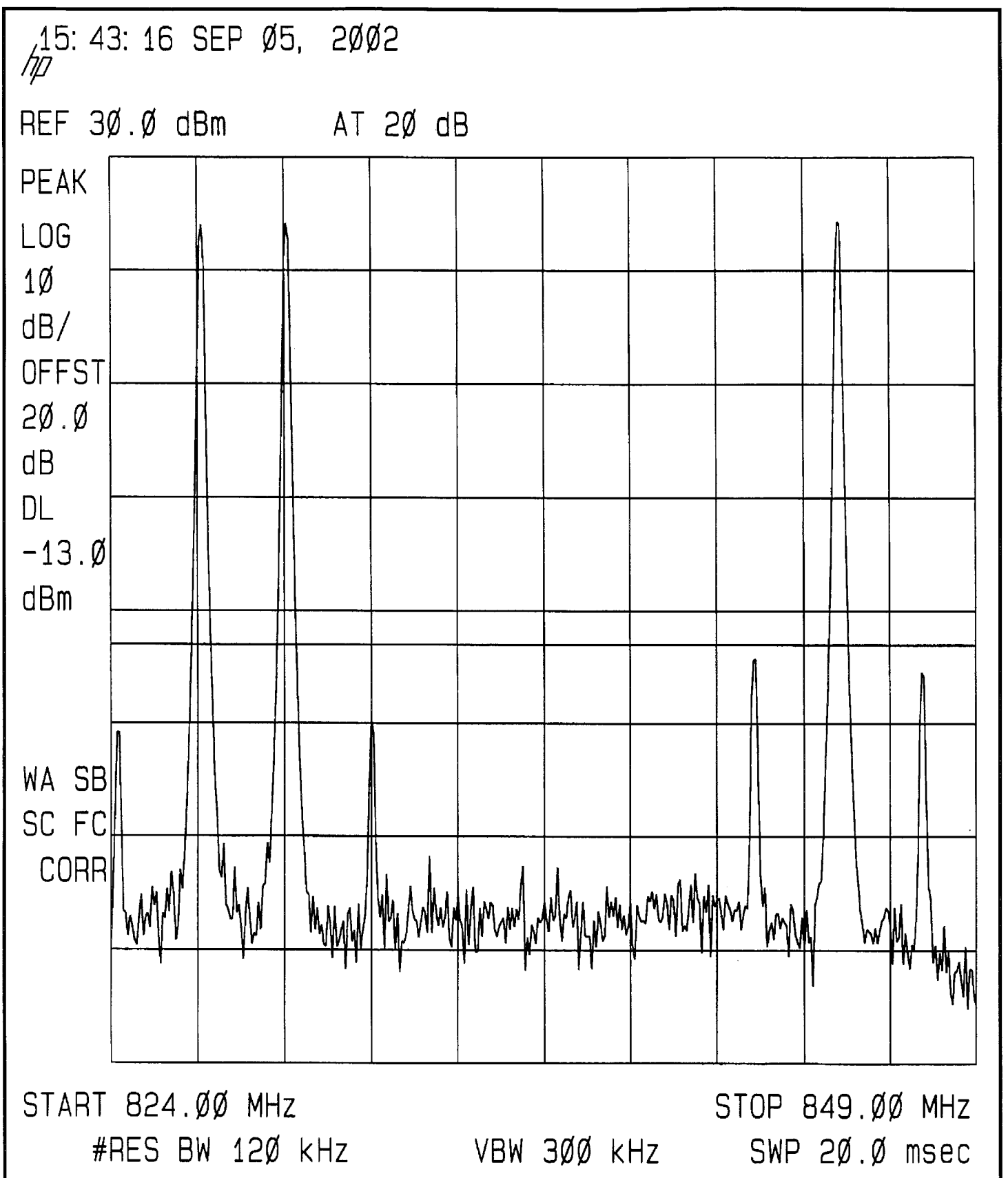
RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

