October 14, 2003

Applicant:	**Askey Computer Corporation**
FCC ID#	**H8NWLL220C**
Correspondence Reference Number:	**25430**
731 Confirmation Number:	**EA441634**
Date of Original E-mail:	**7/9/2003**

We are sorry for the delay in responding to your questions on the above subject caused by Dr. Alan Lane leaving ADT Corporation. The responses are as follows:

1. *Justification of system operation. Validation measurements appear to be made on 1/03/03 while data was measured on 3/7/03. Provide new validation as appropriate. Please repeat worst-case SAR configuration to show agreement with original test.*

Response:

We do not see the above dates in the SAR Report for this EUT submitted on March 20, 2003 (attached as Appendix I). As given on page 5, as well as in Appendix B (p. 49) of the SAR Report, the date for system validation as well as for all of the SAR measurements was March 17, 2003.

2. *Additional SAR data as follows:*
   – Left antenna – worst-case frequency from right side is sufficient.
   – Sample of other data rates at worst-case configuration to demonstrate that there is no effect on SAR.

Response:

The measured SAR data are given in Table 11 both for the right- and left-side antennas marked as antennas "A" and "B", respectively. For the normal (base) and turbo modes, the frequencies selected for SAR testing were those with the highest power outputs as well as to cover both the low and the high frequency bands (see Table 1 on p. 12 of Appendix I).

A3) Details of power measurement made for SAR. Are these peak or average? What is BW of measurement equipment?

Response:

There is a typo in the caption of Table 1on p. 12 of the SAR report . The caption should read " Peak conducted RF power" rather than Average conducted RF power. The procedure for conducted output power measurements used the channel power function of the Spectrum Analyzer Model FSEK 30. Attach an appendix giving the power outputs for various channels.

Appendix

PEAK TRANSMIT POWER MEASUREMENT

LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 – 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 – 5.35GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 – 5.825GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

NOTE: Where B is the 26dB emission bandwidth in MHz.

TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTE: The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.

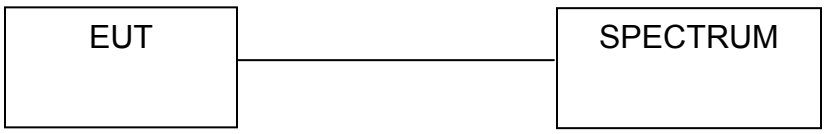
TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 300kHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

DEVIATION FROM TEST STANDARD

No deviation

TEST SETUP



EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

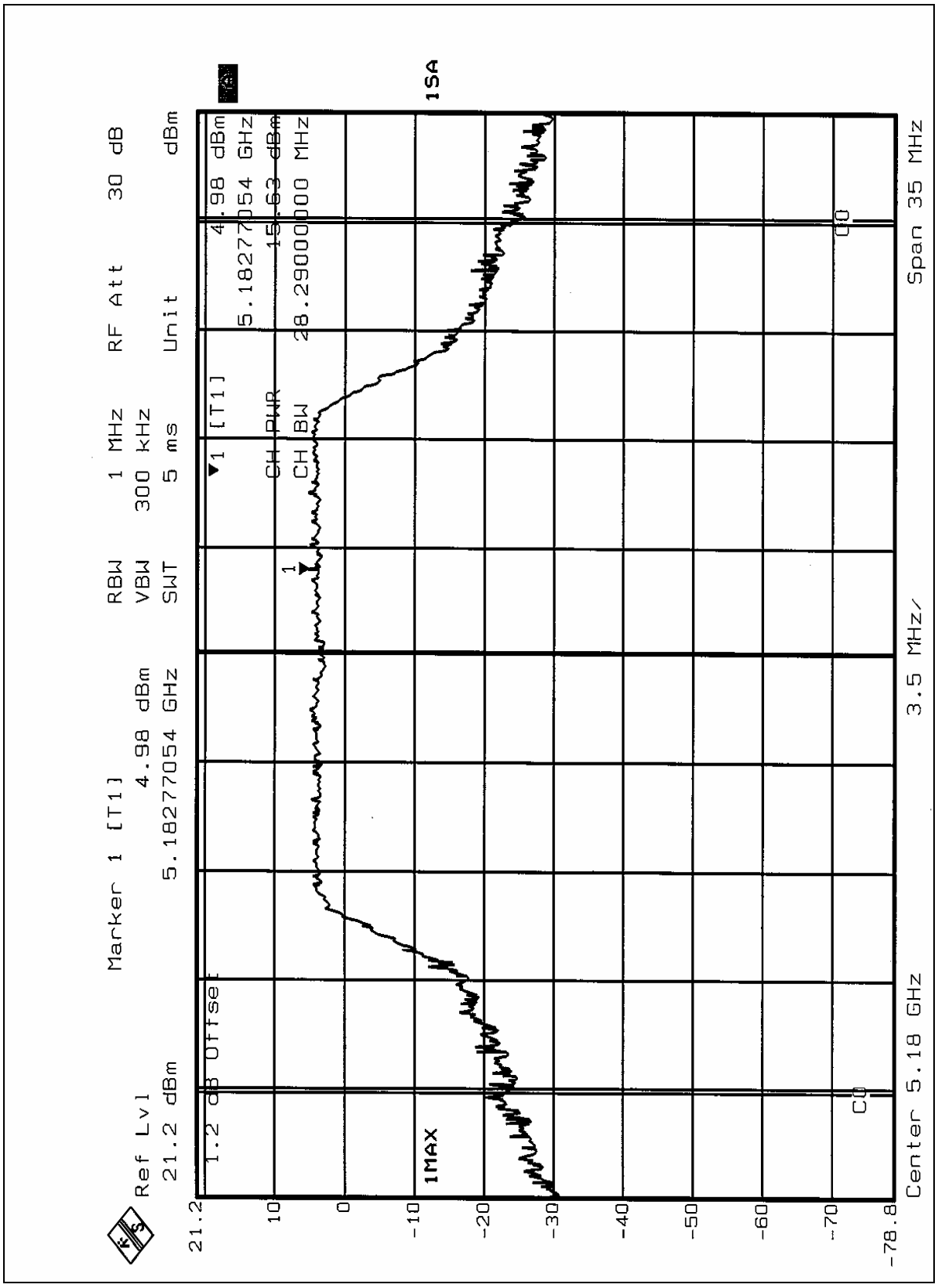
TEST RESULTS – NORMAL MODE

EUT	2.4GHz/5GHz Mini - PCI Card	**MODEL**	WLL220
ENVIRONMENTAL CONDITIONS	24deg. C, 67%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
TESTED BY	Ansen Lei		

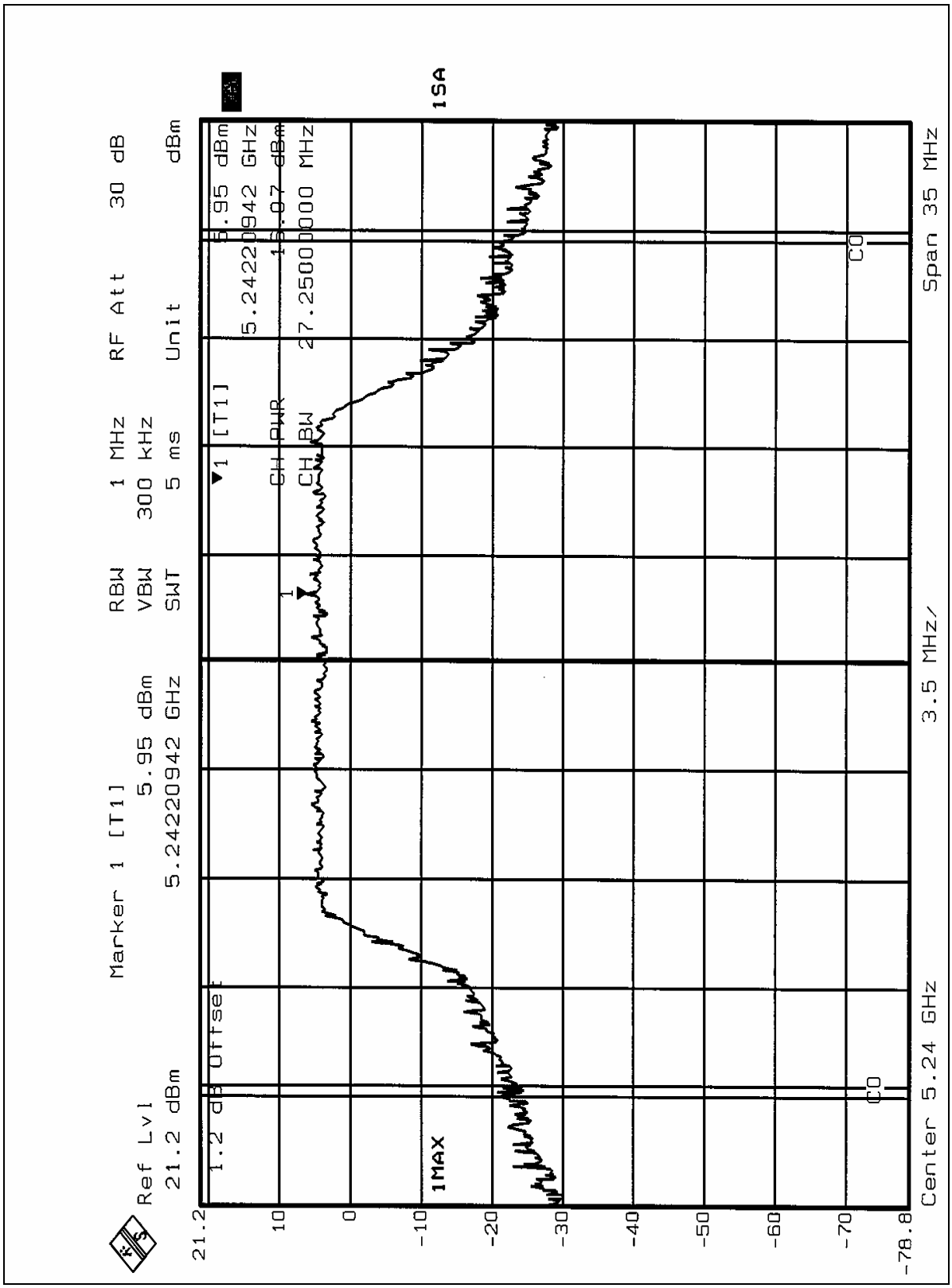
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	15.63	17.00	28.30	PASS
4	5240	16.07	17.00	27.25	PASS
5	5260	20.22	24.00	26.77	PASS
8	5320	17.87	24.00	27.33	PASS
9	5745	18.92	30.00	27.17	PASS
12	5805	18.33	30.00	27.25	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

