

Report No. S8310-08 (FCC ID: LB41900CDMA)

AA.1 CONDUCTED MEASUREMENT PHOTOS

TESTED BY ORTEL CORPORATION (photos not provided)

AA.2 CONDUCTED MEASUREMENT EQUIPMENT LIST

TESTED BY ORTEL CORPORATION

Test Equipment Used:

--Signal generator system 1:

Sony/Tektronix model AWG2021, S/N J310827 (Ortel asset number OC19693), calibration due on 9/27/98

AND Rohde & Schwarz, Model 835.8011.58, S/N 844170/007 (Ortel asset number OC 19692), calibration is "For Reference Only"

--Signal generator system 2 (all equipment for this system is rented from McGrath RentCorp, 800-352-2900):

Sony/Tektronix, Model AWG2021, S/N J310364 (McGrath ID number 9732), calibration due on 12/27/98

AND Rohde & Schwarz, Model 835.8011.58, S/N 843863/002 (McGrath ID number 11383), calibration due on 3/23/99

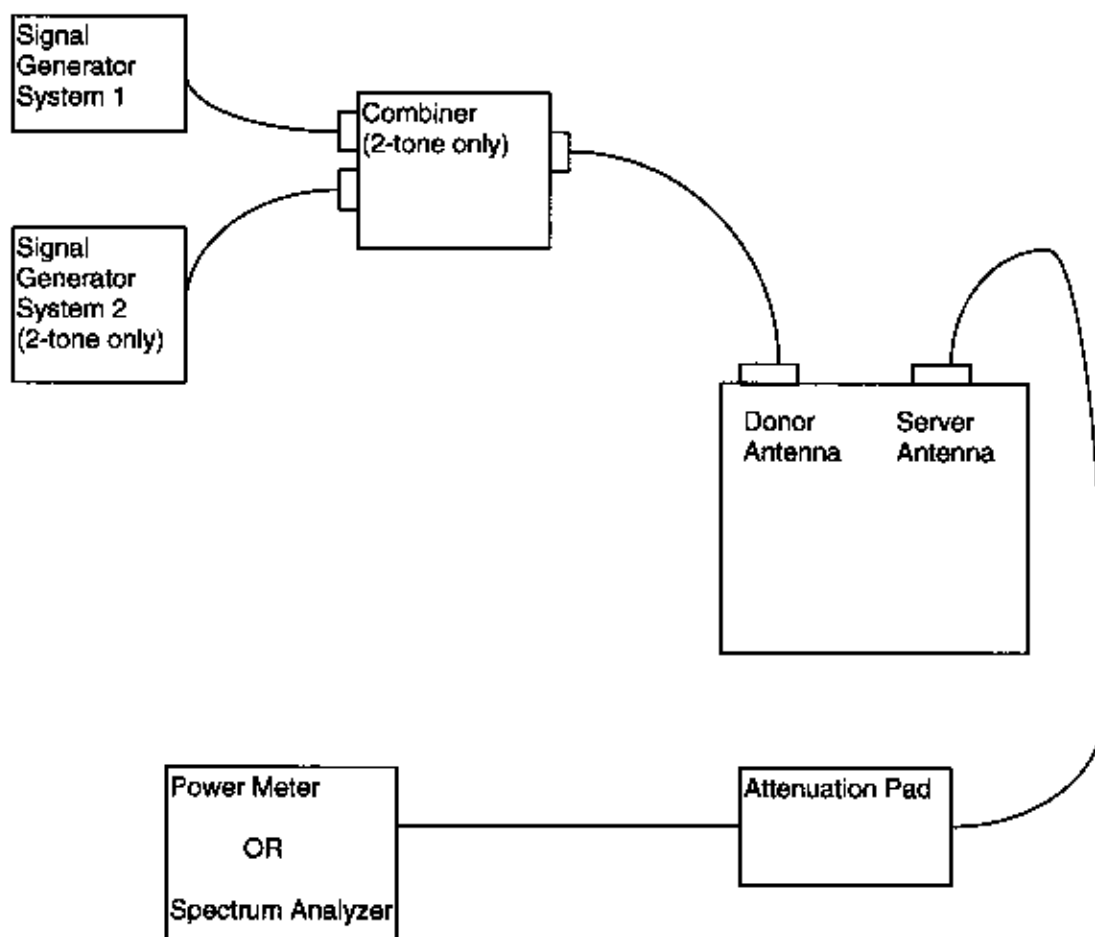
--Power meter: HP model 438A, Ortel asset number OC8L034349, calibration due on 3/21/99

--Spectrum Analyzer: HP, Model 8563E, S/N 18975/868 (Ortel asset number OC18812), calibration due on 10/20/98

Other equipment: RF cables (with SMA connectors), 7/16 to N connectors, N to SMA connectors, attenuation pad (for repeater output), and passive external combiner used for 2 tone testing.

AA.3 CONDUCTED MEASUREMENT TEST SETUP

TESTED BY ORTEL CORPORATION



Downlink mode shown. For uplink, swap antenna connections at the repeater.

NOTE: All cables, connectors, and the attenuation pad are calibrated out at the

A.4 CONDUCTED EMISSION DATA

MODEL CDR-1912-A (A-Band 2 channel CDMA Repeater) with 3.55W per channel DL / 1.0W per channel UL

See following page(s).

FCC Part 2.985: RF Output Power

DUT: Model CDR-1912-A (A-Band 2 channel CDMA Repeater),
with 3.55W per channel DL / 1.0W per channel UL

S/N: FCC Unit

Test Date: 9/8/98

FCC ID: LB41900CDMA

Company: Ortel Corporation

****RF Output Power Measured with Power Meter**
(HP Model: 438A Ortel Asset Number: 8L034349)

UPLINK:

Channel	Frequency (MHz)	Output Power (dBm)
25	1851.25	30.05
150	1857.50	29.98
275	1863.75	29.95

DOWNLINK:

Channel	Frequency (MHz)	Output Power (dBm)
25	1931.25	35.50
150	1937.50	35.53
275	1943.75	35.51

****Per FCC request to use power meter.**

COR 2ch x 3.55W

OL Low

9/8/98

A-band

Ch. 25

(Representative Unit)

*ATTEN 20dB

VAVG 10

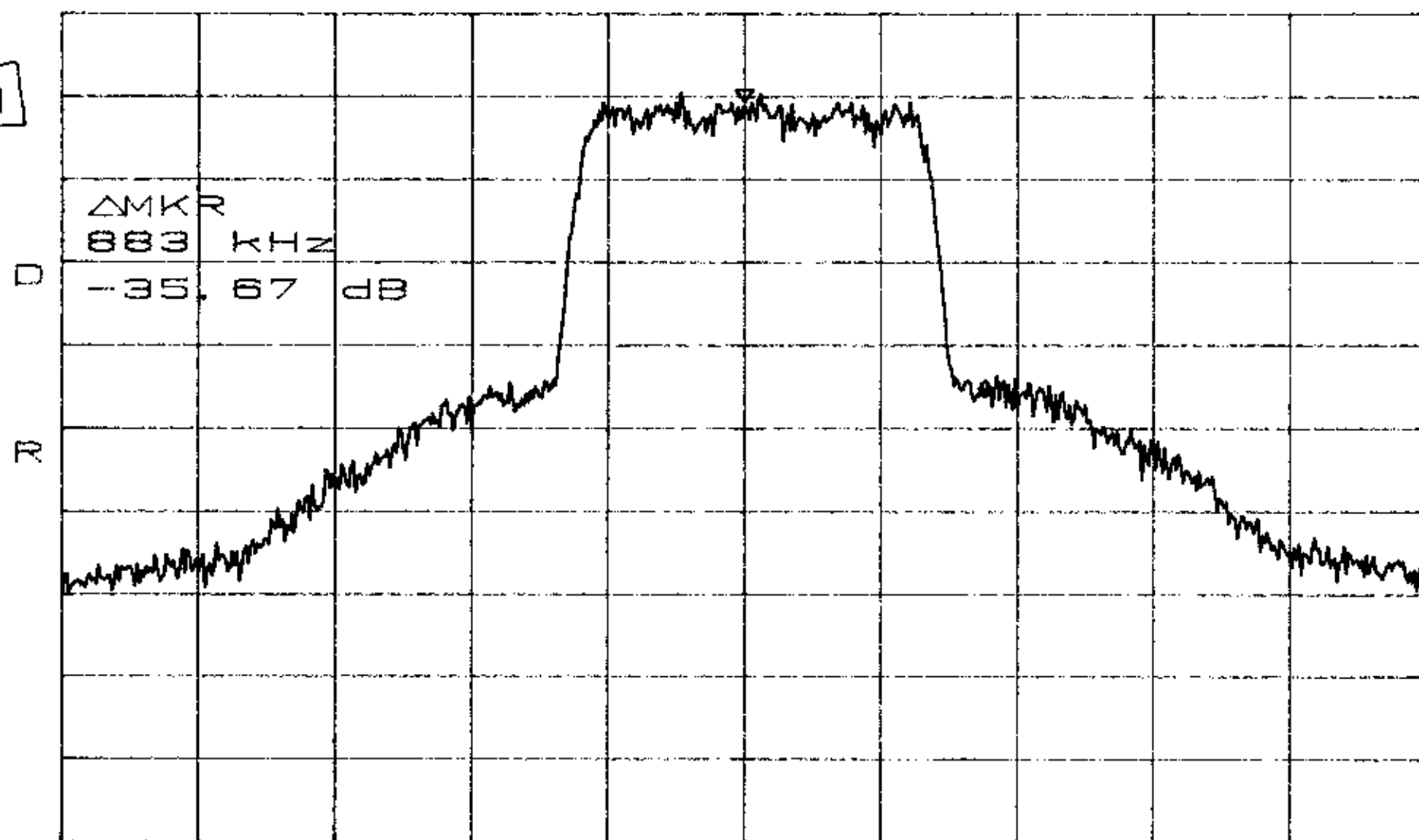
ΔMKR -35.67dB

RL 30.0dB

10dB/

883kHz

2.989



CENTER 1.981250GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W

OL High

9/8/98

A-band

Ch. 275

(Representative Unit)

*ATTEN 20dB

VAVG 10

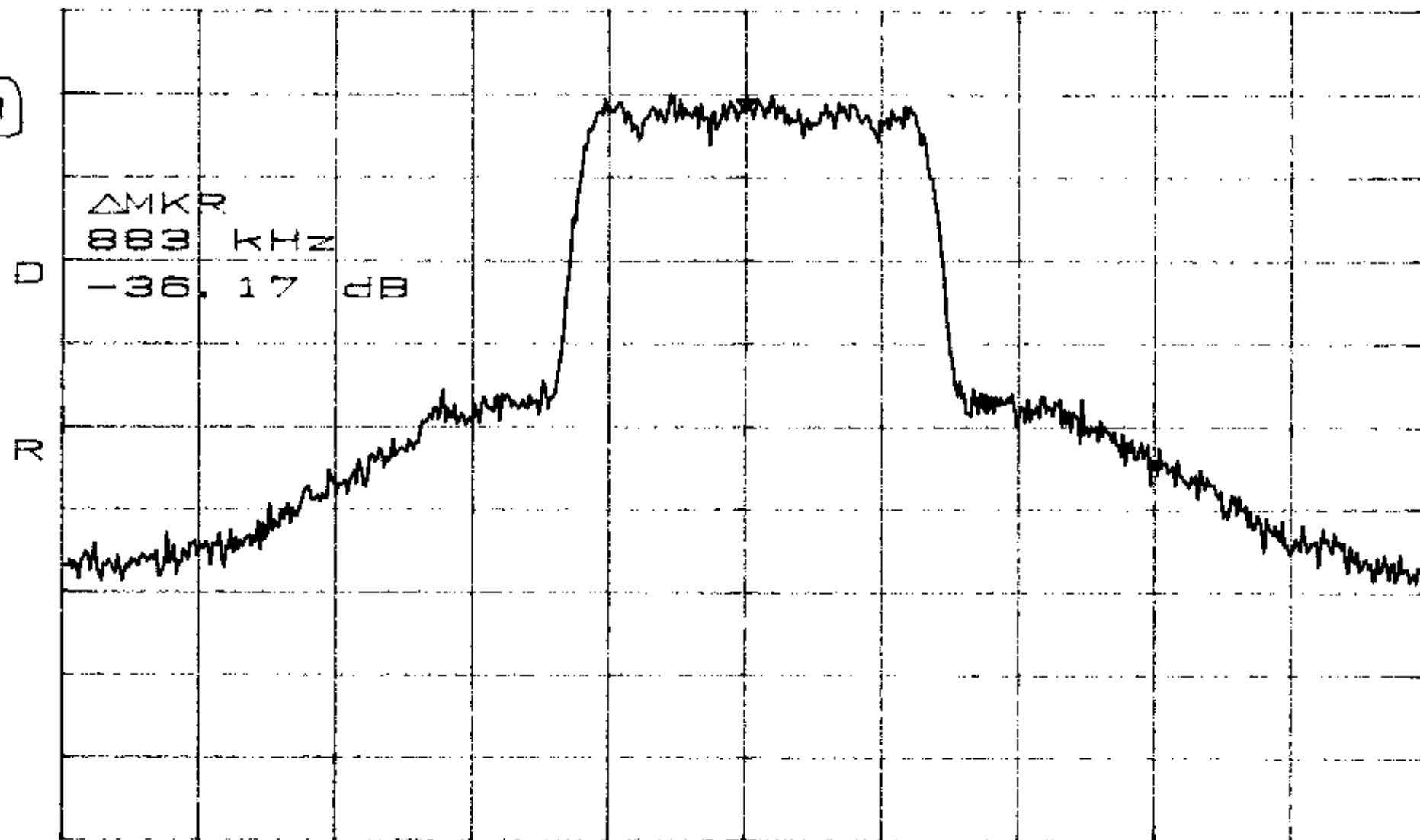
ΔMKR -36.17dB

RL 30.0dBm

10dB/

883kHz

2.959



CENTER 1.943750GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W

A-band

(Representative Unit)

UL Low

Ch. 25

9/8/98

*ATTEN 20dB

VAVG 10

ΔMKR -26.50dB

RL 30.0dBm

10dB/

883kHz

2.989

ΔMKR
883 kHz
-26.50 dB

D

R

CENTER 1.851250GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band

(Representative Unit)

