

**GRAPHICAL SECTION PART 2
FOR RFI TEST REPORT SERIAL NO:
RFI/MPTB3/RP45398JD01A**

Test Of: PipeHawk plc.
Ground Probing Radar

To: FCC Part 15: 2002,
Section 15.509

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Basingstoke, Hampshire RG26 5RQ



Test Of: PipeHawk plc.
Ground Probing Radar
To: FCC Part 15: 2002, Section 15.509

Graphical Test Results

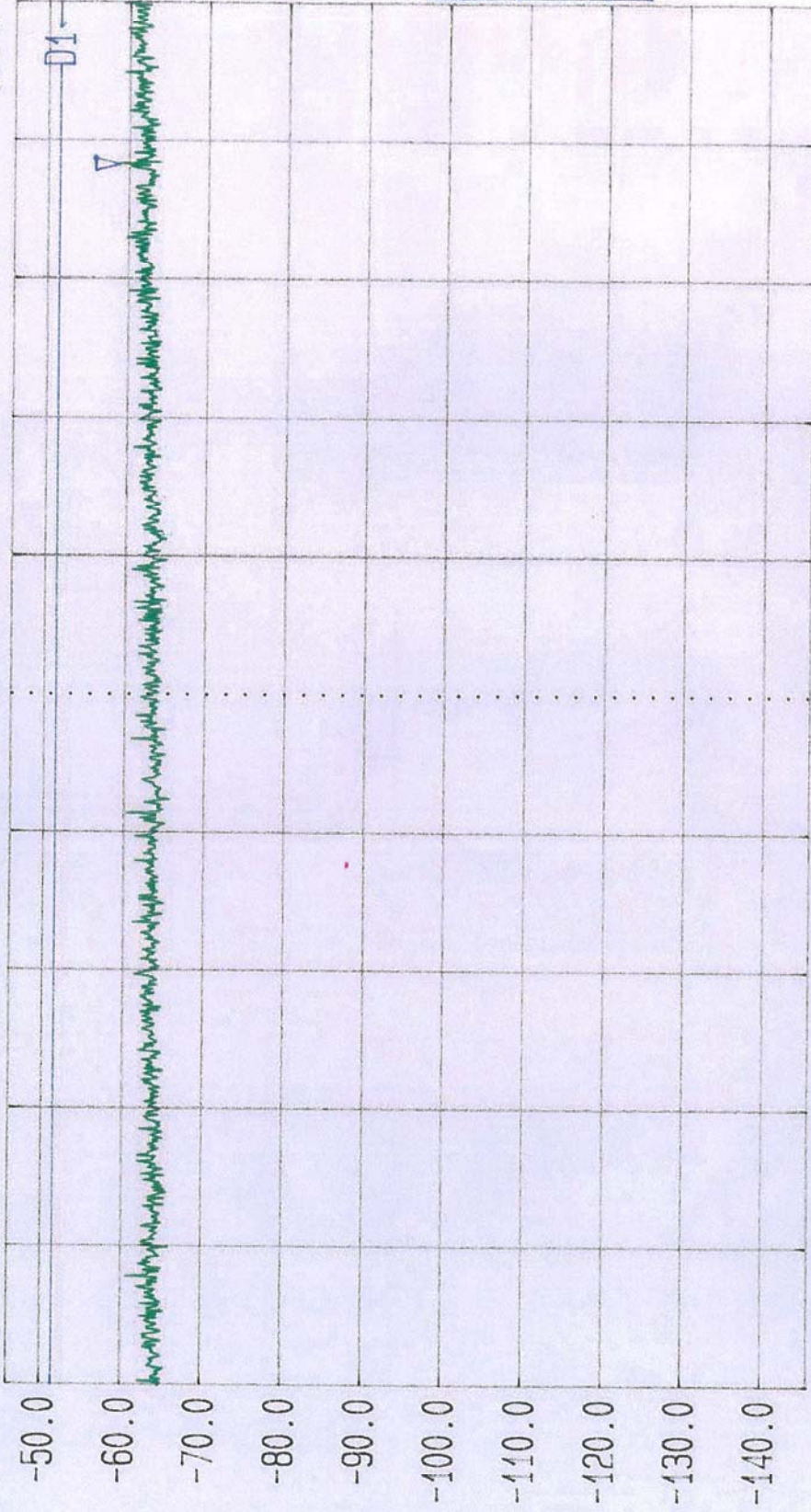
Graph Reference Number	Title
GPH/44292JD04/HC/012	Radiated Spurious Emissions Cross Polar Antenna (12.5 GHz to 15.0 GHz)
GPH/44292JD04/HC/011A	Radiated Spurious Emissions Co-Polar Antenna (30.0 MHz to 960.0 MHz)
GPH/44292JD04/HC/011B	Radiated Spurious Emissions Co-Polar Antenna (0.960 GHz to 2.0 GHz)
GPH/44292JD04/HC/005	Radiated Spurious Emissions Co-Polar Antenna (2.0 GHz to 4.0 GHz)
GPH/44292JD04/HC/013	Radiated Spurious Emissions Co-Polar Antenna (4.0 GHz to 6.0 GHz)
GPH/44292JD04/HC/014	Radiated Spurious Emissions Co-Polar Antenna (6.0 GHz to 8.0 GHz)
GPH/44292JD04/HC/015	Radiated Spurious Emissions Co-Polar Antenna (8.0 GHz to 12.5 GHz)
GPH/44292JD04/HC/016	Radiated Spurious Emissions Co-Polar Antenna (12.5 GHz to 15.0 GHz)
GPH/44292JD04/HC/003	Radiated Spurious Emissions Co-Polar Antenna (1.164 GHz to 1.24 GHz)
GPH/44292JD04/HC/009A	Radiated Spurious Emissions Cross Polar Antenna (1.164 GHz to 1.24 GHz)
GPH/44292JD04/HC/004	Radiated Spurious Emissions Co-Polar Antenna (1.559 GHz to 1.61 GHz)
GPH/44292JD04/HC/010A	Radiated Spurious Emissions Cross Polar Antenna (1.559 GHz to 1.61 GHz)
GPH/44292JD04/002	Peak Output Power Co-Polar Antenna (321.86 MHz to 374.86 MHz)
GPH/44292JD04/001	Peak Output Power Cross Polar Antenna (500.00 MHz to 555.91 MHz)
GPH/44292JD04/OCB/001	Occupied Bandwidth Cross Polar Antenna (120.0 MHz to 1.0 GHz)
GPH/44292JD04/OCB/002	Occupied Bandwidth Co-Polar Antenna (120.0 MHz to 1.0 GHz)

LVLOFF



Date 14 April 2003 Time 06:15:52
Ref.Lvl -46.00 dBm Marker -59.00 dBm
14.7083 GHz

Res.Bw 1.0 MHz [3dB] Vid.Bw 3 MHz
CF.Stp 250.000 MHz RF.Att 10 dB
Unit [dBm]



