

6.6 Spurious Emissions - FCC Section 15.247(c)

6.6.1 RF Conducted Spurious Emissions

The EUT was investigated for conducted spurious emissions from 30MHz to 25GHz, 10 times the highest fundamental frequency. For each measurement, the spectrum analyzer’s VBW was set to 100kHz and the RBW was set to 1MHz.

6.6.1.2 Test Results

Result: All emission found were greater than 20dB down from the fundamental carrier. The RF conducted spurious emissions found in the band of 30MHz to 25GHz are reported in Table 6.6.1.2 below. Plots were taken also and are filed separately with this filing in a file titled “03-0193 Data Plots A.doc”. Each emission was compared to the fundamental reference level to determine if they were at least 20dB below the reference level.

Table 6.6.1.2: RF Conducted Spurious Emissions

Frequency (MHz)	Level (dBm)	Peak Power (dBm)	Limit (dBm)	Margin (dB)	Final Result (Pass/Fail)
High Channel:					
1012.8	-53.85	15.31	-4.69	-49.16	Pass
4960.3	-32.34			-27.65	Pass
9922.2	-43.39			-38.7	Pass
12400	-57.63			-52.94	Pass
15000	-76.27			-71.58	Pass
20000	-79.17			-74.48	Pass
Mid Channel:					
952.1	-60.68	15.59	-4.41	-56.27	Pass
4882.2	-31.02			-26.61	Pass
9766.6	-49.13			-44.72	Pass
12205.5	-59.36			-54.95	Pass
15000	-76.12			-71.71	Pass
20000	-80.67			-76.26	Pass
Low Channel:					
895.8	-55.02	15.43	-4.57	-50.45	Pass
4805.6	-32.04			-27.47	Pass
9611.1	-56.54			-51.97	Pass
12011.1	-64.82			-60.25	Pass
15000	-76.81			-72.24	Pass
20000	-78.53			-73.96	Pass

6.6.2 Radiated Spurious Emissions (Restricted Bands) - FCC Section 15.205

Radiated emissions tests were made over the frequency range of 30MHz to 25GHz, 10 times the highest fundamental frequency on each antenna given in section 1.2.3.

The EUT was rotated through 360° and the receive antenna height was varied from 1m to 4m so that the maximum radiated emissions level would be detected. For frequencies below 1000MHz, quasi-peak measurements were made using a resolution bandwidth (RBW) of 120 kHz and a video bandwidth (VBW) of 300 kHz. For frequencies above 1000MHz, average measurements were made using an RBW of 1MHz and a VBW of 10Hz and peak measurements were made with RBW of 1MHz and a VBW of 1MHz.

The EUT was caused to generate a carrier signal on the hopping channel.

Data Plots

ACS Report Number: 03-0193-15B

Manufacturer: Cirronet, Inc.
Model: BT2022

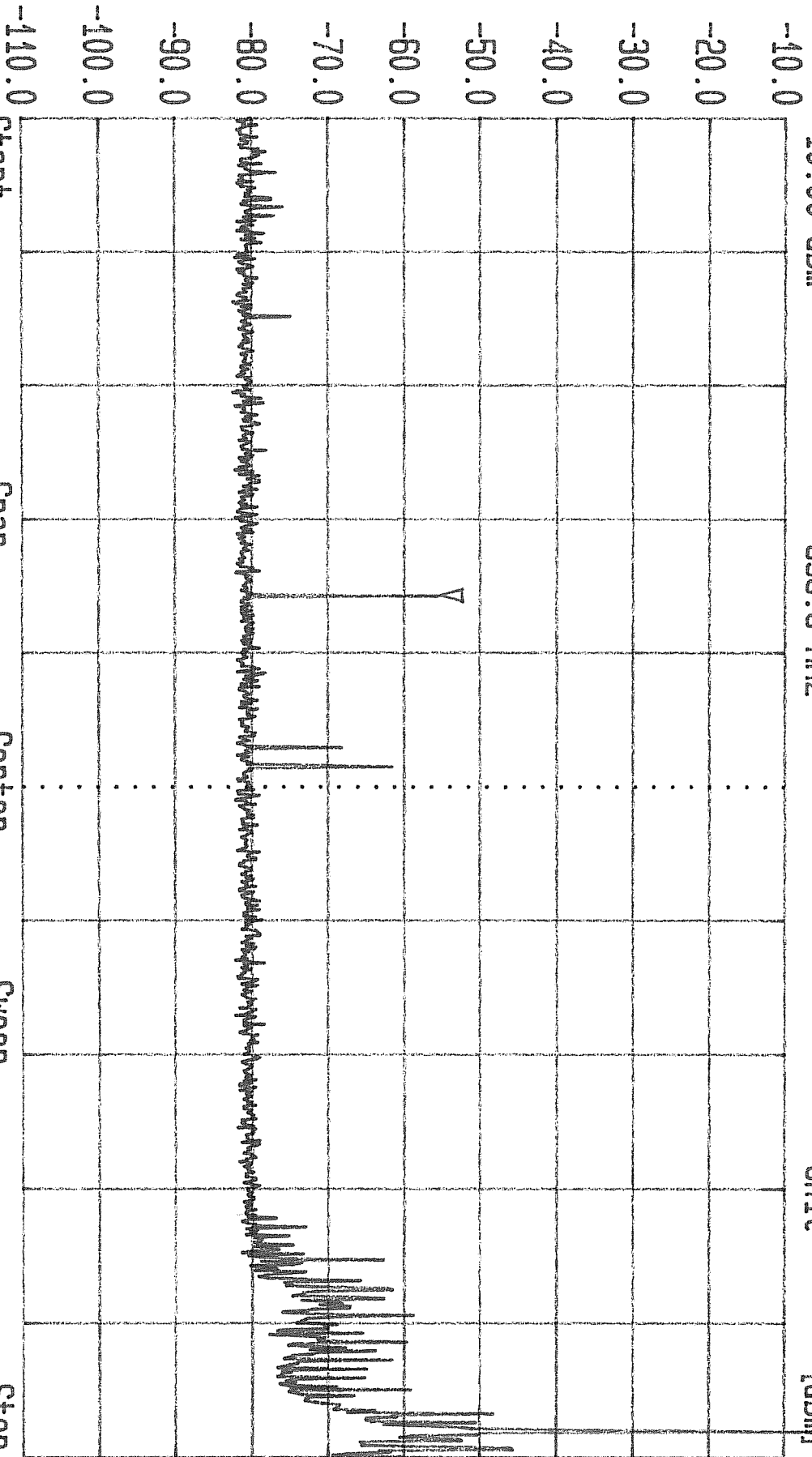
Test: Conducted Spurious Emissions
Channel: Low



Date 08.Oct.'03 Time 14:45:25
Ref.Lvl1 -10.00 dBm
Marker -55.02 dBm
895.8 MHz

Res.BW 100 KHz
TG.Lvl1 Off
CF.Stp 242.000 MHz

Vid.BW 1 MHz
RF.Att Unit
10 dB [dBm]



Start 0.030 GHz
03-0193 CIRRONET HN110
LOW CHANNEL

Span 2.42 GHz

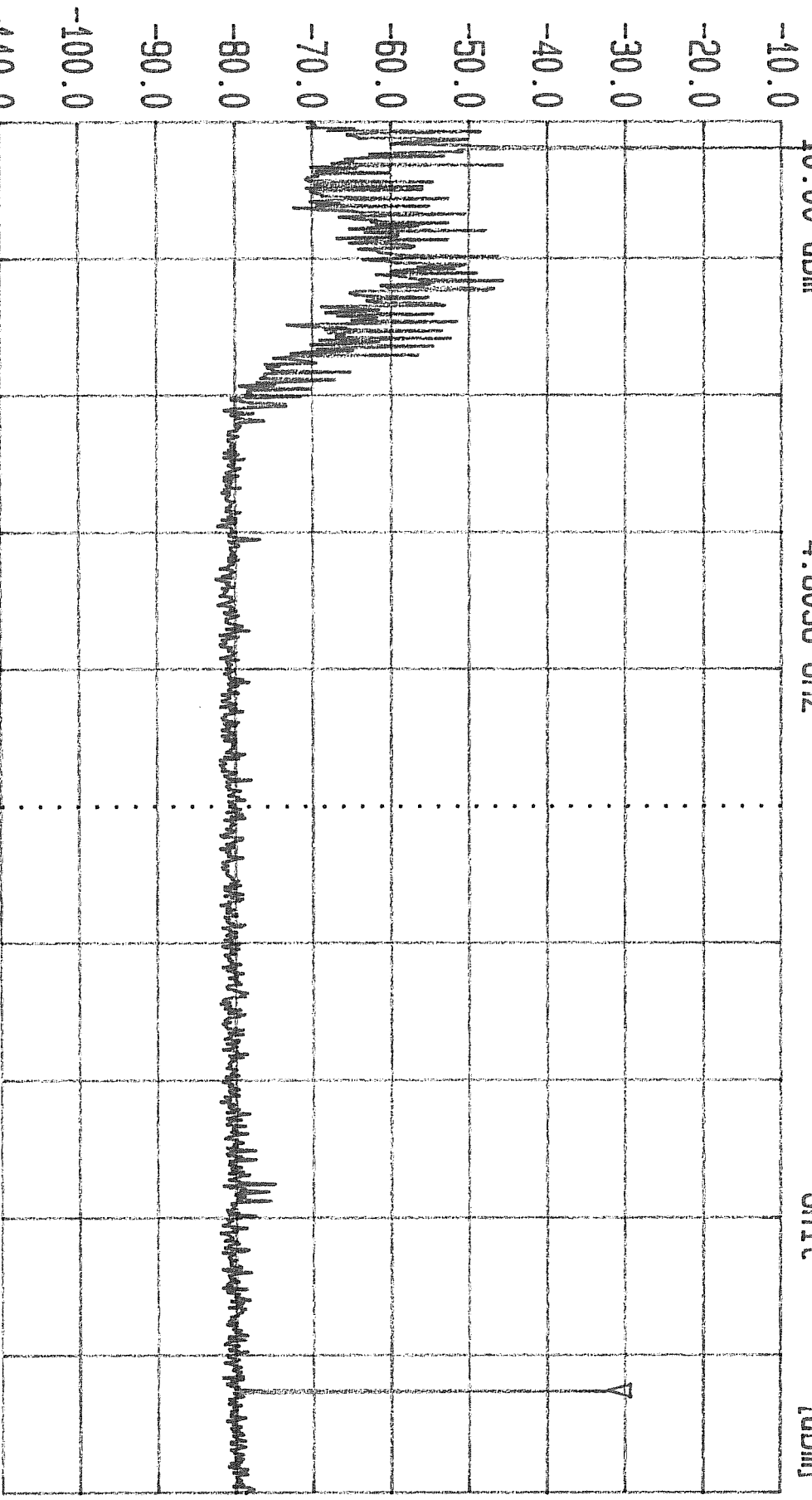
Center 1.24 GHz

Sweep 1.54 s

Stop 2.45 GHz



Date 08.Oct.'03 Time 14:49:16 MSG
 Ref.Lvl -10.00 dBm Marker -32.04 dBm
 Res.BW 100 KHz Imp1 1 MHz
 CF.Stp 265.000 MHz Off
 Vid.BW 10 dB
 AF.Att Unit [dBm]

