

**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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Conformance Testing Department

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

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

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

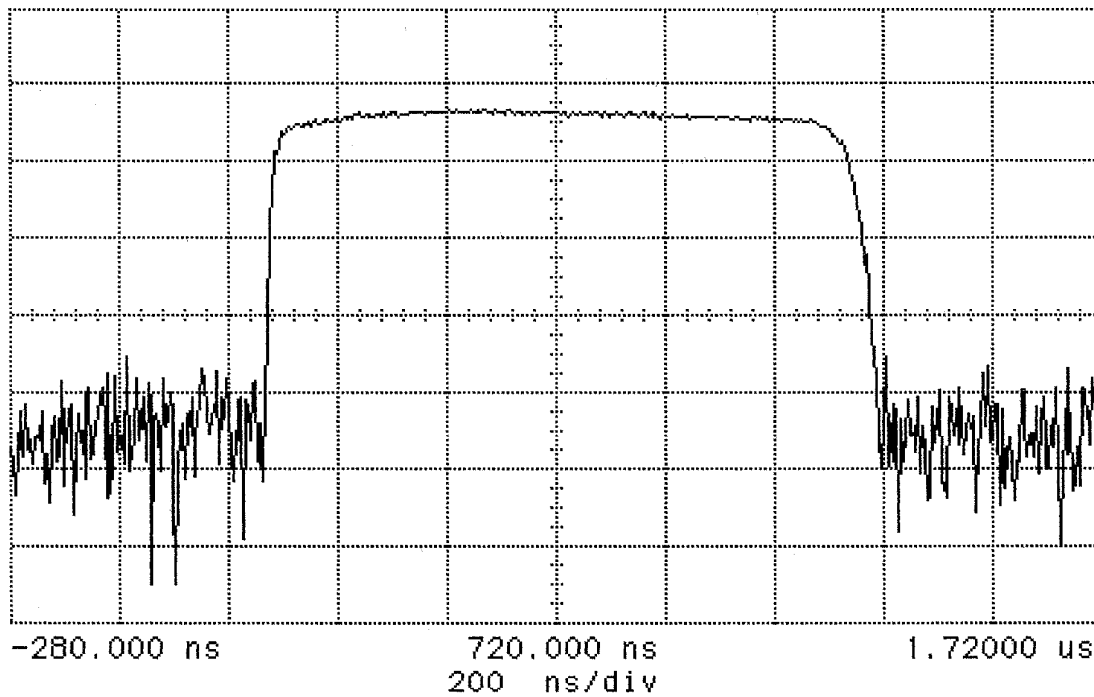
Graph Reference Number	Conducted Antenna Port Spurious Emissions
GPH/42589/01/01/022	6.00GHz to 8.91GHz, 450ns Pulse Width
GPH/42589/01/01/023	8.91GHz to 9.35GHz, 450ns Pulse Width
GPH/42589/01/01/024	8.91GHz to 9.35GHz, 65ns Pulse Width
GPH/42589/01/01/025	8.91GHz to 9.35GHz, 1000ns Pulse Width
GPH/42589/01/01/026	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

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**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

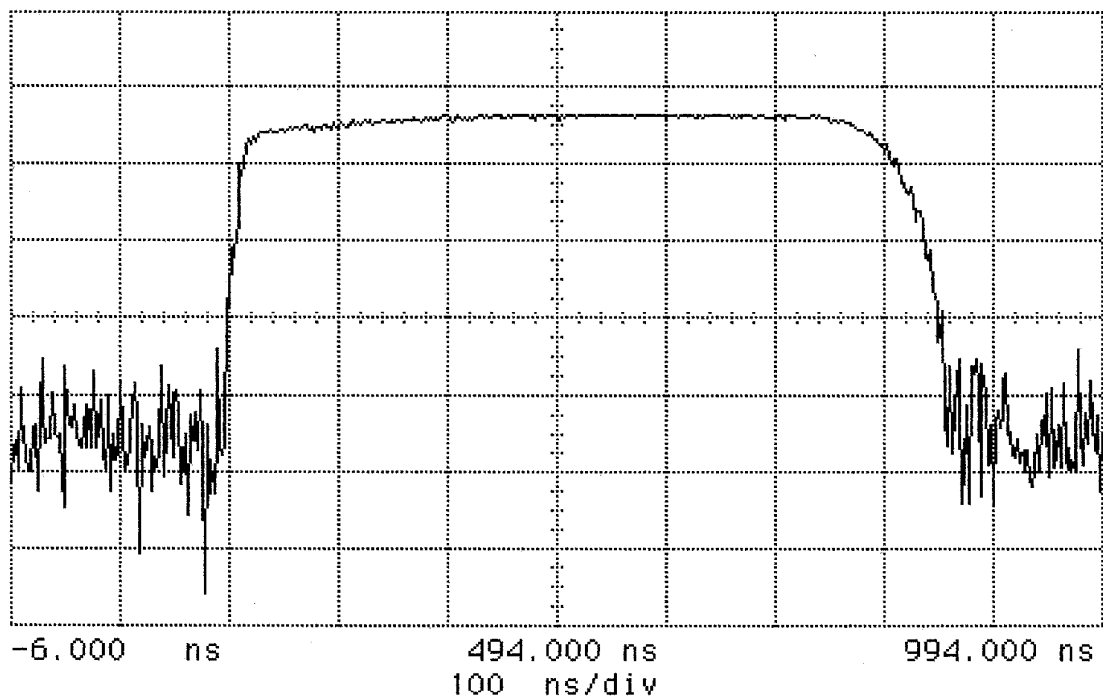
external loss 72.40 dB

sensor zero

fine

GPI 42589 5001/001.

hp running



CHANNEL

1	2	3	4
•	o	o	o

off on

scale

ref. level

bandwidth high low CW

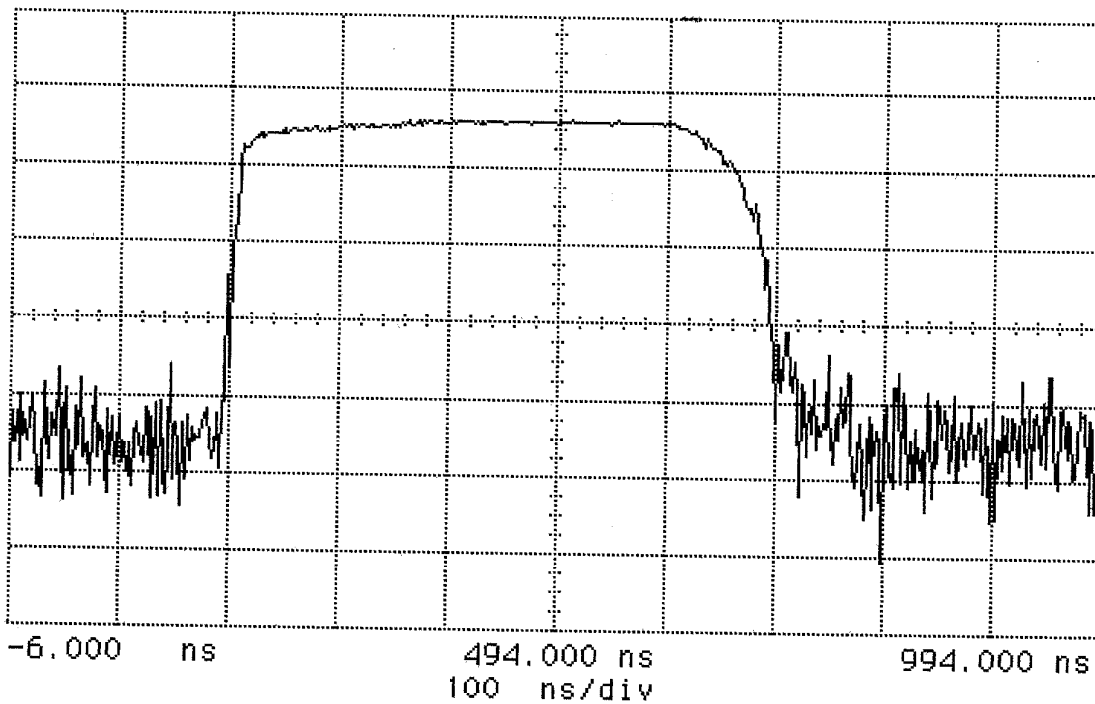
external loss

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

fine

GPI 42589 0001/002.

hp printing



peak(1) 65.59 dBm pulsewidth(1) 447.106ns

CHANNEL

1	2	3	4
•	o	o	o

off on

scale

ref. level

bandwidth low CW

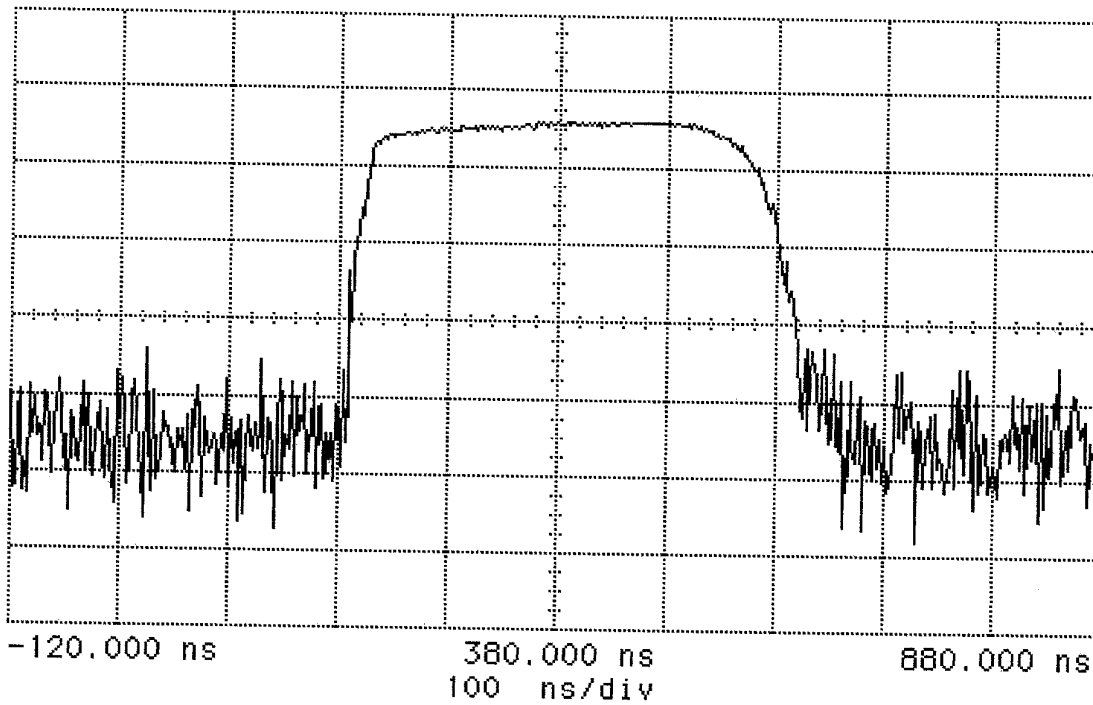
external loss

sensor zero

fine

GPU 42589 0001/003.