TT		
2		

Start 12.5 GHz Span 2.5 GHz Center 13.75 GHz Sweep 20 ms Stop 15 GHz

TEST FOR PIPEHAWK OF GROUND PROBING RADAR. SPEC FCC PART 15.509. ENG: JPH 00PCOND:
TX XPOLAR ANTENNA 44292JD04/HC/012

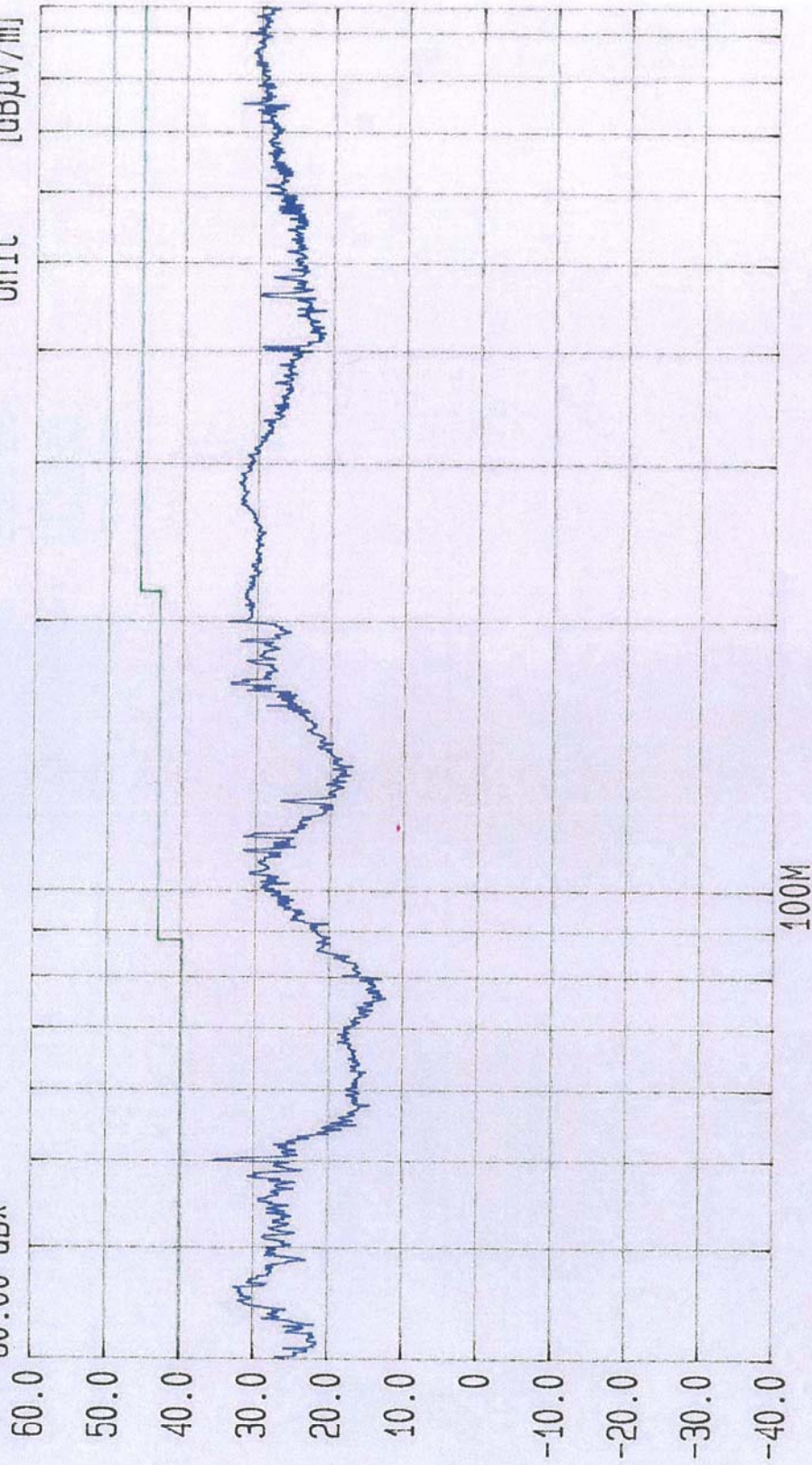


Date 14 April 2003

Time 10:08:47

Ref.Lvl
60.00 dB*

Res.Bw 120.0 kHz [3dB]
TG.Lvl off
CF.Stp 93.000 MHz
Vid.Bw 100 kHz
RF.Att 0 dB
Unit [dBμV/m]



Start
30 MHz

Span
930 MHz

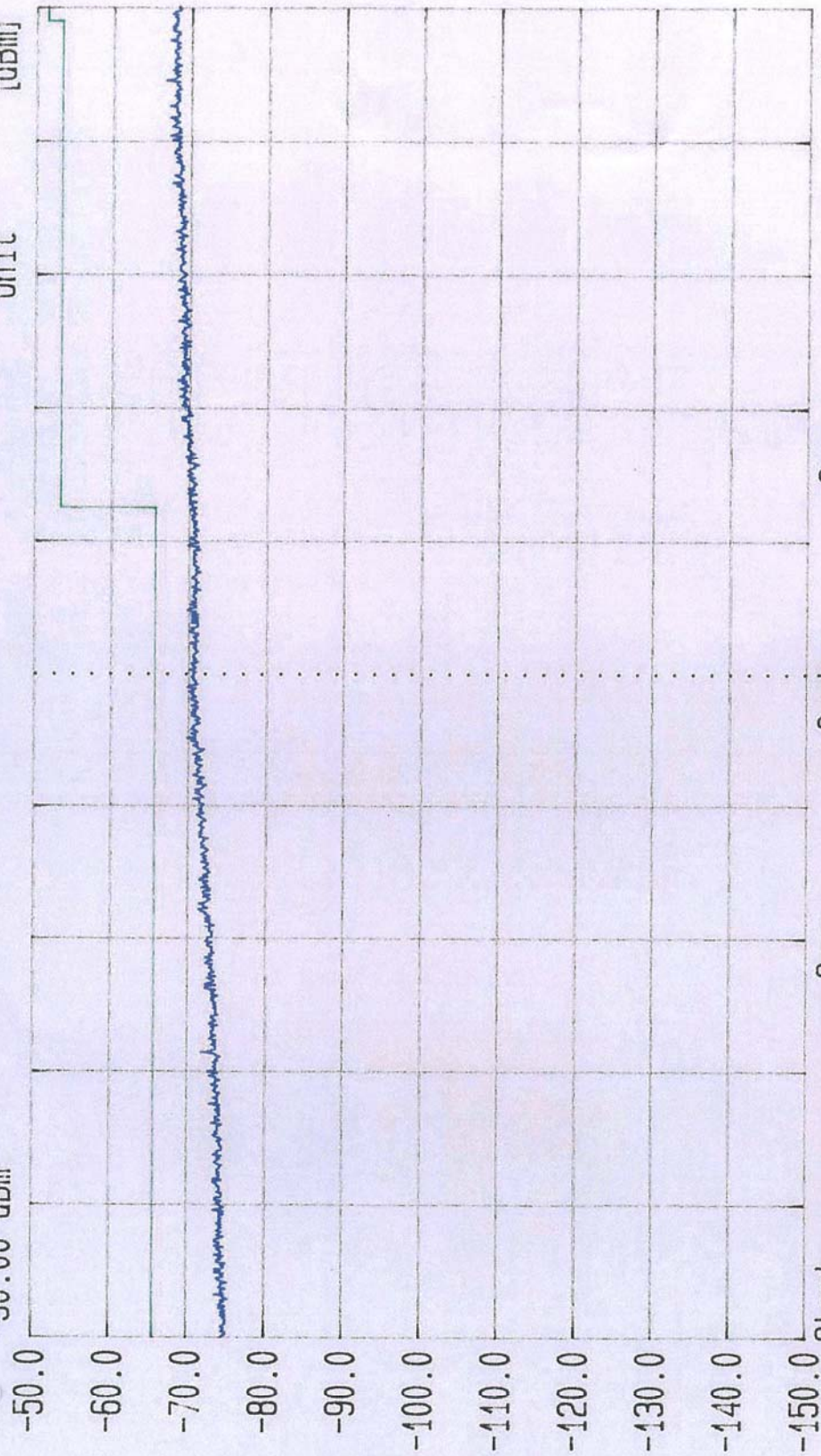
Center
169.7 MHz

Sweep
40 ms

Stop
960 MHz

Test for Pipe Hawk of Ground Probing RADAR. SPEC FCC Part 15.509. ENG : AMT Operati
ng Condition : Tx with co-Polar Antenna 44292JD04/HC/011A

LVLOFF
Date 14 April 2003 Time 09:51:26
Ref.Lvl -50.00 dBm
Res.Bw 1.0 MHz [3dB] off
TG.Lvl 104.000 MHz
CF.Stp Unit
Vid.Bw 3 MHz
RF.Att 0 dB
Unit [dBm]



Start 0.960 GHz Stop 2 GHz
Span 1.04 GHz Sweep 20 ms
Center 1.48 GHz
Test for Pipe Hawk of Ground Probing RADAR. SPEC FCC Part 15.509. ENG : AMT Operati
ng Condition : Tx with co-Polar Antenna 44292JD04/HC/0116



