

ORTEL CORPORATION
2015 West Chestnut Street
Alhambra, CA 91803

This Report Concerns:	Original Grant:	Class II Change: X
Equipment Type:	PCS5800 Hub and Antenna System, Model PS-5800PCS (B-band)	
Deferred grant requested per 47 CFR 0.457(d)(1)(ii)?	Yes: Defer until:	No: X
Company Name agrees to notify the Commission by:	N/A	
of the intended date of announcement of the product so that the grant can be issued on that date.		
Transition Rules Request per 15.37?	Yes:	*No:
(*) FCC Part 2, Paragraphs 2.985, 2.989,, 2.991 and 2.993; and Part 24, Paragraph 24.238		
Report Prepared by: TÜV PRODUCT SERVICE 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone: 619 546 3999 Fax: 619 546 0364		

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1 GENERAL INFORMATION

1.1 Product Description

5800 PCS Hub and Antenna System, Model PS-5800PCS (B-band)

1.2 Test Methodology

Purpose of Test: To demonstrate compliance with the ANSI C63.4 setup.

Test Performed:

- x 1. Conducted Emissions, FCC Part 2, Paragraphs 2.985, 2.989, 2.991 & Part 24, Paragraph 24.238
- 2. Radiated Emissions, EN55022: 1992 Class B limit, 30 - 1,000 MHz, 10 meters
- x 3. Radiated Emission per FCC Part 2, Paragraph 2.993, 1 - 20 GHz
- 4. Engineering evaluations

1.3 Test Facility

The open area test site and conducted measurement data were tested by:

TÜV PRODUCT SERVICE
10040 Mesa Rim Road
San Diego, CA 92121-2912
Phone: 619 546 3999
Fax: 619 546 0364

The Test Site Data and performance comply with ANSI 63.4 and are registered with the FCC, 7435 Oakland Mills Rd, Columbia Maryland 21046. All Measurement Data is acquired according to the content of FCC Measurement Procedure and ANSI C63.4, unless supplemented with additional requirements as noted in the test report.

1.4 Product Information

Single Level Current Bill of Material
4 Filter Component Information Sheets

2 CONDUCTED EMISSION DATA

ORTEL CORPORATION
PCS 5800 Hub and Antenna System, Model PS-5800PCS (B-band)

See following page(s).

Part 2, Paragraph 2.989

3/26/98
FCC ID: LB45800PCS

Occupied BW
Max Hold

GSM Source
for PCS 1900

10dB/

ΔMKR - .34dB

250KHZ

DL Low (B-band)
(1950.2 MHz)

ATTEN 30dB

RL 20.0dBm

OCCUPIED BW

200.99.00

250.0KHZ

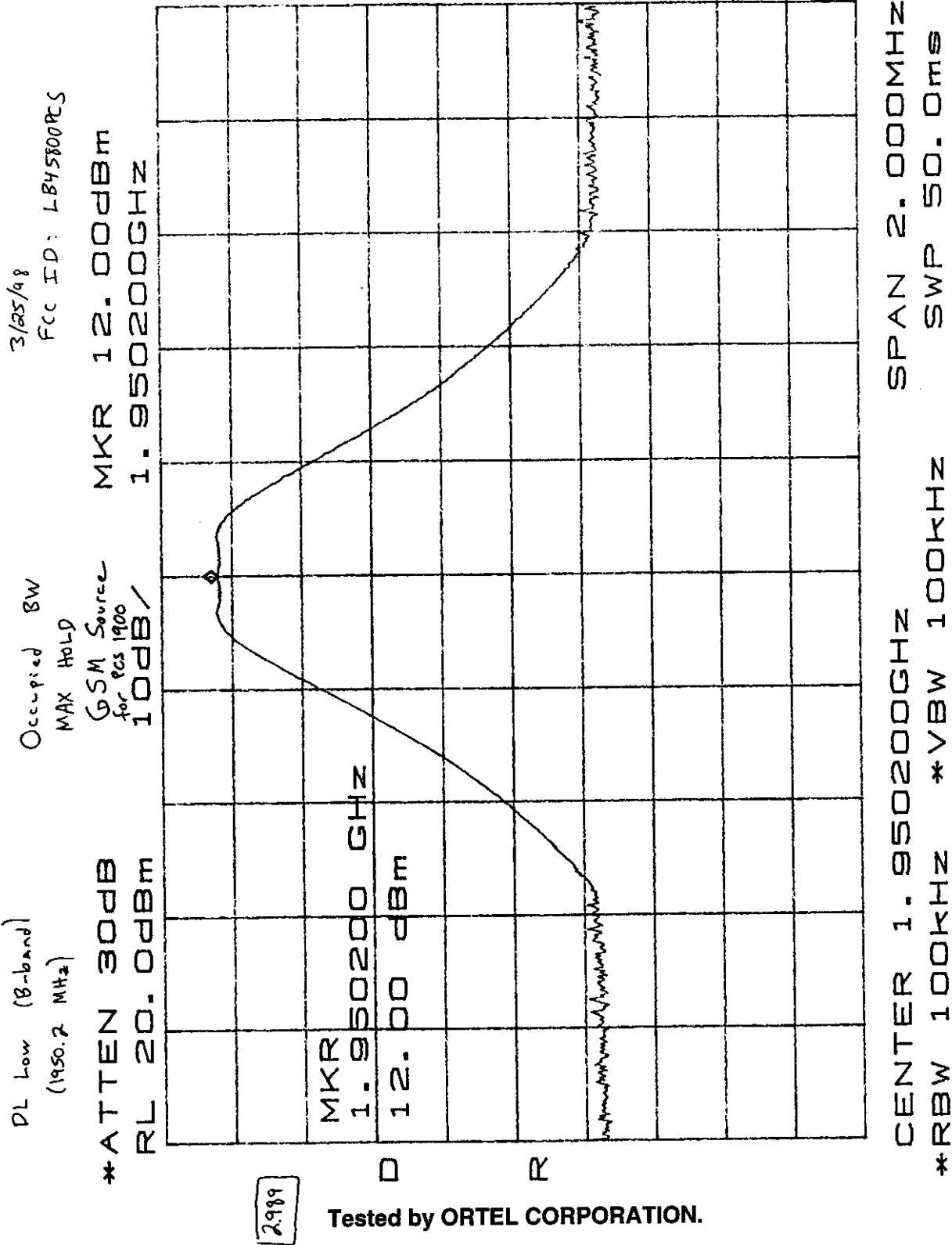
2.989

Tested by ORTEL CORPORATION.

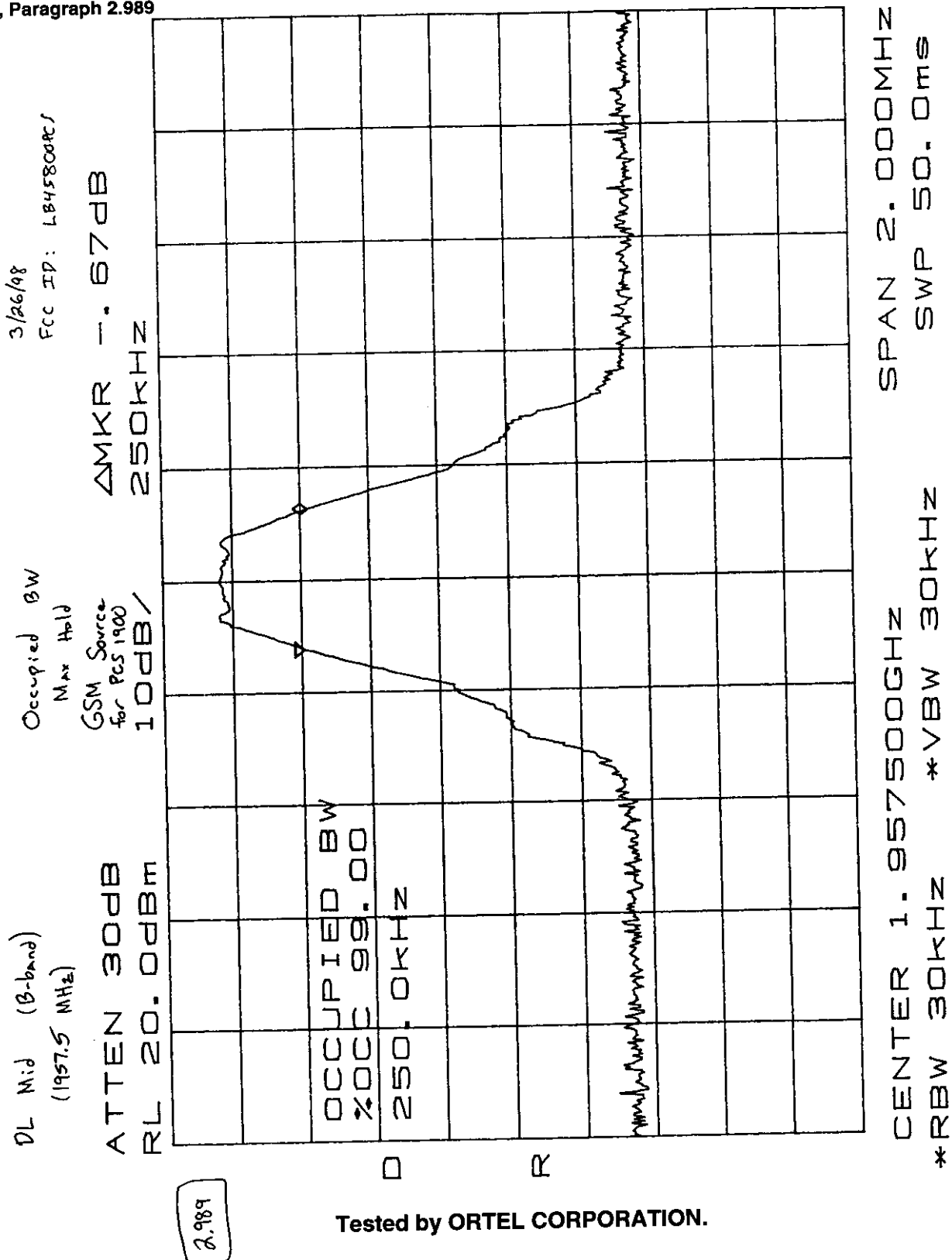
SPAN 2.000MHZ
SWP 50.0ms

CENTER 1.950200GHZ
*RBW 30KHZ *VBW 30KHZ

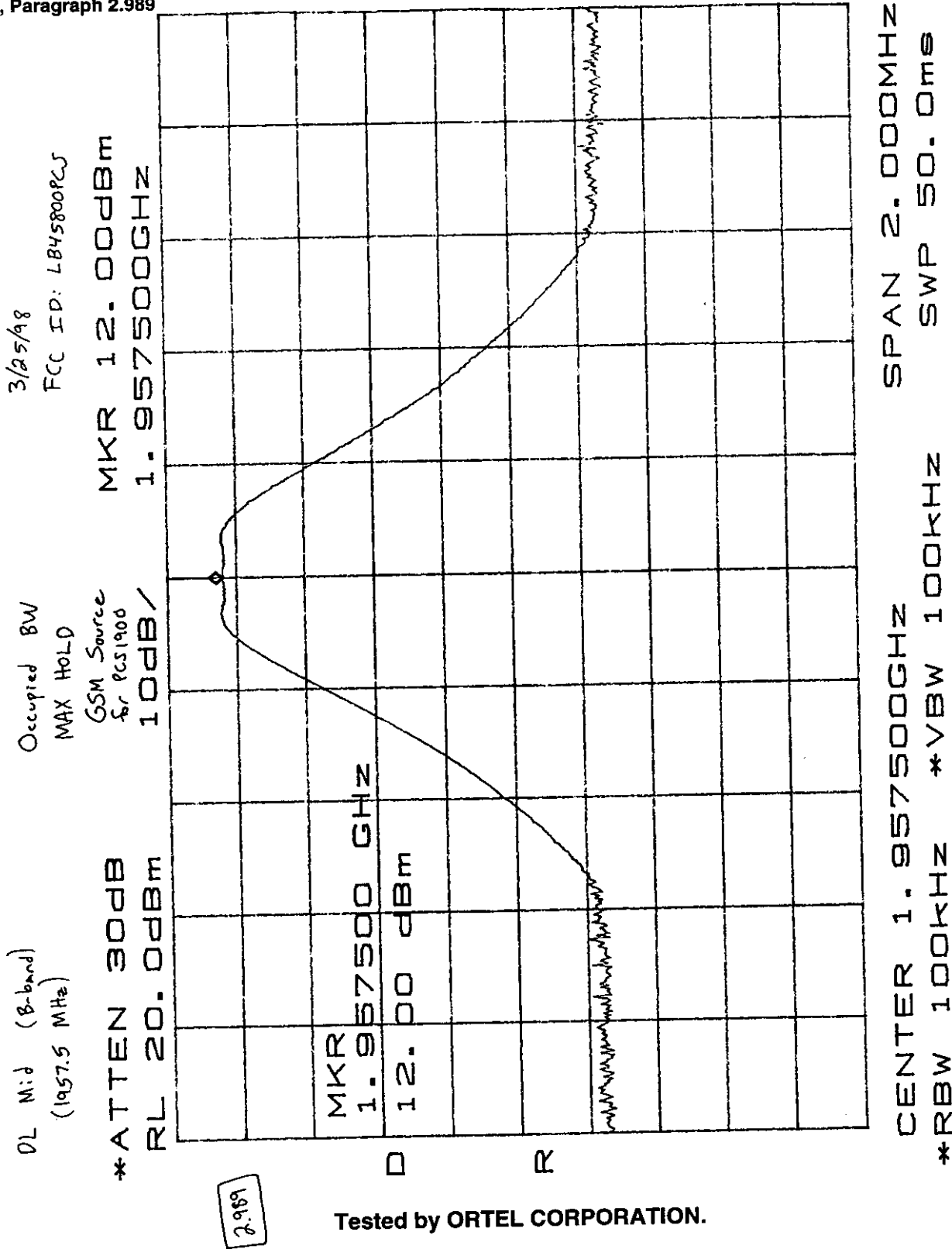
Part 2, Paragraph 2.989



Part 2, Paragraph 2.989



Part 2, Paragraph 2.989



Tested by ORTEL CORPORATION.

Part 2, Paragraph 2.989

3/26/98
FCC ID: LB45800PCS

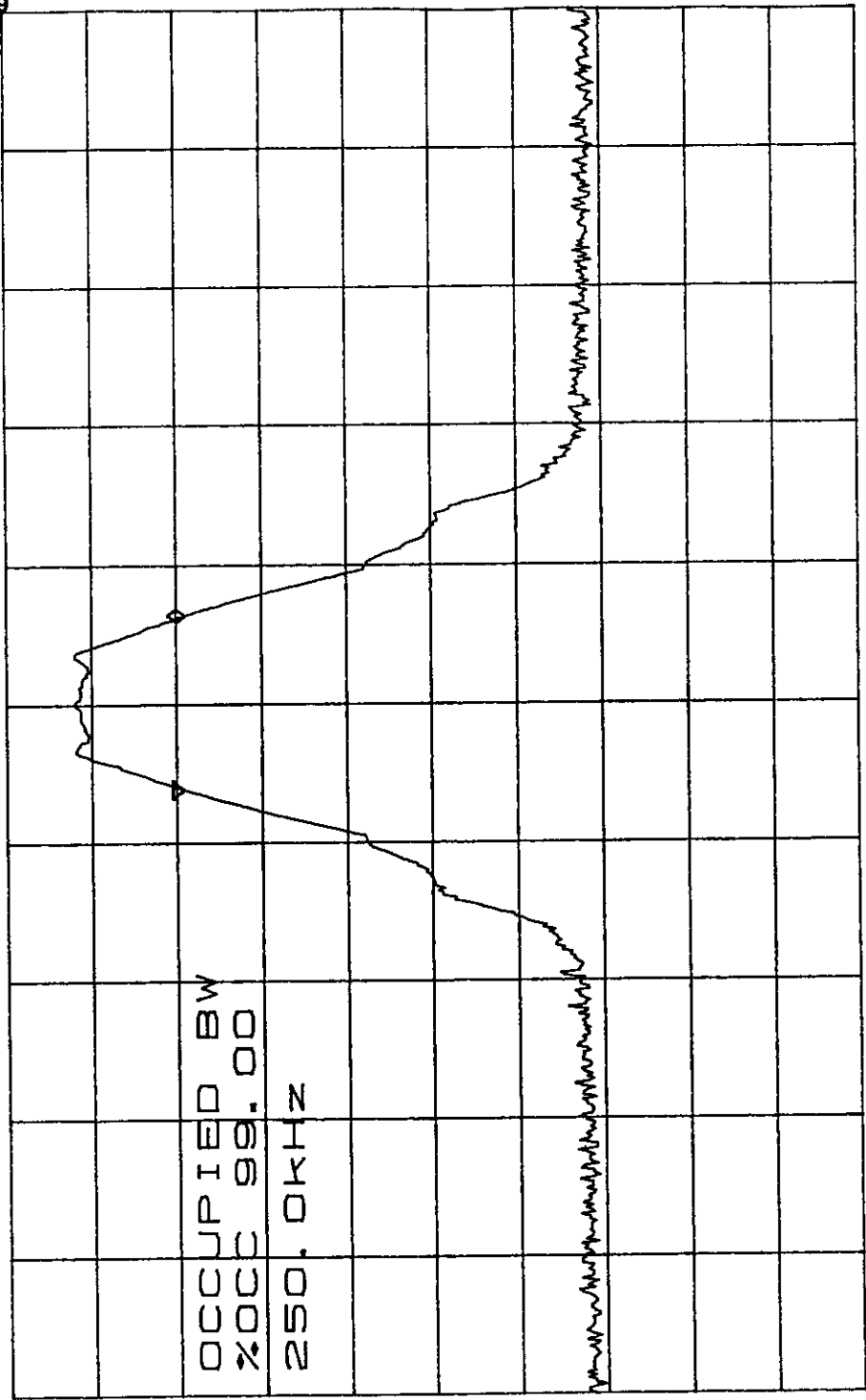
Occupied BW
Max Hld
GSM Source
for PCS1900
10dB/

ΔMKR -17dB
250kHz

DL High (B-band)
(1964.8 MHz)

