

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



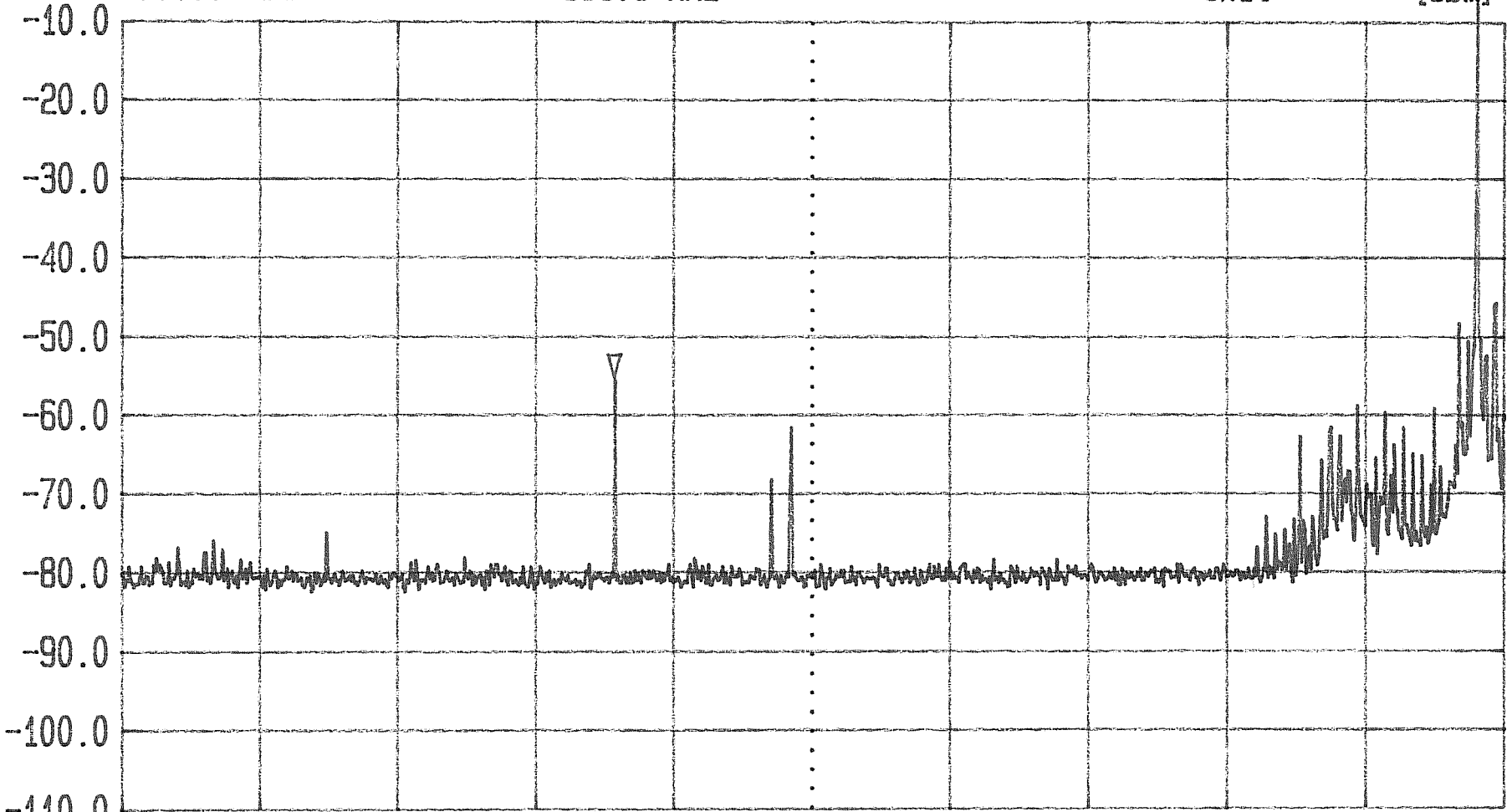
Date 08.Oct.'03 Time 14:45:25
Ref.Lvl -10.00 dBm
Marker -55.02 dBm
895.8 MHz

MSG

Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 242.000 MHz

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

1 MHz
10 dB [dBm]



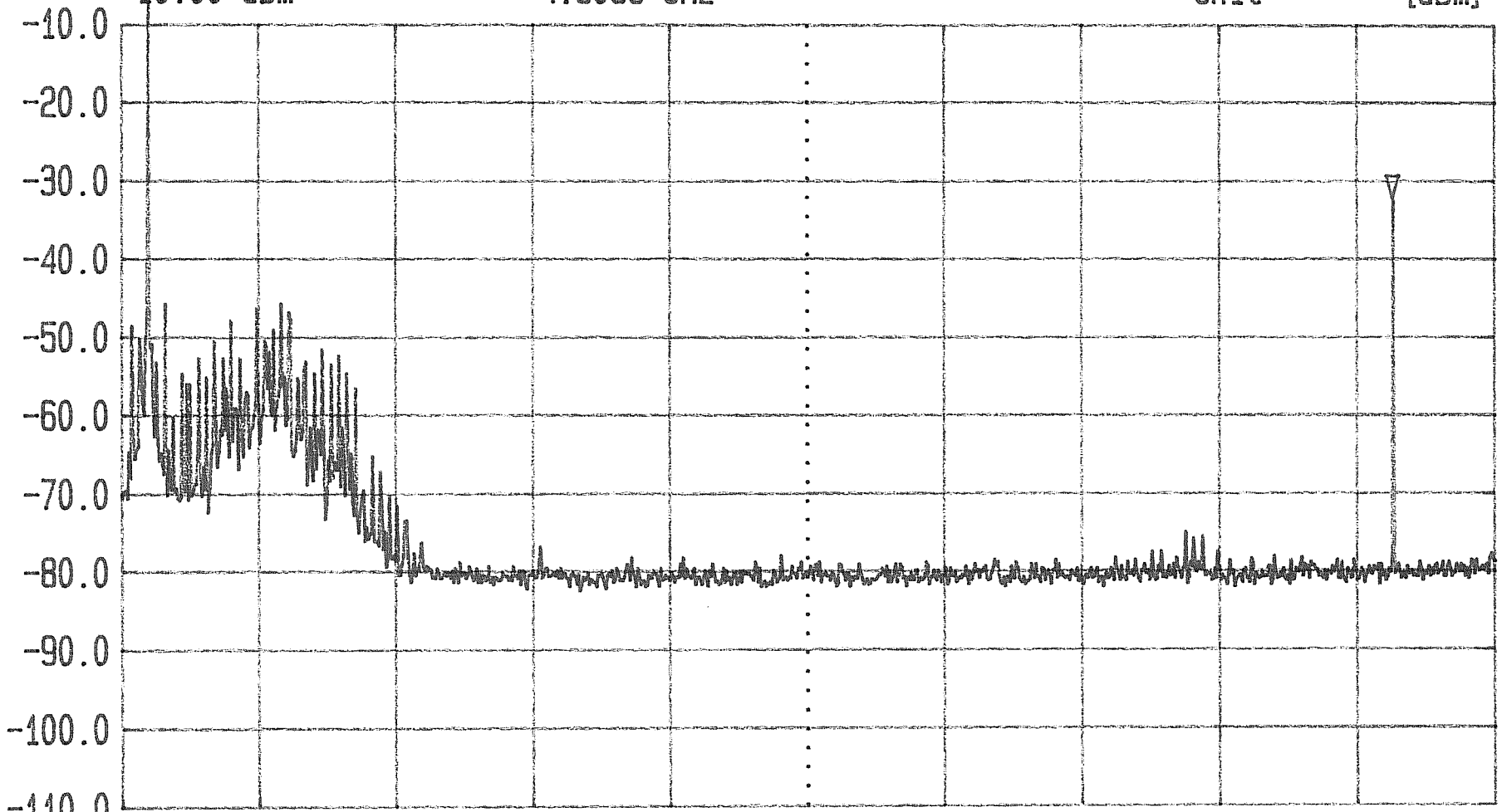
Start 0.030 GHz Span 2.42 GHz Center 1.24 GHz Sweep 1.54 s Stop 2.45 GHz

03-0193 CIRRONET HN110
LOW CHANNEL



Date 08.Oct.'03 Time 14:49:16
Ref.Lvl -10.00 dBm
Marker -32.04 dBm
4.8056 GHz

MSG
Res.Bw 100 kHz [imp]
TG.Lvl off
CF.Stp 265.000 MHz
Vid.Bw 1 MHz
RF.Att 10 dB
Unit [dBm]



