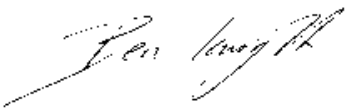
SUPPLEMENTARY TEST REPORT
FROM
RADIO FREQUENCY
INVESTIGATION LTD.

Test Of: Adaptive Broadband Ltd.
AB Access EXTENDER

To: FCC Part 15: Subpart E: 2000
(Unlicensed National Information
Infrastructure Devices)

Supplementary Test Report Serial No.:
RFI/MICB1/SUP42151B

This Supplementary Test Report Is Issued Under The Authority Of Richard Jacklin, Operations Director: 	**Checked By:** 
Tested By: 	**Release Version No:** **PDF01**
Issue Date: 27 June 2001	

This supplementary report is issued in conjunction with RFI Test Report Serial No: RFI/MICB1/RP42151A. The report has been issued to resolve the issues raised in FCC Correspondence Reference Number: 2147731, Confirmation Number: TC101128, FCC ID Number: OJB-EX-F058).

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1. Client Information

Company Name:	Adaptive Broadband Ltd.
Address:	The Westbrook Centre Block 5 Milton Road Cambridge SB41 1YG.
Contact Name:	Mr A Crisp.

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:	AB-Access ™ EXTENDER
Model Name or Number:	Subscriber Unit
Unique Type Identification:	None stated by client
Serial Number:	None
Country of Manufacture:	USA
FCC ID Number:	OJB-EX-F058
Date of Receipt:	10 April 2001

Brand Name:	AB-Access ™ EXTENDER
Model Name or Number:	Power Supply
Unique Type Identification:	SSL40-3360
Serial Number:	None stated by client
Country of Manufacture:	China
FCC ID Number:	Awaiting certification from FCC
Date of Receipt:	10 April 2001

Brand Name:	AB-Access ™ EXTENDER
Model Name or Number:	AB-Access Extender Wall Box
Unique Type Identification:	10000008
Serial Number:	None stated by client
Country of Manufacture:	EU
FCC ID Number:	Awaiting certification from FCC
Date of Receipt:	10 April 2001

2.2. Description Of EUT

AB-Access ™ EXTENDER is targeted at providing high-speed wireless internet/video/data/voice access in the FCC UNII bands between 5.725 GHz and 5.825 GHz.

AB-Access ™ EXTENDER adopts a point to point configuration, consisting of two AB-Access extender units. It is a fixed access, point to point infrastructure. The product is targeted for the US market only.

The Subscriber Unit (SU) is routed via a wall box to the network service provider's truncated infrastructure. The SU has an integral antenna with a 10 degree by 10 degree, 3dB beam width to receive/transmit the desired area of coverage. SU units can be installed around the periphery of a tall building or on a tower for optimum line of sight range. Power and data (bi-directional) are routed via braid and foil screened, quad twisted pair, CAT 5 data cable from the internally mounted wall box (similar in construction to a standard BT telephone outlet) up to the SU transceiver/antenna unit. Power and data status is also routed via this cable. Power is provided to the wall box via a standard FCC approved 48V DC power supply. The wall box provides either Ethernet or ATM connectivity via the industry standard RJ45 socket, to the service providers network and end customer systems.

2.3. Modifications Incorporated In EUT

The EUT incorporates the following modifications:

The AB-Access ™ EXTENDER unit has been modified so that it can be driven from a PC test script, enabling the worst case conditions for FCC requirements, to be evaluated and tested for compliance. There are no hardware modifications, as the modification is purely in the software driver. AB Access employs a rapid Time Division Duplex (TDD) air interface, based on Asynchronous Transfer Mode (ATM) networking protocols. Data is transmitted asynchronously on demand, so there is no discernible duty cycle from which averaged measurements can be taken.

The following test modes have been implemented:

- Continuous Transmit Mode (CTM) – this configures the unit for its worst case mode, for EIRP measurements. The unit is set for maximum transmit power, to give the worst case for switching transients, which can cause spurious emissions whilst performing radiated and conducted emissions.

- Continuous Bursted Receive Mode (CBRM) – this exercises the unit if there may be some fundamental frequency components that exceed the receive switch test mode. In this configuration the unit is set to maximum receive gain.

In either of these modes it is possible to change the operating channel and antenna polarisation as required, by means of the PC controller.

2.4. Additional Information Related To Equipment Under Test

Power Supply Requirement:	Nominal 115 V, 60 Hz AC Mains Supply 13 Amp (max) 48 V DC from PSU to EUT
Current Rating:	0.6 Amps
Highest Frequency used or generated within the EUT	5.805 GHz
Type of Device:	Point to Point wireless data system
Antenna Details:	Permanently attached. (Horizontal or Vertical)
Antenna Gain (Declared)	+23dBi
Transmitter Duty:	Continuous
Occupied Bandwidth:	17 MHz
Transmit Frequency:	5.745 GHz to 5.805 GHz
Type of Modulation:	QPSK at 25 Mbits/sec, raised cosine filter ($\propto$ = 0.35)
Number of Channels:	5 Channels of 15 MHz
Receiver Category:	Superhetrodyne Highest local oscillator frequency 4.9025 GHz
Antenna	Permanently attached. (Horizontal or Vertical)
Tuning Frequency:	5.745 GHz to 5.805 GHz
Method of frequency Generation:	Synthesizer
Intended Operating Environment:	AB-Access ™ EXTENDER unit transceivers/antennas are mounted outside with an operating range of -20°C to +50°C. The wall box and power supply are intended to be mounted internally in users building/office/or home.
Weight:	Master Unit = 6.25 Kg PSU = 0.2 Kg Wall Box = 0.05 Kg
Dimensions:	Master Unit = 0.37 x 0.40 x 0.10 metres PSU = 0.11 x 0.045 x 0.03 metres Wall Box = 0.085 x 0.085 x 0.040 metres
Interface Ports:	Wall Box RJ45 Socket - Ethernet or ATM
Cycle Time:	Not applicable

2.5. Support Equipment

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

Description:	Personal Computer
Model Name:	Dell
Model Number:	PPX
Serial Number:	4898T
Cable Length And Type:	10.0 metres Ethernet cable
Connected to Port:	Local Area Line (LAN) to port 4 on fast Ethernet switch

Description	Fast Ethernet Switch
Brand Name	Netgear
Model Name or Number	FS308
Serial Number	FS38G05015393
F.C.C. ID Number	None stated
Cable Length And Type	9 m Ethernet Crossover Cable
Connected to Port	Port 5 to RJ45 Port on the Wall Box of the EUT

3. Operation of EUT

3.1. Operating Conditions

The EUT was tested in a normal laboratory environment.

During the testing the EUT was powered by a 48 V DC supply from the PSU. The PSU was powered from a 115 V AC, 60 Hz mains supply.

3.2. Operating Modes

The EUT was tested in the following operating modes:

Continuous Transmit Mode at maximum power for transmitter tests.

Continuous Bursted Receive Mode for receiver tests.

The tests were performed with the EUT in both antenna polarisation's and set to the bottom (10), middle (12) and top (14) channels, which are shown in the table below.

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

Channel	Frequency/GHz
10	5.745
12	5.775
14	5.805

3.3. Configuration And Peripherals

The EUT was tested in the following configuration:

The AB-Access ^{TM} EXTENDER unit was connected via the S-FTP, CAT 5 cable to the wall box. The power was supplied from the PSU to the wall box. Data was controlled from the support PC to the wall box via S-UTP-CAT 5 Ethernet cables.

The reason for choosing this configuration was that it was defined by the client as being likely to be the worst case with regards EMC and typical of an installation of a users home or office.

3.4. Configuration of EUT During Radiated Emissions Testing.

All six faces of the EUT were orientated towards the measuring antenna during the Effective Isotropic Radiated Spurious Emissions and Electric Field Strength Spurious Emissions tests. All results from these Radiated measurements can be seen in the original RFI test report, RFI/MICB1/RP42151A. The photographs of which show the worst case configuration.

4. Summary Of Test Results

This section cross references the issues raised in FCC Correspondence Reference Number: 2147731, Confirmation Number: TC101128, FCC ID Number: OJB-EX-F058.

Cross Reference Number	Issues / Measurements	Compliancy Status / Comment
1.	Internal Photographs of EUT	Please refer to the additional photographs supplied to the TCB
3.	Frequency Stability	Complied Refer to Section 5.2
4.	Photographs of test configuration.	Refer to Section 3.4
5.	Peak Conducted Transmit Output Power	Complied Refer to Section 5.1.1 and Appendix 2
6.	Bandwidth	Complied Refer to Section 5.1.1 and Appendix 2
7.	Peak Power Spectral Density	Complied Refer to Section 5.1.1 and Appendix 2
8.	Peak Excursion of the Modulation Envelope	Complied Refer to Section 5.1.1 and Appendix 2
9.	Antenna Gain	The declared gain of the antenna is 23dBi
10.	EIRP limits using measured bandwidth B	Complied
11.	Bandedge measurements	Complied Refer to Section 5.2 and Appendix 2

4.1. Locaion 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.

5. Test Results

5.1. Test Results For Conducted Emissions: Transmit Mode

5.1.1. Peak Conducted Transmit Output Power

5.1.1.1. Measurements were performed in accordance with Section 15.407 of C.F.R. 47: 2000, on the bottom, middle and top channels.

5.1.1.2. It was possible to polarise the antenna incorporated within the EUT for both vertical and horizontal polarisation's. Therefore measurements were performed with the antenna polarised in both planes.

5.1.1.3. The peak power measurements were performed conducted at the antenna connector using a peak power sensor.

5.1.1.4. Results are shown for the EUT operating on each of the 3 channels and both the EUT antenna polarisation's stated in section 3.2. Measurements are shown for both transmit power and peak power spectral density. Plots showing the characteristics of the transmitter output can be found in Appendix 2.

5.1.1.5. As specified by 15.407(a)(5), the Peak Power Spectral Density was performed as a conducted measurement by direct connection of a calibrated test instrument to the equipment under test. Similarly, the Peak Power was also measured by direct connection.

Results: Peak Transmit Power Output and Bandwidth

Channel	EUT Antenna Polarisation	Measured Peak Power (dBm)	Measured Bandwidth (MHz)	Plot No.	Result
10	Vertical	14.9	15.5	A/404	Complied
10	Horizontal	14.9	15.5	A/405	Complied
12	Vertical	15.1	15.8	A/403	Complied
12	Horizontal	15.0	15.8	A/402	Complied
14	Vertical	15.1	15.7	A/400	Complied
14	Horizontal	14.9	15.7	A/401	Complied

Note: The declared gain of the antenna is 23dBi.

Results: Peak Power Spectral Density (PPSD)

Channel	EUT Antenna Polarity	Measured PPSD (dBm/MHz)	Limit (dBm/MHz)	Plot No.	Result
10	Vertical	11.2	17.0	A/023	Complied
10	Horizontal	10.8	17.0	A/003	Complied
12	Vertical	10.8	17.0	A/019	Complied
12	Horizontal	12.1	17.0	A/006	Complied
14	Vertical	11.4	17.0	A/014	Complied
14	Horizontal	10.9	17.0	A/011	Complied

Results: Ratio of Peak Excursion of the Modulation Envelope

Channel	EUT Antenna Polarity	Measured Ratio: Peak Excursion	Limit (dB)	Plot No.	Result
10	Vertical	7.2	13.0	A/024	Complied
10	Horizontal	7.3	13.0	A/004	Complied
12	Vertical	8.6	13.0	A/020	Complied
12	Horizontal	8.1	13.0	A/005	Complied
14	Vertical	8.9	13.0	A/013	Complied
14	Horizontal	8.8	13.0	A/012	Complied

5.2. Test Results For Frequency Stability: Transmit Mode

5.2.1. Frequency Stability and Bandedge Measurements

5.2.1.1. Measurements were performed in accordance with Section 2.1055 of C.F.R. 47: 2000 on the bottom and top channels.

5.2.1.2. The EUT's antenna can transmit in both horizontal and vertical polarisations. Therefore conducted measurements were performed at both the horizontal and vertical antenna ports.

5.2.1.3. The test results are presented in graphical format. Plots showing the characteristics of the transmitter output can be found in Appendix 2.

5.2.1.4. The EUT was configured for normal operation as per 15.407(g).

5.2.1.5. Summary of frequency stability test results:

Test Conditions (Deg.C)	**Measured Frequency Deviation (kHz)**	**Limit**	**Result**
-30.0	<200	Within the band of operation (100MHz)	Complied
-20.0	<200		Complied
-10.0	<200		Complied
0.0	<200		Complied
+10.0	<200		Complied
+20.0	<200		Complied
+30.0	<200		Complied
+40.0	<200		Complied
+50.0	<200		Complied

Results: Supply Variation

5.2.1.6. The test results are presented in graphical format. Plots showing the characteristics of the transmitter output can be found in Appendix 2.

Frequency Deviation @ +20°C (kHz)				
85% Supply Voltage	**100% Supply Voltage**	**115% Supply Voltage**	**Limit**	**Result**
<200	<200	<200	Within the band of operation (100MHz)	Complied

Appendix 1. Test Equipment

Instrument	Manufacturer	Model	RFI No.
Chase Bilog Antenna	Chase EMC Ltd	CBL6112B	A1037
Bilog Antenna	Chase	CBL6111	A259
OATS Positioning Controller	Rohde & Schwarz	HCC	A276
WG 22 Attenuator	Flann	22081-10	A332
Absorbing Clamp	Rohde & Schwarz	MDS 21	A504
Cables	Rosenberger	UFA210A-1-1181-70x70	C160
Cable	Andrews	None	C340
Cable	Rosenberger	UFA210A-1-1182-704704	C459
C564-N-2	Rosenberger	UFA 210A-1-0787-70x70	C564
Spectrum Monitor	Rohde & Schwarz	EZM	M003
ESVP Receiver	Rohde & Schwarz	ESVP	M023
Temperature/Humidity/Pressure Meter	RS Components	None	M136
40GHz Peak Power Sensor	Boonton	51072	M140
Power Meter	Boonton	4220	M141
Turntable Controller	R.H.Electrical Services	RH351	M173
OATS Turntable	British Turntable Ltd	S36069	M174
Thermo/hygro meter	RS Components Ltd	RS212-124	M210
Analyser Display Unit	Rohde & Schwarz	ESAI-D	M505
RF unit	Rohde & Schwarz	ESBI-RF	M506
Site 1	RFI	1	S201

Appendix 2. Graphical Test Results

This appendix contains the following graphs:

Graph Reference Number	Title
GPH/42151A/100	Frequency Stability, Channel 14 Tnom Vnom, FCC Part 15.407
GPH/42151A/101	Frequency Stability, Channel 10 Tnom Vnom, FCC Part 15.407
GPH/42151A/102	Frequency Stability, Channel 14 T-30.0 Vnom, FCC Part 15.407
GPH/42151A/103	Frequency Stability, Channel 10 T-30.0 Vnom, FCC Part 15.407
GPH/42151A/104	Frequency Stability, Channel 10 T-20.0 Vnom, FCC Part 15.407
GPH/42151A/105	Frequency Stability, Channel 14 T-20.0 Vnom, FCC Part 15.407
GPH/42151A/106	Frequency Stability, Channel 14 T-10.0 Vnom, FCC Part 15.407
GPH/42151A/107	Frequency Stability, Channel 10 T-10.0 Vnom, FCC Part 15.407
GPH/42151A/108	Frequency Stability, Channel 10 T 0.0 Vnom, FCC Part 15.407
GPH/42151A/109	Frequency Stability, Channel 10 T 0.0 Vnom, FCC Part 15.407
GPH/42151A/110	Frequency Stability, Channel 14 T 10.0 Vnom, FCC Part 15.407
GPH/42151A/111	Frequency Stability, Channel 10 T 10.0 Vnom, FCC Part 15.407

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42151A/112	Frequency Stability, Channel 10 T 20.0 Vnom, FCC Part 15.407
GPH/42151A/113	Frequency Stability, Channel 14 T 20.0 Vnom, FCC Part 15.407
GPH/42151A/114	Frequency Stability, Channel 10 T 30.0 Vnom, FCC Part 15.407
GPH/42151A/115	Frequency Stability, Channel 14 T 30.0 Vnom, FCC Part 15.407
GPH/42151A/116	Frequency Stability, Channel 14 T 40.0 Vnom, FCC Part 15.407
GPH/42151A/117	Frequency Stability, Channel 10 T 40.0 Vnom, FCC Part 15.407
GPH/42151A/118	Frequency Stability, Channel 10 T 50.0 Vnom, FCC Part 15.407
GPH/42151A/119	Frequency Stability, Channel 14 T 50.0 Vnom, FCC Part 15.407
GPH/42151A/200	Band Edge Measurements, Channel 10 Tnom Vnom, FCC Part 15.407
GPH/42151A/201	Band Edge Measurements, Channel 10 Tnom Vlow, FCC Part 15.407
GPH/42151A/202	Band Edge Measurements, Channel 10 Tnom Vhigh, FCC Part 15.407
GPH/42151A/203	Band Edge Measurements, Channel 14 Tnom Vhigh, FCC Part 15.407

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42151A/204	Band Edge Measurements, Channel 14 Tnom Vnom, FCC Part 15.407
GPH/42151A/205	Band Edge Measurements, Channel 14 Tnom Vlow, FCC Part 15.407
GPH/42151A/205	Band Edge Measurements, Channel 14 Tnom Vlow, FCC Part 15.407
GPH/42151A/400	Emission Bandwidth, Antenna Port Measurement Top Channel, Antenna Pol Vertical, FCC Part 15.407
GPH/42151A/401	Emission Bandwidth, Antenna Port Measurement Top Channel, Antenna Pol Horizontal, FCC Part 15.407
GPH/42151A/402	Emission Bandwidth, Antenna Port Measurement Middle Channel, Antenna Pol Horizontal, FCC Part 15.407
GPH/42151A/403	Emission Bandwidth, Antenna Port Measurement Middle Channel, Antenna Pol Vertical, FCC Part 15.407
GPH/42151A/404	Emission Bandwidth, Antenna Port Measurement Bottom Channel, Antenna Pol Vertical, FCC Part 15.407
GPH/42151A/405	Emission Bandwidth, Antenna Port Measurement Bottom Channel, Antenna Pol Horizontal, FCC Part 15.407
GPH/42151A/004	Peak Excursion, Antenna Port, Bottom Channel, Antenna Horizontal, (5.73247 GHz to 5.75747 GHz), FCC Part 15.407
GPH/42151A/005	Peak Excursion, Antenna Port, Middle Channel, Antenna Horizontal, (5.76244 GHz to 5.78744 GHz), FCC Part 15.407
GPH/42151A/012	Peak Excursion, Antenna Port, Top Channel, Antenna Horizontal, (5.79266 GHz to 5.81766 GHz), FCC Part 15.407
GPH/42151A/013	Peak Excursion, Antenna Port, Top Channel, Antenna Vertical, (5.79266 GHz to 5.81766 GHz), FCC Part 15.407
GPH/42151A/020	Peak Excursion, Antenna Port, Middle Channel, Antenna Vertical, (5.76244 GHz to 5.78744 GHz), FCC Part 15.407
GPH/42151A/024	Peak Excursion, Antenna Port, Bottom Channel, Antenna Vertical, (5.73228 GHz to 5.75728 GHz), FCC Part 15.407
GPH/42151A/003	PPSD, Antenna Port, Bottom Channel, Antenna Horizontal, (5.72497 GHz to 5.76497 GHz), FCC Part 15.407(a)

Graphical Test Results (continued)

Graph Reference Number	Title
GPH/42151A/006	PPSD, Antenna Port, Middle Channel, Antenna Horizontal, (5.75494 GHz to 5.79494 GHz), FCC Part 15.407(a)
GPH/42151A/011	PPSD, Antenna Port, Top Channel, Antenna Horizontal, (5.78516 GHz to 5.82516 GHz), FCC Part 15.407(a)
GPH/42151A/014	PPSD, Antenna Port, Top Channel, Antenna Vertical, (5.79266 GHz to 5.81766 GHz), FCC Part 15.407(a)
GPH/42151A/019	PPSD, Antenna Port, Middle Channel, Antenna Vertical, (5.75494 GHz to 5.79494 GHz), FCC Part 15.407(a)
GPH/42151A/023	PPSD, Antenna Port, Bottom Channel, Antenna Vertical, (5.75494 GHz to 5.79494 GHz), FCC Part 15.407(a)

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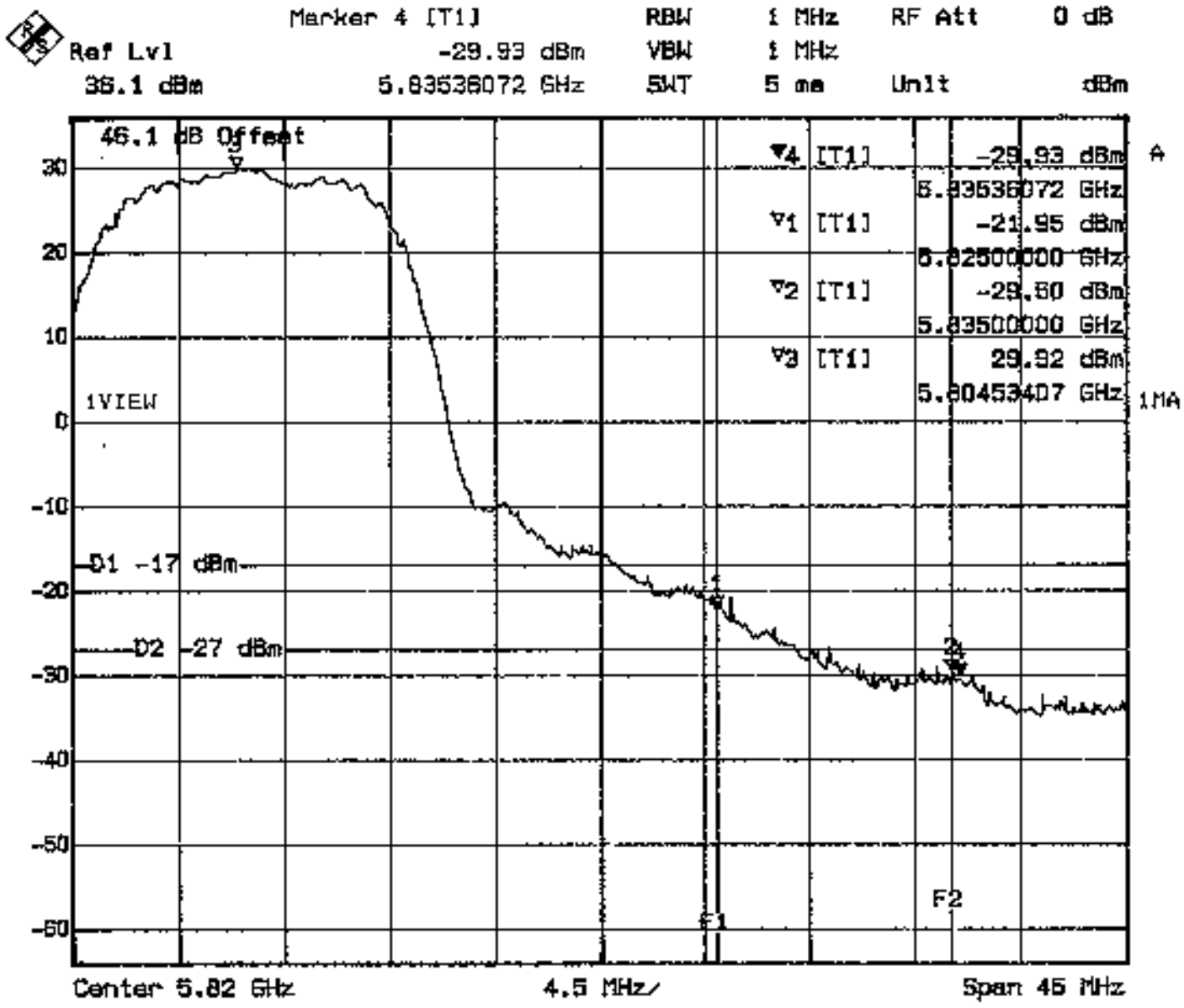

