INTRODUCTION

As required by §2.931 and §2.938 of 47 CFR, the following data is presented on behalf of the manufacturer, General Microwave Services, Inc., as verification of the compliance of the General Microwave STS-10000 Microwave Transmitter to the requirements of Parts 74 and 90 of 47 CFR. (All references are to the most current version of 47 CFR in effect.)

TEST SITE

All testing was conducted at MET Laboratories, Inc., 914 West Patapsco Avenue, Baltimore, Maryland 21230-3493. Radiated emissions measurements were performed on a ten meter open air test site (OATS). In accordance with 47 CFR, §2.948, a complete site description is on file with the FCC Laboratory Division as 31040/SIT/MET.

MEASUREMENT PROCEDURES

As required by §2.993, *field strength of spurious radiation measurements* were made in accordance with the general procedures of ANSI C63.4-1992 "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40 GHz". The measurements were performed over the frequency range of 9 kHz to 26 GHz using the following equipment:

Frequency Range	Input Transducer	Measurement Instrumentation
9 kHz to 30 MHz	Loop Antenna	Spectrum Analyzer
30 MHz to 200 MHz	Biconical Antenna	Spectrum Analyzer
200 MHz to 1 GHz	Log Periodic Antenna	Spectrum Analyzer
1 GHz to 10 GHz	Double Ridged Guide Horn	Spectrum Analyzer
18 GHz to 26 Ghz	Standard Gain Horn	Spectrum Analyzer

The measurements were made with the detector set for quasi-peak with a bandwidth of 120 kHz. A preliminary RF scan was performed in an RF-shielded enclosure. Final measurements were made on the OATS, as per §15.31(d).

As required by §2.985 of CFR 47, *RF power output measurements* were made at the RF output terminals using a spectrum analyzer. This test was performed with the carrier unmodulated.

MEASUREMENT PROCEDURES (continued)

As required by §2.995 of CFR 47, *frequency tolerance measurements* were made over the temperature range of -30°C to +50°C, and variations of the primary voltage between 85% and 115% (of the rated supply voltage). The frequency measurements were made using direct input to a spectrum analyzer, or with a current probe placed around or near the transmitting antenna, as the input to the analyzer.

Power supply variations were simulated using a DC power supply. Climatic control was accomplished using an environmental simulation chamber. The temperature was first lowered to -30°C and then raised hourly in 10° increments. The unit remained in the chamber during temperature transitions and during the measurement process.

As required by §2.989 of CFR 47, *occupied bandwidth measurements* were made by measuring the unmodulated carrier and comparing this measurement to the modulated carrier. If front end limiting circuitry is provided, a modulation meter was used to determine the 100% modulation level. If no limiting circuitry exists in the front end, the modulation amplitude was set per the manufacturer's instructions for 100% to allow for front end sensitivity of the modulation circuit. The unit was then exercised using signal types required by §2.989.

As required by §2.991 of CFR 47, *spurious emissions at antenna terminal measurements* were made at the RF output terminals using a spectrum analyzer set for a 100 kHz bandwidth. This test was performed with the carrier unmodulated. For each of the harmonic spurs measurements out to the tenth harmonic, high pass/bandpass filters were used to eliminate any possible saturation effects from the fundamental transmit frequency.

INSTRUMENTATION

Radiated emissions measurements were made using a Hewlett-Packard 6563A Spectrum Analyzer with an EMCO Model 3104C biconical antenna for the range 30 MHz - 200 MHz, an EMCO model 3146A log periodic antenna for the range 200 MHz - 1 GHz, an EMCO model 3115 double-ridge guided horn antenna for the range 1 GHz - 18 GHz, and a Waveline model 899 standard gain horn antenna for the range 18 GHz - 27 GHz.

Carrier field strength measurements, when necessary, were made using the equipment described above.

Occupied bandwidth measurements were made using a Hewlett-Packard 6563A Spectrum Analyzer. Video signals were provided by an NTSC video signal generator, audio signals were provide by an audio frequency signal generator.

TEST CONFIGURATION

The Microwave Transmitter was configured in accordance with the manufacturer's instructions and operated in a manner representative of the typical usage of the equipment. During all testing, system components were manipulated within the confines of typical usage to maximize each emission.

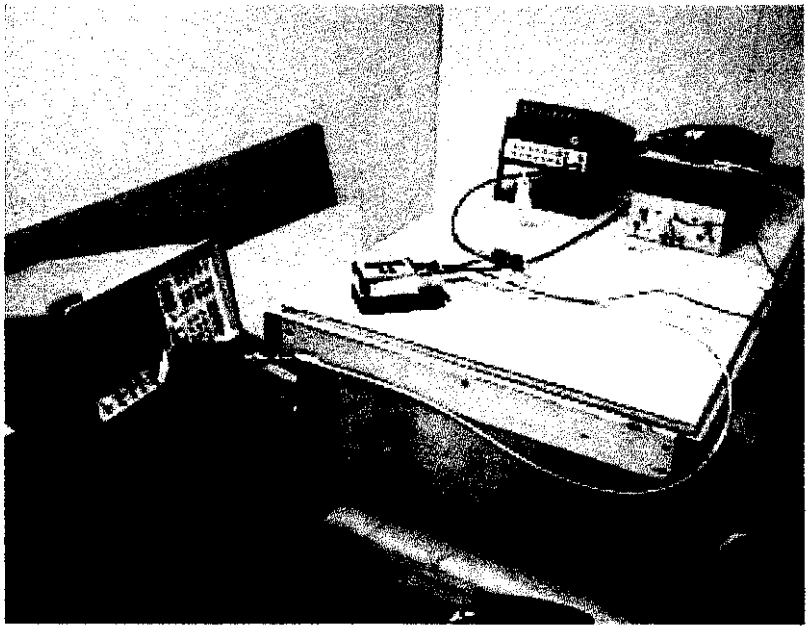
Video modulation was provided by an NTSC signal generator for all test which required modulated signals. Audio signals were injected into both audio channels in parallel at the frequencies and amplitudes required by each measurement procedure.

Test Configuration List

Equipment Type	Manufacturer	Model #	Serial #	Cabling
EUT	General Microwave	STS-10000	n/a	as below
Audio Generator	HP	33120A	U534008074	0.5m shielded 1/4" to banana
DC Power Supply	HP	6002A	1802A02498	1m unshielded to EUT
RF Load	Microwave Devices	634N	A441	1m shielded to EUT
NTSC Generator	Tektronics	TSG-120	B010648	1m 75ohm shielded coax to EUT

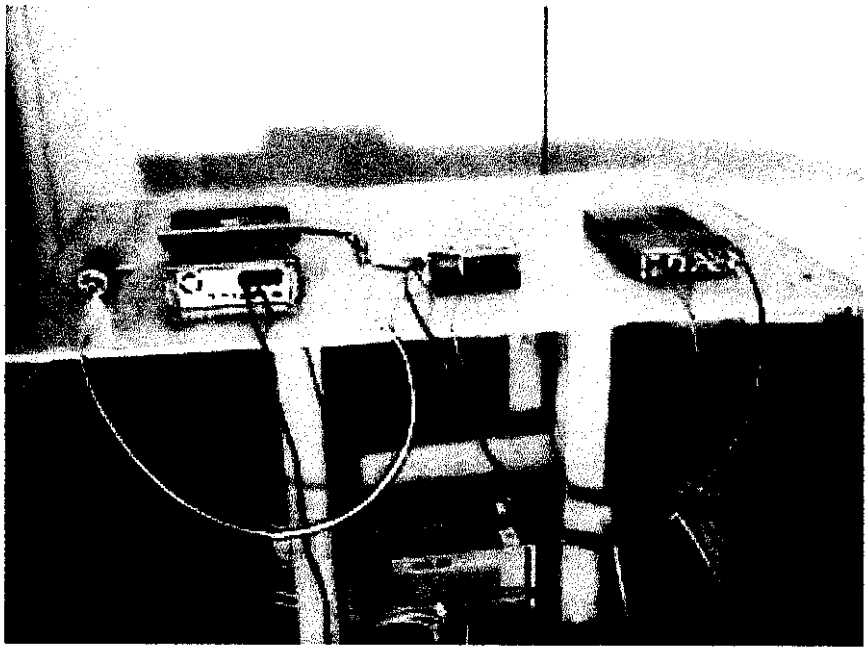
Photograph of Occupied Bandwidth and Power Output Test Configuration

General Microwave STS-10000 Microwave Transmitter



Photograph of Radiated Emissions Test Configuration

General Microwave STS-10000 Microwave Transmitter



SUBJECT: Radiated Emissions

FCC Part 74

MET REPORT: EMI894
MFG: General Microwave
TESTED BY: Kenneth Bass
TEST DATE: 23 March 1998

EUT: Microwave Transmitter
MODEL: STS-10000

TECHNICAL SPECIFICATION: 2.993

Carrier Emissions Limit: 20 Watts
Spurious Emissions Limits: 100% removed from carrier frequency ≤ 25 dB
150% removed from carrier frequency ≤ 35 dB
>150% removed from carrier frequency ≤ $43 + 10_{log}$(carrier power)dB

Frequency (MHz)	Azimuth (°CCW-O°=EUT facing ant.)	Polarity	Height (m)	Raw Amplitude (dBuV)	Ant.Cor. Factor (db)	Cable Loss (db)	Corrected Amplitude (dBuV/m)	Limit (dBuV/m)
55.40	120	H	1.5	14.2	11.3	1.2	26.70	84.86
55.40	180	V	1.5	14.8	11.6	1.2	27.60	84.86
110.30	180	H	1.5	13.3	12.4	.2	25.90	84.86
110.30	270	V	1.5	14.1	12.7	.2	27.00	84.86
111.60	180	H	1.3	13.6	12.4	.2	26.20	84.86
111.60	90	V	1.3	14.1	12.7	.2	27.00	84.86
124.90	90	H	1.5	13.3	13.5	.3	27.10	84.86
124.90	90	V	1.5	13.2	14.4	.3	27.90	84.86
333.3	180	H	1.3	12.7	15.5	2.4	30.60	84.86
333.3	180	V	1.3	12.9	15.1	2.4	30.40	84.86
458.0	90	H	1.5	12.8	19.0	1.1	32.90	84.86
458.0	180	V	1.5	12.9	17.6	1.1	31.60	84.86

Note: The EUT was tested at 3m.

Equipment meets the specifications of 2.985; 2.993; 74.636; 74.637(a) ; 90.69

Frequency (MHz)	Azimuth (°CCW-O°=EUT facing ant.)	Pola-rity	Height (m)	Raw Amplitude (dBuV)	Ant.Cor. Factor (db)	Cbl/flt Loss (db)	Other	Corrected Amplitude (dBuV/m)	Limit (dBuV/m)
7,375.50	45	H	1.0	49.50	38.20	1.0	-9.54	79.16	84.86
7,375.50	45	V	1.0	47.40	38.40	1.0	-9.54	77.26	84.86
9,834.00	45	H	1.0	37.17	39.20	1.0	-9.54	77.37	84.86
9,834.00	45	V	1.0	29.17	37.20	1.0	-9.54	67.37	84.86
12,292.00	45	H	1.0	48.17	39.00	1.0	-9.54	78.63	84.86
12,292.00	45	V	1.0	47.83	41.00	1.0	-9.54	80.29	84.86
19,668.00	45	H	1.0	12.00	33.09	1.5	-9.54	37.05	84.86
19,668.00	45	V	1.0	6.50	33.09	1.5	-9.54	31.55	84.86

Note: The EUT was tested at 1m. The data has been corrected for comparison with the 3m limit using the formula: 20log(1m/3m) as expressed in the 'Other' column.

Equipment meets the specifications of 2.985; 2.993; 74.636; 74.637(a) ; 90.69

SUBJECT: RF Power Output

FCC Part 74 ; 90

MET REPORT: EMI894
MFG: General Microwave
TESTED BY: Kenneth Bass
TEST DATE: 29 OCT 1997

EUT: Microwave Transmitter
MODEL: STS-10000

TECHNICAL SPECIFICATION: 2.985; 74.637(a) ; 90.69

Comment: Equipment complies with Section 2.985 and 74.636. The transmitter power which will be authorized will be 10 W. Transmitters designed for other types of modulation - when modulated by an appropriate signal of sufficient amplitude to be representative of the type of service in which used. A description of the input signal is supplied on page 12.

Plots appears on following pages.

For the Low Power mode;

$P_{o(meas)}$ = 141 dBµV

Solving for power (W) gives ;

141/20 = 7.05

$10^{7.05}$ = 11,220,184.54 µV X 10^{-6} = 11.22V

and $P_{o(W)} = (11.22V)^2 / 50 = 2.517$ W

For High Power mode;

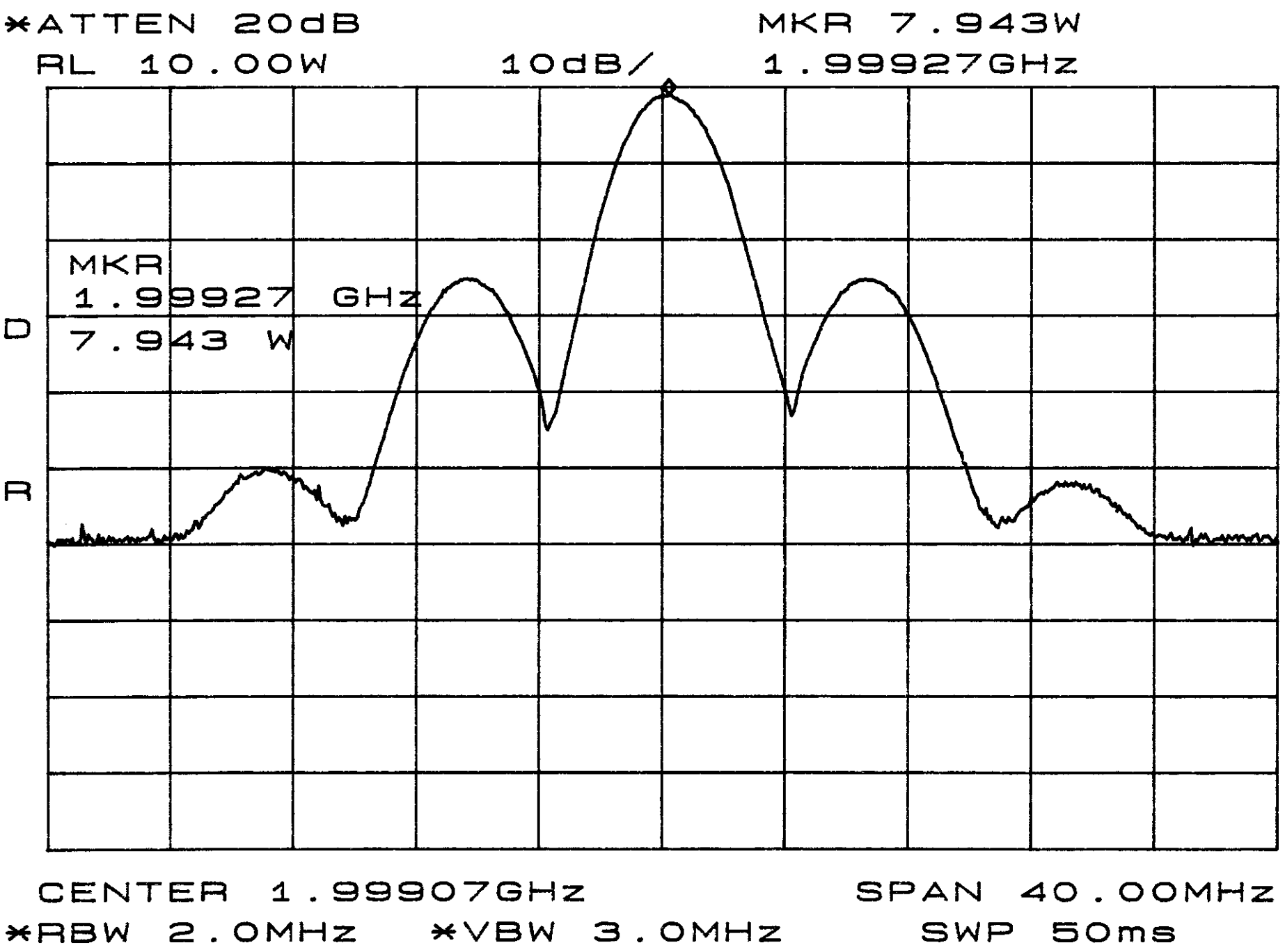
$P_{o(meas)}$ = 146 dBµV

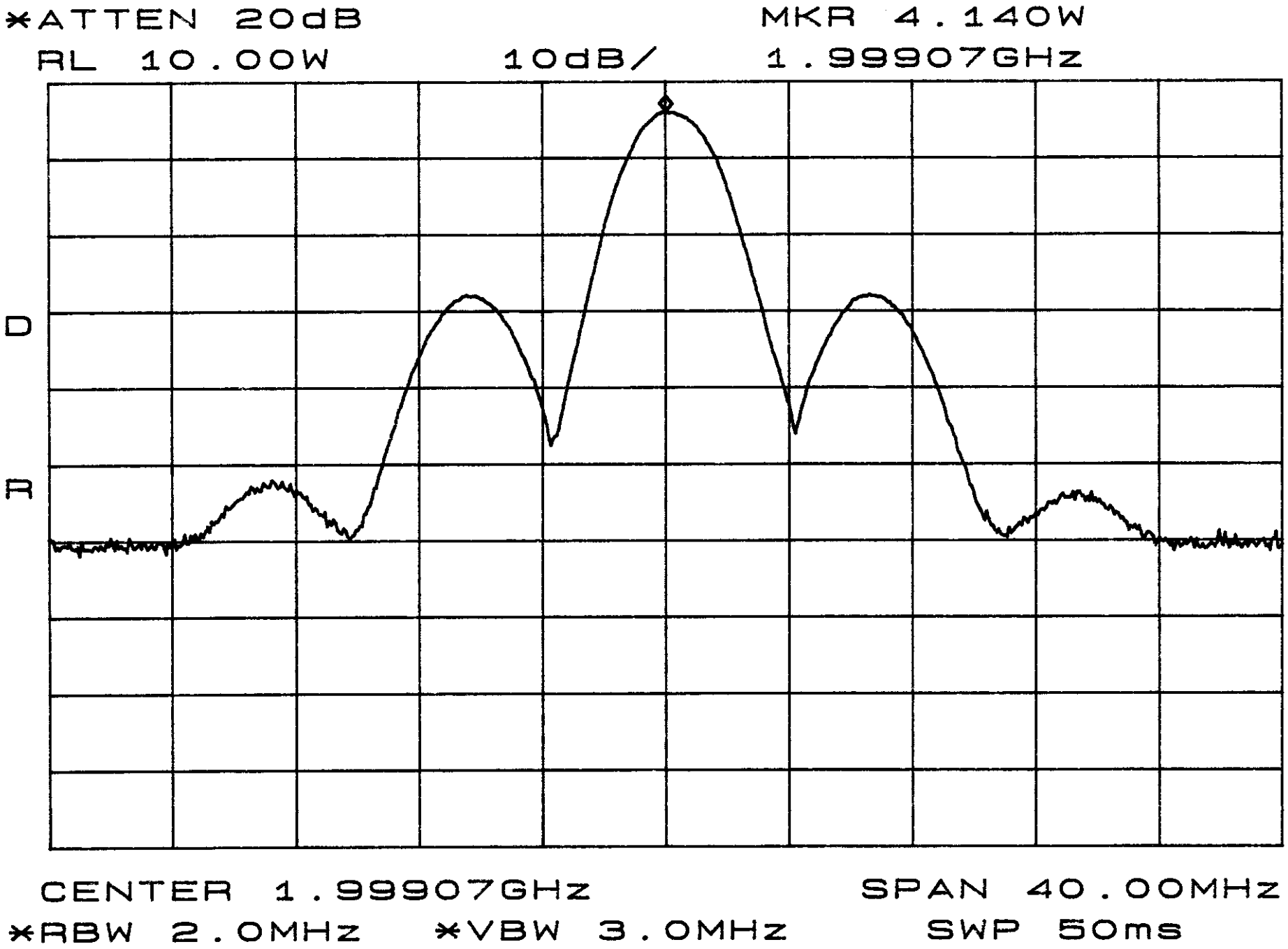
Solving for power (W) gives ;

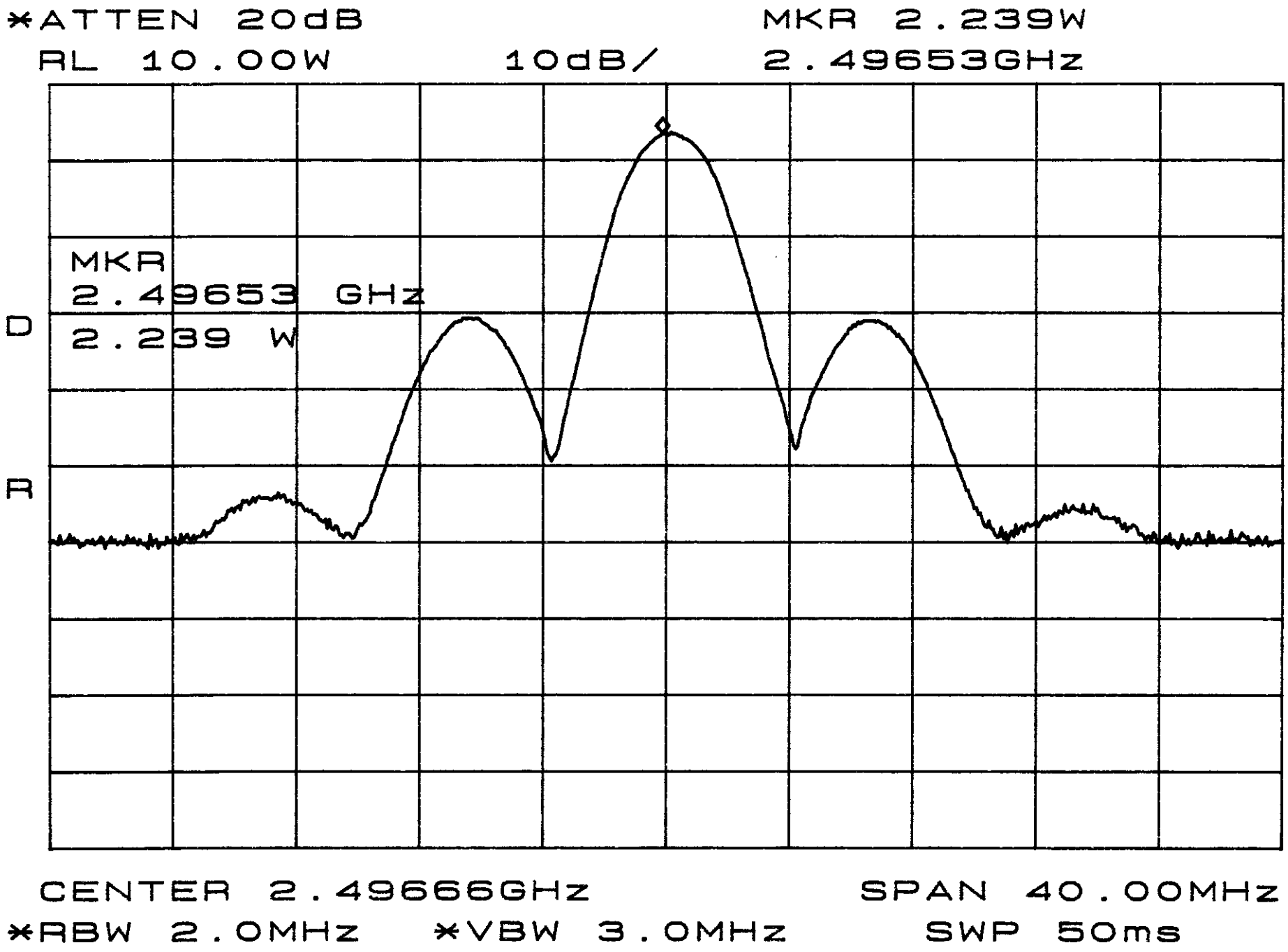
146/20 = 7.30

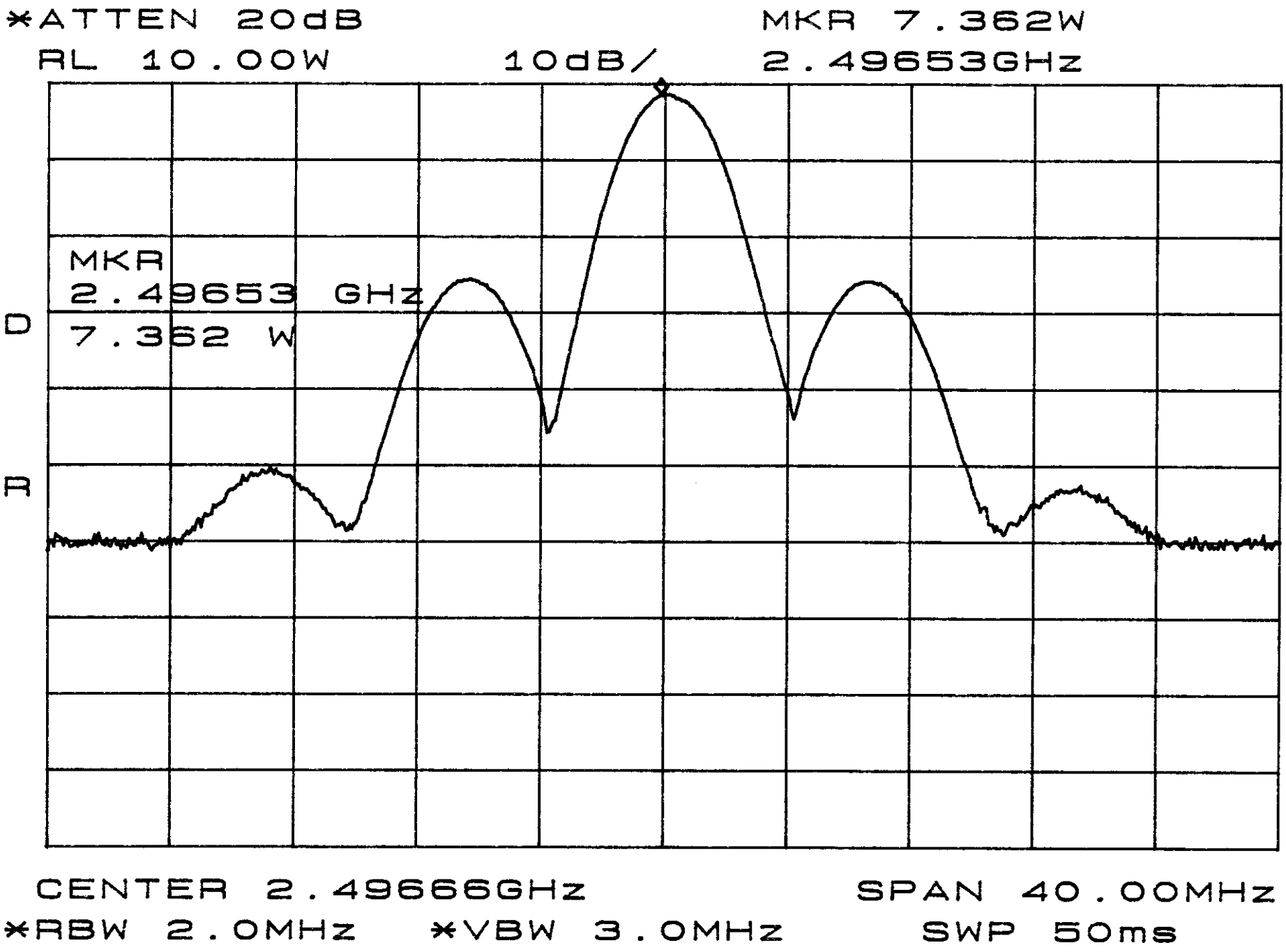
$10^{7.30}$ = 19,952,623.10 µV X 10^{-6} = 19.95V

and $P_{o(W)} = (19.95V)^2 / 50 = 7.96$ W


*ATTEN 20dB
MKR 7.943W
RL 10.00W
10dB/
1.99927GHz
MKR
1.99927 GHz
D
7.943 W
R
CENTER 1.99907GHz
SPAN 40.00MHz
*RBW 2.0MHz
*VBW 3.0MHz
SWP 50ms


