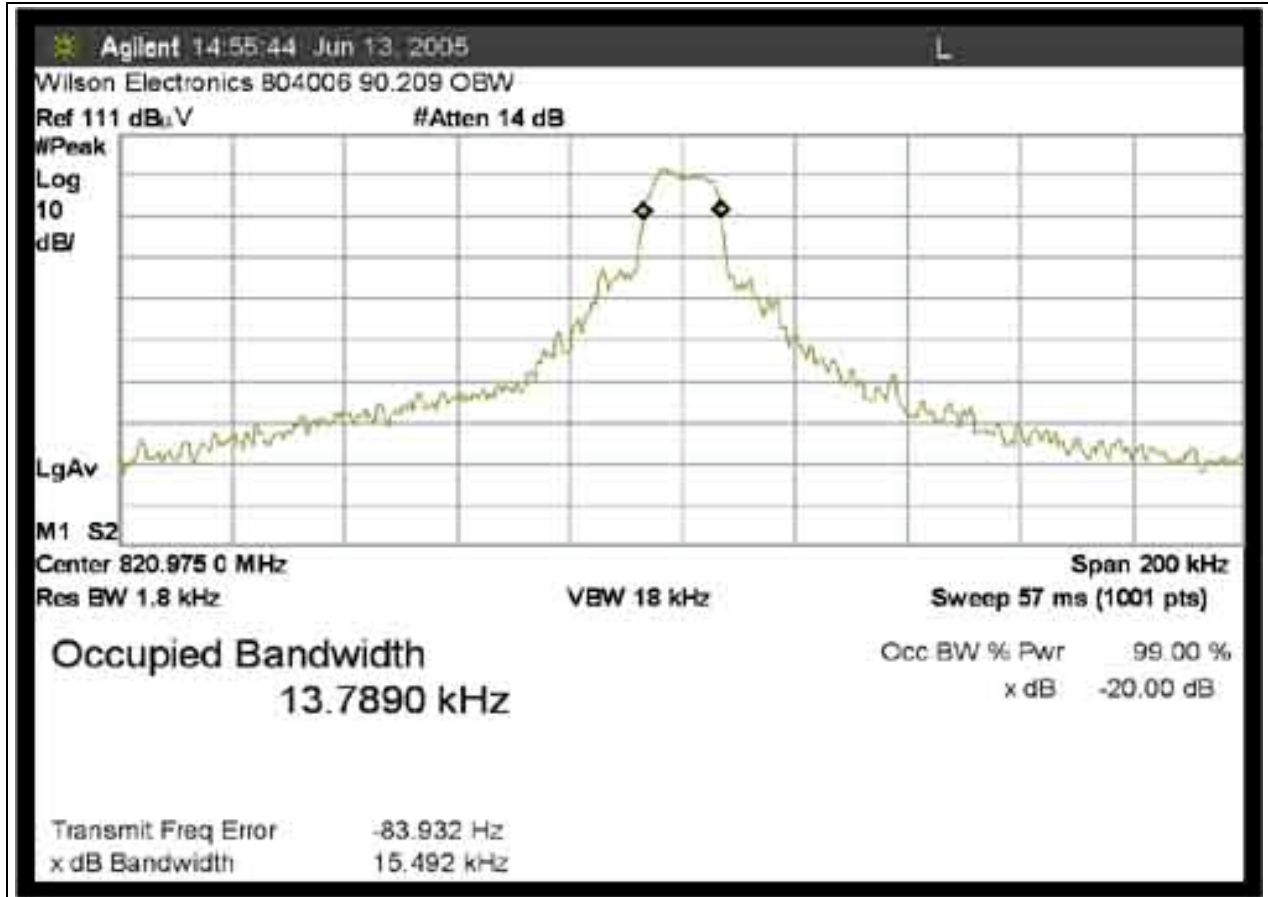
FCC 90.209 OCCUPIED BANDWIDTH - UPLINK LOW CHANNEL



FCC 90.209 OCCUPIED BANDWIDTH - UPLINK MID CHANNEL



FCC 90.209 OCCUPIED BANDWIDTH - UPLINK HIGH CHANNEL



**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**





**FCC 2.1033(c)(14)/2.1051/90.210 - SPURIOUS EMISSIONS AT ANTENNA TERMINAL**

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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210(g)**  
 Work Order #: **83307** Date: 06/13/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 15:13:05  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 2  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier*	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Downlink. Frequency Range Investigated: Carrier. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

**Transducer Legend:**

T1=Pad 30dB	T2=Cable 40 GHz 36"
T3=dBm to dBuV	

**Measurement Data:**

#	Freq MHz	Rdng dBµV	Reading listed by margin.			Dist dB	Table	Test Lead: RF Output			
			T1 dB	T2 dB	T3 dB			Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	865.975M	107.9	+30.1	+0.6	+107.0	+0.0	31.6	94.0	-62.4	RF Ou	
2	858.500M	107.2	+30.1	+0.6	+107.0	+0.0	30.9	94.0	-63.1	RF Ou	



3	851.025M	106.9	+30.1	+0.6	+107.0	+0.0	30.6	94.0	-63.4	RF Ou
								Peak		
4	858.500M	105.3	+30.1	+0.6	+107.0	+0.0	29.0	94.0	-65.0	RF Ou
								Average		
5	865.975M	105.2	+30.1	+0.6	+107.0	+0.0	28.9	94.0	-65.1	RF Ou
								Average		
6	851.025M	104.9	+30.1	+0.6	+107.0	+0.0	28.6	94.0	-65.4	RF Ou
								Average		



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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210(g)**  
 Work Order #: **83307** Date: 06/13/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 13:38:45  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 1  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Uplink and Downlink. Frequency Range Investigated: Carrier. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

**Transducer Legend:**

T1=Pad 30dB	T2=Cable 40 GHz 36"
T3=dBm to dBuV	

**Measurement Data:** Reading listed by margin. Test Lead: RF Output

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	Dist dB	Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	815.500M	108.1	+30.0	+0.6	+107.0	+0.0	31.7	94.0	-62.3	RF Ou	
								Peak			
2	820.975M	107.8	+30.0	+0.6	+107.0	+0.0	31.4	94.0	-62.6	RF Ou	
								Peak			
3	806.025M	107.5	+30.0	+0.6	+107.0	+0.0	31.1	94.0	-62.9	RF Ou	
								Peak			

4	806.025M	105.9	+30.0	+0.6	+107.0	+0.0	29.5	94.0	-64.5	RF Ou
								Average		
5	820.975M	105.6	+30.0	+0.6	+107.0	+0.0	29.2	94.0	-64.8	RF Ou
								Average		
6	813.500M	105.4	+30.0	+0.6	+107.0	+0.0	29.0	94.0	-65.0	RF Ou
								Average		
7	820.975M	105.3	+30.0	+0.6	+107.0	+0.0	28.9	94.0	-65.1	RF Ou
								Average		
8	813.500M	105.0	+30.0	+0.6	+107.0	+0.0	28.6	94.0	-65.4	RF Ou
								Average		
9	820.975M	104.5	+30.0	+0.6	+107.0	+0.0	28.1	94.0	-65.9	RF Ou
								Average		



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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210(g)**  
 Work Order #: **83307** Date: 06/14/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 09:33:36  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 6  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Downlink Low Channel. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

**Transducer Legend:**

T1=Cable 40 GHz 36"	T2=Pad 30dB
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**Measurement Data:**

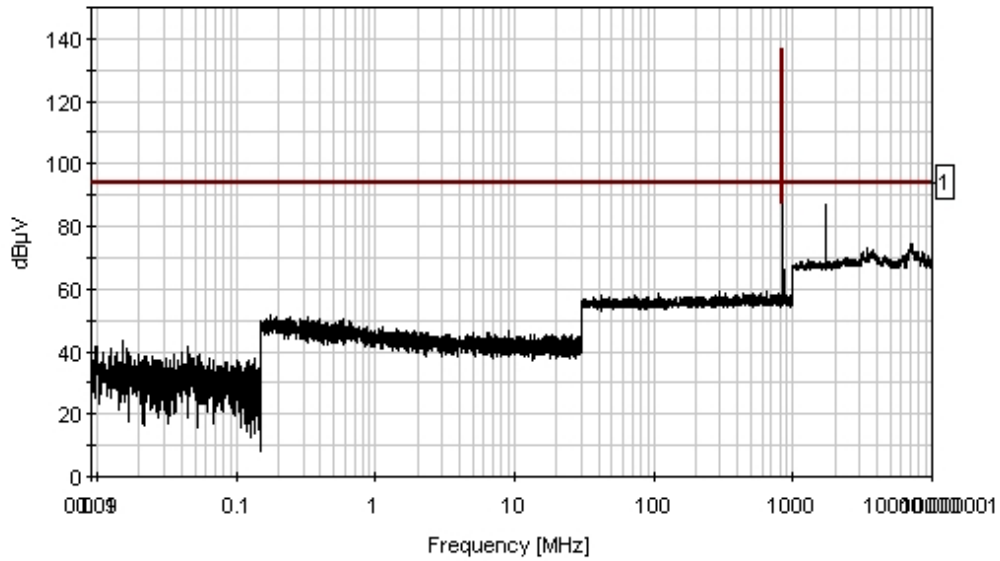
Reading listed by margin.

Test Lead: RF Output

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	851.025M	105.8	+0.6	+30.1	+0.0	136.5	136.5 Carrier	+0.0	RF Ou
2	1702.050M	55.9	+0.8	+30.1	+0.0	86.8	94.0	-7.2	RF Ou
3	851.010M	52.3	+0.6	+30.1	+0.0	83.0	91.9	-8.9	RF Ou

4	851.039M	45.2	+0.6	+30.1	+0.0	75.9	93.5	-17.6	RF Ou
5	3404.100M	40.2	+1.2	+29.7	+0.0	71.1	94.0	-22.9	RF Ou
6	4255.127M	33.2	+1.4	+29.3	+0.0	63.9	94.0	-30.1	RF Ou
7	2553.075M	28.1	+1.1	+29.9	+0.0	59.1	94.0	-34.9	RF Ou

CKC Laboratories Date: 06/14/2005 Time: 09:33:36 Wilson Electronics WO#: 83307  
 FCC 90.210(g) Test Lead: RF Output 5VDC Sequence#: 6  
 Wilson Electronics M/N 804006



— Sweep Data      — 1 - FCC 90.210(g)



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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210(g)**  
 Work Order #: **83307** Date: 06/14/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 09:35:54  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 7  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Downlink Mid Channel. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

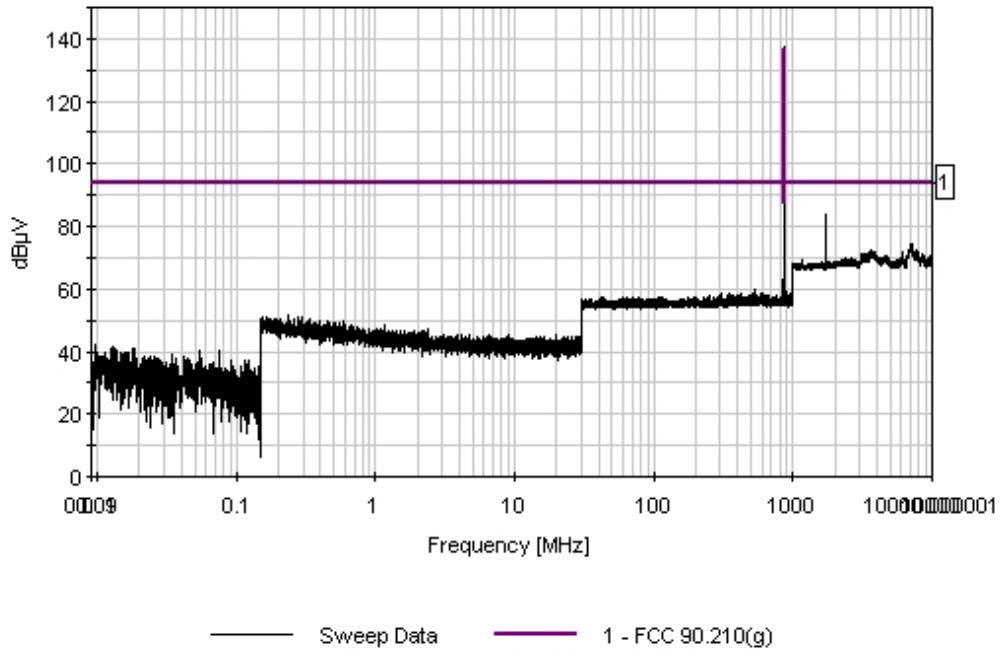
**Transducer Legend:**

T1=Cable 40 GHz 36"	T2=Pad 30dB
---------------------	-------------

#	Freq MHz	Rdng dBµV	Reading listed by margin.				Test Lead: RF Output				
			T1 dB	T2 dB	Dist dB	Corr dBµV	Spec dBµV	Margin dB	Polar Ant		
1	858.500M	105.8	+0.6	+30.1	+0.0	136.5	136.5	+0.0	RF Ou		
2	858.484M	52.1	+0.6	+30.1	+0.0	82.8	87.0	-4.2	RF Ou		
3	1717.000M	52.5	+0.8	+30.1	+0.0	83.4	94.0	-10.6	RF Ou		

4	858.514M	50.7	+0.6	+30.1	+0.0	81.4	93.5	-12.1	RF Ou
5	3434.000M	34.5	+1.2	+29.6	+0.0	65.3	94.0	-28.7	RF Ou
6	4292.500M	33.1	+1.4	+29.2	+0.0	63.7	94.0	-30.3	RF Ou
7	2575.500M	25.7	+1.1	+29.9	+0.0	56.7	94.0	-37.3	RF Ou

CKC Laboratories Date: 06/14/2005 Time: 09:35:54 Wilson Electronics WO#: 83307  
 FCC 90.210(g) Test Lead: RF Output 5VDC Sequence#: 7  
 Wilson Electronics M/N 804006





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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210(g)**  
 Work Order #: **83307** Date: 06/14/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 09:37:19  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 8  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Downlink High Channel. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

**Transducer Legend:**

T1=Cable 40 GHz 36"	T2=Pad 30dB
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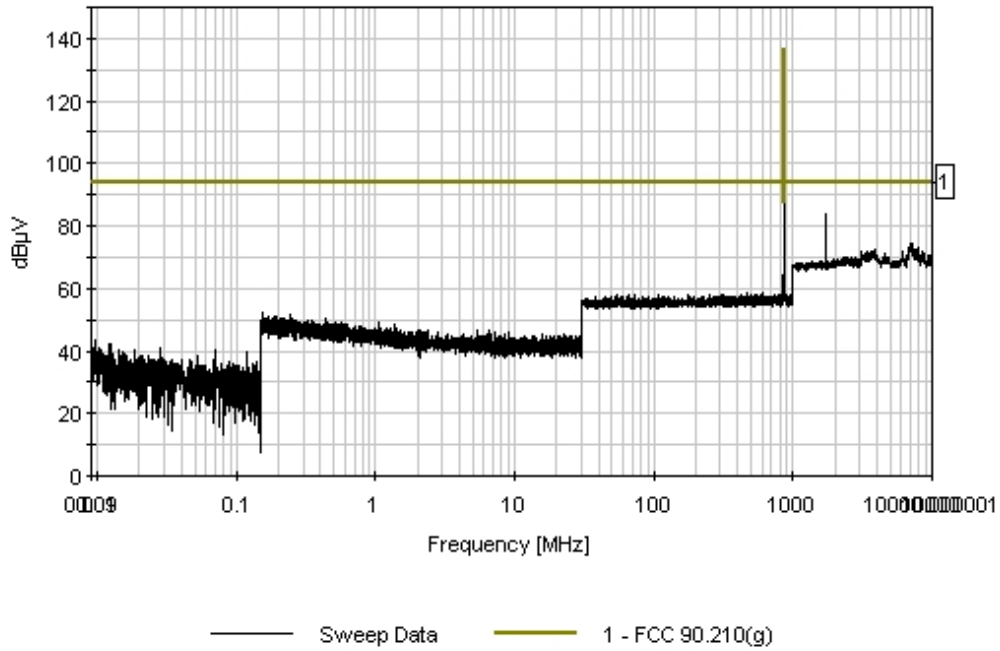
**Measurement Data:**

#	Freq MHz	Rdng dBµV	Reading listed by margin.				Test Lead: RF Output				
			T1 dB	T2 dB	Dist dB	Corr dB	Spec dBµV	Margin dB	Polar Ant		
1	865.975M	105.6	+0.6	+30.1	+0.0	136.3	136.5	-0.2	RF Ou		
2	865.959M	52.3	+0.6	+30.1	+0.0	83.0	88.6	-5.6	RF Ou		
3	1731.950M	52.6	+0.9	+30.0	+0.0	83.5	94.0	-10.5	RF Ou		



4	865.961M	54.5	+0.6	+30.1	+0.0	85.2	96.0	-10.8	RF Ou
5	3463.900M	28.6	+1.2	+29.6	+0.0	59.4	94.0	-34.6	RF Ou
6	2597.925M	28.1	+1.1	+29.8	+0.0	59.0	94.0	-35.0	RF Ou

CKC Laboratories Date: 06/14/2005 Time: 09:37:19 Wilson Electronics WO#: 83307  
 FCC 90.210(g) Test Lead: RF Output 5VDC Sequence#: 8  
 Wilson Electronics M/N 804006





Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)  
 Customer: **Wilson Electronics**  
 Specification: **FCC 90.210(g)**  
 Work Order #: **83307** Date: 06/13/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 15:44:38  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 3  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Uplink Low Channel. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW, VBW.

