

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

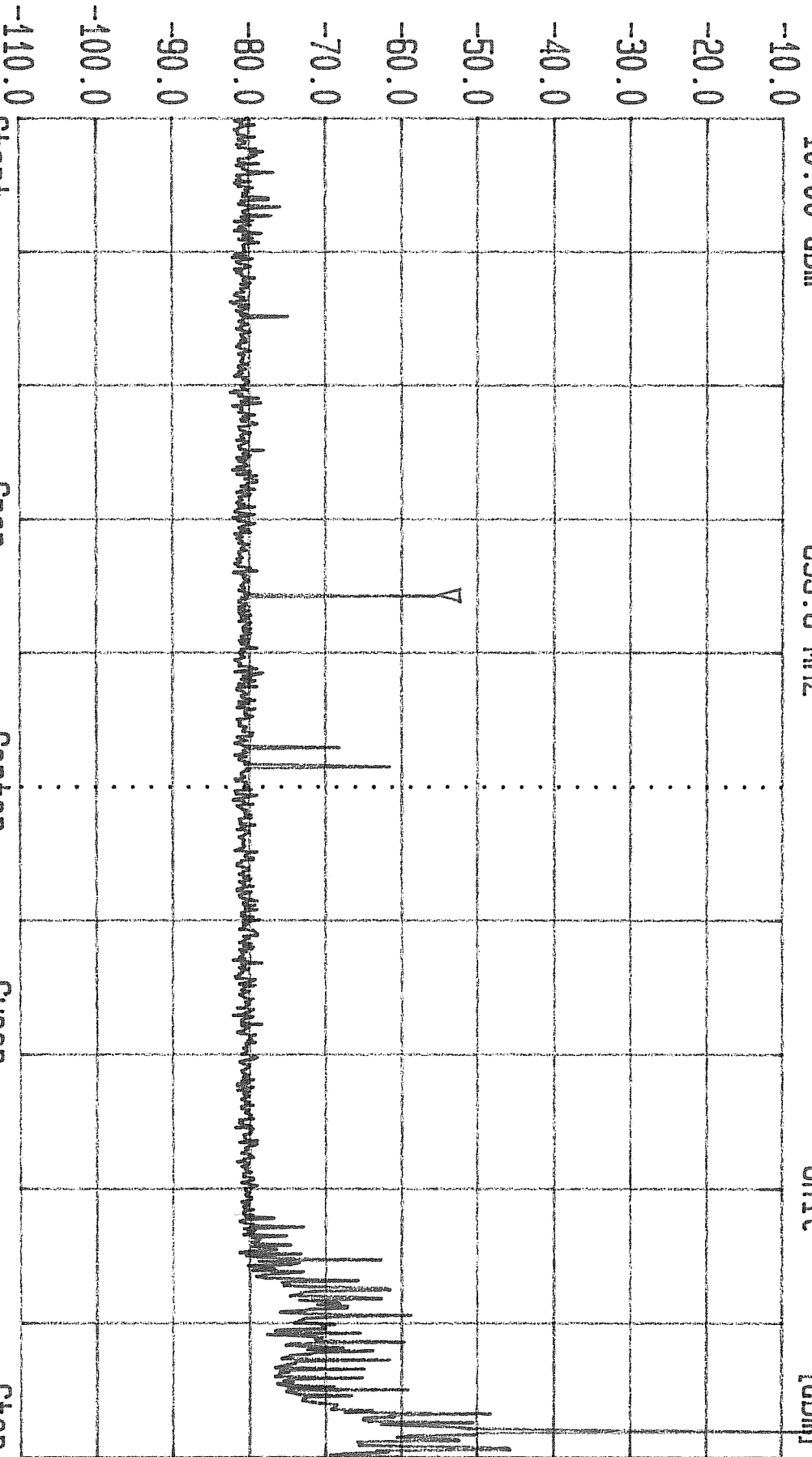
ACS Report Number: 03-0193-15B

Manufacturer: Cirronet, Inc.
Model: BT2022

Test: Conducted Spurious Emissions
Channel: Low



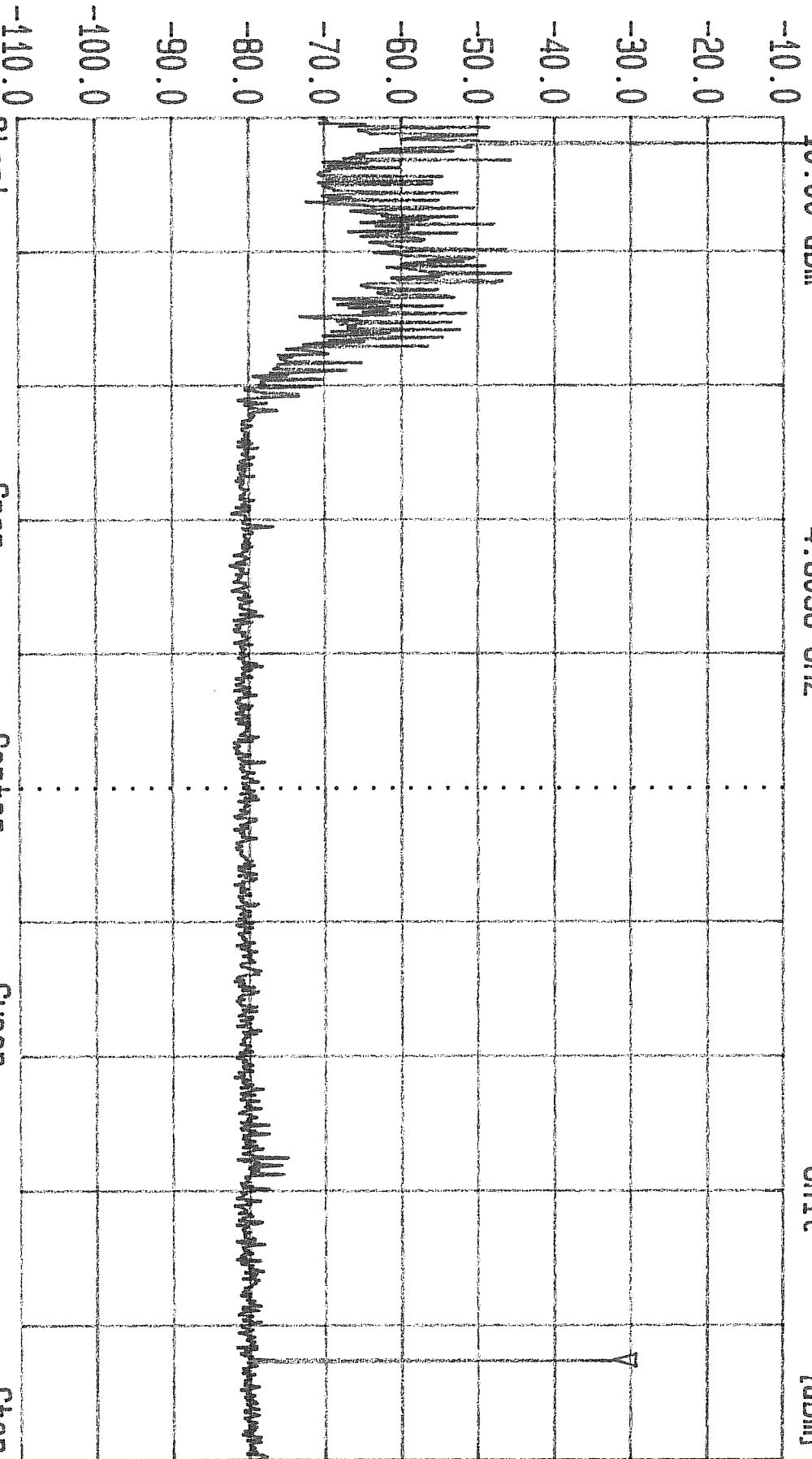
Date 08.Oct.'03 Time 14:45:25 MSG
Ref.Lvl -10.00 dBm Marker -55.02 dBm 895.8 MHz
Res.Bw 100 kHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 242.000 MHz
RF.Att Unit 10 dB [dBm]



Start 0.030 GHz Span 2.42 GHz Center 1.24 GHz Sweep 1.54 s Stop 2.45 GHz
03-0193 CIRRONET HN110
LOW CHANNEL



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

Res.Bw 100 kHz [imp]

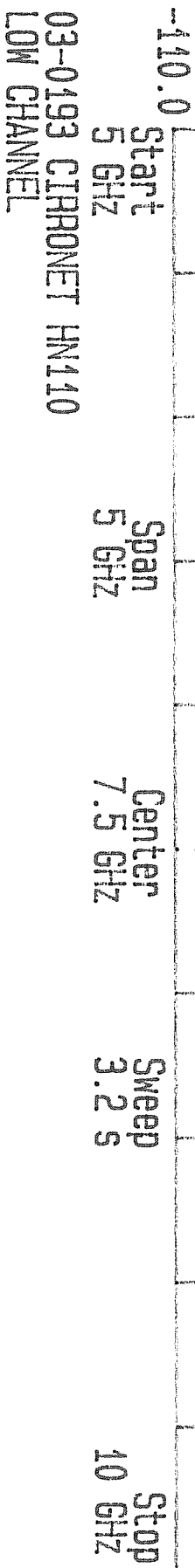
Vid.Bw 1 MHz

10 dB [dBm]