hp running



peak(1) 65.44 dBm pulsewidth(1) 355.289ns

CHANNEL

1	2	3	4
•	o	o	o

off on

scale 5.0 dB/div

ref. level 72.40 dBm

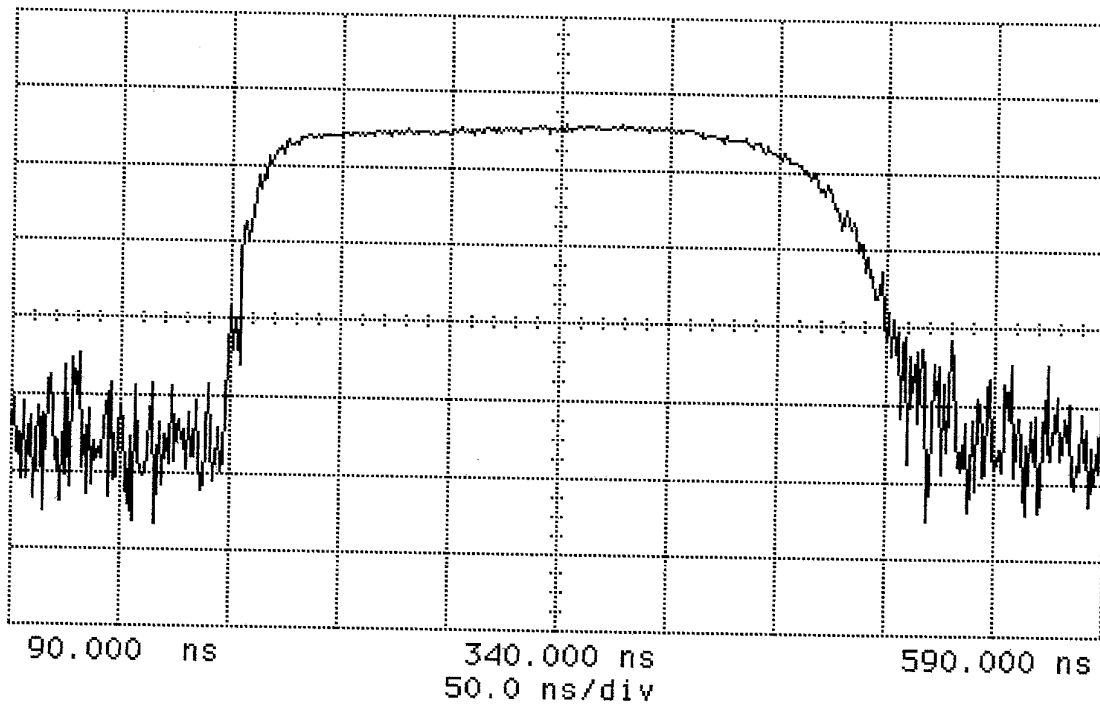
bandwidth high low CW

external loss 72.40 dB

sensor zero

GPU 42589 0001/004

hp running



CHANNEL

1	2	3	4
•	o	o	o

off on

scale

ref. level

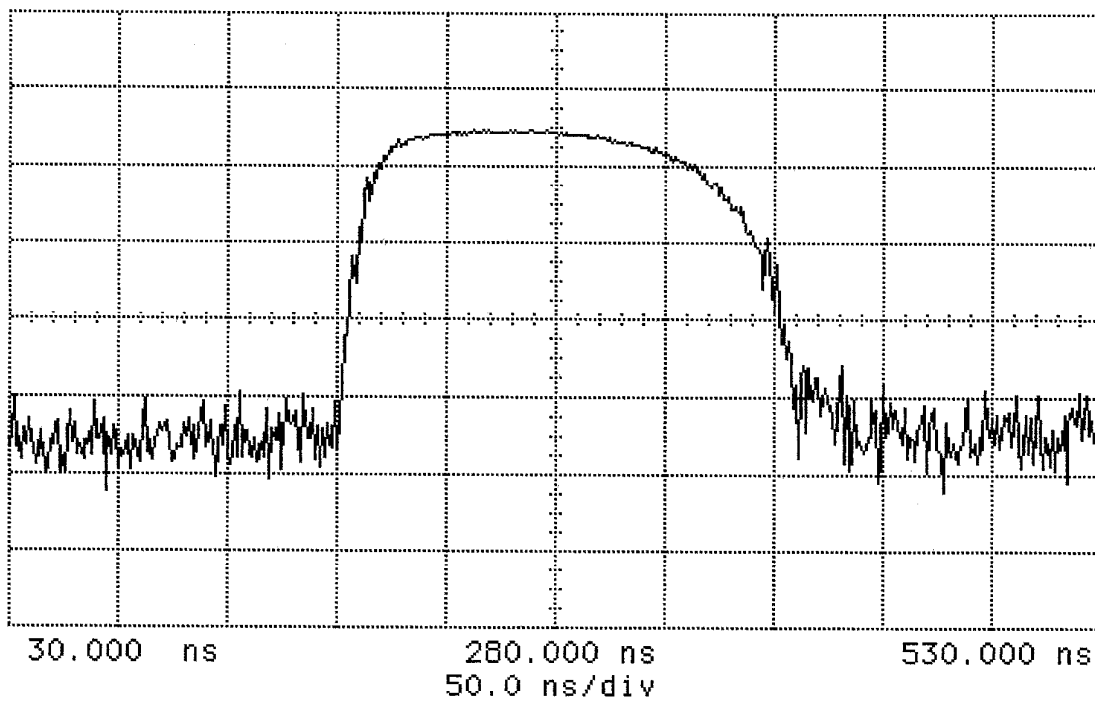
bandwidth high low CW

external loss

peak(1) 65.30 dBm pulswidth(1) 247.505ns

GPU 42589 8001/005.

hp running



CHANNEL

1	2	3	4
•	o	o	o

off on

scale

ref. level

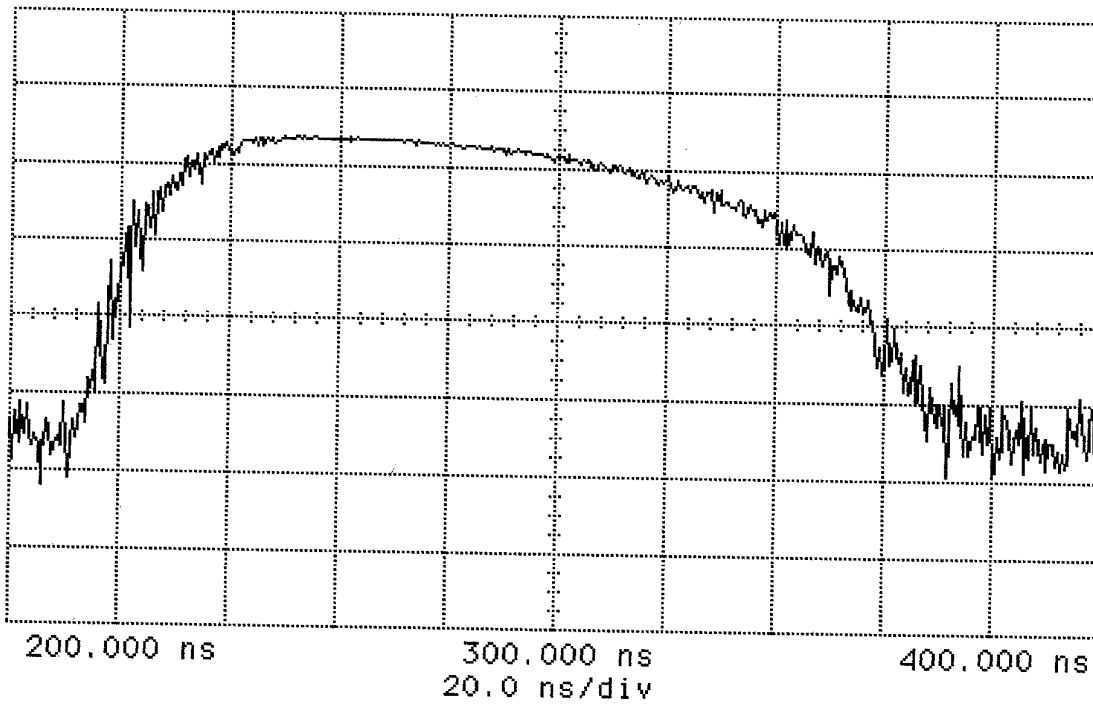
bandwidth high low CW

external loss

peak(1) 64.74 dBm pulswidth(1) 151.697ns

GPU 42589 0001/006.