**Transducer Legend:**

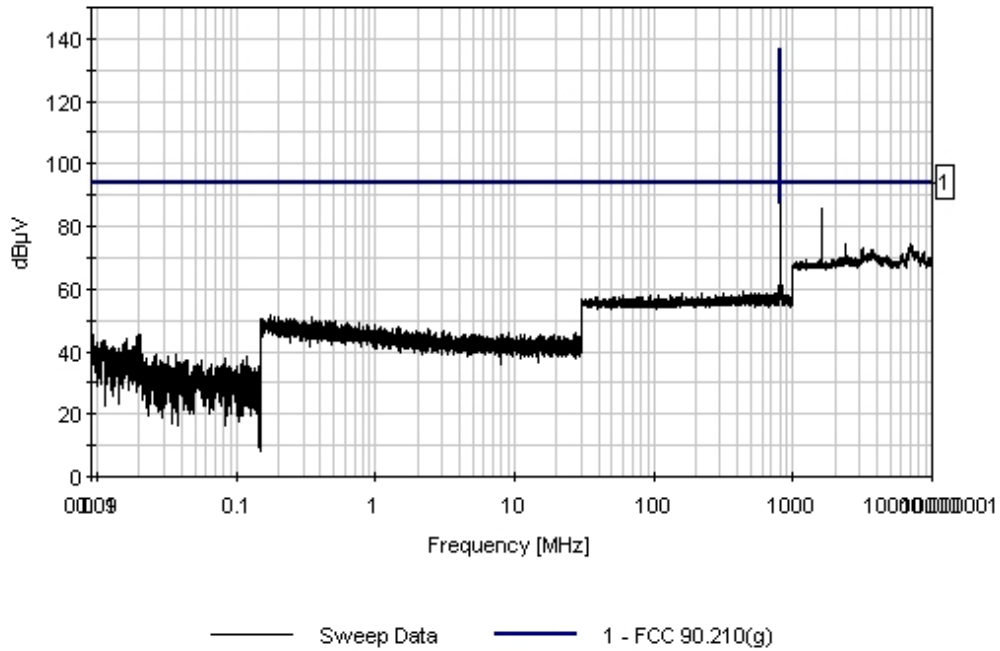
T1=Cable 40 GHz 36"	T2=Pad 30dB
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**Measurement Data:**

#	Freq MHz	Rdng dBµV	Reading listed by margin.				Test Lead: RF Output				
			T1 dB	T2 dB			Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	806.038M	60.0	+0.6	+30.0			+0.0	90.6	94.0	-3.4	RF Ou
	Ave										
^	806.025M	105.4	+0.6	+30.0			+0.0	136.0	136.5	-0.5	RF Ou
	Carrier										

3	806.010M	55.3	+0.6	+30.0	+0.0	85.9	94.0	-8.1	RF Ou
4	1612.050M	54.2	+0.8	+30.2	+0.0	85.2	94.0	-8.8	RF Ou
5	2418.075M	39.1	+1.0	+30.1	+0.0	70.2	94.0	-23.8	RF Ou

CKC Laboratories Date: 06/13/2005 Time: 15:44:38 Wilson Electronics W/O#: 83307  
 FCC 90.210(g) Test Lead: RF Output 5VDC Sequence#: 3  
 Wilson Electronics M/N 804006





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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210(g)**  
 Work Order #: **83307** Date: 06/13/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 15:52:08  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 4  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Uplink Mid Channel. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

**Transducer Legend:**

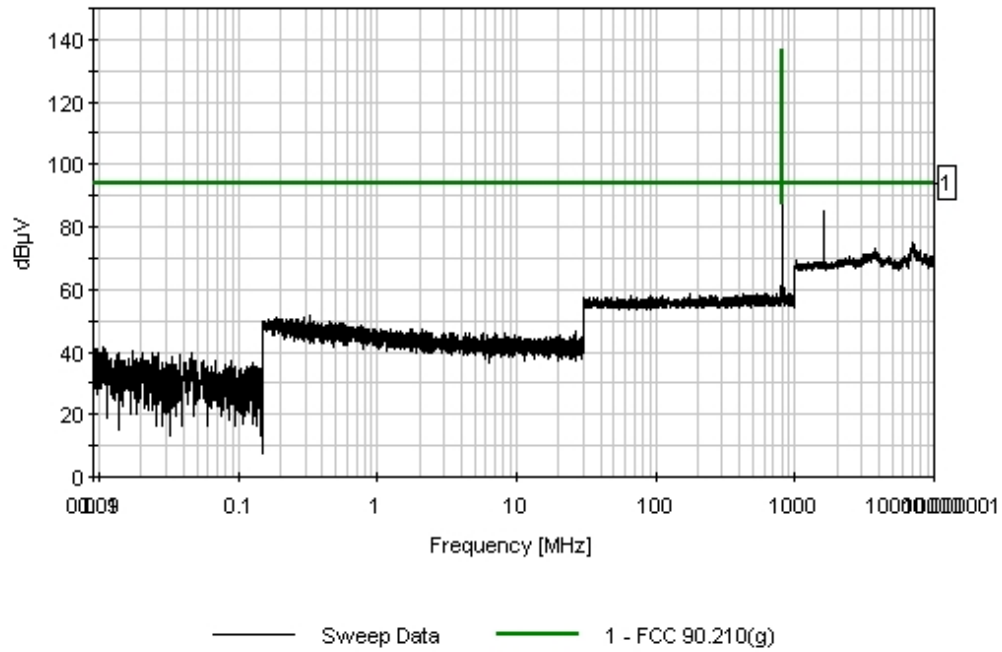
T1=Cable 40 GHz 36"	T2=Pad 30dB
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**Measurement Data:** Reading listed by margin. Test Lead: RF Output

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	813.500M	105.6	+0.6	+30.0	+0.0	136.2	136.5 Carrier	-0.3	RF Ou
2	813.485M	54.3	+0.6	+30.0	+0.0	84.9	91.1	-6.2	RF Ou
3	813.515M	54.1	+0.6	+30.0	+0.0	84.7	92.7	-8.0	RF Ou

4	1627.000M	53.3	+0.8	+30.2	+0.0	84.3	94.0	-9.7	RF Ou
5	2440.500M	40.4	+1.0	+30.1	+0.0	71.5	94.0	-22.5	RF Ou
6	3254.000M	27.5	+1.2	+29.7	+0.0	58.4	94.0	-35.6	RF Ou

CKC Laboratories Date: 06/13/2005 Time: 15:52:08 Wilson Electronics WO#: 83307  
 FCC 90.210(g) Test Lead: RF Output 5VDC Sequence#: 4  
 Wilson Electronics M/N 804006





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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210(g)**  
 Work Order #: **83307** Date: 06/13/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 16:11:51  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 5  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Uplink High Channel. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

**Transducer Legend:**

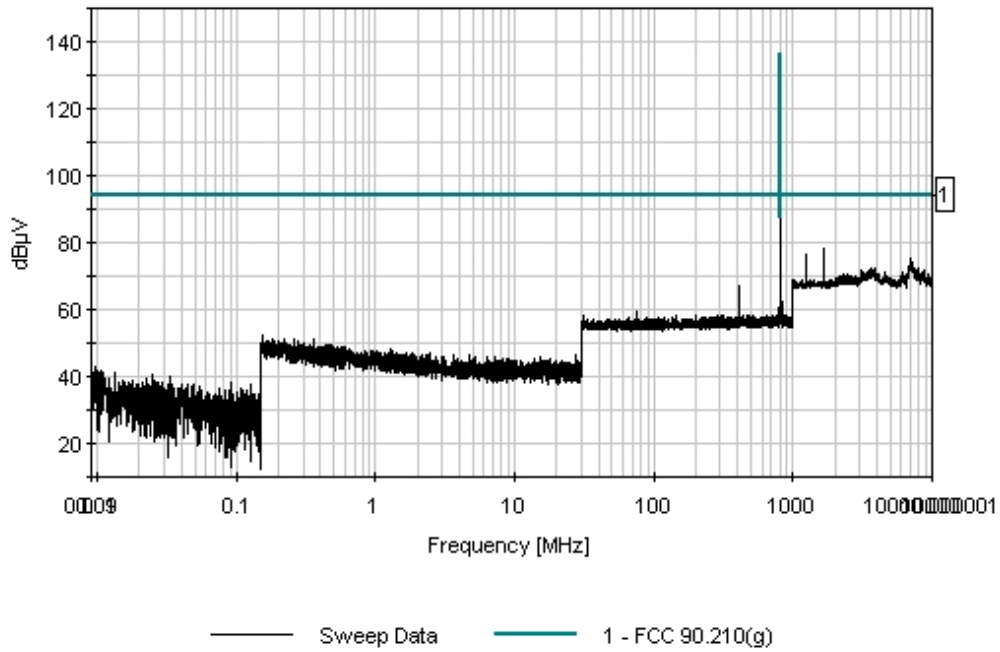
T1=Cable 40 GHz 36"	T2=Pad 30dB
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**Measurement Data:**

#	Freq MHz	Rdng dBµV	Reading listed by margin.				Test Lead: RF Output				
			T1 dB	T2 dB	Dist dB	Corr dB	Spec dBµV	Margin dB	Polar Ant		
1	820.975M	105.9	+0.6	+30.0	+0.0	136.5	136.5	+0.0	RF Ou		
2	820.960M	54.9	+0.6	+30.0	+0.0	85.5	91.9	-6.4	RF Ou		
3	820.988M	55.6	+0.6	+30.0	+0.0	86.2	97.6	-11.4	RF Ou		
4	1641.950M	46.3	+0.8	+30.2	+0.0	77.3	94.0	-16.7	RF Ou		

5	1231.468M	45.6	+0.7	+30.0	+0.0	76.3	94.0	-17.7	RF Ou
6	410.493M	38.8	+0.5	+30.0	+0.0	69.3	94.0	-24.7	RF Ou
7	2462.925M	33.6	+1.0	+30.1	+0.0	64.7	94.0	-29.3	RF Ou
8	3283.900M	29.6	+1.2	+29.7	+0.0	60.5	94.0	-33.5	RF Ou

CKC Laboratories Date: 06/13/2005 Time: 16:11:51 Wilson Electronics WO#: 83307  
 FCC 90.210(g) Test Lead: RF Output 5VDC Sequence#: 5  
 Wilson Electronics M/N 804006



**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**







**FCC 2.1033(c)(14)/2.1053/90.210 - FIELD STRENGTH OF SPURIOUS RADIATION**

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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210**  
 Work Order #: **83307** Date: 06/14/2005  
 Test Type: **Maximized Emissions** Time: 14:57:29  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 11  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006  
 S/N: 804006012

***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Chase CBL6111C Bilog	2456	06/07/2005	06/07/2007	01991
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Cable, Andrews Hardline HF-005-20	NA	05/27/2005	05/27/2007	P04275
EMCO 3115 Horn Antenna	9307-4085	04/29/2005	04/29/2007	00656
EMCO Loop Antenna	1074	05/13/2005	05/13/2007	00226
HP 8447D Preamp	1937A02604	03/11/2005	03/11/2007	00099
HP 8449B Preamp	3008A00301	12/14/2004	12/14/2006	2010

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

***Support Devices:***

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

***Test Conditions / Notes:***

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Uplink & Downlink (Data represents worst case emissions). Frequency Range Investigated: 30MHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 30MHz – 10GHz, 100kHz RBW,VBW. **No EUT emissions detected within 20dB of the limit.**

***Transducer Legend:***

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

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

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



## FCC 90.210 EMISSIONS MASKS

### 47 CFR 90.210(g) Calculation of Spurious Emissions Mask

Carrier Frequency:	865.975	MHz
Authorized Bandwidth:	25.0	kHz
Peak Unmodulated Power Output:	29.5000	dBm
Peak Unmodulated Power Output:	0.8913	Watts

**Calculation of Attenuation Requirements:**

P is the peak unmodulated carrier output power in Watts, and fd is the displacement frequency from the center of the authorized bandwidth in kHz.

*NOTE: Only the endpoints are calculated. The limit line is linearly interpolated between the two points on a LOG - Linear scale.*

**90.210(g)(1)**

On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5 kHz, but not more than 10 kHz: At least 83 log (fd/5) dB;

$$F(fd) = 83 * \text{LOG}(fd/5)$$

F(5) =	0.0	dBc
F(10) =	25.0	dBc

**90.210(g)(2)**

On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 10 kHz, but not more than 250 percent of the authorized bandwidth: At least 116 log (fd/6.1) dB or 50+10 log(P) dB or 70 dB, whichever is the lesser attenuation.

Attenuation:

Point	fd (kHz)	116LOG(fd/6.1)	50+10LOG(P)	70
1	10	24.9	49.5	70
2	16.3	49.5	49.5	70

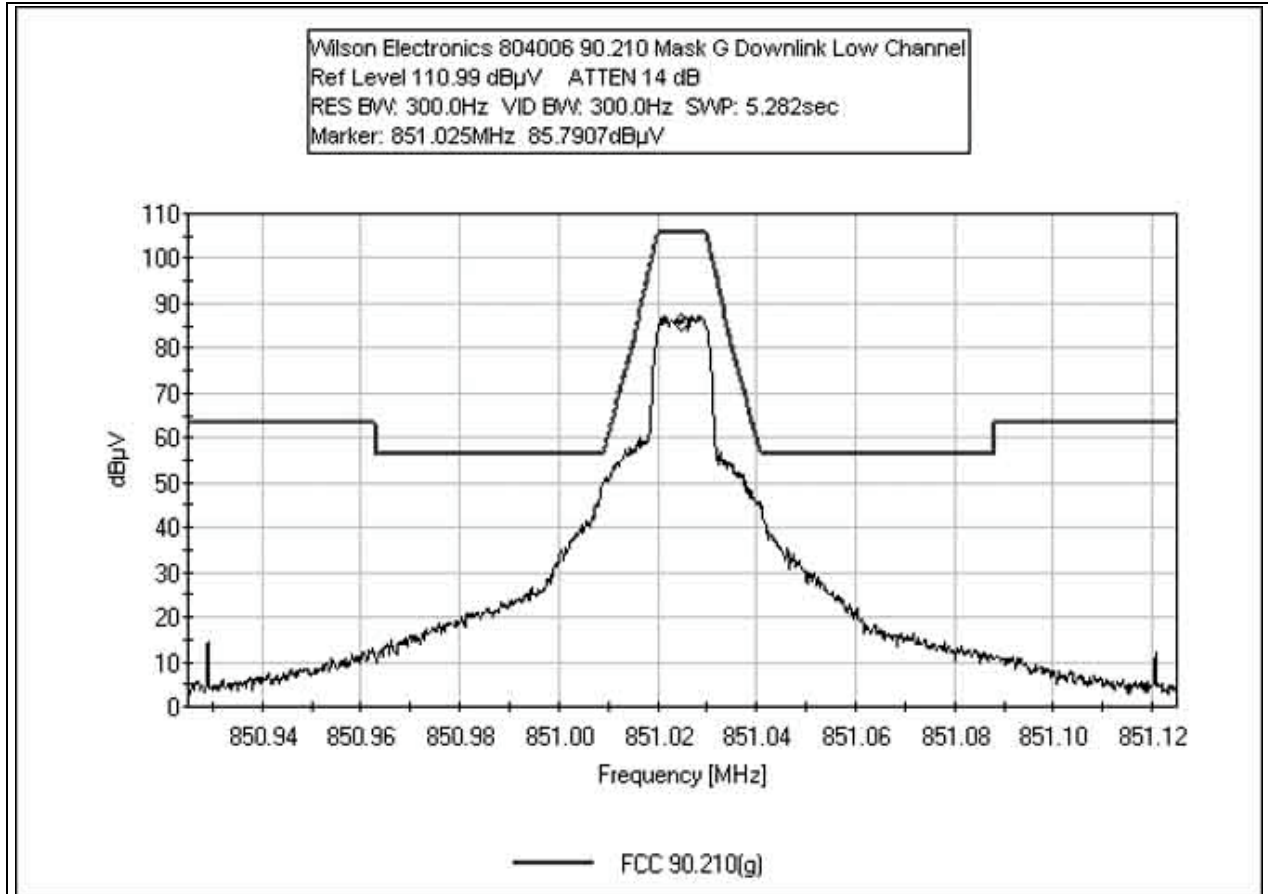
Point 2 is when 116LOG(fd/6.1) is equal to the lesser of 50+10LOG(P) or 70dB