Test Method:	**RF Power Output**		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4021N
Test Sample:	Bidirectional Amplifier		
Model No:	610amps	**Serial No:**	n/a
Test Specification:	FCC Part 2 Paragraph: 2.1046		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann	**Date:**	9/5/02
Notes:	Uplink Frequency: 835.0 MHz Downlink Frequency: 882.0 MHz		

Test Frequency	Power In @ EUT Max input	Power Output	Gain							
MHz	dBm	dBm	dB							
(Uplink)										
835.0000	-42.00	35.60	77.60							
(Downlink)										
882.0000	-40.00	38.20	78.20							

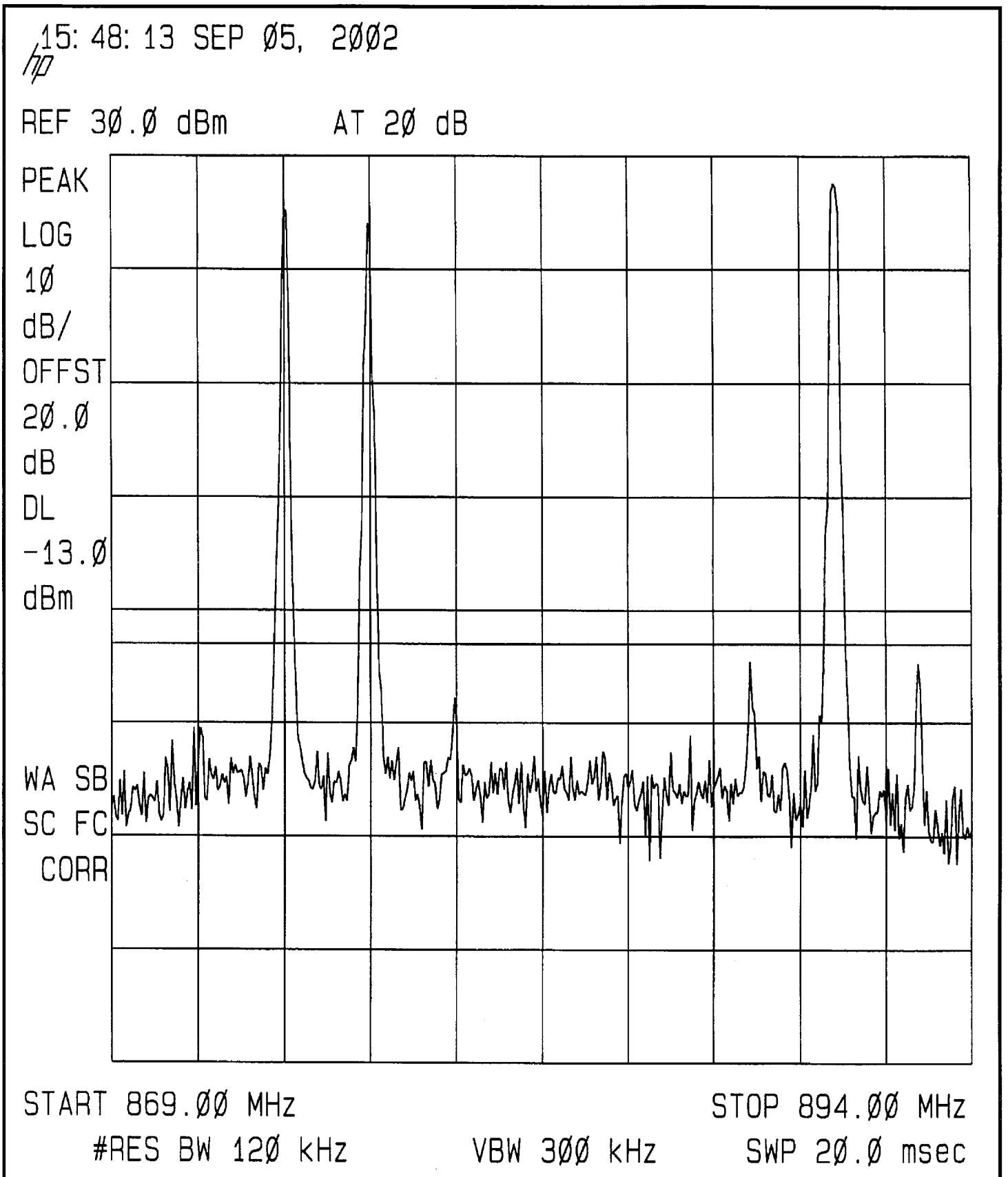


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610amps
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Uplink Frequency Range: 824-849 MHz

