



TESTING  
CERT #803.01, 803.02, 803.05, 803.06

**CELLYNX GROUP, INC. TEST REPORT**  
**FOR THE**  
**MOBILE CELLULAR BOOSTER, MD015A**  
**FCC PART 24E & RSS-131 (2003)**  
**TESTING**

**DATE OF ISSUE: JULY 13, 2009**

**PREPARED FOR:**

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El Dorado Hills, CA 95762

W.O. No.: 89227

**PREPARED BY:**

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Mariposa, CA 95338

Date of test: July 1 - 8, 2009

**Report No.: FC09-113**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** July 1 - 8, 2009

**DATE OF RECEIPT:** July 1, 2009

**REPRESENTATIVE:** Michael Cecil

**MANUFACTURER:**

Cellynx Group, Inc.  
5047 Robert J. Matthews  
El Dorado Hills, CA 95762

**TEST LOCATION:**

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

**TEST METHOD:** FCC PART 24E & RSS-131 (2003)

**PURPOSE OF TEST:** To perform the testing of the Mobile Cellular Booster, MD015A with the requirements for FCC Part 24E & RSS-131 devices.

**APPROVALS**

Steve Behm, Director of Engineering Services

**TEST PERSONNEL:**

A handwritten signature in black ink, appearing to read 'Randy Clark', is written over a horizontal line.

Randy Clark, EMC Engineer

## SUMMARY OF RESULTS

Test	Specification/Method	Results
RF Power Output	FCC 2.1033(c)(14)/2.1046/24.232 RSS 131 §6.2	Pass
Peak to Average Ratio (PAR)	FCC 2.1033(c)(14)/2.1046/24.232	Pass
Occupied Bandwidth Input and Output Plots	FCC 2.1033(c)(14)/2.1049(i)	Pass
Spurious Emissions at Antenna Terminal	FCC 2.1033(c)(14)/2.1051/24.238	Pass
Field Strength of Spurious Radiation	FCC 2.1033(c)(14)/2.1053/24.238	Pass
Block edge	FCC 2.1051/2.1053	Pass
Input vs. Output Plots		Pass
Intermodulation	FCC 2.1051	Pass
Out of Band Rejection	FCC 2.1051	Pass
Passband Gain	RSS 131 §6.1	Pass
Bandwidth	RSS 131 §6.1	Pass
FCC Site File No.	90477	
IC Site File No.	3082A-2	

## CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.



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

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

## **EQUIPMENT UNDER TEST**

### **Mobile Cellular Booster**

Manuf: Cellynx  
Model: MD015A  
Serial: 09262100003

## **PERIPHERAL DEVICES**

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

### **Power Supply**

Manuf: Sceptre Power  
Model: S012BU1200100  
Serial: NA

### **Signal Generator**

Manuf: Agilent  
Model: E4437B  
Serial: US39260159

### **Signal Generator**

Manuf: Agilent  
Model: E4437B  
Serial: MY41000126

### **Laptop Power Supply**

Manuf: Dell  
Model: LA65N50-00  
Serial: CN-0DF263-71615-850-9C16

### **Support Computer**

Manuf: Dell  
Model: PP23LB  
Serial: 28862556913

**TEMPERATURE AND HUMIDITY DURING TESTING**

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

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

The necessary information is contained in a separate document.

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

GXW, G7W, F9W

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

Downlink: 869-894 MHz and 1930-1990 MHz

Uplink: 824 – 849 MHz and 1850-1910 MHz

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

Downlink: 325mW

Uplink: 471mW

**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, WCDMA, GSM, EDGE

## MEASUREMENT UNCERTAINTIES

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ . Compliance is deemed to occur provided measurements are below the specified limits.

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

**Test Setup Photo**







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

Customer: **Cellynx Group**  
 Specification: **FCC 24.232**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/2/2009  
 Sequence#: 10  
 Tested By: Randal Clark  
 120V 60Hz

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

**Support Devices:**

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

**Test Conditions / Notes:**

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. The power output is measured using multi-carrier mode using two tone input. The signal generators are set such that both signals are at equal amplitude at the output and such that the 3<sup>rd</sup> order intermodulation products meet the spurious emissions requirements of 24.238. Measurements are taken using the analyzer's internal channel power measurement and are corrected for insertion losses.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Frequency Range Investigated: Carrier  
 Operating Band: Uplink and Downlink

Temperature: 25°C  
 Rel Humidity: 40%

### Downlink Power Output Measurements

<i>Modulation</i>	<i>Channel</i>	<i>Peak Multicarrier Output (dBm)</i>	<i>Peak Multicarrier Output (mW)</i>
WCDMA	Low	24.46	279.3
	Mid	23.62	230.1
	High	25.12	325.1
CDMA	Low	23.22	209.9
	Mid	23.66	232.3
	High	24.44	278.0
GSM	Low	21.54	142.6
	Mid	21.76	150.0
	High	22.31	170.2
EDGE	Low	22.08	161.4
	Mid	21.73	148.9
	High	22.14	163.7

The maximum RF output for downlink is 325mW.

The maximum allowable antenna gain is 7.93dBi in order to comply with the requirements of 24.232.

### Uplink Power Output Measurements

<i>Modulation</i>	<i>Channel</i>	<i>Peak Multicarrier Output (dBm)</i>	<i>Peak Multicarrier Output (mW)</i>
WCDMA	Low	26.64	461.3
	Mid	26.73	471.0
	High	26.14	411.1
CDMA	Low	25.75	375.8
	Mid	25.98	396.3
	High	25.28	337.3
GSM	Low	24.28	267.9
	Mid	24.52	283.1
	High	23.92	246.6
EDGE	Low	23.94	247.7
	Mid	24.23	264.9
	High	23.50	223.9

The maximum RF output for uplink is 471mW.

The maximum allowable antenna gain is 5.91dBi in order to comply with the requirements of 24.232.

**FCC 2.1033(c)(14)/2.1046/24.232 – PEAK TO AVERAGE RATIO**

**Test Setup Photo**





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

Customer: **Cellynx Group**  
 Specification: **FCC 24.232**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/6/2009  
 Time: 11:44:14  
 Sequence#: 11  
 Tested By: Randal Clark  
 120V 60Hz

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

**Support Devices:**

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

**Test Conditions / Notes:**

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. The signal generator is set to the middle of the band for uplink (1895 MHz) and downlink (1960 MHz). Measurements of the uplink and downlink are nearly identical. Measurements are reported for the uplink path.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Frequency Range Investigated: Carrier  
 Operating Band: Uplink and Downlink

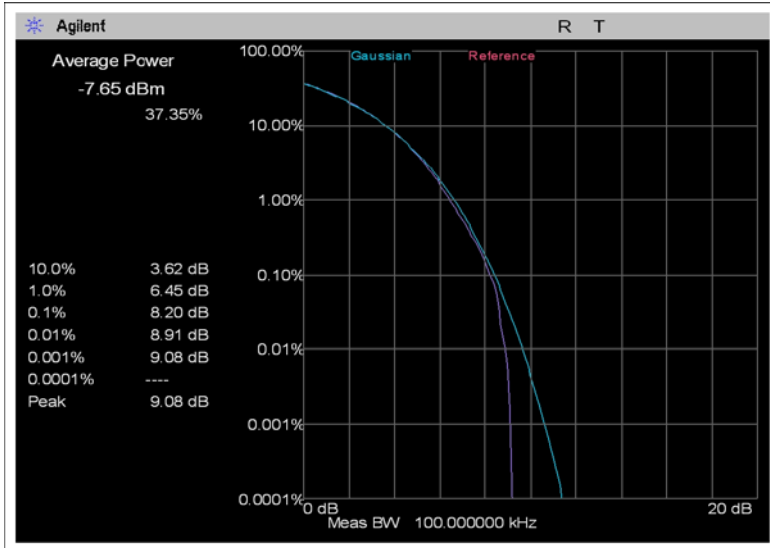
Temperature: 25°C  
 Rel Humidity: 40%

Measurements for the peak to average ratio were performed using the CCDF function of the spectrum analyzer. All measurements are below the required 13dB.

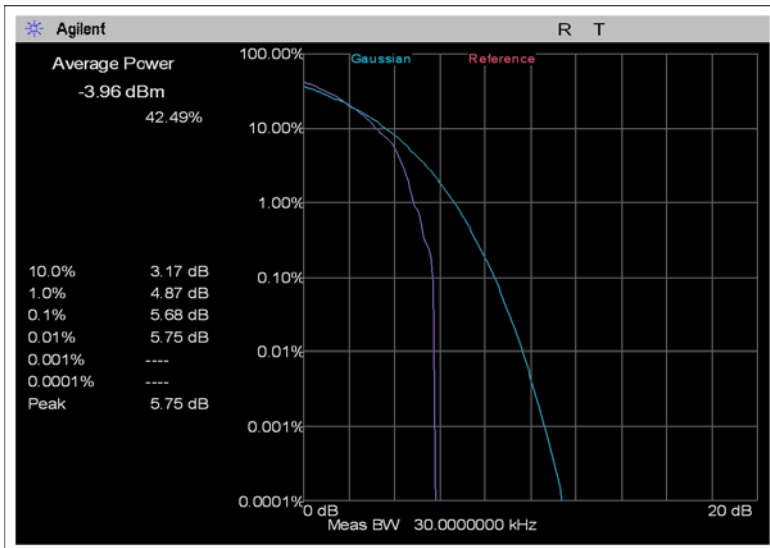
## Test Plots

Tested By: Randy Clark

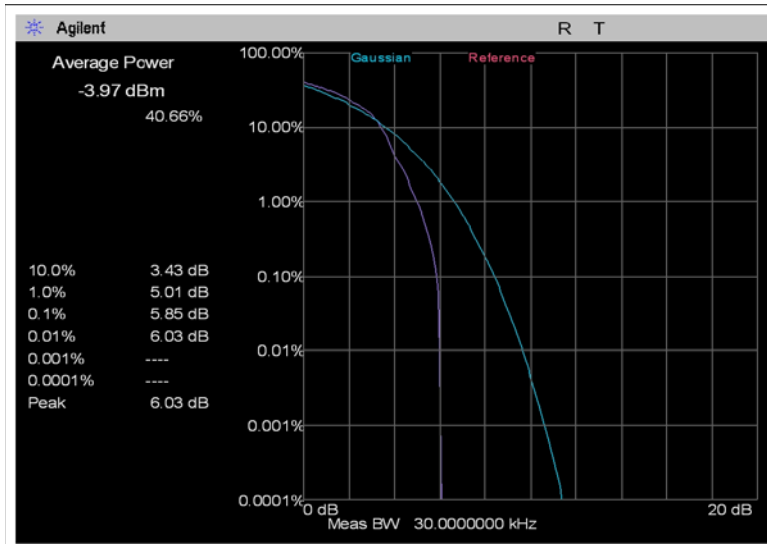
### FCC 24.232 – PEAK TO AVERAGE RATIO – UPLINK – CDMA



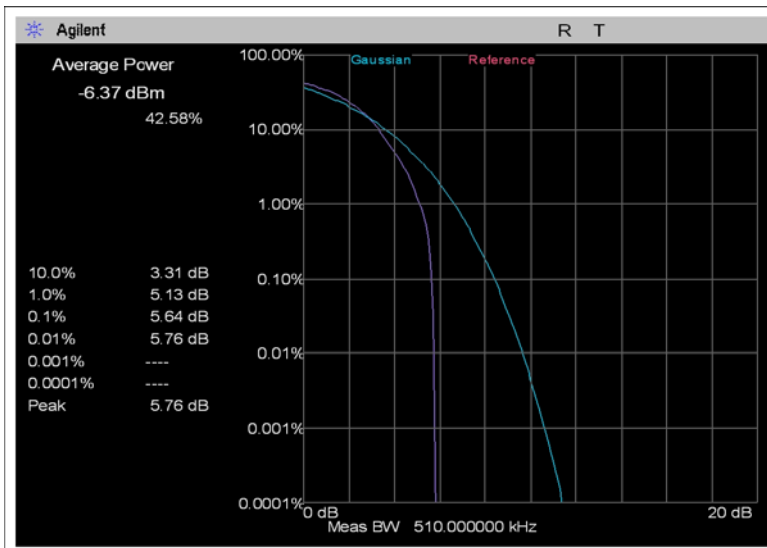
### FCC 24.232 – PEAK TO AVERAGE RATIO – UPLINK – EDGE



## FCC 24.232 – PEAK TO AVERAGE RATIO – UPLINK – GSM



## FCC 24.232 – PEAK TO AVERAGE RATIO – UPLINK – WCDMA



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

**Test Setup Photo**





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

Customer: **Cellynx Group**  
 Specification: **FCC 2.1049**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/6/2009  
 Time:  
 Sequence#: 13  
 Tested By: Randal Clark  
 120V 60Hz

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 GHz	na	06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

**Support Devices:**

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

**Test Conditions / Notes:**

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value.

Frequency Range Investigated: Middle channel of each band.  
 Operating Band: Uplink and Downlink

Temperature: 25°C  
 Rel Humidity: 40%

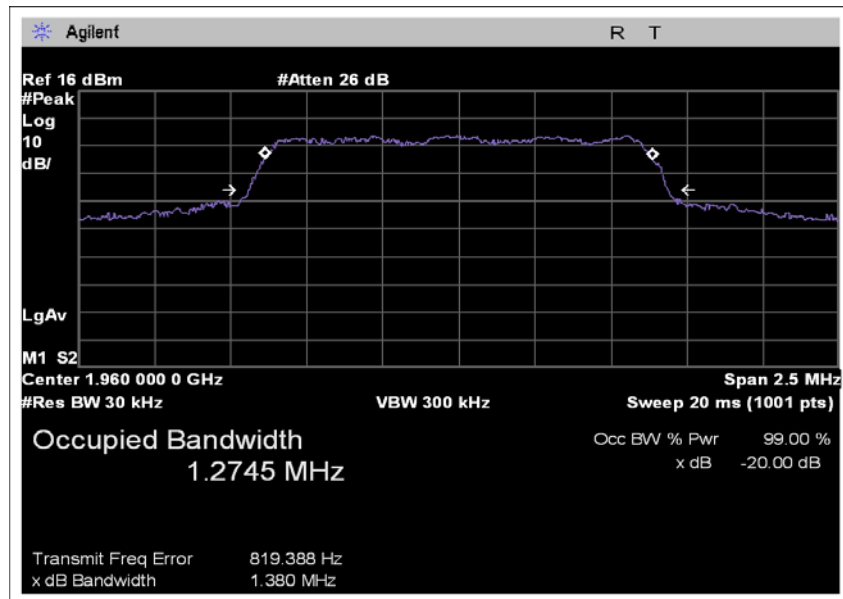


Modulation Type	Band	Measurement	Units
WCDMA	Downlink	4.14	MHz
WCDMA	Uplink	4.12	MHz
CDMA	Downlink	1.27	MHz
CDMA	Uplink	1.26	MHz
GSM	Downlink	243.1	kHz
GSM	Uplink	243.0	kHz
EDGE	Downlink	251.3	kHz
EDGE	Uplink	245.3	kHz

