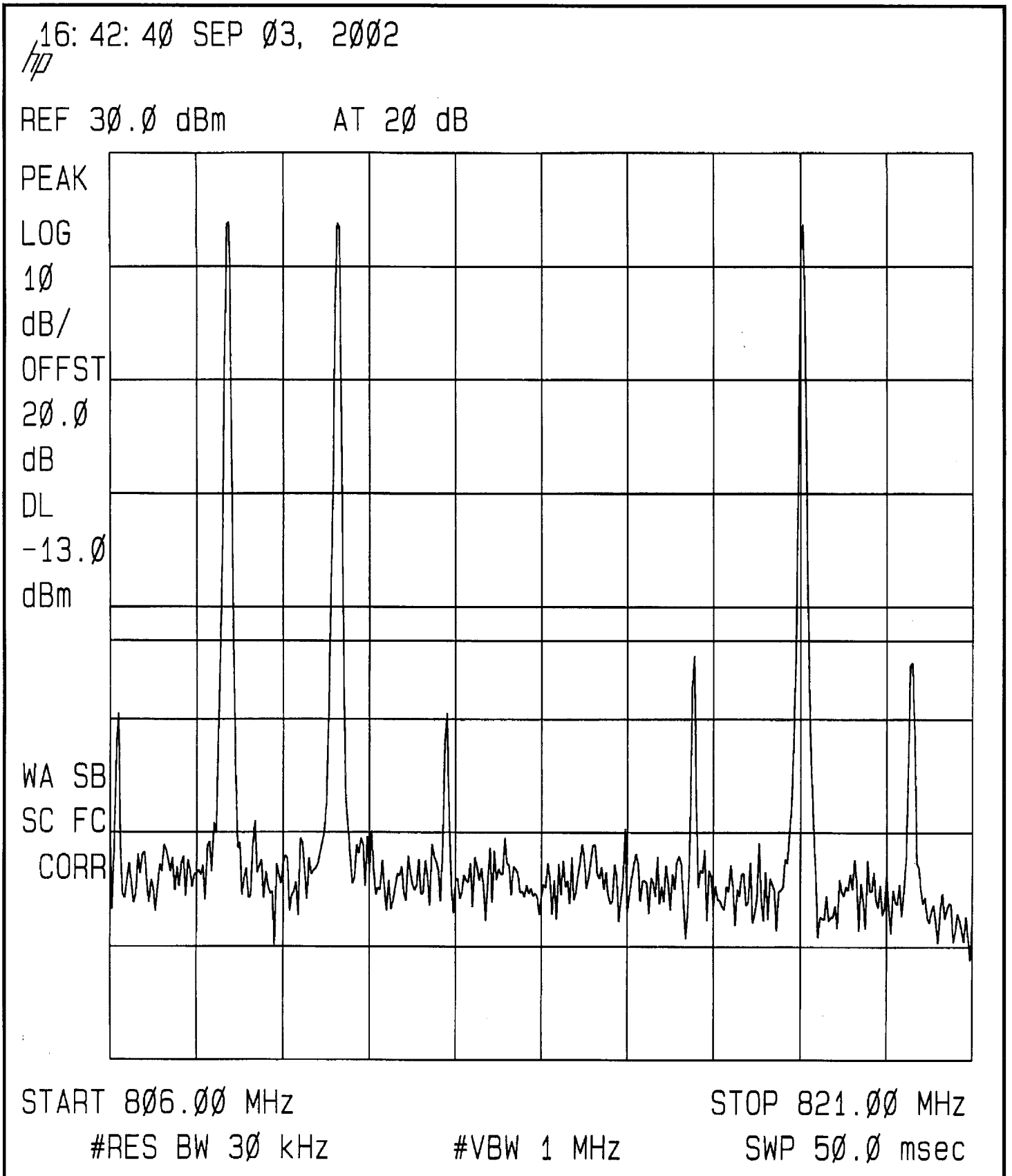
RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

Test Method:	**RF Power Output**		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4014N
Test Sample:	Bidirectional Amplifier		
Model No:	610smr	**Serial No:**	n/a
Test Specification:	FCC Part 2 Paragraph: 2.1046		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann DV	**Date:**	9/3/02
Notes:	Uplink Frequency: 813.5 MHz Downlink Frequency: 858.5 MHz		

Test Frequency	Power In @ EUT Max input	Power Output	Gain
MHz	dBm	dBm	dB
(Uplink)			
813.5000	-45.69	34.22	79.91
(Downlink)			
858.5000	-39.86	39.18	79.04



Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610smr
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Uplink Frequency Range: 806 - 821 MHz