*ATTEN 20dB
MKR 4.140W
RL 10.00W
10dB/
1.99907GHz
D
R
CENTER 1.99907GHz
SPAN 40.00MHz
*RBW 2.0MHz
*VBW 3.0MHz
SWP 50ms


*ATTEN 20dB
MKR 2.239W
RL 10.00W
10dB/
2.49653GHz
MKR
2.49653 GHz
2.239 W
D
R
CENTER 2.49666GHz
SPAN 40.00MHz
*RBW 2.0MHz
*VBW 3.0MHz
SWP 50ms


*ATTEN 20dB
RL 10.00W
10dB/
MKR 7.362W
2.49653GHz
MKR
2.49653 GHz
7.362 W
D
R
CENTER 2.49666GHz
SPAN 40.00MHz
*RBW 2.0MHz
*VBW 3.0MHz
SWP 50ms

SUBJECT: Antenna Conducted Spurrious Emissions FCC Part 74 ; 90

MET REPORT: EMI894
MFG: General Microwave
TESTED BY: Kenneth Bass
TEST DATE: 10 MAR 1998

TECHNICAL SPECIFICATION: 2.991; 74.637

EUT: Microwave Transmitter
MODEL: STS-10000

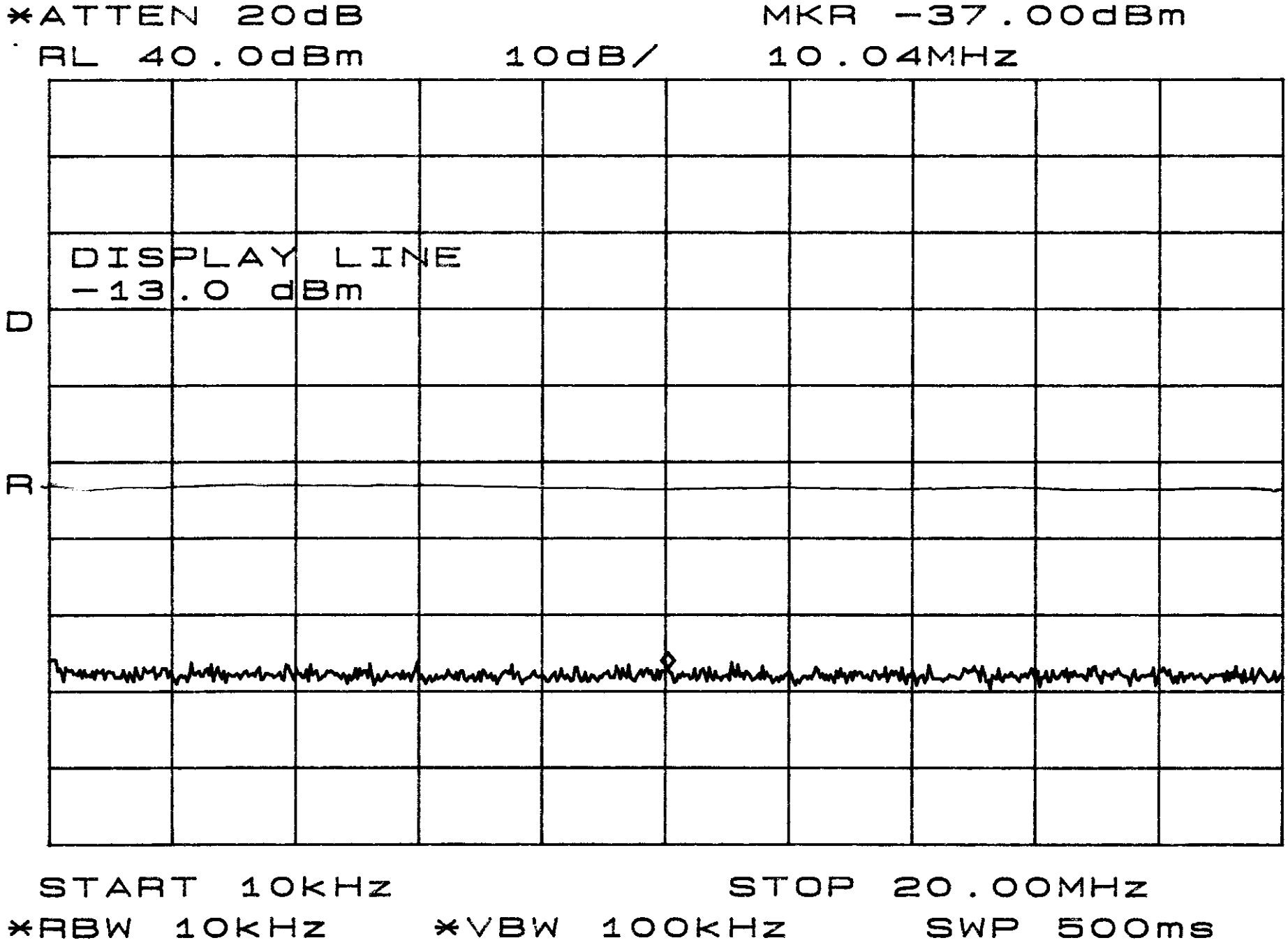
Comment: Equipment complies with Section 2.991 and 74.637(a). Emissions outside of the allowable bandwidth are attenuated at least 43 + 10_{log}(carrier power) below the level of the unmodulated carrier.

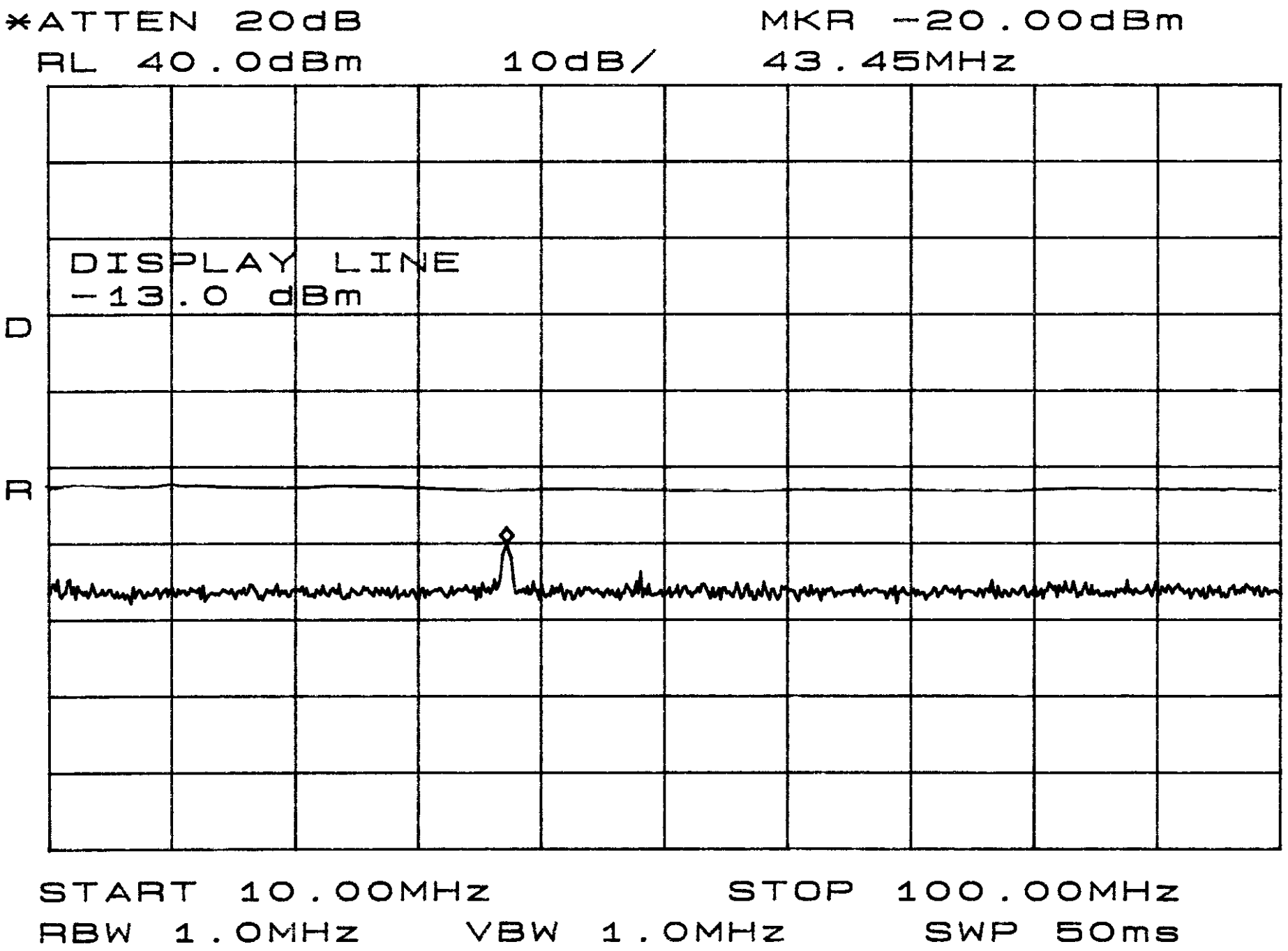
43 + 10_{log}(carrier power) = 43 + 10 log (10) = 53 dBc

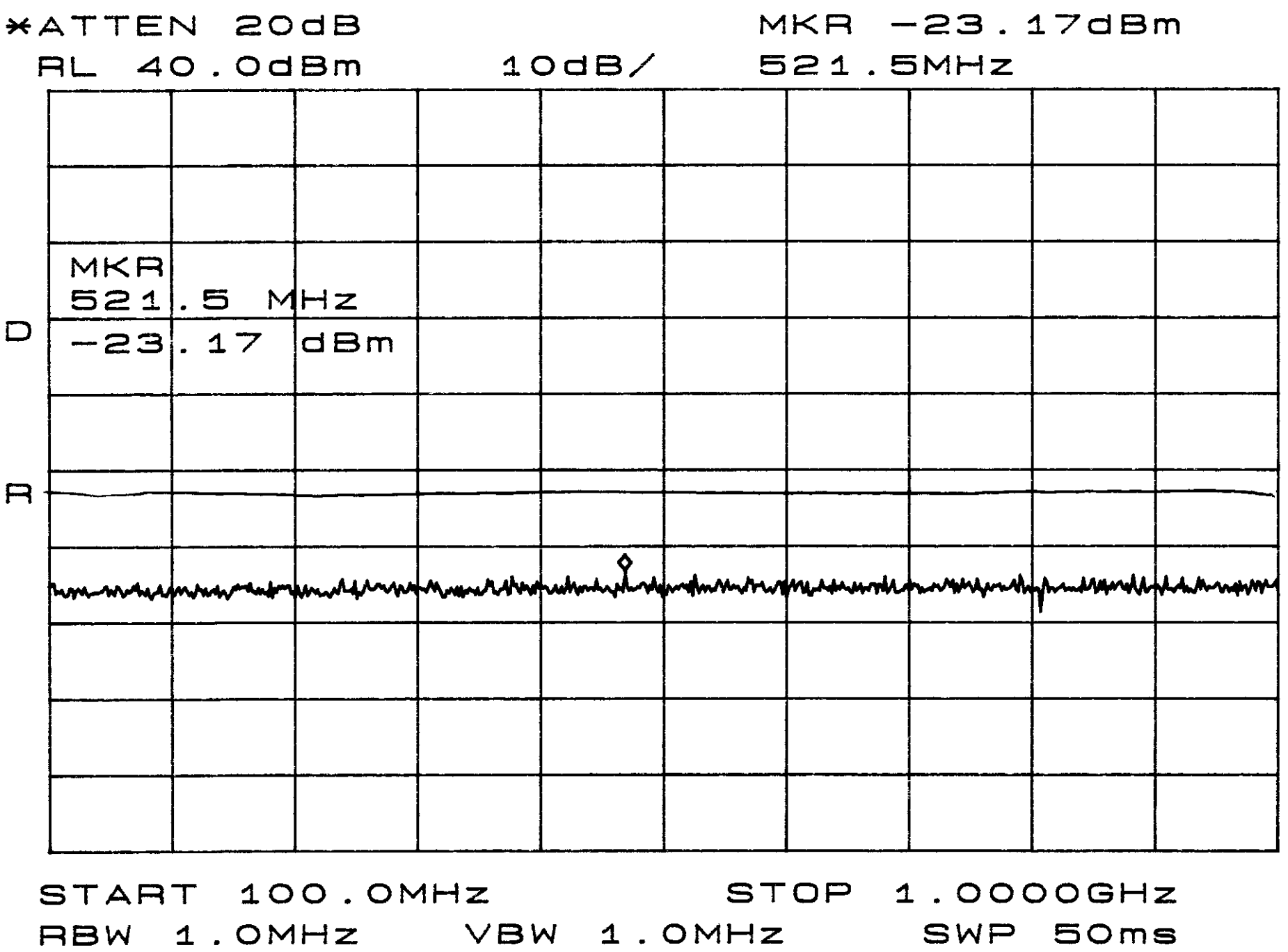
Since 10W = 40 dBm ;

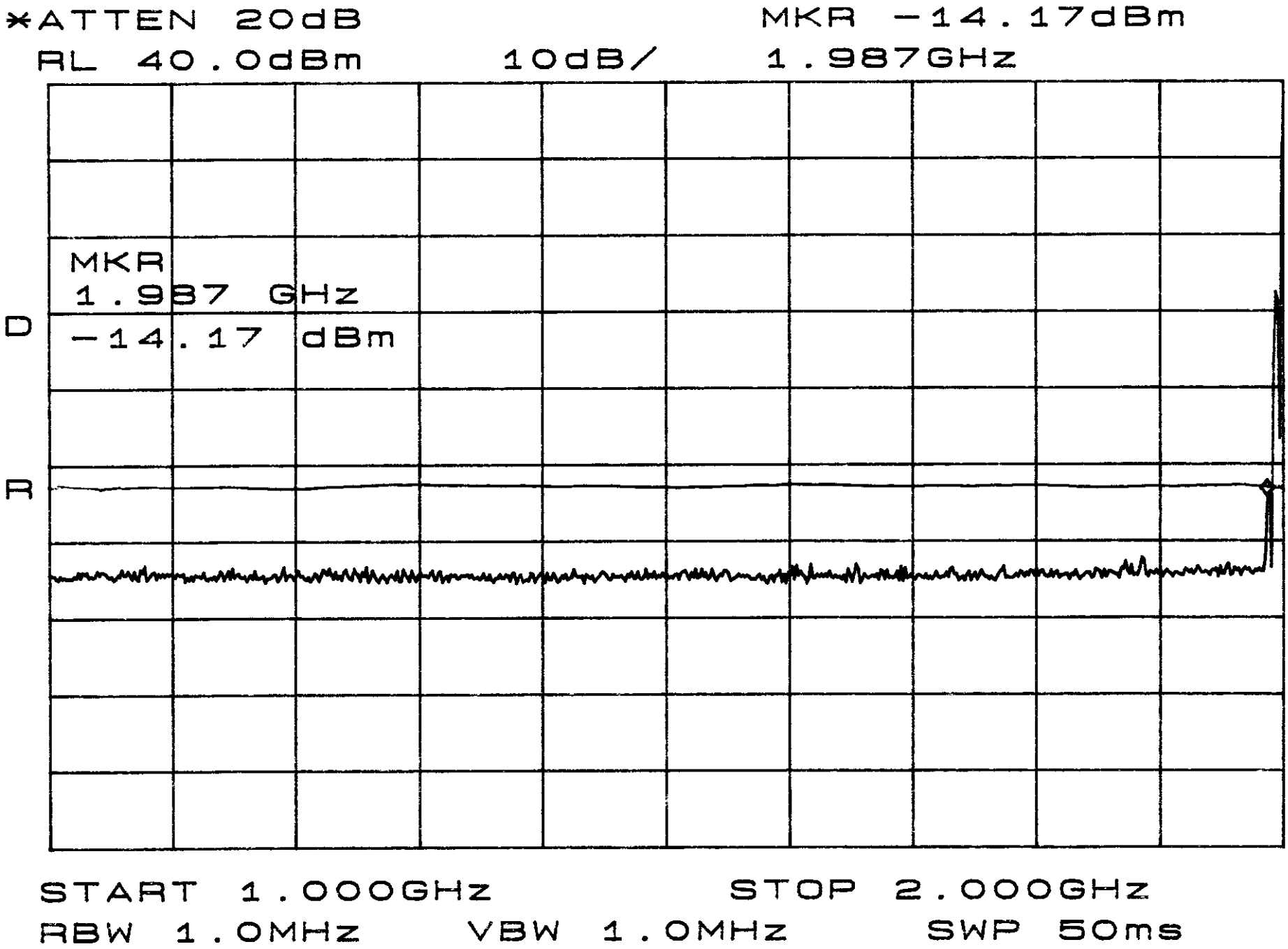
40 dBm - 53 dB = - 13dBm

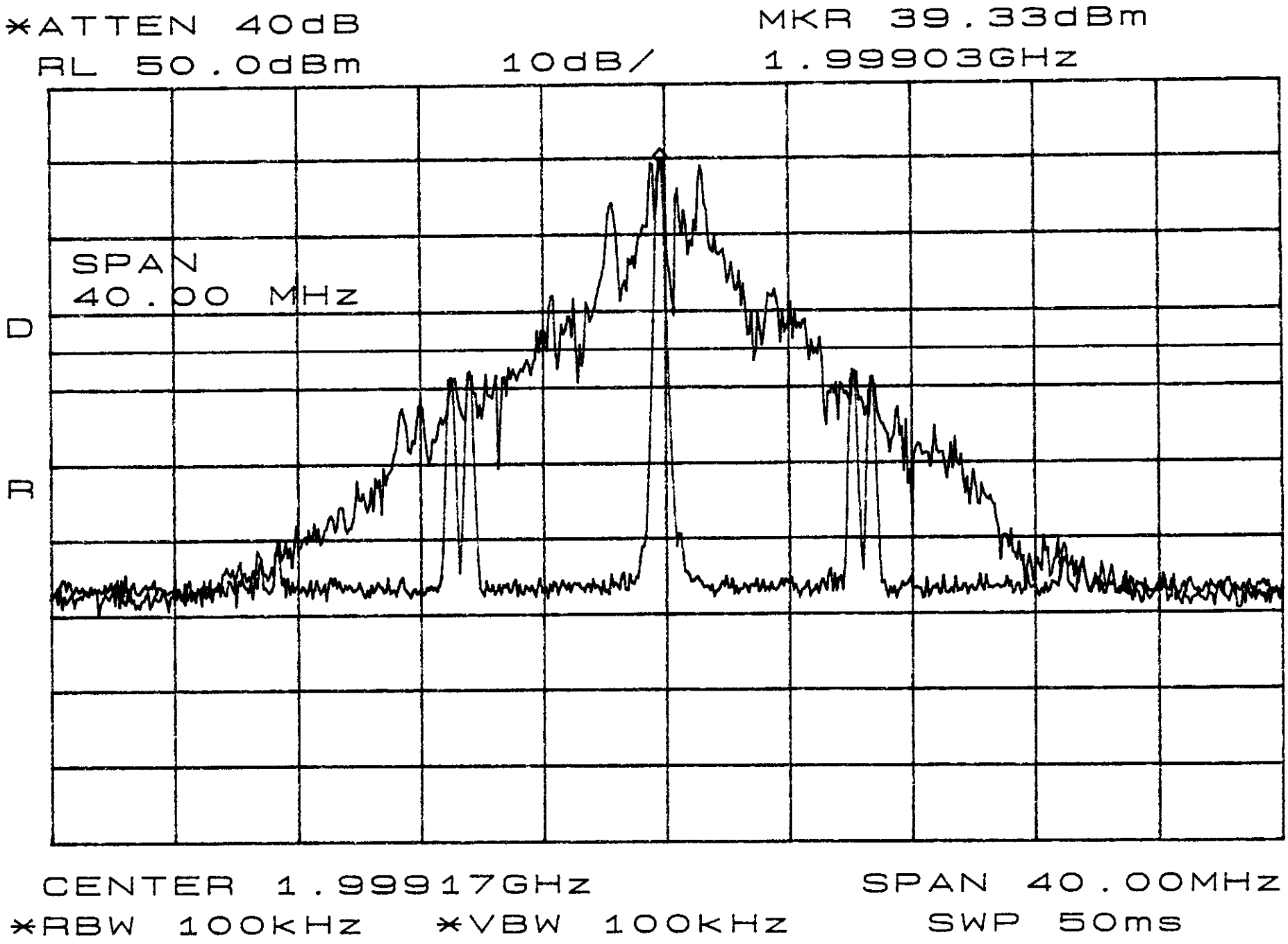
Plots appear on following pages.

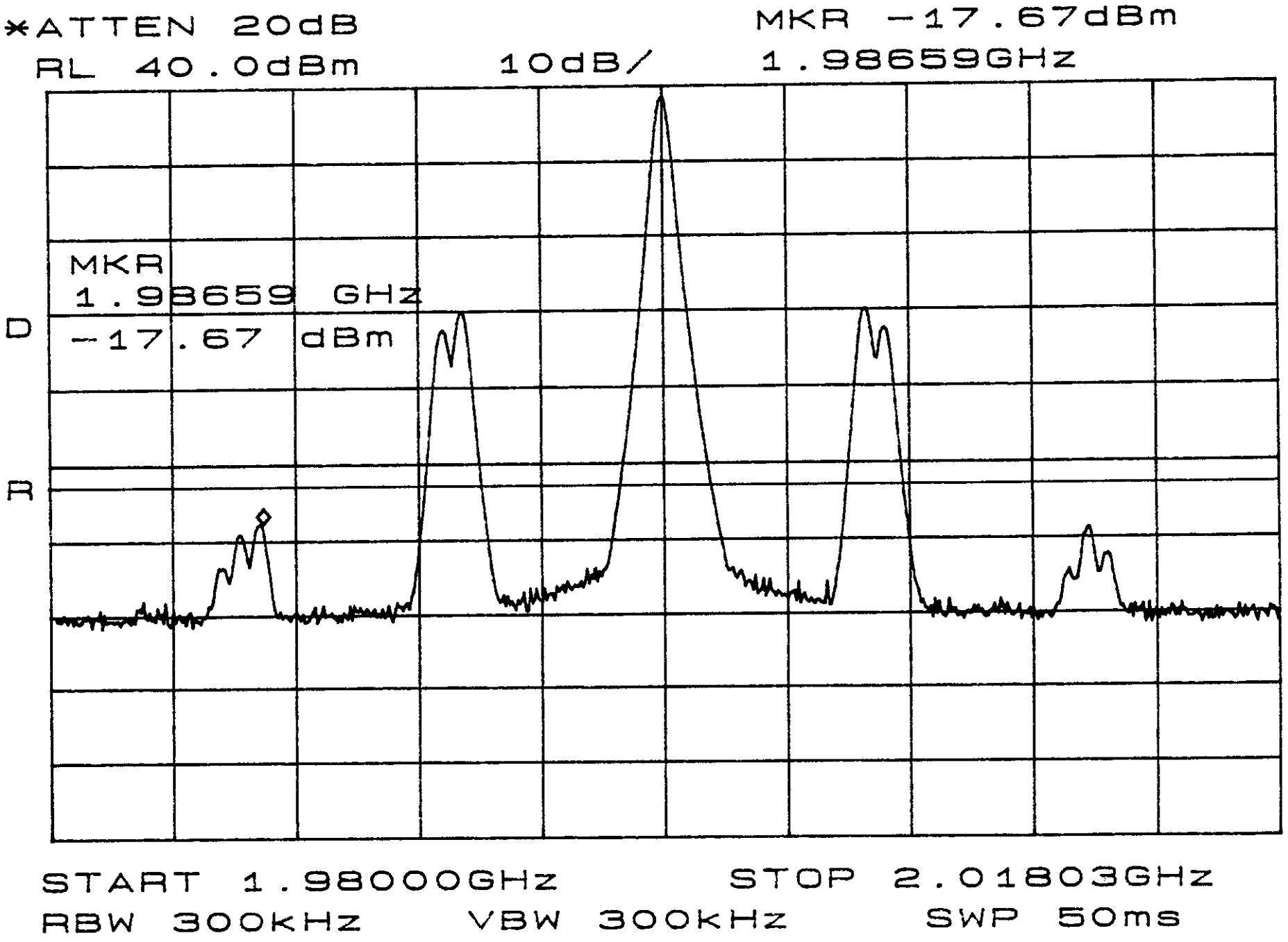

*ATTEN 20dB
MKR -37.00dBm
RL 40.0dBm
10dB/
10.04MHz
DISPLAY LINE
-13.0 dBm
D
R
START 10kHz
STOP 20.00MHz
*RBW 10kHz
*VBW 100kHz
SWP 500ms

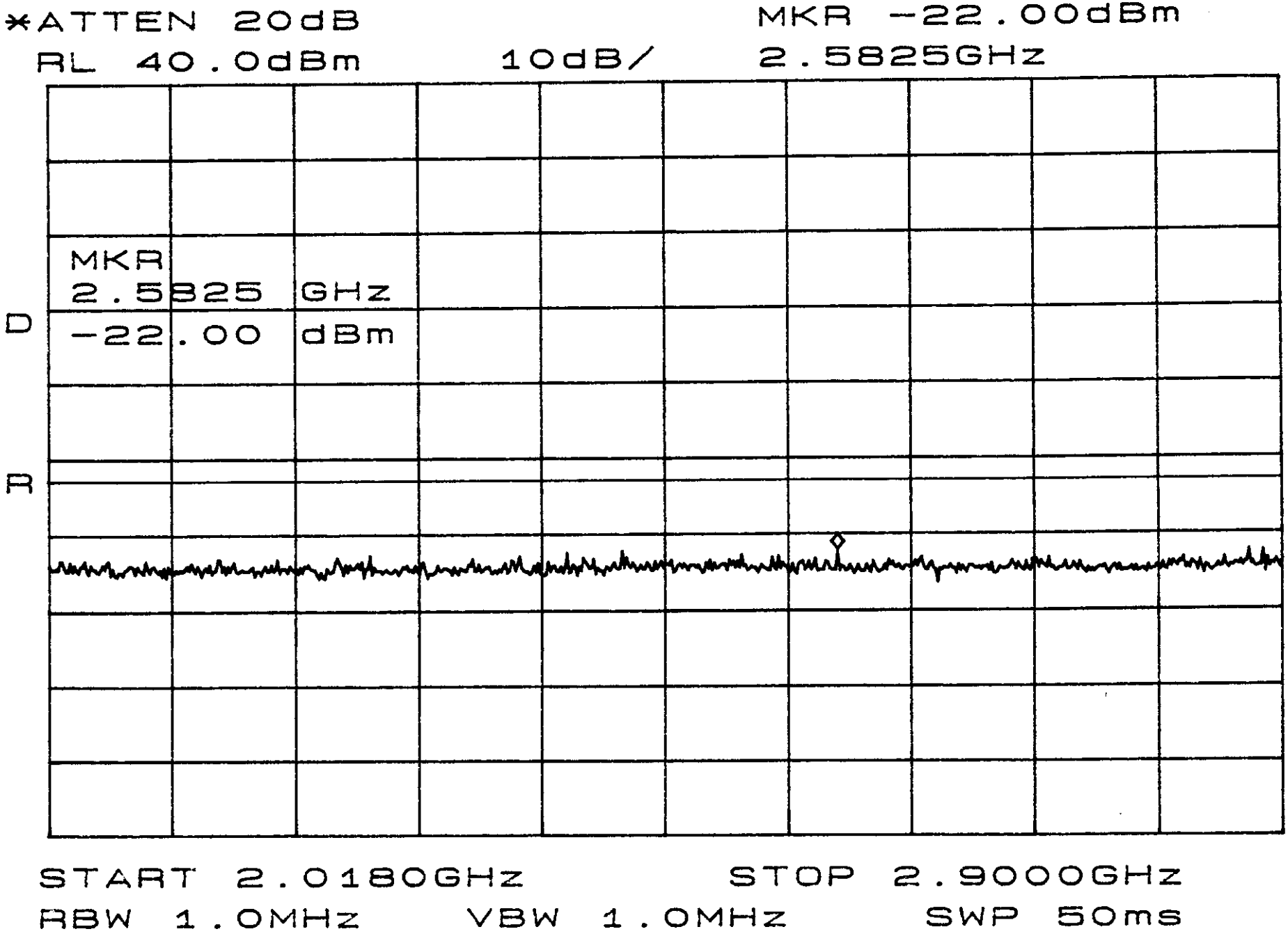

*ATTEN 20dB
MKR -20.00dBm
RL 40.0dBm
10dB/
43.45MHz
DISPLAY LINE
-13.0 dBm
D
R
START 10.00MHz
STOP 100.00MHz
RBW 1.0MHz
VBW 1.0MHz
SWP 50ms

