TEST RESULT SUMMARY

FCC PART 24 SUBPART E

MANUFACTURER'S NAME	ADC Telecommunications, Inc.
NAME OF EQUIPMENT	Digivance™ Long Range Coverage Solution (LRCS) 1900 MHz System (A,D / D,B,E / B,E,F / E,F,C Band)
MODEL NUMBER	**DGVL-431110SYS** **DGVL-441110SYS** **DGVL-451110SYS** **DGVL-461110SYS**
MANUFACTURER'S ADDRESS	PO Box 1101 Minneapolis MN 55440
TEST REPORT NUMBER	NC201819
TEST DATE	10 April 2002

According to testing performed at TÜV Product Service Inc, the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in FCC Part 24 Subpart E.

It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications necessary for compliance made during testing on the above mentioned date(s) must be implemented in all production units for compliance to be maintained.

TÜV Product Service Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the requirements of FCC Part 24 Subpart E.

Date: 17 April 2002

Location: Taylors Falls MN USA

G. S. Jakubowski
Test Engineer

J. T. Schneider
Chief Engineer

Not Transferable

EMC EMISSION - T E S T R E P O R T

Test Report File No.	:	**NC201819** Date of issue: 17 April 2002
Model / Serial No.	:	**DBVL-431110SYS / DGVL-441110SYS / DGVL-451110SYS / DGVL-461110SYS /**
Product Type	:	Digivance™ Long Range Coverage Solution (LRCS) 1900 MHz System (A,D / D,B,E / B,E,F / E,F,C Band)
Applicant	:	ADC Telecommunications, Inc.
Manufacturer	:	ADC Telecommunications, Inc.
License holder	:	ADC Telecommunications, Inc.
Address	:	PO Box 1101
	:	Minneapolis MN 55440
Test Result	:	■ **Positive** ☐ **Negative**
Test Project Number Reference(s)	:	**NC201819**
Total pages including Appendices		**237**

TÜV Product Service Inc is a subcontractor to TÜV Product Service, GmbH according to the principles outlined in ISO/IEC Guide 25 and EN 45001. TÜV Product Service Inc reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. TÜV Product Service Inc shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV Product Service Inc issued reports. This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval. This report shall not be used by the client to claim product endorsement by NVLAP or any agency of the US government.

TÜV Product Service Inc and its professional staff hold government and professional organization certifications and are members of AAMI, ACIL, AEA, ANSI, IEEE, NVLAP, and VCCI

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0

D I R E C T O R Y - EMISSIONS

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0

EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

☐ - EN 50081-1 / 1991

☐ - EN 55011 / 1991 ☐ - Group 1 ☐ - Group 2
☐ - Class A ☐ - Class B

☐ - EN 55013 / 1990

☐ - EN 55014 / 1987 ☐ - Household appliances and similar
☐ - Portable tools
☐ - Semiconductor devices

☐ - EN 55014 / A2:1990

☐ - EN 55014 / 1993 ☐ - Household appliances and similar
☐ - Portable tools
☐ - Semiconductor devices

☐ - EN 55015 / 1987

☐ - EN 55015 / A1:1990

☐ - EN 55015 / 1993

☐ - EN 55022 / 1987 ☐ - Class A ☐ - Class B

■ - FCC Part 24 Subpart E

☐ - BS

☐ - VCCI ☐ - Class A ☐ - Class B

☐ - FCC ☐ - Class A ☐ - Class B

☐ - AS 3548 (1992) ☐ - Class A ☐ - Class B

☐ - CISPR 11 (1990) ☐ - Group 1 ☐ - Group 2
☐ - Class A ☐ - Class B

☐ - CISPR 22 (1993) ☐ - Class A ☐ - Class B

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Environmental conditions in the lab:

	Actual
Temperature	: 22 °C
Relative Humidity	: 27 %
Atmospheric pressure	: 99.3 kPa
Power supply system	: 60 Hz - 115 V - 1-phase

Sign Explanations:

☐ - not applicable
■ - applicable

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Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage) per 15.207

The *CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE*) measurements were performed at the following test location:

■ - Test not applicable

☐ - Wild River Lab Large Test Site (Open Area Test Site)
☐ - Wild River Lab Small Test Site (Open Area Test Site)
☐ - Oakwood Lab (Open Area Test Site)
☐ - Wild River Lab Screen Room
☐ - New Brighton Lab Shielded Room

24.232 Effective Radiated Power Limit

The Effective Radiated Power Limit measurements were tested at the following test location :

☐ - Test not applicable

■ - ADC facility

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ -	8563E	Hewlett-Packard	Spectrum Analyzer	MC27690	May 02
■ -	6810.17.A	Huber+Suhner	Attenuator		CNR

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually. Equipment labeled CNR (Calibration Not Required) is verified and compensated for with NIST traceable calibrated equipment.

This measurement was made as a direct conducted emission measurement. The output from the EUT antenna connector was connected directly to the spectrum analyzer, which was set up with a 1 MHz resolution bandwidth. The spectrum analyzer level was offset by -35 dB to compensate for the attenuator placed between the EUT and the analyzer, and by 2 dB for the measured cable loss between the EUT and the analyzer.

ERP data on next page

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Effective Isotropic Radiated Power Limit Test for ADC Inc. Digivance Long Range Coverage System Model Numbers DGVL-431110SYS, DGVL-441110SYS, DGVL-451110SYS, and DGVL-461110SYS.

*Note: The EUT is a fixed repeater and not a base station.

This measurement was made as a direct conducted emission measurement. The output from the EUT antenna connector was connected to the spectrum analyzer. The Carrier Output, below, was conducted using a single CW signal generator. The spectrum analyzer level was offset to compensate for attenuators and cable loss between the EUT and the analyzer.

A CW signal was used at the low, mid and high parts of the selected band. The spectrum analyzer level was offset by 47.8 dB to compensate for attenuators and cable loss between the EUT and the analyzer.

Band A

Carrier Frequency	Carrier Output
1930.0 MHz	+ 43.00dBm
1937.0 MHz	+ 42.97dBm
1945.0 MHz	+ 43.30dBm

Band B

Carrier Frequency	Carrier Output
1950.0 MHz	+ 41.30dBm
1957.0 MHz	+ 41.63dBm
1965.0 MHz	+ 41.80dBm

Band C

Carrier Frequency	Carrier Output
1975.0 MHz	+ 42.80dBm
1982.0 MHz	+ 41.97dBm
1990.0 MHz	+ 40.30dBm

Band D

Carrier Frequency	Carrier Output
1945.0 MHz	+ 43.47dBm
1947.0 MHz	+ 43.30dBm
1950.0 MHz	+ 42.63dBm

Band E

Carrier Frequency	Carrier Output
1965.0 MHz	+ 41.80dBm
1967.0 MHz	+ 41.63dBm
1970.0 MHz	+ 42.13dBm

Band F

Carrier Frequency	Carrier Output
1970.0 MHz	+ 42.30dBm
1972.0 MHz	+ 41.97dBm
1975.0 MHz	+ 42.30dBm

24.235 Frequency Stability

The Frequency Stability measurements were tested at the following test location :

☐ - Test not applicable

■ - ADC facility

Test equipment used :

	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ -	F-12-CHV-S-5	Despatch/Ecosphere	Temperature chamber	MC21679	Aug 02
■ -	5347A	Hewlett-Packard	Frequency Counter	MC27569	May 02
■ -	HH23	Omega	Microprocessor Thermometer		Nov 02

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually.

Frequency Stability measurements on following pages:

Frequency Tolerance Test for ADC Inc
Digivance Long Range Coverage Solution
Model Numbers DGVL-431110SYS, DGVL-441110SYS, DGVL-451110SYS, and DGVL-461110SYS.

EUT Band A and D Selected

Input Voltage	Carrier Frequency	Measured Frequency	Meets requirement?
102 VAC	1930.000000 MHz	1930.000000 MHz	YES
120 VAC	1930.000000 MHz	1930.000000 MHz	YES
138 VAC	1930.000000 MHz	1930.000000 MHz	YES
102 VAC	1940.000000 MHz	1940.000000 MHz	YES
120 VAC	1940.000000 MHz	1940.000000 MHz	YES
138 VAC	1940.000000 MHz	1940.000000 MHz	YES
102 VAC	1950.000000 MHz	1950.000000 MHz	YES
120 VAC	1950.000000 MHz	1950.000000 MHz	YES
138 VAC	1950.000000 MHz	1950.000000 MHz	YES
Temperature	**Carrier Frequency**	**Measured Frequency**	**Meets requirement?**
-30 Deg C	1930.000000 MHz	1930.000000 MHz	YES
-20 Deg C	1930.000000 MHz	1930.000000 MHz	YES
-10 Deg C	1930.000000 MHz	1930.000000 MHz	YES
0 Deg. C	1930.000000 MHz	1930.000000 MHz	YES
10 Deg C	1930.000000 MHz	1930.000000 MHz	YES
20 Deg C	1930.000000 MHz	1930.000000 MHz	YES
30 Deg C	1930.000000 MHz	1930.000000 MHz	YES
40 Deg C	1930.000000 MHz	1930.000000 MHz	YES
50 Deg C	1930.000000 MHz	1930.000000 MHz	YES
-30 Deg C	1940.000000 MHz	1940.000000 MHz	YES
-20 Deg C	1940.000000 MHz	1940.000000 MHz	YES
-10 Deg C	1940.000000 MHz	1940.000000 MHz	YES
0 Deg. C	1940.000000 MHz	1940.000000 MHz	YES
10 Deg C	1940.000000 MHz	1940.000000 MHz	YES
20 Deg C	1940.000000 MHz	1940.000000 MHz	YES
30 Deg C	1940.000000 MHz	1940.000000 MHz	YES
40 Deg C	1940.000000 MHz	1940.000000 MHz	YES
50 Deg C	1940.000000 MHz	1940.000000 MHz	YES
-30 Deg C	1950.000000 MHz	1950.000000 MHz	YES
-20 Deg C	1950.000000 MHz	1950.000000 MHz	YES
-10 Deg C	1950.000000 MHz	1950.000000 MHz	YES
0 Deg. C	1950.000000 MHz	1950.000000 MHz	YES
10 Deg C	1950.000000 MHz	1950.000000 MHz	YES
20 Deg C	1950.000000 MHz	1950.000000 MHz	YES
30 Deg C	1950.000000 MHz	1950.000000 MHz	YES
40 Deg C	1950.000000 MHz	1950.000000 MHz	YES
50 Deg C	1950.000000 MHz	1950.000000 MHz	YES

EUT Band D, B, and E Selected

Input Voltage	Carrier Frequency	Measured Frequency	Meets requirement?
102 VAC	1945.000000 MHz	1945.000000 MHz	YES
120 VAC	1945.000000 MHz	1945.000000 MHz	YES
138 VAC	1945.000000 MHz	1945.000000 MHz	YES
102 VAC	1960.000000 MHz	1960.000000 MHz	YES
120 VAC	1960.000000 MHz	1960.000000 MHz	YES
138 VAC	1960.000000 MHz	1960.000000 MHz	YES
102 VAC	1970.000000 MHz	1970.000000 MHz	YES
120 VAC	1970.000000 MHz	1970.000000 MHz	YES
138 VAC	1970.000000 MHz	1970.000000 MHz	YES
Temperature	**Carrier Frequency**	**Measured Frequency**	**Meets requirement?**
-30 Deg C	1945.000000 MHz	1945.000000 MHz	YES
-20 Deg C	1945.000000 MHz	1945.000000 MHz	YES
-10 Deg C	1945.000000 MHz	1945.000000 MHz	YES
0 Deg. C	1945.000000 MHz	1945.000000 MHz	YES
10 Deg C	1945.000000 MHz	1945.000000 MHz	YES
20 Deg C	1945.000000 MHz	1945.000000 MHz	YES
30 Deg C	1945.000000 MHz	1945.000000 MHz	YES
40 Deg C	1945.000000 MHz	1945.000000 MHz	YES
50 Deg C	1945.000000 MHz	1945.000000 MHz	YES
-30 Deg C	1960.000000 MHz	1960.000000 MHz	YES
-20 Deg C	1960.000000 MHz	1960.000000 MHz	YES
-10 Deg C	1960.000000 MHz	1960.000000 MHz	YES
0 Deg. C	1960.000000 MHz	1960.000000 MHz	YES
10 Deg C	1960.000000 MHz	1960.000000 MHz	YES
20 Deg C	1960.000000 MHz	1960.000000 MHz	YES
30 Deg C	1960.000000 MHz	1960.000000 MHz	YES
40 Deg C	1960.000000 MHz	1960.000000 MHz	YES
50 Deg C	1960.000000 MHz	1960.000000 MHz	YES
-30 Deg C	1970.000000 MHz	1970.000000 MHz	YES
-20 Deg C	1970.000000 MHz	1970.000000 MHz	YES
-10 Deg C	1970.000000 MHz	1970.000000 MHz	YES
0 Deg. C	1970.000000 MHz	1970.000000 MHz	YES
10 Deg C	1970.000000 MHz	1970.000000 MHz	YES
20 Deg C	1970.000000 MHz	1970.000000 MHz	YES
30 Deg C	1970.000000 MHz	1970.000000 MHz	YES
40 Deg C	1970.000000 MHz	1970.000000 MHz	YES
50 Deg C	1970.000000 MHz	1970.000000 MHz	YES

EUT Band B, E, and F Selected

Input Voltage	Carrier Frequency	Measured Frequency	Meets requirement?
102 VAC	1950.000000 MHz	1950.000000 MHz	YES
120 VAC	1950.000000 MHz	1950.000000 MHz	YES
138 VAC	1950.000000 MHz	1950.000000 MHz	YES
102 VAC	1965.000000 MHz	1965.000000 MHz	YES
120 VAC	1965.000000 MHz	1965.000000 MHz	YES
138 VAC	1965.000000 MHz	1965.000000 MHz	YES
102 VAC	1975.000000 MHz	1975.000000 MHz	YES
120 VAC	1975.000000 MHz	1975.000000 MHz	YES
138 VAC	1975.000000 MHz	1975.000000 MHz	YES
Temperature	**Carrier Frequency**	**Measured Frequency**	**Meets requirement?**
-30 Deg C	1950.000000 MHz	1950.000000 MHz	YES
-20 Deg C	1950.000000 MHz	1950.000000 MHz	YES
-10 Deg C	1950.000000 MHz	1950.000000 MHz	YES
0 Deg. C	1950.000000 MHz	1950.000000 MHz	YES
10 Deg C	1950.000000 MHz	1950.000000 MHz	YES
20 Deg C	1950.000000 MHz	1950.000000 MHz	YES
30 Deg C	1950.000000 MHz	1950.000000 MHz	YES
40 Deg C	1950.000000 MHz	1950.000000 MHz	YES
50 Deg C	1950.000000 MHz	1950.000000 MHz	YES
-30 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-20 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-10 Deg C	1965.000000 MHz	1965.000000 MHz	YES
0 Deg. C	1965.000000 MHz	1965.000000 MHz	YES
10 Deg C	1965.000000 MHz	1965.000000 MHz	YES
20 Deg C	1965.000000 MHz	1965.000000 MHz	YES
30 Deg C	1965.000000 MHz	1965.000000 MHz	YES
40 Deg C	1965.000000 MHz	1965.000000 MHz	YES
50 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-30 Deg C	1975.000000 MHz	1975.000000 MHz	YES
-20 Deg C	1975.000000 MHz	1975.000000 MHz	YES
-10 Deg C	1975.000000 MHz	1975.000000 MHz	YES
0 Deg. C	1975.000000 MHz	1975.000000 MHz	YES
10 Deg C	1975.000000 MHz	1975.000000 MHz	YES
20 Deg C	1975.000000 MHz	1975.000000 MHz	YES
30 Deg C	1975.000000 MHz	1975.000000 MHz	YES
40 Deg C	1975.000000 MHz	1975.000000 MHz	YES
50 Deg C	1975.000000 MHz	1975.000000 MHz	YES

EUT Band E, F, and C Selected

Input Voltage	Carrier Frequency	Measured Frequency	Meets requirement?
102 VAC	1965.000000 MHz	1965.000000 MHz	YES
120 VAC	1965.000000 MHz	1965.000000 MHz	YES
138 VAC	1965.000000 MHz	1965.000000 MHz	YES
102 VAC	1980.000000 MHz	1980.000000 MHz	YES
120 VAC	1980.000000 MHz	1980.000000 MHz	YES
138 VAC	1980.000000 MHz	1980.000000 MHz	YES
102 VAC	1990.000000 MHz	1990.000000 MHz	YES
120 VAC	1990.000000 MHz	1990.000000 MHz	YES
138 VAC	1990.000000 MHz	1990.000000 MHz	YES
Temperature	**Carrier Frequency**	**Measured Frequency**	**Meets requirement?**
-30 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-20 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-10 Deg C	1965.000000 MHz	1965.000000 MHz	YES
0 Deg. C	1965.000000 MHz	1965.000000 MHz	YES
10 Deg C	1965.000000 MHz	1965.000000 MHz	YES
20 Deg C	1965.000000 MHz	1965.000000 MHz	YES
30 Deg C	1965.000000 MHz	1965.000000 MHz	YES
40 Deg C	1965.000000 MHz	1965.000000 MHz	YES
50 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-30 Deg C	1980.000000 MHz	1980.000000 MHz	YES
-20 Deg C	1980.000000 MHz	1980.000000 MHz	YES
-10 Deg C	1980.000000 MHz	1980.000000 MHz	YES
0 Deg. C	1980.000000 MHz	1980.000000 MHz	YES
10 Deg C	1980.000000 MHz	1980.000000 MHz	YES
20 Deg C	1980.000000 MHz	1980.000000 MHz	YES
30 Deg C	1980.000000 MHz	1980.000000 MHz	YES
40 Deg C	1980.000000 MHz	1980.000000 MHz	YES
50 Deg C	1980.000000 MHz	1980.000000 MHz	YES
-30 Deg C	1990.000000 MHz	1990.000000 MHz	YES
-20 Deg C	1990.000000 MHz	1990.000000 MHz	YES
-10 Deg C	1990.000000 MHz	1990.000000 MHz	YES
0 Deg. C	1990.000000 MHz	1990.000000 MHz	YES
10 Deg C	1990.000000 MHz	1990.000000 MHz	YES
20 Deg C	1990.000000 MHz	1990.000000 MHz	YES
30 Deg C	1990.000000 MHz	1990.000000 MHz	YES
40 Deg C	1990.000000 MHz	1990.000000 MHz	YES
50 Deg C	1990.000000 MHz	1990.000000 MHz	YES

Note: EUT Host is specified for indoor use only with temperature range of 0 to +50º C and was tested within its range.

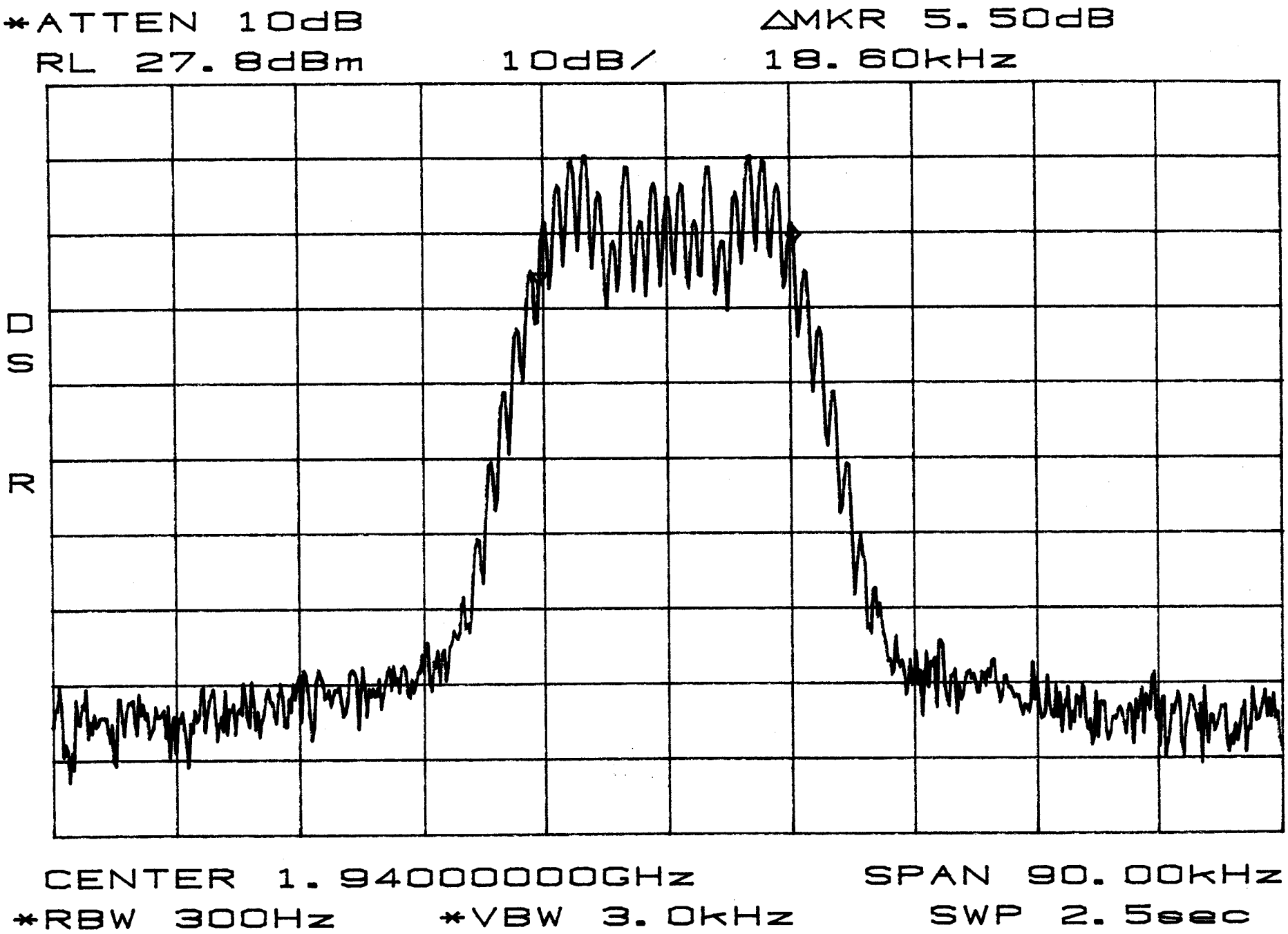
Note: EUT STM and LPA are specified with a temperature range of -30 to +50º C and were tested with their range.

Occupied Bandwidth Modulation Test for ADC Inc.
Digivance Long Range Coverage System
Model Numbers DGVL-431110SYS, DGVL-441110SYS, DGVL-451110SYS, and DGVL-461110SYS.

An input/output Occupied Bandwidth test was done with three different modulation types: FM (1 kHz @ 8 kHz deviation) TDMA, and CDMA. The purpose was to determine the amount of distortion added to different types of modulation schemes by the EUT. The following plots show input signals vs. output signals.

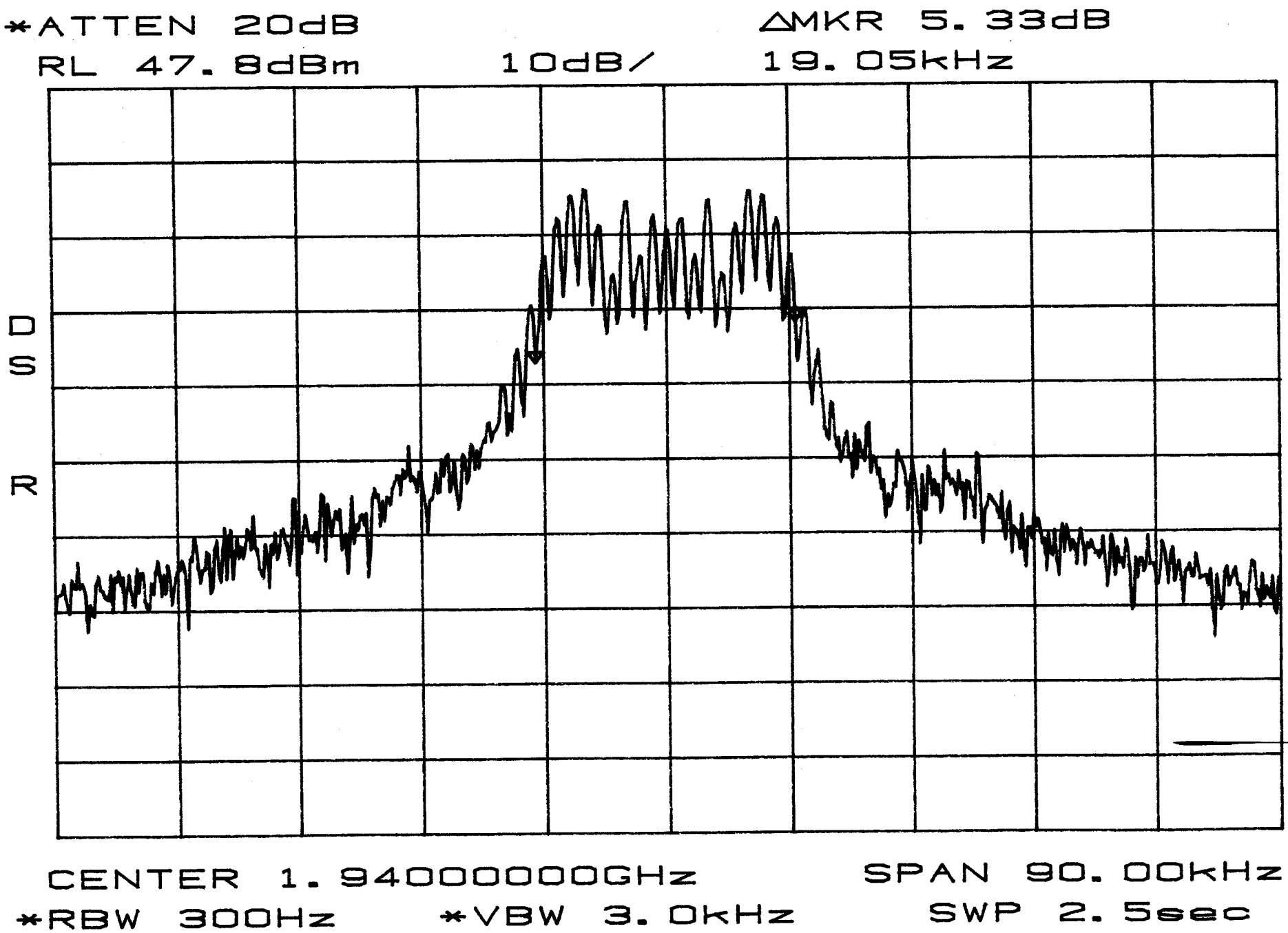
Results:
Pass (see plots)

