

GRAPHICAL TEST RESULTS FOR RFI TEST REPORT SERIAL NO: RFI/MICB2/RP42589JD01A

Test Of: Raymarine Ltd.
4D Light Marine Radome Radar Scanner

To: FCC Part 80: 1998 and FCC Part 2: 1998

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Graphical Test Results

This appendix contains the following graphs:

Graph Reference Number	Measured Pulse
GPH/42589JD01/001	1000ns Pulse Width, 6 mile range
GPH/42589JD01/002	600ns Pulse Width, 3 mile range, Pulse Expansion On
GPH/42589JD01/003	450ns Pulse Width, 3 mile range
GPH/42589JD01/004	350ns Pulse Width, 1 ½ mile range
GPH/42589JD01/005	250ns Pulse Width, ¾ mile range, Pulse Expansion On
GPH/42589JD01/006	150ns Pulse Width, ¾ mile range
GPH/42589JD01/007	90ns Pulse Width, ½ mile range
GPH/42589JD01/008	65ns Pulse Width, ¼ mile range
Graph Reference Number	Measured Pulse Repetition
GPH/42589JD01/009	6 mile range
GPH/42589JD01/010	3 mile range, Pulse Expansion On
GPH/42589JD01/011	3 mile range
GPH/42589JD01/012	1 ½ mile range
GPH/42589JD01/013	¾ mile range, Pulse Expansion On
Graph Reference Number	Occupied Bandwidth
GPH/42589/01/01/014	1000ns Pulse Width, 6 mile range
GPH/42589/01/01/015	600ns Pulse Width, 3 mile range, Pulse Expansion On
GPH/42589/01/01/016	450ns Pulse Width, 3 mile range
GPH/42589/01/01/017	350ns Pulse Width, 1 ½ mile range
GPH/42589/01/01/018	250ns Pulse Width, ¾ mile range, Pulse Expansion On,
GPH/42589/01/01/019	150ns Pulse Width, ¾ mile range
GPH/42589/01/01/020	90ns Pulse Width, ½ mile range
GPH/42589/01/01/021	65ns Pulse Width, ¼ mile range

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4D Light Marine Radome Radar Scanner
To: FCC Part 80: 1998 and FCC Part 2: 1998

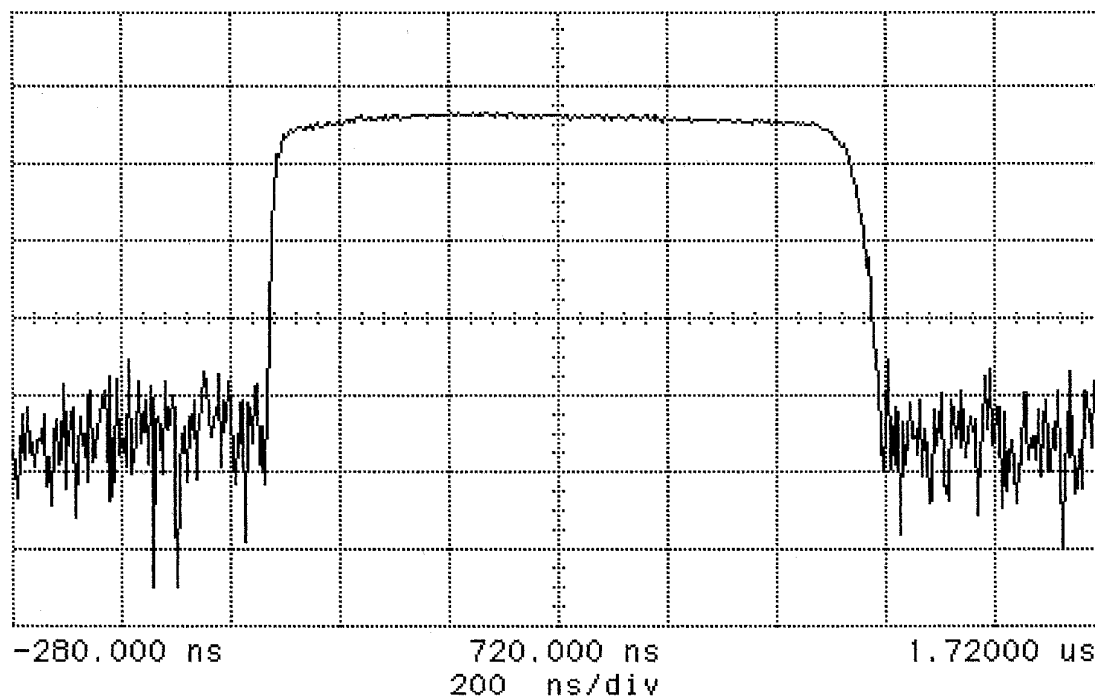
Graph Reference Number	Conducted Antenna Port Spurious Emissions
GPH/42589/01/01/022	6.00GHz to 8.91GHz, 450ns Pulse Width
GPH/42589/01/01/023	8.91GHz to 9.35GHz, 450ns Pulse Width
GPH/42589/01/01/024	8.91GHz to 9.35GHz, 65ns Pulse Width
GPH/42589/01/01/025	8.91GHz to 9.35GHz, 1000ns Pulse Width
GPH/42589/01/01/026	9.45GHz to 9.91GHz, 1000ns Pulse Width
GPH/42589/01/01/027	9.45GHz to 9.91GHz, 65ns Pulse Width
GPH/42589/01/01/028	9.45GHz to 9.91GHz, 450ns Pulse Width
GPH/42589/01/01/029	9.91GHz to 26.50GHz, 450ns Pulse Width
42589JD01/001	26.50 to 40.00GHz, 450ns Pulse Width

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

Test Of: Raymarine Ltd.
4D Light Marine Radome Radar Scanner
To: FCC Part 80: 1998 and FCC Part 2: 1998

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hp running



peak(1) 65.61 dBm pulsewidth(1) 1.04990us

CHANNEL

1 2 3 4

off on

scale 5.0 dB/div

ref. level 72.40 dBm

bandwidth high low CW

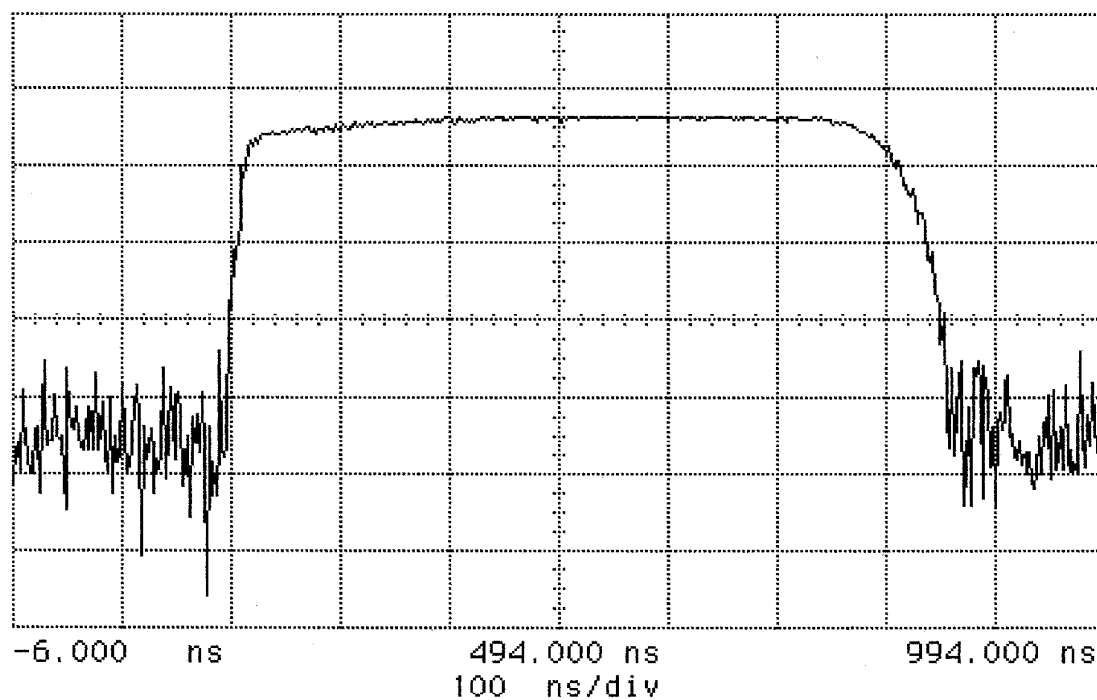
external loss 72.40 dB

sensor zero

fine

GPI 42589 5001/1001.

hp running



peak(1) 65.60 dBm pulsewidth(1) 594.810ns

CHANNEL

1 2 3 4
• ° ° °

off on

scale 5.0 dB/div

ref. level 72.40 dBm

bandwidth high low CW

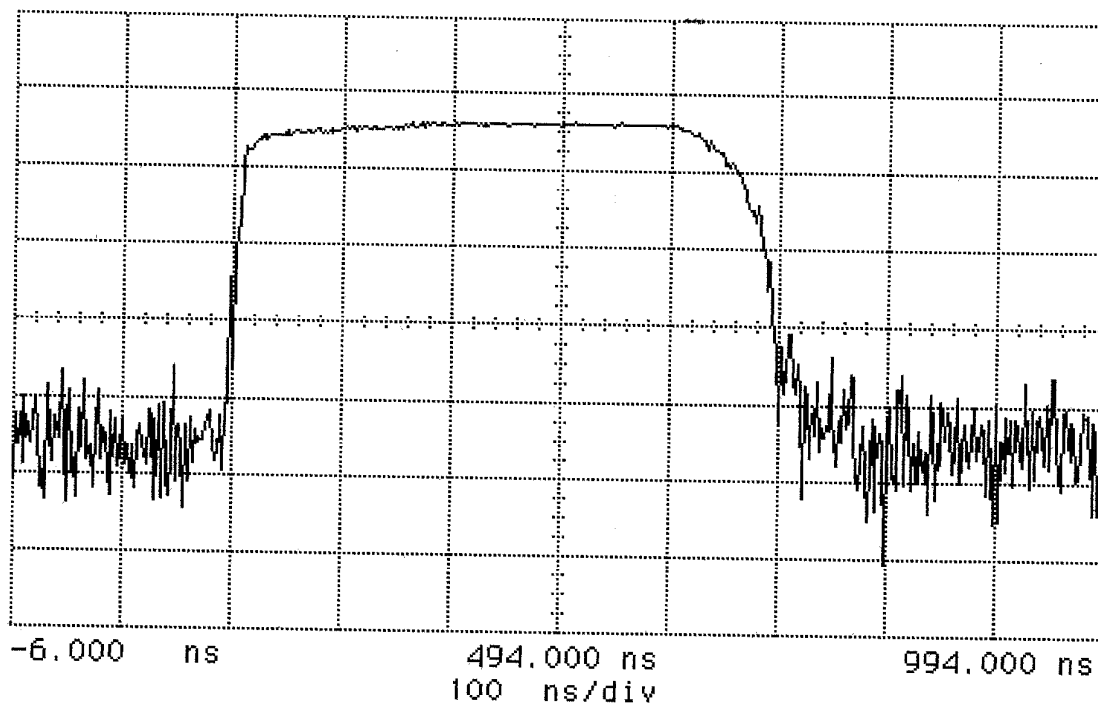
external loss 72.40 dB

sensor zero

fine

GPI 42589 0001/002.

hp printing



peak(1)

65.59 dBm

pulsewidth(1)

447.106ns

CHANNEL

1 2 3 4

off on

scale 5.0 dB/div

ref. level 72.40 dBm

bandwidth high low CW

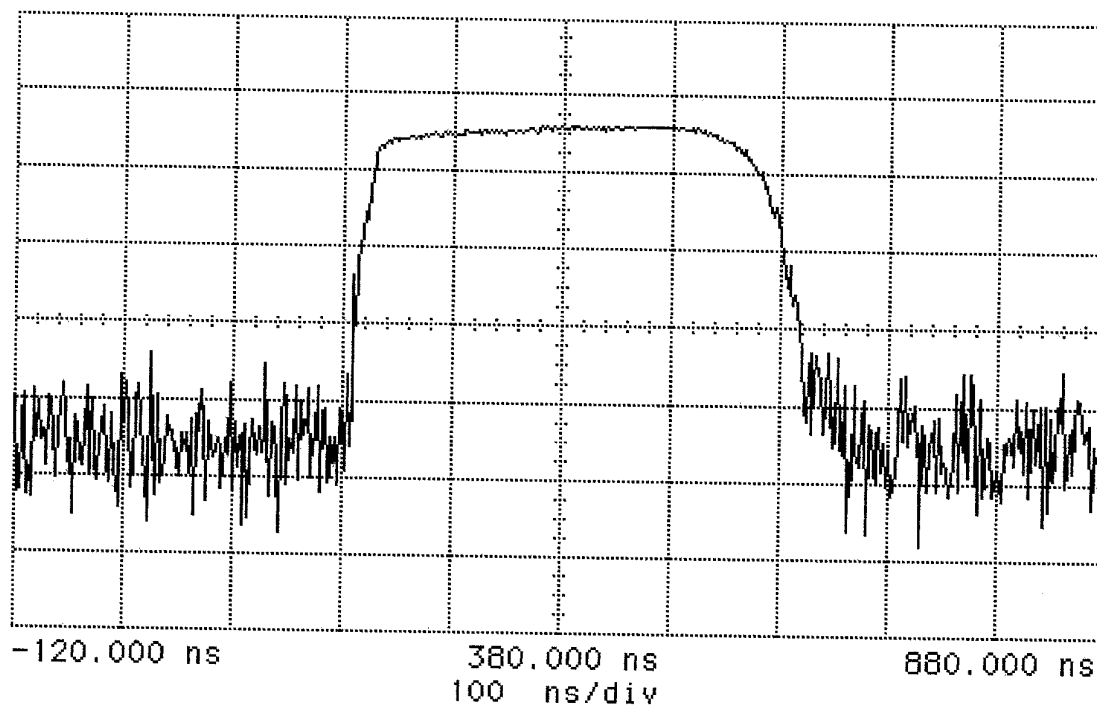
external loss 72.40 dB

sensor zero

fine

GPU 42589 0001/003.

hp running



peak(1)