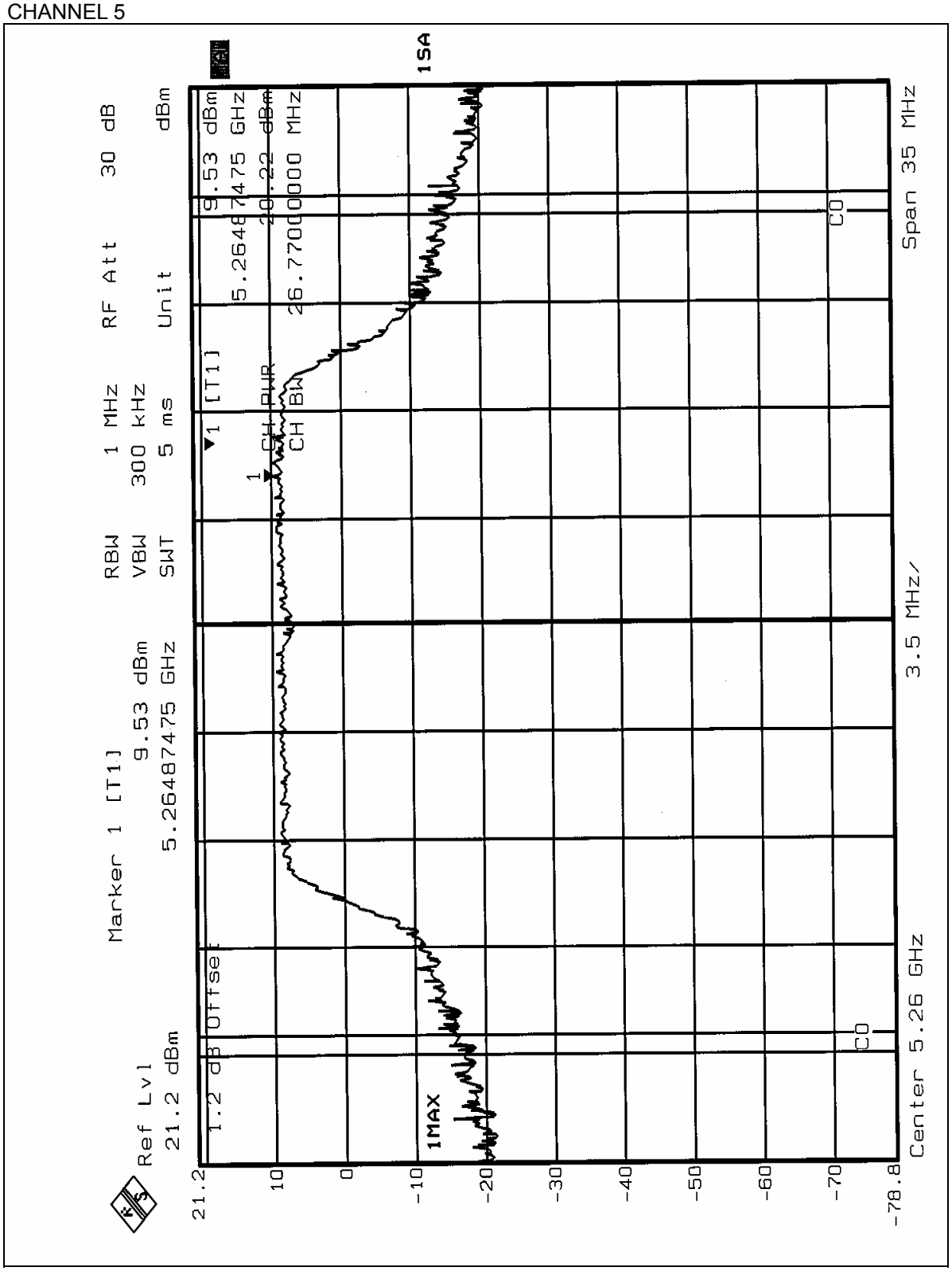
CHANNEL 1


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
4.98 dBm
5.18277054 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1SA
1MAX
1 [T1]
4.98 dBm
5.18277054 GHz
CH PWR 15.63 dBm
CH BW 28.290000000 MHz
Center 5.18 GHz
3.5 MHz/
Span 35 MHz
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8

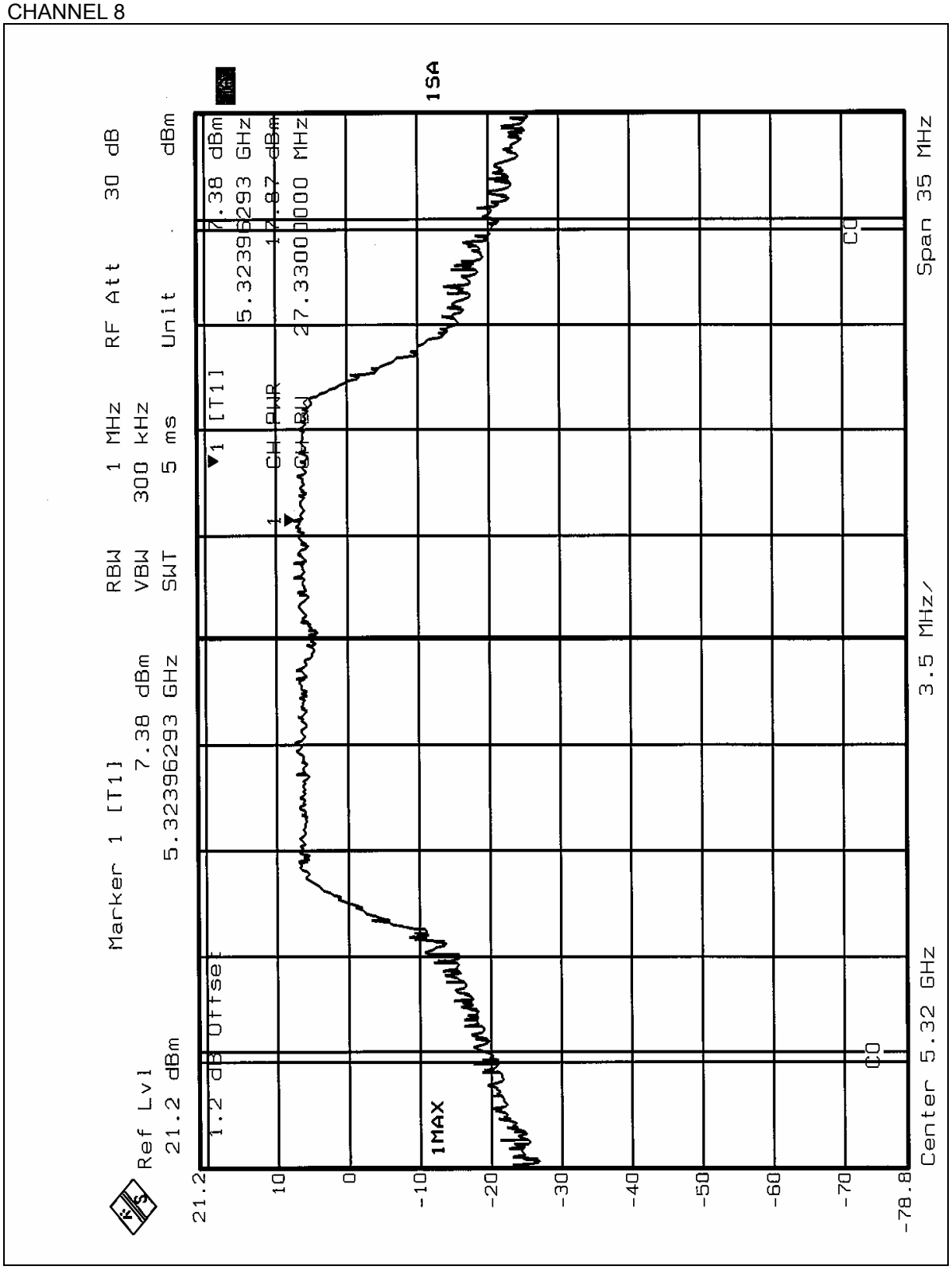
CHANNEL 4


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
5.95 dBm
5.24220942 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1SA
1 [T1]
5.95 dBm
5.24220942 GHz
CH PWR 15.07 dBm
CH BW 27.25000000 MHz
1MAX
Center 5.24 GHz
3.5 MHz/
Span 35 MHz

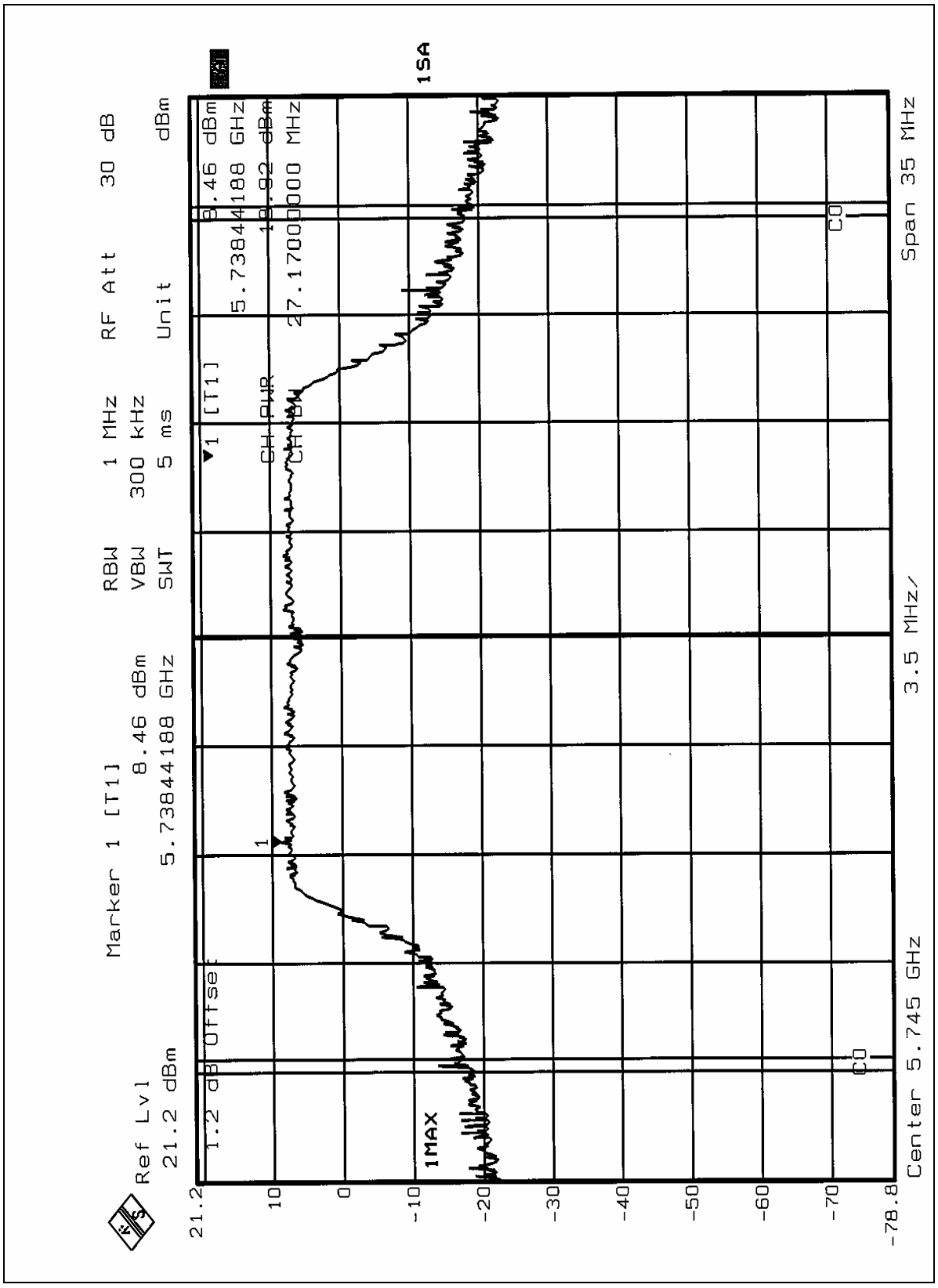
CHANNEL 5


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
9.53 dBm
5.26487475 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1SA
1 [T1]
9.53 dBm
5.26487475 GHz
1 CH PWR 10.22 dBm
CH BW 26.77000000 MHz
1MAX
Center 5.26 GHz
3.5 MHz/
Span 35 MHz