*ATTEN 20dB

RL 30.0dBm

JL High
Ch. 275

VAVG 10

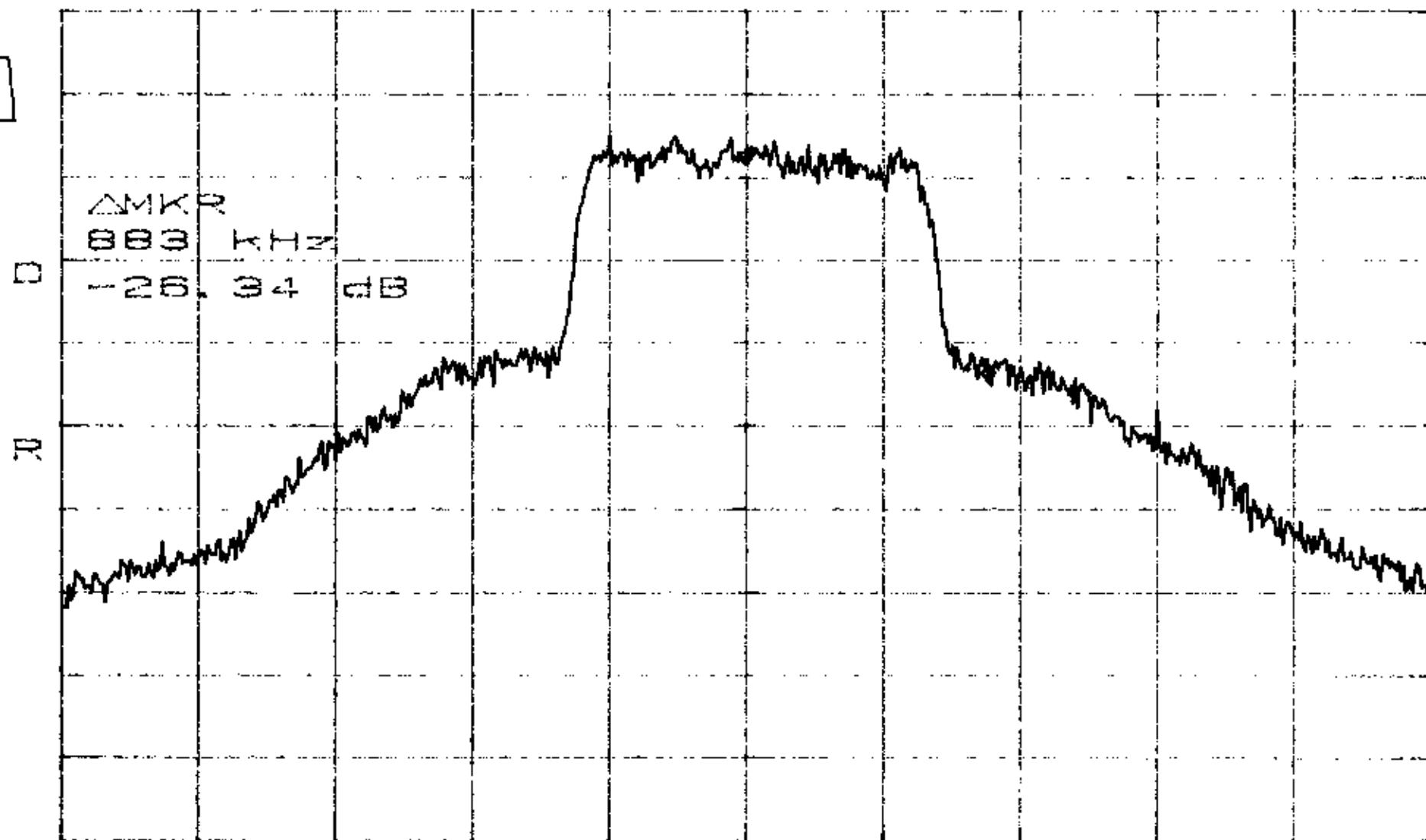
10dB/

9/8/98

ΔMKR -26.34dB

888kHz

2.989



CENTER 1.863750GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

DL Low
Input

9/8/98

ATTEN 10dB

VAVG 10

MKR -69.67dBm

RL -50.0dBm

10dB/

1.931283GHz

In/out

RL OFFSET
1.0 dB

D

R

CENTER 1.931250GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

DL Low
Output

9/8/98

*ATTEN 20dB
RL 30.0dBm

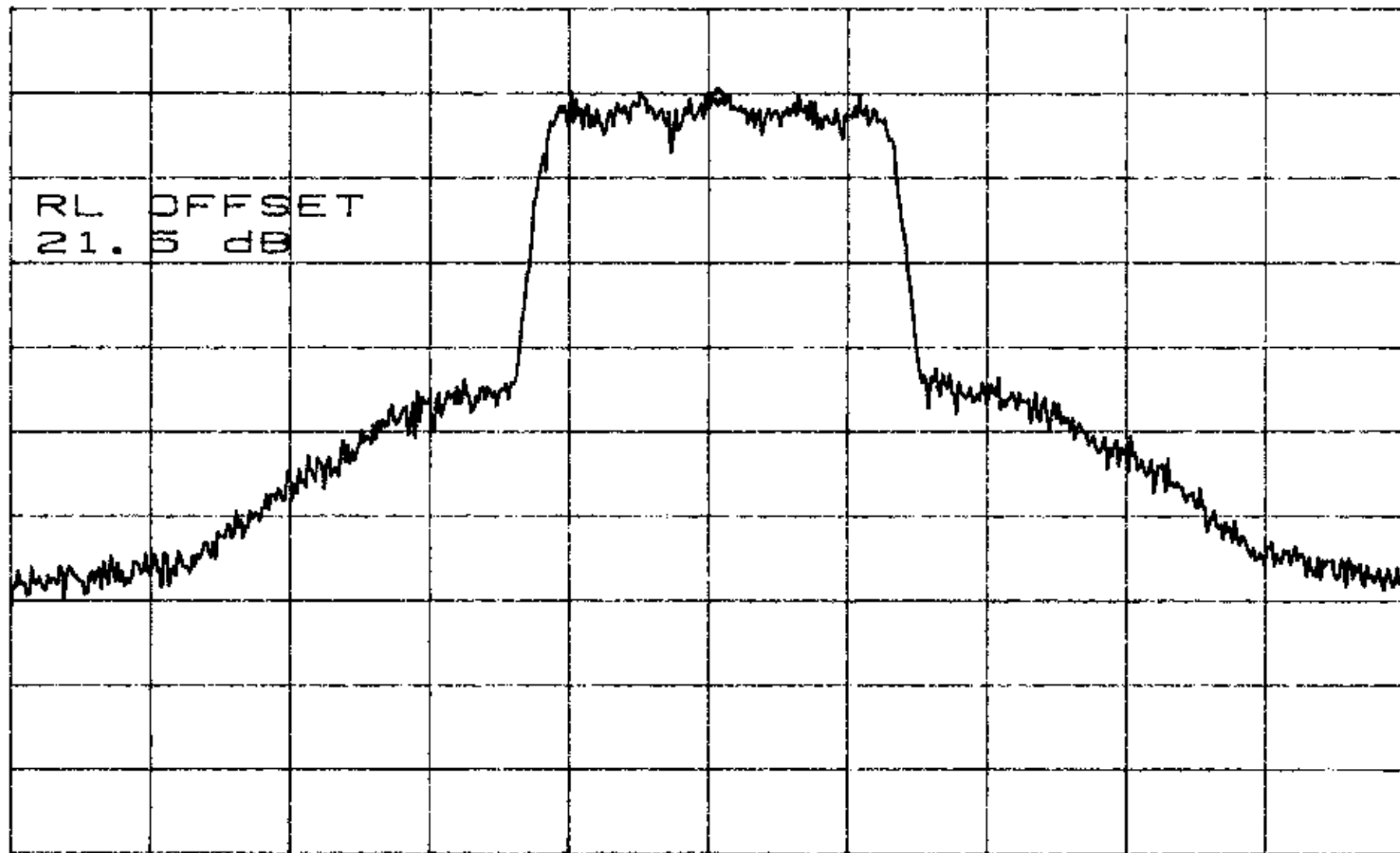
VAVG 10
10dB/

MKR 18.67dBm
1.931283GHz

In/Out

RL OFFSET
21.5 dB

D
R



CENTER 1.931250GHz
*RBW 30kHz *VBW 30kHz

SPAN 5.000MHz
SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

DL High
Input

9/8/98

ATTEN 10dB

VAVG 10

MKR -70.83dBm

RL -50.0dBm

10dB/

1.943783GHz

In/Out

RL OFFSET
1.0 dB

D

R

CENTER 1.943750GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

DL High
Output

9/8/98

ATTEN 20dB

VA/VG 10

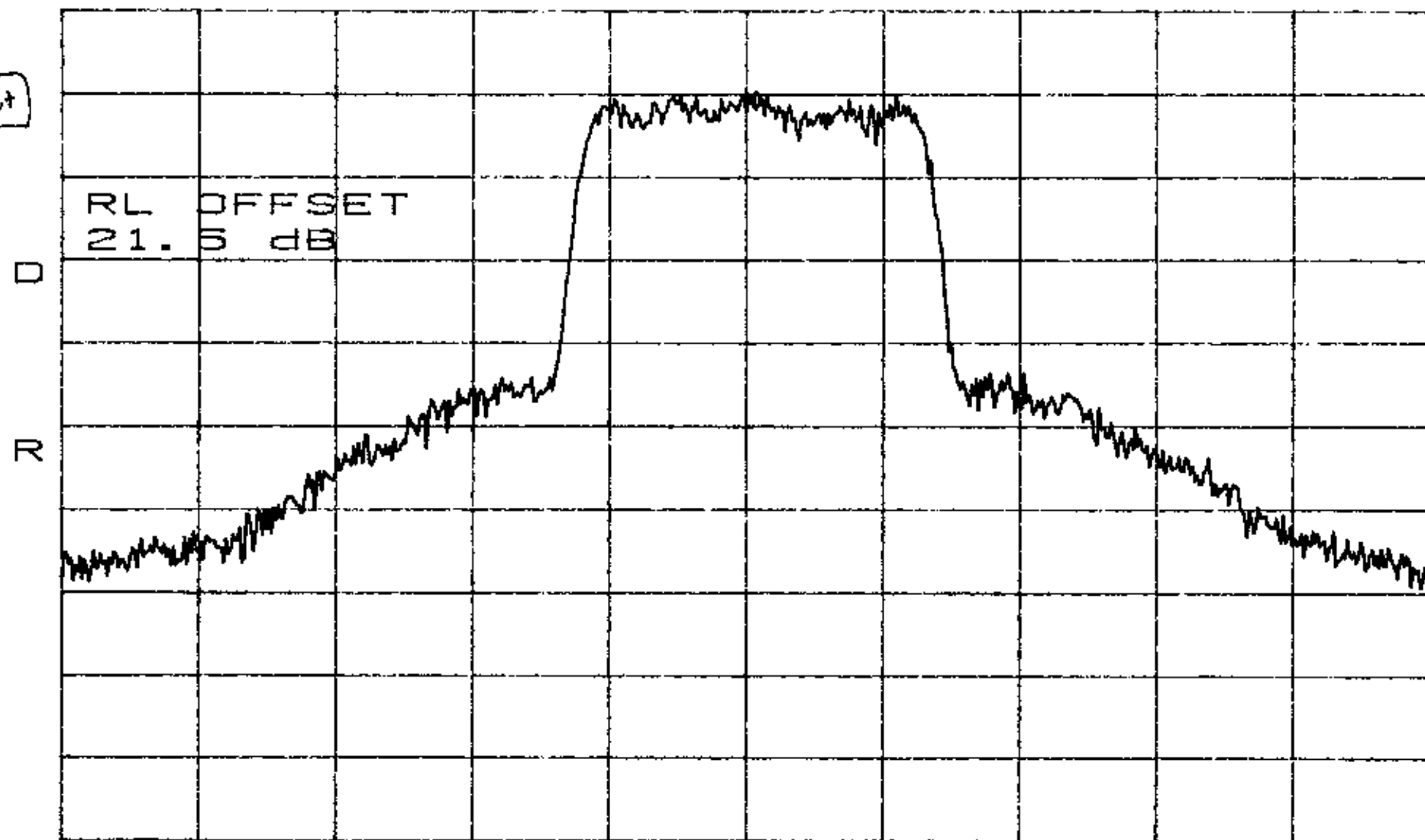
MKR 18.33dBm

RL 30.0dBm

10dB/

1.943783GHz

In/out



RL OFFSET
21.5 dB

CENTER 1.943750GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

U- Low
Input

9/8/98

ATTEN 10dB

VAVG 10

MKR -74.67dBm

RL -50.0dBm

10dB/

1.851283GHz

In/Out

RL OFFSET
1.0 dB

D

R

CENTER 1.851250GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W

UL Low

9/8/98

A-band

Output

(Representative Unit)

*ATTEN 20dB

V.AVG 10

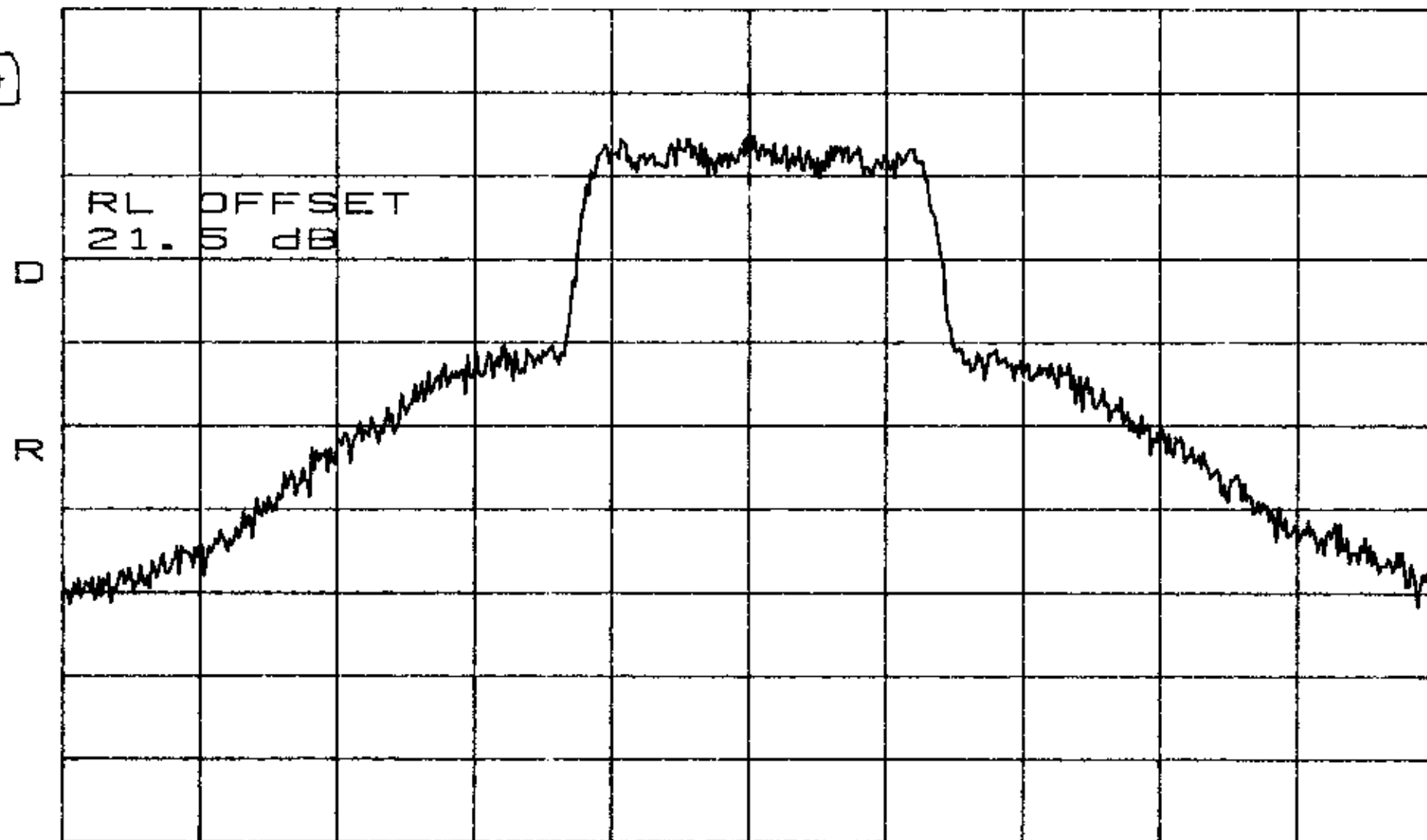
MKR 13.00dBm

RL 30.0dBm

10dB/

1.851250GHz

In/Out



CENTER 1.851250GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CPR 2ch x 3.55W

A-band

(Representative Unit)

UL High
Input

9/8/98

ATTN 10dB

VA.VG 10

MKR -73.67dBm

RL -50.0dBm

10dB/

1.863783GHz

In/Out

D

R

RL OFFSET
1.0 dB

CENTER 1.863750GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W

A-band
(Representative Unit)

ATTEN 20dB

RL 30.0dBm

UL High

output

VAVG 10

10dB/

MKR 12.17dBm

1.863783GHz

9/8/98

In/Out

RL OFFSET
21.5 dB

D

2

CENTER 1.863750GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

DL Low
Ch. 25

Fundamental

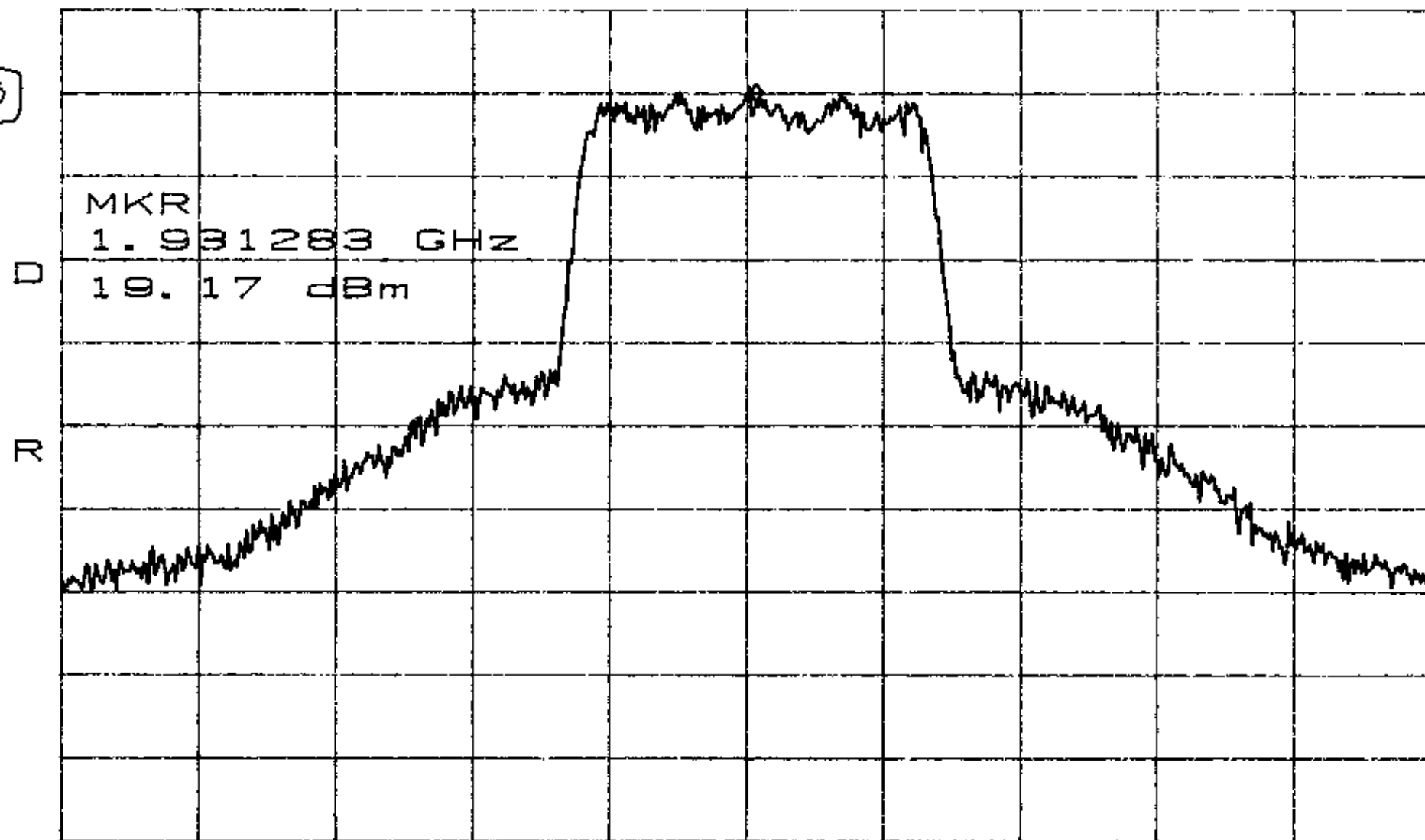
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

