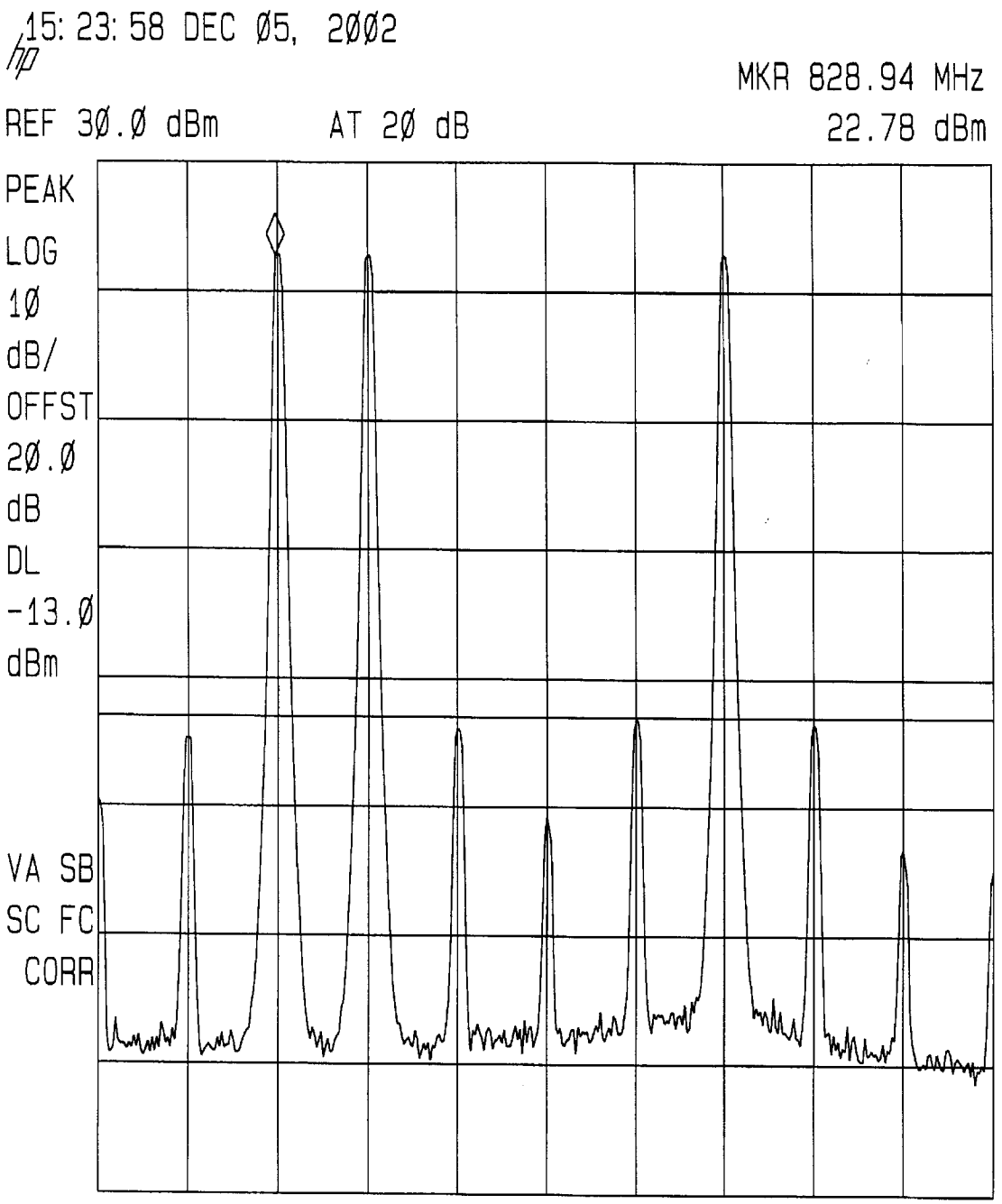
RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

Test Method:	**RF Power Output**		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4067N1
Test Sample:	Bidirectional Amplifier		
Model No:	565AMPS	**Serial No:**	AMPS2
Test Specification:	FCC Part 2 Paragraph: 2.1046		
Operating Mode:	Amplifying input signal		
Technician:	T. Firkowski	**Date:**	12/5/02
Notes:	Uplink Frequency: 836.5 MHz Downlink Frequency: 881.5 MHz		

Test Frequency	Power In @ 1 dB compression	Power Output	Gain
MHz	dBm	dBm	dB
(Uplink)			
836.5000	-35.38	32.37	67.75
(Downlink)			
881.5000	-35.84	32.54	68.38



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Uplink Frequency Range: 824-849 MHz

Date: 12/5/02 Tech: T. Firkowski Sheet 1 of 6

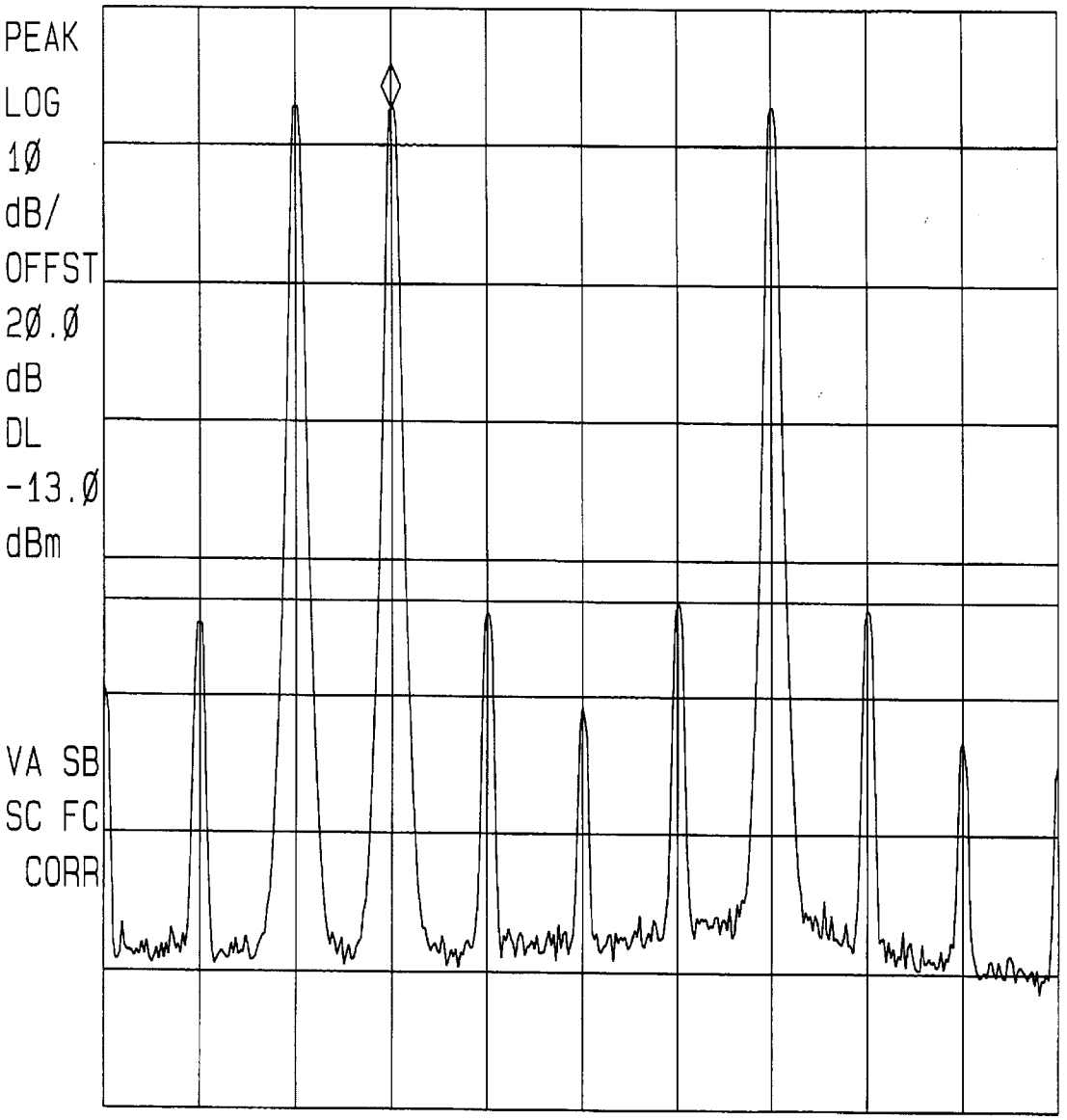
Retlif Testing Laboratories

Report No R-4067N1

15: 23: 58 DEC Ø5, 2ØØ2

MKR 831.5Ø MHz

REF 3Ø.Ø dBm AT 2Ø dB 22.71 dBm



START 824.ØØ MHz STOP 849.ØØ MHz

#RES BW 1ØØ kHz VBW 3ØØ kHz SWP 2Ø.Ø msec

Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Uplink Frequency Range: 824-849 MHz