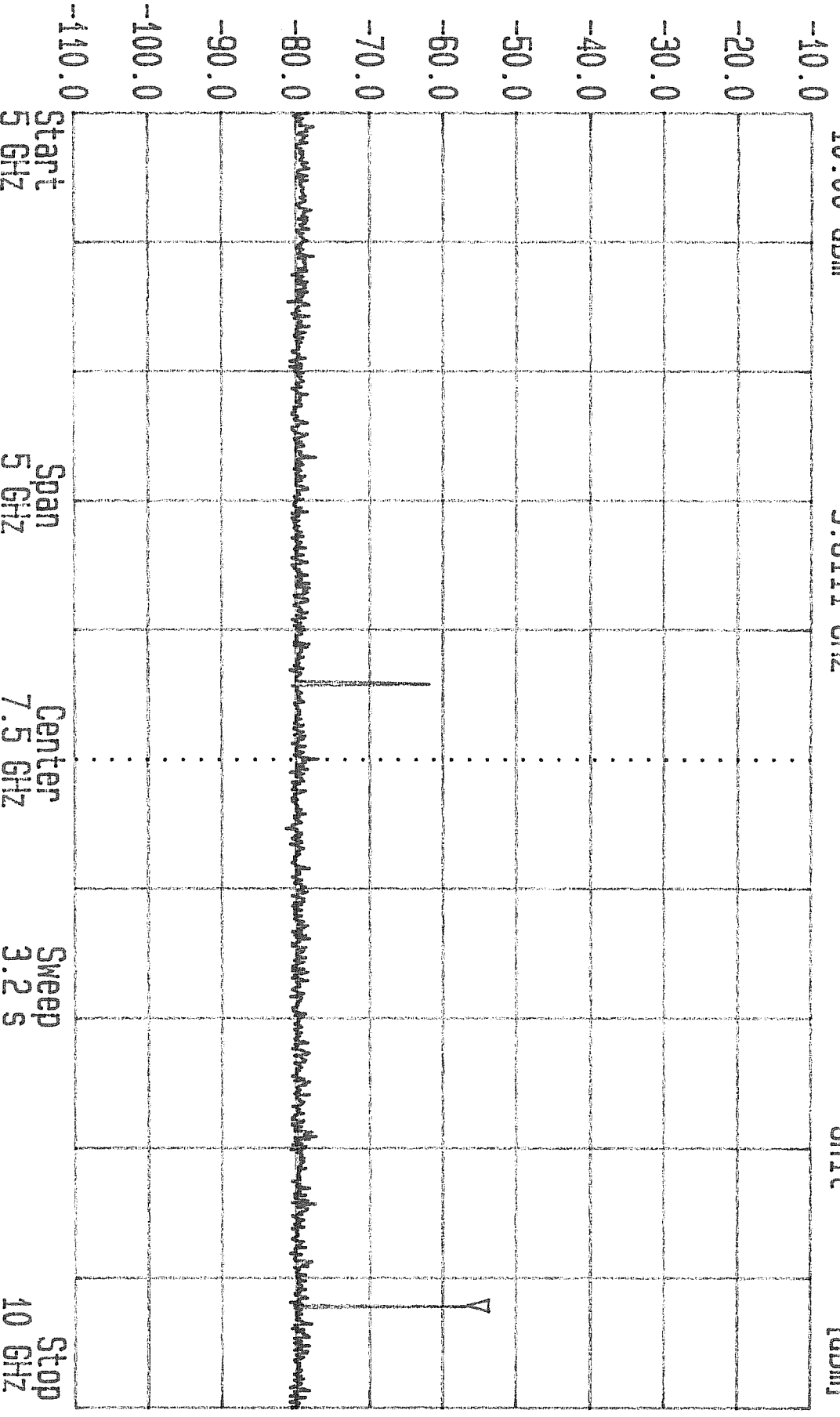


Start 2.35 GHz Span 2.65 GHz Center 3.675 GHz Sweep 1.68 s Stop 5 GHz
 03-0193 CIRRONET HN110
 LOW CHANNEL



Date 08.Oct.'03 Time 14:53:12
 Ref.Lvl -10.00 dBm Marker -56.54 dBm
 9.6111 GHz

Res.BW 100 KHz [imp]
 TG.Lvl 16.Lvl
 CF.Stp 500.000 MHz
 Vid.BW 1 MHz
 AF.Att Unit 10 dB [dBm]