MKR 19.17dBm
1.931283GHz

24.256



CENTER 1.931250GHz SPAN 5.000MHz
*RBW 30kHz *VBW 30kHz SWP 50.0ms

CDR 2ch x 3.55W

A-band

(Representative Unit)

*ATTEN 20dB

RL 30.0dBm

DL Low

ch.25

Below Fundamental

9/8/98

VAVG 10

10dB/

Δ MKR -34.17dB

-880kHz

24.238

D

R

Δ MKR

-880 kHz

-34.17 dB

CENTER 1.92725GHz

SPAN 10.00MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch = 3.95W

PL Low

Above Fundamental

9/8/98

A-band

Ch. 25

(Representative Unit)

*ATTEN 20dB

VAVG 10

MKR 28.33dBm

RL 30.0dBm

10dB/

1.932000GHz

24.238

MKR

1.932000 GHz

28.33 dBm

D

R

CENTER 1.932000GHz

SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

DL Low
ch.25

Above Fundamental

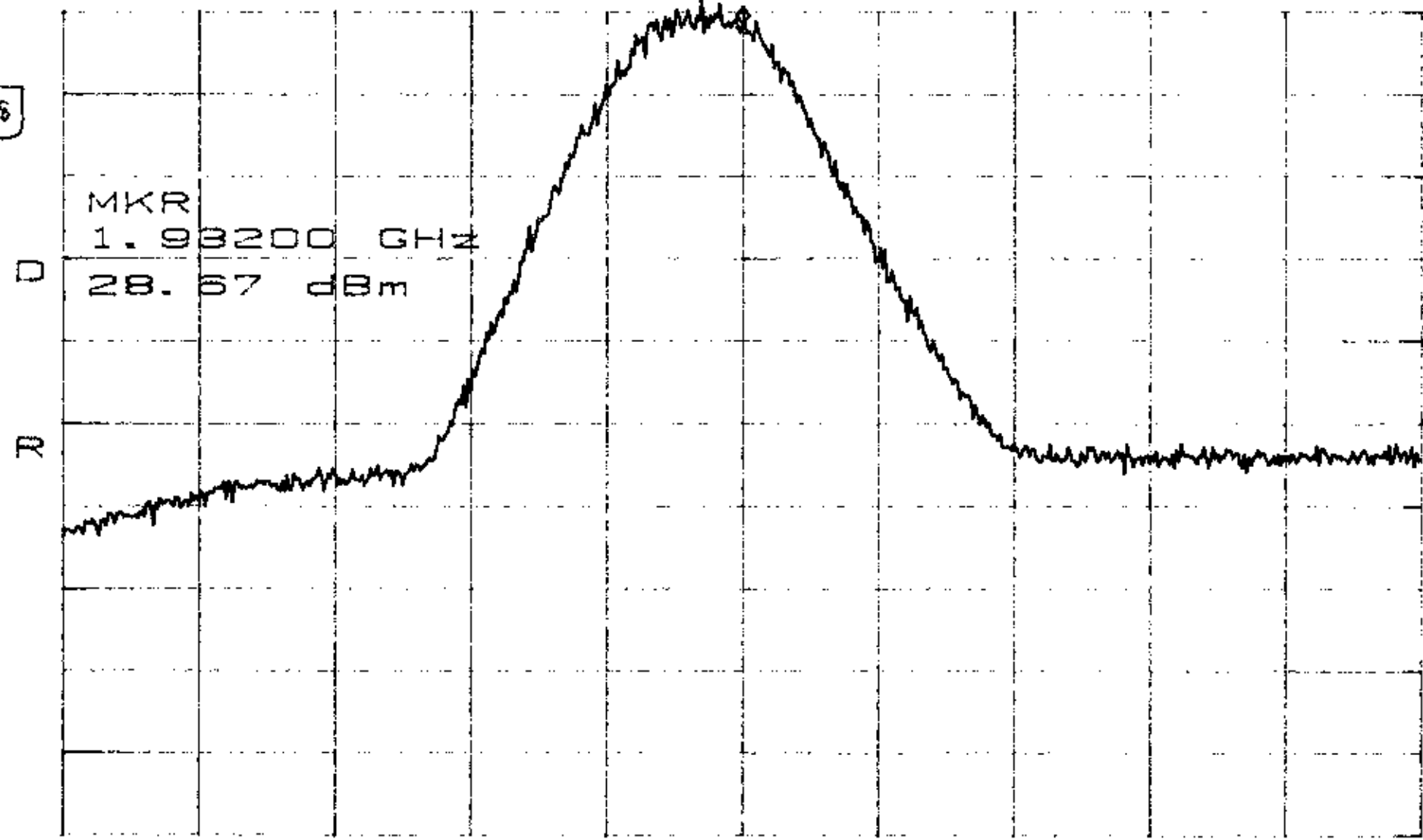
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

MKR 28.67dBm
1.93200GHz

24.236



CENTER 1.93200GHz

SPAN 20.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

CDR 2ch * 3.55W

A-band

(Representative Unit)

DL Low

Ch. 25

Below Fundamental

9/8/98

*ATTEN 20dB

VAVG 10

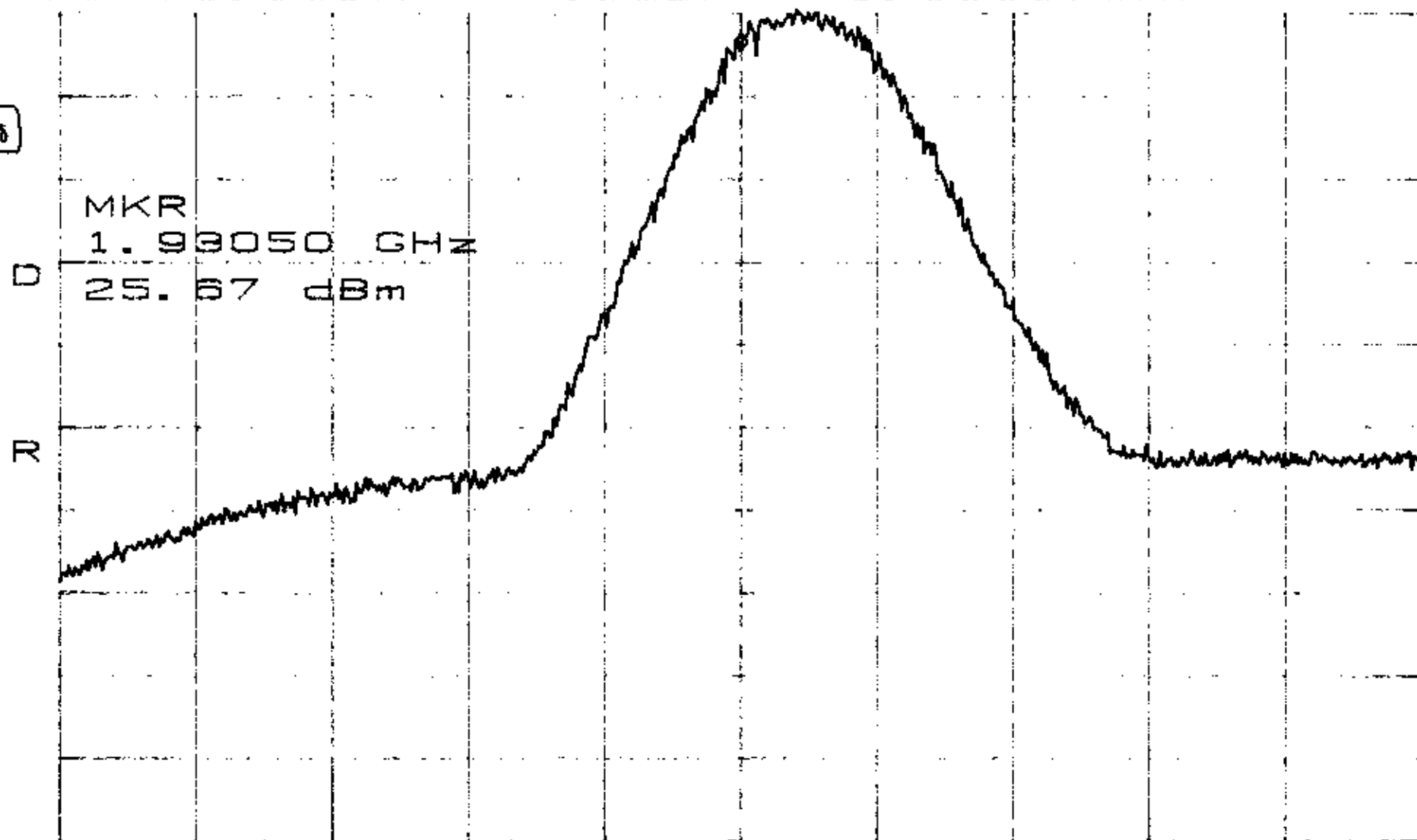
MKR 25.67dBm

RL 30.0dBm

10dB/BPD

1.93050GHz

24.238



CENTER 1.93050GHz

SPAN 20.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

COR 2ch x 3.55W

A-band
(Representative Unit)

DL Low

Ch. 25

Rebu Fundamental

9/8/98

*ATTEN 20dB

VAVG 10

MKR 26.67dBm

RL 30.0dBm

10dB/

1.930500GHz

MKR

1.930500 GHz

26.67 dBm

CENTER 1.930500GHz

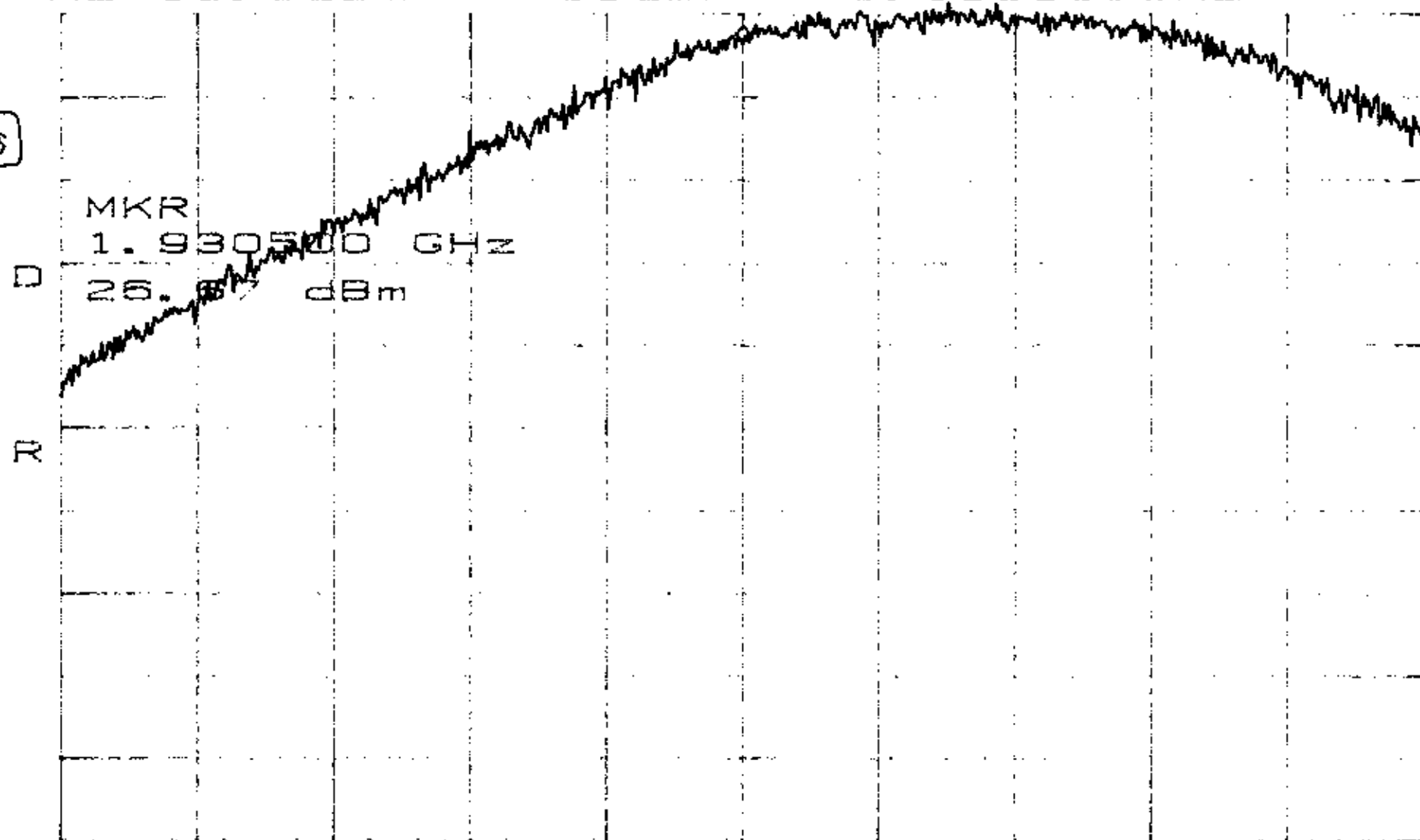
SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

24.236



CDR 2ch x 3.55W
A-band
(Representative Unit)

