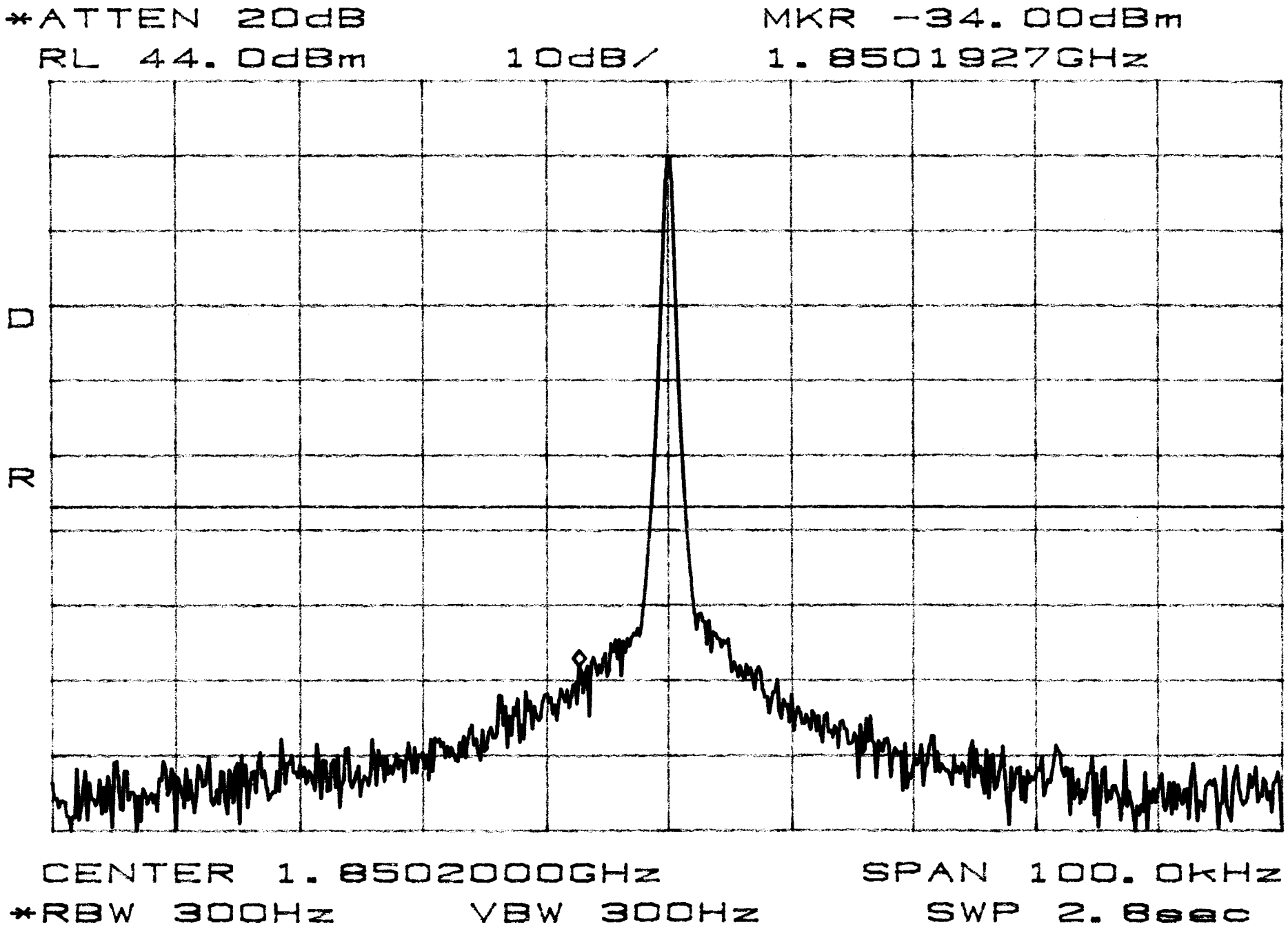
BAND EDGE BAND A



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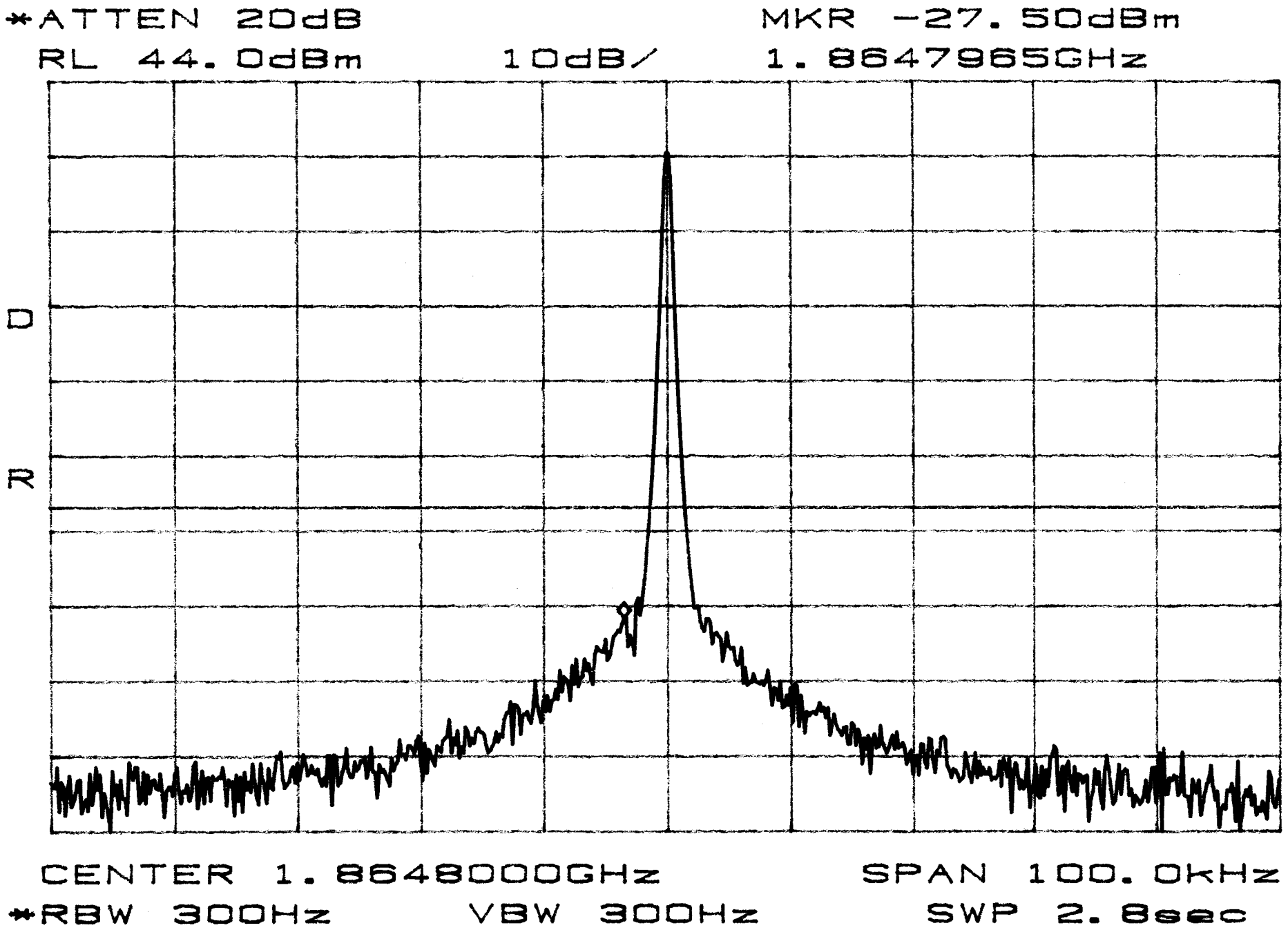

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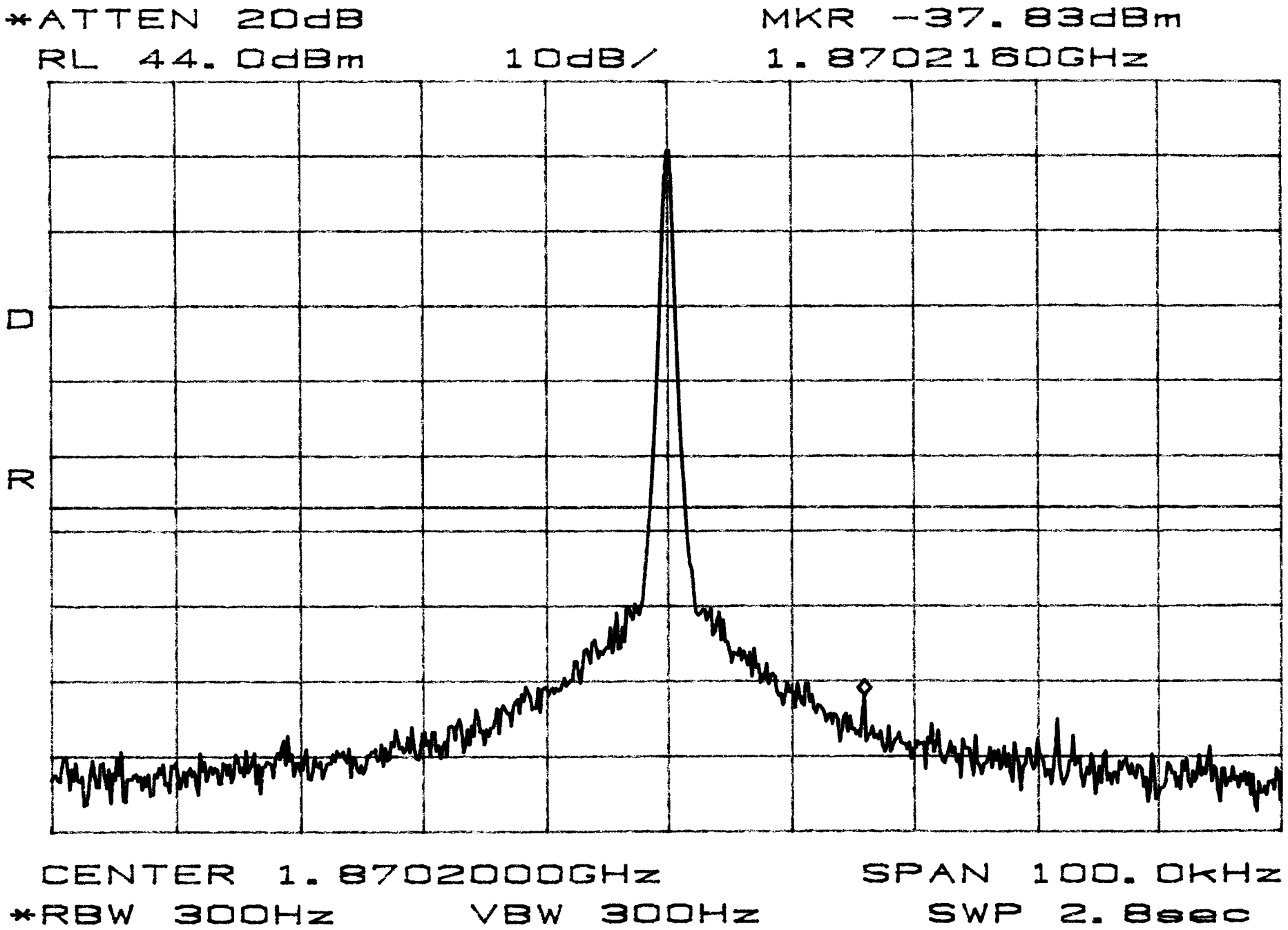

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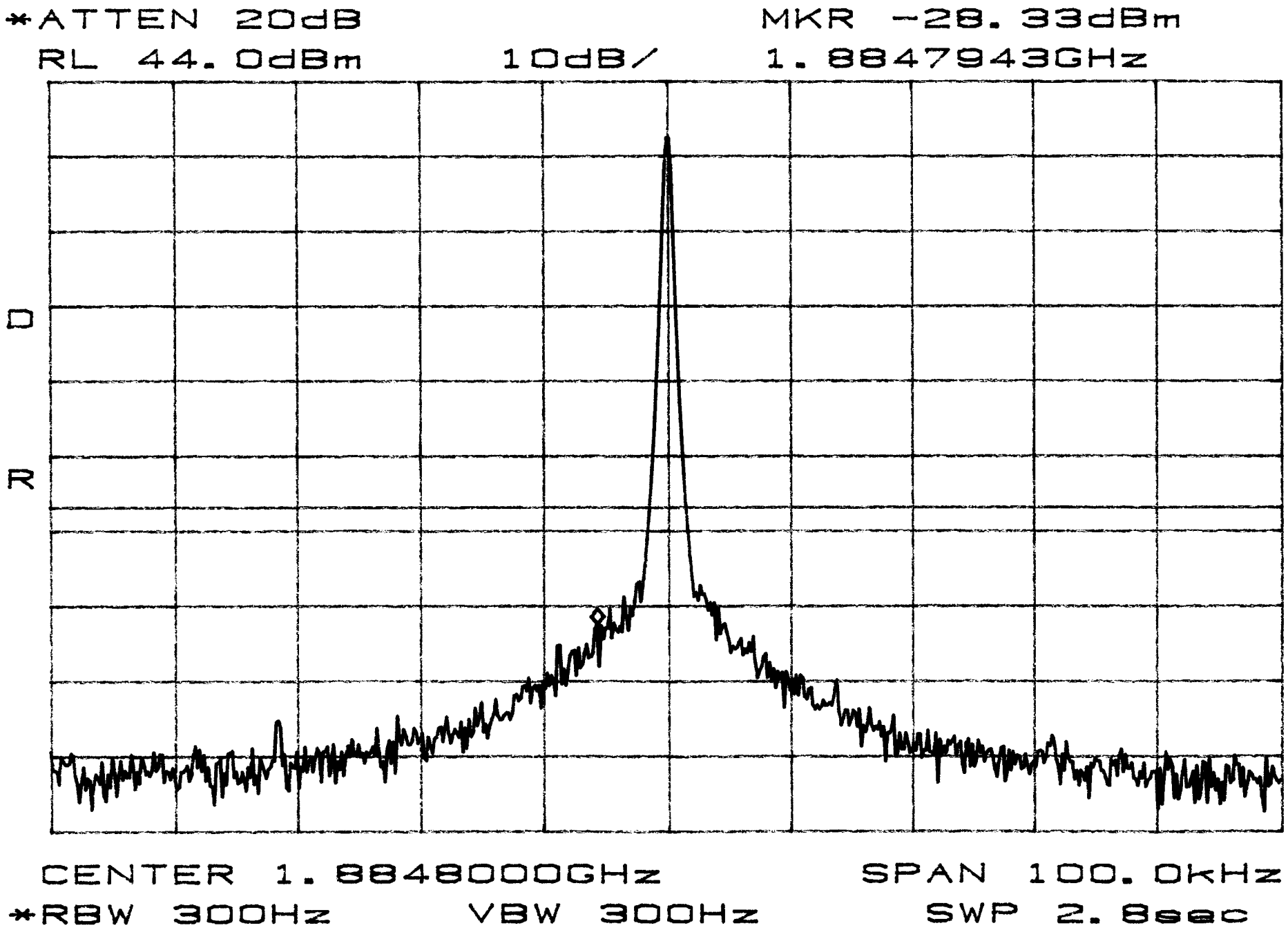

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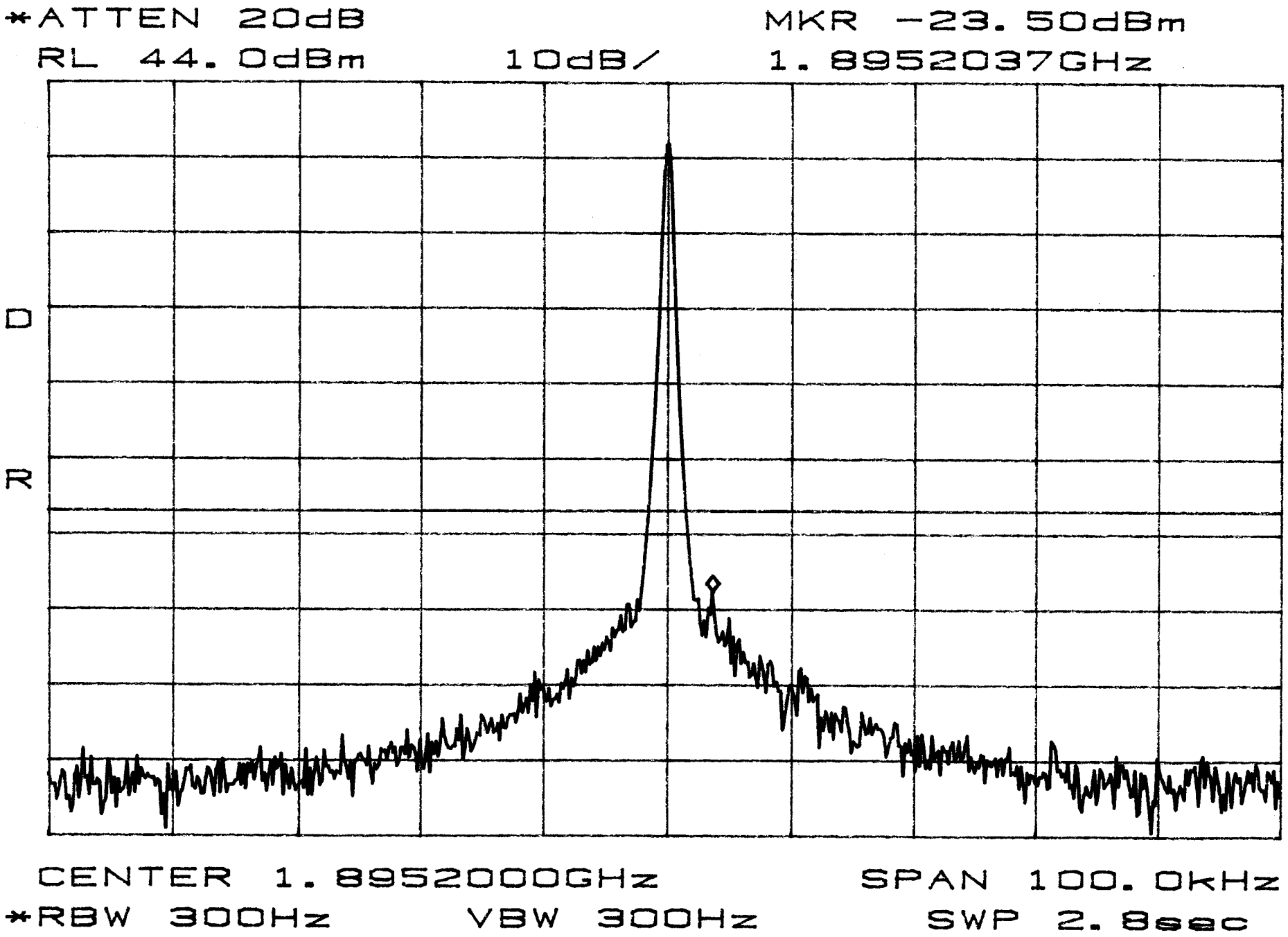

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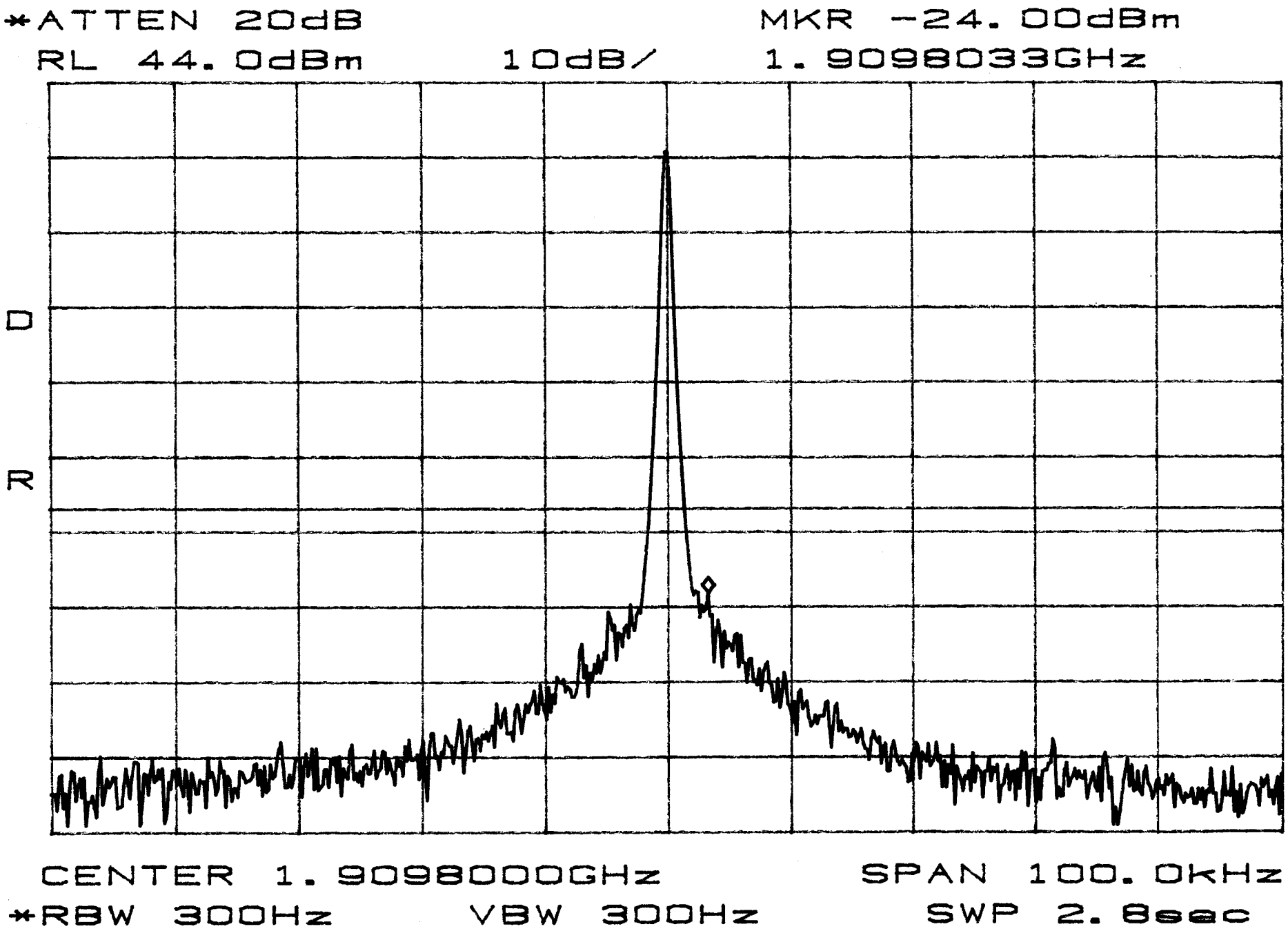

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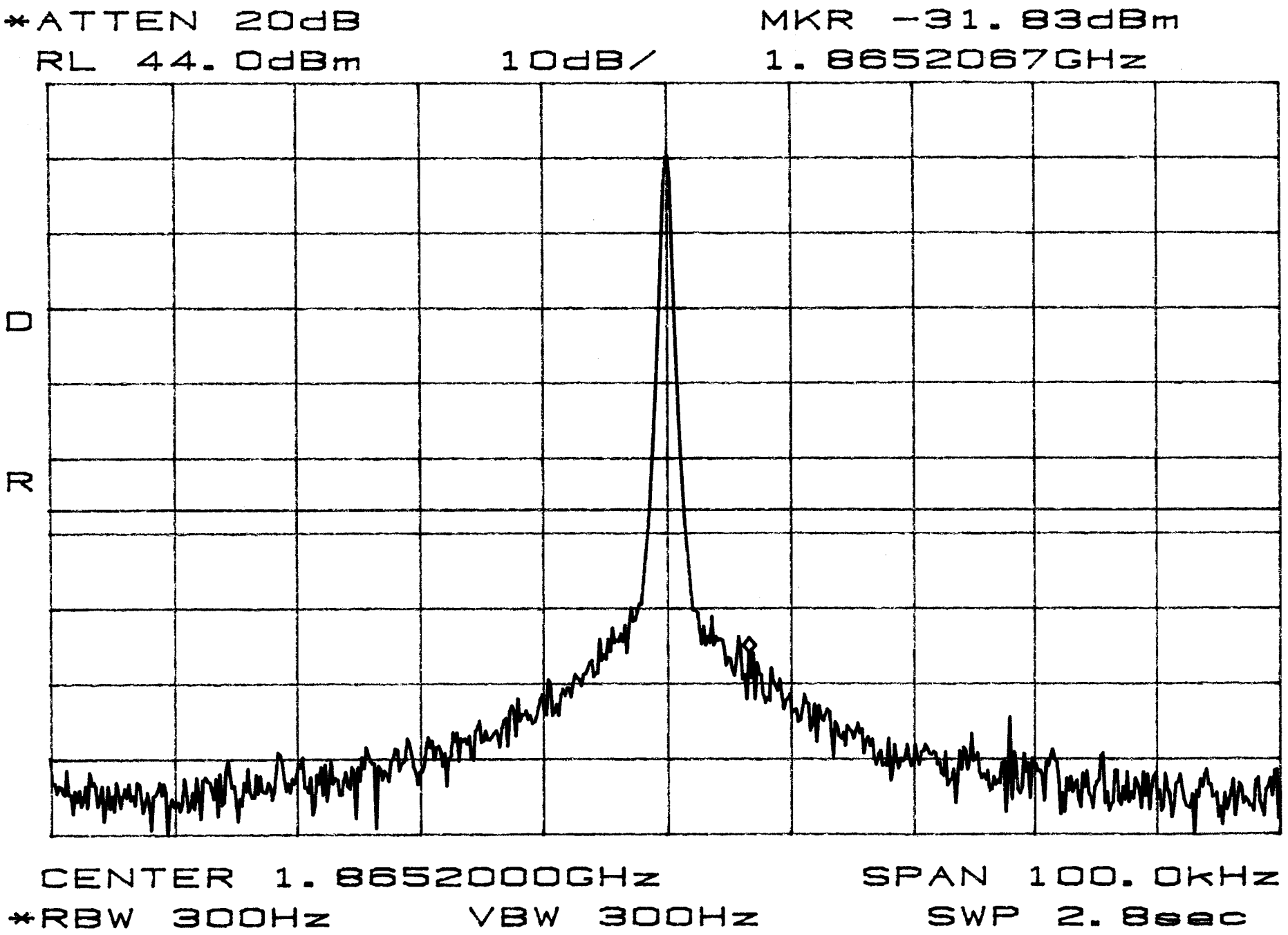

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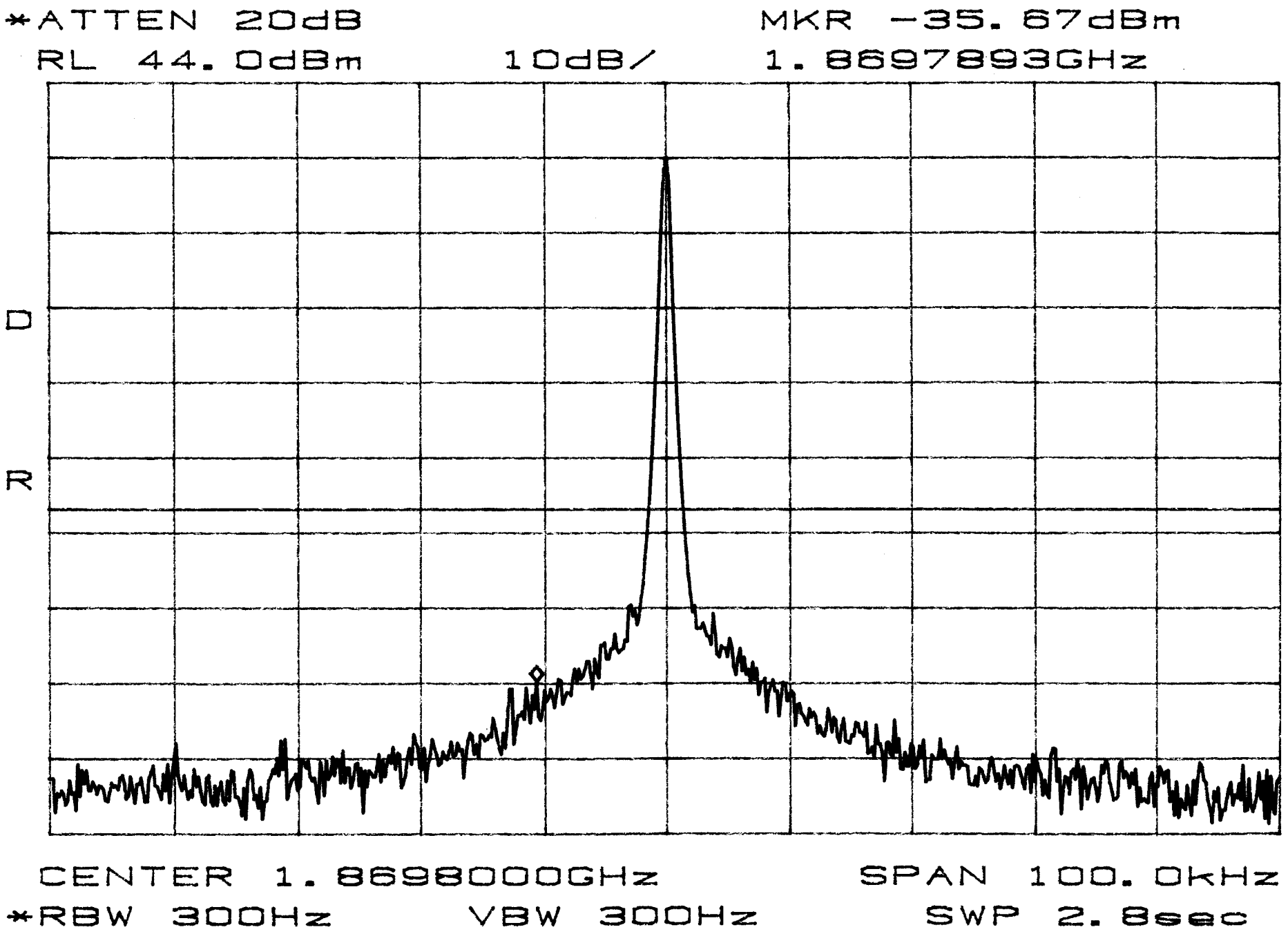

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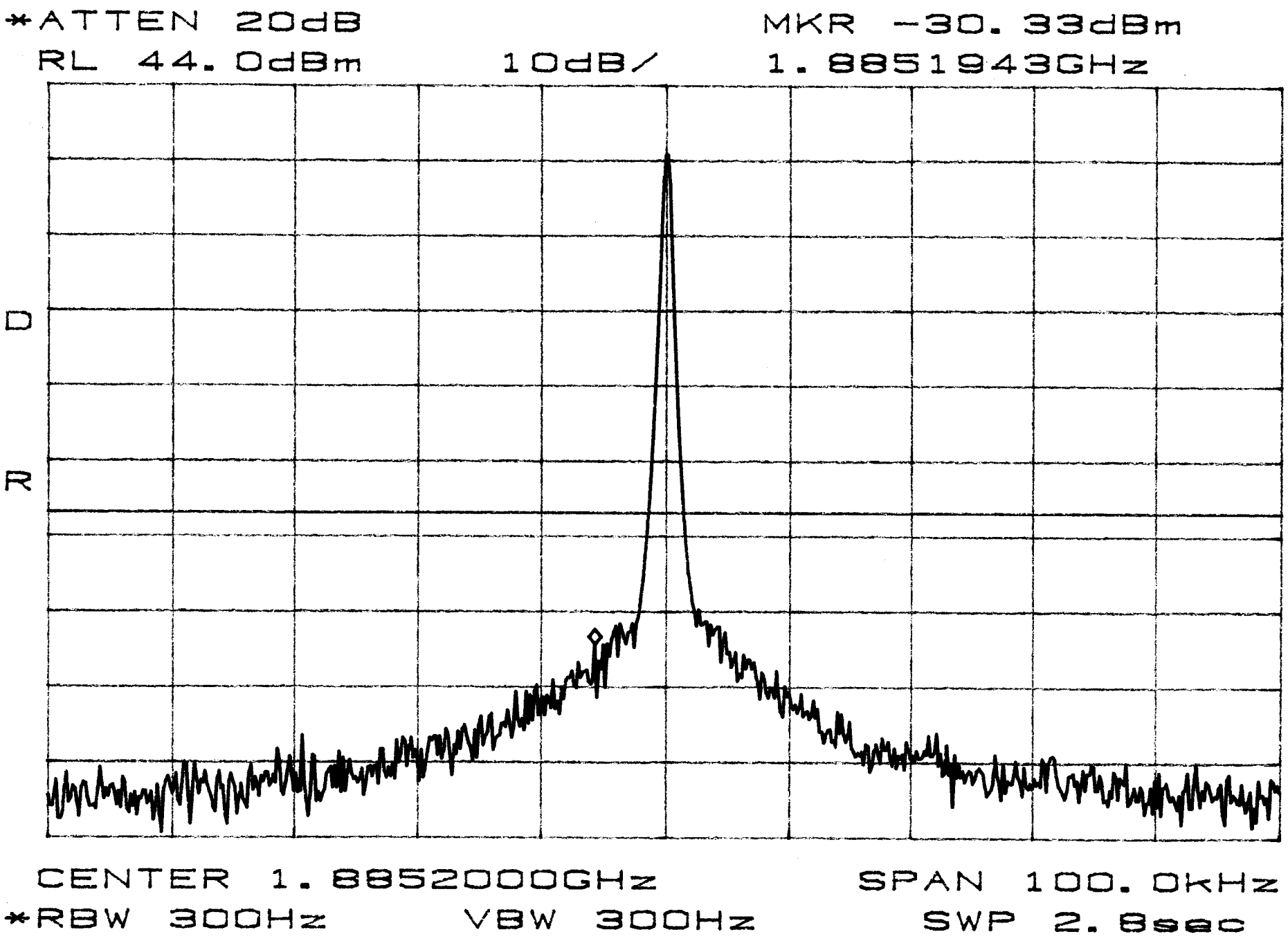

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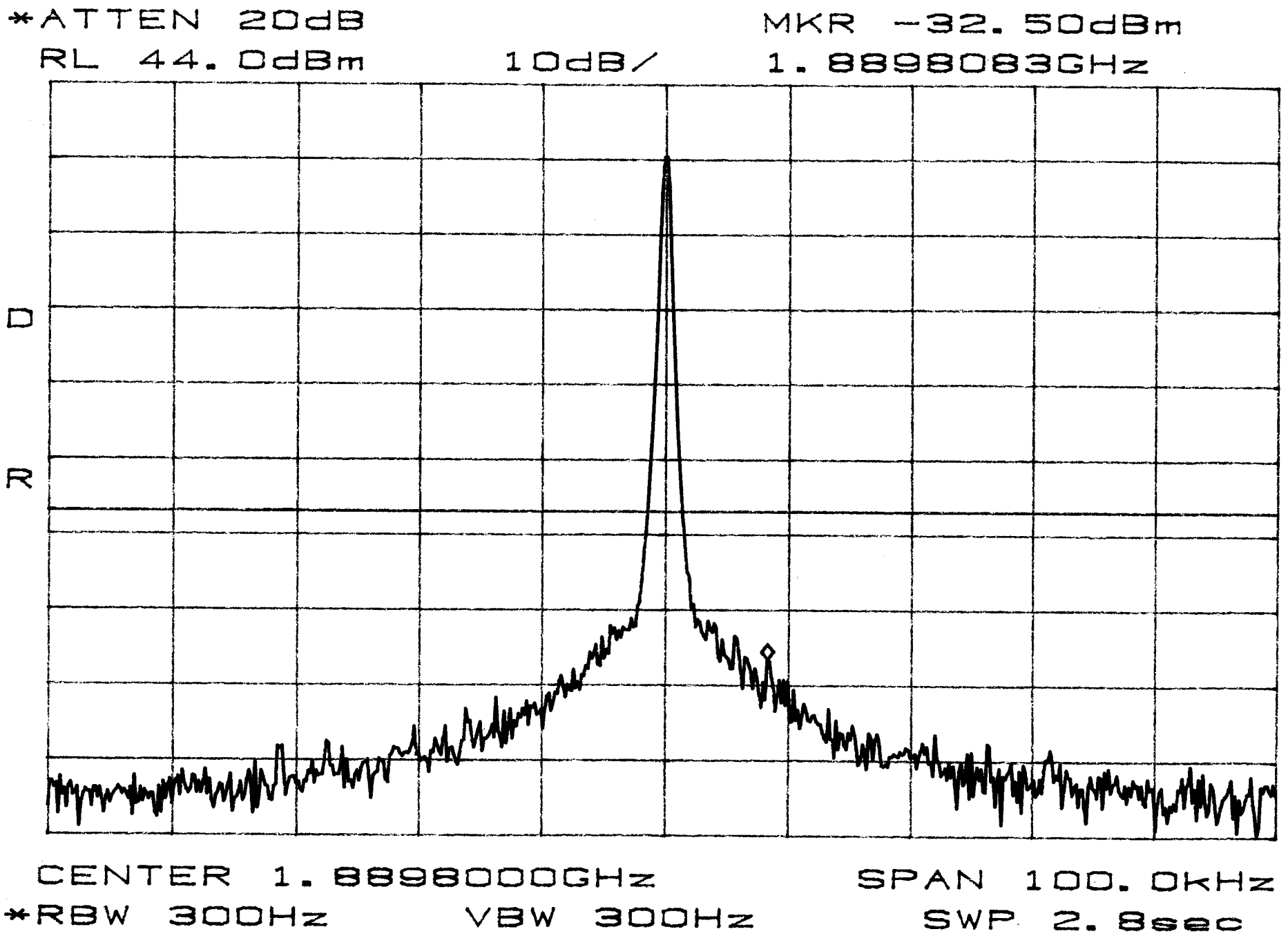

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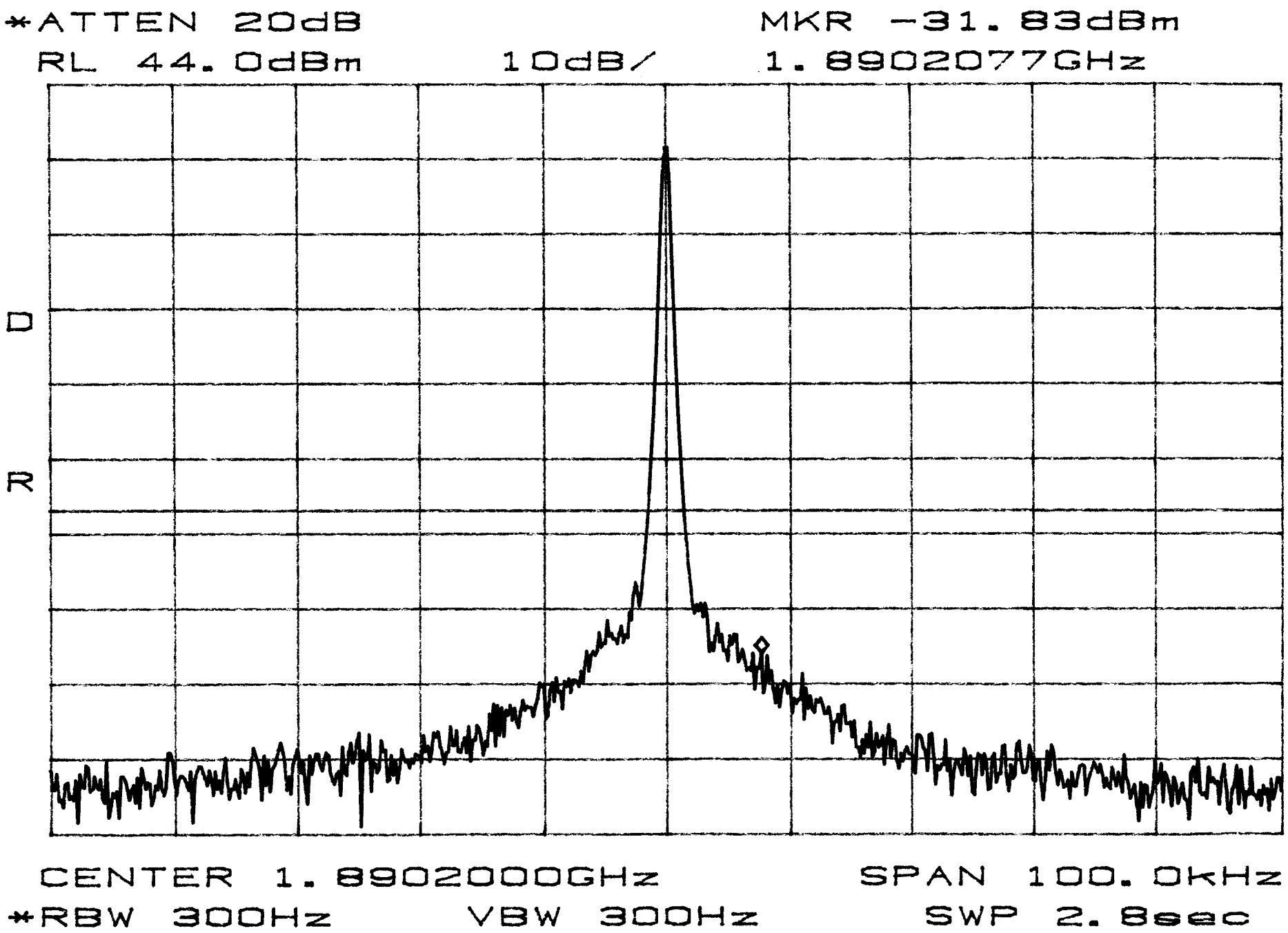
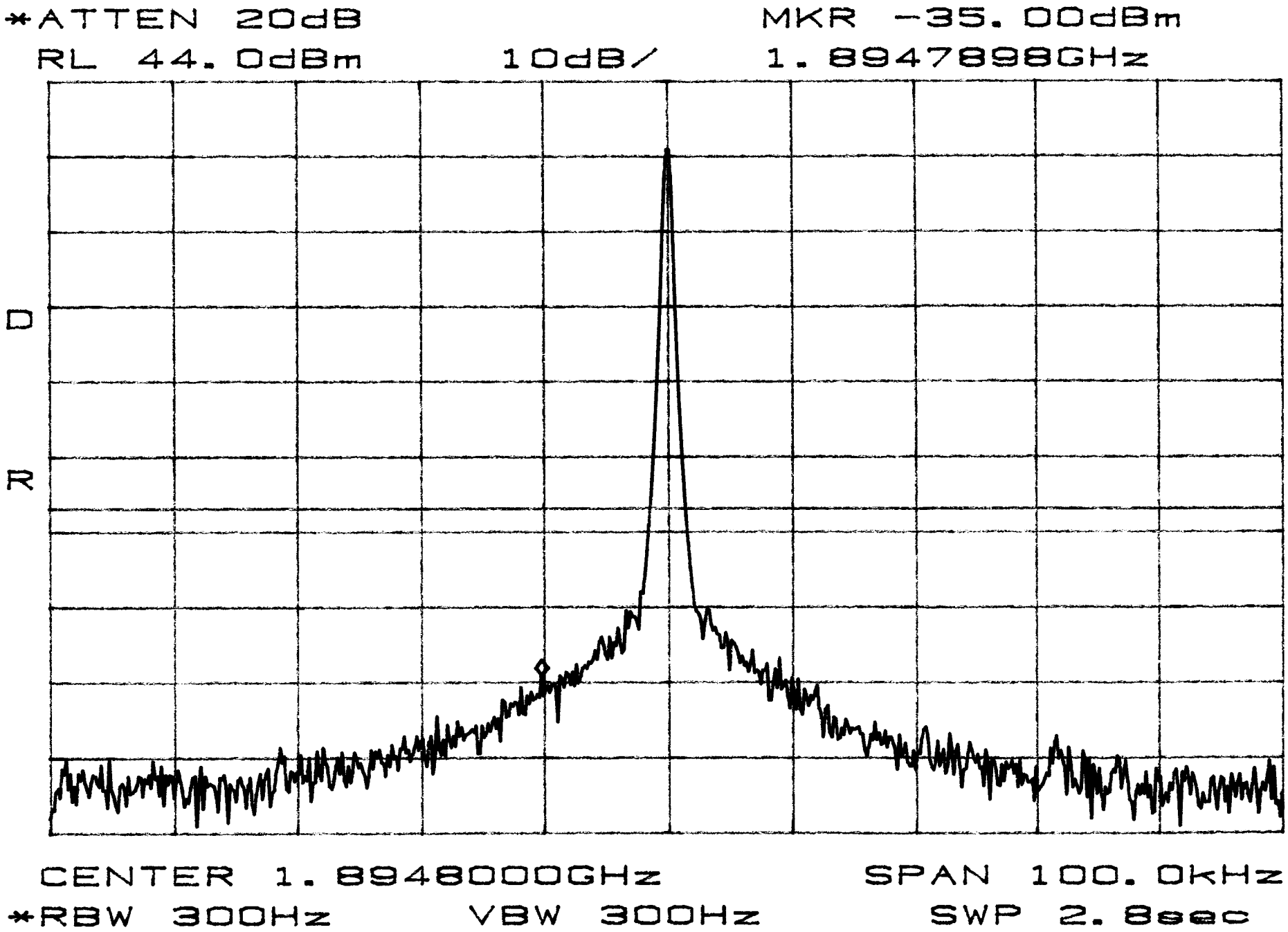


BAND EDGE BAND F



A radiated emission scan was also made with the EUT's antenna replaced with a termination to demonstrate case radiation compliance to the –13 dBm requirement at the 3 carrier frequencies. Radiated emissions from the EUT are measured in the frequency range of 30 to 20000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection and measurements above 1000 MHz are made with a 1 MHz/6 dB bandwidth and peak detection. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimeters above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 10 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees. The field strength levels were measured per ANSI C63.4. The EUT is then replaced with a tuned dipole antenna (below 1 GHz) or horn antenna (above 1 GHz). The substitute antenna was placed in the same polarization as the test antenna. A signal generator was used to generate a signal level that matched the level measured from the EUT. The signal generator level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level. The 10 highest frequencies are listed below. No signals were detected at harmonic frequencies.