Date: 9/5/02 Tech: T. Hannemann Sheet 1 of 2

Retlif Testing Laboratories

Report No R-4021N



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610amps
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Downlink Frequency Range: 869-894 MHz

Date: 9/5/02 Tech: T. Hannemann Sheet 2 of 2

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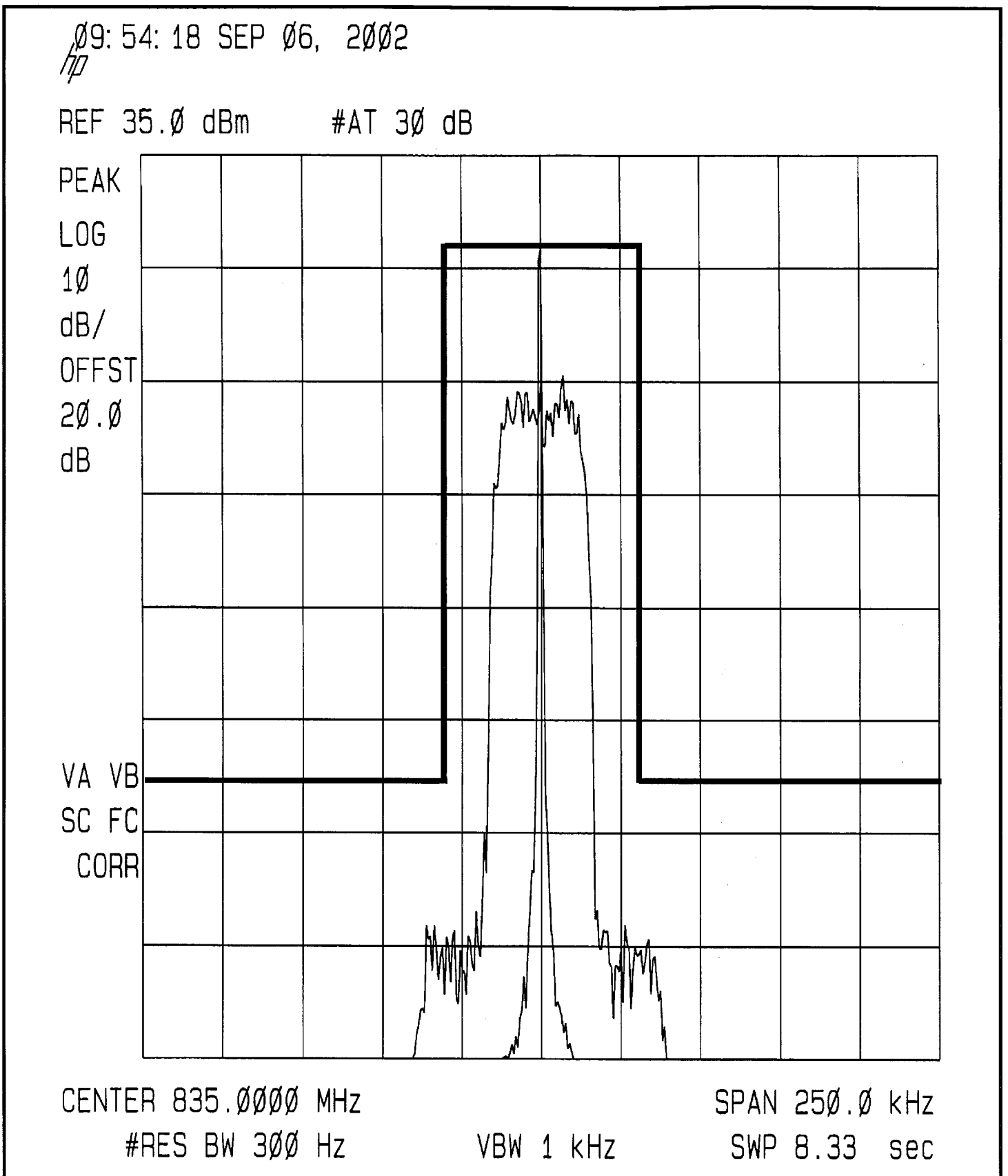
Report No R-4021N