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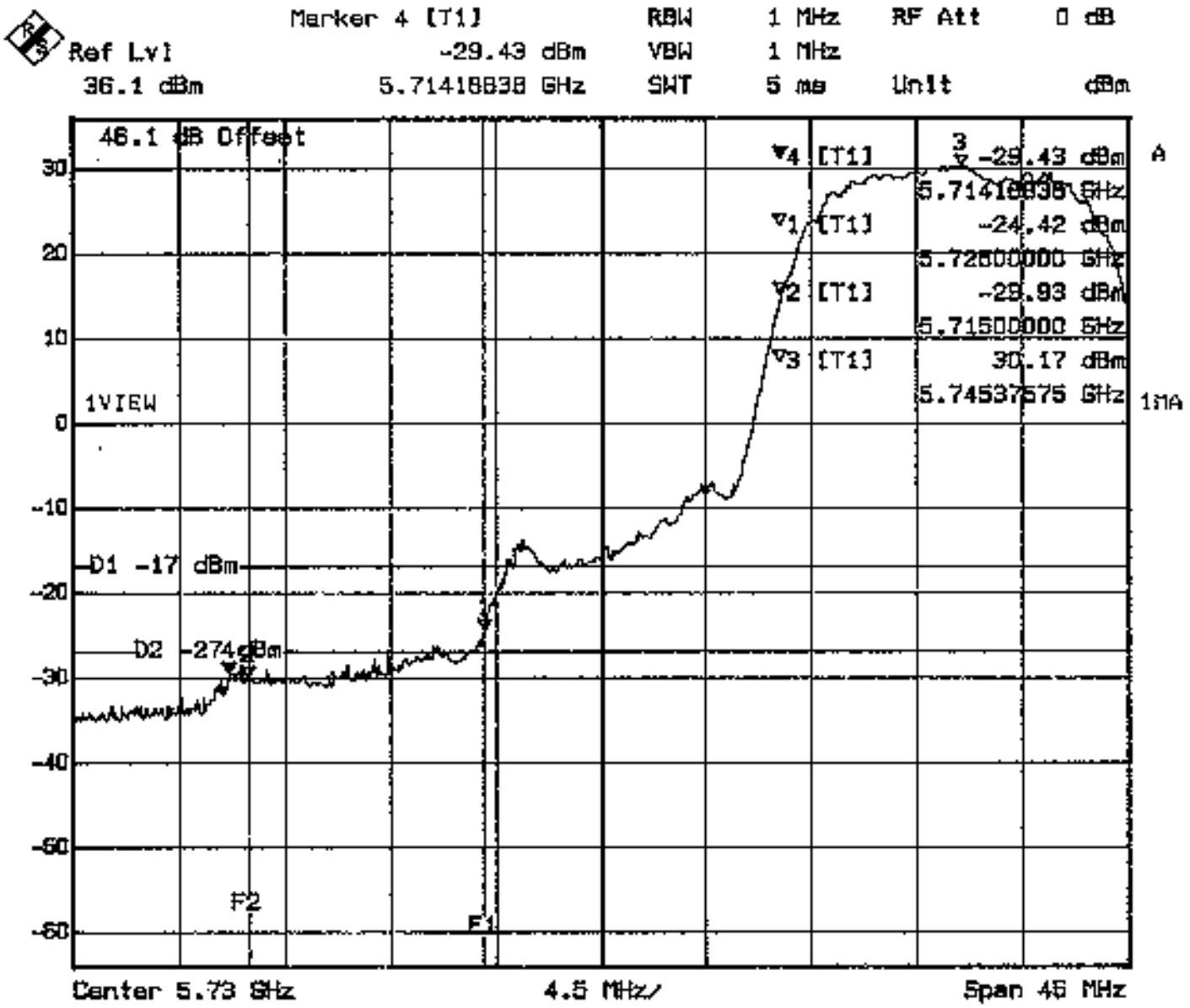

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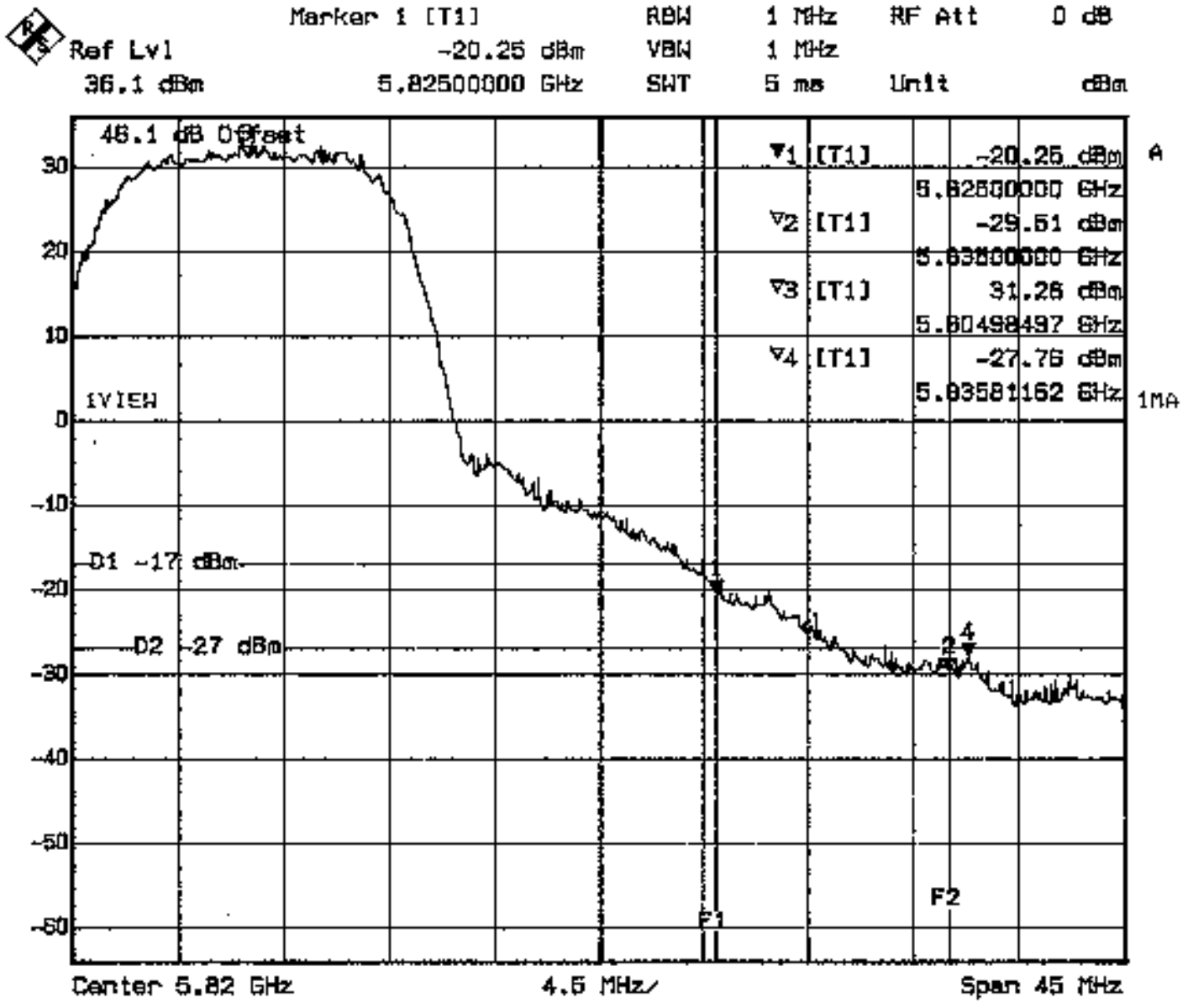

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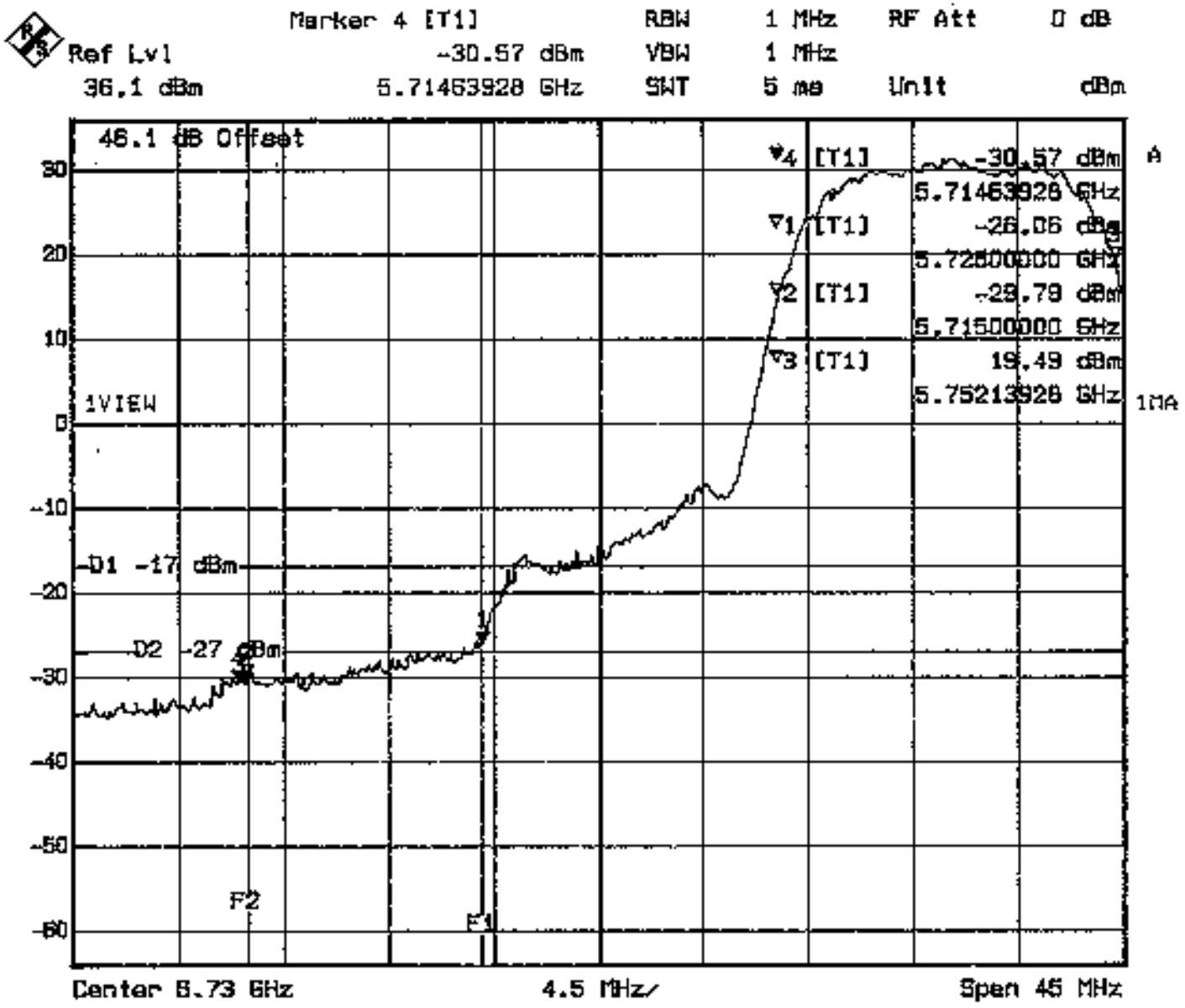

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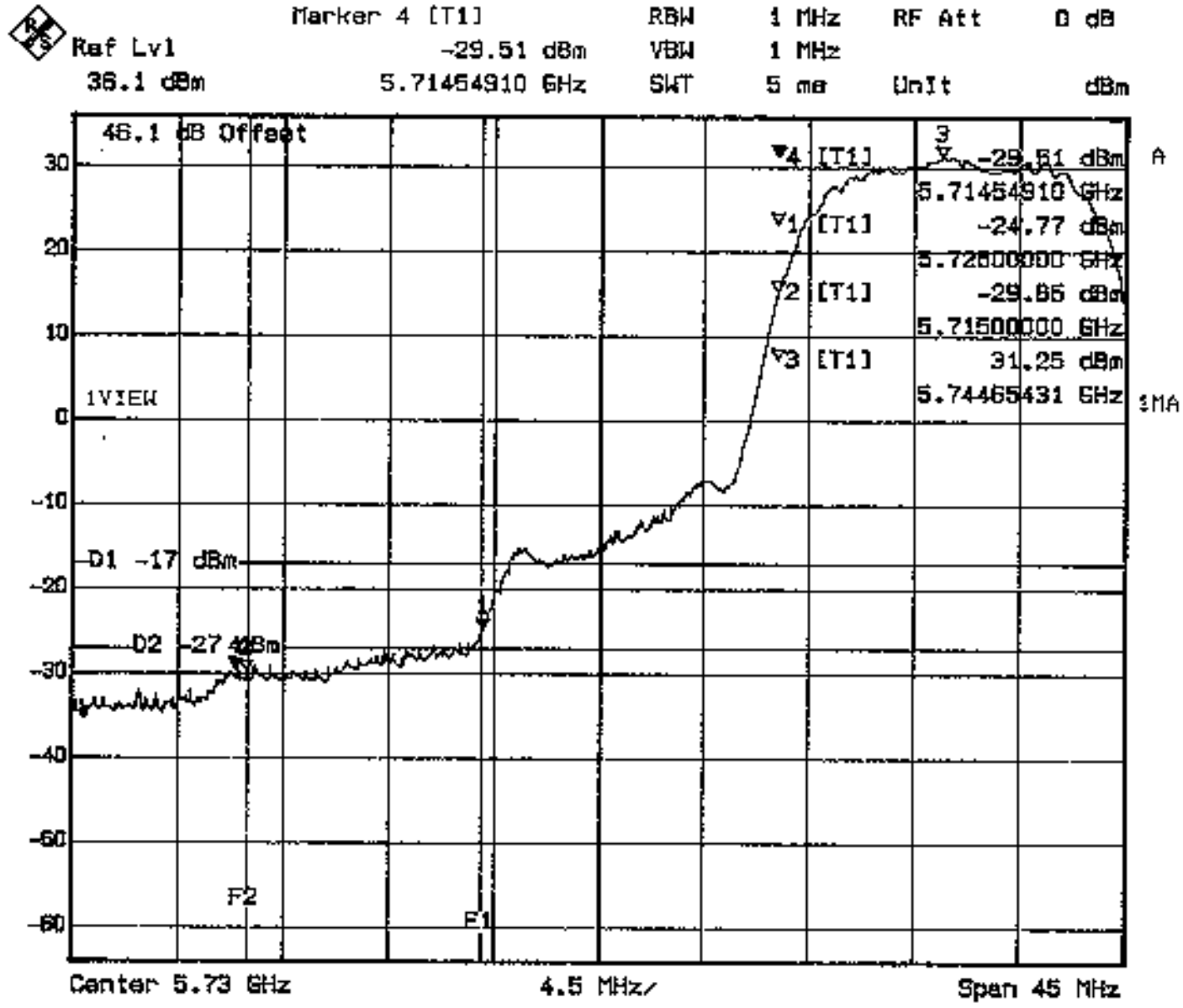

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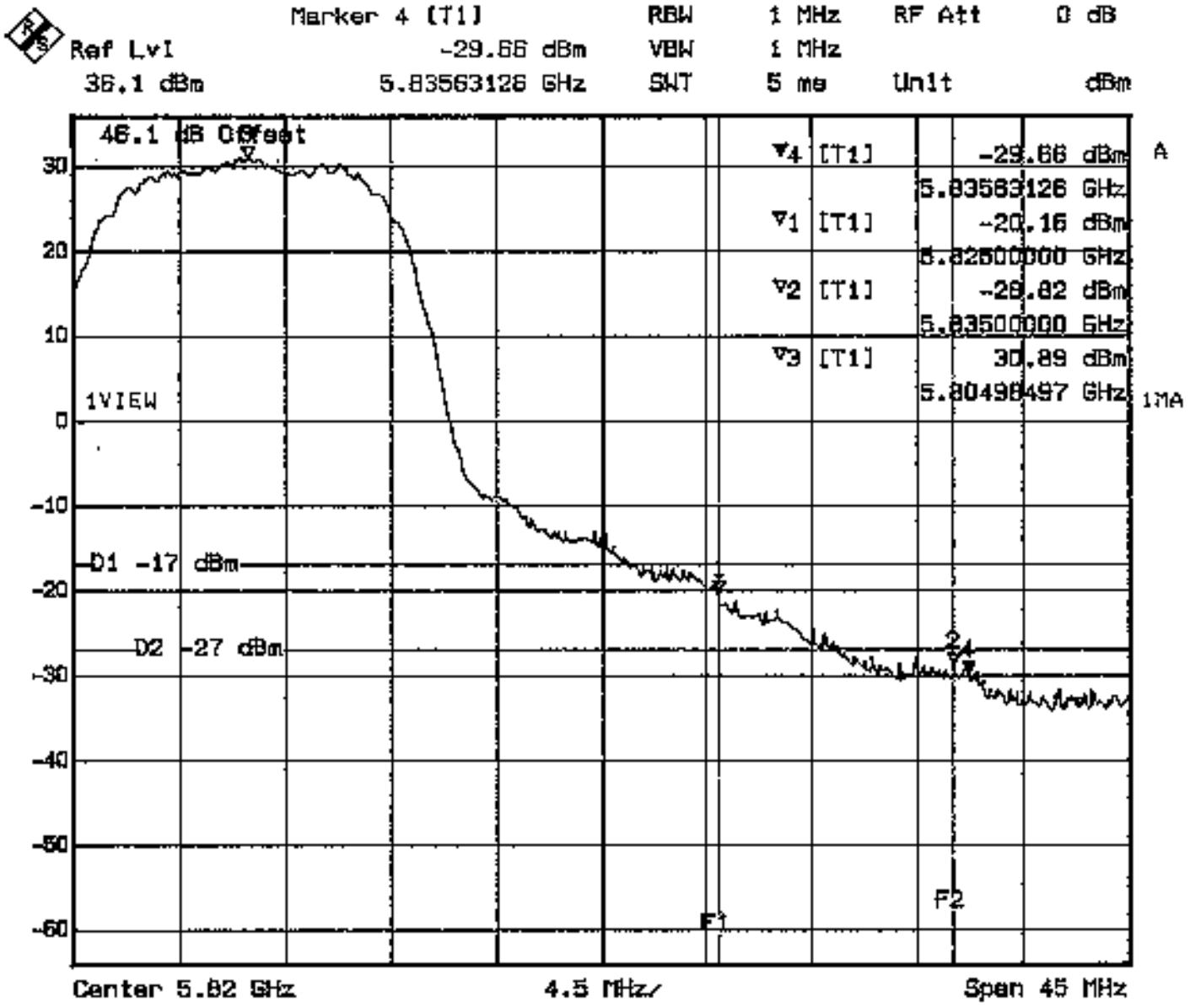

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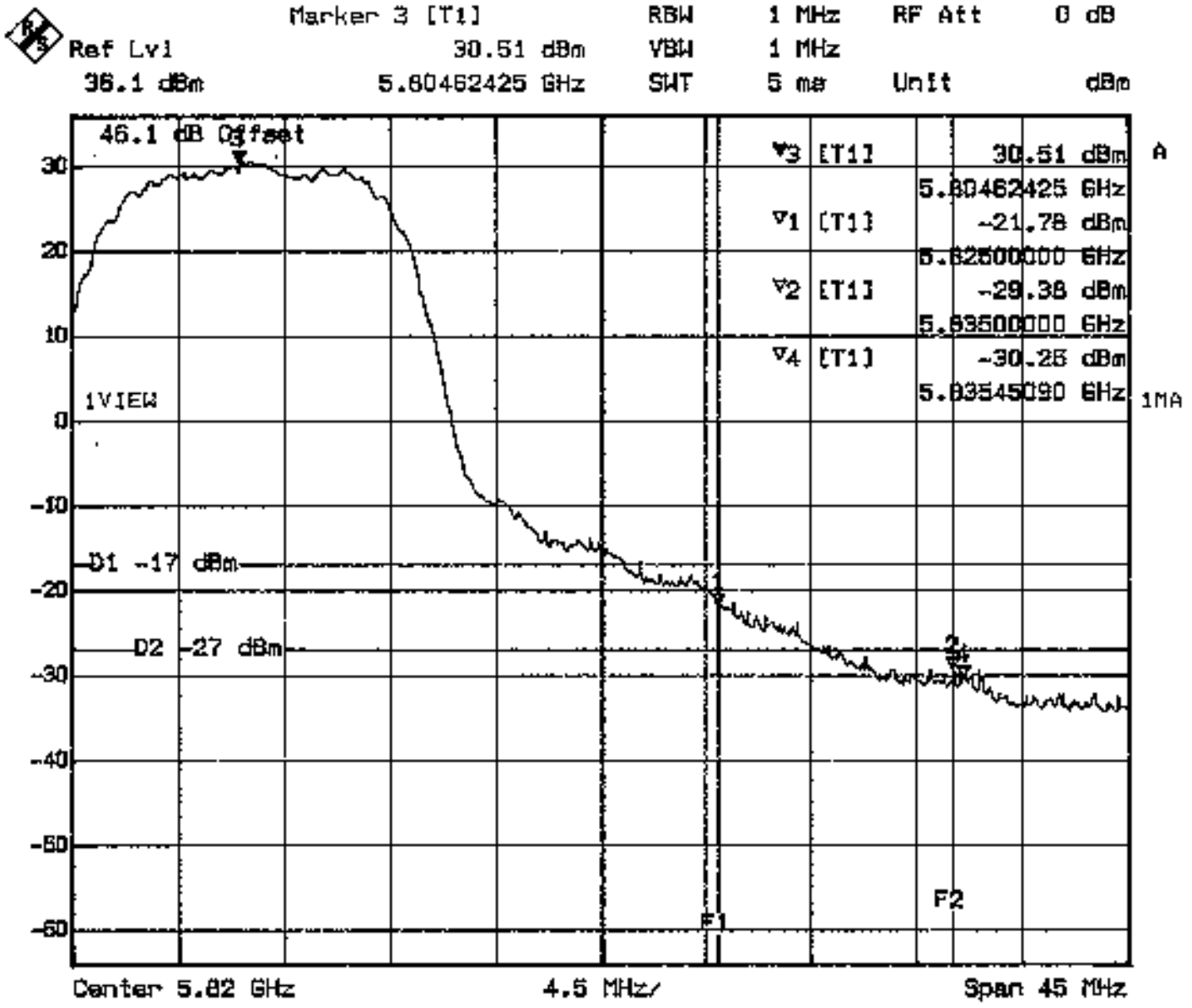

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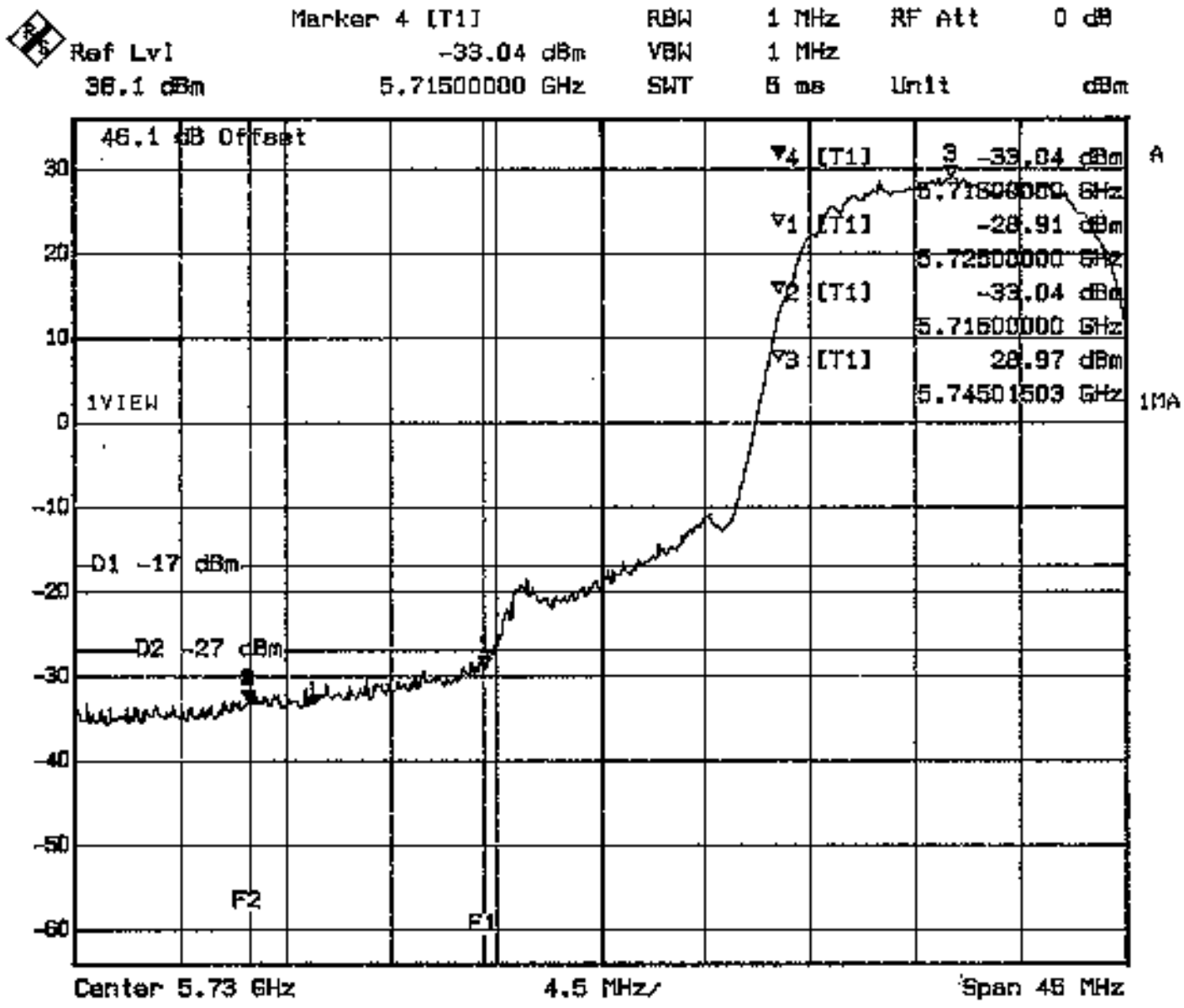

