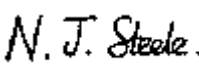


TEST REPORT FROM RADIO FREQUENCY INVESTIGATION LTD.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Test Report Serial No:
RFI/MPTB1/RP42177B

This Test Report Is Issued Under The Authority Of Richard Jacklin, Operations Director: 	Checked By: 
Tested By: 	Release Version No: PDF01
Issue Date: 15 June 2001	Test Date: 11 May 2001 to 17 May 2001

This report is issued in Adobe Acrobat portable document format (PDF). It is only a valid copy of the report if it is being viewed in PDF format with the following security options not allowed: Changing the document, Selecting text and graphics, Adding or changing notes and form fields. Furthermore, the date of creation must match the issue date stated above. This report may be copied in full.

Radio Frequency Investigation Ltd, Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ, ENGLAND. Tel: +44 (0) 1256 851193 Fax: +44 (0) 1256 851192	Registered in England, No. 211 7901. Registered Office: Ewhurst Park, Ramsdell, Basingstoke, Hampshire RG26 5RQ	
--	--	---

RADIO FREQUENCY INVESTIGATION LTD.

Conformance Testing Department

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

TEST REPORT

S.No. RFI/MPTB1/RP42177B

Page 2 of 56

Issue Date: 15 June 2001

This page has been left intentionally blank.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Table of Contents

1. Client Information	4
2. Equipment Under Test (EUT).....	5
3. Test Specification, Methods And Procedures.....	8
4. Deviations From The Test Specification.....	10
5. Operation Of The EUT During Testing.....	11
6. Summary Of Test Results.....	12
7. Measurements, Examinations And Derived Results.....	13
8. Measurement Uncertainty.....	28
Appendix 1. Test Equipment Used.....	30
Appendix 2. Measurement Methods	31
Appendix 3. Test Configuration Drawings	41
Appendix 4. Graphical Test Results	46
Appendix 5. Photographs of EUT.....	55

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

1. Client Information

Company Name:	Red-M (Communications) Ltd.
Address:	Wexham Springs Framewood Road Wexham Slough SL3 6PJ.
Contact Name:	Mark Bailey.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

2. Equipment Under Test (EUT)

The following information (with the exception of the Date of Receipt) has been supplied by the client:

2.1. Identification Of Equipment Under Test (EUT)

Brand Name:	Red-M
Model Name or Number:	3000AS
Unique Type Identification:	None given
Serial Number:	00028110400A0
Country of Manufacture:	UK
FCC ID Number:	Pending
Date of Receipt:	11 May 2001

Brand Name:	Red-M
Model Name or Number:	Access Server External Aerial (3000-501)
Unique Type Identification:	Not applicable
Serial Number:	1
Country of Manufacture:	UK
FCC ID Number:	Pending
Date of Receipt:	11 May 2001

2.2. Description Of EUT

The 3000AS is a Bluetooth Access Server. It provides connectivity between Bluetooth devices, LAN and WAN. The product has an in-built Bluetooth antenna and the option for the connection of an external antenna.

2.3. Modifications Incorporated In EUT

The EUT has not been modified from what is described by the Model Name and Unique Type Identification stated above.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

2.4. Additional Information Related To Testing

Power Supply Requirement:	115 V, 60 Hz AC Mains supply
Intended Operating Environment:	Commercial, Light Industry
Weight:	3.8 kg
Dimensions:	245 x 145 x 334
Interface Ports:	RS232 (x2) 10/100 Fast Ethernet (x3) AC Mains Input ISDN BRI S-i/f External Antenna

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

2.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	10/100 Switch
Brand Name:	3COM
Model Name or Number:	3 Com Office Connect Dual Speed Hub 8
Serial Number:	0101/7P1F67471
FCC ID Number:	None stated
Cable Length And Type:	3m, 10/100 Type
Connected to Port:	10/100

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

3. Test Specification, Methods And Procedures

3.1. Test Specification

Reference:	FCC Part 15 Subpart C: 2000 (Section 15.247)
Title:	Code of Federal Regulations, Part 15 (47CFR15) Radio Frequency Devices: Digital Devices.
Comments:	A description of the test facility used for this test is on file with, and has been accepted by, the Federal Communications Commission as required by Section 2.948 of Federal Rules.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification for the purposes of certification.

Reference:	FCC Part 15 Subpart B: 2000. (Section 15.107 and 15.109)
Title:	Code of Federal Regulations, Part 15 (47CFR15) Radio Frequency Devices: Radio Frequency Devices.
Comments:	A description of the test facility used for this test is on file with, and has been accepted by, the Federal Communications Commission as required by Section 2.948 of Federal Rules.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification for the purposes of certification.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

3.2. Methods And Procedures

The methods and procedures used were as detailed in:

FCC Code of Federal Regulations 47.
Telecommunication. Parts 0 to 19, October 2000.

ANSI C63.2 (1987)
Title: American National Standard for Instrumentation - Electromagnetic noise and field strength.

ANSI C63.4 (1992)
Title: American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

ANSI C63.5 (1988)
Title: American National Standard for the Calibration of antennas used for Radiated Emission measurements in Electromagnetic Interference (EMI) control.

ANSI C63.7 (1988)
Title: American National Standard Guide for Construction of Open Area Test Sites for performing Radiated Emission Measurements.

CISPR 16-1: (1999)
Title: Specification For Radio Disturbance and Immunity Measuring Apparatus and Methods. Part 1: Radio Disturbance and Immunity Measuring Apparatus.

3.3. Definition Of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the Methods & Procedures section above. Appendix 1 contains a list of the test equipment used.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

4. Deviations From The Test Specification

None.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

5. Operation Of The EUT During Testing

5.1. Operating Conditions

The EUT was tested in a normal laboratory environment.

During testing, the EUT was powered by a 115 V, 60 Hz AC Mains supply.

5.2. Operating Modes

The EUT was tested in the following operating modes:

1: Test Mode: The EUT operated in a test mode with its channels Fixed either on Top, Bottom or Middle channel, as specified in FCC Part 15.31(m) and FCC Public Notice DA 00-705.

2: Receive Mode: The EUT did not transmit on any channels but received on all hopping frequencies.

The reason for choosing these modes was that it was defined by the client as being likely to be the worst case with regards EMC.

5.3. Configuration And Peripherals

The EUT was tested in the following configuration:

During the tests, the EUT was configured as intended. However, due to the operation of the EUT the following tests were performed with the external antenna removed, and test equipment connected to the antenna port:

1: Conducted Antenna Port Transmit Power.

2: Conducted Antenna Port Spurious Emissions (30 to 26000 MHz)

3: Modulation Requirements / Channel Spacing / Timing Requirements.

NB Section 2 of this report contains a full list of support equipment used and Appendix 3 contains a schematic diagram of the test configuration.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

6. Summary Of Test Results

6.1. Emissions: Transmit Mode

Range Of Measurements	Specification Reference	Compliance Status
Conducted AC Mains Emissions	C.F.R. 47 FCC Part 15: 2000. Section 15.207	Complied
Conducted Antenna Port Transmit Power	C.F.R. 47 FCC Part 15: 2000. Section 15.247 (b)	Complied
Conducted Antenna Port Spurious Emissions (30 to 26000 MHz)	C.F.R. 47 FCC Part 15: 2000. Section 15.247 (c)	Complied
Modulation Requirements / Channel Spacing / Timing Requirements	C.F.R. 47 FCC Part 15: 2000. Section 15.247 (a)	Complied
Isotropic Effective Radiated Power (EIRP)	C.F.R. 47 FCC Part 15: 2000. Section 15.247 (b) (1)	Complied
Radiated Electric Field Strength Spurious Emissions (30 to 26000 MHz)	C.F.R. 47 FCC Part 15: 2000. Section 15.247 (c) (15.209)	Complied

6.2. Emissions: Receive Mode

Range Of Measurements	Specification Reference	Compliance Status
Conducted AC Mains Emissions	C.F.R. 47 FCC Part 15: 2000. Section 15.107	Complied
Radiated Electric Field Strength Spurious Emissions (30 to 26000 MHz)	C.F.R. 47 FCC Part 15: 2000. Section 15.109	Complied

6.3. Location Of Tests

All the measurements described in this report were performed at the premises of Radio Frequency Investigation Ltd, Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ, England.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7. Measurements, Examinations And Derived Results

7.1. General Comments

7.1.1. This section contains test results only. Details of the test methods and procedures can be found in Appendix 2 of this report.

7.1.2. The measurement uncertainties stated were calculated in accordance with the requirements of UKAS Document NIS 81 with a confidence level of 95%. Please refer to Section 8 for details of measurement uncertainties.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.2. Test Results For AC Mains Conducted Emissions: Transmit Mode

7.2.1. Quasi-Peak Detector Measurements On Live And Neutral Lines

7.2.1.1. The following table indicates measured results to the limits specified in Part 15.207 (a)

7.2.1.2. Preliminary Conducted spurious scans were performed with the EUT set to Top, Middle and Bottom channels as stated in section 5.2.

7.2.1.3. Plots of all the initial scans can be found in Appendix 4.

7.2.1.4. The following table lists frequencies at which emissions were measured using a Quasi-Peak detector:

Bottom Channel.

Frequency (MHz)	Line	Q-P Level (dB _{mV})	Q-P Limit (dB _{mV})	Margin (dB)	Result
11.893	Neutral	37.600	48.0	10.40	Complied
16.228	Live	36.730	48.0	11.27	Complied
23.306	Neutral	36.660	48.0	11.34	Complied
24.351	Live	41.580	48.0	6.42	Complied
26.550	Neutral	39.200	48.0	8.80	Complied

Middle Channel.

Frequency (MHz)	Line	Q-P Level (dB _{mV})	Q-P Limit (dB _{mV})	Margin (dB)	Result
11.893	Neutral	38.330	48.0	9.67	Complied
17.694	Live	38.000	48.0	10.00	Complied
19.896	Live	38.790	48.0	9.21	Complied
23.130	Live	42.650	48.0	5.35	Complied
24.535	Neutral	38.740	48.0	9.26	Complied
26.611	Live	39.400	48.0	8.60	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Test Results For AC Mains Conducted Emissions: Transmit Mode (continued)**Top Channel.**

Frequency (MHz)	Line	Q-P Level (dB _{mV})	Q-P Limit (dB _{mV})	Margin (dB)	Result
11.954	Neutral	36.680	48.0	11.32	Complied
16.228	Neutral	38.180	48.0	9.82	Complied
19.706	Live	39.810	48.0	8.19	Complied
23.128	Neutral	43.130	48.0	4.87	Complied
24.534	Live	38.760	48.0	9.24	Complied
26.549	Live	39.700	48.0	8.30	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.3. Test Results For AC Mains Conducted Emissions: Receive Mode

7.3.1. Quasi-Peak Detector Measurements On Live And Neutral Lines

7.3.1.1. The following table indicates measured results to the limits specified in Part 15.207.

7.3.1.2. Plots of the initial scans can be found in Appendix 4.

7.3.1.3. The following table lists frequencies at which emissions were measured using a Quasi-Peak detector:

Frequency (MHz)	Line	Q-P Level (dB _{mV})	Q-P Limit (dB _{mV})	Margin (dB)	Result
12.200	Neutral	35.54	48	12.46	Complied
13.419	Live	33.08	48	14.92	Complied
16.300	Live	35.13	48	12.87	Complied
19.901	Live	37.09	48	10.91	Complied
23.130	Live	40.21	48	7.79	Complied
26.615	Neutral	35.95	48	12.05	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.4. Test Results for Effective Isotropic Radiated Power (EIRP): Transmit Mode.

7.4.1. Tests were performed to identify the maximum transmit power in accordance with FCC Part 15.247(b)(1) and FCC Public Notice DA 00-705.

7.4.2. The EUT can use either an internal or external antenna. Carrier power measurements were performed radiated on the internal antenna and conducted on the external antenna port.

7.4.3. The client has specified that the EUT employs frequency hopping with 79 hopping channels. Therefore the maximum transmitter power level under FCC Part 15.247(b)(1) is 1 Watt.

7.4.4. It can be confirmed from Plot GPH/42177/02 Appendix 4 that the number of hopping channels employed by the EUT was 79.

7.4.5. Results are shown for the EUT set to Top, Middle and Bottom channels for both antenna types as stated in FCC Part 15.31 (m) and section 5.2 of this report. Graphical measurements are shown for the transmit power levels within GPH/42177/009 to GPH/42177/014.

7.4.6. All measurements were performed for the specified extremes of input voltages:

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Test Results for Conducted Transmitter Power: Transmit Mode (continued)

Channel	Input Voltage (AC)	Maximum Transmitter Output Level (Watts)	Limit (Watts)	Margin	Result
Bottom	95	0.00170	1.0	0.99830	Complied
Bottom	110	0.00187	1.0	0.99813	Complied
Bottom	276	0.00231	1.0	0.99769	Complied

Channel	Input Voltage (AC)	Maximum Transmitter Output Level (Watts)	Limit (Watts)	Margin	Result
Middle	95	0.00162	1.0	0.99838	Complied
Middle	110	0.00165	1.0	0.99835	Complied
Middle	276	0.00164	1.0	0.99836	Complied

Channel	Input Voltage (AC)	Maximum Transmitter Output Level (Watts)	Limit (Watts)	Margin	Result
Top	95	0.00231	1.0	0.99769	Complied
Top	110	0.00236	1.0	0.99764	Complied
Top	276	0.00203	1.0	0.99797	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Test Results for Radiated Transmitter Power: Transmit Mode (continued)

Channel	Input Voltage (AC)	Maximum Transmitter Output Level (Watts)	Limit (Watts)	Margin	Result
Bottom	95	0.00103	1.0	0.99897	Complied
Bottom	110	0.00116	1.0	0.99884	Complied
Bottom	276	0.00159	1.0	0.99841	Complied

Channel	Input Voltage (AC)	Maximum Transmitter Output Level (Watts)	Limit (Watts)	Margin	Result
Middle	95	0.00246	1.0	0.99754	Complied
Middle	110	0.00239	1.0	0.99761	Complied
Middle	276	0.00235	1.0	0.99765	Complied

Channel	Input Voltage (AC)	Maximum Transmitter Output Level (Watts)	Limit (Watts)	Margin	Result
Top	95	0.00210	1.0	0.99790	Complied
Top	110	0.00225	1.0	0.99775	Complied
Top	276	0.00255	1.0	0.99745	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.5. Test Results for Conducted Antenna Port Spurious Emissions: Transmit Mode.

7.5.1. Spurious emissions tests on the antenna port were performed in accordance with FCC Part 15.247(c).

7.5.2. Section 15.247(c) specifies that all spurious emissions should be attenuated at least 20 dB below the level of the highest fundamental level measured between the range of 2400 to 2483.5 MHz.

7.5.3. Scans were performed between 30 and 26000 MHz with the EUT operating in Top, Middle and Bottom channels, as specified within clause 15.31 (m). Initial scans indicated that all spurious emissions were of an amplitude of at least 20 dB below the reference limit line, therefore as per 15.21(o), final measurements were not required.

7.5.4. Plots of all the all the initial scans can be found in Appendix 4.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.6. Test Results For Radiated Spurious Emissions: Transmit Mode.

7.6.1. Electric Field Strength Measurements: 30 to 1000 MHz.

7.6.1.1. The following table specifies frequencies, which fall close to the restricted bands as specified in section FCC Part 15.205.

7.6.1.2. Preliminary Radiated spurious scans were performed with the EUT set to Bottom, Middle and Top channels as stated in section 5.2.

7.6.1.3. Plots of the initial scans can be found in Appendix 4.

7.6.1.4. The following table lists frequencies at which emissions were measured using a Quasi-Peak detector at a test distance of 3m (results incorporate antenna factors and cable losses):

7.6.1.5. The following results are for the EUT configured with internal or external antenna connected and operating.

Bottom Channel. Integral Antenna

Frequency (MHz)	Ant. Pol.	Q-P Level (dB _m V/m)	Limit (dB _m V/m)	Margin (dB)	Result
73.880	Vert.	28.8	40.0	11.2	Complied
108.777	Vert.	33.4	43.5	10.1	Complied
125.007	Vert	29.7	43.5	13.8	Complied
250.014	Vert.	38.1	46.0	7.9	Complied

Bottom Channel. External Antenna

Frequency (MHz)	Ant. Pol.	Q-P Level (dB _m V/m)	Limit (dB _m V/m)	Margin (dB)	Result
73.880	Vert.	28.4	40.0	11.6	Complied
108.777	Vert.	34.7	43.5	8.8	Complied
125.007	Vert	34.6	43.5	8.9	Complied
250.014	Vert.	38.4	46.0	7.6	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Test Results For Radiated Emissions: Transmit Mode (continued)**Middle Channel. Integral Antenna**

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Limit (dBmV/m)	Margin (dB)	Result
73.880	Vert.	30.0	40.0	10.0	Complied
108.777	Vert.	33.7	43.5	9.8	Complied
125.007	Vert	29.7	43.5	13.8	Complied
250.014	Vert.	37.4	46.0	8.6	Complied

Middle Channel. External Antenna

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Limit (dBmV/m)	Margin (dB)	Result
73.880	Vert.	28.5	40.0	11.5	Complied
108.777	Vert.	33.4	43.5	10.1	Complied
125.007	Vert	32.3	43.5	11.2	Complied
250.014	Vert.	37.8	46.0	8.2	Complied

Top Channel. Integral Antenna

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Limit (dBmV/m)	Margin (dB)	Result
73.880	Vert.	27.2	40.0	12.8	Complied
108.777	Vert.	33.2	43.5	10.3	Complied
125.007	Vert	29.7	43.5	13.8	Complied
250.014	Vert.	38.2	46.0	7.8	Complied

Top Channel. External Antenna

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Limit (dBmV/m)	Margin (dB)	Result
73.880	Vert.	28.0	40.0	12.0	Complied
108.777	Vert.	33.9	43.5	9.6	Complied
125.007	Vert	32.8	43.5	10.7	Complied
250.014	Vert.	37.9	46.0	8.1	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.7. Test Results For Radiated Emissions: Transmit Mode

7.7.1. Electric Field Strength Measurements: 1.0 to 26.0 GHz

7.7.1.1. The client has stated that the highest clock frequency for the EUT was 2.480 GHz. Therefore tests were performed up to 26 GHz.

7.7.1.2. Preliminary Radiated spurious scans were performed with the EUT set to Bottom, Middle and Top channels as stated in section 5.2.

7.7.1.3. Due to dynamic range limitations of the measuring receiver, scans at high frequencies above 12 GHz were performed at 1 meter and 30 cm's with an indicated limit line corrected for the reduced test distances.

7.7.1.4. Plots of all the initial scans can be found in Appendix 4.

7.7.1.5. No spurious emissions were noted in the initial scans for frequencies above 1 GHz. As such, final measurements were not required.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.8. Test Results For Radiated Emissions: Receive Mode

7.8.1. Electric Field Strength Measurements (Frequency Range: 30 to 1000 MHz)

7.8.1.1. The following table indicates measured results with the EUT operated in receive mode to the limits specified in Part 15.109.

7.8.1.2. Plots of the initial scans can be found in Appendix 4.

7.8.1.3. The following table lists frequencies at which emissions were measured using a Quasi-Peak detector at a test distance of 3m (results incorporate antenna factors and cable losses):

Integral Antenna

Frequency (MHz)	Ant. Pol.	Q-P Level (dBmV/m)	Limit (dBmV/m)	Margin (dB)	Result
34.733	Vert	32.4	40.0	7.6	Complied
43.525	Vert	39.4	40.0	0.6	Complied
48.472	Vert	34.0	40.0	6.0	Complied
62.214	Vert	39.4	40.0	0.6	Complied
69.725	Vert	30.5	40.0	9.5	Complied
74.551	Vert	30.5	40.0	9.5	Complied
98.395	Vert	20.6	43.5	22.9	Complied
107.311	Vert	38.3	43.5	5.2	Complied
125.007	Vert	40.2	43.5	3.3	Complied
143.248	Vert	30.8	43.5	12.7	Complied
151.616	Vert	28.4	43.5	15.1	Complied
250.014	Vert	42.0	46.0	4.0	Complied
528.075	Vert	44.1	46.0	1.9	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Test Results For Radiated Emissions: Receive Mode (continued)**External Antenna**

Frequency (MHz)	Ant. Pol.	Q-P Level (dB _m V/m)	Limit (dB _m V/m)	Margin (dB)	Result
34.733	Vert	32.4	40.0	8.5	Complied
43.525	Vert	39.4	40.0	1.1	Complied
48.472	Vert	34.0	40.0	6.1	Complied
62.214	Vert	39.4	40.0	0.4	Complied
69.725	Vert	30.5	40.0	7.4	Complied
74.551	Vert	30.5	40.0	9.2	Complied
98.395	Vert	20.6	43.5	22.9	Complied
107.311	Vert	38.3	43.5	5.6	Complied
125.007	Vert	40.2	43.5	2.7	Complied
143.248	Vert	30.8	43.5	12.7	Complied
151.616	Vert	28.4	43.5	15.2	Complied
250.014	Vert	42.0	46.0	3.2	Complied
528.075	Vert	44.1	46.0	2.5	Complied

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.9. Radiated Emissions: Receive Mode

7.9.1. Electric Field Strength Measurements (Frequency Range: 1.0 to 26.0 GHz)

7.9.1.1. Radiated receiver testes were performed with the EUT operating in receive mode. And tested to the limits specified in FCC Part 15.109.

7.9.1.2. Plots of all the initial scans can be found in Appendix 4.

7.9.1.3. The client has stated that the highest clock frequency for the EUT was 2.480 GHz. Therefore tests were performed up to 26 GHz.

7.9.1.4. Preliminary Radiated spurious scans were performed with the EUT configured in the receive mode as stated in section 5.2.

7.9.1.5. Due to dynamic range limitations of the measuring receiver, scans at high frequencies above 12 GHz were performed at 1 meter and 30 cm's with an indicated limit line corrected for the reduced test distances.

7.9.1.6. Plots of all the initial scans can be found in Appendix 4.

7.9.1.7. No spurious emissions were noted in the initial scans for frequencies above 1 GHz. As such, final measurements were not required.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

7.10. Test Results for Occupied Bandwidth, Channel Separation and Time Occupancy.

7.10.1. Tests were performed to identify the Occupied Bandwidth, Channel Separation and Time Occupancy to FCC Part 15.247.

Occupied Bandwidth and Channel Separation:

7.10.2. Section 15.247 (a)(1) specifies that the channels should be separated by at least 25 kHz or the 20 dB bandwidth of the channel, which ever is greater. Section 15.247 (a1)(ii) specifies that the maximum bandwidth of the channel should be 1 MHz.

7.10.3. A graphical plot of the characteristics of two adjacent channels was performed. The following results were noted:

20 dB Bandwidth: 915.5 kHz. (Refer to Appendix 4 Plot GPH/42177/08)

Channel Separation: 975.500 kHz. (Refer to Appendix 4 Plot GPH/42177/01)

Time Occupancy:

7.10.4. The time occupancy of the system was tested on a single carrier. The maximum packet length was measured to be 2.862 ms and can be seen in Appendix 4 (Plot GPH/42177/03). The maximum time the carrier was used in a 30 second period was measured three times and the average number of uses noted to be 71. This resulted in a maximum occupancy of 0.203 seconds. The plots for the Occupancy tests are shown in Appendix 4

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

8. Measurement Uncertainty

8.1. Company Policy, as based on the NAMAS Accreditation Standard, M10, paragraph 12.11 (o), states that Test Reports shall include estimated uncertainty of the calibration or test result (this information need only appear in test reports and test certificates where it is relevant to the validity or application of the test result, where a client's instructions so require or where uncertainty affects compliance to a specification or limit).

8.2. The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
Conducted Emissions	0.15 MHz to 30 MHz	95%	+/- 3.25 dB
Time Occupancy	Not applicable	95%	+/- 10 %
Channel Separation	Not applicable	95%	+/- 10 %
Occupied Bandwidth	Not applicable	95%	+/- 2.5 kHz
Effective Isotropic Radiated Power	1.0 GHz to 26 GHz	95%	+/- 4.0 dB
Radiated Emissions at 3.0 metres	30 MHz to 1000 MHz	95%	+/- 5.26 dB
Radiated Emissions at 3.0 metres	1 GHz to 26 GHz	95%	+/- 4.18 dB

8.3. Measurement uncertainties have been applied in accordance with UKAS document NIS 81 (edition 1, May 1994), and in the absence of any specification criteria, guidance, or code of practice, compliance has been judged on the basis of shared risk.

8.4. In the case of emissions tests, the measured value of the disturbance from the product sample shall be compared directly with the limits. If the measured value is equal to or less than the limit the product is deemed to pass the test.

8.5. In the case of immunity tests, the equipment is deemed to pass the test if it fulfils the stated performance criteria at the required or a higher severity level. The measurement uncertainty has been taken into account in the calibration procedures stated in the relevant basic standard.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

8.6. The methods used to calculate the above uncertainties are in line with those used for calibration laboratories contained in NAMAS document NIS 3003 Edition 8 "The Expression of Uncertainty and Confidence in Measurement" May 1995, which align with international recommendations "Guide to the Expression of Uncertainty in Measurement" ISO/IEC/OIML/BIPM (Prepared by ISO/TAG 4: January 1993).

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Appendix 1. Test Equipment Used

Instrument	Manufacturer	Model	RFI No.
Horn Antenna	Eaton	9188-2	A027
2 to 4 GHz Eaton Horn Antenna	Eaton	91889-2	A031
ESH3-Z5	Rohde & Schwarz	ESH3-Z5	A1069
WG 20 Horn Antenna	Flann Microwave Ltd	20240-20	A201
20 dB Attenuator	Schaffner	6820-17-B	A243
WG 12 Microwave Horn	Flann Microwave	12240-20	A253
WG 14 Microwave Horn	Flann Microwave	14240-20	A254
WG 16 Microwave Horn	Flann Microwave	16240-20	A255
WG 18 Microwave Horn	Flann Microwave	18240-20	A256
Bilog Antenna	Chase	CBL6111	A259
SMHU Signal Generator	Rohde & Schwarz	SMHU	G013
Spectrum Monitor	Rohde & Schwarz	EZM	M003
ESMI Spectrum Analyser / Receiver	Rohde & Schwarz	ESMI	M069
Fluke 77 DVM	Fluke	77	M105
Spectrum Analyser	Rohde & Schwarz	FSEB 30	M127
Thermometer/Barometer/Hydrometer	Oregan Scientific	BA-116	M170
Thermal Power Sensor	Rohde & Schwarz	NRV-Z52	M198
Power Meter	Rohde & Schwarz	NRVS	M199
Power Control	Zen	E08	S003
Site 1	RFI	1	S201
Site 15	RFI	15	S215

NB In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Appendix 2. Measurement Methods

AC Mains Conducted Emissions

AC mains conducted emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

The test was performed in a shielded enclosure with the equipment arranged as detailed in the standard on a wooden bench using the floor of the screened enclosure as the ground reference plane and with the EUT powered via a 60 Hz AC mains supply.

Initial measurements in the form of swept scans covering the entire measurement band were performed in order to identify frequencies on which the EUT was generating interference. In order to minimise the time taken for these swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidths (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.

Following the initial scans, a graph was produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. A tolerance line was set 6 dB below the specification limit and levels above the tolerance line were re-tested (at individual frequencies) using the appropriate detector function.

The test equipment settings for conducted emissions measurements were as follows:

Receiver Function	Initial Scan	Final Measurements
Detector Type:	Peak	Quasi-Peak (CISPR)*
Mode:	Max Hold	Not applicable
Bandwidth:	9 kHz	9 kHz
Amplitude Range:	100 dB	20 dB
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

* In some instances an Average detector function may also have been used.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Radiated Field Strength Emissions

Radiated emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

Initial measurements covering the entire measurement band in the form of swept scans in a shielded enclosure were performed in order to identify frequencies on which the EUT was generating interference. This determined the frequencies on which the EUT should be re-measured in full on the open area test site. In order to minimise the time taken for the swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidth (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and for the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.

The initial scans were performed using an antenna height of 1.5 m and a measurement distance of 3 m, in some circumstances at high frequencies above 12 GHz, scans were performed at 30 cm's with a corrected limit line. This was necessary due to the limited dynamic range of the measuring receiver. Following the initial scans, graphs were produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. A tolerance line was set 6 dB below the specification limit and levels above the tolerance line were re-tested on the open area test site, at the appropriate distance, using a measuring receiver with a Quasi-Peak (below 1000 MHz), Average and Peak (above 1000 MHz) detector, where applicable.

For the main (final) measurements the EUT was arranged on a non-conducting table on an open area test site, as detailed in the specification.

All measurements on the open area test site were performed using broadband antennas.

On the open area test site, at each frequency where a signal was found, the levels were maximised by initially rotating the turntable through 360°. For frequencies below 1000 MHz, the antenna was varied in height between 1 m and 4 m. For frequencies above 1000 MHz, the antenna was fixed at a height of 1.5m. At this point, any signals found to be between the limit and a level 6 dB below it were further maximised by changing the configuration of the EUT, e.g. re-routing cables to peripherals and moving peripherals with respect to the EUT.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

The test equipment settings for radiated emissions measurements were as follows:

Receiver Function	Initial Scan Below 1000 MHz	Final Measurements Below 1000 MHz
Detector Type:	Peak	Quasi-Peak (CISPR)
Mode:	Max Hold	Not applicable
Bandwidth:	100 kHz	120 kHz
Amplitude Range:	100 dB	20 dB
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

Receiver Function	Initial Scan Above 1000 MHz	Final Measurements Above 1000 MHz
Detector Type:	Peak	Peak/Average
Mode:	Max Hold	Not applicable
Bandwidth:	1 MHz	1 MHz
Amplitude Range:	100 dB	20 dB (typical)
Measurement Time:	Not applicable	> 1 s
Observation Time:	Not applicable	> 15 s
Step Size:	Continuous sweep	Not applicable
Sweep Time:	Coupled	Not applicable

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Conducted Antenna Port Emissions

Conducted Antenna Port Emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

Prior to testing being performed a suitable RF attenuator and cable were calibrated for the required frequency range. For each measurement range performed, the calibrated level of the attenuator and cable were entered as an offset into the spectrum analyser to compensate for the measurement setup.

Initial measurements covering the entire measurement band in the form of swept scans were performed in order to identify frequencies on which the EUT was generating interference. This determined the frequencies on which measurements were performed. In order to minimise the time taken for the swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidth (see table below). Repetitive scans were performed to allow for emissions with low repetition rates, and for the duty cycle of the EUT. The test configuration was the same for the initial scans as for the final measurements.

To determine the transmitter output power, the EUT was operated as intended with the spectrum analyser operated in a maximum hold on the bottom, middle and top channels of the EUT.

To determine spurious emissions levels, the EUT was operated as intended with the spectrum analyser operated in a maximum hold mode over selected frequency ranges between 30 MHz and 26 GHz. A reference limit line of 20dB below the maximum output of the transmitter was noted. Levels within 20dB of this limit line were then recorded.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Channel Separation FCC 15.247(1)

The EUT and spectrum analyser was configured as for conducted antenna port measurements, And as per FCC Public Notice DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

To determine the bandwidth and separation of each transmission channel the analyser was configured to measure two adjacent channels.

To determine the occupied bandwidth, A resolution bandwidth of 10 kHz was used, which is greater than 1% of the 20 dB bandwidth. A video bandwidth of a least the same value was used. The analyser was set for a maximum hold scan to capture the profile of the signal. The peak level was then determined, and a reference line was drawn 20dB below the peak level. The bandwidth was determined at the points where the 20dB reference crossed the profile of the emission.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Occupied Bandwidth FCC 15.247(1)

For channel separation, the analyser was configured with a resolution bandwidth and video bandwidth of at least 1% of the frequency span set on the analyser. A setting of 80 kHz was used.

The EUT was operated as intended and the analyser set to a maximum hold mode scan to capture the profile of the signals.

The peak points on the two adjacent channels were noted and the separation between them recorded.

The channel separation was then determined as the greater of 25 kHz or the 20 dB bandwidth.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Average Time of Occupancy FCC 15.247(1)(ii)

The EUT and spectrum analyser was configured as for conducted antenna port measurements

To determine the maximum packet length on any given channel, the analyser was configured in the time domain mode and the EUT was configured to operate as intended.

To determine the average occupancy time on any given channel the analyser was configured in the time domain and a 30 second sweep carried out. The number of times the channel was occupied in any 30 second period multiplied by the maximum packet length will give the total time on the given channel.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Number Of Hopping Frequencies FCC 15.247(a)(1)(ii)

The EUT and spectrum analyser was configured as for conducted antenna port measurements, And as per FCC Public Notice DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

To determine the number of hopping frequencies the EUT was set to operate in its normal mode of operation, hopping over all channels that it is intended to operate on.

The spectrum analyser had a span set to cover the frequency band of operation. The resolution bandwidth was set to $\geq 1\%$ of the span. The video bandwidth was set to be no less than the resolution bandwidth. The sweep was set to auto, the detector function to peak and trace to max hold.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Peak Output Power FCC 15.247(b)

The EUT and spectrum analyser was configured as for conducted antenna port measurements, And as per FCC Public Notice DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

A temporary antenna port was provided by the applicant to allow for conducted measurements.

As the frequency range of operation was greater than 10 MHz, The test was performed on the BOTTOM, MIDDLE and TOP channels as per FCC 15.31(m).

The tests were performed with an AC supply at 60 Hz. The measurements was made over extremes of voltage as per 15.31 (e).

The analyser was setup as per FCC Public Notice DA 00-705.

This test was then repeated as a radiated measurement for the integral antenna using and open area test site.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Band Edge Compliance of RF Conducted Emissions FCC 15.247(c)

The EUT and spectrum analyser was configured as for conducted antenna port measurements, And as per FCC Public Notice DA 00-705, Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

To determine band-edge compliance, the analyser bandwidth resolution bandwidth was set to $\geq$ the analyser span. The video bandwidth was set to be no less than the resolution bandwidth. The sweep was set to auto and the detector to peak. The trace was set to max hold and a trace was produced.

A Plot of the upper channel and the protected band closest to the upper channel was produced. A marker was set to the peak of the highest channel and a delta marker set to the highest out of band peak. (The specification states that either the band edge level must be measured or the highest out of band emission. Which ever is greater). The plots show that the emission complies with the 20 dBc limit.

A Plot of the lower channel and the protected band closest to the lower channel was produced. A marker was set to the peak of the lowest channel and a delta marker set to the highest out of band peak. (The specification states that either the band edge level must be measured or the highest out of band emission. Which ever is greater). The plots show that the emission complies with the 20 dBc limit.

The above procedure was repeated while the EUT was hopping on all channels.

This test was repeated for both integral and external antenna types. For the integral antenna test was made using a test fixture. The carrier power was then measured and on offset used to correct for the difference between EIRP at 3 meters and the EIRP using the test fixture.

Eight plots were produced in total. All plots can be seen in section 4 of this report.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Appendix 3. Test Configuration Drawings

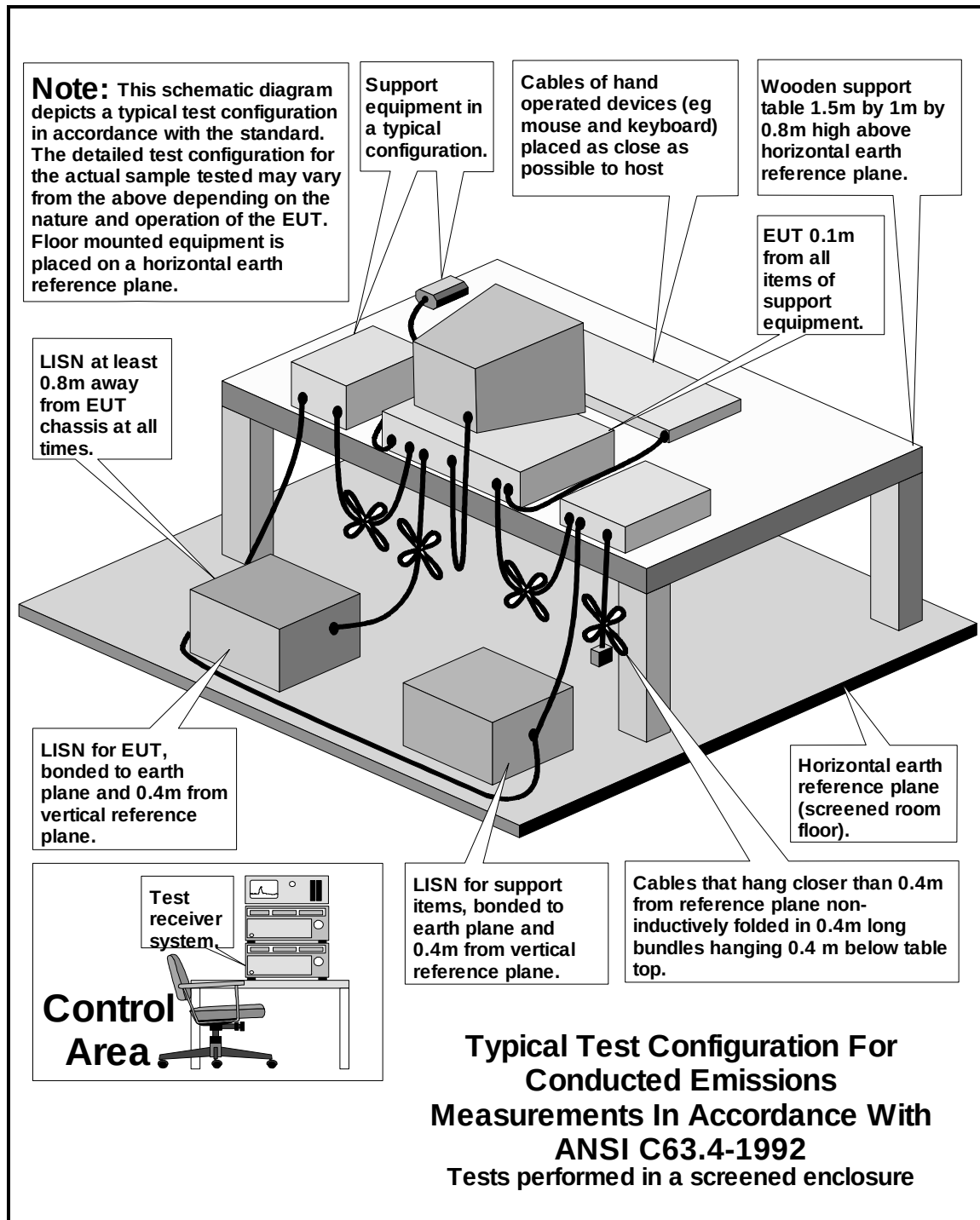
This appendix contains the following drawings:

Drawing Reference Number	Title
DRG\42177JD02\EMICON	Test configuration for measurement of conducted emissions
DRG\42177JD02\EMIRAD	Test configuration for measurement of radiated emissions
DRG\42177JD02\001	Test configuration for Conducted RF Antenna Port
DRG\42177JD02\002	Schematic diagram of the EUT, support equipment and interconnecting cables used for the test

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

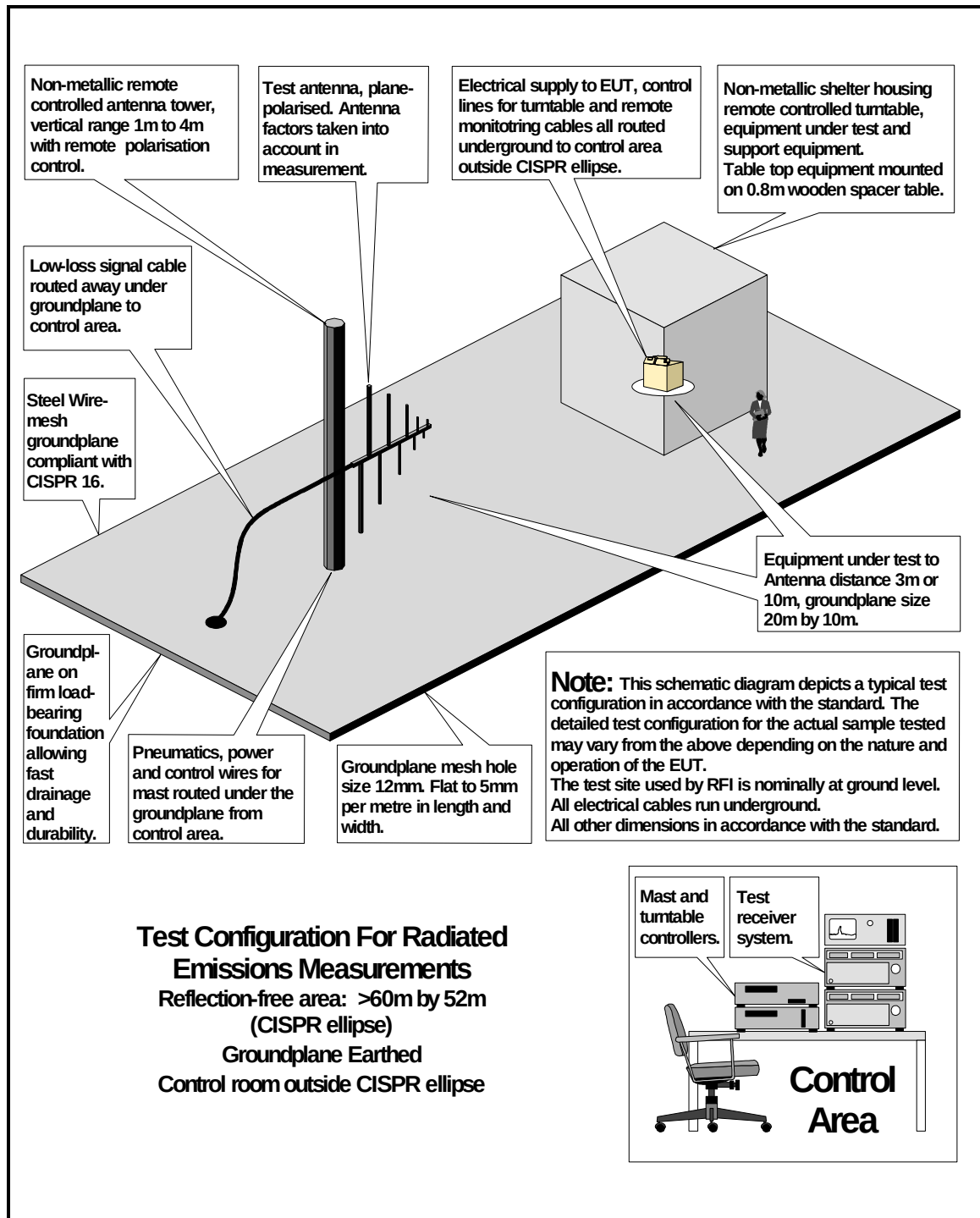
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

DRG\42177JD02\EMICON



Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

DRG\42177JD02\EMIRAD

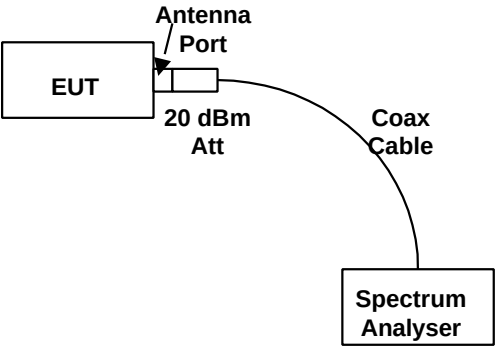


Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

DRG\42177JD02\001

Conducted RF Antenna Port Configuration

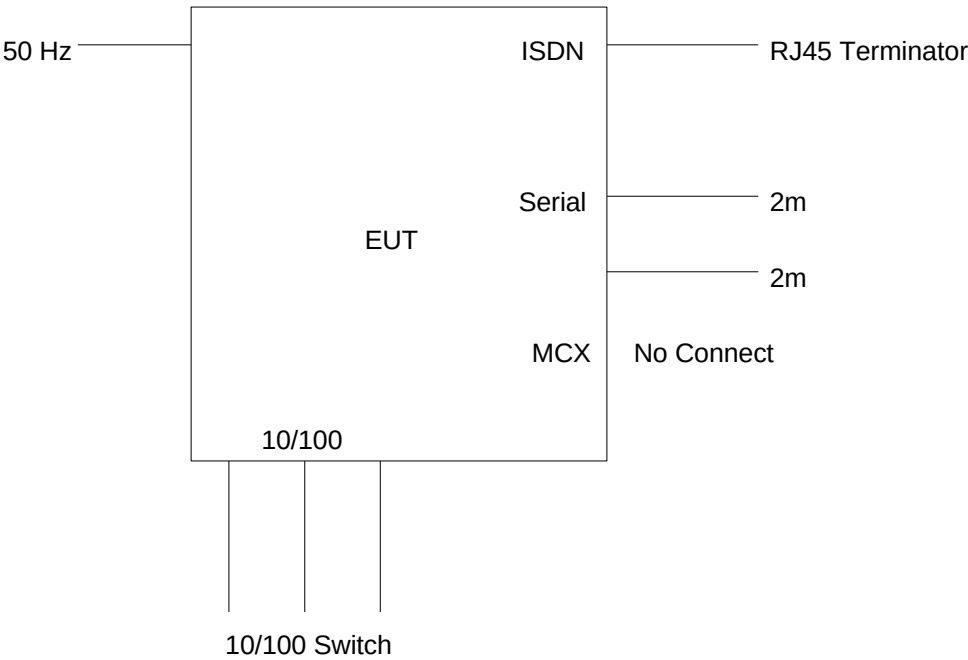
Antenna Port
Emissions



Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

DRG\42177JD02\002

Configuration of EUT and Support Equipment



Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Appendix 4. Graphical Test Results

This appendix contains the following graphs:

Graph Reference Number	Title
GPH/42177/RE001	Spurious Radiated Emissions, Bottom Channel (30 MHz to 1 GHz), Internal Antenna, Part 15.209
GPH/42177/RE002	Spurious Radiated Emissions, Middle Channel (30 MHz to 1 GHz), Internal Antenna, Part 15.209
GPH/42177/RE003	Spurious Radiated Emissions, Top Channel (30 MHz to 1 GHz), Internal Antenna, Part 15.209
GPH/42177/RE004	Spurious Radiated Emissions, Top Channel (30 MHz to 1 GHz), External Antenna, Part 15.209
GPH/42177/RE005	Spurious Radiated Emissions, Middle Channel (30 MHz to 1 GHz), External Antenna, Part 15.209
GPH/42177/RE006	Spurious Radiated Emissions, Bottom Channel (30 MHz to 1 GHz), External Antenna, Part 15.209
GPH/42177/RE007	Spurious Radiated Emissions, Receive Mode (30 MHz to 1 GHz), External Antenna, Part 15.209
GPH/42177/RE008	Spurious Radiated Emissions, Receive Mode (30 MHz to 1 GHz), internal Antenna, Part 15.209
GPH/42177/RE009	Spurious Radiated Emissions, Bottom Channel (1 GHz to 2 GHz), Internal Antenna, Part 15.209
GPH/42177/RE010	Spurious Radiated Emissions, Middle Channel (1 GHz to 2 GHz), Internal Antenna, Part 15.209
GPH/42177/RE011	Spurious Radiated Emissions, Top Channel (1 GHz to 2 GHz), Internal Antenna, Part 15.209
GPH/42177/RE012	Spurious Radiated Emissions, Receiver Mode (1 GHz to 2 GHz), Internal Antenna, Part 15.209
GPH/42177/RE013	Spurious Radiated Emissions, Receiver Mode (1 GHz to 2 GHz), External Antenna, Part 15.209
GPH/42177/RE014	Spurious Radiated Emissions, Top Channel (1 GHz to 2 GHz), External Antenna, Part 15.209
GPH/42177/RE015	Spurious Radiated Emissions, Middle Channel (1 GHz to 2 GHz), External Antenna, Part 15.209
GPH/42177/RE016	Spurious Radiated Emissions, Bottom Channel (1 GHz to 2 GHz), External Antenna, Part 15.209

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42177/RE017	Spurious Radiated Emissions, Bottom Channel (2 GHz to 4 GHz), External Antenna, Part 15.209
GPH/42177/RE018	Spurious Radiated Emissions, Middle Channel (2 GHz to 4 GHz), External Antenna, Part 15.209
GPH/42177/RE019	Spurious Radiated Emissions, Top Channel (2 GHz to 4 GHz), External Antenna, Part 15.209
GPH/42177/RE020	Spurious Radiated Emissions, Receive Mode (2 GHz to 4 GHz), External Antenna, Part 15.209
GPH/42177/RE021	Spurious Radiated Emissions, Top Channel (2 GHz to 4 GHz), Internal Antenna, Part 15.209
GPH/42177/RE022	Spurious Radiated Emissions, Middle Channel (2 GHz to 4 GHz), Internal Antenna, Part 15.209
GPH/42177/RE023	Spurious Radiated Emissions, Bottom Channel (2 GHz to 4 GHz), Internal Antenna, Part 15.209
GPH/42177/RE024	Spurious Radiated Emissions, Receive Mode (2 GHz to 4 GHz), Internal Antenna, Part 15.209
GPH/42177/RE025	Spurious Radiated Emissions, Bottom Channel (4 GHz to 6 GHz), Internal Antenna, Part 15.209
GPH/42177/RE026	Spurious Radiated Emissions, Bottom Channel (6 GHz to 8 GHz), Internal Antenna, Part 15.209
GPH/42177/RE027	Spurious Radiated Emissions, Bottom Channel (8 GHz to 10 GHz), Internal Antenna, Part 15.209
GPH/42177/RE028	Spurious Radiated Emissions, Bottom Channel (10 GHz to 12.5 GHz), Internal Antenna, Part 15.209
GPH/42177/RE029	Spurious Radiated Emissions, Bottom Channel (12.5 GHz to 18 GHz), Internal Antenna, Part 15.209
GPH/42177/RE030	Spurious Radiated Emissions, Bottom Channel (18 GHz to 26.5 GHz), Internal Antenna, Part 15.209
GPH/42177/RE031	Spurious Radiated Emissions, Middle Channel (18 GHz to 26.5 GHz), Internal Antenna, Part 15.209
GPH/42177/RE032	Spurious Radiated Emissions, Middle Channel (12.5 GHz to 18 GHz), Internal Antenna, Part 15.209

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42177/RE033	Spurious Radiated Emissions, Middle Channel (10 GHz to 12.5 GHz), Internal Antenna, Part 15.209
GPH/42177/RE034	Spurious Radiated Emissions, Middle Channel (8 GHz to 10 GHz), Internal Antenna, Part 15.209
GPH/42177/RE035	Spurious Radiated Emissions, Middle Channel (6 GHz to 8 GHz), Internal Antenna, Part 15.209
GPH/42177/RE036	Spurious Radiated Emissions, Middle Channel (4 GHz to 6 GHz), Internal Antenna, Part 15.209
GPH/42177/RE037	Spurious Radiated Emissions, Top Channel (4 GHz to 6 GHz), Internal Antenna, Part 15.209
GPH/42177/RE038	Spurious Radiated Emissions, Top Channel (6 GHz to 8 GHz), Internal Antenna, Part 15.209
GPH/42177/RE039	Spurious Radiated Emissions, Top Channel (8 GHz to 10 GHz), Internal Antenna, Part 15.209
GPH/42177/RE040	Spurious Radiated Emissions, Top Channel (10 GHz to 12.5 GHz), Internal Antenna, Part 15.209
GPH/42177/RE041	Spurious Radiated Emissions, Top Channel (12.5 GHz to 18 GHz), Internal Antenna, Part 15.209
GPH/42177/RE042	Spurious Radiated Emissions, Top Channel (18 GHz to 26.5 GHz), Internal Antenna, Part 15.209
GPH/42177/RE043	Spurious Radiated Emissions, Receive Mode (18 GHz to 26.5 GHz), Internal Antenna, Part 15.109
GPH/42177/RE044	Spurious Radiated Emissions, Receive Mode (12.5 GHz to 18 GHz), Internal Antenna, Part 15.109
GPH/42177/RE045	Spurious Radiated Emissions, Receive Mode (10 GHz to 12.5 GHz), Internal Antenna, Part 15.109
GPH/42177/RE046	Spurious Radiated Emissions, Receive Mode (8 GHz to 10 GHz), Internal Antenna, Part 15.109
GPH/42177/RE047	Spurious Radiated Emissions, Receive Mode (6 GHz to 8 GHz), Internal Antenna, Part 15.109
GPH/42177/RE048	Spurious Radiated Emissions, Receive Mode (4 GHz to 6 GHz), Internal Antenna, Part 15.109

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42177/RE049	Spurious Radiated Emissions, Bottom Channel (4 GHz to 6 GHz), External Antenna, Part 15.209
GPH/42177/RE050	Spurious Radiated Emissions, Bottom Channel (6 GHz to 8 GHz), External Antenna, Part 15.209
GPH/42177/RE051	Spurious Radiated Emissions, Bottom Channel (8 GHz to 10 GHz), External Antenna, Part 15.209
GPH/42177/RE052	Spurious Radiated Emissions, Bottom Channel (10 GHz to 12.5 GHz), External Antenna, Part 15.209
GPH/42177/RE053	Spurious Radiated Emissions, Bottom Channel (12.5 GHz to 18 GHz), External Antenna, Part 15.209
GPH/42177/RE054	Spurious Radiated Emissions, Bottom Channel (18 GHz to 26.5 GHz), External Antenna, Part 15.209
GPH/42177/RE055	Spurious Radiated Emissions, Middle Channel (12.5 GHz to 18 GHz), External Antenna, Part 15.209
GPH/42177/RE056	Spurious Radiated Emissions, Middle Channel (10 GHz to 12.5 GHz), External Antenna, Part 15.209
GPH/42177/RE057	Spurious Radiated Emissions, Middle Channel (8 GHz to 10 GHz), External Antenna, Part 15.209
GPH/42177/RE058	Spurious Radiated Emissions, Middle Channel (6 GHz to 8 GHz), External Antenna, Part 15.209
GPH/42177/RE059	Spurious Radiated Emissions, Middle Channel (4 GHz to 6 GHz), External Antenna, Part 15.209
GPH/42177/RE060	Spurious Radiated Emissions, Top Channel (4 GHz to 6 GHz), External Antenna, Part 15.209
GPH/42177/RE061	Spurious Radiated Emissions, Top Channel (6 GHz to 8 GHz), External Antenna, Part 15.209
GPH/42177/RE062	Spurious Radiated Emissions, Top Channel (8 GHz to 10 GHz), External Antenna, Part 15.209
GPH/42177/RE063	Spurious Radiated Emissions, Top Channel (10 GHz to 12.5 GHz), External Antenna, Part 15.209

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42177/RE064	Spurious Radiated Emissions, Top Channel (12.5 GHz to 18 GHz), External Antenna, Part 15.209
GPH/42177/RE065	Spurious Radiated Emissions, Top Channel (18 GHz to 26.5 GHz), External Antenna, Part 15.209
GPH/42177/RE066	Spurious Radiated Emissions, Receive Mode (18 GHz to 26.5 GHz), External Antenna, Part 15.109
GPH/42177/RE067	Spurious Radiated Emissions, Receive Mode (12.5 GHz to 18 GHz), External Antenna, Part 15.109
GPH/42177/RE068	Spurious Radiated Emissions, Receive Mode (10 GHz to 12.5 GHz), External Antenna, Part 15.109
GPH/42177/RE069	Spurious Radiated Emissions, Receive Mode (8 GHz to 10 GHz), External Antenna, Part 15.109
GPH/42177/RE070	Spurious Radiated Emissions, Receive Mode (6 GHz to 8 GHz), External Antenna, Part 15.109
GPH/42177/RE071	Spurious Radiated Emissions, Receive Mode (4 GHz to 6 GHz), External Antenna, Part 15.109
GPH/42177/CE001	Conducted Emissions, Bottom Channel (0.030 GHz to 2.39 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE002	Conducted Emissions, Bottom Channel (2.39 GHz to 2.49 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE003	Conducted Emissions, Bottom Channel (2.49 GHz to 10 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE004	Conducted Emissions, Bottom Channel (10 GHz to 26.5 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE005	Conducted Emissions, Middle Channel (0.030 GHz to 2.39 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE006	Conducted Emissions, Middle Channel (2.39 GHz to 2.49 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE007	Conducted Emissions, Middle Channel (2.49 GHz to 10 GHz), External Antenna, Part 15.247(c)

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42177/CE008	Conducted Emissions, Middle Channel (10 GHz to 26.5 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE009	Conducted Emissions, Top Channel (0.030 GHz to 2.39 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE010	Conducted Emissions, Top Channel (2.39 GHz to 2.49 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE011	Conducted Emissions, Top Channel (2.49 GHz to 10 GHz), External Antenna, Part 15.247(c)
GPH/42177/CE012	Conducted Emissions, Top Channel (10 GHz to 26.5 GHz), External Antenna, Part 15.247(c)
GPH/42177/001	Carrier Frequency Separation, Hopping all Channels, (2.443427147 GHz to 2.445427147 GHz), External Antenna Part 15.247(a)(1)
GPH/42177/002	Number of Hopping Frequency, Hopping all Channels, External Antenna, Part 15.247(a)(1)(11)
GPH/42177/003	Time of Occupancy, Hopping all Channels, External Antenna, Part 15.247(a)(1)(11)
GPH/42177/004	Time of Occupancy, Hopping all Channels, External Antenna, Part 15.247(a)(1)(11)
GPH/42177/005	Time of Occupancy, Hopping all Channels, External Antenna, Part 15.247(a)(1)(11)
GPH/42177/006	Time of Occupancy, Hopping all Channels, External Antenna, Part 15.247(a)(1)(11)
GPH/42177/007	Time of Occupancy, Hopping all Channels, External Antenna, Part 15.247(a)(1)(11)
GPH/42177/008	20dB Bandwidth, Hopping all Channels (2.440996066 GHz to 2.442996066 GHz), External Antenna Part 15.247(a)(1)(11)

These pages are not included in the total number of pages for this report.

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42177/BE01	Band Edge Compliance, Bottom Channel (2.3049 GHz to 2.4074 GHz), Integral Antenna, Part 15.247(c)
GPH/42177/BE02	Band Edge Compliance, Hopping all Channels (2.3049 GHz to 2.4074 GHz), Integral Antenna, Part 15.247(c)
GPH/42177/BE03	Band Edge Compliance, Top Channel (2.4779 GHz to 2.50041 GHz), Integral Antenna, Part 15.247(c)
GPH/42177/BE04	Band Edge Compliance, Hopping all Channels (2.4779 GHz to 2.50041 GHz), Integral Antenna, Part 15.247(c)
GPH/42177/021	Band Edge Compliance, Hopping all Channels (2.47791 GHz to 2.50041 GHz), External Antenna, Part 15.247(c)
GPH/42177/023	Band Edge Compliance, Top Channel (2.47791 GHz to 2.50041 GHz), External Antenna, Part 15.247(c)
GPH/42177/025	Band Edge Compliance, Bottom Channel (2.3049 GHz to 2.4074 GHz), External Antenna, Part 15.247(c)
GPH/42177/026	Band Edge Compliance, Hopping all Channels (2.3049 GHz to 2.4074 GHz), External Antenna, Part 15.247(c)
GPH/42177/009	Peak Output Power, Bottom Channel (2.3395 GHz to 2.4045 GHz), External Antenna 95 V Supply, Part 15.247(b)
GPH/42177/010	Peak Output Power, Middle Channel (2.4384 GHz to 2.4434 GHz), External Antenna 95 V Supply, Part 15.247(b)
GPH/42177/011	Peak Output Power, Top Channel (2.4775 GHz to 2.4825 GHz), External Antenna 95 V Supply, Part 15.247(b)
GPH/42177/012	Peak Output Power, Top Channel (2.4775 GHz to 2.4825 GHz), External Antenna 276 V Supply, Part 15.247(b)
GPH/42177/013	Peak Output Power, Bottom Channel (2.399609375 GHz to 2.404609375 GHz), External Antenna 110 V Supply, Part 15.247(b)
GPH/42177/RE013	Peak Output Power, Bottom Channel (2.399497 GHz to 2.404502 GHz), External Antenna 110 V Supply, Part 15.247(b)

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)

To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42177/013A	Peak Output Power, Middle Channel (2.4384 GHz to 2.4434 GHz), External Antenna 276 V Supply, Part 15.247(b)
GPH/42177/014	Peak Output Power, Bottom Channel (2.3995 GHz to 2.4045 GHz), External Antenna 276 V Supply, Part 15.247(b)
GPH/42177/RE014	Peak Output Power, Bottom Channel (2.3995 GHz to 2.4045 GHz), Integral Antenna 95 V Supply, Part 15.247(b)
GPH/42177/015	Peak Output Power, Middle Channel (2.438359139 GHz to 2.443359139 GHz), External Antenna 110 V Supply, Part 15.247(b)
GPH/42177/RE015	Peak Output Power, Bottom Channel (2.399502784 GHz to 2.404502777 GHz), Integral Antenna 276 V Supply, Part 15.247(b)
GPH/42177/RE016	Peak Output Power, Middle Channel (2.438353 GHz to 2.443359 GHz), Integral Antenna 110 V Supply, Part 15.247(b)
GPH/42177/RE017	Peak Output Power, Middle Channel (2.438353 GHz to 2.443359 GHz), Integral Antenna 95 V Supply, Part 15.247(b)
GPH/42177/RE018	Peak Output Power, Middle Channel (2.438353 GHz to 2.443359 GHz), Integral Antenna 276 V Supply, Part 15.247(b)
GPH/42177/RE019	Peak Output Power, Top Channel (2.477497 GHz to 2.482502 GHz), External Antenna 110 V Supply, Part 15.247(b)
GPH/42177/RE020	Peak Output Power, Top Channel (2.477502 GHz to 2.482508 GHz), Integral Antenna 110 V Supply, Part 15.247(b)
GPH/42177/RE021	Peak Output Power, Top Channel (2.477502 GHz to 2.482508 GHz), Integral Antenna 95 V Supply, Part 15.247(b)
GPH/42177/RE022	Peak Output Power, Top Channel (2.477502 GHz to 2.482508 GHz), Integral Antenna 276 V Supply, Part 15.247(b)

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42177/ACCE01	Conducted Emissions, Standby Mode, Live/Neutral Lines (0.15 MHz to 30 MHz), Part 15.207
GPH/42177/ACCE02	Conducted Emissions, Top Channel, Live/Neutral Lines (0.15 MHz to 30 MHz), Part 15.207
GPH/42177/ACCE03	Conducted Emissions, Middle Channel, Live/Neutral Lines (0.15 MHz to 30 MHz), Part 15.207
GPH/42177/ACCE04	Conducted Emissions, Bottom Channel, Live/Neutral Lines (0.15 MHz to 30 MHz), Part 15.207

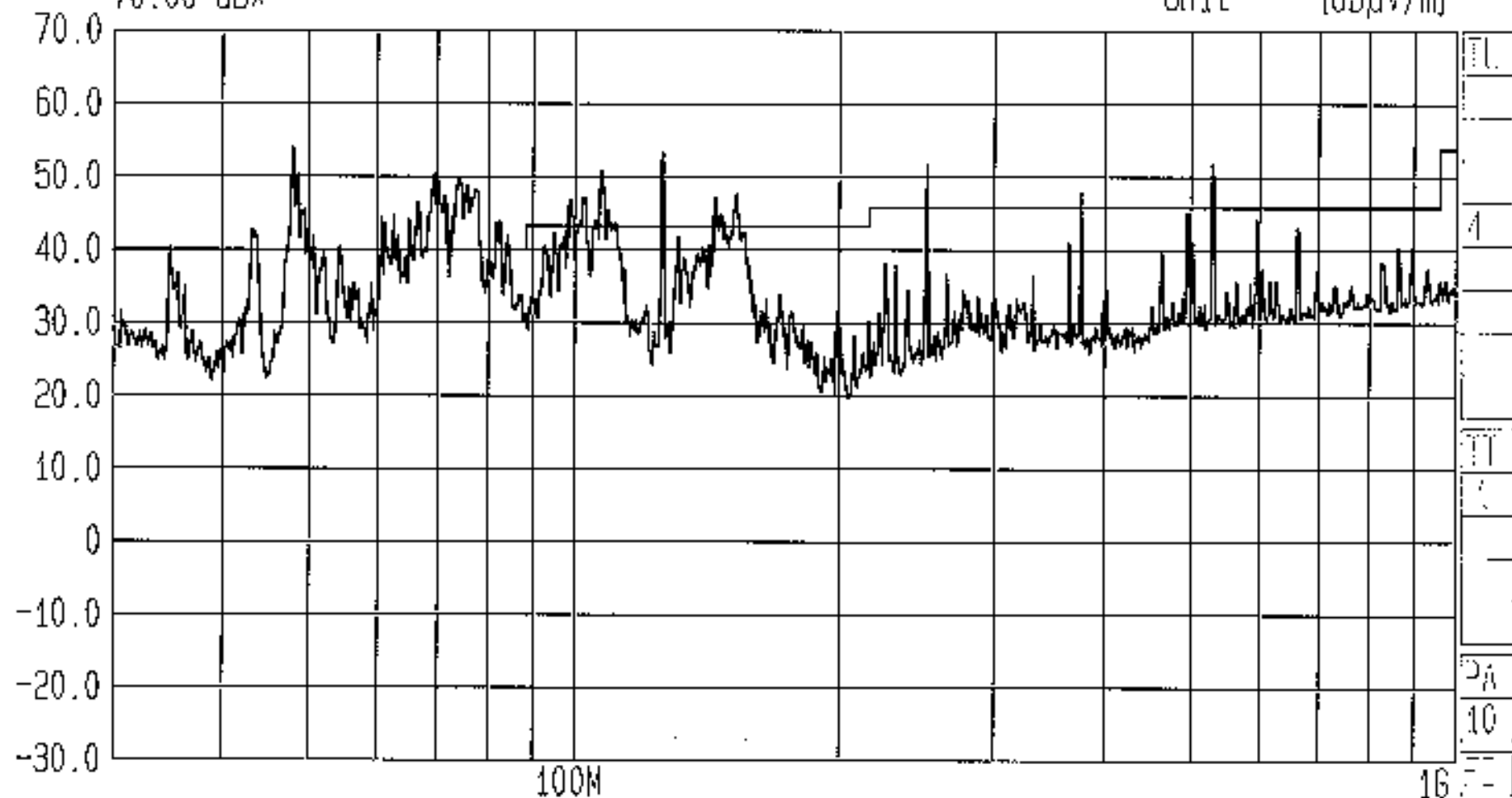


Date 11.May.'01 Time 11:36:44

Ref.Lvl
70.00 dBμ

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 97.000 MHz

Vid.Bw 100 kHz
RF.Att 0 dB
Unit [dBμV/m]



Start
30 MHz

Span
970 MHz

Center
173.2 MHz

Sweep
100 ms

Stop
1 GHz

Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Bottom Channel
GPH/42177/RE001

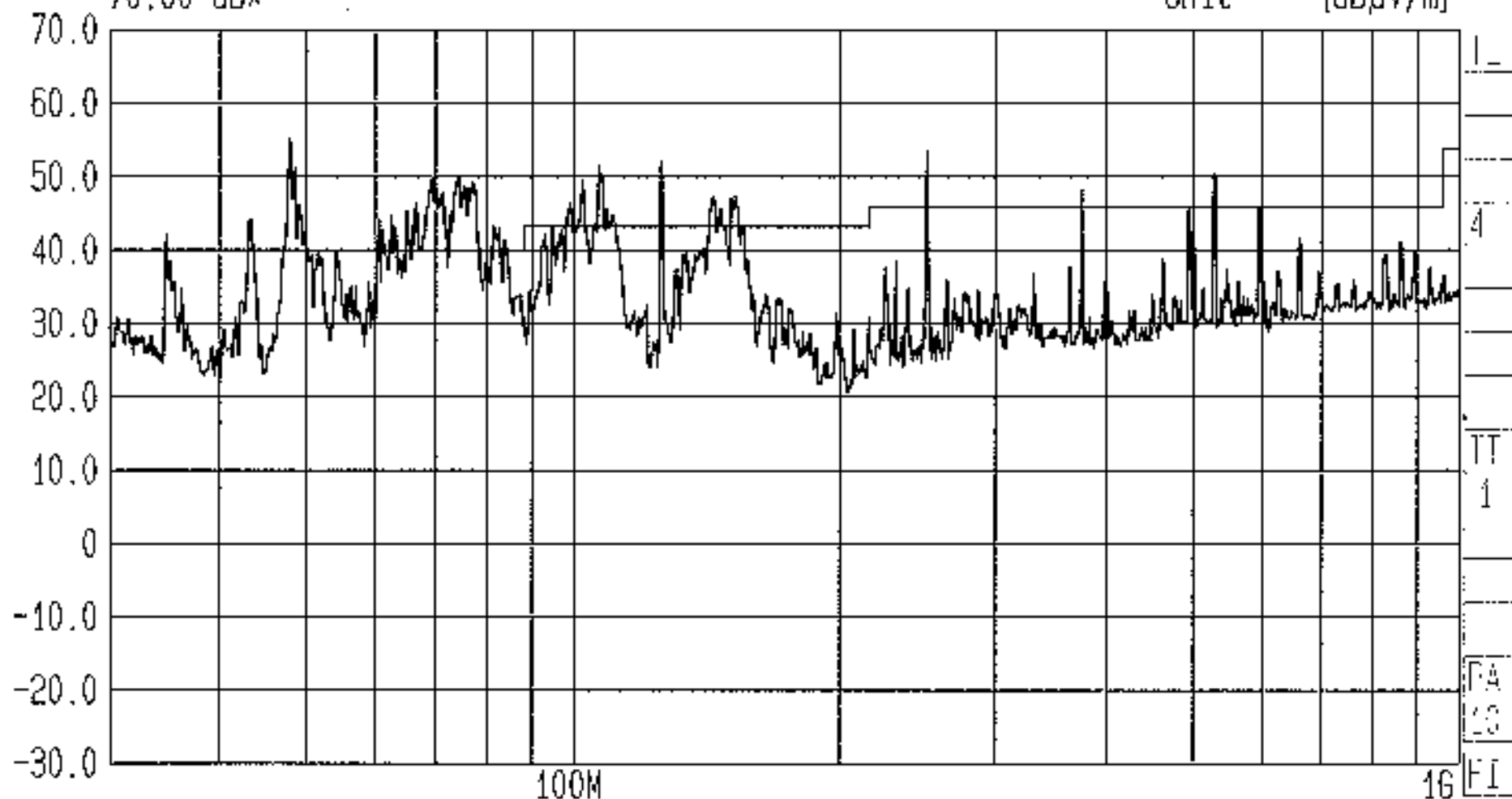


Date 11.May.'01 Time 11:46:57

Ref.Lvl
70.00 dB*

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 97.000 MHz

Vid.Bw 100 kHz
RF.Att 0 dB
Unit [dBμV/m]