9.6111 GHz

CF.Stp 500.000 MHz

AF.Att Unit



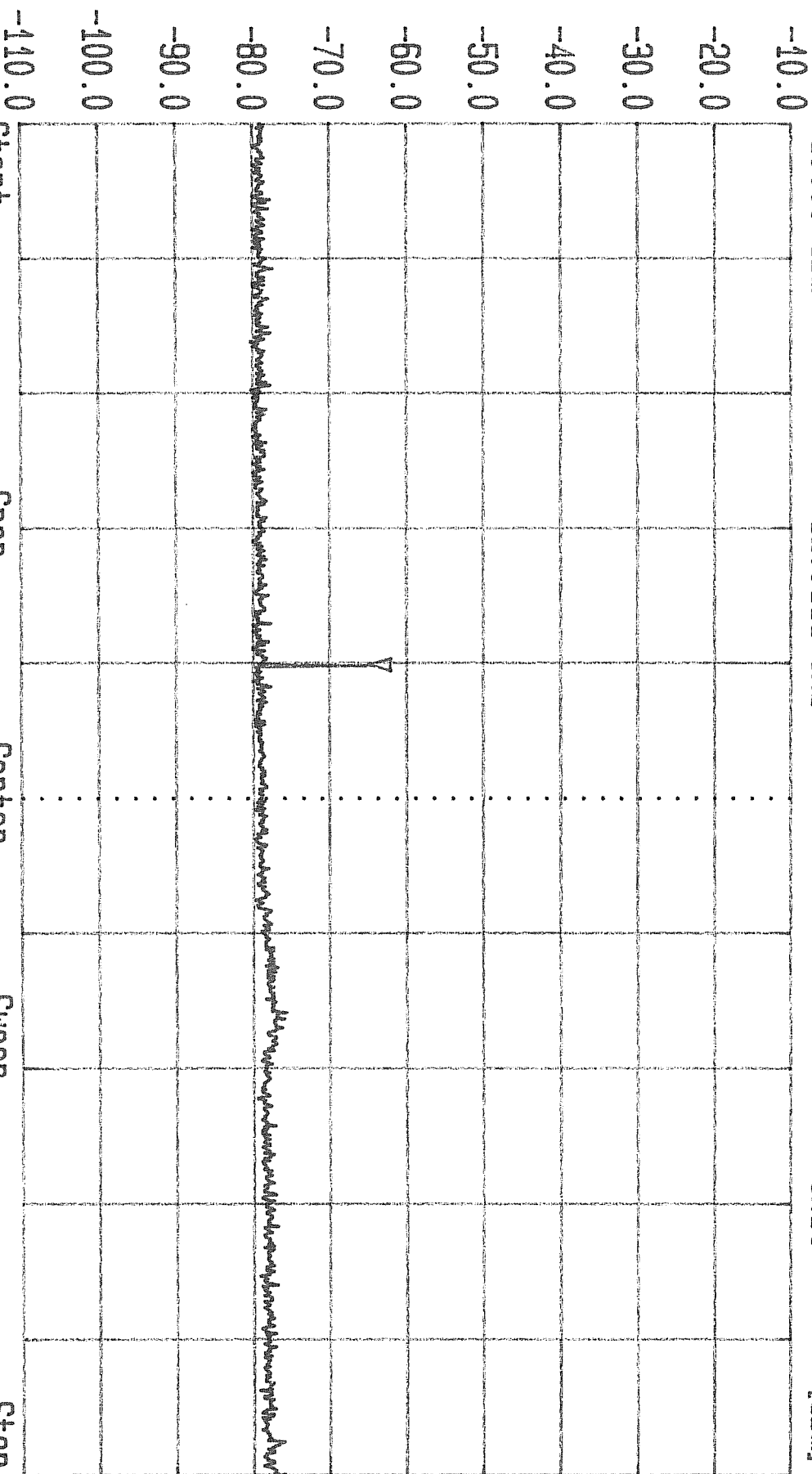


Date 08.Oct.'03 Time 14:56:43
Ref.Lvl -10.00 dBm
Marker 12.0111 GHz

-64.82 dBm

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 500.000 MHz

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



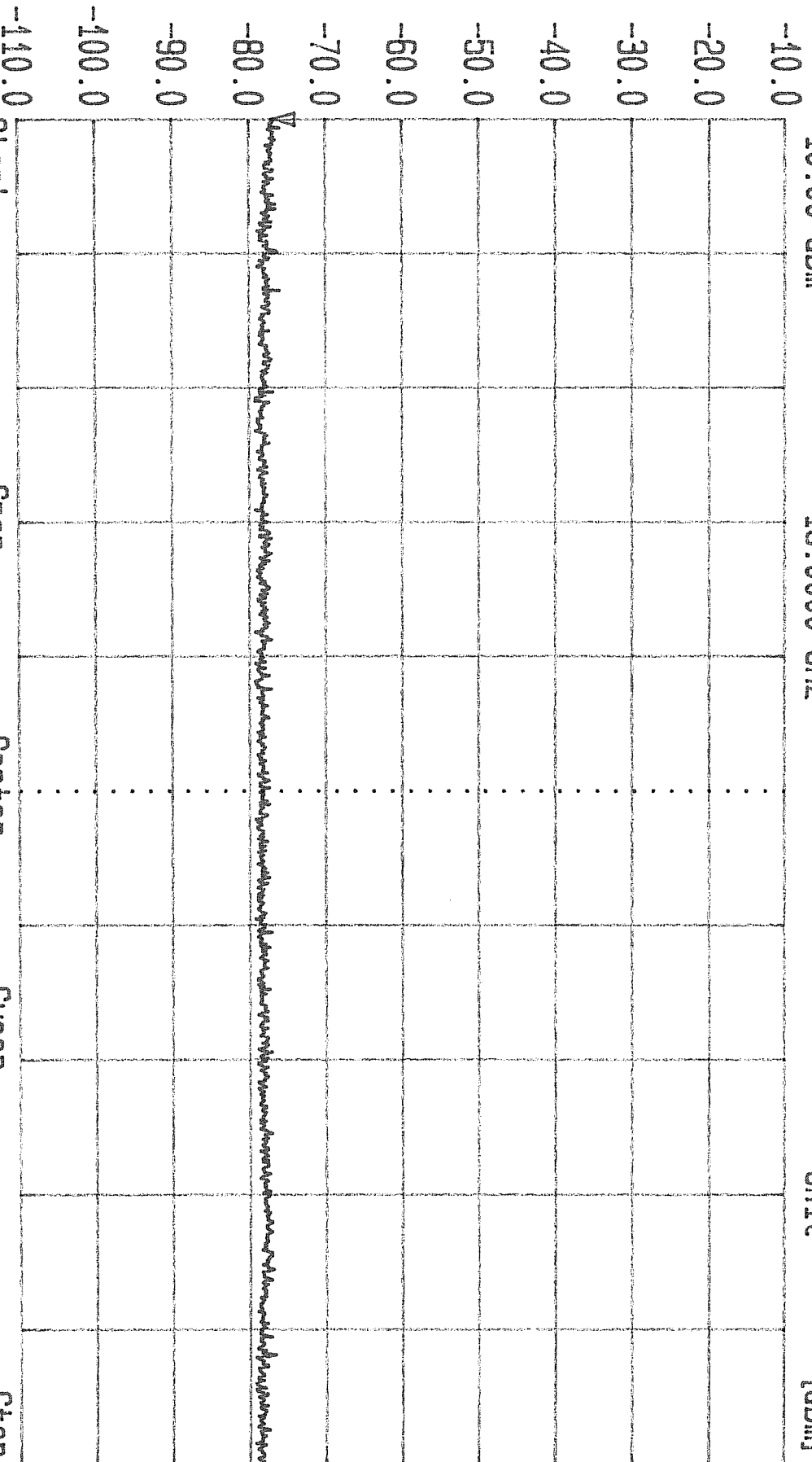
Start 10 GHz
Span 5 GHz
Center 12.5 GHz
Sweep 3.2 s
Stop 15 GHz
03-0193 CIRRONET HN110
LOW CHANNEL



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

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 500.000 MHz

Vid.Bw 1 MHz
AF.Att Unit 10 dB [dBm]