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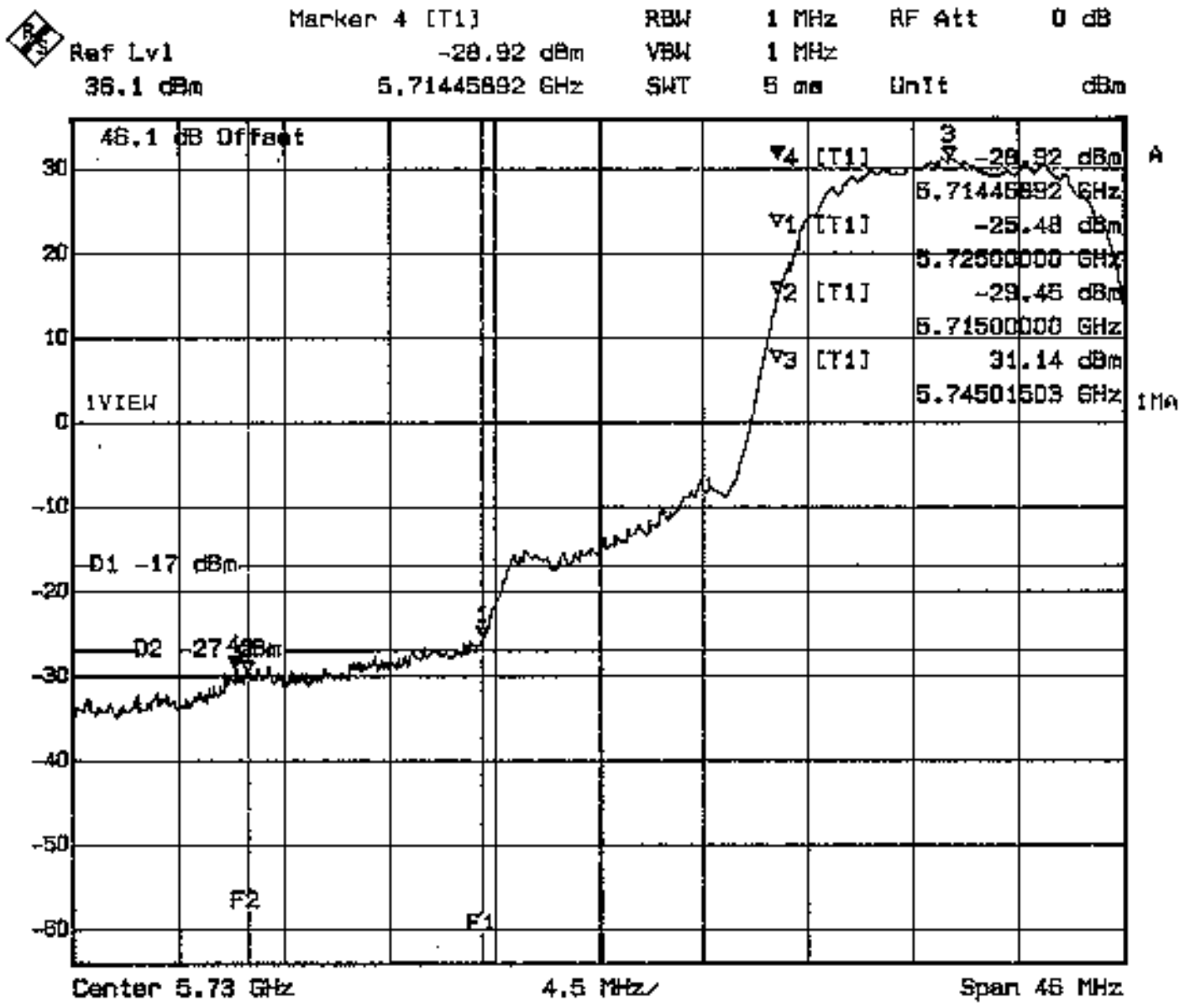

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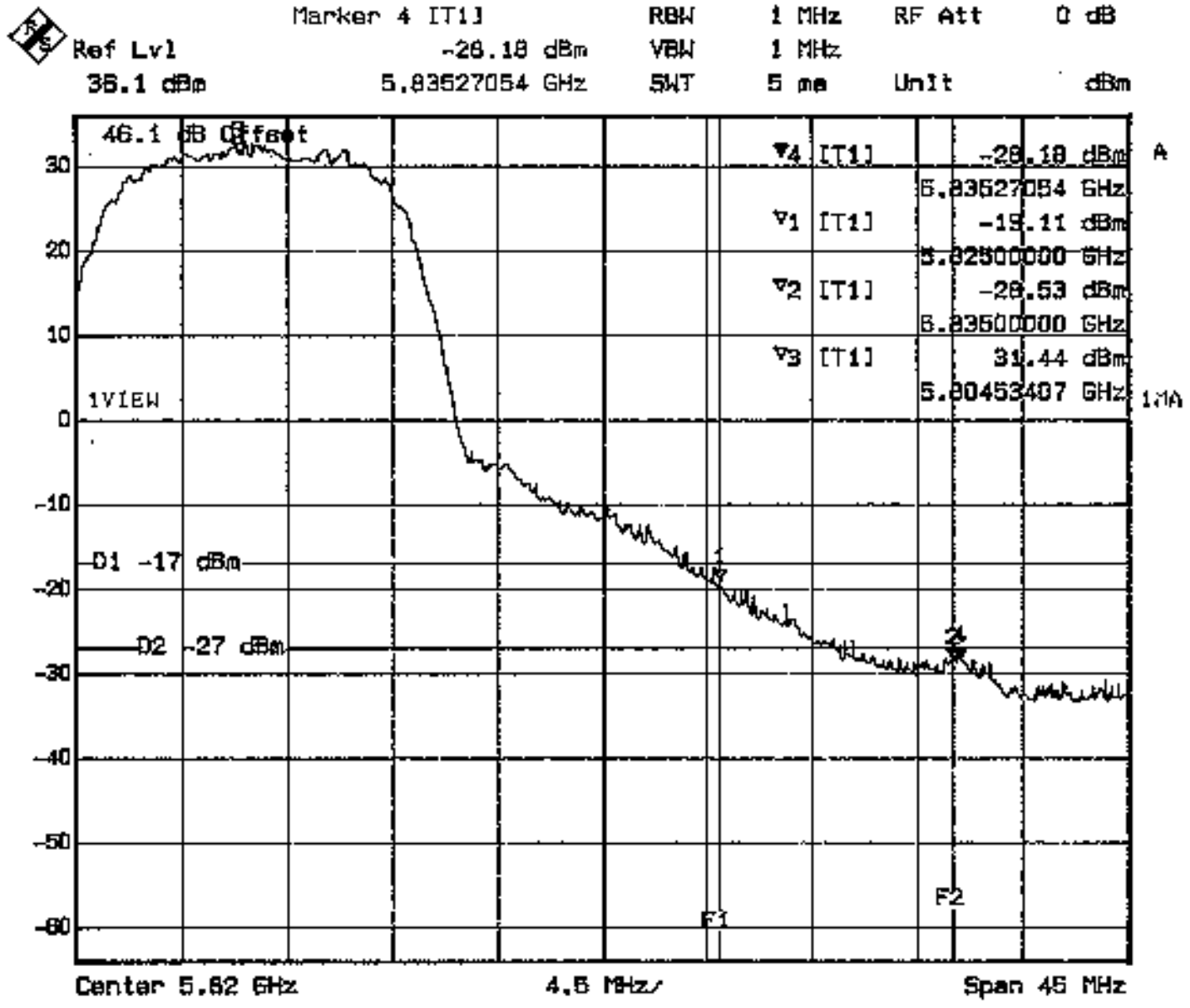

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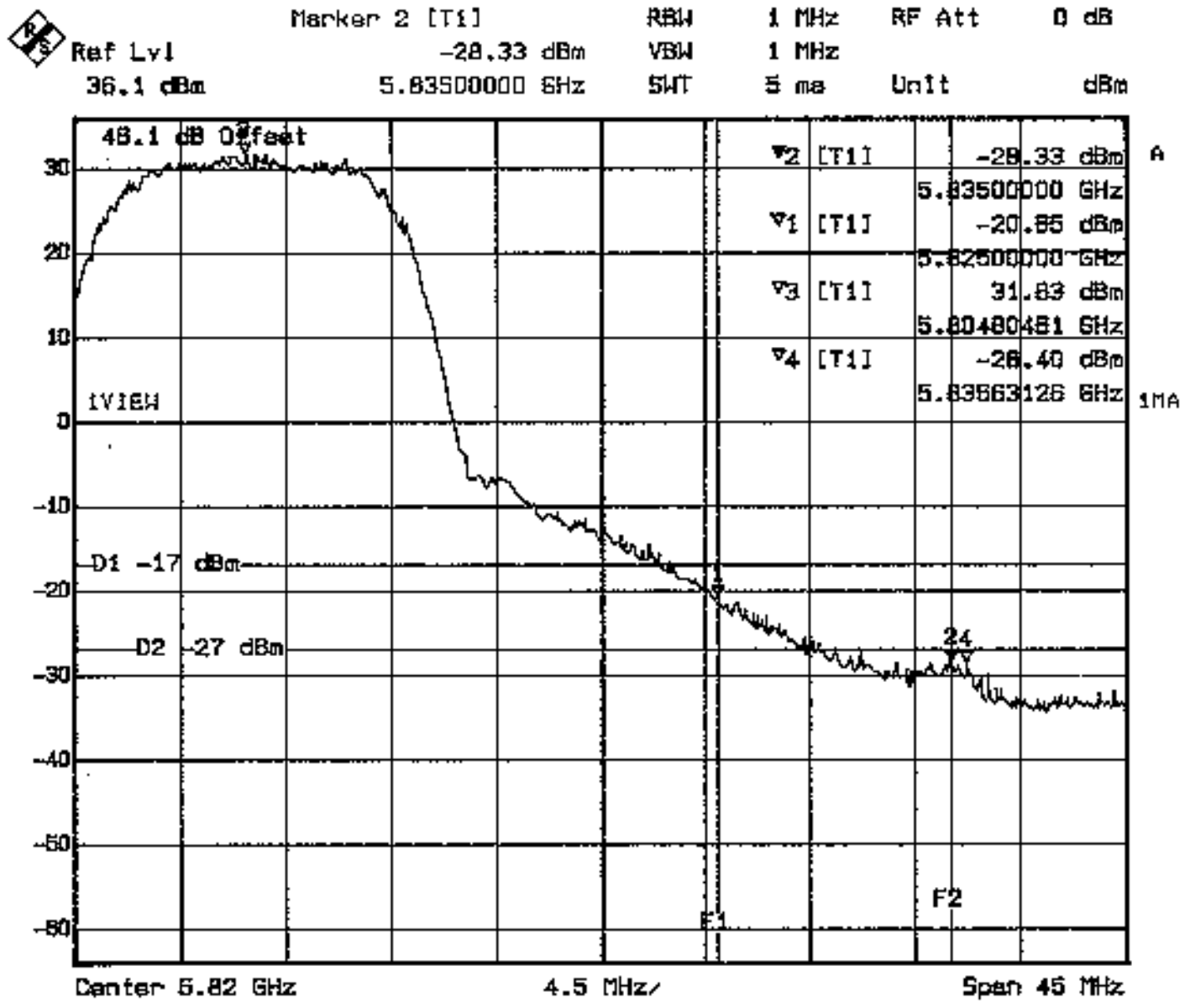

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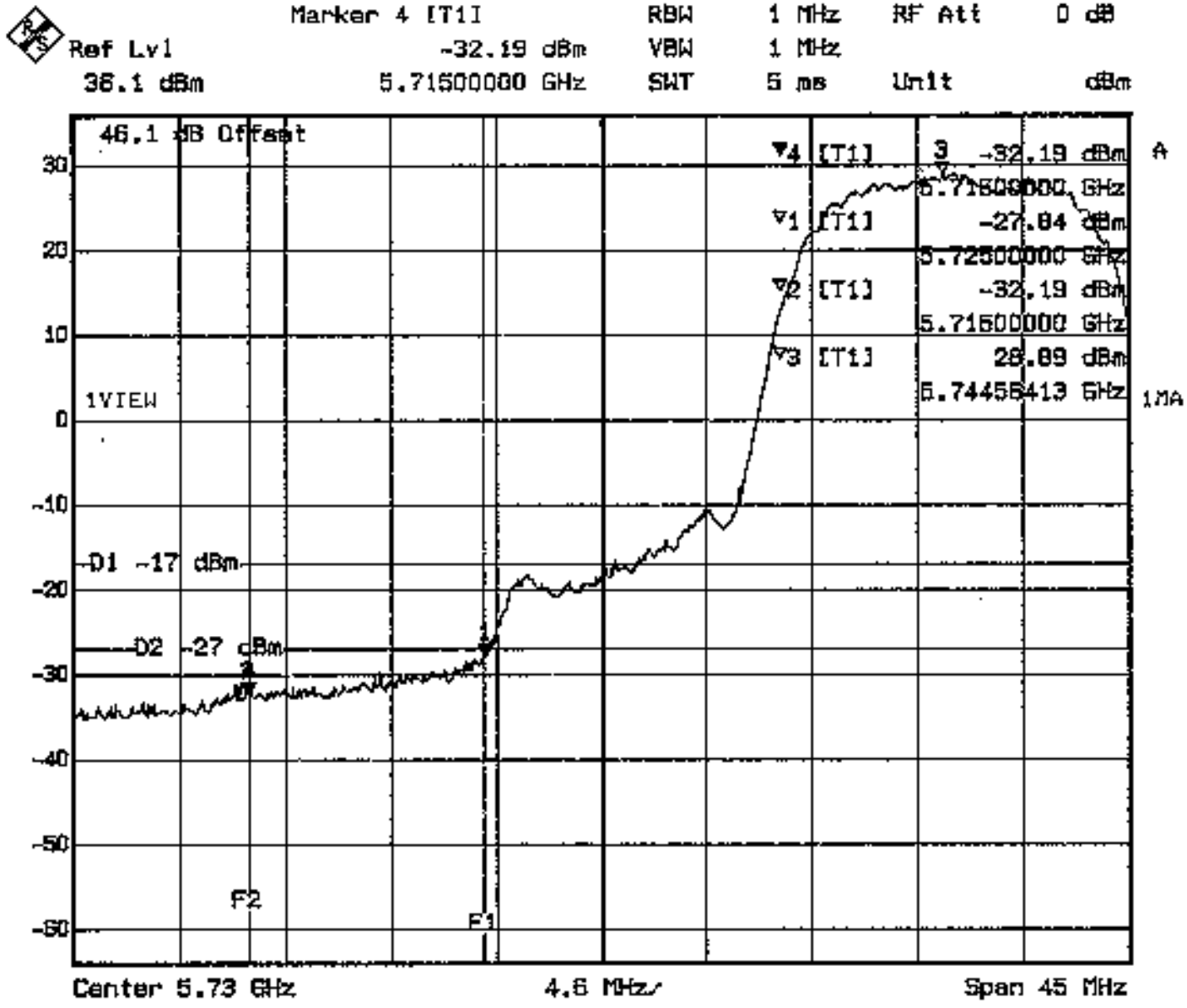
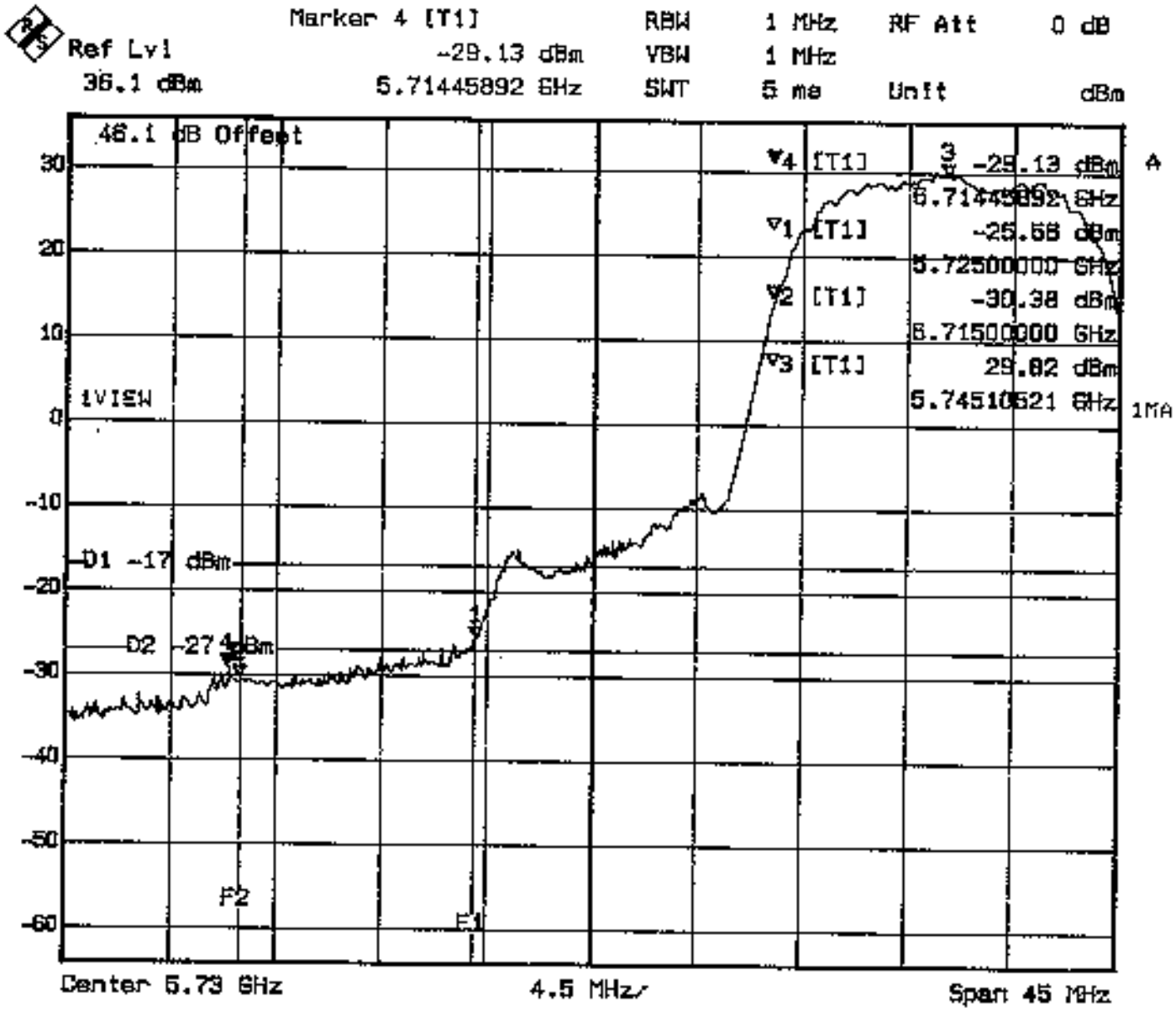
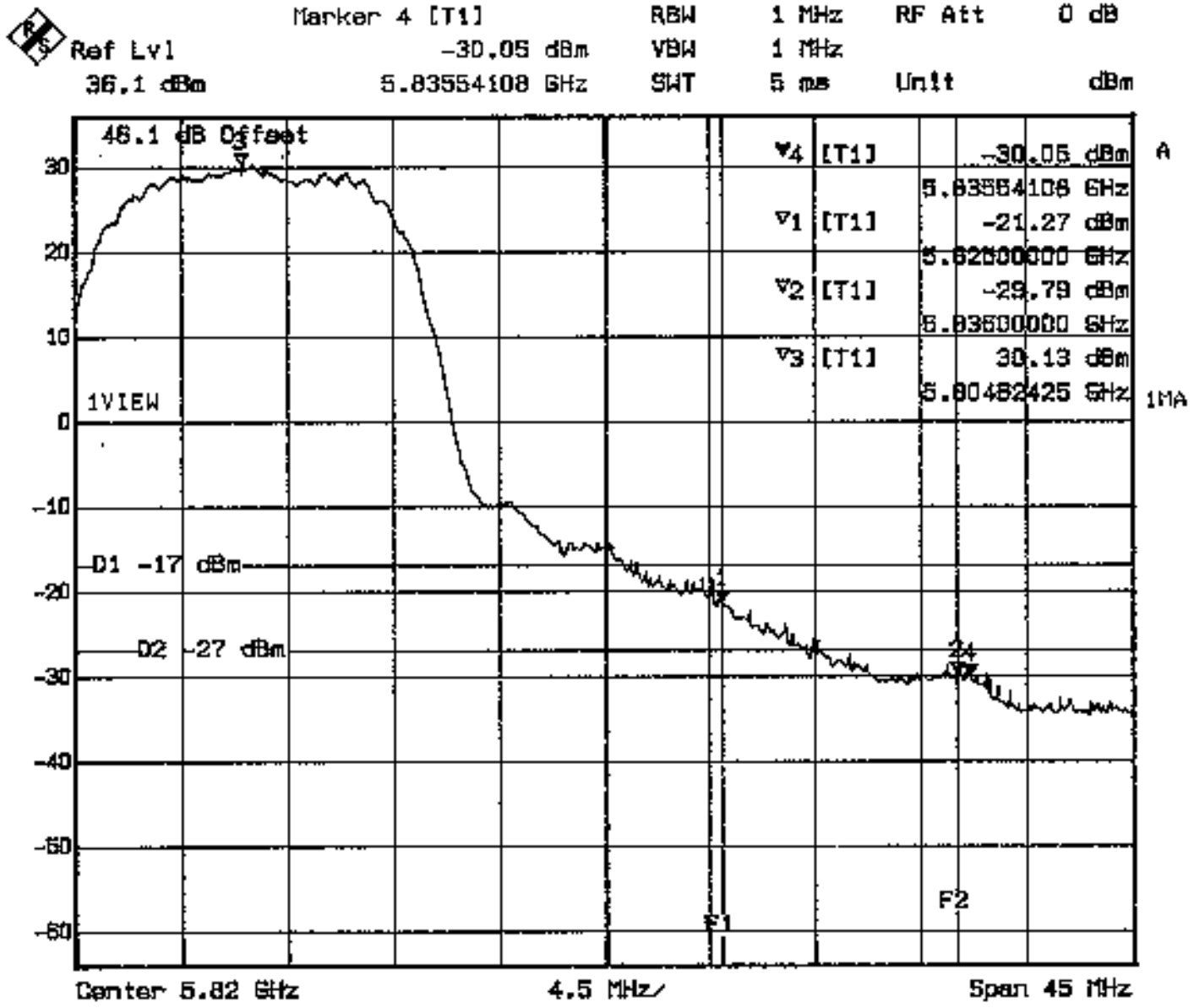