Start
30 MHz

Span
970 MHz

Center
173.2 MHz

Sweep
540 ms

Stop
1 GHz

Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Middle Channel
GPH/42177/RE002



Date 11.May.'01 Time 11:53:10

Ref.Lvl
70.00 dBx

Res.Bw

100 kHz [imp]

Vid.Bw

100 kHz

TG.Lvl

off

CF.Stp

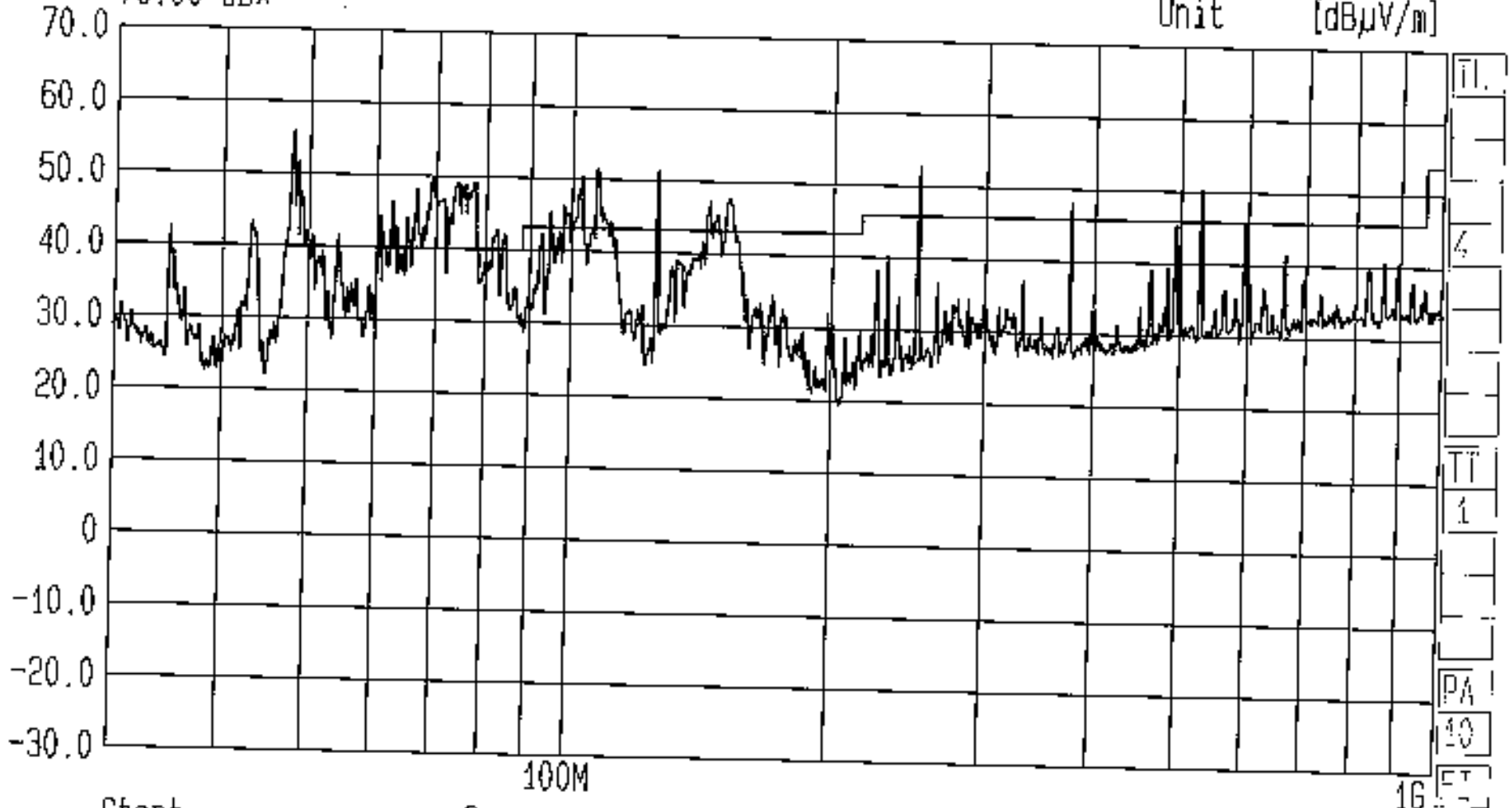
97.000 MHz

RF.Att

0 dB

Unit

[dBμV/m]



Start
30 MHz

Span
970 MHz

Center
173.2 MHz

Sweep
540 ms

Stop
1 GHz

Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Top Channel
RPH/12177/05002



Date 11.May.'01 Time 12:01:13

Ref.Lvl
70.00 dB*

Res.Bw 100 kHz [imp]

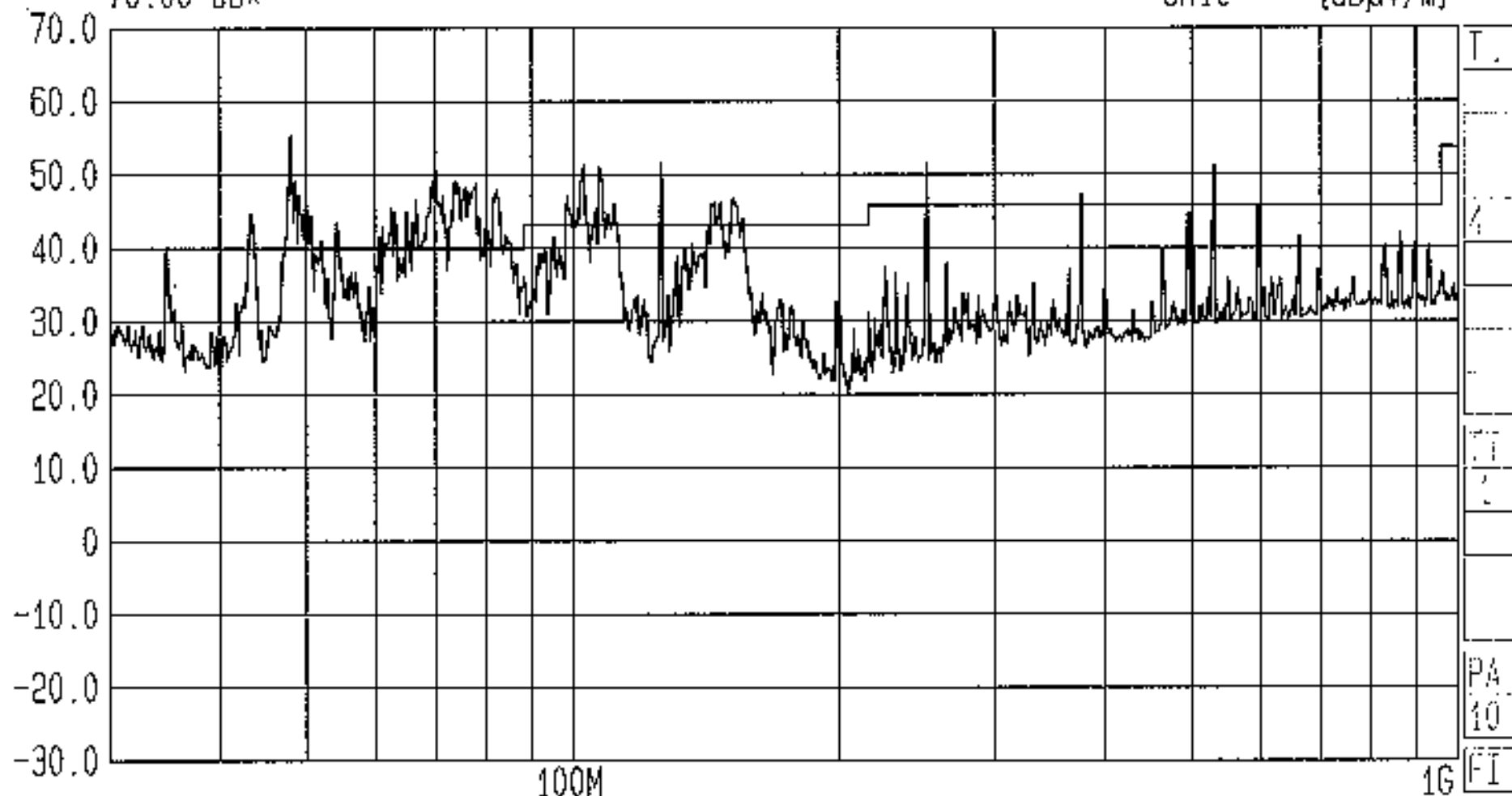
TG.Lvl off

CF.Stp 97.000 MHz

Vid.Bw 100 kHz

RF.Att 0 dB

Unit [dBμV/m]



Start
30 MHz

Span
970 MHz

Center
173.2 MHz

Sweep
540 ms

Stop
1 GHz

Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Top Channel
GPH/42177/RE004

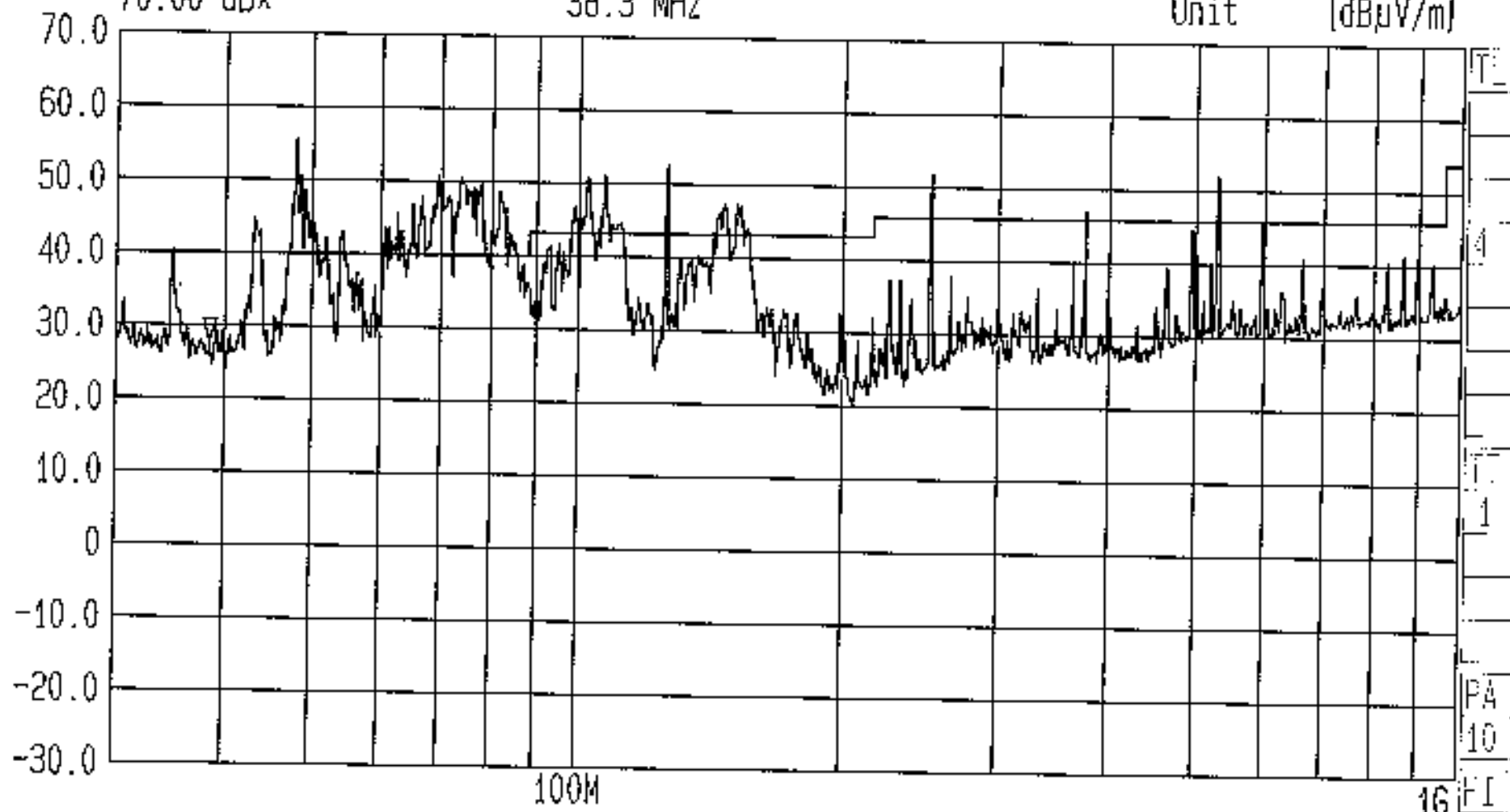


Date 11.May.'01 Time 12:15:19

Ref.Lvl 70.00 dBx
Marker 27.88 dB*
38.3 MHz

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 97.000 MHz

Vid.Bw 100 kHz
RF.Att 0 dB
Unit [dBμV/m]



Start
30 MHz

Span
970 MHz

Center
173.2 MHz

Sweep
540 ms

Stop
1 GHz

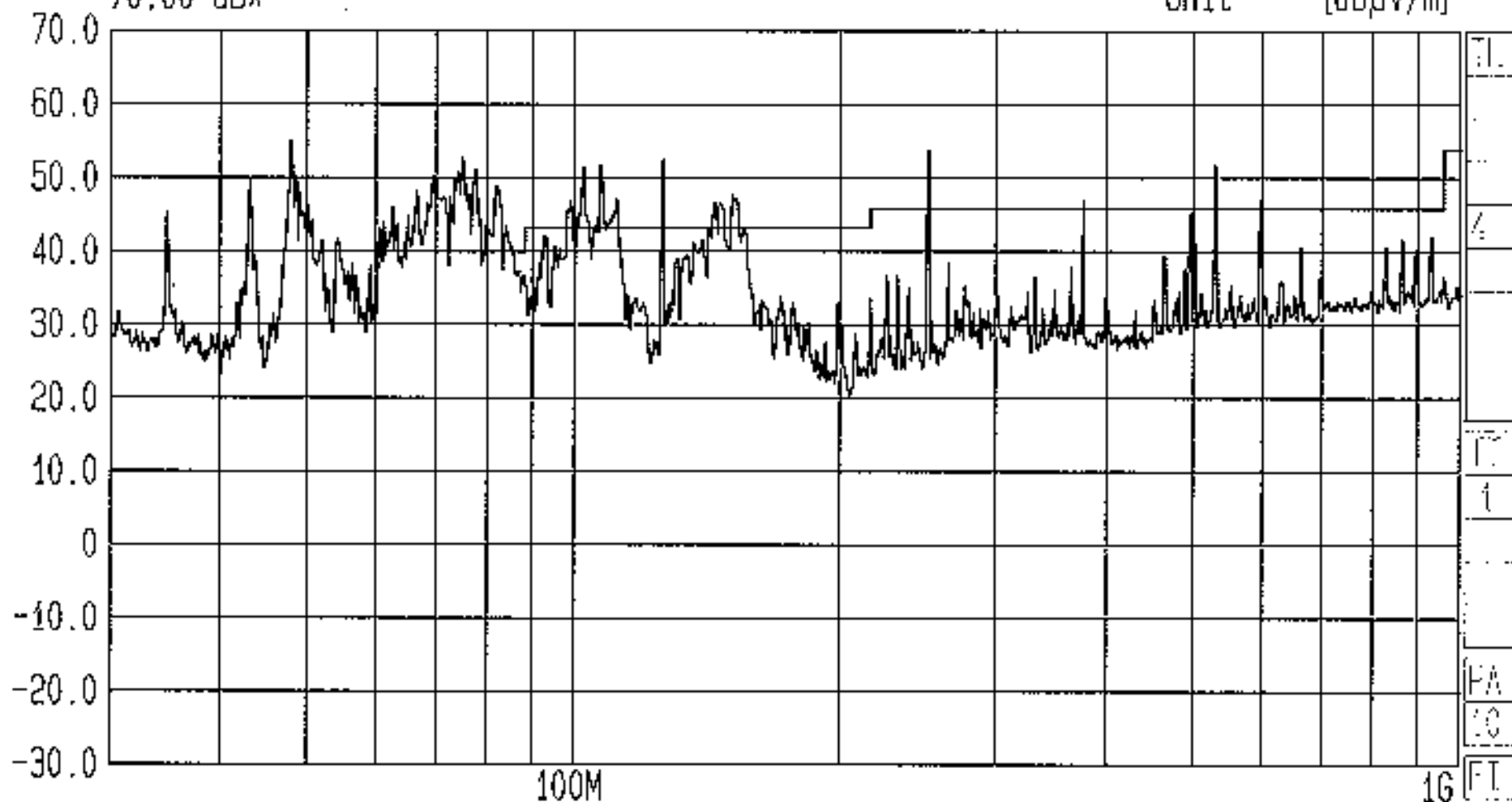
Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Middle Channel
GPH/42177/RF005



Date 11.May.'01 Time 12:22:02
Ref.Lvl
70.00 dBx

Res.Bw 100 kHz [imp] Vid.Bw 100 kHz
TG.Lvl off
CF.Stp 97.000 MHz RF.Att 0 dB
Unit [dBμV/m]



Start
30 MHz

Span
970 MHz

Center
173.2 MHz

Sweep
540 ms

Stop
1 GHz

Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Bottom Channel
GPH/42177/RE006

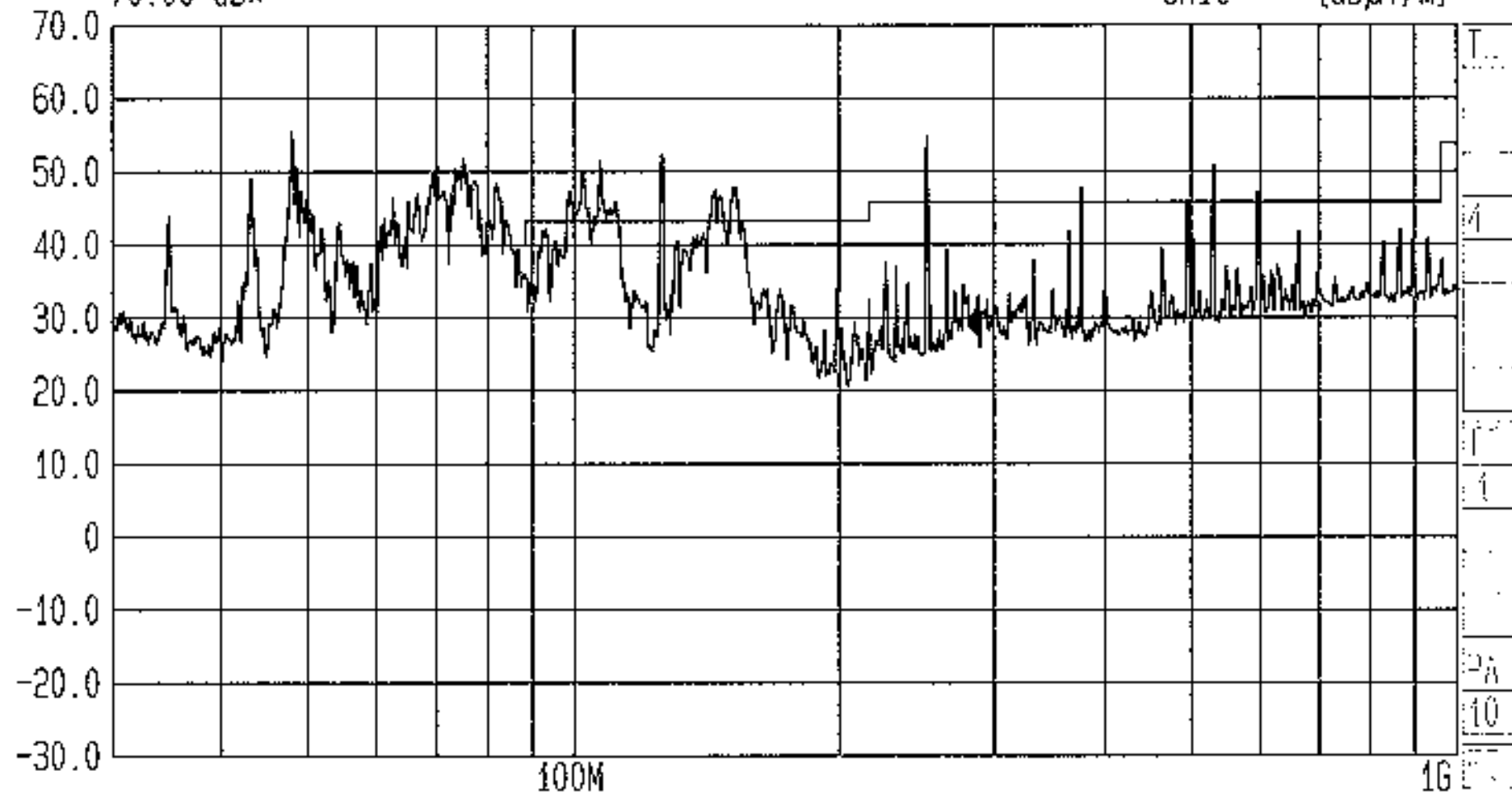


Date 11.May.'01 Time 12:27:47

Ref.Lvl
70.00 dBμ

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 97.000 MHz

Vid.Bw 100 kHz
RF.Att 0 dB
Unit [dBμV/m]



Start
30 MHz

Span
970 MHz

Center
173.2 MHz

Sweep
540 ms

Stop
1 GHz

Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Receive Mode
GPH/42177/RE007

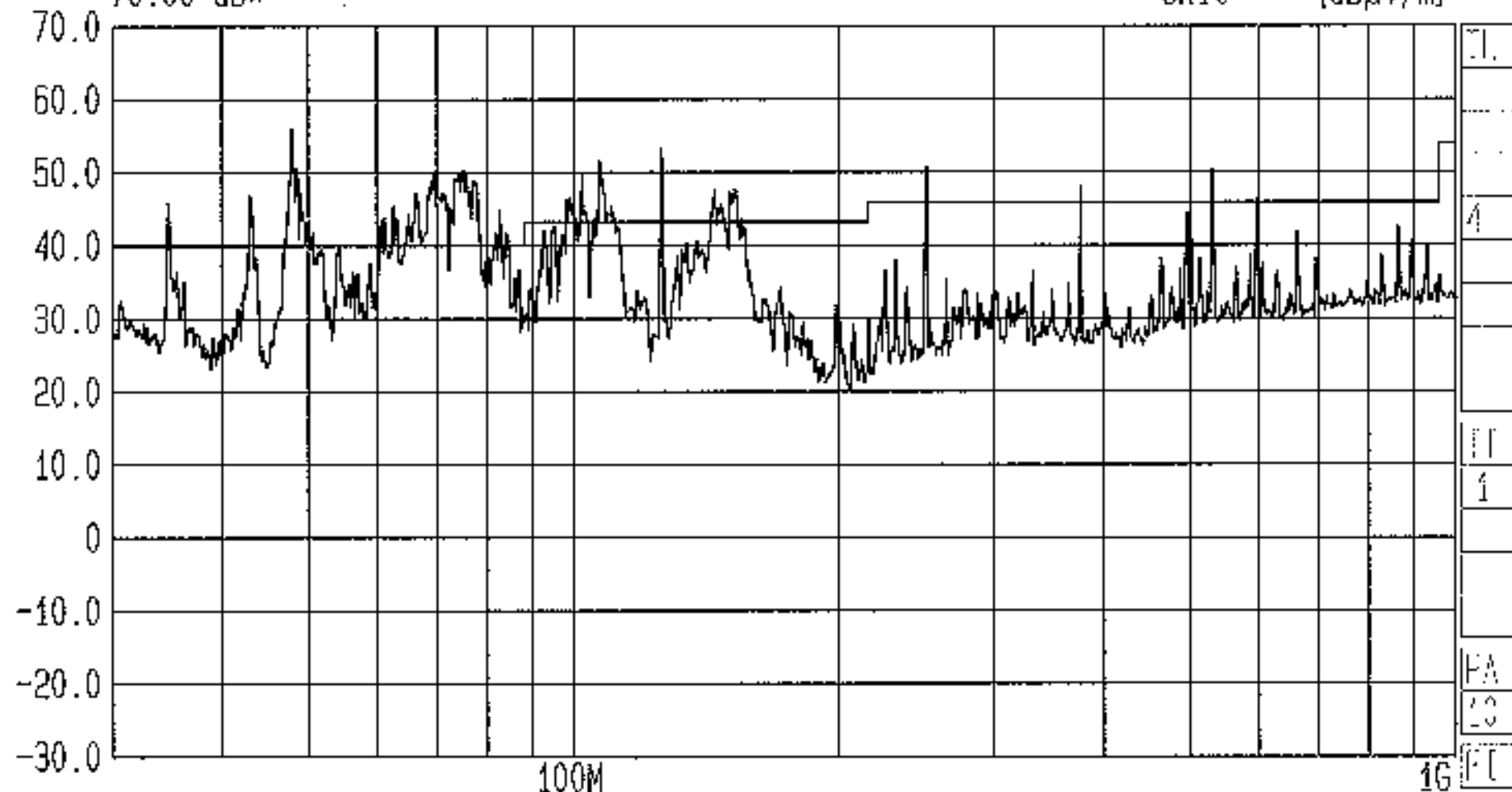


Date 11.May.'01 Time 12:36:16

Ref.Lvl
70.00 dB*

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 97.000 MHz

Vid.Bw 100 kHz
RF.Att 0 dB
Unit [dBμV/m]



Start
30 MHz

Span
970 MHz

Center
173.2 MHz

Sweep
540 ms

Stop
1 GHz

Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Receive Mode
GPH/42177/RE008



Date 11.May.'01 Time 13:37:30

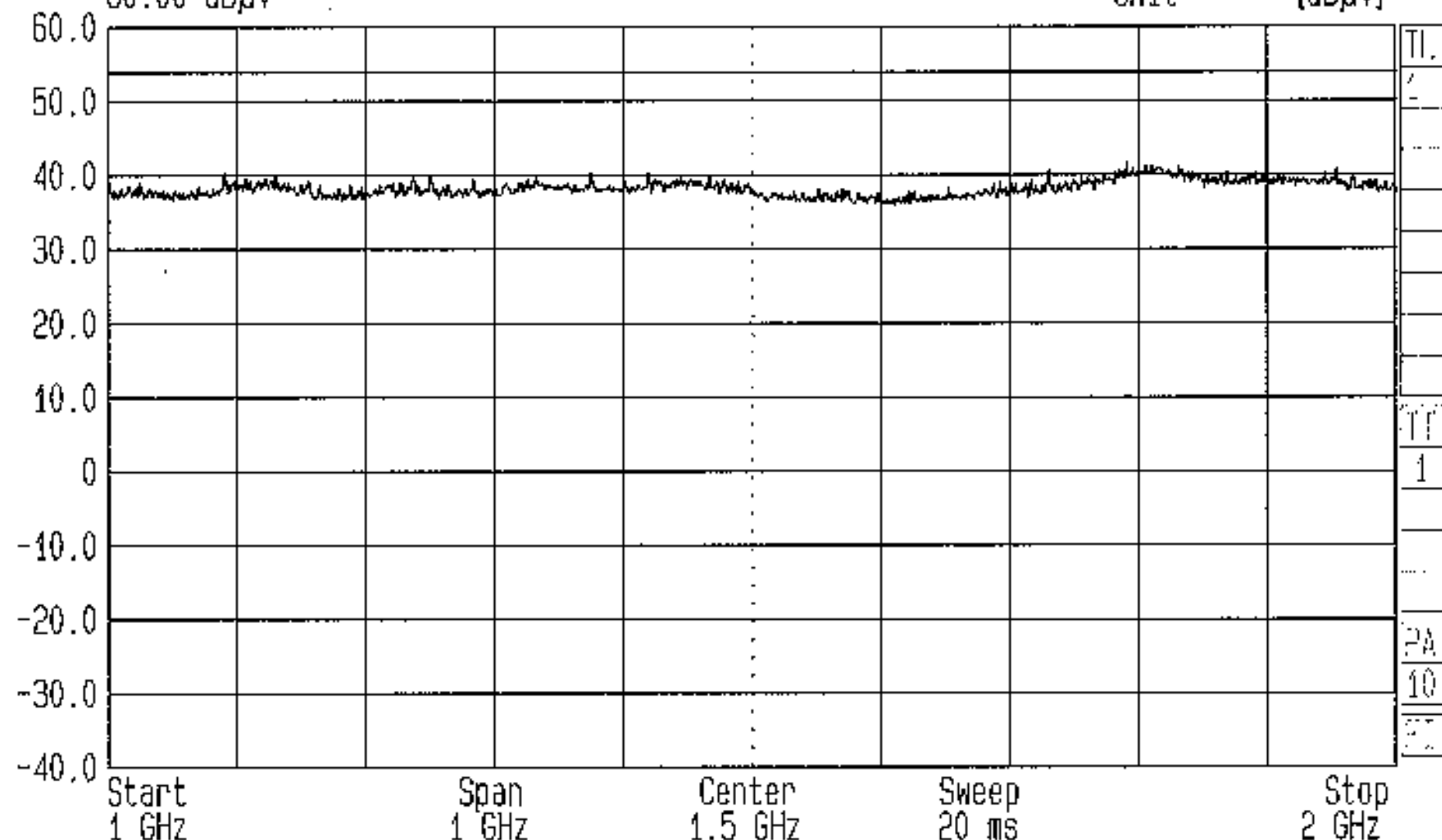
Ref.Lvl
60.00 dBμV

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
100.000 MHz

Vid.Bw
PF.Att
Unit

1 MHz
0 dB
[dBμV]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Bottom Channel
GPH/42177/RE009



Date 11.May.'01 Time 13:40:52

Ref.Lvl
60.00 dBμV

Res.Bw

1 MHz [imp]

Vid.Bw

1 MHz

TG.Lvl

off

CF.Stp

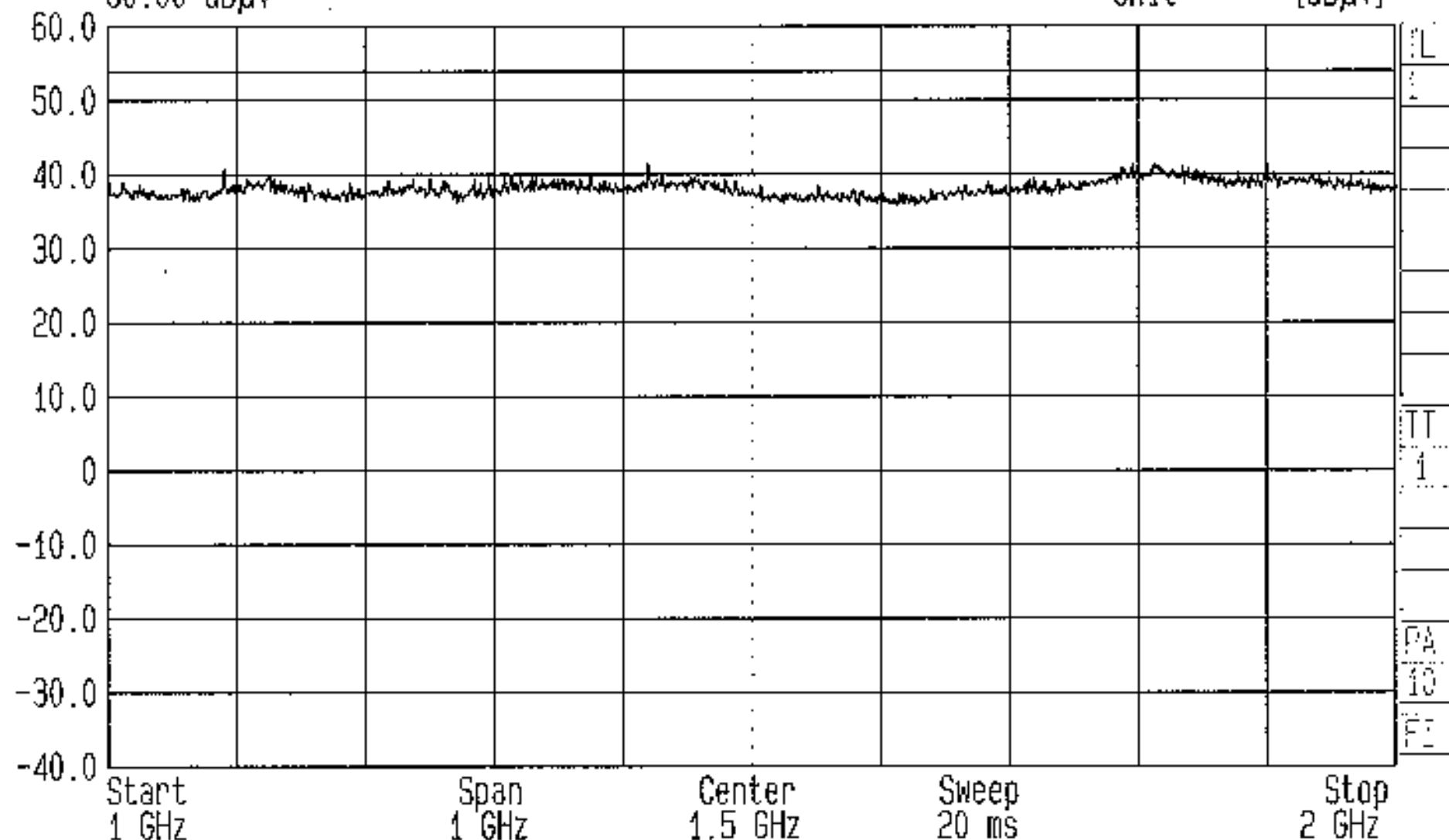
100.000 MHz

RF.Att

0 dB

Unit

[dBμV]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Middle Channel
GPH/42177/RE010



Date 11.May.'01 Time 13:44:37

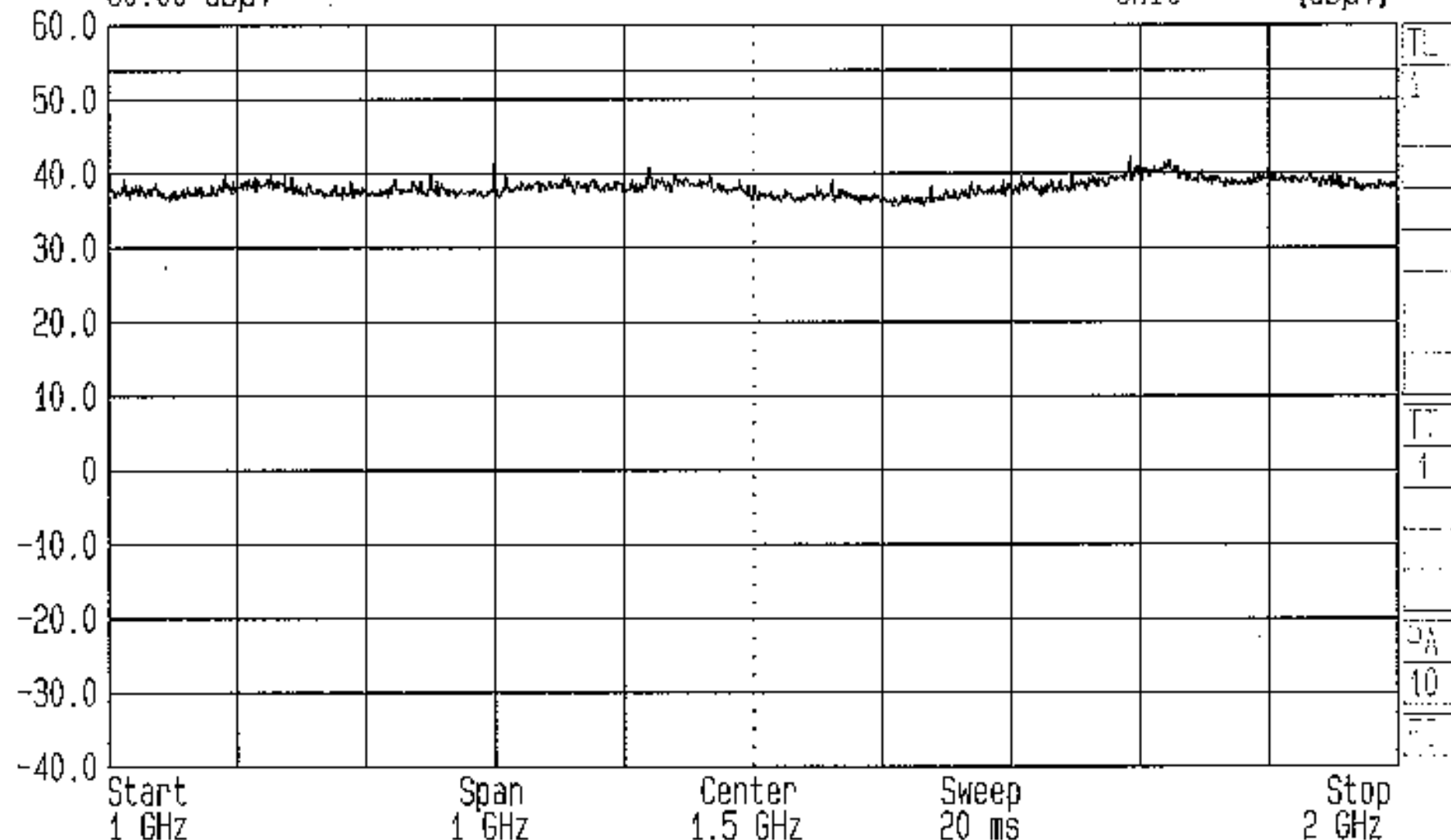
Ref.Lvl
60.00 dBμV

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
100.000 MHz

Vid.Bw
RF.Att
Unit

1 MHz
0 dB
(dBμV)



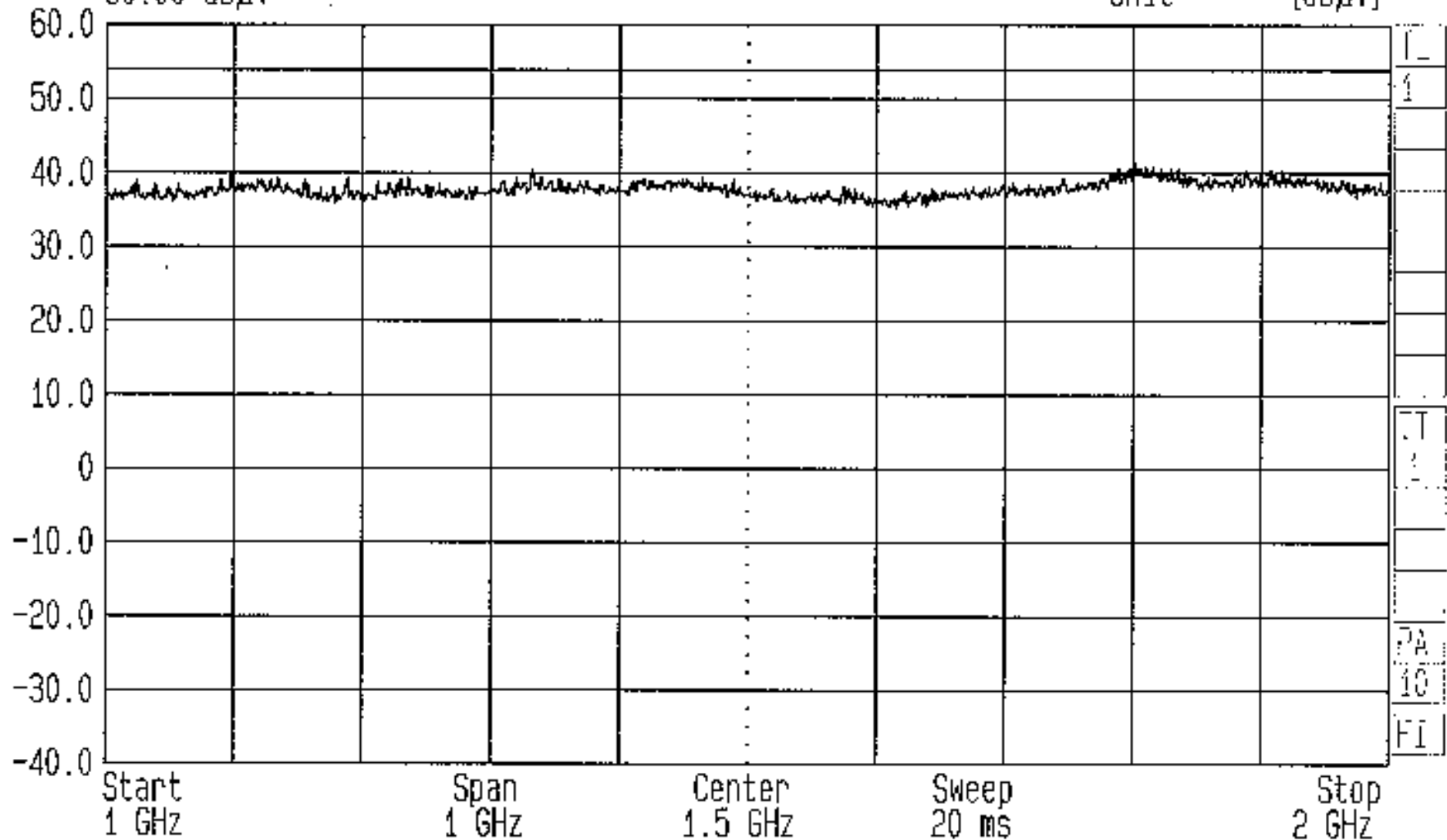
Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Top Channel
GPH/42177/RE011



Date 11.May.'01 Time 13:47:48
Ref.Lvl
60.00 dBμV

Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 100.000 MHz RF.Att 0 dB
Unit [dBμV]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Receiver Mode
GPH/42177/RE012



Date 11.May.'01 Time 13:50:59

Ref.Lvl
60.00 dB μ V

Res.Bw

1 MHz [imp]

Vid.Bw

1 MHz

TG.Lvl

off

CF.Stp

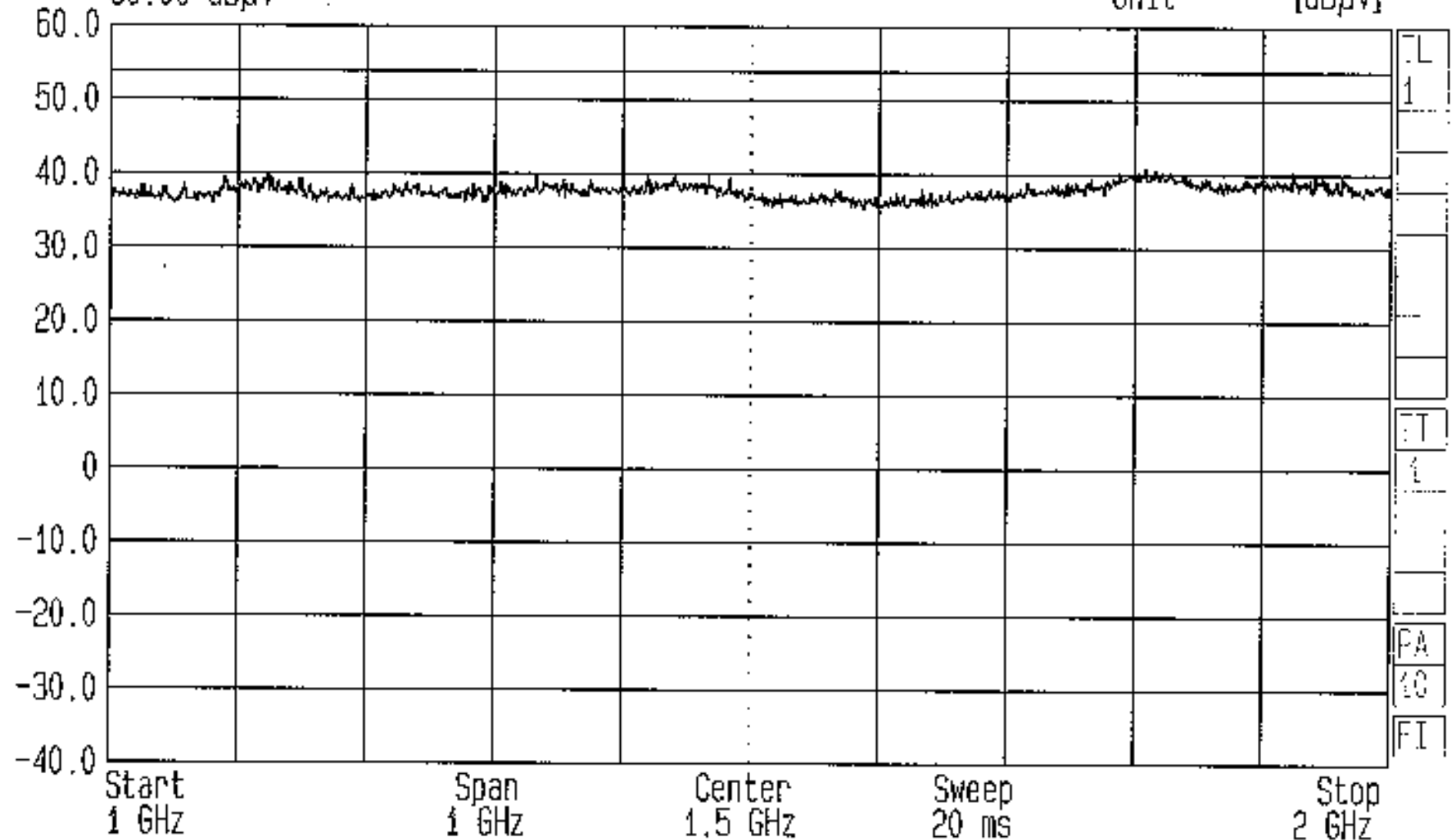
100.000 MHz

RF.Att

0 dB

Unit

[dB μ V]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Receiver Mode
GPH/42177/RE013



Date 11.May.'01 Time 13:54:32

Ref.Lvl
60.00 dBμV

Res.Bw

1 MHz [imp]

Vid.Bw

1 MHz

TG.Lvl

off

CF.Stp

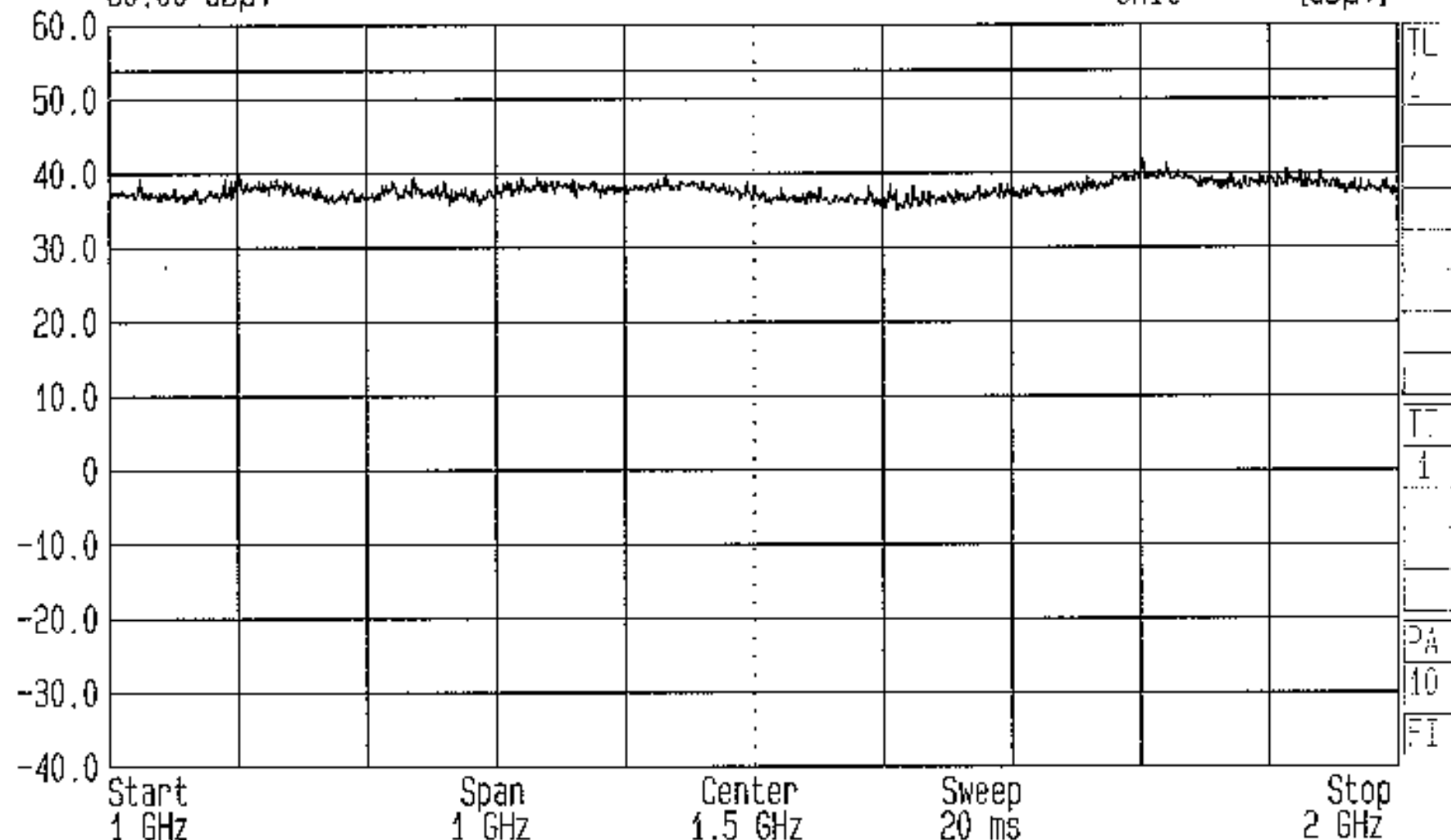
100.000 MHz

RF.Att

0 dB

Unit

[dBμV]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Top Channel
GPH/42177/RE014



Date 11.May.'01 Time 13:58:11

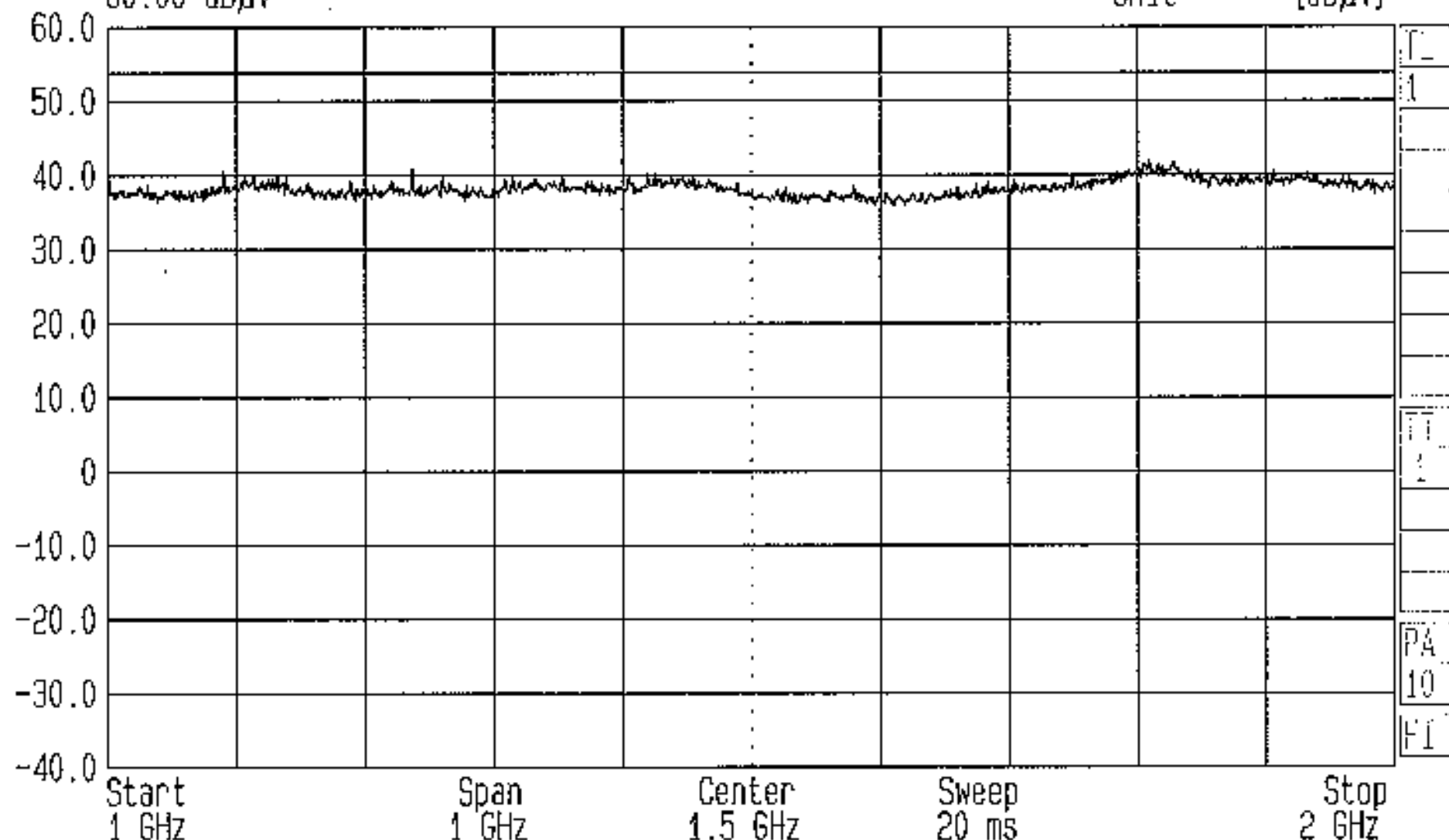
Ref.Lvl
60.00 dBμV

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
100.000 MHz

Vid.Bw
RF.Att
Unit

1 MHz
0 dB
[dBμV]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Middle Channel
GPH/42177/RE015



Date 11.May.'01 Time 14:01:53

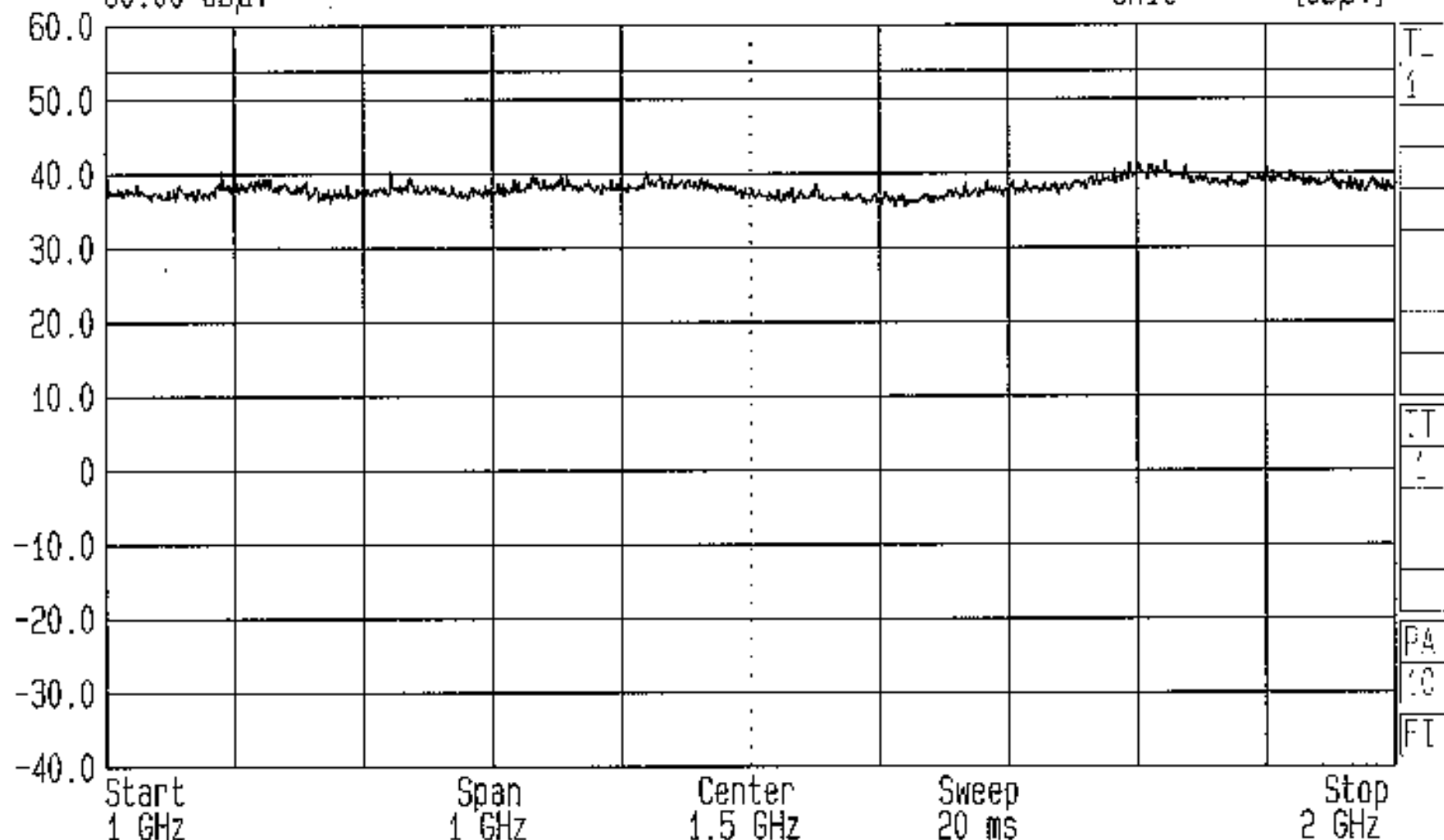
Ref.Lvl
60.00 dBμV

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
100.000 MHz

Vid.Bw
RF.Att
Unit

1 MHz
0 dB
[dBμV]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Bottom Channel
GPH/42177/RE016



Date 11.May.'01 Time 14:18:02

Ref.Lvl
70.00 dB*

Res.Bw

1 MHz [imp]

Vid.Bw

1 MHz

TG.Lvl

off

CF.Stp

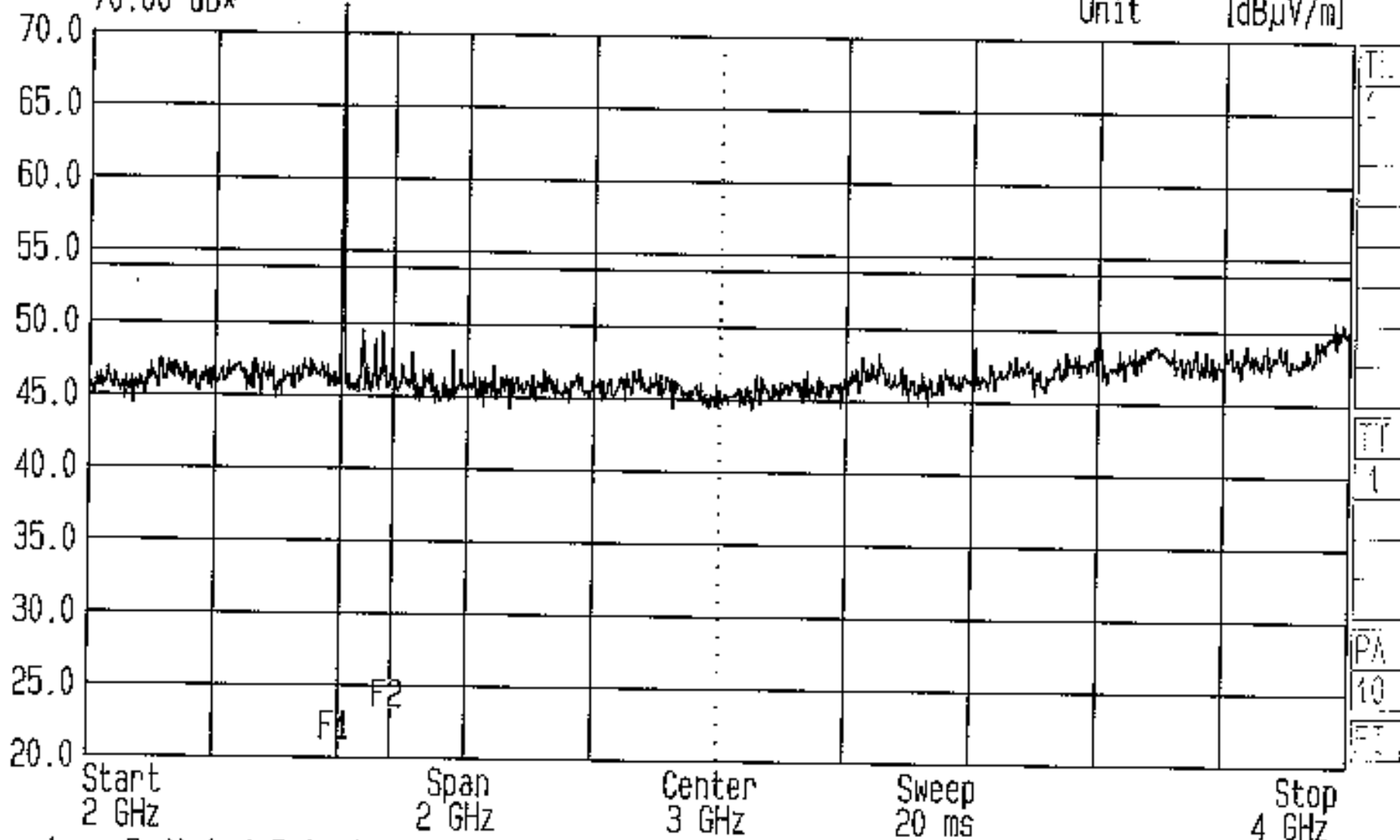
200.000 MHz

RF.Att

0 dB

Unit

[dBμV/m]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Bottom Channel
GPH/42177/RE017



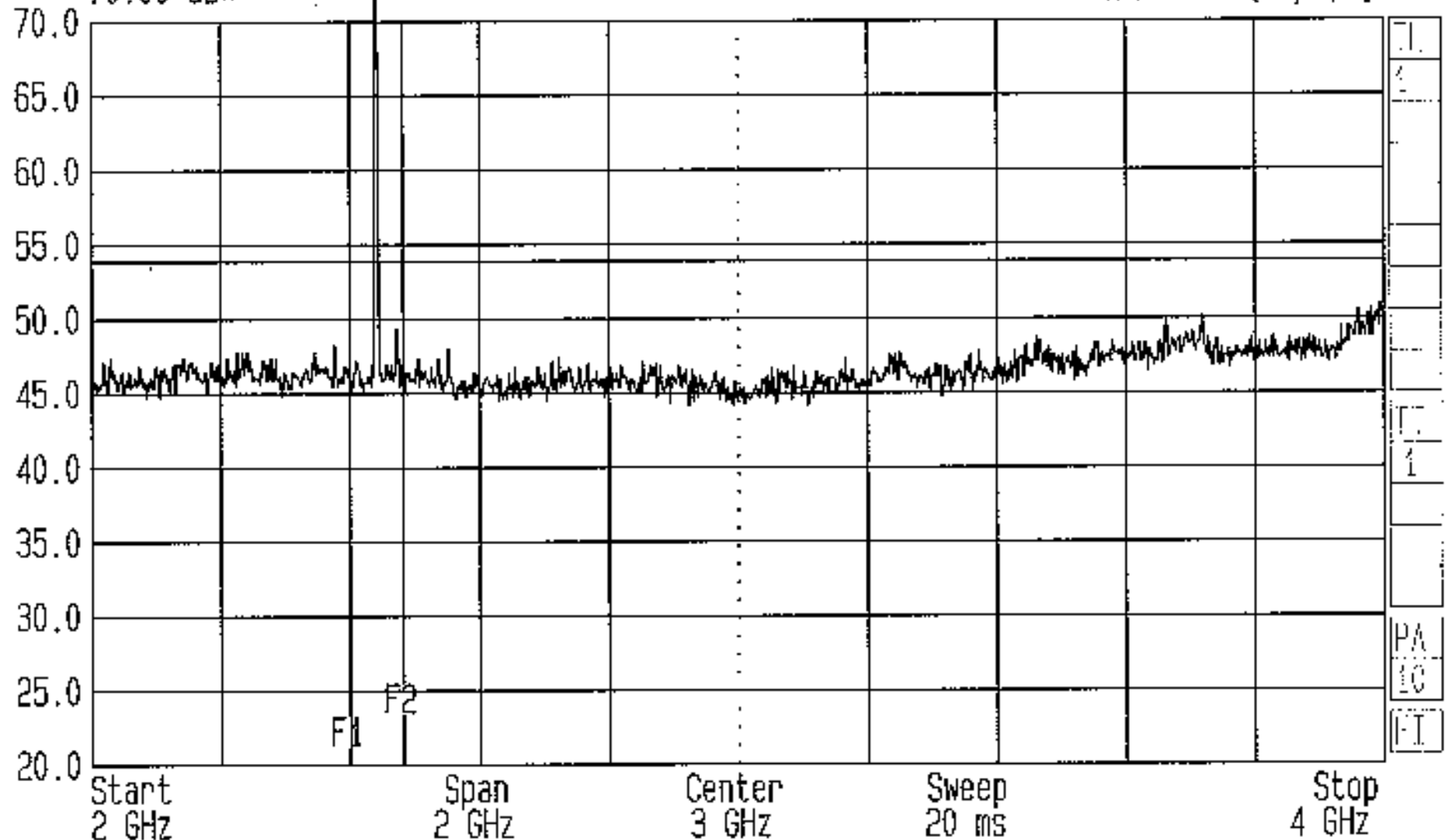
Date 11.May.'01 Time 14:22:39

Ref.Lvl
70.00 dBμ

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
200.000 MHz

Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV/m]



PA
IC
FI

Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Middle Channel
GPH/42177/RE018



Date 11.May.'01 Time 14:40:58

Ref.Lvl
70.00 dBx

Res.Bw

1 MHz [imp]

Vid.Bw

1 MHz

TG.Lvl

off

CF.Stp

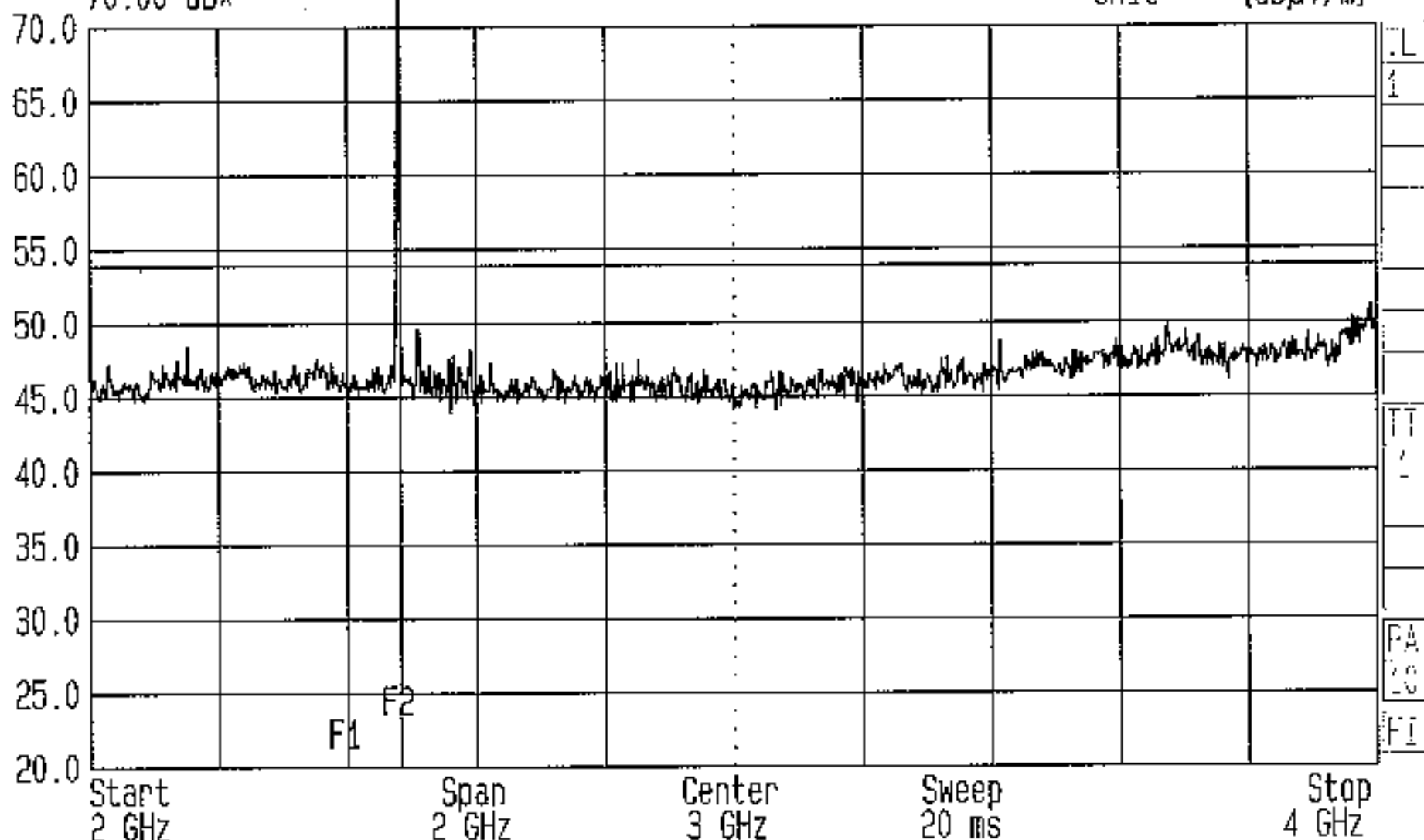
200.000 MHz

RF.Att

0 dB

Unit

[dBμV/m]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Top Channel
GPH/42177/RE019