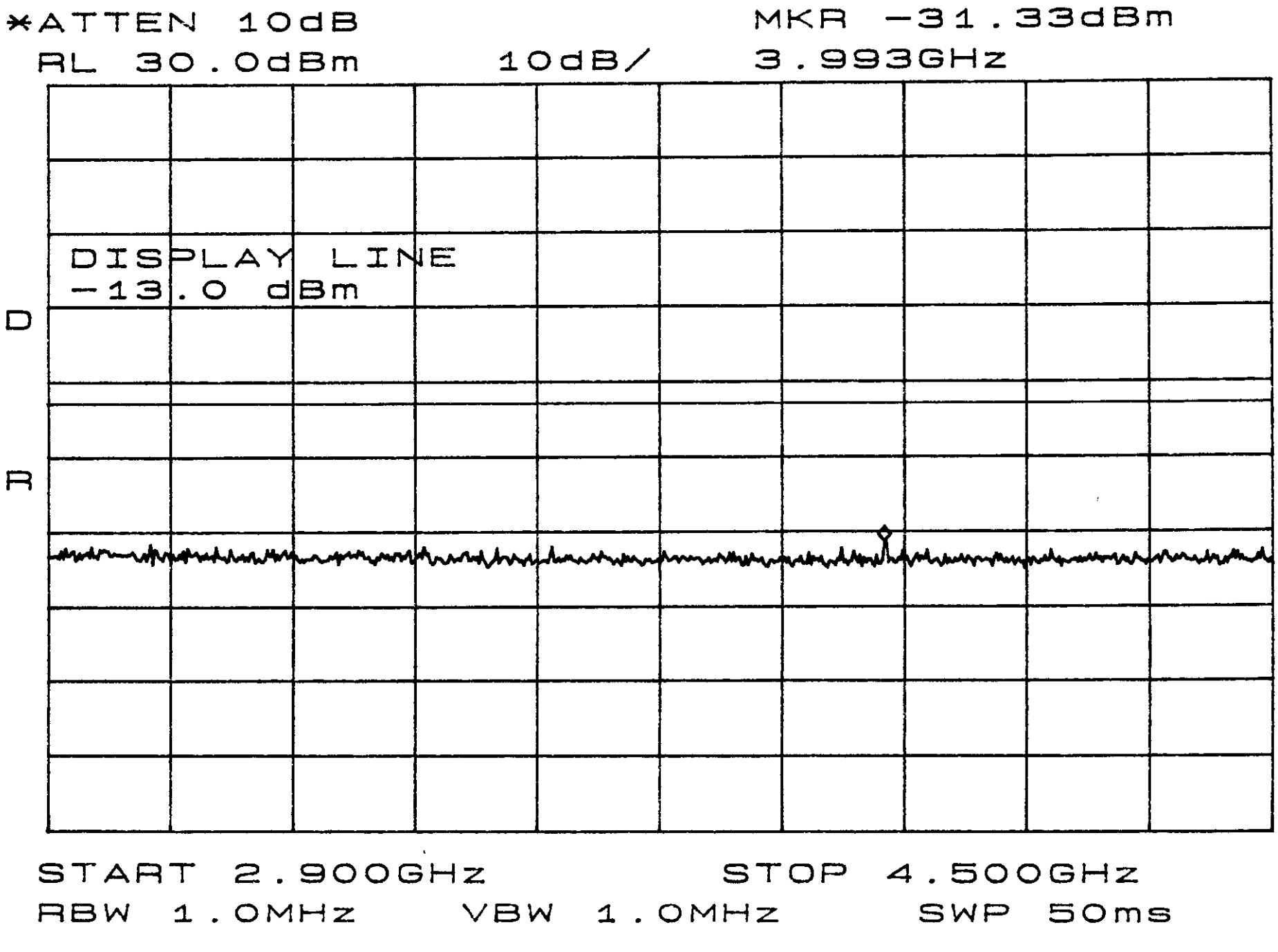

*ATTEN 20dB
MKR -23.17dBm
RL 40.0dBm
10dB/
521.5MHz
MKR
521.5 MHz
D
-23.17 dBm
R
START 100.0MHz
STOP 1.0000GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 50ms

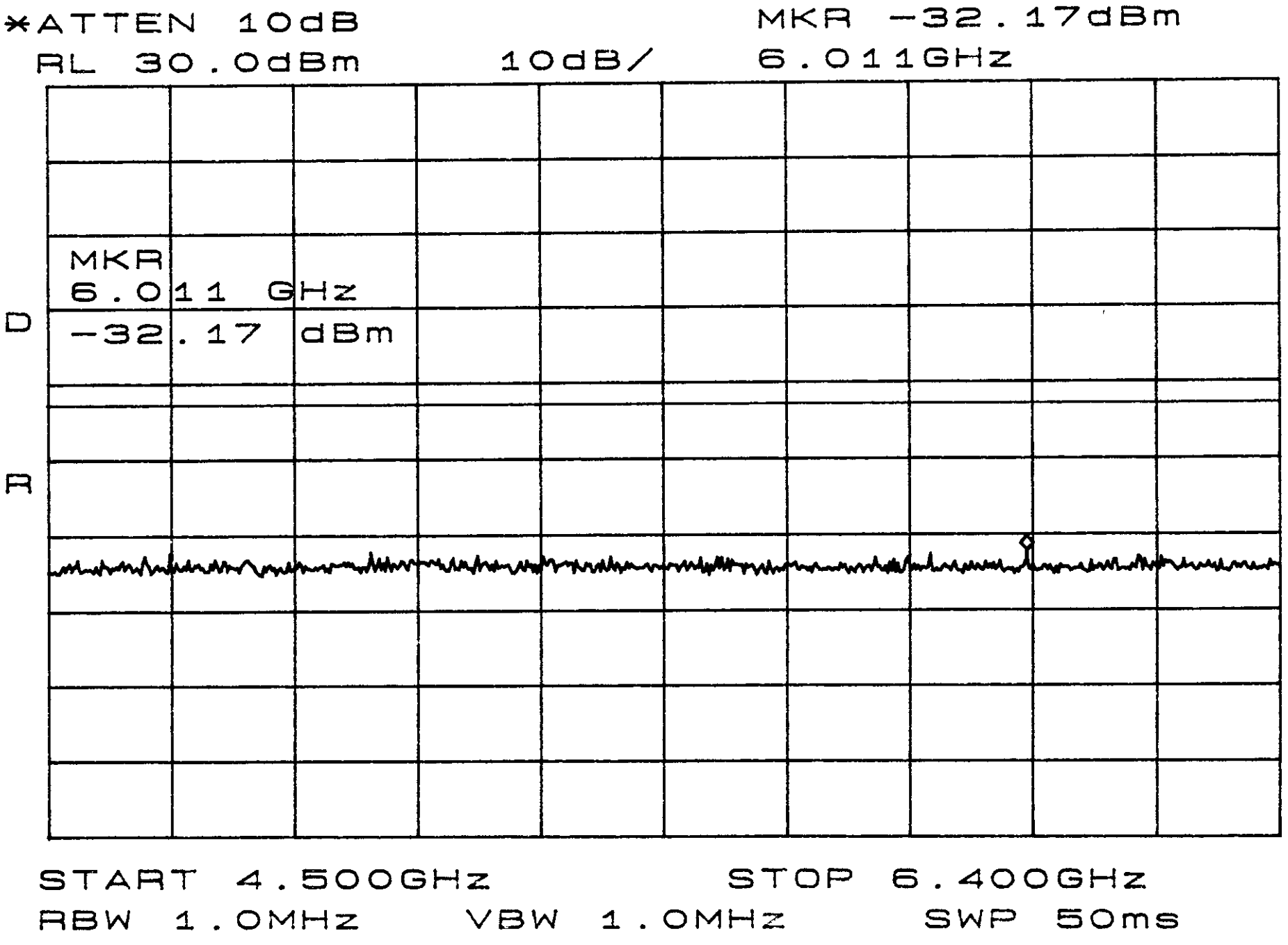

*ATTEN 20dB
MKR -14.17dBm
RL 40.0dBm
10dB/
1.987GHz
MKR
1.987 GHz
-14.17 dBm
D
R
START 1.000GHz
STOP 2.000GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 50ms

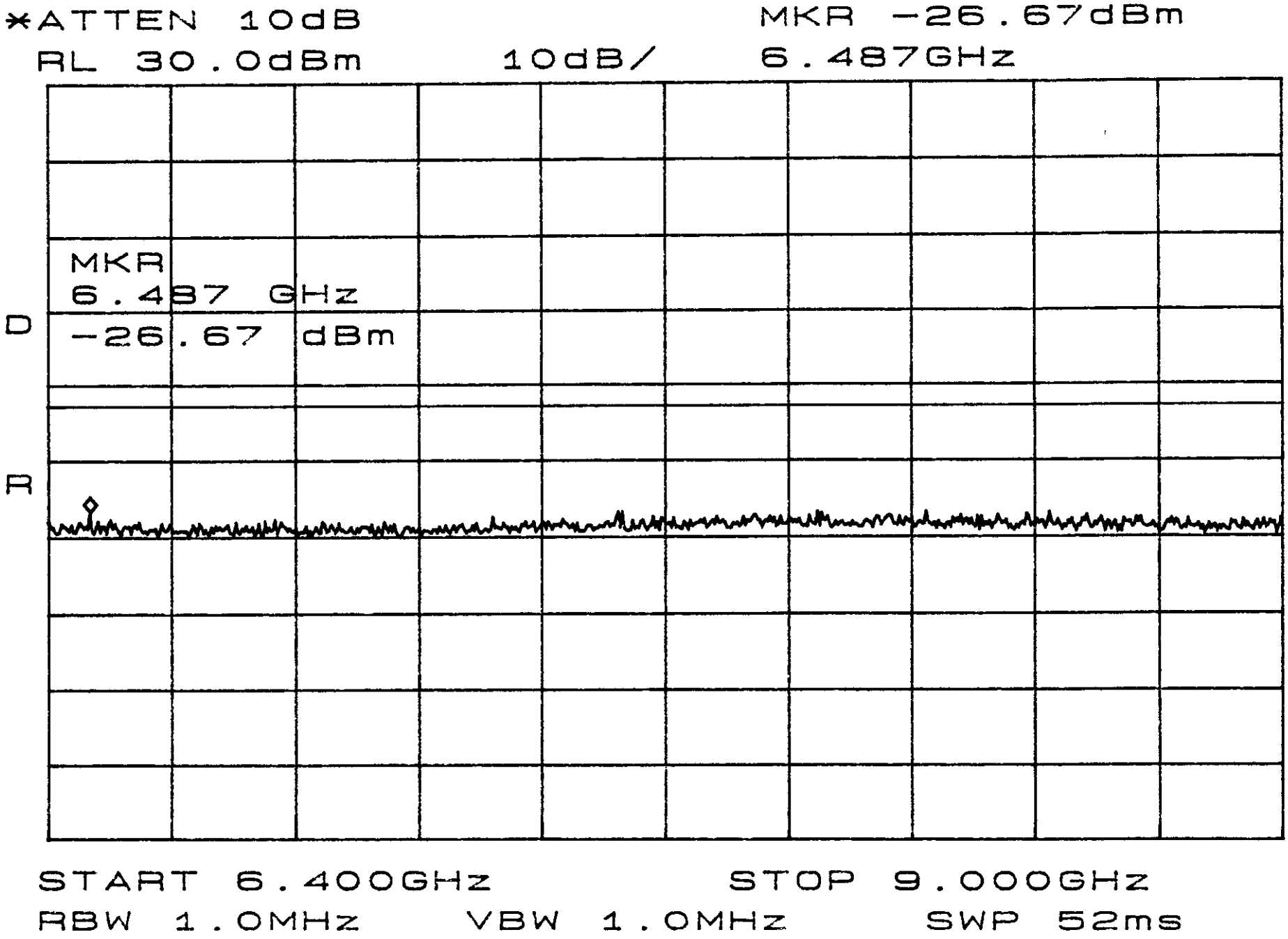

*ATTEN 40dB
MKR 39.33dBm
RL 50.0dBm
10dB/
1.99903GHz
SPAN
40.00 MHz
D
R
CENTER 1.99917GHz
SPAN 40.00MHz
*RBW 100KHz
*VBW 100KHz
SWP 50ms

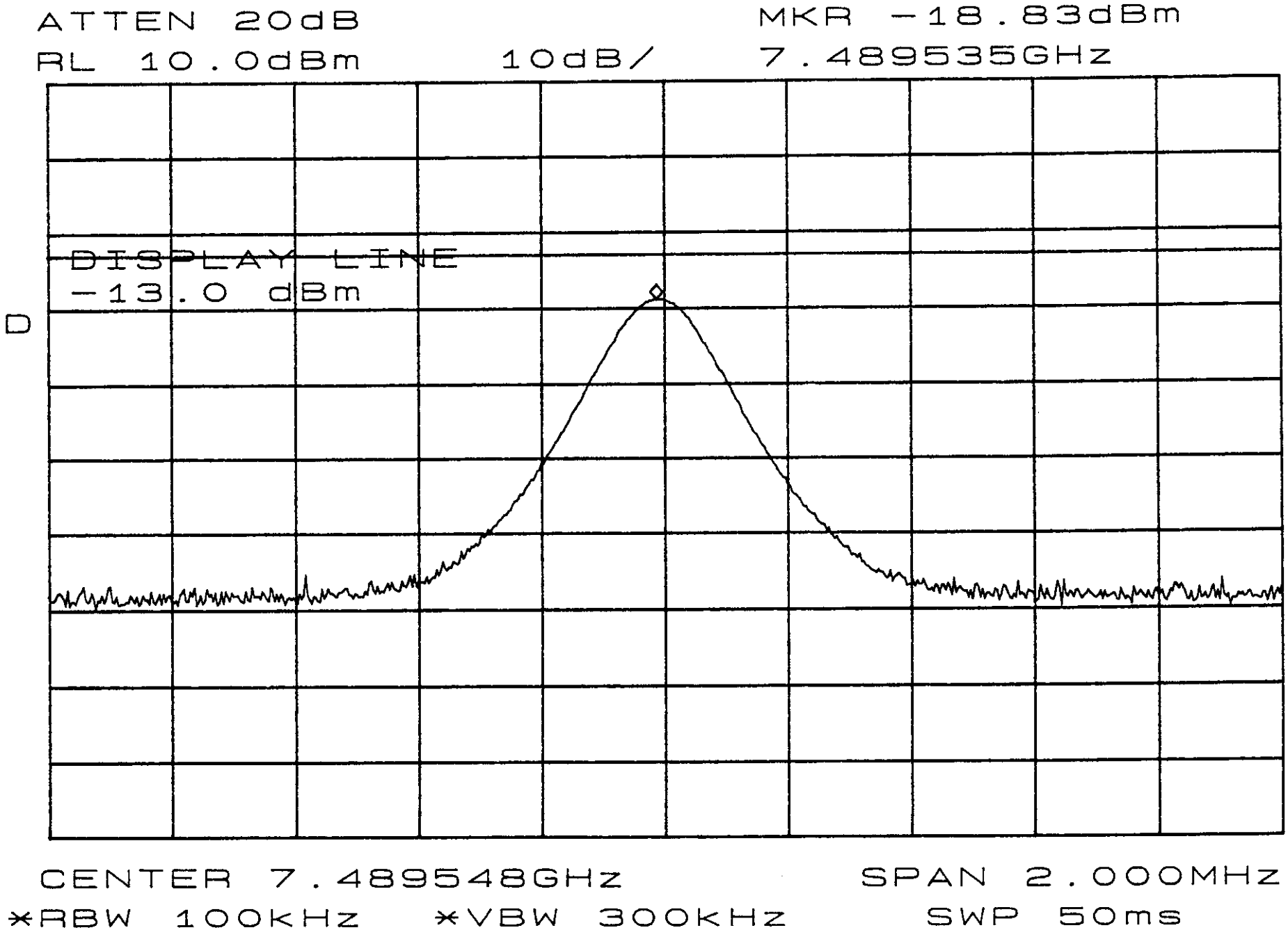

*ATTEN 20dB
MKR -17.67dBm
RL 40.0dBm
10dB/
1.98659GHz
MKR
1.98659 GHz
-17.67 dBm
D
R
START 1.98000GHz
STOP 2.01803GHz
RBW 300kHz
VBW 300kHz
SWP 50ms

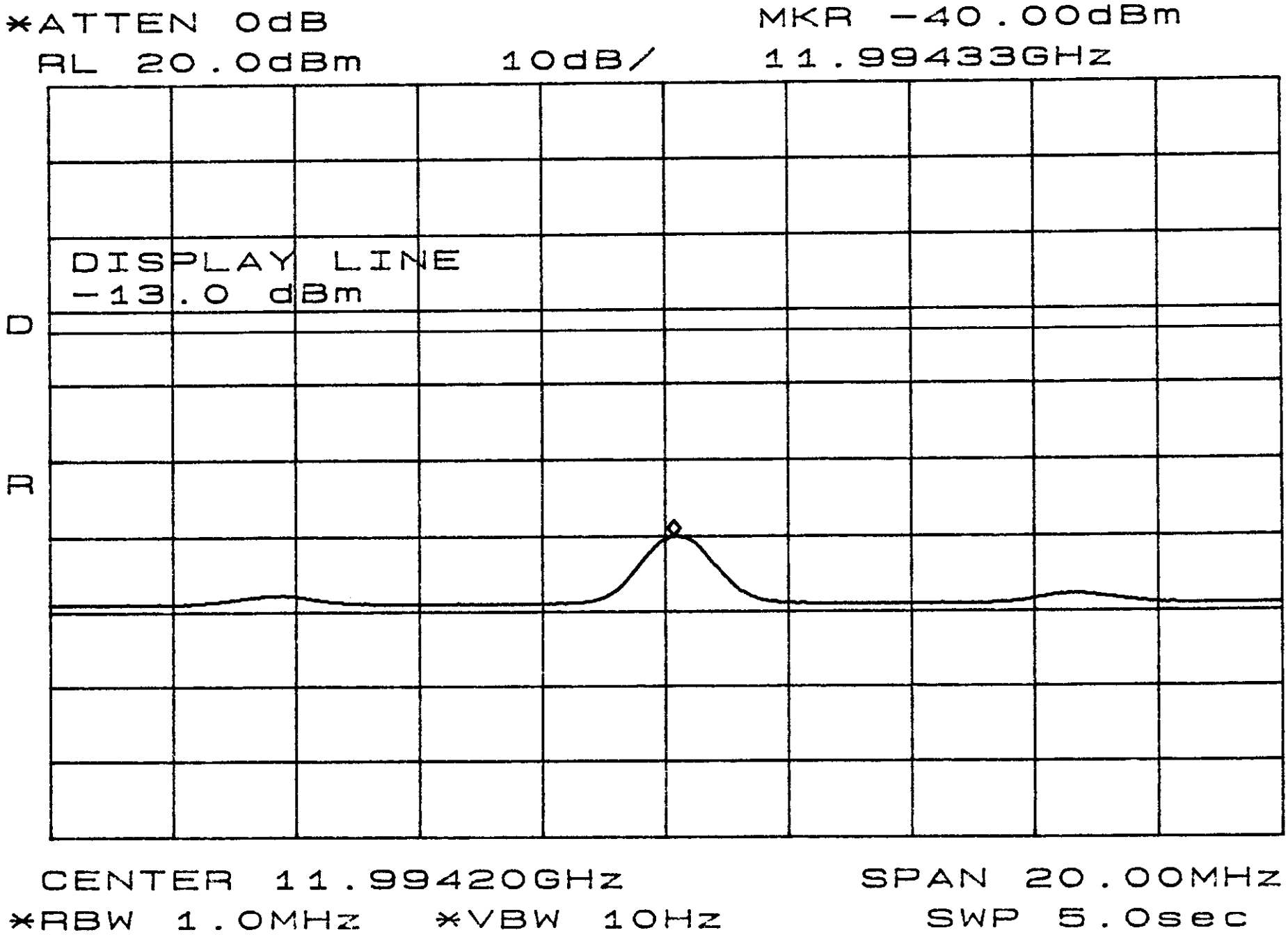

*ATTEN 20dB
MKR -22.00dBm
RL 40.0dBm
10dB/
2.5825GHz
MKR
2.5825 GHz
-22.00 dBm
D
R
START 2.0180GHz
STOP 2.9000GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 50ms

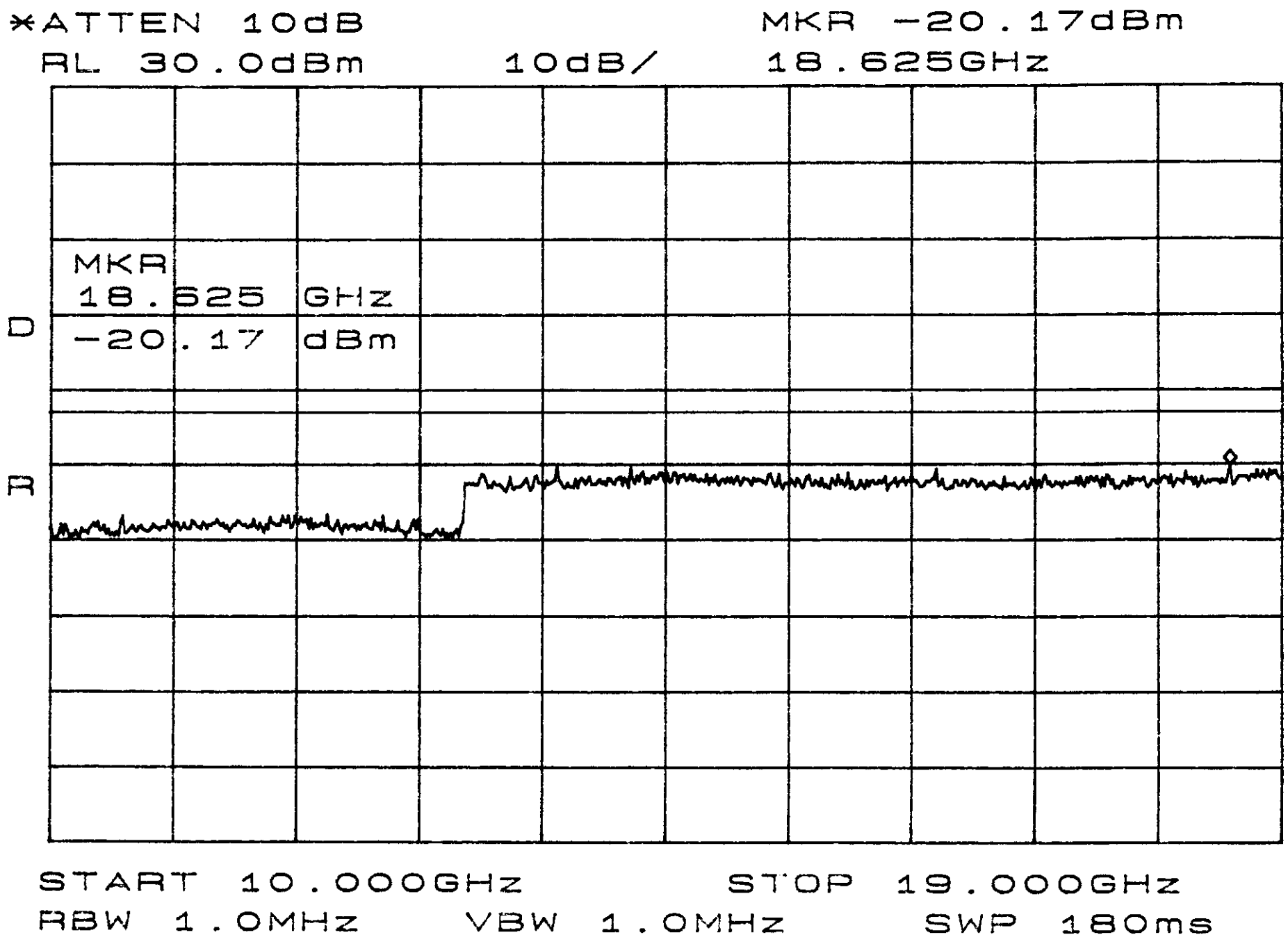

*ATTEN 10dB
MKR -31.33dBm
RL 30.0dBm
10dB/
3.993GHz
DISPLAY LINE
-13.0 dBm
D
R
START 2.900GHz
STOP 4.500GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 50ms