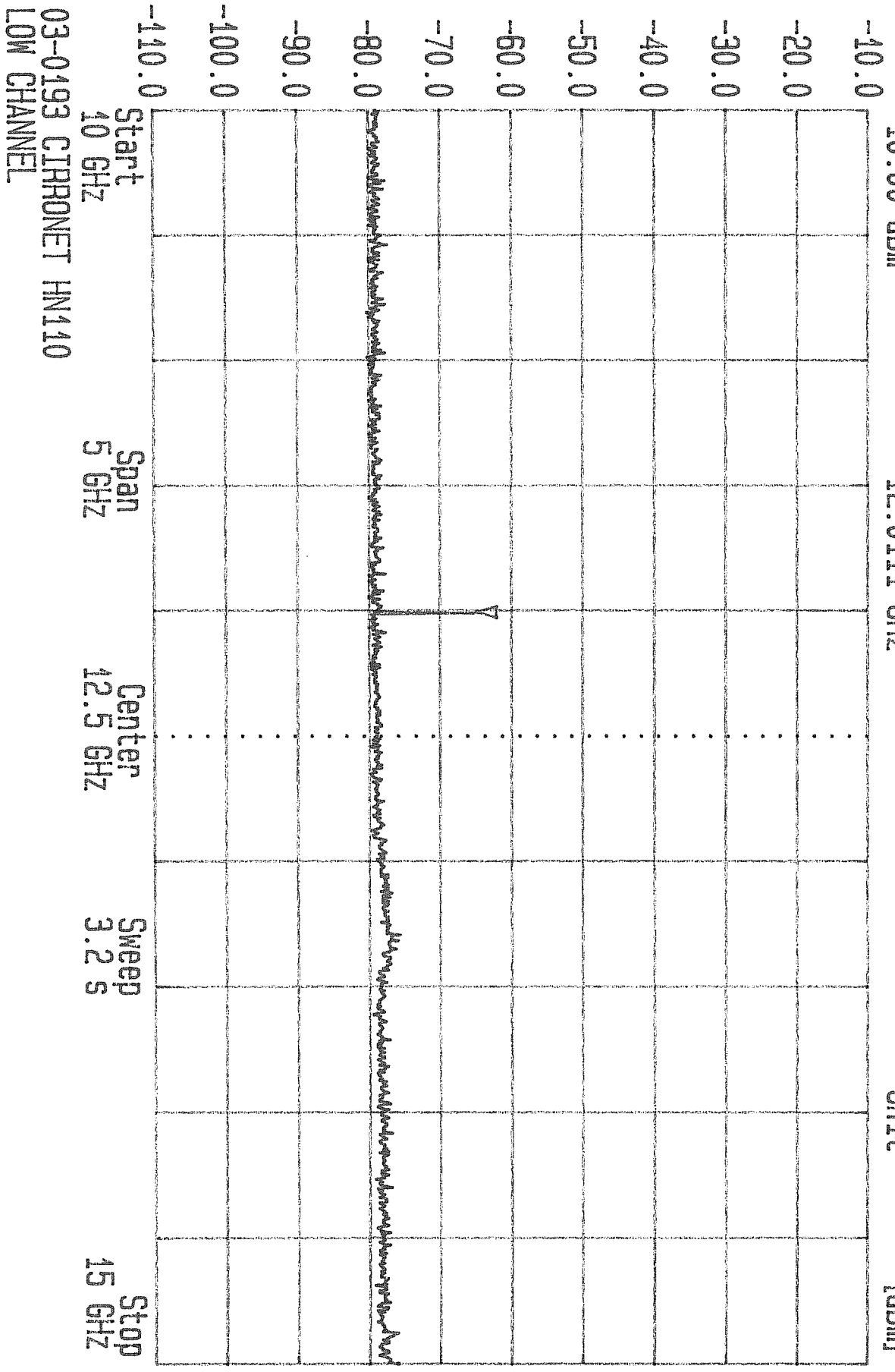


03-0193 CIRRONET HN110
 LOW CHANNEL



Date 08.Oct.'03 Time 14:56:43
 Ref.Lvl -10.00 dBm Marker -64.82 dBm
 12.0111 GHz

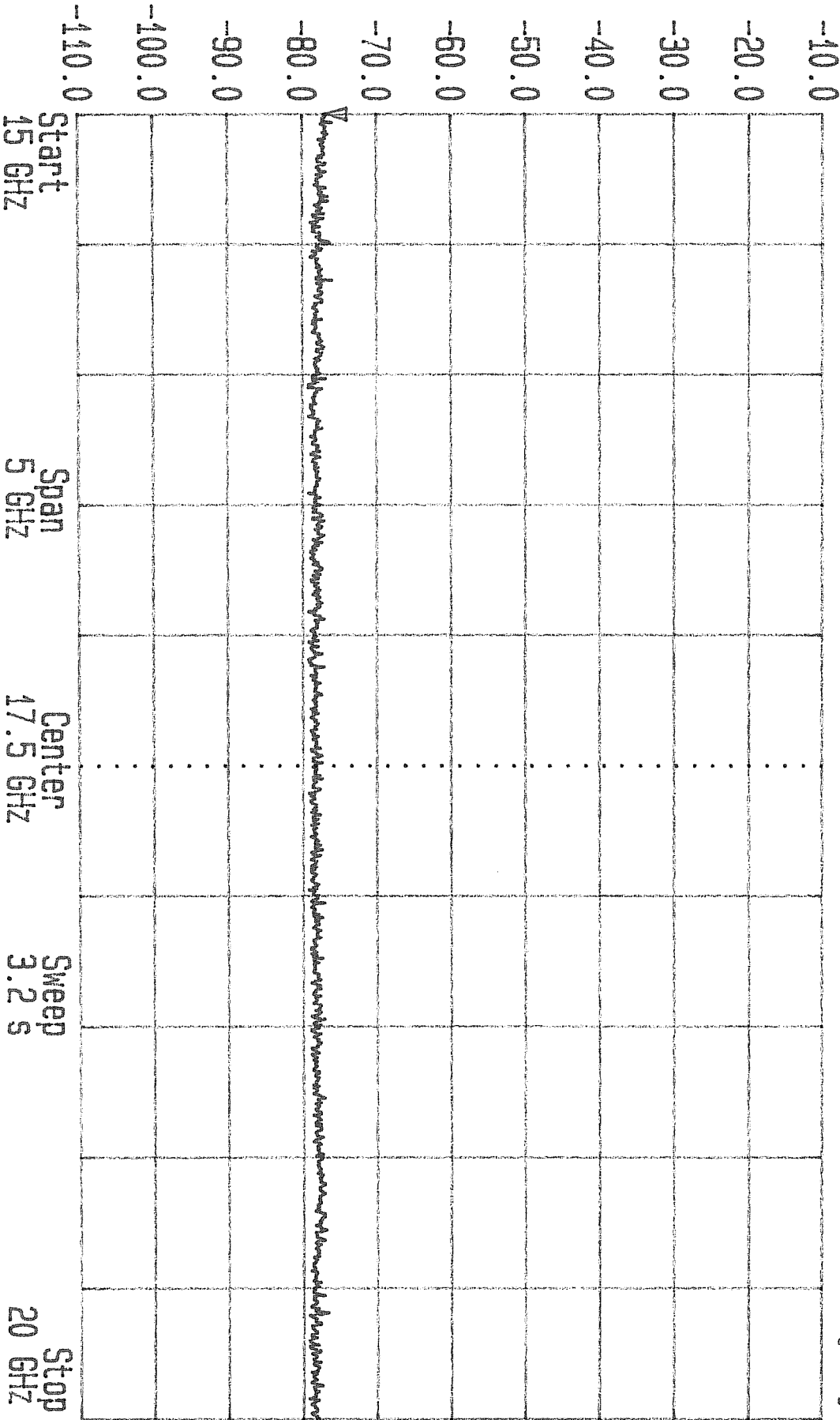
Res.BW 100 kHz [imp] Vid.BW 1 MHz
 TG.Lvl 16.00 dBm CF.Stp 500.000 MHz
 off RF.Att Unit 10 dB [dBm]





Date 08.Oct.'03 Time 15:01:38
 Ref.Lvl1 -10.00 dBm
 Marker -76.81 dBm
 15.0000 GHz

Res.BW 100 kHz [imp]
 TG.Lvl1 Off
 CF.Stp 500.000 MHz
 Vid.BW 1 MHz
 AF.Att Unit
 10 dB [dBm]

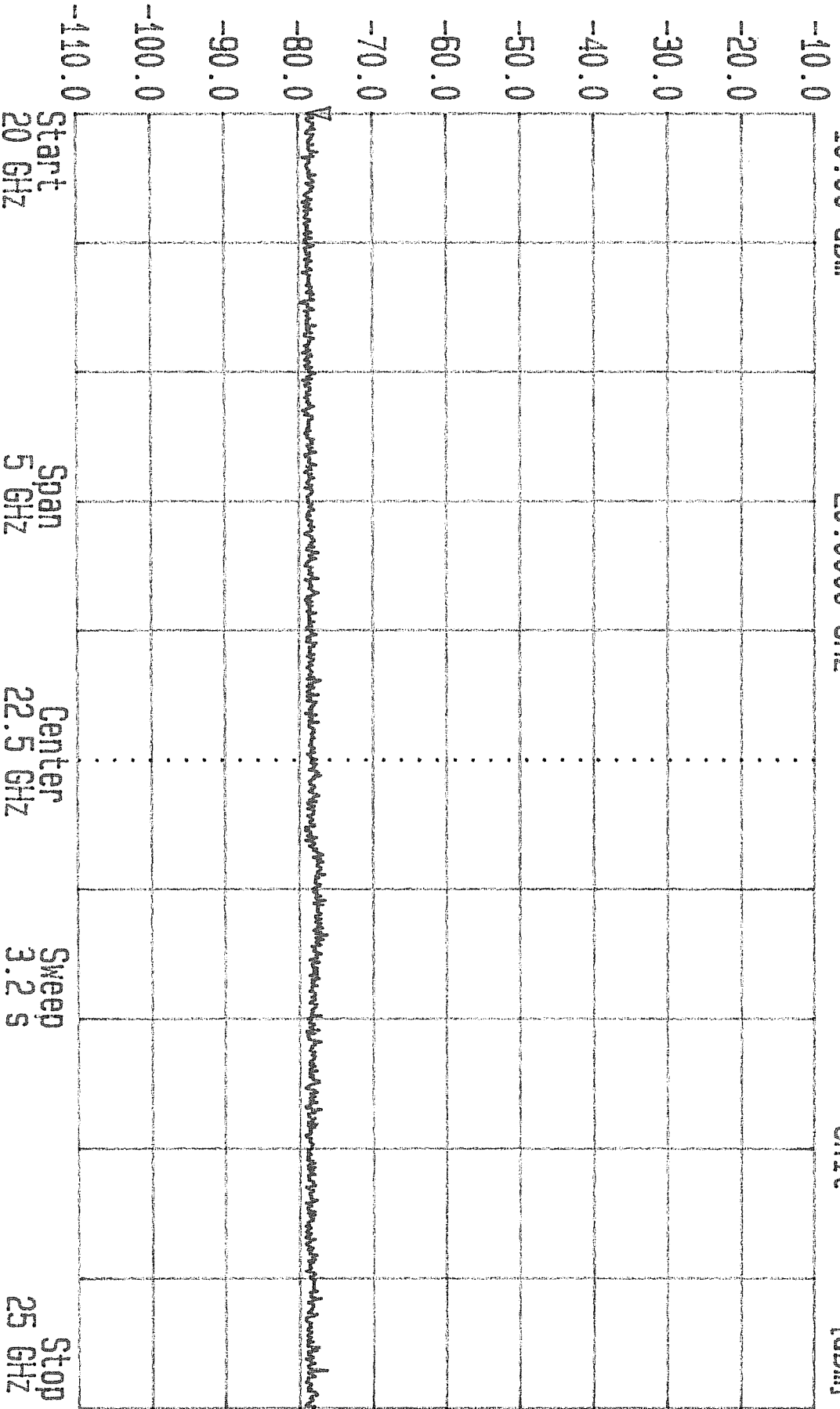


03-0193 CIRRONET HN110
 LOW CHANNEL



Date 08.Oct.'03 Time 15:05:08
 Ref.Lvl1 -10.00 dBm Marker -78.53 dBm
 20.0000 GHz

Res.BW 100 kHz [imp]
 TG.Lvl1 off
 CF.Stp 500.000 MHz
 Vid.BW 1 MHz
 RF.Att Unit
 10 dB [dBm]



Start 20 GHz
 Span 5 GHz
 Center 22.5 GHz
 Sweep 3.2 s
 Stop 25 GHz
 03-0193 CIRRONET HN110
 LOW CHANNEL