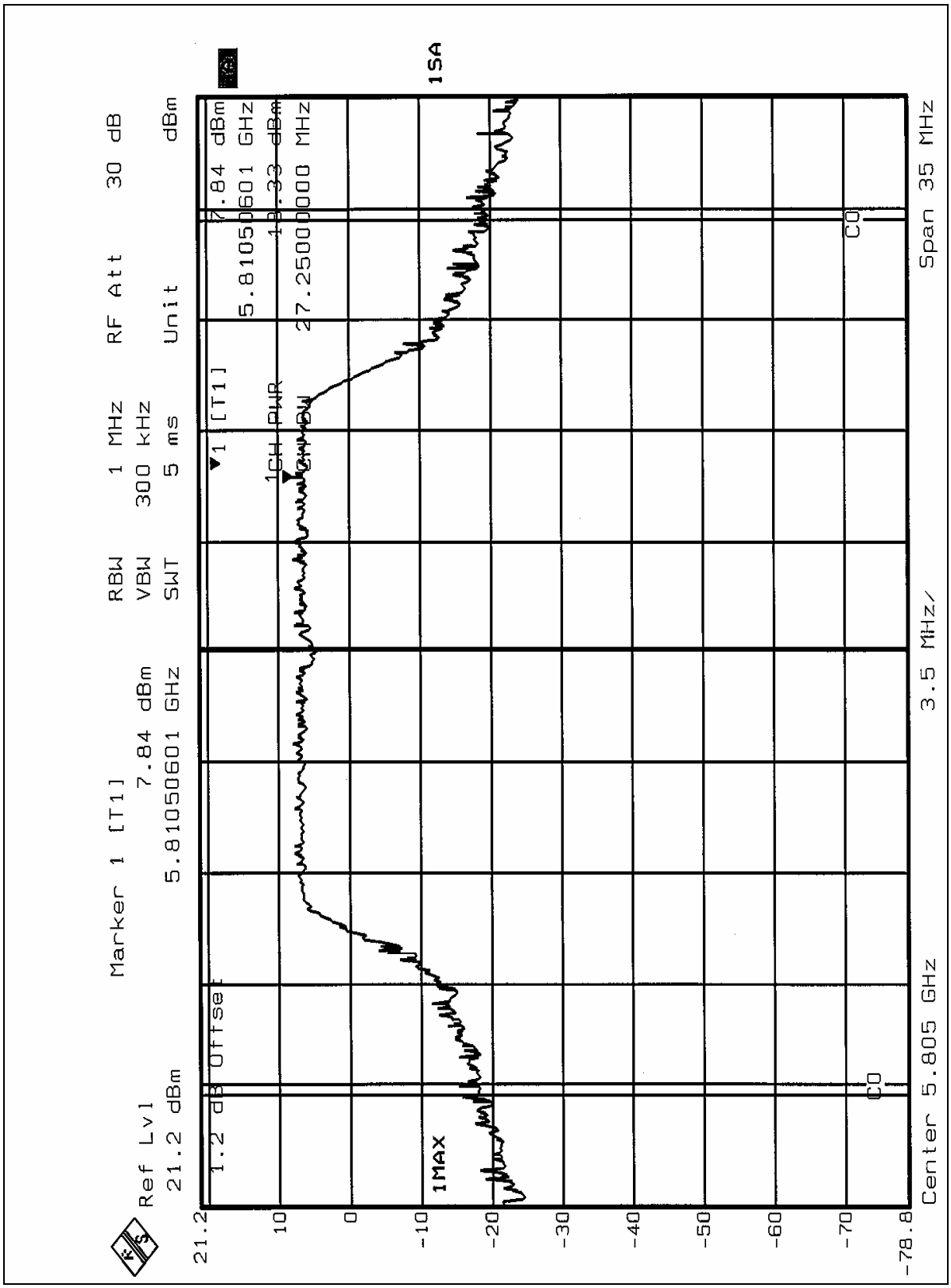
CHANNEL 8


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
7.38 dBm
5.32396293 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
7.38 dBm
5.32396293 GHz
1 CH PWR 17.87 dBm
CH BW 27.33000000 MHz
1SA
1MAX
Center 5.32 GHz
3.5 MHz/
Span 35 MHz
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8

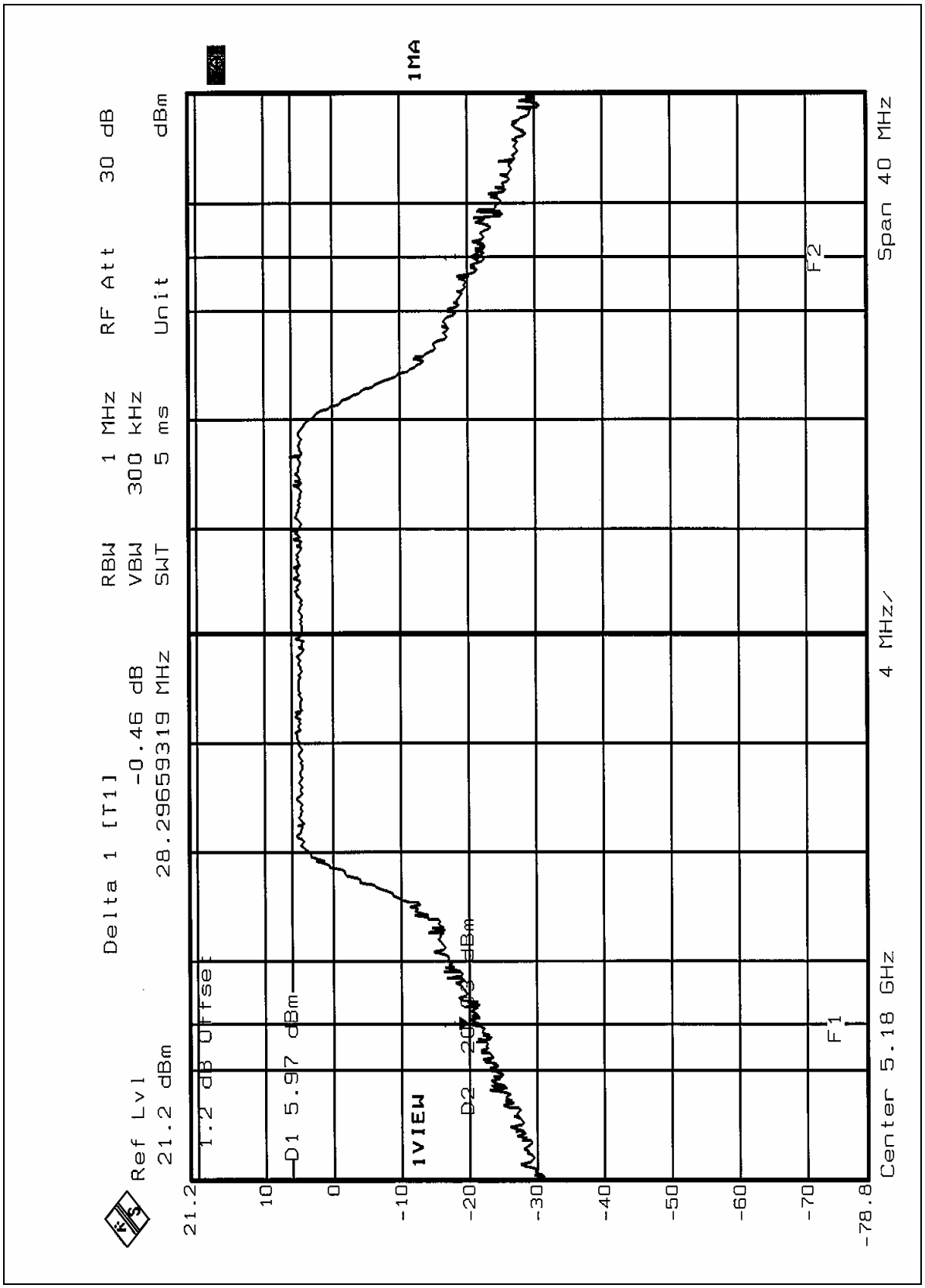
CHANNEL 9


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
8.46 dBm
5.73844188 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1SA
1 [T1]
8.46 dBm
5.73844188 GHz
CH PWR 19.92 dBm
CH BW 27.17000000 MHz
1MAX
Center 5.745 GHz
3.5 MHz/
Span 35 MHz
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8

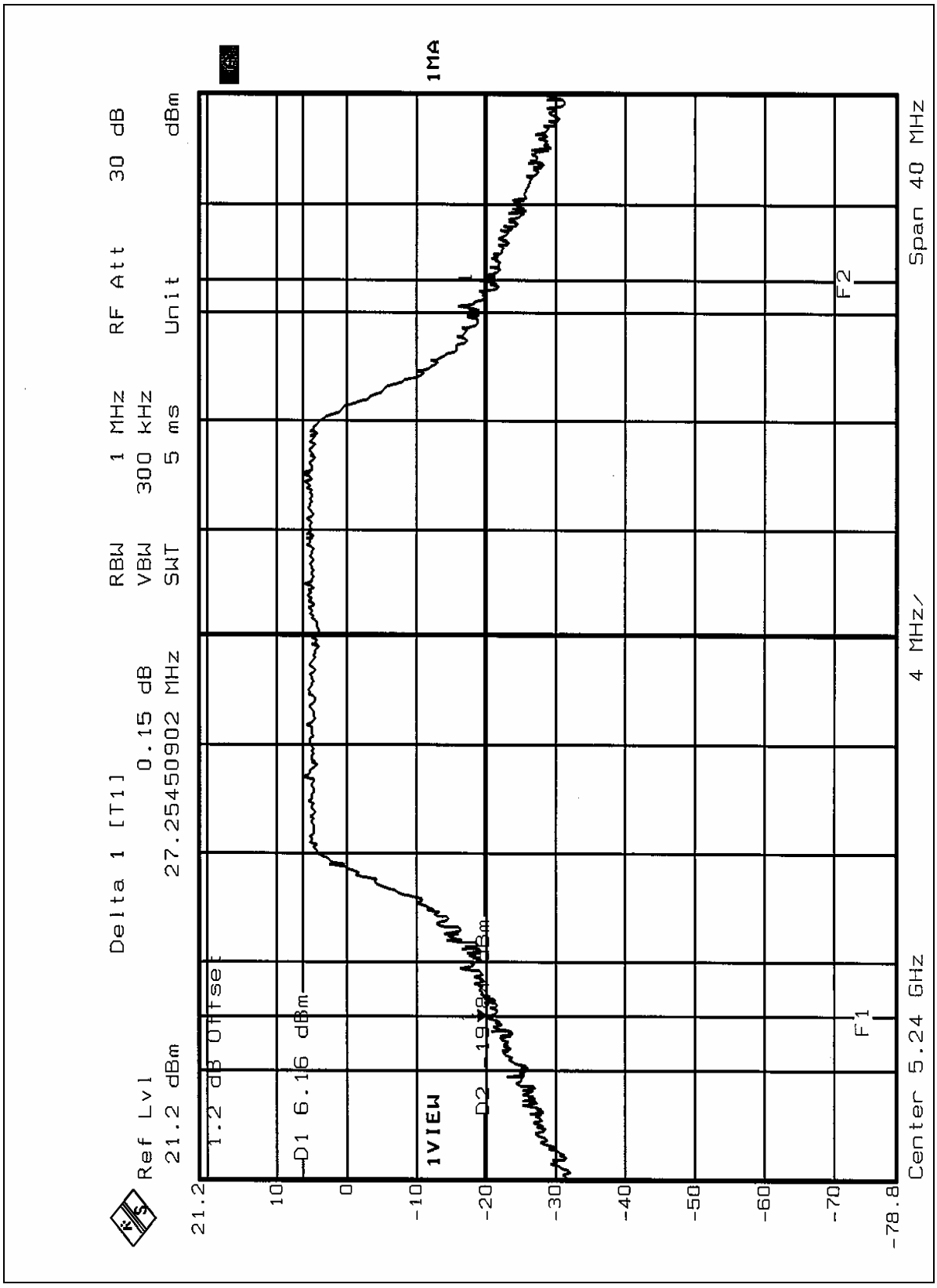
CHANNEL 12


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
7.84 dBm
5.81050601 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1] 7.84 dBm
5.81050601 GHz
1CH PWR 13.33 dBm
CHPWR 27.25000000 MHz
1SA
1MAX
Center 5.805 GHz
3.5 MHz/
Span 35 MHz

