



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

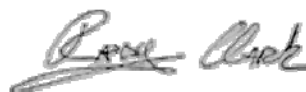
Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:



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:

Description	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
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**

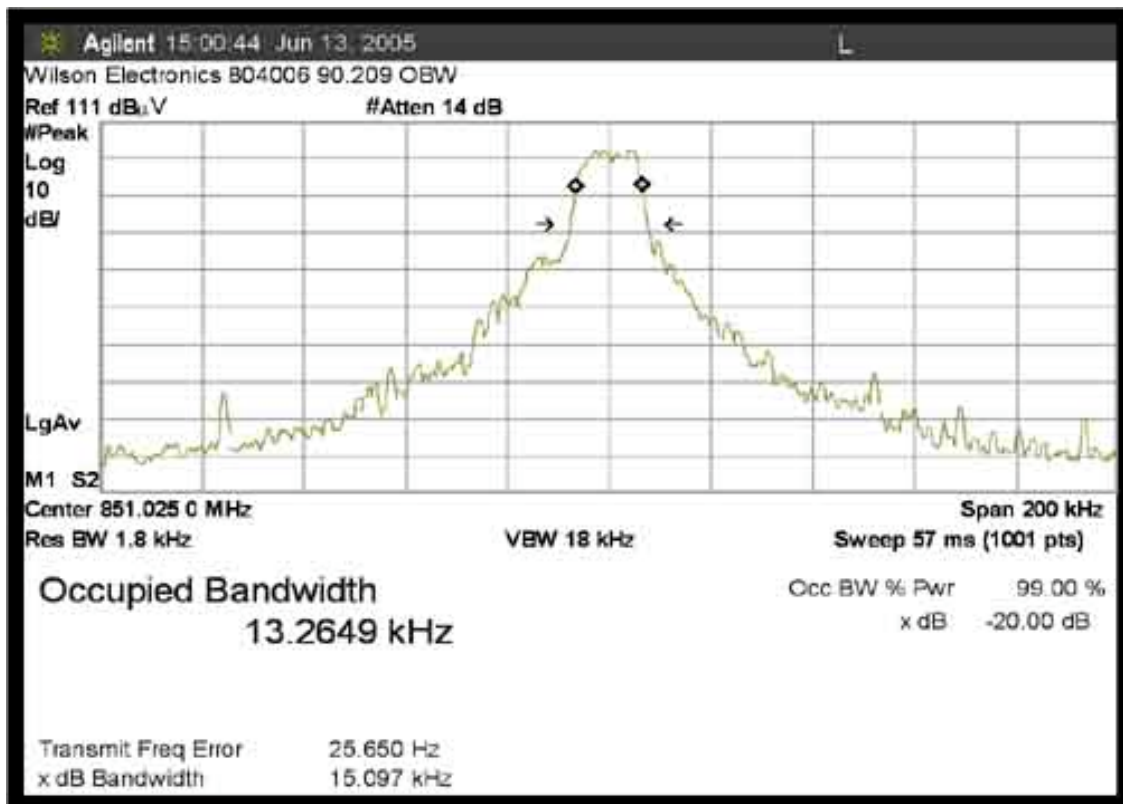
Not applicable to this unit.

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

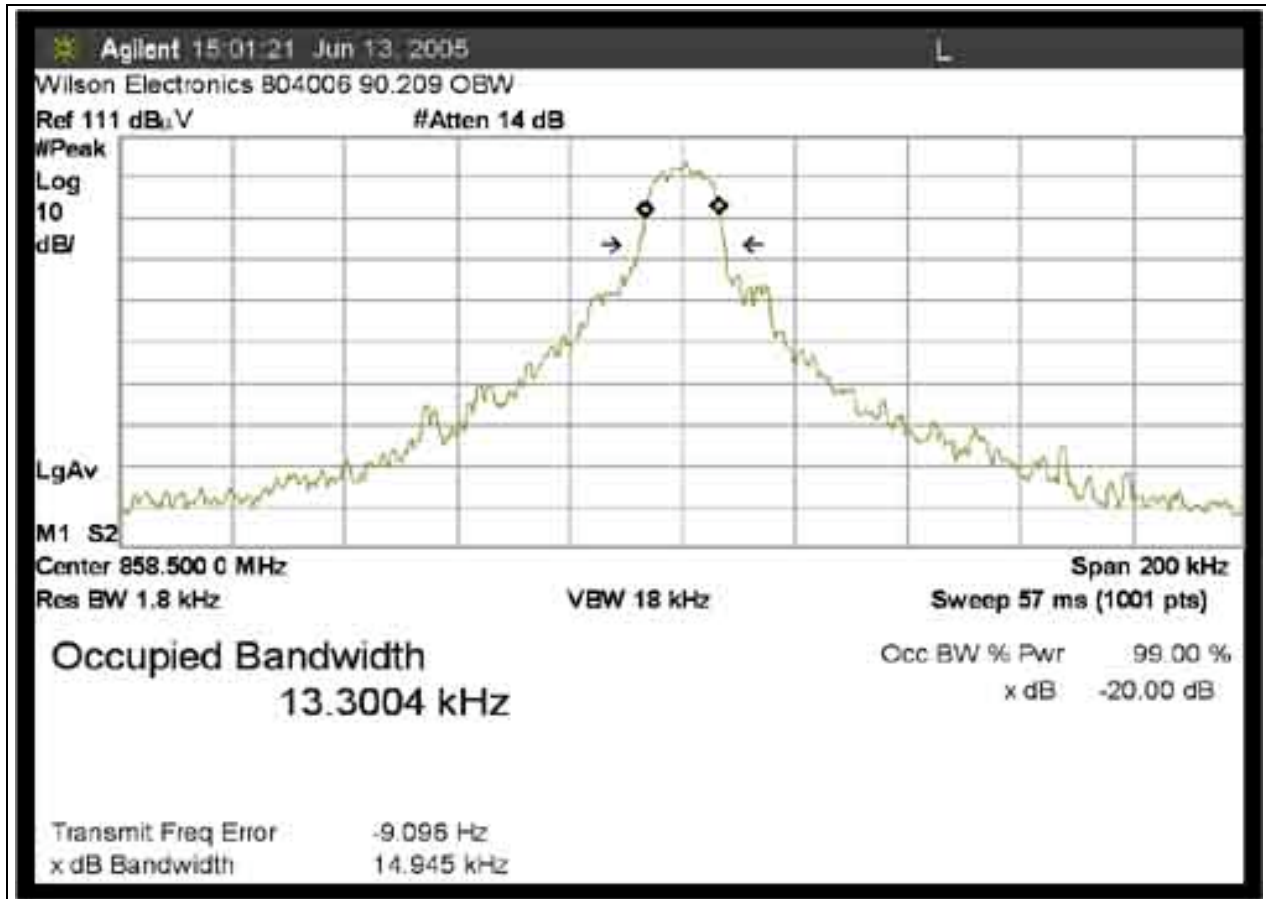
Not applicable to this unit.

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

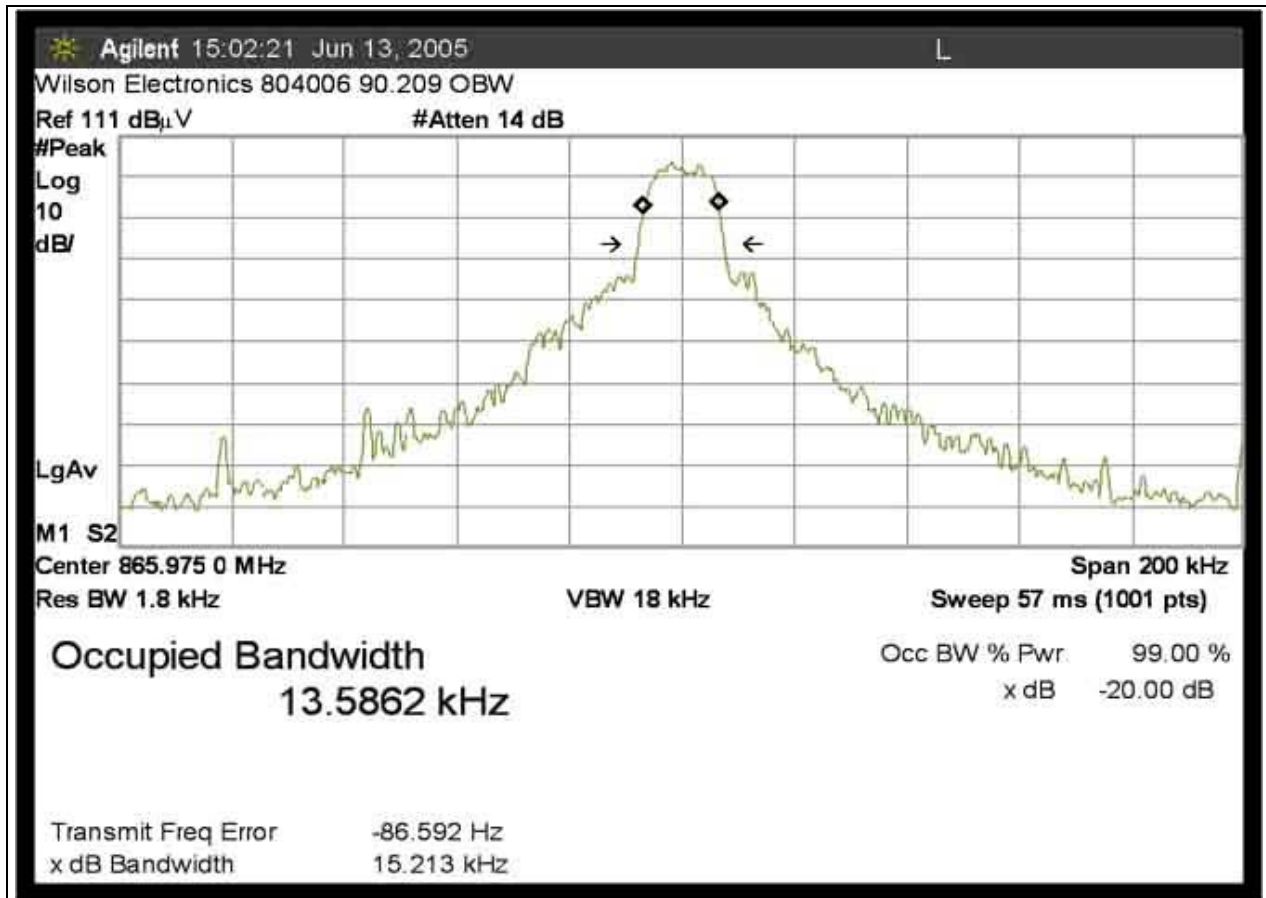
Test Conditions: EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via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



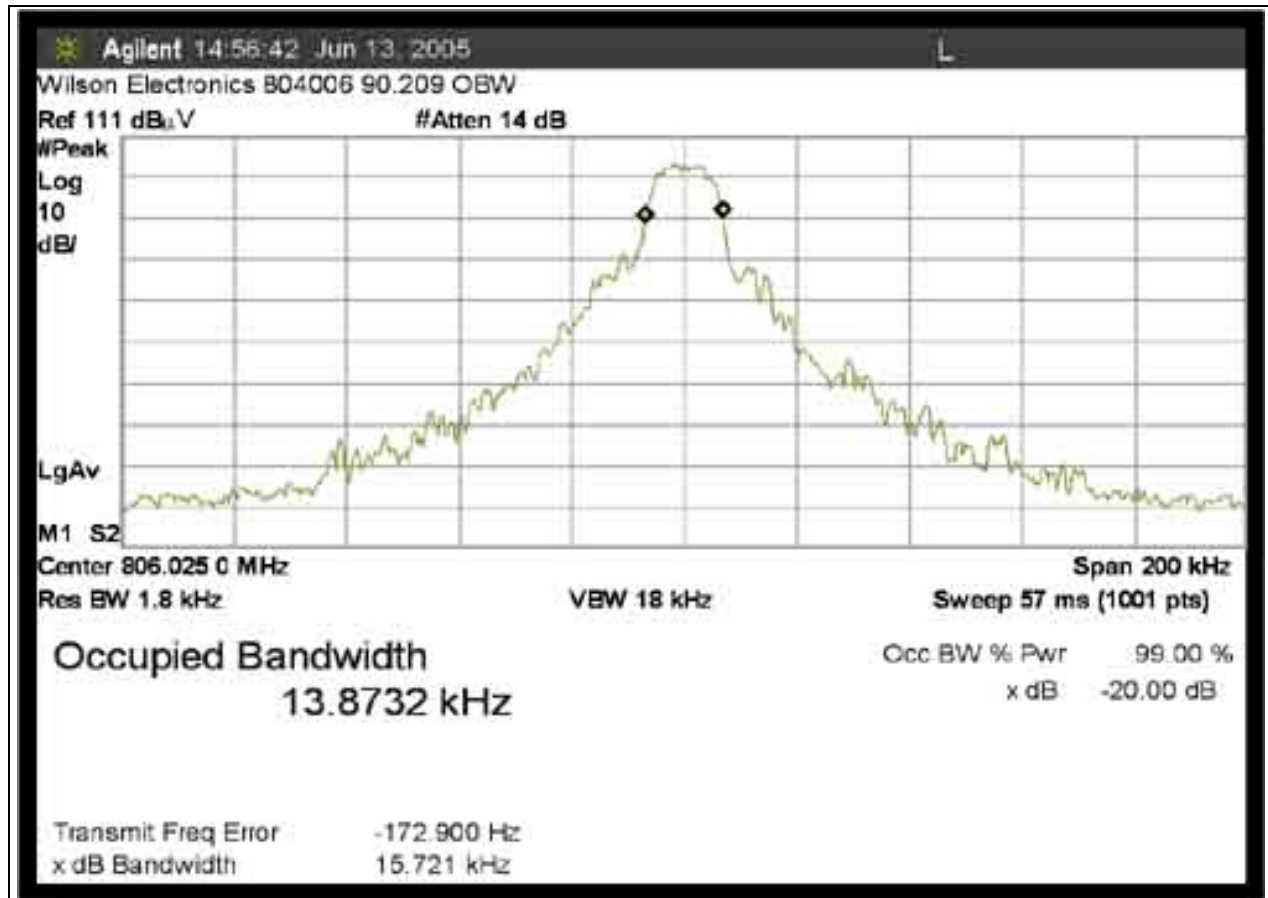
FCC 90.209 OCCUPIED BANDWIDTH - DOWNLINK MID CHANNEL



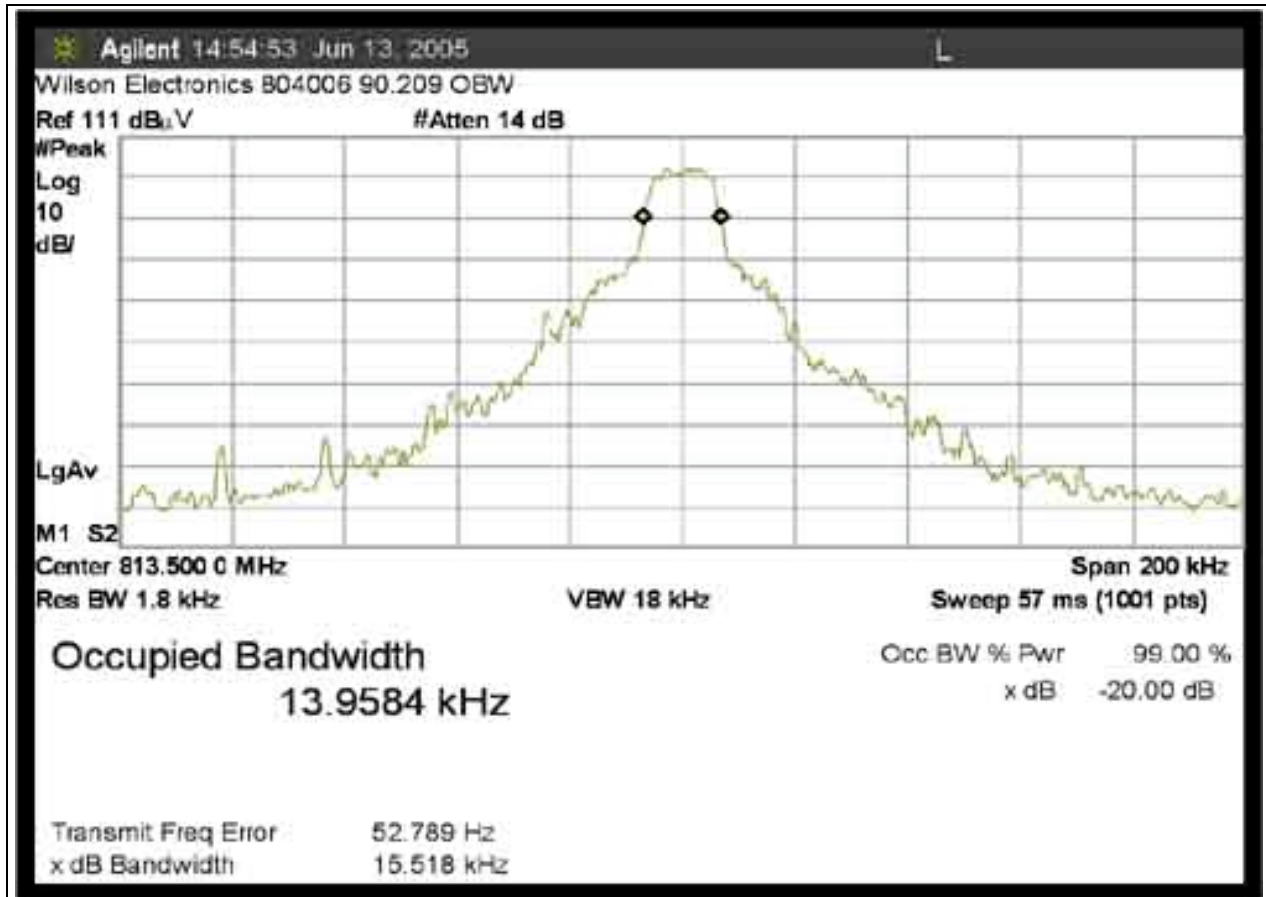
FCC 90.209 OCCUPIED BANDWIDTH - DOWNLINK HIGH CHANNEL