65.44 dBm

pulsewidth(1) 355.289ns

CHANNEL

1 2 3 4

off on

scale 5.0 dB/div

ref. level 72.40 dBm

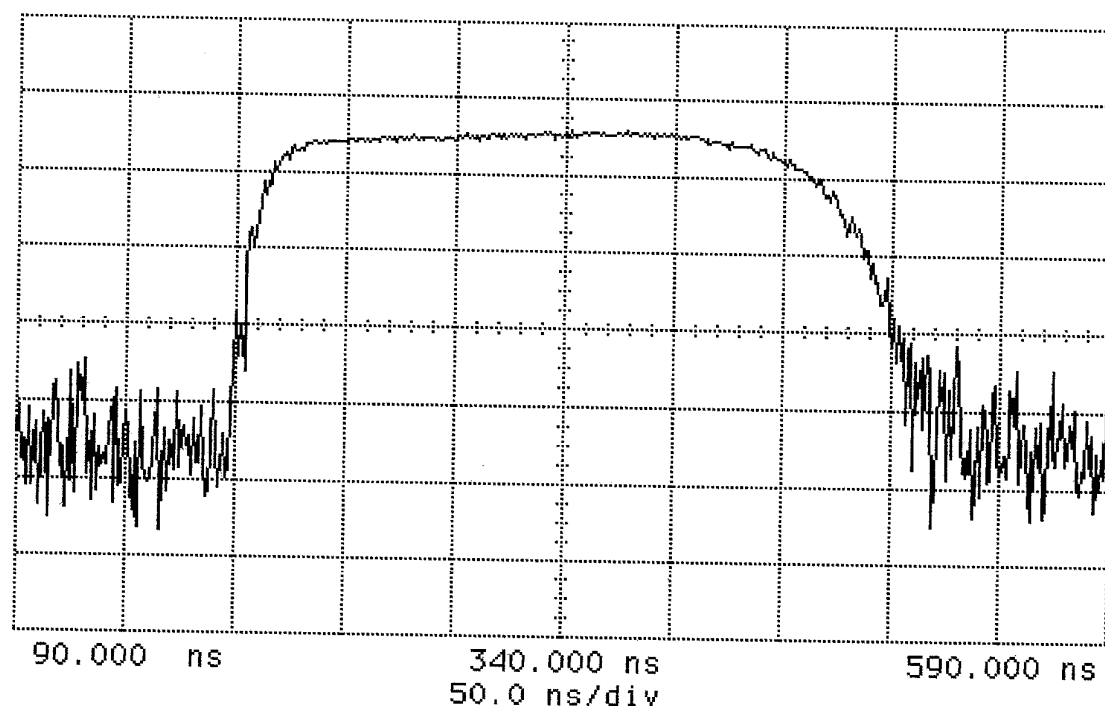
bandwidth high low CW

external loss 72.40 dB

sensor zero

GPU 42589 0001/004

hp running



peak(1)

65.30 dBm

pulsewidth(1) 247.505ns

CHANNEL

1 2 3 4

off **on**

scale
5.0 dB/div

ref. level
72.40 dBm

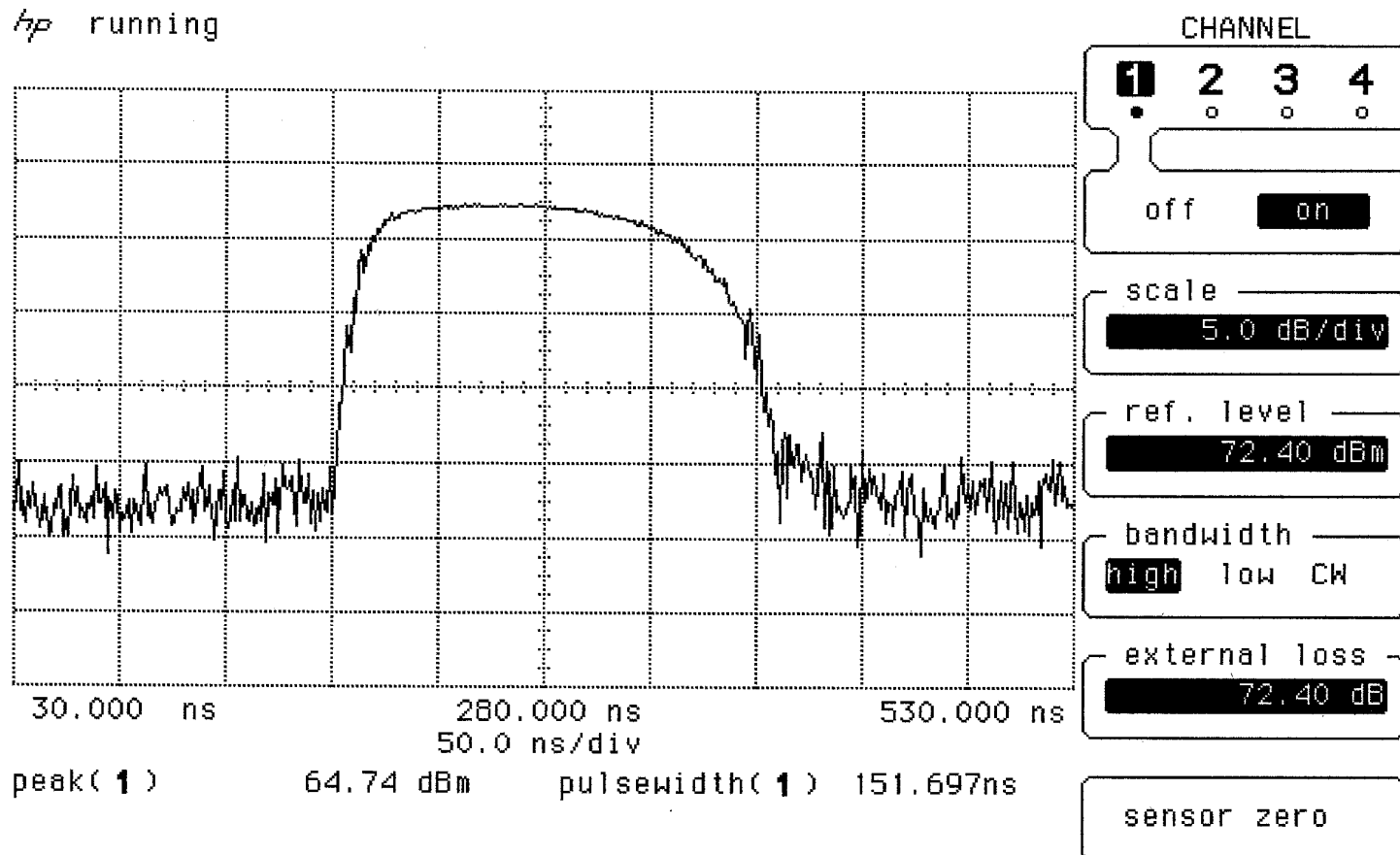
bandwidth
high low CW

external loss
72.40 dB

sensor zero

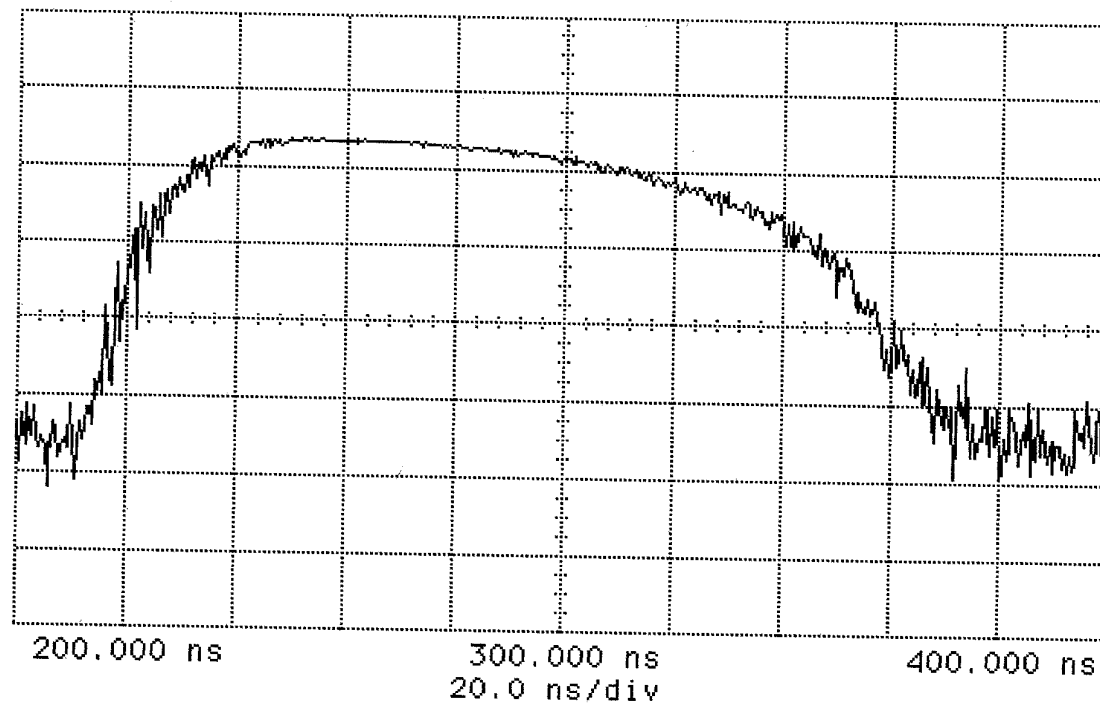
GPU 42589 8001/005.

hp running



GPU 42589 0001/006.

hp running



peak(1)

64.28 dBm

pulsewidth(1) 90.220 ns

CHANNEL

1 2 3 4

off **on**

scale
5.0 dB/div

ref. level
72.40 dBm

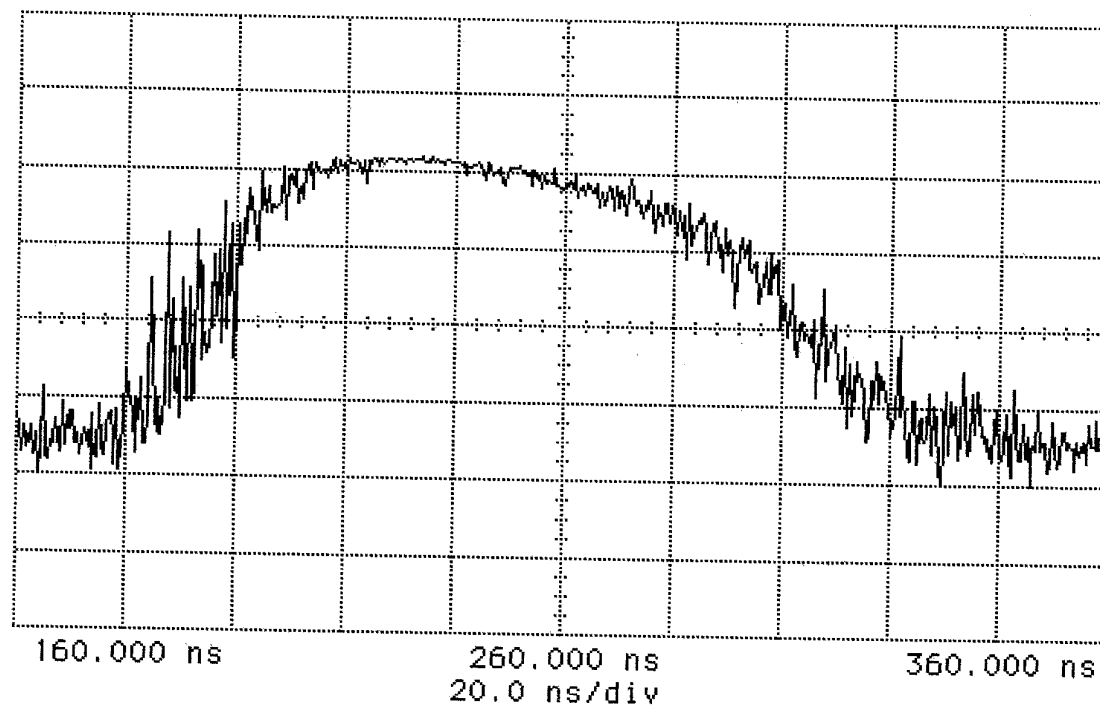
bandwidth
high low CW

external loss
72.40 dB

sensor zero

GPH 42589 J001/007

hp running



peak(1)