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610amps
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Uplink Frequency 813.5 MHz Modulation: TDMA

Date: 9/6/02 Tech: T. Firkowski Sheet 1 of 4

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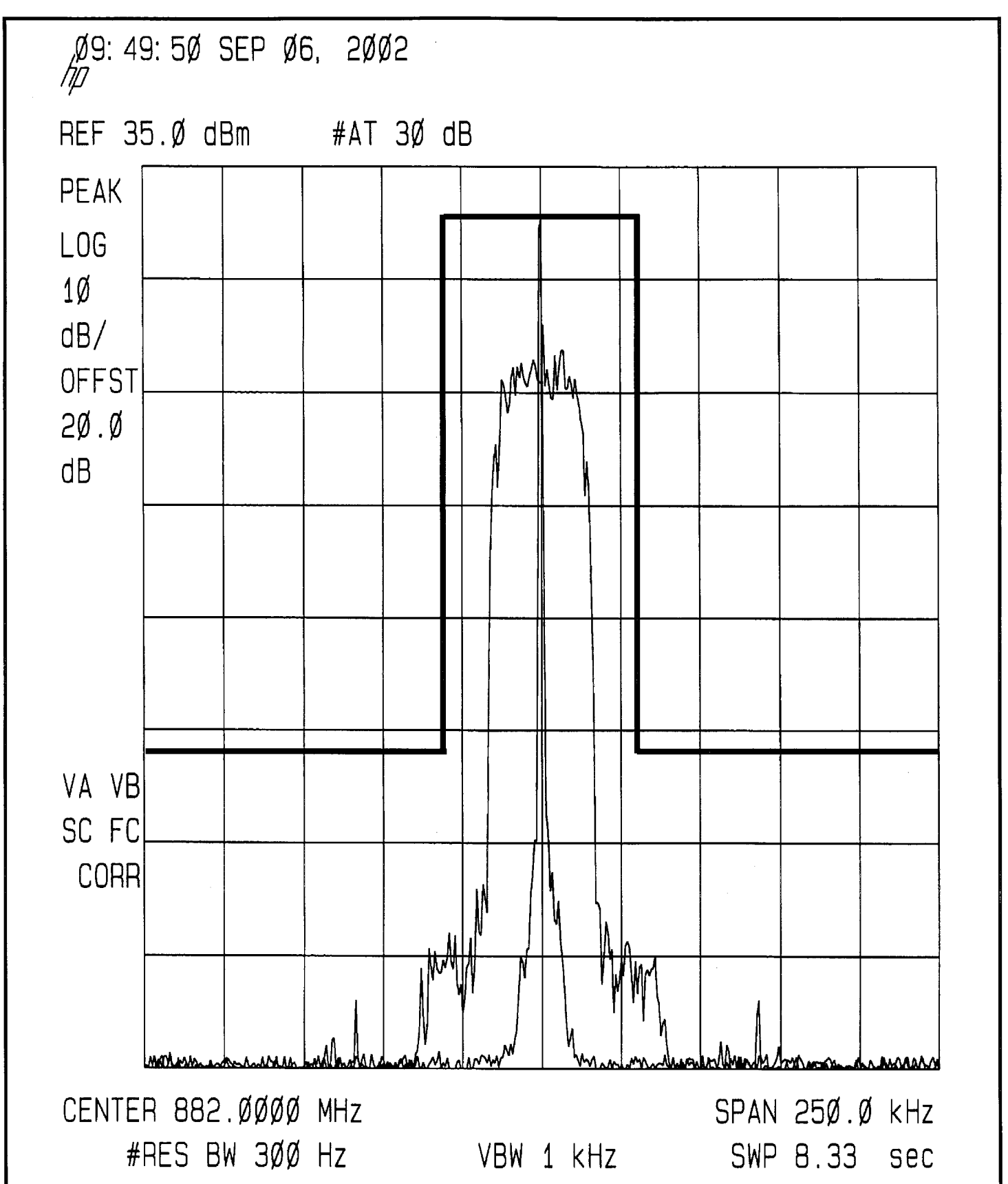
Report No R-4021N