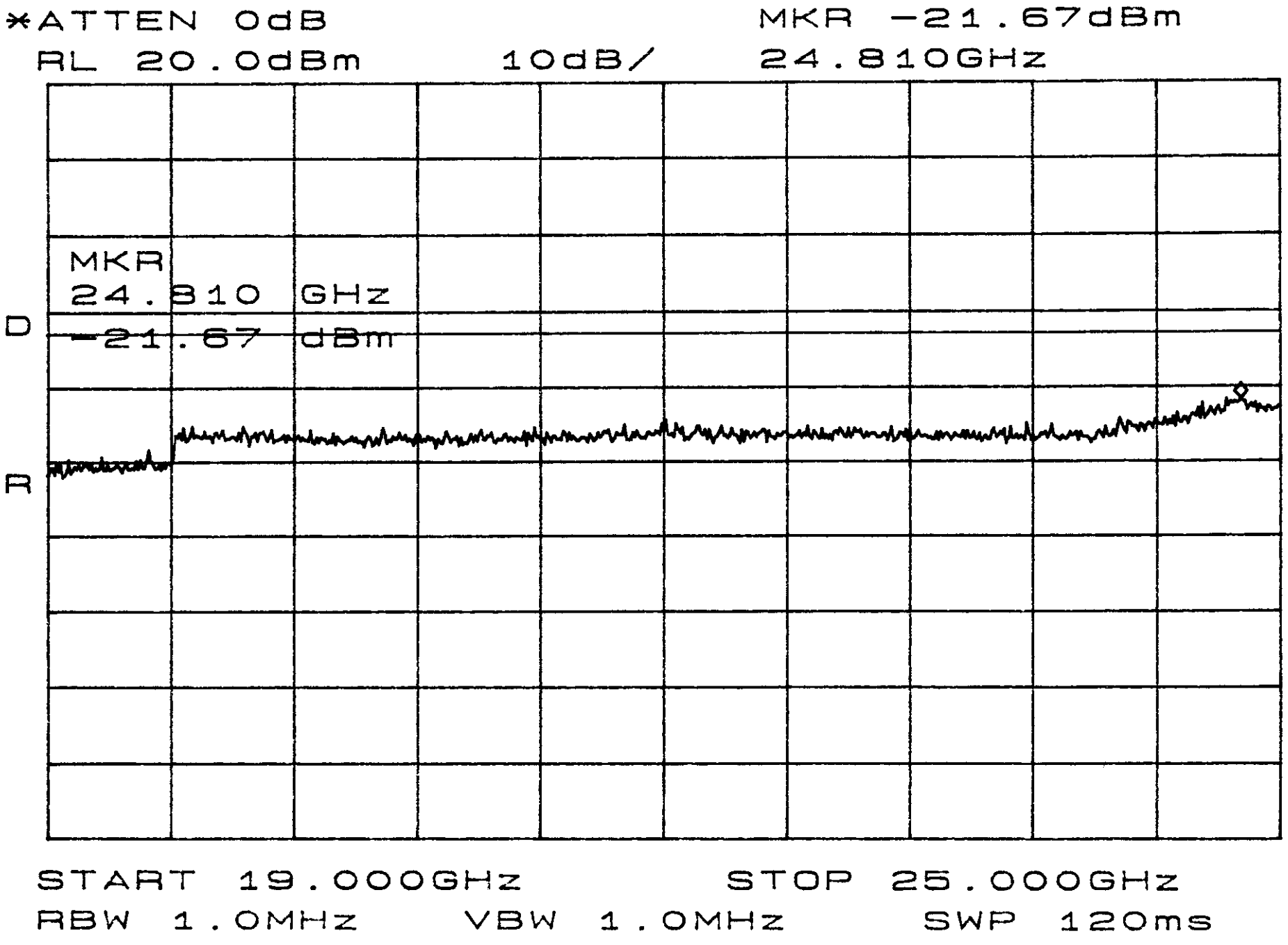

*ATTEN 10dB
MKR -32.17dBm
RL 30.0dBm
10dB/
6.011GHz
MKR
6.011 GHz
-32.17 dBm
D
R
START 4.500GHz
STOP 6.400GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 50ms

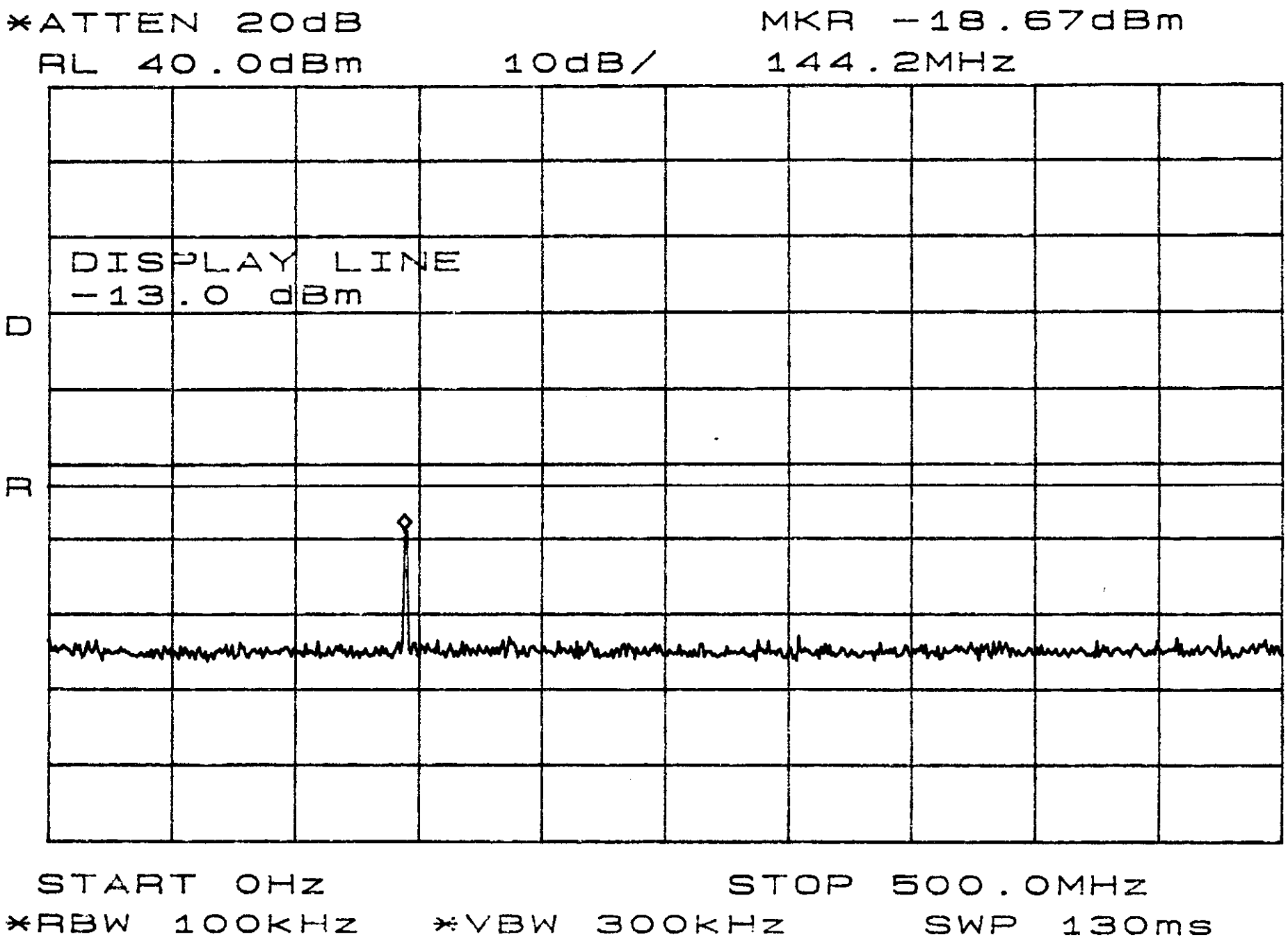

*ATTEN 10dB
MKR -26.67dBm
RL 30.0dBm
10dB/
6.487GHz
MKR
6.487 GHz
-26.67 dBm
D
R
START 6.400GHz
STOP 9.000GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 52ms

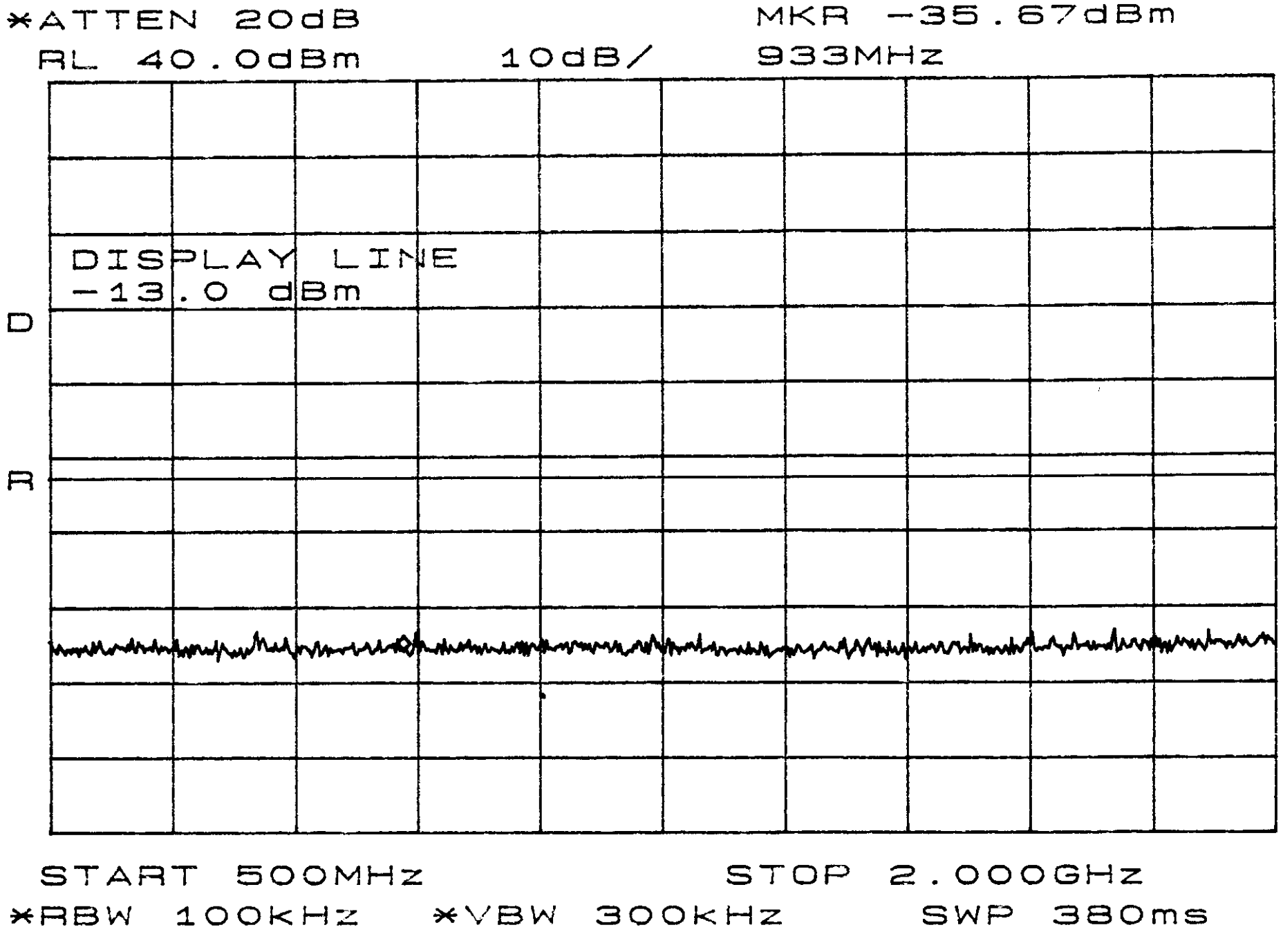

ATTEN 20dB
MKR -18.83dBm
RL 10.0dBm
10dB/
7.489535GHz
DISPLAY LINE
-13.0 dBm
D
CENTER 7.489548GHz
SPAN 2.000MHz
*RBW 100kHz
*VBW 300kHz
SWP 50ms

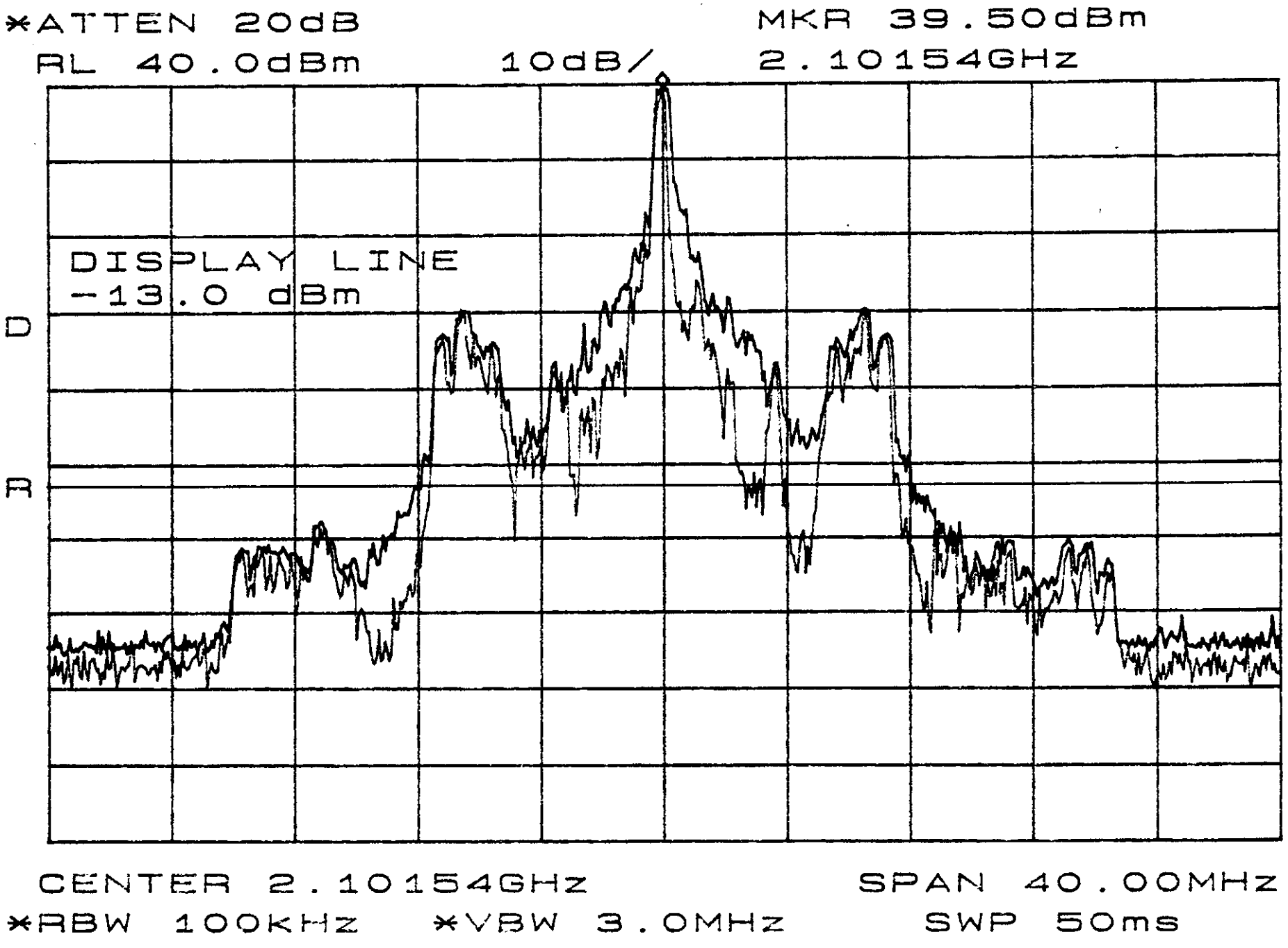

*ATTEN 0dB
MKR -40.00dBm
RL 20.0dBm
10dB/
11.99433GHz
DISPLAY LINE
-13.0 dBm
D
R
CENTER 11.99420GHz
SPAN 20.00MHz
*RBW 1.0MHz
*VBW 10Hz
SWP 5.0sec

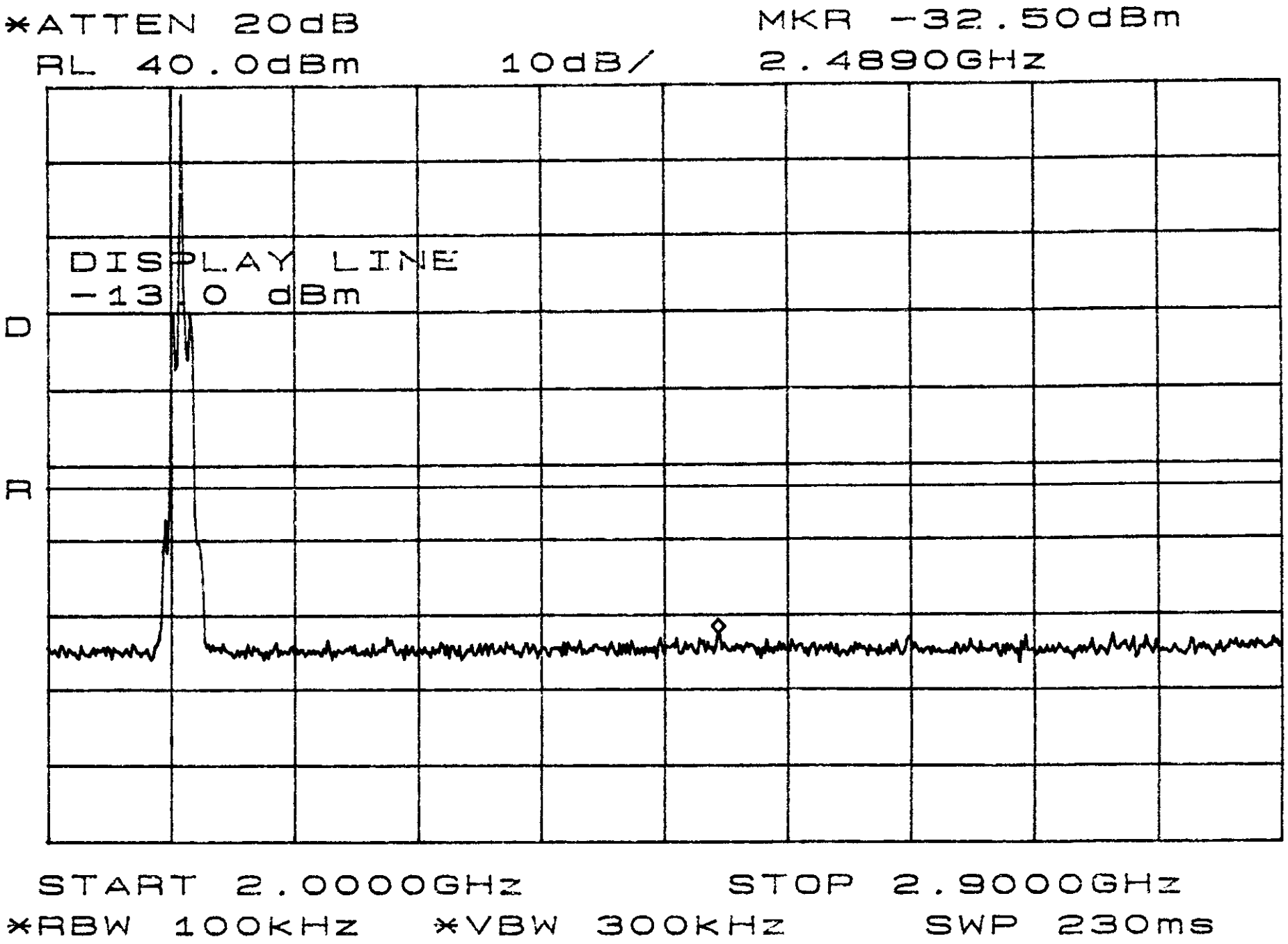

*ATTEN 10dB
MKR -20.17dBm
RL 30.0dBm
10dB/
18.625GHz
MKR
18.625 GHz
-20.17 dBm
D
R
START 10.000GHz
STOP 19.000GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 180ms

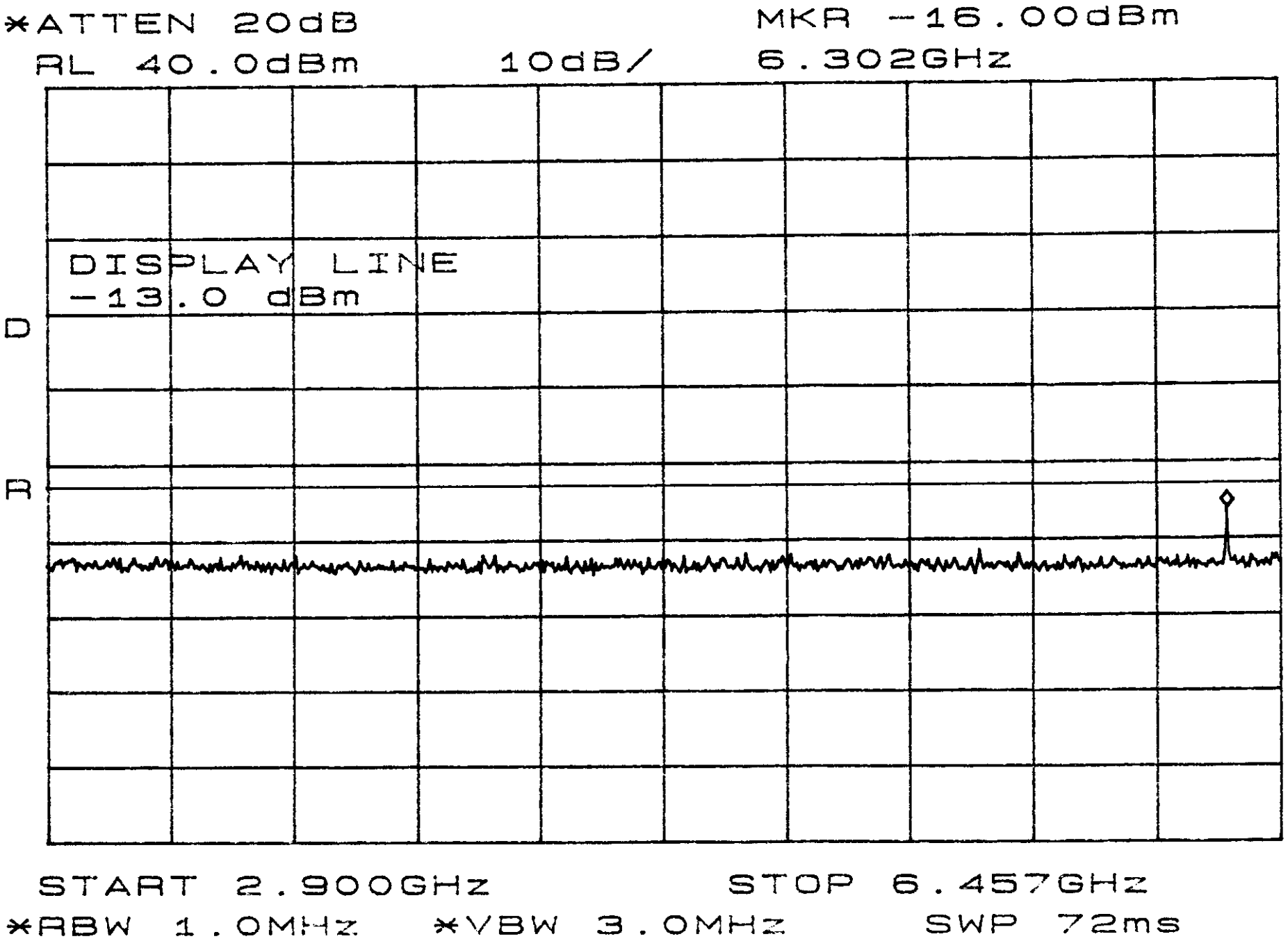

*ATTEN 0dB
MKR -21.67dBm
RL 20.0dBm
10dB/
24.810GHz
MKR
24.810 GHz
-21.67 dBm
D
R
START 19.000GHz
STOP 25.000GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 120ms

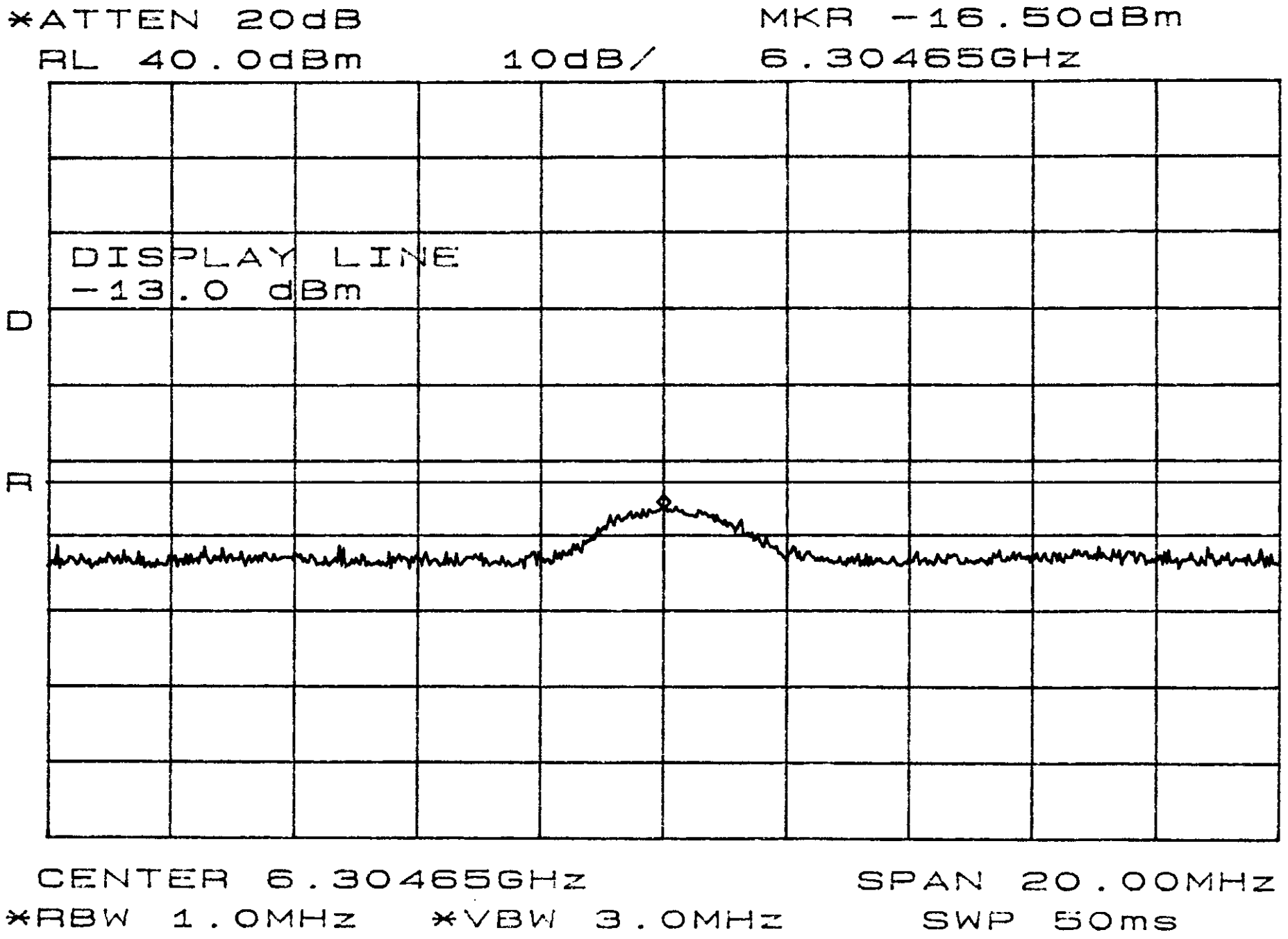

*ATTEN 20dB
MKR -18.67dBm
RL 40.0dBm
10dB/
144.2MHz
DISPLAY LINE
-13.0 dBm
D
R
START 0Hz
STOP 500.0MHz
*RBW 100KHz
*VBW 300KHz
SWP 130ms