63.28 dBm

pulsewidth(1) 64.271 ns

CHANNEL

1 2 3 4

off **on**

scale
5.0 dB/div

ref. level
72.40 dBm

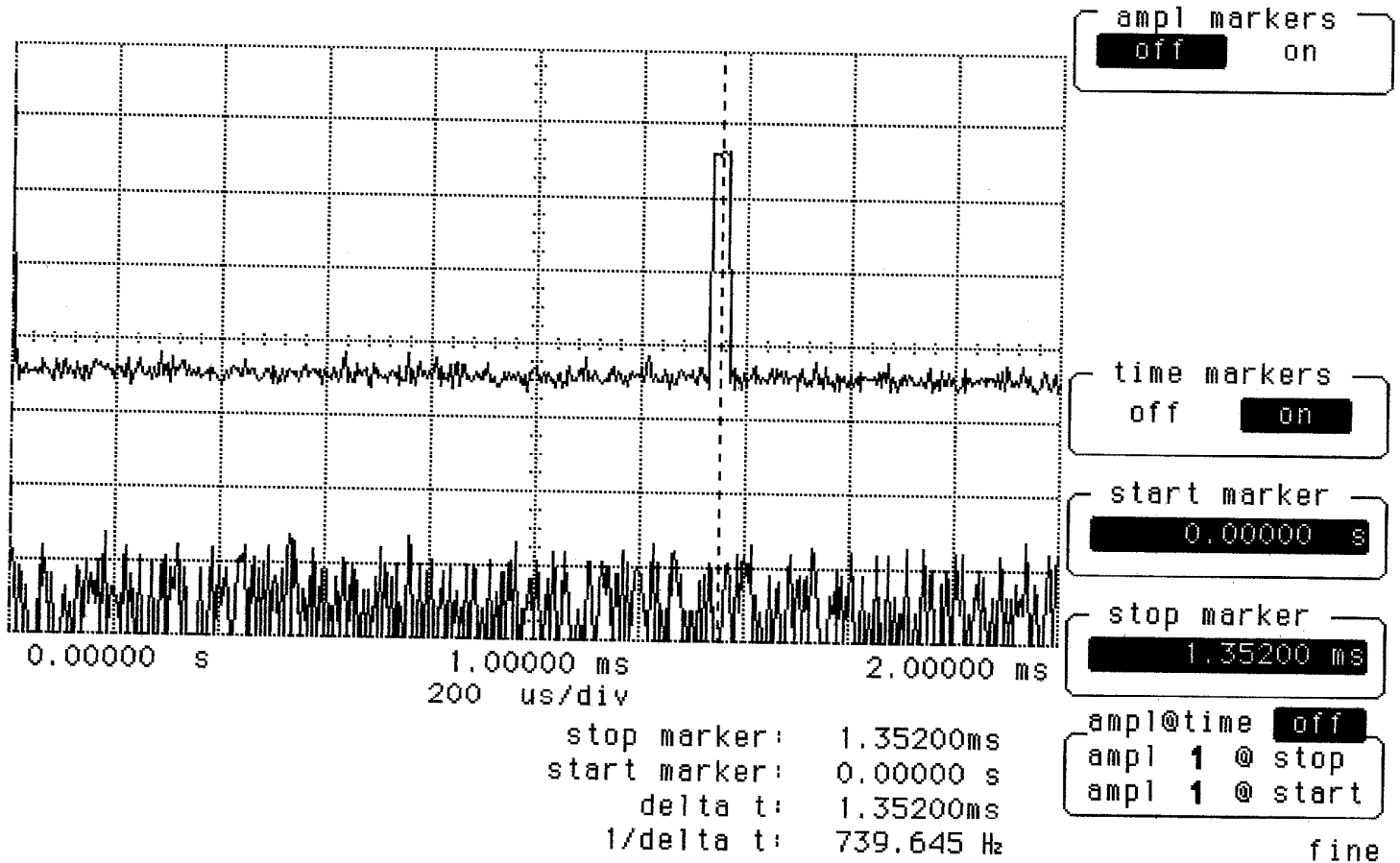
bandwidth
high low CW

external loss
72.40 dB

sensor zero

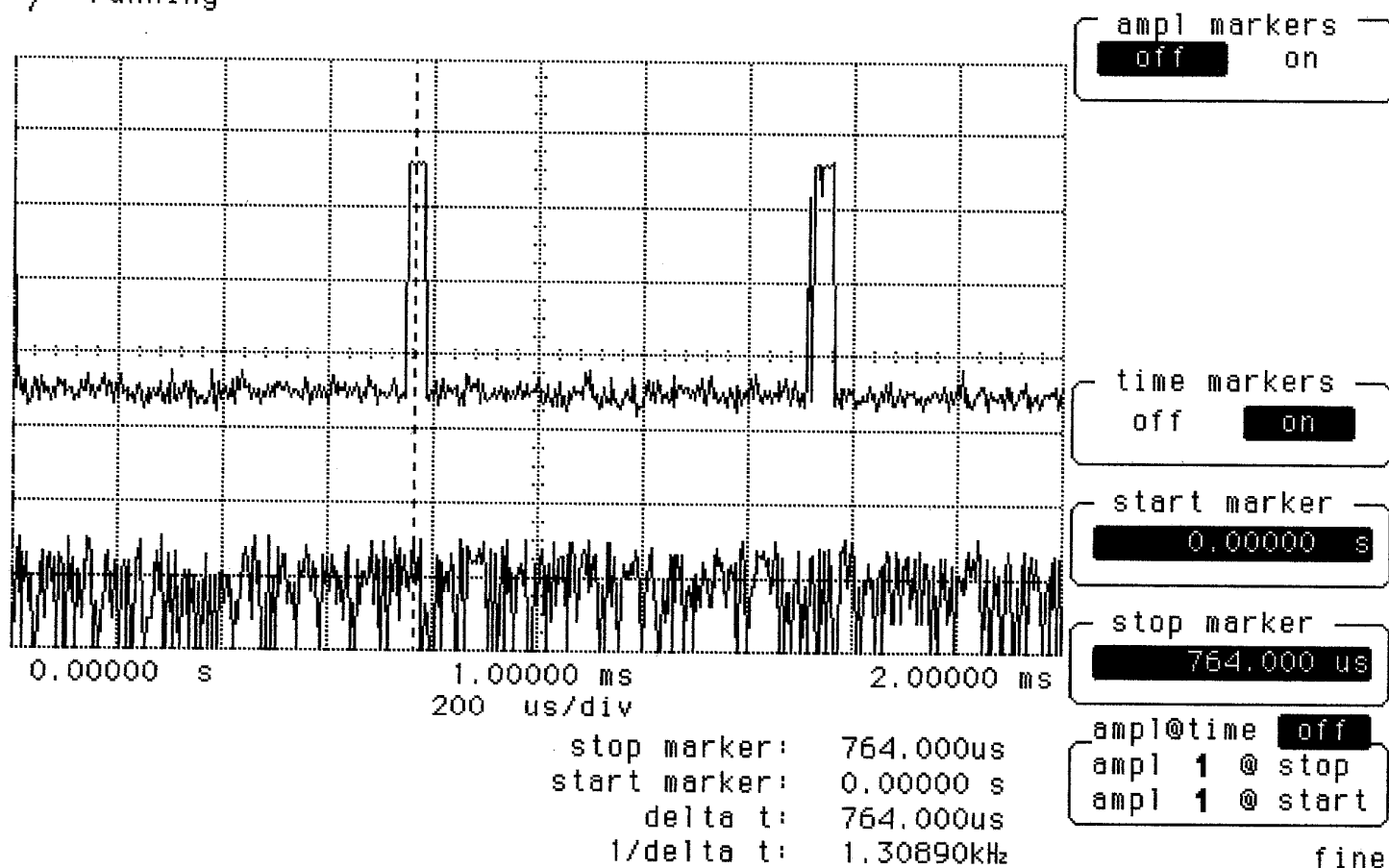
GPU 42589 5001/008

hp running



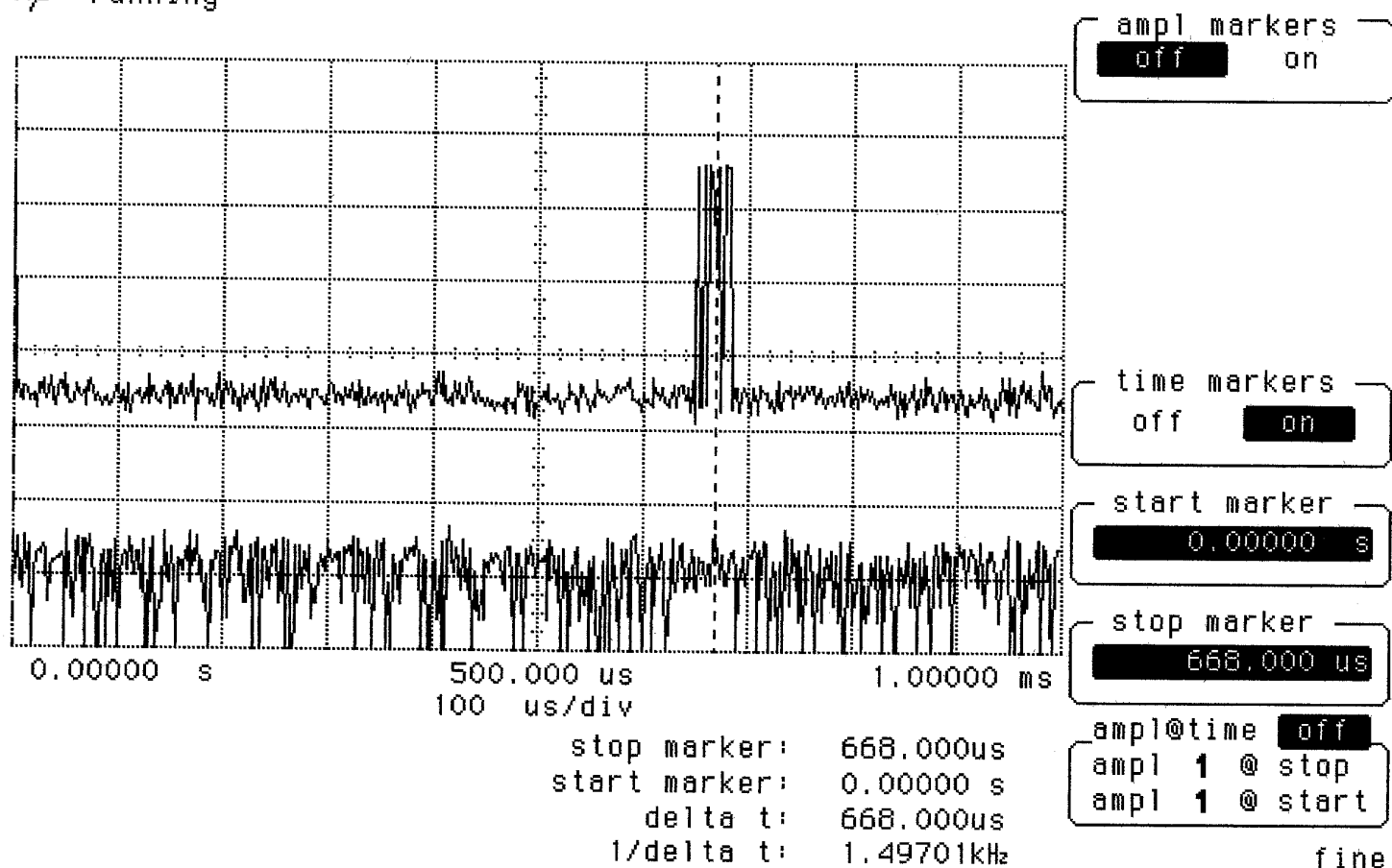
CPU 42589 8001/009.