ATTEN 30dB
RL 20.0dBm

OCCUPIED BW
2000 99.00
250.0KHZ

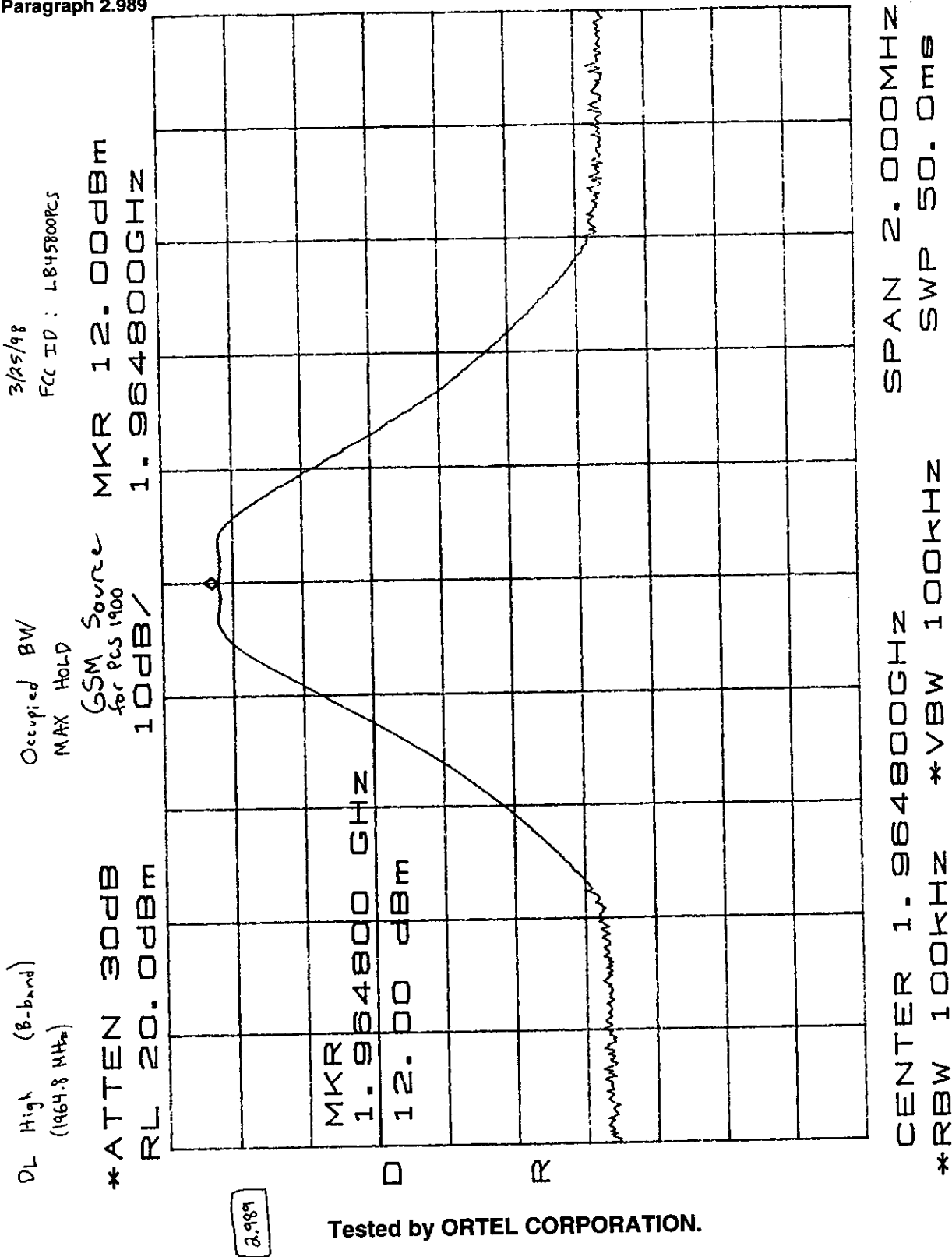


CENTER 1.964800GHZ
*RBW 30KHZ
SPAN 2.000MHZ
SWP 50.0ms
*VBW 30KHZ

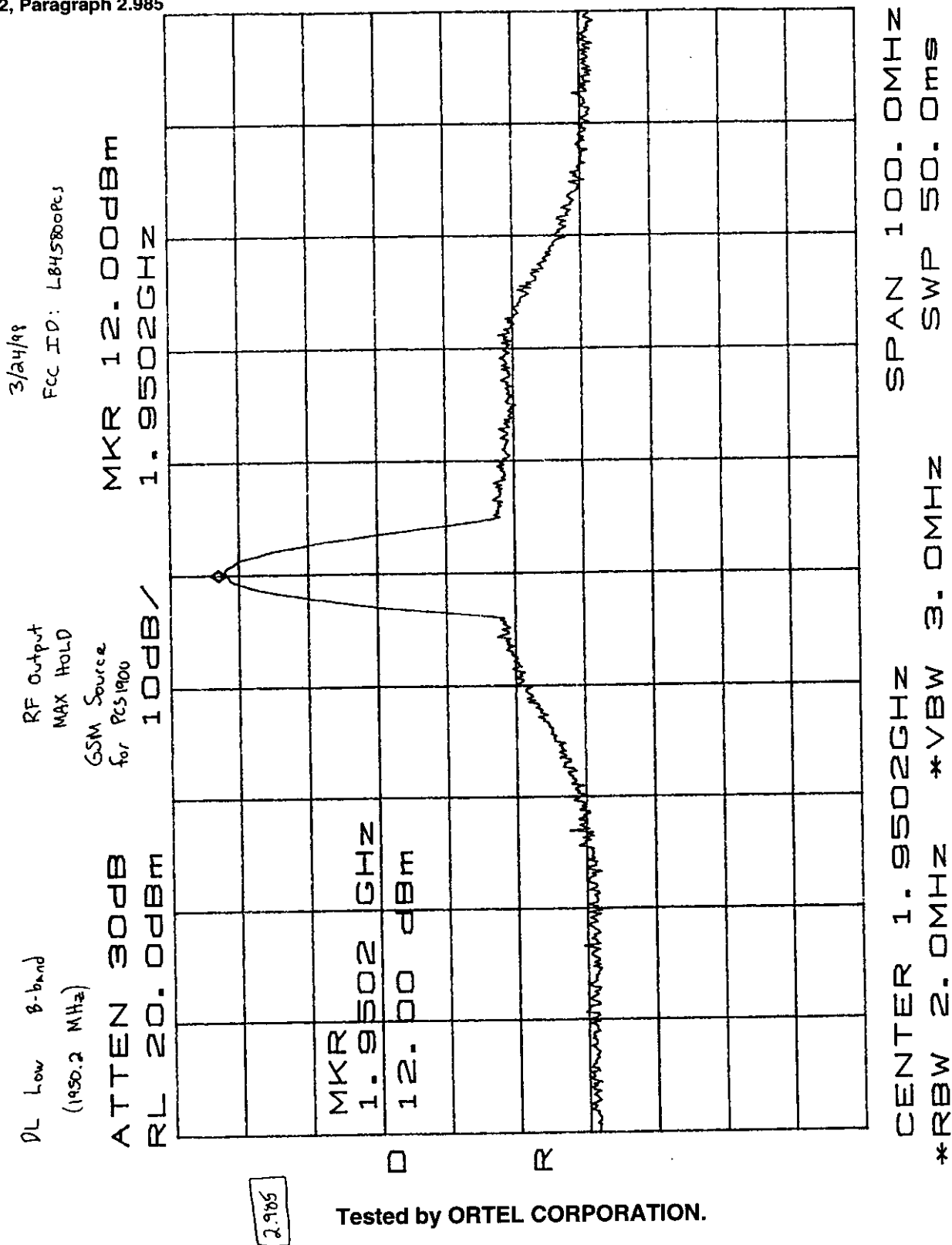
2.989

Tested by ORTEL CORPORATION.

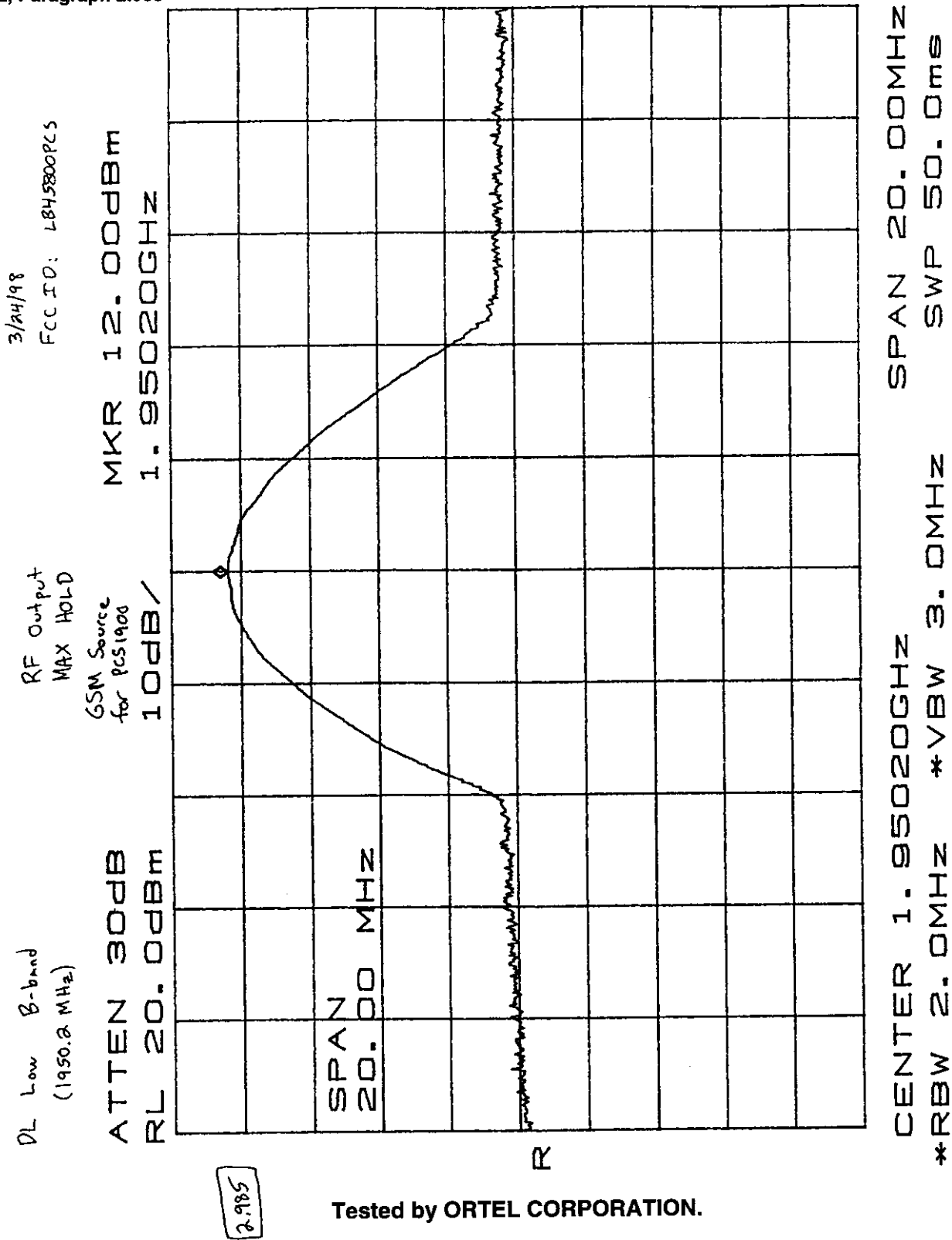
Part 2, Paragraph 2.989



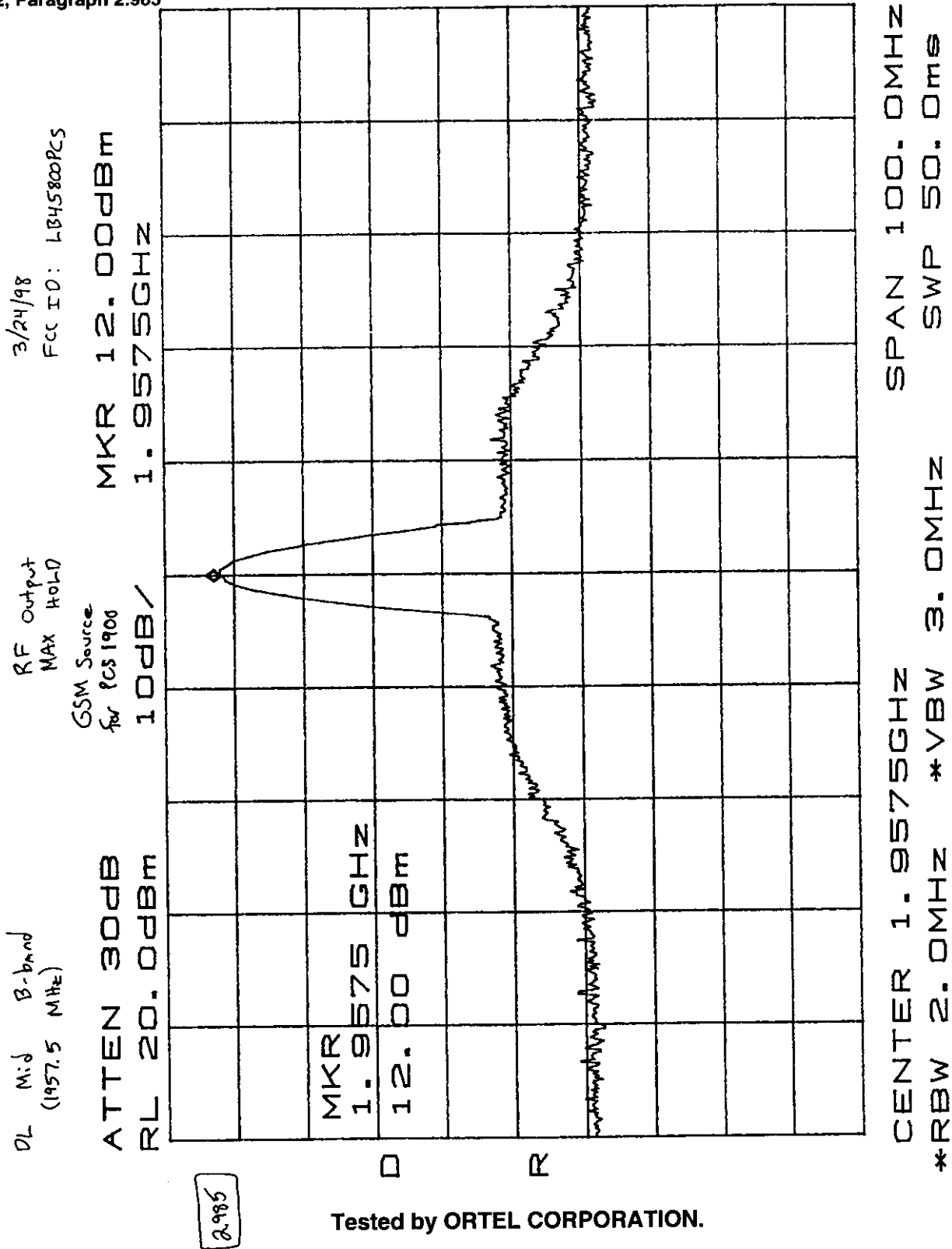
Part 2, Paragraph 2.985



Part 2, Paragraph 2.985

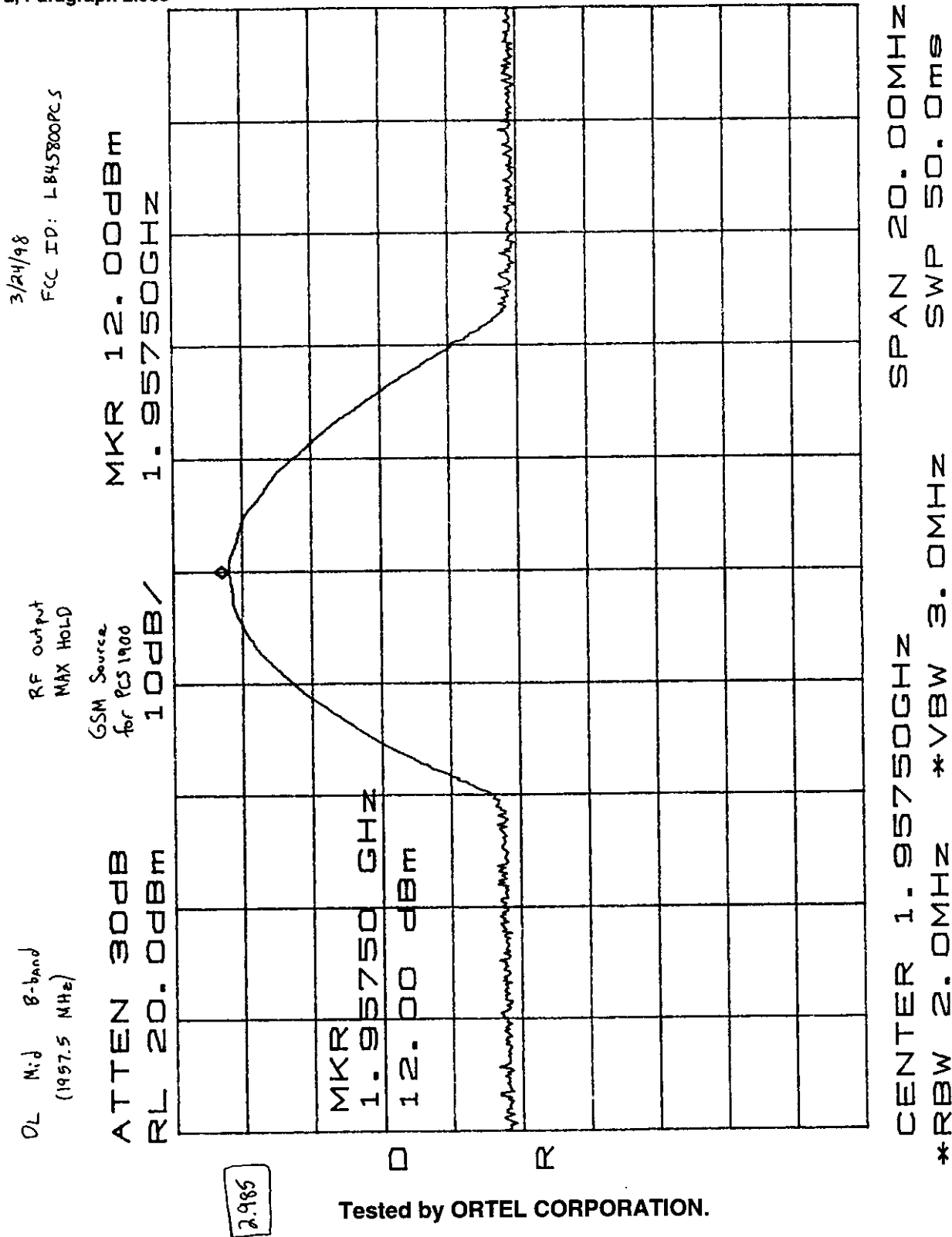


Part 2, Paragraph 2.985

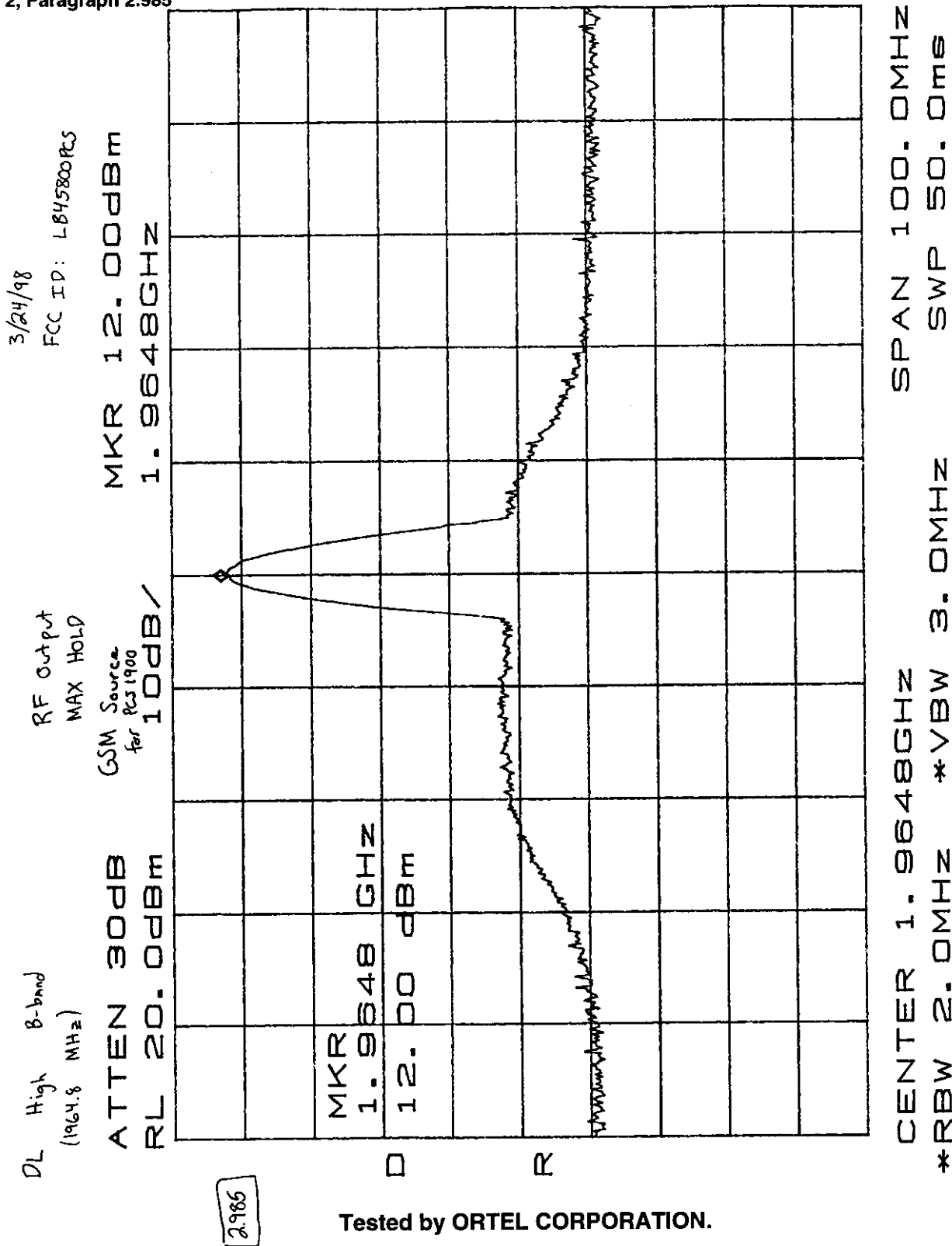


Tested by ORTEL CORPORATION.