hp running



CHANNEL

1	2	3	4
•	○	○	○

off on

scale

ref. level

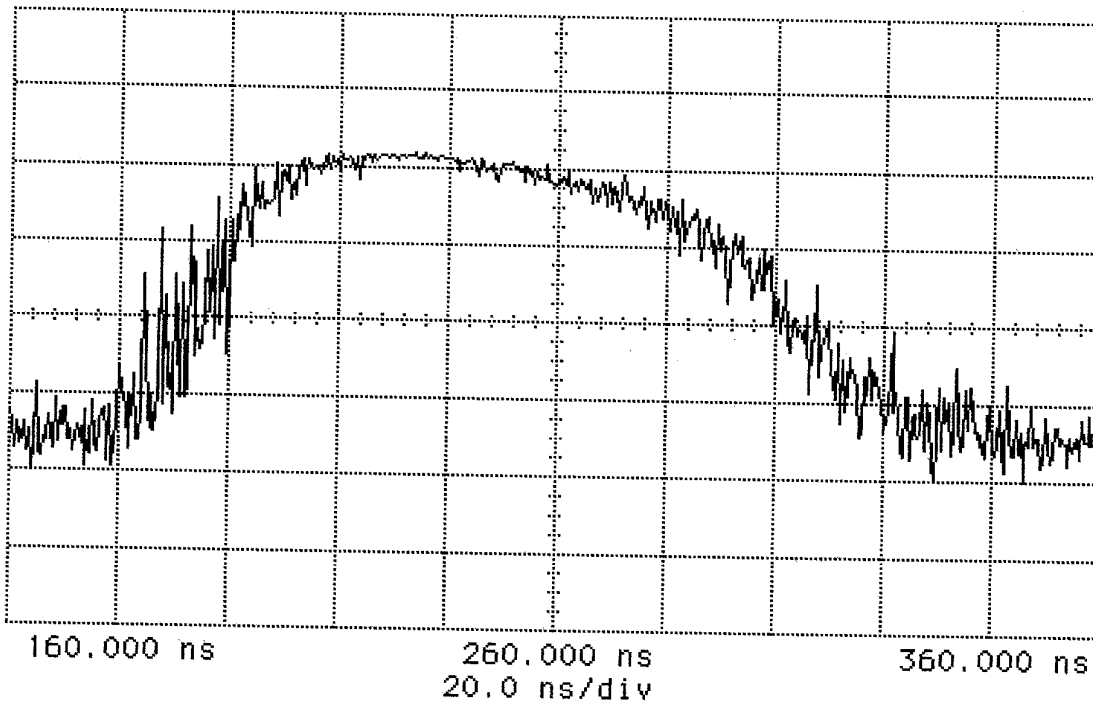
bandwidth high low CW

external loss

peak(1) 64.28 dBm pulswidth(1) 90.220 ns

GPH 42589 J001/007

hp running



CHANNEL

1	2	3	4
•	o	o	o

off **on**

scale **5.0 dB/div**

ref. level **72.40 dBm**

bandwidth **high** low CW

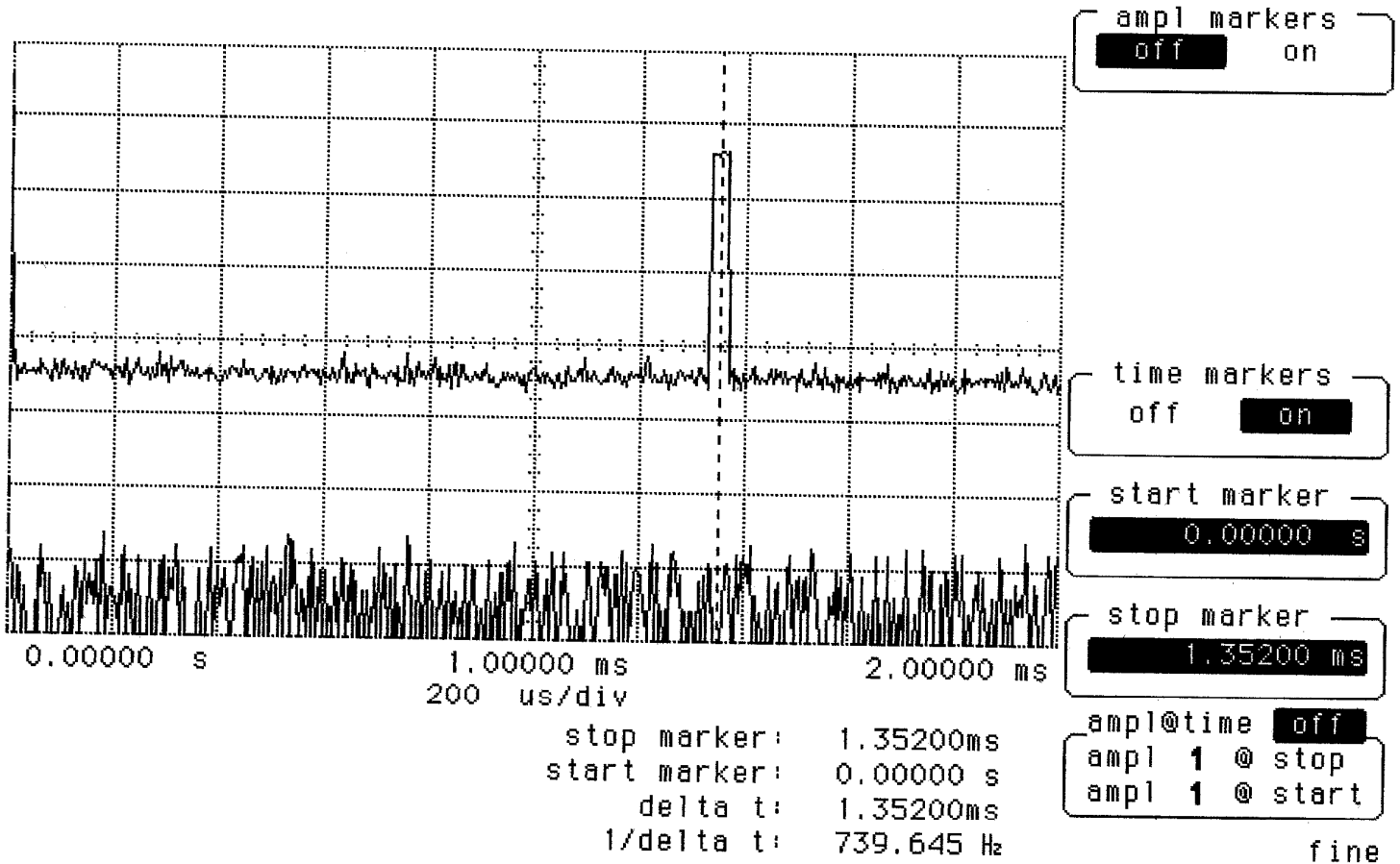
external loss **72.40 dB**

sensor zero

peak(1) 63.28 dBm pulsewidth(1) 64.271 ns

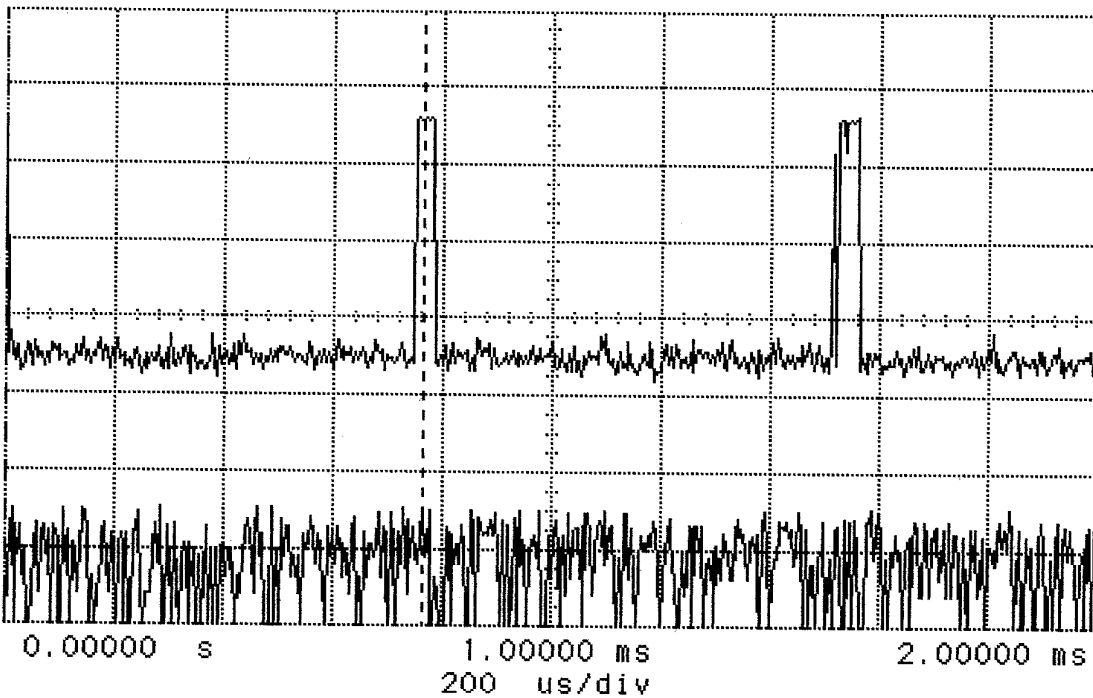
GPU 42589 0001/008.

hp running



CPU 42589 3001/009.

hp running



ampl markers
 off on

time markers
 off on

start marker
 0.00000 s

stop marker
 764.000 us

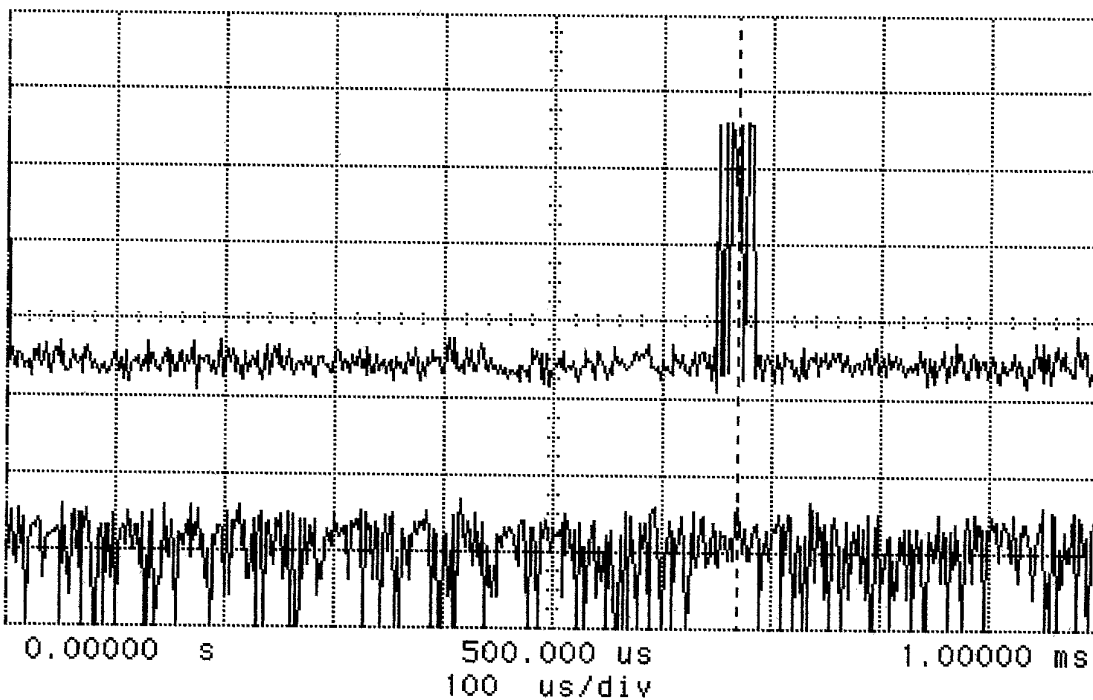
stop marker: 764.000us
start marker: 0.00000 s
delta t: 764.000us
1/delta t: 1.30890kHz

ampl@time off
ampl 1 @ stop
ampl 1 @ start

fine

GPH 42589 0001/010

hp running



ampl markers
 off on

time markers
 off on

start marker
 0.00000 s

stop marker
 668.000 us

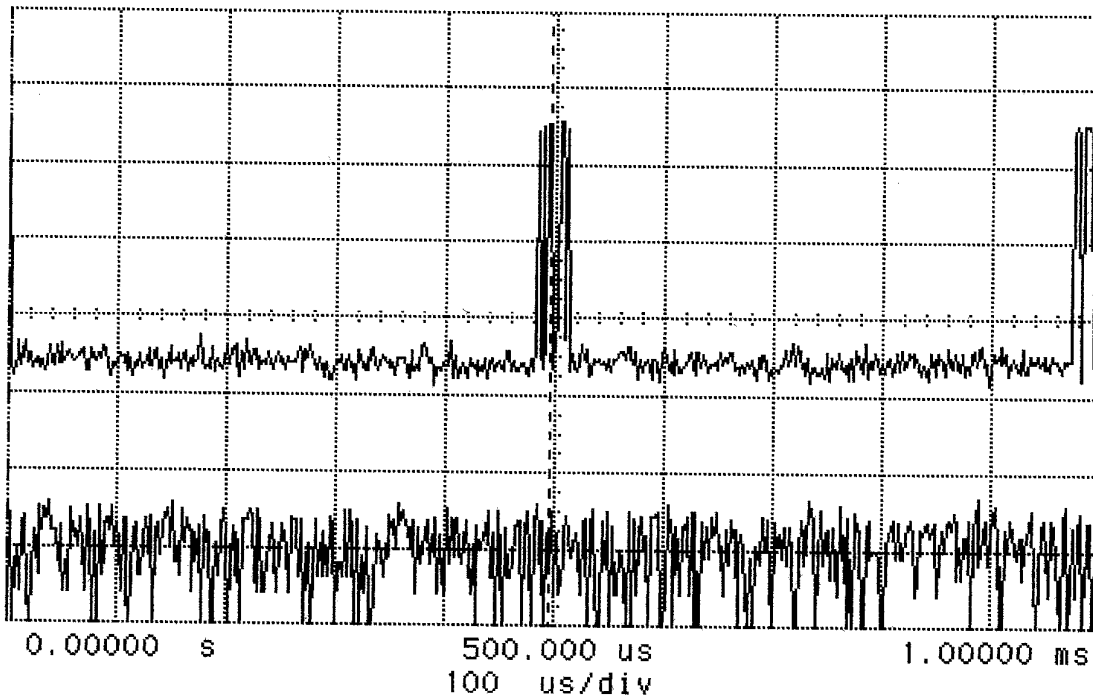
stop marker: 668.000us
start marker: 0.00000 s
delta t: 668.000us
1/delta t: 1.49701kHz

ampl@time off
ampl 1 @ stop
ampl 1 @ start

fine

GPK 42589 8001 / 011

hp running



ampl markers
off on

time markers
off on

start marker
0.00000 s

stop marker
496.000 us

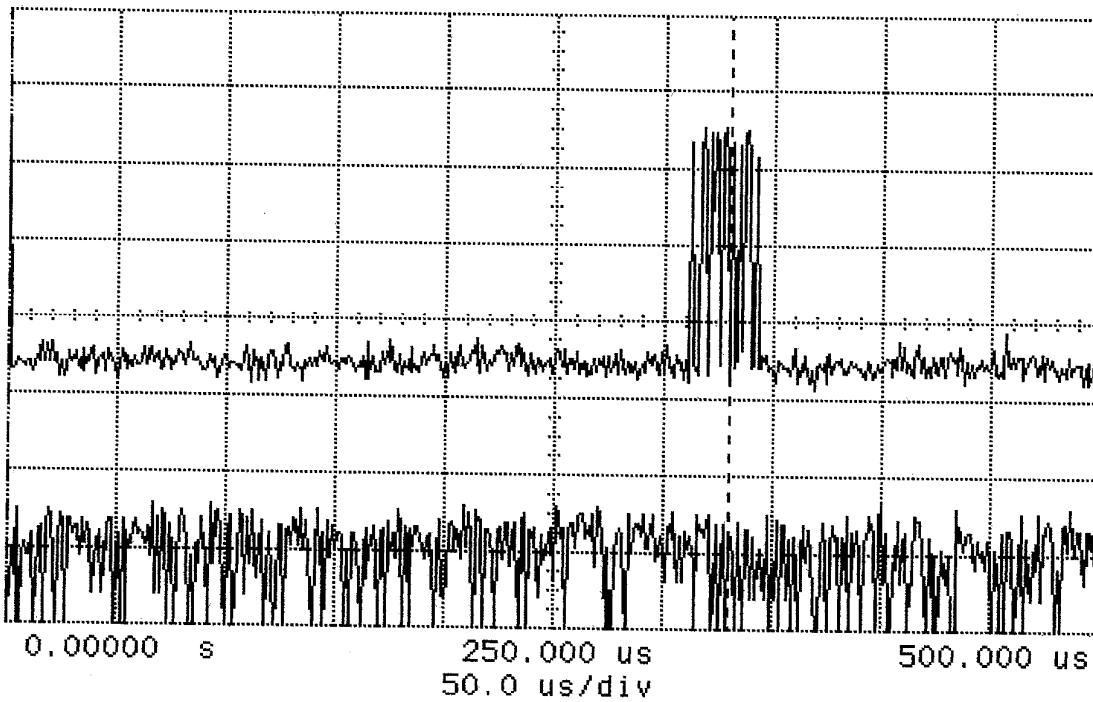
stop marker: 496.000us
start marker: 0.00000 s
delta t: 496.000us
1/delta t: 2.01613kHz

ampl@time off
ampl 1 @ stop
ampl 1 @ start

fine

GPU 42589 8001 1012

hp printing



ampl markers
 off on

time markers
 off on

start marker
 0.00000 s

stop marker
 330.000 us

stop marker: 330.000us
start marker: 0.00000 s
delta t: 330.000us
1/delta t: 3.03030kHz