**90.210(g)(3)**

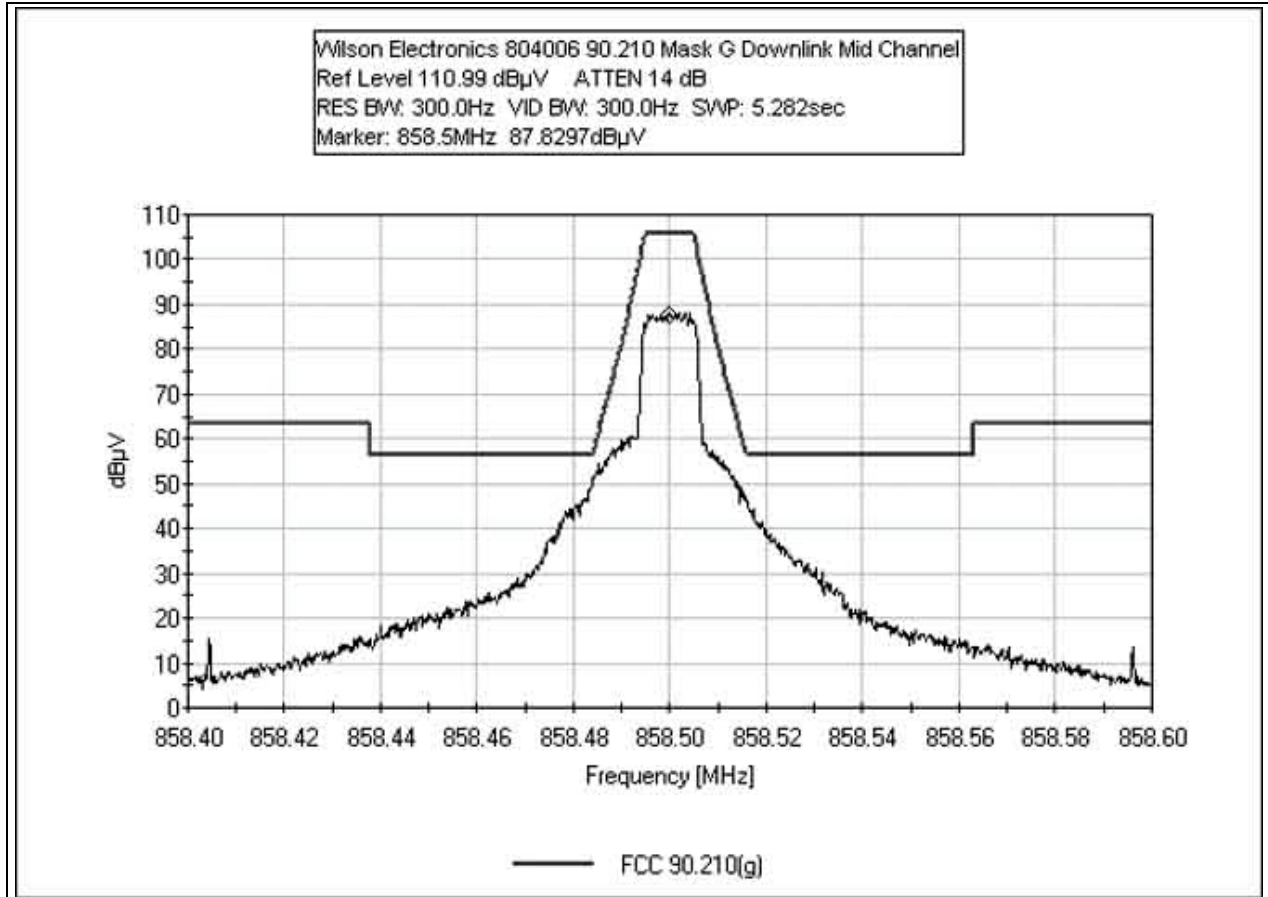
On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.

$$43+10\text{LOG}(P) = \boxed{42.5}$$

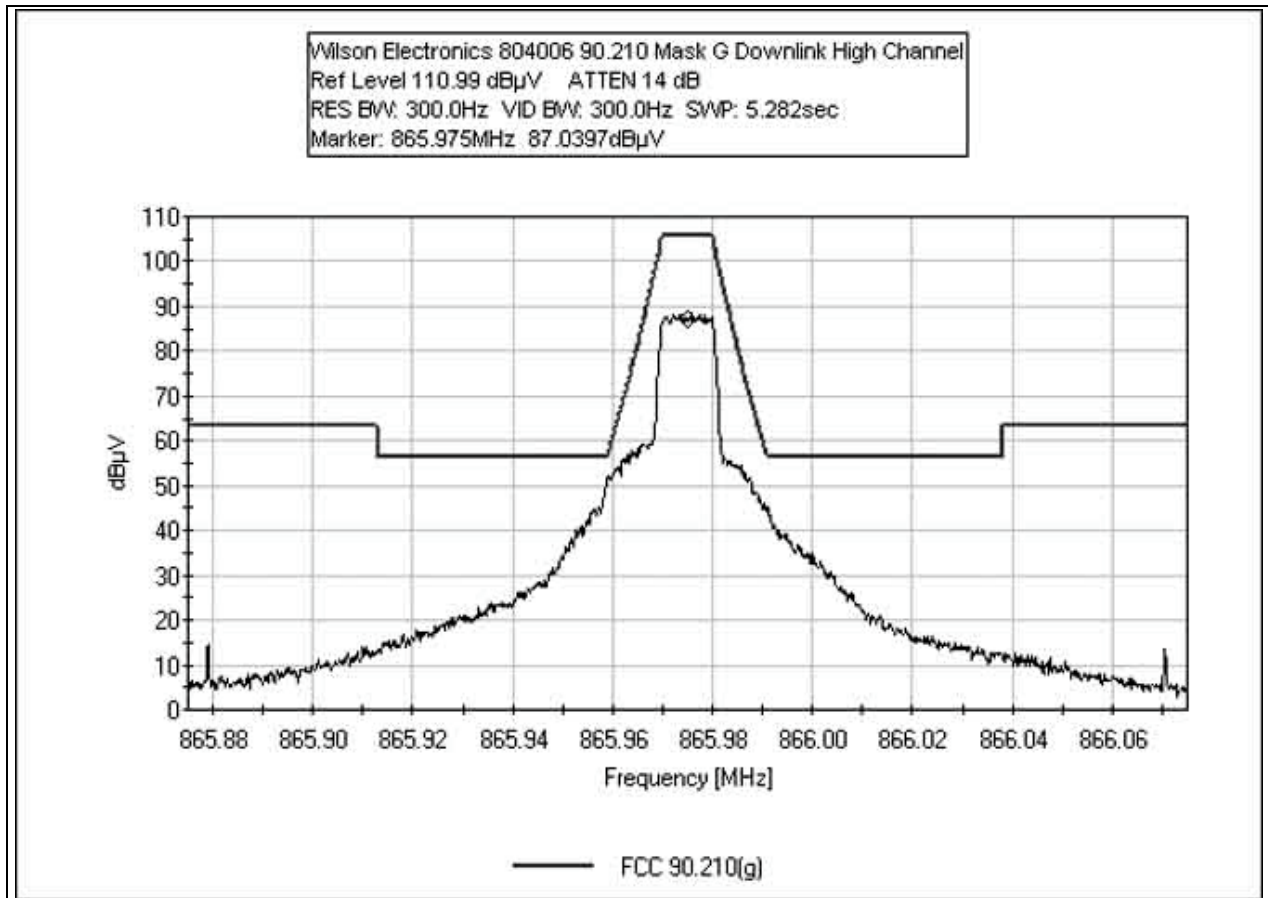
**FCC 90.210 EMISSIONS MASK - DOWNLINK LOW CHANNEL**



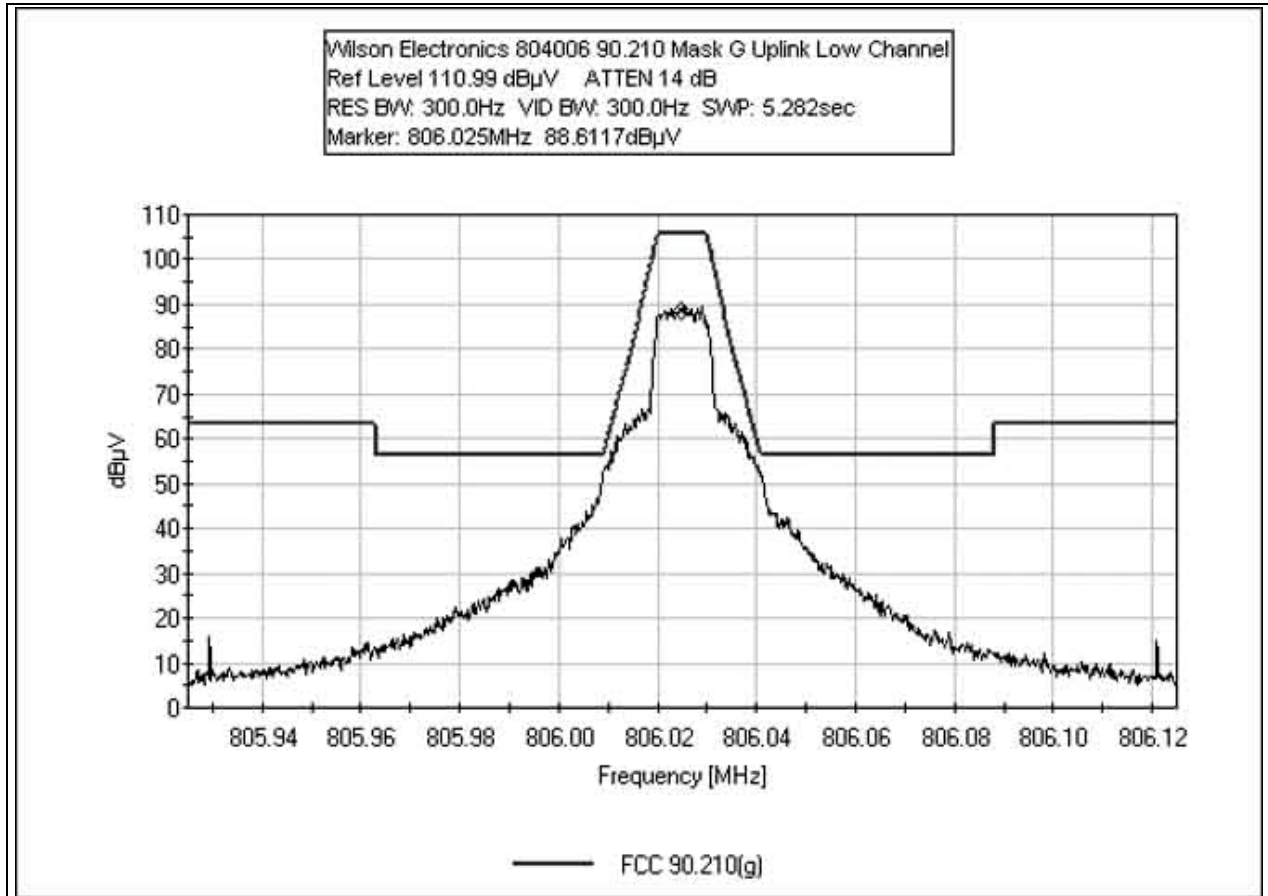
**FCC 90.210 EMISSIONS MASK - DOWNLINK MID CHANNEL**



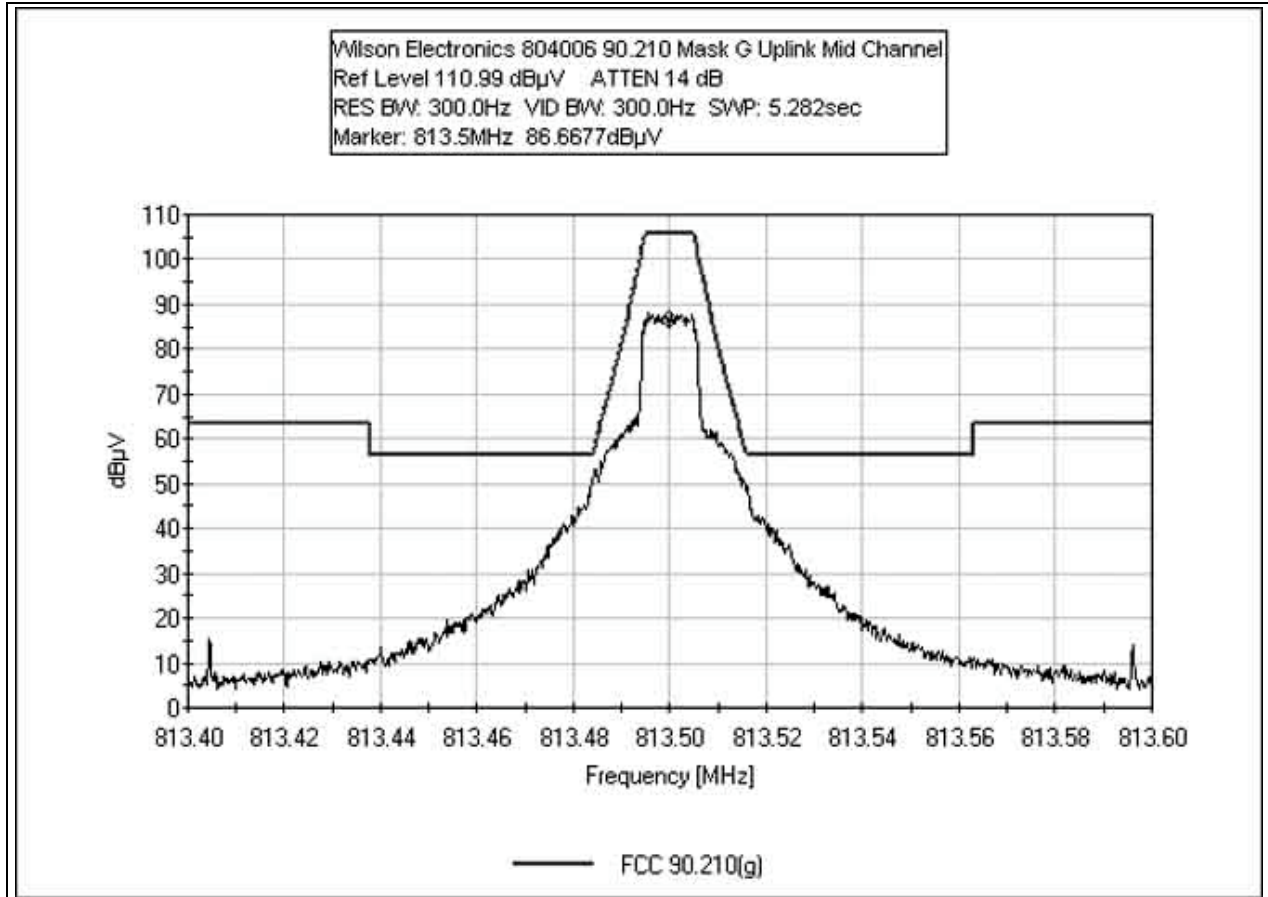
**FCC 90.210 EMISSIONS MASK - DOWNLINK HIGH CHANNEL**