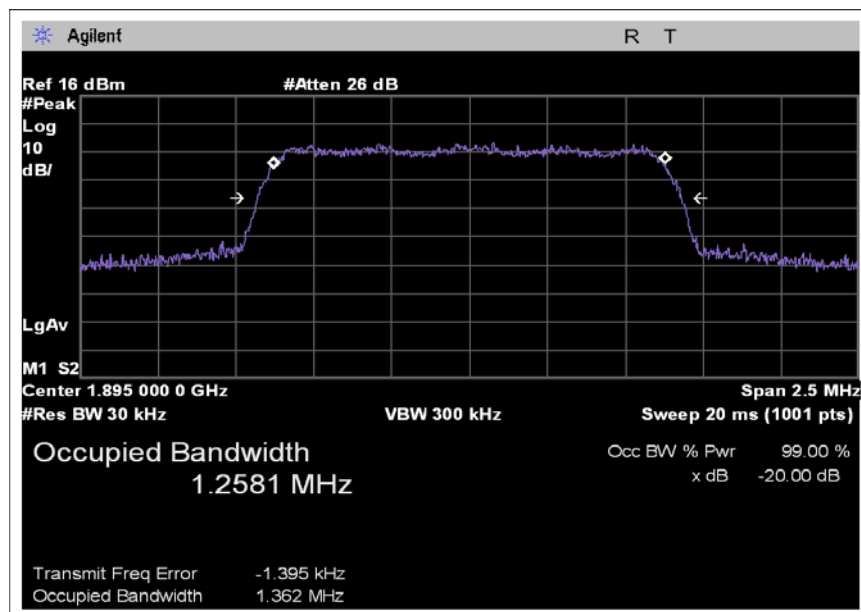
## Test Plots

Tested By: Randy Clark

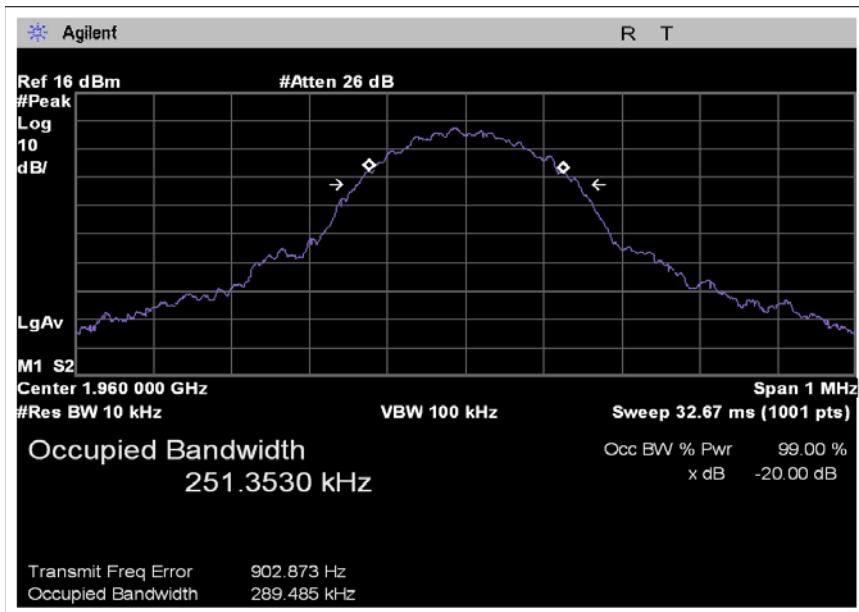
### OCCUPIED BANDWIDTH – CDMA DOWNLINK



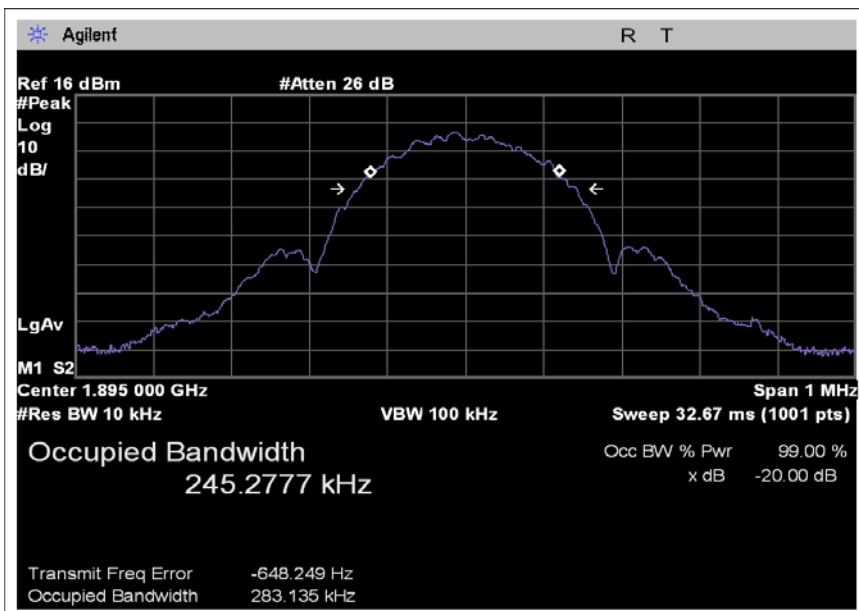
### OCCUPIED BANDWIDTH – CDMA UPLINK



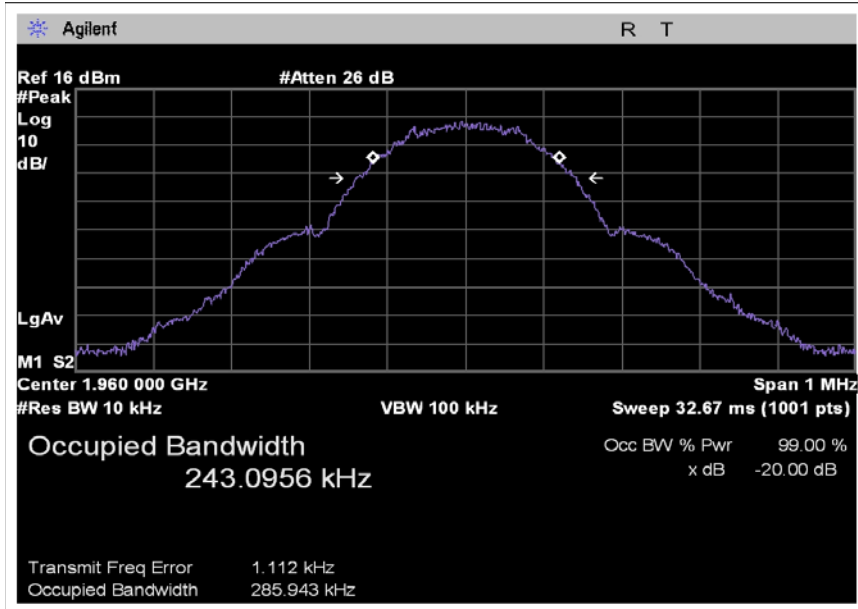
## OCCUPIED BANDWIDTH – EDGE DOWNLINK



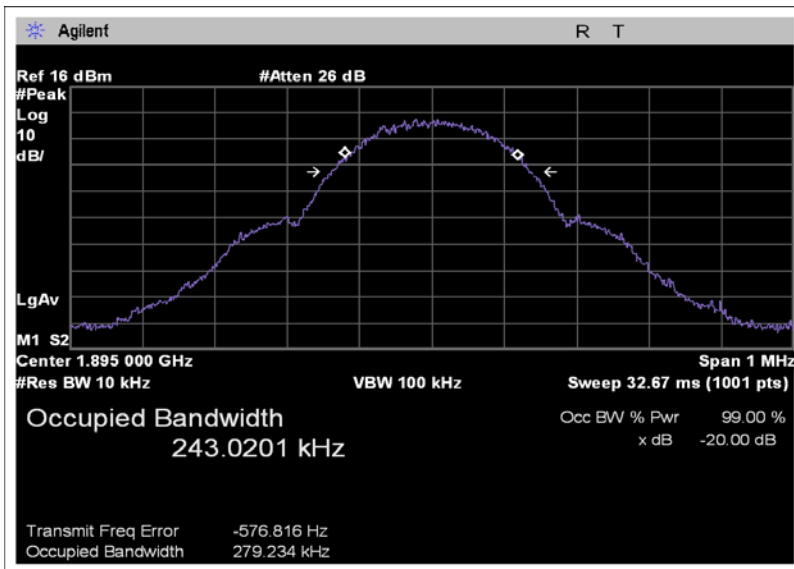
## OCCUPIED BANDWIDTH – EDGE UPLINK



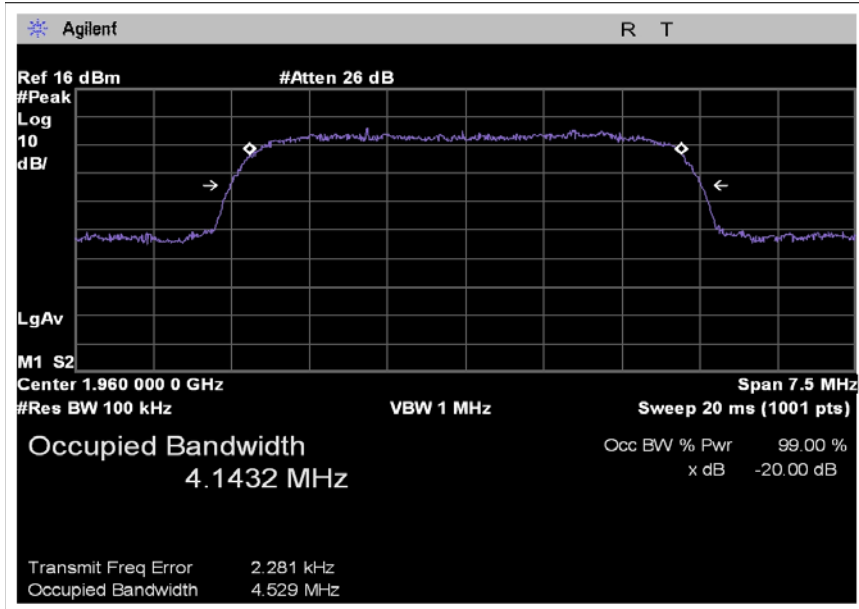
## OCCUPIED BANDWIDTH – GSM DOWNLINK



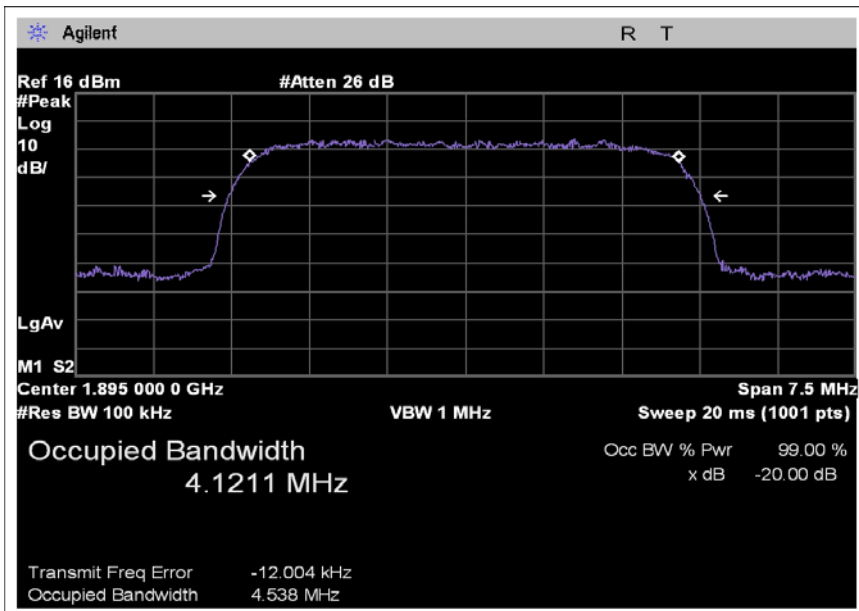
## OCCUPIED BANDWIDTH – GSM UPLINK



## OCCUPIED BANDWIDTH – WCDMA DOWNLINK



## OCCUPIED BANDWIDTH – WCDMA UPLINK



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

**Test Setup Photos**





## Test Data Sheets

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

Customer: **Cellynx Group**  
 Specification: **FCC 24.238**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/7/2009  
 Time: 11:03:45  
 Sequence#: 7  
 Tested By: Randal Clark  
 120V 60Hz

### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551
Cable, 24" 2.92mm 40GHz	NA	01/15/2008	01/15/2010	AN03008

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

### Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

### Test Conditions / Notes:

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Bandwidths used: RBW=1MHz, VBW=3MHz.

Frequency Range Investigated: 30MHz to 20GHz

Operating Band: Uplink and Downlink

Temperature: 25°C

Rel Humidity: 40%

**Transducer Legend:**

T1=ATT-ANP02138-052009-10dB  
T3=ATT-ANP05551-070109-DC BLOCK

T2=CAB-AN03008-40GHZ-2FT

**Measurement Data:**

Reading listed by margin.

Test Lead: Downlink

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	5726.410M	79.4	+10.1	+0.6	+0.0		+0.0	90.1	94.0 CDMA High Channel	-3.9	Uplin
2	5681.440M	77.0	+10.1	+0.6	+0.0		+0.0	87.7	94.0 WCDMA Mid Channel	-6.3	Uplin
3	5550.810M	73.3	+10.1	+0.6	+0.0		+0.0	84.0	94.0 EDGE Low Channel	-10.0	Uplin
4	5563.480M	72.5	+10.1	+0.6	+0.0		+0.0	83.2	94.0 WCDMA Low Channel	-10.8	Uplin
5	5684.800M	69.6	+10.1	+0.6	+0.0		+0.0	80.3	94.0 GSM Mid Channel	-13.7	Uplin
6	3979.475M	68.8	+10.0	+0.5	+0.3		+0.0	79.6	94.0 EDGE High Channel	-14.4	Downl
7	3702.520M	69.2	+9.9	+0.5	+0.0		+0.0	79.6	94.0 CDMA Low Channel	-14.4	Uplin
8	3979.595M	68.3	+10.0	+0.5	+0.3		+0.0	79.1	94.0 GSM High Channel	-14.9	Downl
9	3979.110M	68.0	+10.0	+0.5	+0.3		+0.0	78.8	94.0 CDMA High Channel	-15.2	Downl
10	5685.000M Ave	68.1	+10.1	+0.6	+0.0		+0.0	78.8	94.0 EDGE Mid Channel	-15.2	Uplin
^	5685.040M	81.4	+10.1	+0.6	+0.0		+0.0	92.1	94.0 EDGE Mid Channel	-1.9	Uplin
12	5684.989M Ave	68.1	+10.1	+0.6	+0.0		+0.0	78.8	94.0 CDMA Mid Channel	-15.2	Uplin
^	5684.900M	87.6	+10.1	+0.6	+0.0		+0.0	98.3	94.0 CDMA Mid Channel	+4.3	Uplin
14	3790.280M	68.1	+9.9	+0.5	+0.0		+0.0	78.5	94.0 CDMA Mid Channel	-15.5	Uplin
15	3700.600M	66.9	+9.9	+0.5	+0.0		+0.0	77.3	94.0 EDGE Low Channel	-16.7	Uplin
16	3790.090M	66.7	+9.9	+0.5	+0.0		+0.0	77.1	94.0 EDGE Mid Channel	-16.9	Uplin
17	3789.840M	65.5	+9.9	+0.5	+0.0		+0.0	75.9	94.0 GSM Mid Channel	-18.1	Uplin



18	3817.000M	65.4	+9.9	+0.5	+0.0	+0.0	75.8	94.0	-18.2	Uplink
								CDMA High Channel		
19	3972.920M	64.3	+10.0	+0.5	+0.3	+0.0	75.1	94.0	-18.9	Downlink
								WCDMA High Channel		
20	3700.630M	64.4	+9.9	+0.5	+0.0	+0.0	74.8	94.0	-19.2	Uplink
								GSM Low Channel		
21	5553.750M Ave	63.9	+10.1	+0.6	+0.0	+0.0	74.6	94.0	-19.4	Uplink
								CDMA Low Channel		
^	5553.730M	88.0	+10.1	+0.6	+0.0	+0.0	98.7	94.0	+4.7	Uplink
								CDMA Low Channel		
23	7579.420M	62.9	+10.2	+0.7	+0.0	+0.0	73.8	94.0	-20.2	Uplink
								CDMA Mid Channel		
24	3792.100M	63.0	+9.9	+0.5	+0.0	+0.0	73.4	94.0	-20.6	Uplink
								WCDMA Mid Channel		
25	5550.805M	61.9	+10.1	+0.6	+0.0	+0.0	72.6	94.0	-21.4	Uplink
								GSM Low Channel		
26	3819.380M	62.0	+9.9	+0.5	+0.0	+0.0	72.4	94.0	-21.6	Uplink
								EDGE High Channel		
27	3920.175M	61.5	+10.0	+0.5	+0.3	+0.0	72.3	94.0	-21.7	Downlink
								EDGE Mid Channel		
28	3706.860M	61.9	+9.9	+0.5	+0.0	+0.0	72.3	94.0	-21.7	Uplink
								WCDMA Low Channel		
29	3920.150M	61.0	+10.0	+0.5	+0.3	+0.0	71.8	94.0	-22.2	Downlink
								GSM Mid Channel		
30	5717.780M	61.1	+10.1	+0.6	+0.0	+0.0	71.8	94.0	-22.2	Uplink
								WCDMA High Channel		
31	9474.080M	60.1	+10.2	+0.8	+0.0	+0.0	71.1	94.0	-22.9	Uplink
								CDMA Mid Channel		
32	7579.965M	60.0	+10.2	+0.7	+0.0	+0.0	70.9	94.0	-23.1	Uplink
								EDGE Mid Channel		
33	9475.075M	59.7	+10.2	+0.8	+0.0	+0.0	70.7	94.0	-23.3	Uplink
								EDGE Mid Channel		
34	3808.300M	60.2	+9.9	+0.5	+0.0	+0.0	70.6	94.0	-23.4	Uplink
								WCDMA High Channel		
35	7403.900M	59.6	+10.2	+0.7	+0.0	+0.0	70.5	94.0	-23.5	Uplink
								CDMA Low Channel		
36	3917.960M	59.5	+10.0	+0.5	+0.3	+0.0	70.3	94.0	-23.7	Downlink
								WCDMA Mid Channel		