LVLOFF

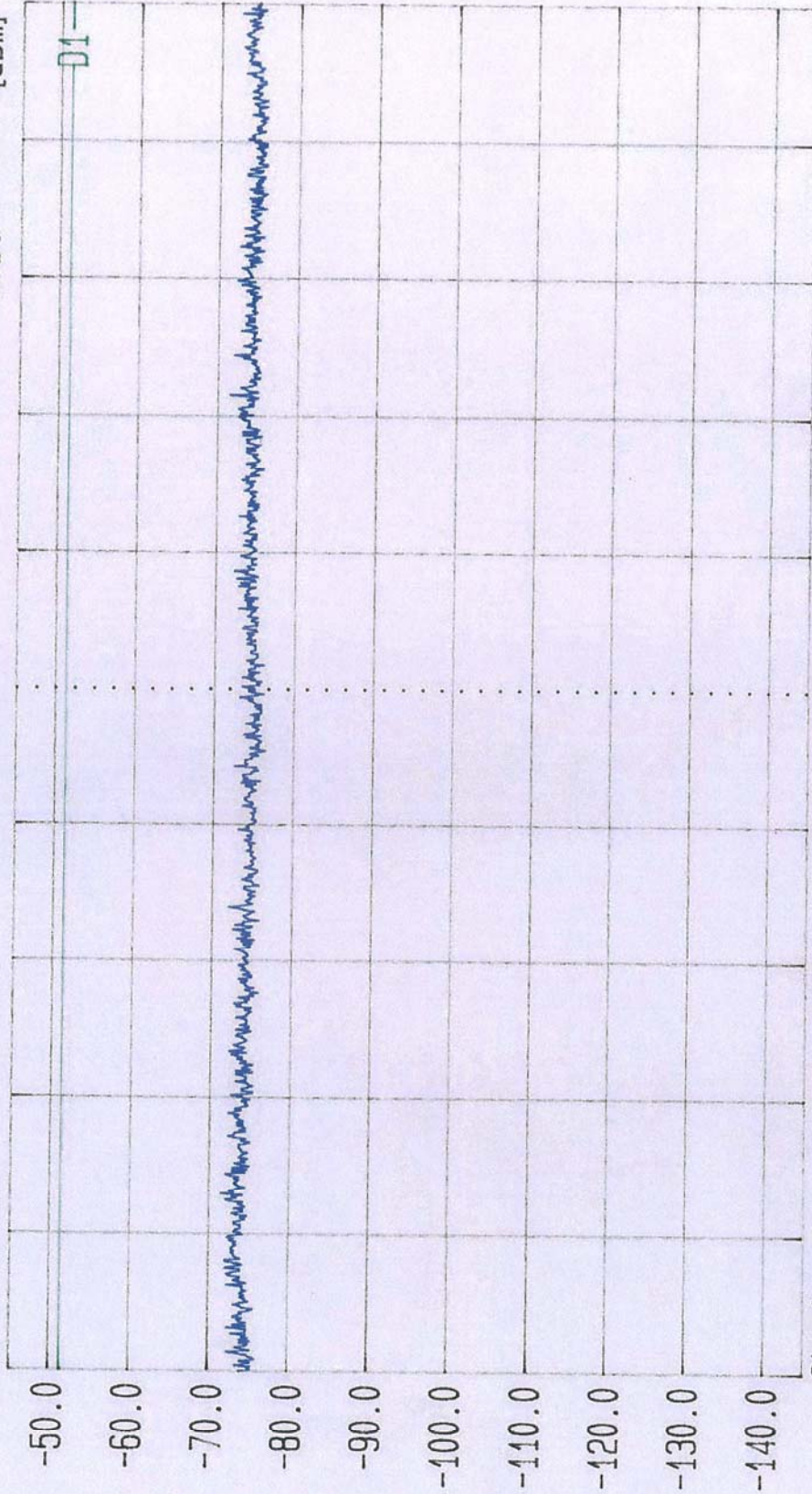
Date 14 April 2003

Time 07:32:17

Ref.Lvl

-45.00 dBm

Res.Bw 1 MHz [imp]
TG.Lvl off
CF.Stp 200.000 MHz
Vid.Bw 3 MHz
RF.Att 0 dB
Unit [dBm]



Start 2 GHz
Span 2 GHz
Center 3 GHz
Sweep 20 ms
Stop 4 GHz

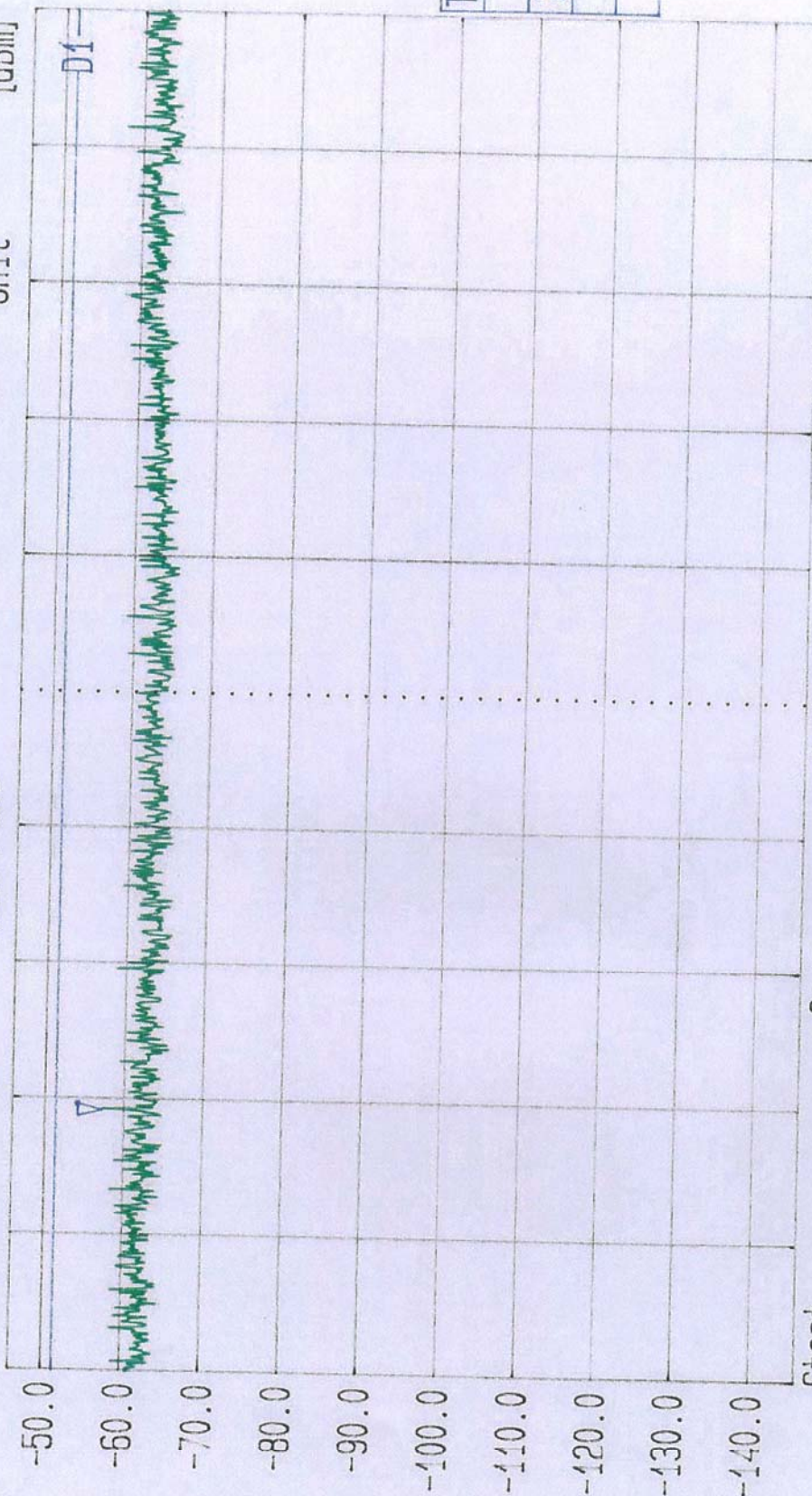
Test for Pipe Hawk of Ground Probing RADAR. SPEC : FCC Part 15.509. ENG : AMT Operat
ing Condition : Tx with Co-Polar Antenna 44292JD04/HC/005



1 VI OFF

Date 14 April 2003 Time 06:35:08
Ref.Lvl -46.00 dBm
Marker -57.27 dBm
4.3844 GHz

Res.Bw 1.0 MHz [3dB] Vid.Bw 3 MHz
CF.Stp 200.000 MHz RF.Att 5 dB
Unit [dBm]



