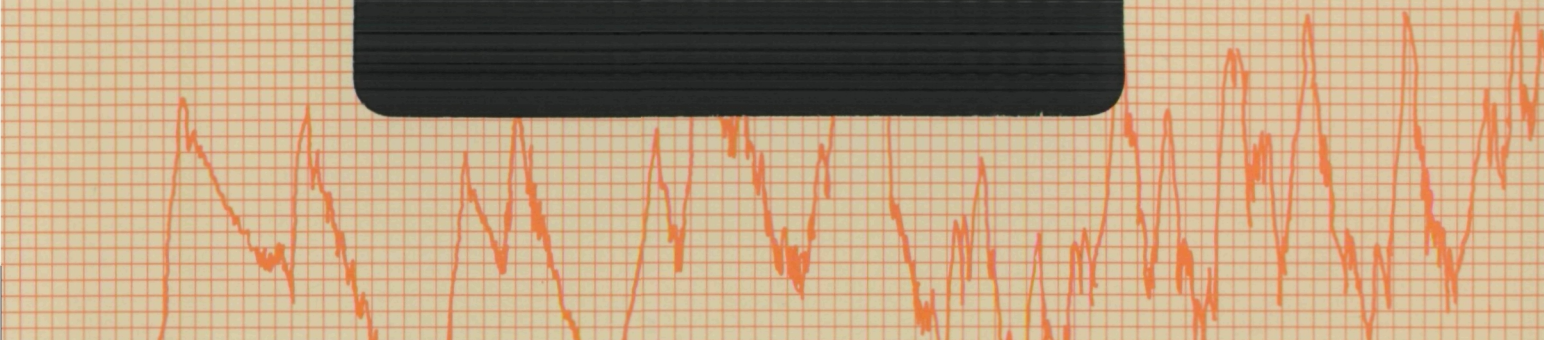


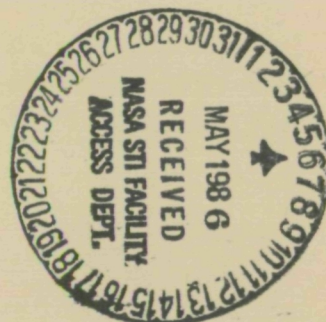
WYLE

LABORATORIES SCIENTIFIC SERVICES & SYSTEMS GROUP



(NASA-CR-178811) A DATA BASE AND ANALYSIS PROGRAM FOR SHUTTLE MAIN ENGINE DYNAMIC PRESSURE MEASUREMENTS. APPENDIX D: DATA BASE PLOTS FOR SSME TESTS 750-047 THROUGH 750-111 Final Report (Wyle Labs., Inc.)

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 HC#A 18/mf#A01
 Unclas
 G3/20 06055



research **REPORT**

WYLE LABORATORIES - RESEARCH STAFF
TECHNICAL REPORT 66338-01

A DATA BASE AND ANALYSIS PROGRAM
FOR SHUTTLE MAIN ENGINE
DYNAMIC PRESSURE MEASUREMENTS
APPENDIX D

DATA BASE PLOTS FOR SSME TESTS
750-047 through 750-111

by

Thomas Coffin

A final report of
work performed under contract NAS8-34343

for

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GEORGE C. MARSHALL SPACE FLIGHT CENTER
MARSHALL SPACE FLIGHT CENTER, ALABAMA 35812

January 1986

FOREWORD

This report describes a dynamic pressure data base and data base management system developed to characterize the Space Shuttle Main Engine (SSME) dynamic pressure environment. The data base represents dynamic pressure measurements obtained during single engine hot firing tests of the SSME. Software is provided to permit statistical evaluation of selected measurements under specified operating conditions. An interpolation scheme is also included to estimate spectral trends with SSME power level. This report was prepared by Wyle Laboratories Scientific Services and Systems Group for the National Aeronautics and Space Administration, George C. Marshall Space Flight Center. The work was performed under NASA contract NAS 8-34343, entitled "Flow Dynamic Environments in High Performance Rocket Engines."

The author wishes to acknowledge the contribution to this study by Dr. G. Meares, Chief Architect of the data base management software described herein. Messrs. B. Dobbs and D. Duck contributed long hours over a digitizer pad to accomplish data base input. The singular value decomposition software for spectrum interpolation was developed by Dr. J. Jong. Mr. T. Nesman, MSFC technical contract monitor, provided continuing support through informal project reviews and served as a focal point for definition of SSME data requirements.

DATA PLOT LISTING FOR TEST STAND A3

<u>Test</u>	<u>Channel Descriptor</u> (Time History or PSD)	<u>Maximum Frequency</u> (Hz)	<u>Time Slice</u> (Sec)
047	THRUST		
048			
049			
050			
052			
053			
066			
067			
068			
069			
070			
071			
072			
073			
074			
075			
076			
077			
078			
079			
087			
088			
089			
090			
091			
092			
093			
094			
095			
096			
097			
098			
099			
100			
	LPFP IN PR		
	LPOP DS PR		
	HPOP BAL CAV PR2		
	HPOP BAL CAV PR1		
	LPFP IN PR		
		5,000	10
			40
			85
			95

DATA PLOT LISTING FOR TEST STAND A3 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
100	LFPF IN PR	20,000	10
	↓		40
	↓		85
	↓		95
	LPOP DS PR		10
	↓		40
	↓		85
	↓		95
	HPOP BAL CAV PR2		10
	↓		40
101	↓	85	
	↓	95	
	HPOP BAL CAV PR1	10	
	↓	40	
	↓	85	
	↓	95	
	THRUST	5,000	5
	LFPF IN PR		30
	LPOP DS PR		80
	HPOP BAL CAV PR2		95
LFPF IN PR	5		
↓	30		
↓	80		
↓	95		
LPOP DS PR	5		
↓	30		
102	↓	80	
	↓	95	
	HPOP BAL CAV PR2	5	
	↓	30	
	↓	80	
	↓	95	
	THRUST	20,000	15
	LFPF IN PR		35
	HPOP BAL CAV PR2		60
	HPOP DS PR		80
LFPF IN PR			
↓			
↓			
↓			
↓			
↓			

DATA PLOT LISTING FOR TEST STAND A3 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
102	LFPF IN PR	20,000	100
			200
			280
	HPOP BAL CAV PR2		15
			35
			60
			80
			100
			150
			200
			280
	HPOP DS PR		15
			35
			60
			80
	100		
	200		
	280		
	5,000		
	15		
	35		
	60		
	200		
	280		
	20,000		
	15		
	35		
	60		
	80		
	100		
	200		
	280		
103	THRUST	5,000	5
	LFPF IN PR		15
	LPOP DS PR		20
	HPOP BAL CAV PR2		26
	HPOP BAL CAV PR1		30
	HPOP DISC PR		5
	LFPF IN PR		15
			20
			20,000
			20

DATA PLOT LISTING FOR TEST STAND A3 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>	
103	LFPF IN PR	20,000	26	
	↓		30	
	LPOP DS PR		5	
	↓		15	
	↓		20	
	↓		26	
	↓		30	
	HPOP BAL CAV PR2		5	
	↓		15	
	↓		20	
	↓		26	
	↓		30	
	HPOP DISC PR		5	
	↓		15	
	↓		20	
104	MCC HOT GAS IN PR	40,000	26	
	↓		30	
	↓		5	
	↓		15	
	↓		20	
	↓		26	
	↓		30	
	MMC LONG ACCEL 1		20,000	6
	THRUST			↓
	LFPF IN PR			
	LPOP DS PR			
	HPOP BAL CAV PR2			
	HPOP BAL CAV PR1			
	HPOP DISC PR			
	MMC HOT GAS IN PR			
LFPF IN PR				
LPOP DS PR				
HPOP BAL CAV PR2				
HPOP DISC PR				
MMC HOT GAS IN PR				
↓	40,000			
105	PBP DS PR	20,000		
	THRUST			
	LFPF IN PR			

DATA PLOT LISTING FOR TEST STAND A3 (Continued)

Test	Channel Descriptor (Time History or PSD)	Maximum Frequency (Hz)	Time Slice (Sec)
108	THRUST		
	LFPF IN PR	5,000	6
		▼	12
		20,000	6
			12
	LPOP DS PR		6
		▼	12
	HPOP DS PR		6
		▼	12
	HPOP DISC PR		6
		▼	12
	MCC HOT GAS IN PR		6
	▼	12	
	40,000	6	
	▼	12	
	20,000	6	
	▼	12	
		6	
109	THRUST		
	LFPF IN PR		
	LPOP DS PR		
	HPOP BAL CAV PR2		
	HPOP BAL CAV PR1		
	HPOP DS PR		
	HPOP DISC PR		
	MCC HOT GAS IN PR		
	PBP DS PR		
	LFPF IN PR	20,000	6
		▼	14
	LPOP DS PR		6
	▼	14	
110	THRUST		
	LFPF DS PR		
	LPOP DS PR		
	HPOP BAL CAV PR2		
	HPOP BAL CAV PR1		
	CHAMBER PR		
	PBP FUEL SUP PR		
	FPB FUEL MAN PR		
	LFPF DS PR	20,000	10
		▼	30
			150
			300
		400	
		10	
		30	
		150	

DATA PLOT LISTING FOR TEST STAND A3 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>
111	HPOP BAL CAV PR2	20,000	15
			40
			50
			60
			70
			80
			90
			100
			120
			200
			280
			111
40			
50			
60			
70			
80			
90			
100			
120			
200			
280			
111	HPOP DS PR	20,000	
			40
			50
			60
			70
			80
			90
			100
			120
			200
			280
			111
40			
50			
60			
70			
80			
90			
100			
120			
200			
280			

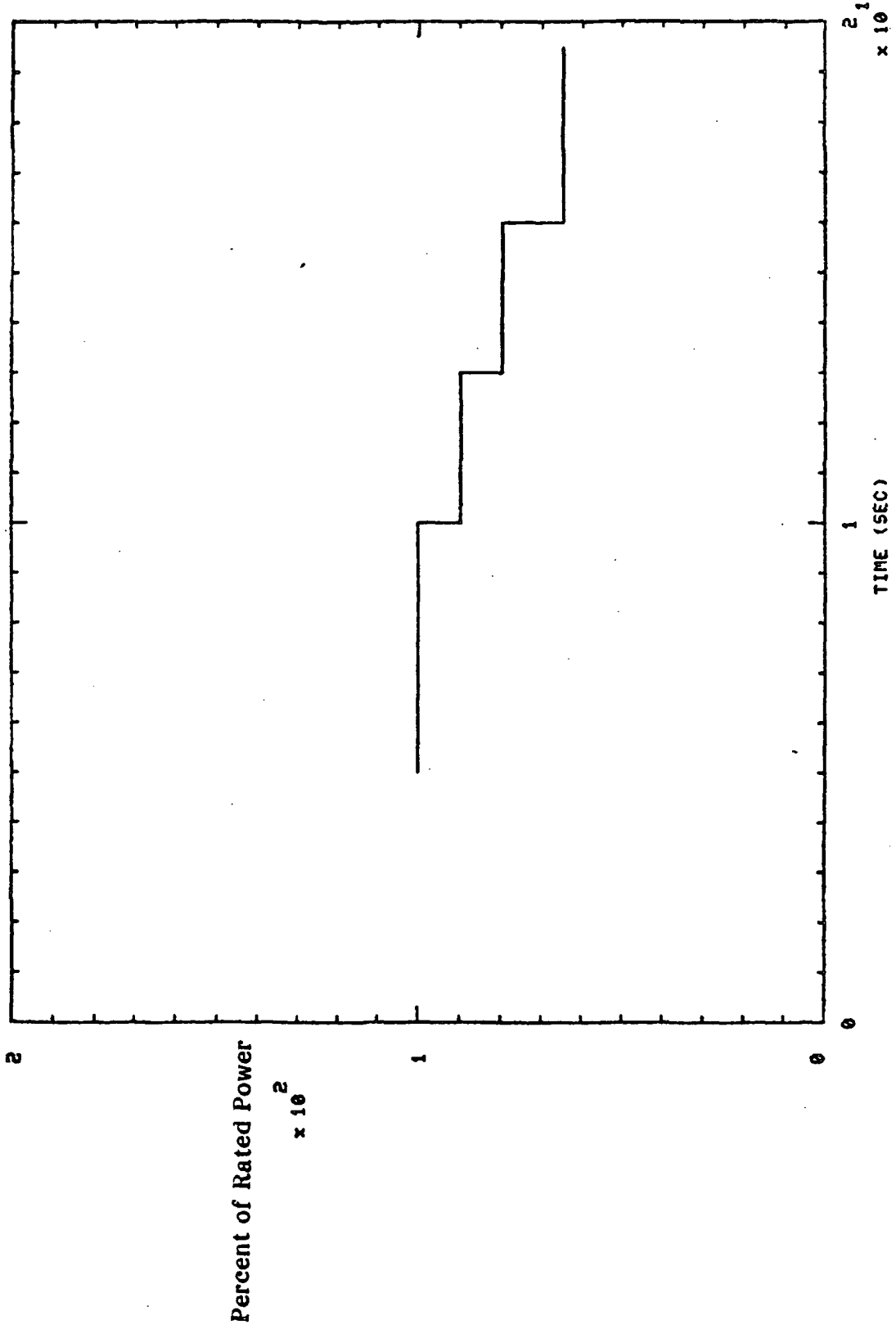
DATA PLOT LISTING FOR TEST STAND A3 (Continued)

<u>Test</u>	<u>Channel Descriptor (Time History or PSD)</u>	<u>Maximum Frequency (Hz)</u>	<u>Time Slice (Sec)</u>	
111	PBP FUEL SUP PR	20,000	15	
			40	
			50	
			60	
			70	
			80	
			90	
			100	
			120	
			200	
		LPOT TURB DR PR	5,000	280
	15			
	40			
	80			
	90			
	100			
	120			
	200			
	280			
	15			
		LOX HX OUT PR	20,000	40
	50			
	60			
	70			
	80			
	90			
	100			
	120			
	200			
	280			
	LOX HX OUT PR	5,000	15	
40				
50				
60				
70				
80				
90				
100				
120				
200				
	LOX HX OUT PR	20,000	280	
40				
50				
60				
	LOX HX OUT PR	20,000	70	
60				
50				

DATA PLOT LISTING FOR TEST STAND A3 (Continued)

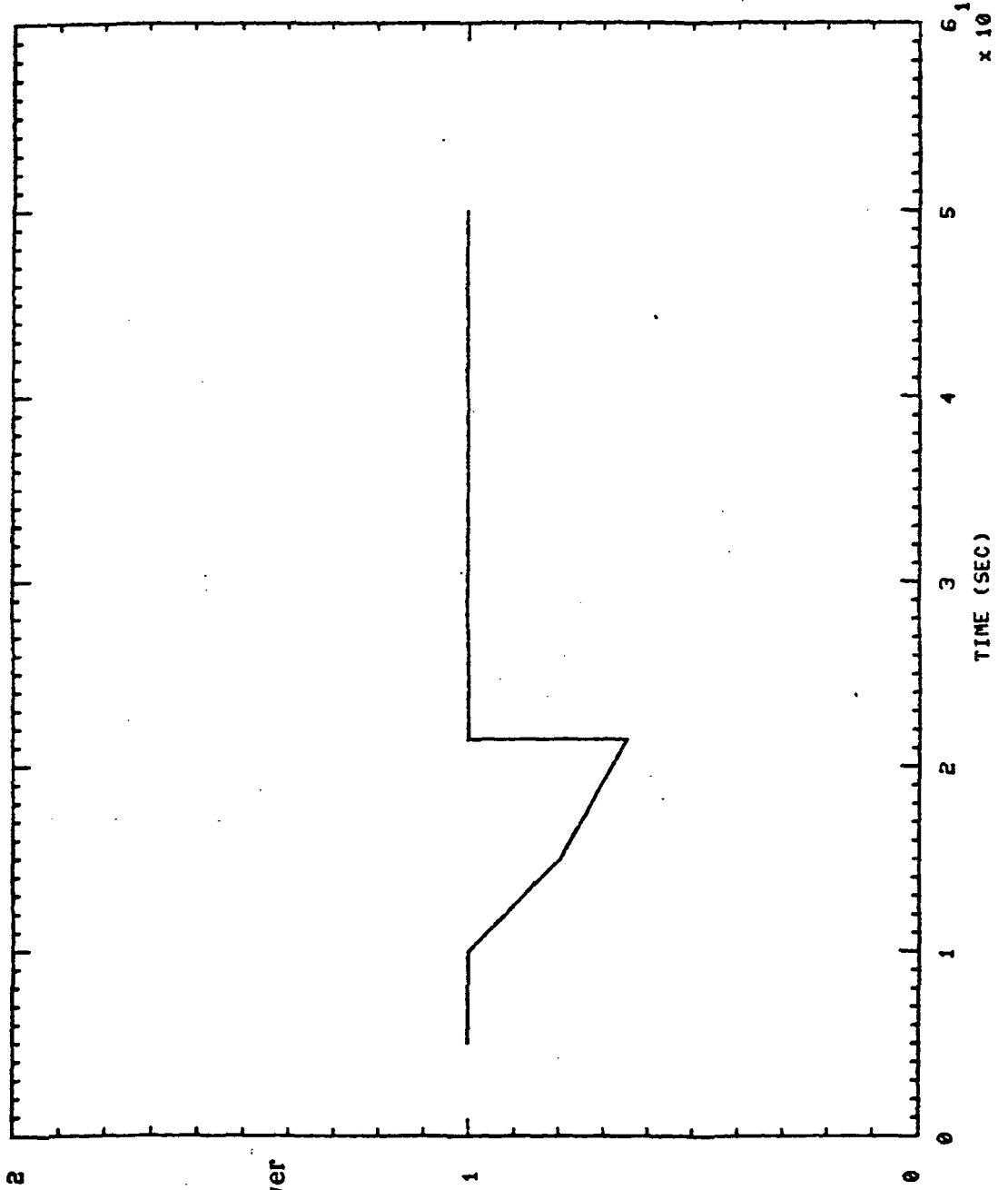
<u>Test</u>	<u>Channel Descriptor</u> (Time History or PSD)	<u>Maximum</u> <u>Frequency</u> (Hz)	<u>Time</u> <u>Slice</u> (Sec)
111	LOX HX OUT PR	20,000	80
↓	↓	↓	90
			100
			120
			200
			280

750047 THRUST (UNFILTERED)



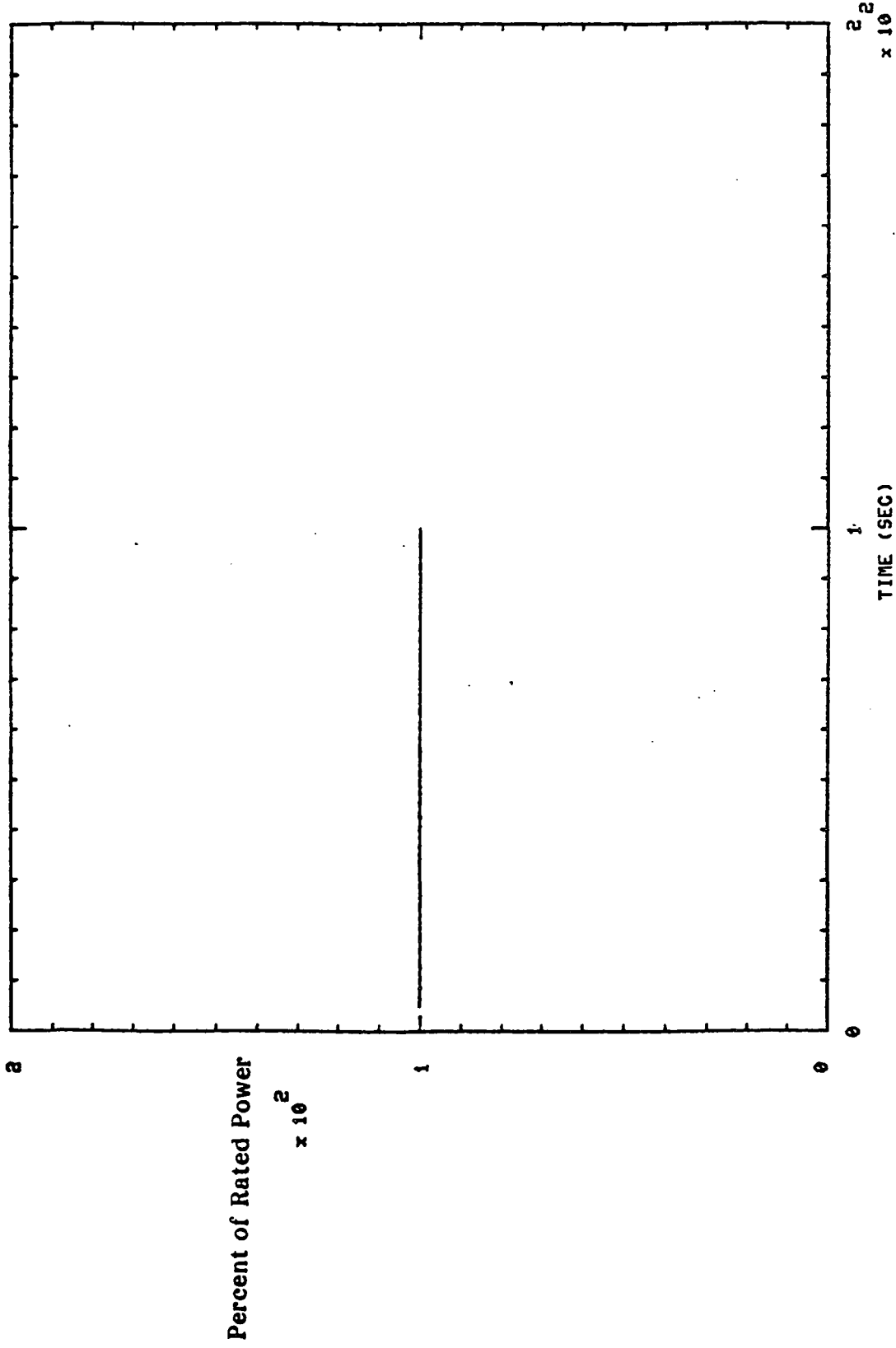
750048 THRUST (UNFILTERED)

750048 THRUST



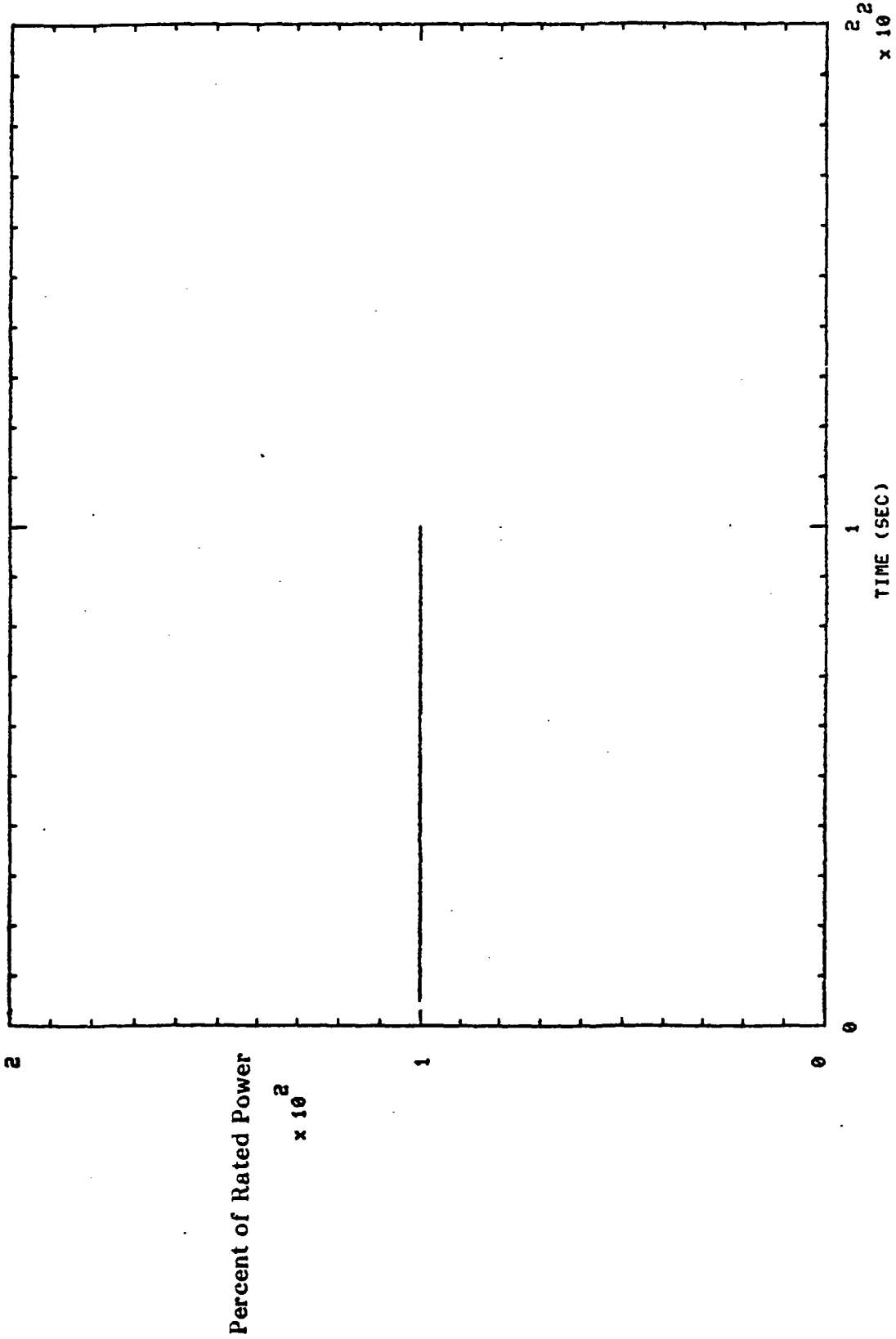
750049 THRUST (UNFILTERED)

750049 THRUST

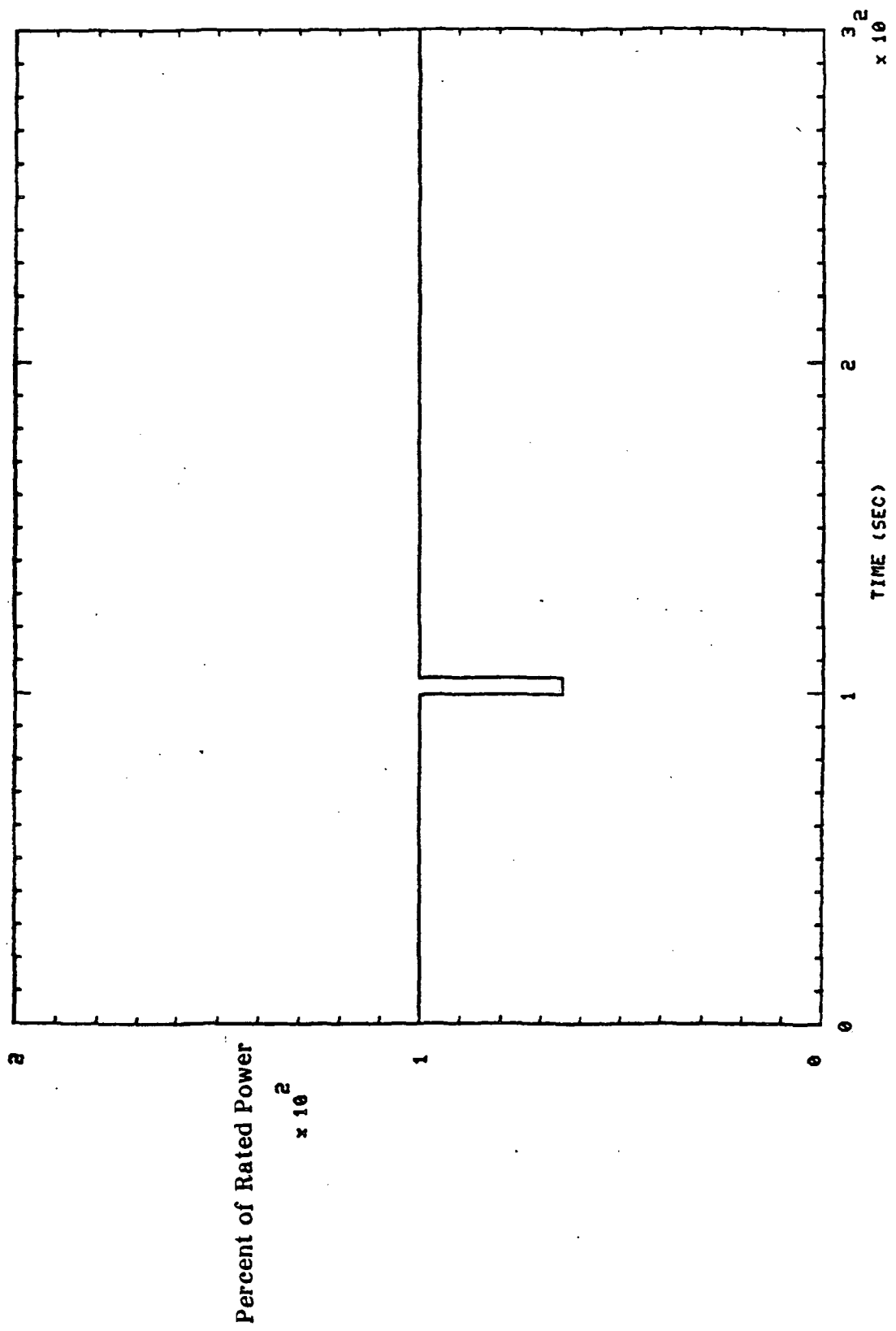


750050 THRUST (UNFILTERED)

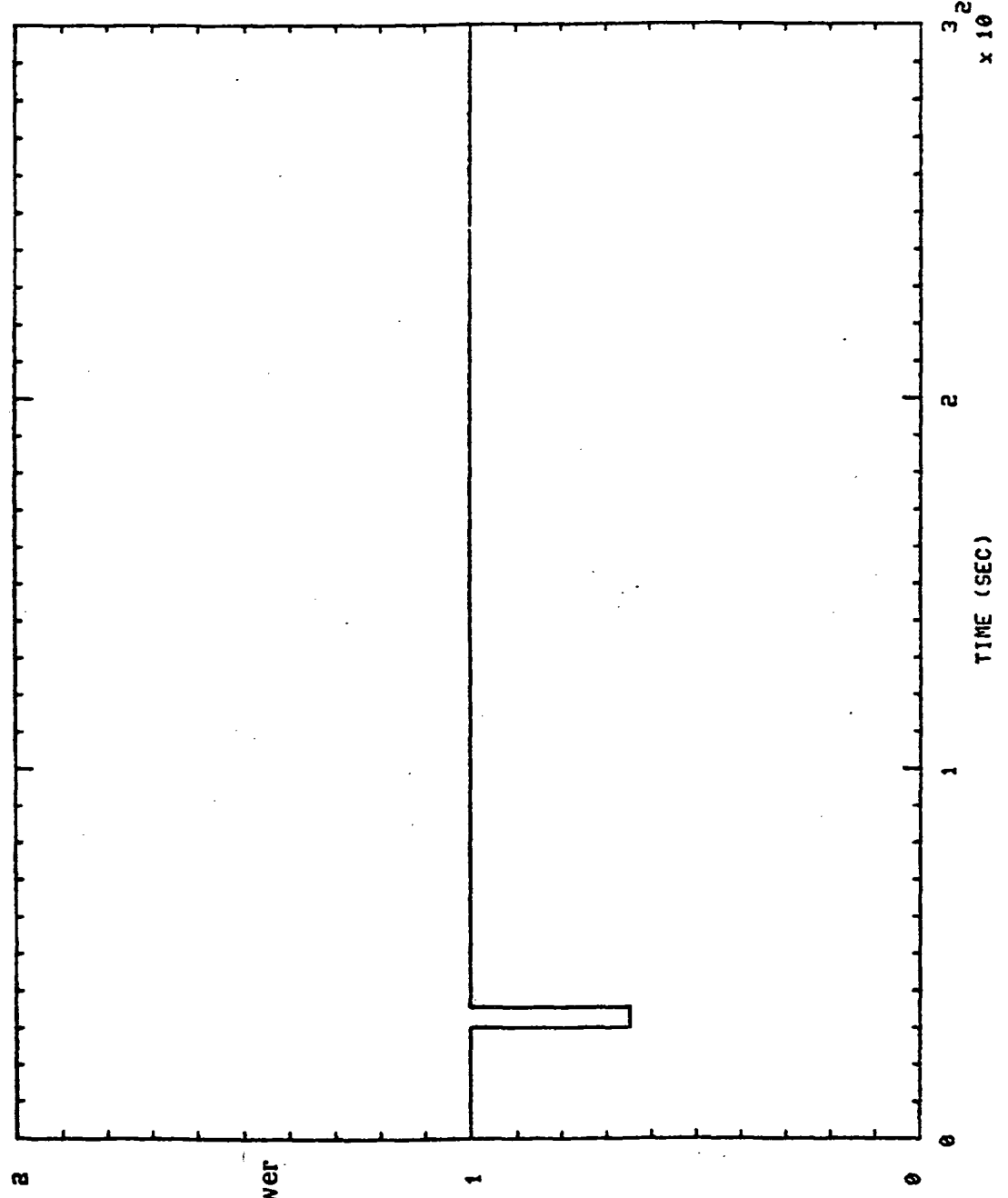
750050 THRUST



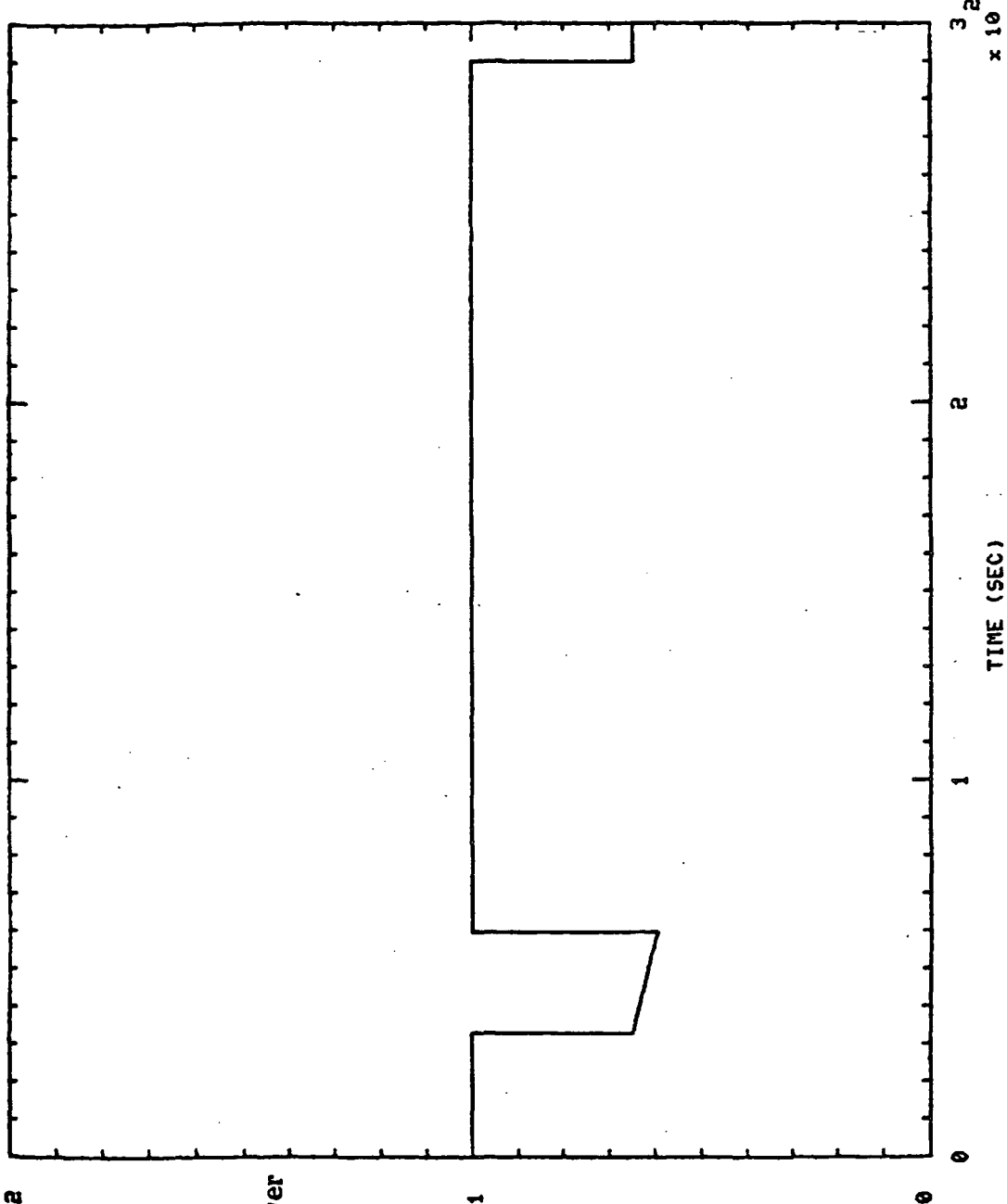
750052 THRUST (UNFILTERED)



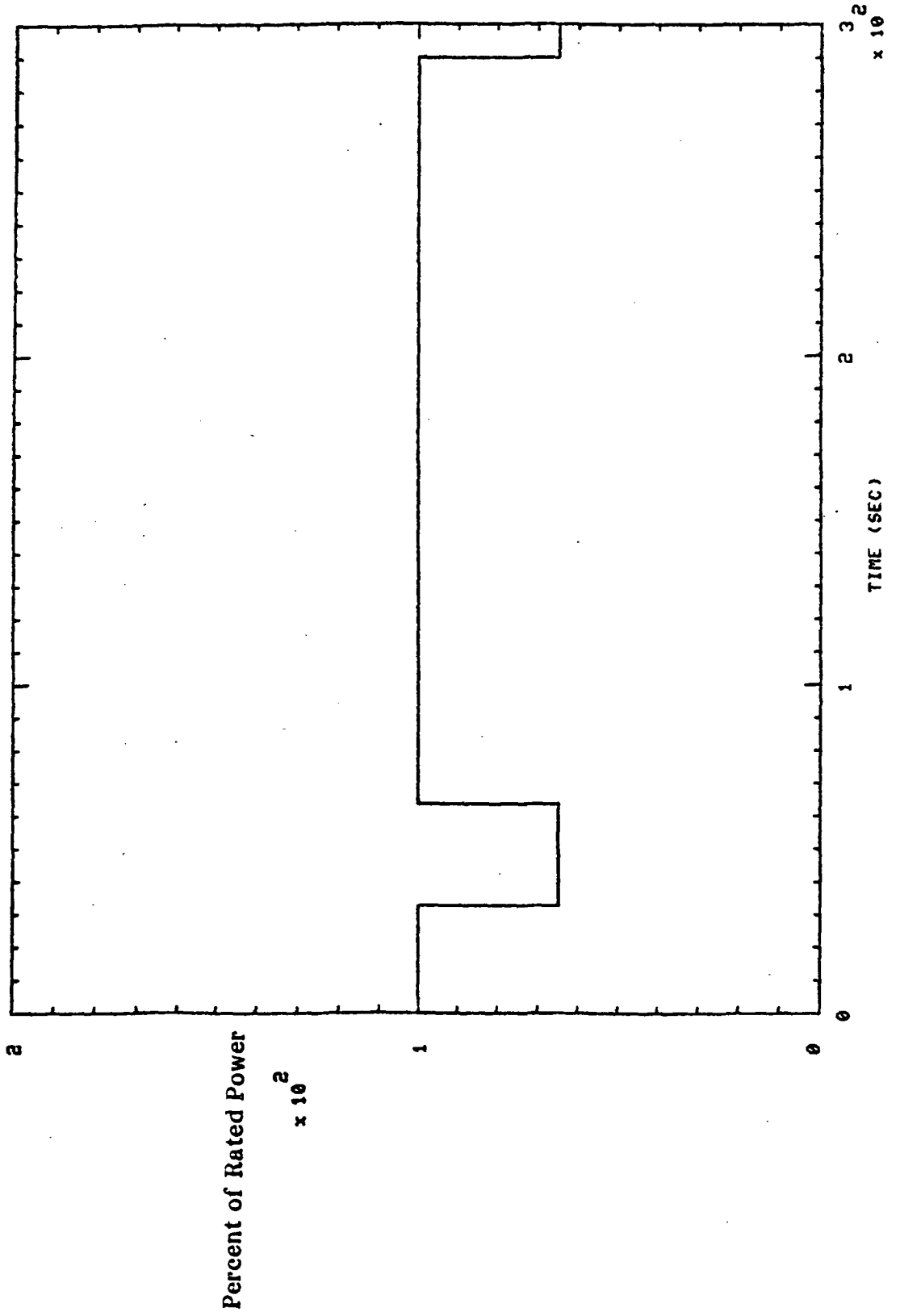
750053 THRUST (UNFILTERED)



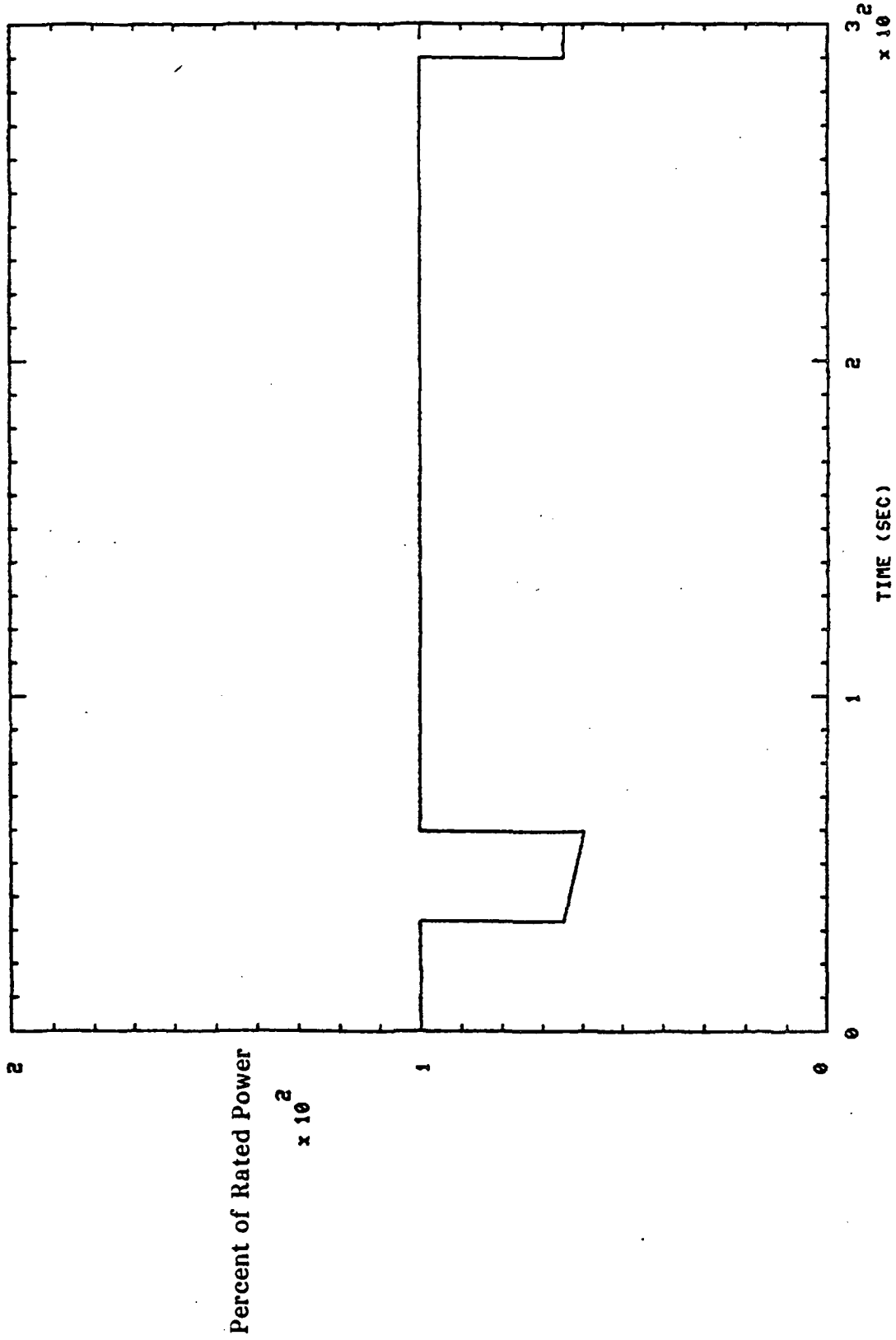
750066 THRUST (UNFILTERED)