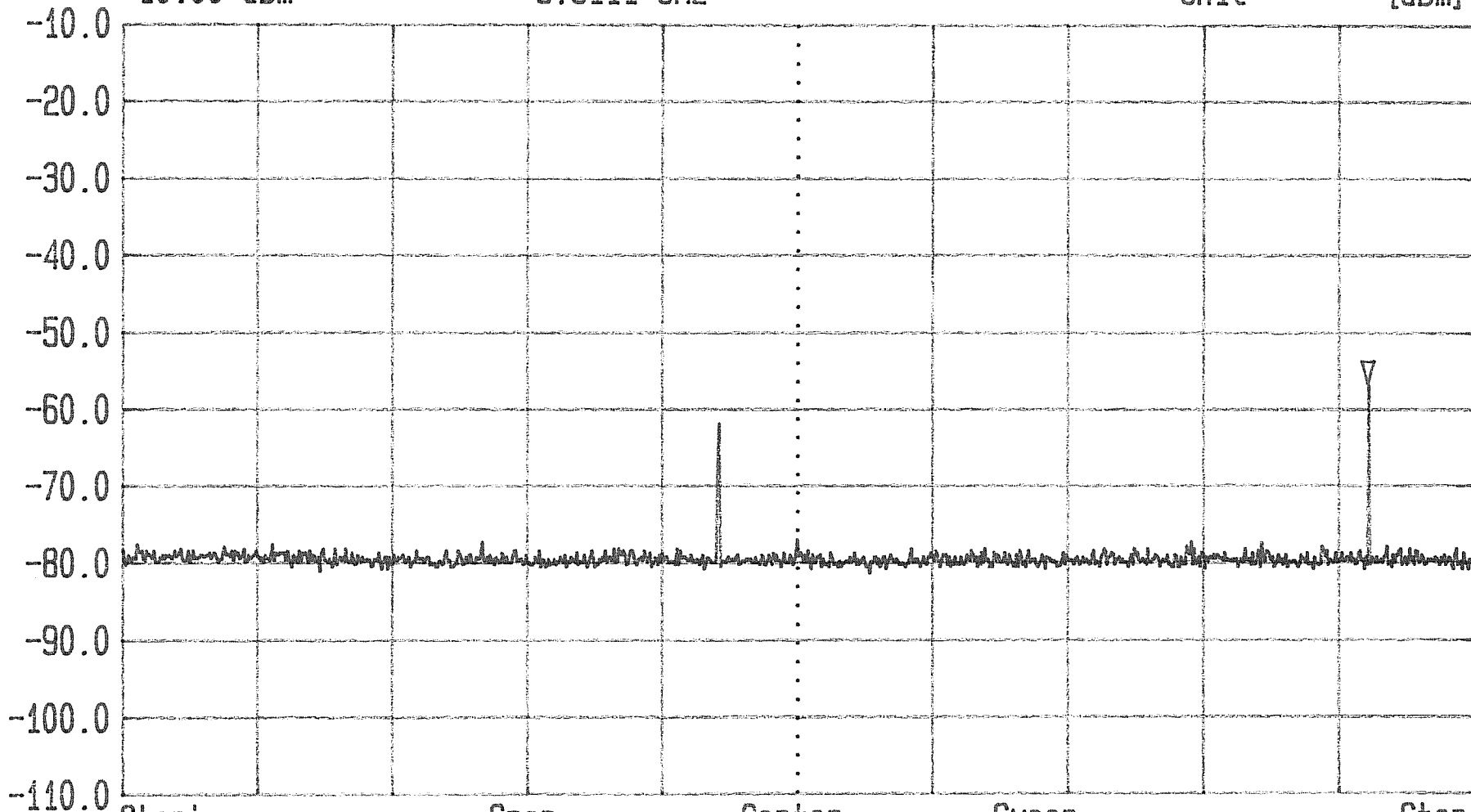
Start 2.35 GHz Span 2.65 GHz Center 3.675 GHz Sweep 1.68 s Stop 5 GHz

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



Start
5 GHz

Span
5 GHz

Center
7.5 GHz

Sweep
3.2 s

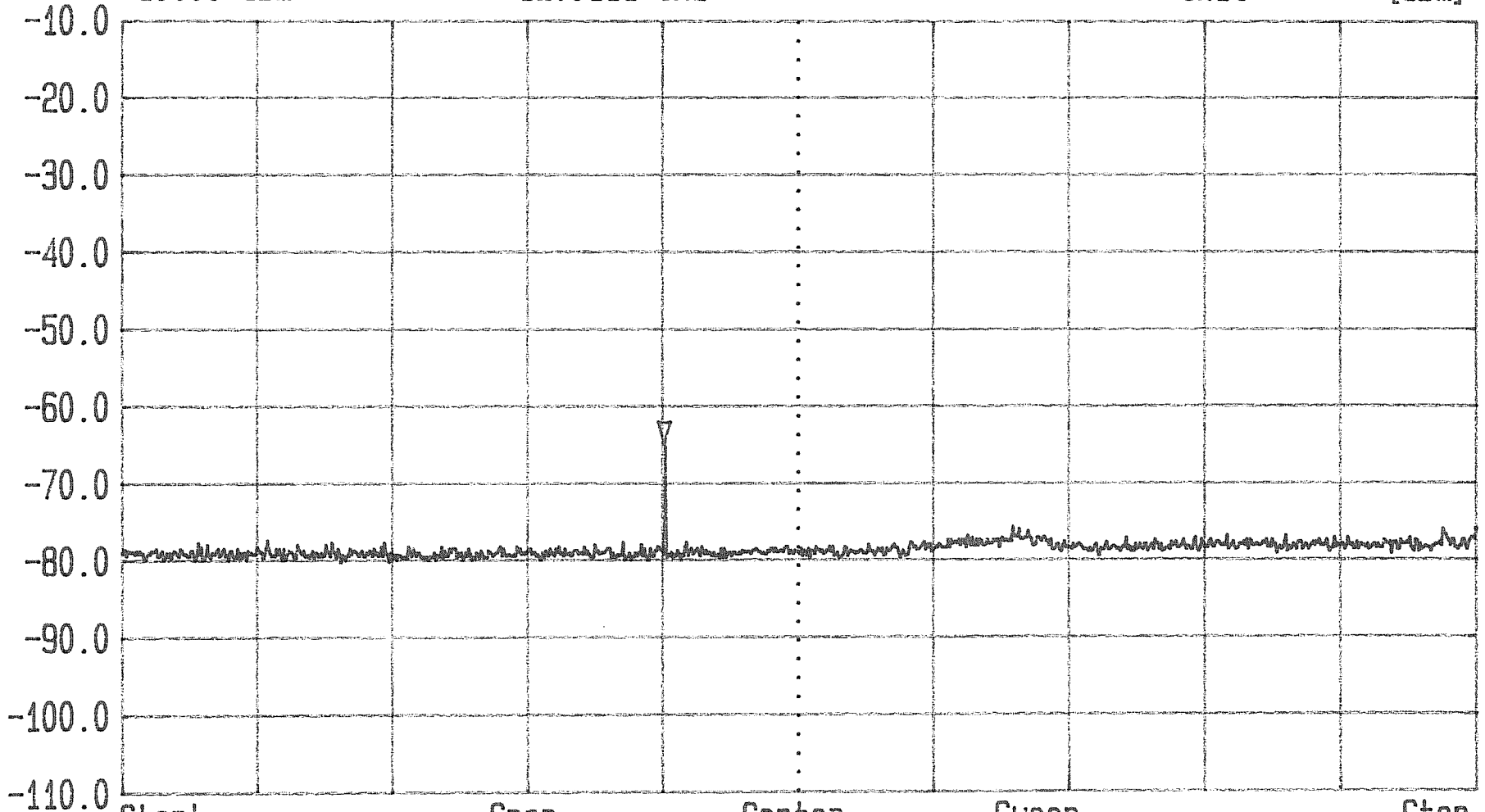
Stop
10 GHz

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 off
CF.Stp 500.000 MHz RF.Att 10 dB
Unit [dBm]