DL High
ch. 275

Fundamental

9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

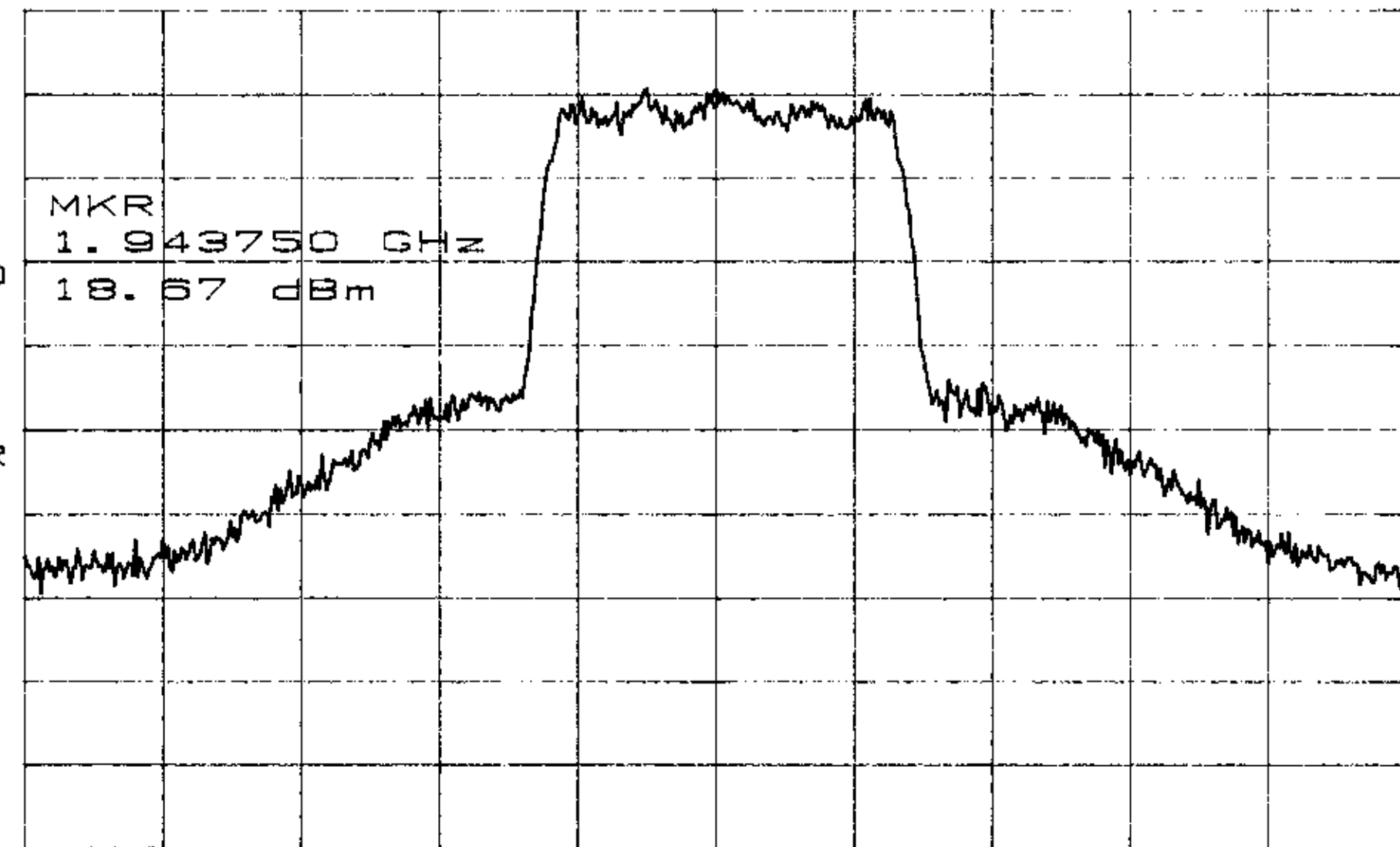
MKR 18.67dBm
1.943750GHz

24.238

MKR
1.943750 GHz
18.67 dBm

D

R



CENTER 1.943750GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

DL High
Ch. 215

Above Fundamental

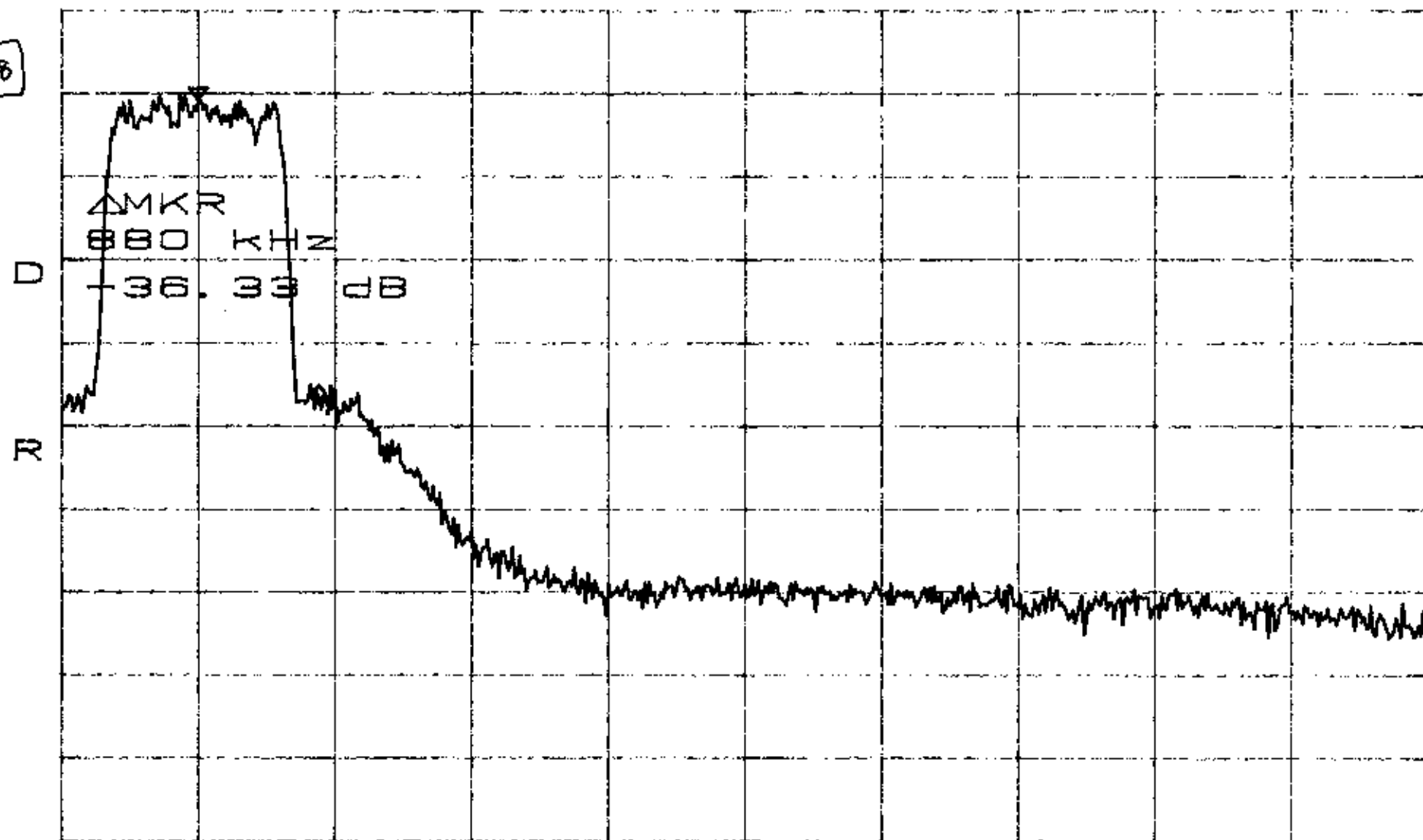
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

Δ MKR -36.33dB
880kHz

24.238



CENTER 1.94775GHz
*RBW 30kHz *VBW 30kHz

SPAN 10.00MHz
SWP 50.0ms

CDR 2ch * 3.55W

A-band

(Representative Unit)

DL High

Ch. 275

Above Fundamental

9/8/98

*ATTEN 20dB

VAVG 10

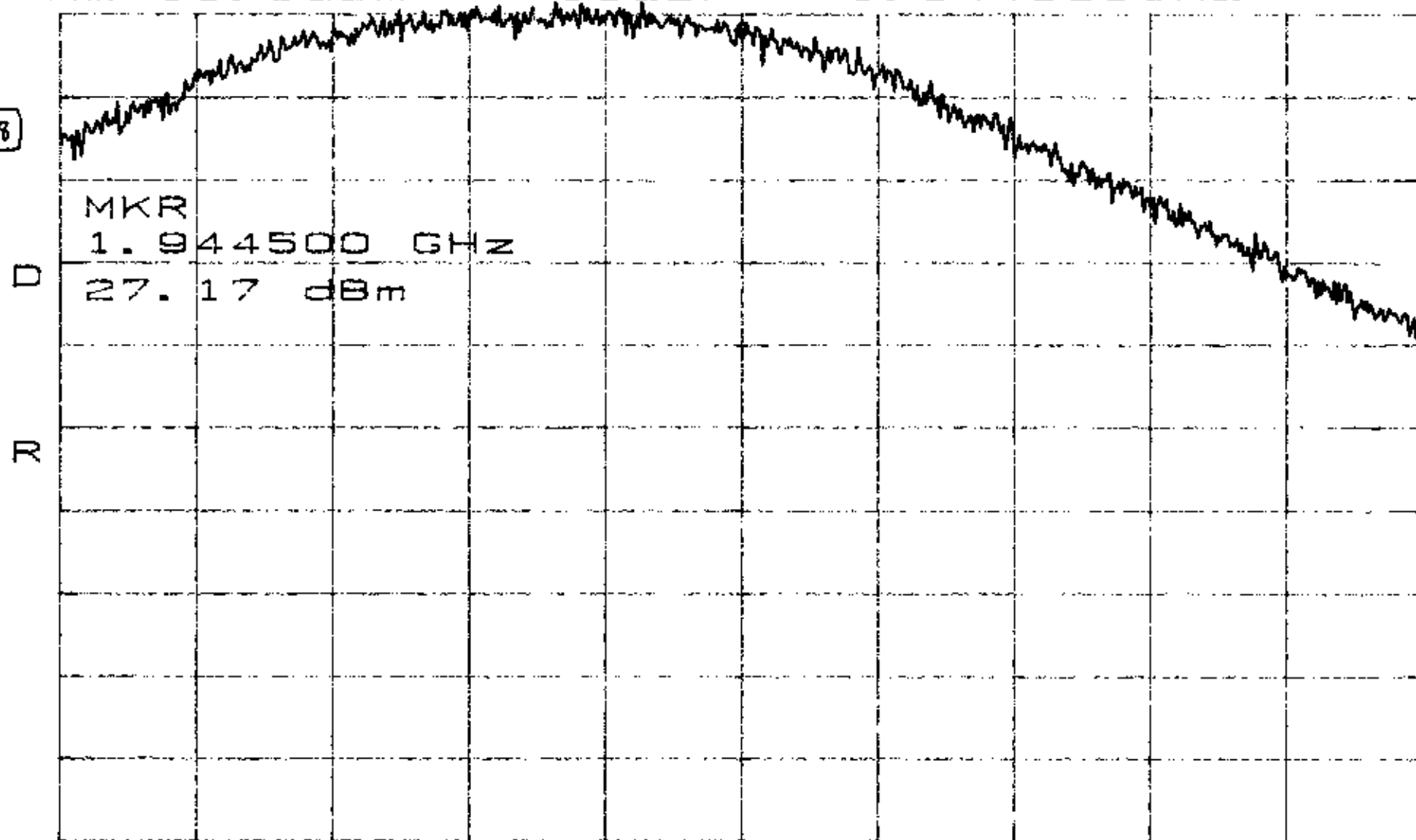
MKR 27.17dBm

RL 30.0dBm

10dB/

1.944500GHz

24.298



CENTER 1.944500GHz

SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

2L High
Ch. 275

Above Fundamental

9/8/98

*ATTEN 20dB

VAVG 10

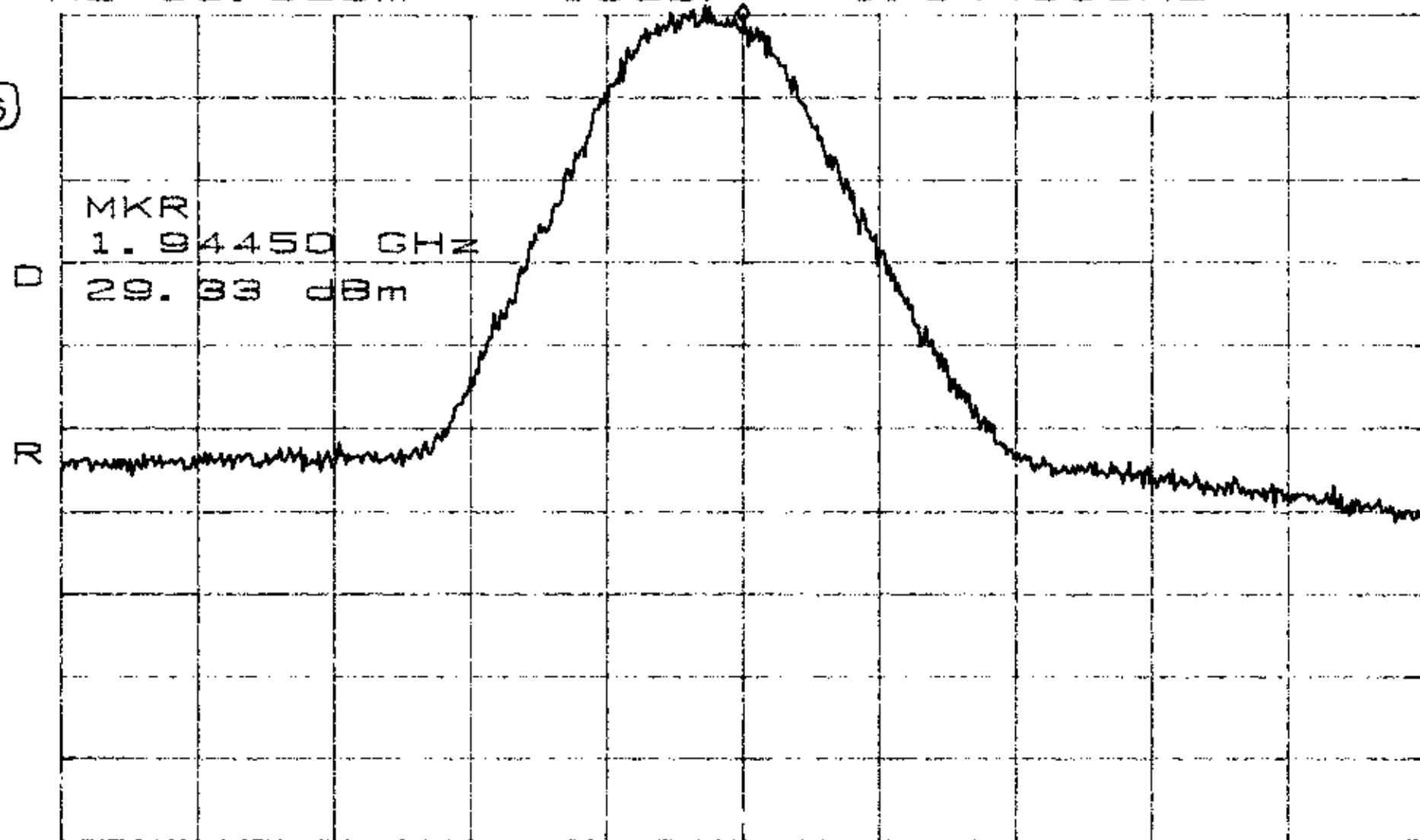
MKR 29.33dBm

RL 30.0dBm

10dB/BPO1

1.94450GHz

24.236



CENTER 1.94450GHz

SPAN 20.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

CPR 2ch x 3.55W
A-band
(Representative Unit)

DL High
Ch. 275

Below Fundamental

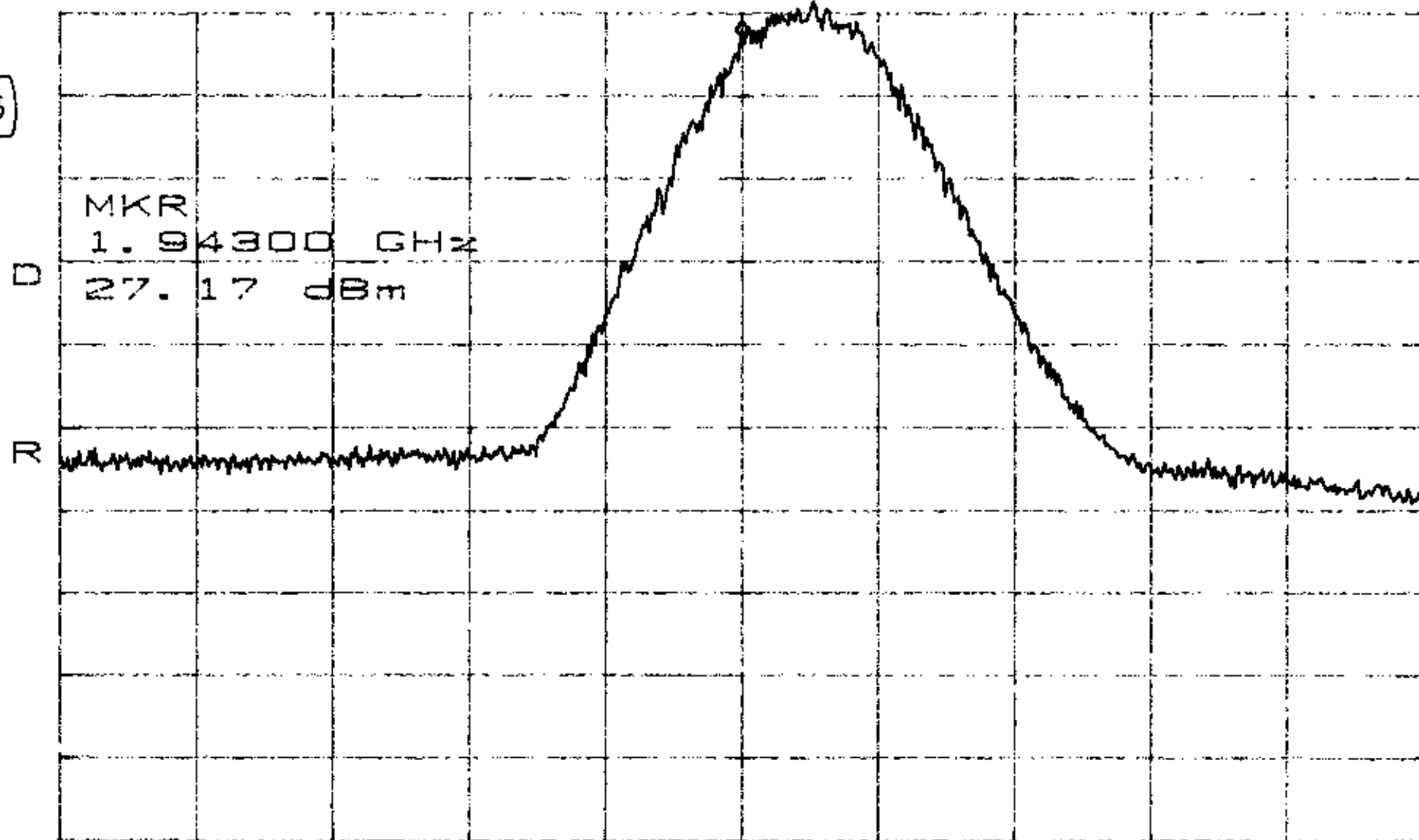
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

MKR 27.17dBm
1.94300GHz

24.238



CENTER 1.94300GHz SPAN 20.00MHz
*RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms

CDR 2ch x 3.95W

A-brand
(Representative Unit)