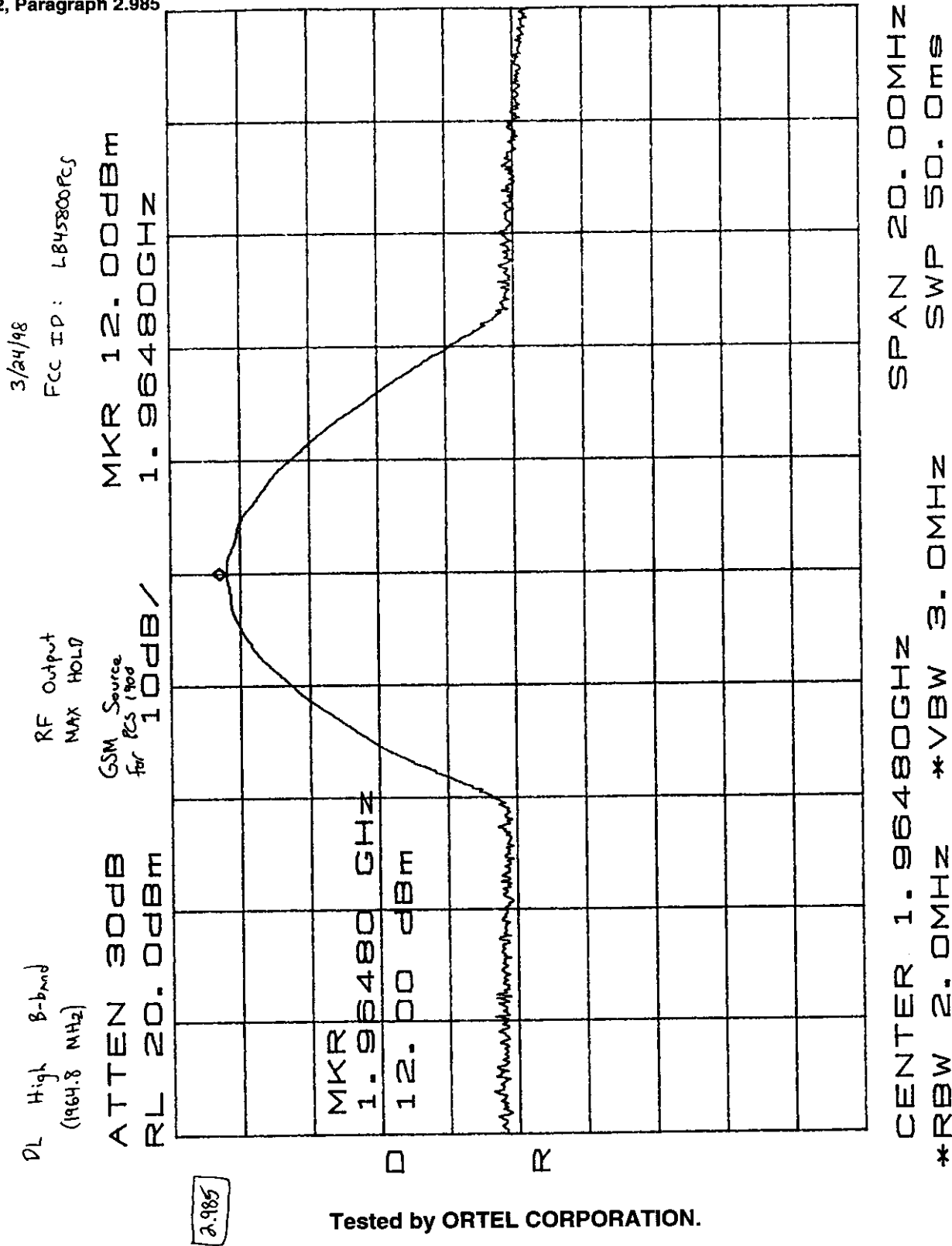
Part 2, Paragraph 2.985



Part 2, Paragraph 2.985



Part 2, Paragraph 2.985



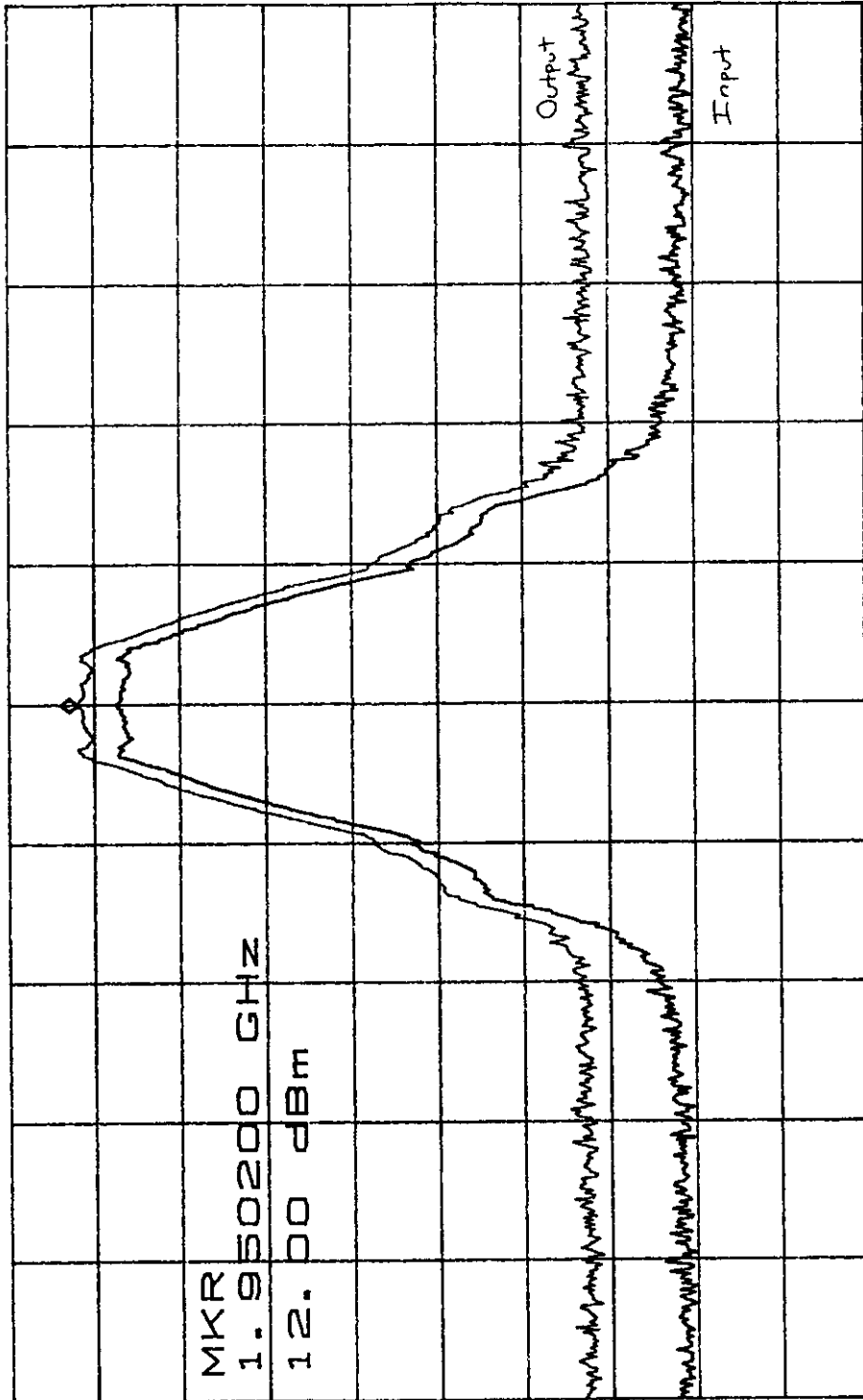
In/Out

3/24/98
FCC ID: LB45800PCS
Input Source Split, 1:8

MKR 12.00dBm
1.950200GHZ

In/Out
MAX HOLD
GSM Source for PDS1900

ATTEN 30dB
RL 20.00dBm



SPAN 2.000MHZ
SWP 50.0ms

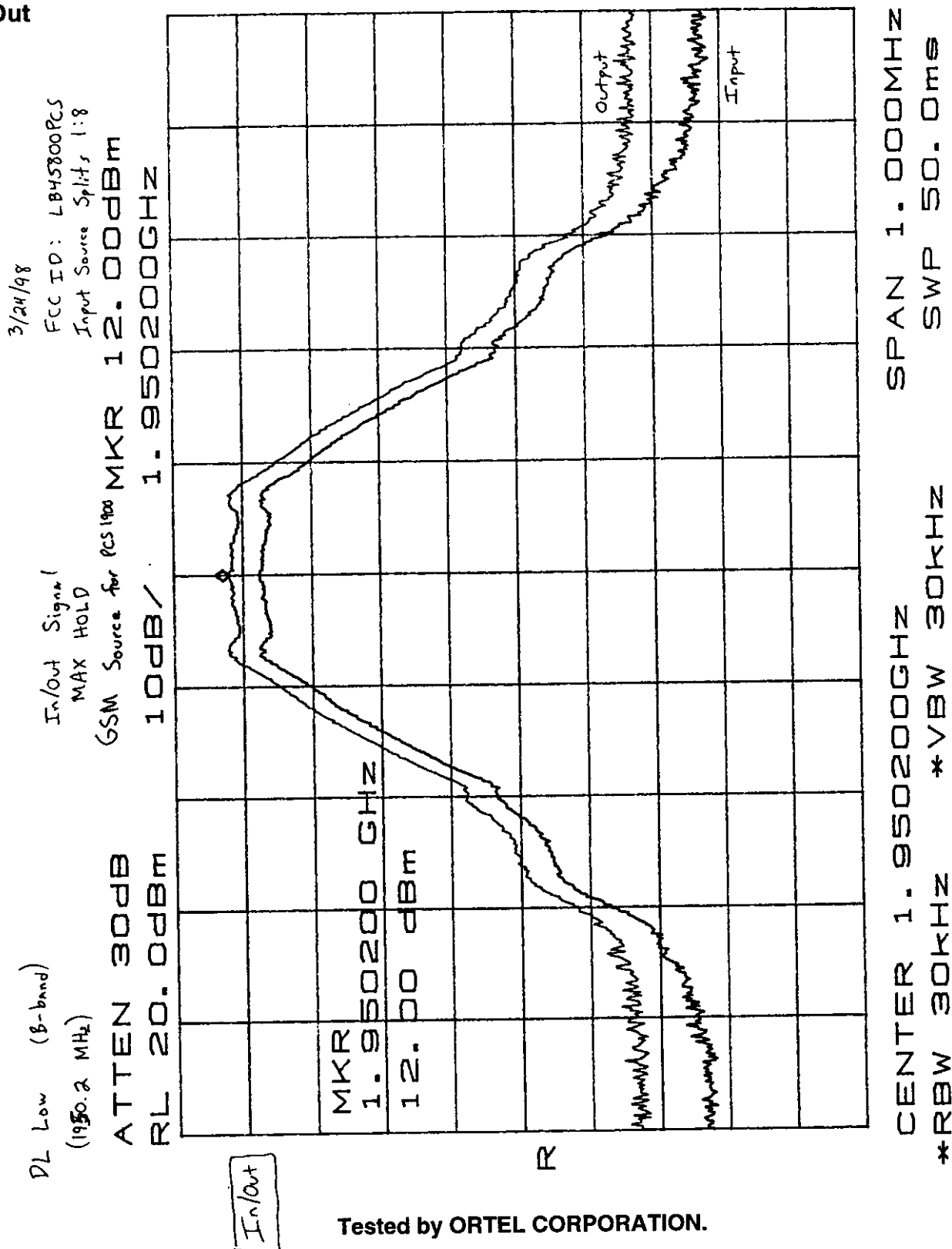
CENTER 1.950200GHZ
*VBW 30KHZ

*RBW 30KHZ

In/Out

Tested by ORTEL CORPORATION.

In/Out



Tested by ORTEL CORPORATION.

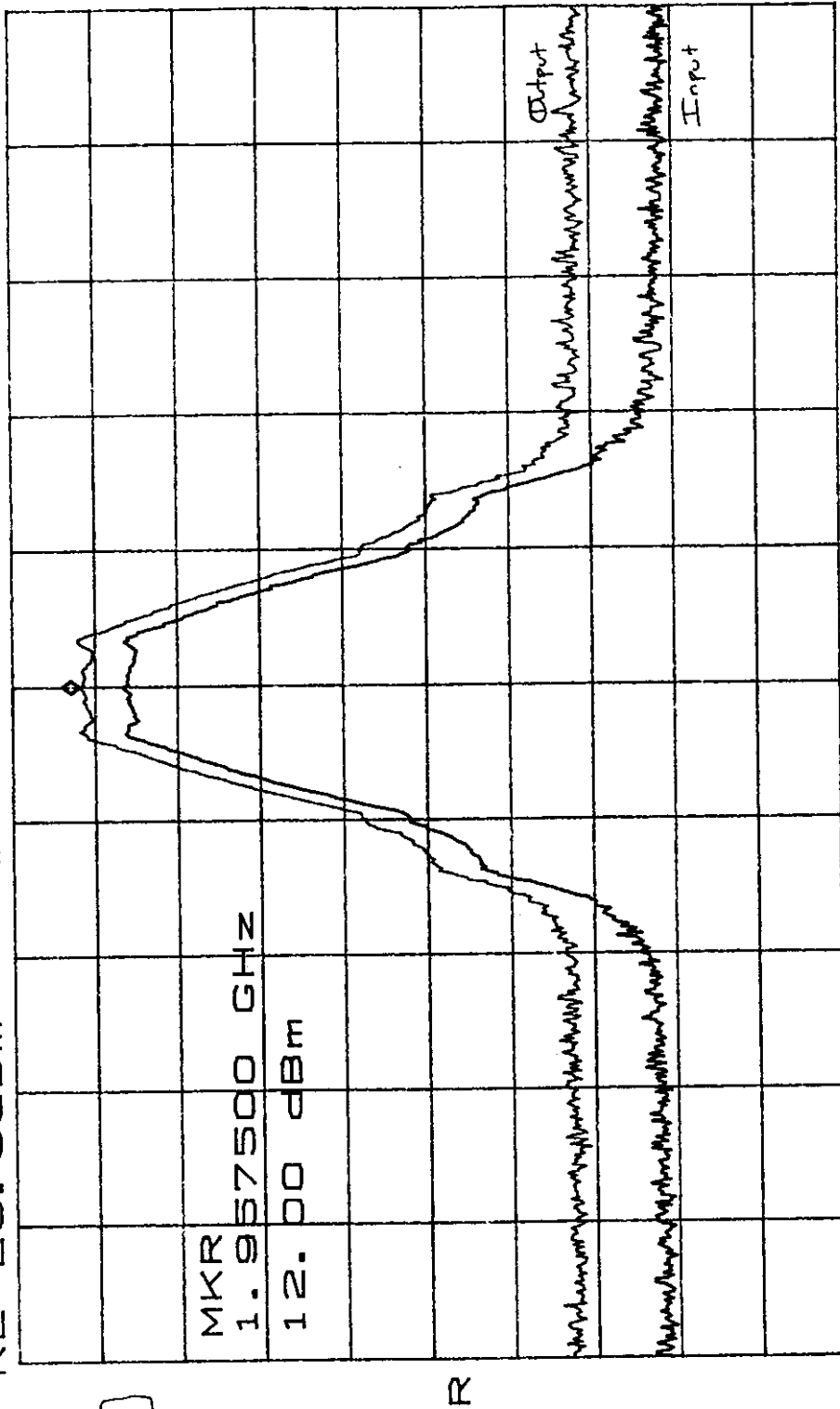
In/Out

3/24/98
FCC ID: LB45800PCS
Input Source Split, 1:8

In/Out
Max Hold
GSM Source for PC1900

ATLEN 30dB
RL 20.0dBm

MKR 12.00dBm
1.957500GHZ



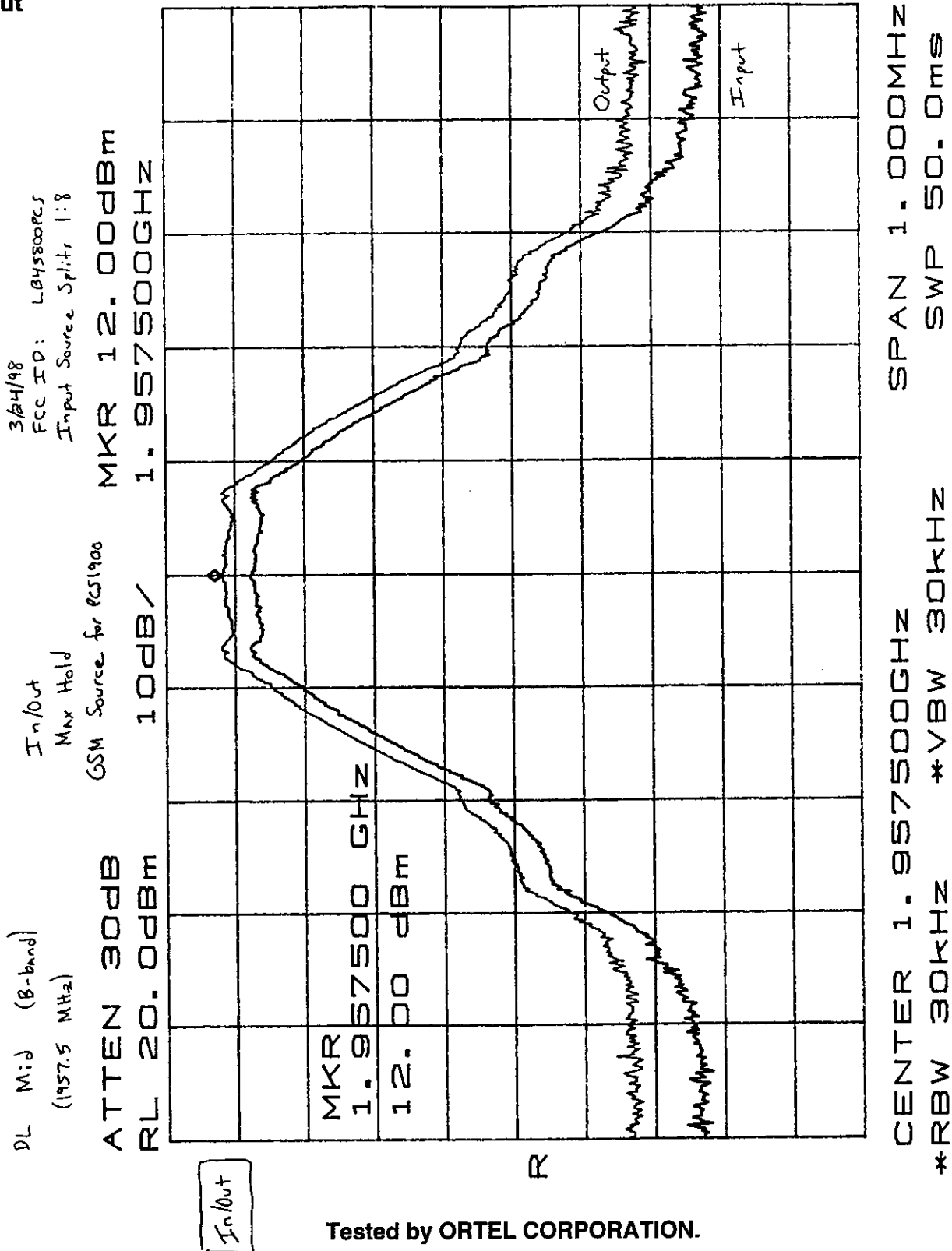
CENTER 1.957500GHZ
*RBW 30KHZ *VBW 30KHZ

SPAN 2.000MHZ
SWP 50.0ms

In/Out

Tested by ORTEL CORPORATION.

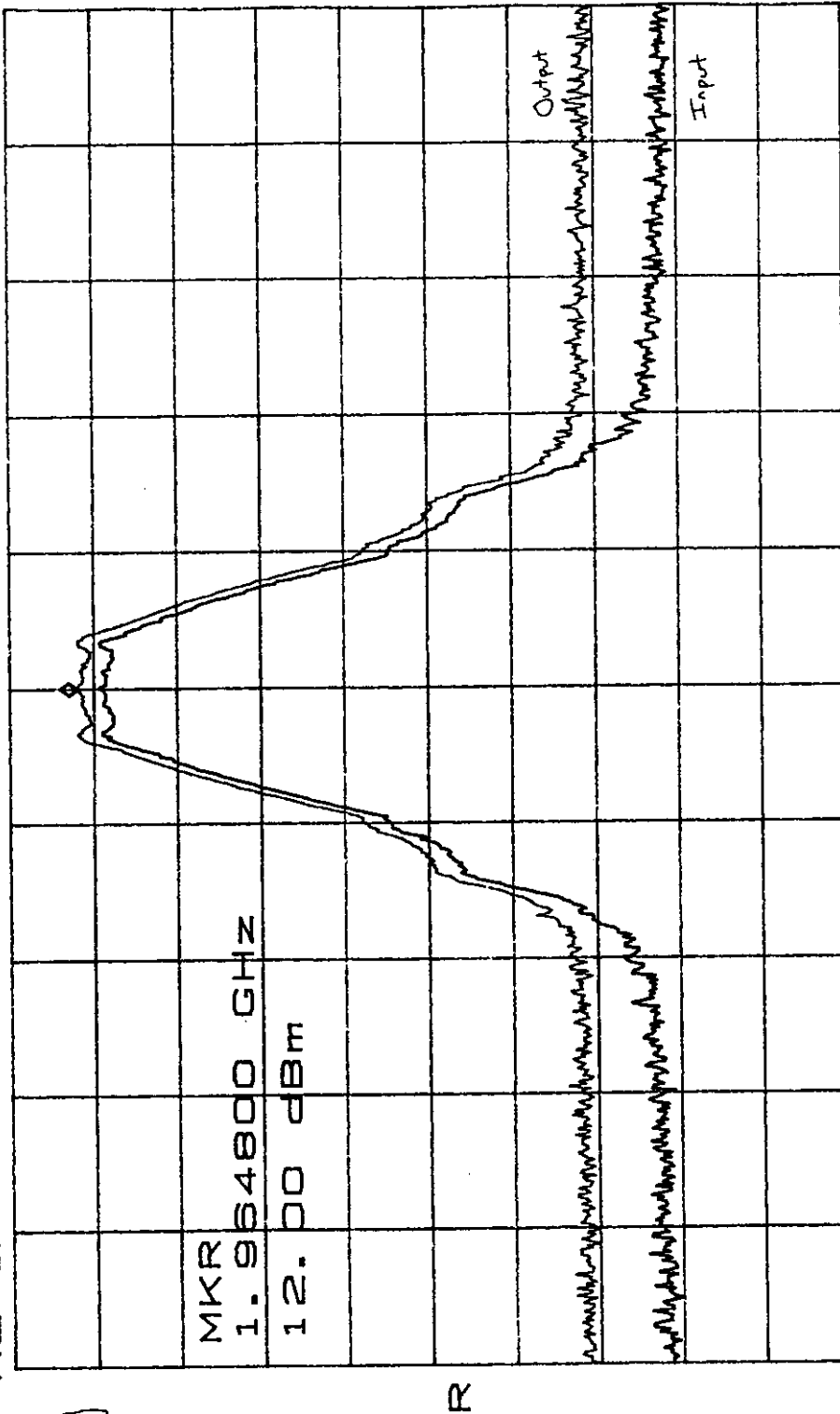
In/Out



Tested by ORTEL CORPORATION.