hp running



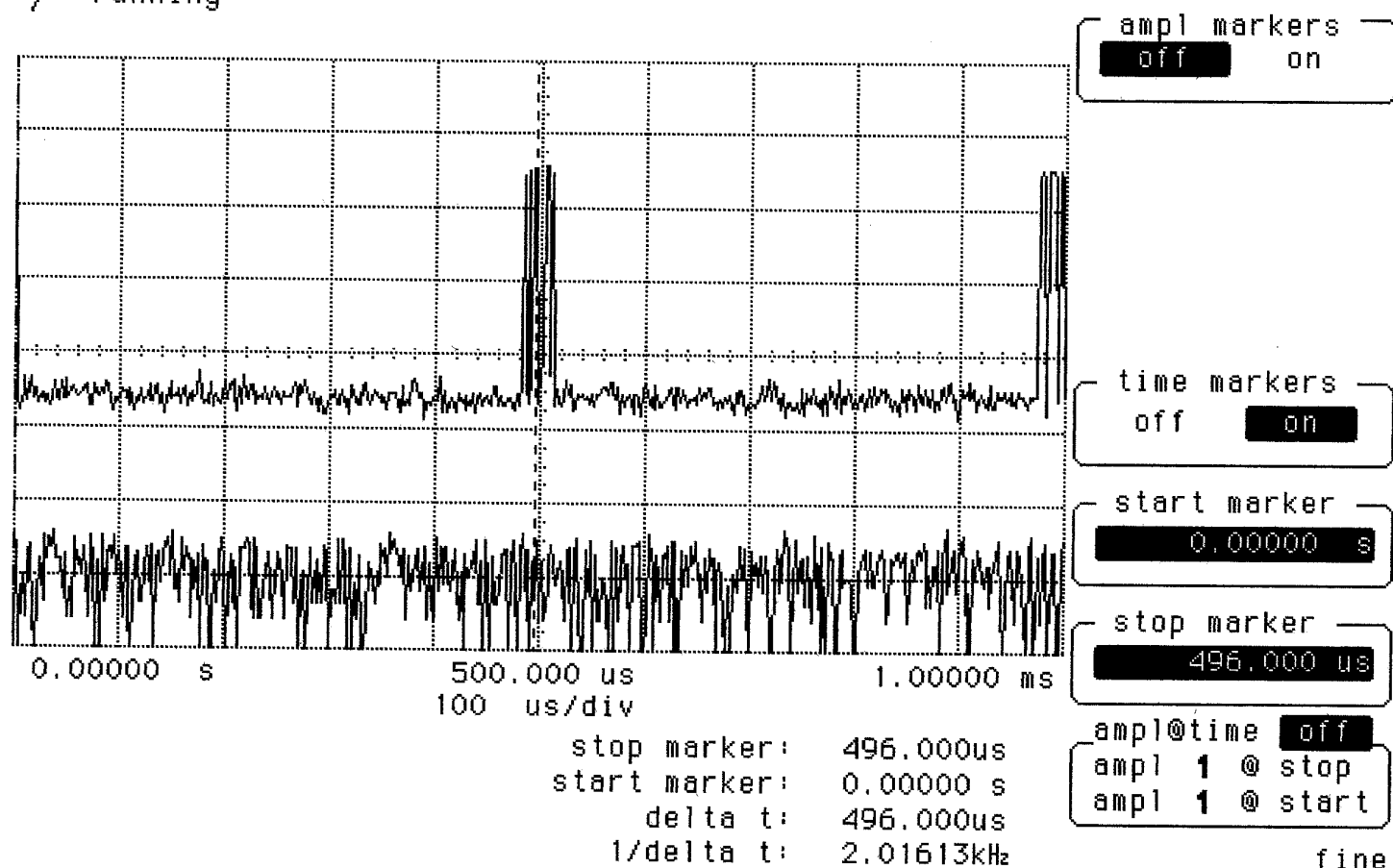
GPH 42589 J001/010

hp running



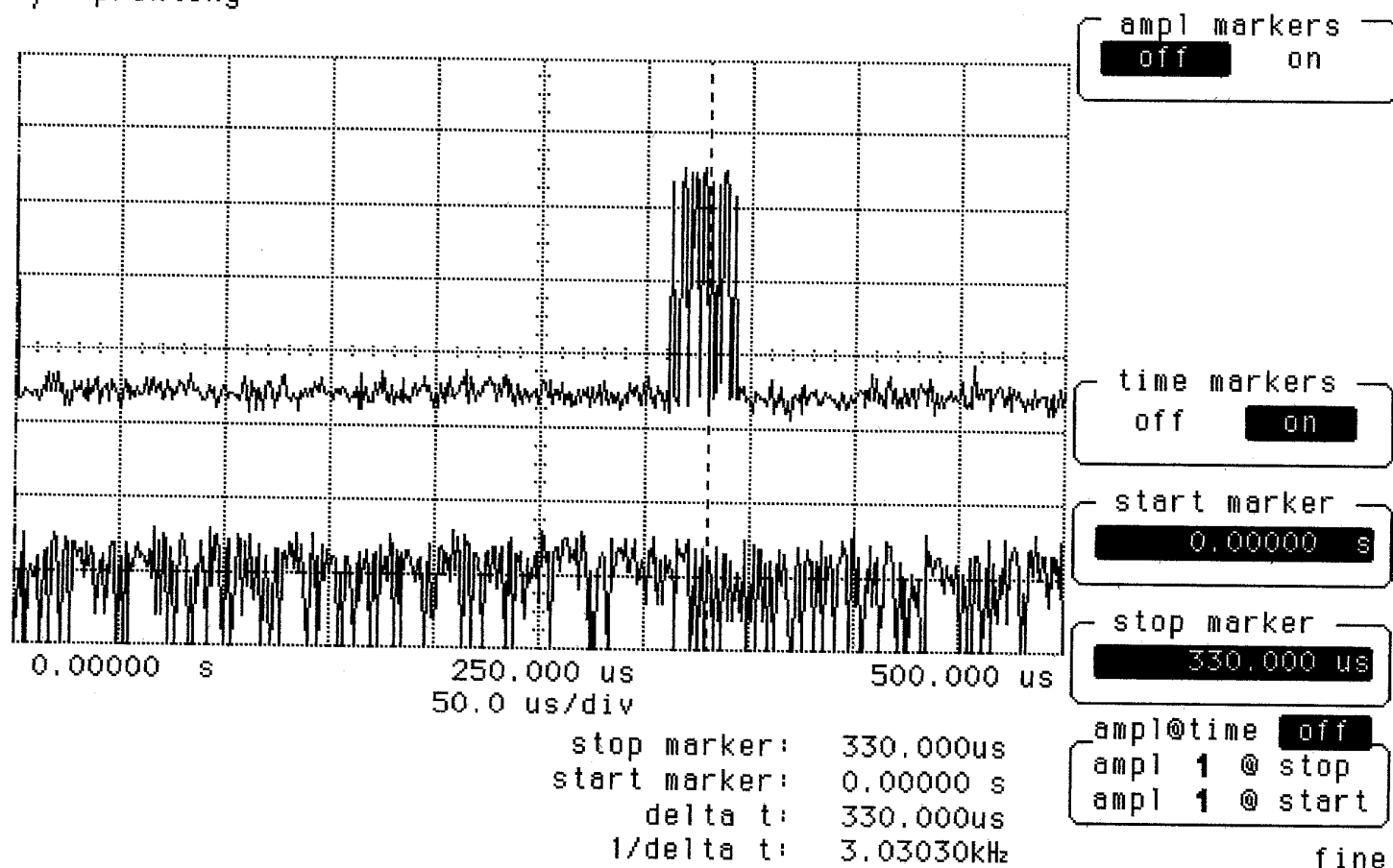
GPK 42589 8001 / 0.11

hp running



GPU 42589 8001/012

hp printing



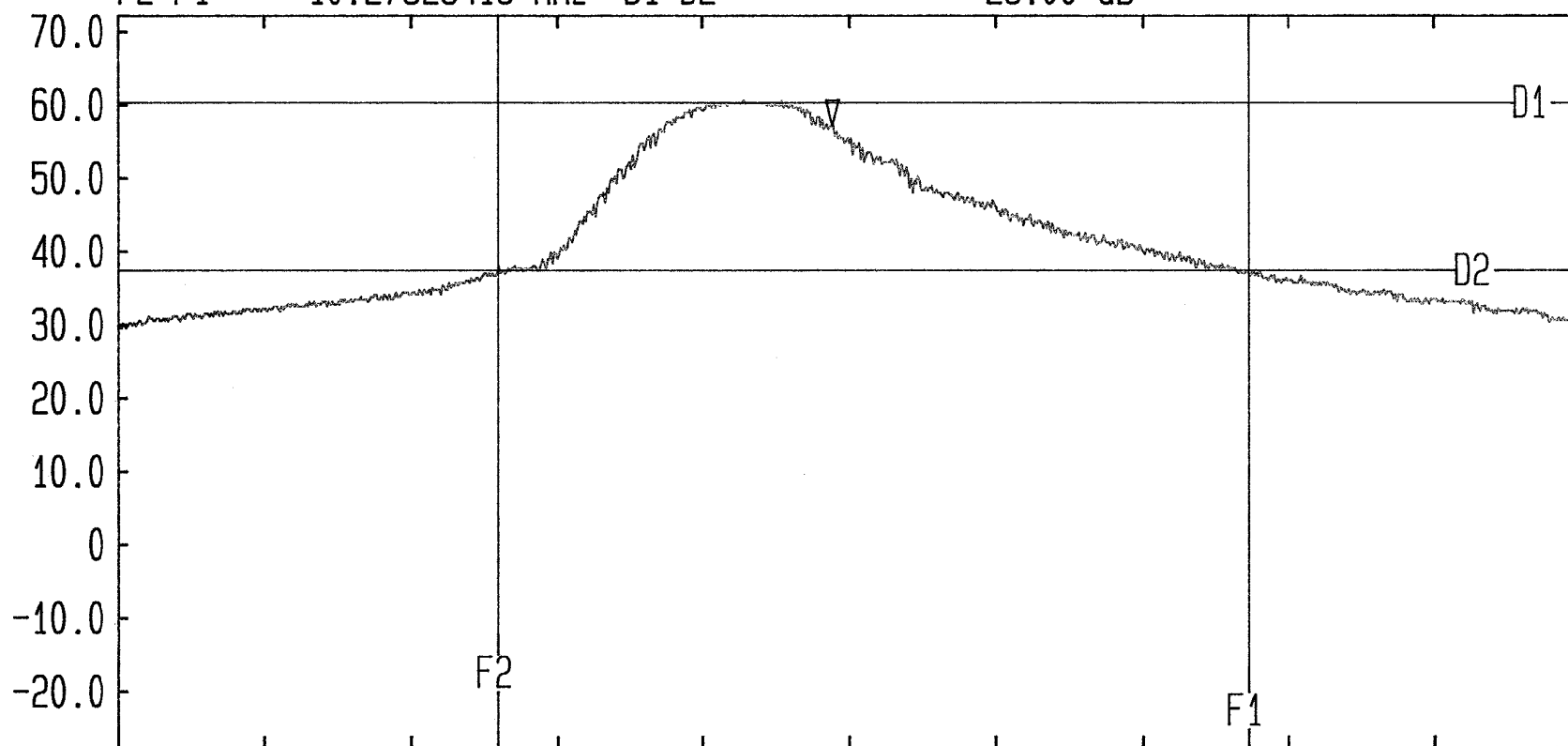
GPU 42589 5001 / 013.



LVLOFF
Date 22.Aug.'01 Time 14:36:08
Ref.Lvl 72.10 dBm
Marker 57.07 dBm
9.40981 GHz

Res.Bw 1.0 MHz [3dB]
TG.Lvl off
CF.Stp 2.000 MHz
Vid.Bw 1 MHz
RF.Att 10 dB
Unit [dBm]

F1 9.41548780391 GHz D1 60.42 dBm
F2 9.40521250978 GHz D2 37.42 dBm
F2-F1 10.27529413 MHz D1-D2 -23.00 dB



Start 9.40003 GHz Span 20 MHz Center 9.41003 GHz Sweep 20 ms Stop 9.42003 GHz

Occupied Bandwidth.
FCC Part 80

Tested By RFI for Raymarine Ltd.
1.0uS Pulse Width

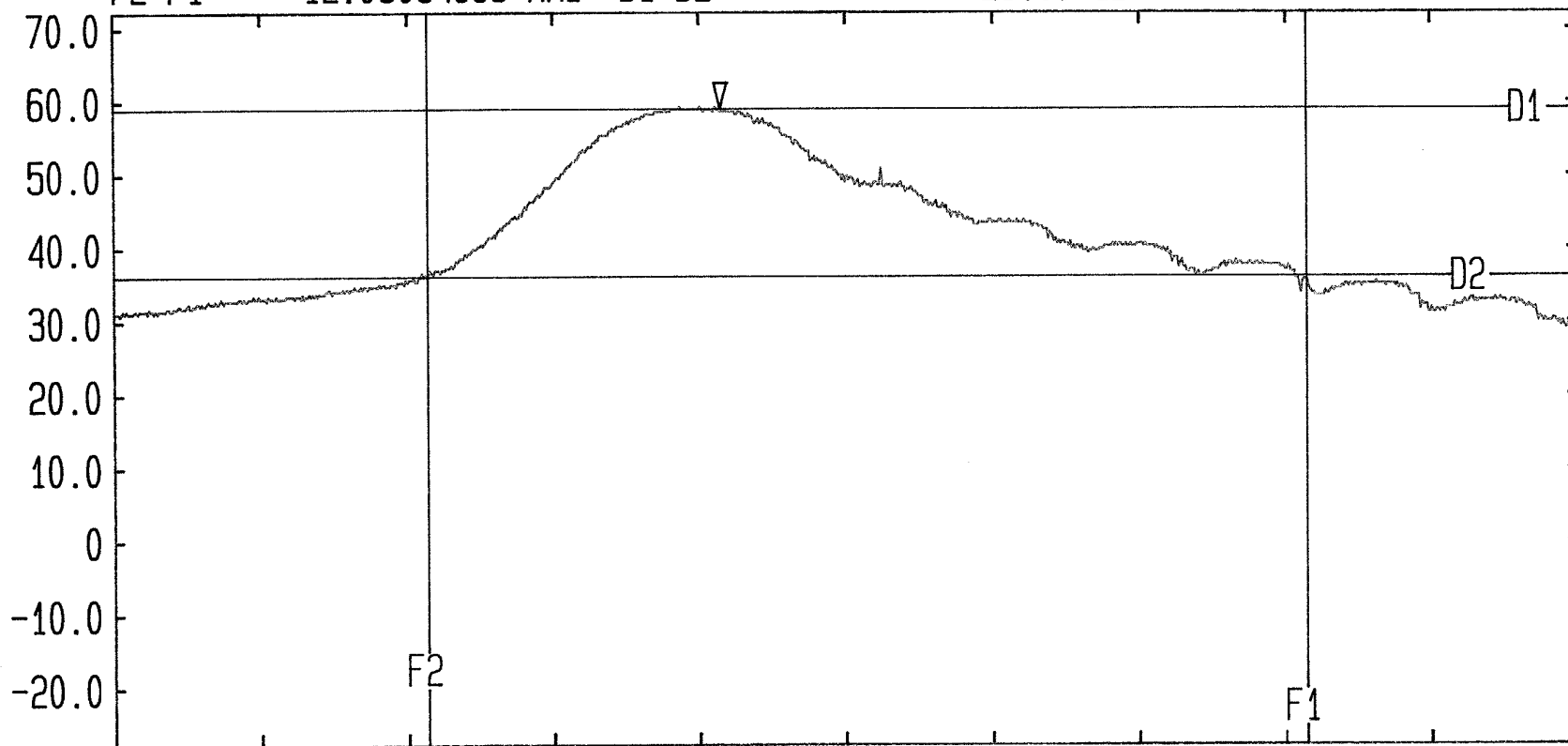
EUT: Pathfinder RL84CRC PLUS
GPH/42589/01/01/014



LVLOFF
Date 22.Aug.'01 Time 14:42:00
Ref.Lvl 72.10 dBm
Marker 59.00 dBm
9.40834 GHz

Res.Bw 1.0 MHz [3dB]
TG.Lvl off
CF.Stp 2.000 MHz
Vid.Bw 1 MHz
RF.Att 10 dB
Unit [dBm]

F1 9.41633224831 GHz D1 59.00 dBm
F2 9.40430139868 GHz D2 36.00 dBm
F2-F1 12.03084963 MHz D1-D2 -23.00 dB



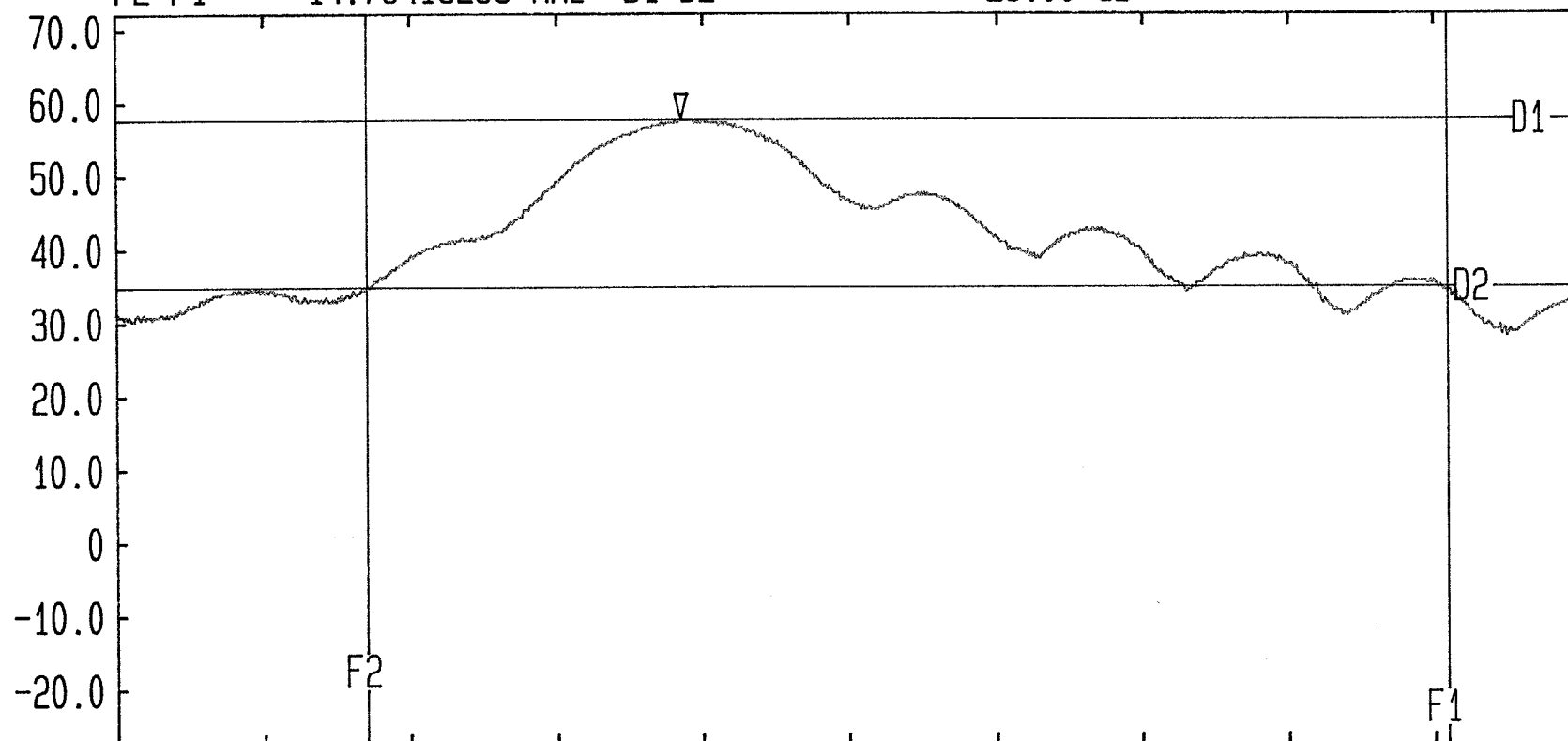
Start 9.40003 GHz Span 20 MHz Center 9.41003 GHz Sweep 20 ms Stop 9.42003 GHz
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
FCC Part 80 600nS Pulse Width GPH/42589/01/01/015