03-0193 CIRRONET HN110
LOW CHANNEL

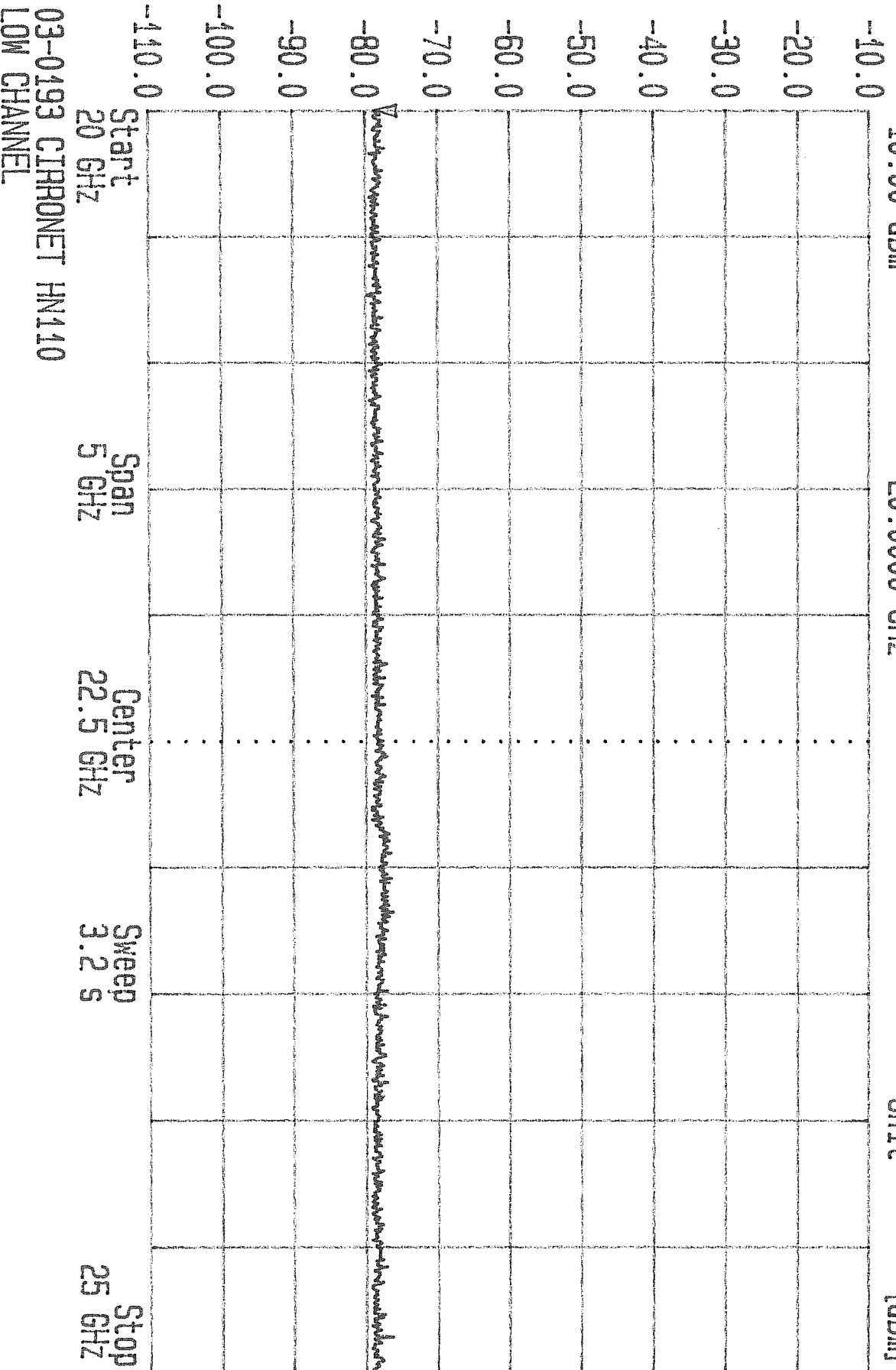


Date 08.Oct.'03 Time 15:05:08
Ref.Lvl -10.00 dBm Marker -78.53 dBm

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 500.000 MHz

Vid.Bw 1 MHz
AF.Att Unit

10 dB [dBm]