**FCC 90.210 EMISSIONS MASK - UPLINK LOW CHANNEL**

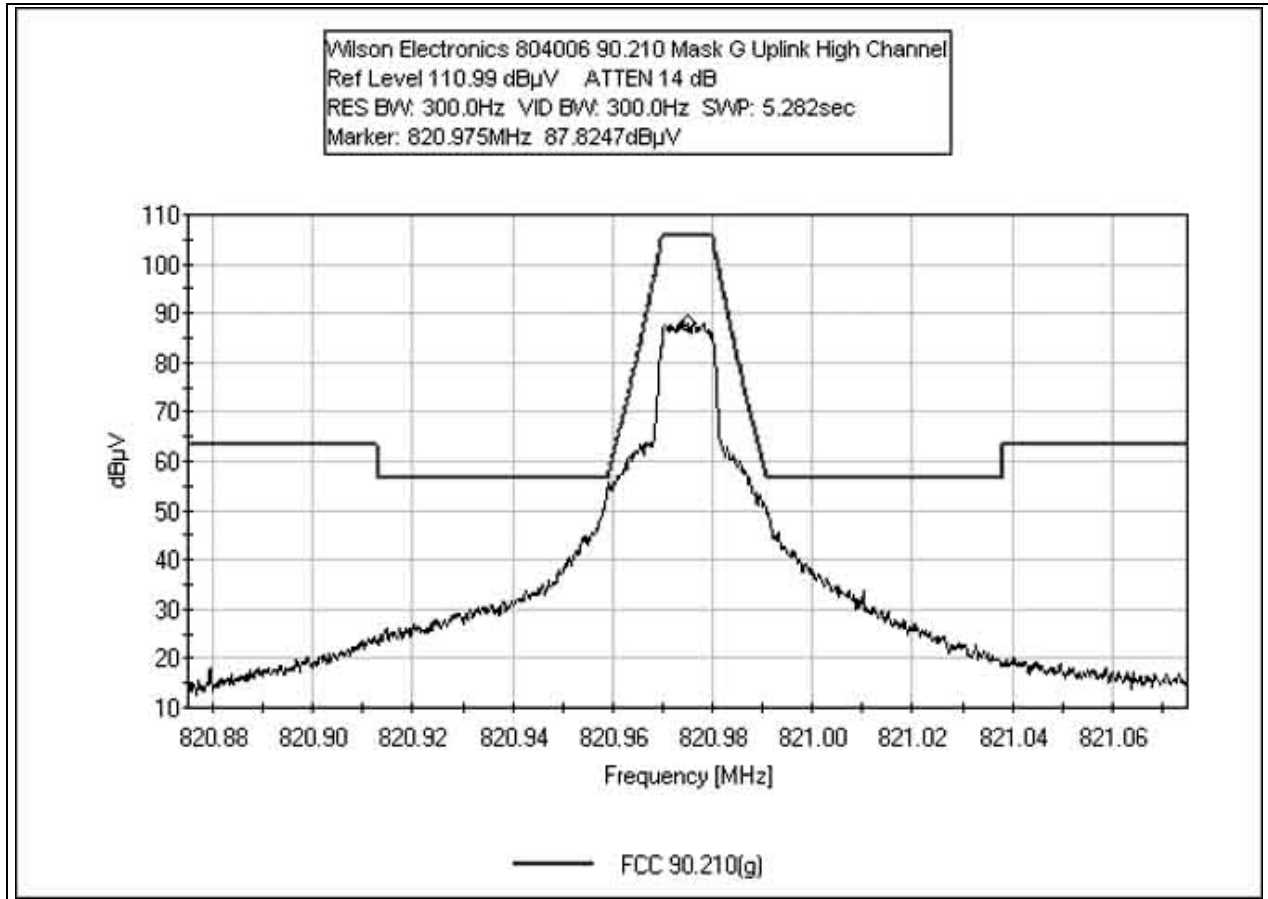


**FCC 90.210 EMISSIONS MASK - UPLINK MID CHANNEL**





**FCC 90.210 EMISSIONS MASK - UPLINK HIGH CHANNEL**



**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**





## FCC 90.210 INTERMODULATION ATTENUATION

Test Location: CKC Laboratories •5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)  
 Customer: **Wilson Electronics**  
 Specification: **FCC 90.210**  
 Work Order #: **83307** Date: 06/14/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 10:35:42  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 9  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Downlink Intermodulation. Two signal generator method employed: three signal generators unavailable for testing. Test setup in accordance with TIA 603. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

**Transducer Legend:**

T1=Cable 40 GHz 36"	T2=Pad 30dB
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**Measurement Data:**

#	Freq MHz	Rdng dBµV	Reading listed by margin.				Test Lead: RF Output				
			T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	865.873M	61.2	+0.6	+30.1			+0.0	91.9	94.0	-2.1	RF Ou

2	850.974M	59.8	+0.6	+30.1	+0.0	90.5	94.0	-3.5	RF Ou
3	866.024M	52.3	+0.6	+30.1	+0.0	83.0	94.0	-11.0	RF Ou
4	851.127M	51.1	+0.6	+30.1	+0.0	81.8	94.0	-12.2	RF Ou
5	865.822M	38.2	+0.6	+30.1	+0.0	68.9	94.0	-25.1	RF Ou
6	851.172M	34.6	+0.6	+30.1	+0.0	65.3	94.0	-28.7	RF Ou
7	850.923M	34.6	+0.6	+30.1	+0.0	65.3	94.0	-28.7	RF Ou
8	866.070M	33.2	+0.6	+30.1	+0.0	63.9	94.0	-30.1	RF Ou



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

Customer: **Wilson Electronics**  
 Specification: **FCC 90.210**  
 Work Order #: **83307** Date: 06/14/2005  
 Test Type: **Antenna Terminals Conducted Emissions** Time: 11:02:07  
 Equipment: **In-Building Wireless iDEN SmartTech Amplifier** Sequence#: 10  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 804006 5VDC  
 S/N: 804006012

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

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

Function	Manufacturer	Model #	S/N
In-Building Wireless iDEN SmartTech Amplifier *	Wilson Electronics	804006	804006012

**Support Devices:**

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

**Test Conditions / Notes:**

EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Operating Mode: Uplink Intermodulation. Two signal generator method employed: three signal generators unavailable for testing. Test setup in accordance with TIA 603. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 24°C, Relative Humidity: 68%. Bandwidth settings: 9kHz – 150kHz, 200Hz; 150kHz – 30MHz, 9kHz; 30MHz – 10GHz, 100kHz RBW,VBW.

**Transducer Legend:**

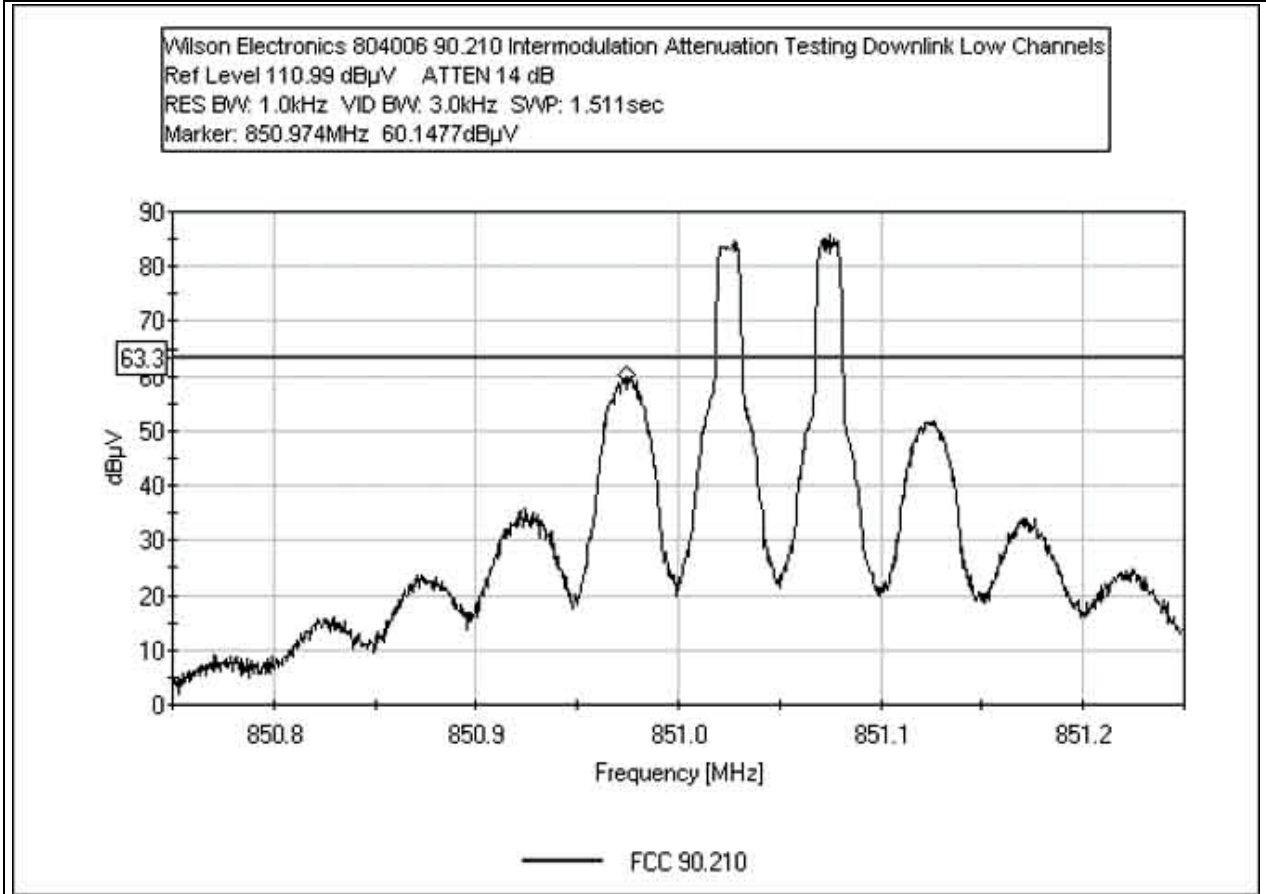
T1=Cable 40 GHz 36"	T2=Pad 30dB
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**Measurement Data:** Reading listed by margin. Test Lead: RF Output

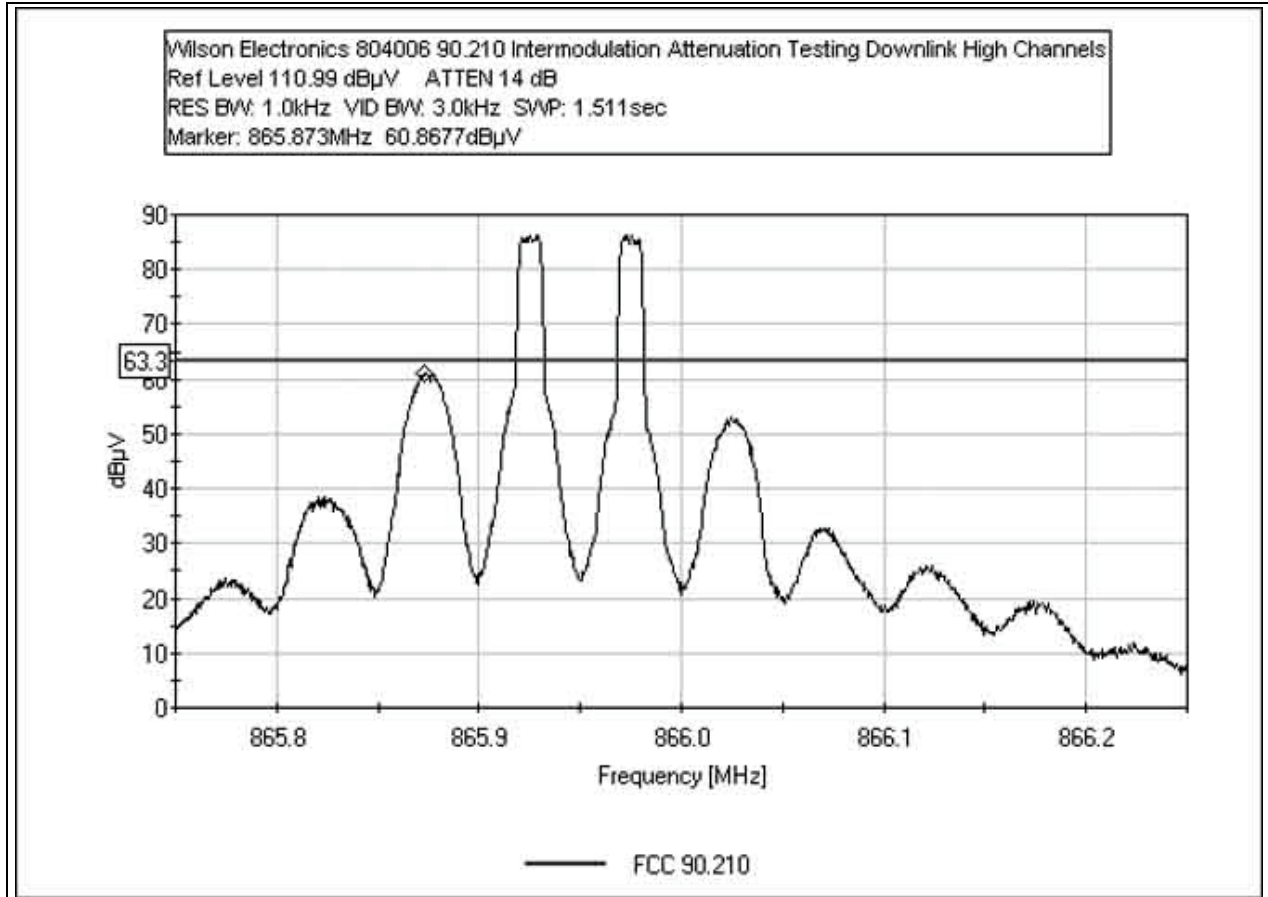
#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist dB	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	805.975M	61.9	+0.6	+30.0	+0.0	92.5	94.0	-1.5	RF Ou
2	820.875M	61.1	+0.6	+30.0	+0.0	91.7	94.0	-2.3	RF Ou

3	806.126M	57.2	+0.6	+30.0	+0.0	87.8	94.0	-6.2	RF Ou
4	821.026M	55.6	+0.6	+30.0	+0.0	86.2	94.0	-7.8	RF Ou
5	820.823M	45.4	+0.6	+30.0	+0.0	76.0	94.0	-18.0	RF Ou
6	805.924M	42.4	+0.6	+30.0	+0.0	73.0	94.0	-21.0	RF Ou
7	821.073M	38.6	+0.6	+30.0	+0.0	69.2	94.0	-24.8	RF Ou
8	806.172M	37.0	+0.6	+30.0	+0.0	67.6	94.0	-26.4	RF Ou