ampl@time off
ampl 1 @ stop
ampl 1 @ start

fine

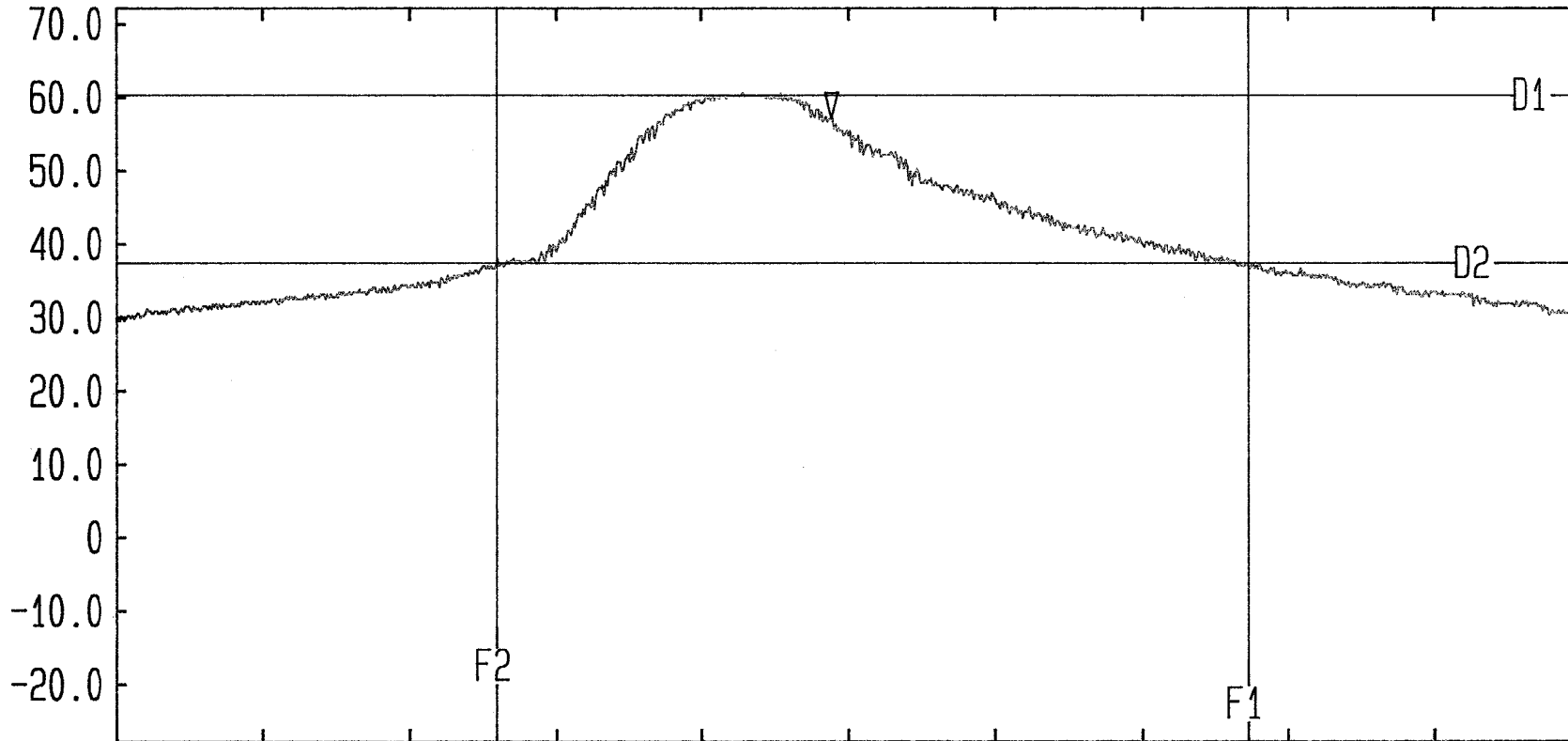
GPU 42589 5001 / 013.



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

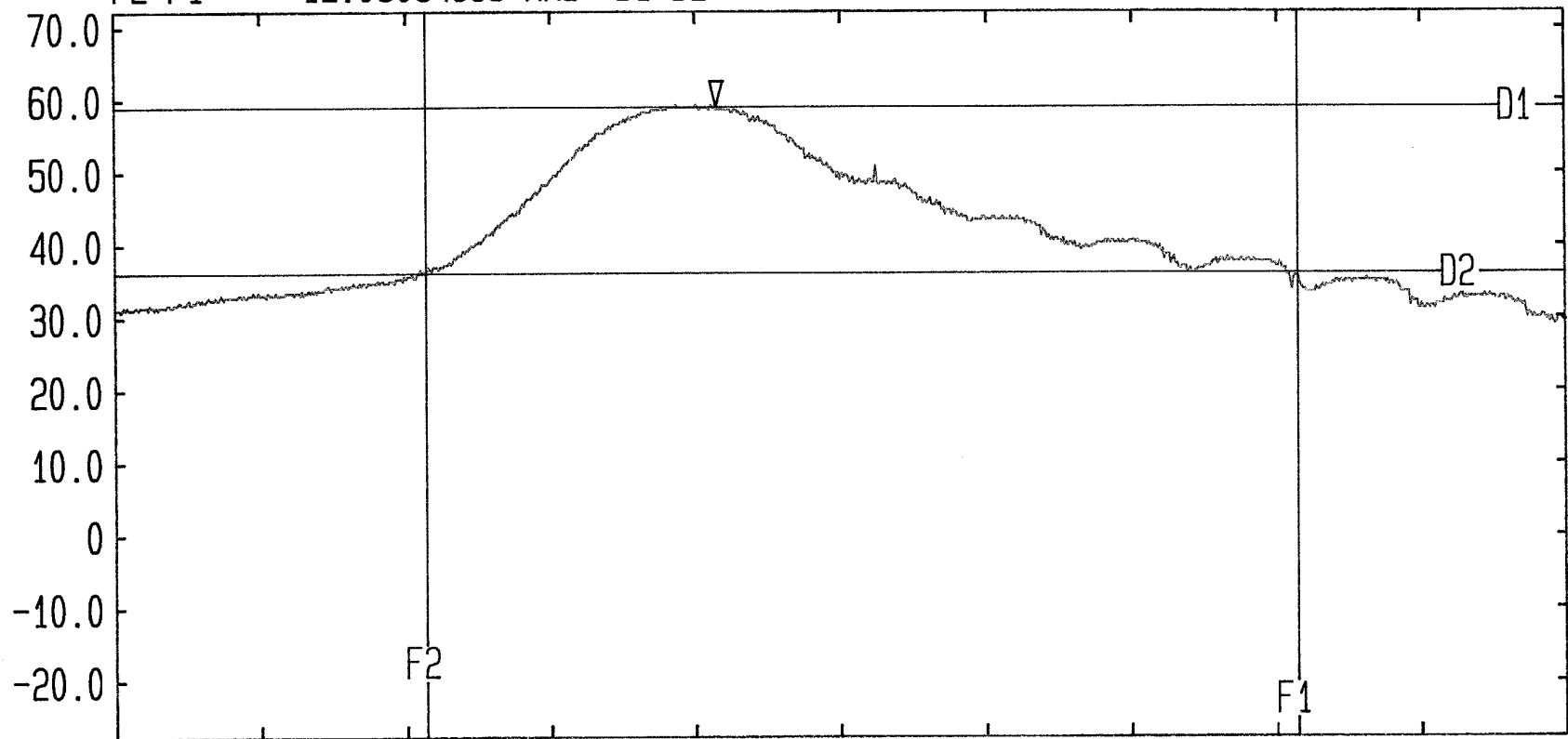
Tested By RFI for Raymarine Ltd.
 1.0uS Pulse Width

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
 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

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



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

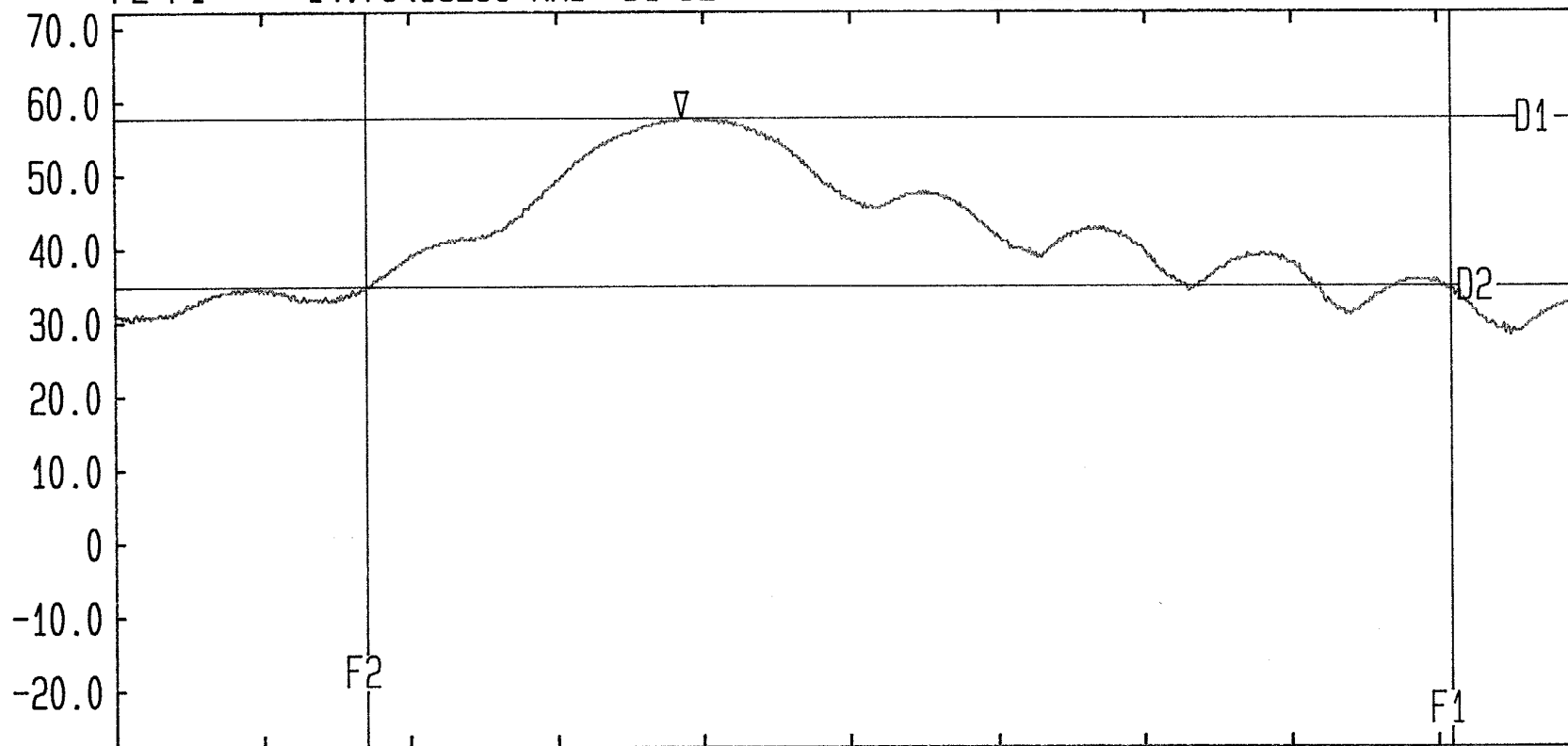
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
 FCC Part 80 600nS Pulse Width GPH/42589/01/01/015