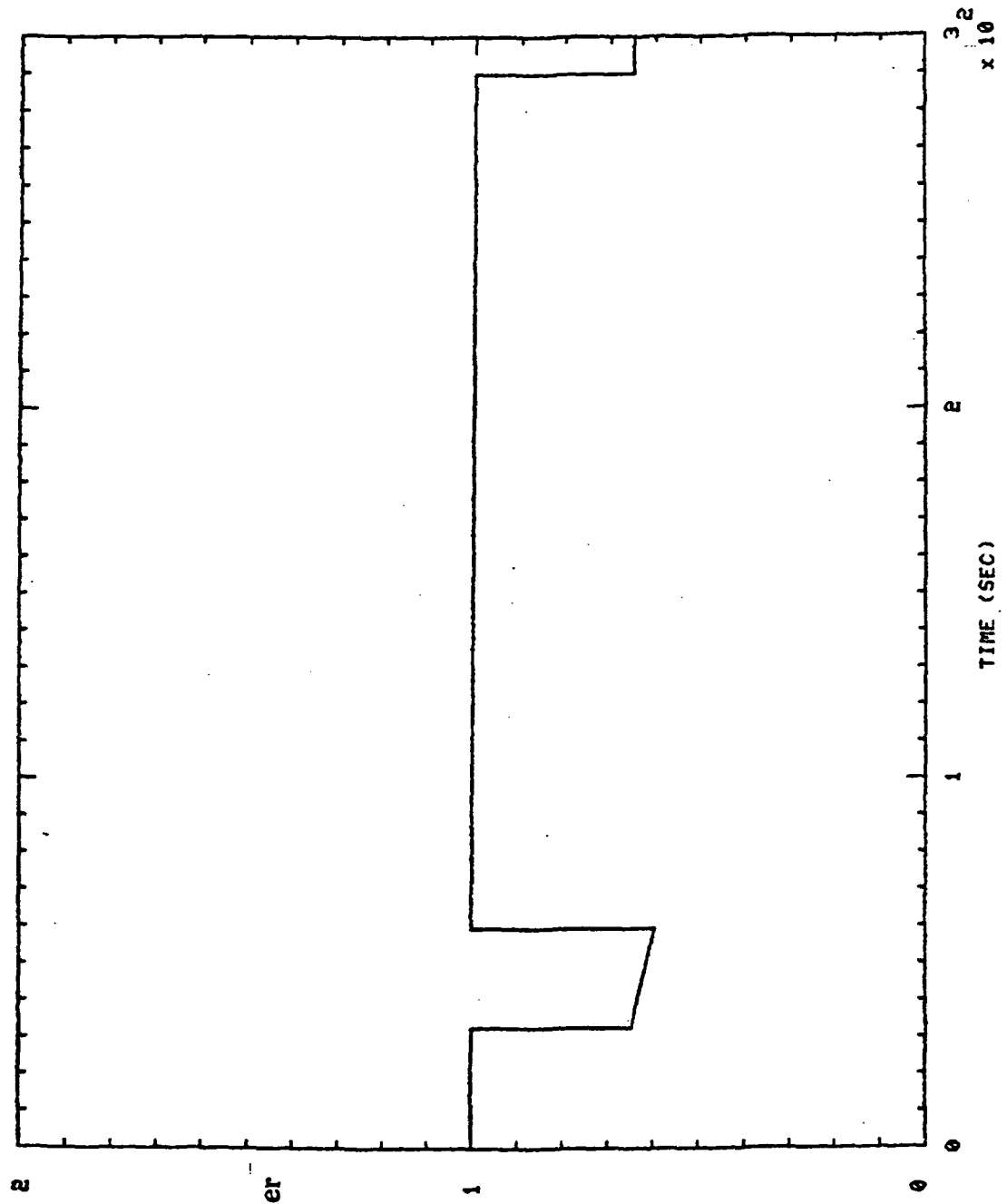
750067 THRUST (UNFILTERED)



750068 THRUST (UNFILTERED)

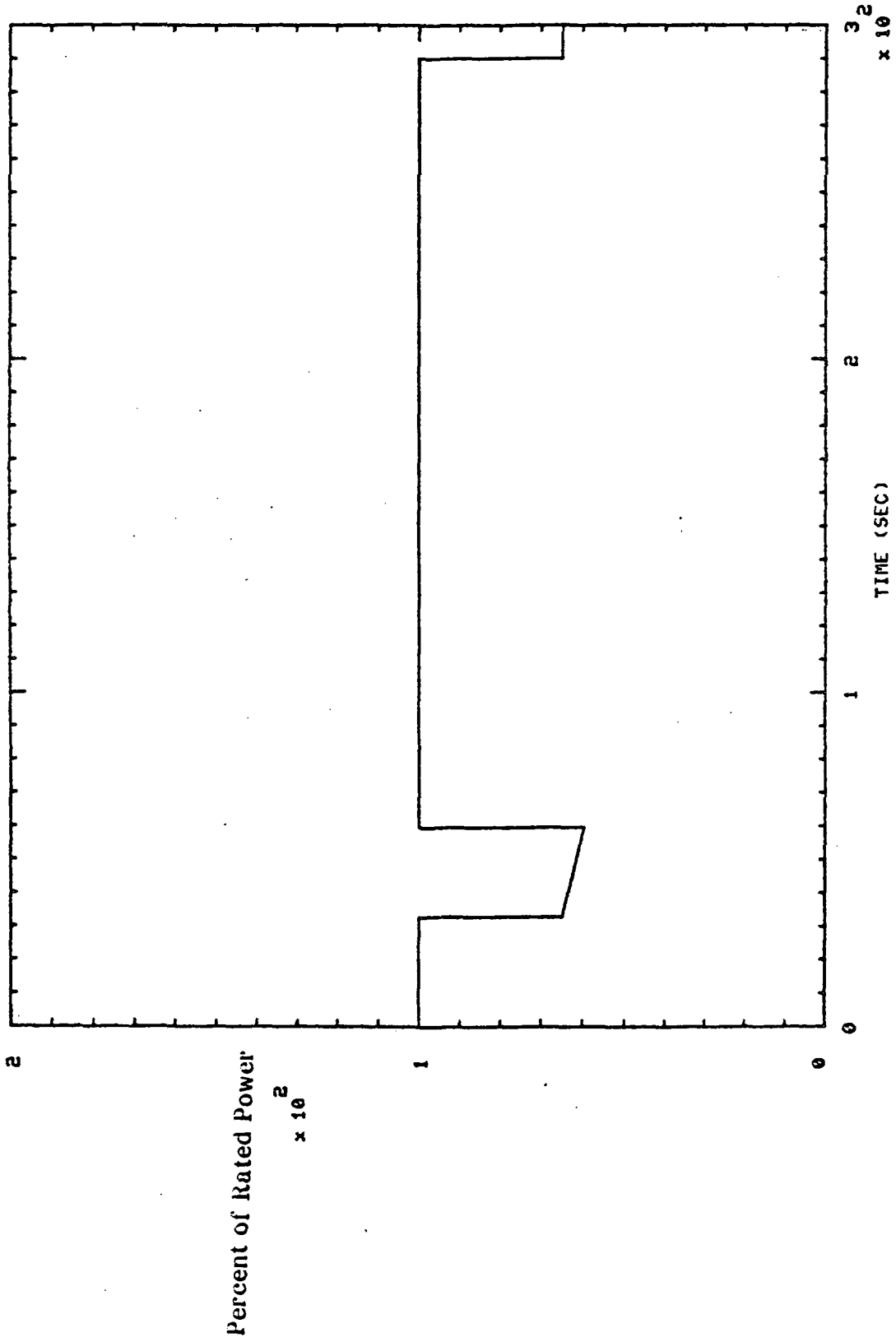


750059 THRUST (UNFILTERED)

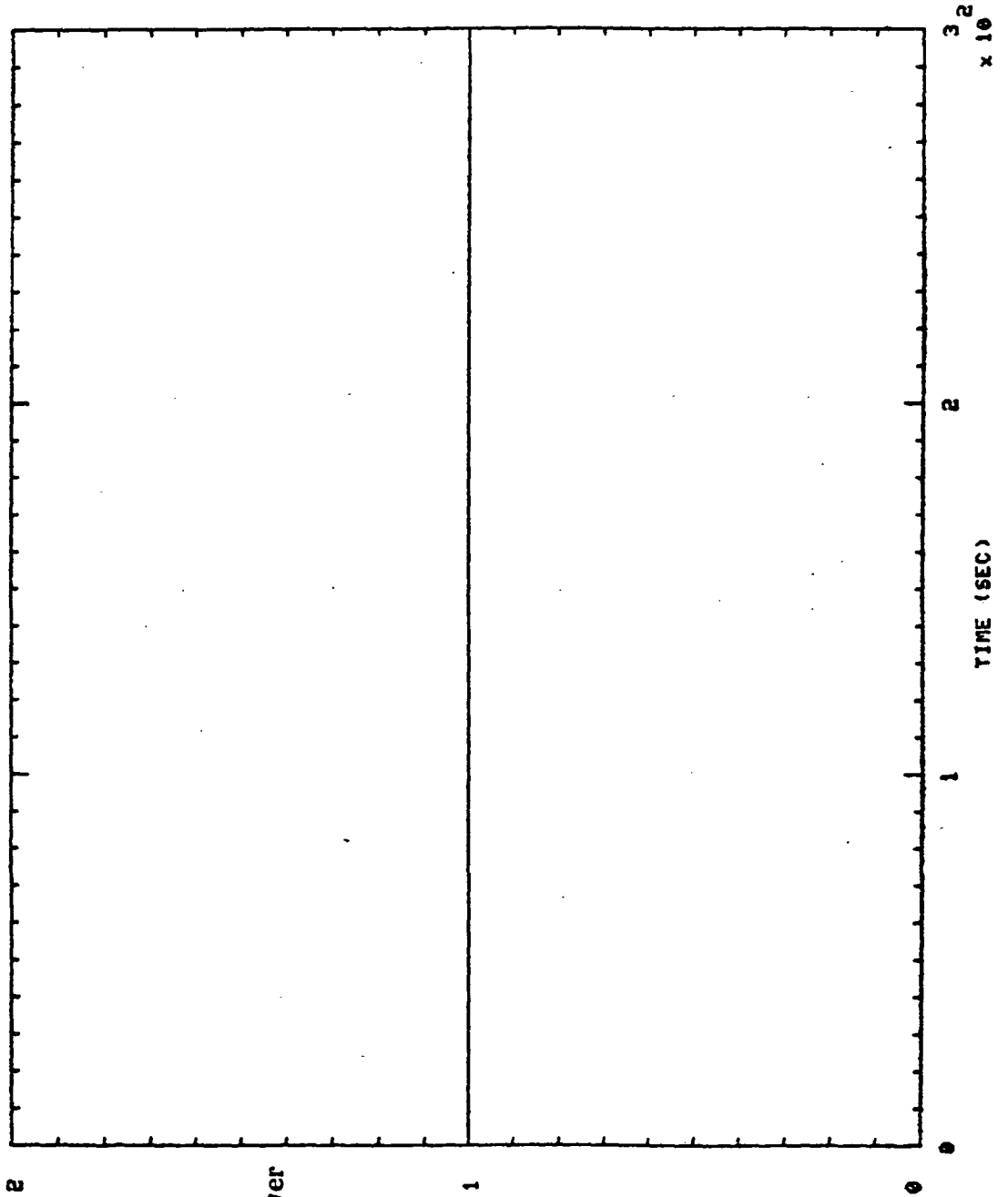


(UNFILTERED)

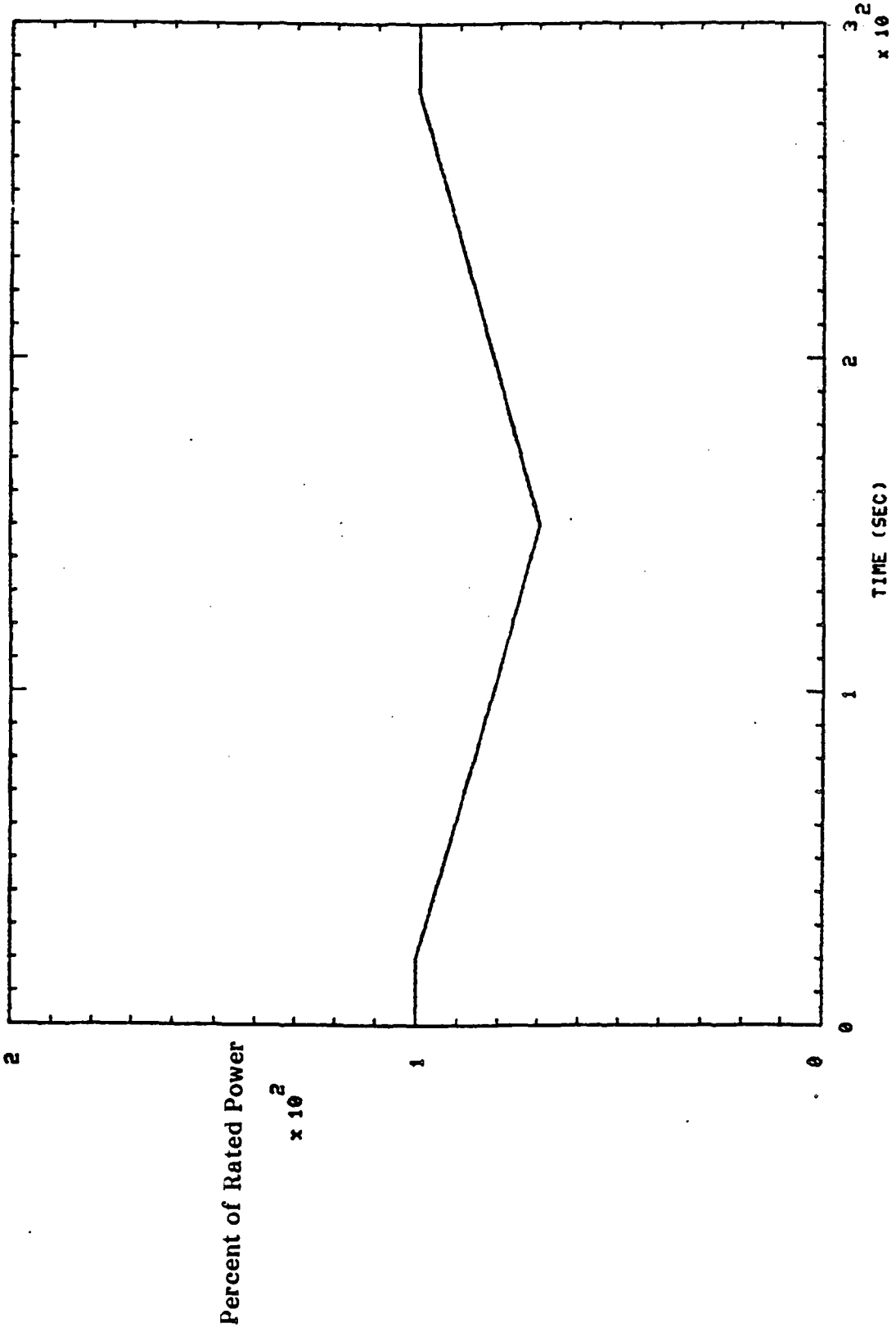
750070 THRUST



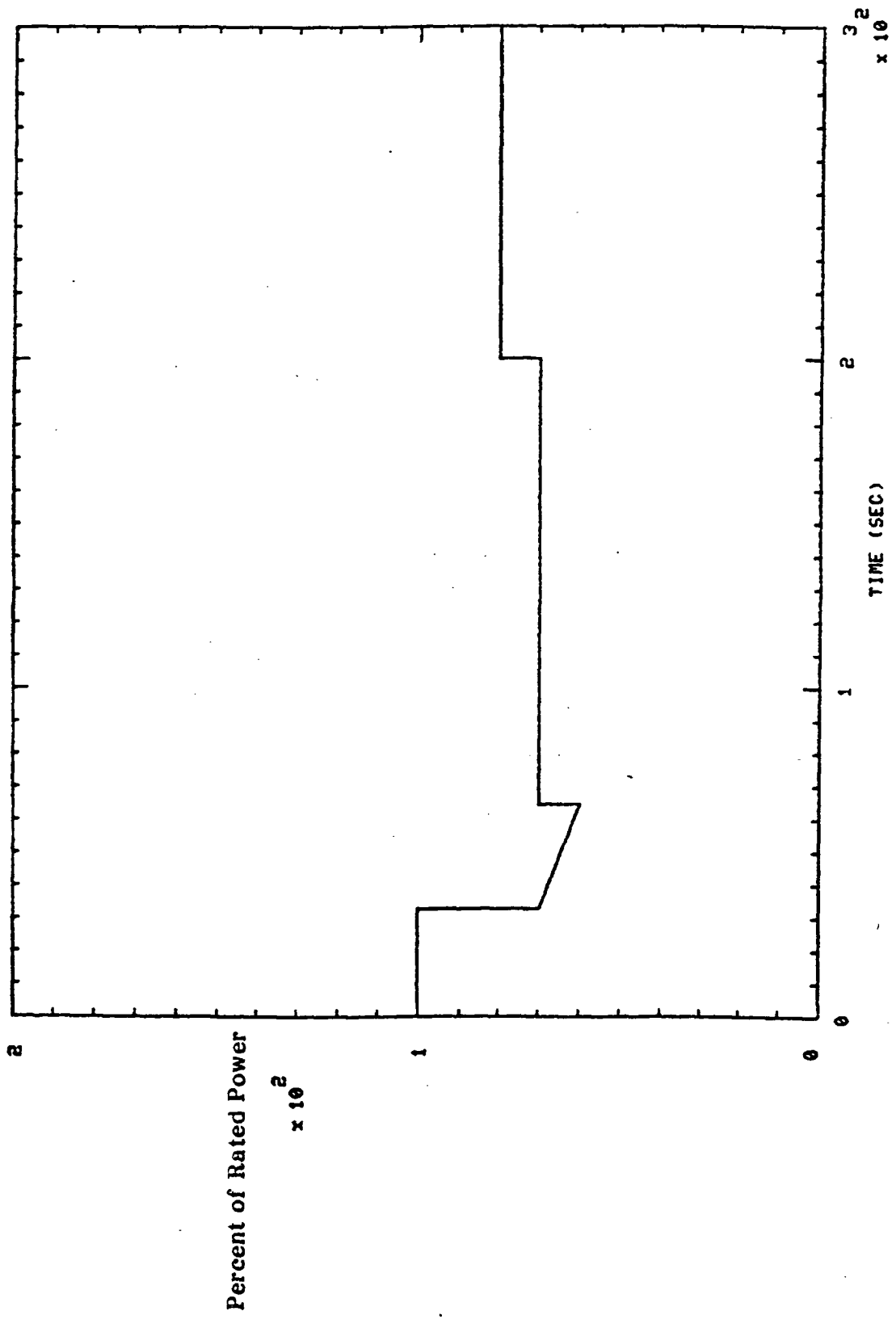
750071 THRUST (UNFILTERED)



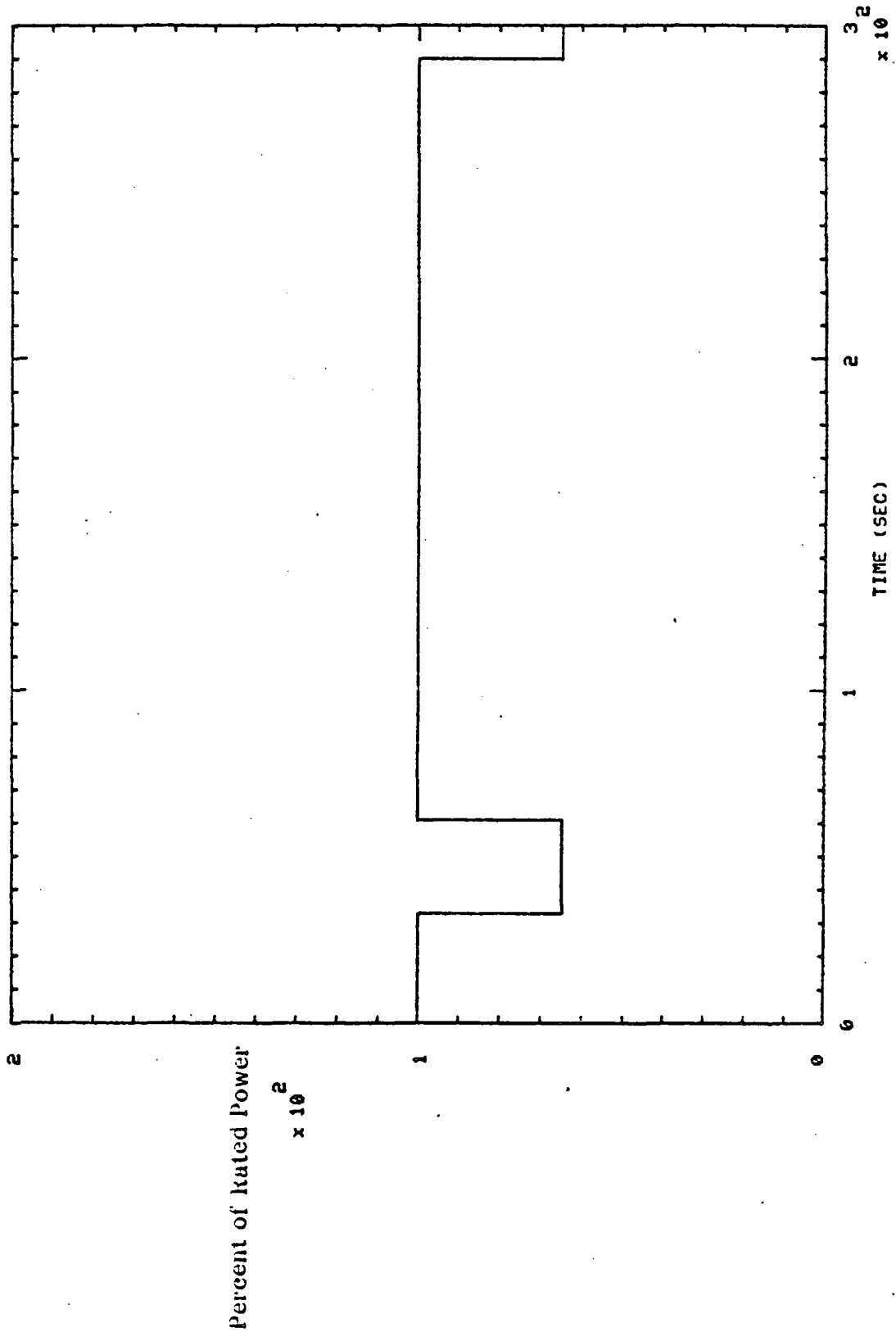
750072 THRUST (UNFILTERED)



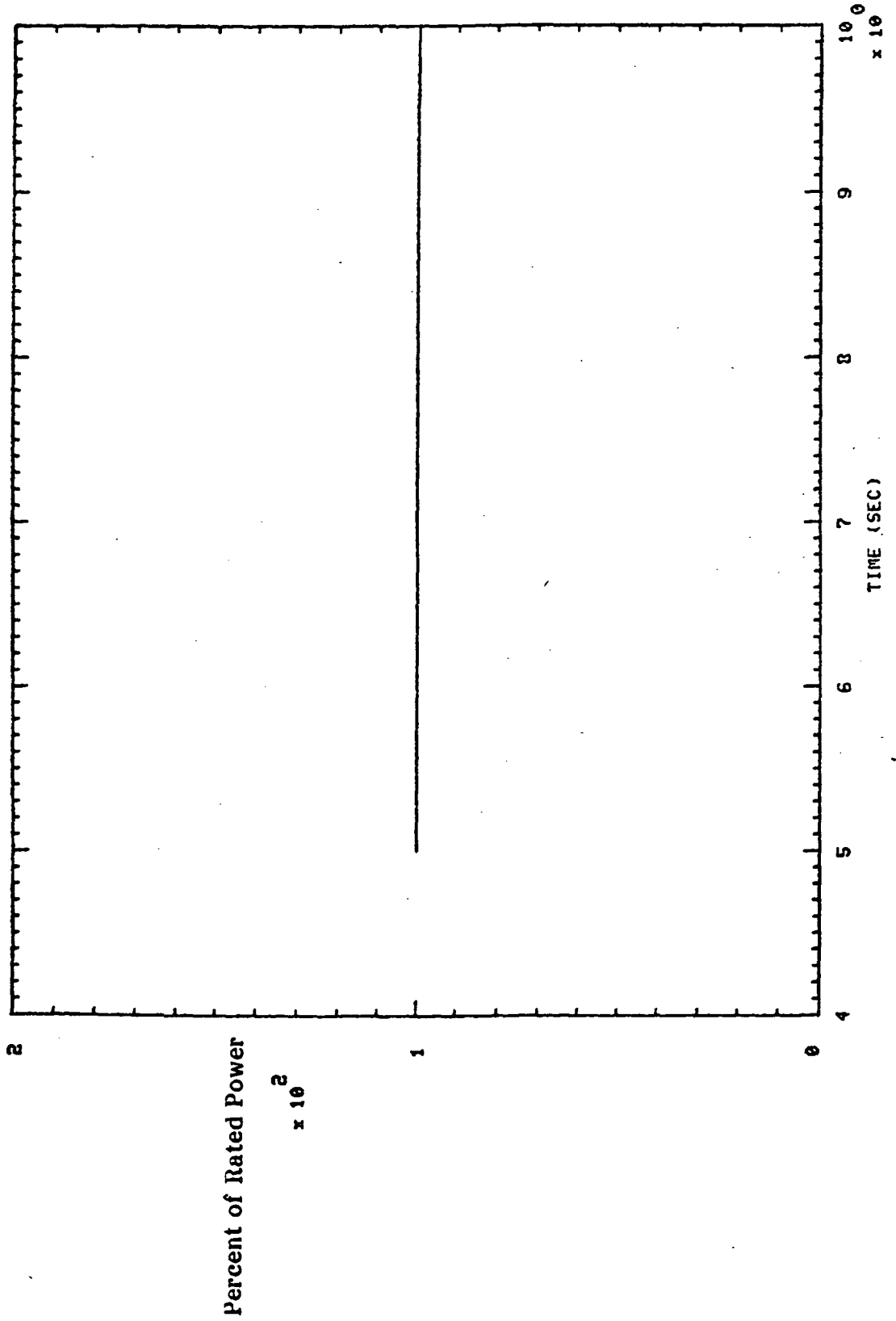
750073 THRUST (UNFILTERED)



750074 THRUST (UNFILTERED)

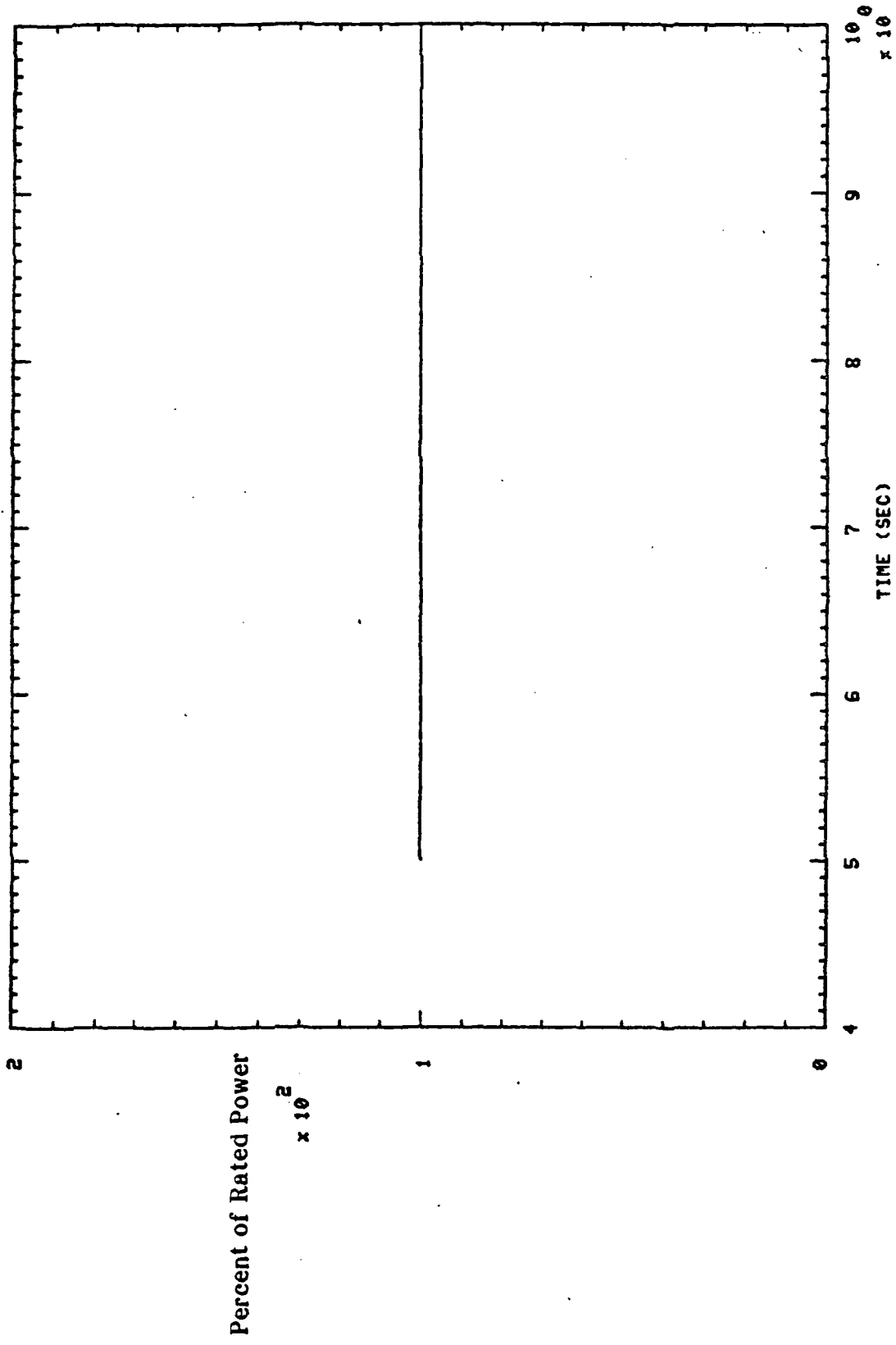


750075 THRUST (UNFILTERED)

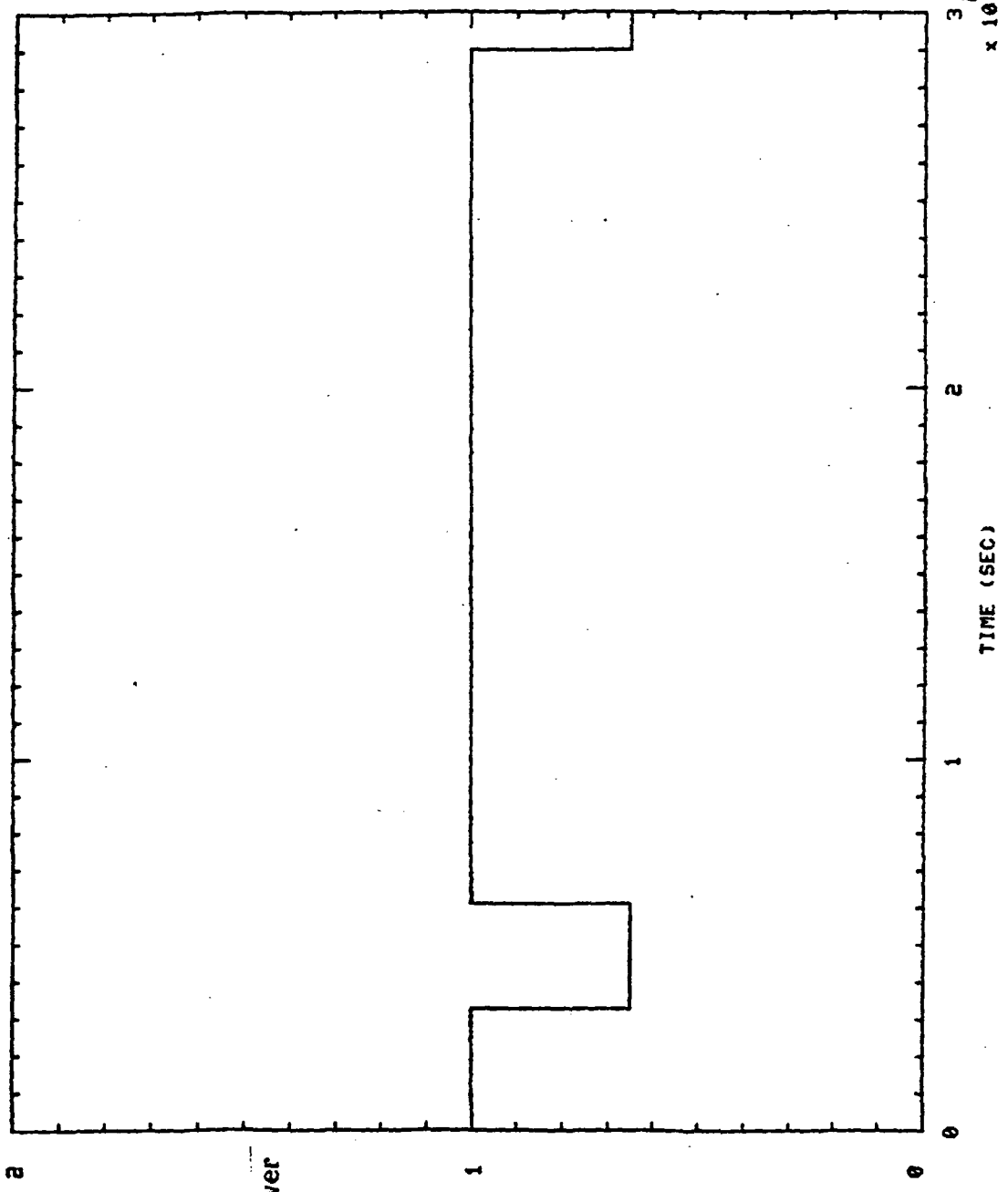


750076 THRUST

(UNFILTERED)



750077 THRUST (UNFILTERED)



Percent of Rated Power

$\times 10^2$

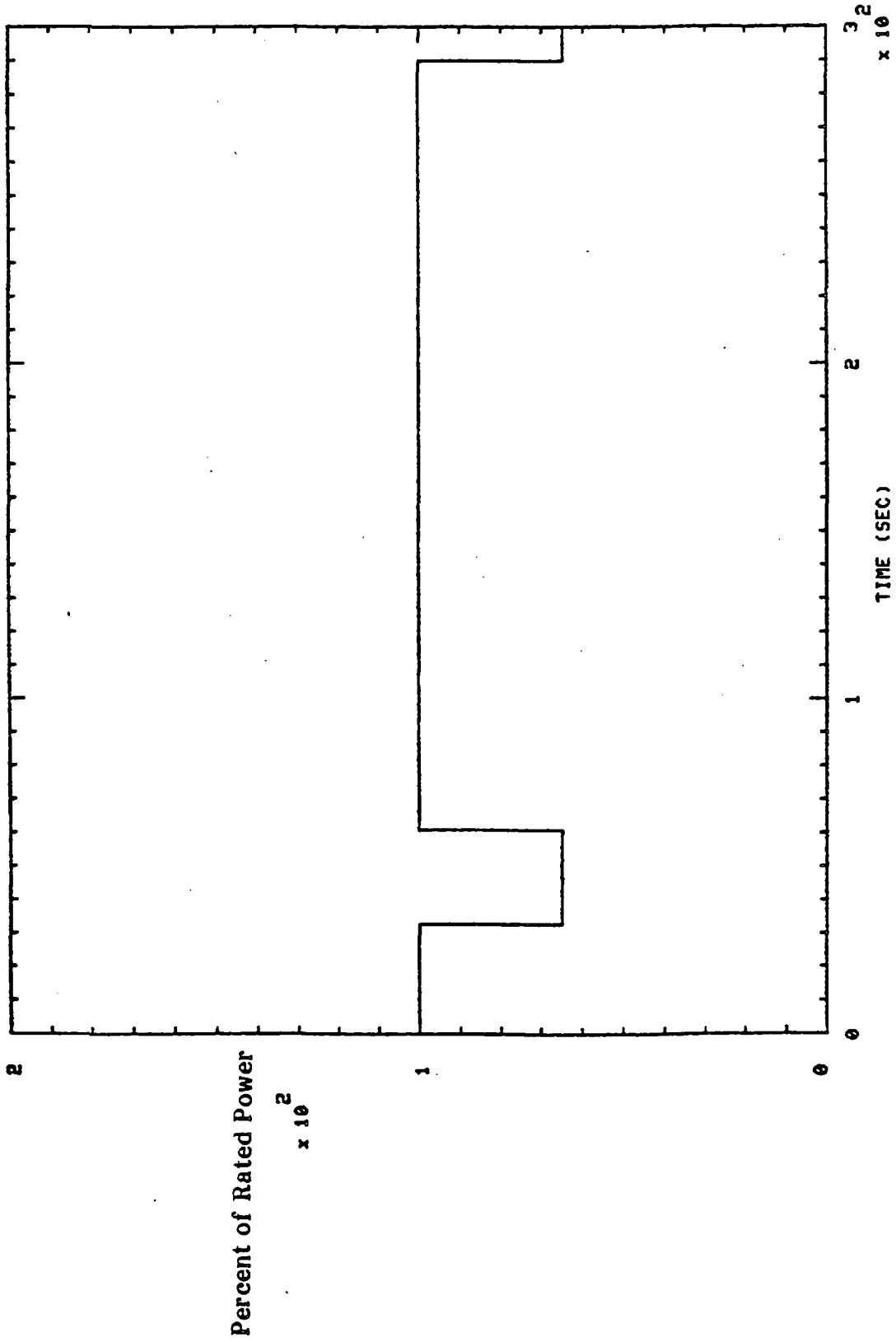
TIME (SEC)

$\times 10^2$

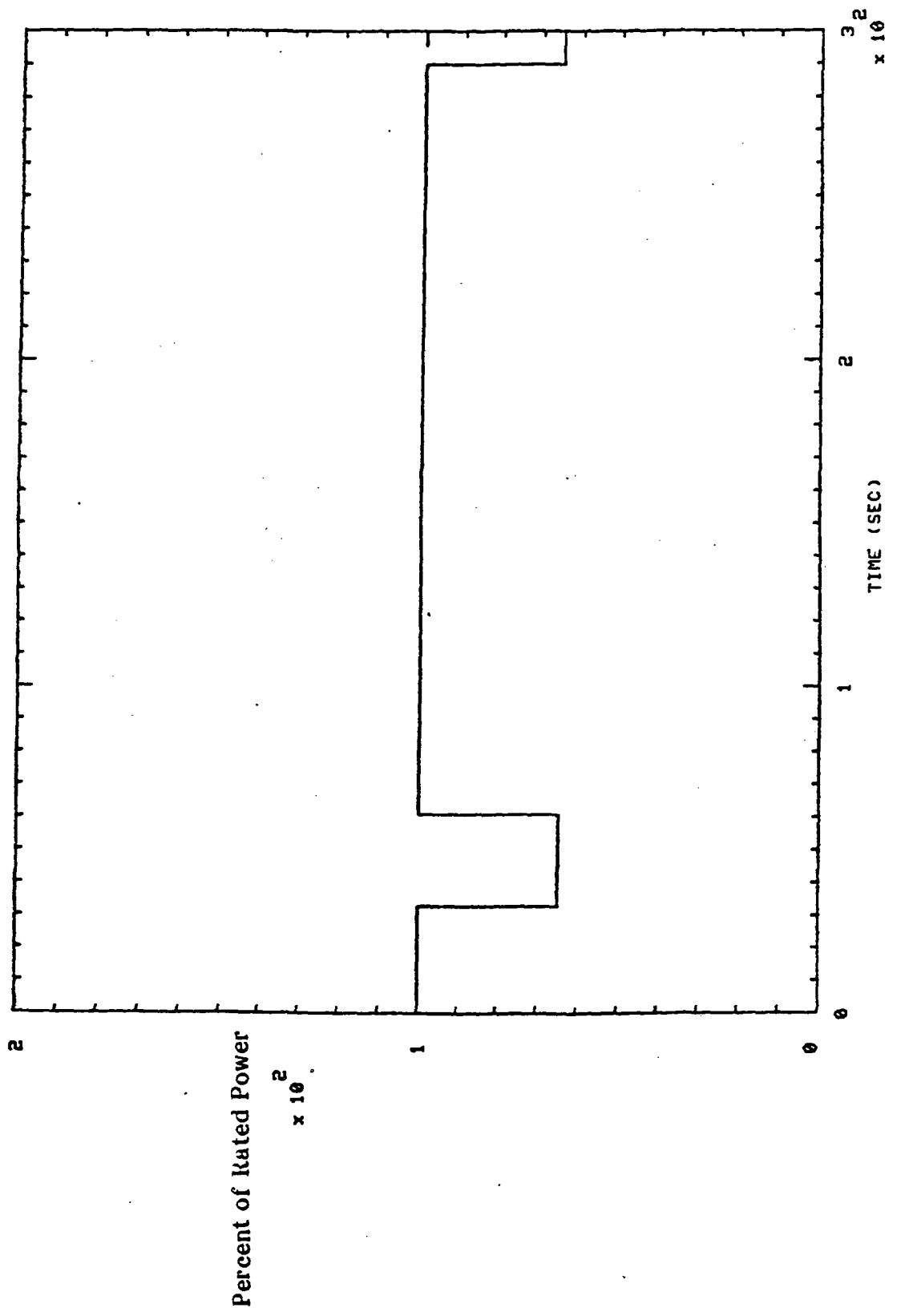
(UNFILTERED)