Data Plots

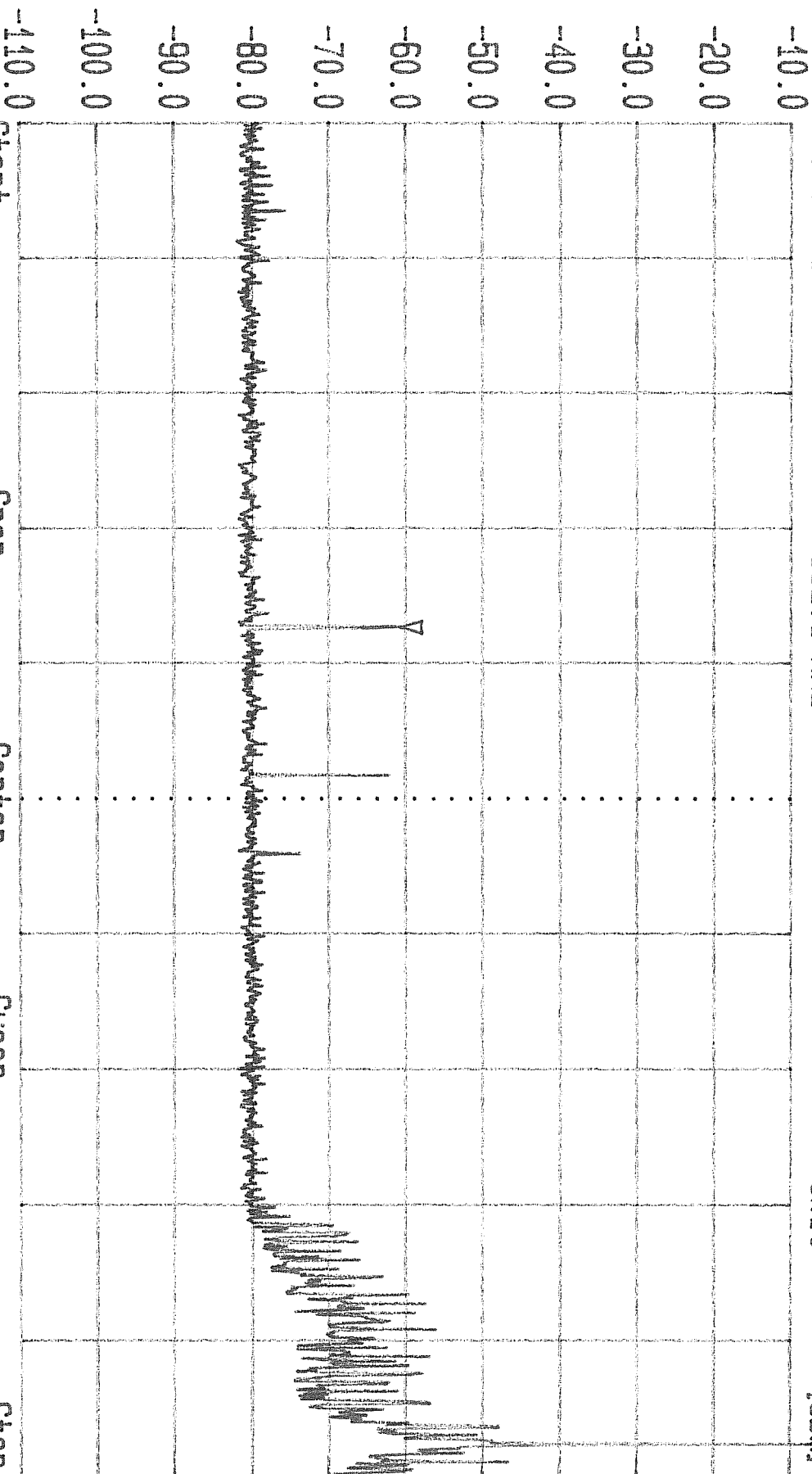
ACS Report Number: 03-0193-15B

Manufacturer: Cirronet, Inc.
Model: BT2022

Test: Conducted Spurious Emissions
Channel: Center



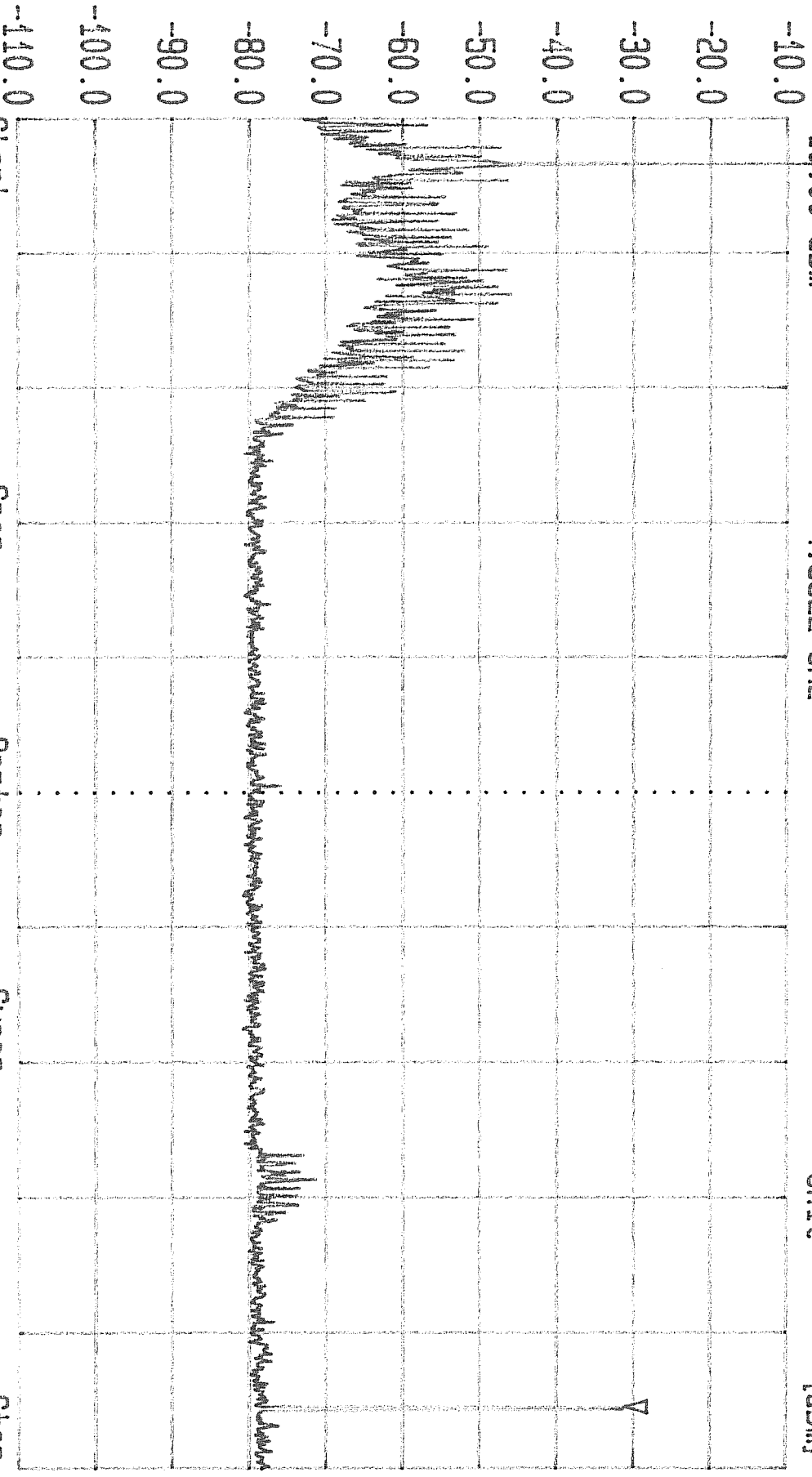
Date 08.Oct.'03 Time 15:13:07 MSG
 Ref.Lvl -10.00 dBm Marker -60.68 dBm 952.1 MHz
 Res.BW 100 kHz [imp] Vid.BW 1 MHz
 TG.Lvl Off
 CF.Stp 247.000 MHz
 AF.Att Unit [dBm]



Start 0.030 GHz Span 2.47 GHz Center 1.265 GHz Sweep 1.56 s Stop 2.5 GHz
 03-0193 CIRRONET HN110
 MID CHANNEL



Date 08.Oct.'03 Time 15:20:49 MSG
 Ref.Lvl -10.00 dBm Marker -31.02 dBm
 Res.BW 100 kHz [imp] Vid.BW 1 MHz
 TG.Lvl Off
 CF.Stp 265.000 MHz
 RF.Att Unit [dBm]



Start 2.35 GHz Span 2.65 GHz Center 3.675 GHz Sweep 1.68 s Stop 5 GHz
 03-0193 CIPRONET HN110
 MID CHANNEL



Date 08.Oct.'03 Time 15:25:07

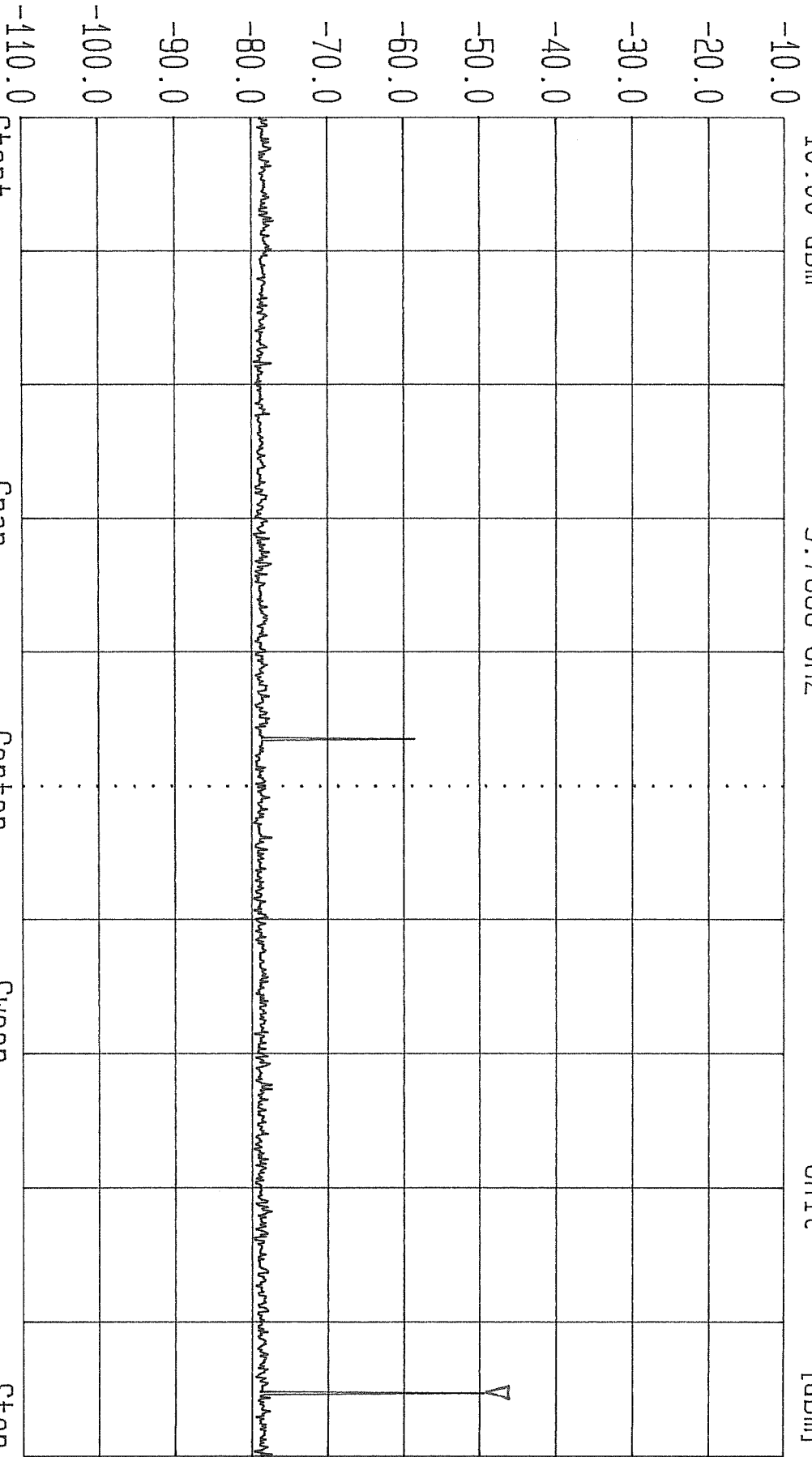
Ref.Lvl -10.00 dBm Marker -49.13 dBm 9.7666 GHz