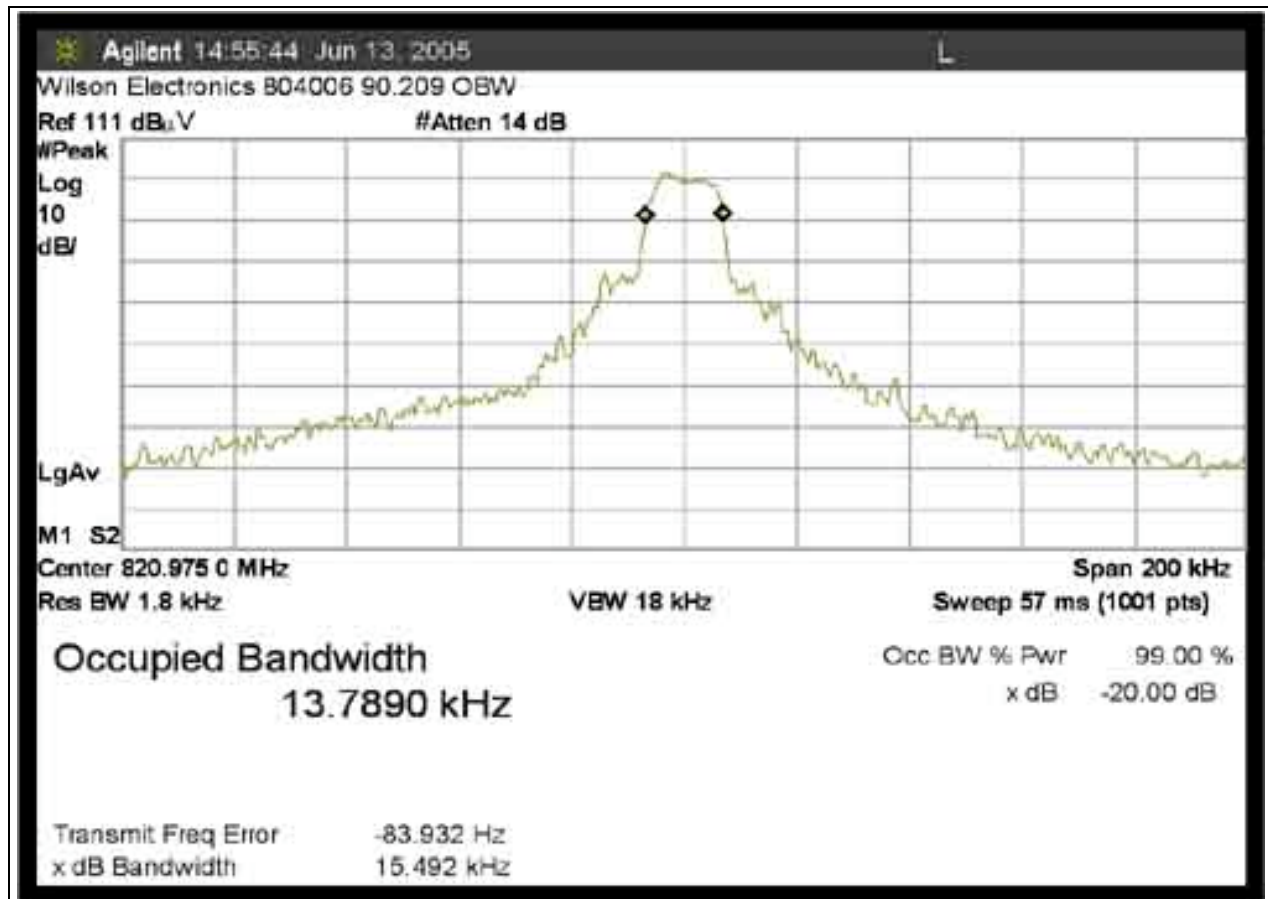
FCC 90.209 OCCUPIED BANDWIDTH - UPLINK LOW CHANNEL



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	9724	05/18/2005	05/18/2007	P01577
25A-MFN-30				

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	

<i>Measurement Data:</i>		Reading listed by margin.					Test Lead: RF Output				
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	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 Peak	-62.4	RF Ou
2	858.500M	107.2	+30.1	+0.6	+107.0		+0.0	30.9	94.0 Peak	-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

Measurement Data		Reading noted by margin					Test Setup & Output				
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB		Dist 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:

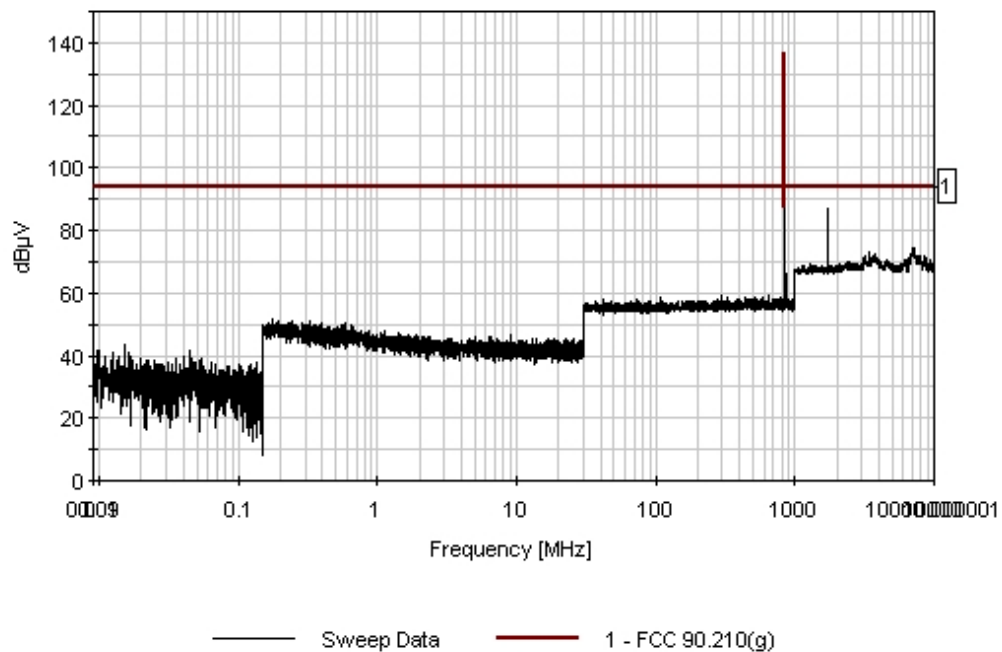
Reading listed by margin.

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



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
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Measurement Data:

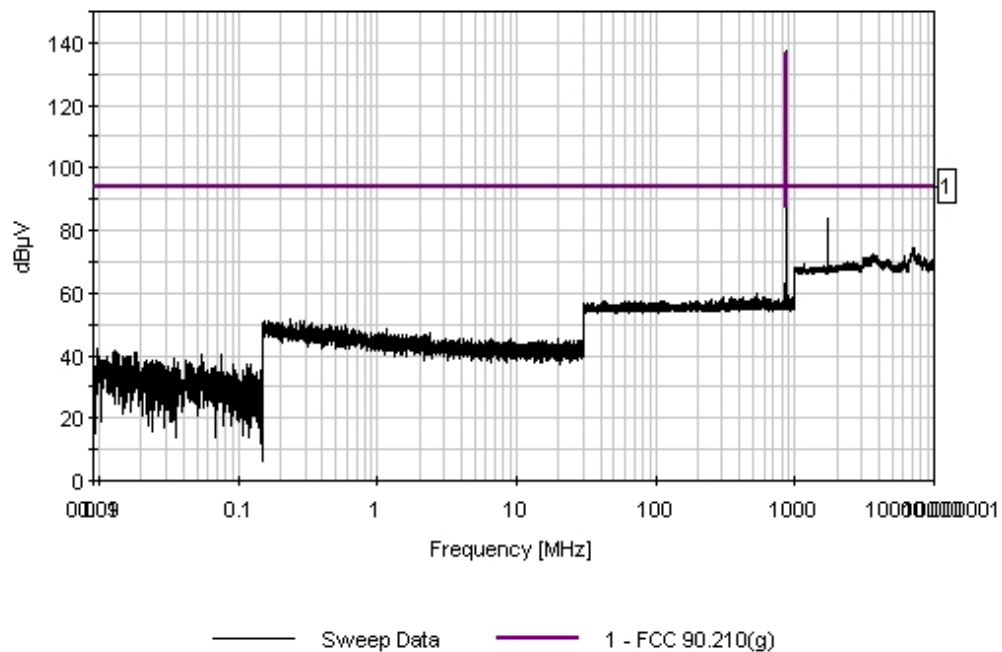
Reading listed by margin.

Test Lead: RF Output

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	858.500M	105.8	+0.6	+30.1	+0.0	136.5	136.5 Carrier	+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:

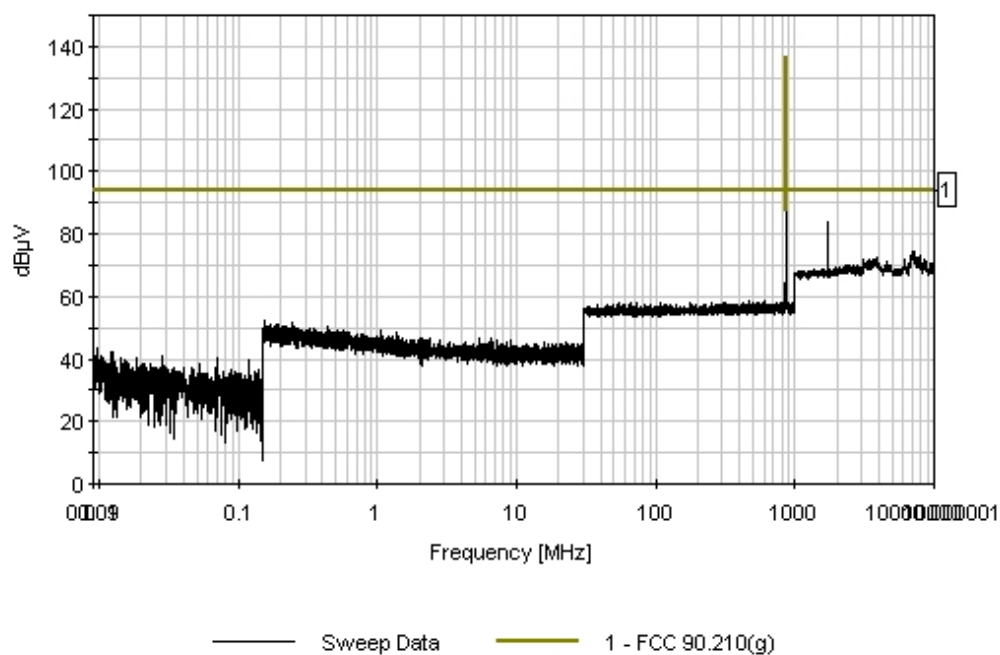
Reading listed by margin.

Test Lead: RF Output

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	865.975M	105.6	+0.6	+30.1	+0.0	136.3	136.5 Carrier	-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	9724	05/18/2005	05/18/2007	P01577
25A-MFN-30				

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:

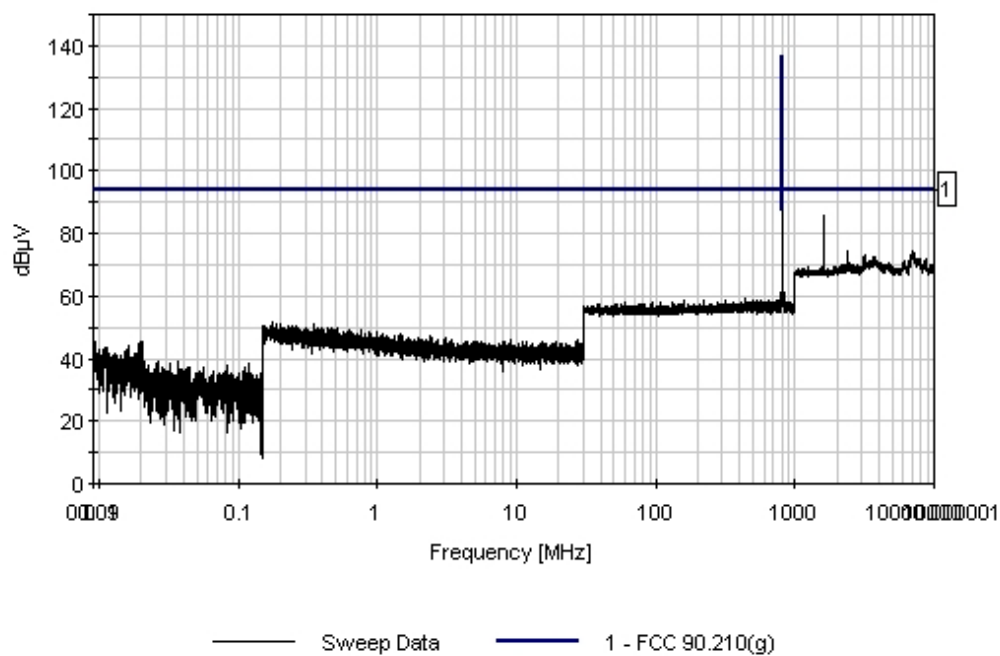
Reading listed by margin.

Test Lead: RF Output

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	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
Ave									
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 WVO#: 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:

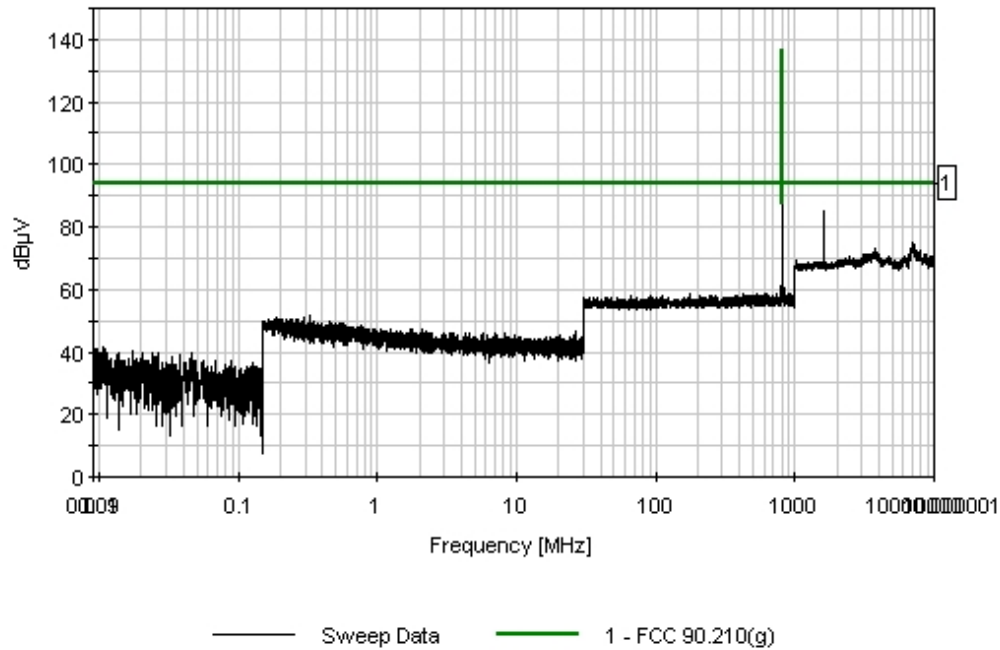
Reading listed by margin.