Data Plots

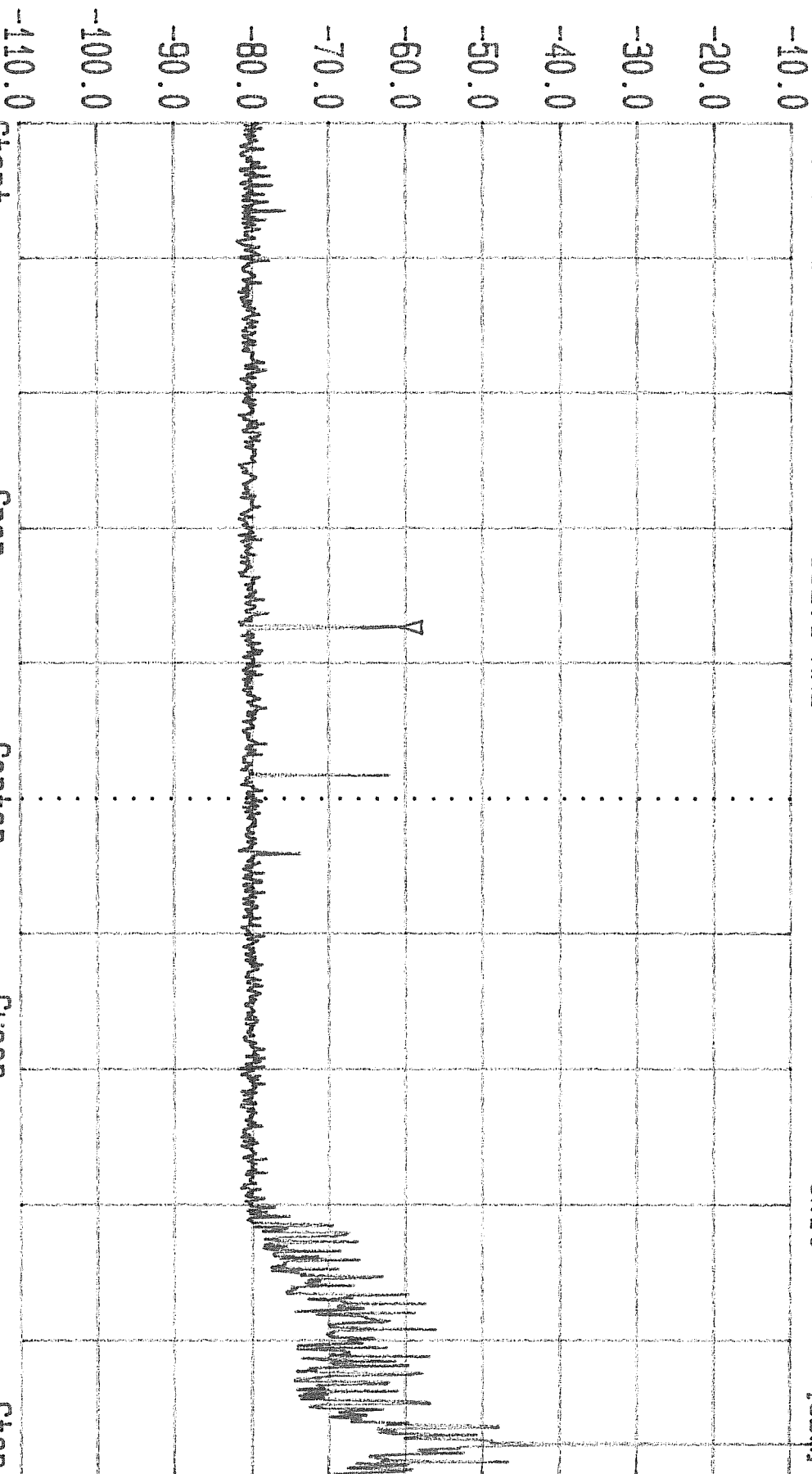
ACS Report Number: 03-0193-15B

Manufacturer: Cirronet, Inc.
Model: BT2022

Test: Conducted Spurious Emissions
Channel: Center



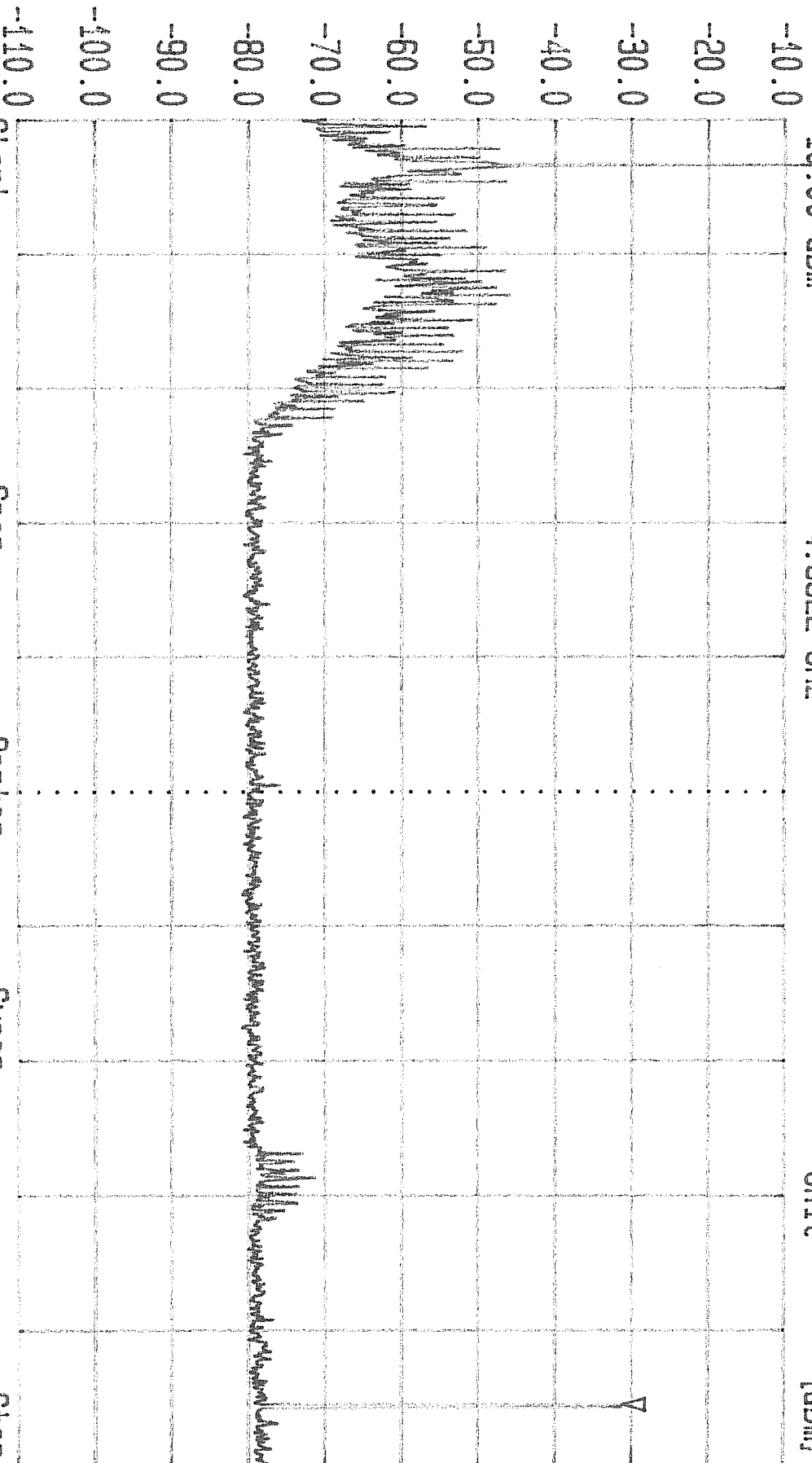
Date 08.Oct.'03 Time 15:13:07 MSG
Ref.Lvl -10.00 dBm Marker -60.68 dBm 952.1 MHz
Res.Bw 100 kHz [imp] Vid.Bw 1 MHz
TG.Lvl off 247.000 MHz
AF.Att Unit 10 dB [dBm]



Start 0.030 GHz Span 2.47 GHz Center 1.255 GHz Sweep 1.56 s Stop 2.5 GHz
03-0193 CIRRONET HN110
MID CHANNEL



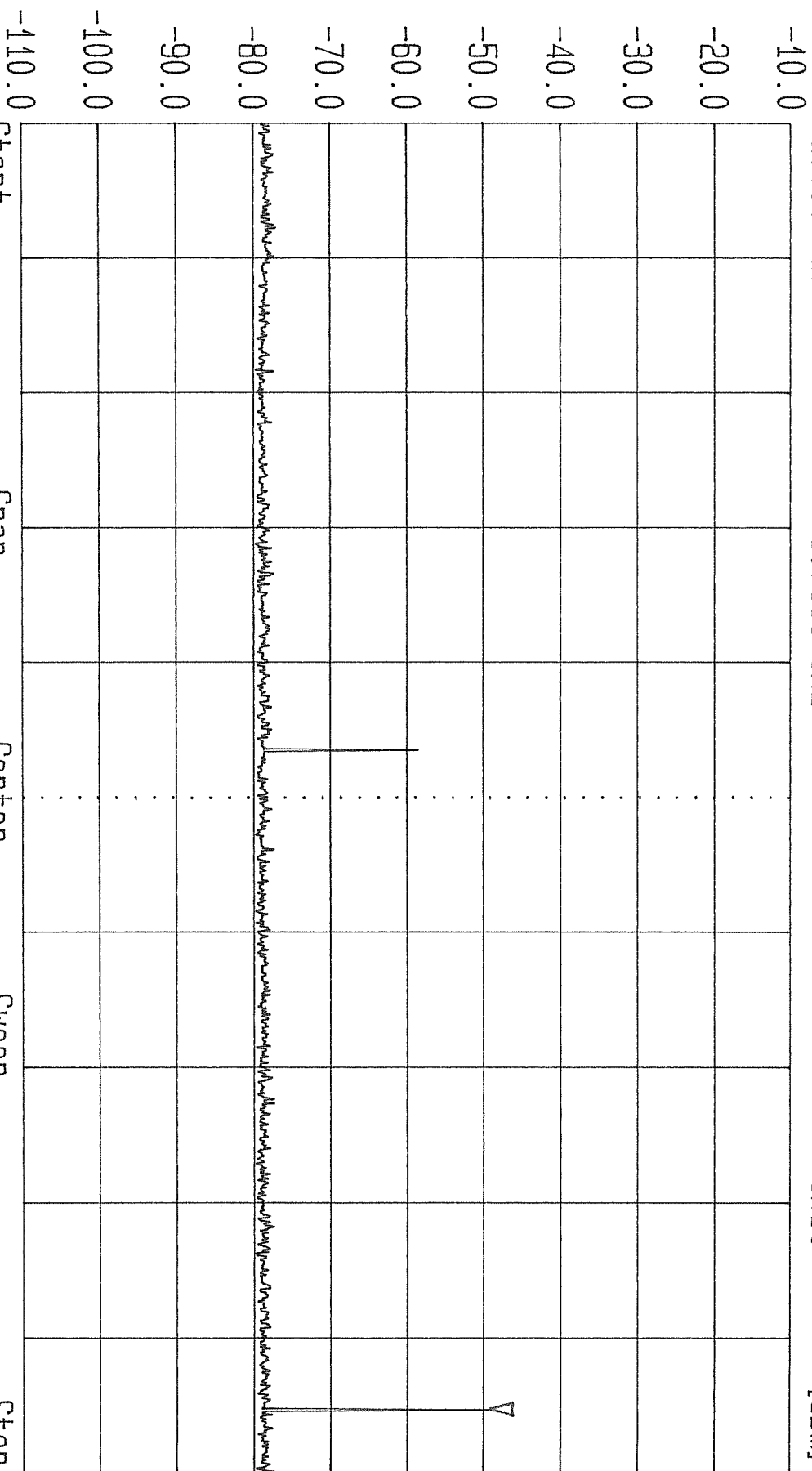
Date 08.Oct.'03 Time 15:20:49 MSG
Ref.Lvl -19.00 dBm Marker -31.02 dBm
Res.BW 100 kHz [imp] Vid.BW 1 MHz
TG.Lvl Off
CF.Stp 265.000 MHz
RF.Att Unit
10 dB [dBm]