37	3920.210M	59.5	+10.0	+0.5	+0.3	+0.0	70.3	94.0	-23.7	Downl
								CDMA Mid Channel		
38	3819.085M	59.9	+9.9	+0.5	+0.0	+0.0	70.3	94.0	-23.7	Uplin
								GSM High Channel		
39	9255.310M	58.4	+10.1	+0.8	+0.0	+0.0	69.3	94.0	-24.7	Uplin
								CDMA Low Channel		
40	7575.140M	58.1	+10.2	+0.7	+0.0	+0.0	69.0	94.0	-25.0	Uplin
								WCDMA Mid Channel		
41	3860.240M	57.7	+10.0	+0.5	+0.3	+0.0	68.5	94.0	-25.5	Downl
								GSM Low Channel		
42	7579.860M	57.4	+10.2	+0.7	+0.0	+0.0	68.3	94.0	-25.7	Uplin
								GSM Mid Channel		
43	5729.385M	57.5	+10.1	+0.6	+0.0	+0.0	68.2	94.0	-25.8	Uplin
								EDGE High Channel		
44	3860.680M	57.3	+10.0	+0.5	+0.3	+0.0	68.1	94.0	-25.9	Downl
								EDGE Low Channel		
45	9474.670M	56.8	+10.2	+0.8	+0.0	+0.0	67.8	94.0	-26.2	Uplin
								GSM Mid Channel		
46	5729.350M	55.5	+10.1	+0.6	+0.0	+0.0	66.2	94.0	-27.8	Uplin
								GSM High Channel		
47	3870.880M	55.0	+10.0	+0.5	+0.3	+0.0	65.8	94.0	-28.2	Downl
								WCDMA Low Channel		
48	3863.310M	52.7	+10.0	+0.5	+0.3	+0.0	63.5	94.0	-30.5	Downl
								CDMA Low Channel		
49	5726.214M Ave	47.9	+10.1	+0.6	+0.0	+0.0	58.6	94.0	-35.4	Uplin
								CDMA High Channel		

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

**Test Setup Photos**





## Test Data Sheets

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

Customer: **Cellynx Group**  
 Specification: **FCC 22.428**  
 Work Order #: **89227**  
 Test Type: **Radiated Scan**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/7/2009  
 Time: 15:59:46  
 Sequence#: 20  
 Tested By: Randal Clark

### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Site A 10 meter cable set		05/10/2009	05/10/2011	MA10M
6dB Attenuator	none	05/20/2009	05/20/2011	ANP05656
HP-8447D Preamp	2727A05444	06/20/2008	06/20/2010	AN00062
Antenna, Bilog	2455	12/22/2008	12/22/2010	AN01992
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Andrew-25'	N/A	05/19/2009	05/19/2011	AN01012
Cable, Andrews Hardline HF-005-20	NA	05/20/2009	05/20/2011	ANP04274
Preamp HP83051A	3332A00309	11/13/2008	11/13/2010	AN02115
EMCO 3115 Horn Antenna	9006-3413	06/06/2008	06/06/2010	AN00327
ARA MWH-1826/B Horn Antenna	1005	11/12/2008	11/12/2010	AN02046

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

### Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

**Test Conditions / Notes:**

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. The signal generator is located below the floor. The laptop is located on the table next to the equipment under test.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Bandwidths used: RBW=1MHz, VBW=3MHz

Frequency Range Investigated: 30MHz to 20GHz

Operating Band: Uplink and Downlink

Input Signal: CW

Temperature: 25°C

Rel Humidity: 40%

**No EUT emissions detected within 20dB of the limit.**

**Transducer Legend:**

**Measurement Data:**

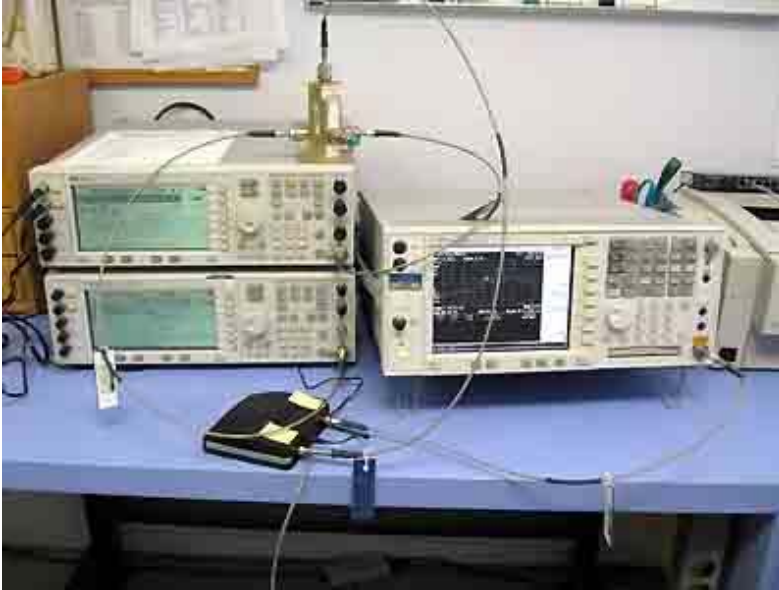
Reading listed by margin.

Test Distance: 10 Meters

#	Freq MHz	Rdng dB $\mu$ V	dB	dB	dB	dB	Dist Table	Corr dB $\mu$ V	Spec dB $\mu$ V	Margin dB	Polar Ant
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**FCC 2.1051/2.1053 – BLOCK EDGE**

**Test Setup Photos**





## Test Data Sheets

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

Customer: **Cellynx Group**  
 Specification: **FCC 24.238**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/2/2009  
 Time: 14:27:11  
 Sequence#: 6  
 Tested By: Randal Clark  
 120V 60Hz

### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

### Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

### Test Conditions / Notes:

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. Two-tone signal input is used as required for intermodulation attenuation.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Frequency Range Investigated: Block Edge  
 Operating Band: Uplink and Downlink

Temperature: 25°C  
 Rel Humidity: 40%

### Transducer Legend:

T1=ATT-ANP02138-052009-10dB  
 T2=ANP05551 DC Block  
 T3=CAB-AN03008-40GHZ-2FT

**Measurement Data:**

Reading listed by margin.

Test Lead: Uplink

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB		Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1849.720M	83.3	+10.0	+0.0	+0.4		+0.0	93.7	94.0 Edge	-0.3	Uplin
2	1990.280M	82.5	+10.0	+0.7	+0.4		+0.0	93.6	94.0 EDGE	-0.4	Downl
3	1910.270M	83.0	+10.0	+0.0	+0.4		+0.0	93.4	94.0 Edge	-0.6	Uplin
4	1929.700M	81.3	+10.0	+0.7	+0.4		+0.0	92.4	94.0 EDGE	-1.6	Downl
5	1928.760M	80.8	+10.0	+0.7	+0.4		+0.0	91.9	94.0 CDMA	-2.1	Downl
6	1911.260M	80.3	+10.0	+0.0	+0.4		+0.0	90.7	94.0 CDMA	-3.3	Uplin
7	1848.680M	80.0	+9.9	+0.0	+0.4		+0.0	90.3	94.0	-3.7	Uplin
8	1913.600M	78.2	+10.0	+0.0	+0.4		+0.0	88.6	94.0 WCDMA	-5.4	Uplin
9	1994.100M	76.1	+10.0	+0.7	+0.4		+0.0	87.2	94.0 WCDMA	-6.8	Downl
10	1991.120M	75.8	+10.0	+0.7	+0.4		+0.0	86.9	94.0 CDMA	-7.1	Downl
11	1845.700M	76.2	+9.9	+0.0	+0.4		+0.0	86.5	94.0 WCDMA	-7.5	Uplin
12	1926.400M	75.3	+10.0	+0.7	+0.4		+0.0	86.4	94.0 WCDMA	-7.6	Downl
13	1990.300M	73.7	+10.0	+0.7	+0.4		+0.0	84.8	94.0 GSM	-9.2	Downl
14	1929.700M	72.4	+10.0	+0.7	+0.4		+0.0	83.5	94.0 GSM	-10.5	Downl
15	1910.270M	72.5	+10.0	+0.0	+0.4		+0.0	82.9	94.0 GSM	-11.1	Uplin
16	1849.720M	71.8	+10.0	+0.0	+0.4		+0.0	82.2	94.0 GSM	-11.8	Uplin



## INPUT VS. OUTPUT PLOTS

### **Test Setup Photo**





## Test Data Sheets

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

Customer: **Cellynx Group**  
 Specification: **FCC 2.1049**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/6/2009  
 Time:  
 Sequence#: 12  
 Tested By: Randal Clark  
 120V 60Hz

### Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

### Support Devices:

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

### Test Conditions / Notes:

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. For the input plots, the signal generator is set to a static amplitude for all modulations which is higher than that which was used for the input signal for the output plots. For the output plots, the signal generator is set to a static amplitude for all modulations corresponding to approximately that which would give the maximum RF power output level.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

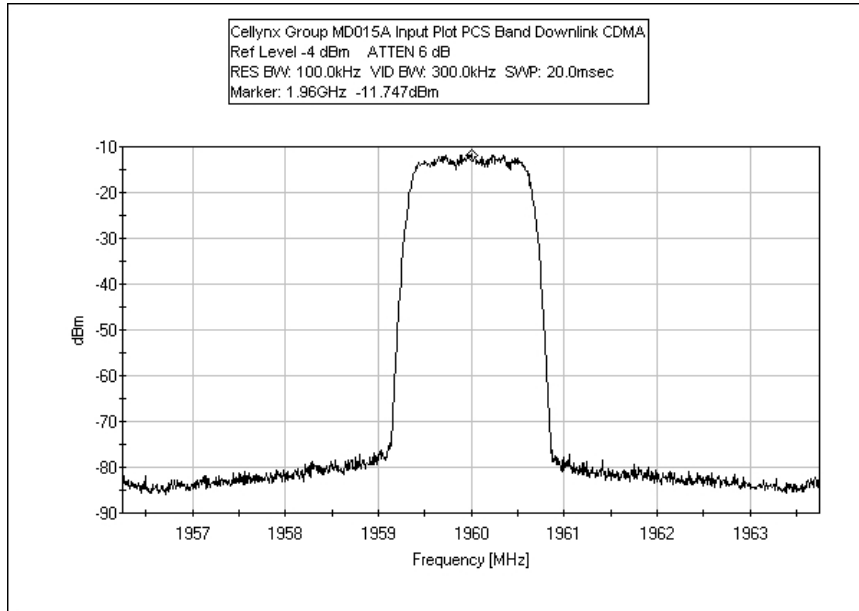
Frequency Range Investigated: Middle channel of each band.  
 Operating Band: Uplink and Downlink

Temperature: 25°C  
 Rel Humidity: 40%

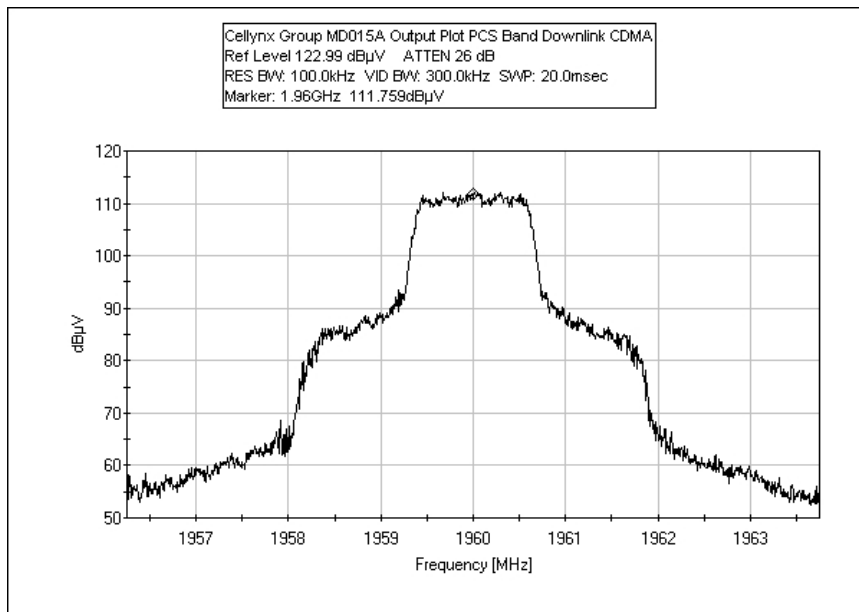
## Test Plots

Tested By: Randy Clark

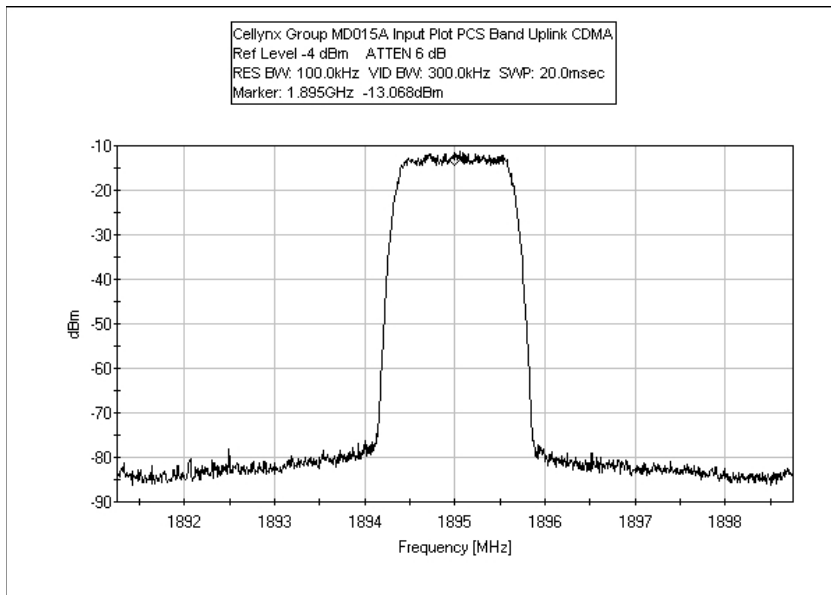
### INPUT VS. OUTPUT PLOTS - CDMA DOWNLINK – INPUT



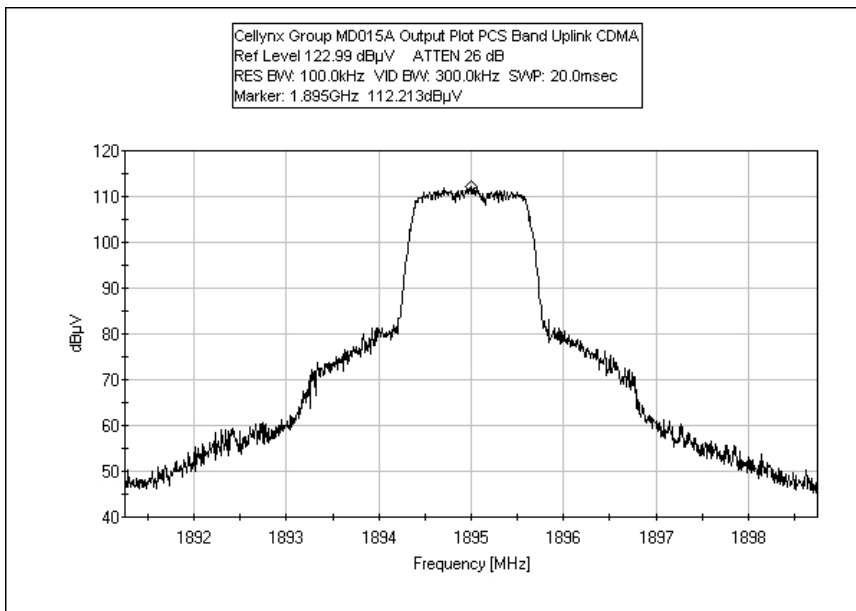
### INPUT VS. OUTPUT PLOTS - CDMA DOWNLINK – OUTPUT



