



**ADDENDUM A TO WILSON ELECTRONICS TEST REPORT FC06-049**

**FOR THE**

**BIDIRECTIONAL CELLULAR AMPLIFIER REPEATER, 801101**

**FCC PART 22H AND RSS-131**

**COMPLIANCE**

**DATE OF ISSUE: NOVEMBER 13, 2006**

**PREPARED FOR:**

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

P.O. No.: SBW801101-1  
W.O. No.: 81892

**PREPARED BY:**

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

Date of test: August 29 - September 15, 2006

**Report No.: FC06-049A**

This report contains a total of 135 pages and may be reproduced in full only. Partial reproduction may only be done with the written consent of CKC Laboratories, Inc. The results in this report apply only to the items tested, as identified herein.

## TABLE OF CONTENTS

Administrative Information .....	4
FCC to Canada Standard Correlation Matrix.....	5
Conditions for Compliance .....	5
Approvals.....	5
Equipment Under Test (EUT) Description .....	6
Equipment Under Test .....	6
Peripheral Devices .....	6
Temperature and Humidity During Testing.....	7
FCC 2.1033(c)(3) User's Manual .....	7
FCC 2.1033(c)(4) Type of Emissions.....	7
FCC 2.1033(c)(5) Frequency Range.....	7
FCC 2.1033(c)(6) Operating Power.....	7
FCC 2.1033(c)(7) Maximum Power Rating .....	7
FCC 2.1033(c)(8) DC Voltages .....	7
FCC 2.1033(c)(9) Tune-Up Procedure .....	7
FCC 2.1033(c)(10) Schematics and Circuitry Description.....	7
FCC 2.1033(c)(11) Label and Placement .....	7
FCC 2.1033(c)(12) Submittal Photos .....	7
FCC 2.1033(c)(13) Modulation Information .....	7
FCC 2.1033(c)(14)/2.1046/22.913 - RF Power Output .....	8
RSS-131 - RF Power Output.....	11
FCC 2.1033(c)(14)/2.1051/22.917 – Downlink Spurious Emissions at Antenna Terminal....	12
FCC 2.1033(c)(14)/2.1051/22.917 – Uplink Spurious Emissions at Antenna Terminal.	36
FCC 2.1033(c)(14)/2.1053/22.917 – Downlink Field Strength of Spurious Radiation...	60
FCC 2.1033(c)(14)/2.1053/22.917 – Uplink Field Strength of Spurious Radiation.....	61
Downlink Occupied Bandwidth.....	62
Uplink Occupied Bandwidth .....	67
Downlink Band Edge.....	72
Uplink Band Edge.....	81
Downlink Intermodulation Attenuation.....	90
Uplink Intermodulation Attenuation.....	100
Downlink Input And Output .....	110
Uplink Input And Output .....	115
Downlink Out Of Band Rejection.....	120
Uplink Out Of Band Rejection .....	122
Downlink RSS-131 Passband Gain .....	124
Uplink RSS-131 Passband Gain .....	126
Downlink RSS-131 Passband Width .....	128
Uplink RSS-131 Passband Width .....	130
Uplink RSS-131 Passband Width.....	131

Photographs .....132  
    Direct Connect Test Setup .....133  
    Radiated Emissions .....134  
    RSS-131 RF Power and Intermodulation Attenuation .....135

## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** August 29 - September 15, 2006

**DATE OF RECEIPT:** August 29, 2006

**FREQUENCY RANGE TESTED:** 30 MHz - 9 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 22H, RSS-131 and RSS GEN

**PURPOSE OF TEST:** **Original Report** is to demonstrate the compliance of the Bidirectional Cellular Amplifier Repeater, 801101 with the requirements for FCC Part 22H and RSS-131 devices.  
**Addendum A** is to revise pages 14, 16, 62 and 67 with no new testing.

## FCC TO CANADA STANDARD CORRELATION MATRIX

Canadian Standard	Canadian Section	FCC Standard	FCC Section	Test Description
RSS 131	5.4	NA	NA	External Controls
RSS 131	5.5	47 CFR	1.1307	RF Exposure
RSS 131	6.1	NA	NA	Passband Gain and Bandwidth
RSS 131	6.2	NA	NA	RF Power Output
N/A	N/A	47 CFR	22.913	RF Power Output
RSS 131	6.3	TIA/EIA	603	Non-Linearity (Intermodulation Attenuation)
RSS 131	6.4	47 CFR	22.917	Spurious Emissions Limitations
RSS 131	6.5	NA	NA	Frequency Stability (Band Translators)
	3082A-1		784962	Site File 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




---

Mike Wilkinson  
EMC Engineer/Lab Manager

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

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

## **EQUIPMENT UNDER TEST**

### **Bidirectional Cellular Amplifier Repeater**

Manuf: Wilson Electronics  
Model: 801101  
Serial: 8011018033282  
FCC ID: PWO824WV  
IC ID: 4726A-824WV

## **PERIPHERAL DEVICES**

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

### **DC Power Supply**

Manuf: Topward Electric Instruments Co., Ltd.  
Model: TPS-2000  
Serial: 920035

### **Digital Signal Generator**

Manuf: Agilent  
Model: E4432B  
Serial: MY41000108

### **TEMPERATURE AND HUMIDITY DURING TESTING**

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

### **FCC 2.1033(c)(3) USER'S MANUAL**

The necessary information is contained in a separate document.

### **FCC 2.1033 (c)(4) TYPE OF EMISSIONS**

F1D, G7W, GXW, F9W

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

824-849 MHz Uplink, 869-894 MHz Downlink.

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

2.14 Watts Uplink, 1.86 milliWatts Downlink.

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

The effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

### **FCC 2.1033 (c)(8) DC VOLTAGES**

The necessary information is contained in a separate document.

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

The necessary information is contained in a separate document.

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

The necessary information is contained in a separate document.

### **FCC 2.1033(c)(11) LABEL AND PLACEMENT**

The necessary information is contained in a separate document.

### **FCC 2.1033(c)(12) SUBMITTAL PHOTOS**

The necessary information is contained in a separate document.

### **FCC 2.1033 (c)(13) MODULATION INFORMATION**

CDMA, AMPS and TDMA ( EDGE & GSM)

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

Customer: **Wilson Electronics**  
Specification: **FCC 2.1046**  
Work Order #: **81892**  
Test Type: **Antenna Conducted**  
Equipment: **Bidirectional Cellular Amplifier  
Repeater**

Manufacturer: Wilson Electronics  
Model: 801101  
S/N: 8011018033282

Tested By: Randal Clark  
12VDC

### ***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

### ***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

### ***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation.

CDMA – RBW=8MHz, VBW=8MHz  
GSM and EDGE – RBW=1MHz, VBW=3MHz  
AMPS – RBW=300kHz, VBW=910kHz

Frequency Range Investigated: Carrier  
Temperature: 81°F  
Relative Humidity: 36%



**Test Conditions:** Only one signal is input to the amplifier. The input from the signal generator is set such that the maximum output is provided at the antenna terminals. The internal ALC of the amplifier limits the maximum power output to a factory set level. Power output is continuously variable and directly proportional to the supplied RF input. Minimum RF output power of 0.00 Watts is achieved with a 0.00 Watt RF input signal.

Uplink Output Ratings:  
 CDMA, AMPS and TDMA ( EDGE & GSM) formats: 3Watts

Downlink Output Ratings:  
 All: <10mW

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

**Downlink - Conducted Power**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (milliWatts)</i>
870.25	CDMA	0.68
881.5	CDMA	1.86
892.75	CDMA	1.38
869.28	GSM	0.19
881.5	GSM	0.30
893.72	GSM	0.25
869.28	EDGE	0.21
881.5	EDGE	0.48
893.72	EDGE	0.32
869.03	AMPS	0.18
881.5	AMPS	0.32
893.97	AMPS	0.24

### **Uplink – Conducted Power**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
825.25	CDMA	1.95
836.5	CDMA	2.14
847.75	CDMA	1.70
824.28	GSM	1.38
836.5	GSM	1.58
848.72	GSM	1.23
824.28	EDGE	1.32
836.5	EDGE	1.41
848.72	EDGE	1.15
824.03	AMPS	1.32
836.5	AMPS	1.45
848.97	AMPS	1.15

### **Uplink – ERP Power**

<i>Frequency (MHz)</i>	<i>Modulation</i>	<i>Power Output (Watts)</i>
825.25	CDMA	1.54
836.5	CDMA	1.69
847.75	CDMA	1.34
824.28	GSM	1.09
836.5	GSM	1.25
848.72	GSM	0.97
824.28	EDGE	1.04
836.5	EDGE	1.12
848.72	EDGE	0.91
824.03	AMPS	1.04
836.5	AMPS	1.14
848.97	AMPS	0.91

Note:

EIRP calculated using highest gain mobile antenna sold with equipment. Antenna consists of a 5.12 dBi gain antenna and 4 dB cable loss as declared by the manufacturer.

## **RSS-131 - RF POWER OUTPUT**

EUT is a In Vehicle Wireless Dual Band Amplifier / Repeater  
824 to 894 MHz AMPS band.

Uplink frequency range 824 - 849 MHz.

Downlink frequency range 869 - 894 MHz.

**Test Conditions:** Two signal generators are connected to a signal combiner. The output of the signal combine is connected to the Indoor/Outdoor antenna port of the EUT. The mean power (p mean) is evaluated at the Outdoor/Indoor antenna port of the EUT with a spectrum analyzer via a directional coupler. Coupling Loss: 30.7 for 800 MHz band.

Injection Frequencies (MHz)	Highest Measured Output Power (P dBm)	Mean Output Power (P + 3dB dBm)	Mean Output Power (Watts)
825 & 826	17.3	20.3	0.107
847 & 848	17.2	20.2	0.105
870 & 871	-6.4	-3.4	0.000457
891 & 892	-5.5	-2.5	0.000562

**FCC 2.1033(c)(14)/2.1051/22.917 – DOWNLINK SPURIOUS EMISSIONS AT ANTENNA TERMINAL**

Bandwidth settings used: 100 kHz.

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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 14:14:54  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 17  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Low Channel. Modulation Type: AMPS. Temperature: 81°F, Relative Humidity: 36%.

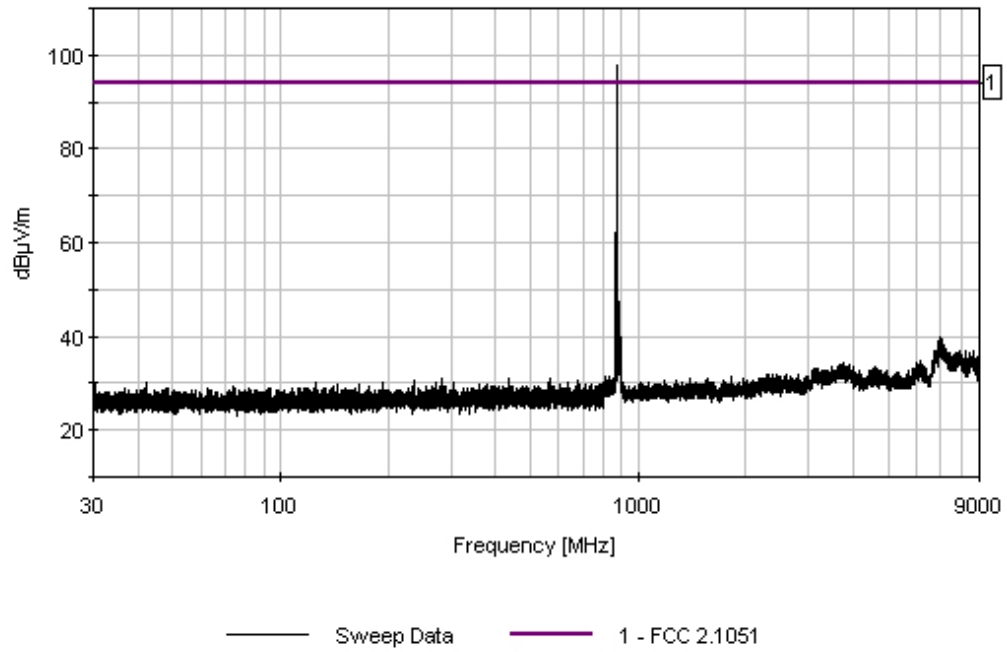
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	869.024M	97.3	+0.6				+0.0	97.9	97.9	+0.0	RF Ou
									Carrier		
2	1738.027M	28.3	+0.9				+0.0	29.2	94.0	-64.8	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 14:14:54 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 17  
Wilson Electronics M/N 801101 Downlink AMPS Low Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 14:19:16  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 18  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Mid Channel. Modulation Type: AMPS. Temperature: 81°F, Relative Humidity: 36%.

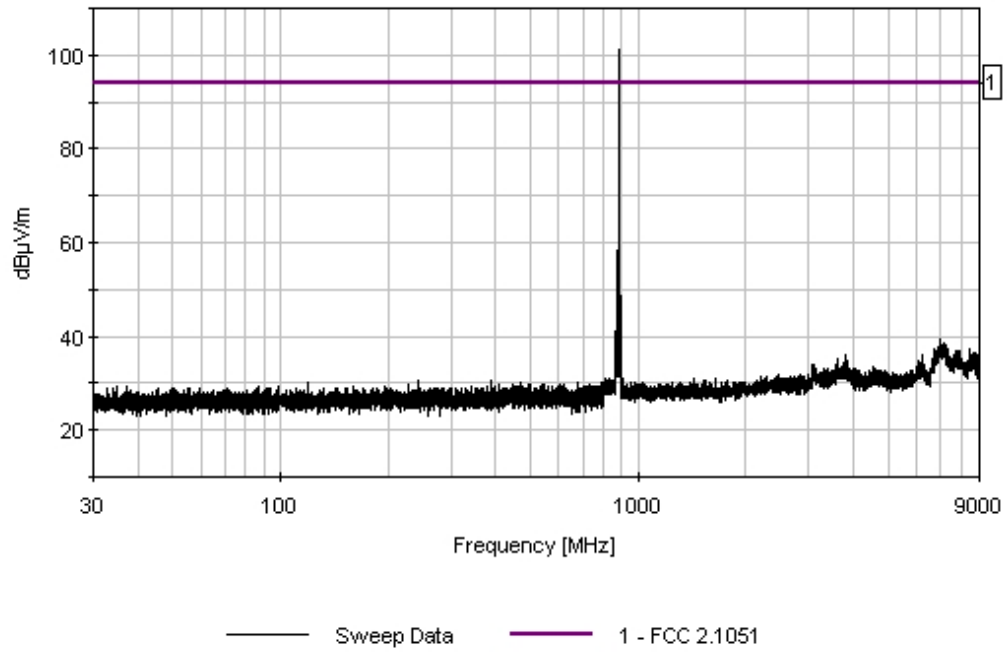
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	Reading listed by margin.			Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	881.503M	100.7	+0.6				+0.0	101.3	101.3	0.0	RF Ou
2	1763.006M	29.1	+0.9				+0.0	30.0	94.0	-64.0	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 14:19:16 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 18  
Wilson Electronics MN 801101 Downlink AMPS Mid Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 14:21:31  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 19  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: High Channel. Modulation Type: AMPS. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

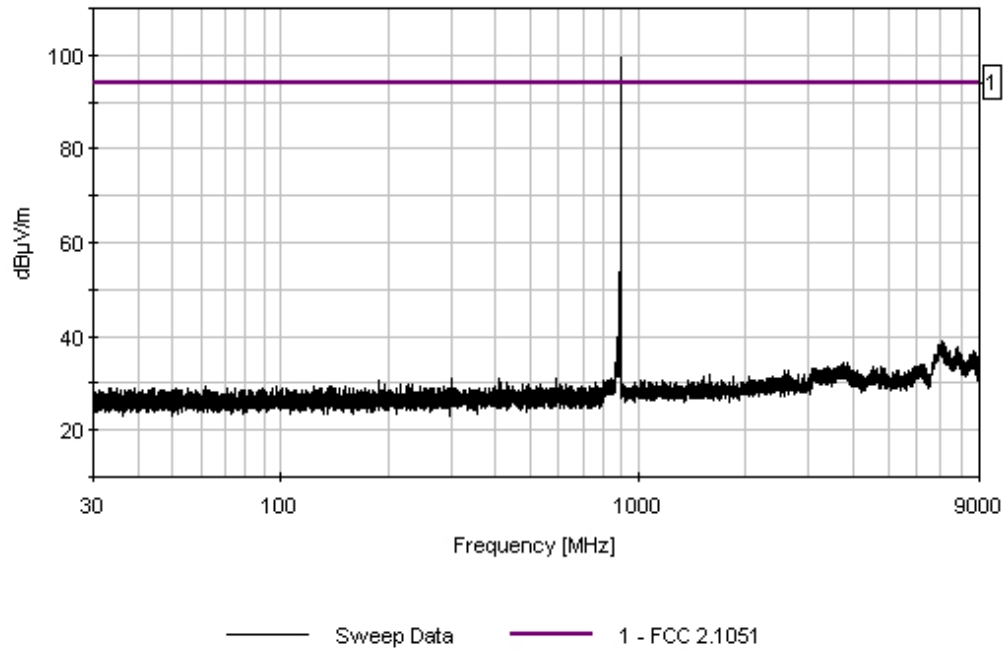
T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	dB	dB	dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	893.961M	98.8	+0.6				+0.0	99.4	99.4	0.0	RF Ou
2	1787.922M	26.2	+0.9				+0.0	27.1	94.0	-66.9	RF Ou



CKC Laboratories Date: 9/13/2006 Time: 14:21:31 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 19  
Wilson Electronics M/N 801101 Downlink: AMPS High Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 16:43:59  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 28  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Low Channel. Modulation Type: CDMA. Temperature: 81°F, Relative Humidity: 36%.

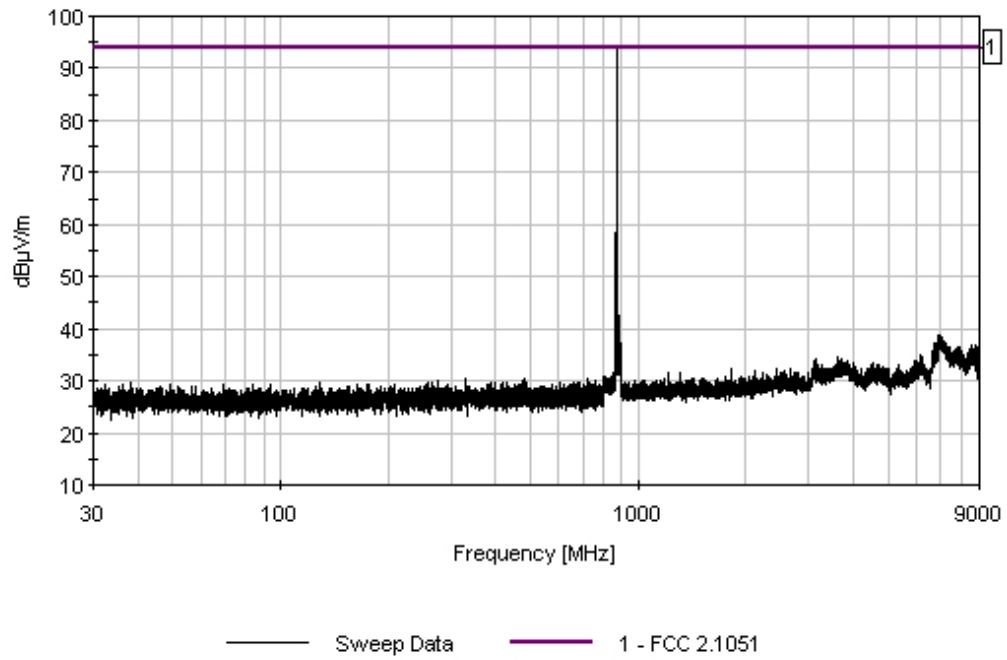
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	870.359M	88.5	+0.6				+0.0	89.1	89.1	+0.0	RF Ou
									Carrier		
2	1740.718M	26.4	+0.9				+0.0	27.3	94.0	-66.7	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 16:43:59 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 28  
Wilson Electronics M/N 801101 Downlink CDMA Low Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 16:41:25  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 27  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Mid Channel. Modulation Type: CDMA. Temperature: 81°F, Relative Humidity: 36%.

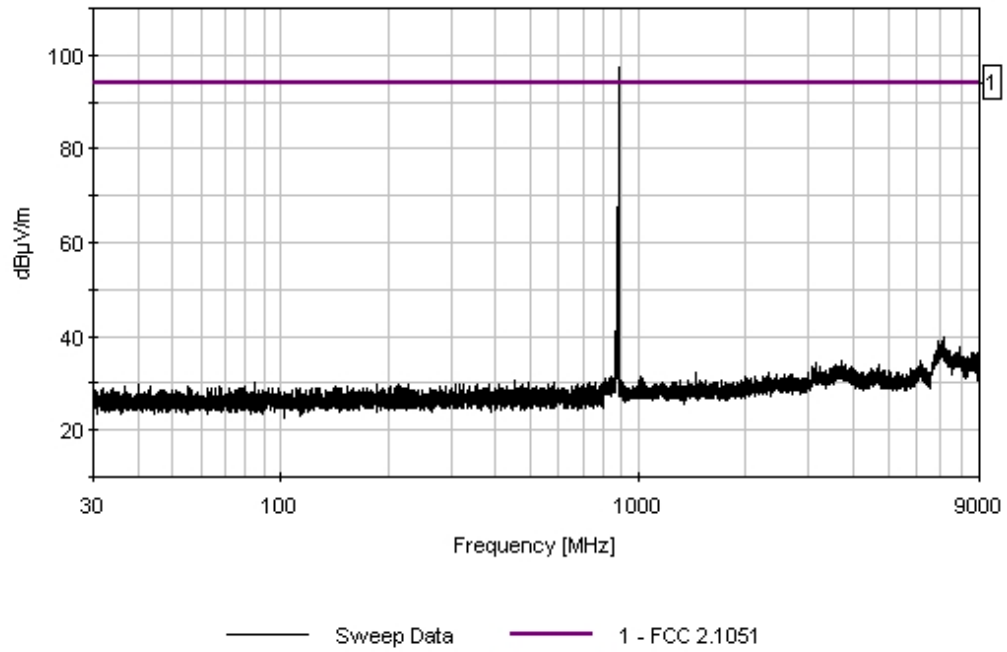
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dBμV	T1 dB	Reading listed by margin.			Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	881.615M	90.6	+0.6				+0.0	91.2	91.2	+0.0	RF Ou
CDMA											
2	1763.230M	27.5	+0.9				+0.0	28.4	94.0	-65.6	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 16:41:25 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 27  
Wilson Electronics M/N 801101 Downlink CDMA Mid Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 16:38:50  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 26  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: High Channel. Modulation Type: CDMA. Temperature: 81°F, Relative Humidity: 36%.

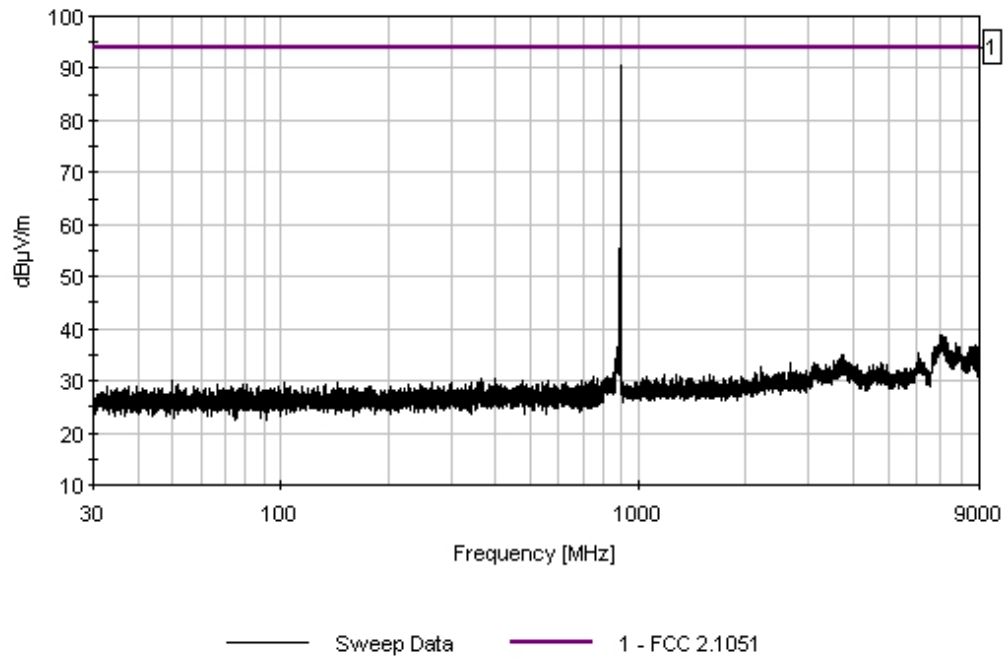
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	dB	dB	dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	892.472M	90.1	+0.6				+0.0	90.7	90.7	+0.0	RF Ou
									Carrier		
2	2676.864M	27.3	+1.1				+0.0	28.4	94.0	-65.6	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 16:38:50 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 26  
Wilson Electronics M/N 801101 Downlink CDMA High Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 16:20:49  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 22  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Low Channel. Modulation Type: EDGE. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

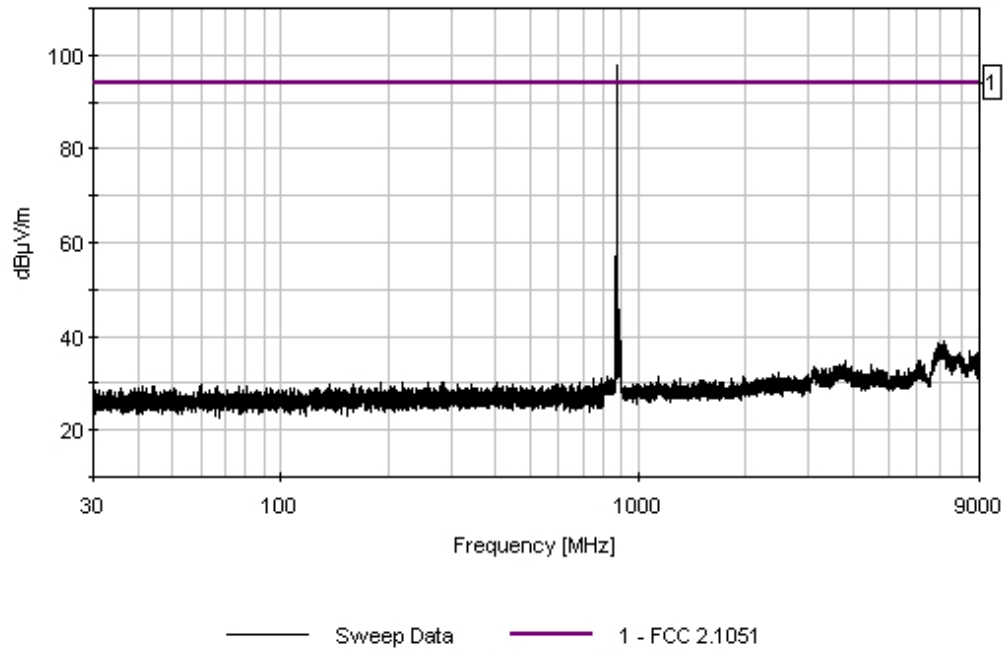
T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dBμV	T1 dB	Reading listed by margin.			Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	869.267M	97.3	+0.6				+0.0	97.9	97.9	+0.0	RF Ou
								Carrier			
2	1738.534M	25.0	+0.9				+0.0	25.9	94.0	-68.1	RF Ou



CKC Laboratories Date: 9/13/2006 Time: 16:20:49 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 22  
Wilson Electronics M/N 801101 Downlink EDGE Low Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 16:15:42  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 21  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Mid Channel. Modulation Type: EDGE. Temperature: 81°F, Relative Humidity: 36%.

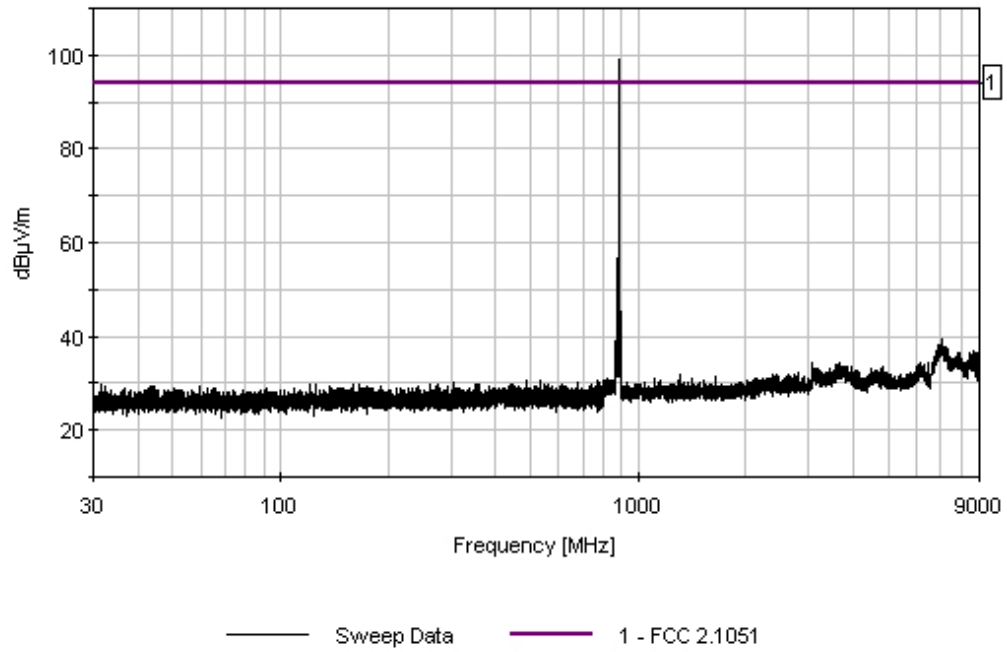
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dBμV	T1 dB	Reading listed by margin.			Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	881.485M	98.7	+0.6				+0.0	99.3	99.3	+0.0	RF Ou
								Carrier			
2	1762.970M	25.9	+0.9				+0.0	26.8	94.0	-67.2	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 16:15:42 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 21  
Wilson Electronics M/N 801101 Downlink EDGE Mid Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 14:28:03  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 20  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: High Channel. Modulation Type: EDGE. Temperature: 81°F, Relative Humidity: 36%.

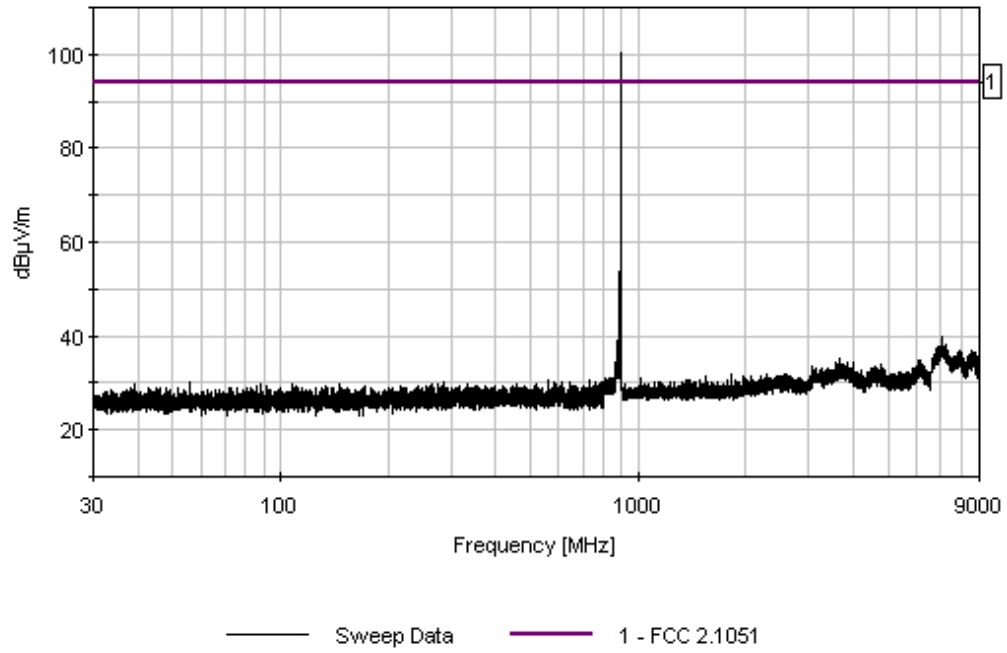
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	dB	dB	dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	893.712M	99.7	+0.6				+0.0	100.3	100.3	+0.0	RF Ou
									Carrier		
2	1787.424M	28.1	+0.9				+0.0	29.0	94.0	-65.0	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 14:28:03 Wilson Electronics W/O#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 20  
Wilson Electronics M/N 801101 Downlink EDGE High Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 16:24:18  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 23  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Low Channel. Modulation Type: GSM. Temperature: 81°F, Relative Humidity: 36%.