Date: 12/5/02 Tech: T. Firkowski Sheet 2 of 6

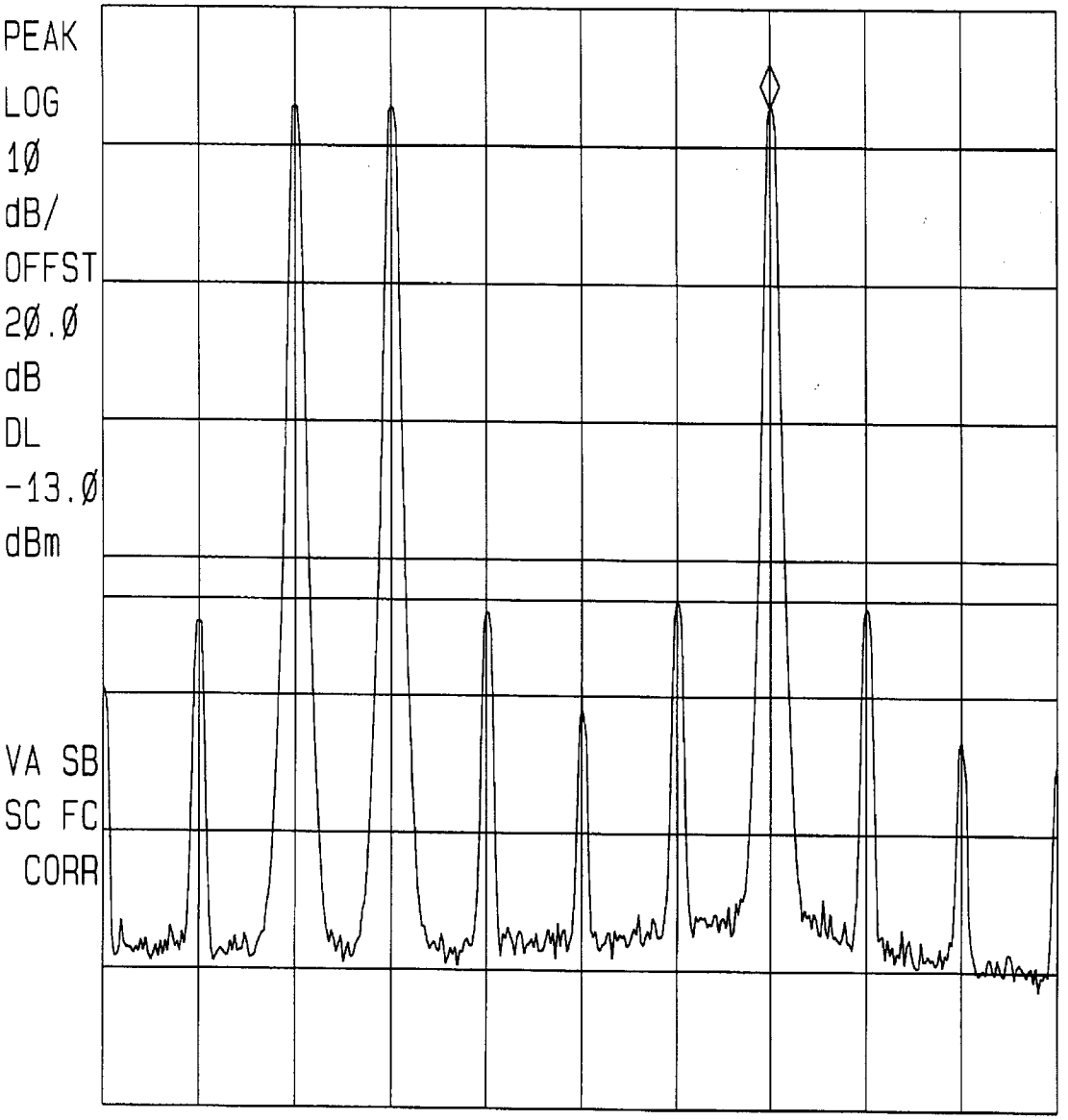
Retlif Testing Laboratories

Report No R-4067N1

15: 26: Ø6 DEC Ø5, 2ØØ2

MKR 841.5Ø MHz

REF 3Ø.Ø dBm AT 2Ø dB 22.79 dBm



START 824.ØØ MHz STOP 849.ØØ MHz

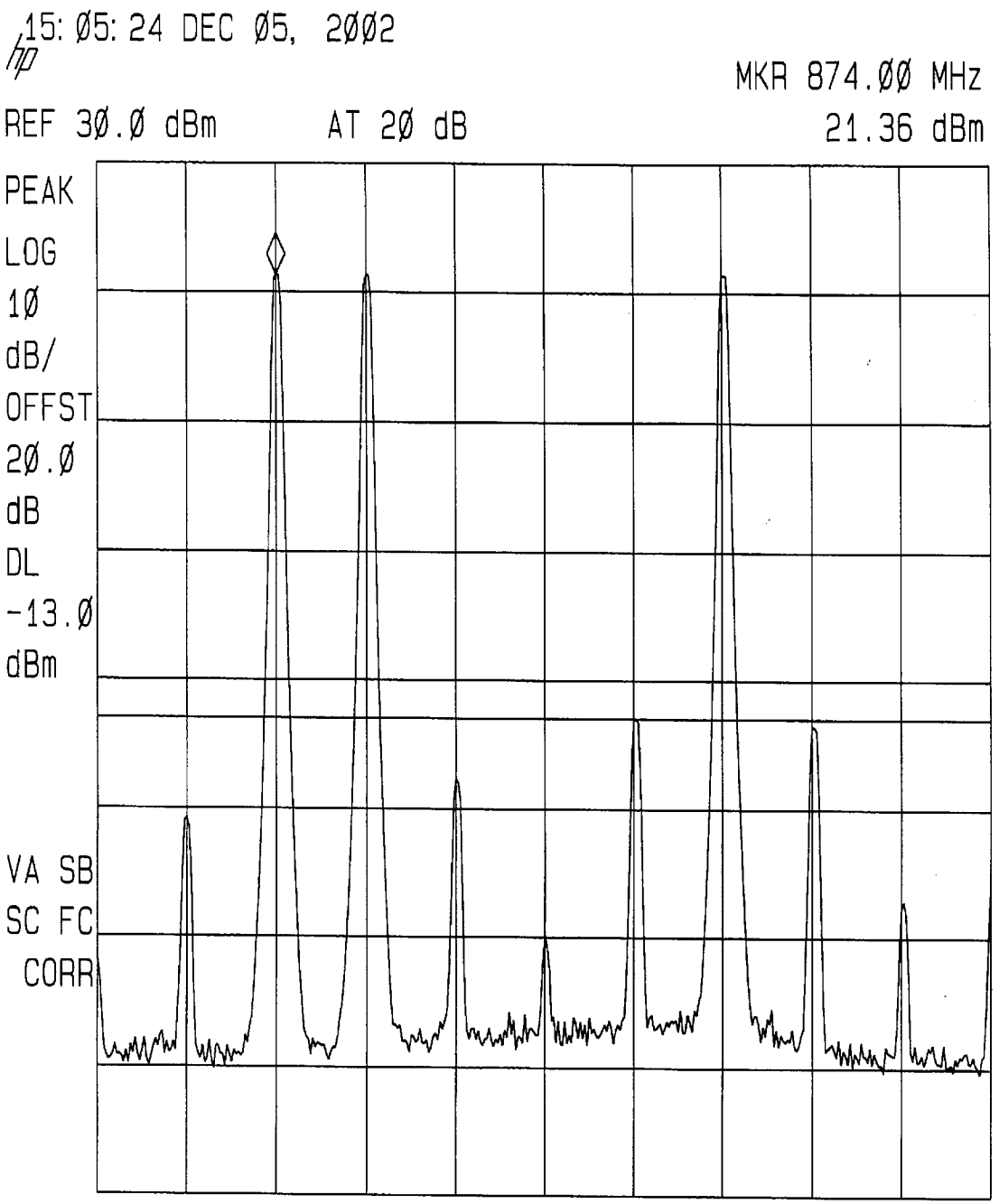
#RES BW 1ØØ kHz VBW 3ØØ kHz SWP 2Ø.Ø msec

Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Uplink Frequency Range: 824-849 MHz

Date: 12/5/02 Tech: T. Firkowski Sheet 3 of 6

Retlif Testing Laboratories

Report No R-4067N1



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Downlink Frequency Range: 869-894 MHz

Date: 12/5/02 Tech: T. Firkowski Sheet 4 of 6

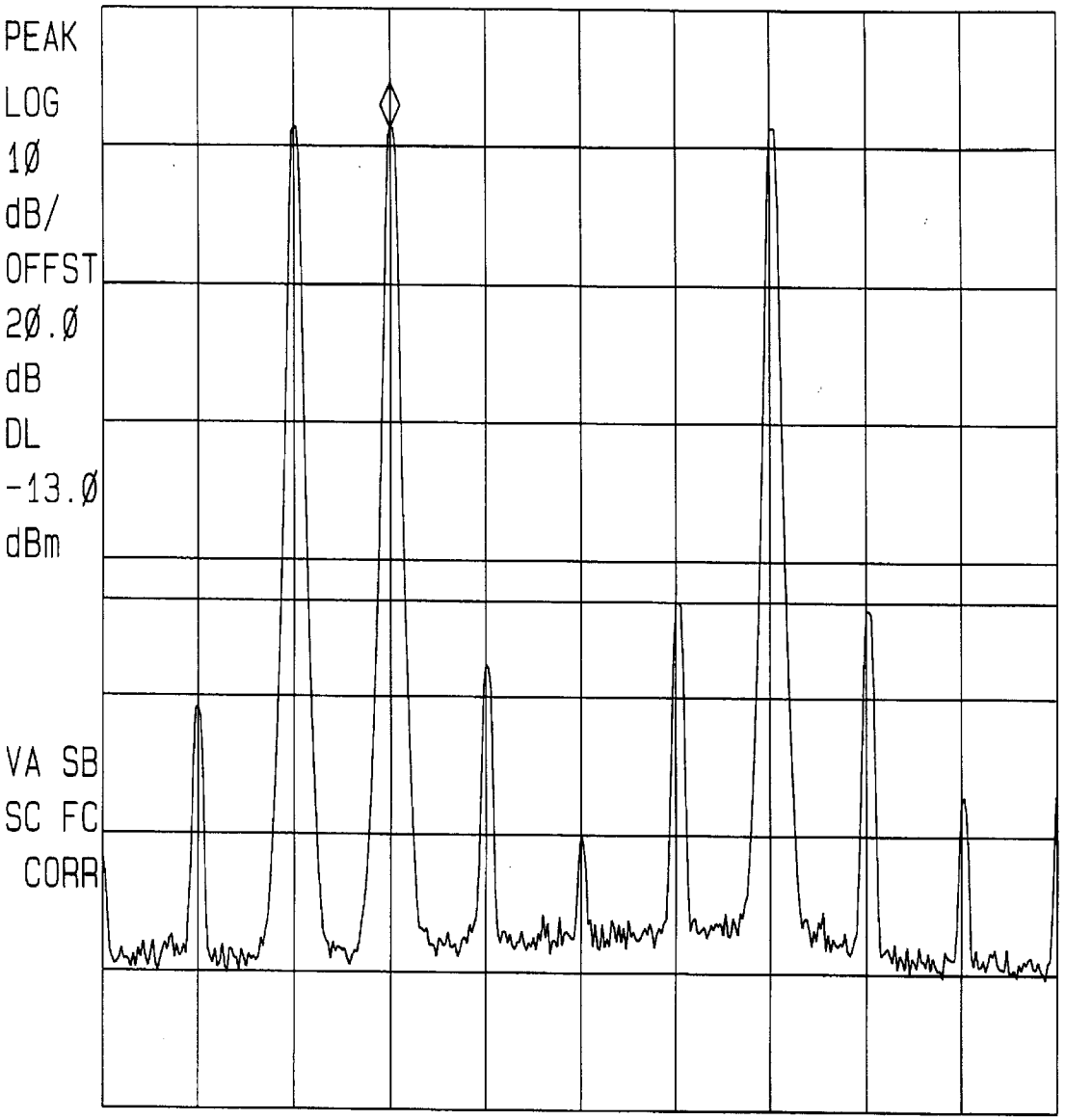
Retlif Testing Laboratories

Report No R-4067N1

15: Ø5: 32 DEC Ø5, 2ØØ2

MKR 876.5Ø MHz

REF 3Ø.Ø dBm AT 2Ø dB 21.34 dBm



START 869.ØØ MHz STOP 894.ØØ MHz

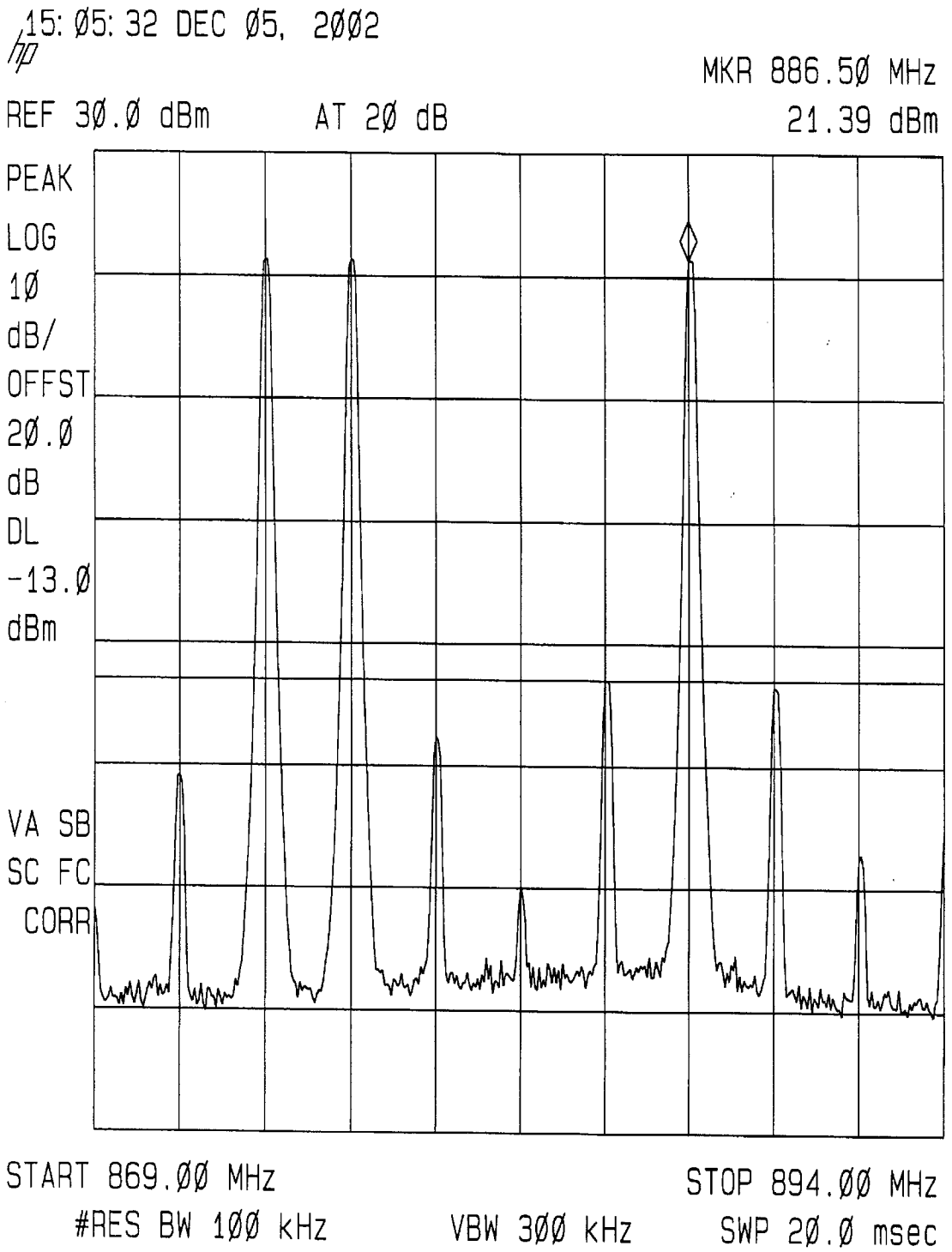
#RES BW 1ØØ kHz VBW 3ØØ kHz SWP 2Ø.Ø msec

Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Downlink Frequency Range: 869-894 MHz

Date: 12/5/02 Tech: T. Firkowski Sheet 5 of 6

Retlif Testing Laboratories

Report No R-4067N1

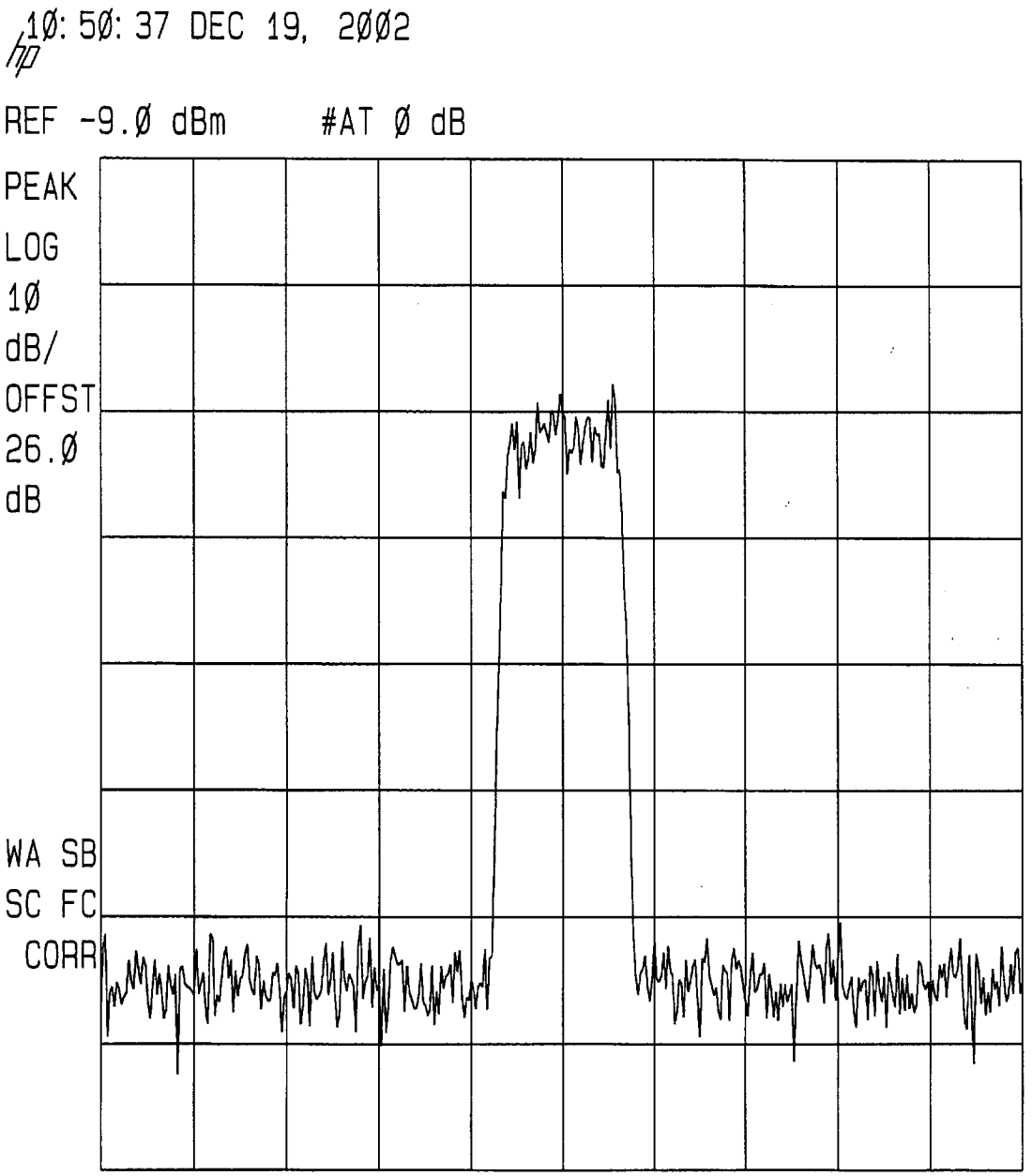


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method: *	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Downlink Frequency Range: 869-894 MHz