THRUST

750078



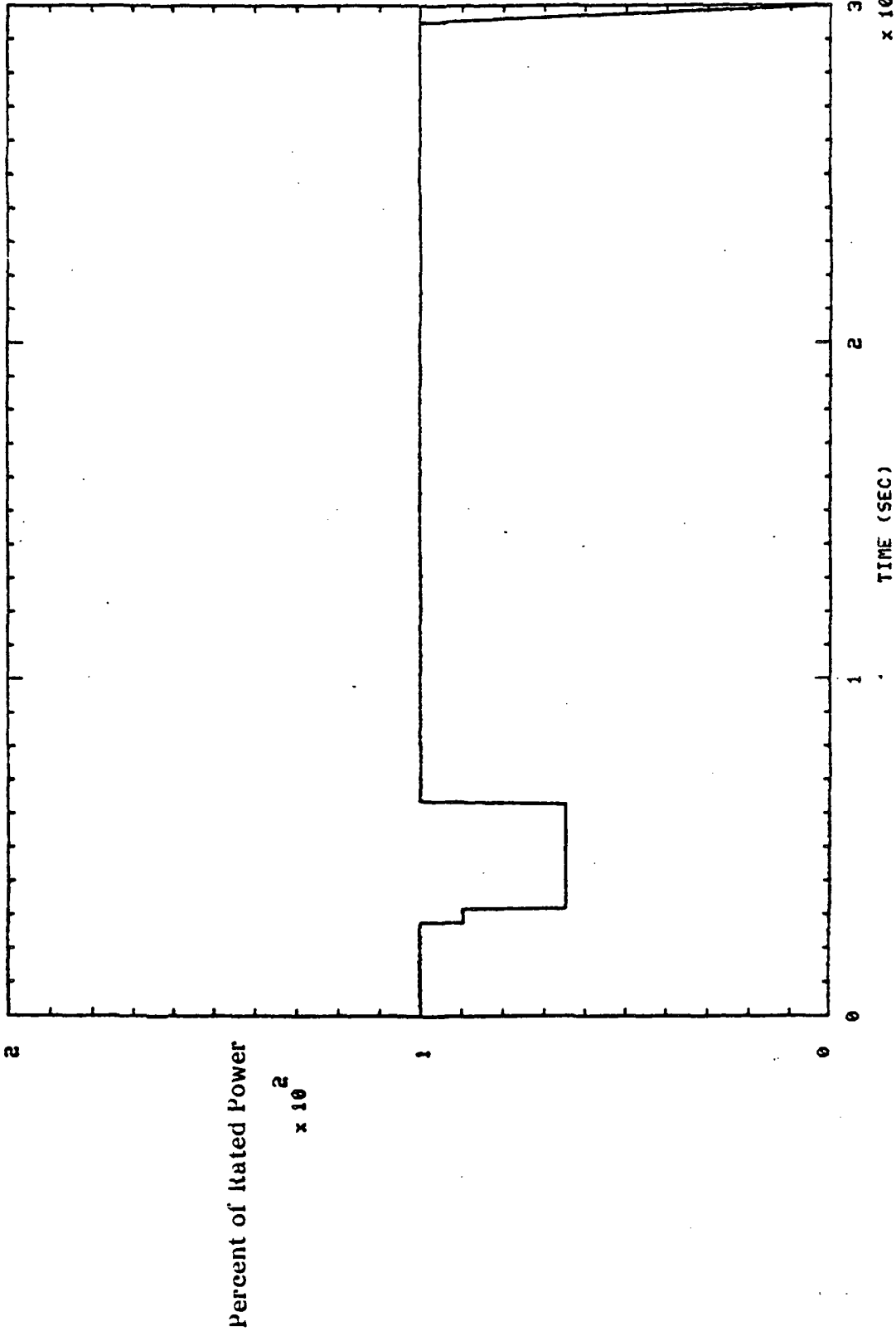
750079 THRUST (UNFILTERED)



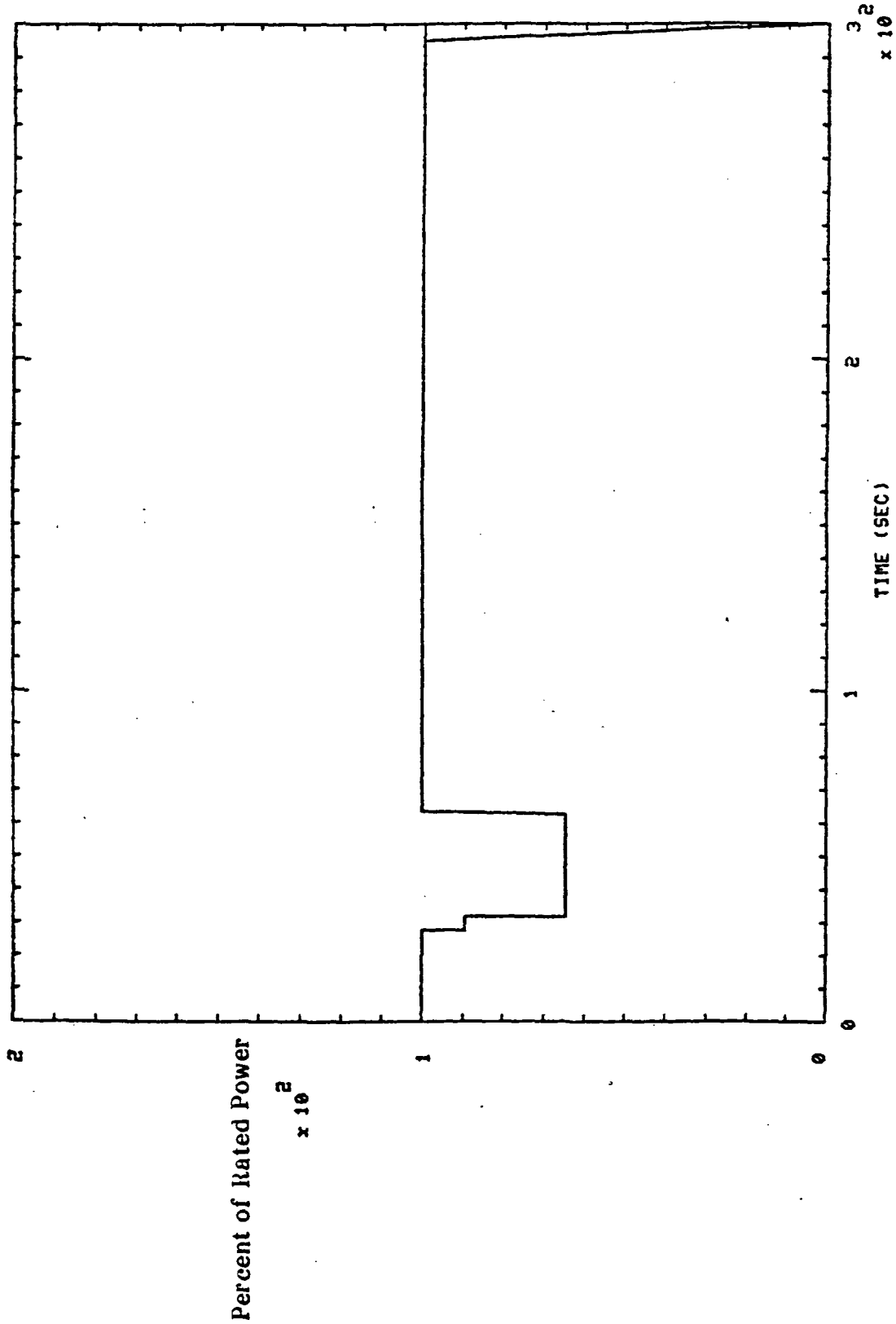
(UNFILTERED)

THRUST

750087

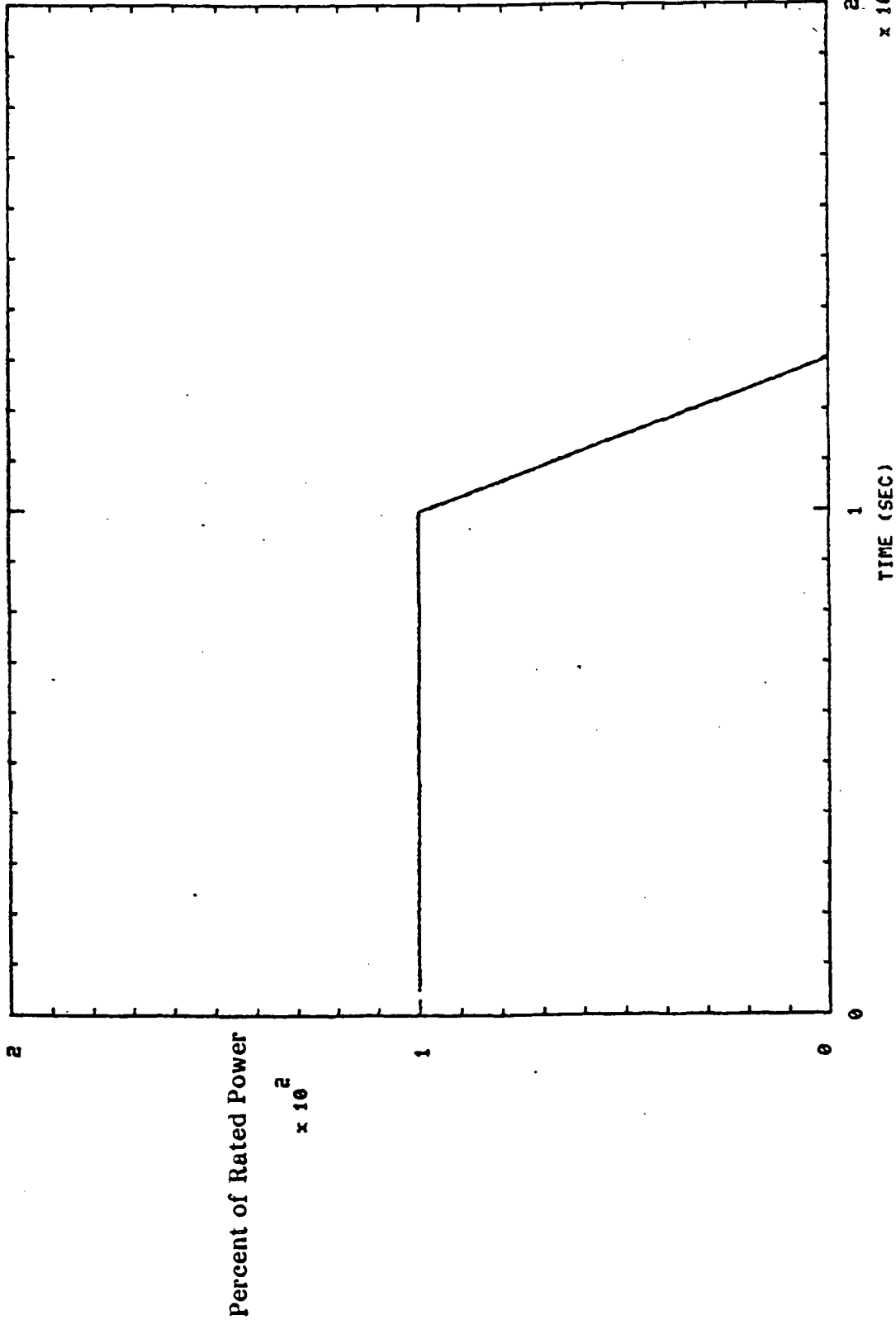


750088 THRUST (UNFILTERED)



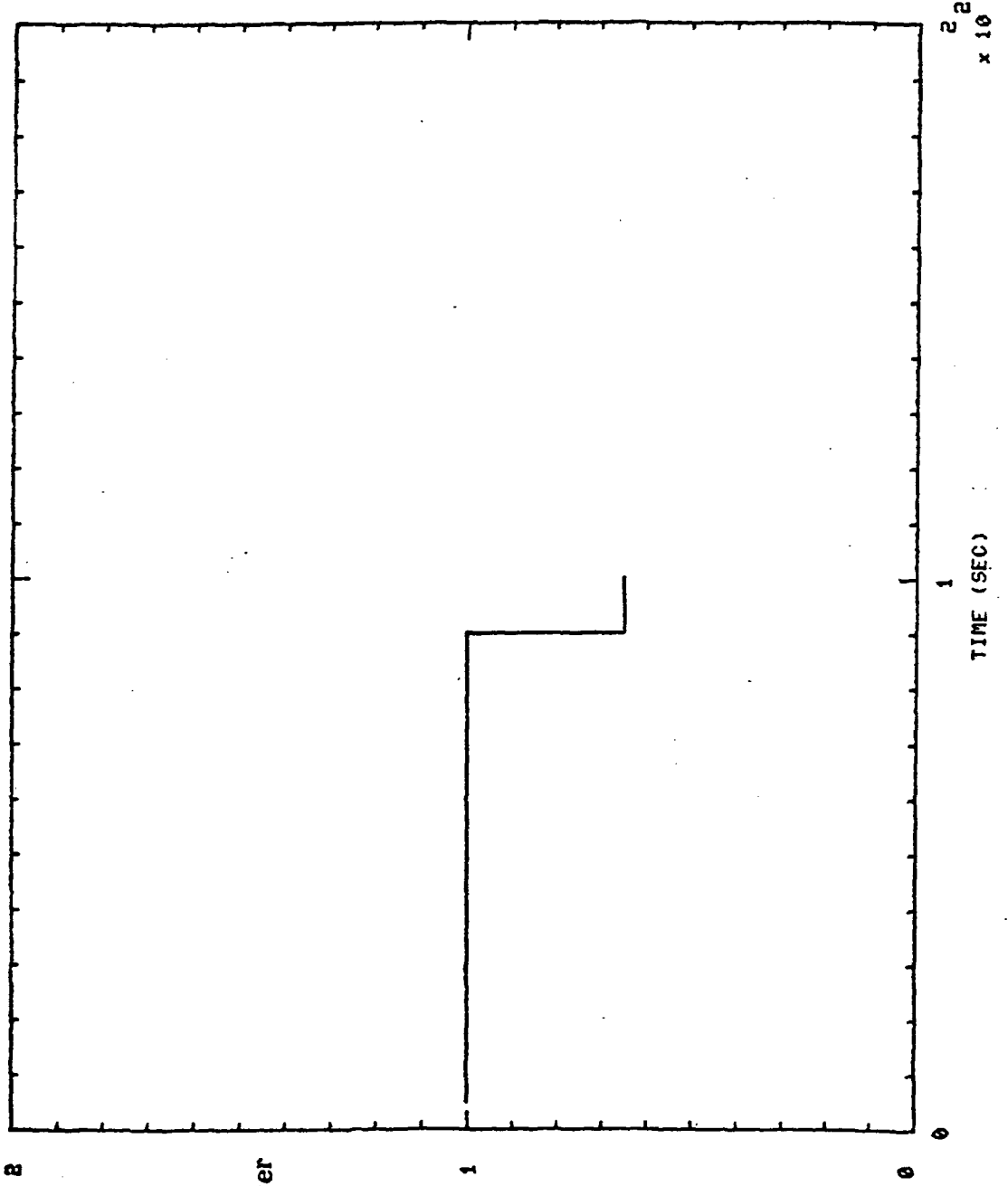
(UNFILTERED)

750089 THRUST



(UNFILTERED)

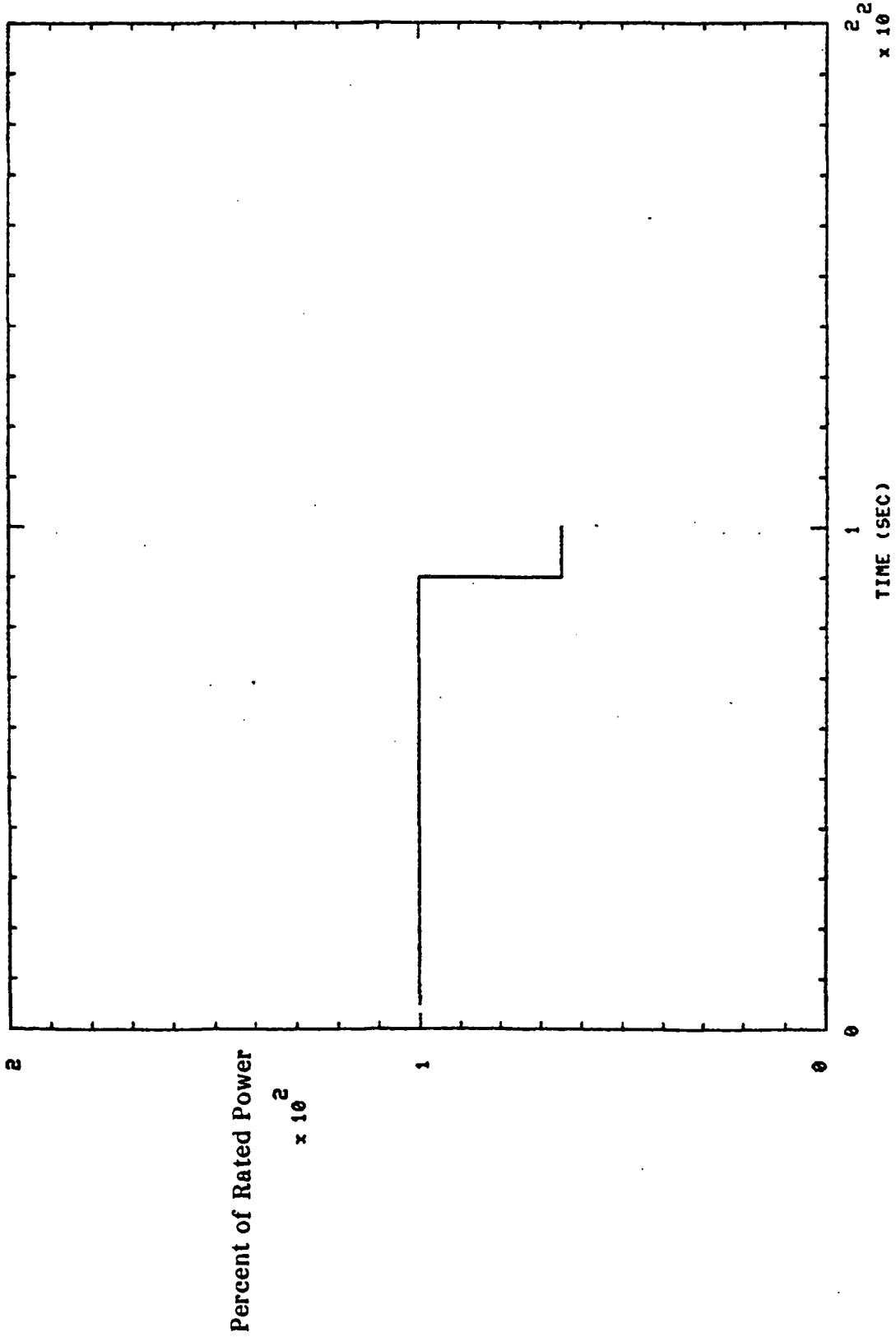
750090 THRUST



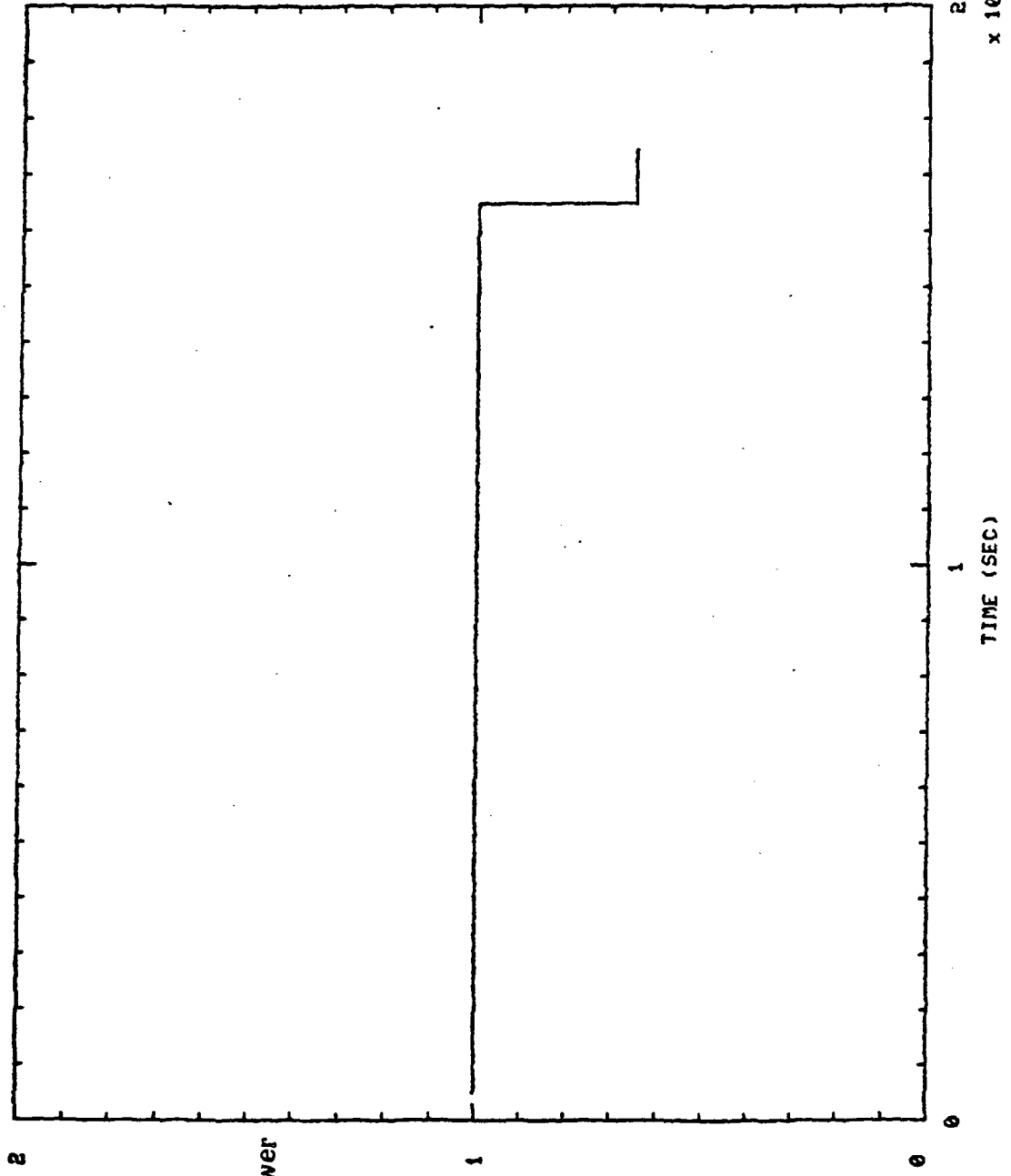
Percent of Rated Power
 $\times 10^2$

TIME (SEC)
 $\times 10^2$

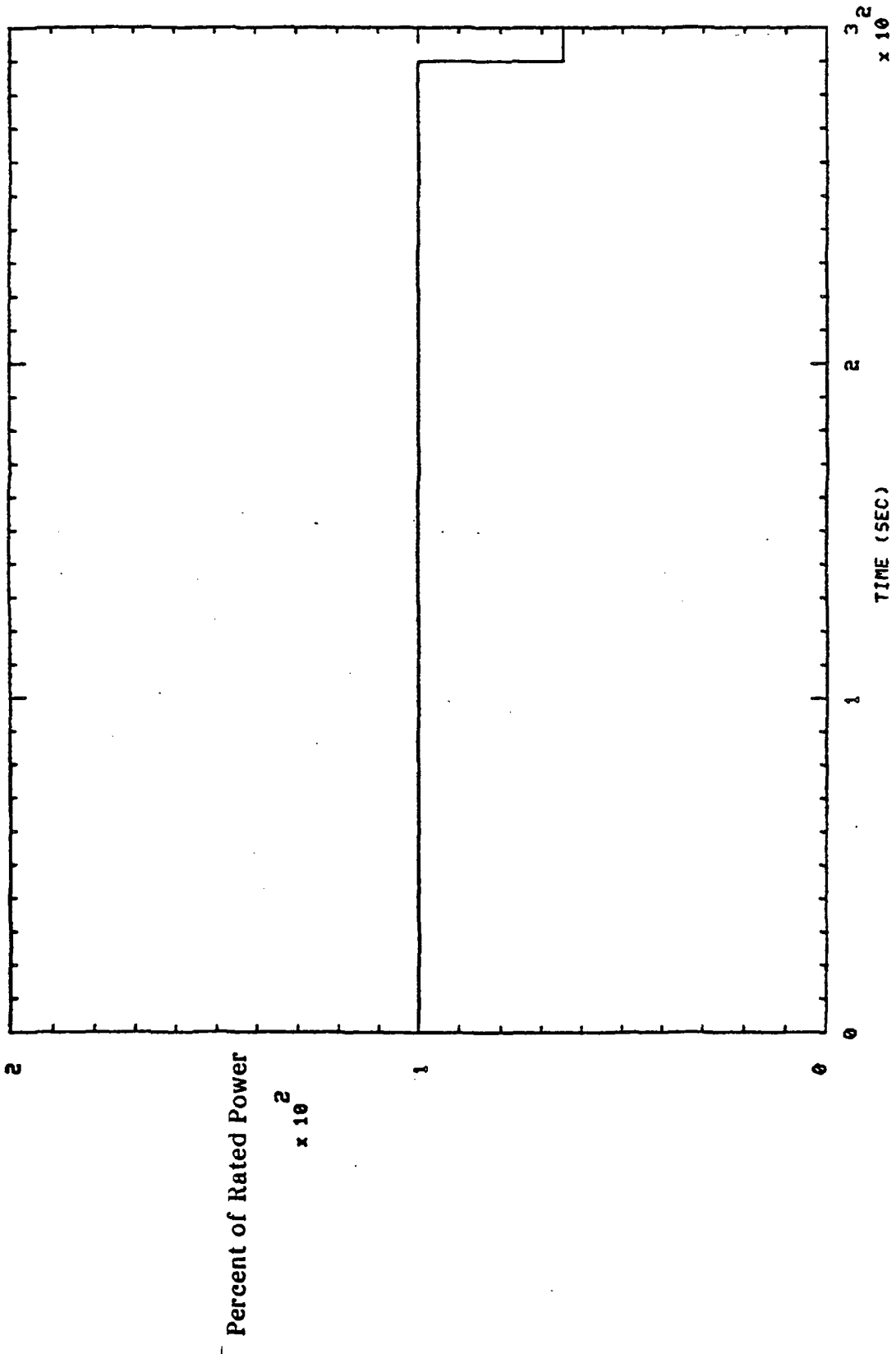
750091 THRUST (UNFILTERED)



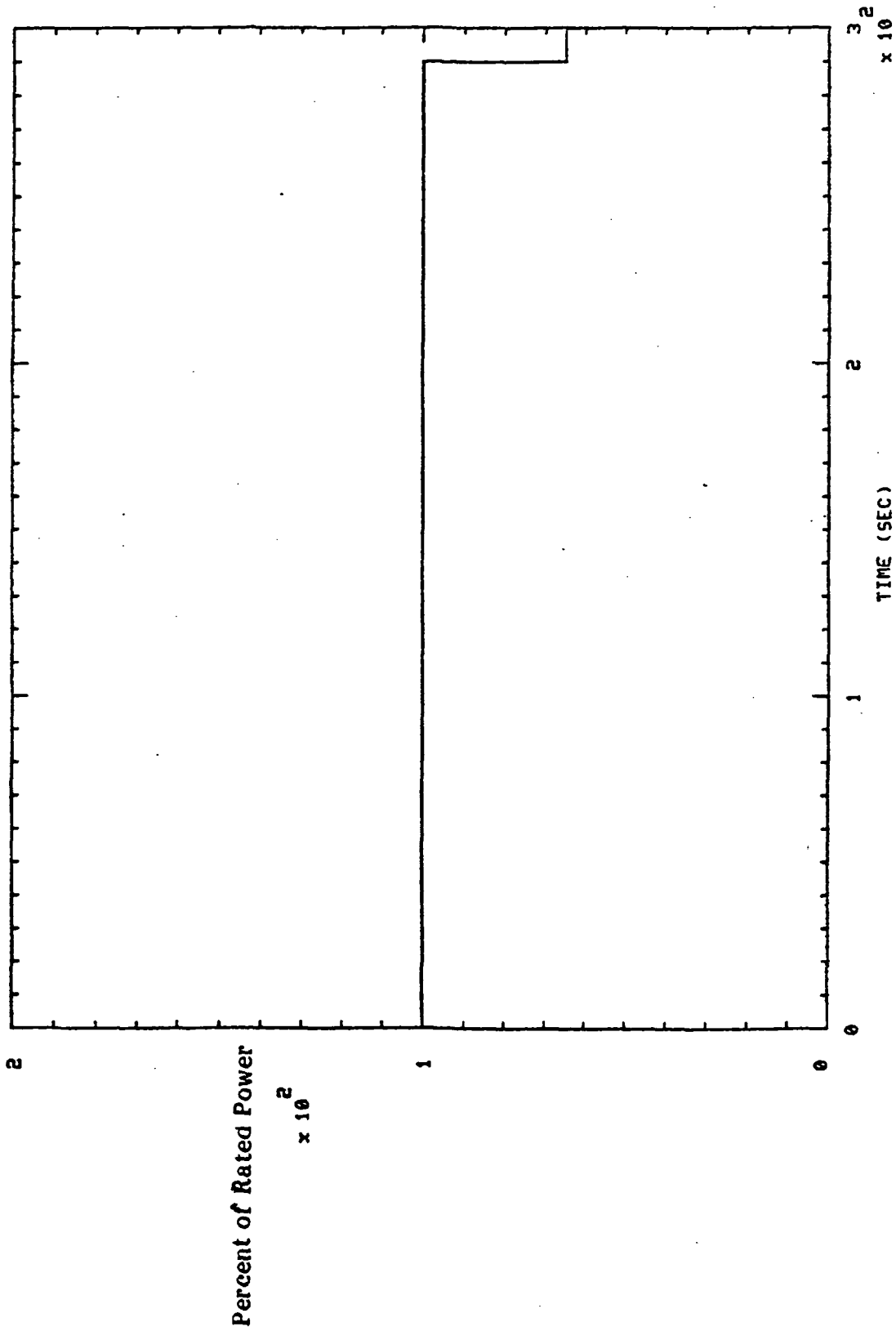
750092 THRUST (UNFILTERED)



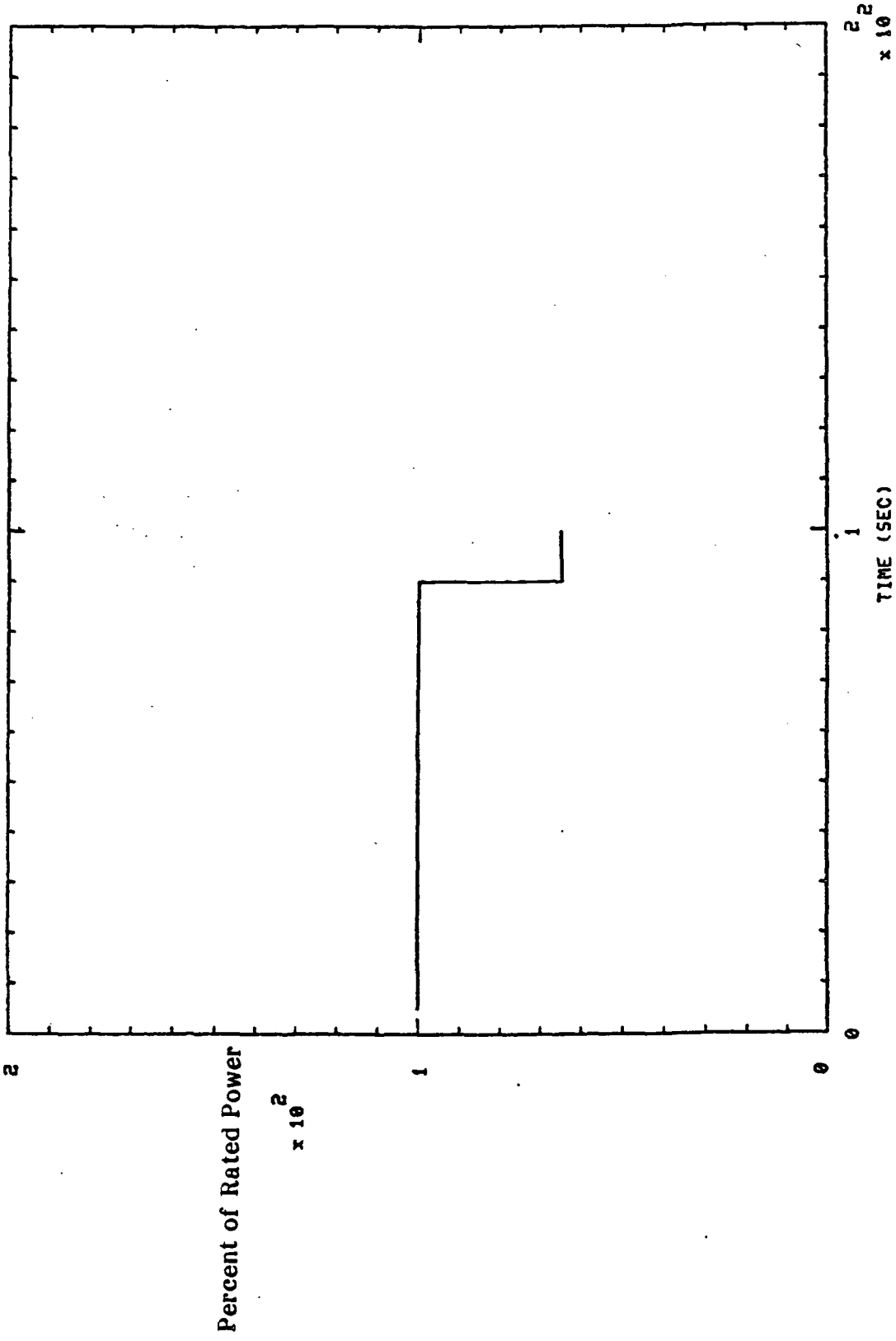
750093 THRUST (UNFILTERED)



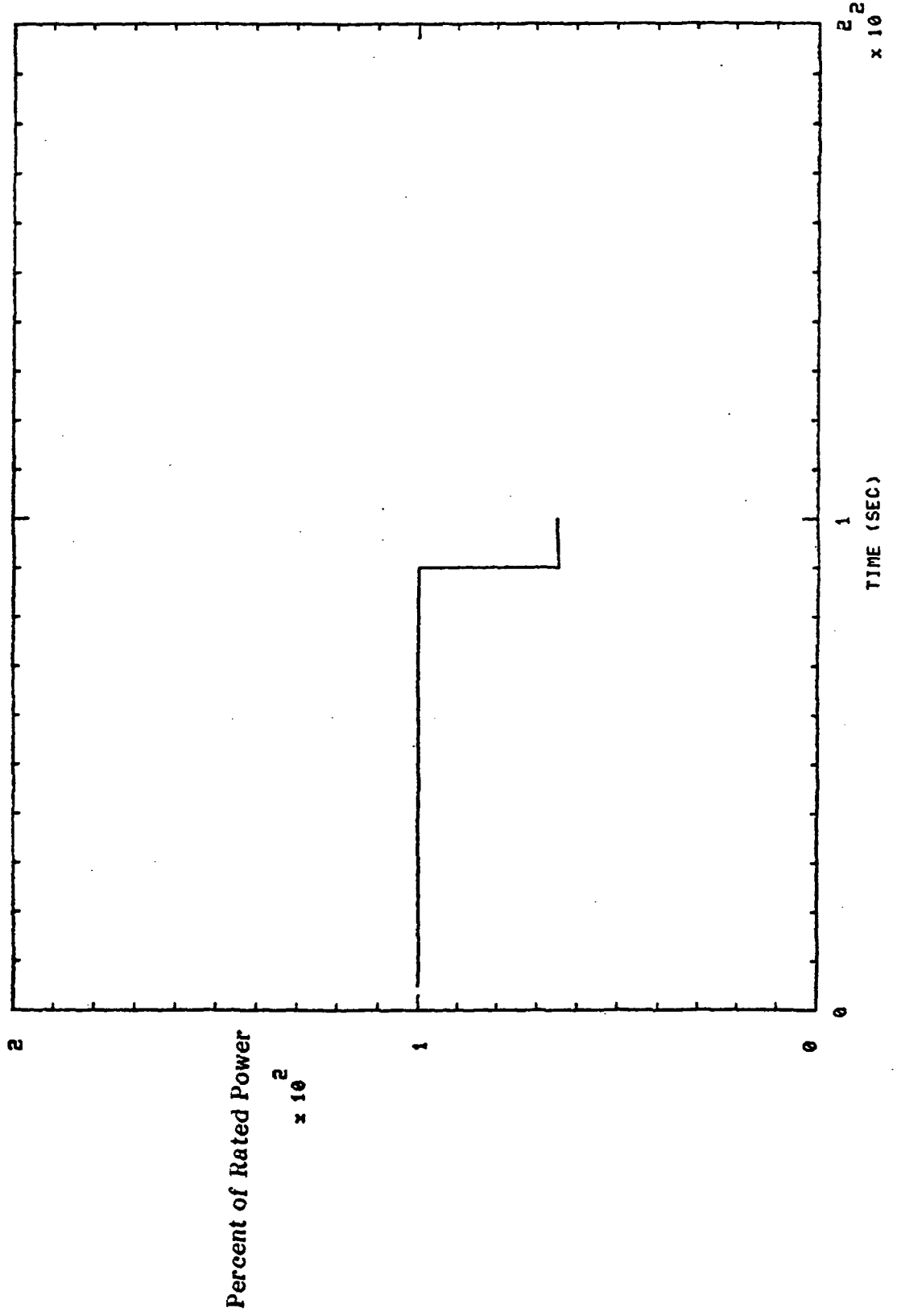
750094 THRUST (UNFILTERED)



750095 THRUST (UNFILTERED)



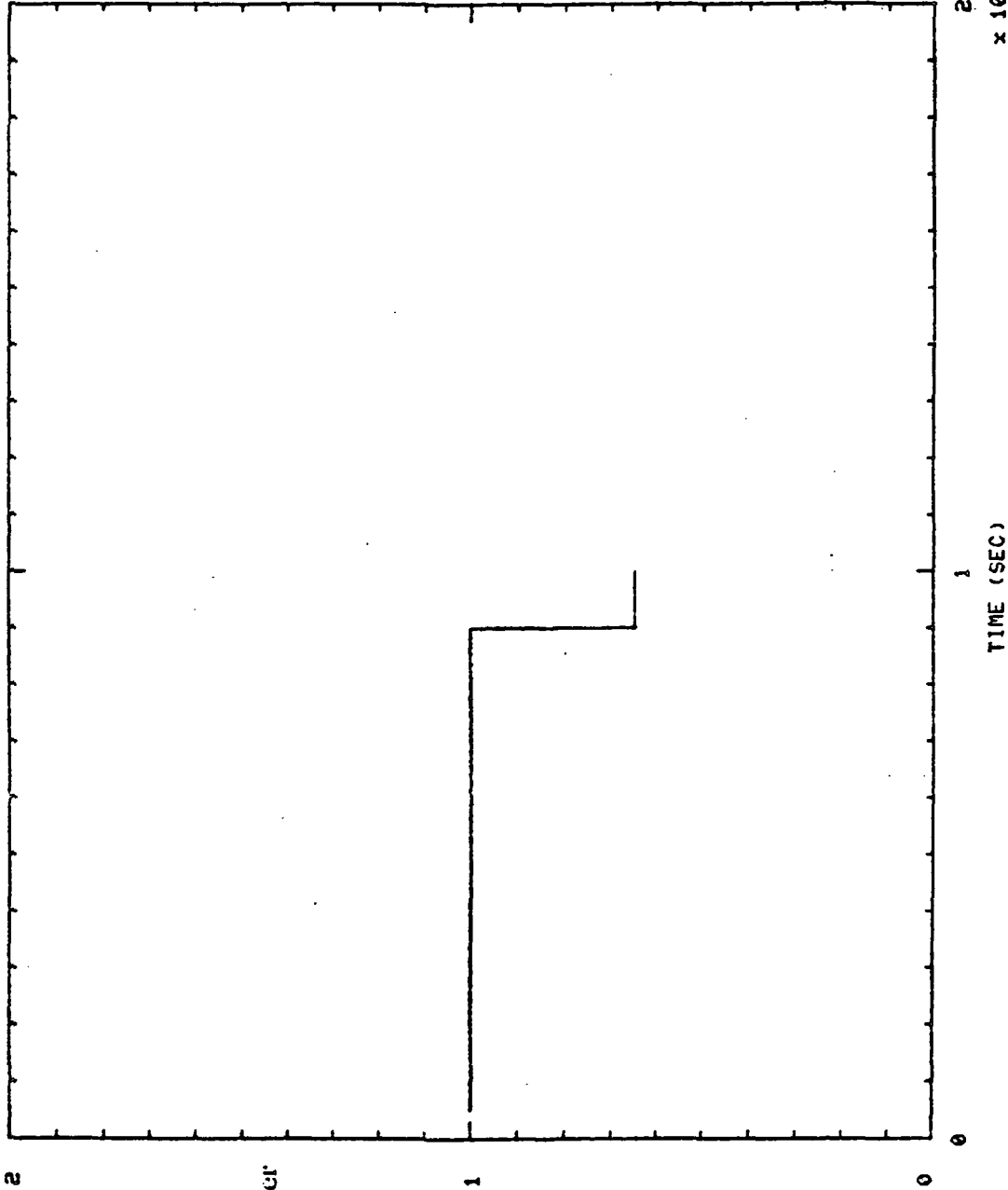
750096 THRUST (UNFILTERED)



(UNFILTERED)

THRUST

750097



Percent of Rated Power
 $\times 10^2$

$\times 10^2$

TIME (SEC)