Res.Bw 100 KHz [imp]

TG.Lvl off 500.000 MHz

Vid.Bw RF.Att Unit

1 MHz 10 dB [dBm]



Start 5 GHz

Span 5 GHz

Center 7.5 GHz

Sweep 3.2 s

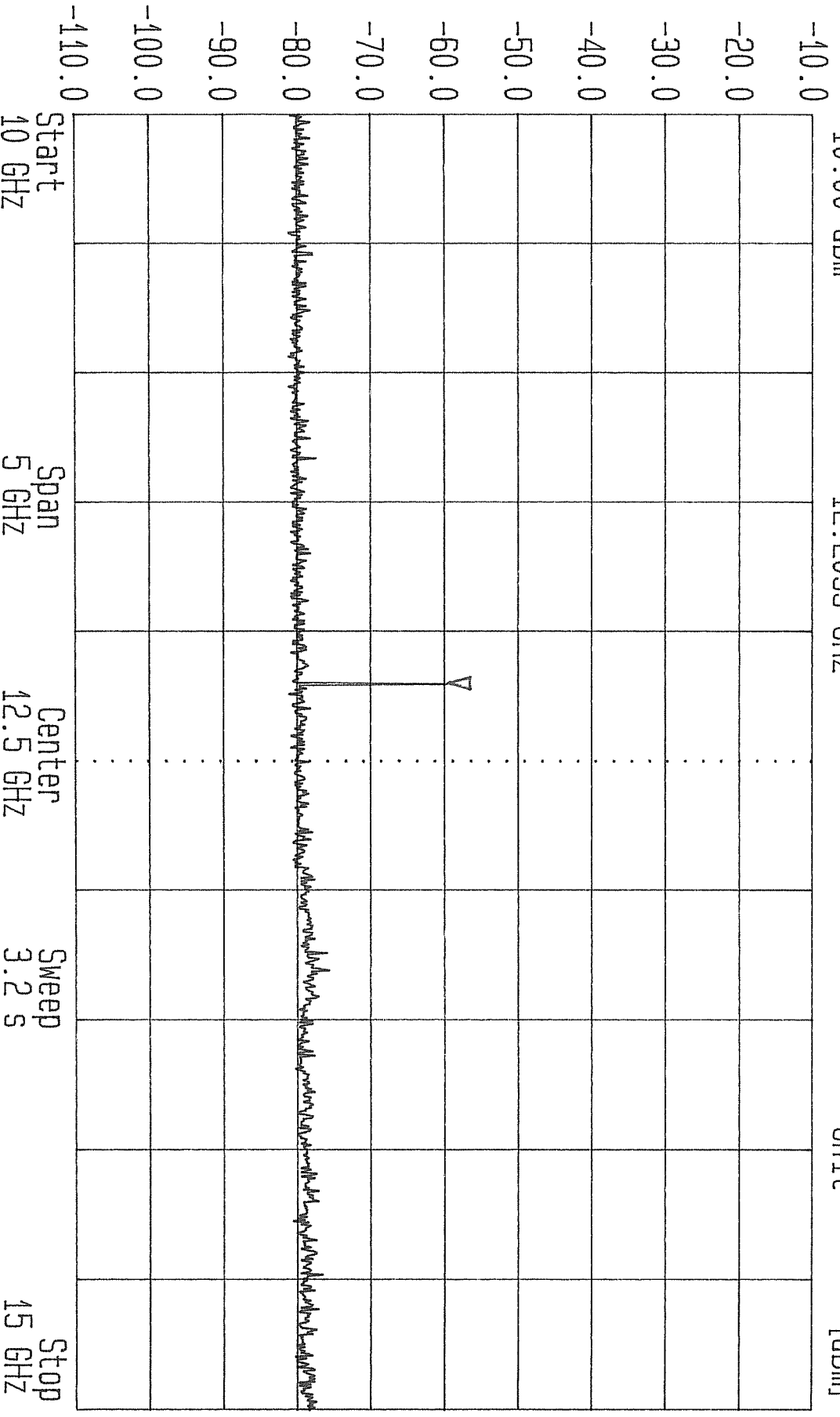
Stop 10 GHz

03-0193 CIRRONET HN110 MID CHANNEL



Date 08.Oct.'03 Time 15:33:26
 Ref.Lvl1 -10.00 dBm Marker -59.36 dBm
 12.2055 GHz

Res.Bw 100 KHz [imp] Vid.Bw 1 MHz
 TG.Lvl1 off
 CF.Stp 500.000 MHz
 RF.Att Unit
 10 dB [dBm]

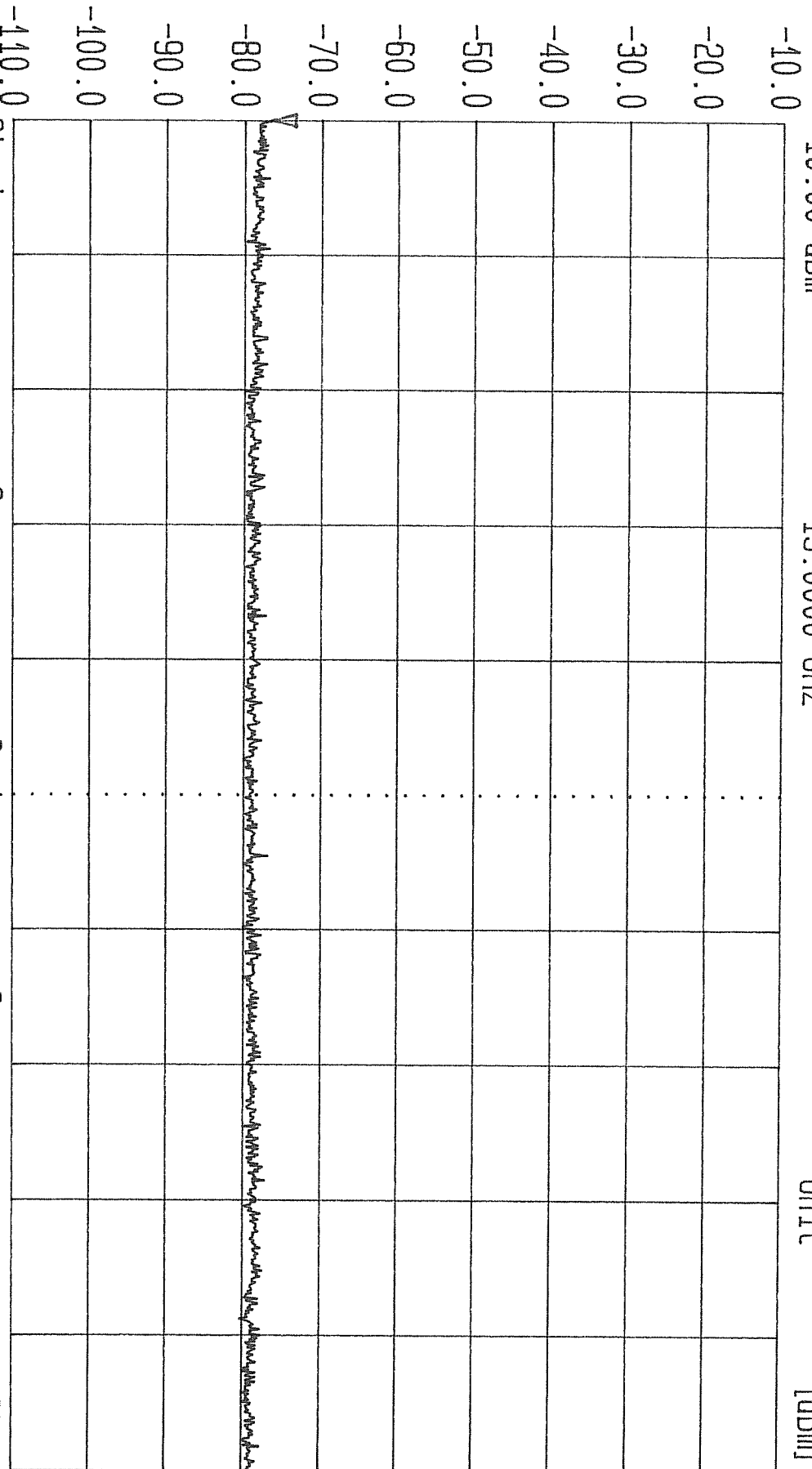


03-0193 CIRRONET HN110
 MID CHANNEL



Date 08.Oct.'03 Time 15:41:56
 Ref.Lvl -10.00 dBm Marker -76.12 dBm
 15.0000 GHz

Res.Bw 100 KHz [imp] Vid.Bw 1 MHz
 TG.Lvl off RF.Att Unit
 CF.Stp 500.000 MHz [dBm]