TT
2

TEST FOR PIPEHAWK OF GROUND PROBING RADAR. SPEC FCC PART 15.509. ENG: JPH 00PCOND:
TX CO POLAR ANTENNA 44292 JD04/HC/013

LVLOFF



Date 14 April 2003 Time 06:37:37

Ref.Lvl -46.00 dBm

Marker -56.10 dBm

7.2955 GHz

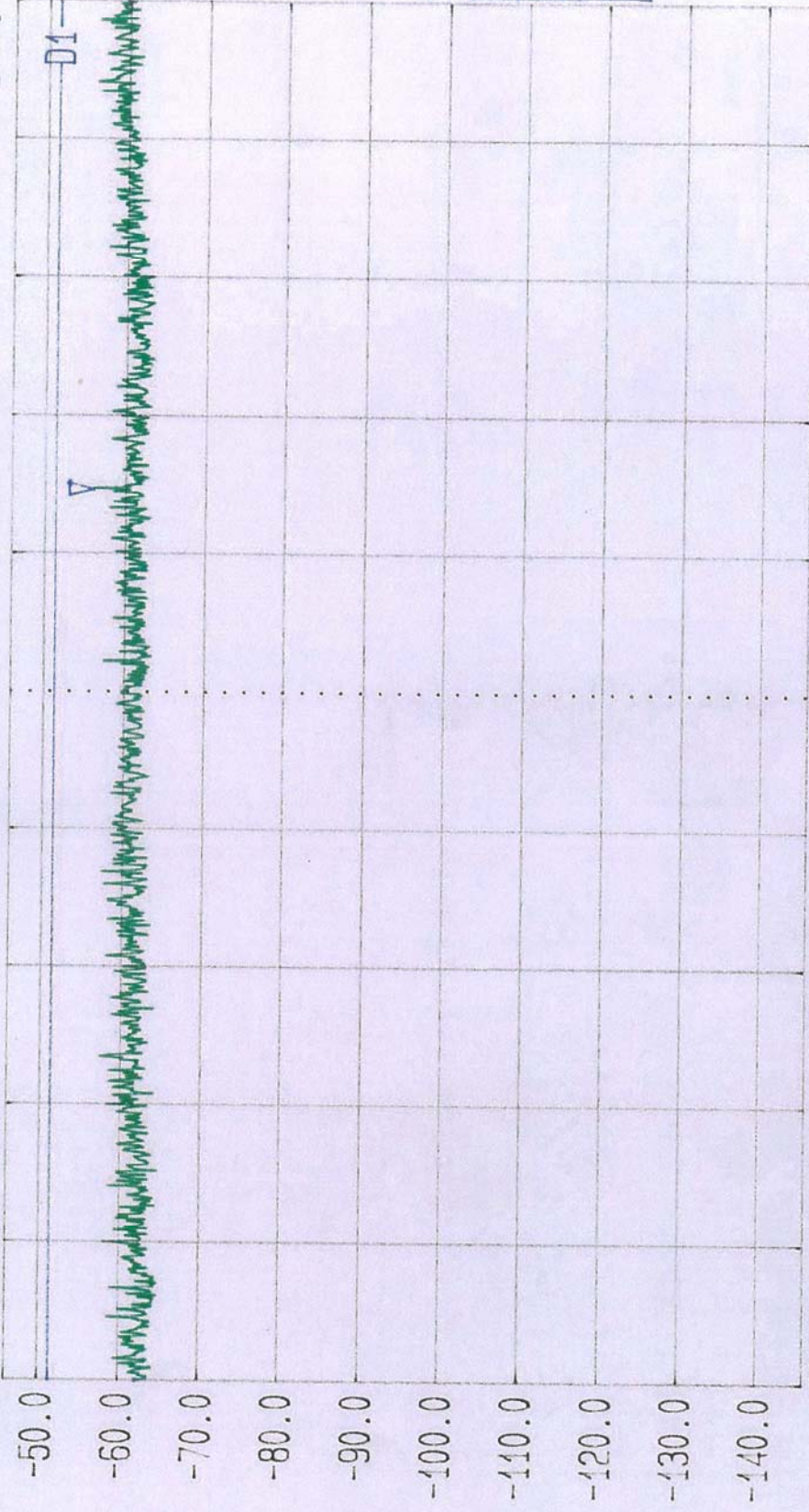
Res.Bw 1.0 MHz [3dB]

Vid.Bw 3 MHz

CF.Stp 200.000 MHz

RF.Att 5 dB

Unit [dBm]



TT 2

Start 6 GHz

Span 2 GHz

Center 7 GHz

Sweep 20 ms

Stop 8 GHz

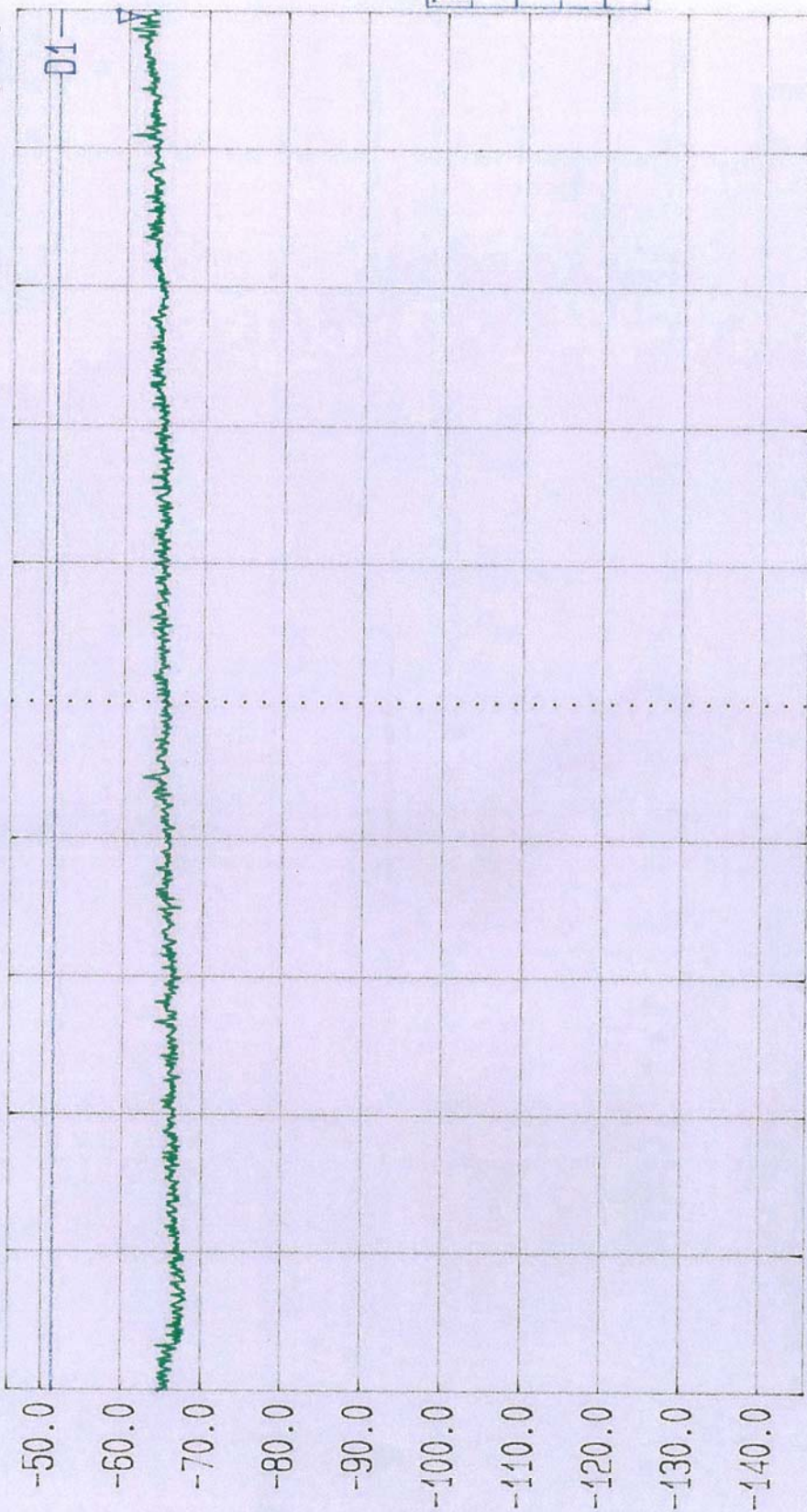
TEST FOR PIPEHAWK OF GROUND PROBING RADAR. SPEC FCC PART 15.509. ENG: JPH 00PCOND:
TX CO POLAR ANTENNA 44292 JD04/HC/014

LVLOFF



Date 14 April 2003 Time 06:40:43
Ref.Lvl -46.00 dBm Marker -61.56 dBm
12.4800 GHz

Res.Bw 1.0 MHz [3dB] Vid.Bw 3 MHz
CF.Stp 450.000 MHz RF.Att 10 dB
Unit [dBm]