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

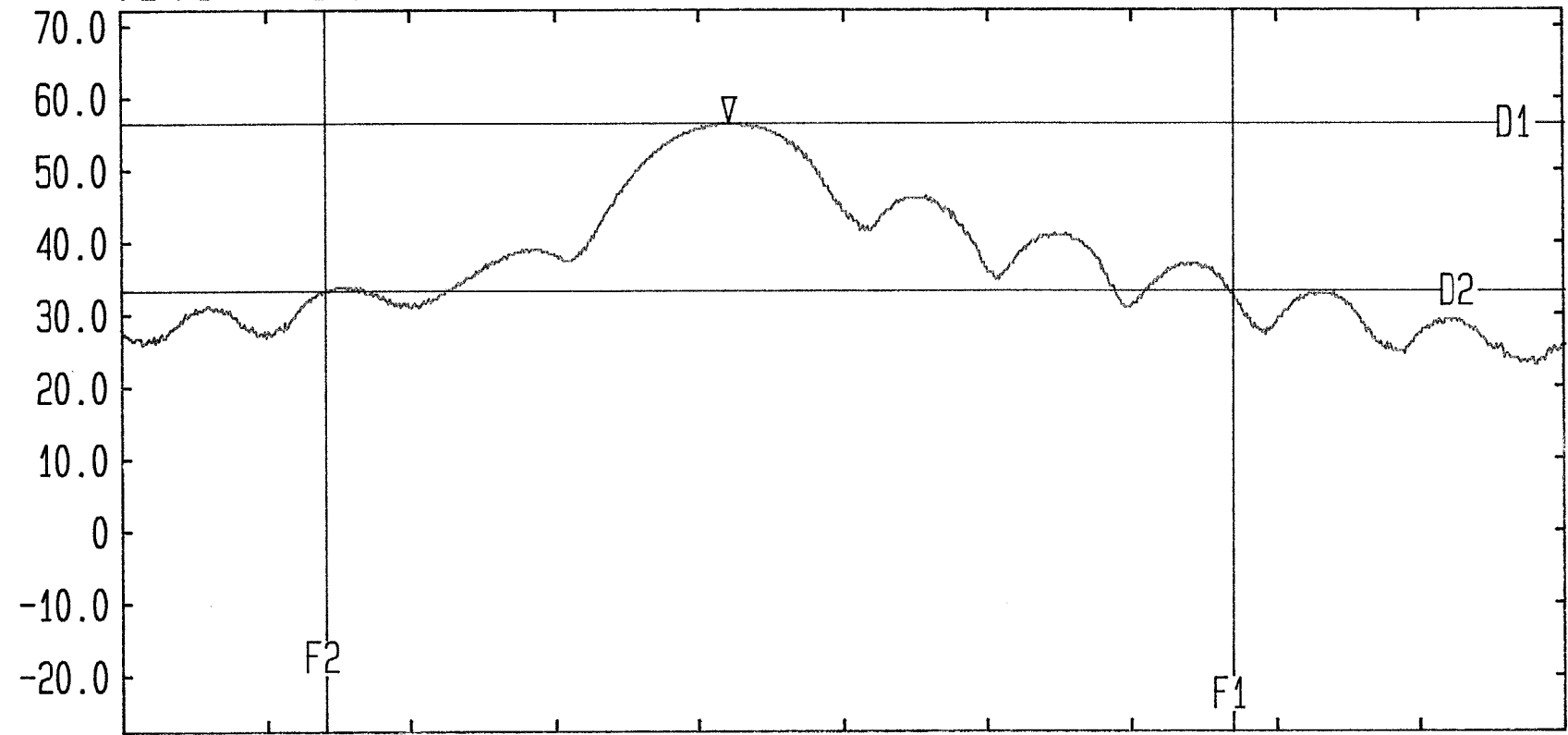
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
 FCC Part 80 450nS Pulse Width GPH/42589/01/01/016



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

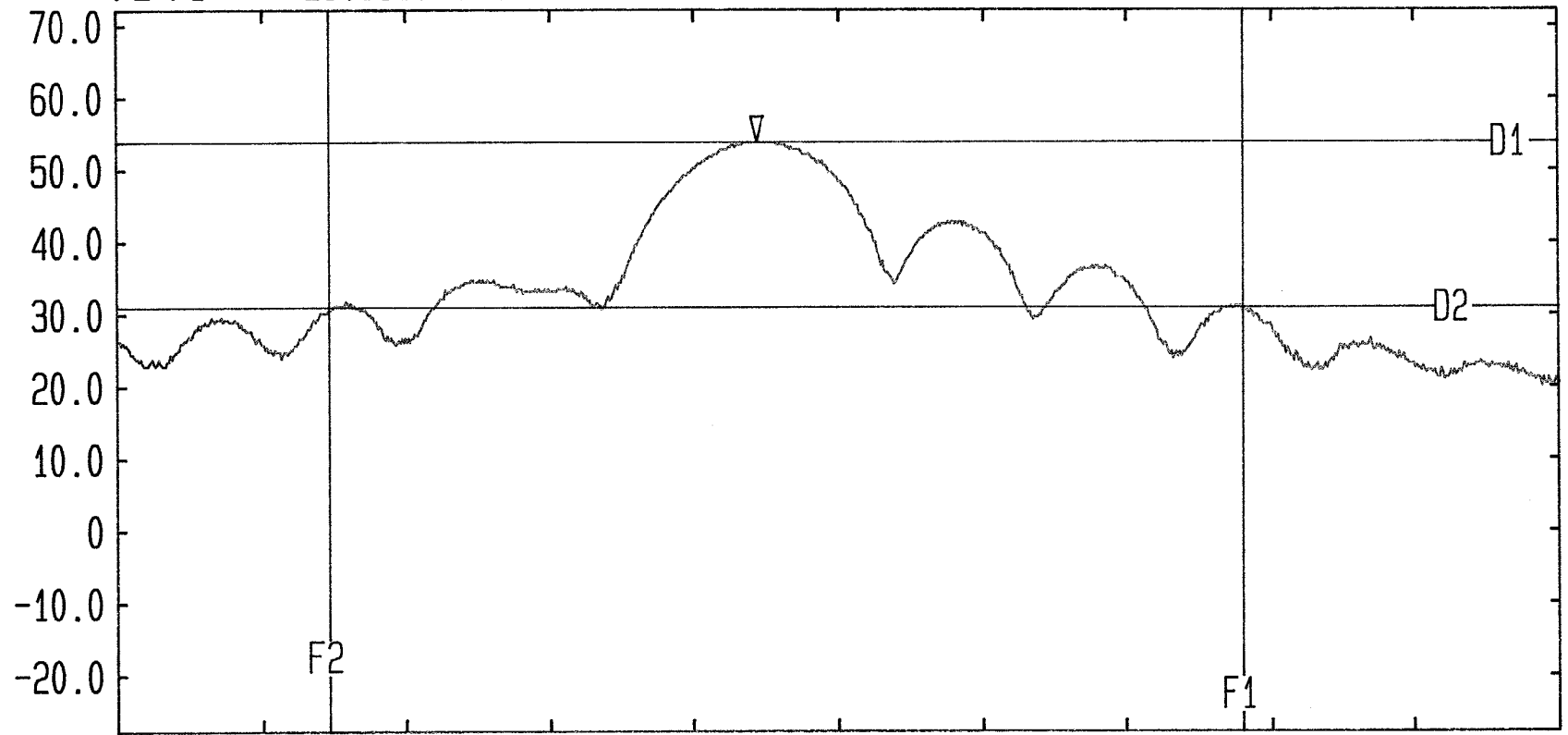
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
 FCC Part 80 350nS Pulse Width GPH/42589/01/01/017



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



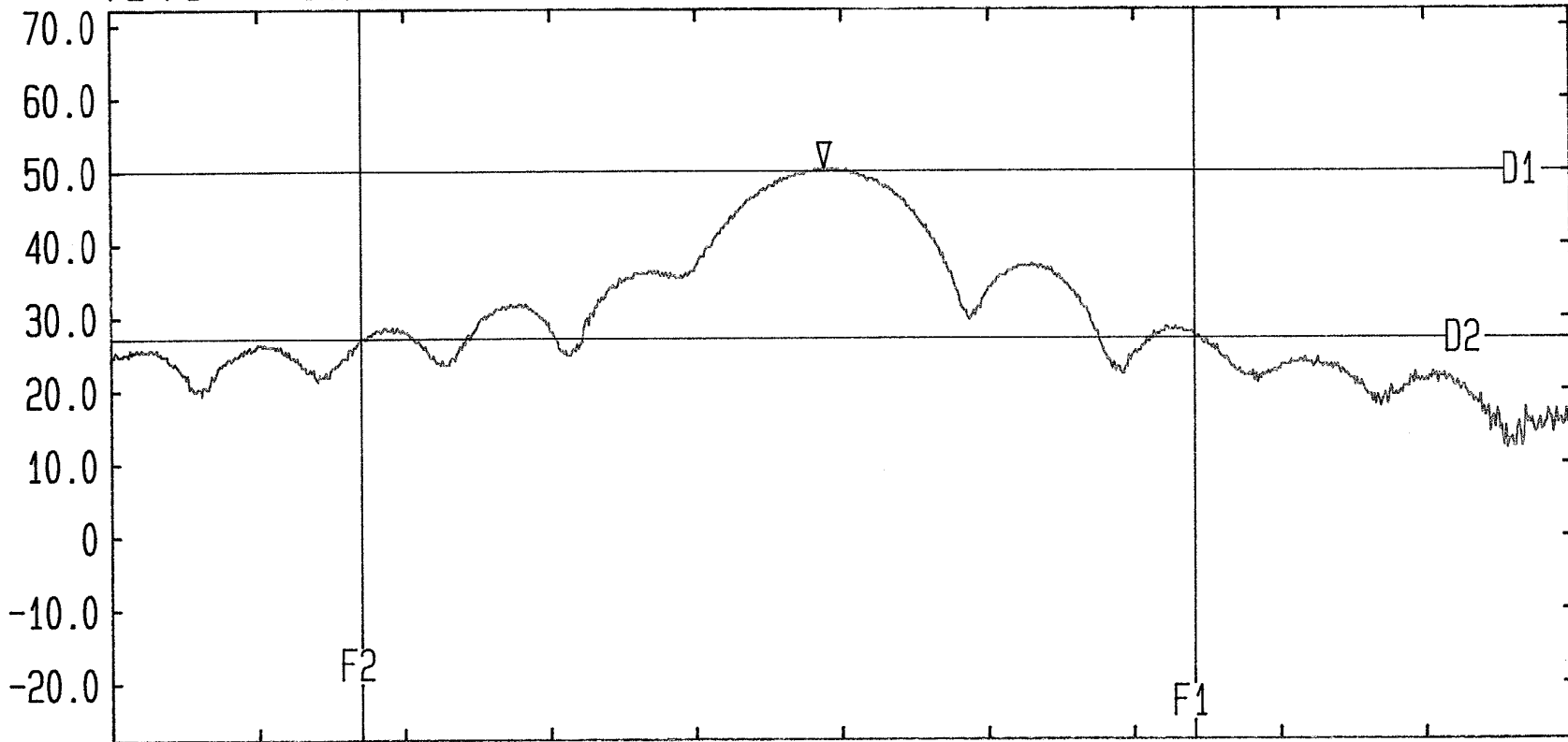
Start 9.39003 GHz Span 40 MHz Center 9.41003 GHz Sweep 20 ms Stop 9.43003 GHz
 Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
 FCC Part 80 250nS Pulse Width GPH/42589/01/01/018



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] Vid.Bw 1 MHz
 TG.Lvl off
 CF.Stp 6.000 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

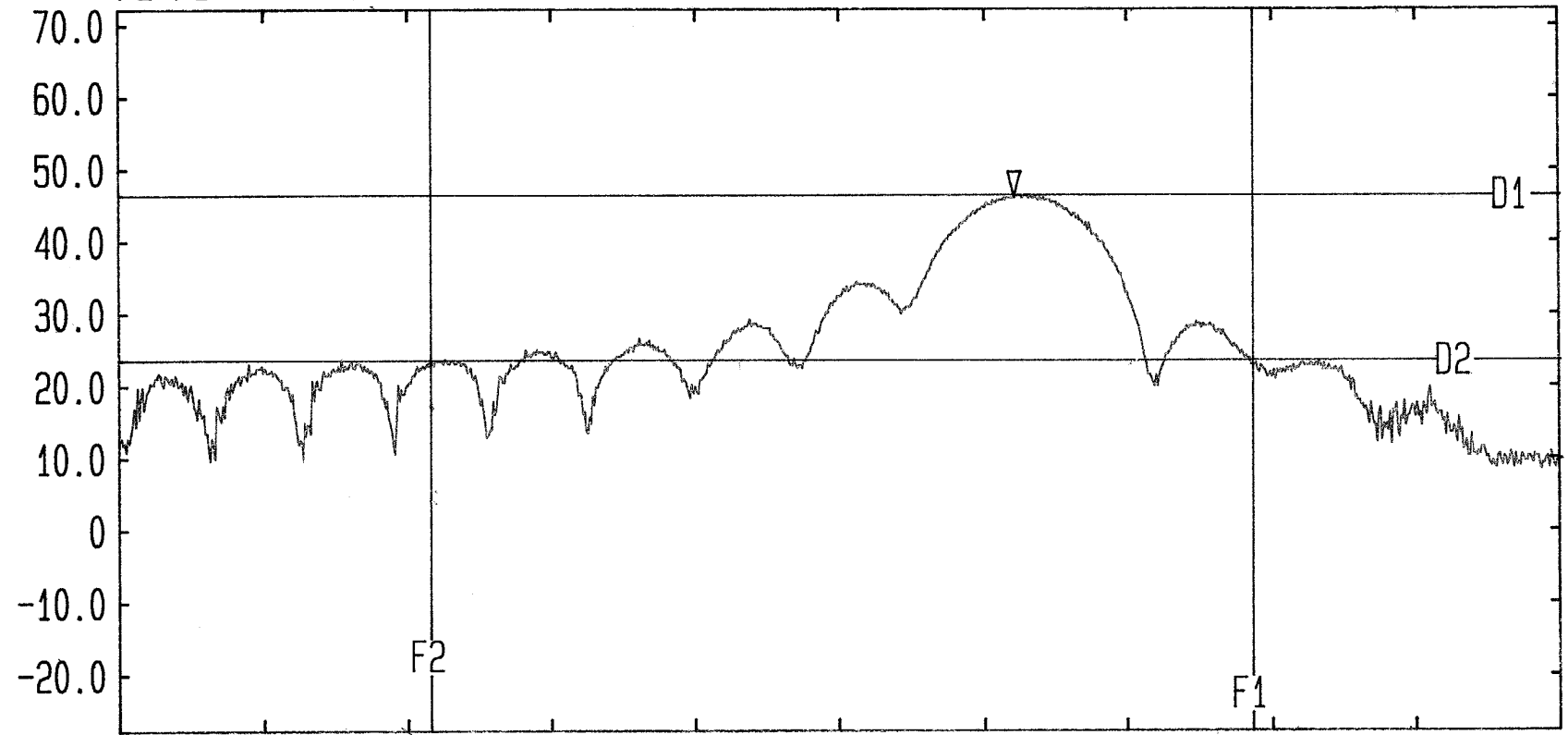
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
 FCC Part 80 150nS Pulse Width GPH/42589/01/01/019