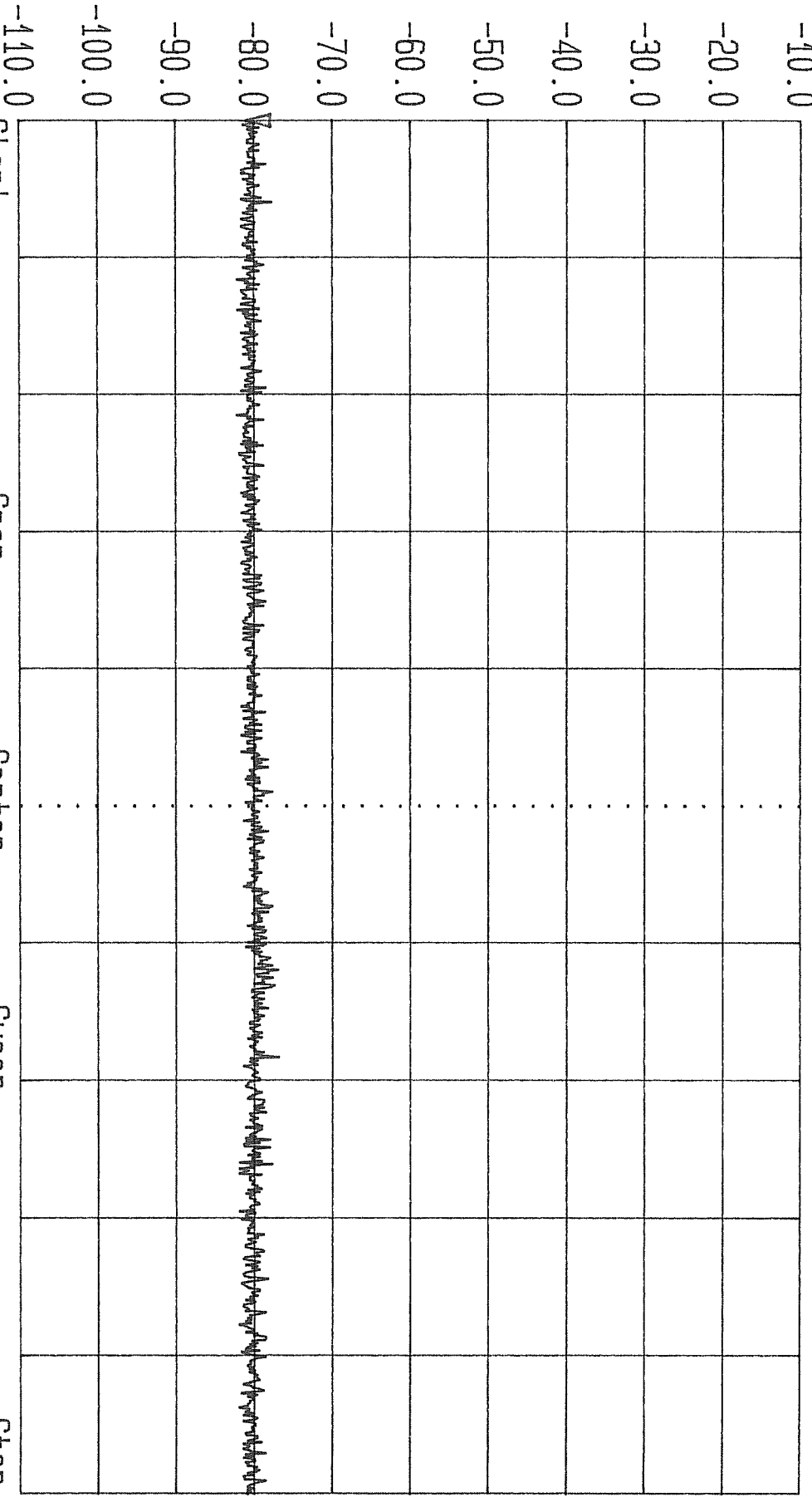


Start 15 GHz Span 5 GHz Center 17.5 GHz Sweep 3.2 s Stop 20 GHz
 03-0193 CIRRONET HN110
 MID CHANNEL



Date 08.Oct.'03 Time 15:47:20
 Ref.Lvl -10.00 dBm Marker -80.67 dBm
 20.0000 GHz

Res.Bw 100 kHz [imp]
 TG.Lvl off
 CF.Stp 500.000 MHz
 Vid.Bw 1 MHz
 RF.Att Unit
 10 dB [dBm]



Start 20 GHz
 Span 5 GHz
 Center 22.5 GHz
 Sweep 3.2 s
 Stop 25 GHz

03-0193 CIRRONET HN110
 MID CHANNEL

Data Plots

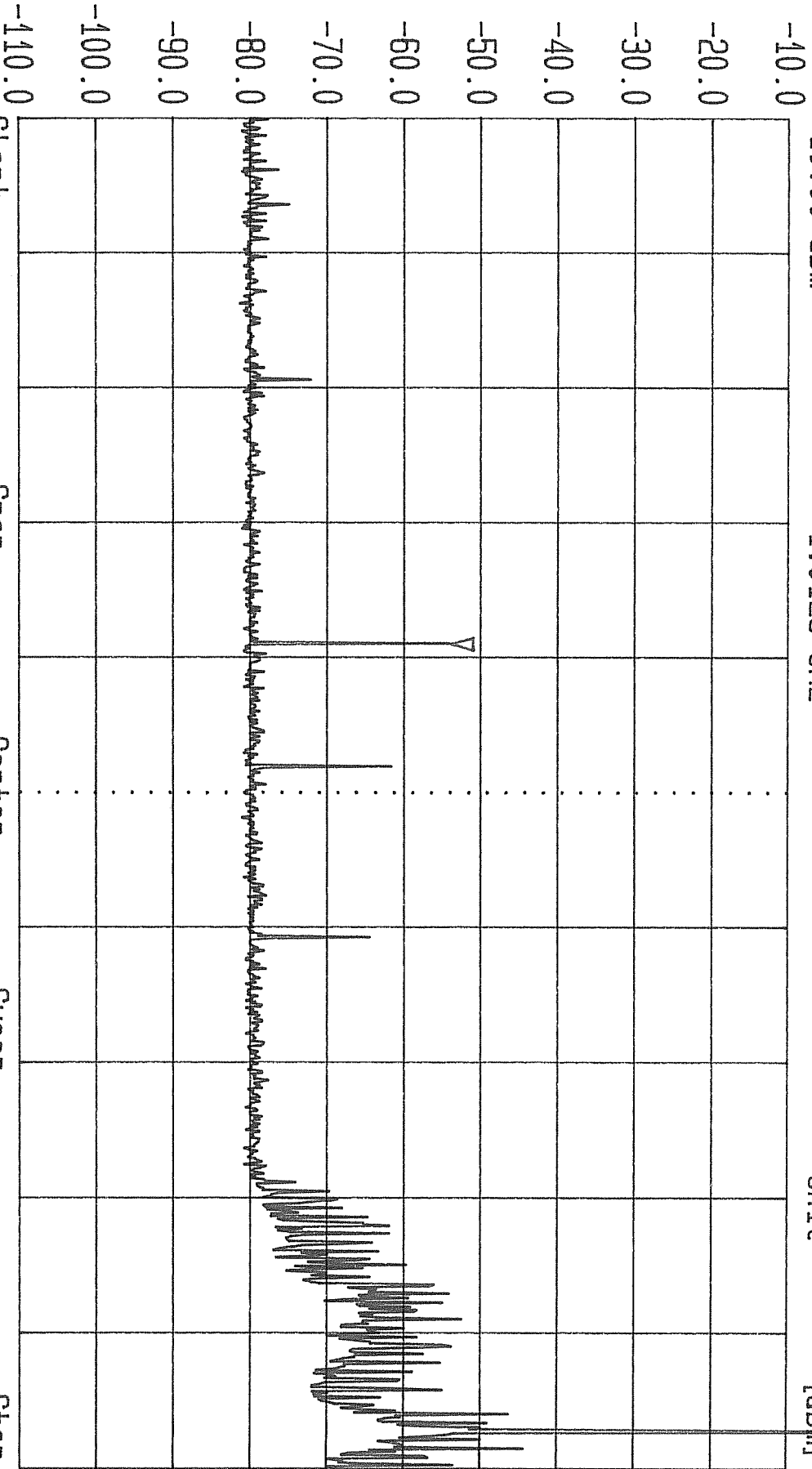
ACS Report Number: 03-0193-15B

Manufacturer: Cirronet, Inc.
Model: BT2022

Test: Conducted Spurious Emissions
Channel: High



Date 08.Oct.'03 Time 16:11:21 MSG
 Ref.Lvl -10.00 dBm Marker -53.85 dBm
 Res.Bw 100 KHz [imp] Vid.Bw 1 MHz
 CF.Stp 1.0128 GHz
 252.000 MHz off
 RF.Att Unit
 [dBm]