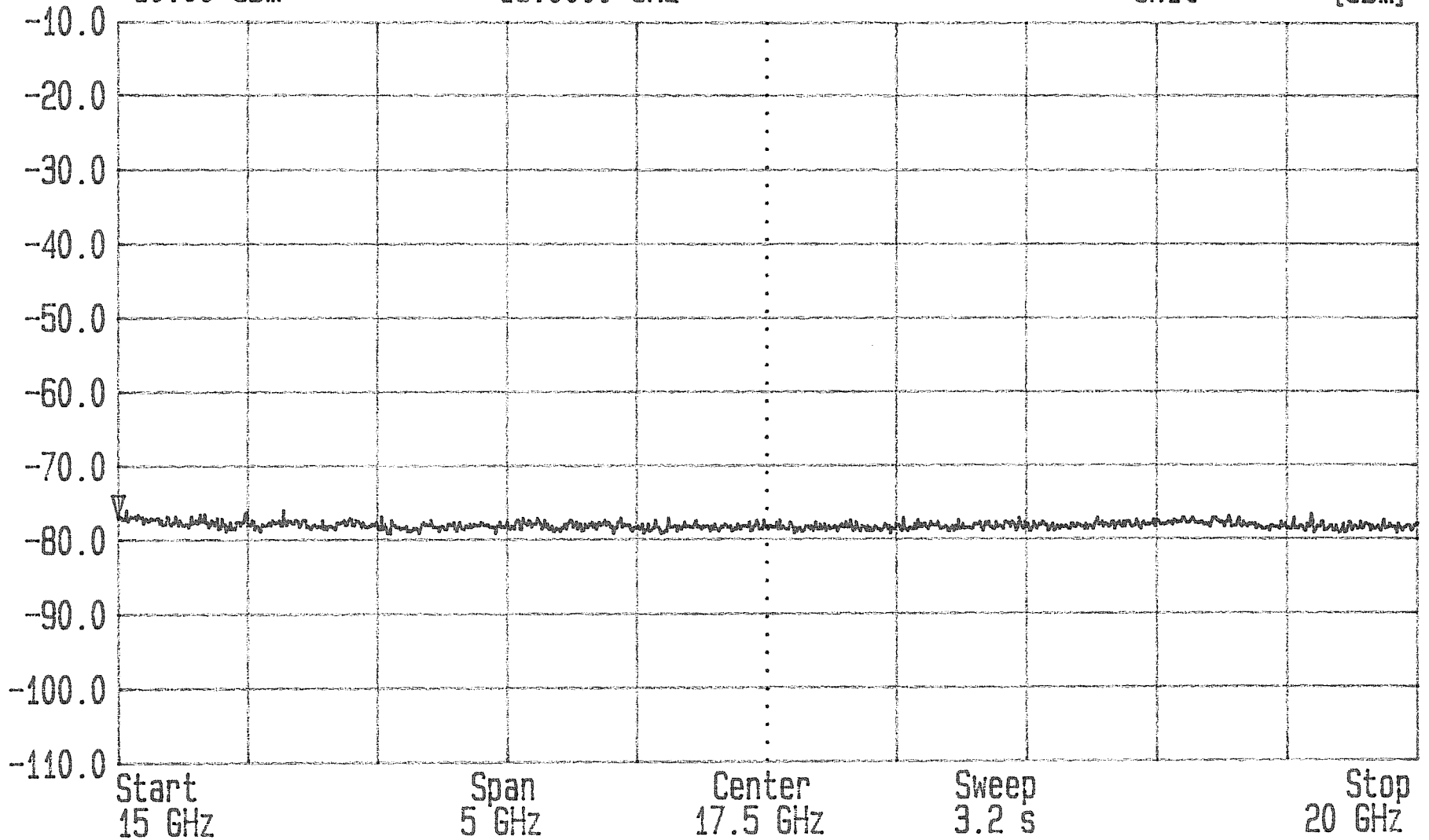
Start 10 GHz Span 5 GHz Center 12.5 GHz Sweep 3.2 s Stop 15 GHz

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] Vid.Bw 1 MHz
TG.Lvl off
CF.Stp 500.000 MHz AF.Att 10 dB
Unit [dBm]