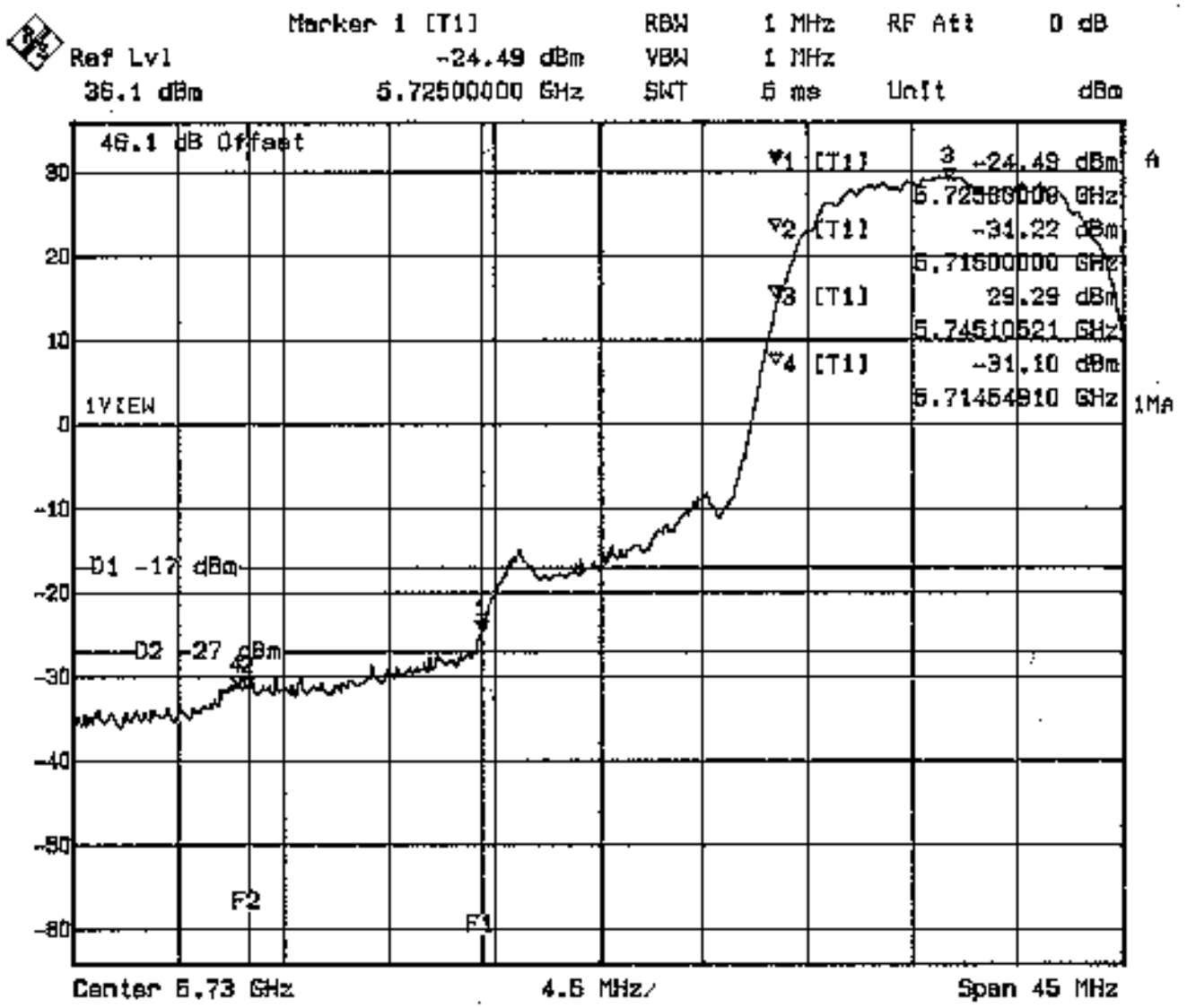
Comment A: Frequency Stability FCC 15.407 CH 10 6PH/42151A/111
T 10.0 Vnom
Date: 19.JUN.2001 19:52:11



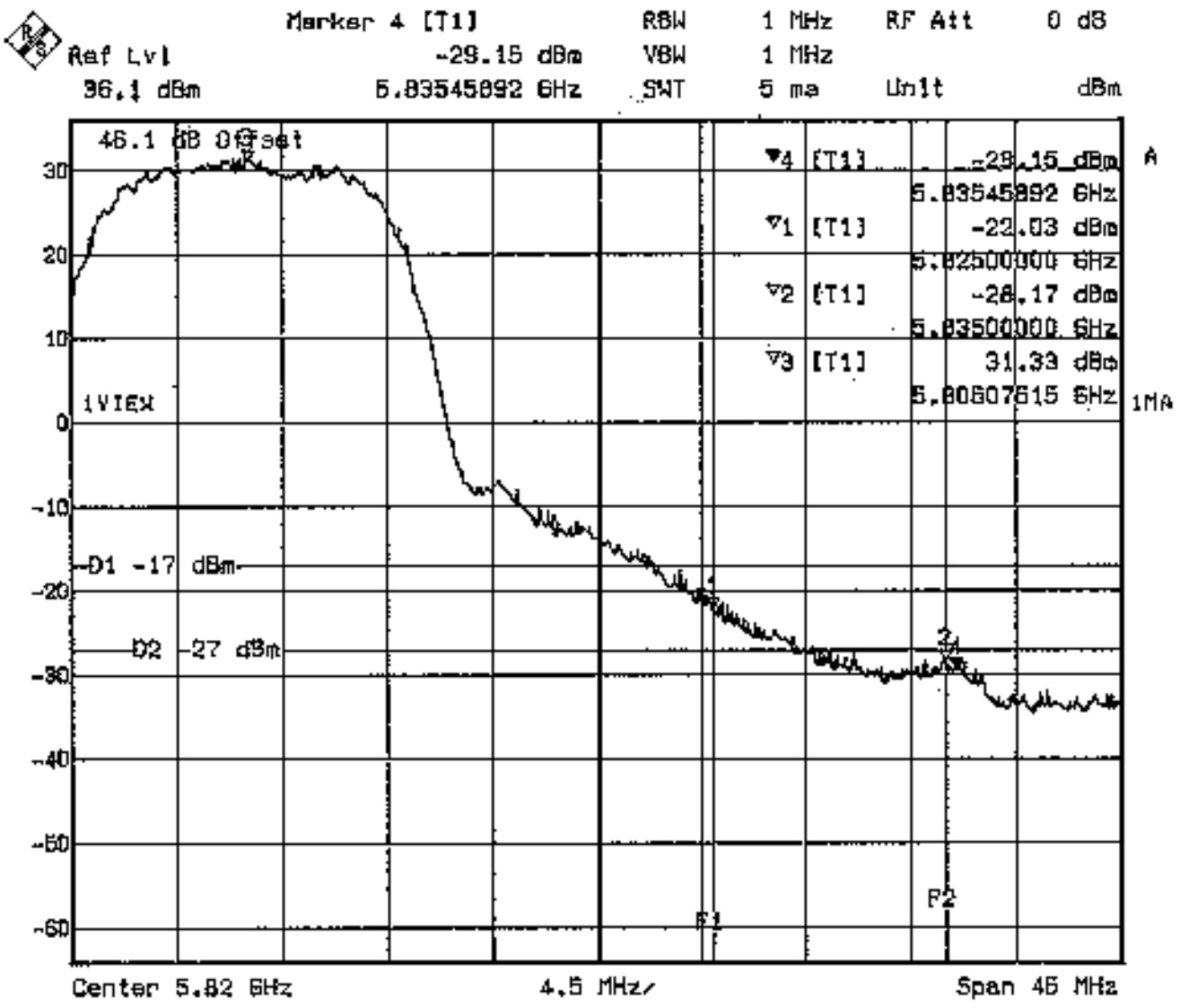
Comment A: Frequency Stability FCC 15.407 CH 10 GPH/4215lA/112
T 20.0 Vnom
Date: 19.JUN.2001 21:24:18



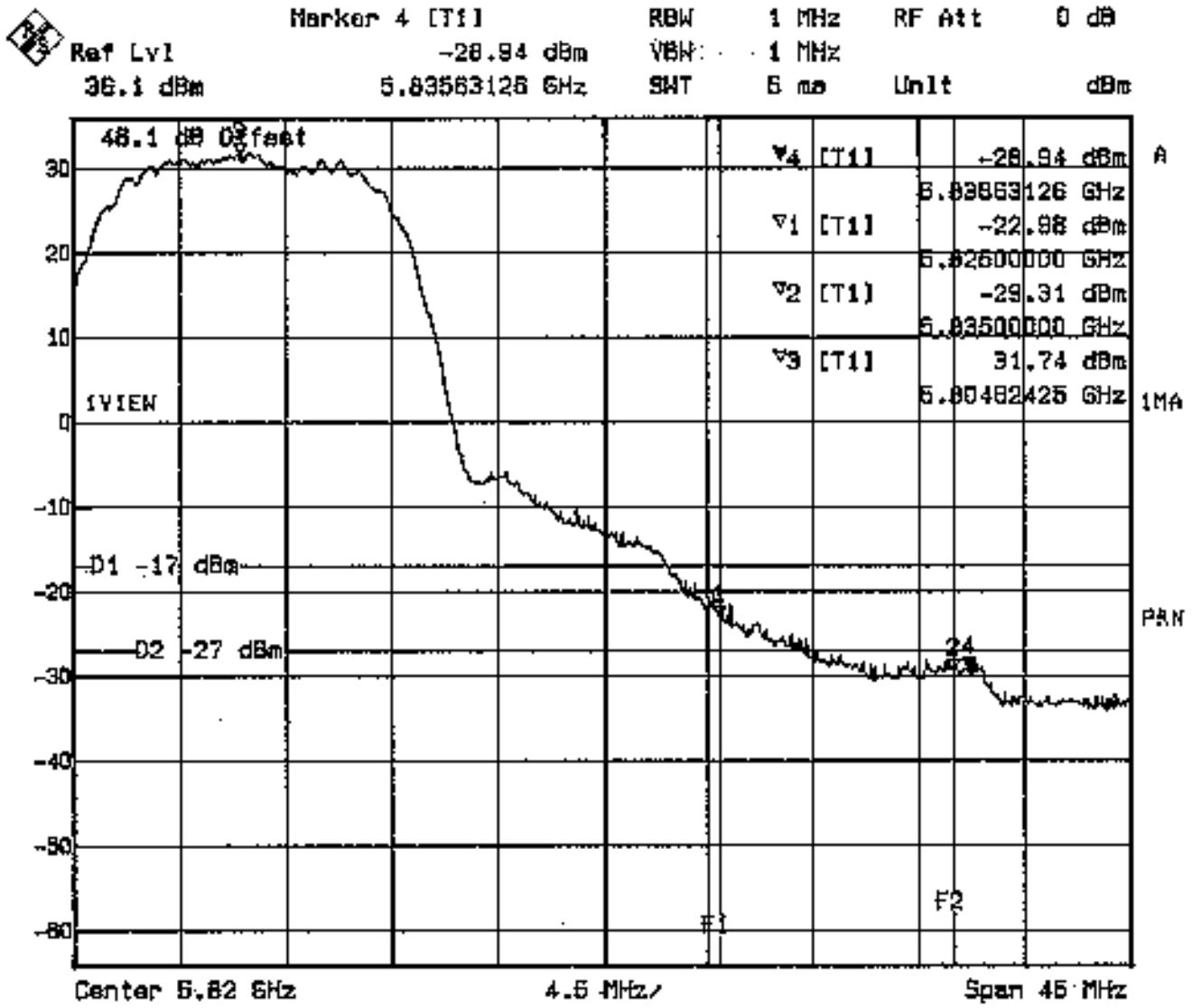
Comment A: Frequency Stability FCC 15.407 CH 14 BPH/42151A/113
T 20.0 Vnom
Date: 19.JUN.2001 21:50:05



Comment A: FREQUENCY STABILITY FCC 15.407 CH 10 SPH/42151A/114
T30.0 Vnom
Date: 20.JUN.2001 15:11:08



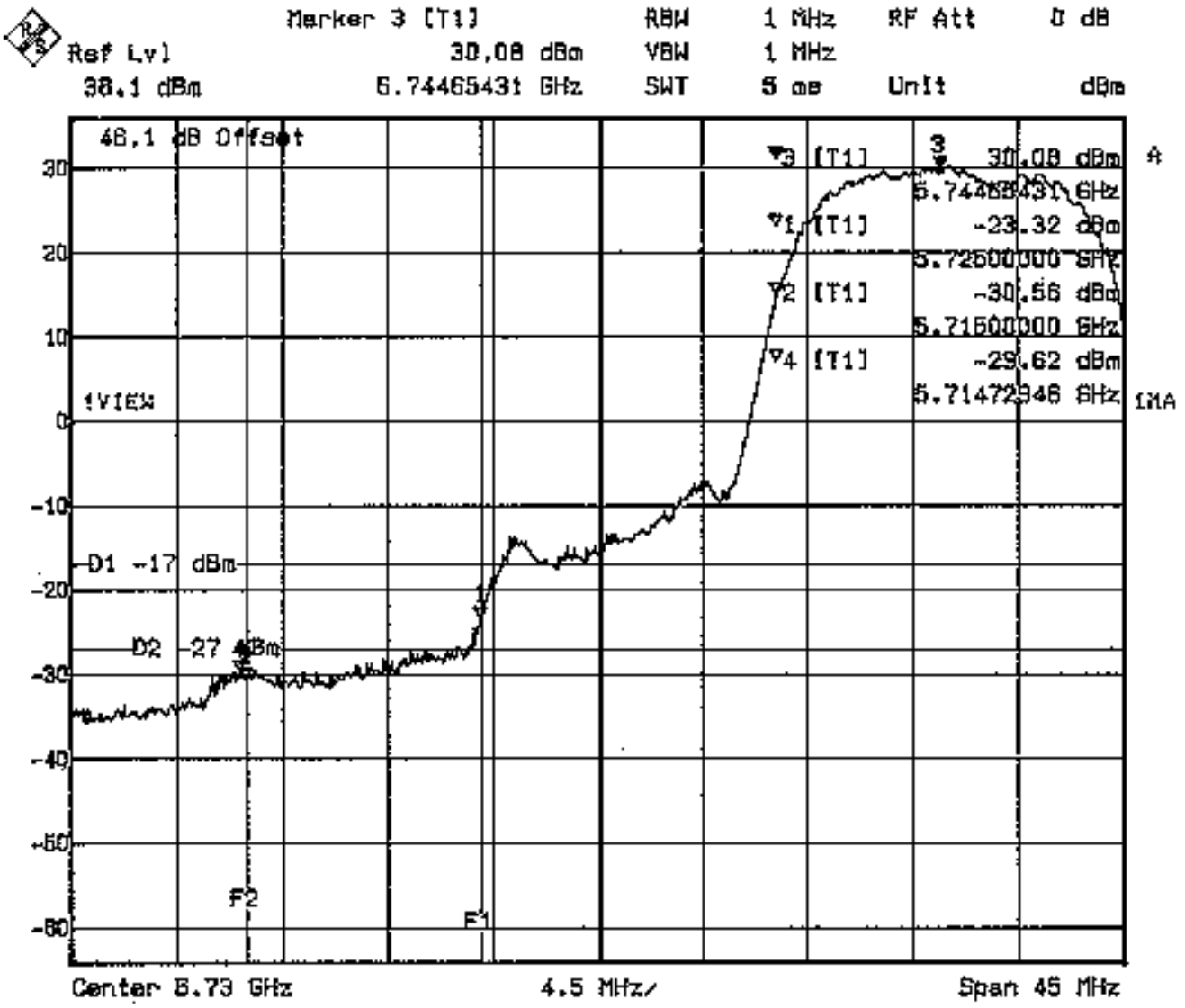
Comment A: FREQUENCY STABILITY FCC 15.407 CH 14 GPH/42151A/115
T30.0 VNOM
Date: 20.JUN.2001 15:19:12



Comment A: FREQUENCY STABILITY FCC 15.407 CH 1Ø 6PH/42151A/116
T40.0 Vnom
Date: 20.JUN.2001 17:23:28

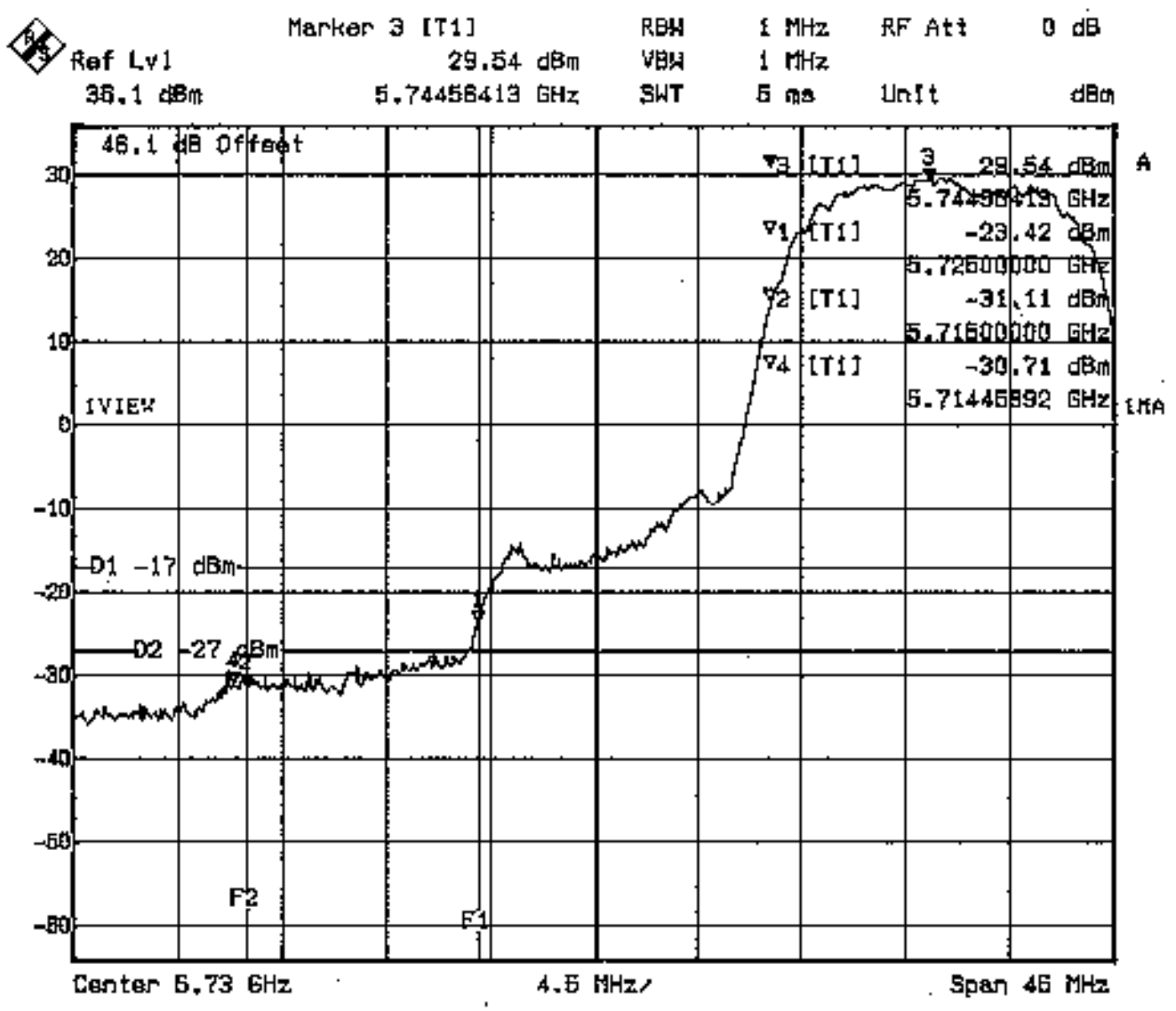
4

BK 21/6/01

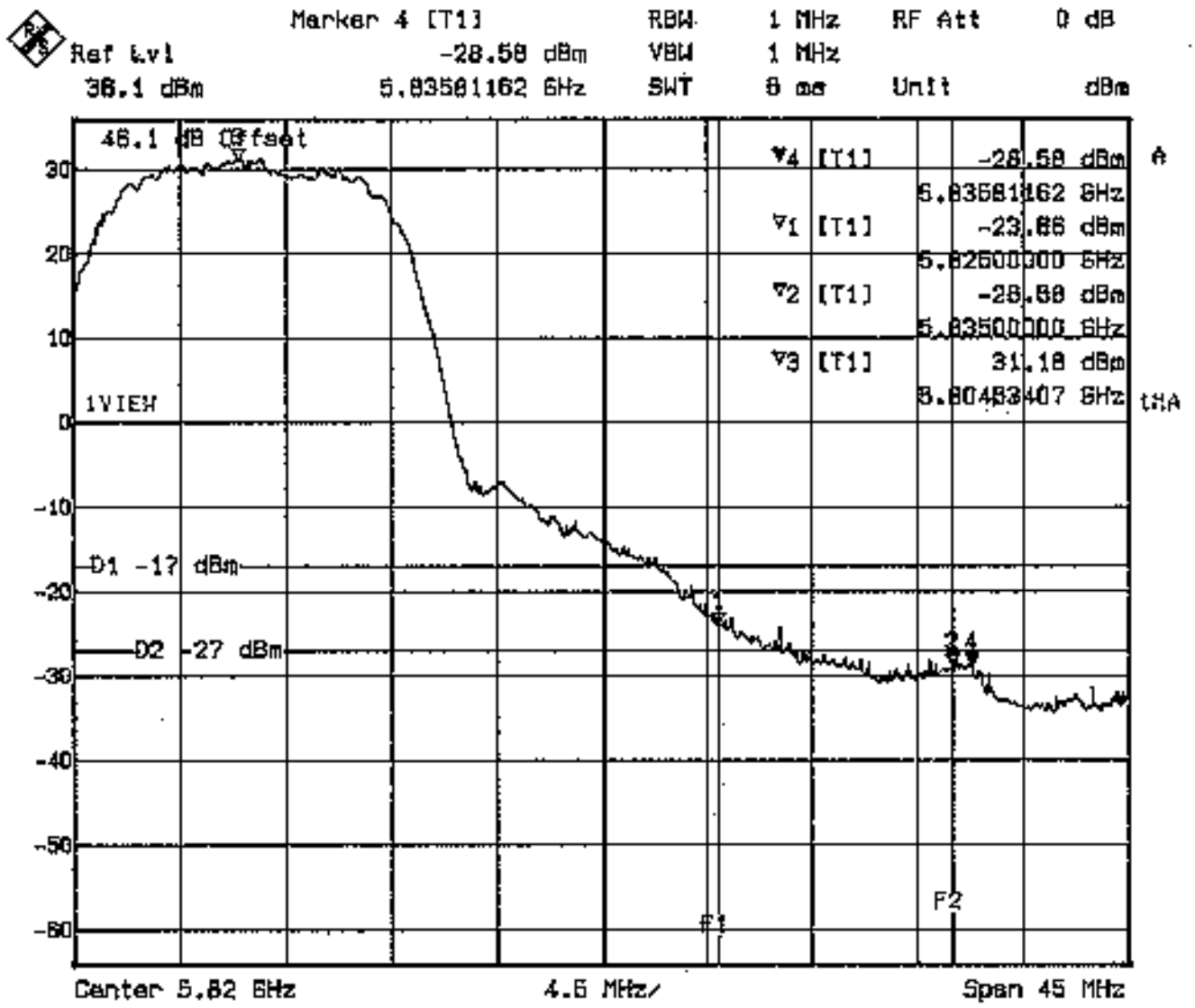


Comment A: FREQUENCY STABILITY FCC 15.407 CH 10 GPH/42151A/11
T20.0 Vnom
Date: 20.JUN.2001 16:45:51