Date: 9/3/02 Tech: T. Hannemann Sheet 1 of 2

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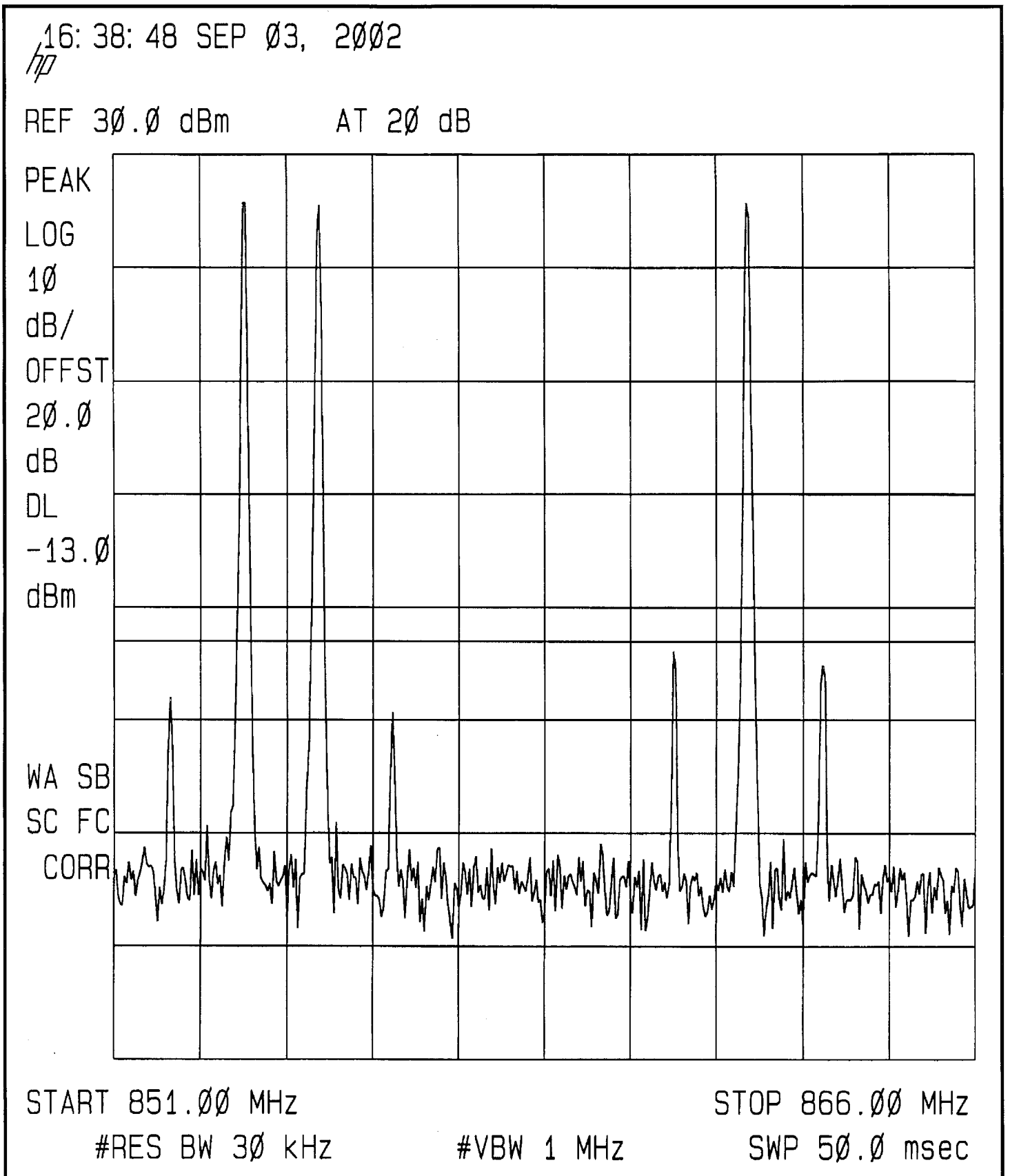

Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610smr
Test Method:	Intermodulation Characteristics, FCC Part 2, para 2.1047
Notes:	Downlink Frequency Range: 851 - 866 MHz