Occupied Band Width BAND A,D
FM IN

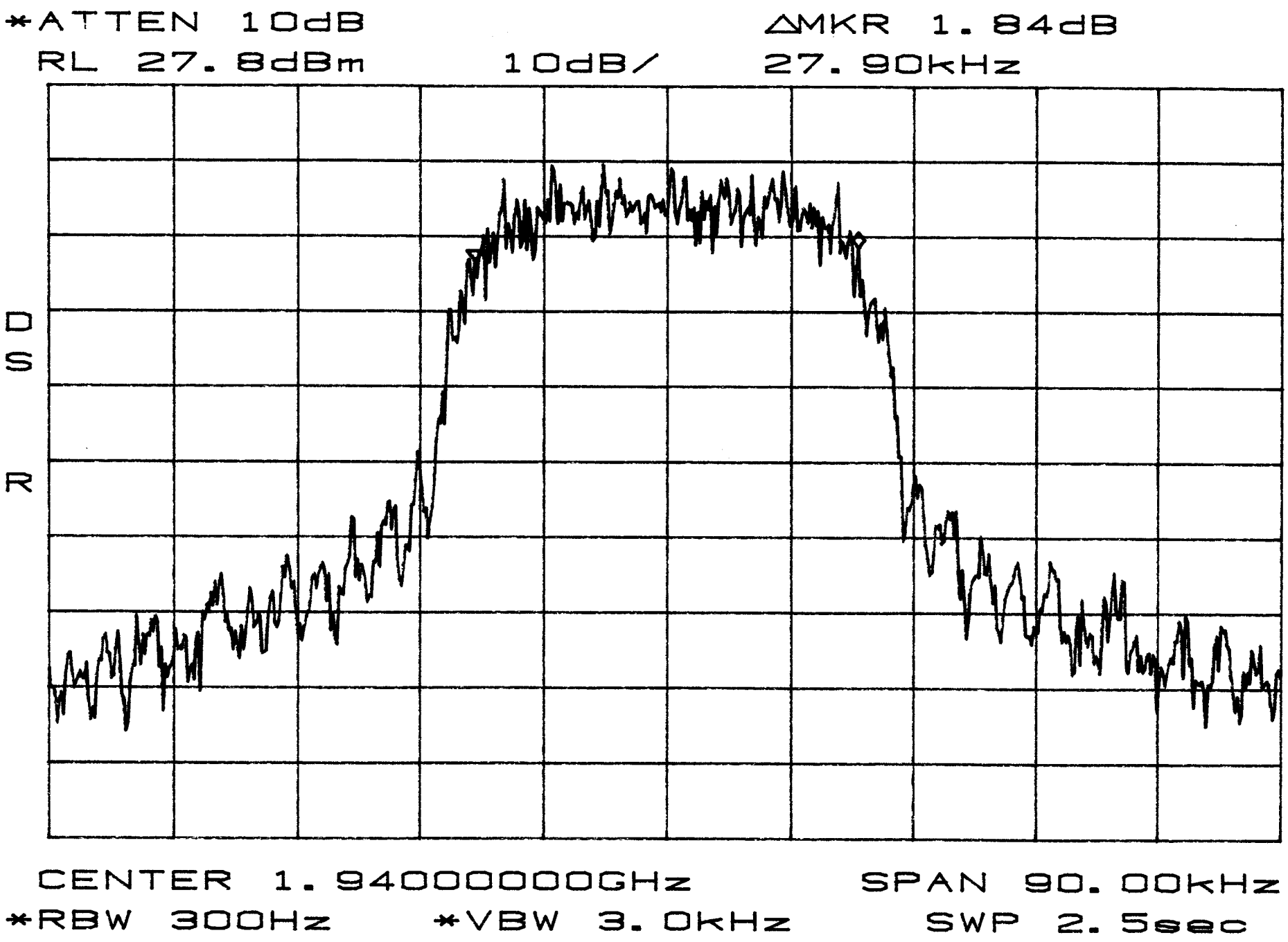


Occupied Band Width
FM out

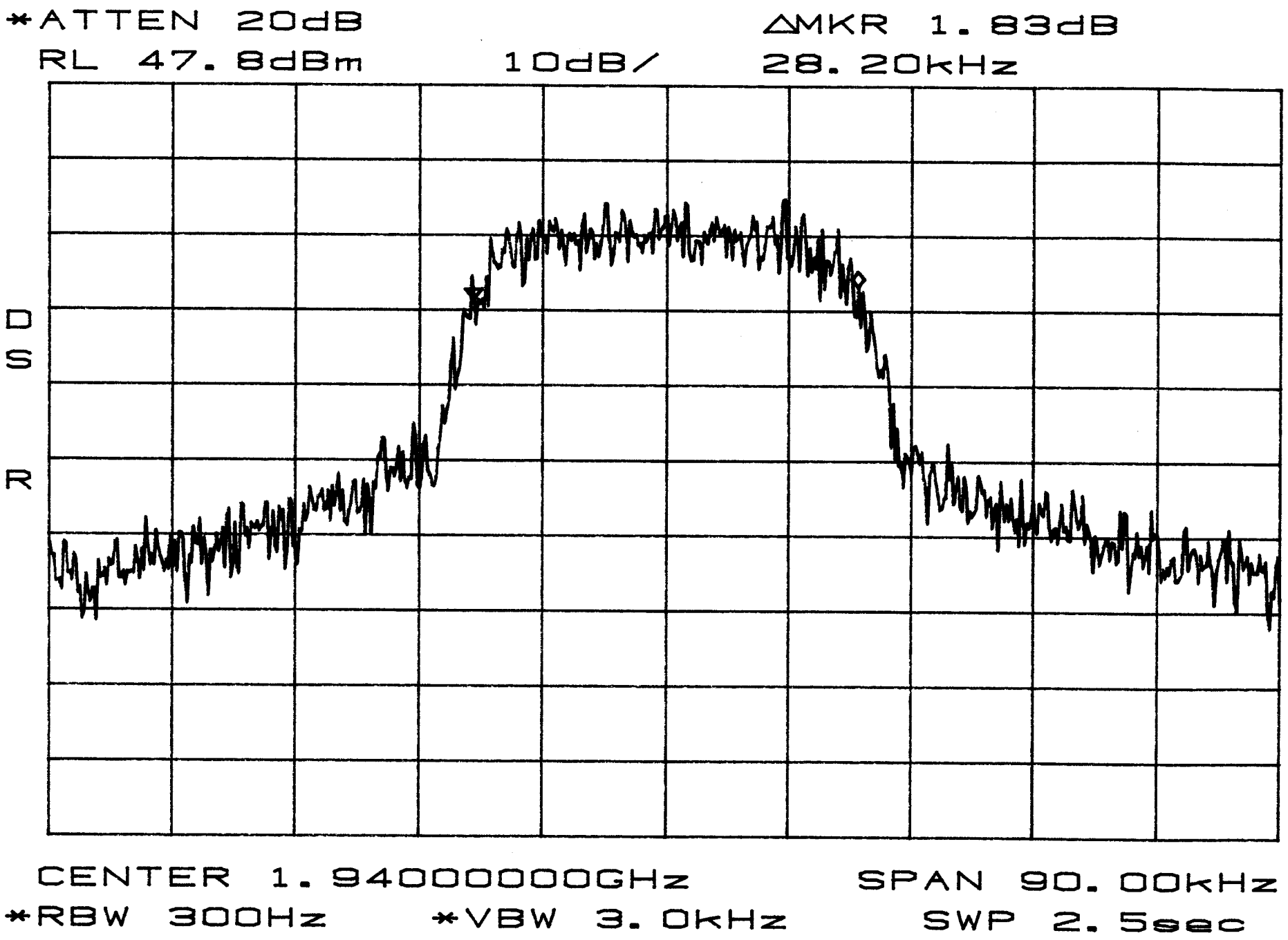
BAND A,D



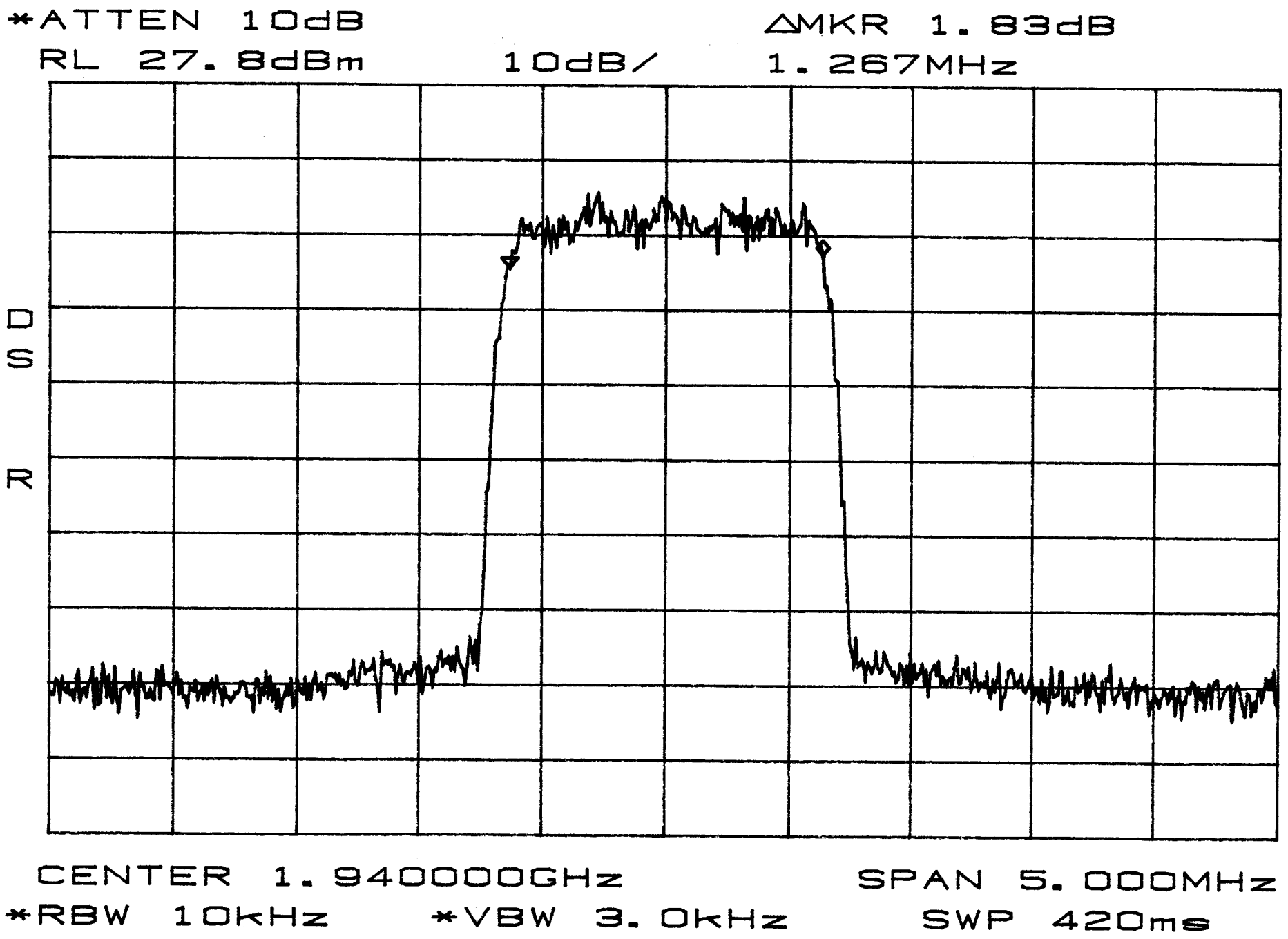
Occupied Band width BAND A,D
TDMA IN



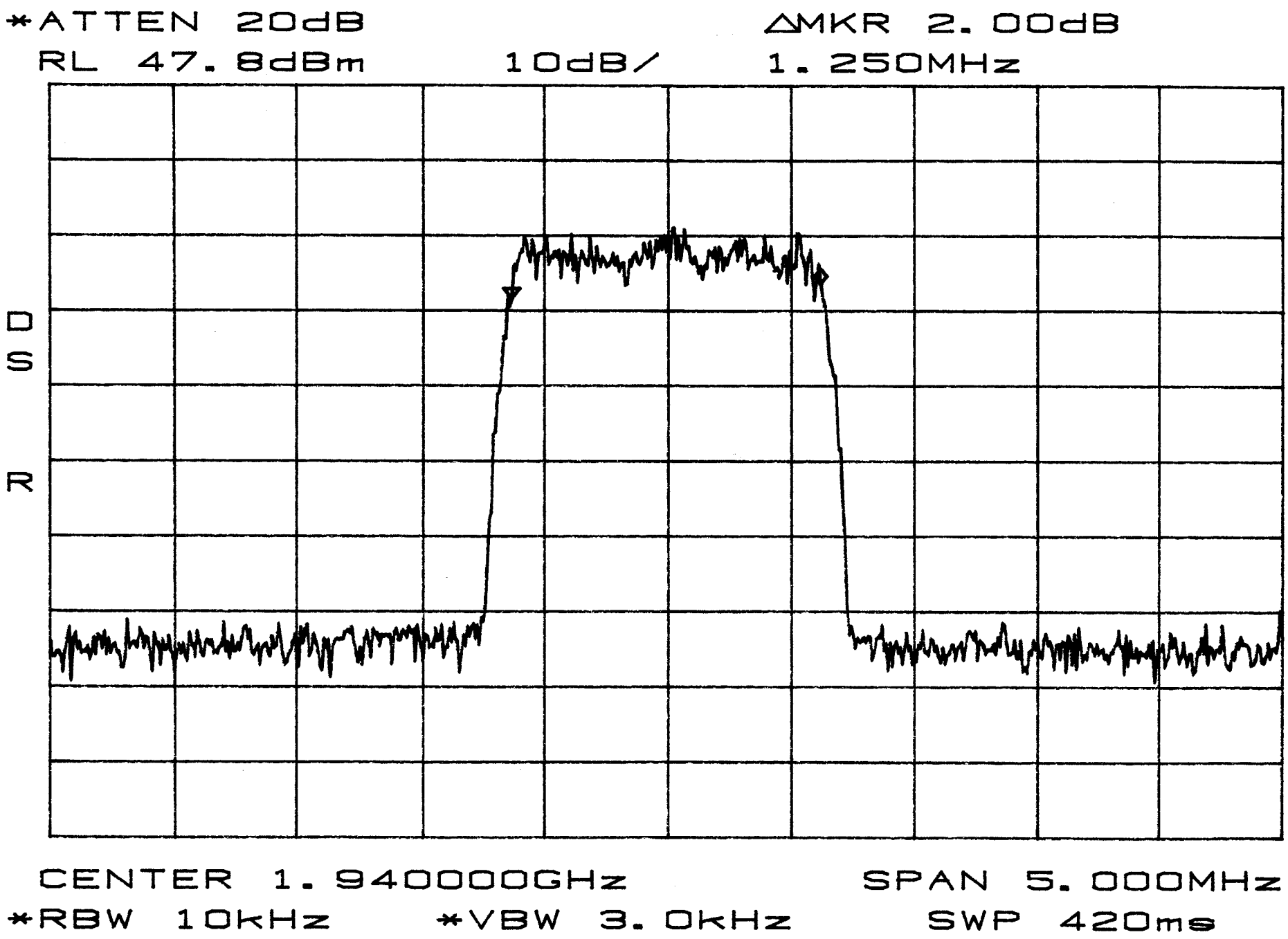
Occupied Band Width BAND A,D
TDMA OUT



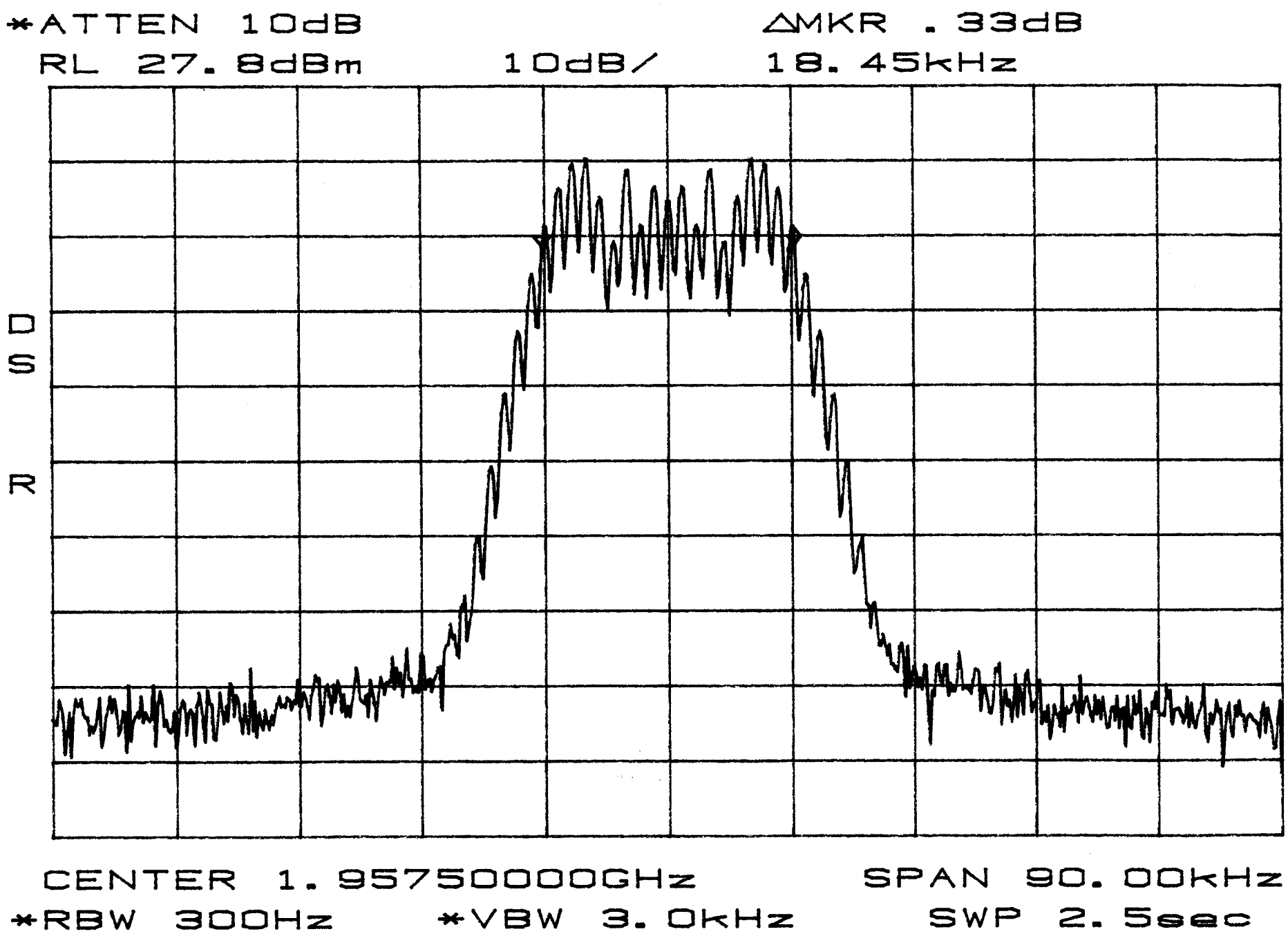
Occupied BAnd width BAND A,D
CDMA IN



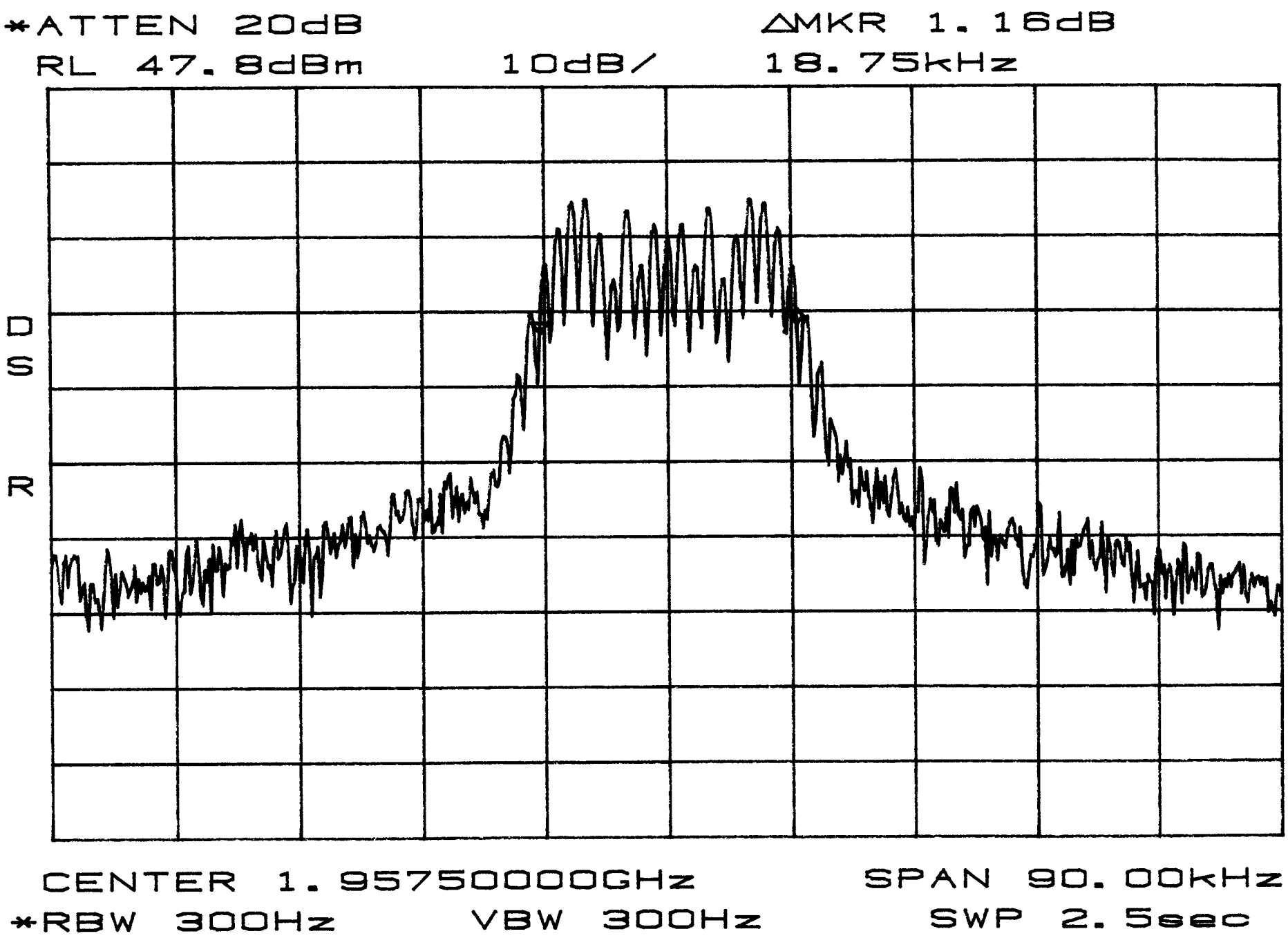
Occupied Band width BAND A,D
CDMA OUT



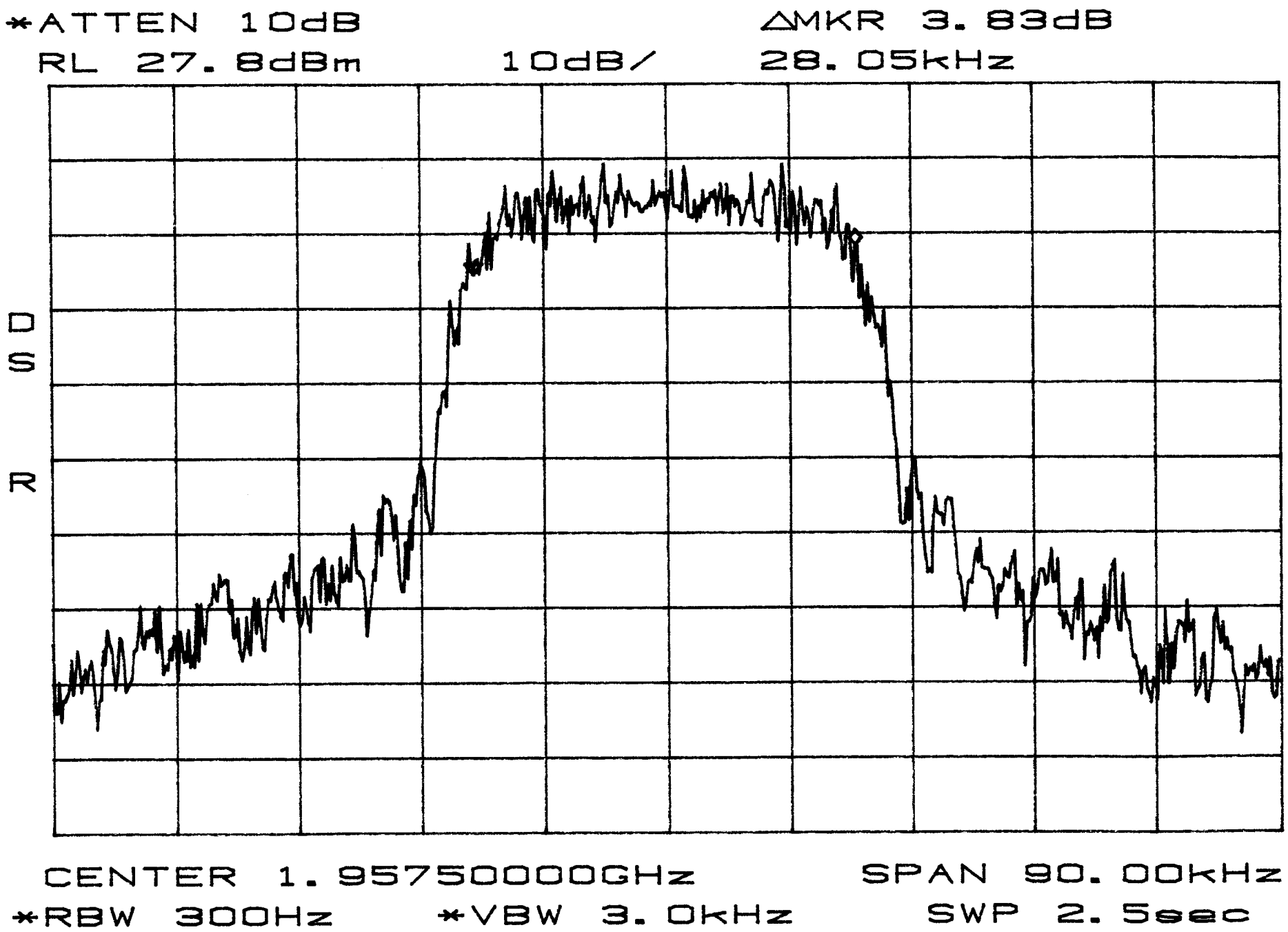
Occupied Band Width BAND D,B,E
FM IN



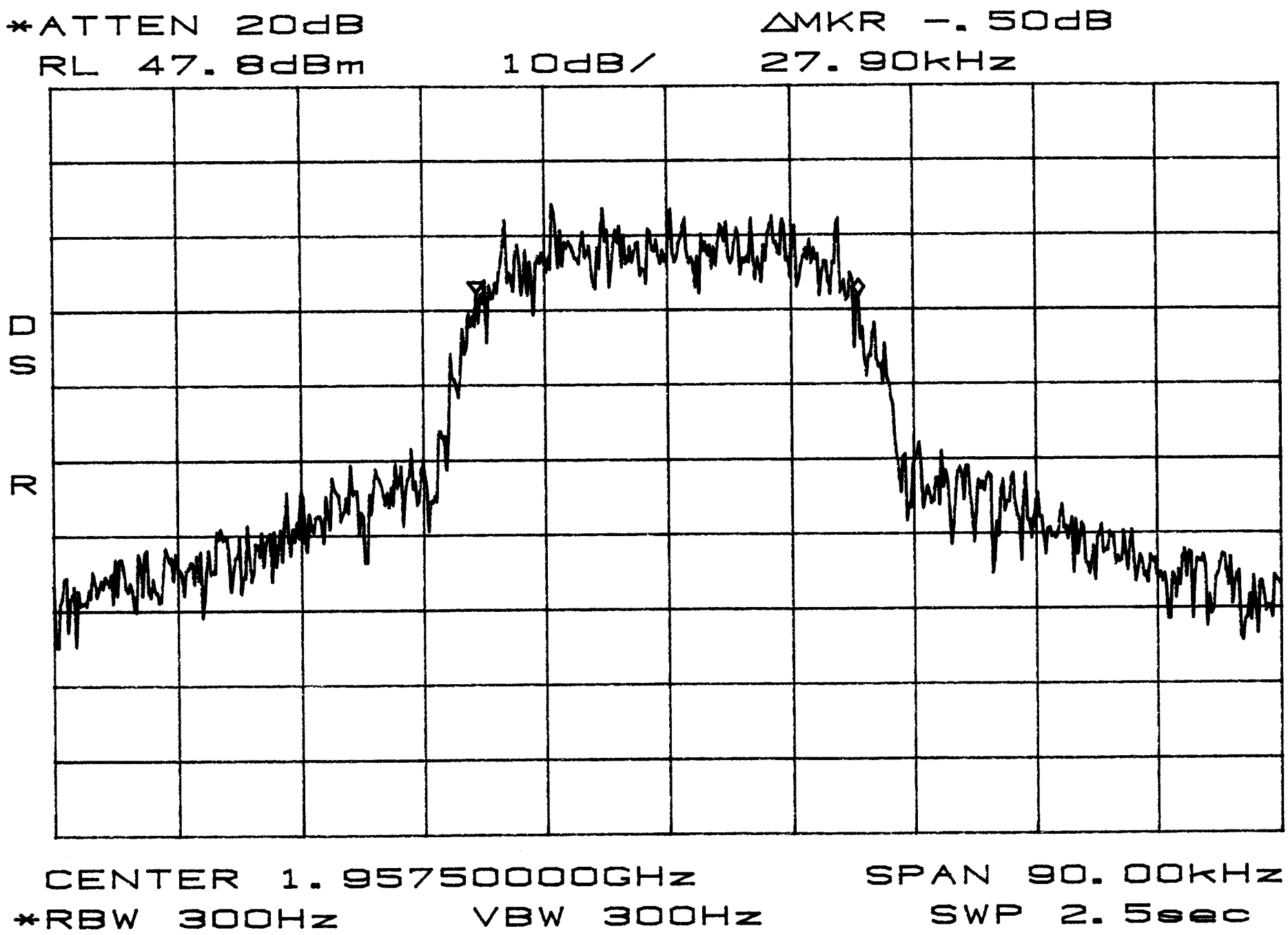
Occupied Band Width BAND D,B,E
FM OUT



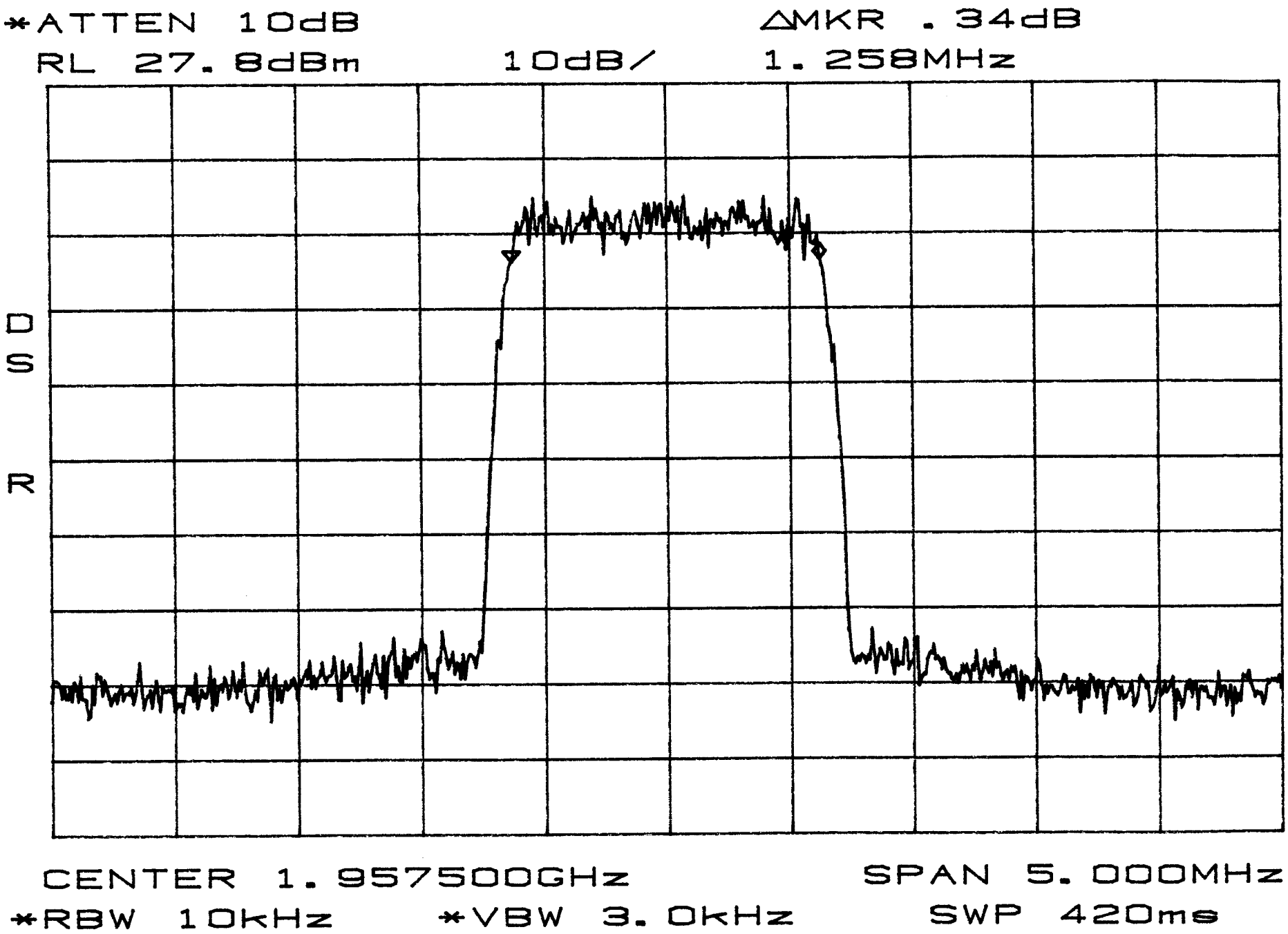
Occupied Band width BAND D,B,E
TDMA IN



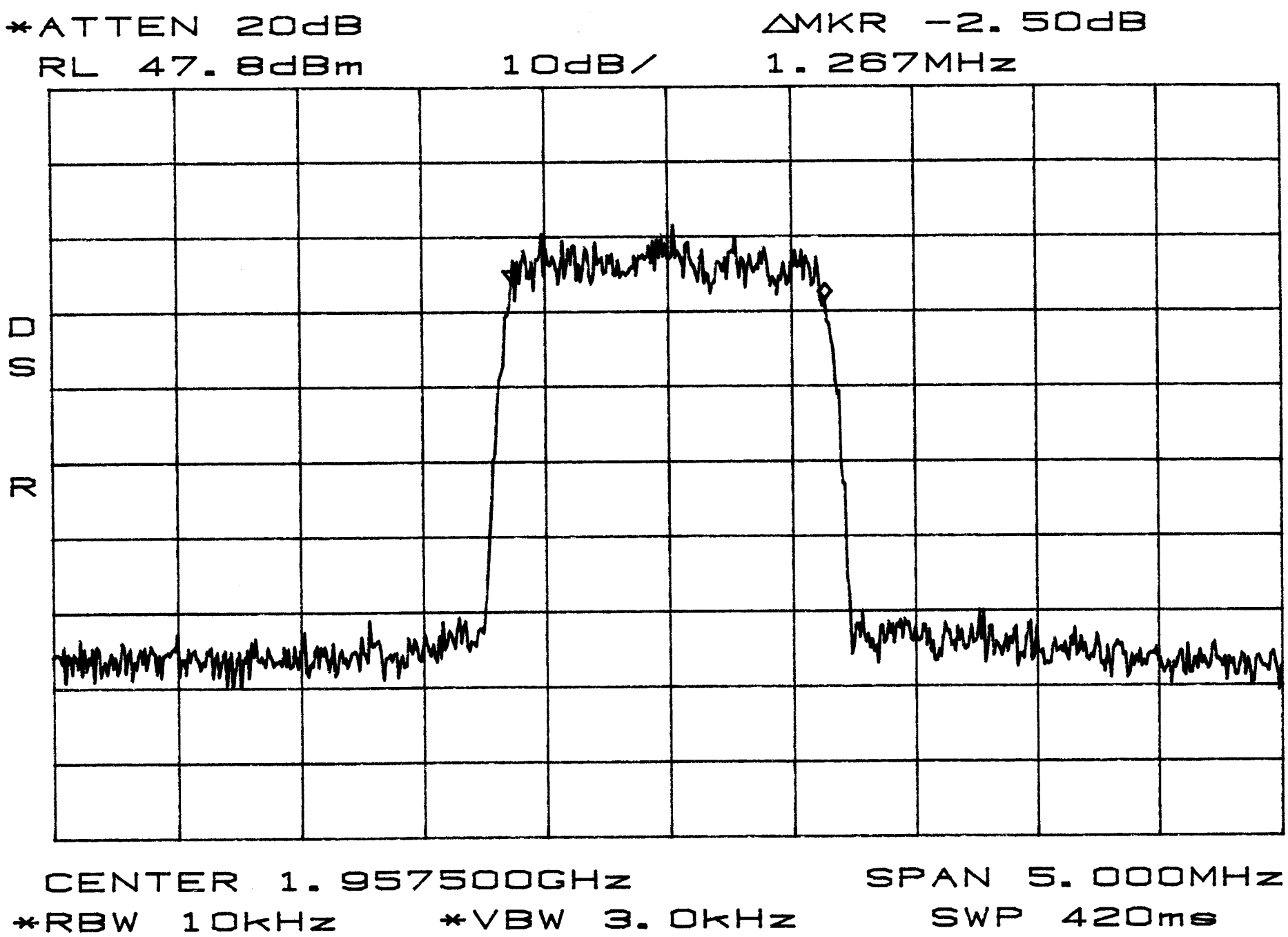
Occupied Band width BAND D,B,E
TDMA OUT



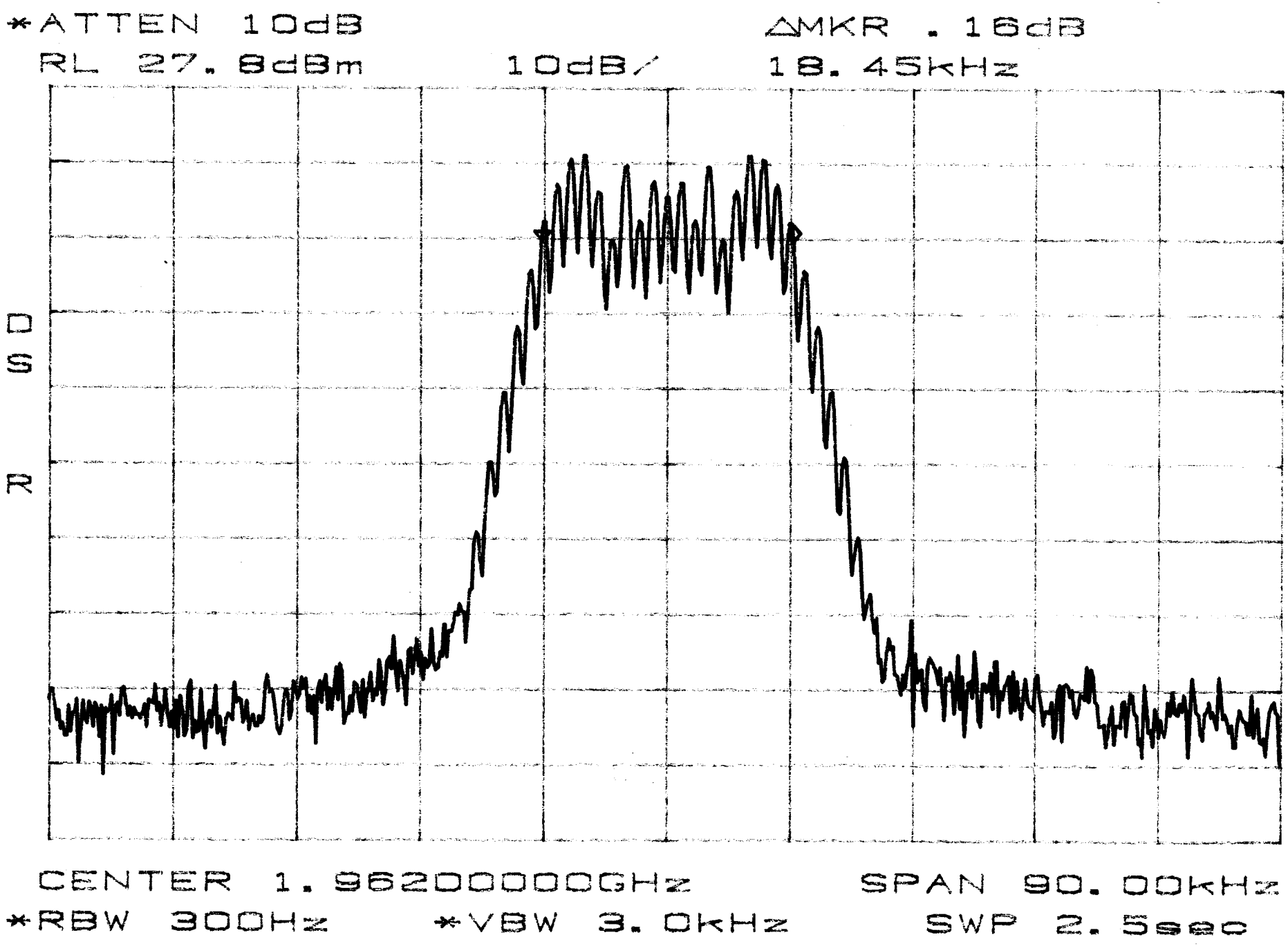
Occupied BAnd width BAND D, B, E
CDMA IN