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



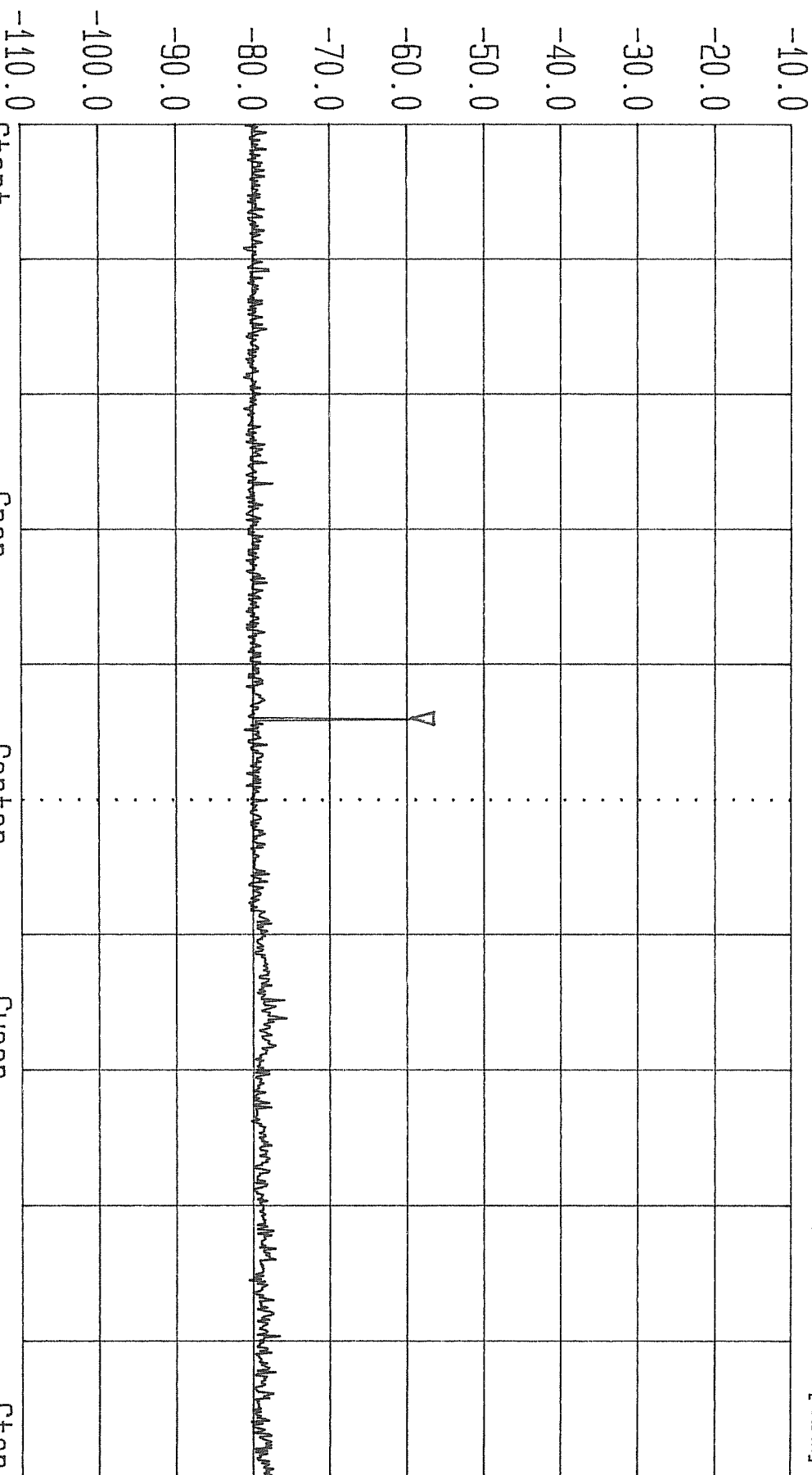
Date 08.Oct.'03 Time 15:25:07 Res.Bw 100 kHz [imp] Vid.Bw 1 MHz
Ref.Lvl Marker -49.13 dBm CF.Stp off RF.Att 10 dB
-10.00 dBm 9.7666 GHz Unit [dBm]



03-0193 CIRRONET HN110
MID CHANNEL



Date 08.Oct.'03 Time 15:33:26 Res.Bw 100 kHz [imp] Vid.Bw 1 MHz
Ref.Lvl -10.00 dBm Marker -59.36 dBm CF.Stp 500.000 MHz off RF.Att Unit 10 dB [dBm]

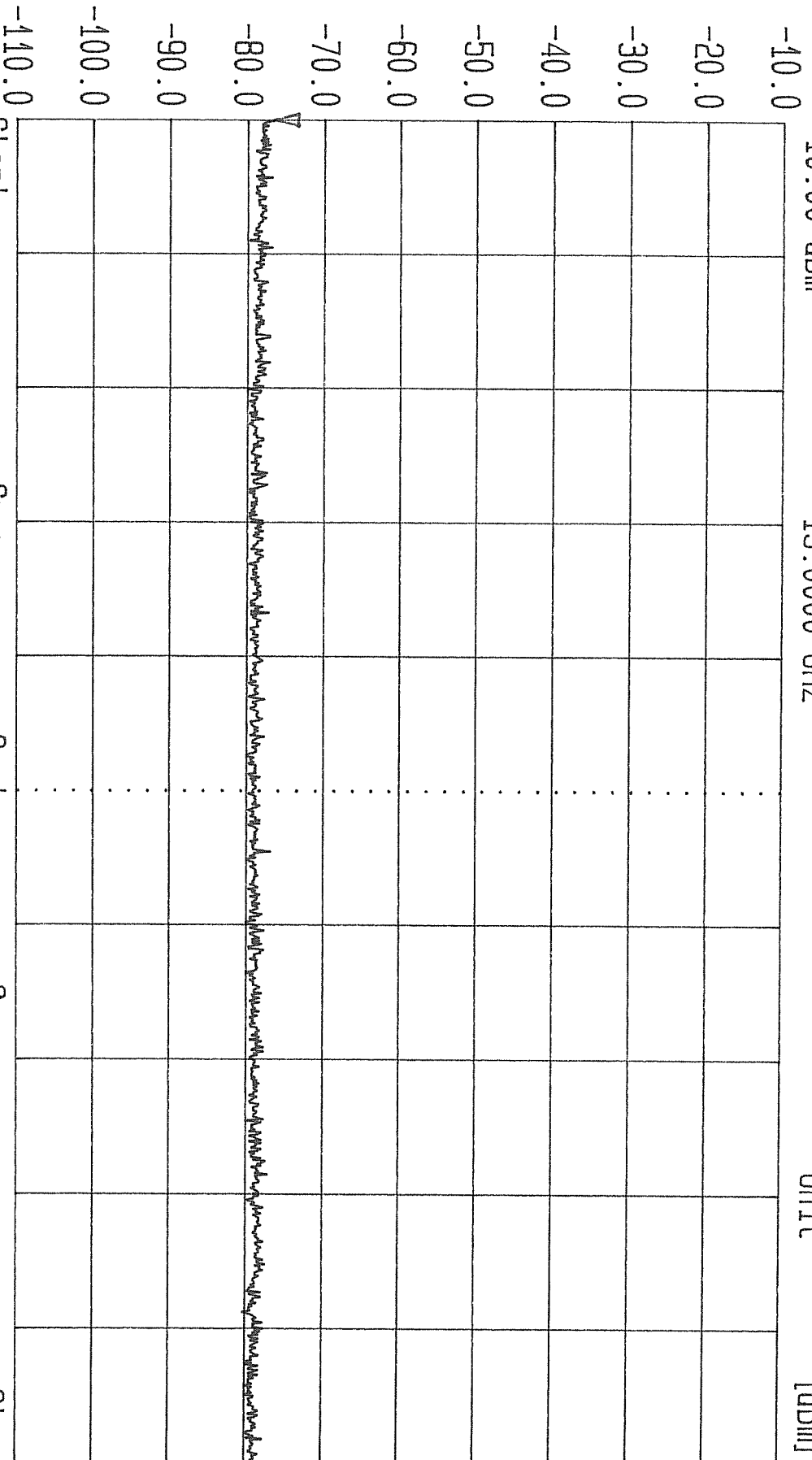


Start 10 GHz Span 5 GHz Center 12.5 GHz Sweep 3.2 s Stop 15 GHz
03-0193 CIRRONET HN110
MID CHANNEL