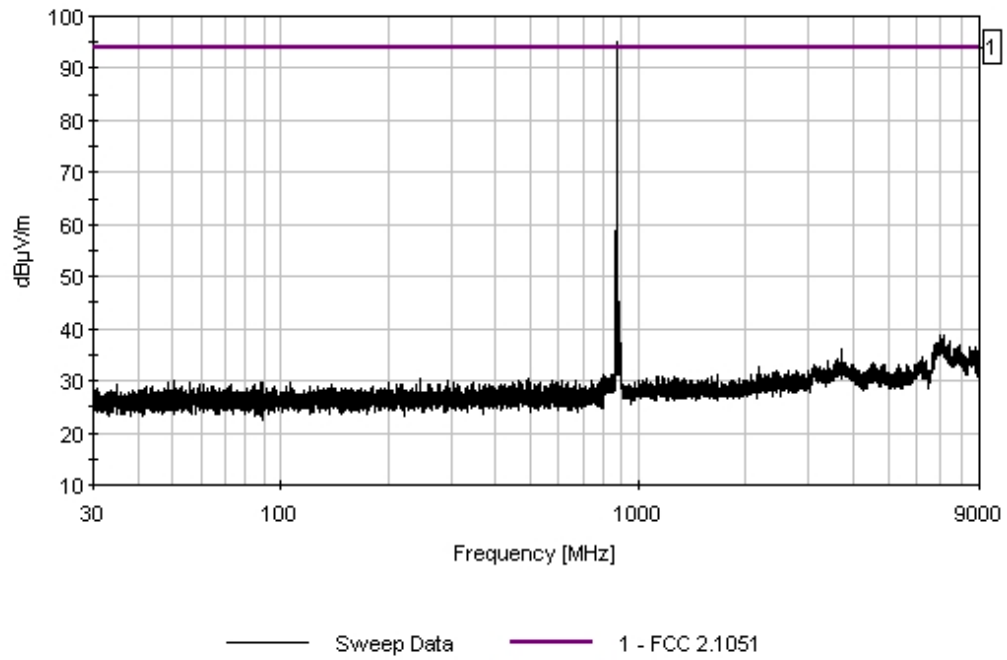
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	dB	dB	dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	869.348M	96.4	+0.6				+0.0	97.0	97.0	+0.0	RF Ou
									Carrier		
2	1738.663M	28.4	+0.9				+0.0	29.3	94.0	-64.7	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 16:24:18 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 23  
Wilson Electronics M/N 801101 Downlink GSM Low Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 16:28:34  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 24  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Mid Channel. Modulation Type: GSM. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

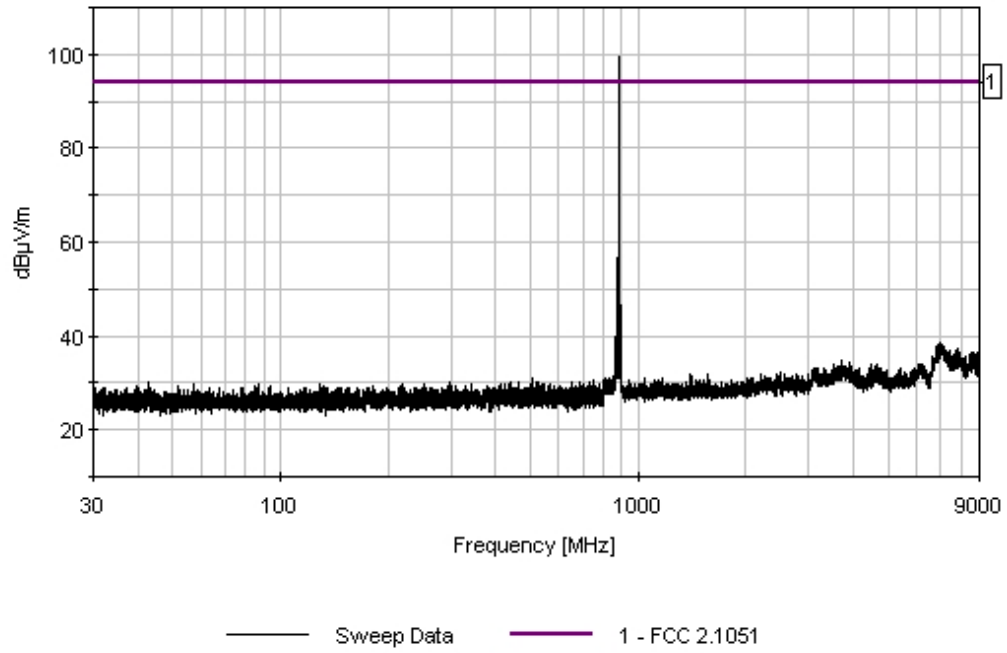
T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	dB	dB	dB	Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	881.570M	98.8	+0.6				+0.0	99.4	99.4	+0.0	RF Ou
									Carrier		
2	1763.140M	26.6	+0.9				+0.0	27.5	94.0	-66.5	RF Ou



CKC Laboratories Date: 9/13/2006 Time: 16:28:34 Wilson Electronics W/O#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 24  
Wilson Electronics M/N 801101 Downlink GSM Mid Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 16:31:42  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 25  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: High Channel. Modulation Type: GSM. Temperature: 81°F, Relative Humidity: 36%.

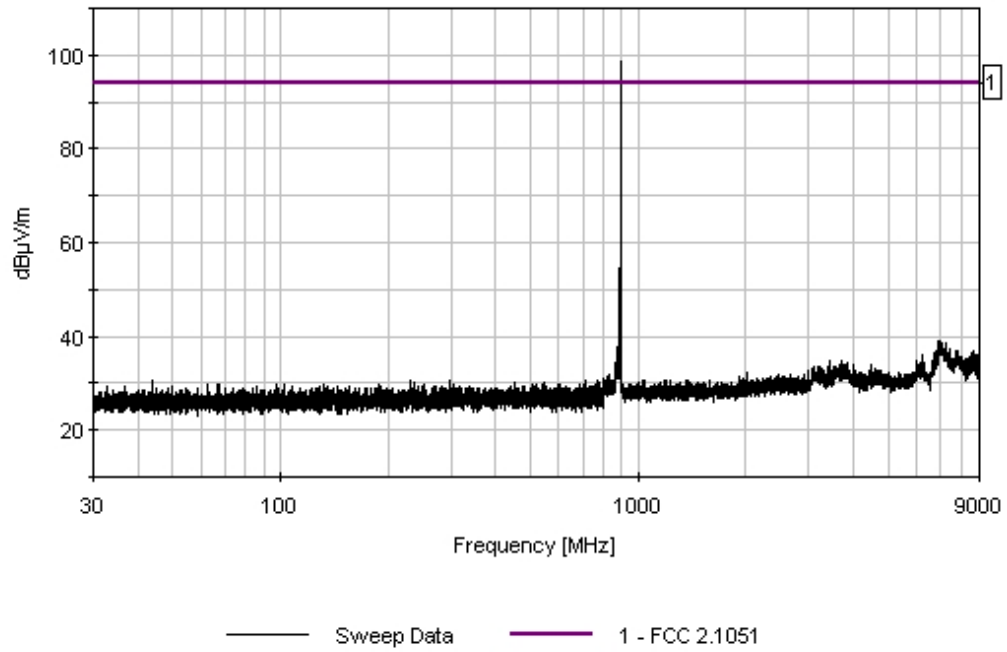
**Transducer Legend:**

T1=Cable 40 GHz 36"

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

#	Freq MHz	Rdng dB $\mu$ V	T1 dB	Reading listed by margin.			Dist Table	Corr dB $\mu$ V/m	Spec dB $\mu$ V/m	Margin dB	Polar Ant
1	893.655M	98.2	+0.6				+0.0	98.8	98.8	+0.0	RF Ou
								Carrier			
2	1787.310M	26.0	+0.9				+0.0	26.9	94.0	-67.1	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 16:31:42 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Downlink 12VDC Sequence#: 25  
Wilson Electronics M/N 801101 Downlink GSM High Channel



**FCC 2.1033(c)(14)/2.1051/22.917 – UPLINK SPURIOUS EMISSIONS AT ANTENNA TERMINAL**

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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 13:55:33  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 16  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Low Channel. Modulation Type: AMPS. Temperature: 81°F, Relative Humidity: 36%.

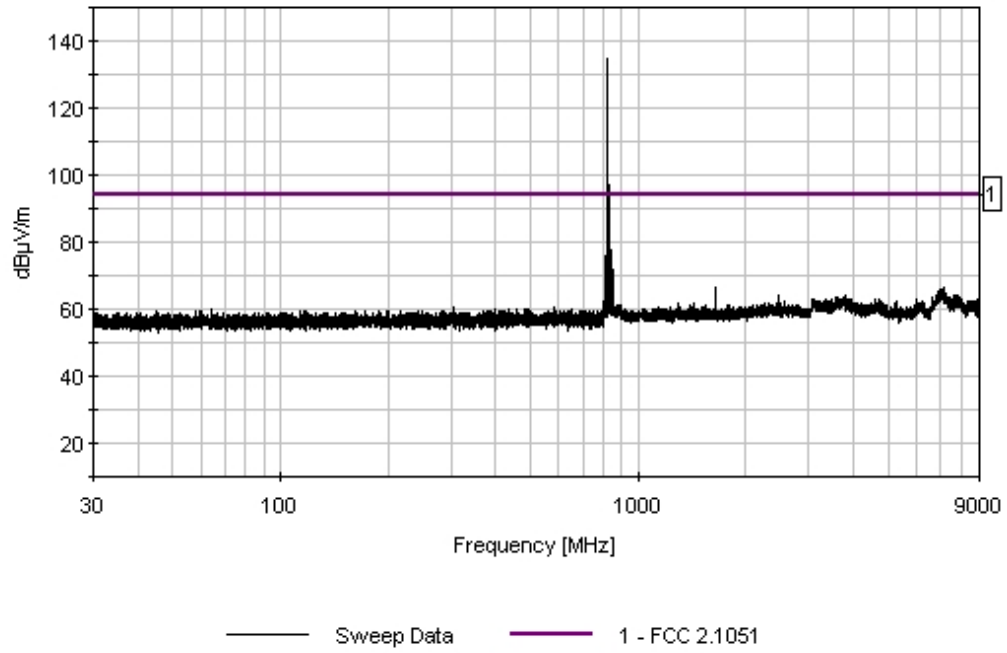
***Transducer Legend:***

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

***Measurement Data:***

#	Freq MHz	Rdng dBµV	Reading listed by margin.				Test Lead: RF Output Uplink					
			T1 dB	T2 dB	dB		Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant	
1	824.021M	104.1	+0.6	+30.1			+0.0	134.8	134.8	+0.0	RF Ou	
2	1648.069M	37.4	+0.8	+30.2			+0.0	68.4	94.0	-25.6	RF Ou	
3	2472.072M	36.7	+1.0	+30.0			+0.0	67.7	94.0	-26.3	RF Ou	
4	3296.093M	30.5	+1.2	+29.7			+0.0	61.4	94.0	-32.6	RF Ou	

CKC Laboratories Date: 9/13/2006 Time: 13:55:33 Wilson Electronics W/O#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 16  
Wilson Electronics M/N 801101 Uplink AMPS Low Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 13:53:07  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 15  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd.	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Mid Channel. Modulation Type: AMPS. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

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

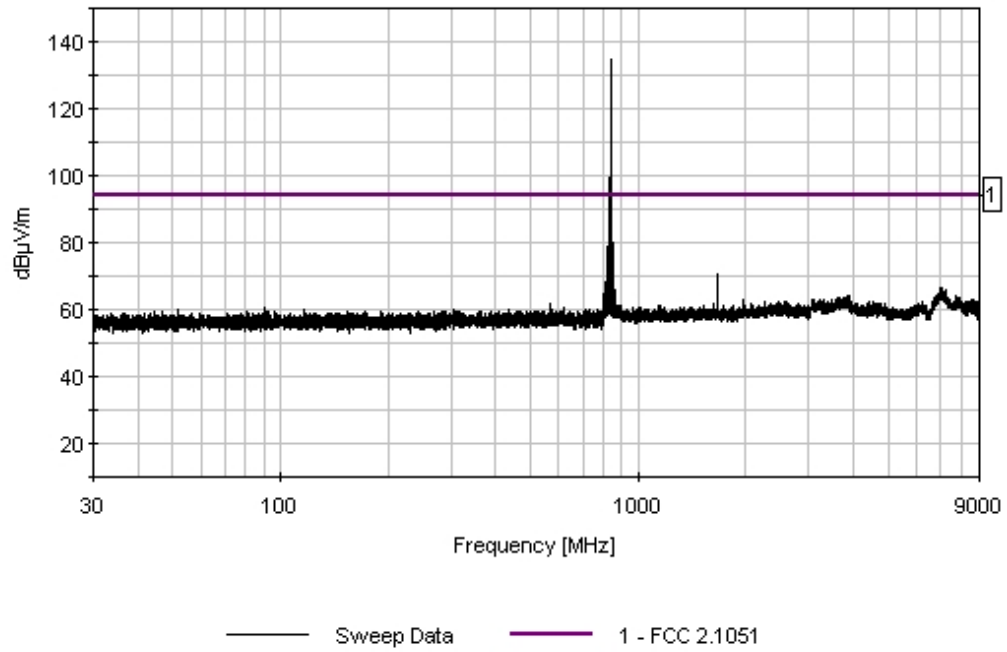
**Measurement Data:**

Reading listed by margin.

Test Lead: RF Output Uplink

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	836.491M	104.2	+0.6	+30.1	+0.0	134.9	134.9	+0.0	RF Ou
								Carrier	
2	1672.988M	41.4	+0.8	+30.1	+0.0	72.3	94.0	-21.7	RF Ou
3	3346.024M	34.4	+1.2	+29.7	+0.0	65.3	94.0	-28.7	RF Ou
4	2509.473M	33.0	+1.0	+30.0	+0.0	64.0	94.0	-30.0	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 13:53:07 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 15  
Wilson Electronics M/N 801101 Uplink AMPS Mid Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 13:50:15  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 14  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd. Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: High Channel. Modulation Type: AMPS. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

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

**Measurement Data:**

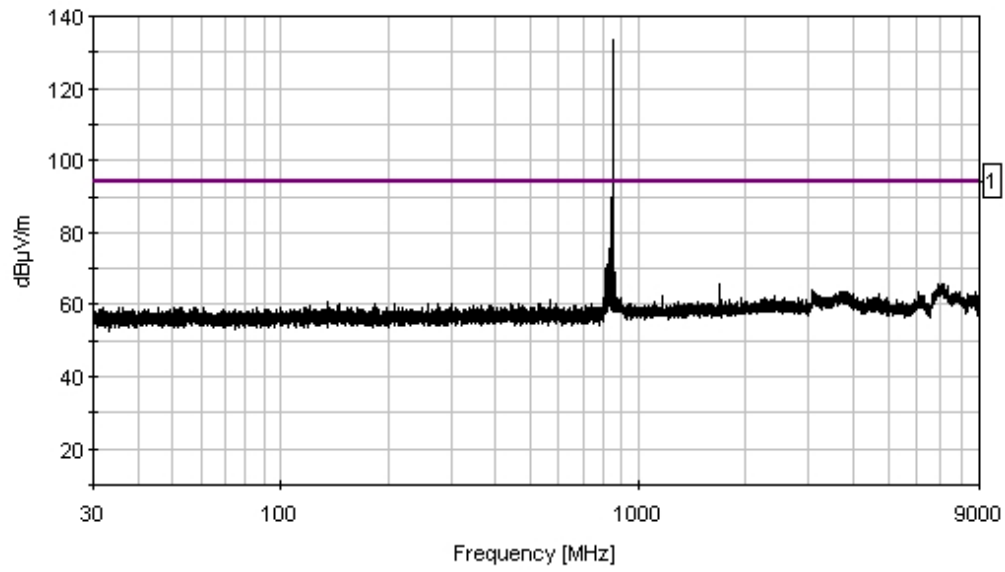
Reading listed by margin.

Test Lead: RF Output Uplink

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist Table dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	848.991M	102.7	+0.6	+30.1	+0.0	133.4	133.4 Carrier	+0.0	RF Ou
2	1697.955M	36.2	+0.8	+30.1	+0.0	67.1	94.0	-26.9	RF Ou
3	2546.946M	32.8	+1.0	+29.9	+0.0	63.7	94.0	-30.3	RF Ou
4	3395.922M	30.3	+1.2	+29.7	+0.0	61.2	94.0	-32.8	RF Ou



CKC Laboratories Date: 9/13/2006 Time: 13:50:15 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 14  
Wilson Electronics M/N 801101 Uplink AMPS High Channel



— Sweep Data      — 1 - FCC 2.1051

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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 12:19:19  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 5  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd.	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Low Channel. Modulation Type: CDMA. Temperature: 81°F, Relative Humidity: 36%.

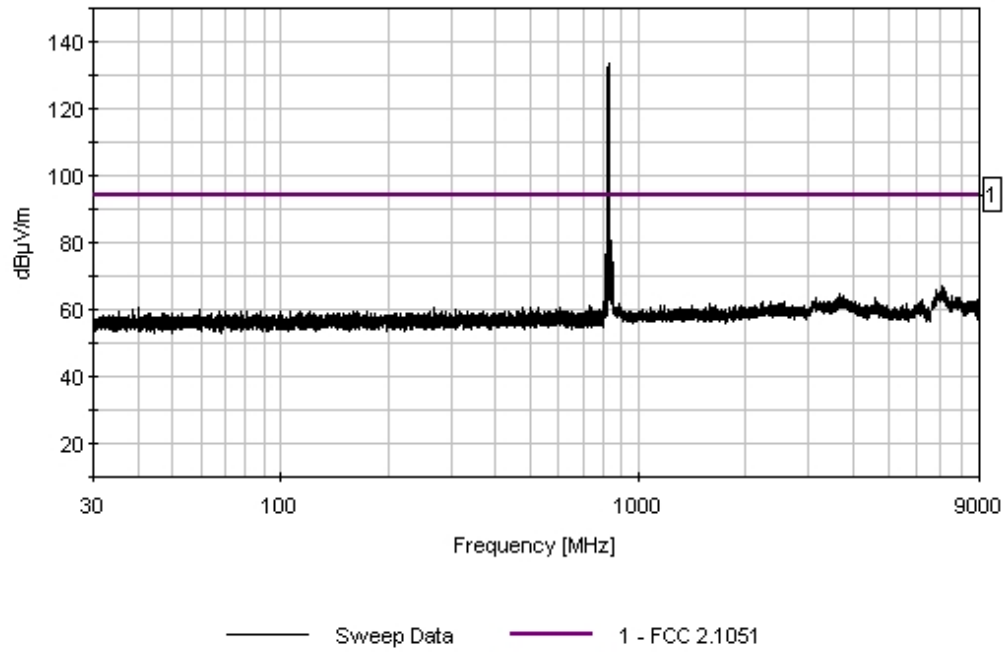
**Transducer Legend:**

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

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

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist Table dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	825.228M	101.8	+0.6	+30.1	+0.0	132.5	132.5	+0.0	RF Ou
								Carrier	
2	2475.747M	30.3	+1.0	+30.0	+0.0	61.3	94.0	-32.7	RF Ou
3	1650.498M	29.3	+0.8	+30.2	+0.0	60.3	94.0	-33.7	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 12:19:19 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 5  
Wilson Electronics M/N 801101 Uplink CDMA Low Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 12:22:16  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 6  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd.	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Mid Channel. Modulation Type: CDMA. Temperature: 81°F, Relative Humidity: 36%.

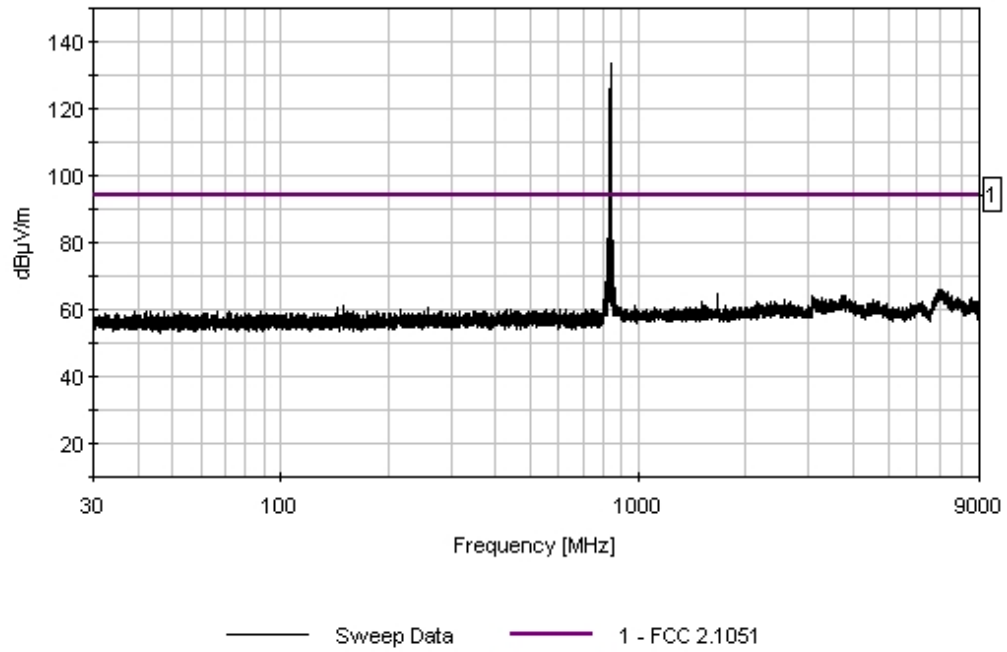
**Transducer Legend:**

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

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	Dist Table dB	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	836.471M	100.1	+0.6	+30.1	+0.0	130.8	130.8	+0.0	RF Ou
								Carrier	
2	1673.002M	37.1	+0.8	+30.1	+0.0	68.0	94.0	-26.0	RF Ou
3	3346.010M	33.6	+1.2	+29.7	+0.0	64.5	94.0	-29.5	RF Ou
4	2509.539M	32.2	+1.0	+30.0	+0.0	63.2	94.0	-30.8	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 12:22:16 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 6  
Wilson Electronics M/N 801101 Uplink CDMA Mid Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 12:26:12  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 7  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd.	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: High Channel. Modulation Type: CDMA. Temperature: 81°F, Relative Humidity: 36%.

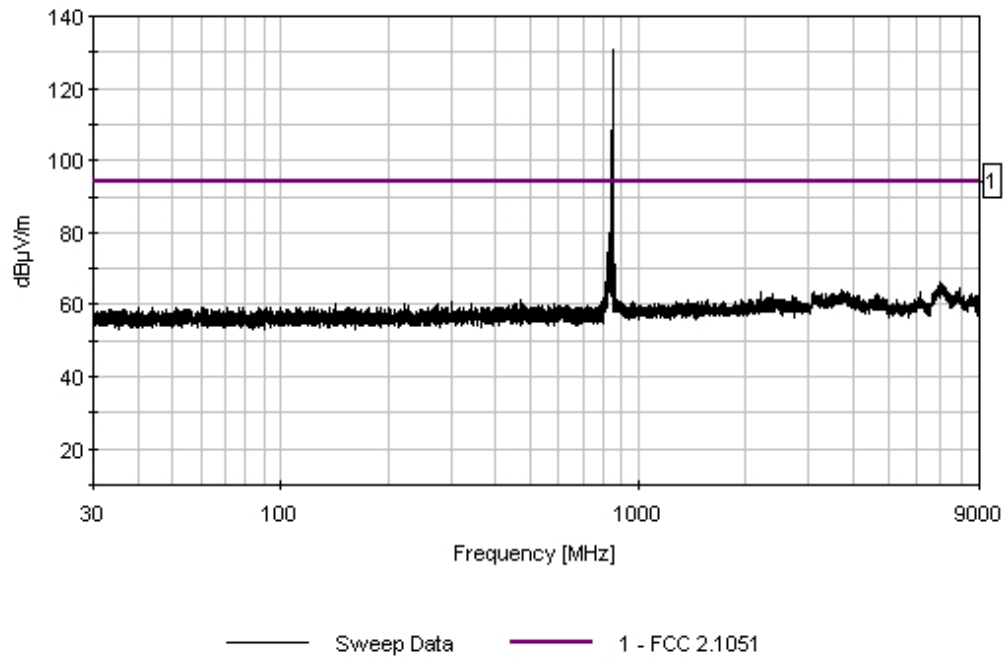
**Transducer Legend:**

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

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

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	847.737M	99.9	+0.6	+30.1	+0.0	130.6	130.6	+0.0	RF Ou
								Carrier	
2	1695.516M	41.0	+0.8	+30.1	+0.0	71.9	94.0	-22.1	RF Ou
3	2543.300M	37.2	+1.0	+29.9	+0.0	68.1	94.0	-25.9	RF Ou
4	3391.037M	30.2	+1.2	+29.7	+0.0	61.1	94.0	-32.9	RF Ou
5	1695.474M	28.8	+0.8	+30.1	+0.0	59.7	94.0	-34.3	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 12:26:12 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 7  
Wilson Electronics M/N 801101 Uplink CDMA High Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 13:16:20  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 11  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd.	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Low Channel. Modulation Type: EDGE. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

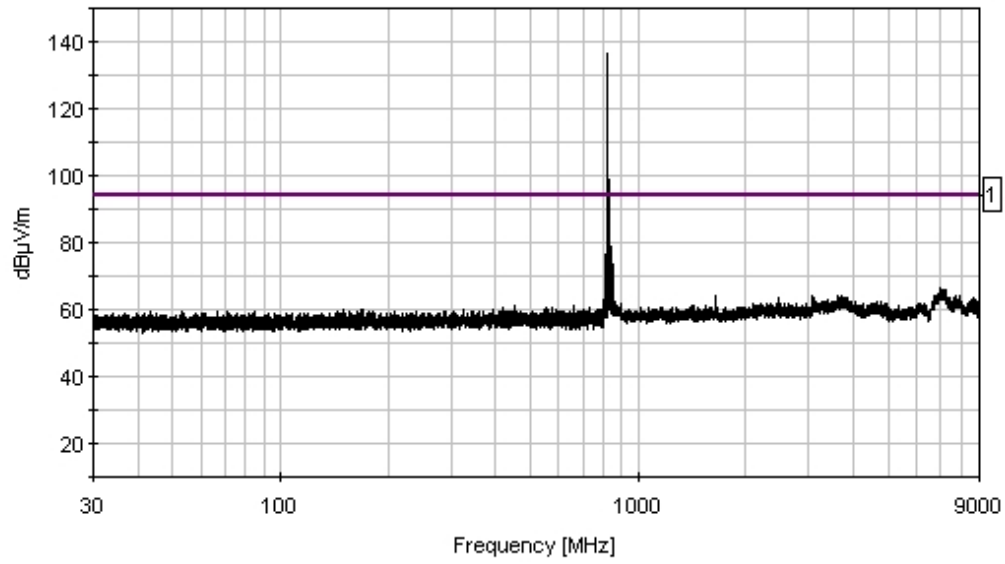
T1=Cable 40 GHz 36"	T2=Pad 30dB
---------------------	-------------

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

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist Table dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	824.303M	105.7	+0.6	+30.1	+0.0	136.4	136.4	+0.0	RF Ou
								Carrier	
2	1648.546M	35.9	+0.8	+30.2	+0.0	66.9	94.0	-27.1	RF Ou
3	2472.822M	35.5	+1.0	+30.0	+0.0	66.5	94.0	-27.5	RF Ou
4	3297.062M	31.9	+1.2	+29.7	+0.0	62.8	94.0	-31.2	RF Ou



CKC Laboratories Date: 9/13/2006 Time: 13:16:20 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 11  
Wilson Electronics M/N 801101 Uplink EDGE Low Channel



— Sweep Data      — 1 - FCC 2.1051

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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 13:19:12  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 12  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd.	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Mid Channel. Modulation Type: EDGE. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

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

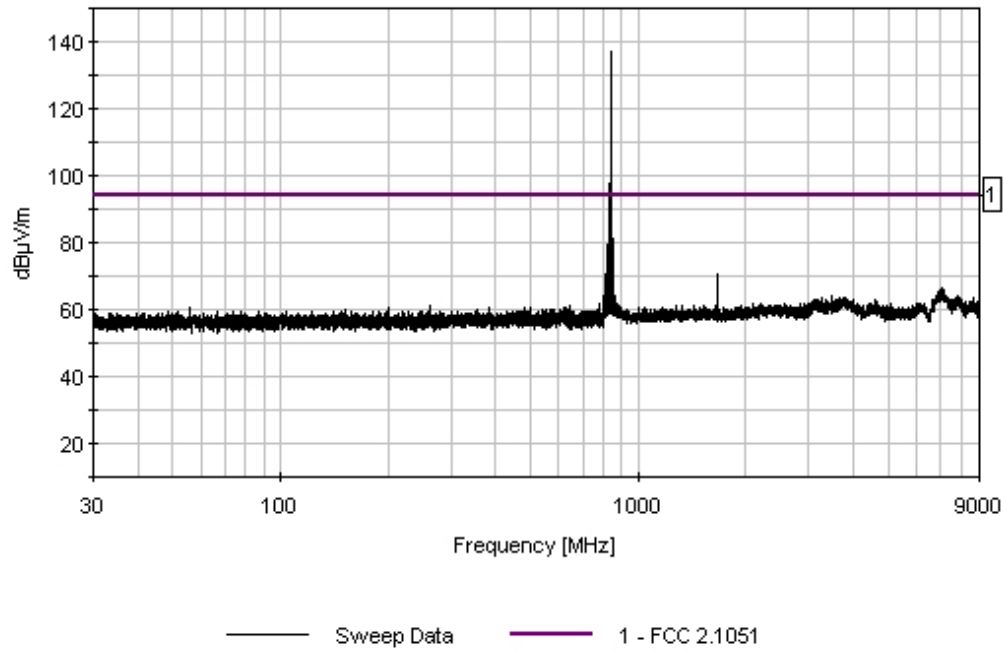
**Measurement Data:**

Reading listed by margin.

Test Lead: RF Output Uplink

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	836.497M	106.1	+0.6	+30.1	+0.0	136.8	136.8	+0.0	RF Ou
								Carrier	
2	1672.979M	41.0	+0.8	+30.1	+0.0	71.9	94.0	-22.1	RF Ou
3	3345.982M	35.6	+1.2	+29.7	+0.0	66.5	94.0	-27.5	RF Ou
4	2509.548M	33.9	+1.0	+30.0	+0.0	64.9	94.0	-29.1	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 13:19:12 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 12  
Wilson Electronics M/N 801101 Uplink EDGE Mid Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 13:21:44  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 13  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd.	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: High Channel. Modulation Type: EDGE. Temperature: 81°F, Relative Humidity: 36%.

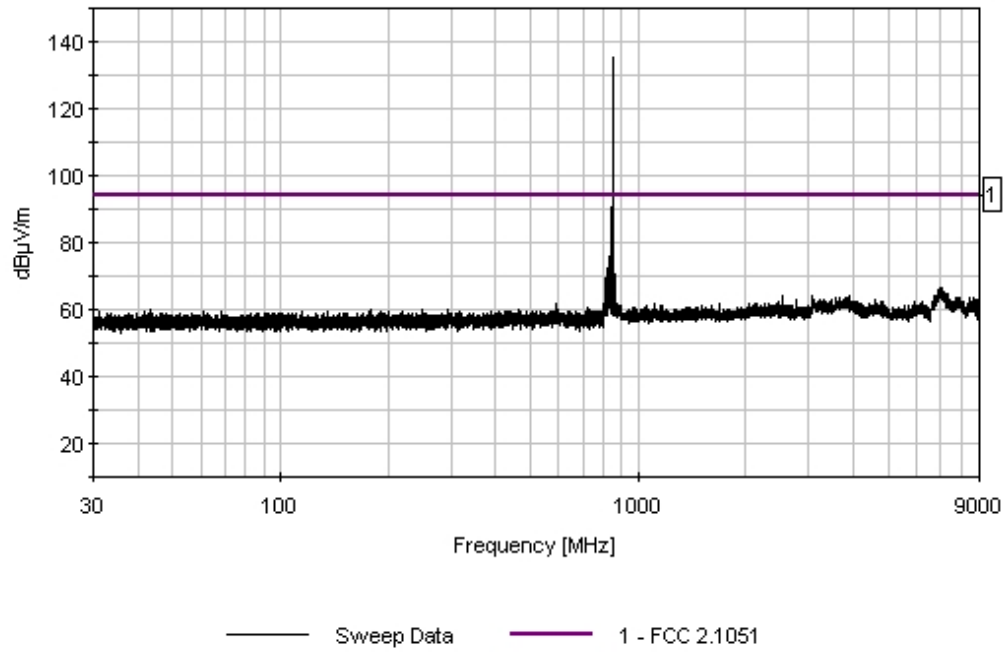
**Transducer Legend:**

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

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

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	848.715M	104.8	+0.6	+30.1	+0.0	135.5	135.5	+0.0	RF Ou
								Carrier	
2	1697.538M	34.4	+0.8	+30.1	+0.0	65.3	94.0	-28.7	RF Ou
3	2546.094M	33.8	+1.0	+29.9	+0.0	64.7	94.0	-29.3	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 13:21:44 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 13  
Wilson Electronics M/N 801101 Uplink EDGE High Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 13:13:47  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 10  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd. Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Low Channel. Modulation Type: GSM. Temperature: 81°F, Relative Humidity: 36%.

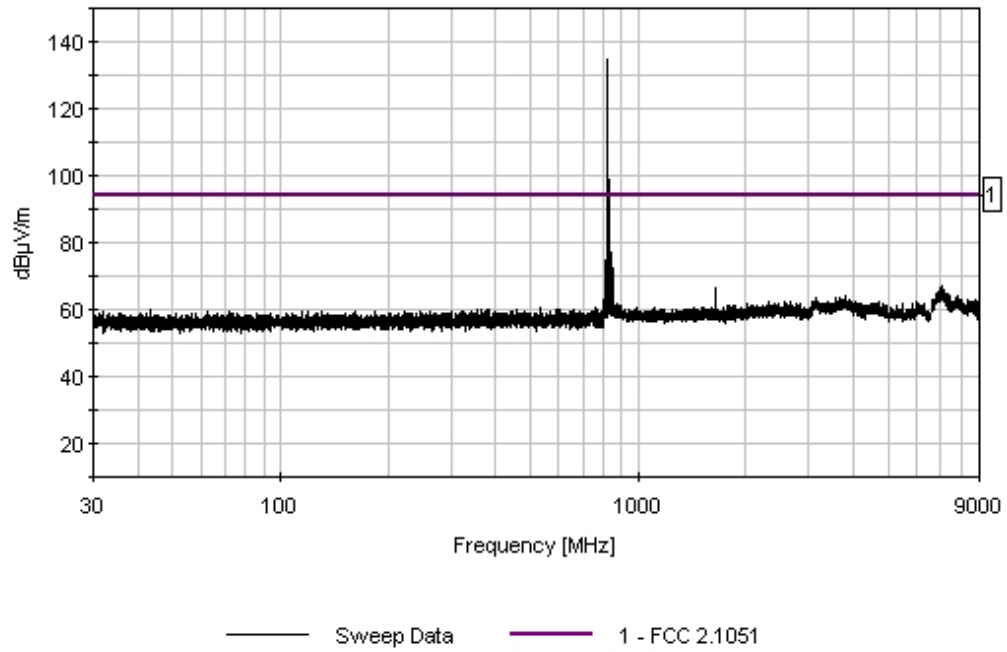
**Transducer Legend:**

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

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

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	824.354M	104.1	+0.6	+30.1	+0.0	134.8	134.8 Carrier	+0.0	RF Ou
2	1648.708M	36.6	+0.8	+30.2	+0.0	67.6	94.0	-26.4	RF Ou
3	2473.041M	33.0	+1.0	+30.0	+0.0	64.0	94.0	-30.0	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 13:13:47 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 10  
Wilson Electronics M/N 801101 Uplink GSM Low Channel



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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 13:10:55  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 9  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd.	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Mid Channel. Modulation Type: GSM. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

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

**Measurement Data:**

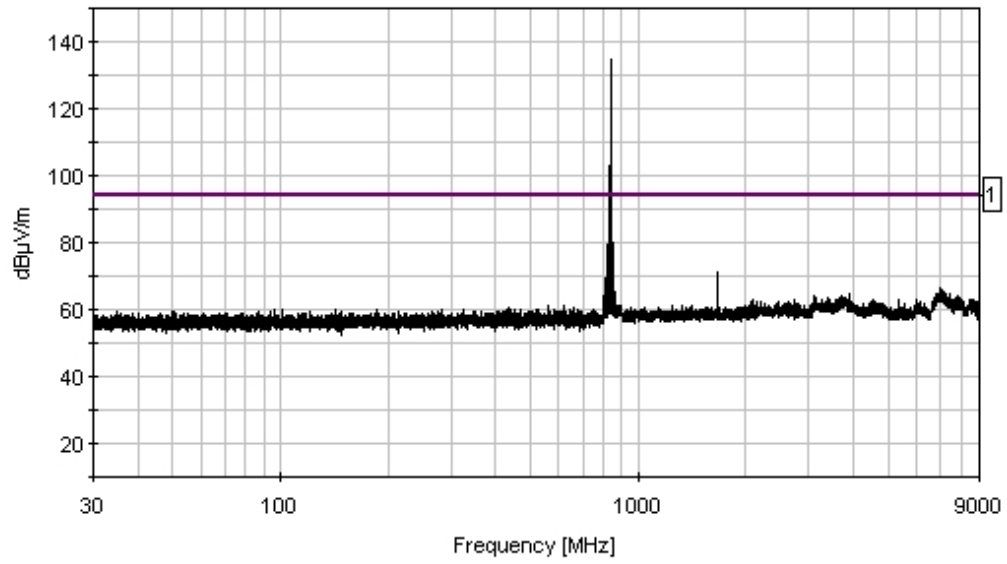
Reading listed by margin.