Date: 12/5/02 Tech: T. Firkowski Sheet 6 of 6

Retlif Testing Laboratories

Report No R-4067N1

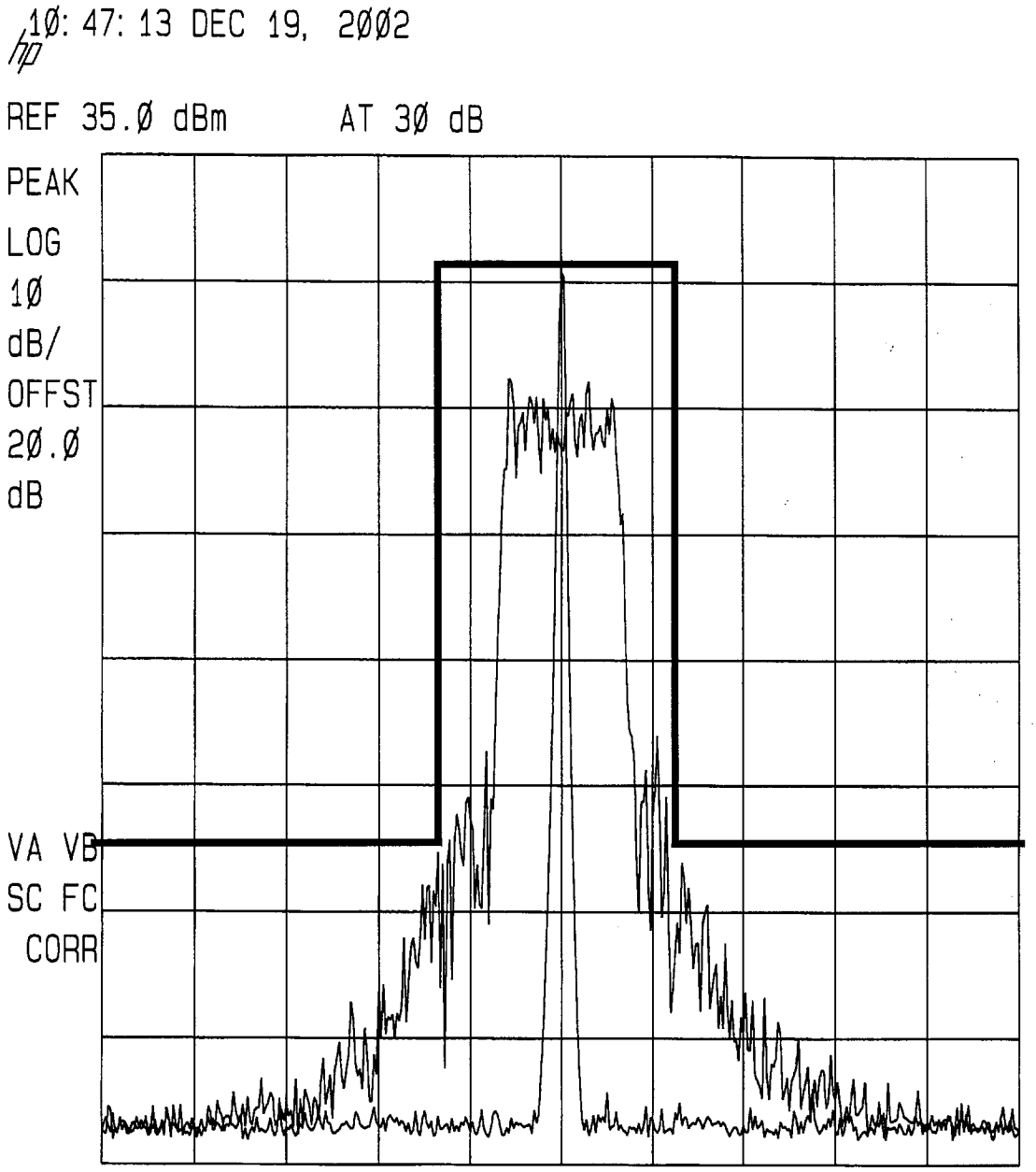


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Uplink Frequency 836.5 MHz
	Modulation: CDMA input

Date: 12/19/02 Tech: T. Firkowski Sheet 1 of 8

Retlif Testing Laboratories

Report No. R-4067N1

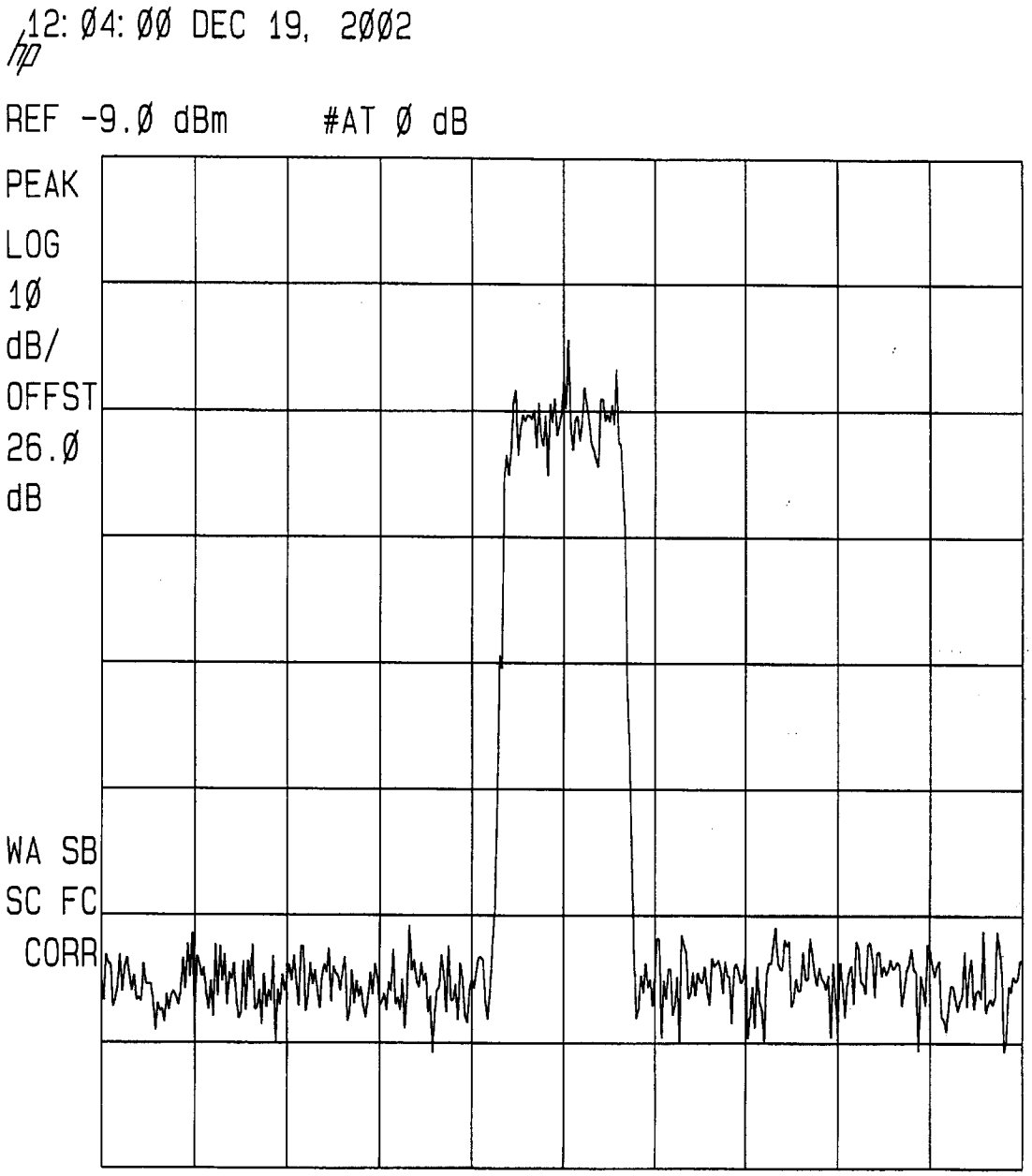


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Uplink Frequency 836.5 MHz
	Modulation: CDMA output