Occupied Band Width BAND D,B,E
CDMA OUT

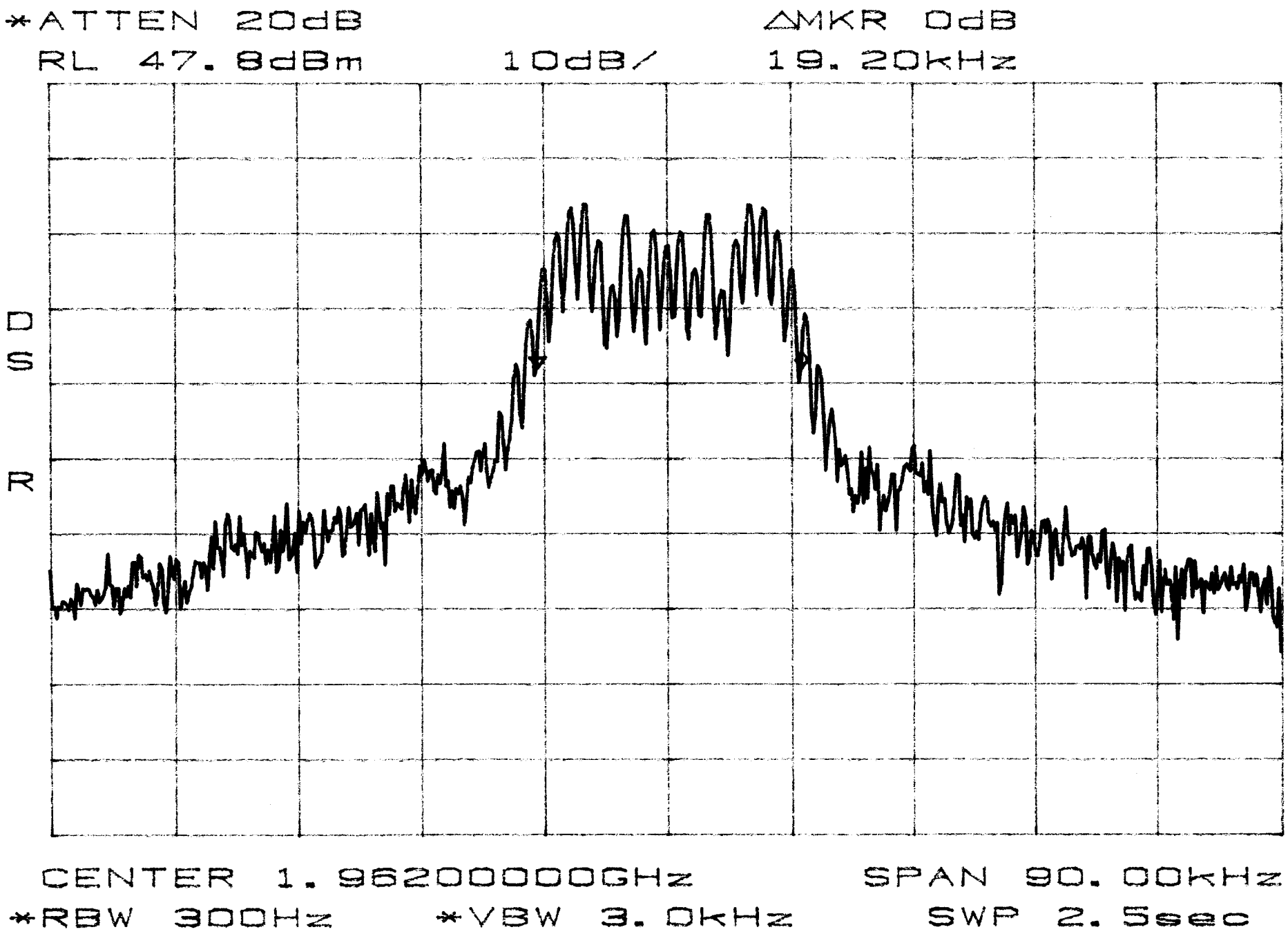


Occupied Band Width BAND B,E,F
FM IN

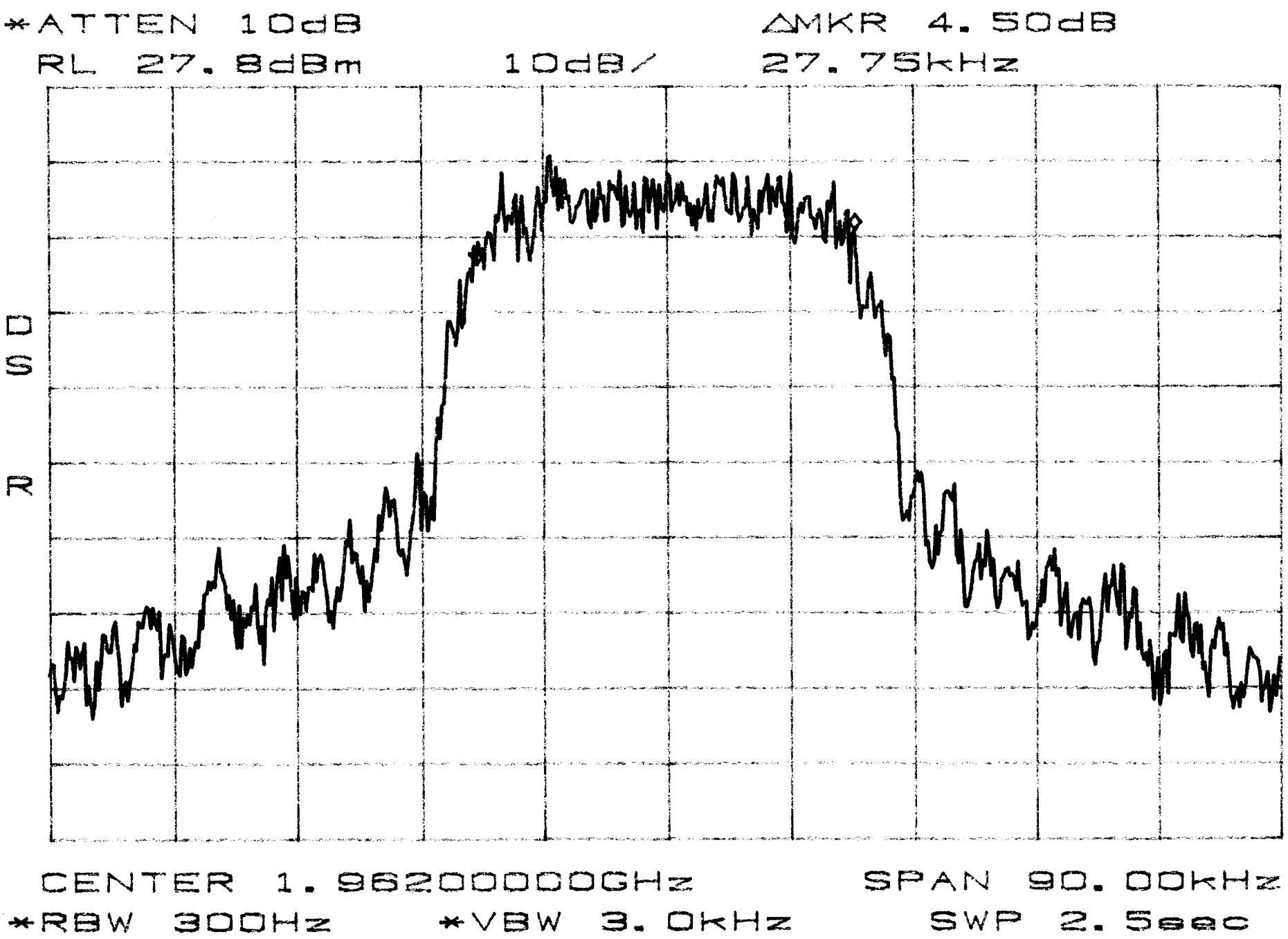


Occupied Band Width
FM OUT

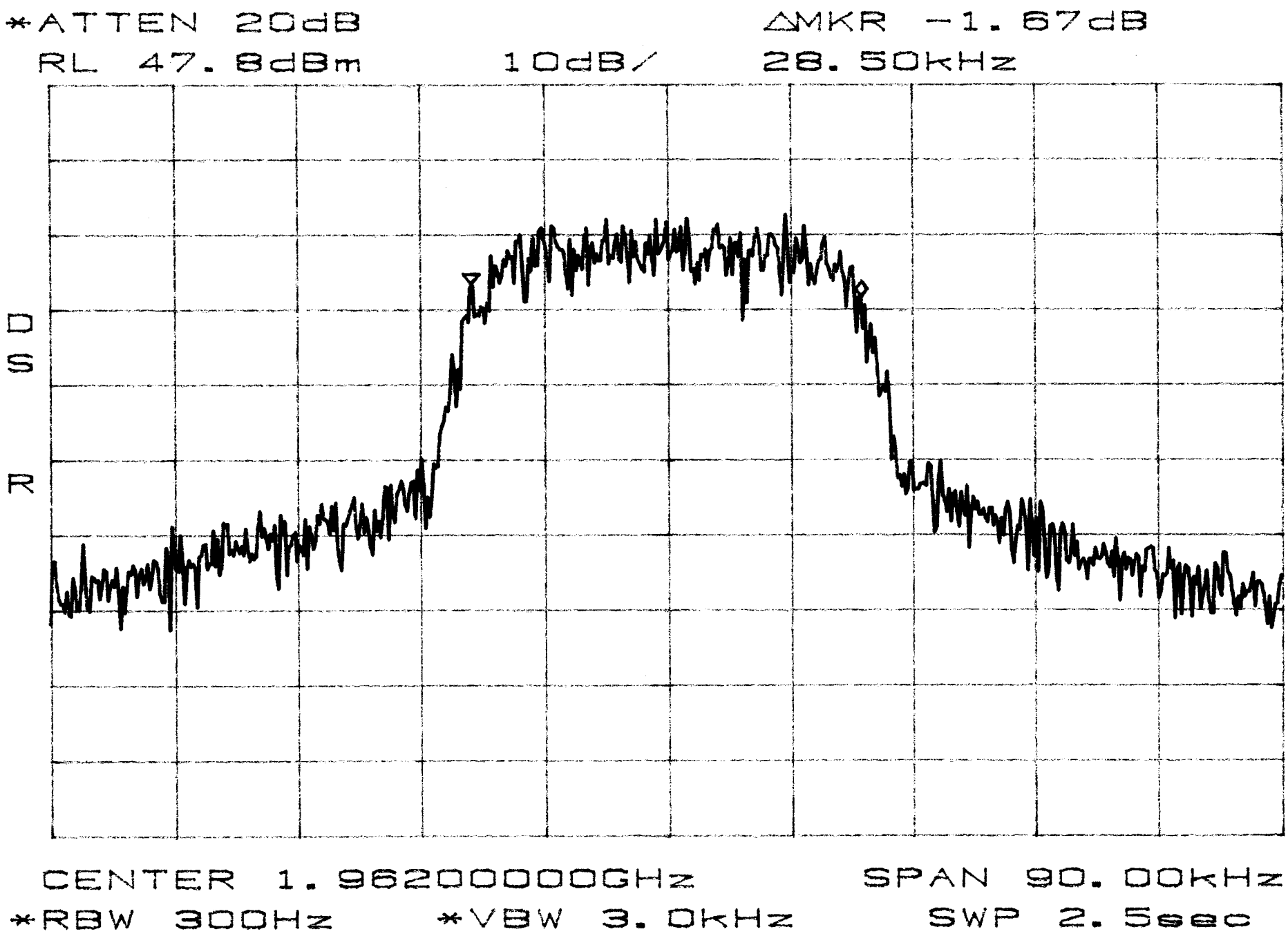
BAND B,E,F



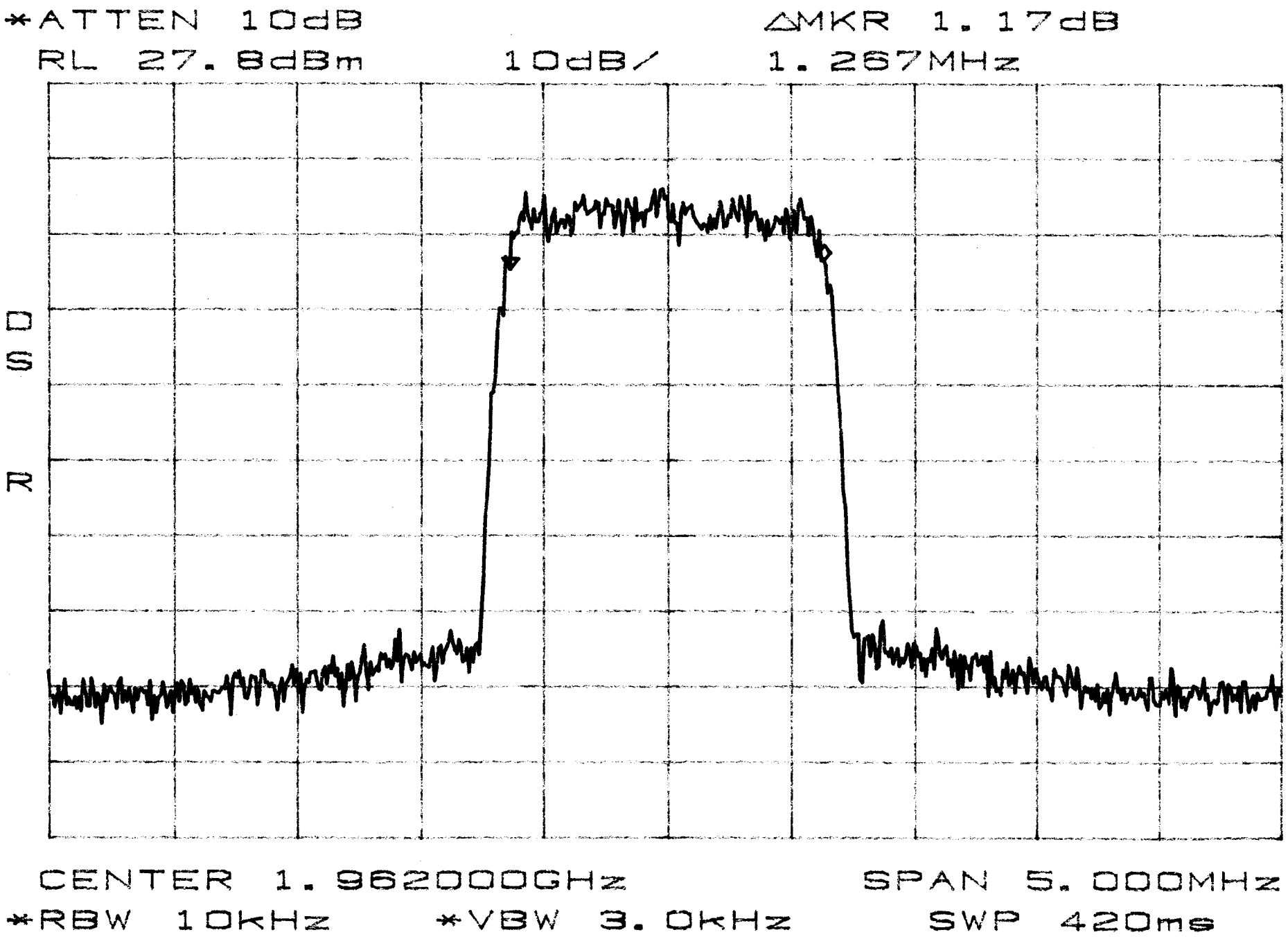
Occupied Band width BAND B,E,F
TDMA IN



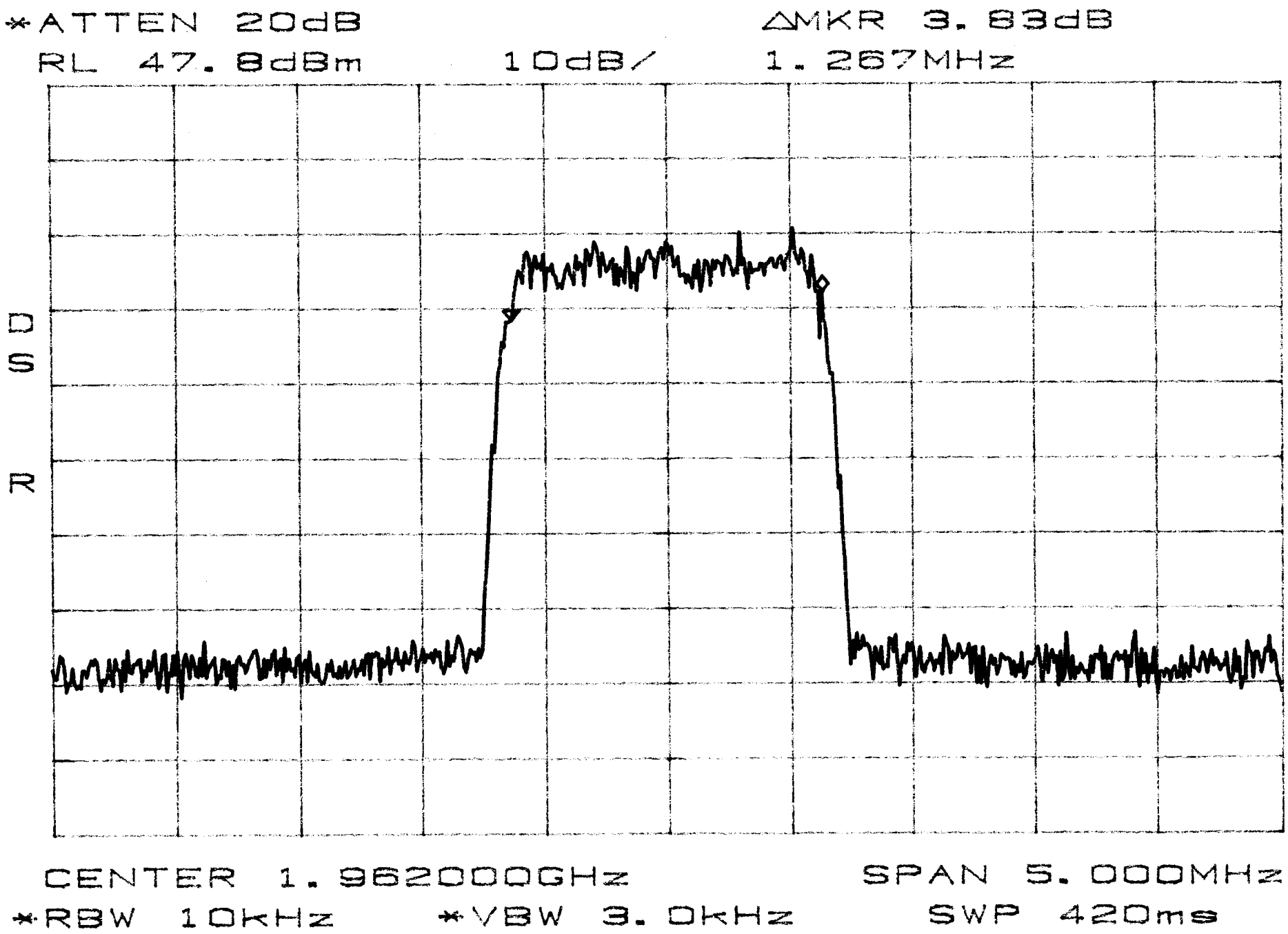
Occupied Band with BAND B,E,F
TDMA OUT



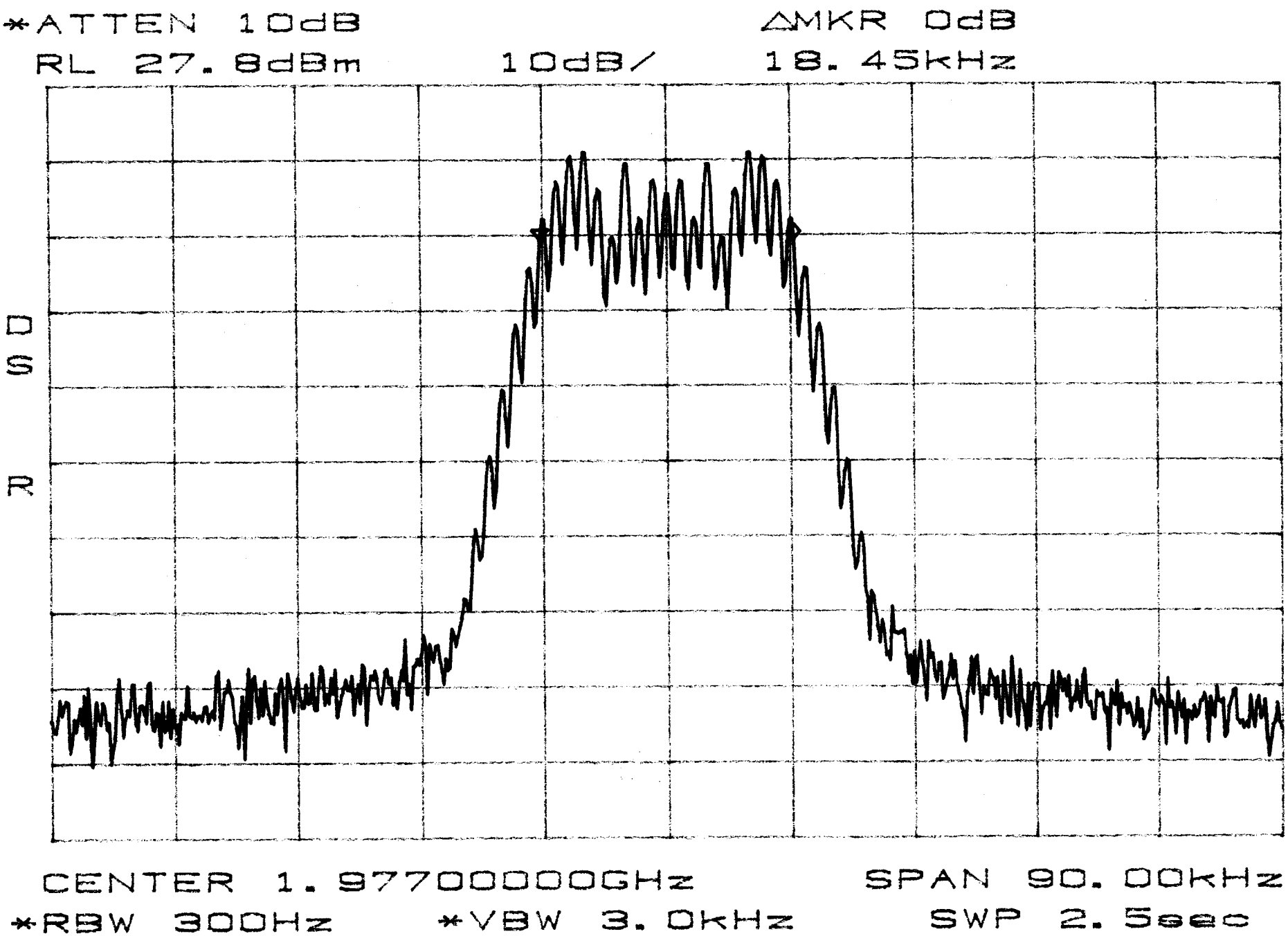
Occupied BAnd width BAND B,E,F
CDMA IN



Occupied Band Width BAND B,E,F
CDMA OUT

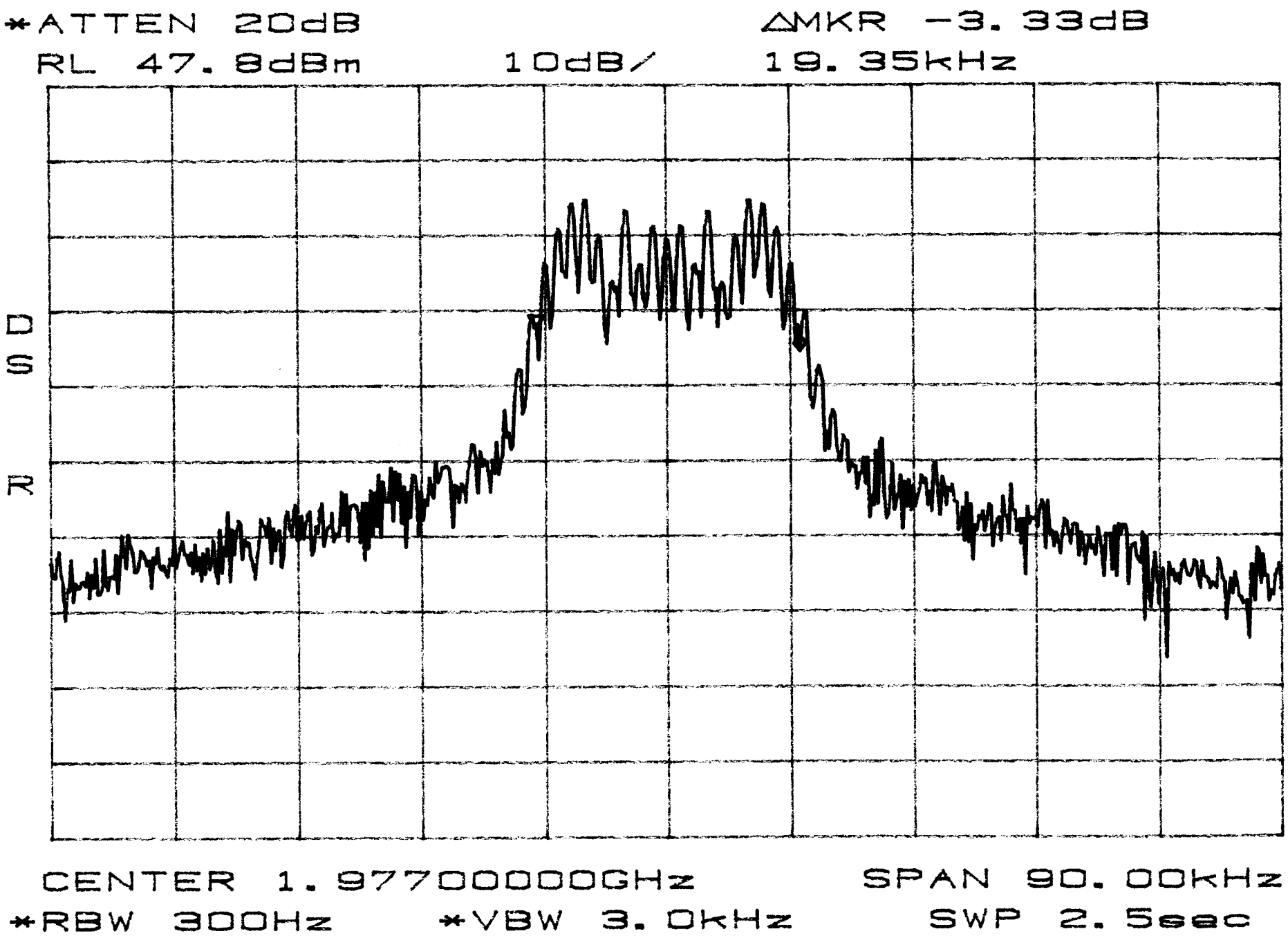


Occupied Band Width BAND E, F, C
Fm IN

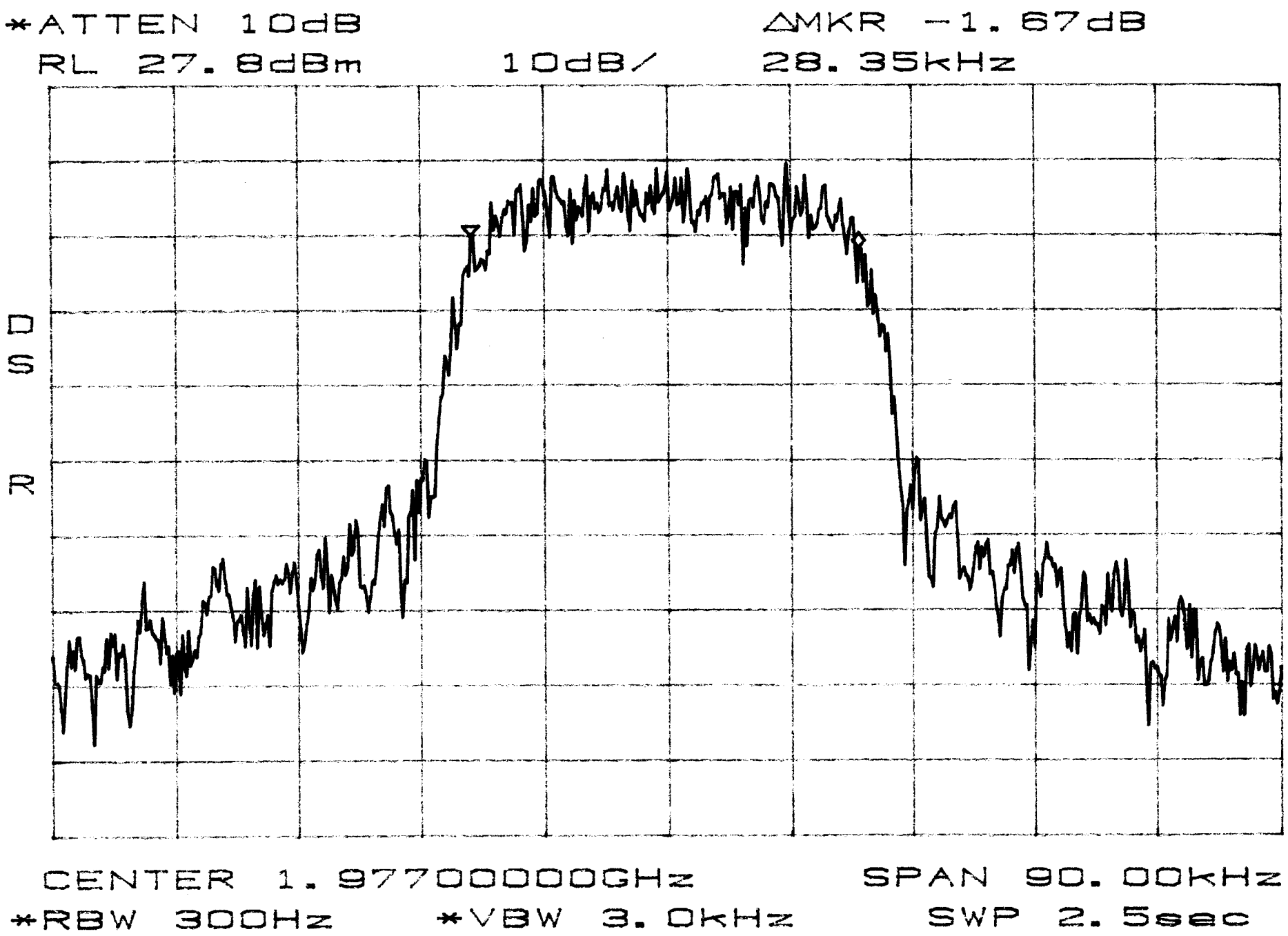


Occupied Band Width
FM out

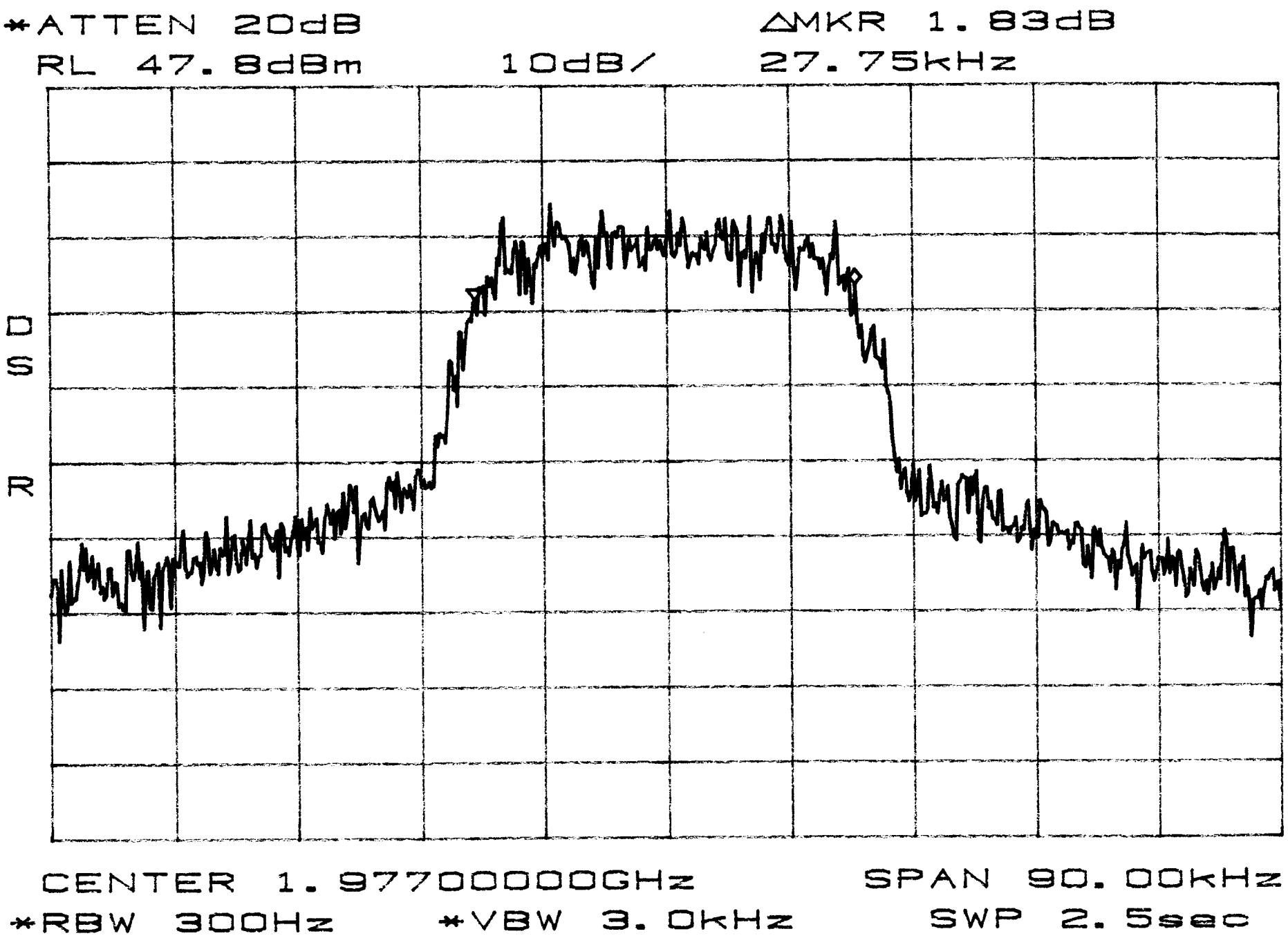
BAND E, F, C



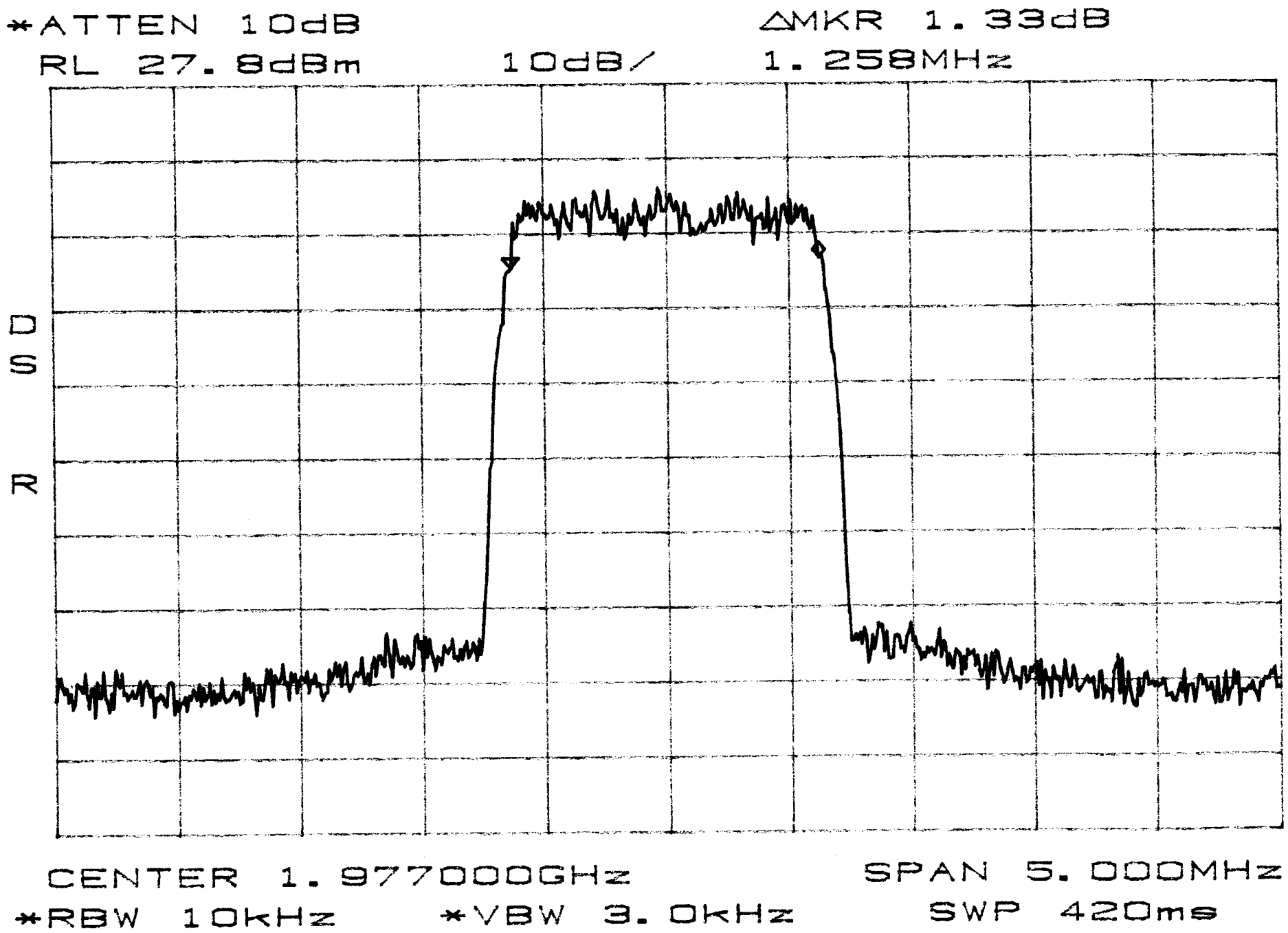
Occupied Band width BAND E,F,C
TDMA IN



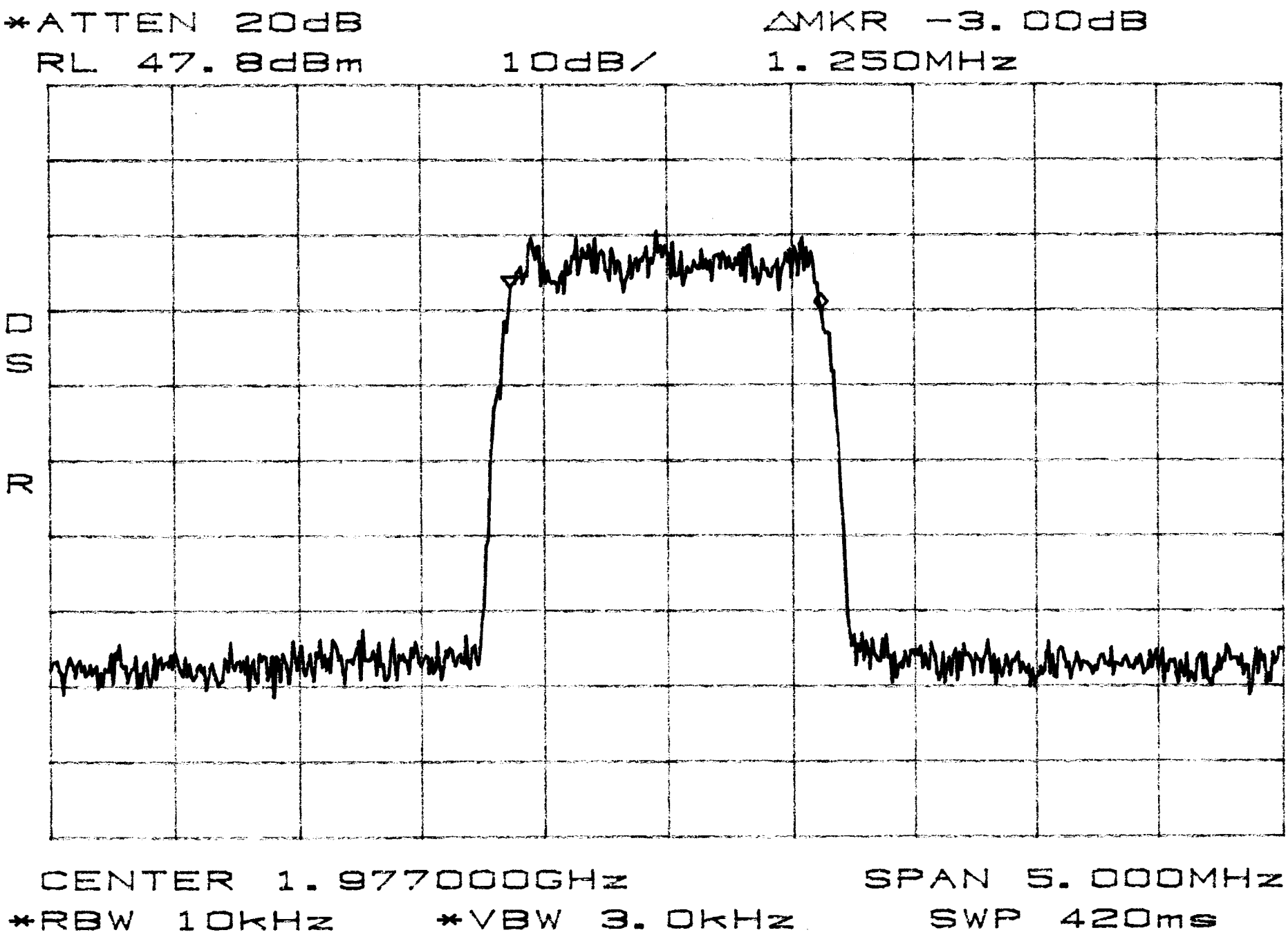
Occupied Band Width BAND E,F,C
TDMA OUT



Occupied BAnd width BAND E, F, C
CDMA IN



Occupied Band Width BAND E,F,C
CDMA OUT



24.238 Emission Limits

The Emission limitations for cellular measurements were performed at the following test location :

■ - ADC facility
■ - Wild River Lab Large Test Site (Case Emissions Test)

TÜV Product Service Test equipment used for Case Emissions Test:

	TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ -	3202	EM-6917B	Electro-Metrics	Biconicalog Periodic	102	9-24-02
■ -	2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	10-20-02
■ -	2865	11867A	Hewlett-Packard	RF Limiter	01972	Code B
■ -	2543	ZHL-1042J	Hewlett-Packard	Preamplifier 1-4 GHz	HO72294-11	Code B