Test Lead: RF Output Uplink

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	836.570M	104.0	+0.6	+30.1	+0.0	134.7	134.7 Carrier	+0.0	RF Ou
2	1673.143M	41.3	+0.8	+30.1	+0.0	72.2	94.0	-21.8	RF Ou
3	3346.289M	34.3	+1.2	+29.7	+0.0	65.2	94.0	-28.8	RF Ou
4	2509.713M	30.5	+1.0	+30.0	+0.0	61.5	94.0	-32.5	RF Ou



CKC Laboratories Date: 9/13/2006 Time: 13:10:55 Wilson Electronics WO#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 9  
Wilson Electronics M/N 801101 Uplink GSM Mid Channel



— Sweep Data      — 1 - FCC 2.1051

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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 12:31:14  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 8  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric	TPS-2000	920035
Digital Signal Generator	Instruments Co., Ltd. Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: High Channel. Modulation Type: GSM. Temperature: 81°F, Relative Humidity: 36%.

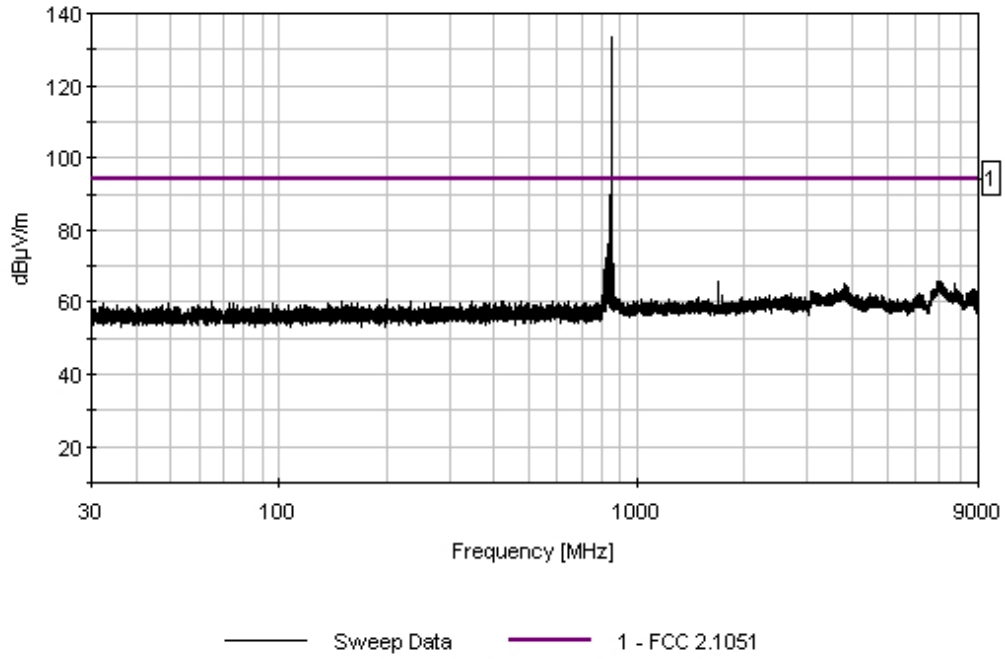
**Transducer Legend:**

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

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

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	Dist dB	Corr dB	Spec dBμV/m	Margin dB	Polar Ant
1	848.791M	102.7	+0.6	+30.1	+0.0	133.4	133.4 Carrier	+0.0	RF Ou
2	1697.306M	36.2	+0.8	+30.1	+0.0	67.1	94.0	-26.9	RF Ou
3	3394.588M	33.1	+1.2	+29.7	+0.0	64.0	94.0	-30.0	RF Ou
4	2546.385M	31.5	+1.0	+29.9	+0.0	62.4	94.0	-31.6	RF Ou

CKC Laboratories Date: 9/13/2006 Time: 12:31:14 Wilson Electronics W/O#: 81892  
FCC 2.1051 Test Lead: RF Output Uplink 12VDC Sequence#: 8  
Wilson Electronics M/N 801101 Uplink GSM High Channel



**FCC 2.1033(c)(14)/2.1053/22.917 – DOWNLINK FIELD STRENGTH OF SPURIOUS RADIATION**

Bandwidth settings used: 100 kHz.

Test Location: CKC Laboratories •4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)  
 Customer: **Wilson Electronics**  
 Specification: **FCC 2.1053**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Maximized Emissions** Time: 08:31:26  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 31  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101  
 S/N: 8011018033282

***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
EMCO Loop Antenna	1074	05/13/2005	05/13/2007	00226
Chase CBL6111C Bilog	2456	06/07/2005	06/07/2007	01991
EMCO 3115 Horn Antenna	9307-4085	04/29/2005	04/29/2007	00656
ARA MWH-1826/B Horn Antenna	1005	11/05/2004	11/05/2006	02046
HP 8447D Preamp	1937A02604	03/11/2005	03/11/2007	00099
HP 8449B Preamp	3008A00301	12/14/2004	12/14/2006	2010
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Cable, Pasternack 48"	NA	02/08/2005	02/08/2007	P05203
Cable, Andrews Hardline	NA	05/27/2005	05/27/2007	P01012

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Data represents worst case of all channels. Modulation Type: Data represents worst case of all modulations. Temperature: 81°F, Relative Humidity: 36%. **No EUT emissions detected within 20 dB 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

**FCC 2.1033(c)(14)/2.1053/22.917 – UPLINK FIELD STRENGTH OF SPURIOUS RADIATION**

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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1053**  
 Work Order #: **81892** Date: 9/15/2006  
 Test Type: **Maximized Emissions** Time: 15:26:36  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 32  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101  
 S/N: 8011018033282

***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/12/2005	01/12/2007	02660
EMCO Loop Antenna	1074	05/13/2005	05/13/2007	00226
Chase CBL6111C Bilog	2456	06/07/2005	06/07/2007	01991
EMCO 3115 Horn Antenna	9307-4085	04/29/2005	04/29/2007	00656
ARA MWH-1826/B Horn Antenna	1005	11/05/2004	11/05/2006	02046
HP 8447D Preamp	1937A02604	03/11/2005	03/11/2007	00099
HP 8449B Preamp	3008A00301	12/14/2004	12/14/2006	2010
Cable, Pasternack 36"	NA	02/08/2005	02/08/2007	P05202
Cable, Pasternack 48"	NA	02/08/2005	02/08/2007	P05203
Cable, Andrews Hardline	NA	05/27/2005	05/27/2007	P01012

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Data represents worst case of all channels. Modulation Type: Data represents worst case of all modulations. Temperature: 81°F, Relative Humidity: 36%. **No EUT emissions detected within 20 dB 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

## DOWNLINK OCCUPIED BANDWIDTH

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1049**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation.

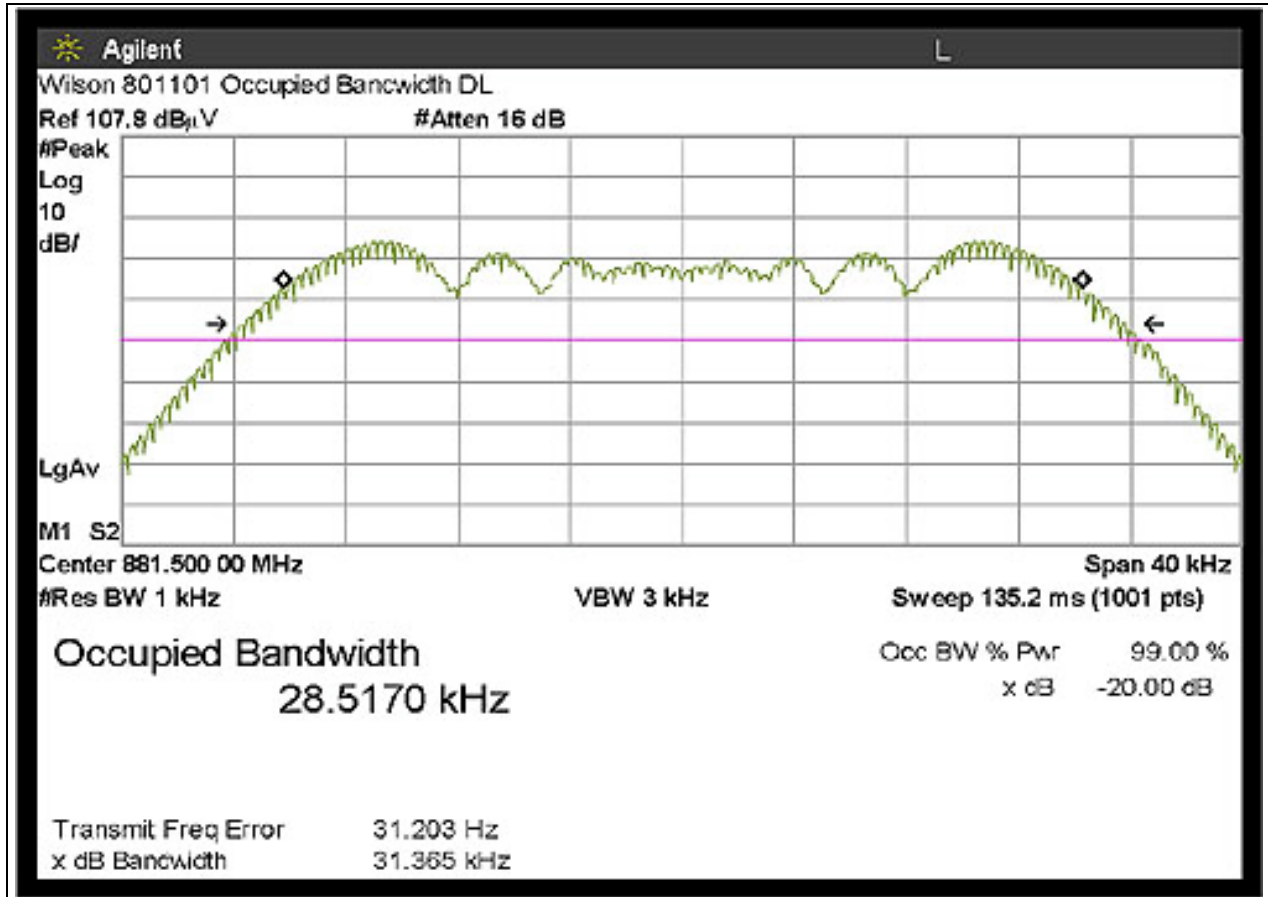
Frequency Range Investigated: Carrier

Temperature: 81°F

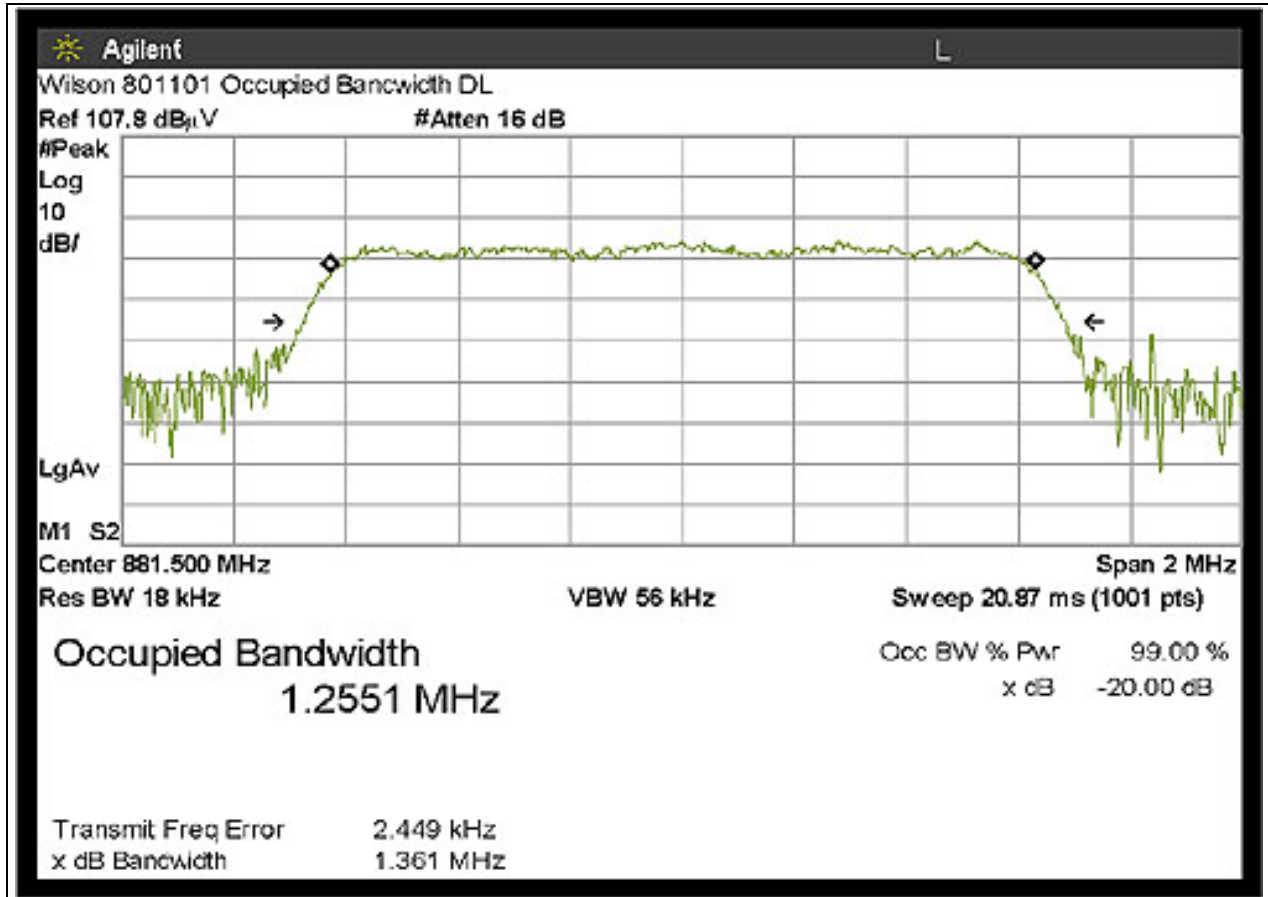
Relative Humidity: 36%

Frequency	Modulation	20dB BW (kHz)	99% BW (kHz)
881.5	CDMA	1361.0	1255.1
881.5	GSM	285.3	245.1
881.5	EDGE	281.5	243.6
881.5	AMPS	31.3	28.5

# DOWNLINK OCCUPIED BANDWIDTH - AMPS

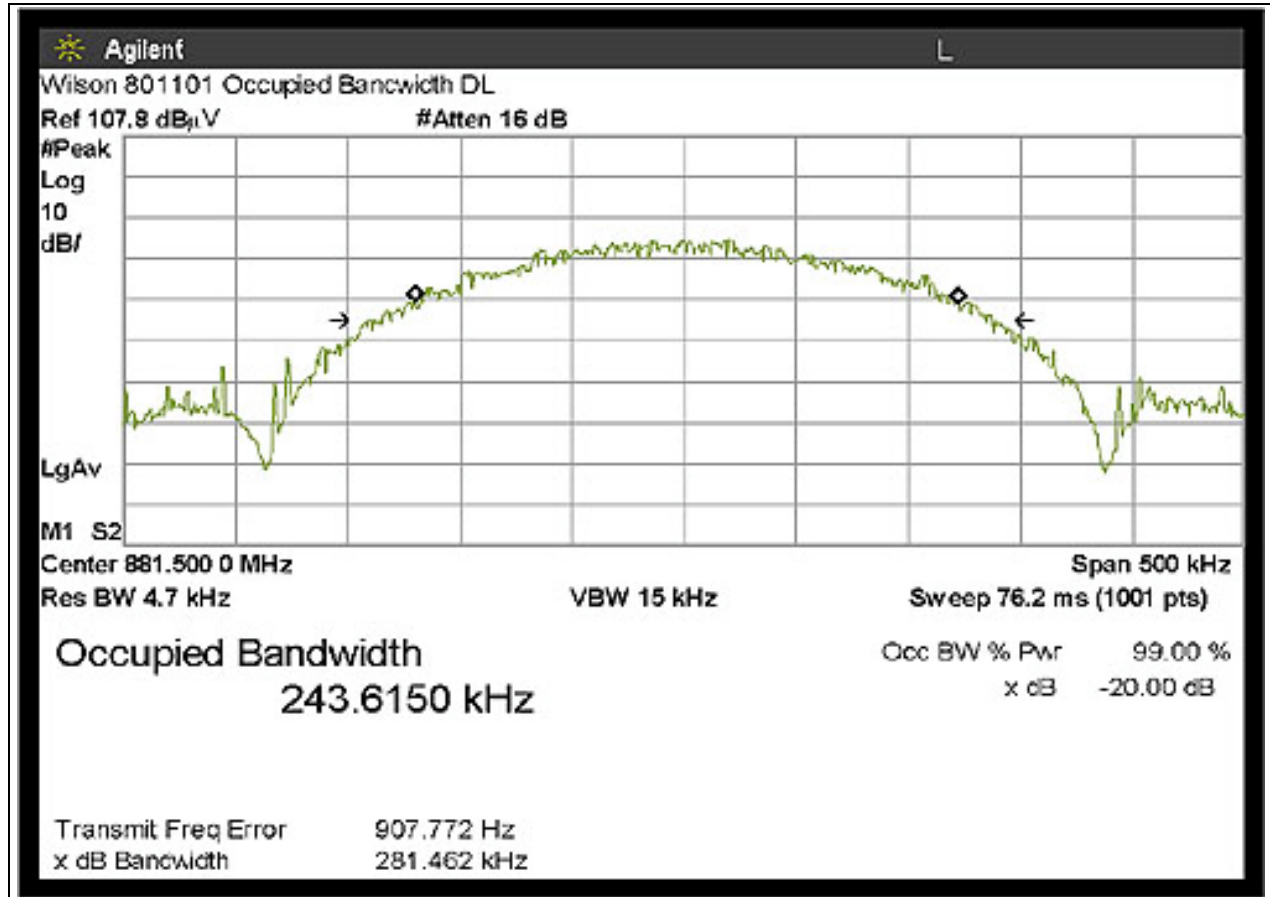


# DOWNLINK OCCUPIED BANDWIDTH - CDMA

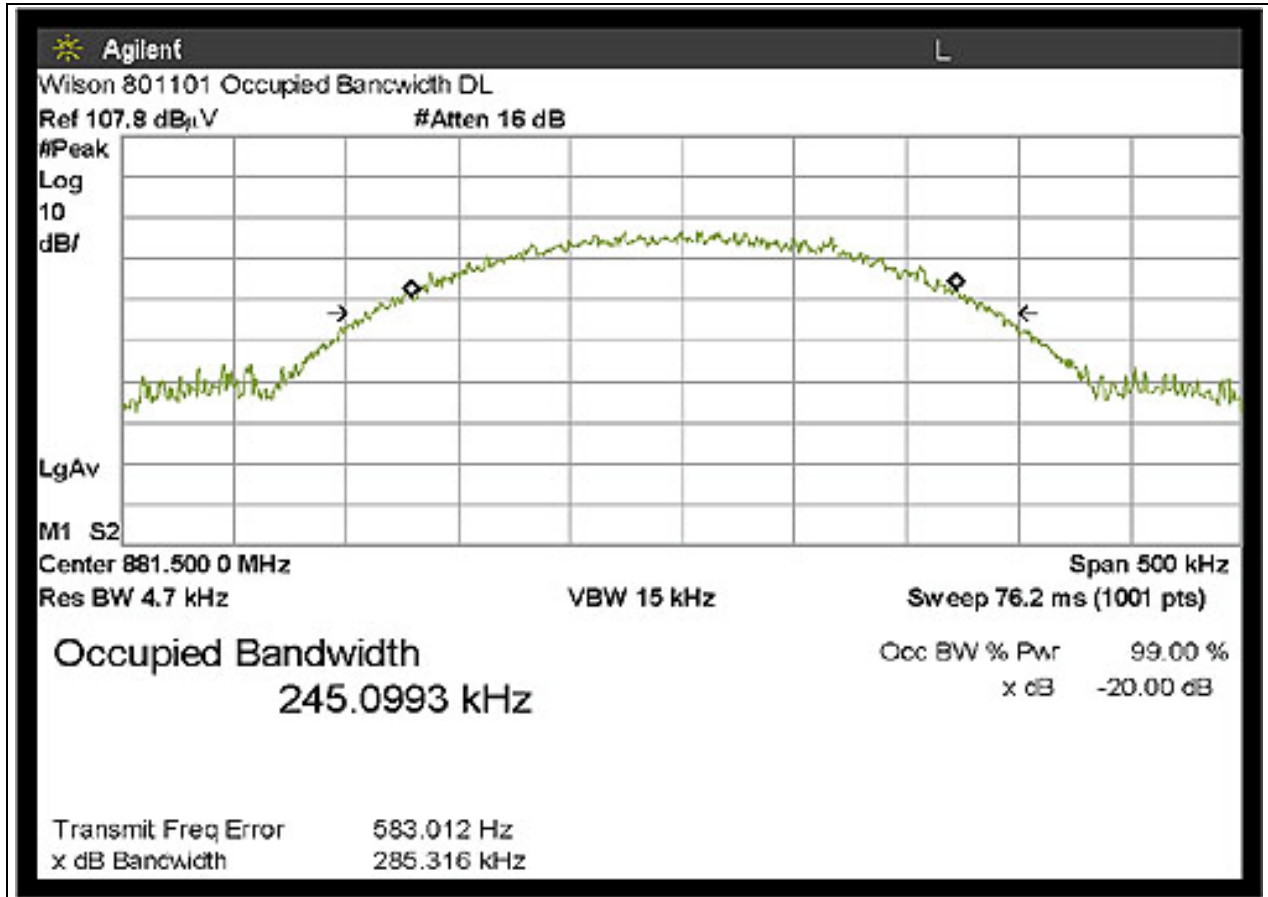




# DOWNLINK OCCUPIED BANDWIDTH - EDGE



# DOWNLINK OCCUPIED BANDWIDTH - GSM



## UPLINK OCCUPIED BANDWIDTH

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1049**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

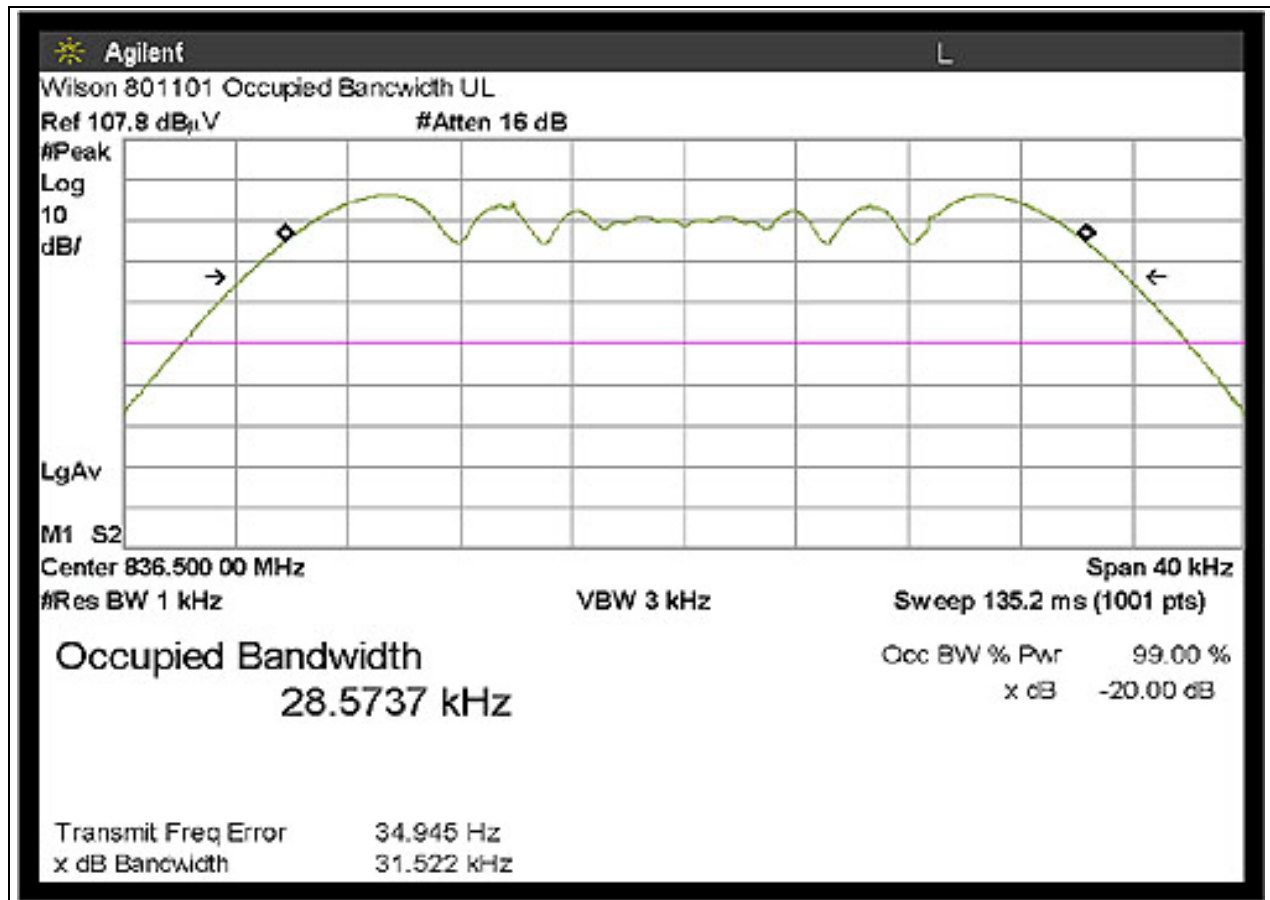
***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation.

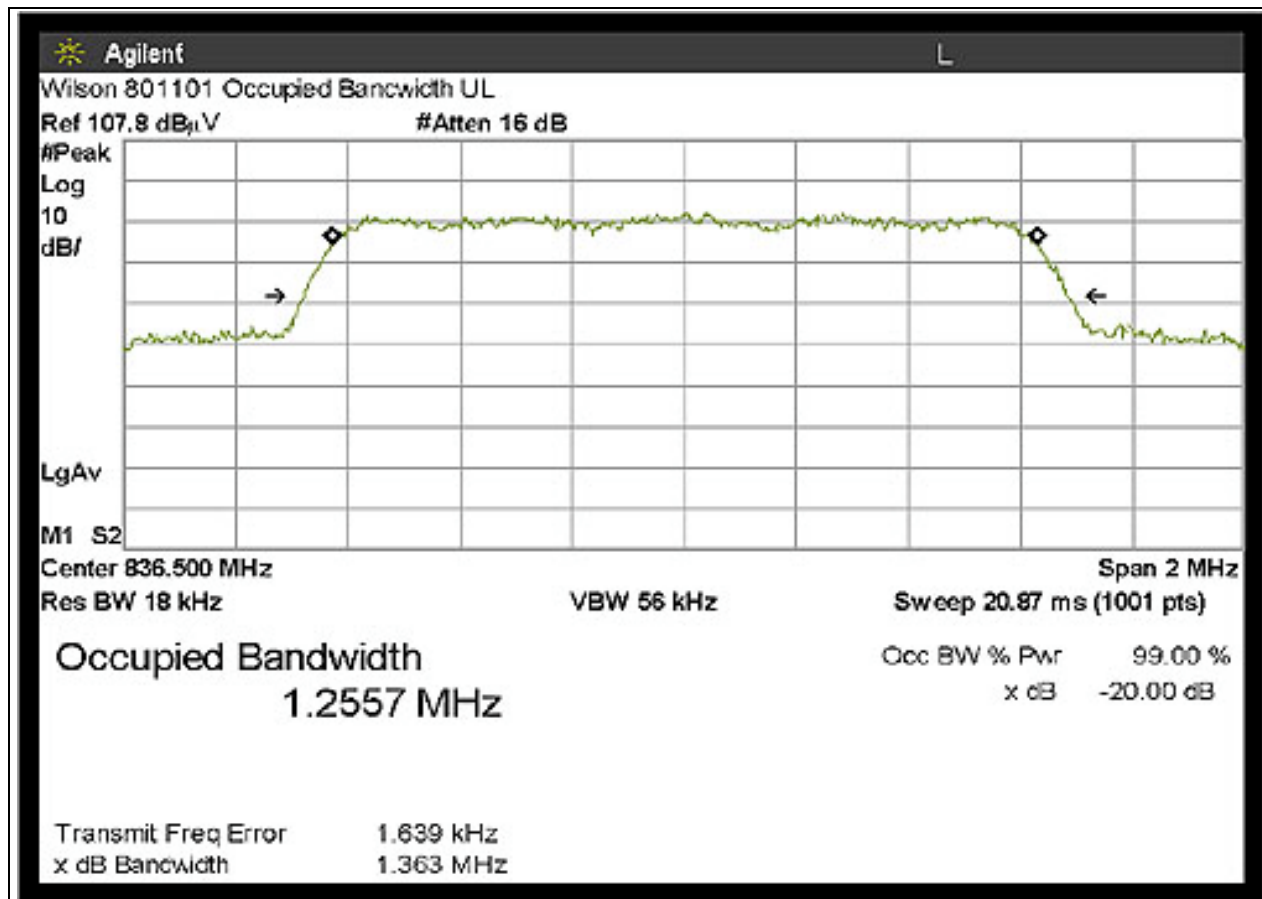
Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%

Frequency	Modulation	20dB BW (kHz)	99% BW (kHz)
836.5	CDMA	1363	1256
836.5	GSM	277.0	244.9
836.5	EDGE	283.7	247.5
836.5	AMPS	31.5	28.6