Date: 9/3/02 Tech: T. Hannemann Sheet 2 of 2

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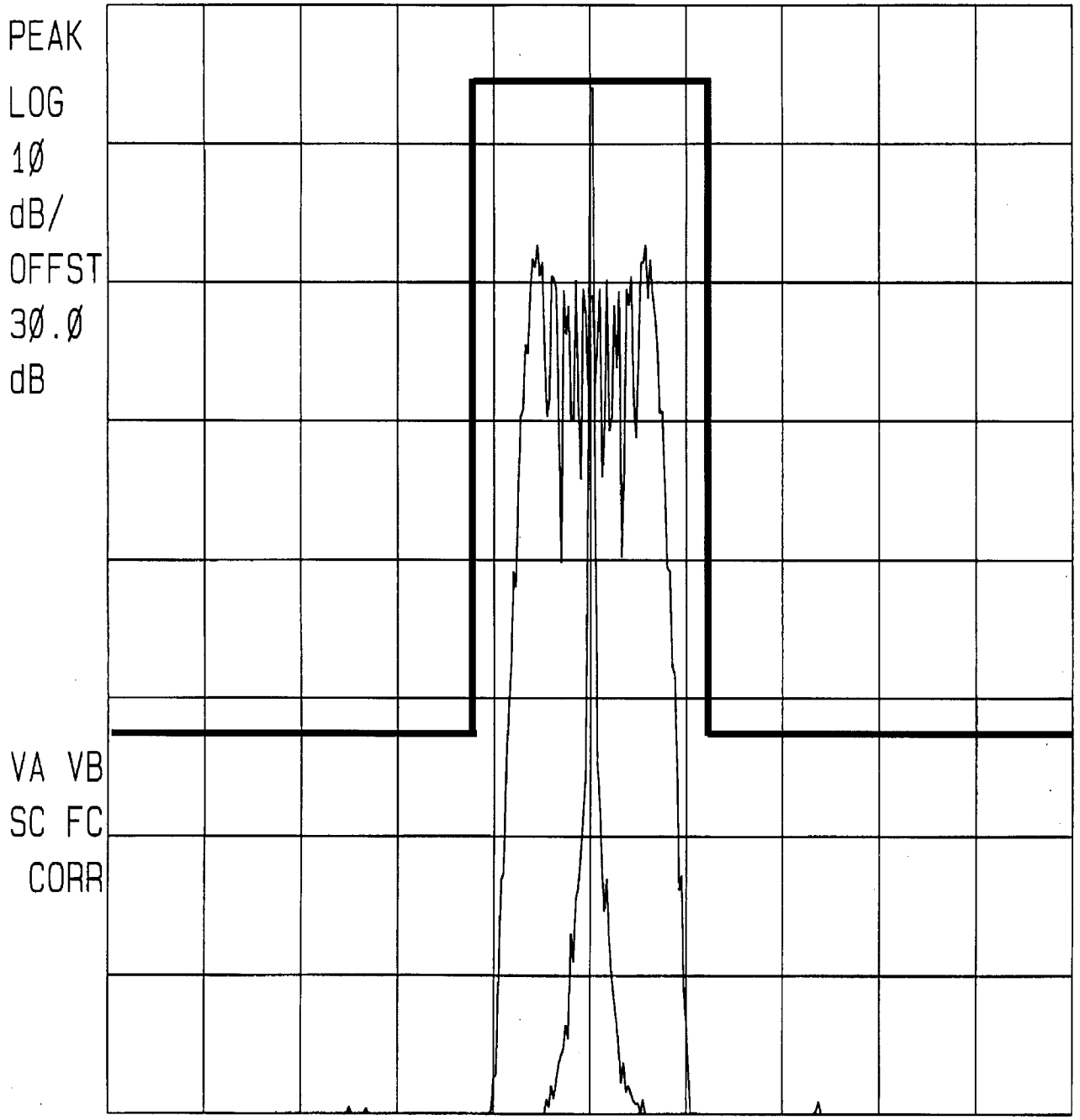
16: Ø7: 57 SEP Ø3, 2ØØ2