Date 11.May.'01 Time 14:37:40

Ref.Lvl
70.00 dBμ

Res.Bw

1 MHz [imp]

Vid.Bw

1 MHz

TG.Lvl

off

CF.Stp

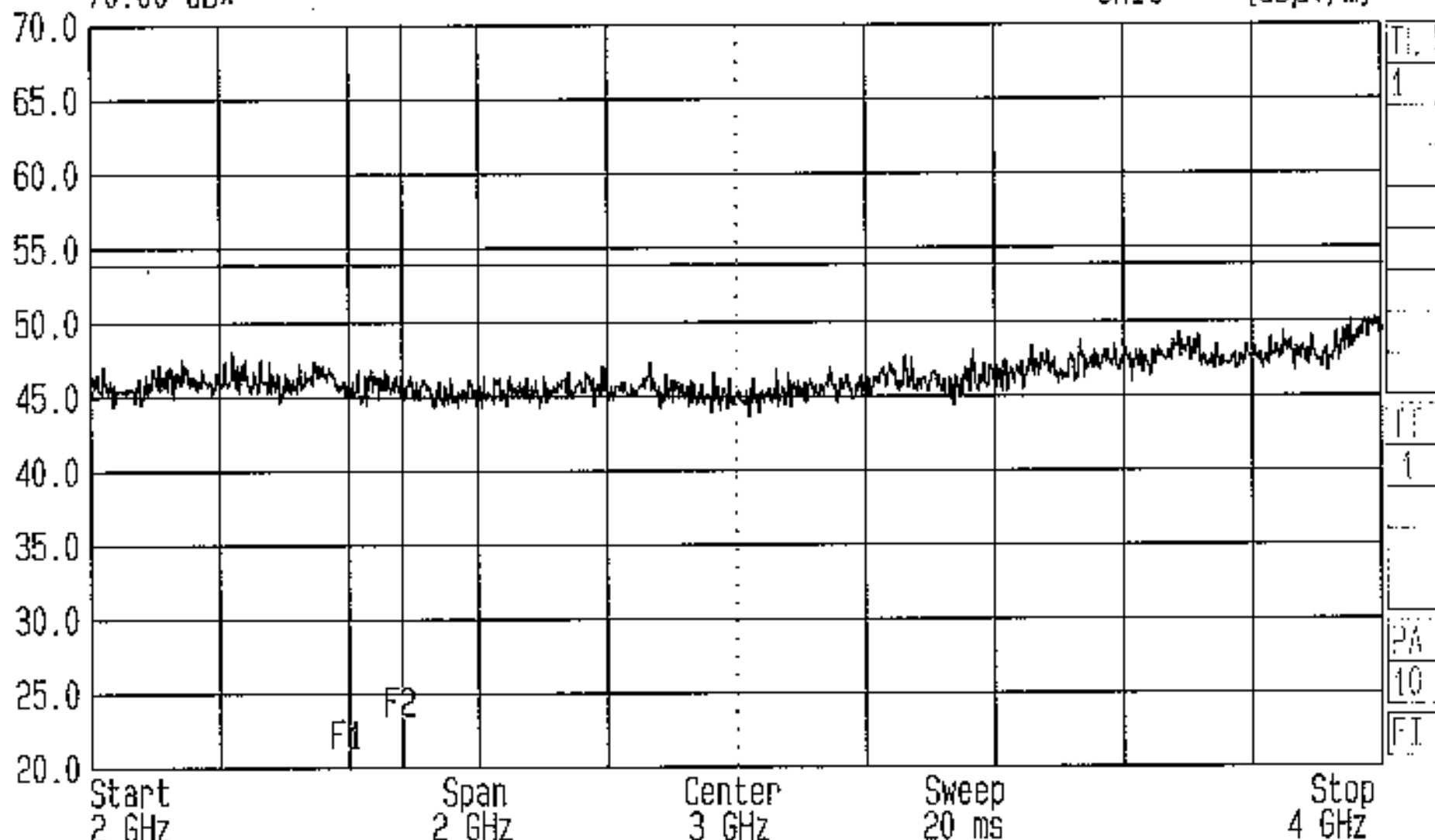
200.000 MHz

RF.Att

0 dB

Unit

[dBμV/m]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Receive Mode
GPH/42177/RE020



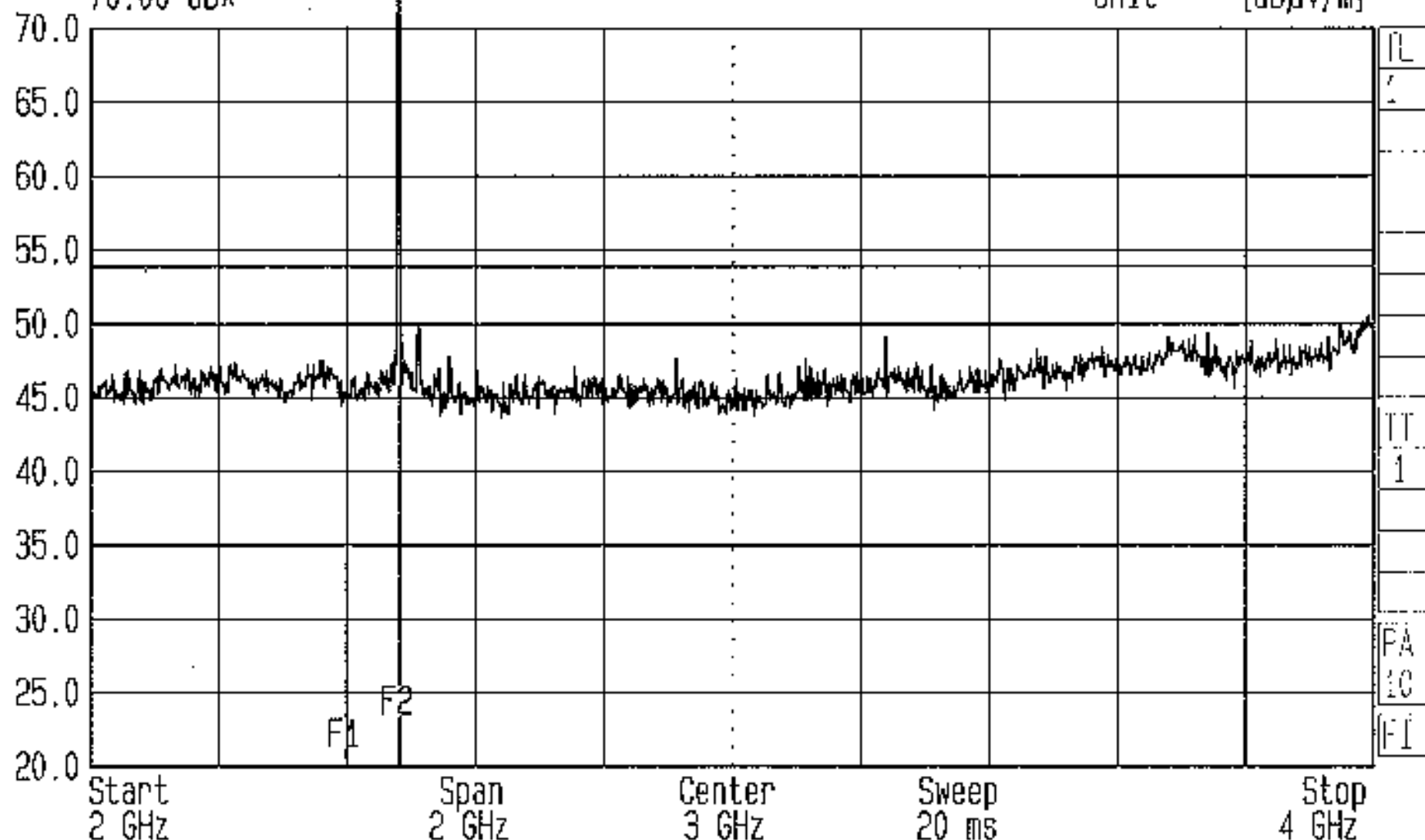
Date 11.May.'01 Time 14:53:33

Ref.Lvl
70.00 dBx

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
200.000 MHz

Vid.Bw 1 MHz
AF.Att 0 dB
Unit [dBμV/m]



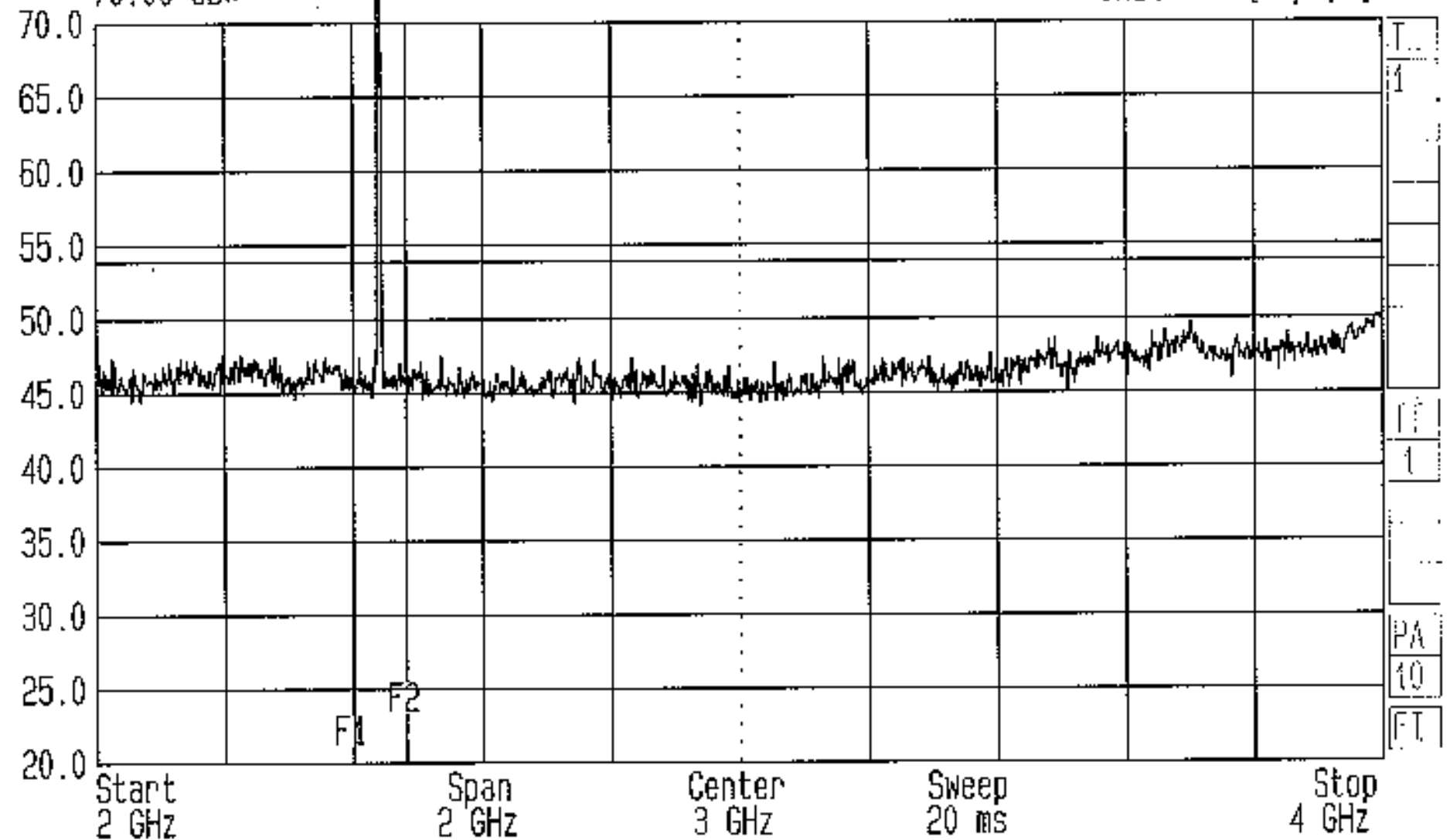
Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Top Channel
GPH/42177/RE021



Date 11.May.'01 Time 14:57:19
Ref.Lvl
70.00 dB*

Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 200.000 MHz RF.Att 0 dB
Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M by RFI Ltd. Op Cond: Middle Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE022



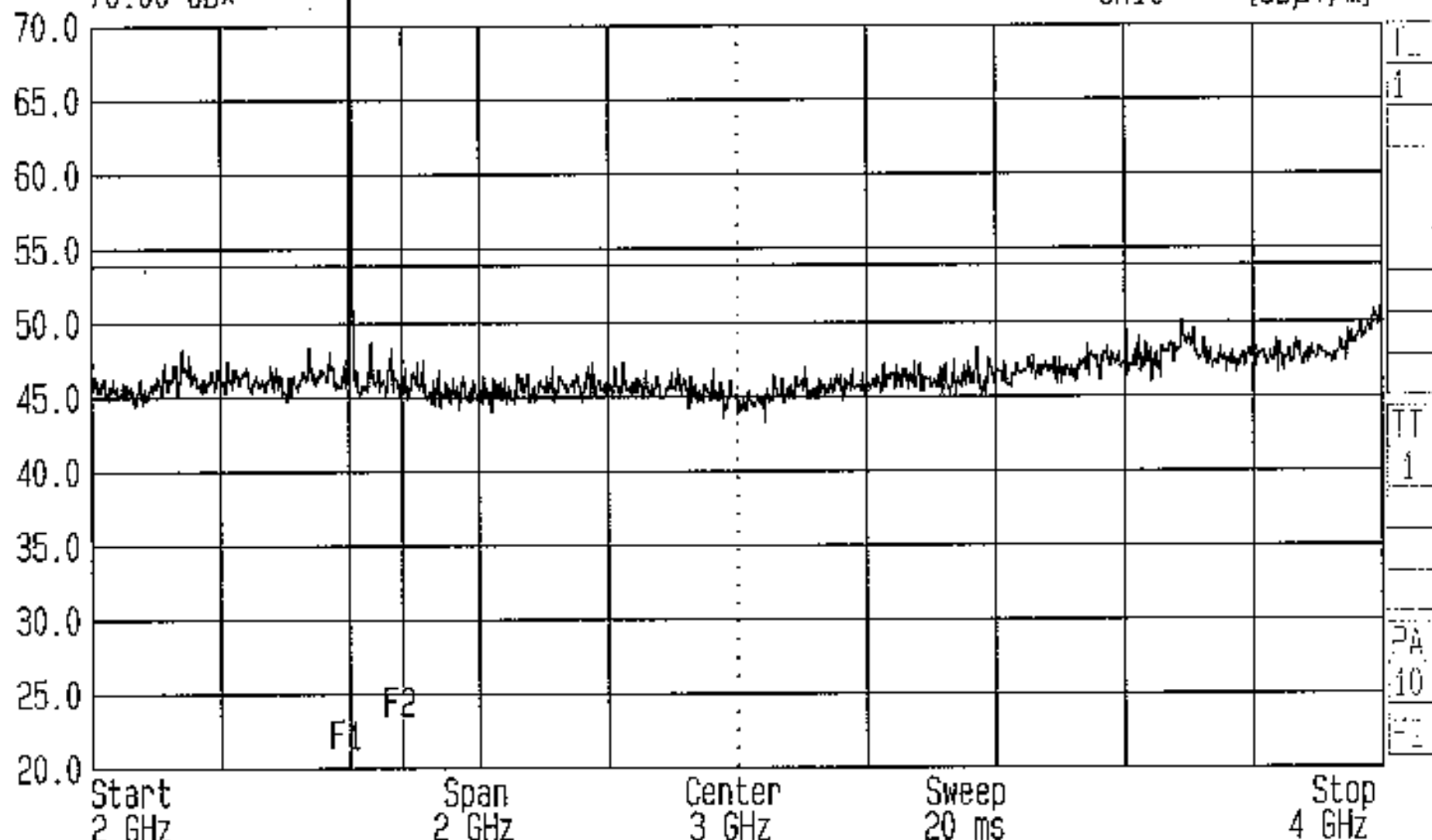
Date 11.May.'01 Time 15:01:05

Ref.Lvl
70.00 dBx

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
200.000 MHz

Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Bottom Channel
GPH/42177/RE023



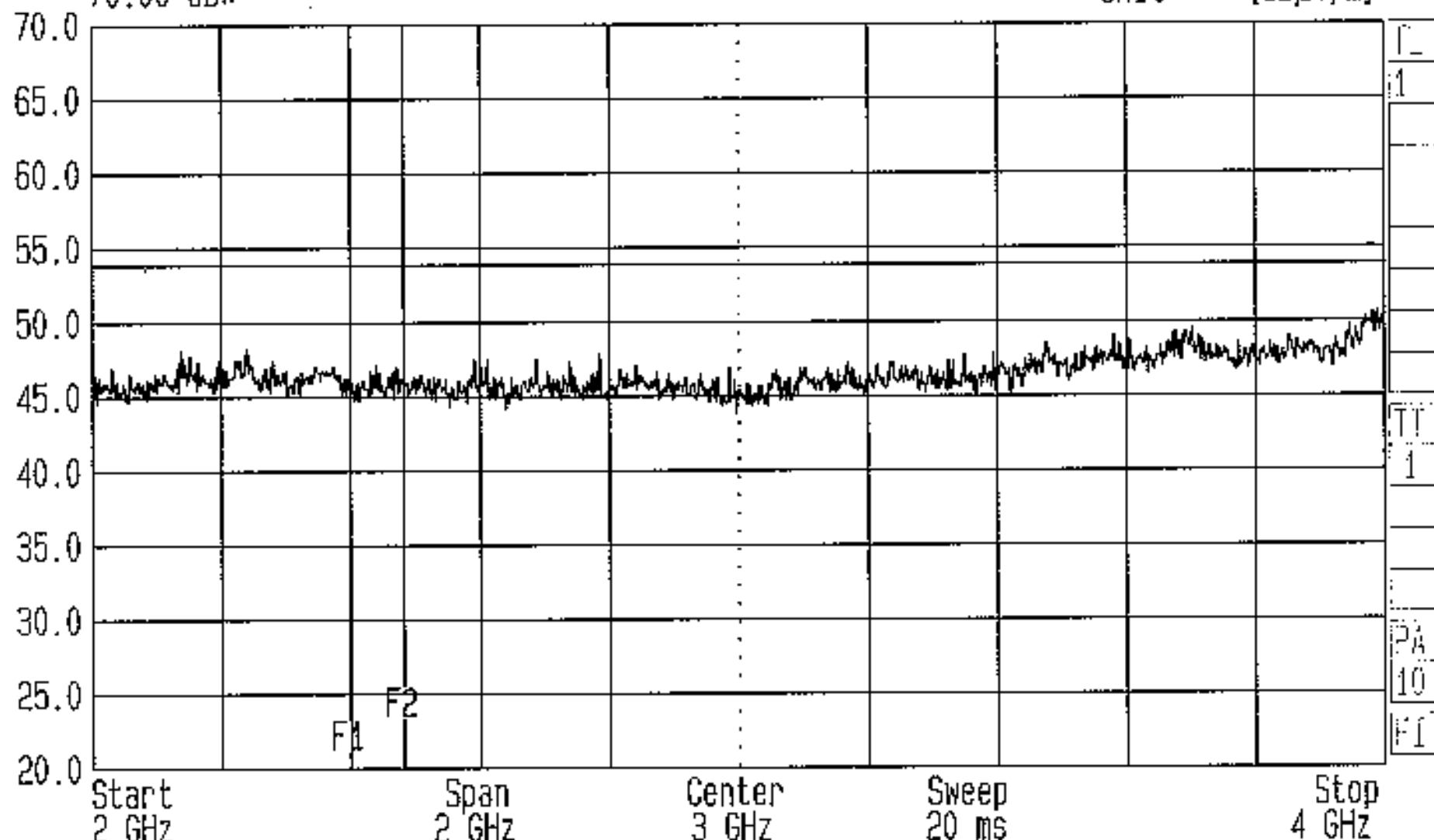
Date 11.May.'01 Time 15:13:17

Ref.Lvl
70.00 dBμ

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
200.000 MHz

Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV/m]

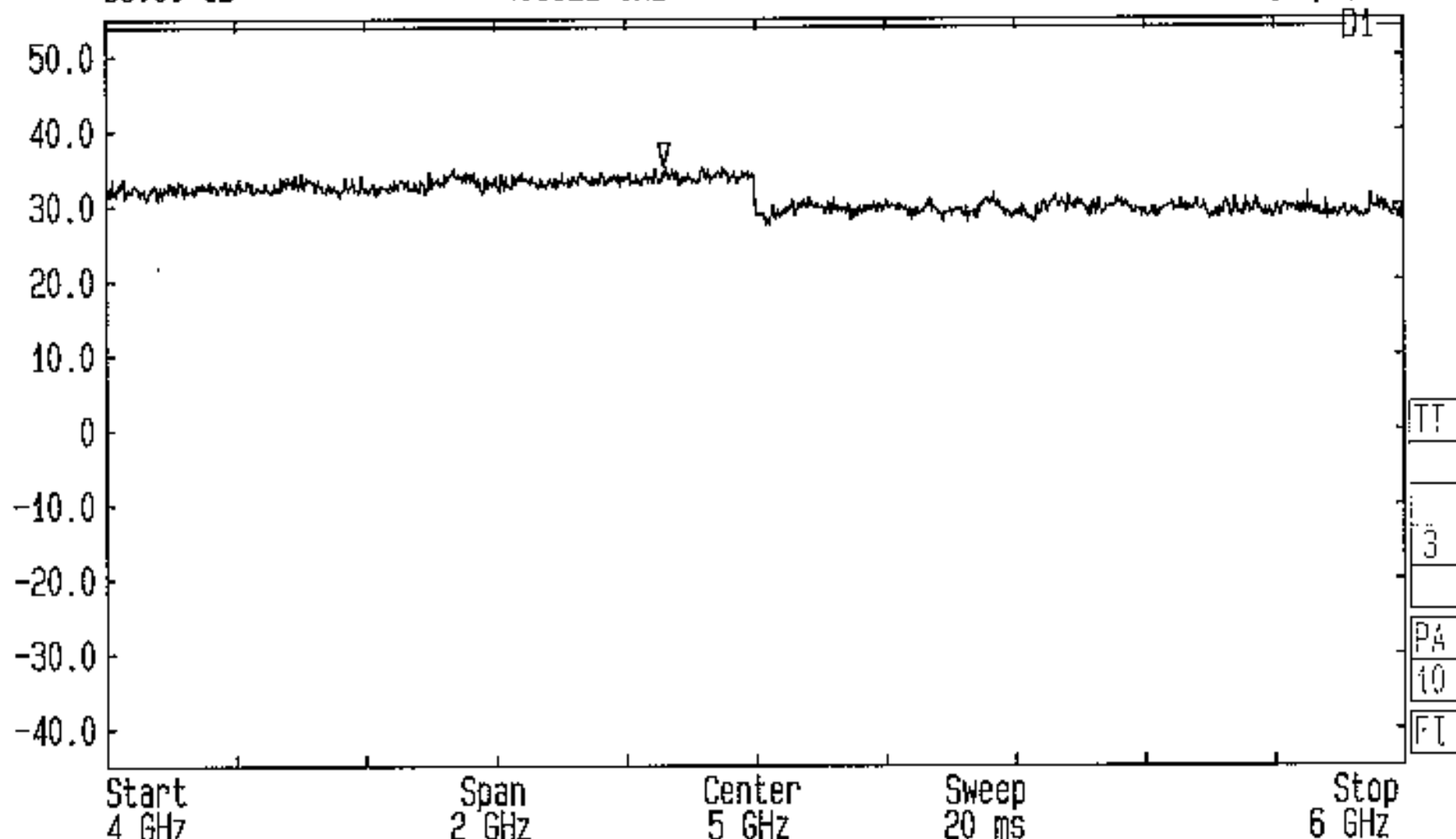


Spurious Radiated Emissions Test For Red-M by RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna)

Op Cond: Receive Mode
GPH/42177/RE024

Date 15.May.'01 Time 14:52:15
Ref.Lvl 55.00 dB* Marker 35.53 dB*
4.8622 GHz

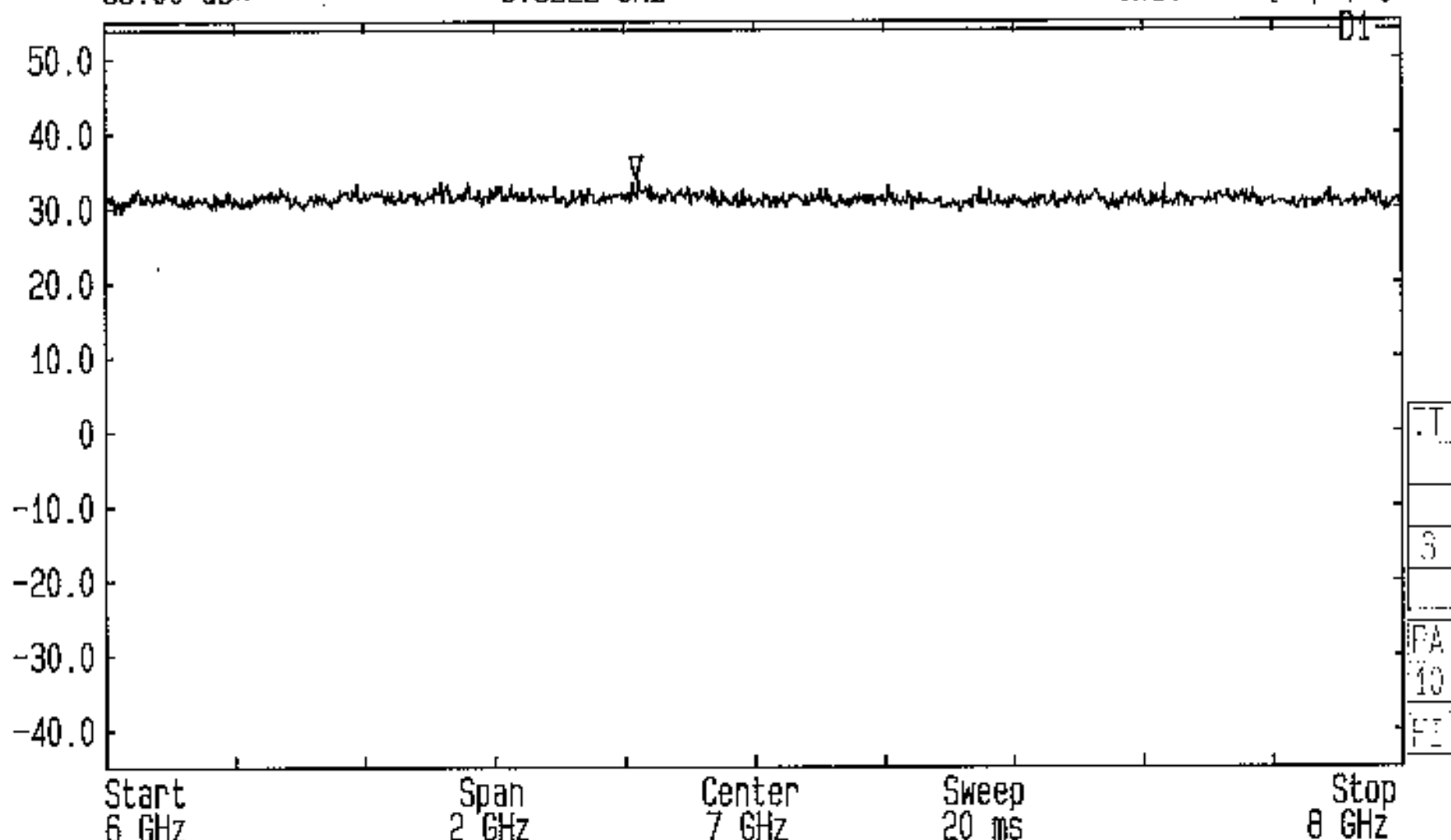
Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 200.000 MHz RF.Att 0 dB
Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0025

Date 15.May.'01 Time 14:57:00
Ref.Lvl 55.00 dBx
Marker 33.93 dB*
6.8222 GHz

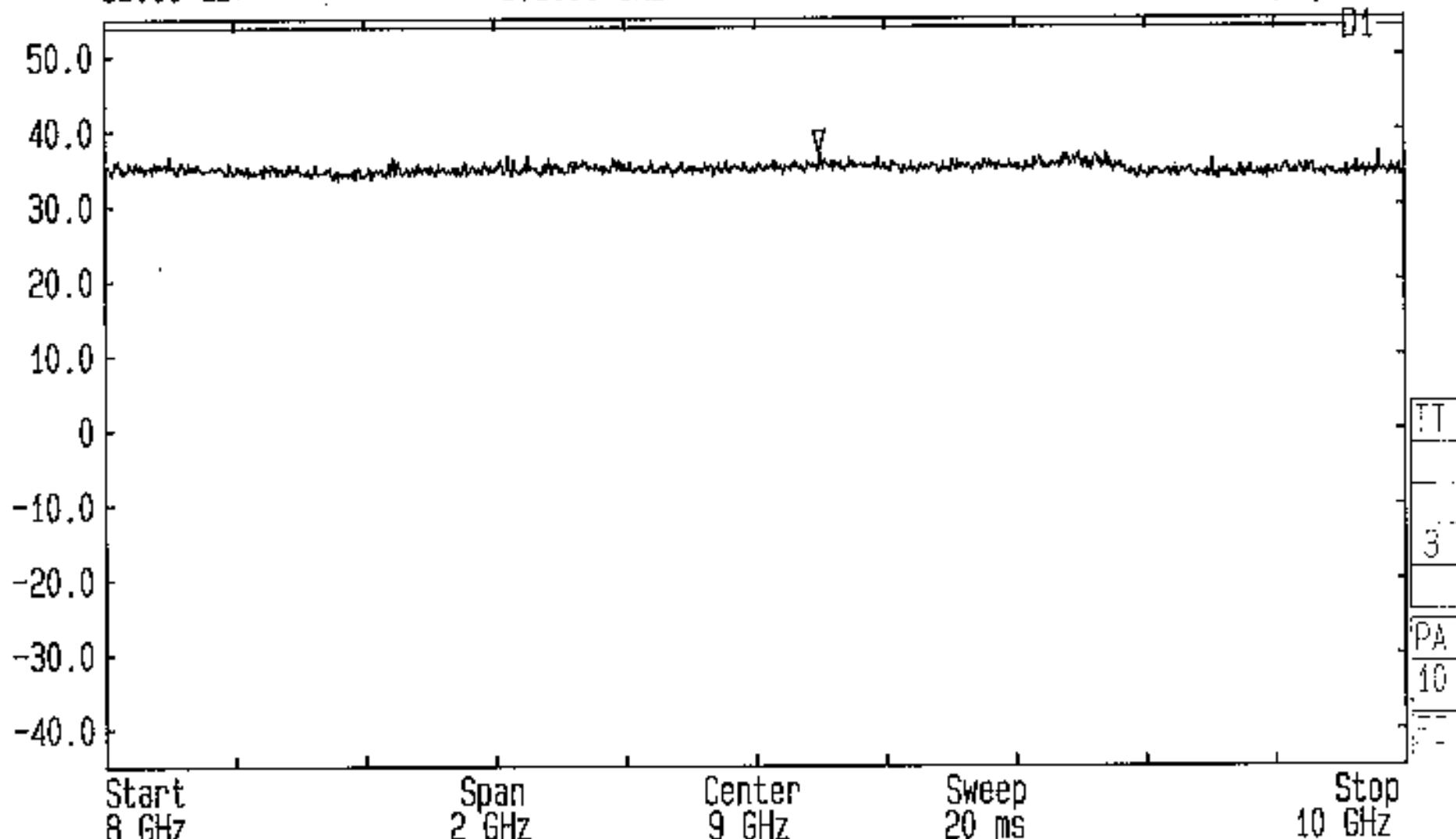
Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0026

Date 15.May.'01 Time 14:59:46
Ref.Lvl 55.00 dB* Marker 37.13 dB*
9.1000 GHz

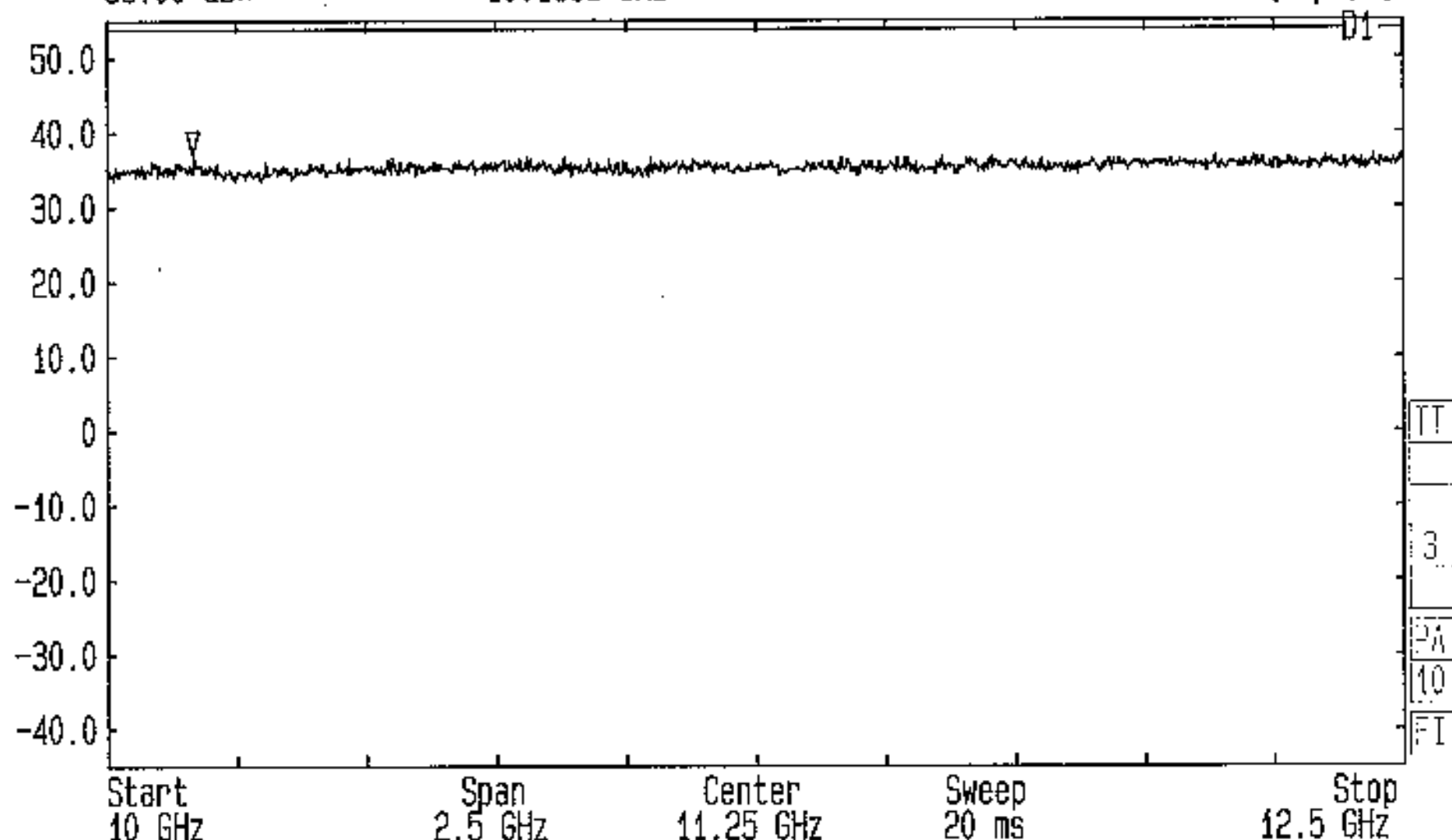
Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 200.000 MHz RF.Att 0 dB
Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0027

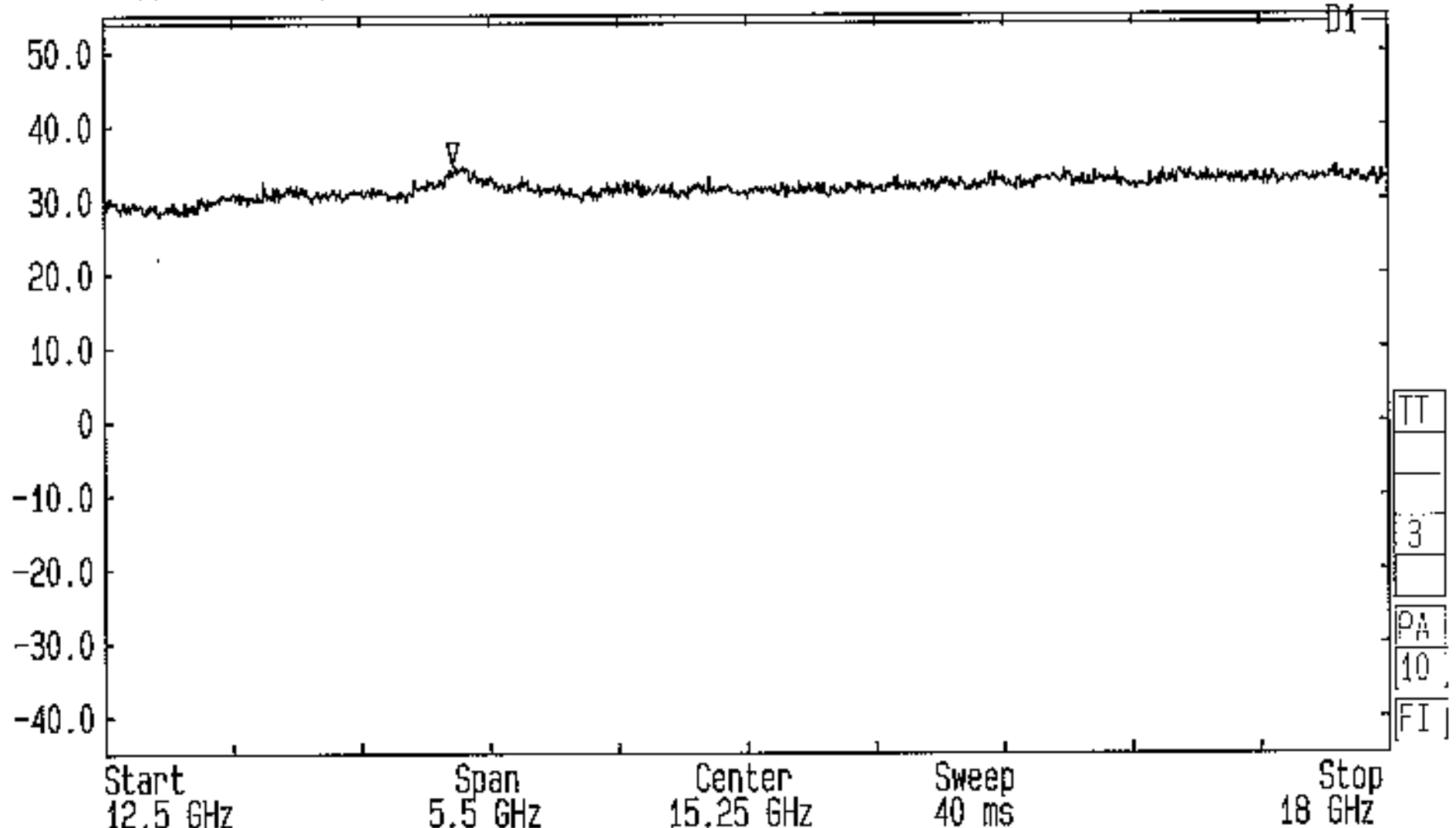
Date 15.May.'01 Time 15:02:32
Ref.Lvl 55.00 dB* Marker 37.31 dB*
10.1666 GHz

Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 250.000 MHz AF.Att 0 dB
Unit [dBμV/m]



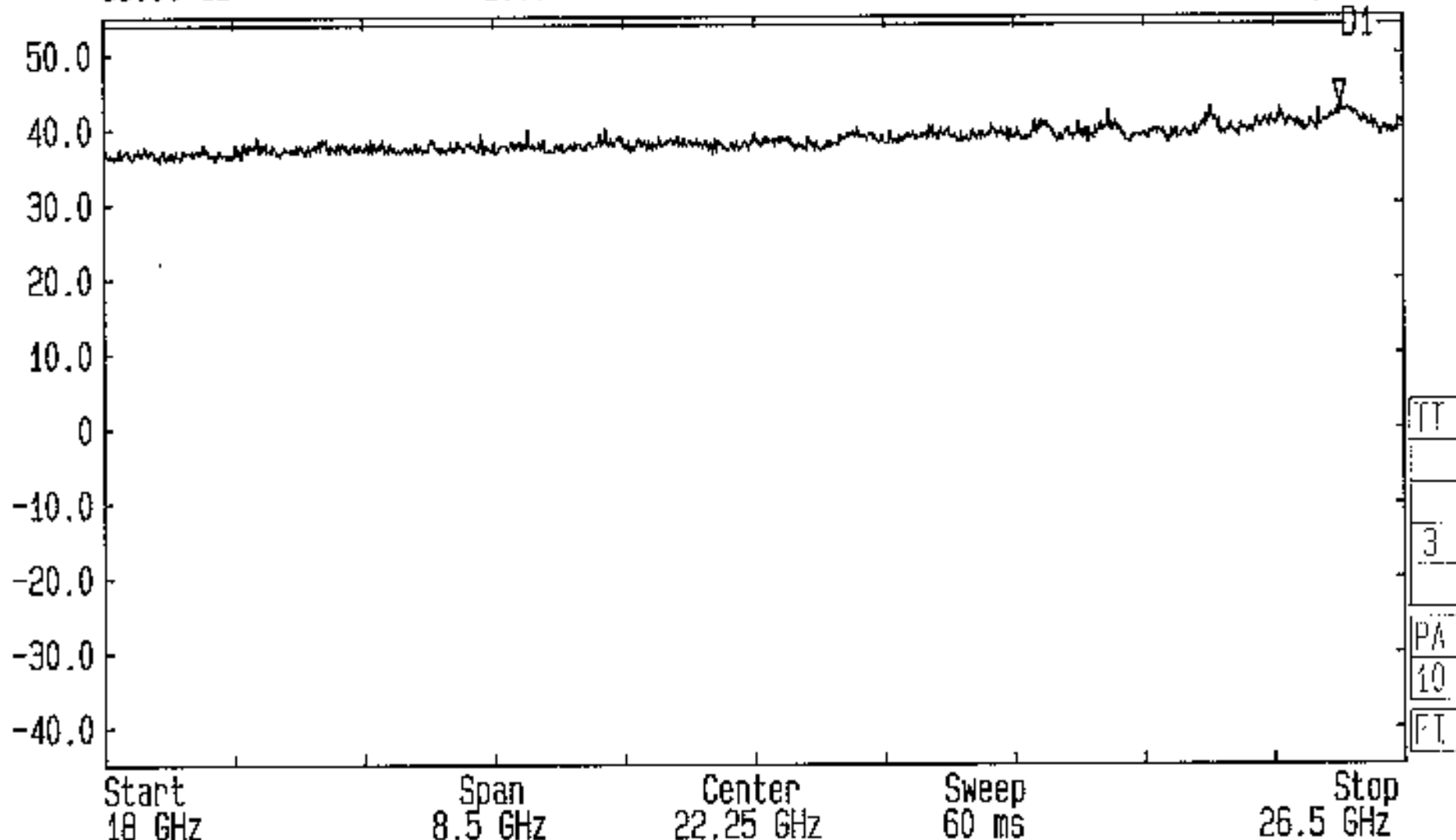
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0028

Date 15.May.'01 Time 14:43:40
 Ref.Lvl 55.00 dB* Marker 34.97 dB*
 Res.Bw 1 MHz [imp] TG.Lvl off
 CF.Stp 550.000 MHz RF.Att 0 dB
 Unit [dBμV/m]



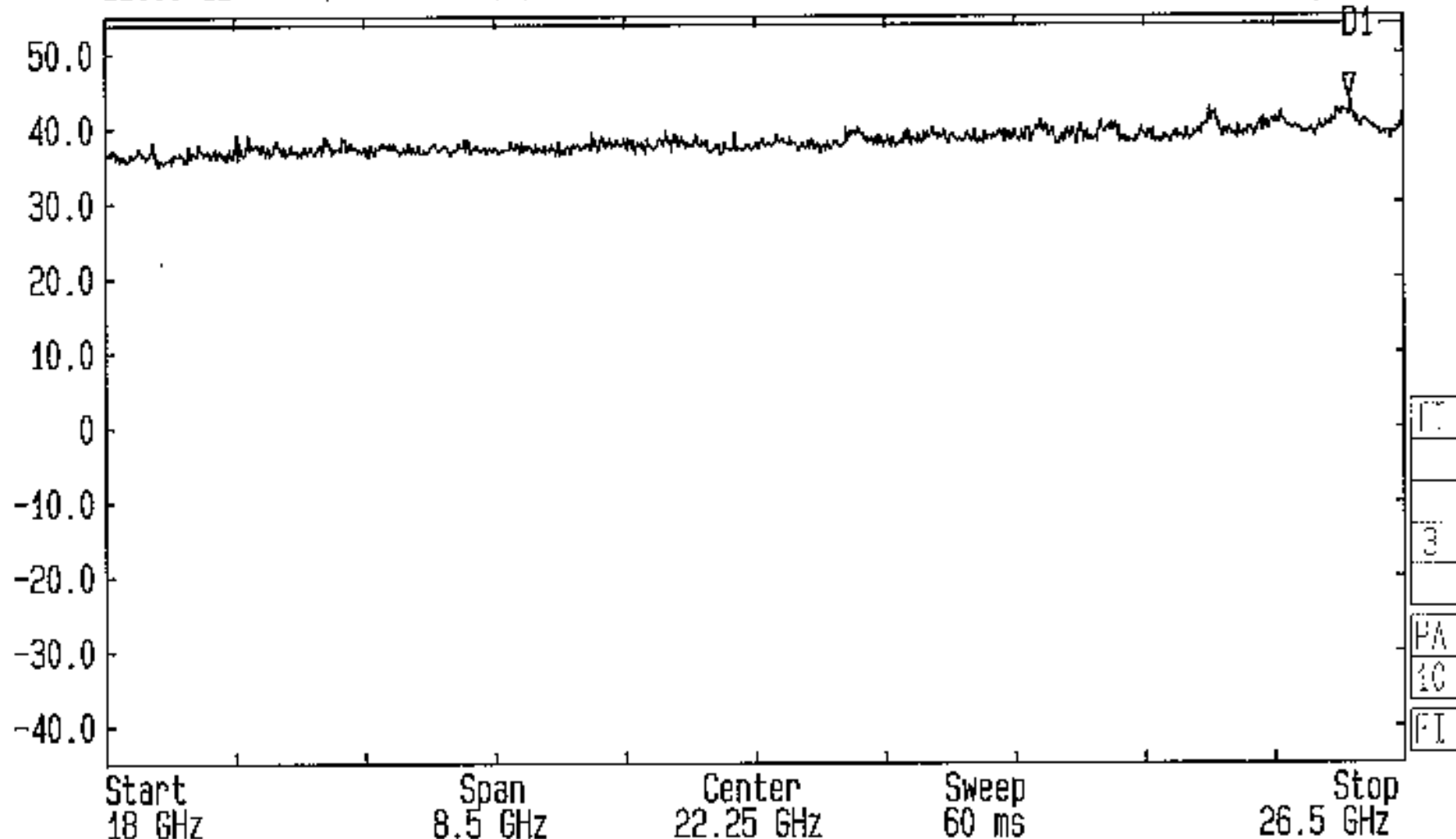
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0029

Date 15.May.'01 Time 14:49:29 Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
 Ref.Lvl Marker 43.15 dB* TG.Lvl off
 55.00 dB* CF.Stp 850.000 MHz RF.Att 0 dB
 26.0938 GHz Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0030

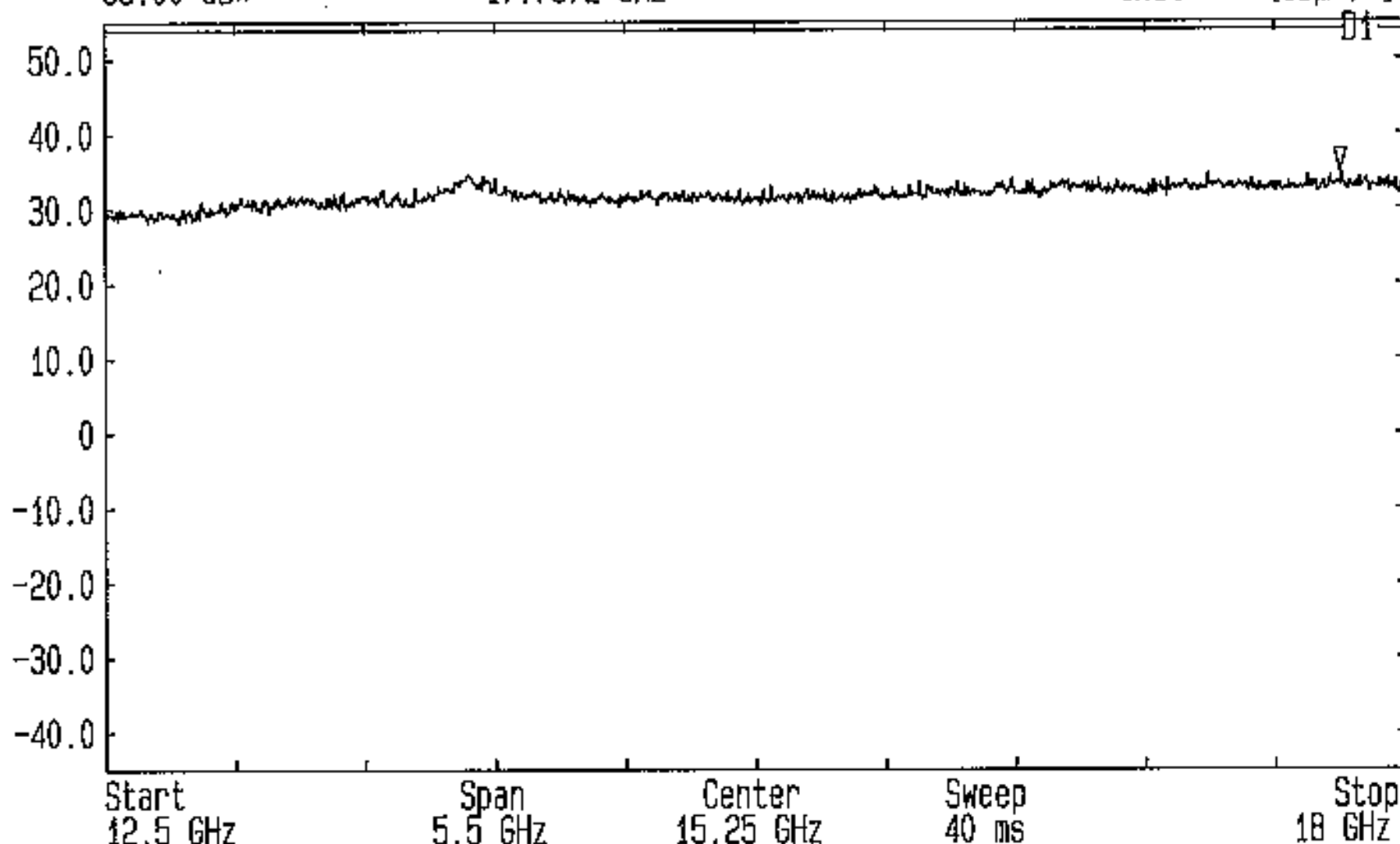
Date 15.May.'01 Time 15:09:27 Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
 Ref.Lvl Marker 44.01 dB* TG.Lvl off
 55.00 dB* CF.Stp 850.000 MHz RF.Att 0 dB
 Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0031

Date 15.May.'01 Time 15:12:30
Ref.Lvl 55.00 dB* Marker 34.87 dB*
17.7372 GHz

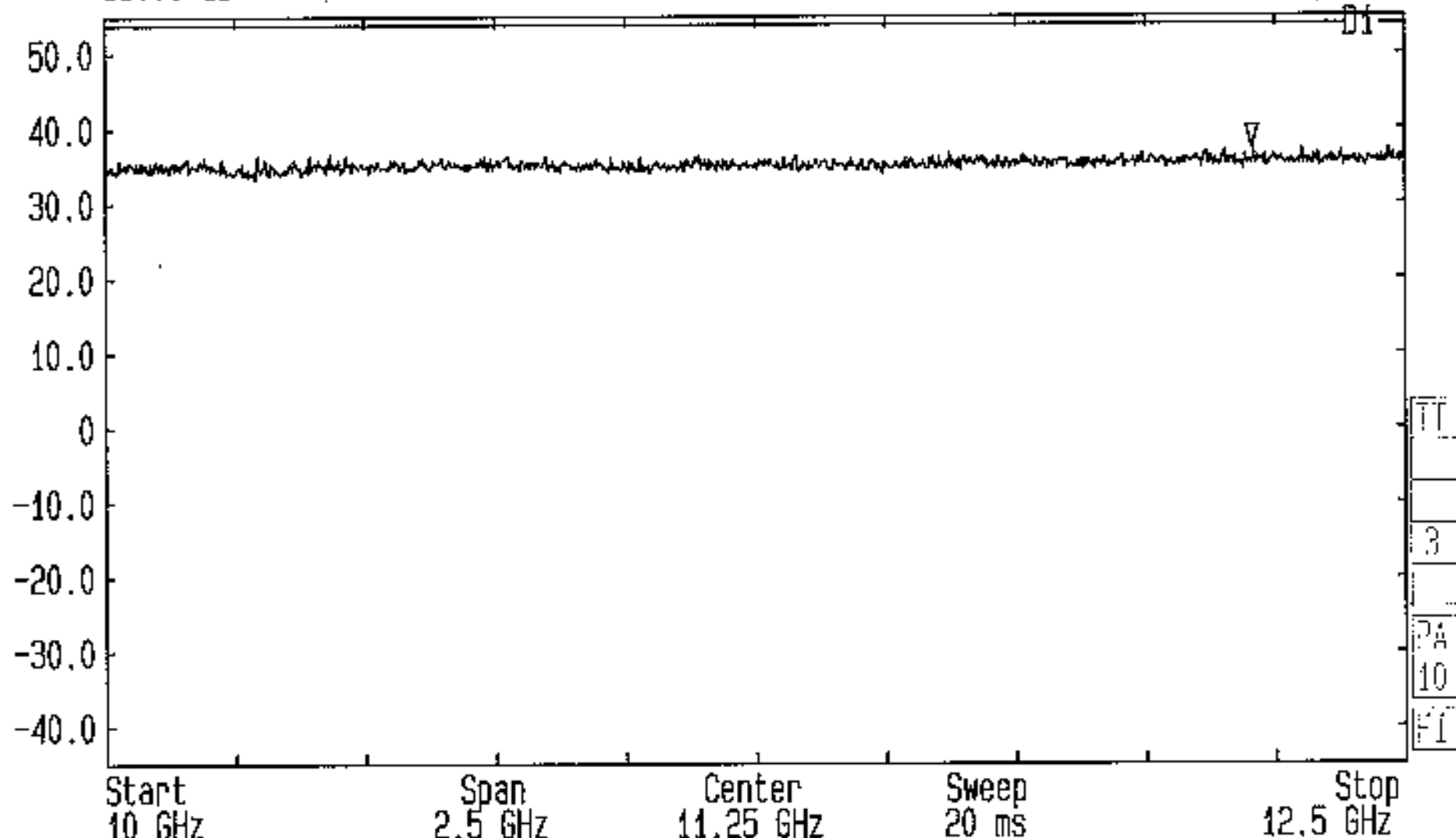
Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 550.000 MHz RF.Att 0 dB
Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0032

Date 15.May.'01 Time 15:15:32
Ref.Lvl 55.00 dB*
Marker 37.43 dB*
12.2083 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 250.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV/m]

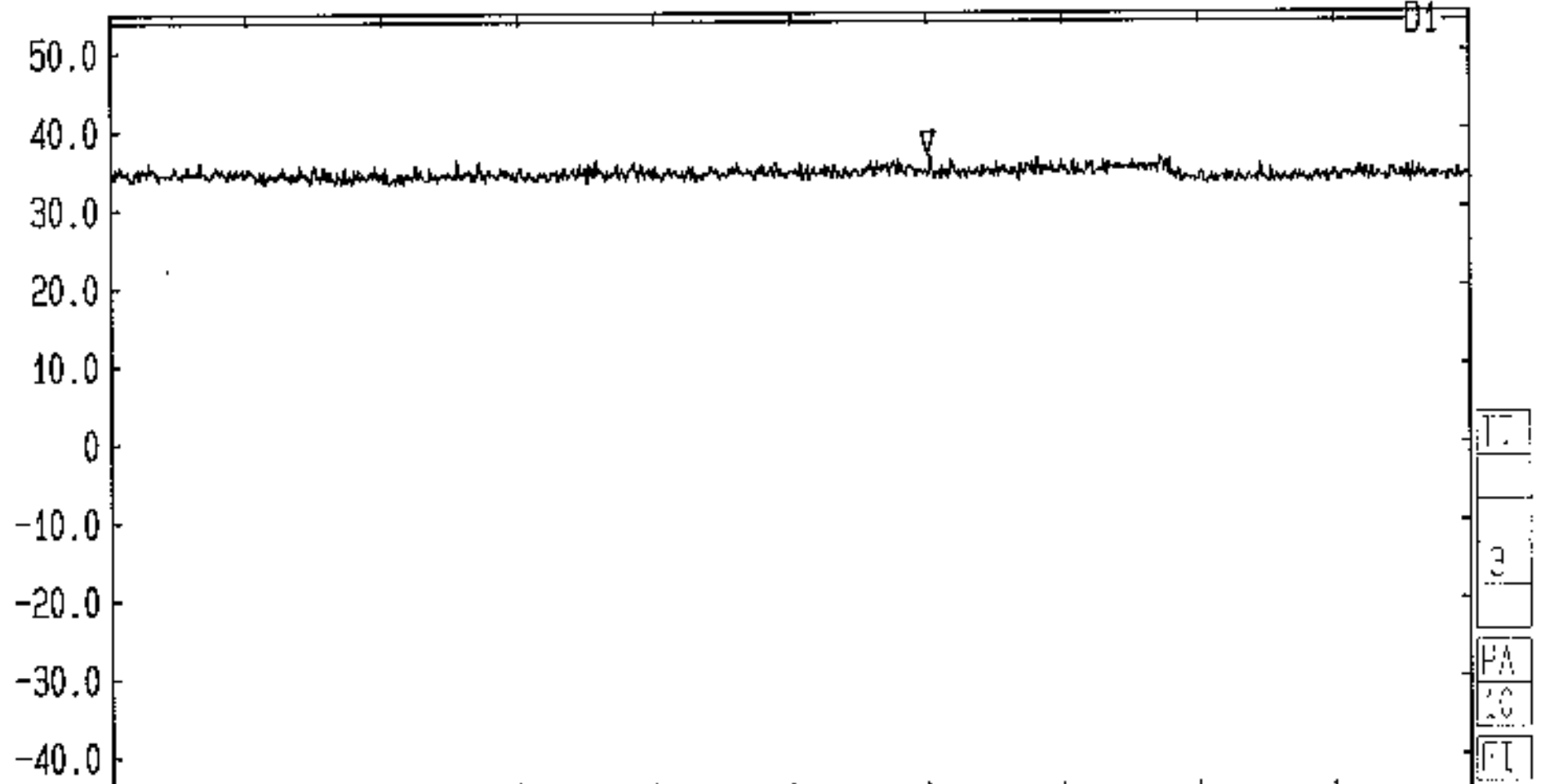


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0033

Date 15.May.'01 Time 15:19:08
 Ref.Lvl 55.00 dBx
 Marker 36.77 dBx
 9.2044 GHz

Res.Bw 1 MHz [imp]
 TG.Lvl off
 CF.Stp 200.000 MHz

Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]

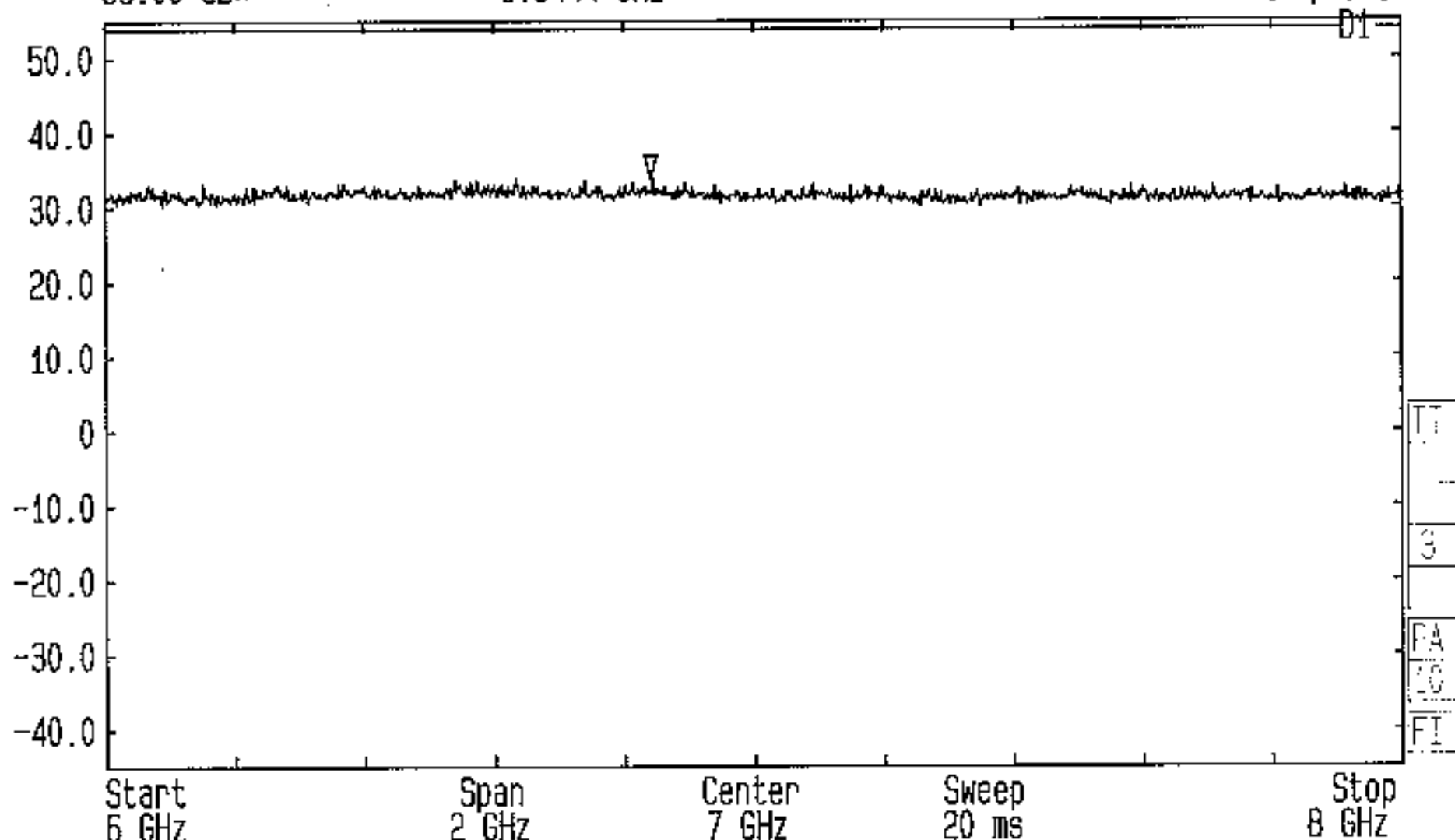


Start 8 GHz Span 2 GHz Center 9 GHz Sweep 20 ms Stop 10 GHz

Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0034

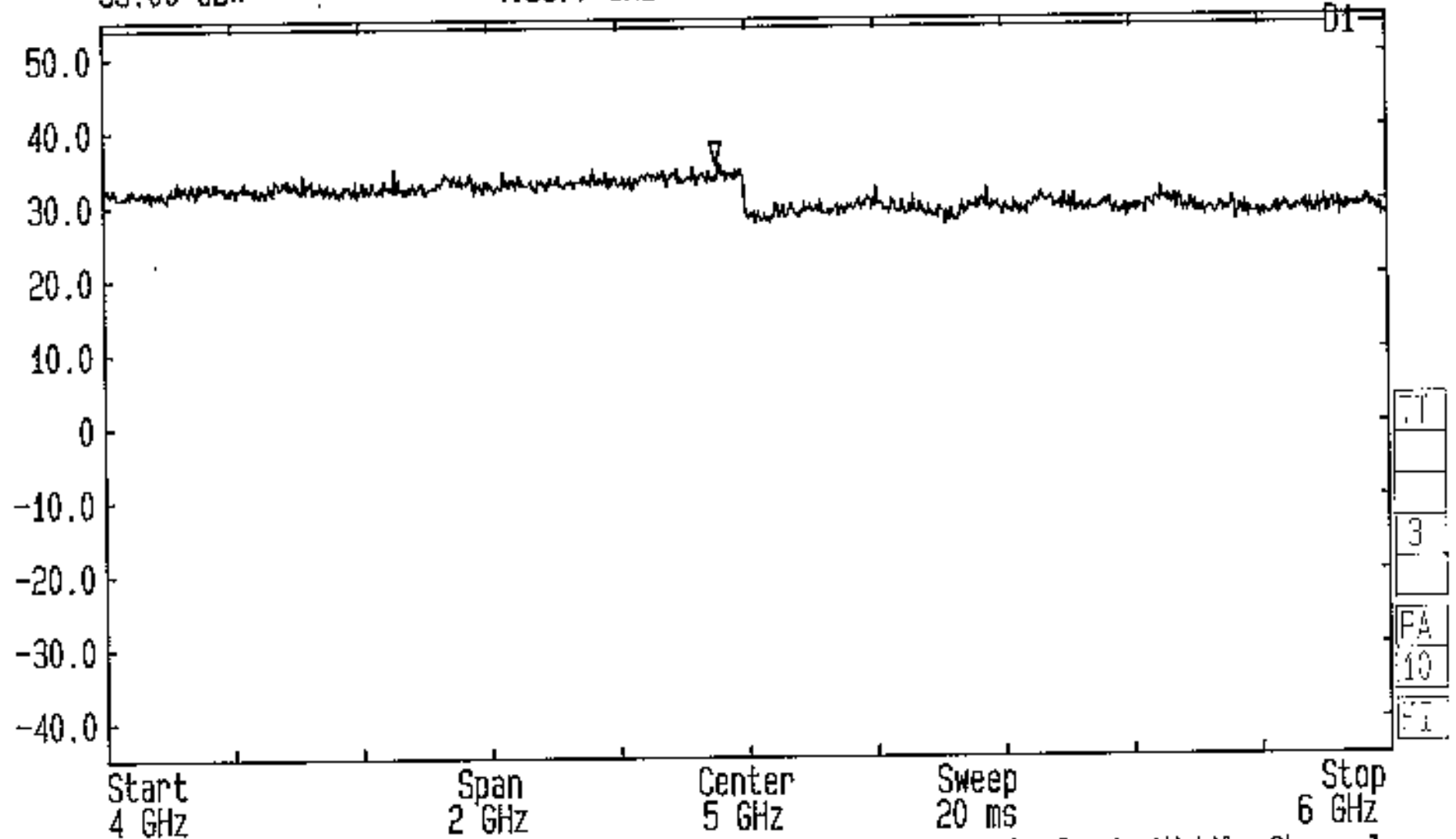
Date 15.May.'01 Time 15:21:57
Ref.Lvl Marker 34.06 dB*
55.00 dB* 6.8444 GHz

Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 200.000 MHz RF.Att 0 dB
Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0035

Date 15.May.'01 Time 15:26:26
 Ref.Lvl 55.00 dB* Marker 35.35 dB*
 Res.Bw 1 MHz [imp] TG.Lvl off
 CF.Stp 200.000 MHz Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]