Date: 12/19/02 Tech: T. Firkowski Sheet 2 of 8

Retlif Testing Laboratories

Report No. R-4067N1

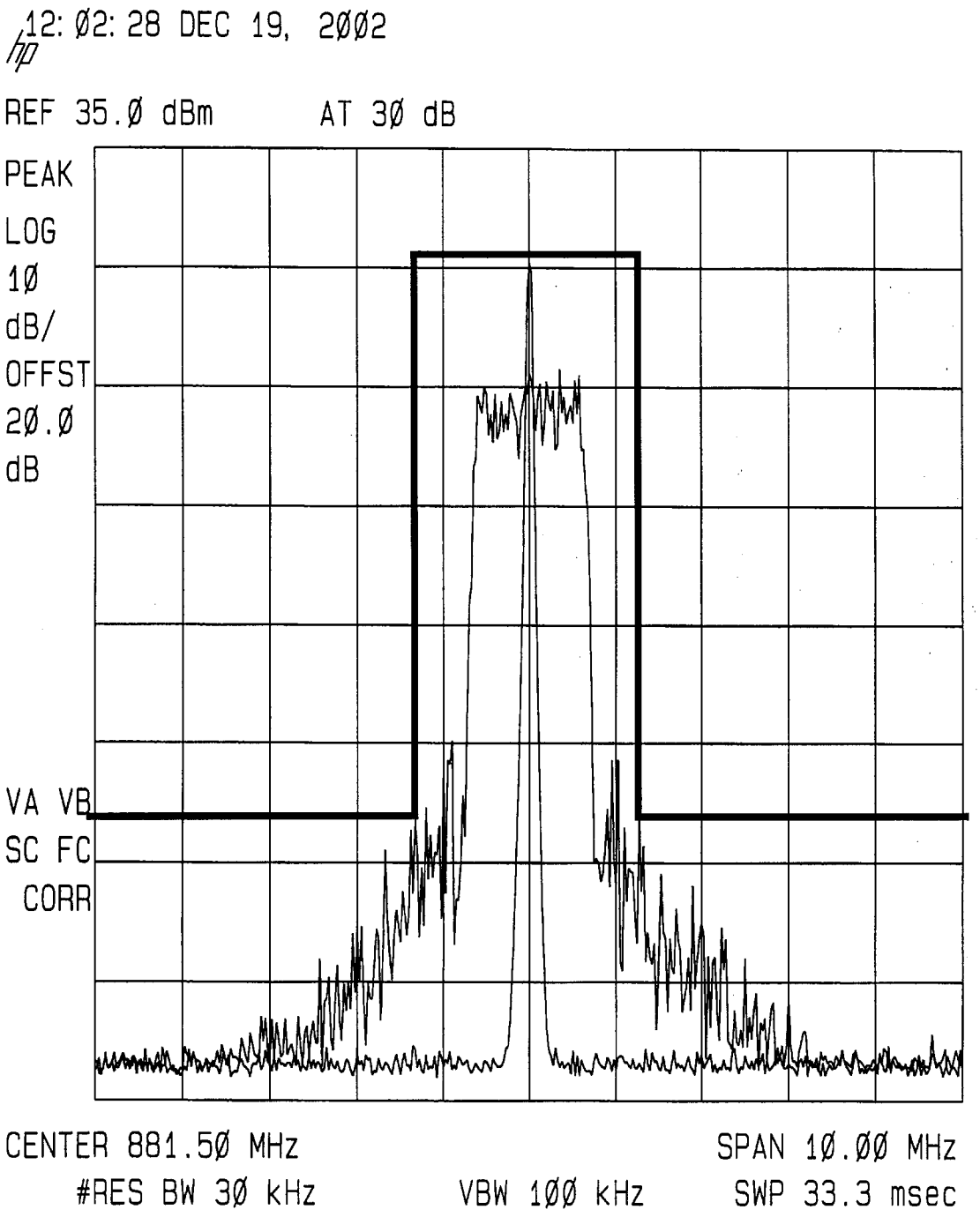


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Downlink Frequency: 881.5 MHz Modulation: CDMA input

Date: 12/19/02 Tech: T. Firkowski Sheet 3 of 8

Retlif Testing Laboratories

Report No. R-4067N1

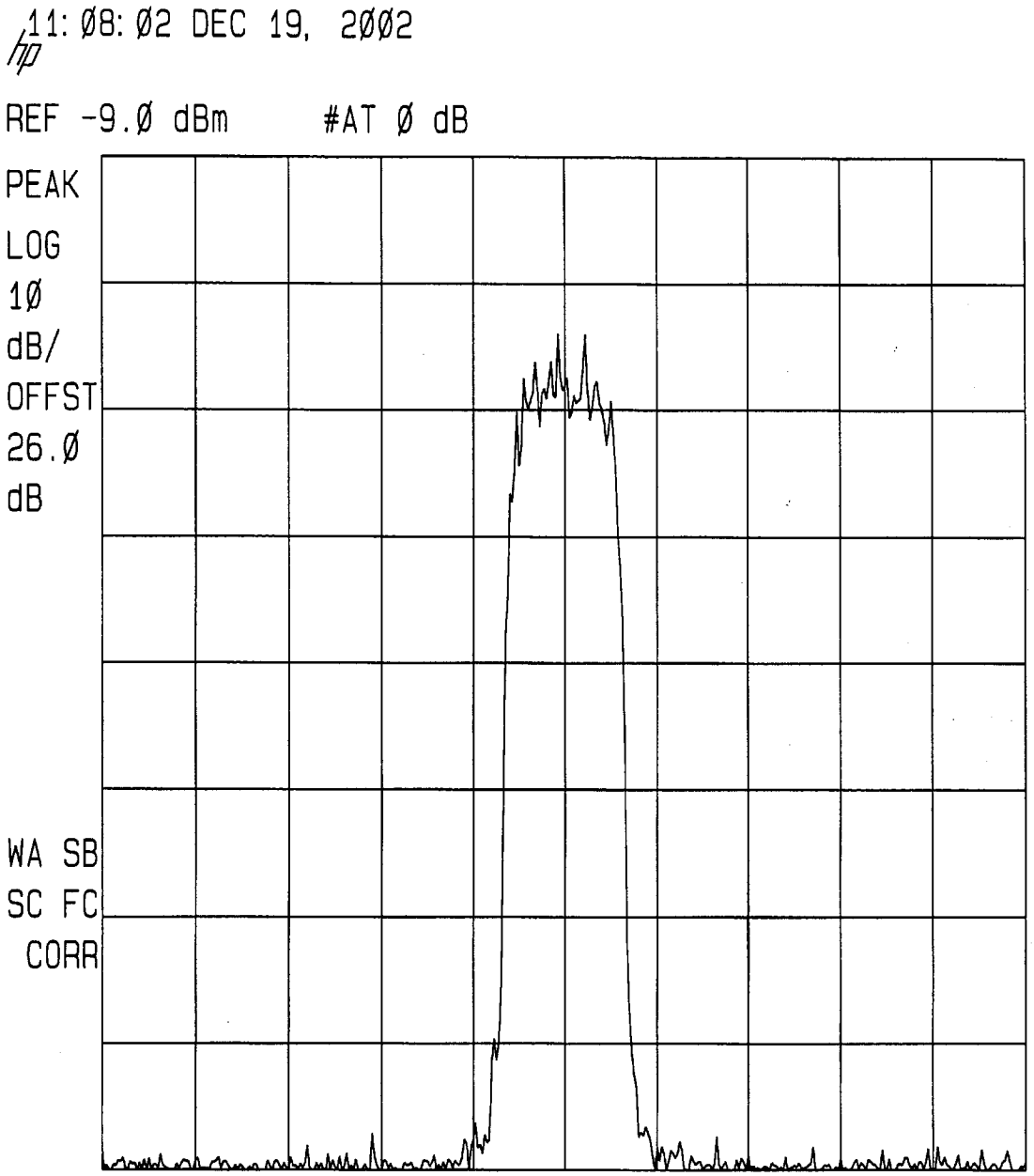


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Downlink Frequency: 881.5 MHz
	Modulation: CDMA output