In/Out

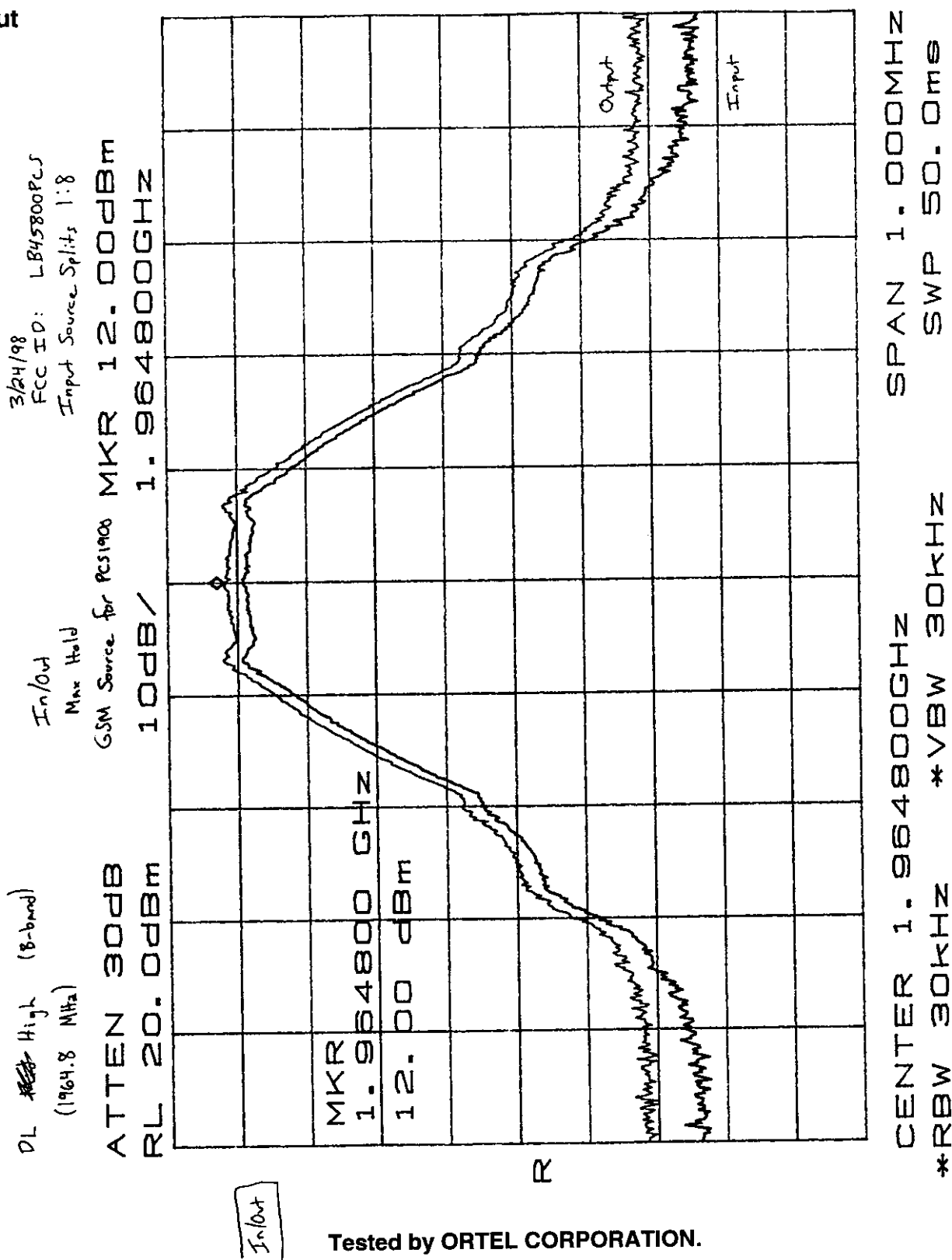
DL High (8-band)
(1964.8 MHz)
ATTN 30dB
RL 20.0dBm
3/24/98
FCC ID: LB45800PCS
Input Source Split, 1:8
MKR 12.00dBm
1.964800GHZ
10dB/
GSM Source for PCS 1908
In/Out
Max Hold



CENTER 1.964800GHZ
*RBW 30KHZ *VBW 30KHZ
SPAN 2.000MHZ
SWP 50.0ms

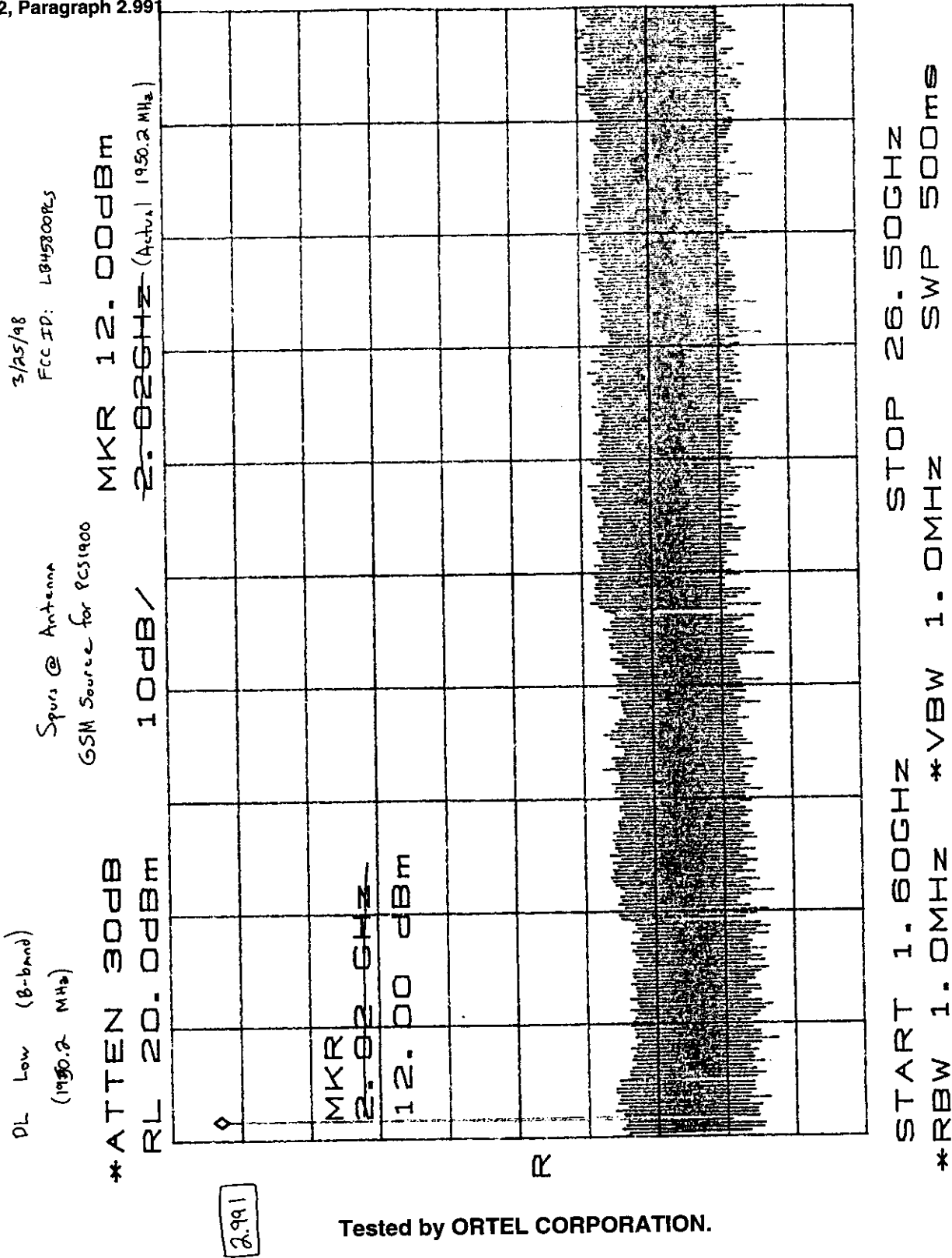
Tested by ORTEL CORPORATION.

In/Out



Tested by ORTEL CORPORATION.

Part 2, Paragraph 2.991



Tested by ORTEL CORPORATION.

Part 2, Paragraph 2.991

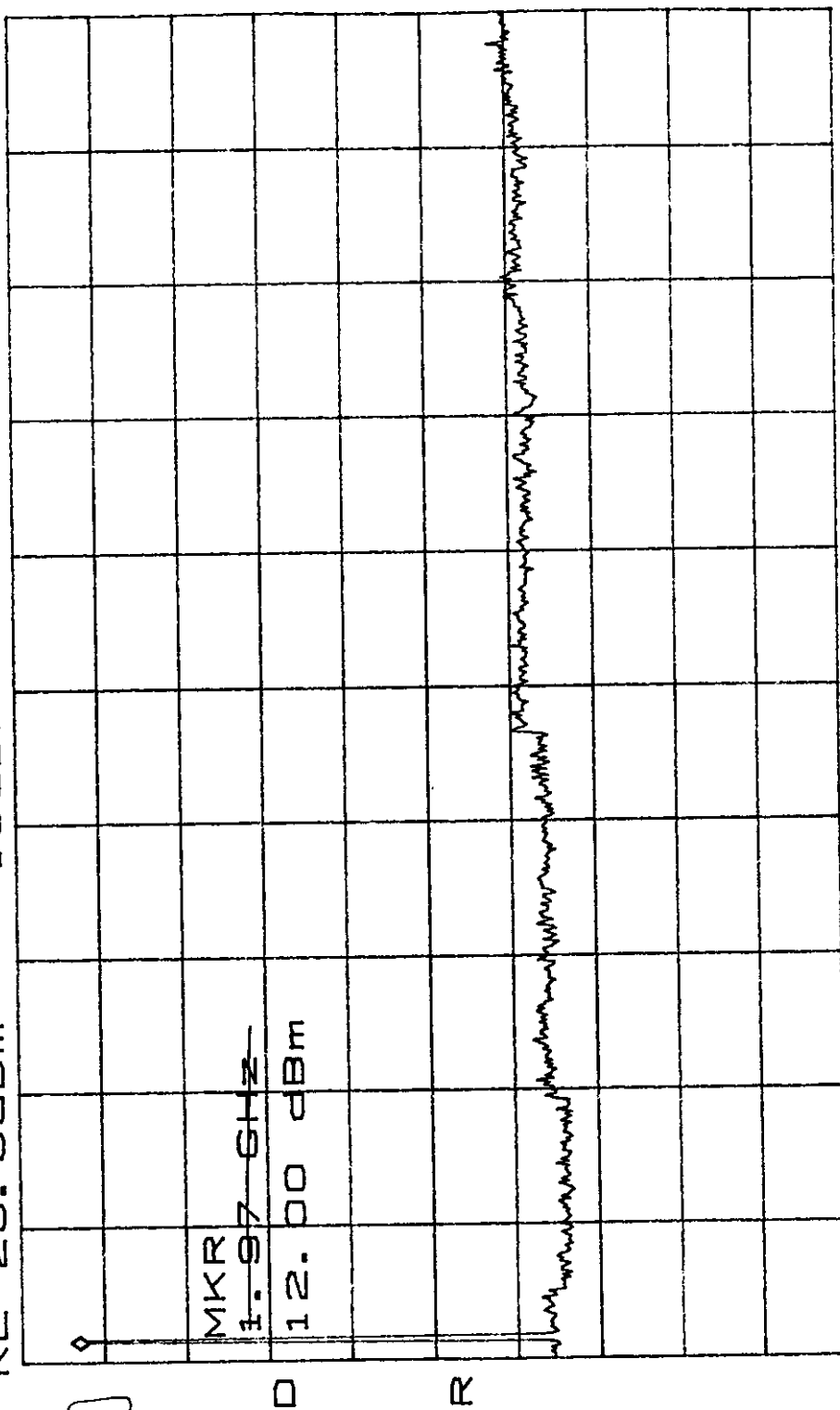
DL Low (8-band)
(1950.2 MHz)

3/25/98
FCC ID: LB45800PCS

Spurs @ Antenna
MAX HOLD

GSM Source for PCS1900
MKR 12.00dBm
-1.9761Hz (Actual = 1950.2 MHz)

*ATTEN 30dB
RL 20.0dBm
10dB/

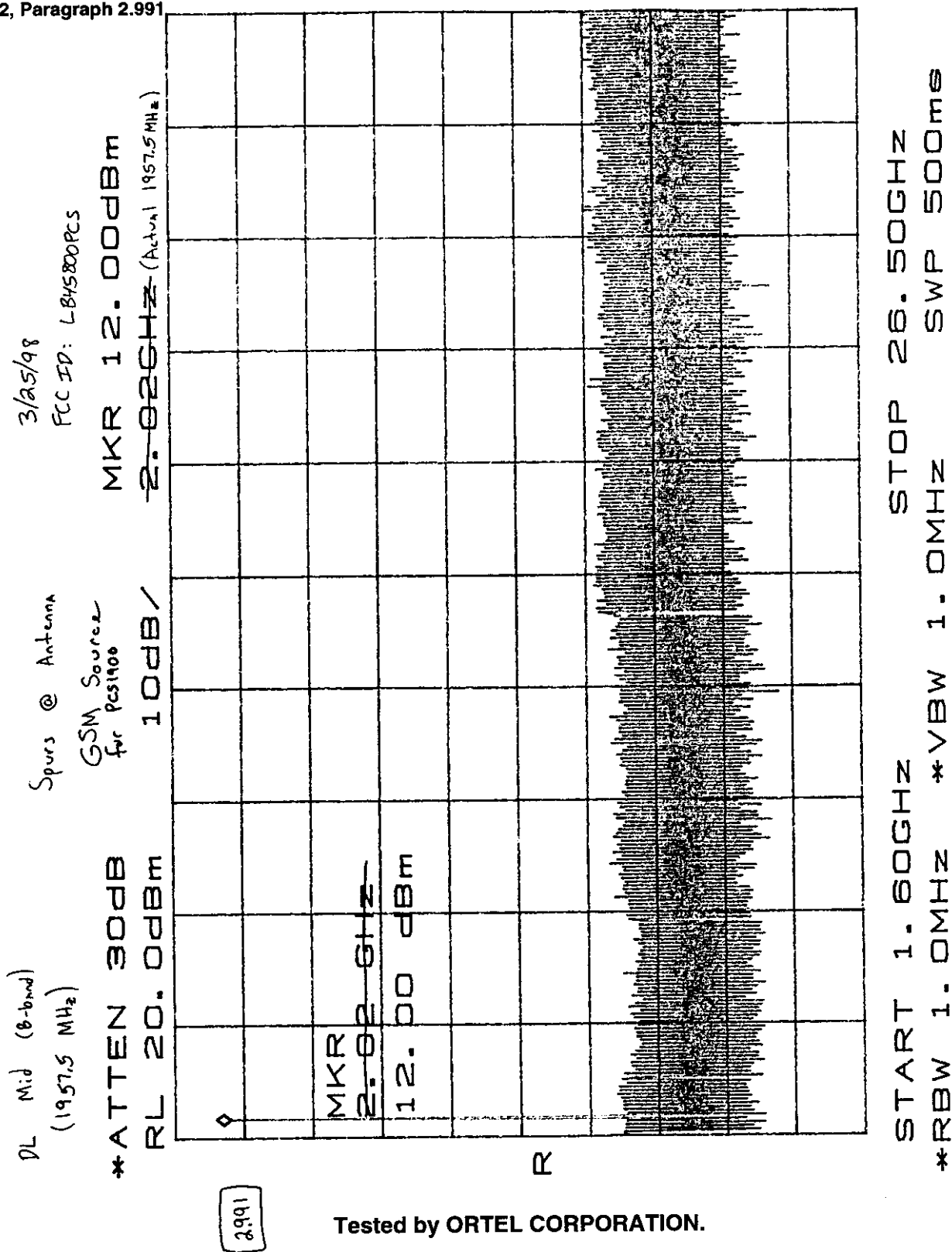


2.991

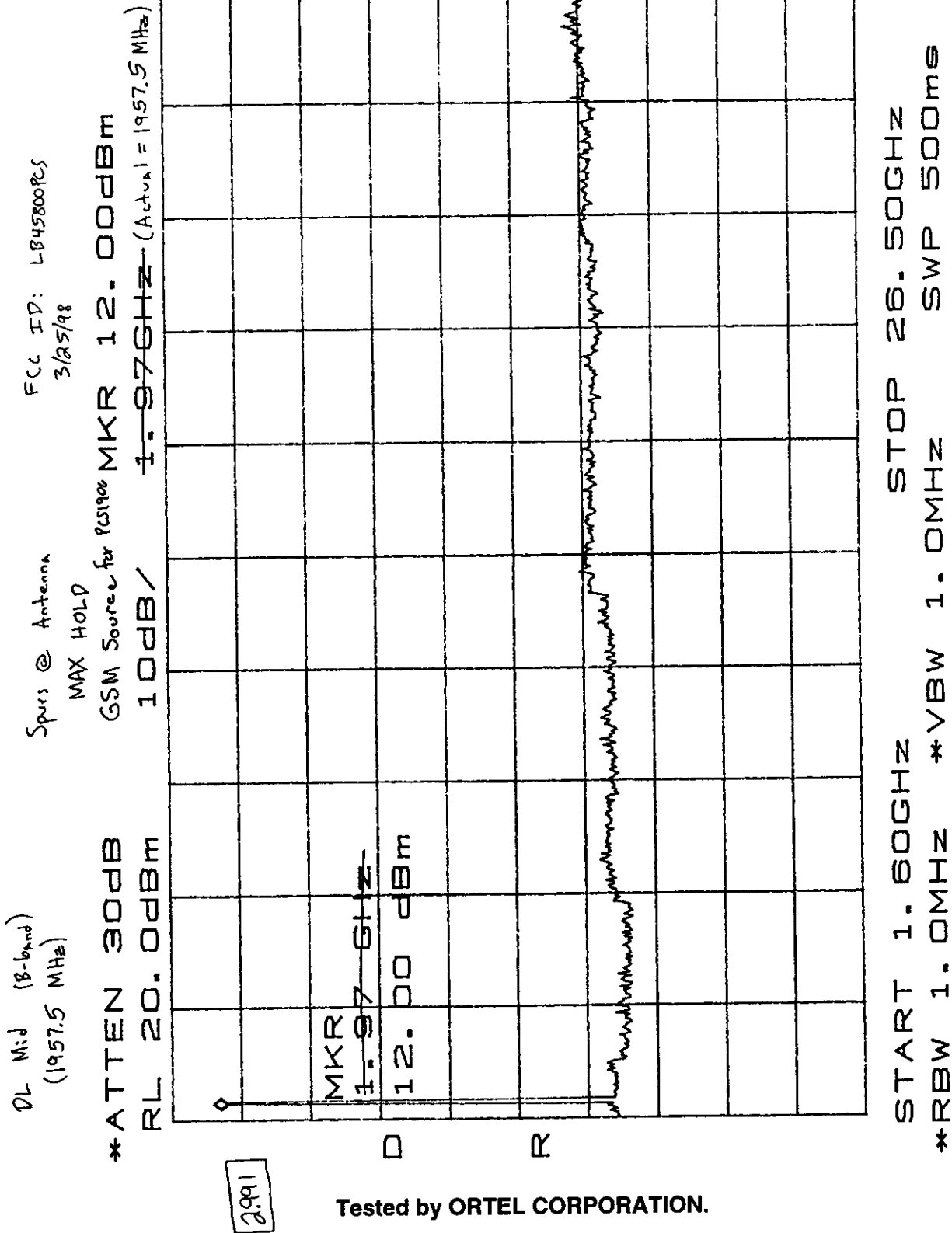
Tested by ORTEL CORPORATION.