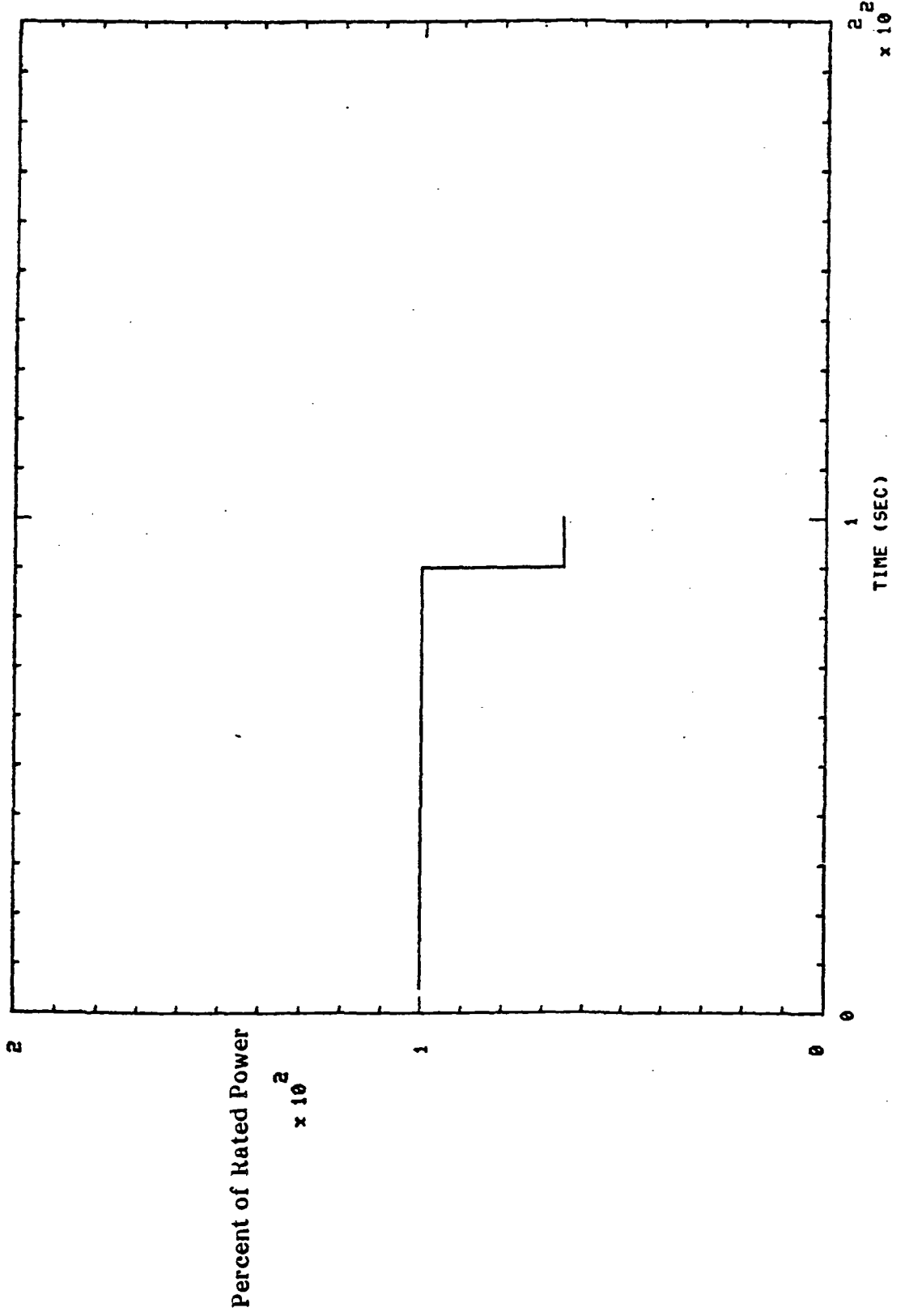
1

0

1

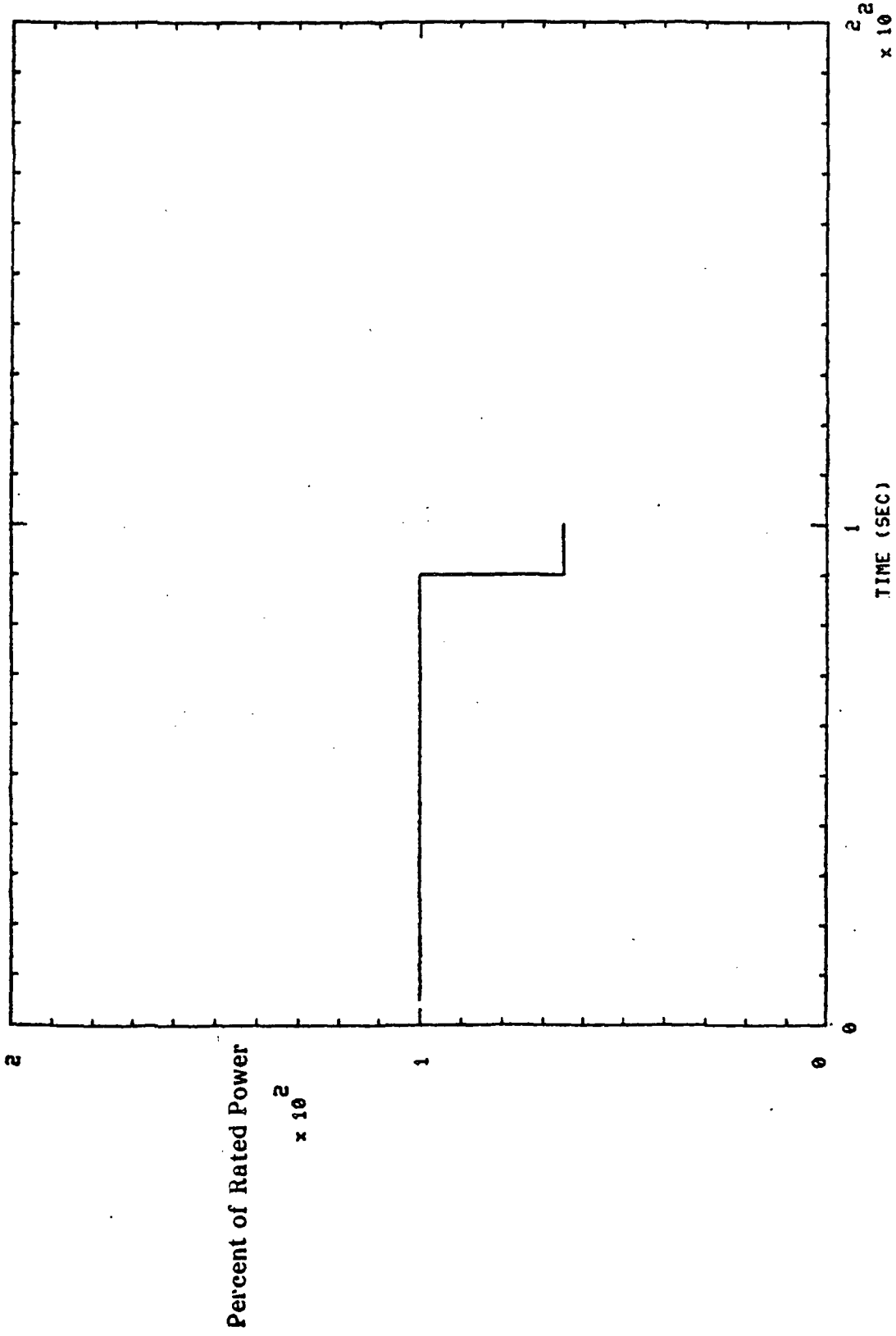
2

750098 THRUST (UNFILTERED)

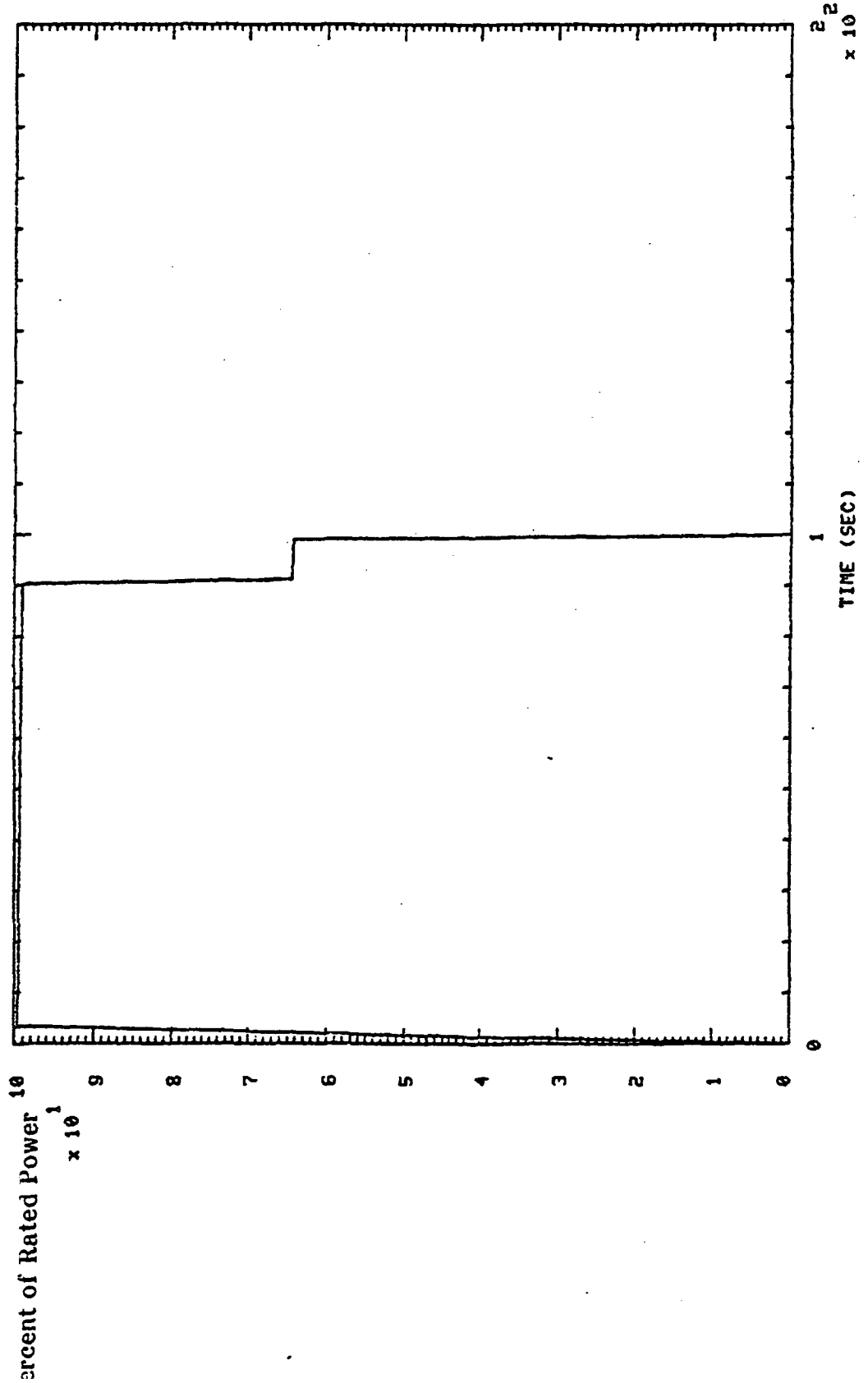


(UNFILTERED)

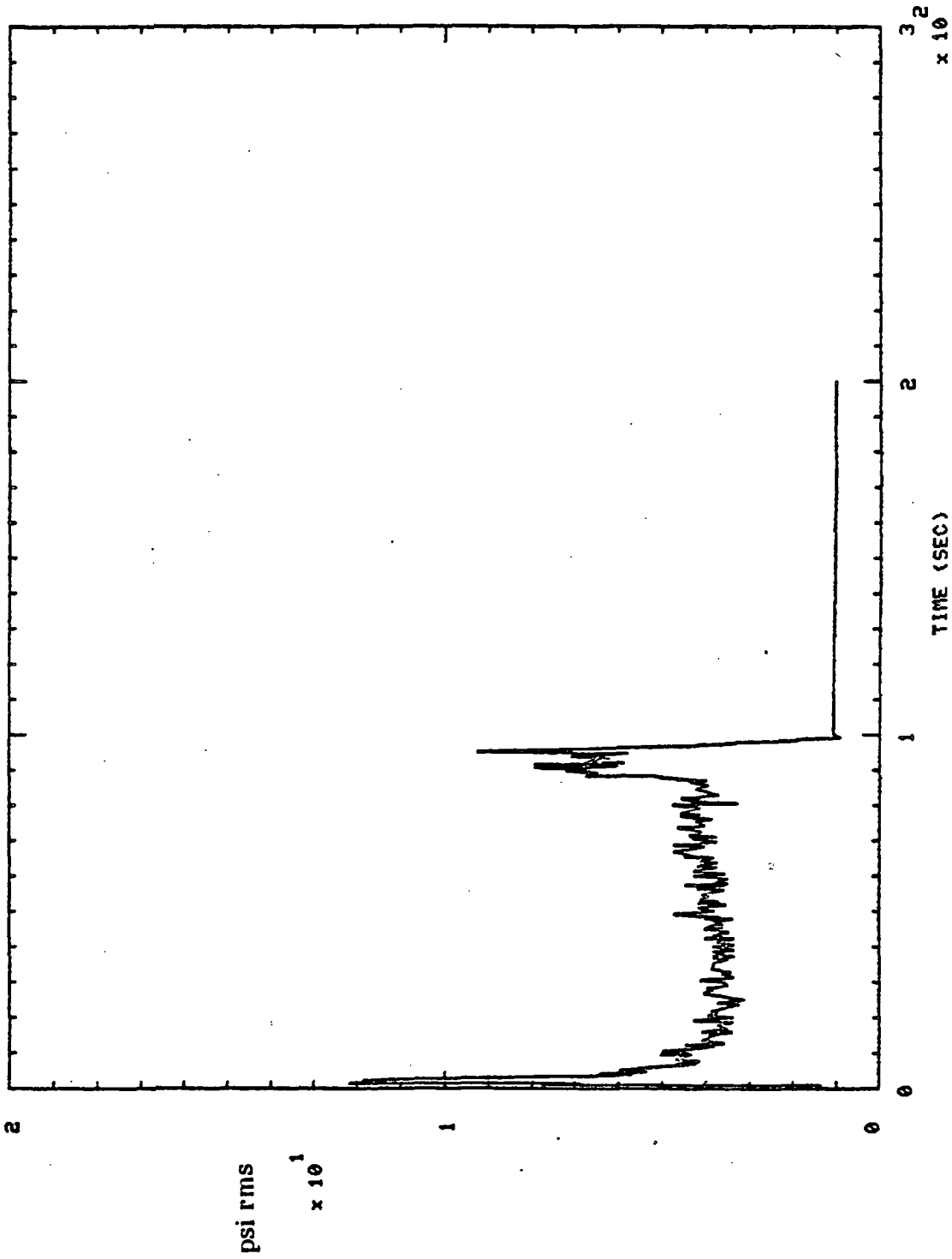
750099 THRUST



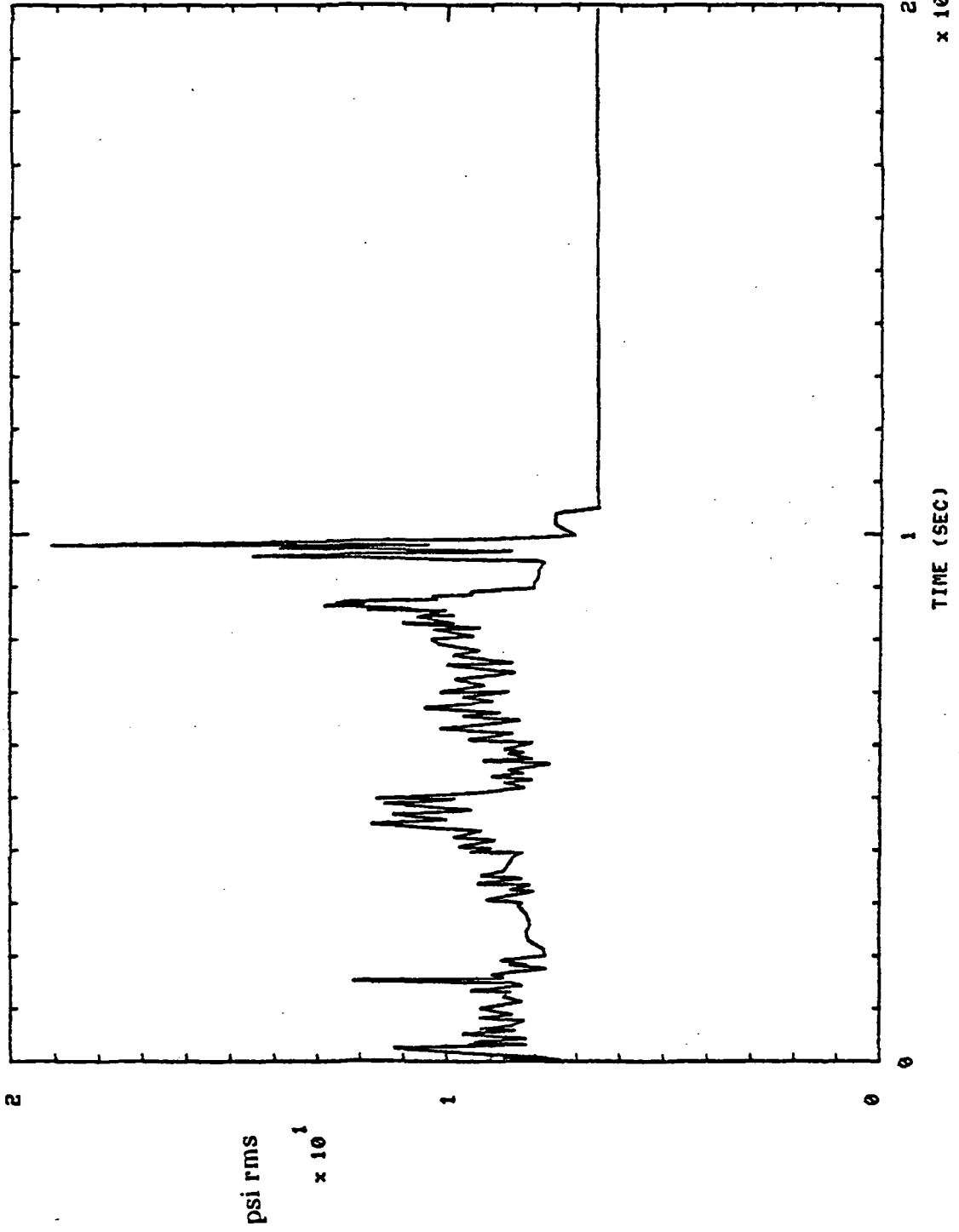
750100 THRUST (UNFILTERED)



750100 LPFP IN PR (1 - 20K HZ)

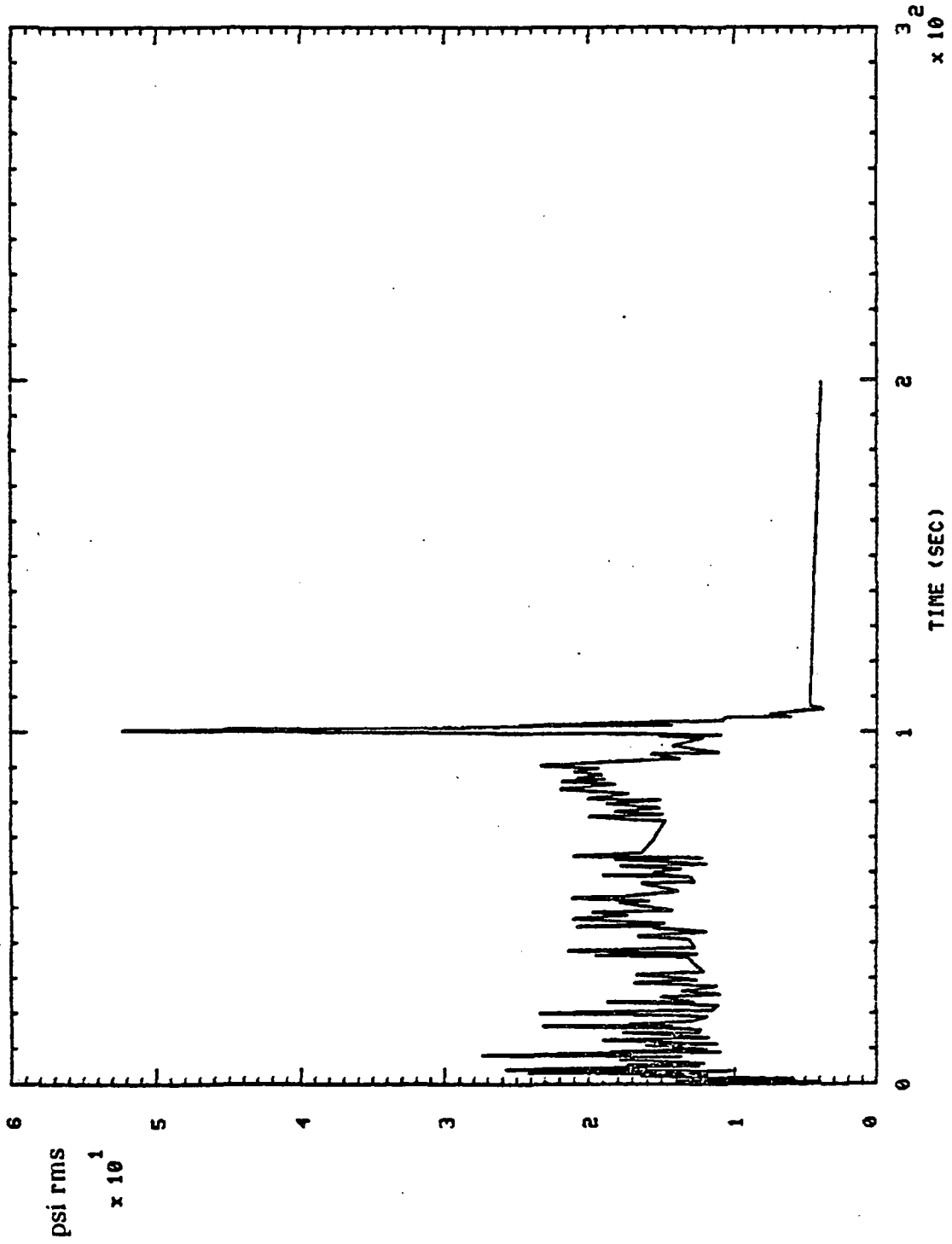


750100 LPOP DS PR (1 - 20K HZ)

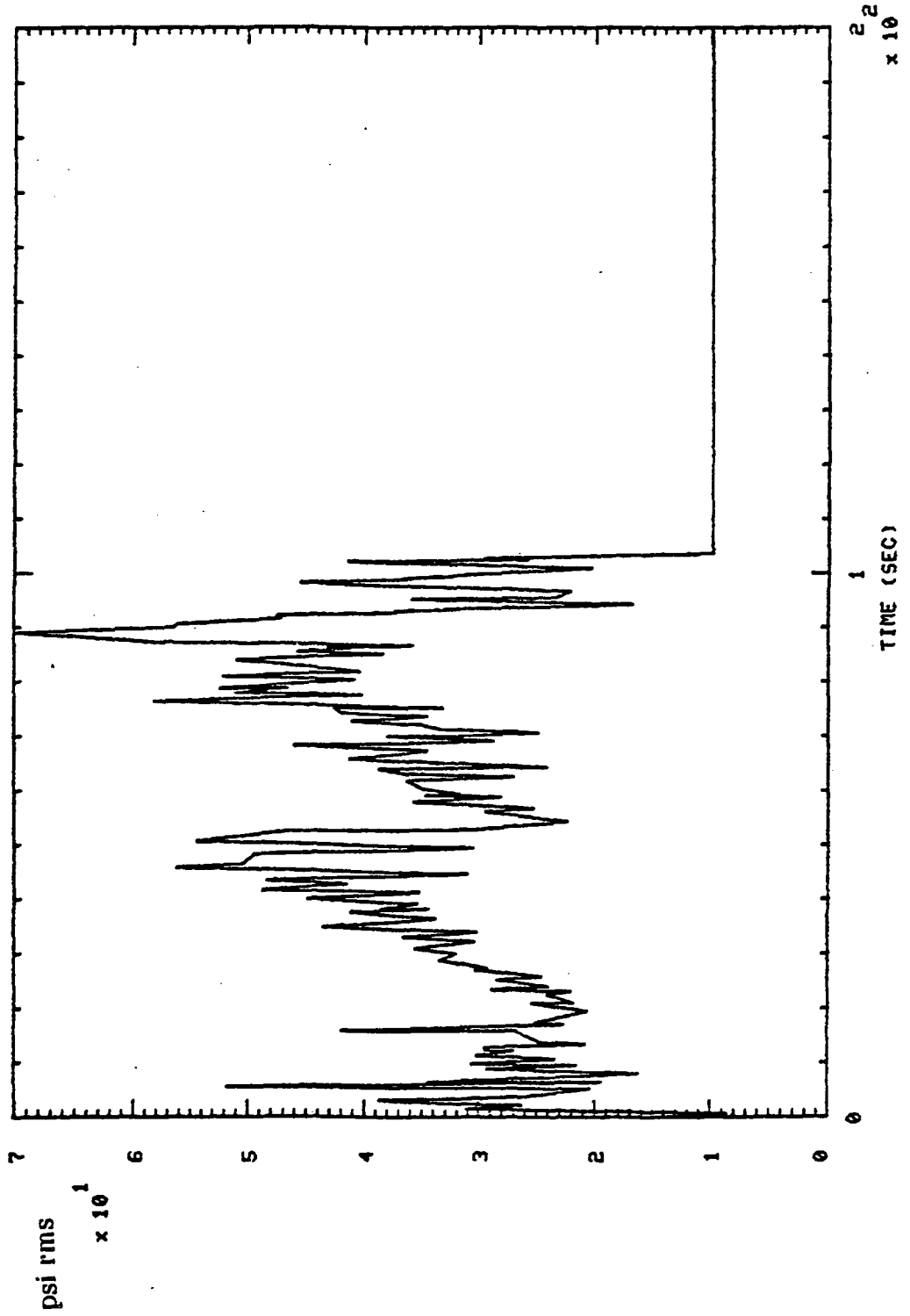


(1 - 20K HZ)