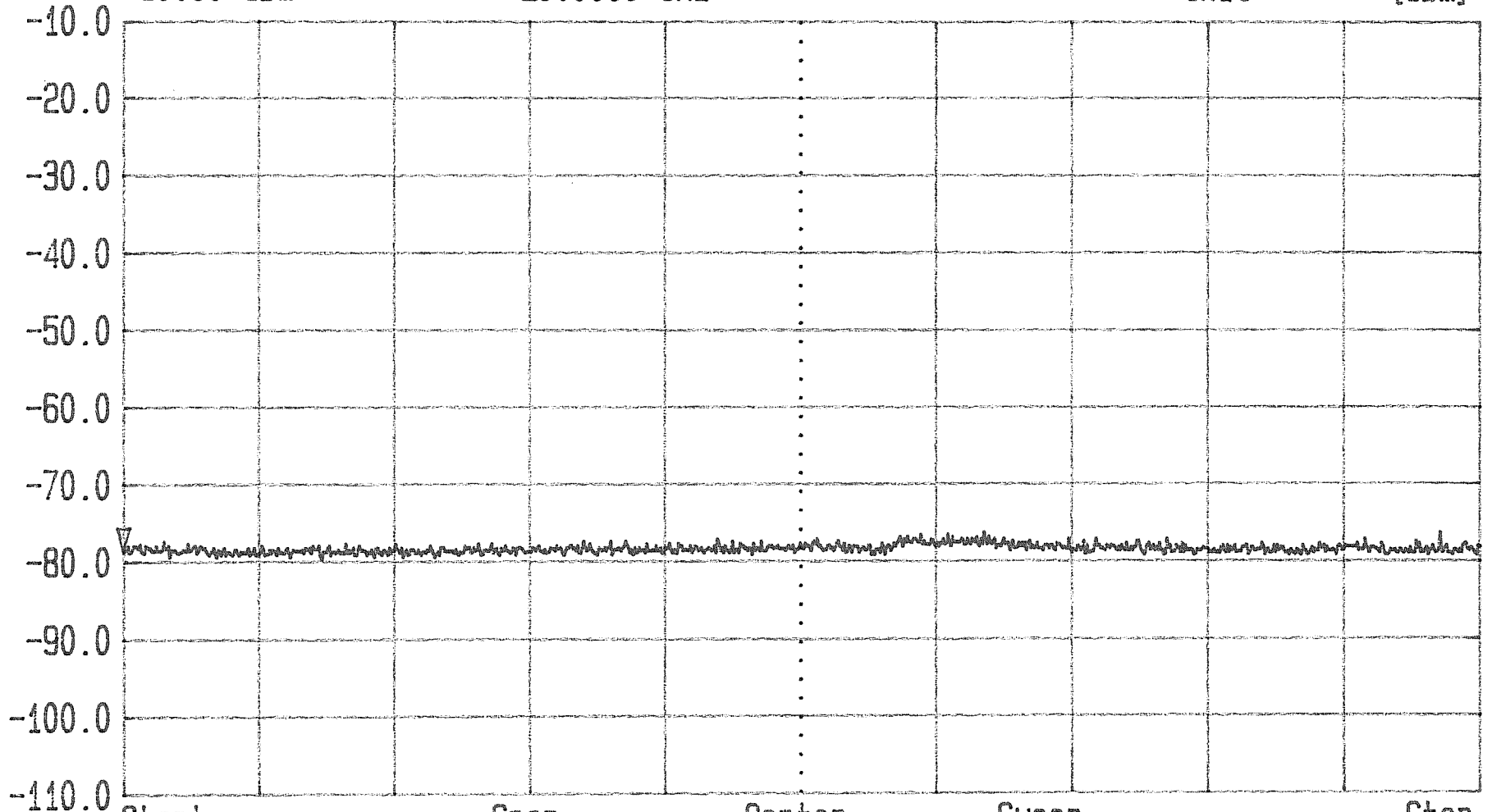


03-0193 CIRRONET HN110
LOW CHANNEL



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

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

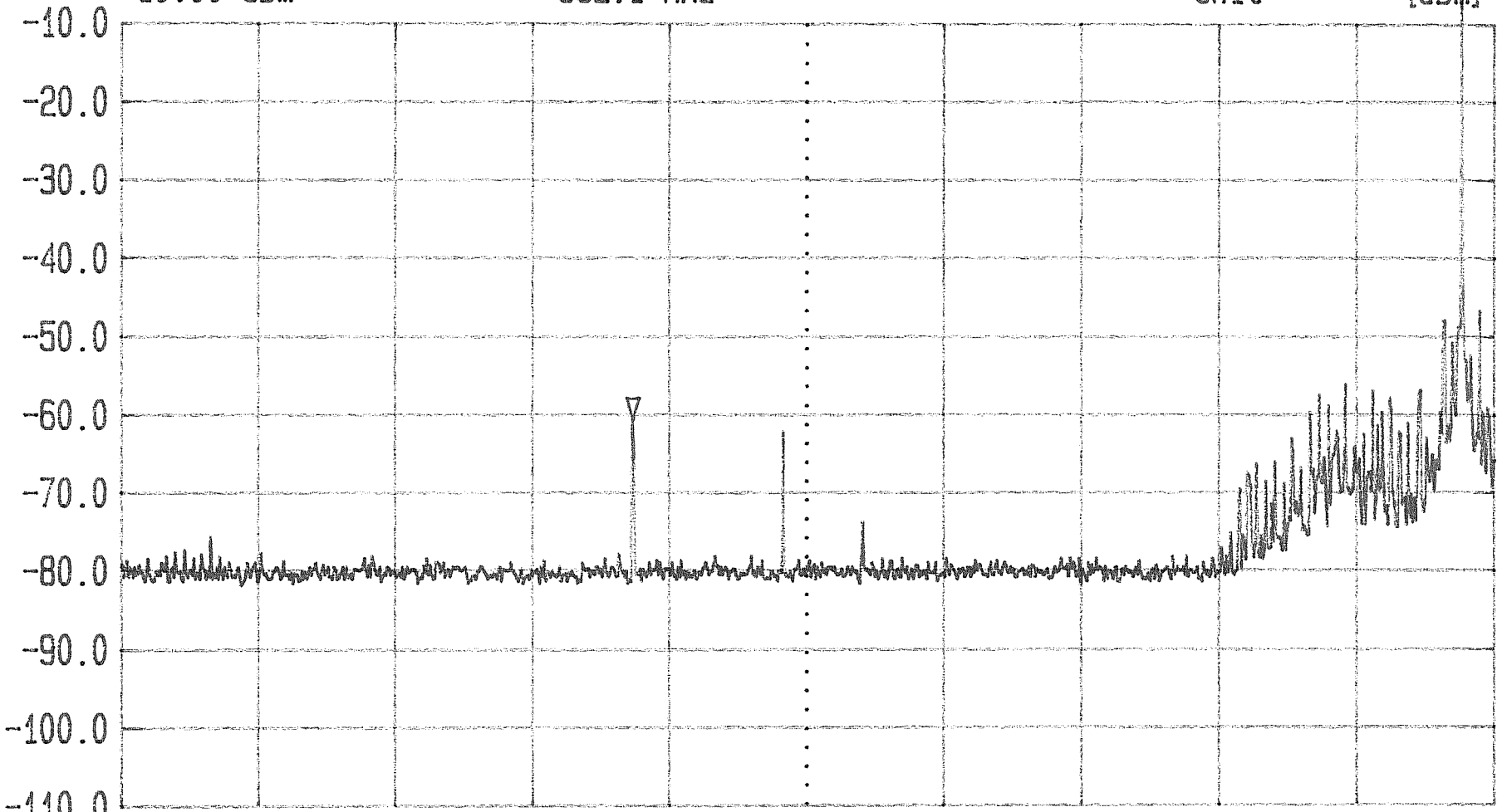
ACS Report Number: 03-0193-15B

Manufacturer: Cirronet, Inc.
Model: BT2022

Test: Conducted Spurious Emissions
Channel: Center



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

Res.Bw

100 kHz [imp]

Vid.Bw

1 MHz

Ref.Lvl

Marker

-31.02 dBm

TG.Lvl

off

CF.Stp

265.000 MHz

RF.Att

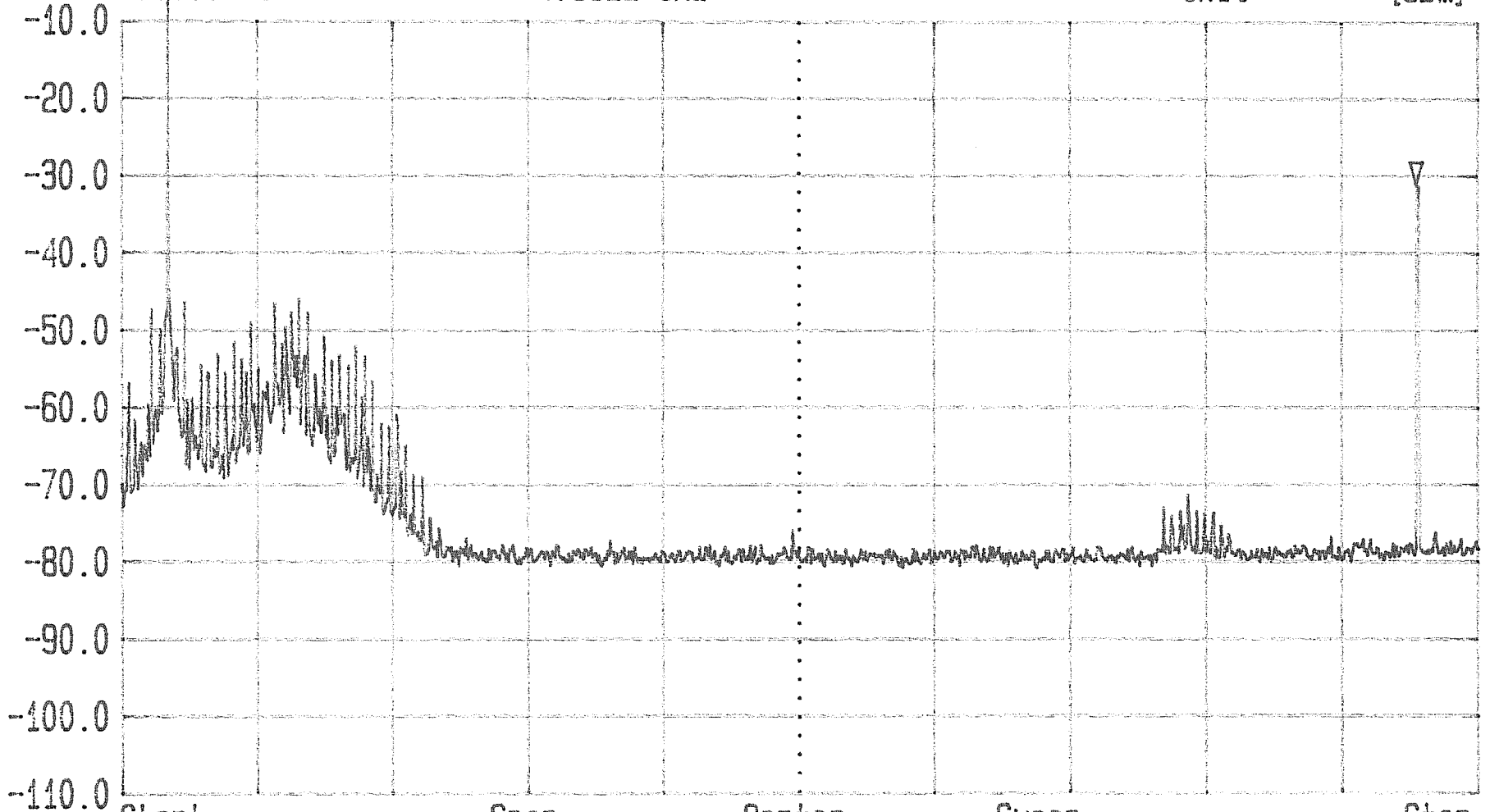
10 dB

-10.00 dBm

4.8822 GHz

Unit

[dBm]