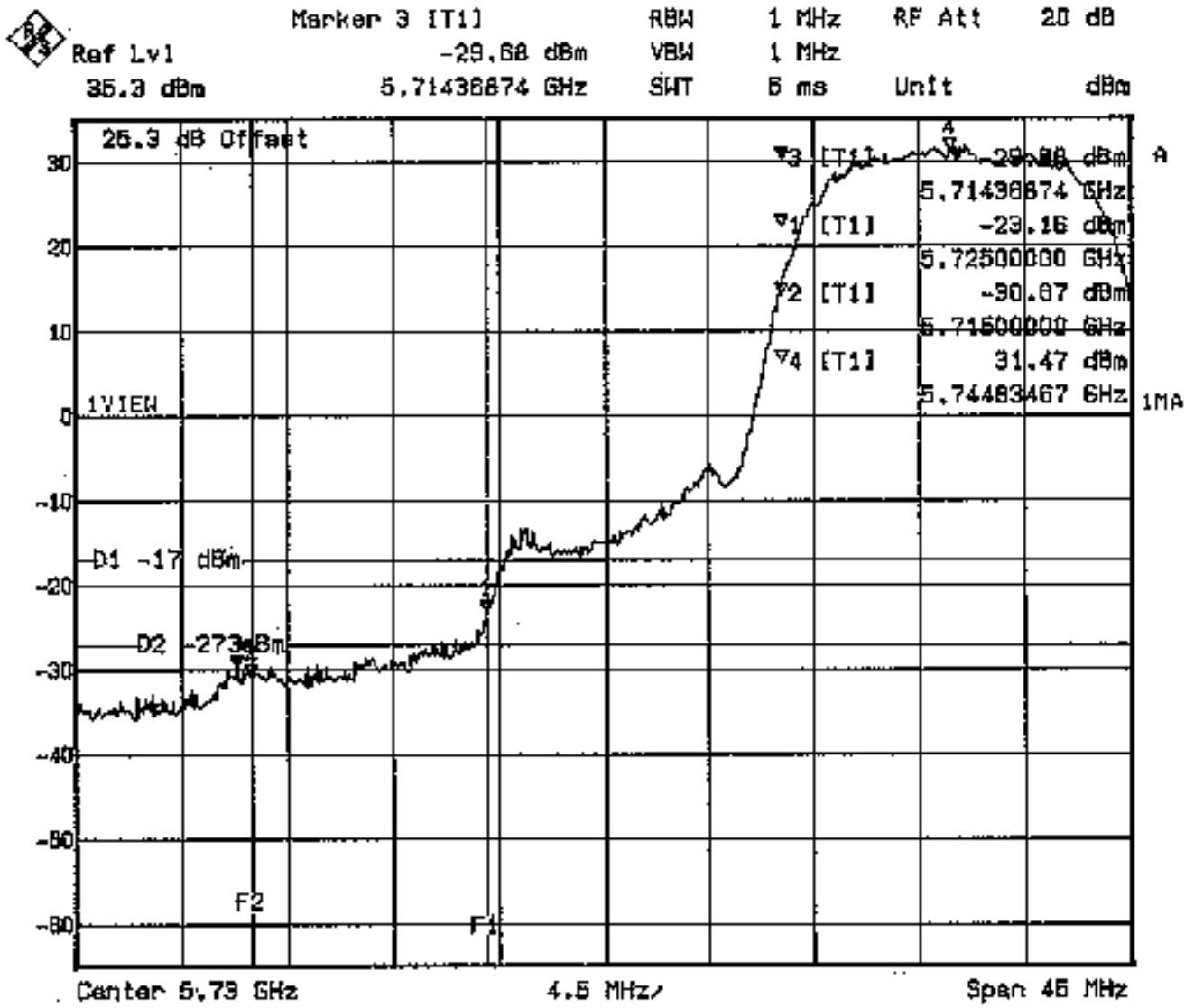
8/22/01



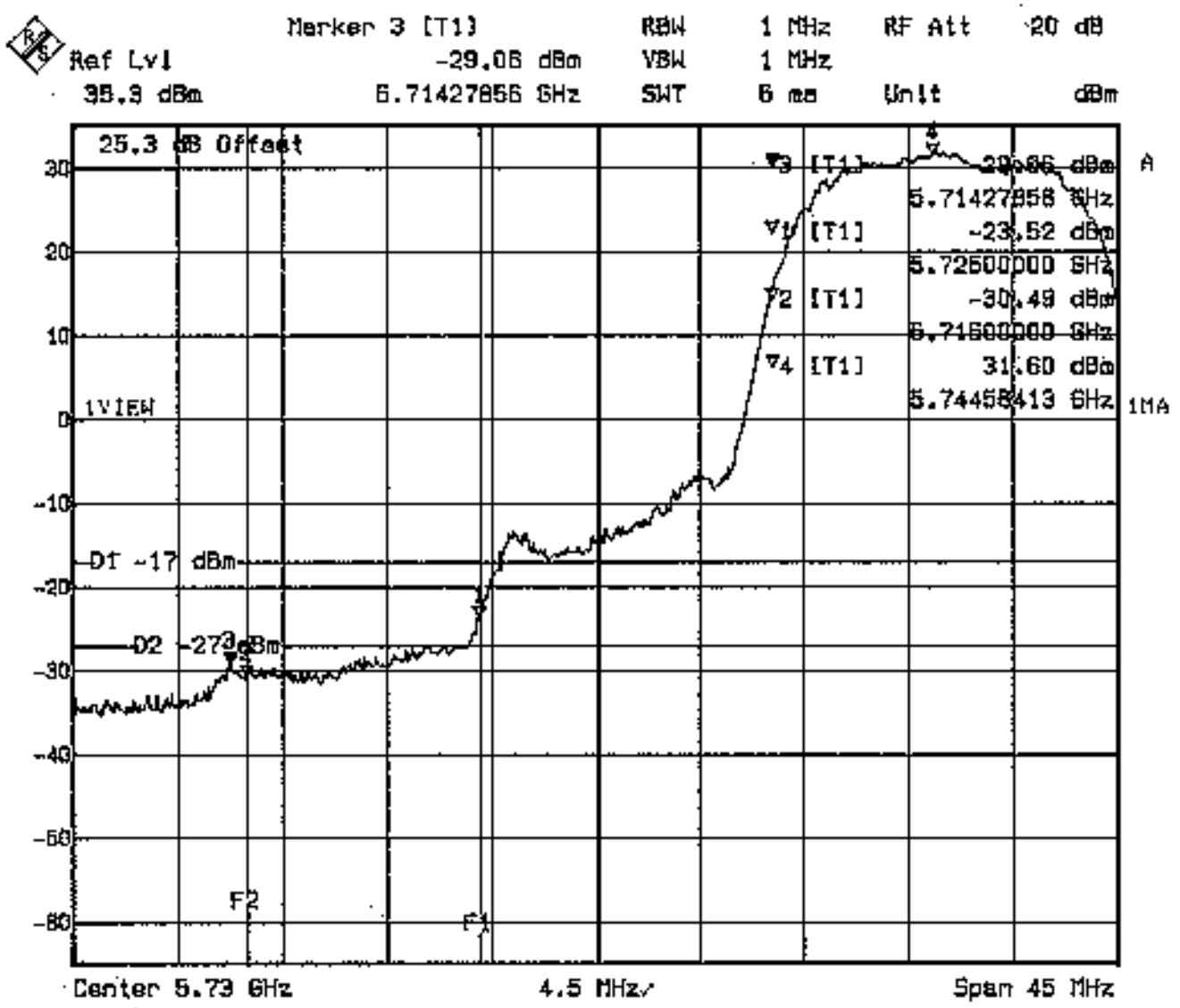
Comment A: FREQUENCY STABILITY FCC 15.407 CH 10 GPH/4215iA/118
T50.0 Vnom
Date: 20.JUN.2001 19:22:33



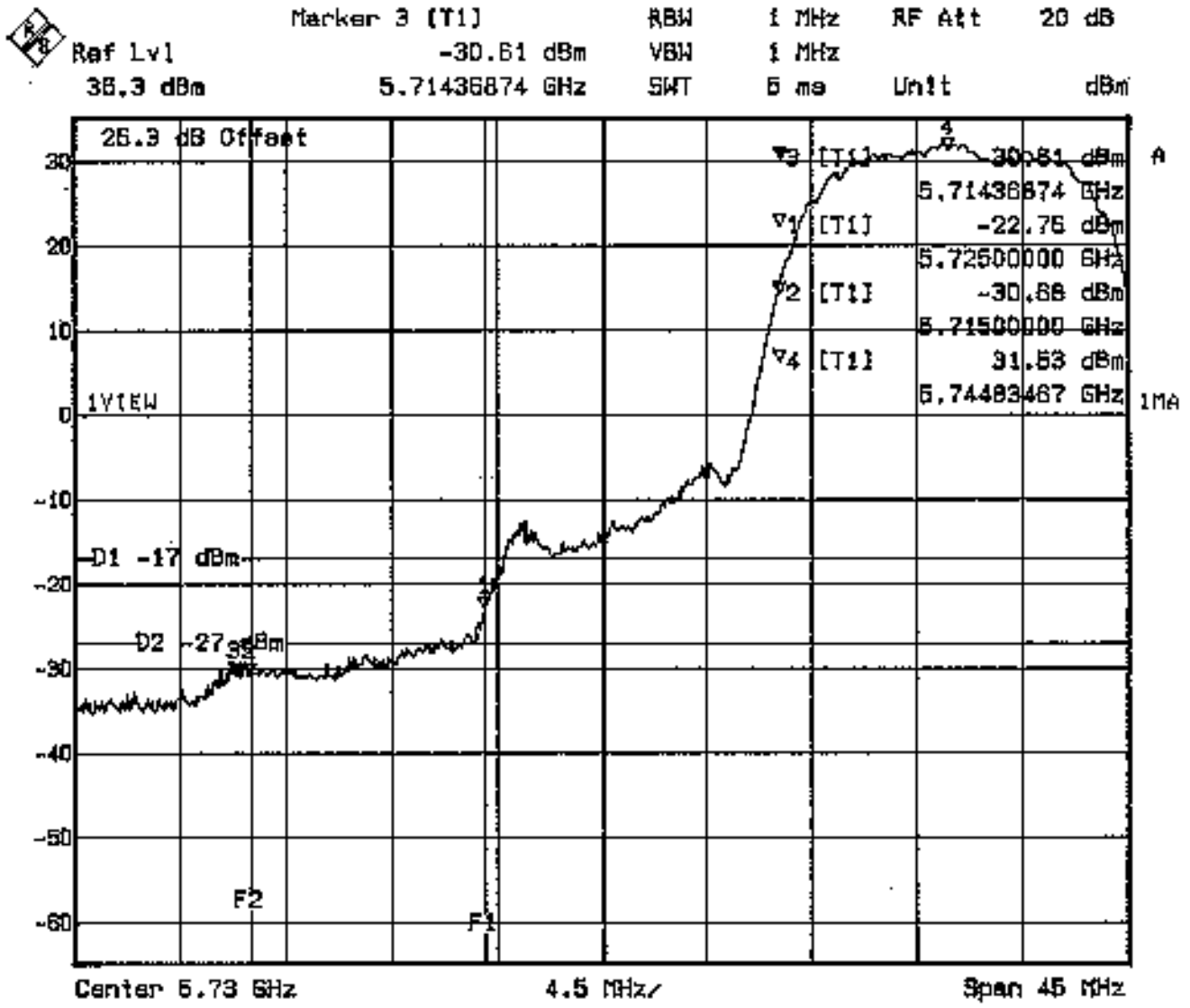
Comment A: FREQUENCY STABILITY FCC 15.407 CH 14 GPH/421614/119
T50.0 Vnom
Date: 20.JUN.2001 16:48:09



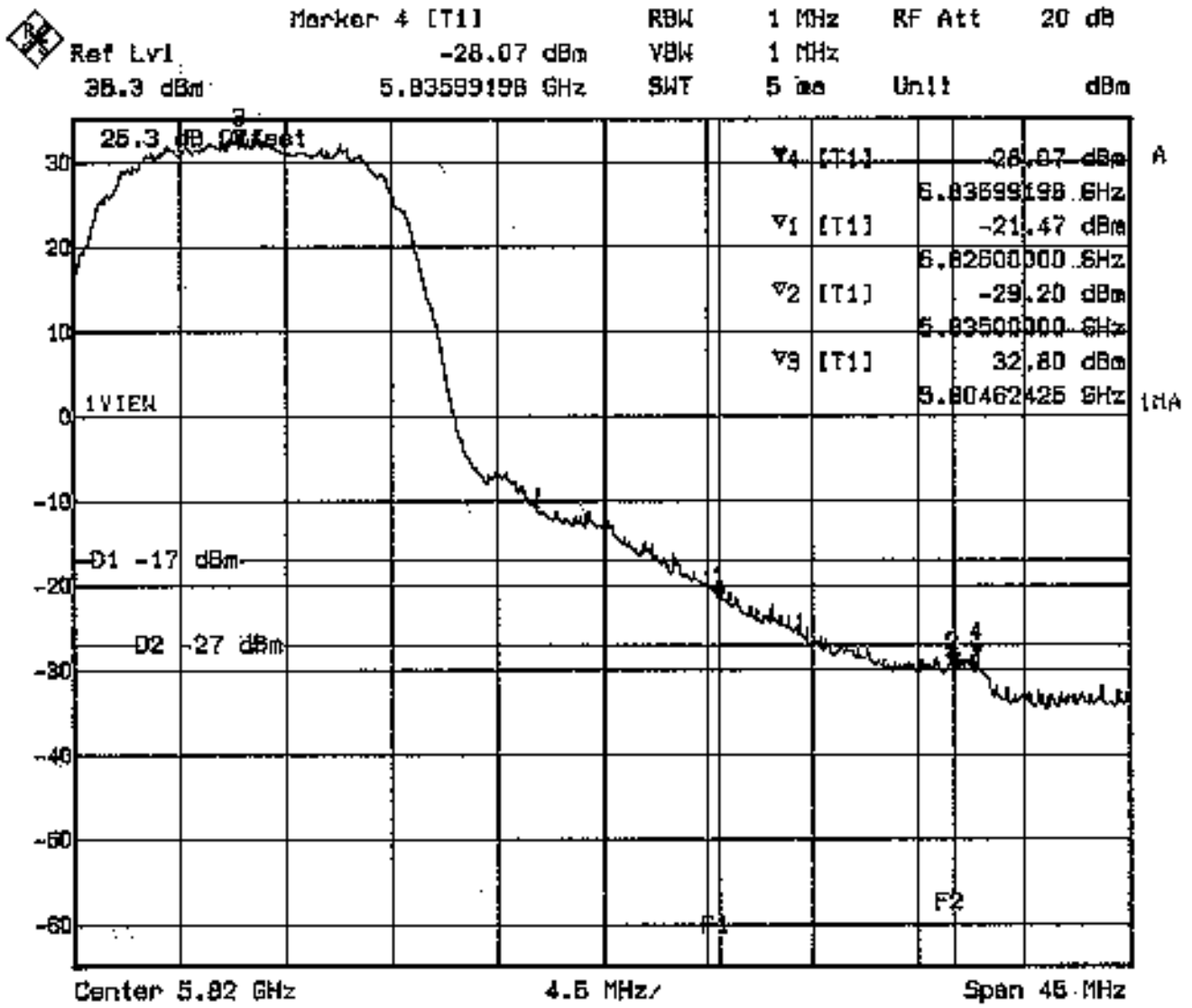
Comment A: BANDEDGE MEASUREMENTS.FCC 15.407 CH 10 GPH/42151A/200
Tnom Vnom
Date: 18.JUN.2001 9:52:27



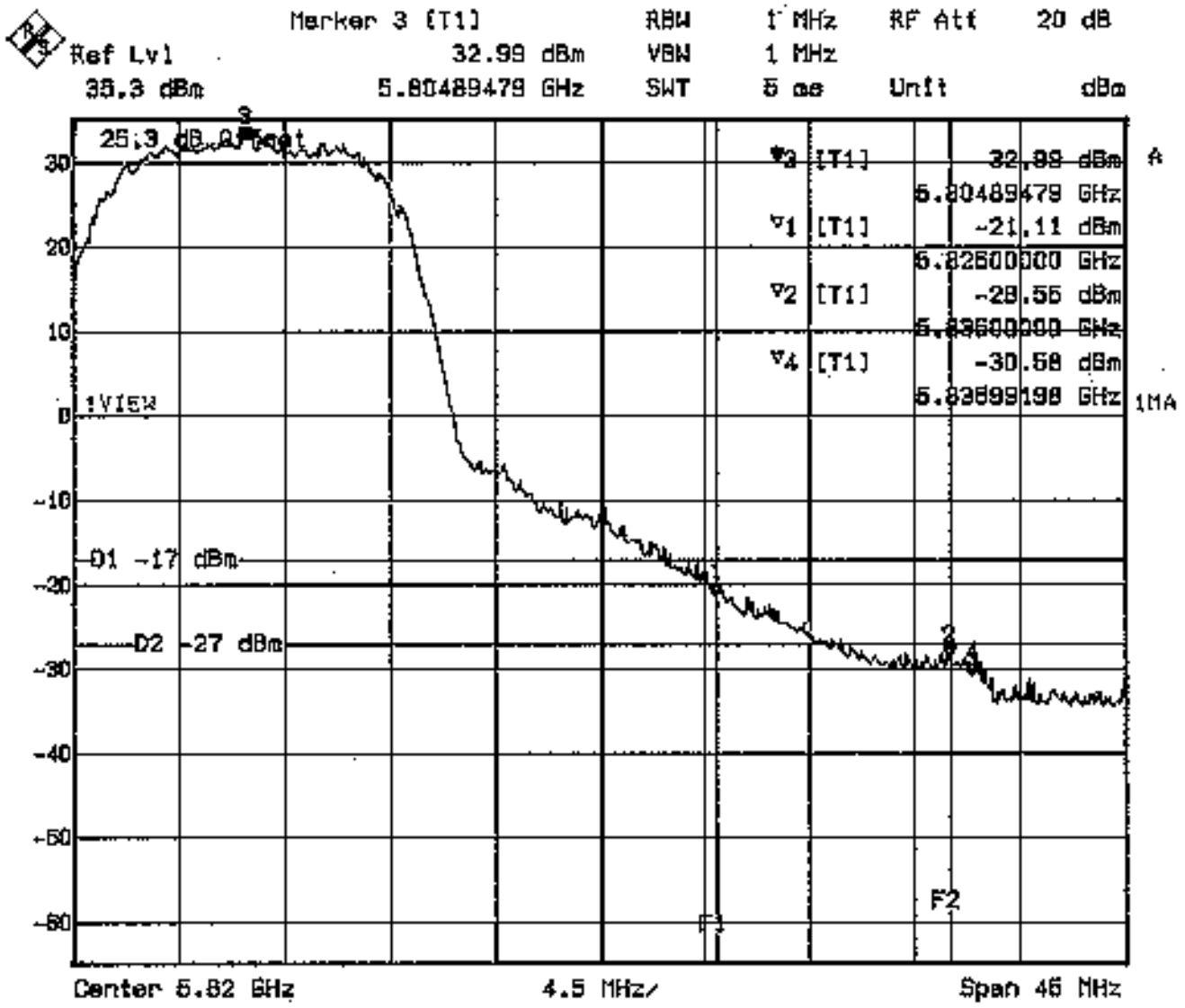
Comment A: BANDEDGE MEASUREMENTS FCC 15.407 CH 10 GPH/4215IA/201
Thom Vlow
Date: 18.JUN.2001 10:04:13



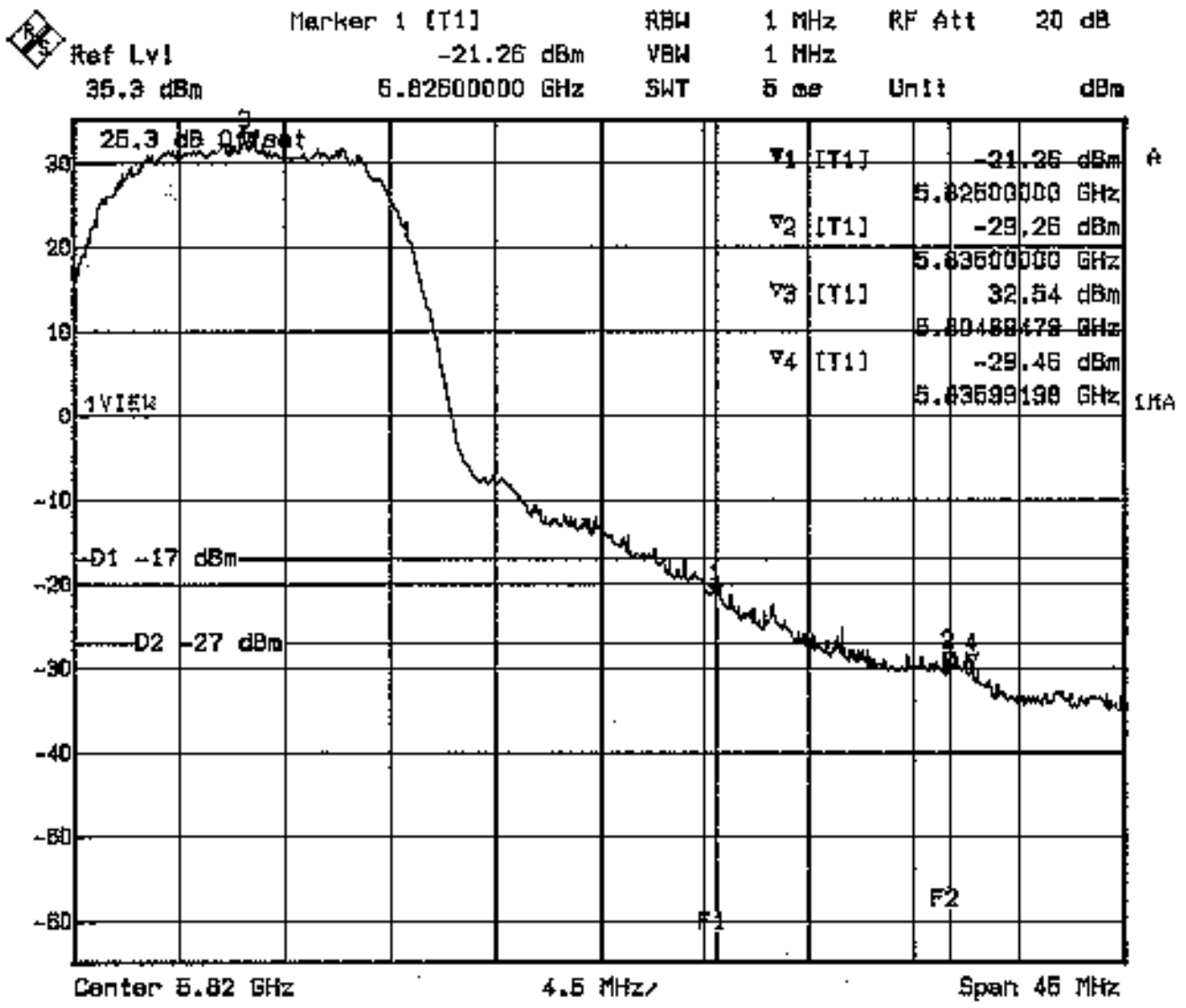
Comment A: BANDEDGE MEASUREMENTS FCC 15.407 CH 10 GPH/42151A/202
Tmom Vhigh
Date: 18.JUN.2001 11:02:52