■ -	2477	AFT-8434	Avantek	Preamplifier 4-8 GHz	2613A92801	3-18-03
■ -	2478	AWT-18037	Avantek	Preamplifier 8-18 GHz	1001-9226	3-18-03
■ -	2690	8566B	Hewlett-Packard	Spectrum Analyzer (Unit F)	2430A00930	11-19-02
■ -	2678	85662A	Hewlett-Packard	Analyzer Display (Unit F)	2403A08134	11-19-02
■ -	2684	85650A	Hewlett-Packard	Quasi-Peak Adapter (Unit F)	2521A01006	11-19-02

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually. Equipment labeled CNR (Calibration Not Required) is verified and compensated for with NIST traceable calibrated equipment.

Emissions Limits Data on following pages

TÜV PRODUCT SERVICE INC 19333 Wild Mountain Road Taylors Falls MN 55084-1758 Tel: 651 638 0297 Fax: 651 638 0298 Rev.No 1.0

Conducted Emission Limits Test for ADC Inc.
Digivance Long Range Coverage System
Model Numbers DGVL-431110SYS, DGVL-441110SYS, DGVL-451110SYS, and DGVL-461110SYS.

The out of band emissions were measured directly from the EUT antenna output with a spectrum analyzer from 30 MHz to the 10^{th} harmonic of the highest carrier frequency. Test signals used: CW, FM (1 kHz @ 8 kHz deviation), TDMA, and CDMA. The different signals were input one at a time to the EUT. In all cases, the out of band emissions were less than –13dBm from the equation

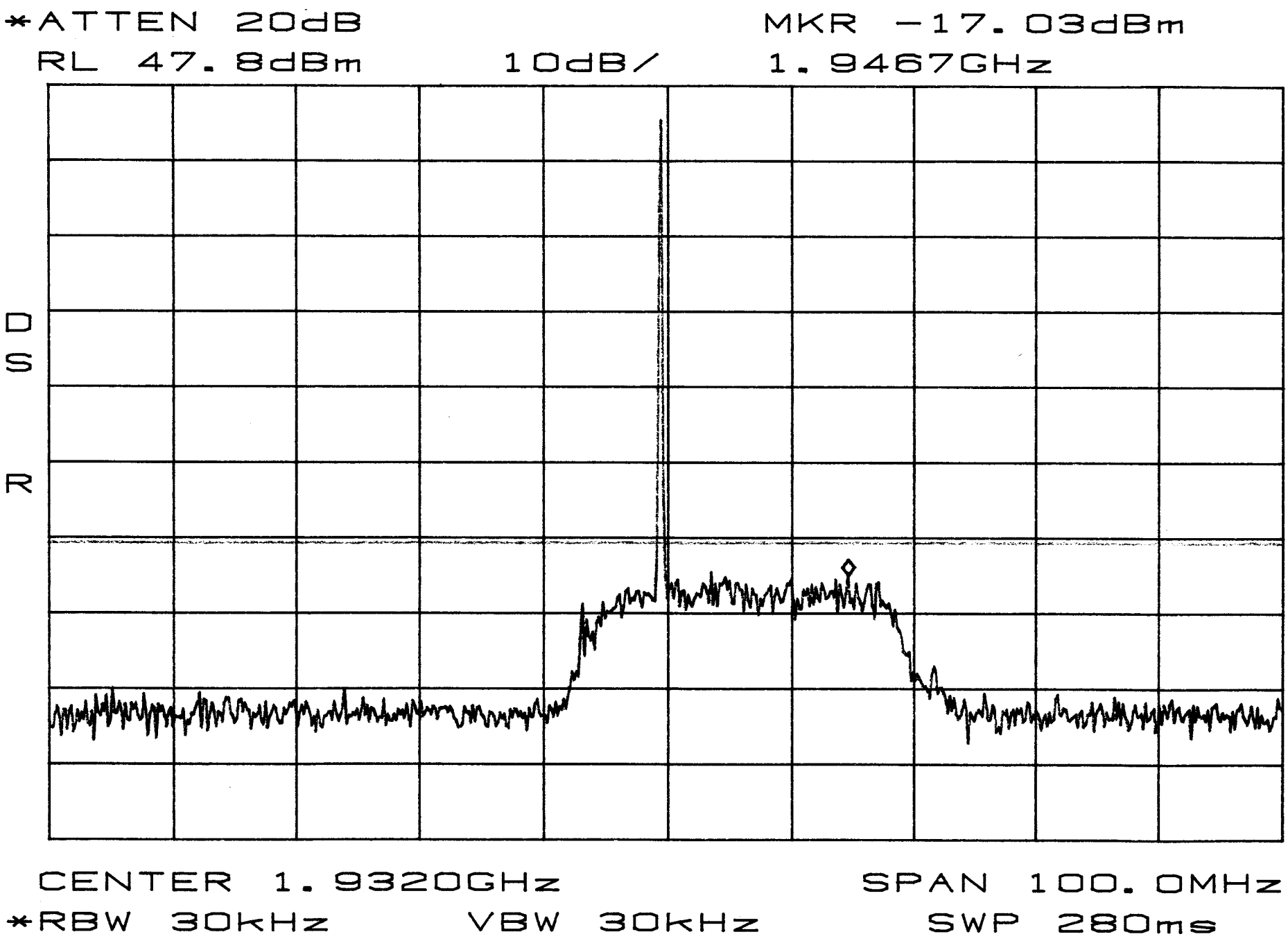
$$(43.47\text{dBm} - [43 + 10\log(22\text{W})])$$

Band edge compliance is also demonstrated using a CDMA signal at the upper and lower limits of the band and a resolution bandwidth of 30 kHz.

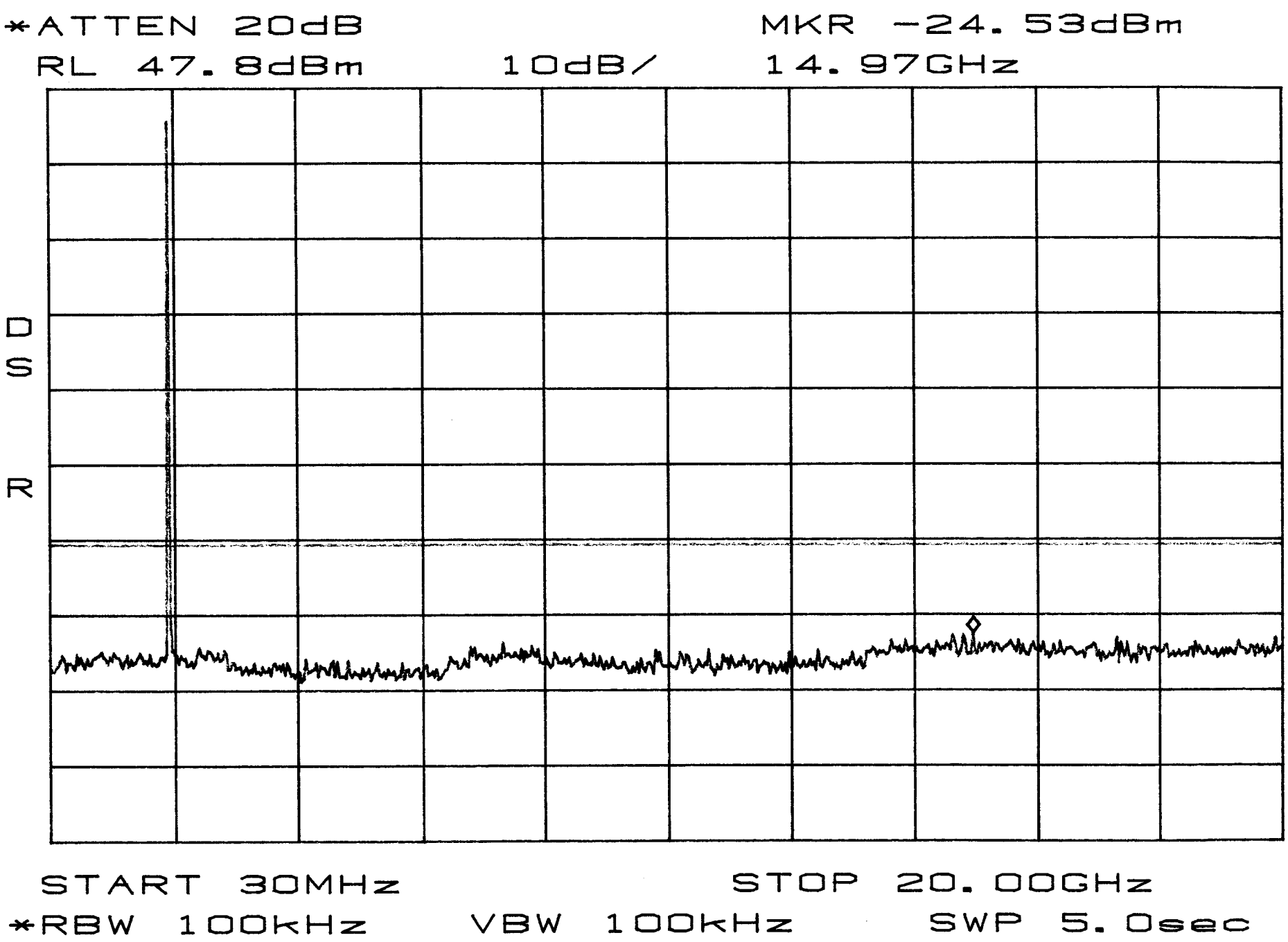
Results:

Pass (see plots)