DL High

Ch.275

Below Fundamental

9/8/98

*ATTEN 20dB

VAVG 10

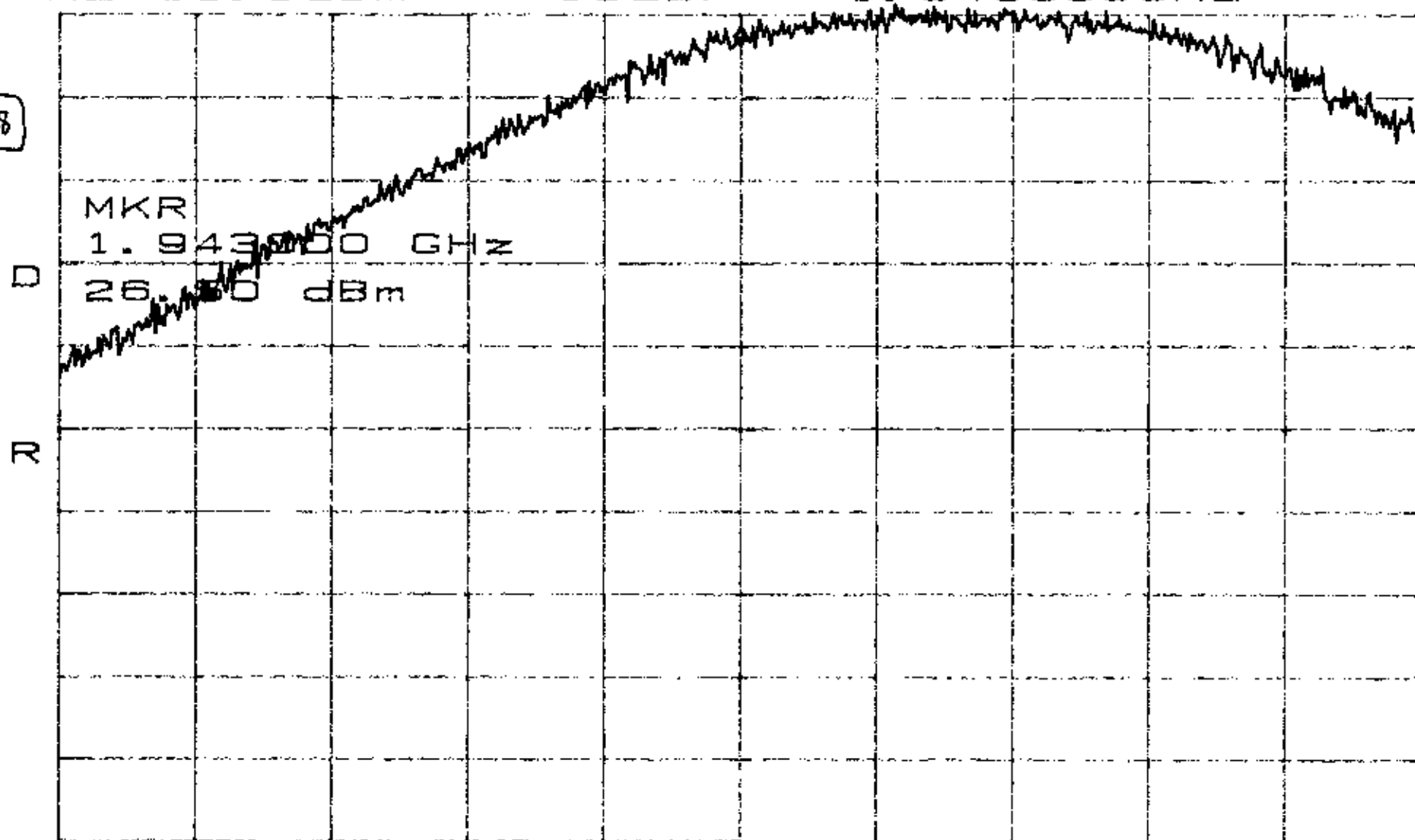
MKR 26.50dBm

RL 30.0dBm

10dB/

1.943000GHz

24.238



CENTER 1.943000GHz

SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

UL Low
ch.25

Fundamental

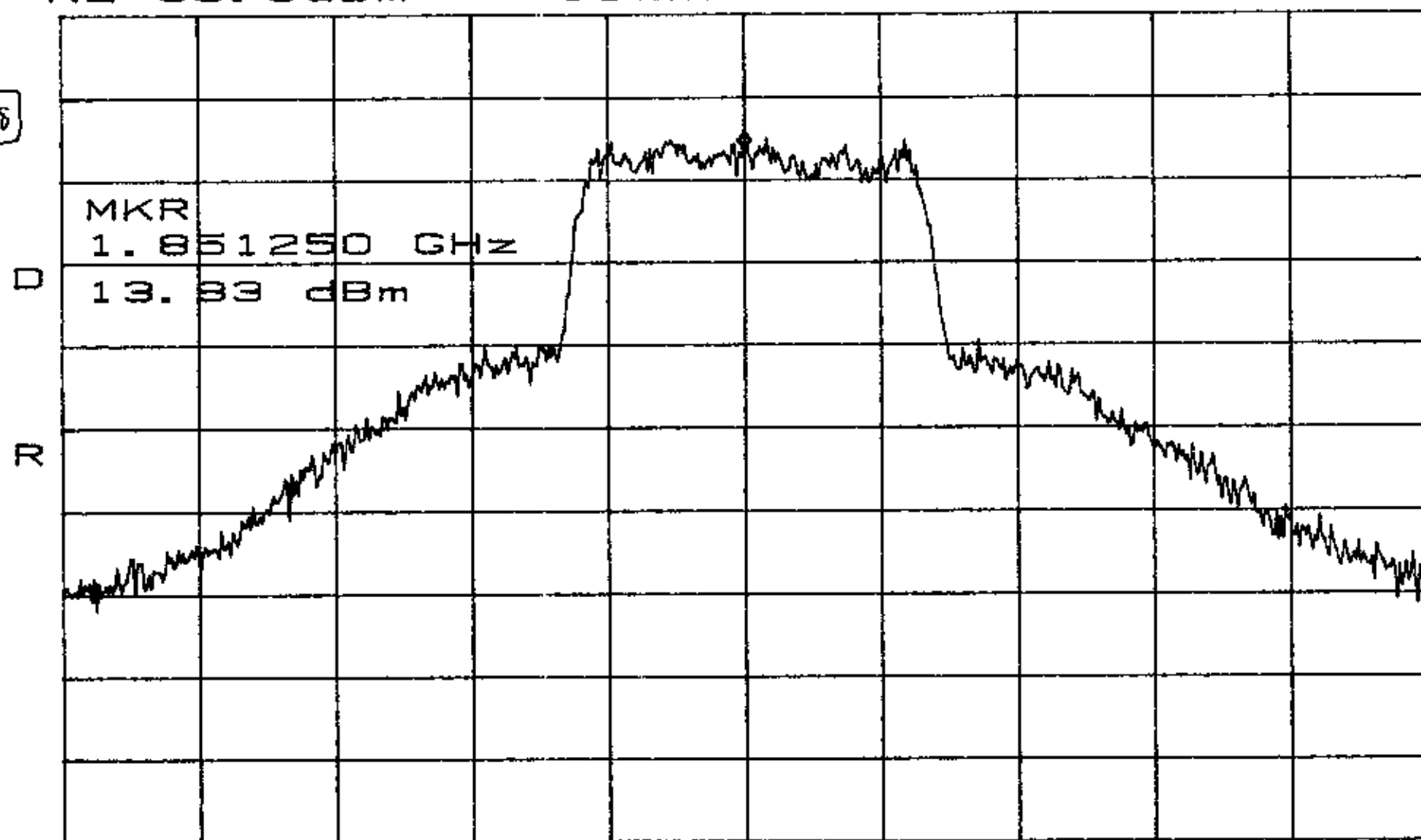
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

MKR 13.83dBm
1.851250GHz

24.298



CENTER 1.851250GHz

SPAN 5.000MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

UL Low
Ch. 25

Below Fundamental

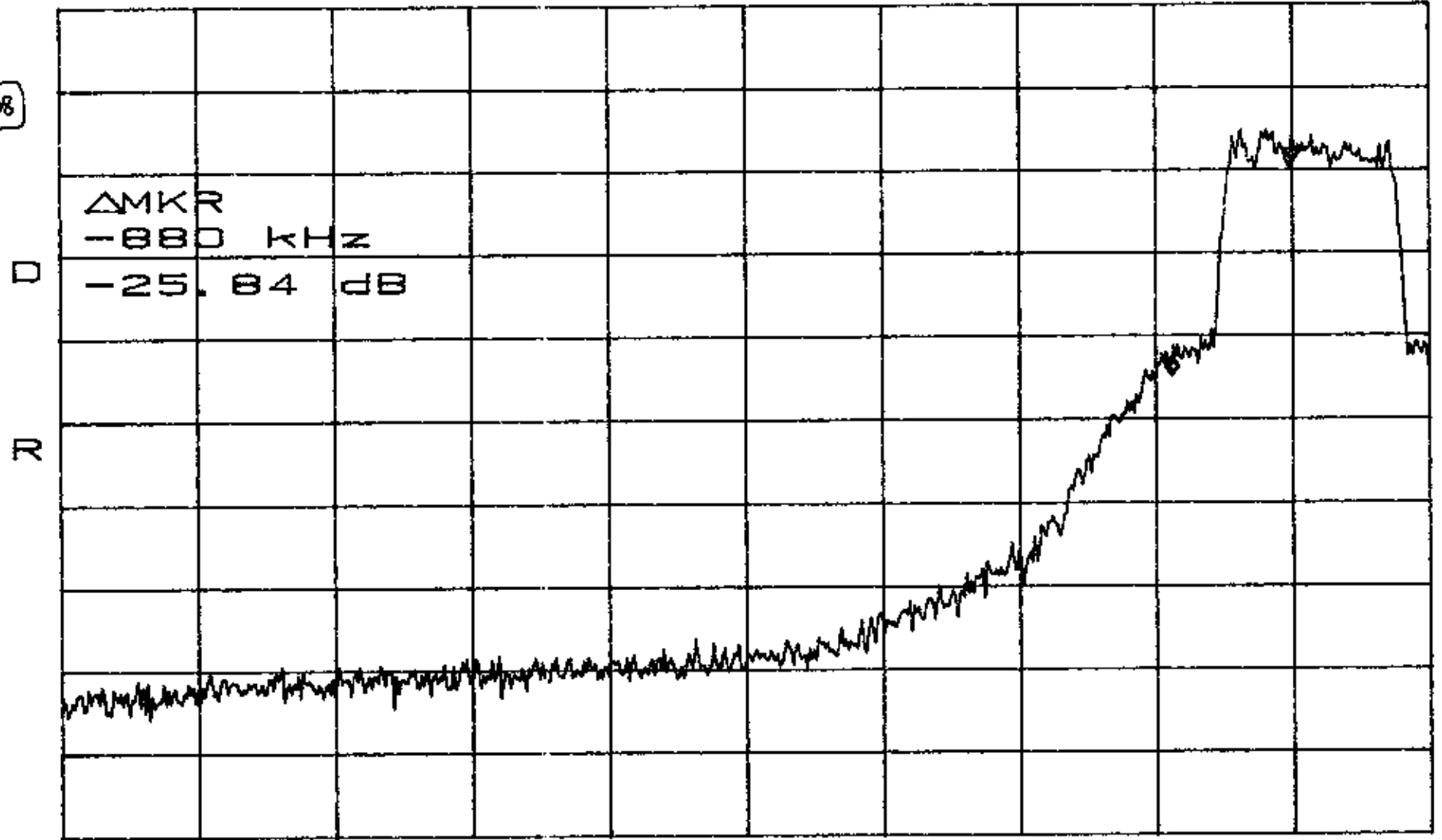
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/BPO1

ΔMKR -25.84dB
-880kHz

24.238



CENTER 1.84725GHz SPAN 10.00MHz
*RBW 30kHz *VBW 30kHz SWP 50.0ms

COR 2ch x 3.55W
A-brand
(Representative Unit)

VL Low
Ch. 25

Above Fundamental

9/8/98

*ATTEN 20dB

VAVG 10

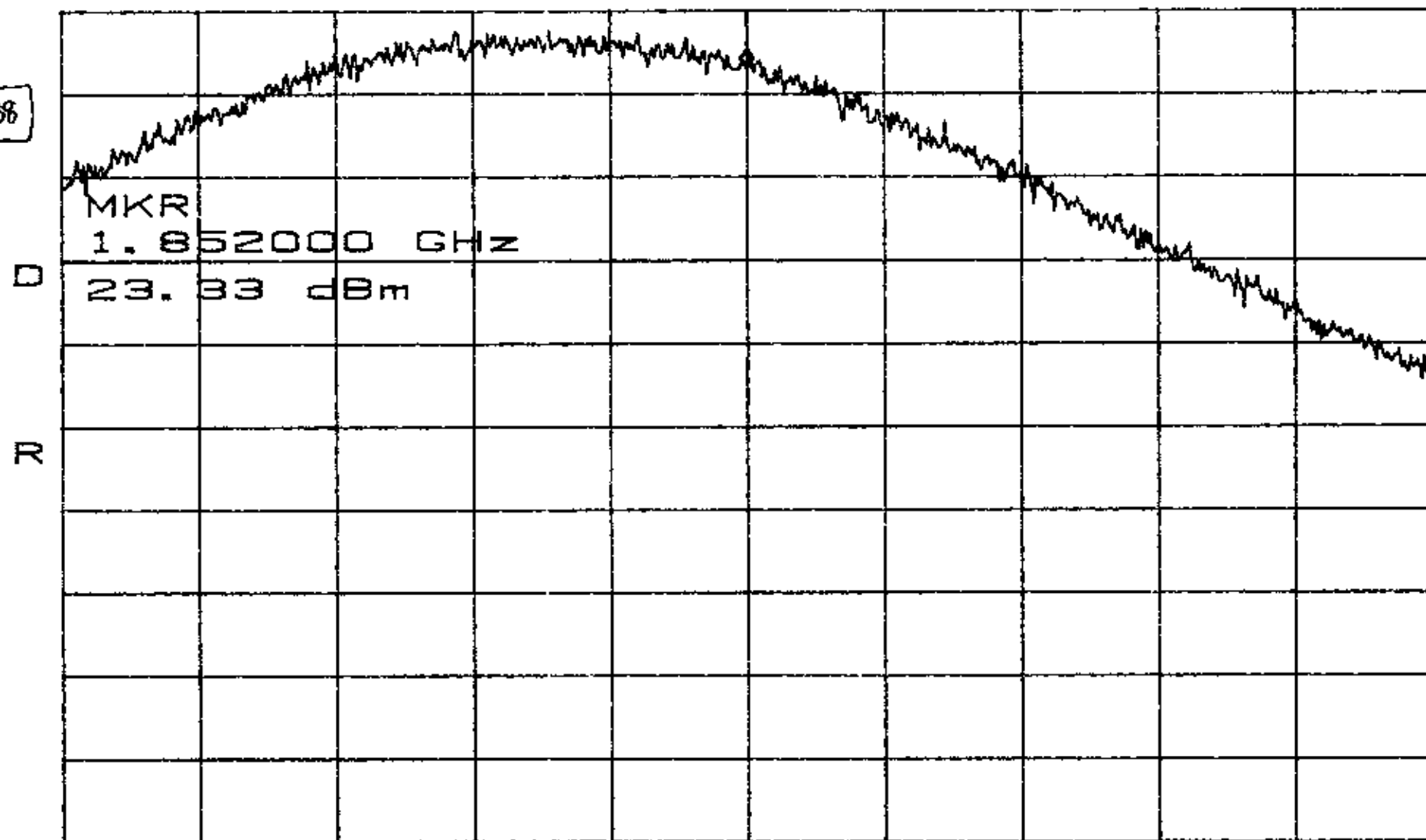
MKR 23.33dBm

RL 30.0dBm

10dB/

1.852000GHz

24.238



CENTER 1.852000GHz

SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

CDR 2ch x 3.55W

UL Low

Above Fundamental

9/8/98

A-band
(Representative Unit)