START 1.60GHz
*RBW 1.0MHz *VBW 1.0MHz
STOP 26.50GHz
SWP 500ms

Part 2, Paragraph 2.991

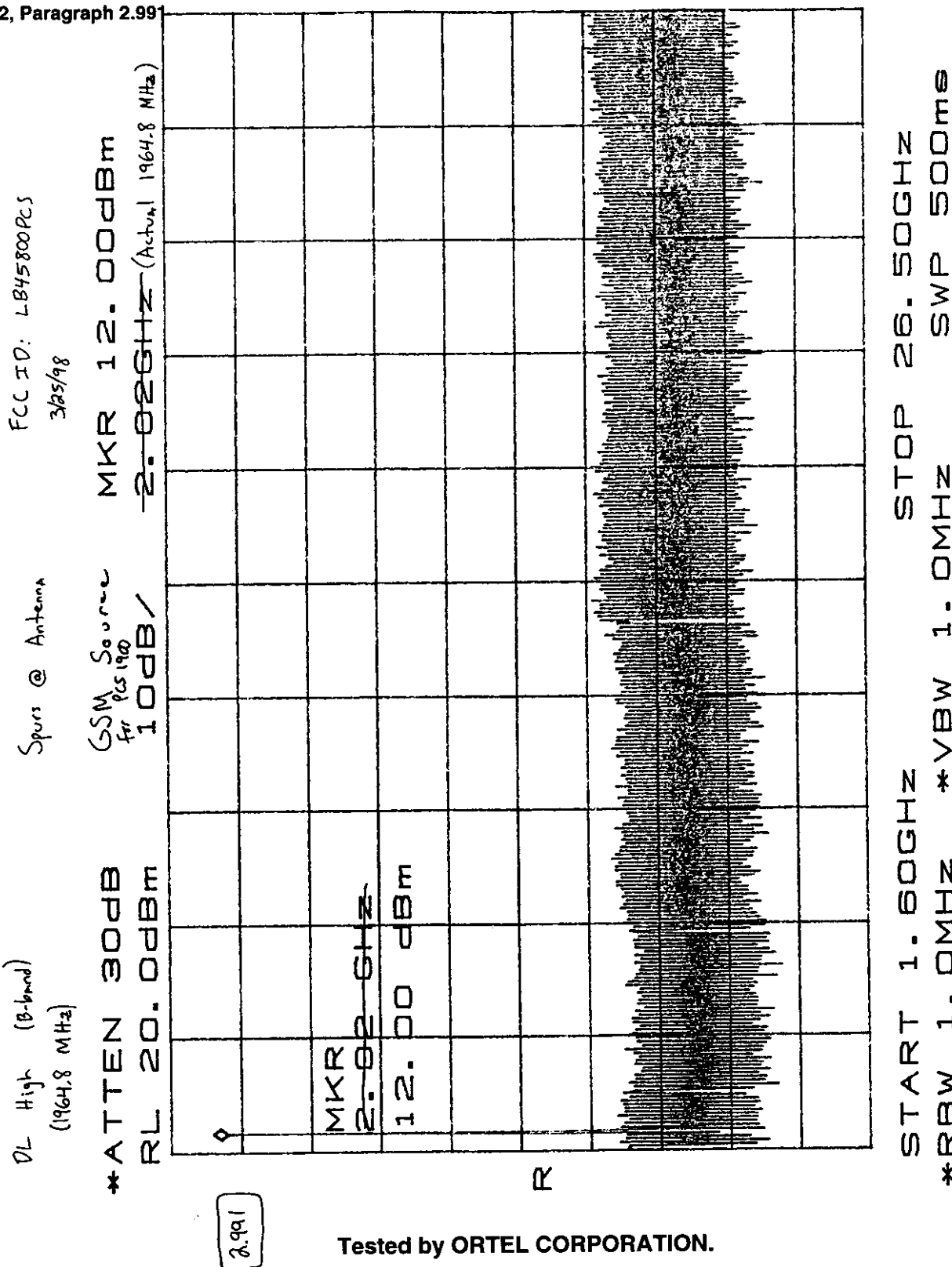


Part 2, Paragraph 2.991

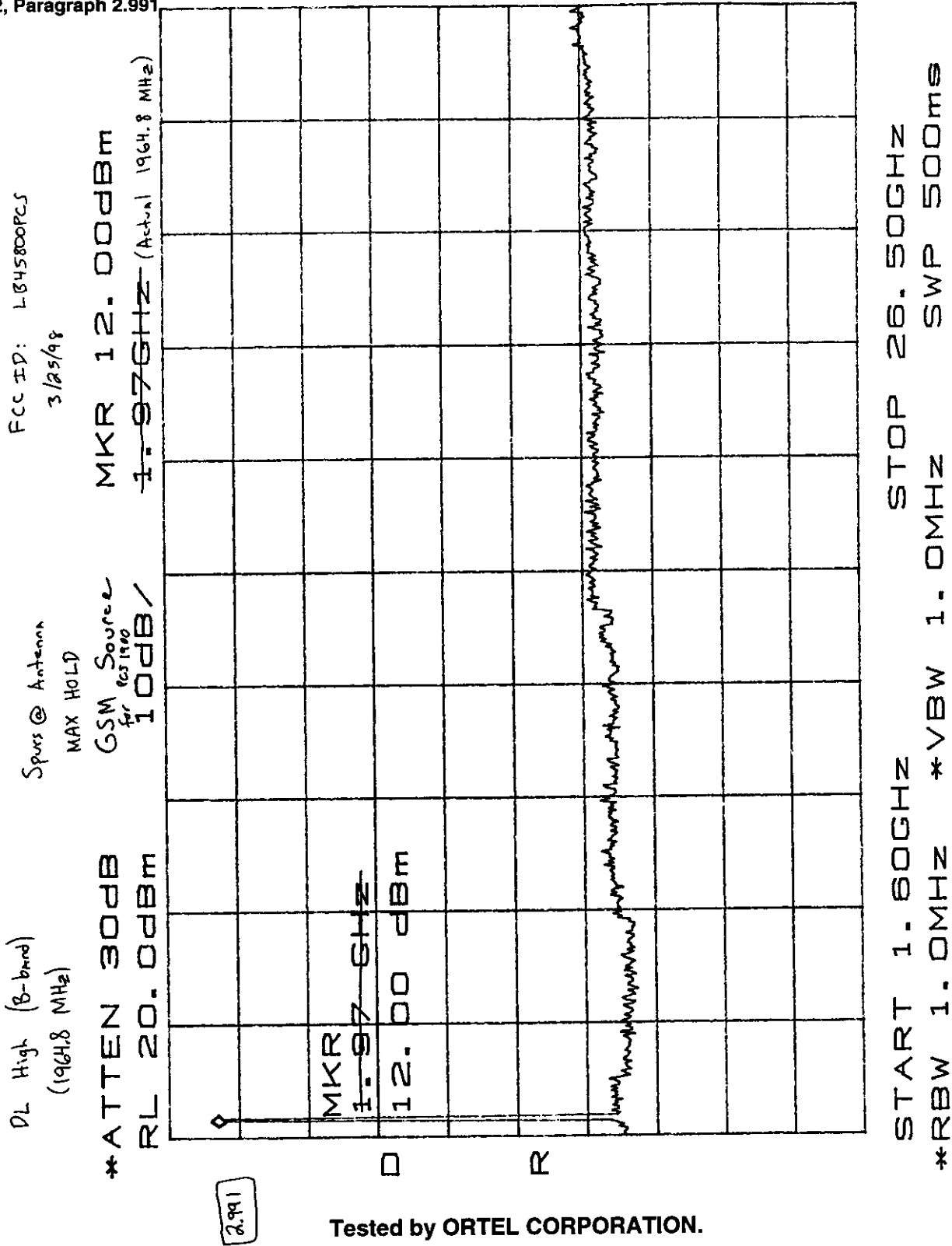




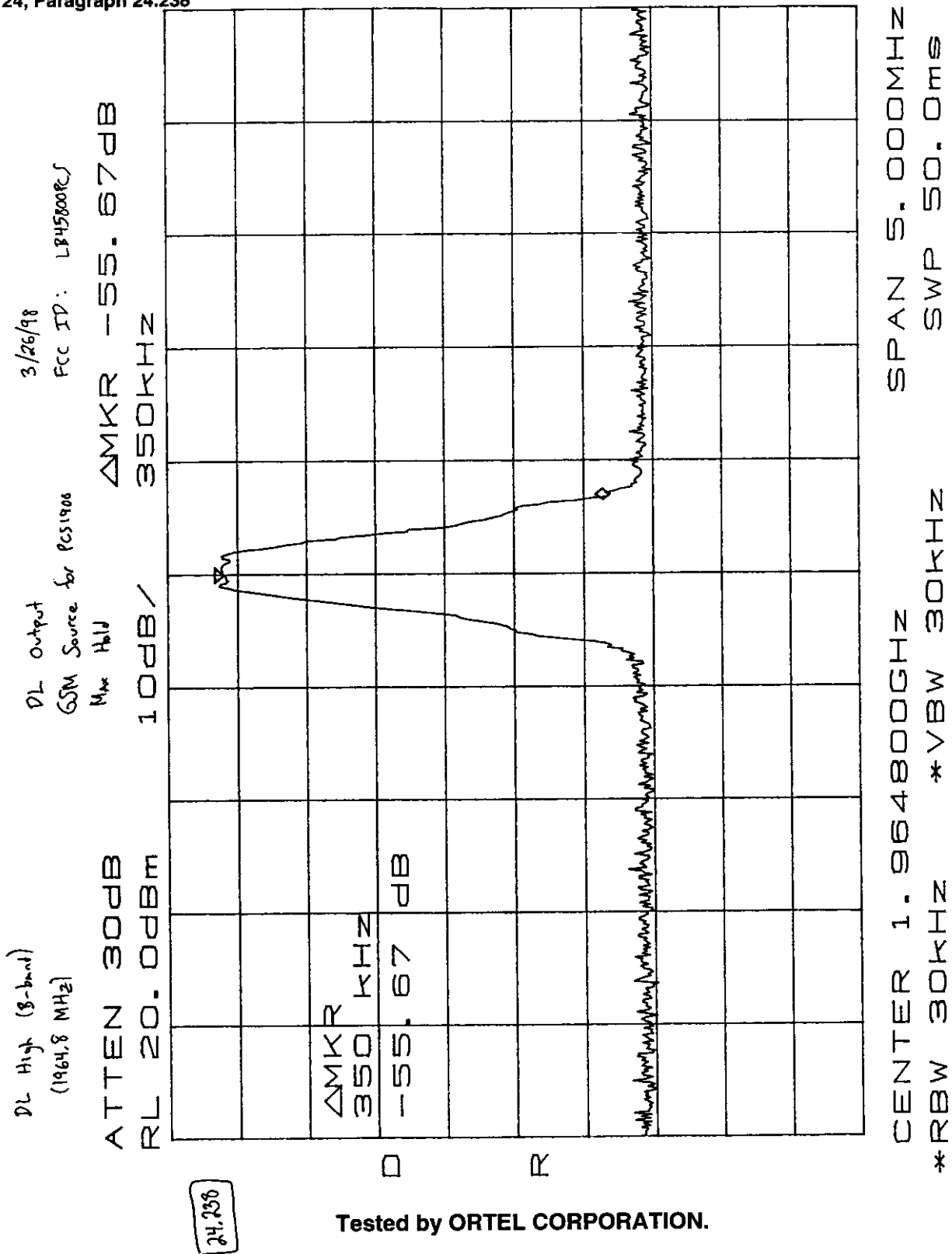
Part 2, Paragraph 2.991



Part 2, Paragraph 2.991

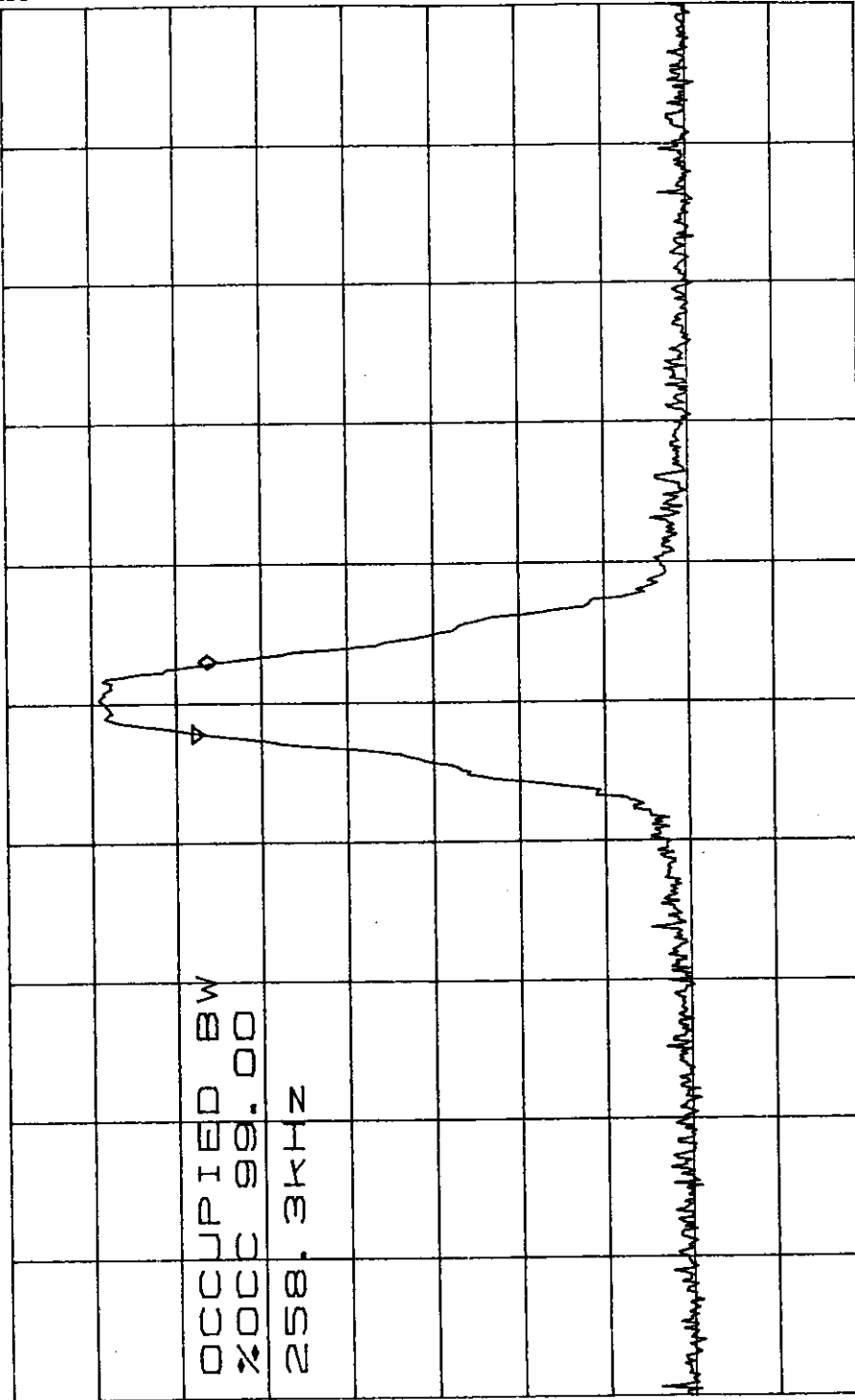


Part 24, Paragraph 24.238



Part 24, Paragraph 24.238

3/26/98
FCC ID: LB45800PCS
Input Source Splits 1:8
MKR 8.50dBm
1.964800GHZ
10dB/
ATTEEN 30dB
RL 20.0dBm
PL High (8-band)
(1964.8 MHz)
Input Signal In
GSM Source for PCS1900
Max Hold

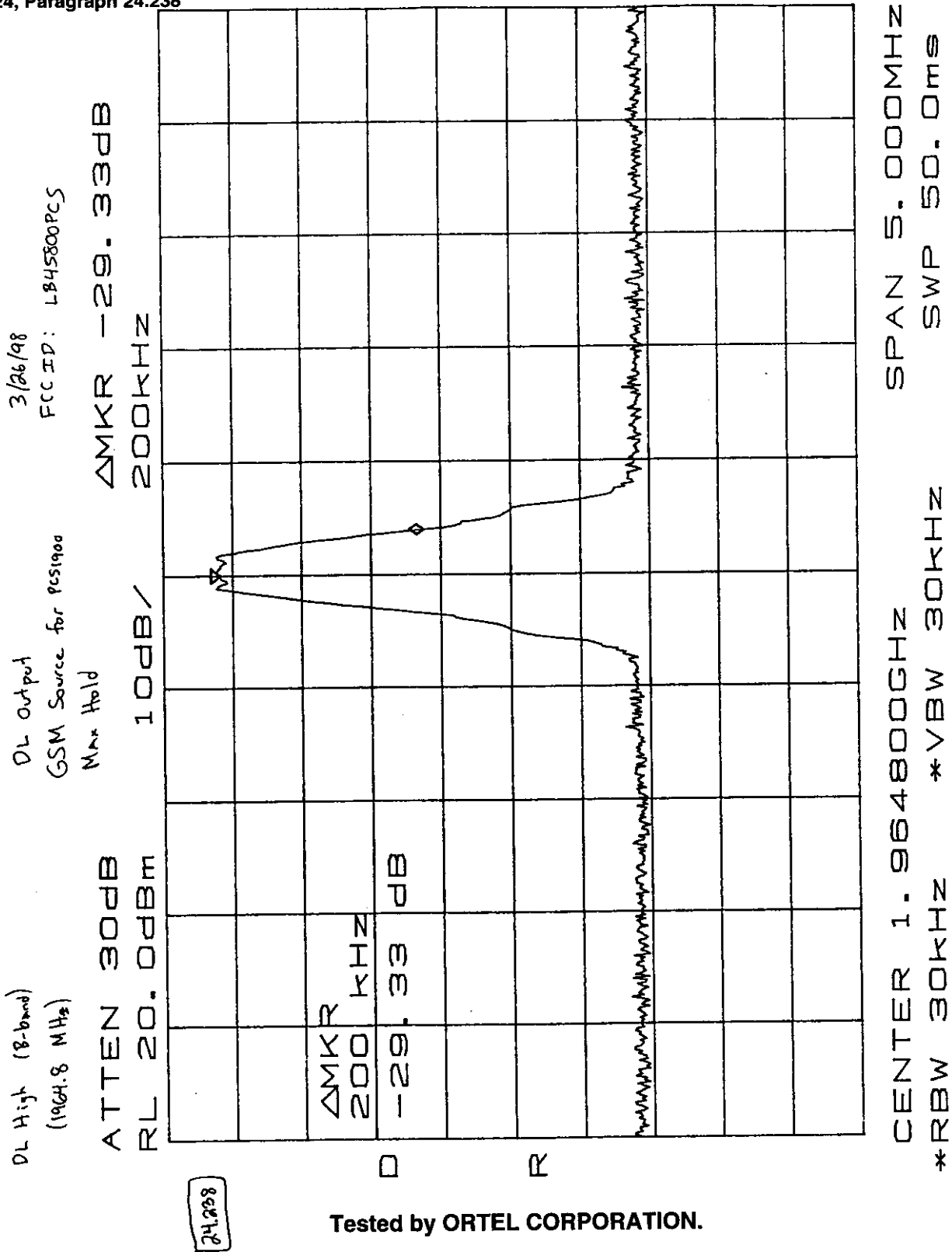


CENTER 1.964800GHZ
*RBW 30KHZ
SPAN 5.000MHZ
SWP 50.0ms
*VBW 30KHZ

24.238

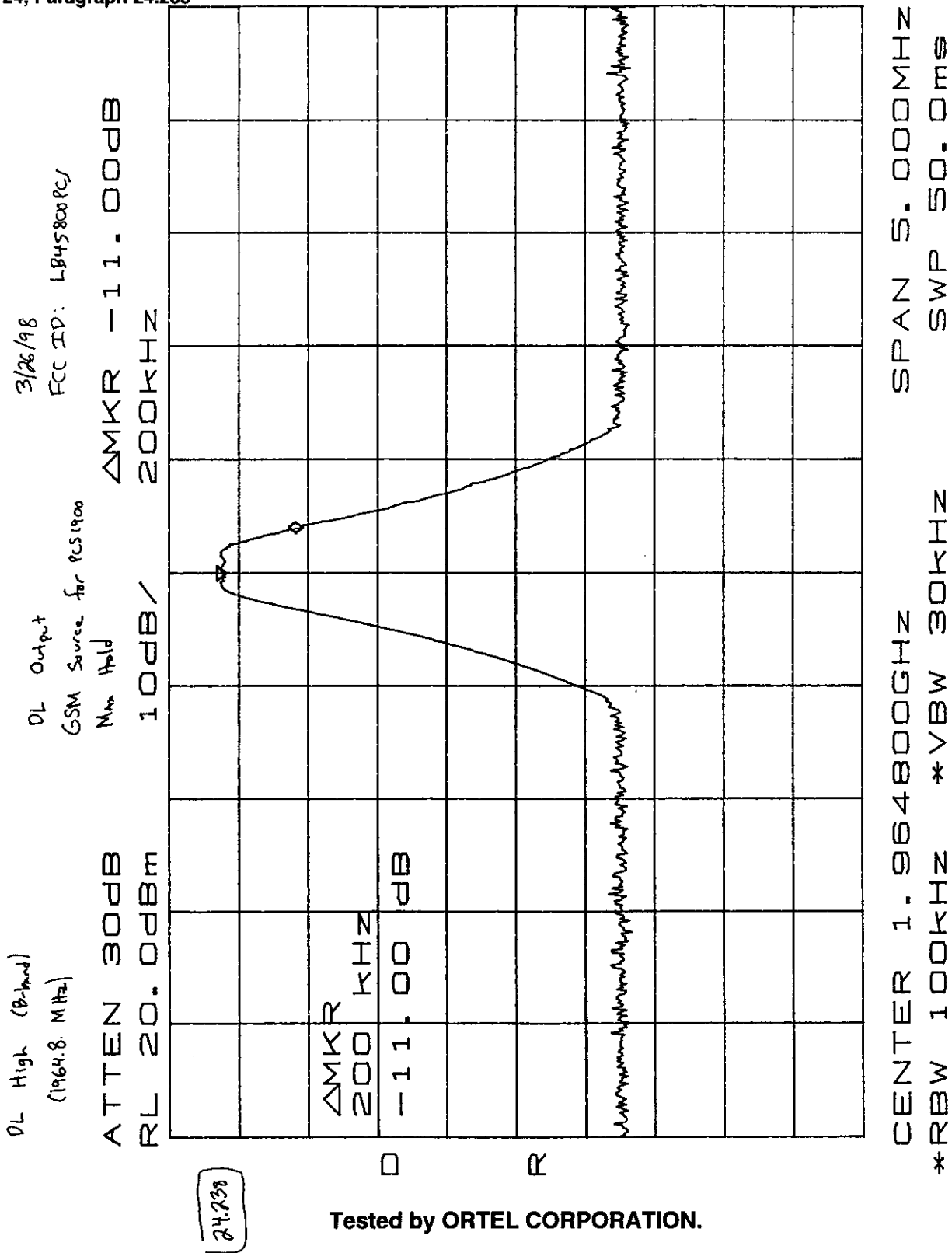
Tested by ORTEL CORPORATION.

Part 24, Paragraph 24.238

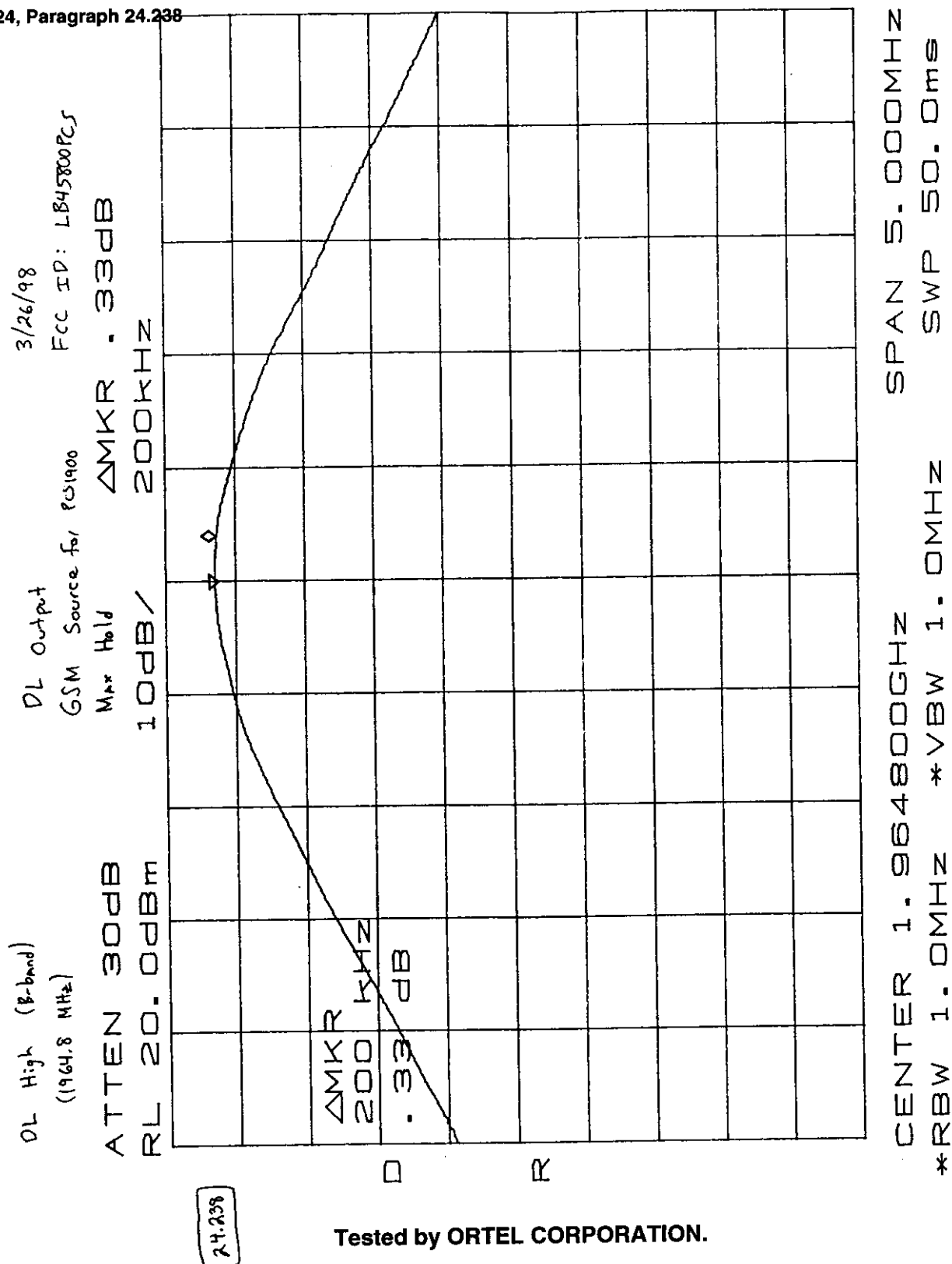


Tested by ORTEL CORPORATION.