Start

2.35 GHz

Span

2.65 GHz

Center

3.675 GHz

Sweep

1.68 s

Stop

5 GHz

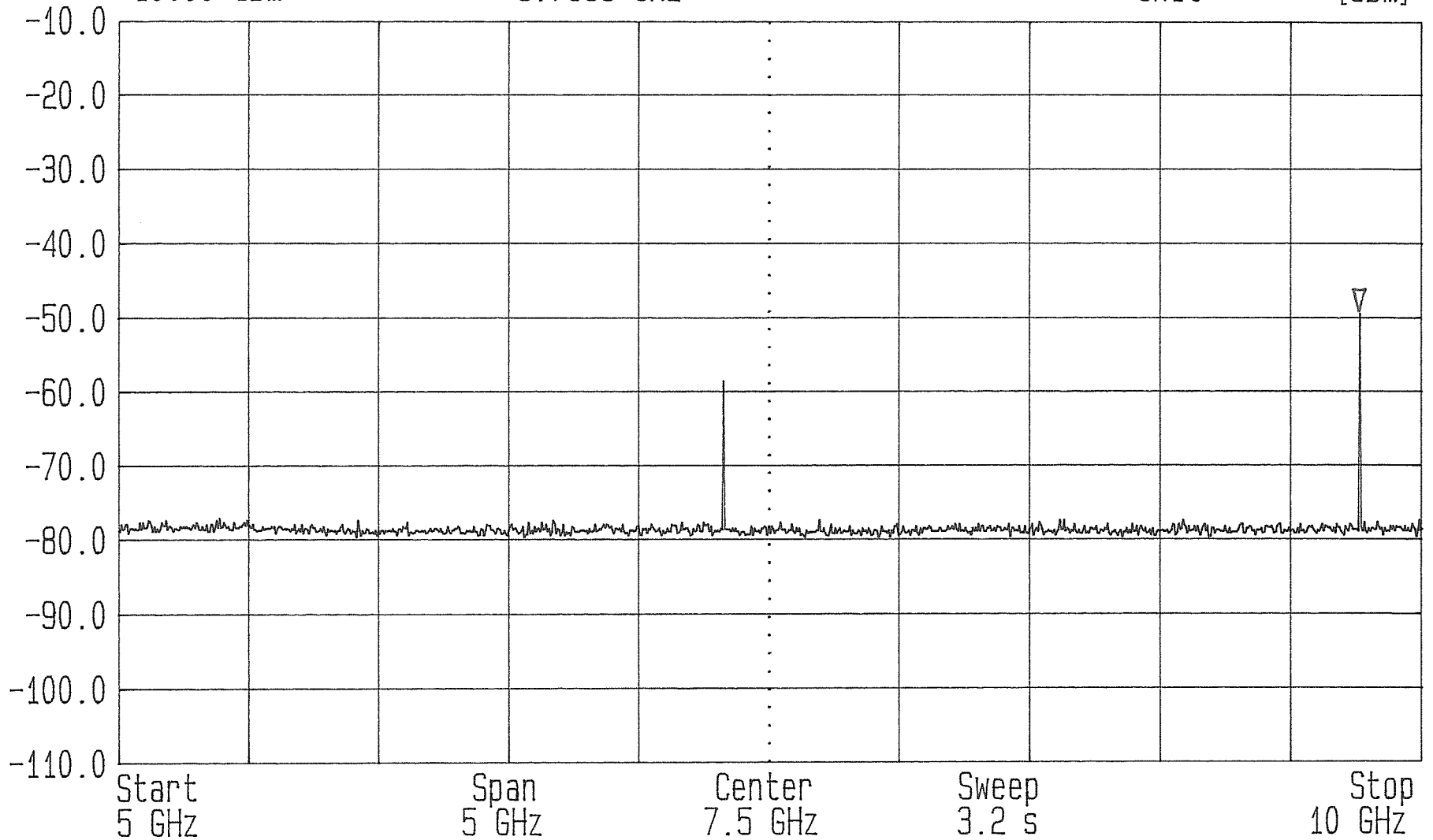
03-0193 CIRRONET HN110

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

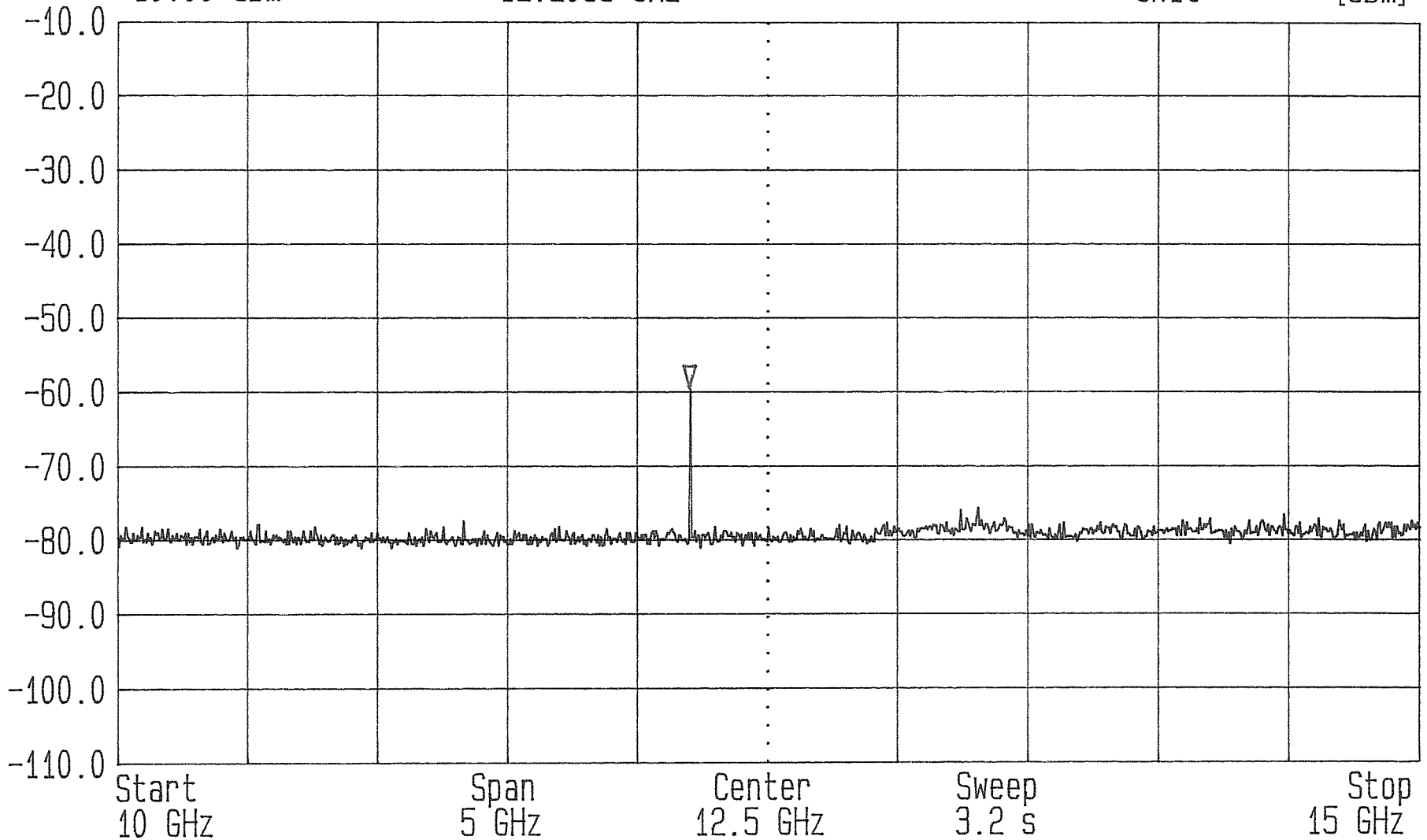


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MID CHANNEL



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

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

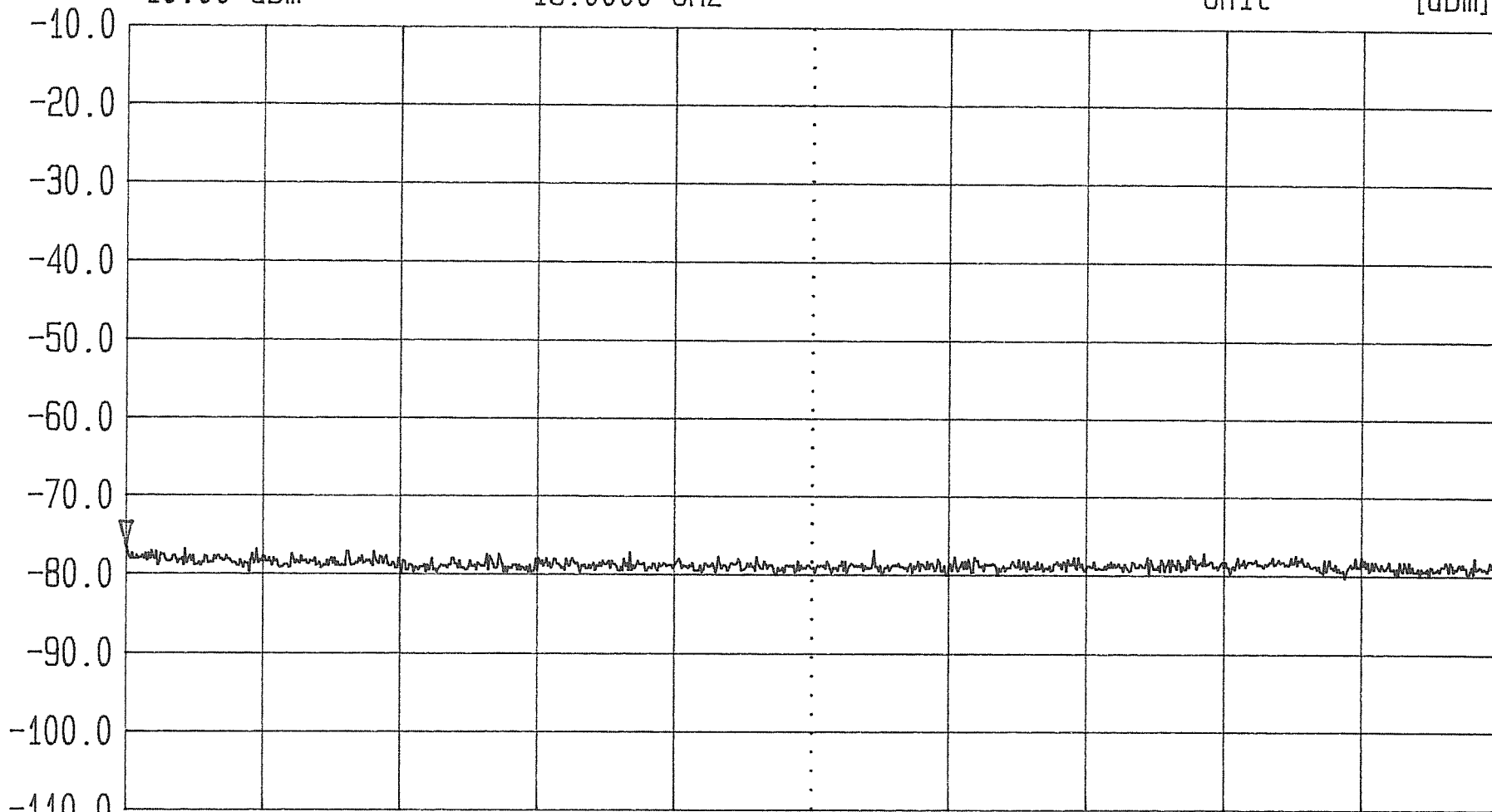


03-0193 CIRRONET HN110
MID CHANNEL



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
CF.Stp 500.000 MHz AF.Att 10 dB
Unit [dBm]