Radiated Electromagnetic Emissions

TÜV PRODUCT SERVICE

Test Report #:	**7868 Run 1**	Test Area:	LTS 3m			
Test Method:	FCC Part 24	Test Date:	11-Dec-2001			
EUT Model #:	DGVI-370000RIU	EUT Power:	110 VAC / 60 Hz			
EUT Serial #:	fcc1			Temperature:	23	°C
Manufacturer:	ADC			Relative Humidity:	19	%
EUT Description:	RF amplifier			Air Pressure:	98.6	kPa
Notes:	6 bands to be tested, A-F, with low mid & high freq setting			Page:	1 of 5	

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 FCC Pt 24, -13dBm	DELTA2 N/A
Measurements < 1GHz, RBW = 100kHz						
Measurements > 1GHz, RBW = 1MHz						
Fundamental = Band F low, 1890.2MHz						
45.23	40.1 Pk	0.5 / 15.7 / 27.8	28.4	V / 1.0 / 0.0	-54.9	N/A
75.54	52.6 Pk	0.7 / 8.4 / 27.9	33.8	V / 1.0 / 0.0	-49.5	N/A
86.14	50.5 Pk	0.8 / 7.3 / 27.9	30.6	V / 1.0 / 0.0	-52.7	N/A
125.17	42.8 Pk	1.0 / 9.0 / 28.0	24.8	V / 1.0 / 0.0	-58.5	N/A
208.90	45.1 Pk	1.3 / 10.8 / 27.7	29.5	V / 1.0 / 0.0	-53.8	N/A
45.23	41.9 Pk	0.5 / 15.7 / 27.8	30.3	V / 1.0 / 90.0	-53	N/A
143.05	42.6 Pk	1.0 / 9.6 / 27.9	25.3	V / 1.0 / 180.0	-58	N/A
86.14	50.9 Pk	0.8 / 7.3 / 27.9	31.0	V / 1.0 / 270.0	-52.3	N/A
125.17	44.4 Pk	1.0 / 9.0 / 28.0	26.4	H / 2.8 / 90.0	-56.9	N/A
Maximized						
75.54	51.8 Pk	0.7 / 8.4 / 27.9	33.0	V / 1.0 / 345.0	-50.3	N/A
Fundamental = band F mid, 1895.5MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band F high, 1894.8 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						

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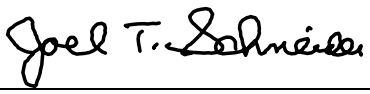

Signature

Radiated Electromagnetic Emissions

Test Report #:	**7868 Run 1**	Test Area:	LTS 3m			
Test Method:	FCC Part 24	Test Date:	11-Dec-2001			
EUT Model #:	DGVI-370000RIU	EUT Power:	110 VAC / 60 Hz			
EUT Serial #:	fcc1			Temperature:	23	°C
Manufacturer:	ADC			Relative Humidity:	19	%
EUT Description:	RF amplifier			Air Pressure:	98.6	kPa
Notes:	6 bands to be tested, A-F, with low mid & high freq setting			Page:	2 of 5	

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 FCC Pt 24, -13dBm	DELTA2 N/A
Fundamental = Band E low, 1885.2 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band E mid, 1887.5 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band E high, 1889.8 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band D low, 1865.2 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band D mid, 1867.5 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band D high, 1869.8 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band C low, 1895.2 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band C mid, 1902.5 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band C high, 1909.8 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band B low, 1870.2 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band B mid, 1877.5 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band B high, 1884.8 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band A low, 1850.2 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = Band A mid, 1857.5 MHz						

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Radiated Electromagnetic Emissions

Test Report #:	**7868 Run 1**	Test Area:	LTS 3m			
Test Method:	FCC Part 24	Test Date:	11-Dec-2001			
EUT Model #:	DGVI-370000RIU	EUT Power:	110 VAC / 60 Hz			
EUT Serial #:	fcc1			Temperature:	23	°C
Manufacturer:	ADC			Relative Humidity:	19	%
EUT Description:	RF amplifier			Air Pressure:	98.6	kPa
Notes:	6 bands to be tested, A-F, with low mid & high freq setting			Page:	3 of 5	

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 FCC Pt 24, -13dBm	DELTA2 N/A
No new or higher emissions detected 30 MHz to 2 GHz						
Fundamental = band A high, 1864.8 MHz						
No new or higher emissions detected 30 MHz to 2 GHz						
End scan 30 MHz to 2 GHz						
Antenna: LTS Horn SN...3275						
No significant emissions detected 2 GHz to 4 GHz						
All bands (A - F) scanned at low, mid, & high frequency settings						
PreAmp: #2477Preamp(4-8GHZ)						
No significant emissions detected 4 GHz to 8 GHz						
All bands (A - F) scanned at low, mid, & high frequency settings						
PreAmp: #2478 Preamp(8-18G)						
No significant emissions detected 8 GHz to 19.1 GHz						
All bands (A - F) scanned at low, mid, & high frequency settings						
Band End Measurements						
Maximized						
Band F, low end, fundamental = 1890.2 MHz						
1890.00	33.8 Pk	4.5 / 28.8 / 26.9	40.1	V / 1.0 / 345.0	-43.2	N/A
Band F, high end, fundamental = 1894.8 MHz						

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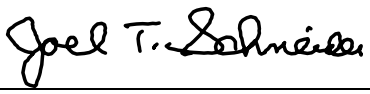

Signature

Radiated Electromagnetic Emissions

TÜV PRODUCT SERVICE

Test Report #:	**7868 Run 1**	Test Area:	LTS 3m			
Test Method:	FCC Part 24	Test Date:	11-Dec-2001			
EUT Model #:	DGVI-370000RIU	EUT Power:	110 VAC / 60 Hz			
EUT Serial #:	fcc1			Temperature:	23	°C
Manufacturer:	ADC			Relative Humidity:	19	%
EUT Description:	RF amplifier			Air Pressure:	98.6	kPa
Notes:	6 bands to be tested, A-F, with low mid & high freq setting			Page:	4 of 5	

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 FCC Pt 24, -13dBm	DELTA2 N/A
1895.00	33.9 Pk	4.5 / 28.7 / 26.9	40.2	V / 1.0 / 345.0	-43.1	N/A
Band E, low end, fundamental = 1885.2 MHz						
1885.00	34.7 Pk	4.5 / 28.8 / 27.0	41.0	V / 1.0 / 345.0	-42.3	N/A
Band E, high end, fundamental = 1889.8 MHz						
1890.00	33.8 Pk	4.5 / 28.8 / 26.9	40.1	V / 1.0 / 345.0	-43.2	N/A
Band D, low end, fundamental = 1865.2 MHz						
1865.00	33.2 Pk	4.5 / 28.4 / 27.0	39.0	V / 1.0 / 345.0	-44.3	N/A
Band D, high end, fundamental = 1869.8 MHz						
1870.00	33.9 Pk	4.5 / 28.4 / 27.0	39.7	V / 1.0 / 345.0	-43.6	N/A
Band C, low end, fundamental = 1895.2 MHz						
1895.00	33.5 Pk	4.5 / 28.7 / 26.9	39.7	V / 1.0 / 345.0	-43.6	N/A
Band C, high end, fundamental = 1909.8 MHz						
1910.00	33.4 Pk	4.5 / 28.4 / 26.9	39.4	V / 1.0 / 345.0	-43.9	N/A
Band B, low end, fundamental = 1870.2 MHz						
1870.00	33.0 Pk	4.5 / 28.4 / 27.0	38.9	V / 1.0 / 345.0	-44.4	N/A
Band B, high end, fundamental = 1884.8 MHz						
1885.00	34.1 Pk	4.5 / 28.8 / 27.0	40.5	V / 1.0 / 345.0	-42.8	N/A
Band A, low end, fundamental = 1850.2 MHz						
1850.00	33.0 Pk	4.5 / 28.3 / 27.1	38.6	V / 1.0 / 345.0	-44.7	N/A
Band A, high end, fundamental = 1864.8 MHz						
1865.00	33.1 Pk	4.5 / 28.4 / 27.0	38.9	V / 1.0 / 345.0	-44.4	N/A
All band end measurements = noise floor						
Substitution method used to determine the energy level of worst case emission						
75.54 MHz						
Sig gen level (-51.0dBm) - cable loss (1.6dB) - transmit antenna correction (9.9dB) = -62.5						
-62.5dBm is 49.5dB below limit of -13dBm						
End scan 30 MHz to 19.1 GHz						

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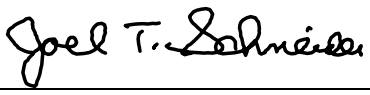

Signature

Radiated Electromagnetic Emissions

TÜV PRODUCT SERVICE

Test Report #:	**7868 Run 1**	Test Area:	LTS 3m			
Test Method:	FCC Part 24	Test Date:	11-Dec-2001			
EUT Model #:	DGVI-370000RIU	EUT Power:	110 VAC / 60 Hz			
EUT Serial #:	fcc1			Temperature:	23	°C
Manufacturer:	ADC			Relative Humidity:	19	%
EUT Description:	RF amplifier			Air Pressure:	98.6	kPa
Notes:	6 bands to be tested, A-F, with low mid & high freq setting			Page:	5 of 5	

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 FCC Pt 24, -13dBm	DELTA2 N/A
********** **MEASUREMENT SUMMARY** **********						
1885.00	34.7 Pk	4.5 / 28.8 / 27.0	41.0	V / 1.0 / 345.0	-42.3	N/A
1895.00	33.9 Pk	4.5 / 28.7 / 26.9	40.2	V / 1.0 / 345.0	-43.1	N/A
1890.00	33.8 Pk	4.5 / 28.8 / 26.9	40.1	V / 1.0 / 345.0	-43.2	N/A
1870.00	33.9 Pk	4.5 / 28.4 / 27.0	39.7	V / 1.0 / 345.0	-43.6	N/A
1910.00	33.4 Pk	4.5 / 28.4 / 26.9	39.4	V / 1.0 / 345.0	-43.9	N/A
1865.00	33.2 Pk	4.5 / 28.4 / 27.0	39.0	V / 1.0 / 345.0	-44.3	N/A
1850.00	33.0 Pk	4.5 / 28.3 / 27.1	38.6	V / 1.0 / 345.0	-44.7	N/A
75.54	52.6 Pk	0.7 / 8.4 / 27.9	33.8	V / 1.0 / 0.0	-49.5	N/A
86.14	50.9 Pk	0.8 / 7.3 / 27.9	31.0	V / 1.0 / 270.0	-52.3	N/A
45.23	41.9 Pk	0.5 / 15.7 / 27.8	30.3	V / 1.0 / 90.0	-53	N/A
208.90	45.1 Pk	1.3 / 10.8 / 27.7	29.5	V / 1.0 / 0.0	-53.8	N/A
125.17	44.4 Pk	1.0 / 9.0 / 28.0	26.4	H / 2.8 / 90.0	-56.9	N/A
143.05	42.6 Pk	1.0 / 9.6 / 27.9	25.3	V / 1.0 / 180.0	-58	N/A

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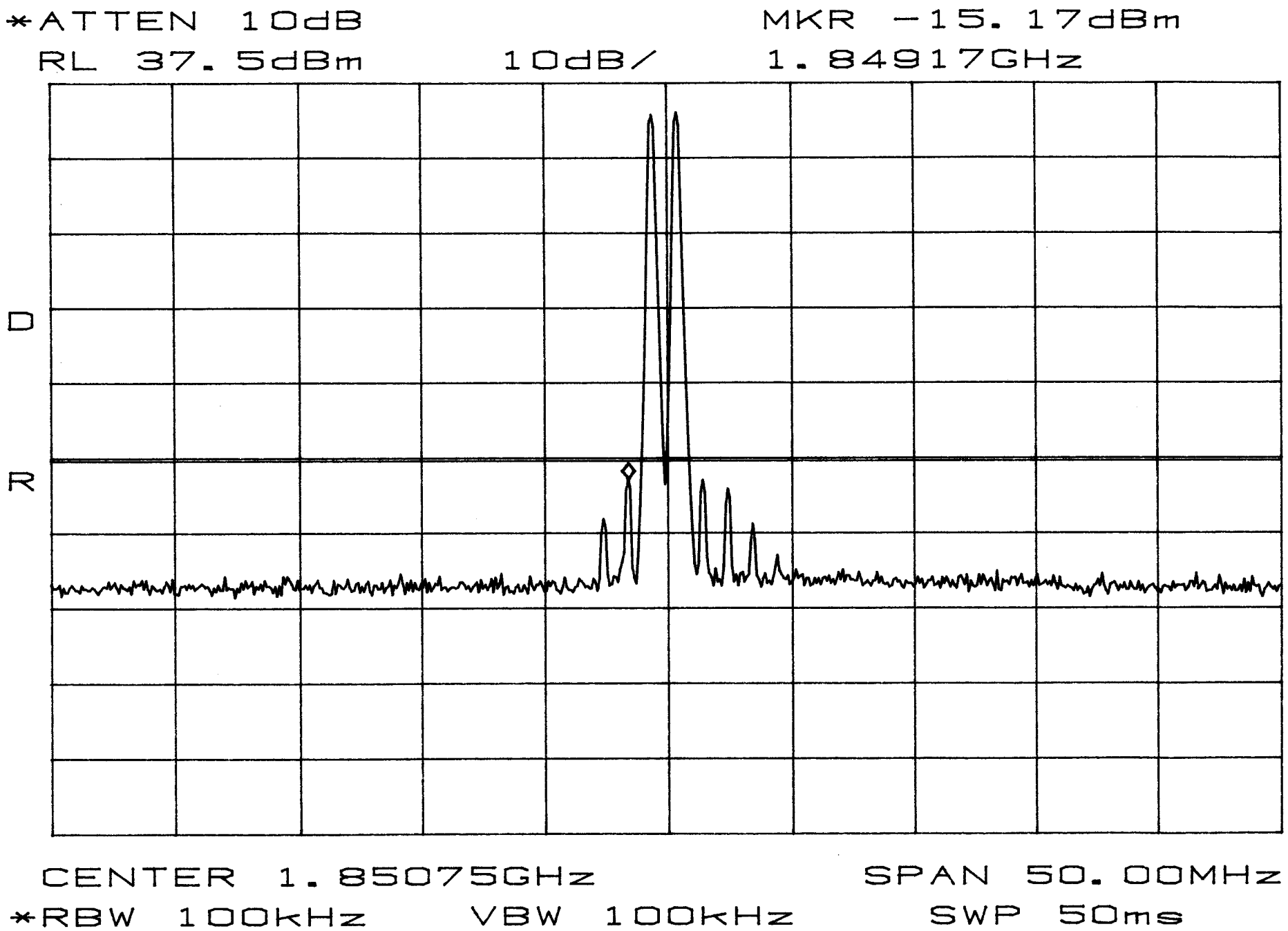
Inter-Modulation Test for ADC Inc. Digivance 1900 MHz RIU Models DGVI-310000RIU, DGVI-320000RIU, DGVI-330000RIU, DGVI-340000RIU, DGVI-350000RIU, and DGVI-360000RIU.

The intermodulation product test was performed for each bandwidth setting of the EUT. Two tests were performed with each modulation type. Test 1 was with two signals input into the EUT at lower end channels. Test 2 was with two signals one at a lower end channel and on at a higher end channel. The modulation types tested were CDMA, TDMA, and FM (1 kHz @ 8 kHz deviation). An investigation was made from 30 MHz to the 10^{th} harmonic of the highest fundamental frequency (~20 GHz).

Results:

Pass (see plots)

IMD close BAND A FM



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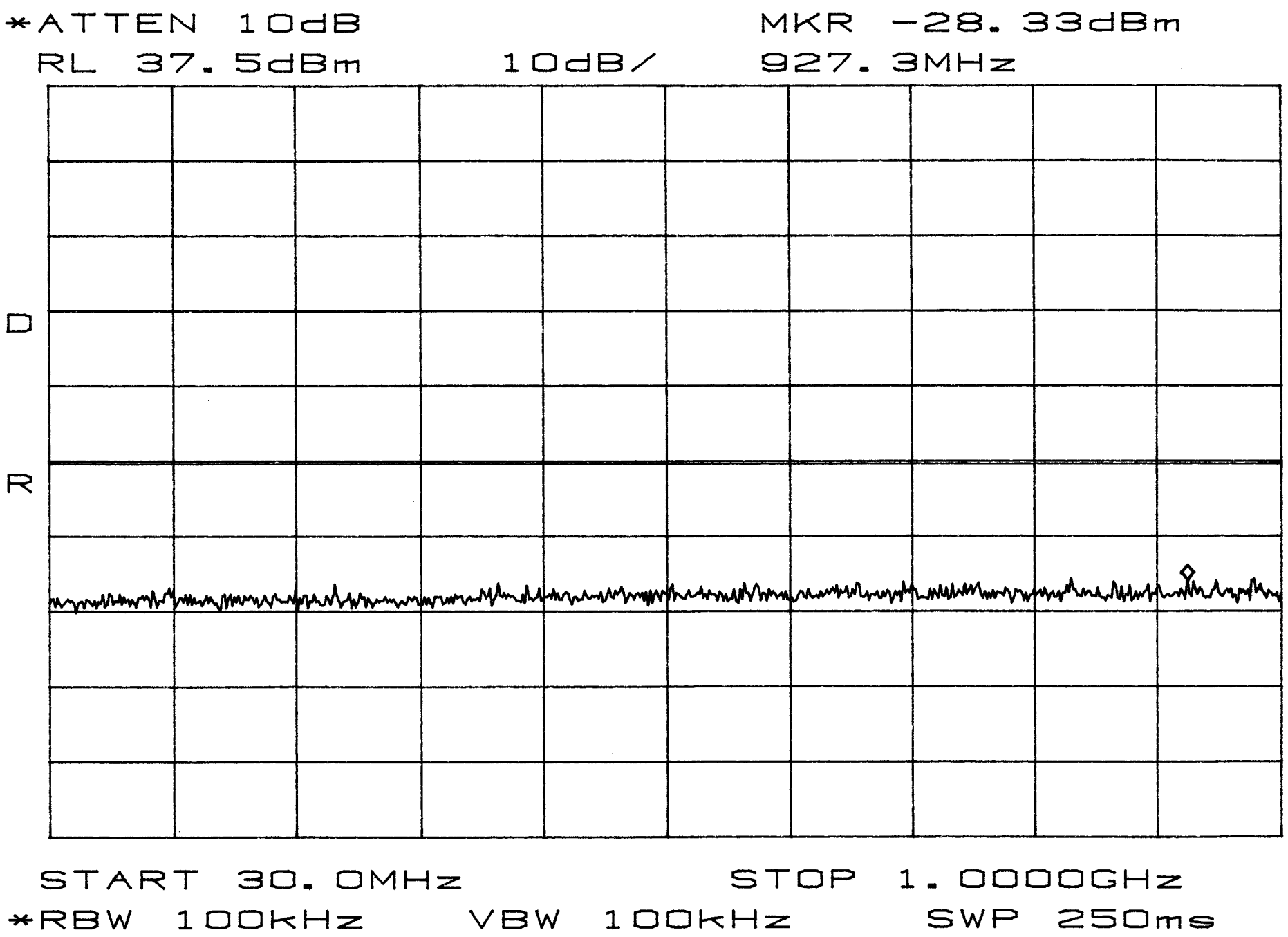

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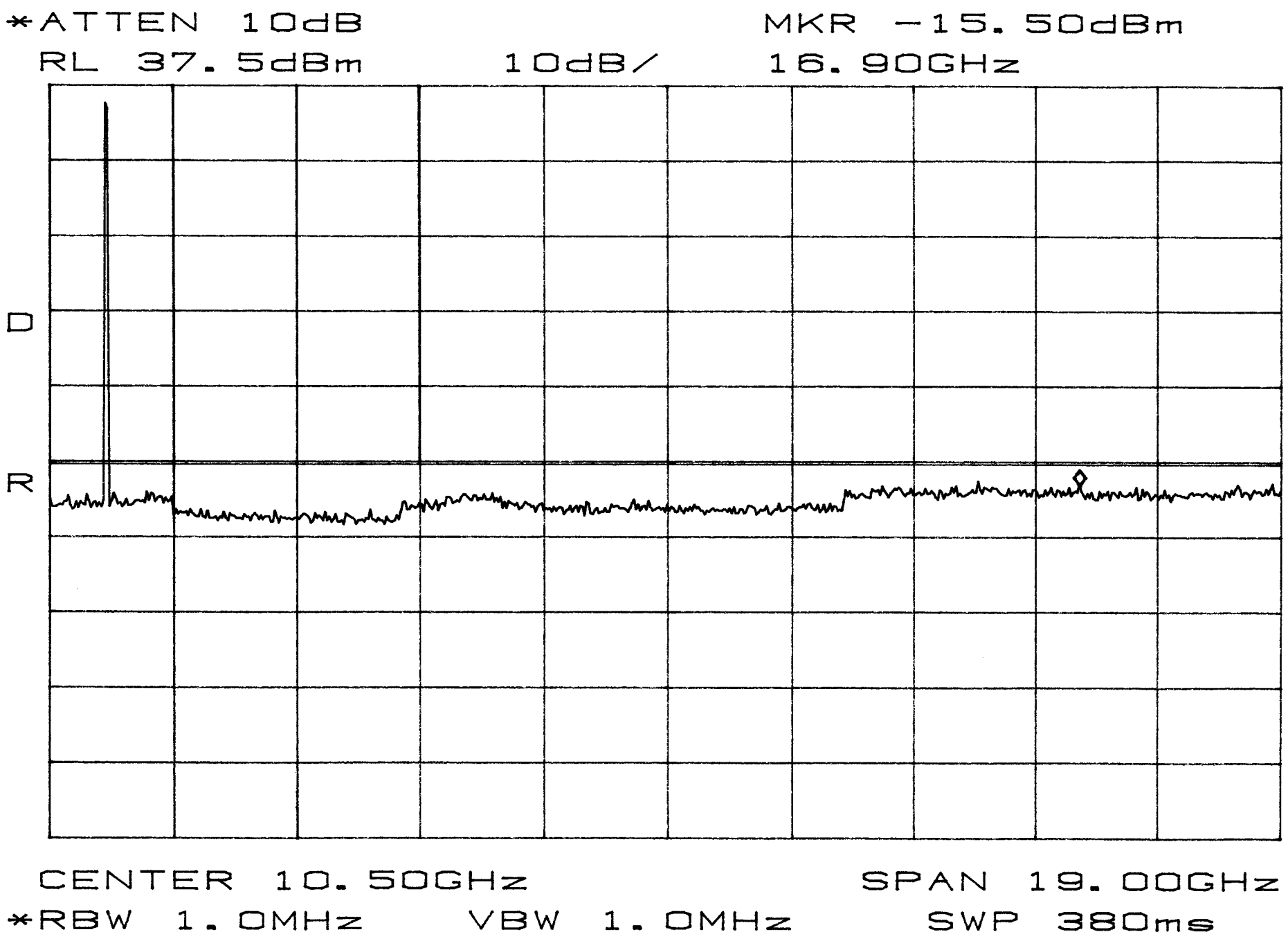

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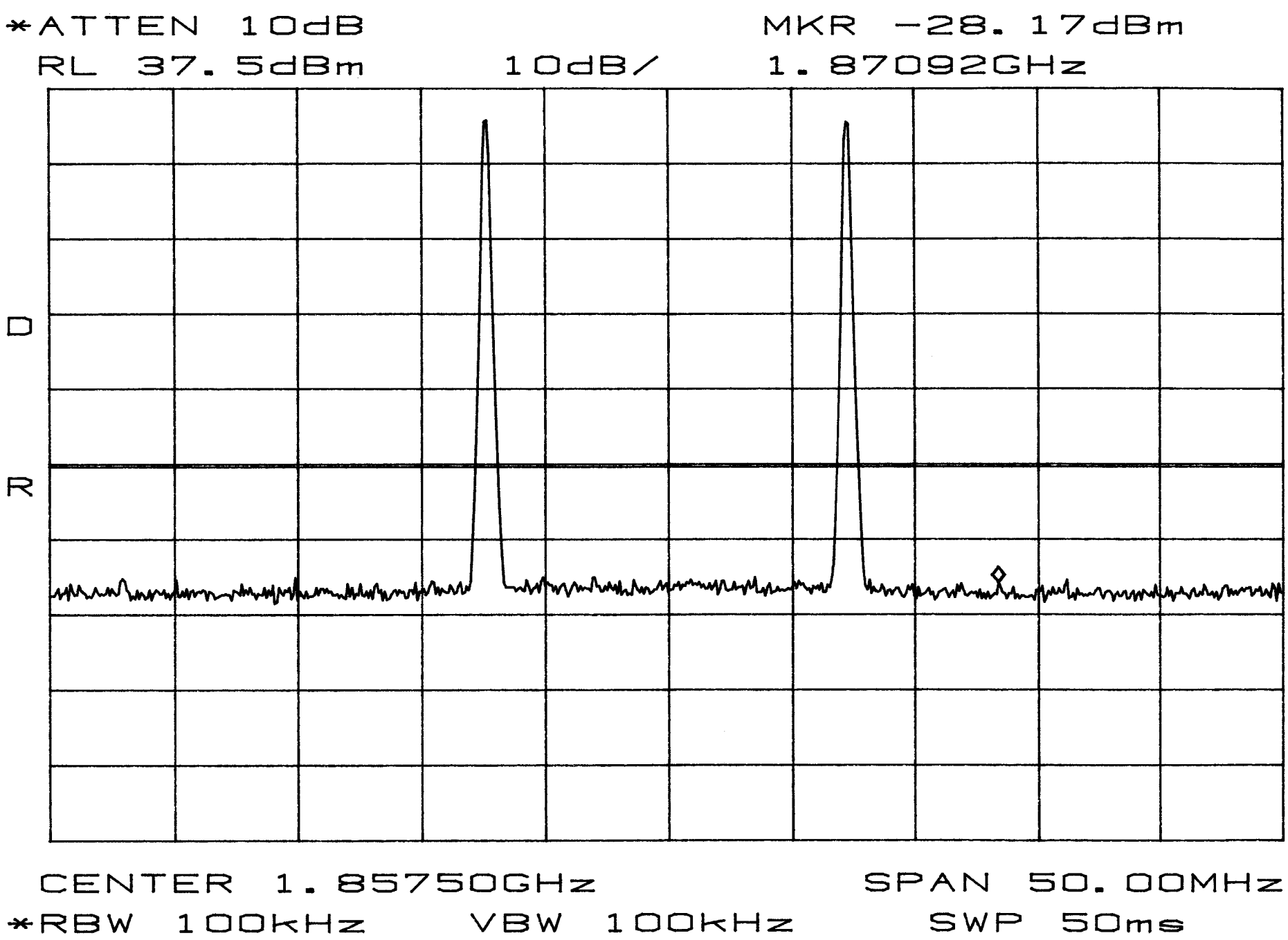
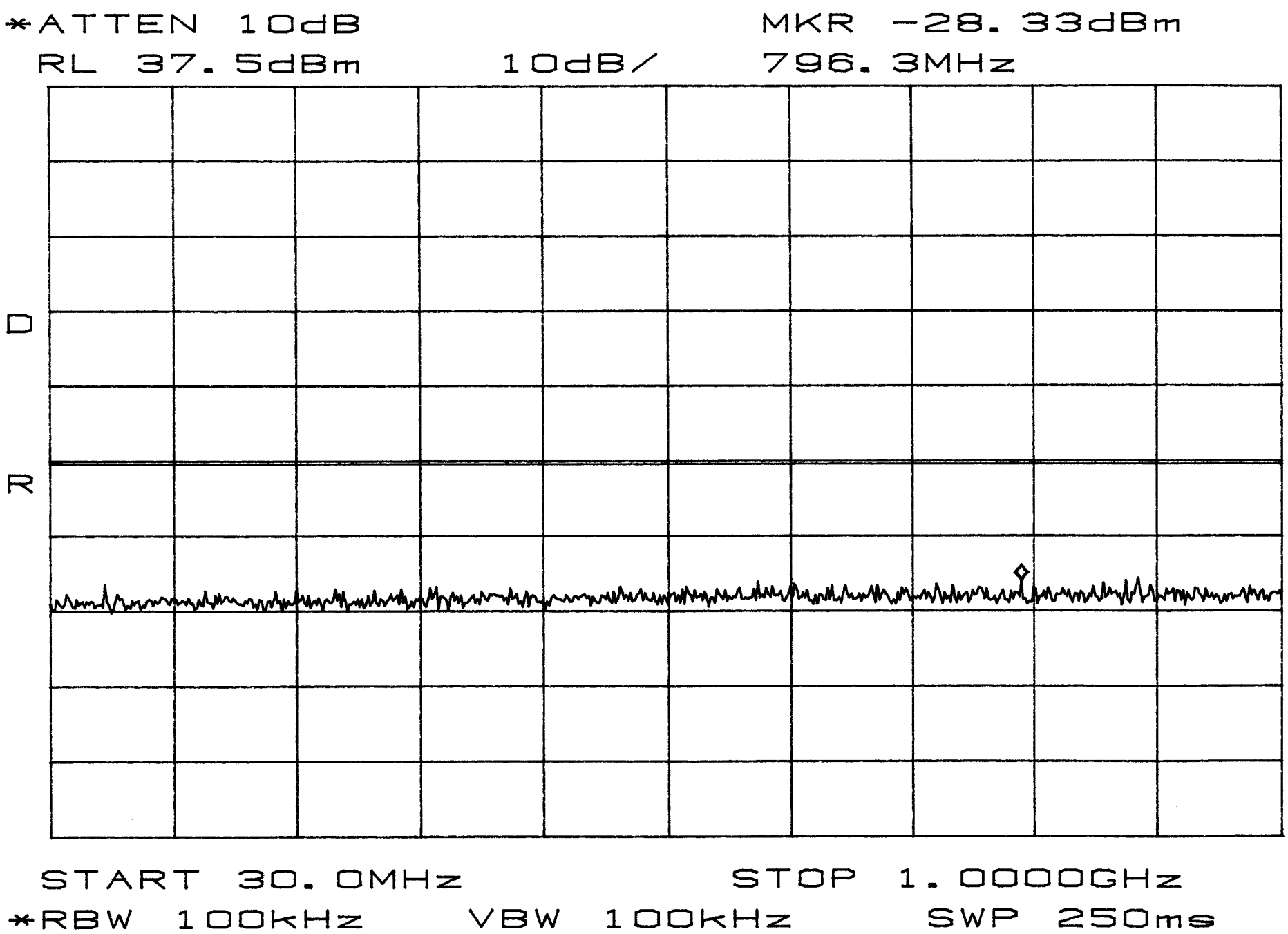


IMD Apart BAND A FM



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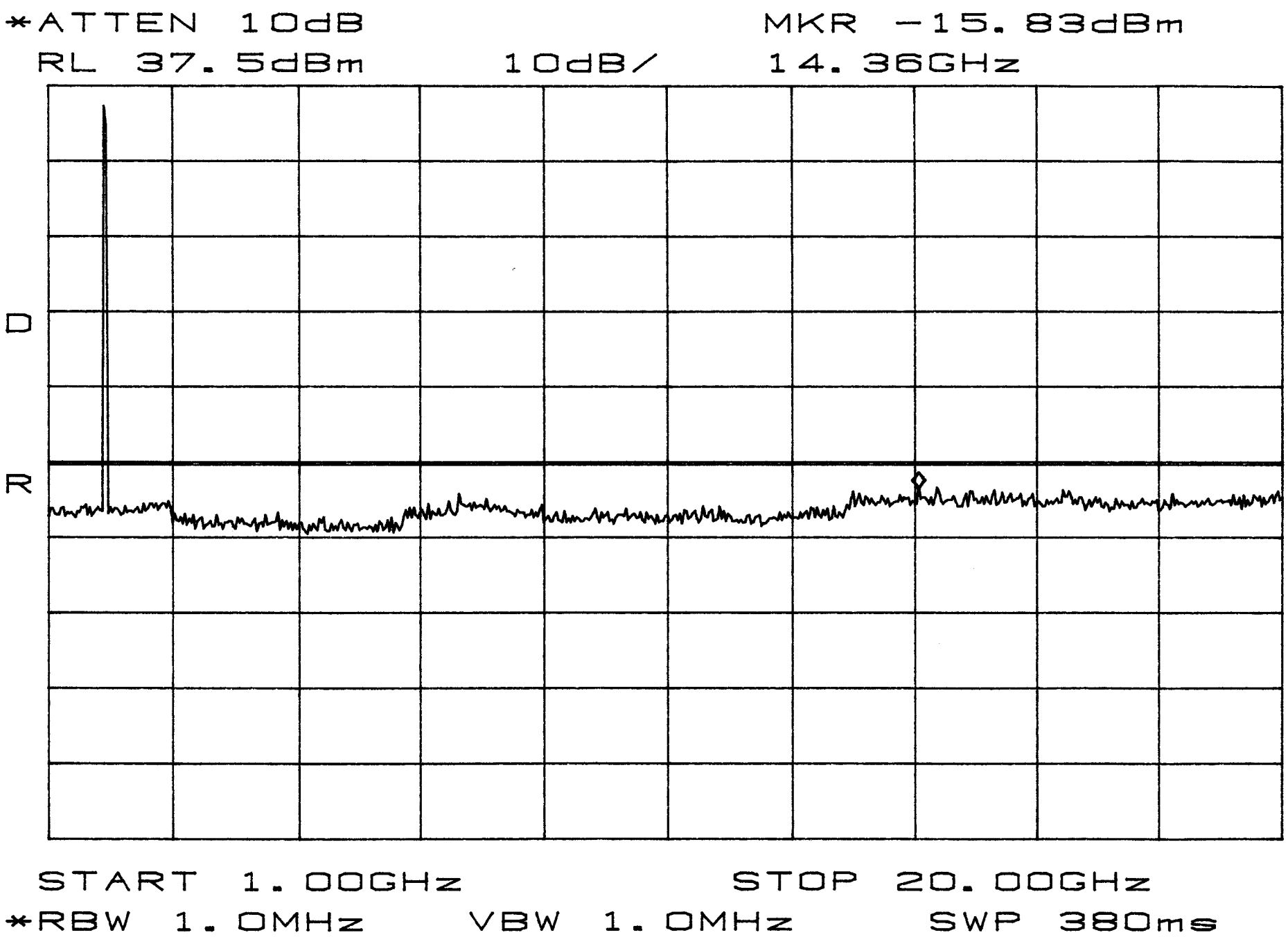