**FCC 90.210 INTERMODULATION ATTENUATION - DOWNLINK LOW CHANNEL**

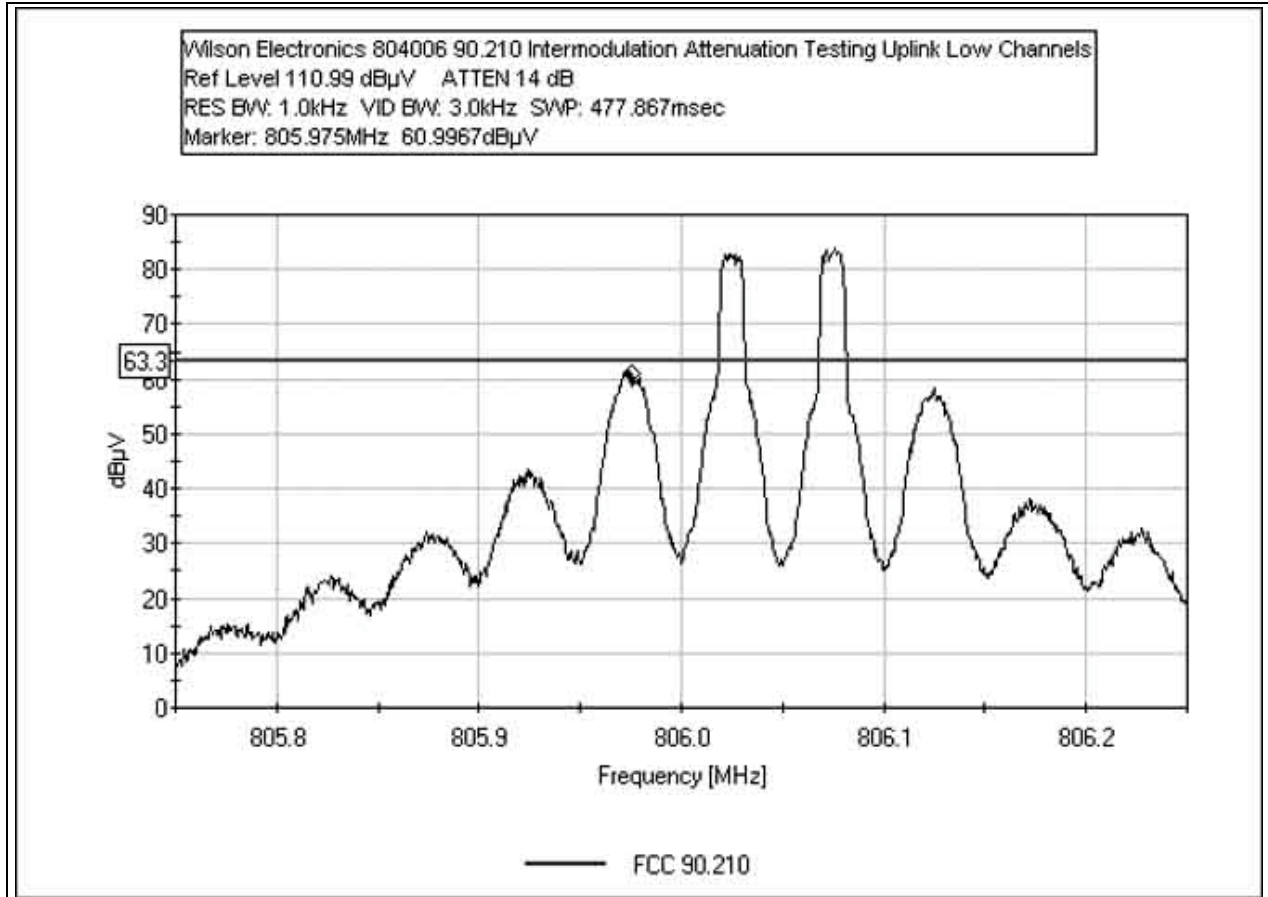


**FCC 90.210 INTERMODULATION ATTENUATION - DOWNLINK HIGH CHANNEL**

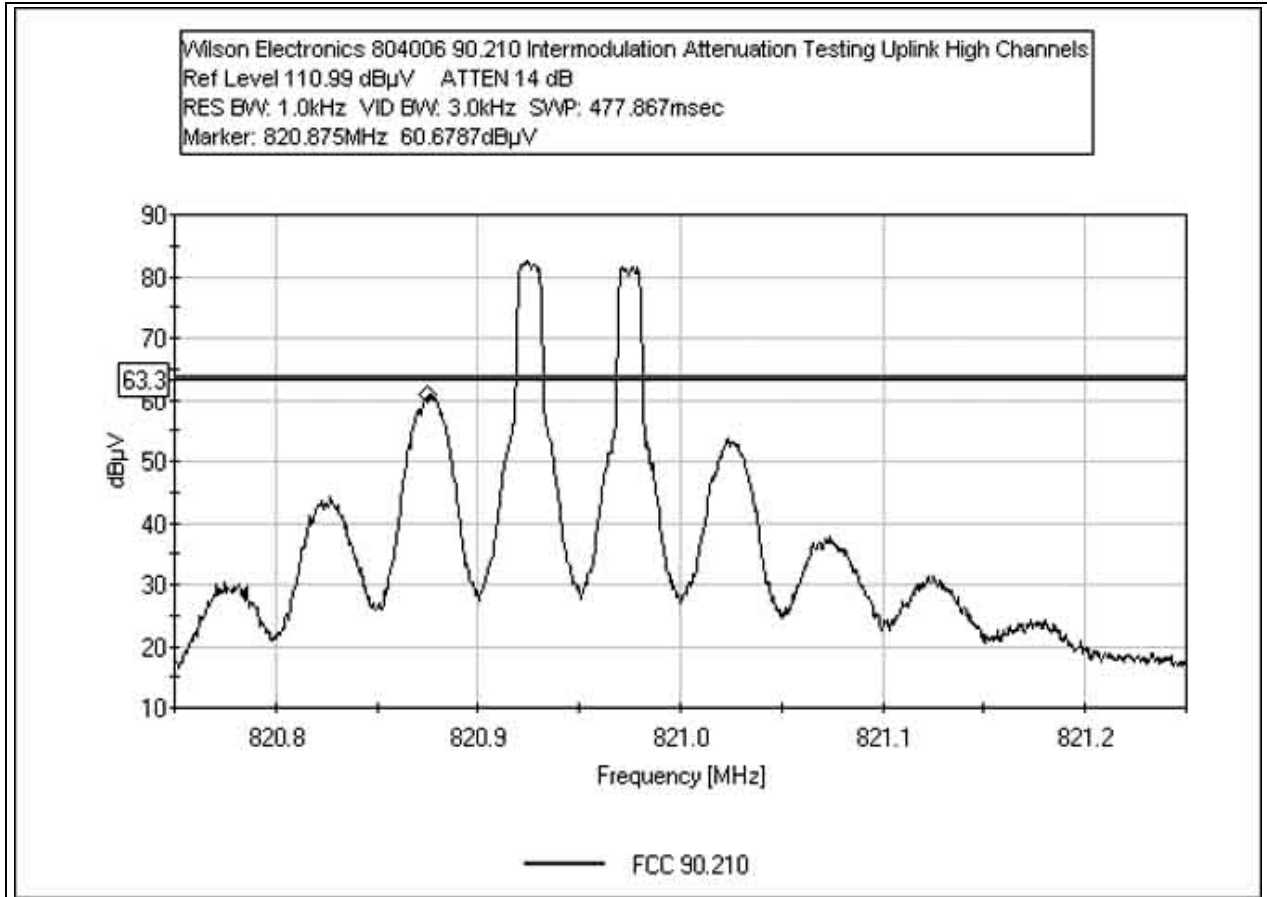




**FCC 90.210 INTERMODULATION ATTENUATION - UPLINK LOW CHANNEL**



**FCC 90.210 INTERMODULATION ATTENUATION - UPLINK HIGH CHANNEL**

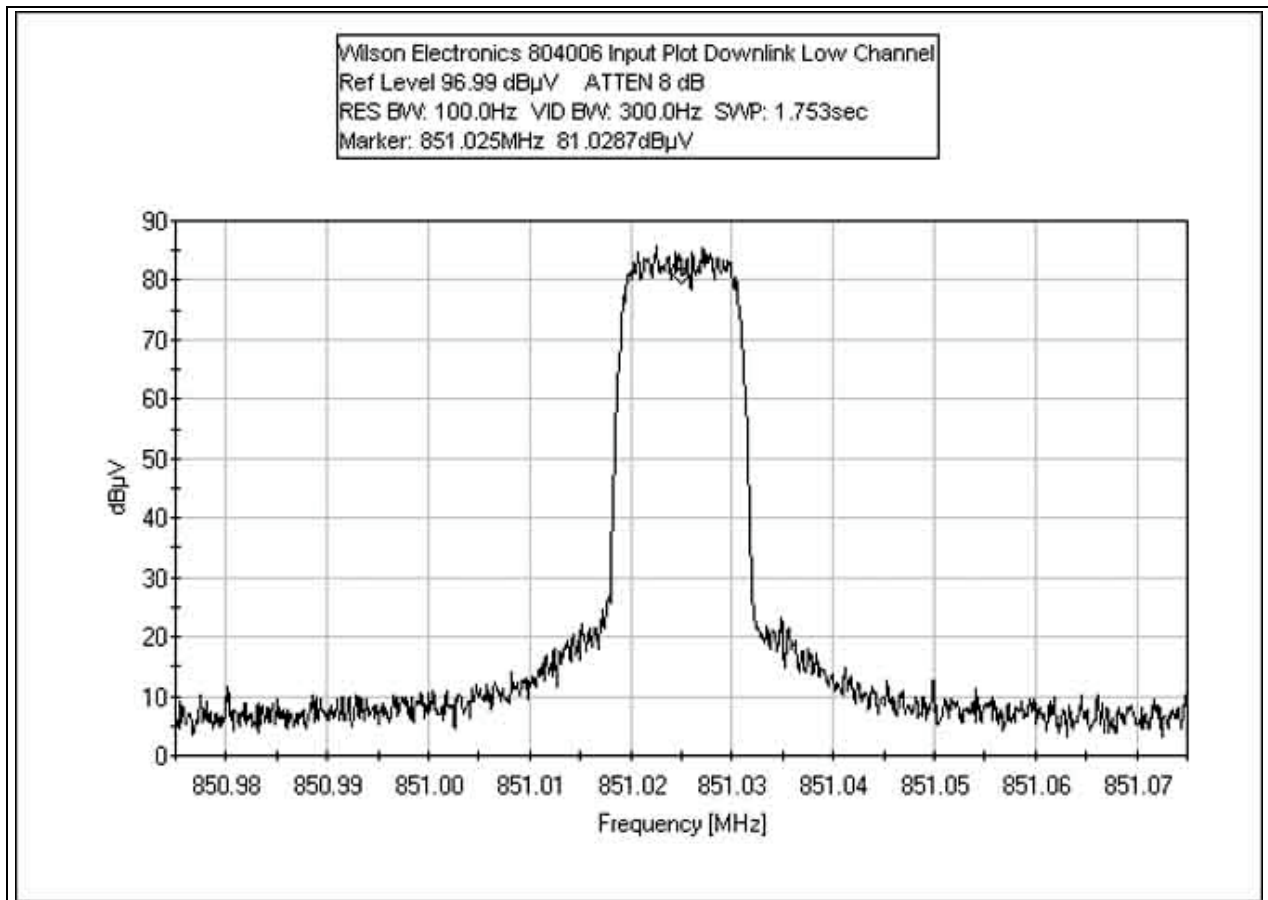


**PHOTOGRAPH SHOWING INTERMODULATION ATTENUATION**

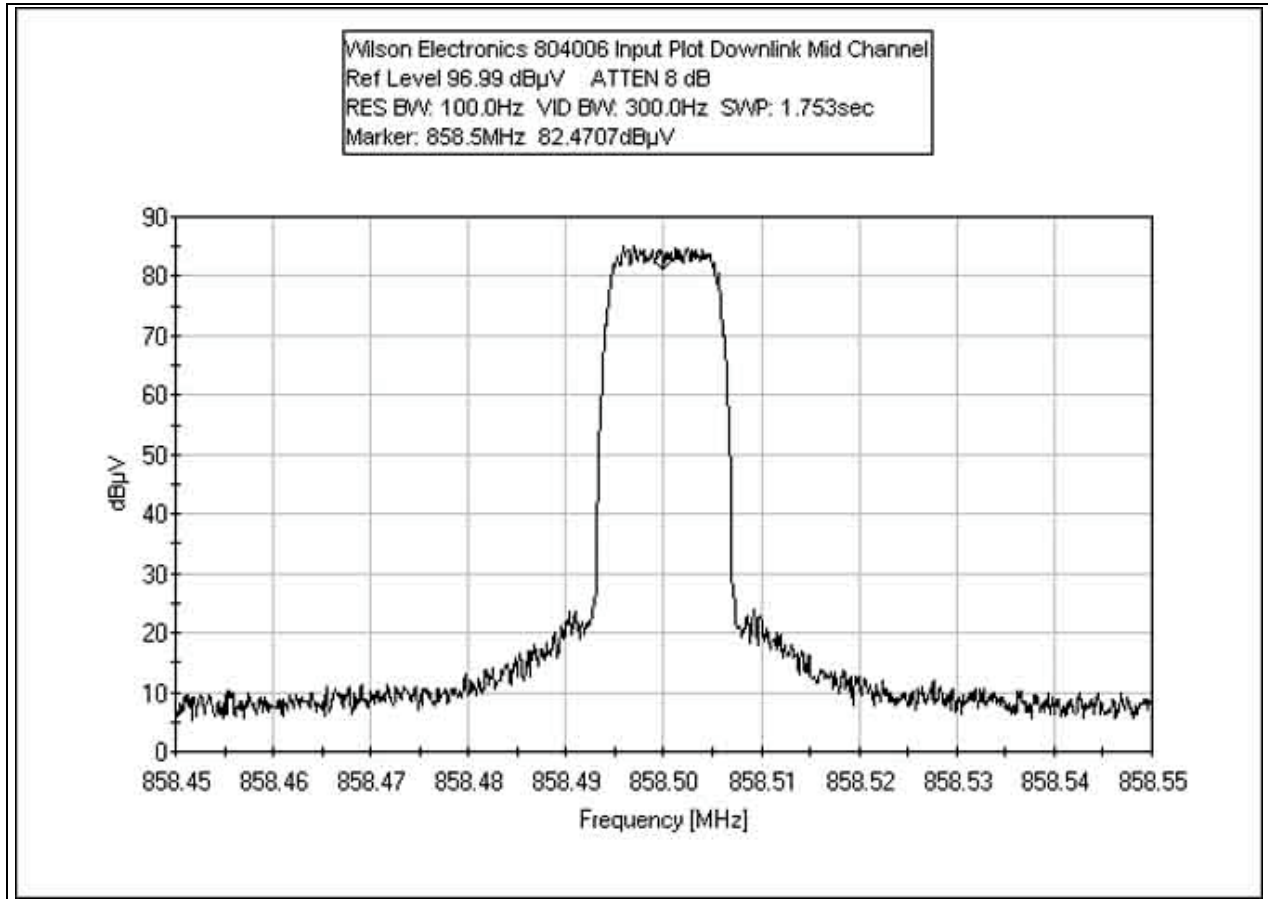


### INPUT PLOT - DOWNLINK LOW CHANNEL

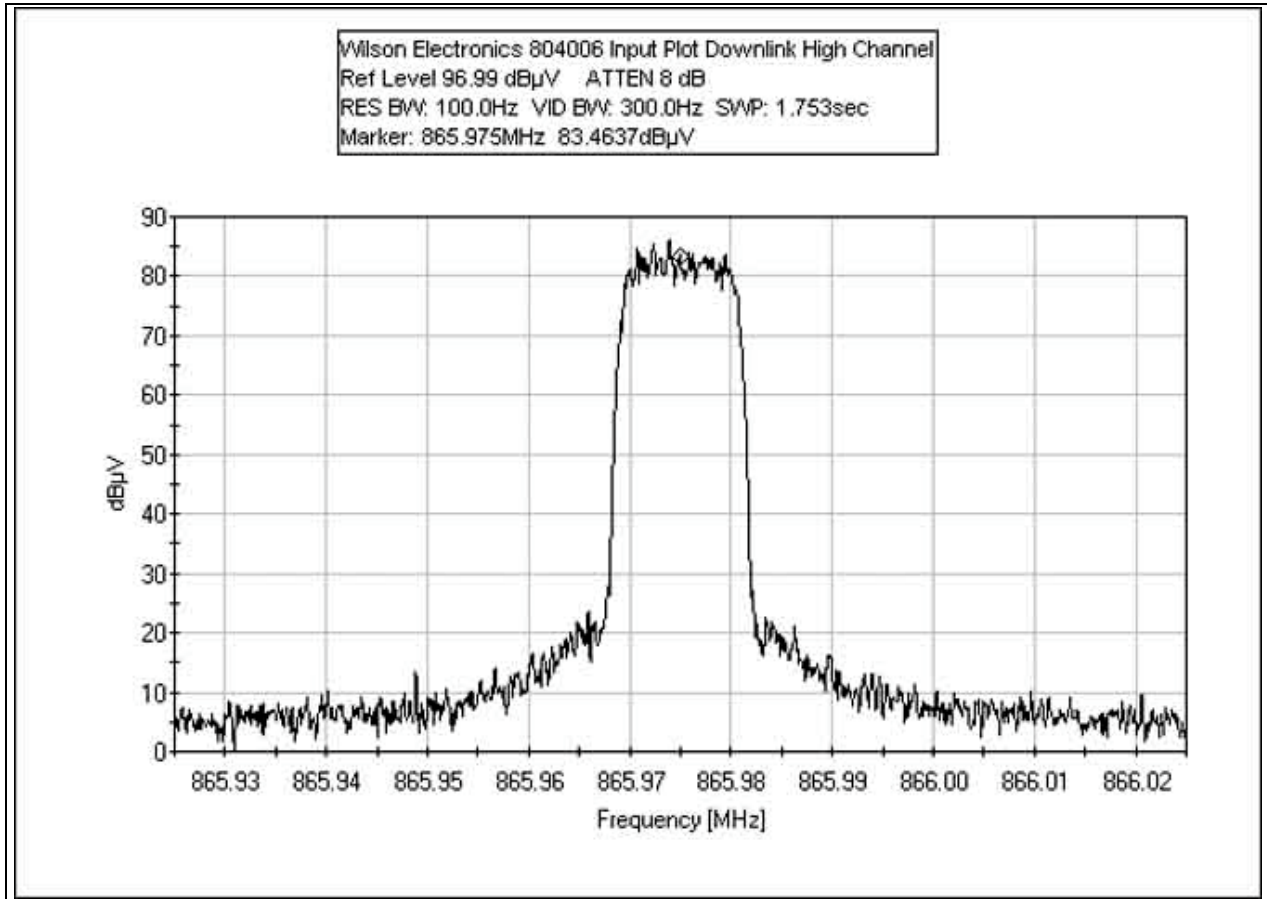
**Test Conditions:** EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. The output of the signal generator is connected directly to the spectrum analyzer. The level of the signal generator output is arbitrarily set to show the details of the input signal adequately.