750100 HPOP BAL CAU PR2

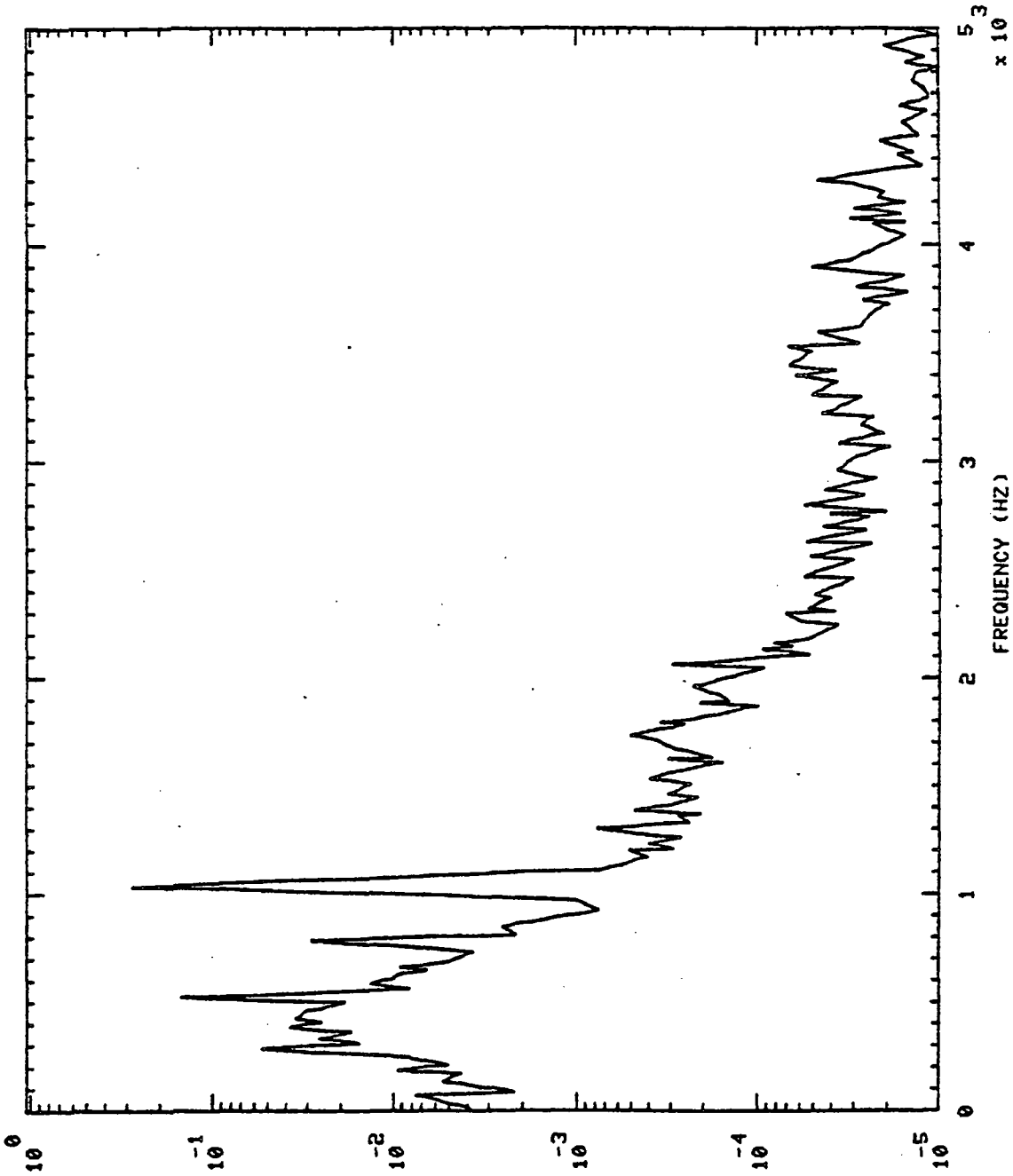


750100 HPOP BAL CAU PRI (1 - 20K HZ)



S+ 10.050/HZ

750100 LPFP IN PR



P 50 \ HZ

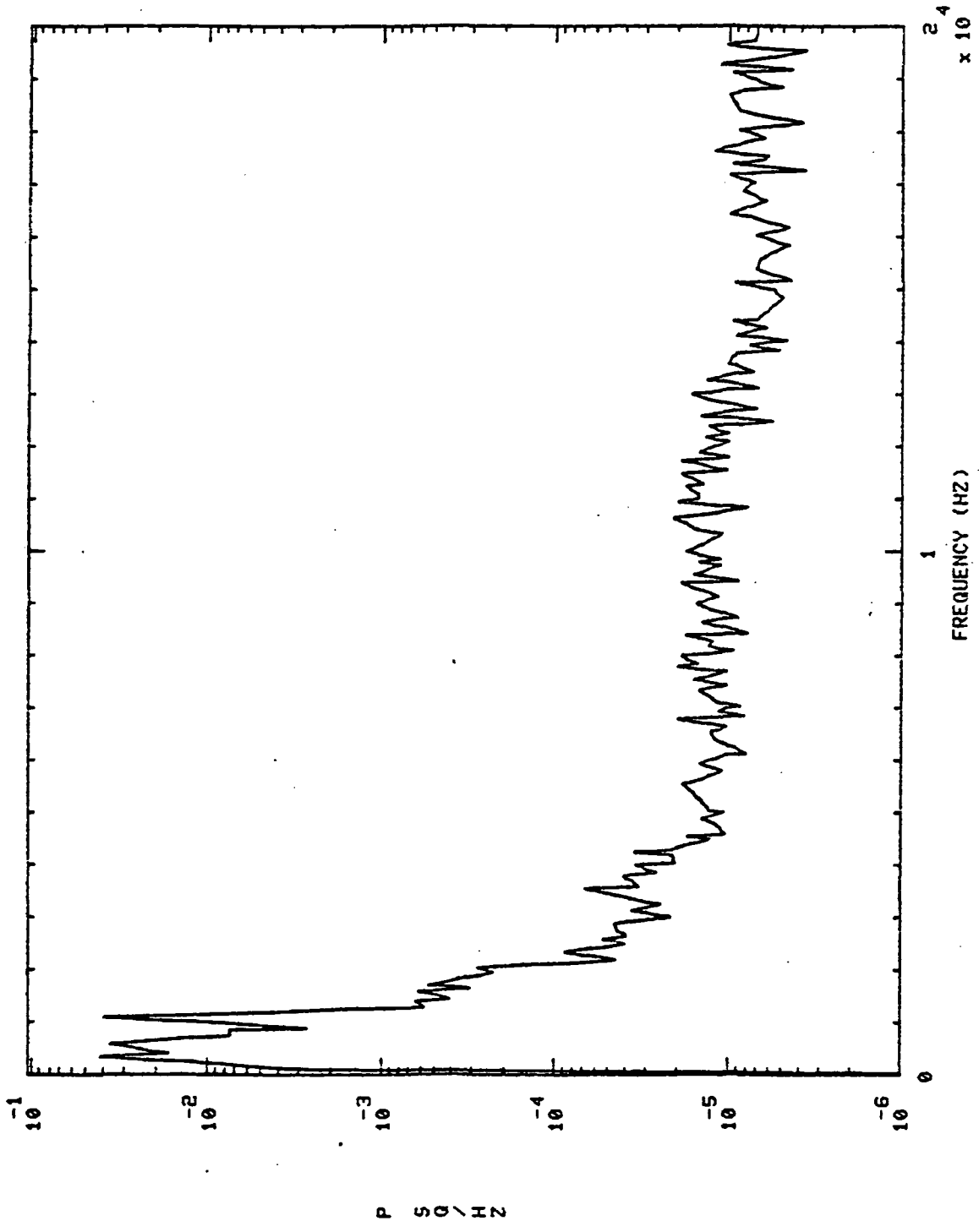
750100 LPFP IN PR S+ 10.050/HZ

750100 LPFP IN PR

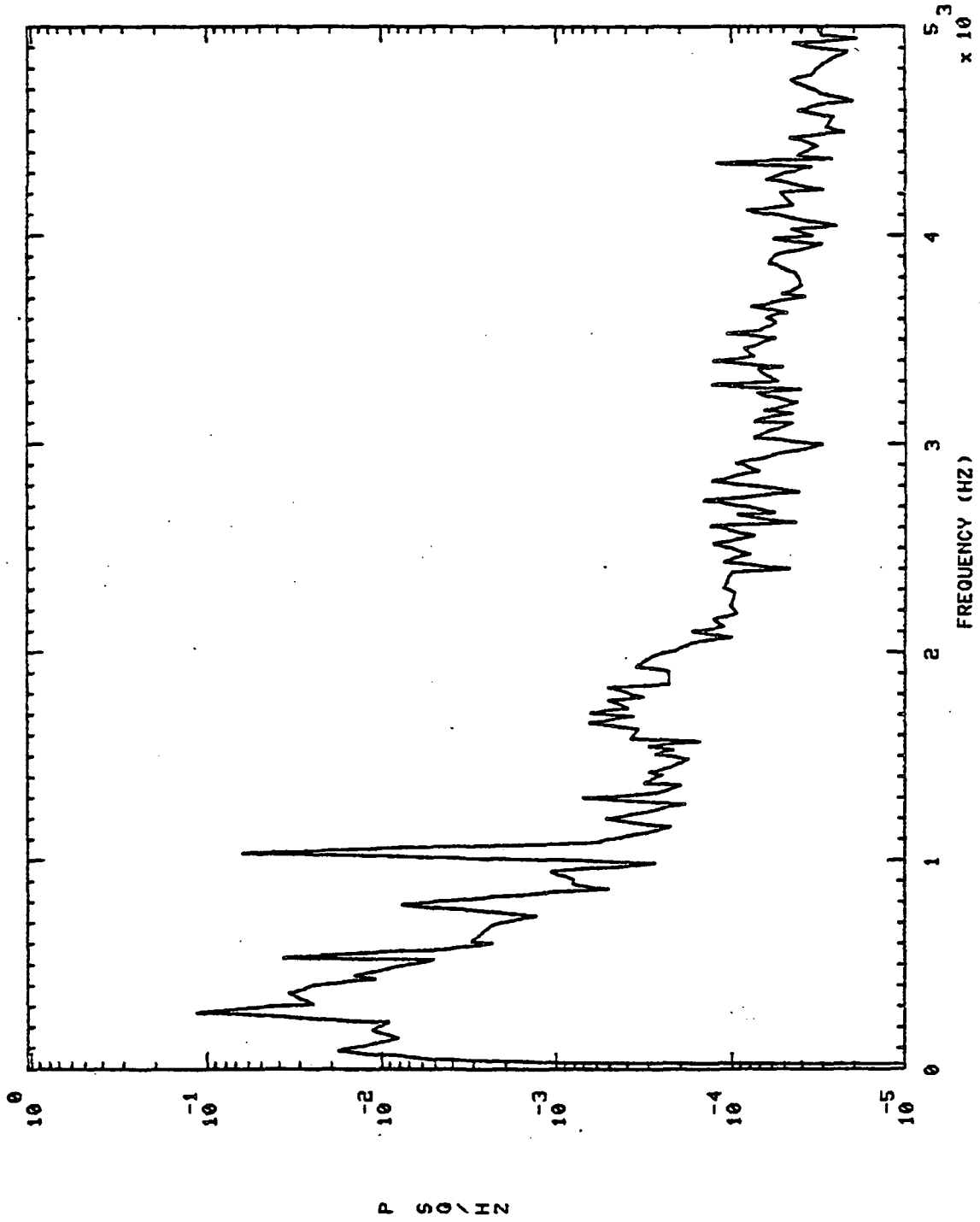
750100

LPFP IN PR

S+ 10.050/HZ

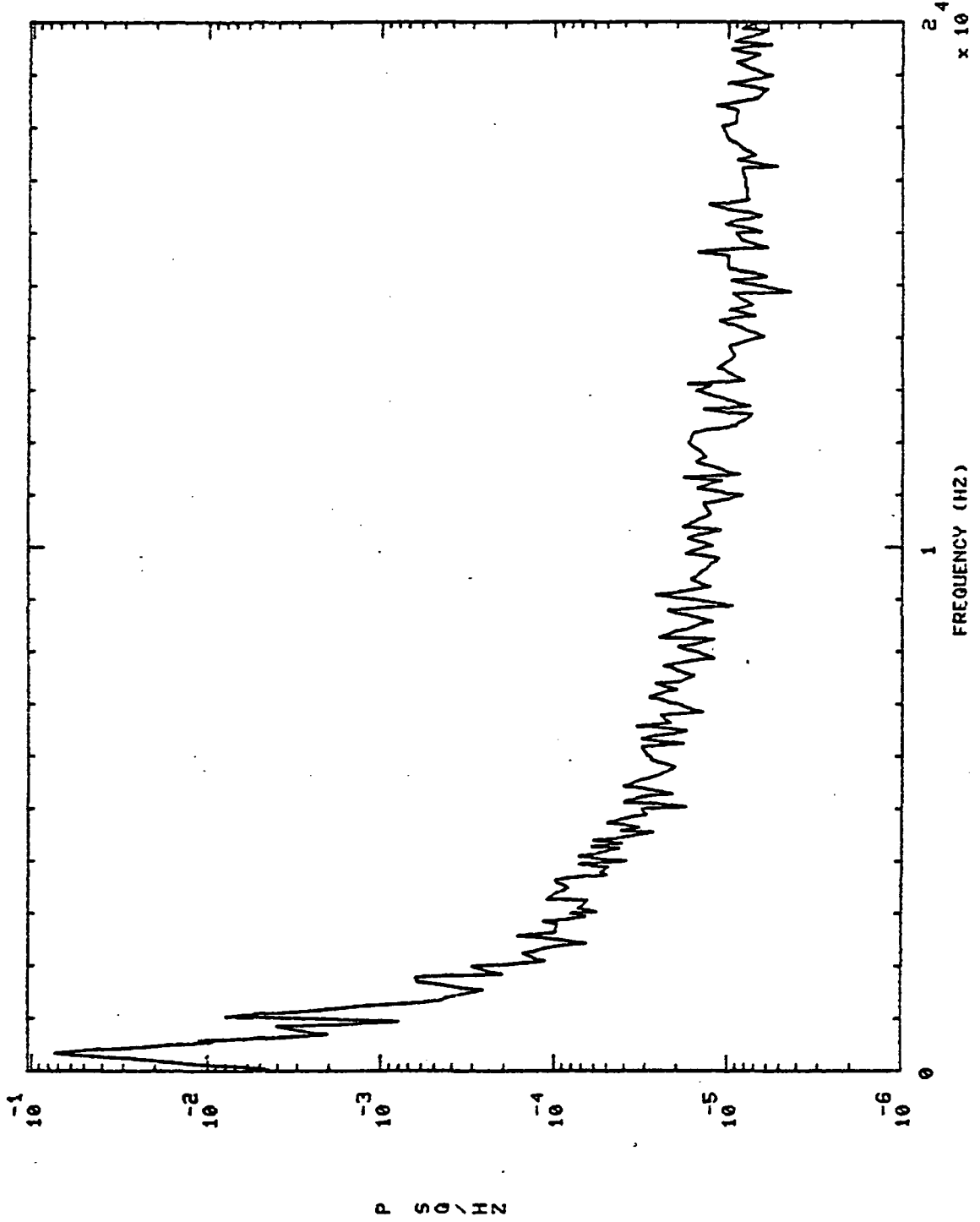


750100 LPFP IN PR S+ 40.050/HZ



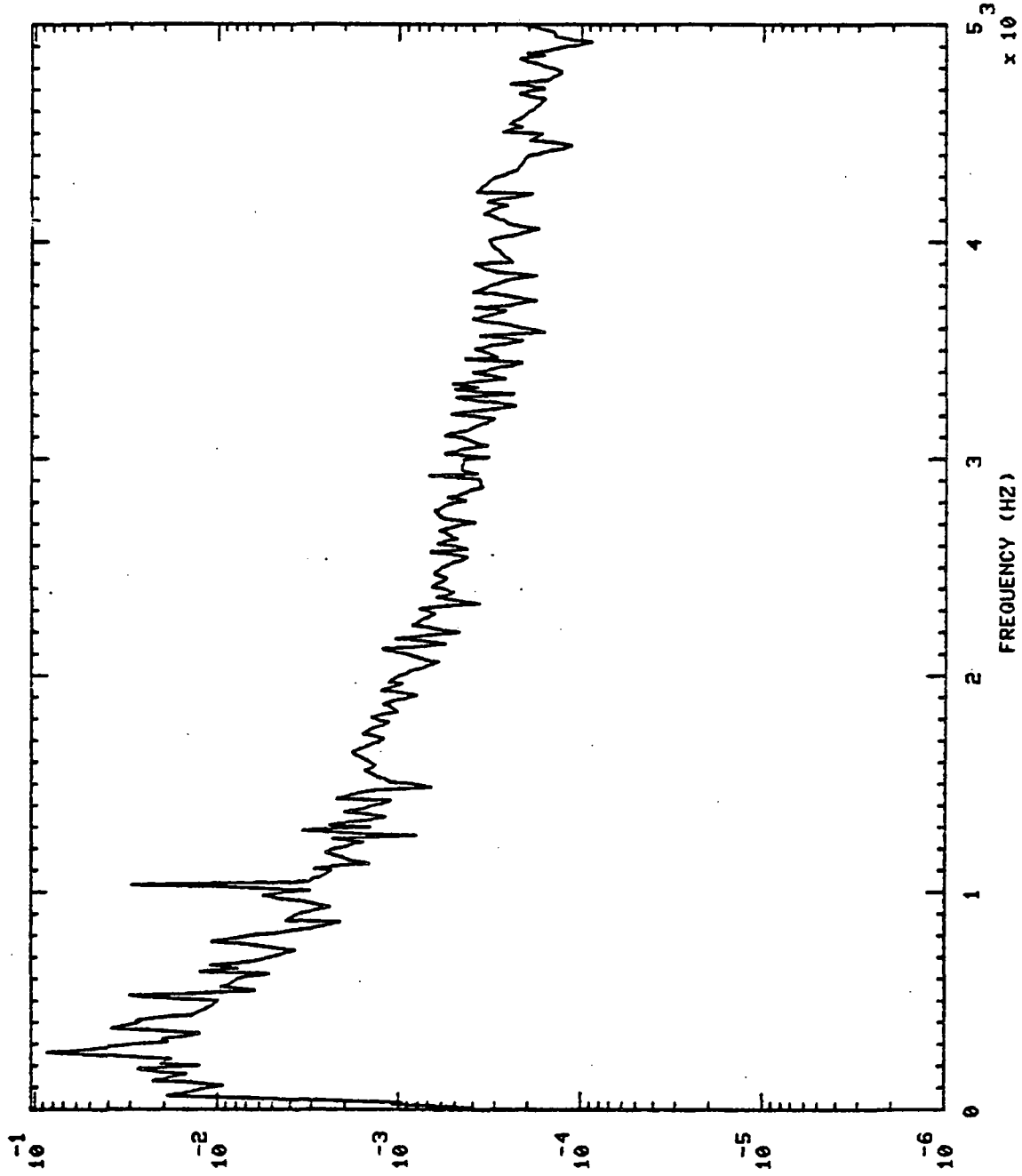
S+ 40.050/HZ

750100 LPFP IN PR



S+ 85.050/HZ

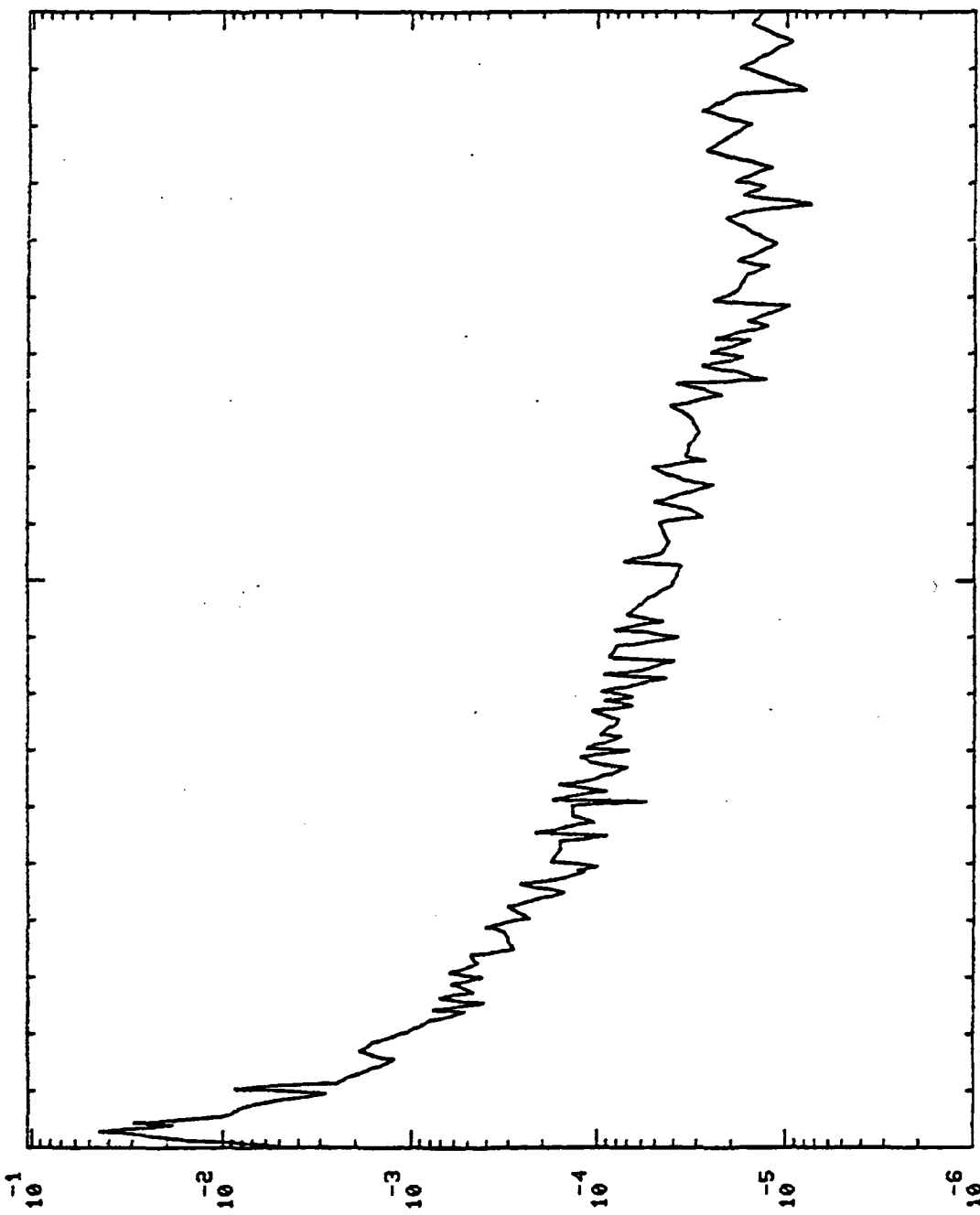
750100 LPFP IN PR



P S G / H Z

750100 LFPF IN PR S+ 85.050/HZ

750100 LFPF IN PR



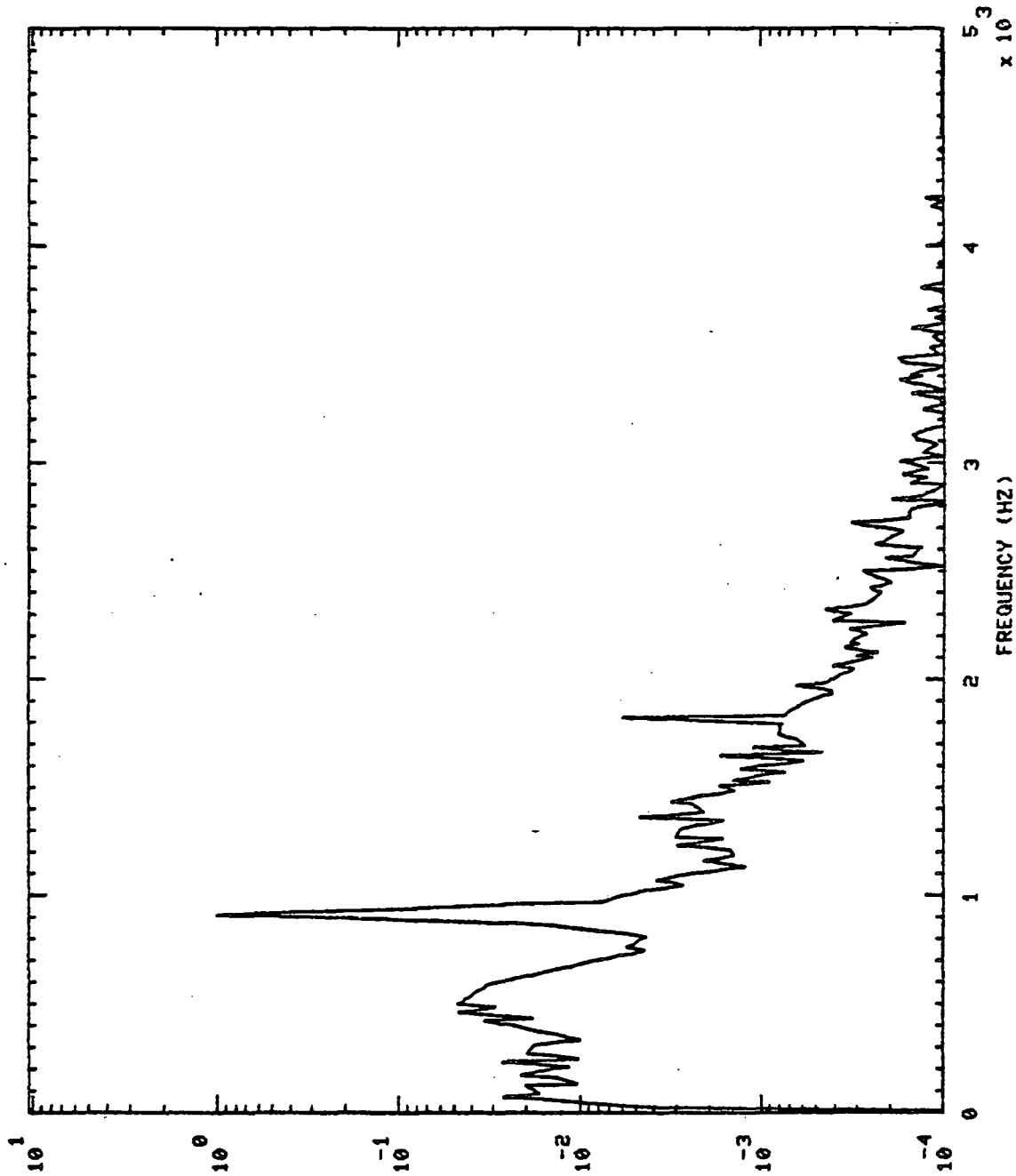
2×10^4

FREQUENCY (HZ)

P SQ/HZ

S+ 95.050/HZ

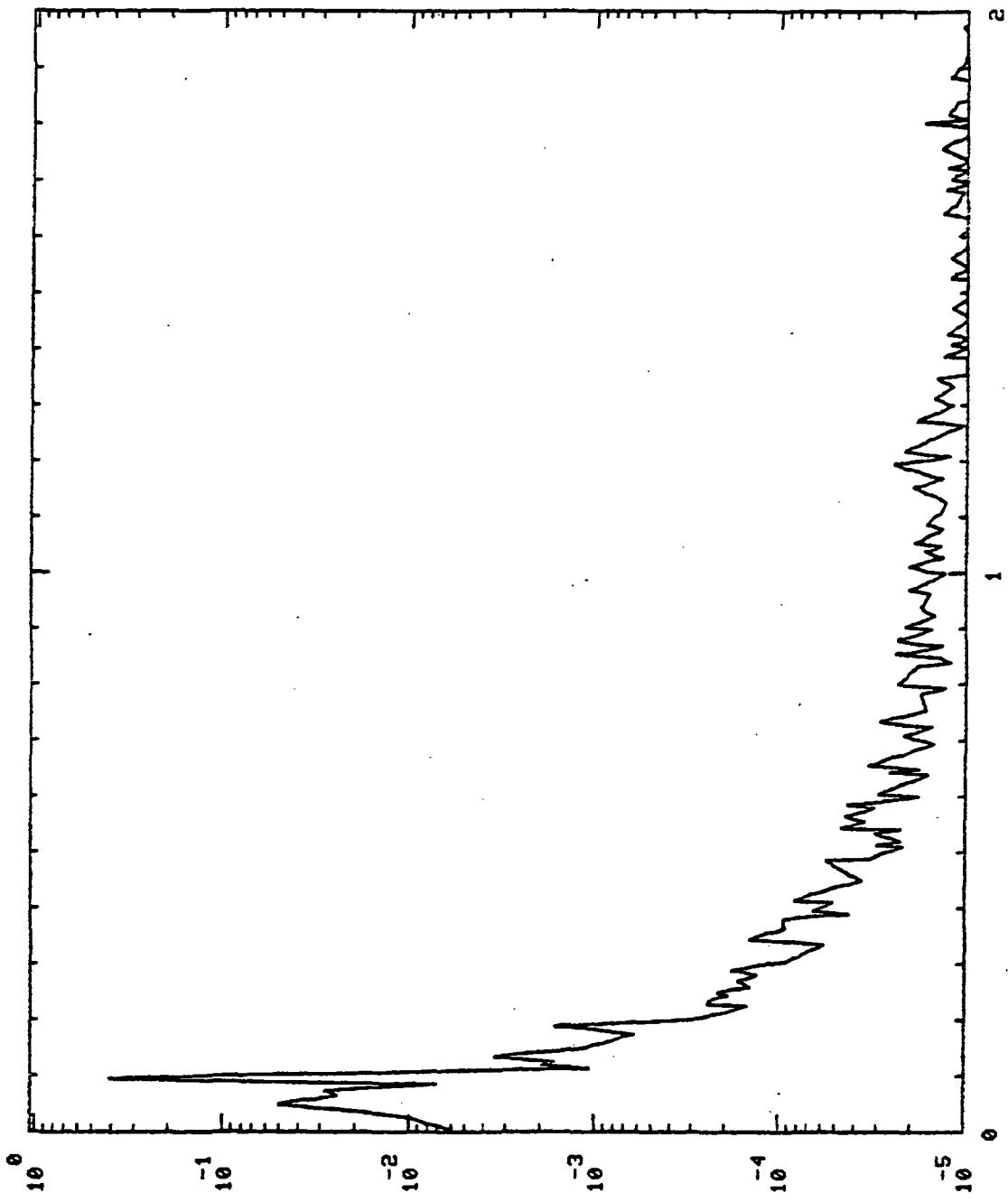
750100 LPFP IN PR



P S D / H Z

S+ 95.050/HZ

750100 LFPF IN PR



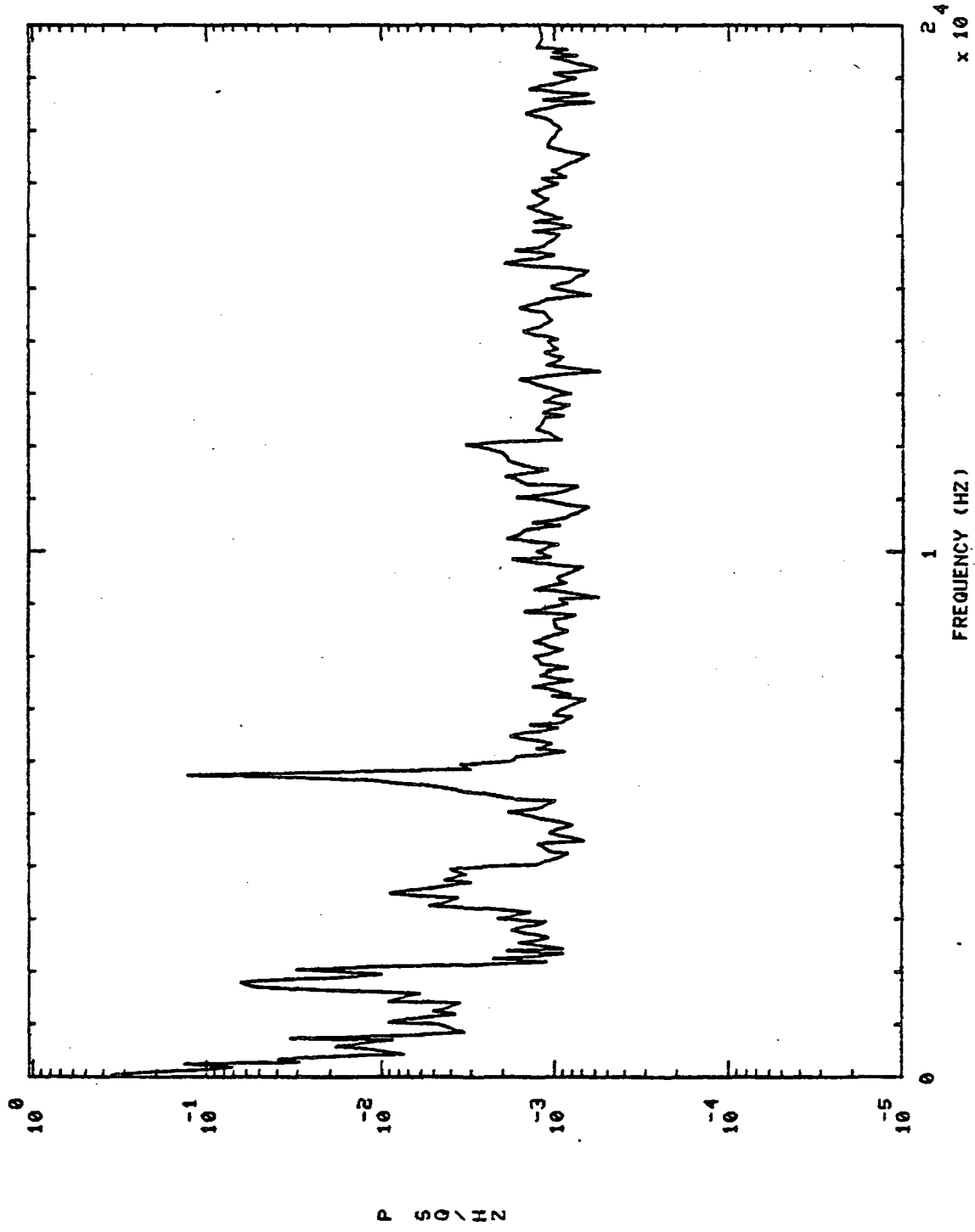
P S D \ H Z

2.4
x 10⁴

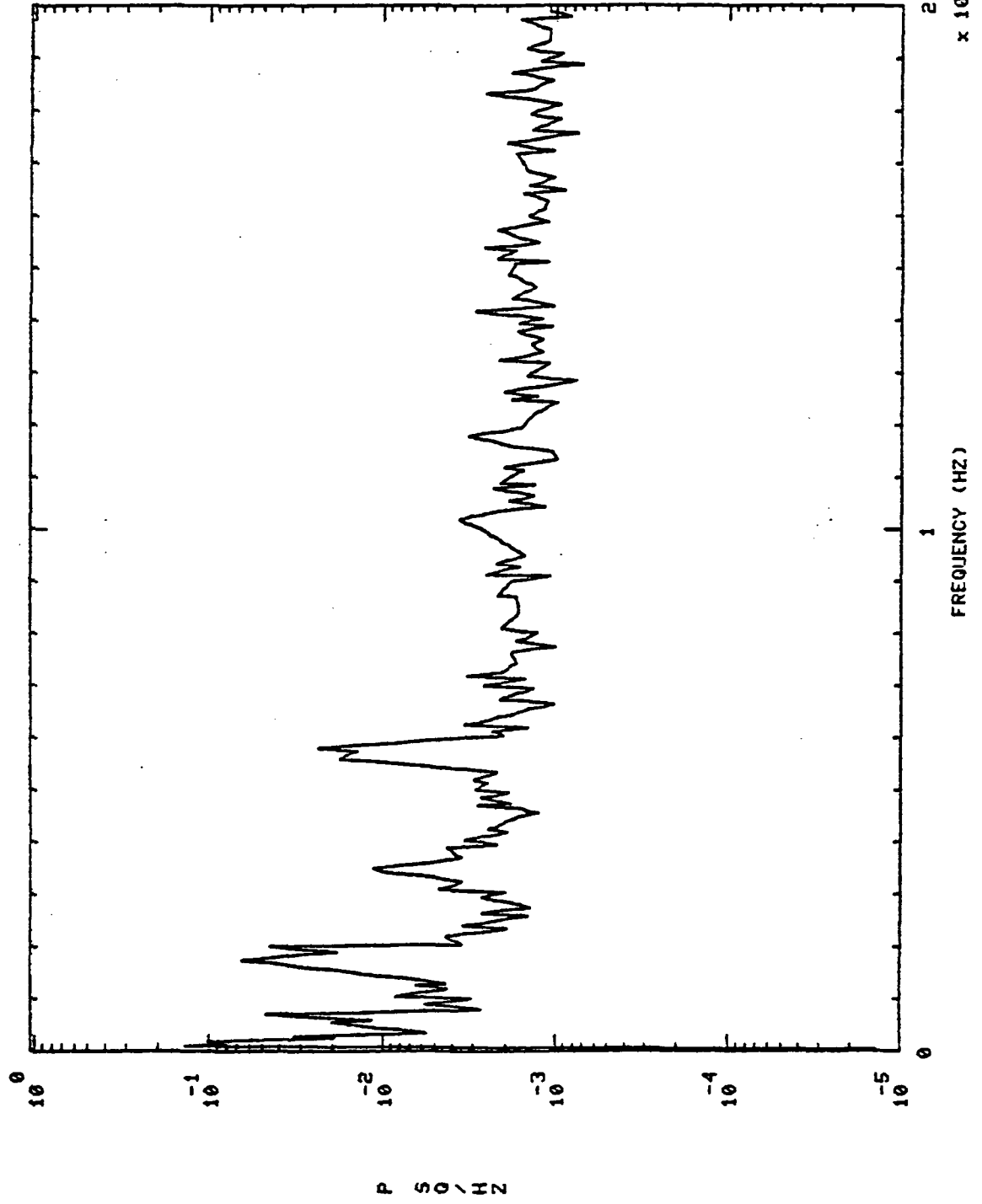
FREQUENCY (HZ)

S+ 10.050/HZ

750100 LPOP DS PR

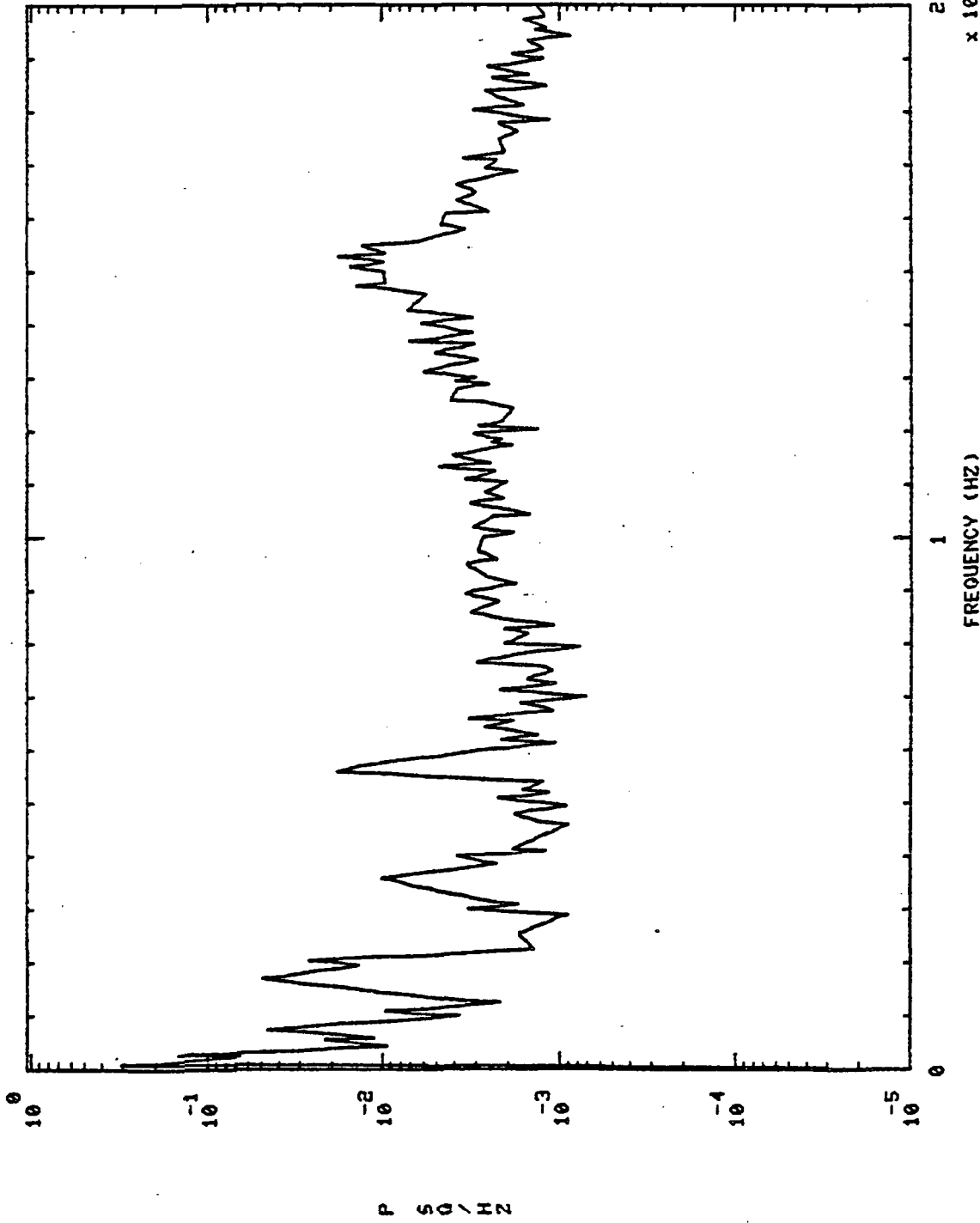


750100 LPOP DS PR S+ 40.050/HZ

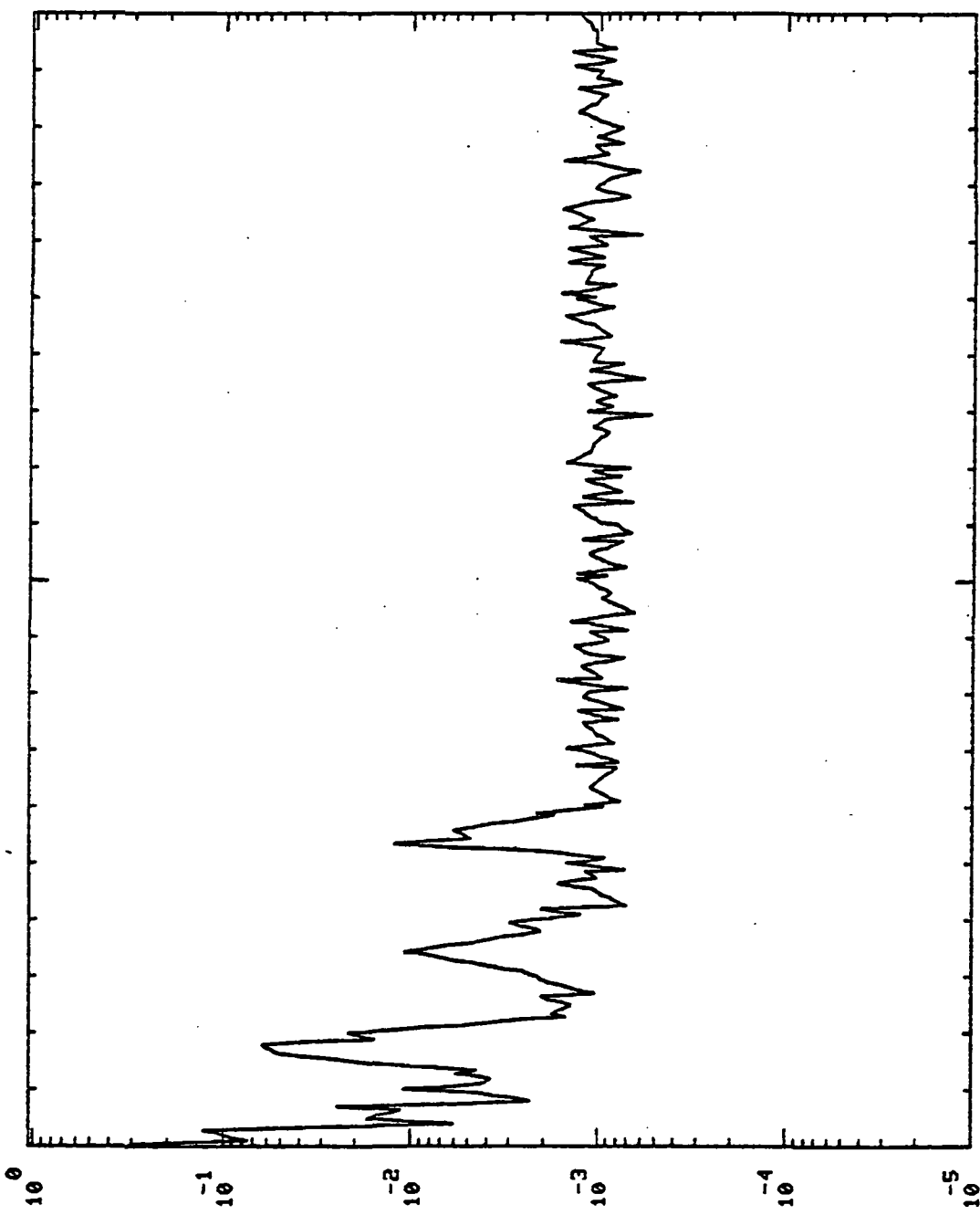


S+ 85.050/HZ

750100 LPOP DS PR



750100 LPOP DS PR S+ 95.050/HZ

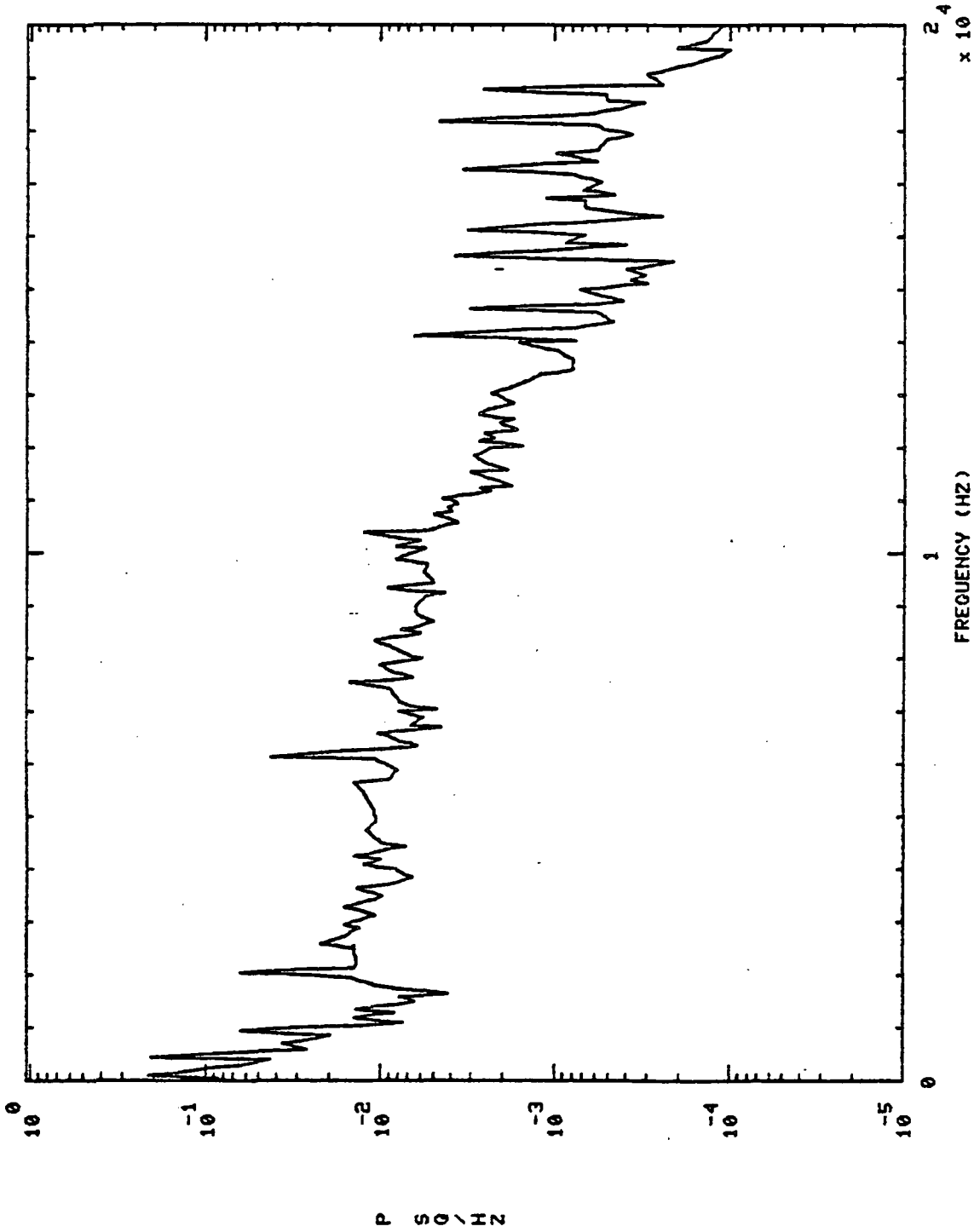


P S D \ HZ

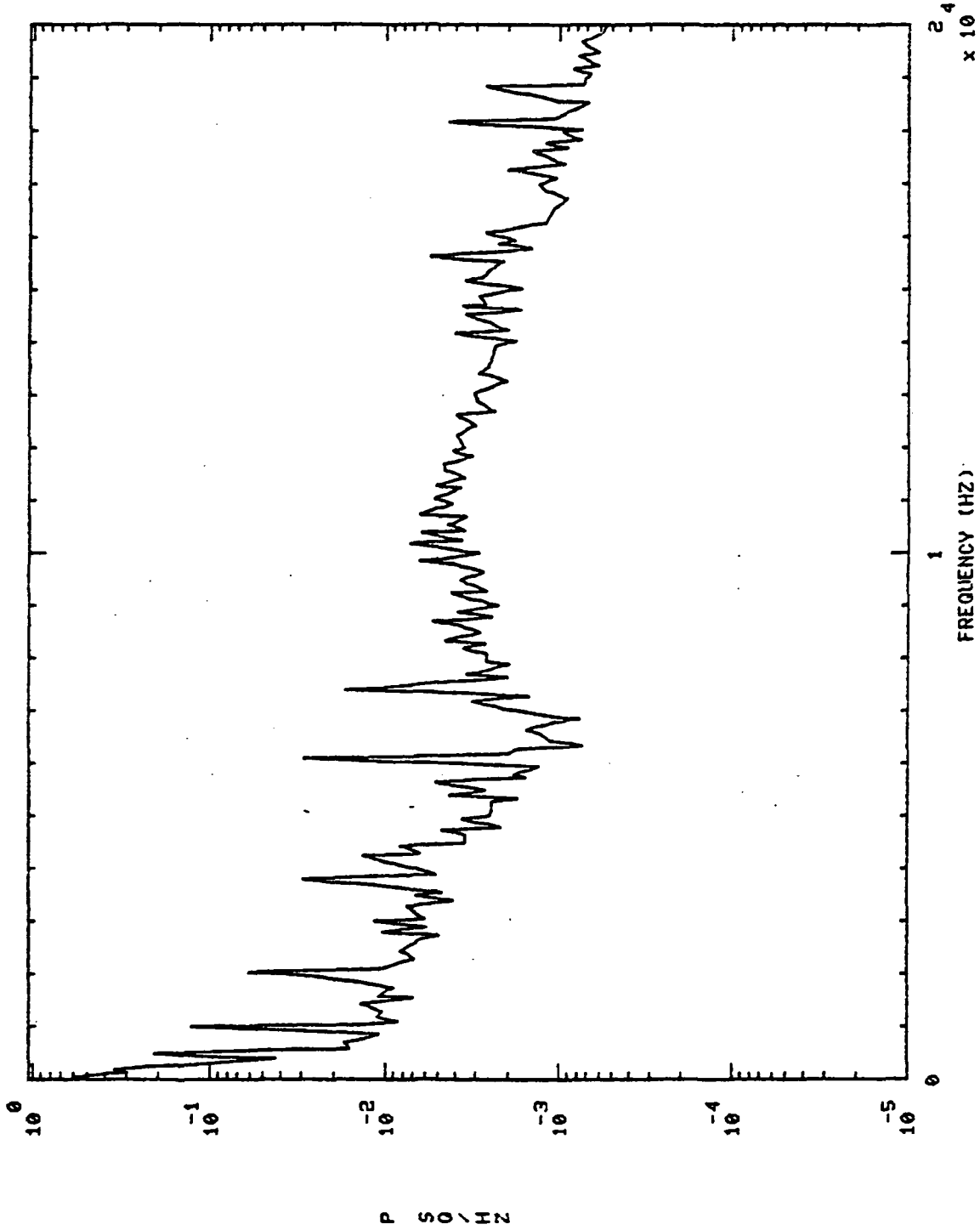
10⁴
x 10

FREQUENCY (HZ)