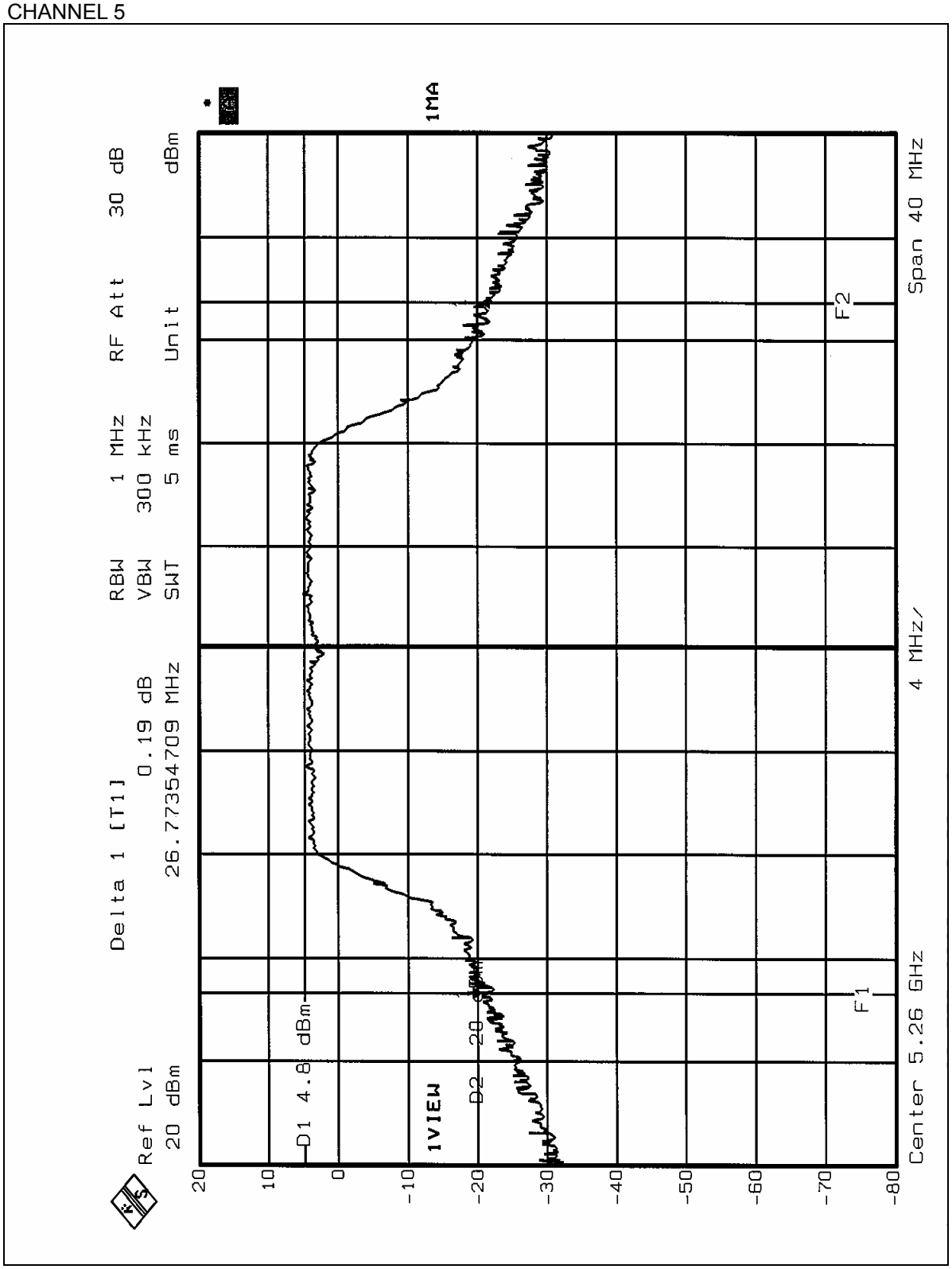
CHANNEL 1


Delta 1 [T1]
-0.46 dB
28.29659319 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
Ref Lvl
21.2 dBm
1.2 dB Offset
D1 5.97 dBm
1VIEW
D2
1MA
F1
F2
Center 5.18 GHz
4 MHz/
Span 40 MHz
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8

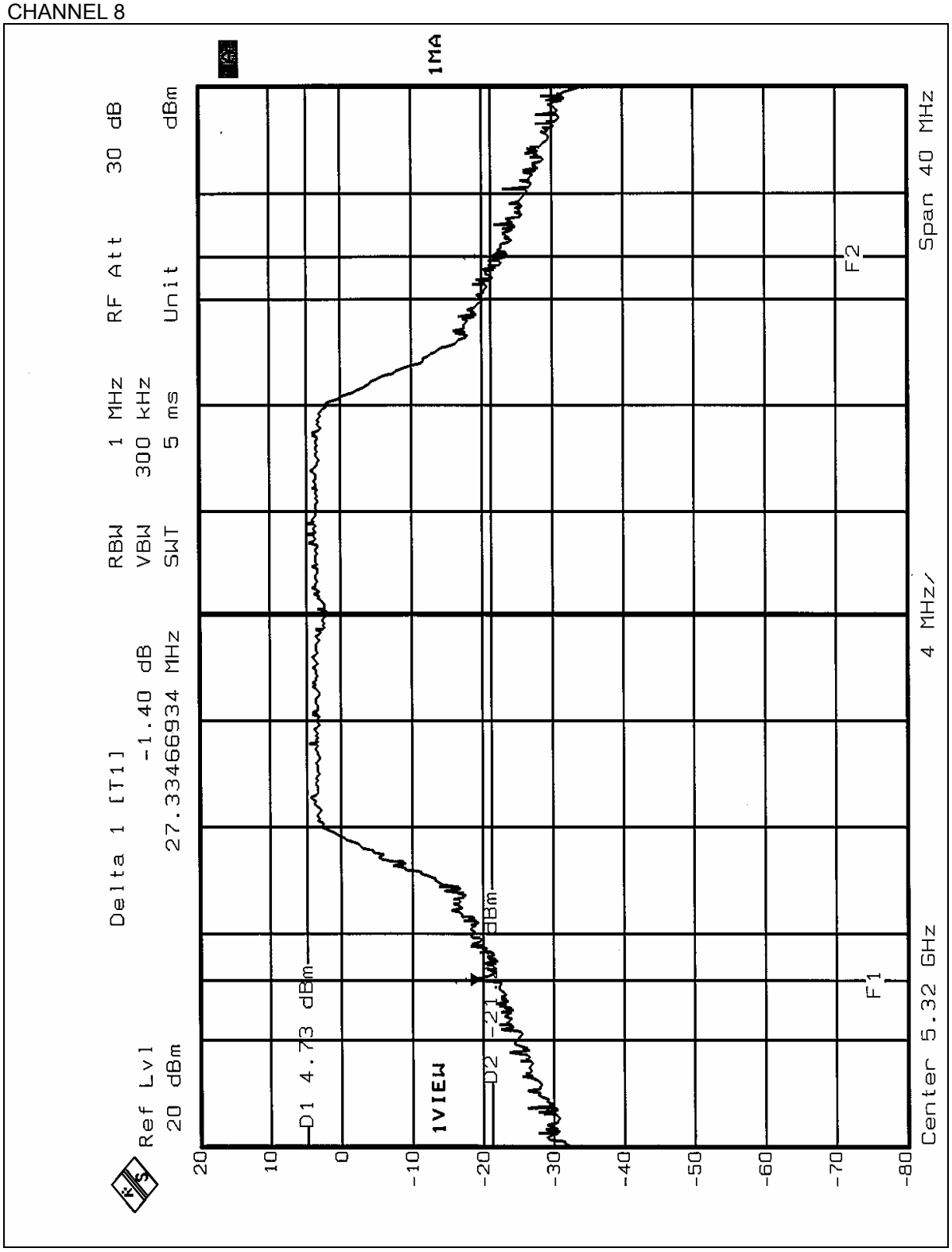
CHANNEL 4


Ref Lvl
21.2 dBm
1.2 dB Offset
Delta 1 [T1]
0.15 dB
27.25450902 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
D1 6.16 dBm
1VIEW
D2
F1
F2
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8
Center 5.24 GHz
4 MHz/
Span 40 MHz

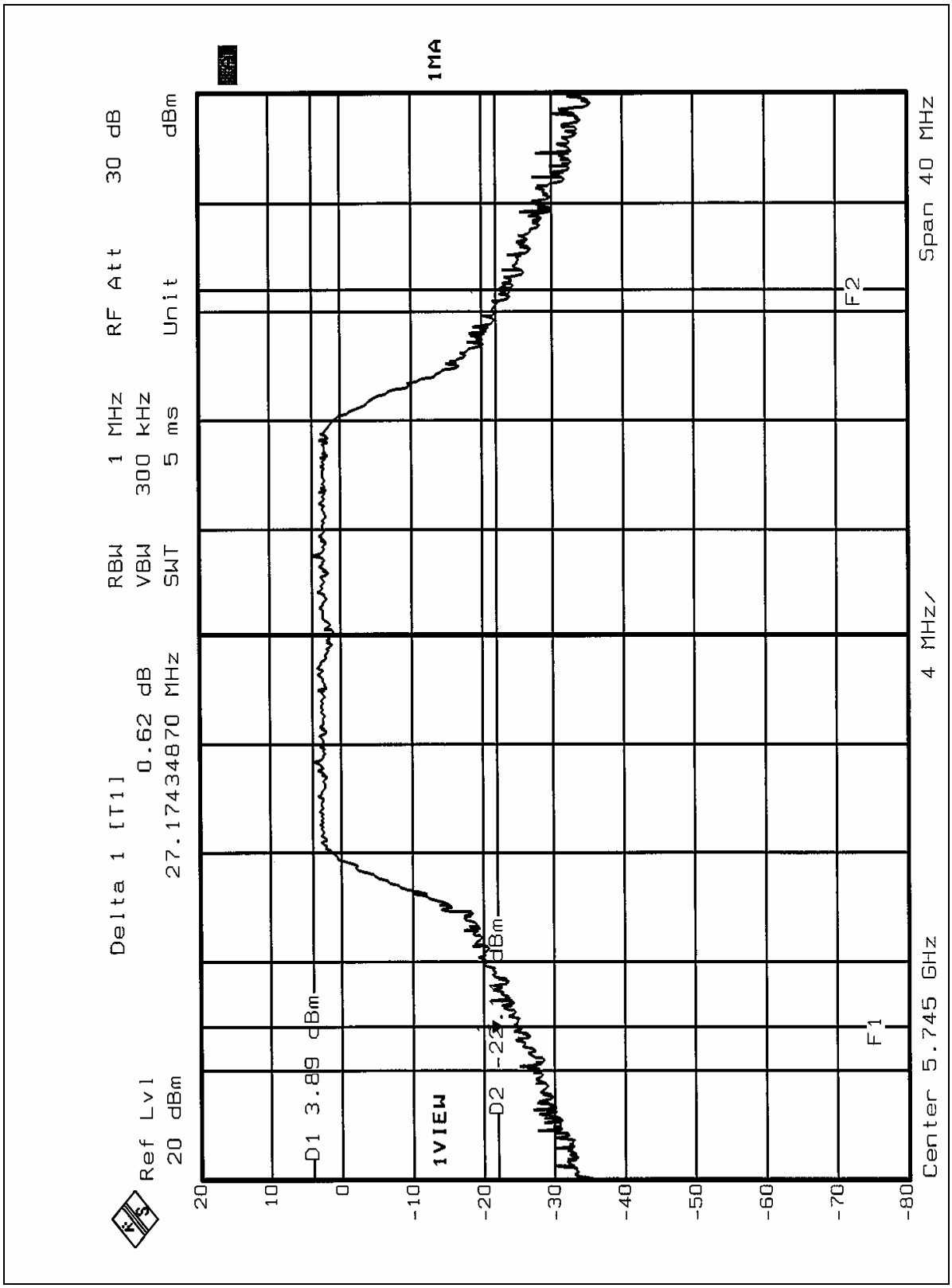
CHANNEL 5


Ref Lvl
20 dBm
Delta 1 [T1]
0.19 dB
26.77354709 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 4.8 dBm
D2 20
F1
F2
Center 5.26 GHz
4 MHz/
Span 40 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