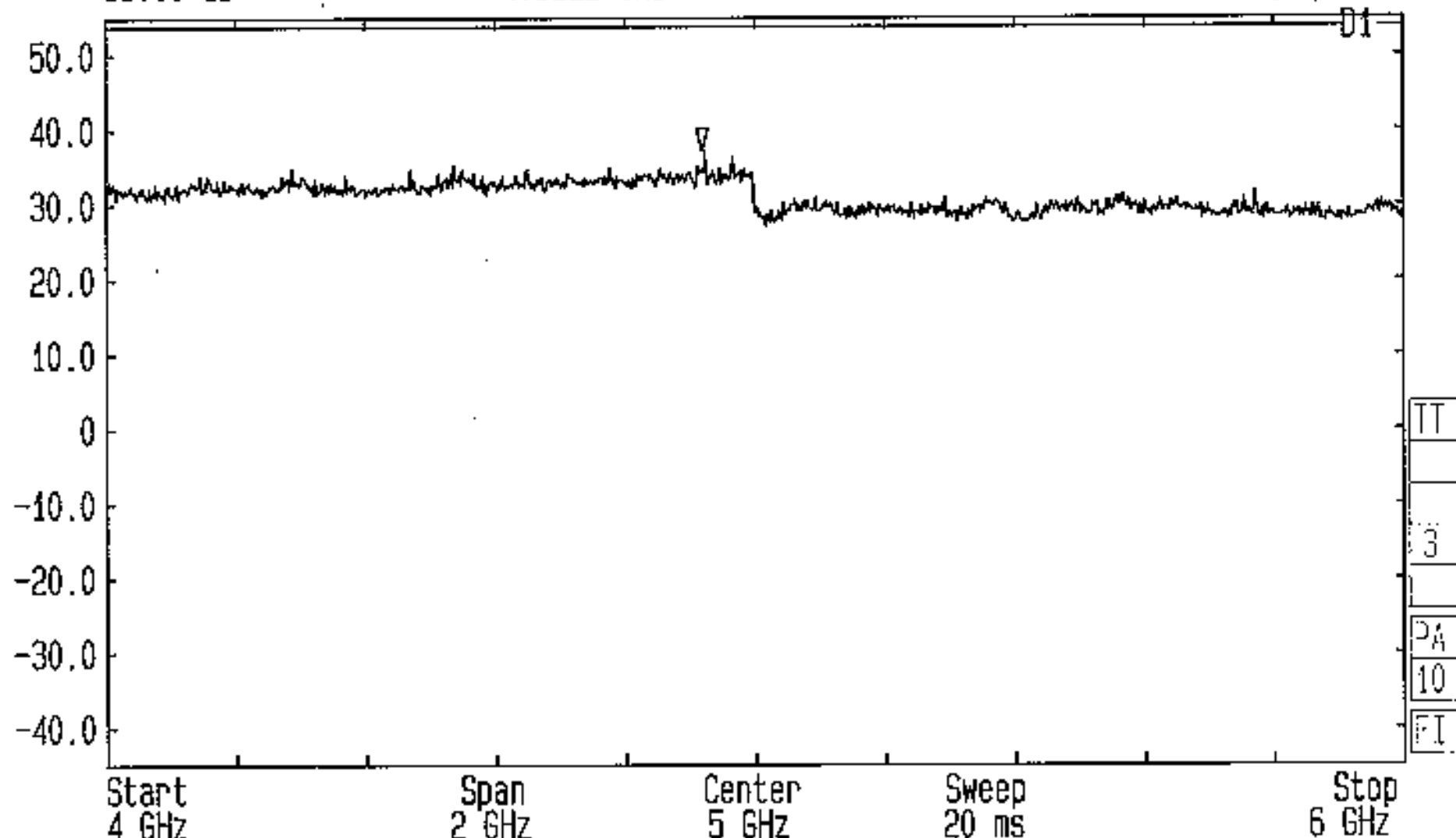


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0036

Date 15.May.'01 Time 15:29:10
 Ref.Lvl 55.00 dBx
 Marker 37.25 dBx
 4.9222 GHz

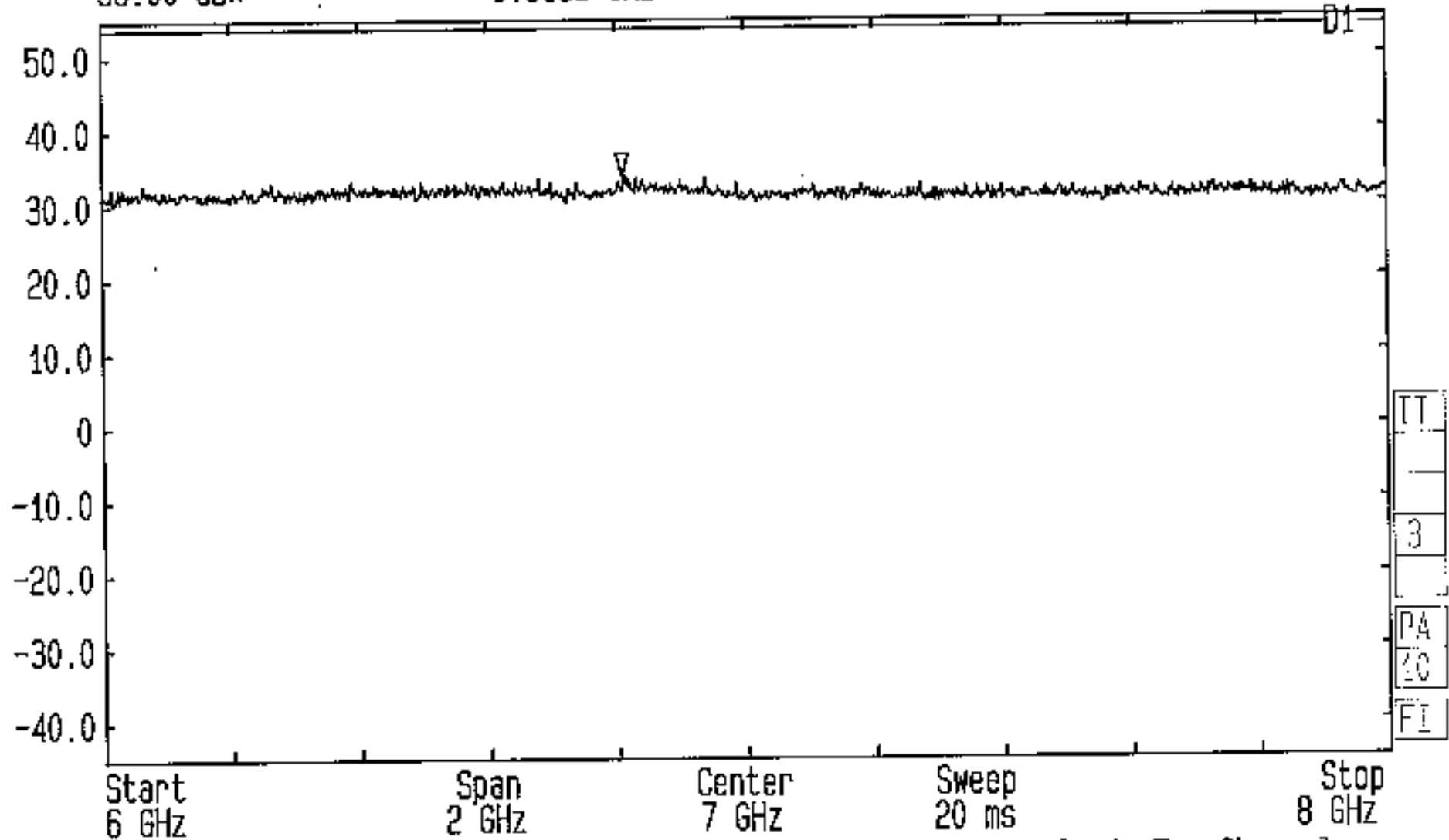
Res.Bw 1 MHz [imp]
 TG.Lvl off
 CF.Stp 200.000 MHz

Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]



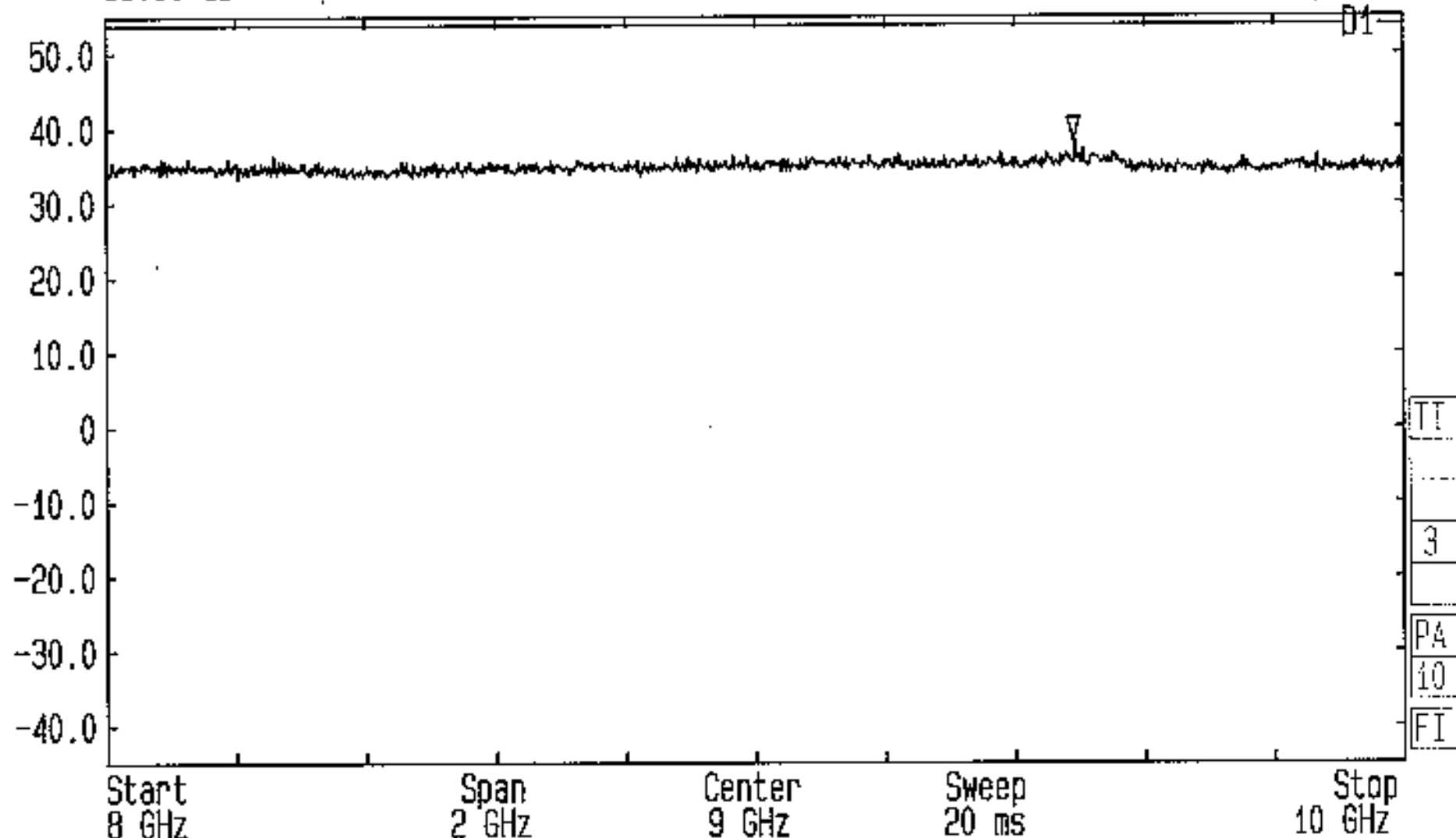
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0037

Date 15.May.'01 Time 15:33:20
 Ref.Lvl 55.00 dB* Marker 33.95 dB*
 Res.Bw 1 MHz [imp] TG.Lvl off
 CF.Stp 200.000 MHz Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]



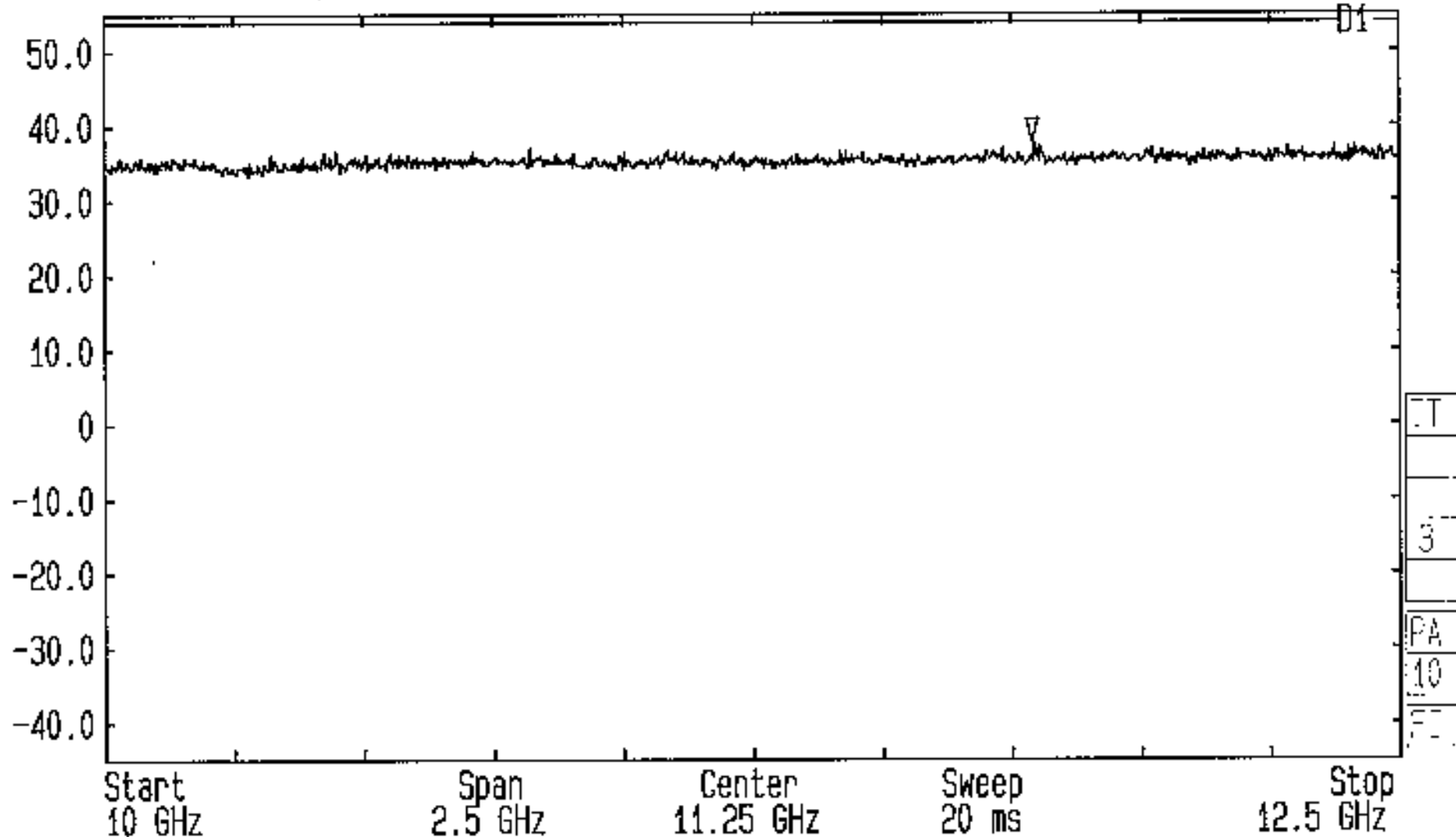
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0038

Date 15.May.'01 Time 15:37:07
 Ref.Lvl 55.00 dB* Marker 38.47 dB*
 Res.Bw 1 MHz [imp] TG.Lvl off
 CF.Stp 200.000 MHz RF.Att 0 dB
 Unit [dBμV/m]



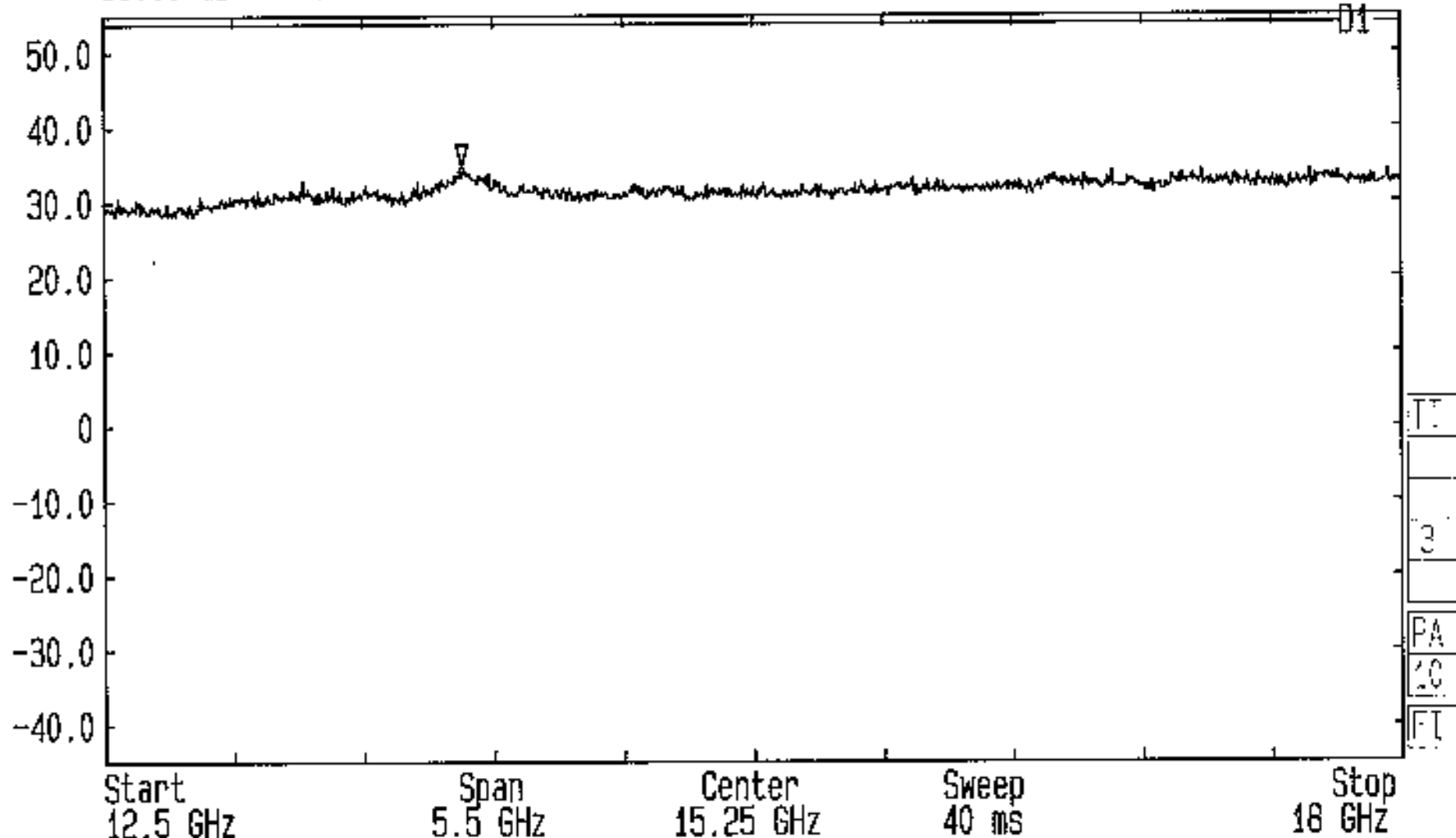
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0039

Date 15.May.'01 Time 15:39:57
 Ref.Lvl 55.00 dB* Marker 37.92 dB*
 Res.Bw 1 MHz [imp] TG.Lvl off
 CF.Stp 250.000 MHz Vid.Bw 1 MHz
 RF.Att 0 dB Unit [dBμV/m]



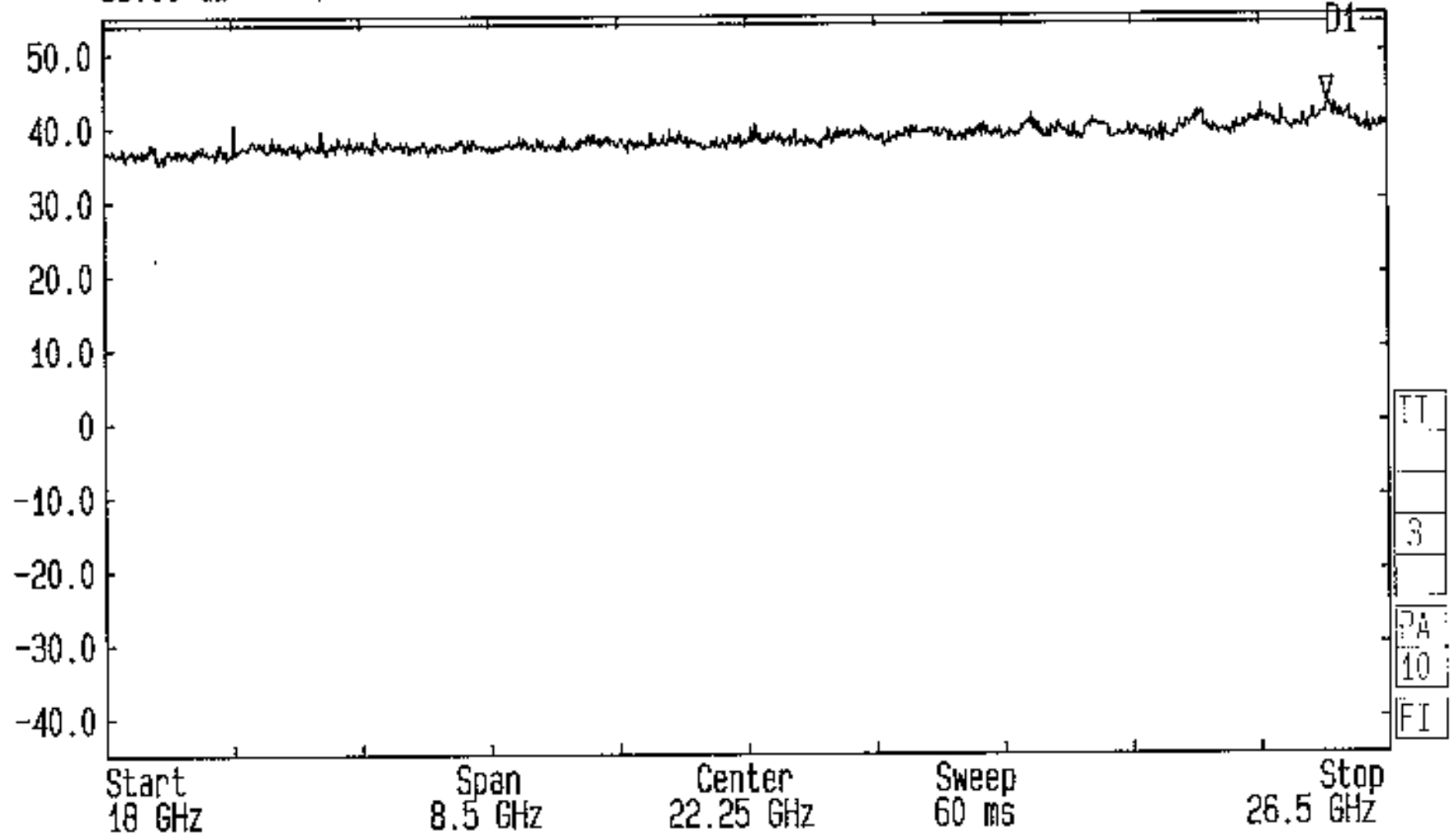
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0040

Date 15.May.'01 Time 15:43:03
 Ref.Lvl 55.00 dB* Marker 34.84 dB*
 Res.Bw 1 MHz [imp] TG.Lvl off
 CF.Stp 550.000 MHz Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]



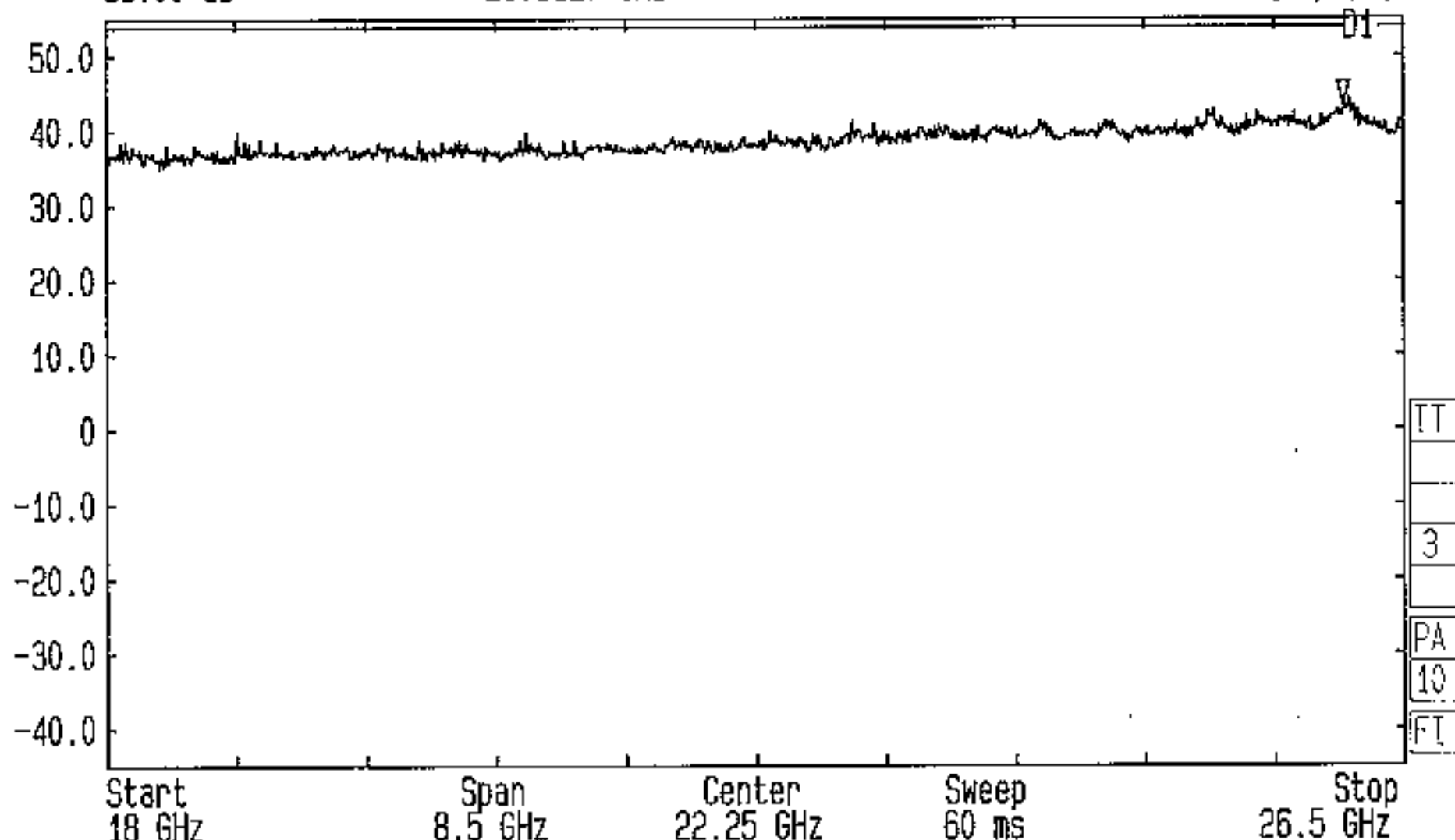
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0041

Date 15.May.'01 Time 15:46:55
 Ref.Lvl 55.00 dB* Marker 43.20 dB*
 Res.Bw 1 MHz [imp] TG.Lvl off
 CF.Stp 850.000 MHz Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]



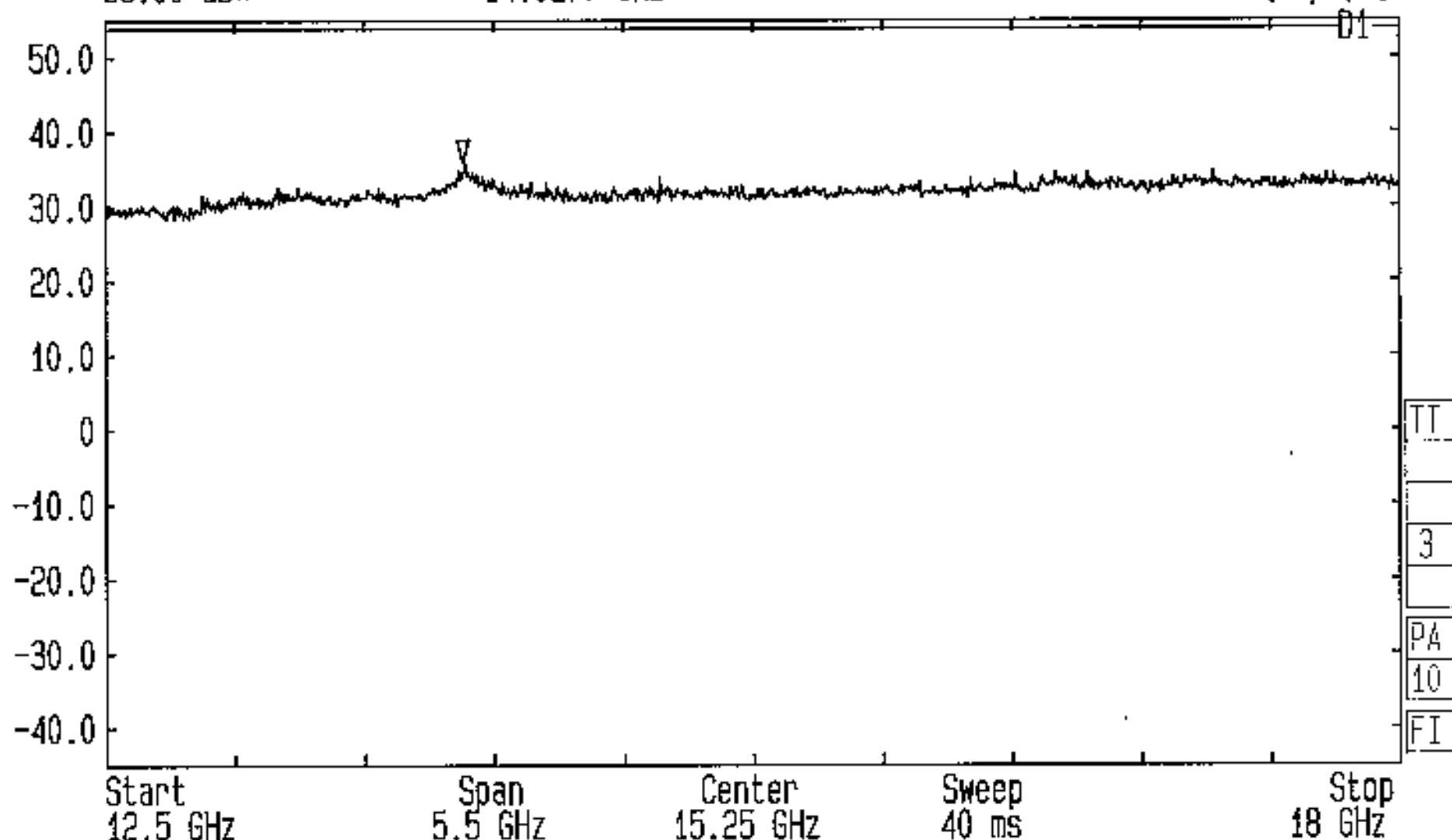
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
 FCC Part 15.209 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0042

Date 15.May.'01 Time 16:10:50 Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
 Ref.Lvl 55.00 dB* Marker 43.40 dB* TG.Lvl off
 CF.Stp 850.000 MHz RF.Att 0 dB
 Unit [dBμV/m]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
 FCC Part 15.109 EMC: NS EUT: 3000AS (Internal Antenna) GPH/42177/RF0043

Date 15.May.'01 Time 16:15:51 Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
 Ref.Lvl 55.00 dB* Marker 36.09 dB* TG.Lvl off
 CF.Stp 550.000 MHz RF.Att 0 dB
 Unit [dBμV/m]

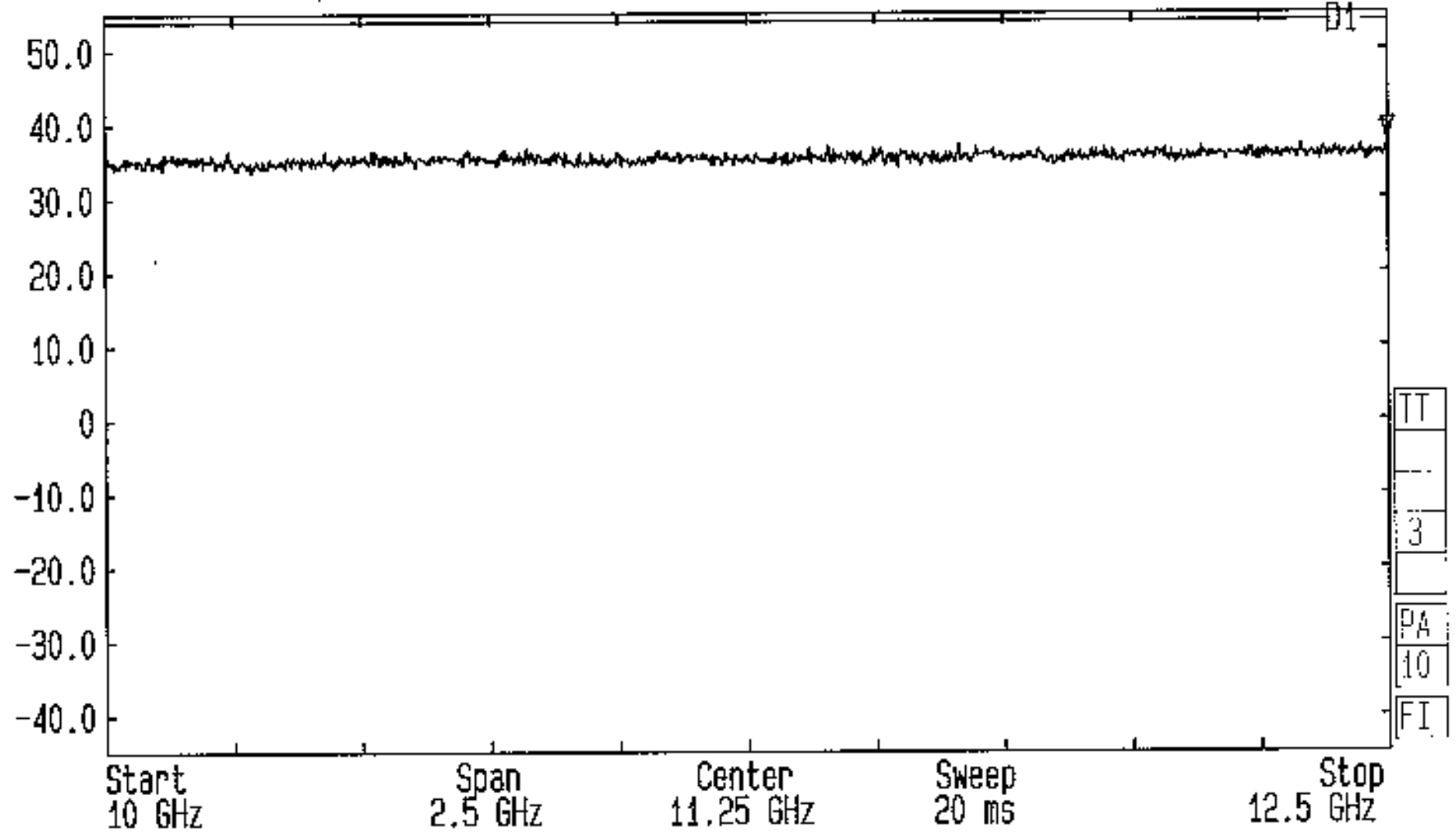


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
 FCC Part 15.109 FNC: NS FIIT: 3000AS (Internal Antenna) GPH/42177/RF0044

Date 15.May.'01 Time 16:19:41
 Ref.Lvl 55.00 dBx
 Marker 37.58 dBx
 12.5000 GHz

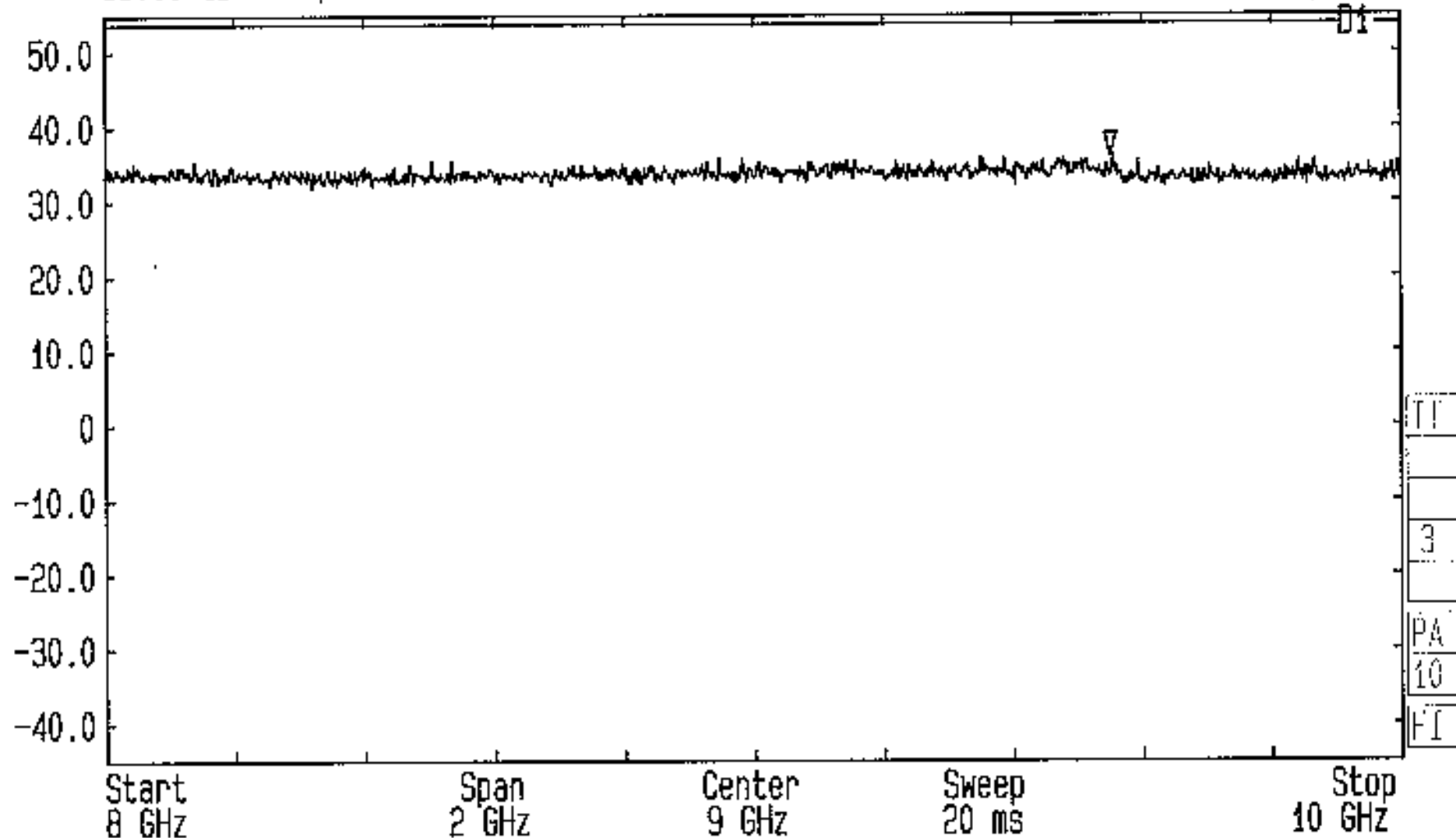
Res.Bw 1 MHz [imp]
 TG.Lvl off
 CF.Stp 250.000 MHz

Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]



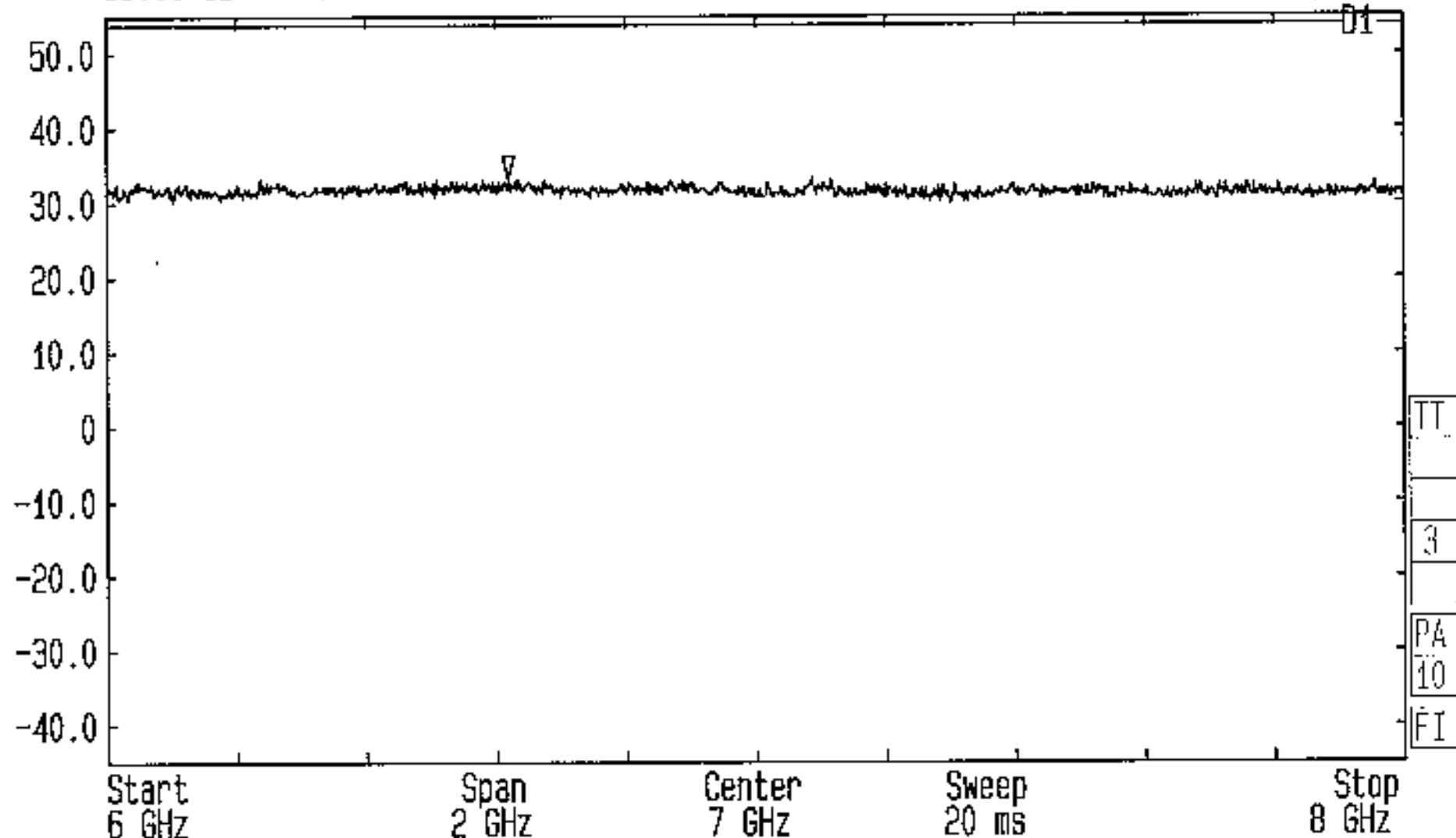
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
 FCC Part 15.109 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0045

Date 15.May.'01 Time 16:23:04
 Ref.Lvl 55.00 dB* Marker 36.39 dB*
 Res.Bw 1 MHz [imp] TG.Lvl off
 CF.Stp 200.000 MHz Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]



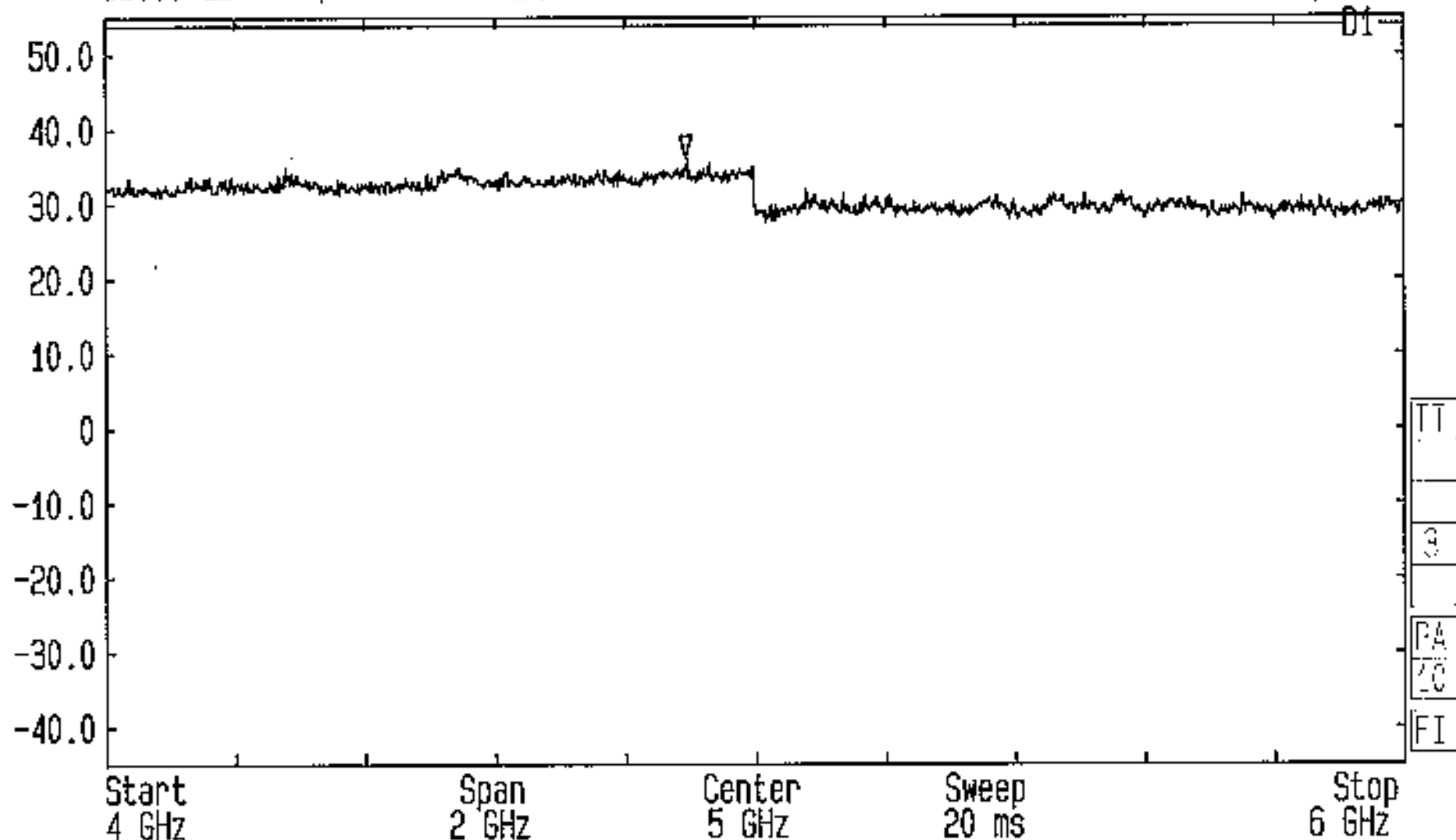
Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
 FCC Part 15.109 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0046

Date 15.May.'01 Time 16:26:53 Res.Bw 1 MHz[imp] Vid.Bw 1 MHz
 Ref.Lvl Marker 33.60 dB* TG.Lvl off
 55.00 dB* CF.Stp 200.000 MHz RF.Att 0 dB
 Unit [dBμV/m]



Start 6 GHz Span 2 GHz Center 7 GHz Sweep 20 ms Stop 8 GHz
 Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
 FCC Part 15.109 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0047

Date 15.May.'01 Time 16:29:43
 Ref.Lvl 55.00 dB* Marker 36.16 dB*
 Res.BW 1 MHz [imp] TG.Lvl off
 CF.Stp 200.000 MHz Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBμV/m]

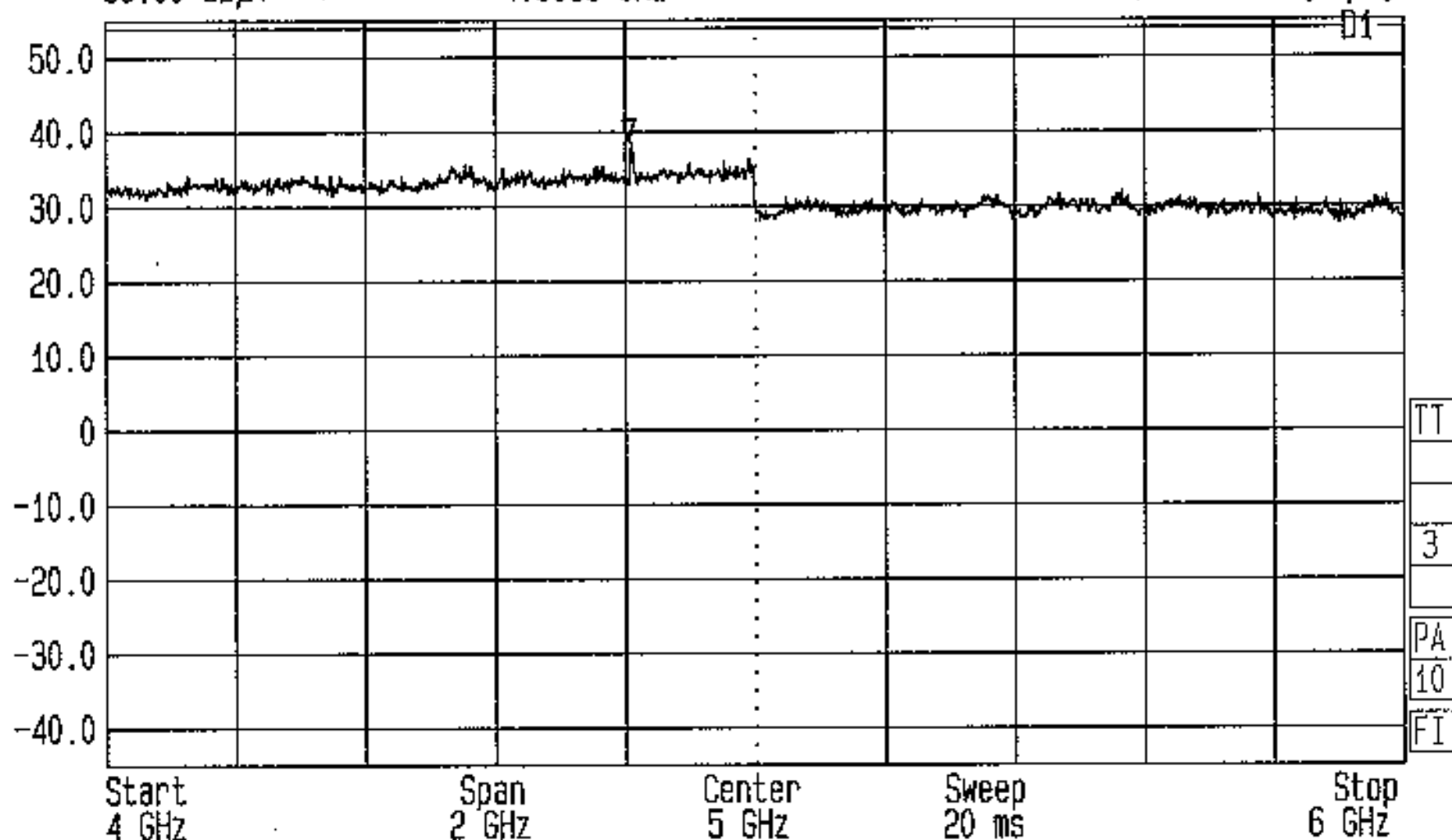


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
 FCC Part 15.109 ENG: NS EUT: 3000AS (Internal Antenna) GPH/42177/RE0048



Date 16.May.'01 Time 10:03:06
Ref.Lvl 55.00 dBμV
Marker 38.83 dBμV
4.8088 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
AF.Att 0 dB
Unit [dBμV]

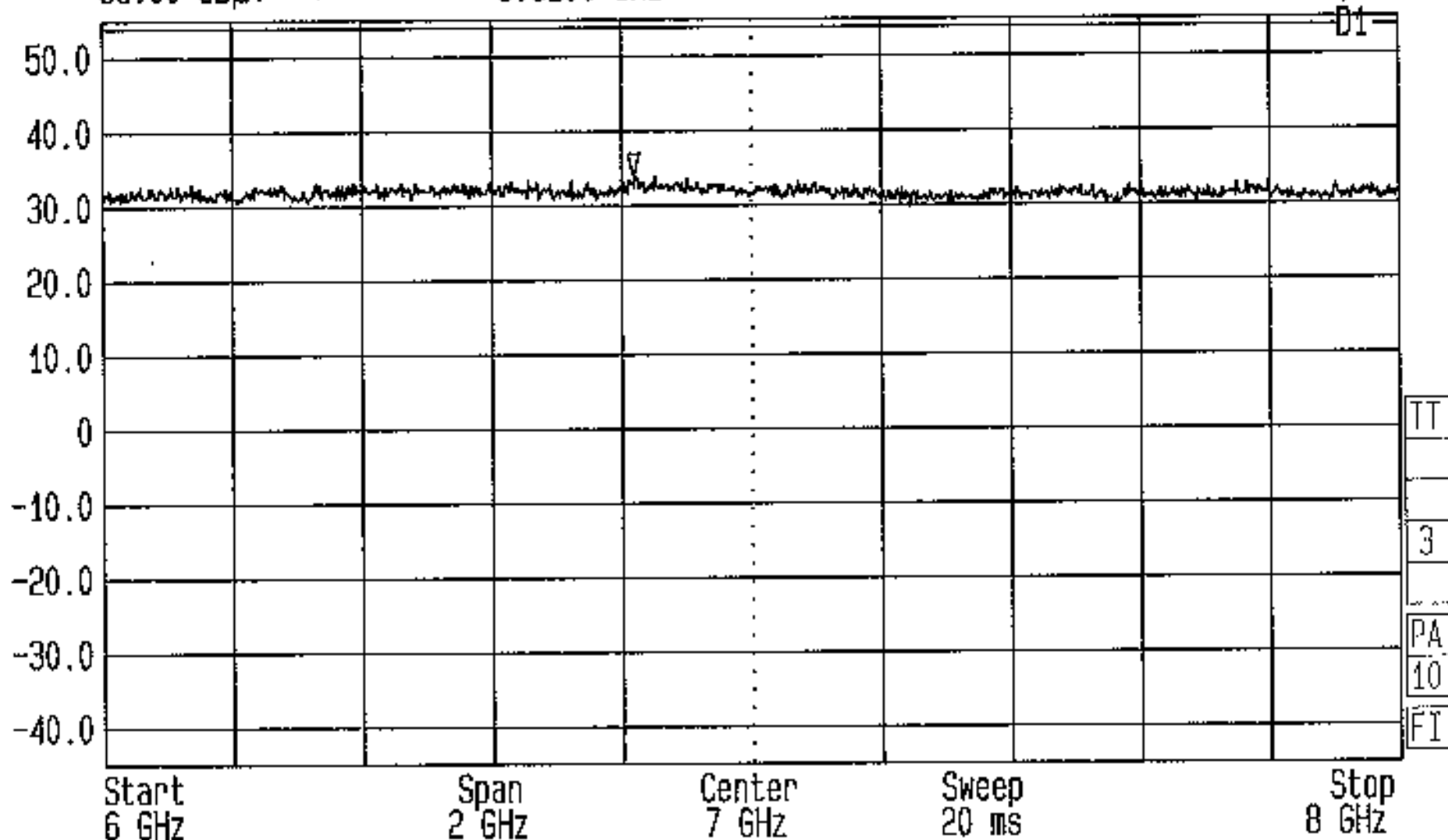


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0049



Date 16.May.'01 Time 10:06:43
Ref.Lvl 55.00 dBμV
Marker 33.98 dBμV
6.8200 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

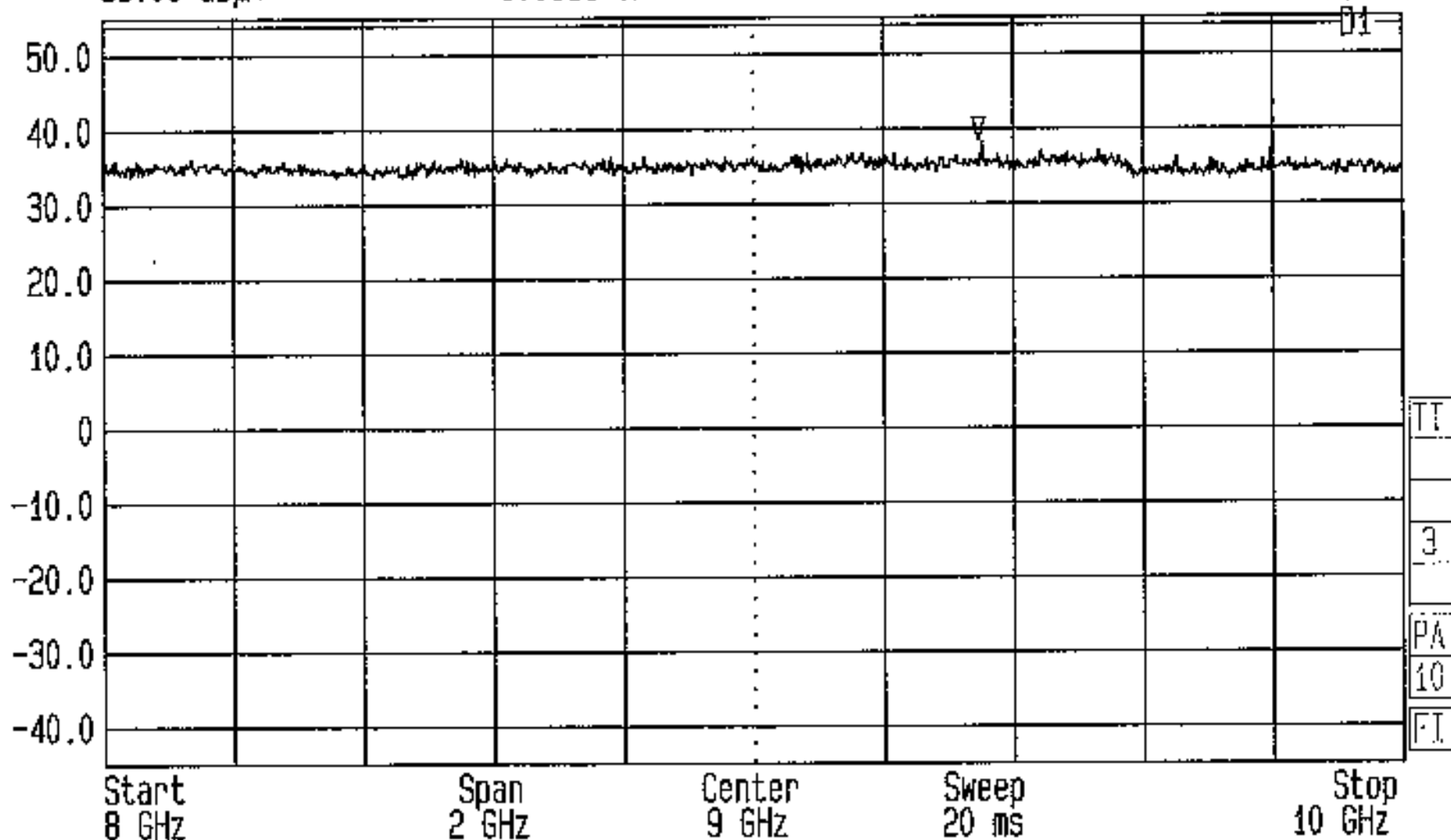


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0050



Date 15.May.'01 Time 10:10:17
Ref.Lvl 55.00 dBμV
Marker 38.58 dBμV
9.3511 GHz

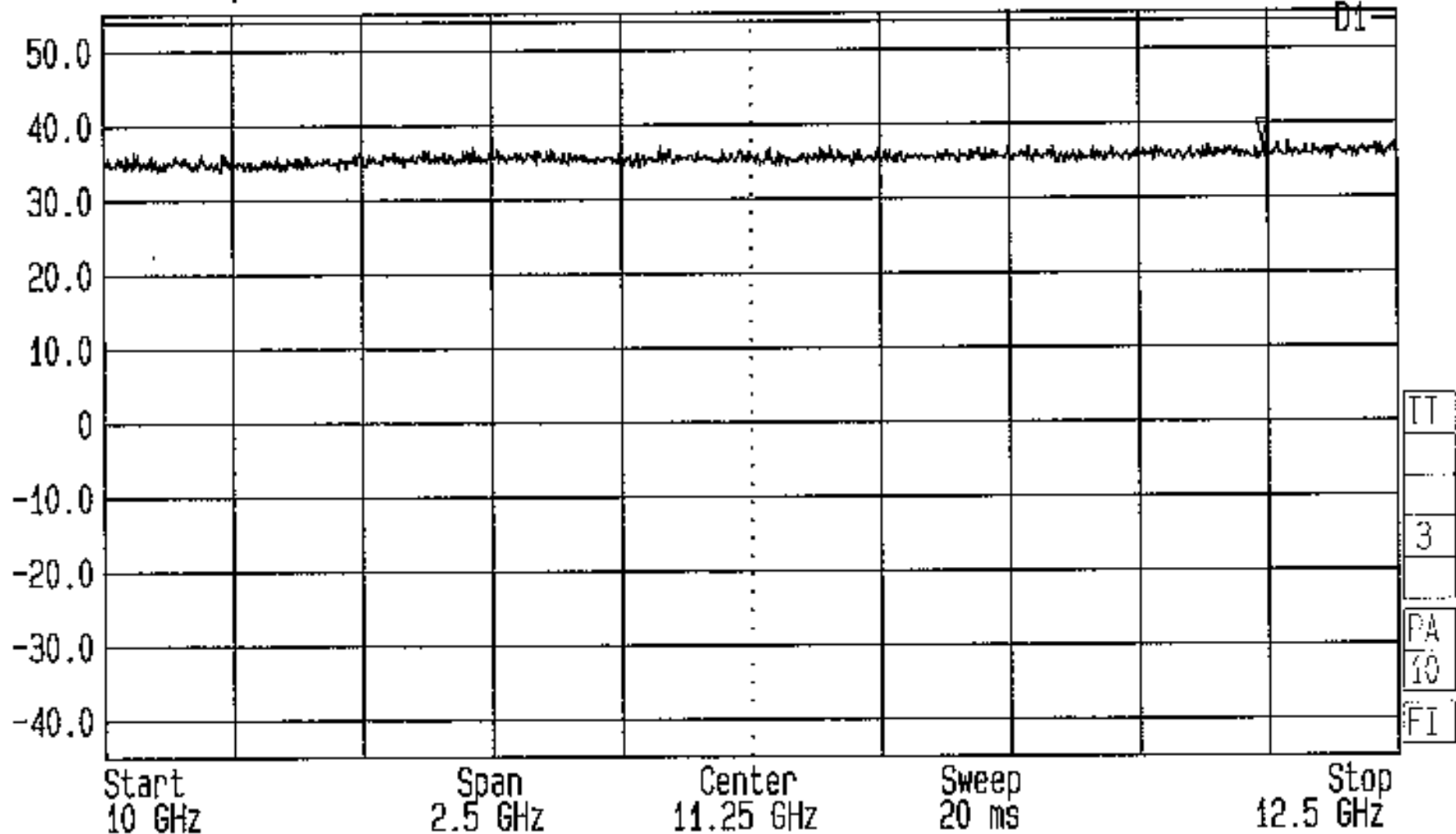
Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]



Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0051



Date 16.May.'01 Time 10:13:35 Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
Ref.Lvl 55.00 dB μ V Marker 37.71 dB μ V TG.Lvl off
CF.Stp 250.000 MHz RF.Att 0 dB
Unit [dB μ V]

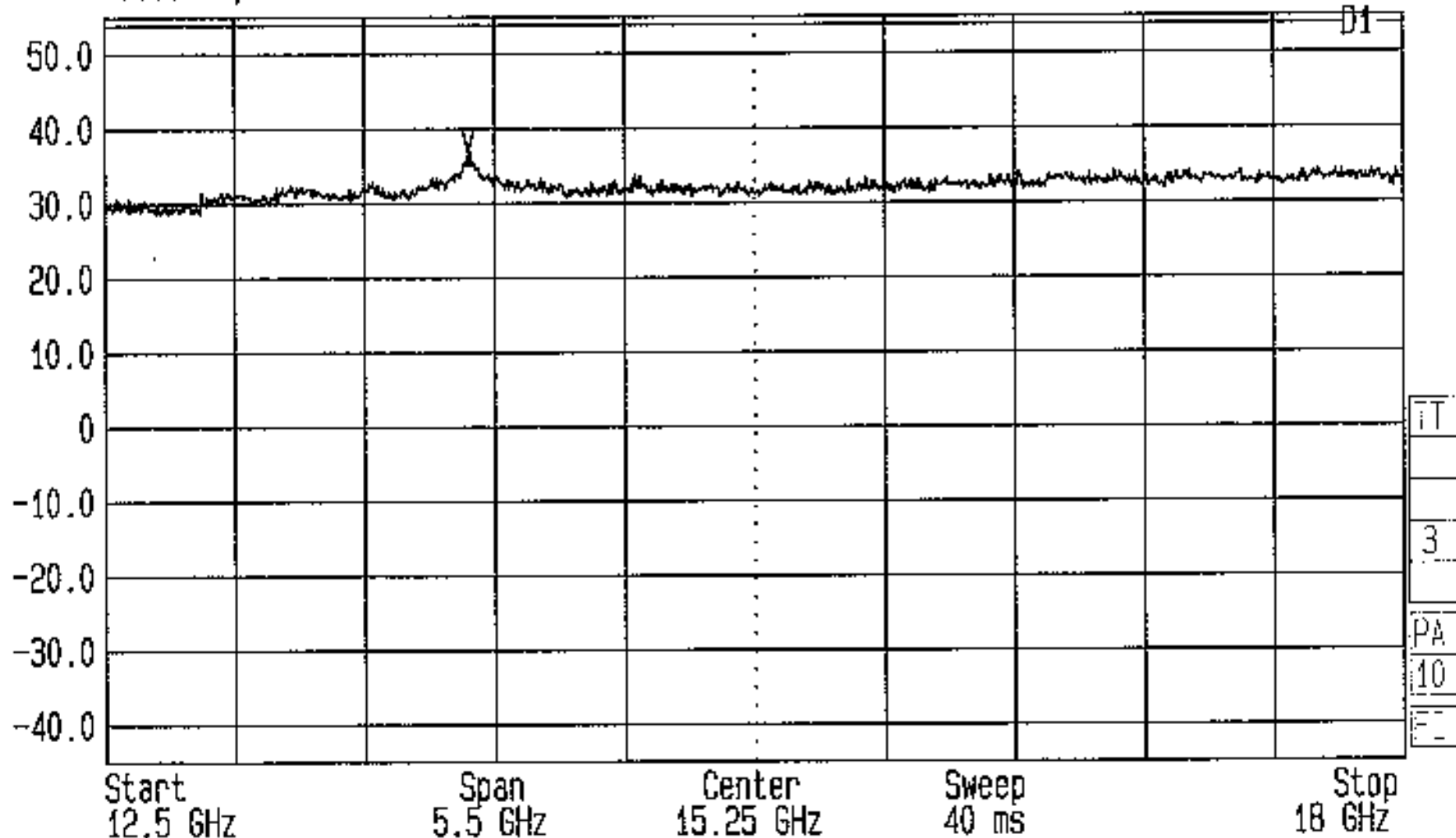


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0052



Date 16.May.'01 Time 10:18:59
Ref.Lvl 55.00 dB μ V
Marker 37.05 dB μ V
14.0461 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 550.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dB μ V]

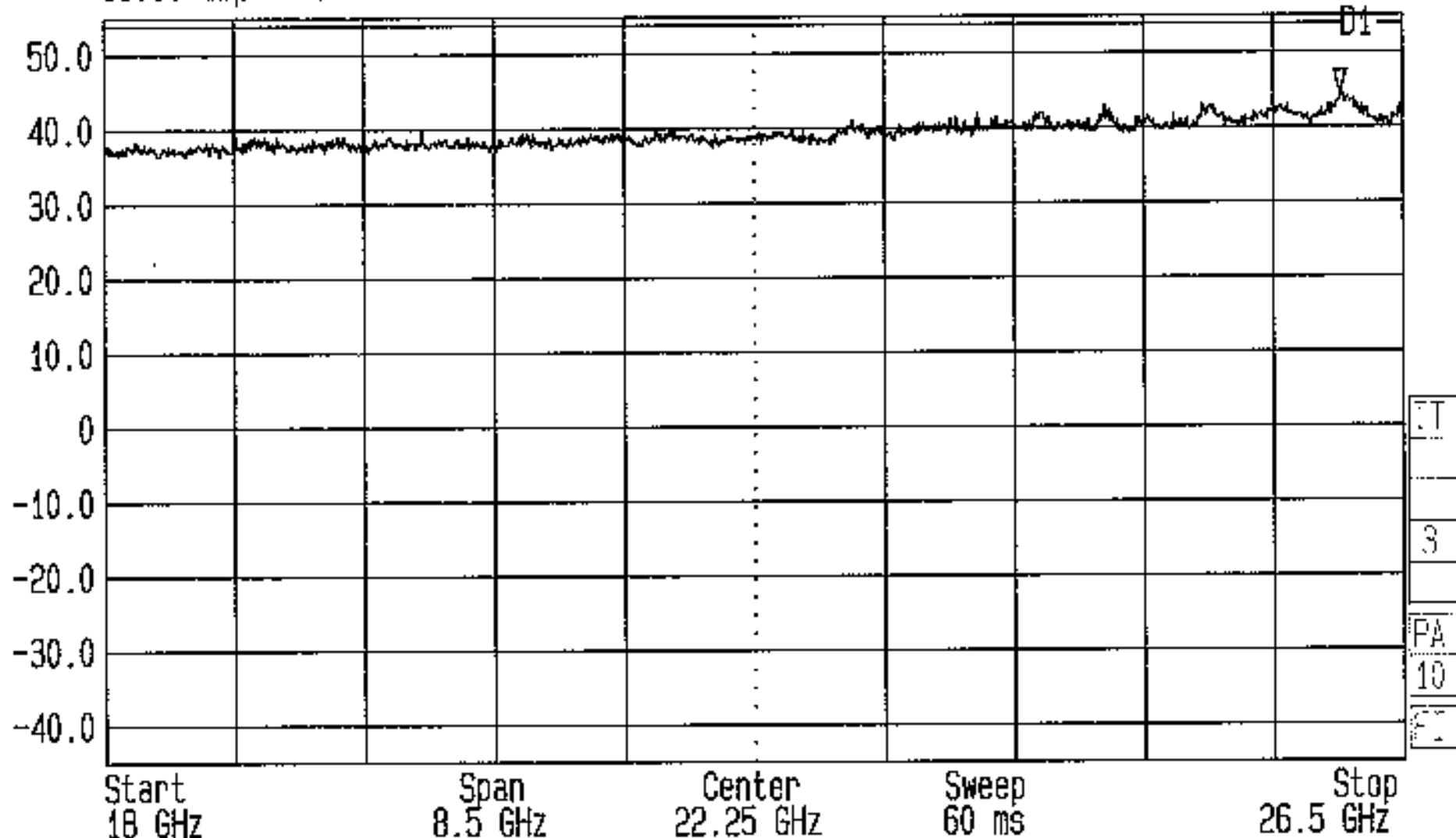


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0053



Date 16.May.'01 Time 10:25:06
Ref.Lvl 55.00 dB μ V
Marker 44.47 dB μ V
26.1033 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 850.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dB μ V]