Test Lead: RF Output

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	813.500M	105.6	+0.6	+30.0		+0.0	136.2	136.5	-0.3	RF Ou
								Carrier		
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:

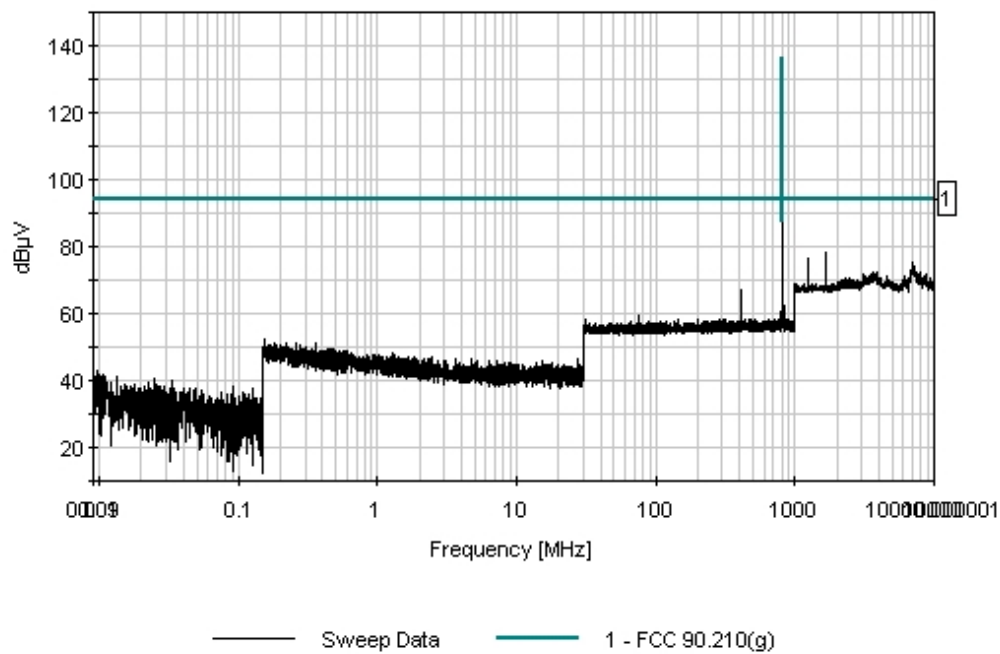
Reading listed by margin.

Test Lead: RF Output

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Table	Corr dBμV	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
								Carrier		
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:

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
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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)	$116 \text{LOG}(fd/6.1)$	$50 + 10 \text{LOG}(P)$	70
1	10	24.9	49.5	70
2	16.3	49.5	49.5	70

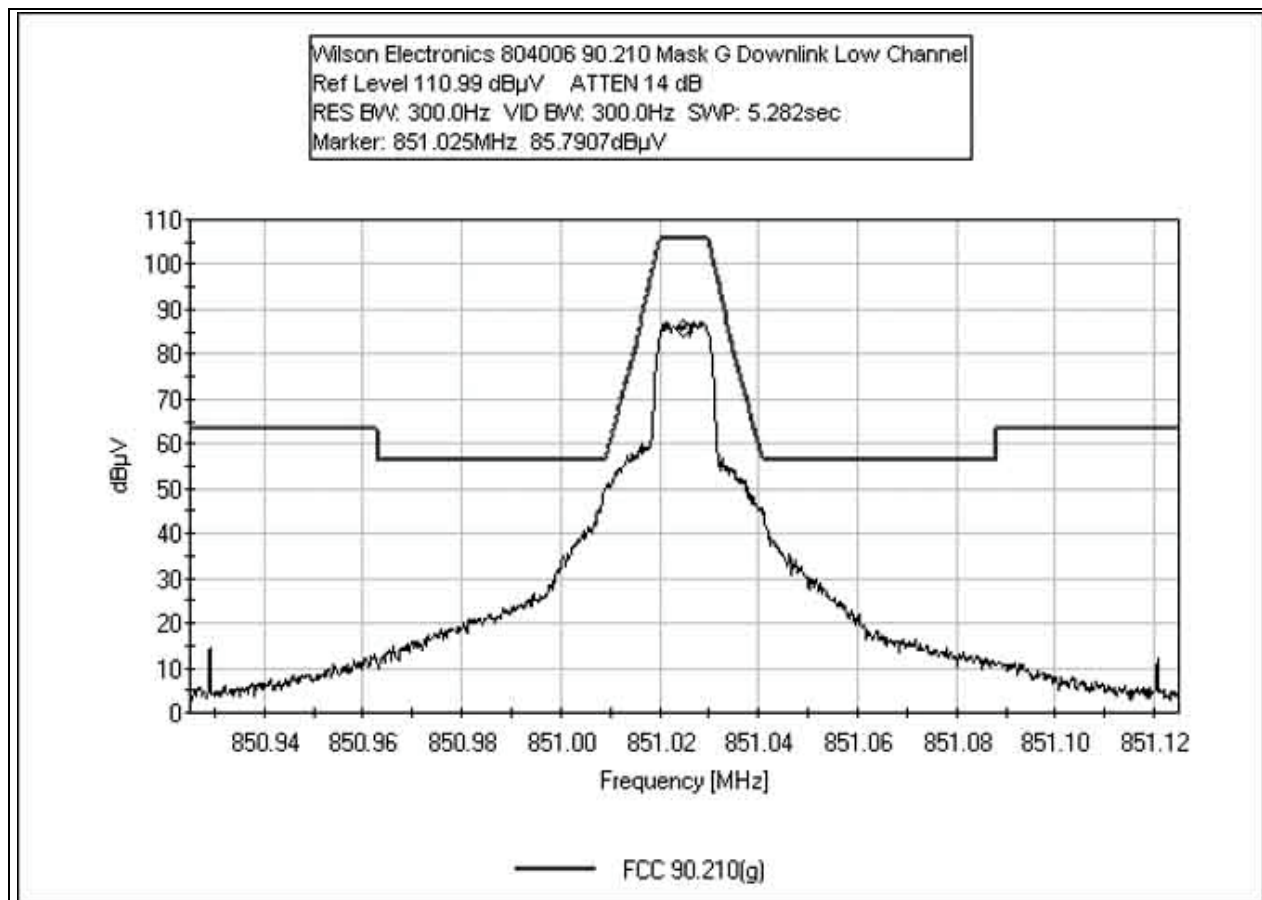
Point 2 is when $116 \text{LOG}(fd/6.1)$ is equal to the lesser of $50 + 10 \text{LOG}(P)$ or 70dB

90.210(g)(3)

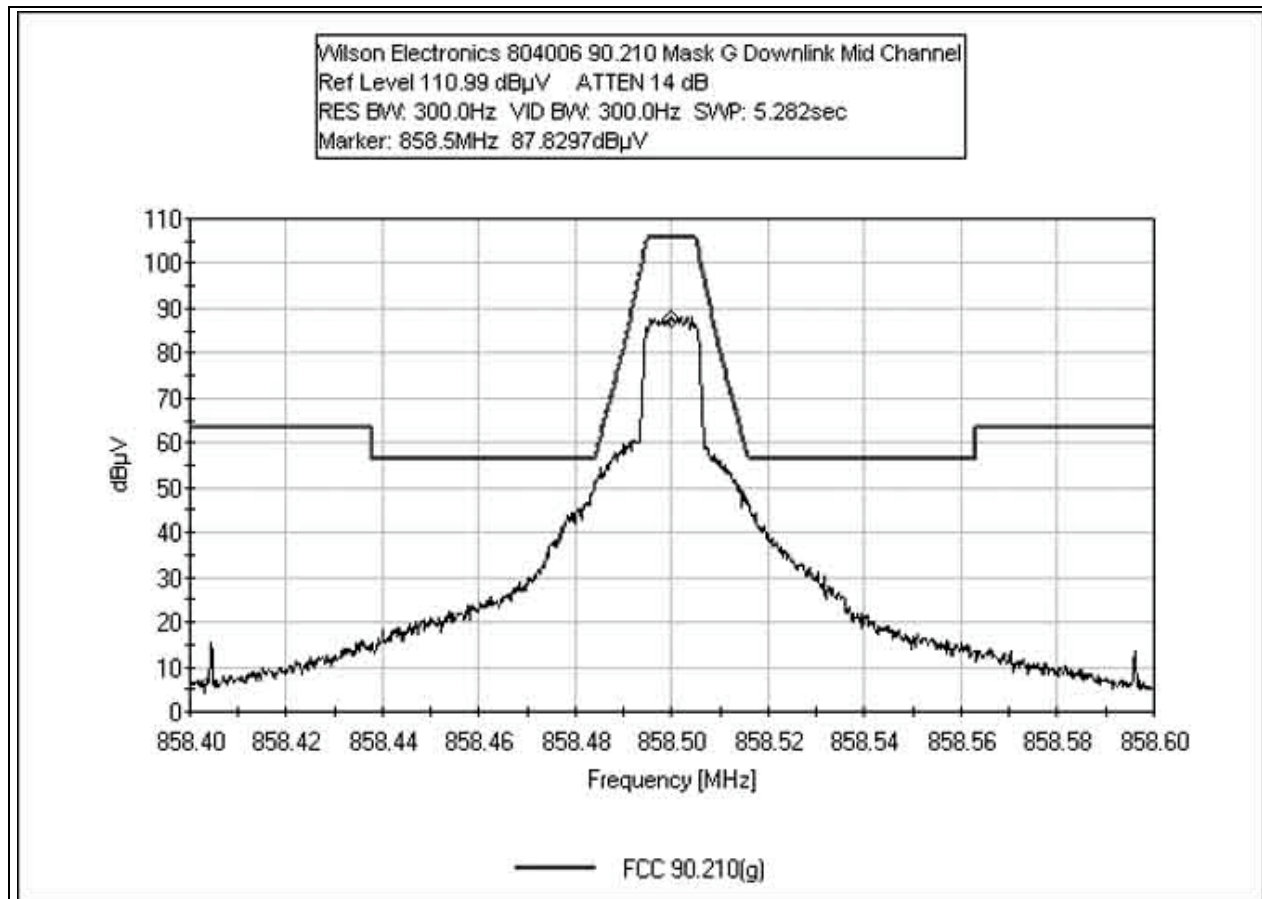
On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

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

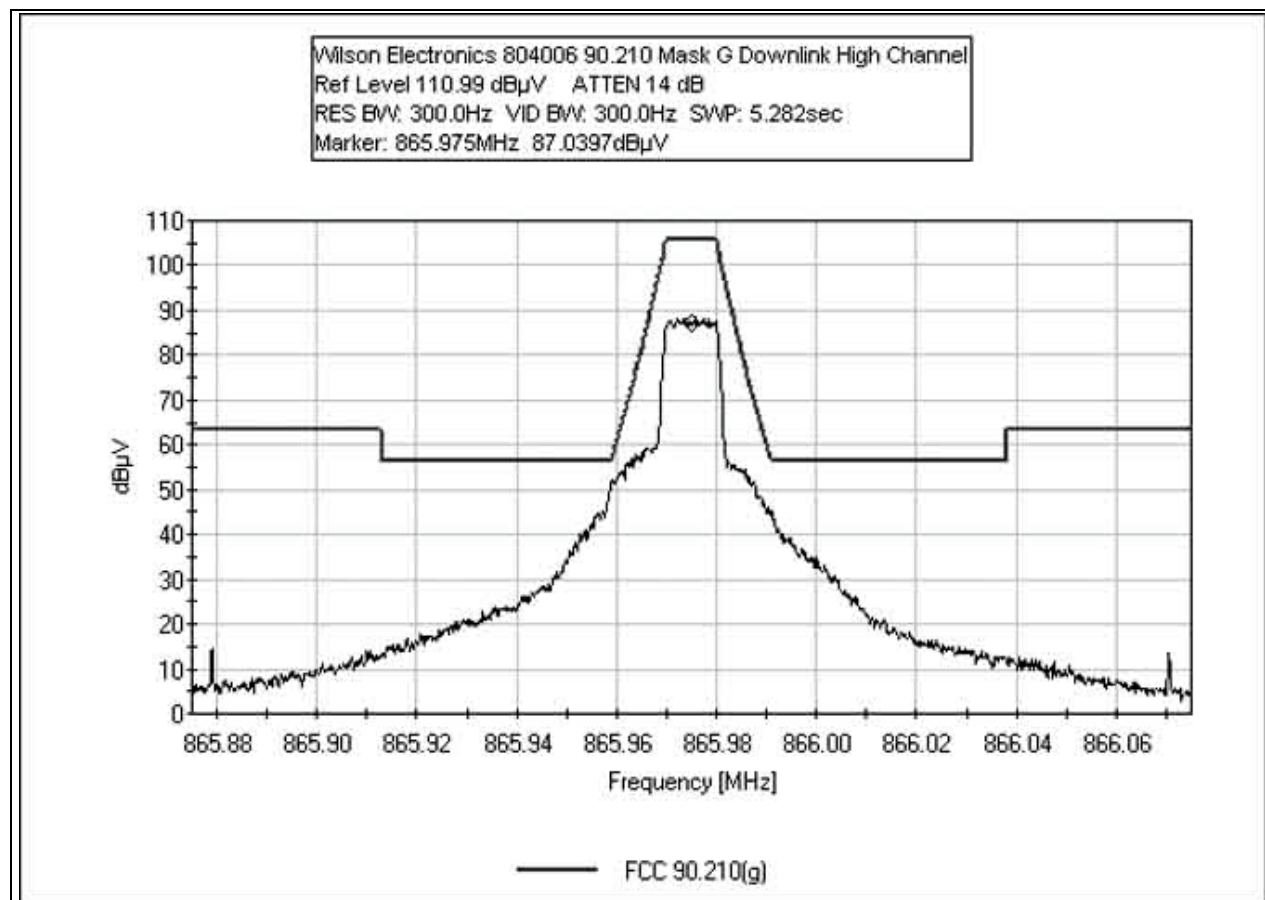
FCC 90.210 EMISSIONS MASK - DOWNLINK LOW CHANNEL



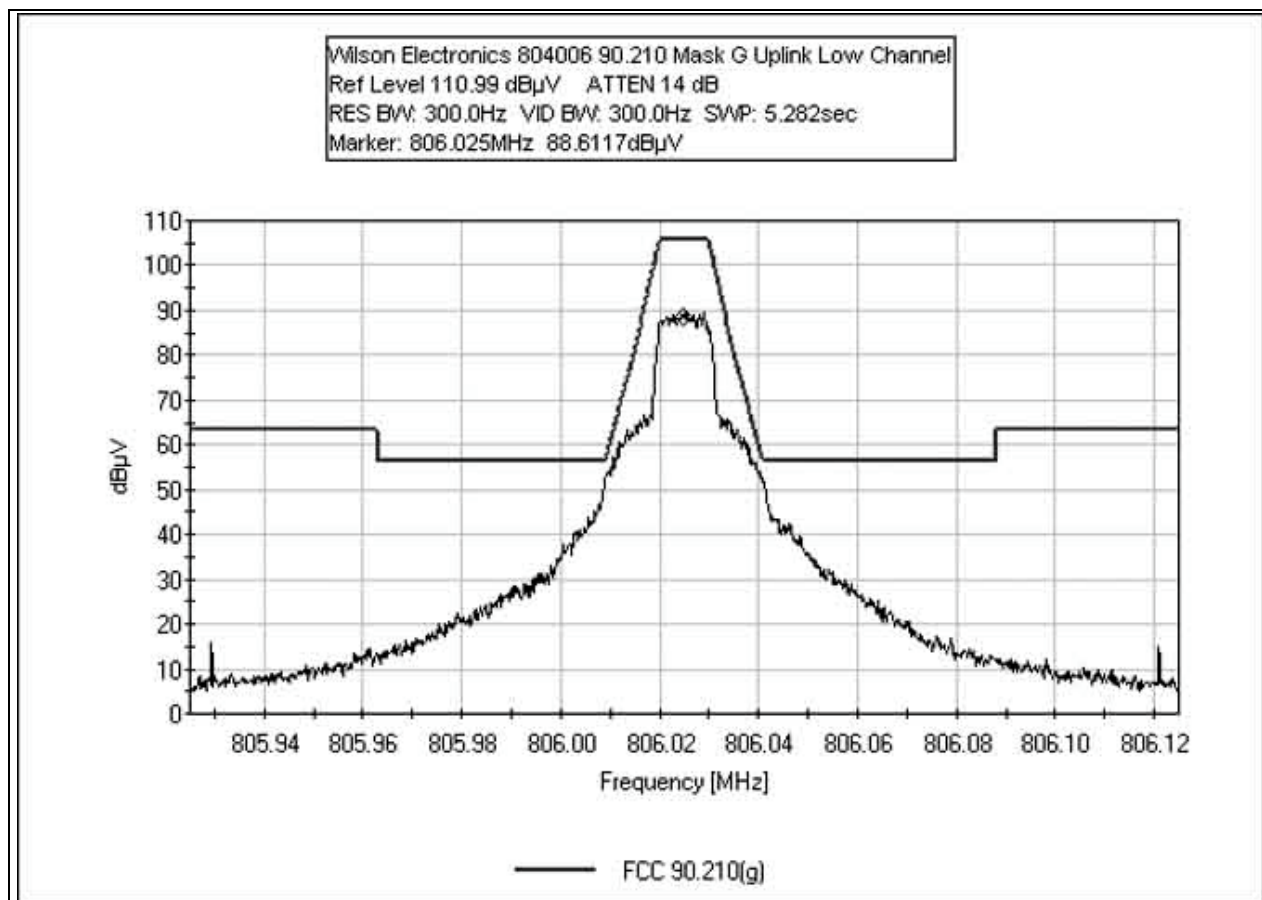
FCC 90.210 EMISSIONS MASK - DOWNLINK MID CHANNEL