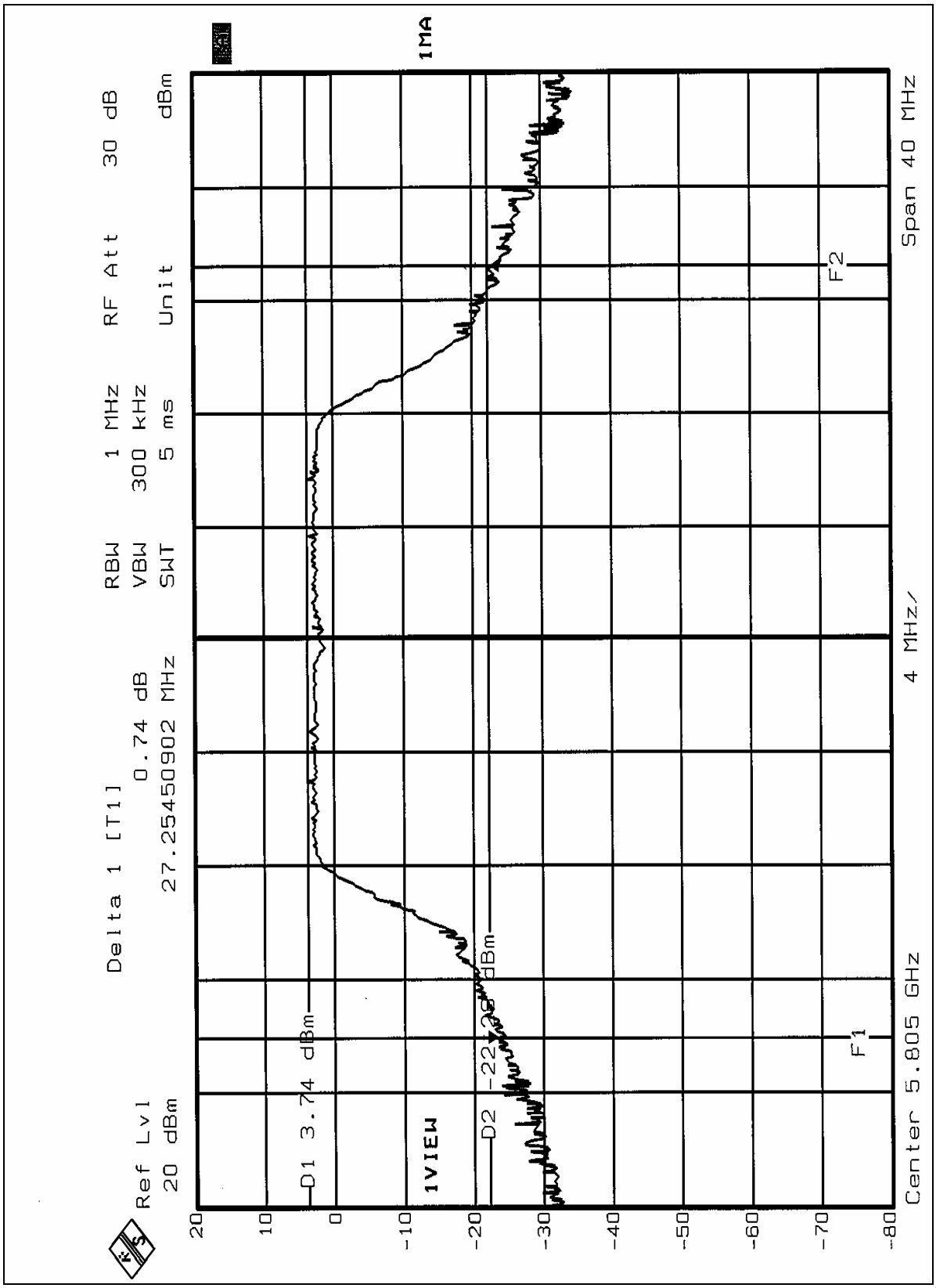
CHANNEL 8


Ref Lvl
20 dBm
Delta 1 [T1]
-1.40 dB
27.33466934 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 4.73 dBm
D2 -21 dBm
F1
F2
Center 5.32 GHz
4 MHz/
Span 40 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CHANNEL 9


Ref Lvl
20 dBm
Delta 1 [T1]
0.62 dB
27.17434870 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 3.89 dBm
D2 -23.1 dBm
F1
F2
Center 5.745 GHz
4 MHz/
Span 40 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CHANNEL 12


Ref Lvl
20 dBm
Delta 1 [T1]
0.74 dB
27.25450902 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 3.74 dBm
D2 -22.26 dBm
F1
F2
Center 5.805 GHz
4 MHz/
Span 40 MHz

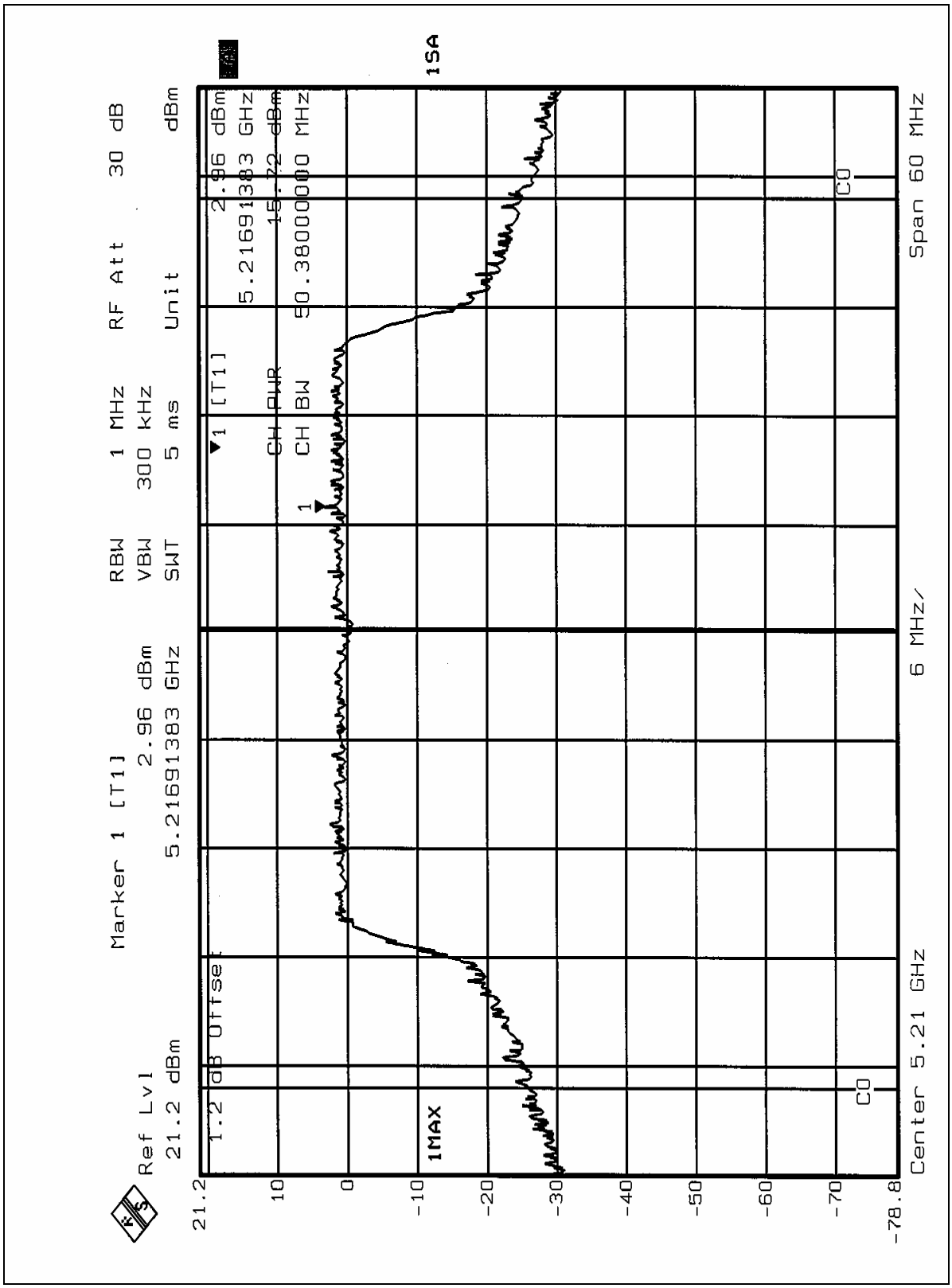
TEST RESULTS – TURBO MODE

EUT	2.4GHz/5GHz Mini - PCI Card	**MODEL**	WLL220
ENVIRONMENTAL CONDITIONS	24deg. C, 67%RH, 991hPa	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
TESTED BY	Ansen Lei		

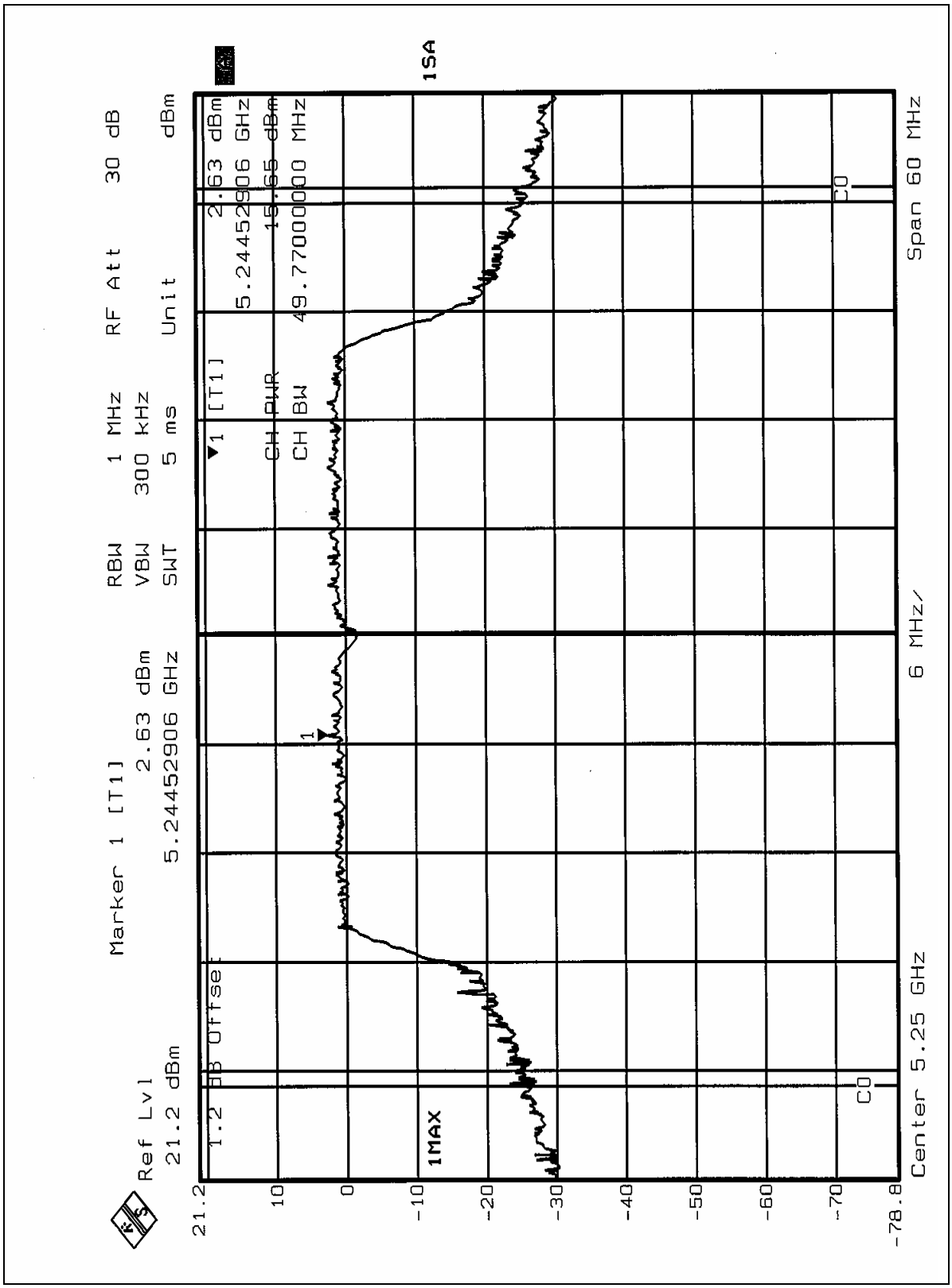
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5210	15.72	17.00	50.38	PASS
2	5250	15.65	17.00	49.78	PASS
3	5290	20.25	24.00	49.54	PASS
4	5760	18.88	30.00	48.58	PASS
5	5800	16.28	30.00	48.22	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