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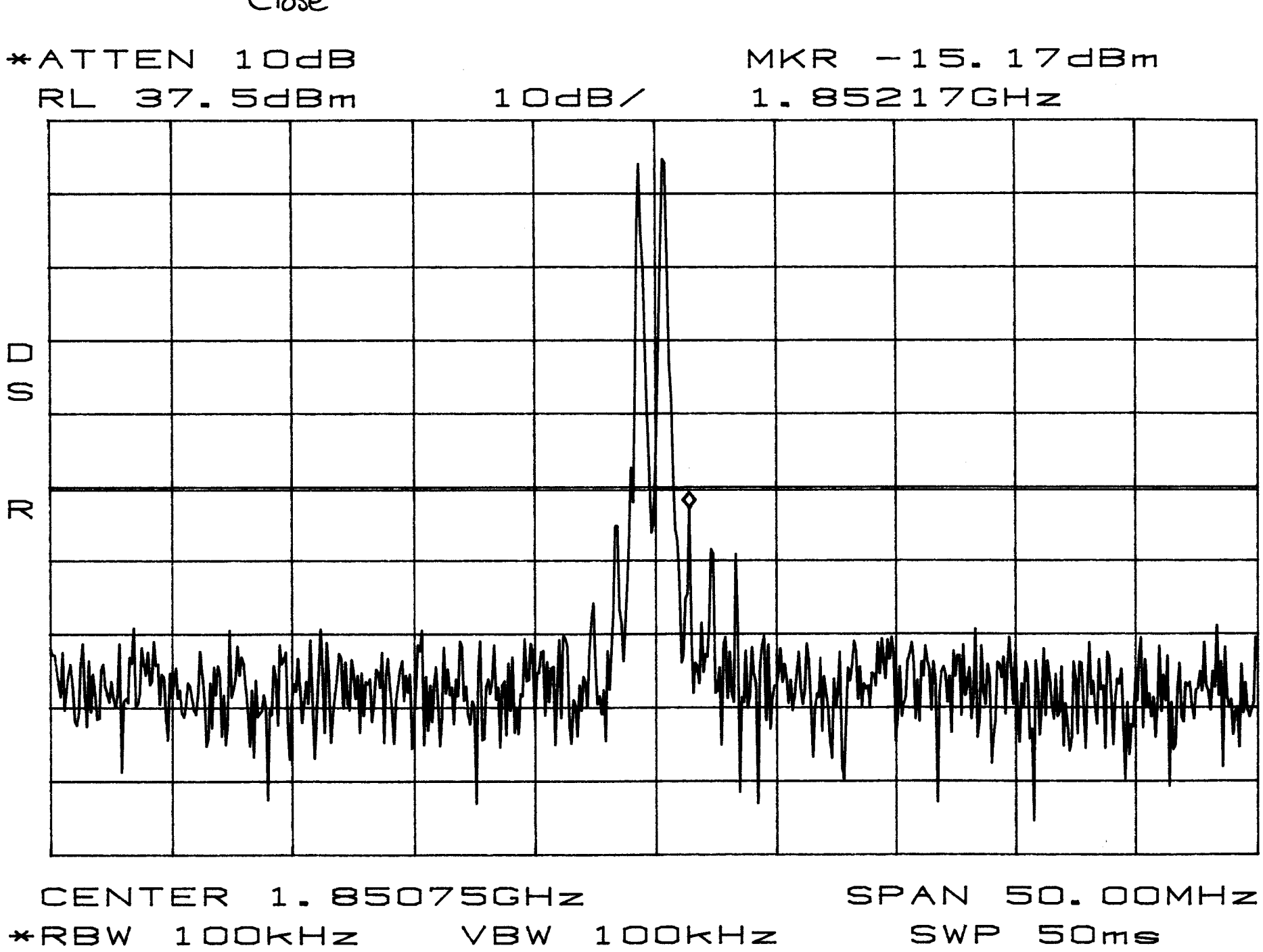
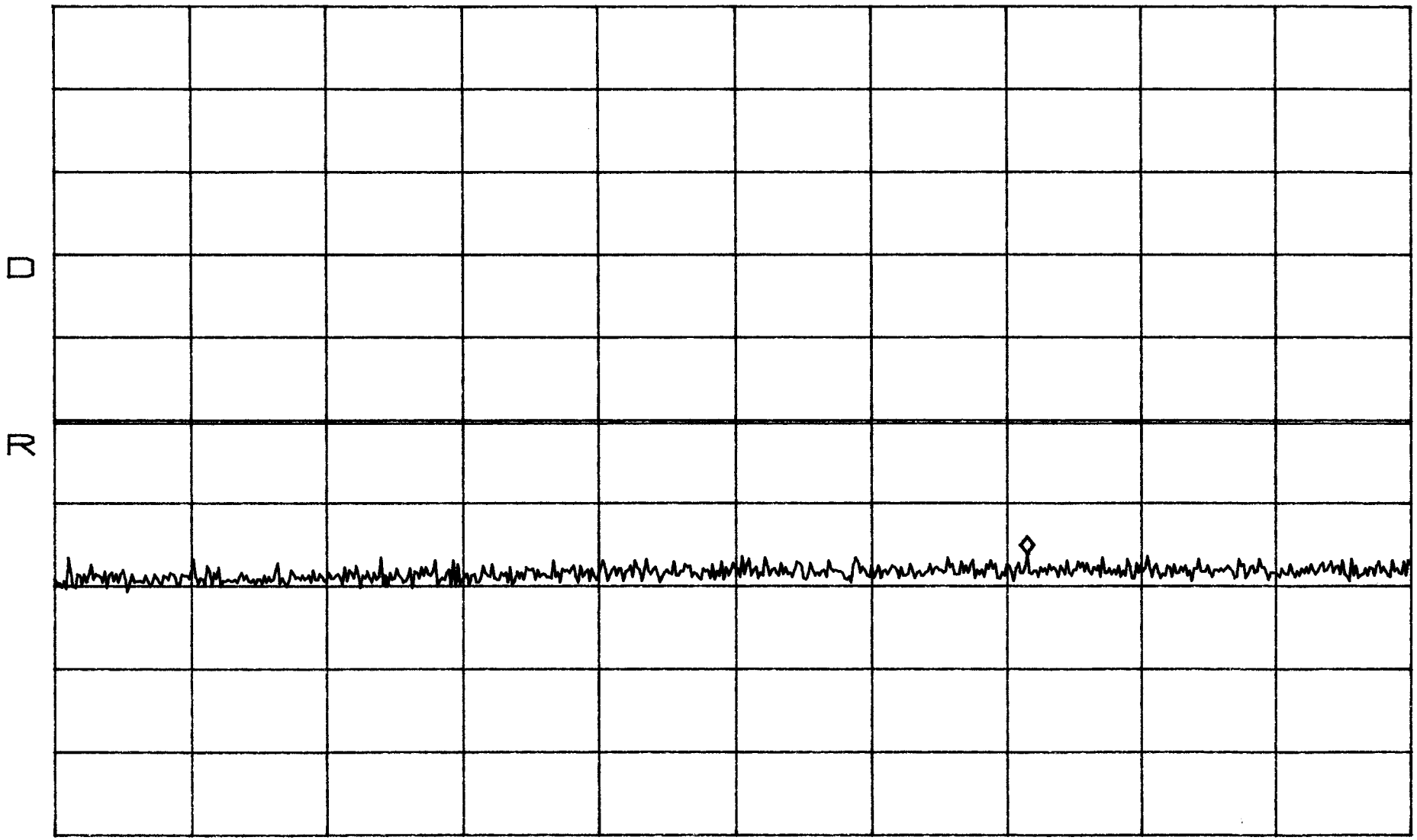
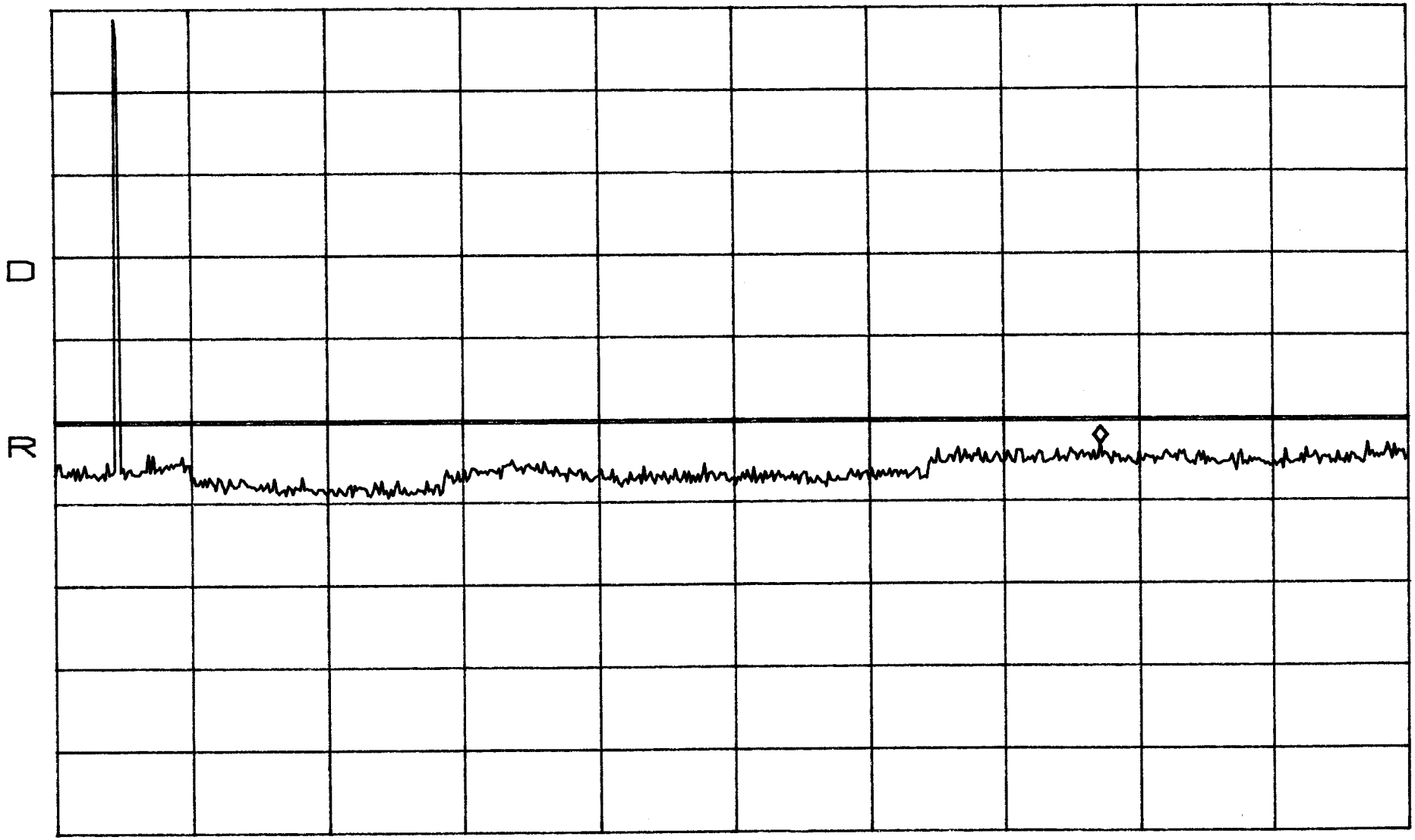


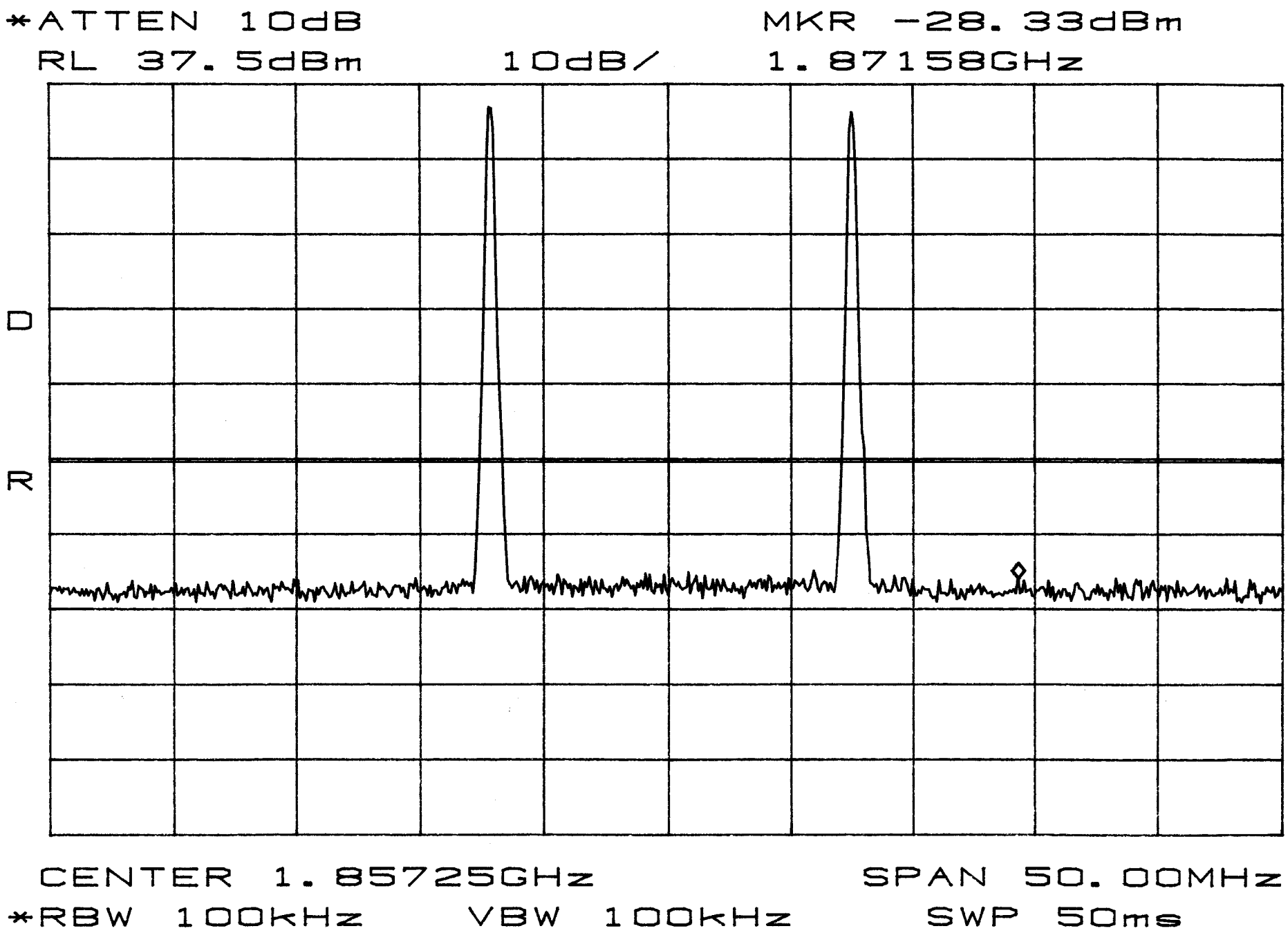
IMD Close BAND A TDMA



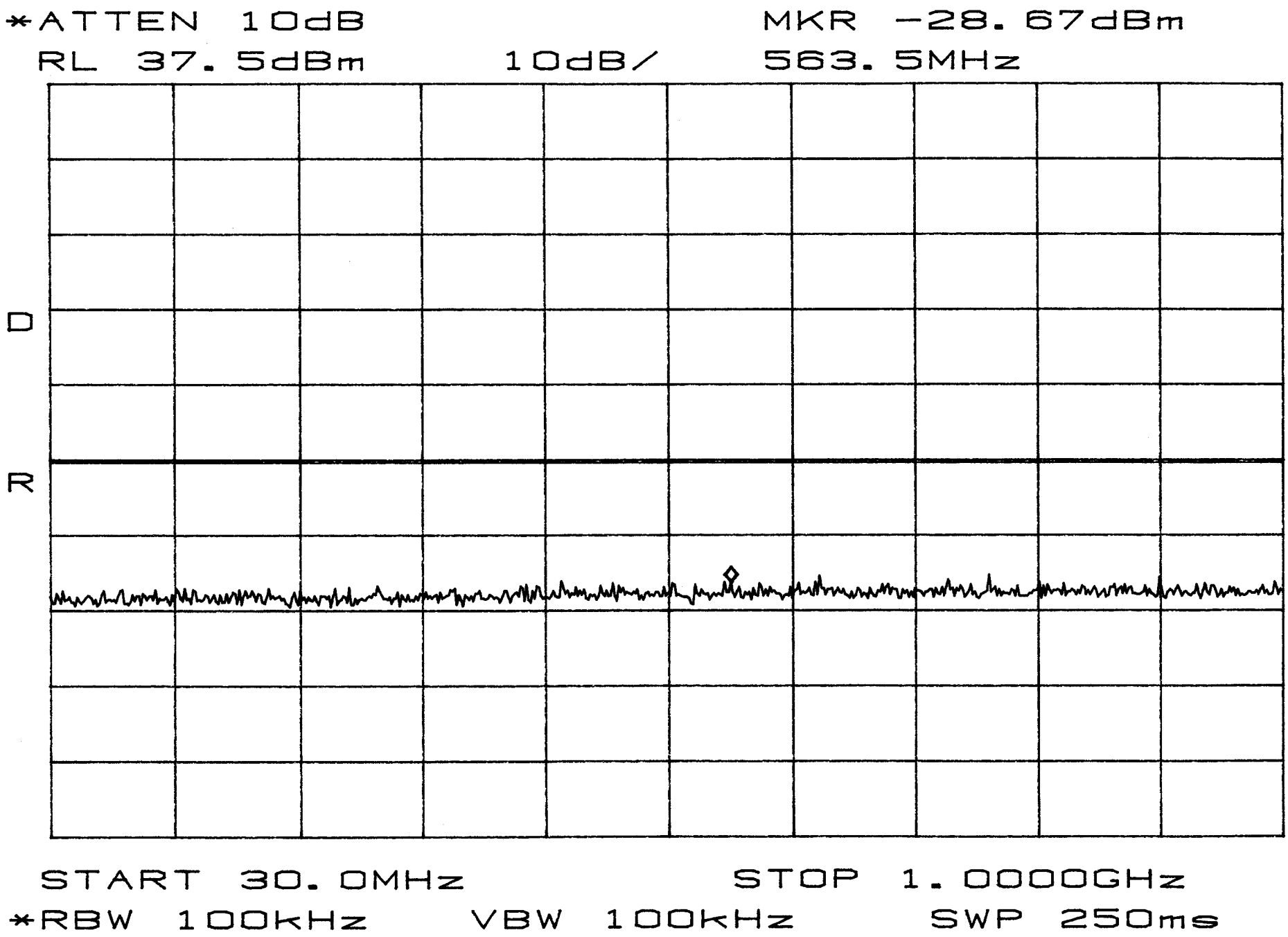
IMD Close BAND A TDMA



IMD Apart BAND A TDMA



IMD Apart BAND A TDMA



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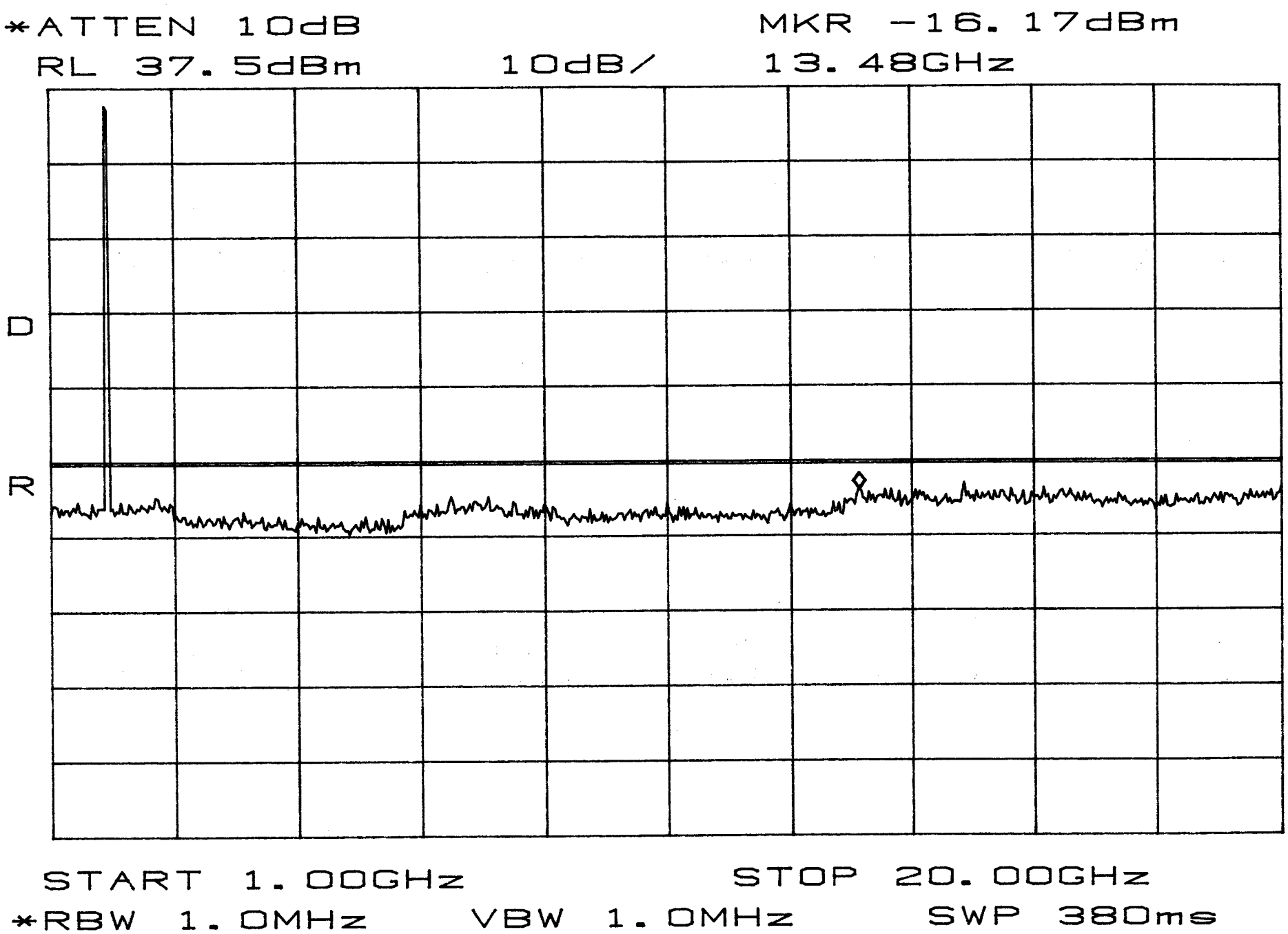

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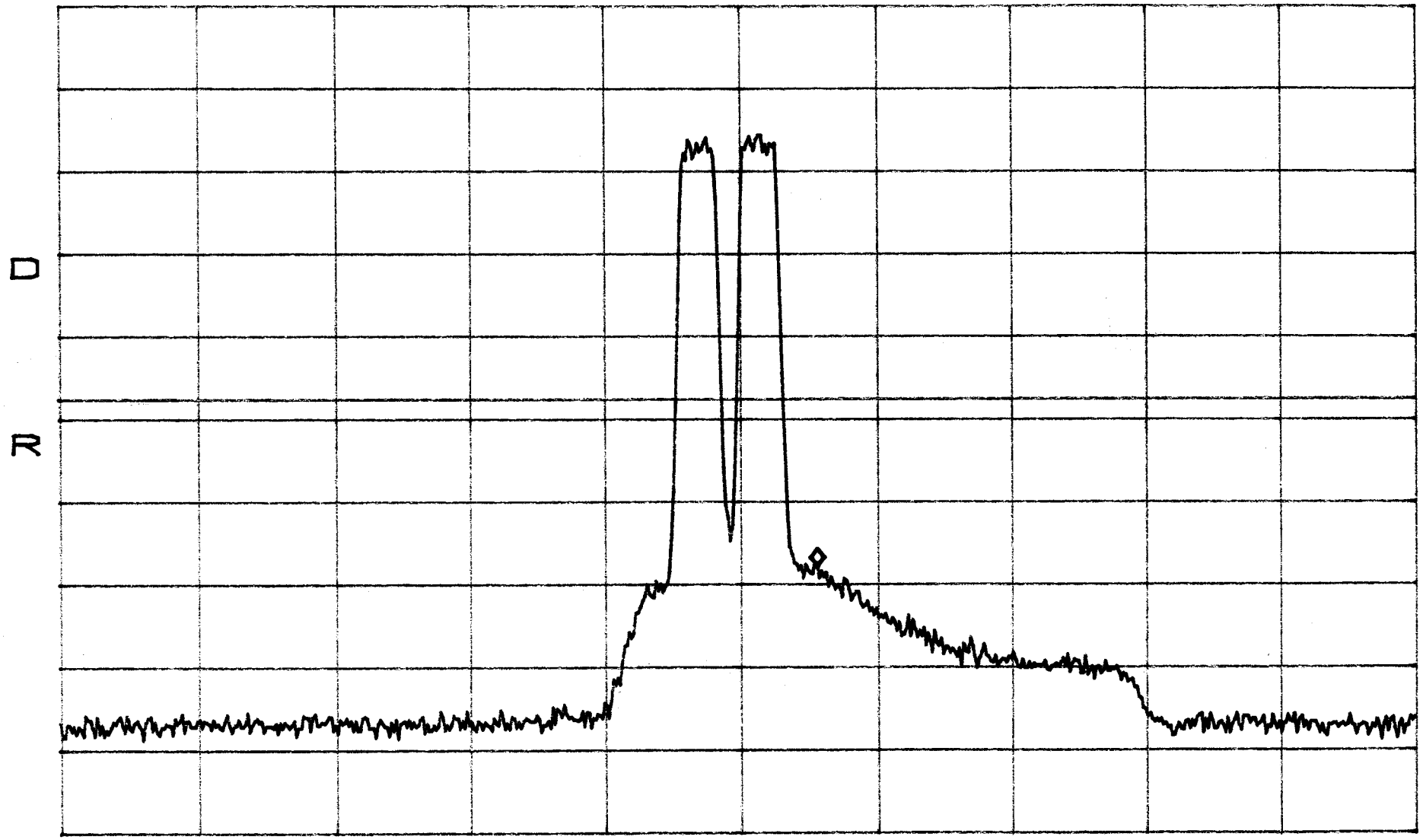

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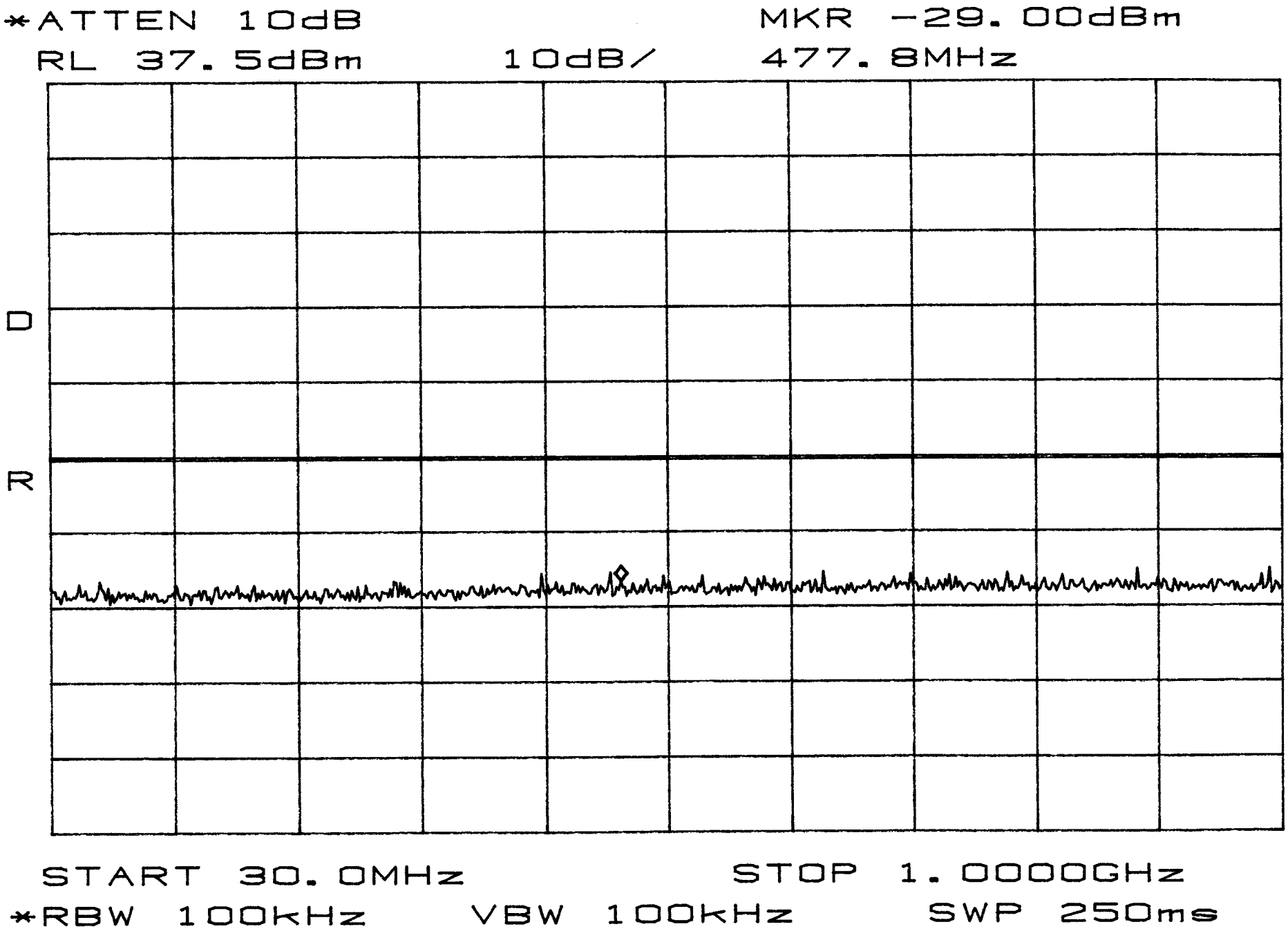

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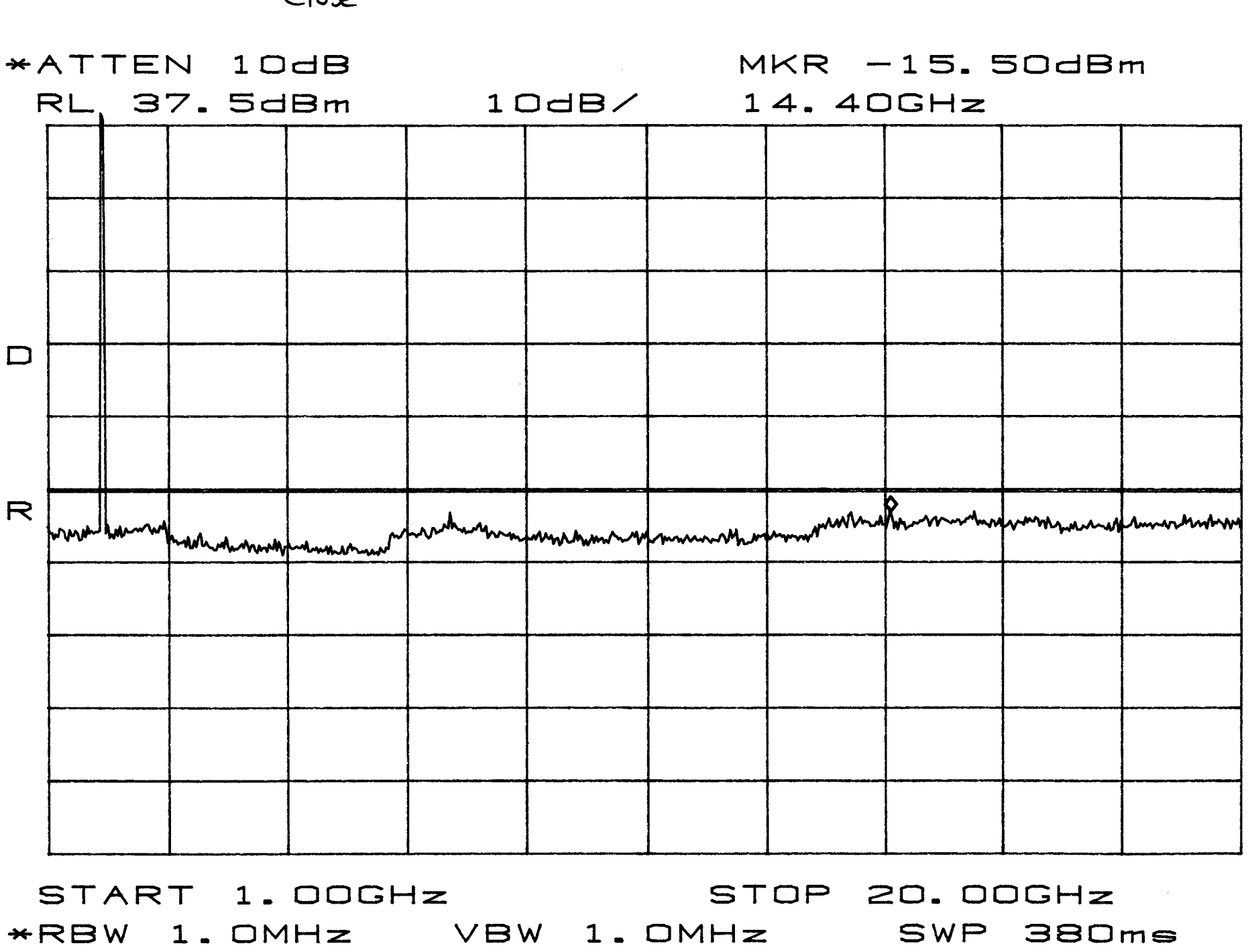

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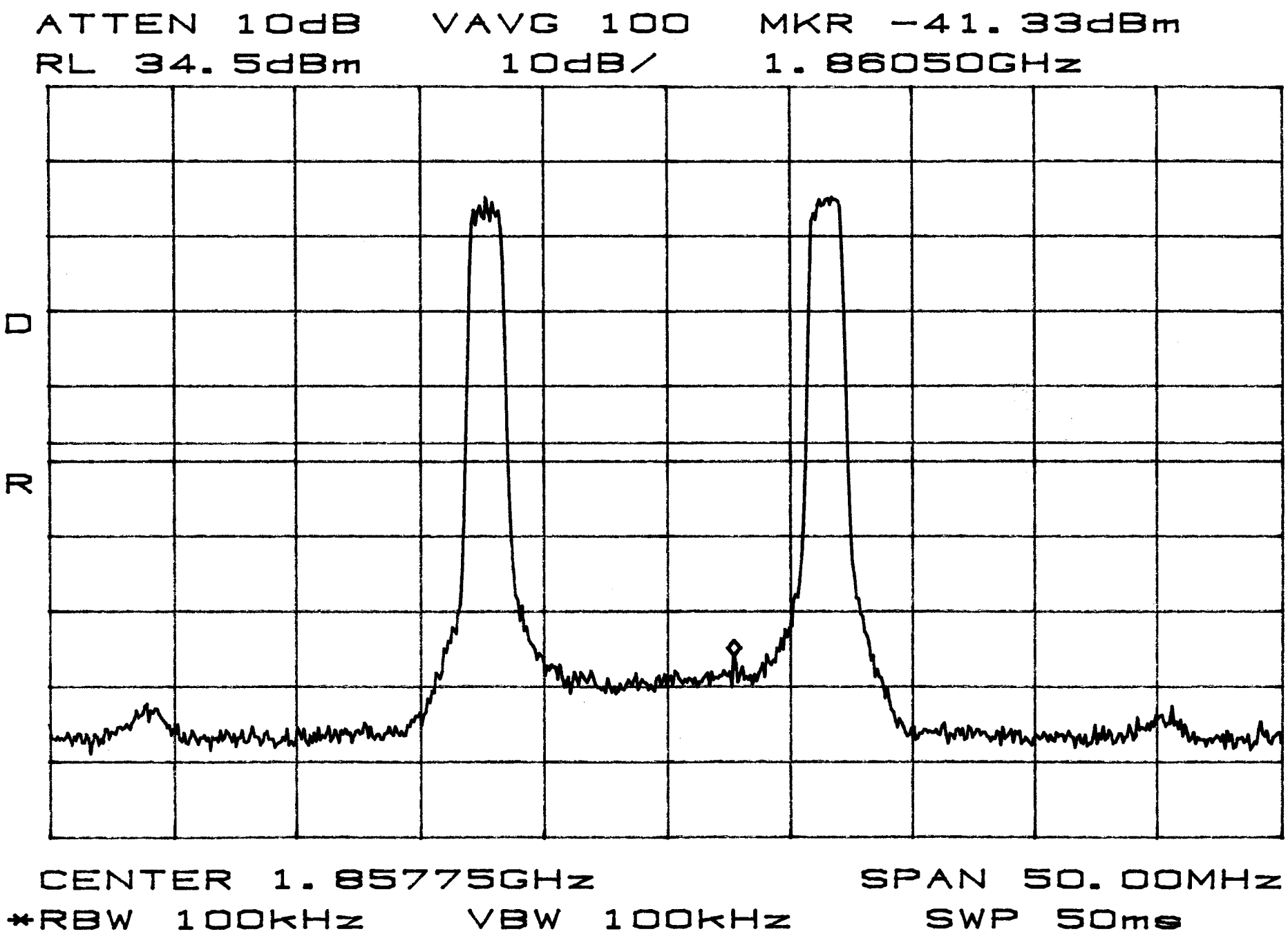

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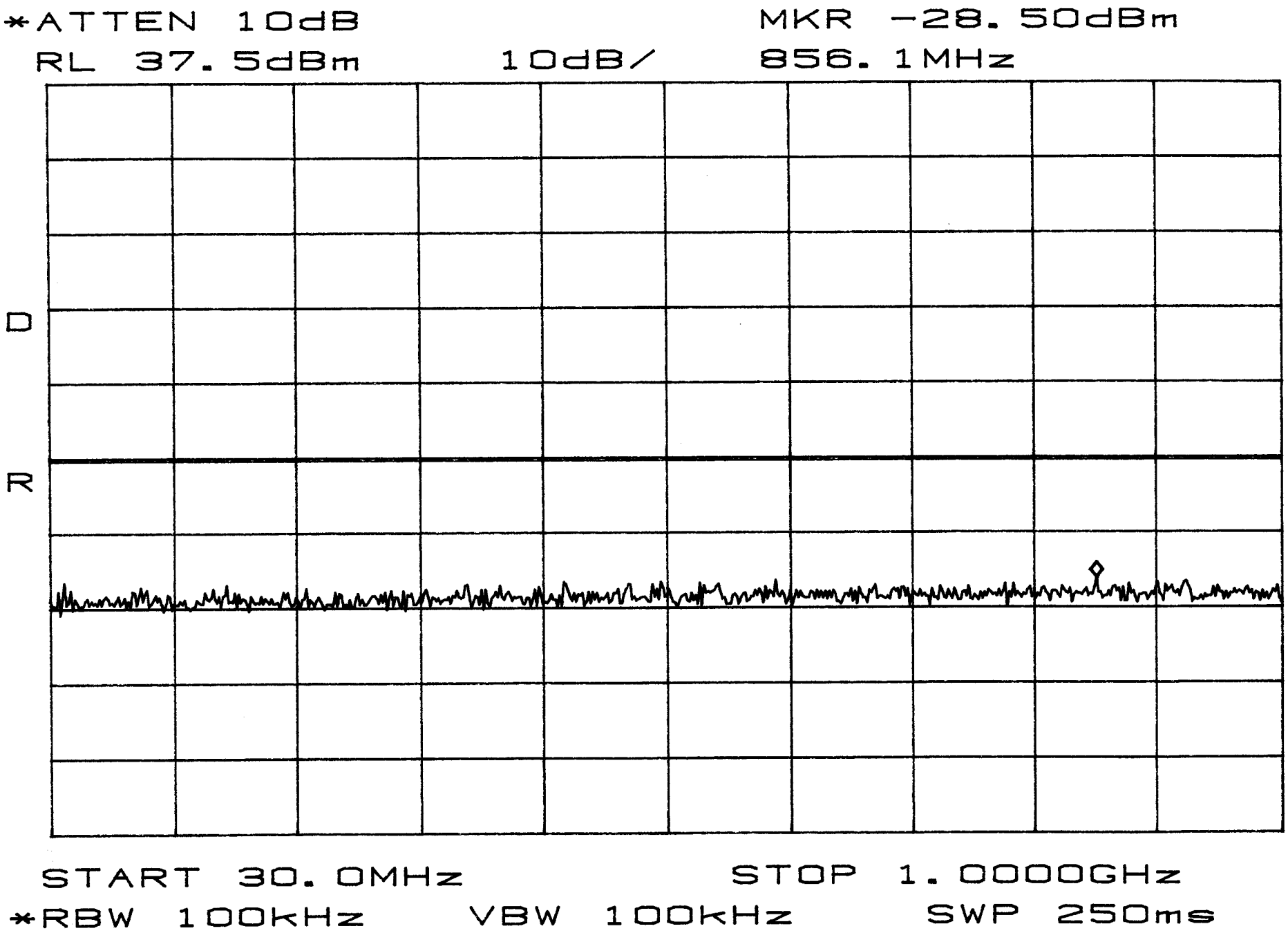