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610amps
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Downlink Frequency 858.5 MHz
	Modulation: TDMA

Date: 9/6/02 Tech: T. Firkowski Sheet 2 of 4

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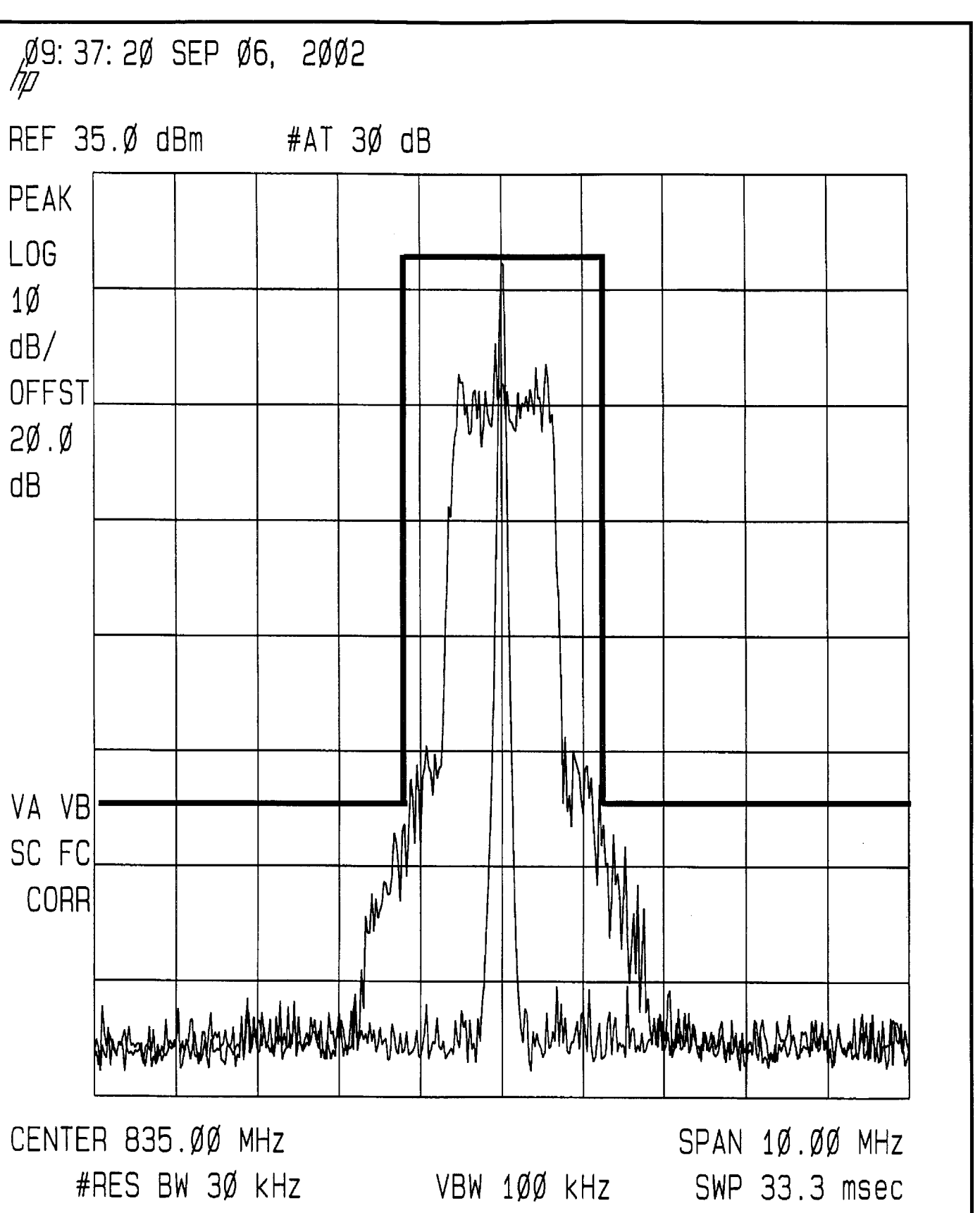
Report No R-4021N