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

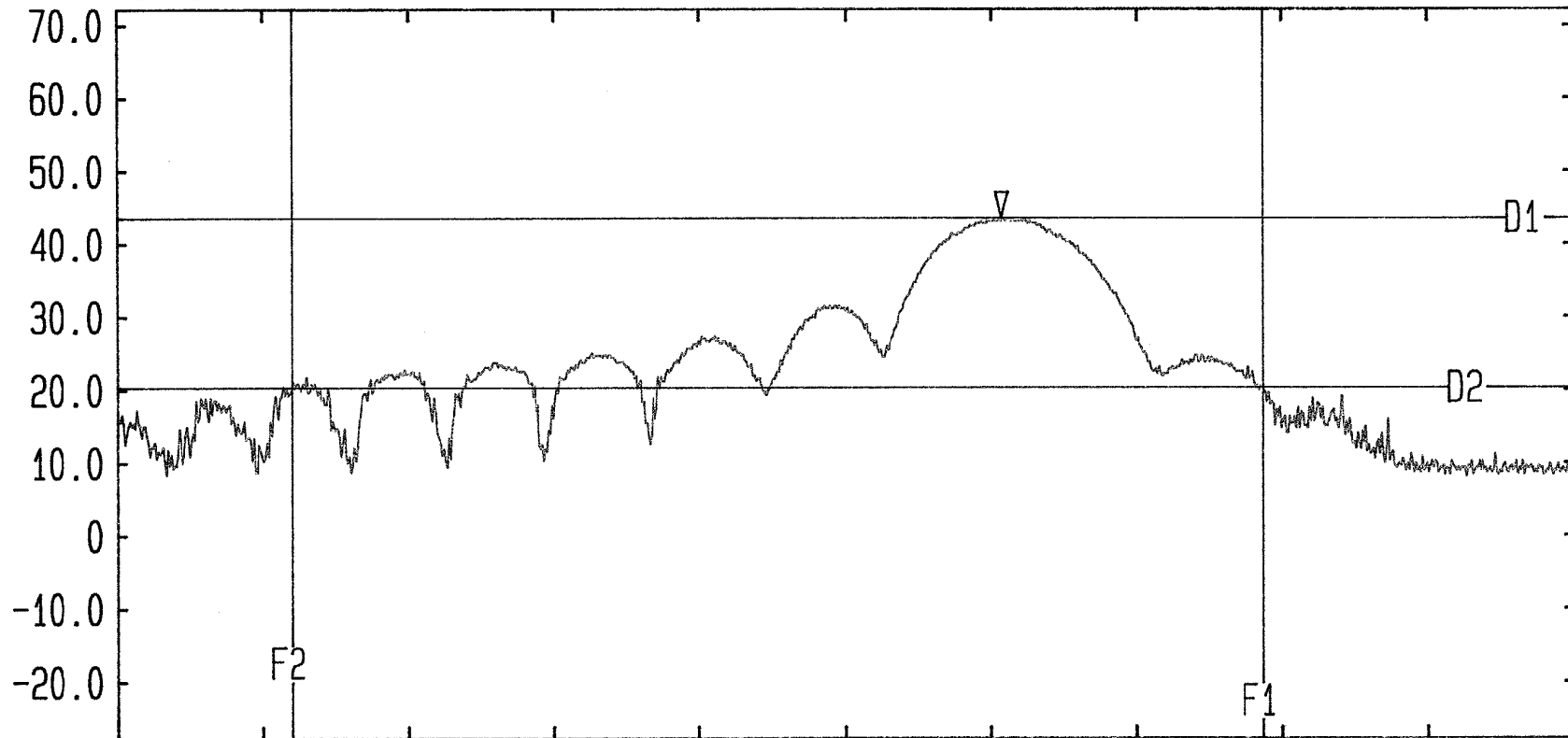
Occupied Bandwidth. Tested By RFI for Raymarine Ltd. EUT: Pathfinder RL84CRC PLUS
 FCC Part 80 90nS Pulse Width GPH/42589/01/01/020



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]
TG.Lvl off
CF.Stp 12.000 MHz
Vid.Bw 1 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



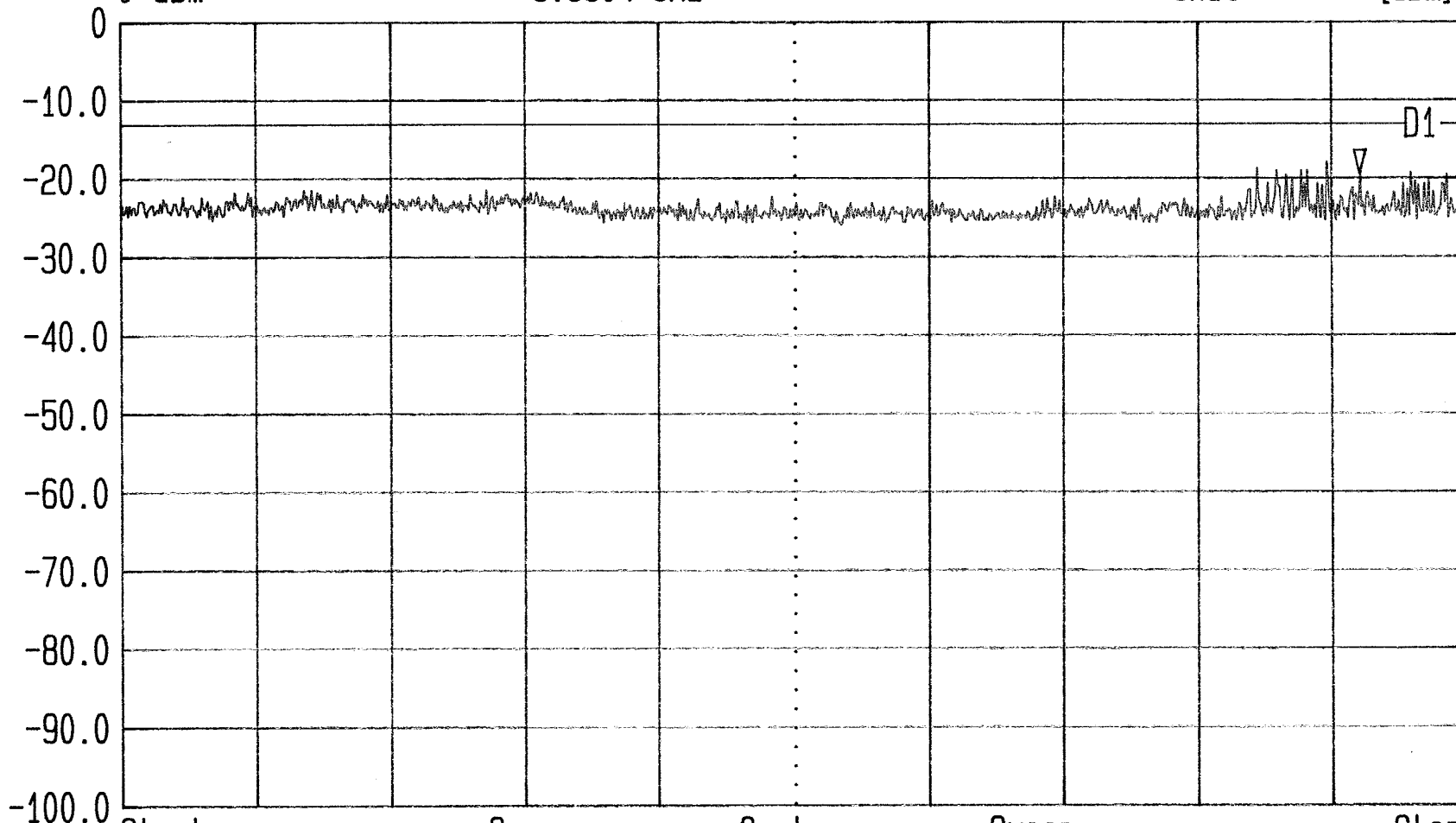
Start 9.3382 GHz Span 120 MHz Center 9.3982 GHz Sweep 20 ms Stop 9.4582 GHz

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 1 MHz [imp] Vid.Bw 1 MHz
 TG.Lvl off
 CF.Stp 291.000 MHz RF.Att 0 dB
 Unit [dBm]