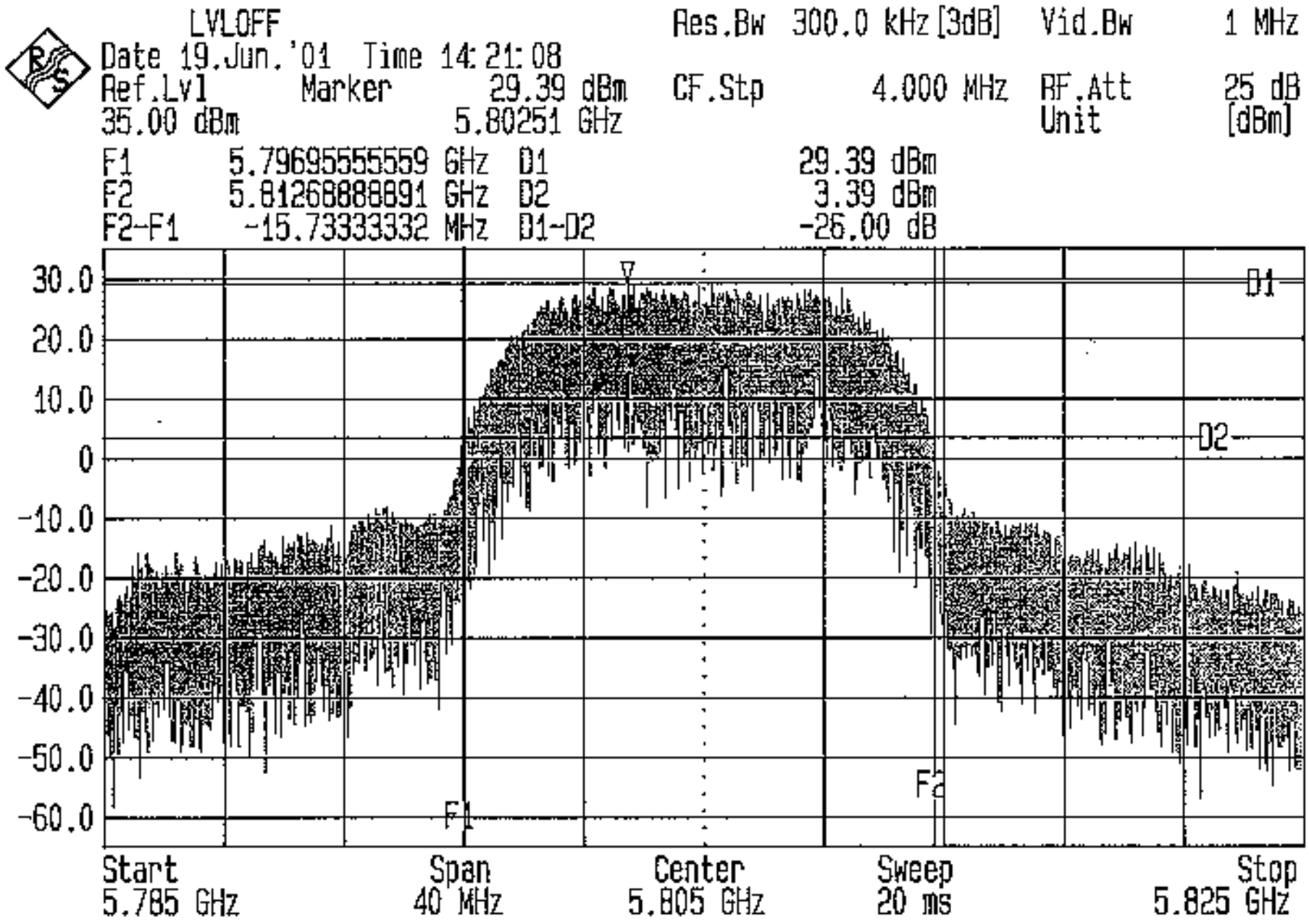
Comment A: BANDEDGE MEASUREMENTS FCC 15.407 CH 14 6PH/42161A/203
From Vhigh
Date: 18.JUN.2001 11:33:05



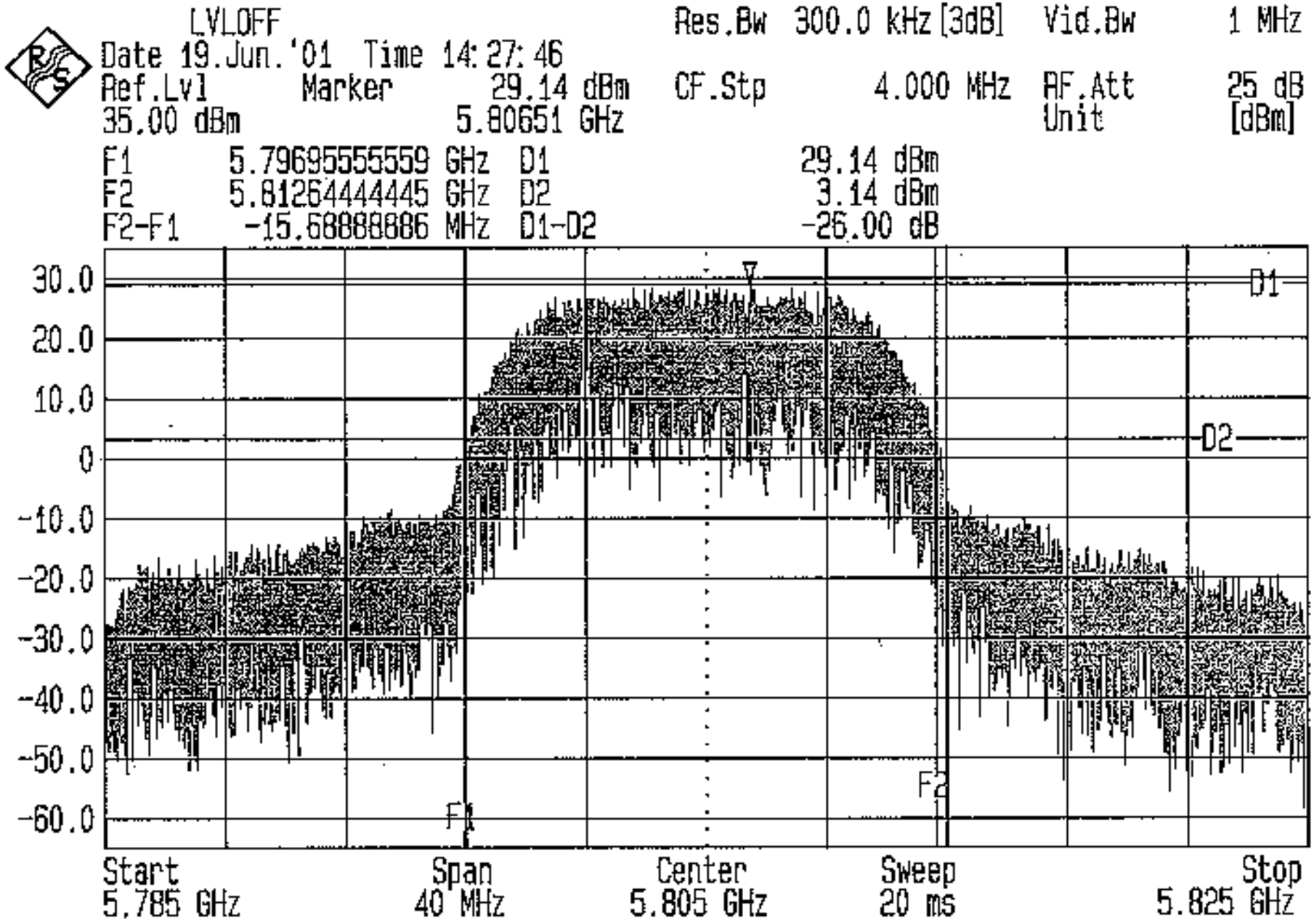
Comment A: BANDEDGE MEASUREMENTS FCC 15.407 CH 14 GPH/42151A/204
Tnom Vnom
Date: 18.JUN.2001 12:02:18



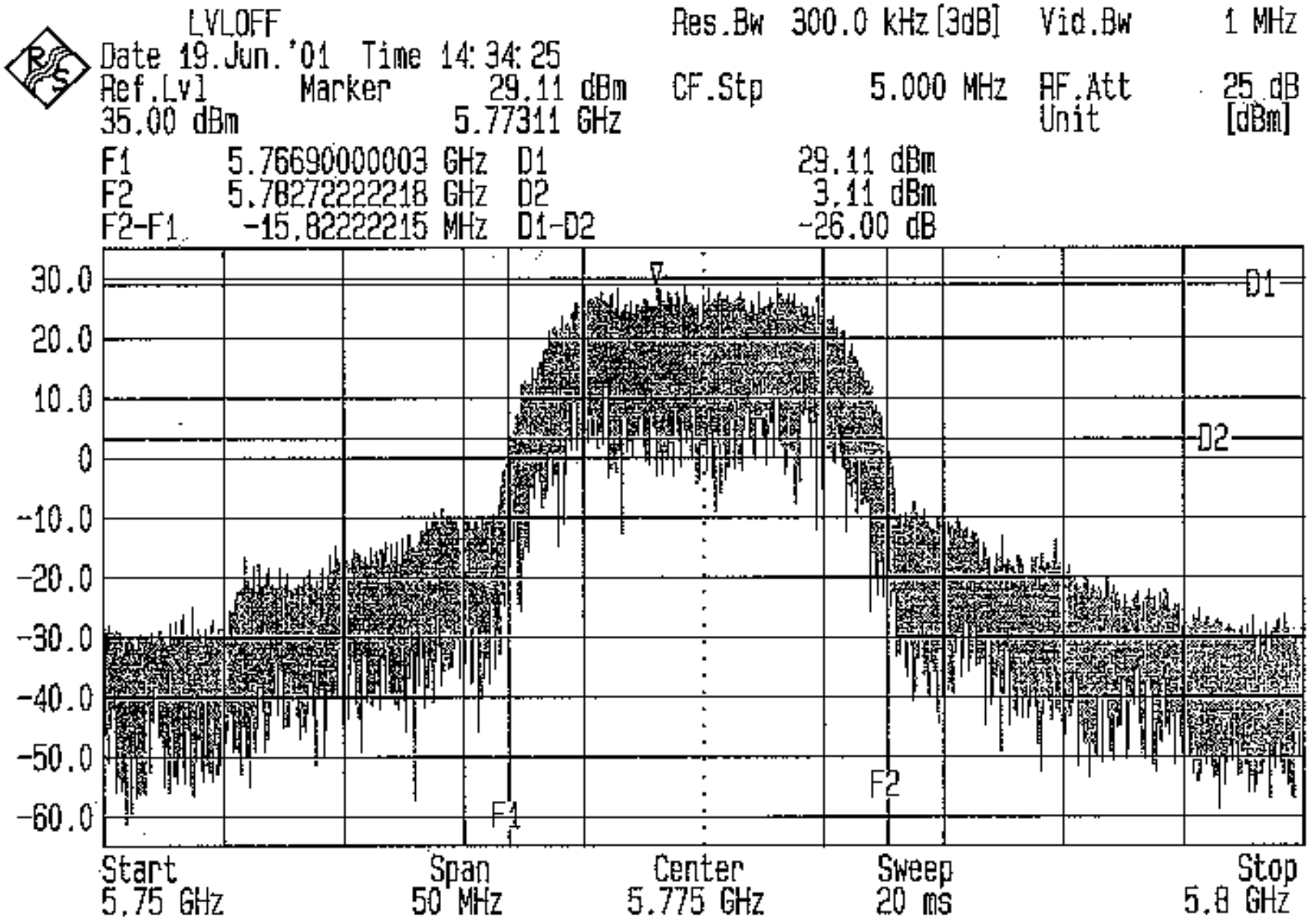
Comment A: BANDEDGE MEASUREMENTS FCC 15.407 CH 14 GPH/42151A/205
Trom Vlow
Date: 18.JUN.2001 12:34:35



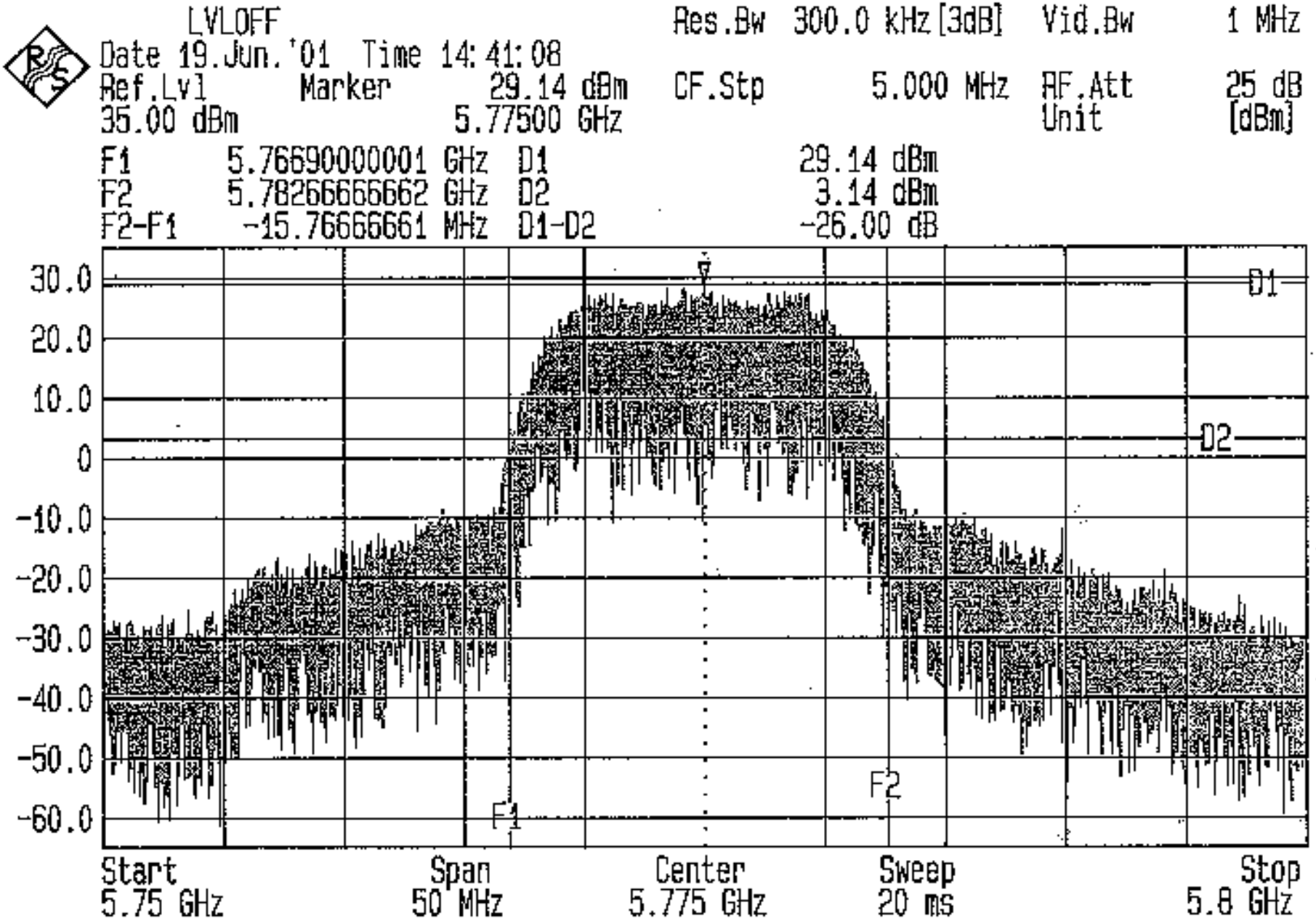
EMISSION BANDWIDTH FCC 15.407
TOP CHANNEL ANTENNA POL VERTICAL ANTENNA PORT MEASUREMENT GPH/42151A/400



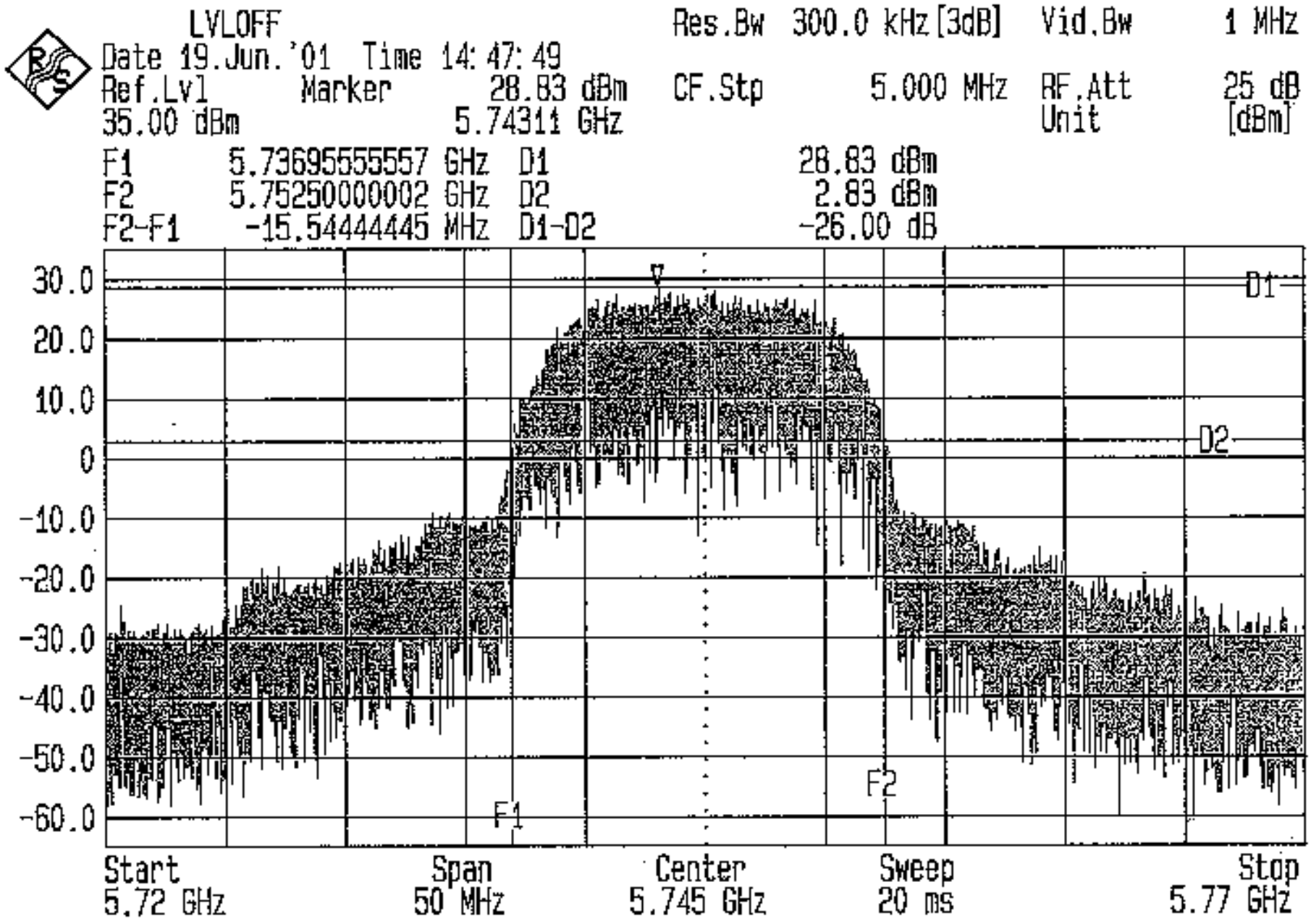
EMISSION BANDWIDTH FCC 15.407
TOP CHANNEL ANTENNA POL HORIZONTAL ANTENNA PORT MEASUREMENT GPH/42151A/401



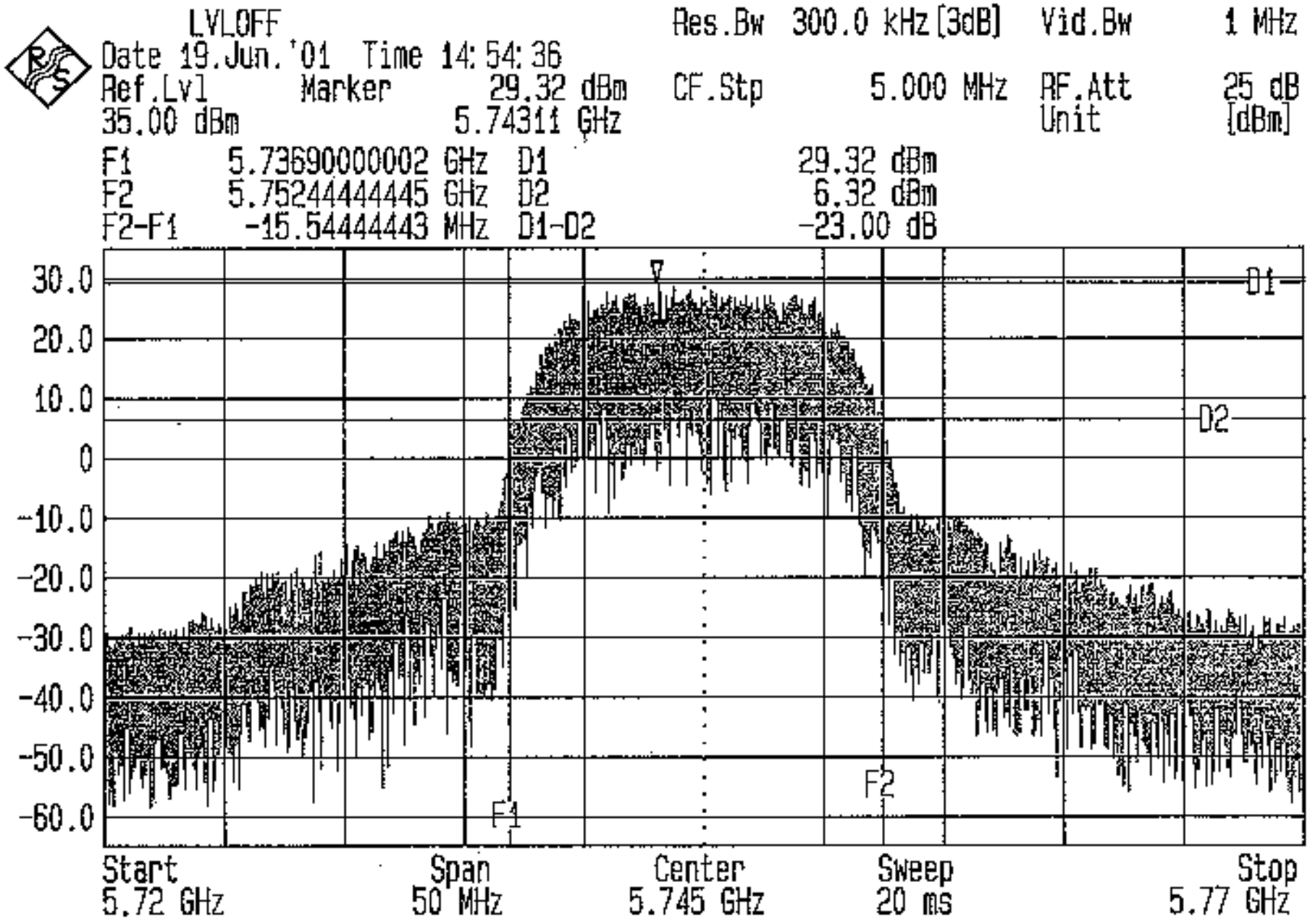
EMISSION BANDWIDTH FCC 15.407
MIDDLE CHANNEL ANTENNA POL HORIZONTAL ANTENNA PORT MEASUREMENT GPH/42151A/402



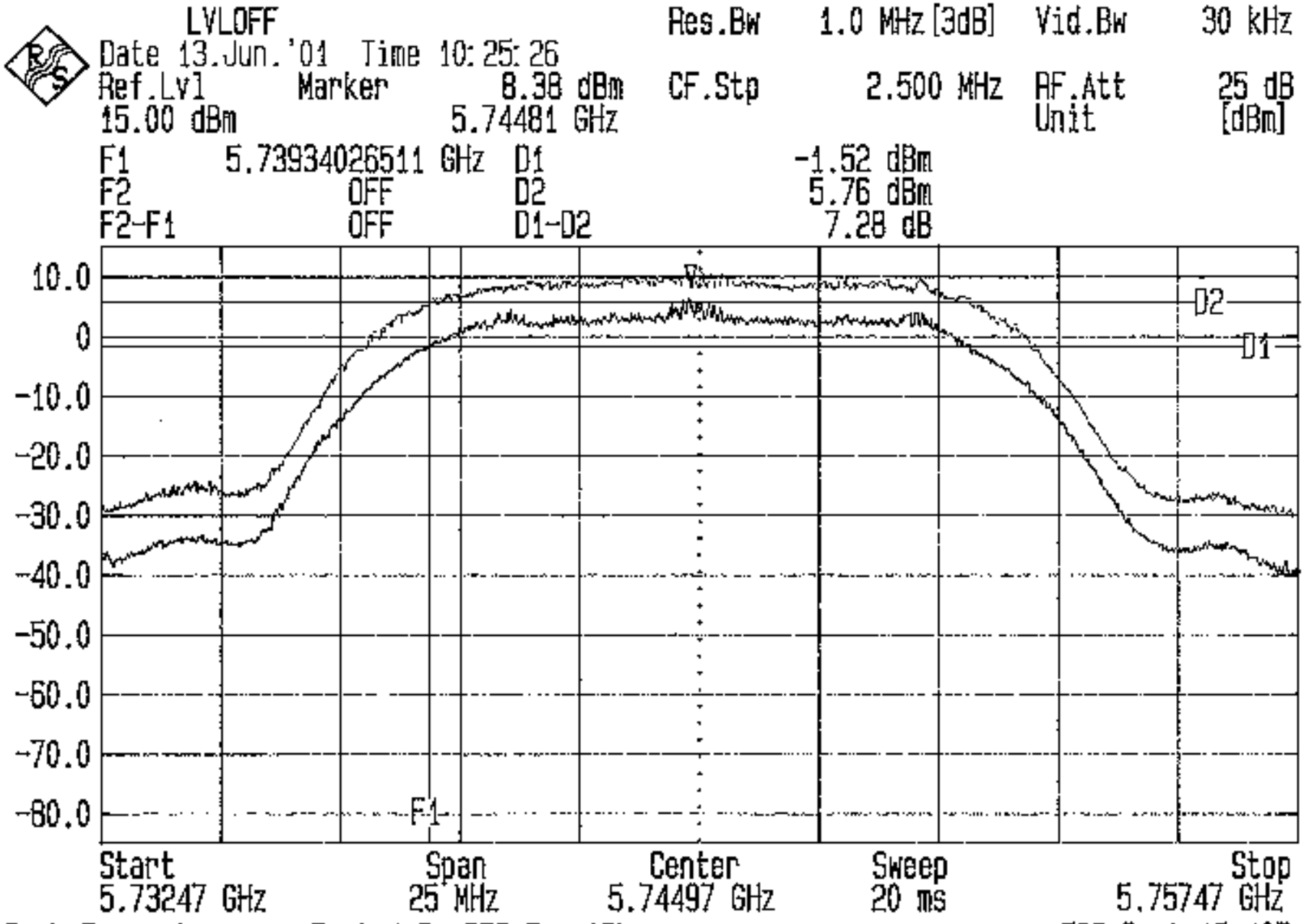
EMISSION BANDWIDTH FCC 15.407
MIDDLE CHANNEL ANTENNA POL VERTICAL ANTENNA PORT MEASUREMENT GPH/42151A/403