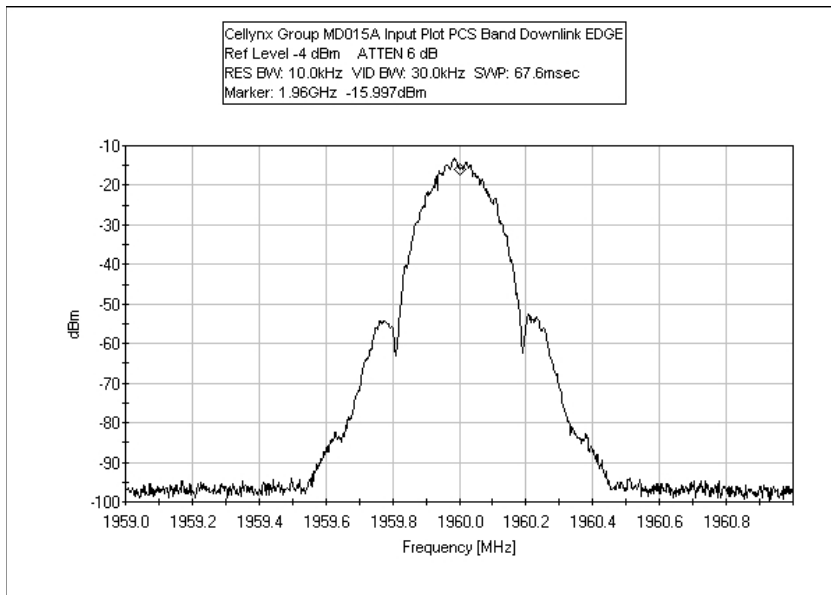
## INPUT VS. OUTPUT PLOTS - CDMA UPLINK – INPUT



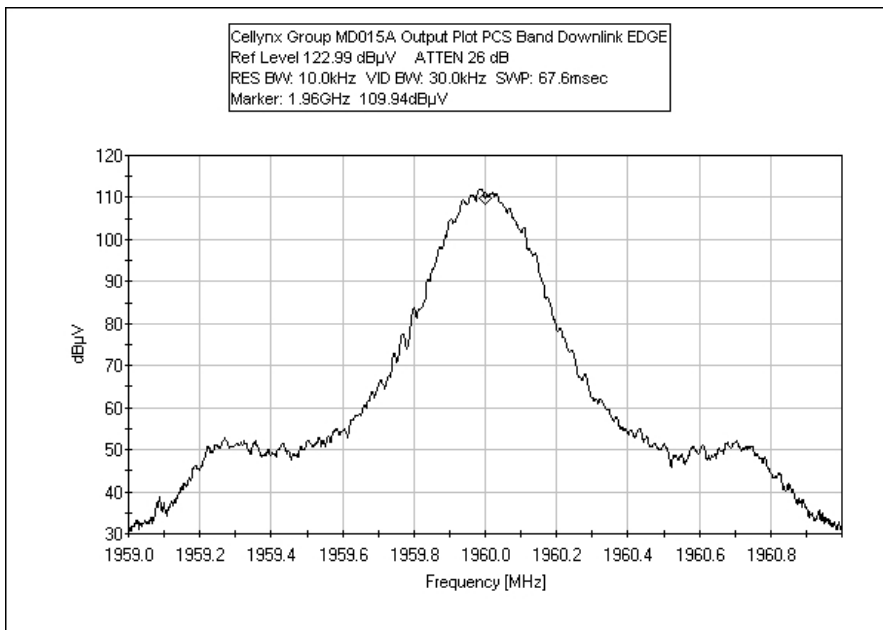
## INPUT VS. OUTPUT PLOTS - CDMA UPLINK – OUTPUT



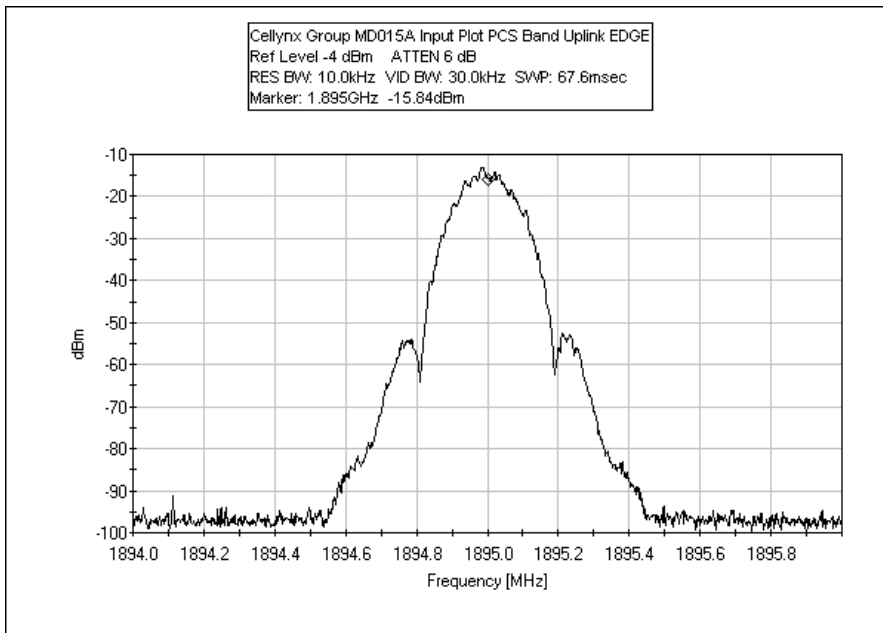
## INPUT VS. OUTPUT PLOTS - EDGE DOWNLINK – INPUT



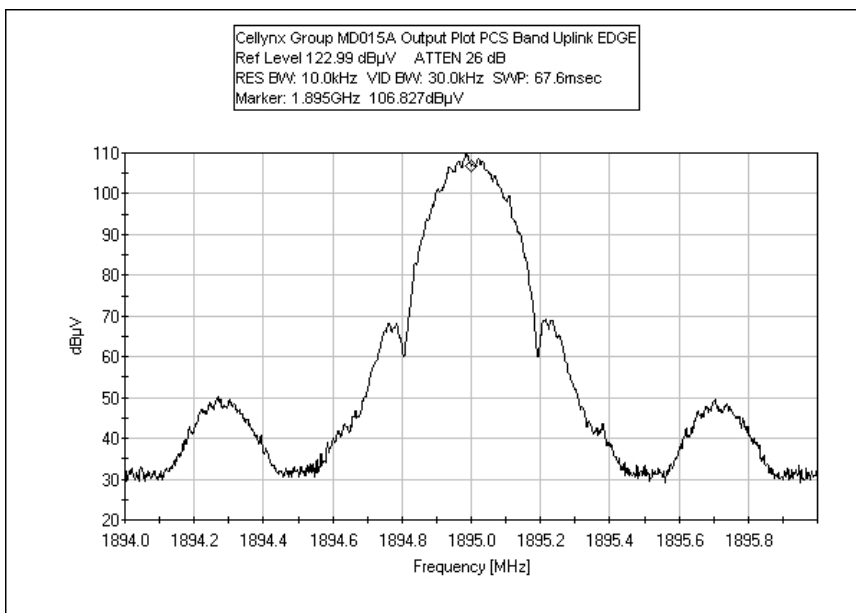
## INPUT VS. OUTPUT PLOTS - EDGE DOWNLINK – OUTPUT



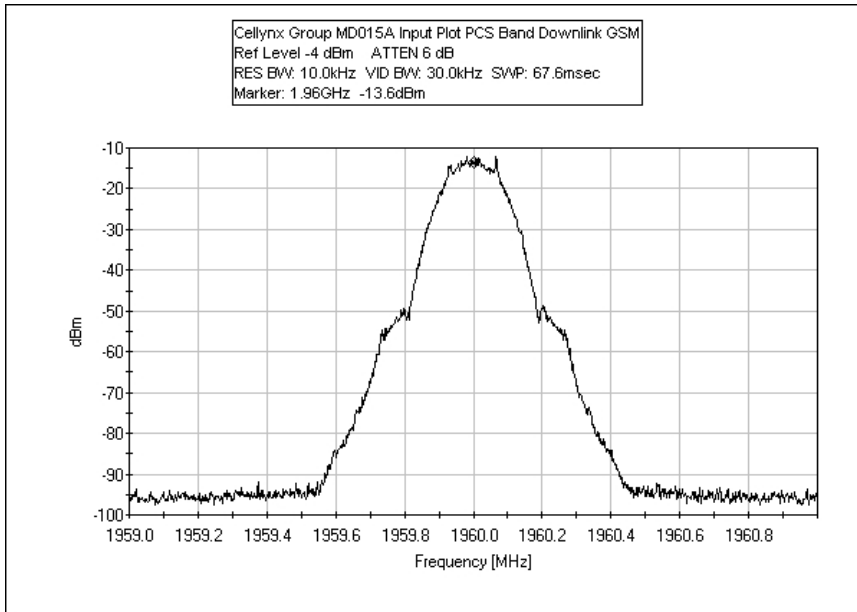
## INPUT VS. OUTPUT PLOTS - EDGE UPLINK – INPUT



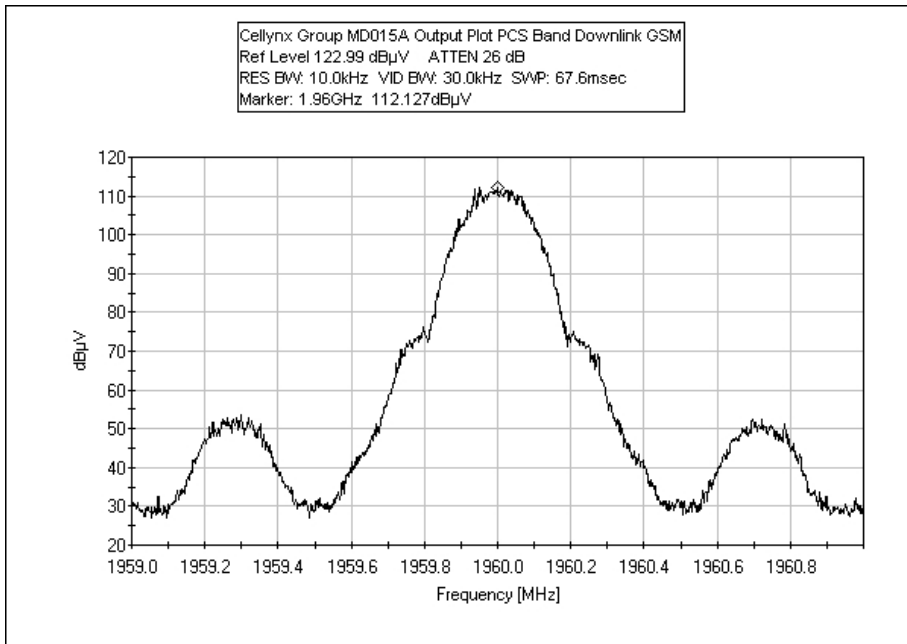
## INPUT VS. OUTPUT PLOTS - EDGE UPLINK – OUTPUT



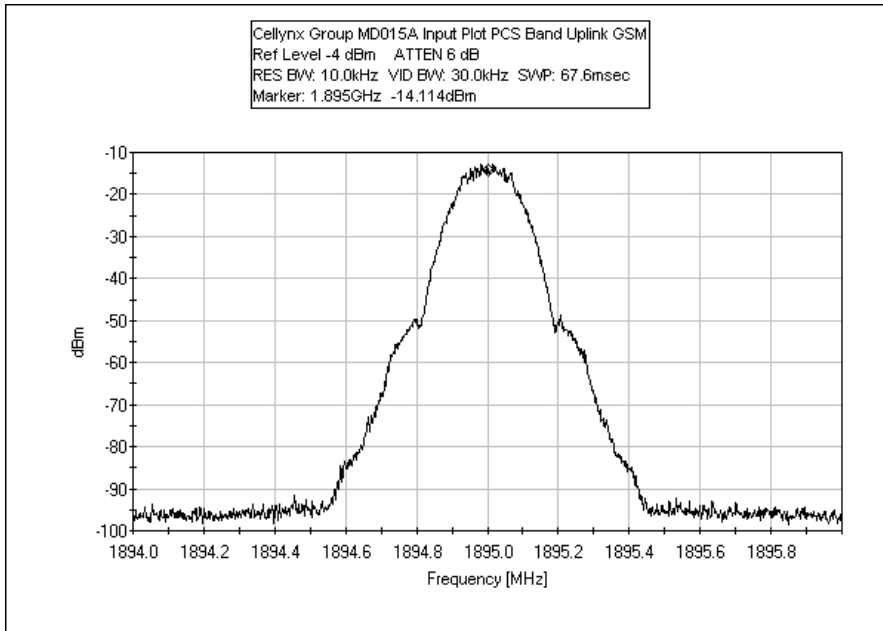
## INPUT VS. OUTPUT PLOTS - GSM DOWNLINK – INPUT



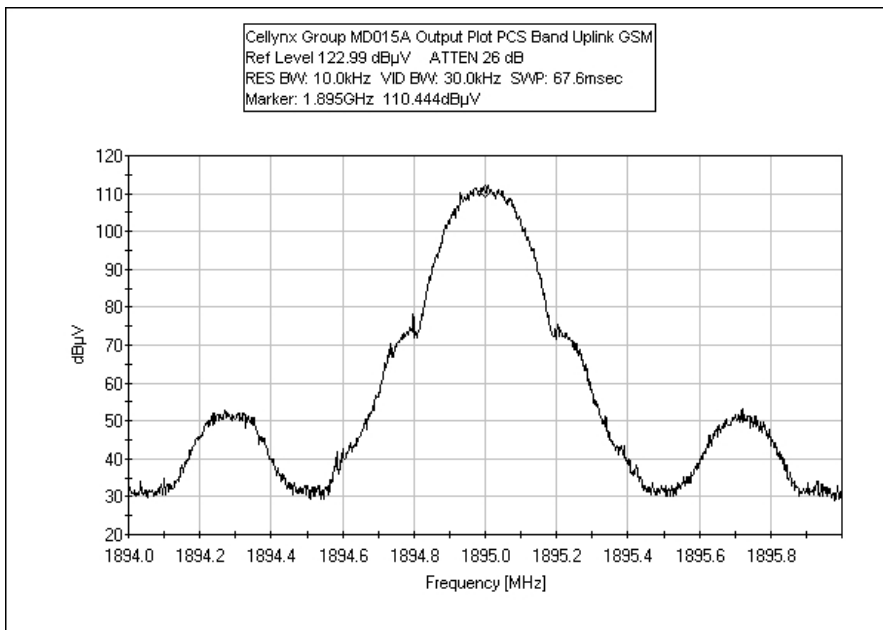
## INPUT VS. OUTPUT PLOTS - GSM DOWNLINK – OUTPUT