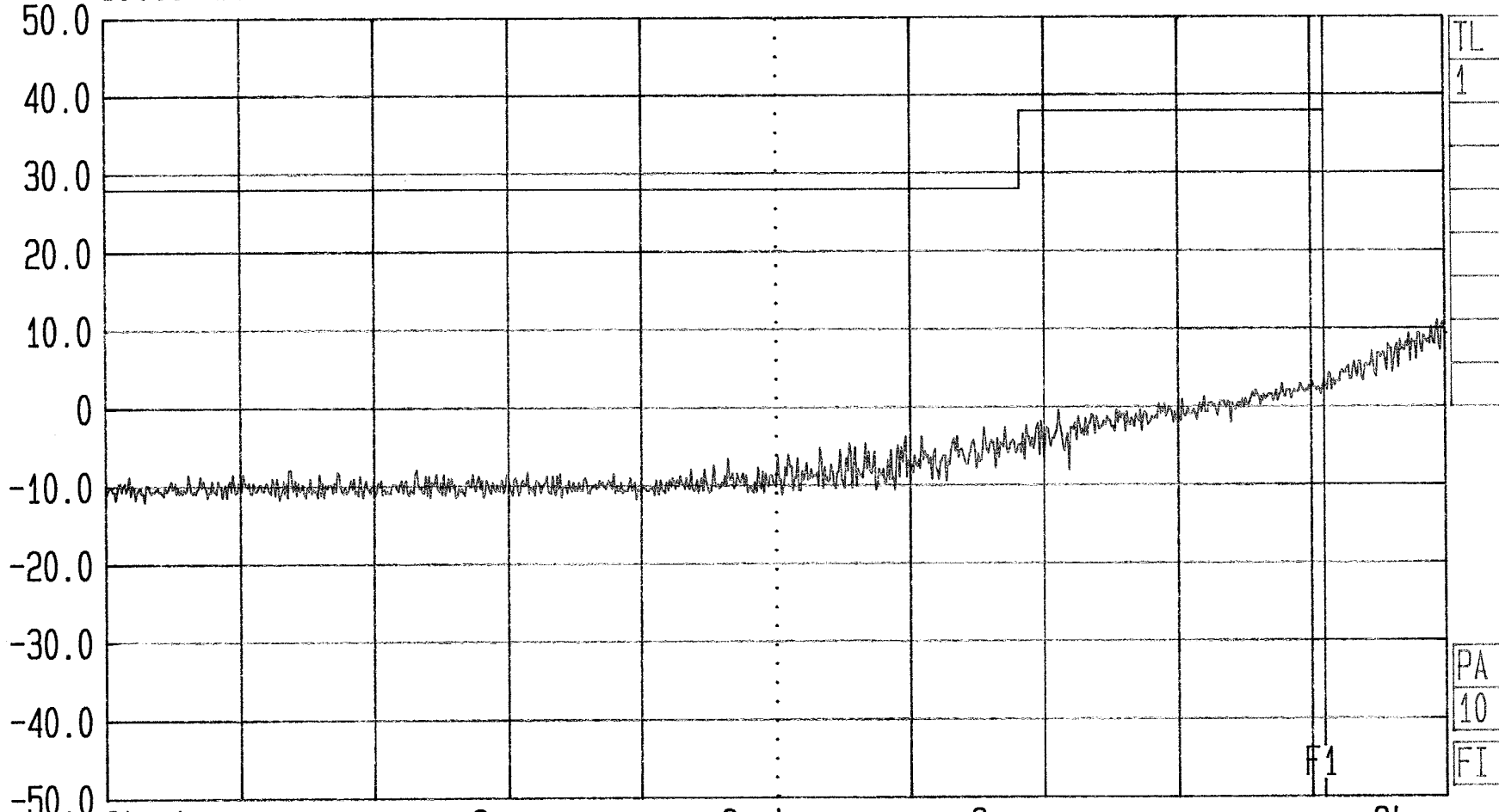
PA
 10
 FI

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



Start 8.91 GHz Span 440 MHz Center 9.13 GHz Sweep 20 ms Stop 9.35 GHz

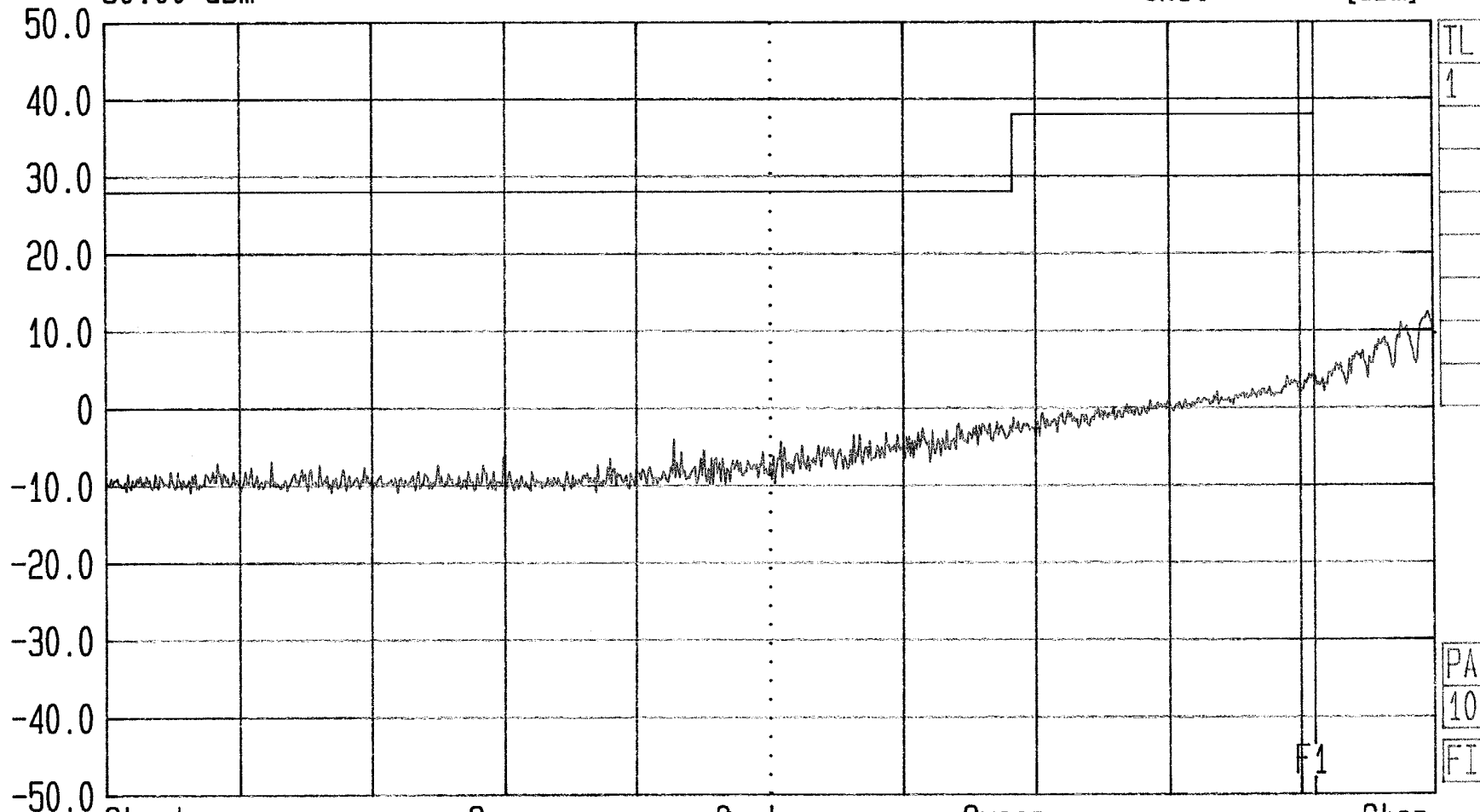
Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
 FCC Part 80 450nS Pulse Width GPH/42589/01/01/023

TL
1
PA
10
FI



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]



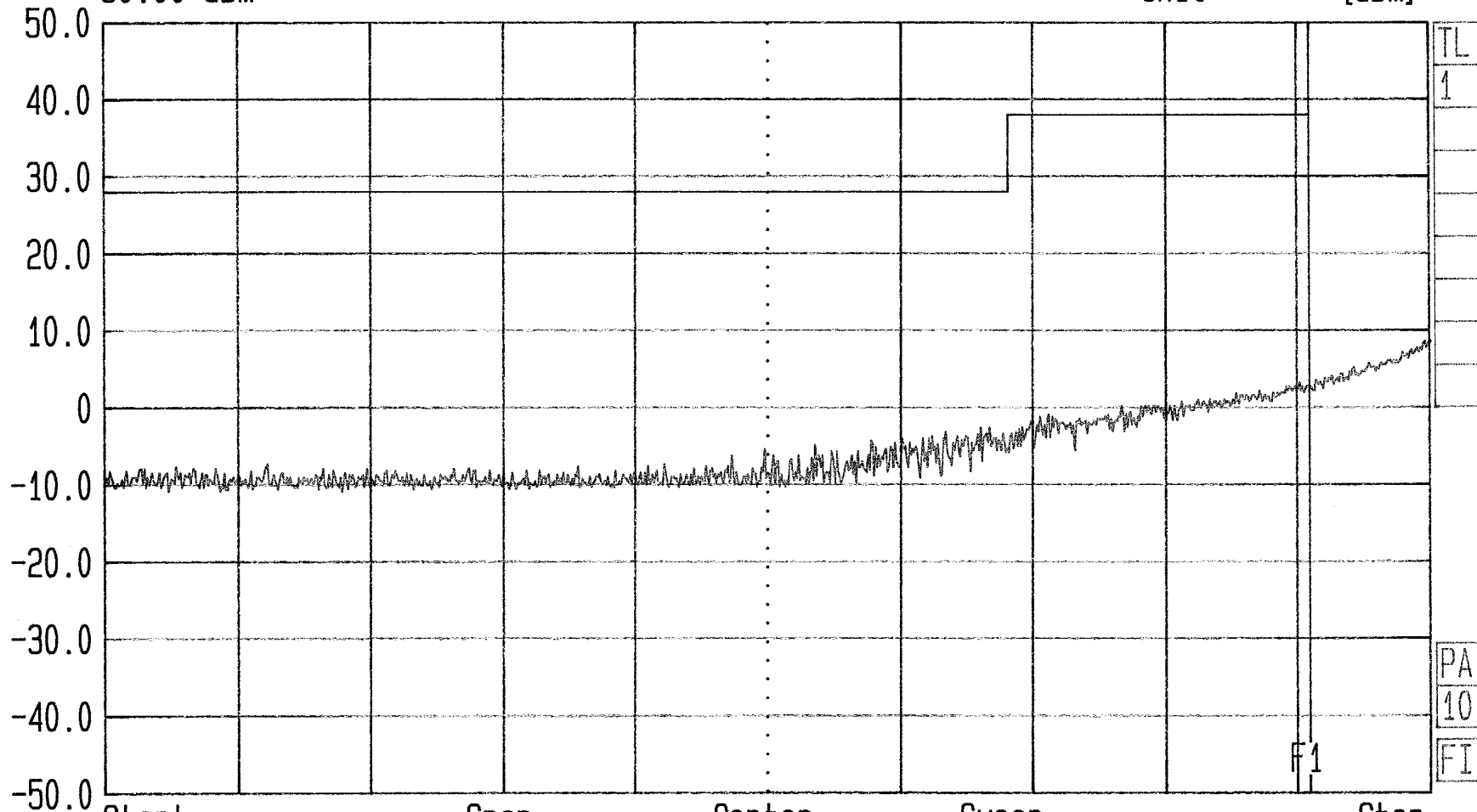
Start 8.91 GHz Span 440 MHz Center 9.13 GHz Sweep 20 ms Stop 9.35 GHz

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



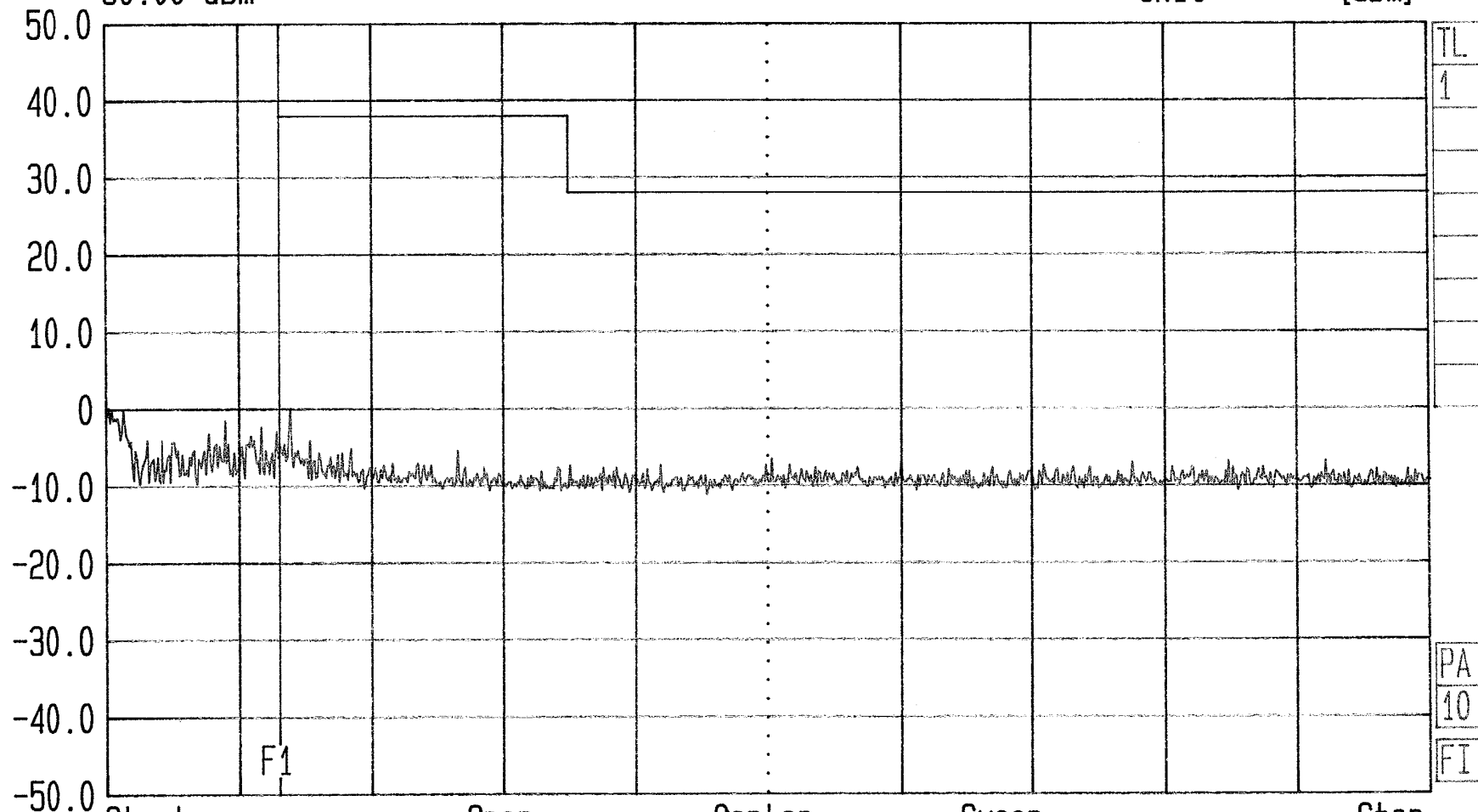
Start 8.91 GHz Span 440 MHz Center 9.13 GHz Sweep 20 ms Stop 9.35 GHz