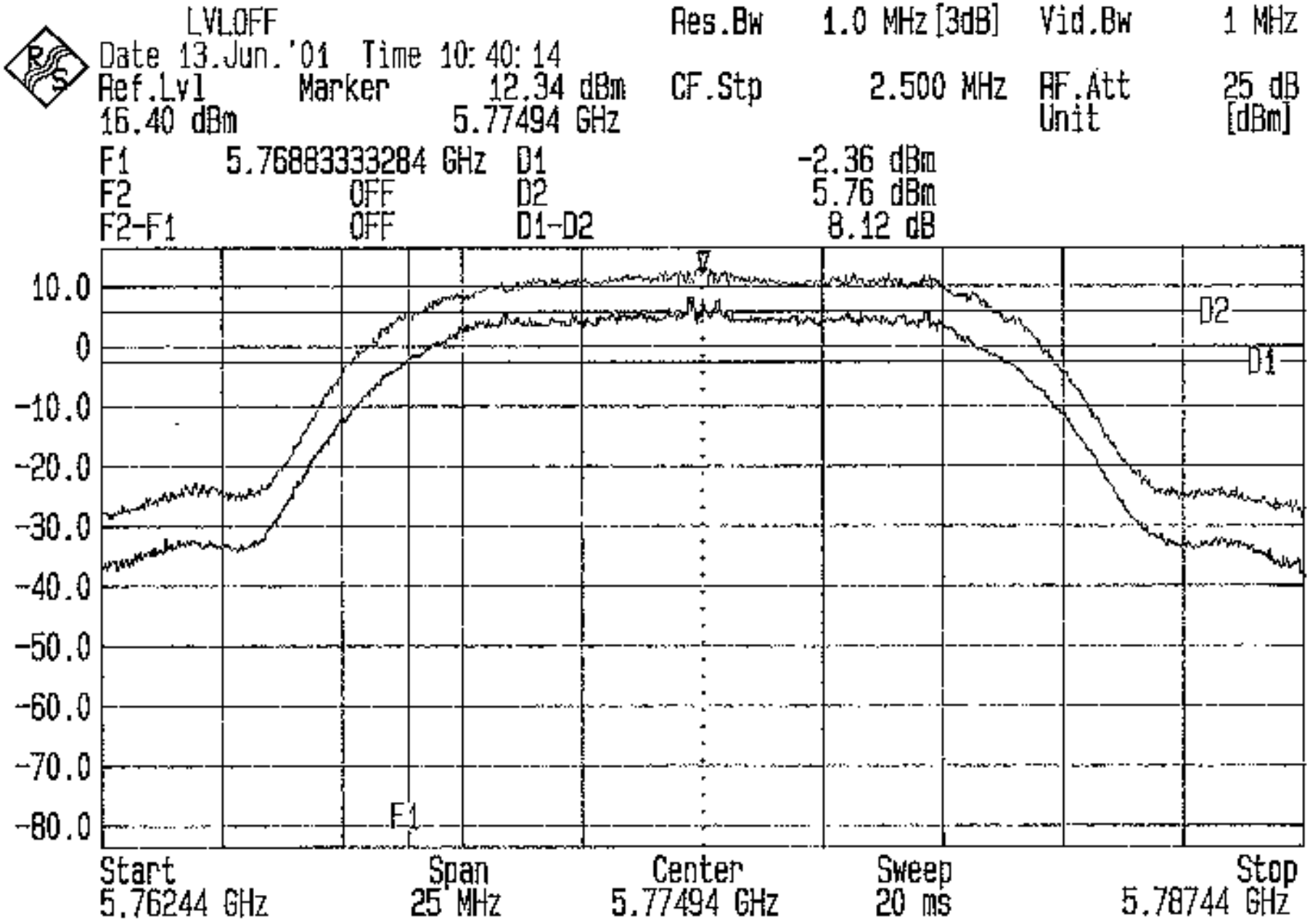
EMISSION BANDWIDTH FCC 15.407
BOTTOM CHANNEL ANTENNA POL VERTICAL ANTENNA PORT MEASUREMENT GPH/42151A/404



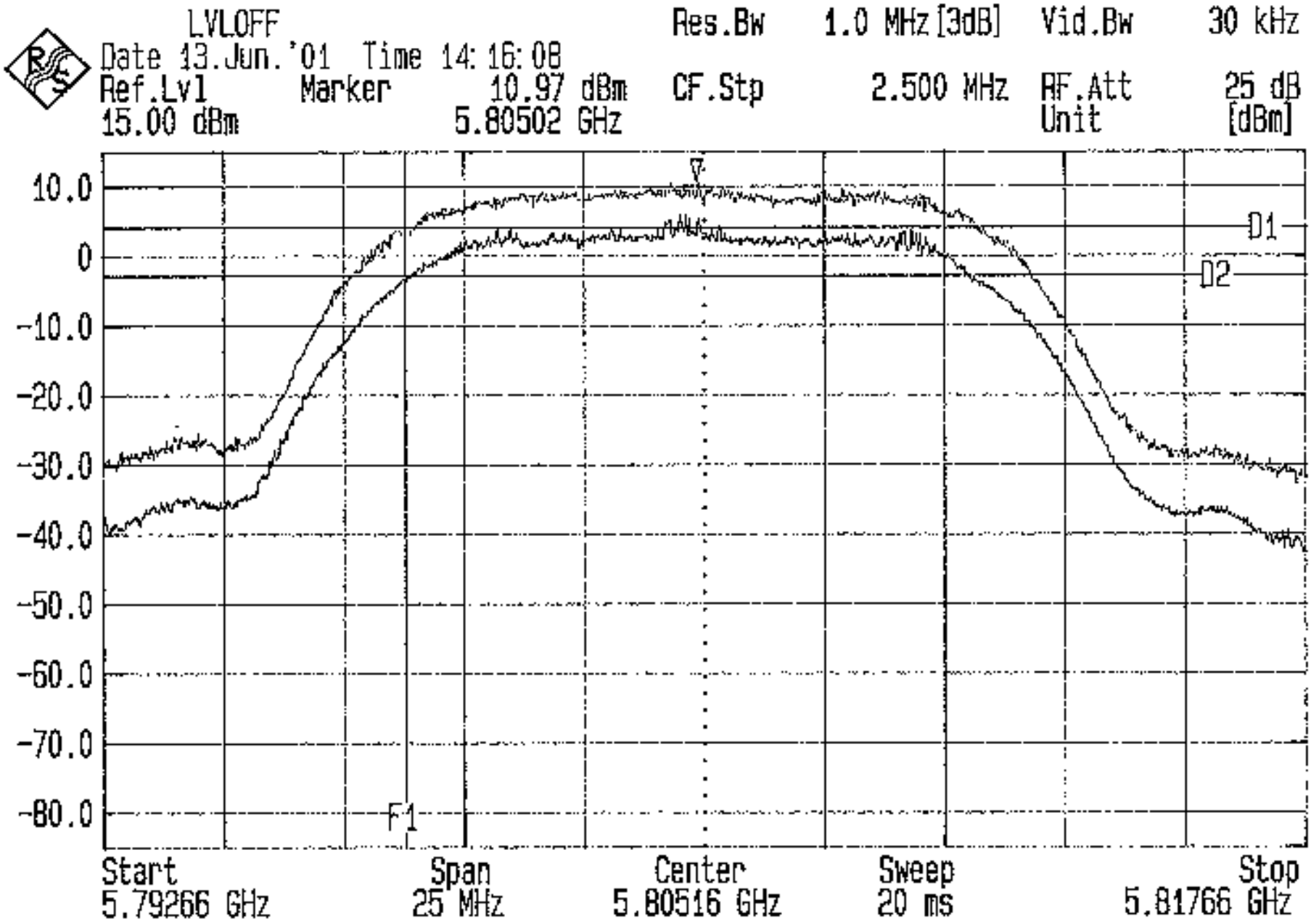
EMISSION BANDWIDTH FCC 15.407
BOTTOM CHANNEL ANTENNA POL HORIZONTLAL ANTENNA PORT MEASUREMENT GPH/42151A/405



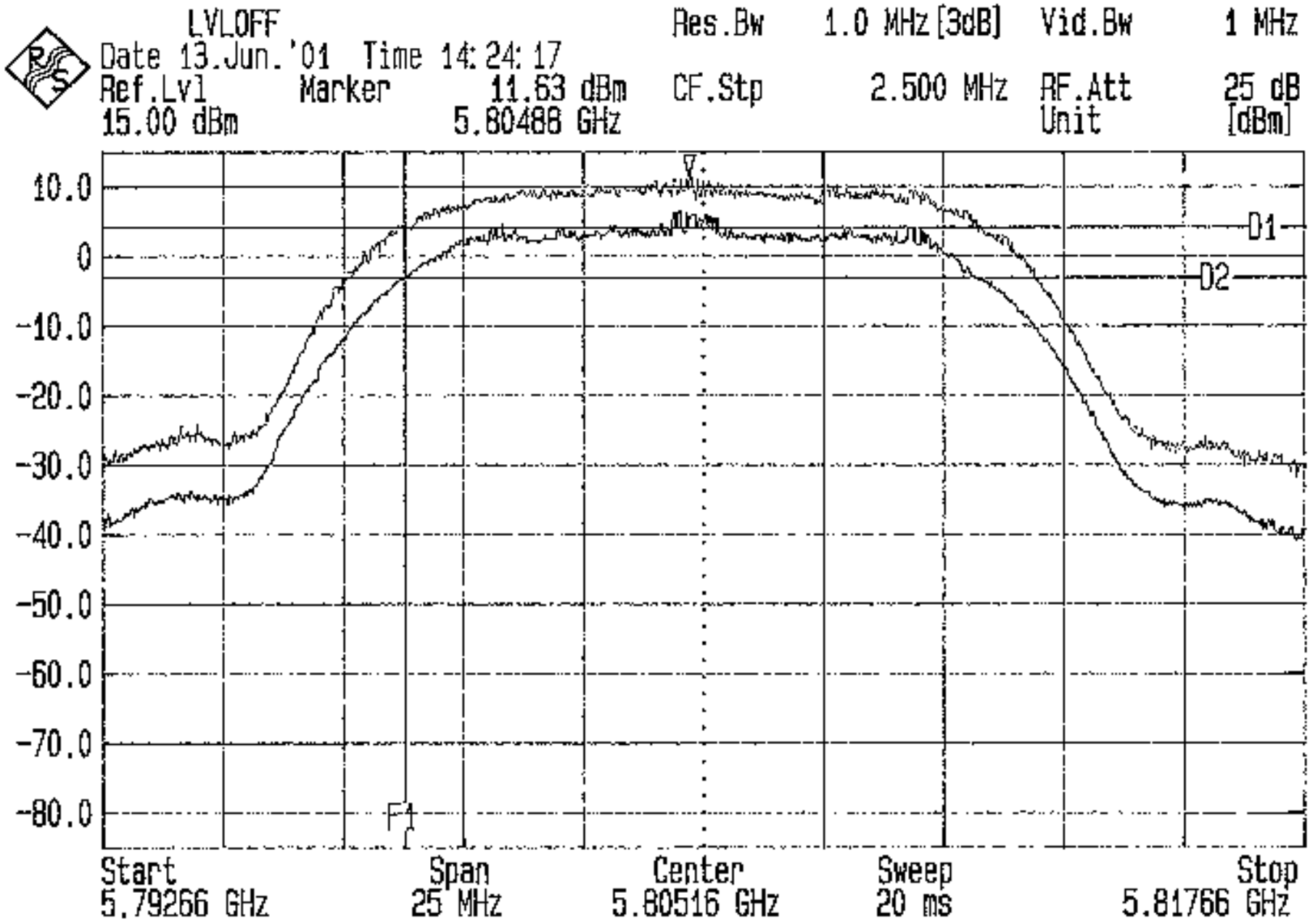
Peak Excursion. Tested By RFI For ABL. FCC Part 15.407
Bottom Channel. Antenna Horizontal. Antenna Port. GPH/42151A/004



Peak Excursion. Tested By RFI For ABL. FCC Part 15.407
Middle Channel. Antenna Horizontal. Antenna Port. GPH/42151A/005



Peak Excursion. Tested By RFI For ABL. FCC Part 15.407
Top Channel. Antenna Horizontal. Antenna Port. GPH/42151A/012

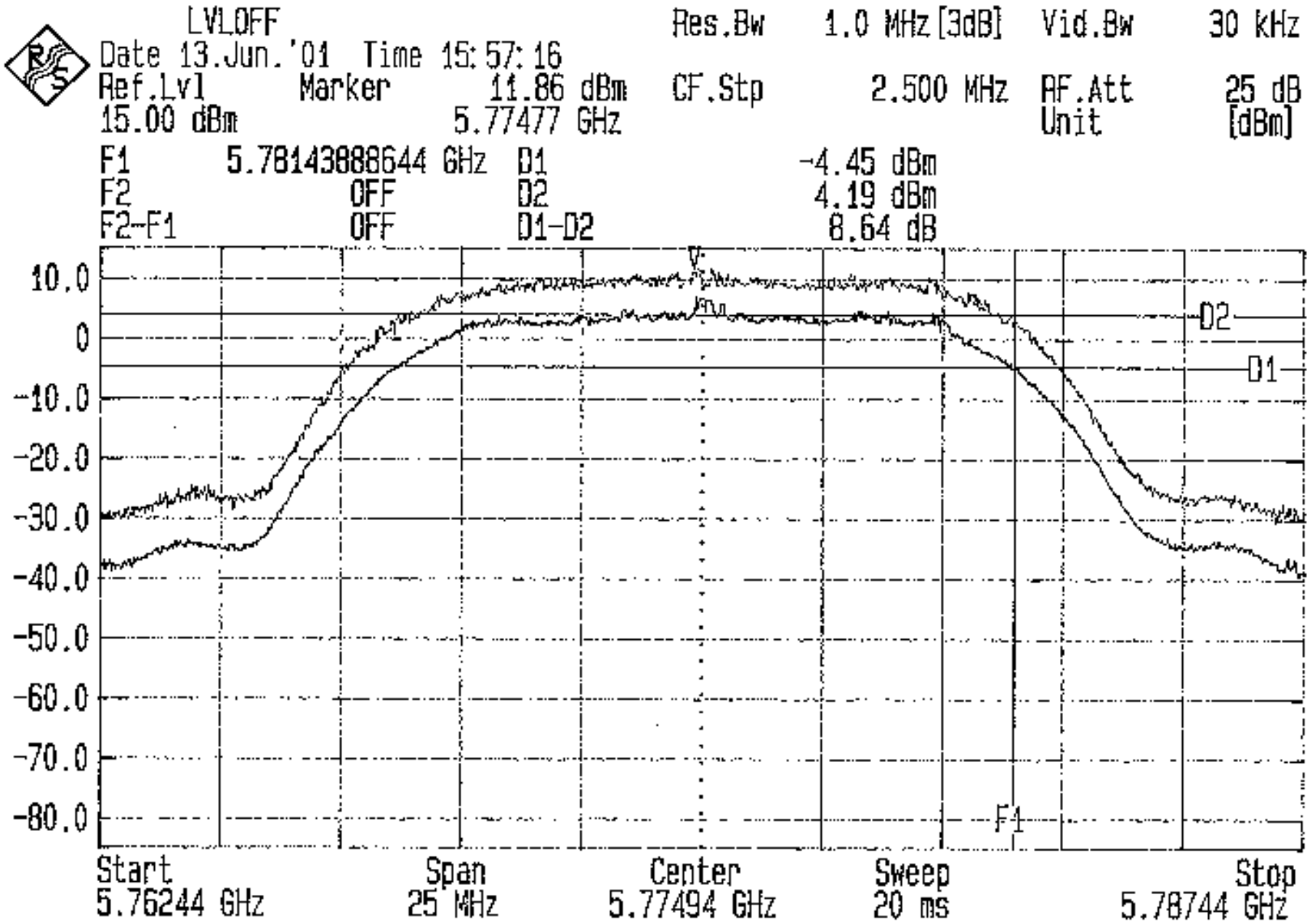


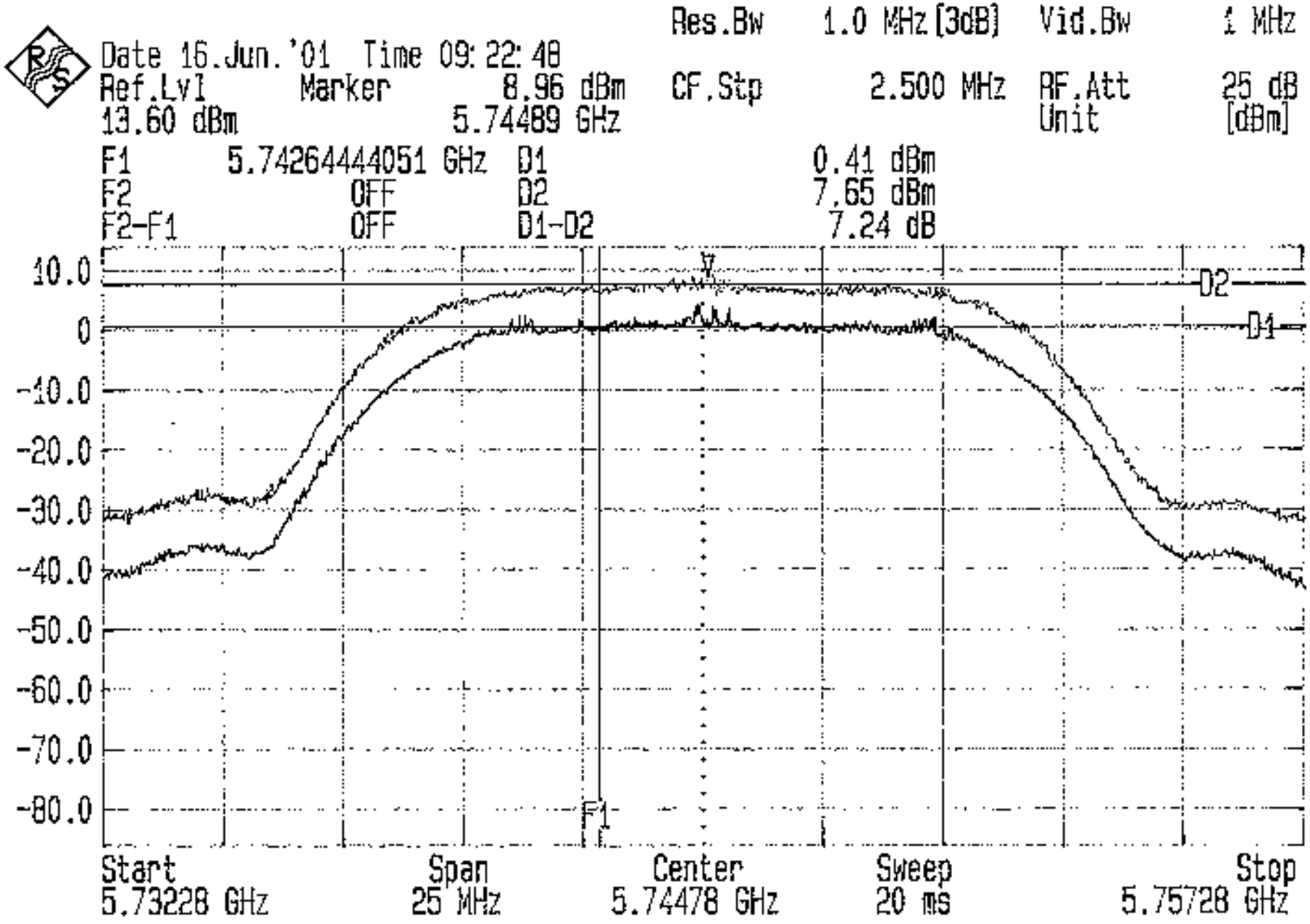
Peak Excursion.
Top Channel.

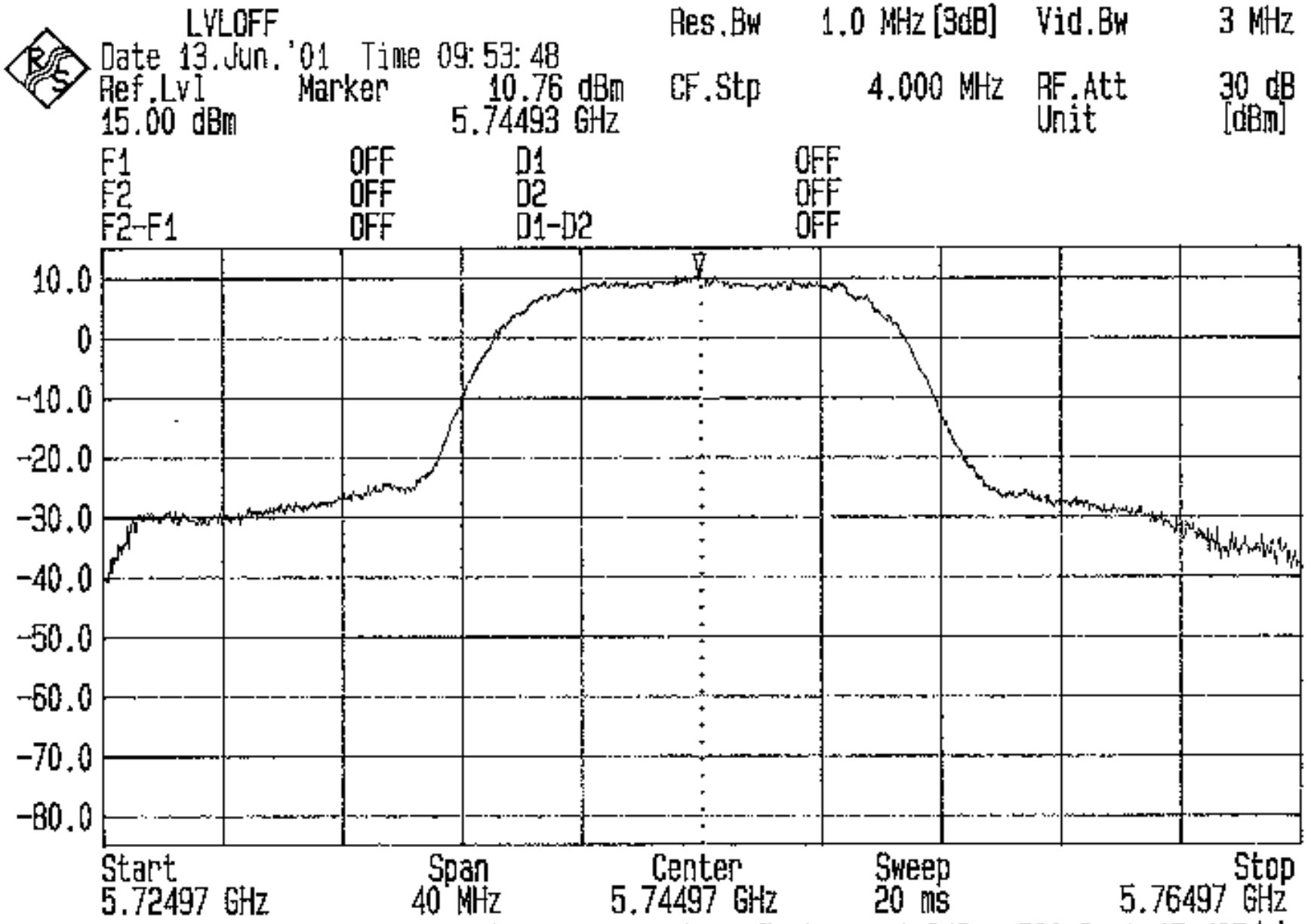
Tested By RFI For ABL.
Antenna ~~Horizontal~~ Vertical.