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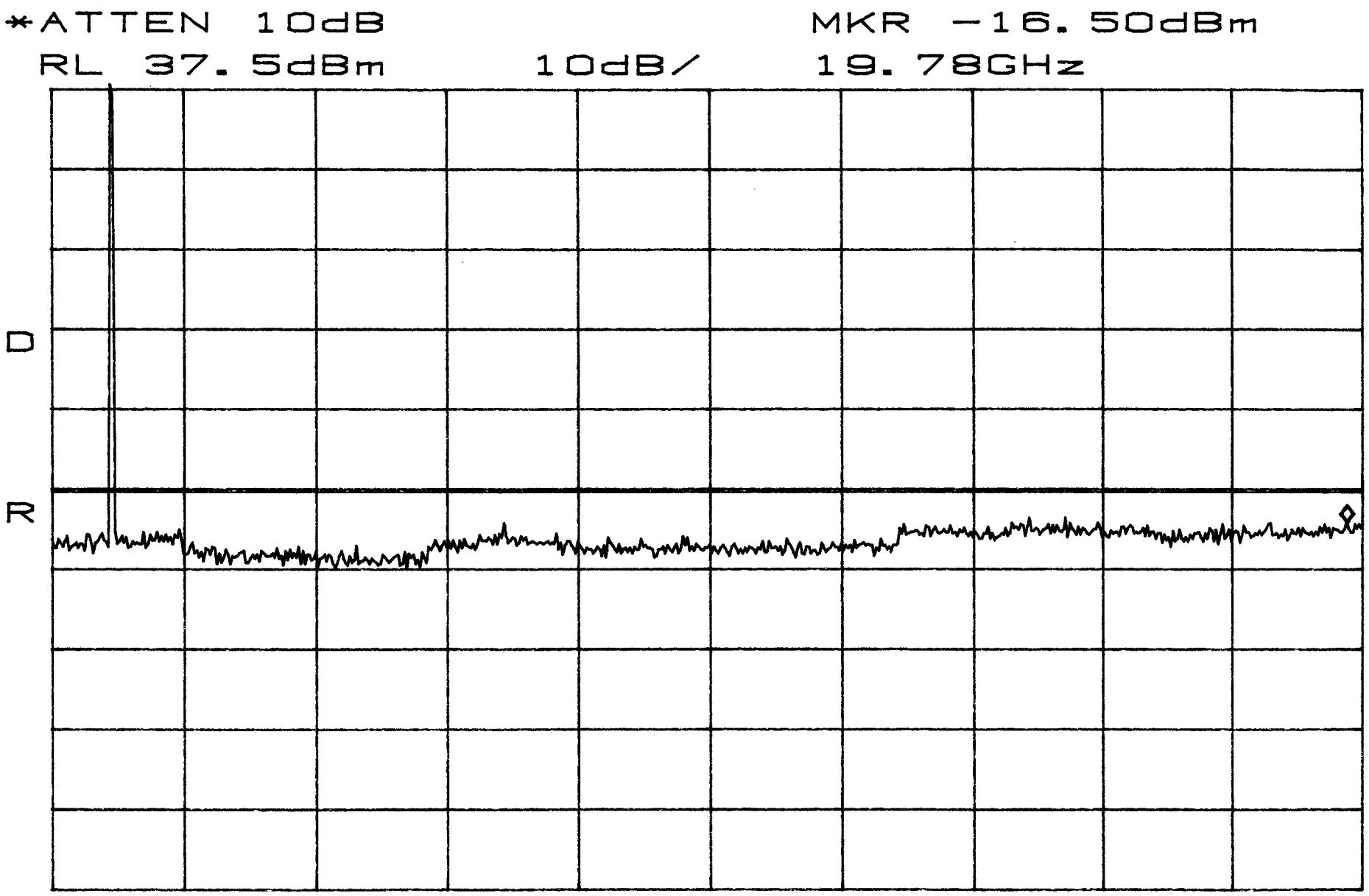

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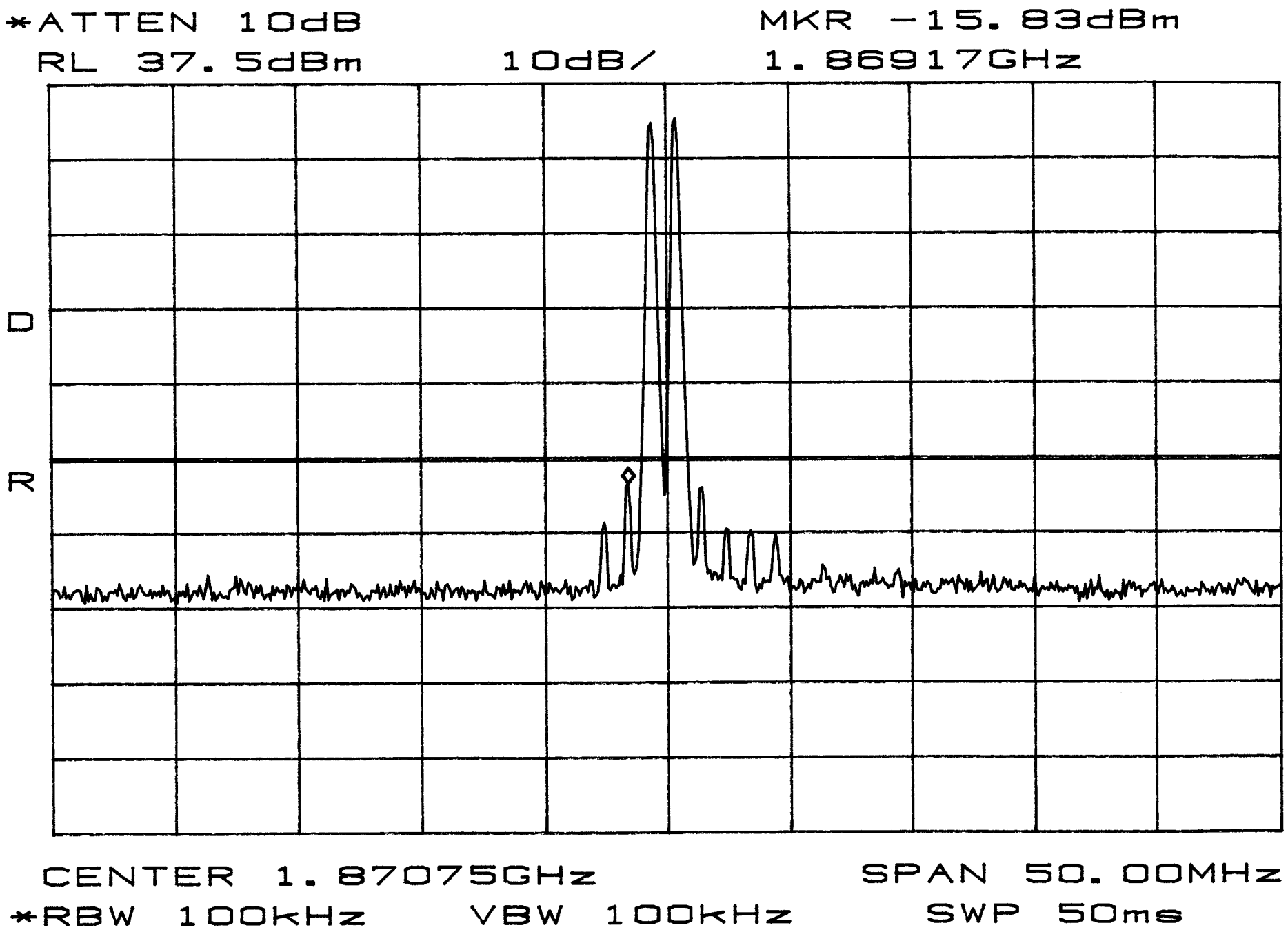

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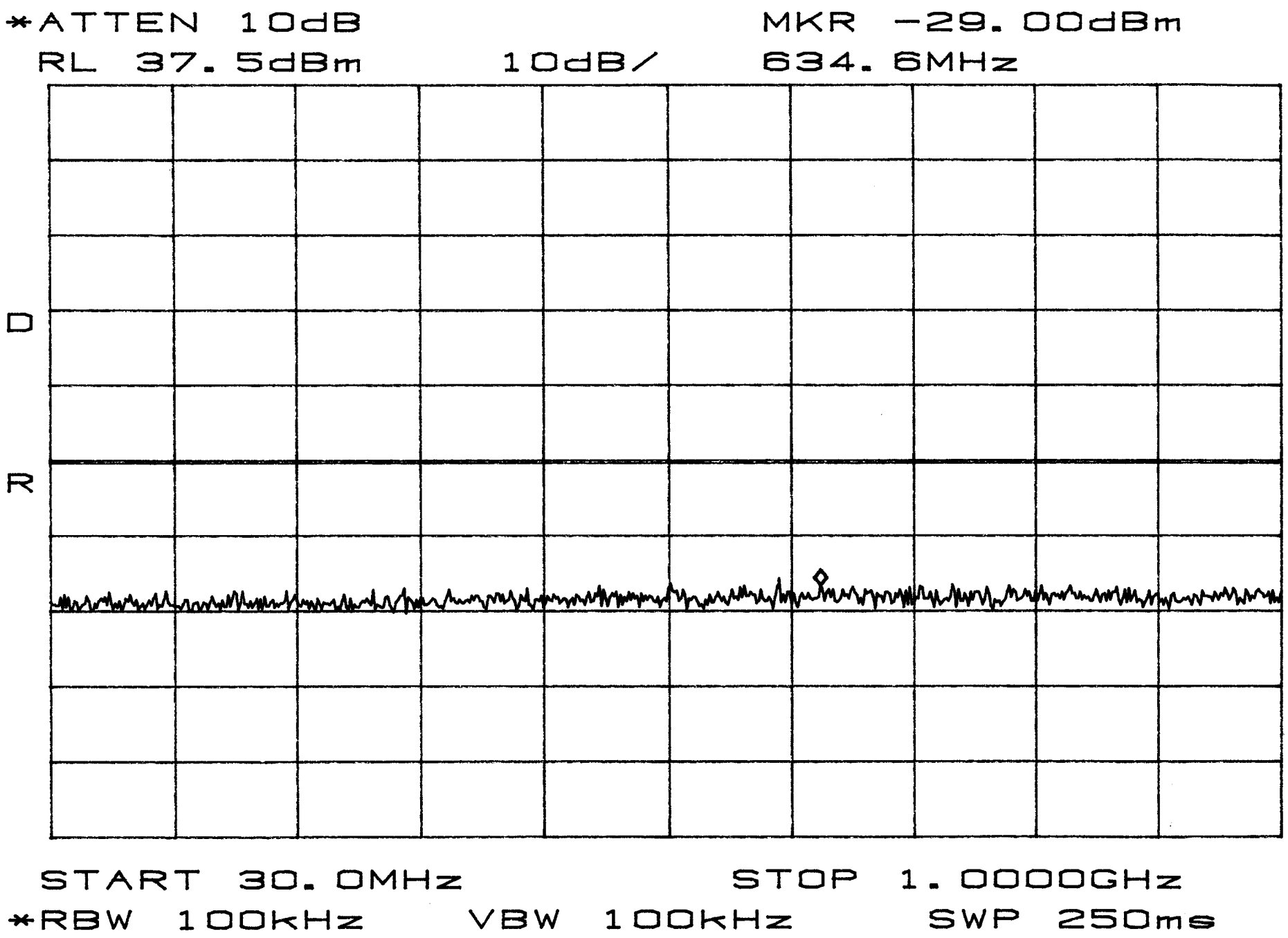

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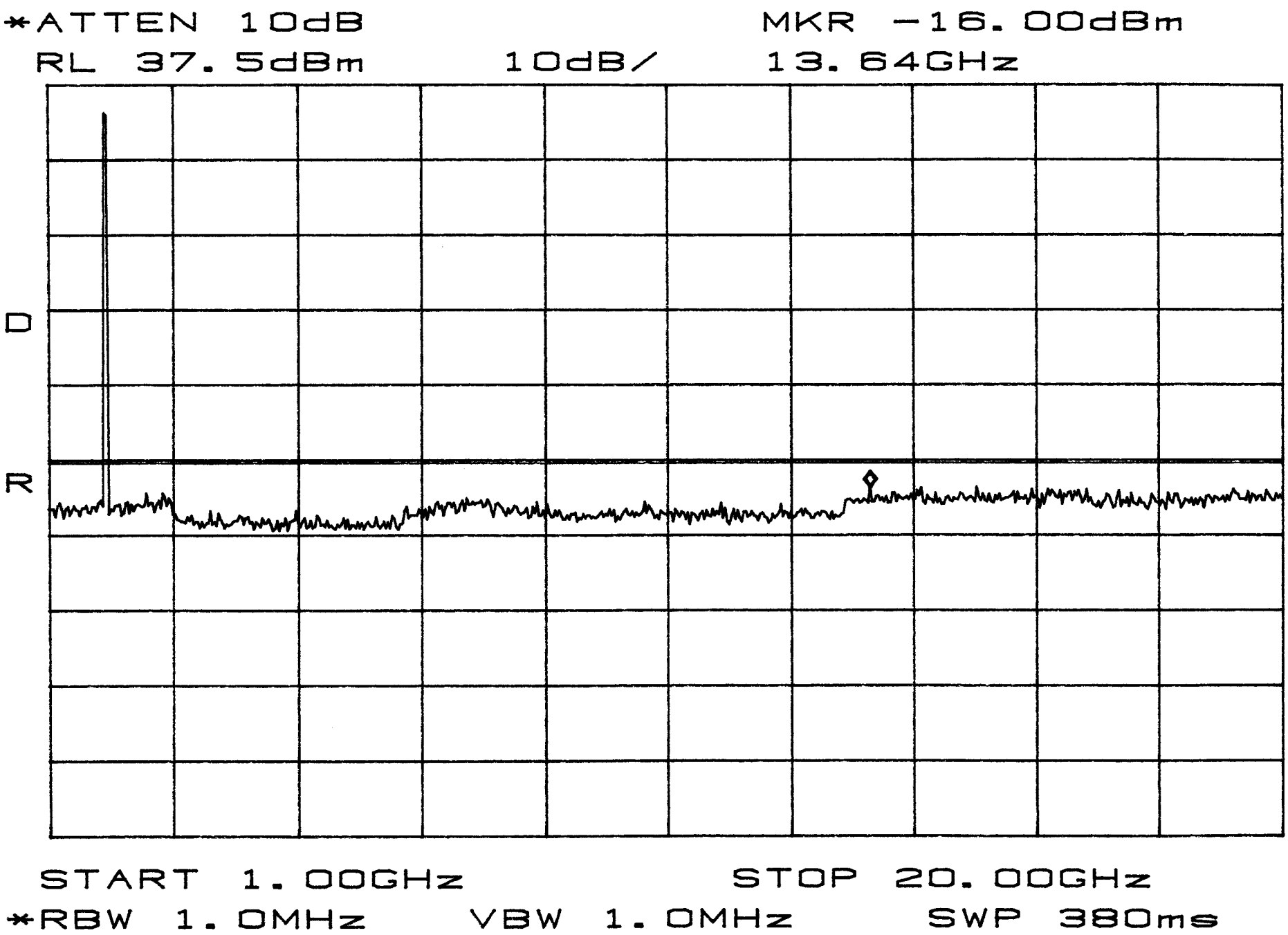

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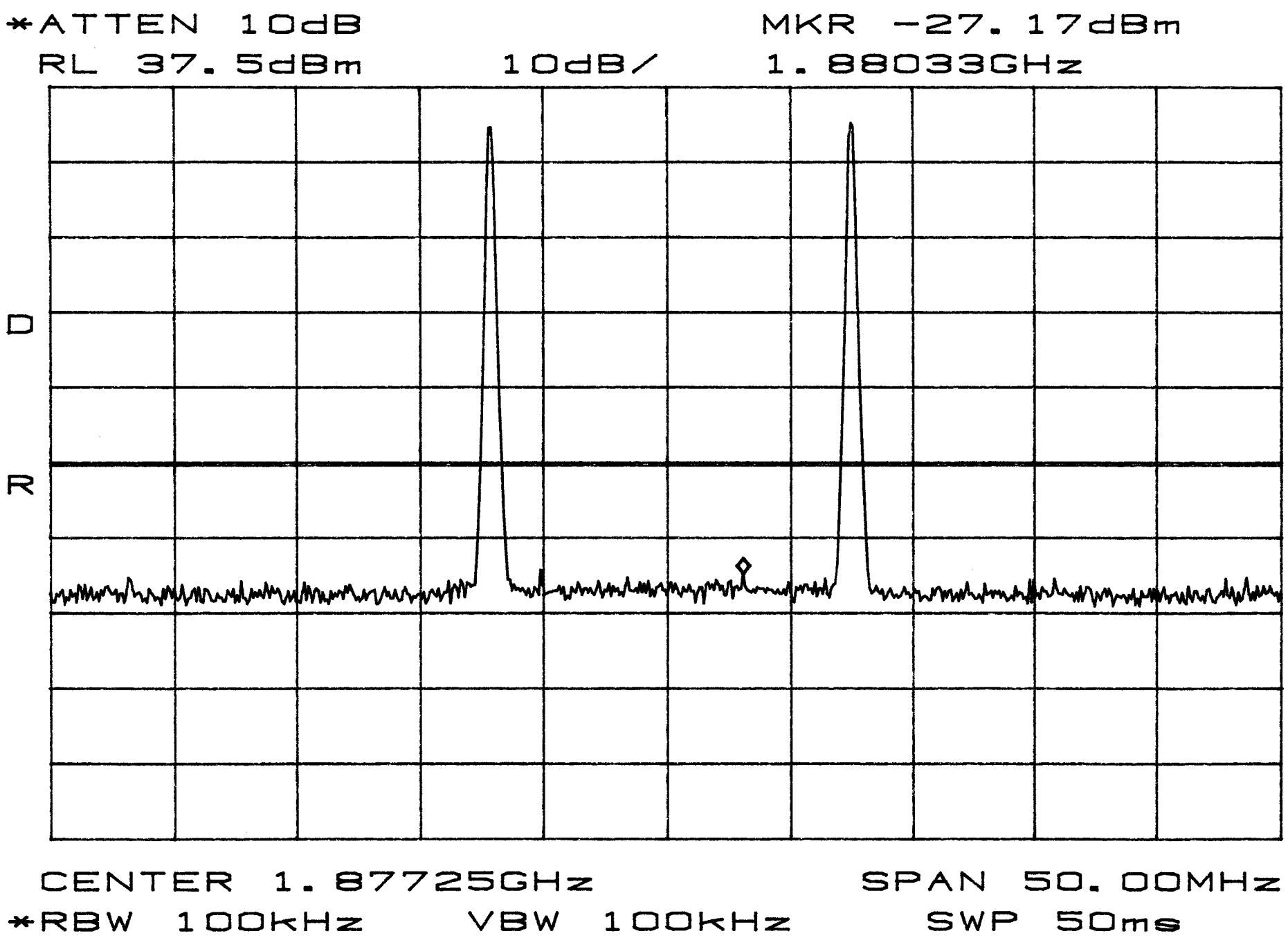

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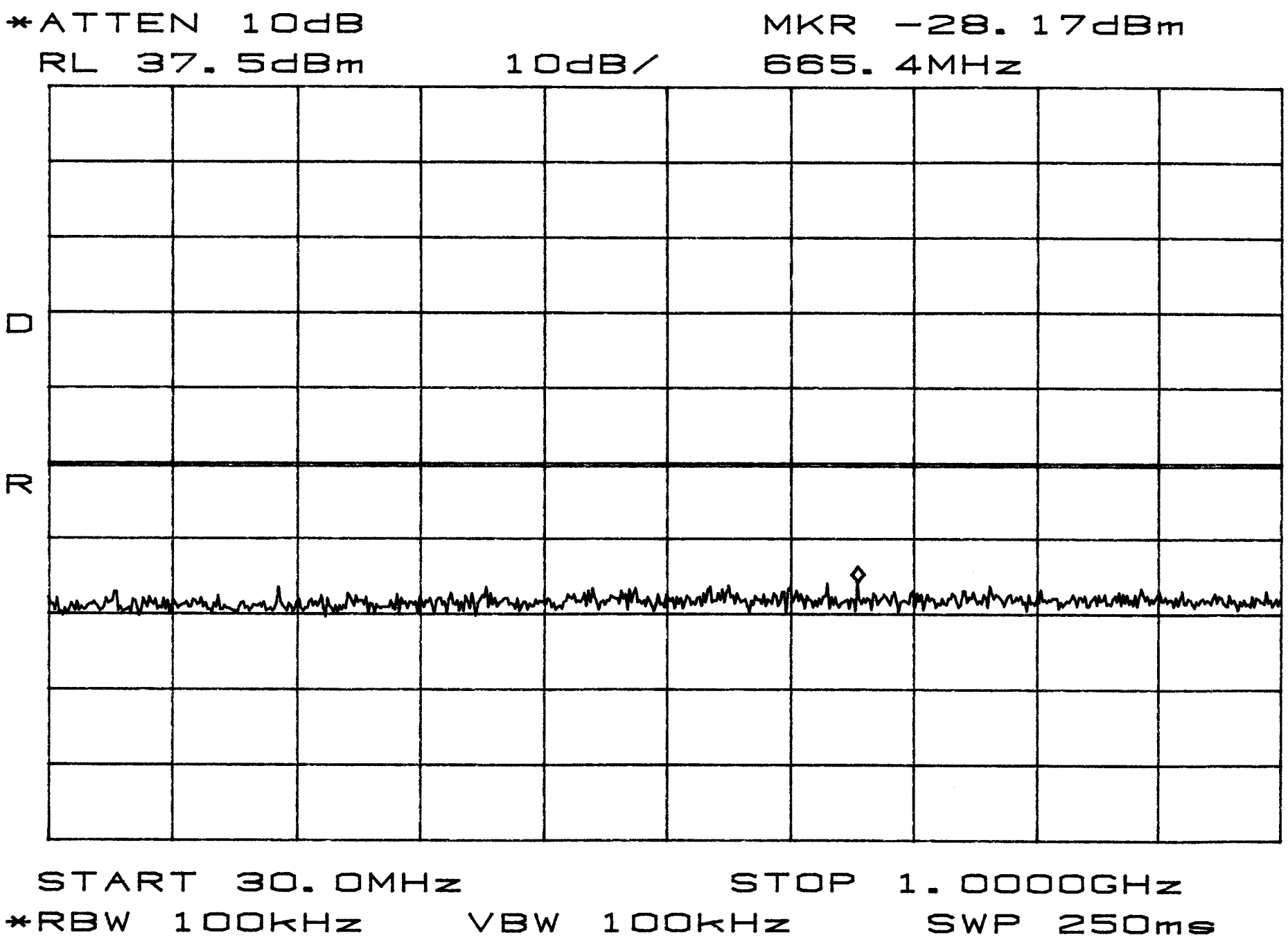

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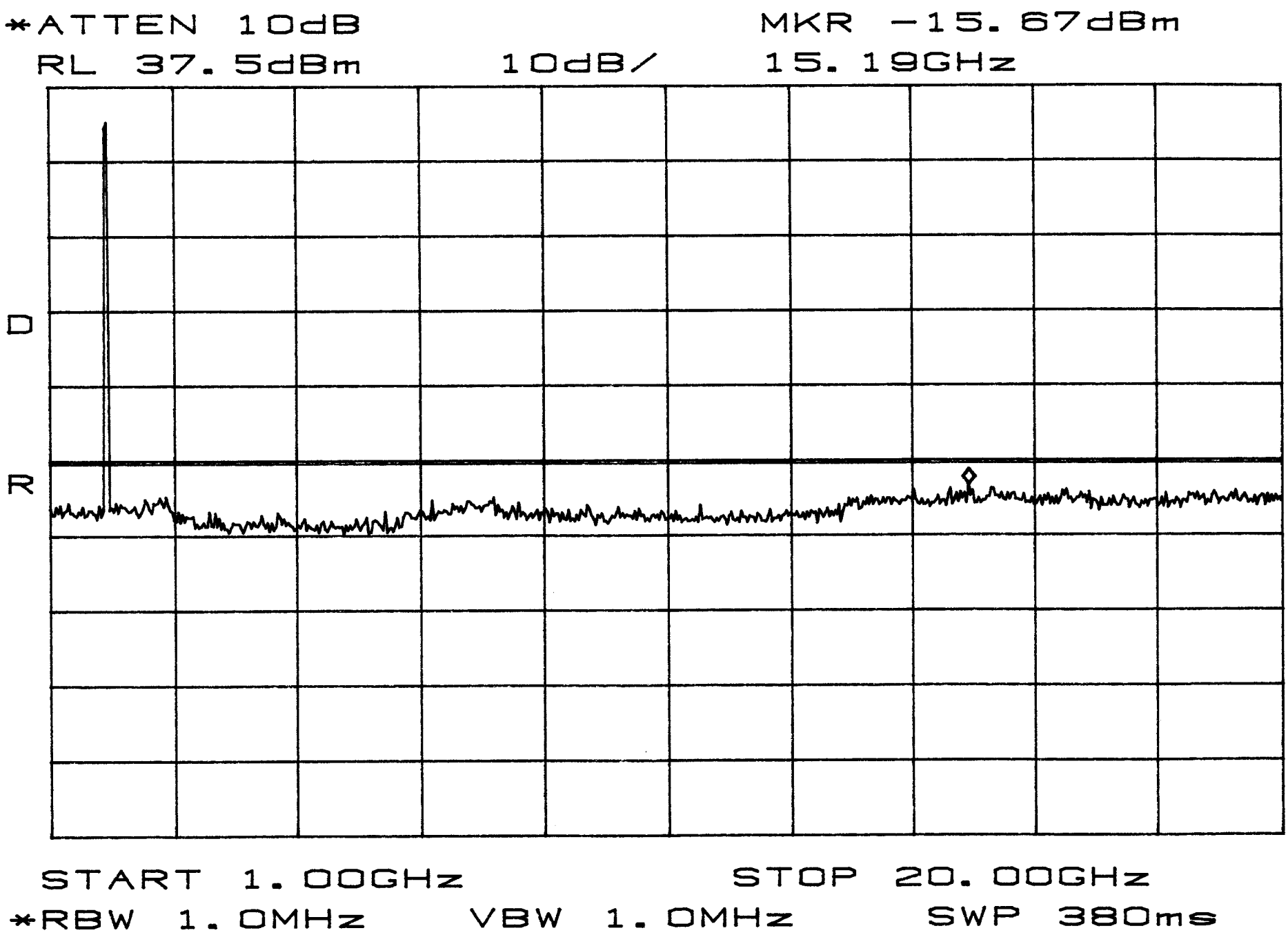

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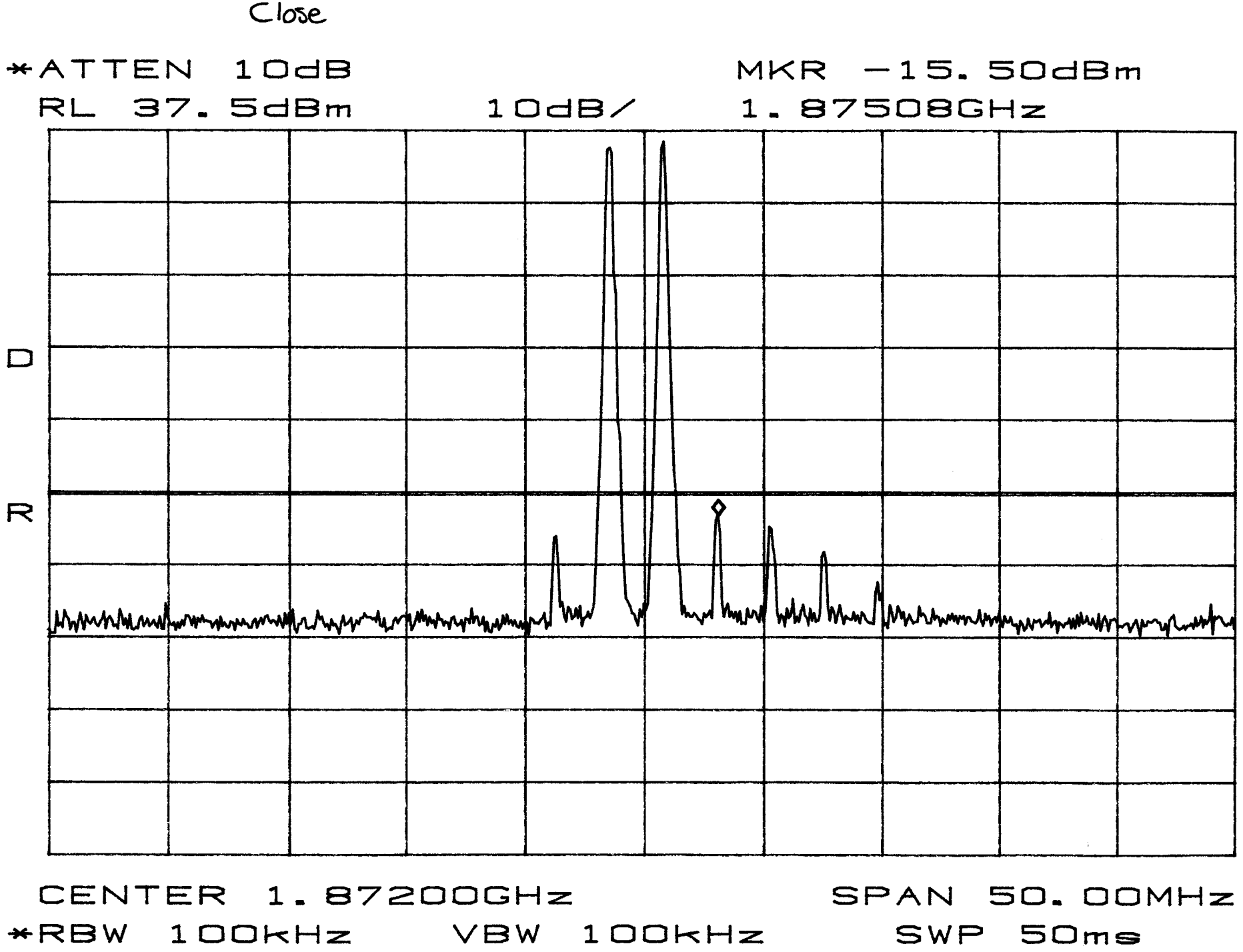

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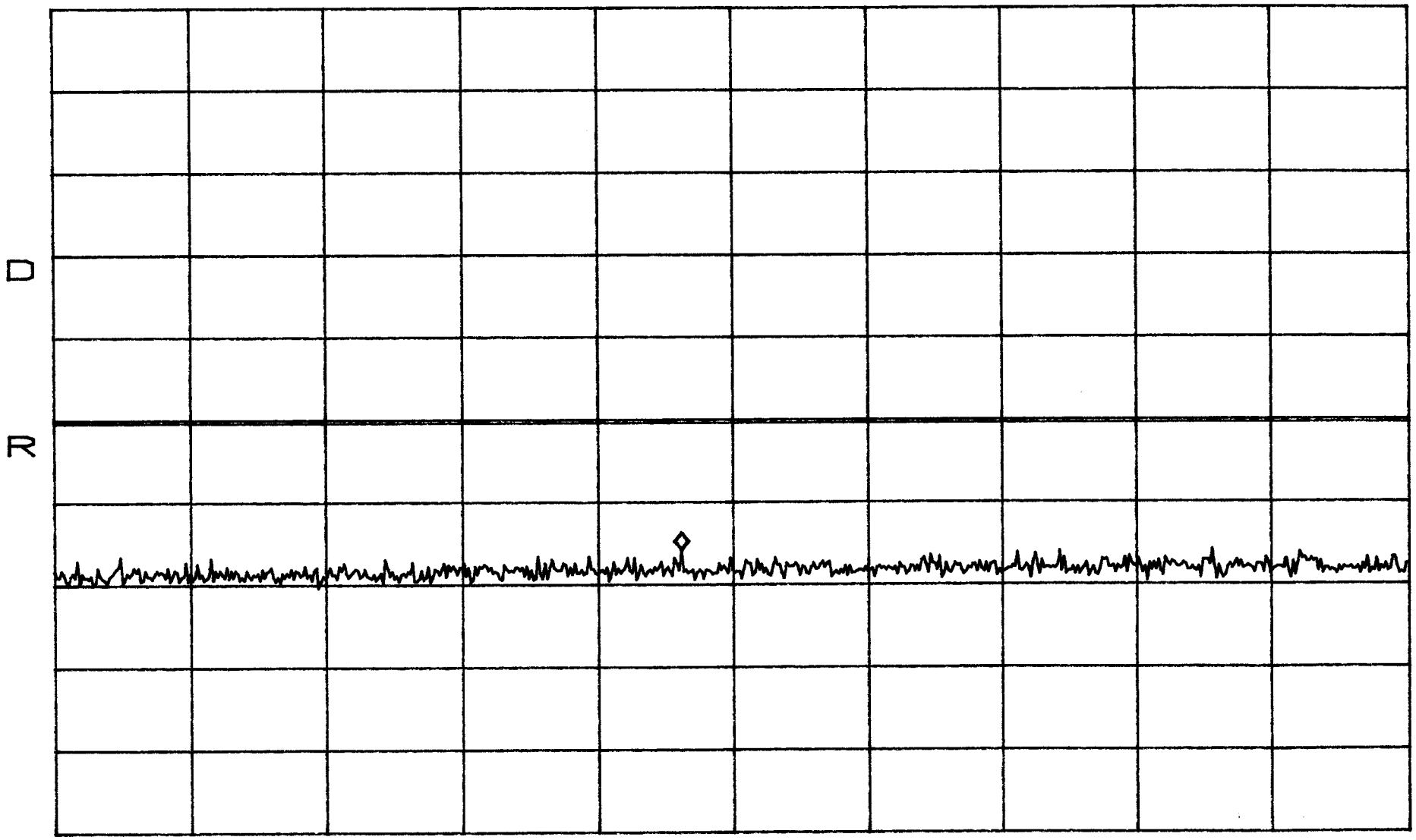

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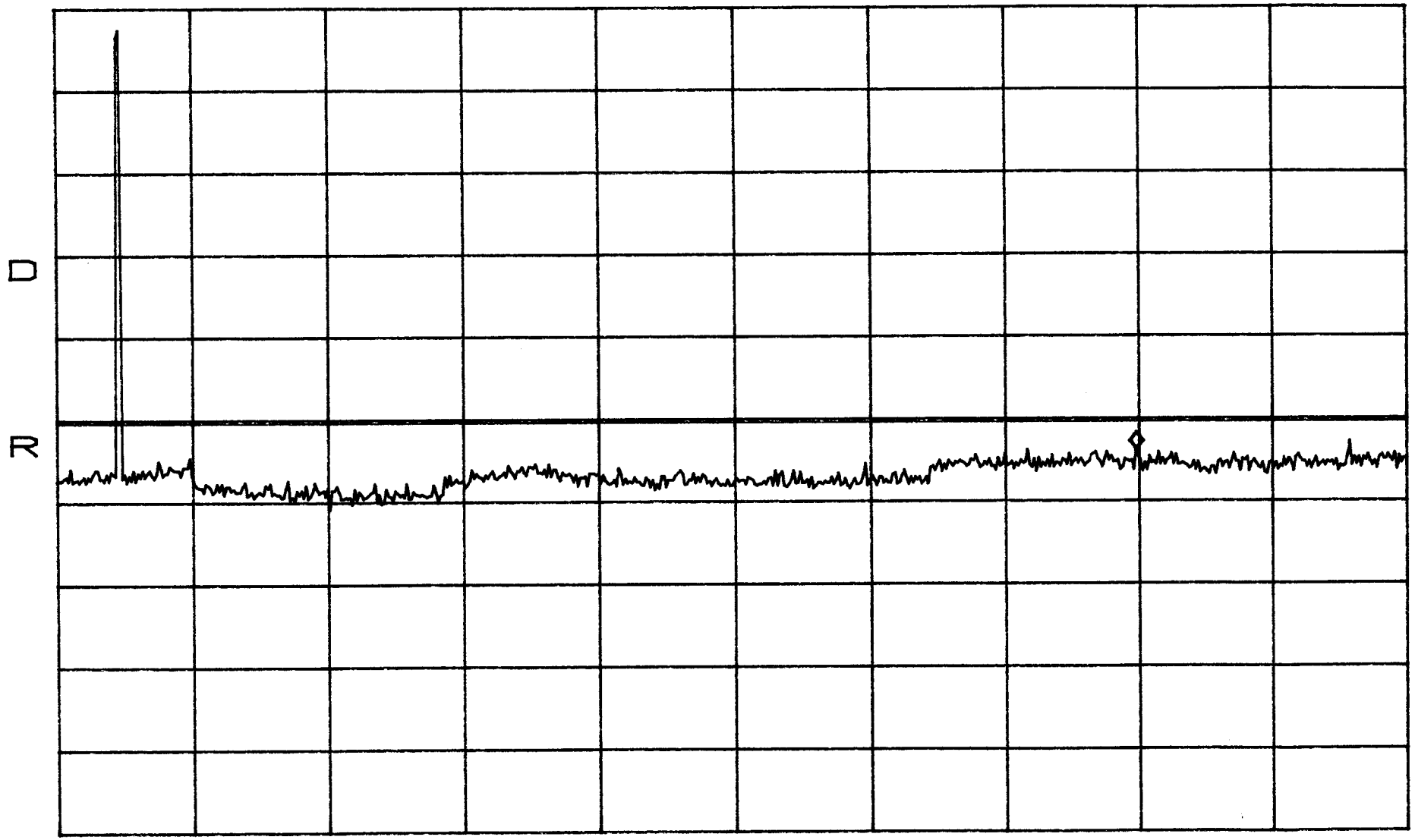

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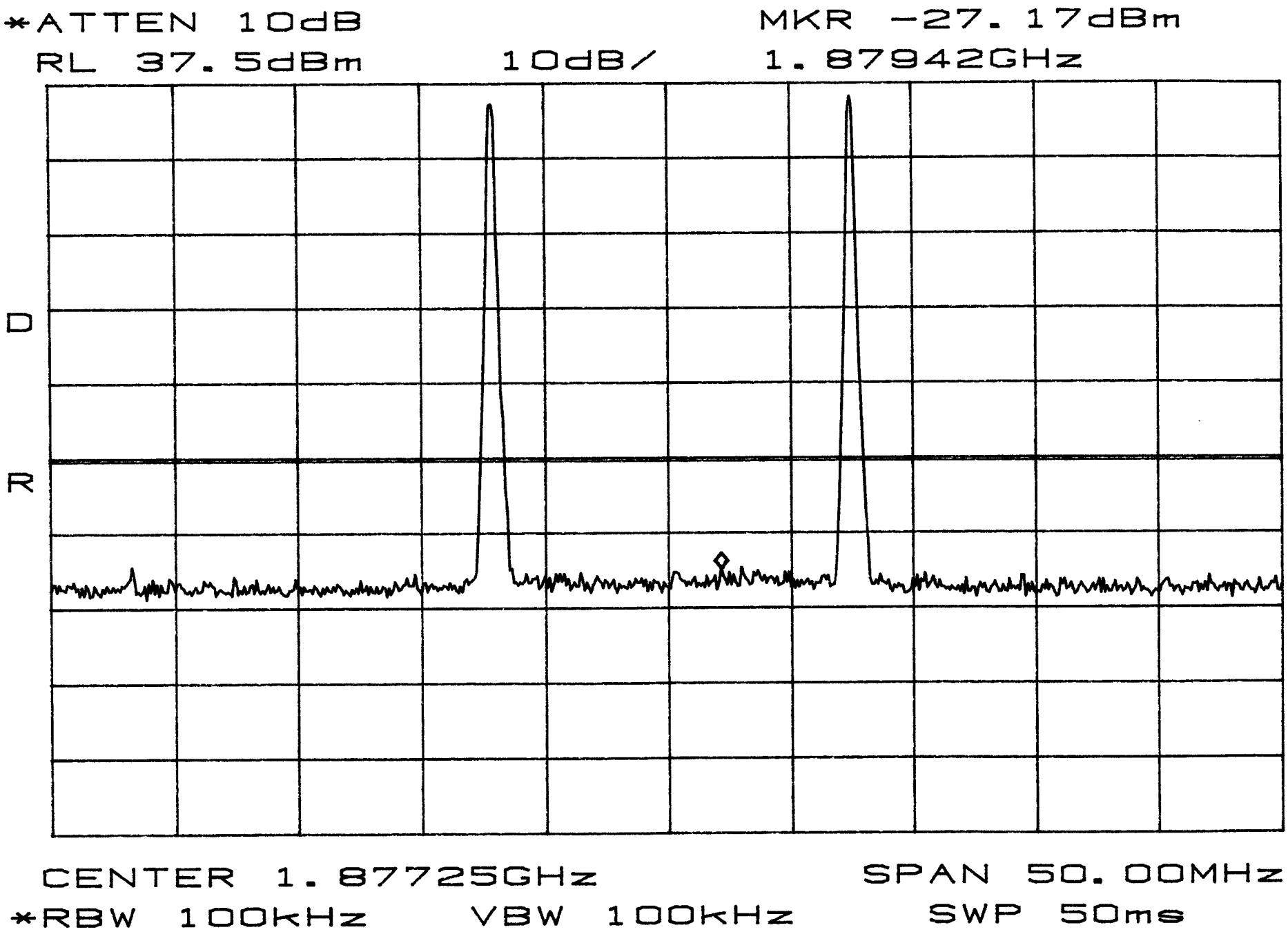