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



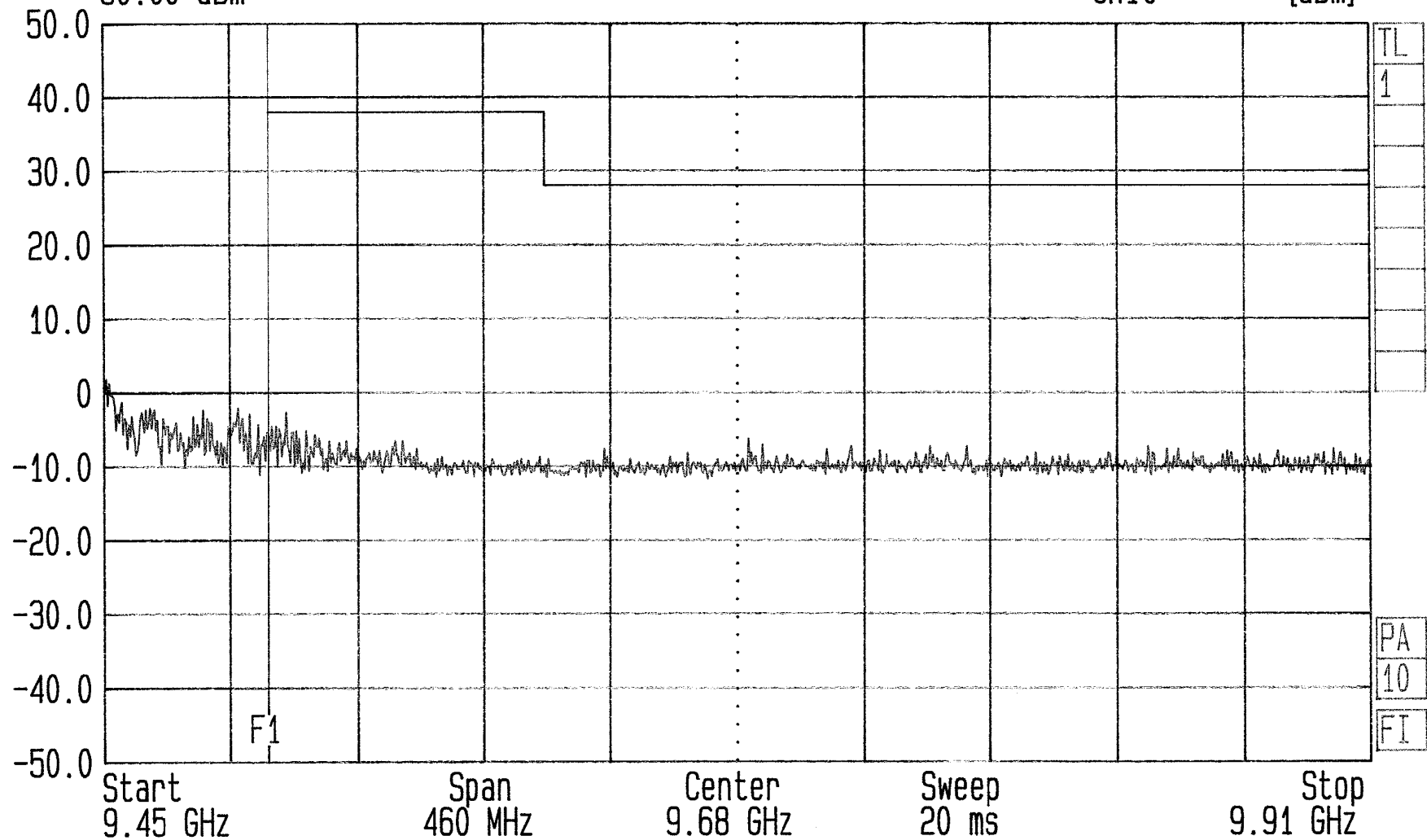
Start 9.45 GHz Span 460 MHz Center 9.68 GHz Sweep 20 ms Stop 9.91 GHz

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

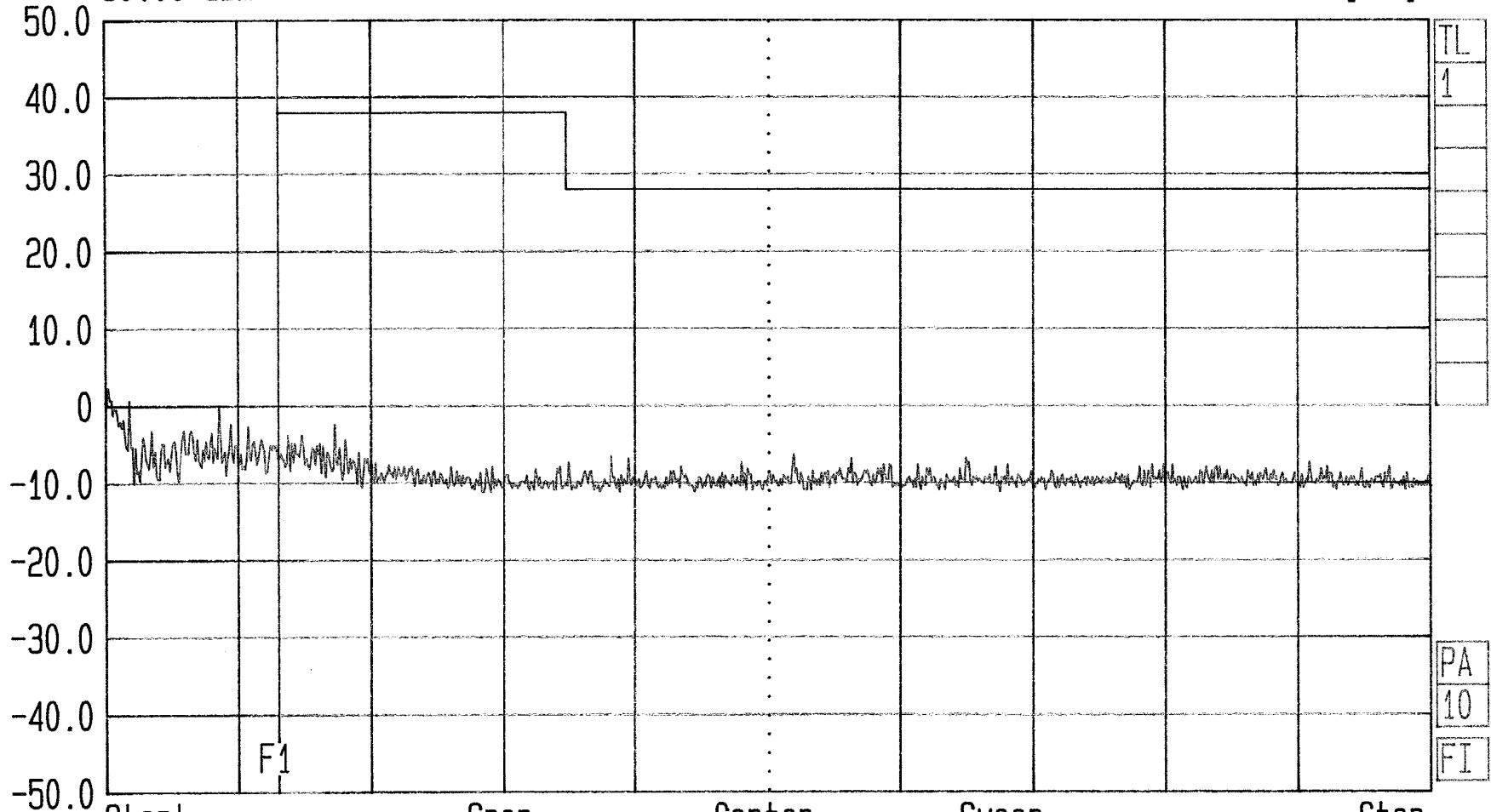


Antenna Port Cond. Emission Tested By RFI for Raymarine EUT: Pathfinder RL84CRC PLUS
 FCC Part 80 65nS Pulse Width GPH/42589/01/01/027



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

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



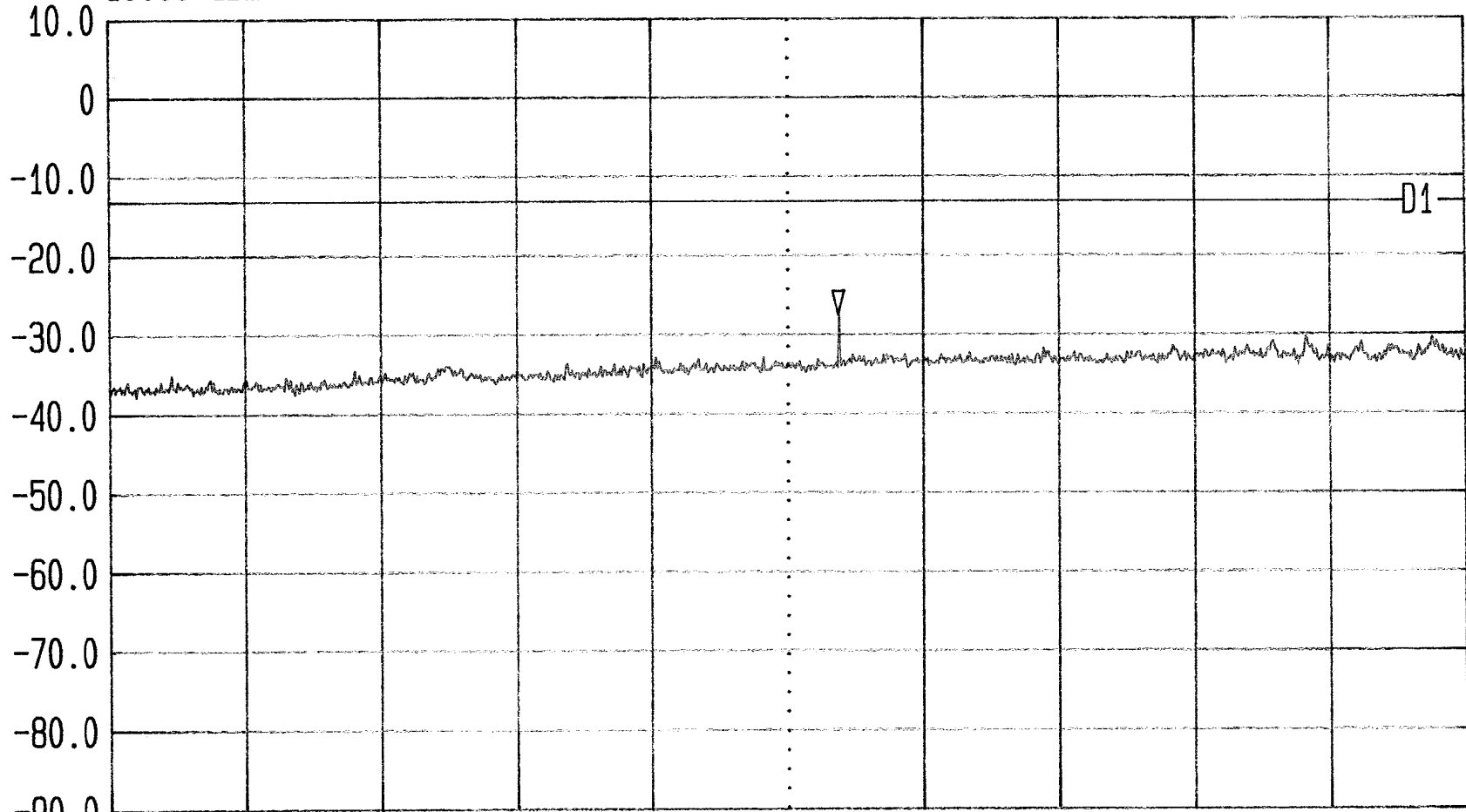
Start 9.45 GHz Span 460 MHz Center 9.68 GHz Sweep 20 ms Stop 9.91 GHz

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



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

Res.Bw 1 MHz [imp]
 TG.Lvl off
 CF.Stp 1.659 GHz
 Vid.Bw 1 MHz
 RF.Att 0 dB
 Unit [dBm]



PA
 10
 FI

Start 9.91 GHz Span 16.59 GHz Center 18.205 GHz Sweep 120 ms Stop 26.5 GHz

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