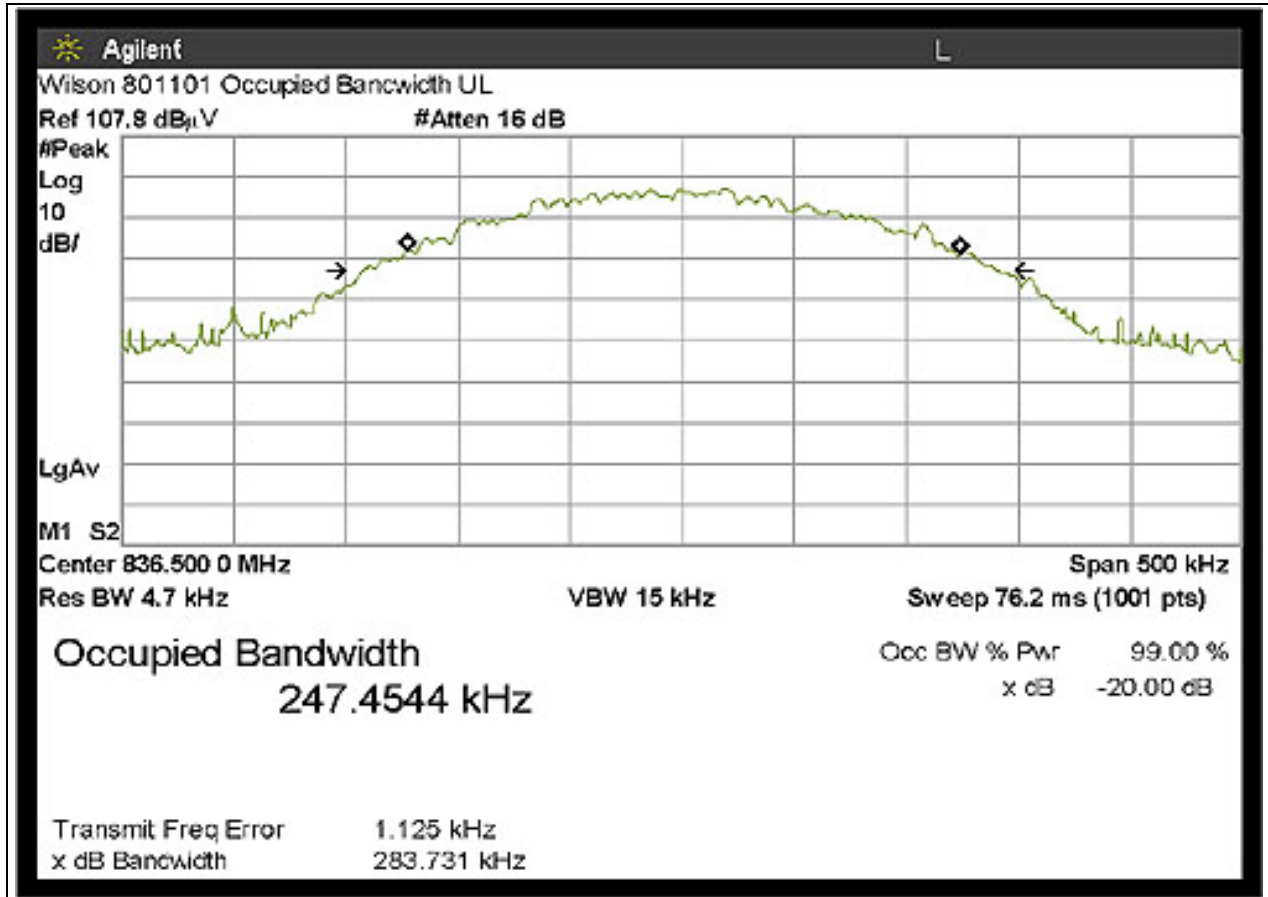
# UPLINK OCCUPIED BANDWIDTH - AMPS



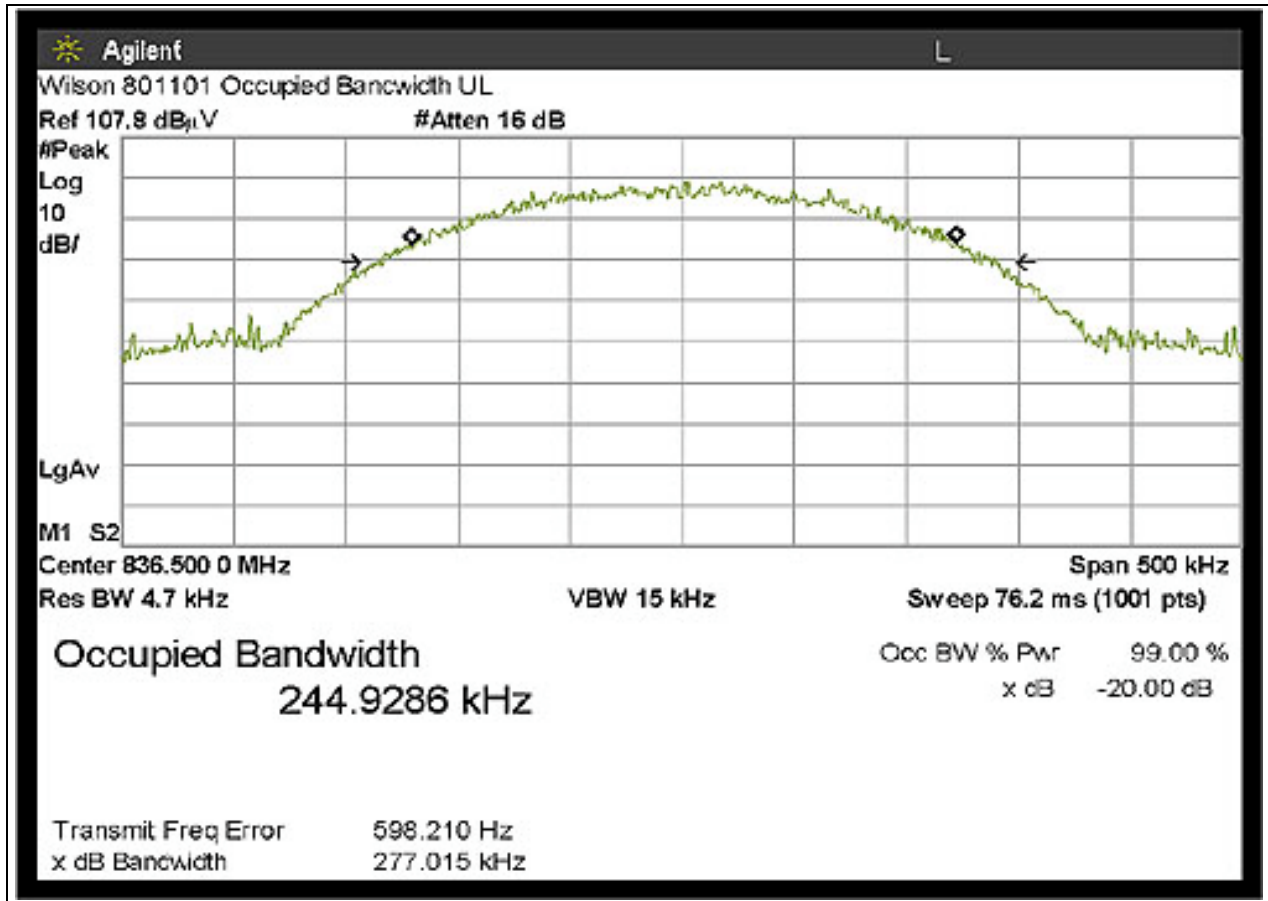
# UPLINK OCCUPIED BANDWIDTH - CDMA



# UPLINK OCCUPIED BANDWIDTH - EDGE



## UPLINK OCCUPIED BANDWIDTH - GSM



## DOWNLINK BAND EDGE

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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 14:14:54  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 17  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

***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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

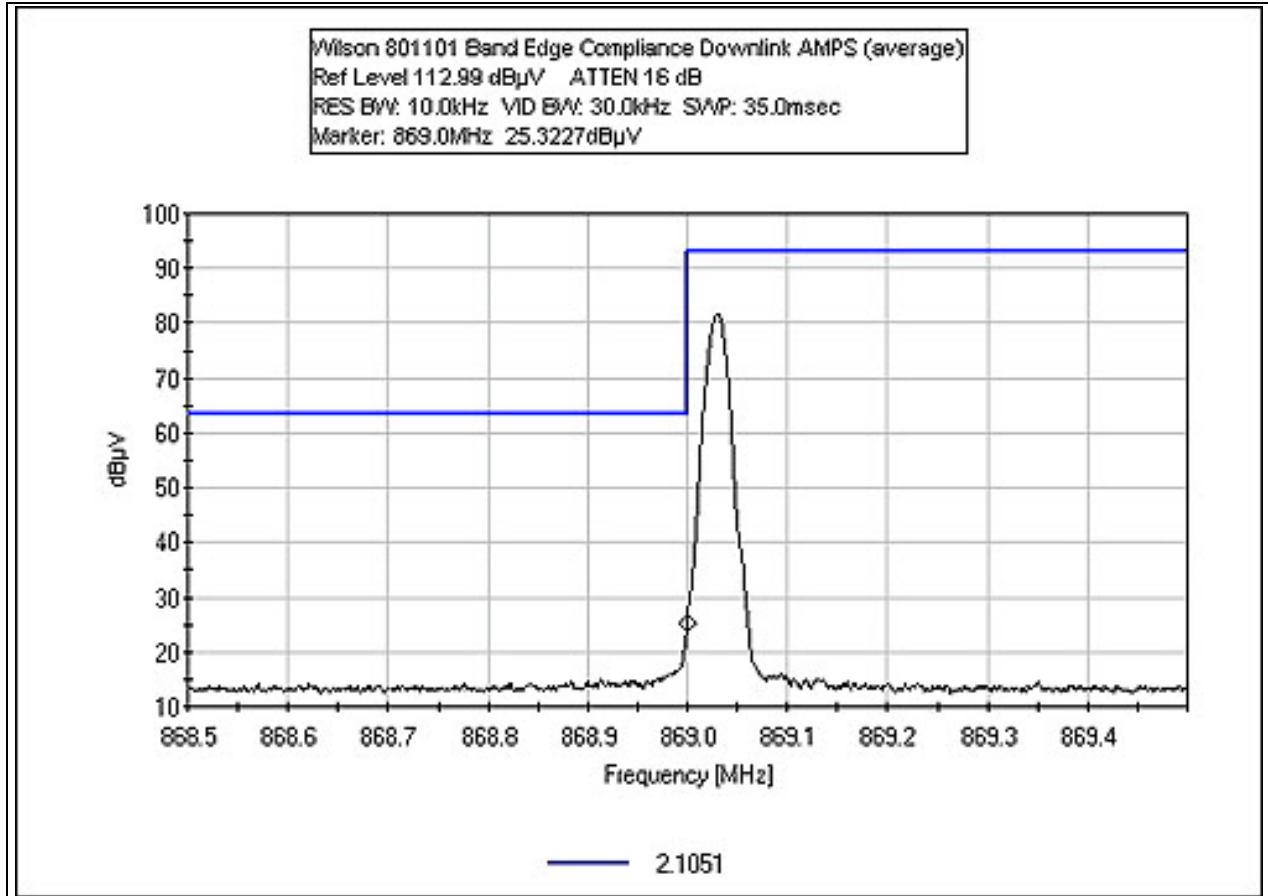
Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

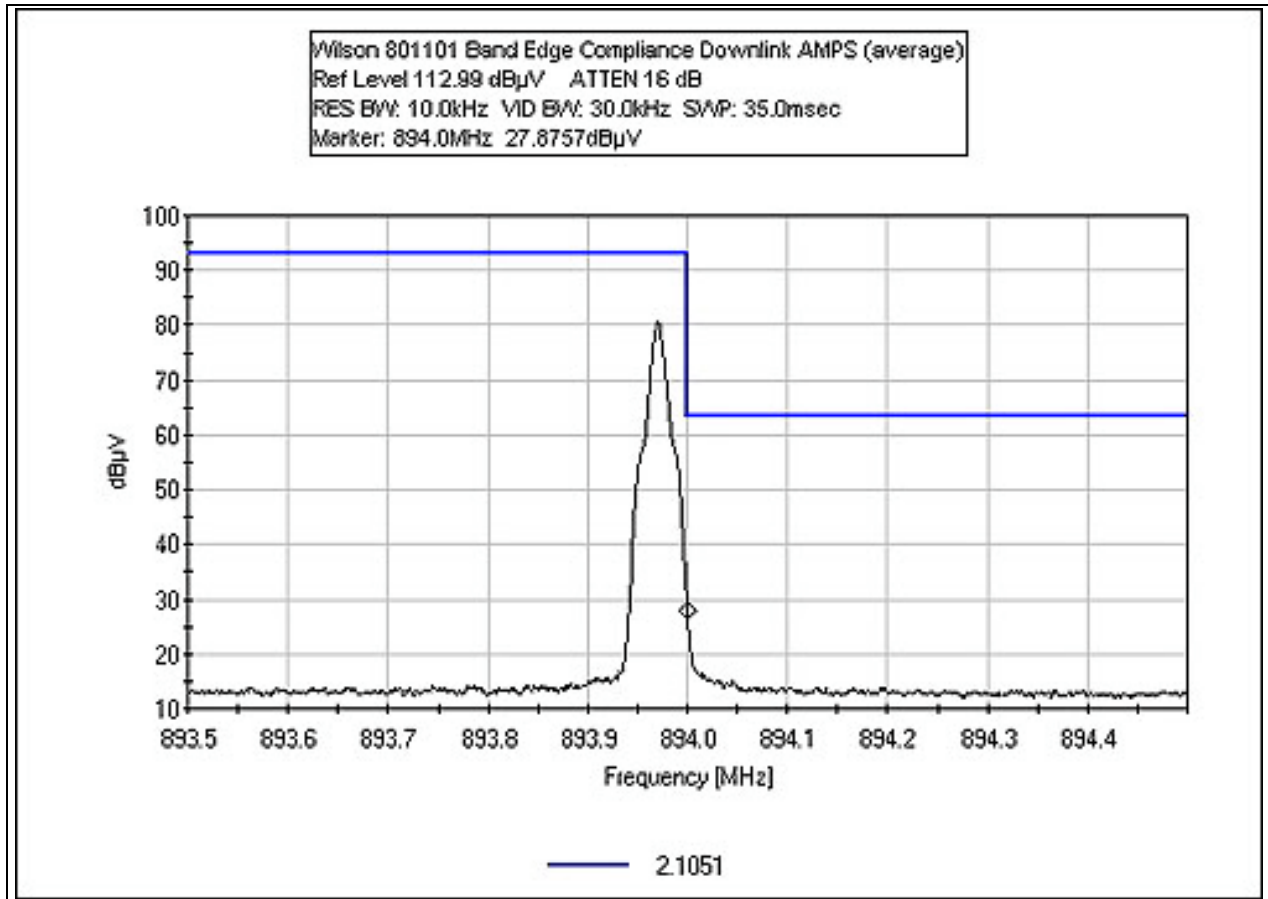
Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Band Edge. Temperature: 81°F, Relative Humidity: 36%.



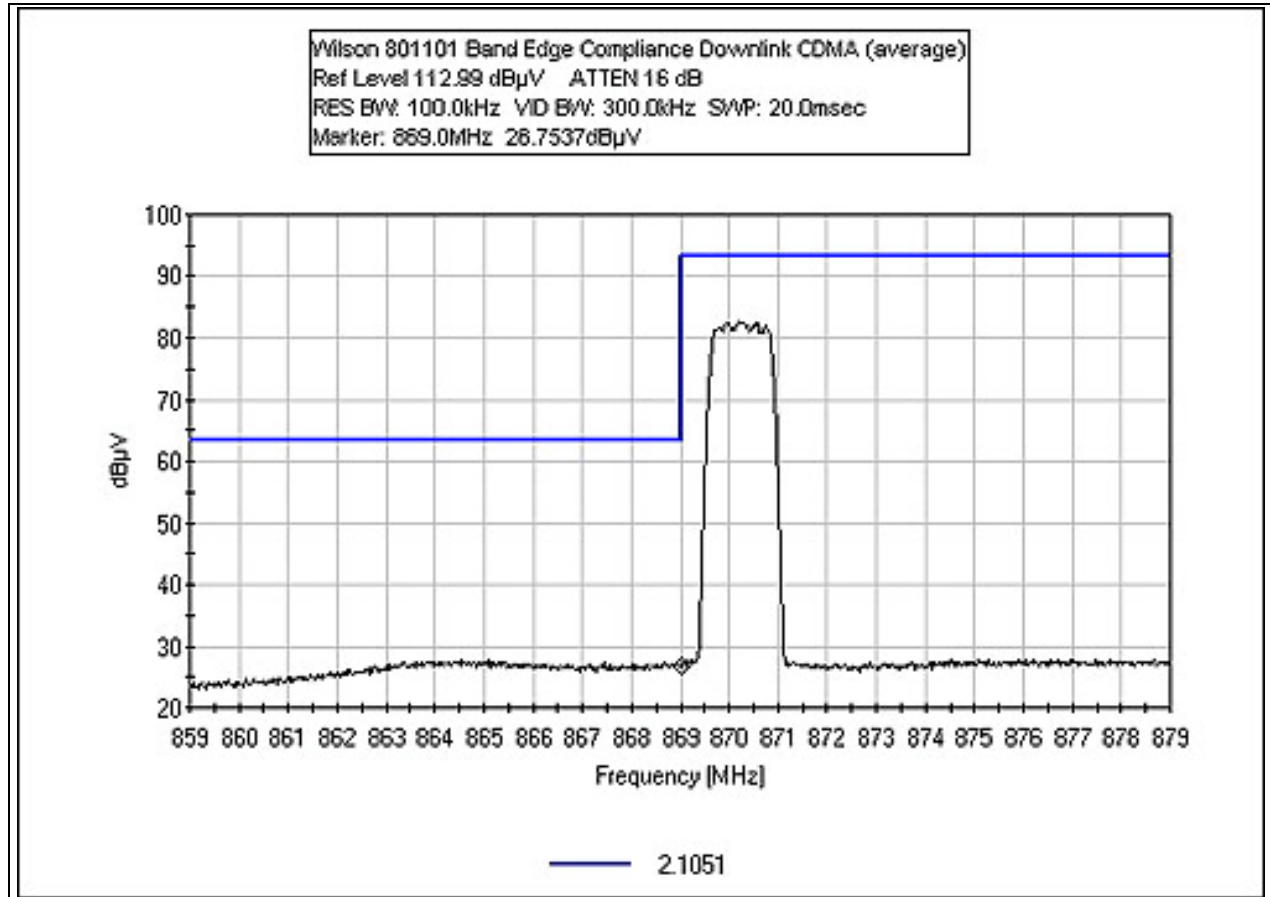
## DOWNLINK BAND EDGE - AMPS LOW AVERAGE



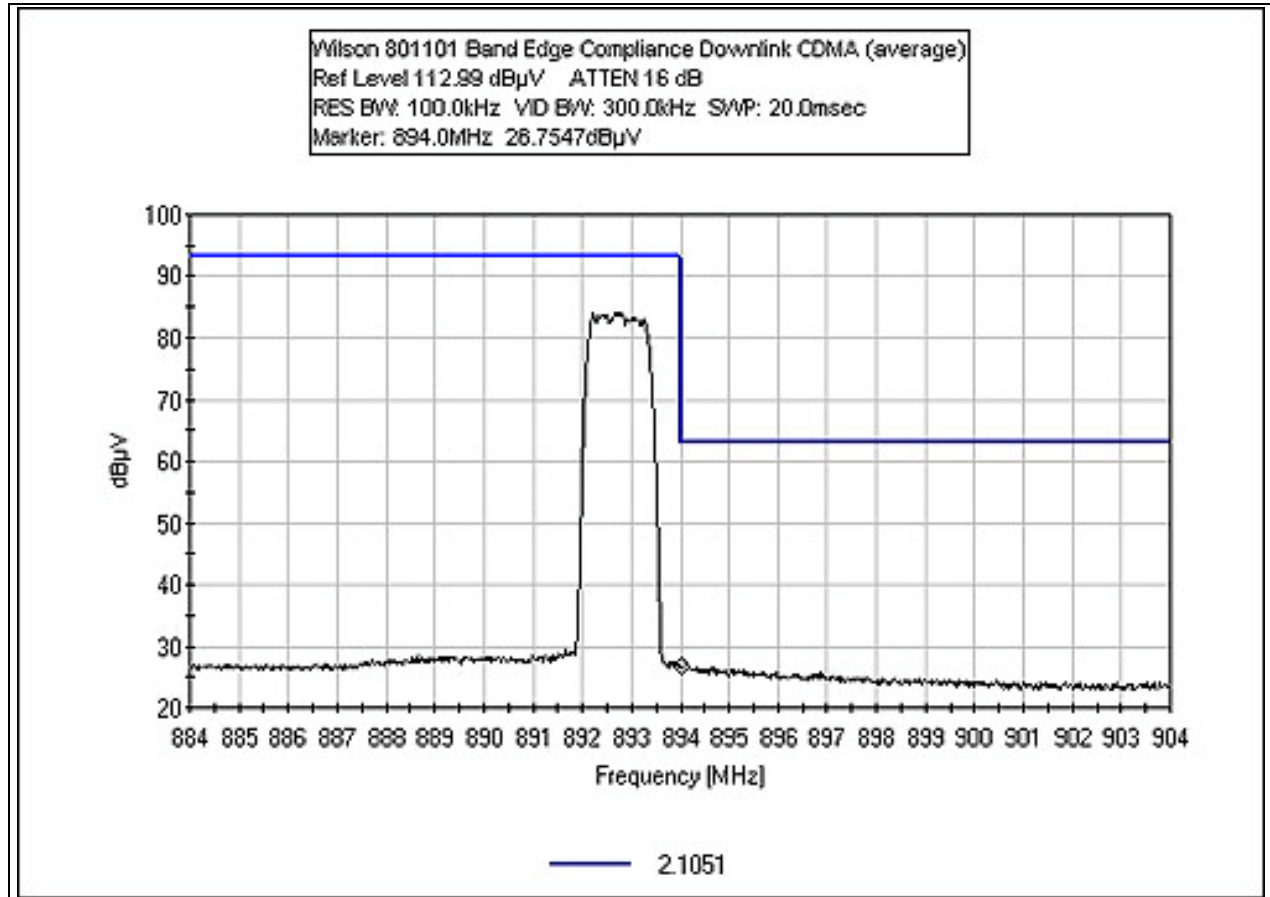
## DOWNLINK BAND EDGE - AMPS HIGH AVERAGE



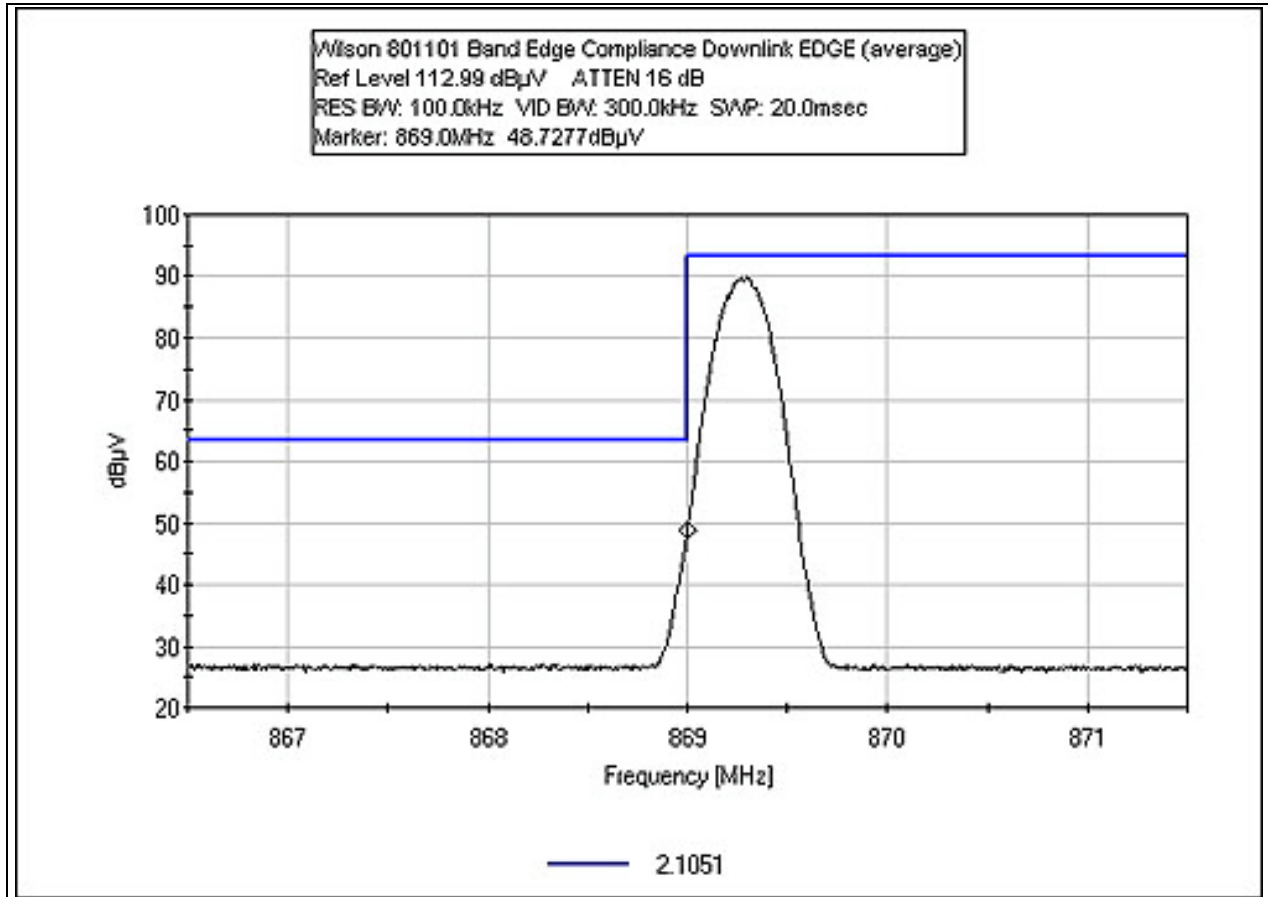
## DOWNLINK BAND EDGE - CDMA LOW AVERAGE



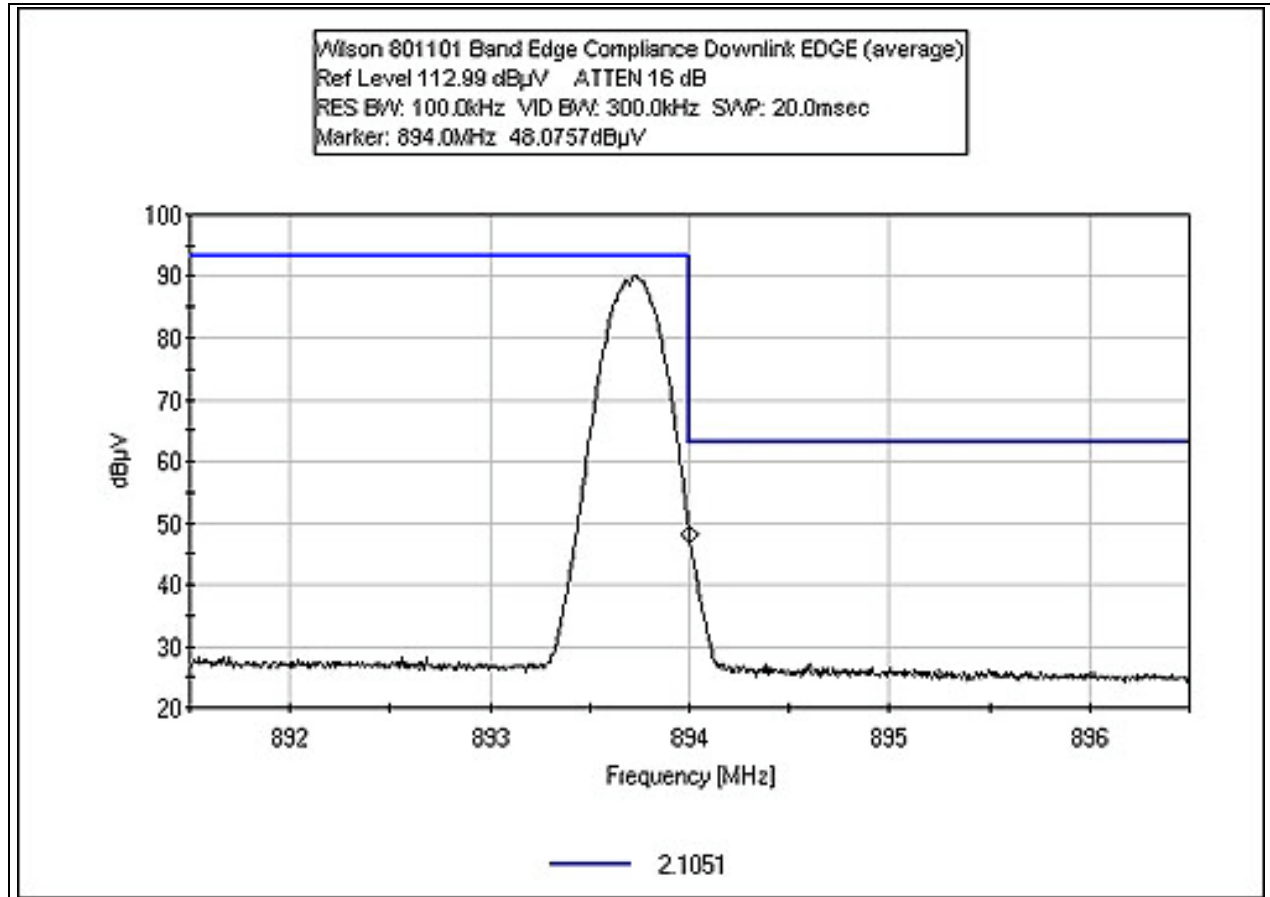
## DOWNLINK BAND EDGE - CDMA HIGH AVERAGE



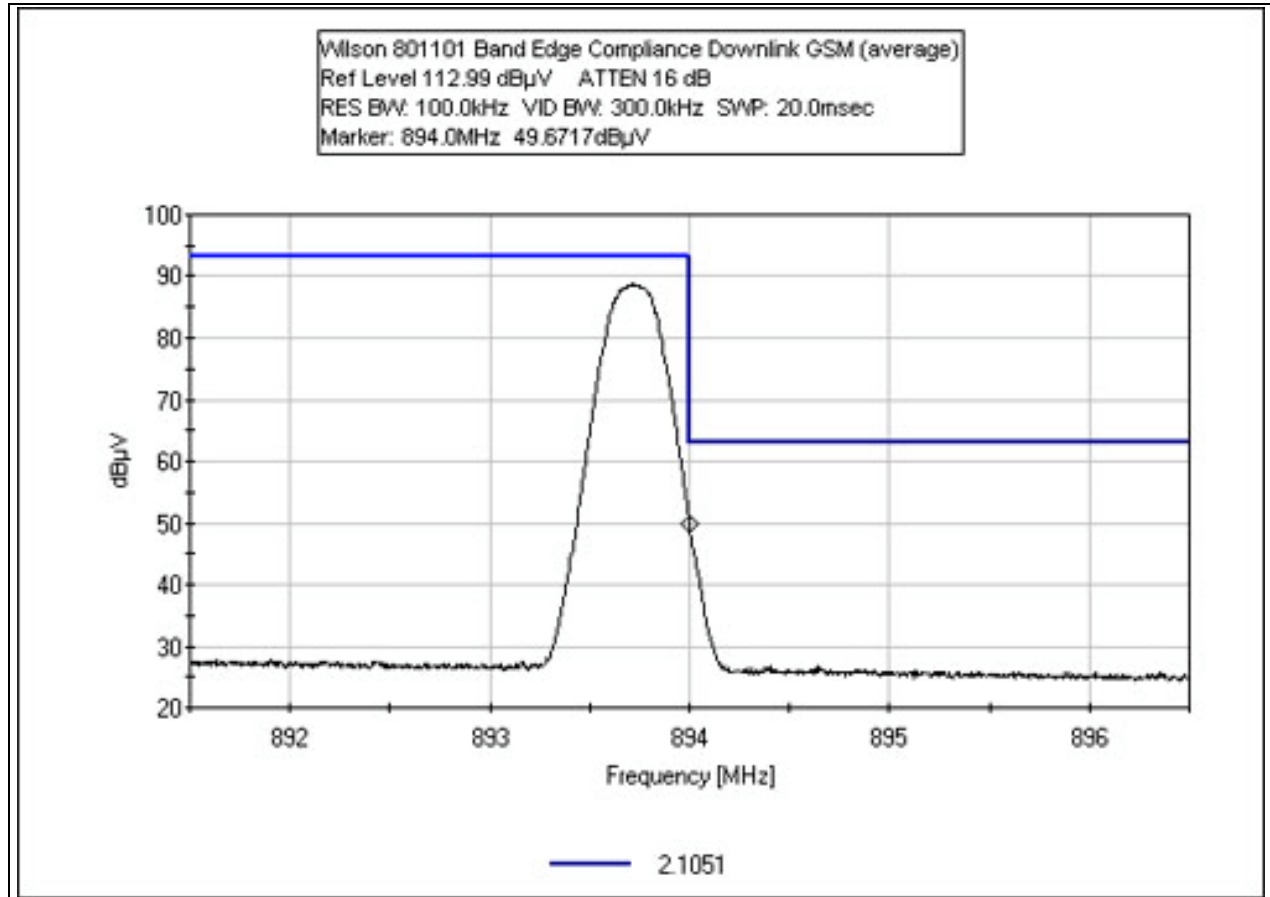
## DOWNLINK BAND EDGE - EDGE LOW AVERAGE



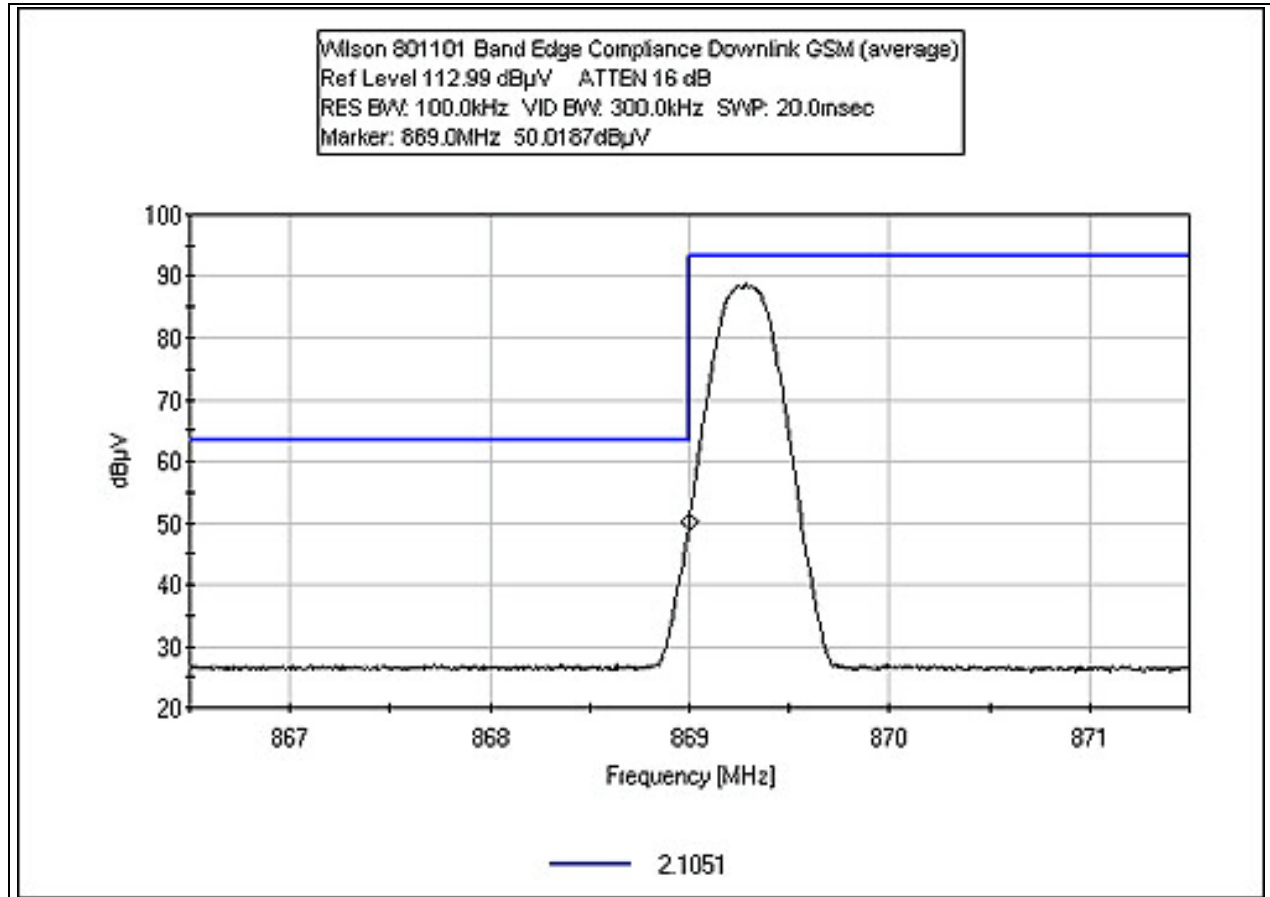
## DOWNLINK BAND EDGE - EDGE HIGH AVERAGE



## DOWNLINK BAND EDGE - GSM HIGH AVERAGE



## DOWNLINK BAND EDGE - GSM LOW AVERAGE





## UPLINK BAND EDGE

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

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1051**  
 Work Order #: **81892** Date: 9/13/2006  
 Test Type: **Antenna Conducted** Time: 14:14:54  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 17  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