REF 4Ø.Ø dBm AT 2Ø dB



CENTER 813.5ØØØ MHz SPAN 25Ø.Ø kHz

#RES BW 3ØØ Hz VBW 1 kHz #SWP 14.Ø sec

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

Date: 9/3/02 Tech: T. Hannemann Sheet 1 of 2

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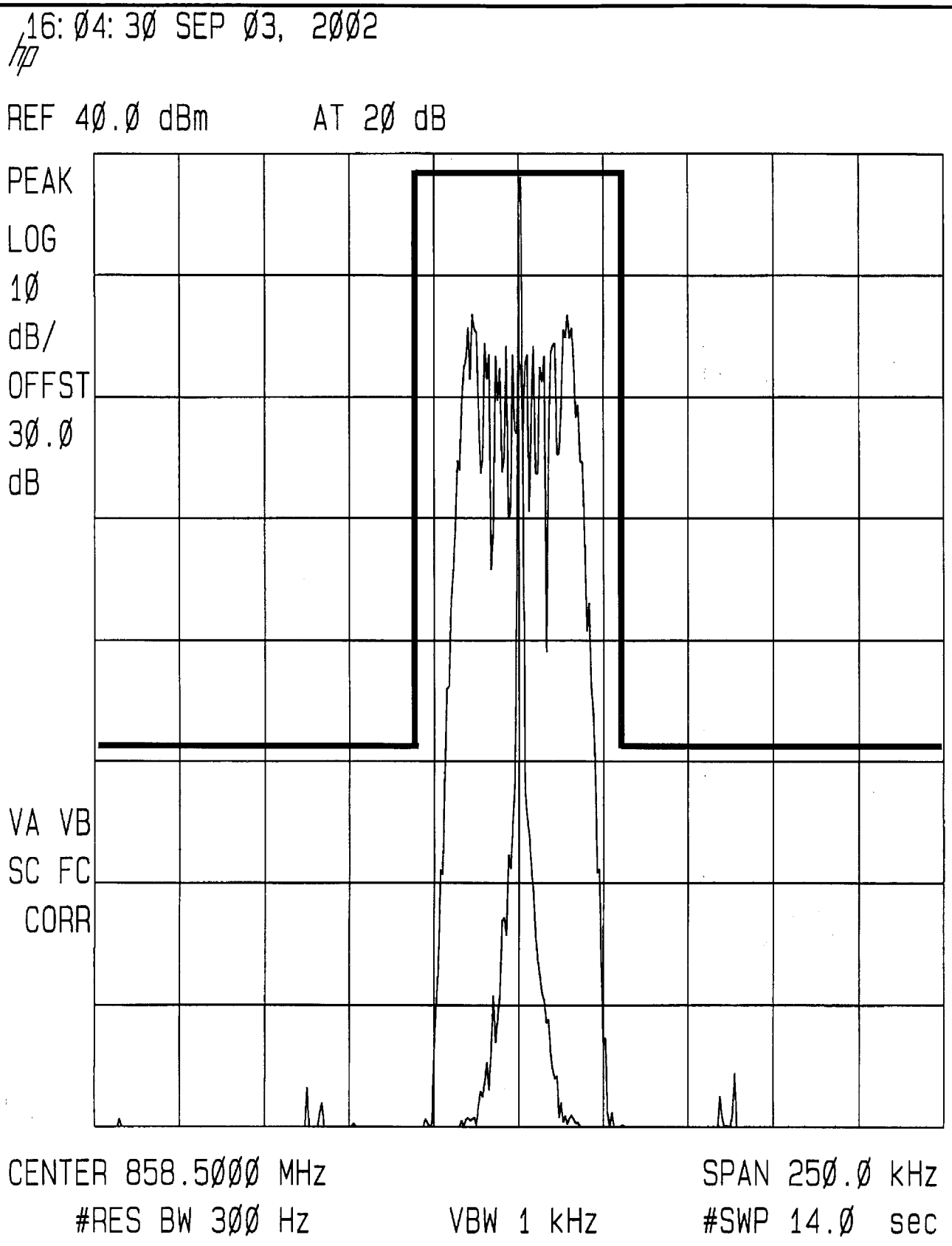

Customer:	Cellular Specialties, Inc.
Test Sample:	Bidirectional Amplifier
Model No:	610smr
Test Method:	Occupied Bandwidth, FCC Part 2, para 2.1049
Notes:	Downlink Frequency 858.5 MHz Modulation: TDMA

Date: 9/3/02 Tech: T. Hannemann Sheet 2 of 2

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Report No R-4014N

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	**Spurious Emissions at the Antenna Terminals 30 MHz to 8.66 GHz**		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4014N
Test Sample:	Bidirectional Amplifier		
Model No:	610smr	**Serial No:**	n/a
Test Specification:	FCC Part 2 Paragraph: 2.1051		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann RV	**Date:**	9/3/02
Notes:	Uplink Frequency 813.5 MHz Downlink Frequency 858.5 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	
-45.69	813.50	813.50	34.22		-29.00	858.50	858.50	39.18		
I	I	1627.00	-21.92	-13.0	I	I	1717.00	-24.91	-13.0	
I	I	2440.50	<-47	I	I	I	2575.50	-24.65	I	
I	I	3254.00	<-47	I	I	I	3434.00	<-47	I	
I	I	4067.50	<-47	I	I	I	4292.50	<-47	I	
I	I	4881.00	<-47	I	I	I	5151.00	<-47	I	
I	I	5694.50	<-47	I	I	I	6009.50	<-47	I	
I	I	6508.00	<-47	I	I	I	6868.00	<-47	I	
I	I	7321.50	<-47	I	I	I	7726.50	<-47	I	
-45.69	813.50	8135.00	<-47	-13.0	-29.00	858.50	8585.00	<-47	-13.0	