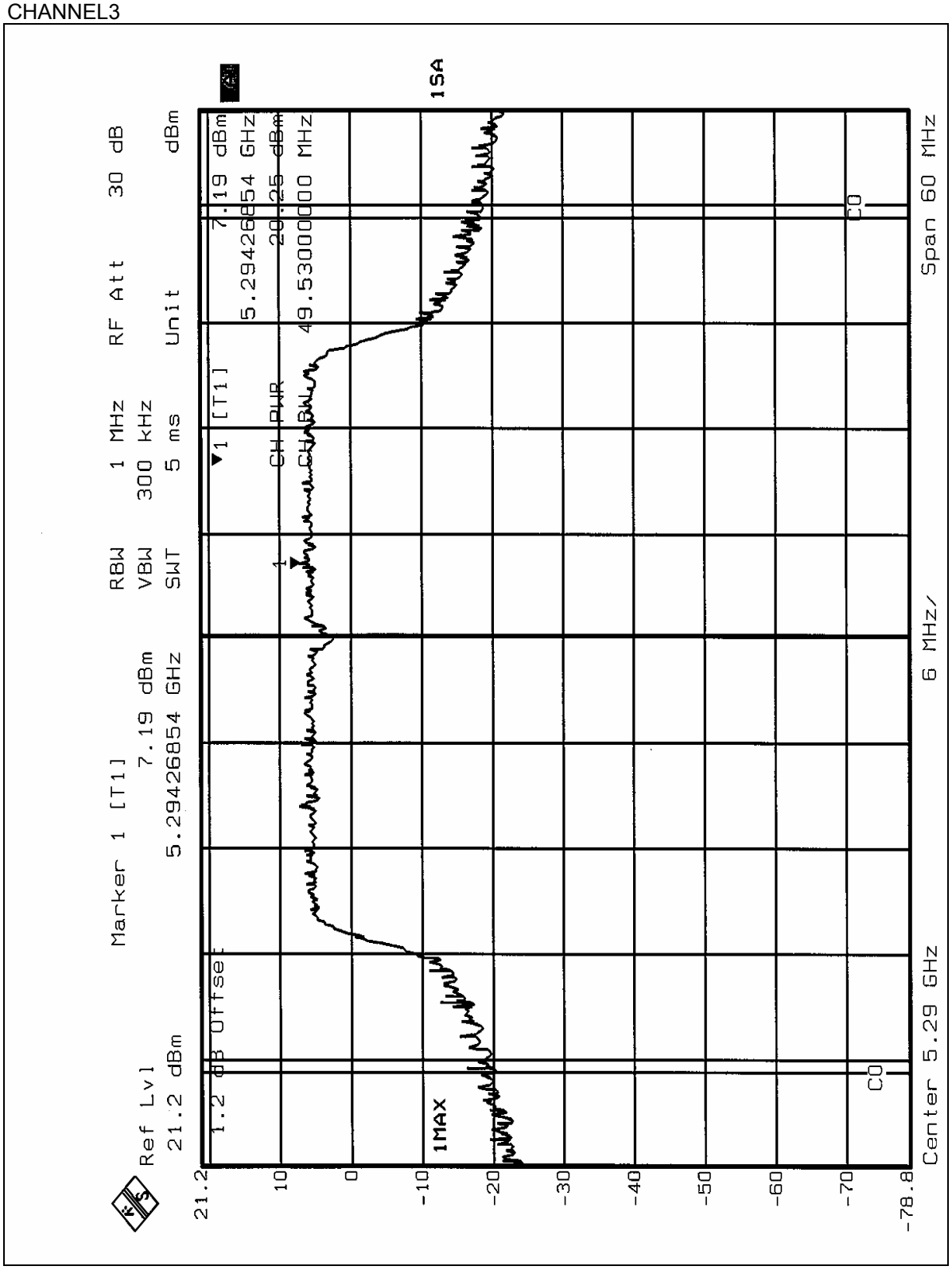
CHANNEL 1


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
2.96 dBm
5.21691383 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
2.96 dBm
5.21691383 GHz
CH PWR 15.72 dBm
1 CH BW 90.38000000 MHz
1SA
1MAX
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8
Center 5.21 GHz
6 MHz/
Span 60 MHz

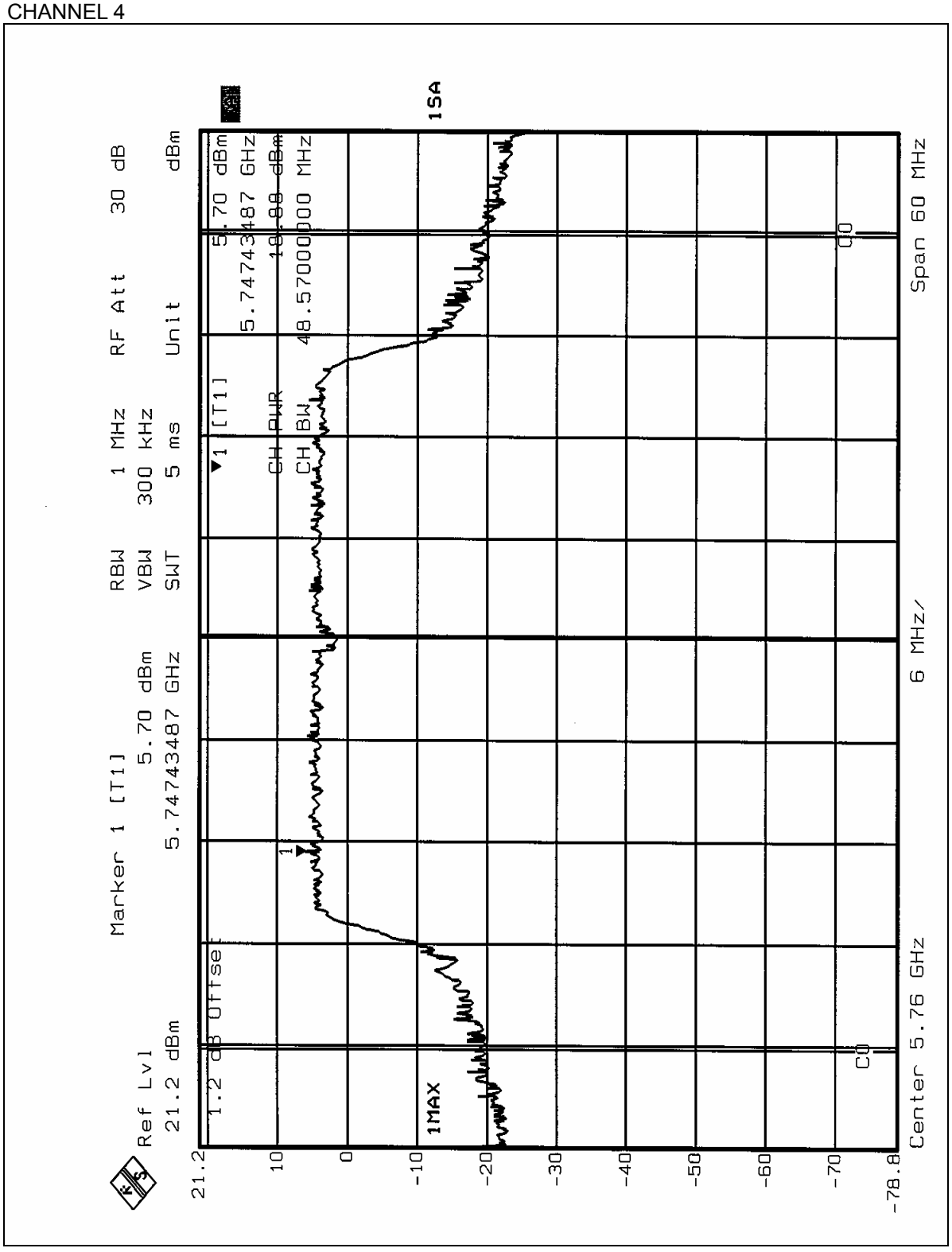
CHANNEL 2


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
2.63 dBm
5.24452906 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1SA
1 [T1]
2.63 dBm
5.24452906 GHz
CH PWR 15.65 dBm
CH BW 49.77000000 MHz
1MAX
Center 5.25 GHz
6 MHz/
Span 60 MHz
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8