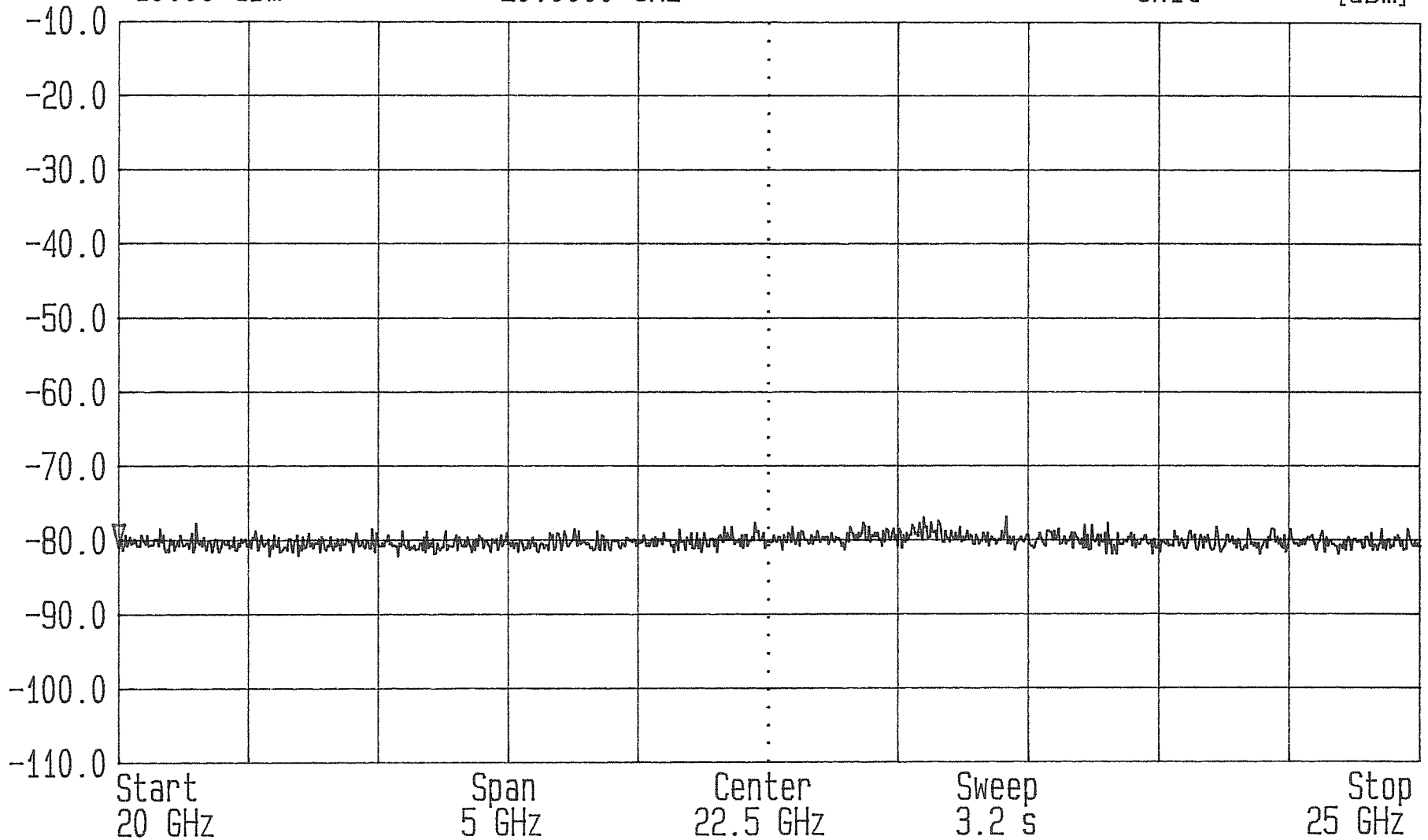
Start 15 GHz Span 5 GHz Center 17.5 GHz Sweep 3.2 s Stop 20 GHz

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



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
Ref.Lvl -10.00 dBm
Marker -53.85 dBm
1.0128 GHz