## INPUT VS. OUTPUT PLOTS - GSM UPLINK – INPUT

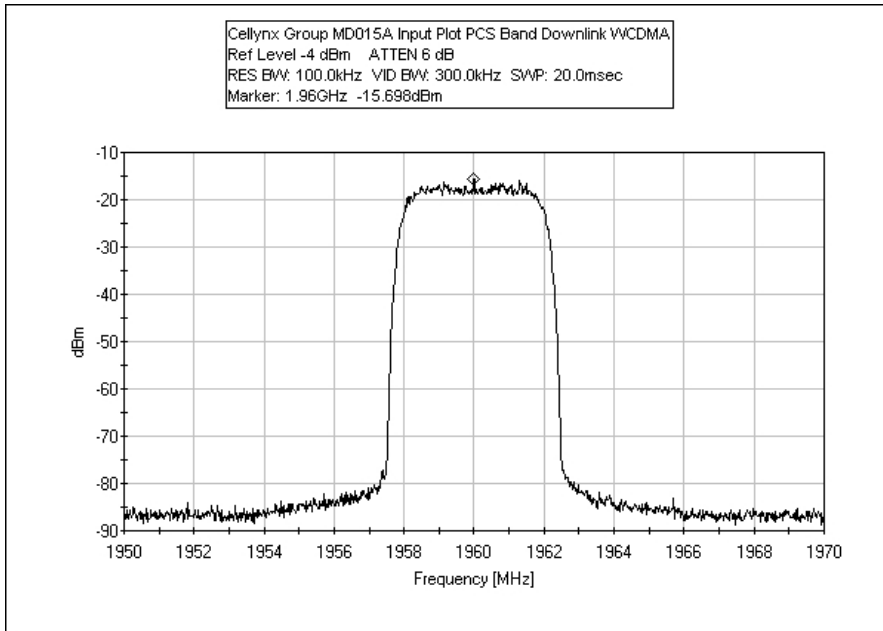


## INPUT VS. OUTPUT PLOTS - GSM UPLINK – OUTPUT

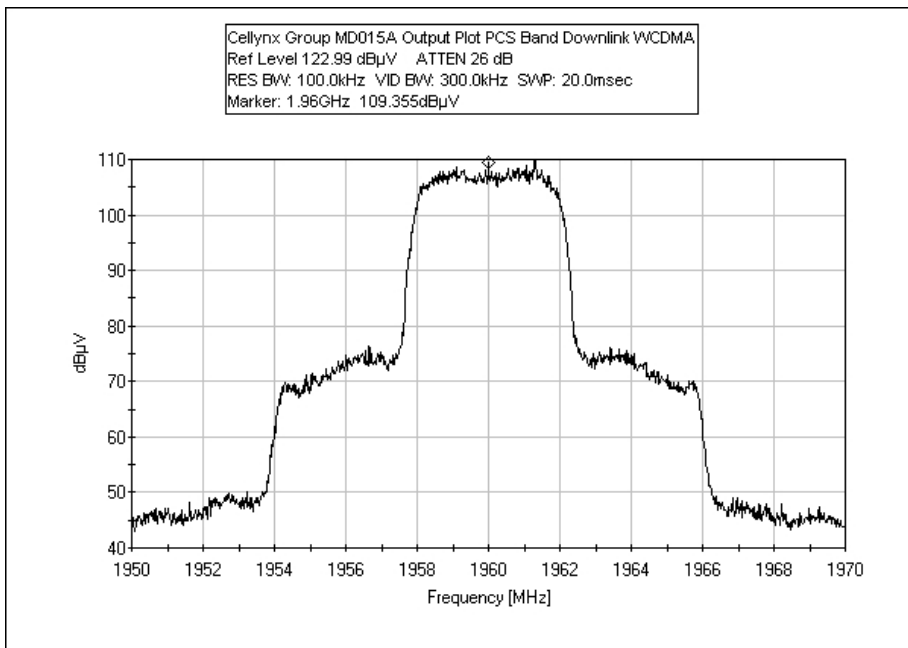




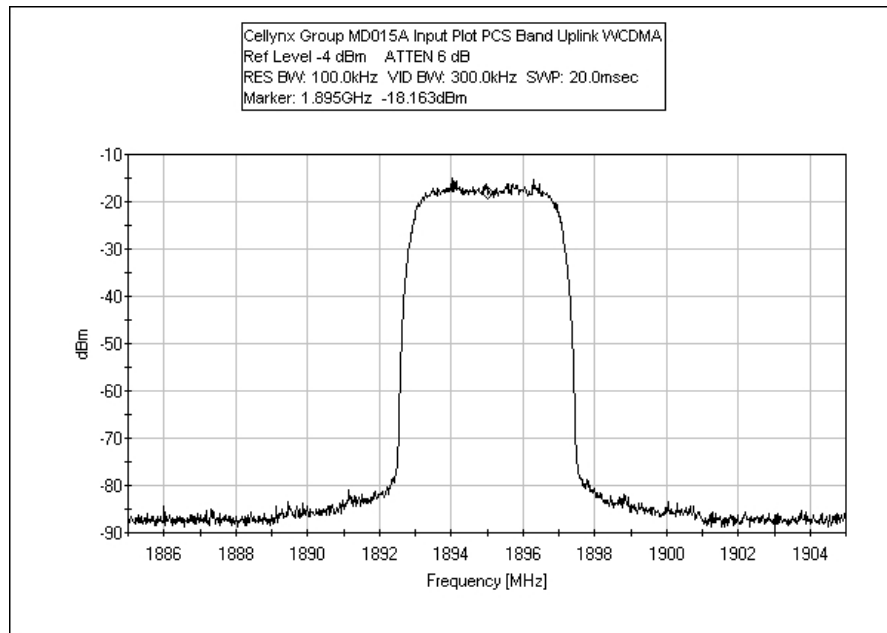
## INPUT VS. OUTPUT PLOTS - WCDMA DOWNLINK – INPUT



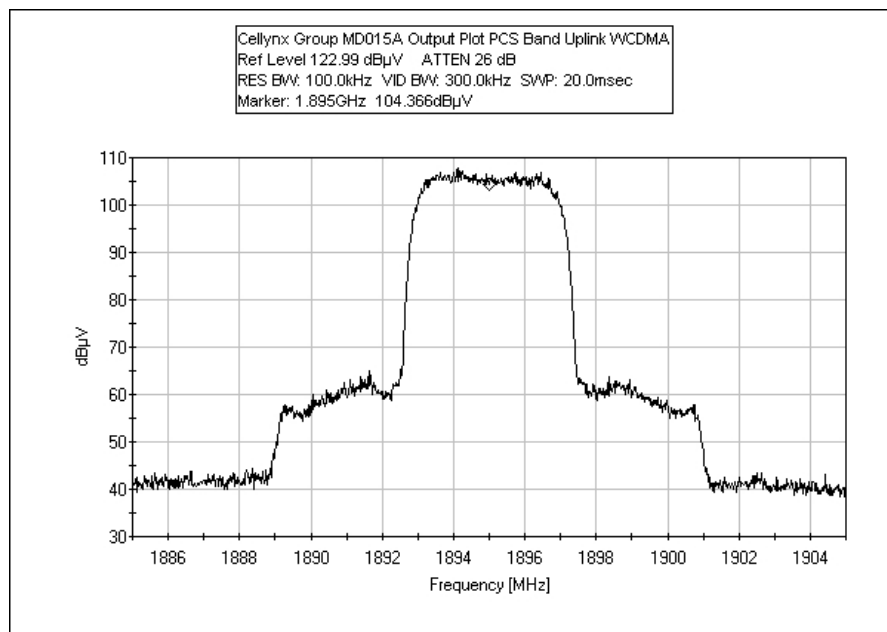
## INPUT VS. OUTPUT PLOTS - WCDMA DOWNLINK – OUTPUT



## INPUT VS. OUTPUT PLOTS - WCDMA UPLINK – INPUT

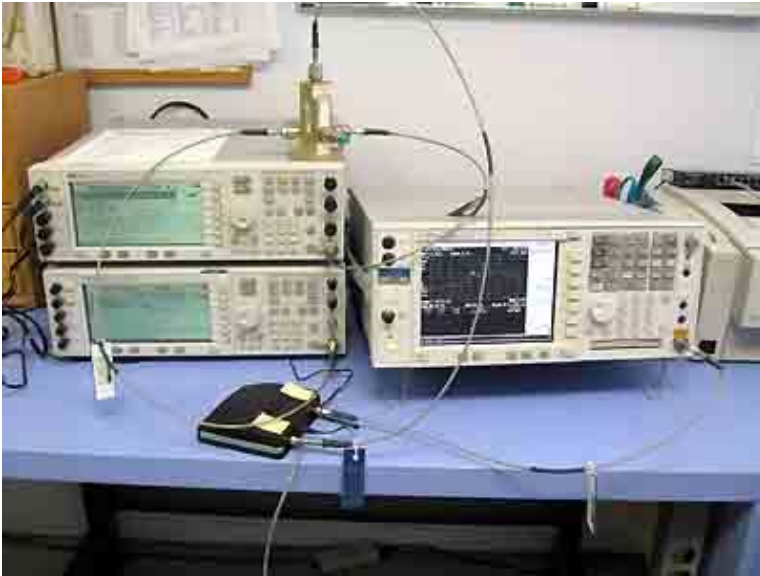


## INPUT VS. OUTPUT PLOTS - WCDMA UPLINK – OUTPUT



**FCC 2.1051 – INTERMODULATION**

**Test Setup Photo**





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

Customer: **Cellynx Group**  
 Specification: **FCC 24.238**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/2/2009

Tested By: Randal Clark  
 120V 60Hz

**Test Equipment:**

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

**Support Devices:**

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

**Test Conditions / Notes:**

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. Two-tone signal input is used as required for intermodulation attenuation. Signal generator source provides two-tone input for the amplifier. Input level is set such that the maximum aggregate authorized power output level is obtained.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

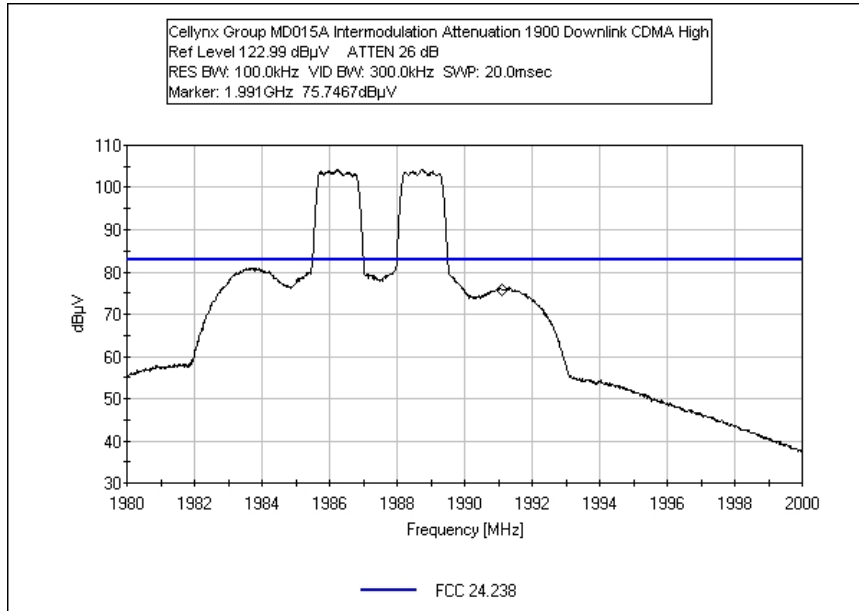
Frequency Range Investigated: Block Edge  
 Operating Band: Uplink and Downlink

Temperature: 25°C  
 Rel Humidity: 40%

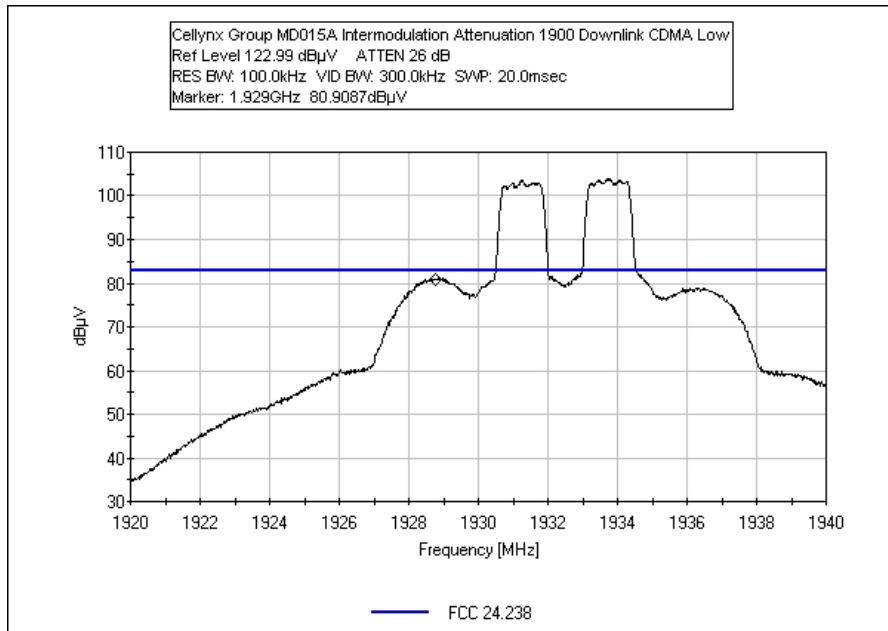
## Test Plots

Tested By: Randy Clark

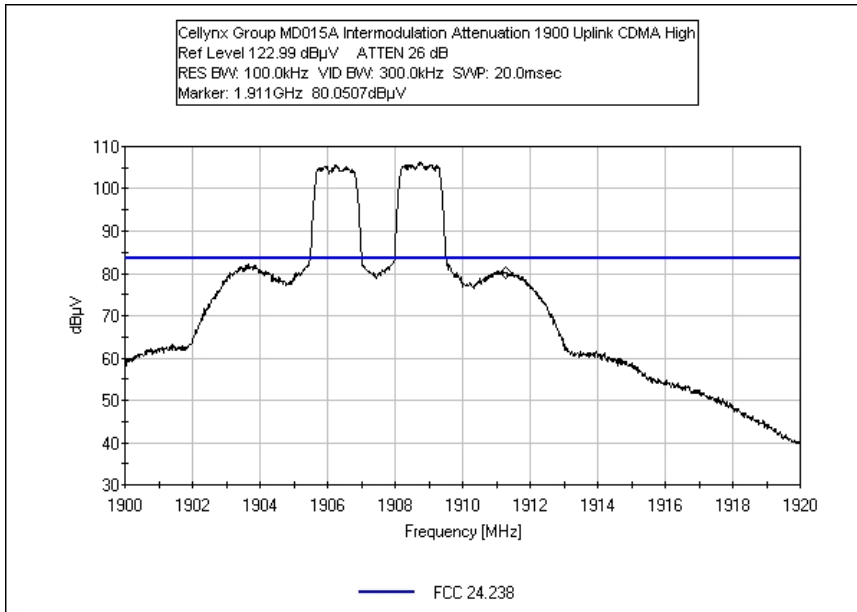
### FCC 2.1051 INTERMODULATION – CDMA DOWNLINK - HIGH



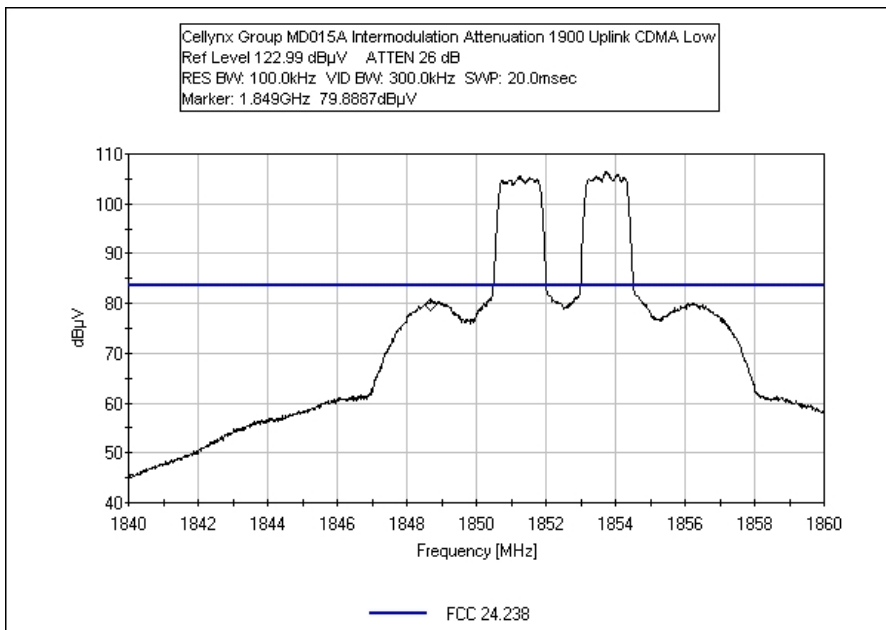
### FCC 2.1051 INTERMODULATION – CDMA DOWNLINK - LOW