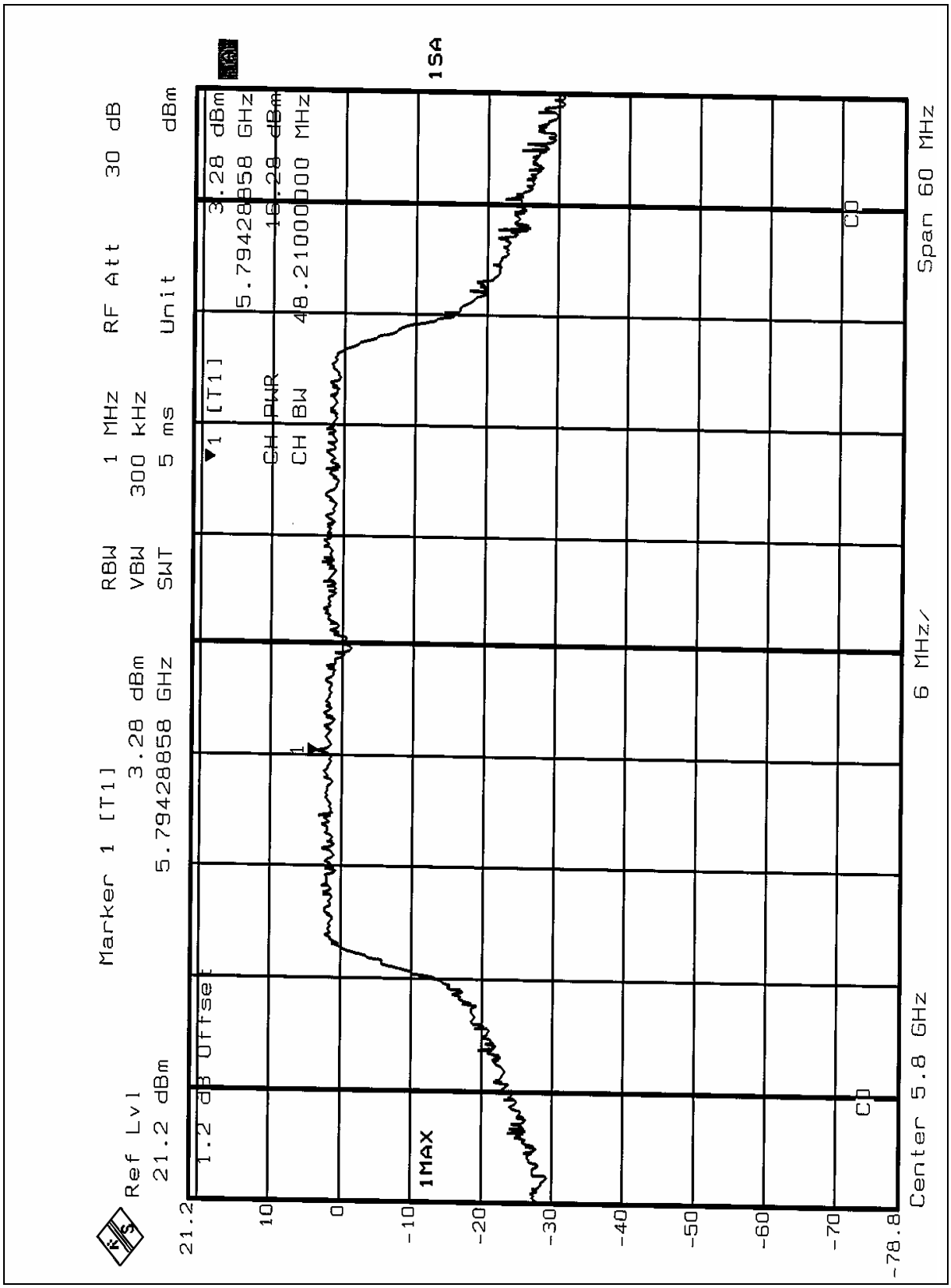
CHANNEL3


Ref Lvl
21.2 dBm
Marker 1 [T1]
7.19 dBm
5.29426854 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1SA
1 [T1]
7.19 dBm
5.29426854 GHz
CH PWR 20.25 dBm
49.53000000 MHz
1.2 dB Offset
1MAX
Center 5.29 GHz
6 MHz/
Span 60 MHz
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8

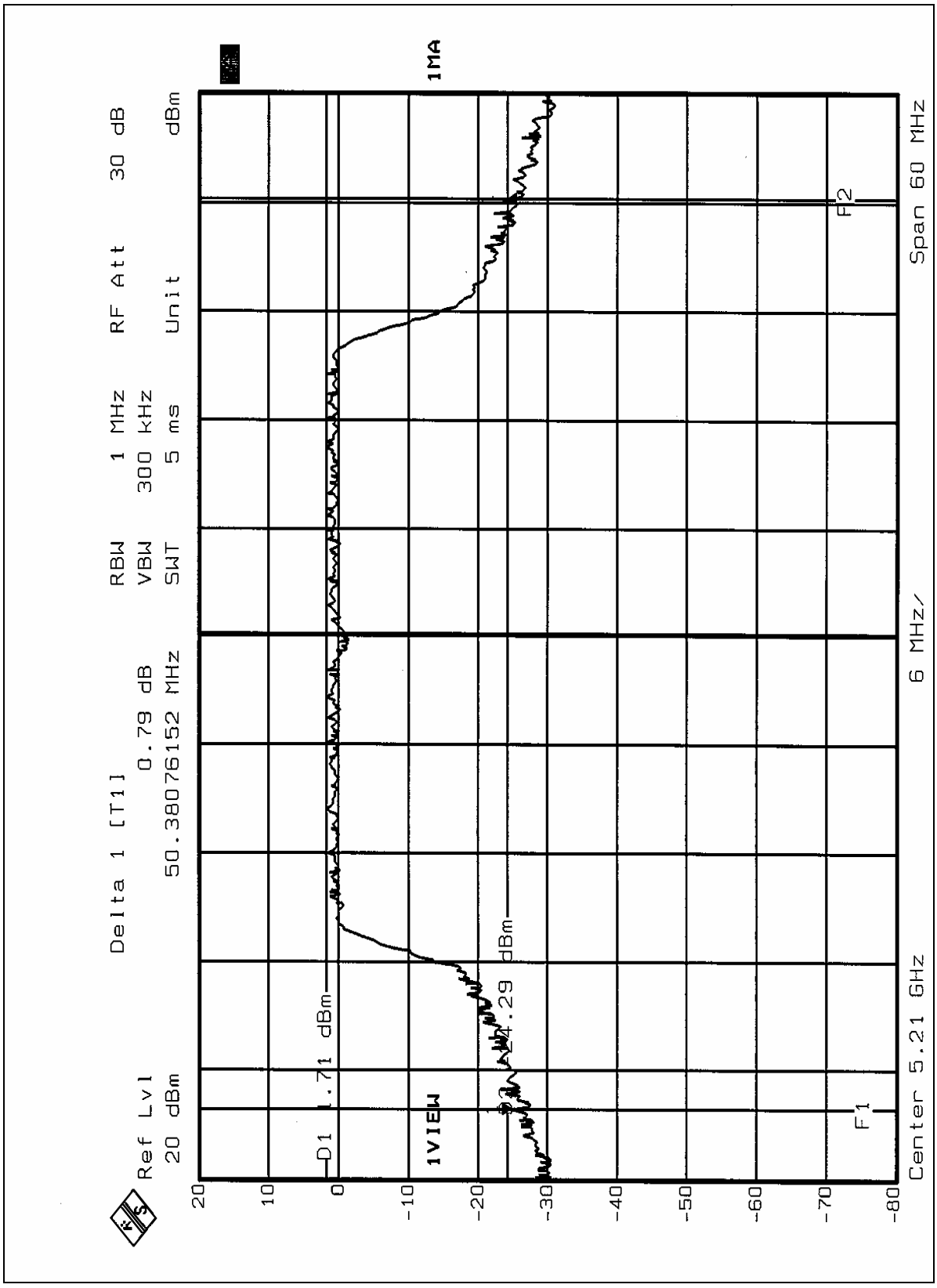
CHANNEL 4


Marker 1 [T1]
5.70 dBm
5.74743487 GHz
Ref Lvl
21.2 dBm
1.2 dB Offset
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1 [T1]
5.70 dBm
5.74743487 GHz
CH PWR 10.88 dBm
CH BW 48.57000000 MHz
1SA
1MAX
Center 5.76 GHz
6 MHz/
Span 60 MHz
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8

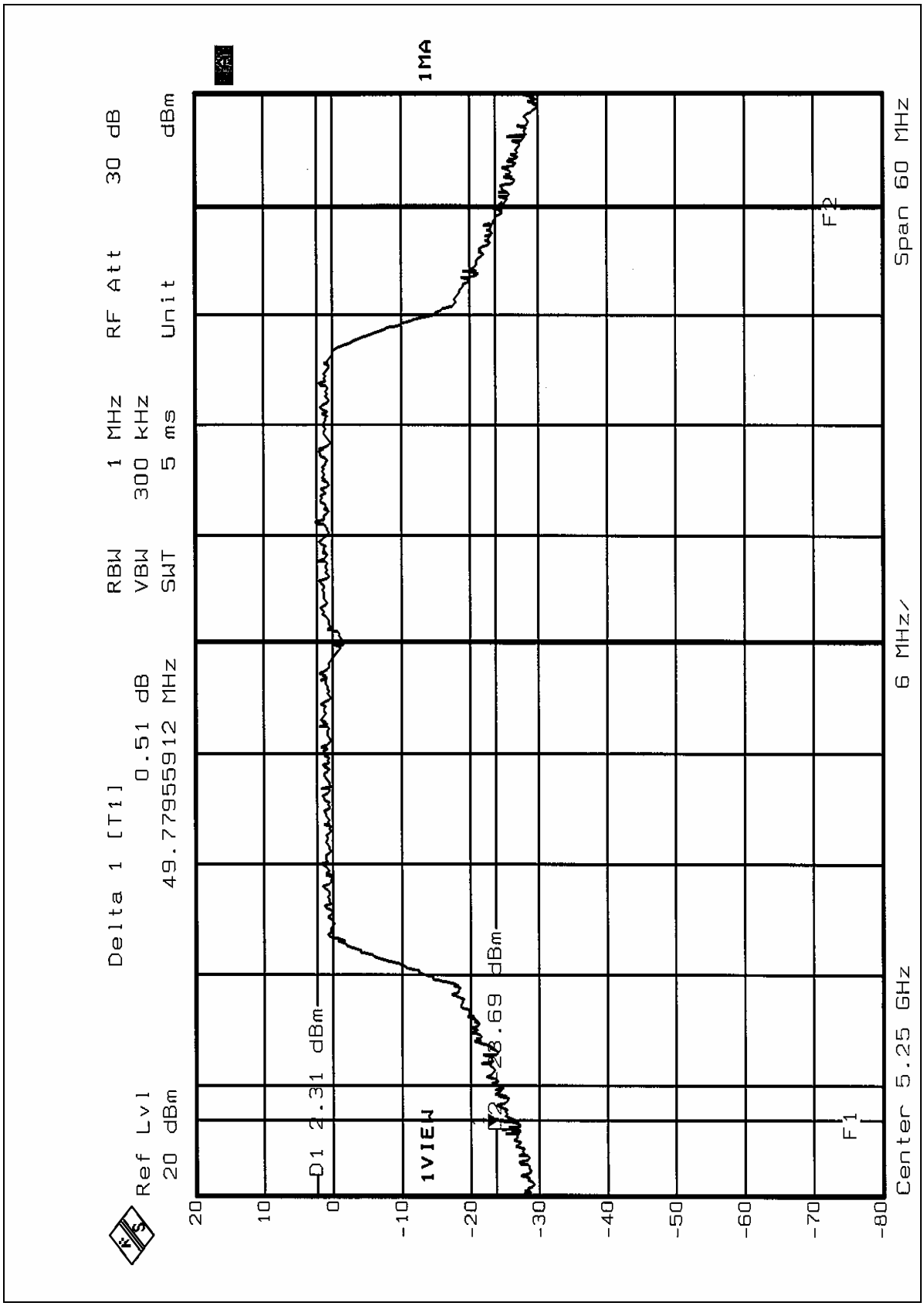
CHANNEL 5


Ref Lvl
21.2 dBm
1.2 dB Offset
Marker 1 [T1]
3.28 dBm
5.79428858 GHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1SA
1 [T1]
3.28 dBm
5.79428858 GHz
CH PWR 16.28 dBm
CH BW 48.21000000 MHz
1MAX
CD
Center 5.8 GHz
6 MHz/
Span 60 MHz
21.2
10
0
-10
-20
-30
-40
-50
-60
-70
-78.8