Date: 12/19/02 Tech: T. Firkowski Sheet 4 of 8

Retlif Testing Laboratories

Report No. R-4067N1

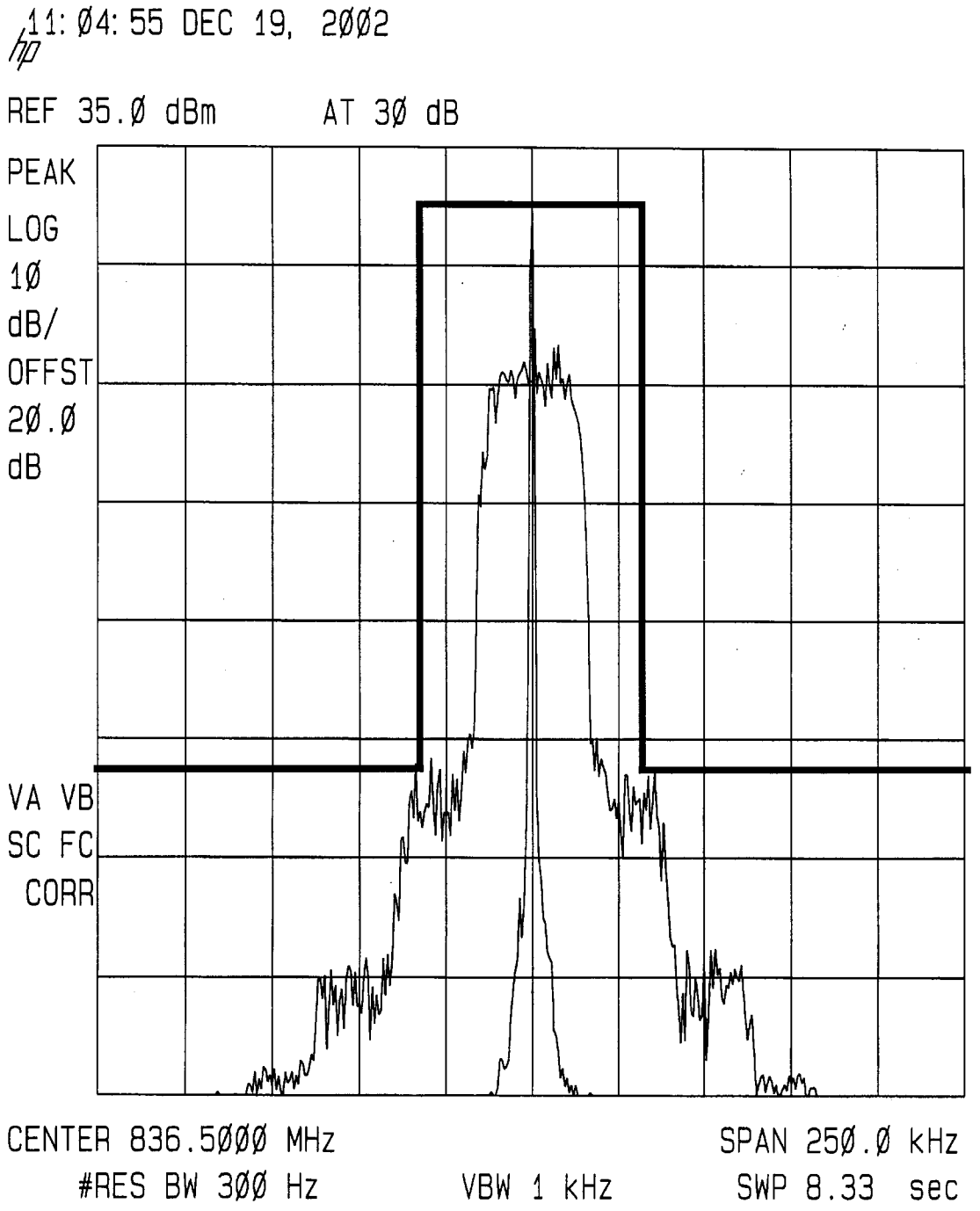


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
	565AMPS
	Occupied Bandwidth, FCC Part 2, para 2.1049
	Uplink Frequency: 836.5 MHz
	Modulation: TDMA input

Date: 12/19/02 Tech: T. Firkowski Sheet 5 of 8

Retlif Testing Laboratories

Report No. R-4067N1

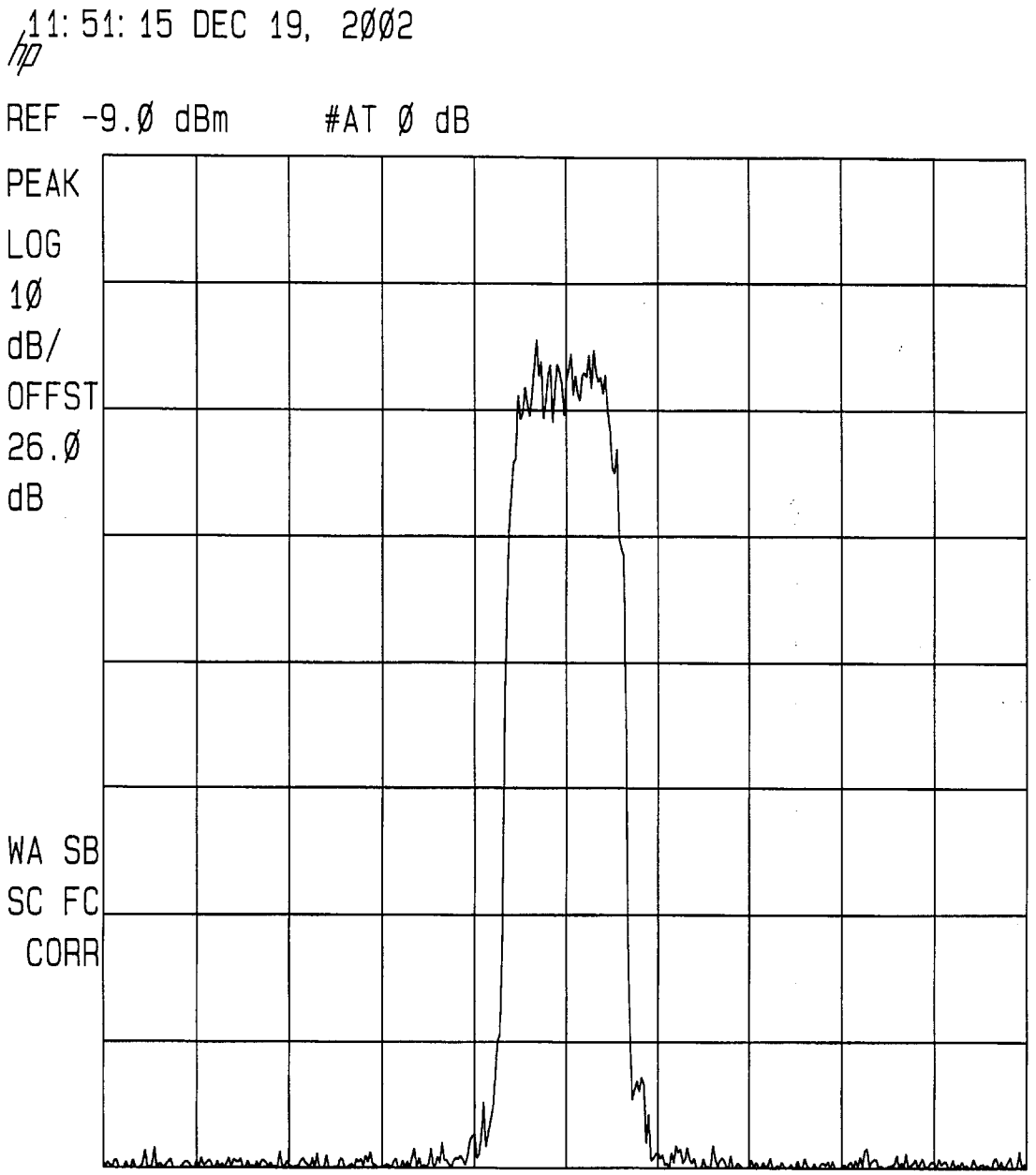


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Uplink Frequency: 836.5 MHz
	Modulation: TDMA output