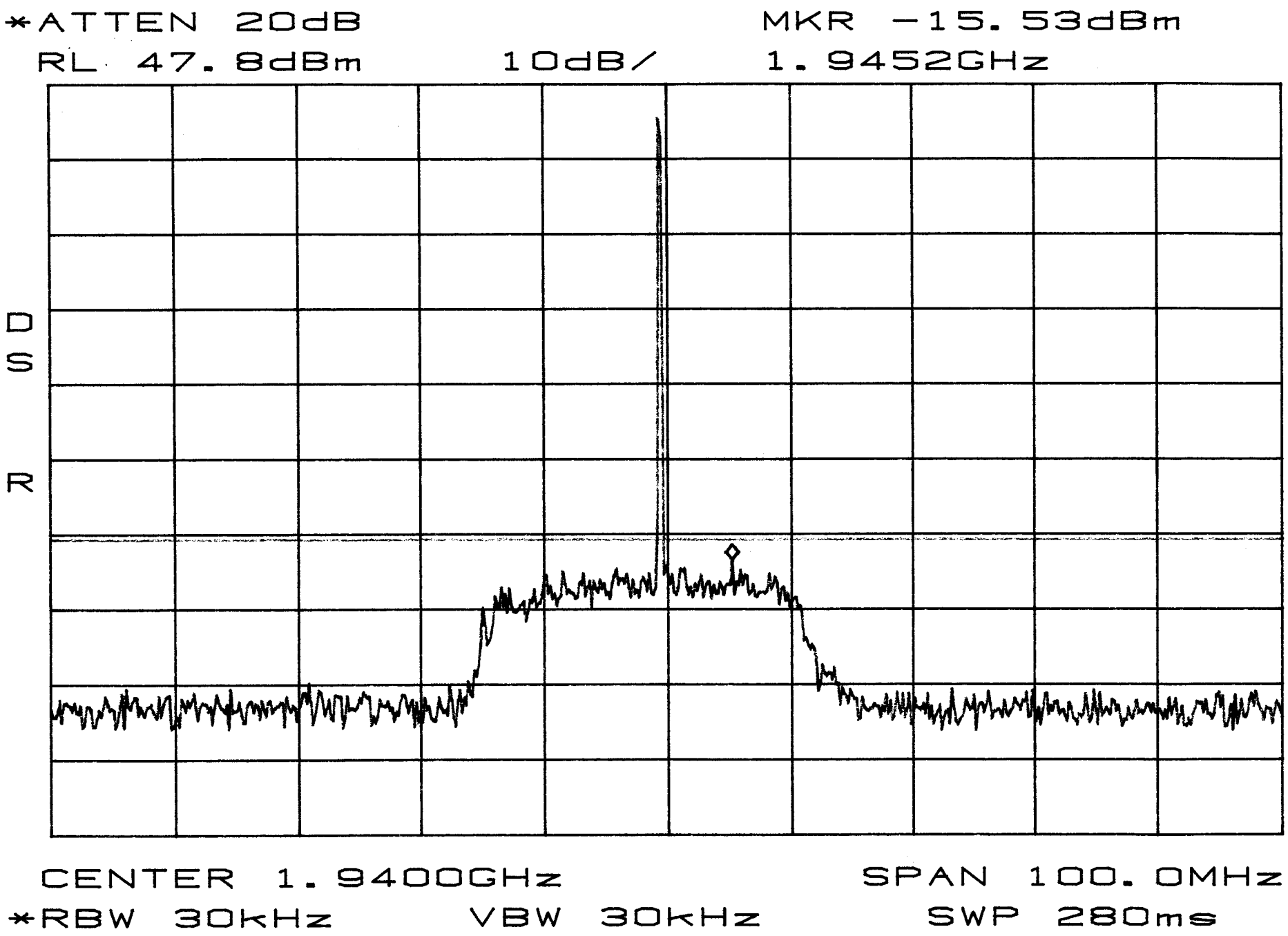
Conducted Emissions Band A
Low



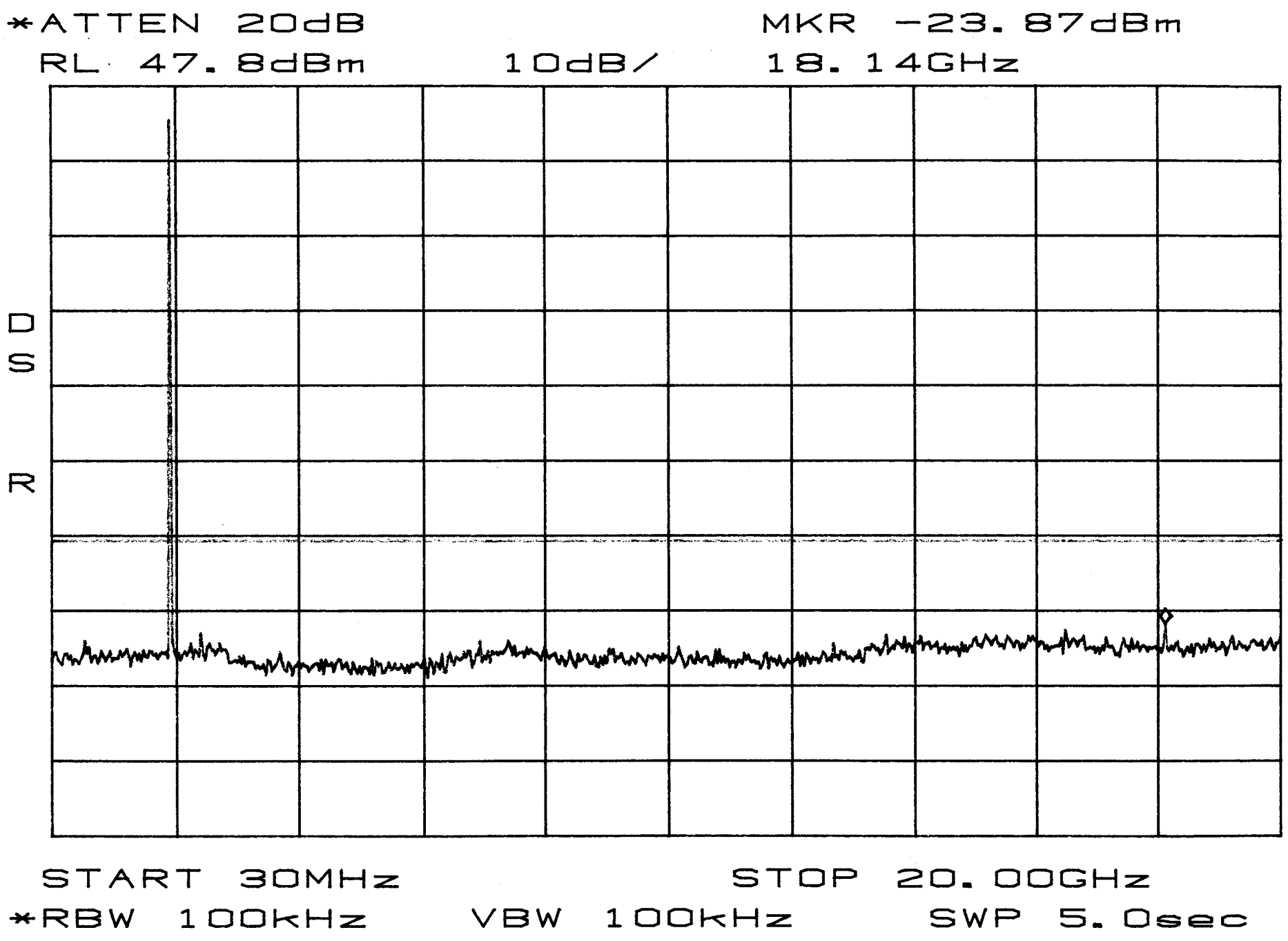
Conducted Emissions Band A
Low



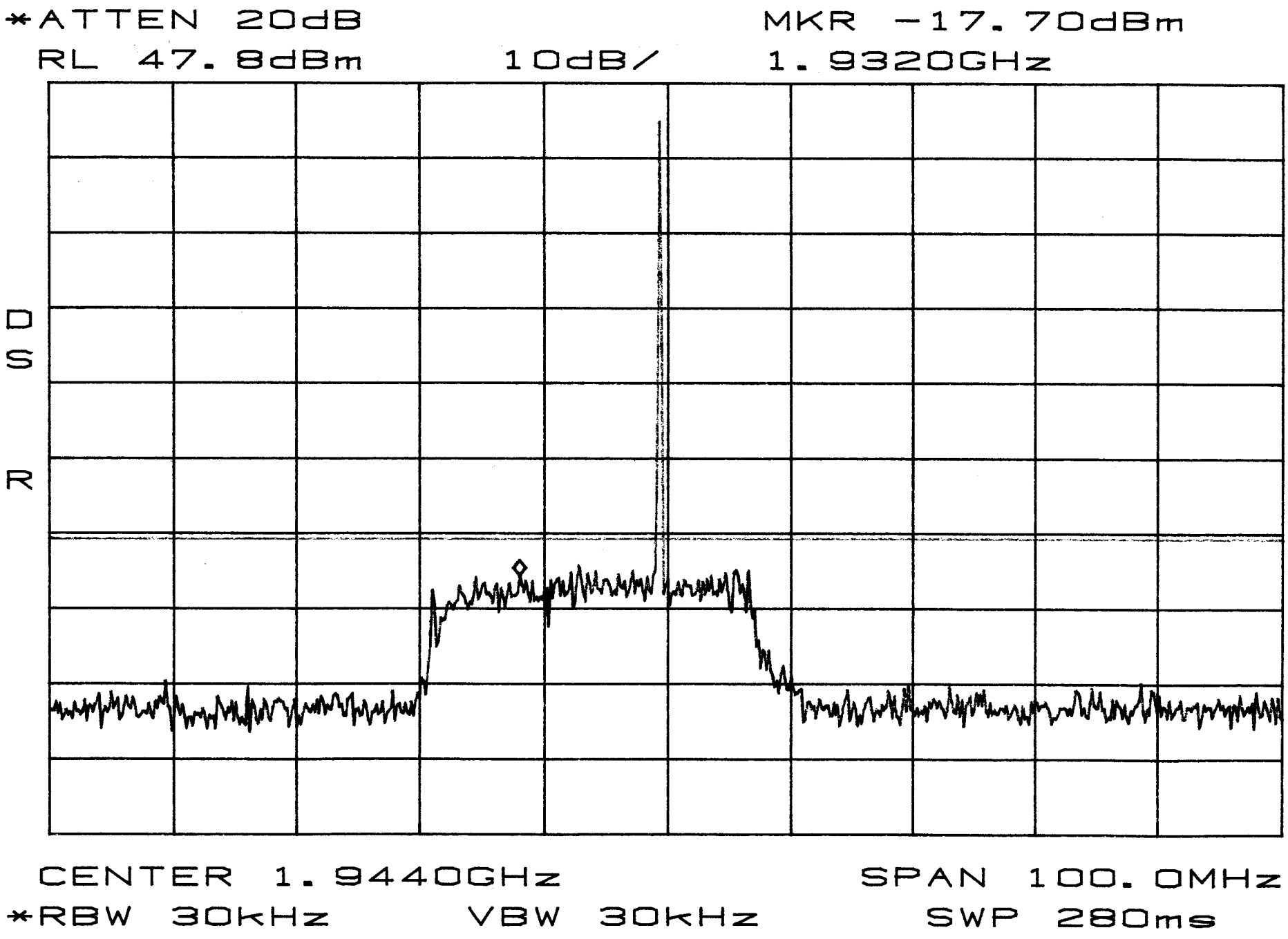
Conducted Emissions Band A
Mid



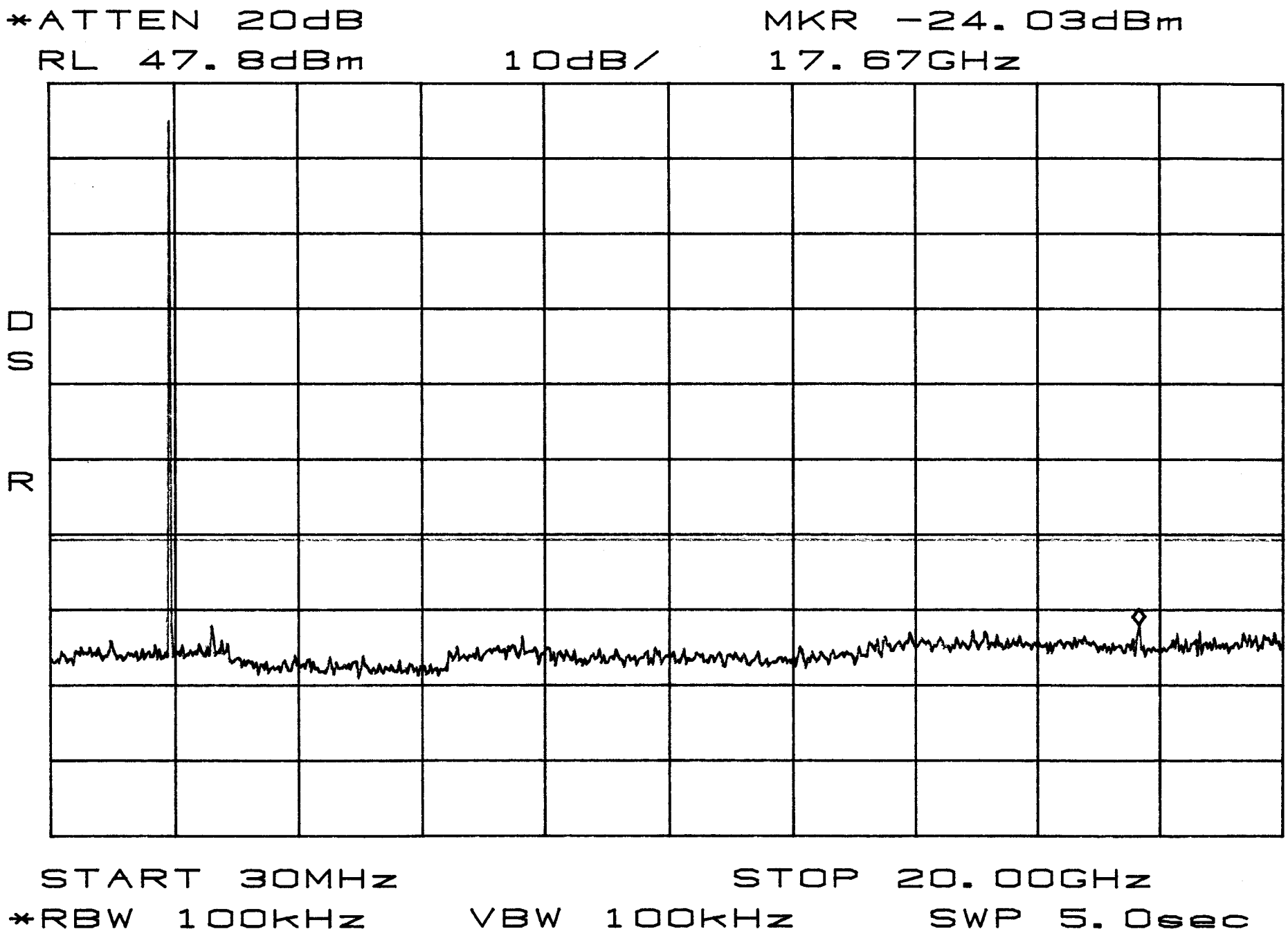
Conducted Emissions Band A
Mid



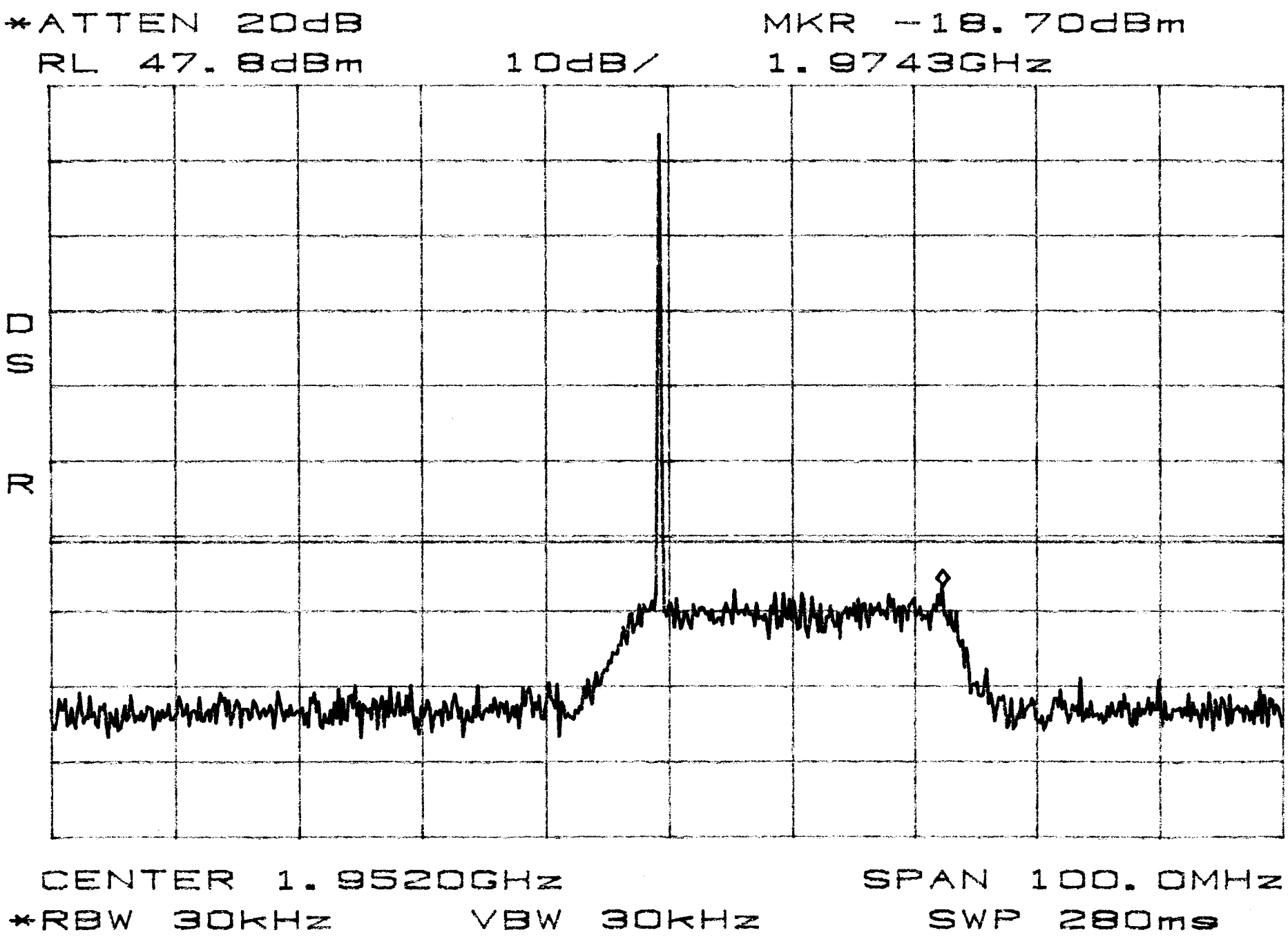
Conducted Emissions Band A
High



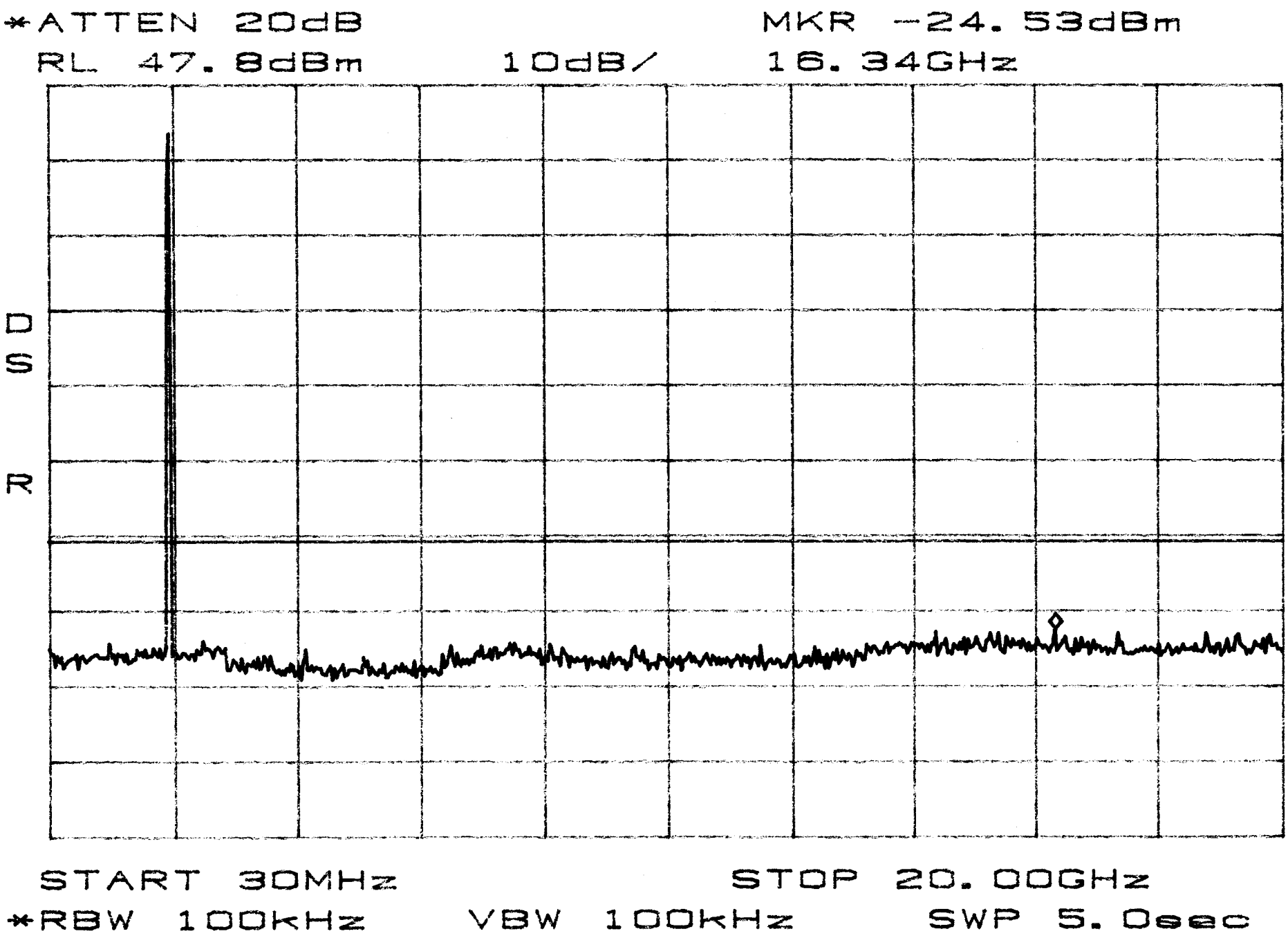
Conducted Emissions Band A
High



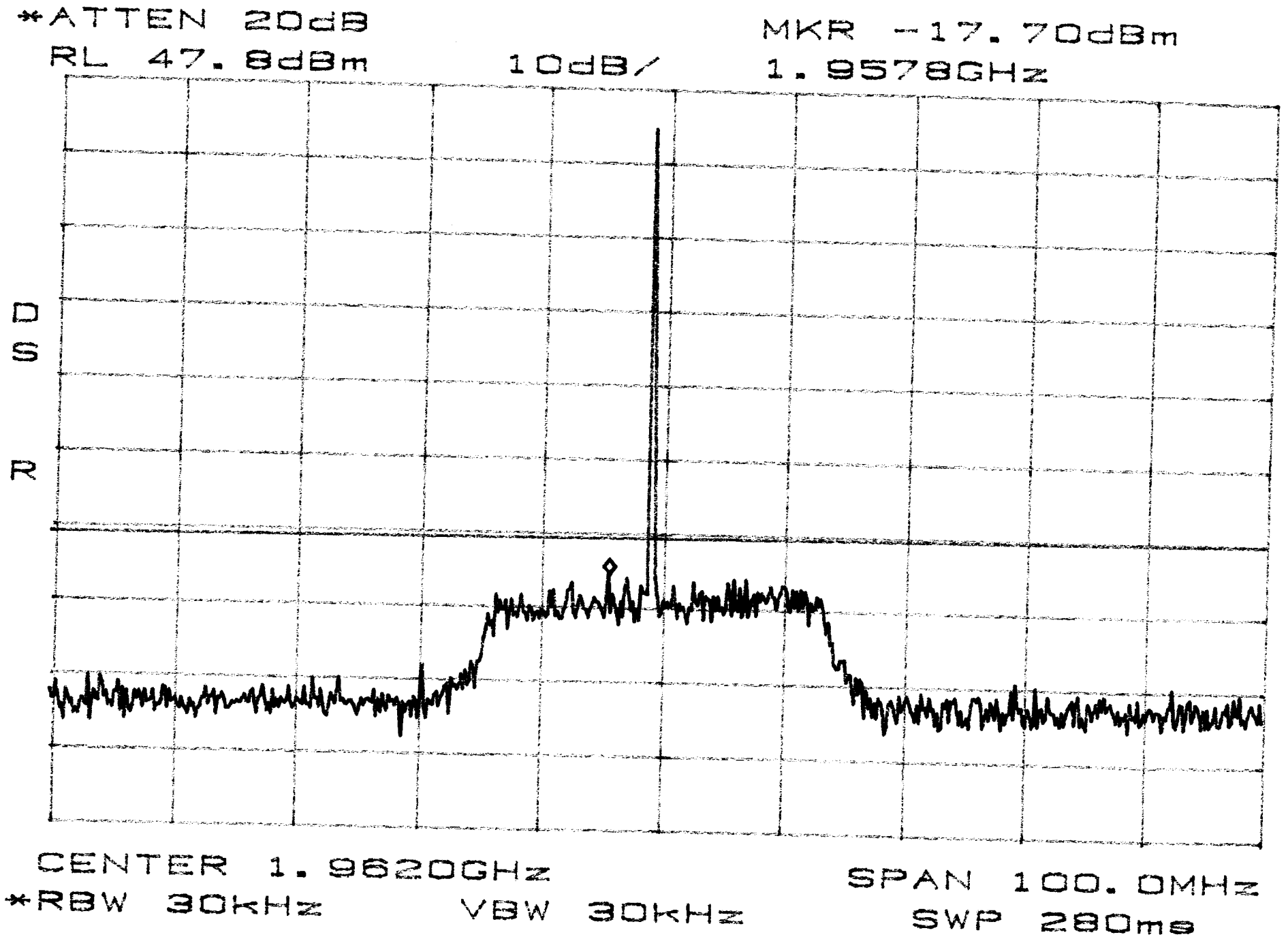
Conducted Emissions Band B
Low



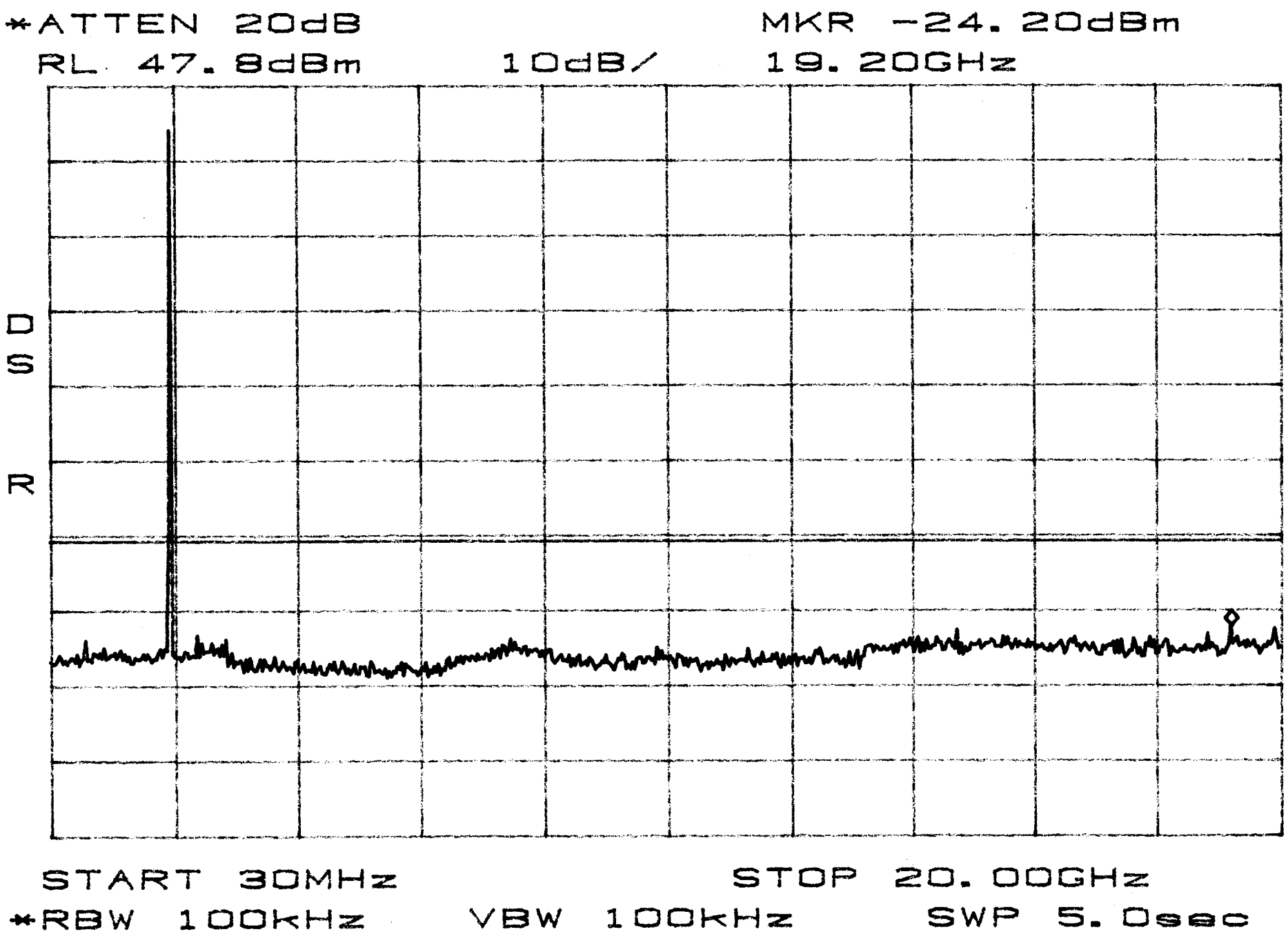
Conducted Emissions Band B
Low



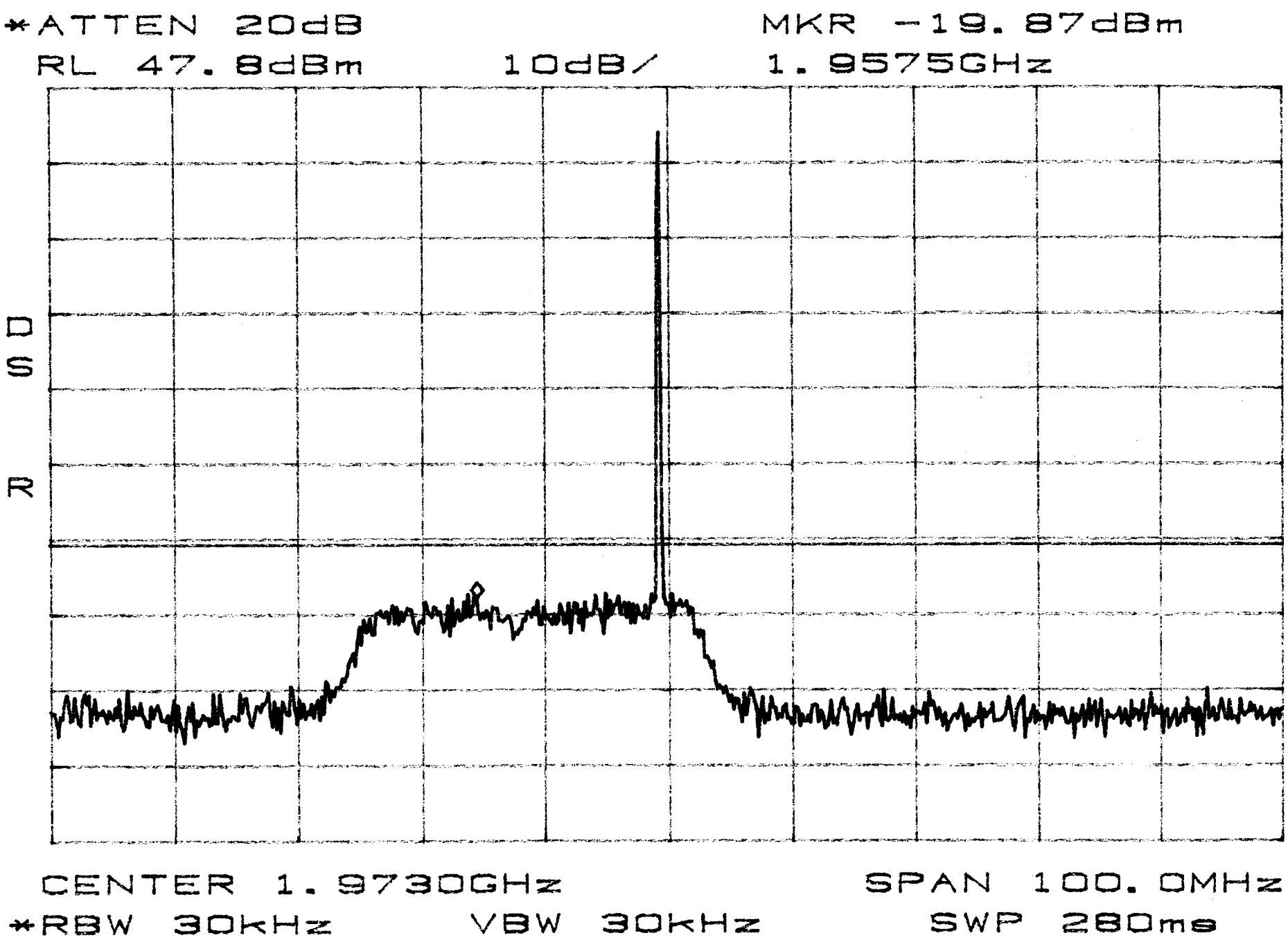