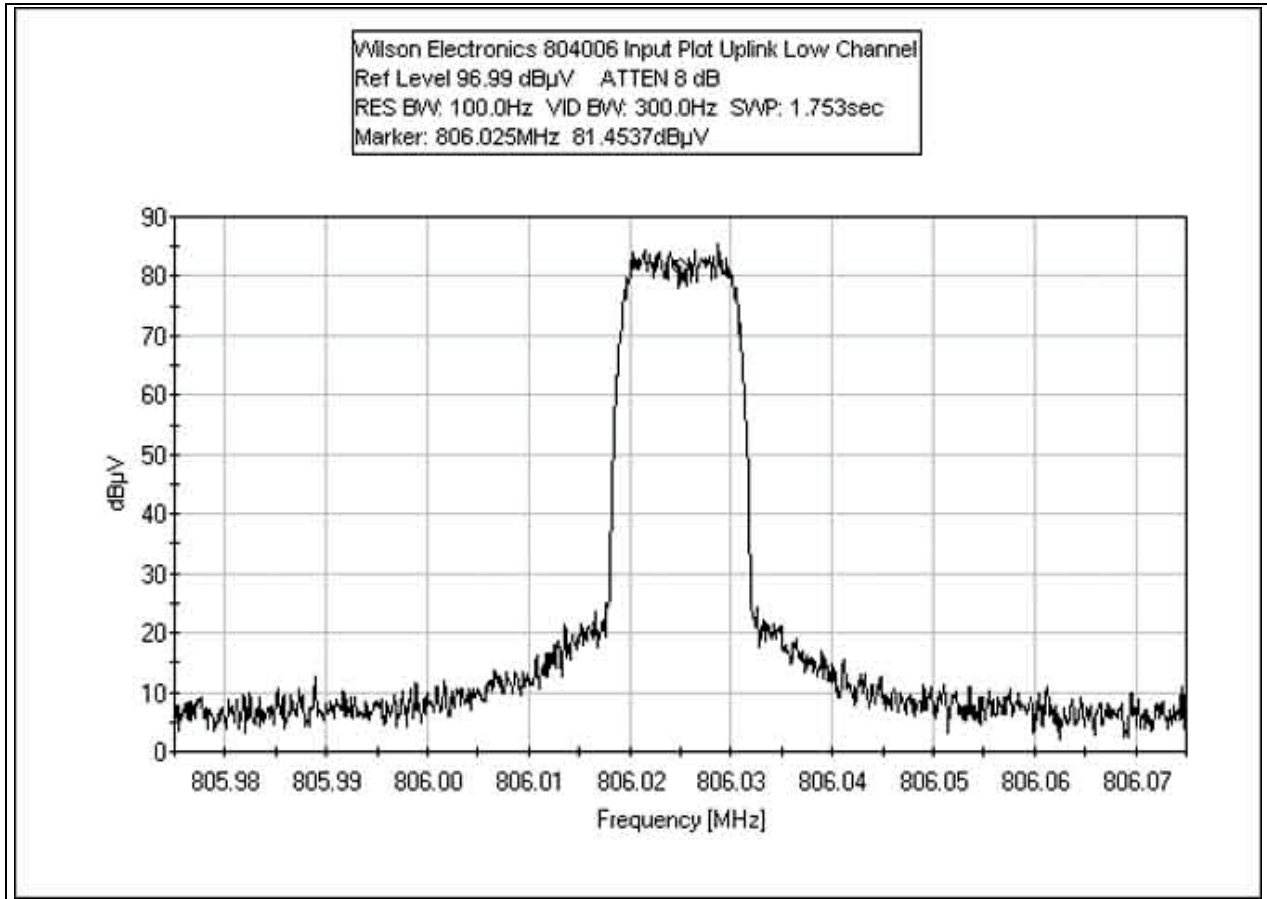
**INPUT PLOT - DOWNLINK MID CHANNEL**



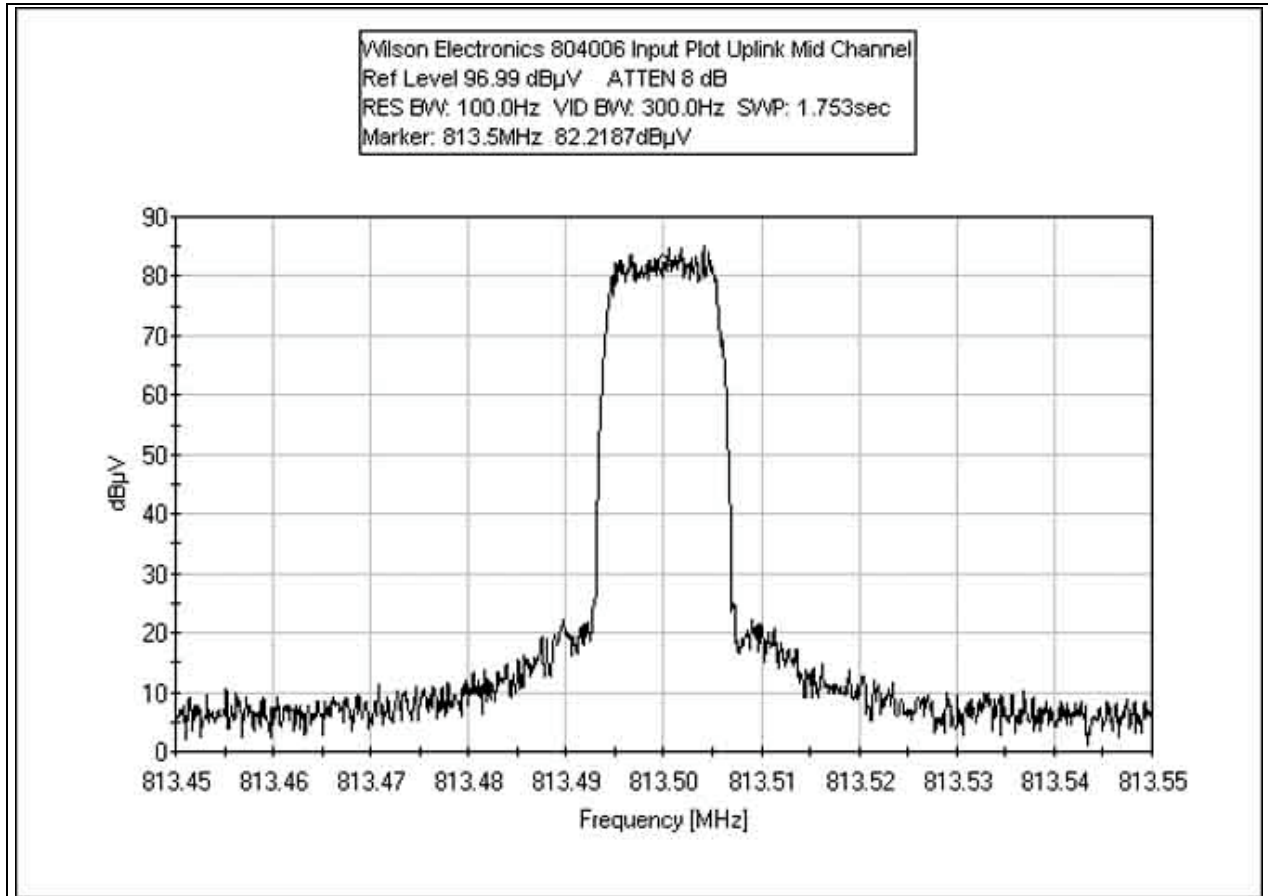
### INPUT PLOT - DOWNLINK HIGH CHANNEL



**INPUT PLOT - UPLINK LOW CHANNEL**

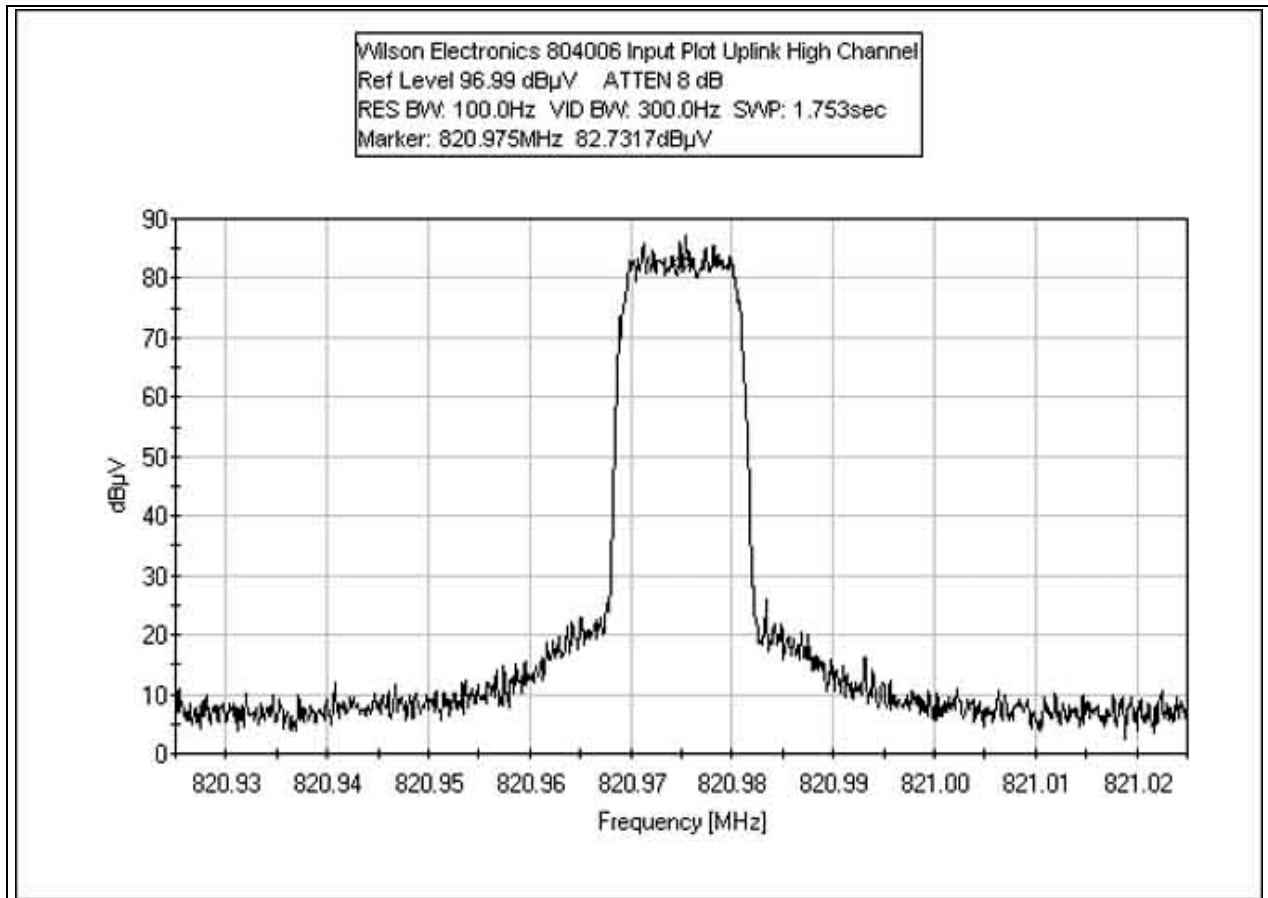


### INPUT PLOT - UPLINK MID CHANNEL





**INPUT PLOT - UPLINK HIGH CHANNEL**



**Test Equipment:**

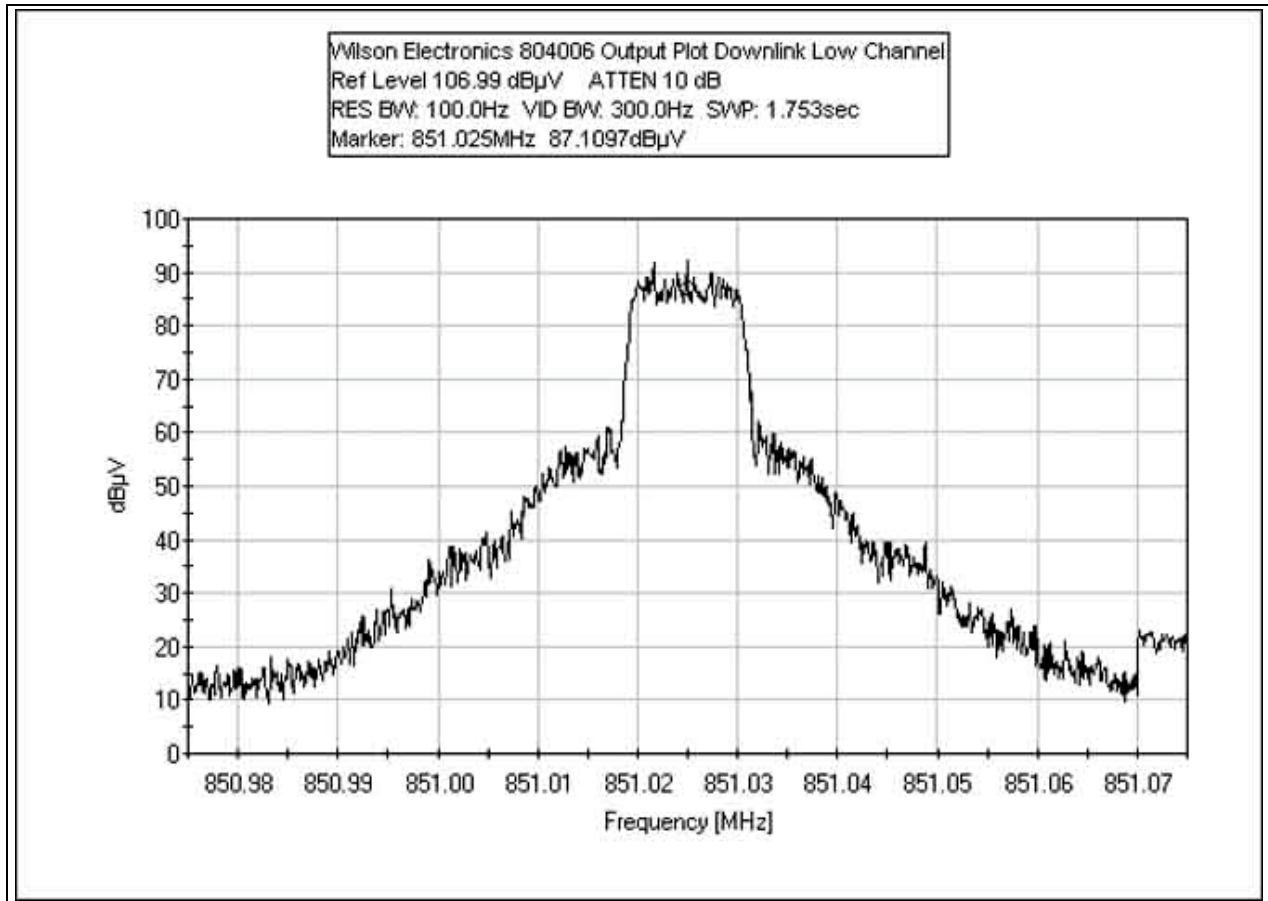
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**