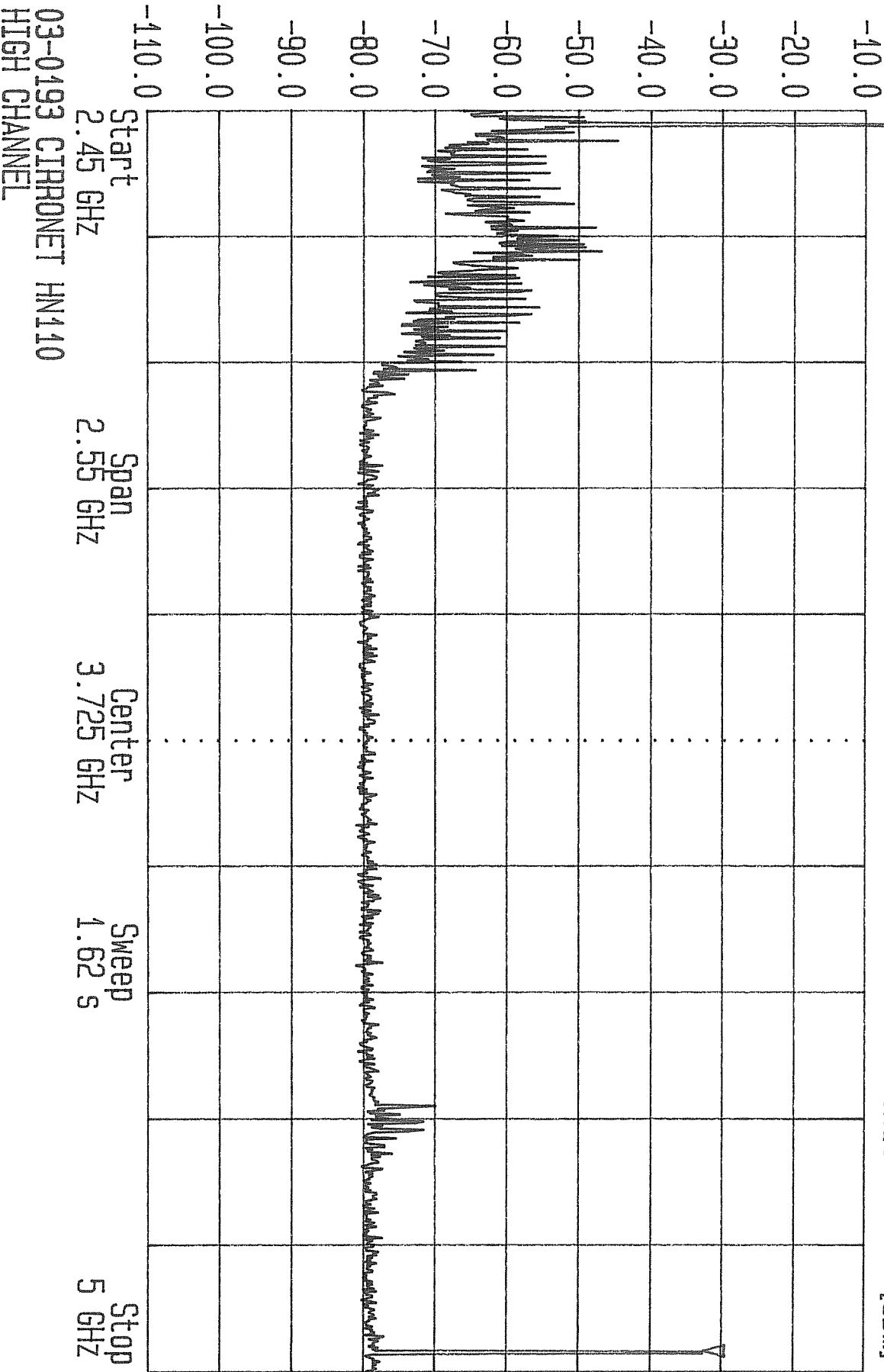


03-0193 CIRRONET HN110
 HIGH CHANNEL



Date 08.Oct.'03 Time 16:26:11
Ref.Lvl -10.00 dBm
Marker -32.34 dBm
4.9603 GHz

MSG
Res.Bw 100 KHz [imp] 1 MHz
TG.Lvl off
CF.Stp 255.000 MHz
Vid.Bw 10 dB
RF.Att Unit [dBm]

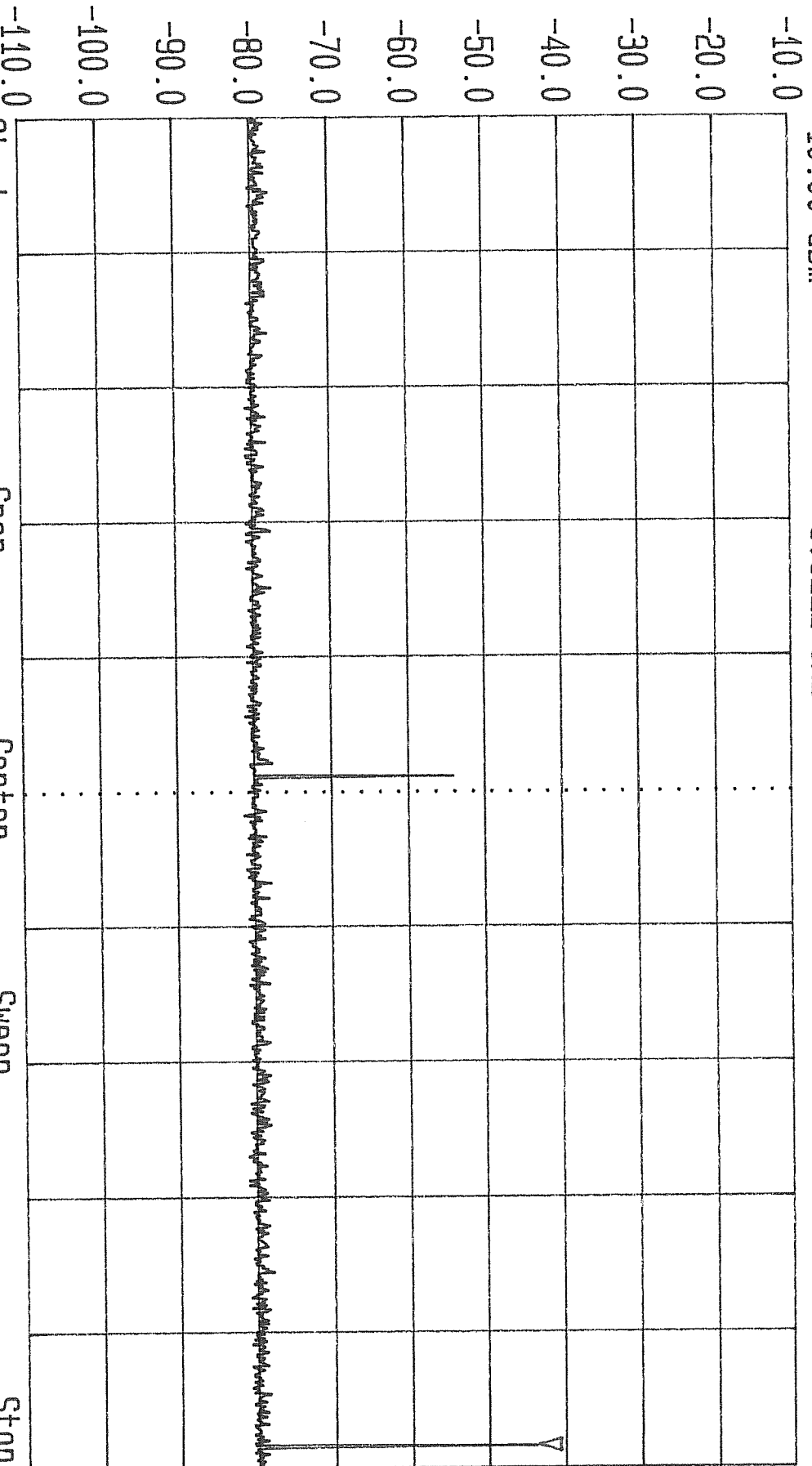


03-0193 CIPRONET HN110
HIGH CHANNEL



Date 08.Oct.'03 Time 16:33:43
 Ref.Lvl -10.00 dBm Marker -43.39 dBm
 9.9222 GHz

Res.Bw 100 KHz [imp] Vid.Bw 1 MHz
 TG.Lvl off
 CF.Stp 500.000 MHz
 RF.Att Unit
 [dBm]

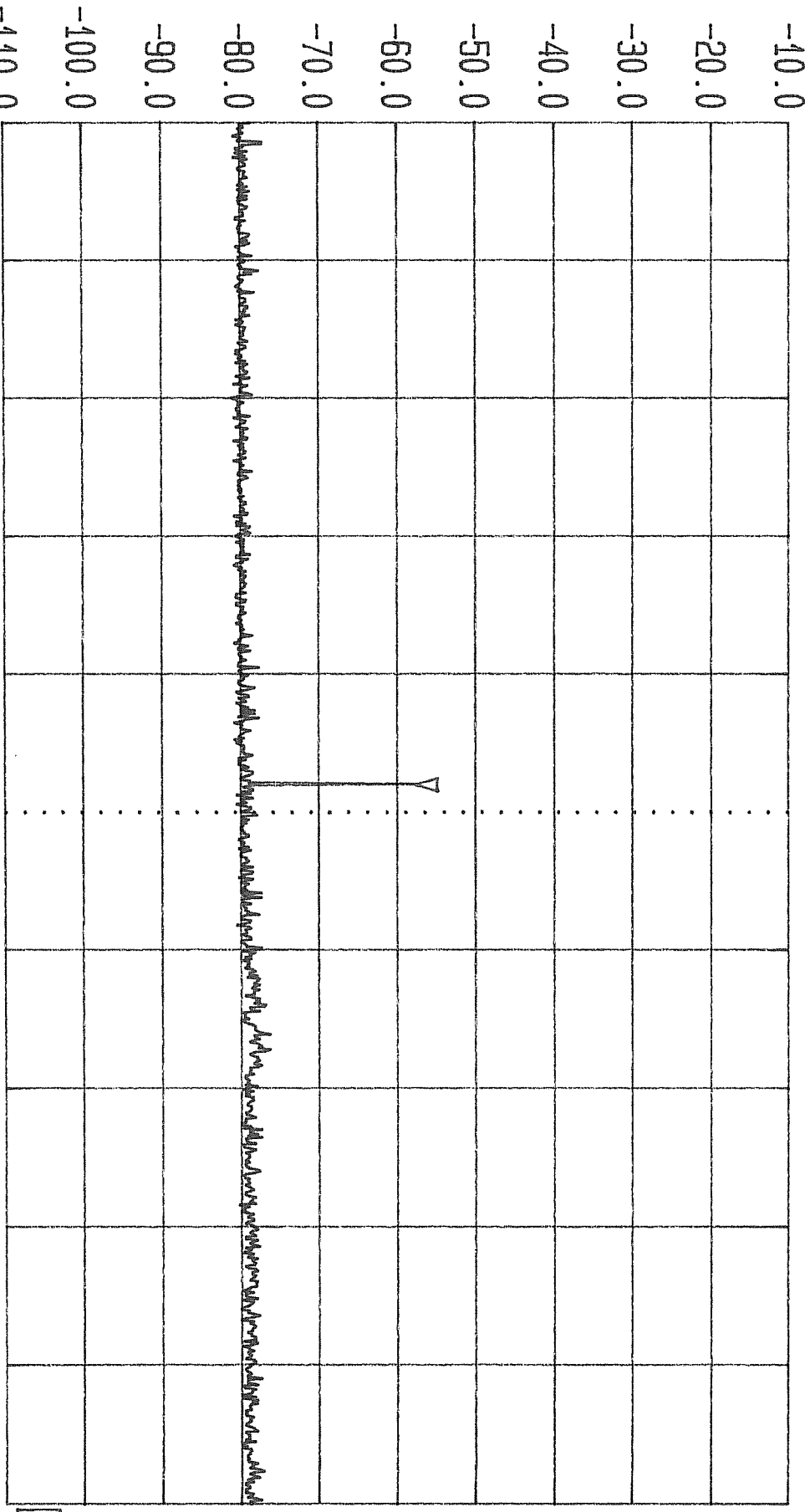


Start 5 GHz Span 5 GHz Center 7.5 GHz Sweep 3.2 s Stop 10 GHz
 03-0193 CIRRONET HN110
 HIGH CHANNEL