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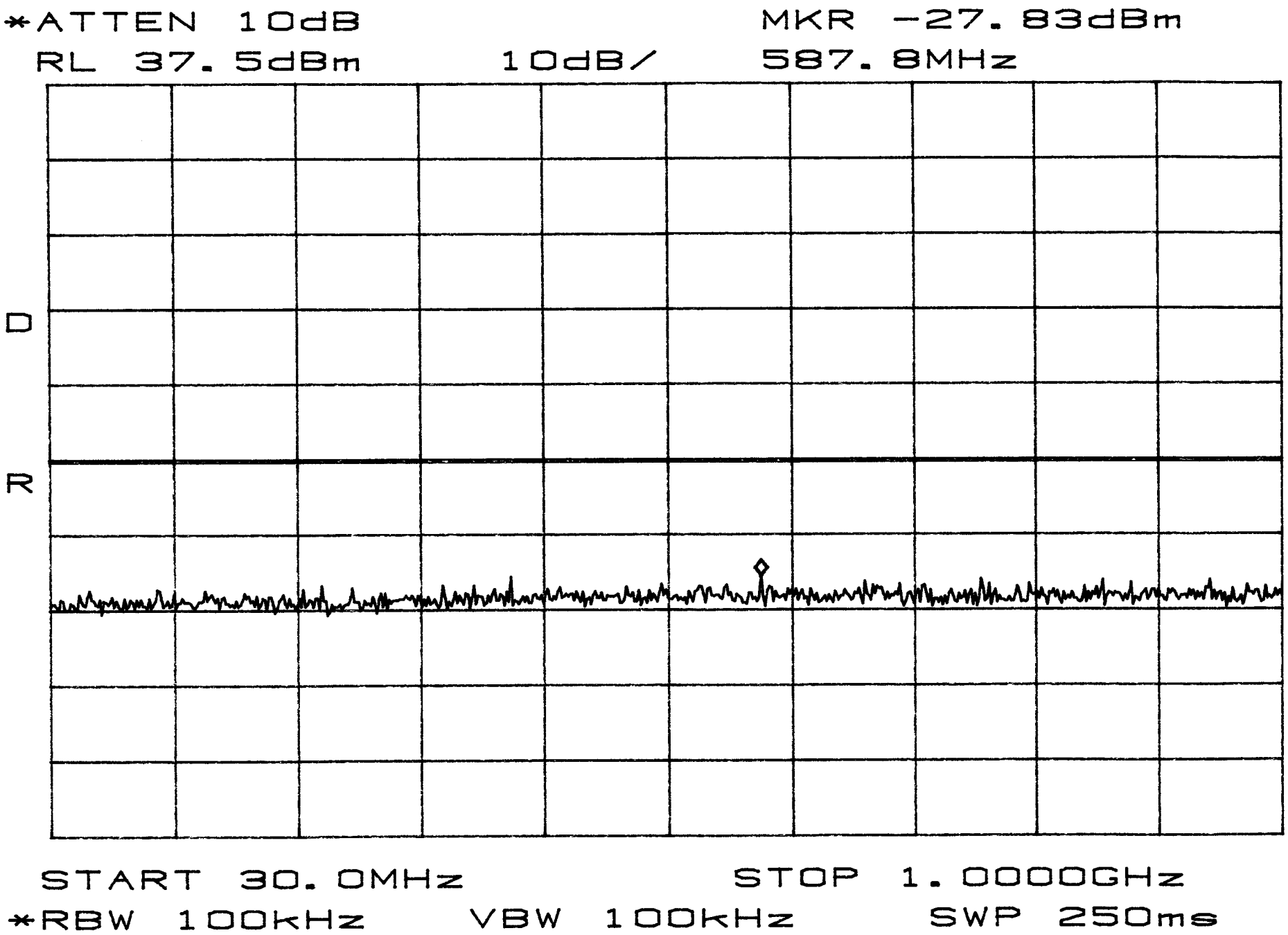

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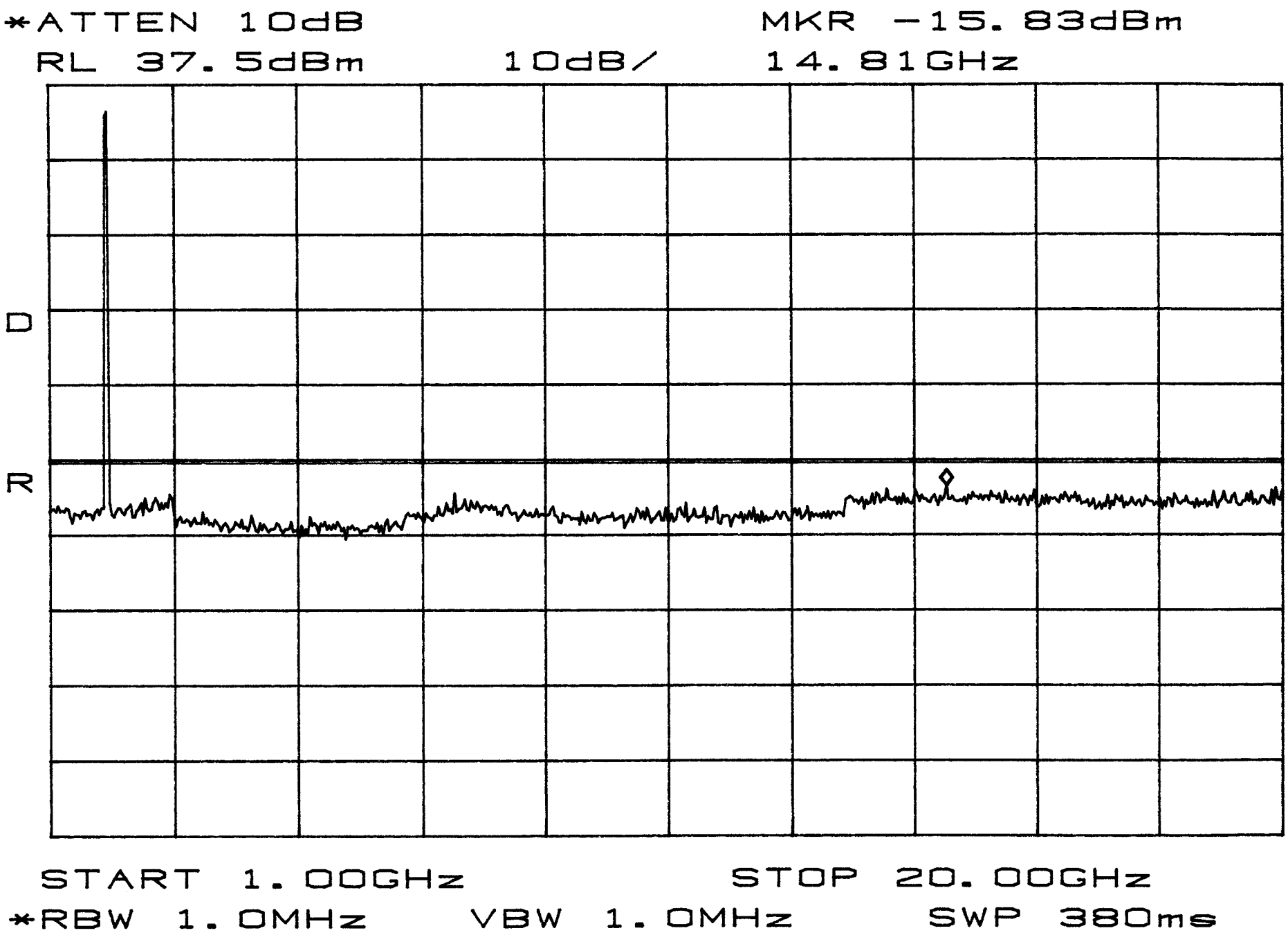
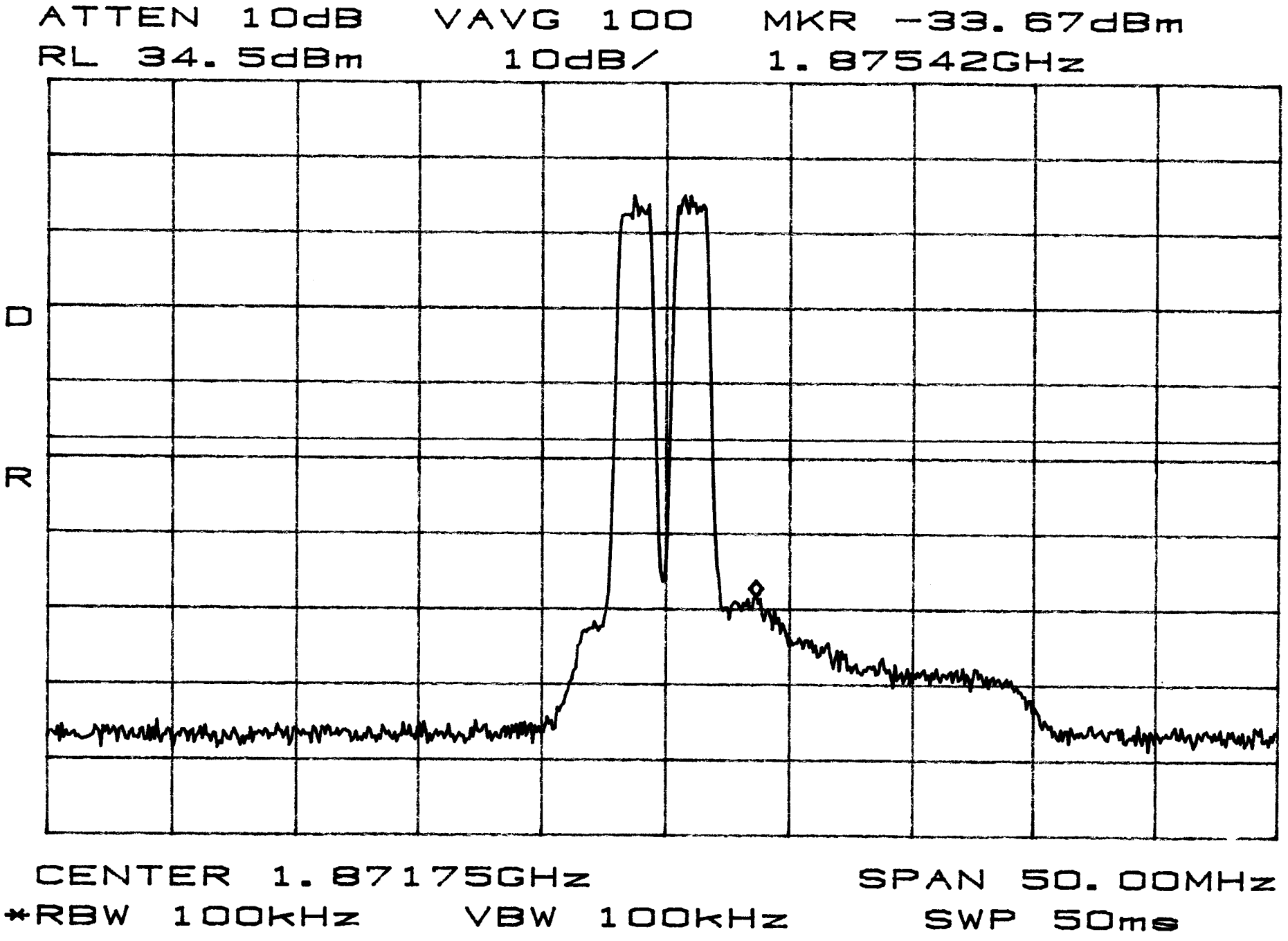


LMD
Close

BAND B

CDMA



IMD
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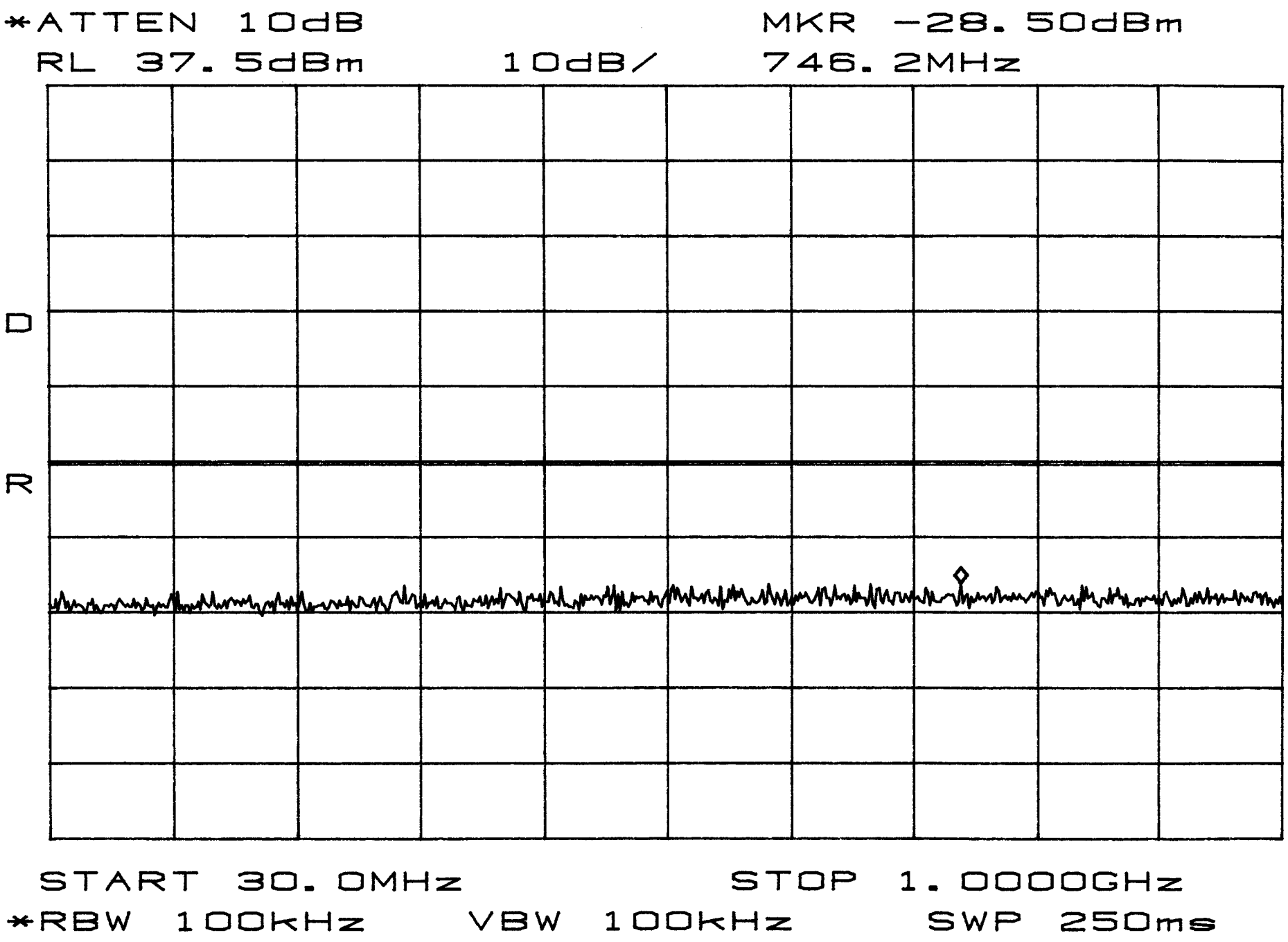

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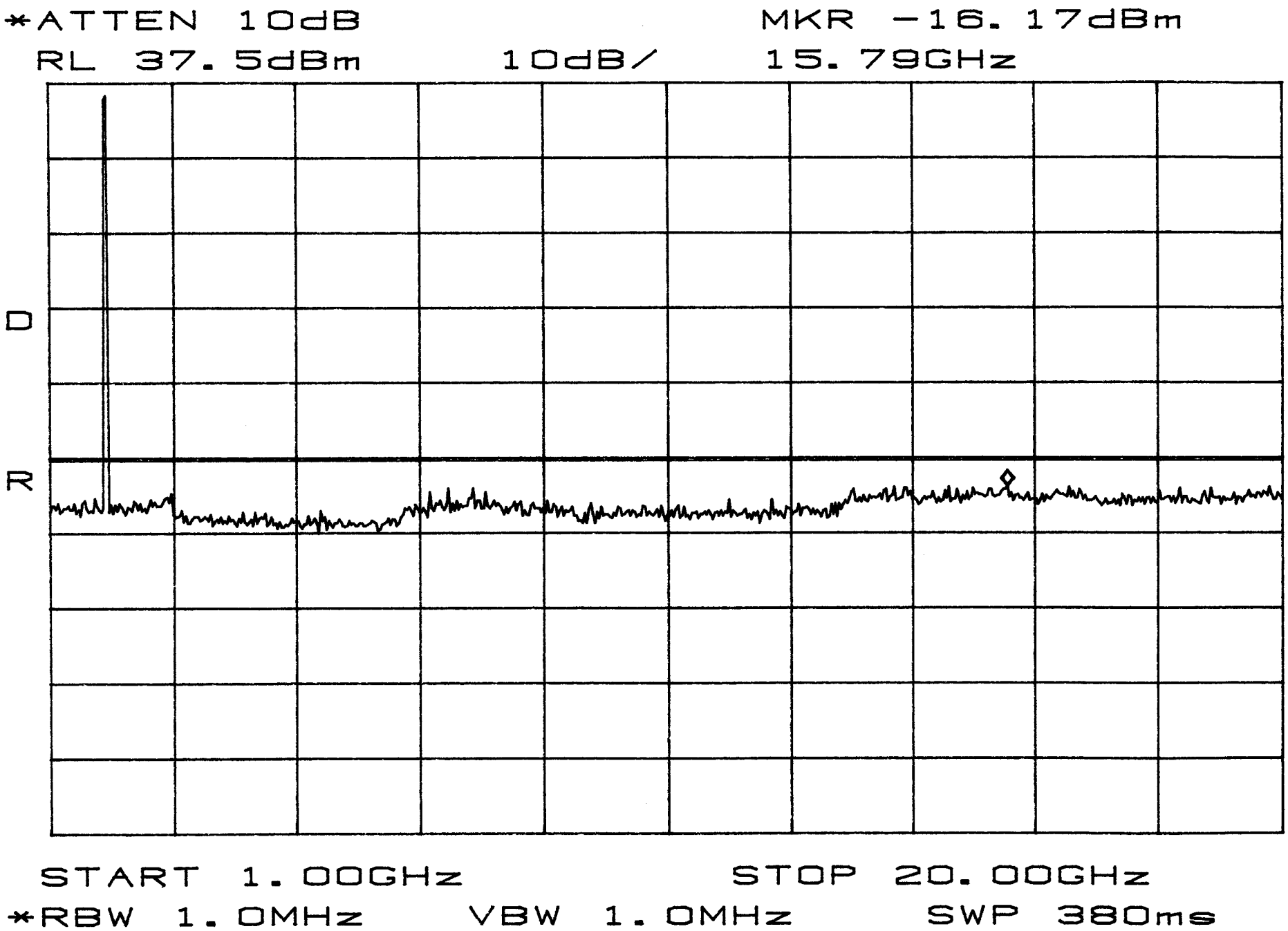

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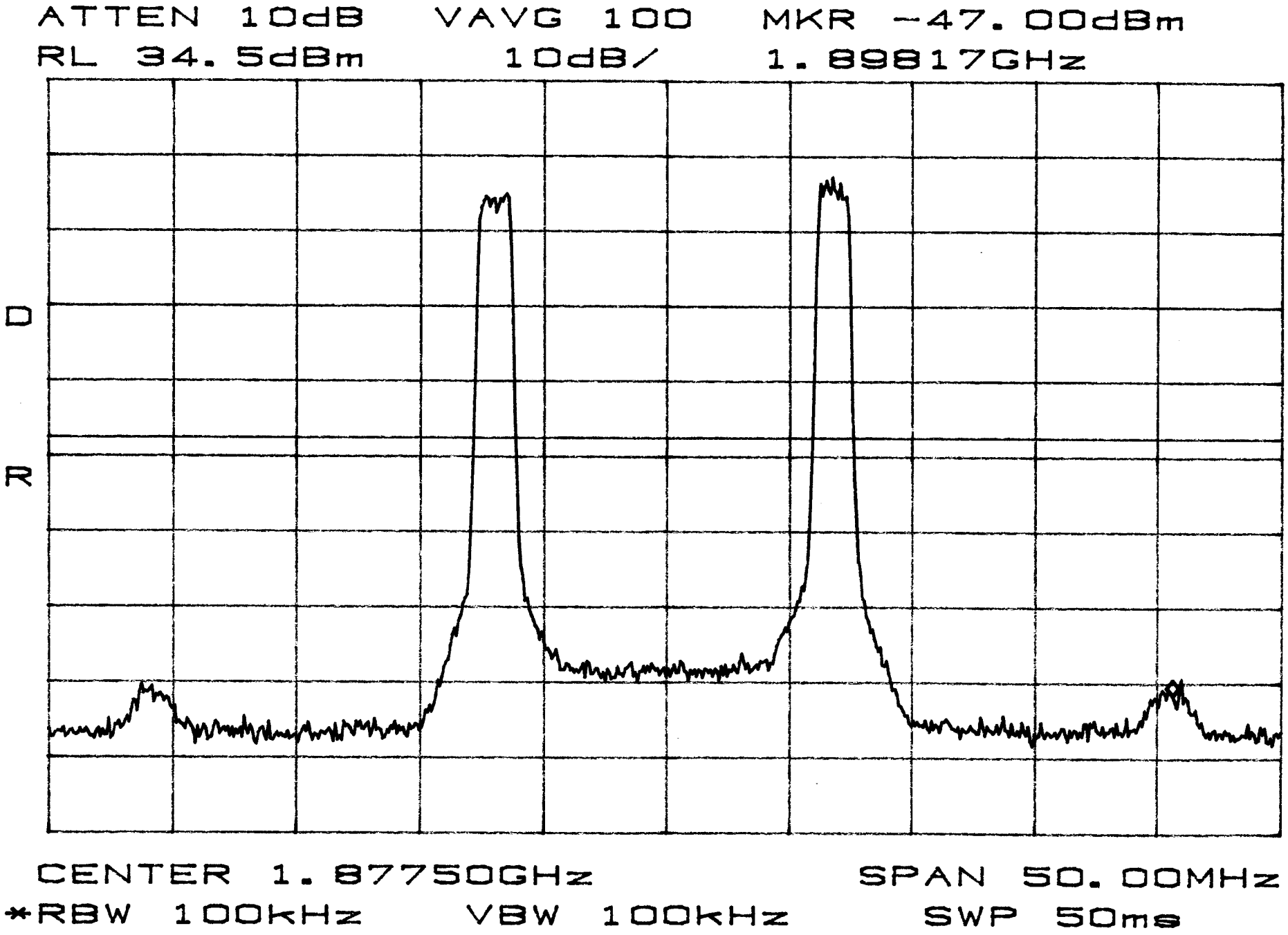

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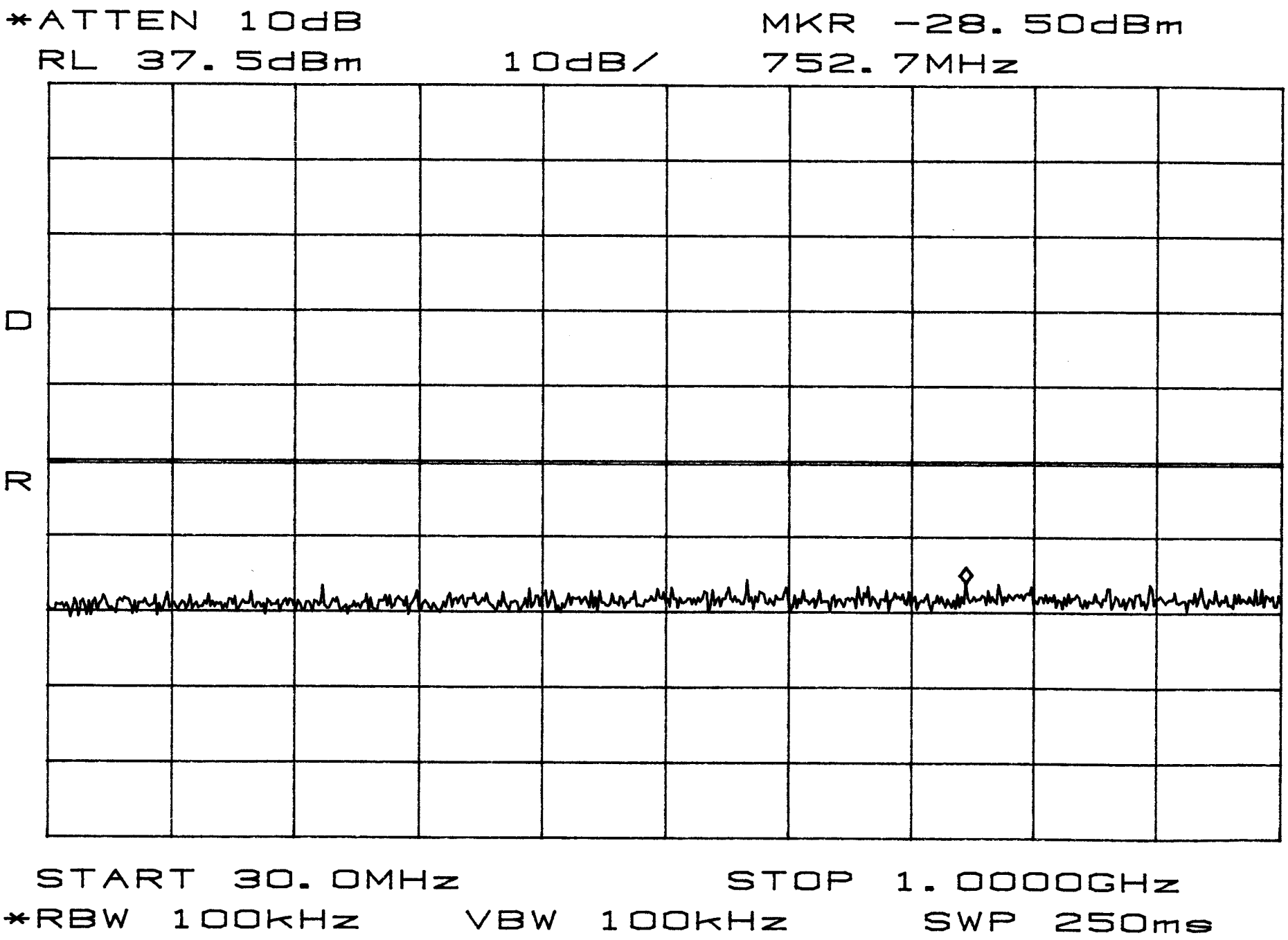

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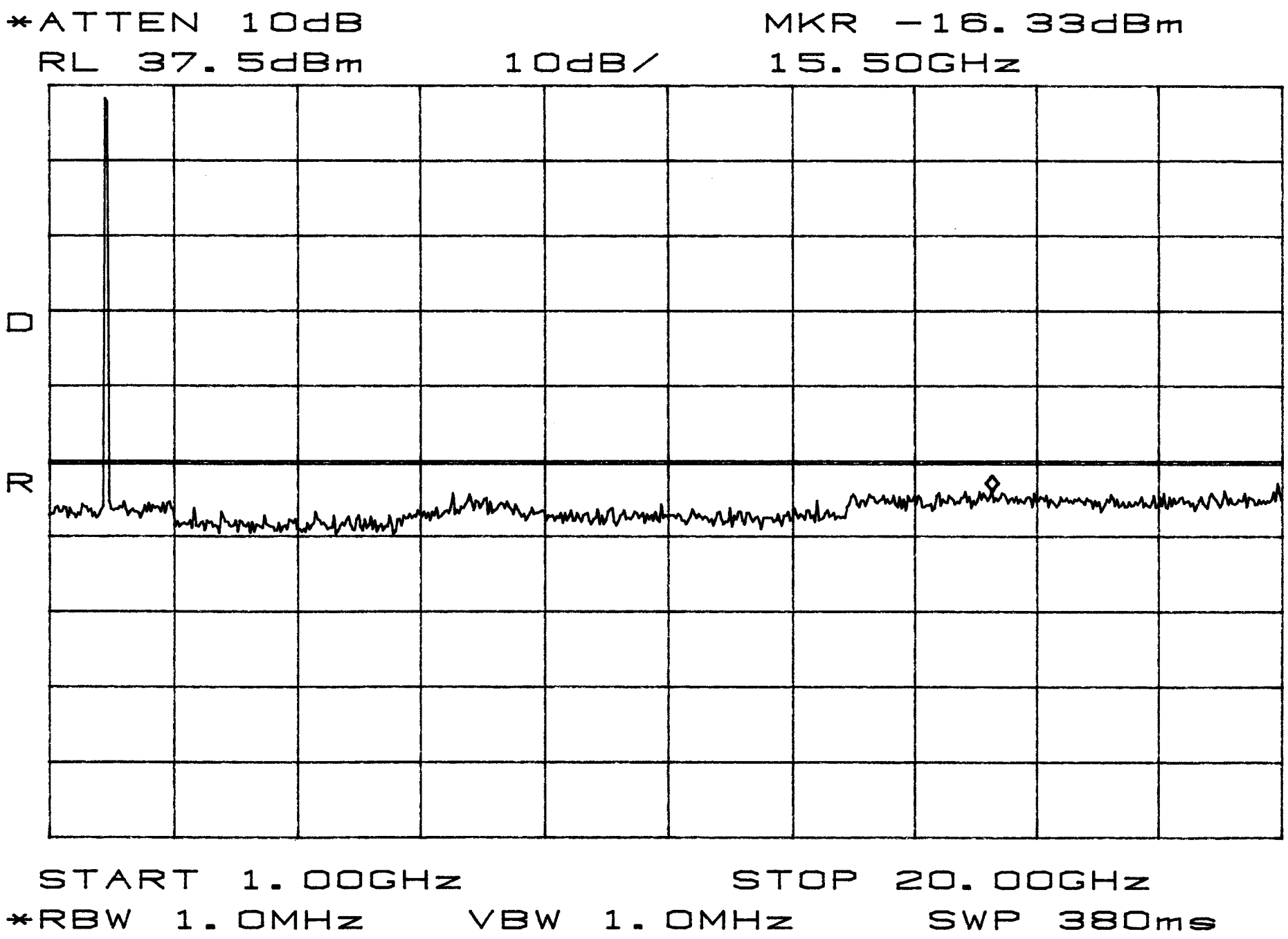

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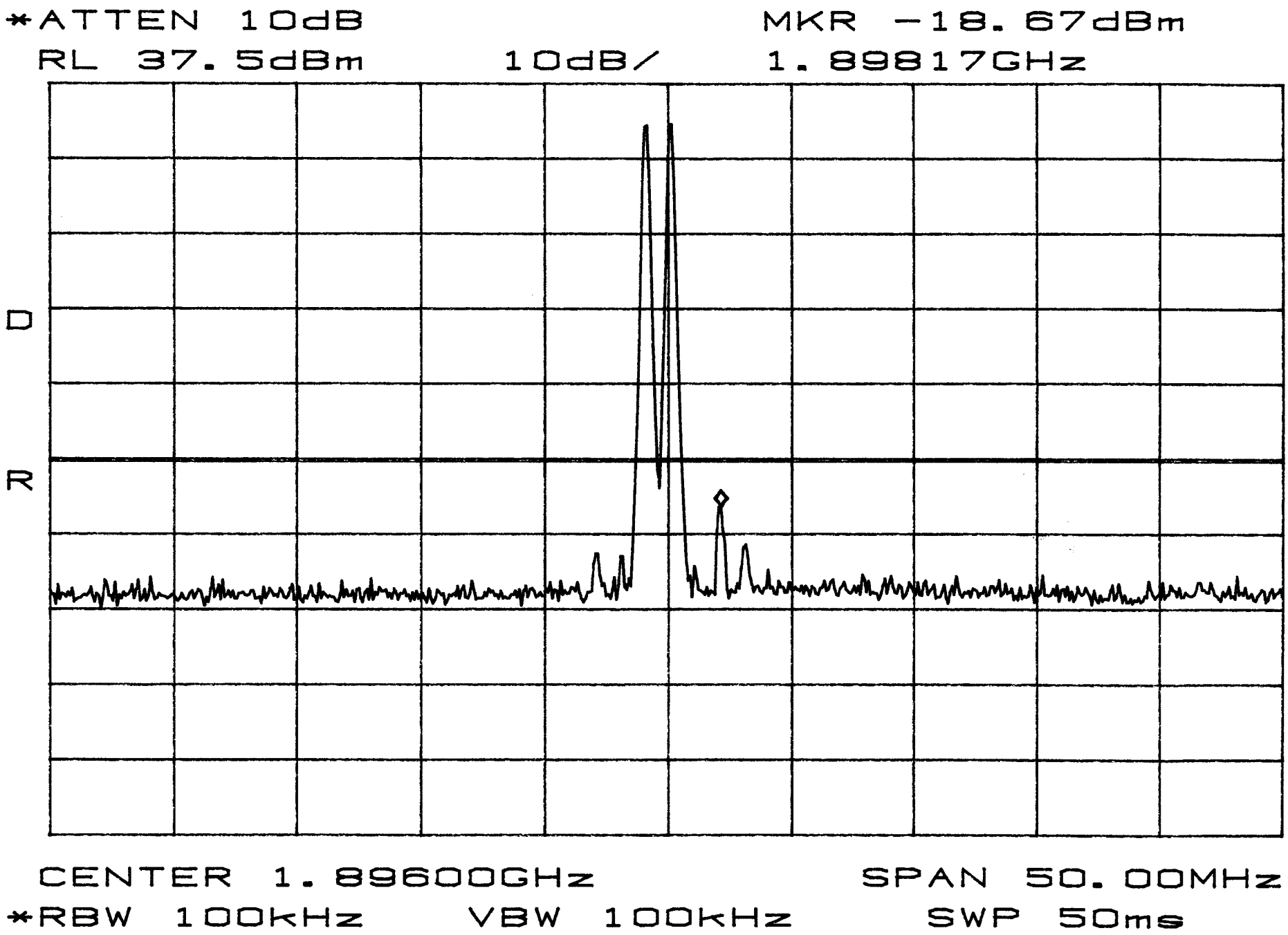

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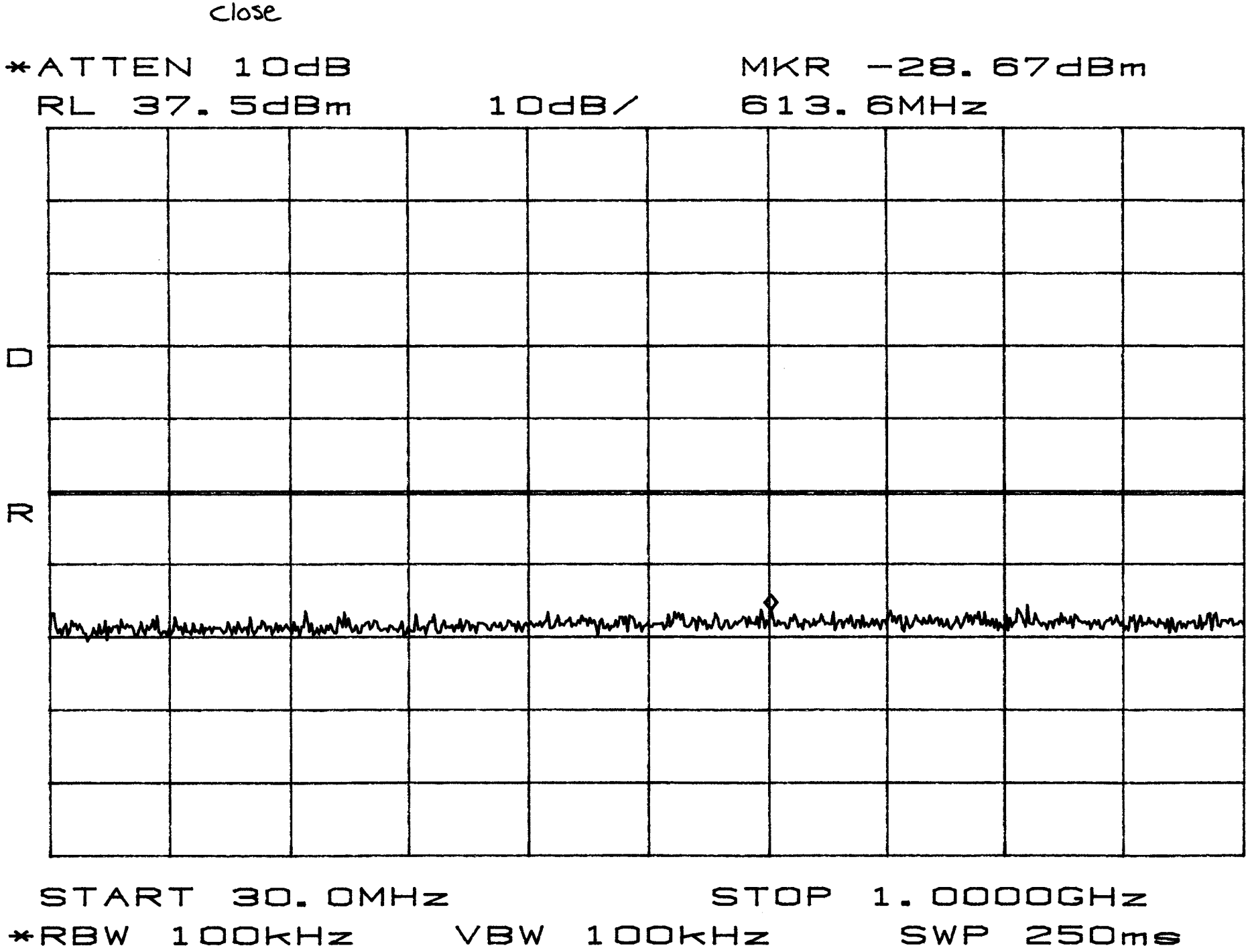

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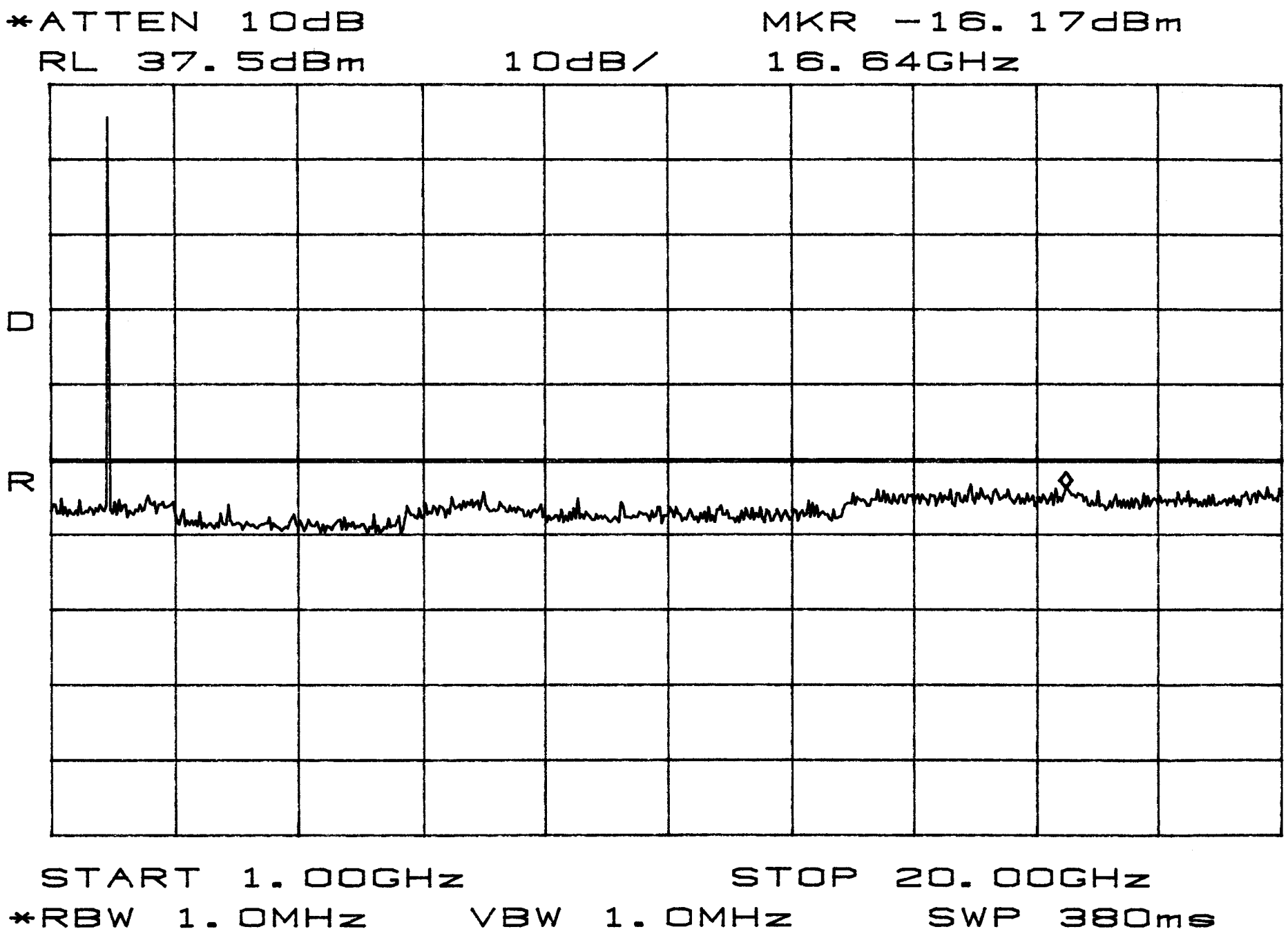