Part 24, Paragraph 24.238

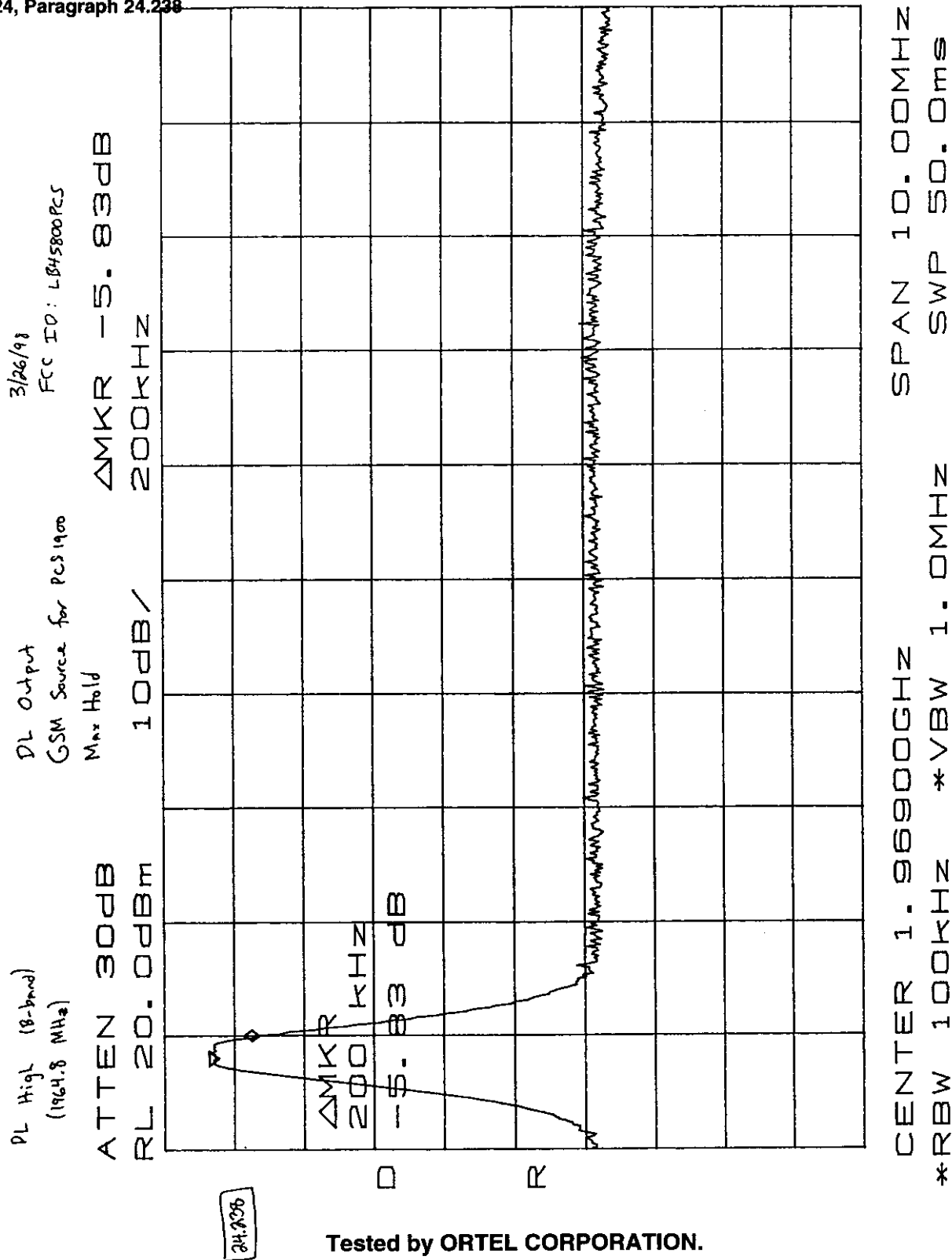


Part 24, Paragraph 24.238

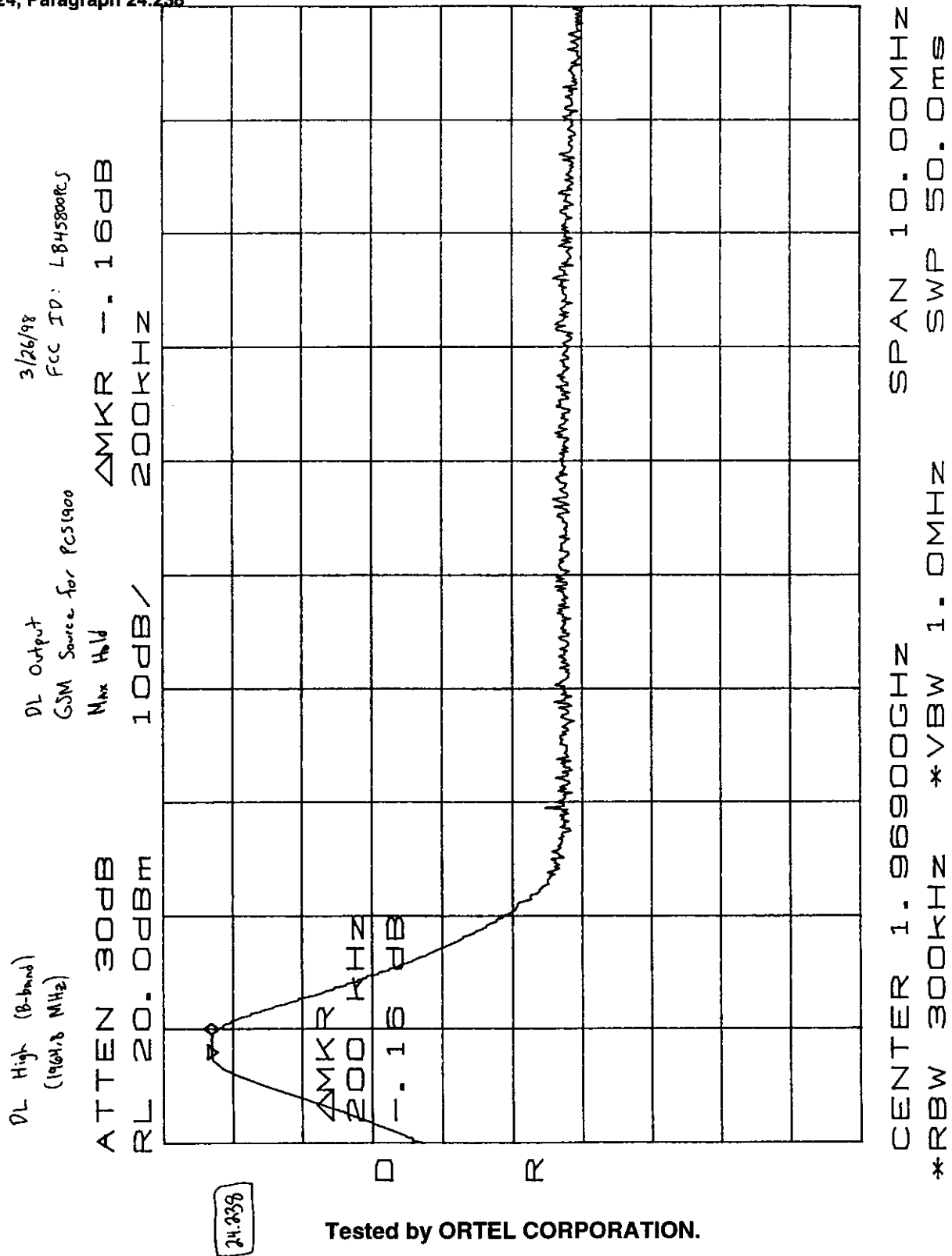


Tested by ORTEL CORPORATION.