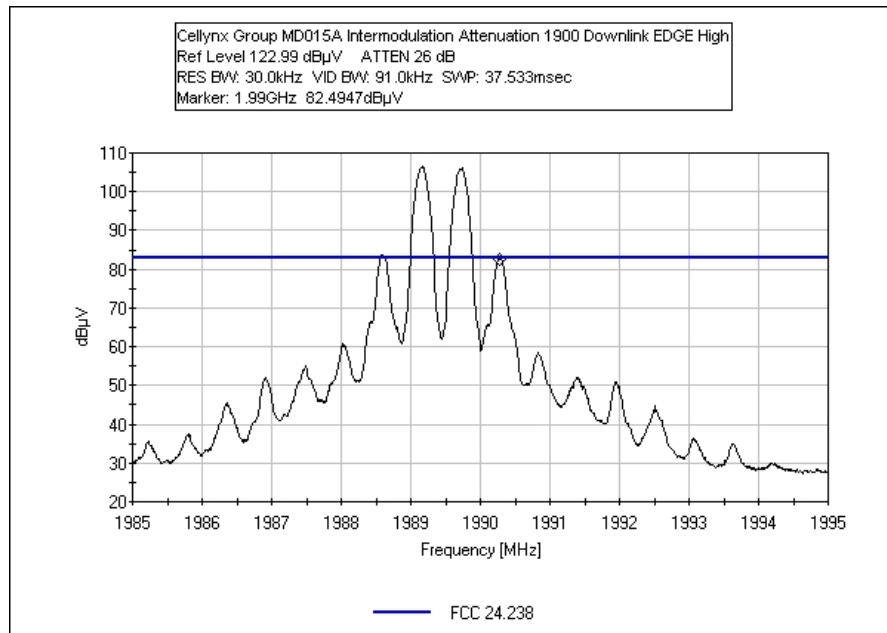
## FCC 2.1051 INTERMODULATION – CDMA UPLINK – HIGH



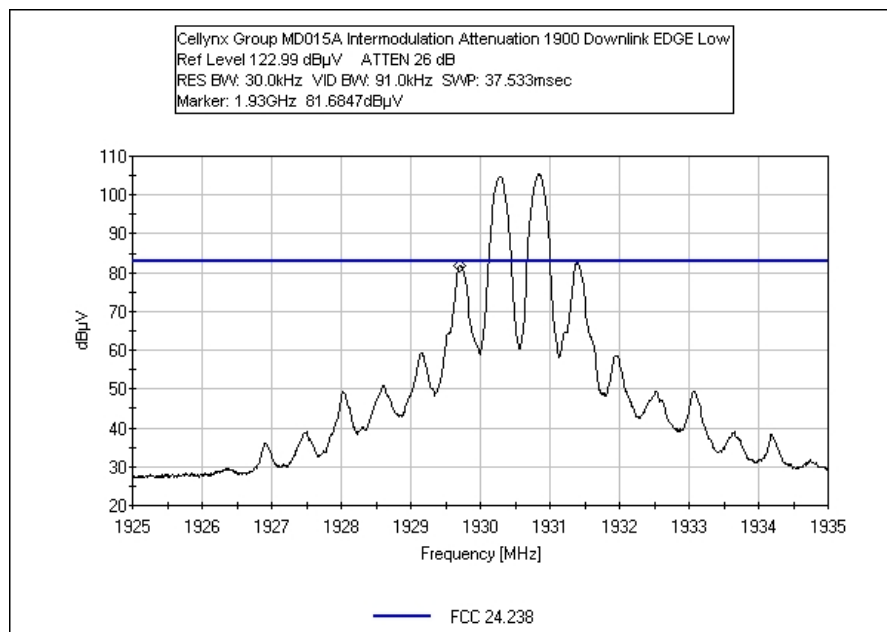
## FCC 2.1051 INTERMODULATION – CDMA UPLINK - LOW



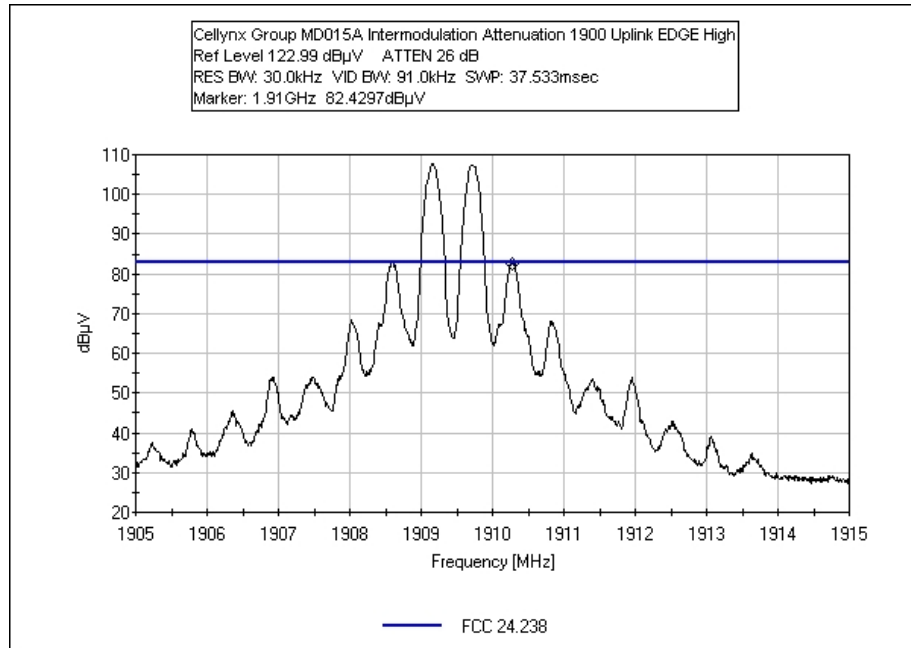
## FCC 2.1051 INTERMODULATION – EDGE DOWNLINK – HIGH



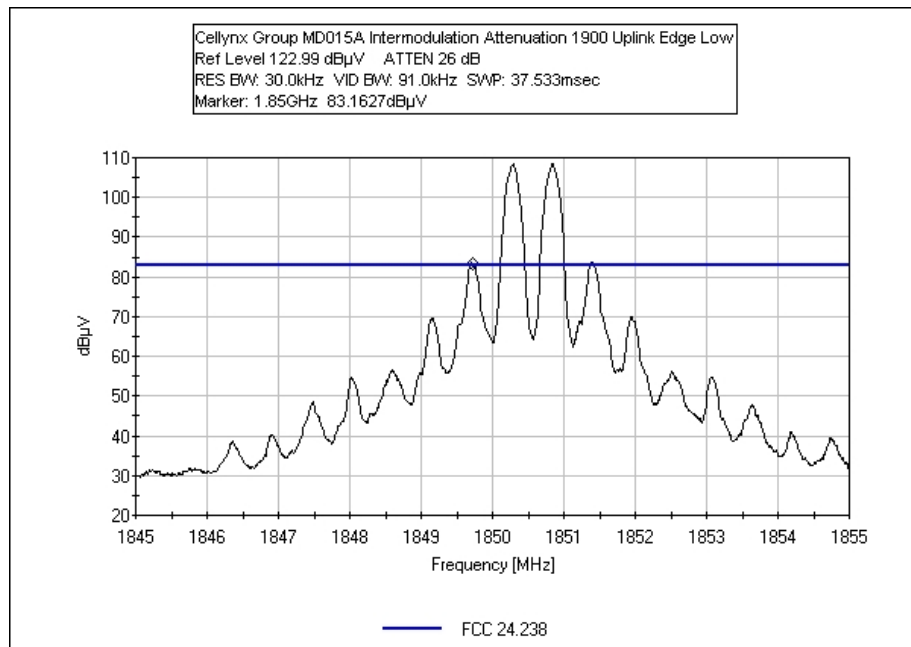
## FCC 2.1051 INTERMODULATION – EDGE DOWNLINK – LOW



## FCC 2.1051 INTERMODULATION – EDGE UPLINK – HIGH

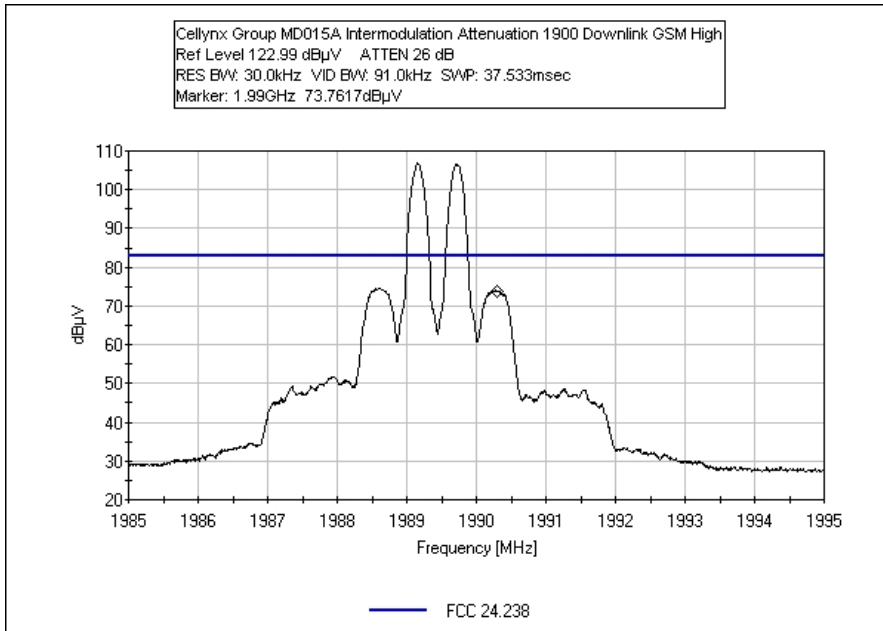


## FCC 2.1051 INTERMODULATION – EDGE UPLINK – LOW

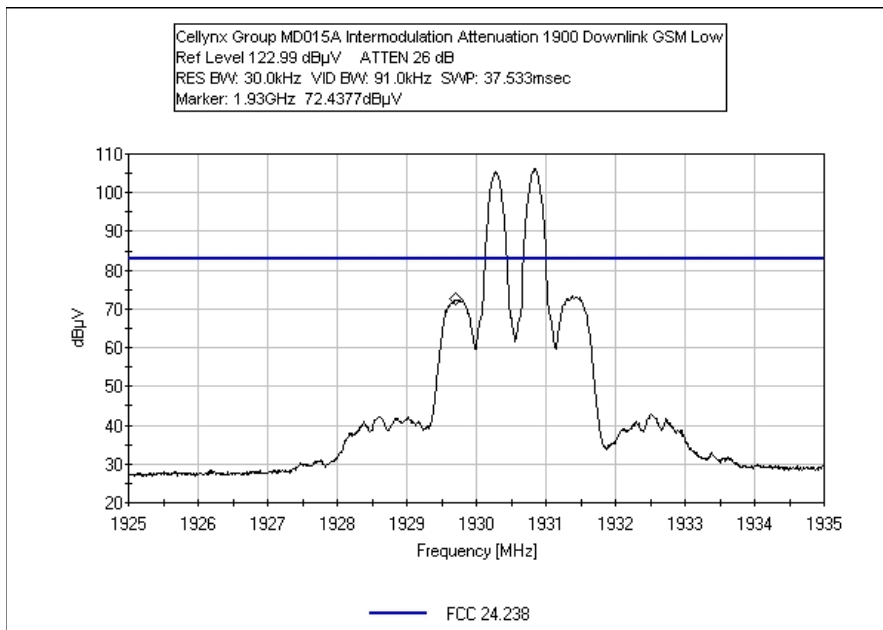




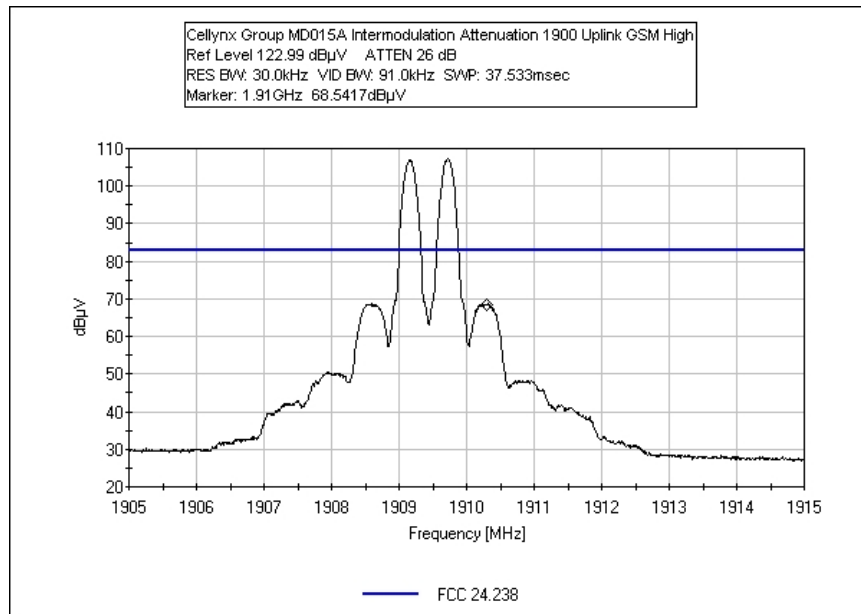
## FCC 2.1051 INTERMODULATION – GSM DOWNLINK – HIGH



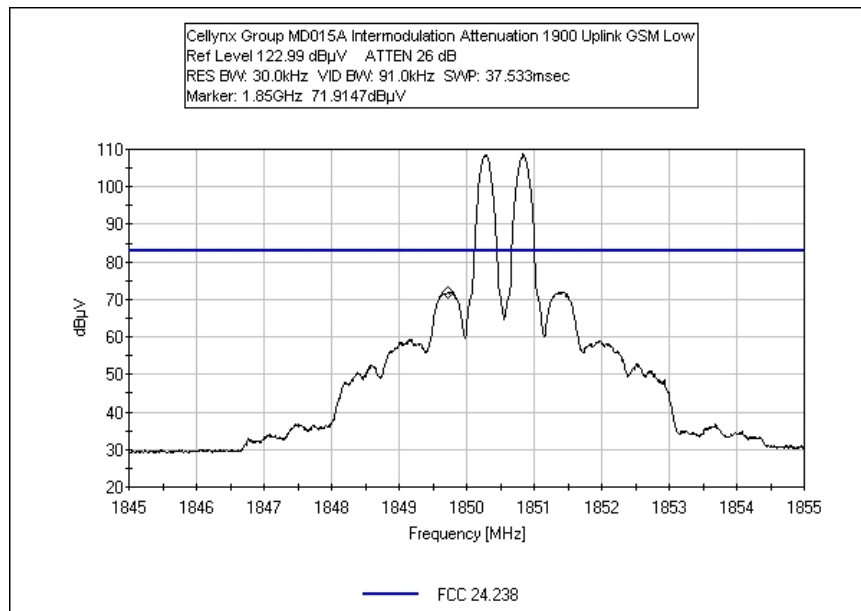
## FCC 2.1051 INTERMODULATION – GSM DOWNLINK – LOW