Start 8 GHz Center 10.25 GHz Stop 12.5 GHz
Span 4.5 GHz Sweep 20 ms

TEST FOR PIPEHAWK OF GROUND PROBING RADAR. SPEC FCC PART 15.509. ENG: JPH 00PCOND:
TX CO POLAR ANTENNA 44292 JD04/HC/015

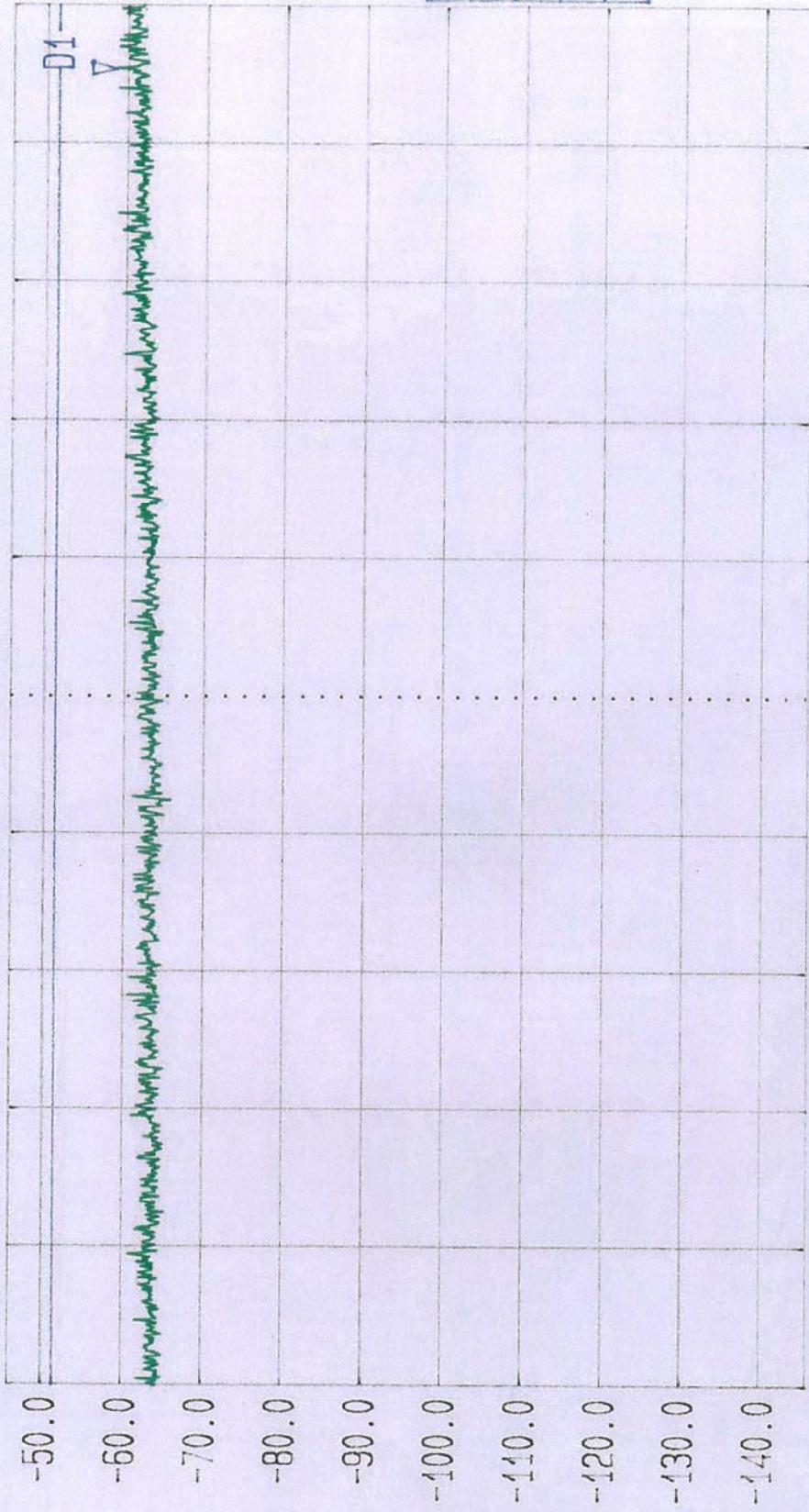
TT 2

LVLOFF



Date 14 April 2003 Time 06:43:33
Ref.LVL Marker
-46.00 dBm

Res.Bw 1.0 MHz [3dB] Vid.Bw 3 MHz
CF.Stp 250.000 MHz RF.Att 10 dB
Unit [dBm]