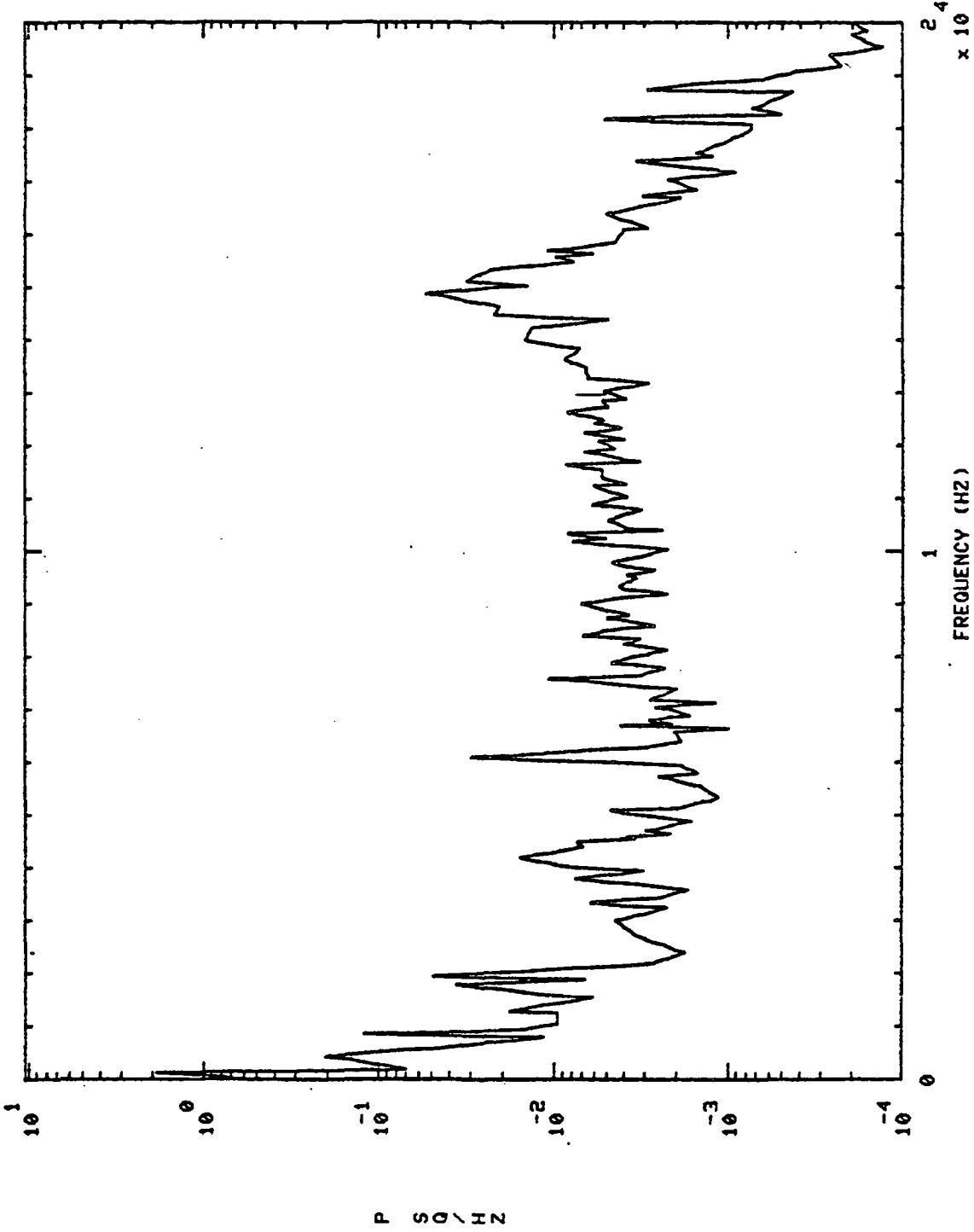
750100 HPOP BAL CAU PR2 S+ 10.050/HZ



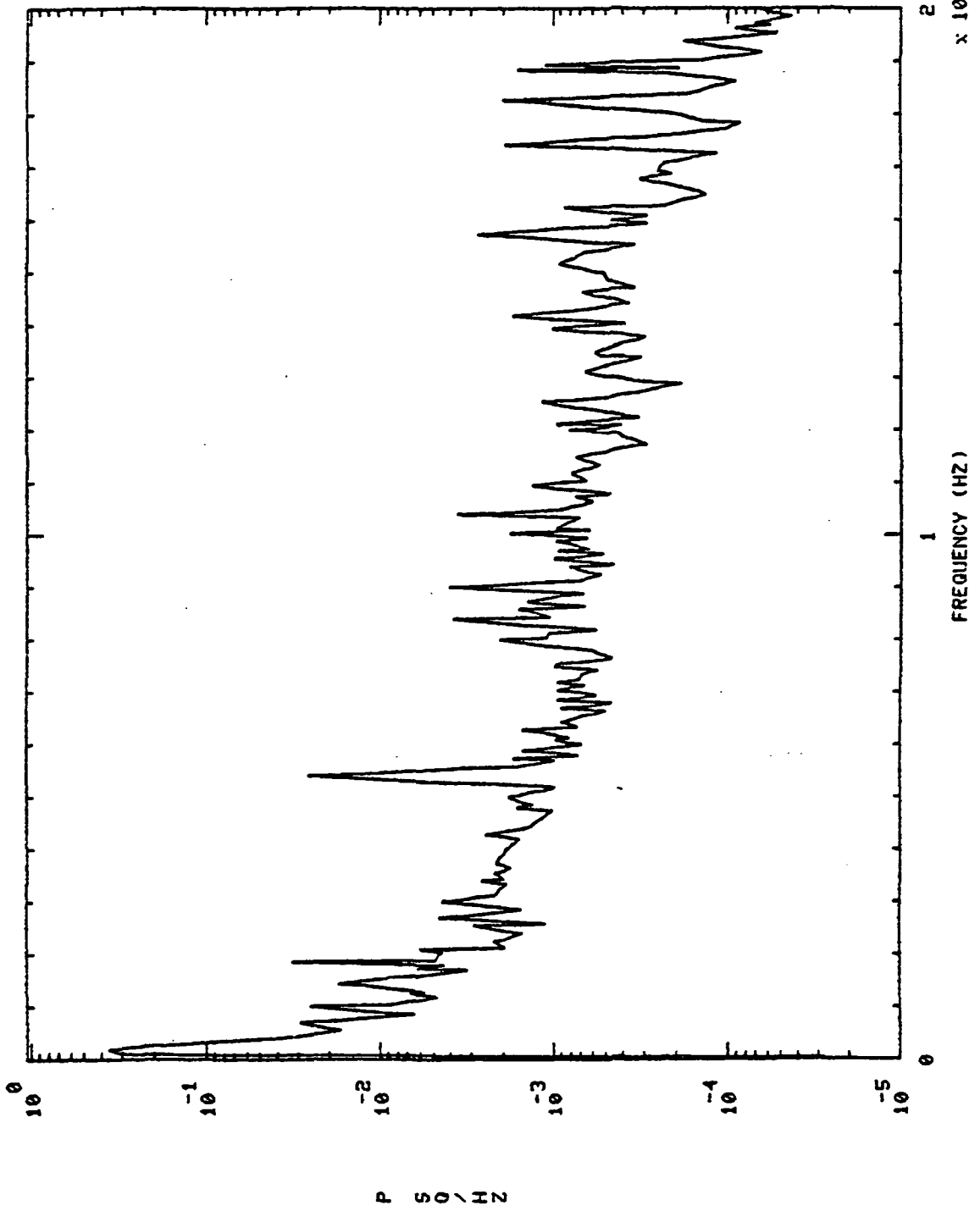
750100 HPOP DAL CAU PR2 S+ 40.050/HZ



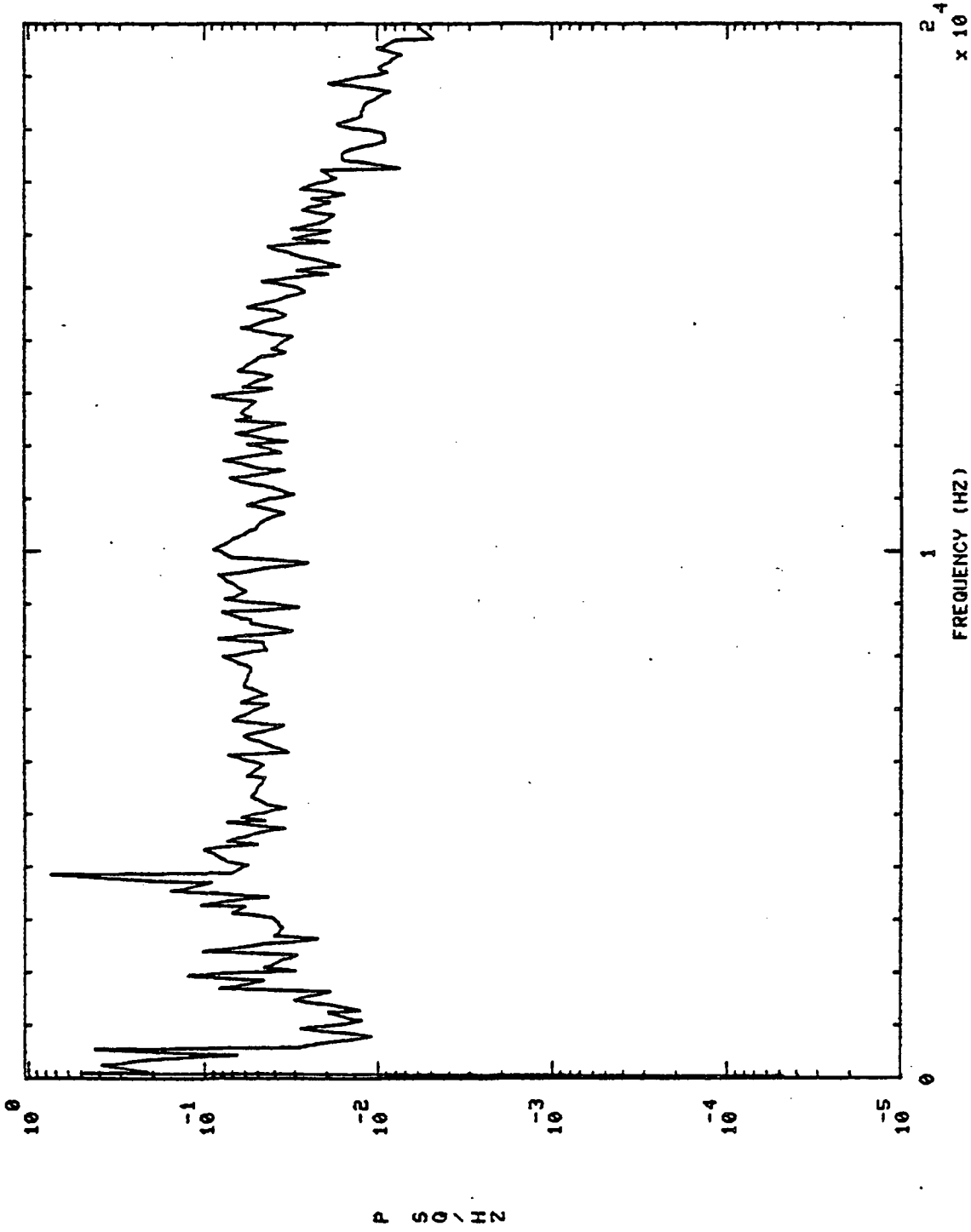
750100 HPOP BAL CAU PR2 S+ 85.050/HZ



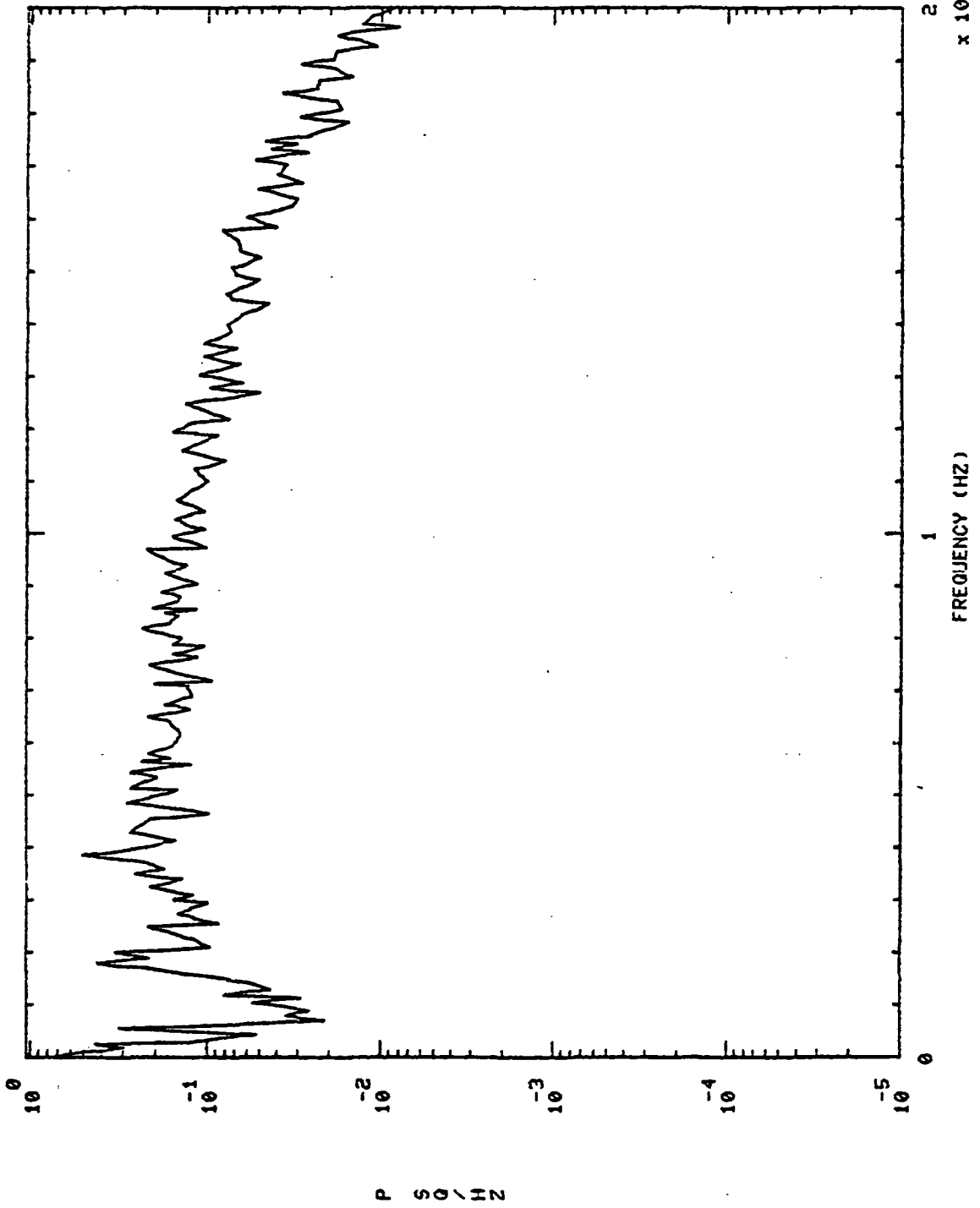
750100 HPOP BAL CAU PR2 S+ 95.050/HZ



750100 HPOP BAL CAU PRI S+ 10.0SQ/HZ



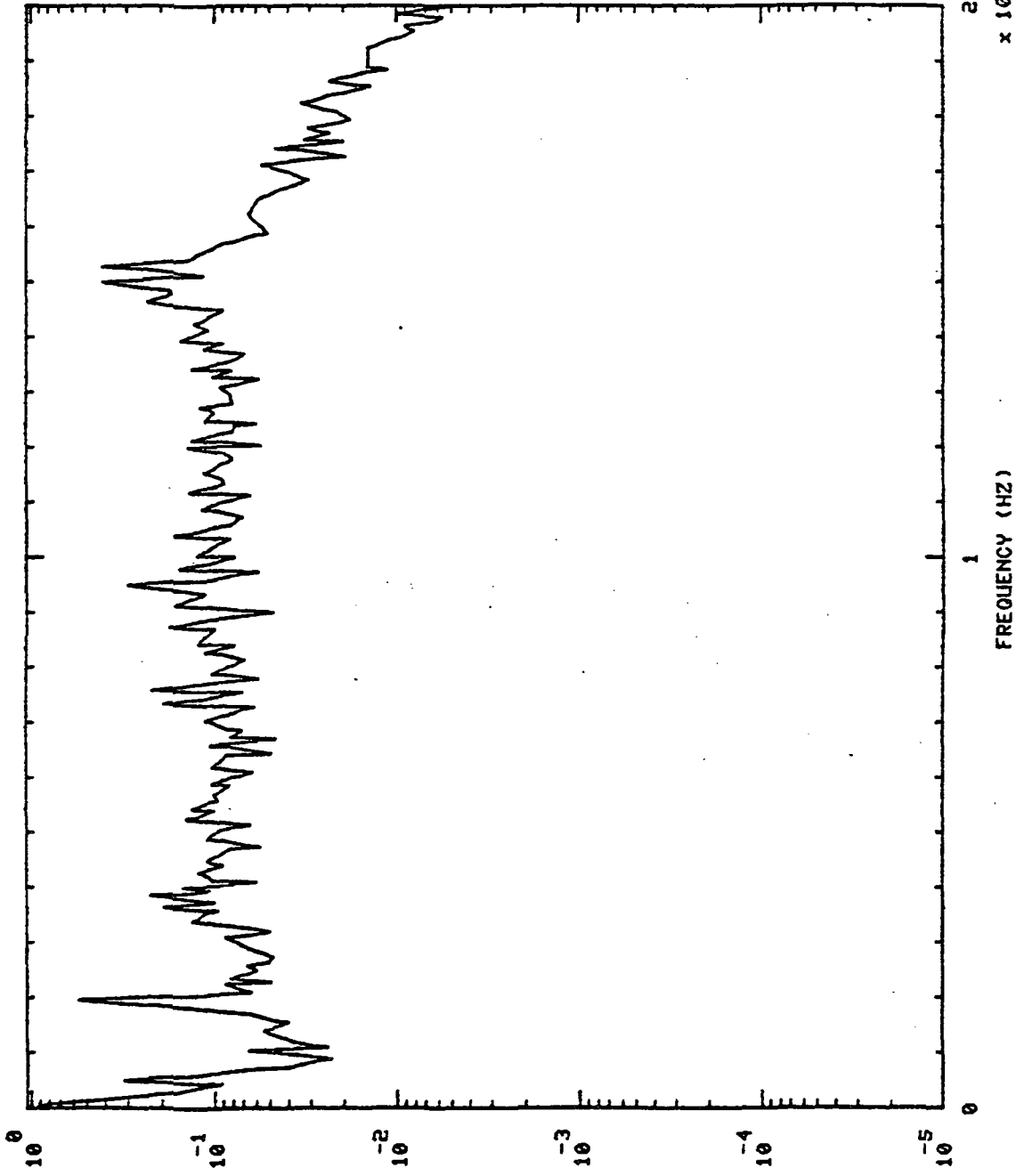
750100 HPOP BAL CAU PRI S+ 40.050/HZ



S+ 85.050/HZ

HPOP BAL CAU PR1

750100

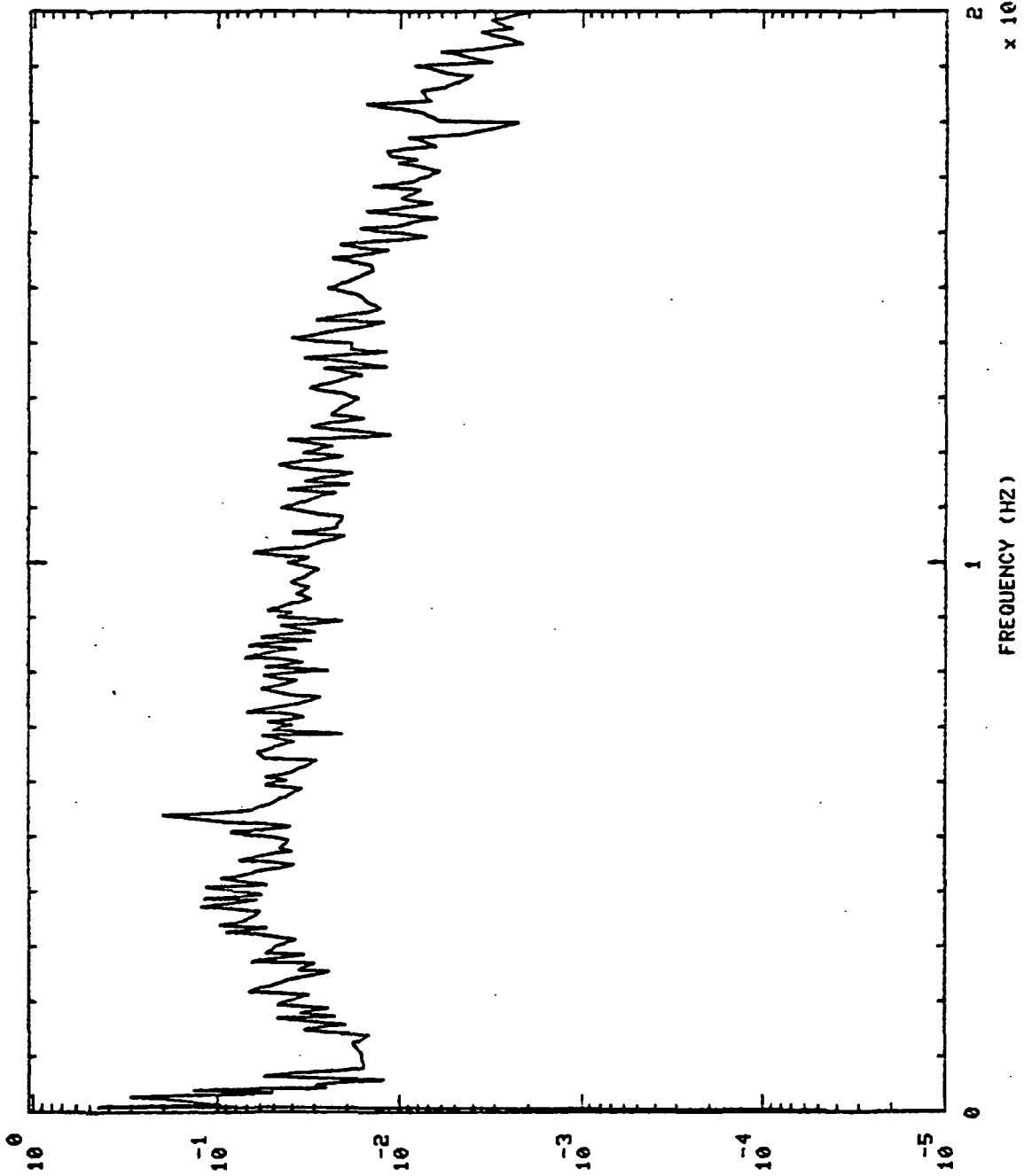


P SQ / HZ

FREQUENCY (HZ)

2.4×10^4

750100 HPOP BAL CAU PRI S+ 95.050/HZ

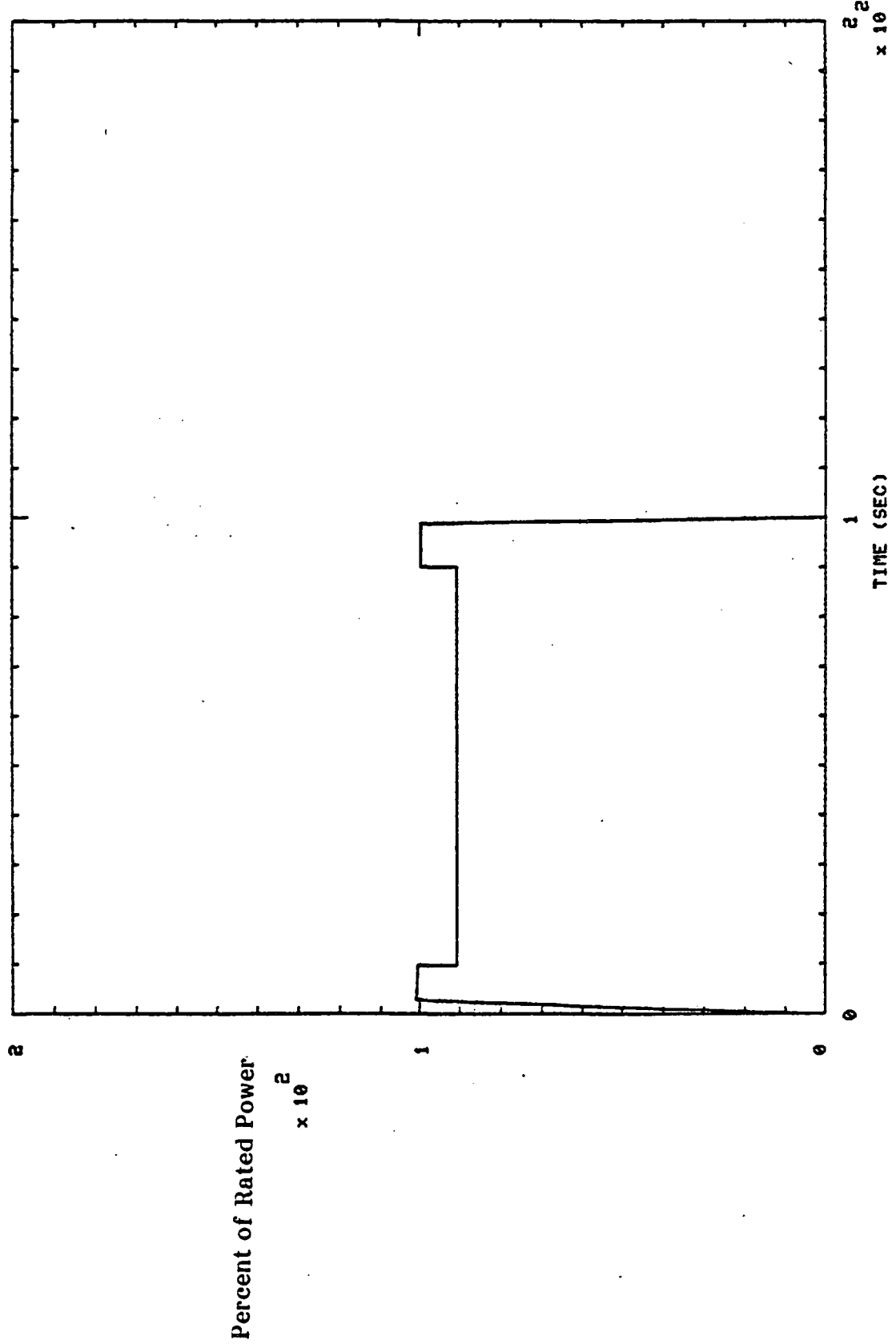


P S Q / H Z

750101 THRUST (UNFILTERED)

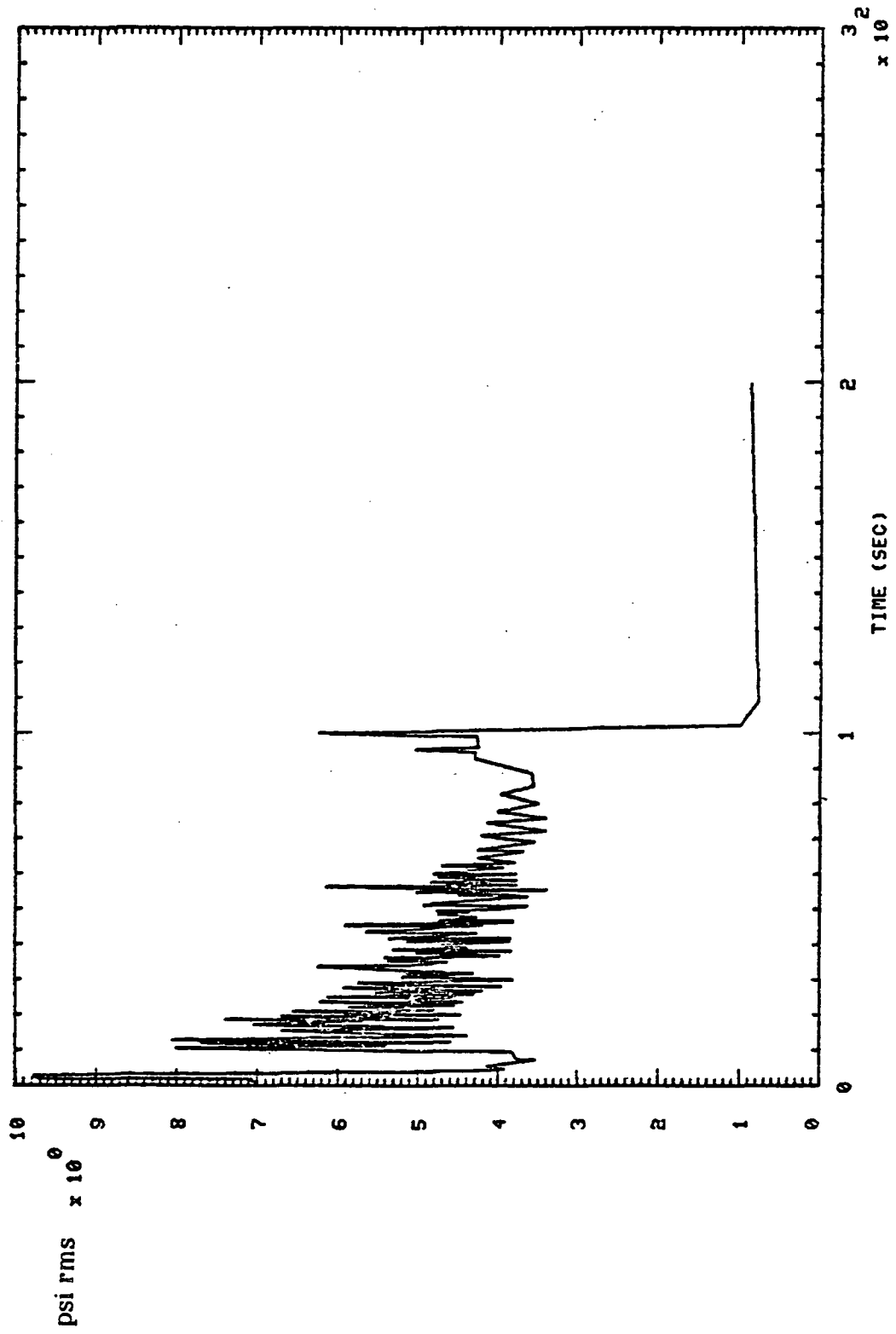
750101 THRUST

750101



750101 LPFP IN PR

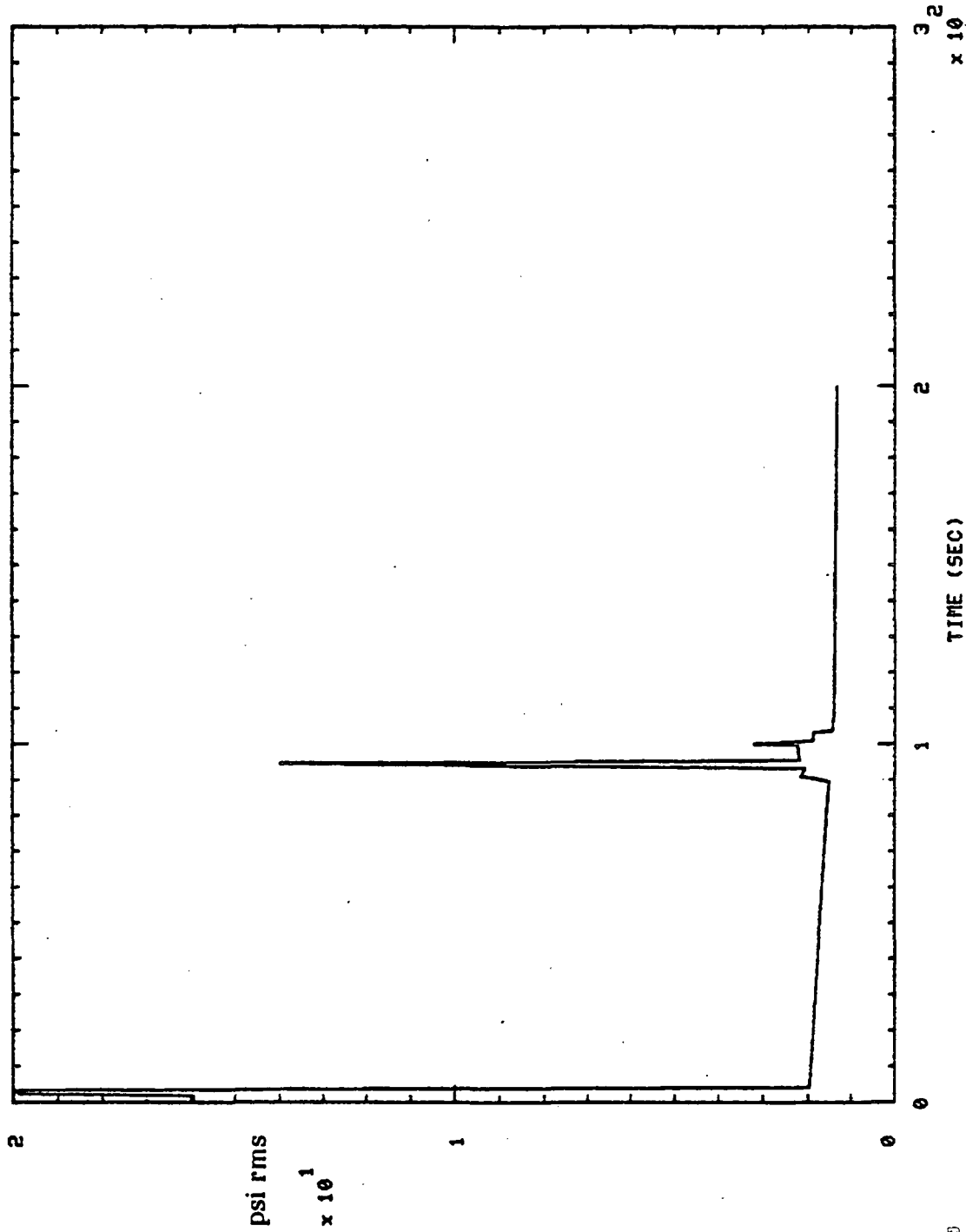
(1 - 20K HZ)



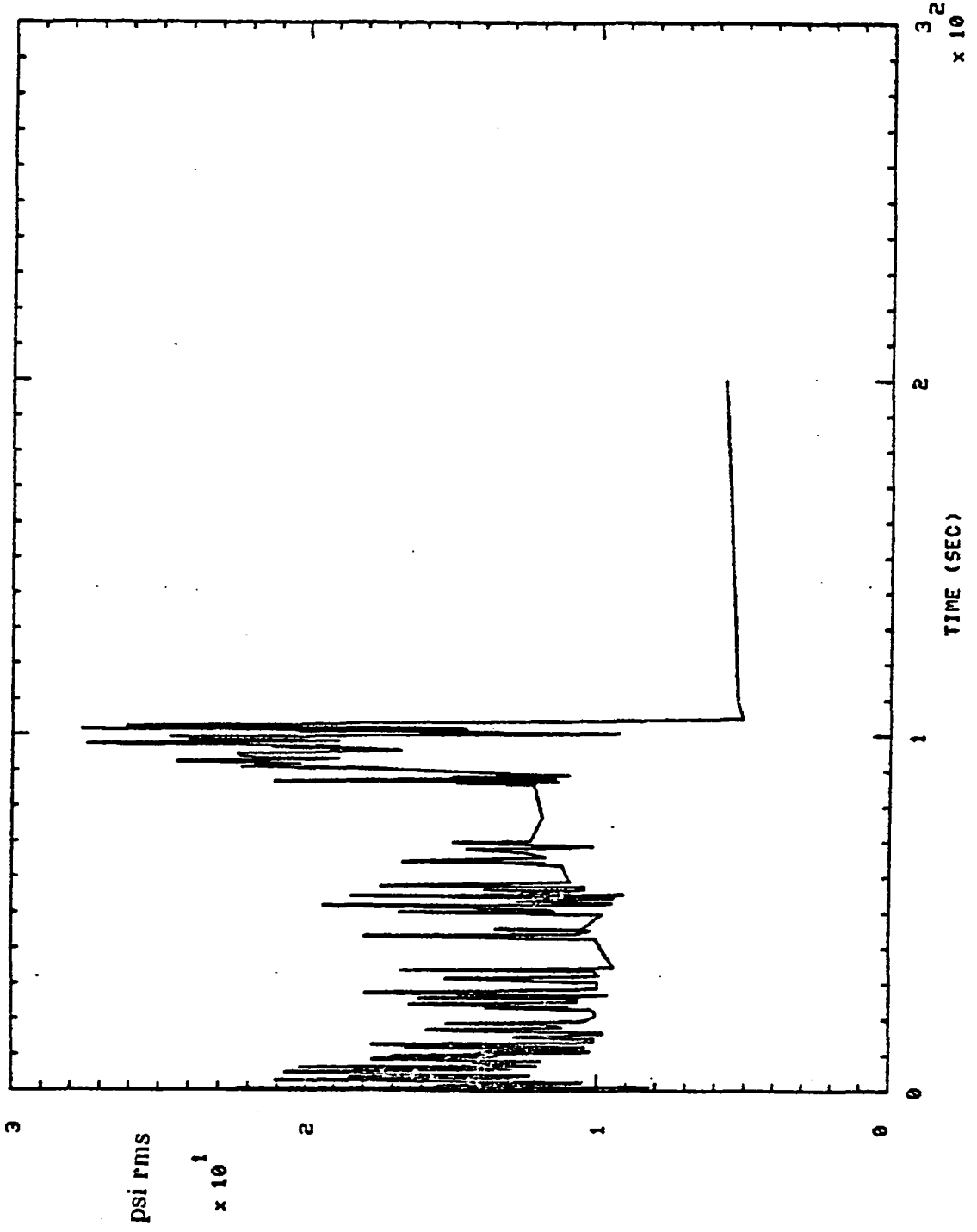
(1 - 20K HZ)

LPOP DS PR

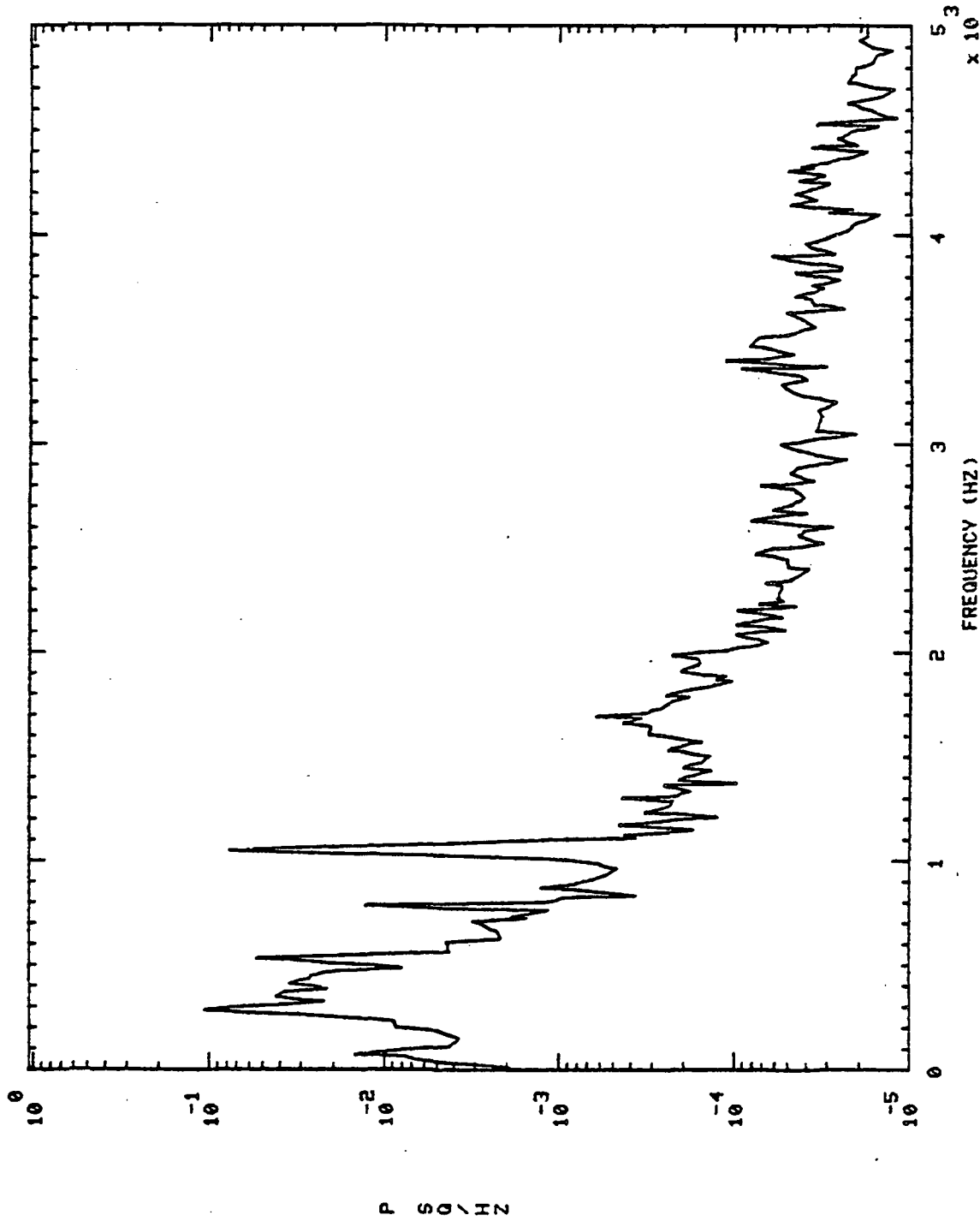
750101



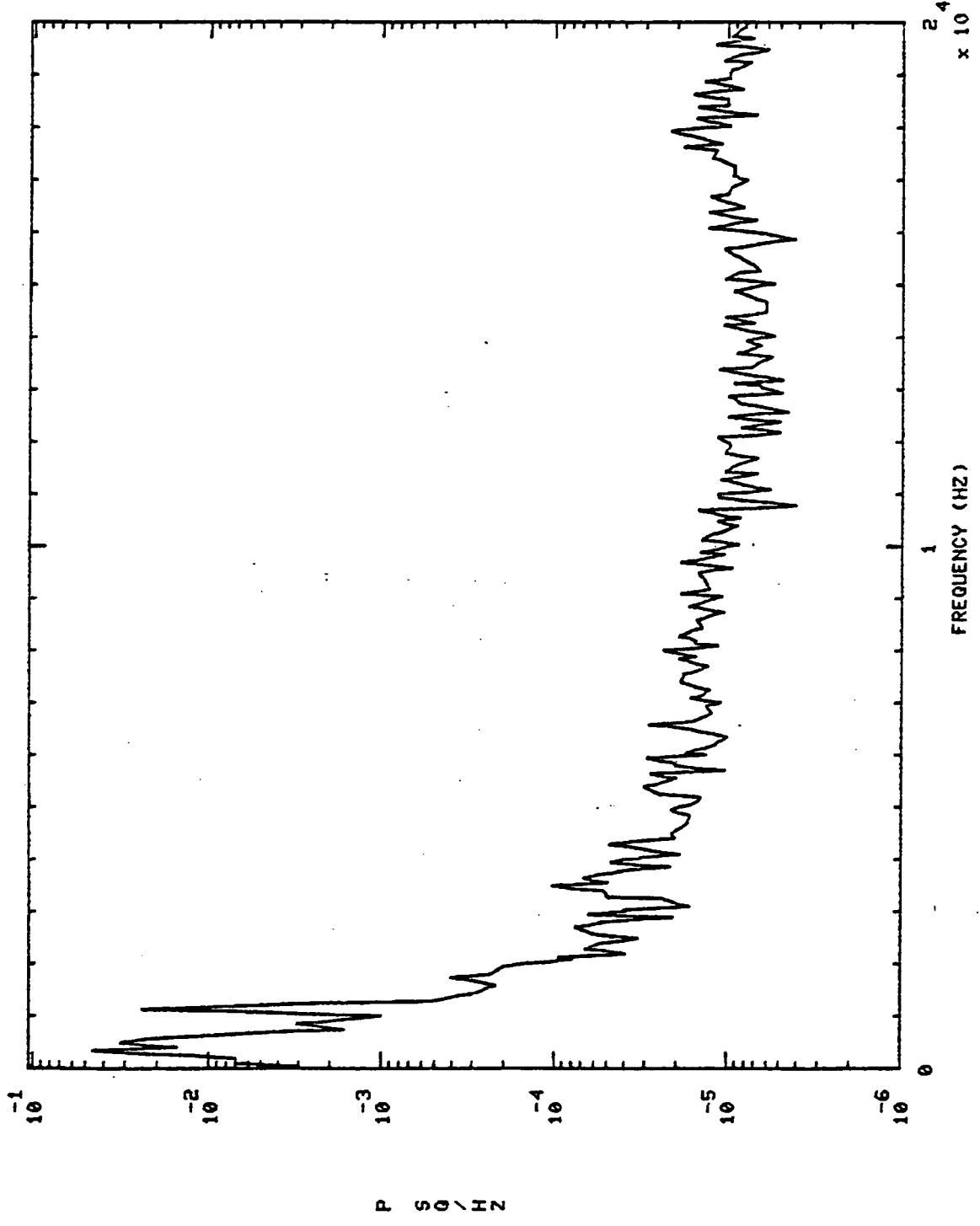
750101 HPOP BAL CAU PR2 (1 - 20K HZ)