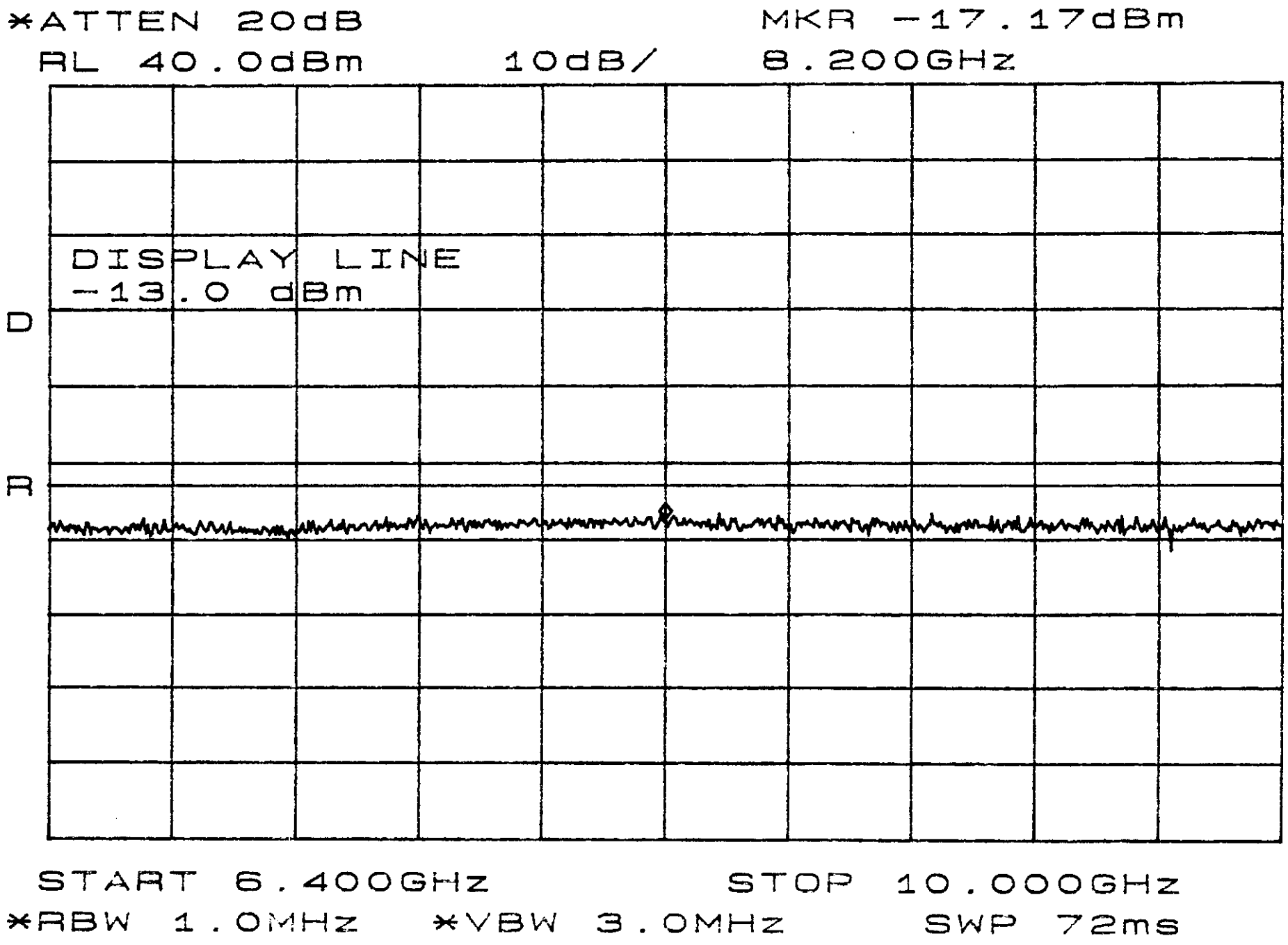

*ATTEN 20dB
MKR -35.67dBm
RL 40.0dBm
10dB/
933MHz
DISPLAY LINE
-13.0 dBm
D
R
START 500MHz
STOP 2.000GHz
*RBW 100KHz
*VBW 300KHz
SWP 380ms

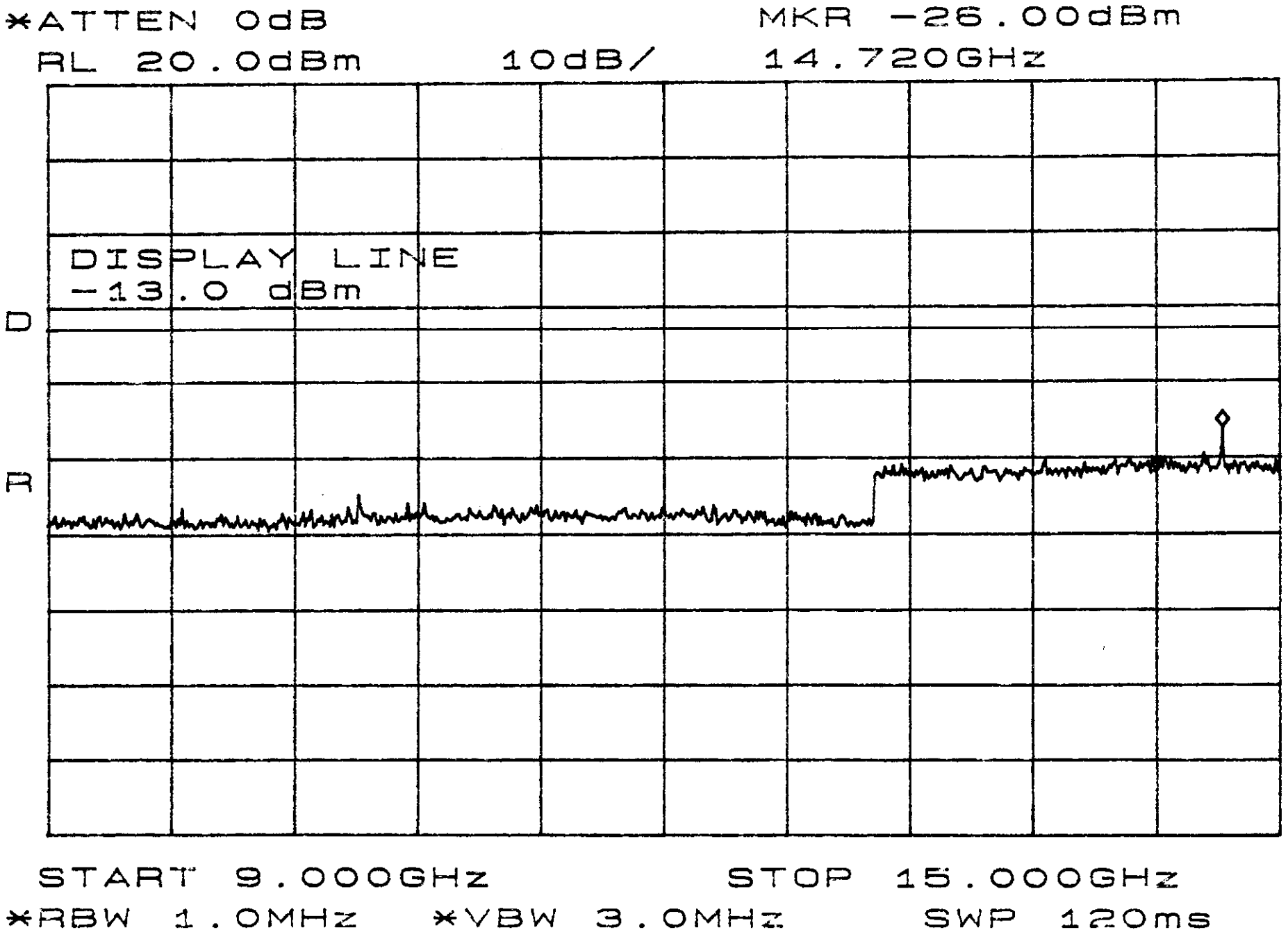

*ATTEN 20dB
MKR 39.50dBm
RL 40.0dBm
10dB/
2.10154GHz
DISPLAY LINE
-13.0 dBm
D
R
CENTER 2.10154GHz
SPAN 40.00MHz
*RBW 100KHz
*VBW 3.0MHz
SWP 50ms

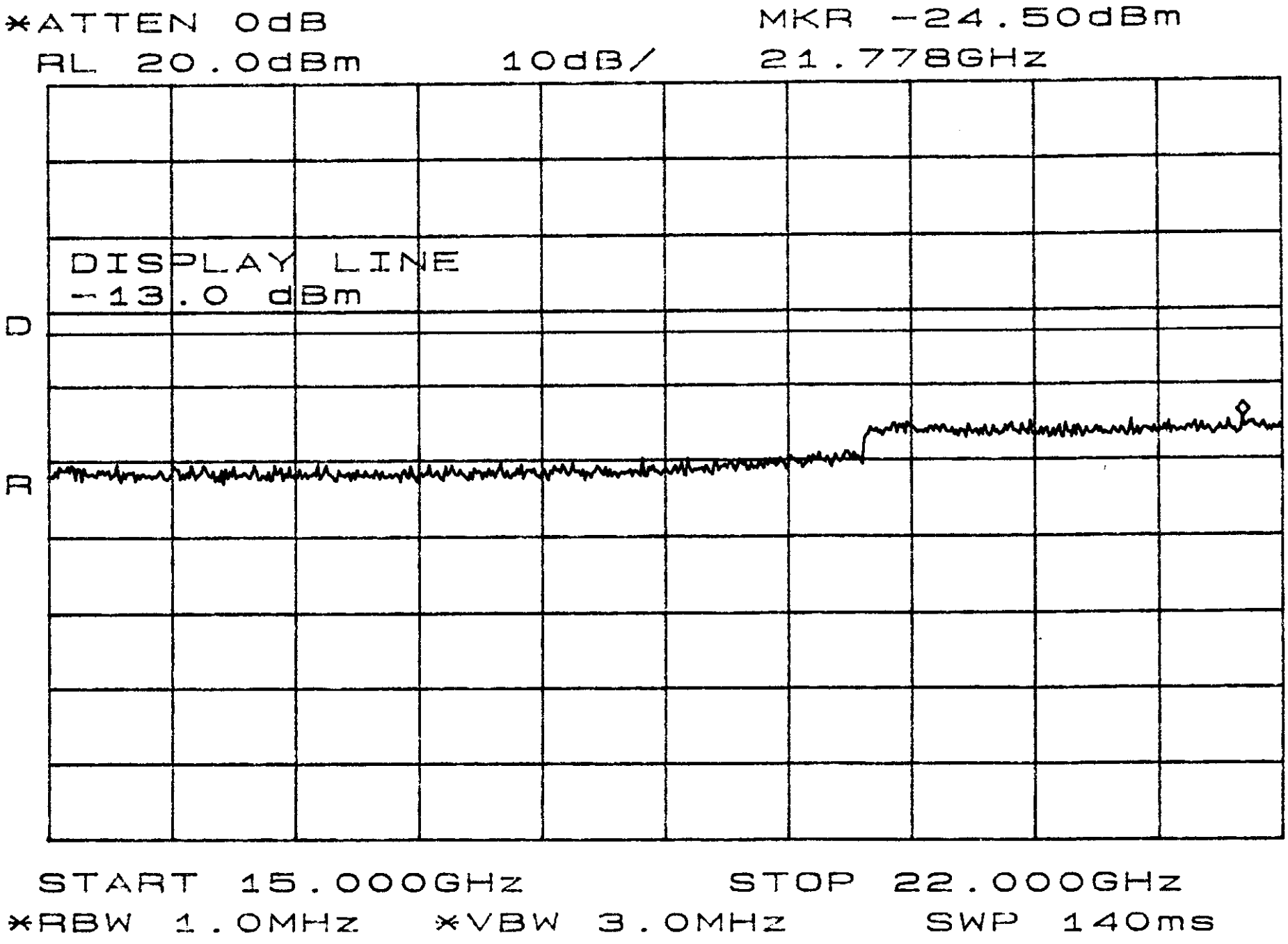

*ATTEN 20dB
MKR -32.50dBm
RL 40.0dBm
10dB/
2.4890GHz
DISPLAY LINE
-13.0 dBm
D
R
START 2.0000GHz
STOP 2.9000GHz
*RBW 100KHz
*VBW 300KHz
SWP 230ms

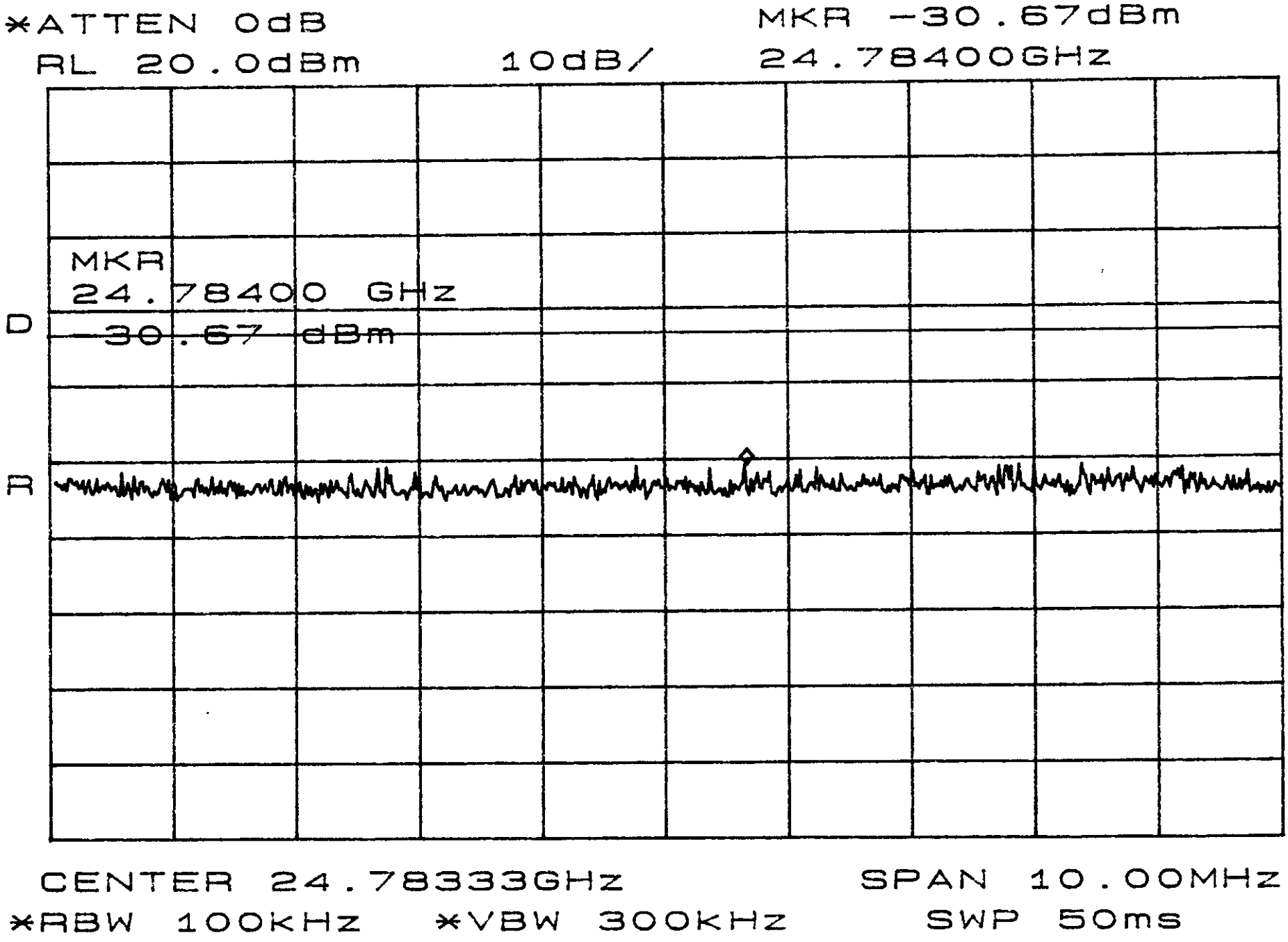

*ATTEN 20dB
MKR -16.00dBm
RL 40.0dBm
10dB/
6.302GHz
DISPLAY LINE
-13.0 dBm
D
R
START 2.900GHz
STOP 6.457GHz
*RBW 1.0MHz
*VBW 3.0MHz
SWP 72ms

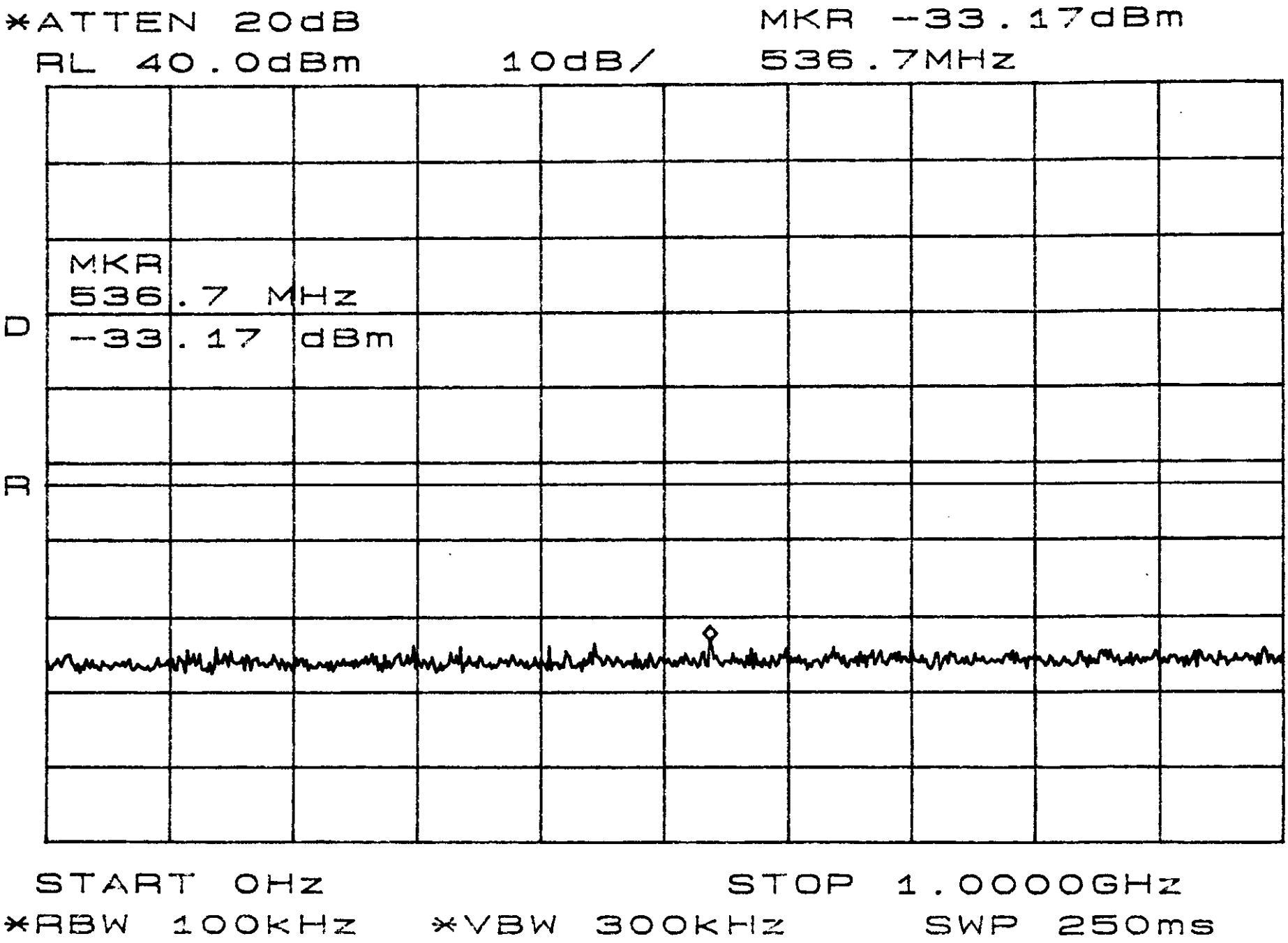

*ATTEN 20dB
MKR -16.50dBm
RL 40.0dBm
10dB/
6.30465GHz
DISPLAY LINE
-13.0 dBm
D
R
CENTER 6.30465GHz
SPAN 20.00MHz
*RBW 1.0MHz
*VBW 3.0MHz
SWP 50ms

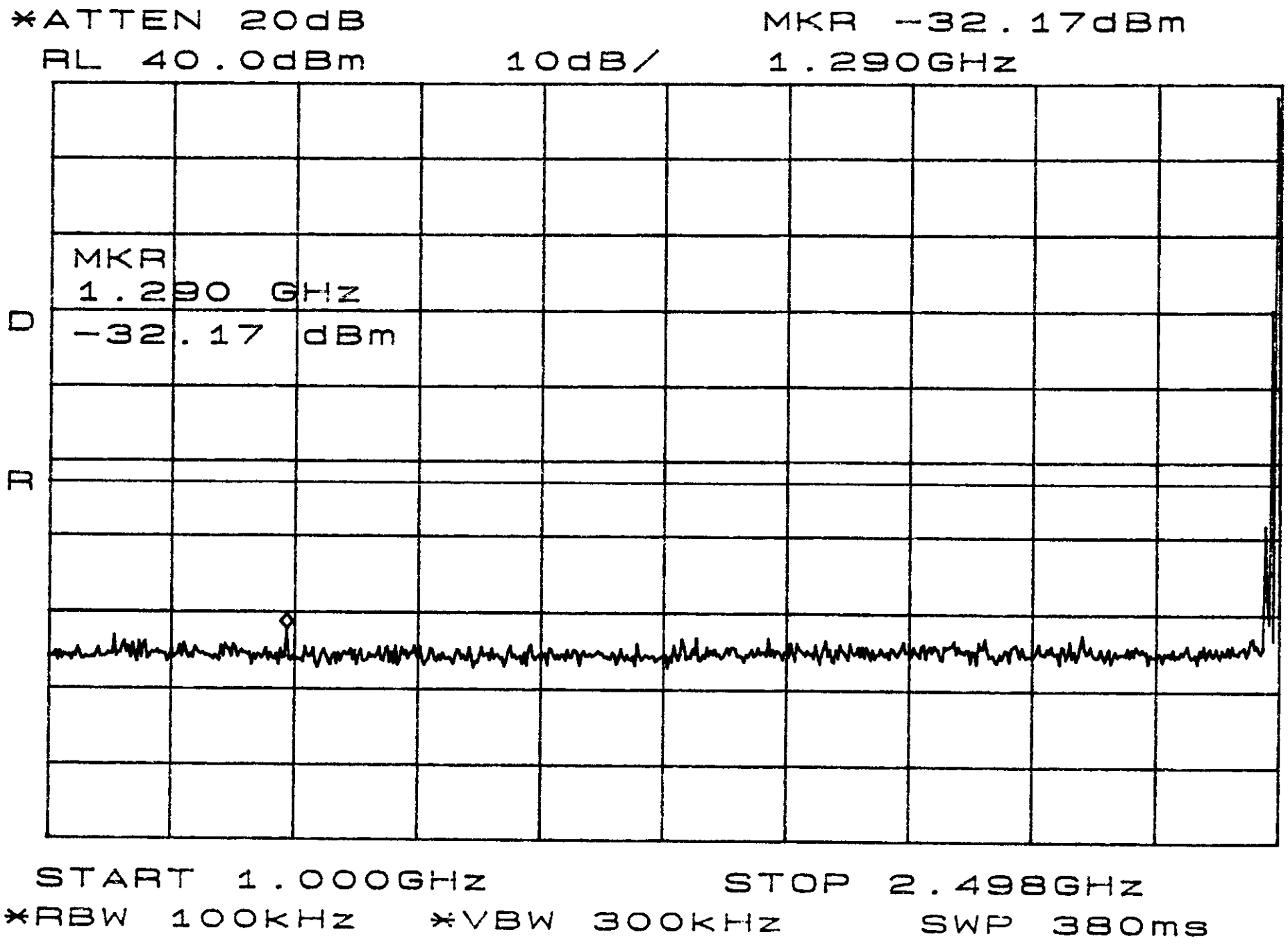

*ATTEN 20dB
MKR -17.17dBm
RL 40.0dBm
10dB/
8.200GHz
DISPLAY LINE
-13.0 dBm
D
R
START 6.400GHz
STOP 10.000GHz
*RBW 1.0MHz
*VBW 3.0MHz
SWP 72ms

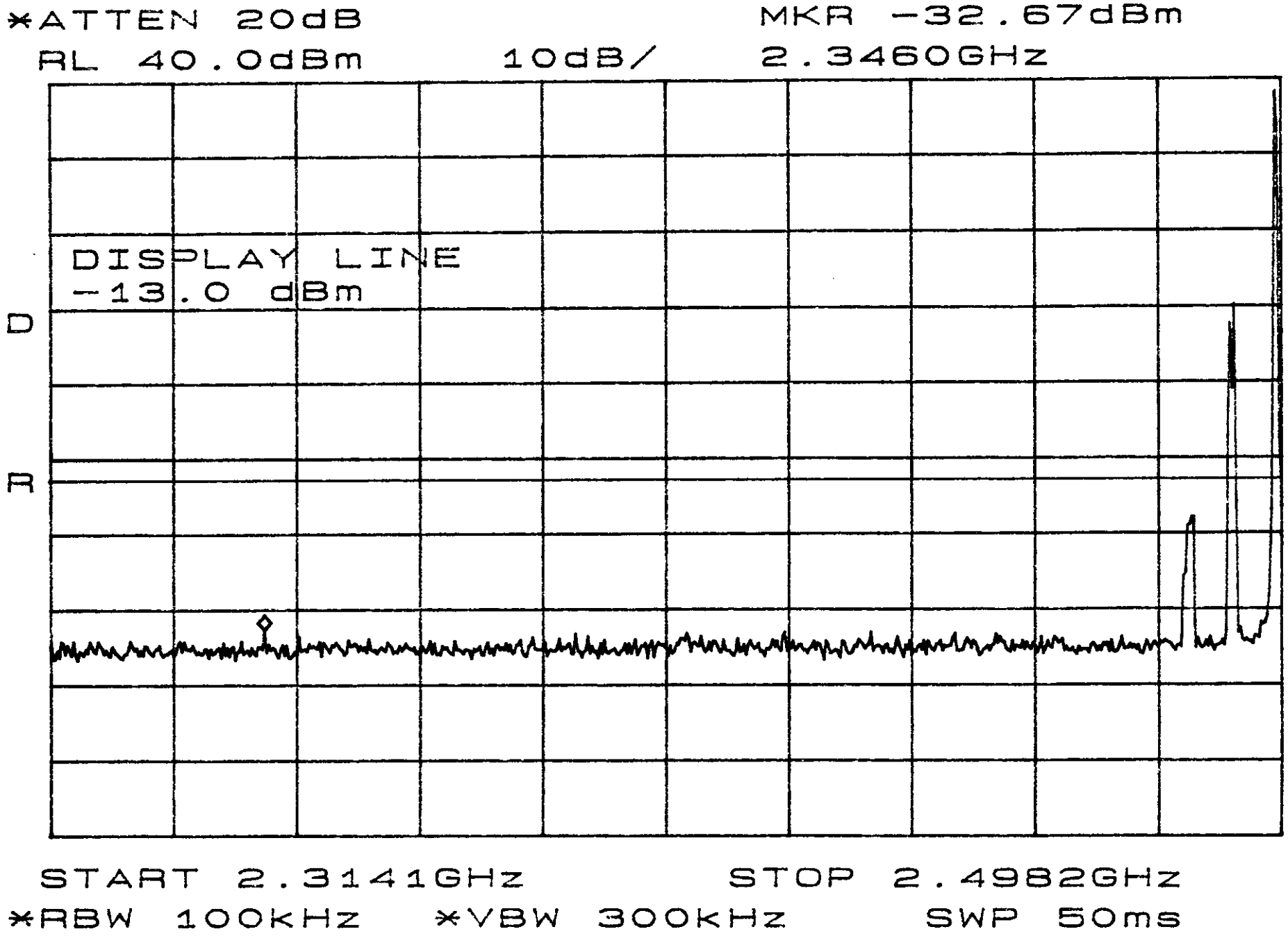

*ATTEN 0dB
MKR -26.00dBm
RL 20.0dBm
10dB/
14.720GHz
DISPLAY LINE
-13.0 dBm
D
R
START 9.000GHz
STOP 15.000GHz
*RBW 1.0MHz
*VBW 3.0MHz
SWP 120ms