LVLOFF
Date 22.Aug.'01 Time 14:47:50
Ref.Lvl 72.10 dBm
Marker 57.78 dBm
9.40774 GHz

Res.Bw 1.0 MHz [3dB]
TG.Lvl off
CF.Stp 2.000 MHz
Vid.Bw 1 MHz
RF.Att 10 dB
Unit [dBm]

F1 9.41822113718 GHz D1 57.78 dBm
F2 9.40345695420 GHz D2 34.78 dBm
F2-F1 14.76418298 MHz D1-D2 -23.00 dB



Start 9.40003 GHz Span 20 MHz Center 9.41003 GHz Sweep 20 ms Stop 9.42003 GHz

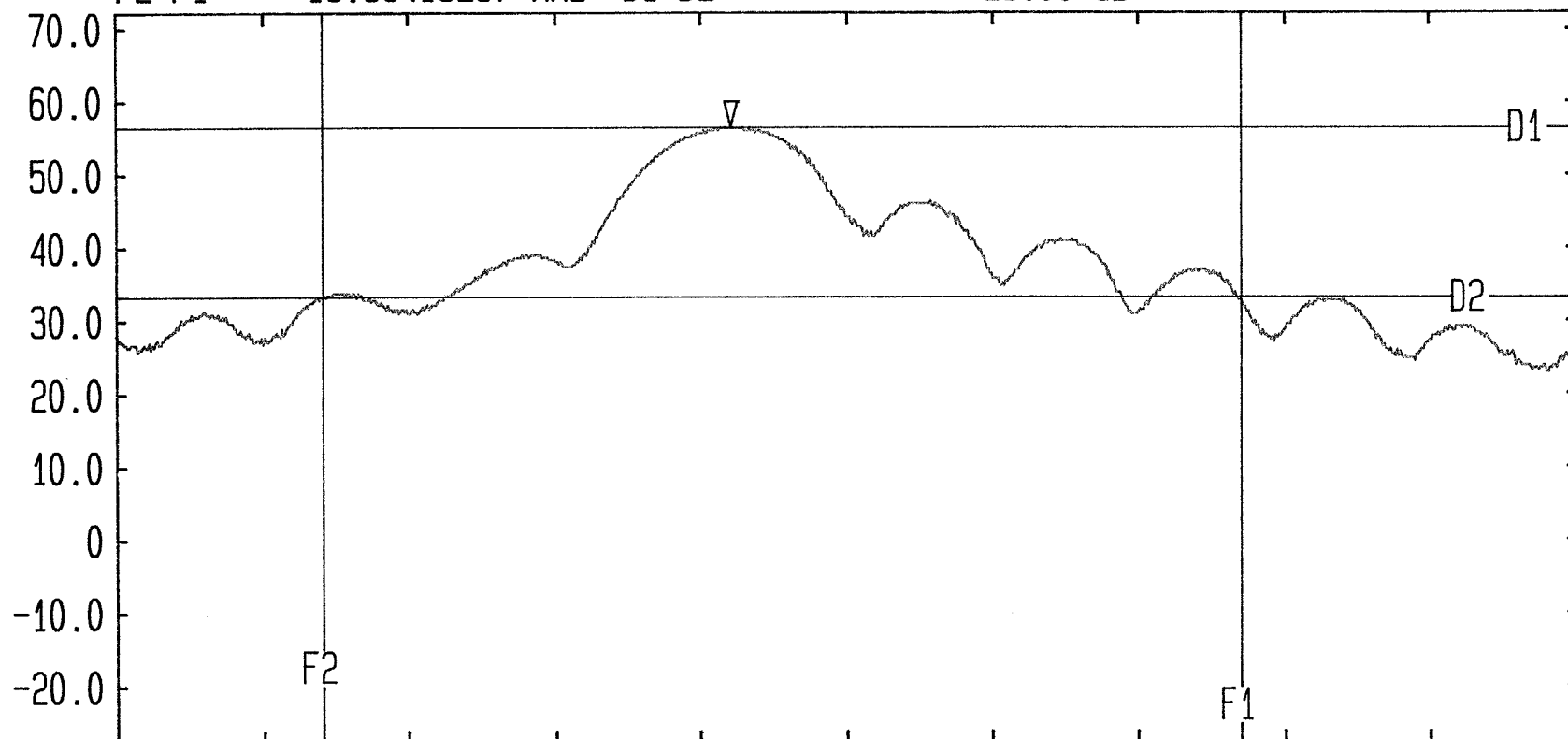
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
FCC Part 80 450nS Pulse Width GPH/42589/01/01/016



LVLOFF
Date 22.Aug.'01 Time 14:53:36
Ref.Lvl 72.10 dBm
Marker 56.39 dBm
9.40766 GHz

Res.Bw 1.0 MHz [3dB]
TG.Lvl off
CF.Stp 3.000 MHz
Vid.Bw 1 MHz
RF.Att 10 dB
Unit [dBm]

F1 9.41812113719 GHz D1 56.31 dBm
F2 9.39925695422 GHz D2 33.31 dBm
F2-F1 18.86418297 MHz D1-D2 -23.00 dB



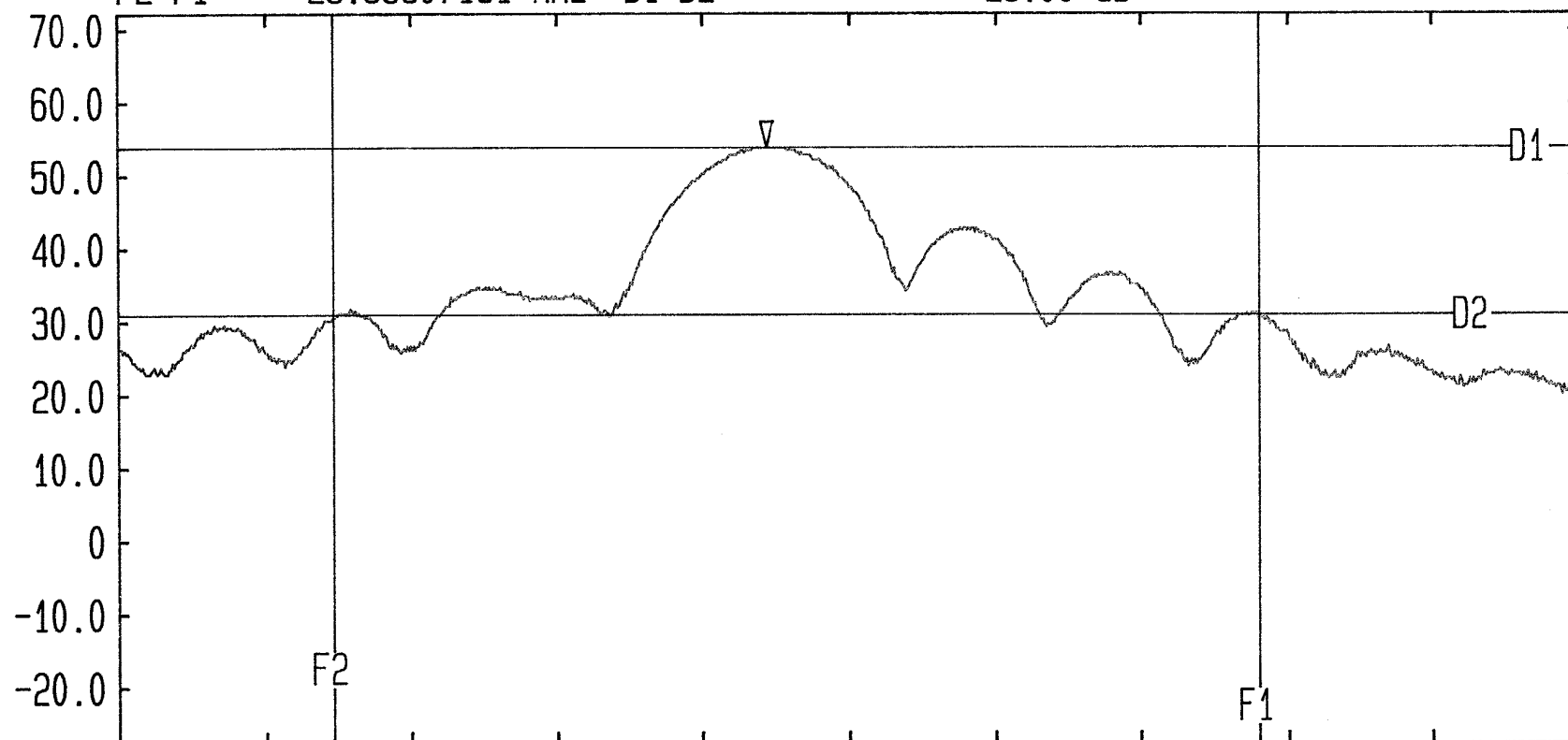
Start 9.39503 GHz Span 30 MHz Center 9.41003 GHz Sweep 20 ms Stop 9.42503 GHz
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
FCC Part 80 350ns Pulse Width GPH/42589/01/01/017



LVLOFF
Date 22.Aug.'01 Time 15:02:27
Ref.Lvl 72.10 dBm
Marker 53.85 dBm
9.40781 GHz

Res.Bw 1.0 MHz [3dB]
TG.Lvl off
CF.Stp 4.000 MHz
Vid.Bw 1 MHz
RF.Att 10 dB
Unit [dBm]

F1 9.42127669271 GHz D1 54.02 dBm
F2 9.39592362090 GHz D2 31.02 dBm
F2-F1 25.35307181 MHz D1-D2 -23.00 dB



Start 9.39003 GHz Span 40 MHz Center 9.41003 GHz Sweep 20 ms Stop 9.43003 GHz

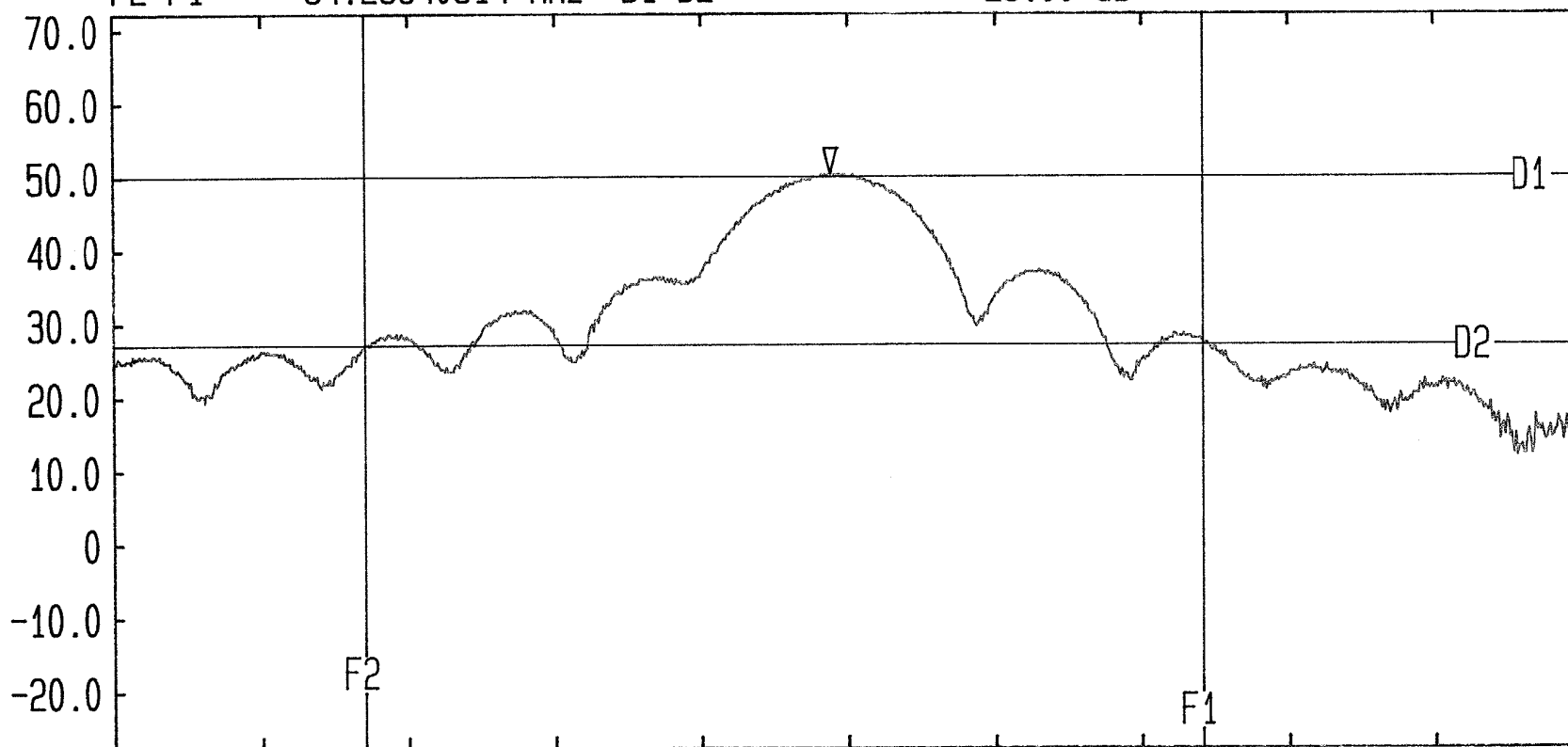
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
FCC Part 80 250nS Pulse Width GPH/42589/01/01/018