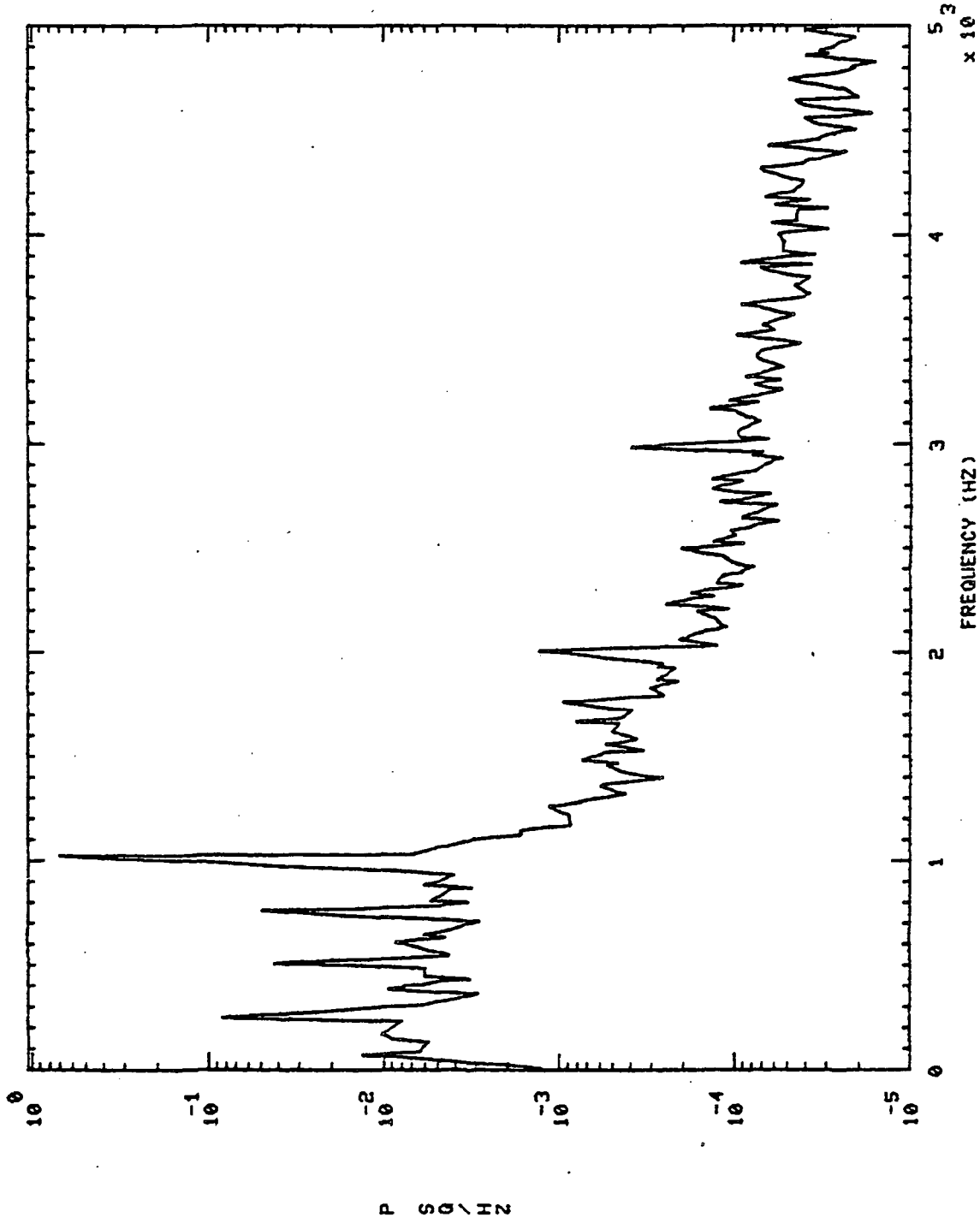
750101 LPFP IN PR S+ 5.0SQ/HZ



750101 LPFP IN PR S+ 5.050/HZ

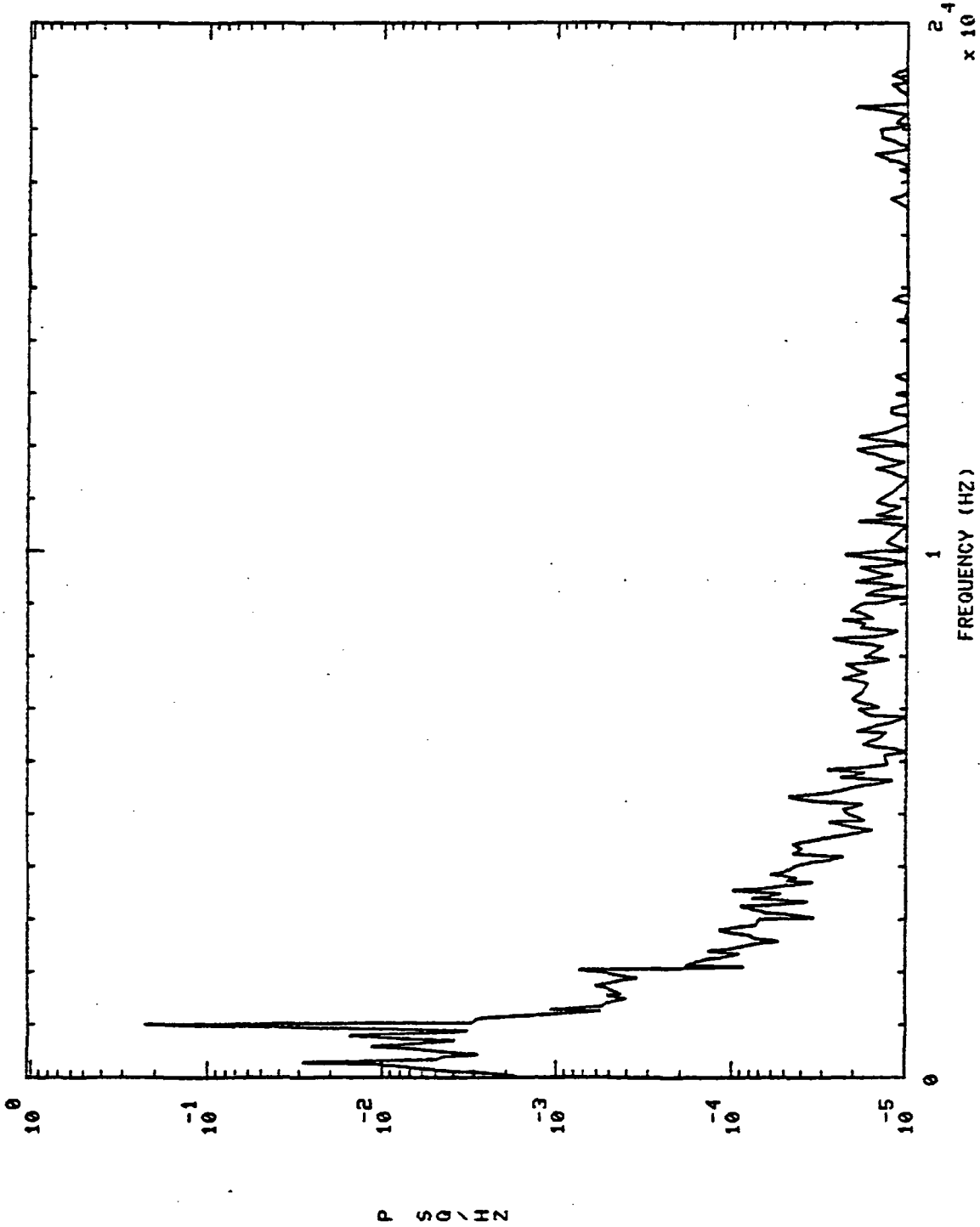


750101 LPFP IN PR S+ 30.050/HZ

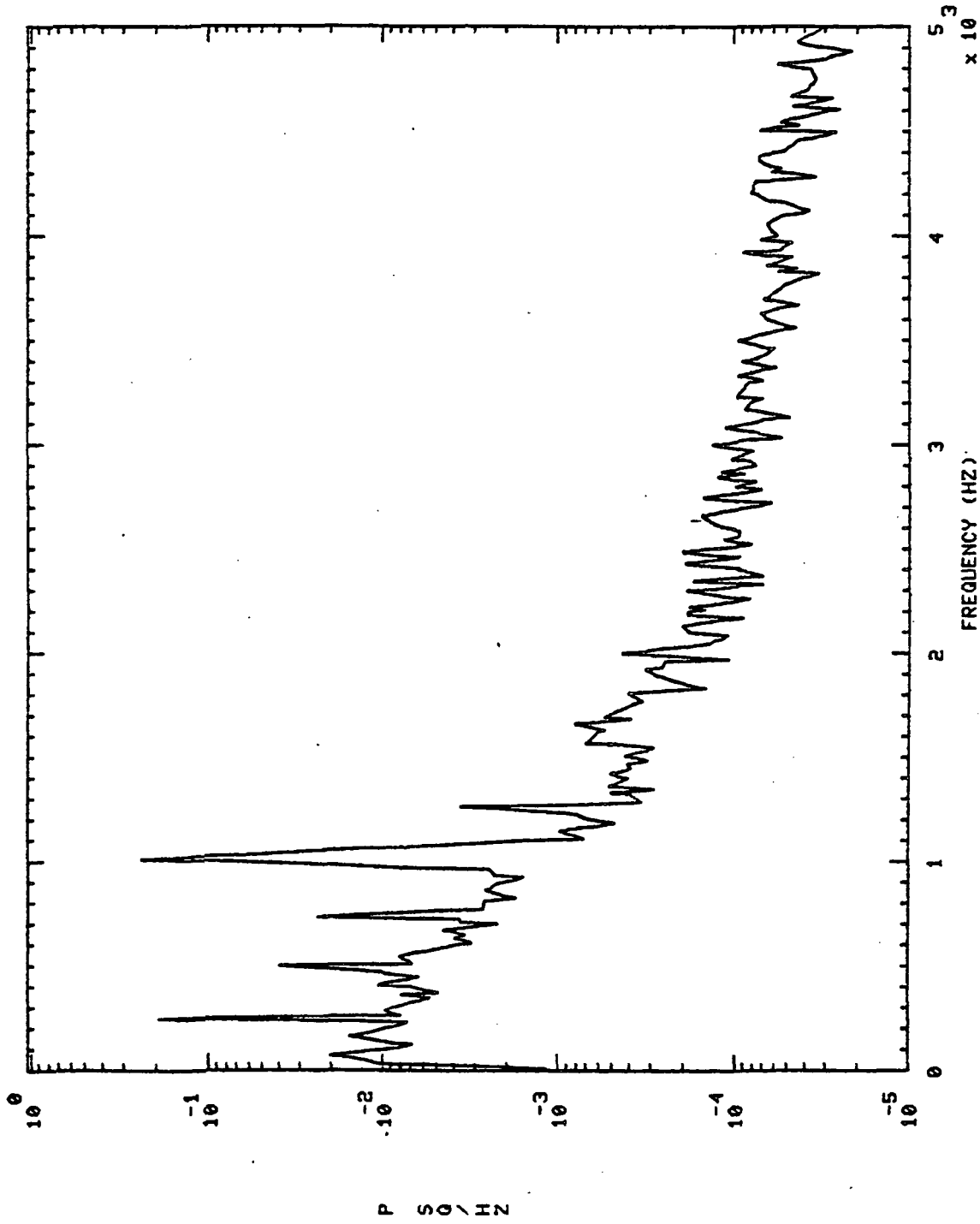


750101 LPFP IN PR S+ 30.050/HZ

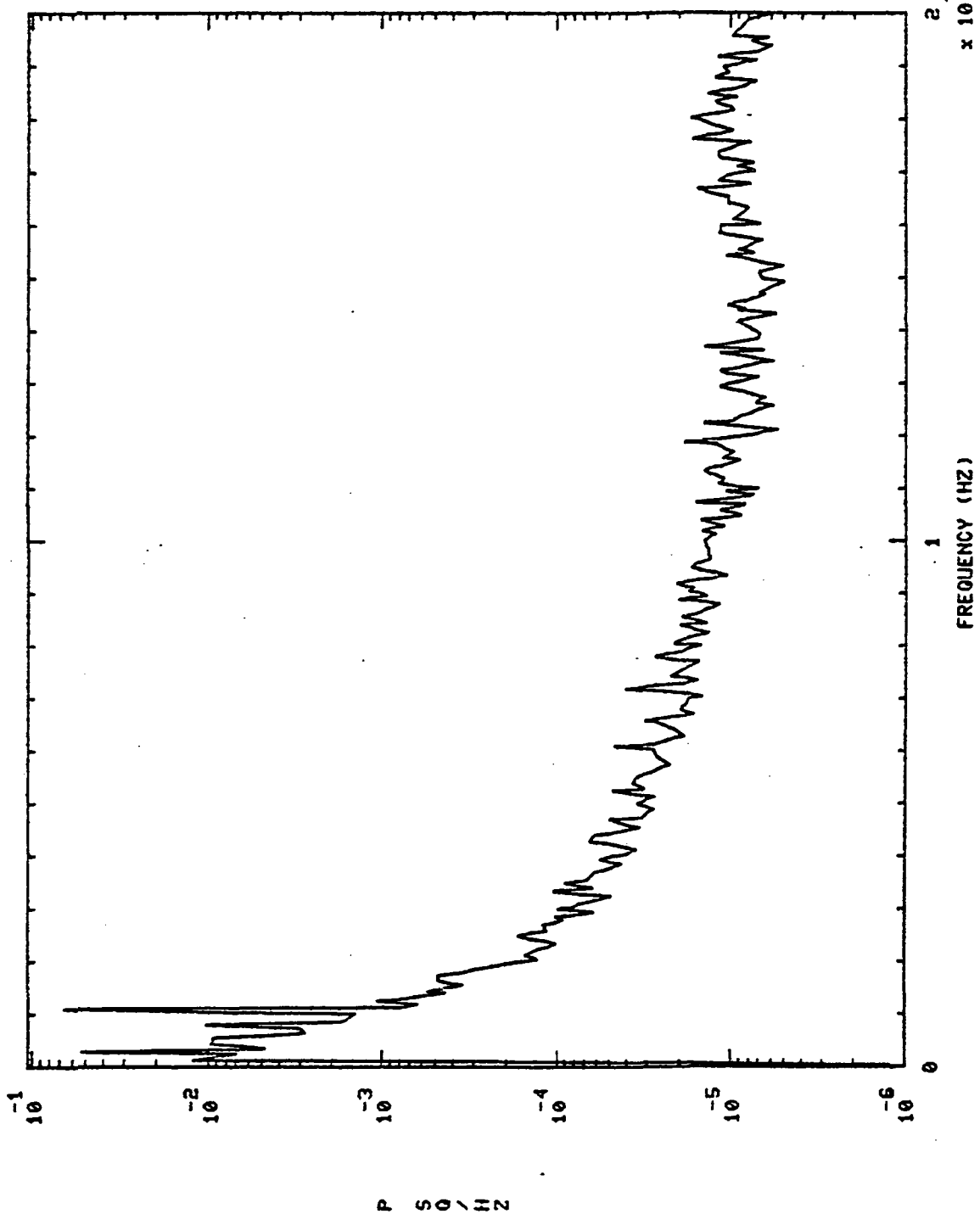
750101 LPFP IN PR



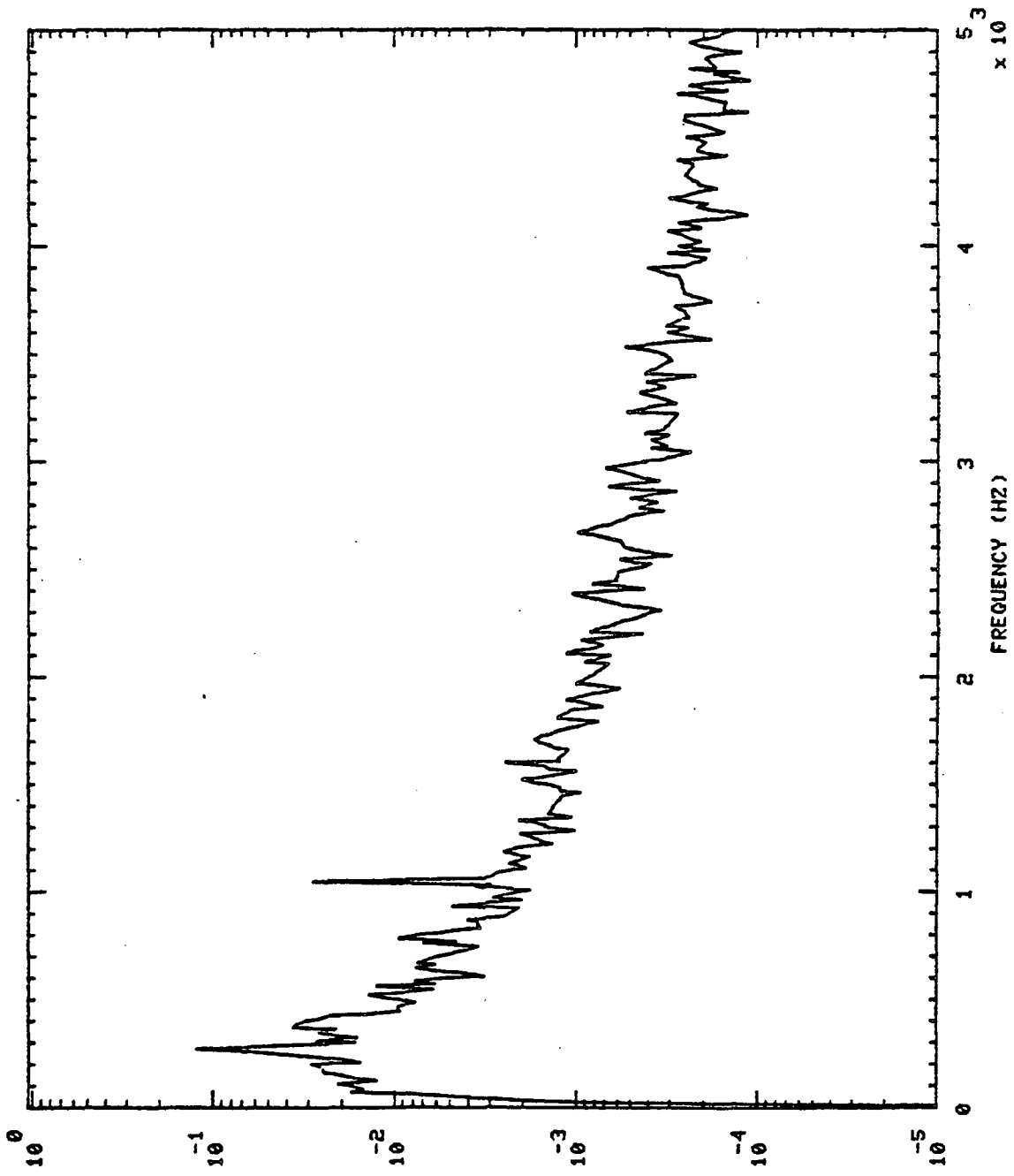
750101 LFPF IN PR S+ 80.050/HZ



750101 LPFP IN PR S+ 80.050/HZ

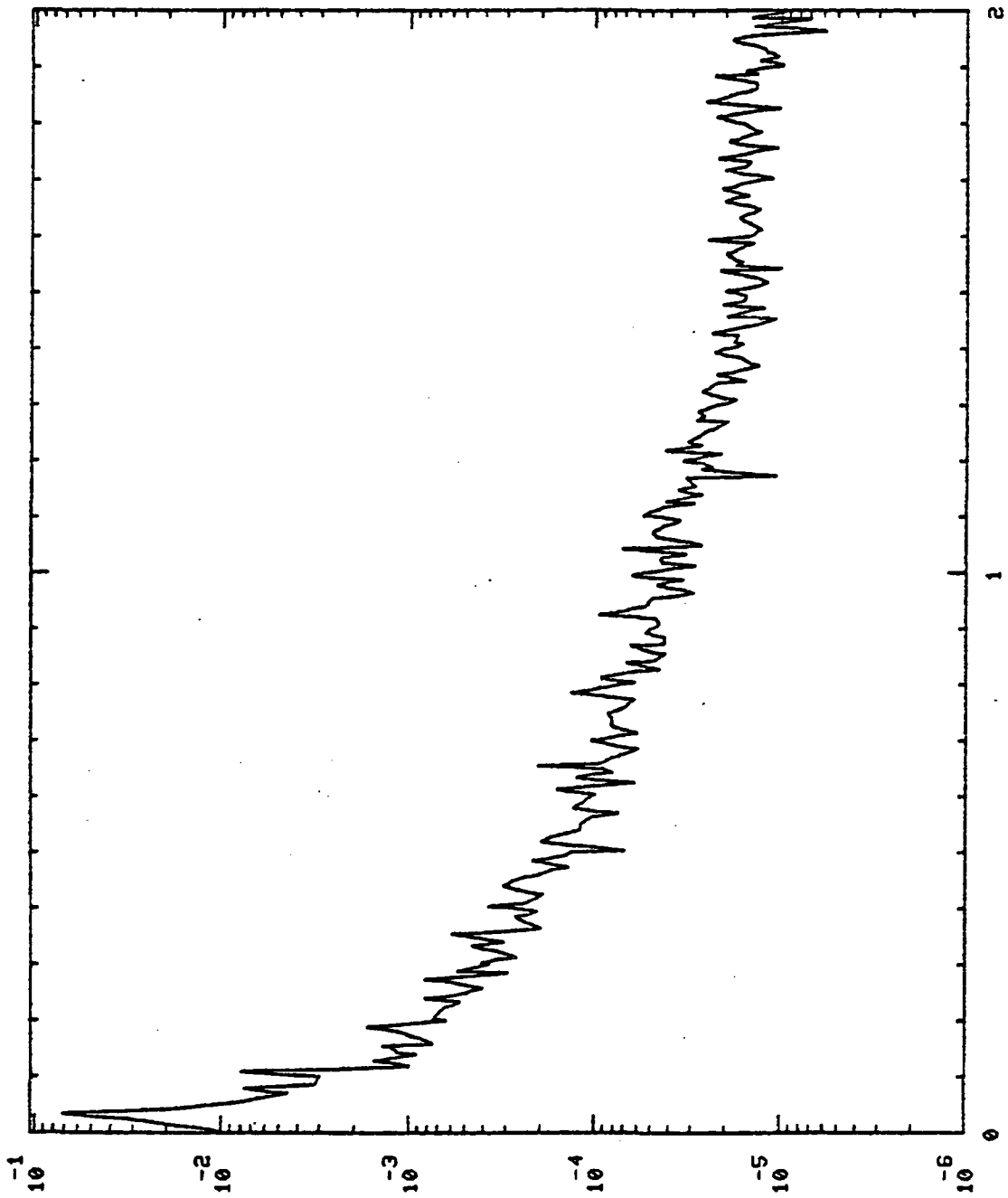


750101 LPFP IN PR 5+ 95.050/HZ



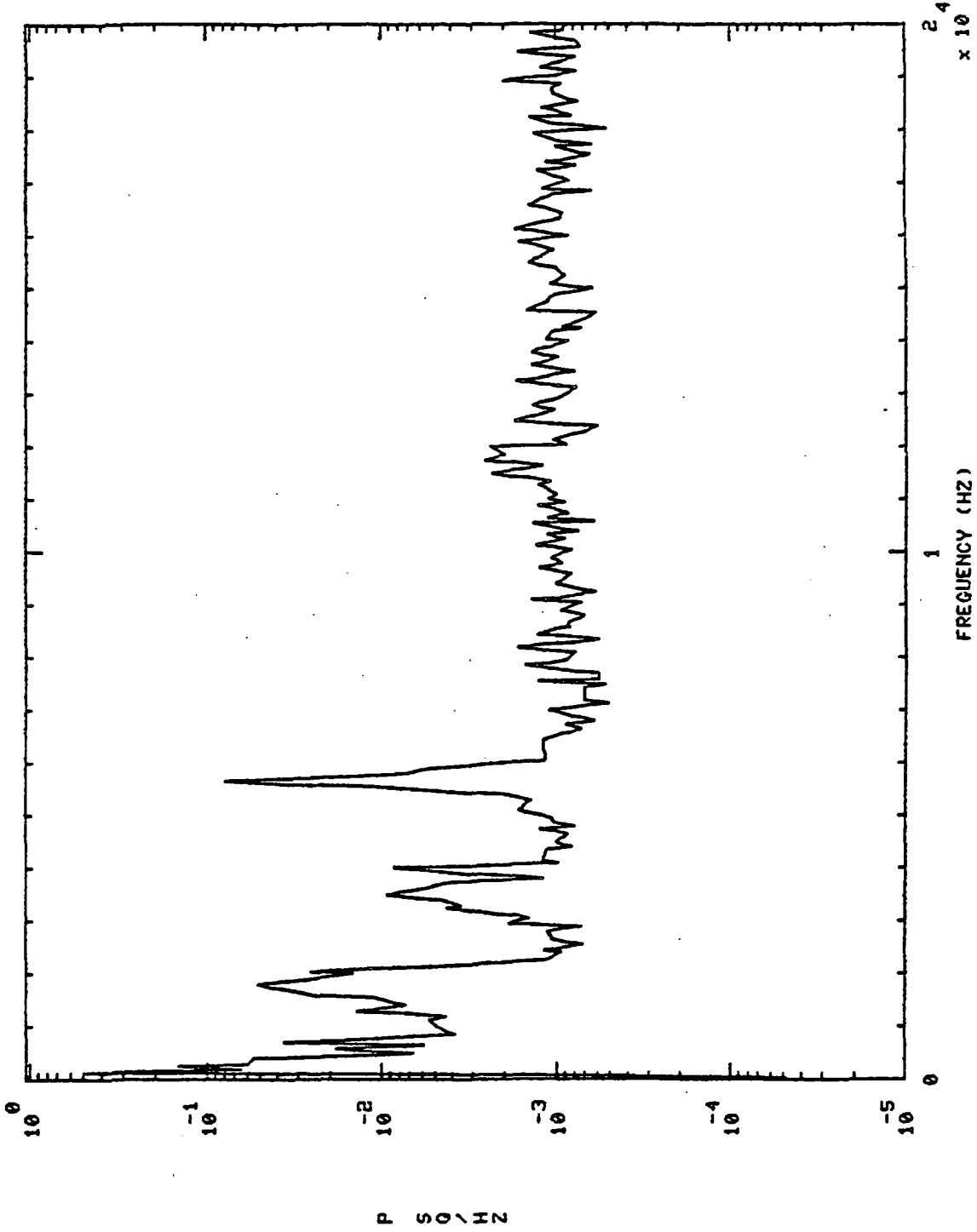
P S D \ HZ

750101 LFPF IN PR S+ 95.050/HZ

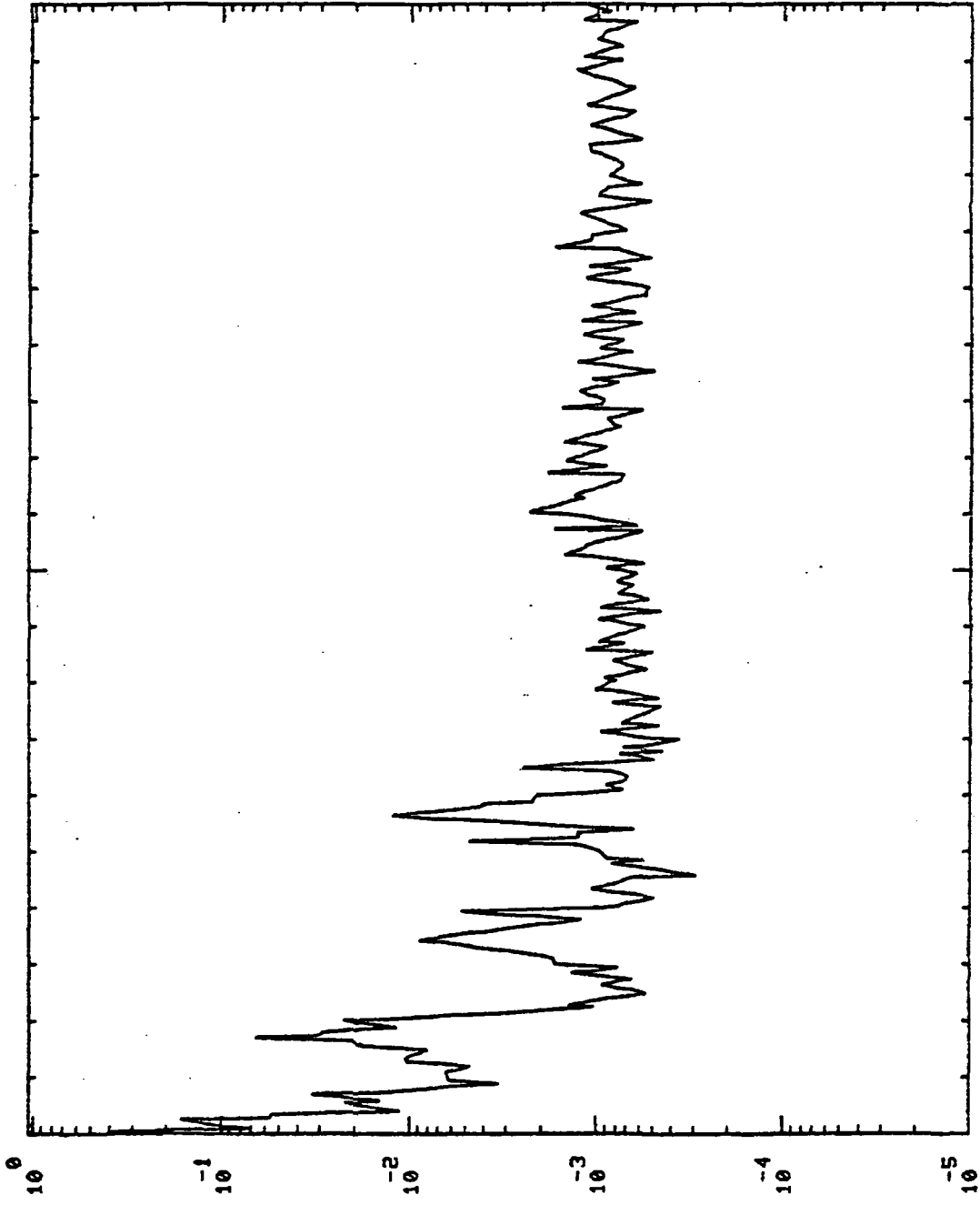


P SQ\HN

750101 LPOP DS PR S+ 5.050/HZ



750101 LPOP DS PR S+ 30.050/HZ



P S D \ H Z

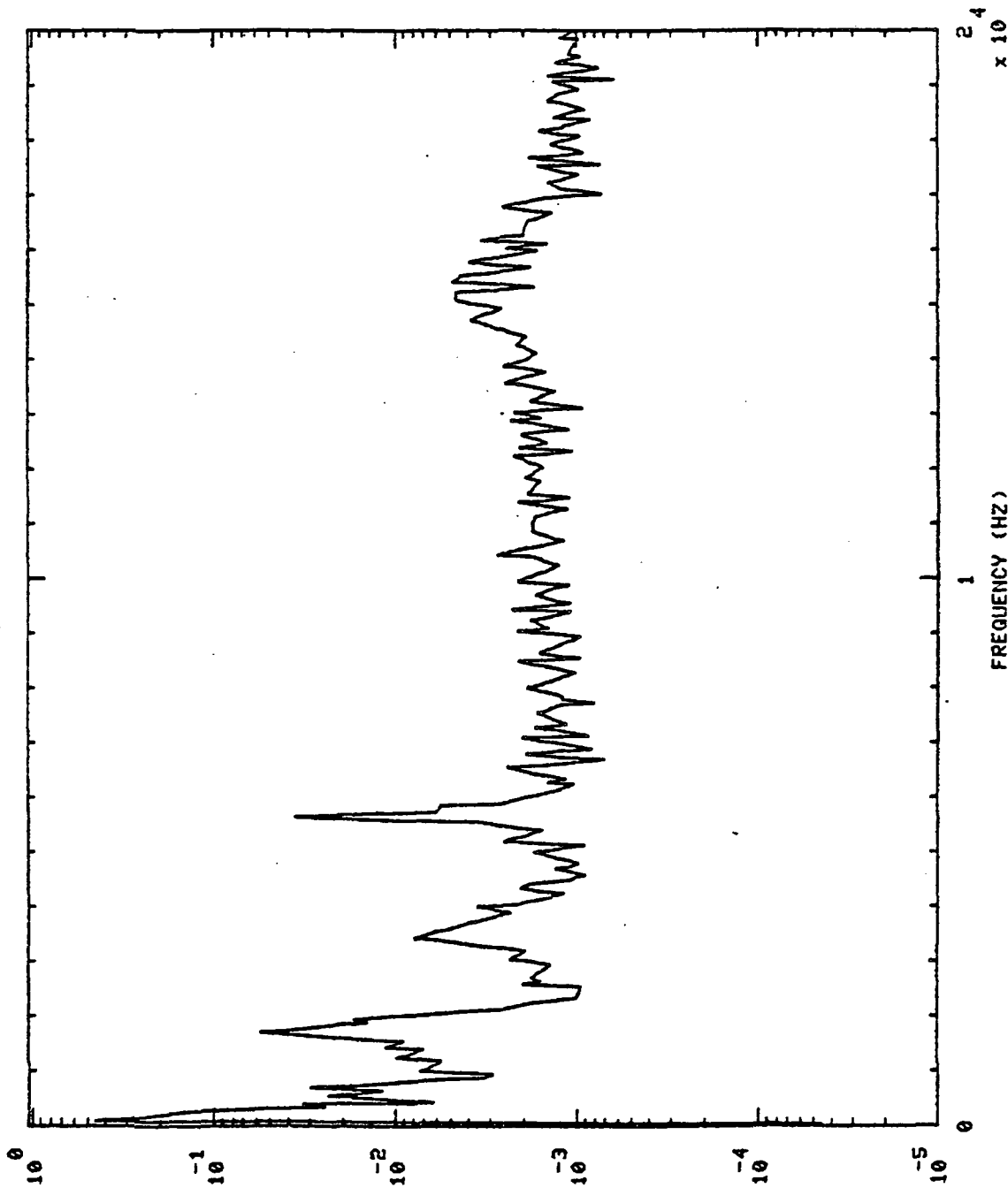
2.4
x 10⁴

FREQUENCY (HZ)

S+ 80.050/HZ

LPOP DS PR

750101

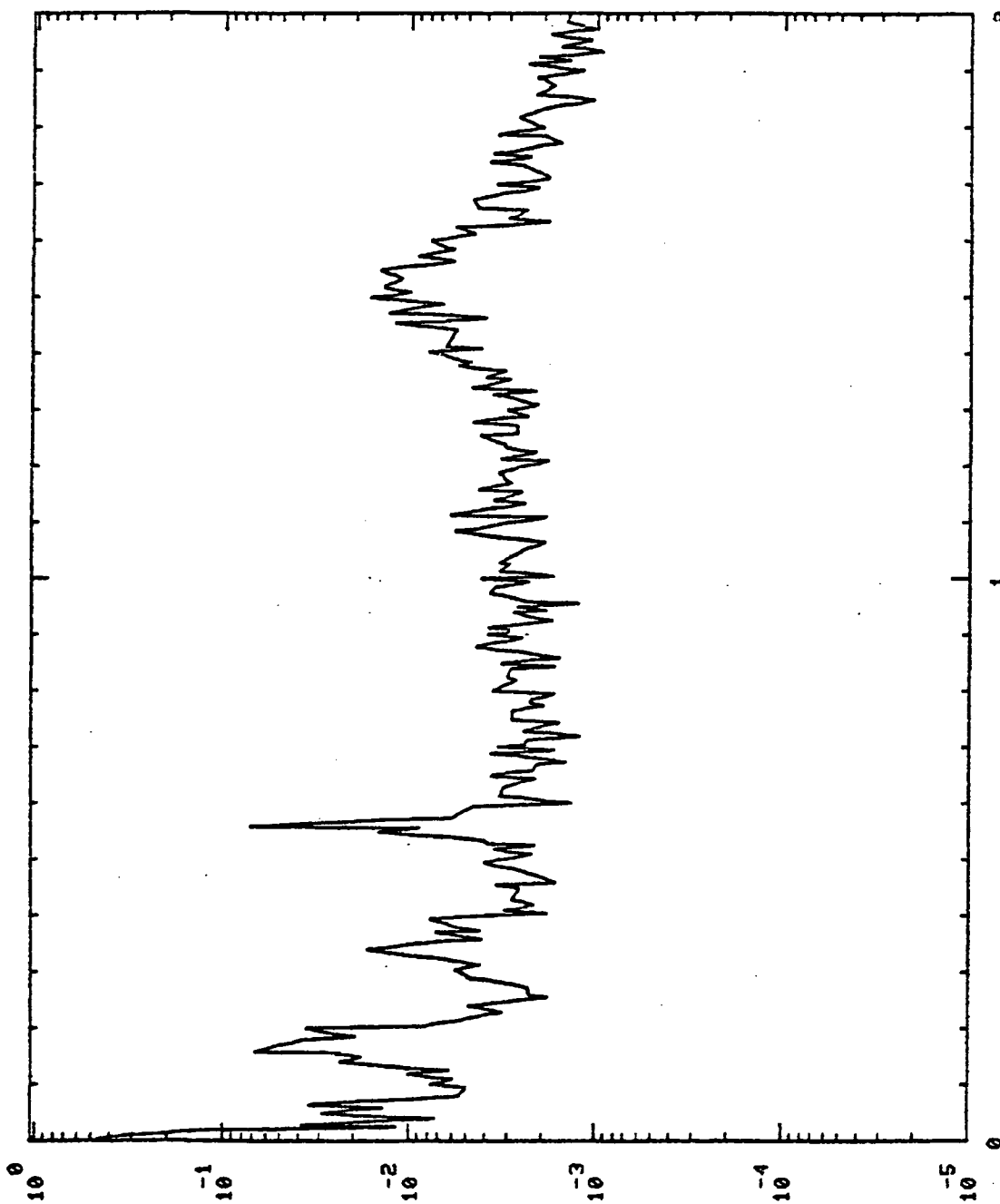


P S D / H Z

2.4
 $\times 10^4$

FREQUENCY (HZ)

750101 LPOP DS PR S+ 95.050/HZ

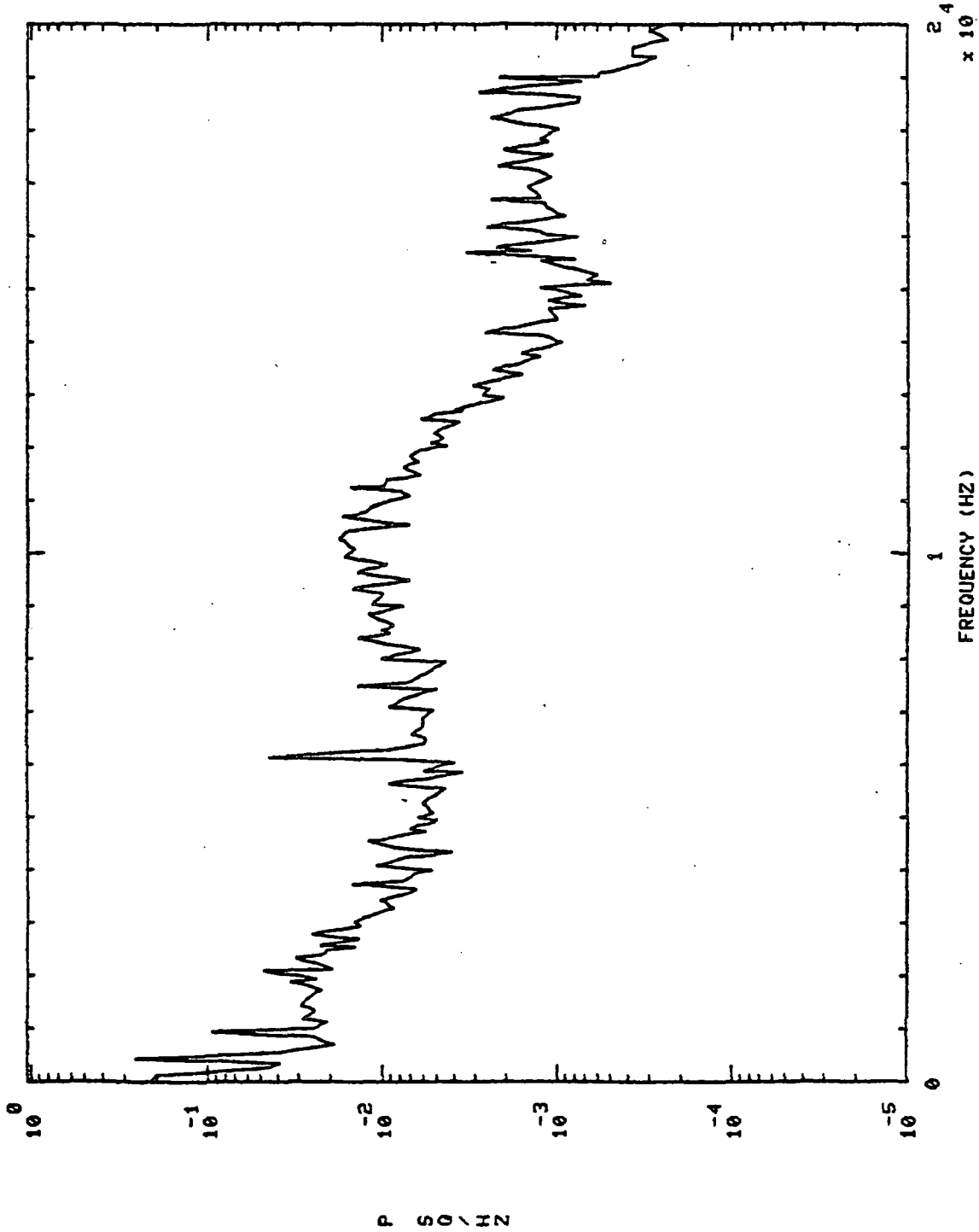


PSD / HZ

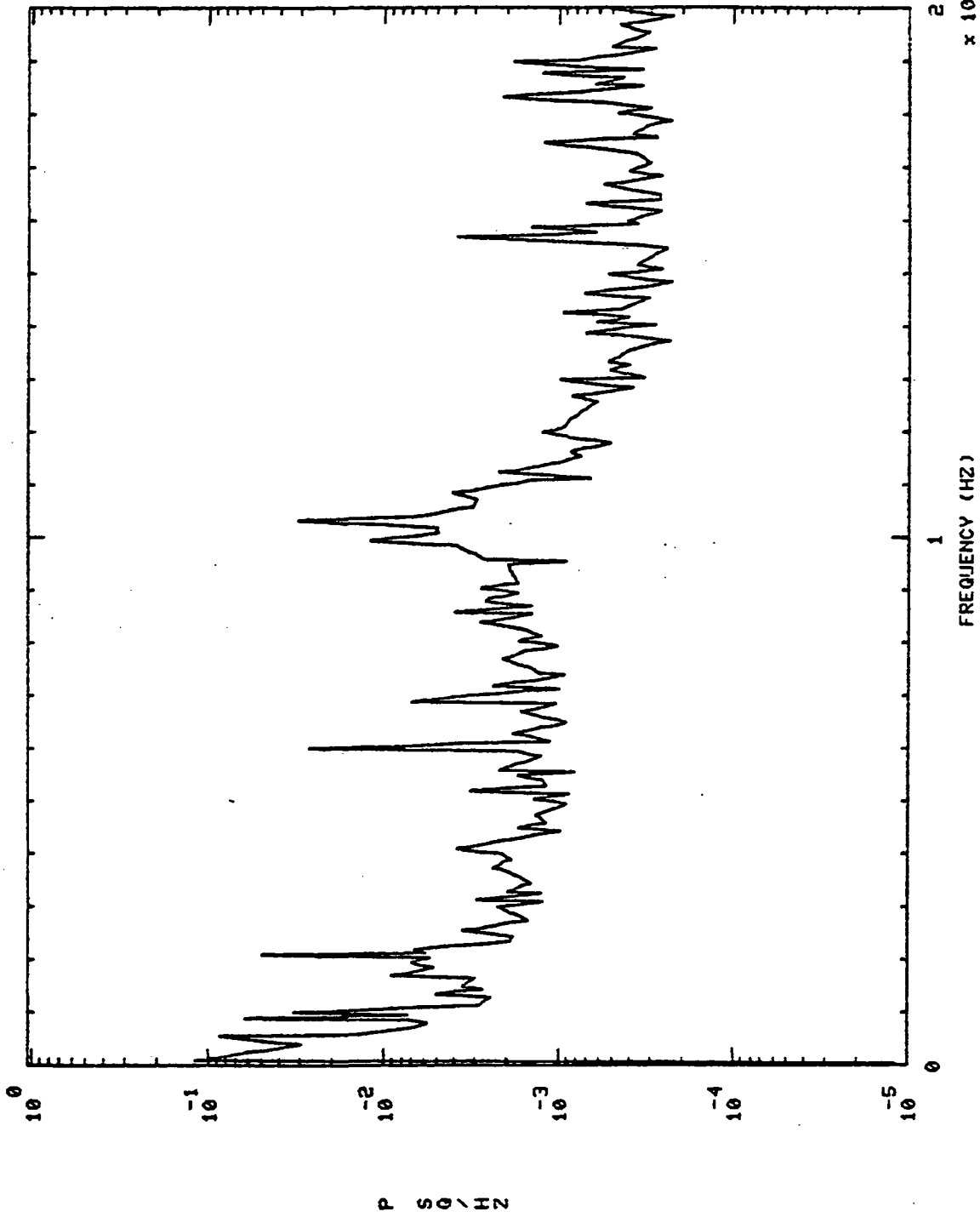
2.4×10^4

FREQUENCY (HZ)