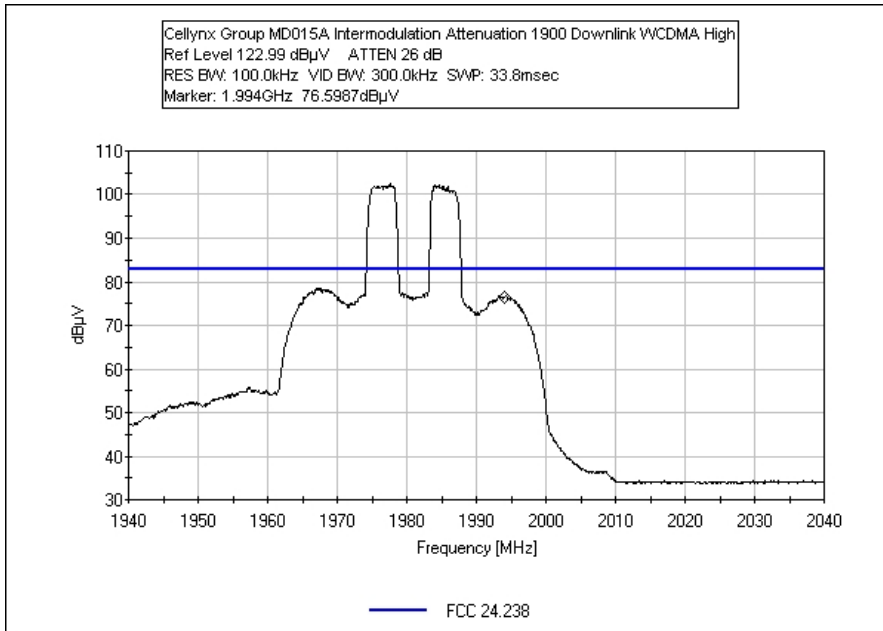
## FCC 2.1051 INTERMODULATION – GMS UPLINK – HIGH



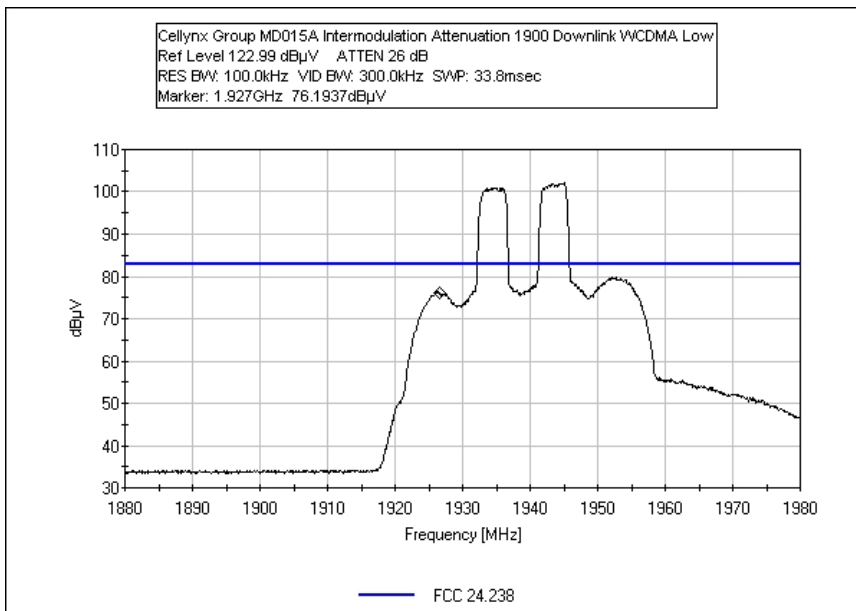
## FCC 2.1051 INTERMODULATION – GMS UPLINK – LOW



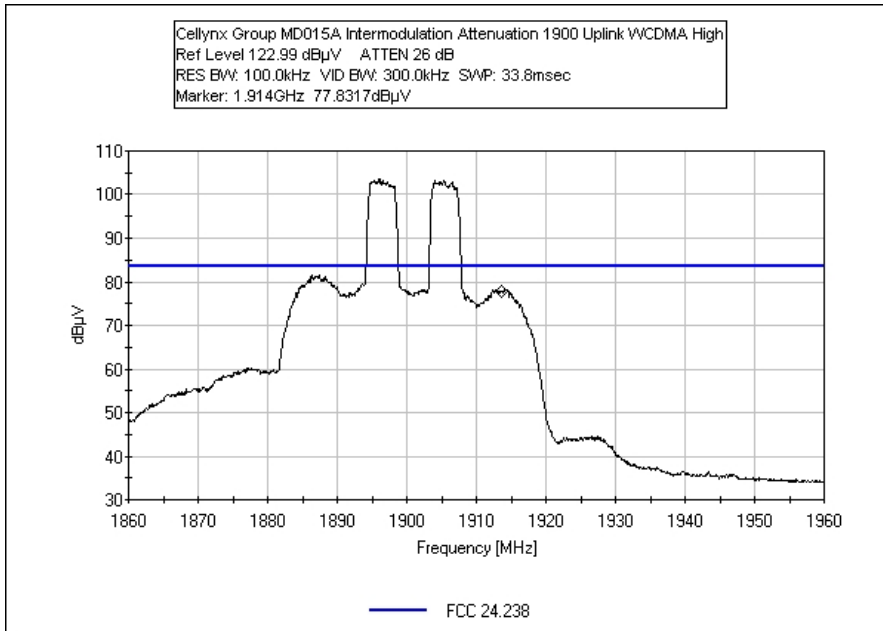
## FCC 2.1051 INTERMODULATION – WCDMA DOWNLINK – HIGH



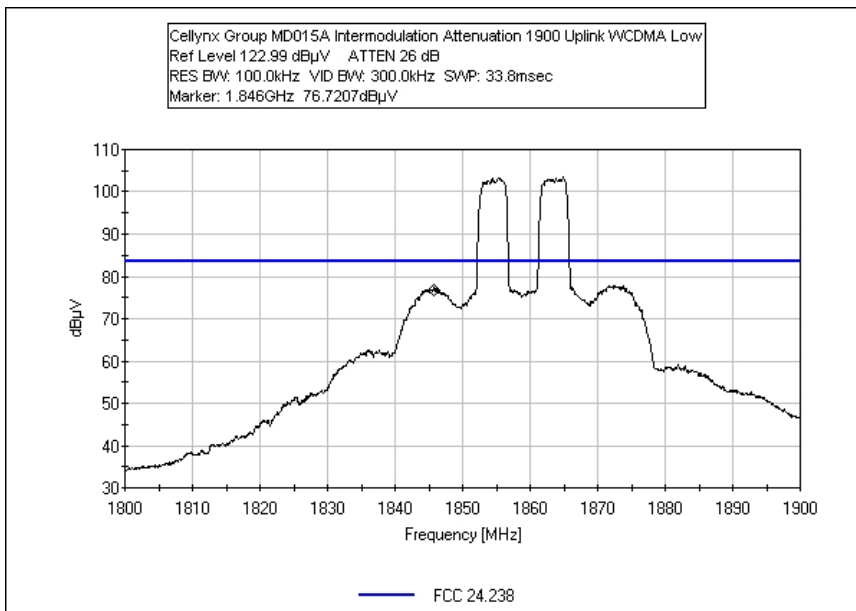
## FCC 2.1051 INTERMODULATION – WCDMA DOWNLINK – LOW



## FCC 2.1051 INTERMODULATION – WCDMA UPLINK – HIGH



## FCC 2.1051 INTERMODULATION – WCDMA UPLINK – LOW





## **FCC 2.1051 – OUT OF BAND REJECTION**

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

Customer: **Cellynx Group**  
 Specification: **FCC 24.238**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/1/2009  
  
 Tested By: Randal Clark  
 120V 60Hz

### ***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

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

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

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

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. The reference signal is injected at -30dBm (output at signal generator). The signal generator output frequency is swept across the entire range of the provided plot.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Frequency Range Investigated: Carrier  
 Operating Band: Uplink and Downlink

Temperature: 25°C  
 Rel Humidity: 40%

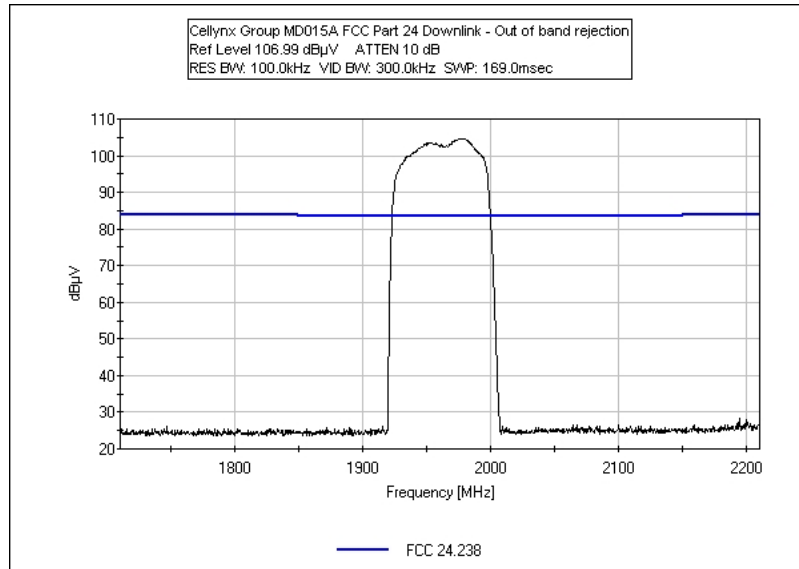
### Test Setup Photo



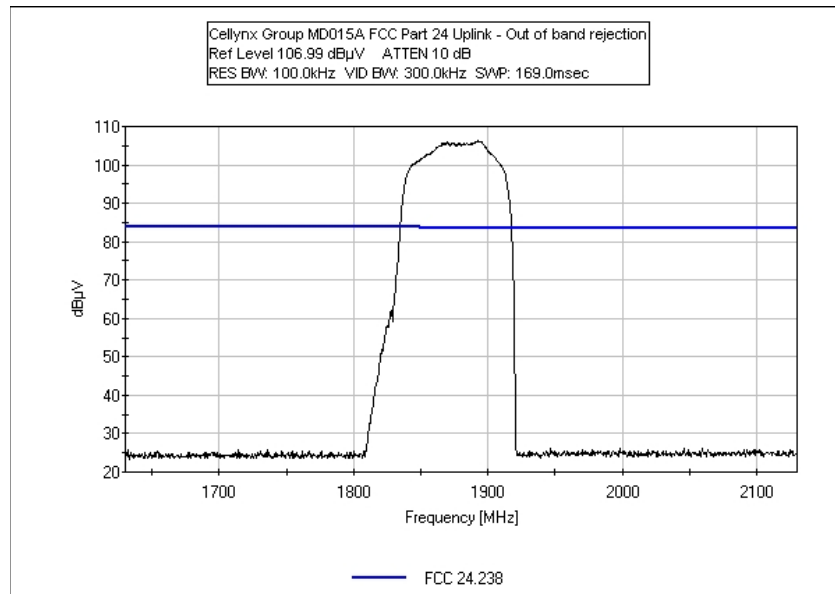
## Test Plots

Tested By: Randy Clark

### FCC 2.1051 – OUT OF BAND REJECTION – DOWNLINK



### FCC 2.1051 – OUT OF BAND REJECTION – UPLINK





## **RSS 131 §6.1 – PASSBAND GAIN**

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

Customer: **Cellynx Group**  
 Specification: **RSS 131**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/1/2009

Tested By: Randal Clark  
 120V 60Hz

### ***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 GHz	na	06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

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

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

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

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. The reference signal is injected at -40dBm (output at signal generator). The measured gain is the peak gain from the signal generator at a constant input.

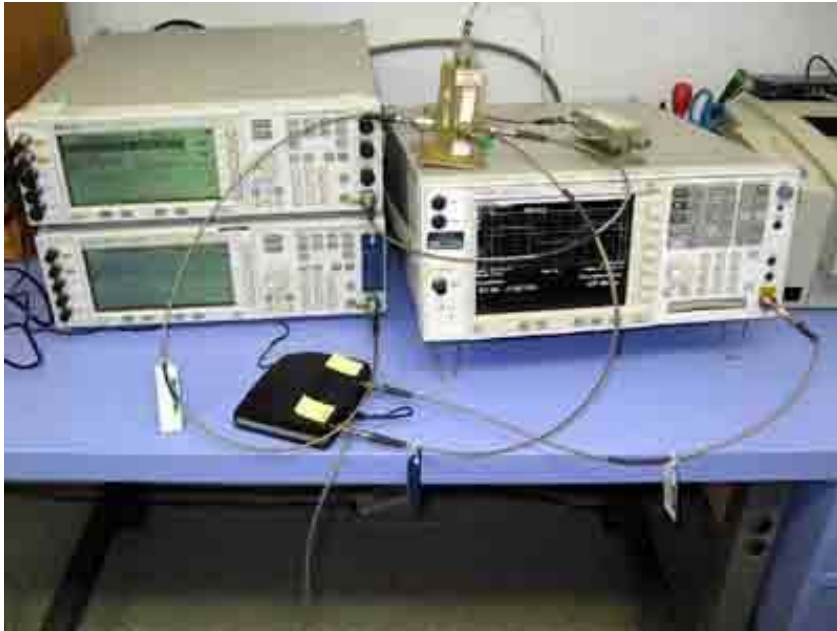
The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Frequency Range Investigated: Carrier  
 Operating Band: Uplink and Downlink

Temperature: 25°C  
 Rel Humidity: 40%



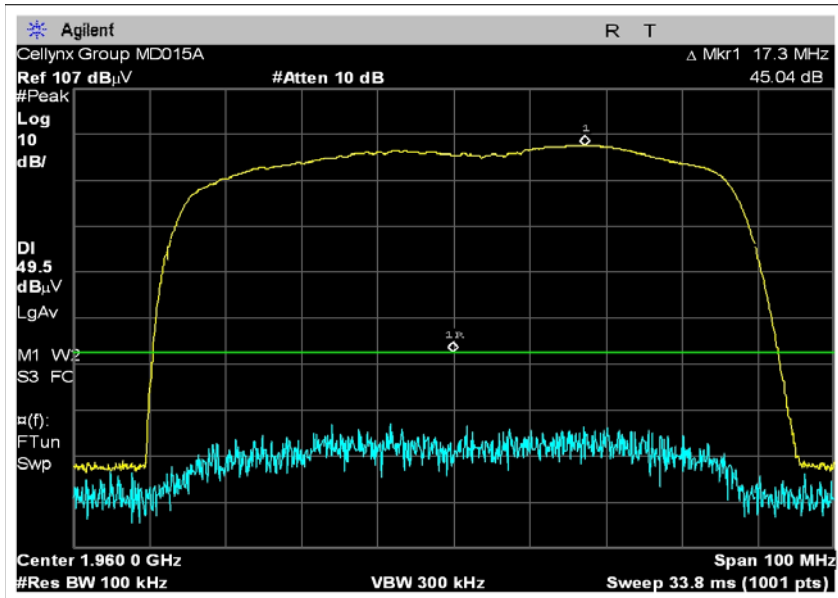
**Test Setup Photo**



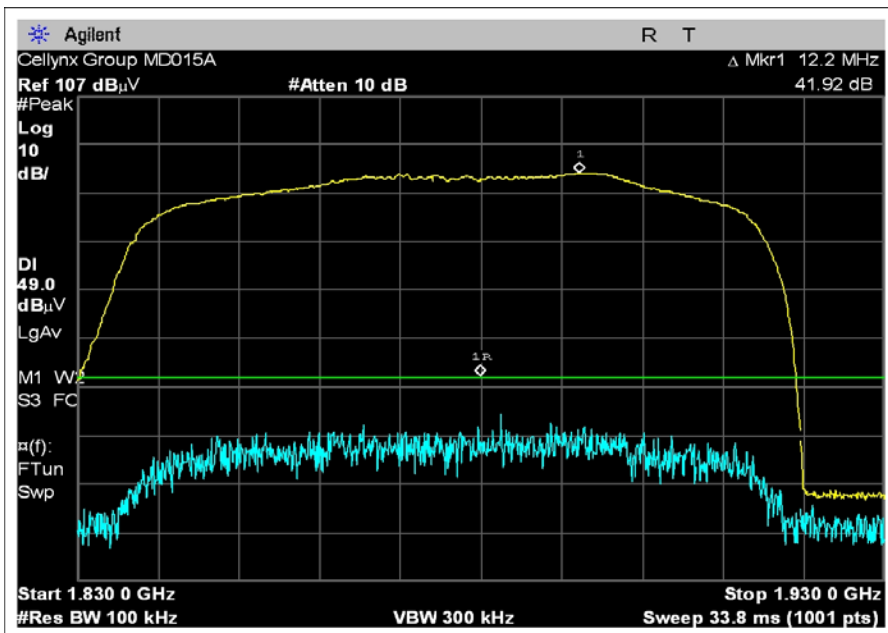
## Test Plots

Tested By: Randy Clark

### RSS 131 §6.1 – PASSBAND GAIN – DOWNLINK



### RSS 131 §6.1 – PASSBAND GAIN – UPLINK



## **RSS 131 §6.1 –BANDWIDTH**

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

Customer: **Cellynx Group**

Specification: **RSS 131**

Work Order #: **89227**

Date: 7/1/2009

Test Type: **Antenna Conducted**

Equipment: **Mobile Cellular Booster**

Manufacturer: Cellynx

Tested By: Randal Clark

Model: MD015A

120V 60Hz

S/N: 09262100003

### ***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

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

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

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

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source. The reference signal is injected at -30dBm (output at signal generator). The signal generator is adjusted over the entire range of the provided plot. Pass band gain is measured at the 20dBc points from the peak output of the amplifier.