TT
2

Start 12.5 GHz Span 2.5 GHz Center 13.75 GHz Sweep 20 ms Stop 15 GHz

TEST FOR PIPEHAWK OF GROUND PROBING RADAR. SPEC FCC PART 15.509. ENG: JPH 00PCOND:
TX CO POLAR ANTENNA 44292 JD04/HC/016



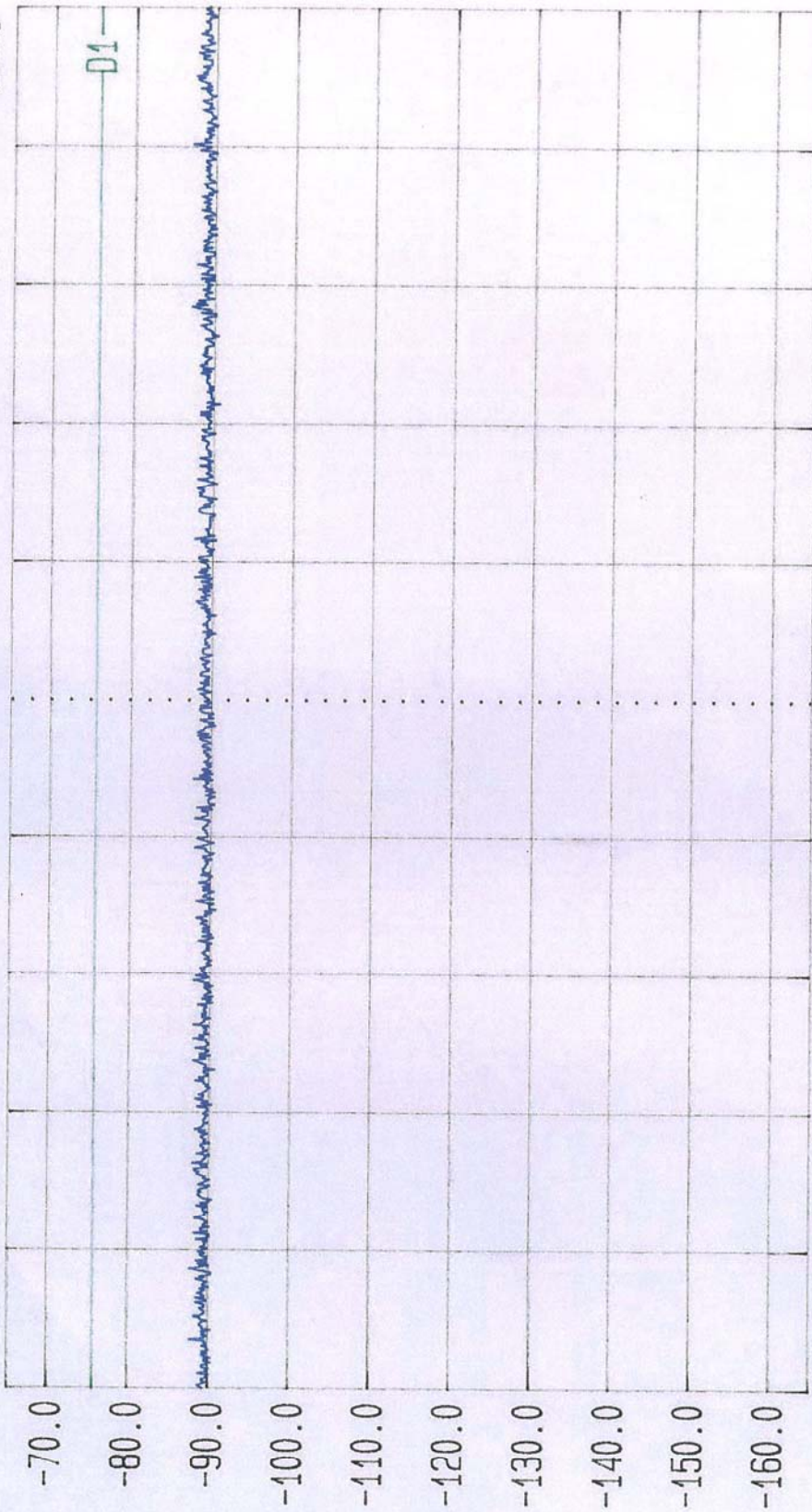
LVL OFF

Date 14 April 2003 Time 07:18:56

Ref. Lvl

-65.00 dBm

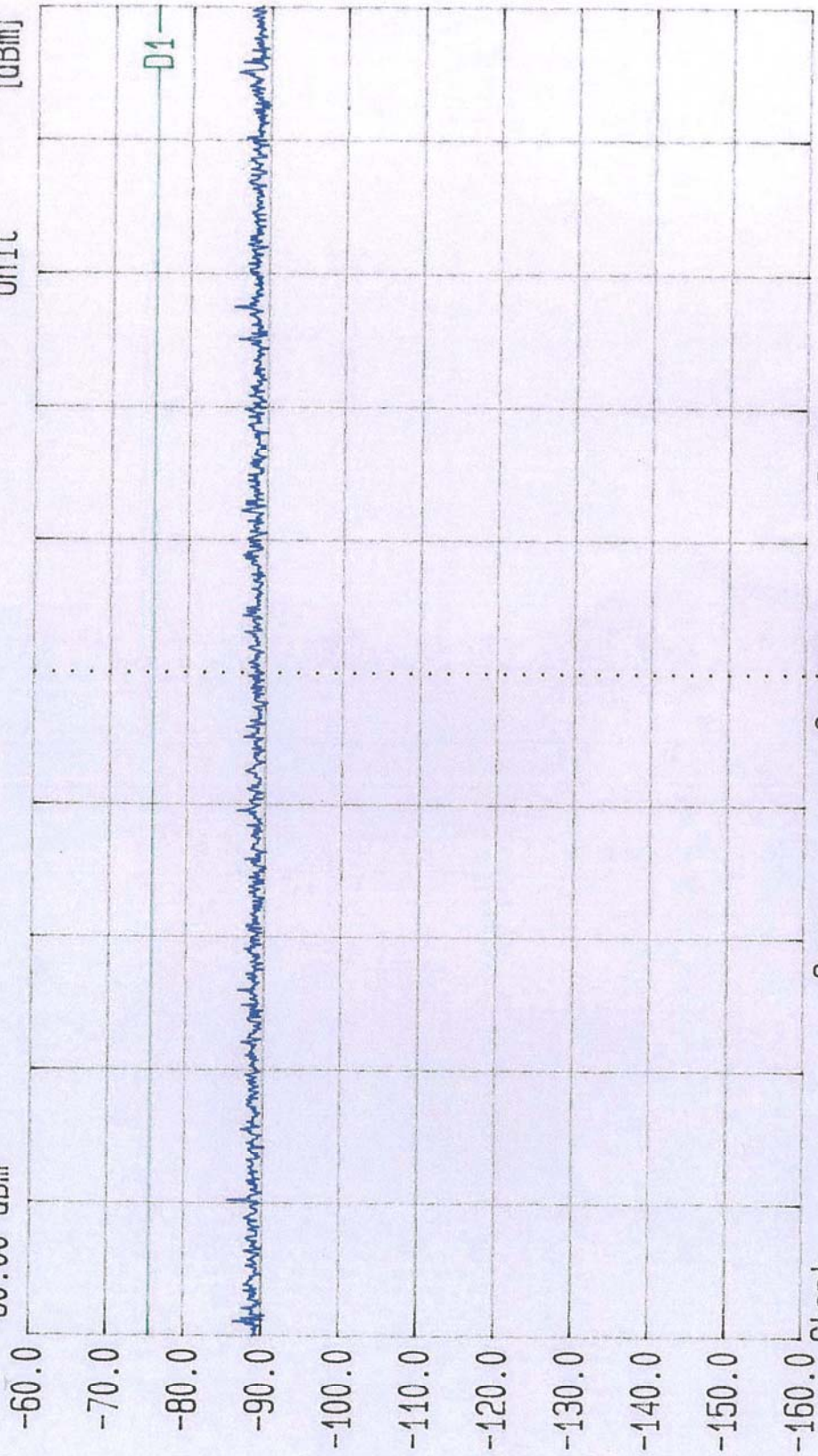
Res. Bw 120 kHz [imp]
TG. Lvl Off
CF. Stp 7.600 MHz
Vid. Bw 300 kHz
RF. Att 0 dB
Unit [dBm]



Start 1.164 GHz Stop 1.24 GHz
Span 76 MHz Sweep 40 ms
Center 1.202 GHz
Test for Pipe Hawk of Ground Probing RADAR. SPEC : FCC Part 15.509. ENG : AMT Operat
ing Condition : Tx with Co-Polar Antenna 44292JD04/HC/003



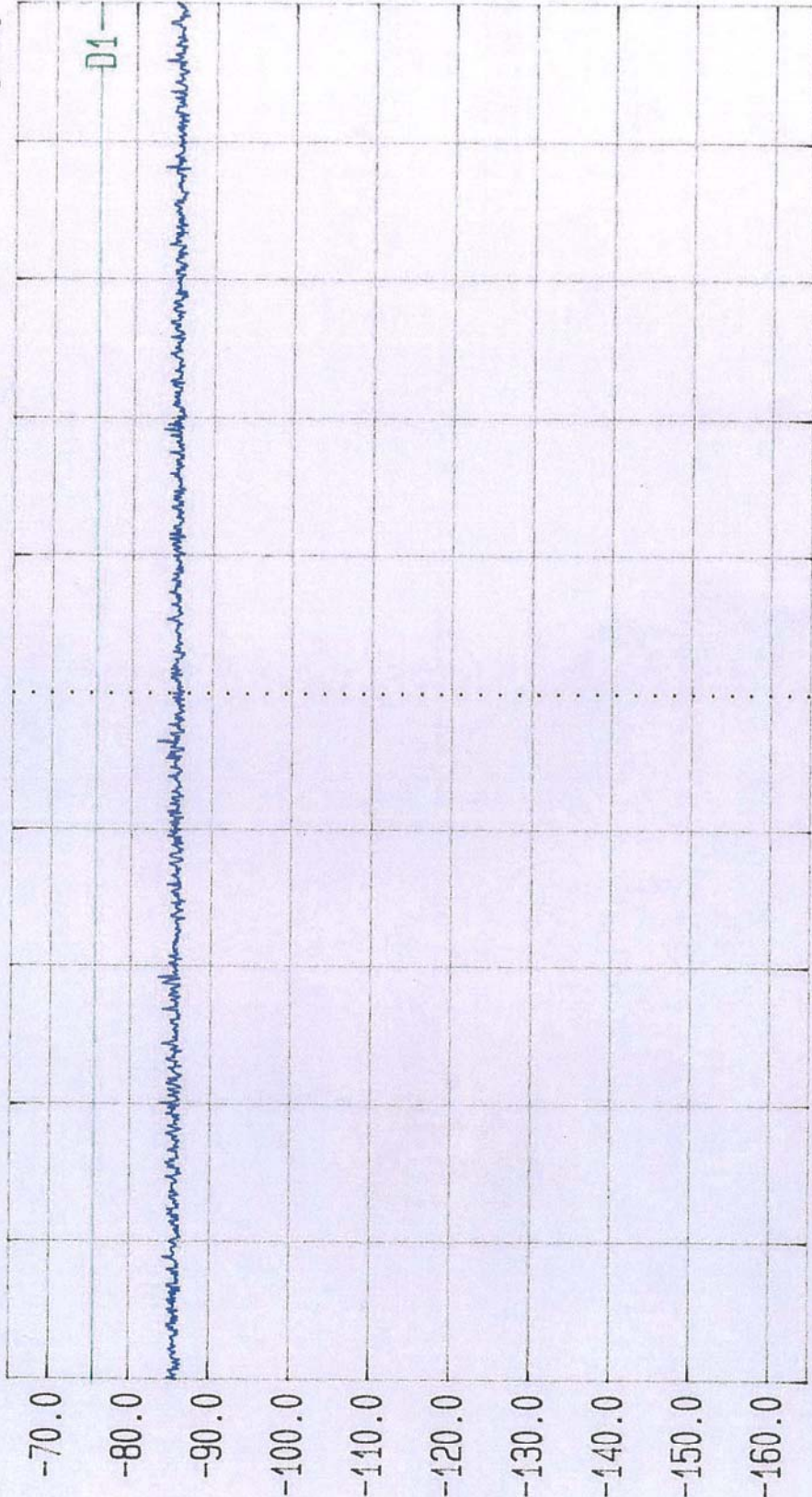
LVLOFF
Date 14 April 2003 Time 09:39:52
Ref.Lvl -60.00 dBm
Res.Bw 120.0 kHz [3dB] Vid.Bw 300 kHz
TG.Lvl Off
CF.Stp 7.600 MHz RF.Att 0 dB
Unit [dBm]



Start 1.164 GHz Stop 1.24 GHz
Span 76 MHz Sweep 20 ms
Center 1.202 GHz
Test for Pipe Hawk of Ground Probing RADAR. SPEC FCC Part 15.509. ENG : AMT Operati
ng Condition : Tx with x-Polar Antenna 44292JD04/HC/009a