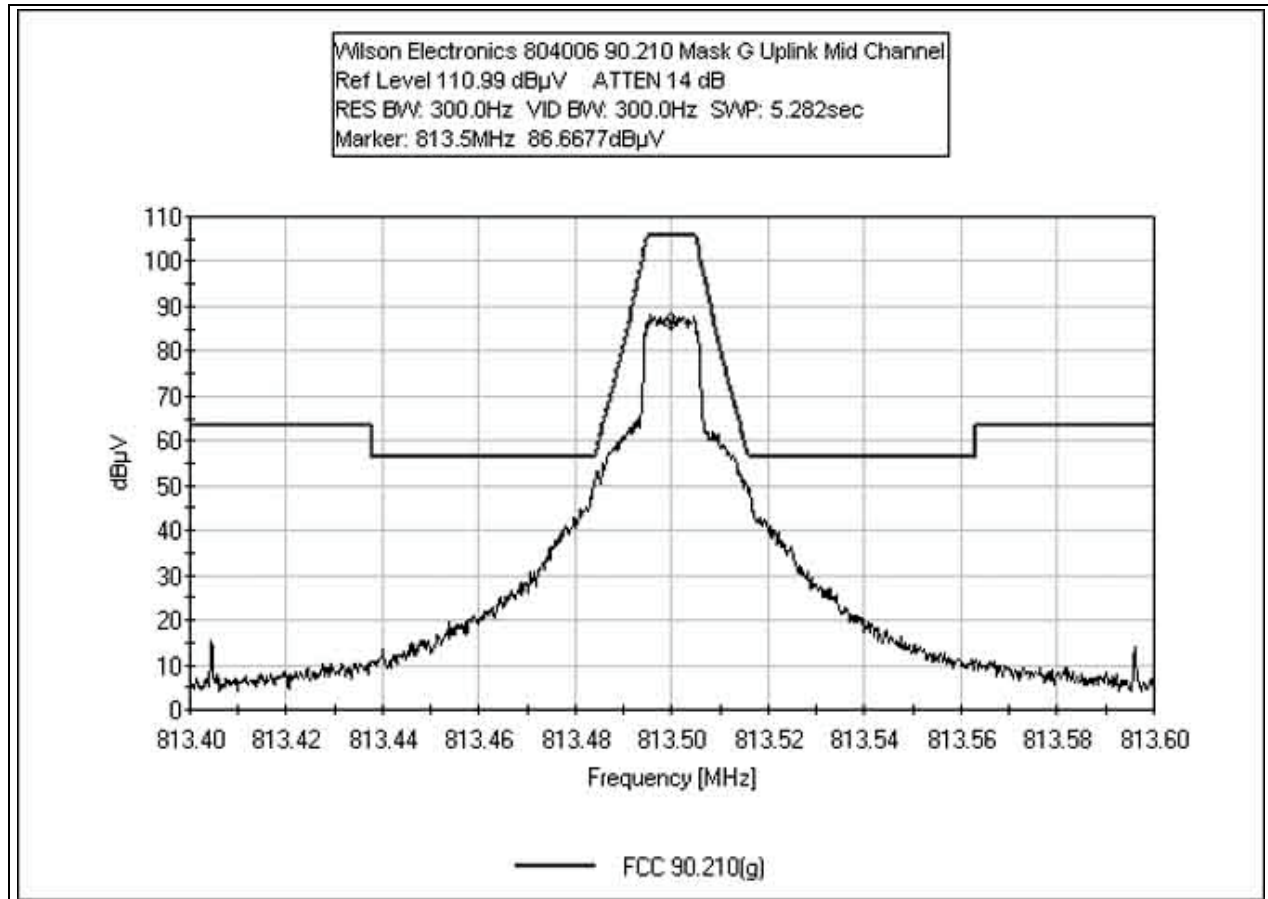
FCC 90.210 EMISSIONS MASK - DOWNLINK HIGH CHANNEL



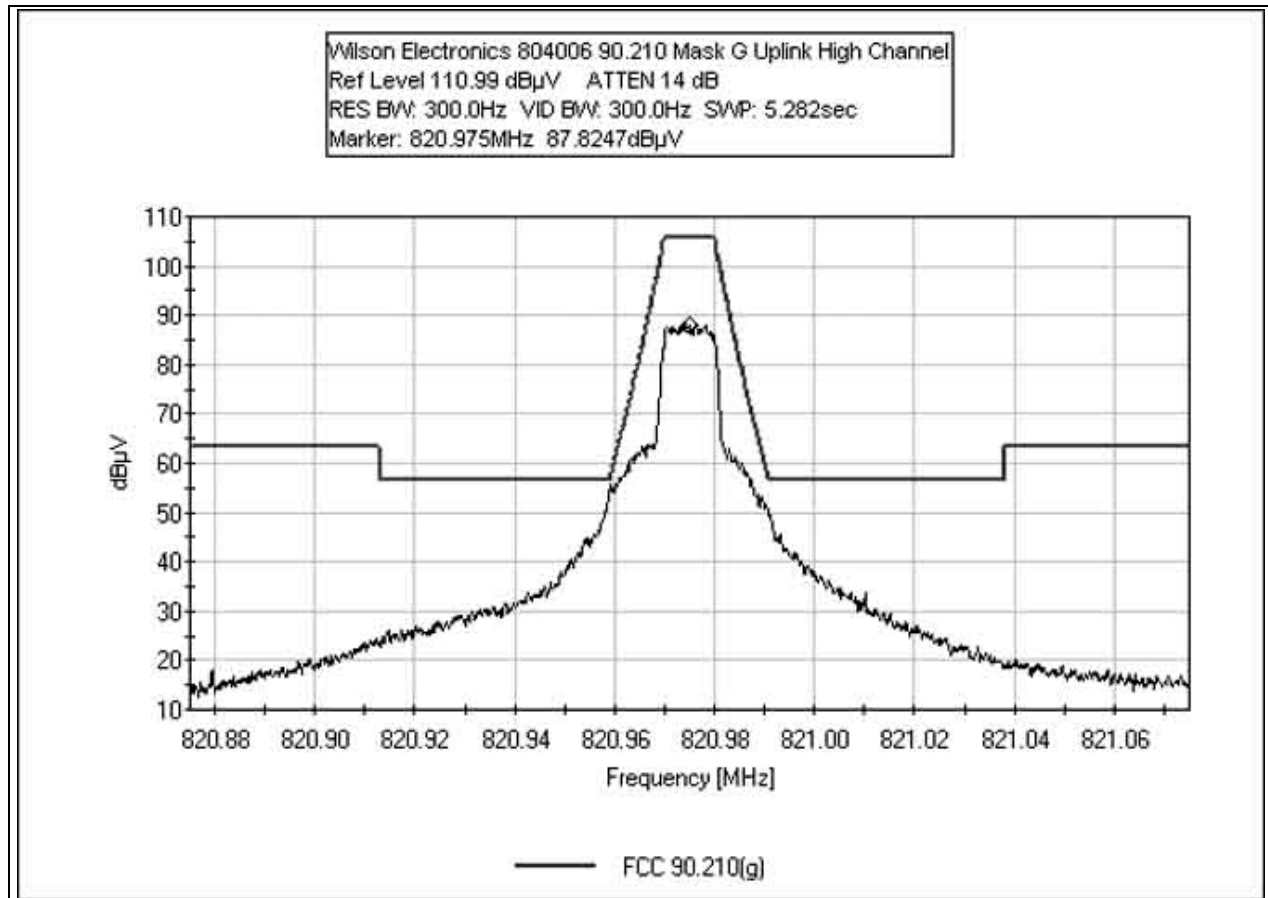
FCC 90.210 EMISSIONS MASK - UPLINK LOW CHANNEL



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 9724		05/18/2005	05/18/2007	P01577
25A-MFN-30				

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:

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	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:

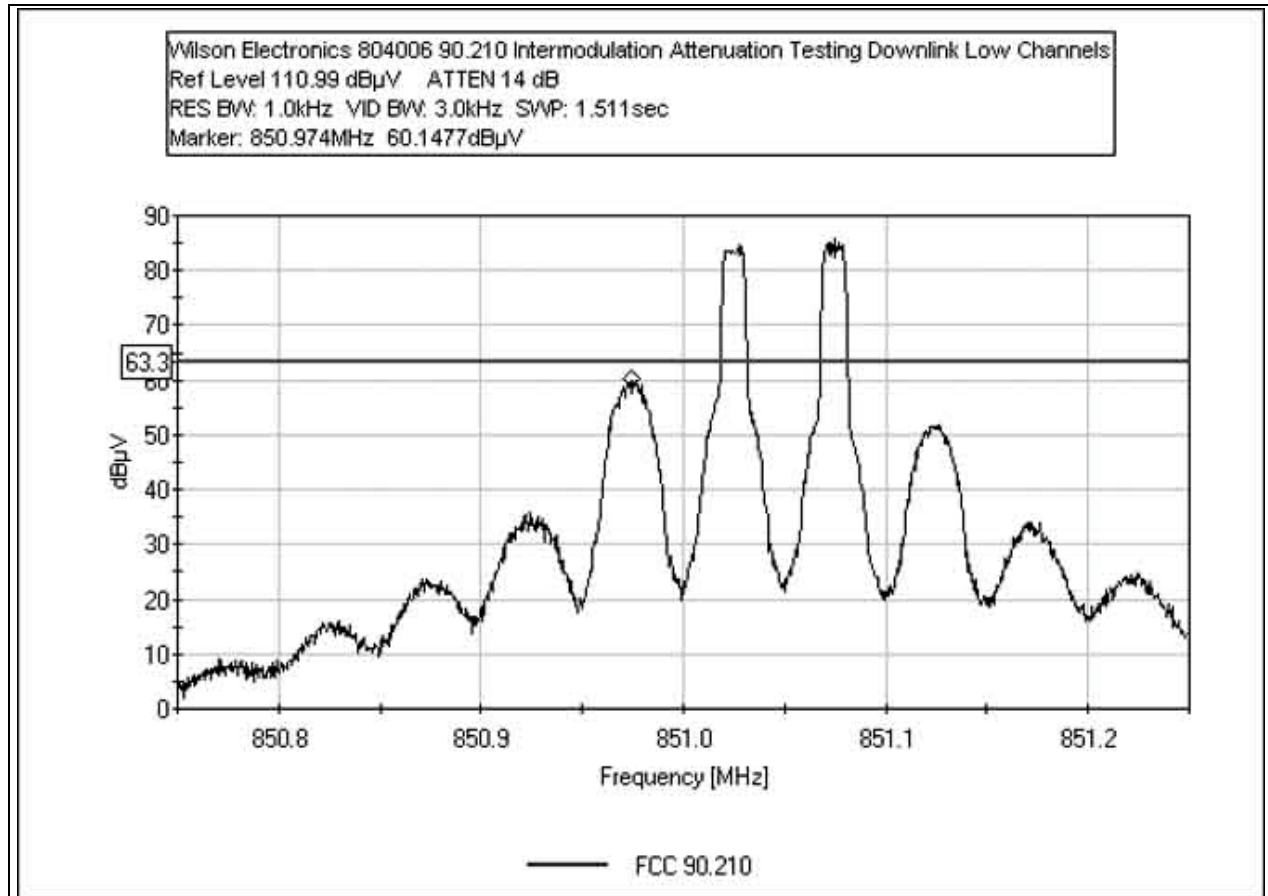
Reading listed by margin.

Test Lead: RF Output

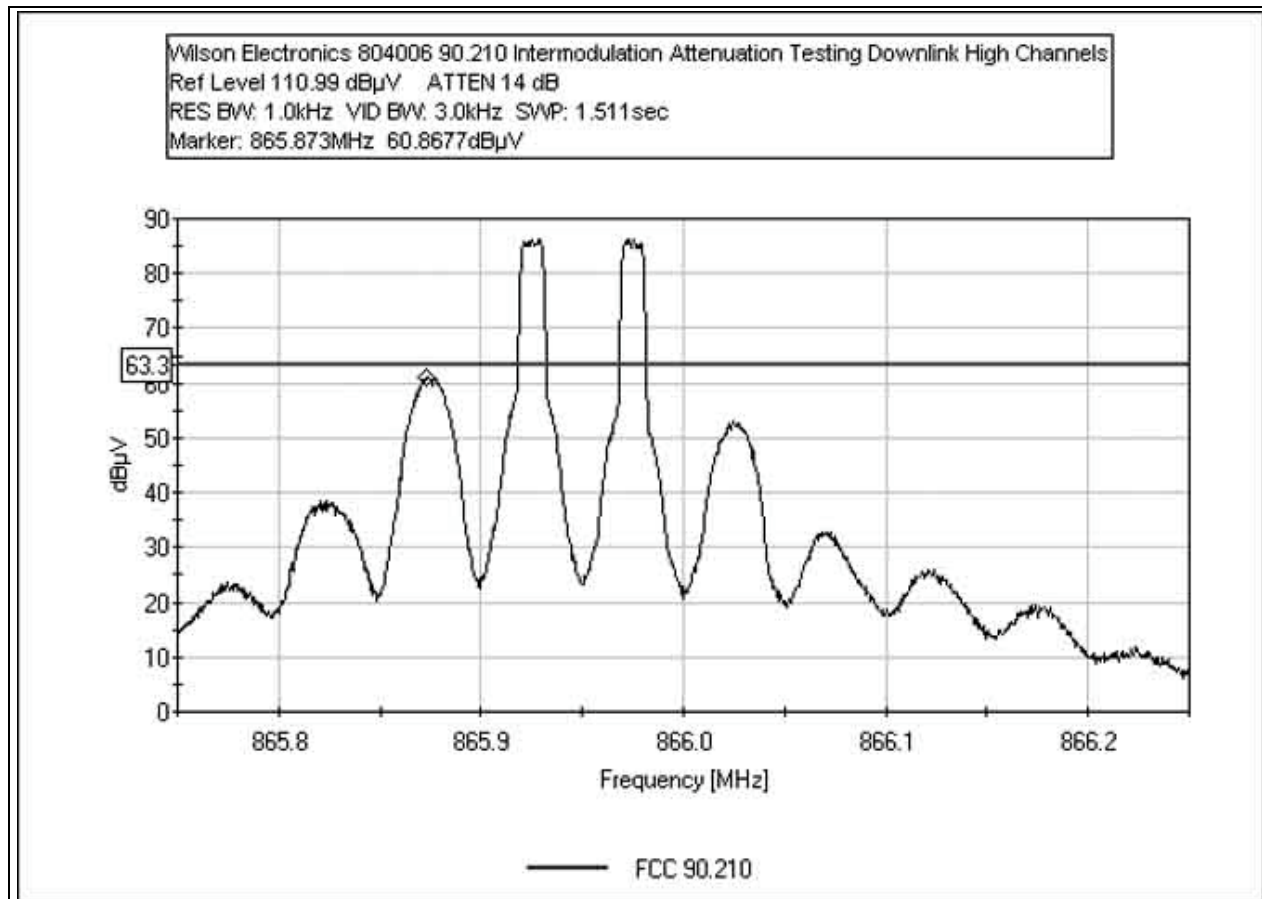
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	805.975M	61.9	+0.6	+30.0	+0.0	92.5	94.0	-1.5	RF Ou
2	820.875M	61.1	+0.6	+30.0	+0.0	91.7	94.0	-2.3	RF Ou