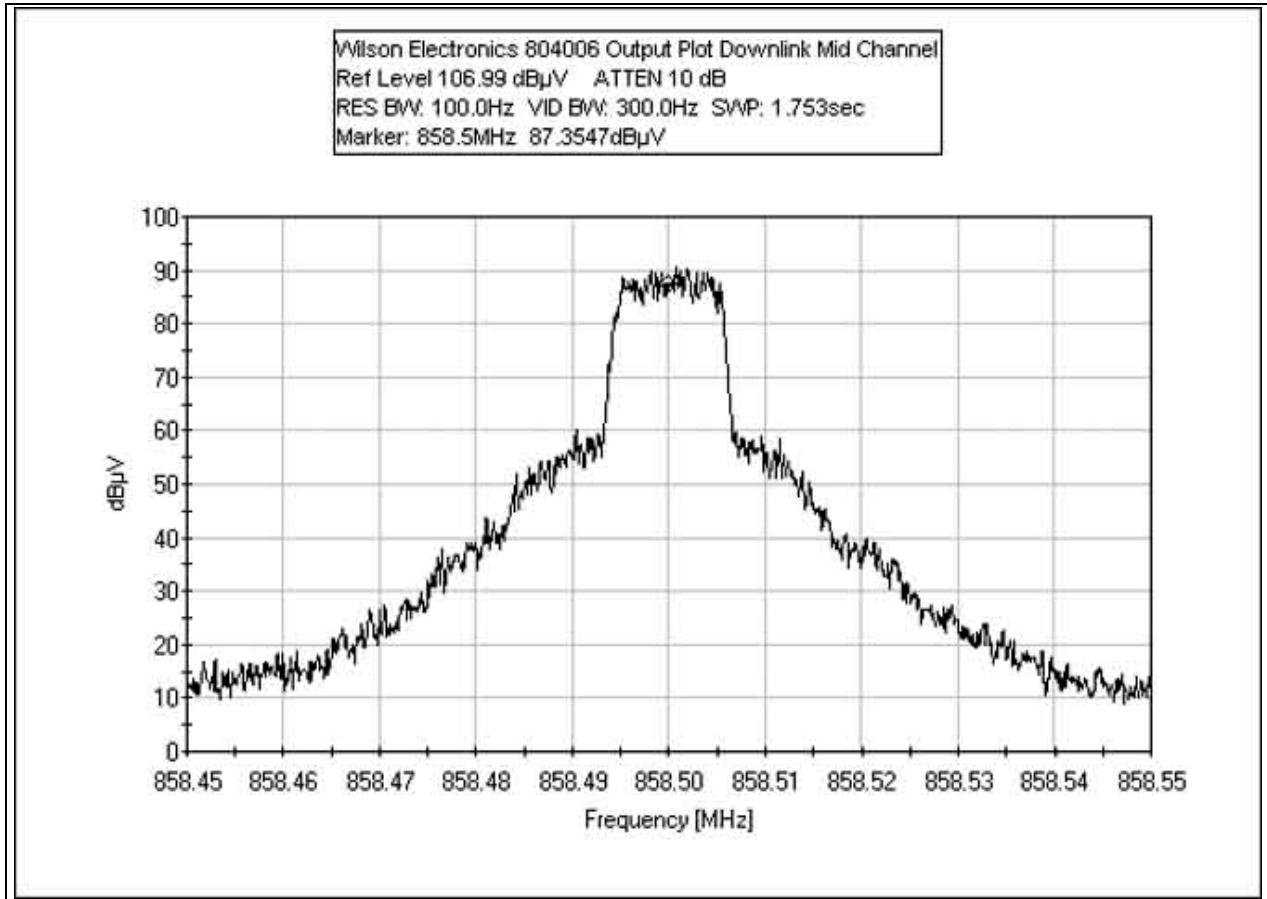


### OUTPUT PLOT - DOWNLINK LOW CHANNEL

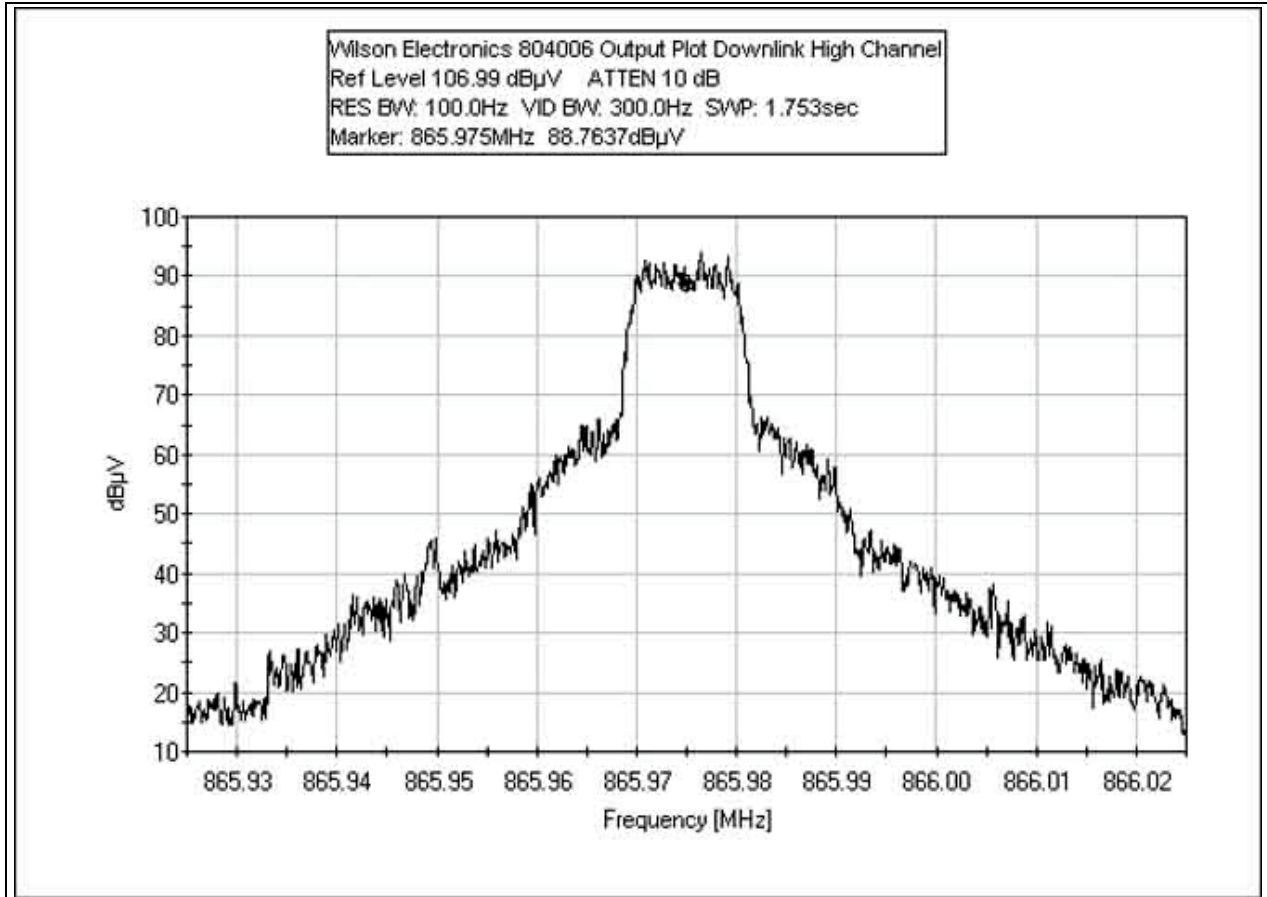
**Test Conditions:** EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved.