Ch. 25

*ATTEN 20dB

VAVG 10

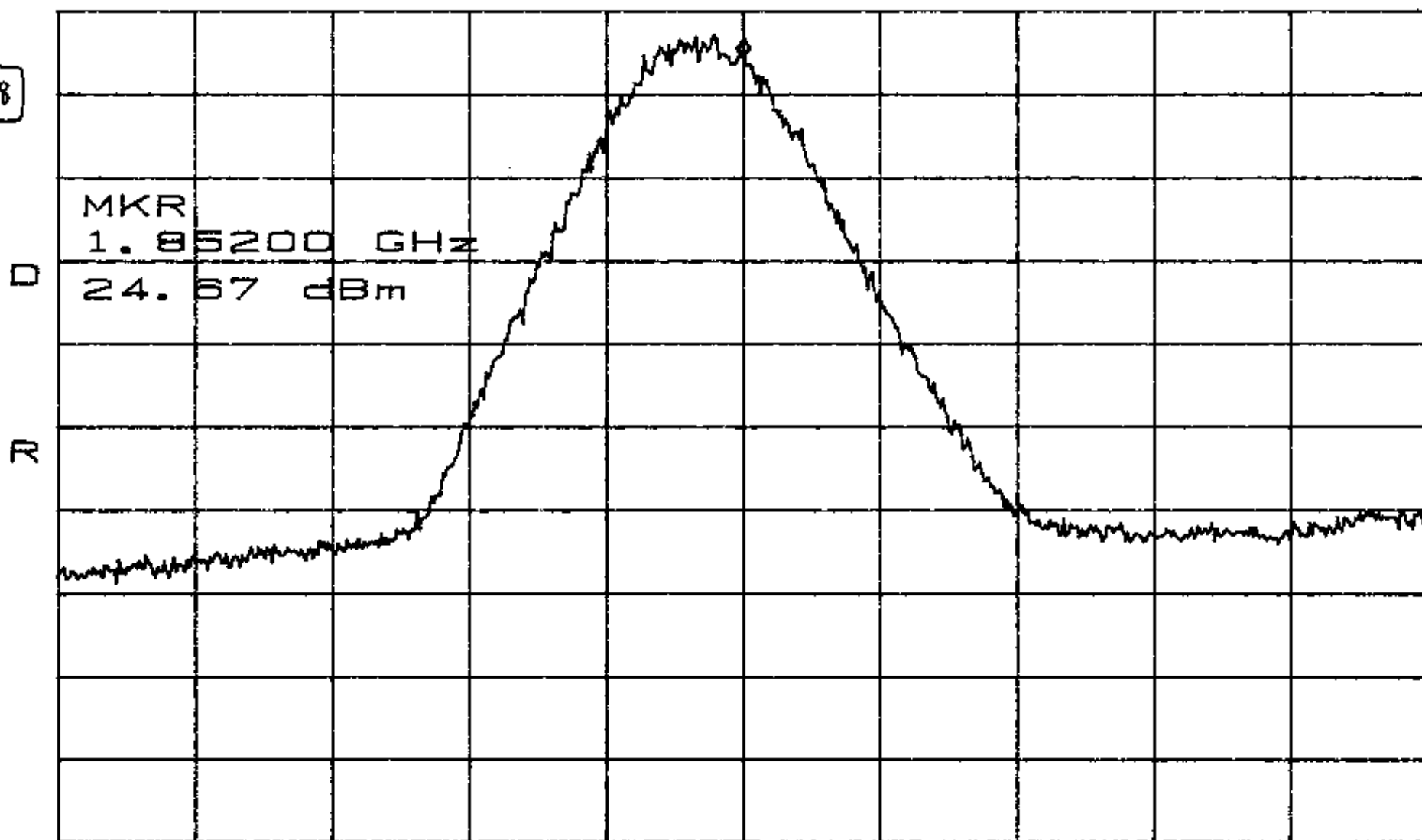
MKR 24.67dBm

RL 30.0dBm

10dB/

1.85200GHz

24.238



CENTER 1.85200GHz

SPAN 20.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

UL Low
ch. 25

Below Fundamental

9/8/98

*ATTEN 20dB
RL 30.0dBm

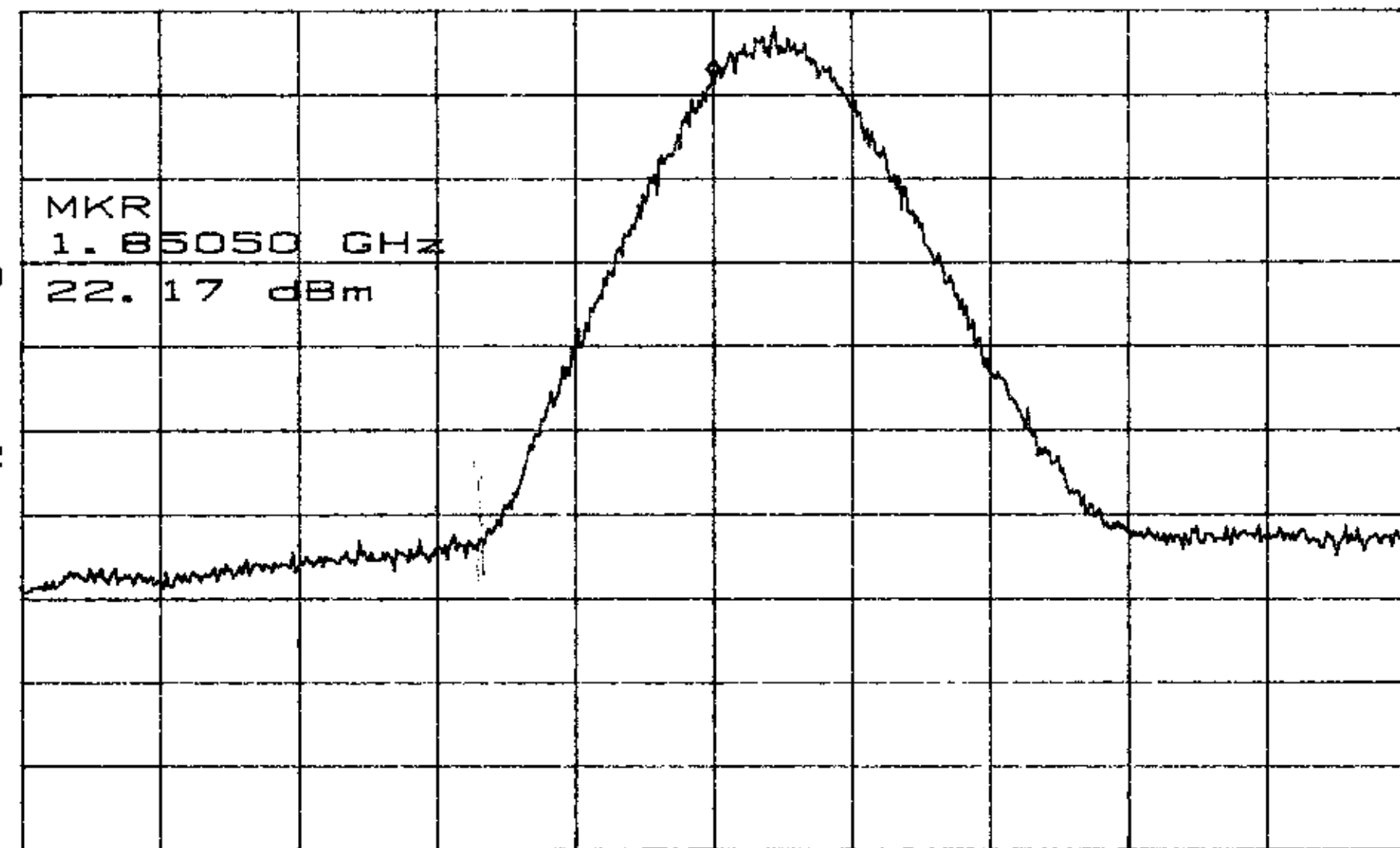
VAVG 10
10dB/

MKR 22.17dBm
1.85050GHz

24.238

MKR
1.85050 GHz
22.17 dBm

D
μ



CENTER 1.85050GHz SPAN 20.00MHz
*RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

UL Low
Ch. 25

Below Fundamental

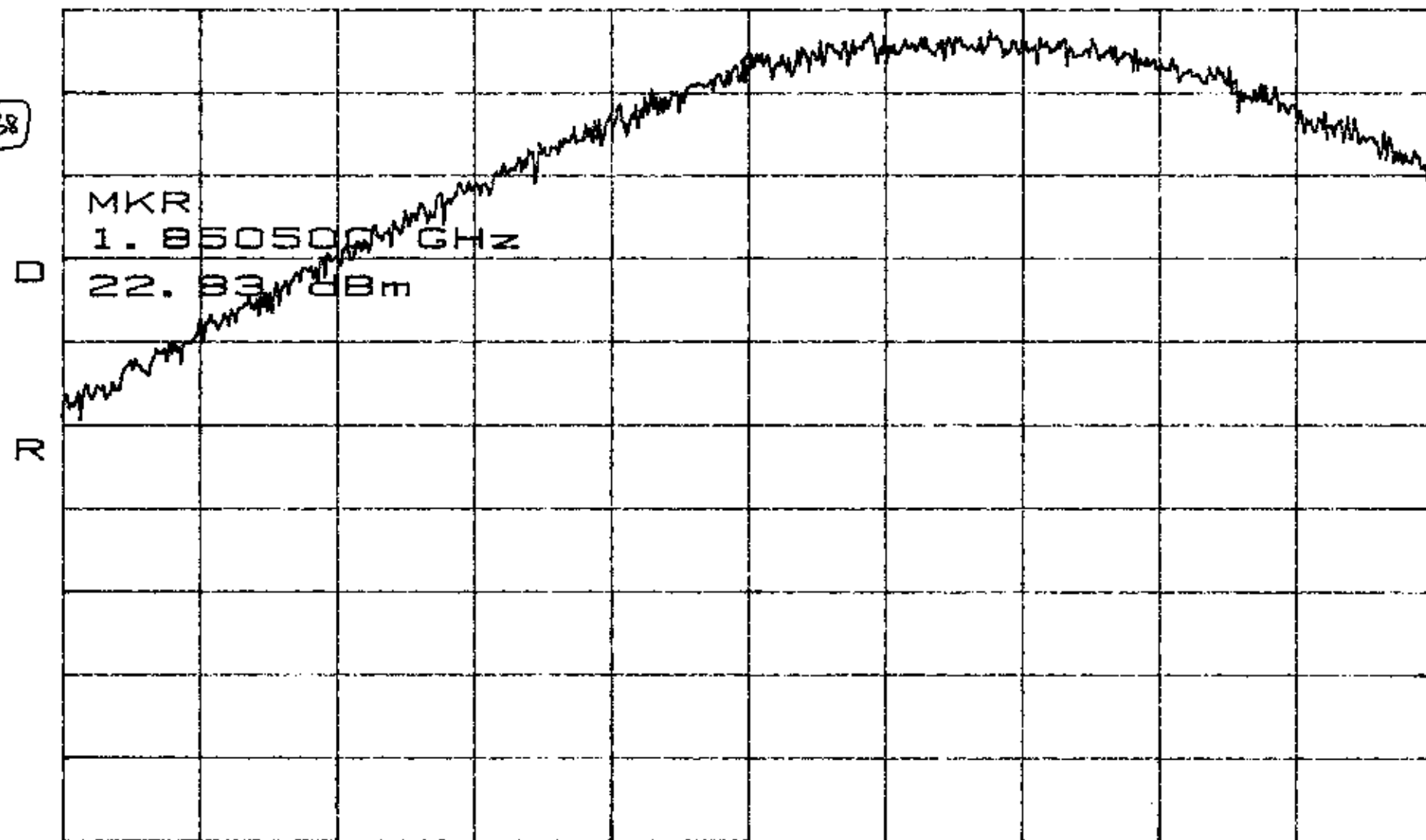
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

MKR 22.83dBm
1.850500GHz

24.238



CENTER 1.850500GHz SPAN 5.000MHz
*RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms

COR 2ch x 3.55W
A-band
(Representative Unit)

UL High
Ch. 275

Fundamental

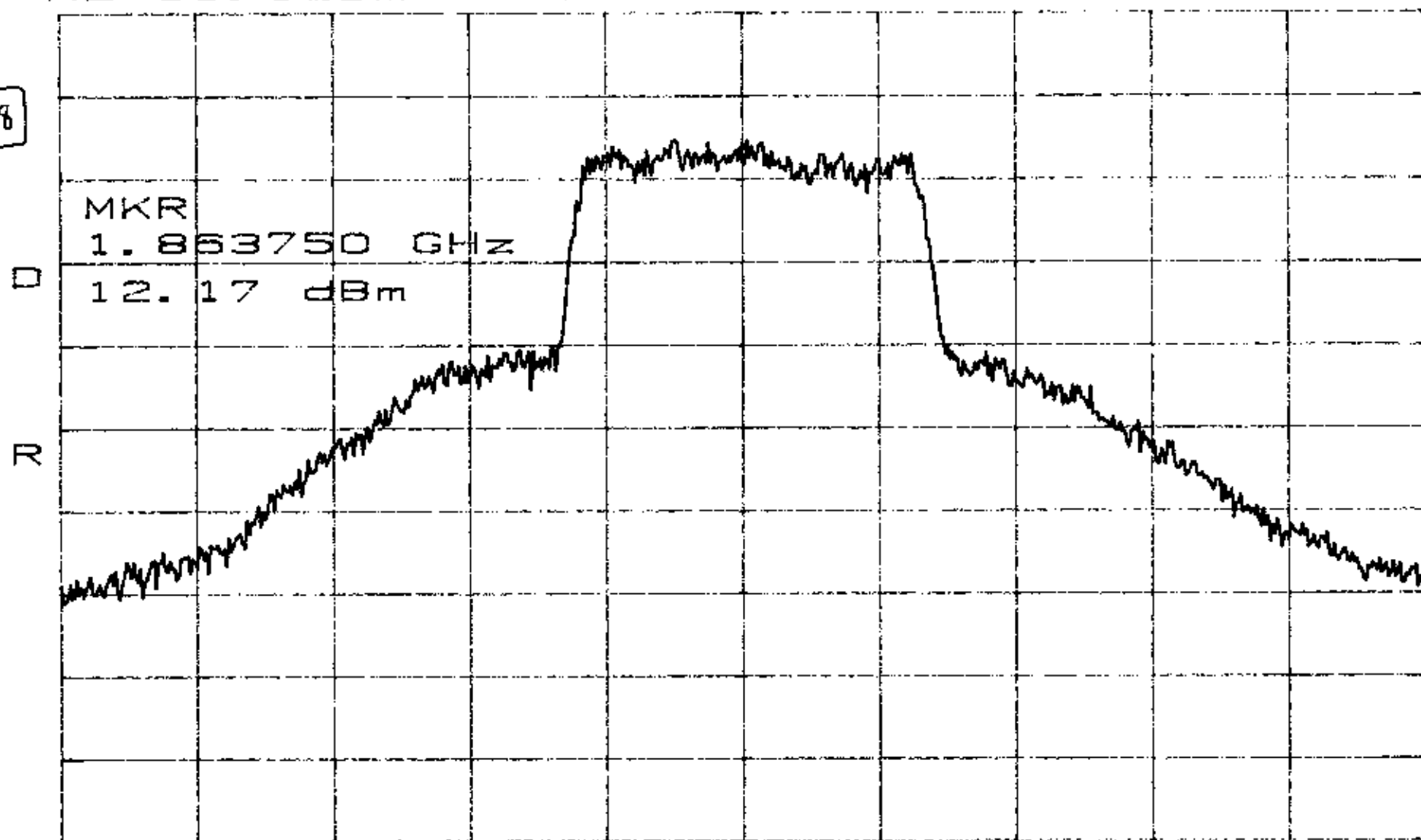
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/BPO1

MKR 12.17dBm
1.863750GHz

24.238



CENTER 1.863750GHz SPAN 5.000MHz
*RBW 30kHz *VBW 30kHz SWP 50.0ms

COR 2ch x 3.55W
A-band
(Representative Unit)

UL High
Ch. 275

Above Fundamental

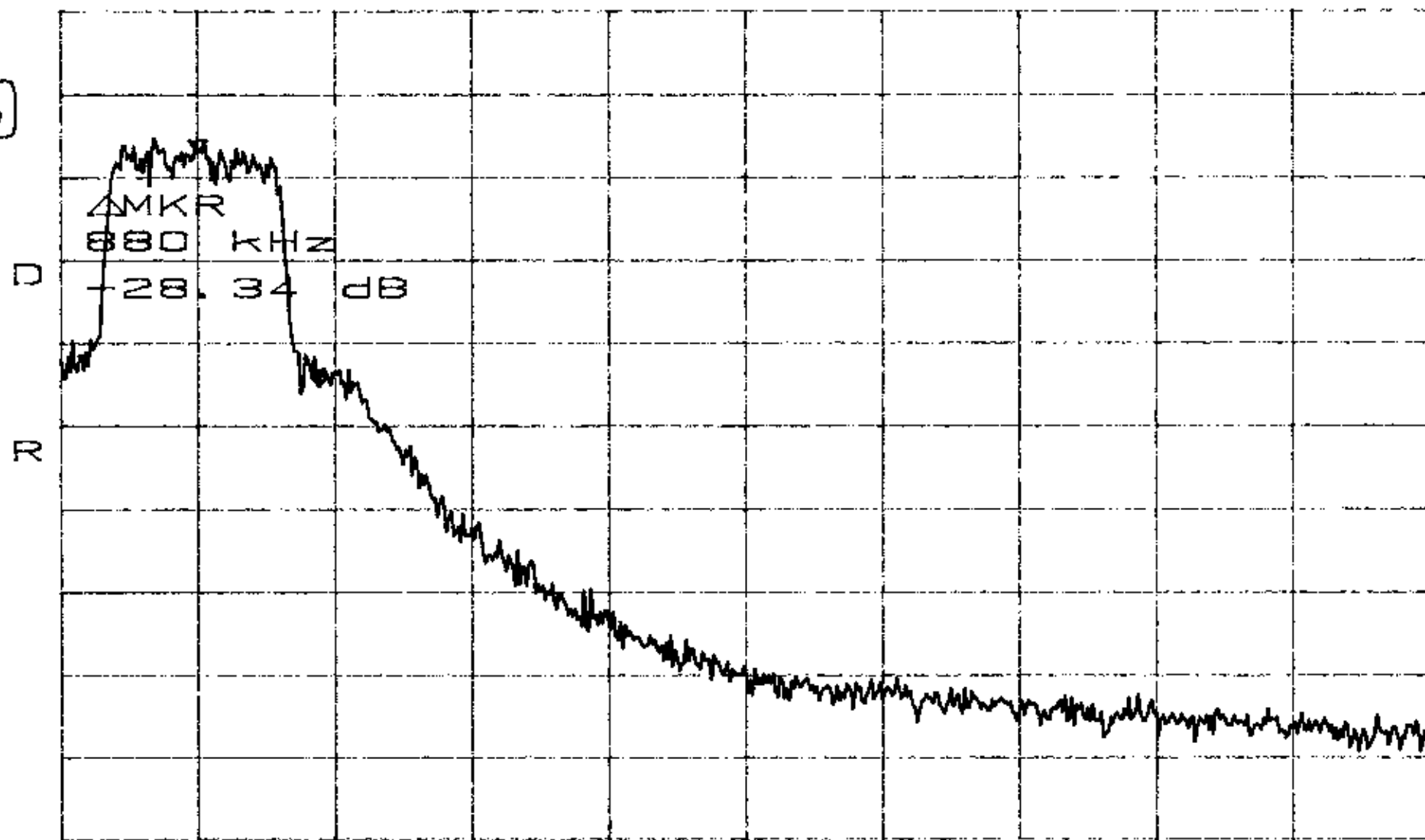
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