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610amps
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Uplink Frequency 813.5 MHz Modulation: CDMA

Date: 9/6/02 Tech: T. Firkowski Sheet 3 of 4

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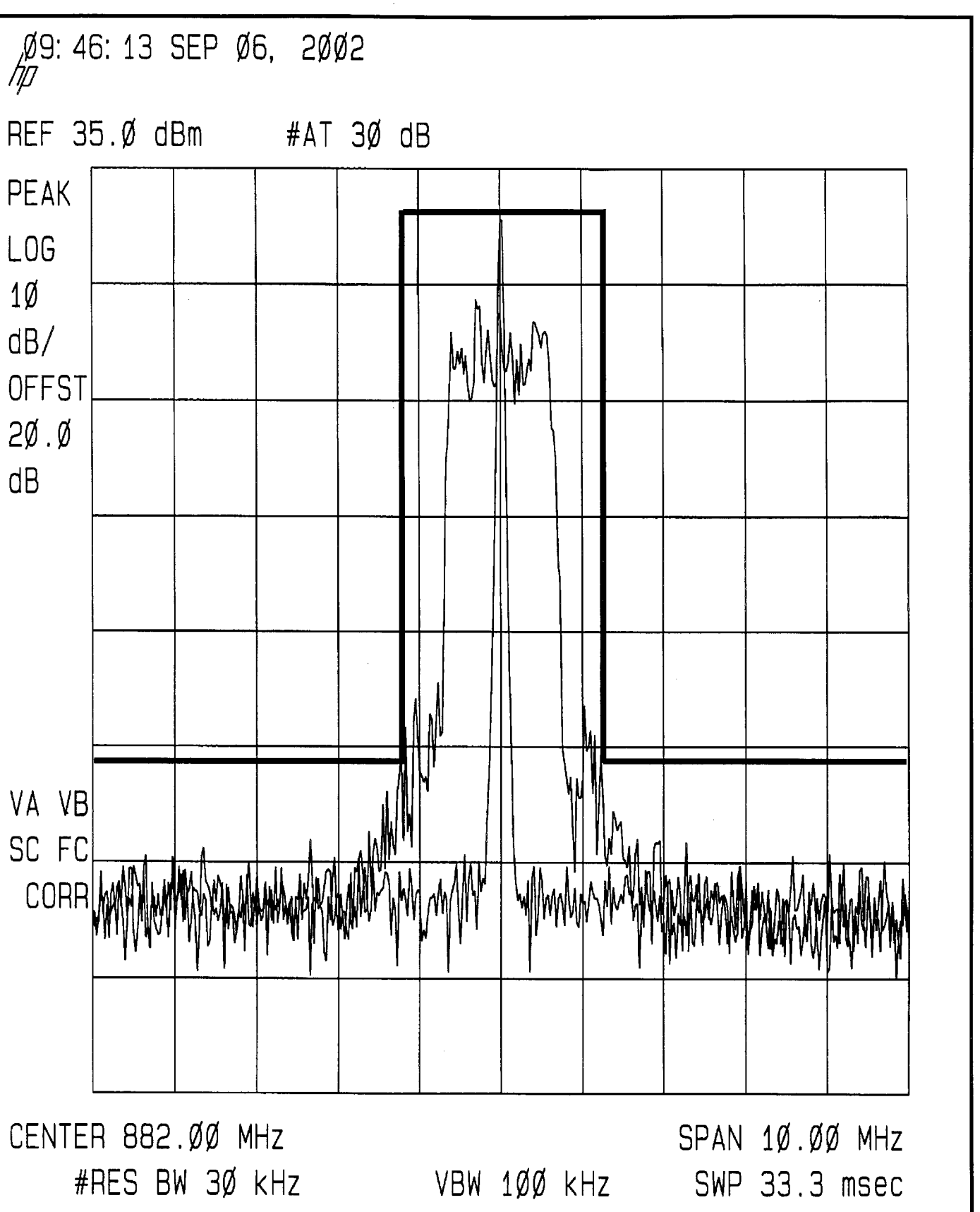
Report No R-4021N