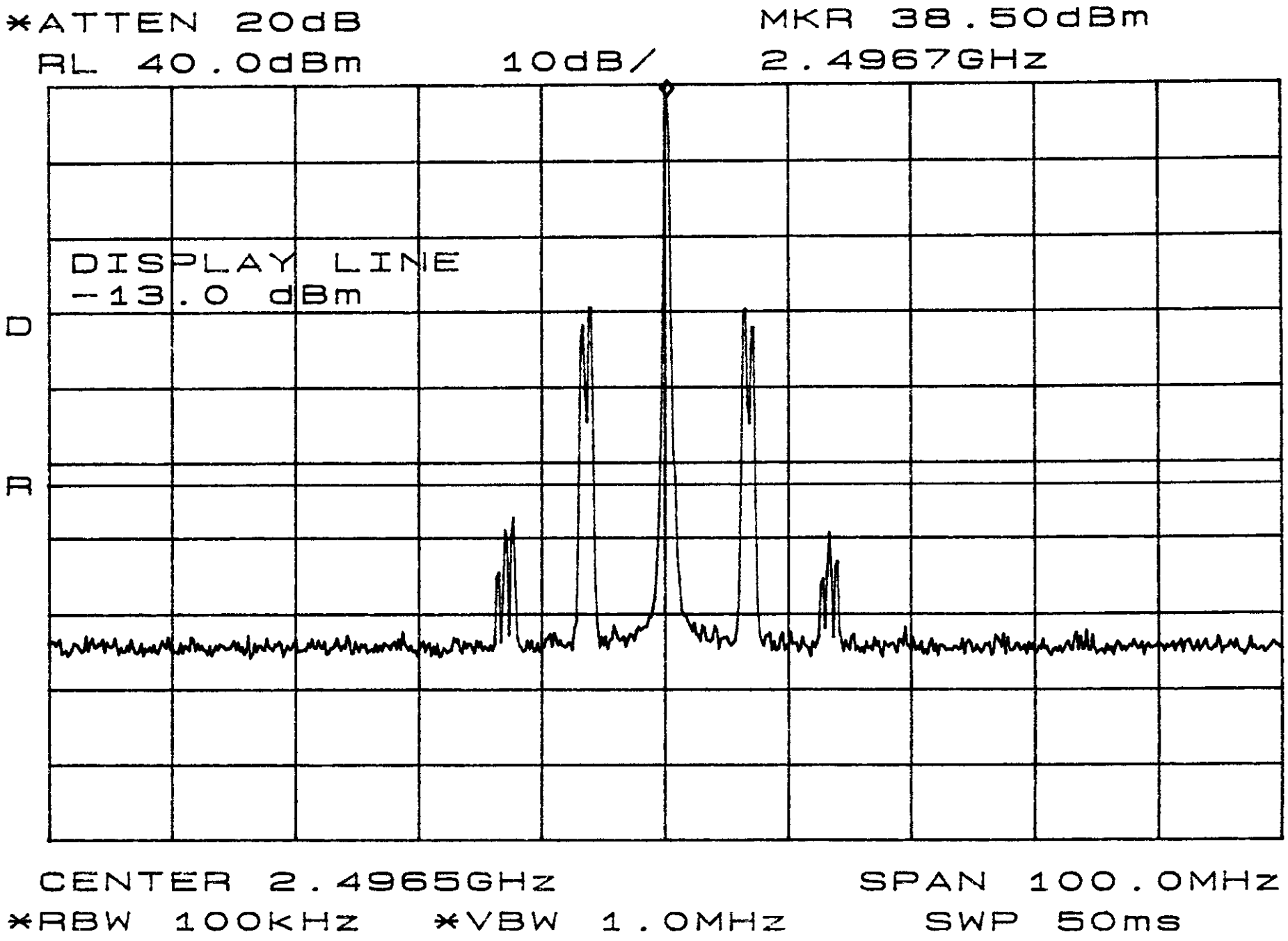

*ATTEN 0dB
MKR -24.50dBm
RL 20.0dBm
10dB/
21.778GHz
DISPLAY LINE
-13.0 dBm
D
R
START 15.000GHz
STOP 22.000GHz
*RBW 1.0MHz
*VBW 3.0MHz
SWP 140ms

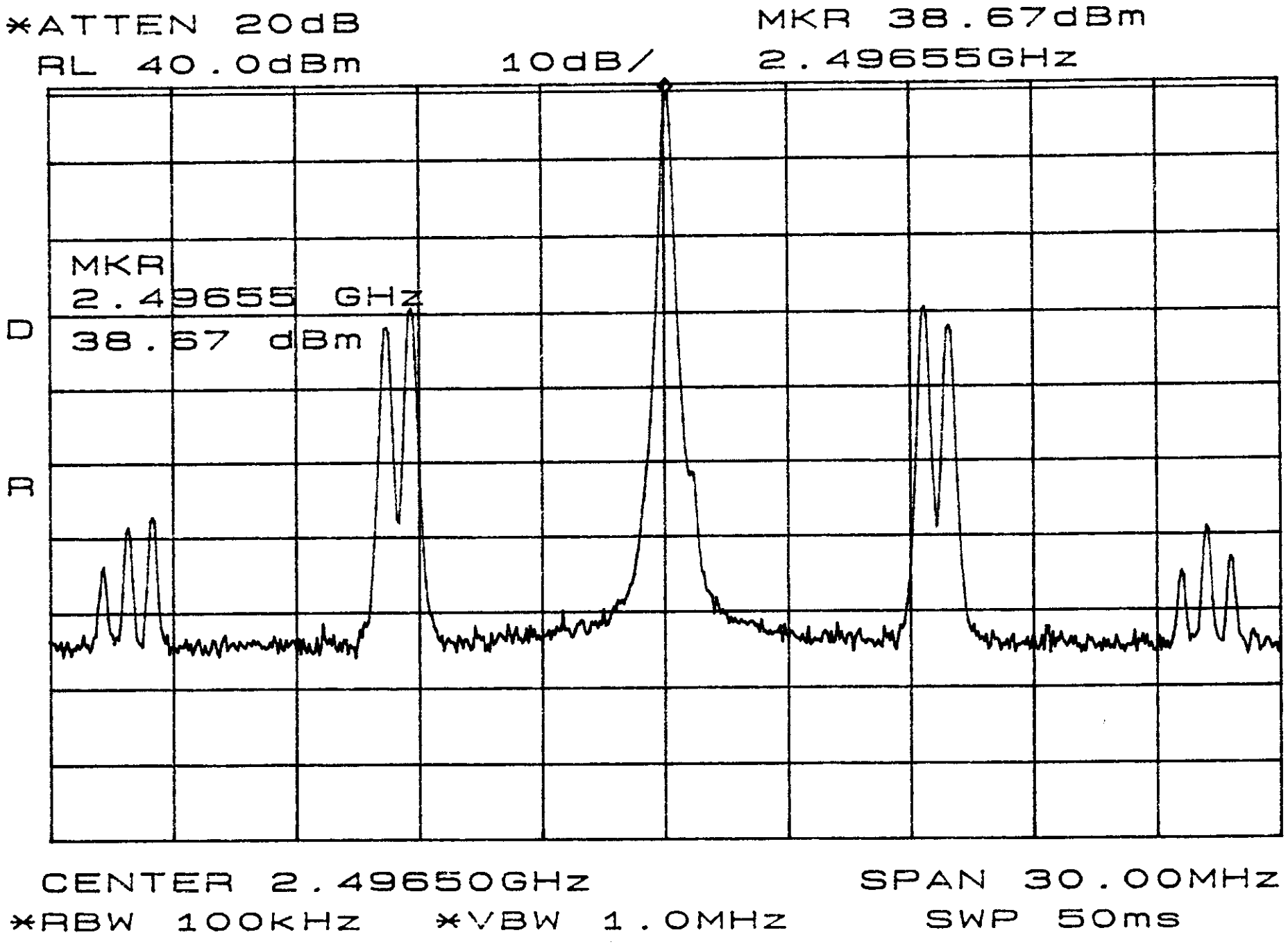

*ATTEN 0dB
MKR -30.67dBm
RL 20.0dBm
10dB/
24.78400GHz
MKR
24.78400 GHz
D
-30.67 dBm
R
CENTER 24.78333GHz
SPAN 10.00MHz
*RBW 100KHz
*VBW 300KHz
SWP 50ms

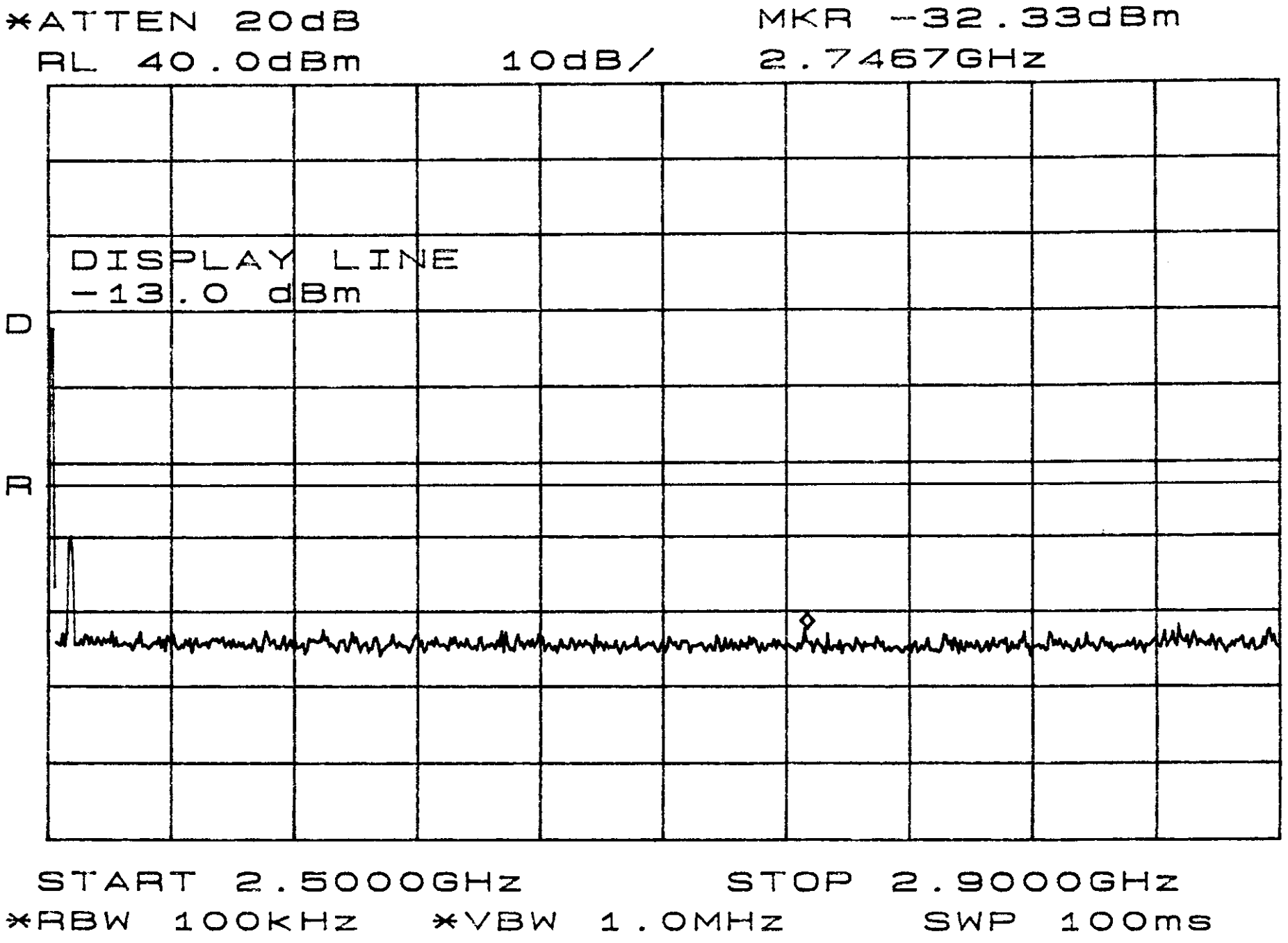

*ATTEN 20dB
MKR -33.17dBm
RL 40.0dBm
10dB/
536.7MHz
MKR
536.7 MHz
-33.17 dBm
D
R
START 0Hz
STOP 1.0000GHz
*RBW 100KHz
*VBW 300KHz
SWP 250ms

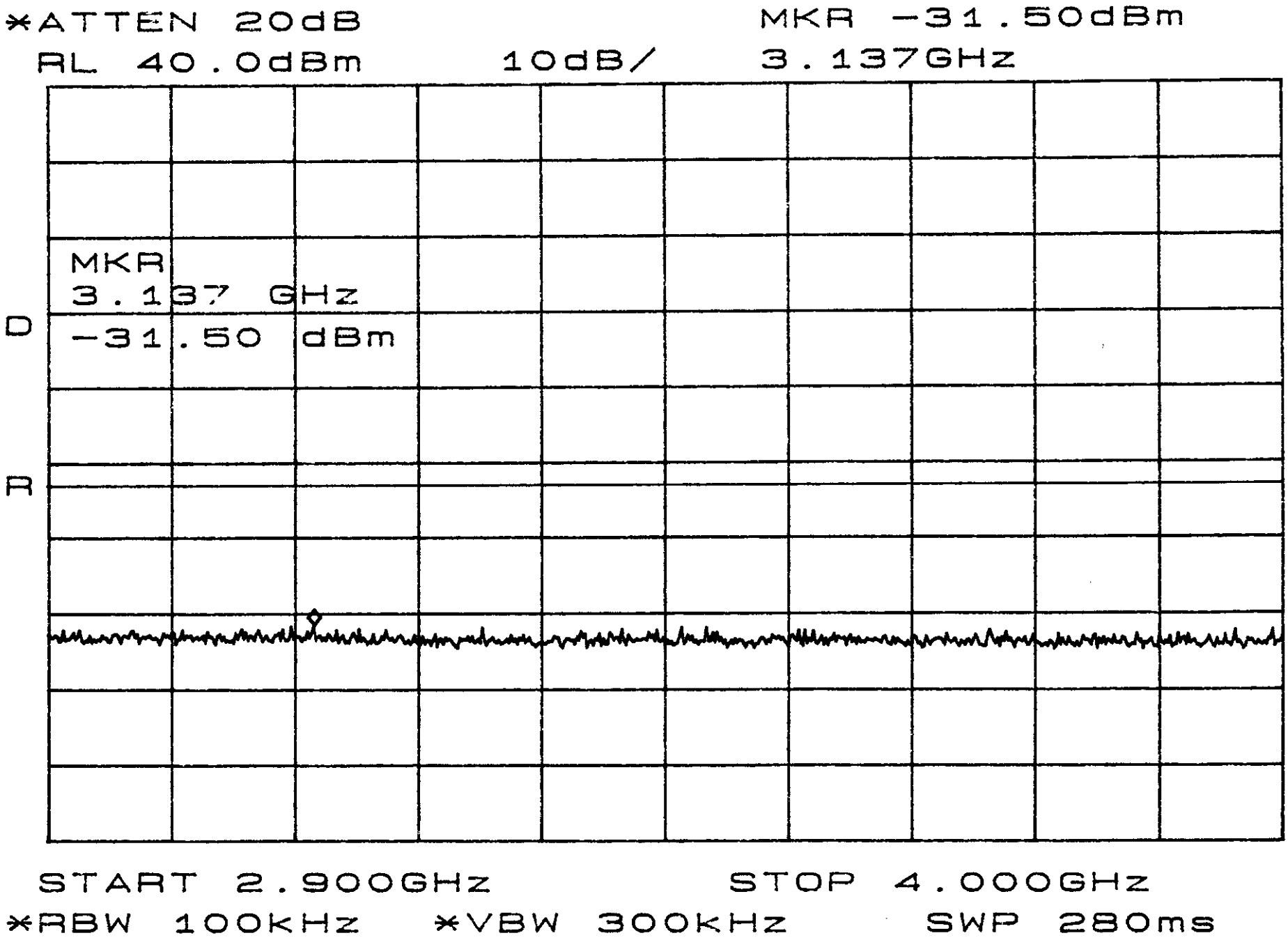

*ATTEN 20dB
MKR -32.17dBm
RL 40.0dBm
10dB/
1.290GHz
MKR
1.290 GHz
-32.17 dBm
D
R
START 1.000GHz
STOP 2.498GHz
*RBW 100KHz
*VBW 300KHz
SWP 380ms

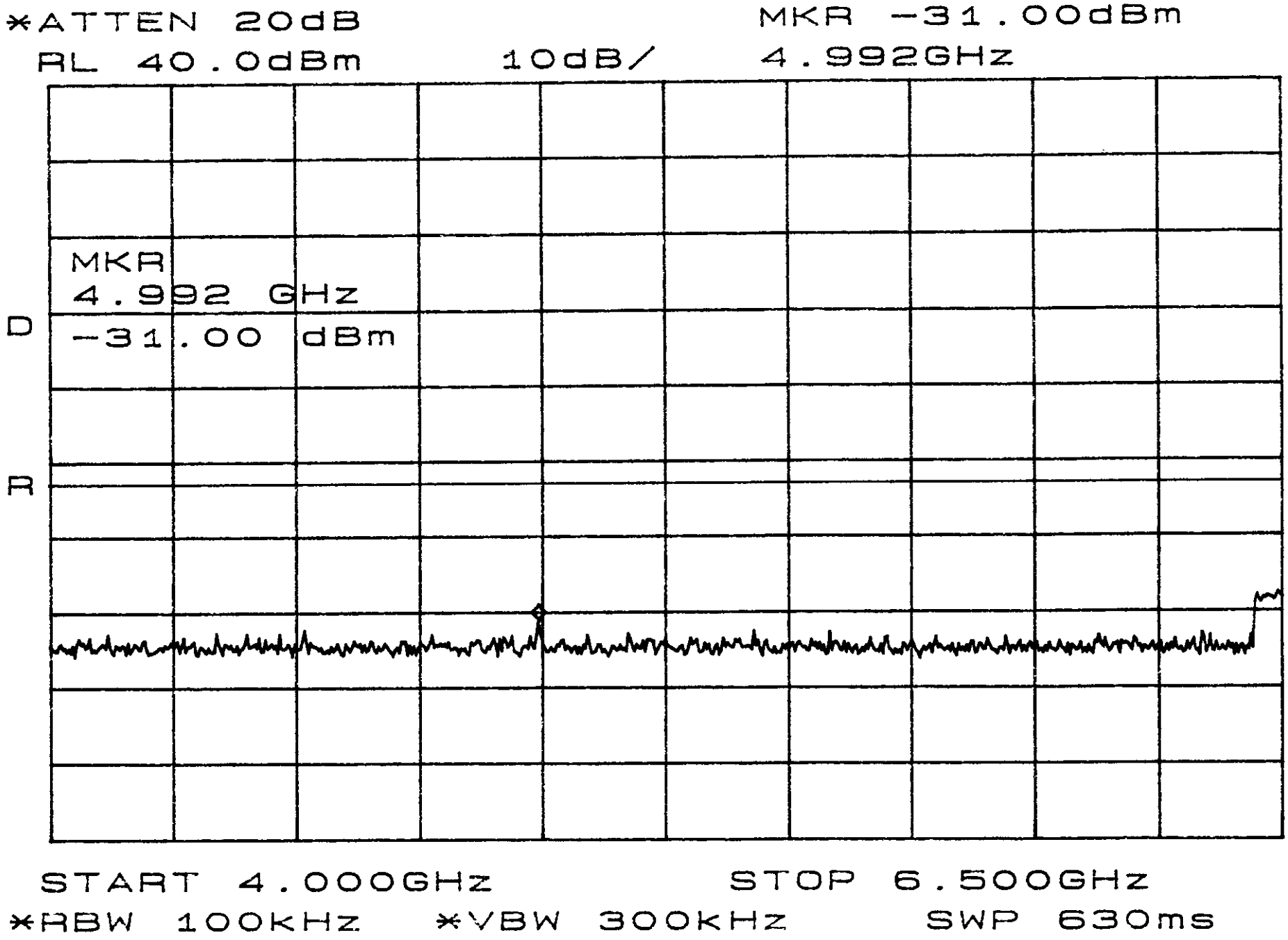

*ATTEN 20dB
MKR -32.67dBm
RL 40.0dBm
10dB/
2.3460GHz
DISPLAY LINE
-13.0 dBm
D
R
START 2.3141GHz
STOP 2.4982GHz
*RBW 100KHz
*VBW 300KHz
SWP 50ms

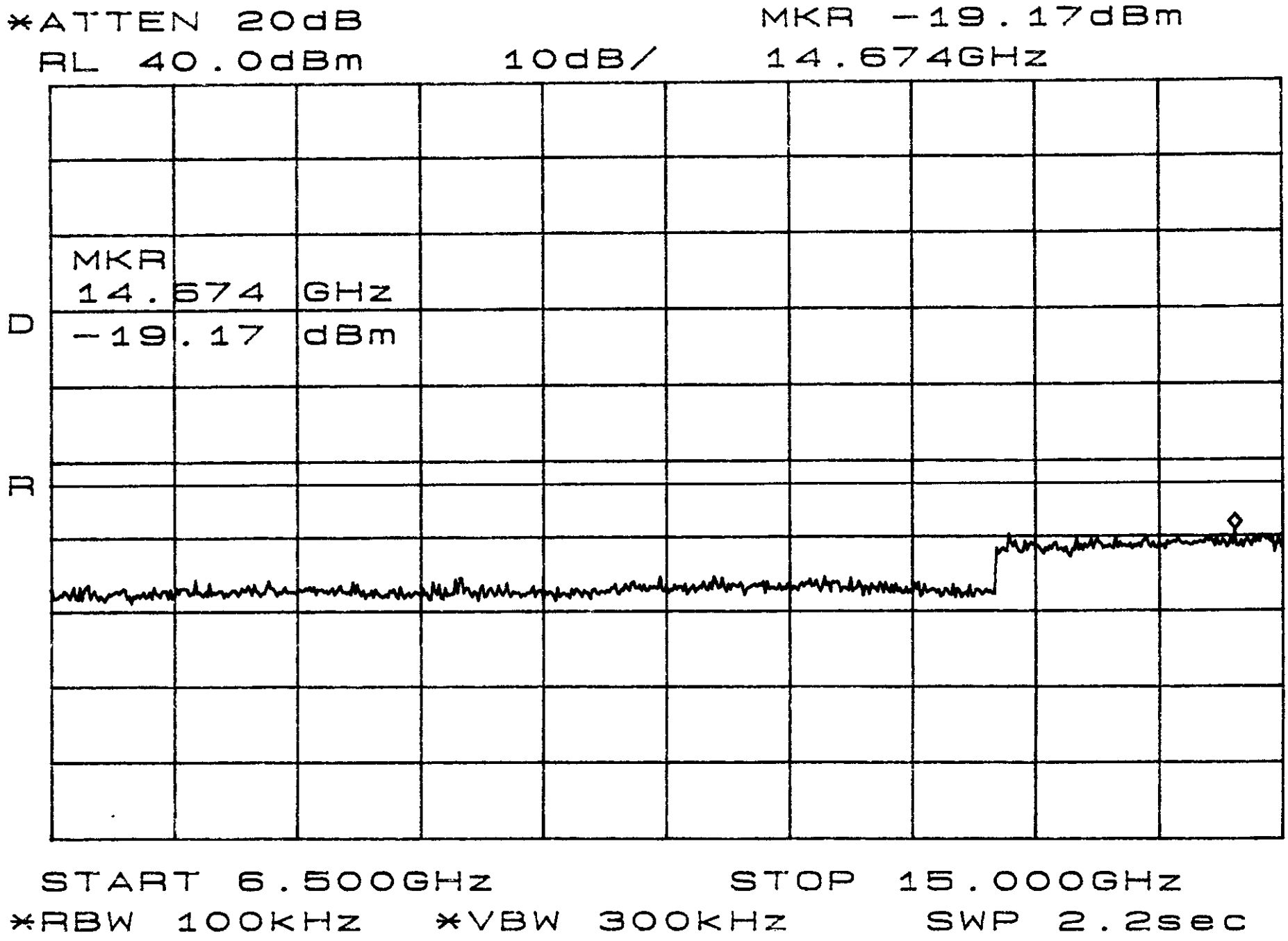

*ATTEN 20dB
MKR 38.50dBm
RL 40.0dBm
10dB/
2.4967GHz
DISPLAY LINE
-13.0 dBm
D
R
CENTER 2.4965GHz
SPAN 100.0MHz
*RBW 100KHz
*VBW 1.0MHz
SWP 50ms

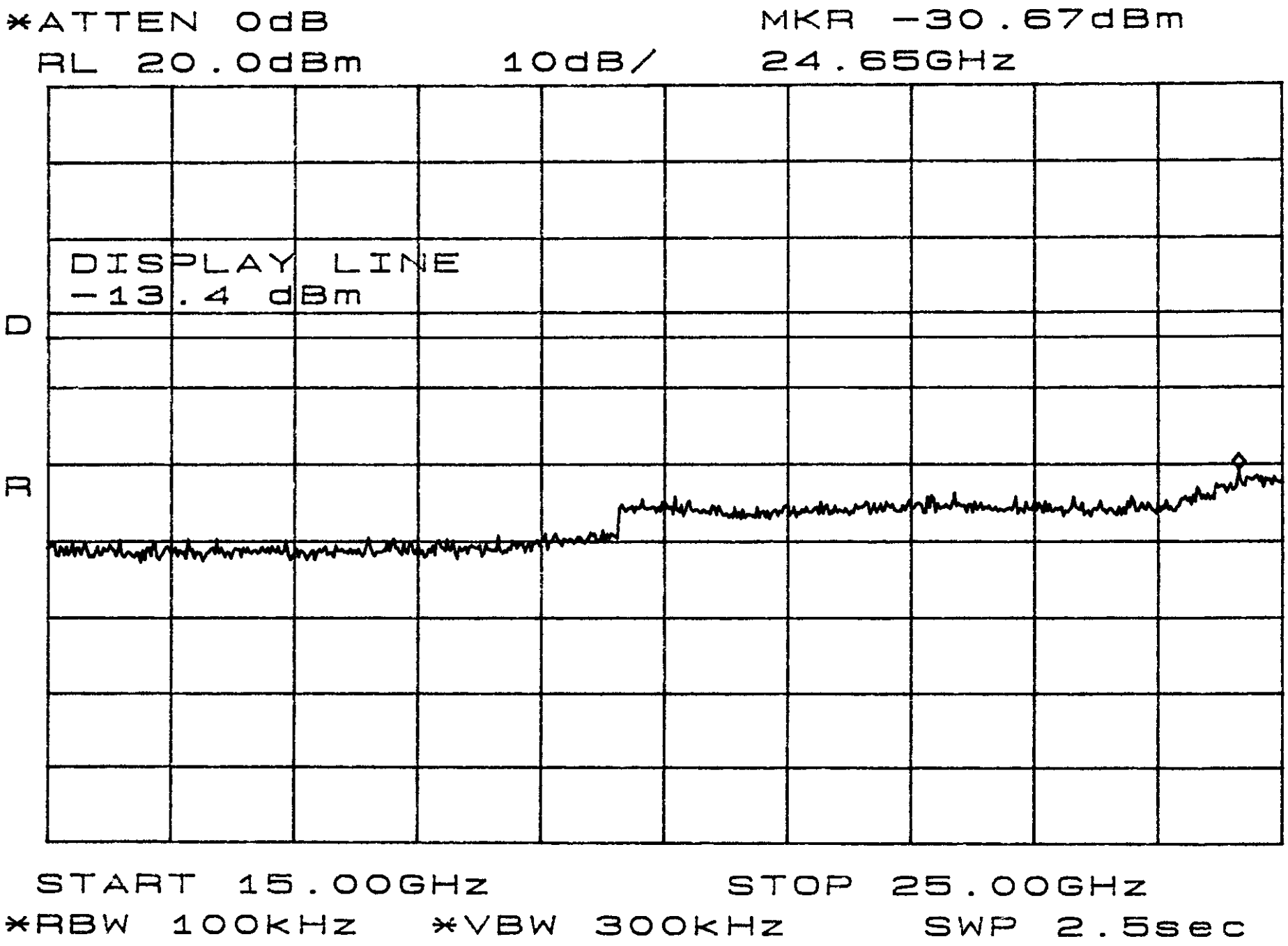

*ATTEN 20dB
RL 40.0dBm
10dB/
MKR 38.67dBm
2.49655GHz
MKR
2.49655 GHz
38.67 dBm
D
R
CENTER 2.49650GHz
SPAN 30.00MHz
*RBW 100KHz
*VBW 1.0MHz
SWP 50ms