LVLOFF
Date 22.Aug.'01 Time 15:09:30
Ref.Lvl 72.10 dBm
Marker 50.37 dBm
9.40936 GHz

Res.Bw 1.0 MHz [3dB]
TG.Lvl off
CF.Stp 6.000 MHz
Vid.Bw 1 MHz
RF.Att 10 dB
Unit [dBm]

F1 9.42454335937 GHz D1 50.14 dBm
F2 9.39025695423 GHz D2 27.14 dBm
F2-F1 34.28640514 MHz D1-D2 -23.00 dB



Start 9.38003 GHz Span 60 MHz Center 9.41003 GHz Sweep 20 ms Stop 9.44003 GHz

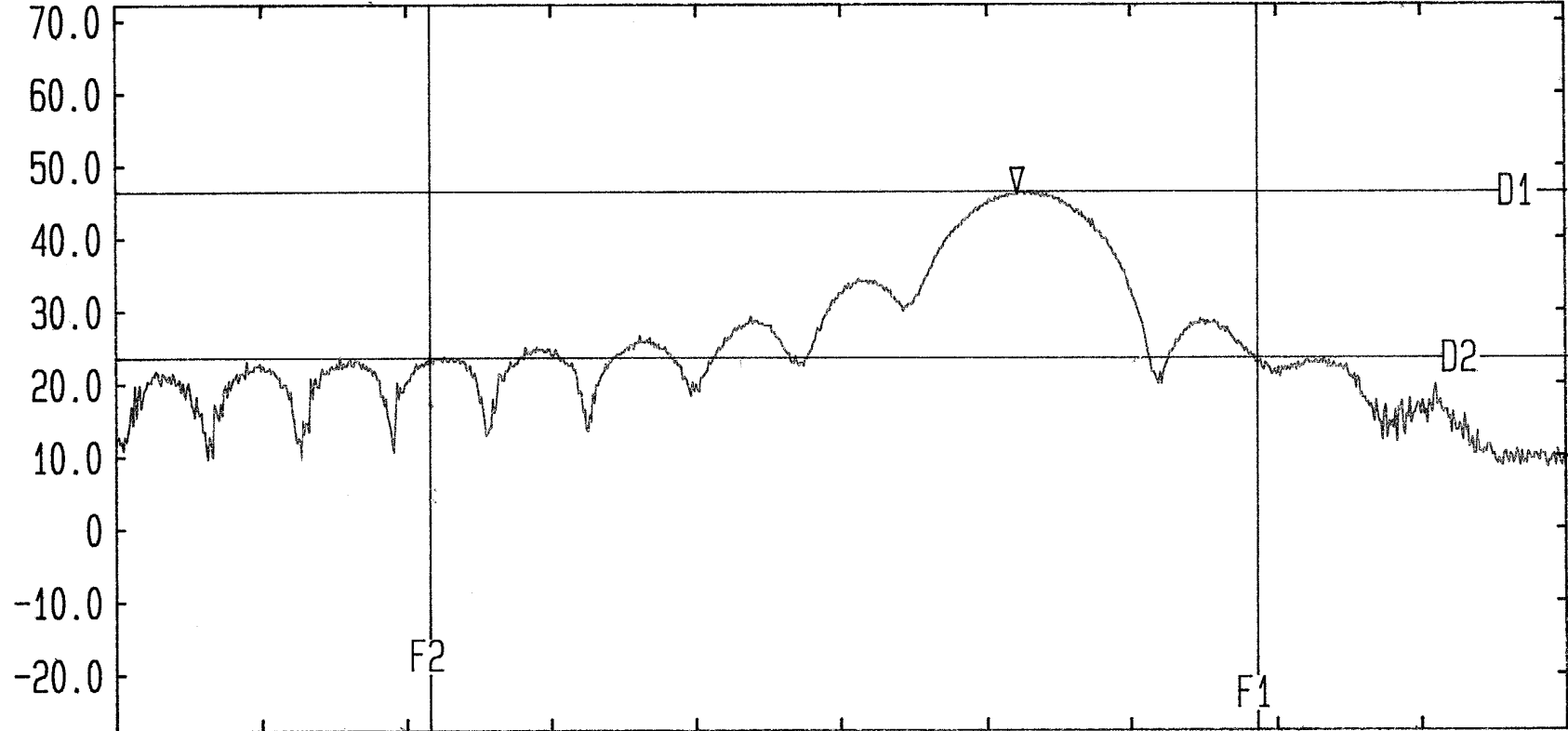
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
FCC Part 80 150nS Pulse Width GPH/42589/01/01/019



LVLOFF
Date 22.Aug.'01 Time 15:15:59
Ref.Lvl 72.10 dBm
Marker 46.20 dBm
9.4102 GHz

Res.Bw 1.0 MHz [3dB]
TG.Lvl off
CF.Stp 10.000 MHz
Vid.Bw 1 MHz
RF.Att 10 dB
Unit [dBm]

F1 9.42687669270 GHz D1 46.58 dBm
F2 9.36992362091 GHz D2 23.58 dBm
F2-F1 56.95307179 MHz D1-D2 -23.00 dB



Start 9.3482 GHz Span 100 MHz Center 9.3982 GHz Sweep 20 ms Stop 9.4482 GHz

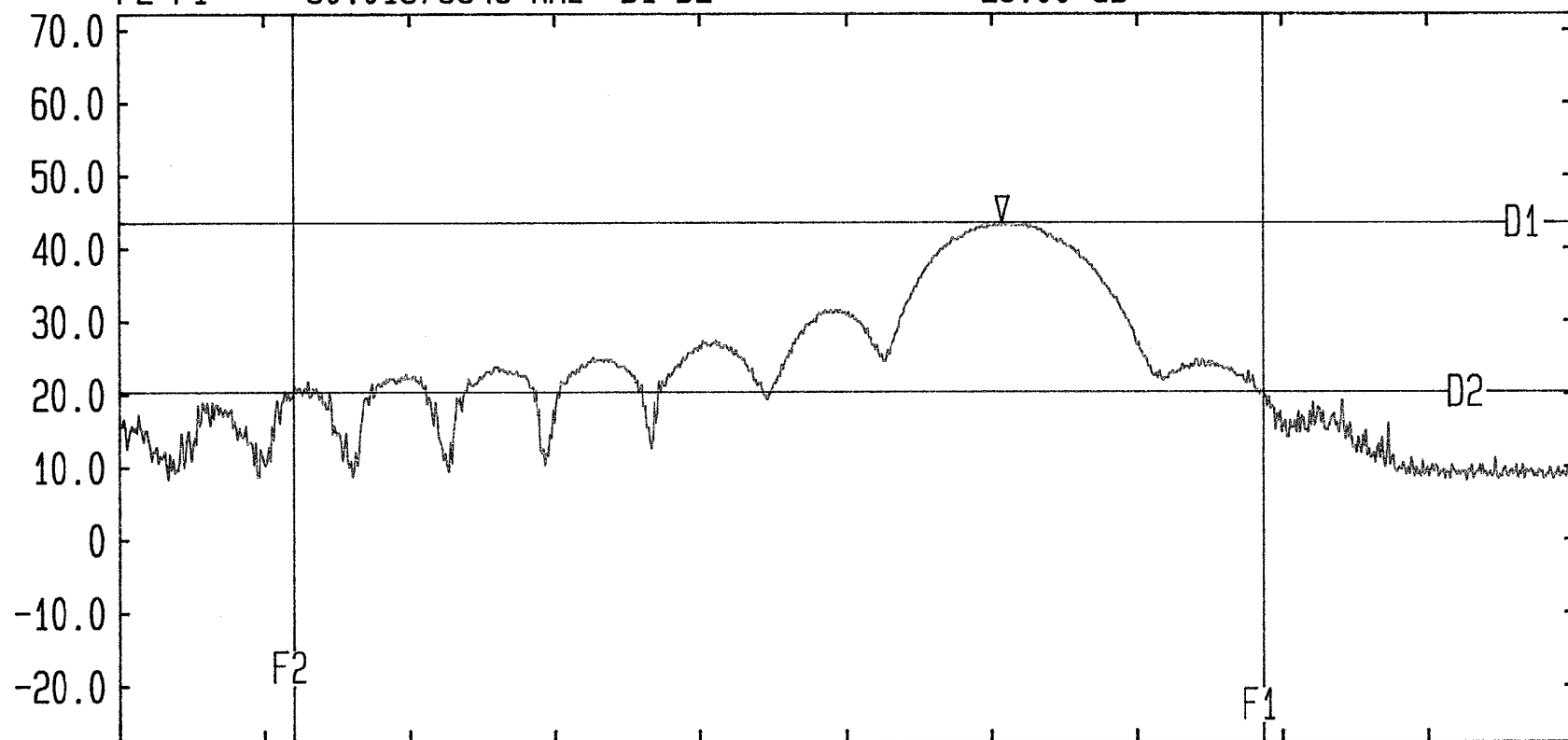
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
FCC Part 80 90nS Pulse Width GPH/42589/01/01/020



LVLOFF
Date 22.Aug.'01 Time 15:21:56
Ref.Lvl 72.10 dBm Marker 43.61 dBm
9.4111 GHz

Res.Bw 1.0 MHz [3dB] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 12.000 MHz RF.Att 10 dB
Unit [dBm]

F1 9.43274335937 GHz D1 43.44 dBm
F2 9.35272362094 GHz D2 20.44 dBm
F2-F1 80.01973843 MHz D1-D2 -23.00 dB



Start 9.3382 GHz Span 120 MHz Center 9.3982 GHz Sweep 20 ms Stop 9.4582 GHz

Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
FCC Part 80 65nS Pulse Width GPH/42589/01/01/021



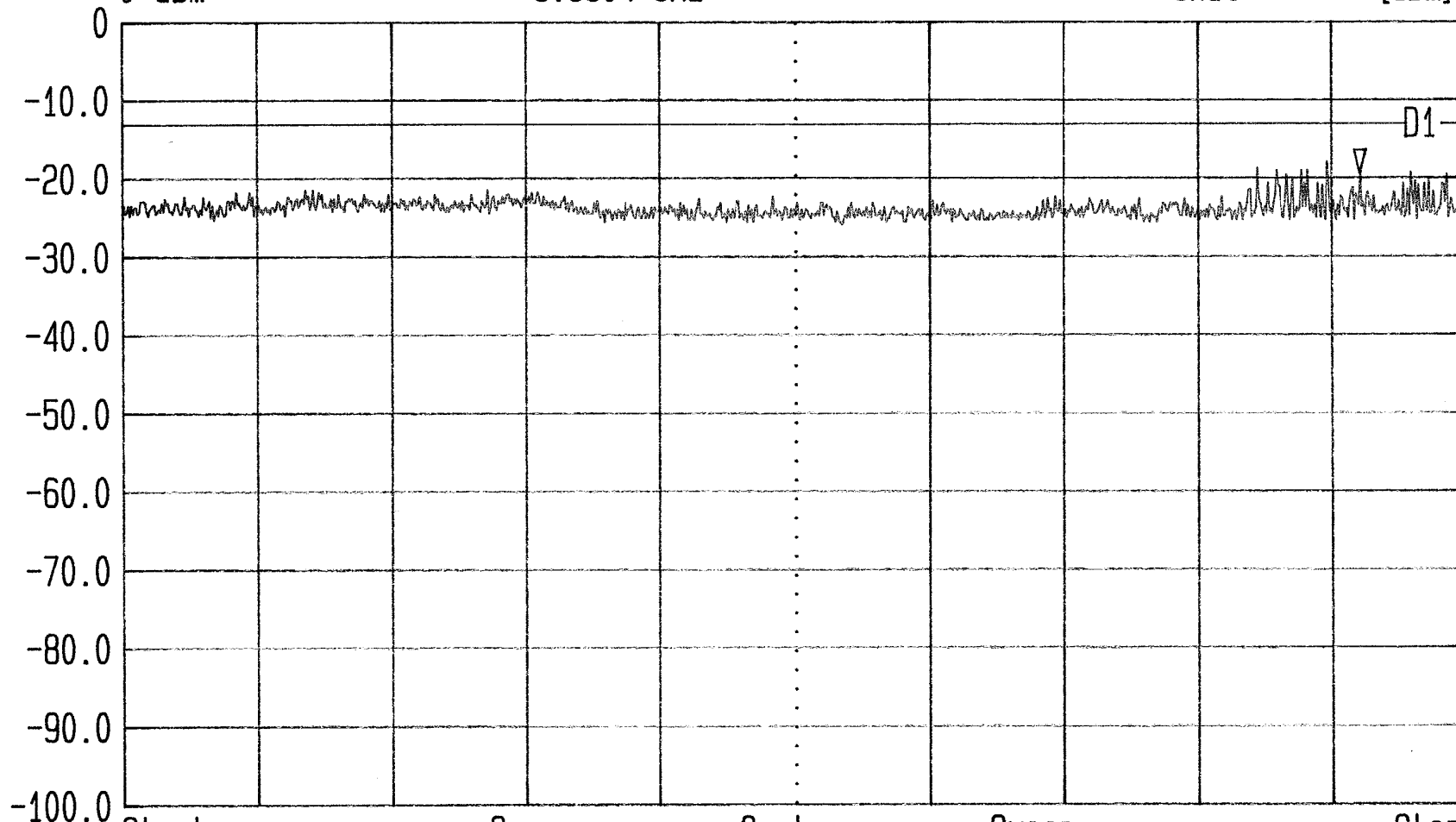
LVLOFF
Date 22.Aug.'01 Time 15:55:43
Ref.Lvl 0 dBm Marker -19.27 dBm
8.6804 GHz