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610amps
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Downlink Frequency 858.5 MHz
	Modulation: CDMA

Date: 9/6/02 Tech: T. Firkowski Sheet 4 of 4

Retlif Testing Laboratories

Report No R-4021N

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	**Spurious Emissions at the Antenna Terminals 30 MHz to 9.0 GHz**		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4021N
Test Sample:	Bidirectional Amplifier		
Model No:	610amps	**Serial No:**	n/a
Test Specification:	FCC Part 2/22.917 Paragraph: 2.1051		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann	**Date:**	9/5/02
Notes:	Uplink Frequency 835.0 MHz Downlink Frequency 882.0 MHz		

Uplink Input Signal	Test Frequency	Harmonic Frequencies	Reading	Limit	Downlink Input Signal	Test Frequency	Harmonic Frequencies	Reading	Limit	
dBm	MHz	MHz	dBm	dBm	dBm	MHz	MHz	dBm	dBm	
-45.69	835.00	835.00	27.20		-29.00	882.00	882.00	30.57		
I	I	1670.00	-56.71	-13.0	I	I	1764.00	-52.80	-13.0	
I	I	2505.00	-55.20	I	I	I	2646.00	-50.80	I	
I	I	3340.00	<-60	I	I	I	3528.00	<-60	I	
I	I	4175.00	<-60	I	I	I	4410.00	<-60	I	
I	I	5010.00	<-60	I	I	I	5292.00	<-60	I	
I	I	5845.00	<-60	I	I	I	6174.00	<-60	I	
I	I	6680.00	<-60	I	I	I	7056.00	<-60	I	
I	I	7515.00	<-60	I	I	I	7938.00	<-60	I	
-45.69	835.00	8350.00	<-60	-13.0	-29.00	882.00	8820.00	<-60	-13.0	

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Spurious Radiated Emissions (ERP) 30 MHz to 9.0 GHz		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4021N
Test Sample:	Bidirectional Amplifier		
Model No:	610amps	**Serial No:**	n/a
Test Specification:	FCC Part 2.1053/22.917 Paragraph: n/a		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann	**Date:**	9/19/02
Notes:	Uplink Frequency Range: 824 - 849 MHz Tested at 835.0 MHz Peak Detector		

Test Frequency	Antenna Position	Reference Reading	Signal Gen Level	Reference Ant Gain					Corrected Reading	Spurious Limit
MHz	(H/V) - Height	dBuV	dBm	dBI					dBm	dBm
30.00	-	-	-	-						-13.00
I	-	-	-	-						I
32.89	V-1m	23.74	-55.00	1.64					-53.36	I
38.74	V-1m	23.19	-61.00	1.64					-59.36	I
48.72	V-1m	32.31	-68.99	1.64					-67.35	I
77.42	V-1m	26.5	-59.00	1.64					-57.36	I
I	-	-	-	-					-	I
9000.00	-	-	-	-					-	-13.00

EUT emissions observed throughout the given frequency spectrum were recorded & evaluated, Emission levels closest to the limit are listed on this data sheet.