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

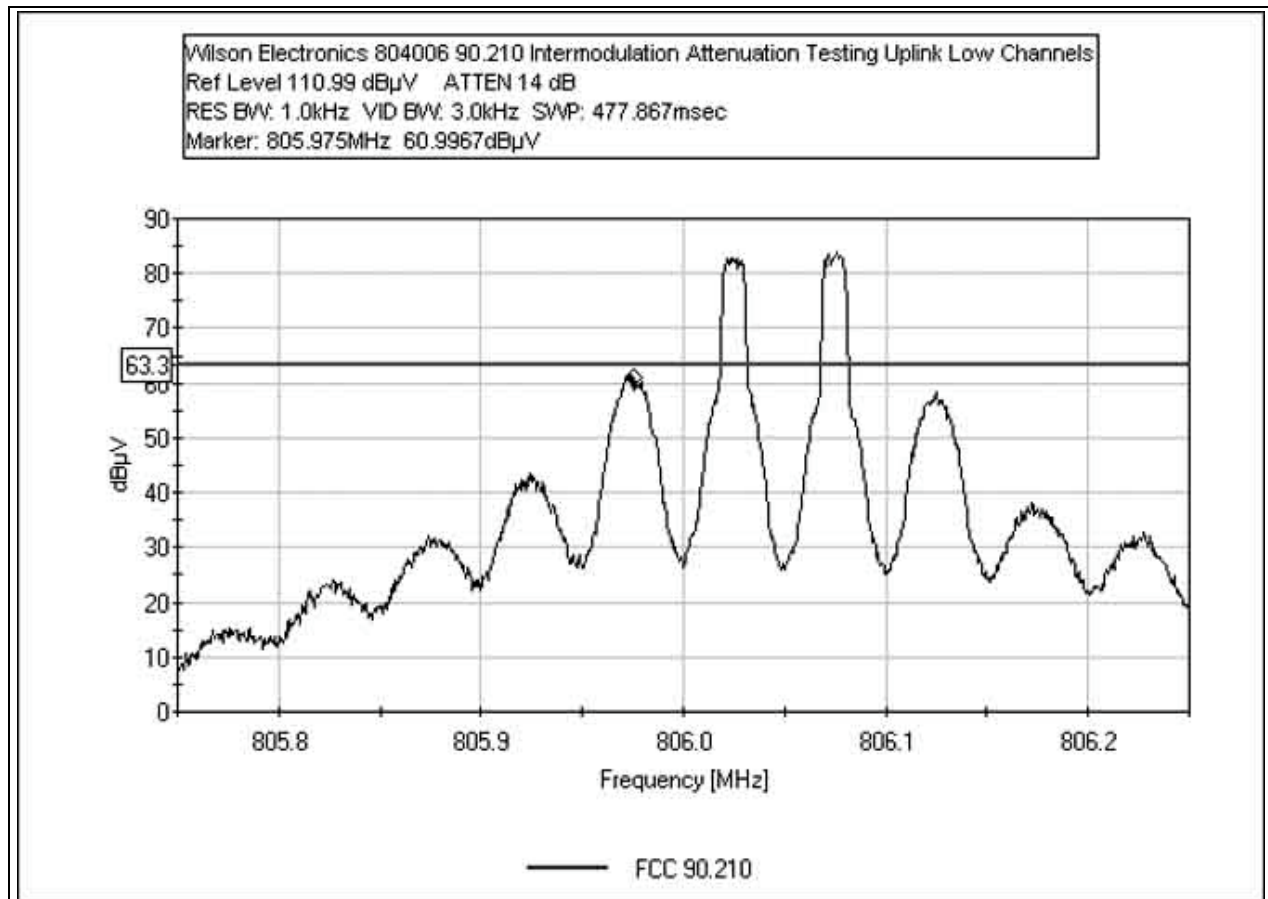
FCC 90.210 INTERMODULATION ATTENUATION - DOWNLINK LOW CHANNEL



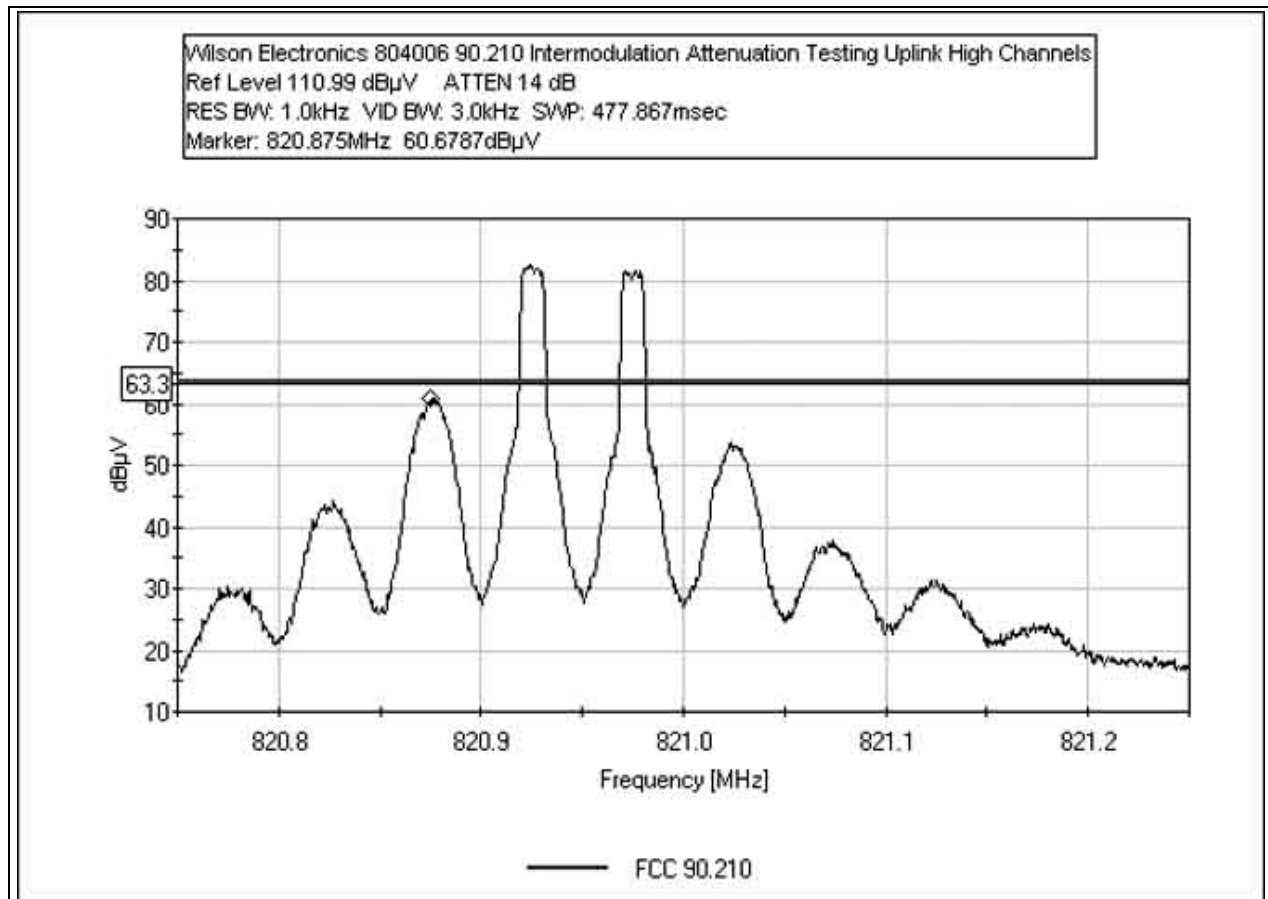
FCC 90.210 INTERMODULATION ATTENUATION - DOWNLINK HIGH CHANNEL



FCC 90.210 INTERMODULATION ATTENUATION - UPLINK LOW CHANNEL



FCC 90.210 INTERMODULATION ATTENUATION - UPLINK HIGH CHANNEL

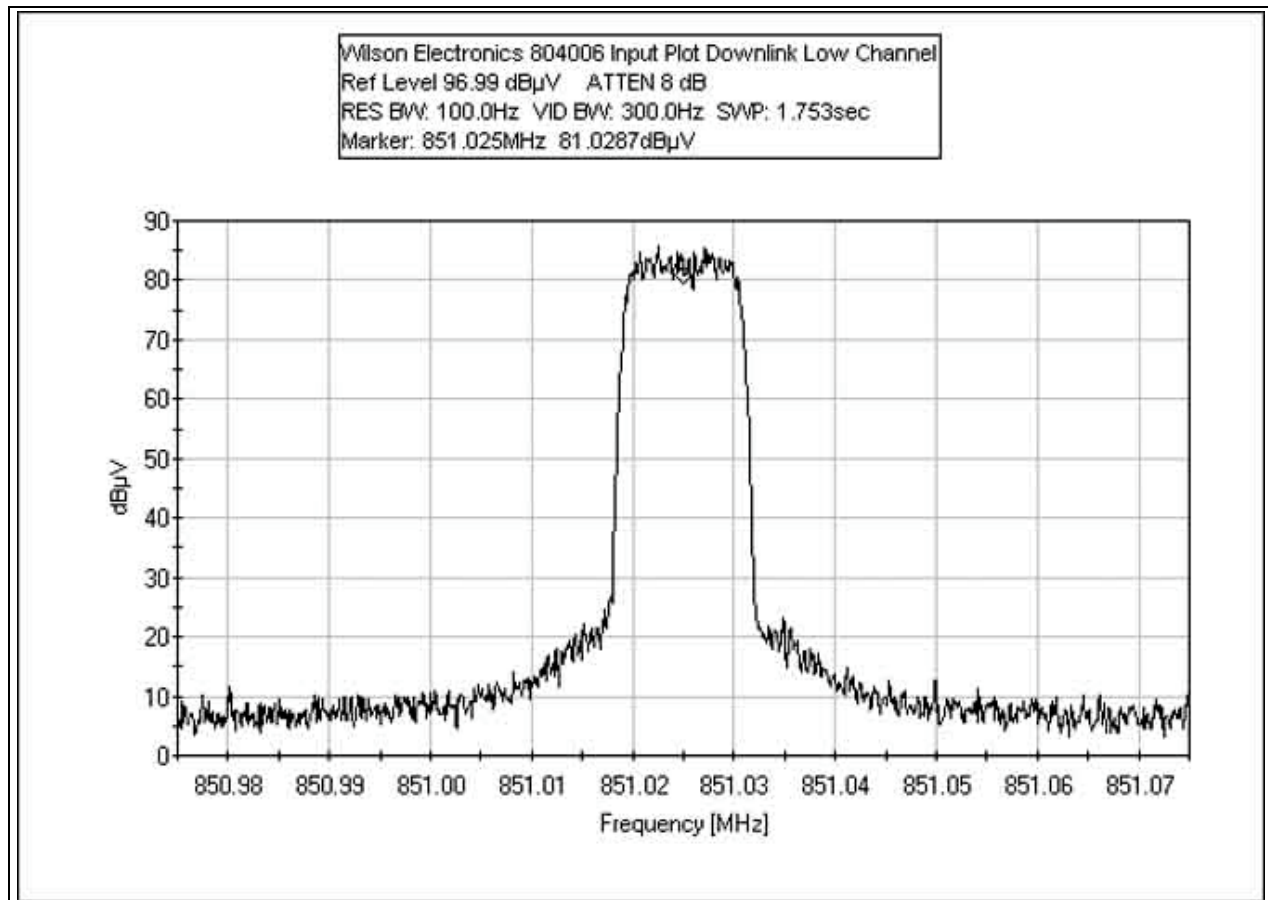


PHOTOGRAPH SHOWING INTERMODULATION ATTENUATION

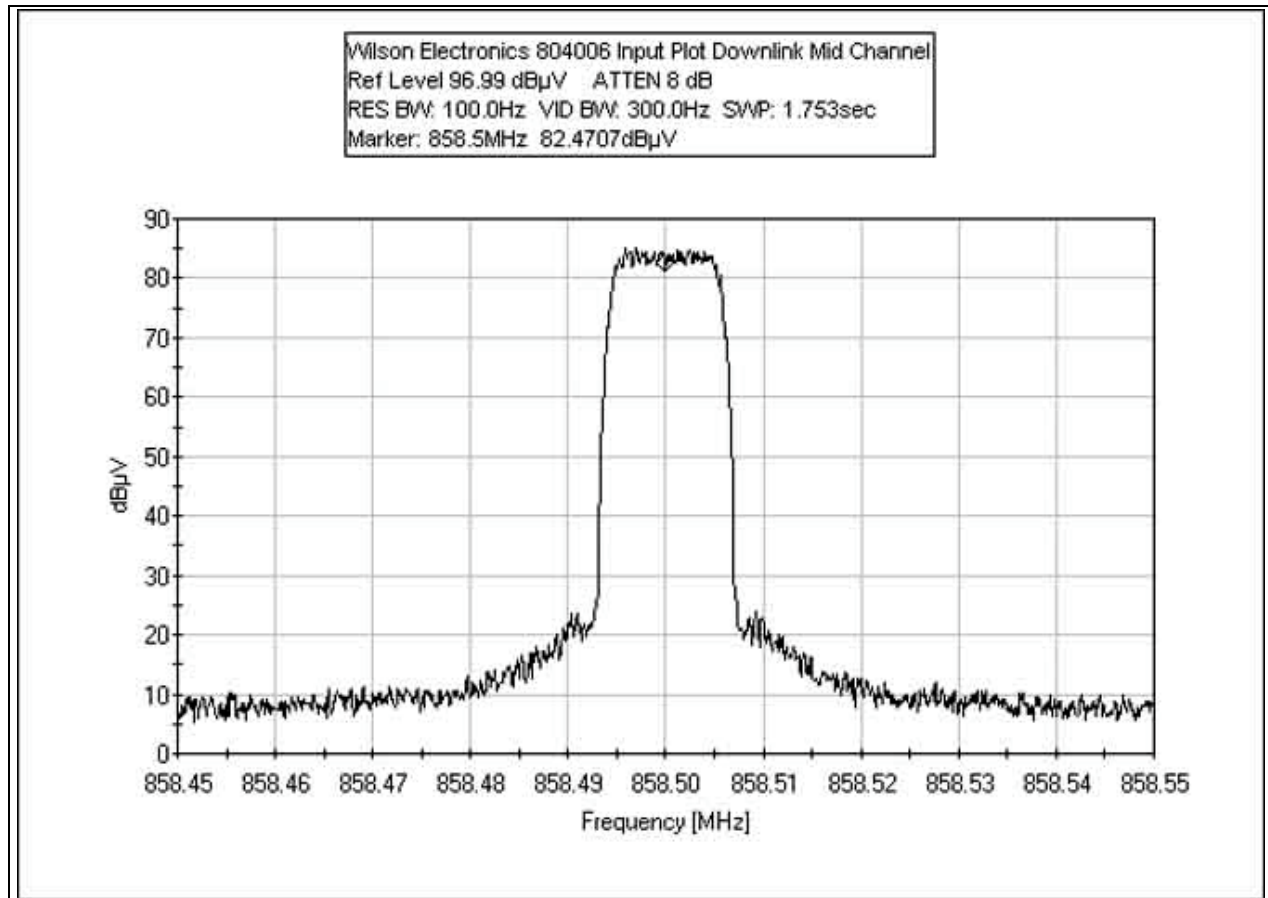


INPUT PLOT - DOWNLINK LOW CHANNEL

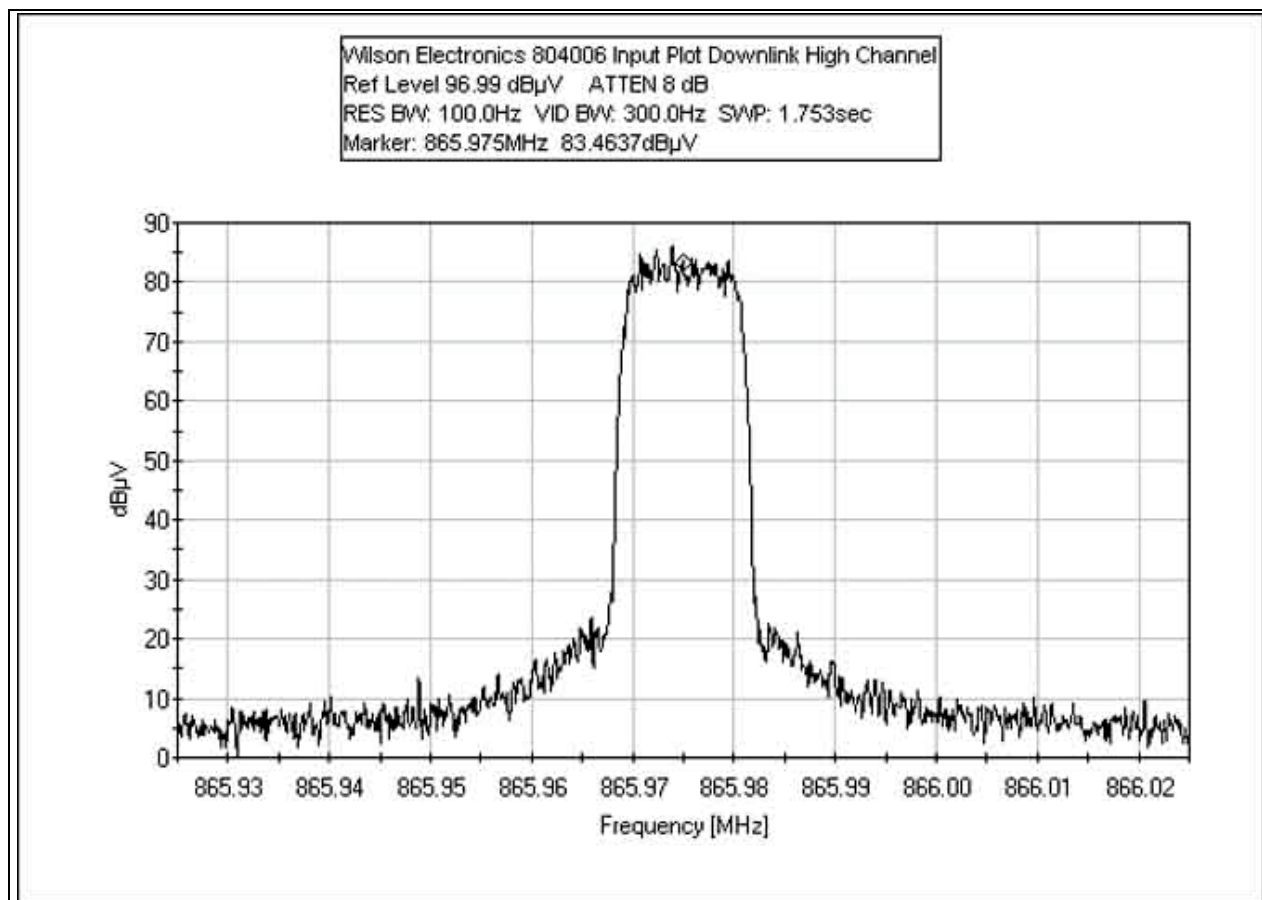
Test Conditions: EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. The output of the signal generator is connected directly to the spectrum analyzer. The level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