Conducted Emissions Band B
Mid



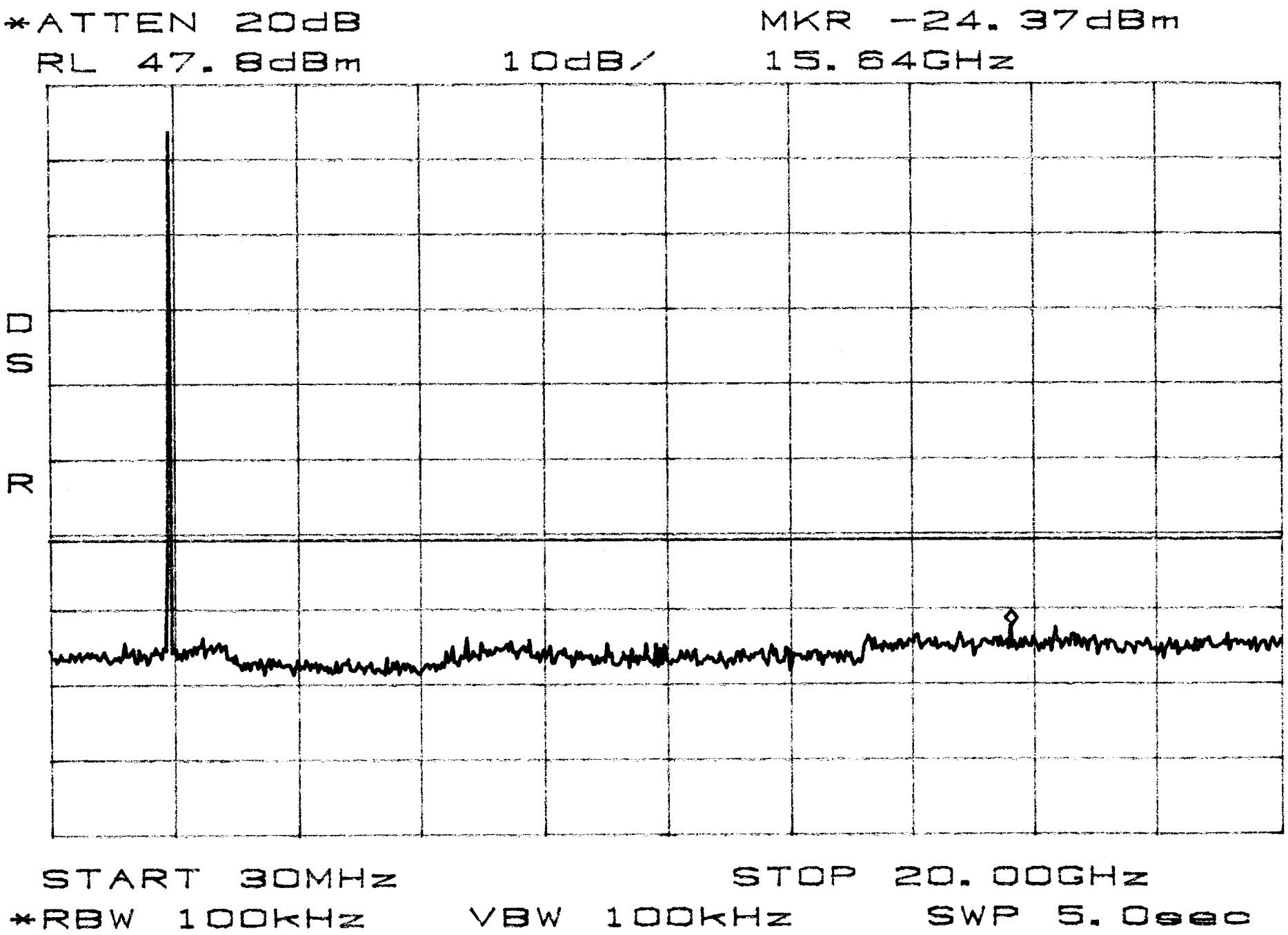
Conducted Emissions Band B
Mid



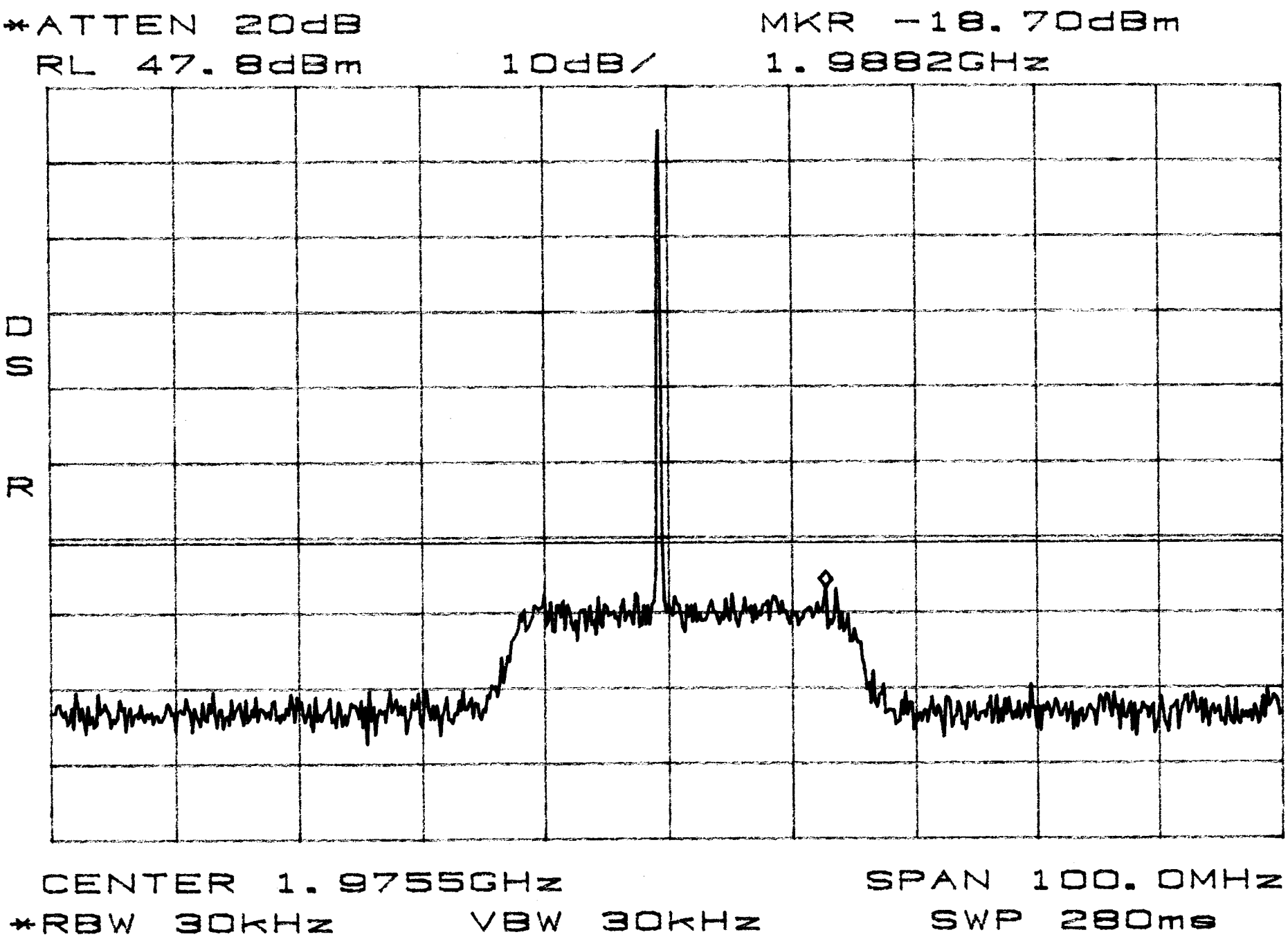
Conducted Emissions Band B
High



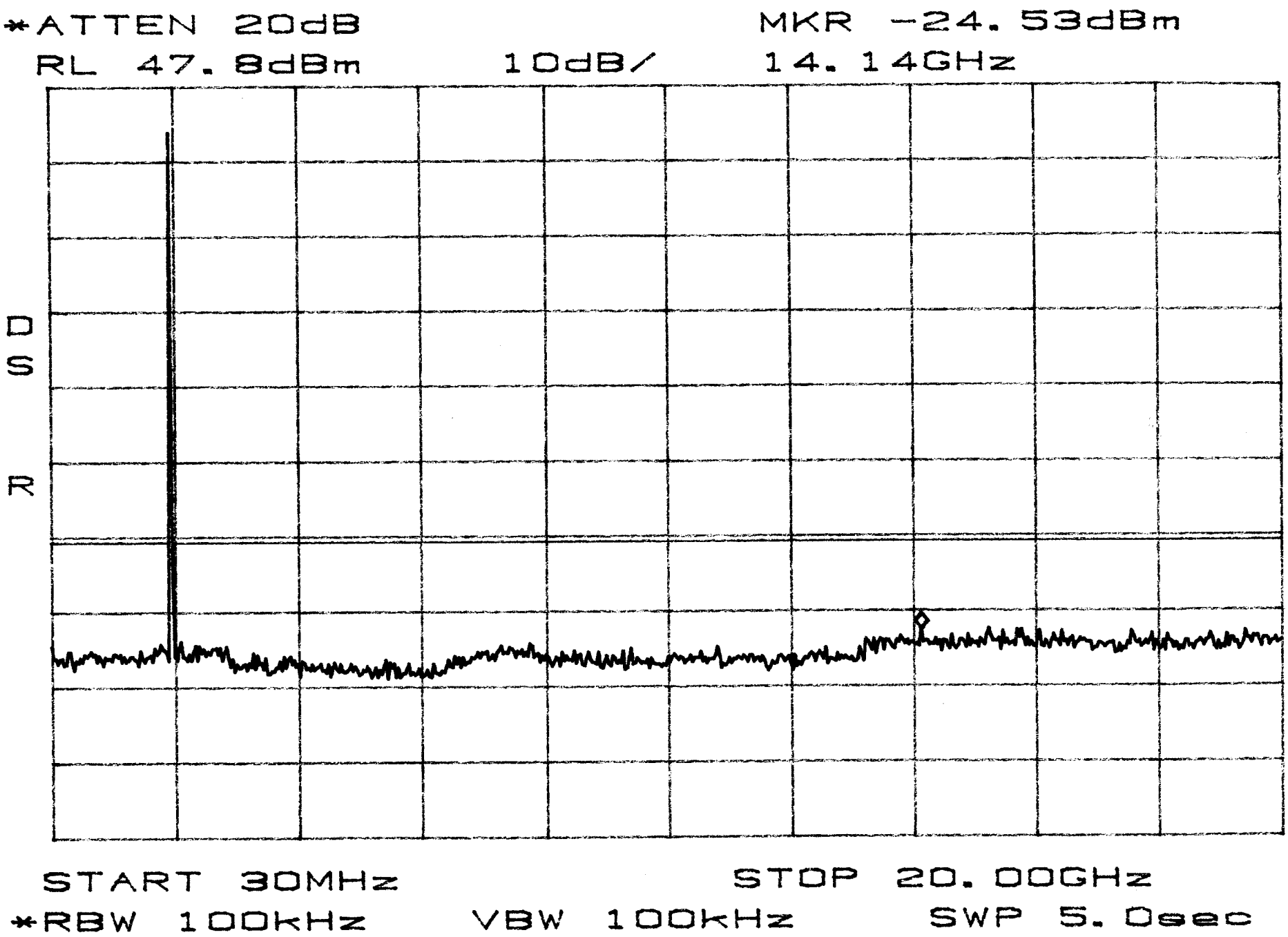
Conducted Emissions Band B
High



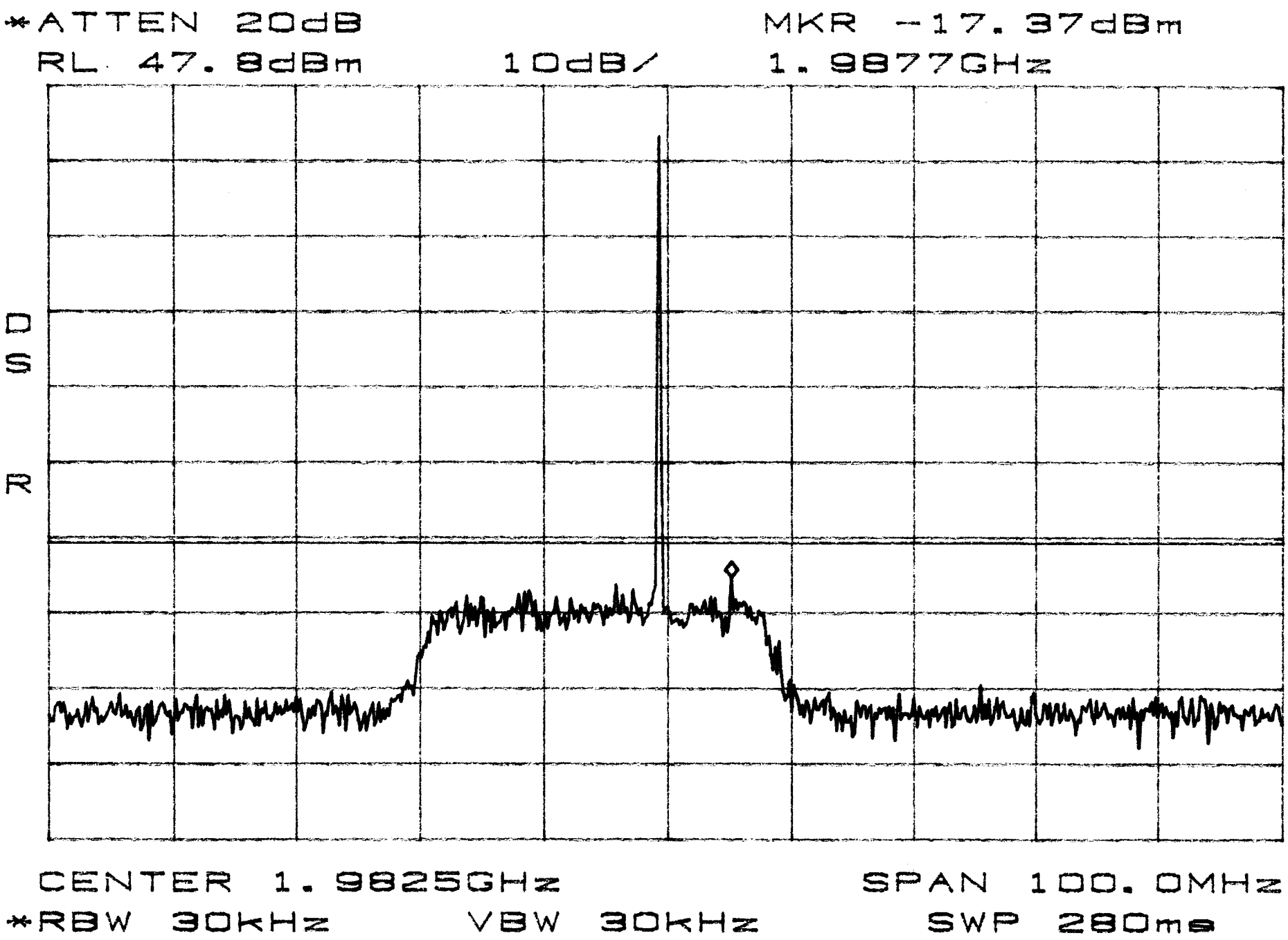
Conducted Emissions Band C
Low



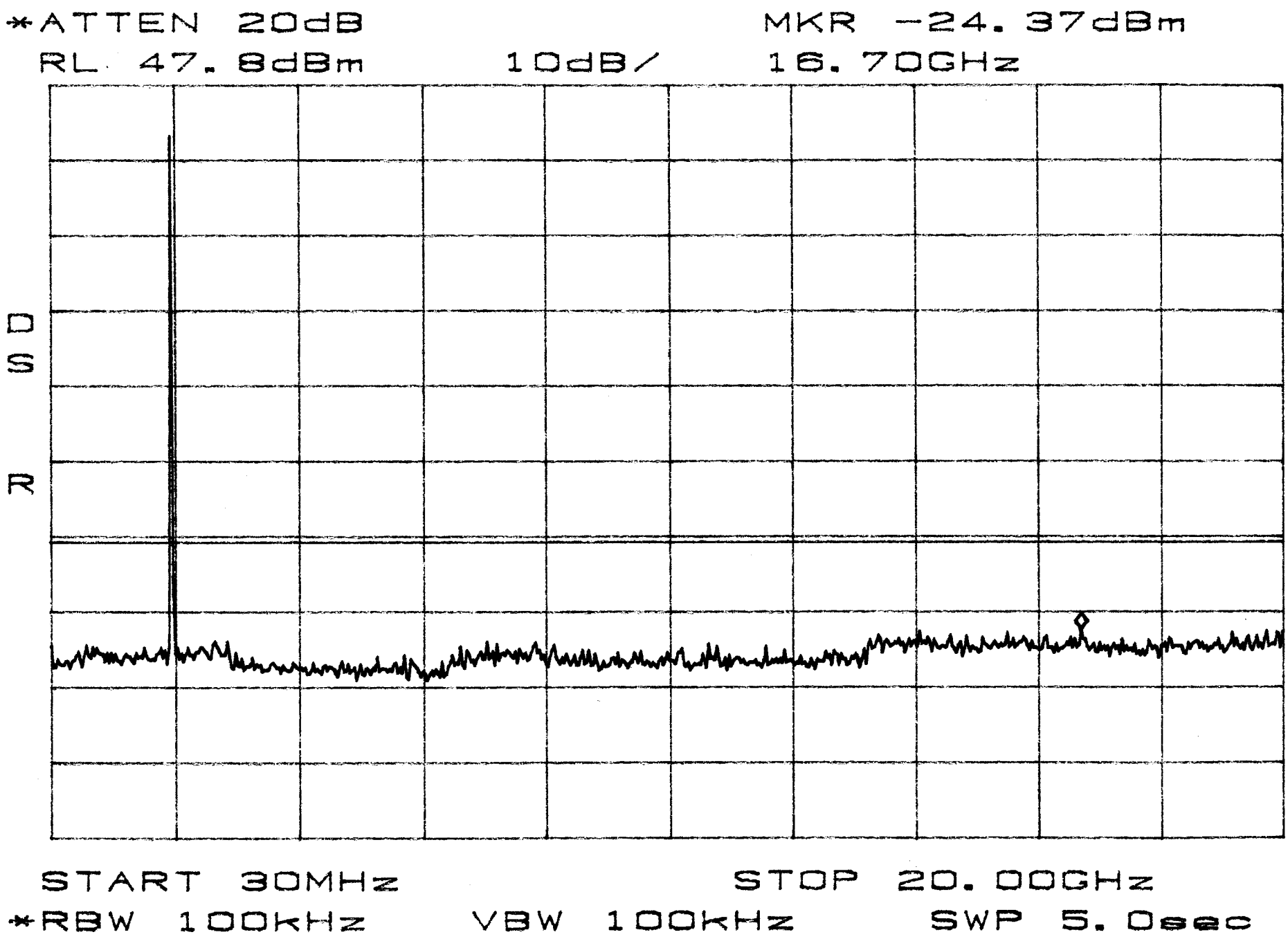
Conducted Emissions Band C
Low



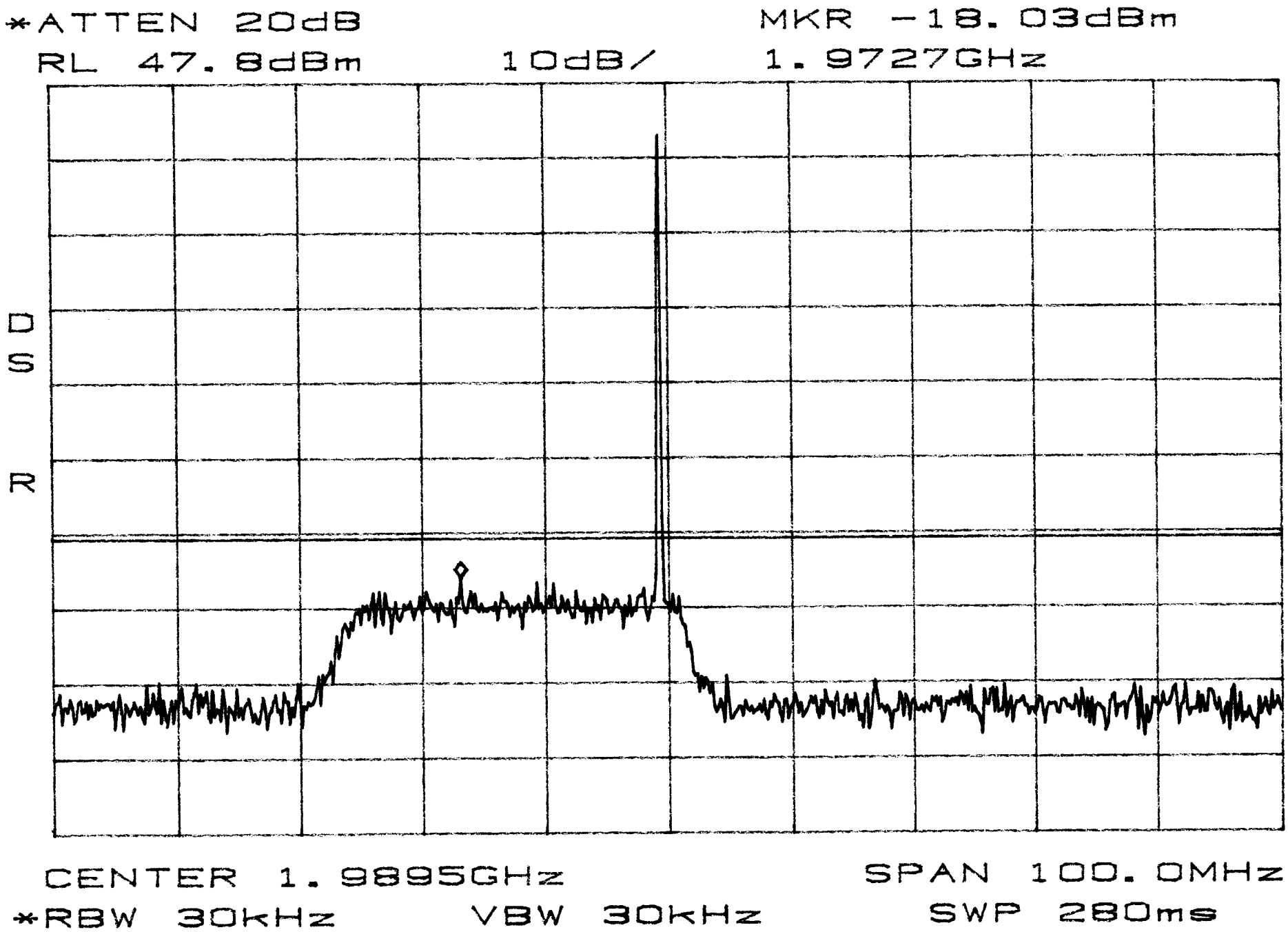
Conducted Emissions Band C
Mid



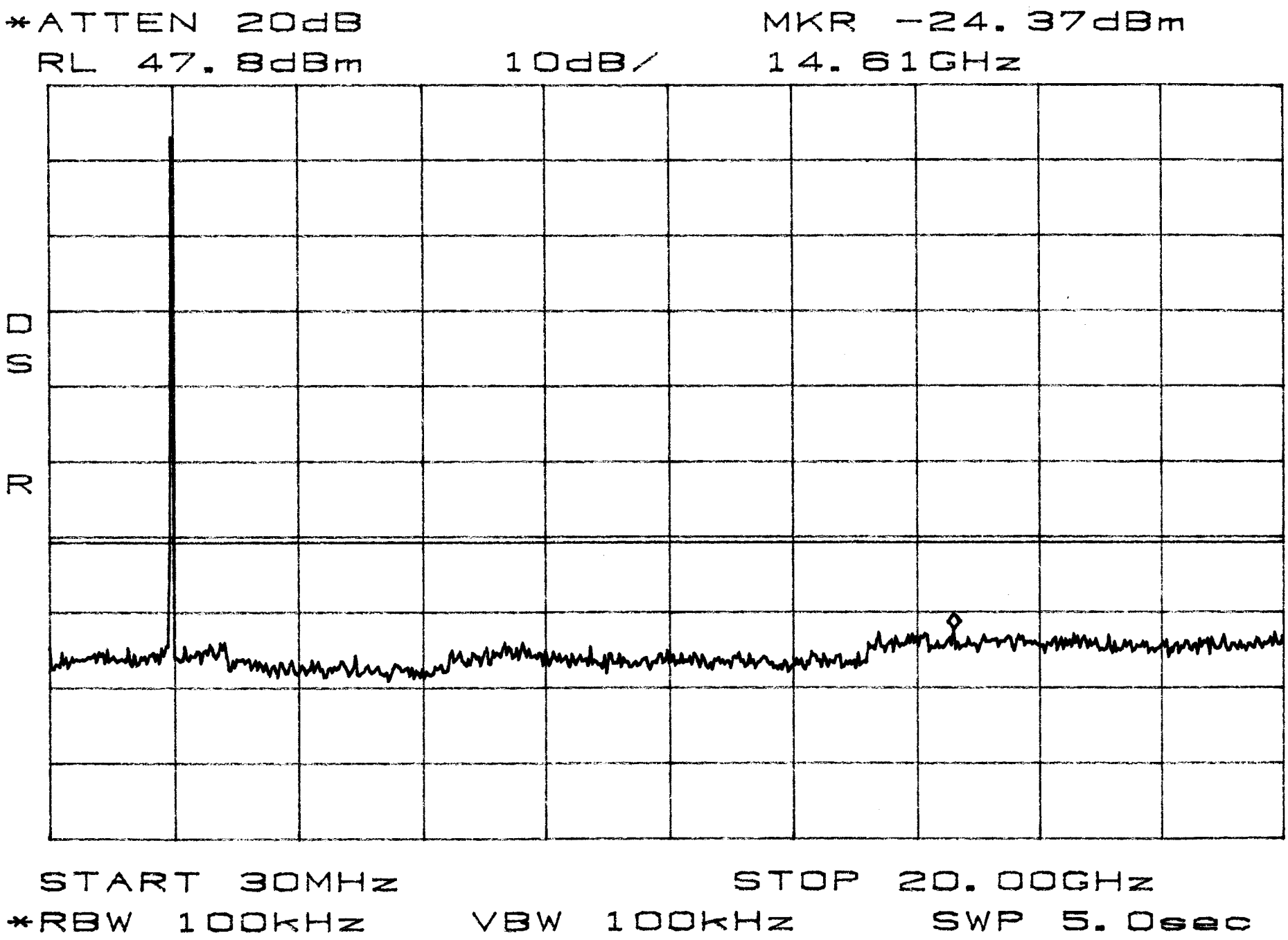
Conducted Emissions Band C
Mid



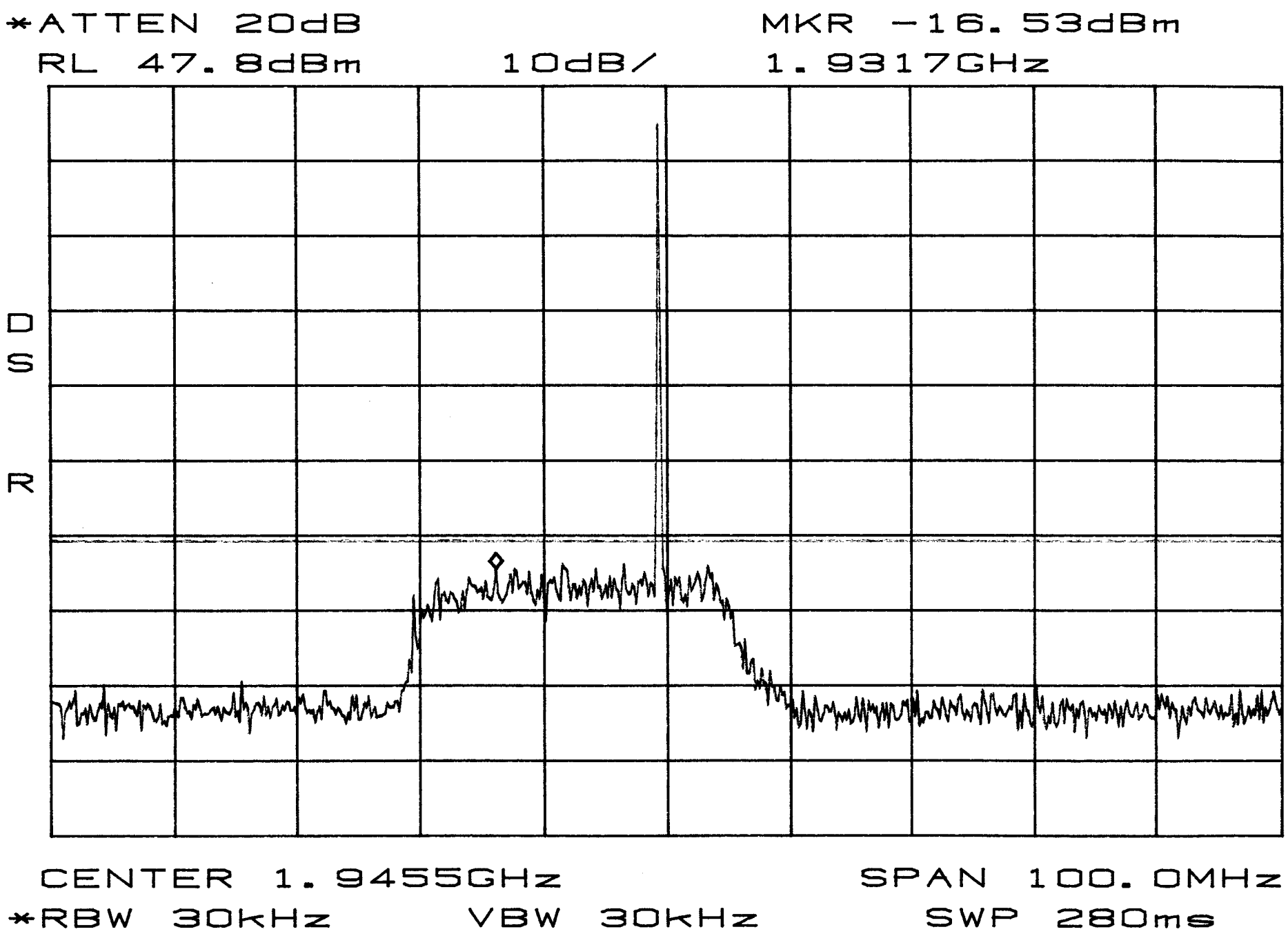
Conducted Emissions Band C
High