Date 10.Oct.'03 Time 10:08:51
 Ref.Lvl1 -10.00 dBm Marker -57.63 dBm
 12.4000 GHz

Res.Bw 100 KHz [imp] Vid.Bw 1 MHz
 TG.Lvl1 off
 CF.Stp 500.000 MHz
 RF.Att Unit 10 dB [dBm]



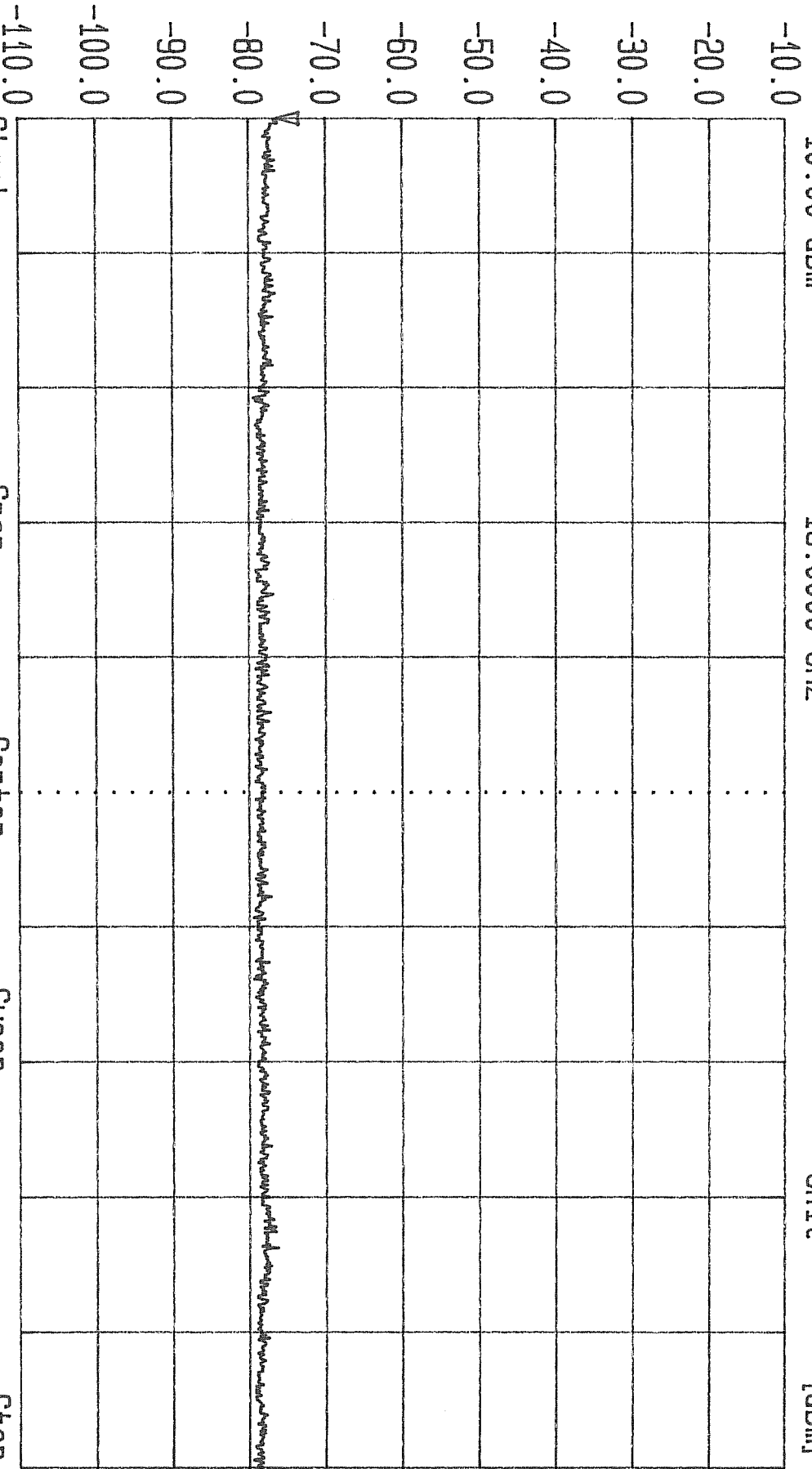
Start 10 GHz Span 5 GHz Center 12.5 GHz Sweep 4.0 s Stop 15 GHz
 03-0193 CIRRONET HN110
 HIGH CHANNEL

[FI]



Date 10.Oct.'03 Time 10:12:48
 Ref.Lvl -10.00 dBm
 Marker -76.27 dBm
 15.0000 GHz

Res.Bw 100 KHz [imp]
 TG.Lvl off
 CF.Stp 500.000 MHz
 Vid.Bw 1 MHz
 RF.Att Unit
 10 dB [dBm]



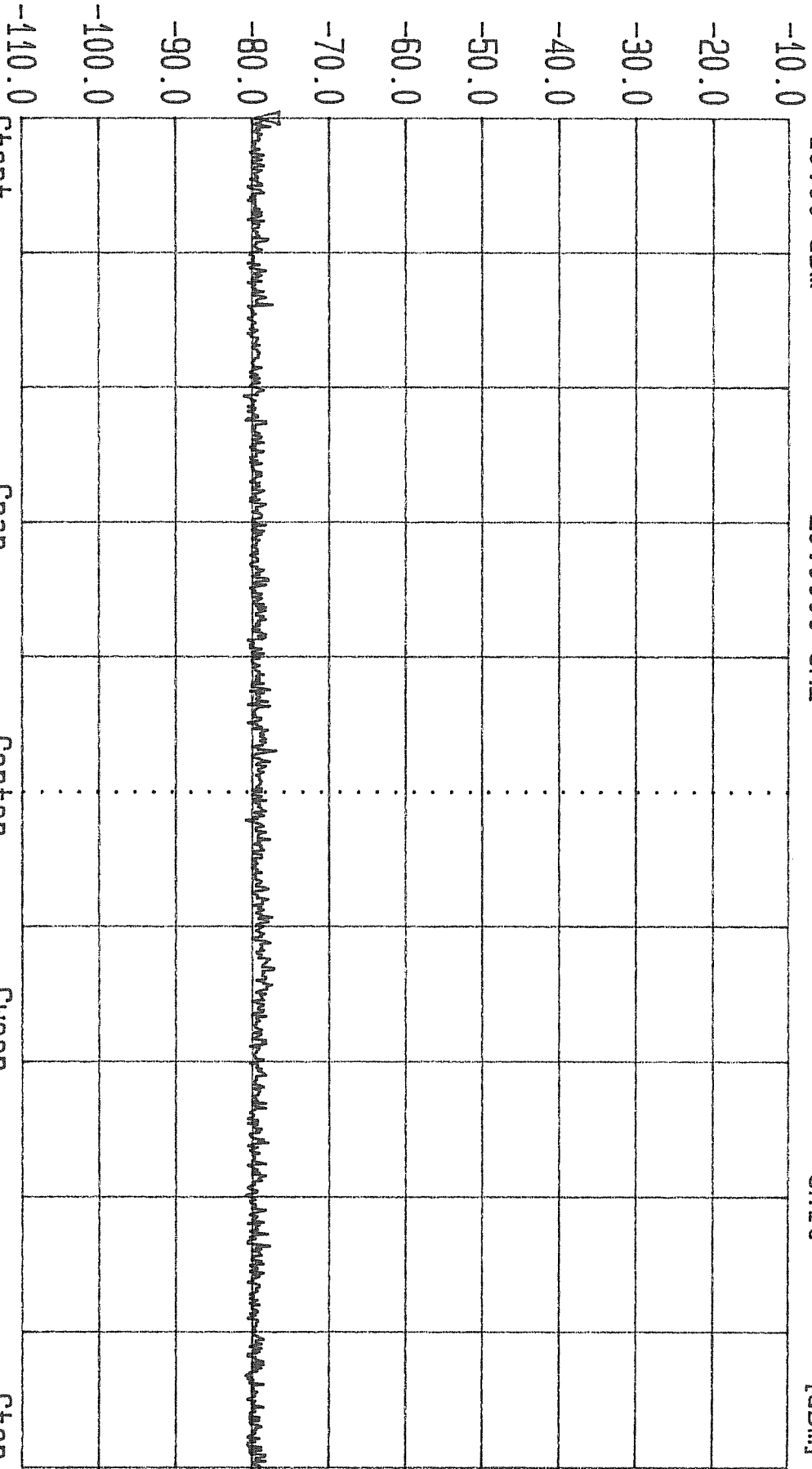
Start 15 GHz
 Span 5 GHz
 Center 17.5 GHz
 Sweep 4.0 s
 Stop 20 GHz
 03-0193 CIRRONET HN110
 HIGH CHANNEL

FI



Date 10.Oct.'03 Time 10:18:12
 Ref.Lvl -10.00 dBm Marker -79.17 dBm
 20.0000 GHz

Res.Bw 100 KHz [imp]
 TG.Lvl off
 CF.Stp 500.000 MHz
 Vid.Bw 1 MHz
 RF.Att Unit
 10 dB [dBm]



03-0193 CIRRONET HN110
 HIGH CHANNEL

FI