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

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

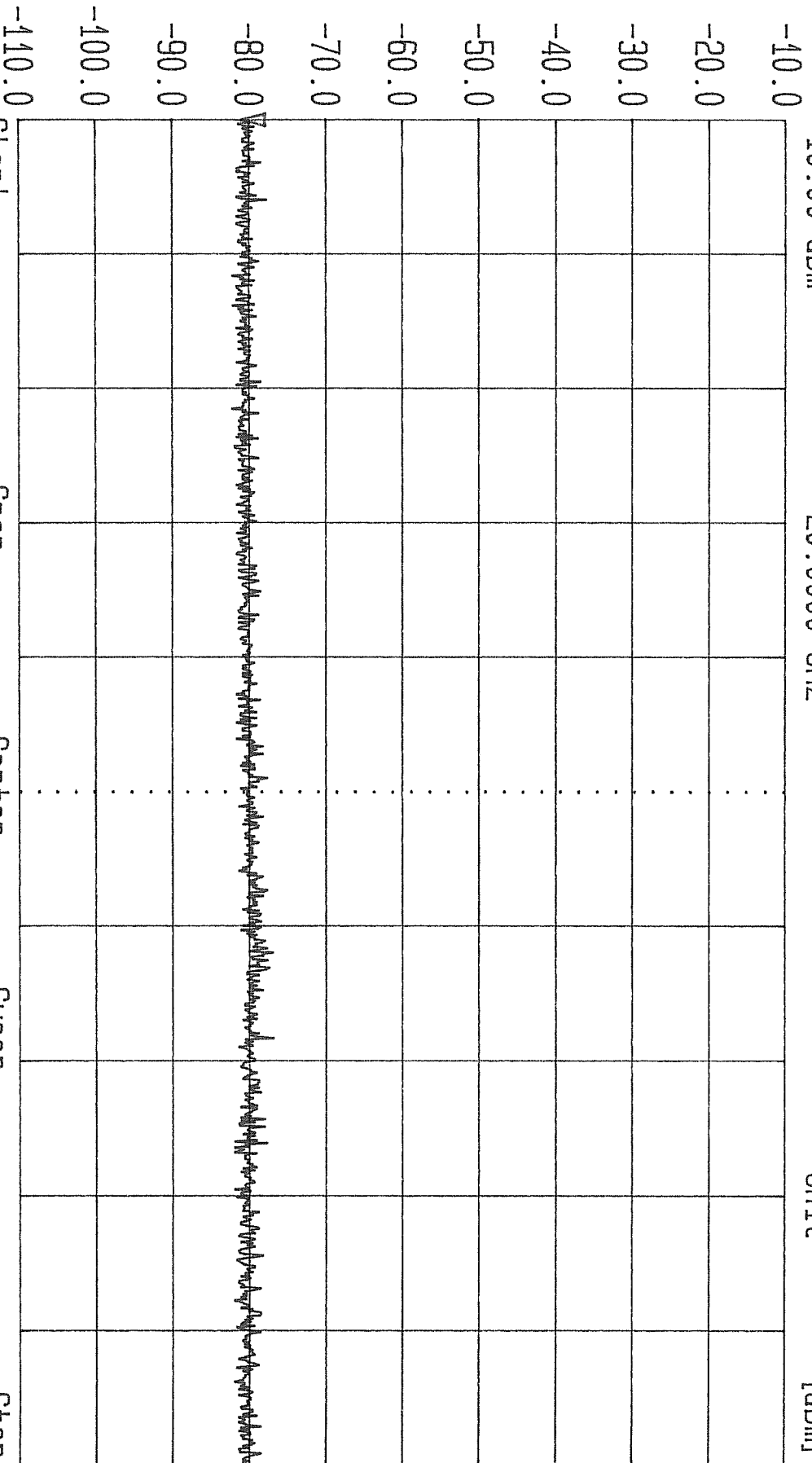


03-0193 CIRRONET HN110
MID CHANNEL



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

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

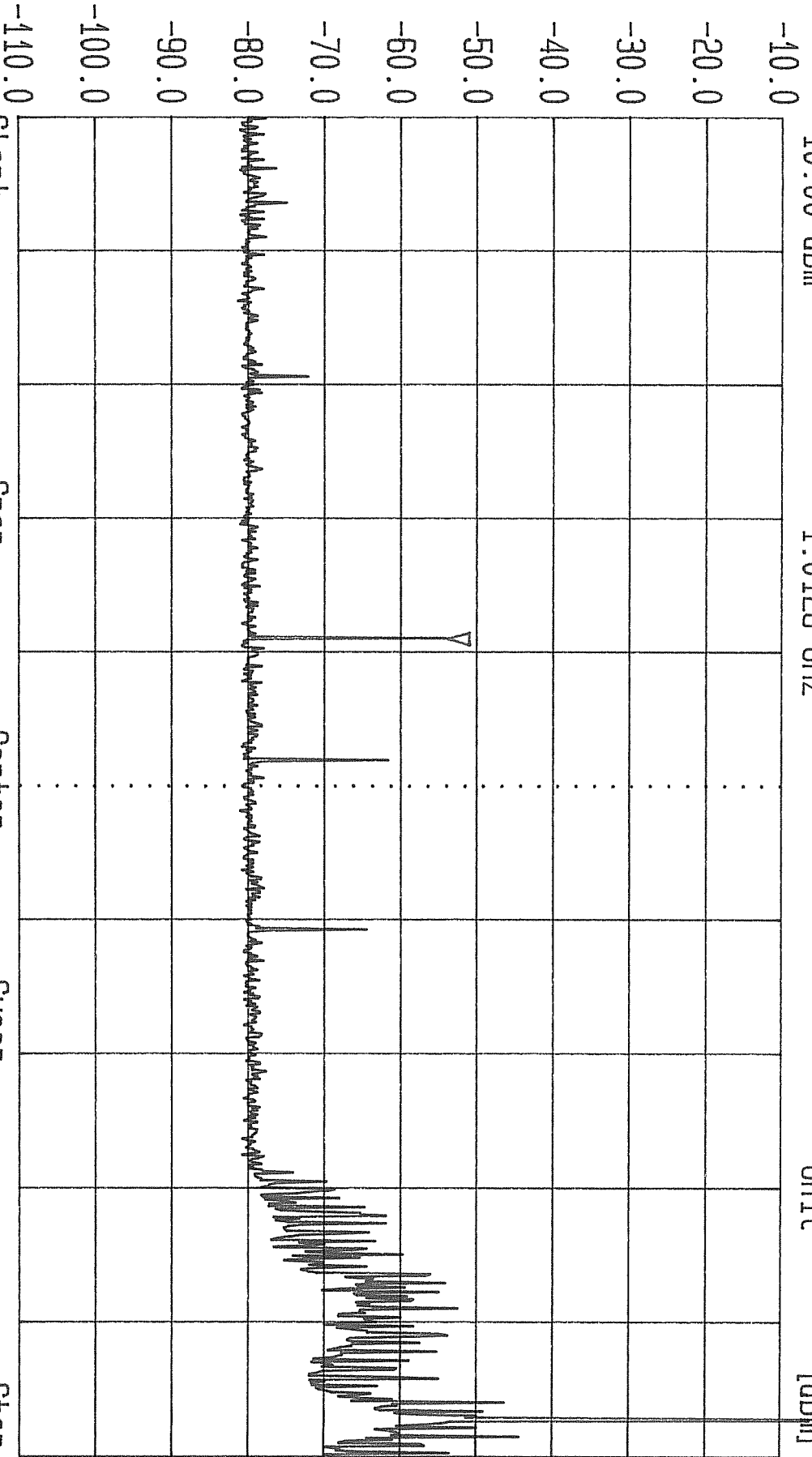
ACS Report Number: 03-0193-15B

Manufacturer: Cirronet, Inc.
Model: BT2022

Test: Conducted Spurious Emissions
Channel: High



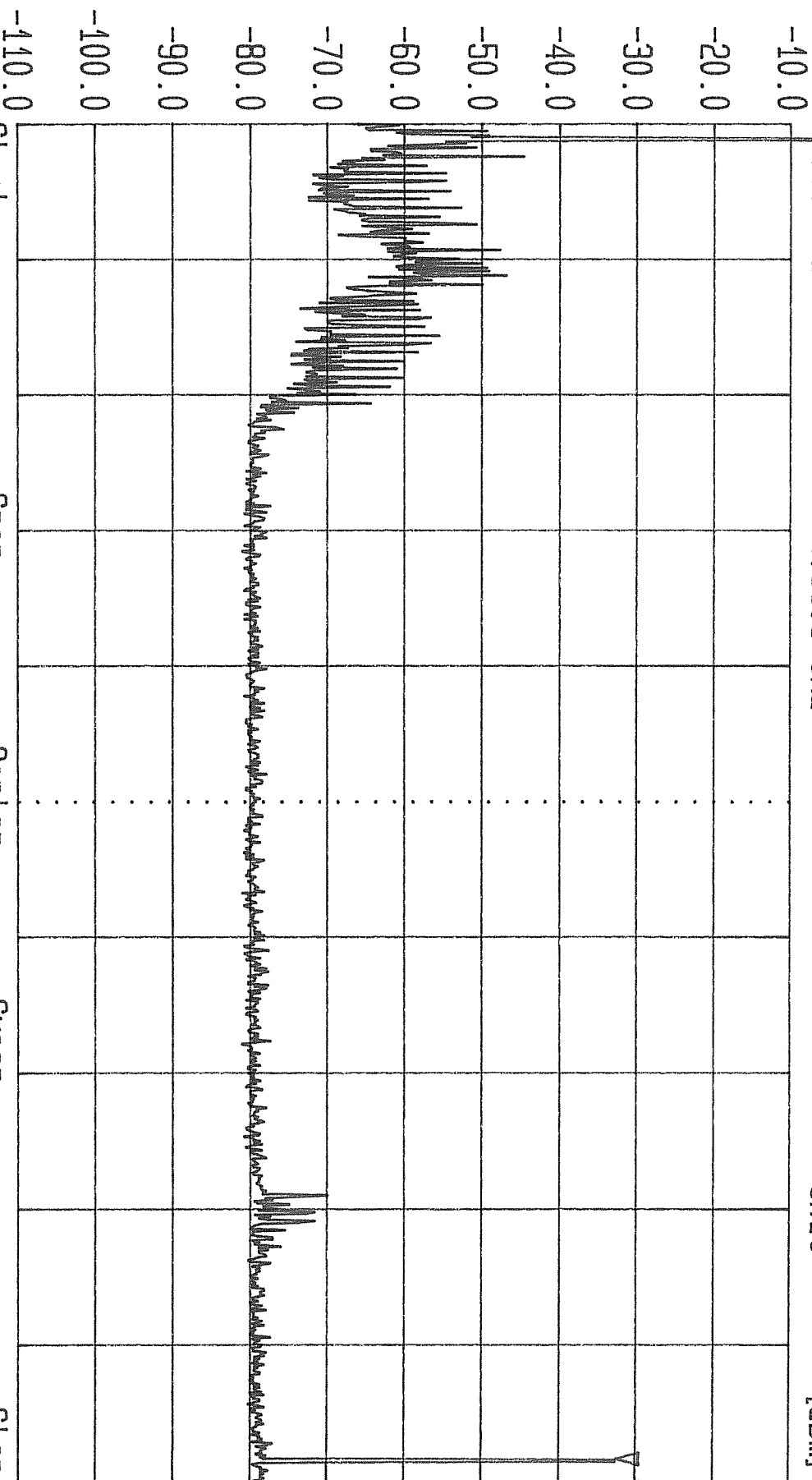
Date 08.Oct.'03 Time 16:11:21 MS6
Ref.Lvl -10.00 dBm Marker -53.85 dBm 1.0128 GHz
Res.Bw 100 kHz [imp] 1 MHz
TG.Lvl off
CF.Stp 252.000 MHz
Vid.Bw 10 dB
RF.Att Unit [dBm]