*ATTEN 20dB
MKR -32.33dBm
RL 40.0dBm
10dB/
2.7467GHz
DISPLAY LINE
-13.0 dBm
D
R
START 2.5000GHz
STOP 2.9000GHz
*RBW 100KHz
*VBW 1.0MHz
SWP 100ms


*ATTEN 20dB
MKR -31.50dBm
RL 40.0dBm
10dB/
3.137GHz
MKR
3.137 GHz
-31.50 dBm
D
R
START 2.900GHz
STOP 4.000GHz
*RBW 100KHz
*VBW 300KHz
SWP 280ms


*ATTEN 20dB
MKR -31.00dBm
RL 40.0dBm
10dB/
4.992GHz
MKR
4.992 GHz
-31.00 dBm
D
R
START 4.000GHz
STOP 6.500GHz
*RBW 100kHz
*VBW 300kHz
SWP 630ms


*ATTEN 20dB
MKR -19.17dBm
RL 40.0dBm
10dB/
14.674GHz
MKR
14.674 GHz
-19.17 dBm
D
R
START 6.500GHz
STOP 15.000GHz
*RBW 100KHz
*VBW 300KHz
SWP 2.2sec


*ATTEN 0dB
MKR -30.67dBm
RL 20.0dBm
10dB/
24.65GHz
DISPLAY LINE
-13.4 dBm
D
R
START 15.00GHz
STOP 25.00GHz
*RBW 100KHz
*VBW 300KHz
SWP 2.5sec

SUBJECT: Modulation Characteristics

FCC Part 74 ; 90

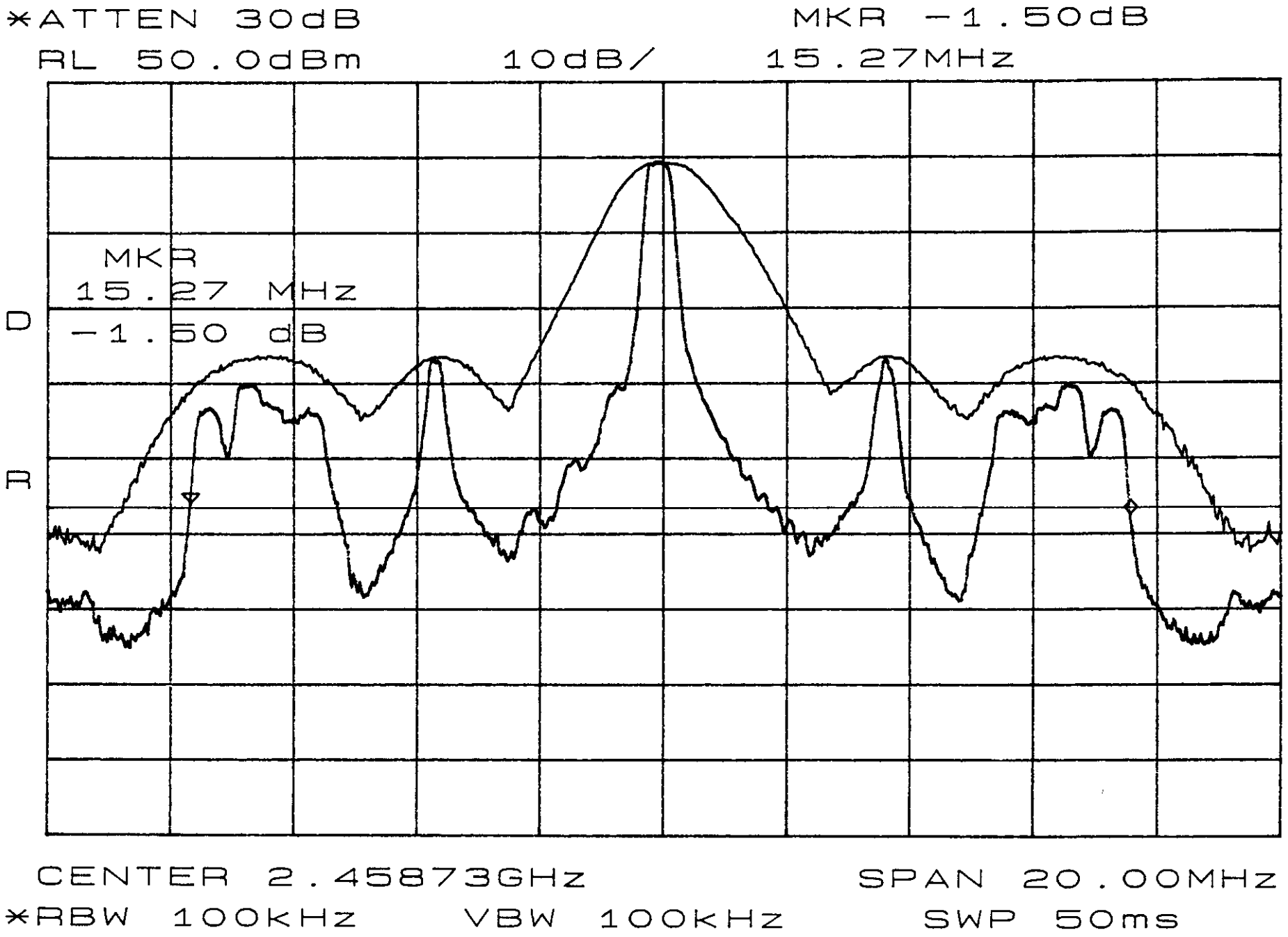
MET REPORT: EMI894
MFG: General Microwave
TESTED BY: Kenneth Bass
TEST DATE: 23 MAR 1998

EUT: Microwave Transmitter
MODEL: STS-10000

TECHNICAL SPECIFICATION: 2.987

Comment: A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licenced.

Refer to plots #3 and #4 for modulation characteristics. The input signals used for this (and other appropriate tests) was an NTSC standard input from a Tektronics NTSC signal generator set to provide standard color bars video signal. The audio subcarriers were modulated with 15 kHz tones from an audio signal generator.


*ATTEN 30dB
MKR -1.50dB
RL 50.0dBm
10dB/
15.27MHz
MKR
15.27 MHz
-1.50 dB
D
R
CENTER 2.45873GHz
SPAN 20.00MHz
*RBW 100kHz
VBW 100kHz
SWP 50ms

SUBJECT: Occupied Bandwidth

FCC Part 74 ; 90

MET REPORT: EMI894
MFG: General Microwave
TESTED BY: Kenneth Bass
TEST DATE: 23 MAR 1998

EUT: Microwave Transmitter
MODEL: STS-10000

TECHNICAL SPECIFICATION: 2.989(i)

Comment: Modulated by an appropriate signal of sufficient amplitude to be representative of the type of service in which used. The signal source used was a Tektronics NTSC signal generator and 100% modulation on both audio channels.

Plot appears on following page.

Special Note:

The channel Bandwidth (as noted on the FCC form 731) is specified as 18 MHz. This bandwidth is determined from the following:

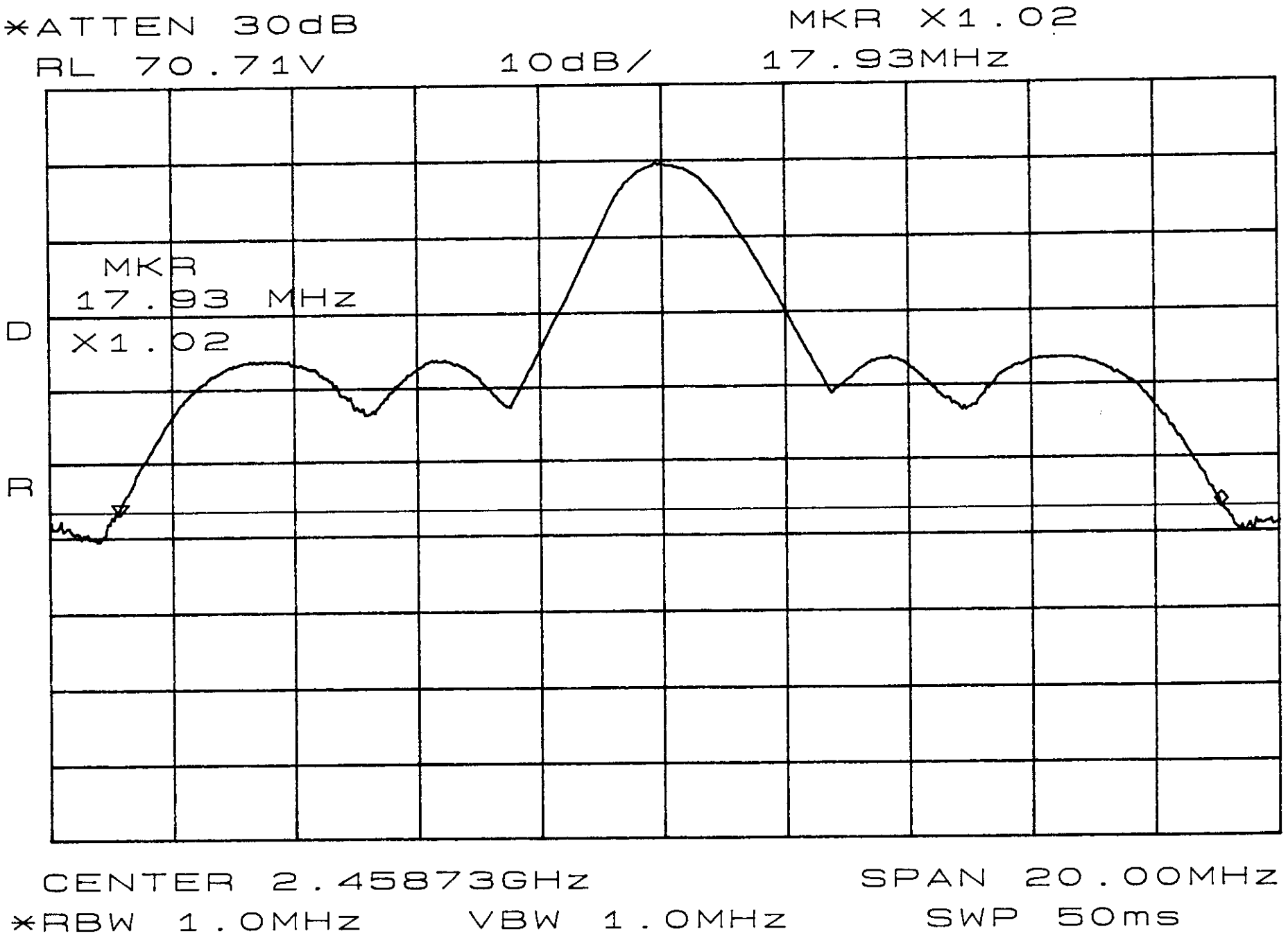
a) Maximum modulating frequency = ± 4.0 MHz (m)

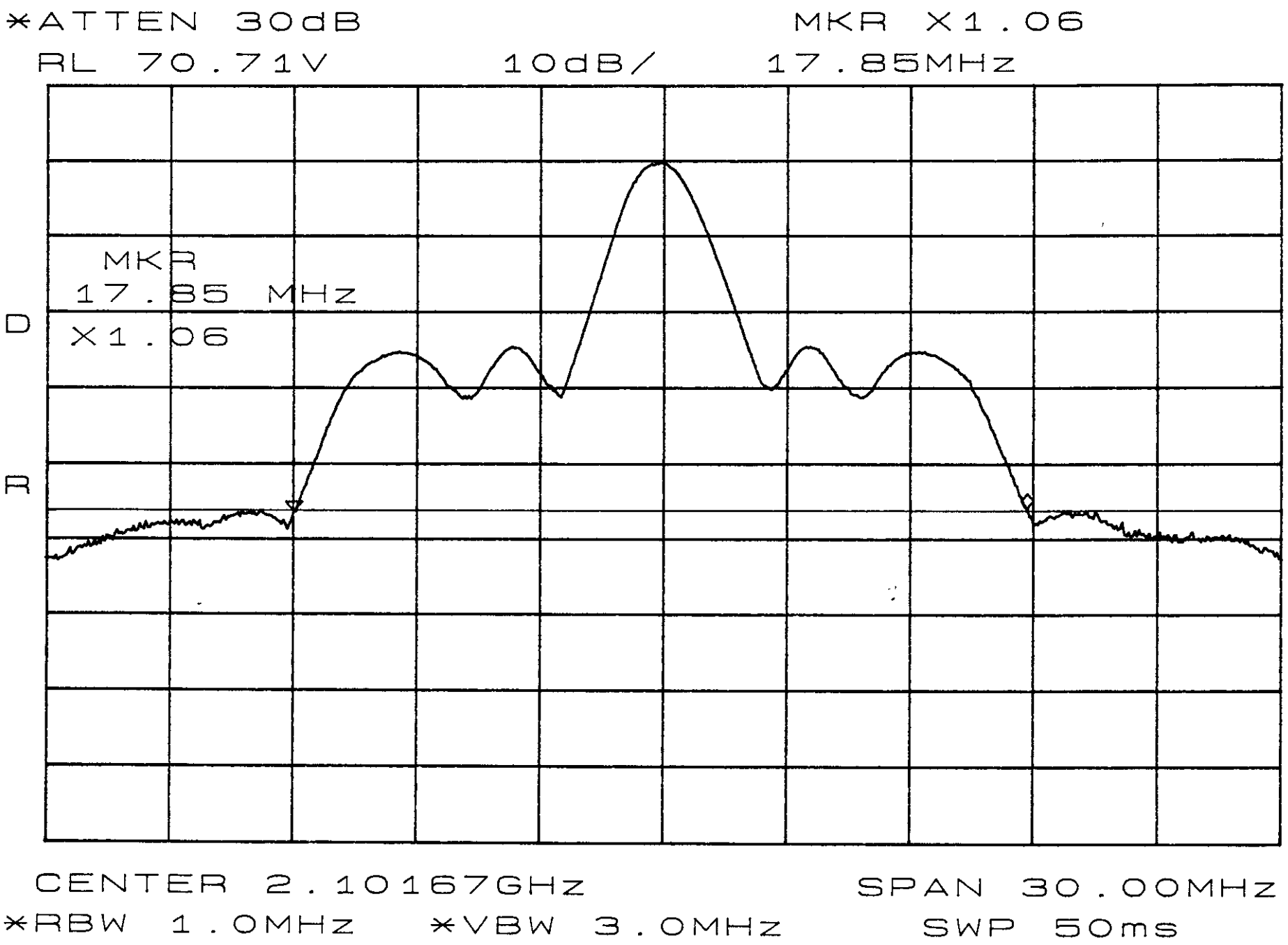
b) Maximum frequency deviation = ± 4.0 MHz (D)

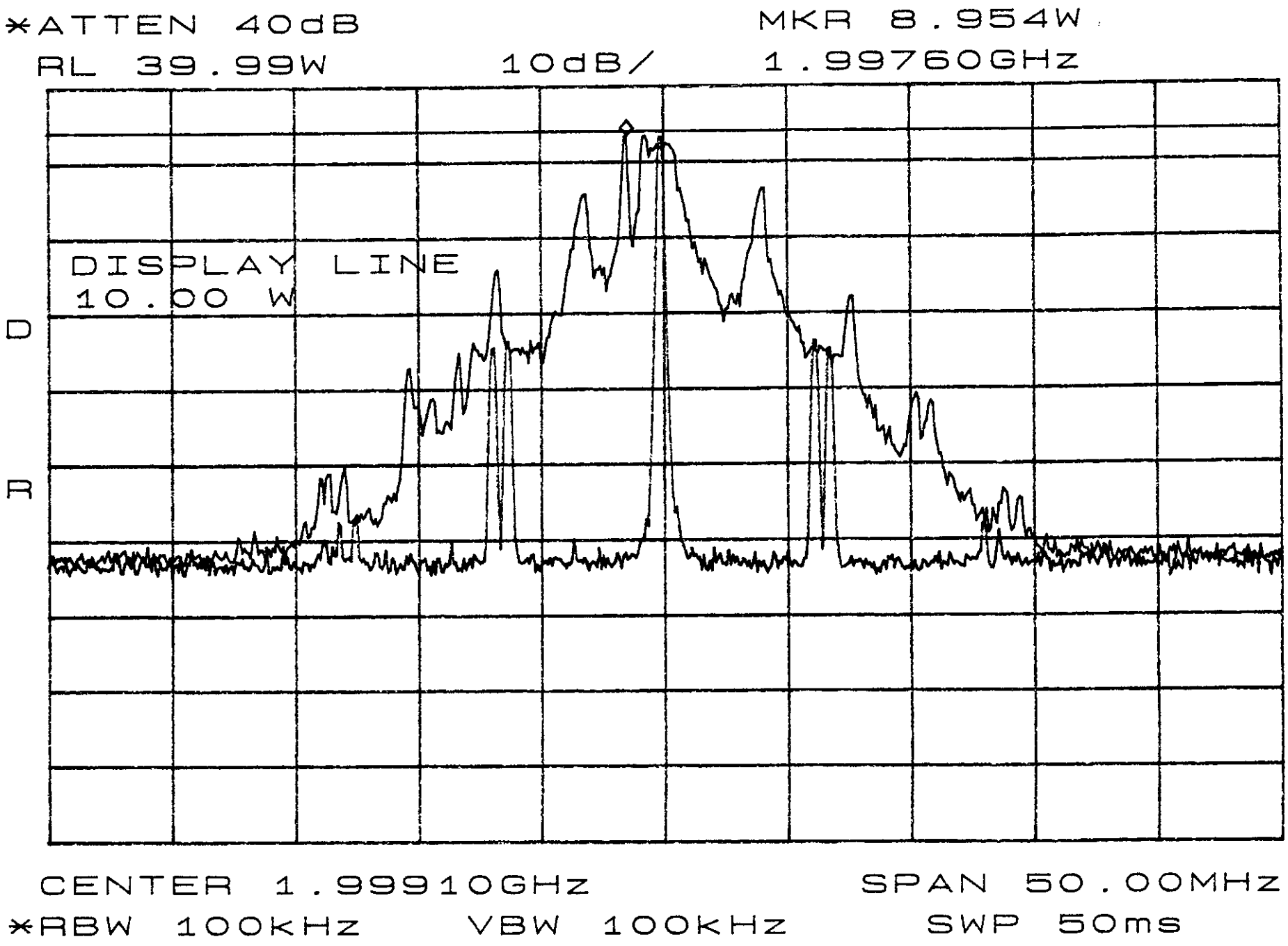
c) Audio subcarriers = 1 MHz deviation nominal
= 2 MHz deviation maximum

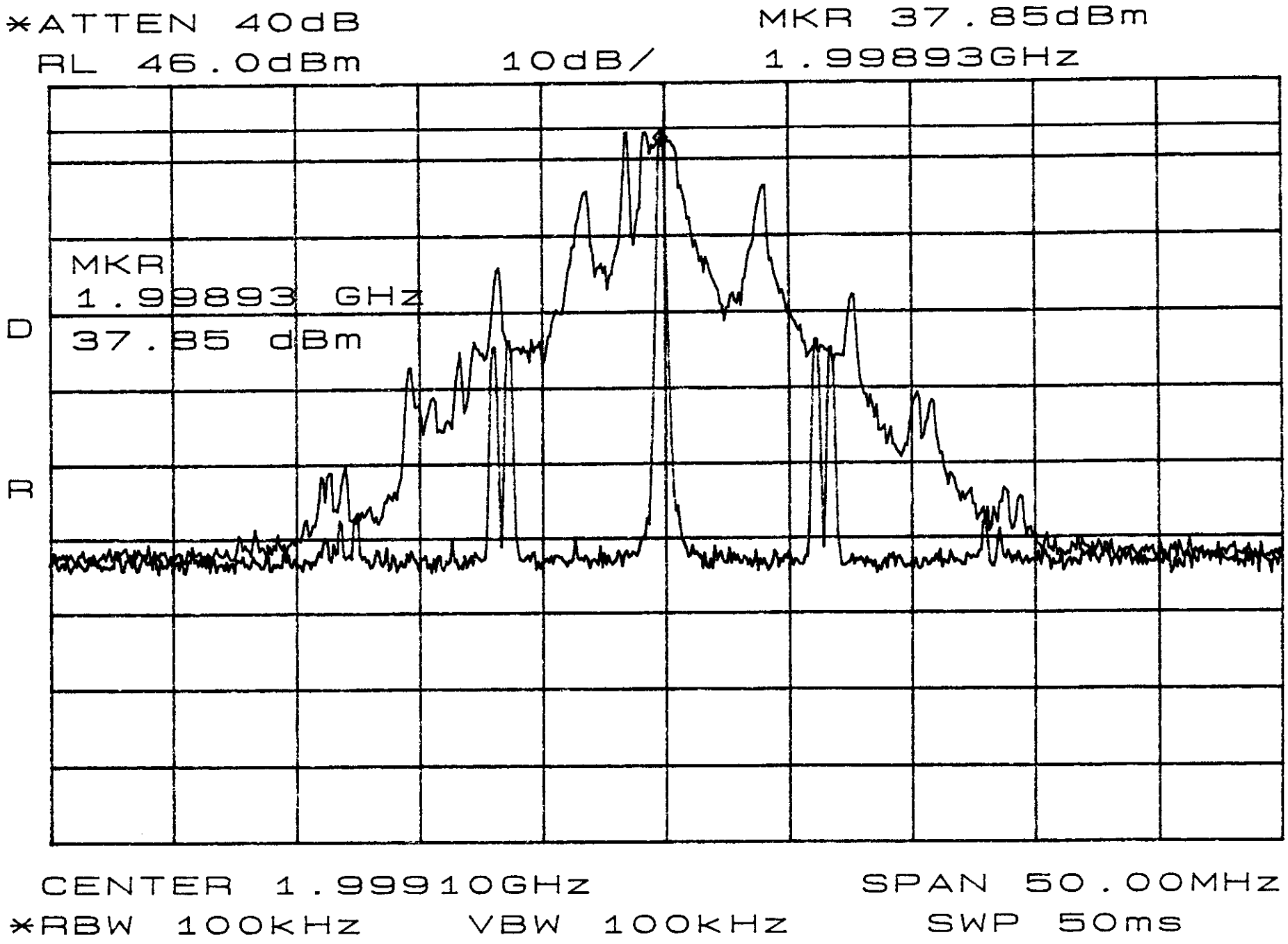
Therefore;

$BW_{channel}$ = 2M + 2D = 8 MHz + 8 MHz = 16 MHz
= 16 MHz + 2 $MHz_{(max\ audio)}$ = 18 MHz


*ATTEN 30dB
MKR X1.02
RL 70.71V
10dB/
17.93MHz
MKR
17.93 MHz
X1.02
D
R
CENTER 2.45873GHz
SPAN 20.00MHz
*RBW 1.0MHz
VBW 1.0MHz
SWP 50ms


*ATTEN 30dB
MKR X1.06
RL 70.71V
10dB/
17.85MHz
MKR
17.85 MHz
X1.06
D
R
CENTER 2.10167GHz
SPAN 30.00MHz
*RBW 1.0MHz
*VBW 3.0MHz
SWP 50ms


*ATTEN 40dB
MKR 8.954W
RL 39.99W
10dB/
1.99760GHz
DISPLAY LINE
10.00 W
D
R
CENTER 1.99910GHz
SPAN 50.00MHz
*RBW 100kHz
VBW 100kHz
SWP 50ms


*ATTEN 40dB
MKR 37.85dBm
RL 46.0dBm
10dB/
1.99893GHz
MKR
1.99893 GHz
37.85 dBm
D
R
CENTER 1.99910GHz
SPAN 50.00MHz
*RBW 100KHz
VBW 100KHz
SWP 50ms

SUBJECT: Frequency Stability

FCC Part 74 ; 90

MET REPORT: EMI894
MFG: General Microwave
TESTED BY: Kenneth Bass
TEST DATE: 31 OCT 1997

EUT: Microwave Transmitter
MODEL: STS-10000

TECHNICAL SPECIFICATION: 2.995

Frequency tolerance of carrier signal: +/- 0.005% for a temperature variation from -30°C to +50°C at normal supply voltage, and for a variation in primary voltage from 85% to 100% of the rated supply voltage at +20°C.