Δ MKR -28.34dB
880kHz

24.238



CENTER 1.86775GHz

SPAN 10.00MHz

*RBW 30kHz

*VBW 30kHz

SWP 50.0ms

CDR 2ch x 3.55W
A-bmod

(Representative Unit)

*ATTEN 20dB

RL 30.0dBm

UL High

ch. 275

VAVG 10

10dB/

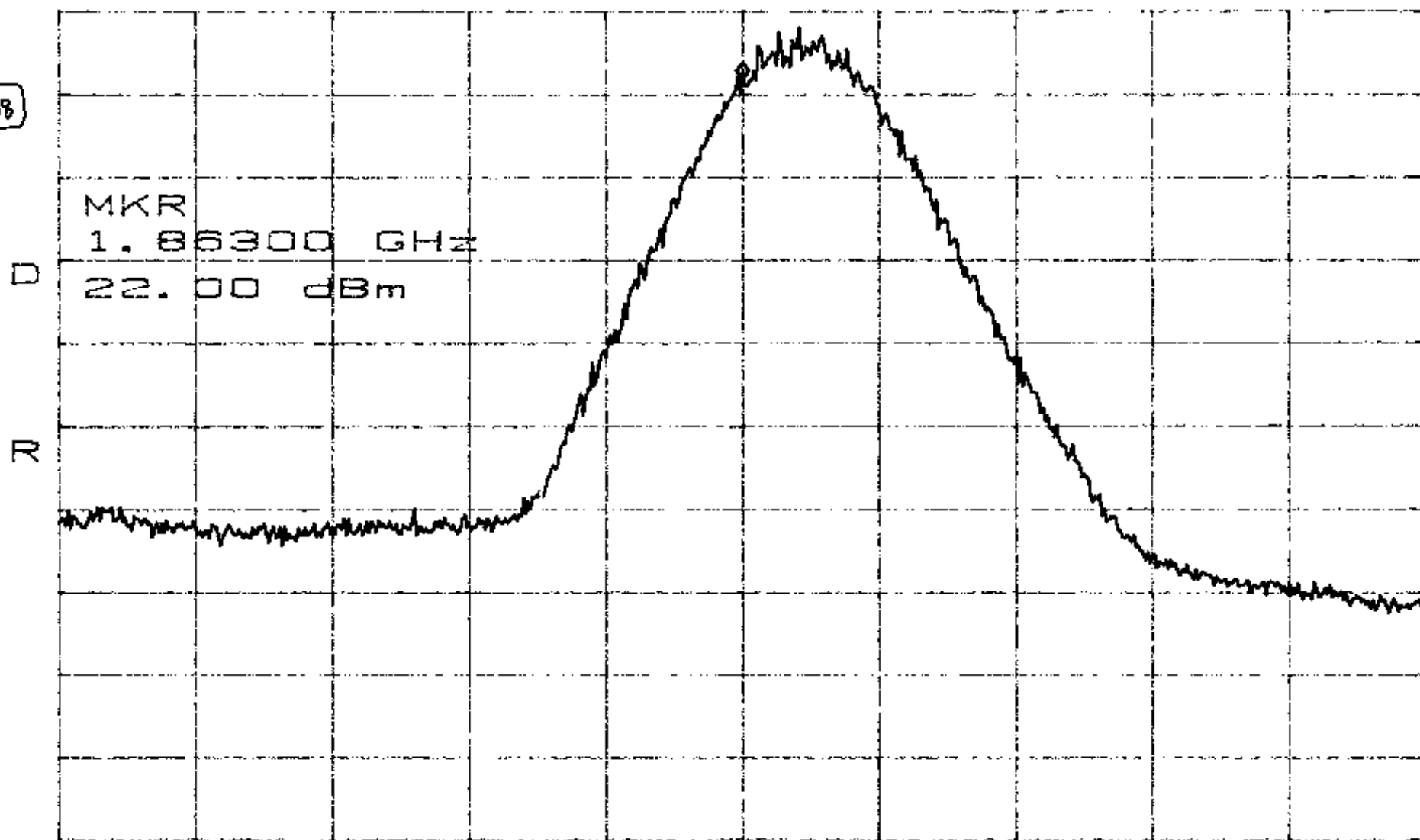
Below Fundamental

9/8/98

MKR 22.00dBm

1.86300GHz

24.238



CENTER 1.86300GHz

SPAN 20.00MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

COR 2ch x 3.55W
A-band
(Representative Unit)

UL High
Ch. 275

Below Fundamental

9/8/98

*ATTEN 20dB

VAVG 10

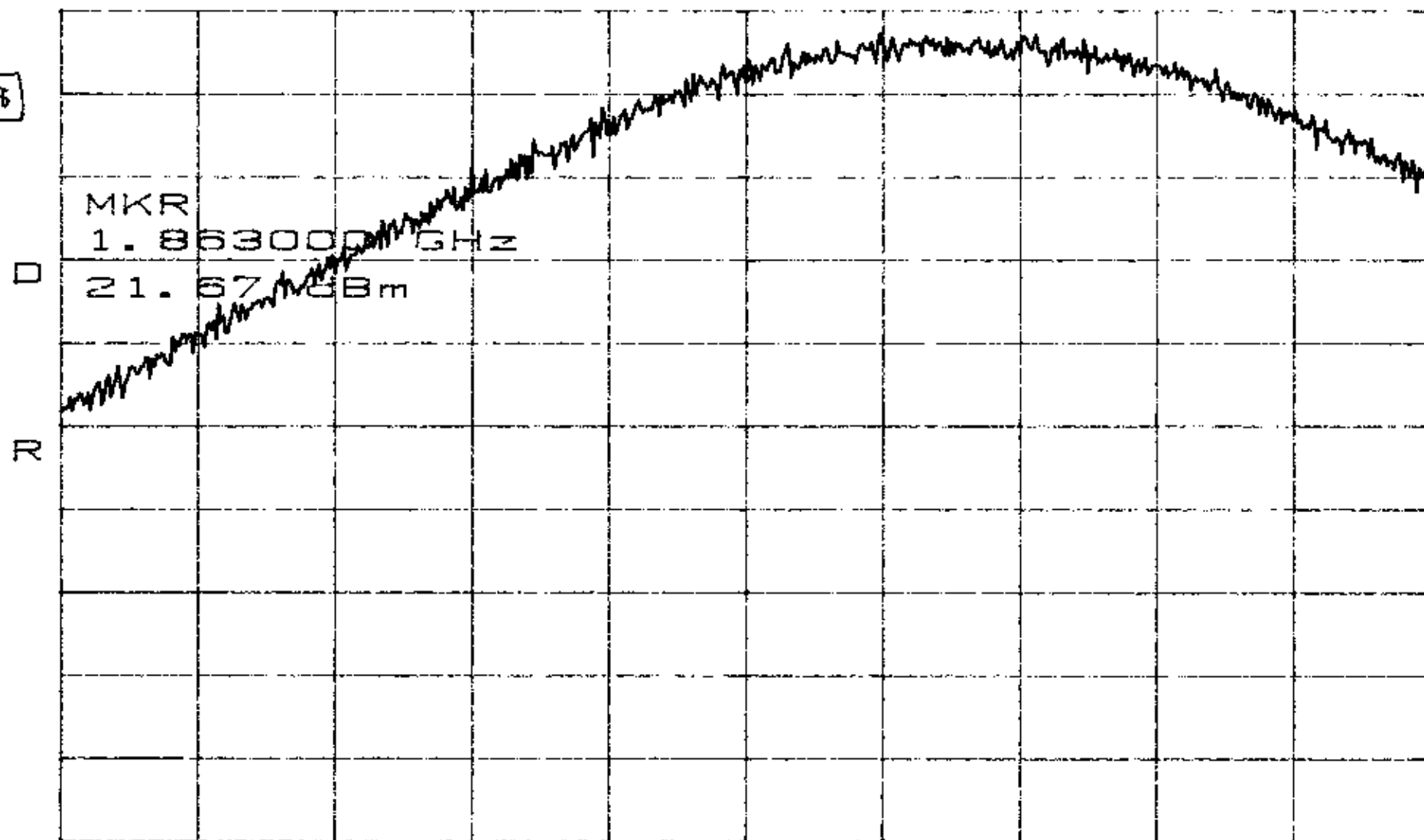
MKR 21.67dBm

RL 30.0dBm

10dB/

1.863000GHz

24.23%



CENTER 1.863000GHz

SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

COR 2ch x 3.55W
A-band
(Representative Unit)

UL High
Ch. 275

Above Fundamental

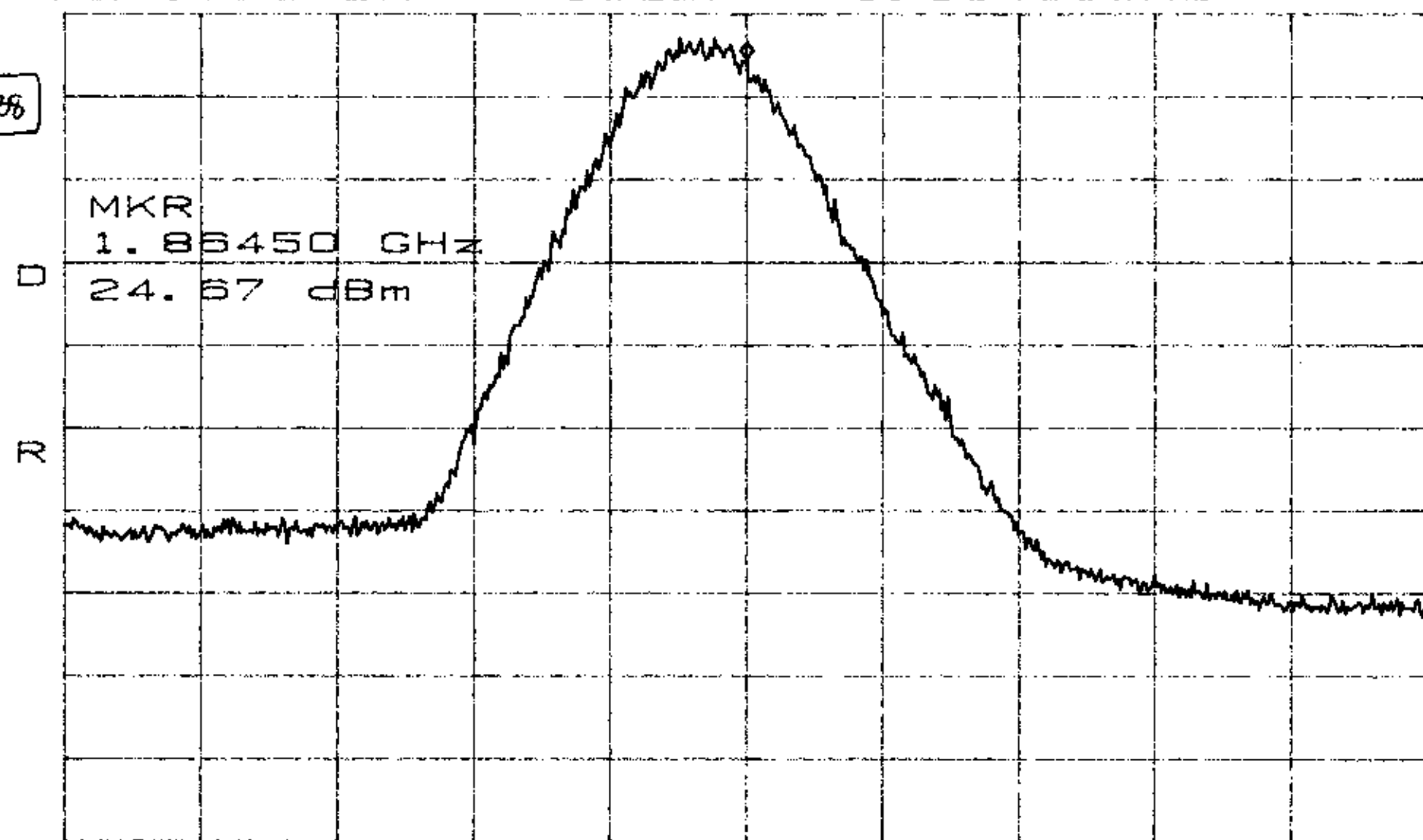
9/8/98

*ATTEN 20dB
RL 30.0dBm

VAVG 10
10dB/

MKR 24.67dBm
1.86450GHz

24.238



CENTER 1.86450GHz SPAN 20.00MHz
*RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

UL High
Ch. 275

Above Fundamental

9/8/98

*ATTEN 20dB

VAVG 10

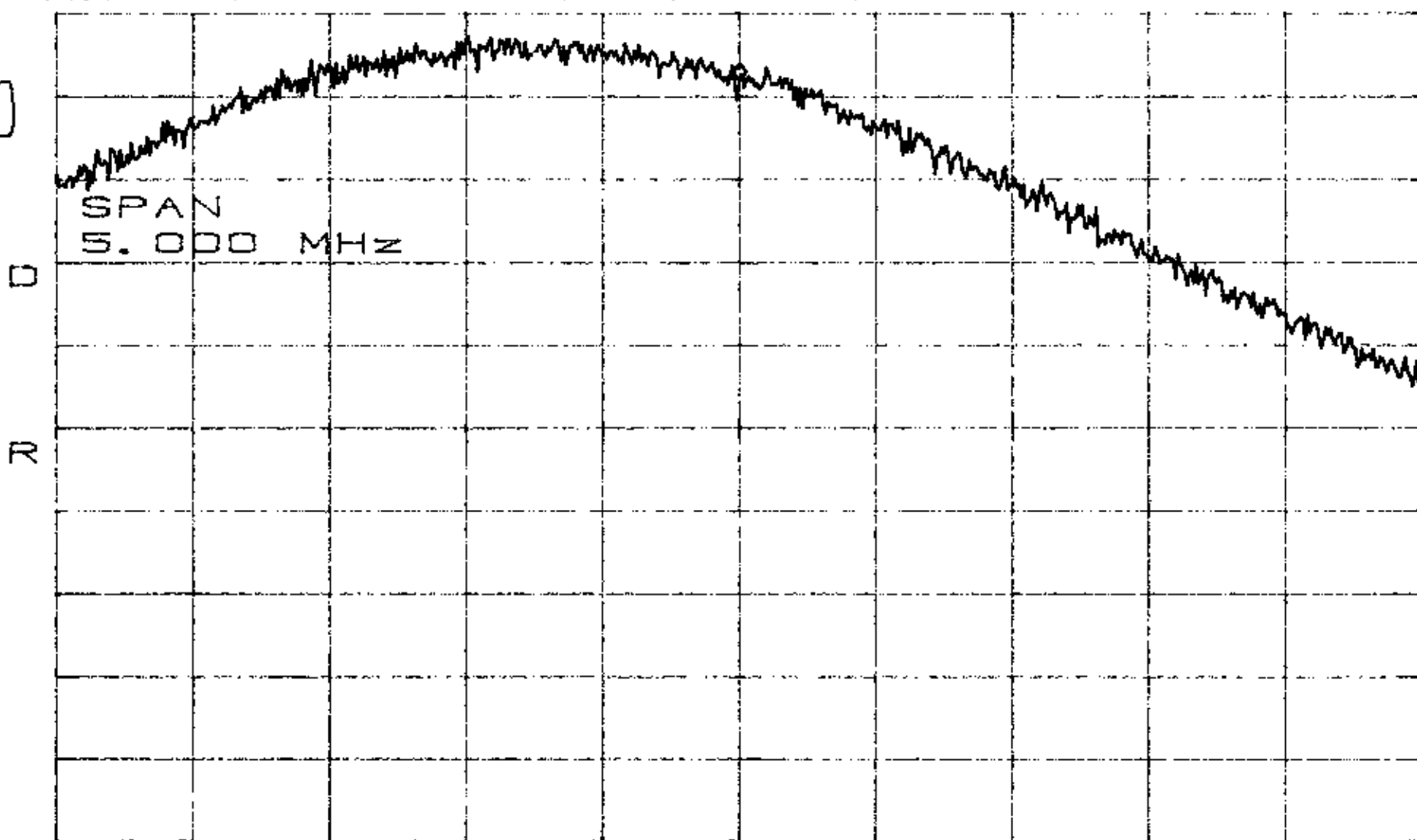
MKR 22.00dBm

RL 30.00dBm

10dB/

1.864500GHz

24.238



CENTER 1.864500GHz

SPAN 5.000MHz

*RBW 1.0MHz

*VBW 1.0MHz

SWP 50.0ms

COR 2ch x 3.55W
A-band
(Representative Unit)