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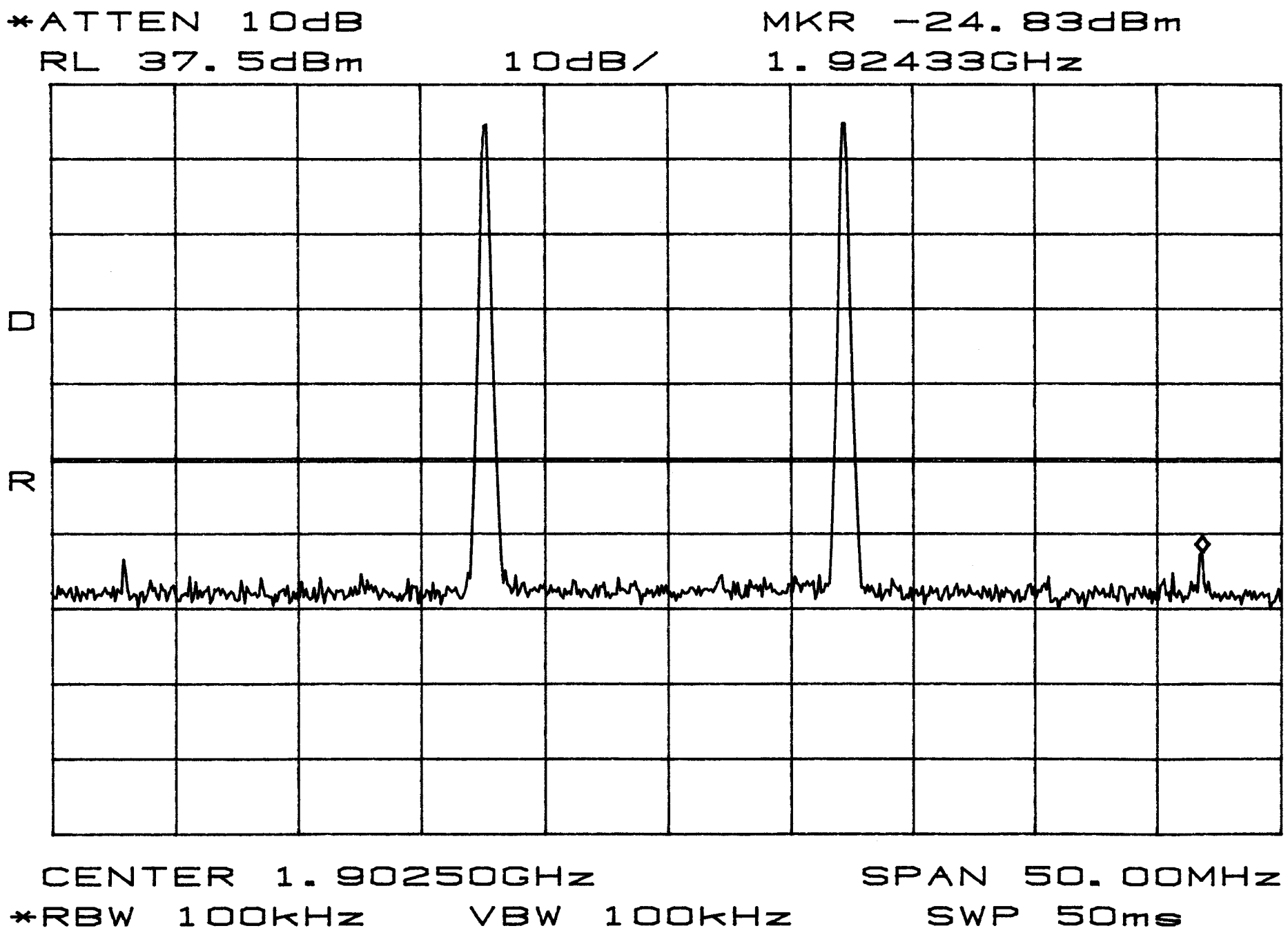

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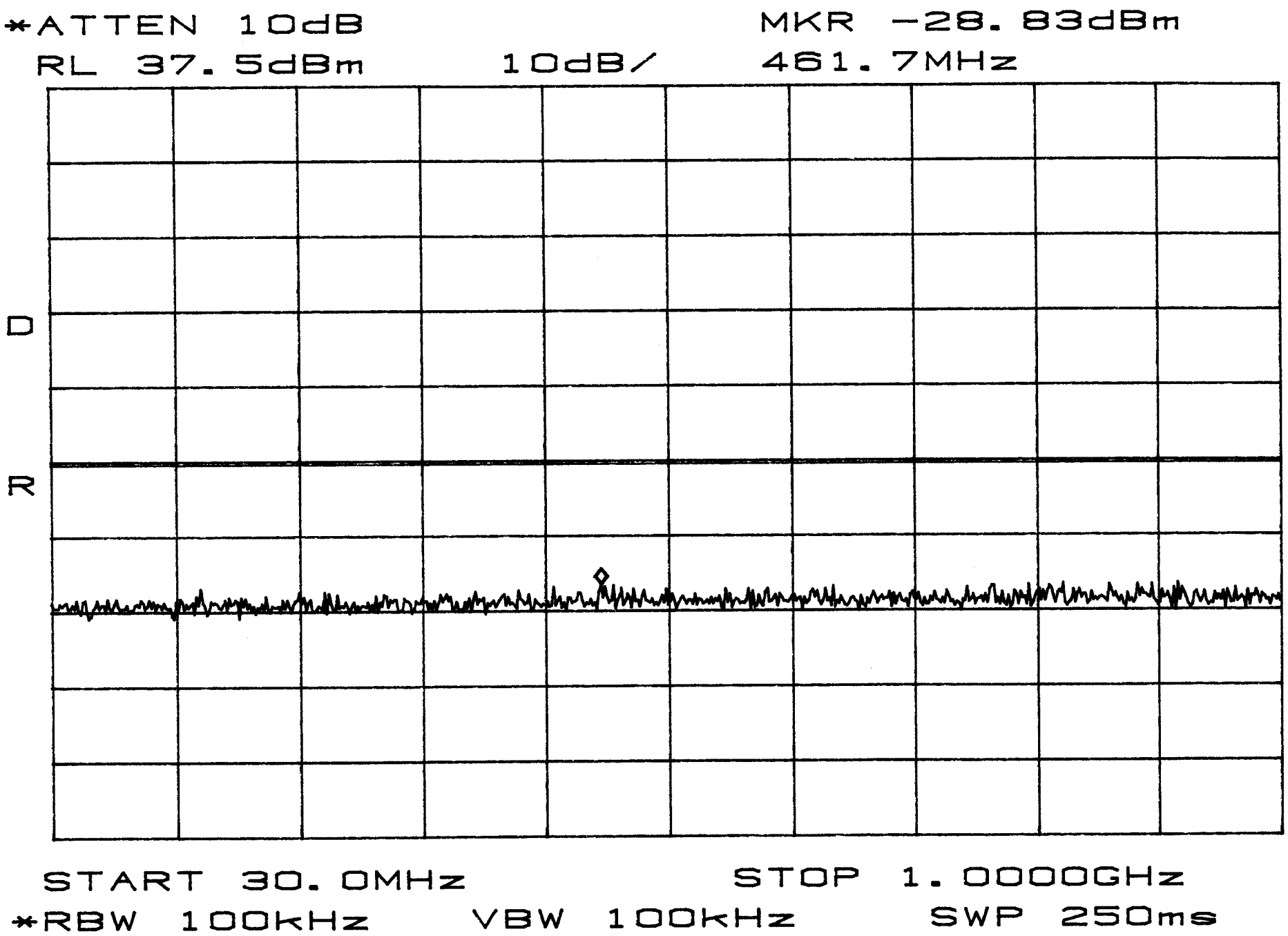

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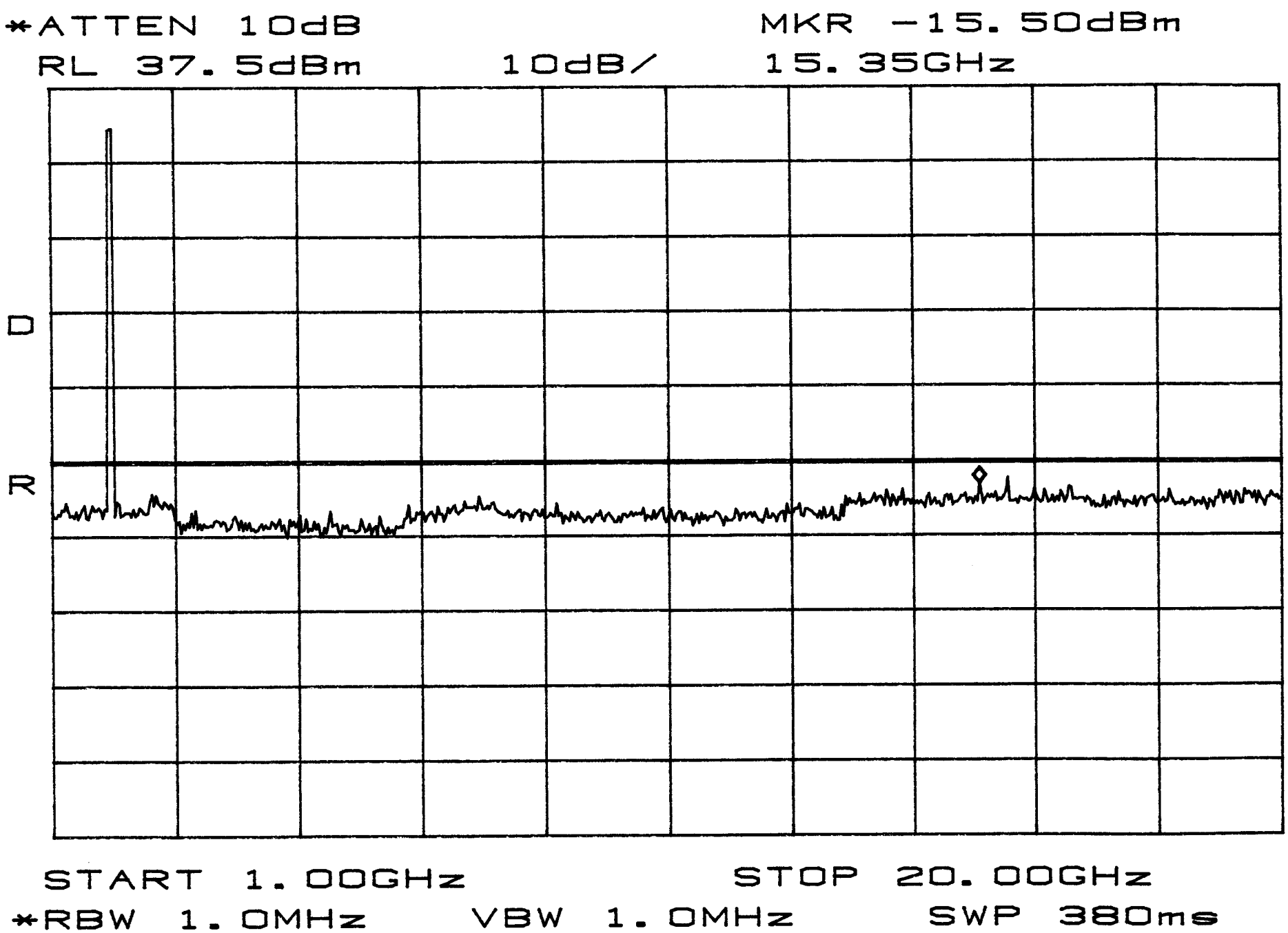

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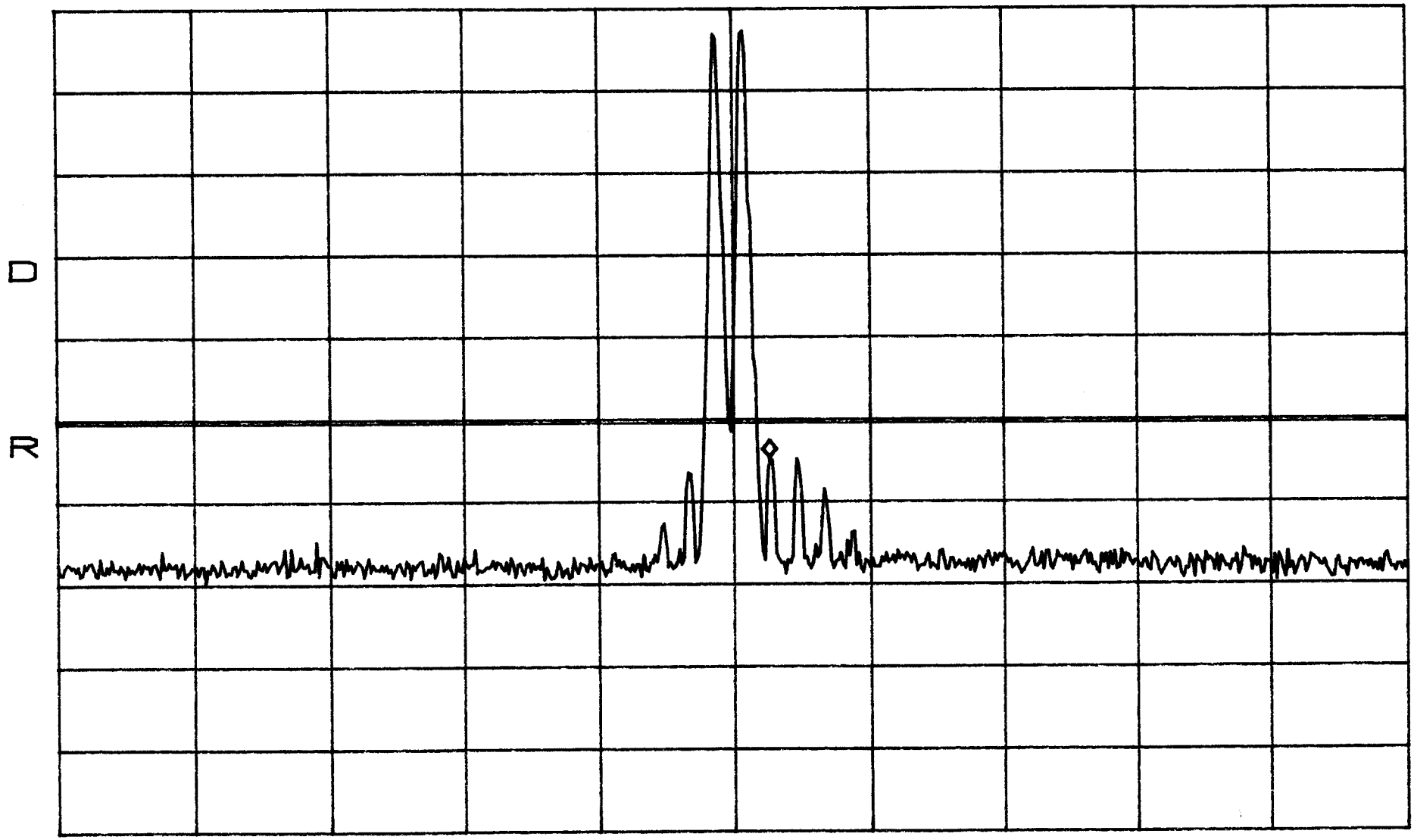

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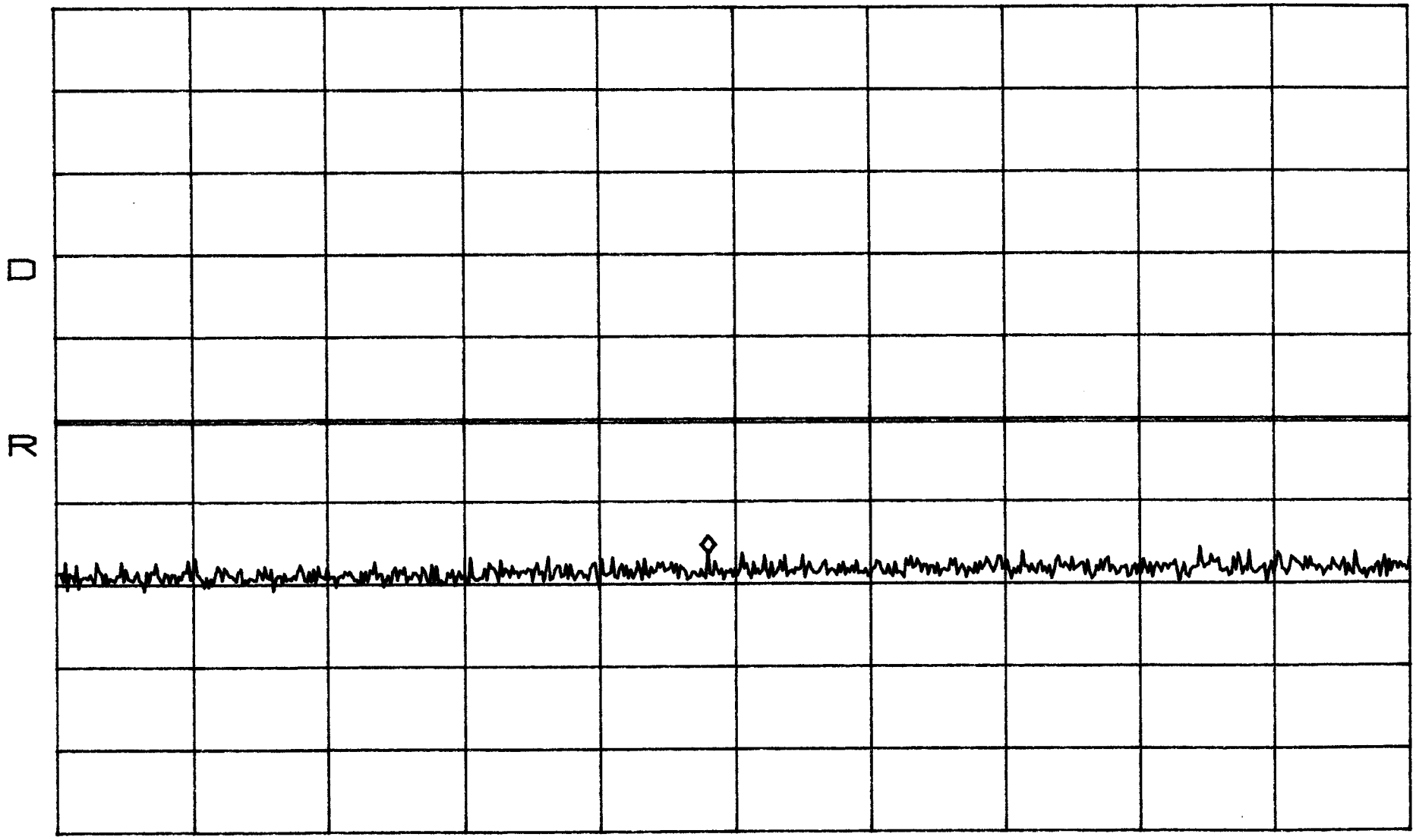

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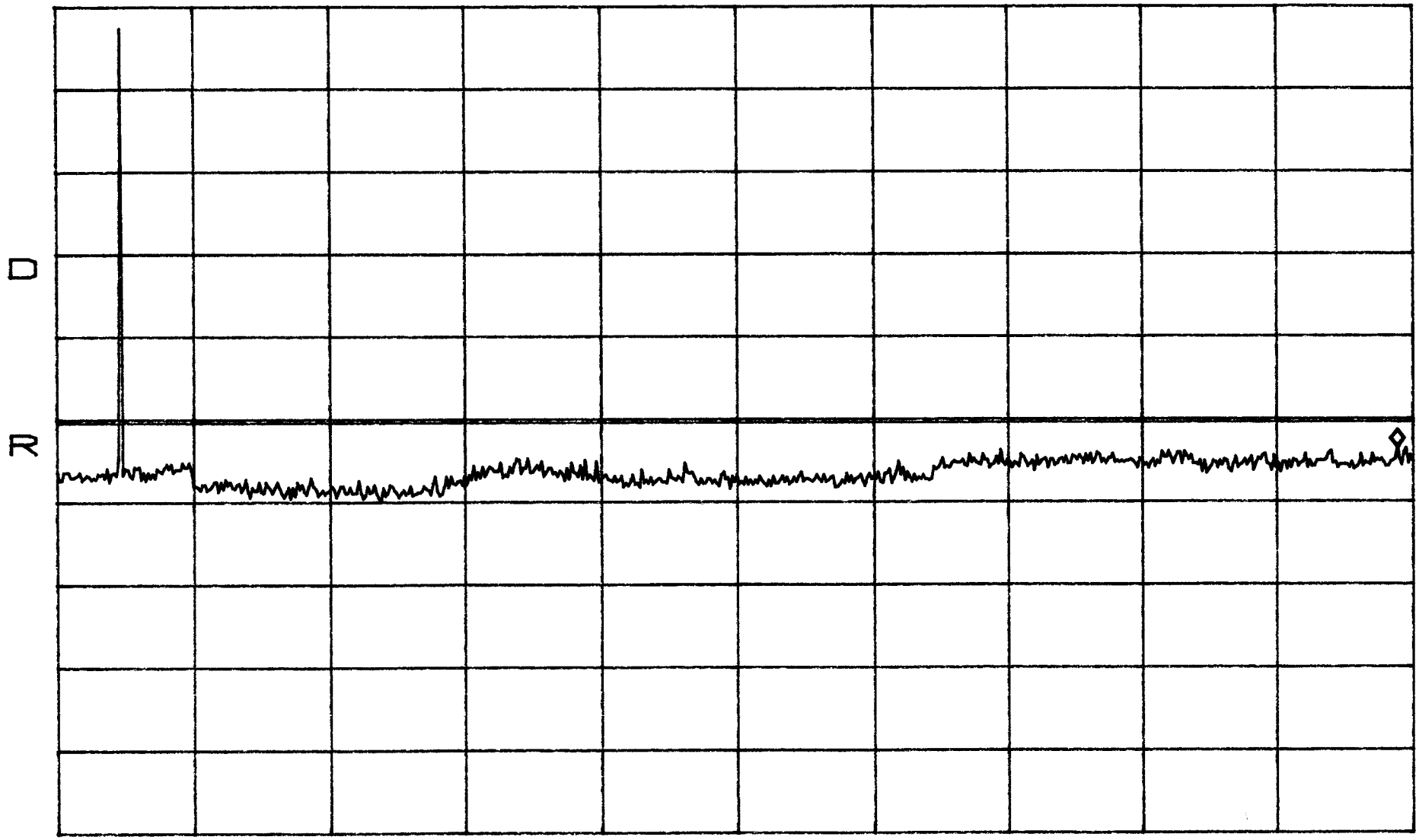

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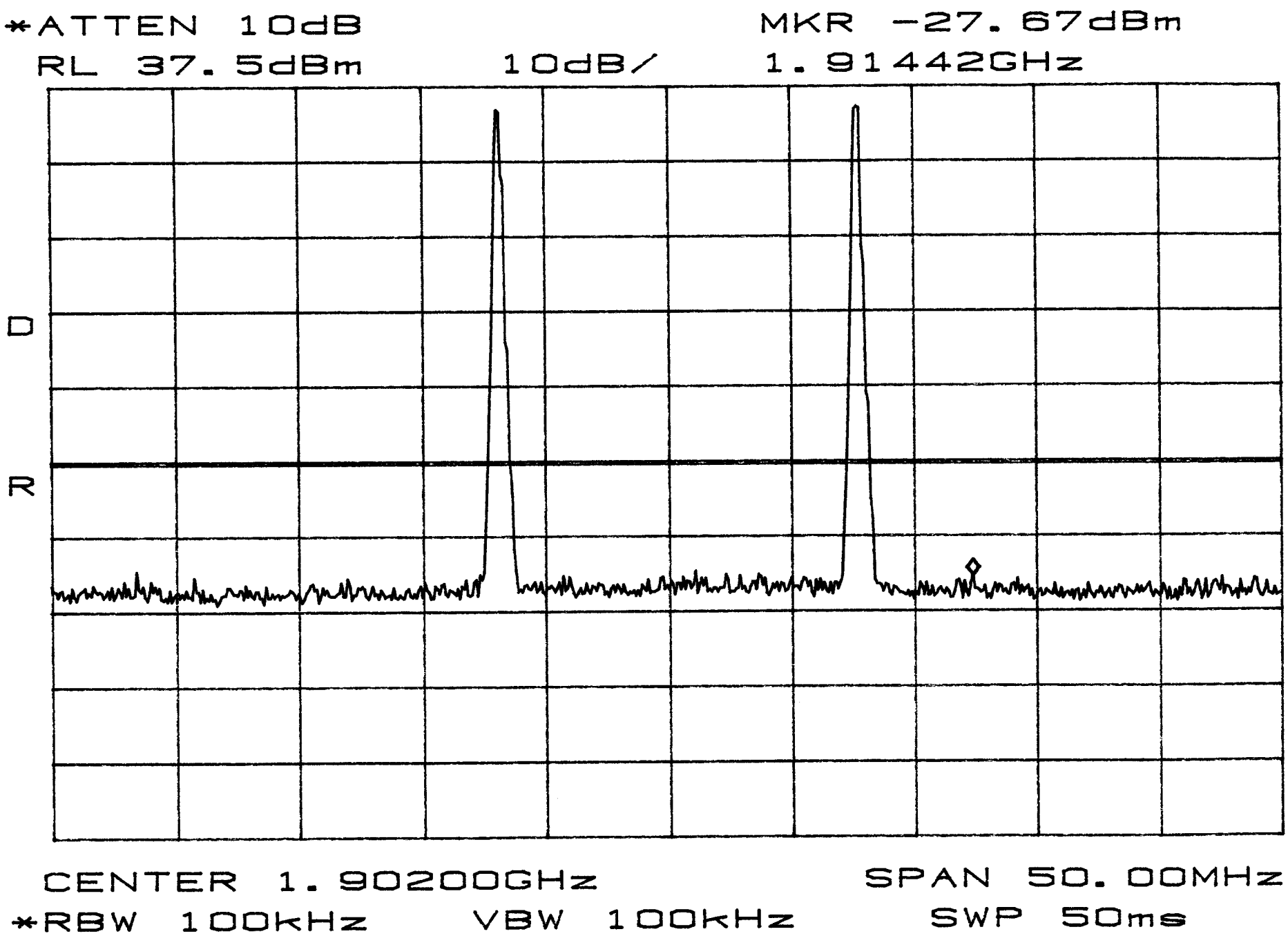
Apart

BAND C TDMA



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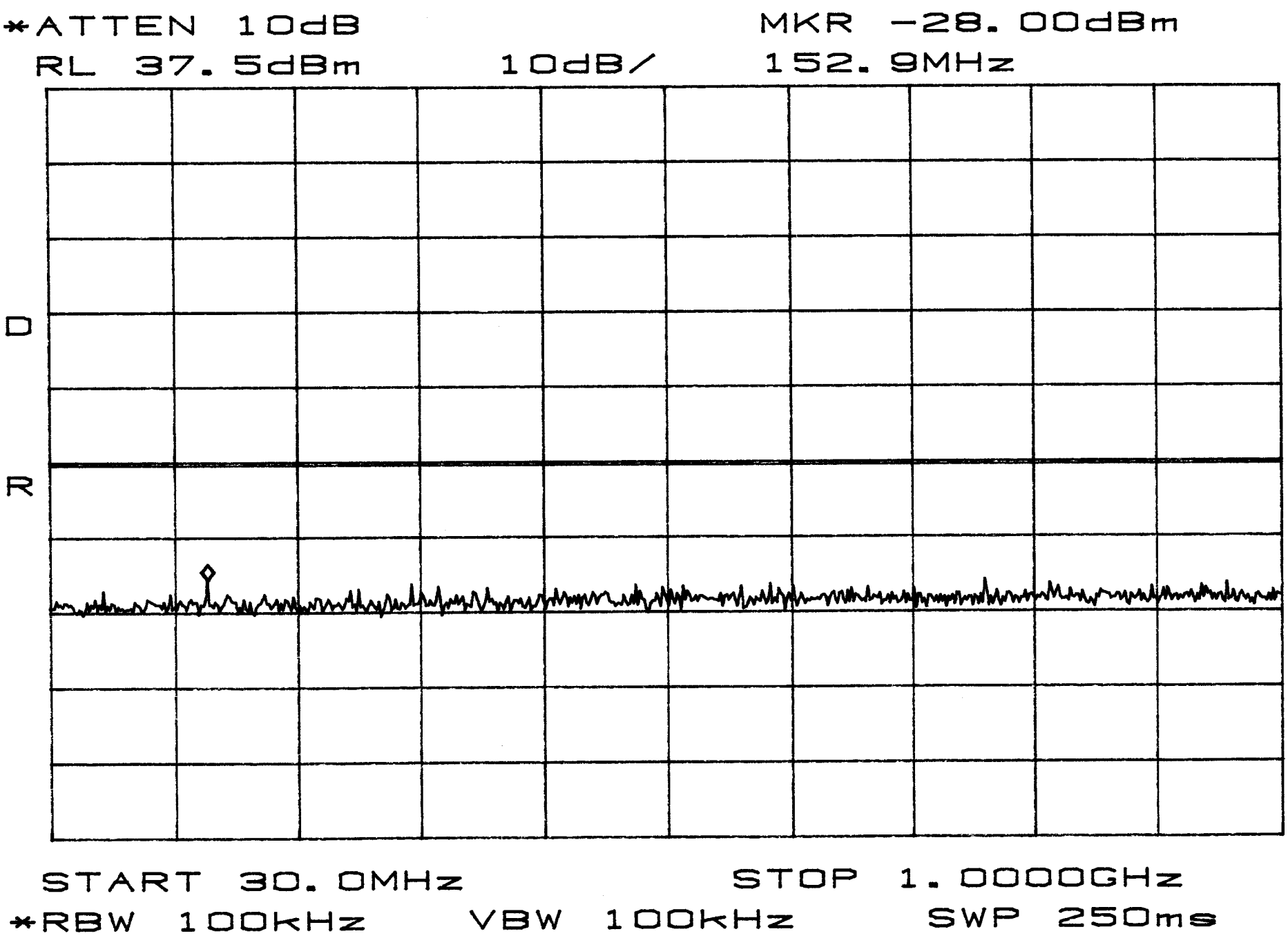

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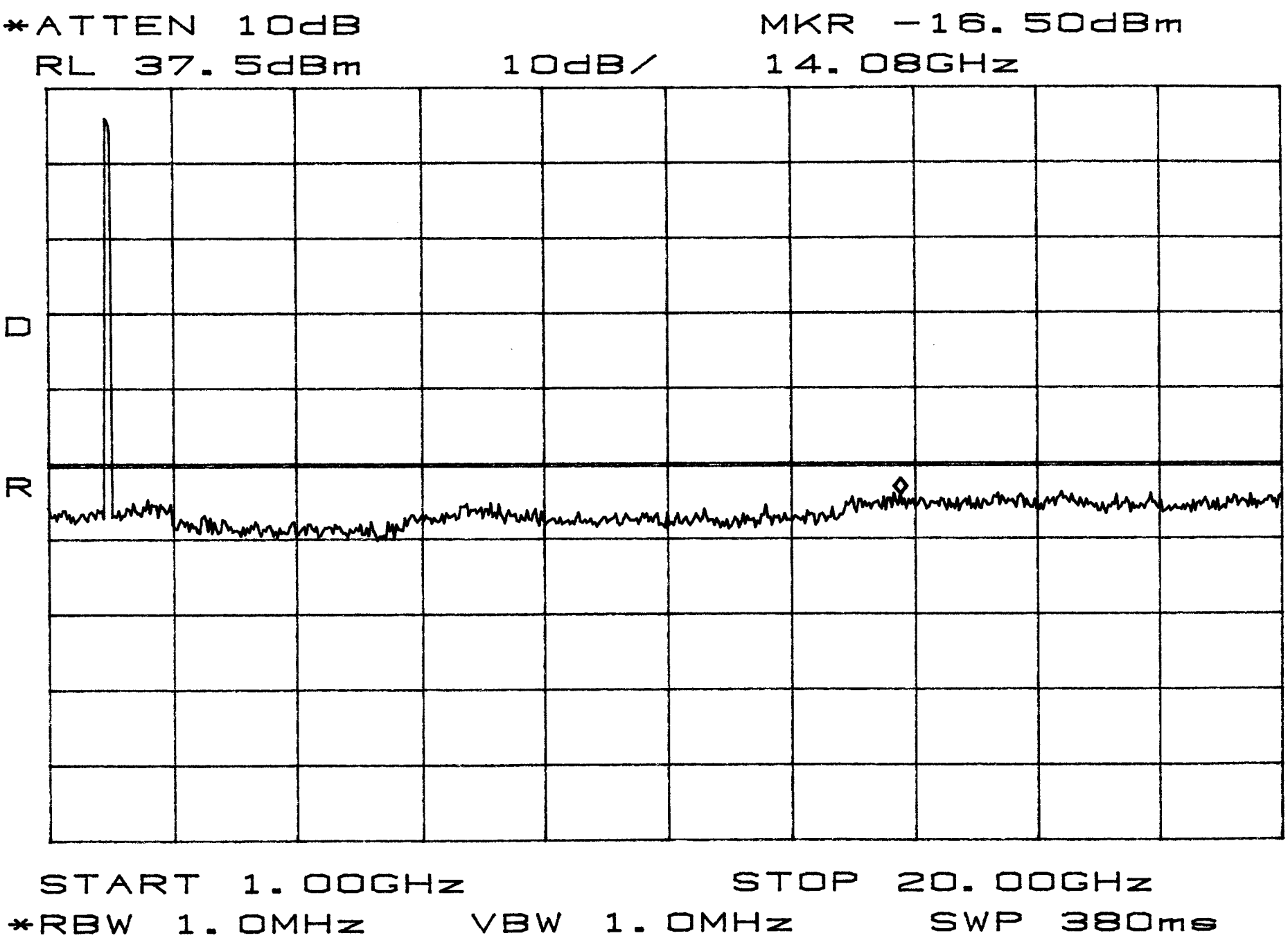

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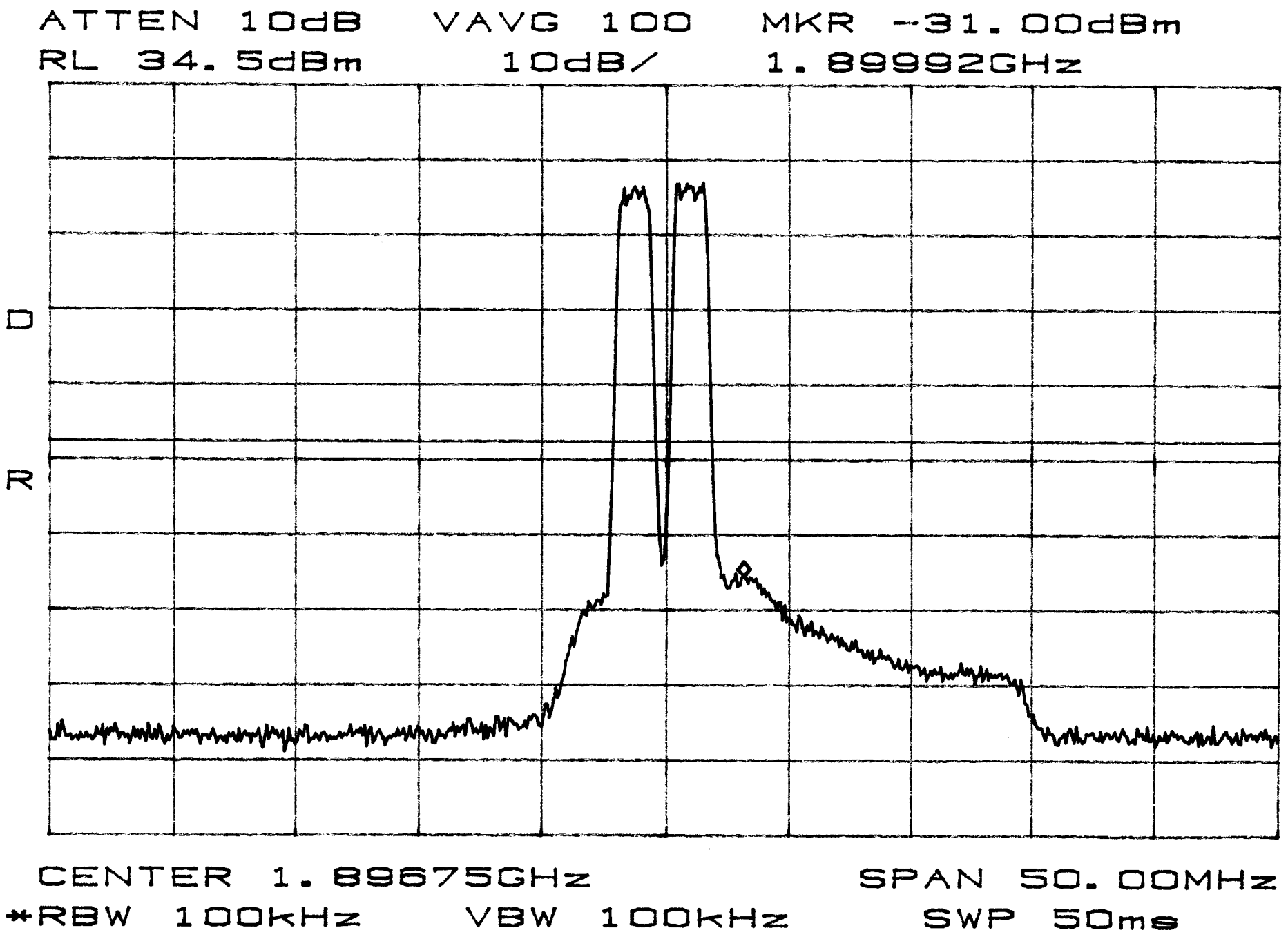

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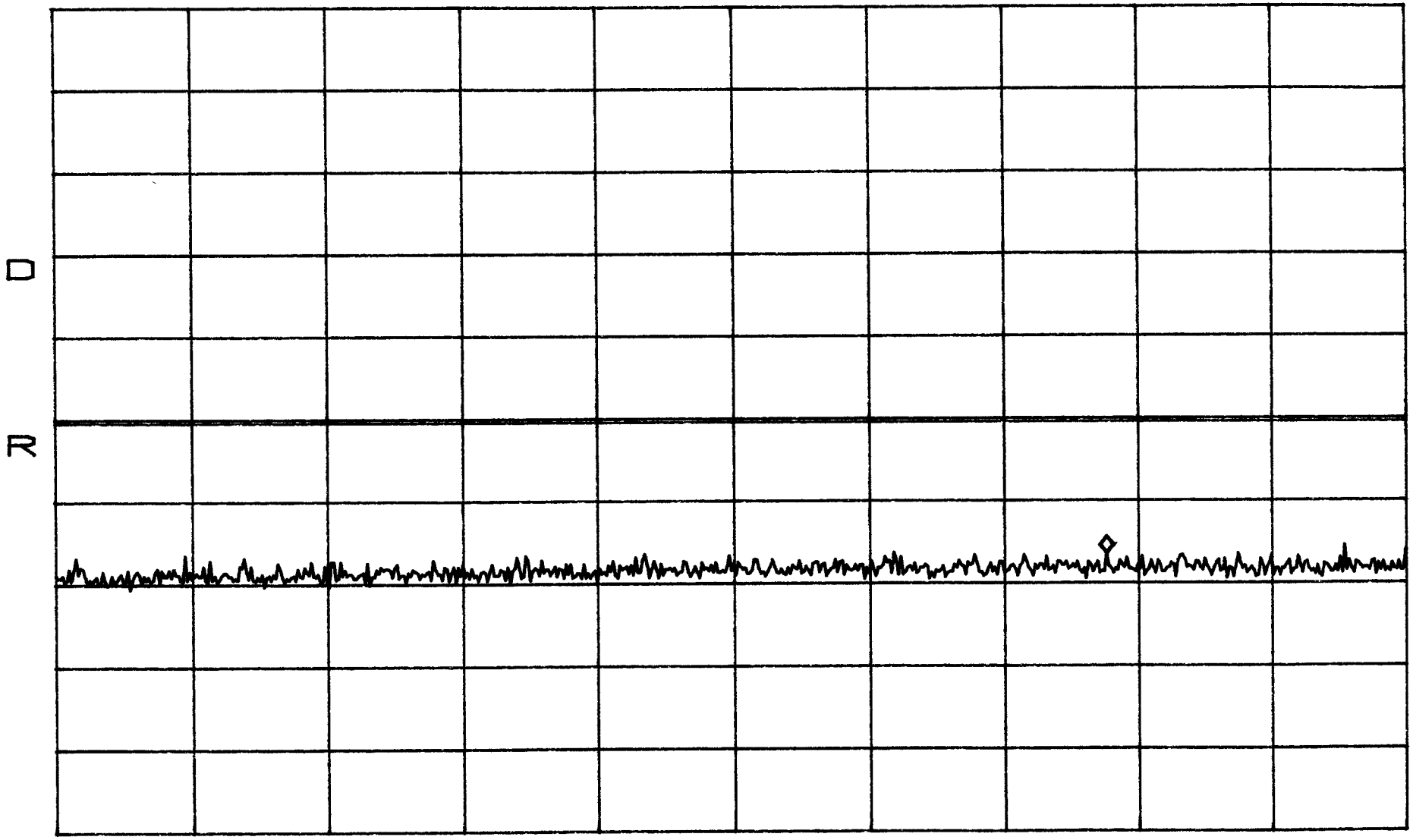
Close