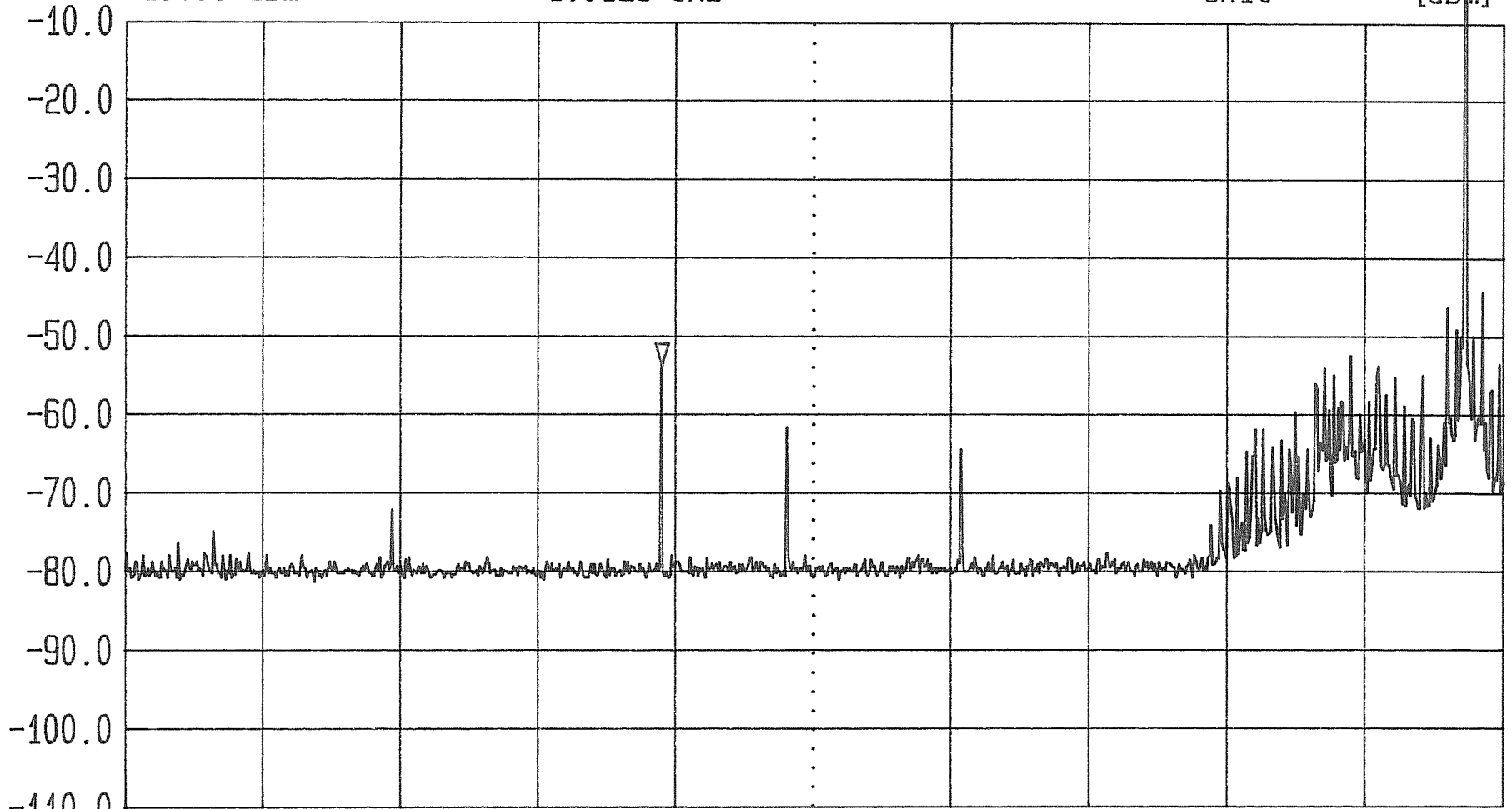
MSG

Res.Bw
TG.Lvl
CF.Stp

100 kHz [imp]
off
252.000 MHz

Vid.Bw
RF.Att
Unit

1 MHz
10 dB
[dBm]



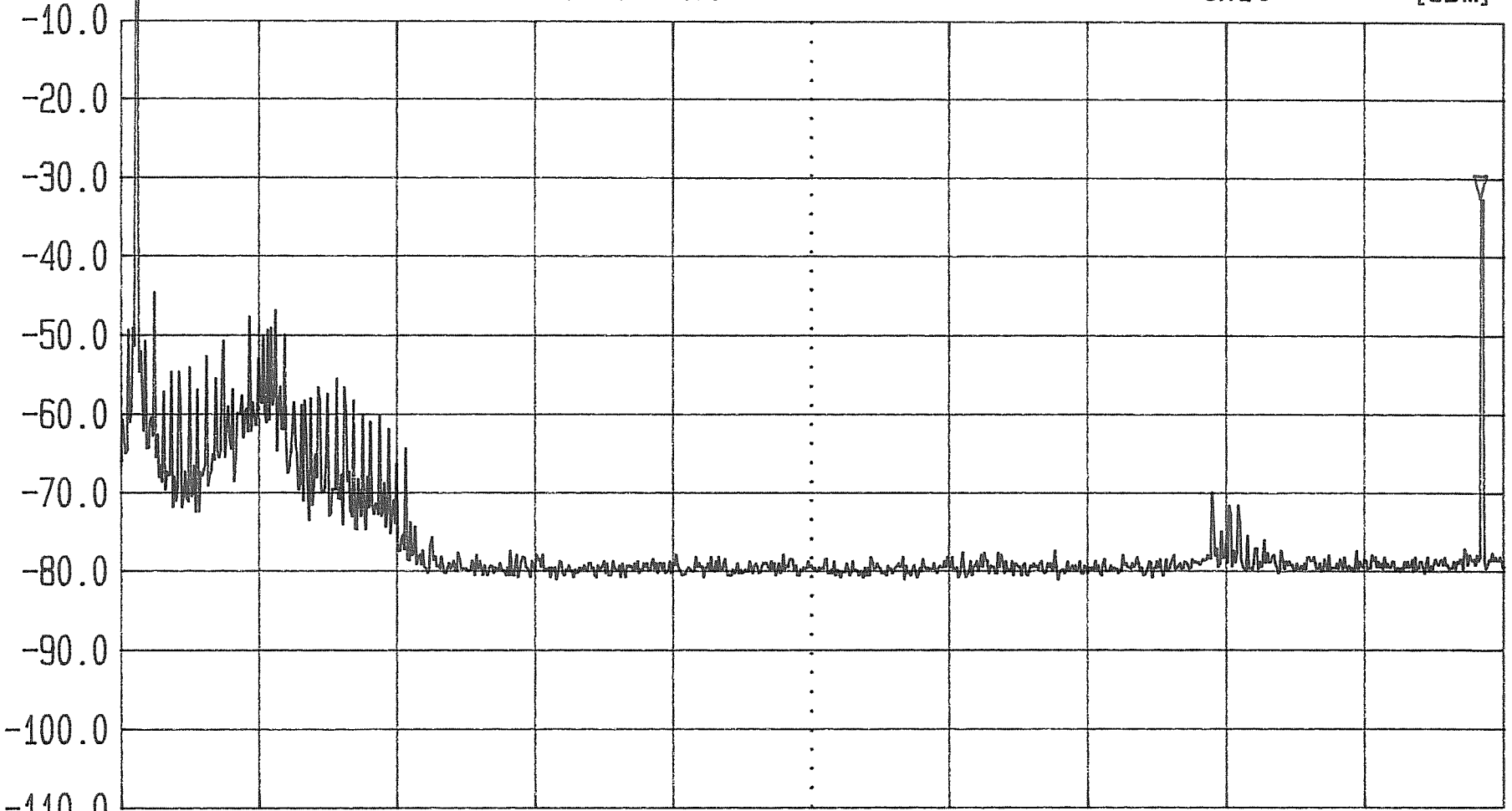
Start 0.030 GHz Span 2.52 GHz Center 1.29 GHz Sweep 1.60 s Stop 2.55 GHz

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]
TG.Lvl off
CF.Stp 255.000 MHz
Vid.Bw 1 MHz
AF.Att 10 dB
Unit [dBm]



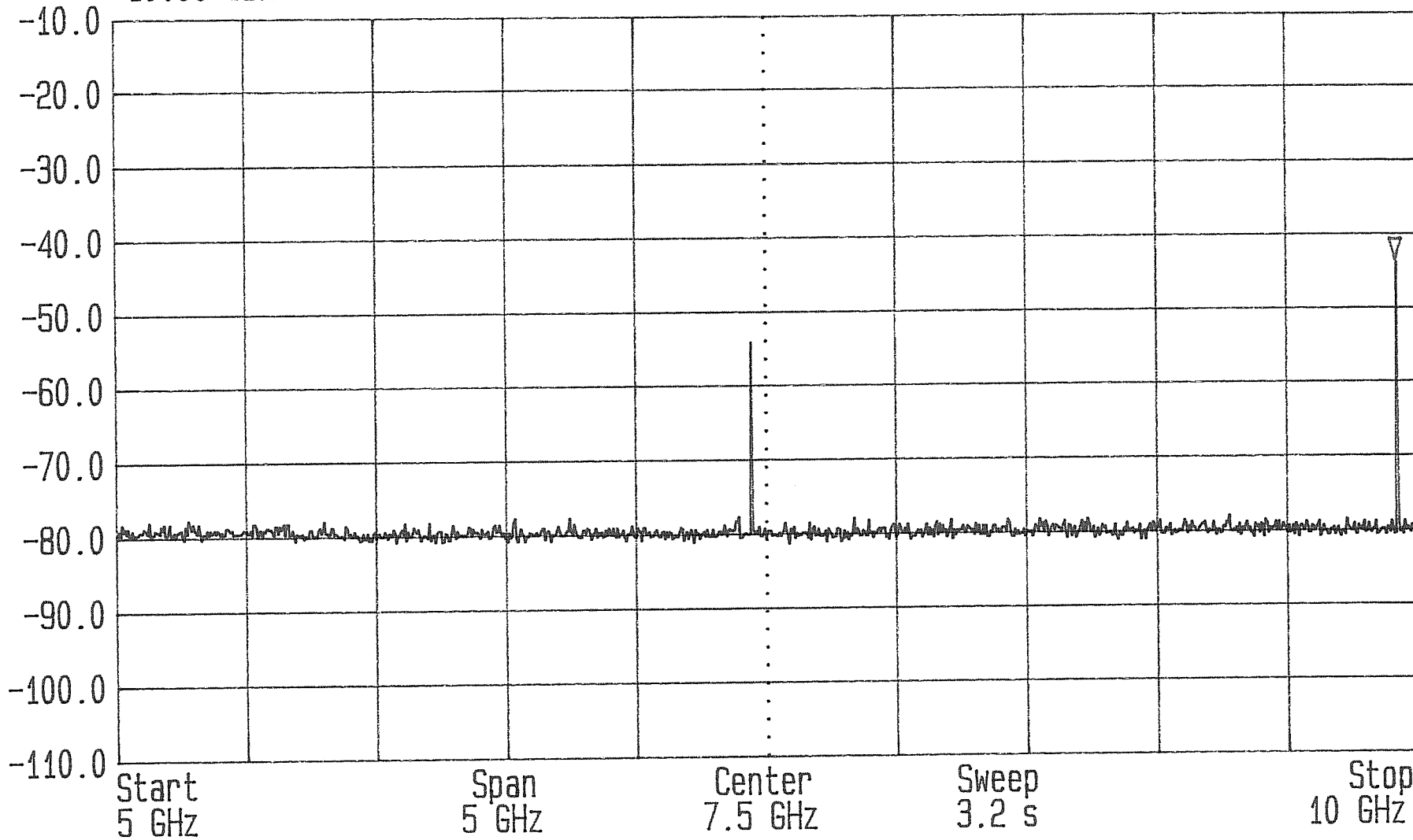
Start 2.45 GHz
Span 2.55 GHz
Center 3.725 GHz
Sweep 1.62 s
Stop 5 GHz