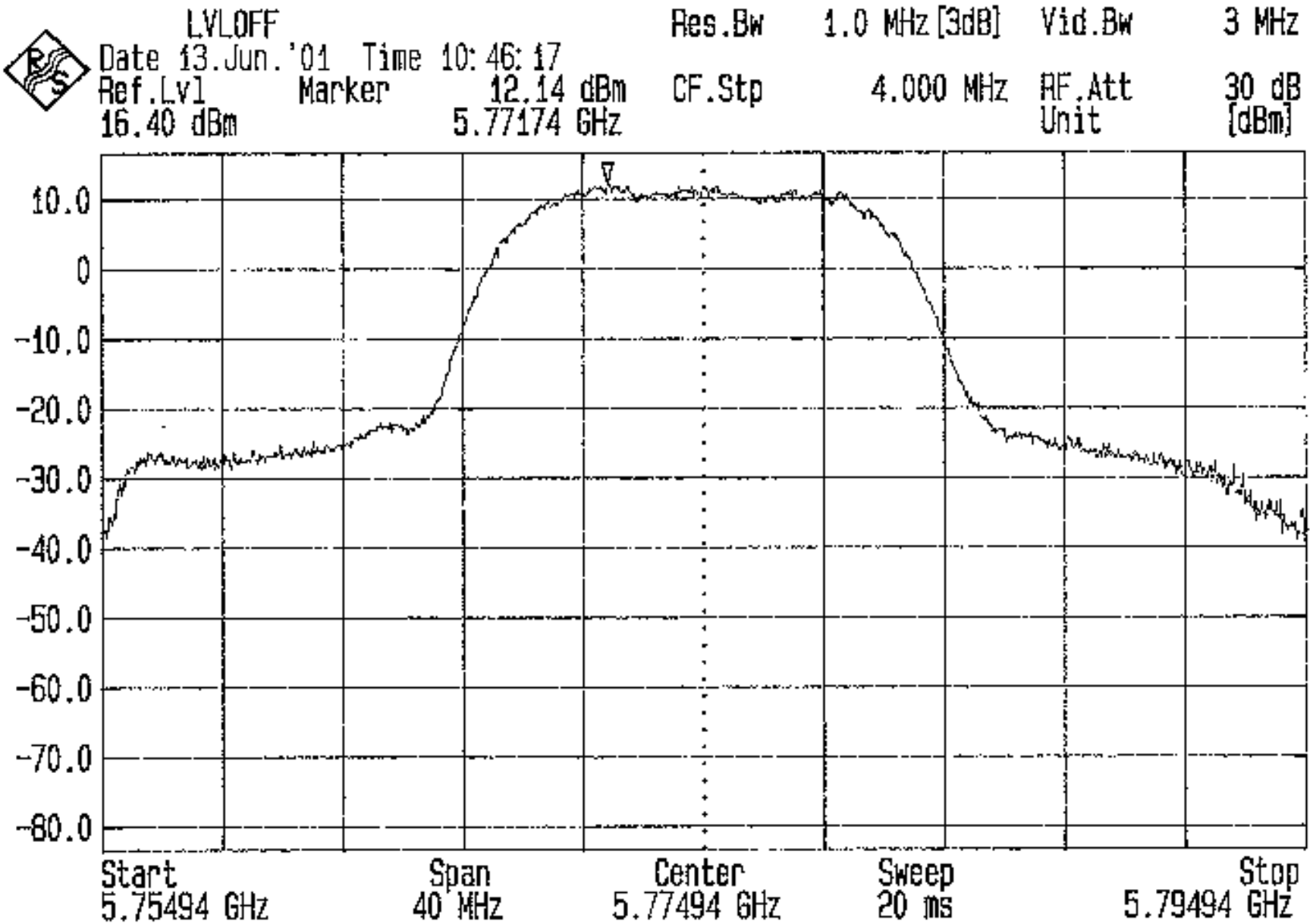
Antenna Port.

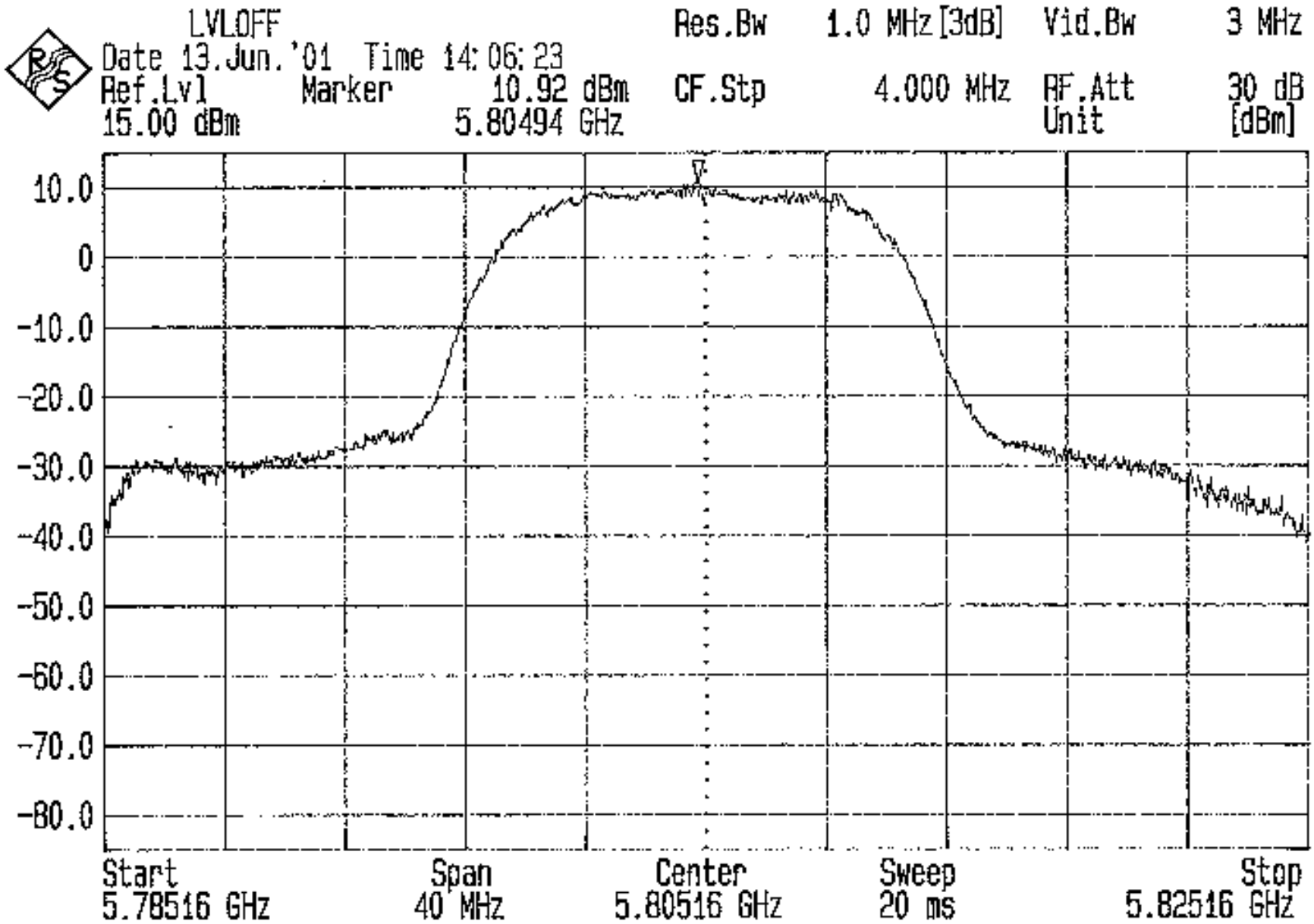
FCC Part 15.407
GPH/42151A/013

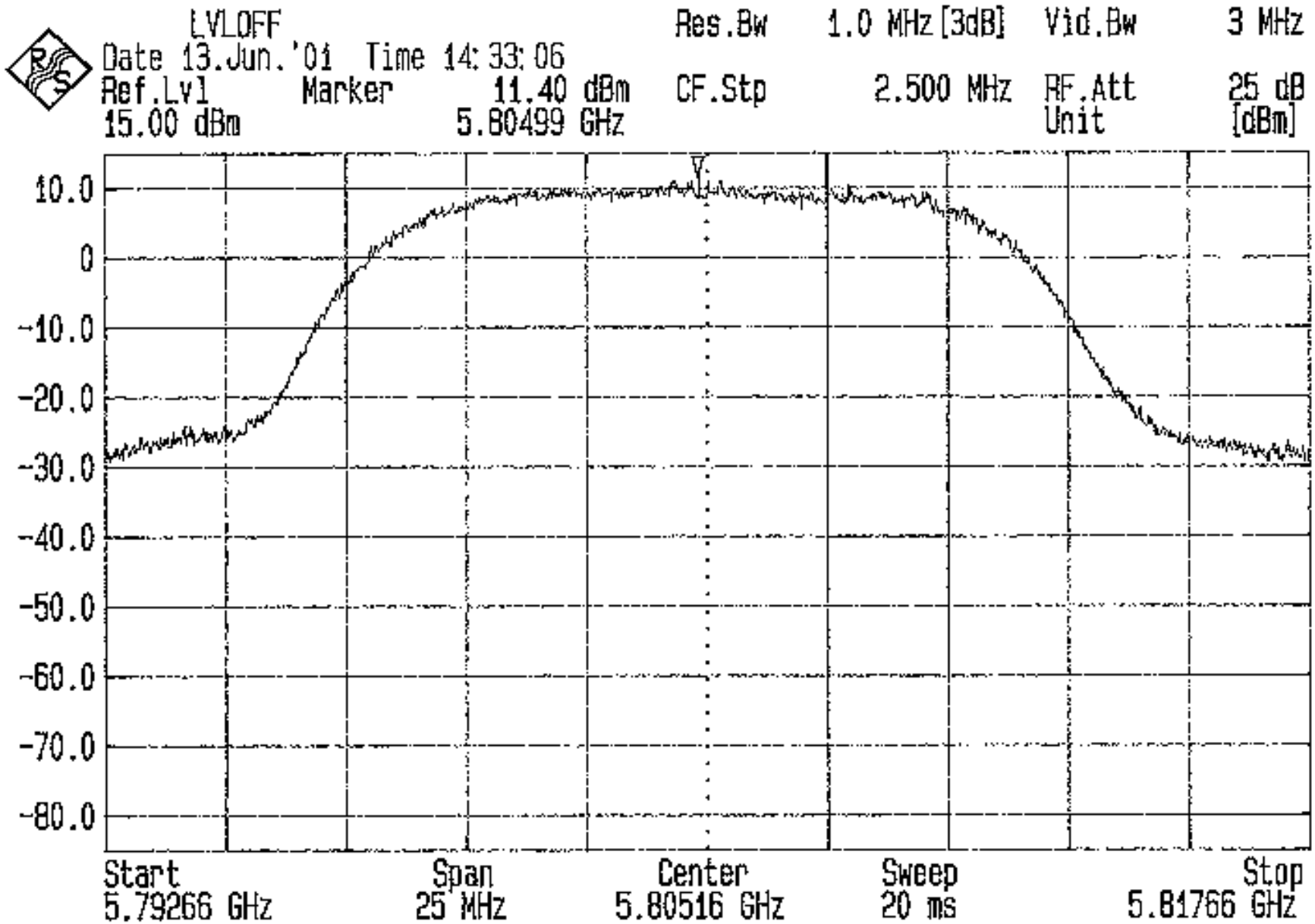

LVLOFF
Res.Bw 1.0 MHz [3dB]
Vid.Bw 30 kHz
Date 13.Jun.'01 Time 15:57:16
Ref.Lvl
15.00 dBm
Marker
11.86 dBm
5.77477 GHz
CF.Stp 2.500 MHz
RF.Att 25 dB
Unit [dBm]
F1 5.78143888644 GHz
D1 -4.45 dBm
F2 OFF
D2 4.19 dBm
F2-F1 OFF
D1-D2 8.64 dB
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
D2
D1
F1
Start
5.76244 GHz
Span
25 MHz
Center
5.77494 GHz
Sweep
20 ms
Stop
5.78744 GHz
Peak Excursion.
Middle Channel.
Tested By RFI For ABL.
Antenna Vertical.
Antenna Port.
FCC Part 15.407
GPH/42151A/020

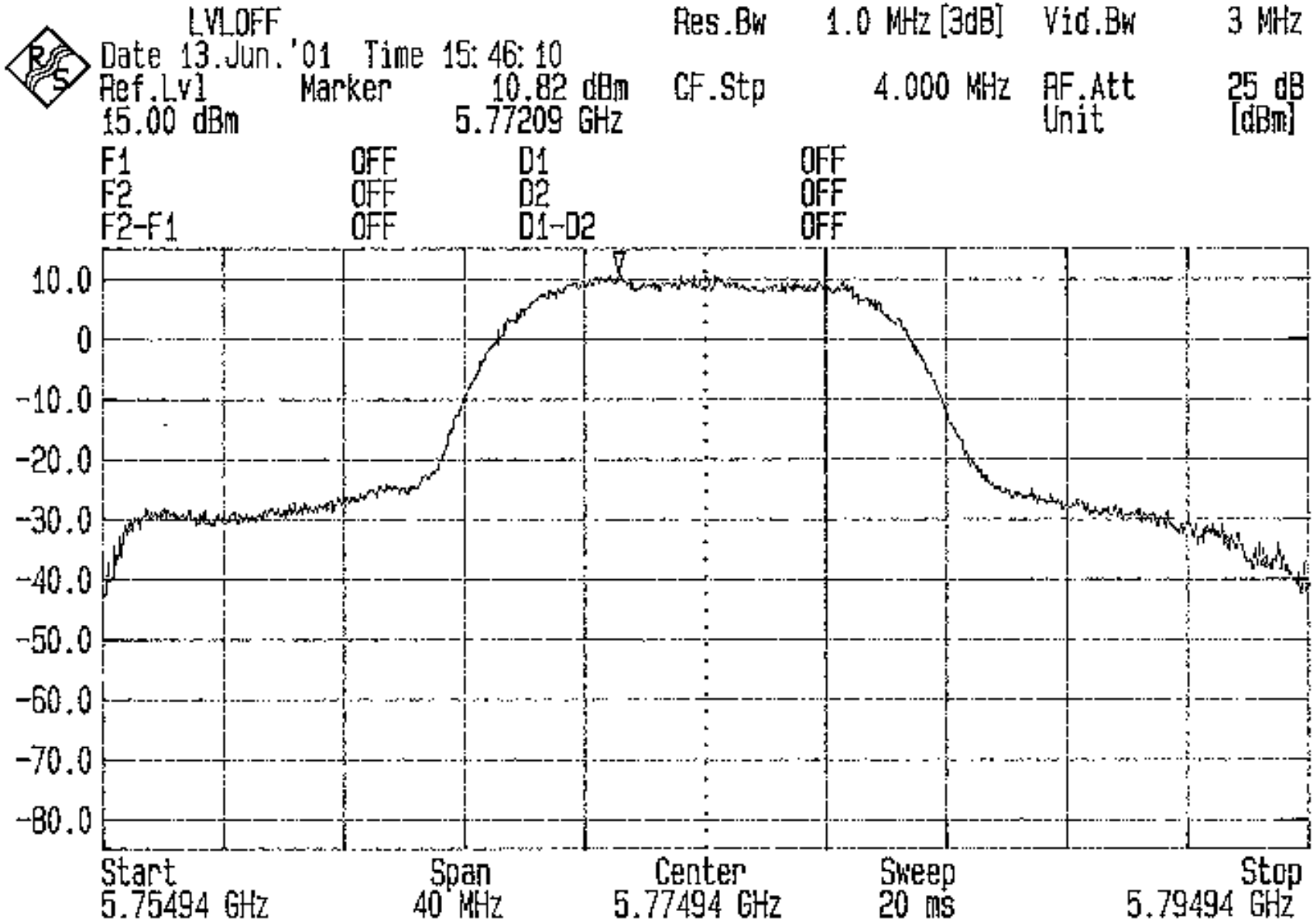

Res.Bw 1.0 MHz [3dB] Vid.Bw 1 MHz
Date 16.Jun.'01 Time 09:22:48
Ref.Lvl Marker 8.96 dBm CF.Stp 2.500 MHz RF.Att 25 dB
13.60 dBm 5.74489 GHz Unit [dBm]
F1 5.74264444051 GHz D1 0.41 dBm
F2 OFF D2 7.65 dBm
F2-F1 OFF D1-D2 7.24 dB
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
D2
D1
F1
Start 5.73228 GHz
Span 25 MHz
Center 5.74478 GHz
Sweep 20 ms
Stop 5.75728 GHz
Peak Excursion.
Bottom Channel.
Tested By RFI For ABL.
Antenna Vertical.
Antenna Port
FCC Part 15.407
GPH/42151A/024


LVLOFF
Res.Bw 1.0 MHz [3dB]
Vid.Bw 3 MHz
Date 13.Jun.'01 Time 09:53:48
Ref.Lvl
15.00 dBm
Marker
10.76 dBm
5.74493 GHz
CF.Stp 4.000 MHz
RF.Att 30 dB
Unit [dBm]
F1 OFF
F2 OFF
F2-F1 OFF
D1 OFF
D2 OFF
D1-D2 OFF
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start 5.72497 GHz
Span 40 MHz
Center 5.74497 GHz
Sweep 20 ms
Stop 5.76497 GHz
PPSD.
Bottom Channel.
Tested By RFI For ABL.
Antenna Horizontal.
Corr Factor: 11.9dB.
Antenna Port.
FCC Part 15.407(a)
GPH/42151A/003


LVLOFF
Res.Bw 1.0 MHz [3dB]
Vid.Bw 3 MHz
Date 13.Jun.'01 Time 10:46:17
Ref.Lvl
16.40 dBm
Marker
12.14 dBm
5.77174 GHz
CF.Stp 4.000 MHz
RF.Att 30 dB
Unit [dBm]
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start
5.75494 GHz
Span
40 MHz
Center
5.77494 GHz
Sweep
20 ms
Stop
5.79494 GHz
PPSD.
Middle Channel.
Tested By RFI For ABL.
Antenna Horizontal.
Antenna Port.
FCC Part 15.407
GPH/42151A/006


LVLOFF
Res.Bw 1.0 MHz[3dB]
Vid.Bw 3 MHz
Date 13.Jun.'01 Time 14:06:23
Ref.Lvl
15.00 dBm
Marker
10.92 dBm
5.80494 GHz
CF.Stp 4.000 MHz
RF.Att 30 dB
Unit [dBm]
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start
5.78516 GHz
Span
40 MHz
Center
5.80516 GHz
Sweep
20 ms
Stop
5.82516 GHz
PPSD.
Top Channel.
Tested By RFI For ABL.
Antenna Horizontal.
Antenna Port.
FCC Part 15.407
GPH/42151A/011


LVLOFF
Res.Bw 1.0 MHz [3dB]
Vid.Bw 3 MHz
Date 13.Jun.'01 Time 14:33:06
Ref.Lvl
15.00 dBm
Marker
11.40 dBm
5.80499 GHz
CF.Stp 2.500 MHz
RF.Att 25 dB
Unit [dBm]
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start
5.79266 GHz
Span
25 MHz
Center
5.80516 GHz
Sweep
20 ms
Stop
5.81766 GHz
PPSD.
Top Channel.
Tested By AFI For ABL.
Antenna Vertical.
Antenna Port.
FCC Part 15.407
GPH/42151A/014

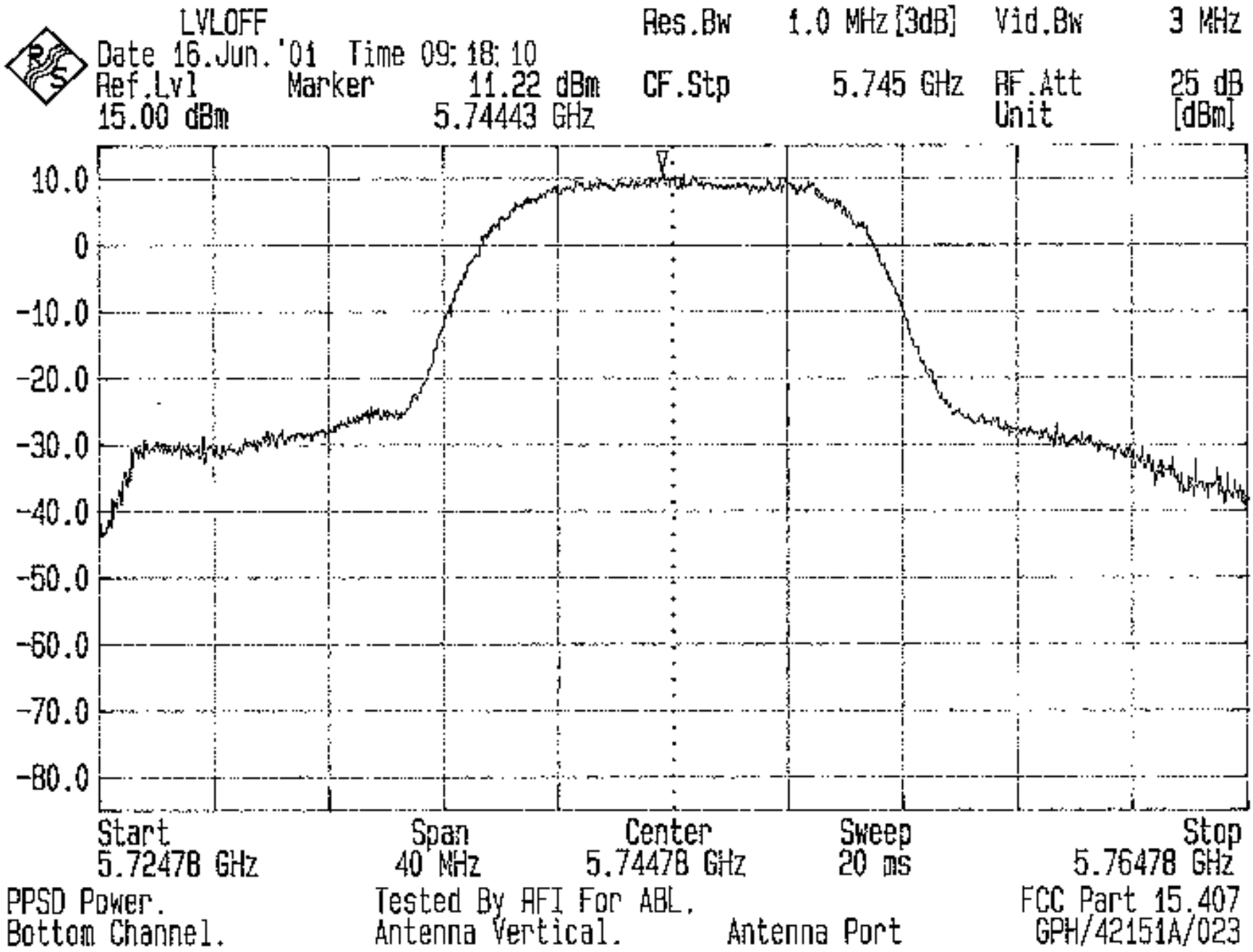


PPSD.
Middle Channel.

Tested By RFI For ABL.
Antenna Vertical.

Antenna Port.

FCC Part 15.407
GPH/42151A/019


LVLOFF
Res.Bw 1.0 MHz[3dB] Vid.Bw 3 MHz
Date 16.Jun.'01 Time 09:18:10
Ref.Lvl Marker 11.22 dBm CF.Stp 5.745 GHz RF.Att 25 dB
15.00 dBm 5.74443 GHz Unit [dBm]
10.0
0
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
Start 5.72478 GHz
Span 40 MHz
Center 5.74478 GHz
Sweep 20 ms
Stop 5.76478 GHz
PPSD Power.
Bottom Channel.
Tested By RFI For ABL.
Antenna Vertical.
Antenna Port
FCC Part 15.407
GPH/42151A/023