BAND C CDMA



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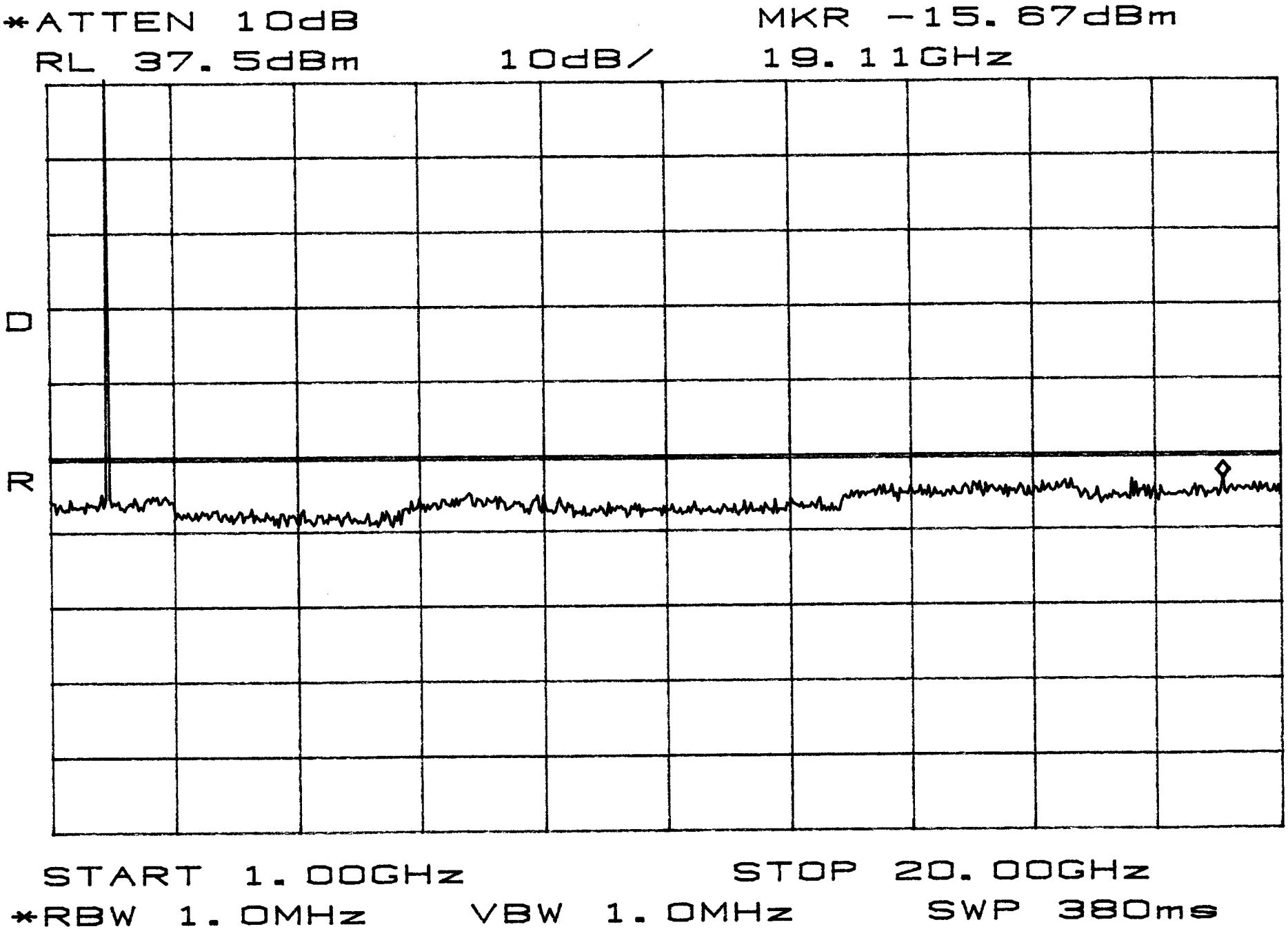
BAND C CDMA



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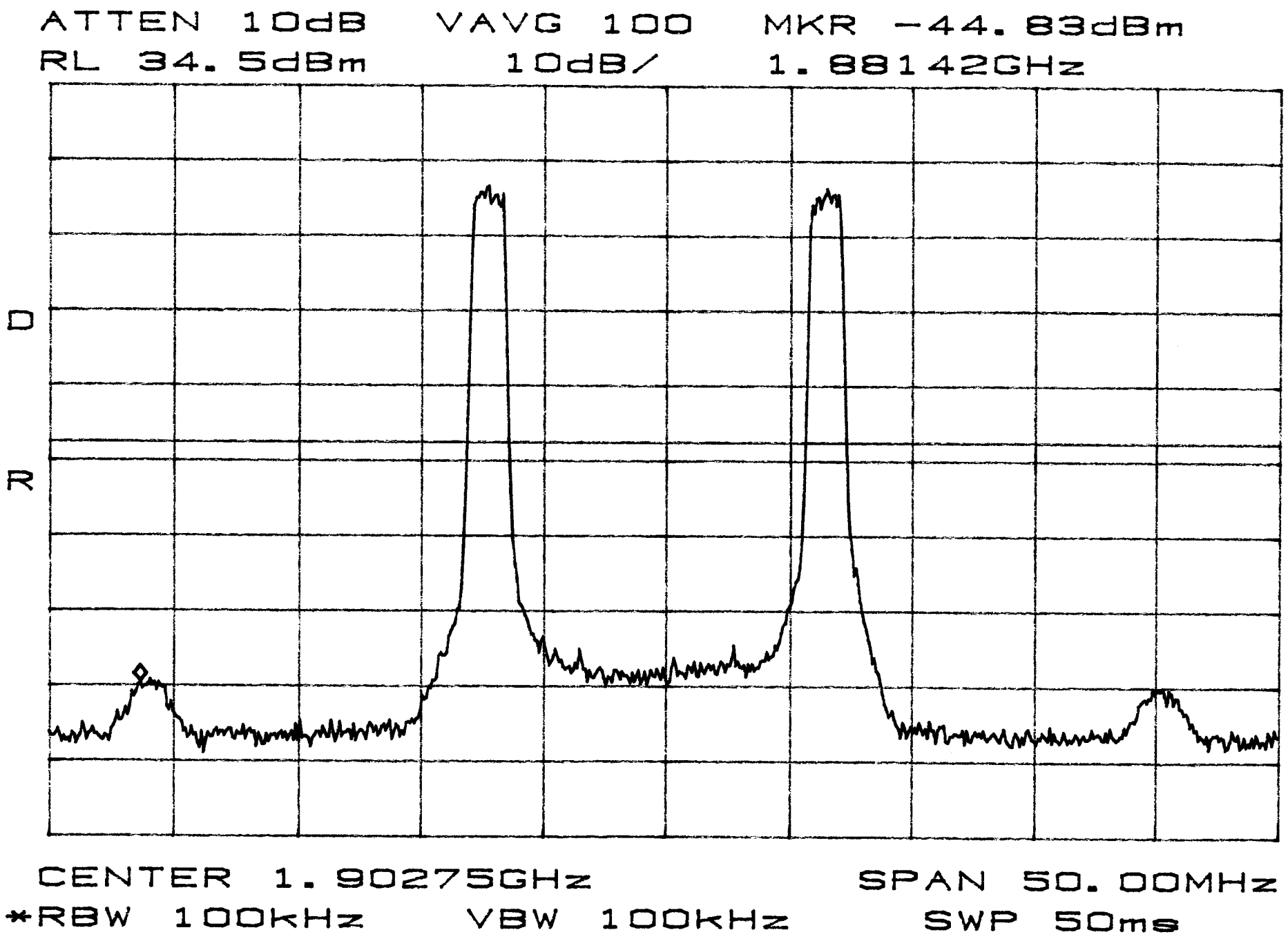

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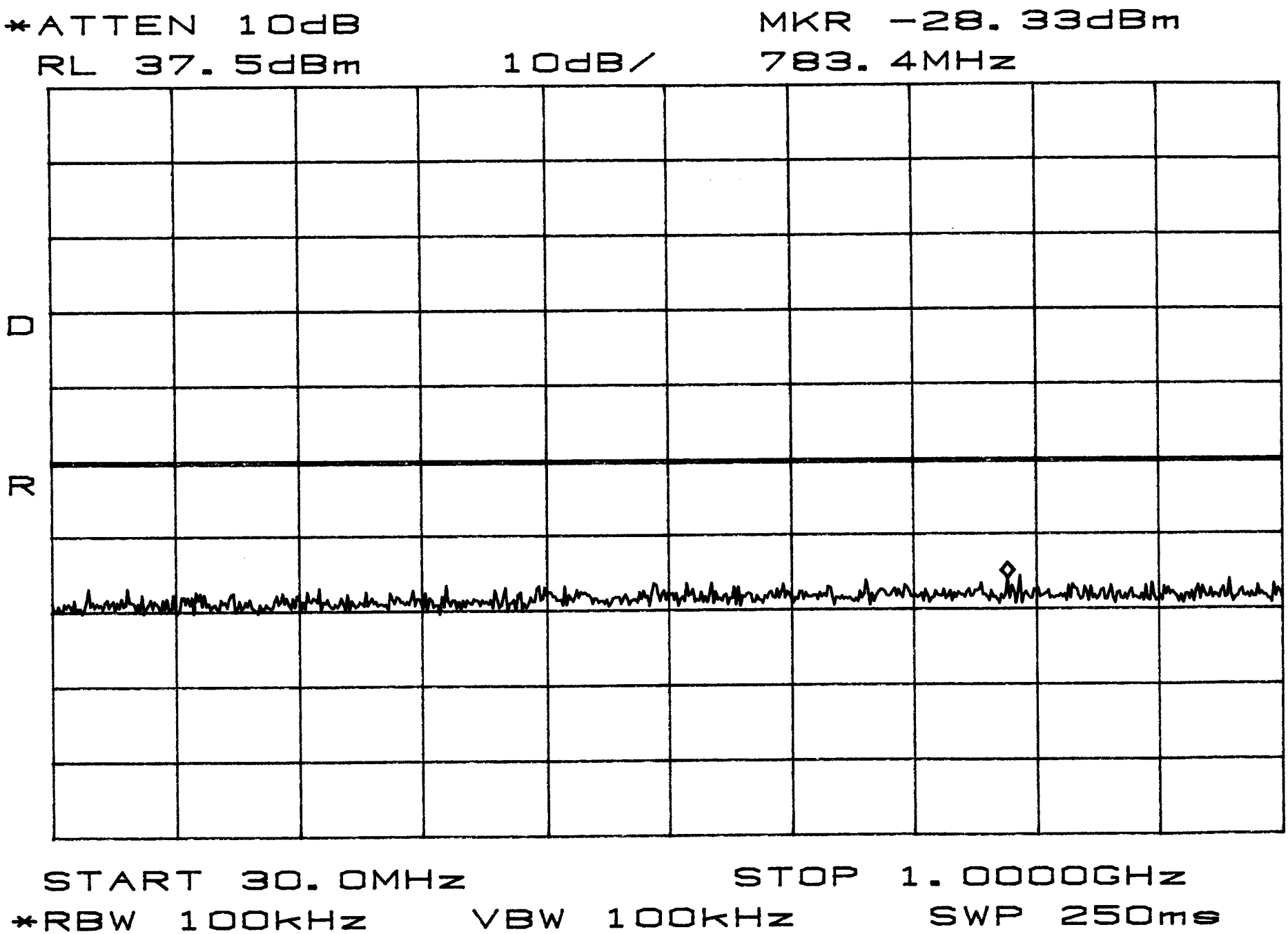

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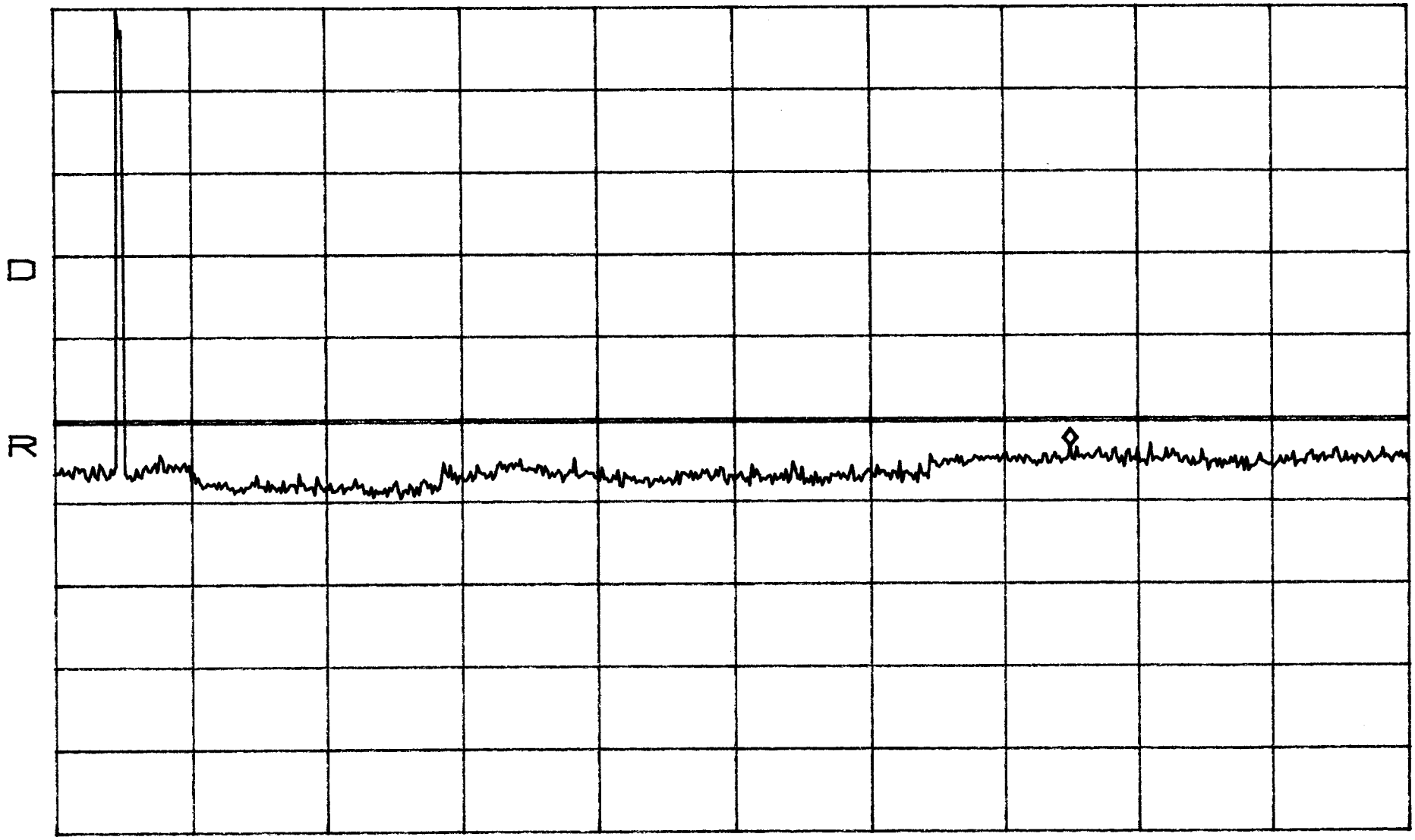

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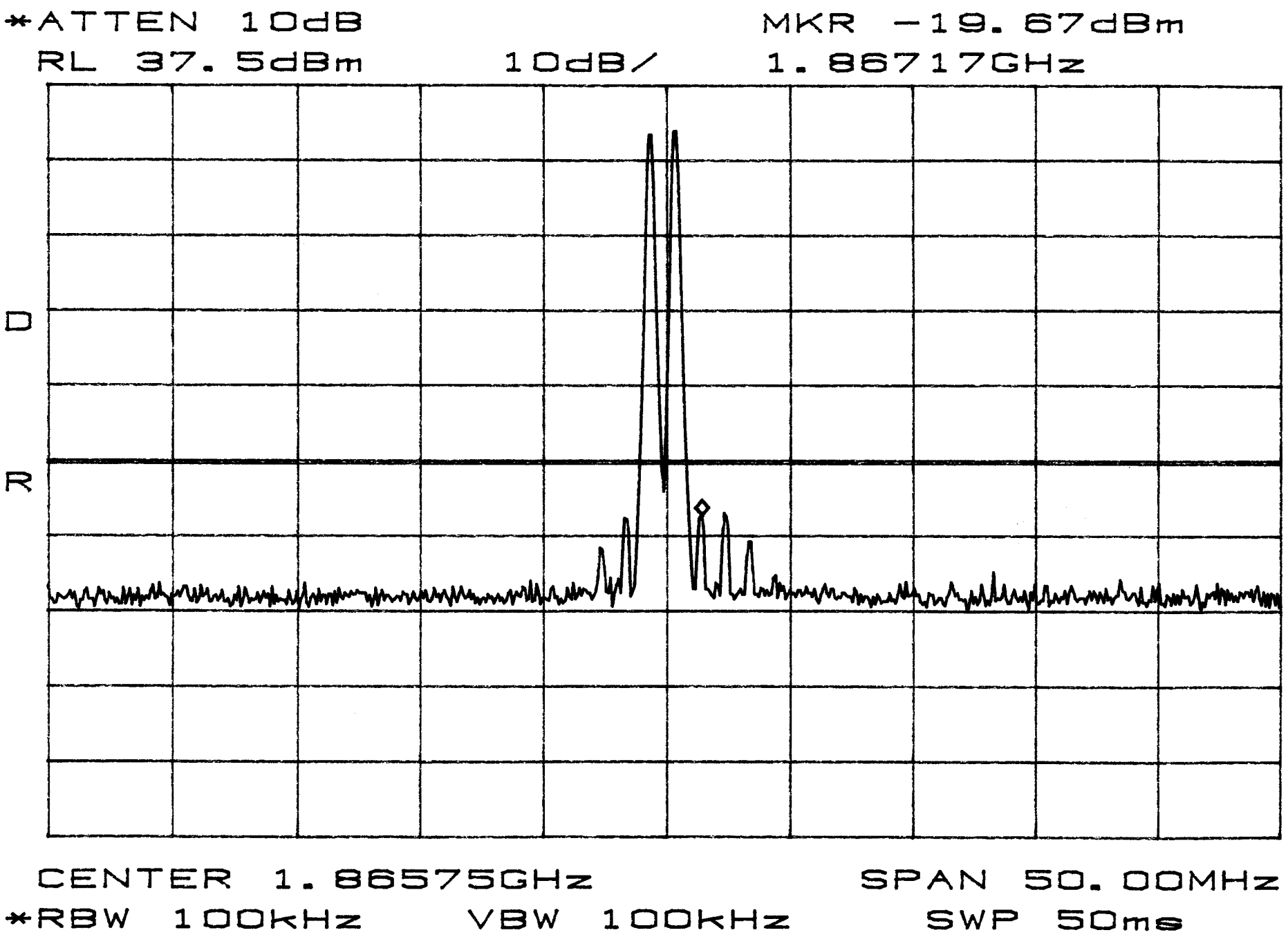

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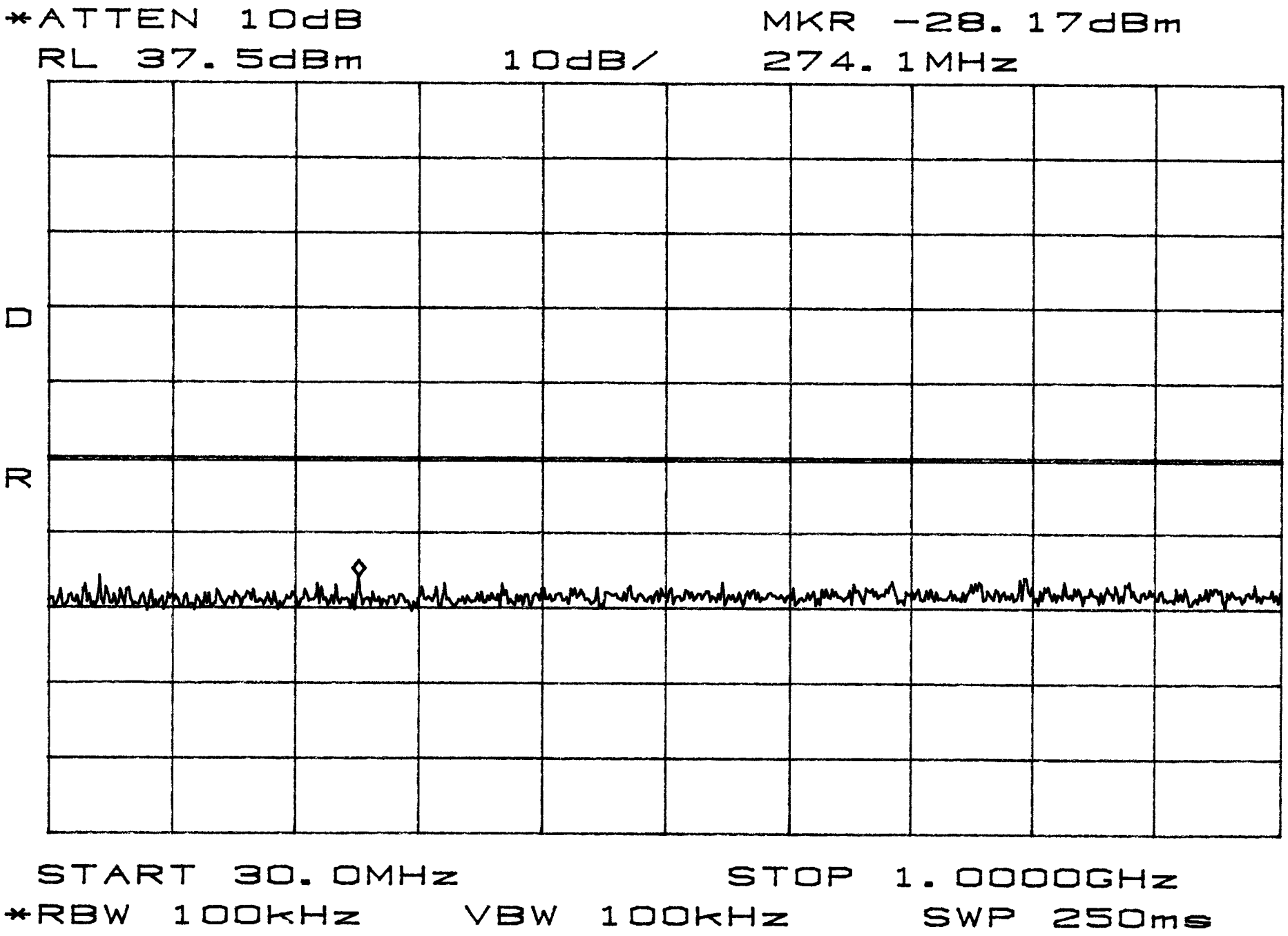

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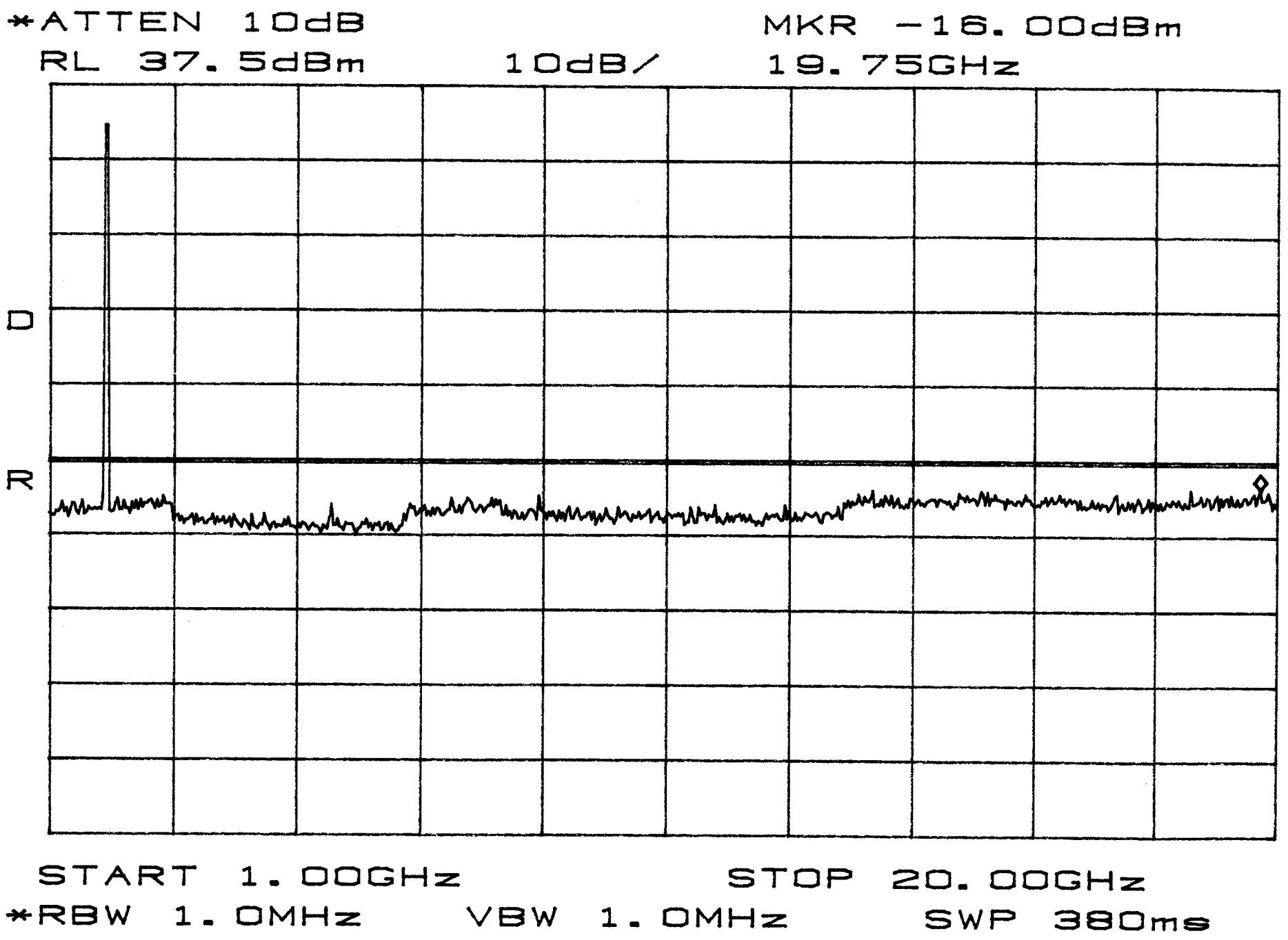

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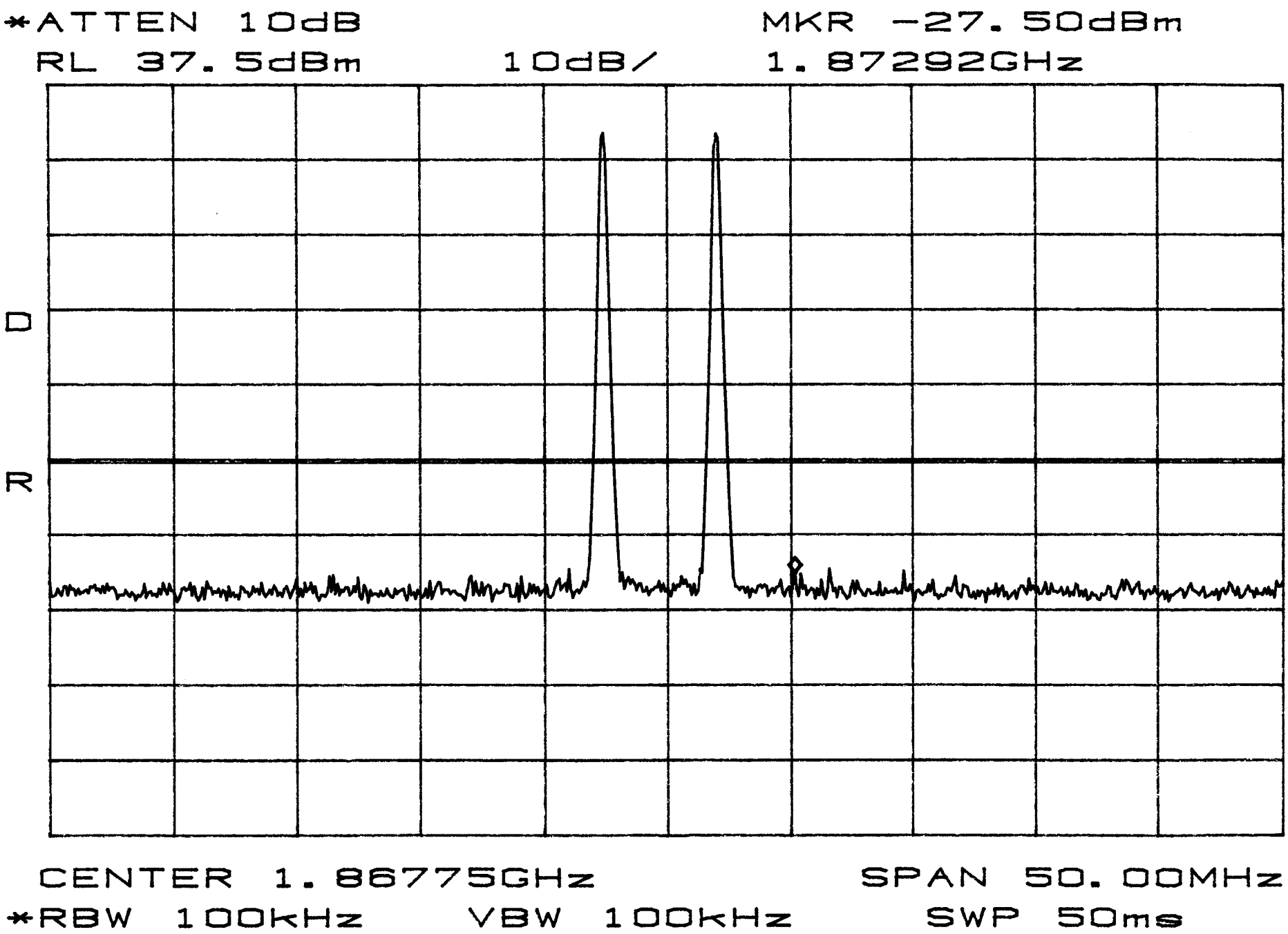

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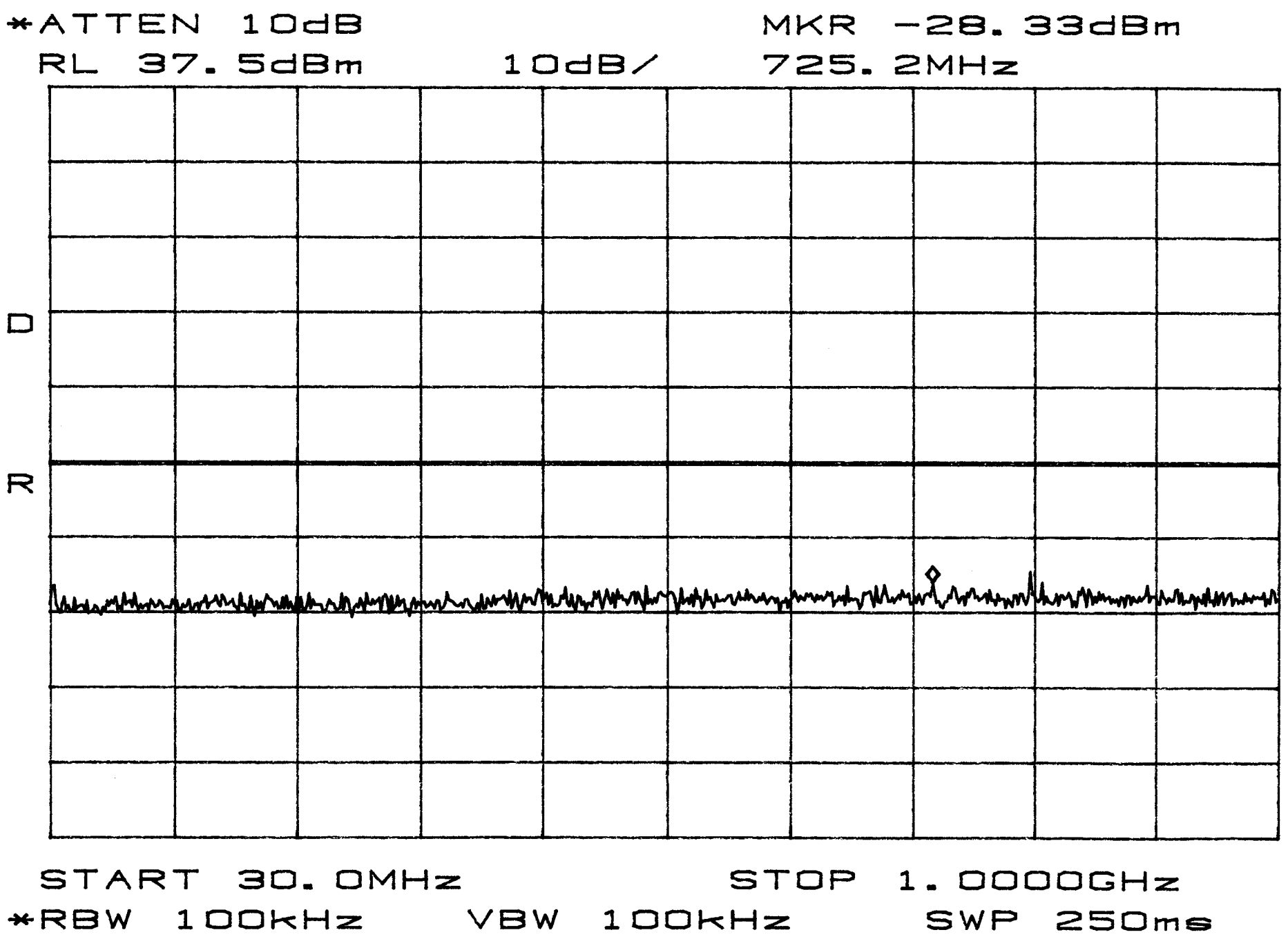

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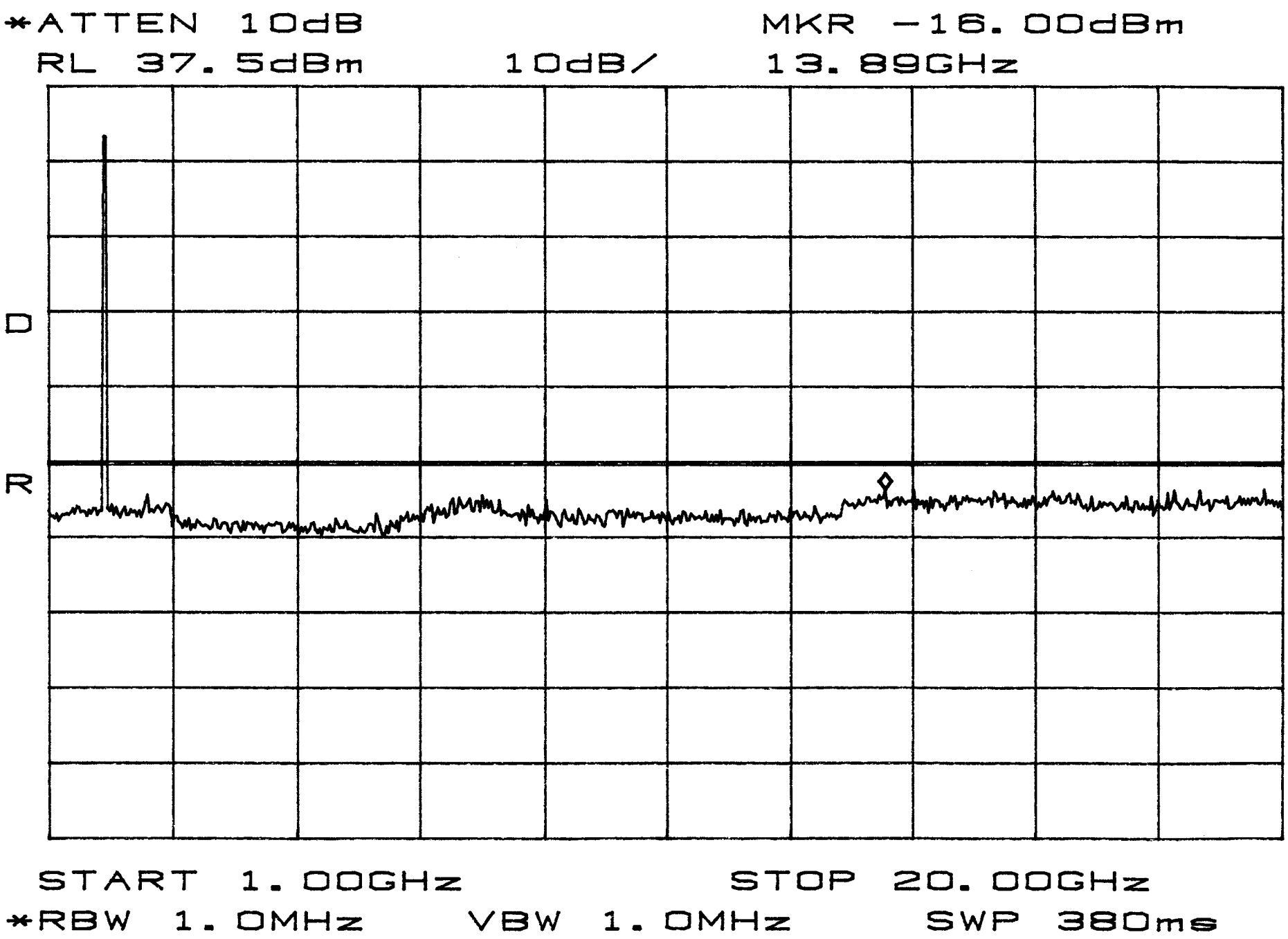

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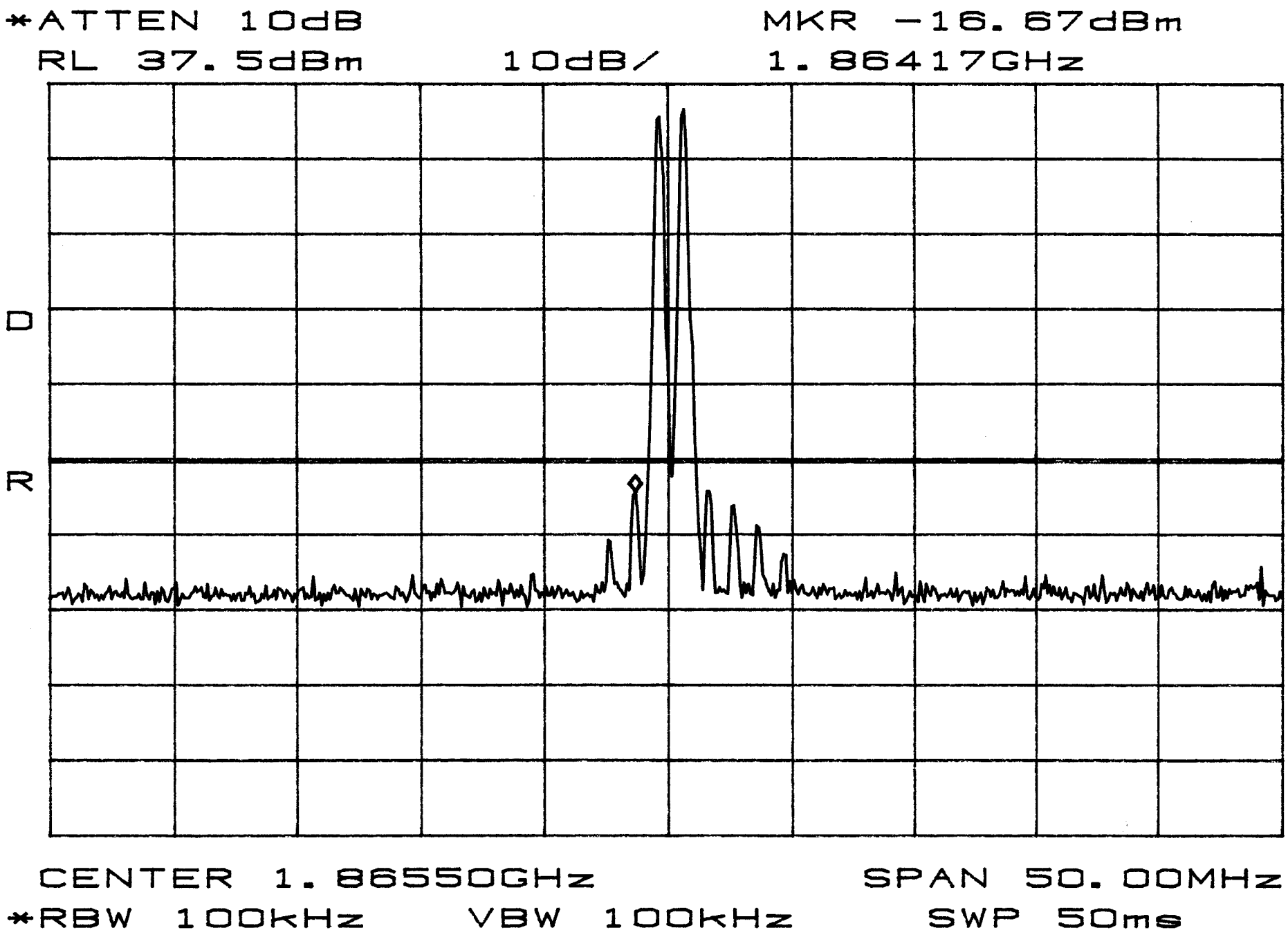