Date: 12/19/02 Tech: T. Firkowski Sheet 6 of 8

Retlif Testing Laboratories

Report No. R-4067N1

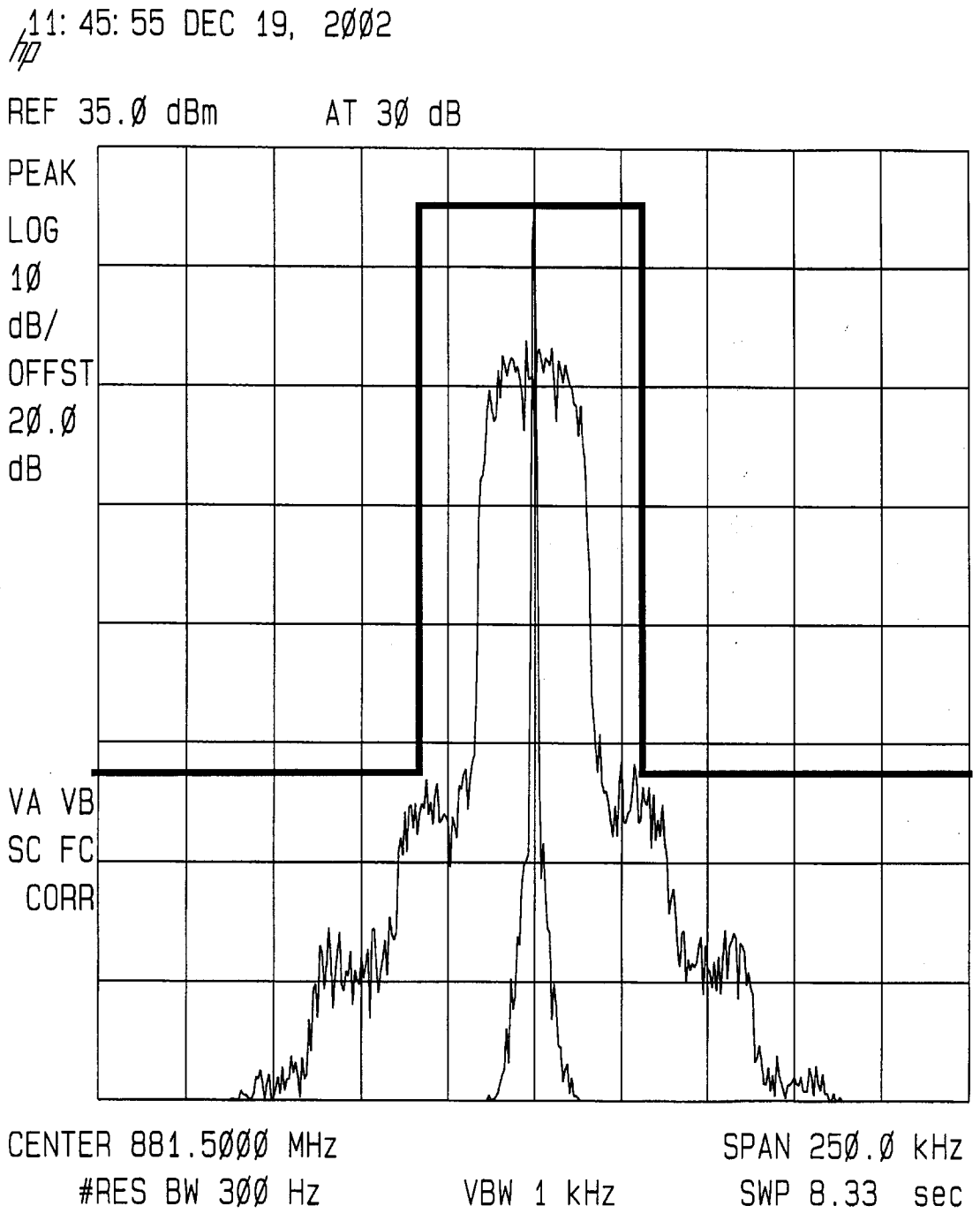


Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Downlink Frequency: 881.5 MHz
	Modulation: TDMA input

Date: 12/19/02 Tech: T. Firkowski Sheet 7 of 8

Retlif Testing Laboratories

Report No. R-4067N1



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	565AMPS
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Downlink Frequency: 881.5 MHz
	Modulation: TDMA output

Date: 12/19/02 Tech: T. Firkowski Sheet 8 of 8

Retlif Testing Laboratories

Report No. R-4067N1

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	**Spurious Emissions at the Antenna Terminals 30 MHz to 8.94 GHz**		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4067N1
Test Sample:	Bidirectional Amplifier		
Model No:	565AMPS	**Serial No:**	AMPS2
Test Specification:	FCC Part 2 Paragraph: 2.1051		
Operating Mode:	Amplifying input signal		
Technician:	T. Firkowski	**Date:**	12/5/02
Notes:	Uplink Frequency: 836.5 MHz Downlink Frequency: 881.5 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
-35.38	836.50	836.50			-35.84	881.50	881.50		
I	I	1673.00	-20.50	-13.0	I	I	1763.00	-33.48	-13.0
I	I	2509.50	-32.15	I	I	I	2644.50	-31.58	I
I	I	3346.00	<-45	I	I	I	3526.00	<-45	I
I	I	4182.50	<-45	I	I	I	4407.50	<-45	I
I	I	5019.00	<-45	I	I	I	5289.00	<-45	I
I	I	5855.50	<-45	I	I	I	6170.50	<-45	I
I	I	6692.00	<-40	I	I	I	7052.00	<-40	I
I	I	7528.50	<-40	I	I	I	7933.50	<-40	I
-35.38	836.50	8365.00	<-40	-13.0	-35.84	881.50	8815.00	<-40	-13.0

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method: Spurious Radiated Emissions (ERP) 30 MHz to 8.94 GHz

Customer: Cellular Specialties, Inc. **Job No:** R-4067N1

Test Sample: Bidirectional Amplifier

Model No: 565AMPS **Serial No:** AMPS2

Test Specification: FCC Part 2.1053\Part 22
Paragraph: n/a

Operating Mode: Amplifying input signal

Technician: T. Firkowski **Date:** 12/12/02

Notes: Uplink Frequency Range:824-849 MHz Tested at 836.5 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
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
8940.00	-	-	-	-						-13.00

No emissions observed within 20 dB of the limit.

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method: Spurious Radiated Emissions (ERP) 30 MHz to 8.94 GHz

Customer: Cellular Specialties, Inc. **Job No:** R-4067N1

Test Sample: Bidirectional Amplifier

Model No: 565AMPS **Serial No:** AMPS2

Test Specification: FCC Part 2.1053\Part 22
Paragraph: n/a

Operating Mode: Amplifying input signal

Technician: T. Firkowski **Date:** 12/12/02

Notes: Uplink Frequency Range:869-894 MHz Tested at 881.5 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
|	-	-	-	-					-	|
|										|
|										|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
|	-	-	-	-					-	|
8940.00	-	-	-	-						-13.00

No emissions observed within 20 dB of the limit.

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	**Frequency Stability**		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4067N1
Test Sample:	Bidirectional Amplifier		
Model No:	565AMPS	**Serial No:**	AMPS2
Test Specification:	Fcc Part 2 Paragraph: 2.1055		
Operating Mode:	Amplifying input signal		
Technician:	T. Firkowski	**Date:**	12/10/02
Notes:	Uplink Frequency: 836.5 MHz Nominal Input Voltage: 115 VAC Downlink Frequency: 881.5 MHz		

Temp	Test Frequency	Input Level	Output Level	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	836.5	-56.59	13.97	836.500	836.500	836.500	836.500	836.500	836.500	836.500
-20	"	"	14.92	836.500	836.500	836.500	836.500	836.500	836.500	836.500
-10	"	"	14.80	836.500	836.500	836.500	836.500	836.500	836.500	836.500
0	"	"	13.68	836.500	836.500	836.500	836.500	836.500	836.500	836.500
10	"	"	13.58	836.500	836.500	836.500	836.500	836.500	836.500	836.500
20	"	"	13.50	836.500	836.500	836.500	836.500	836.500	836.500	836.500
30	"	"	13.40	836.500	836.500	836.500	836.500	836.500	836.500	836.500
40	"	"	13.23	836.500	836.500	836.500	836.500	836.500	836.500	836.500
50	836.5	-56.59	13.10	836.500	836.500	836.500	836.500	836.500	836.500	836.500
	(Downlink)									
-30	881.5	-56.86	13.56	881.500	881.500	881.500	881.500	881.500	881.500	881.500
-20	"	"	13.46	881.500	881.500	881.500	881.500	881.500	881.500	881.500
-10	"	"	13.47	881.500	881.500	881.500	881.500	881.500	881.500	881.500
0	"	"	12.98	881.500	881.500	881.500	881.500	881.500	881.500	881.500
10	"	"	12.72	881.500	881.500	881.500	881.500	881.500	881.500	881.500
20	"	"	12.17	881.500	881.500	881.500	881.500	881.500	881.500	881.500
30	"	"	12.08	881.500	881.500	881.500	881.500	881.500	881.500	881.500
40	"	"	11.74	881.500	881.500	881.500	881.500	881.500	881.500	881.500
50	881.5	-56.86	11.55	881.500	881.500	881.500	881.500	881.500	881.500	881.500