03-0193 CIPRONET HN110
HIGH CHANNEL



Date 08.Oct.'03 Time 16:26:11 MSG
Ref.Lvl -10.00 dBm Marker -32.34 dBm
Res.Bw 100 kHz [imp] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 255.000 MHz
RF.Att Unit
[dBm]



Start 2.45 GHz Span 2.55 GHz Center 3.725 GHz Sweep 1.62 s Stop 5 GHz
03-0193 CIRRONET HN110
HIGH CHANNEL



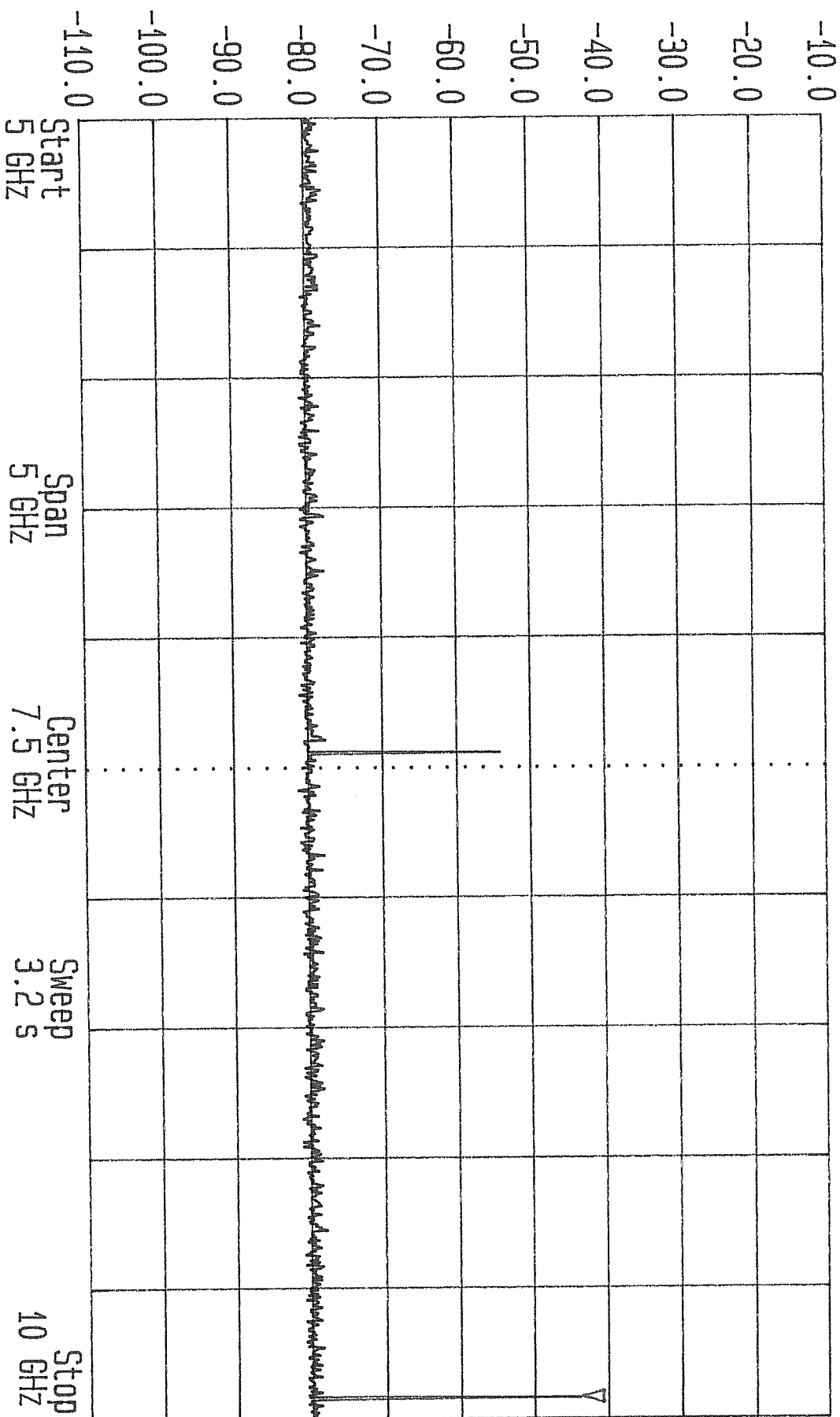
Date 08.Oct.'03 Time 16:33:43
Ref.Lvl -10.00 dBm Marker -43.39 dBm

9.9222 GHz

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 500.000 MHz

Vid.Bw 1 MHz
RF.Att Unit

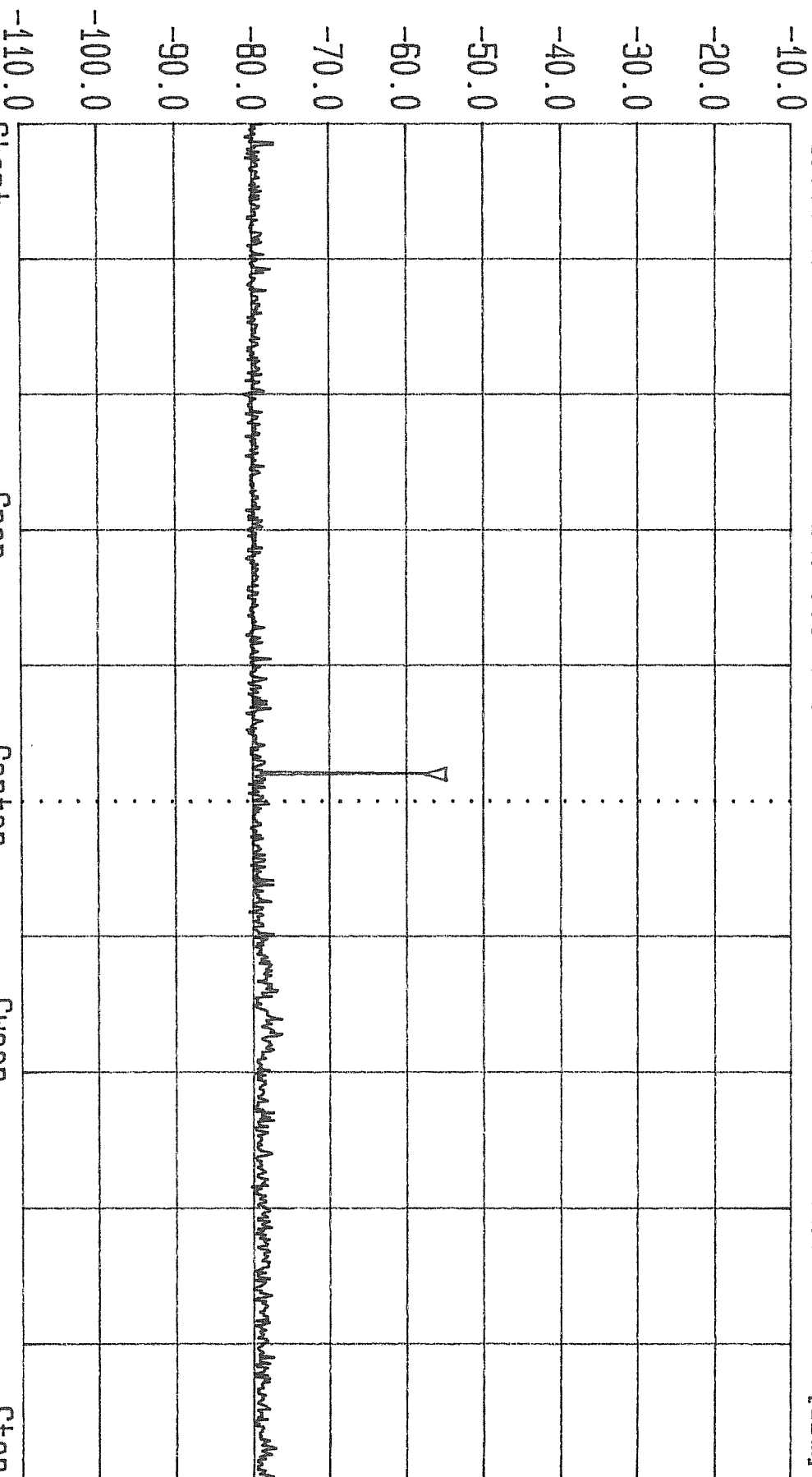
10 dB [dBm]