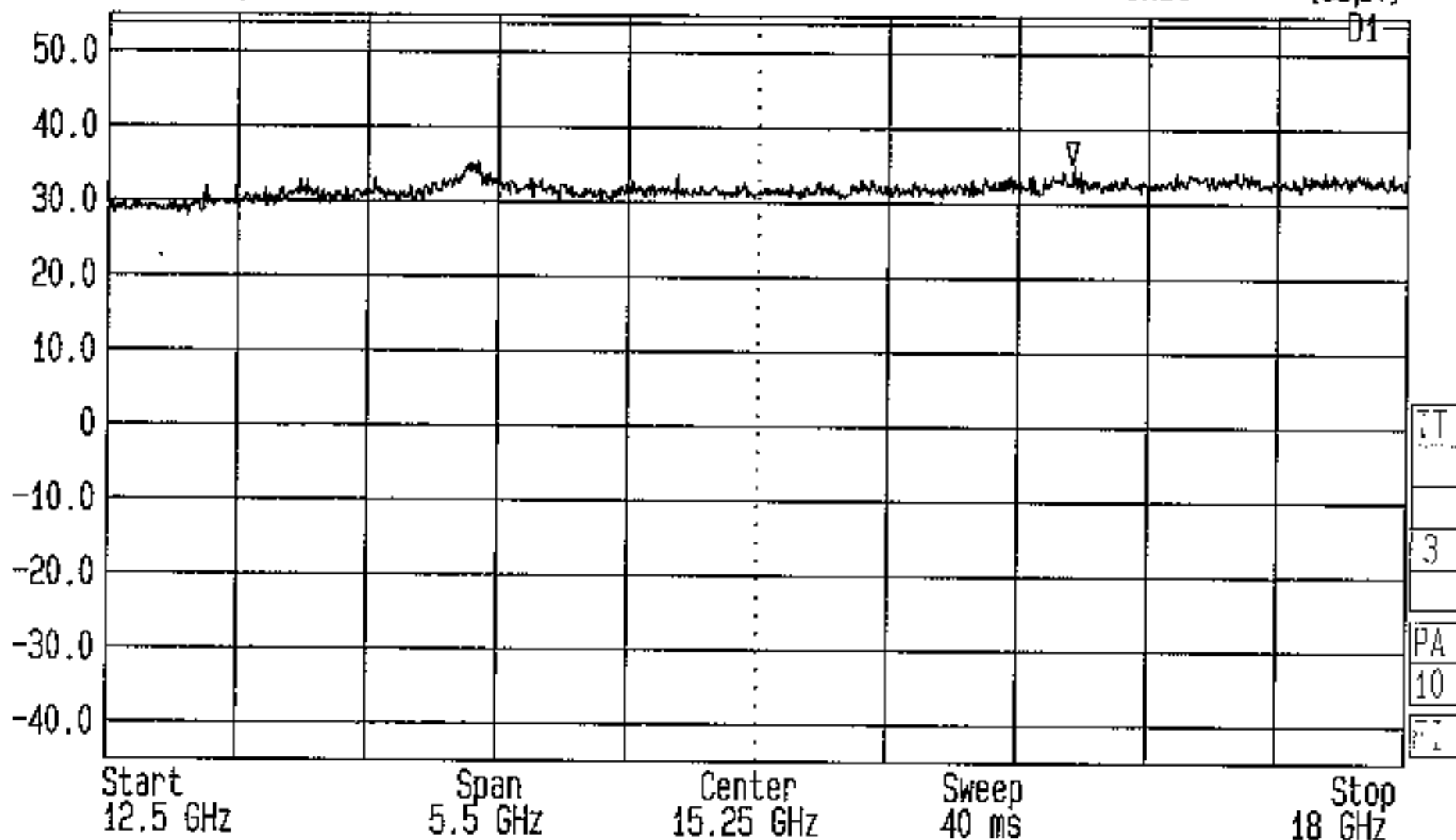


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Bottom Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0054



Date 16.May.'01 Time 10:47:31
Ref.Lvl 55.00 dBμV
Marker 35.45 dBμV
16.5883 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 550.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]



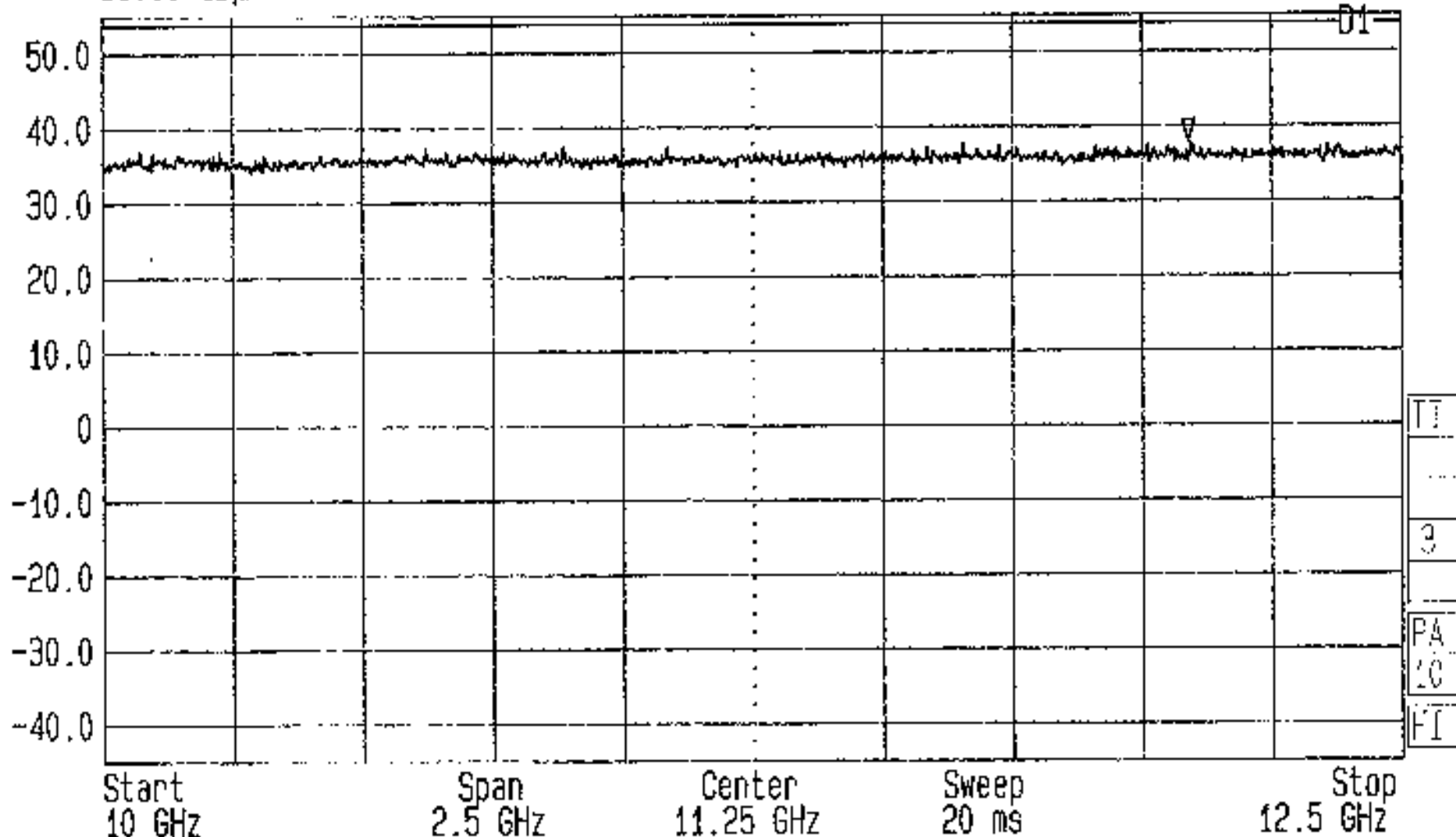
Spurious Radiated Emissions Test For Red-M By RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Middle Channel
GPH/42177/RE0055



Date 16.May.'01 Time 10:52:37
Ref.Lvl 55.00 dBμV
Marker 37.99 dBμV
12.0944 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 250.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

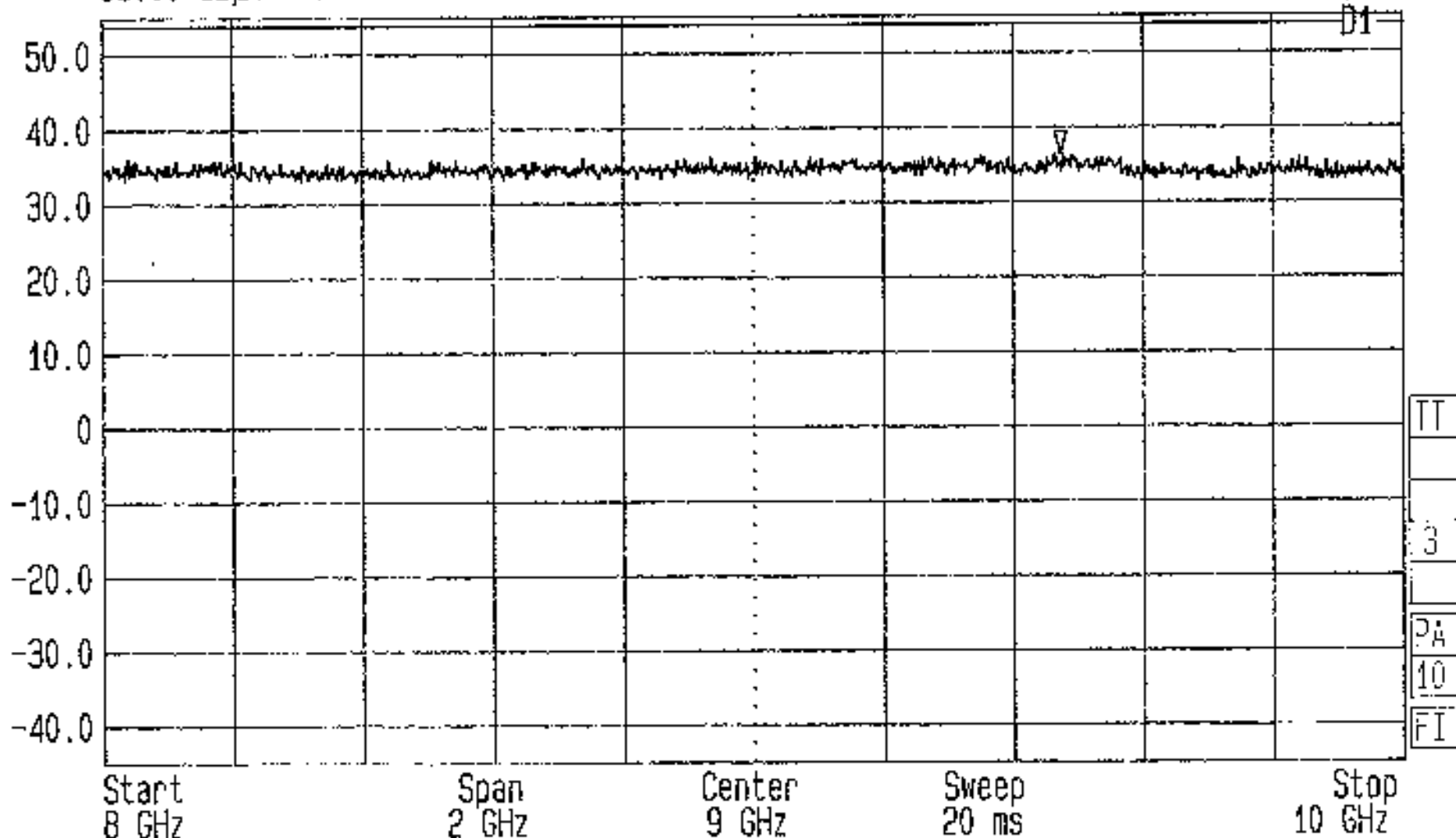


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0056



Date 16.May.'01 Time 10:58:00
Ref.Lvl 55.00 dB μ V
Marker 36.57 dB μ V
9.4755 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dB μ V]



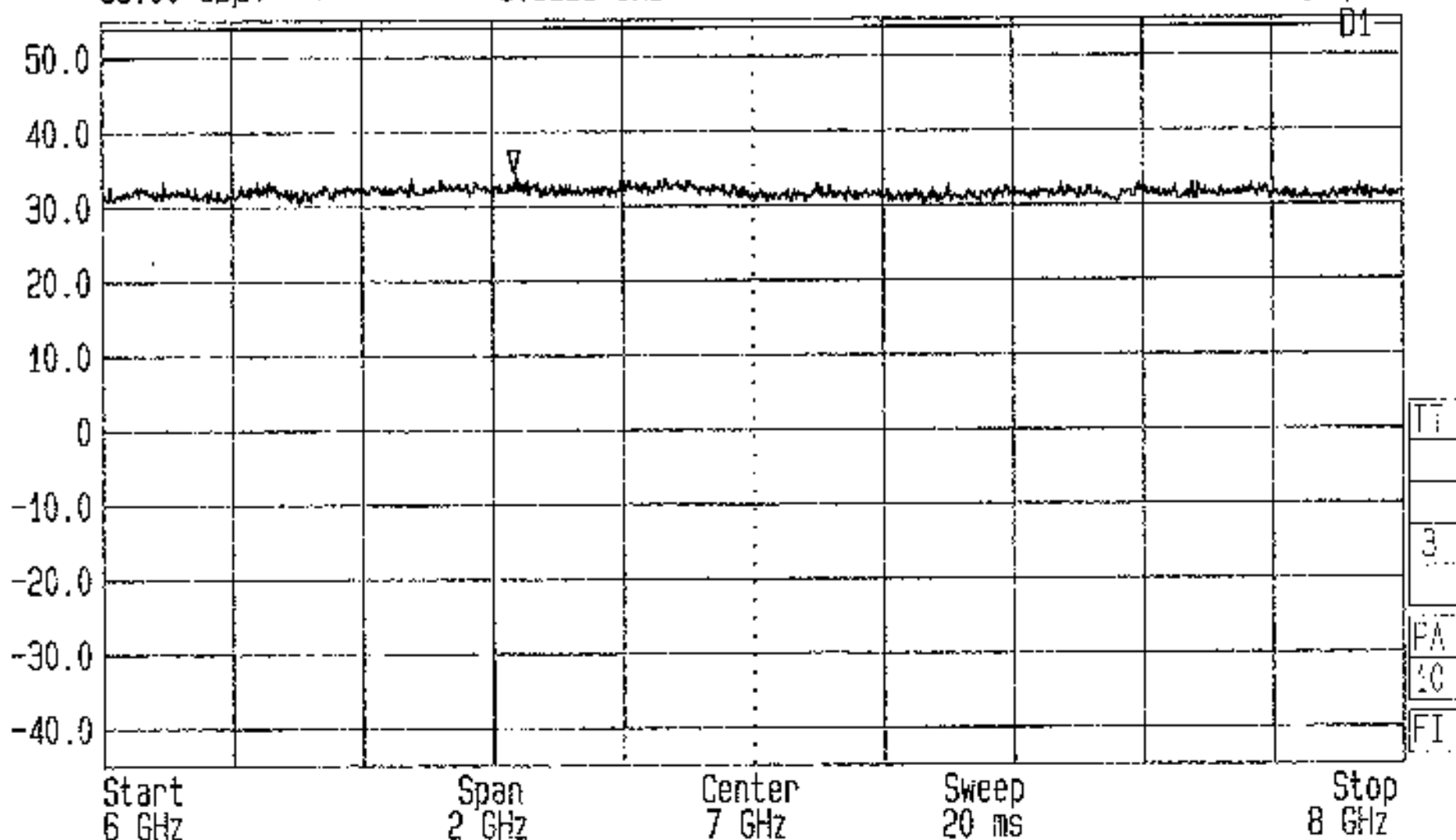
Spurious Radiated Emissions Test For Red-M By RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Middle Channel
GPH/42177/RE0057



Date 16.May.'01 Time 11:01:40
Ref.Lvl 55.00 dBμV
Marker 34.61 dBμV
6.6355 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

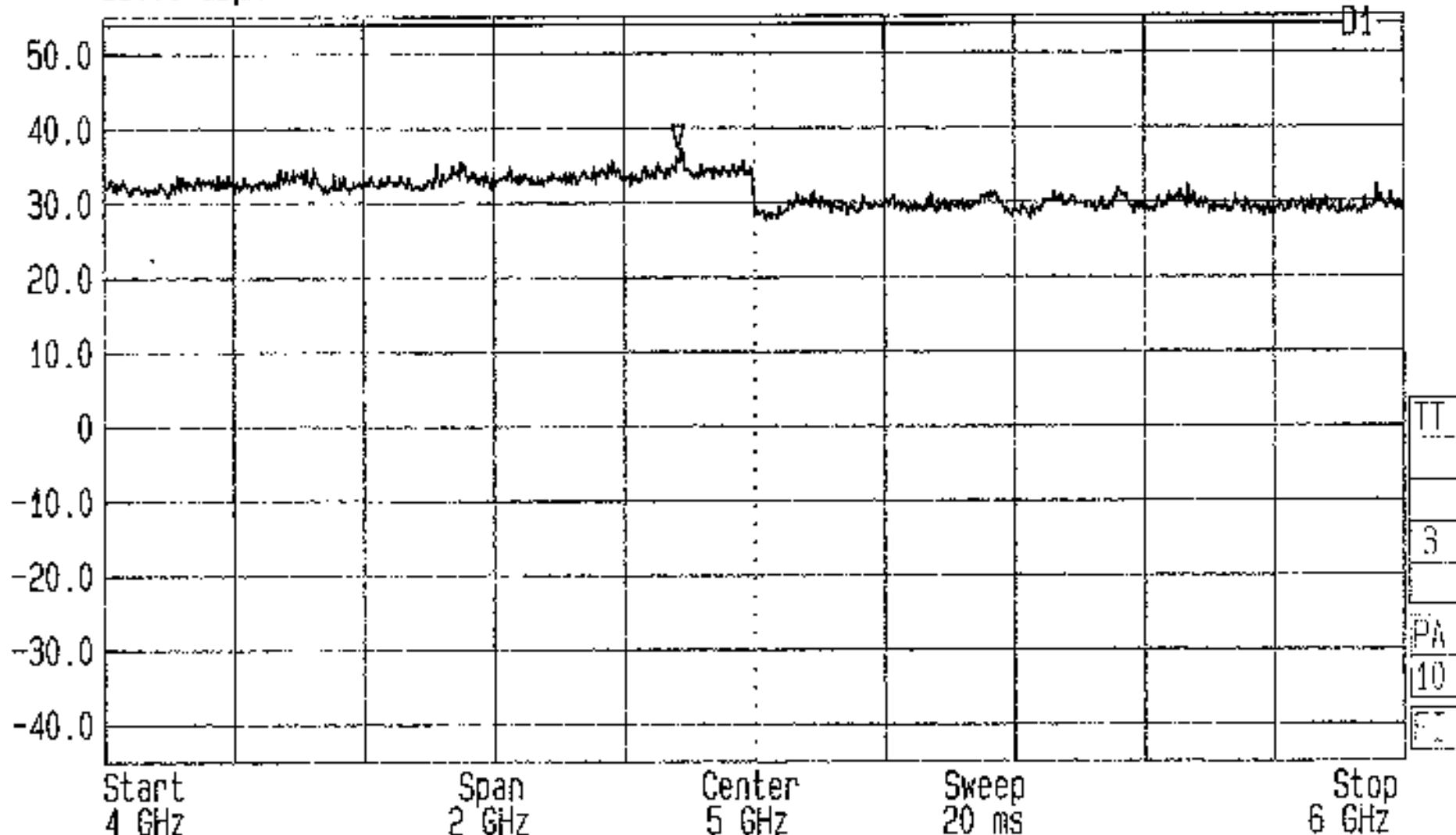


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0058



Date 16.May.'01 Time 11:07:39
Ref.Lvl 55.00 dBμV
Marker 37.46 dBμV
4.8866 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

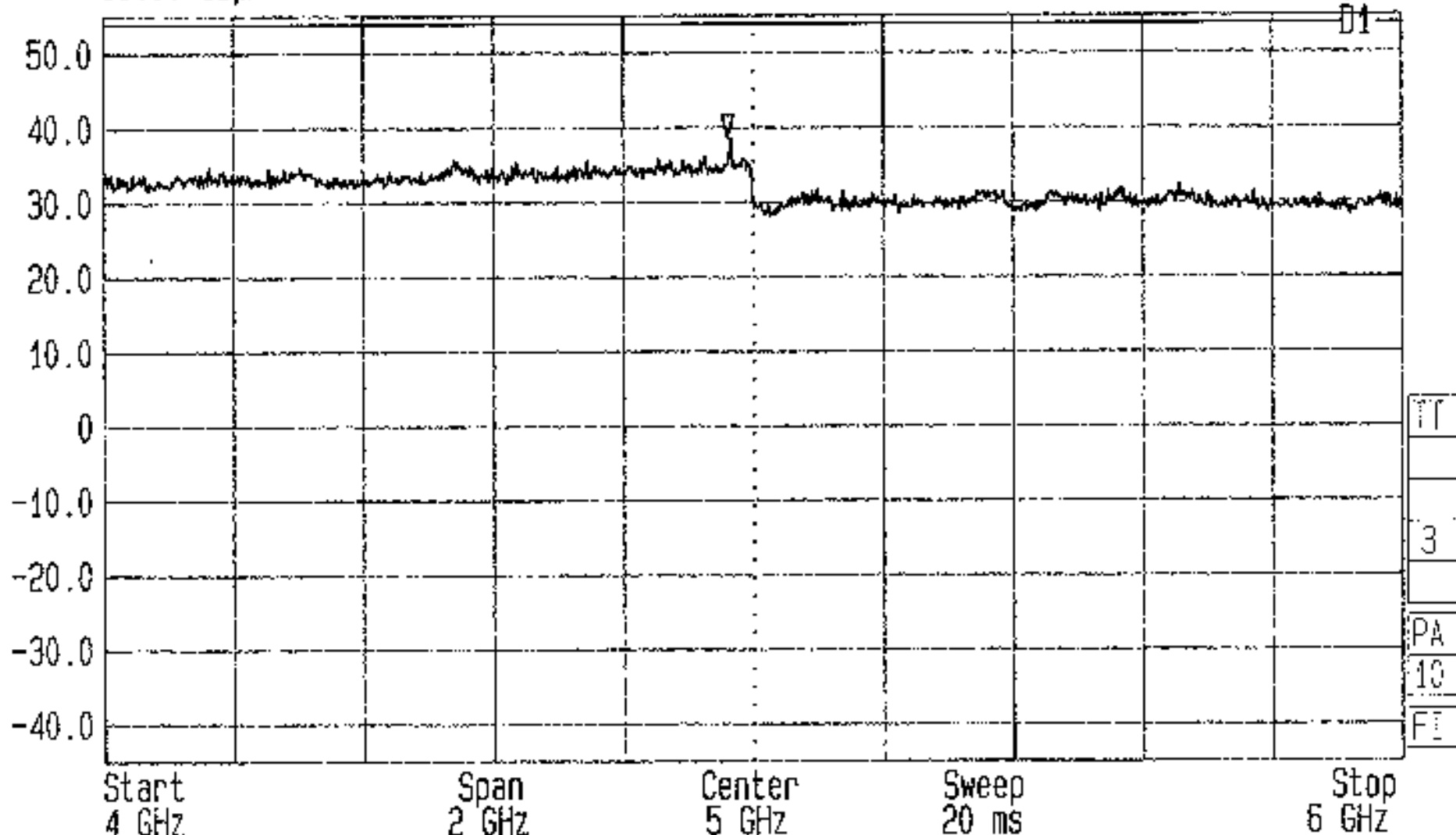


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Middle Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0059



Date 16.May.'01 Time 11:13:10
Ref.Lvl 55.00 dBμV
Marker 38.68 dBμV
4.9644 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

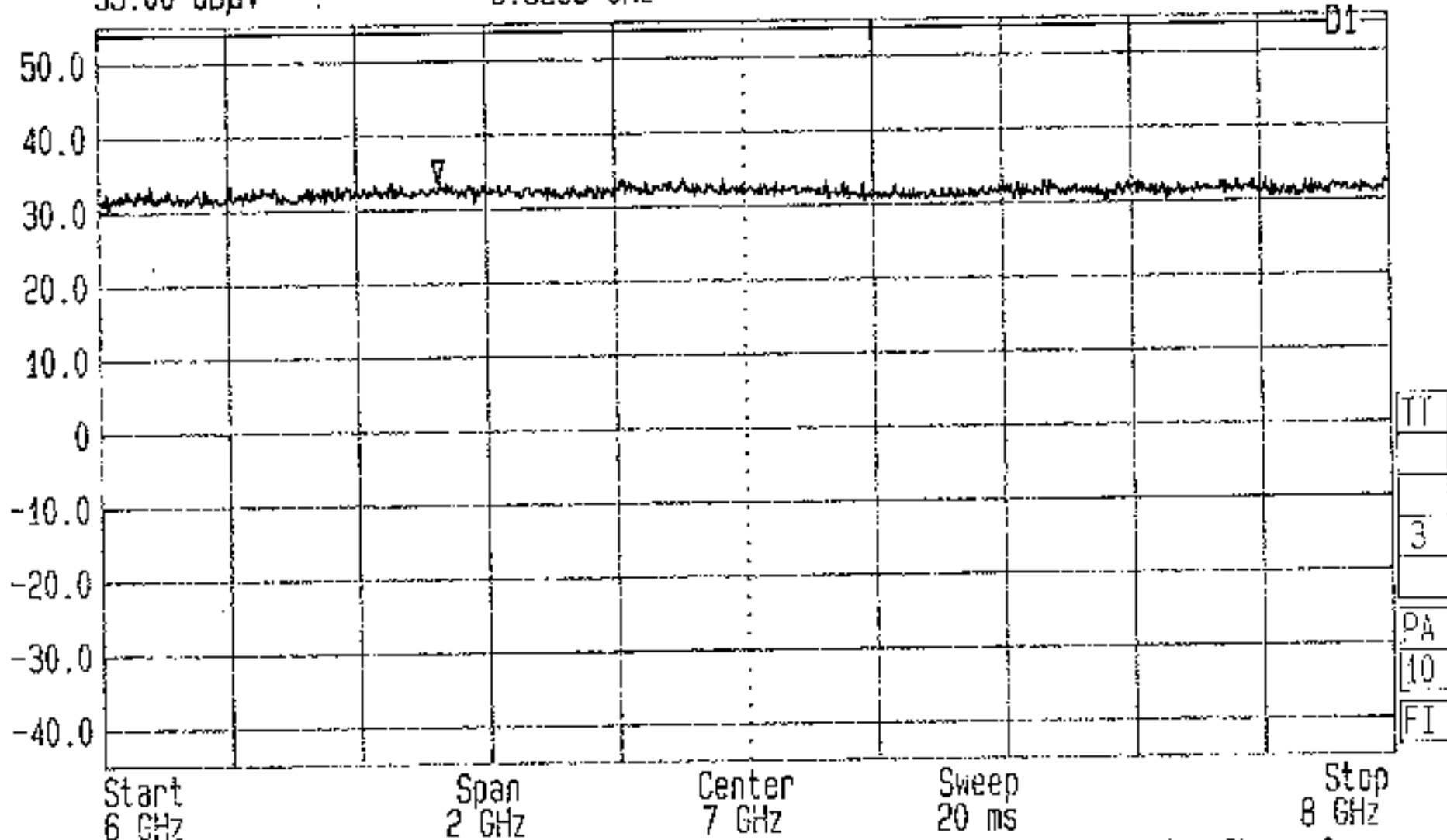


Spurious Radiated Emissions Test For Red-M By RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Top Channel
GPH/42177/RE0060



Date 16.May.'01 Time 11:18:21
Ref.Lvl 55.00 dBμV
Marker 33.88 dBμV
6.5288 GHz
Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

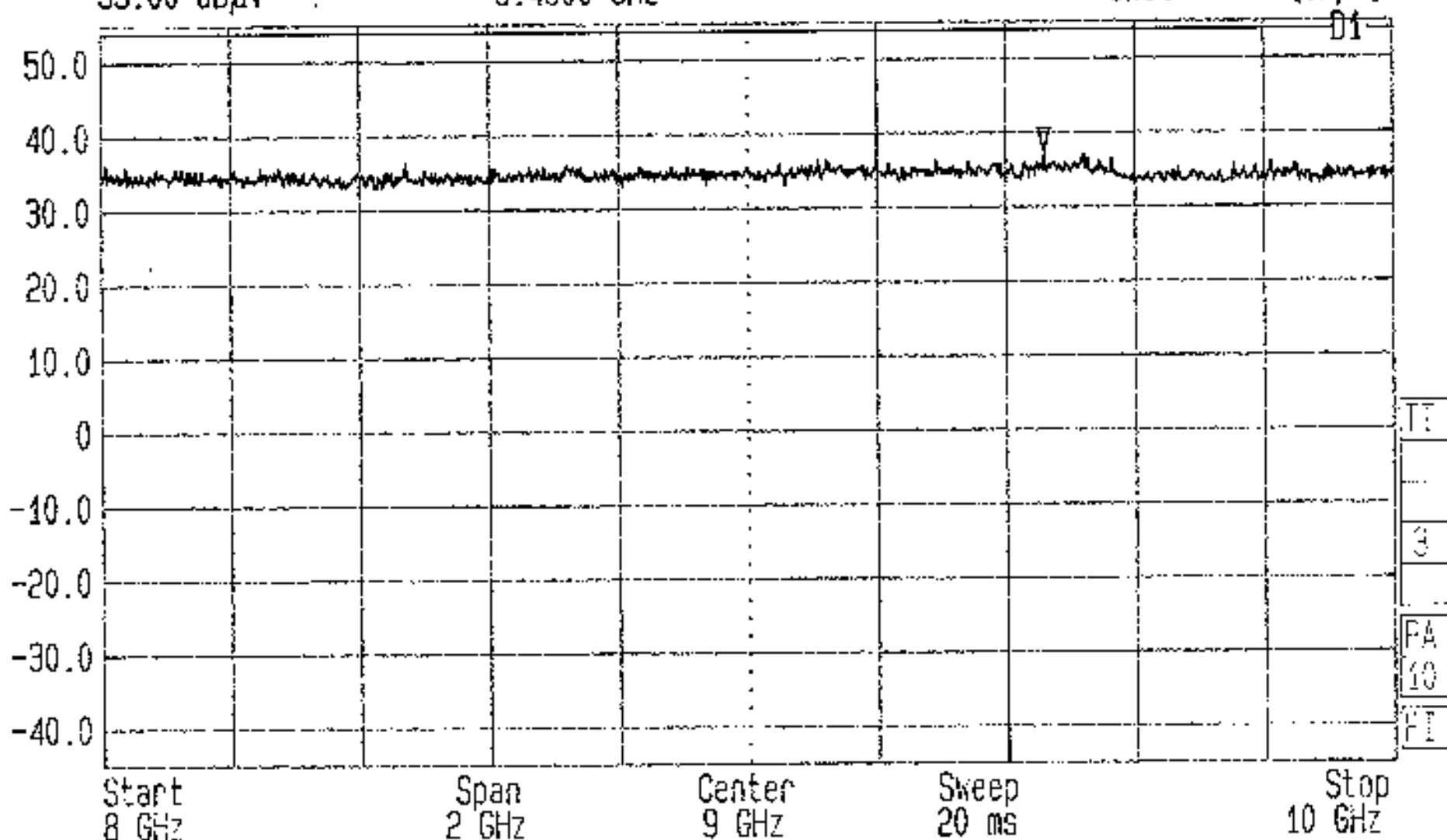


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0061



Date 16.May.'01 Time 11:23:48
Ref.Lvl 55.00 dB μ V
Marker 37.58 dB μ V
9.4600 GHz

Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 200.000 MHz RF.Att 0 dB
Unit [dB μ V]



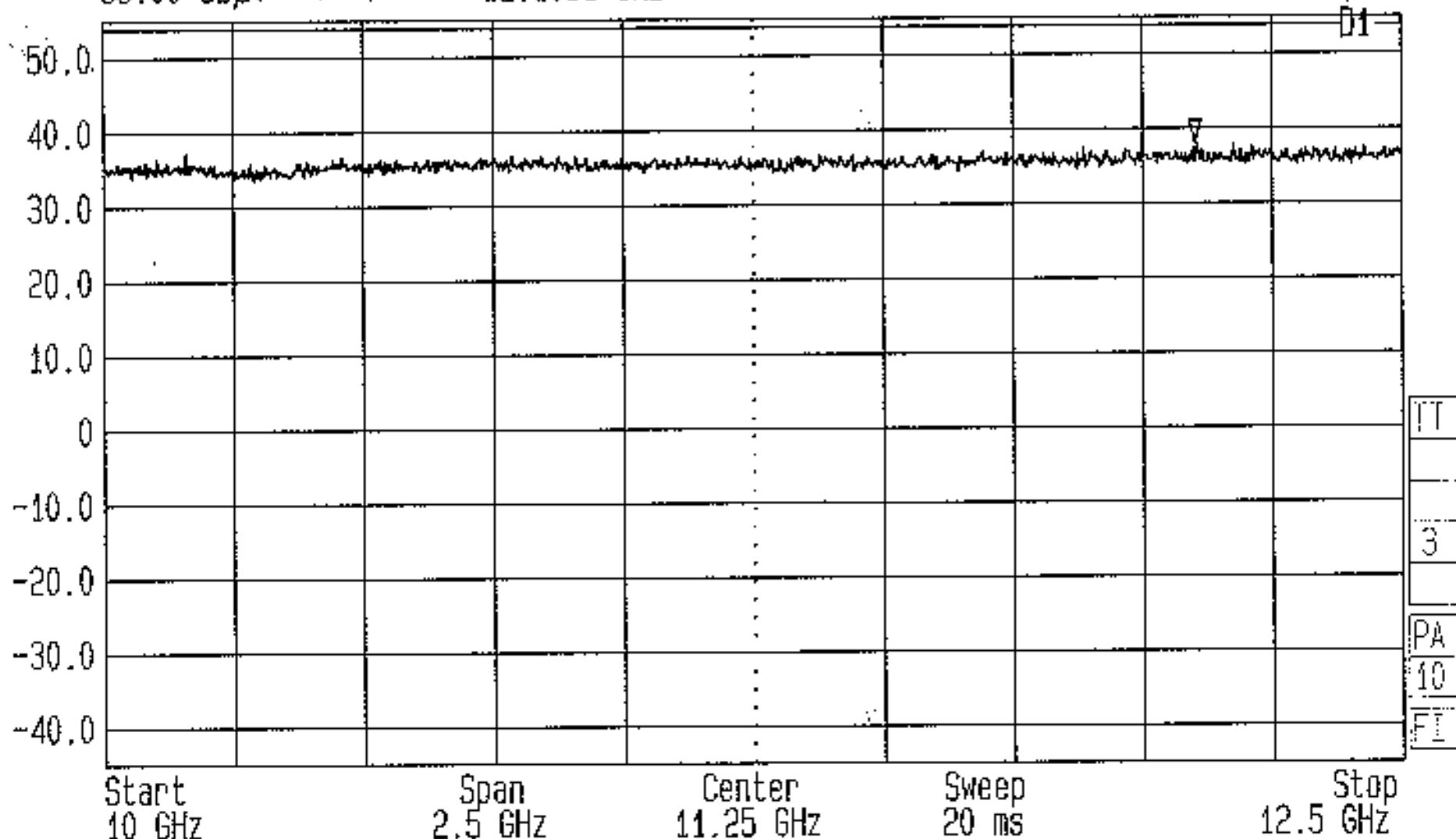
Spurious Radiated Emissions Test For Red-M By RFI Ltd.
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Top Channel
GPH/42177/RE0062



Date 16.May.'01 Time 11:40:17
Ref.Lvl 55.00 dBμV Marker 38.19 dBμV
12.1055 GHz

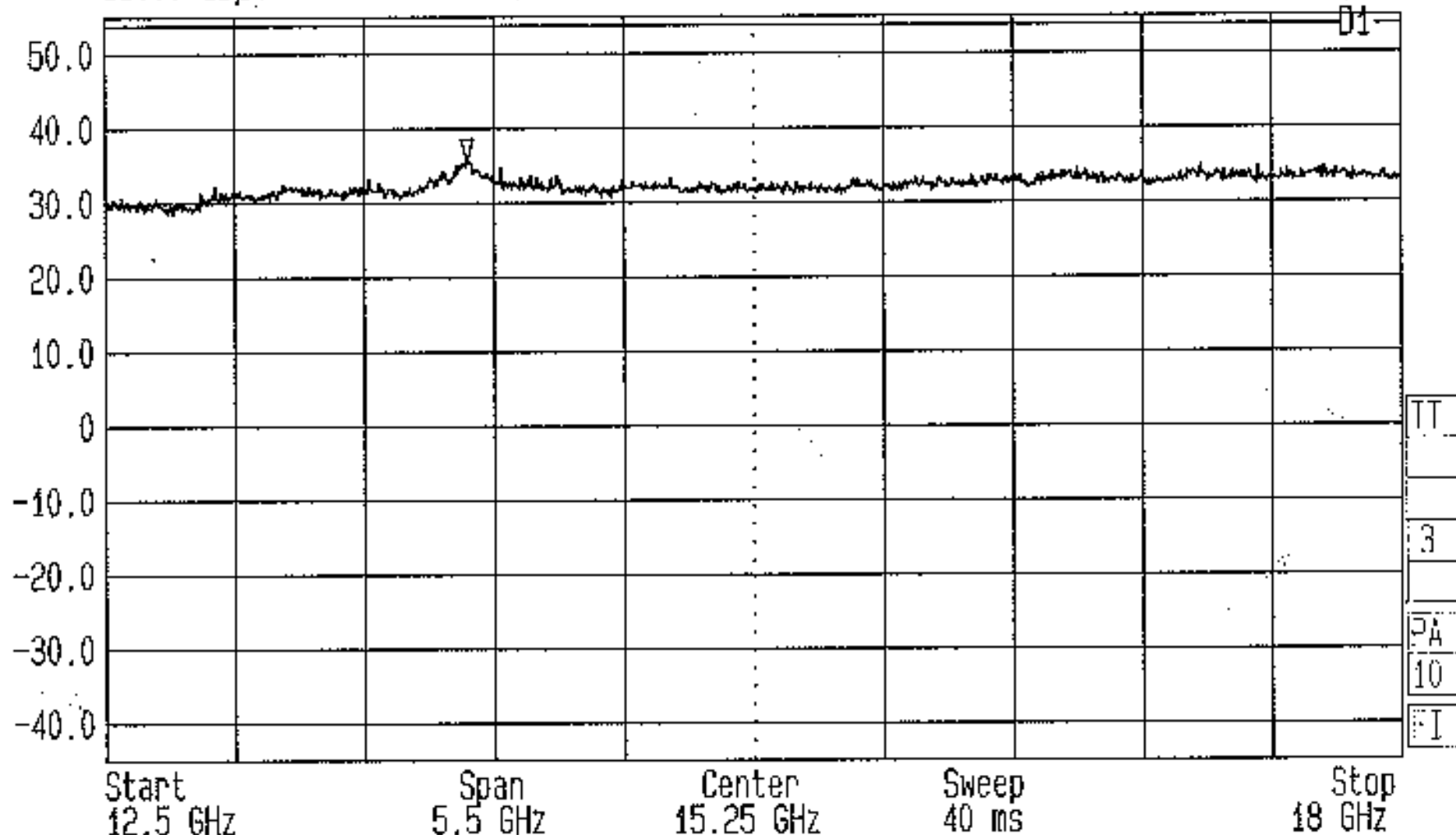
Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 250.000 MHz RF.Att 0 dB
Unit [dBμV]





Date 16.May.'01 Time 11:50:50
Ref.Lvl 55.00 dBμV
Marker 35.60 dBμV
14.0400 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 550.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

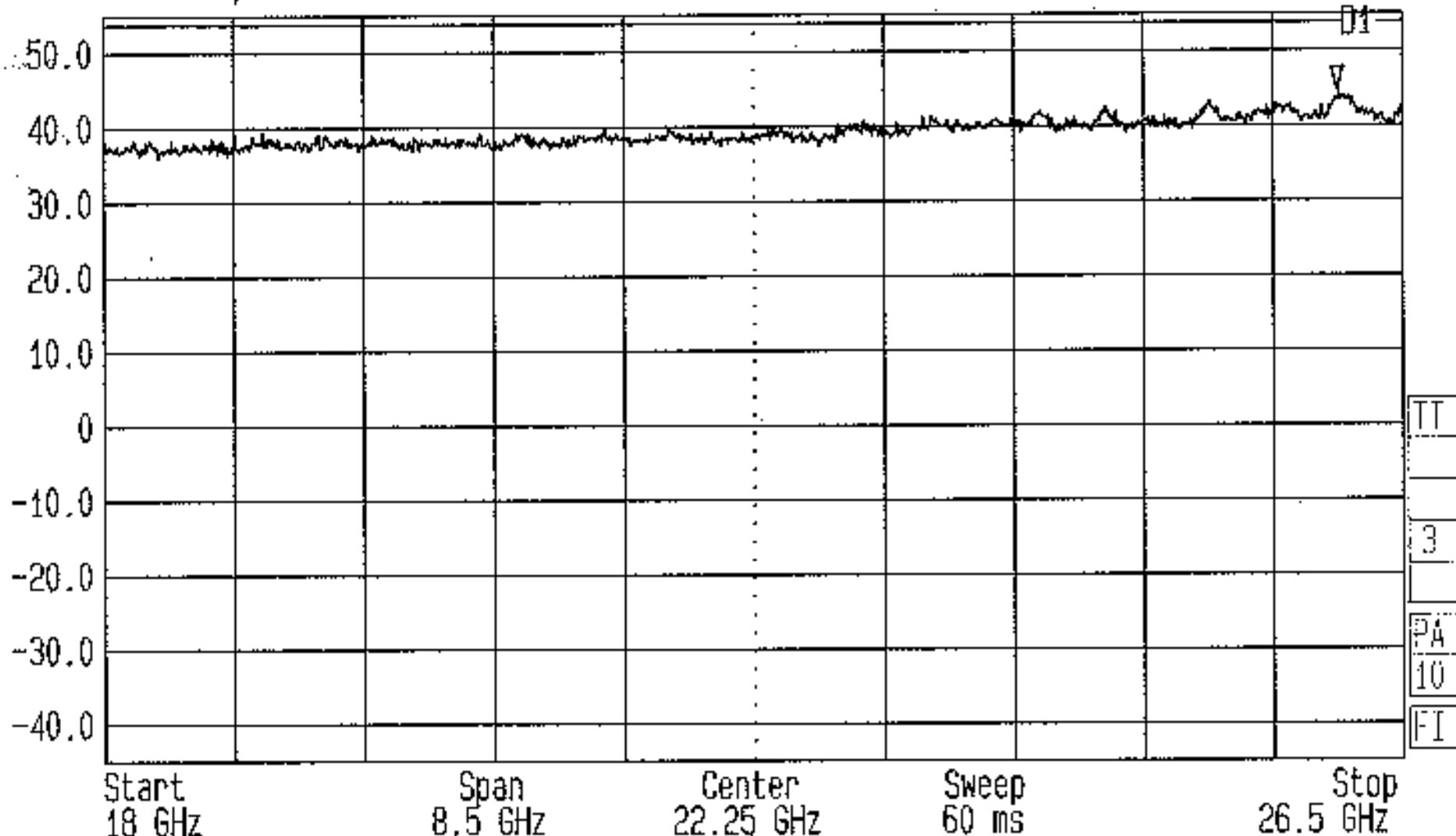


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0064



Date 16.May.'01 Time 11:55:38
Ref.Lvl 55.00 dBμV
Marker 44.75 dBμV
26.0844 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 850.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

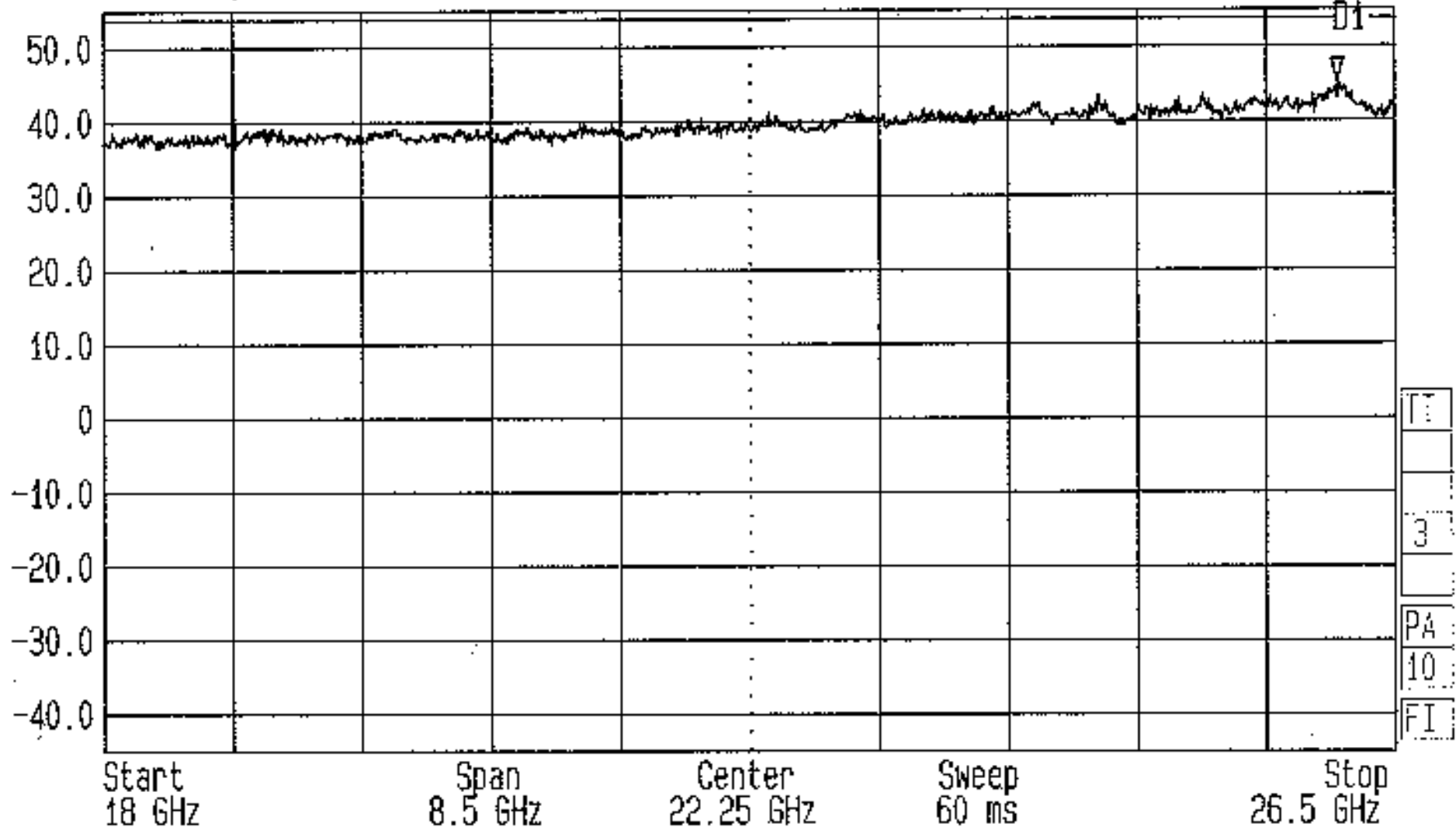


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Top Channel
FCC Part 15.209 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0065



Date 16.May.'01 Time 12:16:47
Ref.Lvl 55.00 dB μ V
Marker 45.36 dB μ V
26.1316 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 850.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dB μ V]

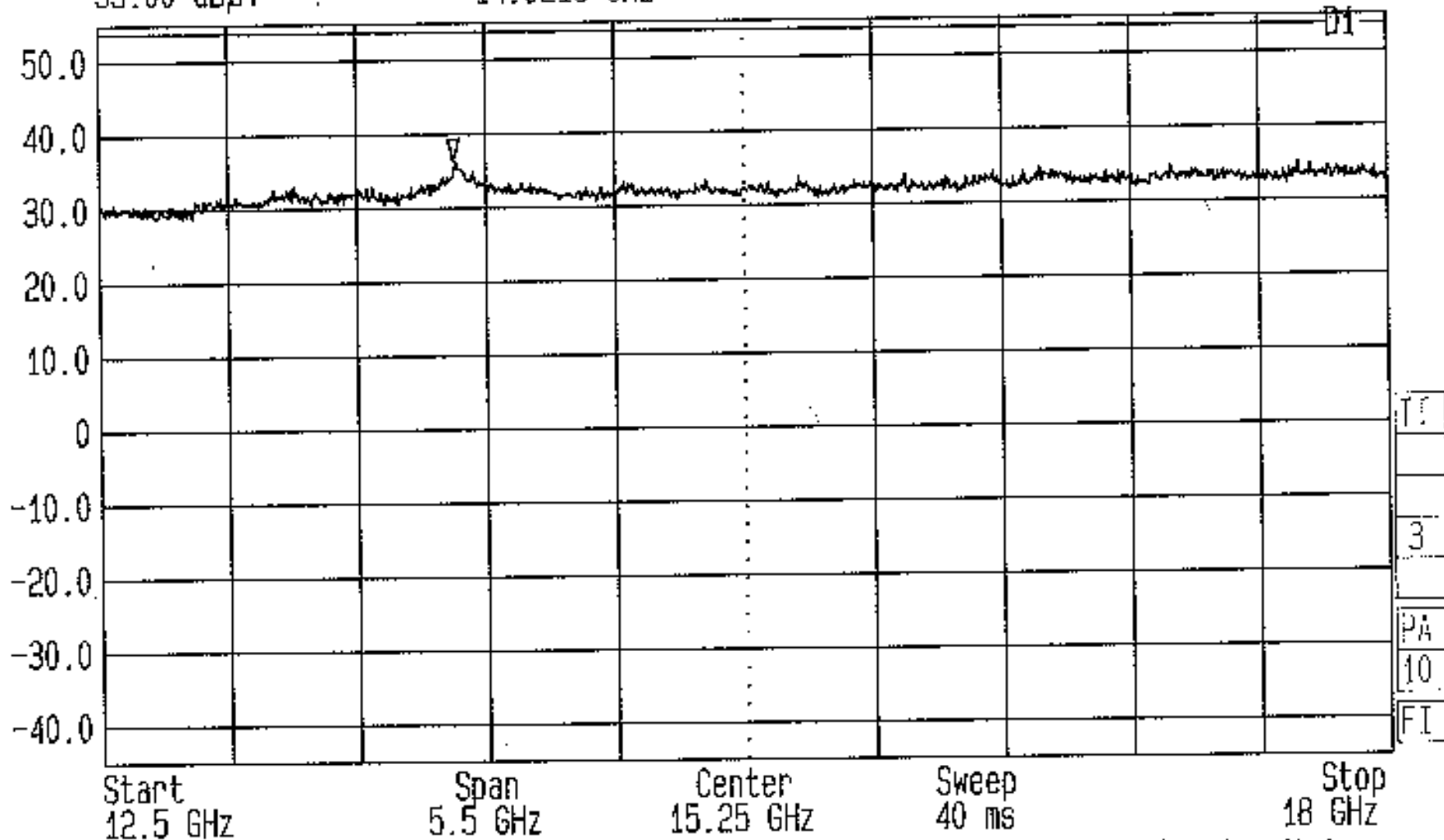


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
FCC Part 15.109 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0066



Date 16.May.'01 Time 12:23:05
Ref.Lvl 55.00 dBμV
Marker 36.54 dBμV
14.0216 GHz

Res.Bw 1 MHz [imp]
T6.Lvl off
CF.Stp 550.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

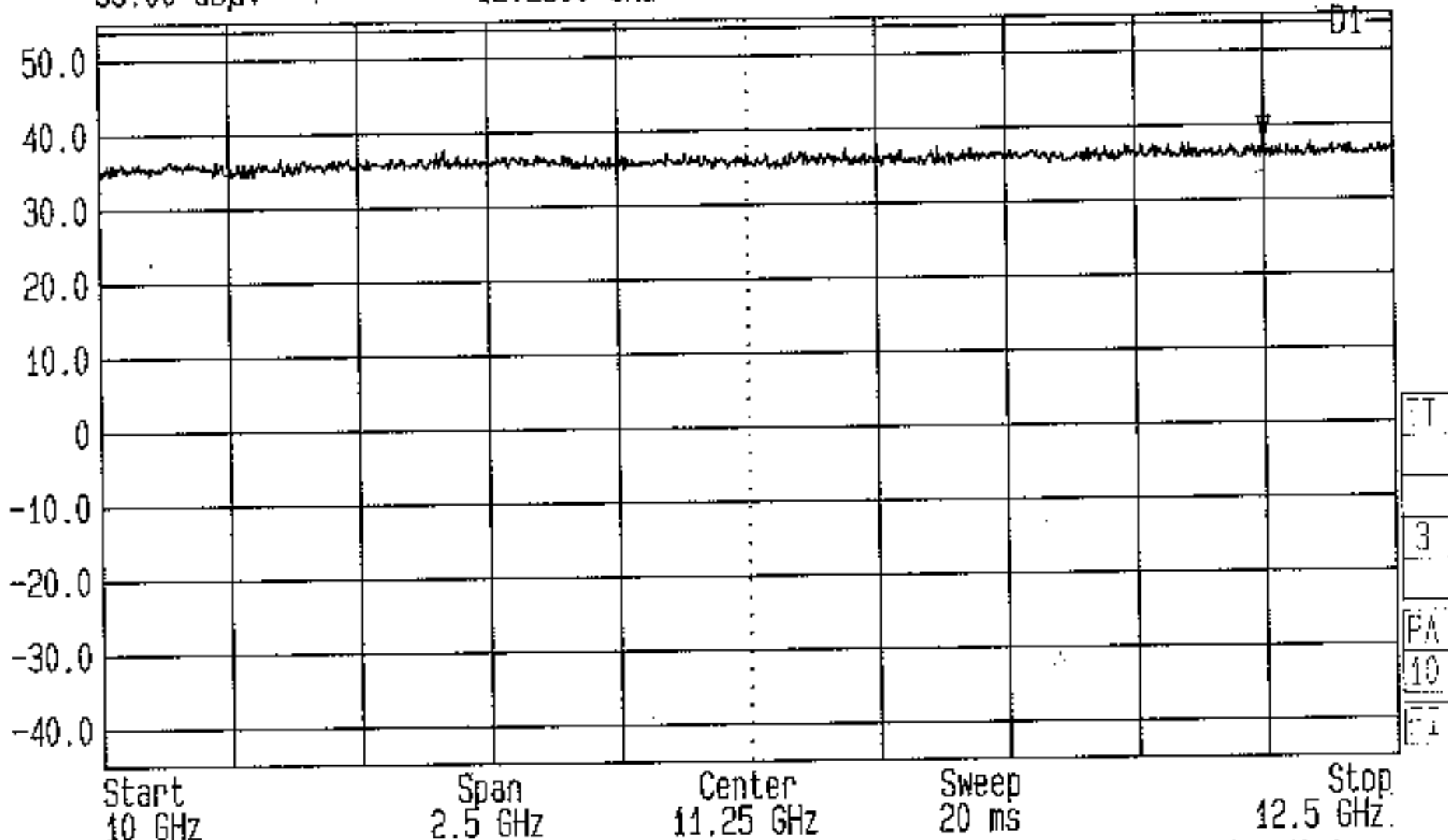


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
FCC Part 15.109 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0067



Date 15.May.'01 Time 12:28:50
Ref.Lvl 55.00 dB μ V
Marker 38.14 dB μ V
12.2500 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 250.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dB μ V]

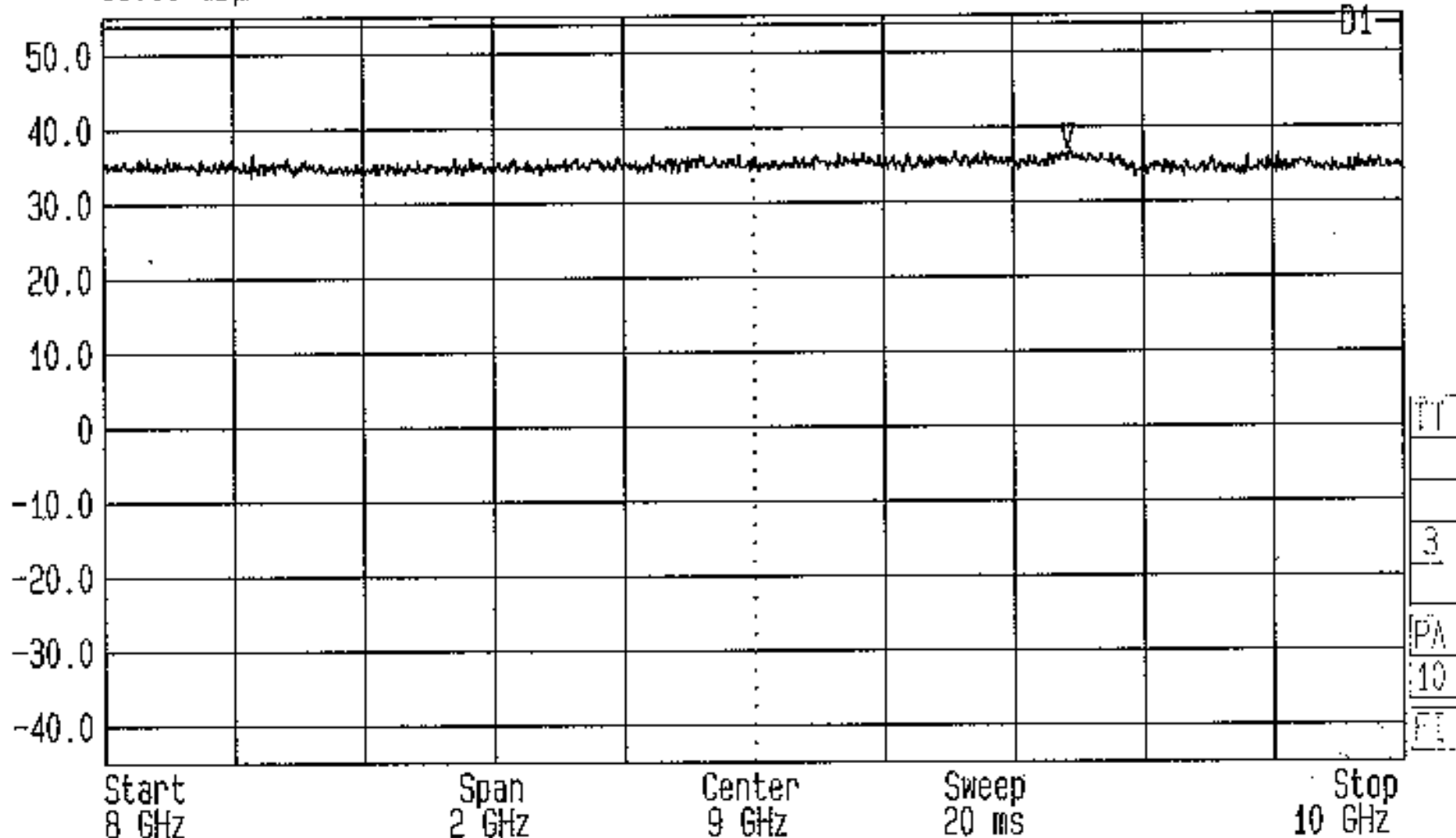


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
FCC Part 15.109 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0068



Date 16.May.'01 Time 12:32:49
Ref.Lvl 55.00 dBμV
Marker 37.48 dBμV
9.4866 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit (dBμV)



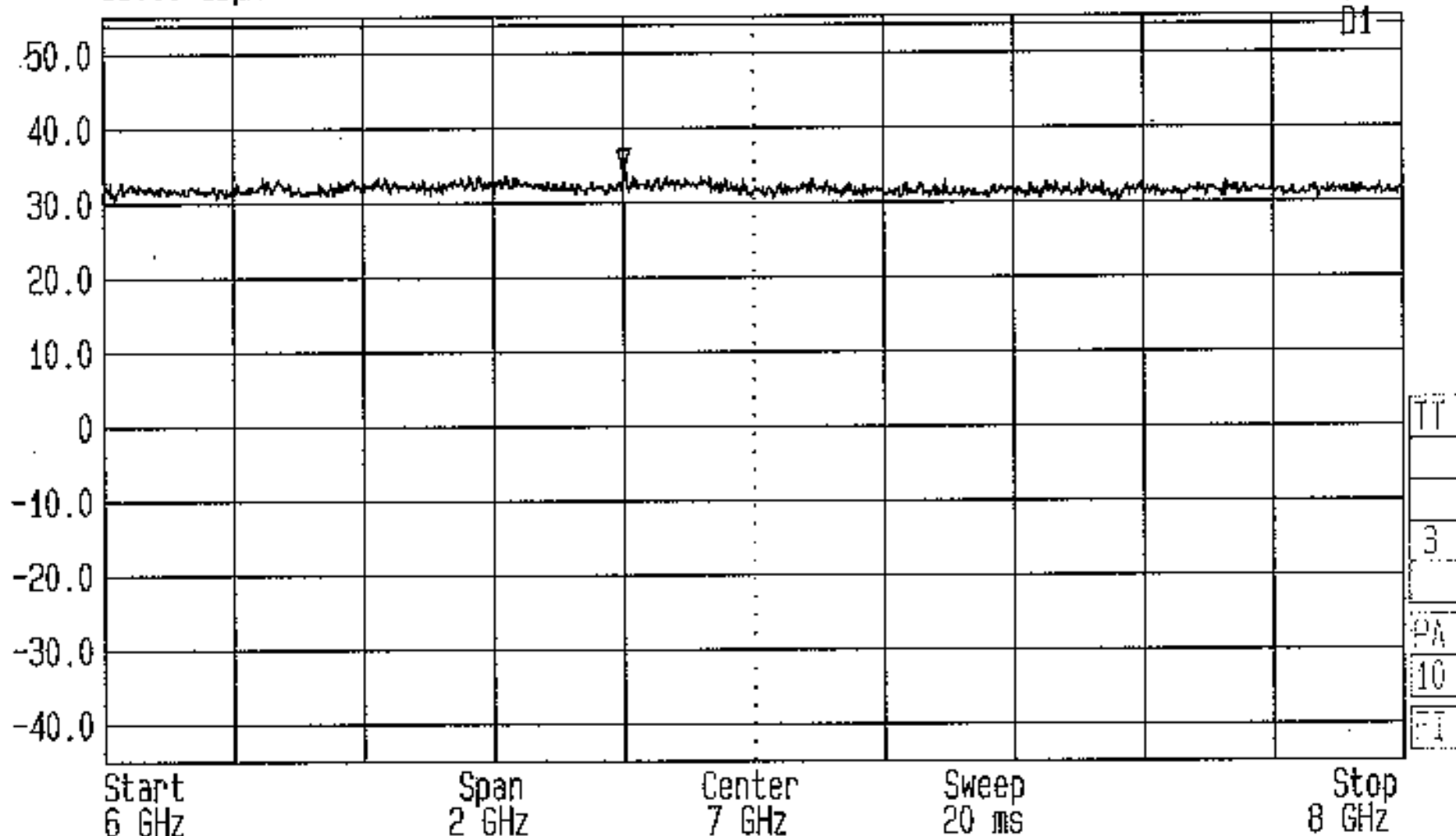
Spurious Radiated Emissions Test For Red-M By RFI Ltd.
FCC Part 15.109 ENG: NS EUT: 3000AS (External Antenna)

Op Cond: Receive Mode
GPH/42177/RE0069



Date 16.May.'01 Time 12:40:08
Ref.Lvl 55.00 dBμV
Marker 34.26 dBμV
6.8022 GHz

Res.Bw 1 MHz [imp]
T6.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

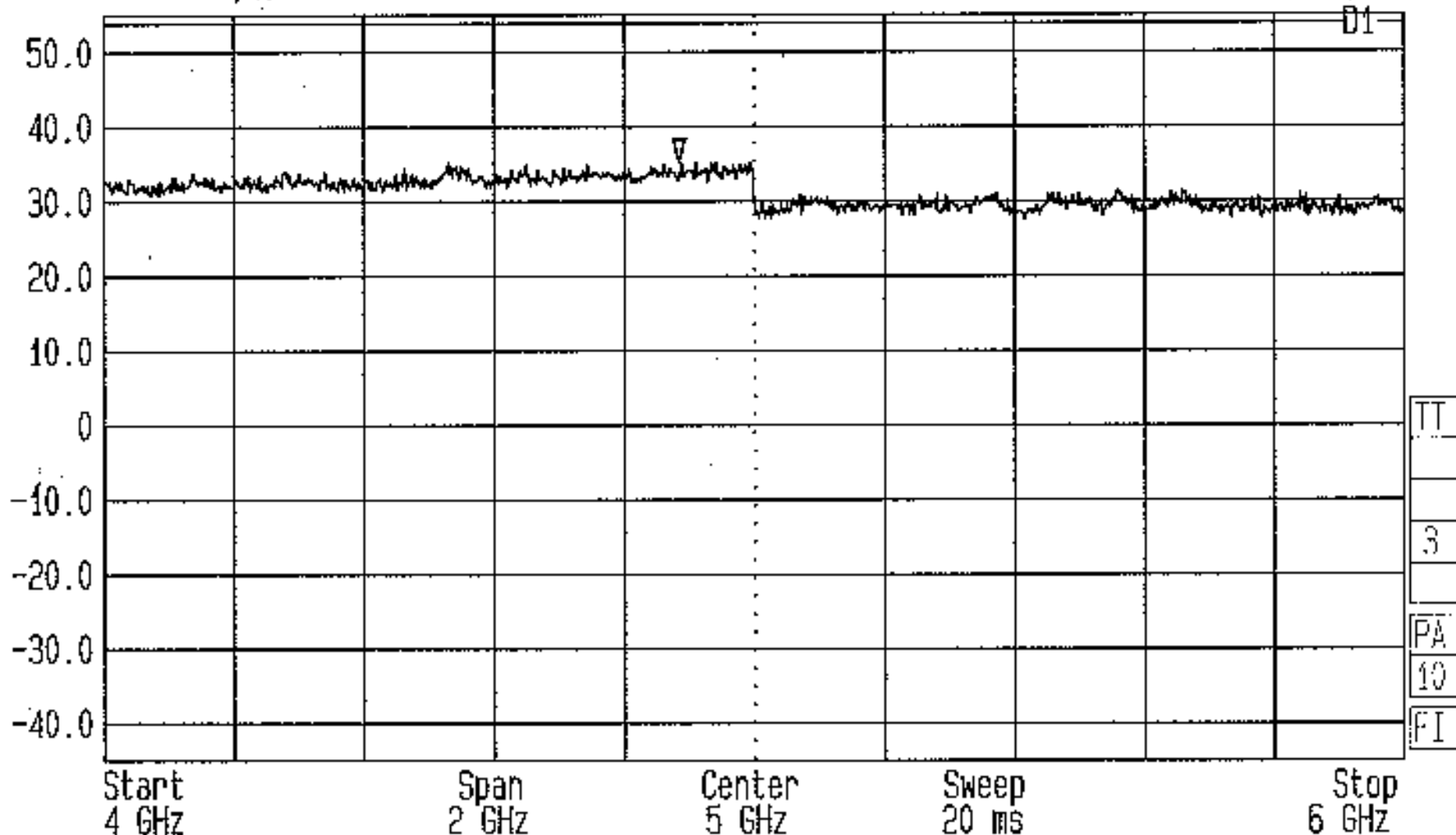


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
FCC Part 15.109 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0070



Date 16.May.'01 Time 12:46:14
Ref.Lvl 55.00 dBμV
Marker 35.40 dBμV
4.8866 GHz

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBμV]

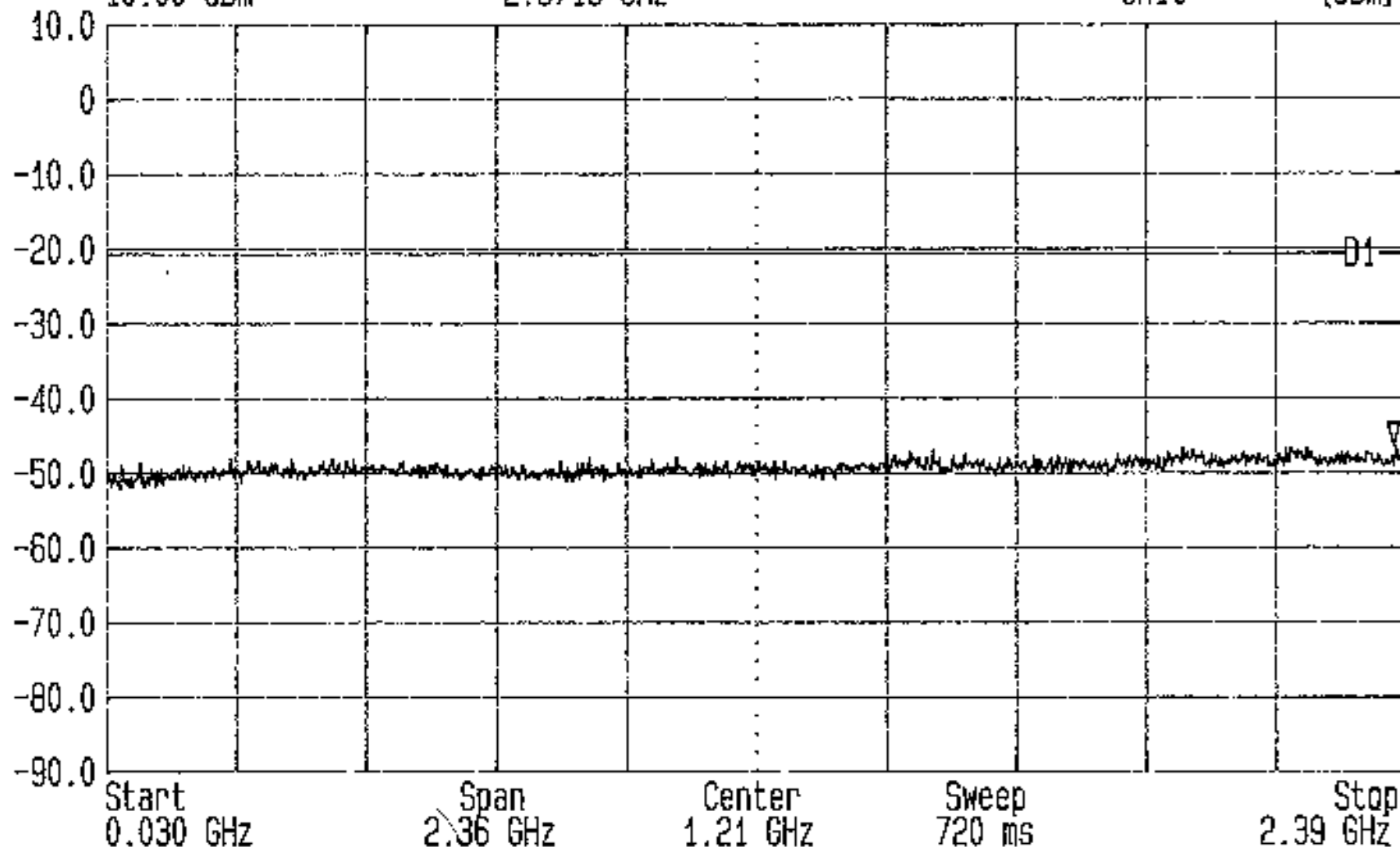


Spurious Radiated Emissions Test For Red-M By RFI Ltd. Op Cond: Receive Mode
FCC Part 15.109 ENG: NS EUT: 3000AS (External Antenna) GPH/42177/RE0071