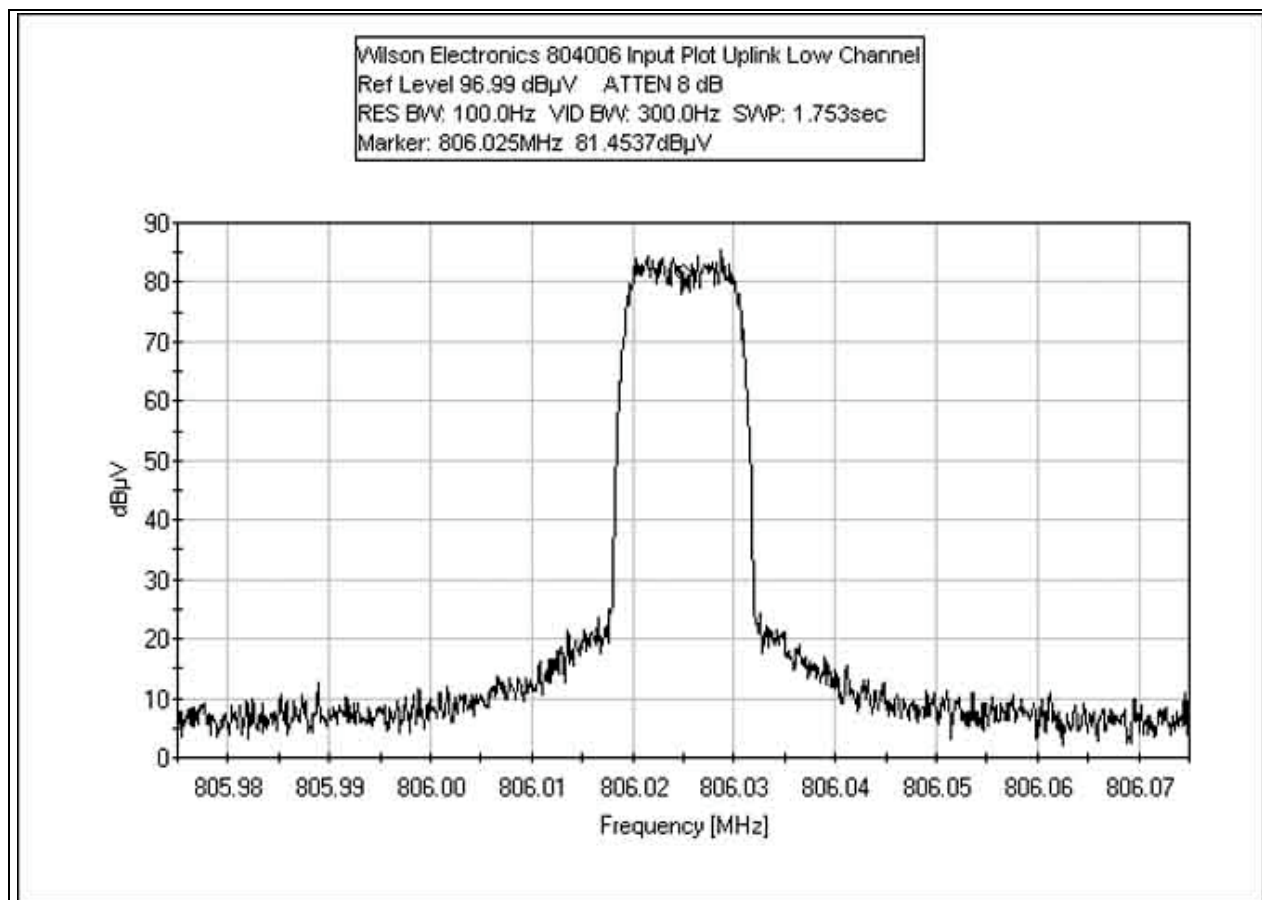
INPUT PLOT - DOWNLINK MID CHANNEL



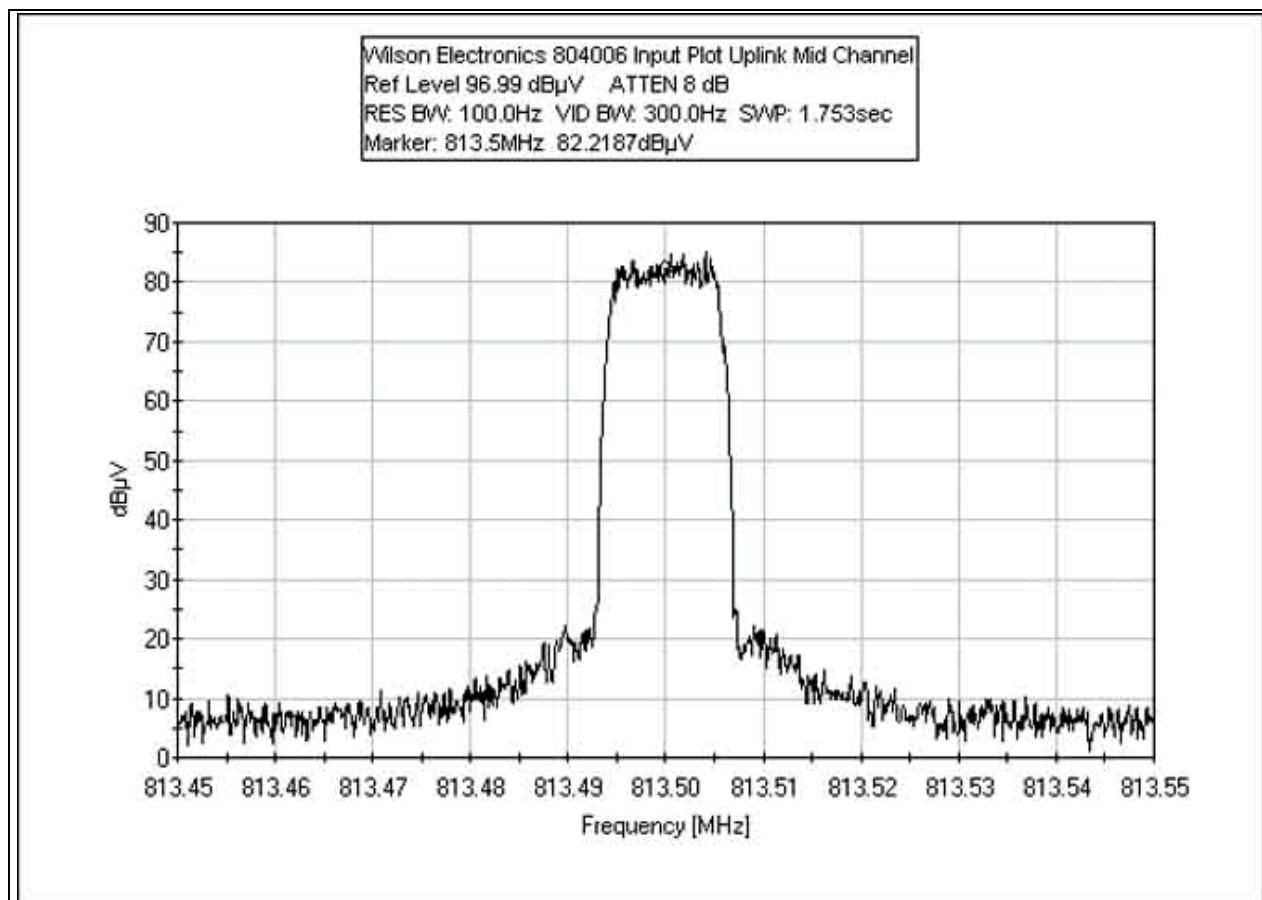
INPUT PLOT - DOWNLINK HIGH CHANNEL



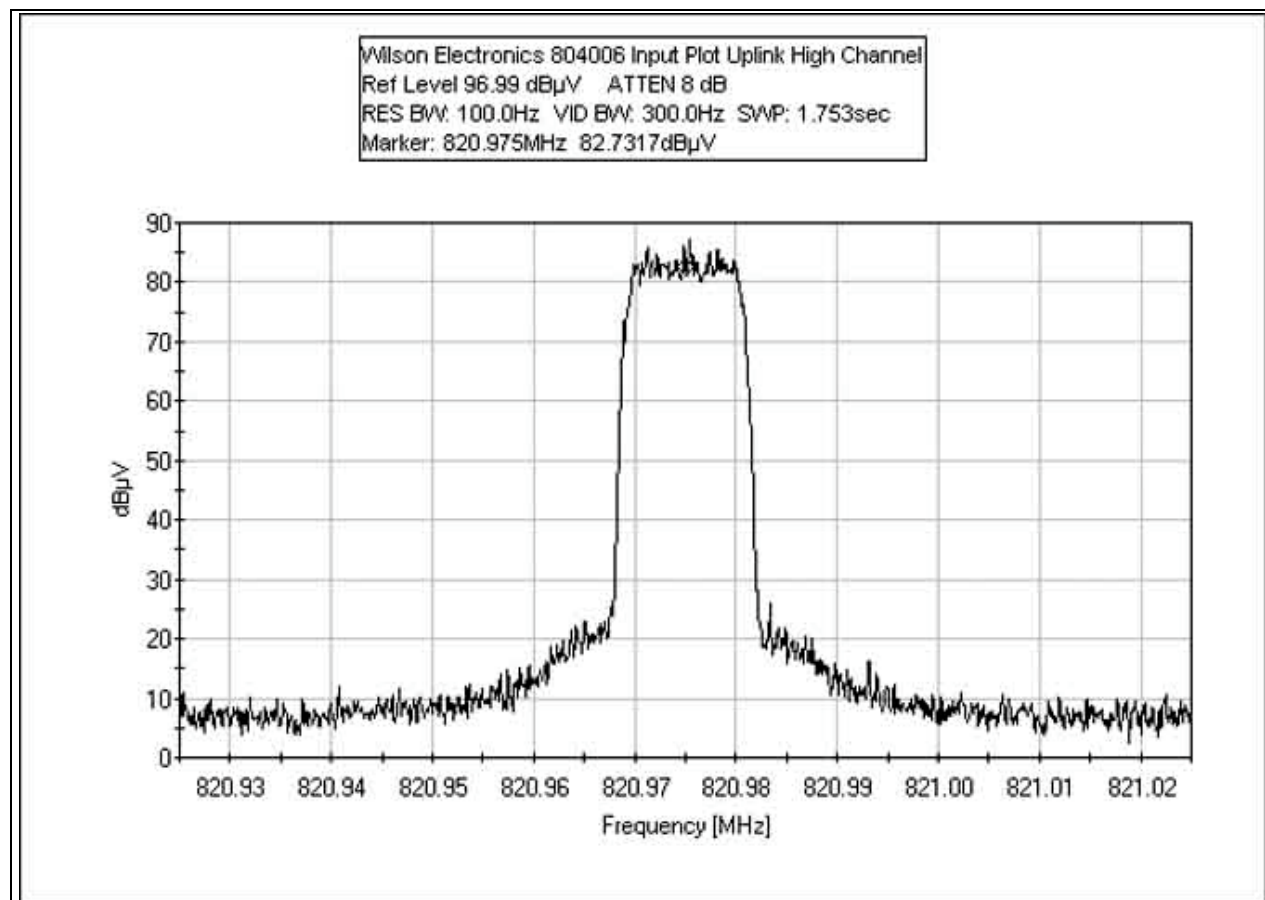
INPUT PLOT - UPLINK LOW CHANNEL



INPUT PLOT - UPLINK MID CHANNEL



INPUT PLOT - UPLINK HIGH CHANNEL



Test Equipment:

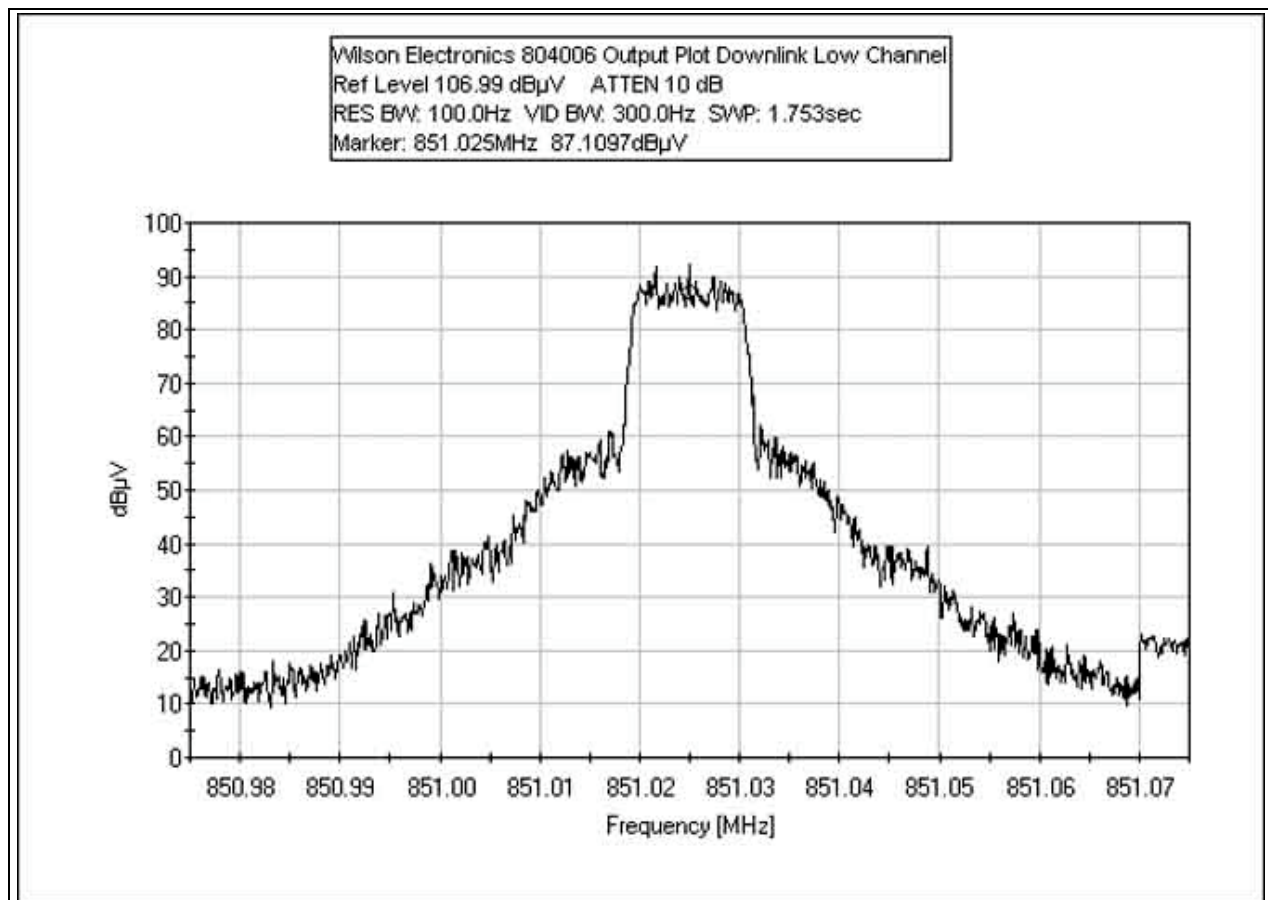
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