***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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

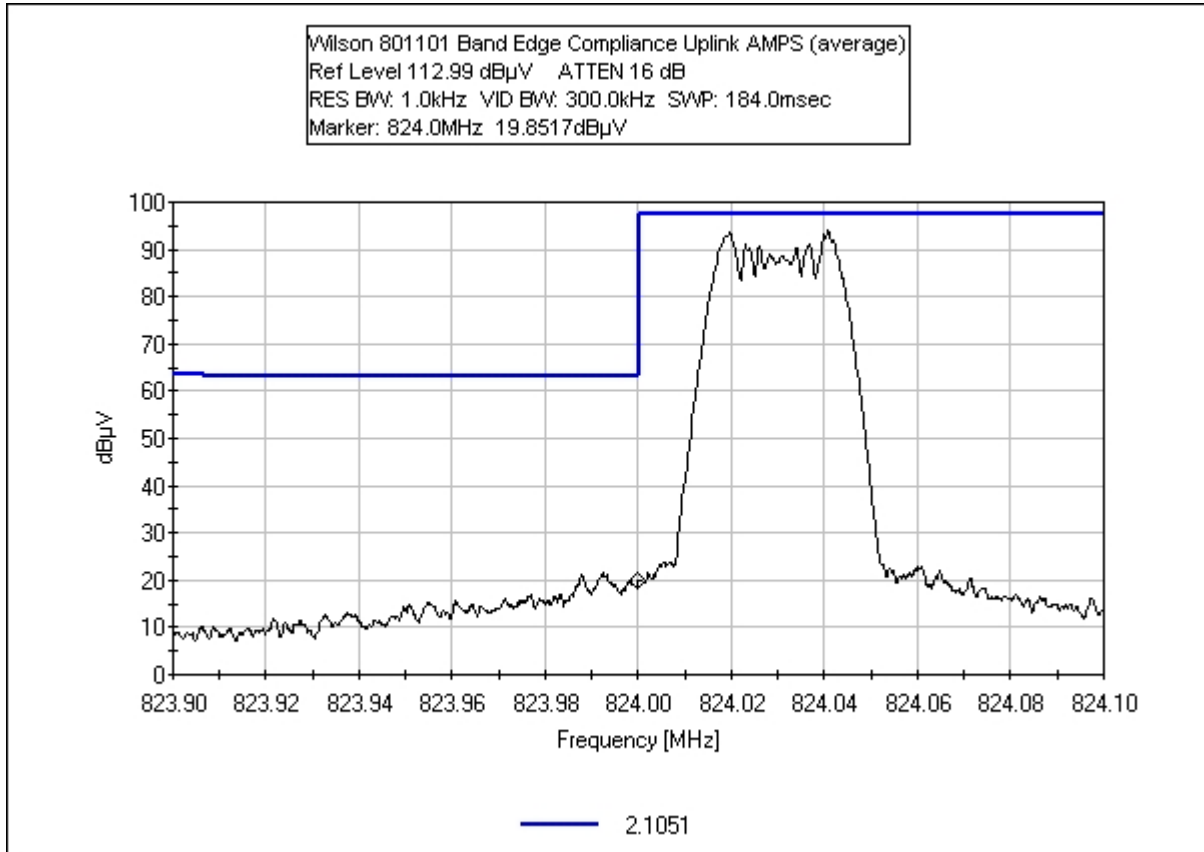
***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

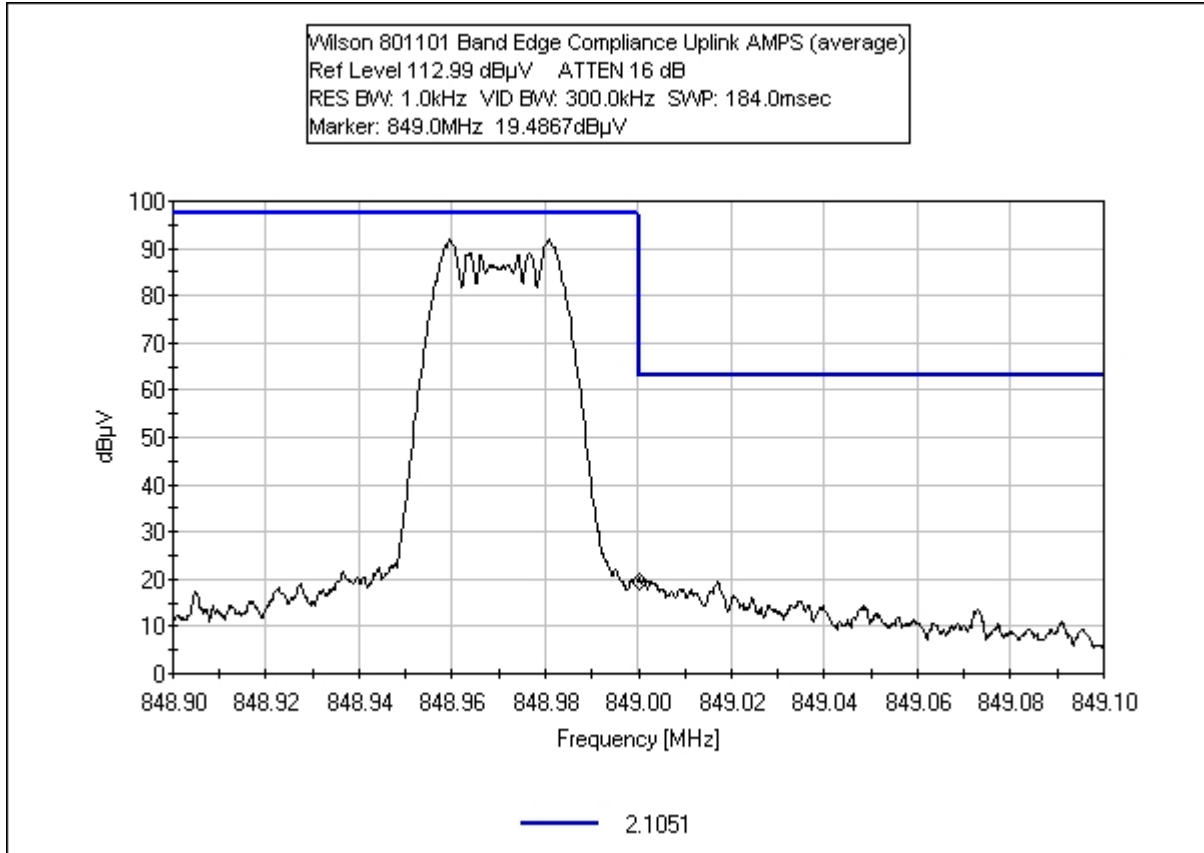
***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Band Edge. Temperature: 81°F, Relative Humidity: 36%.

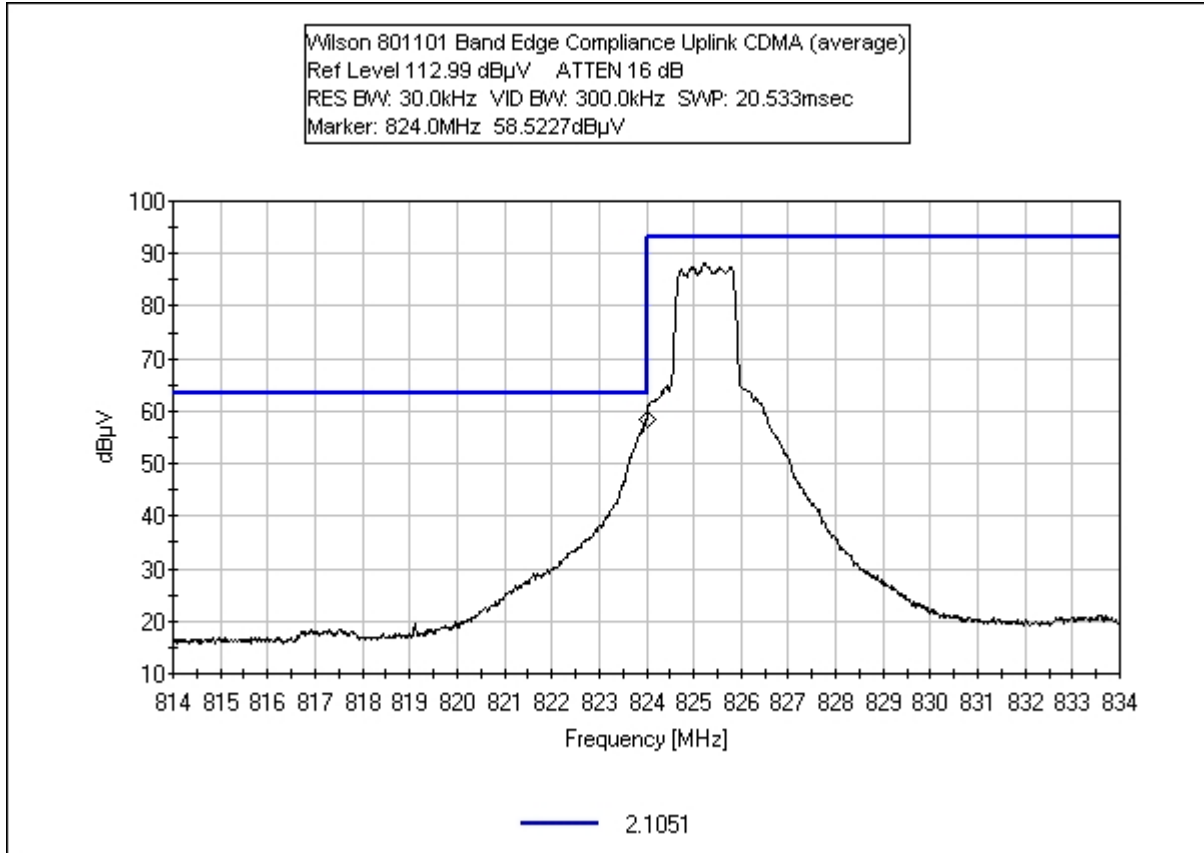
## UPLINK BAND EDGE - AMPS LOW AVERAGE



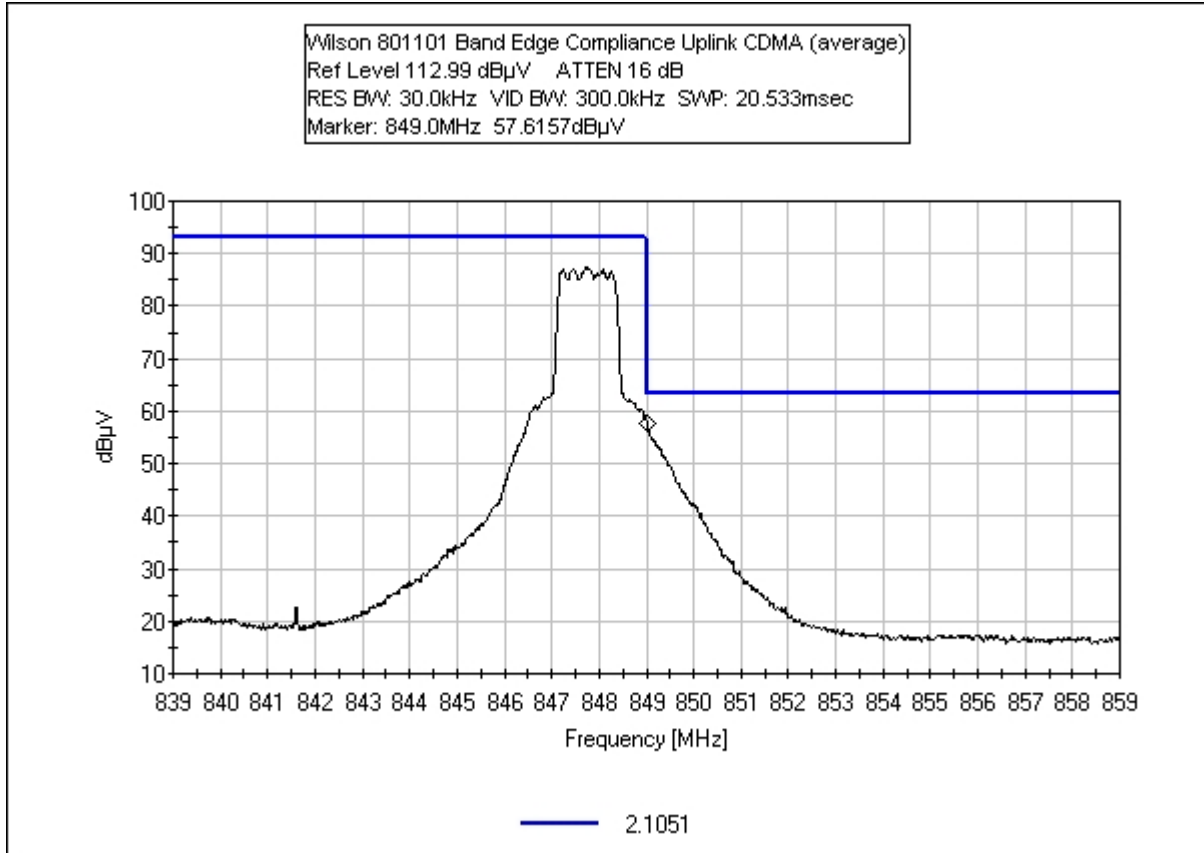
# UPLINK BAND EDGE - AMPS HIGH AVERAGE



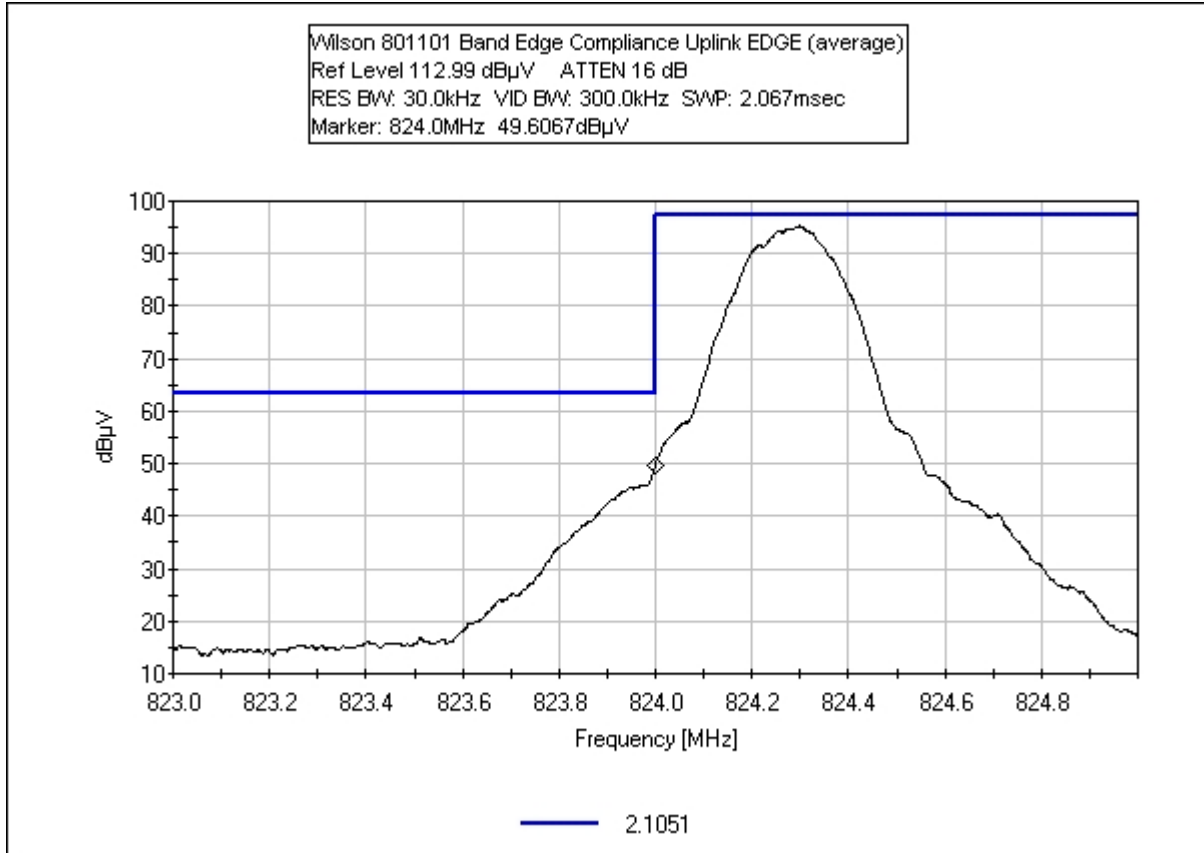
## UPLINK BAND EDGE - CDMA LOW AVERAGE



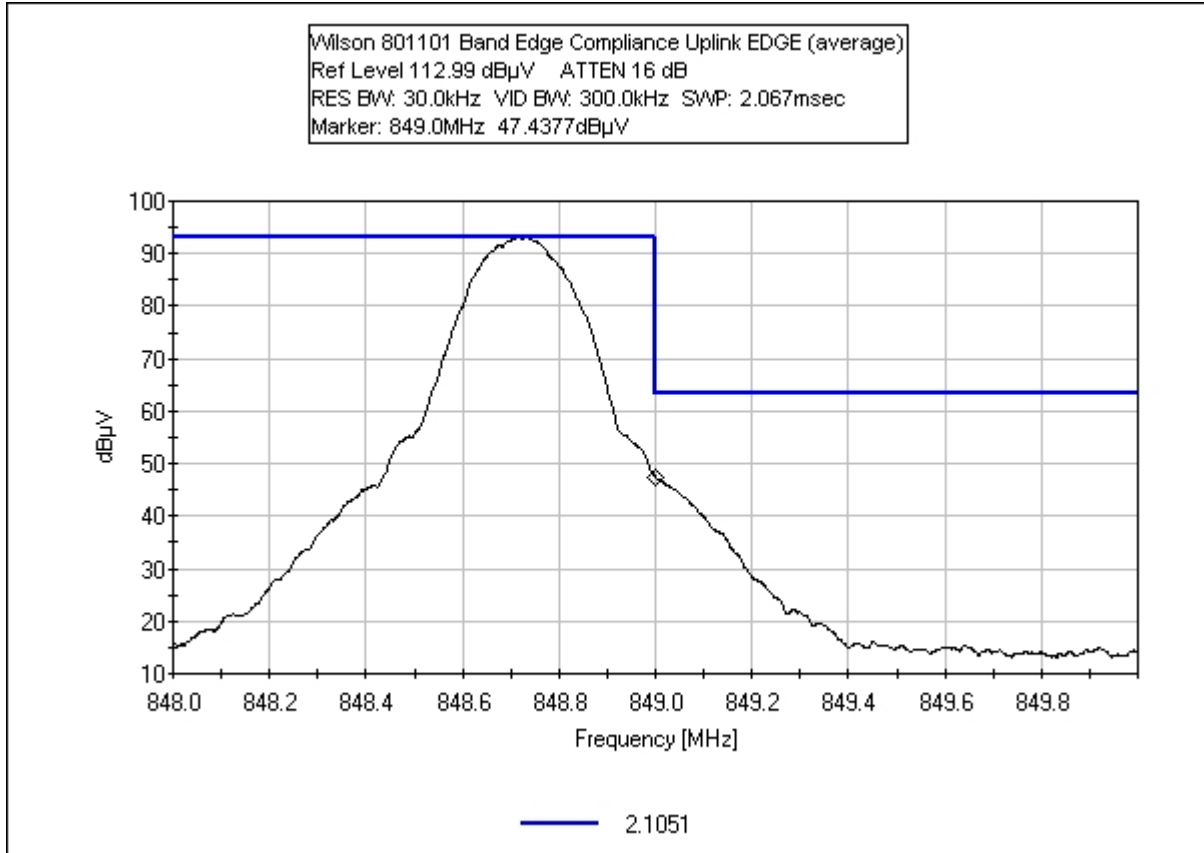
## UPLINK BAND EDGE - CDMA HIGH AVERAGE



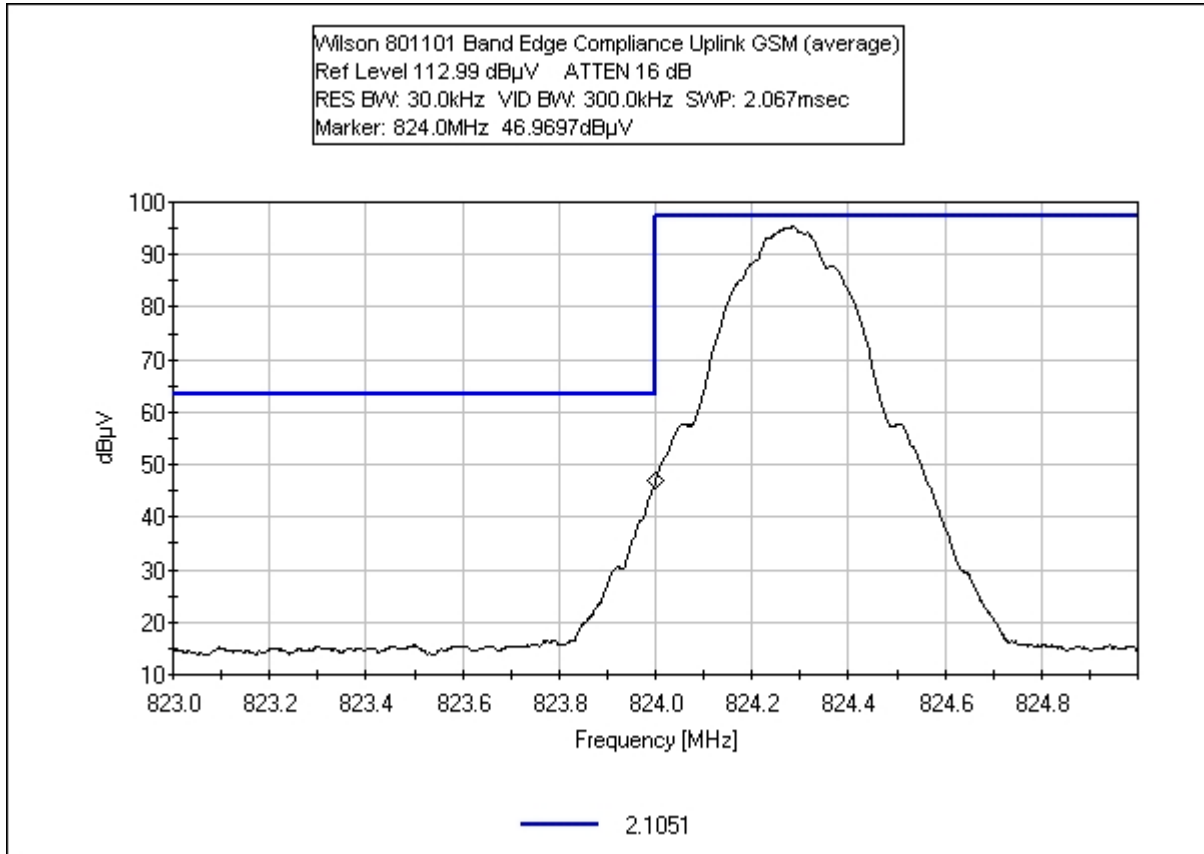
### UPLINK BAND EDGE - EDGE LOW AVERAGE



## UPLINK BAND EDGE - EDGE HIGH AVERAGE

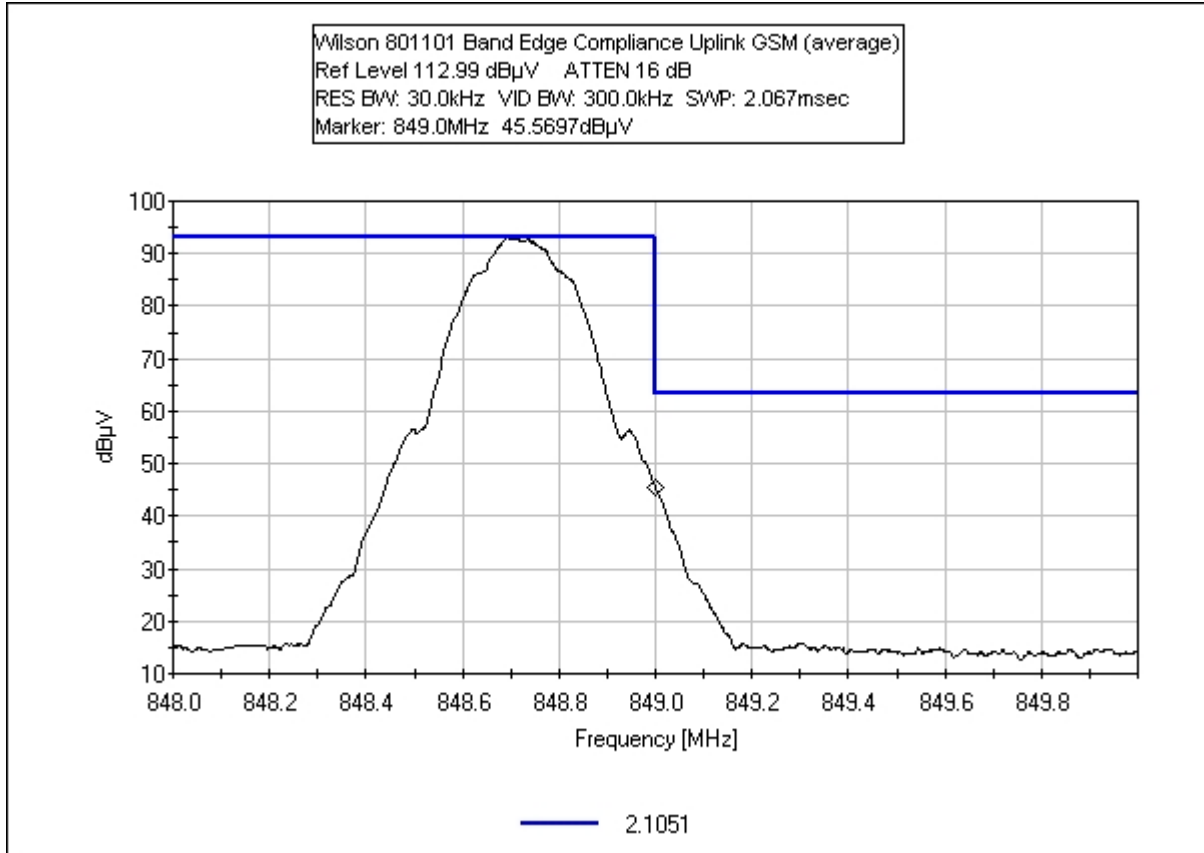


## UPLINK BAND EDGE - GSM LOW AVERAGE





## UPLINK BAND EDGE - GSM HIGH AVERAGE



## DOWNLINK INTERMODULATION ATTENUATION

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

Customer: **Wilson Electronics**  
 Specification: **2.1051**  
 Work Order #: **81892** Date: 9/14/2006  
 Test Type: **Antenna Conducted** Time: 11:18:01  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 30  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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

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

Function	Manufacturer	Model #	S/N
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Downlink. Carrier Frequency: Intermodulation Test. Modulation Type: As Listed. Temperature: 81°F, Relative Humidity: 36%.

**Transducer Legend:**

T1=Cable 40 GHz 36"

**Measurement Data:**

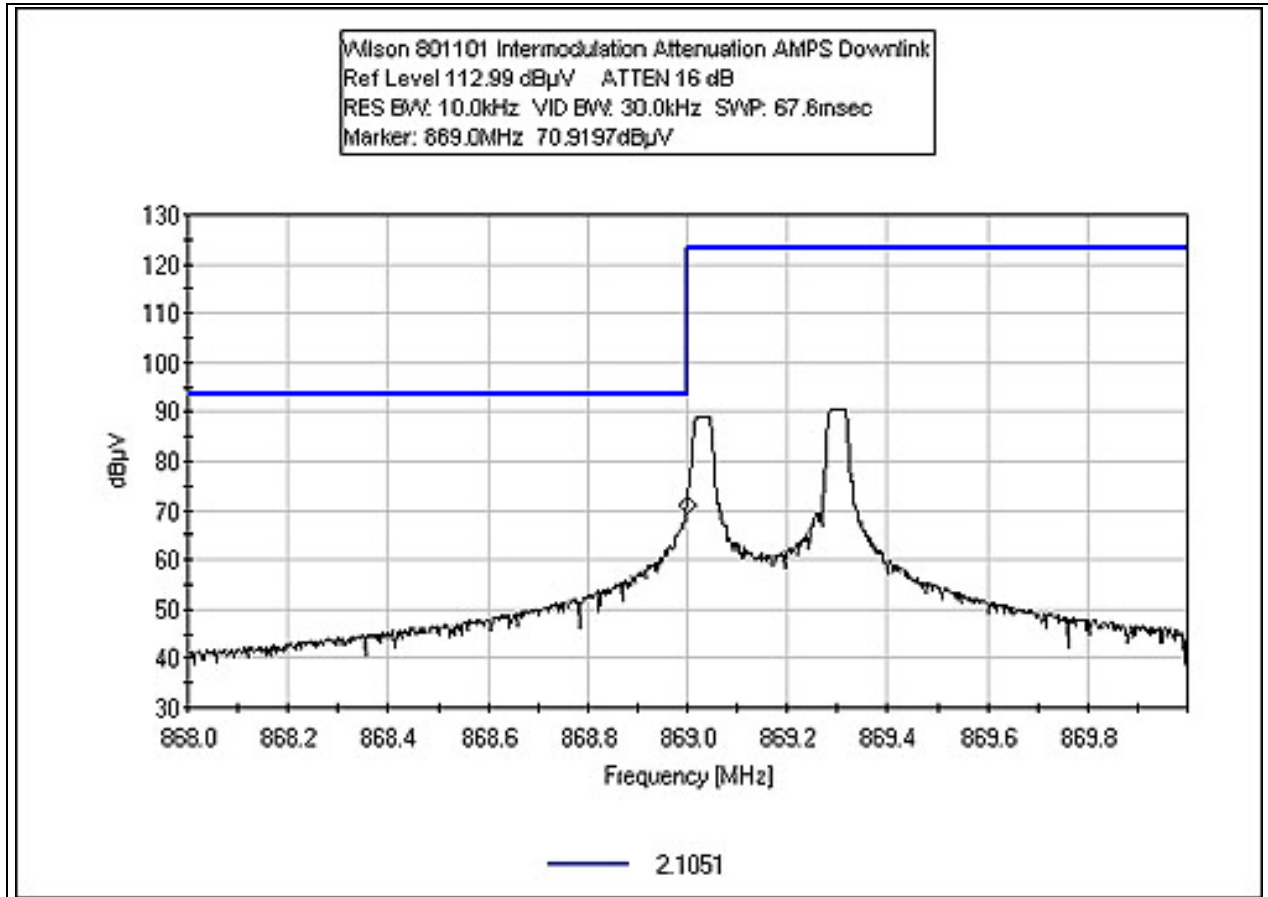
Reading listed by margin.