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

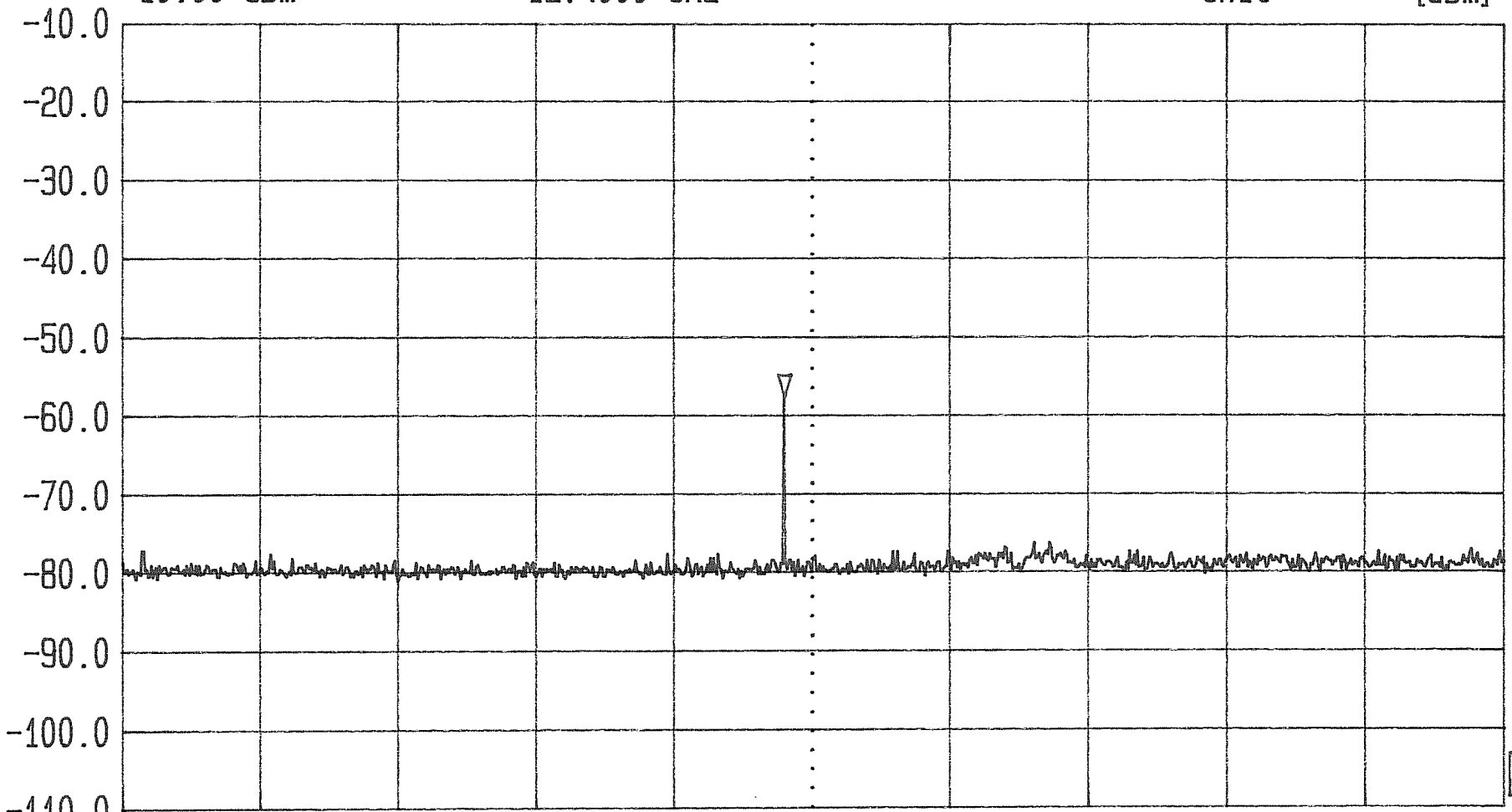


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HIGH CHANNEL



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

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



Start 10 GHz Span 5 GHz Center 12.5 GHz Sweep 4.0 s Stop 15 GHz

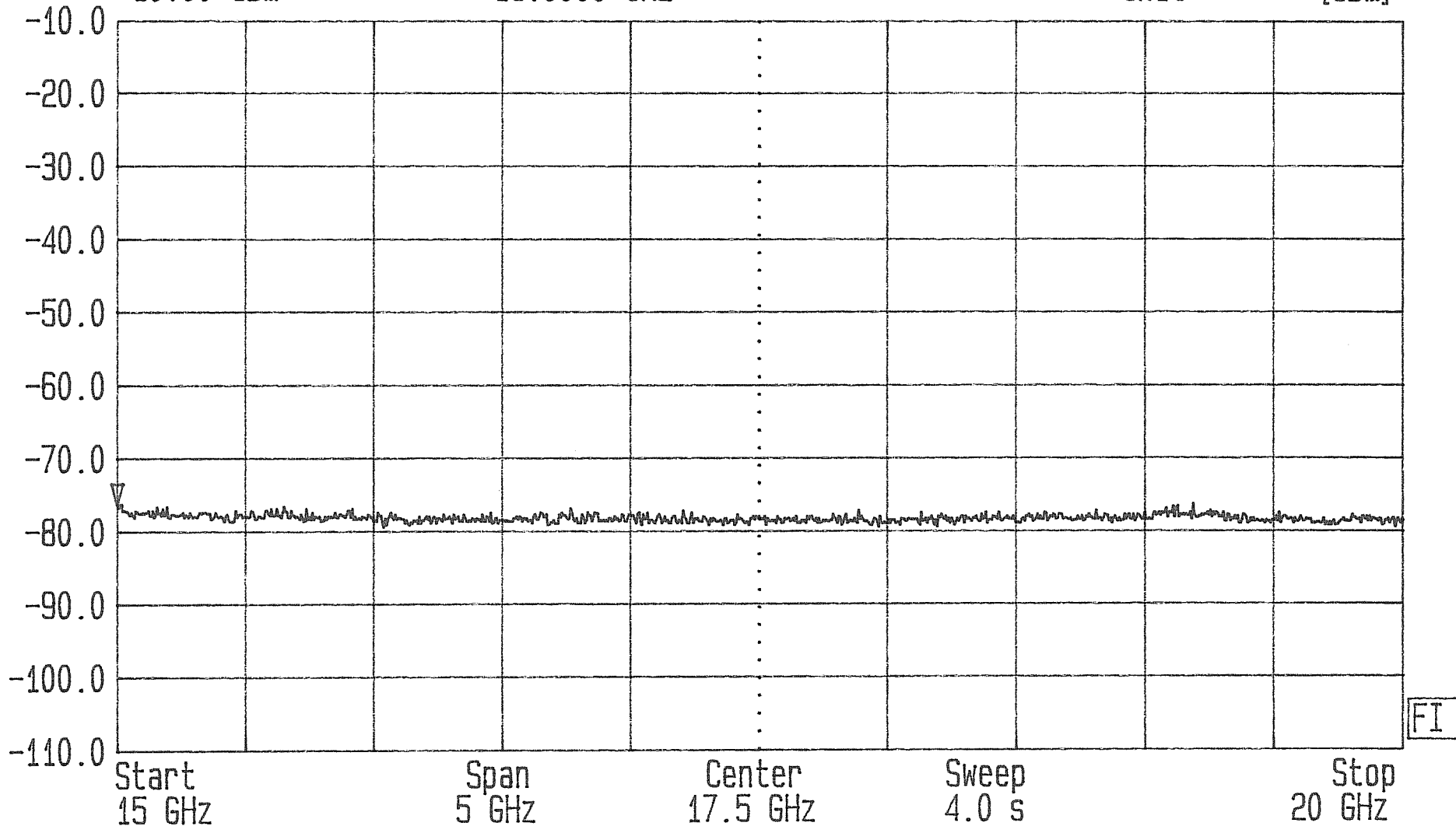
03-0193 CIRRONET HN110
HIGH CHANNEL

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

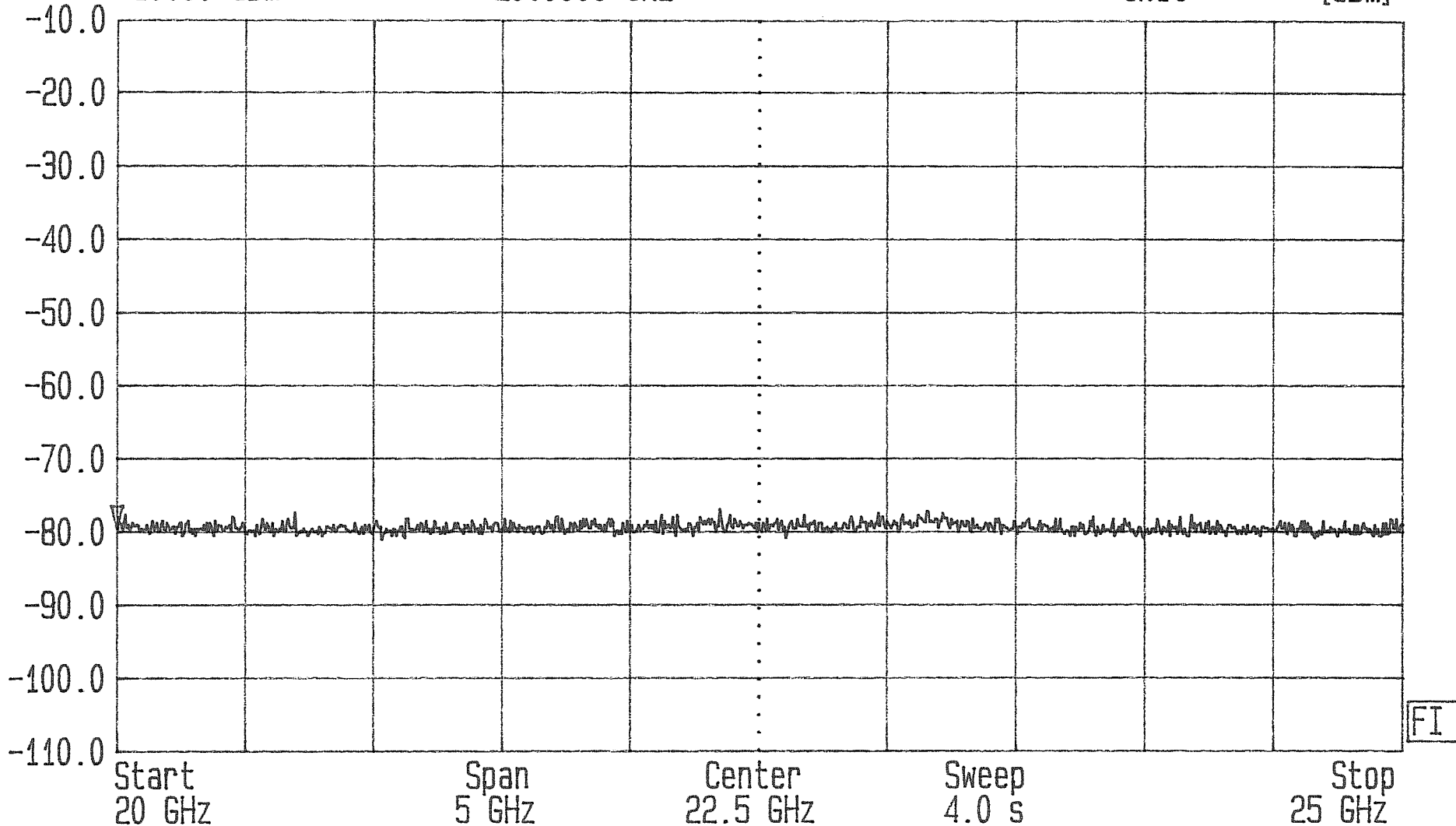


03-0193 CIRRONET HN110
HIGH CHANNEL



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



03-0193 CIRRONET HN110
HIGH CHANNEL

FI