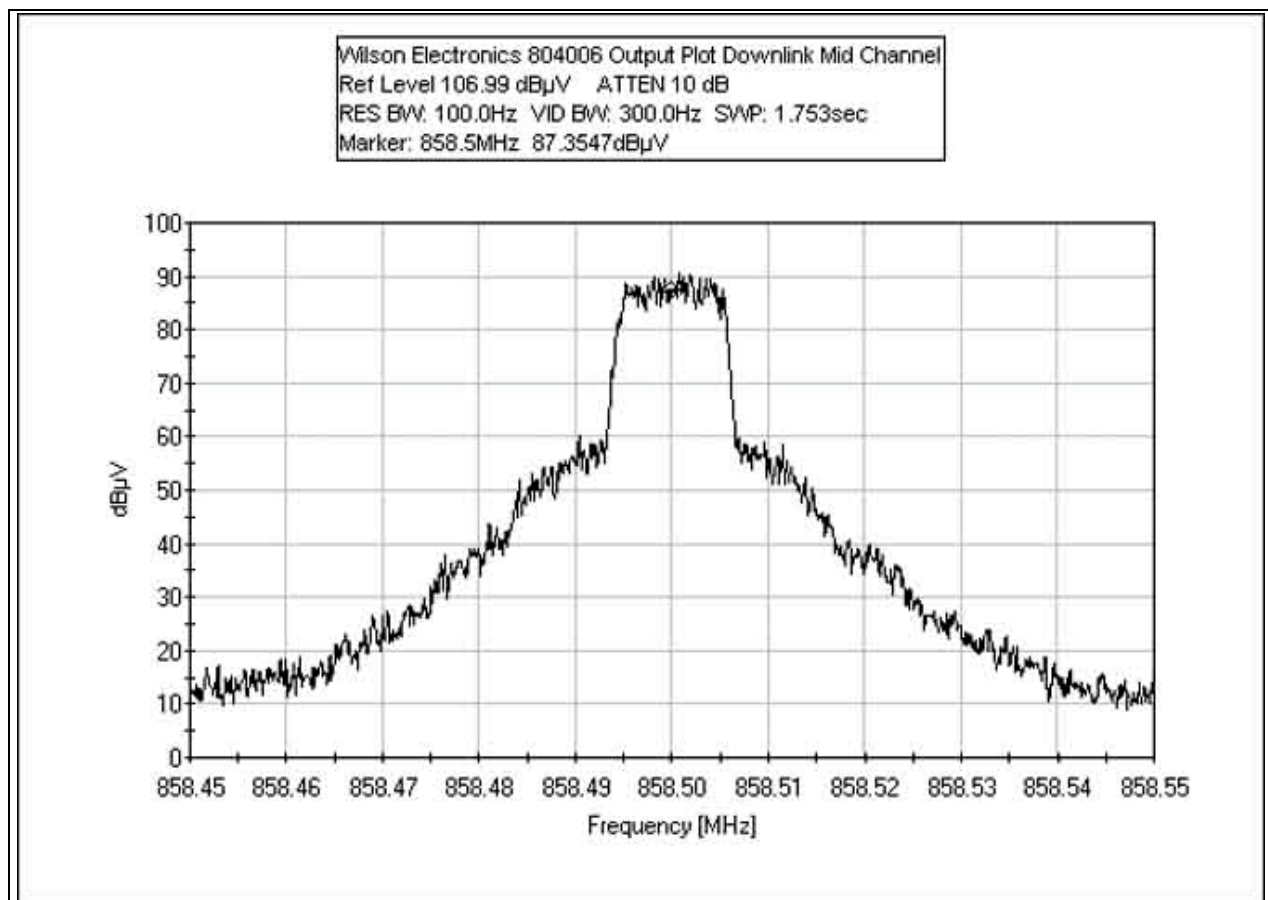


OUTPUT PLOT - DOWNLINK LOW CHANNEL

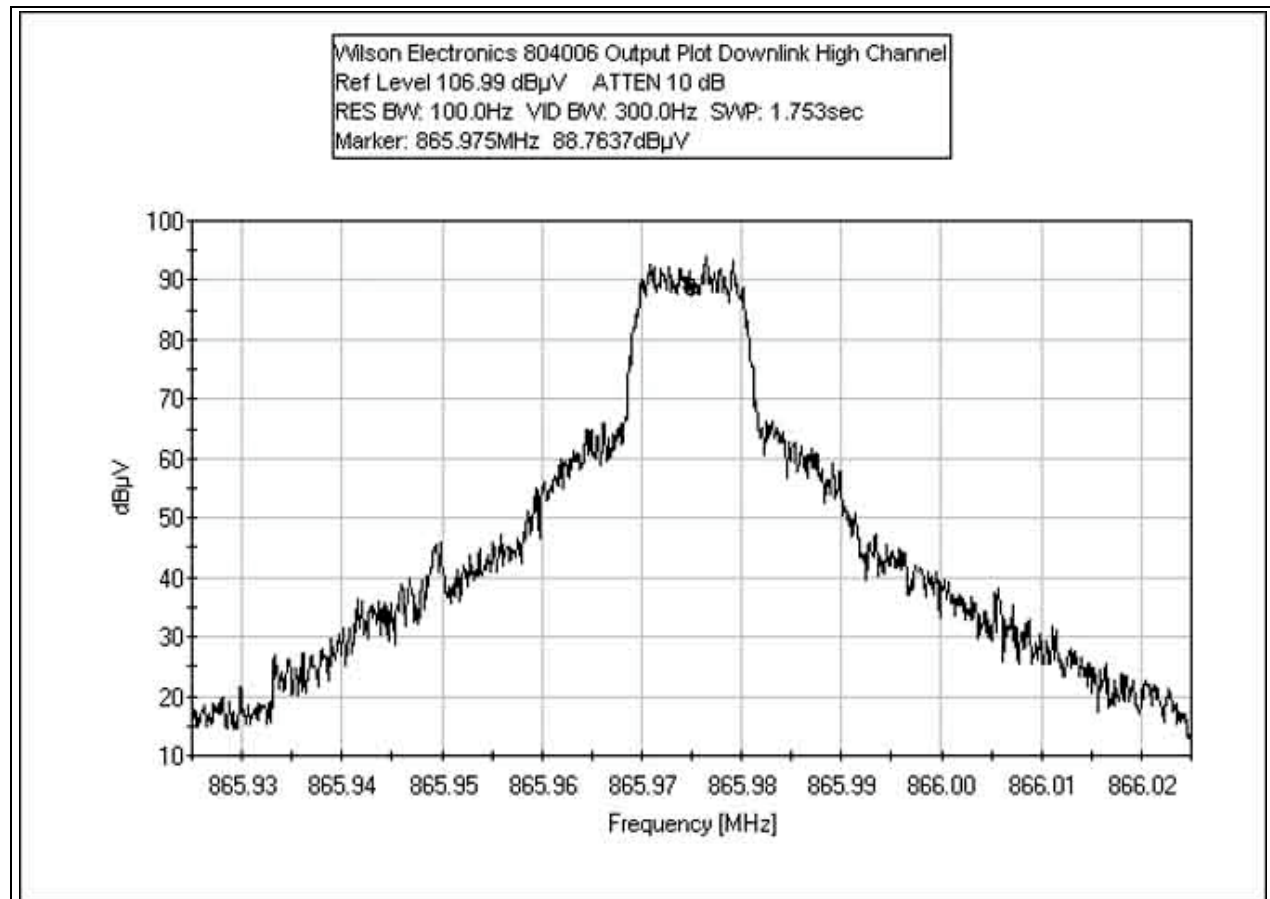
Test Conditions: EUT is an in-Building Wireless Bi-Directional amplifier for uplink and downlink iDEN signals from a cell phone within the operating band of 851-866 MHz for downlink and 806-821 MHz for uplink. EUT is powered via external DC power supply at 5VDC. Signal input to the EUT is supplied via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



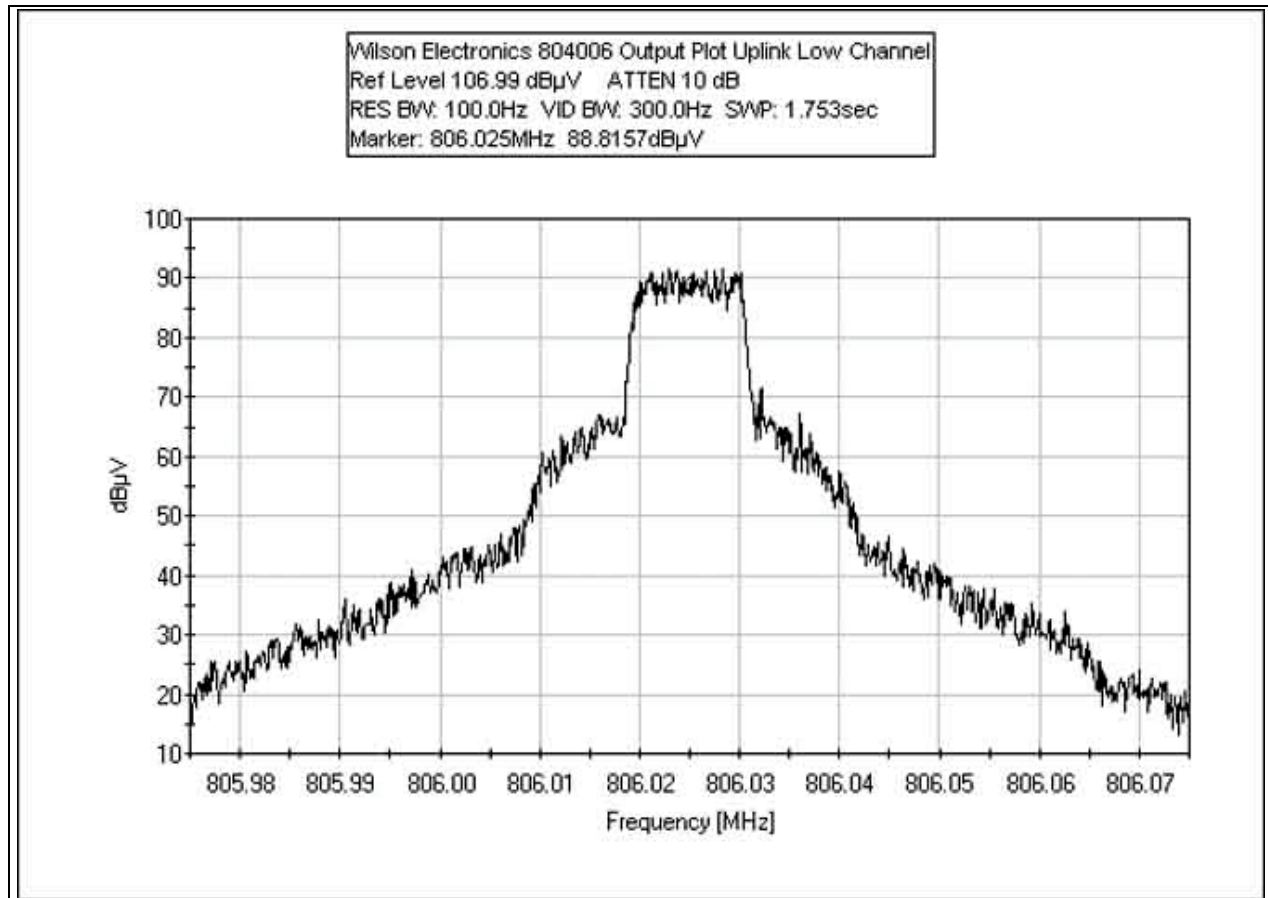
OUTPUT PLOT - DOWNLINK MID CHANNEL



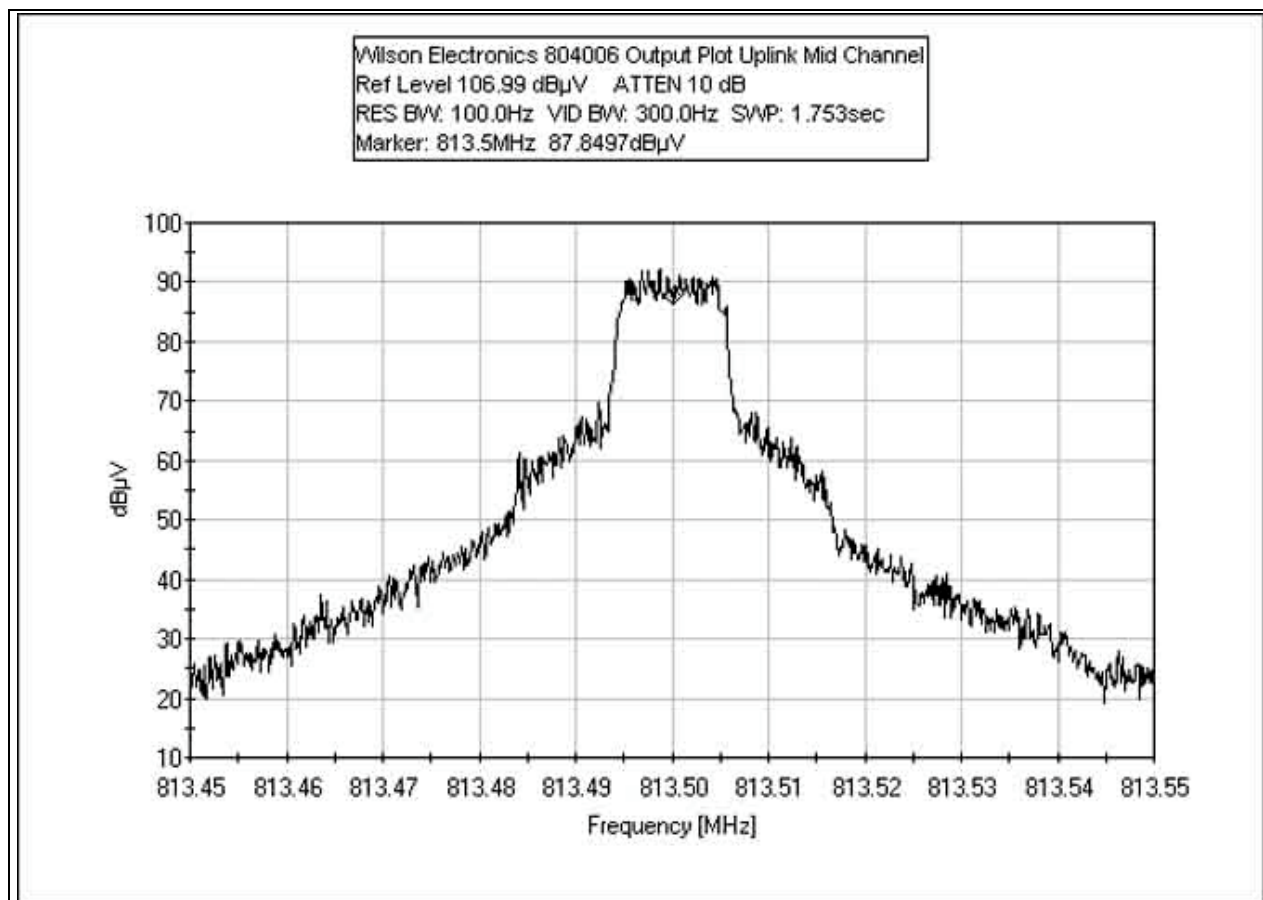
OUTPUT PLOT - DOWNLINK HIGH CHANNEL



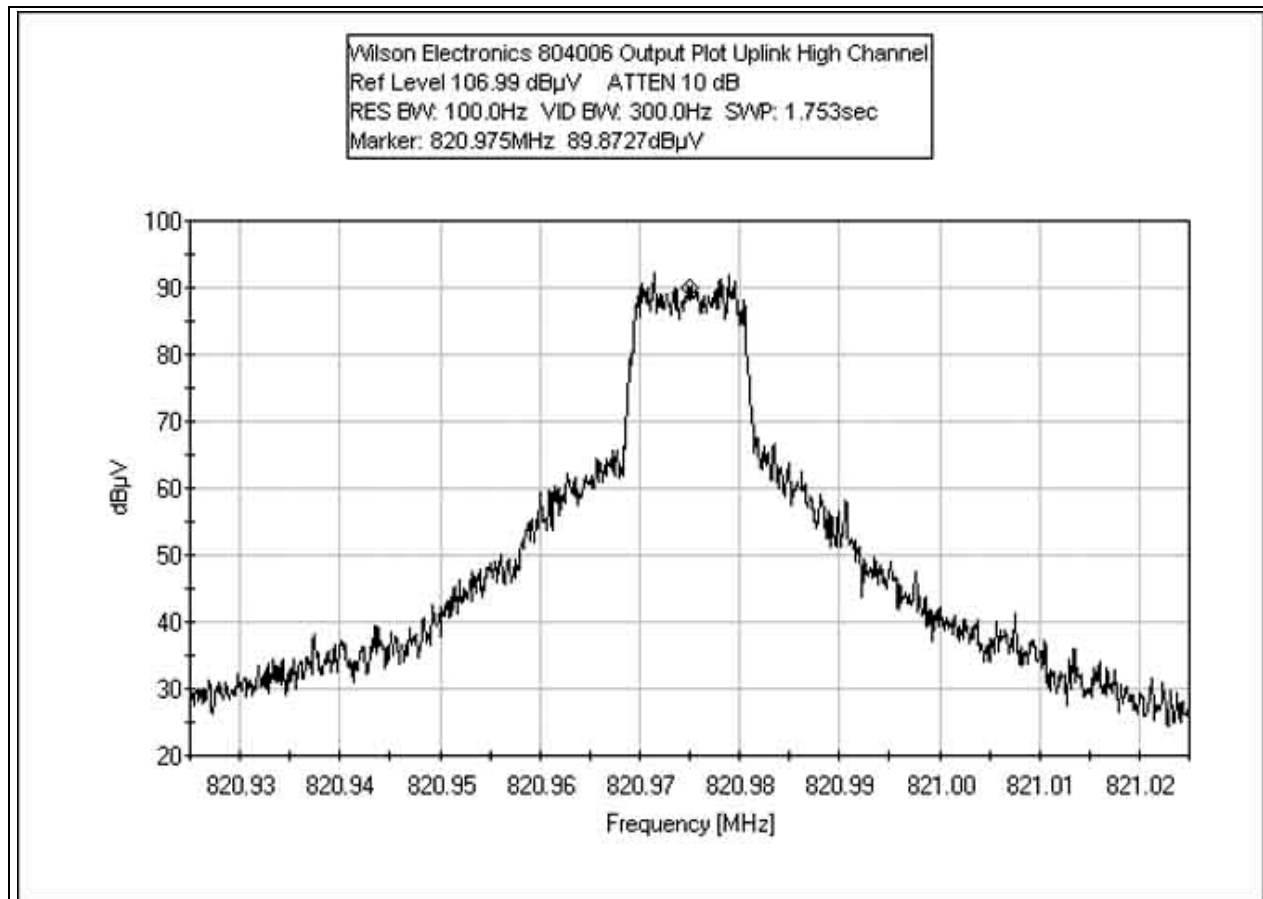
OUTPUT PLOT - UPLINK LOW CHANNEL



OUTPUT PLOT - UPLINK MID CHANNEL



OUTPUT PLOT - UPLINK HIGH CHANNEL



Test Equipment:

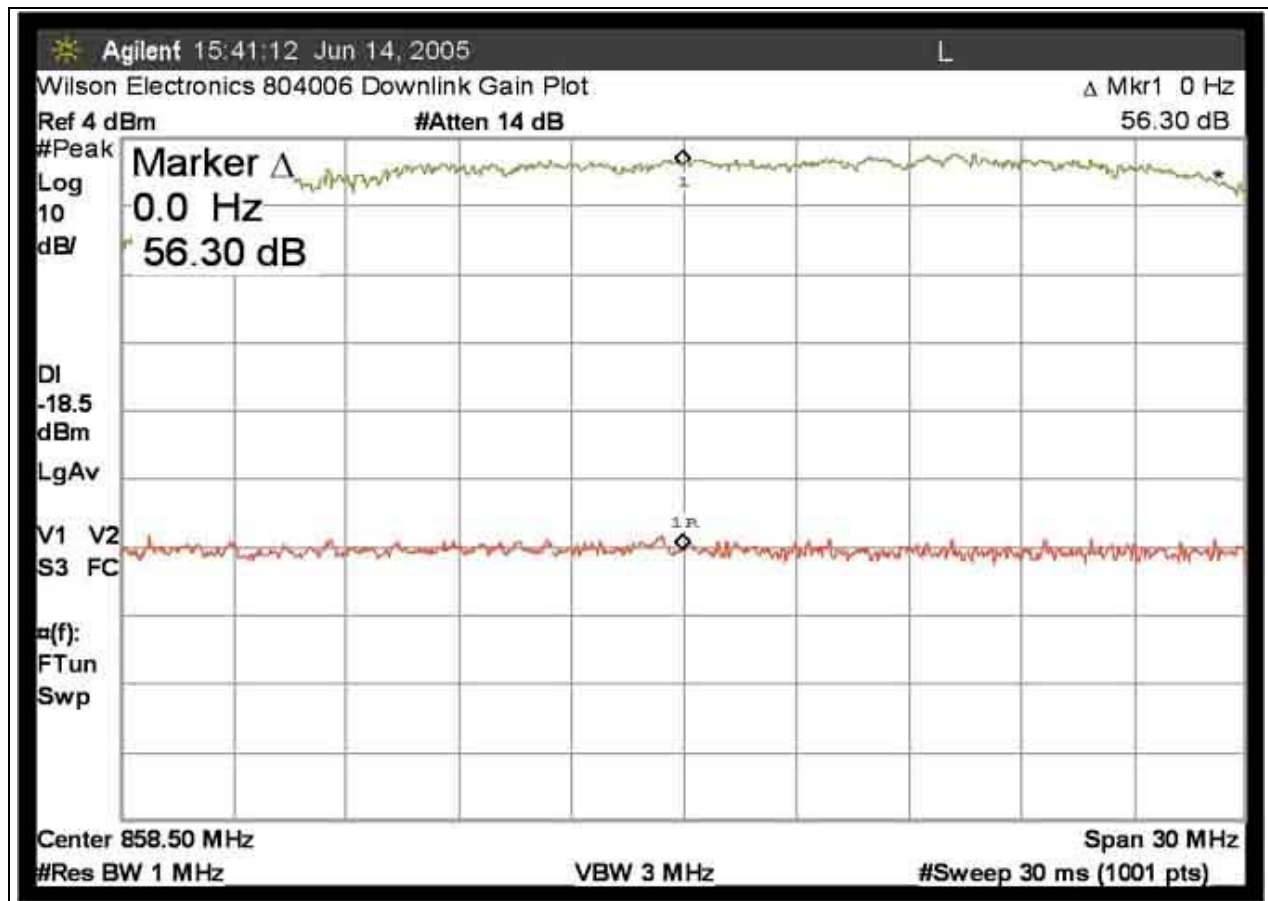
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP



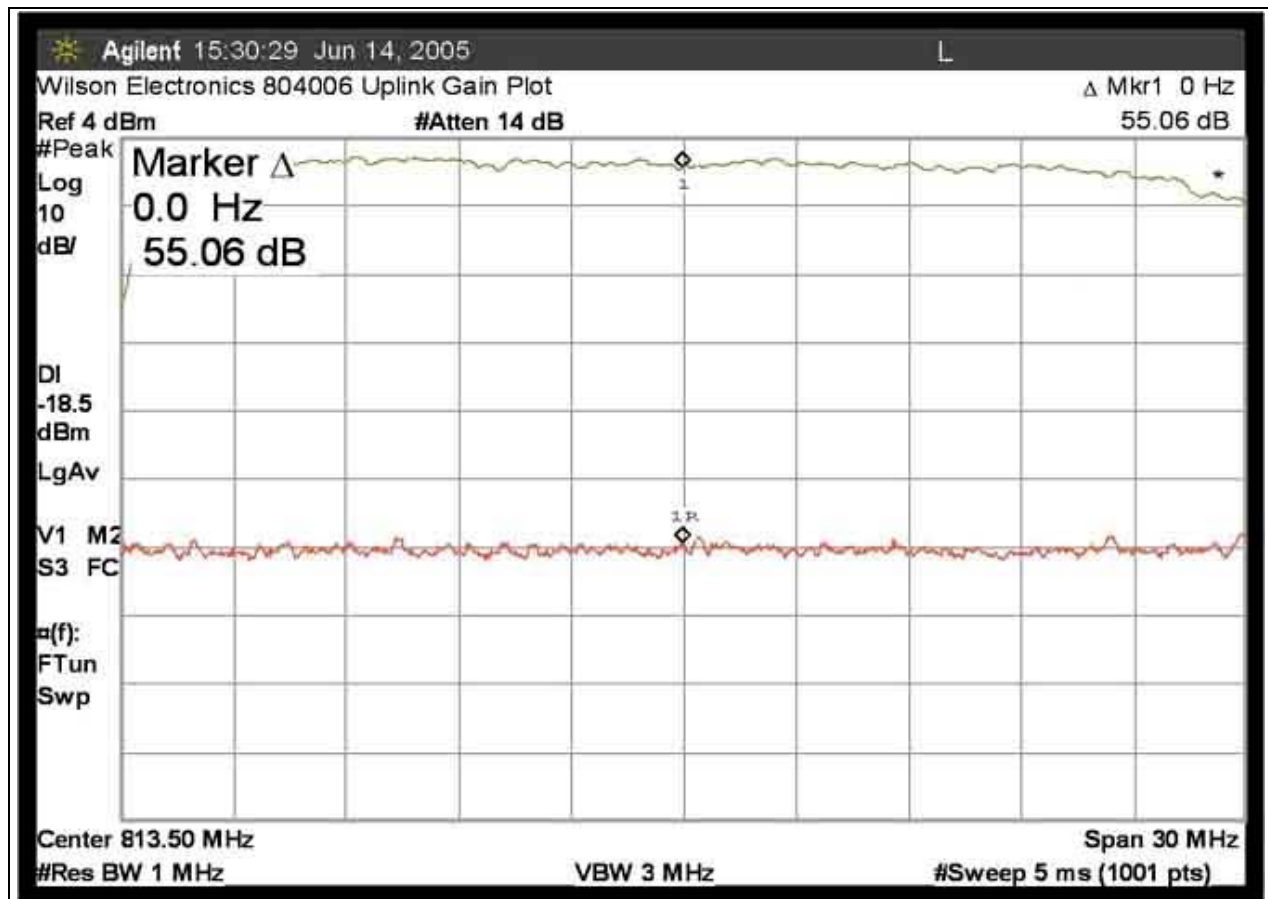
RSS-131 PASSBAND GAIN - DOWNLINK

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:

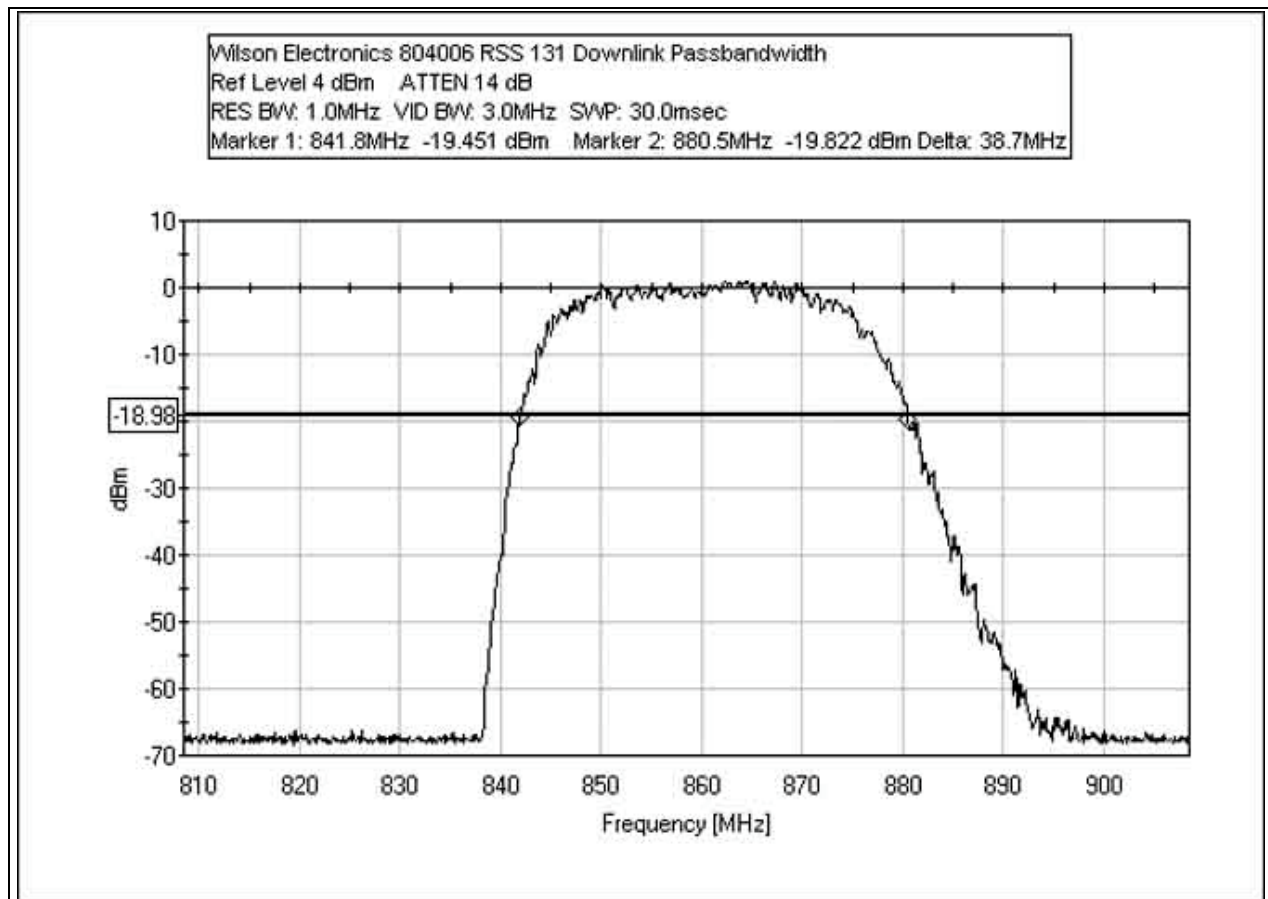
Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Attenuator 30dB, Bird 25A-MFN-30	9724	05/18/2005	05/18/2007	P01577

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP



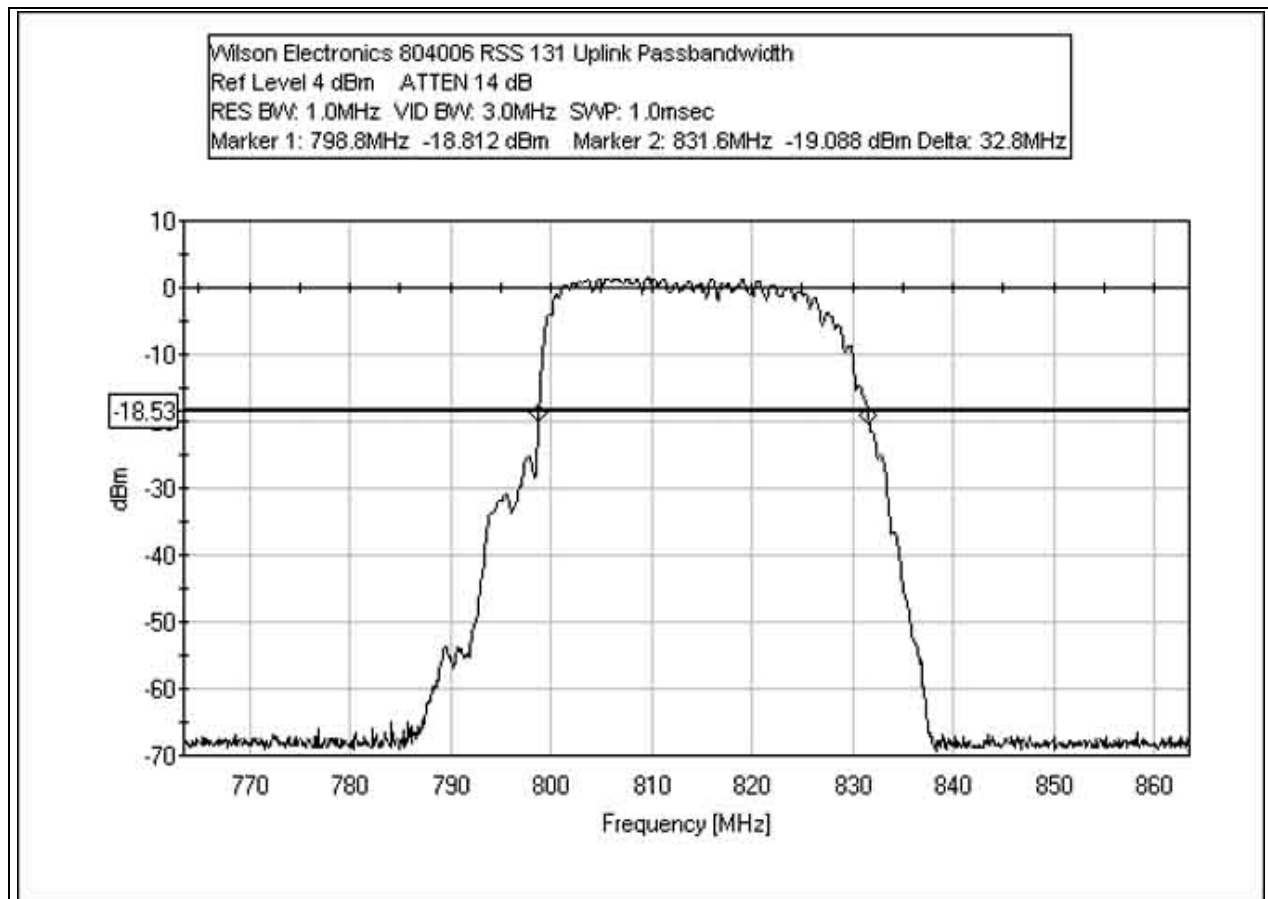
RSS-131 PASSBANDWIDTH - DOWNLINK

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	9724	05/18/2005	05/18/2007	P01577
25A-MFN-30				

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