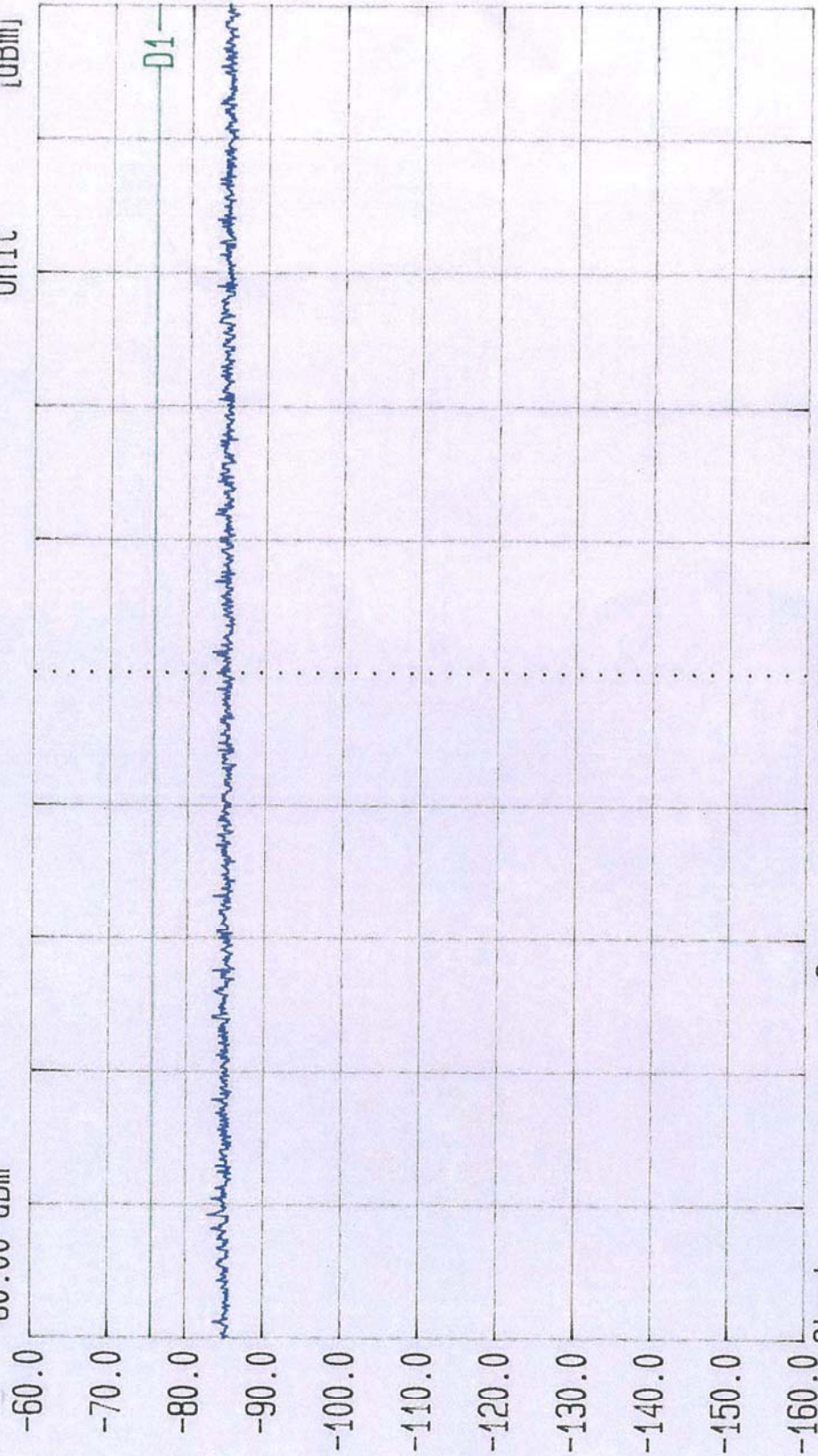


LVLOFF
Date 14 April 2003 Time 07:24:11
Ref.Lvl -65.00 dBm
Res.Bw 120 kHz [imp] 300 kHz
TG.Lvl off
CF.Stp 5.100 MHz
RF.Att 0 dB
Unit [dBm]



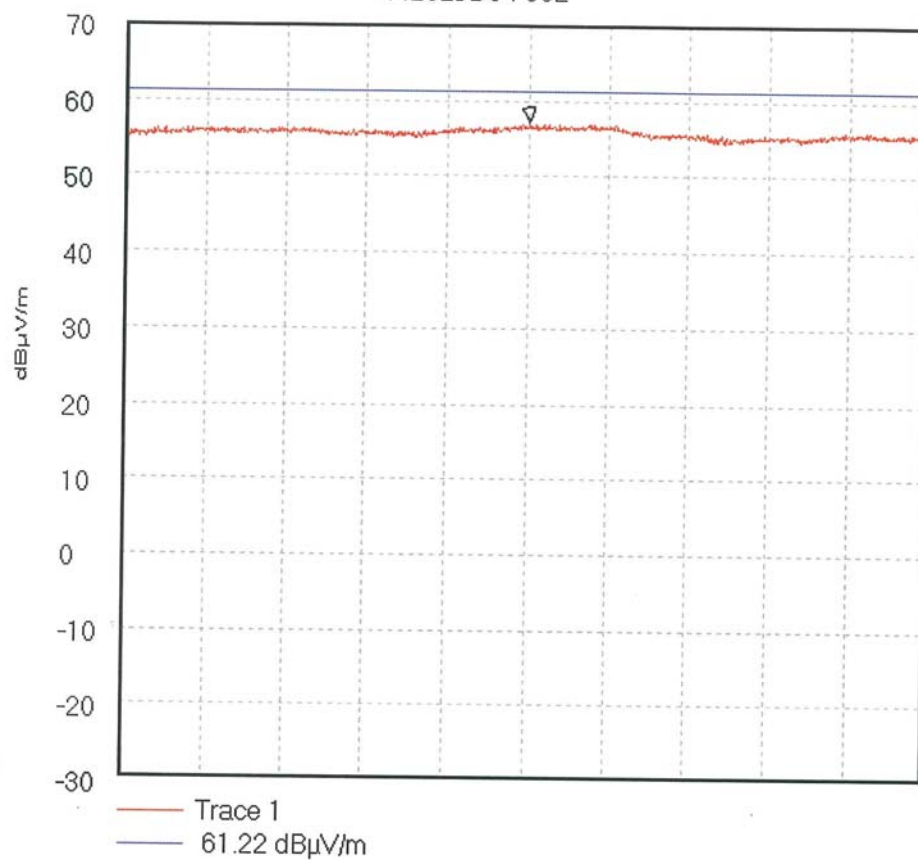
Start 1.559 GHz Stop 1.61 GHz
Span 51 MHz Sweep 40 ms
Center 1.5845 GHz
Test for Pipe Hawk of Ground Probing RADAR. SPEC : FCC Part 15.509. ENG : AMT Operat
ing Condition : Tx with Co-Polar Antenna 44292JD04/HC/004

LVLOFF
Date 14 April 2003 Time 09:46:19
Ref.Lvl -60.00 dBm
Res.Bw 120.0 kHz [3dB] Vid.Bw 300 kHz
TG.Lvl Off
CF.Stp 5.100 MHz RF.Att 0 dB
Unit [dBm]



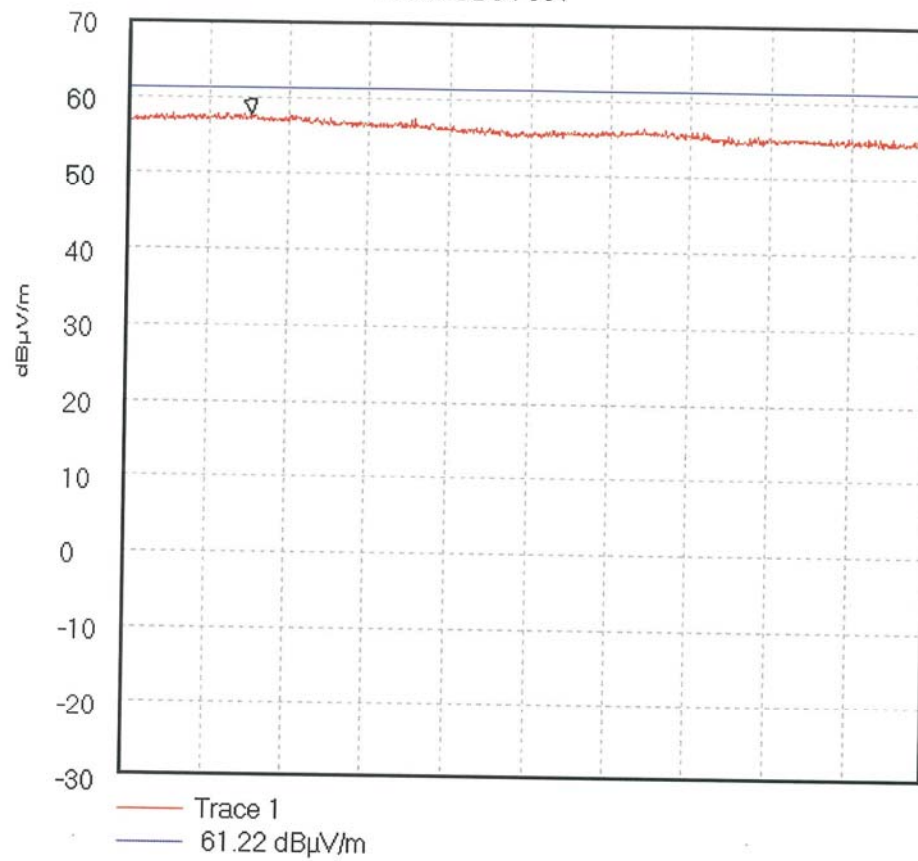
Start 1.559 GHz Span 51 MHz Center 1.5845 GHz Sweep 20 ms Stop 1.61 GHz
Test for Pipe Hawk of Ground Probing RADAR. SPEC FCC Part 15.509. ENG : AMT Operati
ng Condition : Tx with x-Polar Antenna 44292JD04/HC/010

44292JD04 002



Start 321.86 MHz; Stop 374.86 MHz
Ref 70 $\text{dB}\mu\text{V/m}$; Ref Offset 0.0 dB; 10 dB/div
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS
Peak 348.477778 MHz, 57.28 $\text{dB}\mu\text{V/m}$
Display Line: 61.22 $\text{dB}\mu\text{V/m}$
28/06/2003 09:21:17