LVLOFF
Date 14.May.'01 Time 16:18:35
Ref.Lvl 10.00 dBm
Marker -46.27 dBm
2.3716 GHz

Res.Bw 100.0 kHz [3dB]
TG.Lvl off
CF.Stp 236.000 MHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]

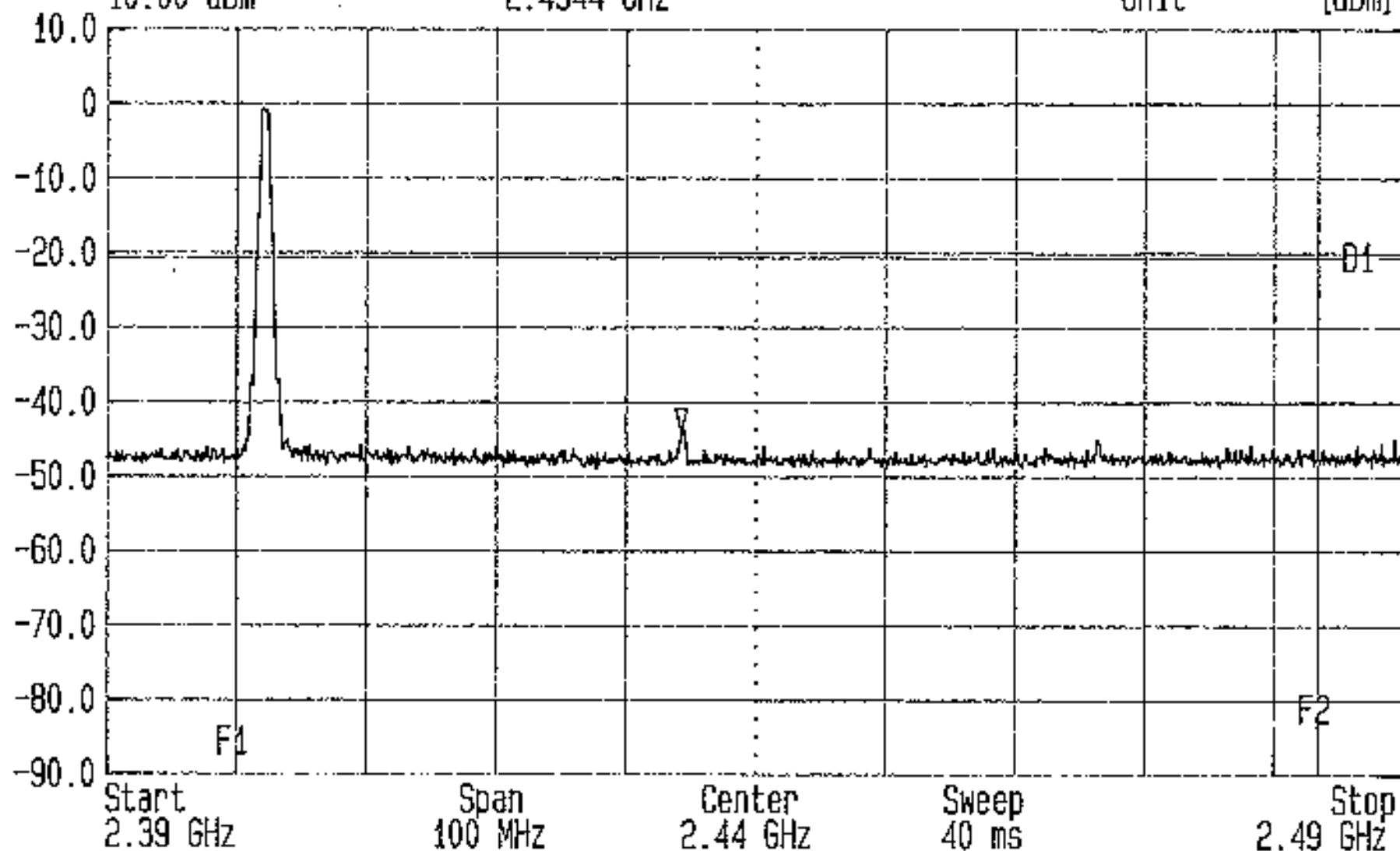


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Bottom Channel (External Antenna) ENG: NS GPH/42177/CE001



LVLOFF
Date 14.May.'01 Time 16:16:17
Ref.Lvl 10.00 dBm
Marker -43.63 dBm
2.4344 GHz

Res.Bw 100.0 kHz [3dB] Vid.Bw 100 kHz
TG.Lvl off
CF.Stp 10.000 MHz RF.Att 20 dB
Unit [dBm]

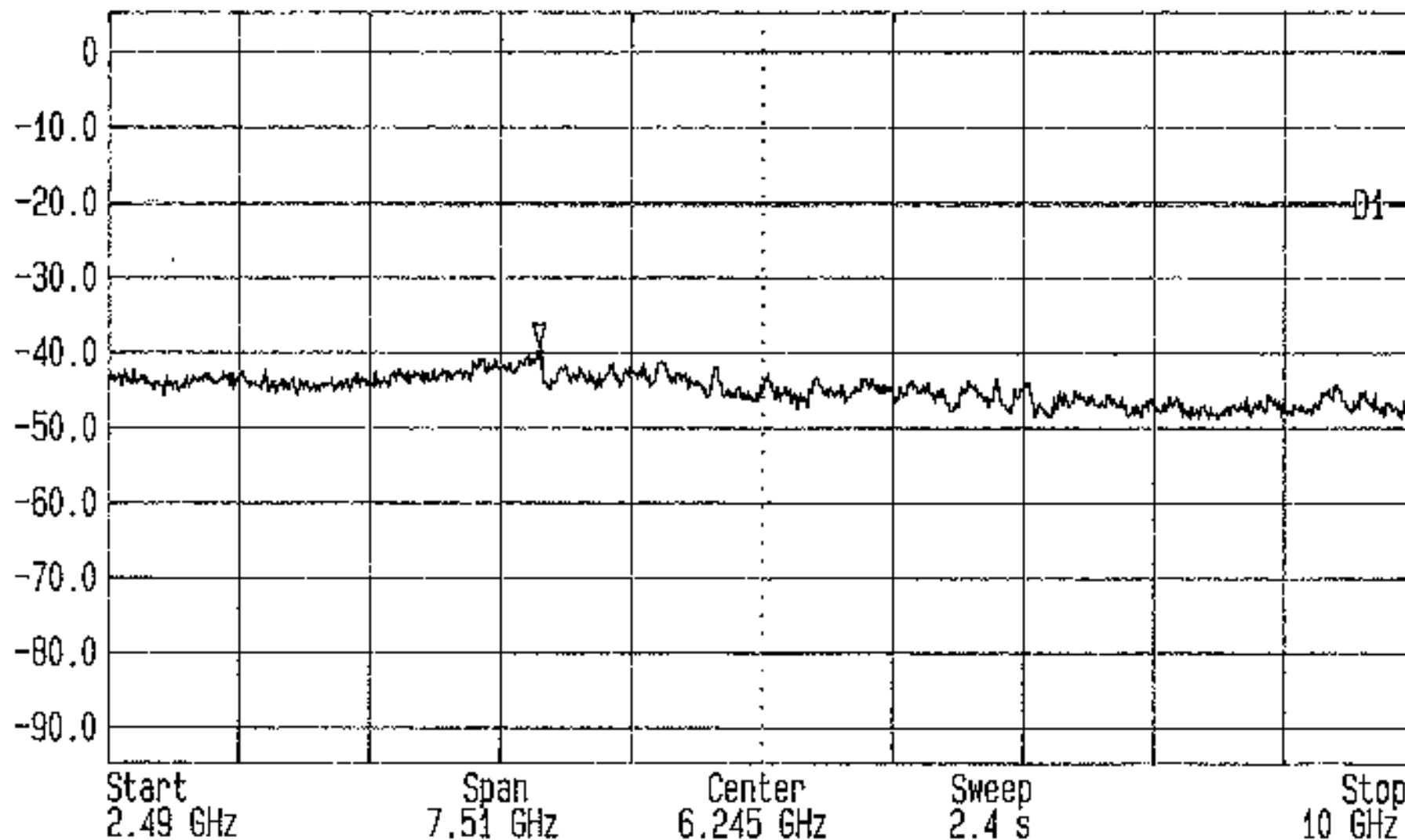


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Bottom Channel (External Antenna) ENG: NS GPH/42177/CE002



LVLOFF
Date 14.May.'01 Time 16:20:52
Ref.Lvl 5.10 dBm
Marker -39.28 dBm
4.9766 GHz

Res.Bw 100.0 kHz [3dB]
T6.Lvl off
CF.Stp 751.000 MHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]

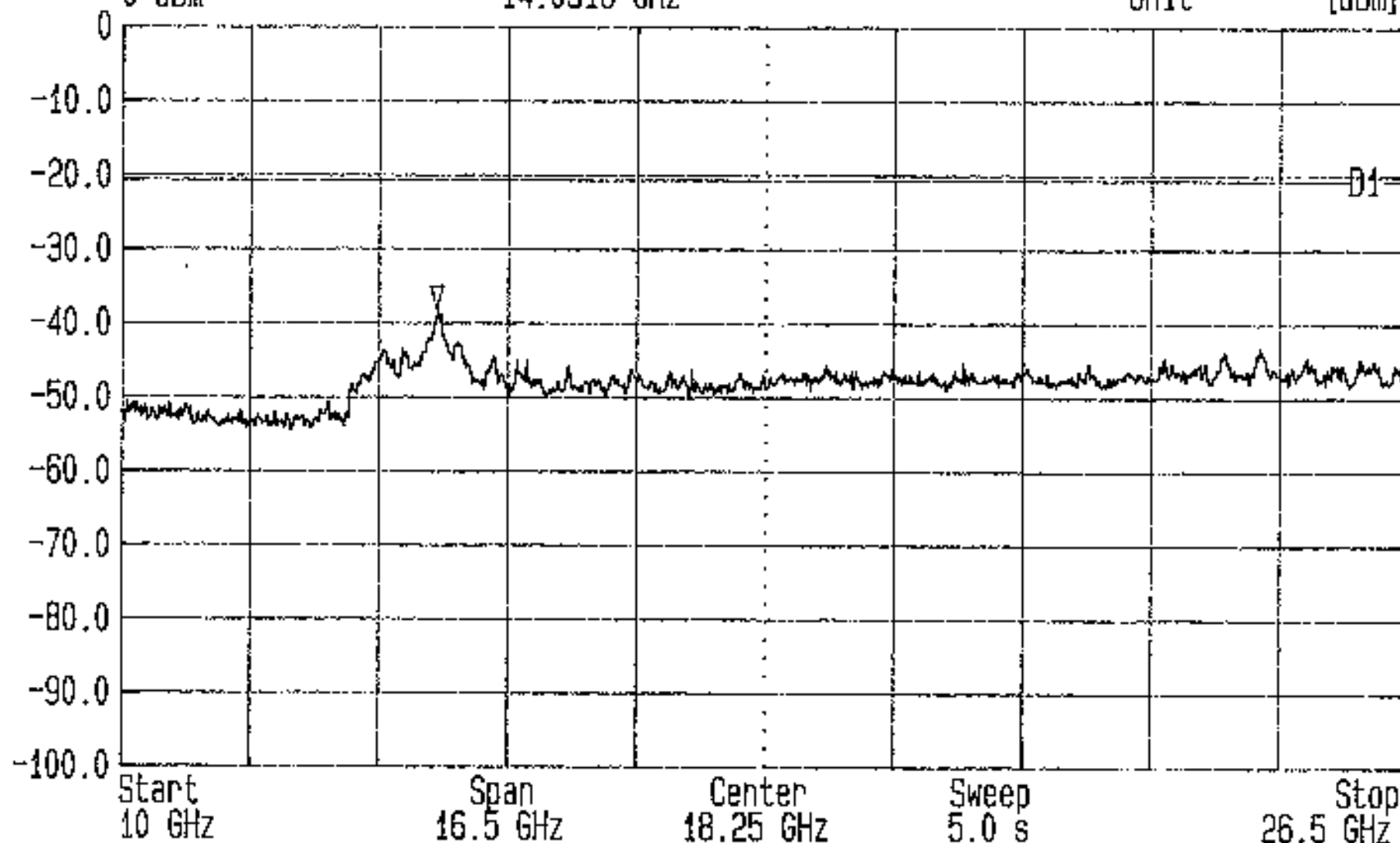


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Bottom Channel (External Antenna) ENG: NS GPH/42177/CE003



LVLOFF
Date 14.May.'01 Time 16:23:19
Ref.Lvl 0 dBm
Marker -38.01 dBm
14.0516 GHz

Res.Bw 100.0 kHz [3dB] Vid.Bw 100 kHz
TG.Lvl off
CF.Stp 1.650 GHz RF.Att 10 dB
Unit [dBm]

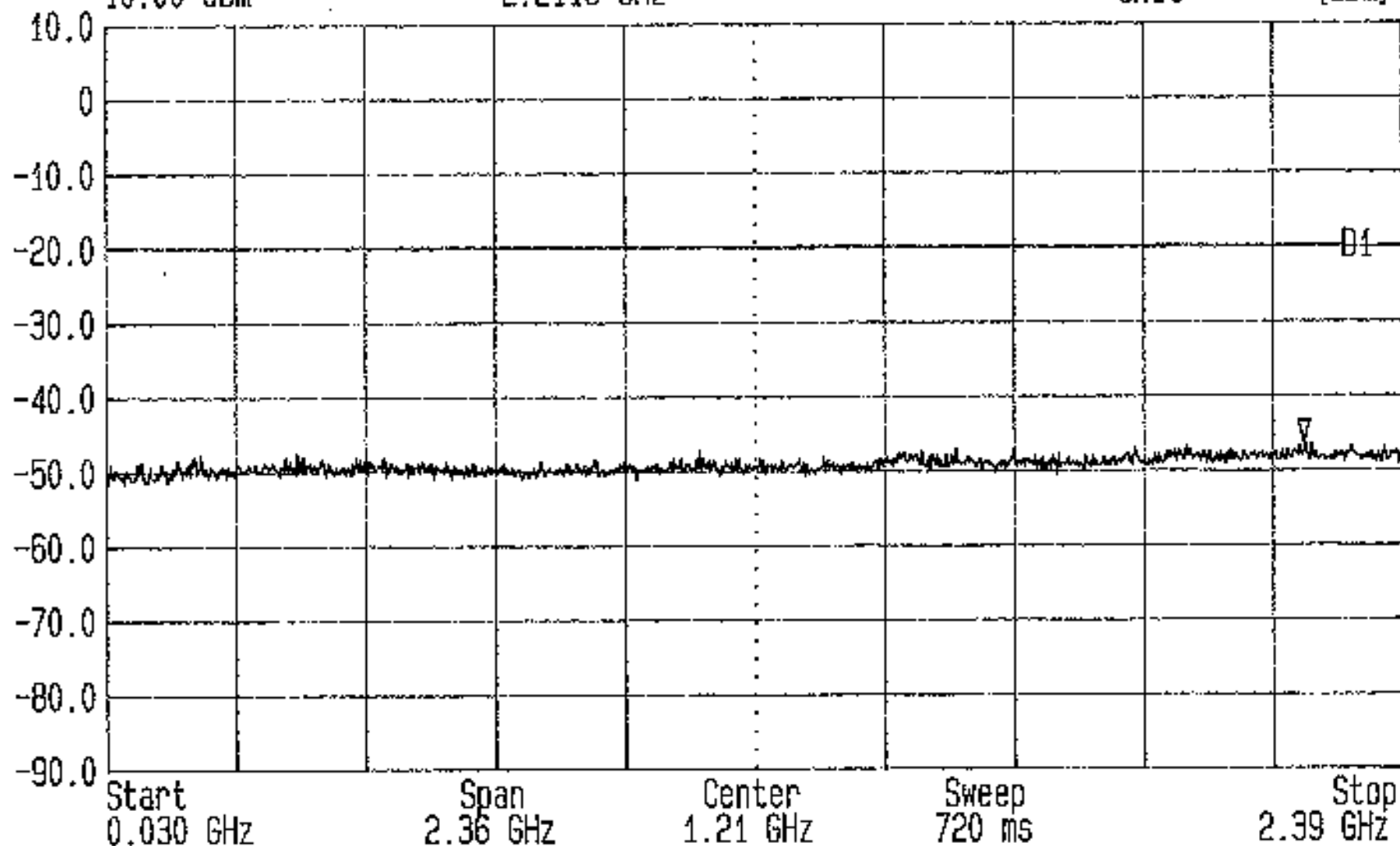


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Bottom Channel (External Antenna) ENG: NS GPH/42177/CE004



LVLOFF
Date 14.May.'01 Time 16:26:08
Ref.Lvl 10.00 dBm
Marker -46.19 dBm
2.2116 GHz

Res.Bw 100.0 kHz [3dB]
TG.Lvl off
CF.Stp 236.000 MHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]

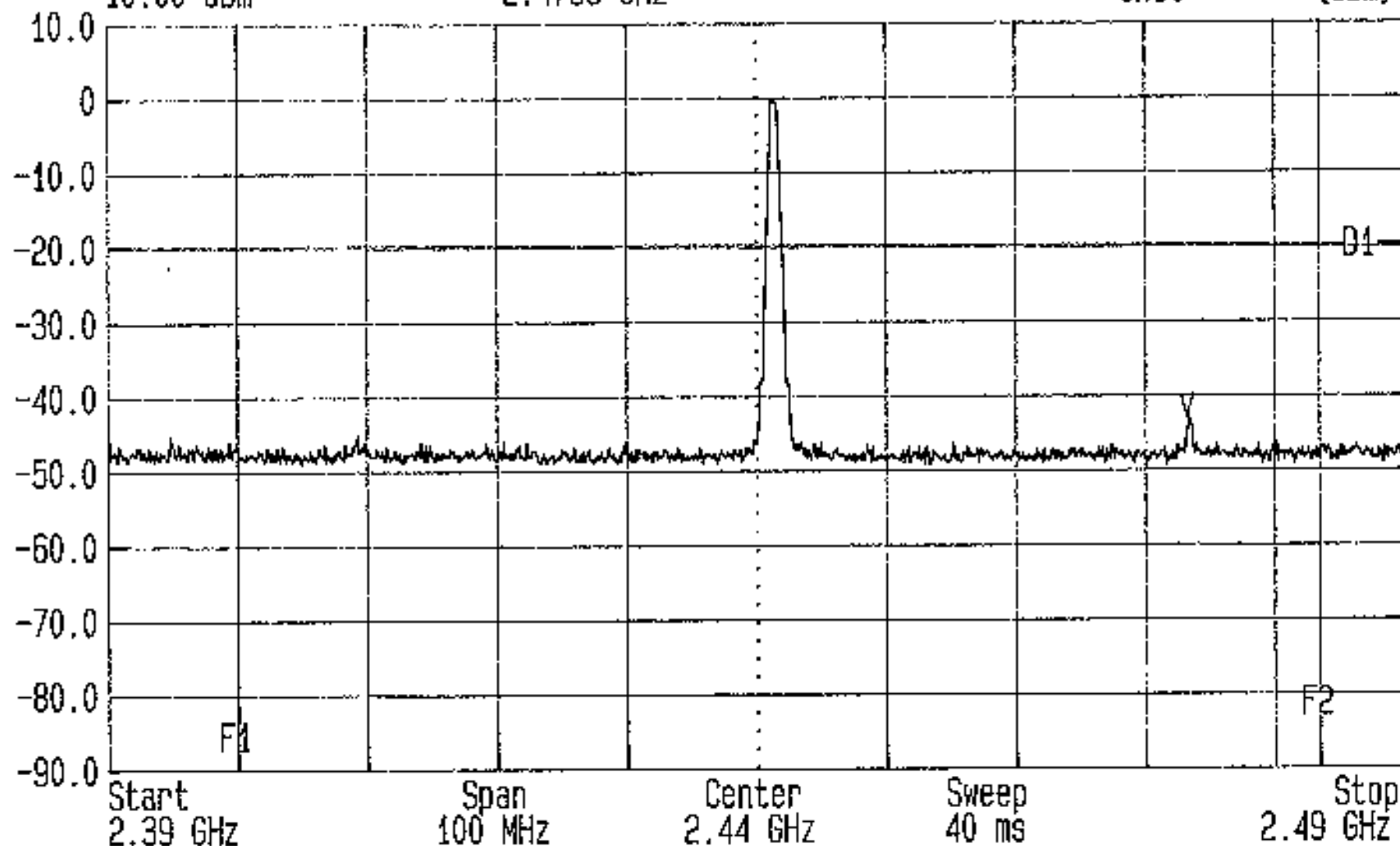


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Middle Channel (External Antenna) ENG: NS GPH/42177/CE005



LVLOFF
Date 14.May.'01 Time 16:28:52
Ref.Lvl 10.00 dBm
Marker -42.89 dBm
2.4733 GHz

Res.Bw 100.0 kHz [3dB]
TG.Lvl off
CF.Stp 10.000 MHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]

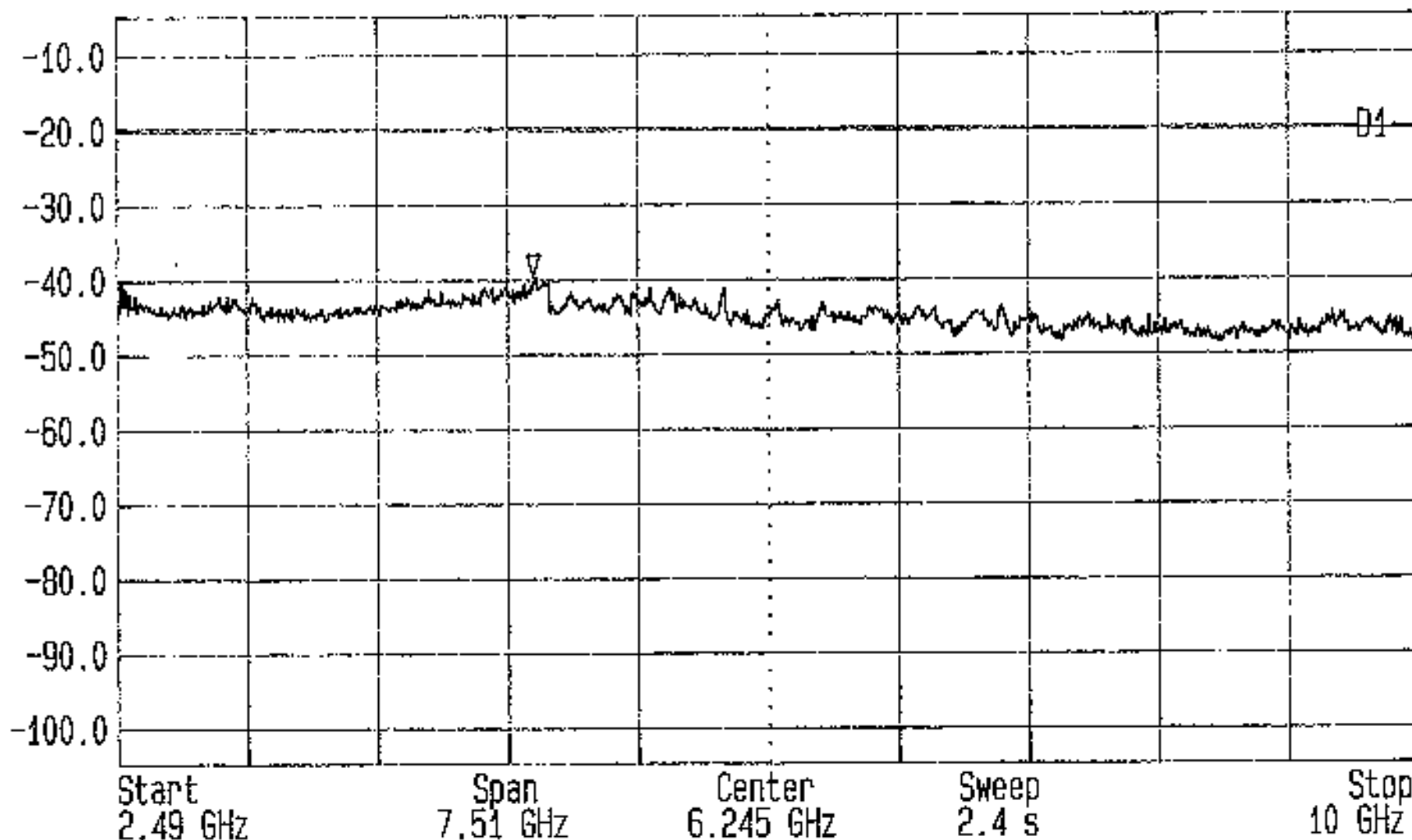


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Middle Channel (External Antenna) ENG: NS GPH/42177/CE006



LVLOFF
Date 14.May.'01 Time 16:31:24
Ref.Lvl -4.90 dBm
Marker -39.71 dBm
4.9015 GHz

Res.Bw 100.0 kHz [3dB]
T6.Lvl off
CF.Stp 751.000 MHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]

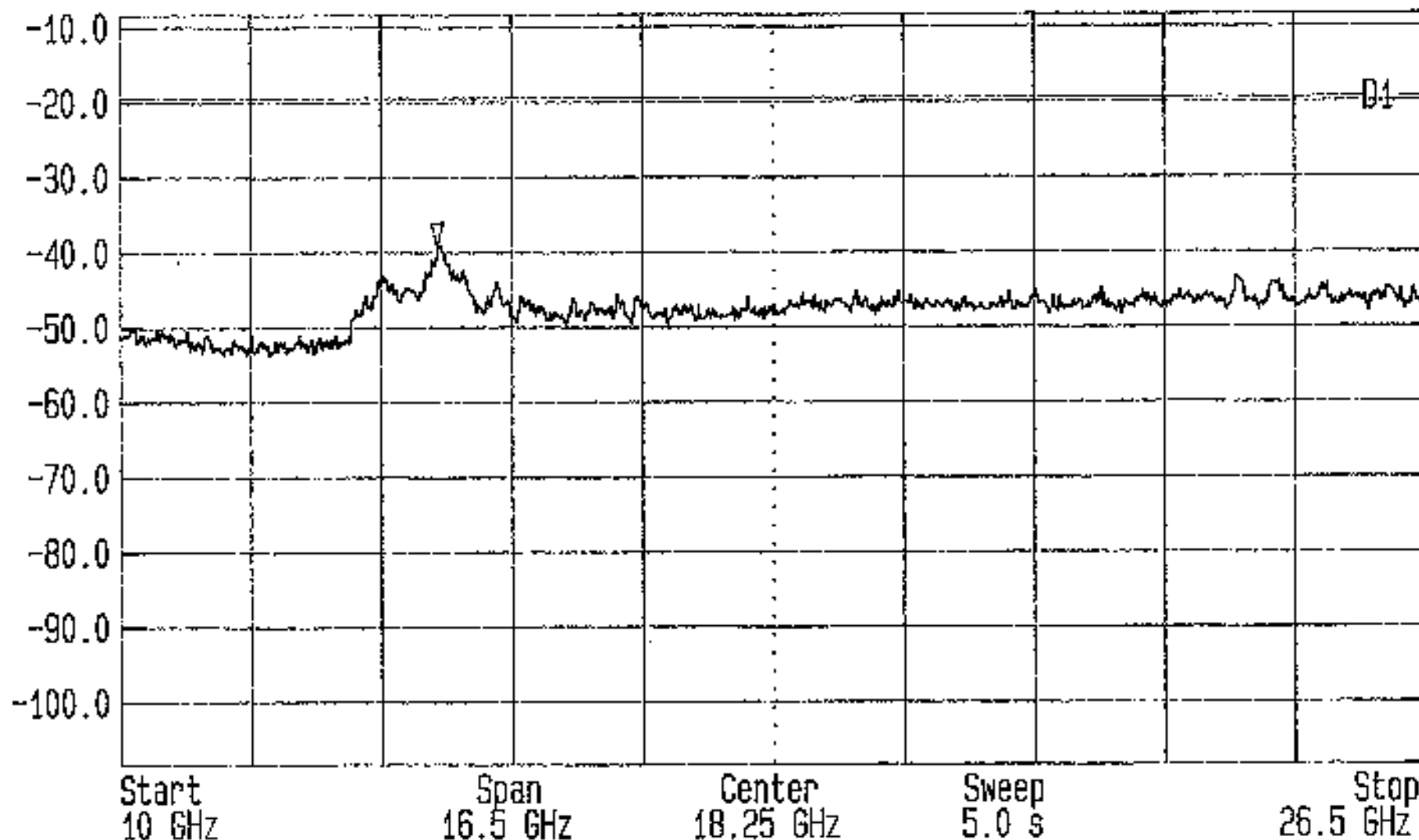


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Middle Channel (External Antenna) ENG: NS GPH/42177/CE007



LVLOFF
Date 14.May.'01 Time 16:35:08
Ref.Lvl -8.60 dBm
Marker -39.35 dBm
14.0333 GHz

Res.Bw 100.0 kHz [3dB]
TG.Lvl off
CF.Stp 1.650 GHz
Vid.Bw 100 kHz
RF.Att 10 dB
Unit [dBm]

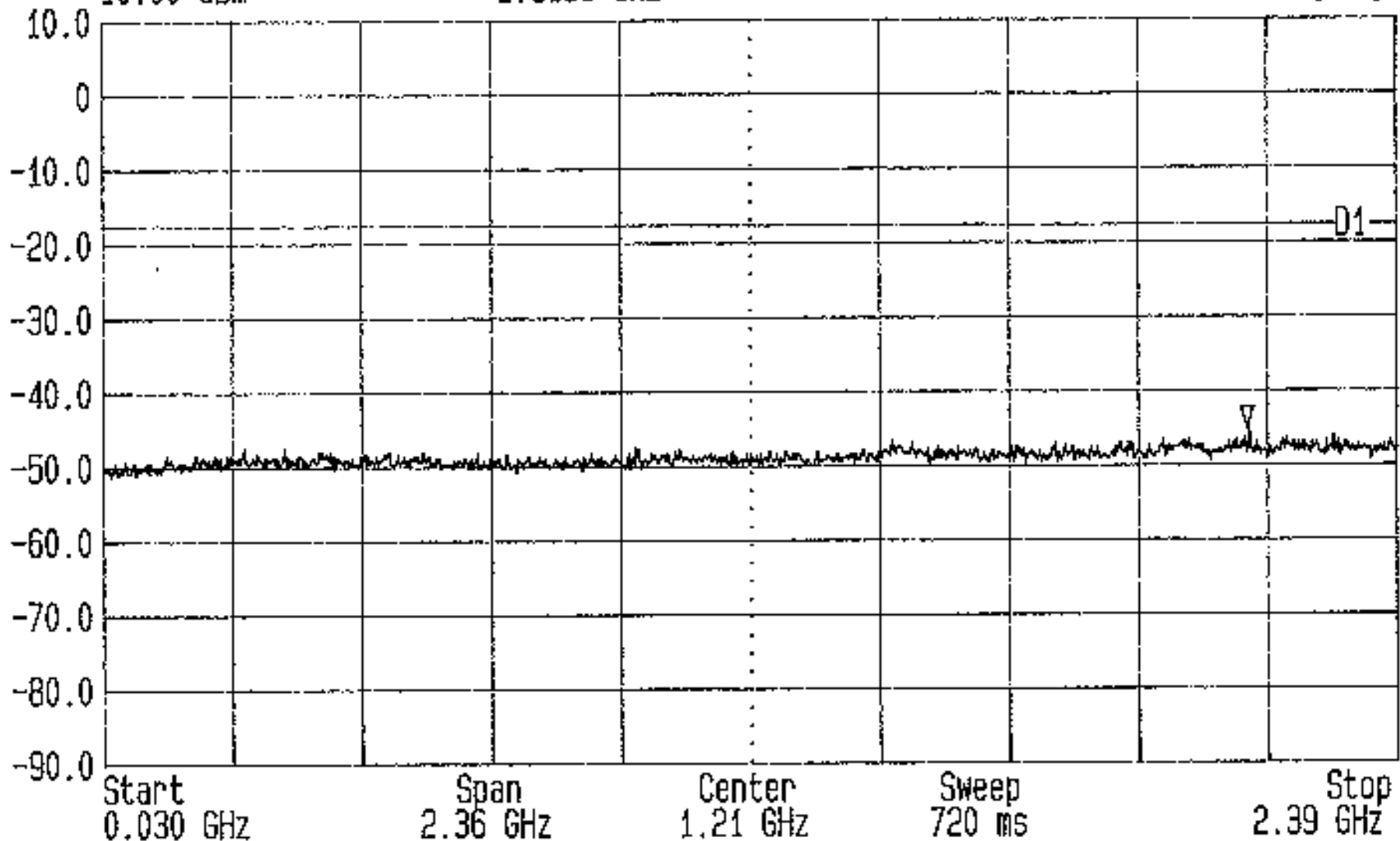


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Middle Channel (External Antenna) ENG: NS GPH/42177/CE008



LVLOFF
Date 14.May.'01 Time 16:44:00
Ref.Lvl 10.00 dBm
Marker -45.05 dBm
2.1199 GHz

Res.Bw 100.0 kHz [3dB]
TG.Lvl off
CF.Stp 236.000 MHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]

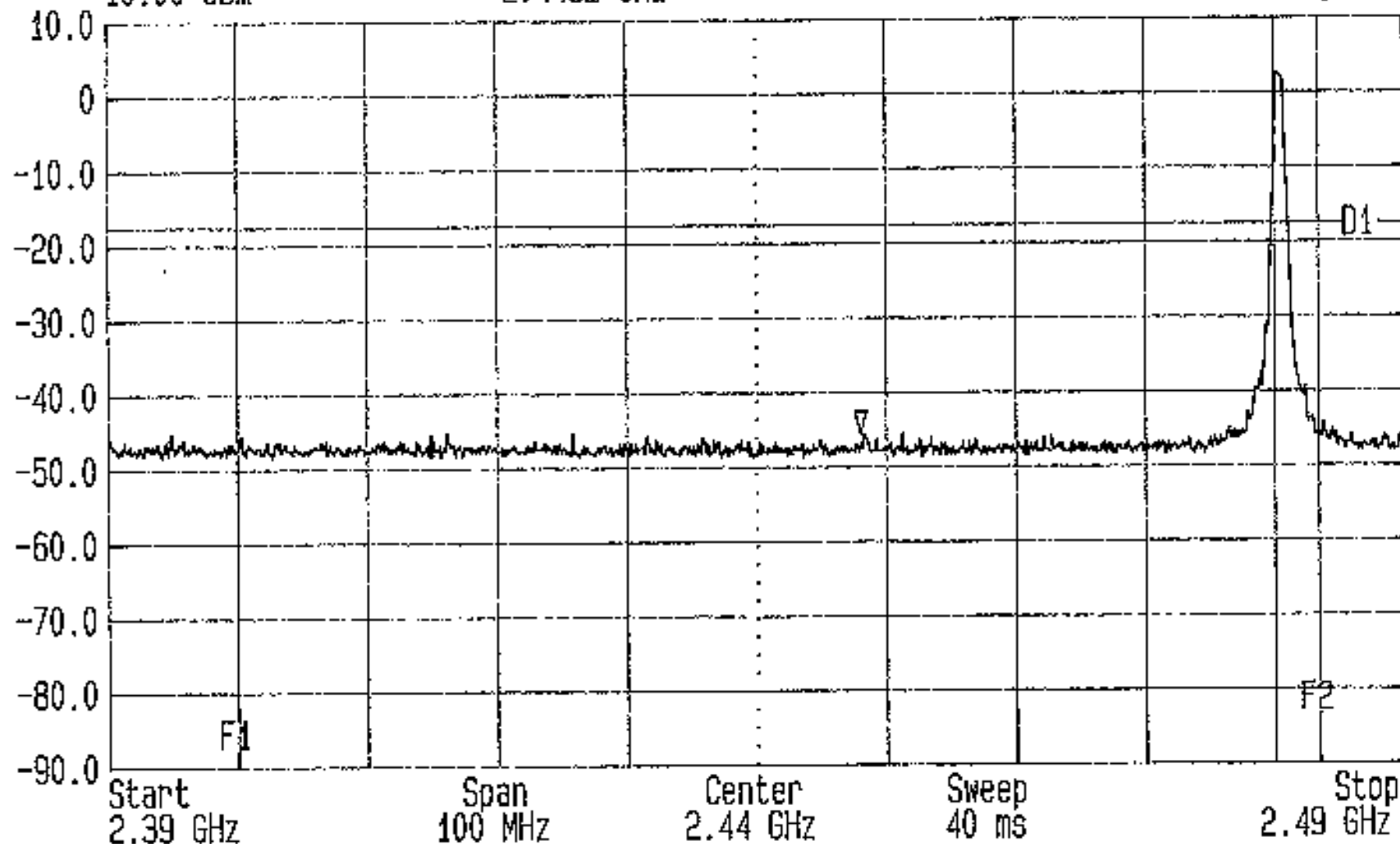


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Top Channel (External Antenna) ENG: NS GPH/42177/CE009



LVLOFF
Date 14.May.'01 Time 16:40:26
Ref.Lvl 10.00 dBm
Marker -45.43 dBm
2.4482 GHz

Res.Bw 100.0 kHz [3dB]
TG.Lvl off
CF.Stp 10.000 MHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]

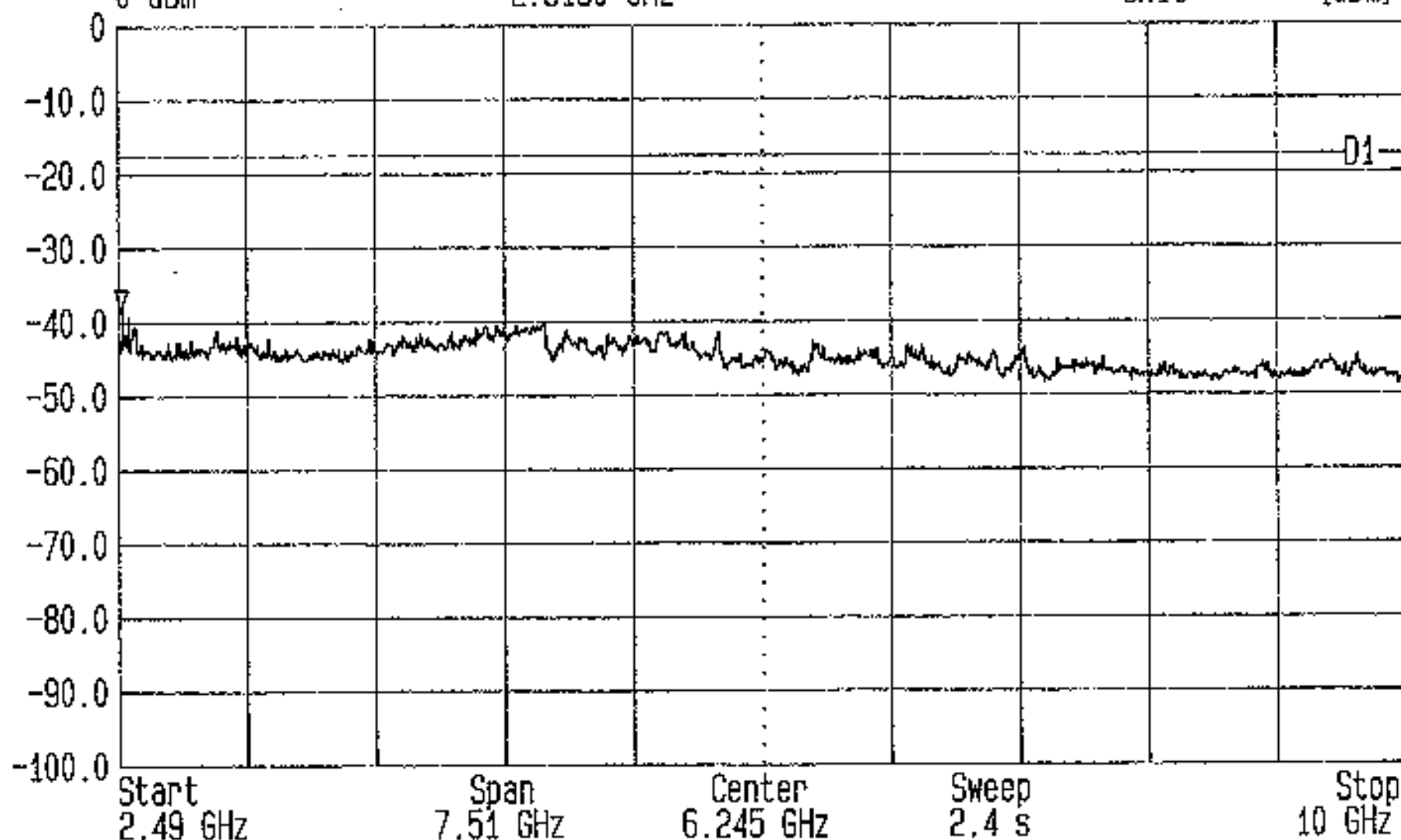


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Top Channel (External Antenna) ENG: NS GPH/42177/CE010



LVLOFF
Date 14.May.'01 Time 16:46:45
Ref.Lvl 0 dBm
Marker -38.34 dBm
2.5150 GHz

Res.Bw 100.0 kHz [3dB]
T6.Lvl off
CF.Stp 751.000 MHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]

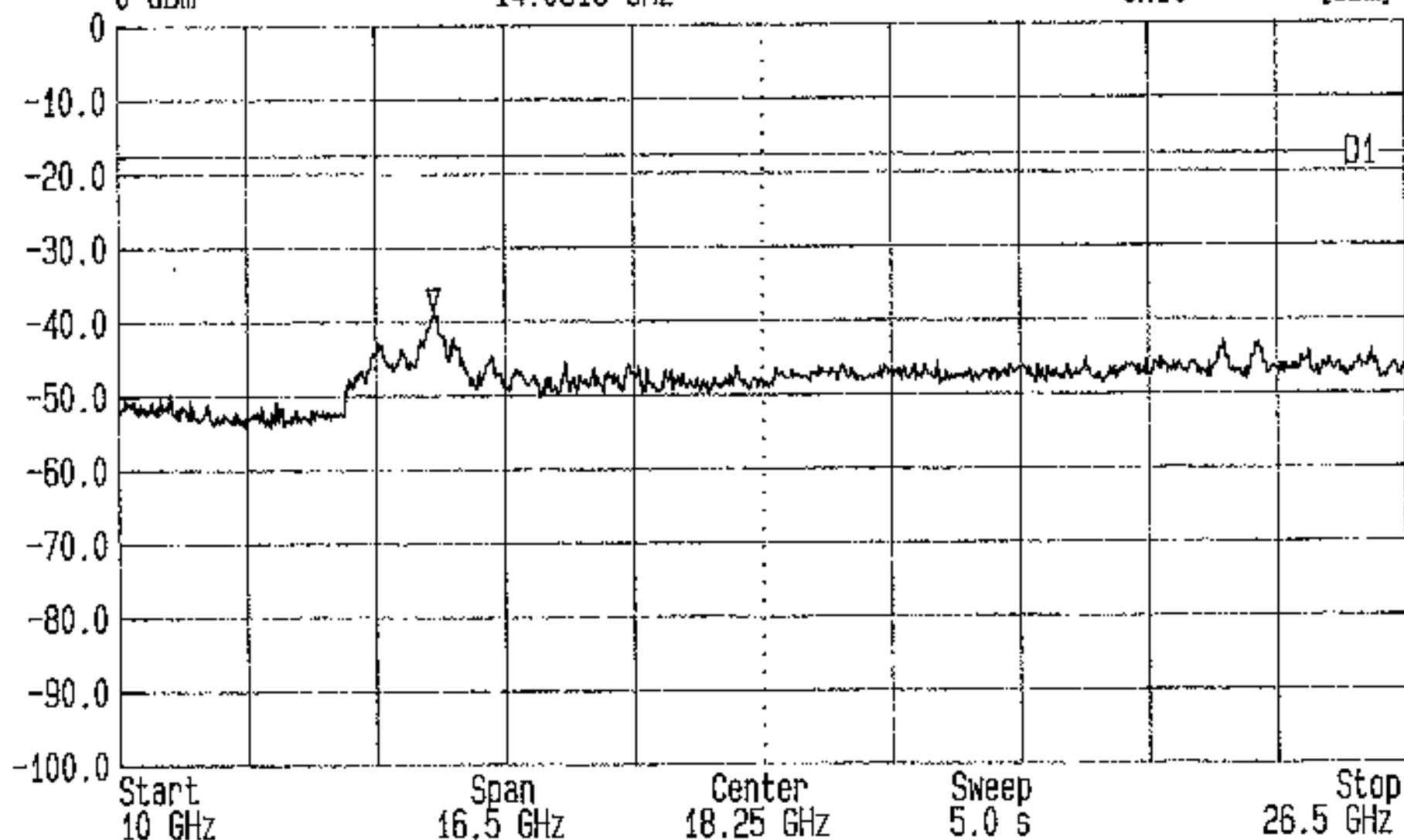


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Top Channel (External Antenna) ENG: NS GPH/42177/CE011



LVLOFF
Date 14.May.'01 Time 16:50:07
Ref.Lvl 0 dBm
Marker -38.57 dBm
14.0516 GHz

Res.Bw 100.0 kHz [3dB]
TG.Lvl off
CF.Stp 1.650 GHz
Vid.Bw 100 kHz
RF.Att 10 dB
Unit [dBm]

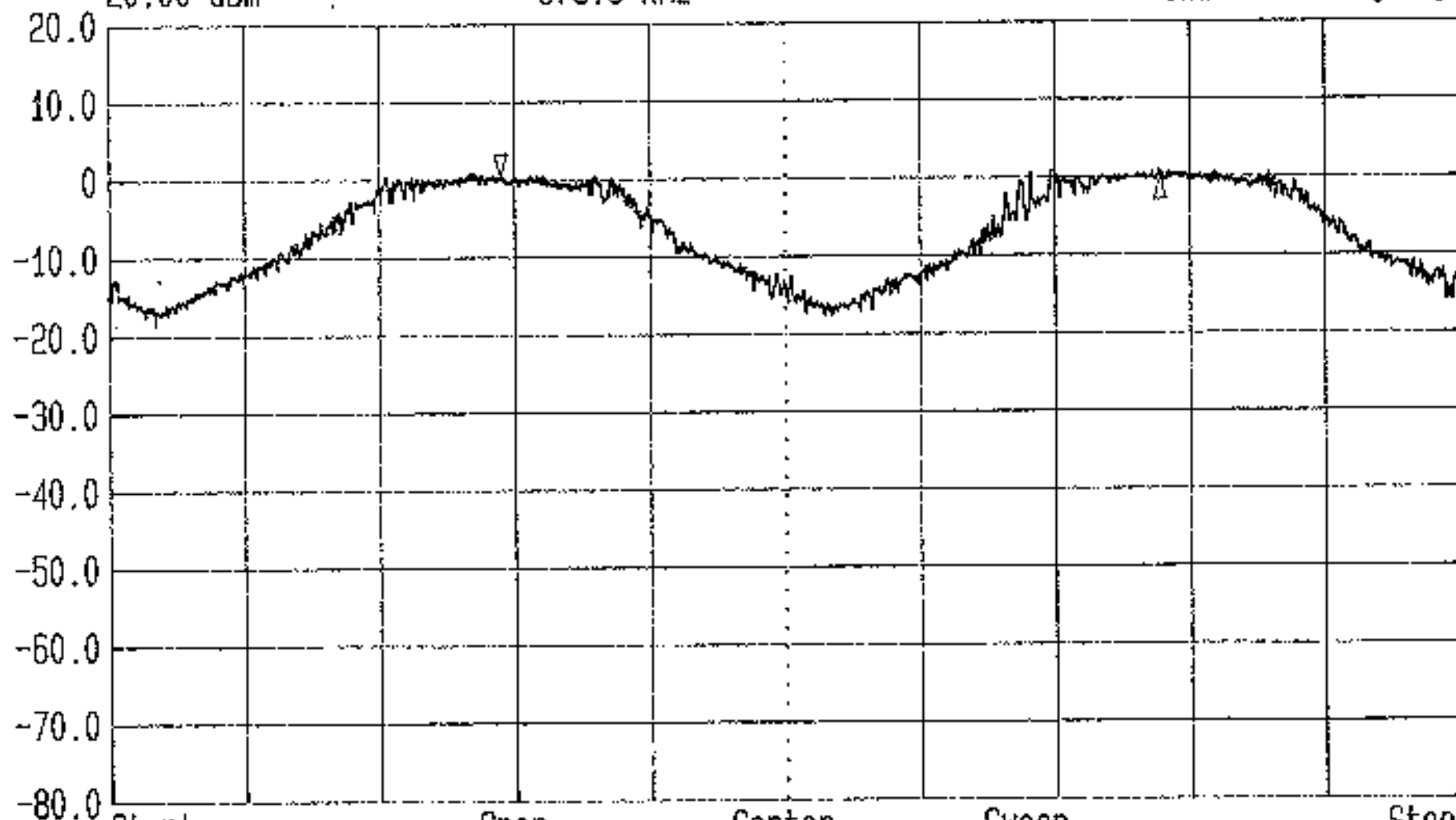


Conducted Emissions FCC Part 15.247 (c) Tested For Red-M By RFI Ltd.
EUT: 3000AS Op Cond: Top Channel (External Antenna) ENG: NS GPH/42177/CE012



LVLOFF
Date 14.May.'01 Time 10:37:45
Ref.Lvl Delta 0.25 dB
20.00 dBm 975.5 kHz

Res.Bw 80.0 kHz [3dB]
TG.Lvl off
CF.Stp 200.000 kHz
Vid.Bw 100 kHz
RF.Att 20 dB
Unit [dBm]



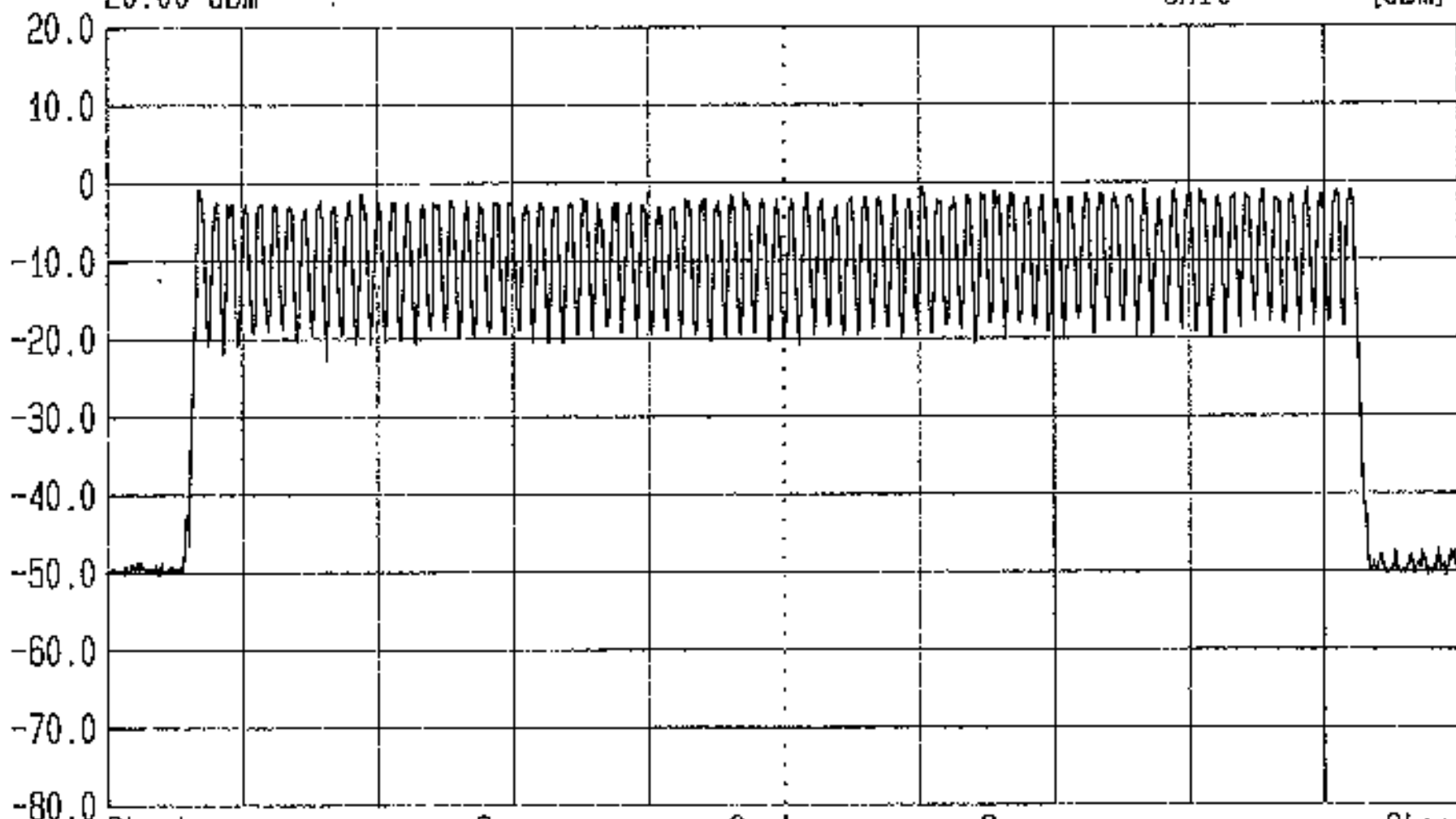
Start 2.443427147 GHz Span 2 MHz Center 2.444427147 GHz Sweep 20 ms Stop 2.445427147 GHz

Carrier Frequency Separation FCC Part 15.247 (a) (1) Tested For Red-M By RFI Ltd
EUT: 3000AS Op Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/001



LVLOFF
Date 14.May.'01 Time 10:46:33
Ref.Lvl
20.00 dBm

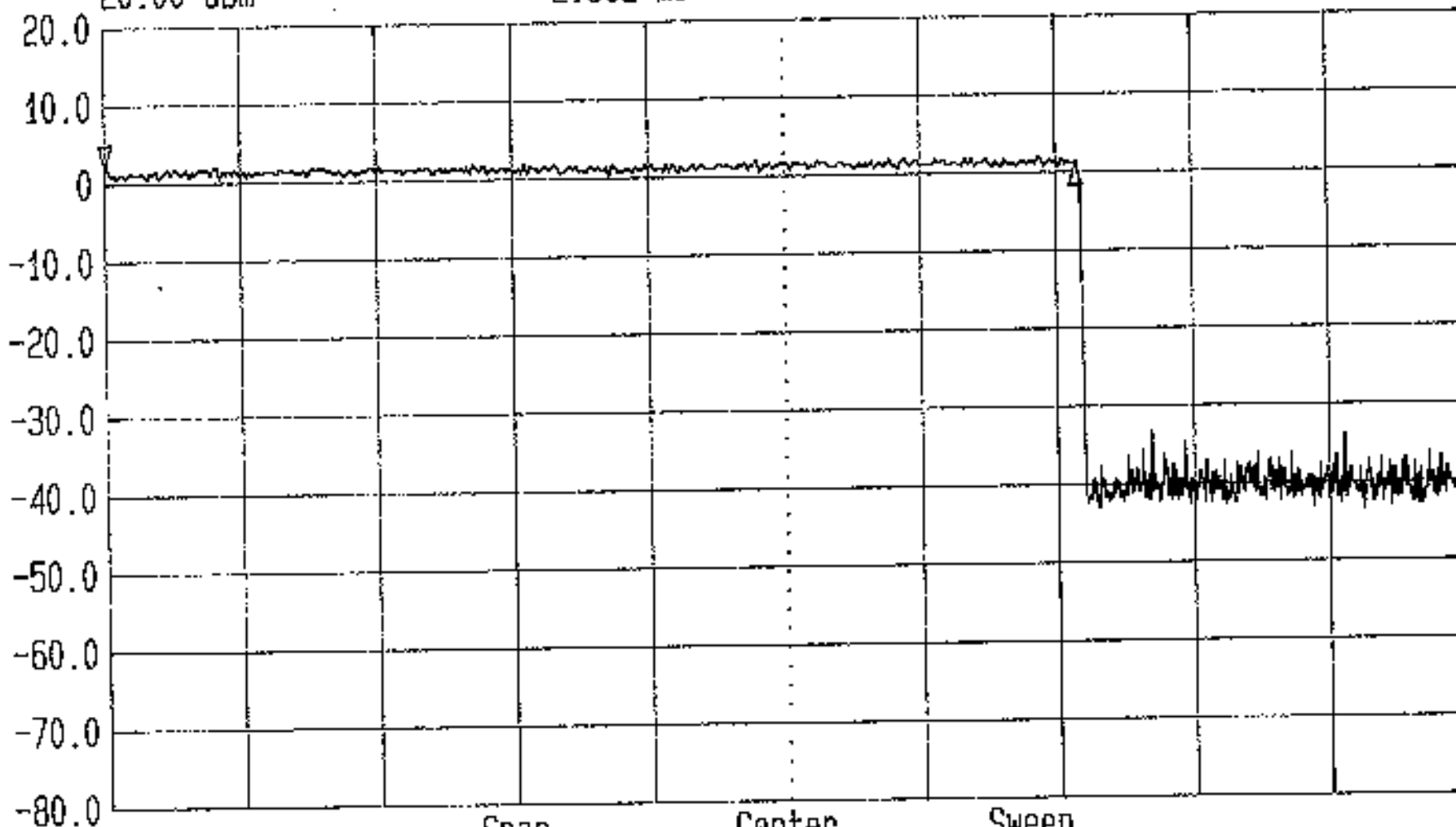
Res.Bw 30.0 kHz [3dB]
TG.Lvl off
CF.Stp 9.179 MHz
Vid.Bw 30 kHz
AF.Att 20 dB
Unit [dBm]



Start 2.39570 GHz Span 91.79 MHz Center 2.44160 GHz Sweep 320 ms Stop 2.4875 GHz
Number Of Hopping Frequencies Part 15.247 (a) (1) (11) Tested For Red-M By RFI Ltd
FUT-3000AS On Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/002



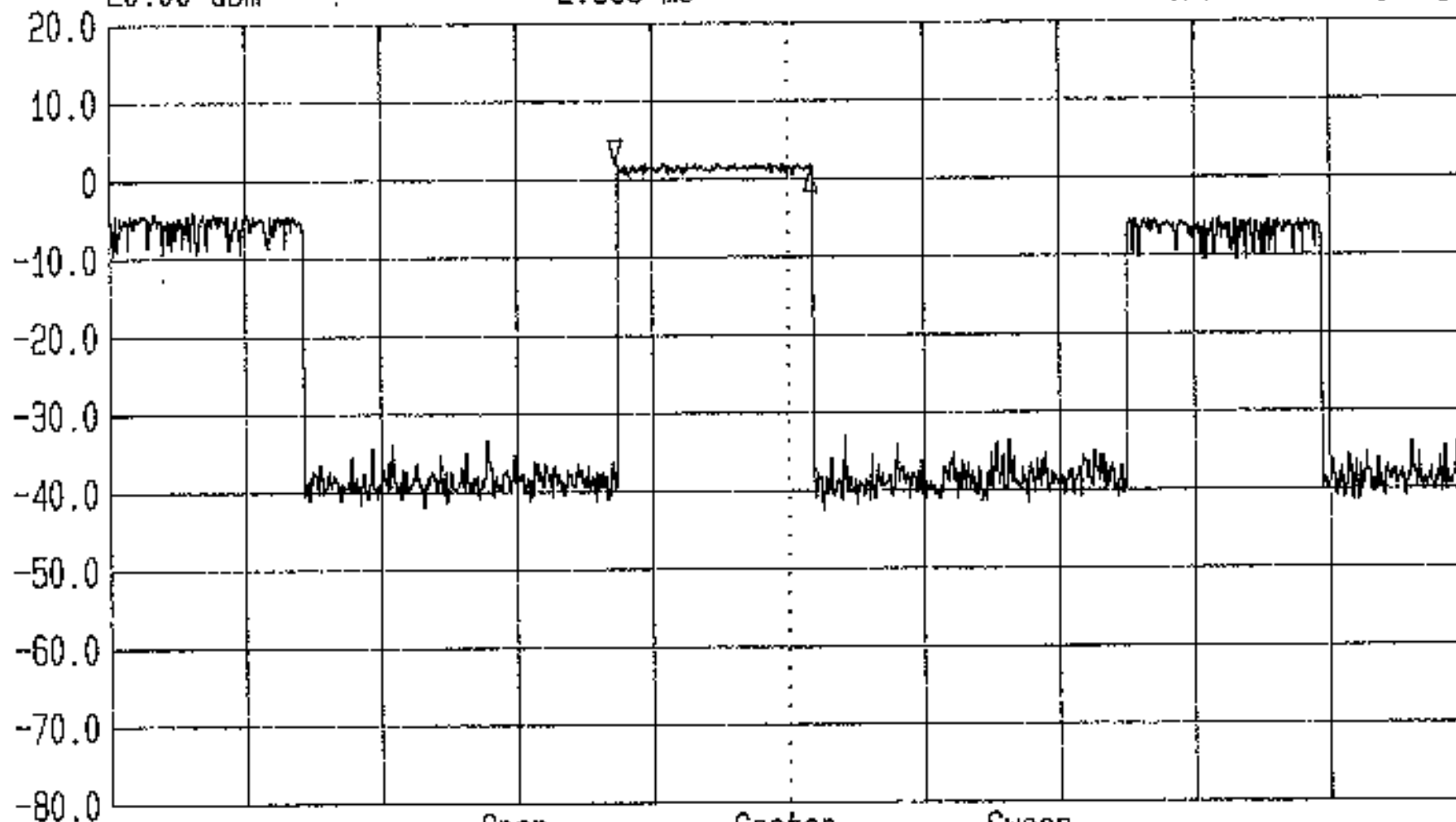
LVLOFF TRG Res.Bw 1.0 MHz [3dB] Vid.Bw 1 MHz
Date 14.May.'01 Time 11:07:44 TG.Lvl off
Ref.Lvl Delta -0.46 dB CF.Stp 100.000 kHz RF.Att 20 dB
20.00 dBm 2.862 ms Unit [dBm]



Time Of Occupancy (Dwell Time) Part 15.247 (a) (1) (11) Tested For Red-M By RFI Ltd
EUT: 3000AS Op Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/003



LVLOFF TRG Res.Bw 1.0 MHz [3dB] Vid.Bw 1 MHz
Date 14.May.'01 Time 11:11:08 TG.Lvl off
Ref.Lvl Delta -0.46 dB CF.Stp 100.000 kHz RF.Att 20 dB
20.00 dBm 2.866 ms Unit [dBm]

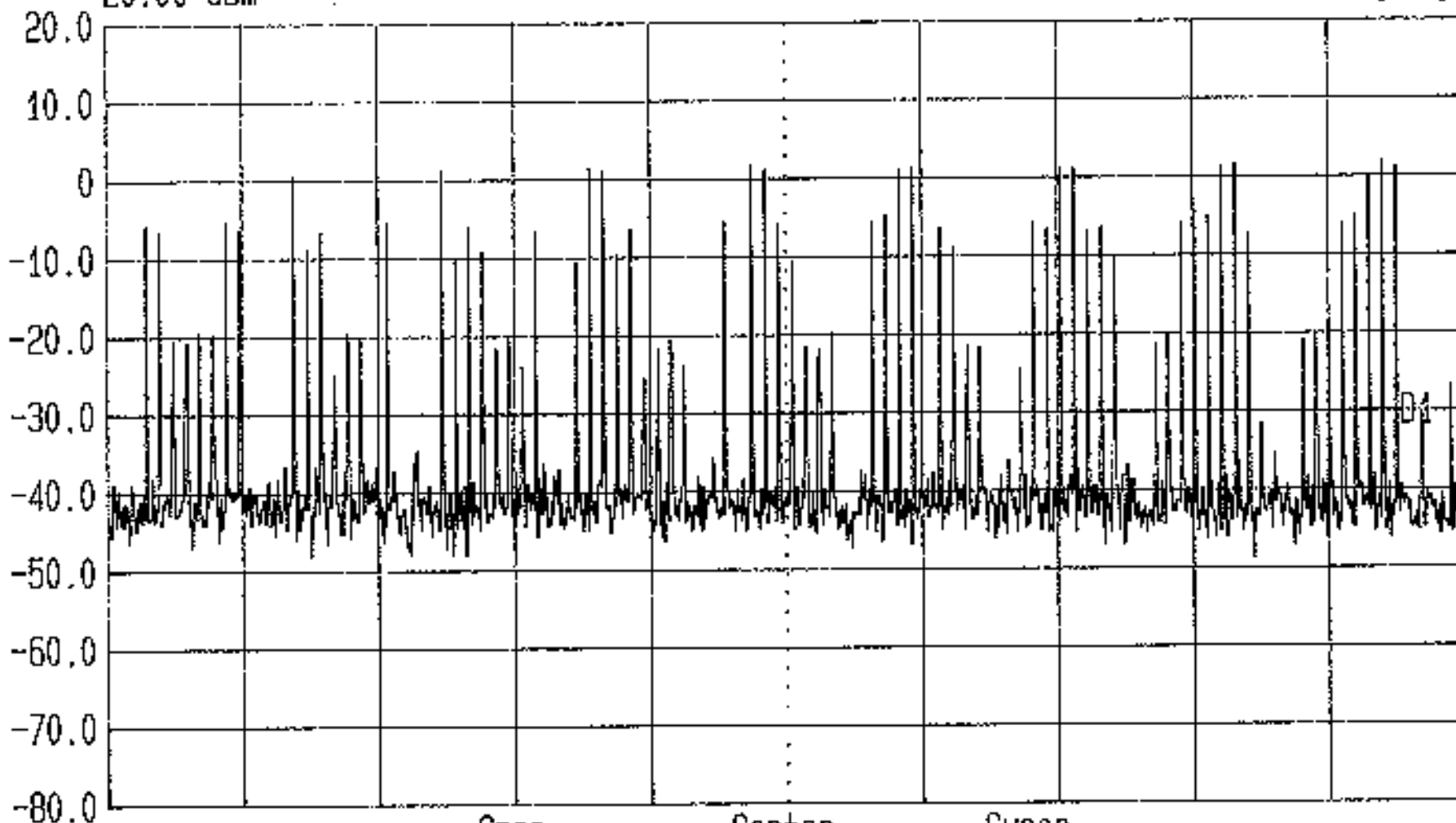


Time Of Occupancy (Dwell Time) Part 15.247 (a) (1) (11) Tested For Red-M By RFI Ltd
EUT: 3000AS On Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/004



LVLOFF TRG
Date 14.May.'01 Time 11:45:52
Ref.Lvl
20.00 dBm

Res.Bw 1.0 MHz [3dB] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 100.000 kHz RF.Att 20 dB
Unit [dBm]



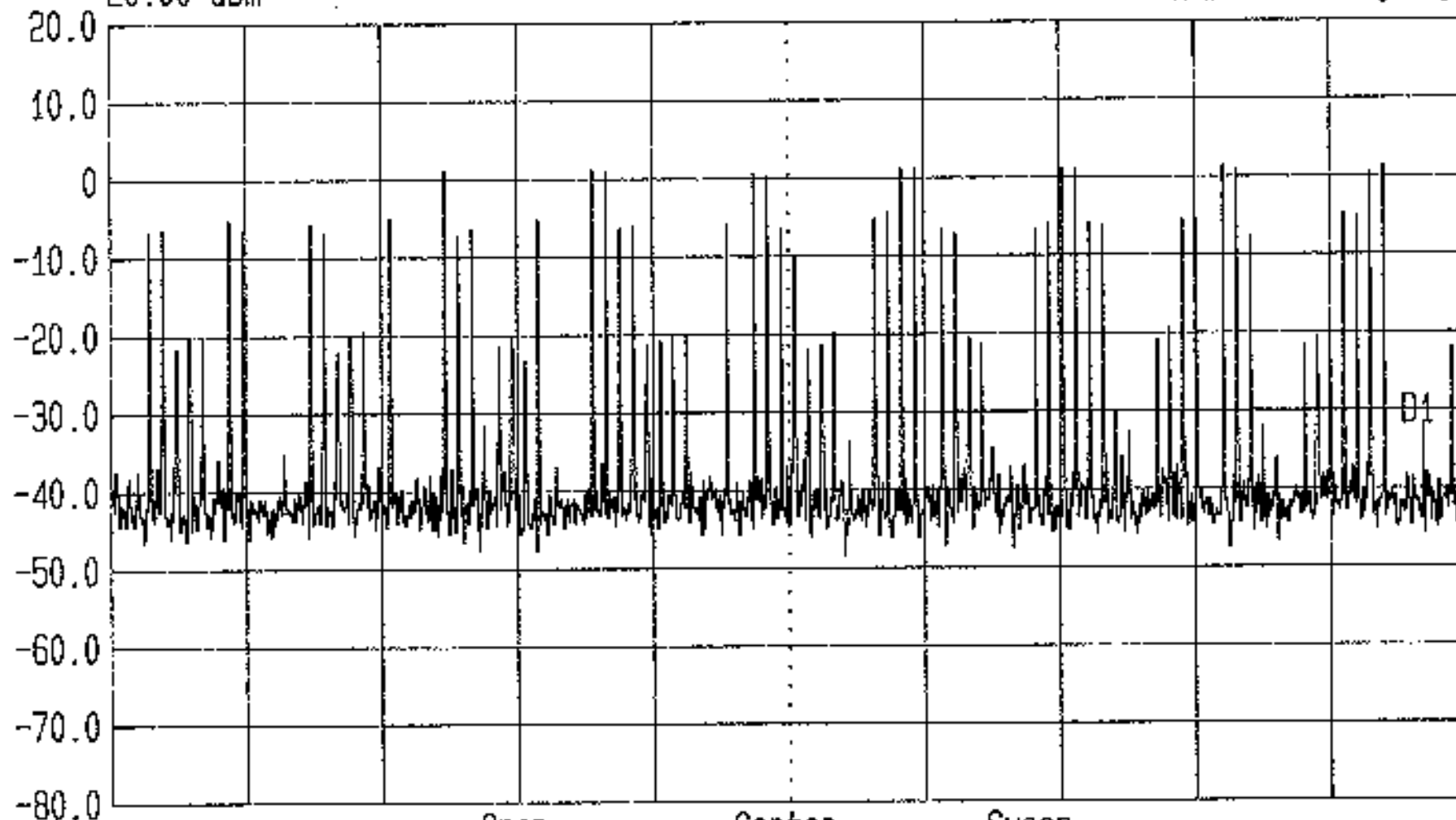
Span 0 Hz Center 2.441996066 GHz Sweep 30 s