CARRIER FREQUENCY TOLERANCE LIMIT

Tolerance	Channel Frequency
+0.005%	2029.5950 MHz
0%	2029.4932 MHz
-0.005%	2029.3920 MHz

CARRIER FREQUENCY DEVIATIONS DUE TO POWER SUPPLY INSTABILITY

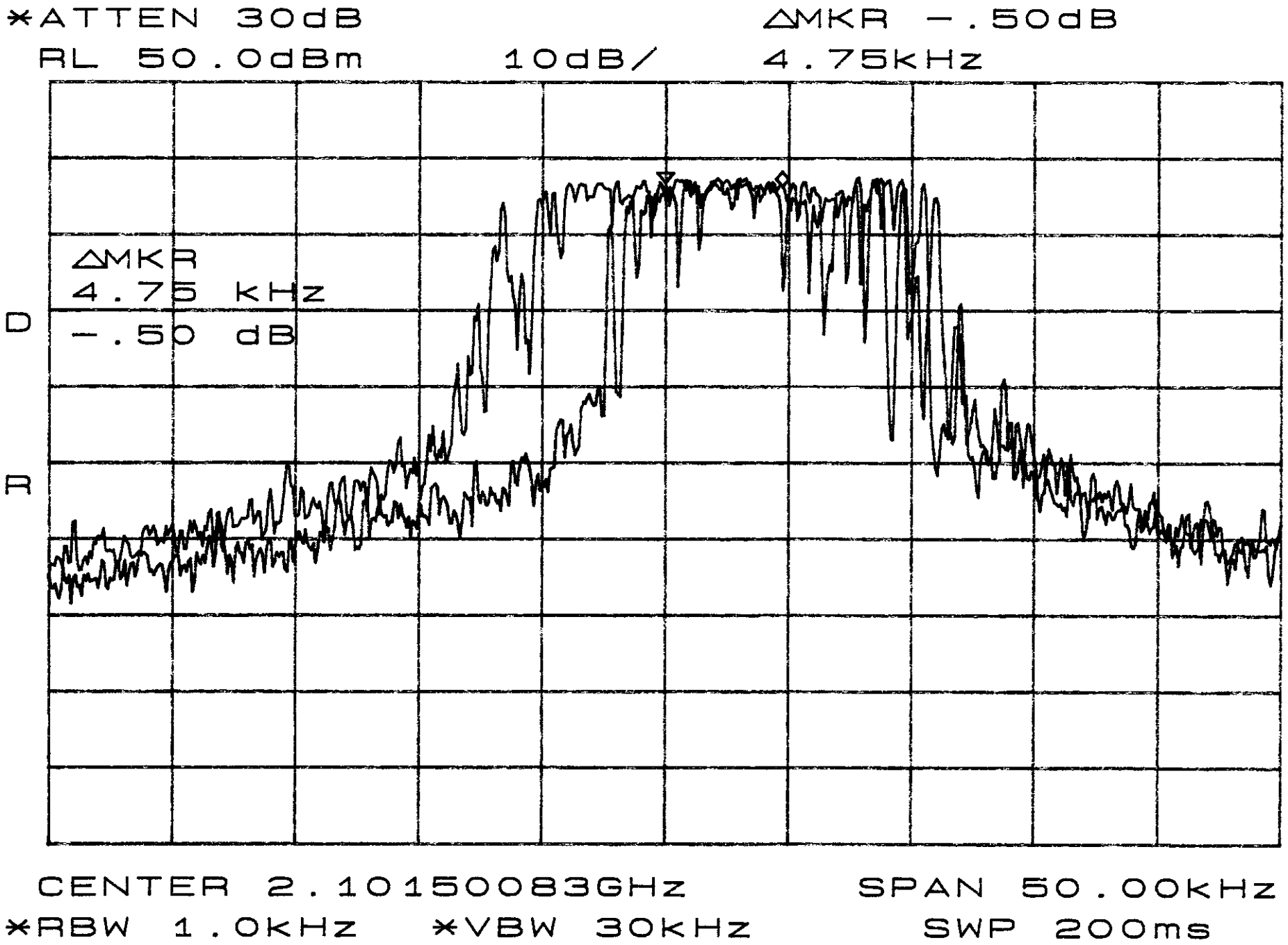
% Deviation from Nominal Voltage	Supply Voltage	Channel Carrier Frequency (GHz) High Power	Δf (KHz)
85%	10.2	2.1015001	4.3
100%	12	2.1015005	0
115%	13.15	2.1014999	6.0

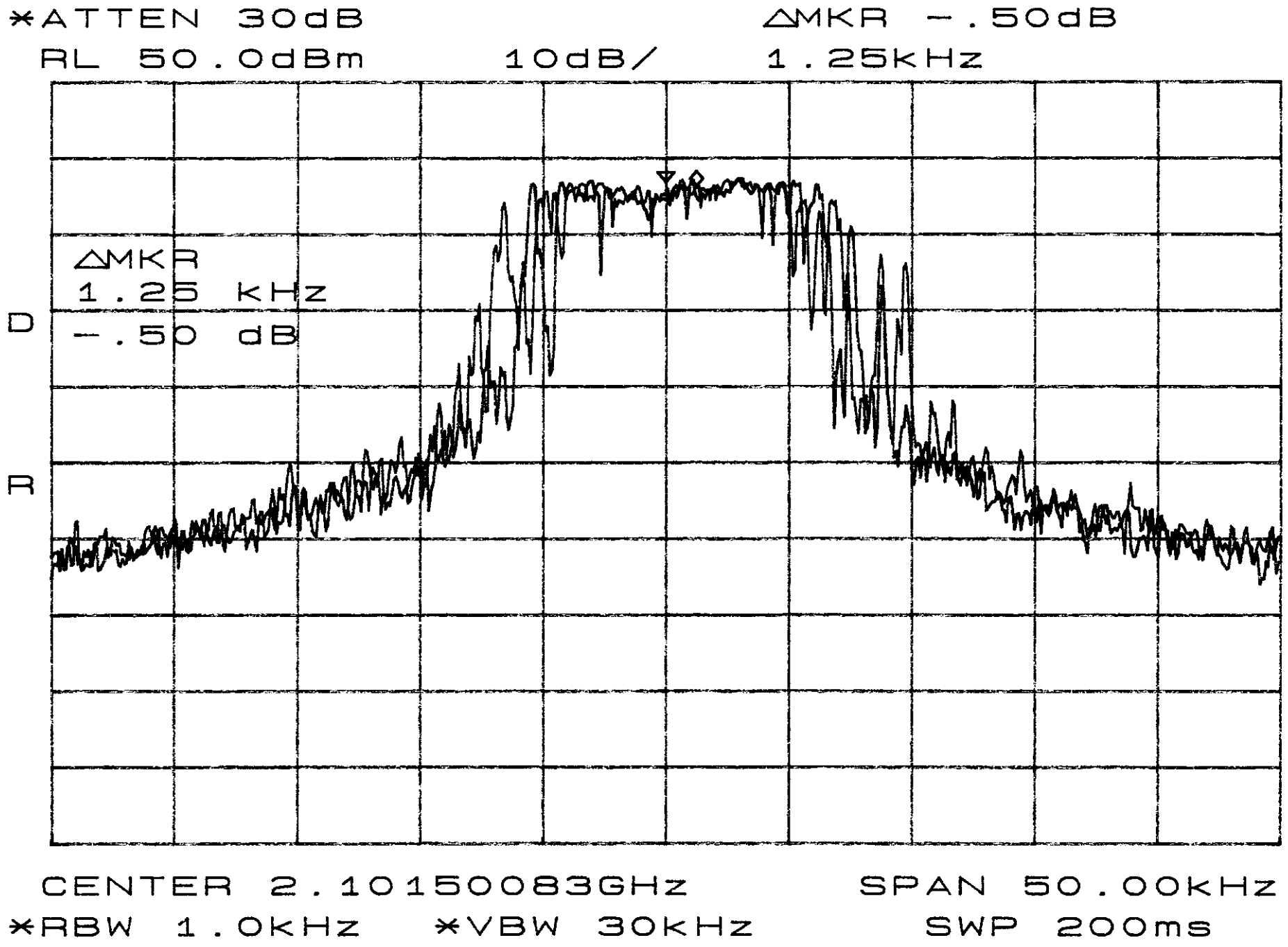
MET

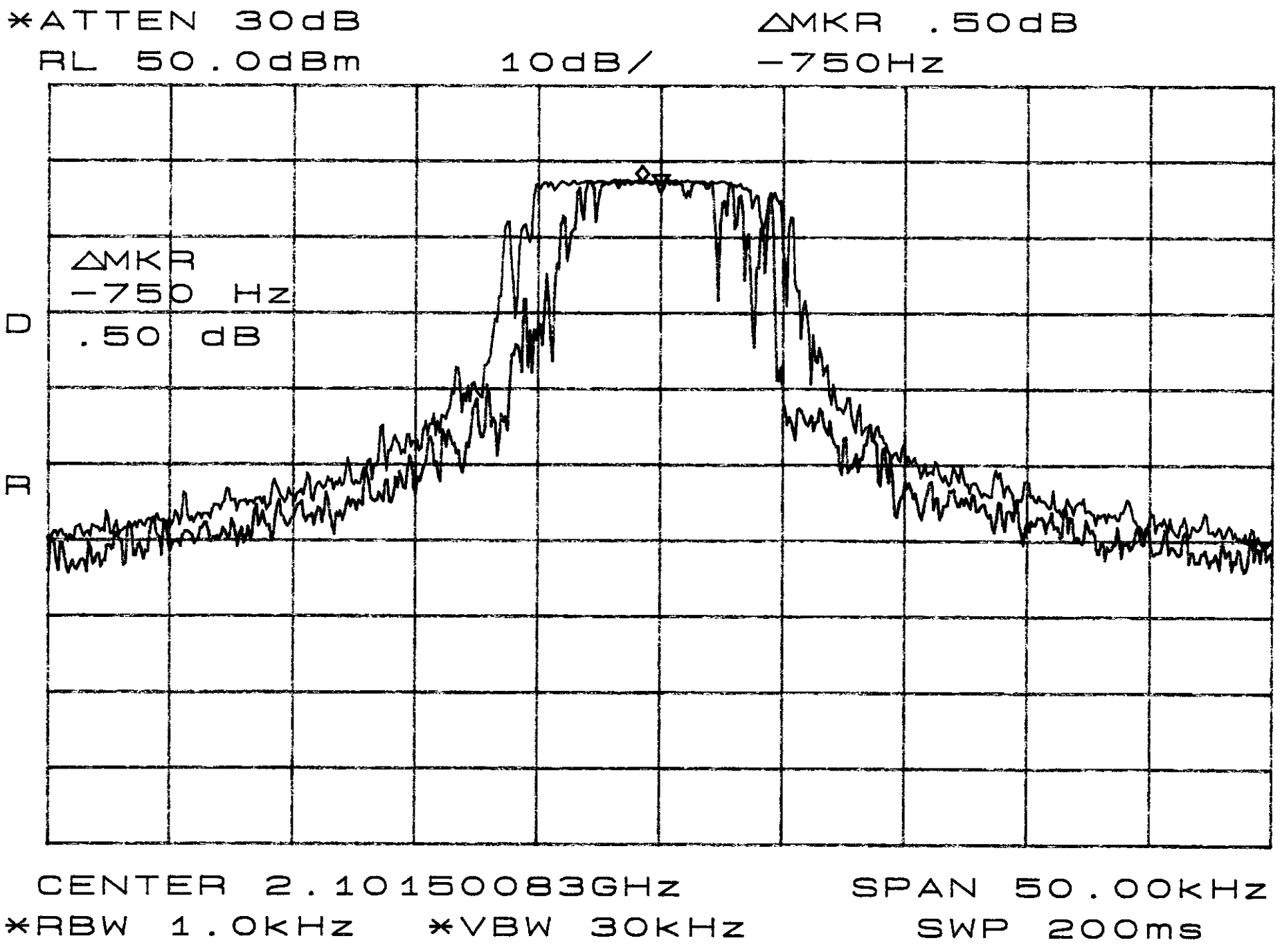
CARRIER FREQUENCY DEVIATIONS DUE TO TEMPERATURE INSTABILITY

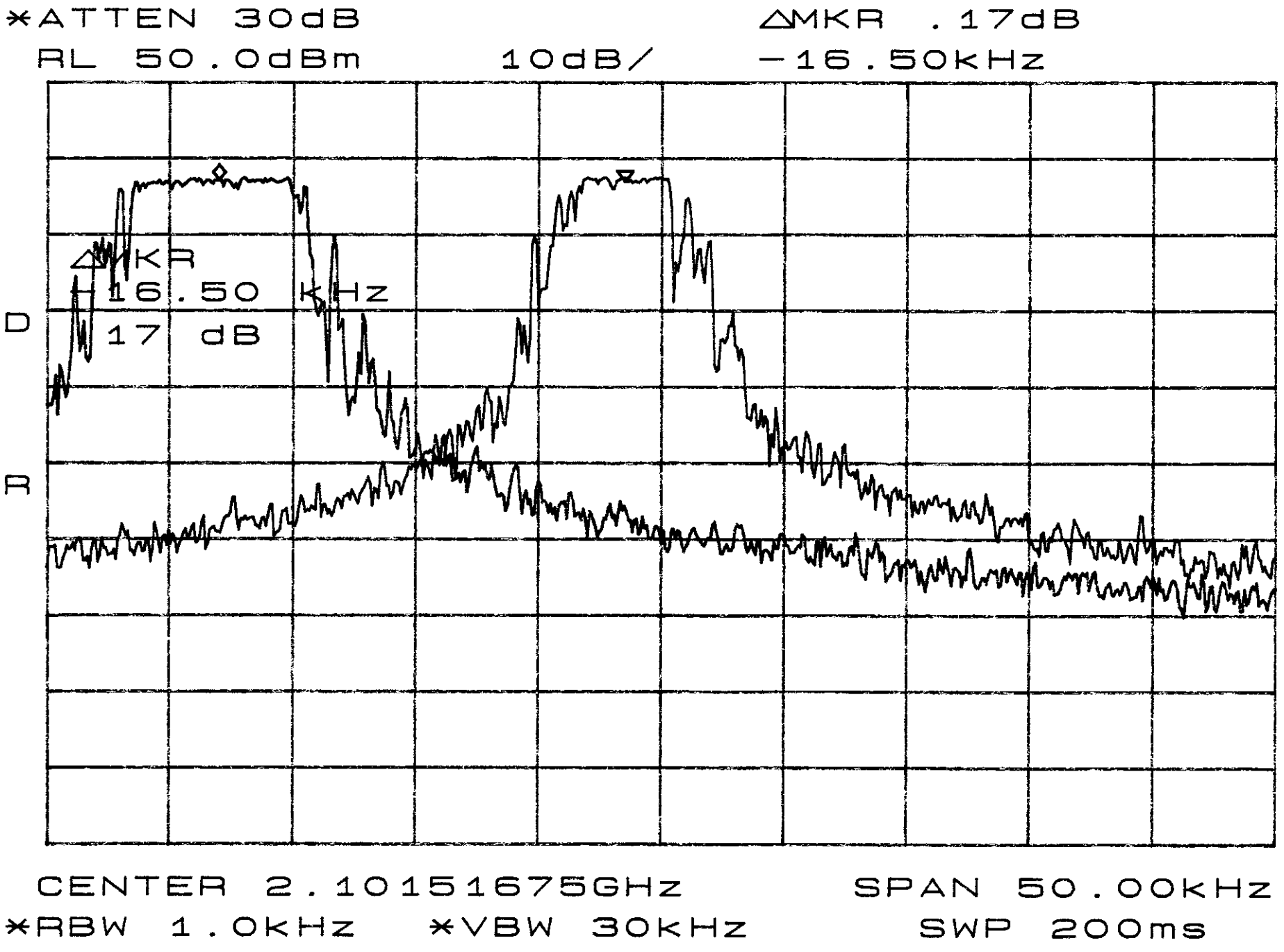
Temperature (°C)	Δf High Power Mode	
	Carrier Frequency (GHz) High Power	Δf (KHz)
-30	2.10150083	4.75
-20	2.10150083	1.92
-10	2.10150083	1.92
0	2.10150083	1.25
+10	2.10150083	.750
+20	2.10151675	16.5
+30	2.10151675	4.92
+40	2.10151675	1.67
+50	2.10151067	3.08

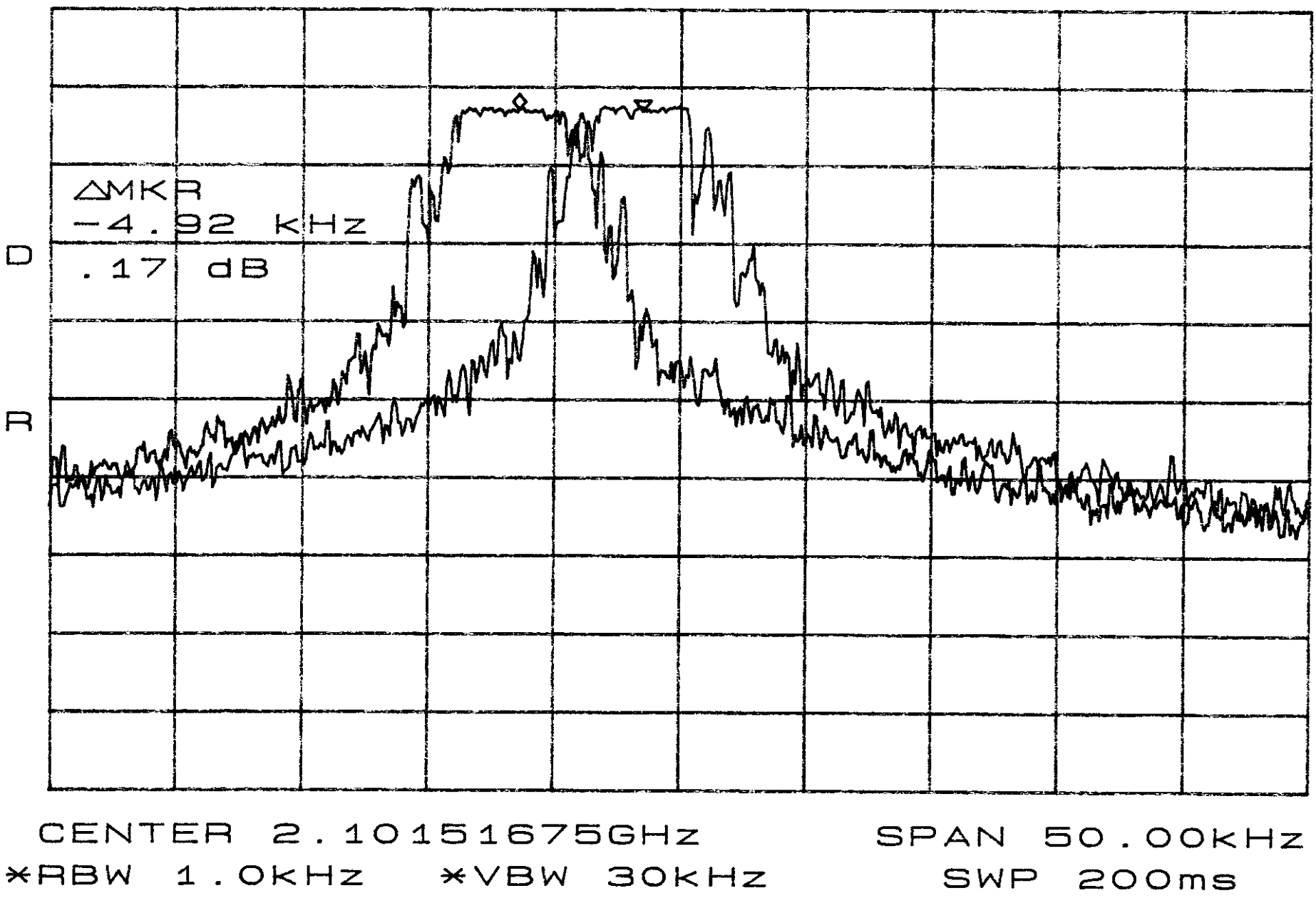
Equipment meets the requirements of 2.995

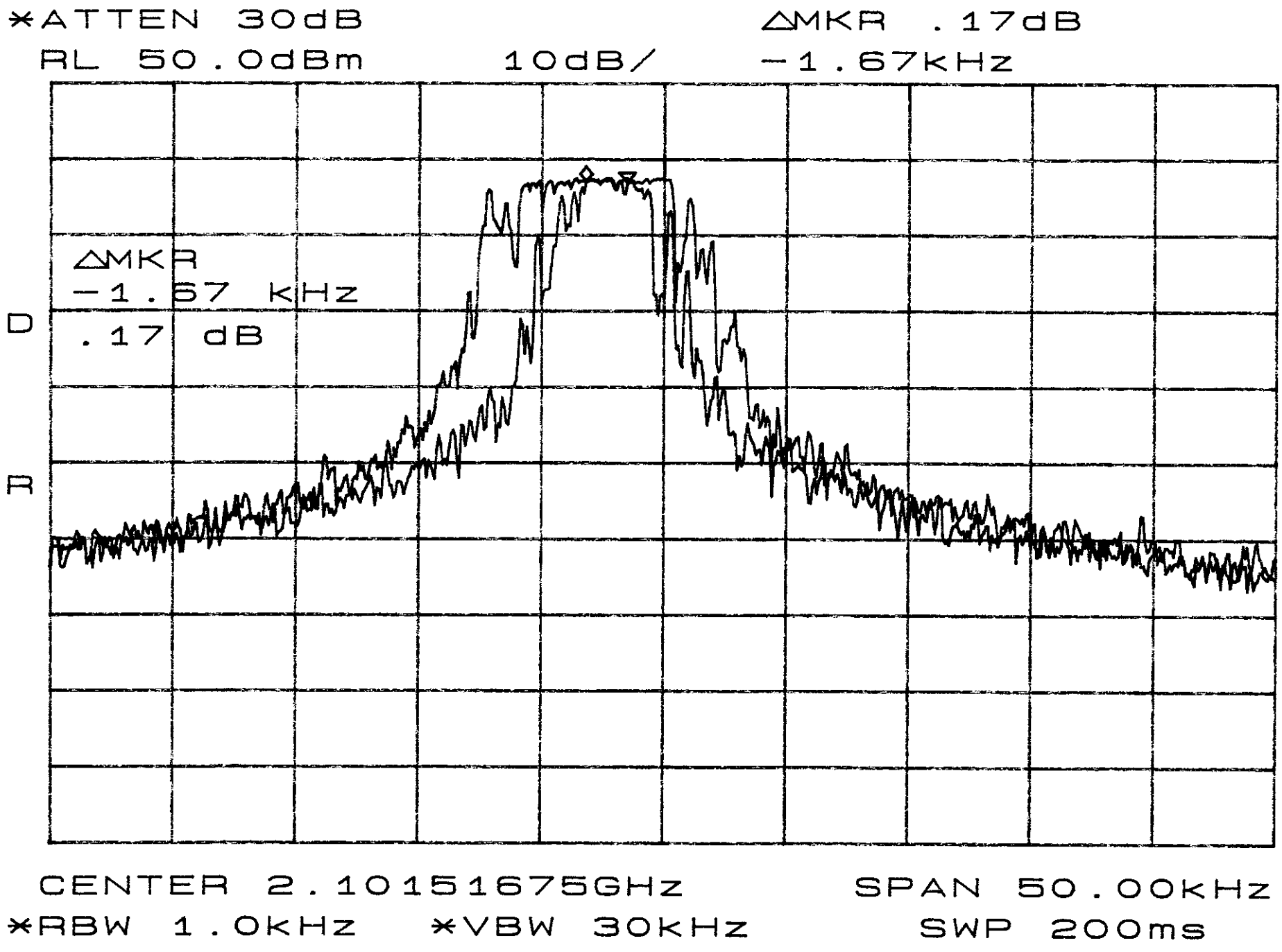

*ATTEN 30dB
ΔMKR -.50dB
RL 50.0dBm
10dB/
4.75kHz
ΔMKR
4.75 kHz
-.50 dB
D
R
CENTER 2.101500836GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 30kHz
SWP 200ms

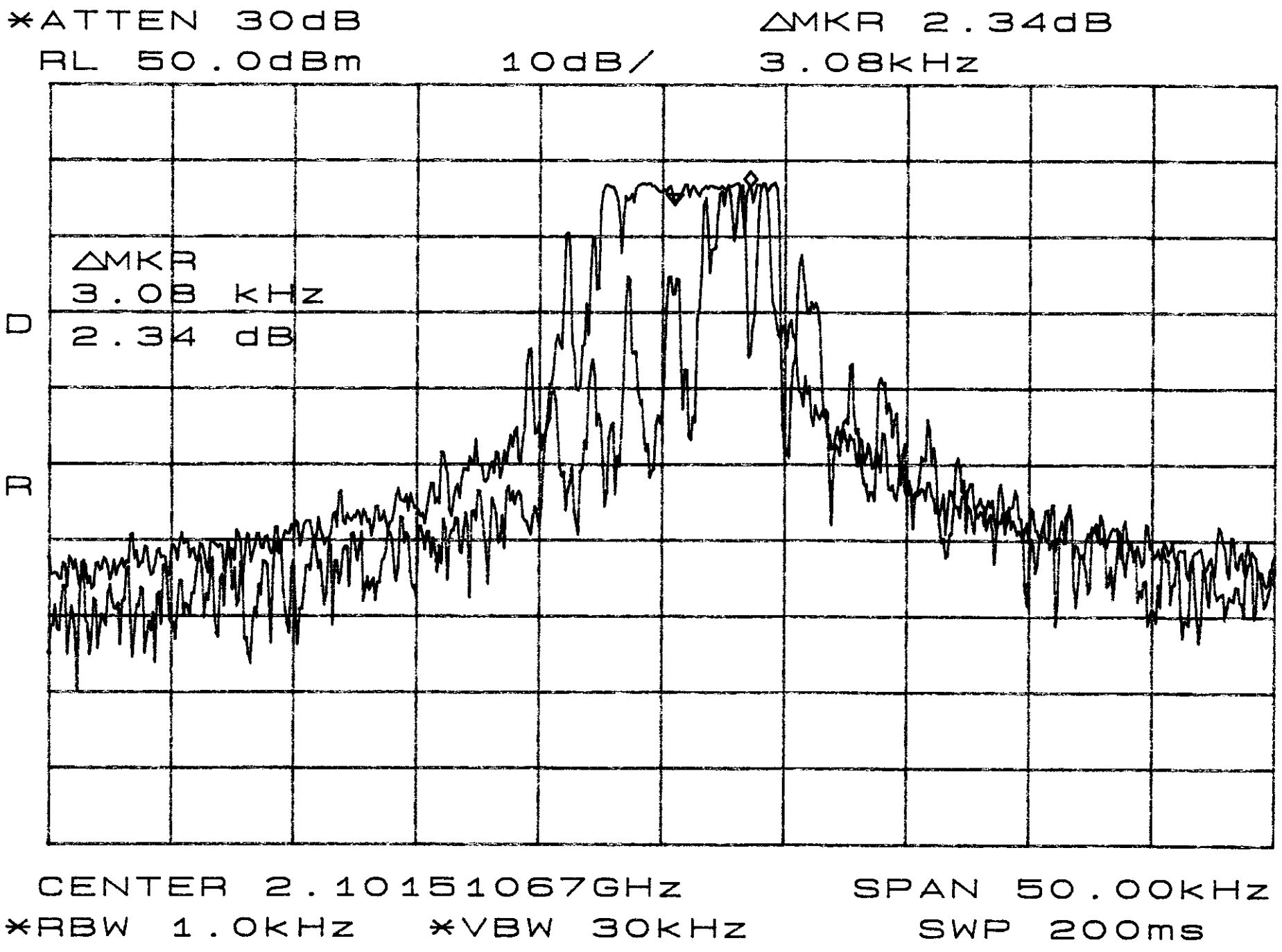

*ATTEN 30dB
ΔMKR -.50dB
RL 50.0dBm
10dB/
1.25kHz
ΔMKR
1.25 kHz
-.50 dB
D
R
CENTER 2.10150083GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 30kHz
SWP 200ms


*ATTEN 30dB
RL 50.0dBm
10dB/
ΔMKR .50dB
−750Hz
ΔMKR
−750 Hz
.50 dB
D
B
CENTER 2.10150083GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 30kHz
SWP 200ms


*ATTEN 30dB
RL 50.0dBm
10dB/
ΔMKR .17dB
−16.50kHz
ΔMKR
−16.50 kHz
.17 dB
D
R
CENTER 2.10151675GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 30kHz
SWP 200ms


*ATTEN 30dB
RL 50.0dBm
10dB/
ΔMKR .17dB
-4.92kHz
ΔMKR
-4.92 kHz
.17 dB
D
R
CENTER 2.10151675GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 30kHz
SWP 200ms


*ATTEN 30dB
RL 50.0dBm
10dB/
ΔMKR .17dB
-1.67kHz
ΔMKR
-1.67 kHz
.17 dB
D
R
CENTER 2.10151675GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 30kHz
SWP 200ms


*ATTEN 30dB
RL 50.0dBm
10dB/
ΔMKR 2.34dB
3.08kHz
ΔMKR
3.08 kHz
2.34 dB
D
R
CENTER 2.10151067GHz
SPAN 50.00kHz
*RBW 1.0kHz
*VBW 30kHz
SWP 200ms