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
291.000 MHz

Vid.Bw
RF.Att
Unit

1 MHz
0 dB
[dBm]



PA
10
FI

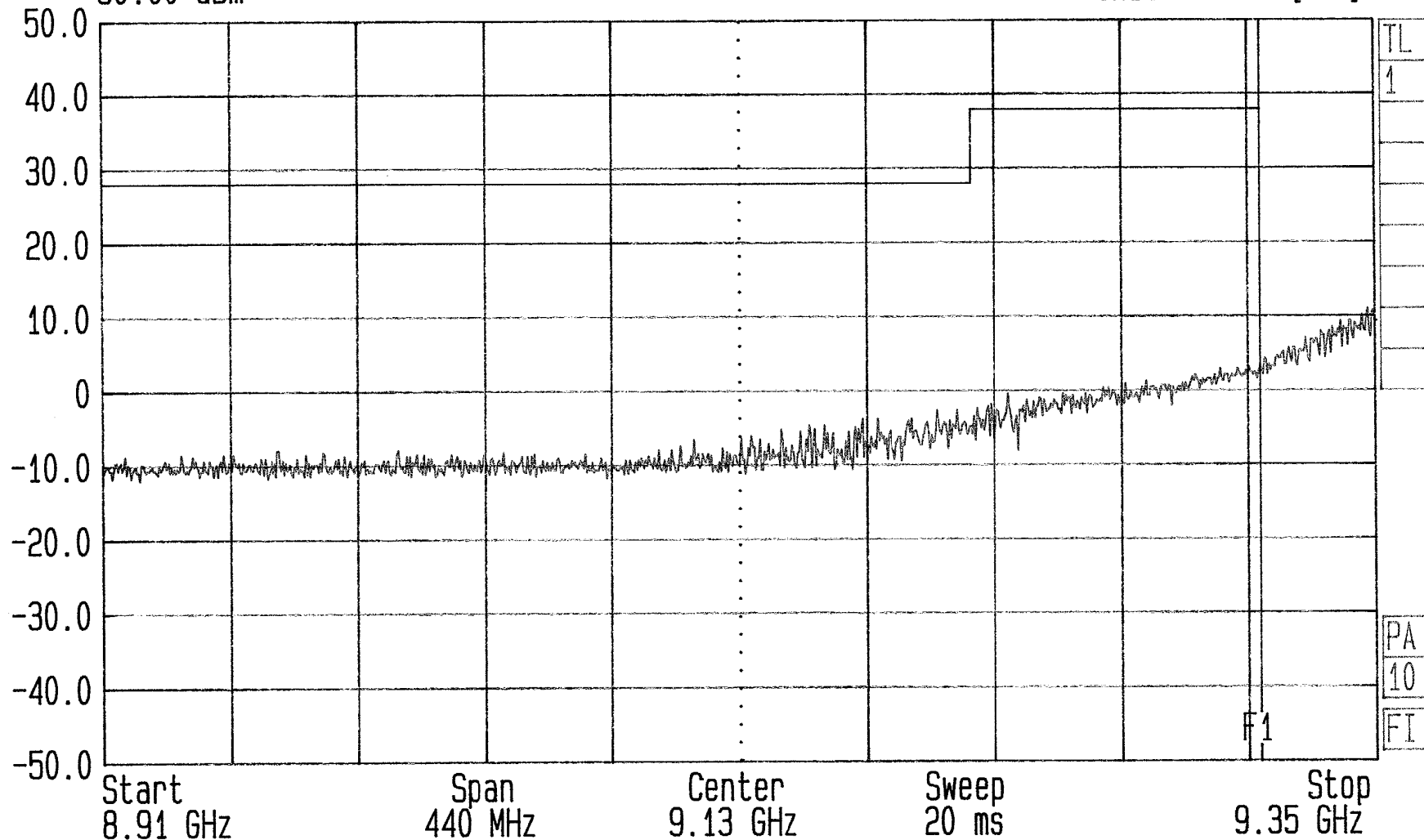
Start 6 GHz Span 2.91 GHz Center 7.455 GHz Sweep 20 ms Stop 8.91 GHz

Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
FCC Part 80 450nS Pulse Width GPH/42589/01/01/022



LVLOFF
Date 22.Aug.'01 Time 16:01:19
Ref.Lvl
50.00 dBm

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 44.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBm]

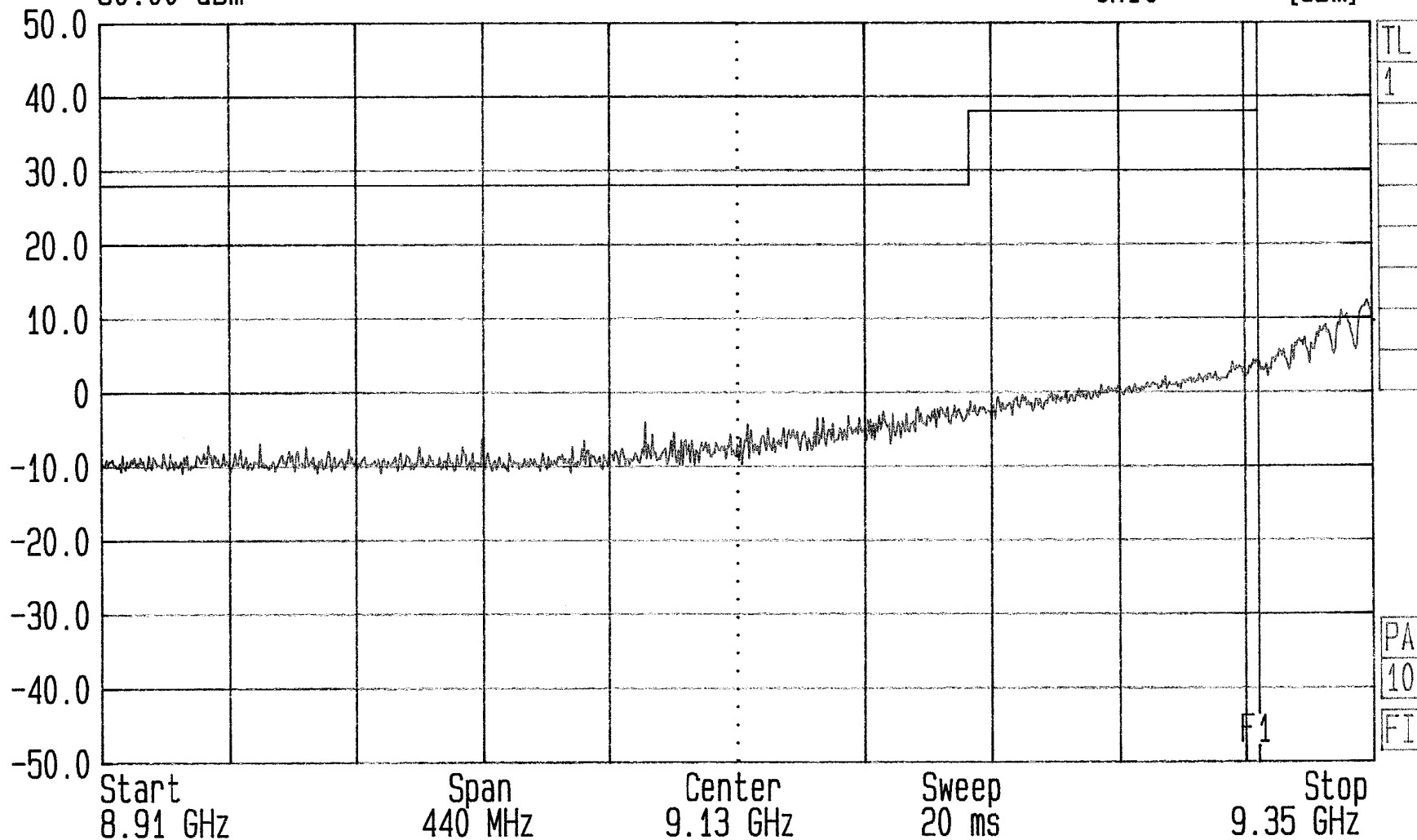


Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
FCC Part 80 450nS Pulse Width GPH/42589/01/01/023



LVLOFF
Date 22.Aug.'01 Time 16:06:52
Ref.Lvl
50.00 dBm

Res.Bw 1 MHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 44.000 MHz RF.Att 0 dB
Unit [dBm]

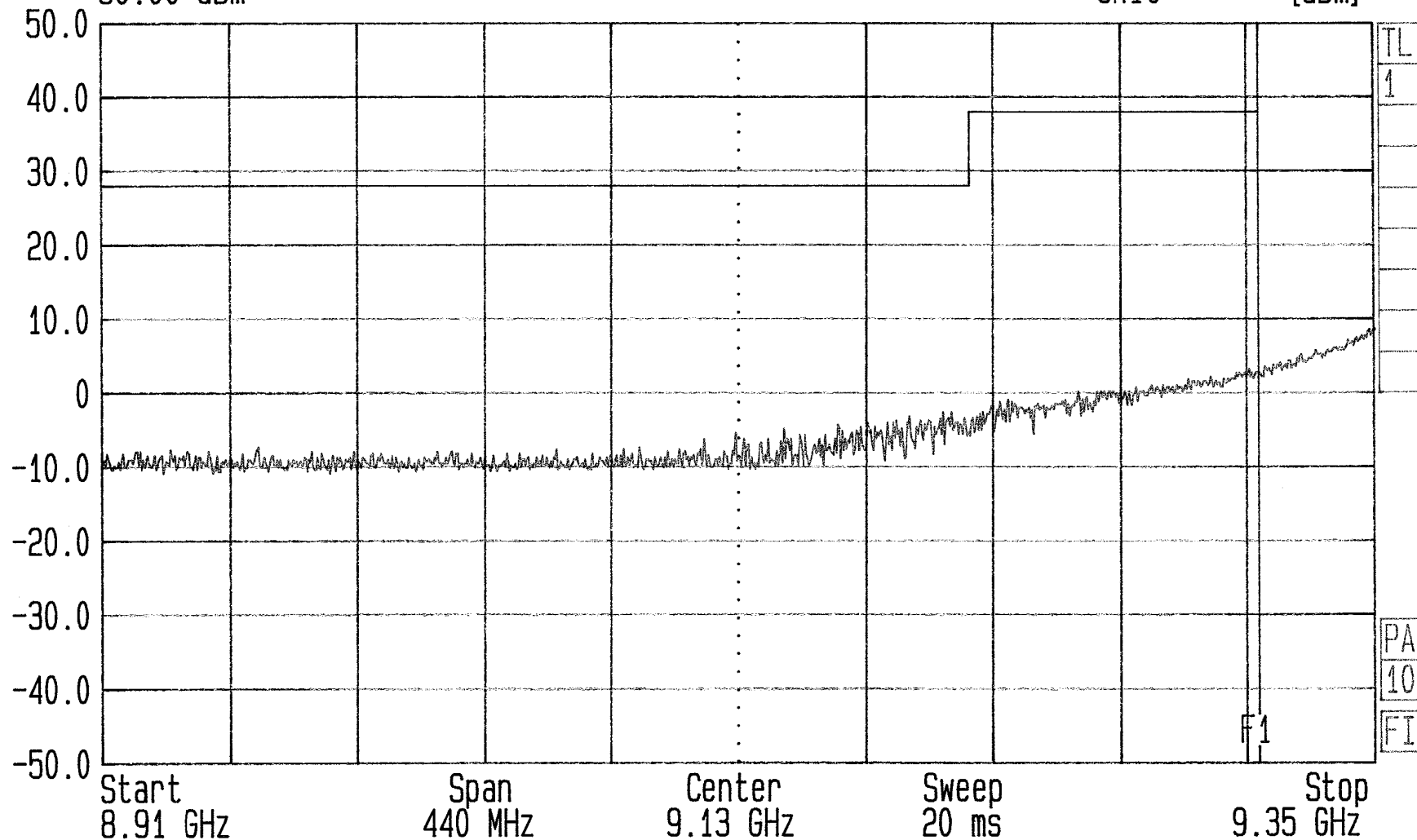


Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
FCC Part 80 65nS Pulse Width GPH/42589/01/01/024



LVLOFF
Date 22.Aug.'01 Time 16:12:53
Ref.Lvl
50.00 dBm

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 44.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBm]

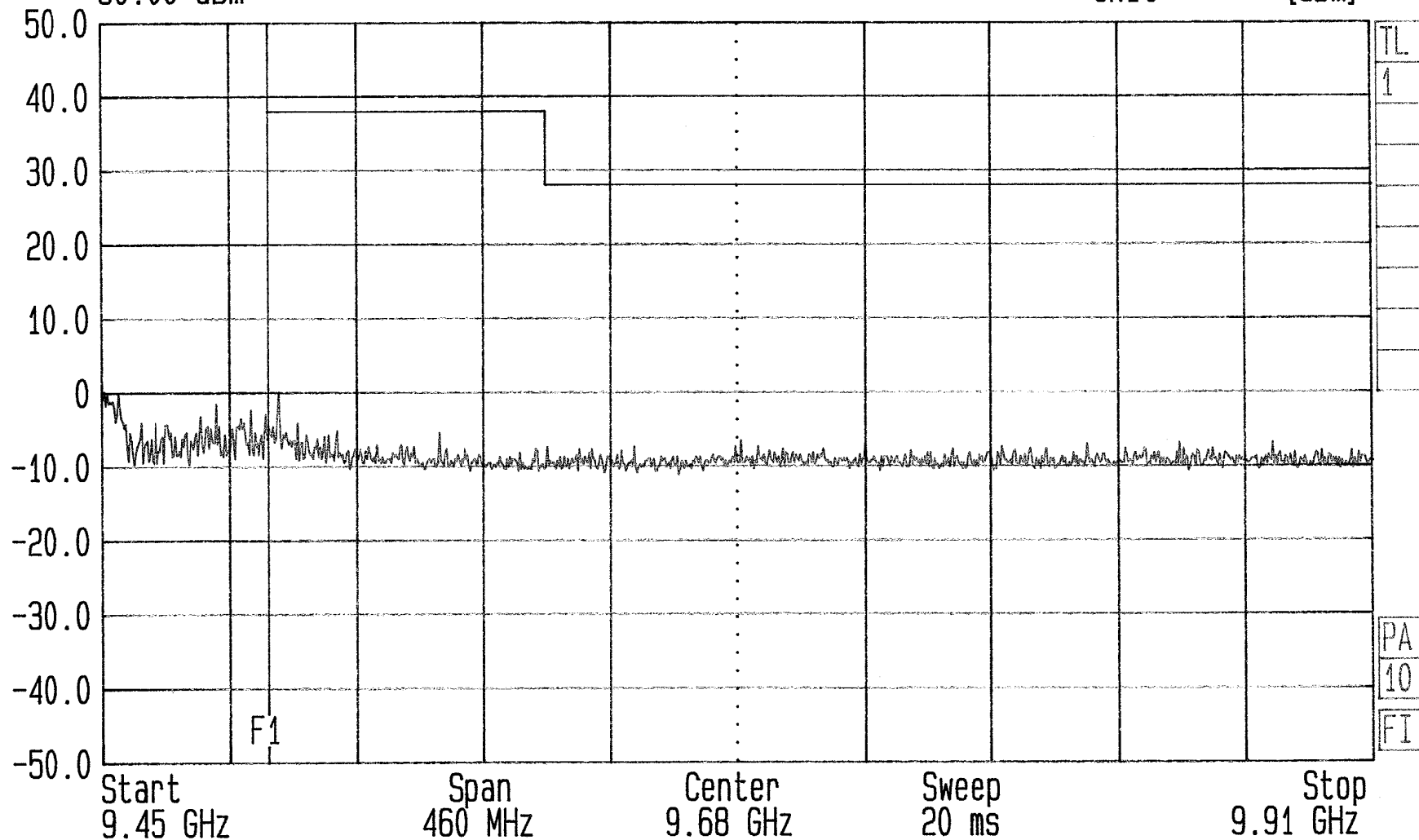


Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
FCC Part 80 1.0uS Pulse Width GPH/42589/01/01/025