DL Low
ch. 25

CDMA Source

9/8/98

ATTEN 40dB

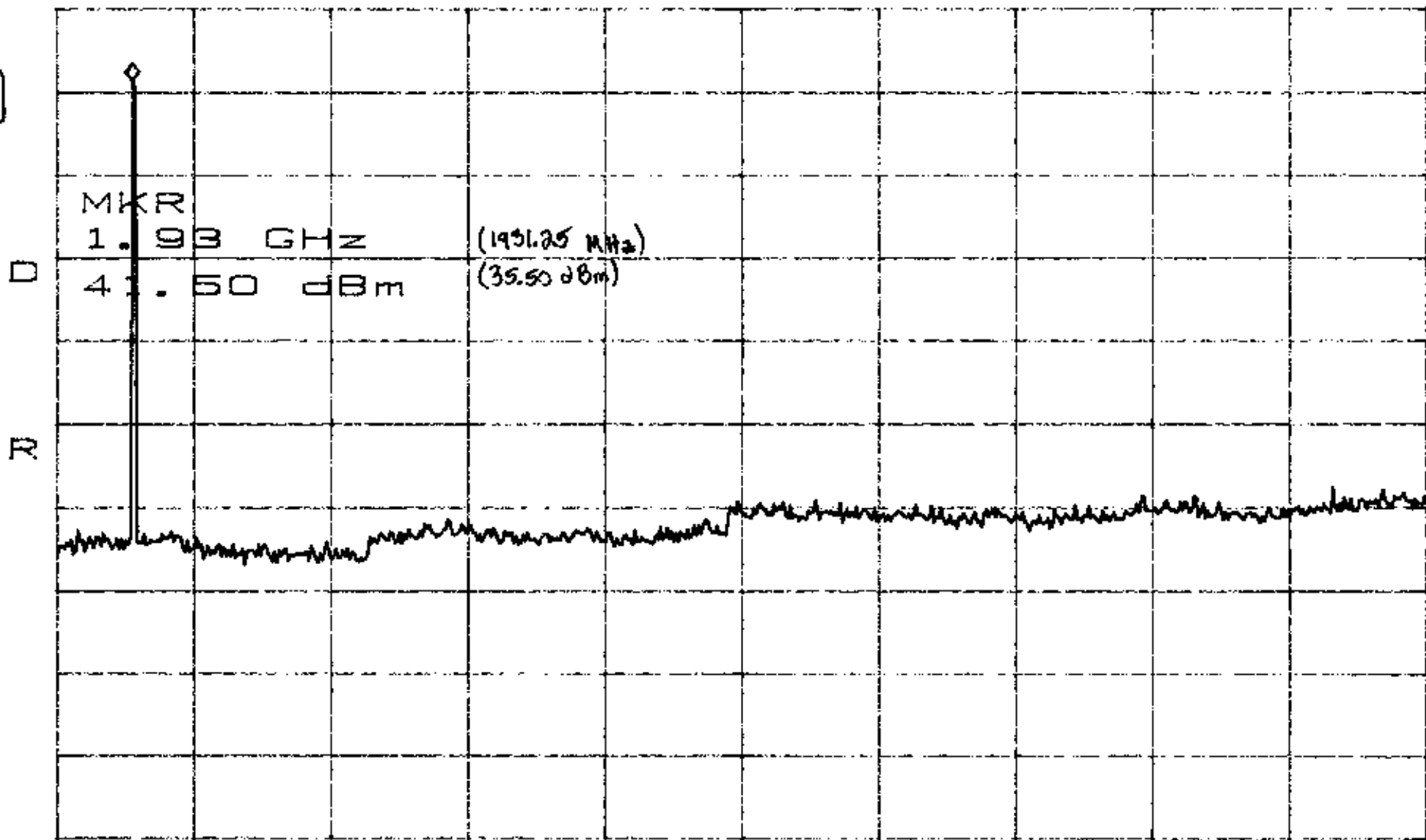
MKR 41.50dBm

RL 50.0dBm

10dB/

1.93GHz

2.991



START 500MHz

STOP 26.50GHz

RBW 1.0MHz

VBW 1.0MHz

SWP 520ms

CDR 2ch x 3.55W
A-band
(Representative Unit)

DL High
Ch. 275

CDMA Source

9/8/98

ATTEN 40dB

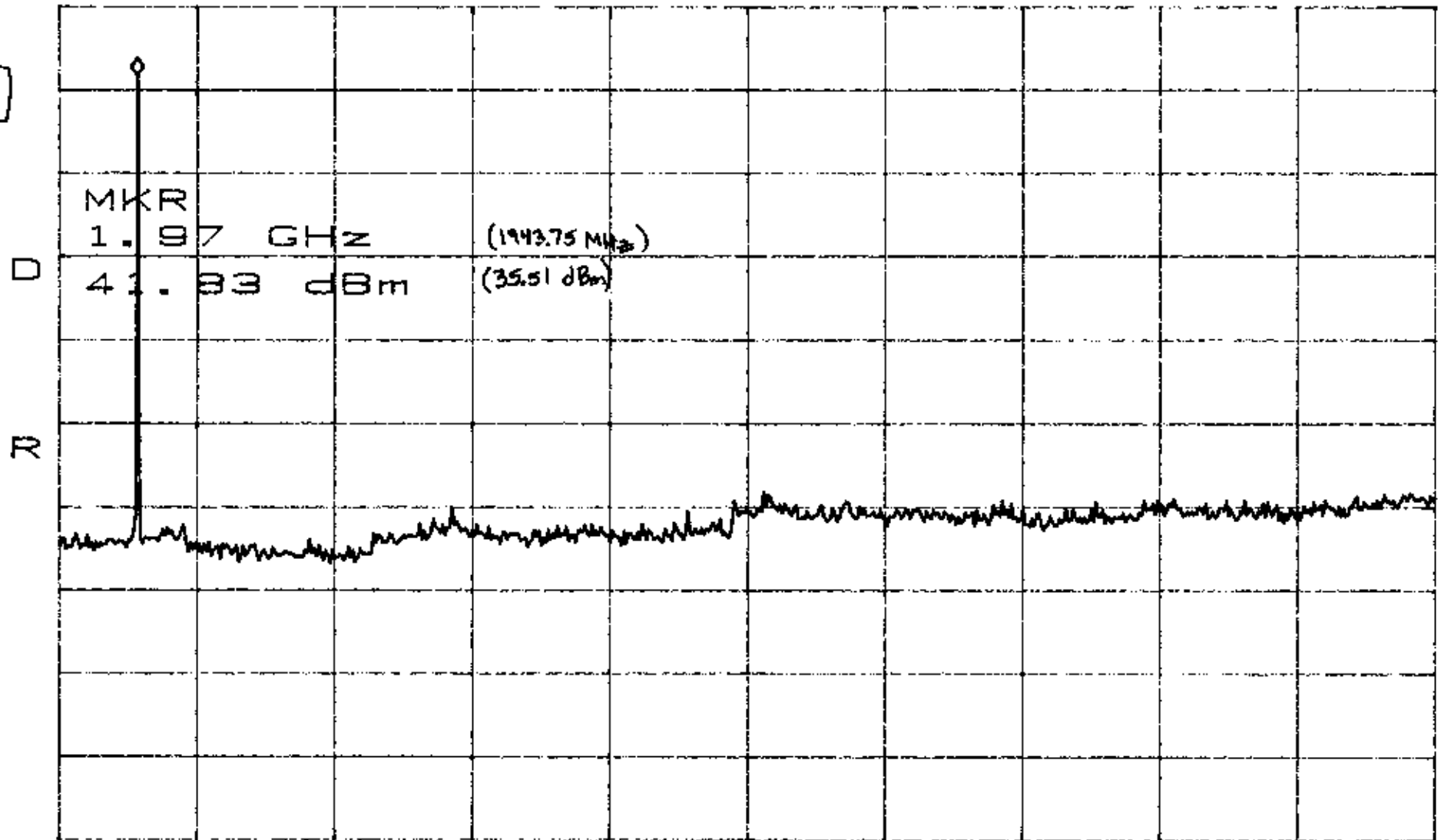
RL 50.0dBm

10dB/

MKR 41.83dBm

1.97GHz

2.991



START 500MHz

STOP 26.50GHz

RBW 1.0MHz

VBW 1.0MHz

SWP 520ms

CDR 2ch x 3.55W

A-band
(Representative Unit)

ATTEN 40dB

RL 50.0dBm

● UL Low

Ch. 25

CDMA Source

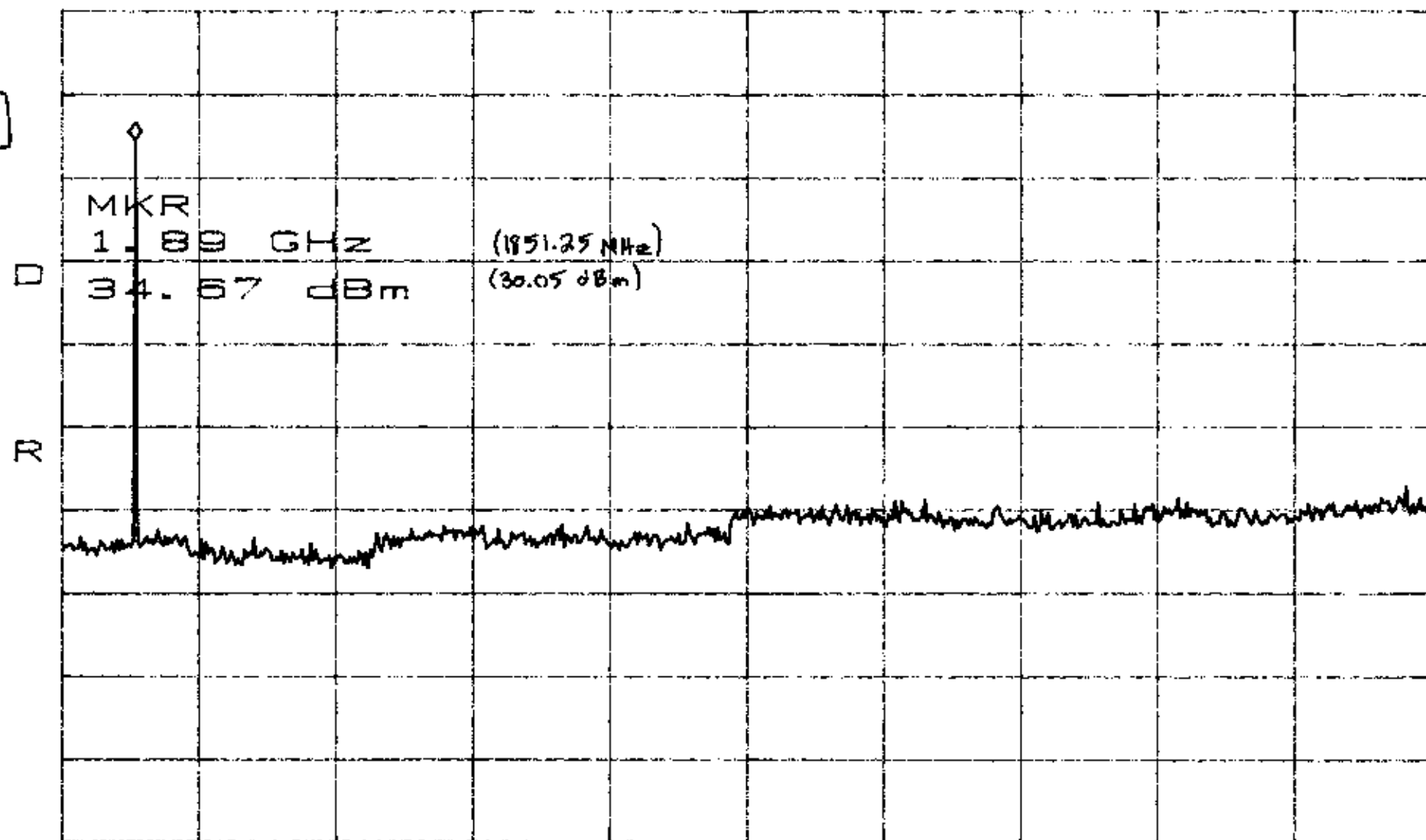
9/8/90

MKR 34.67dBm

1.89GHz

10dB/

2.991



START 500MHz

STOP 26.50GHz

RBW 1.0MHz

VBW 1.0MHz

SWP 520ms

CDR 2ch x 3.55W
A-band
(Representative Unit)
ATTEN 40dB
RL 50.0dBm

UL High
Ch. 275

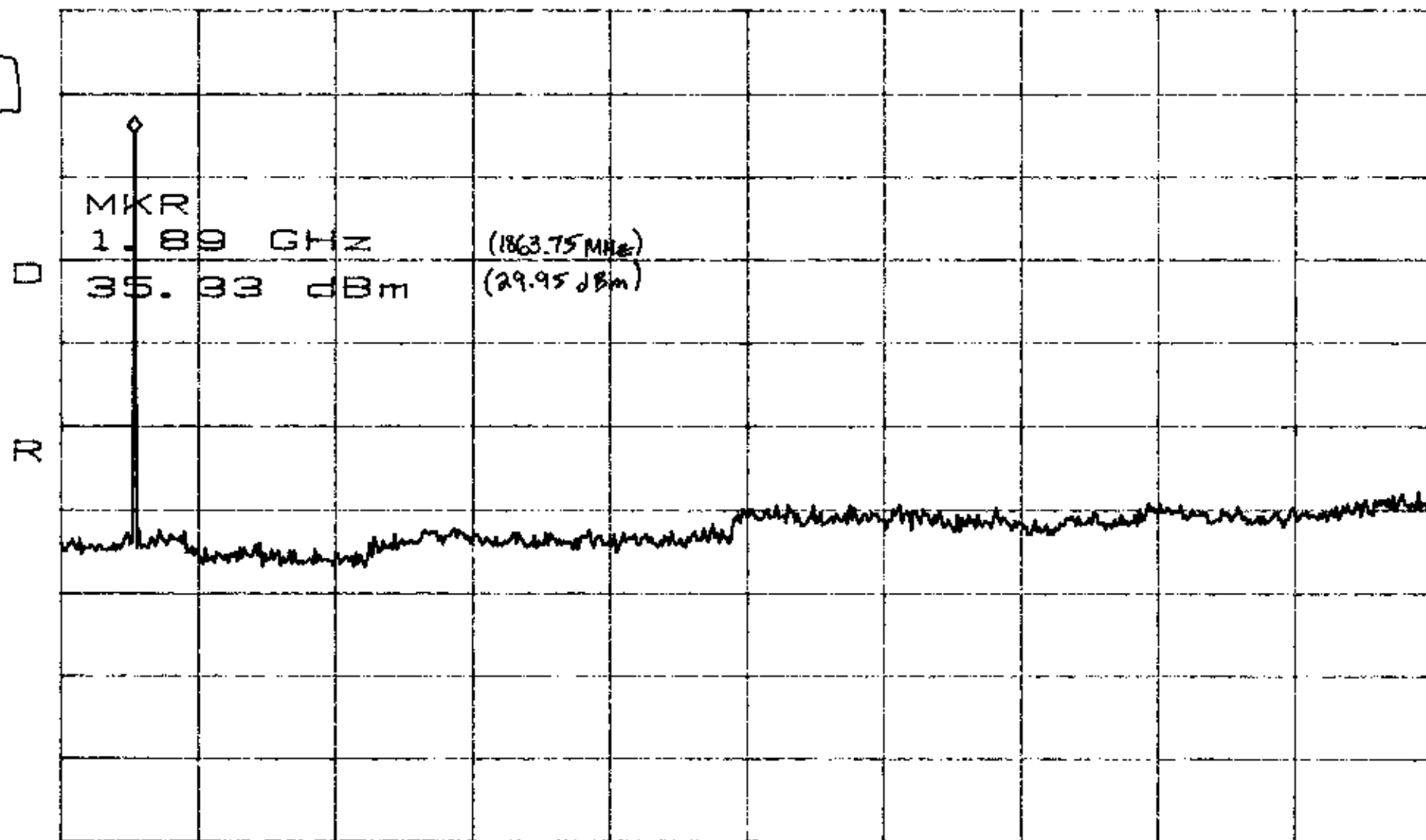
CDMA Sources

9/8/98

MKR 35.33dBm
1.89GHz

10dB/

2.991



START 500MHz

STOP 26.50GHz

RBW 1.0MHz

VBW 1.0MHz

SWP 520ms