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Spurious Radiated Emissions (ERP) 30 MHz to 9.0 GHz		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4021N
Test Sample:	Bidirectional Amplifier		
Model No:	610amps	**Serial No:**	n/a
Test Specification:	FCC Part 2.1053/22.917 Paragraph: n/a		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann	**Date:**	9/19/02
Notes:	Downlink Frequency Range: 869 - 894 MHz Tested at 882.0 MHz Peak Detector		

Test Frequency	Antenna Position	Reference Reading	Signal Gen Level	Reference Ant Gain					Corrected Reading	Spurious Limit
MHz	(H/V) - Height	dBuV	dBm	dBI					dBm	dBm
30.00	-	-	-	-					-	-13.00
|	-	-	-	-					-	|
31.40	V-1m	20.1	-51.36	1.64					-49.72	|
39.27	V-1m	21.2	-63.00	1.64					-61.36	|
48.73	V-1m	25.3	-62.00	1.64					-60.36	|
|	-	-	-	-					-	|
9000.00	-	-	-	-					-	-13.00

EUT emissions observed throughout the given frequency spectrum were recorded & evaluated, Emission levels closest to the limit are listed on this data sheet.

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	**Frequency Stability**		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4021N
Test Sample:	Bidirectional Amplifier		
Model No:	610amps	**Serial No:**	n/a
Test Specification:	FCC Part 2 Paragraph: 2.1055		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann	**Date:**	9/4/02
Notes:	Uplink Frequency 835.0 MHz Nominal Voltage = 115 VAC Downlink Frequency 882.0 MHz		

Temp	Test Frequency	Input Power	Output Power	Frequency @ 97.75 VAC	Frequency @ 103.50 VAC	Frequency @ 109.25 VAC	Frequency @ 115 VAC	Frequency @ 120.75 VAC	Frequency @ 126.50 VAC	Frequency @ 132.25 VAC
C	MHz	dBm	dBm	MHz	MHz	MHz	MHz	MHz	MHz	MHz
	(Uplink)									
-30	835	-54.7	27.2	835.000	835.000	835.000	835.000	835.000	835.000	835.000
-20	"	"	"	835.000	835.000	835.000	835.000	835.000	835.000	835.000
-10	"	"	"	835.000	835.000	835.000	835.000	835.000	835.000	835.000
0	"	"	"	835.000	835.000	835.000	835.000	835.000	835.000	835.000
10	"	"	"	835.000	835.000	835.000	835.000	835.000	835.000	835.000
20	"	"	"	835.000	835.000	835.000	835.000	835.000	835.000	835.000
30	"	"	"	835.000	835.000	835.000	835.000	835.000	835.000	835.000
40	"	"	"	835.000	835.000	835.000	835.000	835.000	835.000	835.000
50	835	-54.7	27.2	835.000	835.000	835.000	835.000	835.000	835.000	835.000
	(Downlink)									
-30	882	-53.2	30.57	882.000	882.000	882.000	882.000	882.000	882.000	882.000
-20	"	"	"	882.000	882.000	882.000	882.000	882.000	882.000	882.000
-10	"	"	"	882.000	882.000	882.000	882.000	882.000	882.000	882.000
0	"	"	"	882.000	882.000	882.000	882.000	882.000	882.000	882.000
10	"	"	"	882.000	882.000	882.000	882.000	882.000	882.000	882.000
20	"	"	"	882.000	882.000	882.000	882.000	882.000	882.000	882.000
30	"	"	"	882.000	882.000	882.000	882.000	882.000	882.000	882.000
40	"	"	"	882.000	882.000	882.000	882.000	882.000	882.000	882.000
50	882	-53.2	30.57	882.000	882.000	882.000	882.000	882.000	882.000	882.000