LVLOFF
Date 22.Aug.'01 Time 16:21:11
Ref.Lvl
50.00 dBm

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 46.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBm]

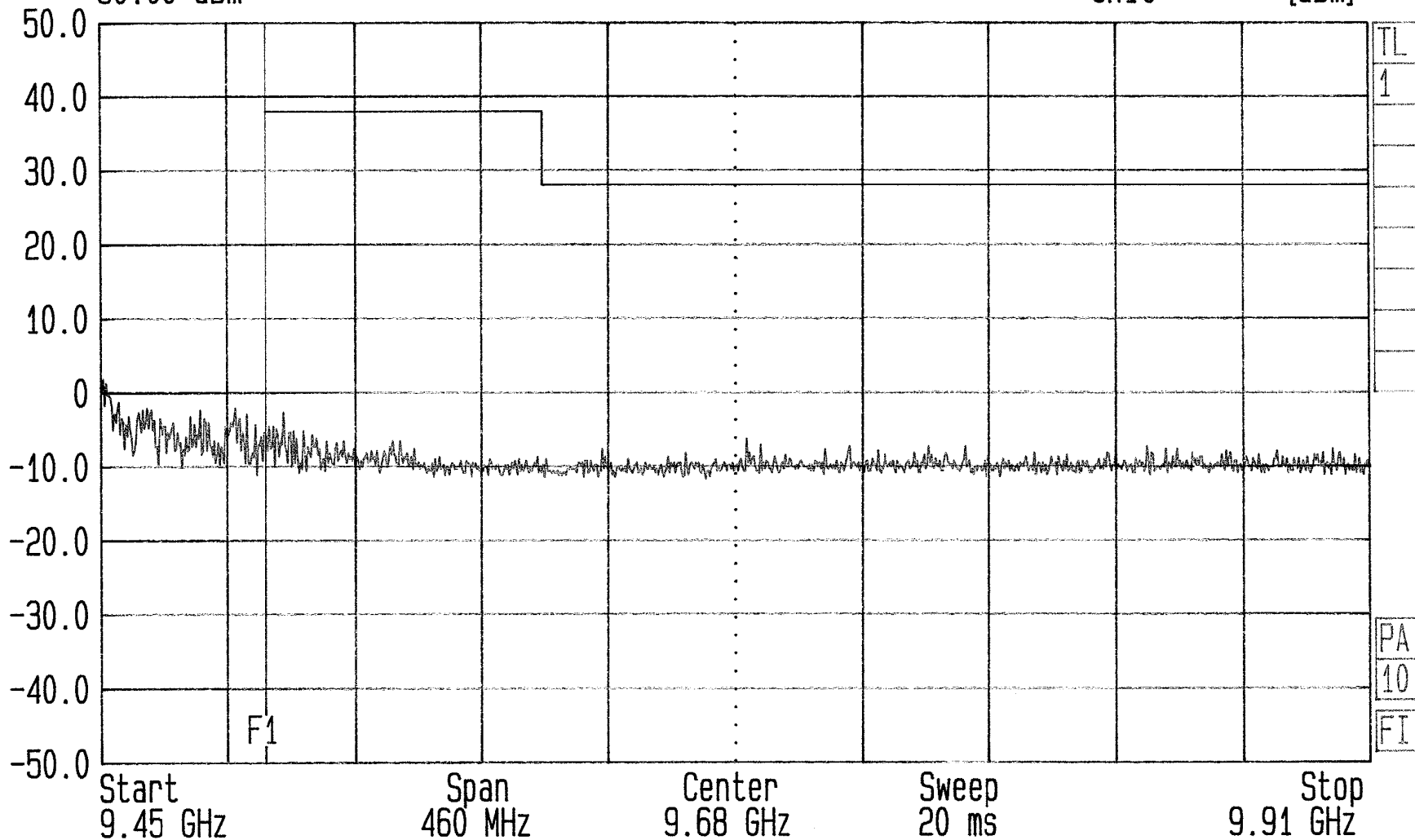


Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
FCC Part 80 1.0uS Pulse Width GPH/42589/01/01/026



LVLOFF
Date 22.Aug.'01 Time 16:28:35
Ref.Lvl
50.00 dBm

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 46.000 MHz
Vid.Bw 1 MHz
RF.Att 0 dB
Unit [dBm]

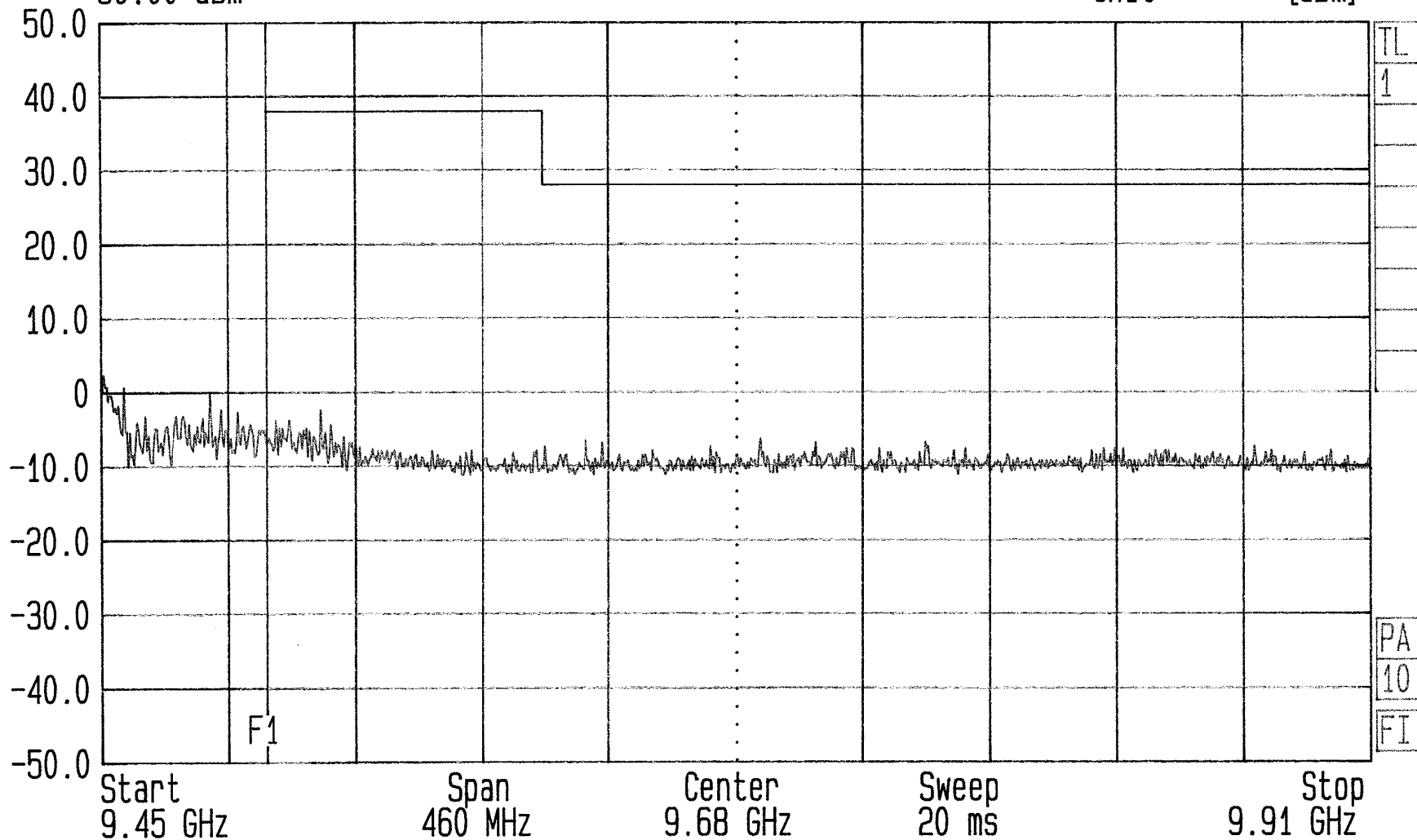


Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
FCC Part 80 65nS Pulse Width GPH/42589/01/01/027



LVLOFF
Date 22.Aug.'01 Time 16:33:50
Ref.Lvl
50.00 dBm

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 46.000 MHz
Vid.Bw 1 MHz
RF.Att Unit
0 dB [dBm]



Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
FCC Part 80 450nS Pulse Width GPH/42589/01/01/028



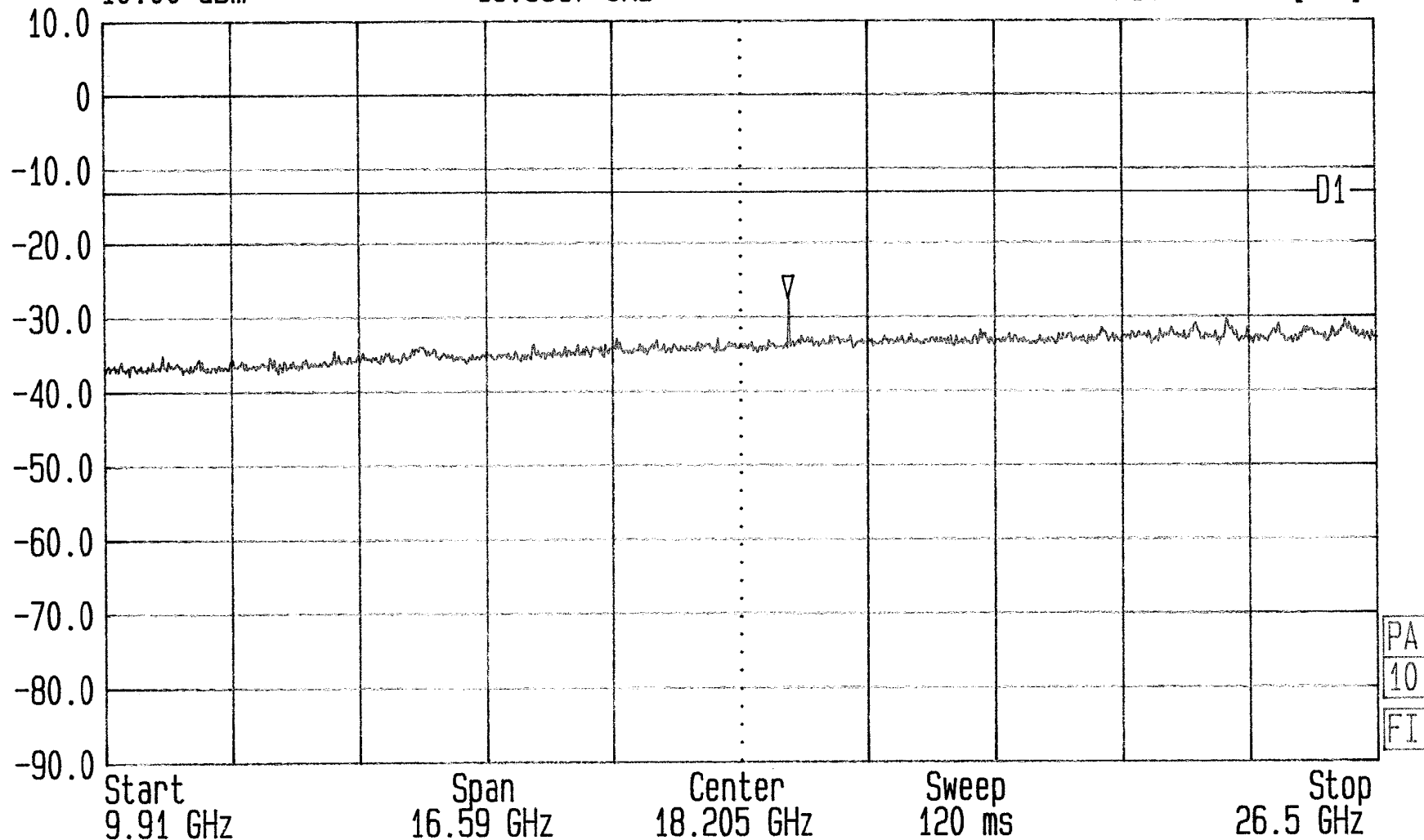
LVLOFF
Date 23.Aug.'01 Time 15:41:27
Ref.Lvl 10.00 dBm
Marker -27.45 dBm
18.8317 GHz

Res.Bw
TG.Lvl
CF.Stp

1 MHz [imp]
off
1.659 GHz

Vid.Bw
RF.Att
Unit

1 MHz
0 dB
[dBm]



Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
FCC Part 80 450nS Pulse Width GPH/42589/012/01/029