Time Of Occupancy (Dwell Time) Part 15.247 (a) (1) (11) Tested For Red-M By RFI Ltd
EUT:3000AS Op Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/005



LVLOFF TRG
Date 14.May.'01 Time 11:50:58
Ref.Lvl
20.00 dBm

Res.Bw 1.0 MHz [3dB] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 100.000 kHz RF.Att 20 dB
Unit [dBm]



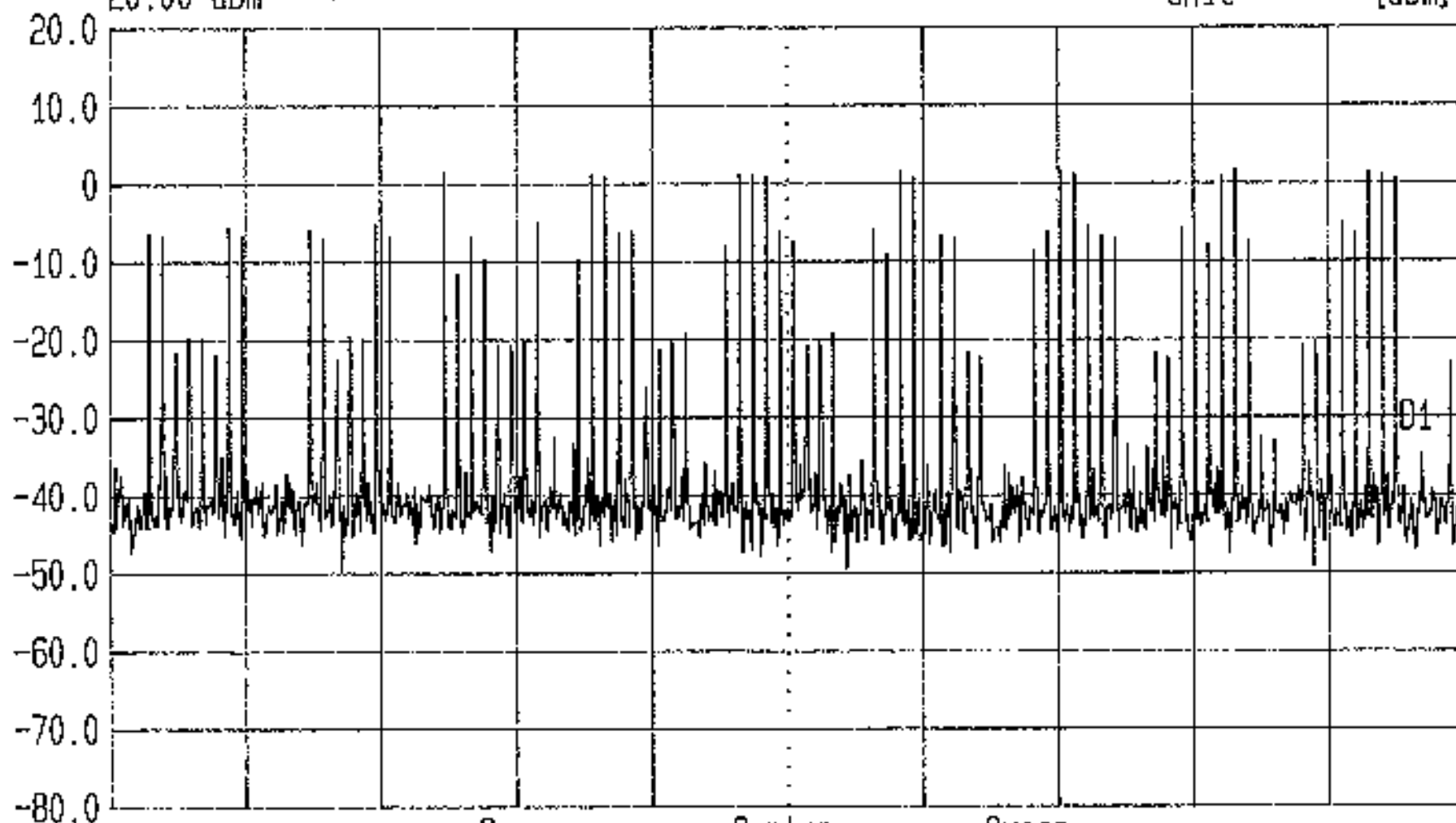
Span 0 Hz Center 2.441996066 GHz Sweep 30 s

Time Of Occupancy (Dwell Time) Part 15.247 (a) (1) (11) Tested For Red-M By RFI Ltd
EUT:3000AS Op Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/006



LVLOFF TRG
Date 14.May.'01 Time 11:56:18
Ref.Lvl
20.00 dBm

Res.Bw 1.0 MHz [3dB]
TG.Lvl off
CF.Stp 100.000 kHz
Vid.Bw 1 MHz
RF.Att 20 dB
Unit [dBm]

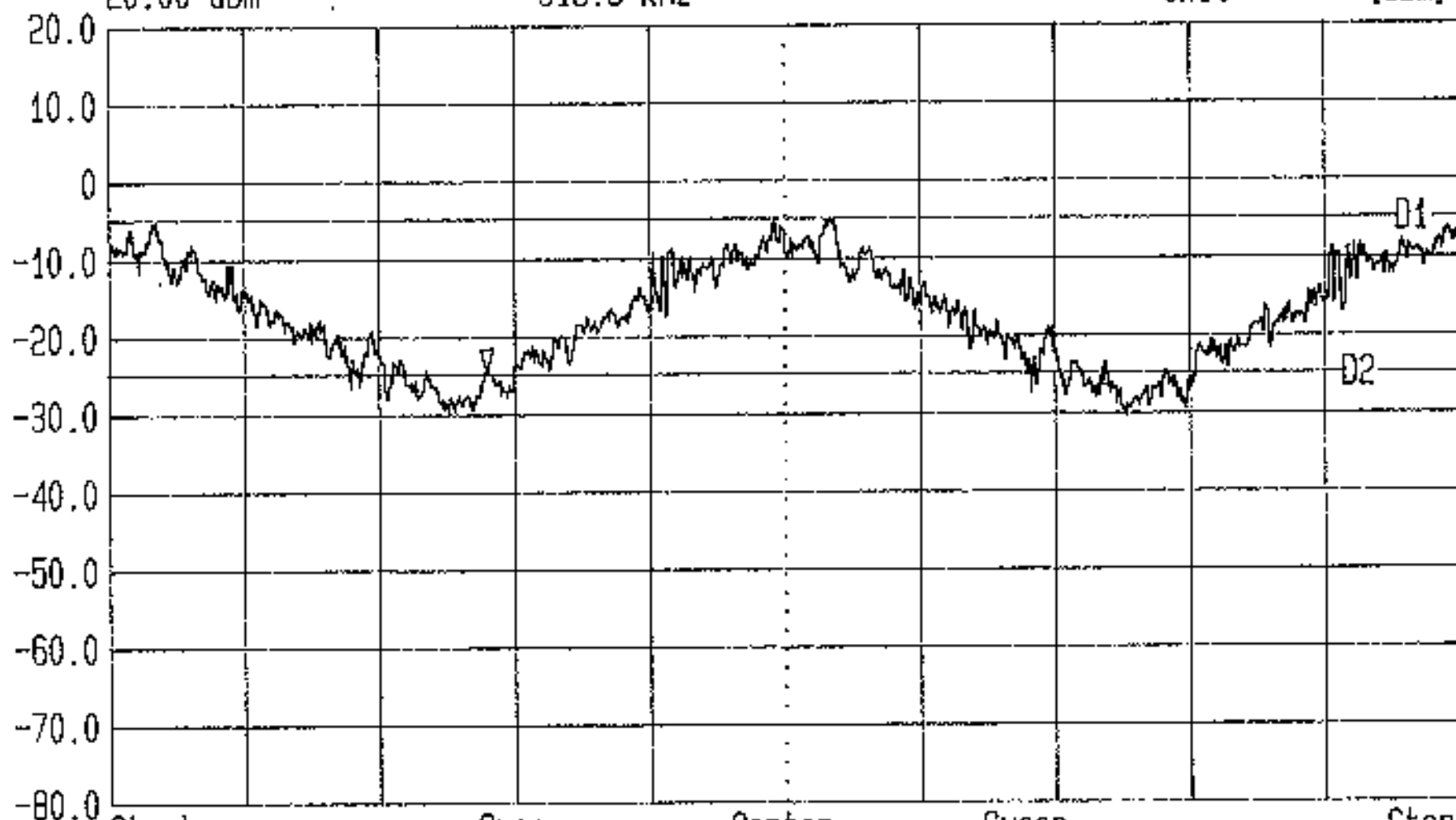


Time Of Occupancy (Dwell Time) Part 15.247 (a) (1) (11) Tested For Red-M By RFI Ltd
EUT: 3000AS On Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/007



LVLOFF
Date 14.May.'01 Time 12:07:09
Ref.Lvl Delta 1.22 dB
20.00 dBm 915.5 kHz

Res.Bw 10.0 kHz [3dB]
TG.Lvl off
CF.Stp 200.000 kHz
Vid.Bw 10 kHz
RF.Att 20 dB
Unit [dBm]



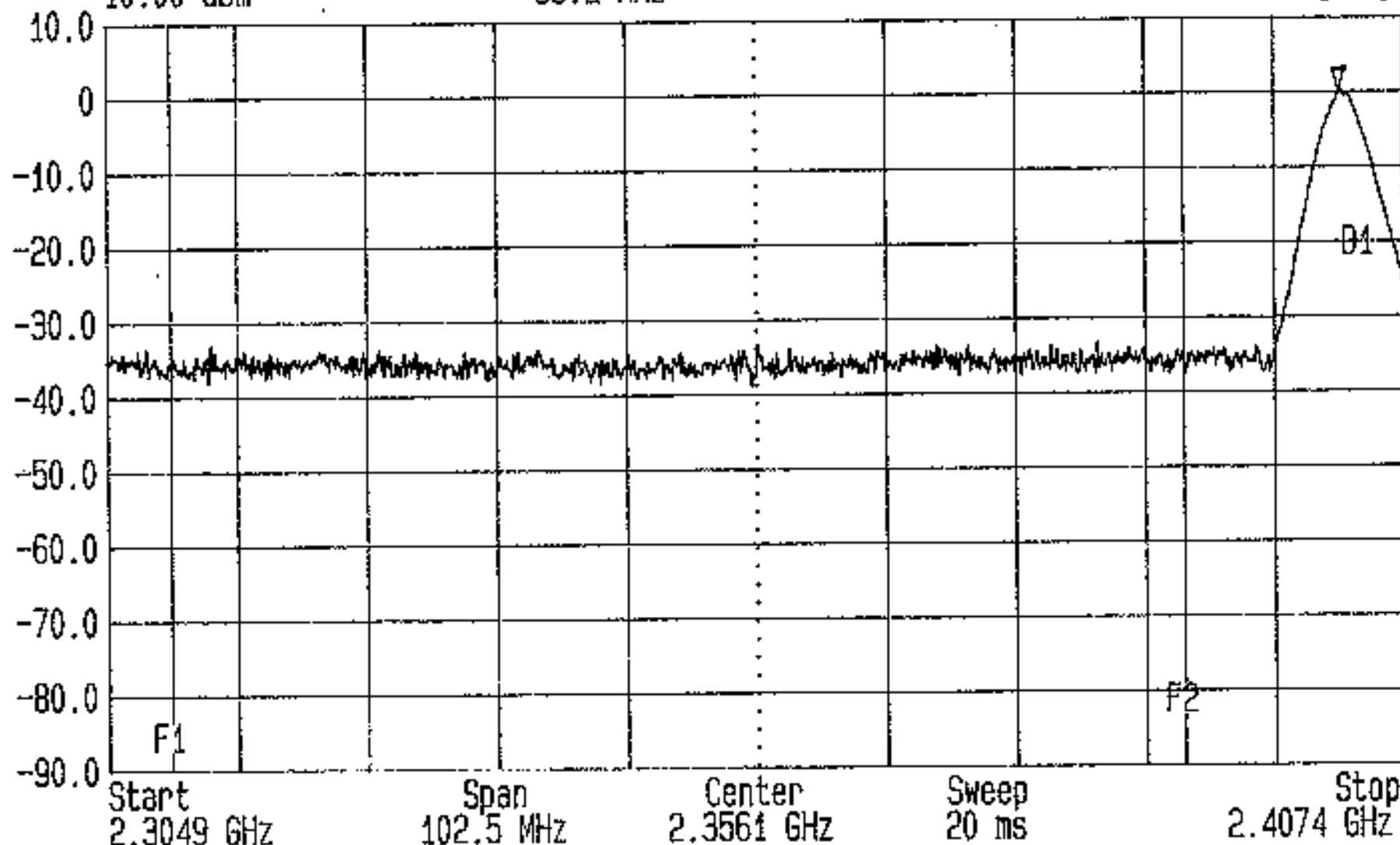
Start 2.440996066 GHz Span 2 MHz Center 2.441996066 GHz Sweep 60 ms Stop 2.442996066 GHz

20dB Bandwidth FCC Part 15.247 (a) (1) (11) Tested For Red-M By RFI Ltd
EUT:3000AS Op Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/008



LVLOFF
Date 08.Jun.'01 Time 13:16:45
Ref.Lvl 10.00 dBm
Delta -33.11 dB
-89.2 MHz

Res.Bw 2.0 MHz [3dB]
T6.Lvl off
CF.Stp 10.250 MHz
Vid.Bw 3 MHz
RF.Att 5 dB
Unit [dBm]

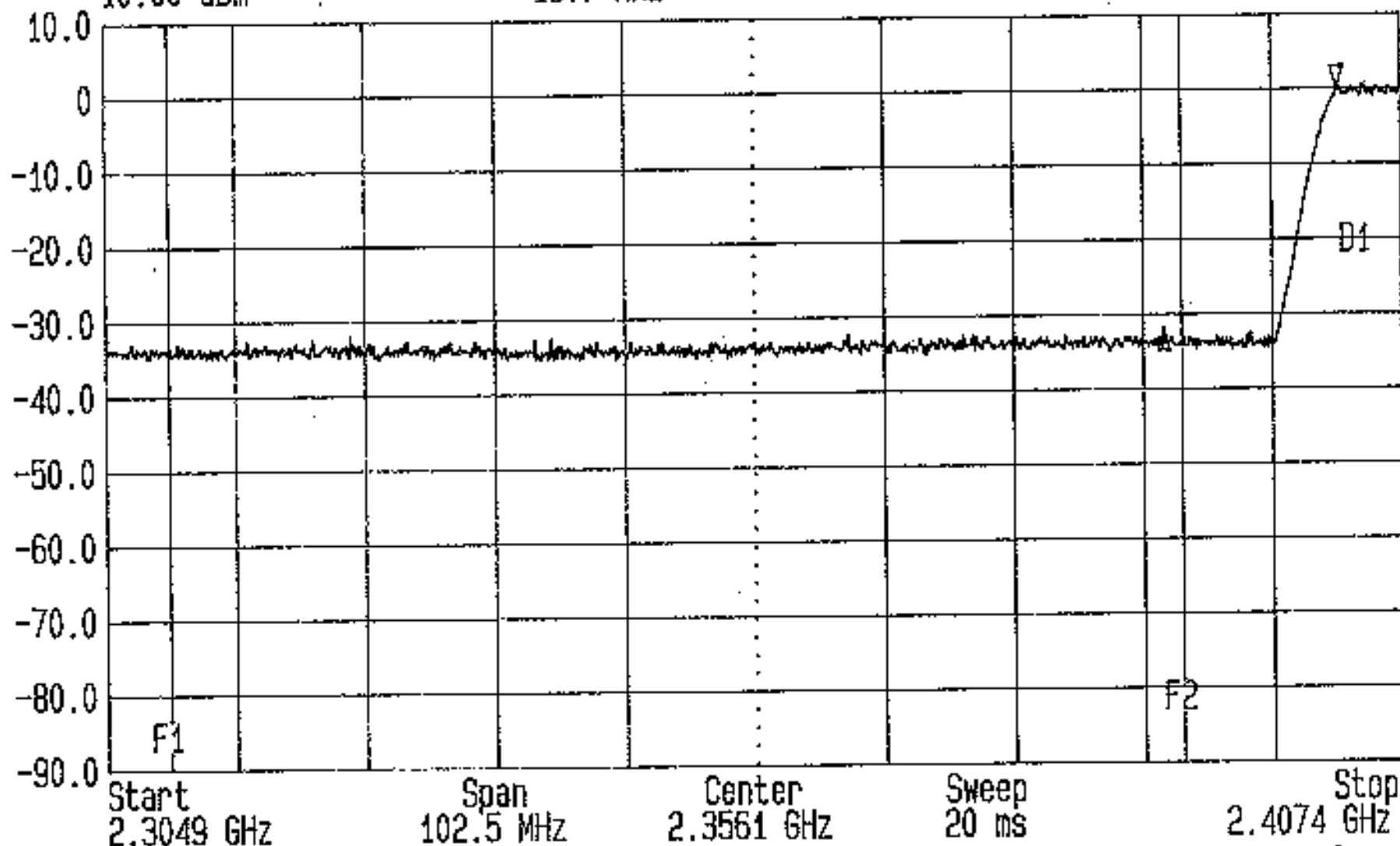


Band Edge Compliance. FCC Part 15.247 (c) Tested for Red-M by RFI Ltd. EUT 3000AS
Op Cond: Bottom Channel (Integral Antenna) ENG: NS GPH/42177/BE01



LVLOFF
Date 08.Jun.'01 Time 13:22:55
Ref.Lvl Delta -31.69 dB
10.00 dBm -13.7 MHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 10.250 MHz
Vid.Bw 3 MHz
RF.Att 5 dB
Unit [dBm]

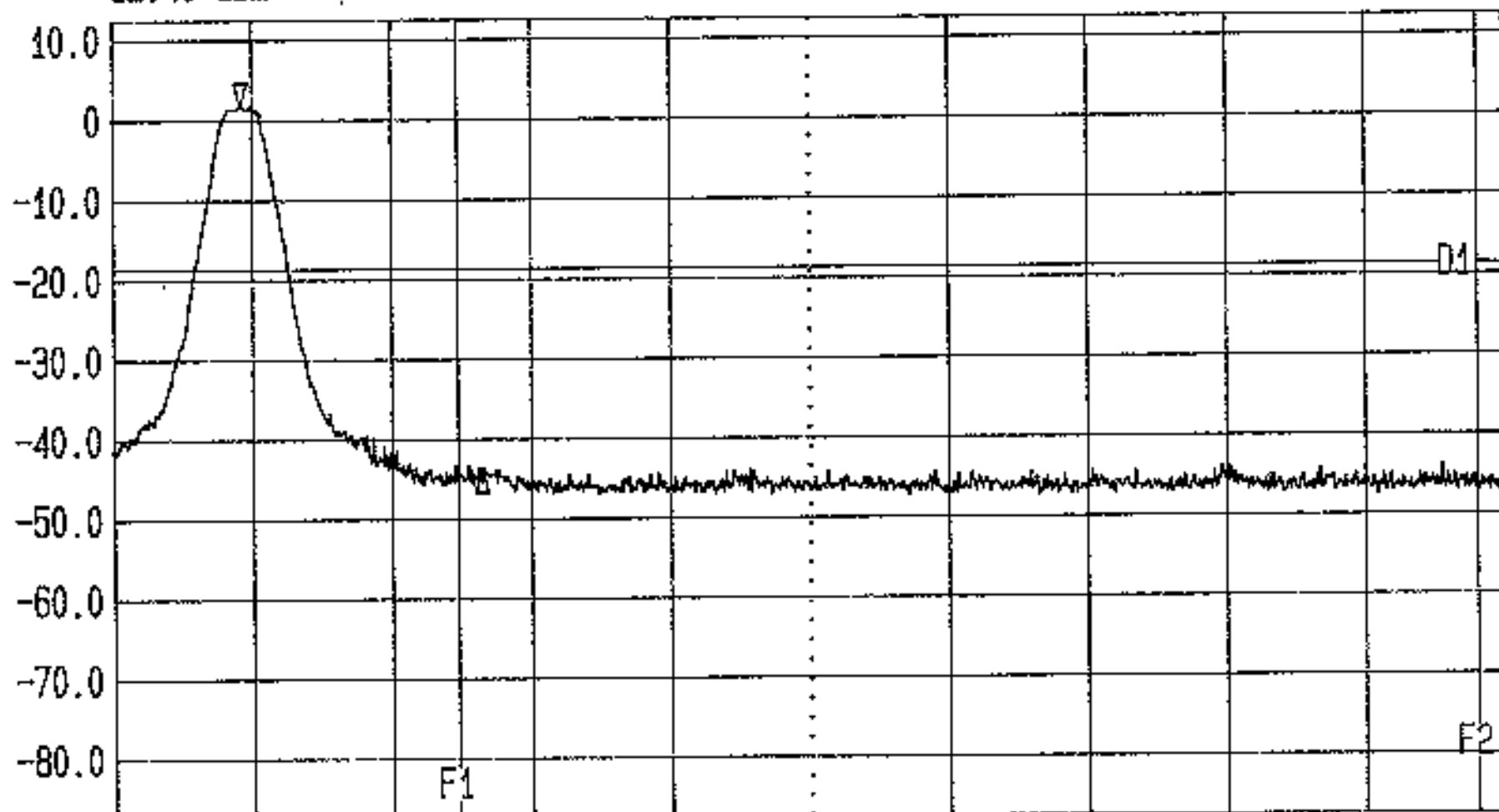


Band Edge Compliance, FCC Part 15.247 (c) Tested for Red-M by RFI Ltd. EUT 3000AS
Op Cond: Hopping All Channels (Integral Antenna) ENG: NS GPH/42177/BE02



LVLOFF
Date 08.Jun.'01 Time 13:30:43
Ref.Lvl Delta -45.38 dB
12.40 dBm 3.87 MHz

Res.Bw 300.0 kHz [3dB] Vid.Bw 300 kHz
TG.Lvl off
CF.Stp 2.251 MHz RF.Att 5 dB
Unit [dBm]



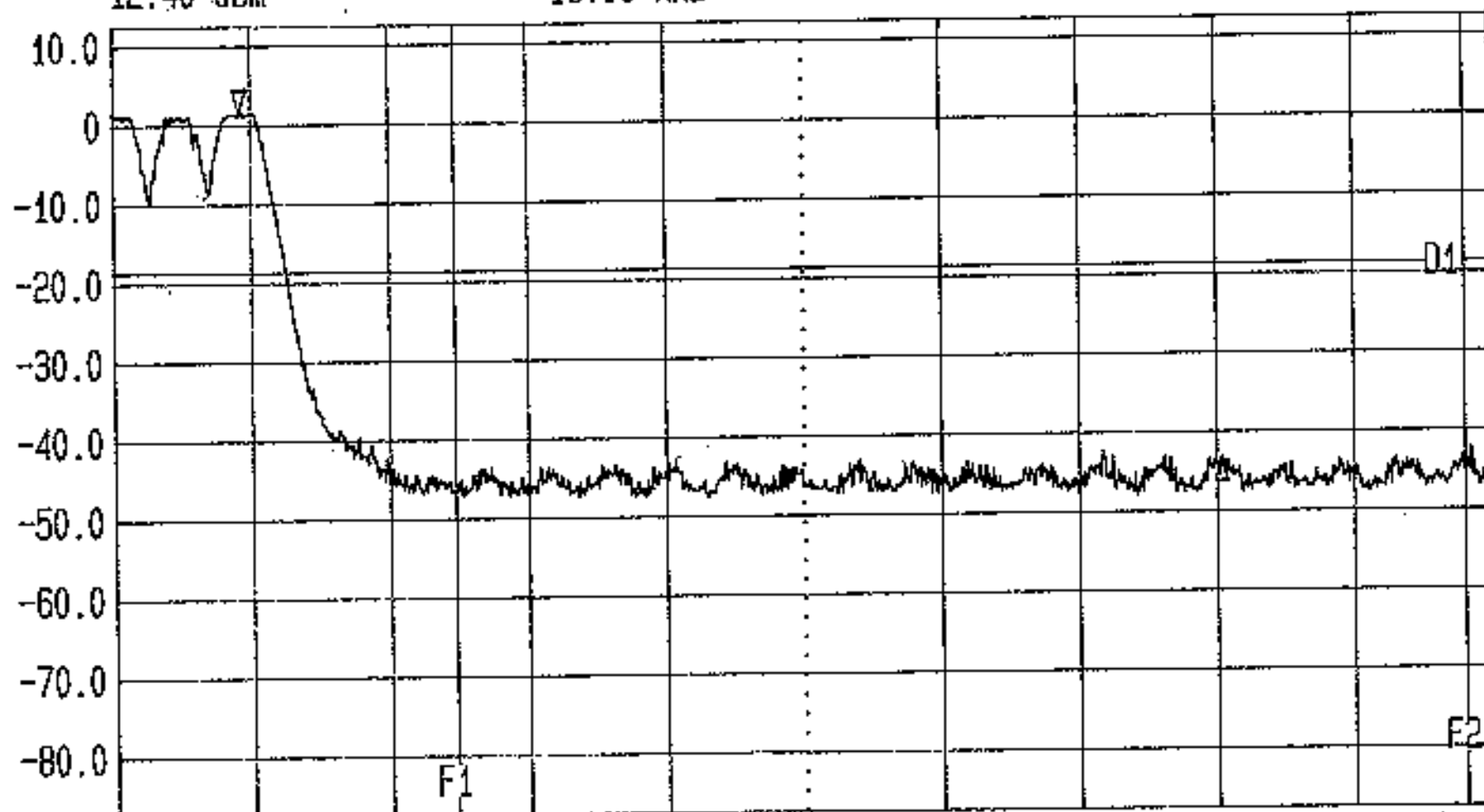
Start 2.4779 GHz Span 22.51 MHz Center 2.48915 GHz Sweep 20 ms Stop 2.50041 GHz

Band Edge Compliance, FCC Part 15.247 (c) Tested for Red-M by RFI Ltd. EUT 3000AS
Op Cond: Top Channel (Integral Antenna) ENG: NS GPH/42177/BE03



LVLOFF
Date 08.Jun.'01 Time 13:34:41
Ref.Lvl 12.40 dBm
Delta -44.33 dB
16.00 MHz

Res.Bw 300.0 kHz [3dB]
T6.Lvl off
CF.Stp 2.251 MHz
Vid.Bw 300 kHz
RF.Att 5 dB
Unit [dBm]

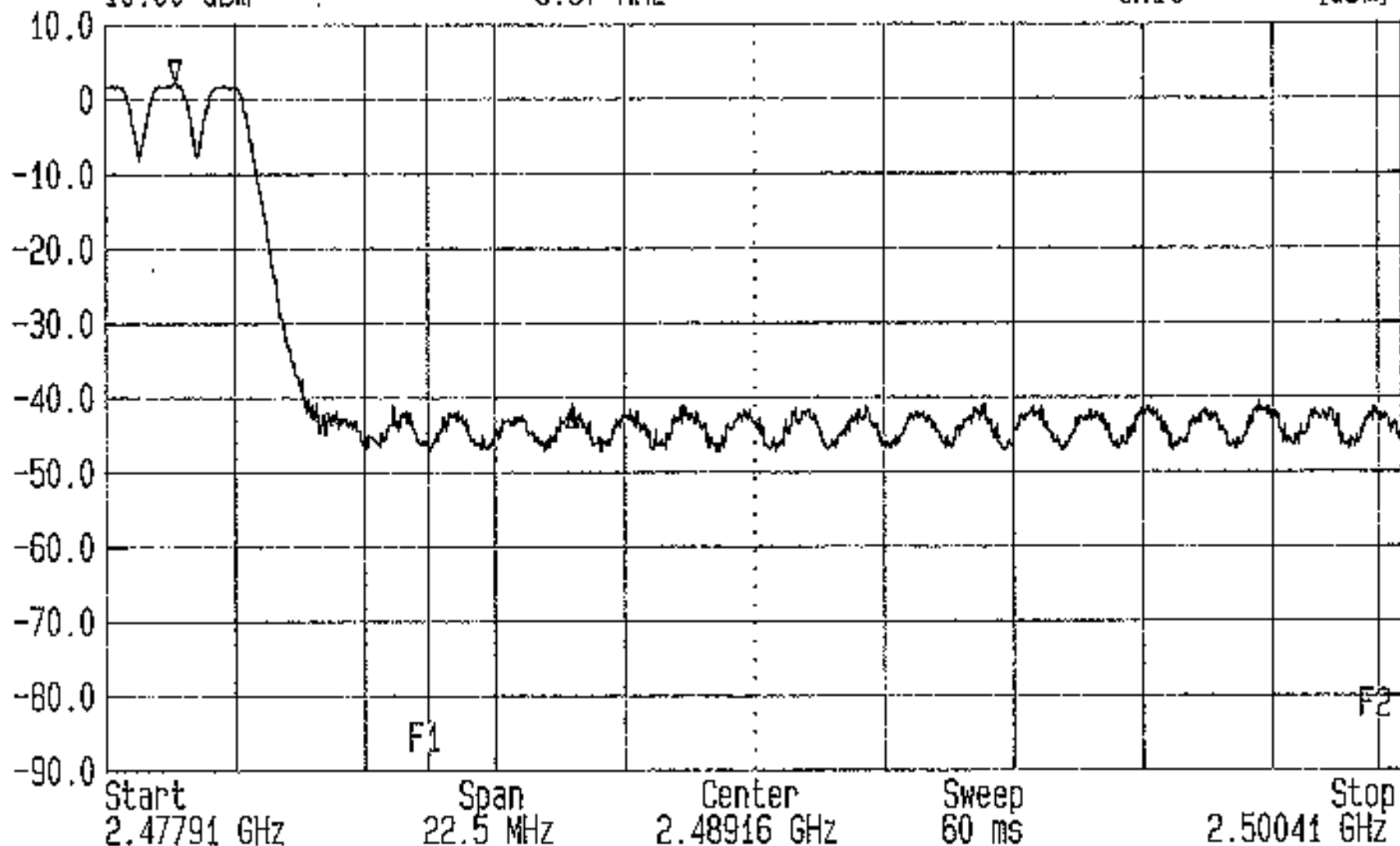


Start 2.4779 GHz Span 22.51 MHz Center 2.48915 GHz Sweep 20 ms Stop 2.50041 GHz
Band Edge Compliance. FCC Part 15.247 (c) Tested for Red-M by RFI Ltd. EUT 3000AS
Op Cond: Hopping All Channels (Integral Antenna) ENG: NS GPH/42177/BE04



LVLOFF
Date 14.May.'01 Time 13:22:16
Ref.Lvl Delta -43.17 dB
10.00 dBm 6.87 MHz

Res.Bw 300.0 kHz [3dB] Vid.Bw 300 kHz
TG.Lvl off
CF.Stp 2.250 MHz RF.Att 15 dB
Unit [dBm]

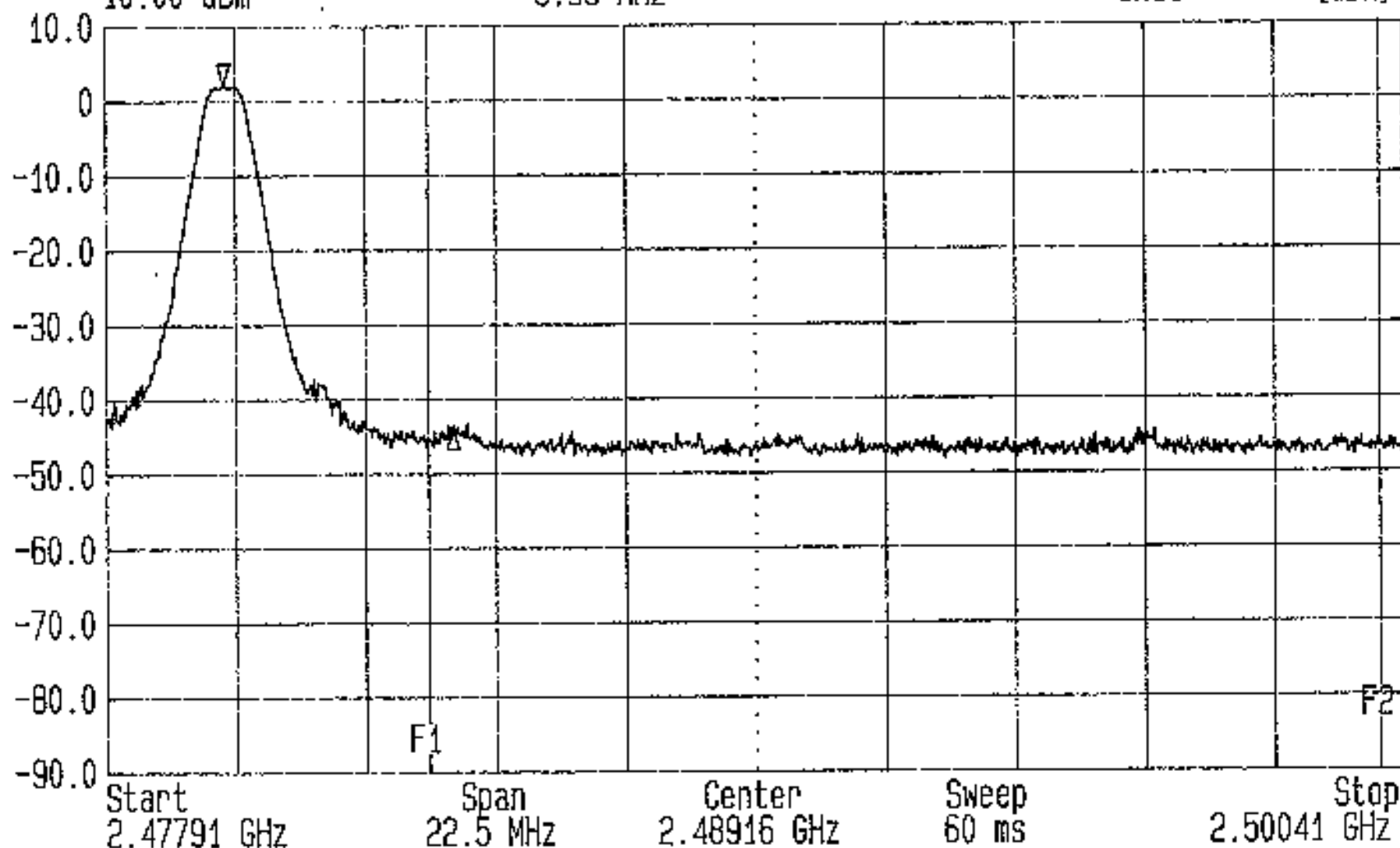


Band Edge Compliance. FCC Part 15.247 (c) Tested For Red-M By RFI Ltd
EUT: 3000AS Op Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/021



LVLOFF
Date 14.May.'01 Time 13:29:56
Ref.Lvl 10.00 dBm
Delta -45.48 dB
3.95 MHz

Res.Bw 300.0 kHz [3dB]
Vid.Bw 300 kHz
TG.Lvl off
CF.Stp 2.250 MHz
RF.Att 15 dB
Unit [dBm]

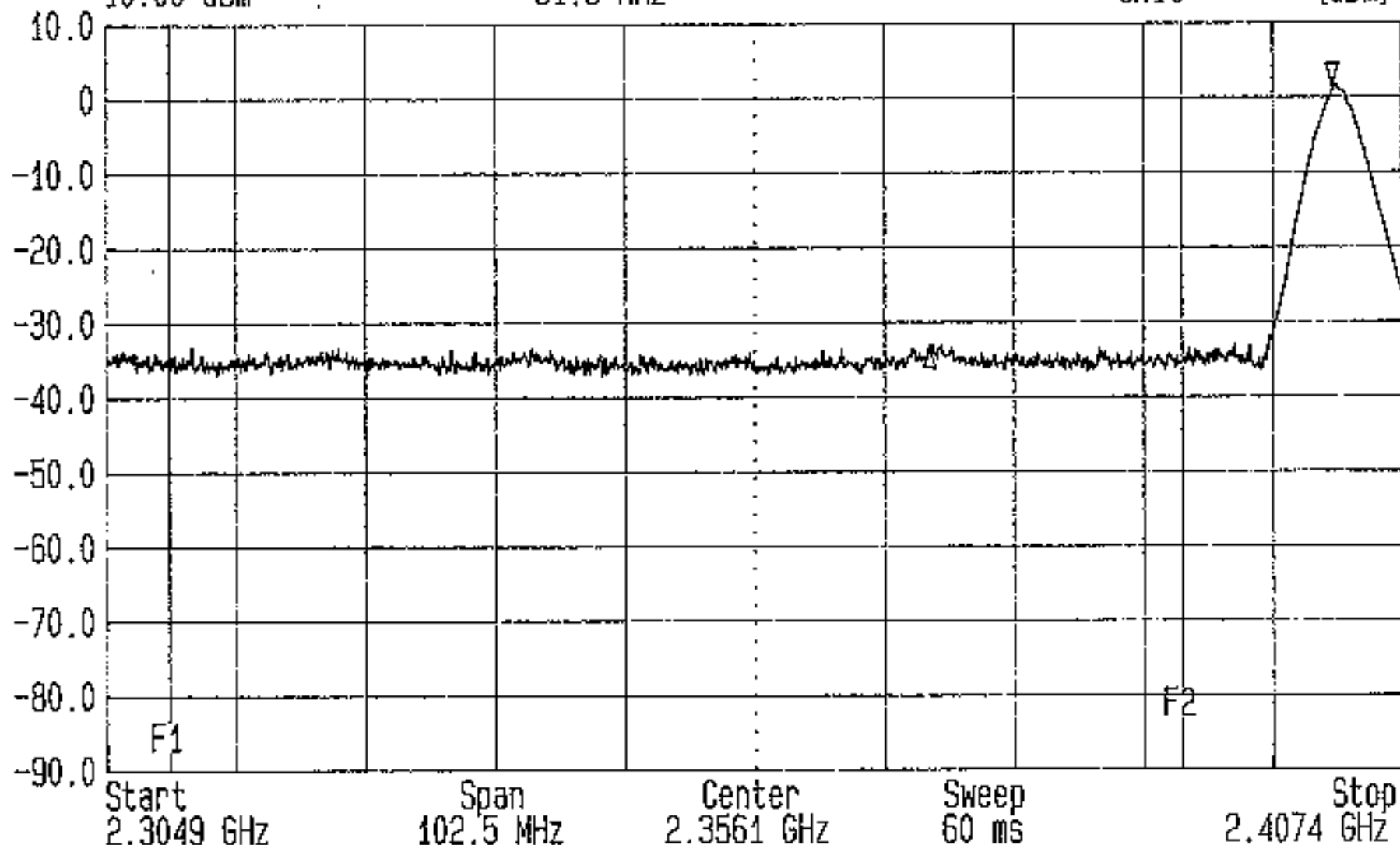


Band Edge Compliance. FCC Part 15.247 (c) Tested For Red-M By RFI Ltd
EUT: 3000AS Op Cond: Top Channel (External Antenna) ENG: NS GPH/42177/023



LVLOFF
Date 14.May.'01 Time 13:59:01
Ref.Lvl Delta -34.40 dB
10.00 dBm -31.8 MHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 10.250 MHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [dBm]

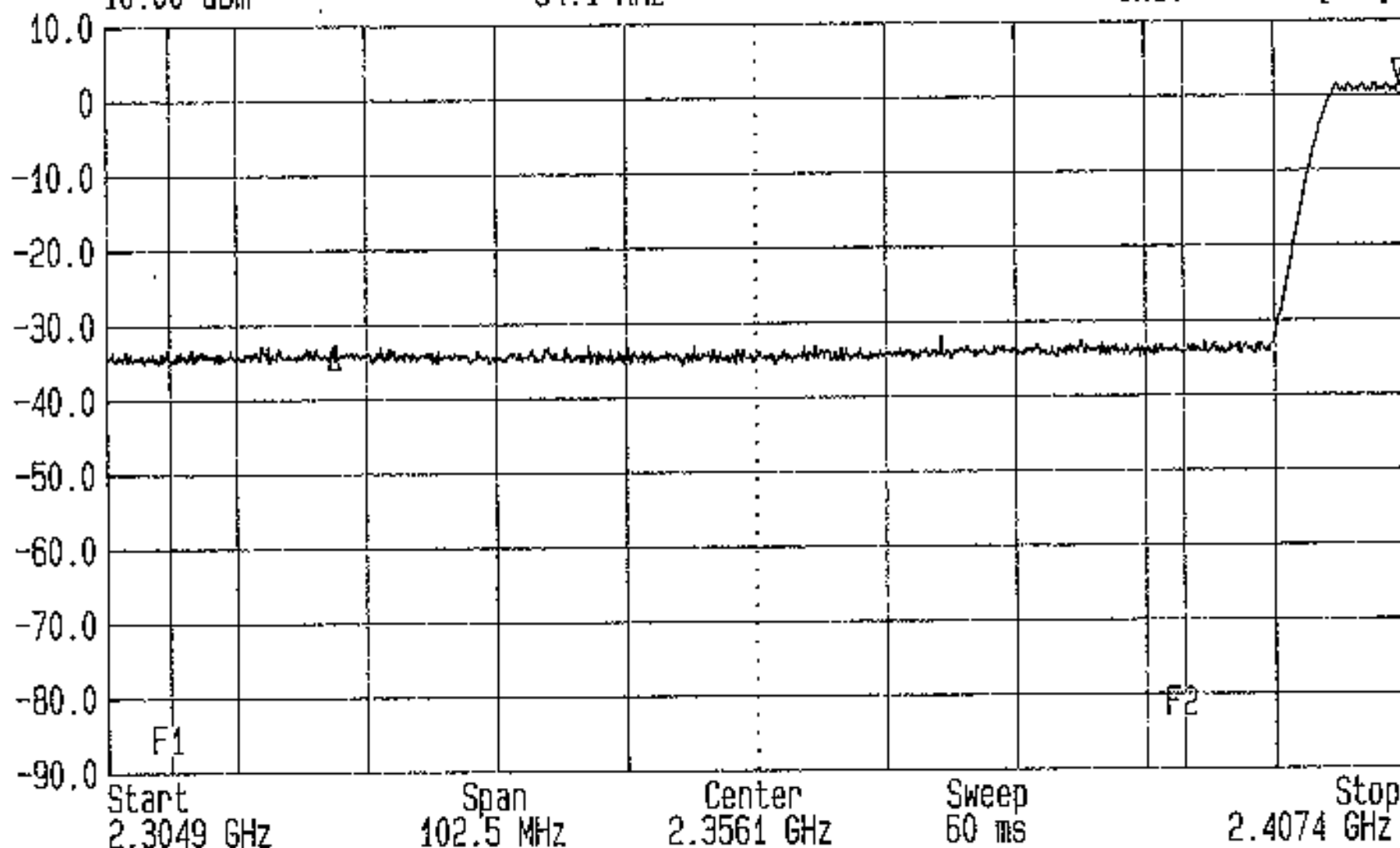


Band Edge Compliance, FCC Part 15.247 (c) Tested For Red-M By RFI Ltd
EUT: 3000AS Op Cond: Bottom Channel (External Antenna) ENG: NS GPH/42177/025



LVLOFF
Date 14.May.'01 Time 14:14:23
Ref.Lvl Delta -34.36 dB
10.00 dBm -84.1 MHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 10.250 MHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [dBm]

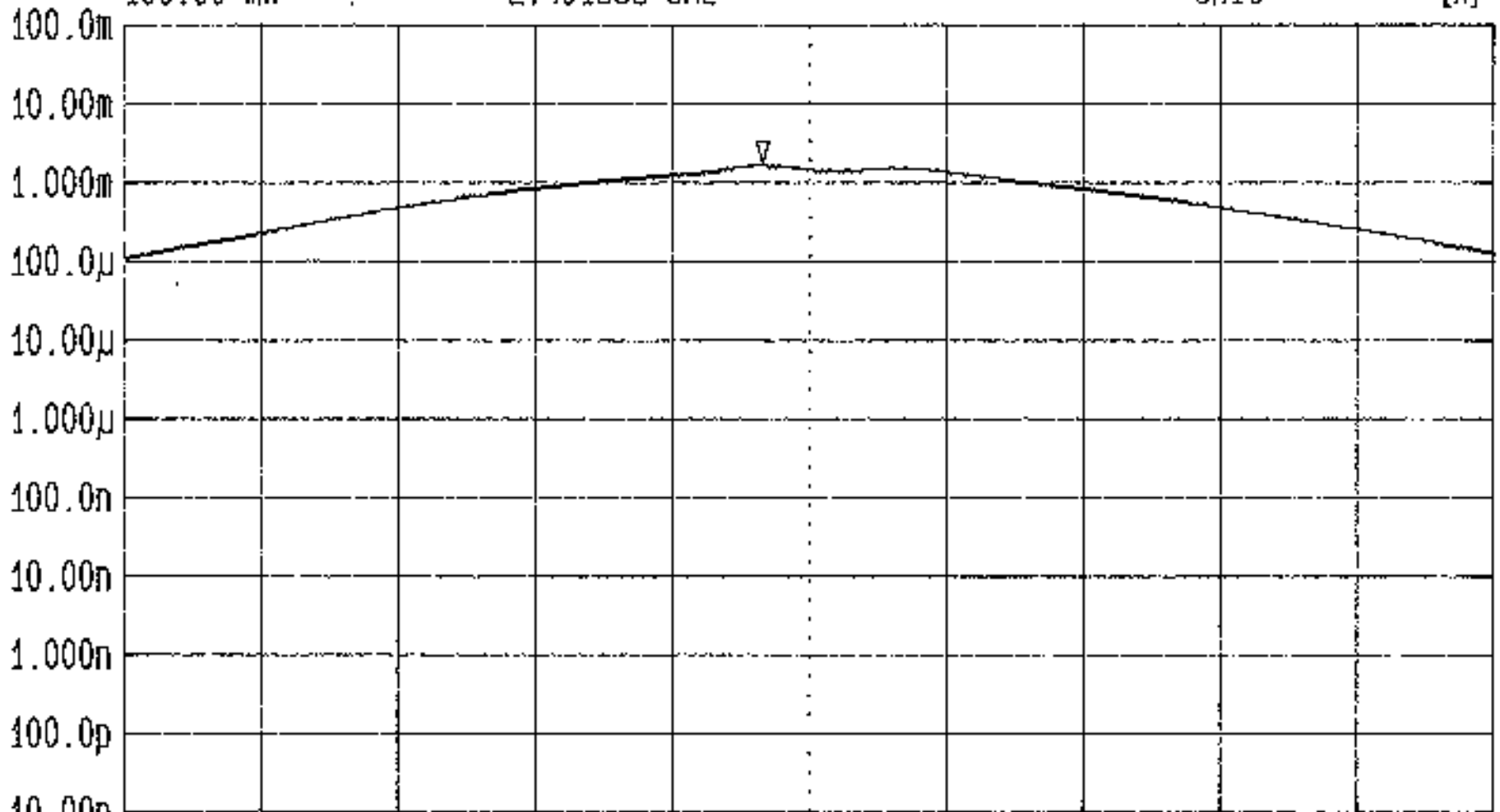


Band Edge Compliance. FCC Part 15.247 (c) Tested For Red-M By RFI Ltd
EUT: 3000AS Op Cond: Hopping All Channels (External Antenna) ENG: NS GPH/42177/026



LVLOFF
Date 14.May.'01 Time 14:47:48
Ref.Lvl 100.00 mW
Marker 1.7021 mW
2.401838 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.000 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



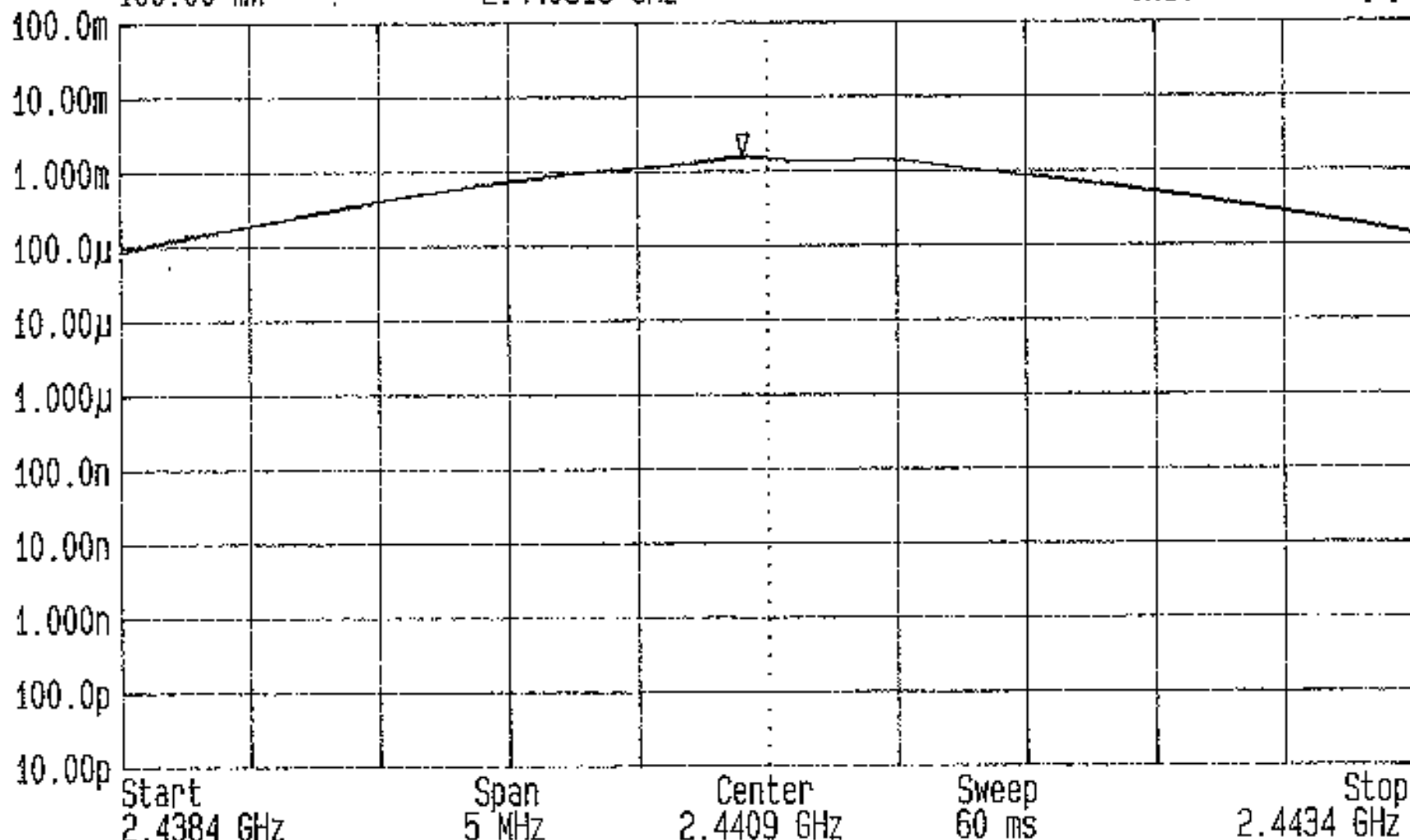
Start 2.3995 GHz Span 5 MHz Center 2.402 GHz Sweep 60 ms Stop 2.4045 GHz

Peak Output Power FCC Part 15.247 (b) Tested For Red-M By RFI Ltd. EUT: 3000AS
Op Cond: Bottom Channel (External Antenna) 95V Supply ENG: NS GPH/42177/009



LVLOFF
Date 14.May.'01 Time 14:50:32
Ref.Lvl 100.00 mW
Marker 1.6218 mW
2.440816 GHz

Res.Bw 2.0 MHz [3dB]
T6.Lvl off
CF.Stp 500.000 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]

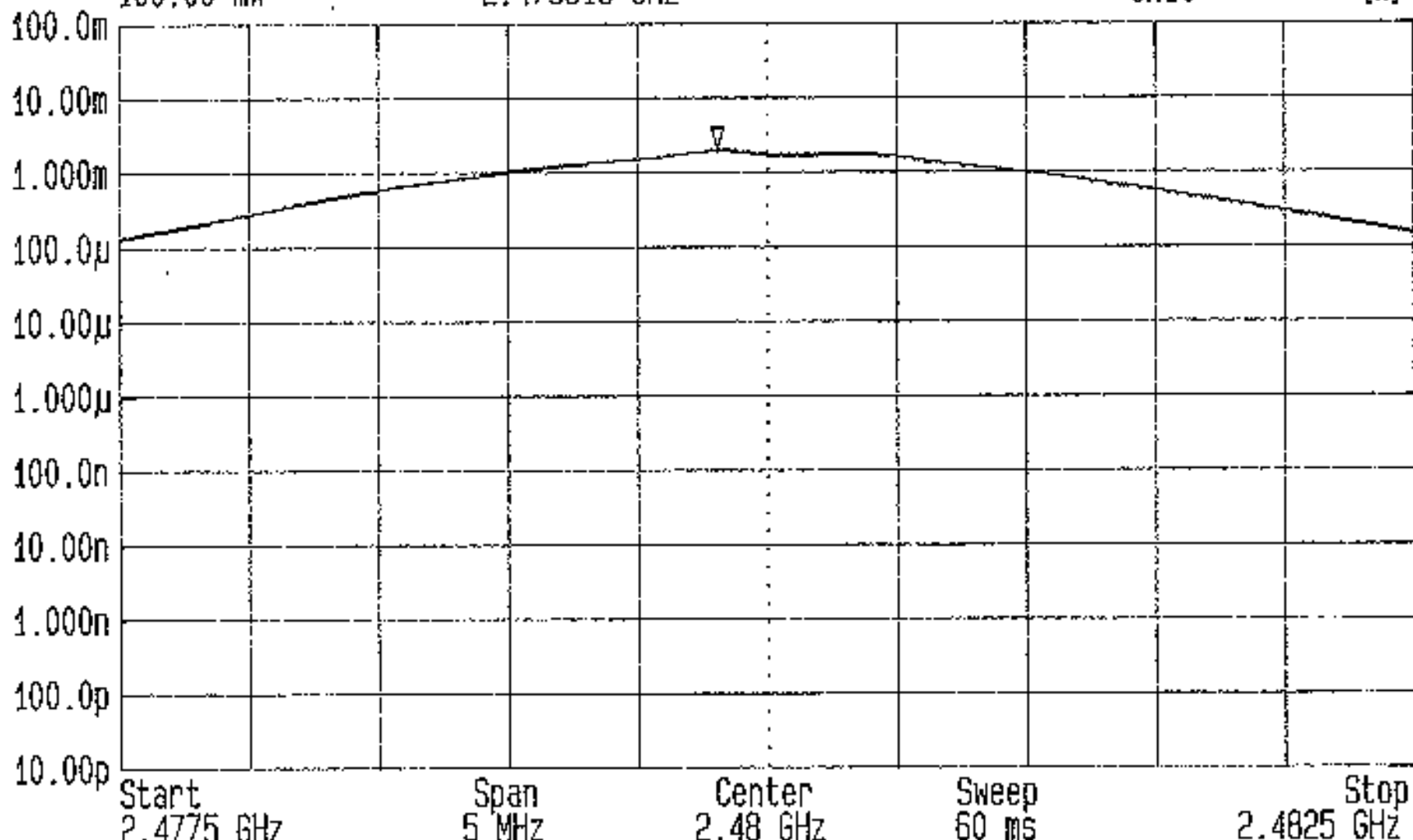


Peak Output Power FCC Part 15.247 (b) Tested For Red-M By RFI Ltd. EUT: 3000AS
Op Cond: Middle Channel (External Antenna) 95V Supply ENG: NS GPH/42177/010



LVLOFF
Date 14.May.'01 Time 14:53:11
Ref.Lvl 100.00 mW
Marker 2.0276 mW
2.479816 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.000 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]

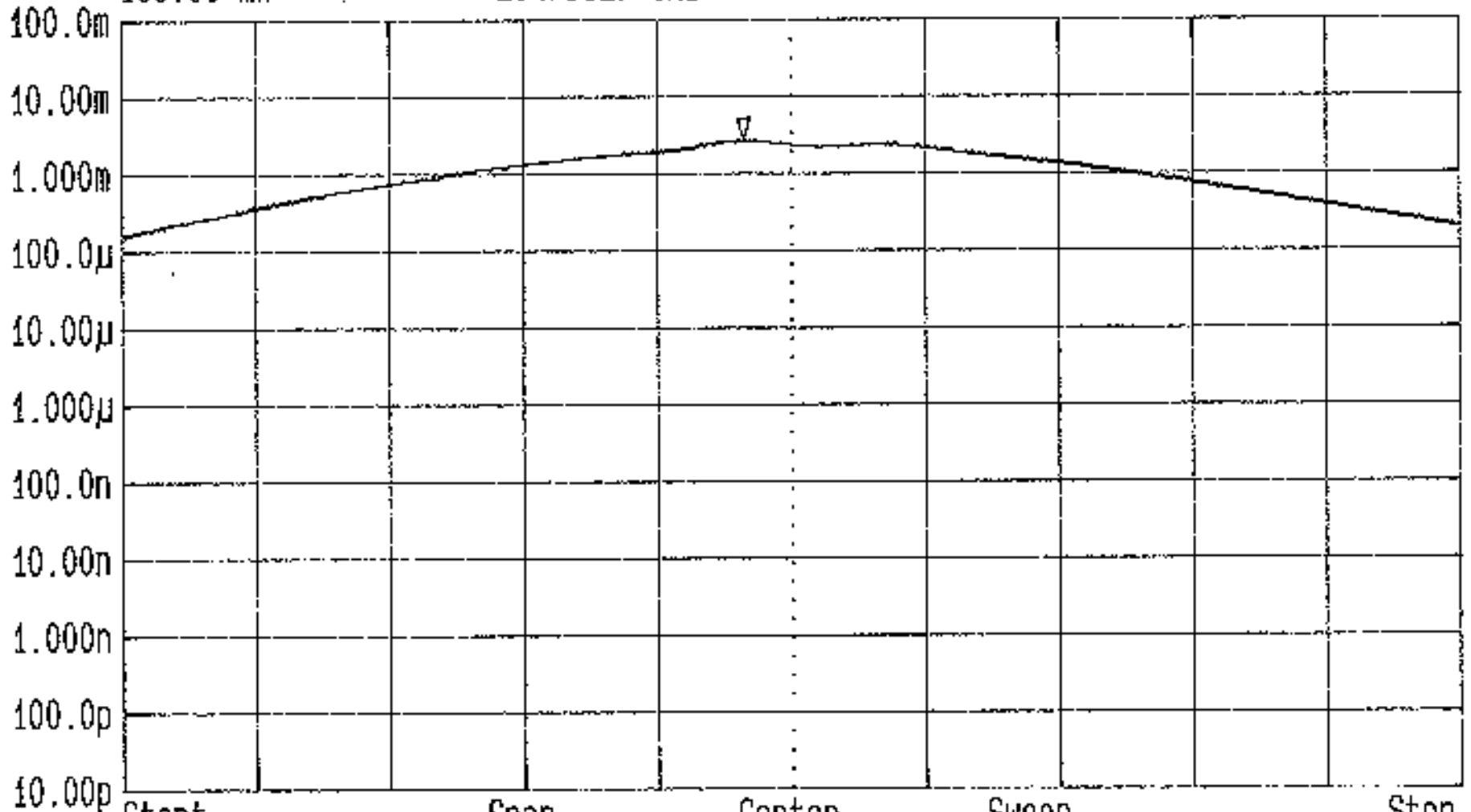


Peak Output Power FCC Part 15.247 (b) Tested For Red-M By RFI Ltd. EUT: 3000AS
Op Cond: Top Channel (External Antenna) 95V Supply ENG: NS GPH/42177/011



LVLOFF
Date 14.May.'01 Time 15:07:17
Ref.Lvl 100.00 mW
Marker 2.7289 mW
2.479827 GHz

Res.Bw 2.0 MHz [3dB]
T6.Lvl off
CF.Stp 500.000 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



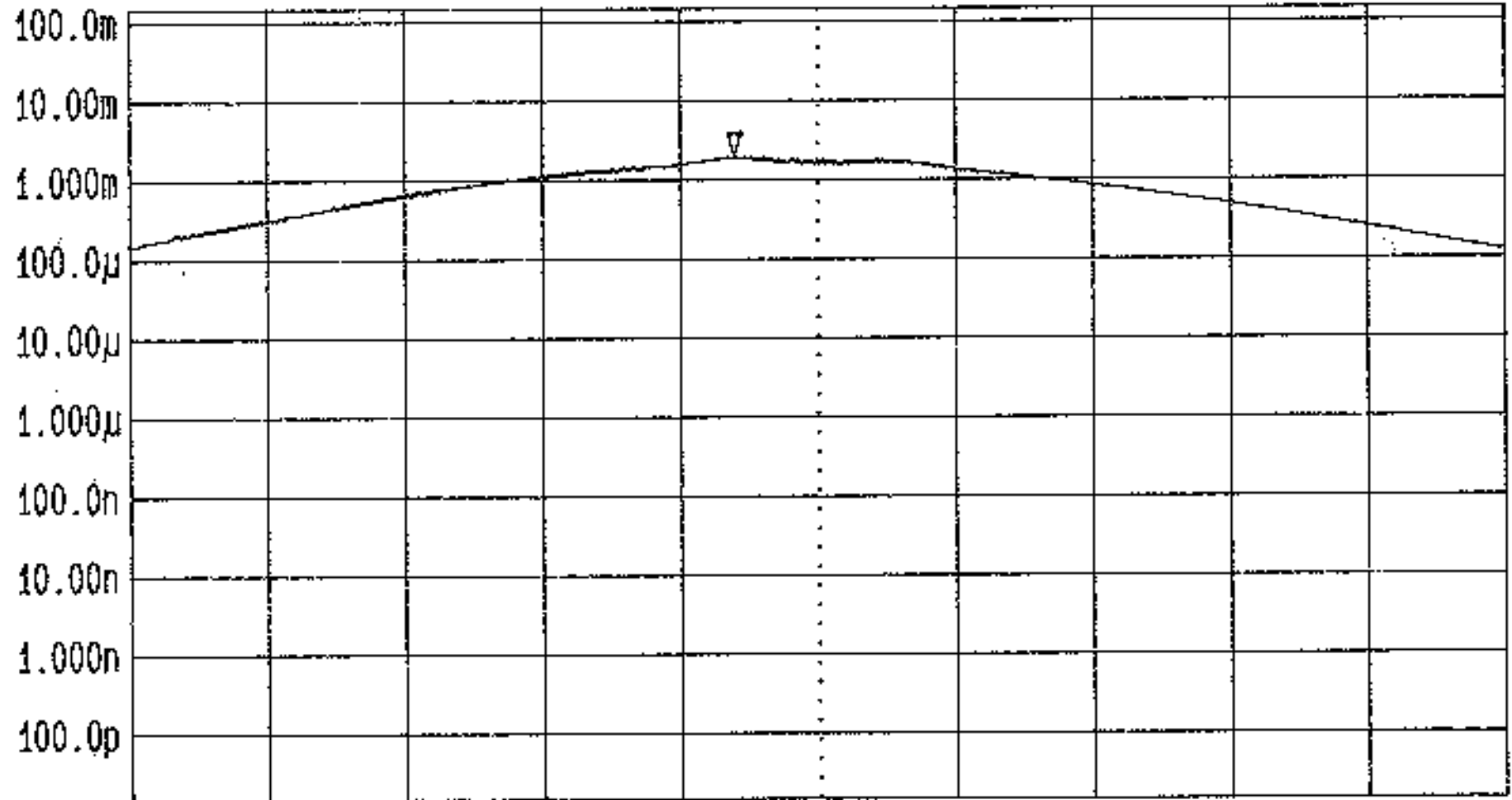
Start 2.4775 GHz Span 5 MHz Center 2.48 GHz Sweep 60 ms Stop 2.4825 GHz

Peak Output Power FCC Part 15.247 (b) Tested For Red-M By RFI Ltd. EUT: 3000AS
Op Cond: Top Channel (External Antenna) 276V Supply ENG: NS GPH/42177/012



LVLOFF
Date 08.Jun.'01 Time 11:33:10
Ref.Lvl 141.25 mW
Marker 1.8663 mW
2.401809 GHz

Res.Bw 2.0 MHz [3dB]
T6.Lvl off
CF.Stp 500.000 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



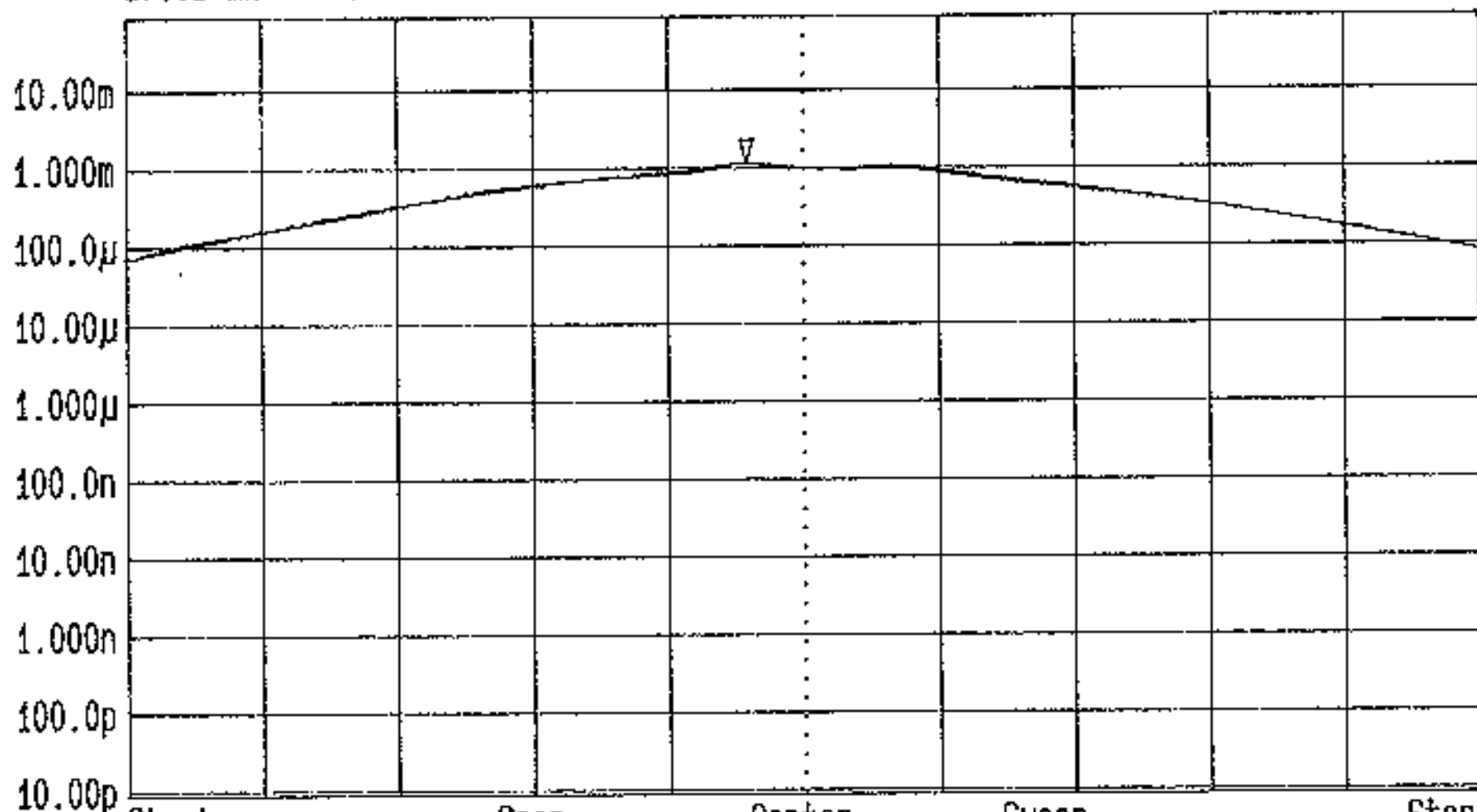
Start 2.399609375 GHz Span 5 MHz Center 2.402109375 GHz Sweep 20 ms Stop 2.404609375 GHz

Peak Putput Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Bottom Channel (External Antenna) 110V Supply ENG: NS GPH/42177/013



LVLOFF
Date 08.Jun.'01 Time 12:45:46
Ref.Lvl 87.09 mW
Marker 1.1641 mW
2.401794 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.555 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