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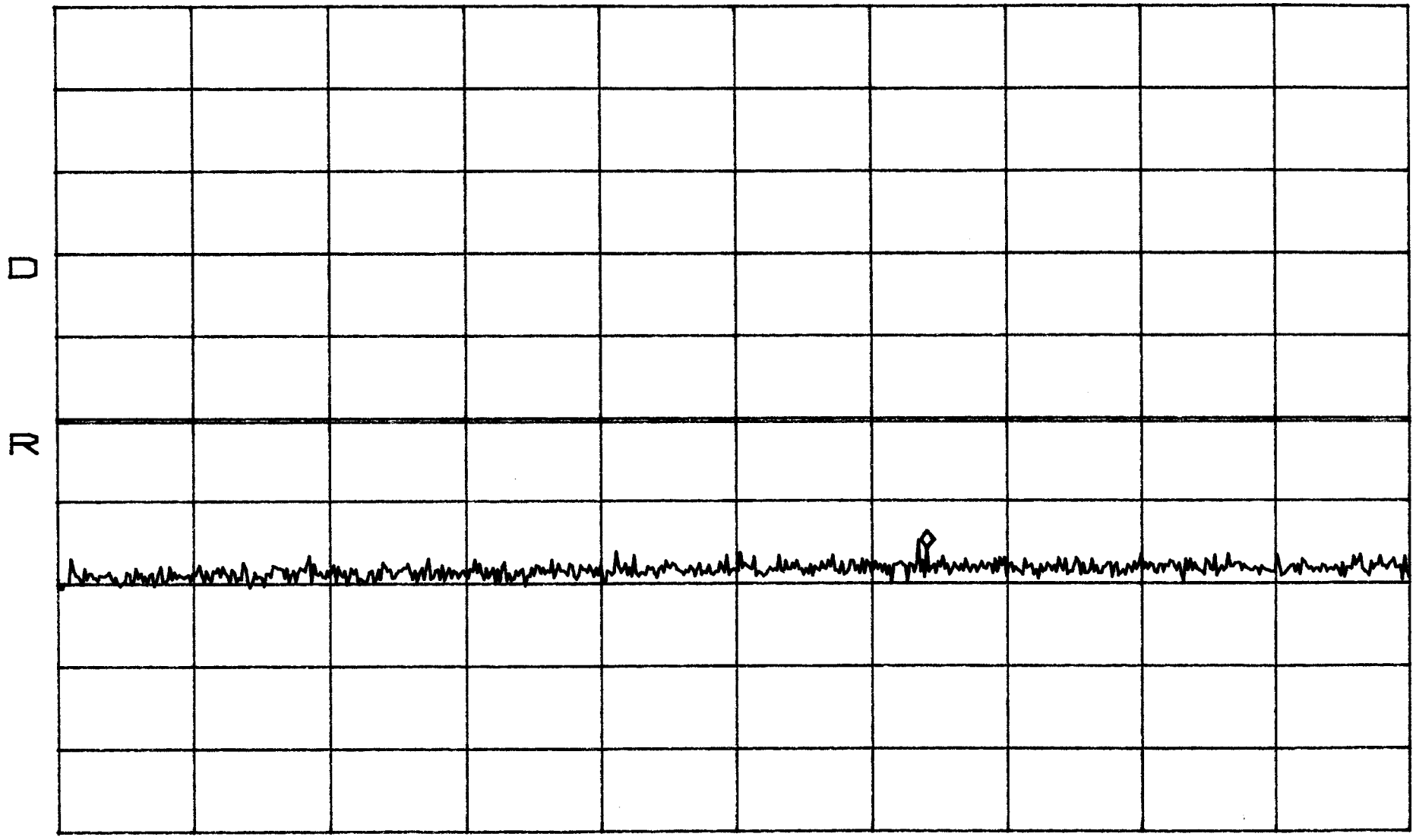

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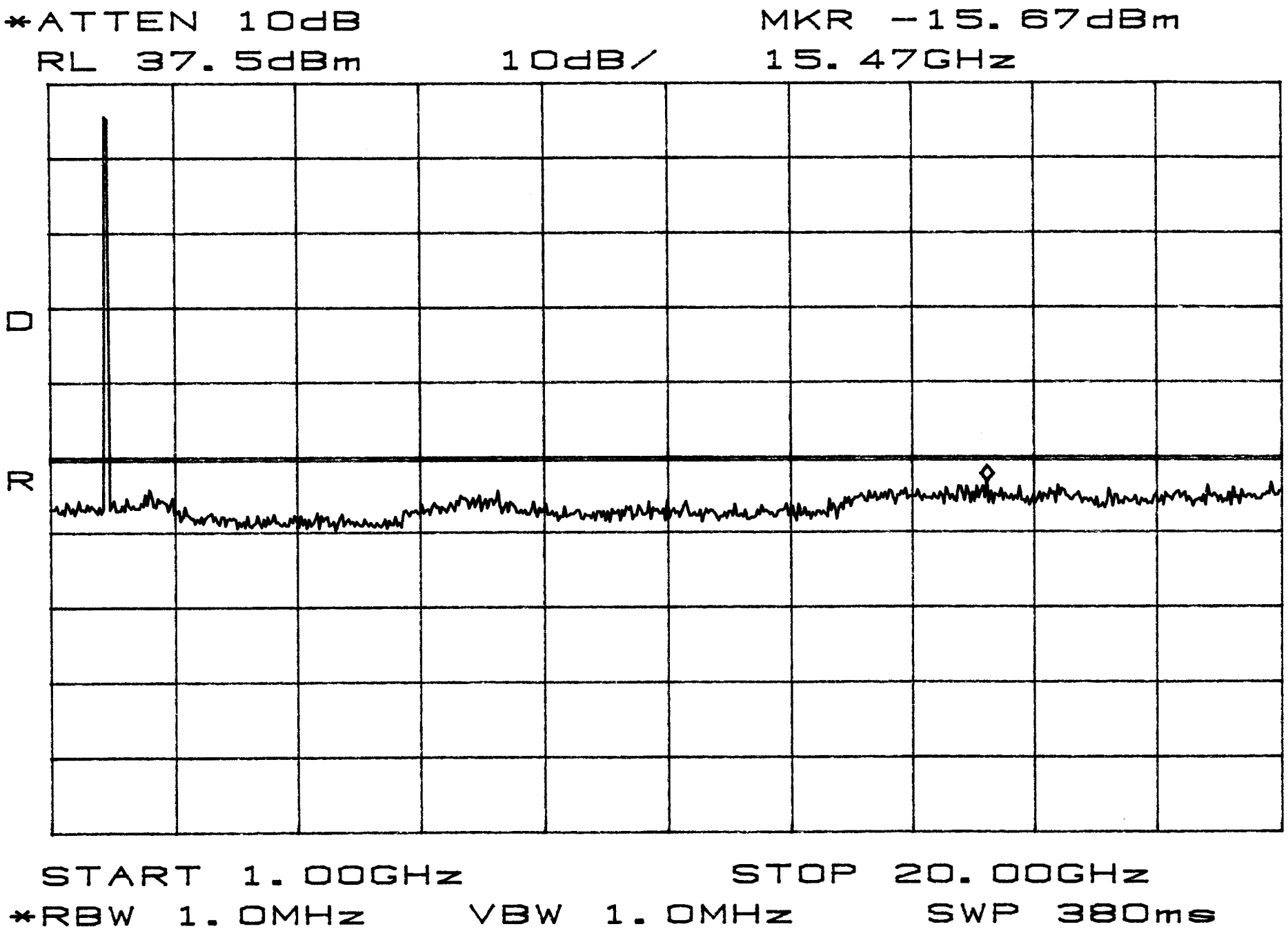

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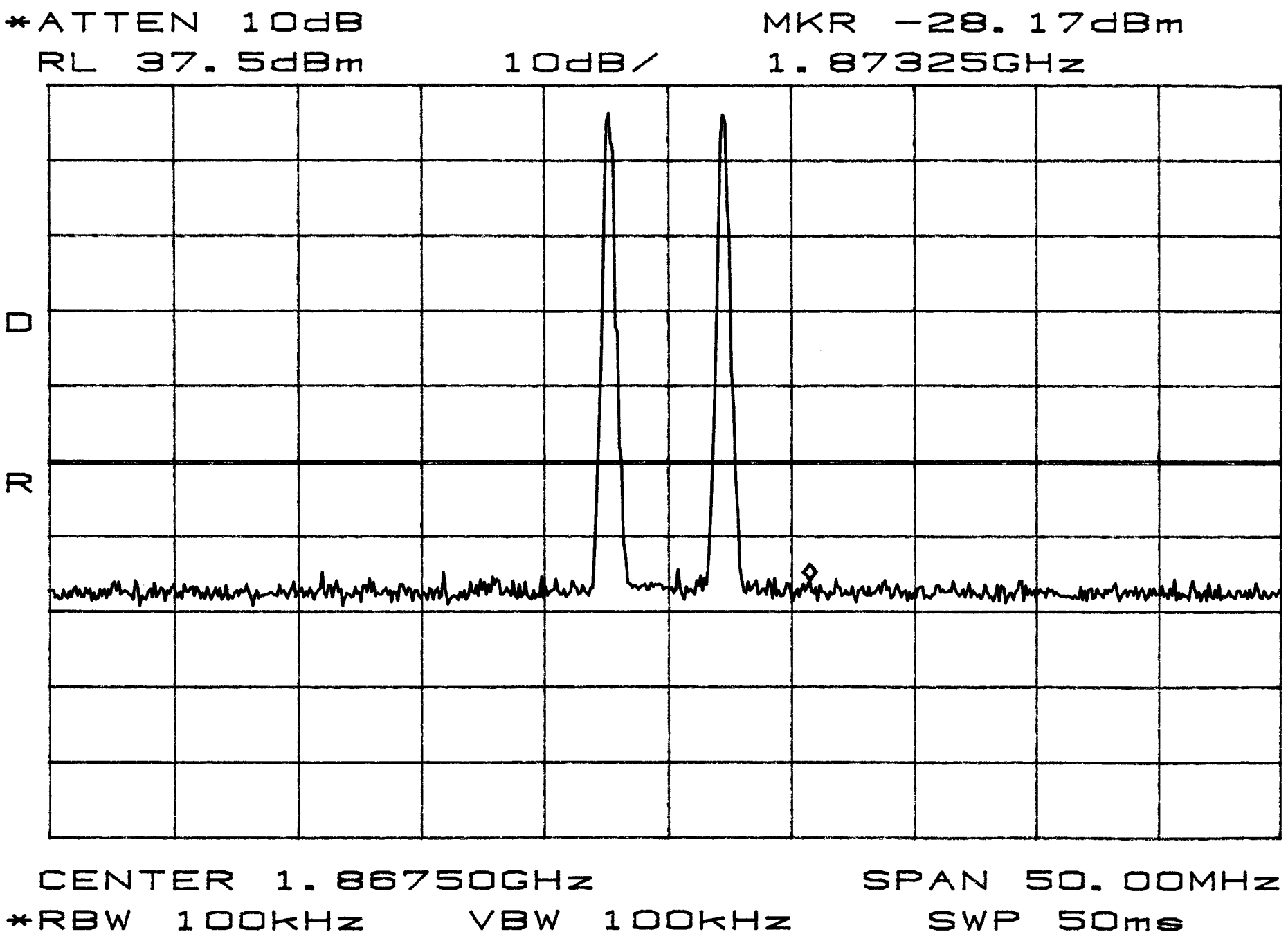

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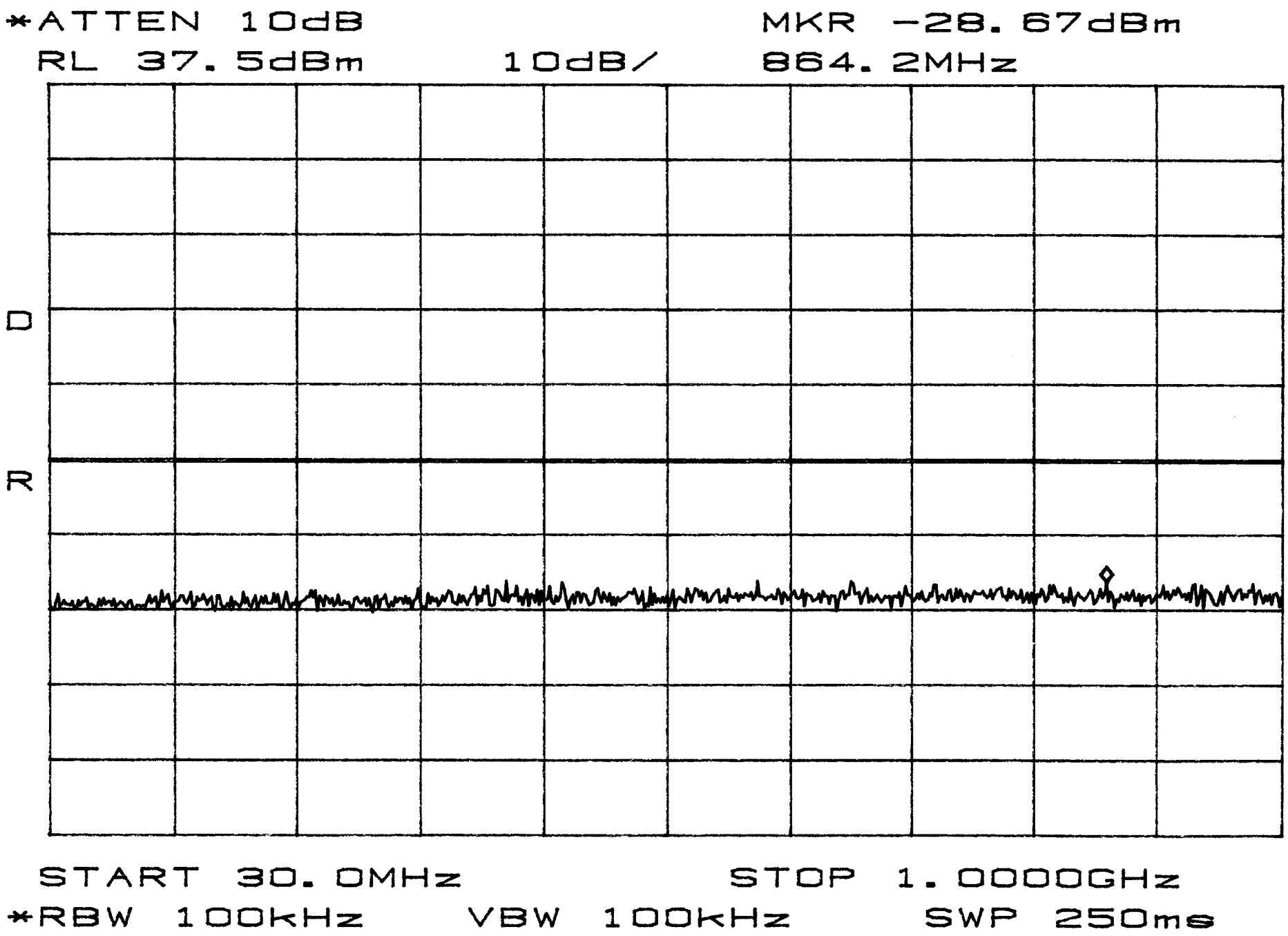
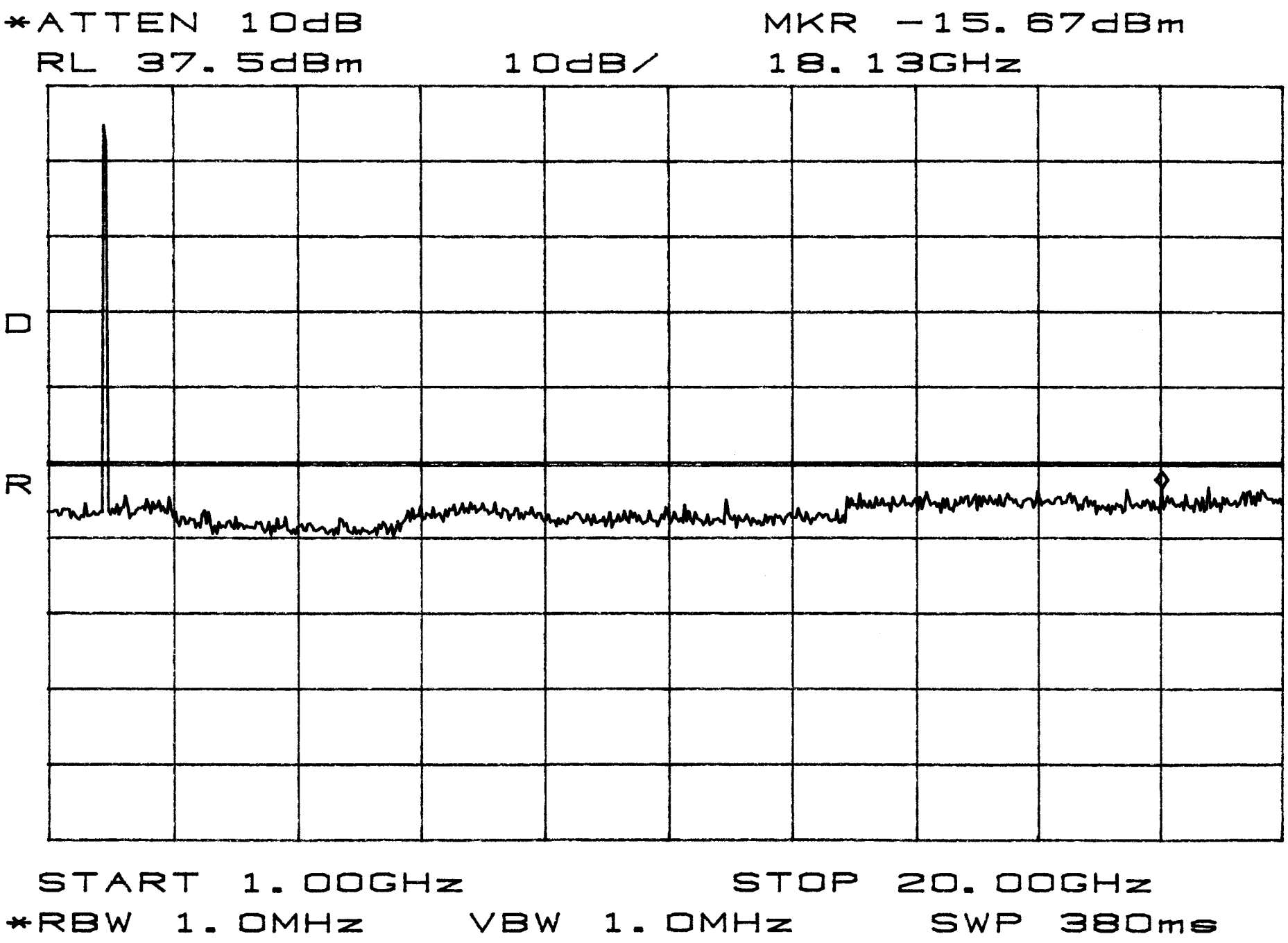


IMD
Apart

BAND D TDMA



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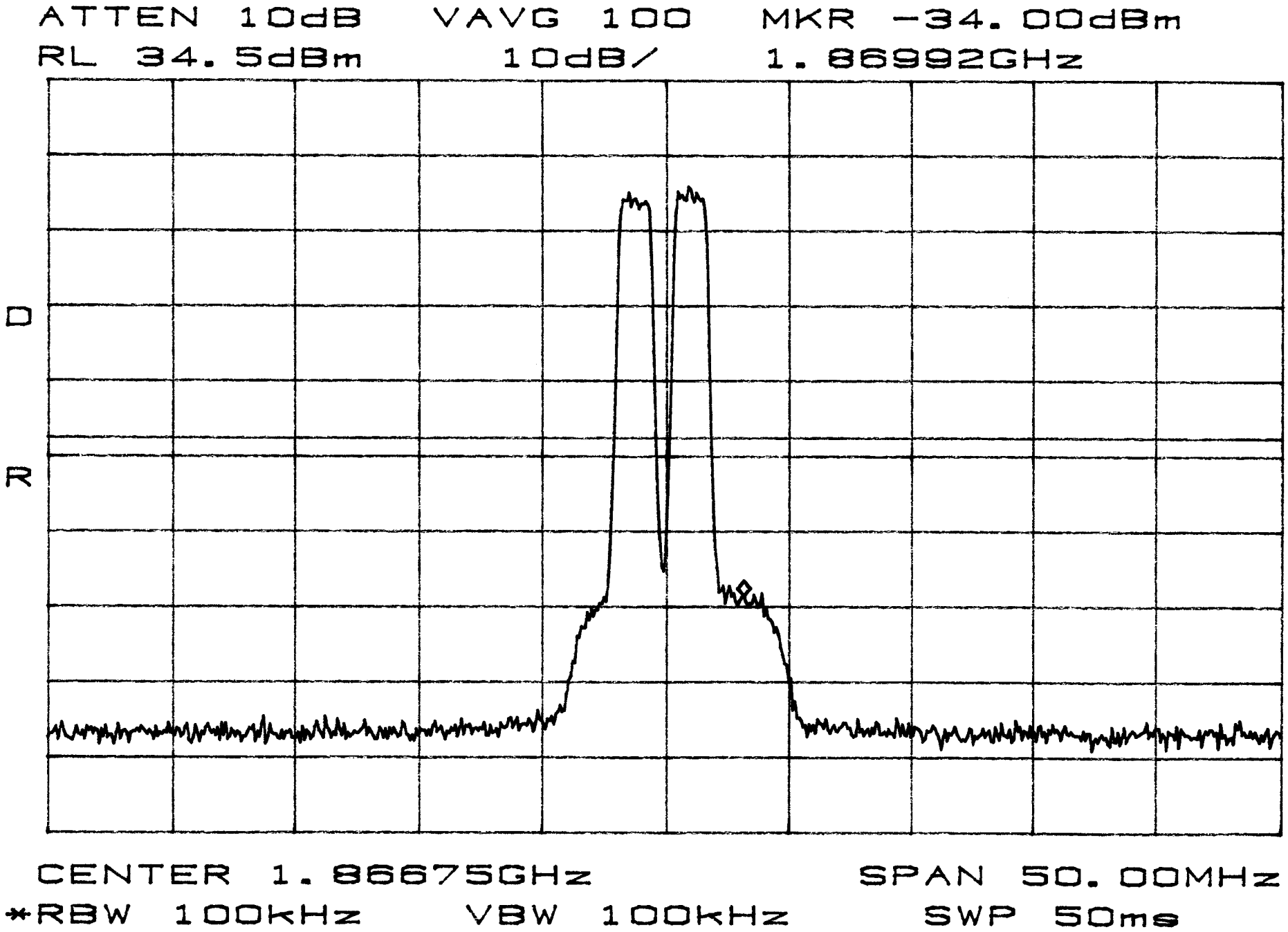

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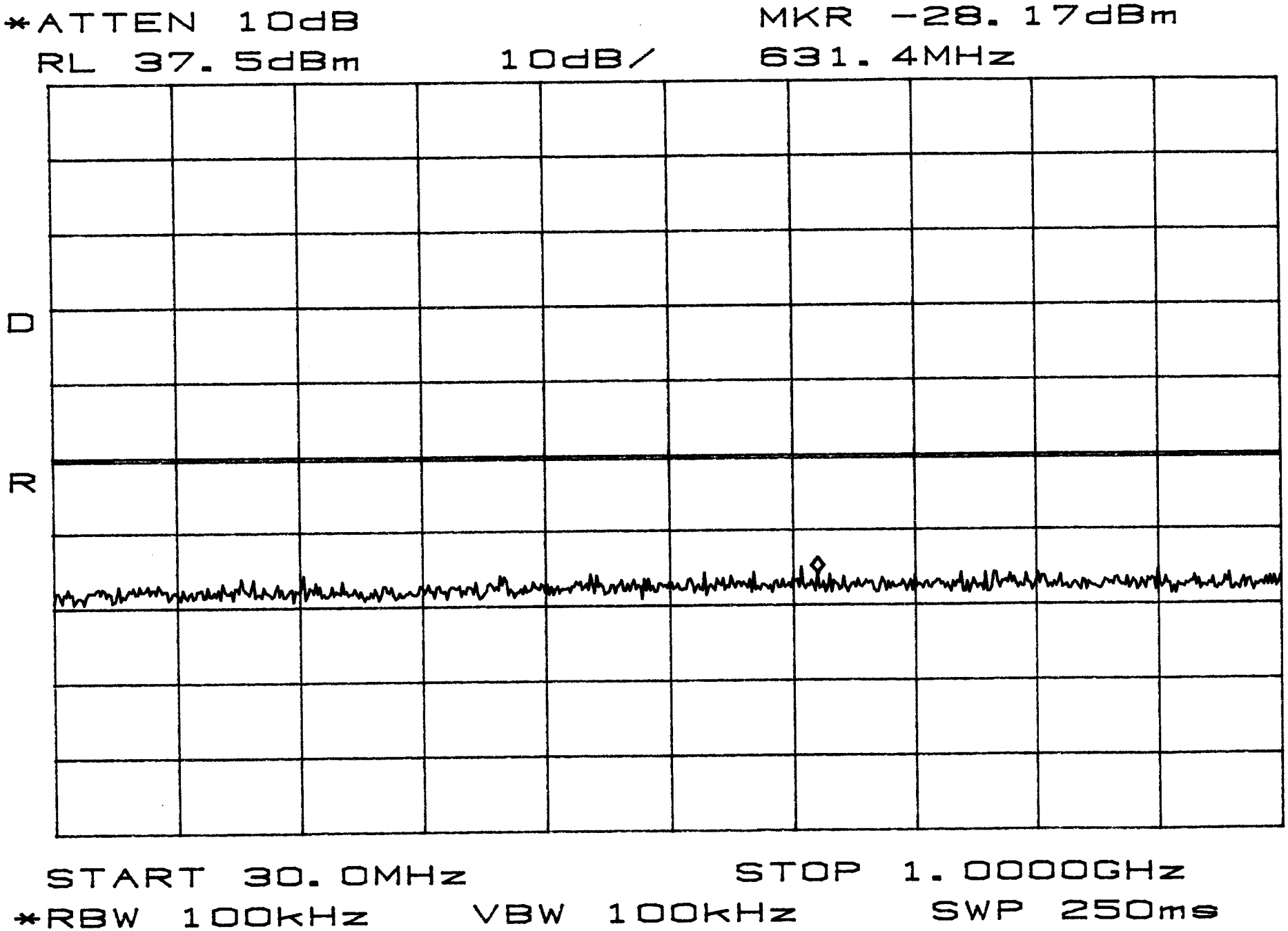

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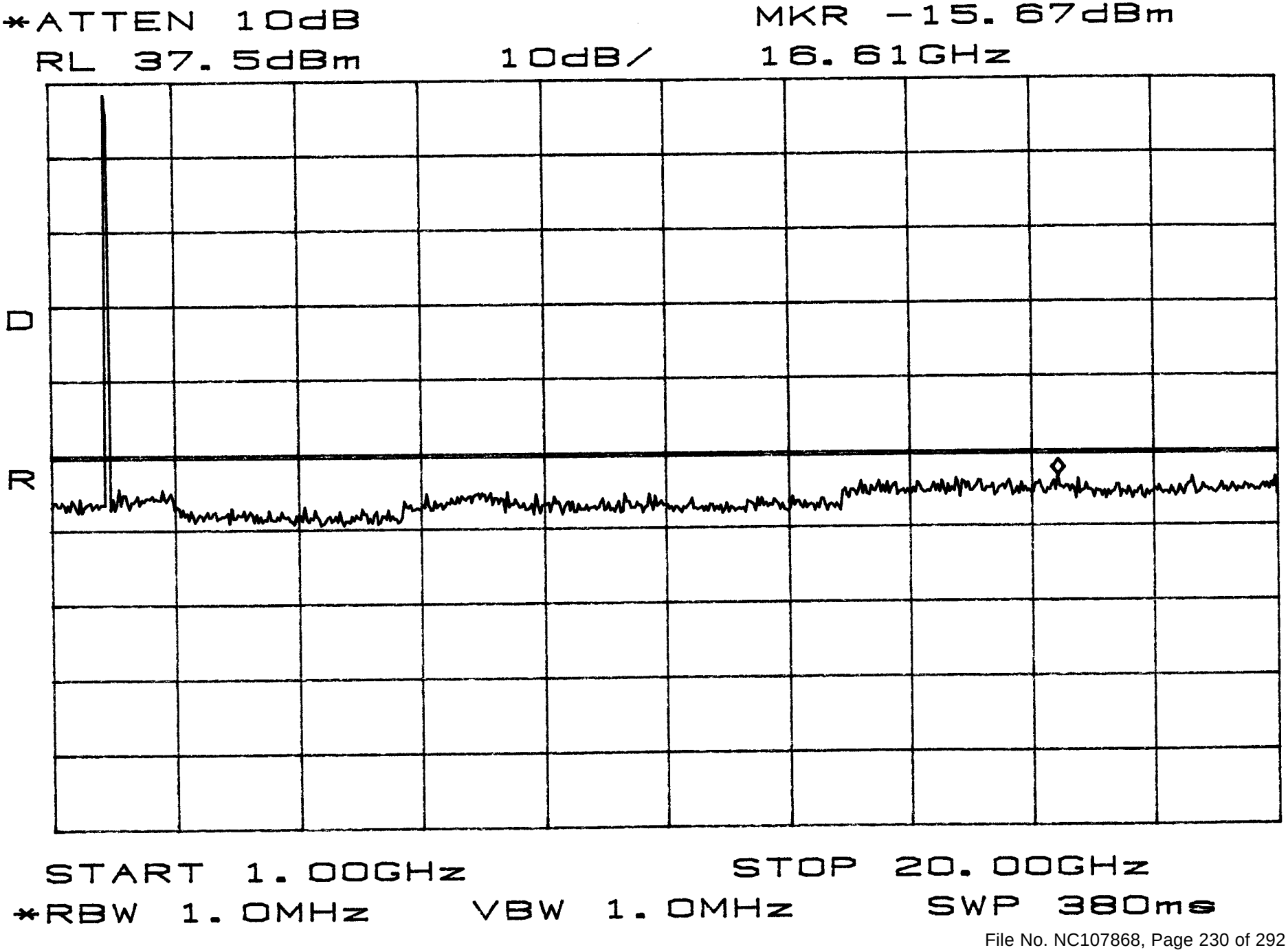

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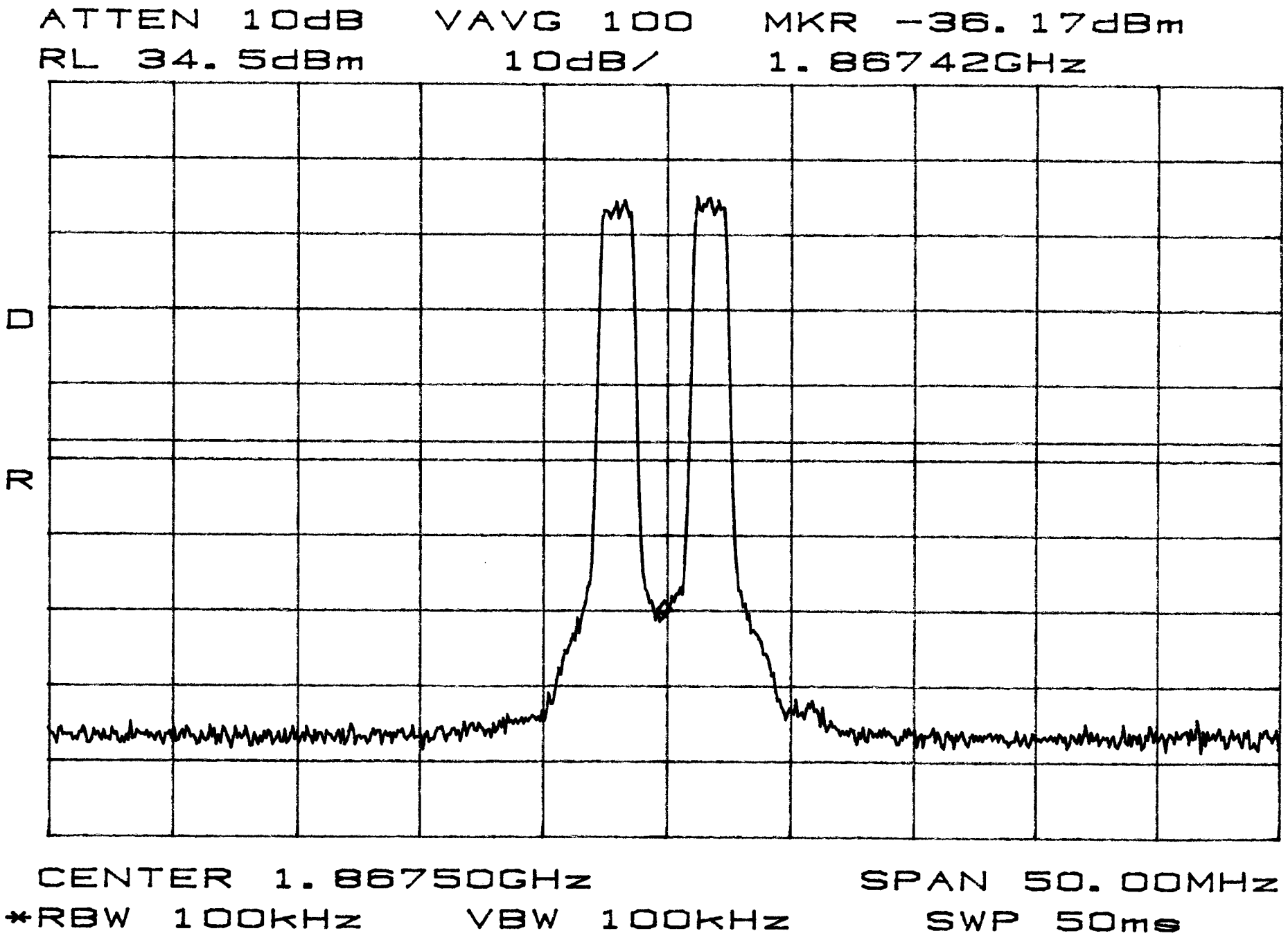

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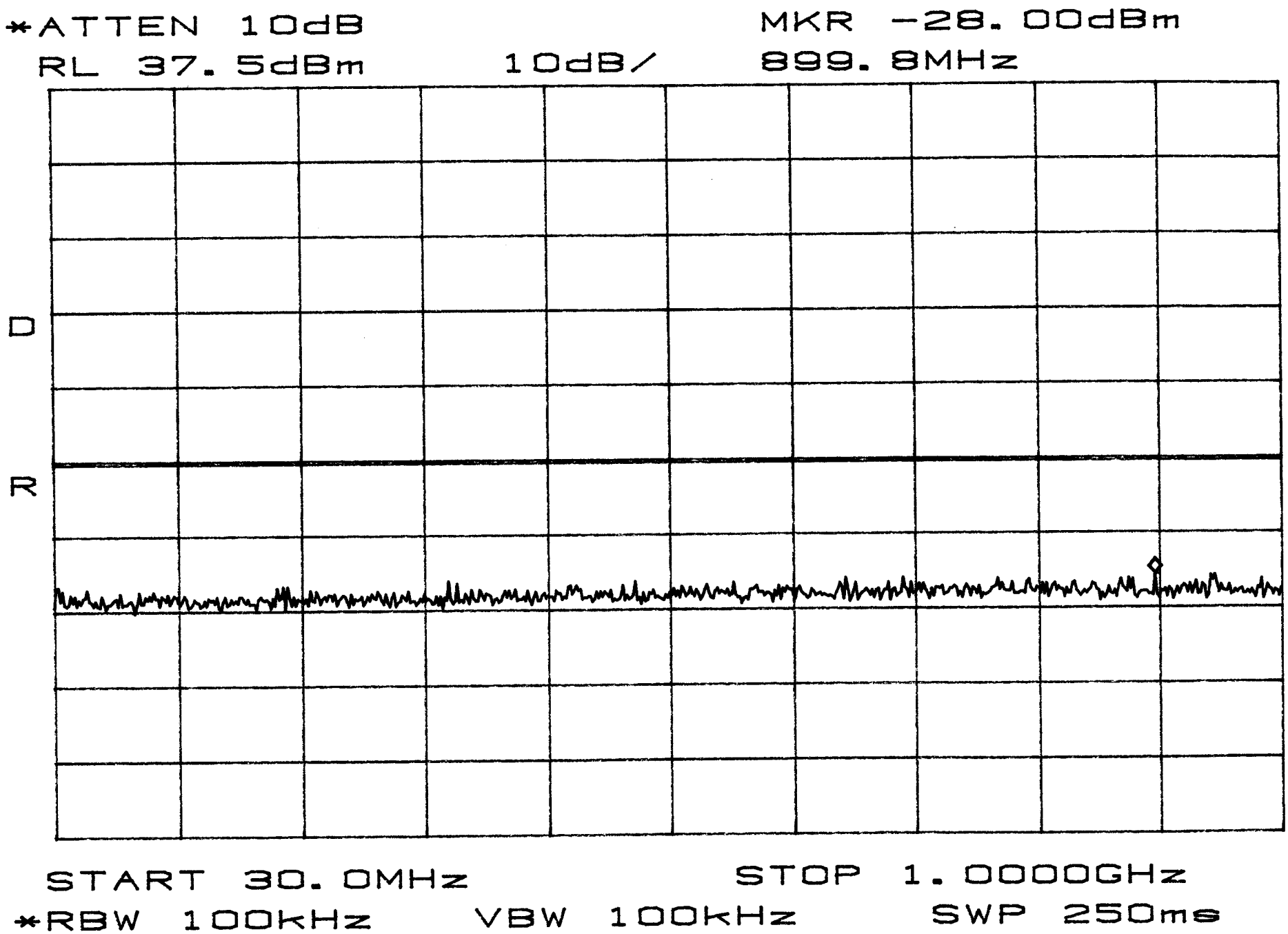

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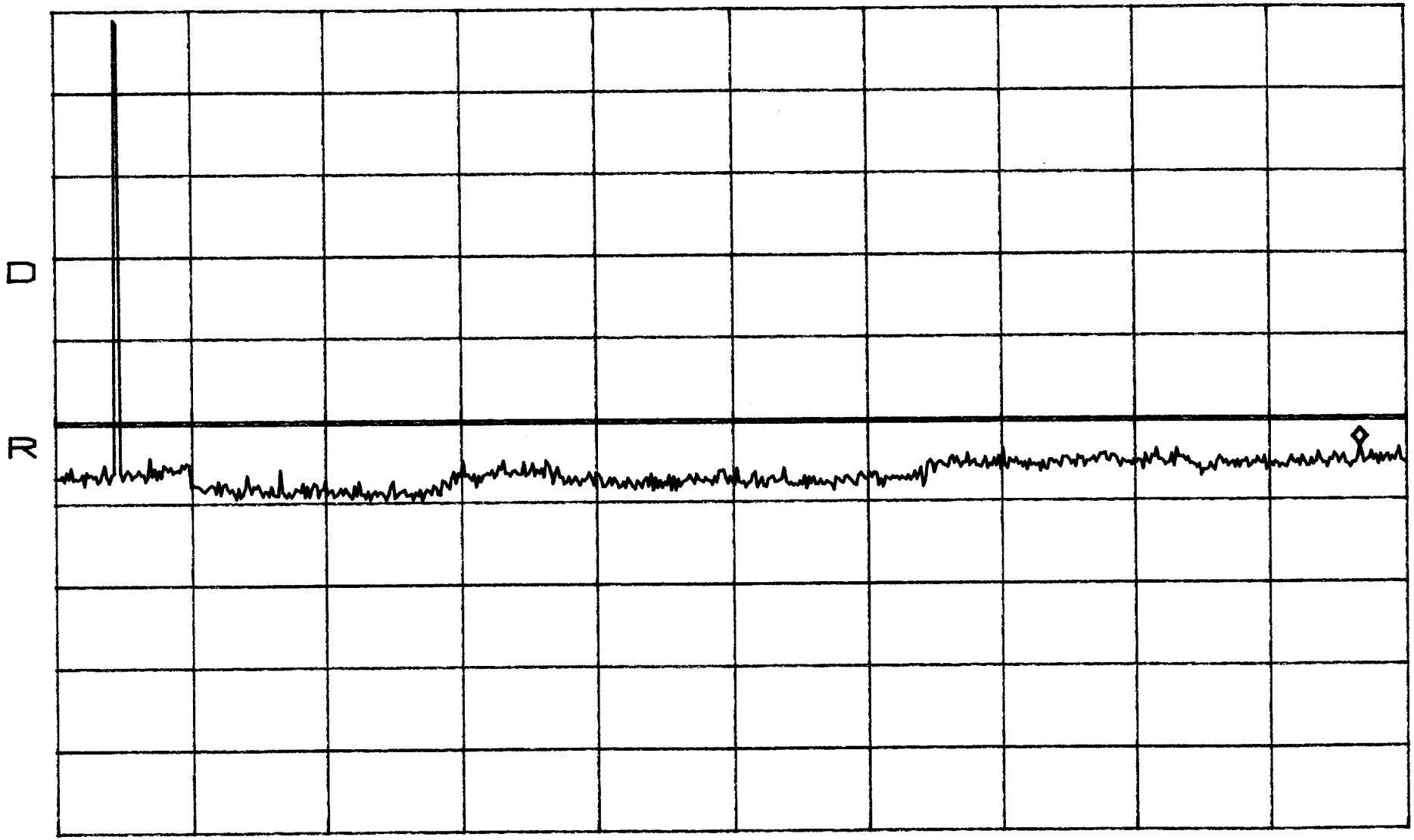

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