03-0193 CIRRONET HN110
HIGH CHANNEL



Date 10.Oct.'03 Time 10:08:51 Res.Bw 100 kHz [imp] Vid.Bw 1 MHz
Ref.Lvl -10.00 dBm Marker -57.63 dBm CF.Stp 500.000 MHz off AF.Att 10 dB
Unit [dBm]



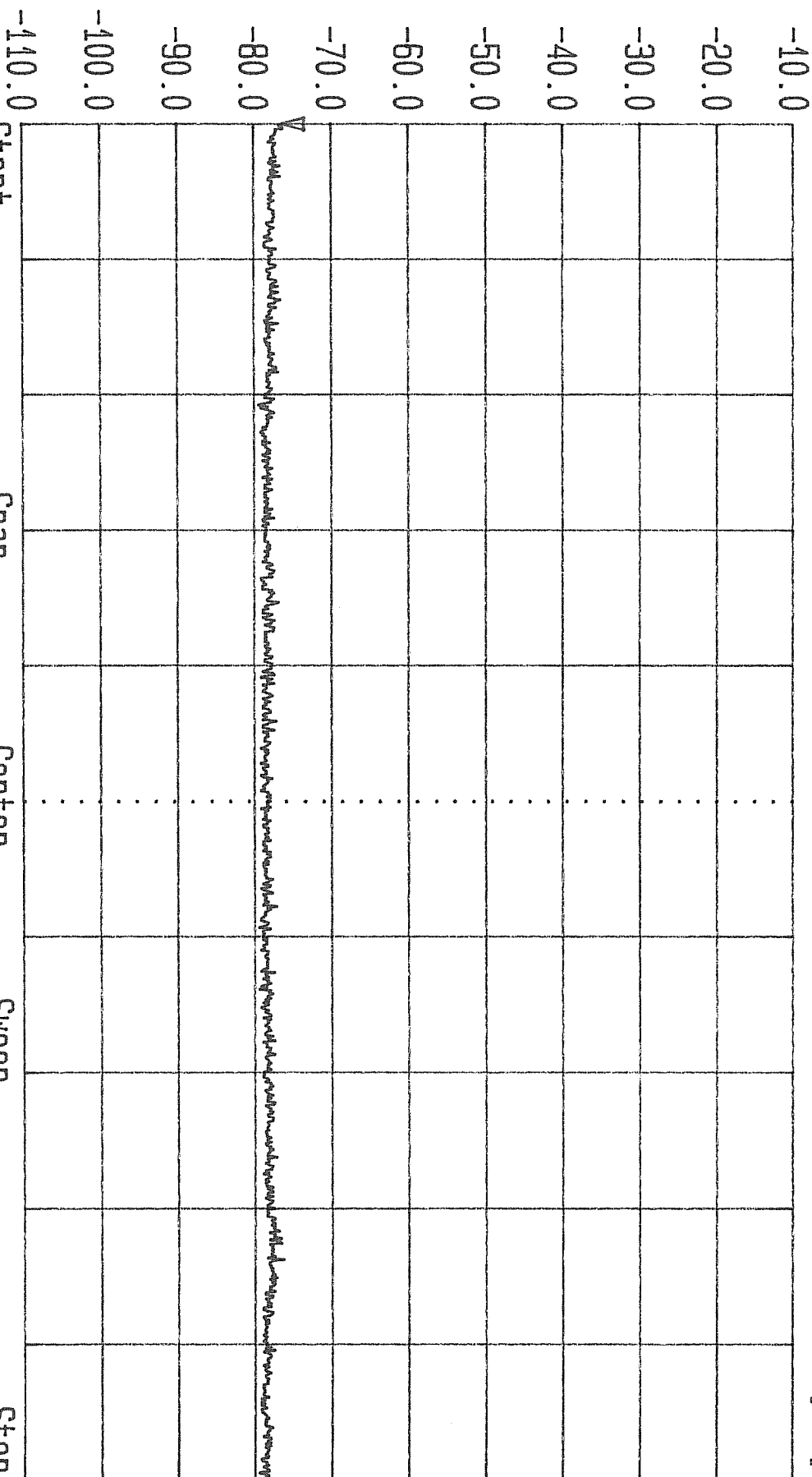
Start 10 GHz Span 5 GHz Center 12.5 GHz Sweep 4.0 s Stop 15 GHz
03-0193 CIRRONET HN110
HIGH CHANNEL



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

Res.Bw 100 kHz [imp]
TG.Lvl 500.000 MHz
CF.Stp off

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



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03-0193 CIRRONET HN110
HIGH CHANNEL

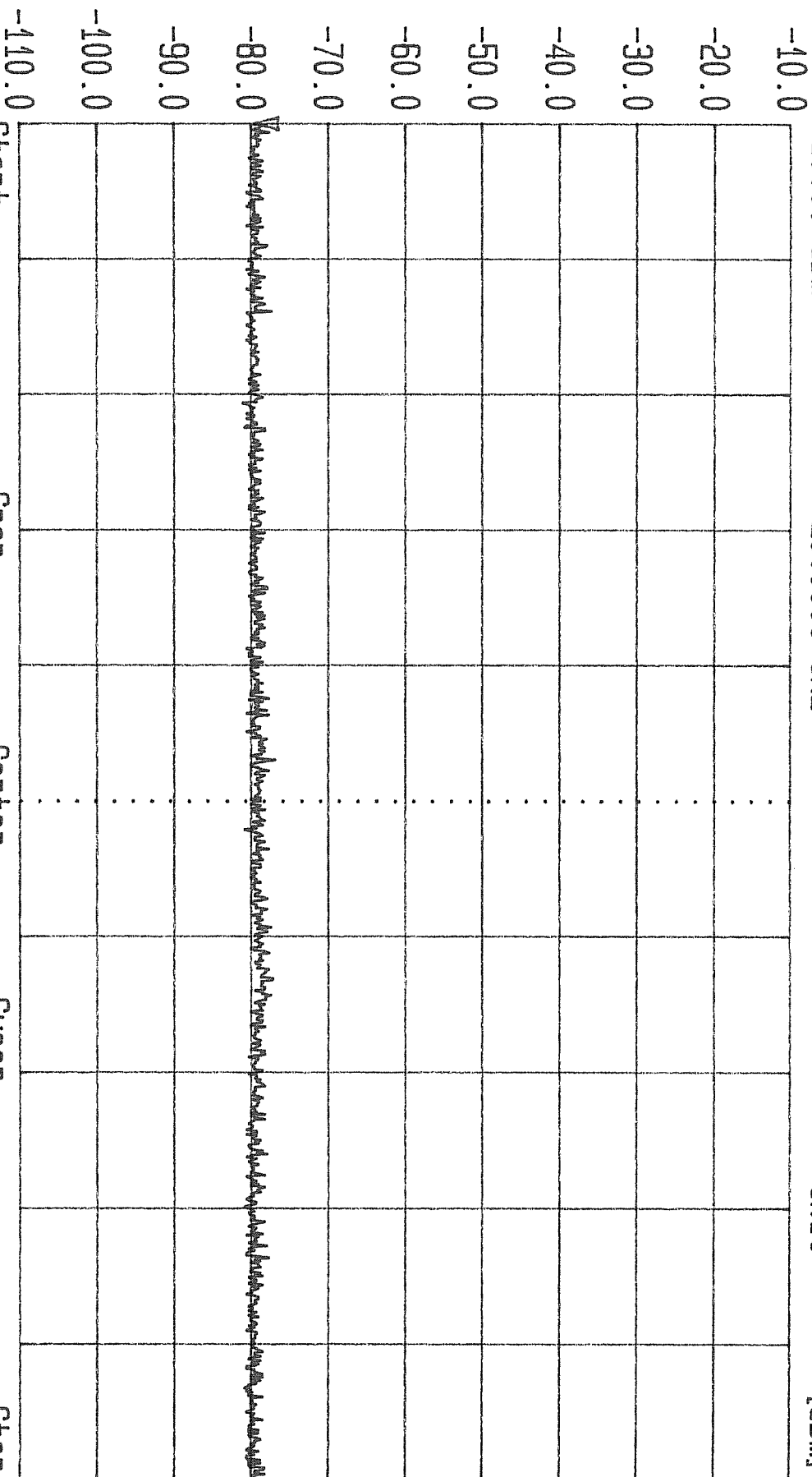


Date 10.Oct.'03 Time 10:18:12
Ref.Lvl -10.00 dBm Marker 20.0000 GHz

Res.Bw 100 kHz [imp]
TG.Lvl off

CF.Stp 500.000 MHz

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



Start 20 GHz
Span 5 GHz
Center 22.5 GHz
Sweep 4.0 s
Stop 25 GHz
03-0193 CIRRONET HN110
HIGH CHANNEL

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