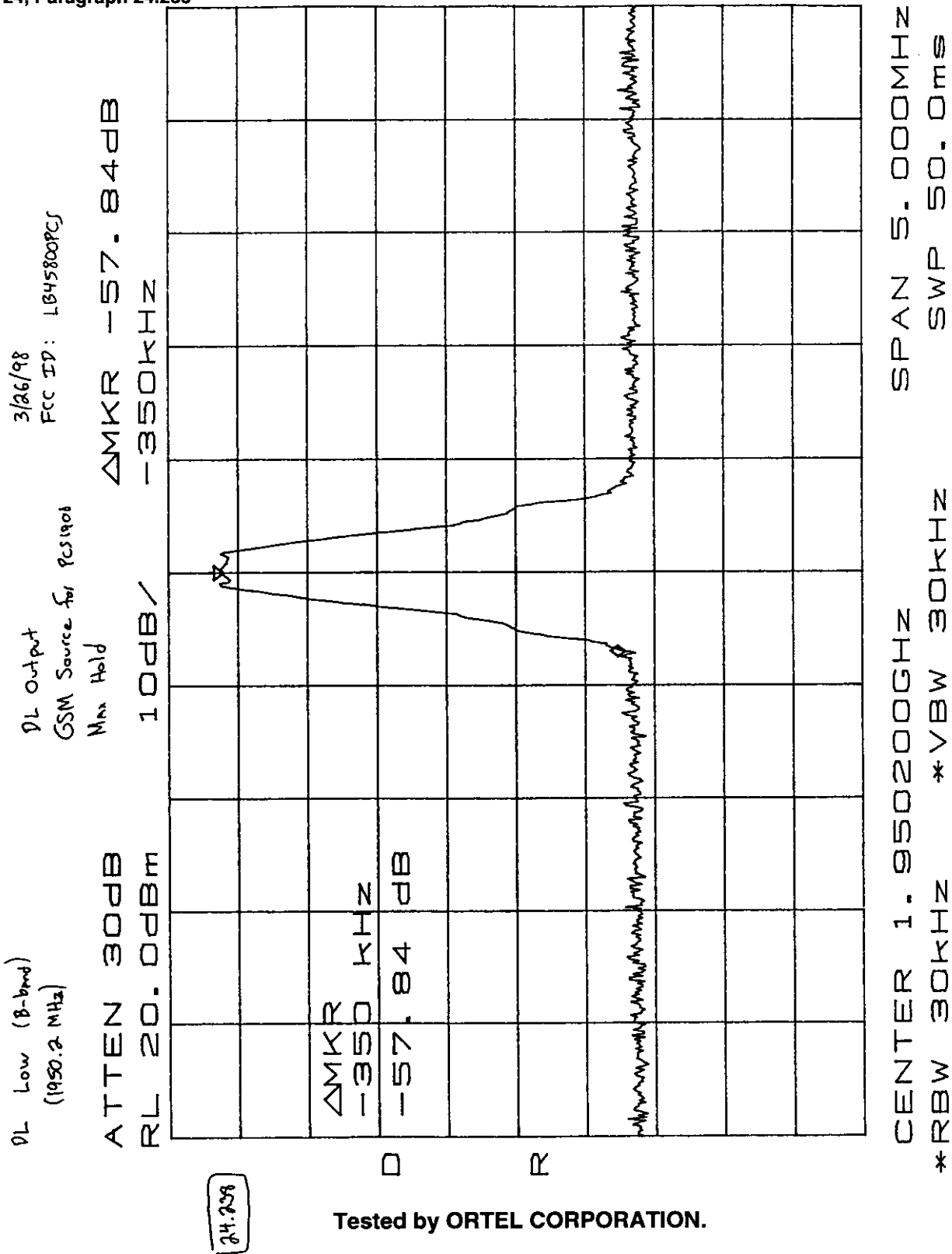
Part 24, Paragraph 24.238



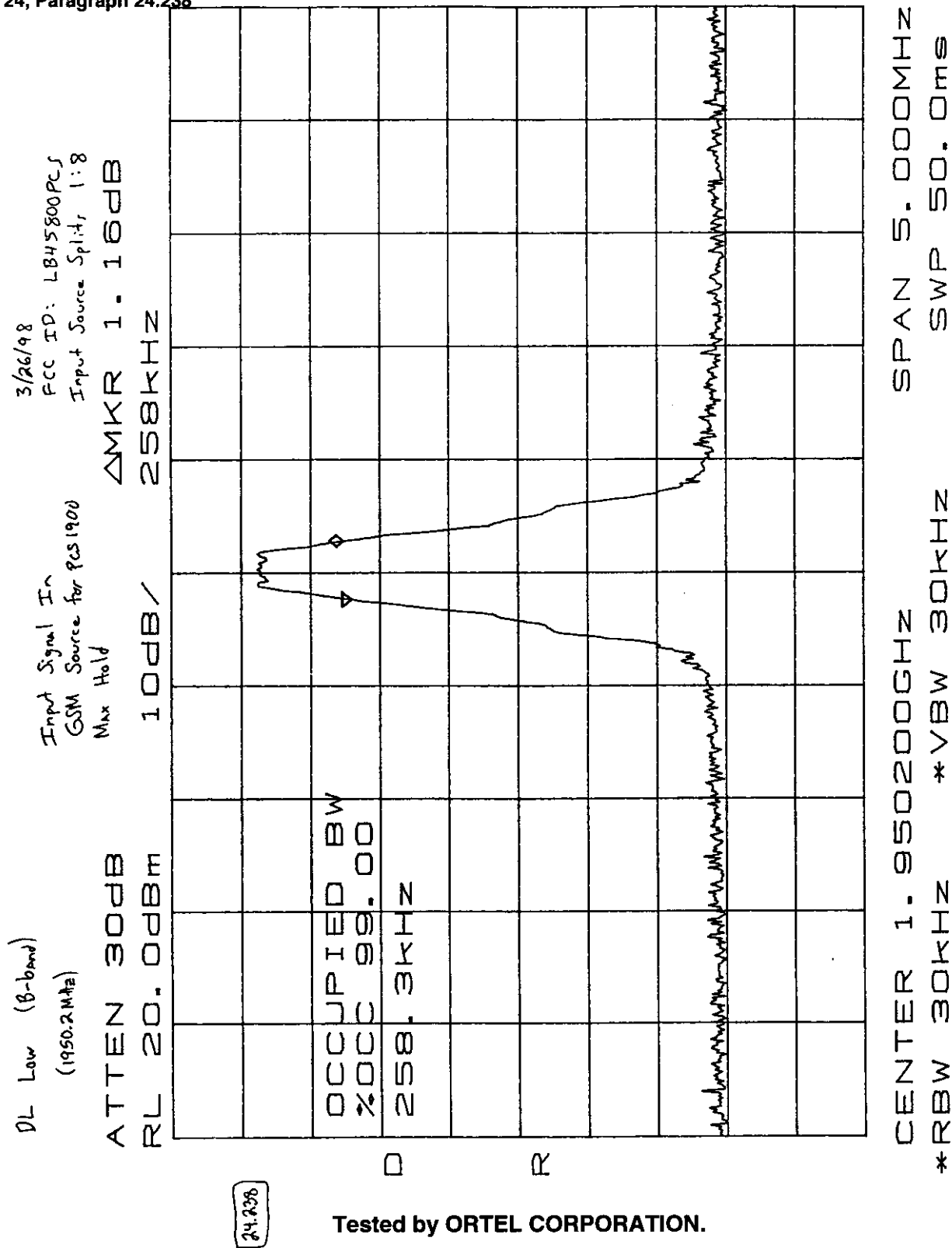
Part 24, Paragraph 24.238



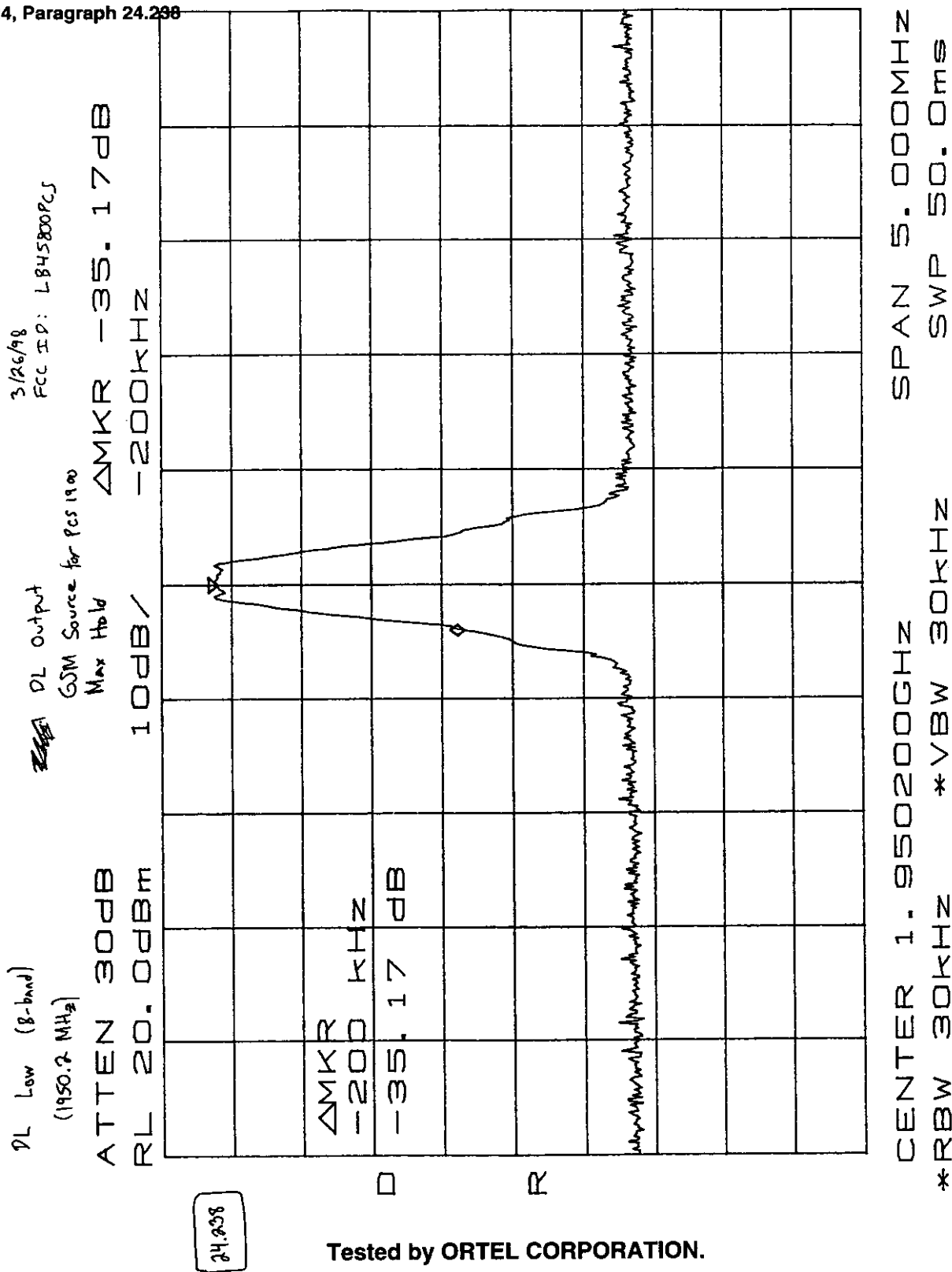
Part 24, Paragraph 24.238



Part 24, Paragraph 24.238

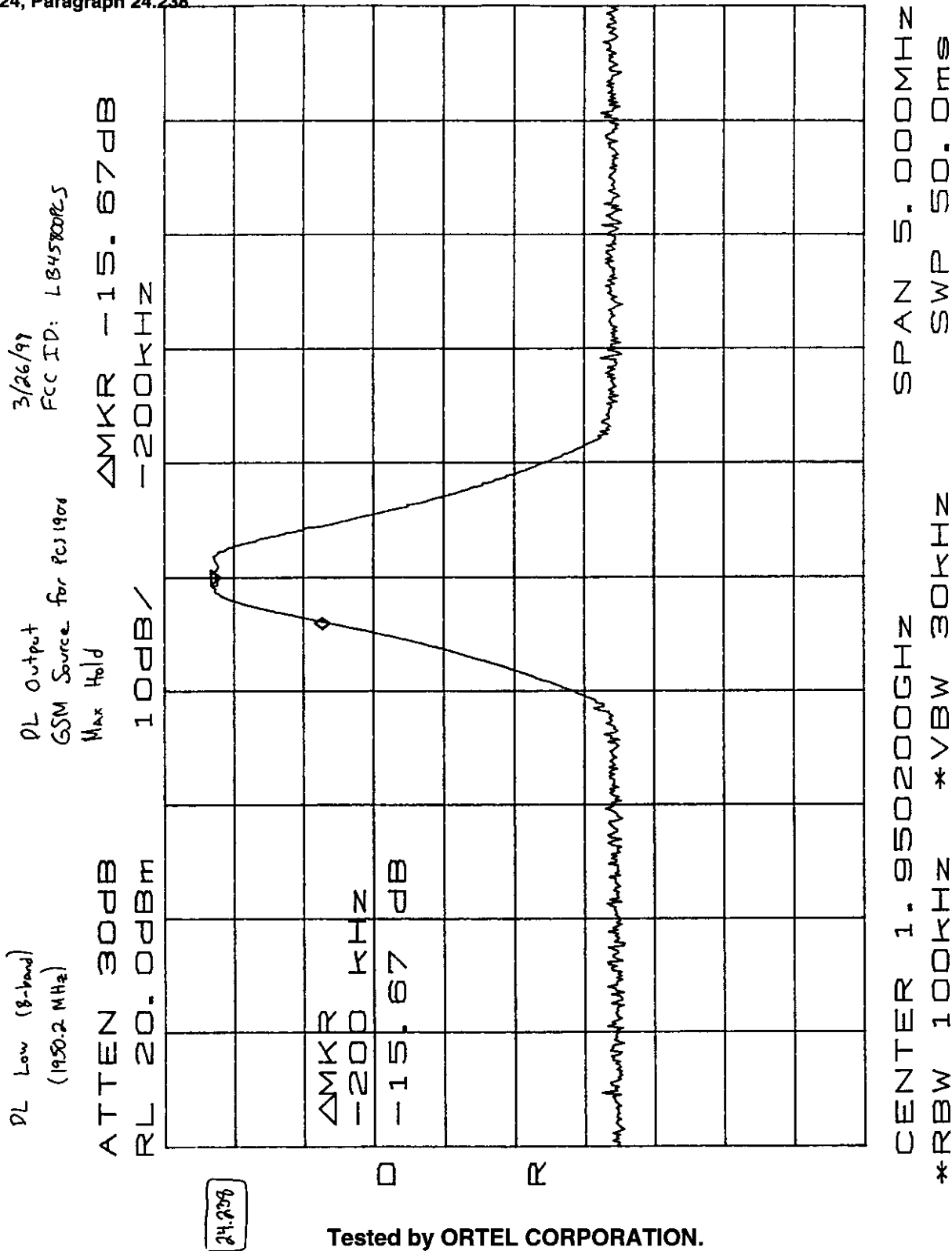


Part 24, Paragraph 24.238

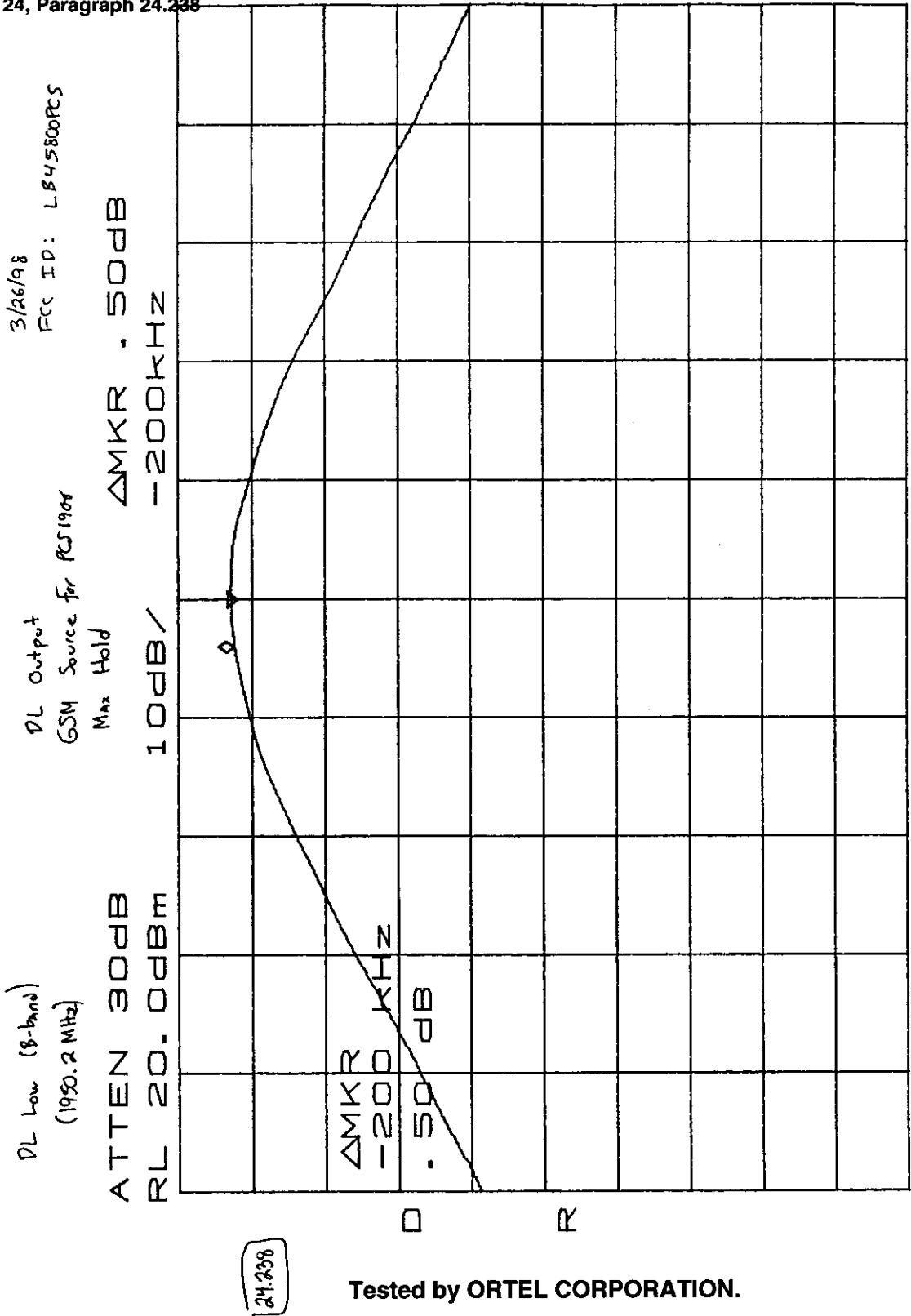


Tested by ORTEL CORPORATION.

Part 24, Paragraph 24.238

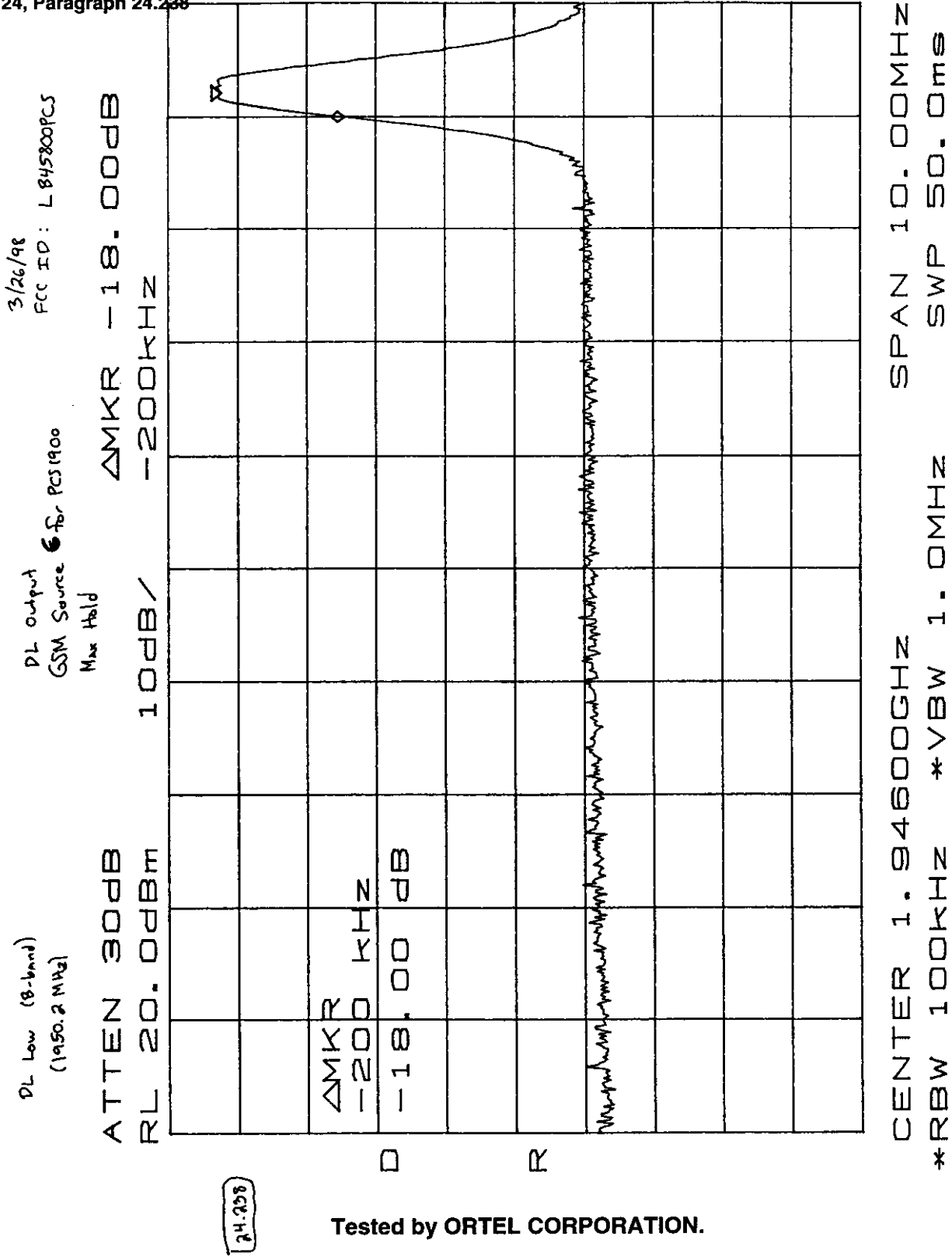


Part 24, Paragraph 24.238



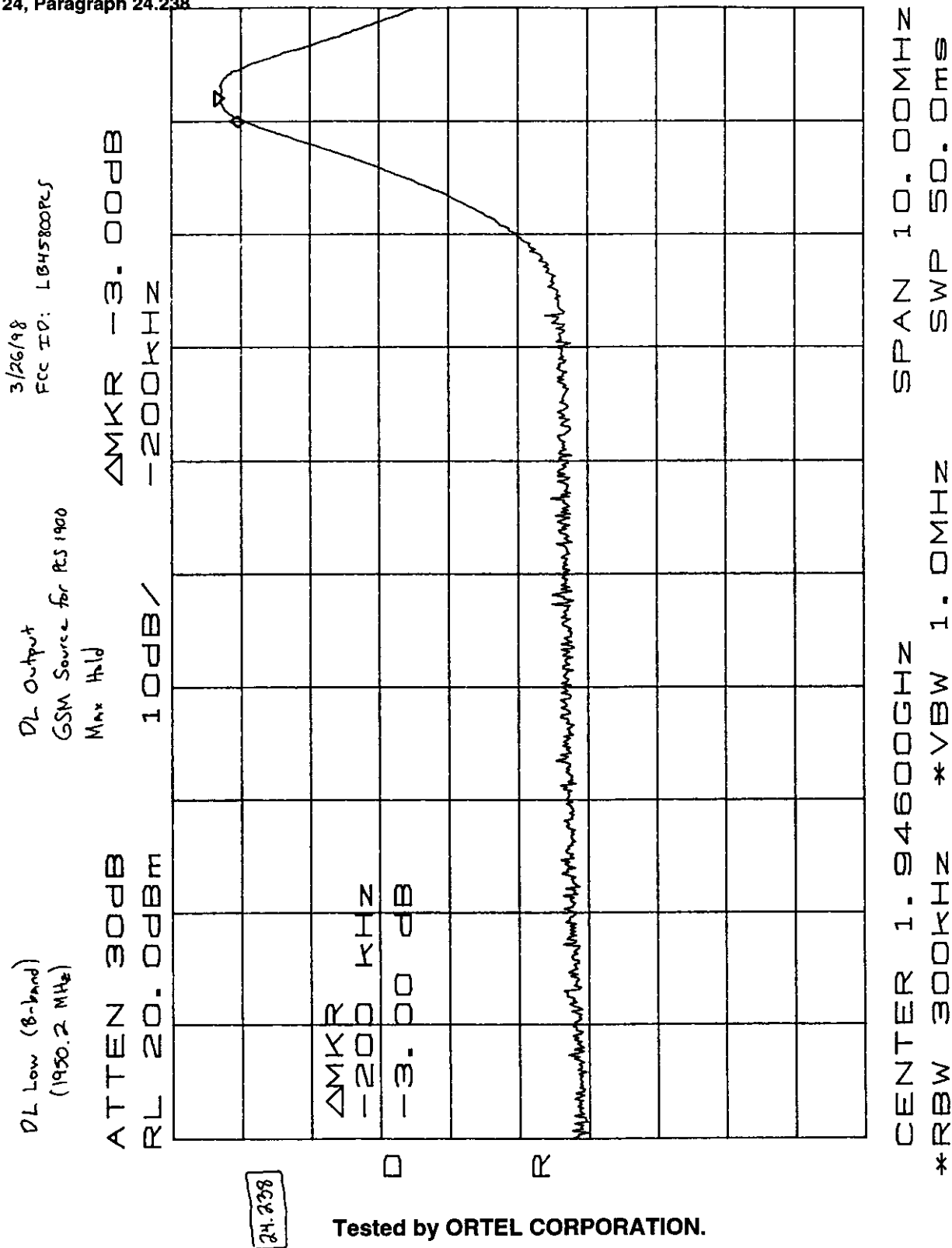
CENTER 1.950200GHZ
*RBW 1.0MHz *VBW 1.0MHz
SPAN 5.000MHz SWP 50.0ms

Part 24, Paragraph 24.238

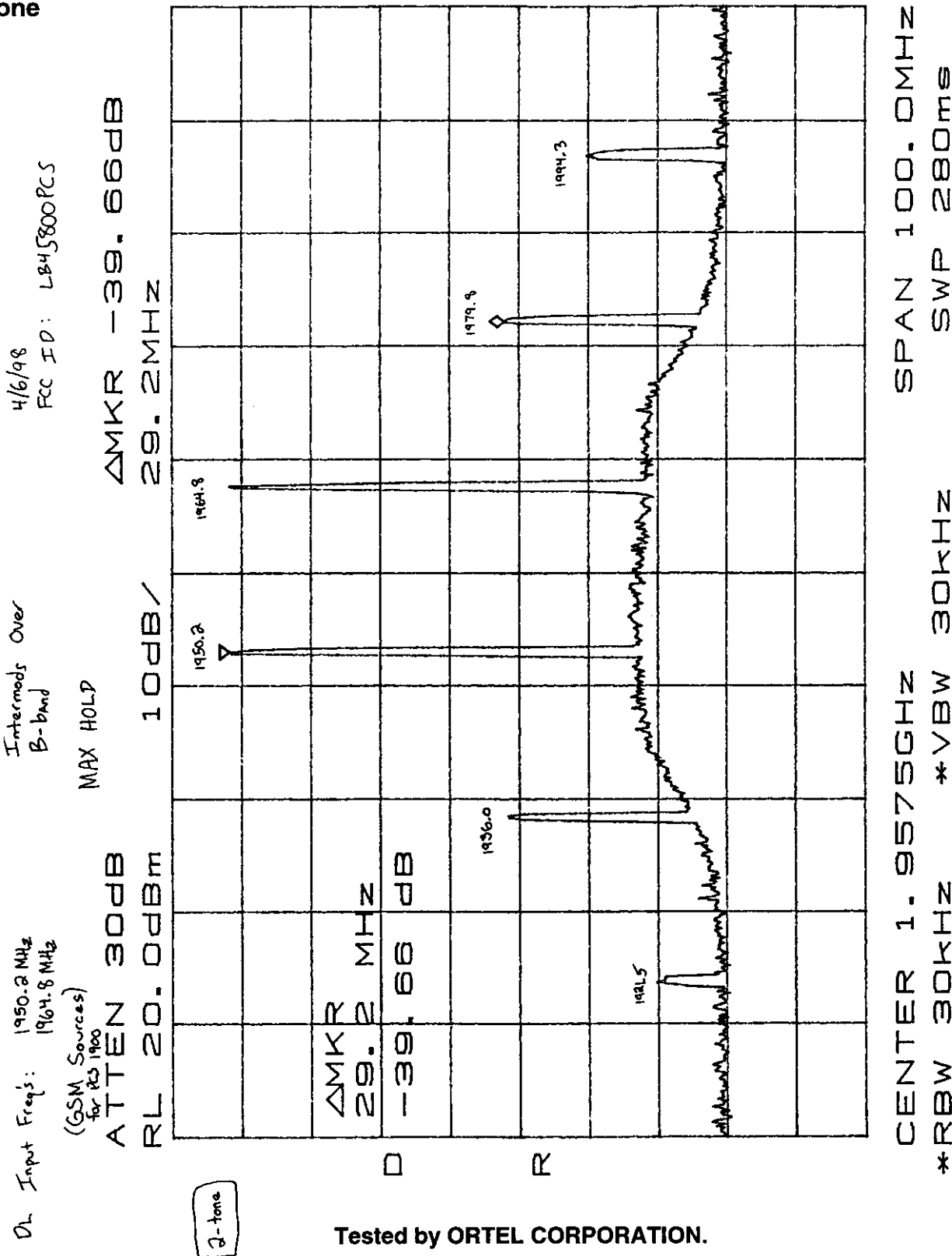


Tested by ORTEL CORPORATION.

Part 24, Paragraph 24.238



2-tone



2-tone

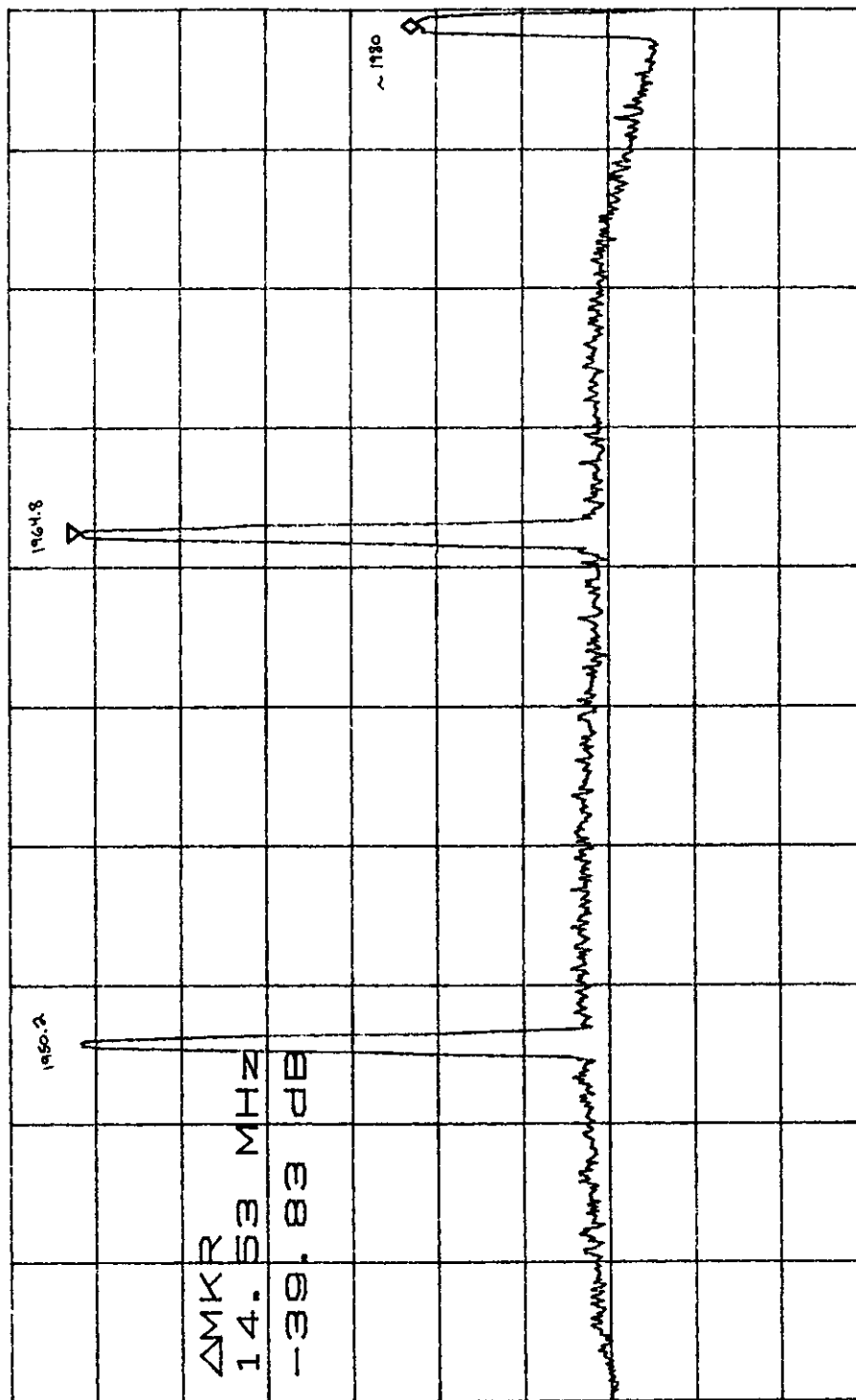
4/6/98
FCC ID: LB45800PCS

Intermod Over
B-band

MAX HOLD

DL Inputs Freq: 1950.2 MHz
1964.8 MHz
(GSM Sources for PCS 1900)

ATTEN 30dB
RL 20.0dBm
ΔMKR -39.83dB
14.53MHz



2-tone

Tested by ORTEL CORPORATION.