44292JD04 001

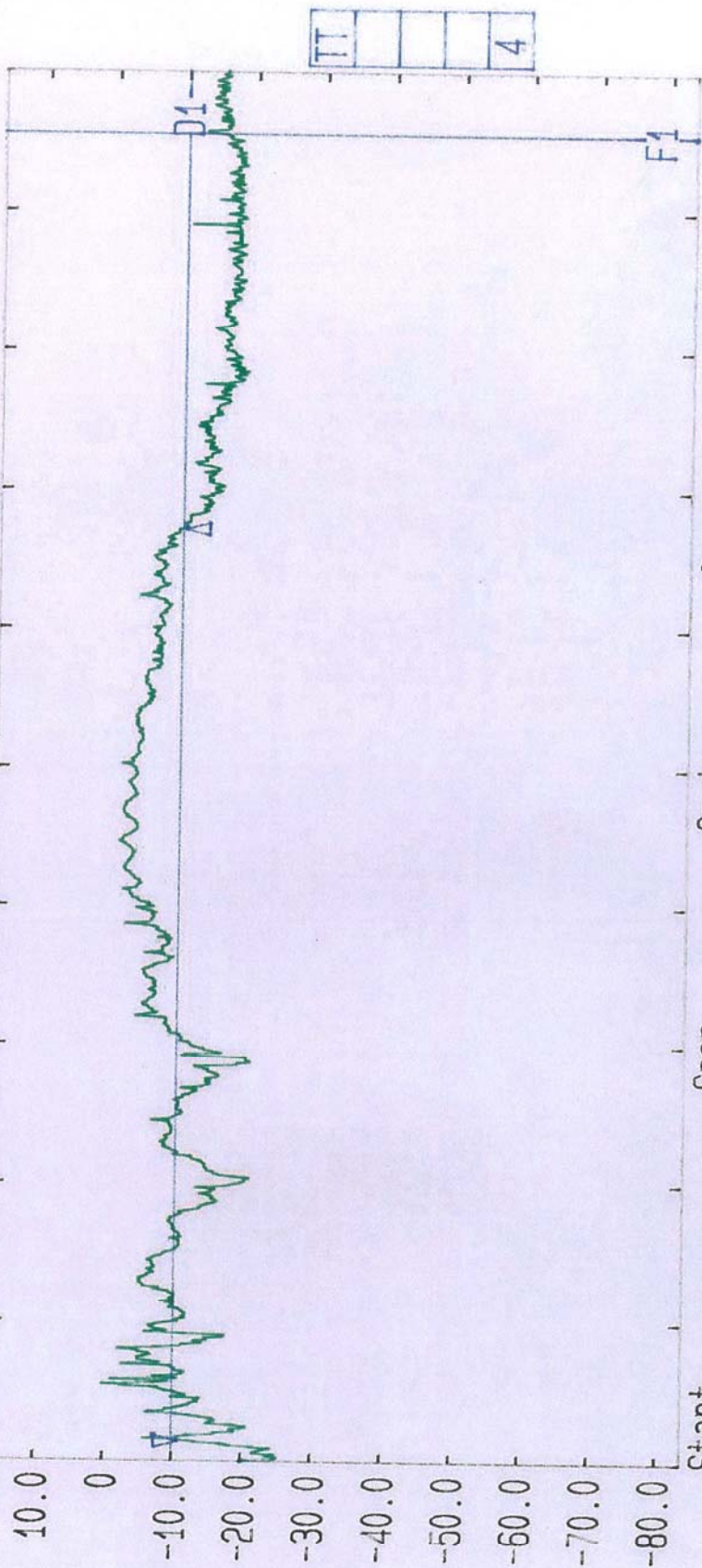


Start 500.0 MHz; Stop 555.91 MHz
Ref 70 $\text{dB}\mu\text{V/m}$; Ref Offset 0.0 dB; 10 dB/div
RBW 1.0 MHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS
Peak 508.572867 MHz, 57.82 $\text{dB}\mu\text{V/m}$
Display Line: 61.22 $\text{dB}\mu\text{V/m}$;
28/06/2003 09:16:59

LVLOFF

Date 14 April 2003 Time 10:40:53
Ref.Lvl Delta 0.66 dB
16.30 dBm 578.8 MHz
F1 960.0000000 MHz D1
F2 OFF D2
F2-F1 OFF D1-D2

Res.Bw 118.8 kHz [3dB] Vid.Bw 300 kHz
CF.Stp 88.000 MHz RF.Att 0 dB
Unit [dBm]
-10.00 dBm
OFF
OFF



Start 120 MHz Span 880 MHz Center 560 MHz Sweep 200 ms Stop 1 GHz
Test for Pipe Hawk of Ground Probing RADAR. SPEC: FCC part 15.509. ENG: AMT. Oper
ing condition: Tx with x-polar Antenna 44262JD2/OCB/001

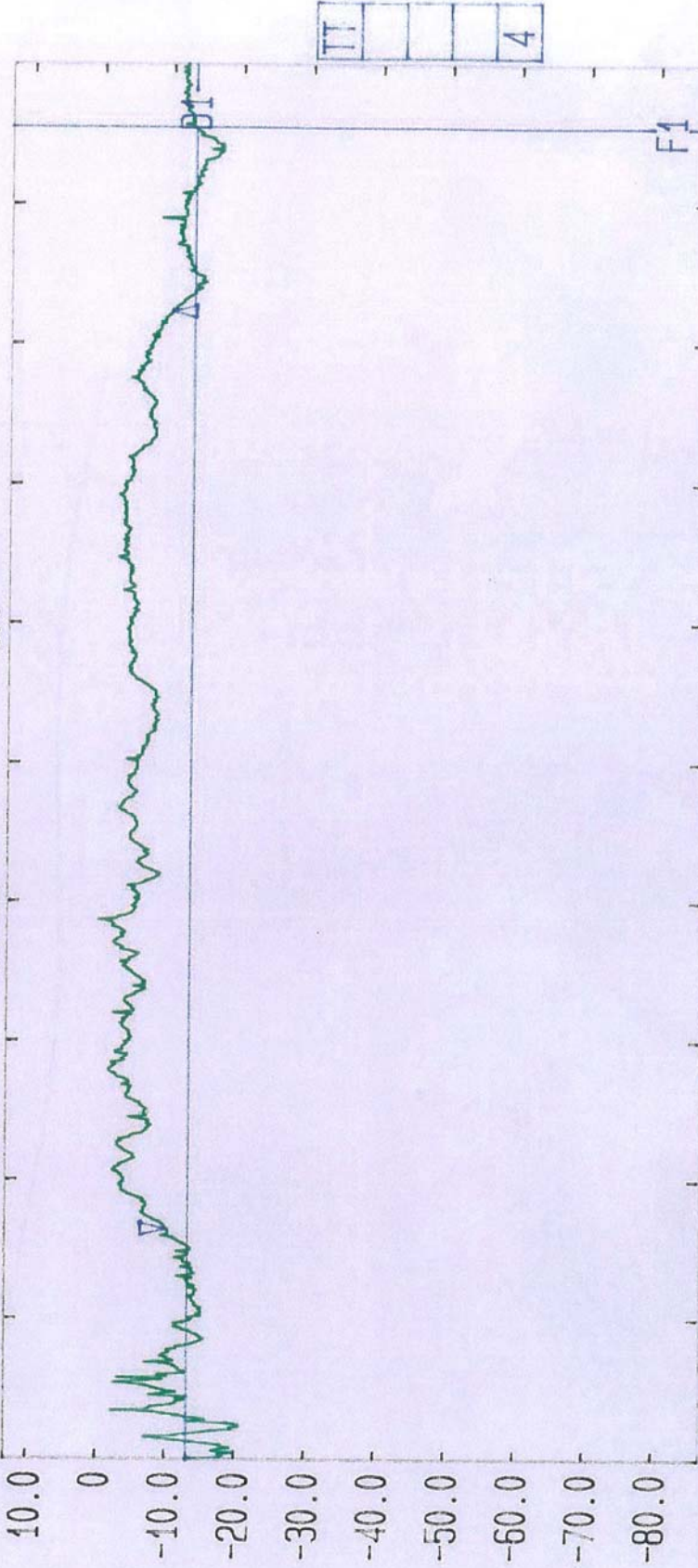
LVLOFF

Date 14 April 2003 Time 10:50:00
Ref.Lvl Delta
13.00 dBm -0.05 dB
579.8 MHz

Res.Bw 118.8 kHz [3dB] Vid.Bw 300 kHz
CF.Stp 88.000 MHz RF.Att 0 dB
Unit [dBm]

F1 960.00000000 MHz D1
F2 OFF
F2-F1 OFF
D1-D2 OFF

-13.30 dBm



Test for Pipe Hawk of Ground Probing RADAR. SPEC: FCC part 15.509. ENG: AMT. Oper
ing condition: Tx with co-Polar Antenna 44262JD2/OCB/002