RETLIF TESTING LABORATORIES

EMISSIONS DATA SHEET

Test Method:	Spurious Radiated Emissions (ERP) 30 MHz to 9 GHz		
Customer:	Cellular Specialties, Inc.	**Job No:**	R-4014N
Test Sample:	Bidirectional Amplifier		
Model No:	610smr	**Serial No:**	n/a
Test Specification:	FCC Part 2.1053/90.209 Paragraph: n/a		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann DV	**Date:**	9/19/02
Notes:	Uplink Frequency Range: 806 - 821 MHz Tested at 813.5 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
|	-	-	-	-						|
34.71	V-1m	23.09	-57.00	1.64					-55.36	|
39.53	V-1m	24.57	-60.00	1.64					-58.36	|
48.48	V-1m	25.19	-53.19	1.64					-51.55	|
54.91	V-1m	22.18	-46.58	1.64					-44.94	|
1627.00	V-1m	41.92	-60.00	8.15					-51.85	|
2440.50	V-1m	31.20	-69.00	8.60					-60.40	|
3254.00	V-1m	31.20	-65.00	8.85					-56.15	|
4067.50	V-1m	32.80	-72.00	8.73					-63.27	|
4881.00	V-1m	23.20	-80.00	10.73					-69.27	|
|	-	-	-	-						|
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-4014N
Test Sample:	Bidirectional Amplifier		
Model No:	610smr	**Serial No:**	n/a
Test Specification:	FCC Part 2.1053/90.209 Paragraph: n/a		
Operating Mode:	Amplifying input signal		
Technician:	T. Hannemann	**Date:**	9/19/02
Notes:	Downlink Frequency Range: 851 - 866 MHz Tested at 858.5 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
|	-	-	-	-						|
33.51	V-1m	22.5	-56.41	1.64					-54.77	|
39.77	V-1m	22.7	-62.00	1.64					-60.36	|
48.48	V-1m	29.0	-57.00	1.64					-55.36	|
54.91	V-1m	30.1	-54.00	1.64					-52.36	|
74.46	V-1m	21.7	-61.00	1.64					-59.36	|
1717.00	V-1m	37.8	-64.00	8.19					-55.81	|
2575.50	V-1m	31.7	-69.00	8.72					-60.28	|
3434.00	V-1m	41.3	-55.00	8.85					-46.15	|
4292.50	V-1m	43.9	-61.50	9.49					-52.01	|
5151.00	V-1m	34.3	-70.00	11.11					-58.89	|
|	-	-	-	-						|
9500.00	-	-	-	-						-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-4014N
Test Sample:	Bidirectional Amplifier		
Model No:	610smr	**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 813.5 MHz Nominal Voltage = 115 VAC Downlink Frequency 858.5 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	813.5	-45.69	34.22	813.500	813.500	813.500	813.500	813.500	813.500	813.500
-20	"	"	"	813.500	813.500	813.500	813.500	813.500	813.500	813.500
-10	"	"	"	813.500	813.500	813.500	813.500	813.500	813.500	813.500
0	"	"	"	813.500	813.500	813.500	813.500	813.500	813.500	813.500
10	"	"	"	813.500	813.500	813.500	813.500	813.500	813.500	813.500
20	"	"	"	813.500	813.500	813.500	813.500	813.500	813.500	813.500
30	"	"	"	813.500	813.500	813.500	813.500	813.500	813.500	813.500
40	"	"	"	813.500	813.500	813.500	813.500	813.500	813.500	813.500
50	813.5	-45.69	34.22	813.500	813.500	813.500	813.500	813.500	813.500	813.500
	(Downlink)									
-30	858.5	-39.86	39.18	858.500	858.500	858.500	858.500	858.500	858.500	858.500
-20	"	"	"	858.500	858.500	858.500	858.500	858.500	858.500	858.500
-10	"	"	"	858.500	858.500	858.500	858.500	858.500	858.500	858.500
0	"	"	"	858.500	858.500	858.500	858.500	858.500	858.500	858.500
10	"	"	"	858.500	858.500	858.500	858.500	858.500	858.500	858.500
20	"	"	"	858.500	858.500	858.500	858.500	858.500	858.500	858.500
30	"	"	"	858.500	858.500	858.500	858.500	858.500	858.500	858.500
40	"	"	"	858.500	858.500	858.500	858.500	858.500	858.500	858.500
50	858.5	-39.86	39.18	858.500	858.500	858.500	858.500	858.500	858.500	858.500