START 1.94000GHZ STOP 1.98000GHZ
*RBW 30KHZ *VBW 30KHZ SWP 120ms

2-tone

DL Input Freq's: 1950.2 MHz
1964.8 MHz
(GSM Sources)
for PCS 1900

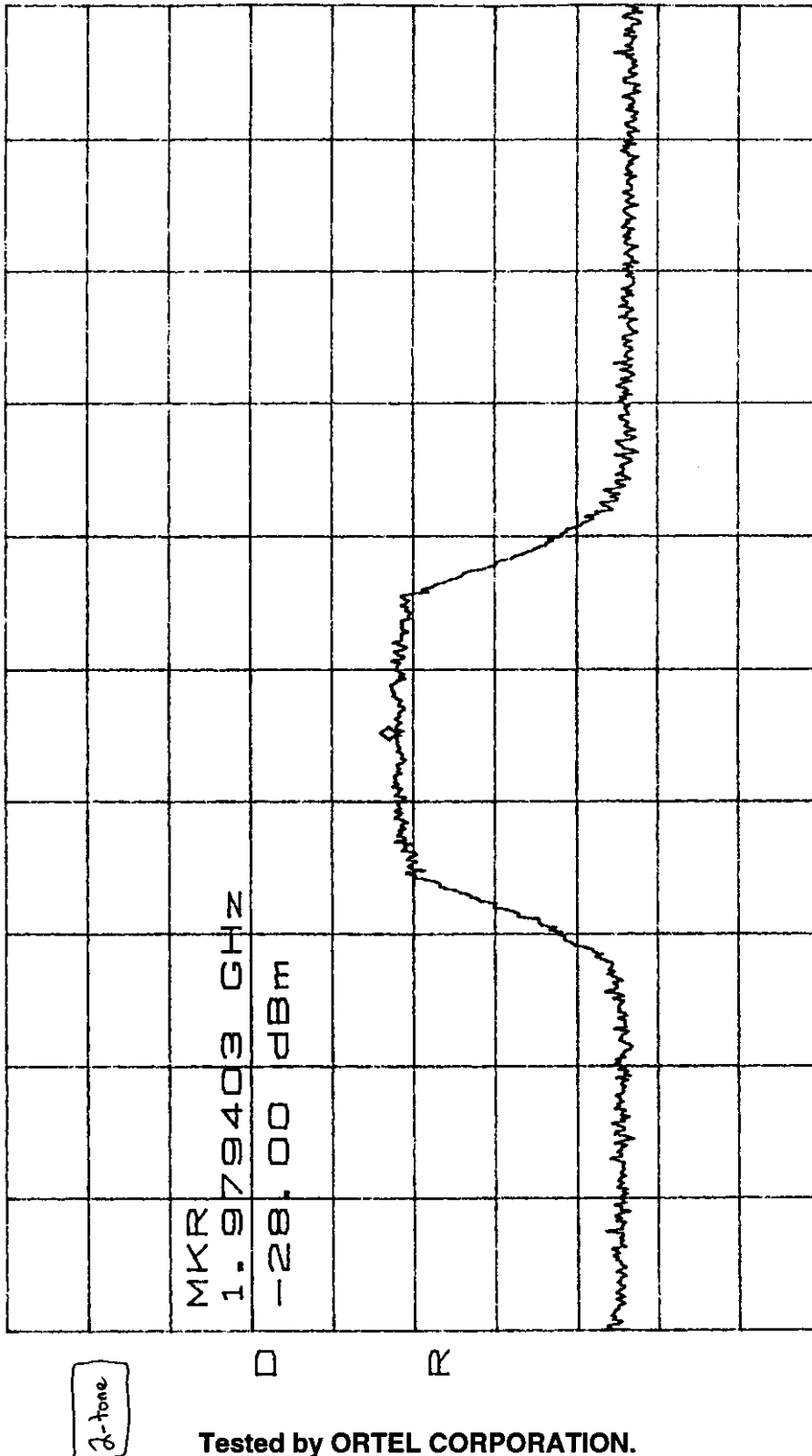
Highest Peak Intermod
B-band
MAX HOLD

4/6/98
FCC ID: LB45800PCS

MKR -28.00dBm
1.979403GHz

ATTEN 30dB
RL 20.00dBm

10dB/



CENTER 1.979500GHz
*RBW 30kHz *VBW 30kHz

SPAN 2.000MHz
SWP 50.0ms

Tested by ORTEL CORPORATION.

2-tone

4/6/98
FCC ID: LB45800PCS
Inputs to 1:4 Splitter on Hub (Slight amplitude
difference of peaks due to gain variation over BW)

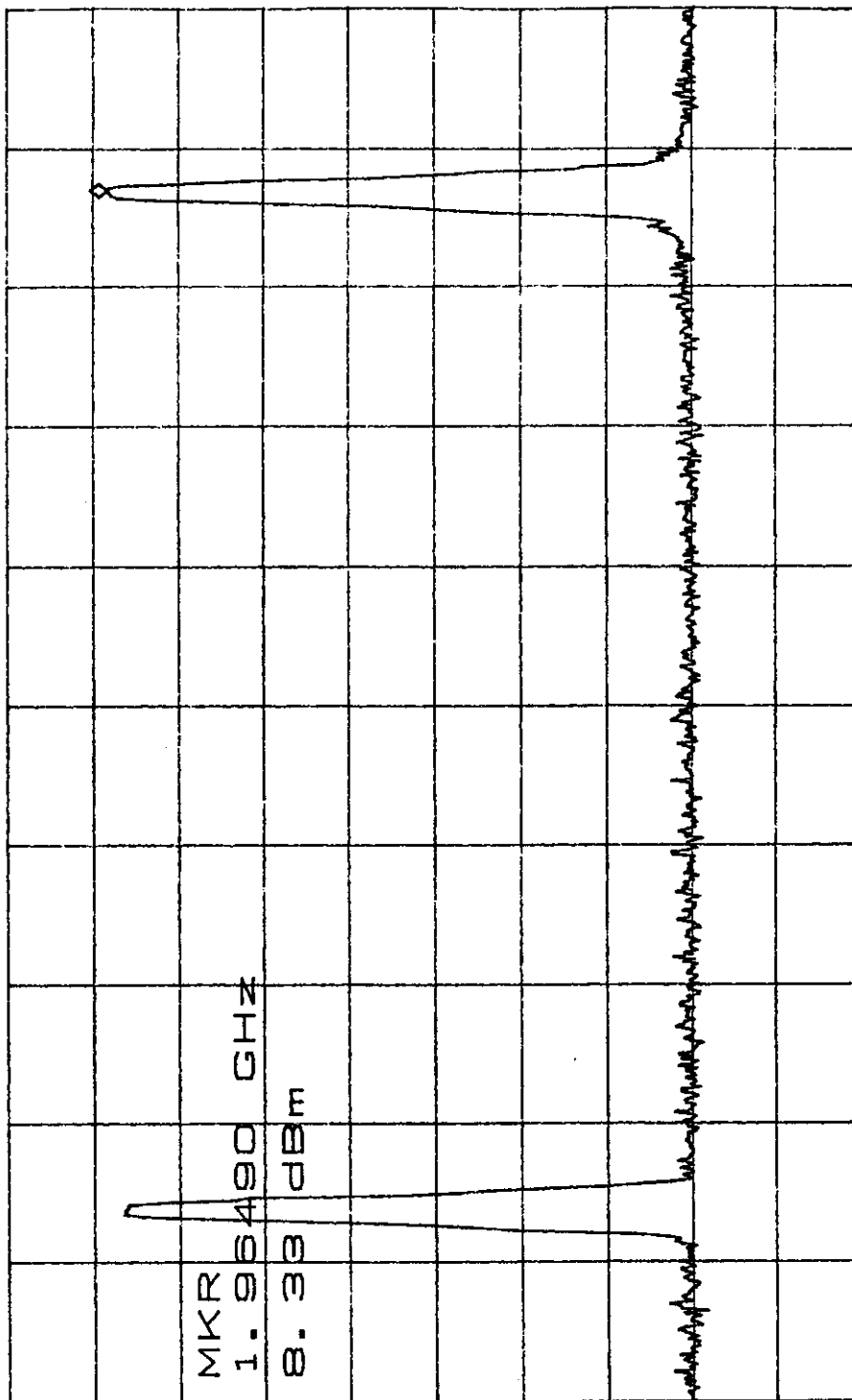
Inputs for IMD
B-band
MAX HOLD

DL Inputs: 1950.2 MHz
1964.8 MHz
(GSM Sources)
for PDS1400

MKR 8.33dBm

ATTEN 30dB

RL 20.0dBm 1.96490GHz



2-tone

Tested by ORTEL CORPORATION.

CENTER 1.95750GHz SPAN 20.00MHz
*RBW 30kHz *VBW 30kHz SWP 56.0ms

2-tone

4/6/98
FCC ID: LB45800PCS

Intermods Over B-band

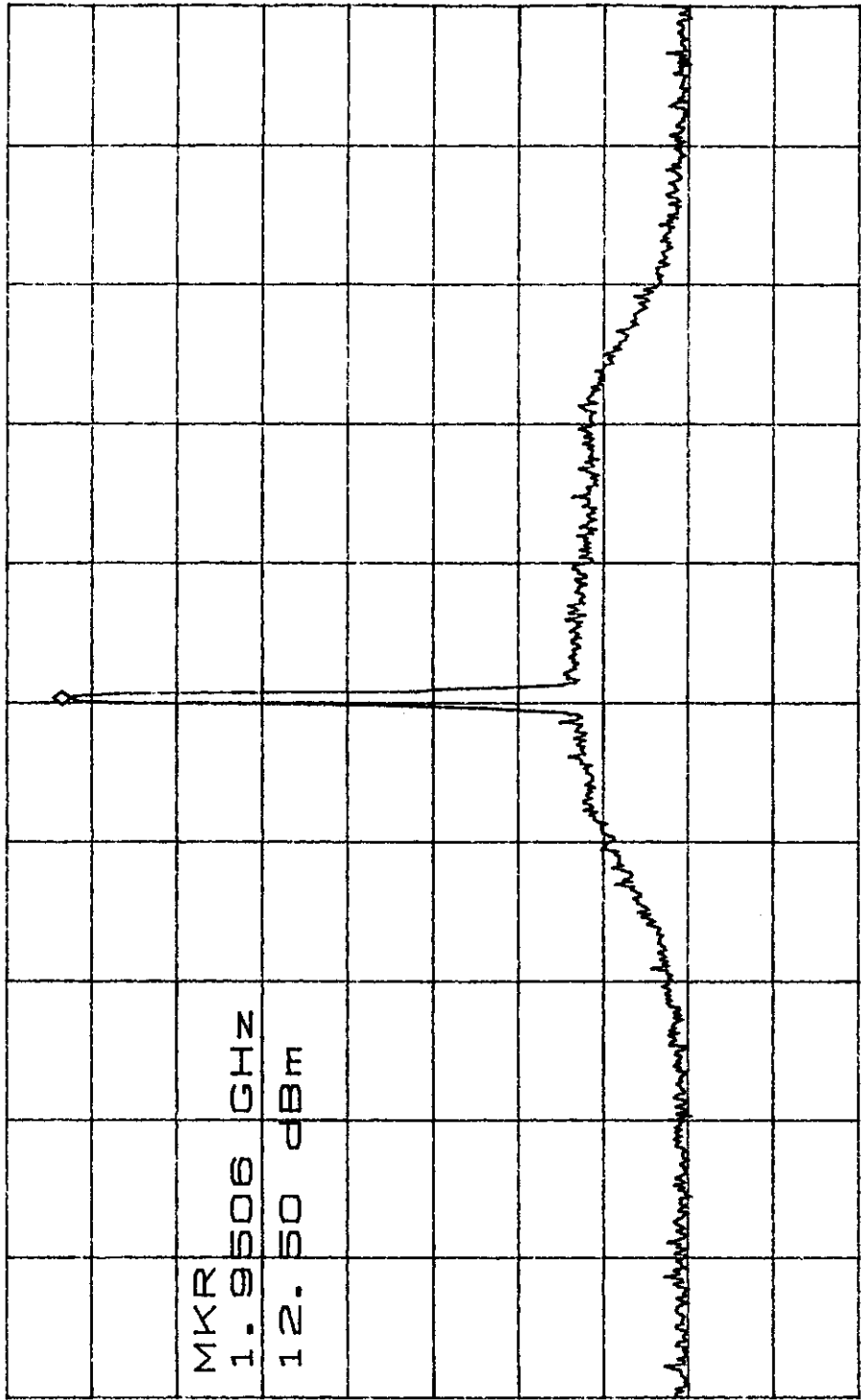
MAX HOLD

DL Input Freq's: 1950.2 MHz
1950.4 MHz

(GSM Sources)
for FCC 1900

ATTEN 30dB
RL 20.0dBm

MKR 12.50dBm
1.9506GHz



SPAN 100.0MHz

*VBW 30kHz

CENTER 1.9503GHz

*RBW 30kHz

SWP 280ms

Tested by ORTEL CORPORATION.

2-tone

4/6/98
FCC ID: LB45800PCS

Intermod Over B-band

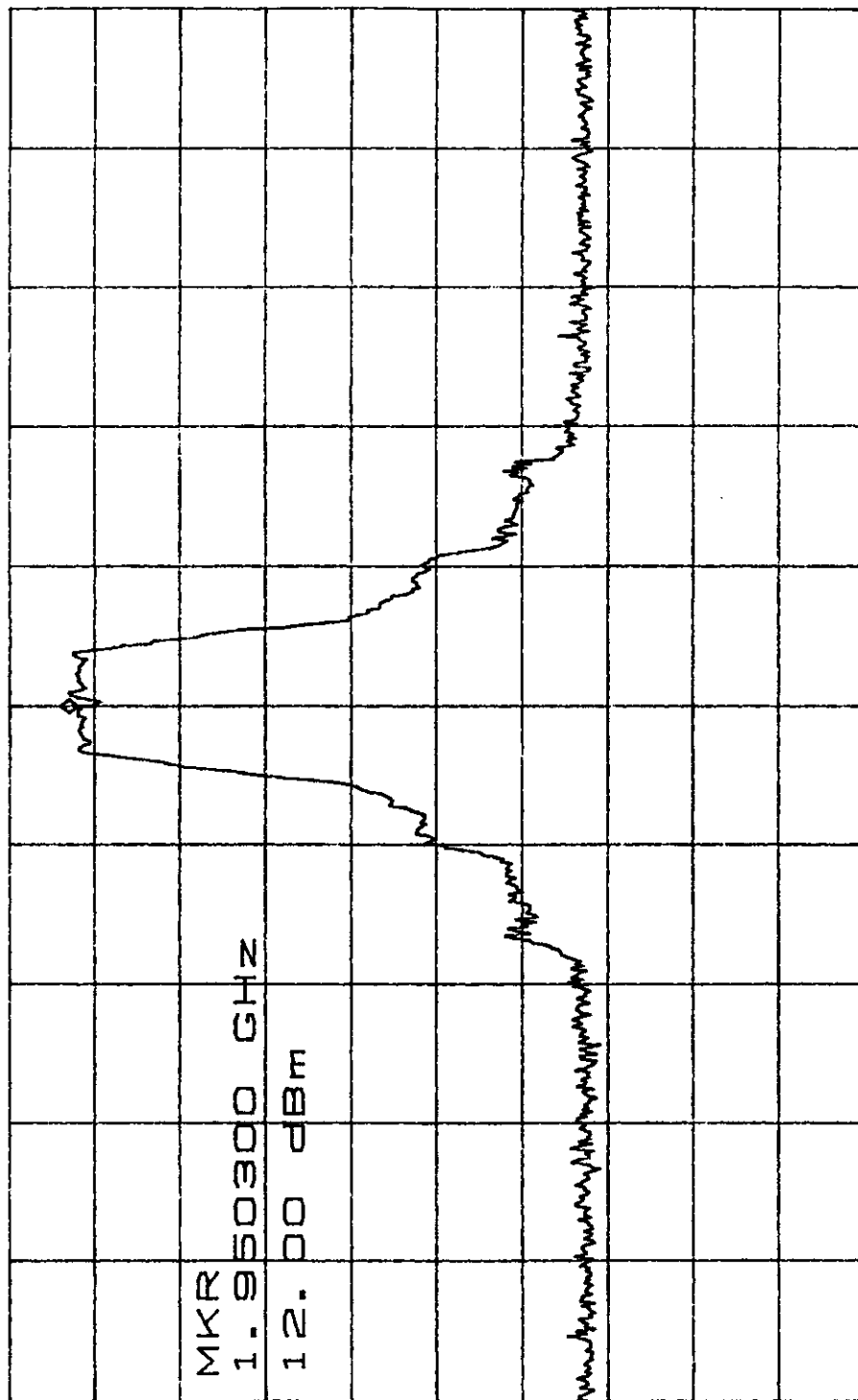
MAX HOLD

DL Input Freq's: 1950.2 MHz
1950.4 MHz

(GSM Source)
for PS1900

MKR 12.00dBm
1.950300GHz

ATTEEN 30dB
RL 20.00dBm



SPAN 5.000MHz
SWP 50.0ms

CENTER 1.950300GHz
*RBW 30kHz *VBW 30kHz

2-tone

Tested by ORTEL CORPORATION.

2-tone

4/6/98
FCC ID: LB45800PCS
Inputs to 1:4 Splitter

Inputs for IMP
B-band

MAX HOLD

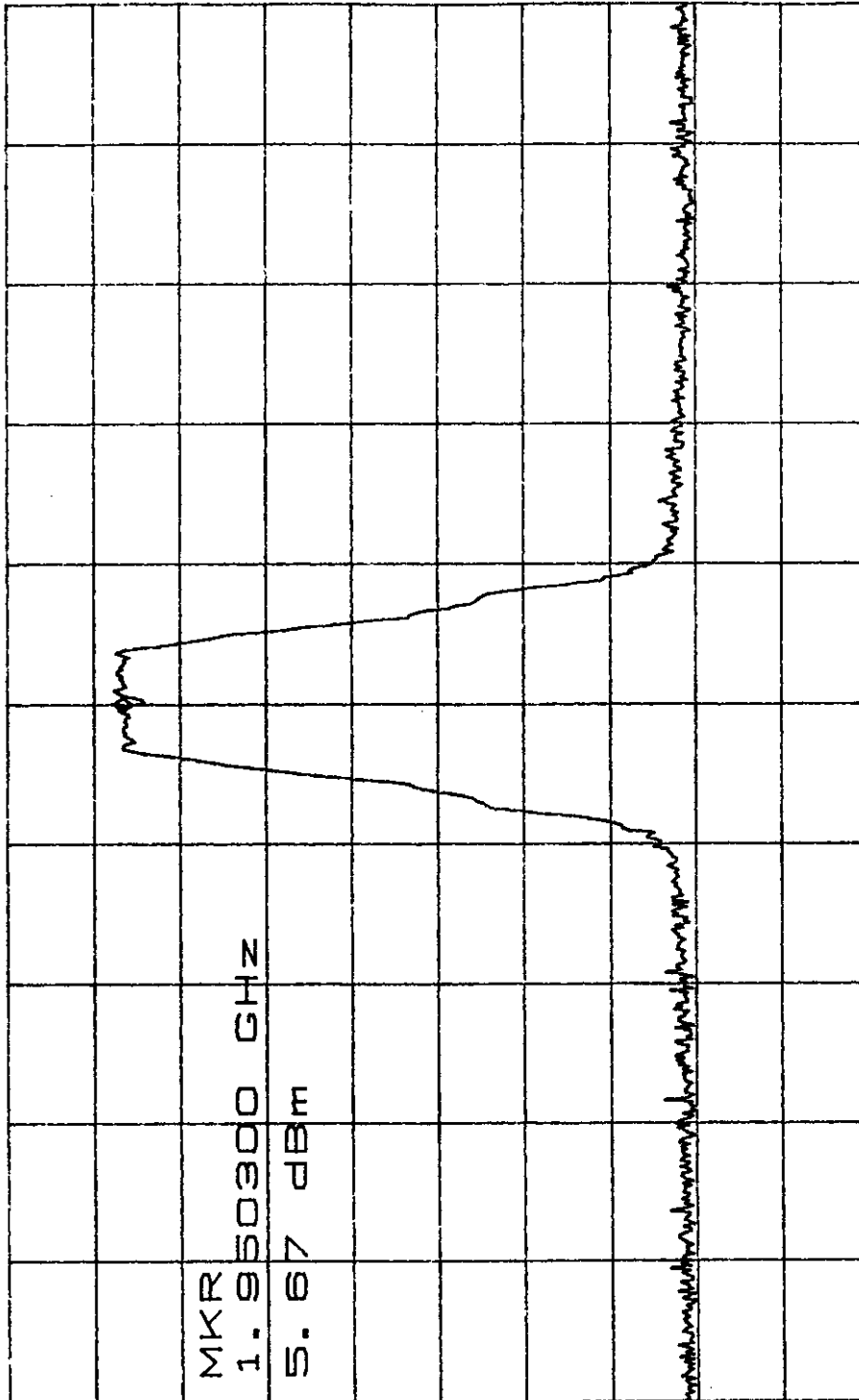
DL Inputs: 1950.2 MHz
1950.4 MHz

(GSM Sources)
5W PCS 1950

ATTEN 30dB
RL 20.0dBm

MKR 5.67dBm
1.950300GHZ

10dB/



2-tone

Tested by ORTEL CORPORATION.

CENTER 1.950300GHZ SPAN 5.000MHZ
*RBW 30KHZ *VBW 30KHZ SWP 50.0ms

3 RADIATED EMISSION DATA

The following data lists the significant emission frequencies, measured levels, correction factor (which includes cable and antenna corrections), the corrected reading, and the limit.

See following page(s).

All measurements are noise floor readings except the fundamental.

Page 53 of 53
Rev.No 1.0

Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1 GHz - 20 GHz were performed in a horizontal and vertical polarization at the following test location :

■ - Test not applicable

- ☐ - Roof (Small Open Area Test Site)
- ☐ - Canyon #1 (10- and 30-Meter Open Area Test Site), Carroll Canyon, San Diego
- ☐ - Canyon #2 (3- and 10-Meter Open Area Test Site), Carroll Canyon, San Diego

Testing was performed at a test distance of:

- ☐ - 1 meters
- - 3 meters
- ☐ - 10 meters

Test Equipment Used :

Model No.	Prop. No.	Description	Manufacturer	Serial No.
■ - 8566B	407	Spectrum Analyzer	Hewlett Packard	2311A02209
☐ - 85662B	406	Spectrum Analyzer Display	Hewlett Packard	2309A04682
☐ - 3115	453	Antenna, Double Ridge Guide	EMCO	9412-4363
■ - 3115	251	Antenna, Double Ridge Guide	EMCO	2495
☐ - AFD3-0102-13-ST	366	Pre-Amplifier (38 dB gain), 1 to 2 GHz	Miteq, Inc.	16429
■ - AFD3-0208-40-ST	367	Pre-Amplifier (30 dB gain), 2 to 8 GHz	Miteq, Inc.	155382
☐ - AFS4-08001800-70-10P-4	368	Pre-Amplifier (22 dB gain), 8 to 18 GHz	Miteq, Inc.	167
☐ - 91888-2	252	Horn Antenna (1 to 2 GHz)	Eaton	101
☐ - 91889-2	253	Horn Antenna (2 to 3.6 GHz)	Eaton	101
☐ - 91892-1	254	Reflector Antenna (3.6 to 18 GHz)	Eaton	--
☐ - 94613-1	255	Horn Antenna (3.6 to 7.6 GHz)	Eaton	--
☐ - 91891-2	256	Horn Antenna (7.3 to 12 GHz)	Eaton	--
☐ - 94614-1	257	Horn Antenna (12 to 18 GHz)	Eaton	--

Remarks: _____