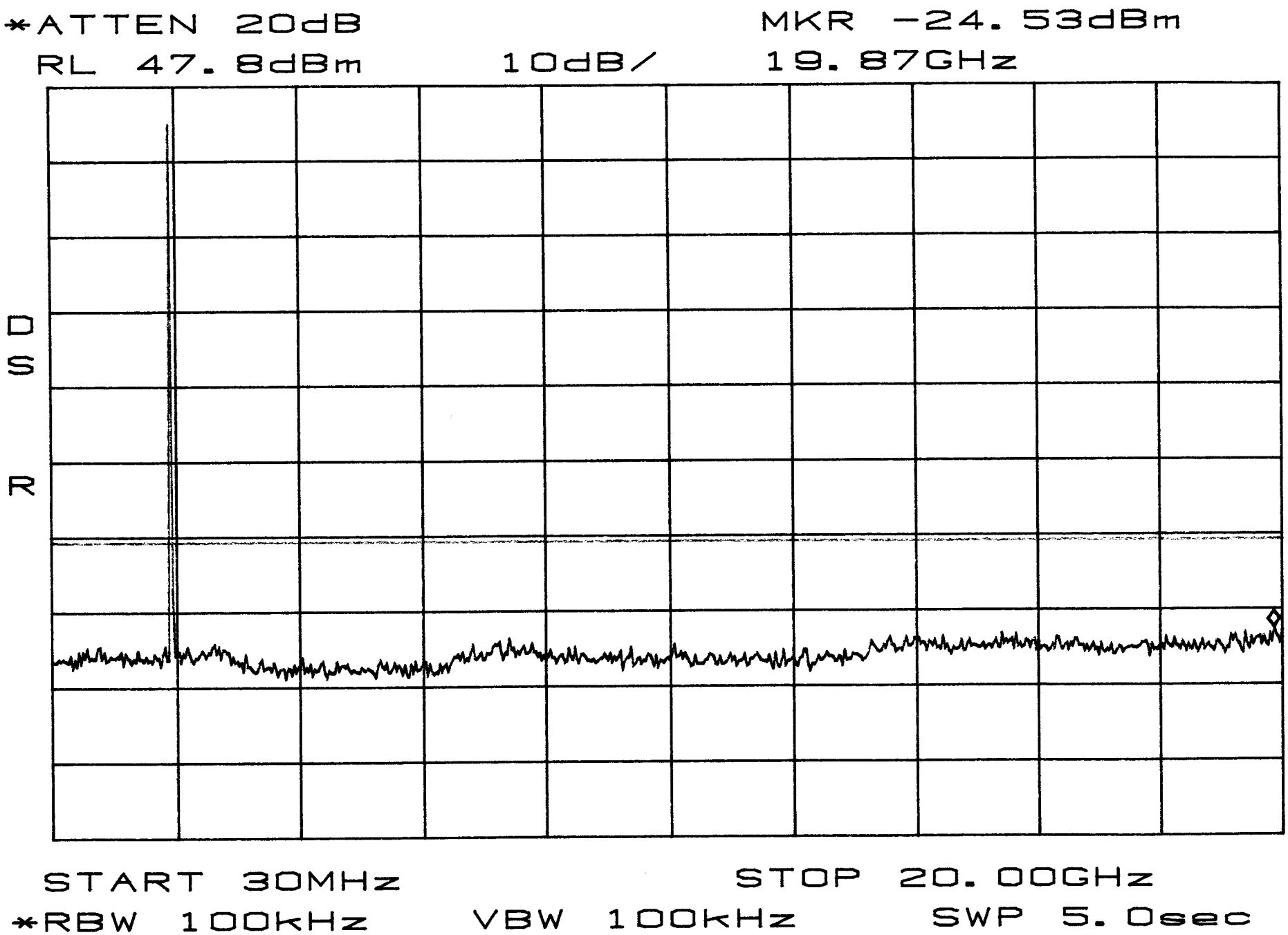
Conducted Emissions Band C
High



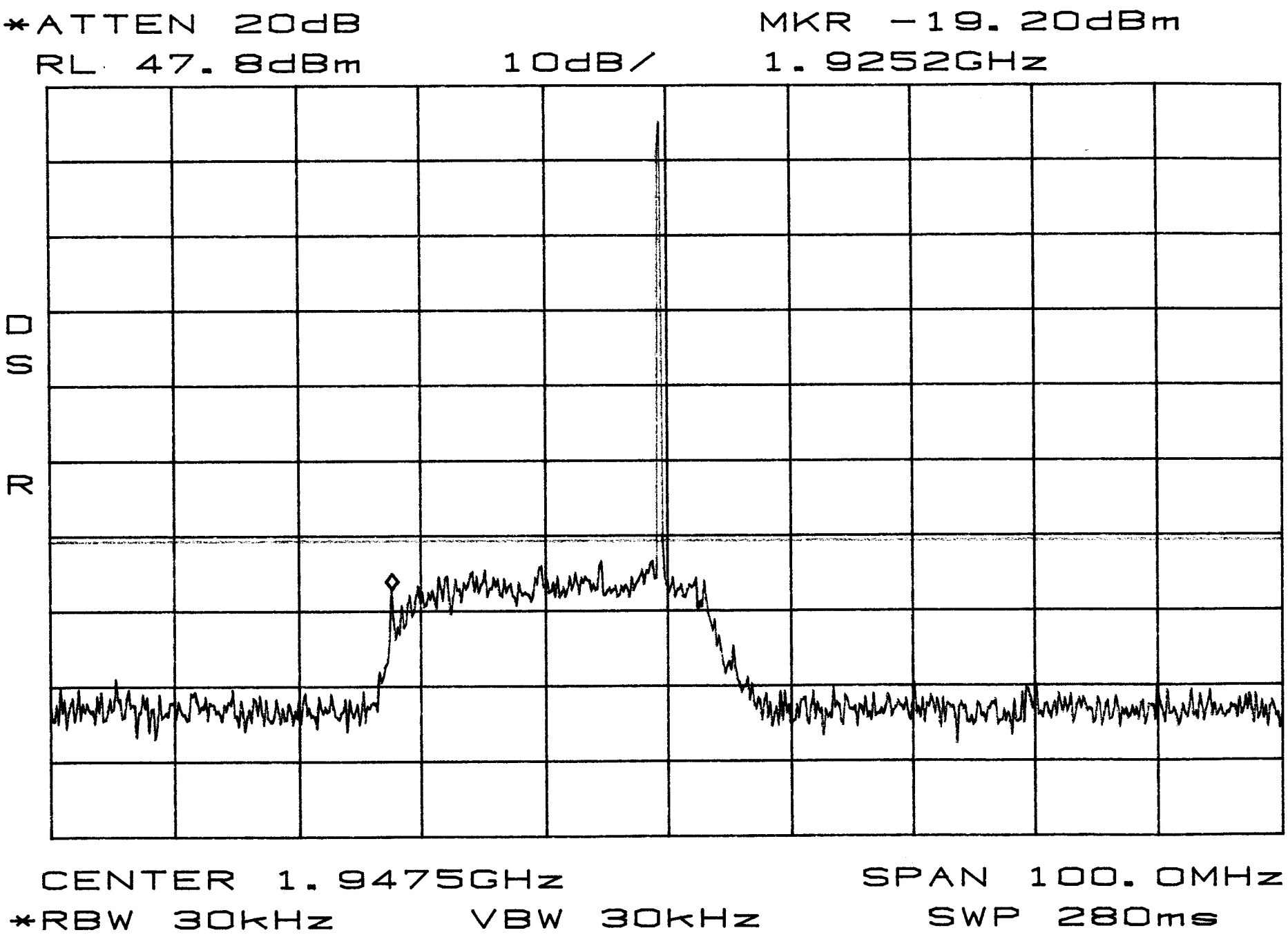
Conducted Emissions Band D
Low



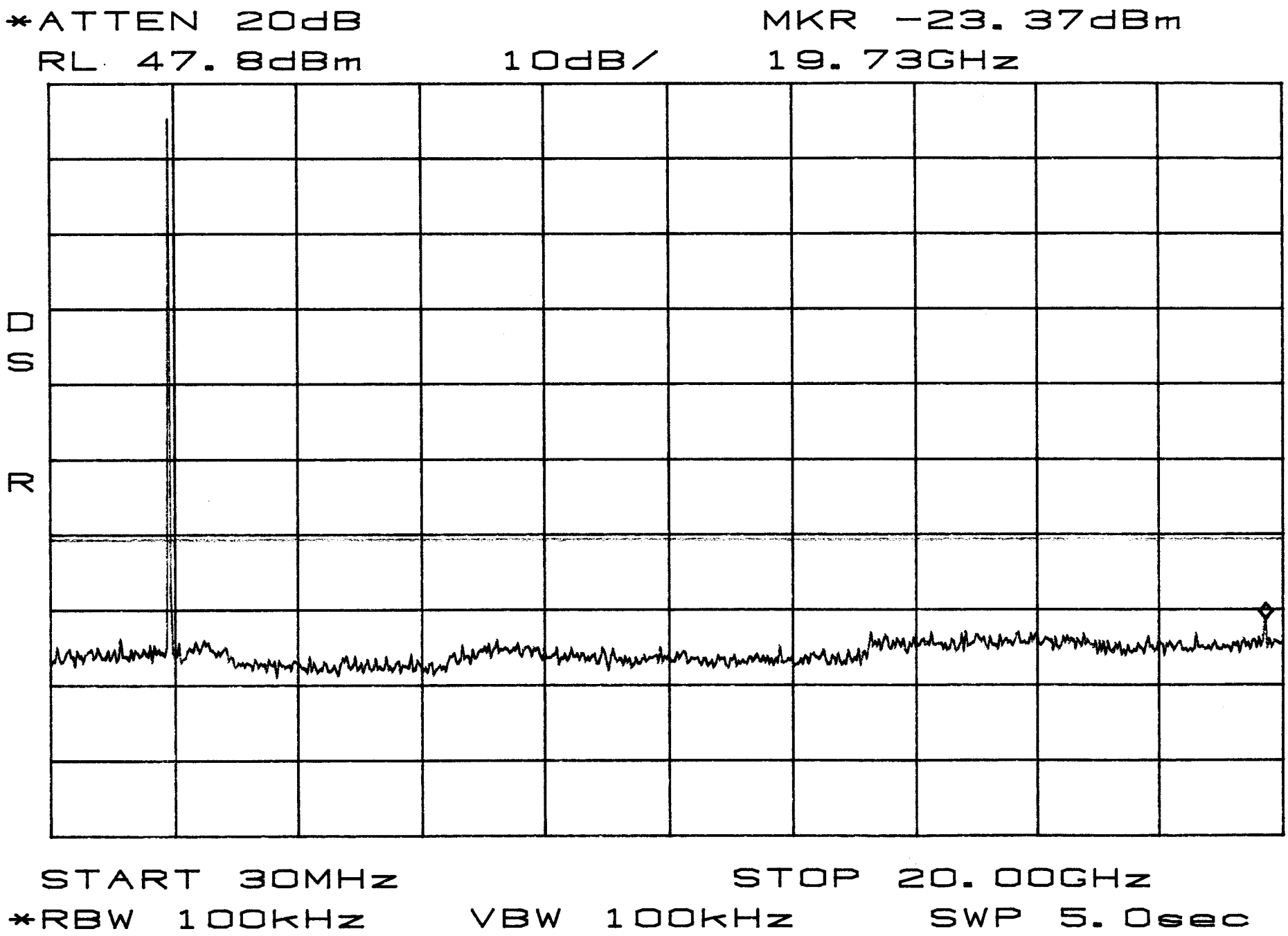
Conducted Emissions Band D
Low



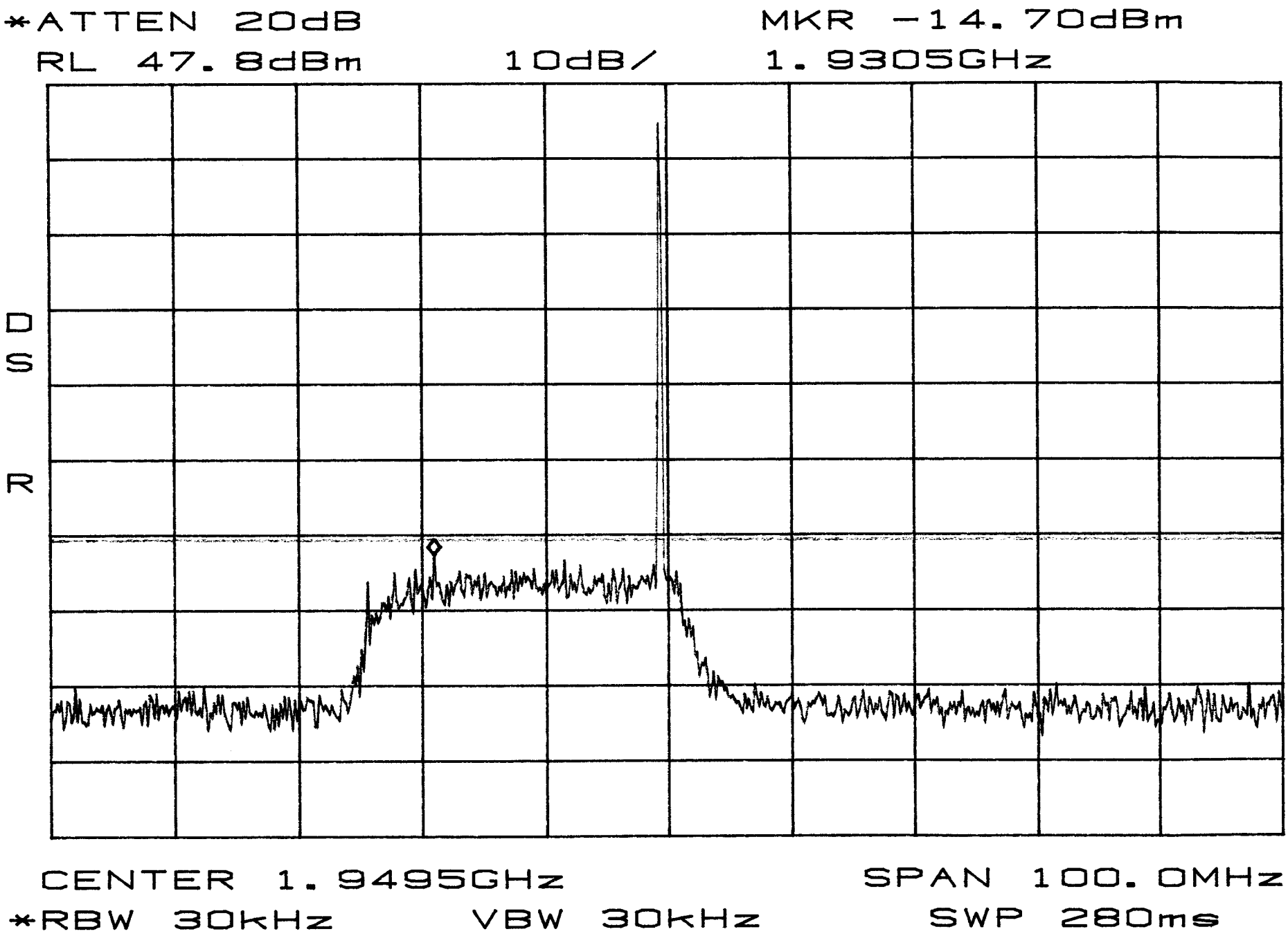
Conducted Emissions Band D
Mid



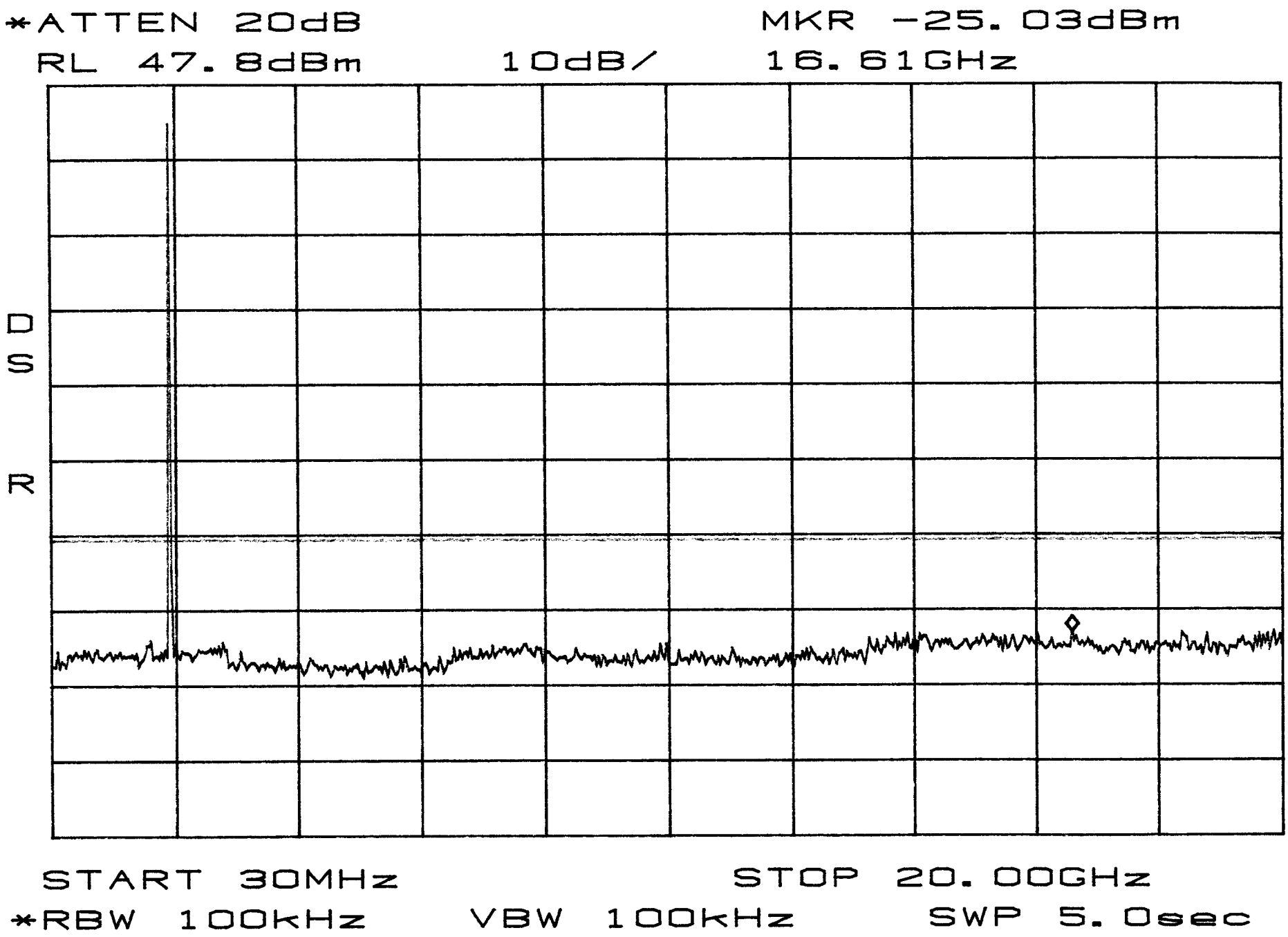
Conducted Emissions Band D
Mid



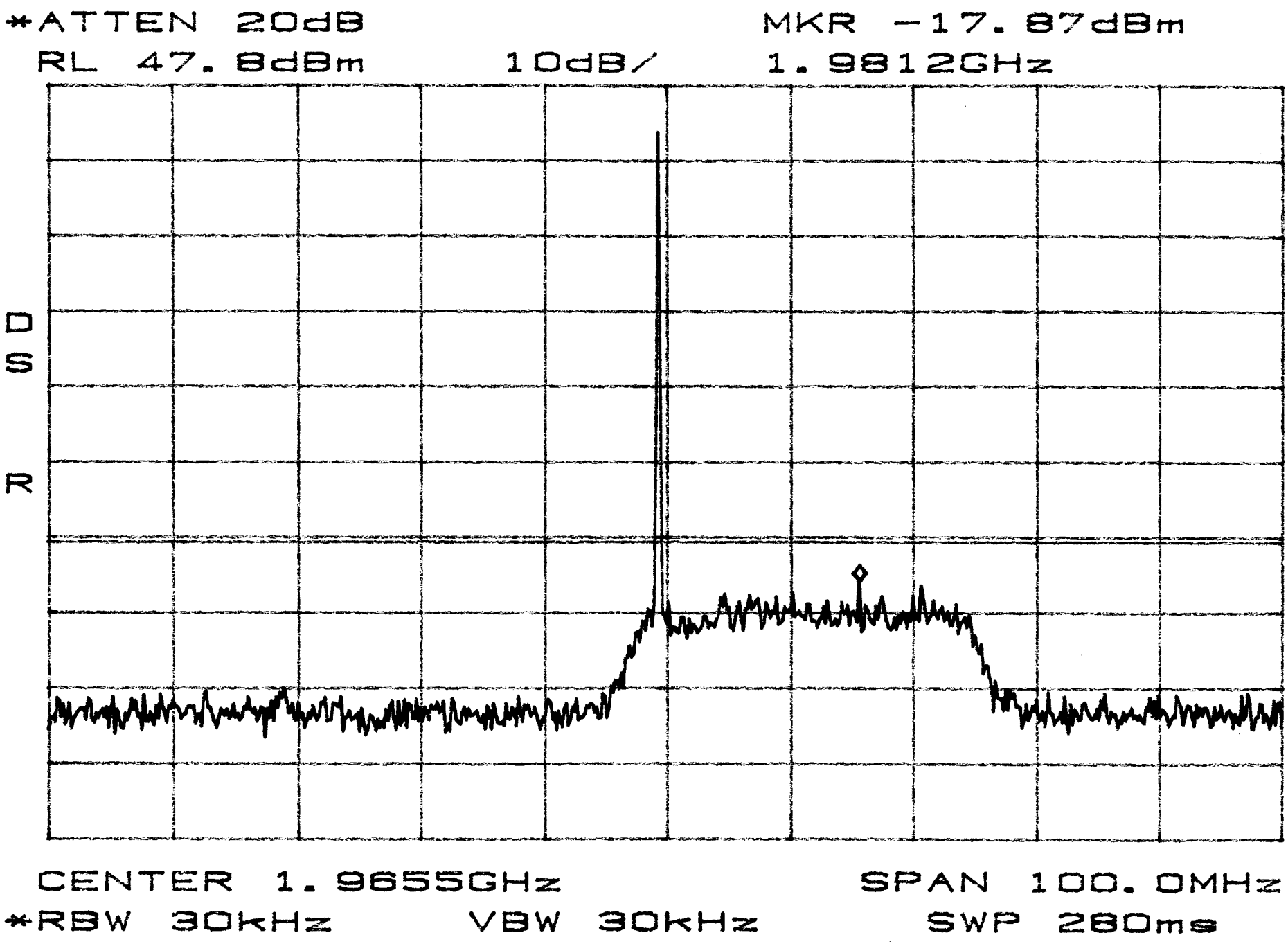
Conducted Emissions Band D
High



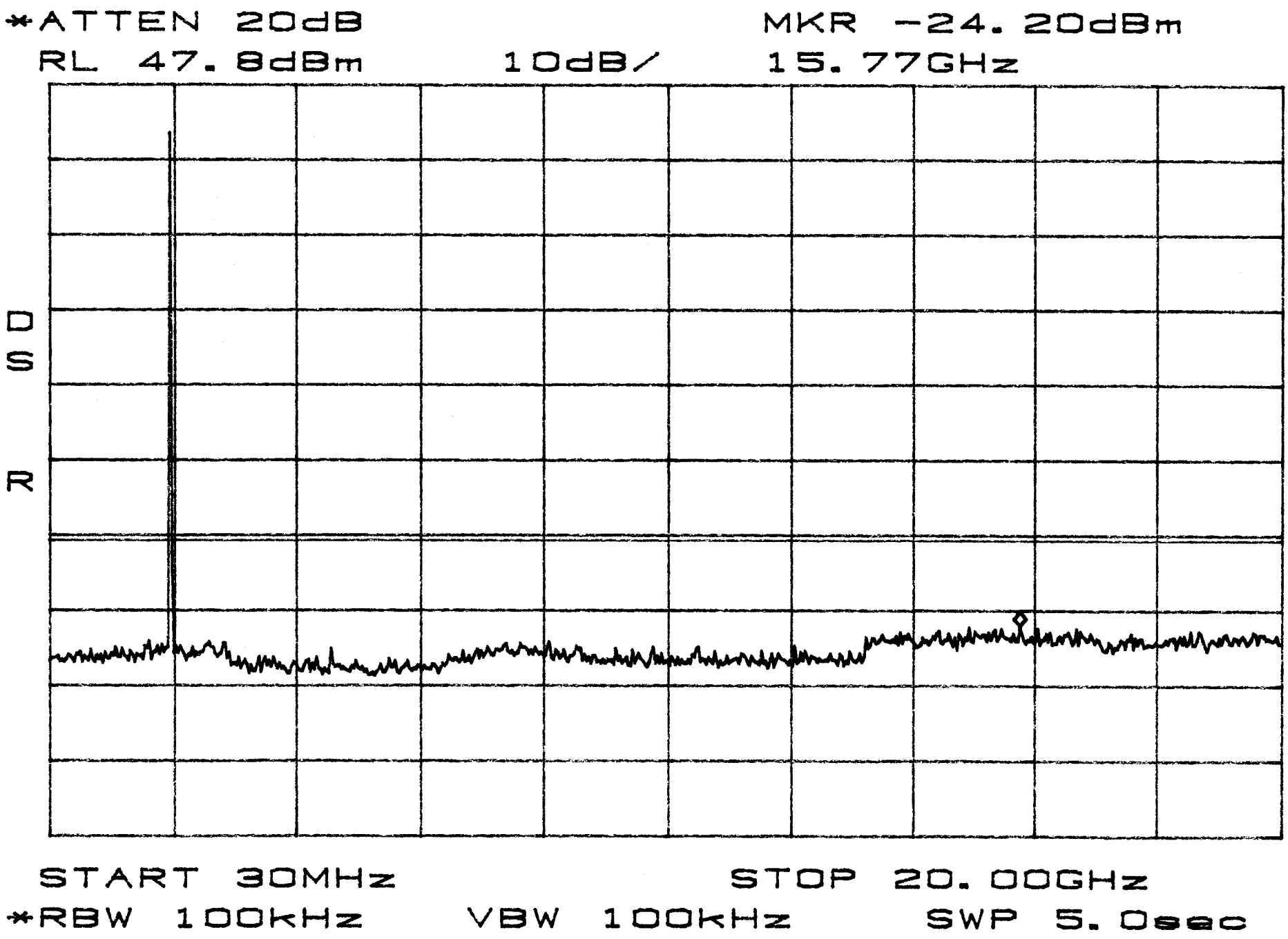
Conducted Emissions Band D
High



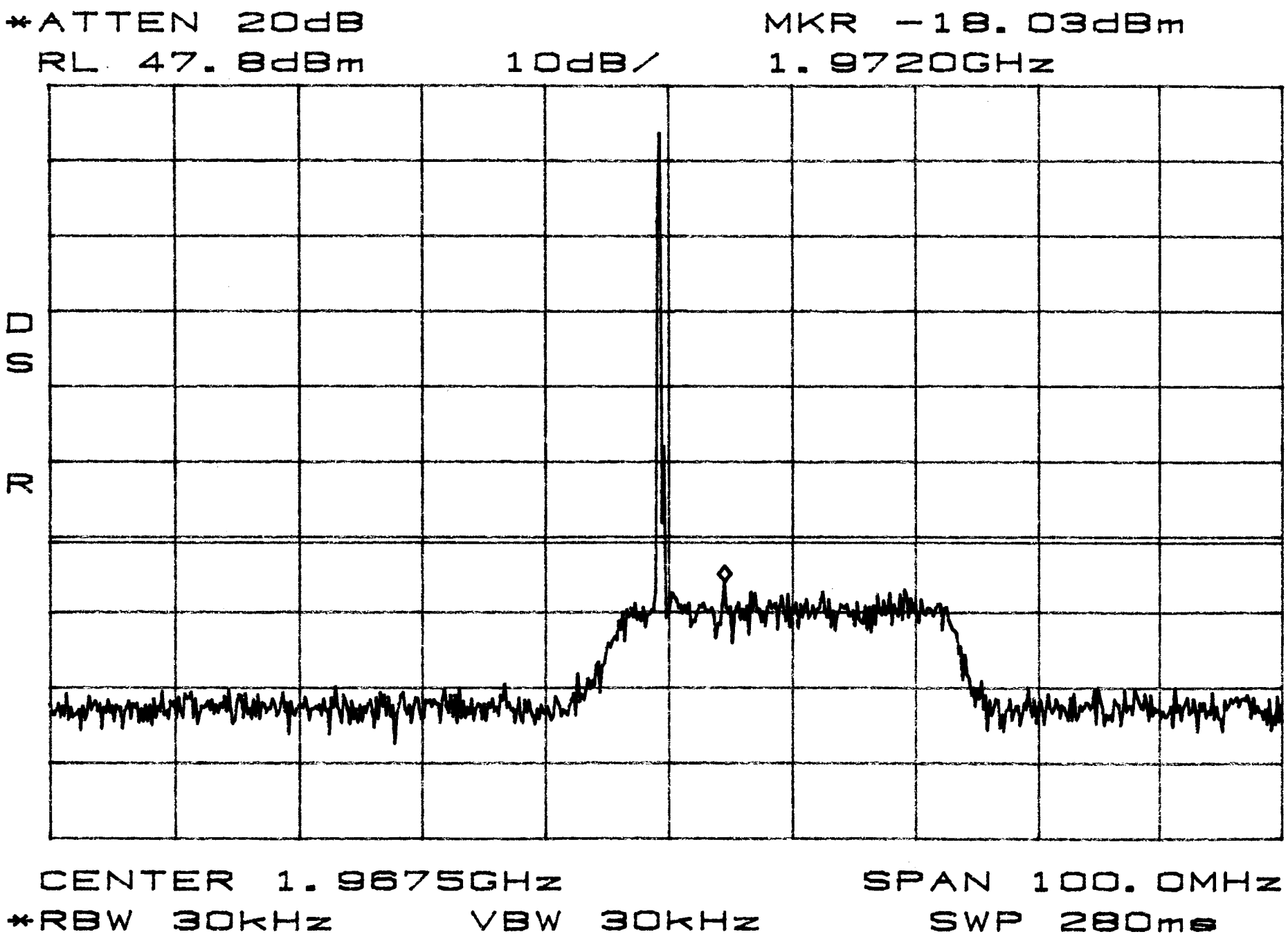
Conducted Emissions Band E
Low



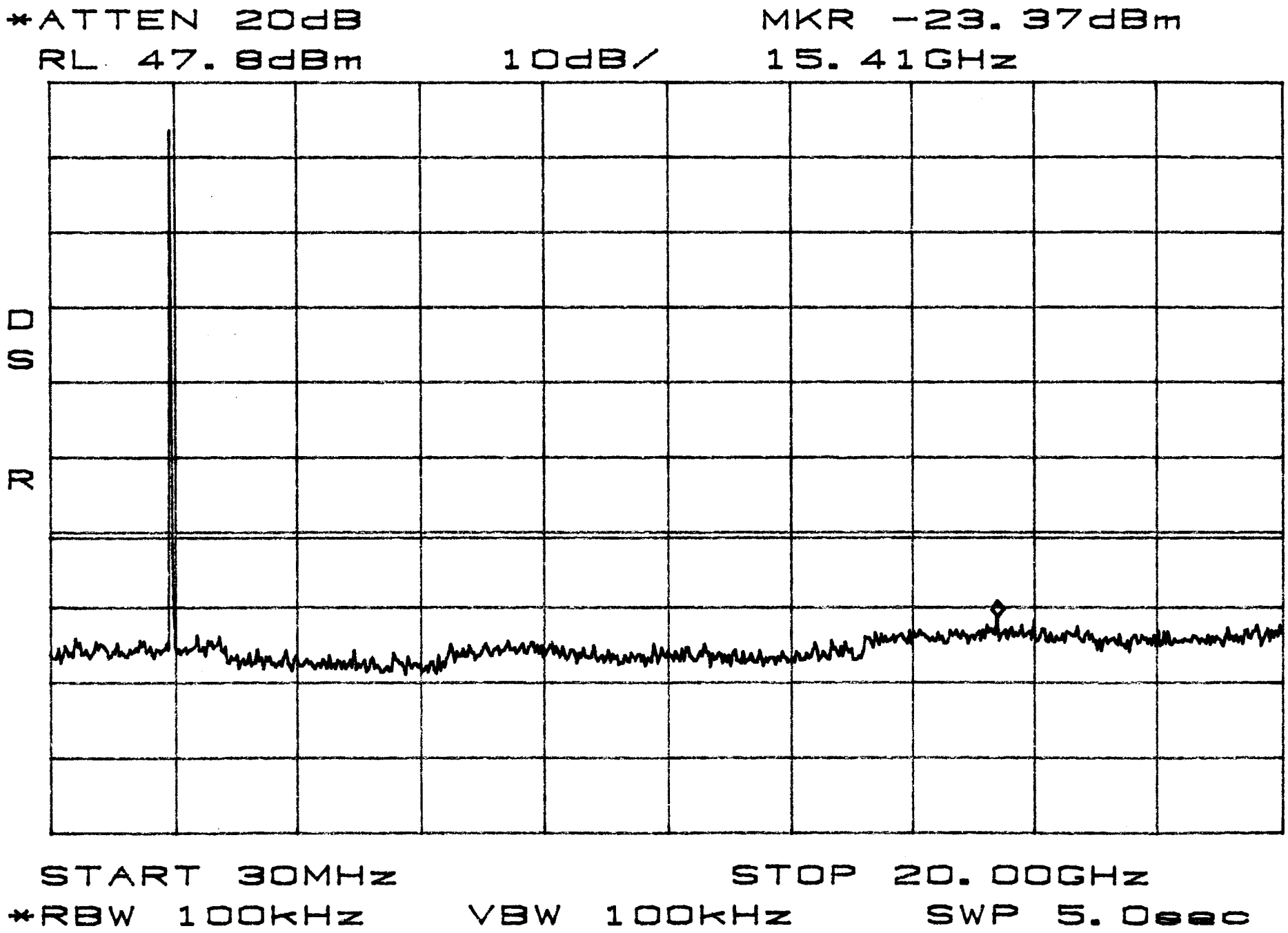
Conducted Emissions Band E