Test Lead: RF Output Downlink

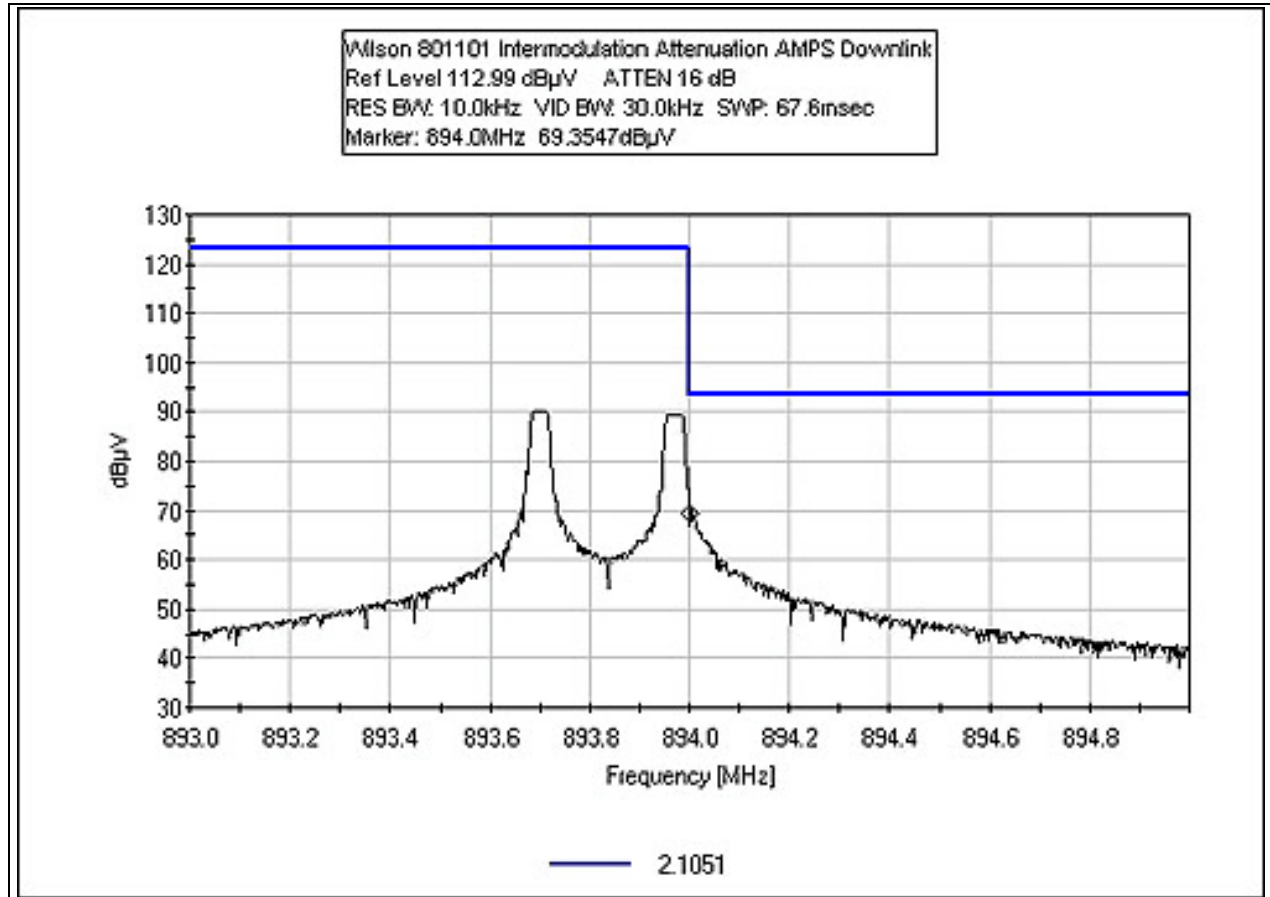
#	Freq MHz	Rdng dB $\mu$ V	T1 dB	dB			Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
1	869.000M	70.9	+0.6				+0.0	71.5	94.0	-22.5	RF Ou
2	894.000M	67.4	+0.6				+0.0	68.0	94.0	-26.0	RF Ou
3	869.000M	43.6	+0.6				+0.0	44.2	94.0	-49.8	RF Ou
								GSM			
4	894.000M	37.2	+0.6				+0.0	37.8	94.0	-56.2	RF Ou
								GSM			

5	894.000M	36.1	+0.6	+0.0	36.7	94.0	-57.3	RF Ou
						EDGE		
6	869.000M	35.0	+0.6	+0.0	35.6	94.0	-58.4	RF Ou
						EDGE		
7	869.000M	21.9	+0.6	+0.0	22.5	94.0	-71.5	RF Ou
						CDMA		
8	894.000M	20.6	+0.6	+0.0	21.2	94.0	-72.8	RF Ou
						CDMA		

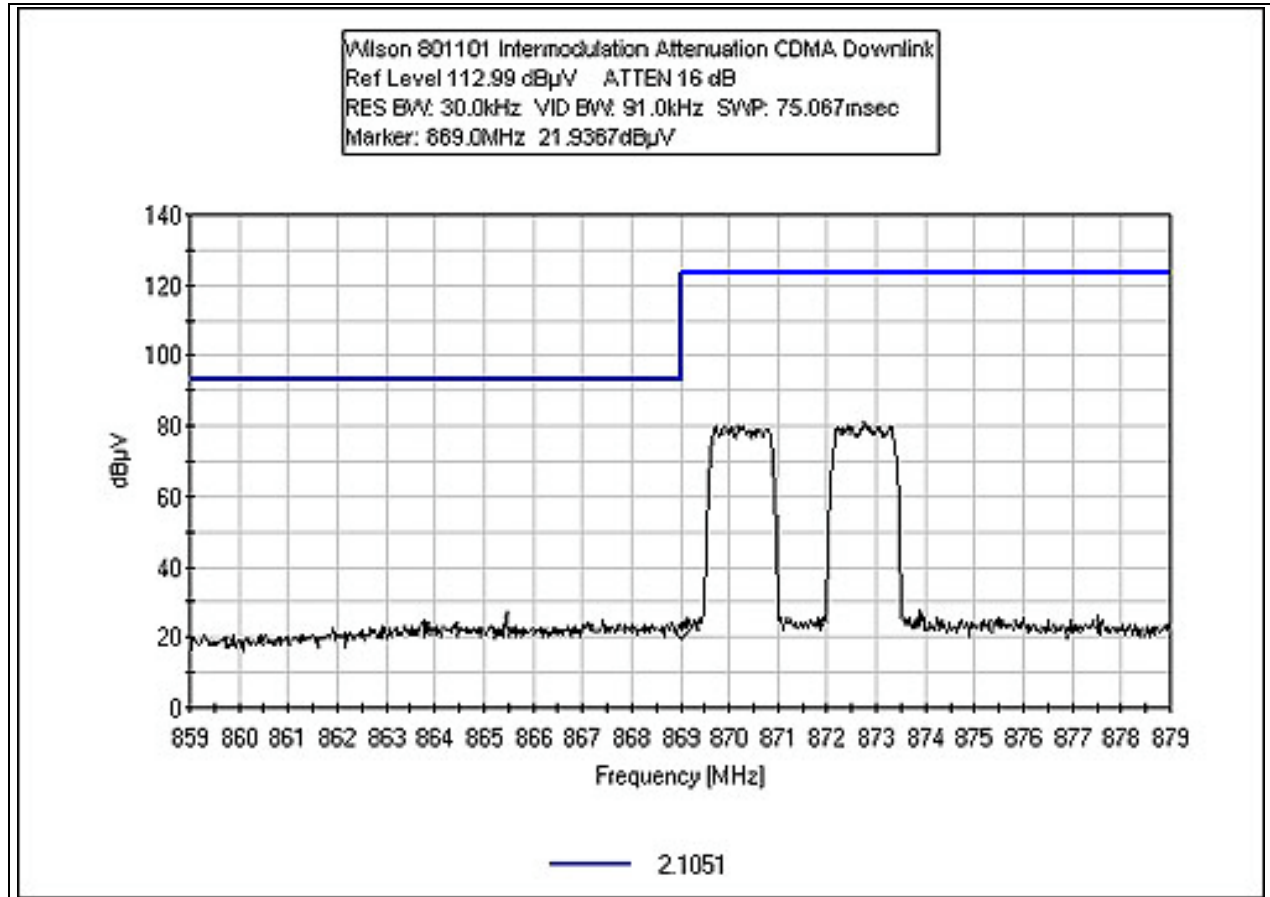
## DOWNLINK INTERMODULATION ATTENUATION - AMPS LOW



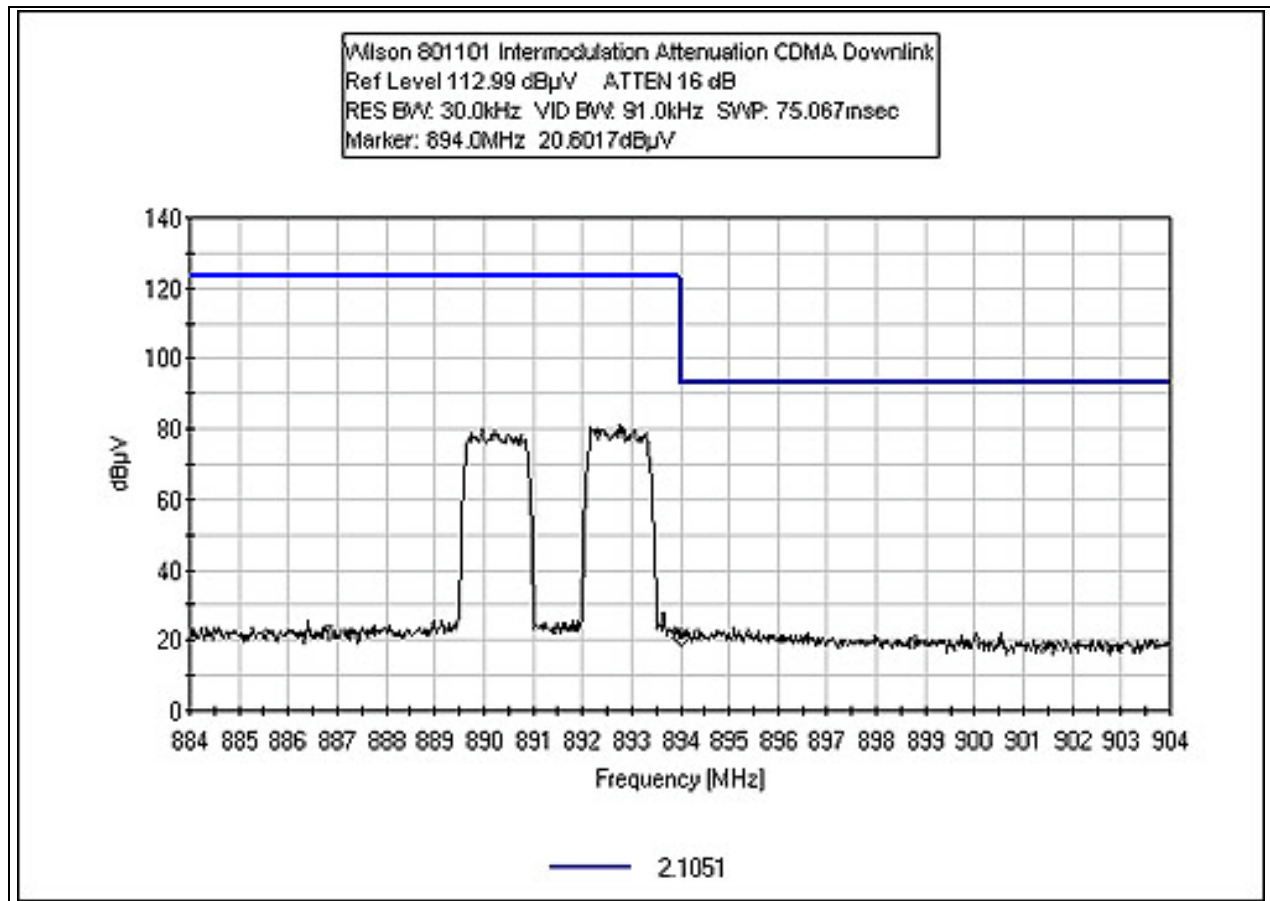
## DOWNLINK INTERMODULATION ATTENUATION - AMPS HIGH



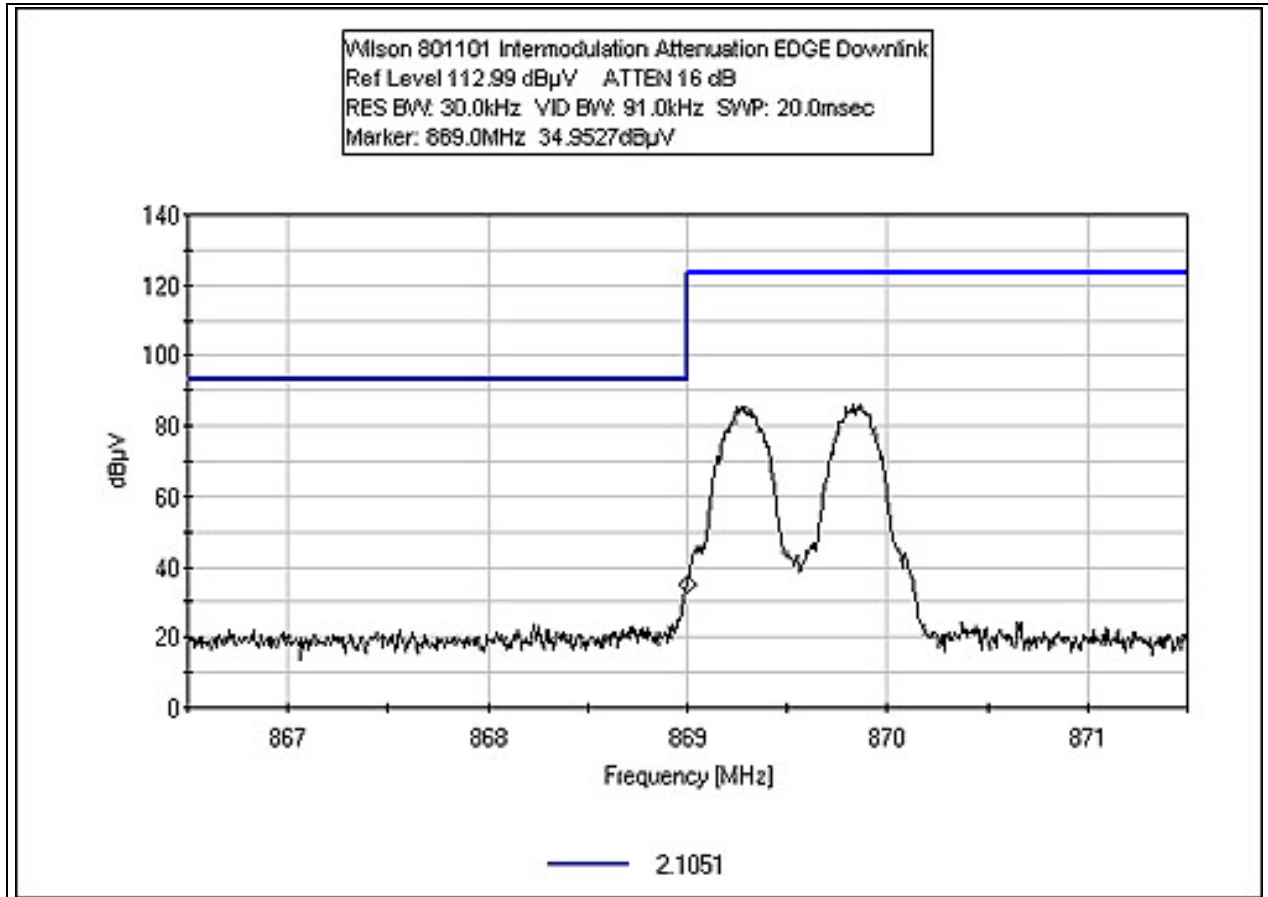
## DOWNLINK INTERMODULATION ATTENUATION - CDMA LOW



## DOWNLINK INTERMODULATION ATTENUATION - CDMA HIGH

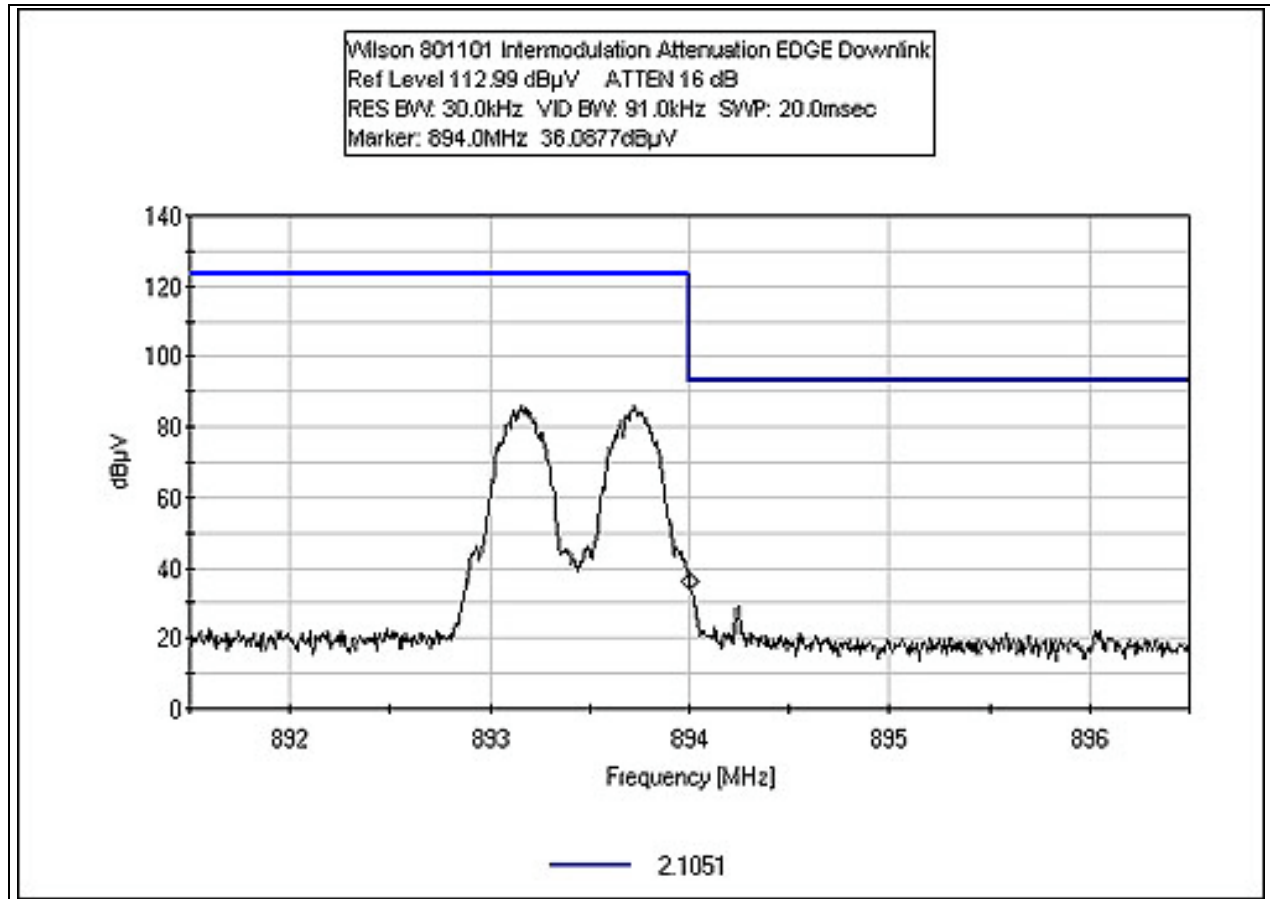


# DOWNLINK INTERMODULATION ATTENUATION - EDGE LOW

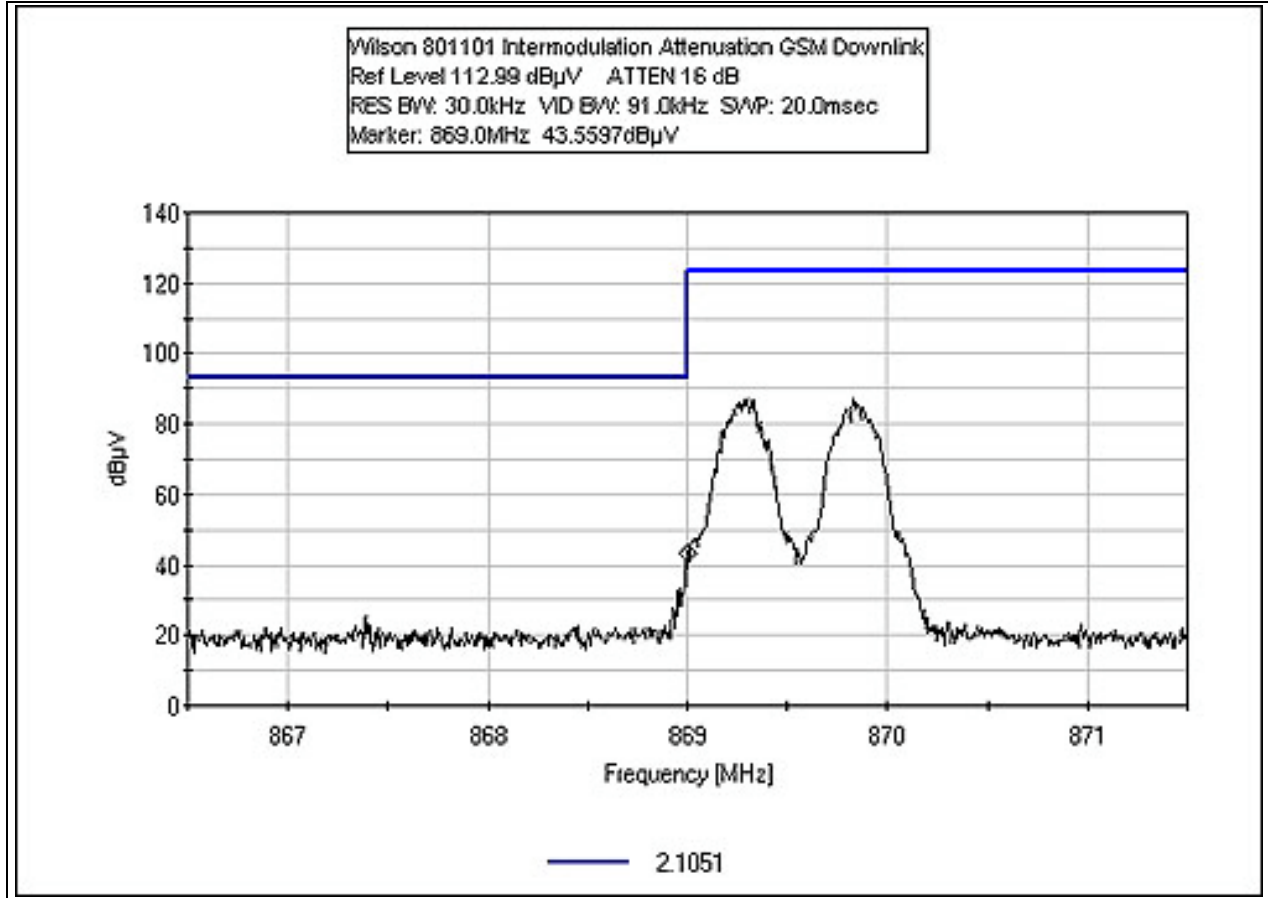




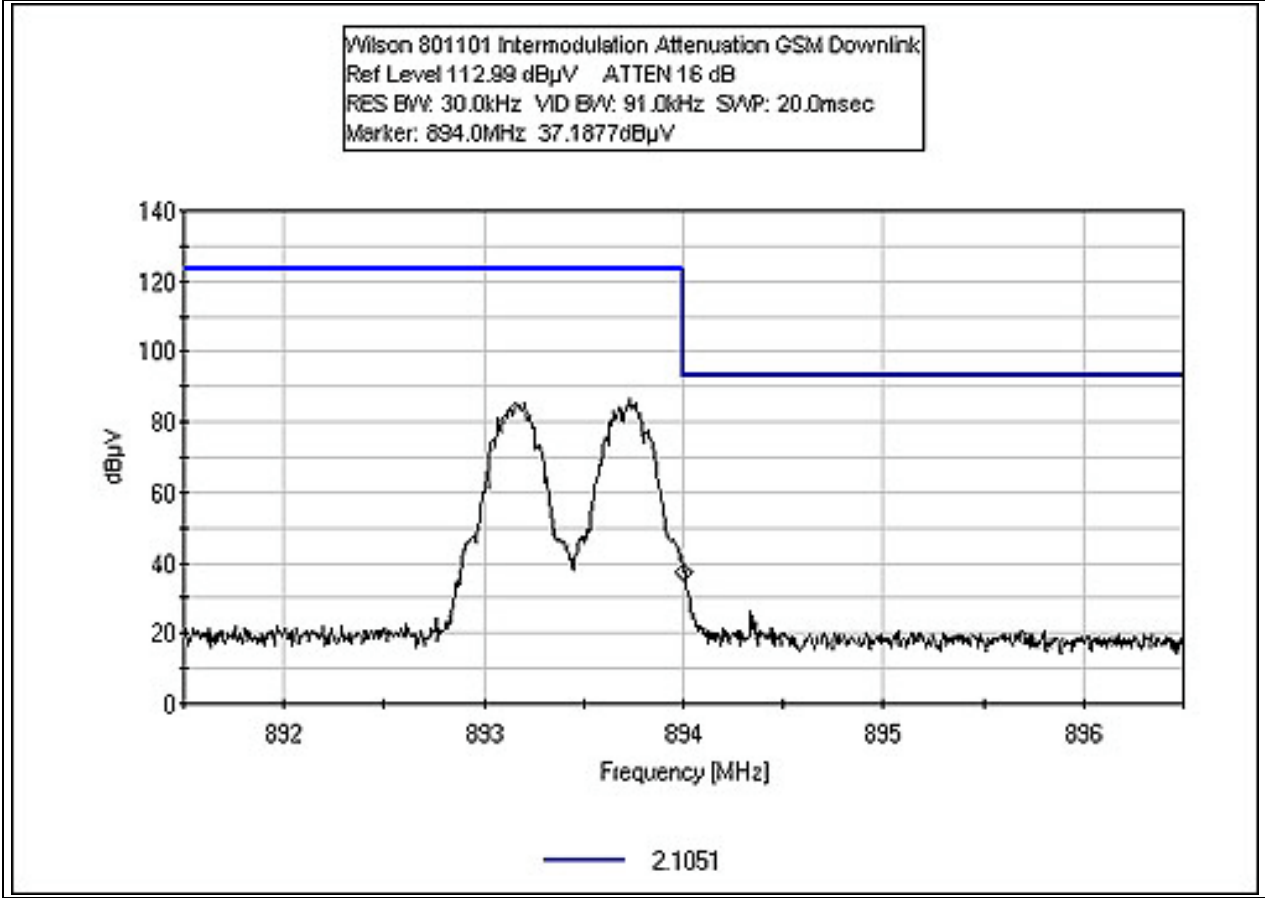
## DOWNLINK INTERMODULATION ATTENUATION - EDGE HIGH



# DOWNLINK INTERMODULATION ATTENUATION - GSM LOW



# DOWNLINK INTERMODULATION ATTENUATION - GSM HIGH



## UPLINK INTERMODULATION ATTENUATION

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

Customer: **Wilson Electronics**  
 Specification: **2.1051**  
 Work Order #: **81892** Date: 9/14/2006  
 Test Type: **Antenna Conducted** Time: 10:45:53  
 Equipment: **Bidirectional Cellular Amplifier Repeater** Sequence#: 29  
 Manufacturer: Wilson Electronics Tested By: Randal Clark  
 Model: 801101 12VDC  
 S/N: 8011018033282

**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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

**Support Devices:**

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

**Test Conditions / Notes:**

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Frequency Range Investigated: 30-9000 MHz. Amplification Band: Uplink. Carrier Frequency: Intermodulation. Test Modulation Type: As Listed. Temperature: 81°F, Relative Humidity: 36%.

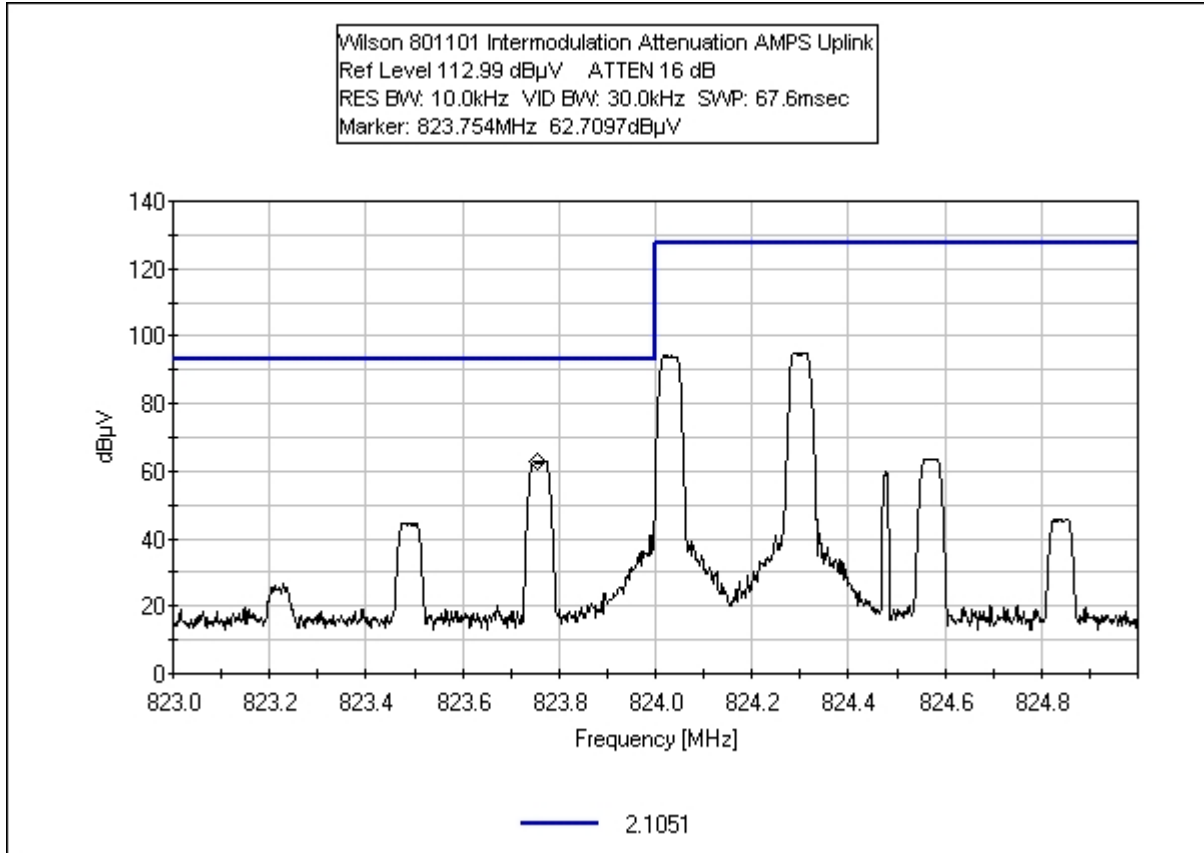
**Transducer Legend:**

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

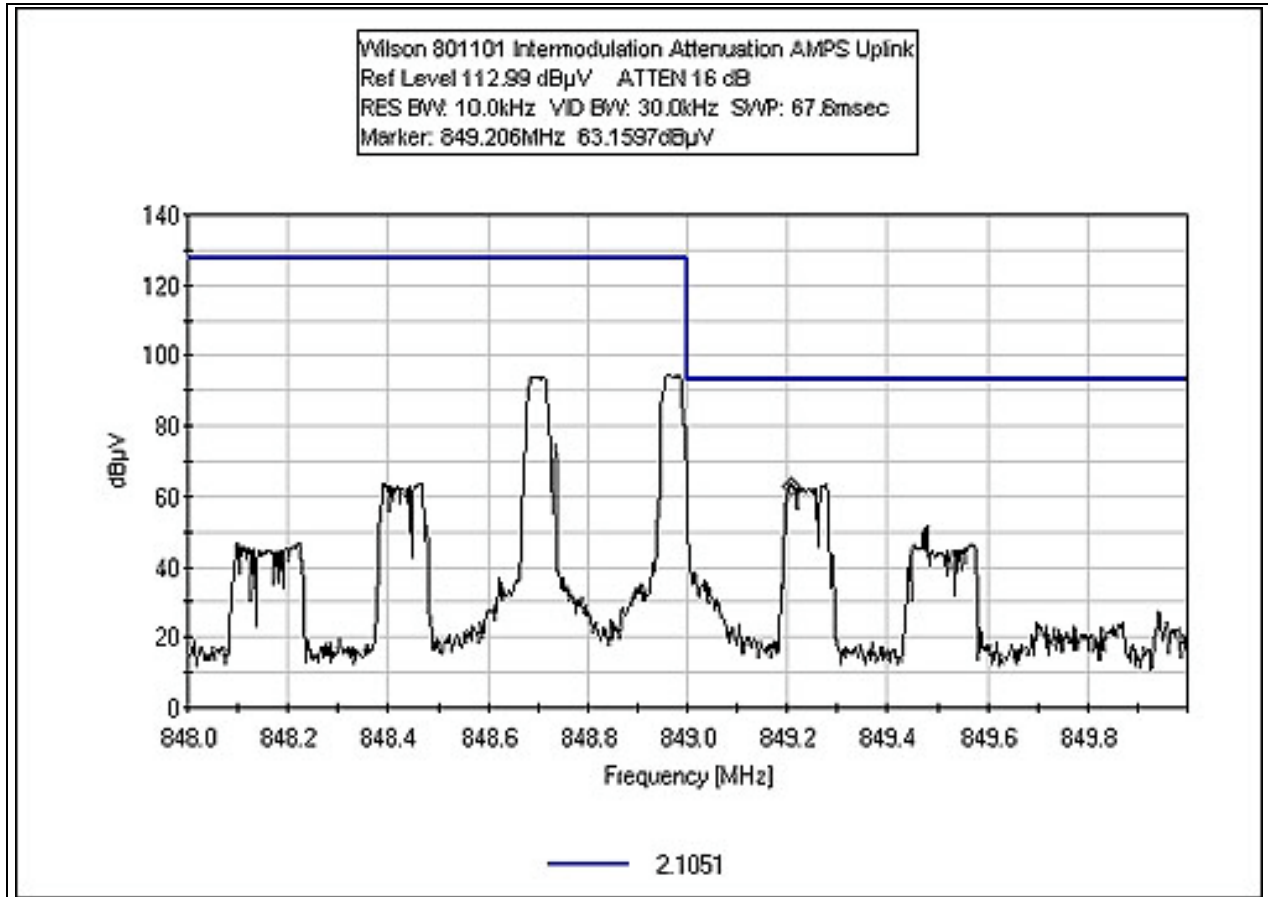
#	Freq MHz	Rdng dBμV	Reading listed by margin.				Test Lead: RF Output Uplink				
			T1 dB	T2 dB			Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	849.206M	63.2	+0.6	+30.1			+0.0	93.9	94.0	-0.1	RF Ou
2	823.754M	62.7	+0.6	+30.0			+0.0	93.3	94.0	-0.7	RF Ou
3	823.725M	62.3	+0.6	+30.0			+0.0	92.9	94.0	-1.1	RF Ou

4	823.705M	62.3	+0.6	+30.0	+0.0	92.9	94.0	-1.1	RF Ou
							GSM		
5	824.000M	61.5	+0.6	+30.1	+0.0	92.2	94.0	-1.8	RF Ou
							CDMA		
6	849.205M	60.9	+0.6	+30.1	+0.0	91.6	94.0	-2.4	RF Ou
							GSM		
7	849.325M	60.3	+0.6	+30.1	+0.0	91.0	94.0	-3.0	RF Ou
							EDGE		
8	849.000M	58.6	+0.6	+30.1	+0.0	89.3	94.0	-4.7	RF Ou
							CDMA		
9	1648.325M	33.5	+0.8	+30.2	+0.0	64.5	94.0	-29.5	RF Ou
							AMPS		
10	1697.647M	32.4	+0.8	+30.1	+0.0	63.3	94.0	-30.7	RF Ou
							AMPS		
11	1649.190M	31.3	+0.8	+30.2	+0.0	62.3	94.0	-31.7	RF Ou
							GSM		
12	1649.150M	30.1	+0.8	+30.2	+0.0	61.1	94.0	-32.9	RF Ou
							EDGE		
13	1696.850M	28.3	+0.8	+30.1	+0.0	59.2	94.0	-34.8	RF Ou
							GSM		
14	1696.820M	27.4	+0.8	+30.1	+0.0	58.3	94.0	-35.7	RF Ou
							EDGE		

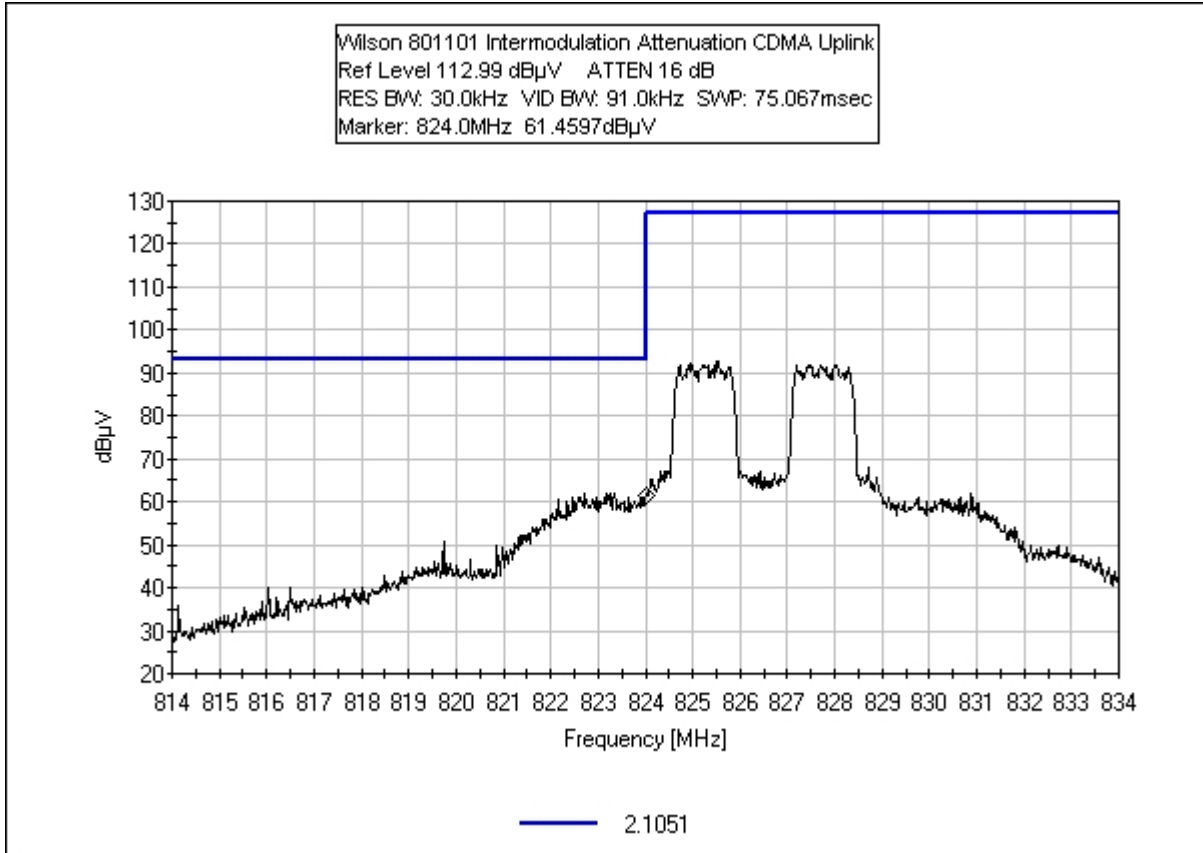
# UPLINK INTERMODULATION ATTENUATION - AMPS LOW