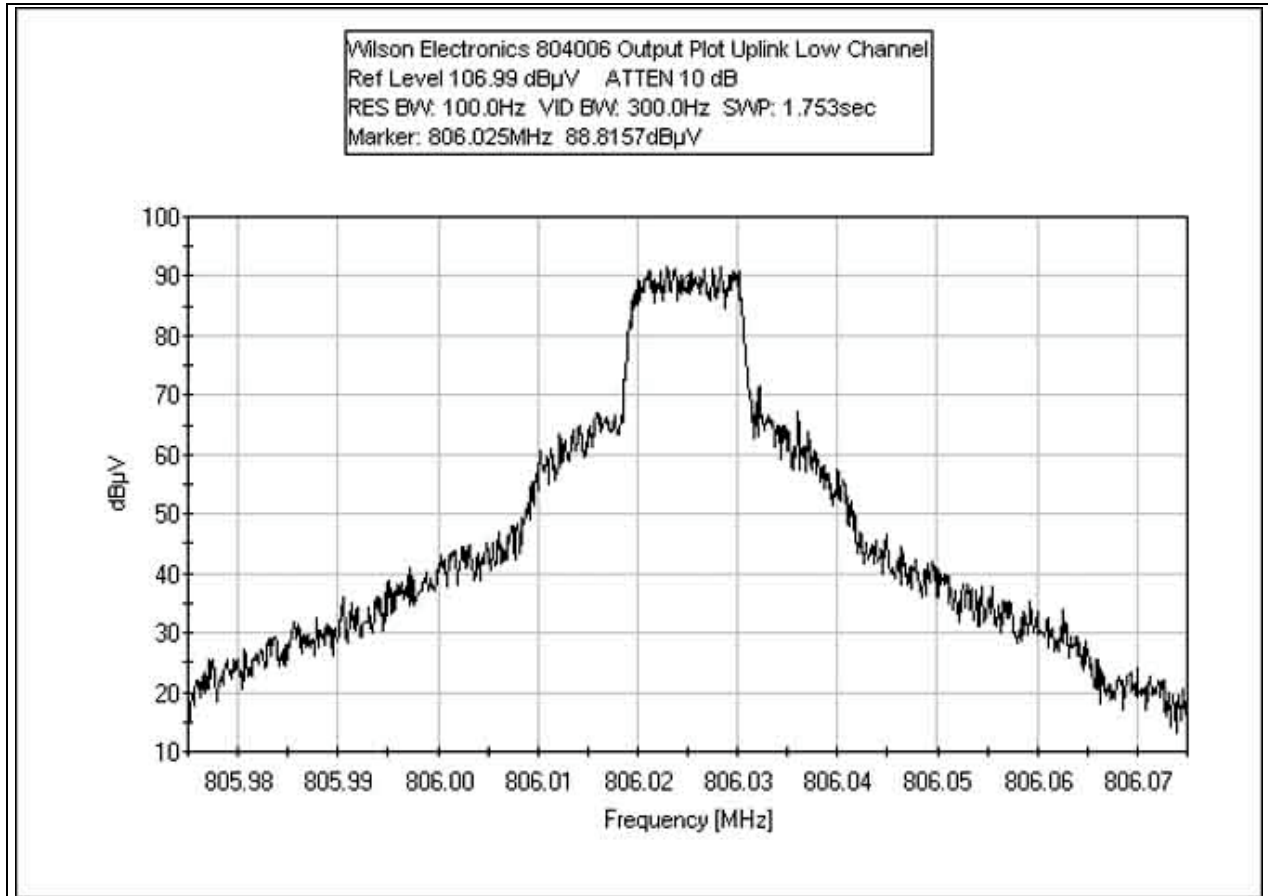
**OUTPUT PLOT - DOWNLINK MID CHANNEL**



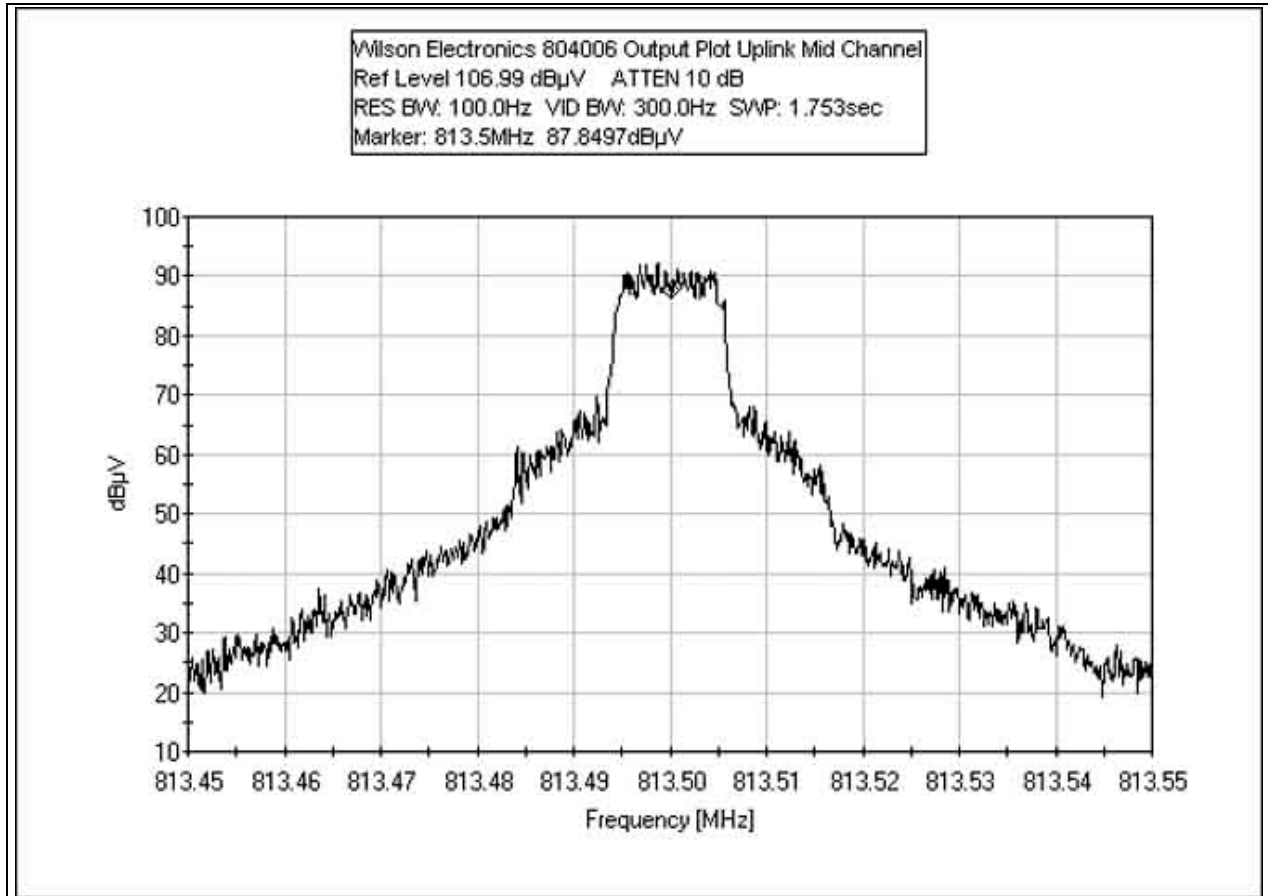
### OUTPUT PLOT - DOWNLINK HIGH CHANNEL



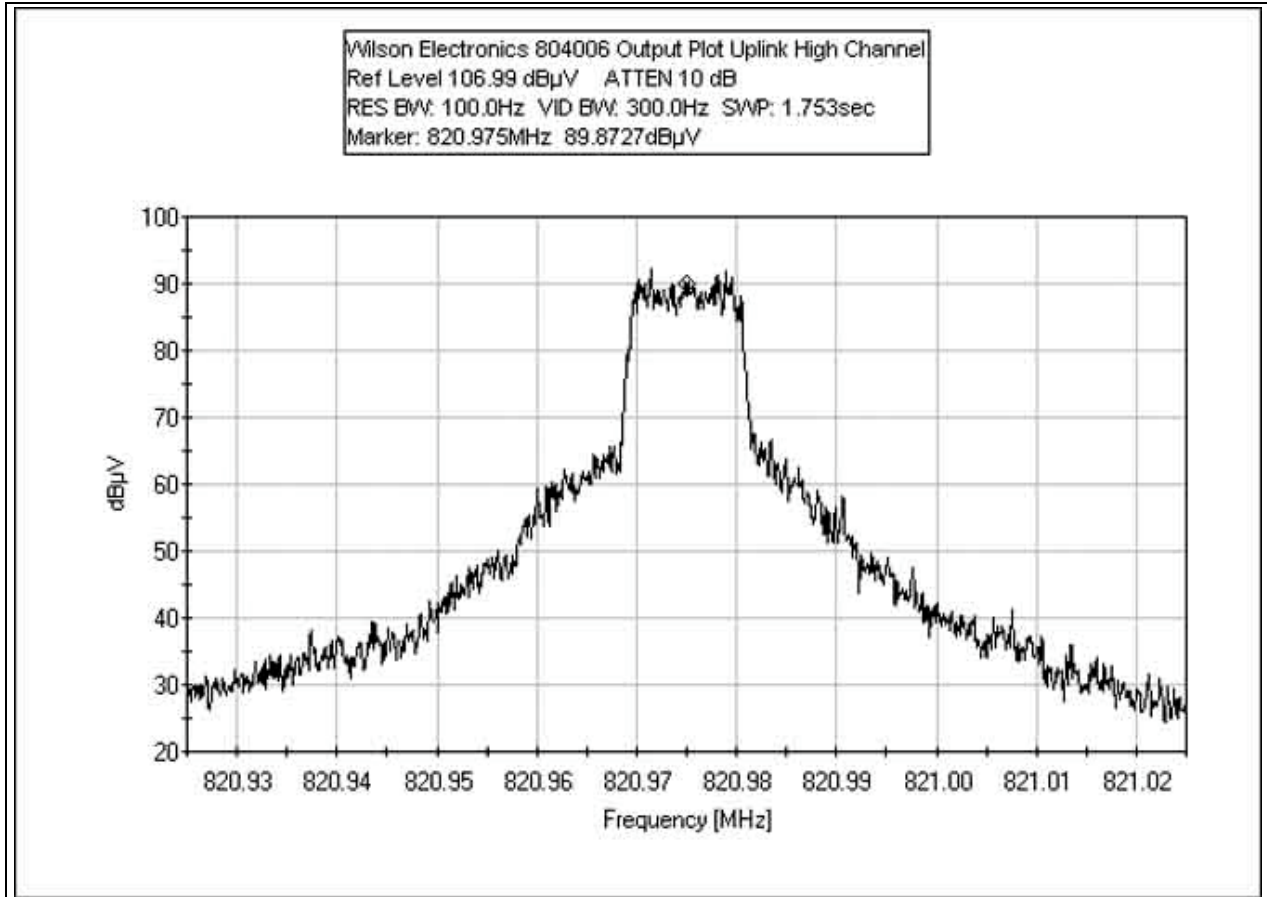
**OUTPUT PLOT - UPLINK LOW CHANNEL**



### OUTPUT PLOT - UPLINK MID CHANNEL



### OUTPUT PLOT - UPLINK HIGH CHANNEL





**Test Equipment:**

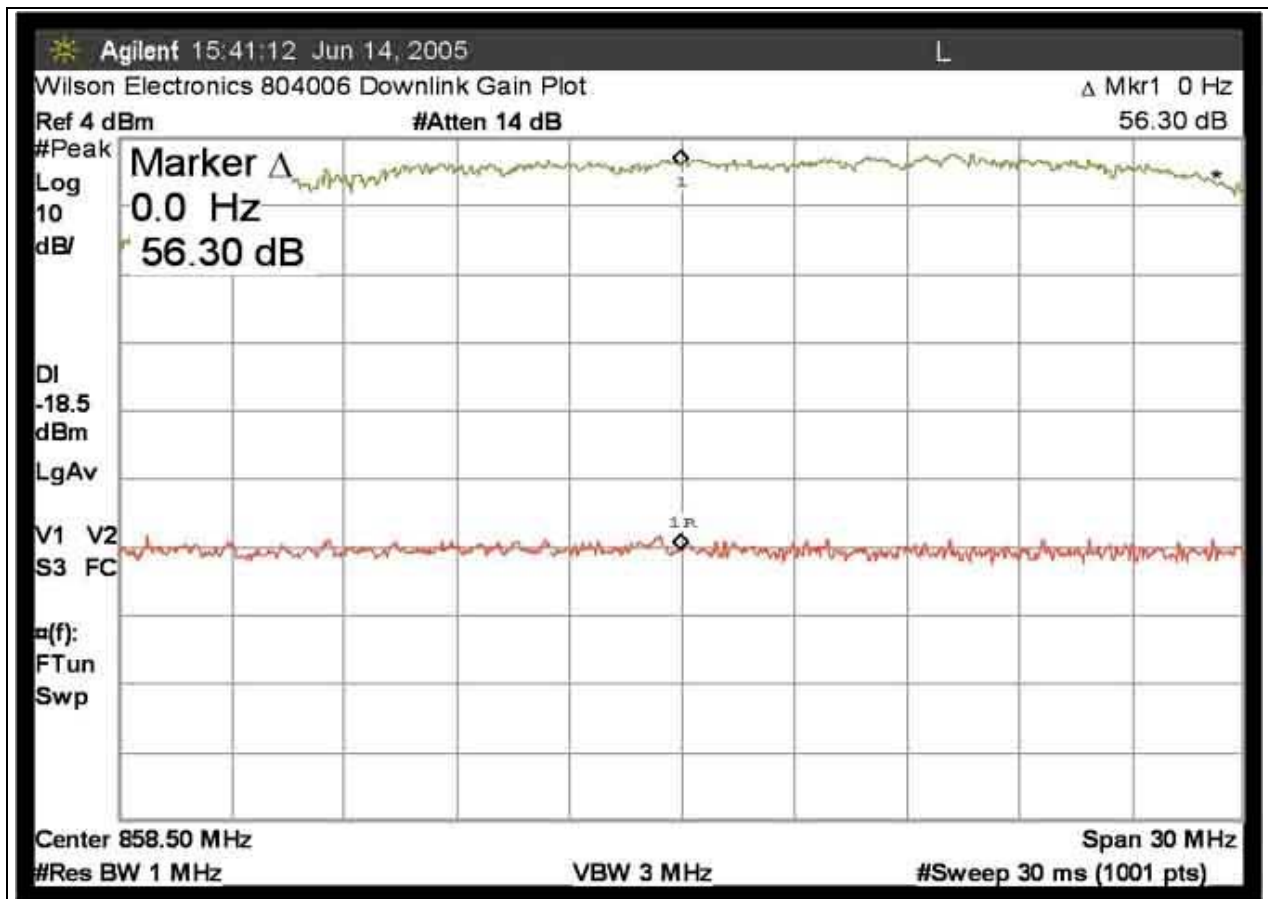
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**



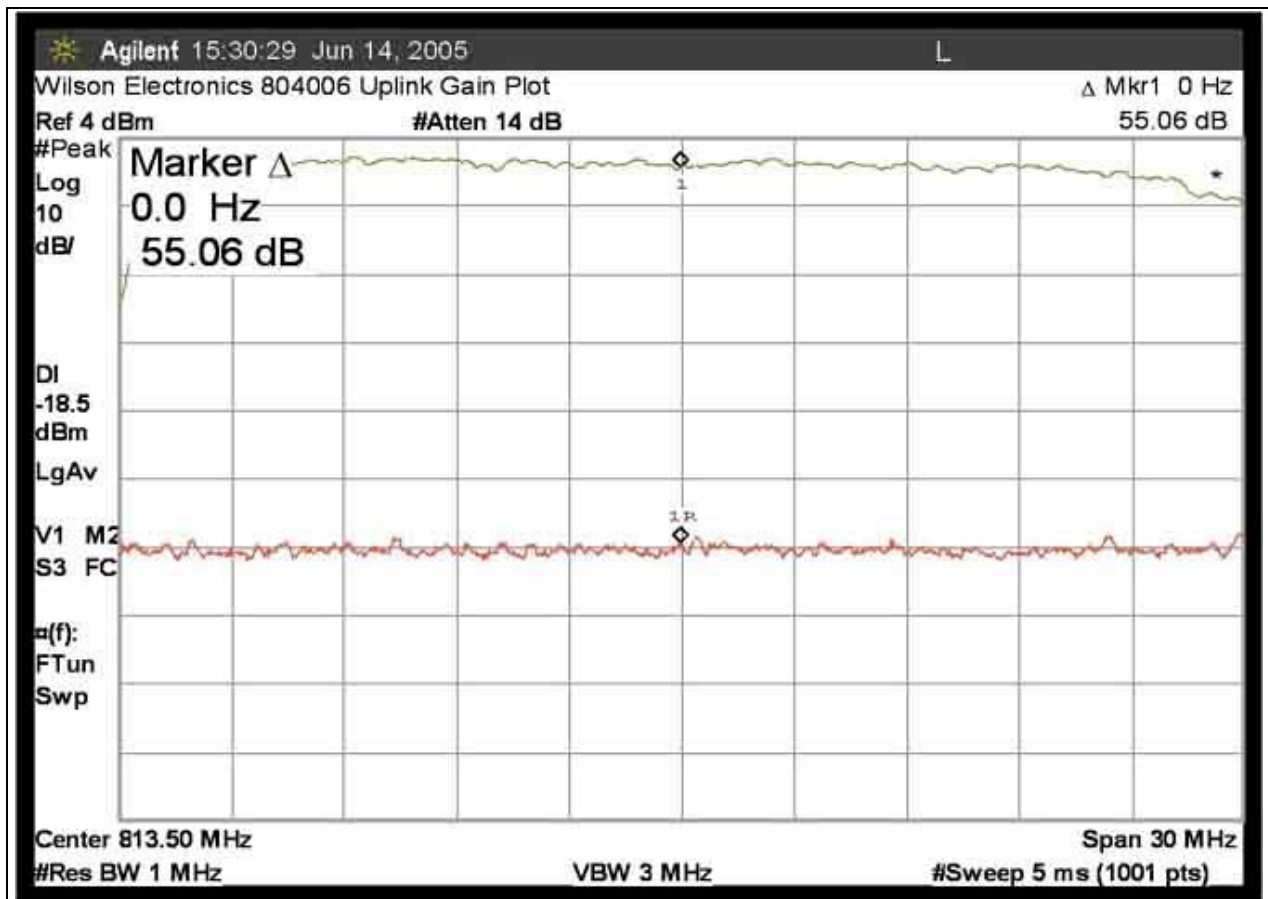
### RSS-131 PASSBAND GAIN - DOWNLINK

**Test Conditions:** EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Temperature: 24°C, Relative Humidity: 68%.



### RSS-131 PASSBAND GAIN - UPLINK

**Test Conditions:** EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Temperature: 24°C, Relative Humidity: 68%.



**Test Equipment:**

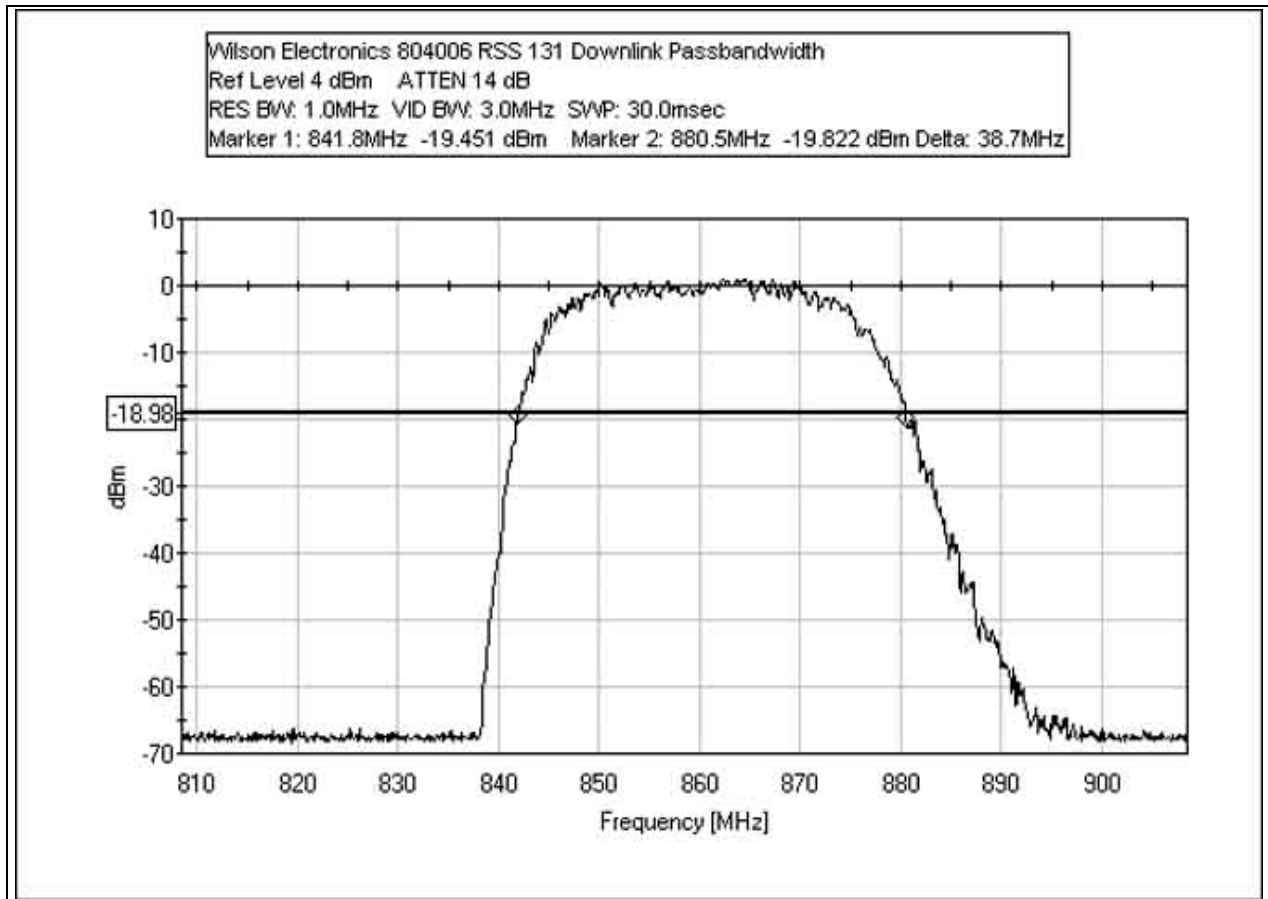
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**



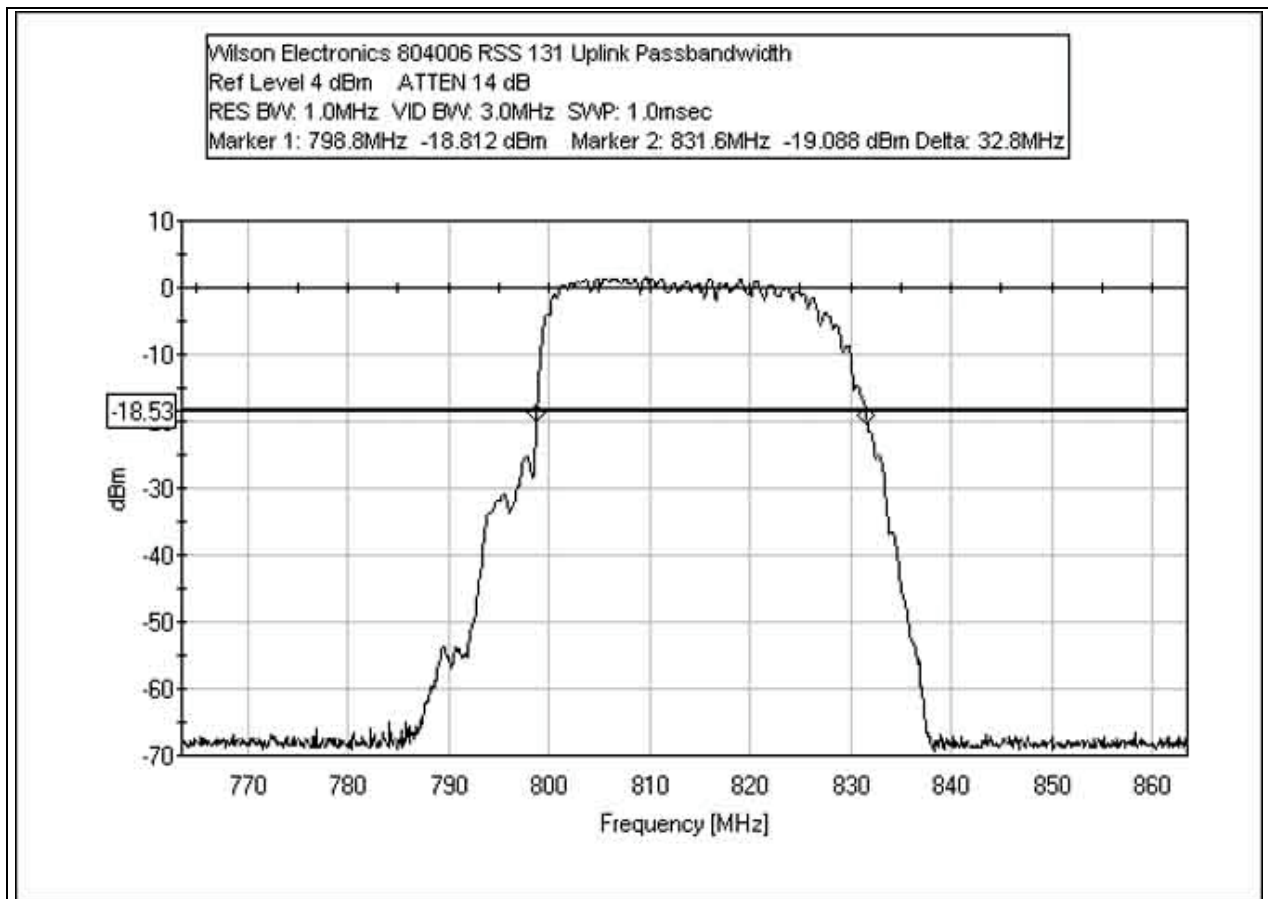
### RSS-131 PASSBANDWIDTH - DOWNLINK

**Test Conditions:** EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Temperature: 24°C, Relative Humidity: 68%.



### RSS-131 PASSBANDWIDTH - UPLINK

**Test Conditions:** EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via support signal generator. Signal generator output is set such that the maximum power output of the amplifier is achieved. Temperature: 24°C, Relative Humidity: 68%.



**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**