Low



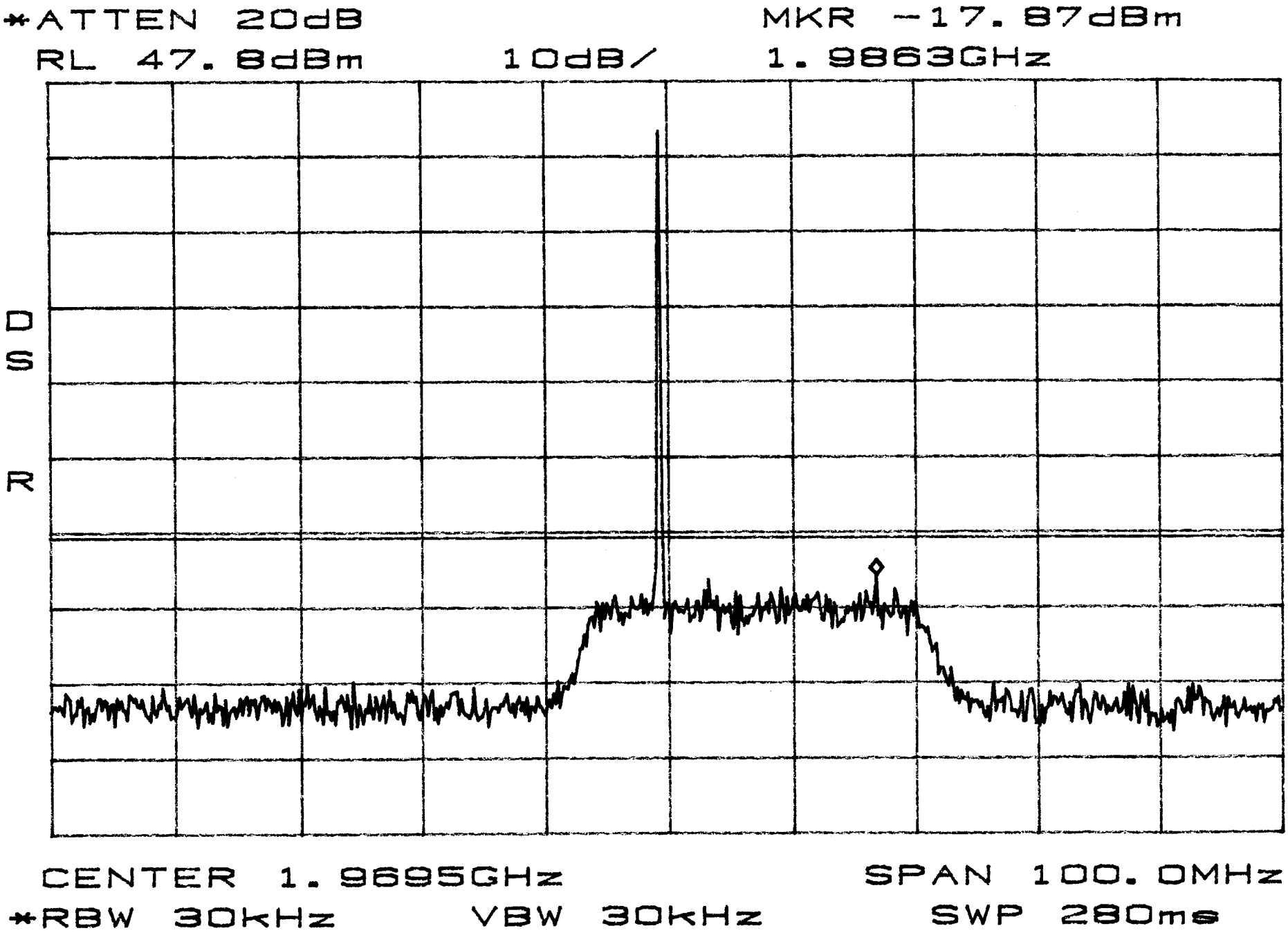
Conducted Emissions Band E
Mid



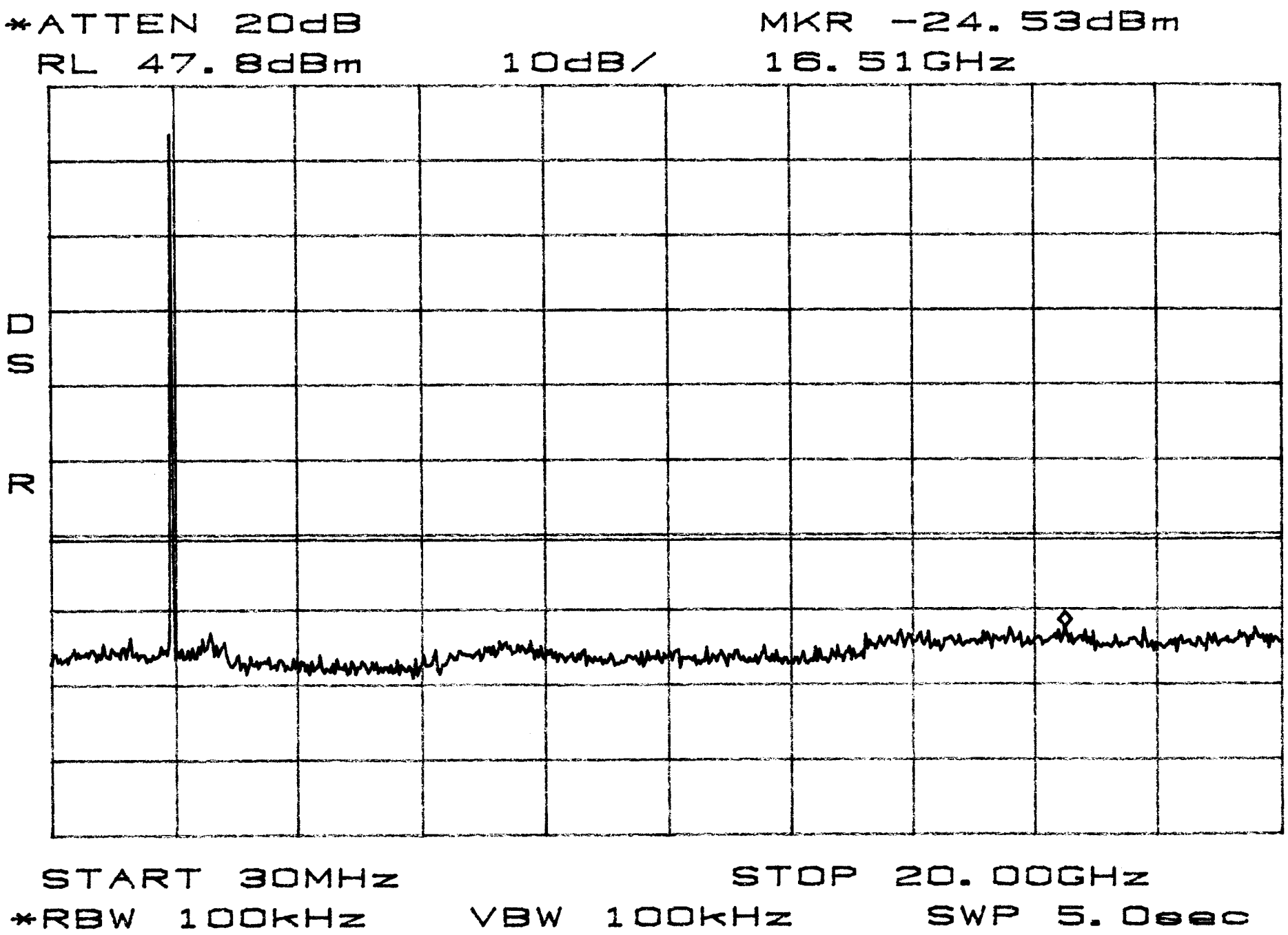
Conducted Emissions Band E
Mid



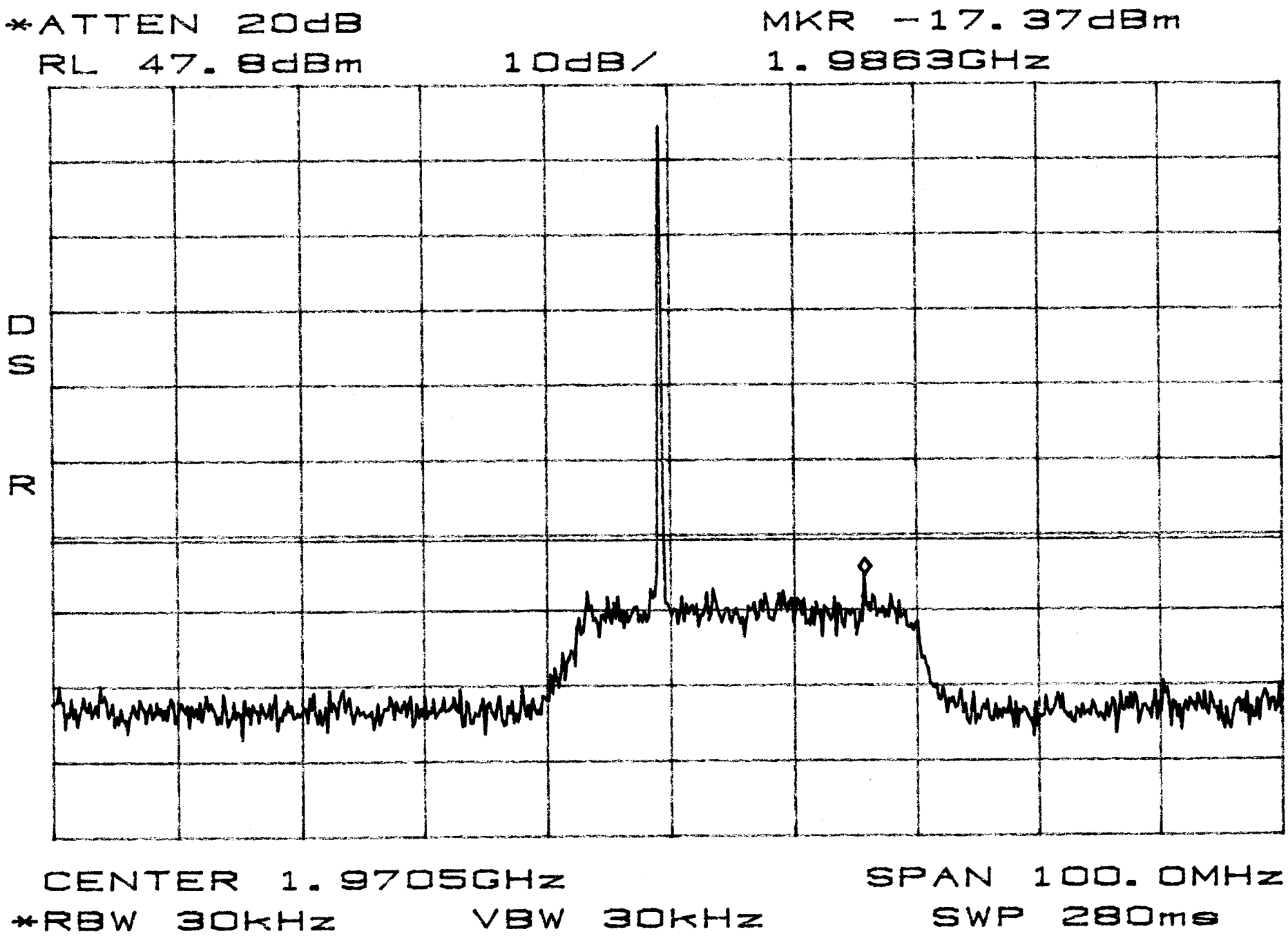
Conducted Emissions Band E
High



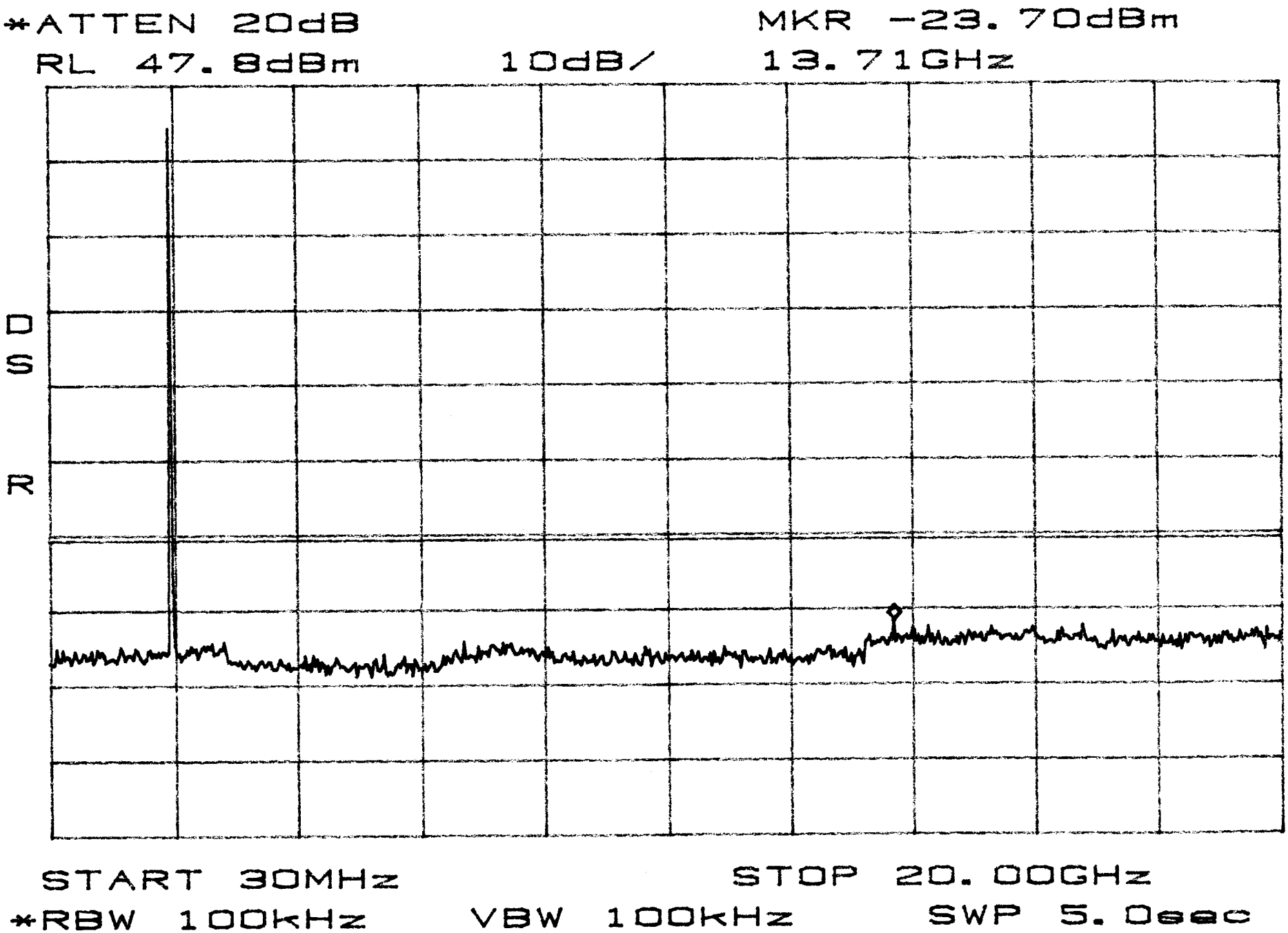
Conducted Emissions Band E
High



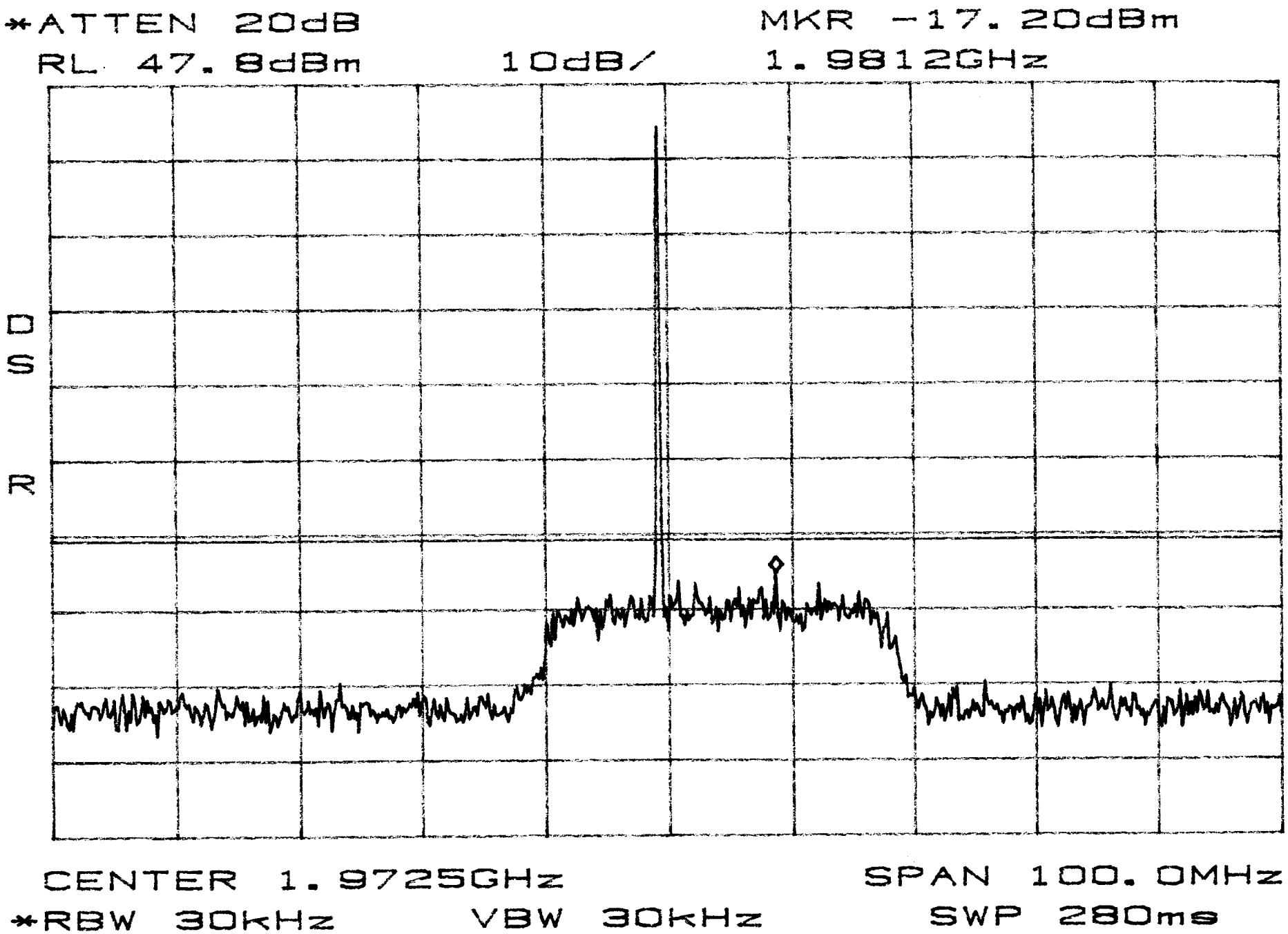
Conducted Emissions Band F
Low



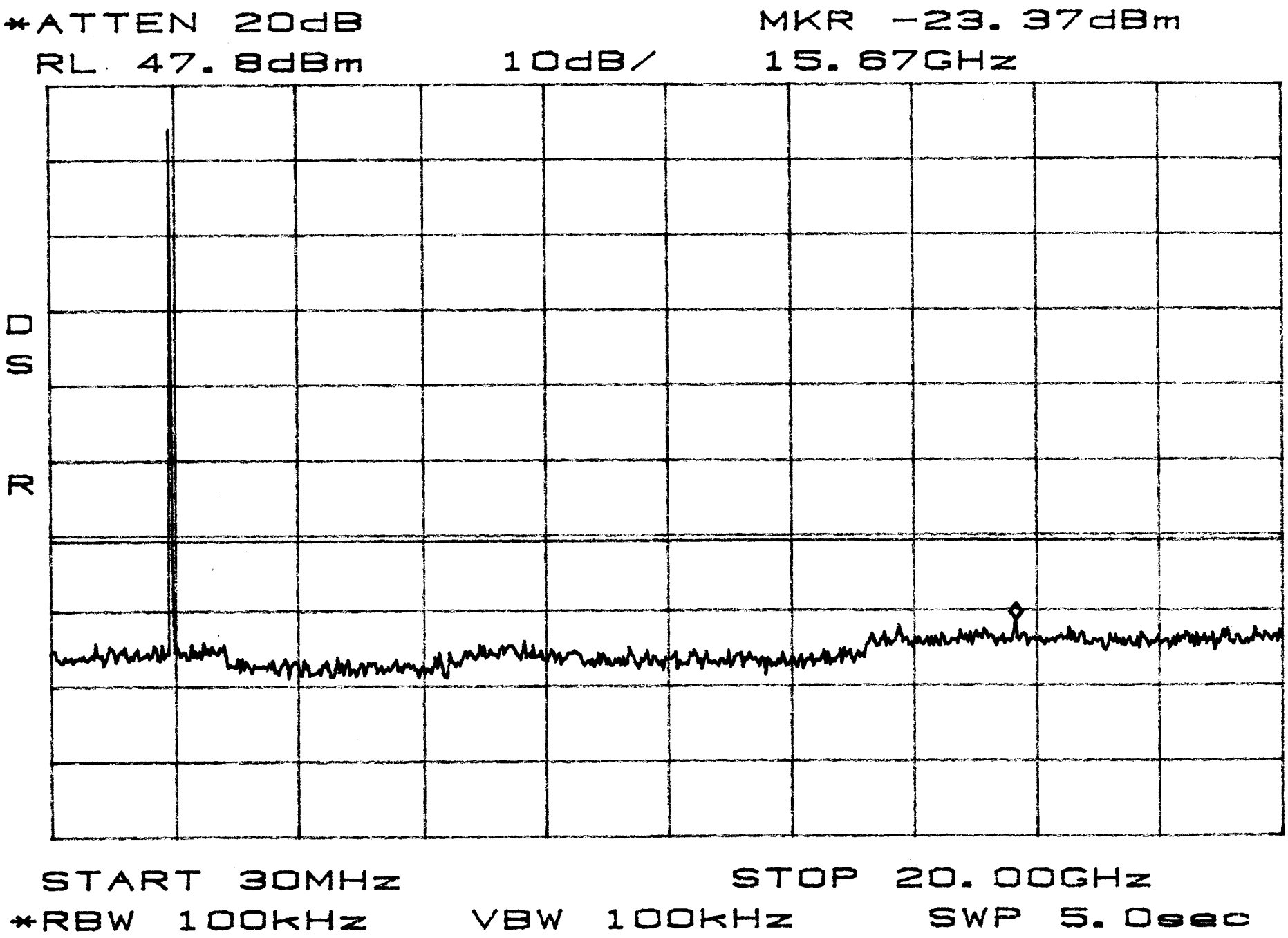
Conducted Emissions Band F
Low



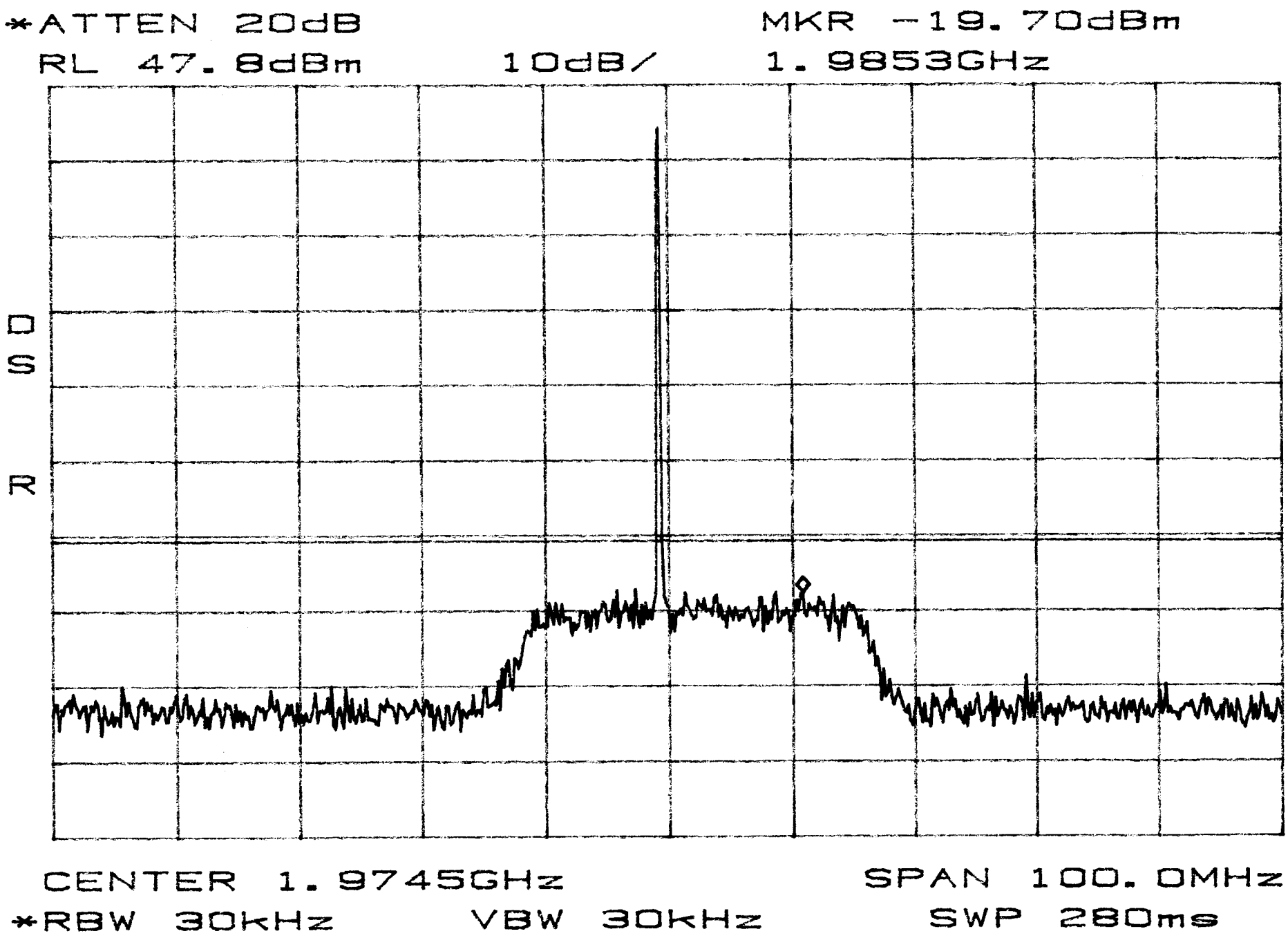
Conducted Emissions Band F
Mid



Conducted Emissions Band F
Mid



Conducted Emissions Band F
High



Conducted Emissions Band F
High