# UPLINK INTERMODULATION ATTENUATION - AMPS HIGH

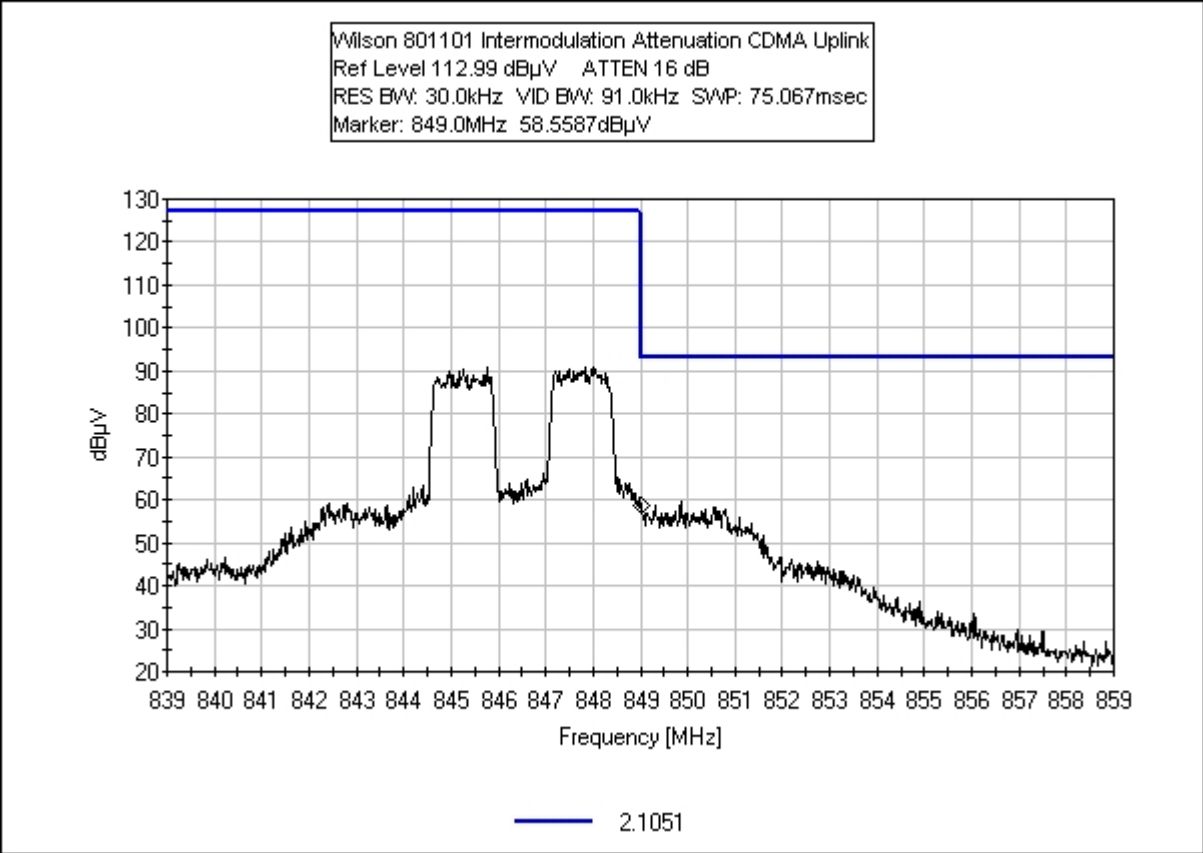


# UPLINK INTERMODULATION ATTENUATION - CDMA LOW

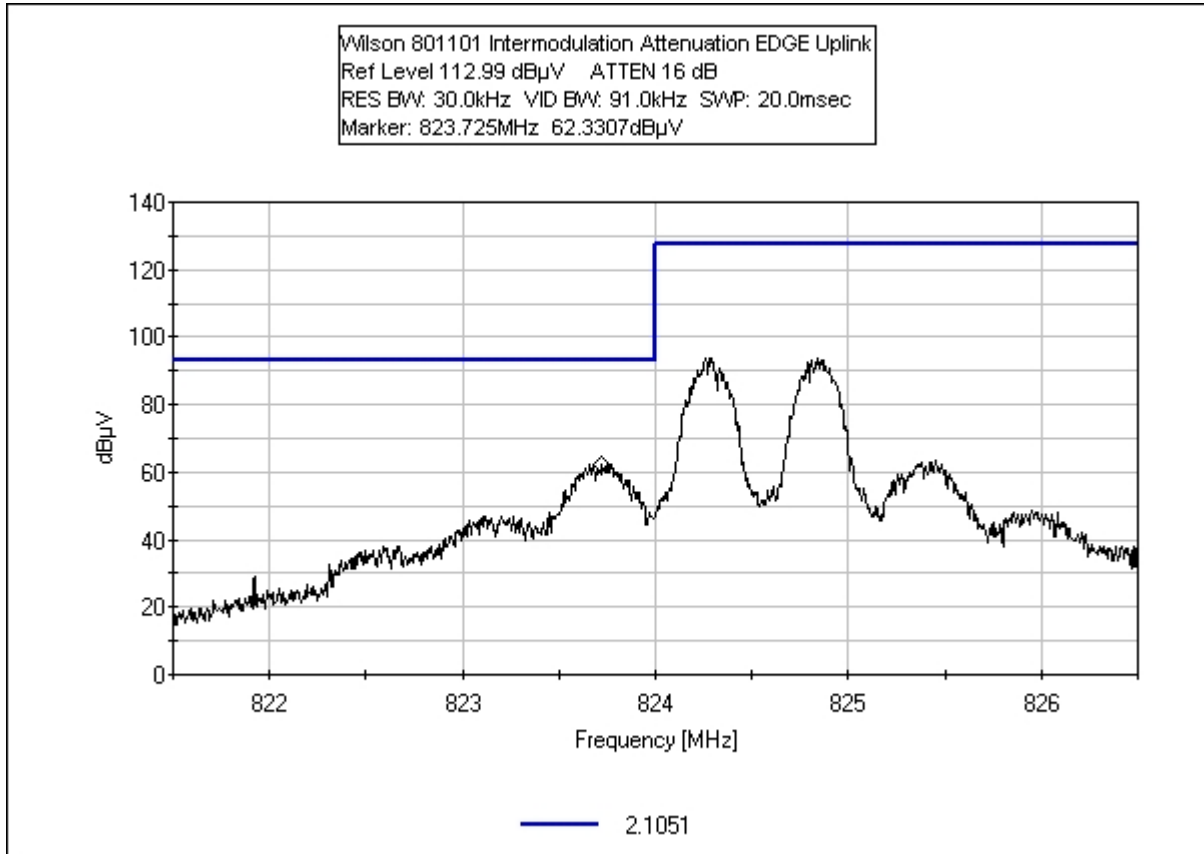




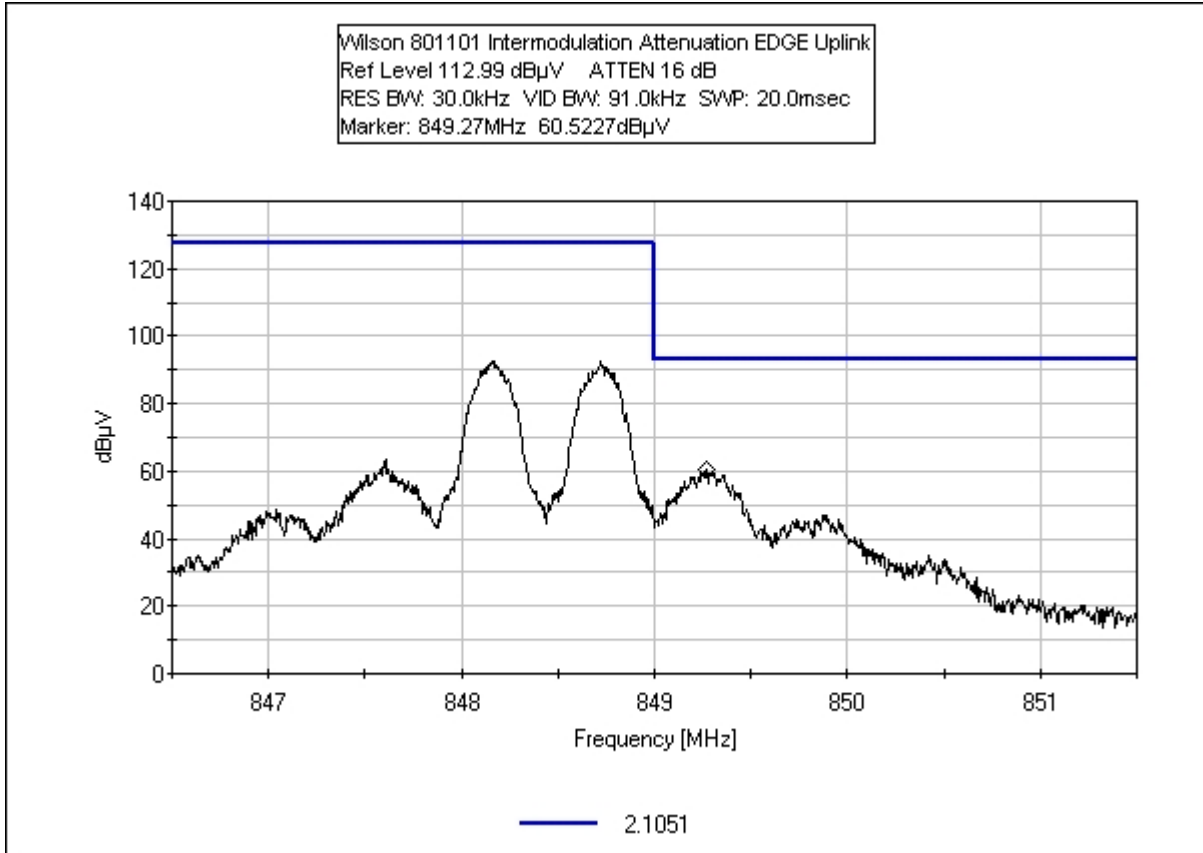
# UPLINK INTERMODULATION ATTENUATION - CDMA HIGH



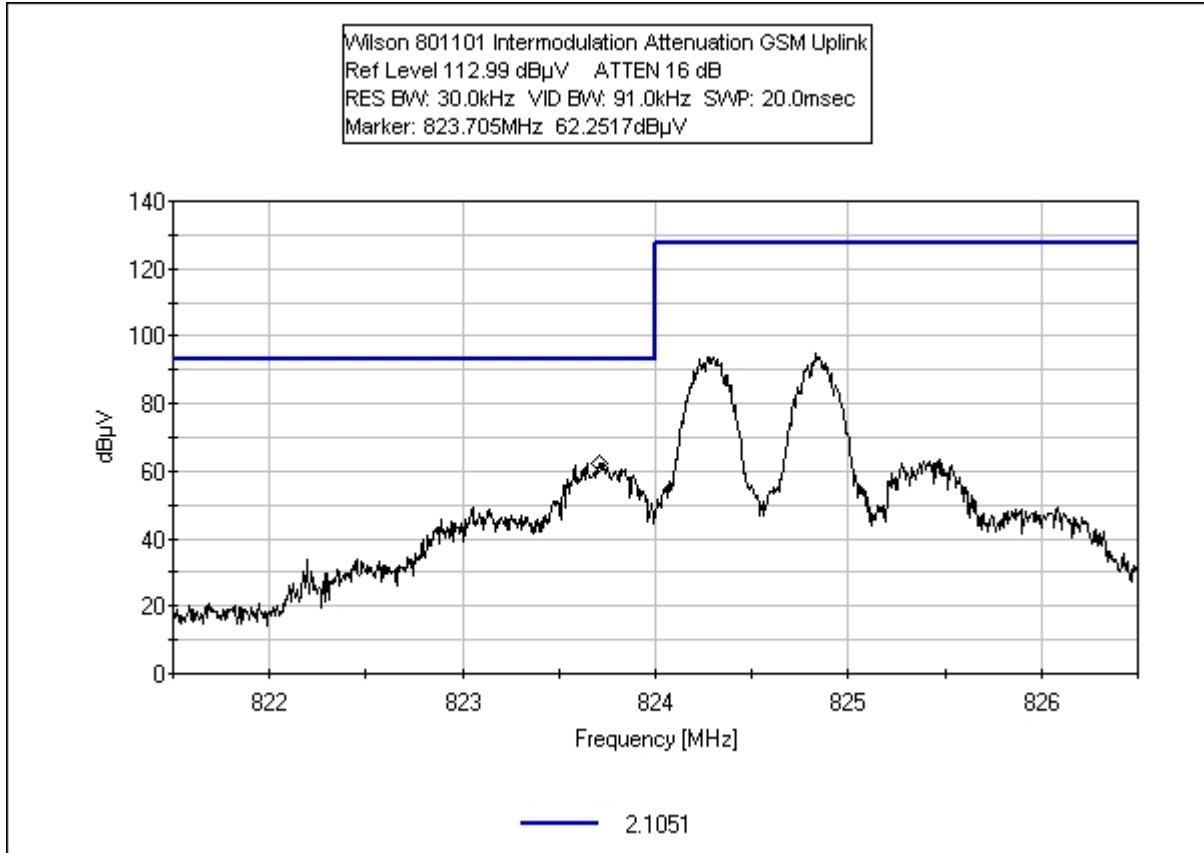
## UPLINK INTERMODULATION ATTENUATION - EDGE LOW



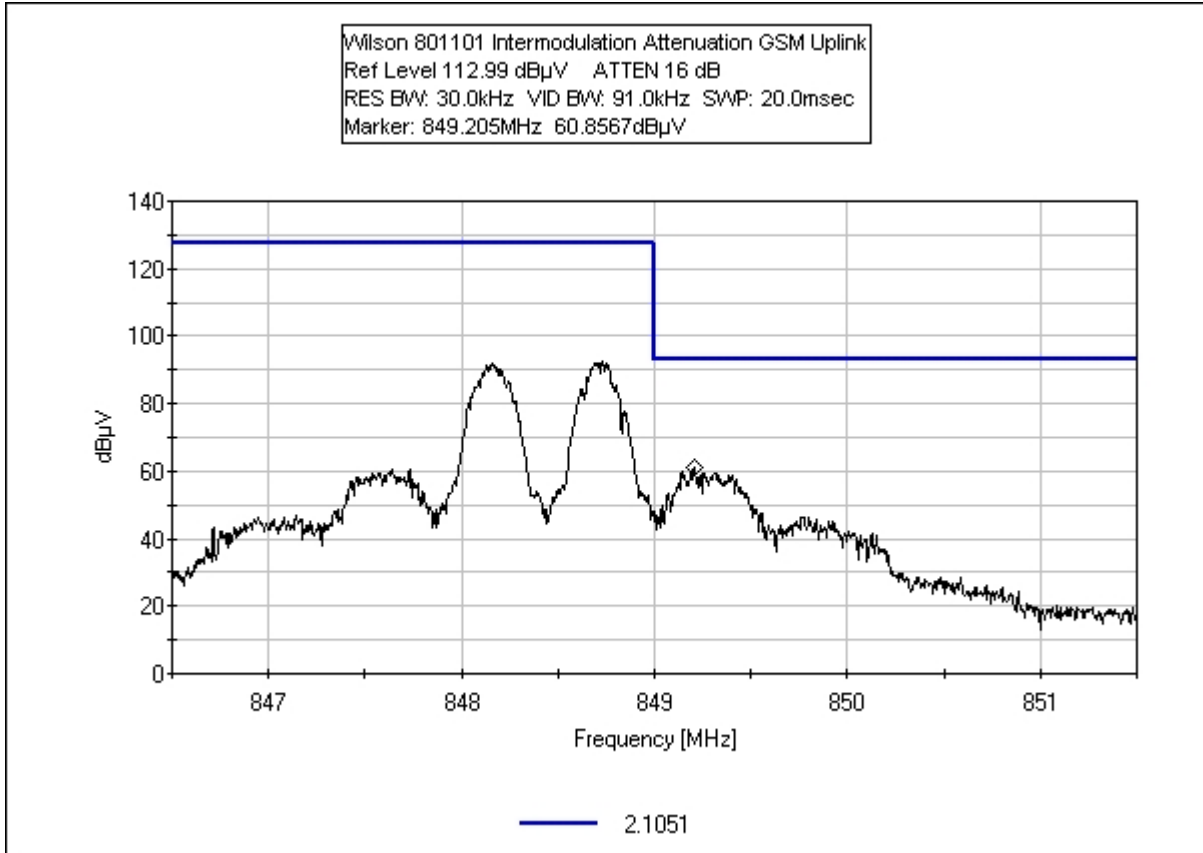
## UPLINK INTERMODULATION ATTENUATION - EDGE HIGH



## UPLINK INTERMODULATION ATTENUATION - GSM LOW



# UPLINK INTERMODULATION ATTENUATION - GSM HIGH



## DOWNLINK INPUT AND OUTPUT

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1046**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

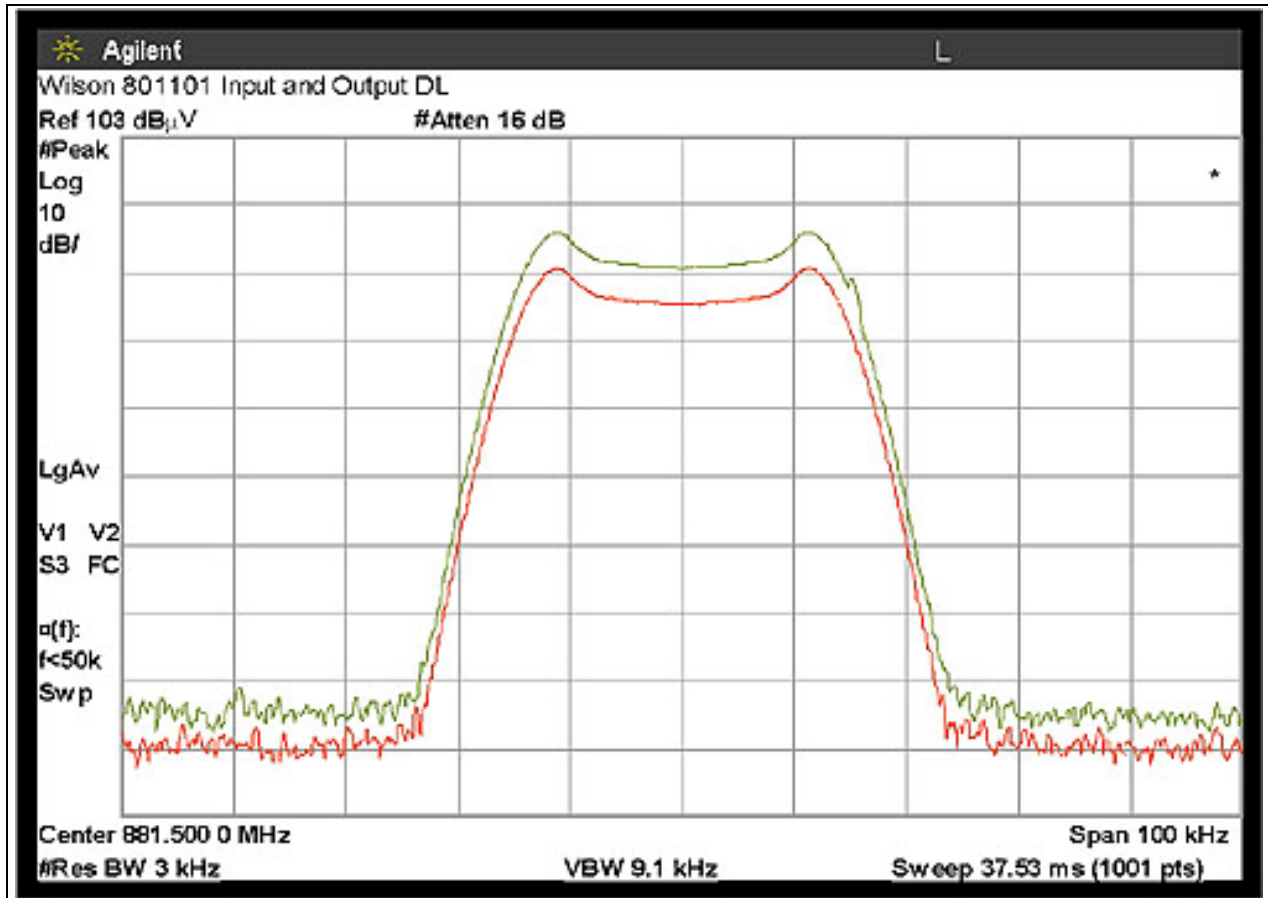
Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

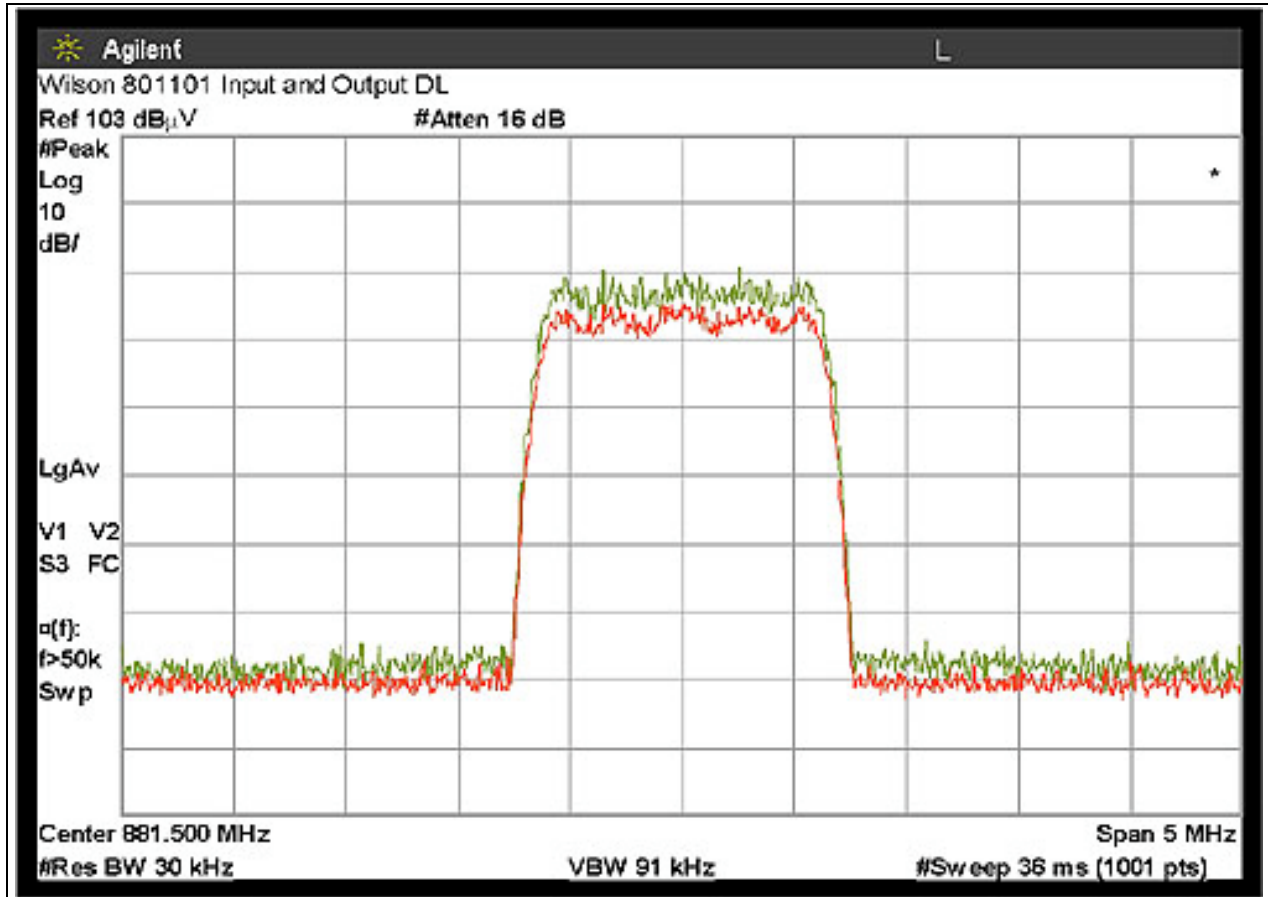
Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation. Plots represent relative comparisons of spectral characteristics. Signal generator levels are adjusted to show close comparison of modulation waveforms - plots do not represent amplifier gain.

Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%

# DOWNLINK INPUT AND OUTPUT - AMPS

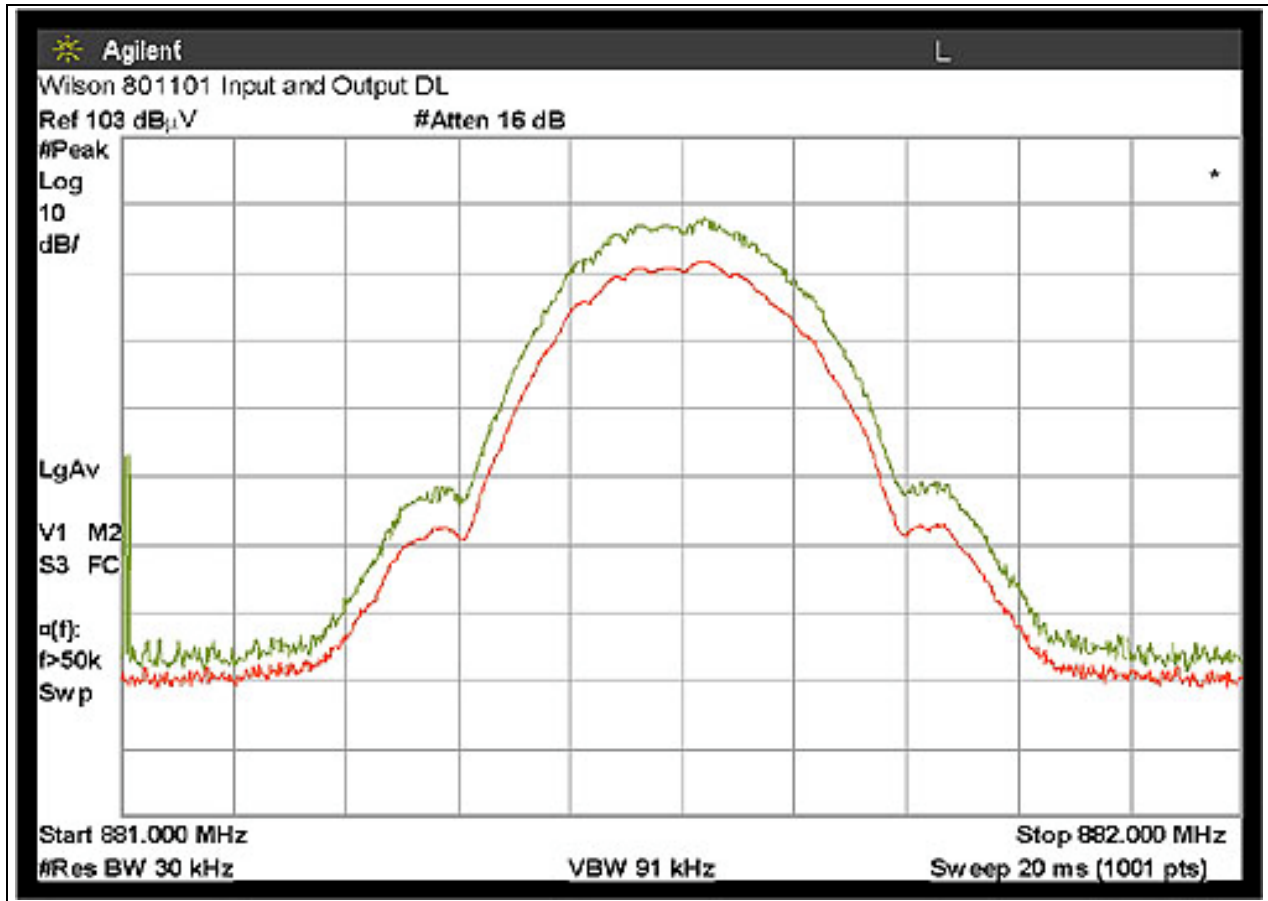


# DOWNLINK INPUT AND OUTPUT - CDMA

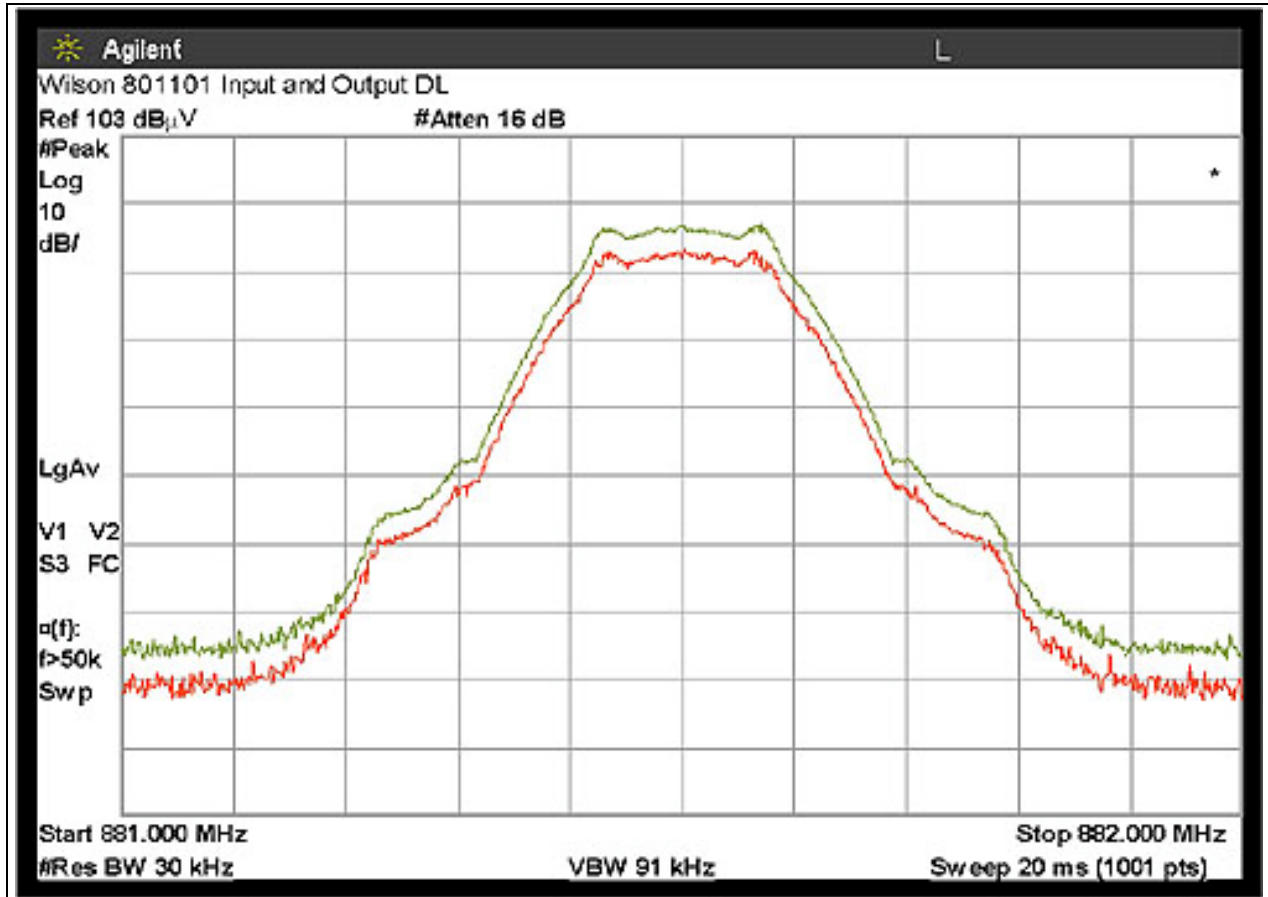




# DOWNLINK INPUT AND OUTPUT - EDGE



# DOWNLINK INPUT AND OUTPUT - GSM



## UPLINK INPUT AND OUTPUT

Customer: **Wilson Electronics**  
 Specification: **FCC 2.1046**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

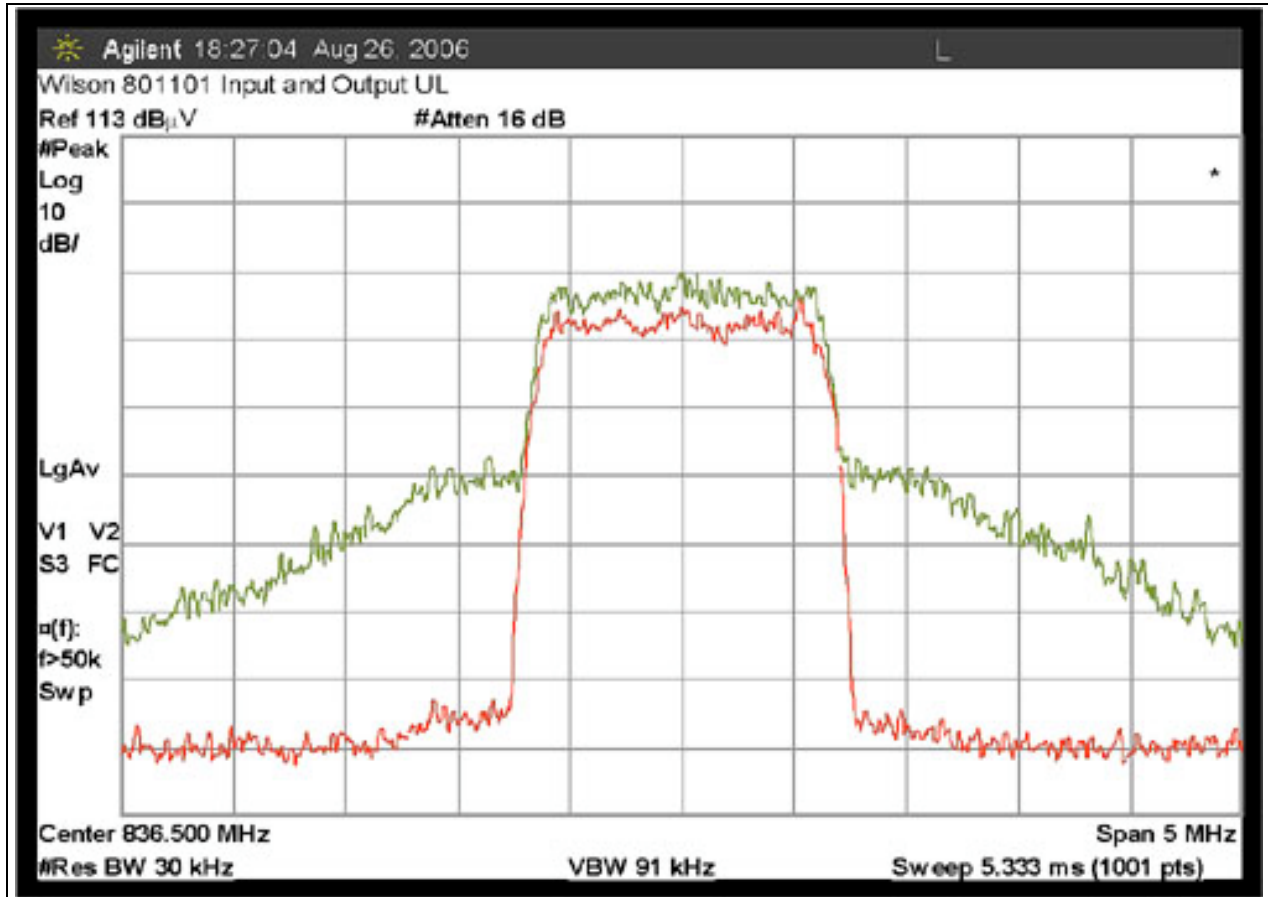
Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation. Plots represent relative comparisons of spectral characteristics. Signal generator levels are adjusted to show close comparison of modulation waveforms - plots do not represent amplifier gain.

Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%

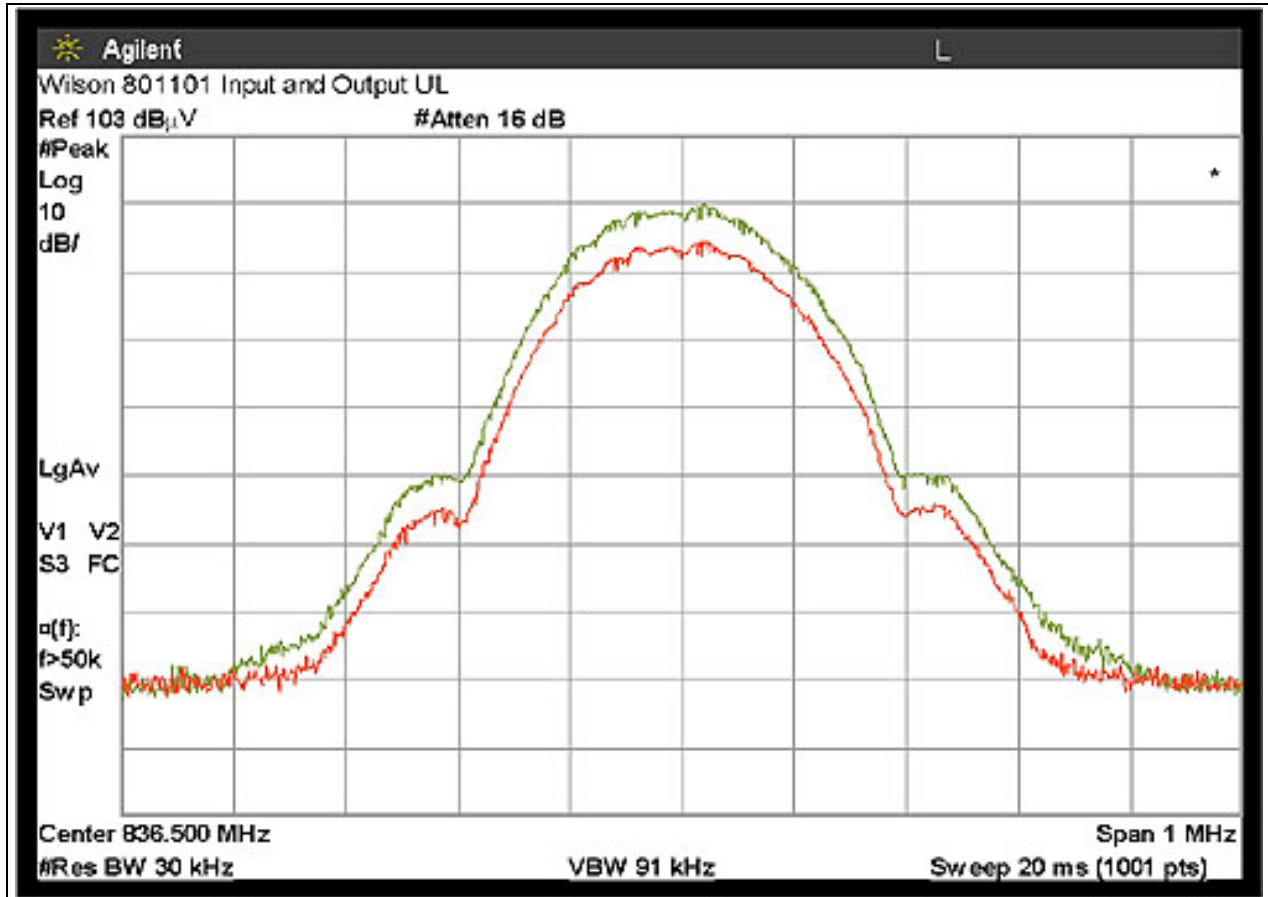
# UPLINK INPUT AND OUTPUT - AMPS



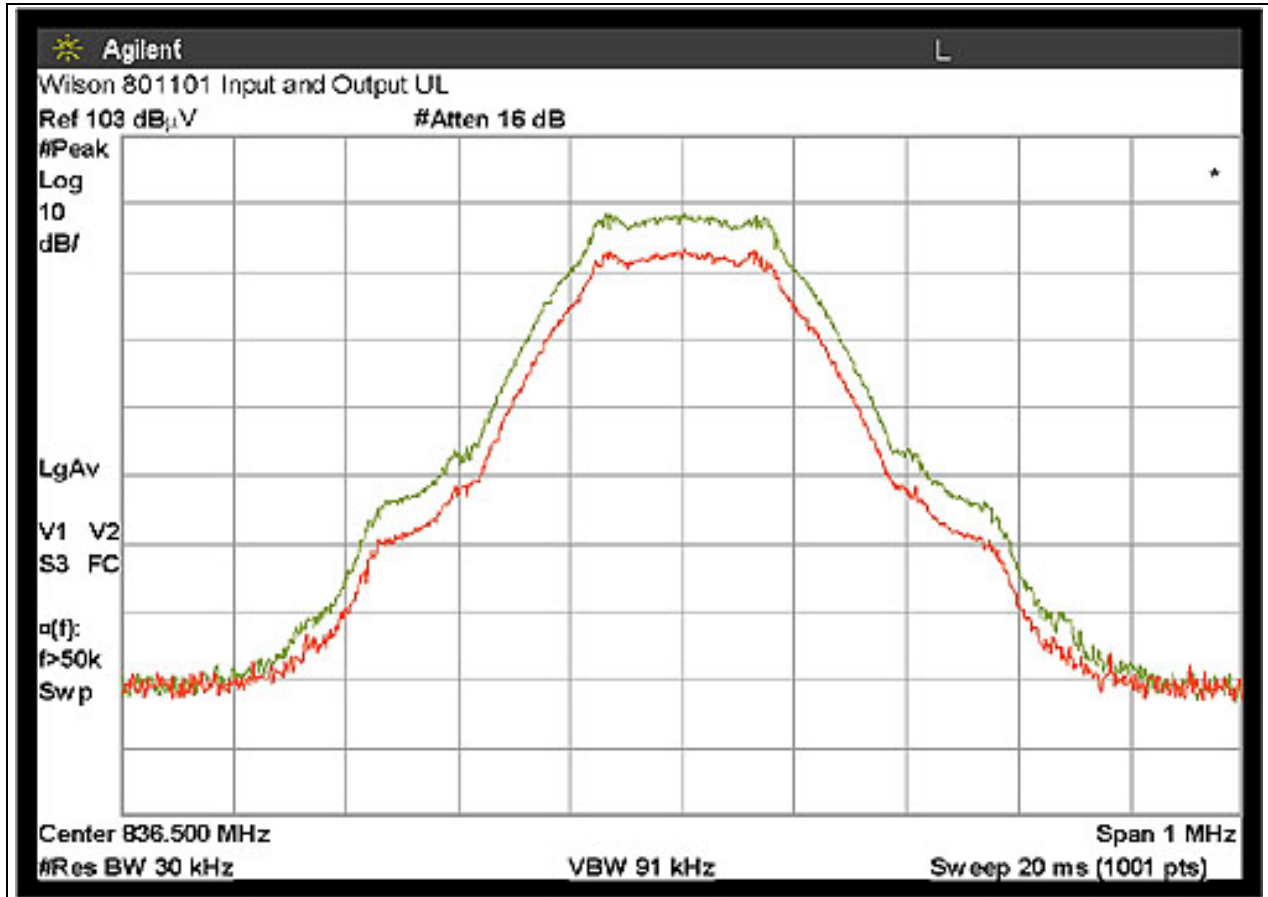
# UPLINK INPUT AND OUTPUT - CDMA



# UPLINK INPUT AND OUTPUT - EDGE



# UPLINK INPUT AND OUTPUT - GSM



## DOWNLINK OUT OF BAND REJECTION

Customer: **Wilson Electronics**  
 Specification: **2.1051**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

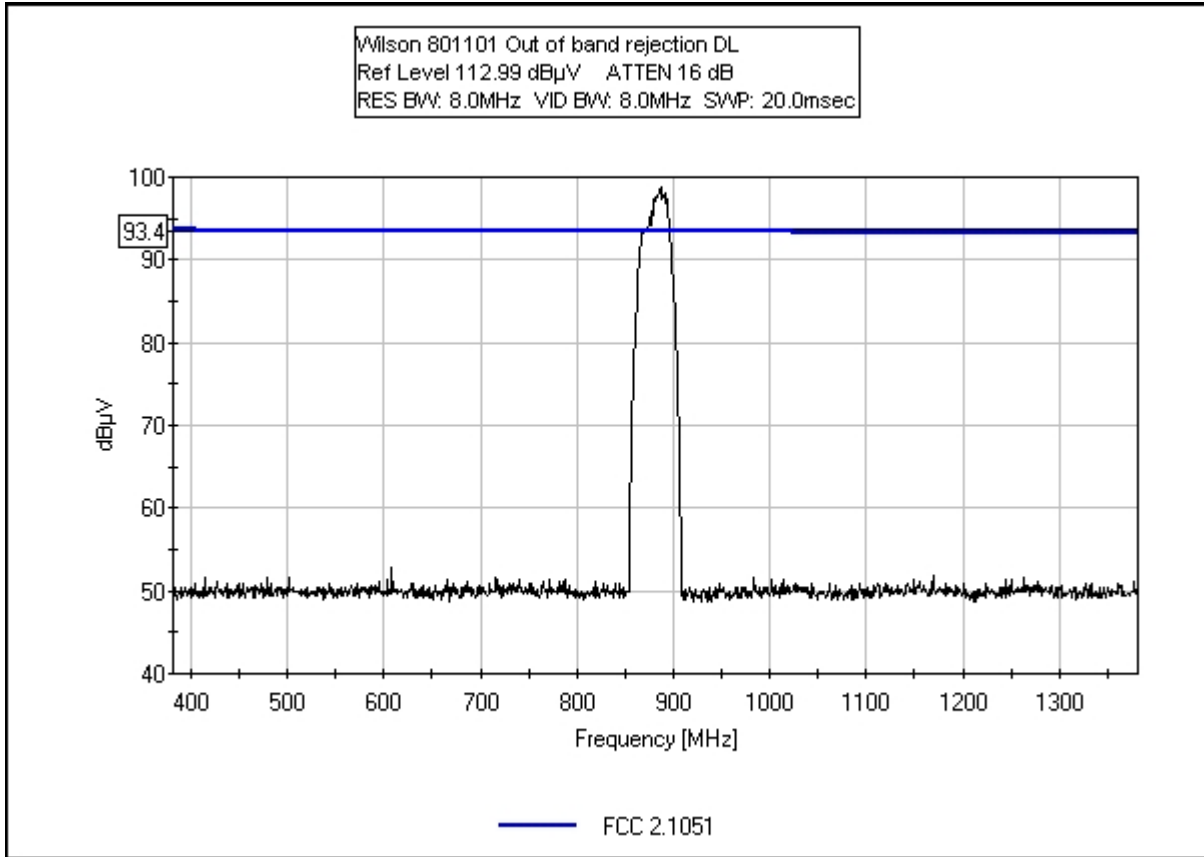
***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation. Input to amplifier is set at the 1 dB compression point of the amplifier's operating output range. The signal generator input is swept across a 1 GHz frequency range while a spectrum analyzer monitors the amplifier output.

Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%



## DOWNLINK OUT OF BAND REJECTION



## UPLINK OUT OF BAND REJECTION

Customer: **Wilson Electronics**  
 Specification: **2.1051**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

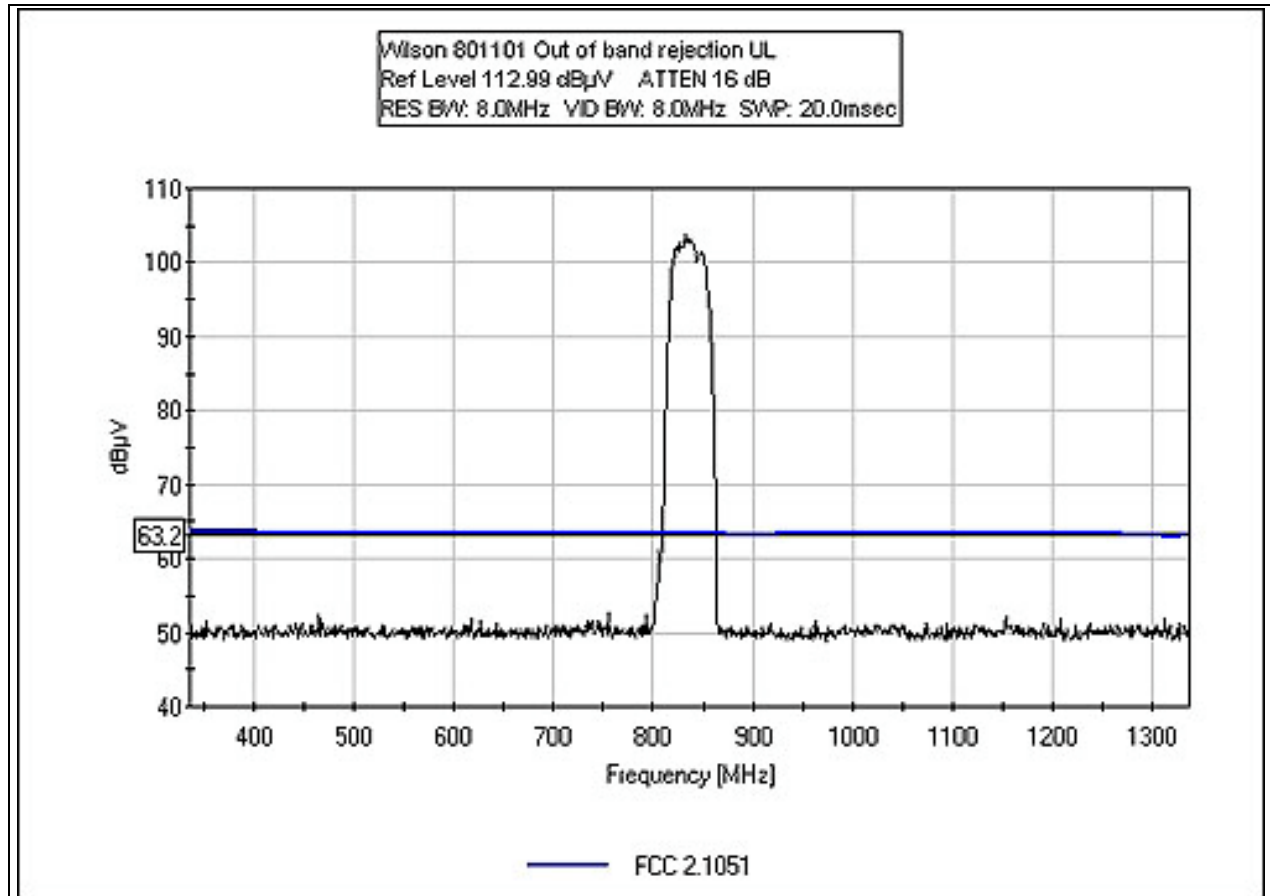
Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation. Input to amplifier is set at the 1 dB compression point of the amplifier's operating output range. The signal generator input is swept across a 1 GHz frequency range while a spectrum analyzer monitors the amplifier output.

Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%

## UPLINK OUT OF BAND REJECTION



## DOWNLINK RSS-131 PASSBAND GAIN

Customer: **Wilson Electronics**  
 Specification: **RSS 131**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

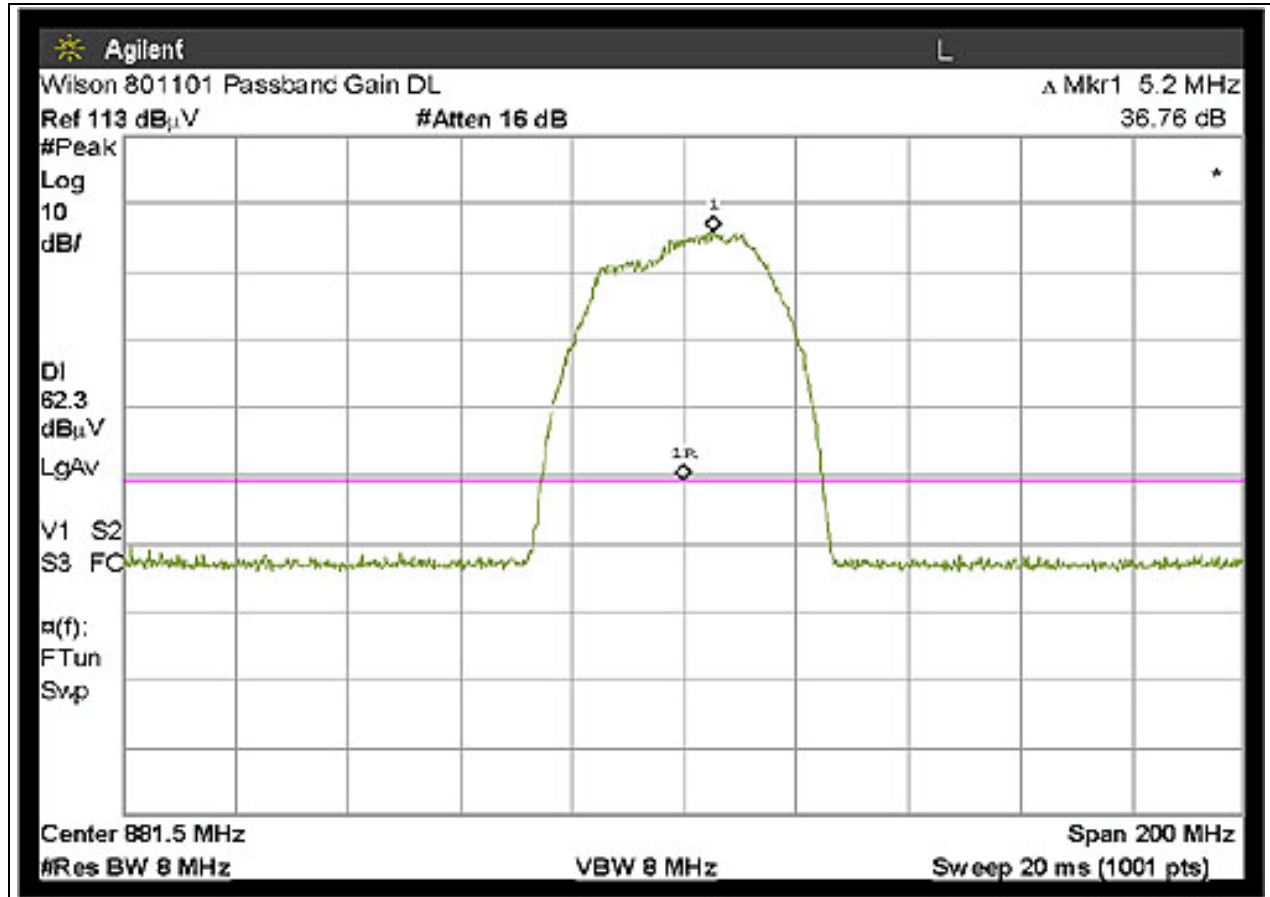
Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation. Input to amplifier is set such that the output is within the linear range of the amplifier's operating range.

Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%

# DOWNLINK RSS-131 PASSBAND GAIN



## UPLINK RSS-131 PASSBAND GAIN

Customer: **Wilson Electronics**  
 Specification: **RSS 131**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

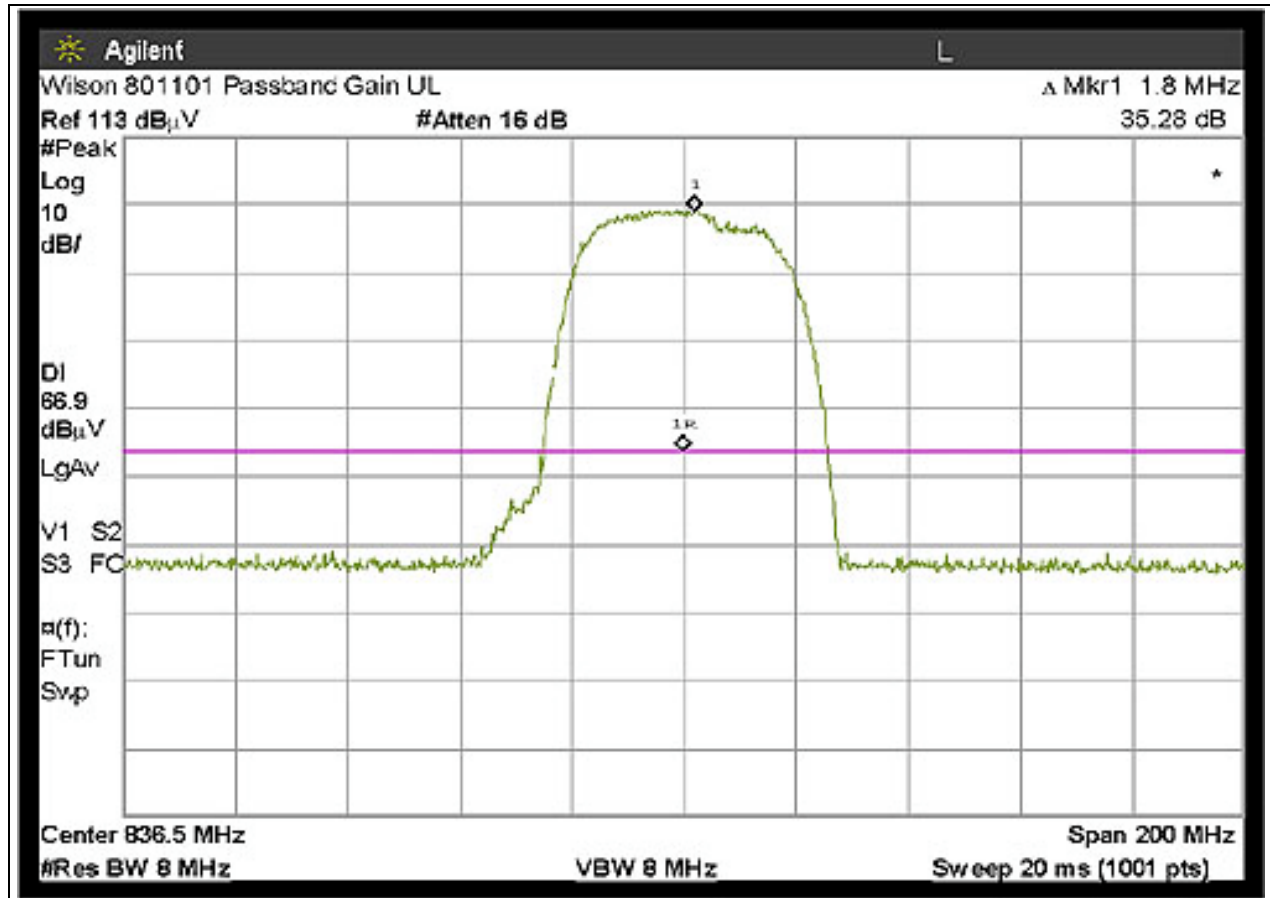
Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation. Input to amplifier is set such that the output is within the linear range of the amplifier's operating range.

Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%

# UPLINK RSS-131 PASSBAND GAIN



## DOWNLINK RSS-131 PASSBAND WIDTH

Customer: **Wilson Electronics**  
 Specification: **RSS 131**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

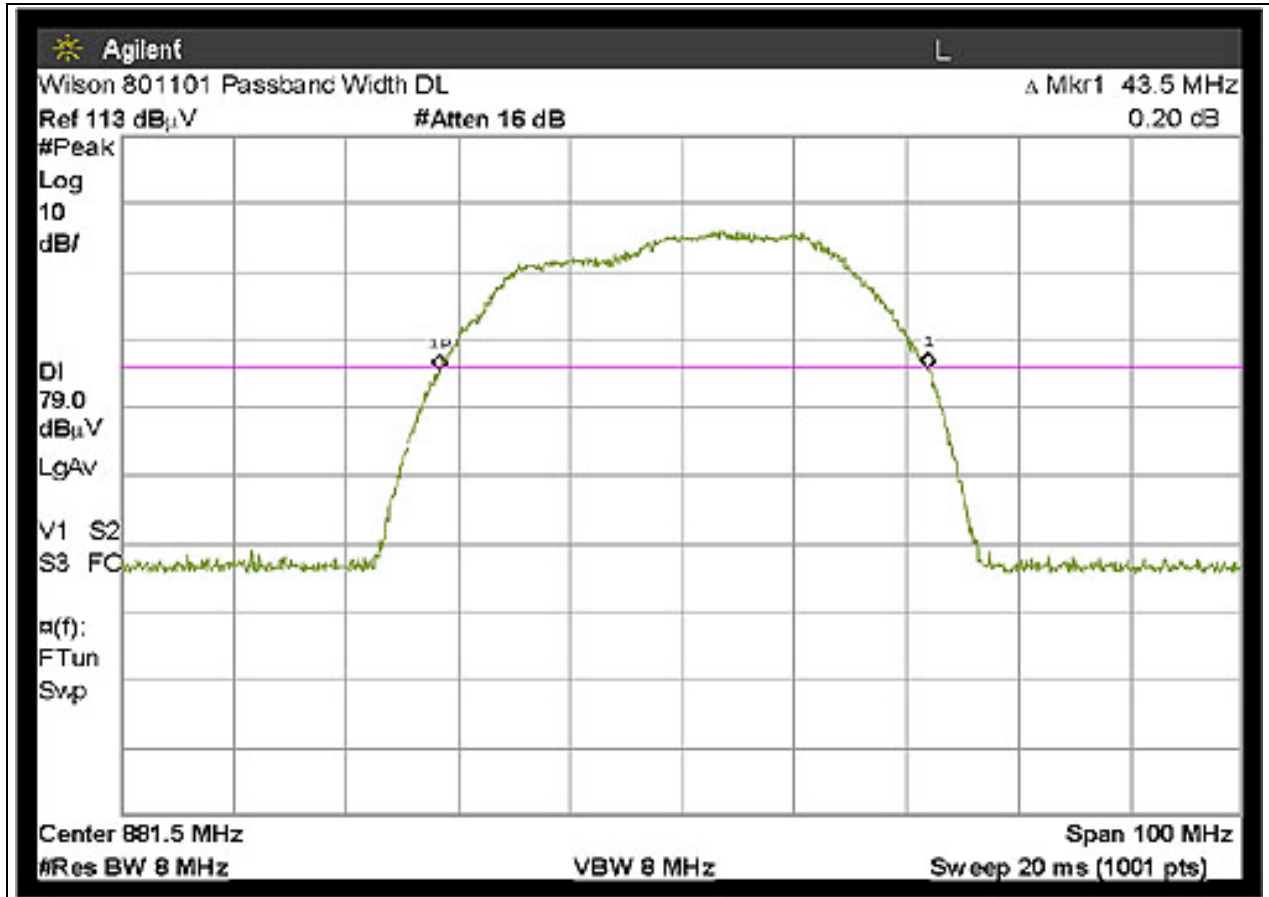
***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation. Input to amplifier is set such that the output is within the linear range of the amplifier's operating range.

Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%



# DOWNLINK RSS-131 PASSBAND WIDTH



## UPLINK RSS-131 PASSBAND WIDTH

Customer: **Wilson Electronics**  
 Specification: **RSS 131**  
 Work Order #: **81892**  
 Test Type: **Antenna Conducted**  
 Equipment: **Bidirectional Cellular Amplifier Repeater**

Manufacturer: Wilson Electronics  
 Model: 801101  
 S/N: 8011018033282

Tested By: Randal Clark  
 12VDC

***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
Bidirectional Cellular Amplifier Repeater*	Wilson Electronics	801101	8011018033282

***Support Devices:***

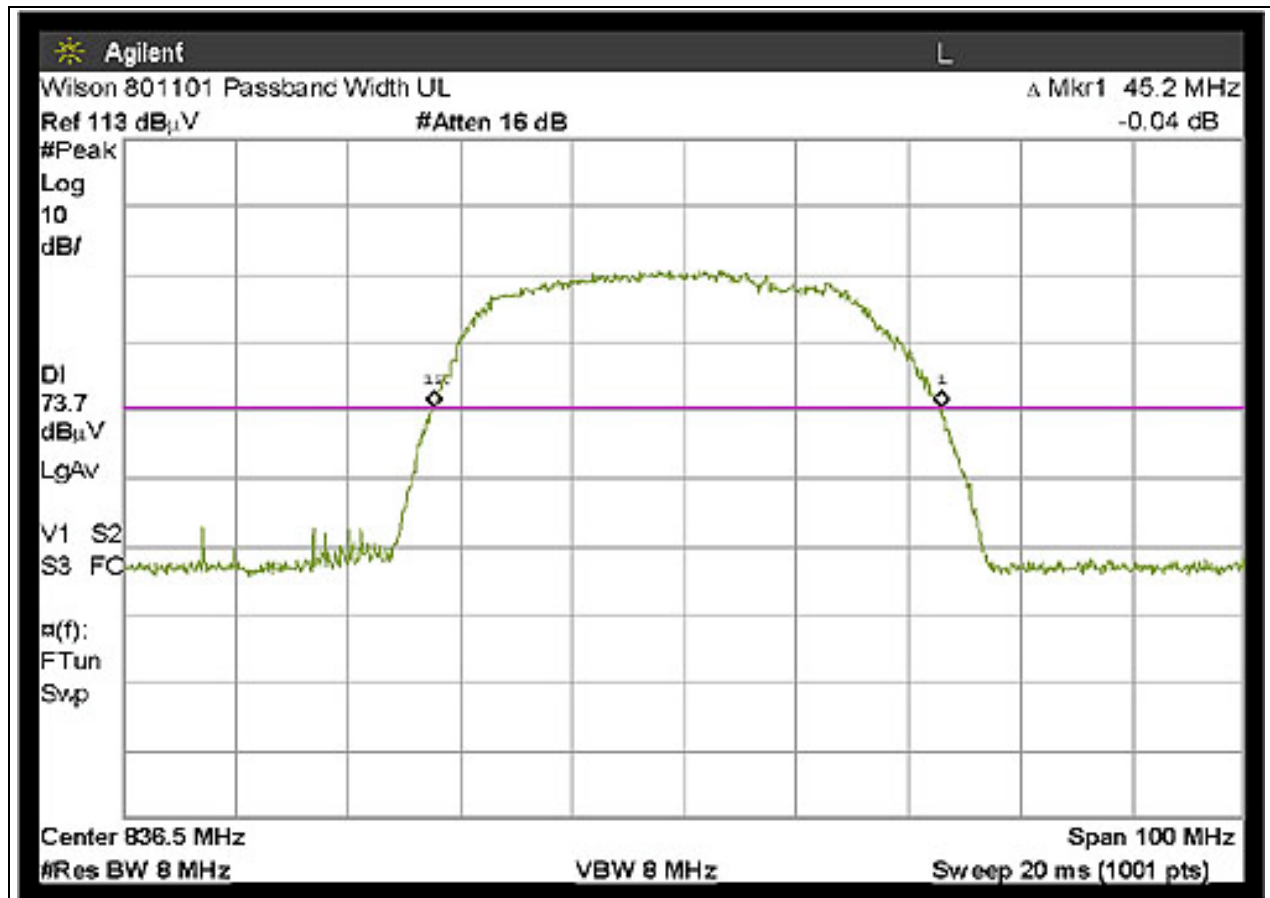
Function	Manufacturer	Model #	S/N
DC Power Supply	Topward Electric Instruments Co., Ltd.	TPS-2000	920035
Digital Signal Generator	Agilent	E4432B	MY41000108

***Test Conditions / Notes:***

Equipment is a bidirectional cellular amplifier repeater operating on frequency range of 824 to 894 MHz band. Uplink frequency range 824 - 849 MHz. Downlink frequency range 869 - 894 MHz. Equipment is powered via 12VDC support power supply. Antenna output port directly connected to spectrum analyzer via suitable attenuation. Input to amplifier is set such that the output is within the linear range of the amplifier's operating range.

Frequency Range Investigated: Carrier  
 Temperature: 81°F  
 Relative Humidity: 36%

# UPLINK RSS-131 PASSBAND WIDTH



## **PHOTOGRAPHS**

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**



**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



## RSS-131 RF POWER AND INTERMODULATION ATTENUATION