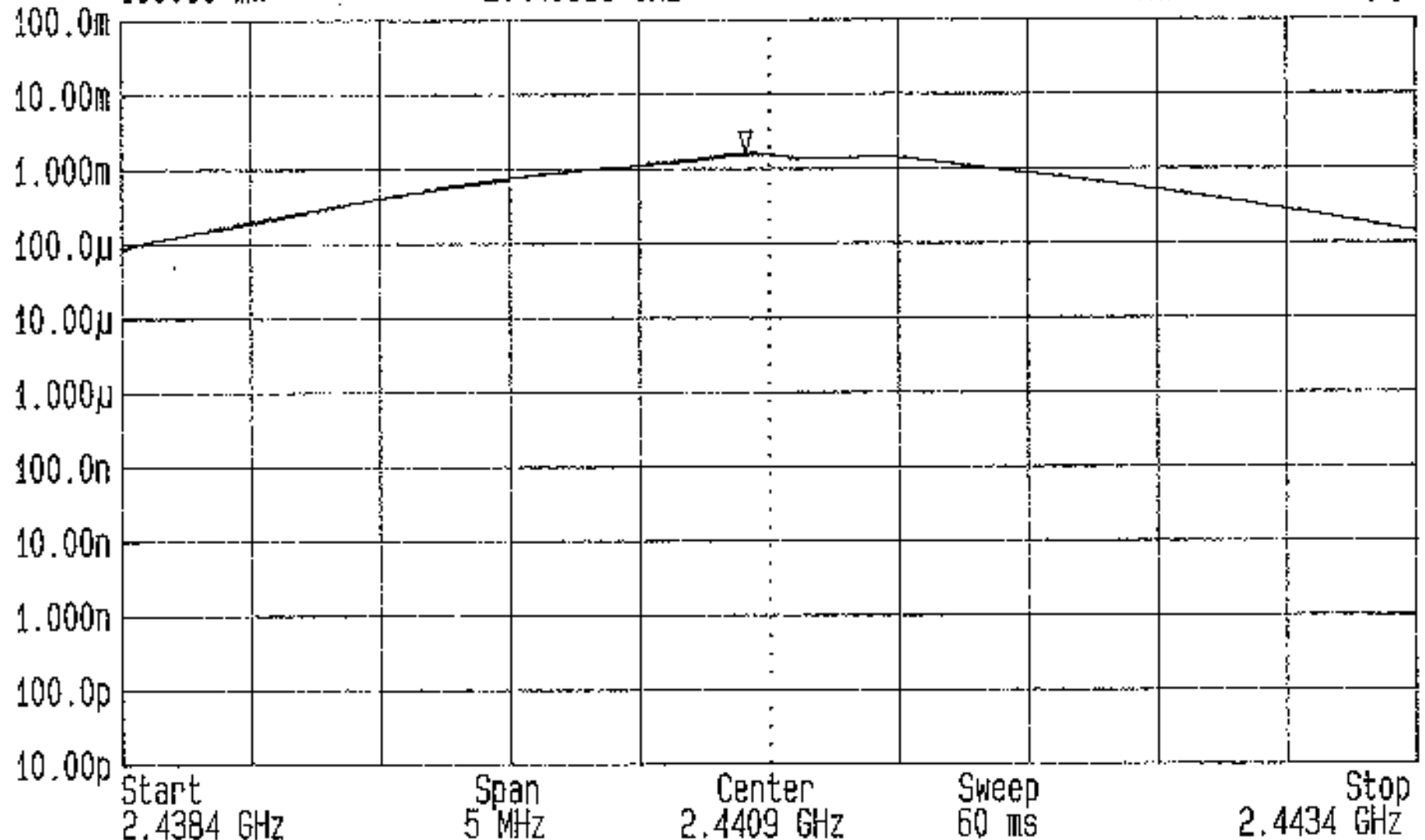
Start 2.399497 GHz Span 5.005 MHz Center 2.402 GHz Sweep 20 ms Stop 2.404502 GHz

Peak Output Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Bottom Channel (Integral Antenna) 110V Supply ENG: NS GPH/42177/RE013



LVLOFF
Date 14.May.'01 Time 15:13:38
Ref.Lvl 100.00 mW
Marker 1.6405 mW
2.440816 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.000 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]

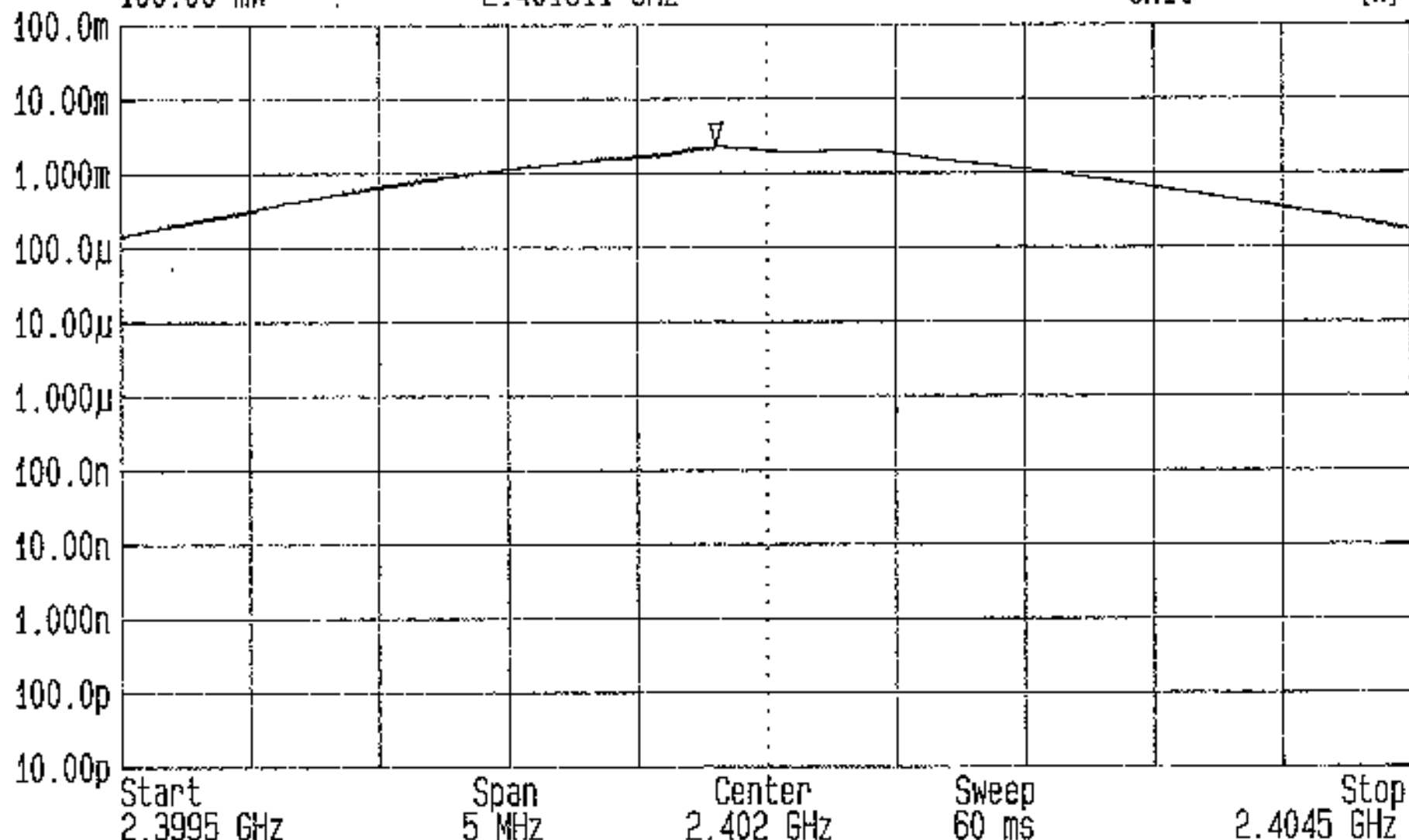


Peak Output Power FCC Part 15.247 (b) Tested For Red-M By RFI Ltd. EUT: 3000AS
Op Cond: Middle Channel (External Antenna) 276V Supply ENG: NS GPH/42177/013A



LVLOFF
Date 14.May.'01 Time 15:17:33
Ref.Lvl 100.00 mW
Marker 2.3067 mW
2.401811 GHz

Res.Bw 2.0 MHz [3dB]
T6.Lvl off
CF.Stp 500.000 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]

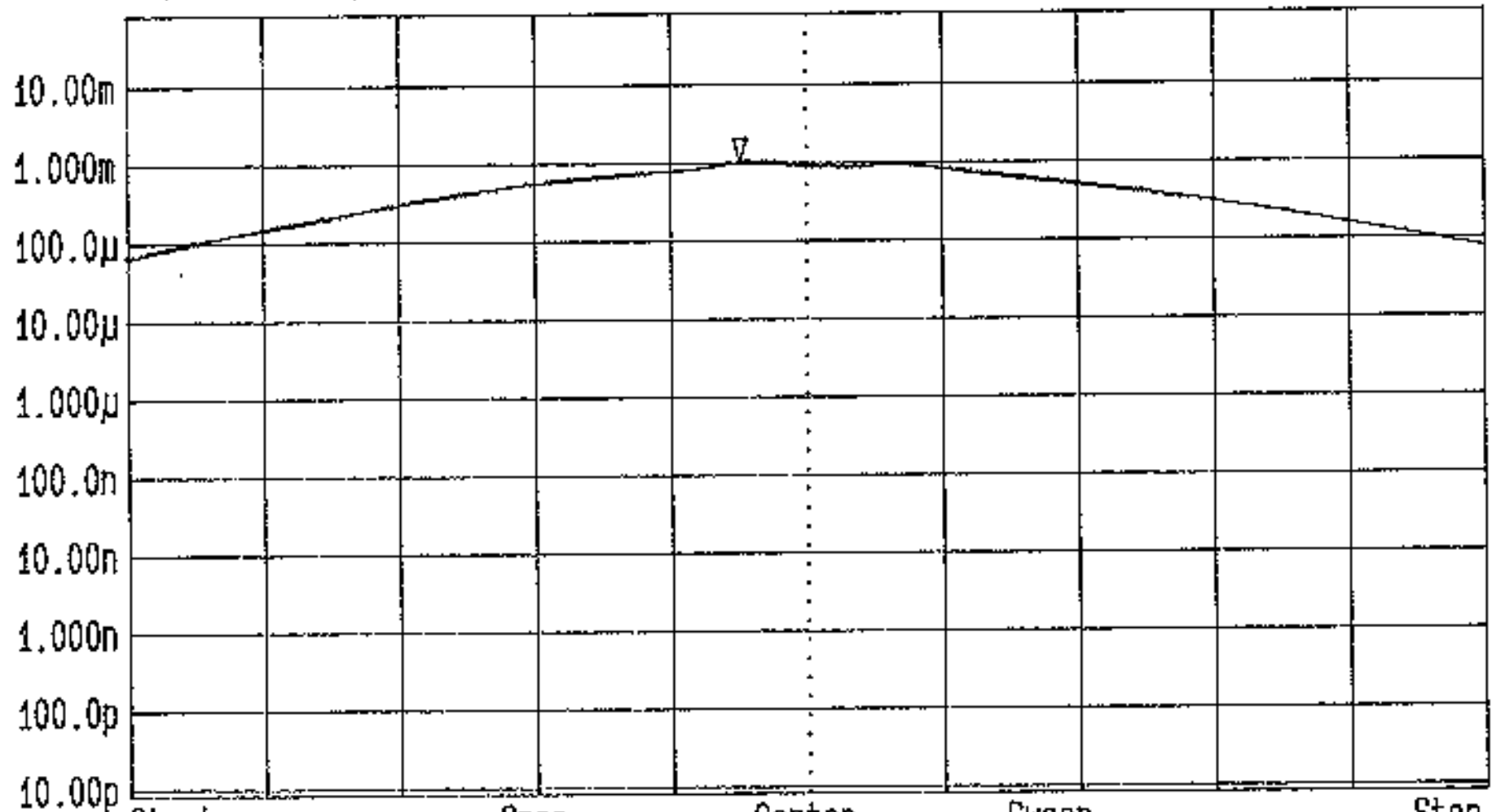


Peak Output Power FCC Part 15.247 (b) Tested For Red-M By RFI Ltd. EUT: 3000AS
Op Cond: Bottom Channel (External Antenna) 276V Supply ENG: NS GPH/42177/014



LVLOFF
Date 08.Jun.'01 Time 12:51:32
Ref.Lvl 81.28 mW
Marker 1.0327 mW
2.401769 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 499.999 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



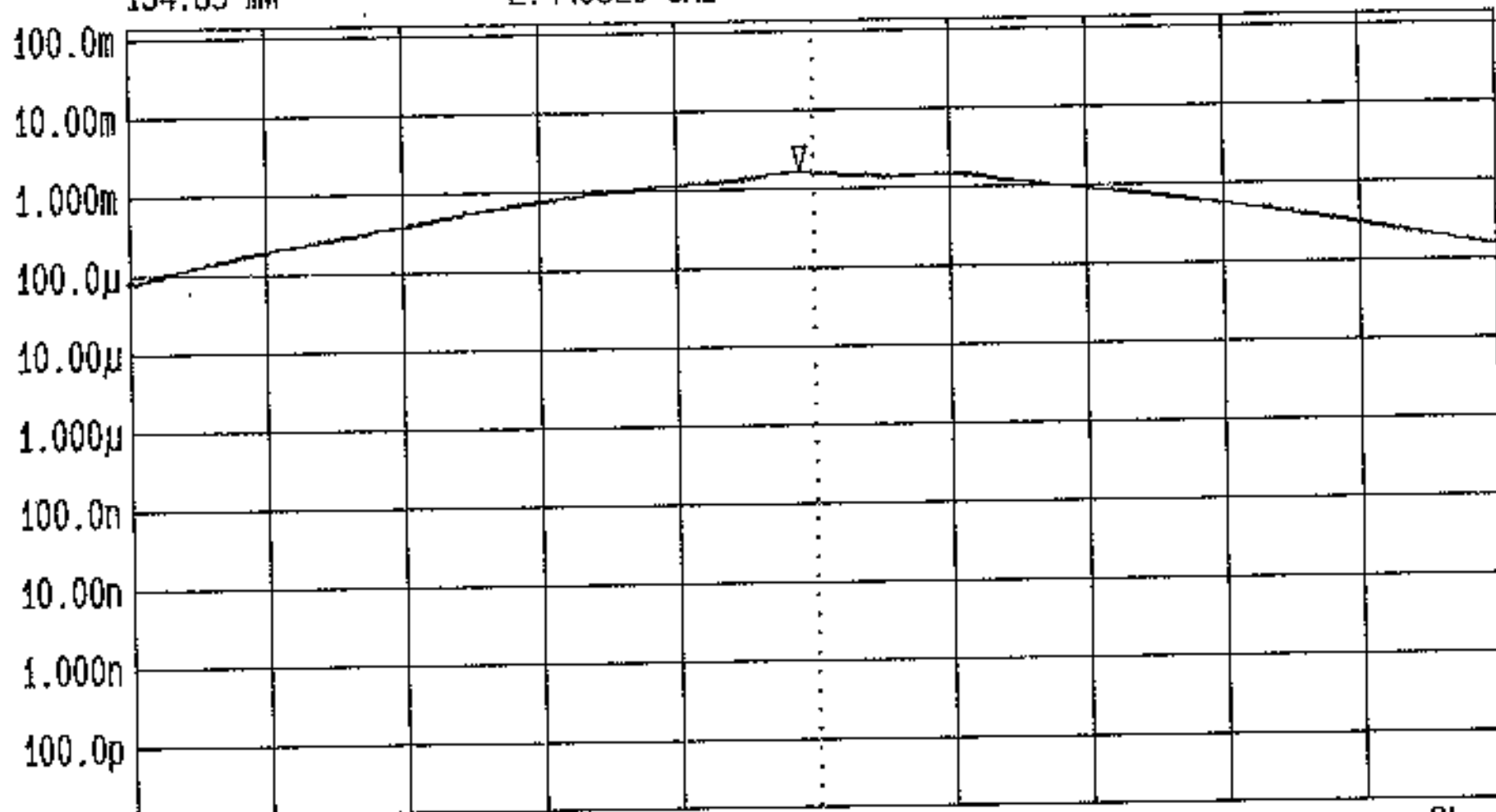
Start 2.399502784 GHz Span 4.99999 MHz Center 2.40200278 GHz Sweep 20 ms Stop 2.404502777 GHz

Peak Output Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Bottom Channel (Integral Antenna) 95 V Supply ENG: NS GPH/42177/RE014



LVLOFF
Date 08 Jun '01 Time 12:07:12
Ref.Lvl 134.89 mW
Marker 1.6519 mW
2.440820 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.000 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



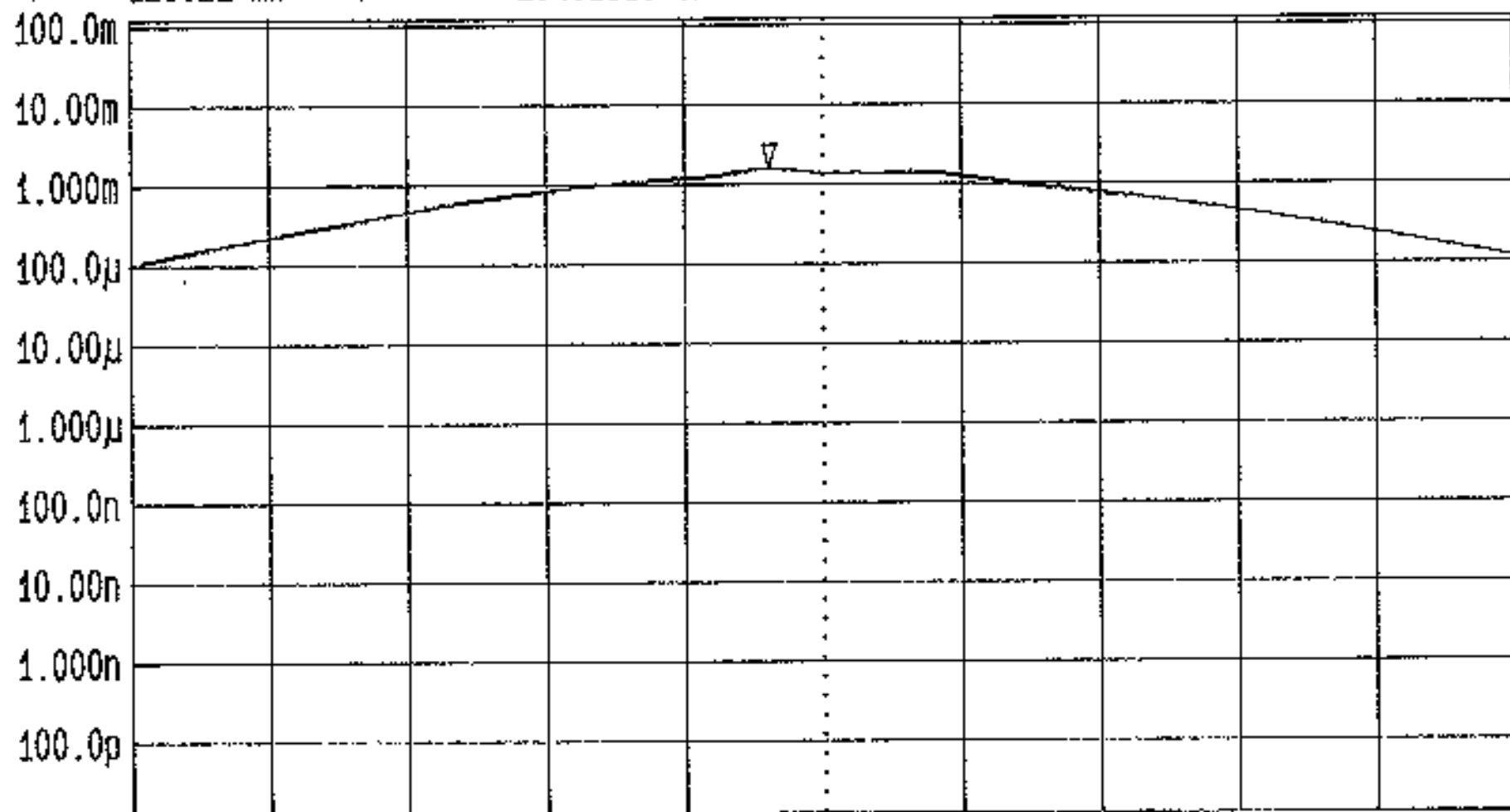
Start 2.438359139 GHz Span 5 MHz Center 2.440859139 GHz Sweep 20 ms Stop 2.443359139 GHz

Peak Putput Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Middle Channel (External Antenna) 110V Supply ENG: NS GPH/42177/015



LVLOFF
Date 08.Jun.'01 Time 12:58:26
Ref.Lvl 120.22 mW
Marker 1.5885 mW
2.401819 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 499.999 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



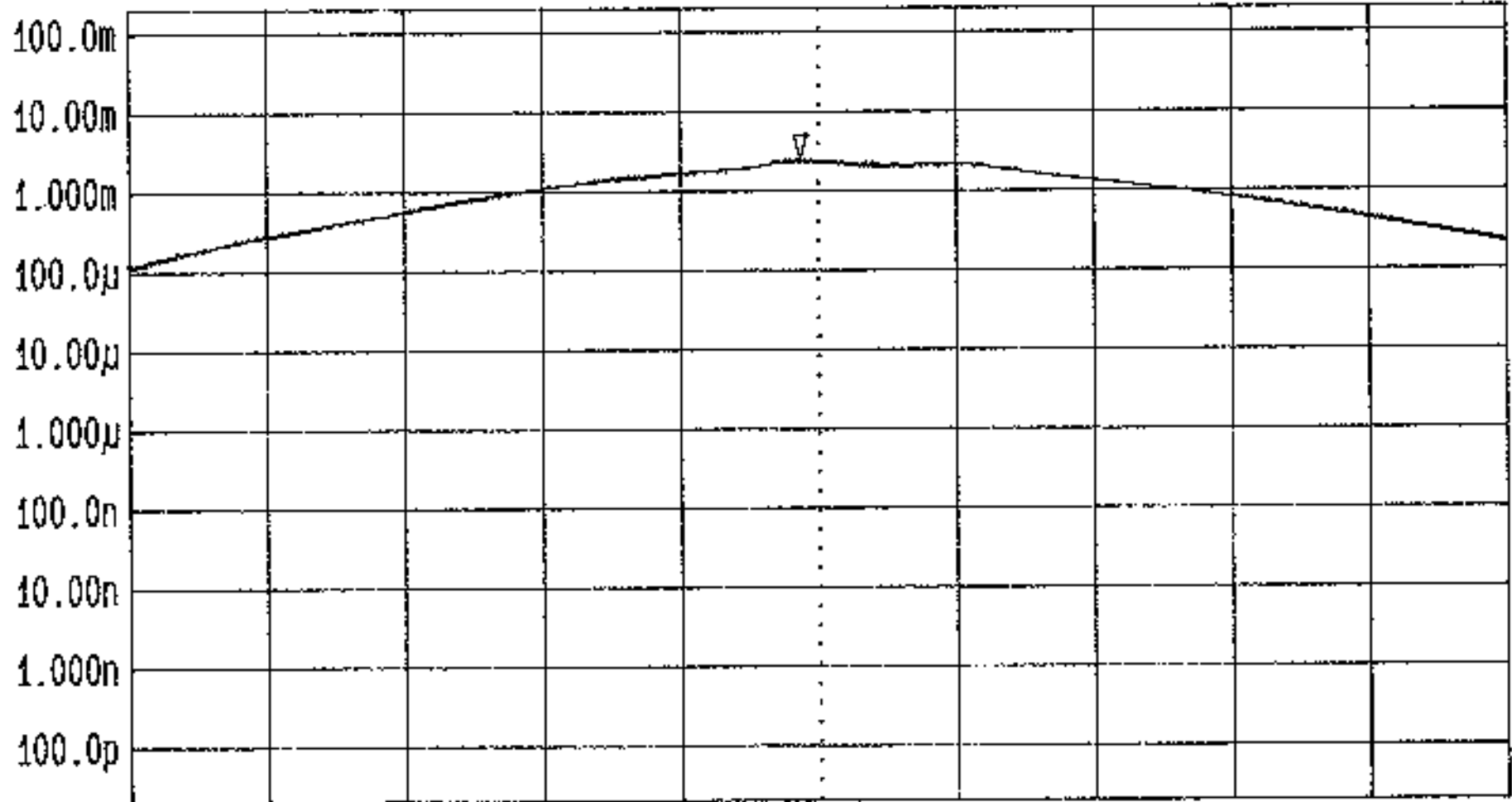
Start 2.399502784 GHz Span 4.99999 MHz Center 2.40200278 GHz Sweep 20 ms Stop 2.404502777 GHz

Peak Output Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Bottom Channel (Integral Antenna) 276V Supply ENG: NS GPH/42177/RE015



LVLOFF
Date 08.Jun.'01 Time 12:10:44
Ref.Lvl 194.98 mW
Marker 2.3878 mW
2.440800 GHz

Res.Bw 2.0 MHz [3dB]
T6.Lvl off
CF.Stp 500.555 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



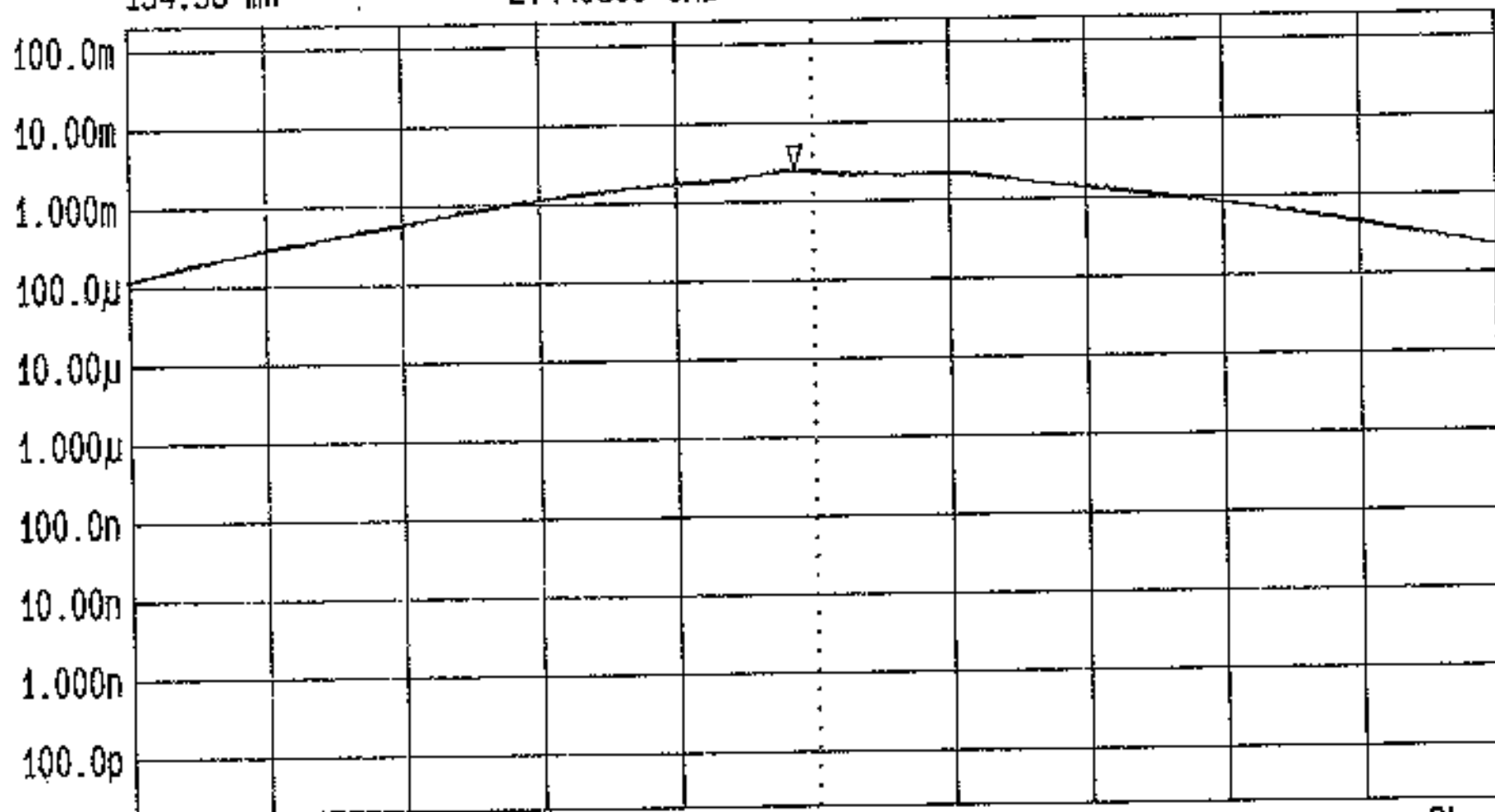
Start 2.438353 GHz Span 5.005 MHz Center 2.440856 GHz Sweep 20 ms Stop 2.443359 GHz

Peak Putput Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Middle Channel (Integral Antenna) 110V Supply ENG: NS GPH/42177/RE016



LVLOFF
Date 08.Jun.'01 Time 12:18:07
Ref.Lvl 194.98 mW
Marker 2.4603 mW
2.440800 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.555 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



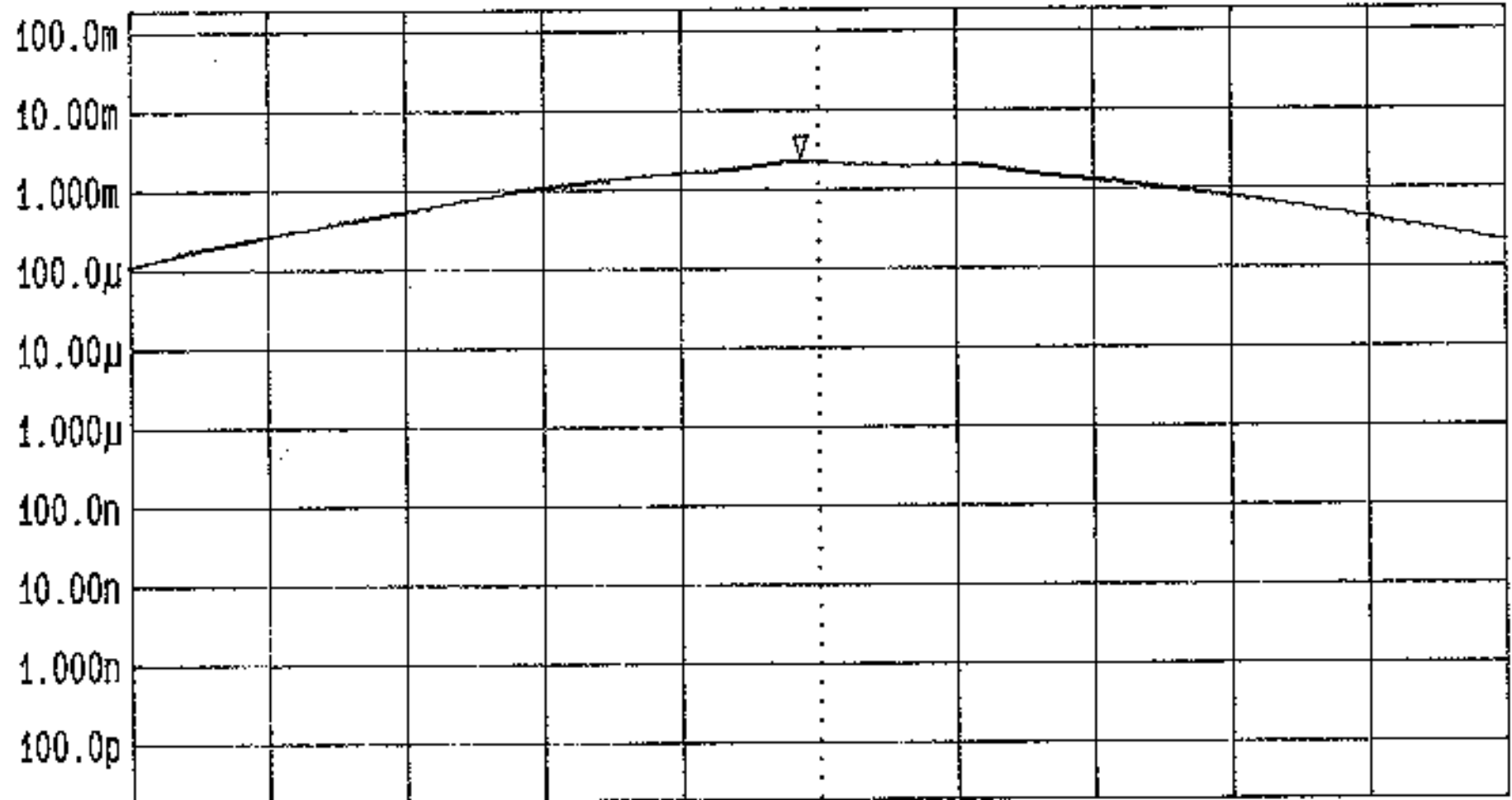
Start 2.438353 GHz Span 5.005 MHz Center 2.440856 GHz Sweep 20 ms Stop 2.443359 GHz

Peak Putput Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Middle Channel (Integral Antenna) 95 V Supply ENG: NS GPH/42177/RE017



LVLOFF
Date 08.Jun.'01 Time 12:21:29
Ref.Lvl 186.20 mW
Marker 2.3496 mW
2.440800 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.555 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



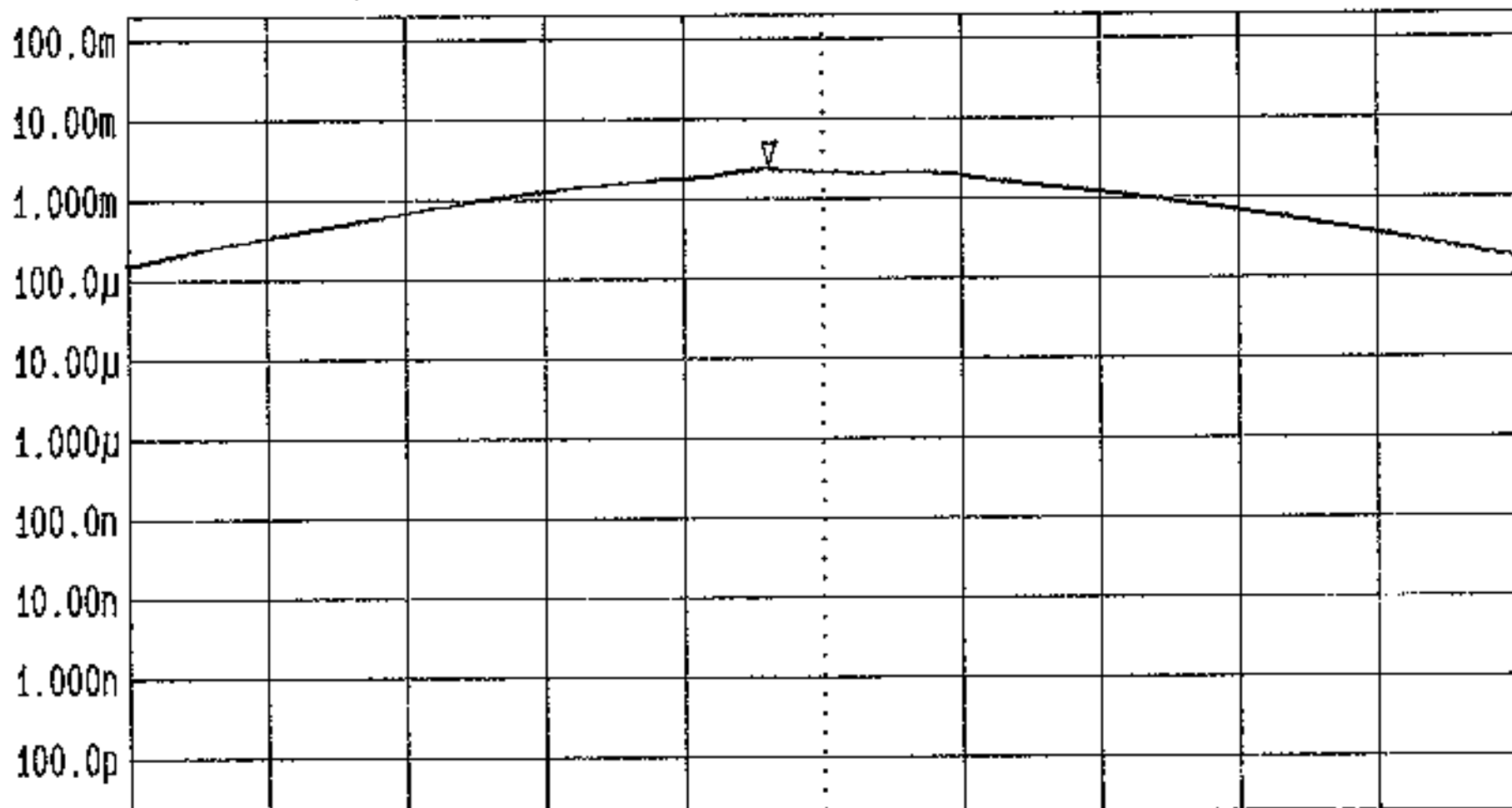
Start 2.438353 GHz Span 5.005 MHz Center 2.440856 GHz Sweep 20 ms Stop 2.443359 GHz

Peak Putput Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Middle Channel (Integral Antenna) 276V Supply ENG: NS GPH/42177/RE01B



LVLOFF
Date 08.Jun.'01 Time 12:26:02
Ref.Lvl 190.54 mW
Marker 2.3604 mW
2.479810 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.555 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



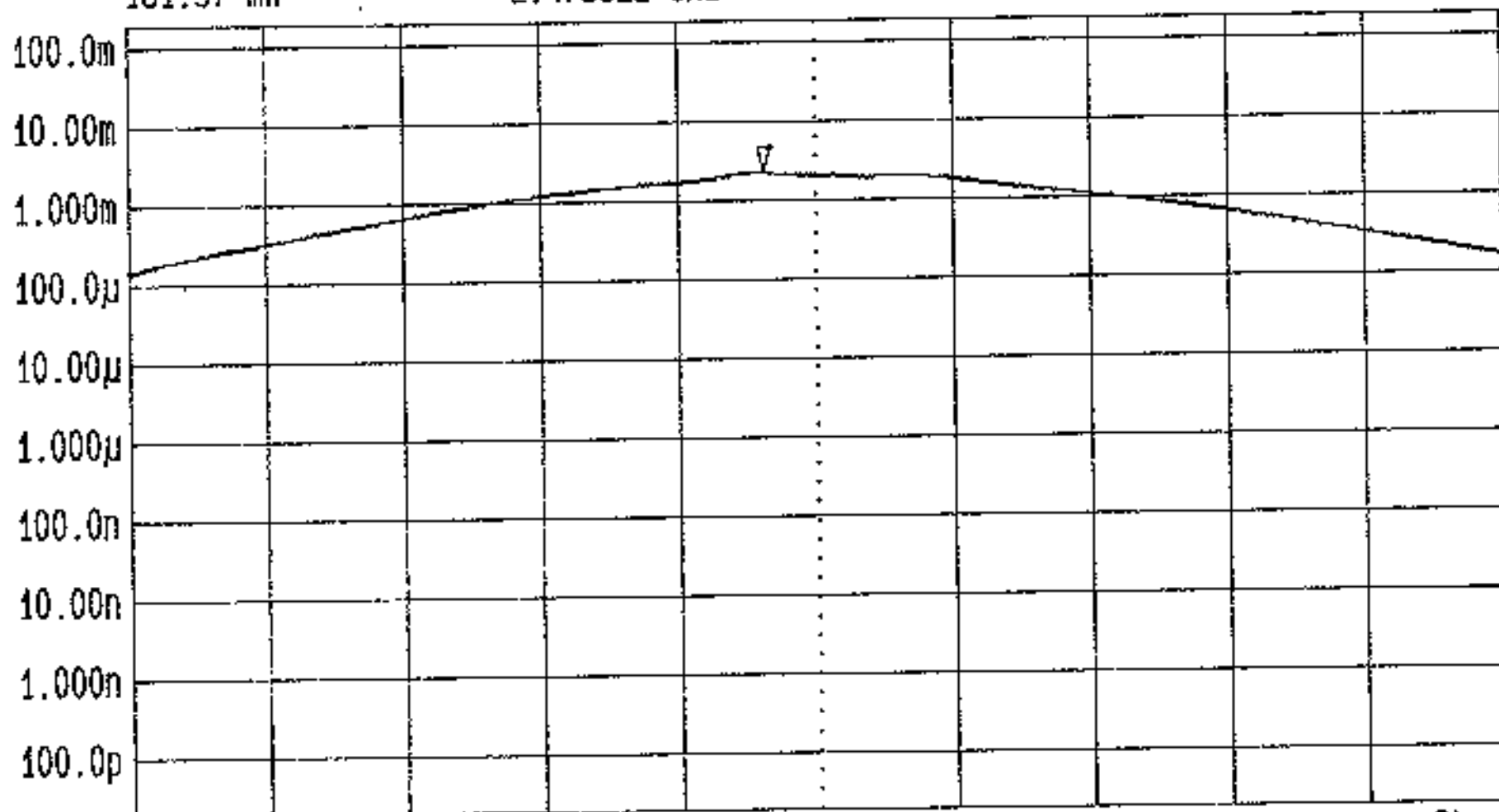
Start 2.477497 GHz Span 5.005 MHz Center 2.48 GHz Sweep 20 ms Stop 2.482502 GHz

Peak Putput Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Top Channel (External Antenna) 110V Supply ENG: NS GPH/42177/019



LVLOFF
Date 08.Jun.'01 Time 12:32:17
Ref.Lvl 181.97 mW
Marker 2.2542 mW
2.479822 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.555 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



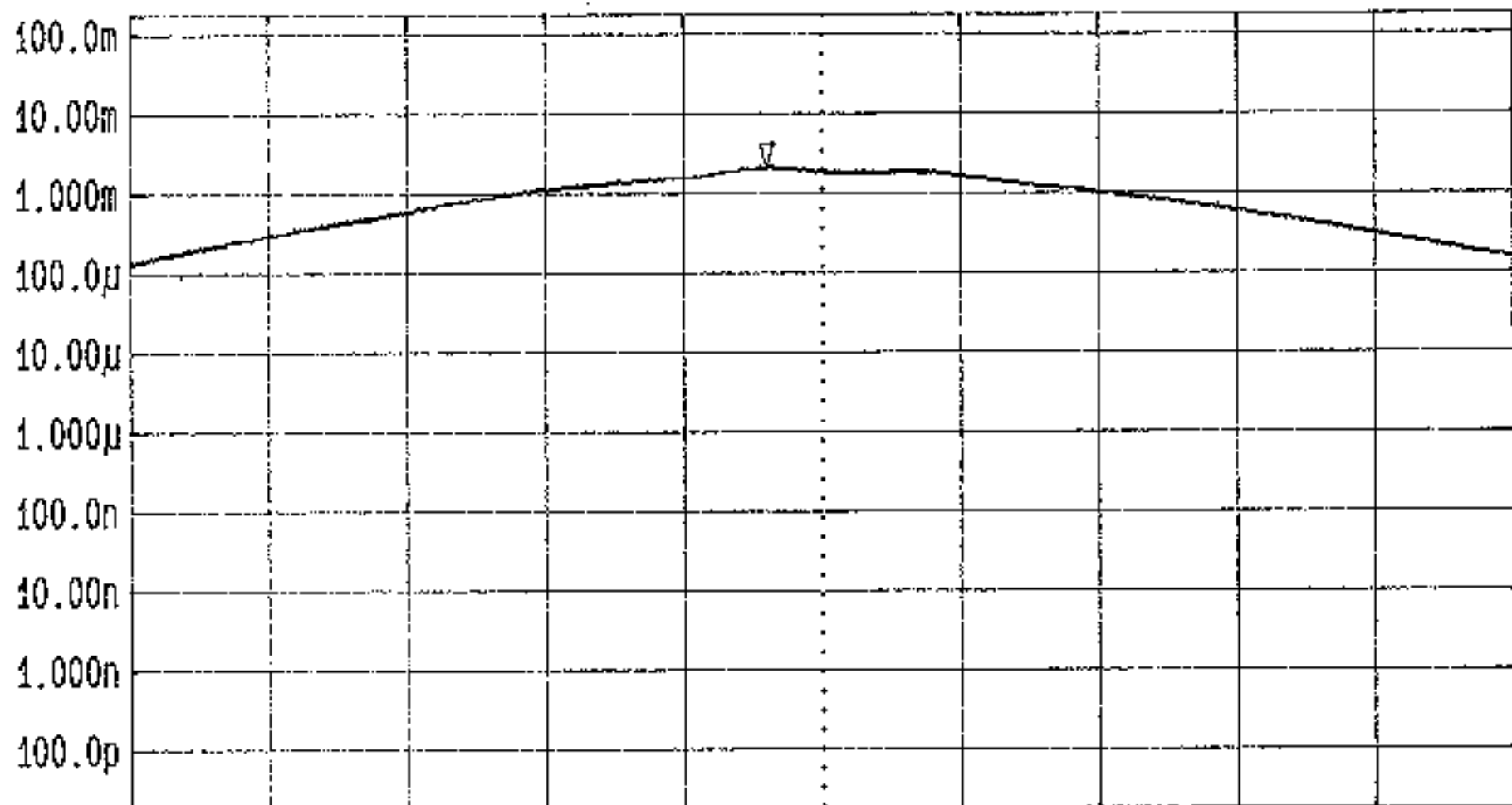
Start 2.477502 GHz Span 5.005 MHz Center 2.480005 GHz Sweep 20 ms Stop 2.482508 GHz

Peak Putput Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Top Channel (Integral Antenna) 110V Supply ENG: NS GPH/42177/RE020



LVLOFF
Date 08.Jun.'01 Time 12:37:44
Ref.Lvl 173.78 mW
Marker 2.1037 mW
2.479810 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.555 kHz
Vid.Bw 3 MHz
RF.Att 10 dB
Unit [W]



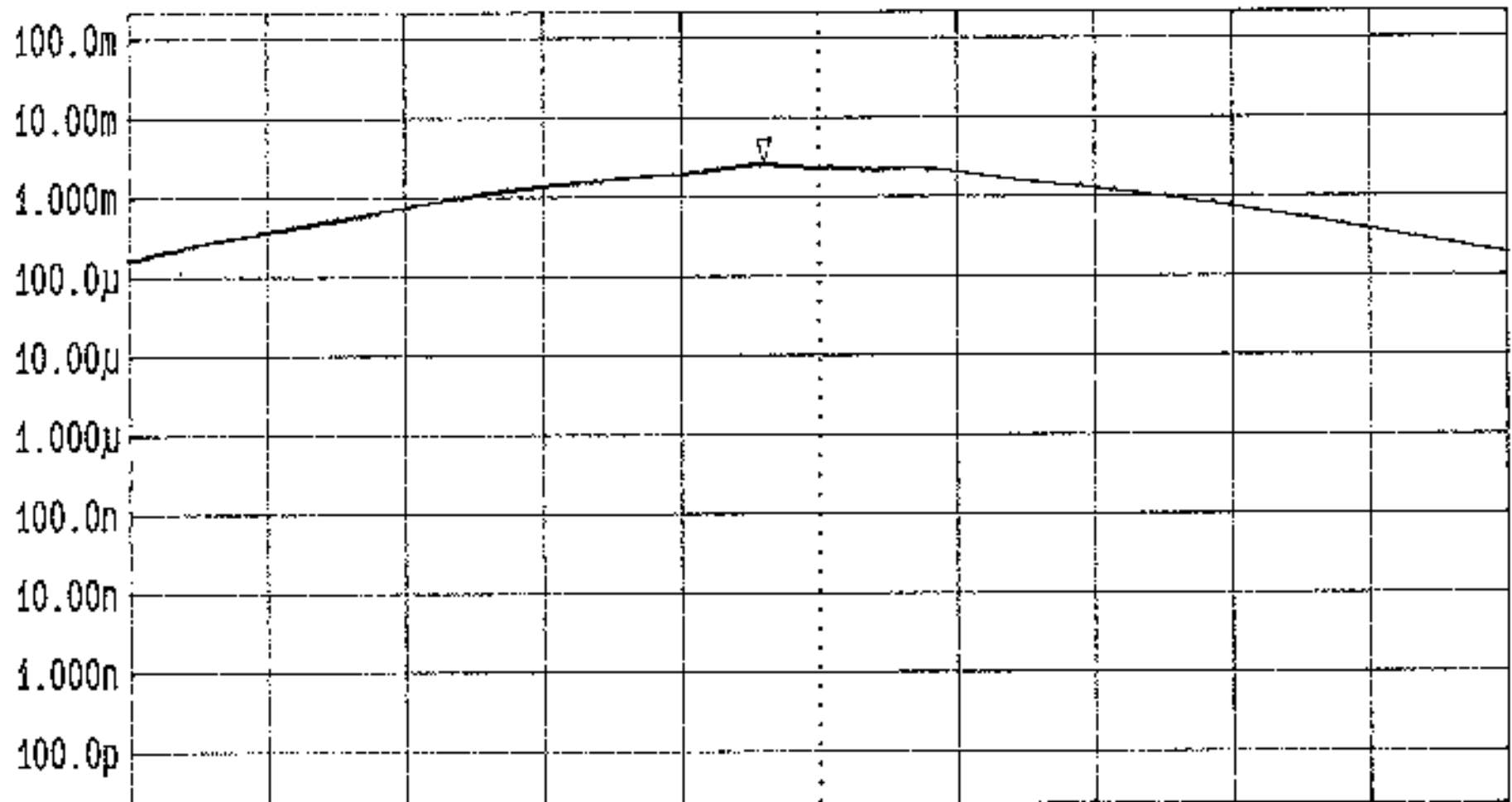
Start 2.477502 GHz Span 5.005 MHz Center 2.480005 GHz Sweep 20 ms Stop 2.482508 GHz

Peak Putput Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Top Channel (Integral Antenna) 95 V Supply ENG: NS GPH/42177/RE021



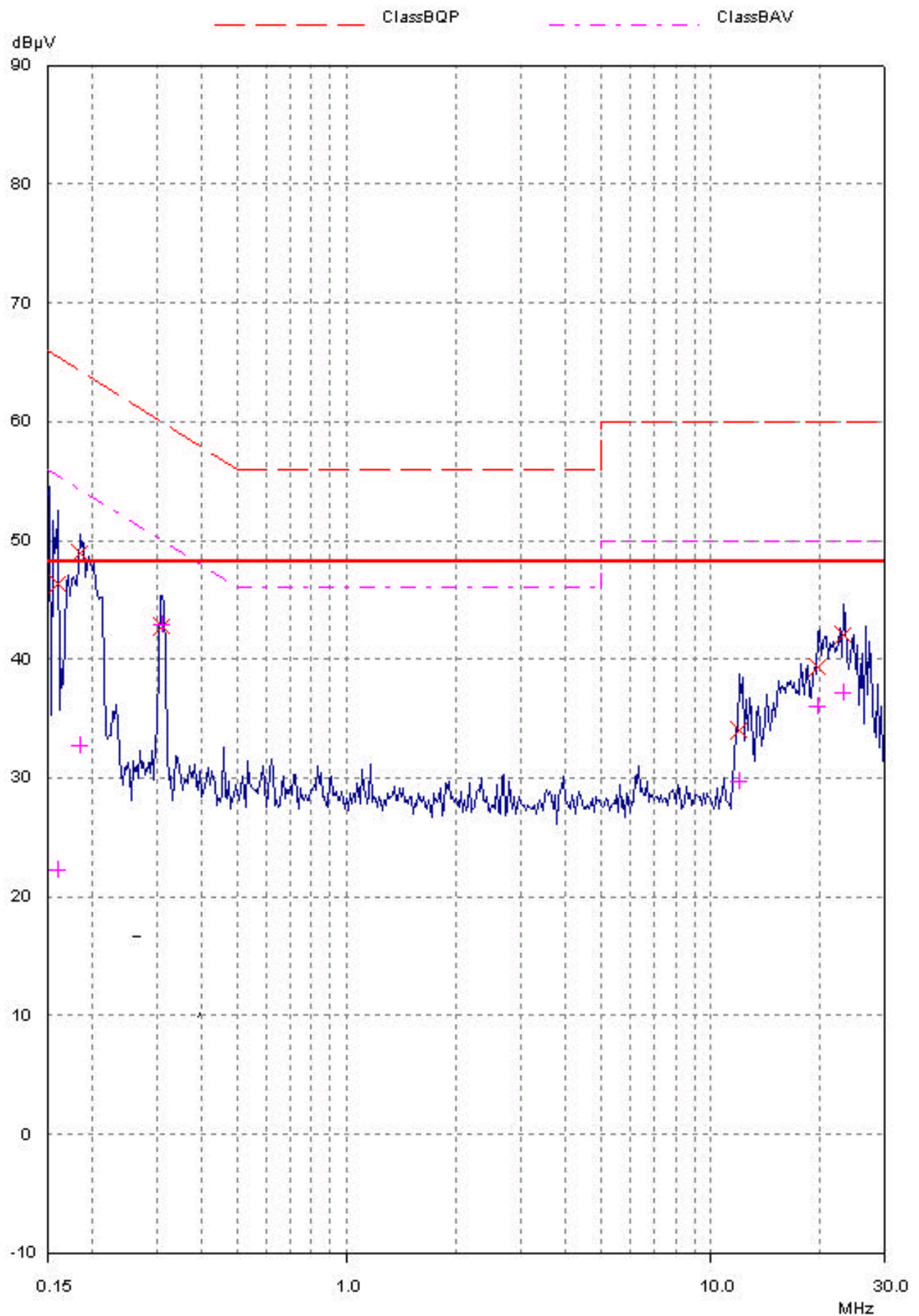
LVLOFF
Date 08.Jun.'01 Time 12:41:00
Ref.Lvl 208.93 mW
Marker 2.5468 mW
2.479810 GHz

Res.Bw 2.0 MHz [3dB]
TG.Lvl off
CF.Stp 500.555 kHz
Vid.Bw 3 MHz
AF.Att 10 dB
Unit [W]

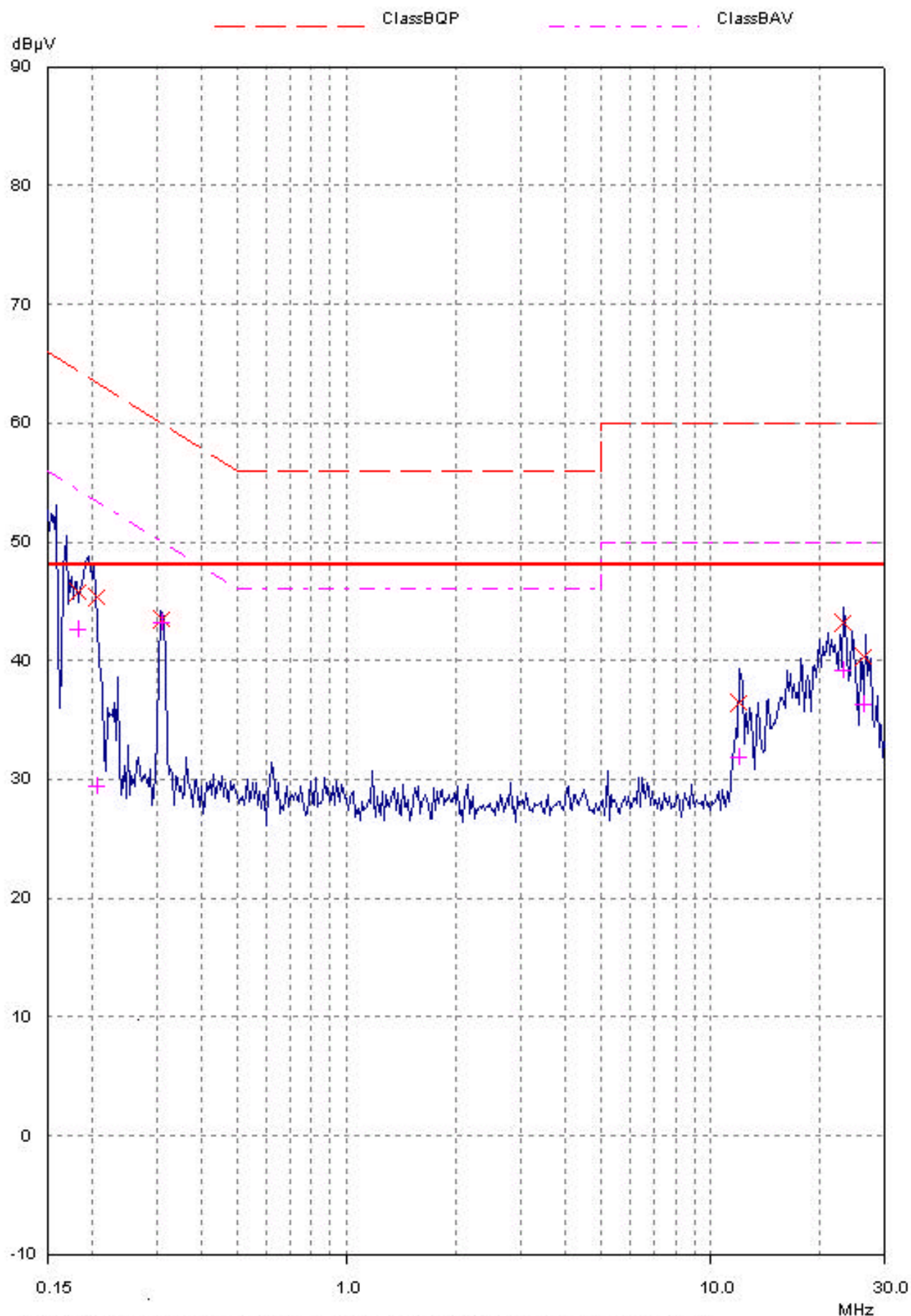


Start 2.477502 GHz Span 5.005 MHz Center 2.480005 GHz Sweep 20 ms Stop 2.482508 GHz

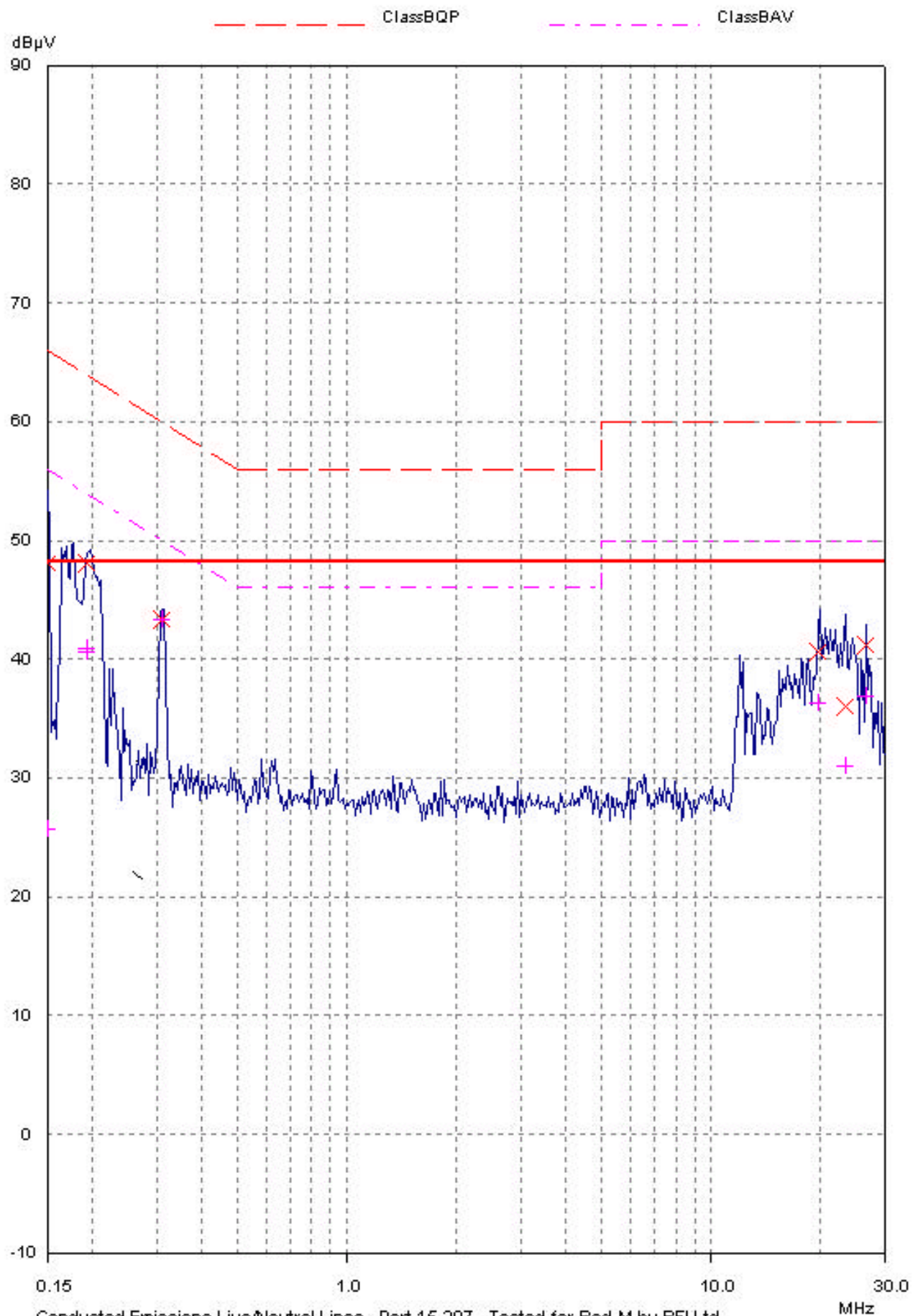
Peak Output Power FCC Part 15.247 (b) Tested for Red-M by RFI Ltd. EUT: 3000AS
Op Cond: Top Channel (Integral Antenna) 276V Supply ENG: NS GPH/42177/RE022



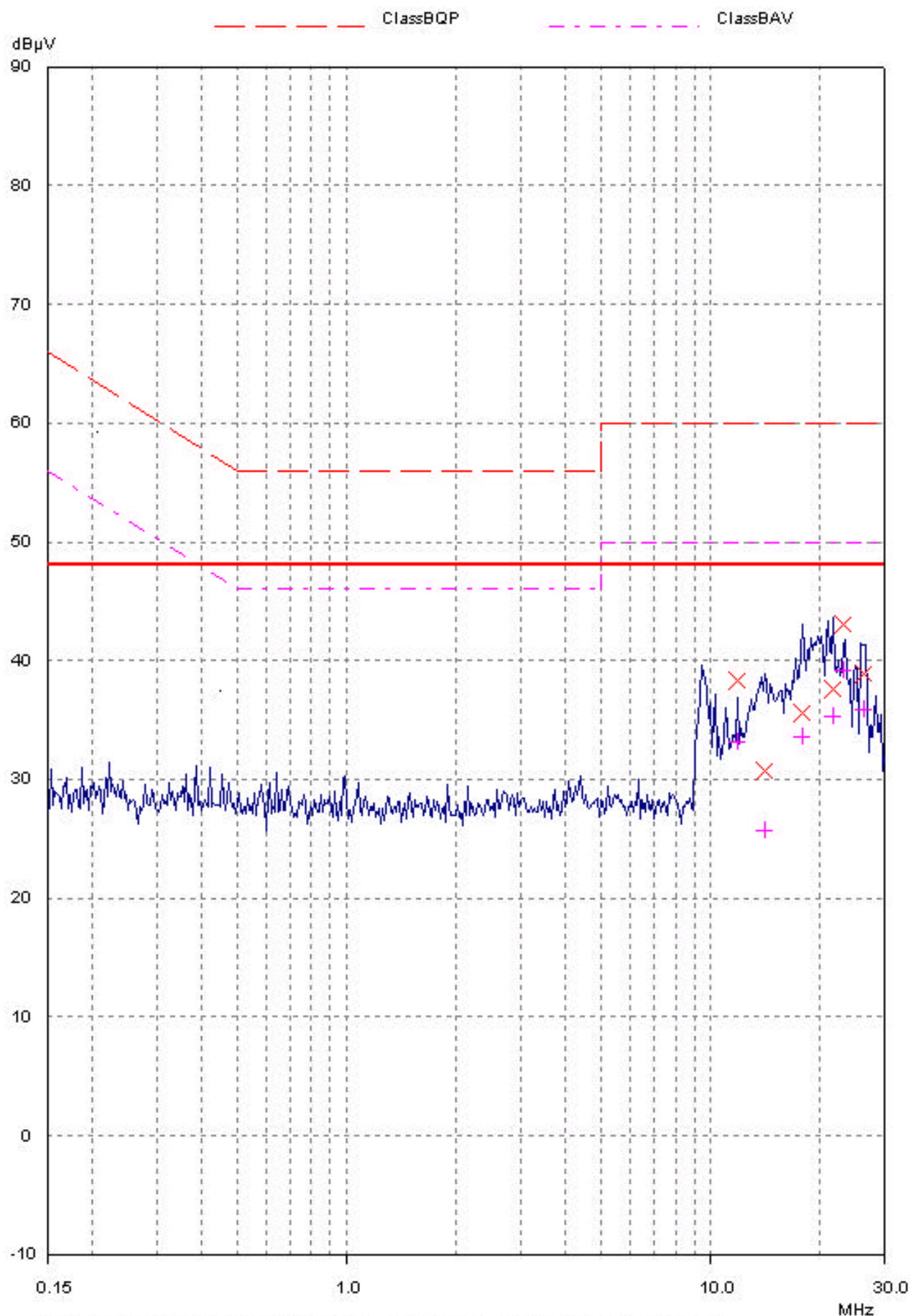
Conducted Emissions Live/Neutral Lines. Part 15.207. Tested for Red-M by RFI Ltd.



Conducted Emissions Live/Neutral Lines. Part 15.207. Tested for Red-M by RFI Ltd.
EUT: 3000AS. ENG: NS. Top Channel GPH/42177/ACCE02



Conducted Emissions Live/Neutral Lines. Part 15.207. Tested for Red-M by RFI Ltd.
EUT: 3000AS. ENG: NS. Middle Channel GPH/42177/ACCE03



Conducted Emissions Live/Neutral Lines. Part 15.207. Tested for Red-M by RFI Ltd.

FLT: 3000A.S

ENG: NS

Bottom Channel

GDH/17177/ACCEM

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

Appendix 5. Photographs of EUT

This appendix contains the following photographs:

Photo Reference Number	Title
PHT/42177JD02/001	Rear and side view of radiated emissions test configuration.
PHT/42177JD02/002	Side view of radiated emissions test configuration.
PHT/42177JD02/003	Rear view of radiated emissions test configuration.
PHT/42177JD02/004	Rear and side view of conducted emissions test configuration.
PHT/42177JD02/005	Front and side view of conducted emissions test configuration.

These pages are not included in the total number of pages for this report.

RADIO FREQUENCY INVESTIGATION LTD.

Conformance Testing Department

Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

TEST REPORT

S.No. RFI/MPTB1/RP42177B

Page 56 of 56

Issue Date: 15 June 2001

This page has been left intentionally blank.

Conformance Testing Department

Title: Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

PHT/42177JD02/001 Rear and side view of radiated emissions test configuration.



Conformance Testing Department

Title: Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

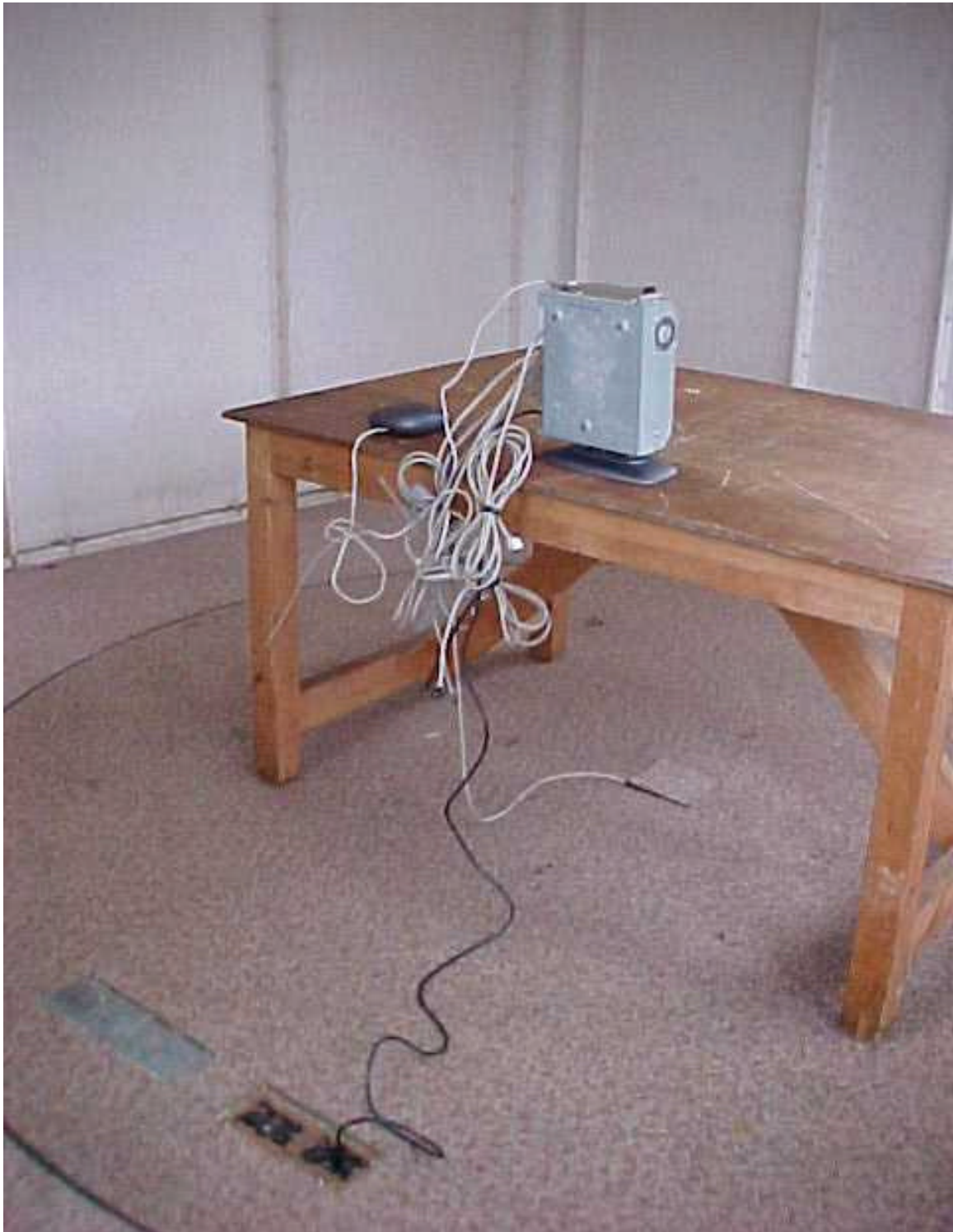
PHT/42177JD02/002 Side view of radiated emissions test configuration.



Conformance Testing Department

Title: Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

PHT/42177JD02/003 Rear view of radiated emissions test configuration.



Conformance Testing Department

Title: Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

PHT/42177JD02/004 Rear and side view of conducted emissions test configuration.



Conformance Testing Department

Title: Test Of: Red-M (Communications) Ltd.
3000AS Wireless Internet Server
with Access Server External Aerial (3000-501)
To: F.C.C. Part 15 Subpart C: 2000
(Intentional Radiators)
Section 15.247

PHT/42177JD02/005 Front and side view of conducted emissions test configuration.