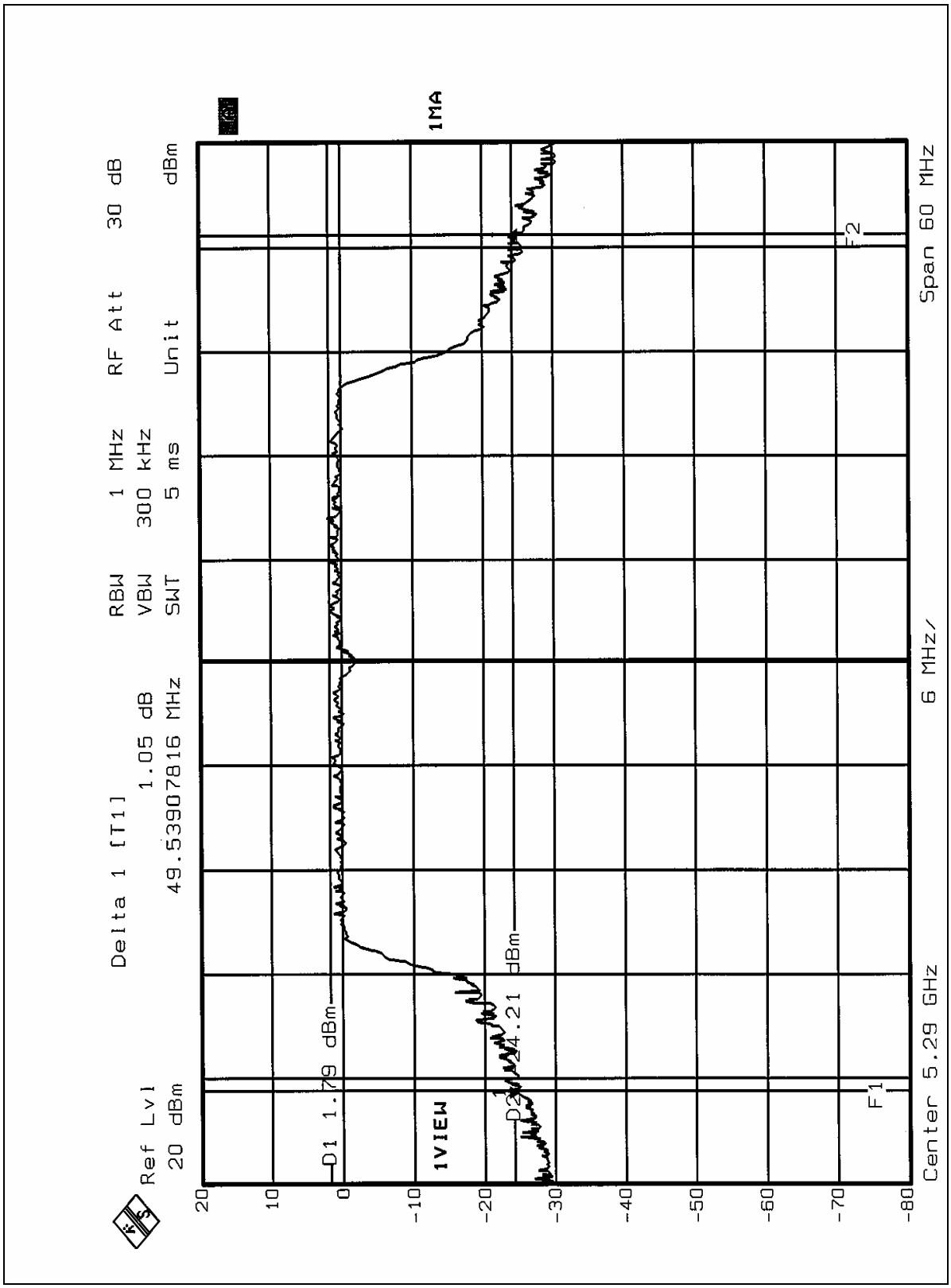
CHANNEL 1


Ref Lvl
20 dBm
Delta 1 [T1]
0.79 dB
50.38076152 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 1.71 dBm
-24.29 dBm
F1
F2
Center 5.21 GHz
6 MHz/
Span 60 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

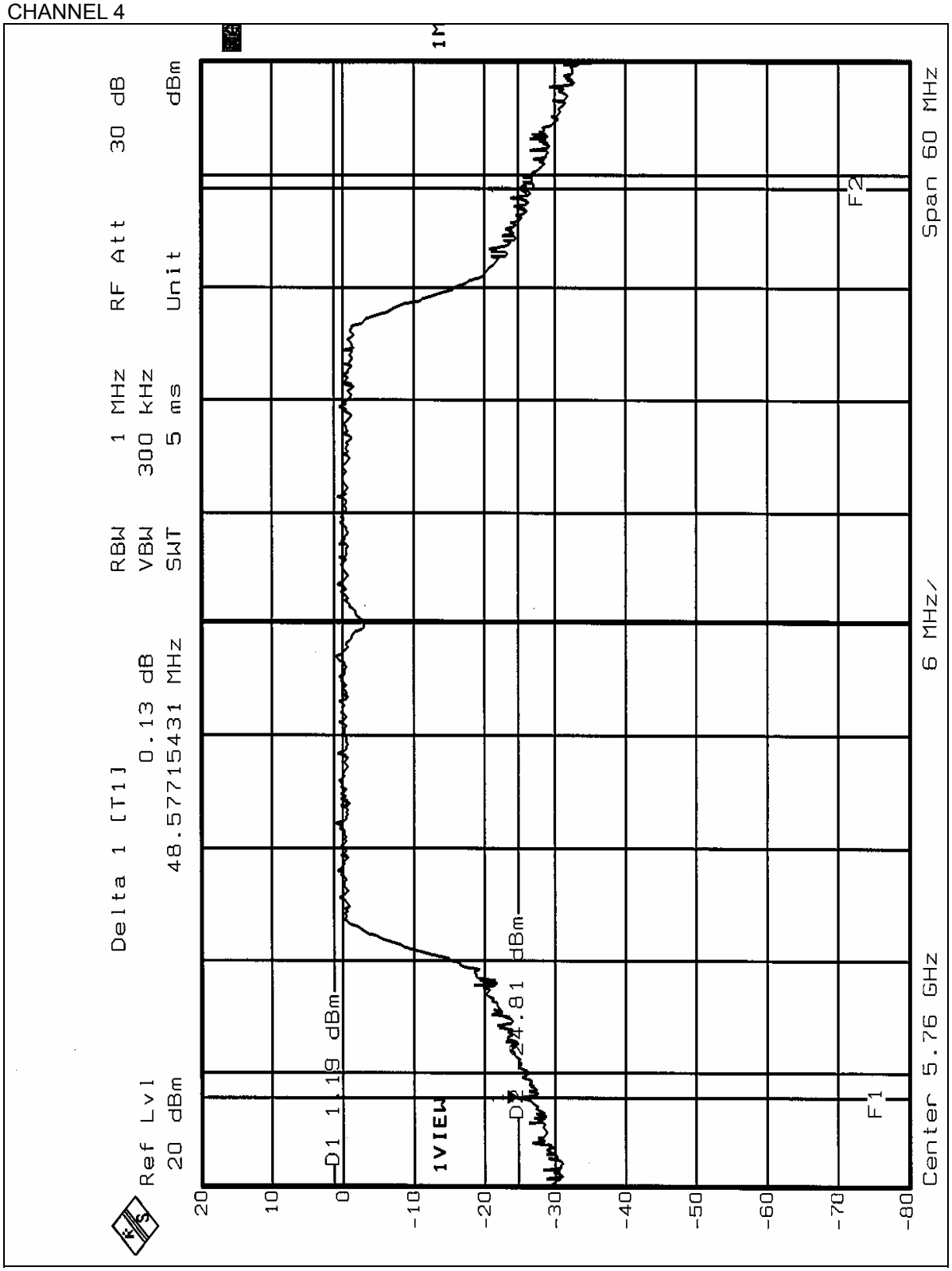
CHANNEL 2


Ref Lvl
20 dBm
Delta 1 [T1]
0.51 dB
49.77955912 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 2.31 dBm
T2 -28.69 dBm
F1
F2
Center 5.25 GHz
6 MHz/
Span 60 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

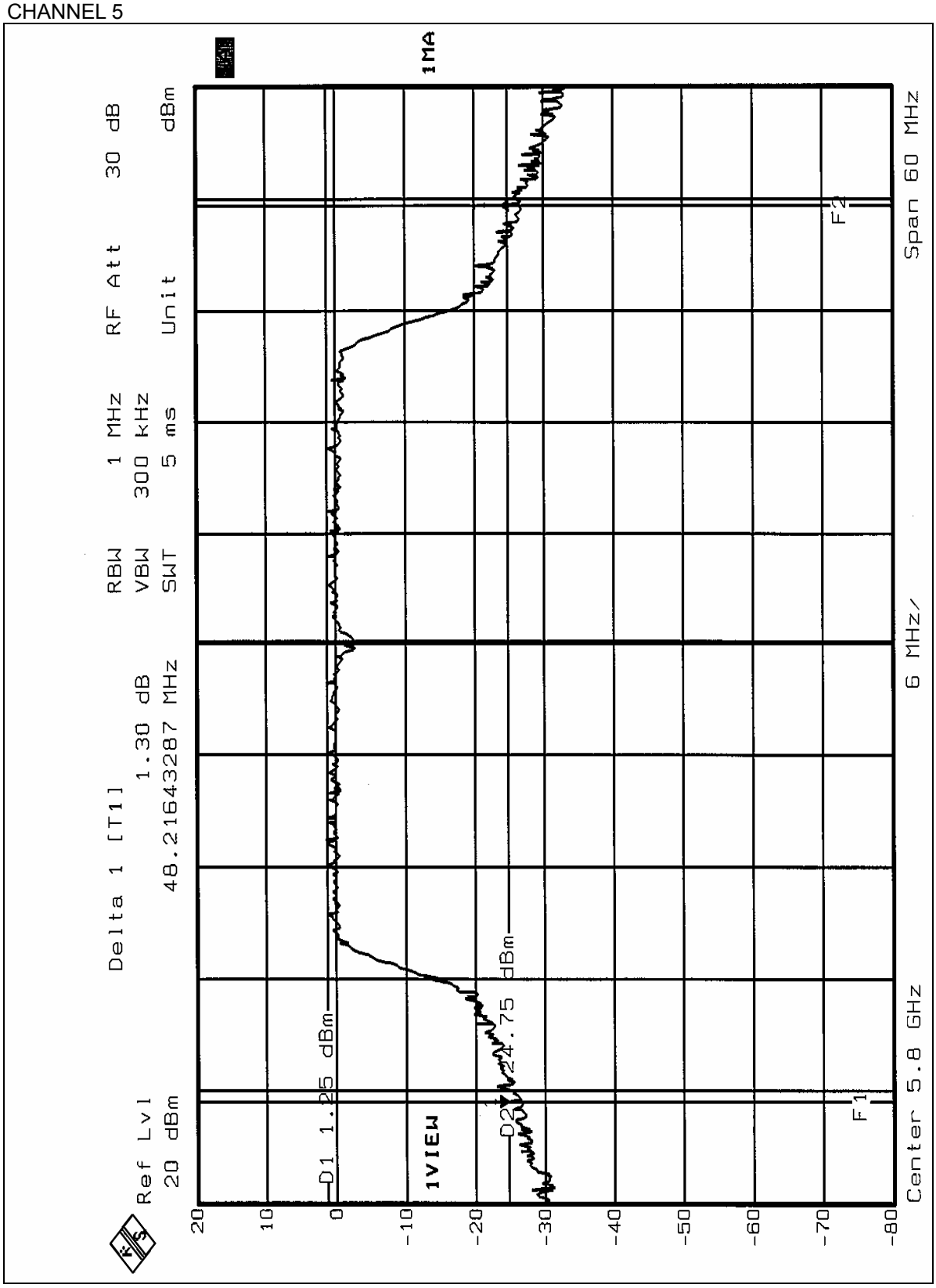
CHANNEL 3


Ref Lvl
20 dBm
Delta 1 [T1]
1.05 dB
49.53907816 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 1.79 dBm
D2 -4.21 dBm
F1
F2
Center 5.29 GHz
6 MHz/
Span 60 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CHANNEL 4


Ref Lvl
20 dBm
Delta 1 [T1]
0.13 dB
48.57715431 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
D1 1.19 dBm
D2 -24.81 dBm
1VIEW
Center 5.76 GHz
6 MHz/
Span 60 MHz
F1
F2

CHANNEL 5


Ref Lvl
20 dBm
Delta 1 [T1]
1.30 dB
48.21643287 MHz
RBW 1 MHz
VBW 300 kHz
SWT 5 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 1.25 dBm
D2 24.75 dBm
F1
F2
Center 5.8 GHz
6 MHz/
Span 60 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80