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Frequency Range Investigated: Carrier

Operating Band: Uplink and Downlink

Temperature: 25°C

Rel Humidity: 40%

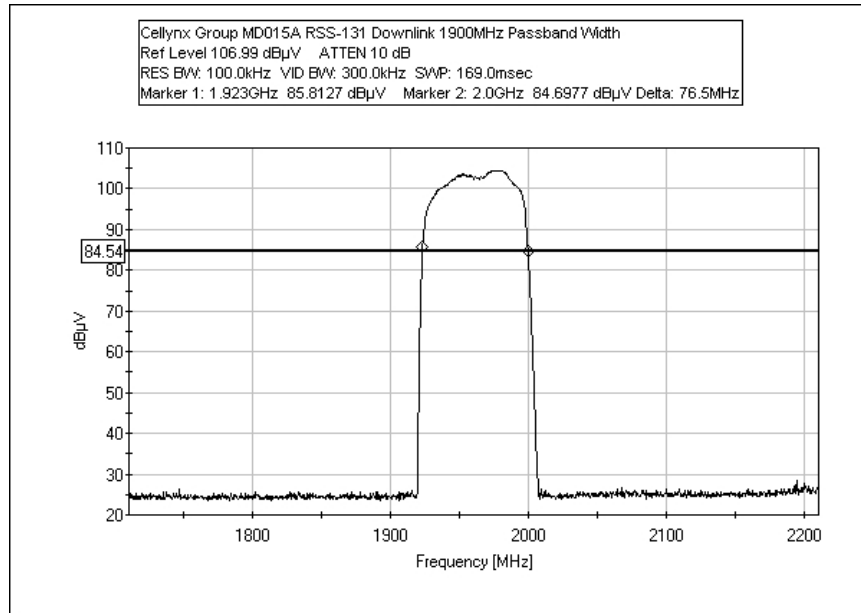
### Test Setup Photo



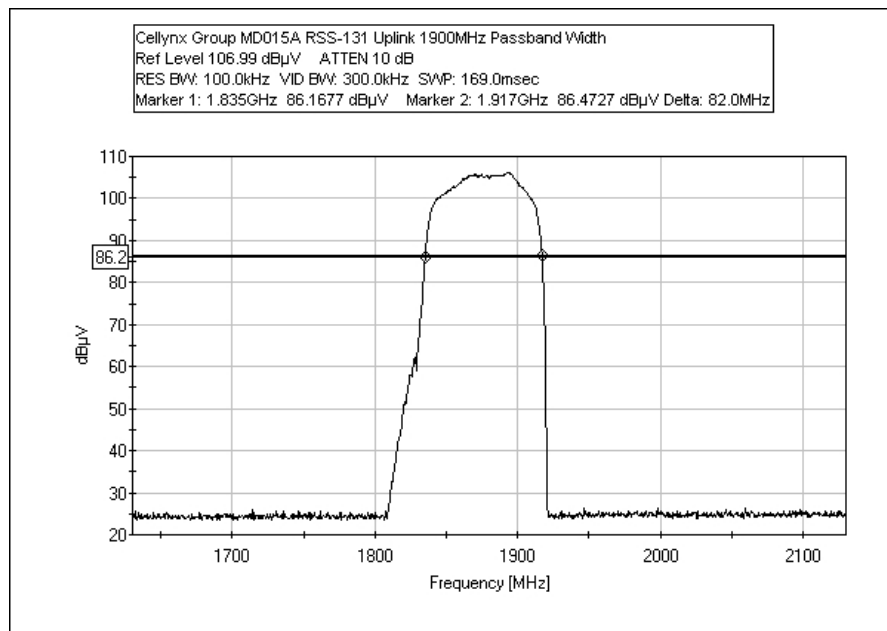
## Test Plots

Tested By: Randy Clark

### RSS 131 §6.1 –BANDWIDTH – DOWNLINK



### RSS 131 §6.1 –BANDWIDTH – UPLINK





## **RSS 131 §6.2 - RF POWER OUTPUT**

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

Customer: **Cellynx Group**  
 Specification: **RSS 131**  
 Work Order #: **89227**  
 Test Type: **Antenna Conducted**  
 Equipment: **Mobile Cellular Booster**  
 Manufacturer: Cellynx  
 Model: MD015A  
 S/N: 09262100003

Date: 7/1/2009  
 Time: 14:06:50  
 Sequence#: 4  
 Tested By: Randal Clark  
 120V 60Hz

### ***Test Equipment:***

Function	S/N	Calibration Date	Cal Due Date	Asset #
E4446A	US44300507	07/08/2008	07/08/2010	AN02660
Cable, 10' 2.92mm 40 na GHz		06/10/2009	06/10/2011	ANP01403
Weinchel 10dB attenuator	C8596	05/20/2009	05/20/2011	ANP02138
Inmet DC Block	NA	07/01/2009	07/01/2011	ANP05551

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

Function	Manufacturer	Model #	S/N
Mobile Cellular Booster*	Cellynx	MD015A	09262100003

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

Function	Manufacturer	Model #	S/N
Power Supply	Sceptre Power	S012BU1200100	NA
Signal Generator	Agilent	E4437B	US39260159
Signal Generator	Agilent	E4437B	MY41000126
Laptop Power Supply	Dell	LA65N50-00	CN-0DF263-71615-850-9C16
Support Computer	Dell	PP23LB	28862556913

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

Equipment is a bidirectional mobile cellular booster amplifier operating on 824-849 paired with 869-894 MHz and 1850-1910 paired with 1930-1990 MHz. The equipment is connected directly to a signal generator source

The amplifier is controlled using an external computer running Gemini Program Interface GUI software v8.4.1.1. The software is used to control the internal attenuation of the amplifier. The tests were performed with the attenuators set to a static value of 6.0 corresponding to approximately 6dB of internal attenuation. In normal operation, the amplifier would insert attenuation automatically in order to ensure the input signal levels do not exceed a predetermined value. The firmware in the amplifier is v04.10.84.

Frequency Range Investigated: Carrier  
 Operating Band: Downlink

Temperature: 25°C  
 Rel Humidity: 40%

Band	Channel	Single Channel Output Power (dBm)	Rated Output Power Prated (dBm)
Downlink	Low	13.6	16.6
	Mid	14.4	17.4
	High	15.3	18.3
Uplink	Low	16.3	19.3
	Mid	16.6	19.6
	High	16.0	19.0

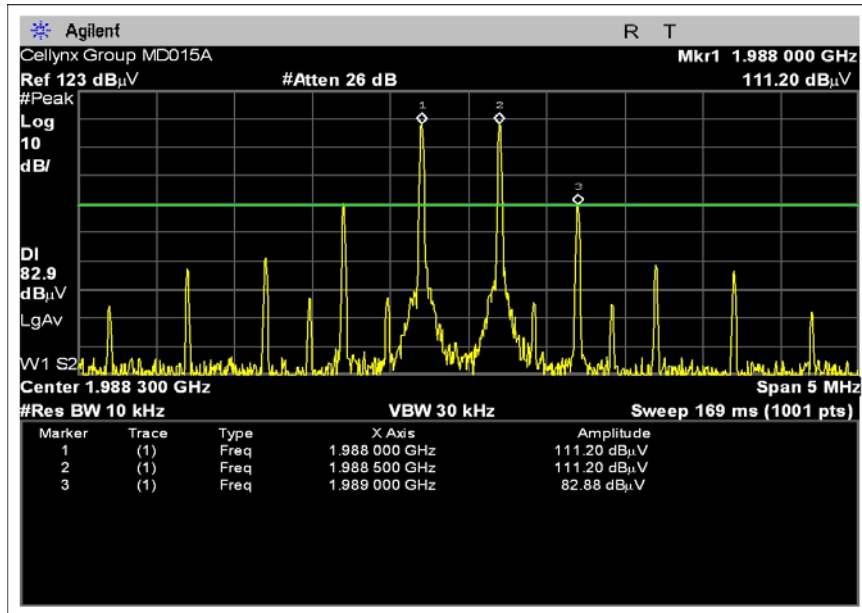
### Test Setup Photo



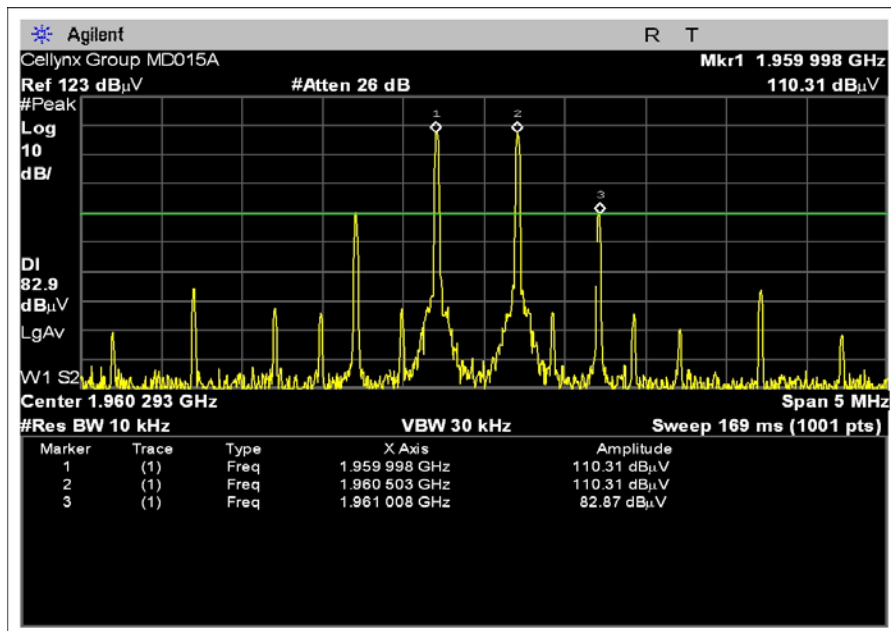
## Test Plots

Tested By: Randy Clark

### RSS 131 §6.2 - RF POWER OUTPUT – DOWNLINK – HIGH

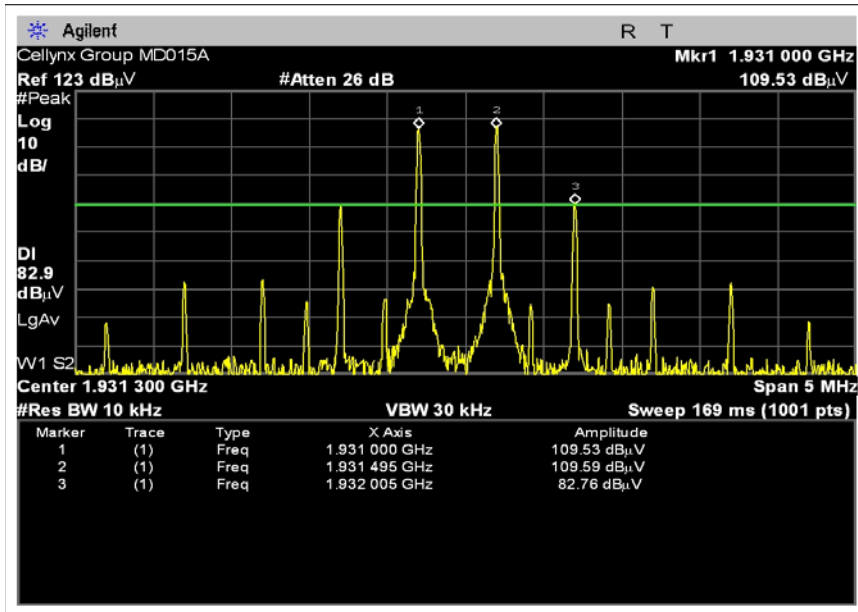


### RSS 131 §6.2 - RF POWER OUTPUT – DOWNLINK – MIDDLE

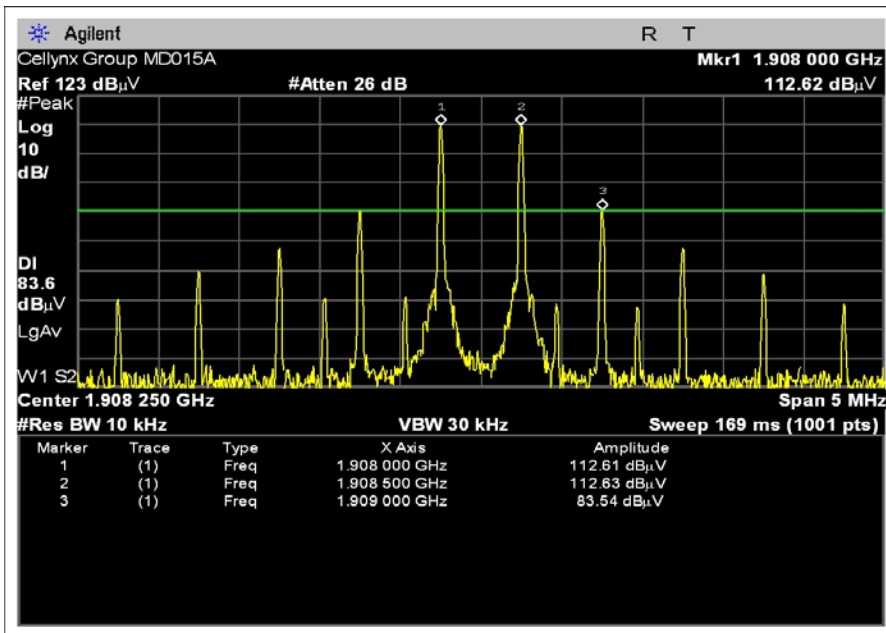




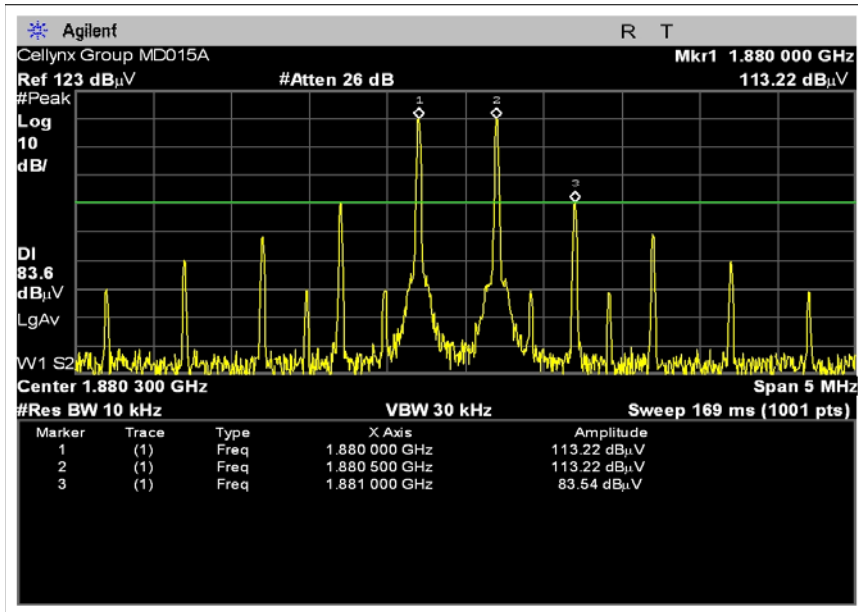
## RSS 131 §6.2 - RF POWER OUTPUT – DOWNLINK - LOW



## RSS 131 §6.2 - RF POWER OUTPUT – UPLINK – HIGH



## RSS 131 §6.2 - RF POWER OUTPUT – UPLINK – MIDDLE



## RSS 131 §6.2 - RF POWER OUTPUT – UPLINK - LOW