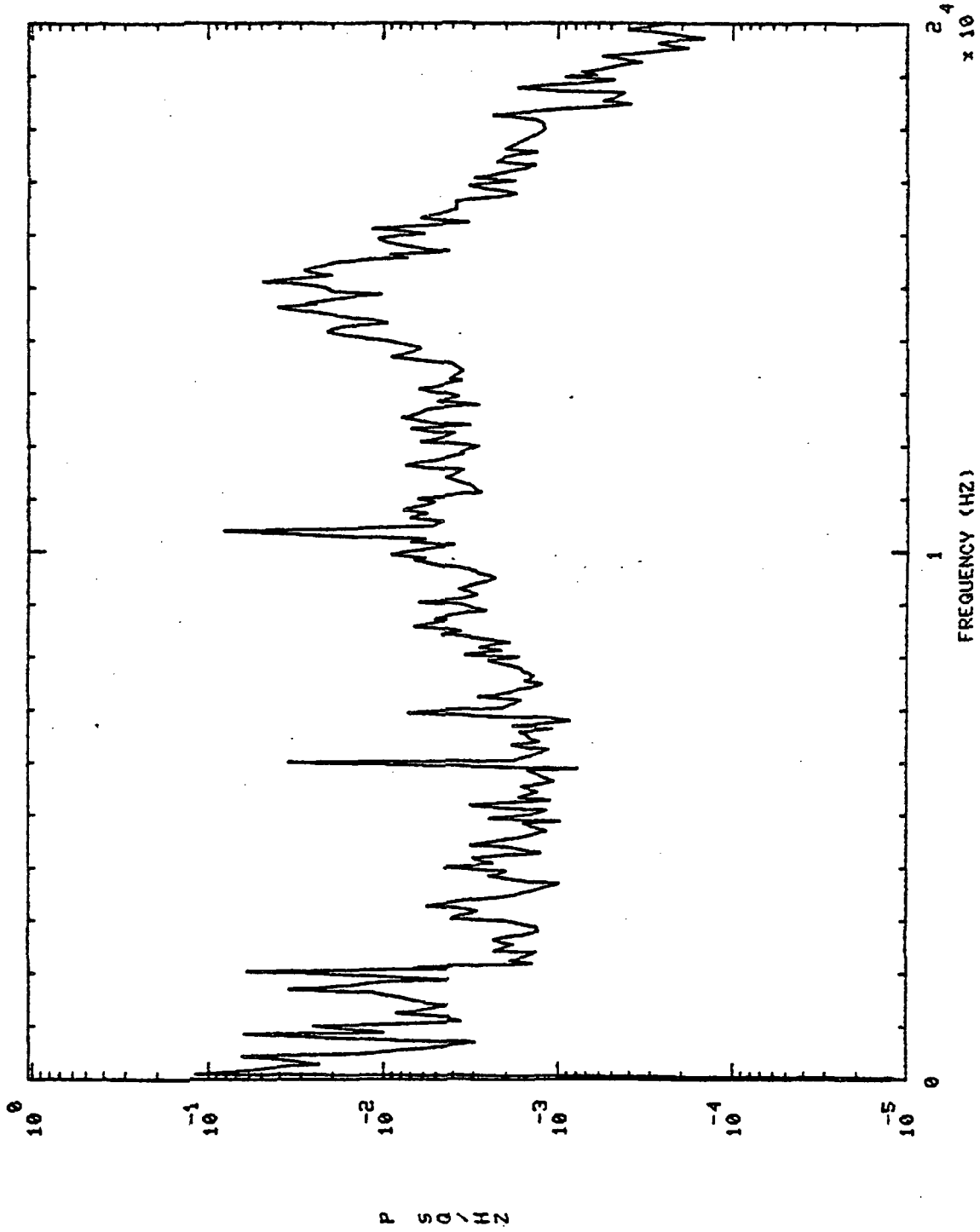
750101 HPOP BAL CAU PR2 S+ 5.05Q/MZ



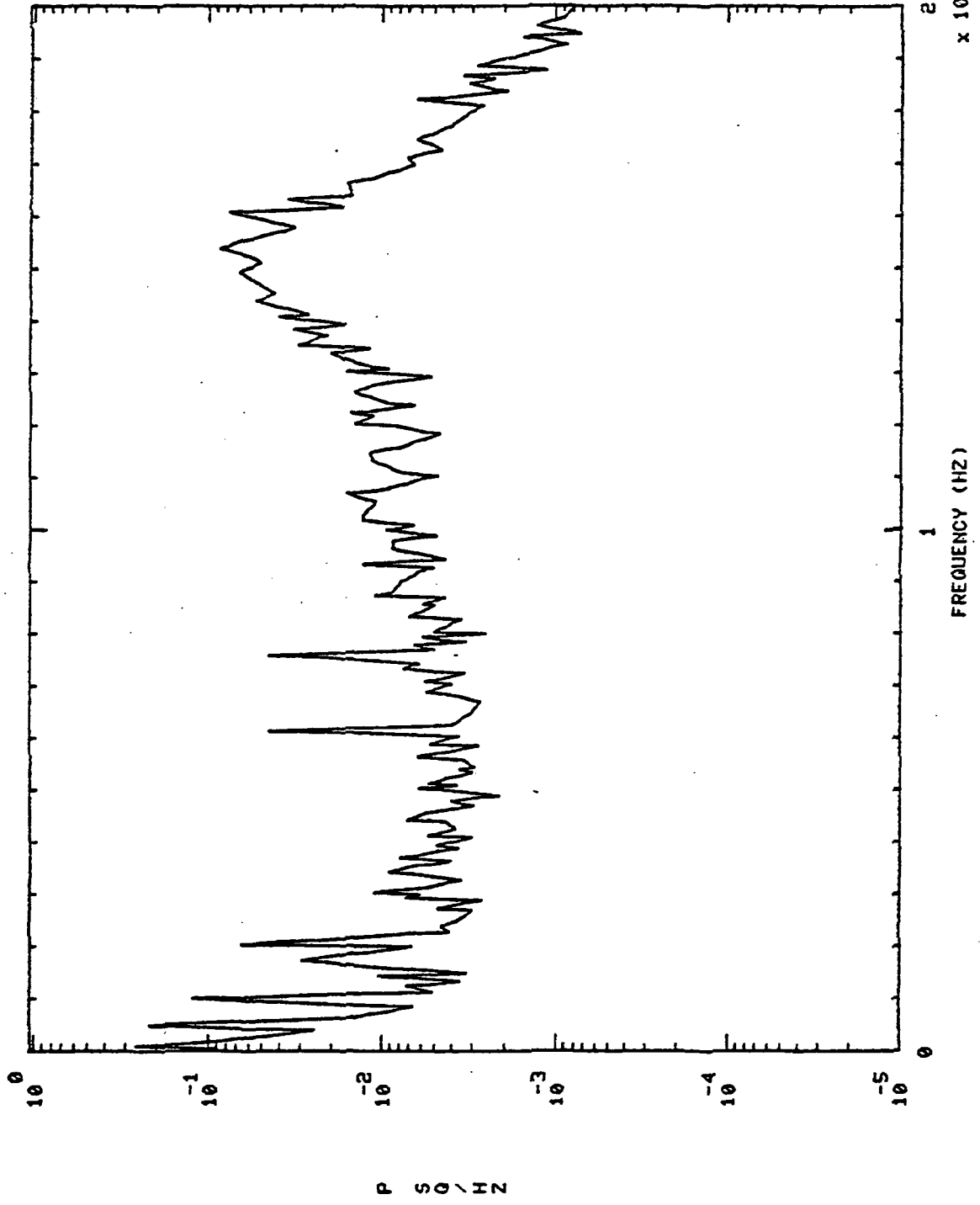
750101 HPOP BAL CAU PR2 S+ 30.050/HZ



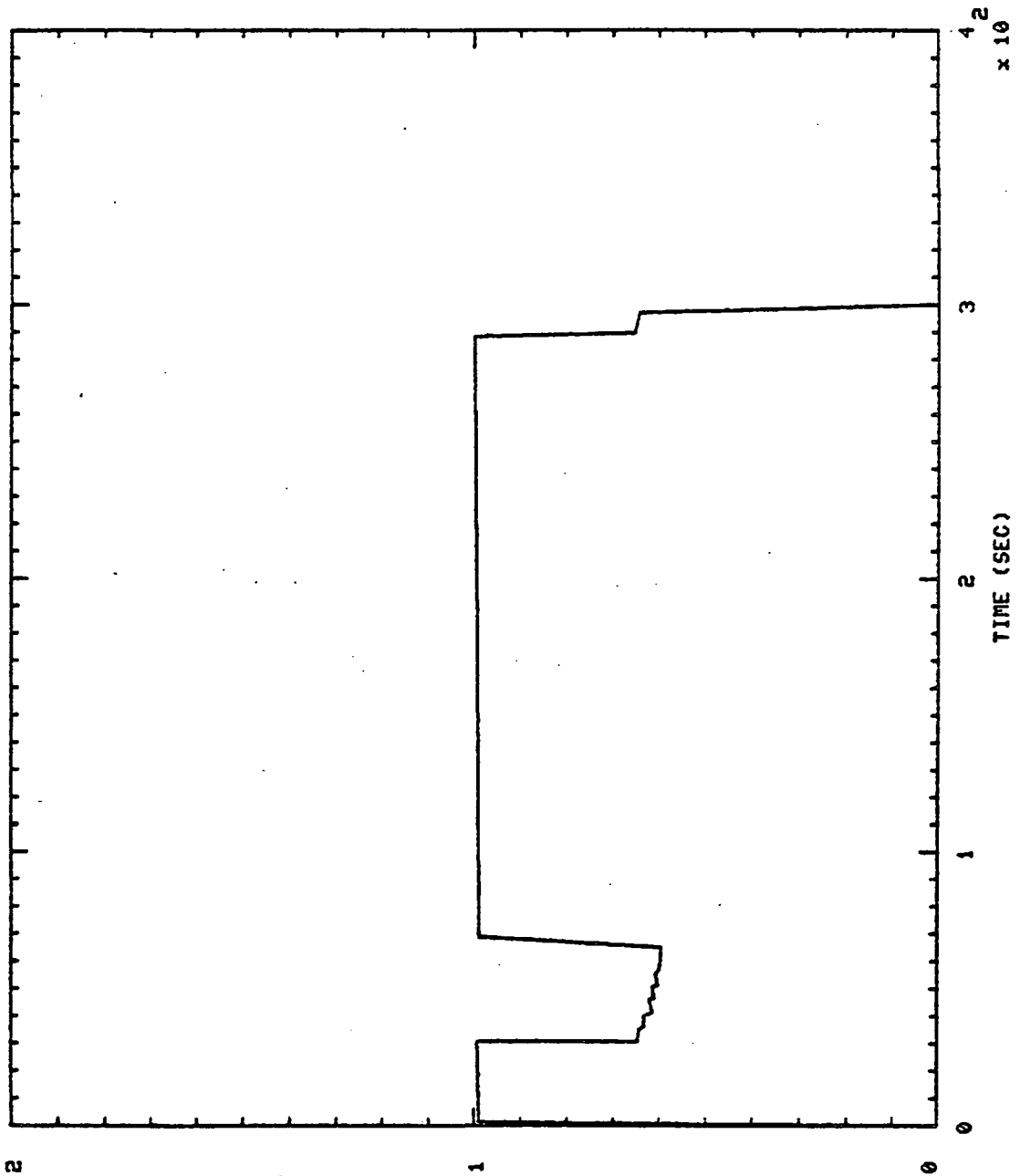
750101 HPOP BAL CAU PR2 S+ 80.0SQ/HZ



750101 HPOP BAL CAU PR2 S+ 95.050/HZ



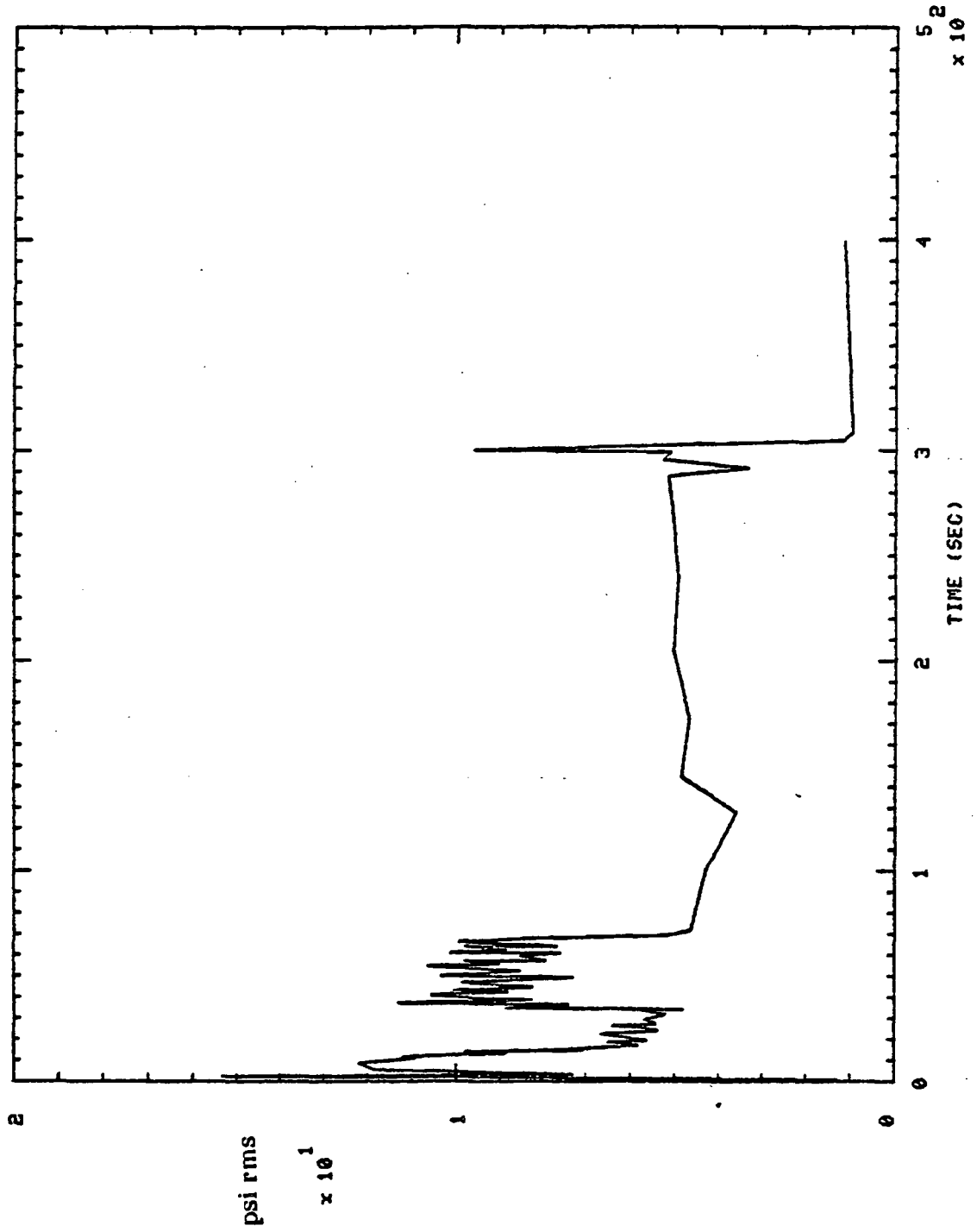
750102 THRUST (UNFILTERED)



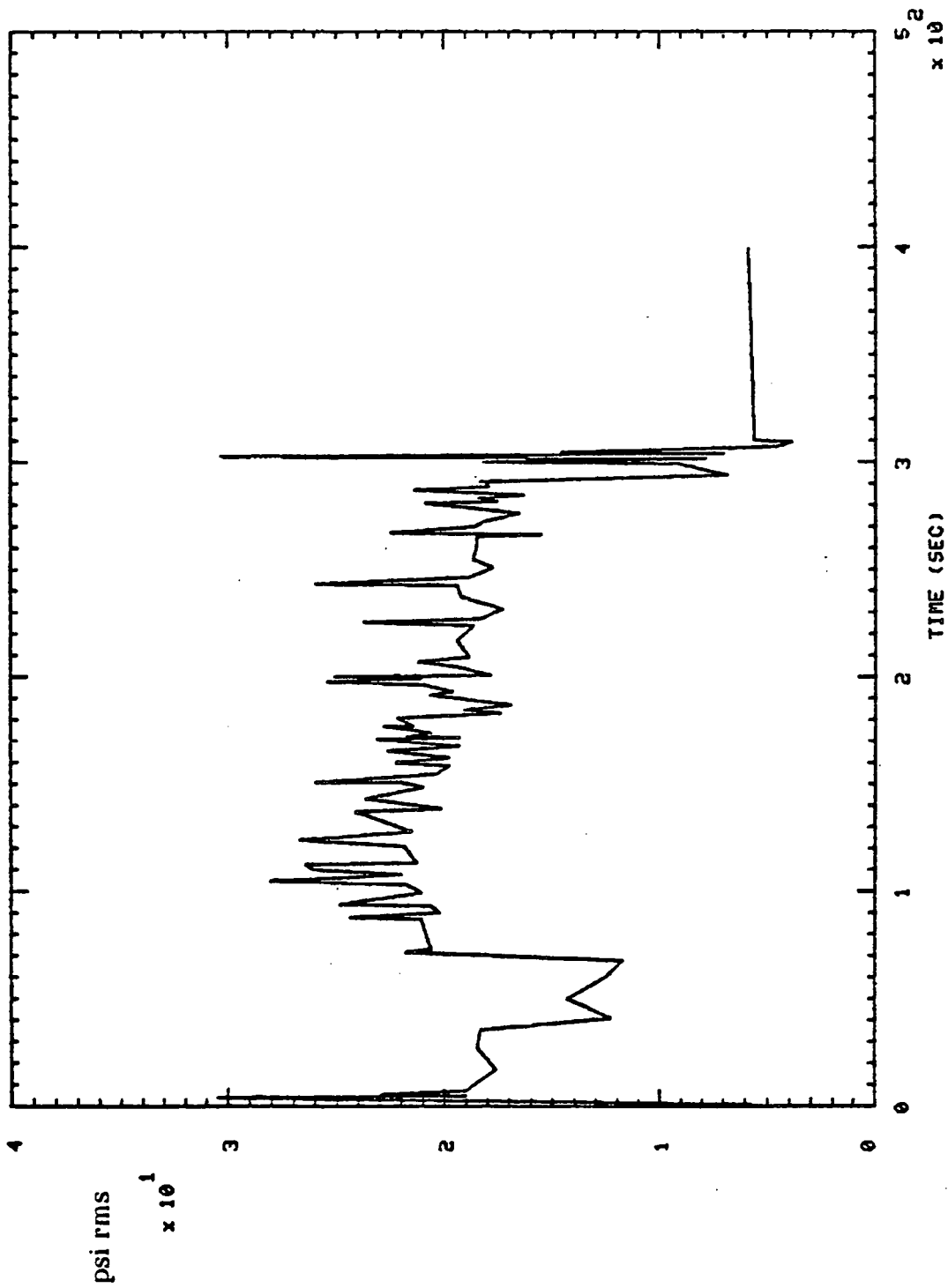
Percent of Rated Power
x 10²

TIME (SEC)
x 10²

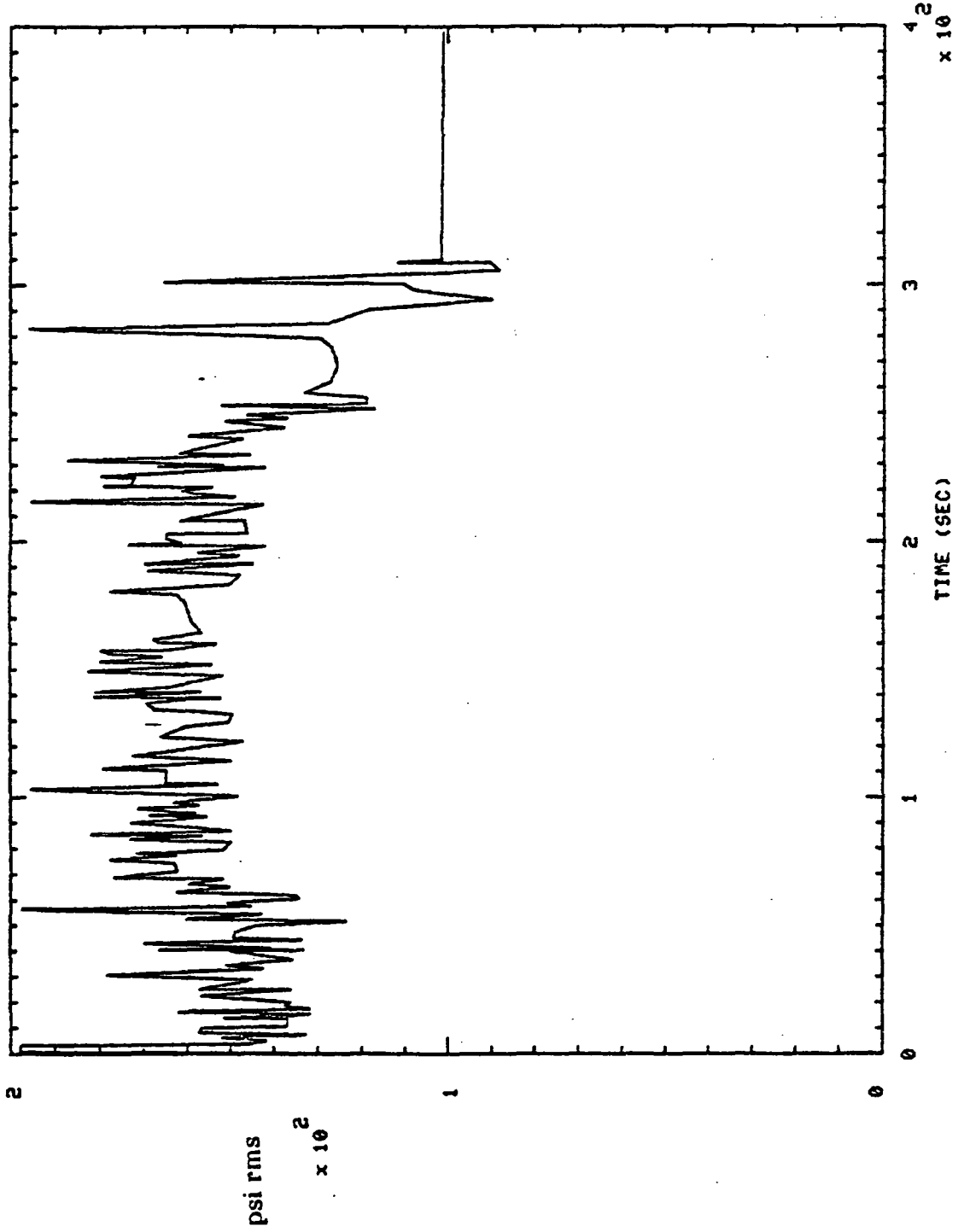
750102 LPFP IN PR (1 - 20K HZ)



750102 HPOP BAL CAU PR2 (1 - 20K HZ)



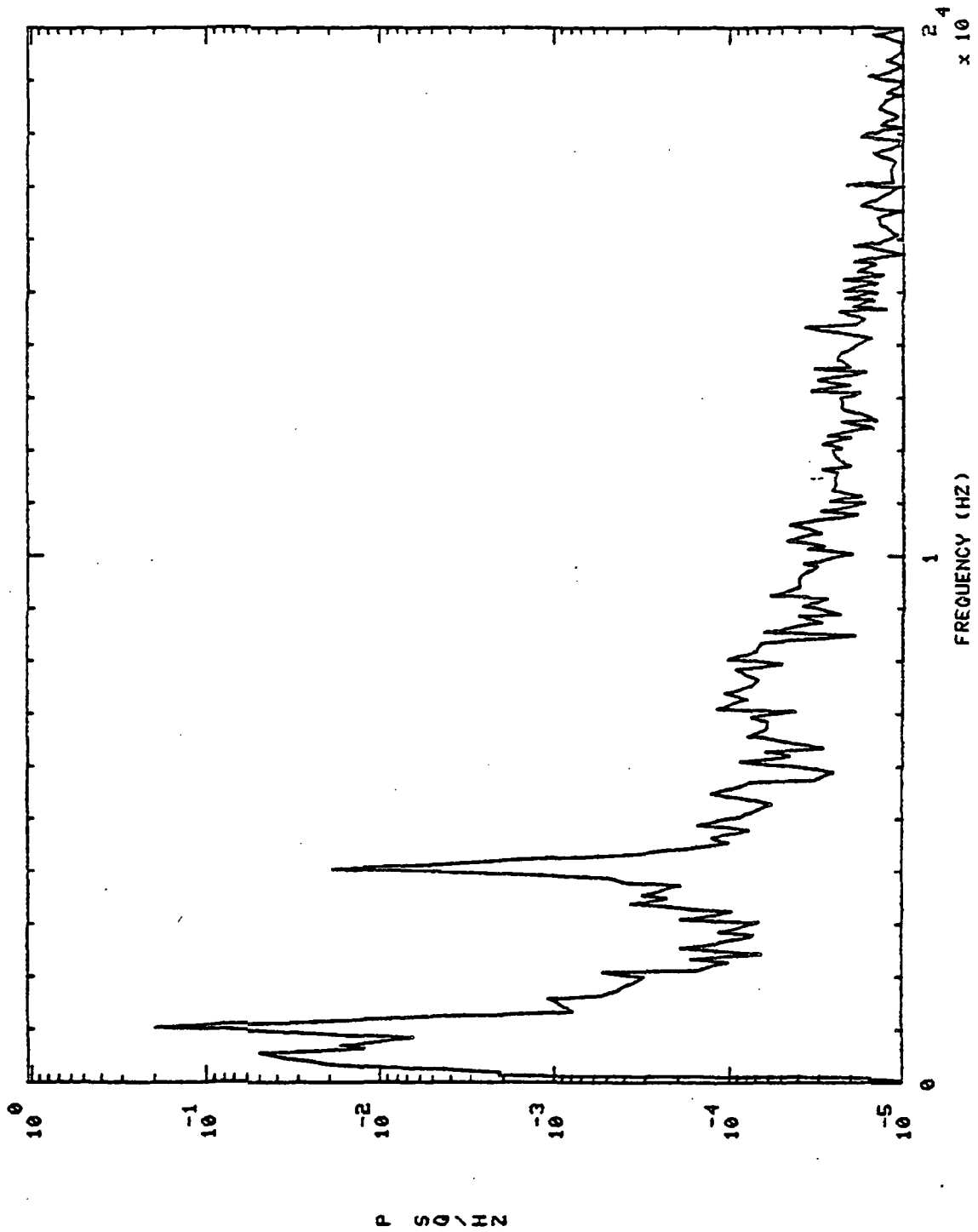
750102 HPOP DS PR (1 - 20K HZ)



S+ 15.050/HZ

LPFP IN PR

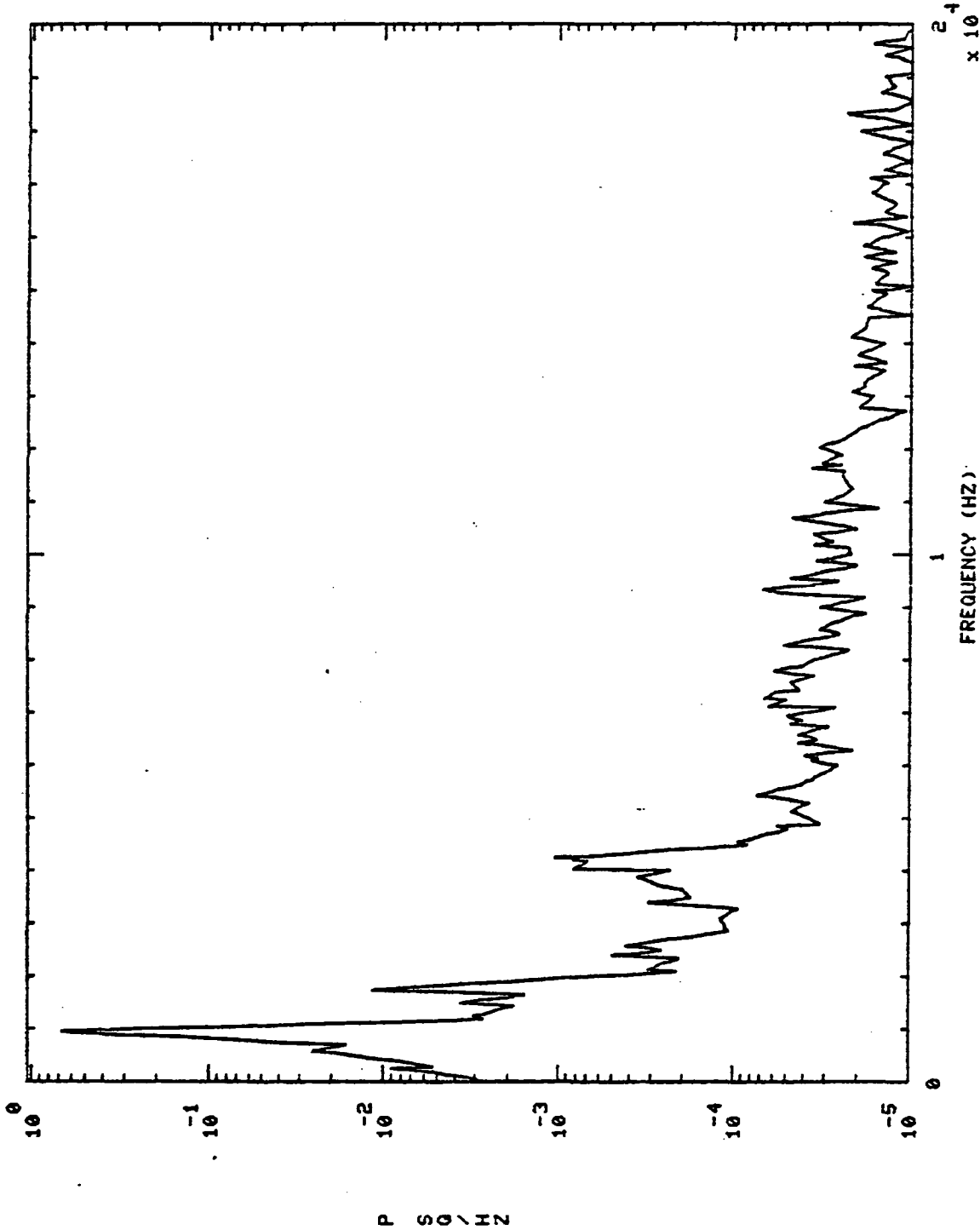
750102



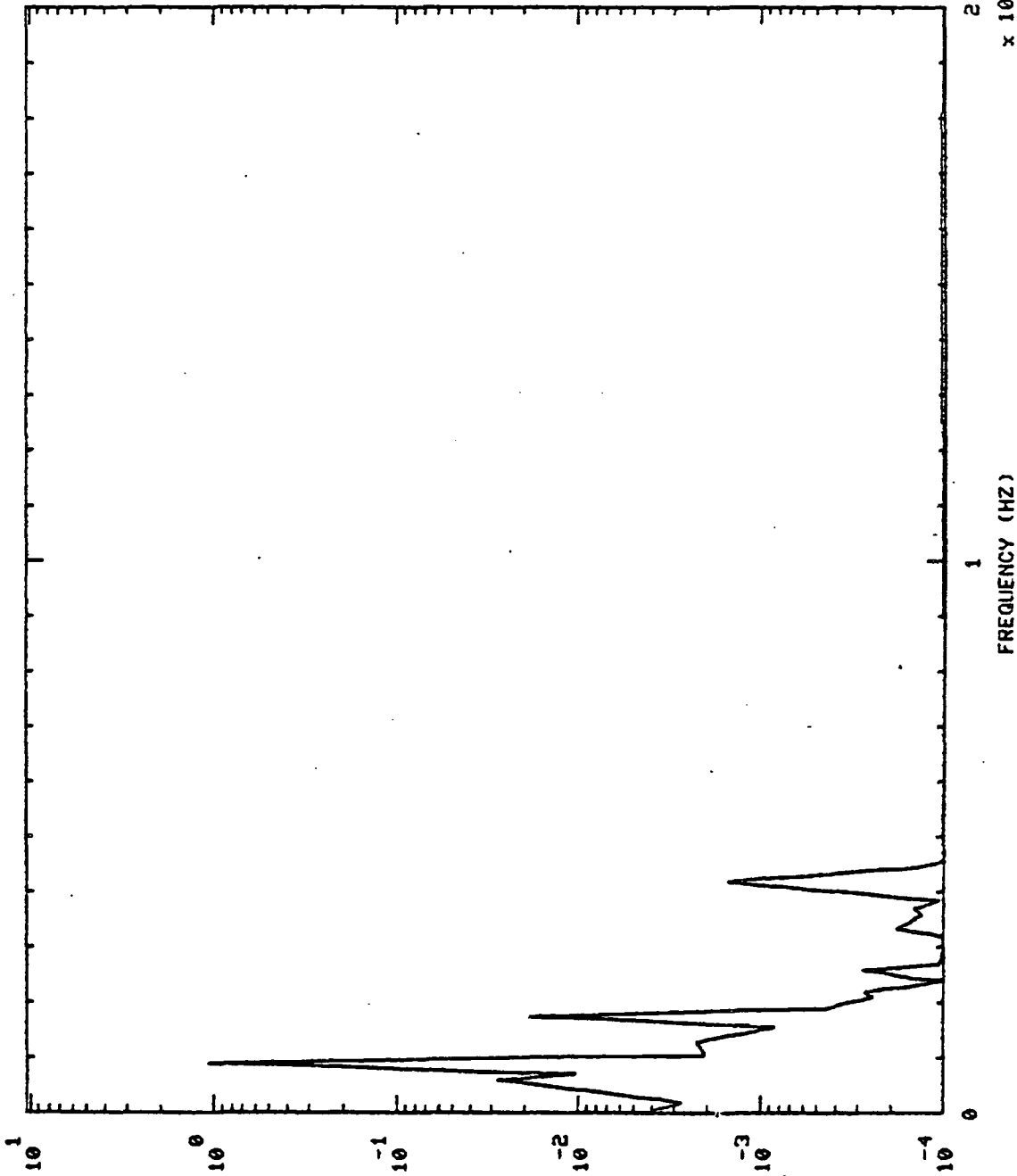
10^2
 $\times 10^4$

1
FREQUENCY (HZ)

750102 LPFP IN PR S+ 35.050/HZ



750102 LPFP IN PR S+ 60.050/HZ

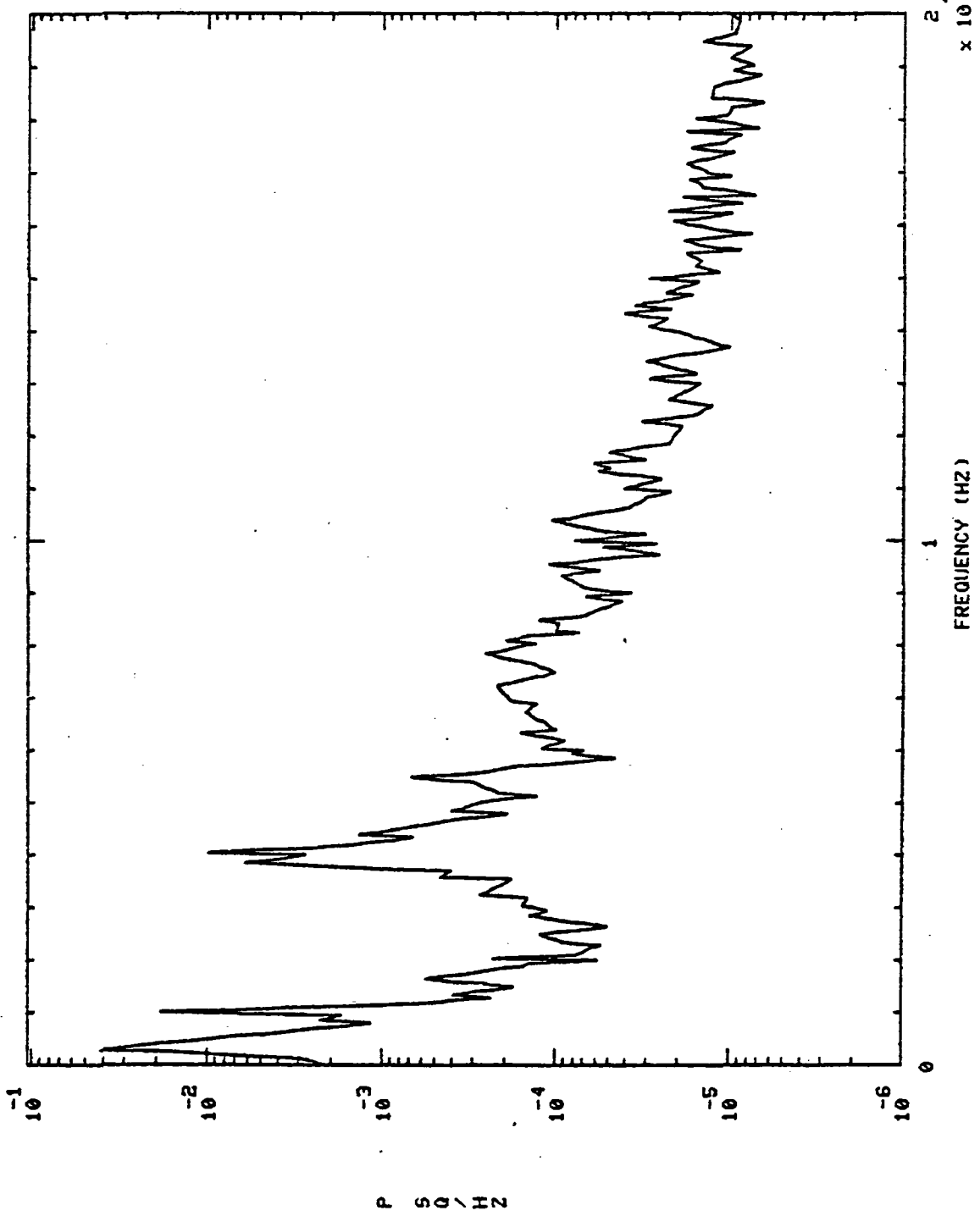


P SQ/HZ

C-2

750102 LPFP IN PR S+ 80.0SQ/HZ

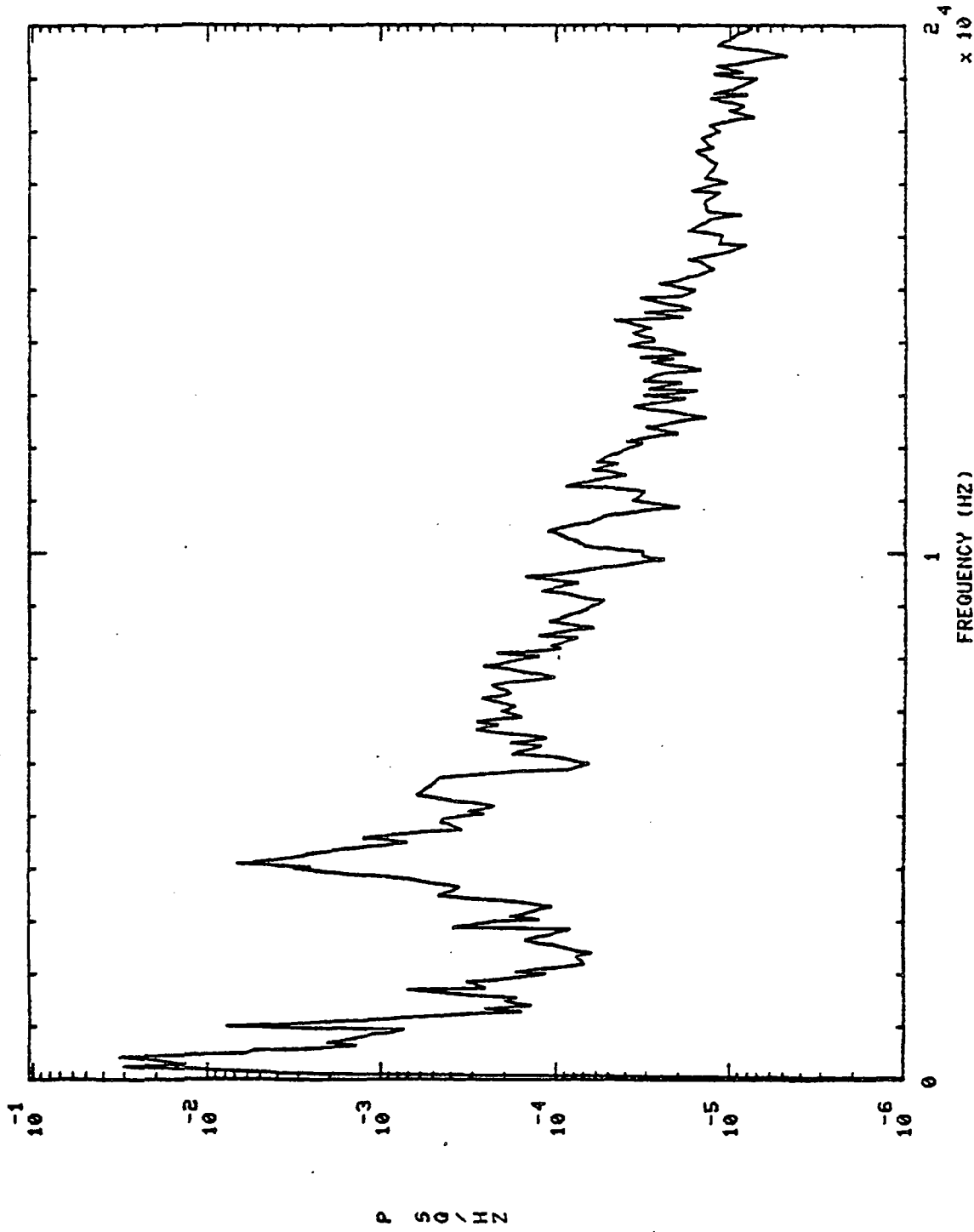
750102 LPFP IN PR



S+ 100.05Q/HZ

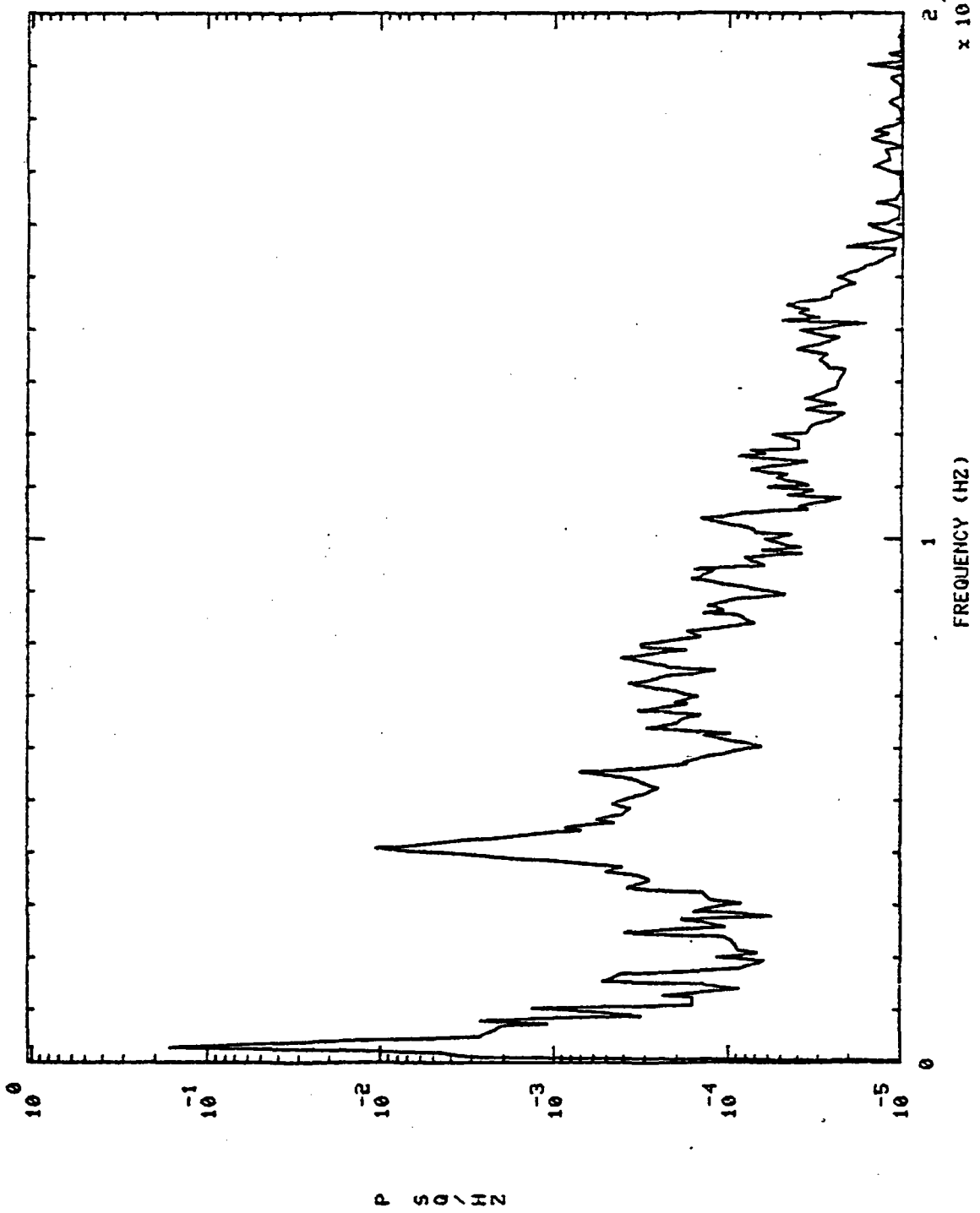
LFPF IN PR

750102



S+ 200.050/HZ

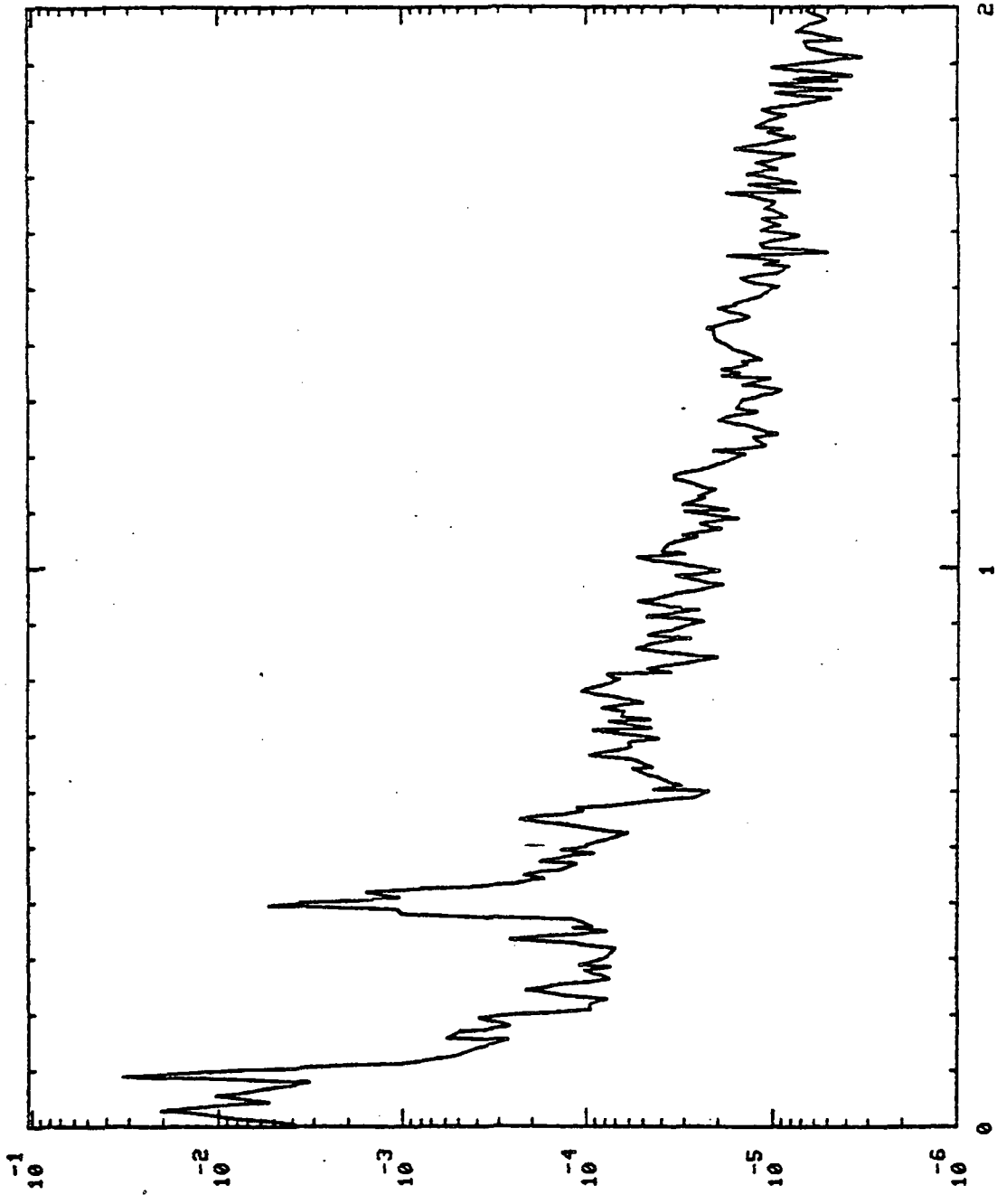
750102 LPFP IN PR



S+ 280.050/HZ

LPFP IN PR

750102

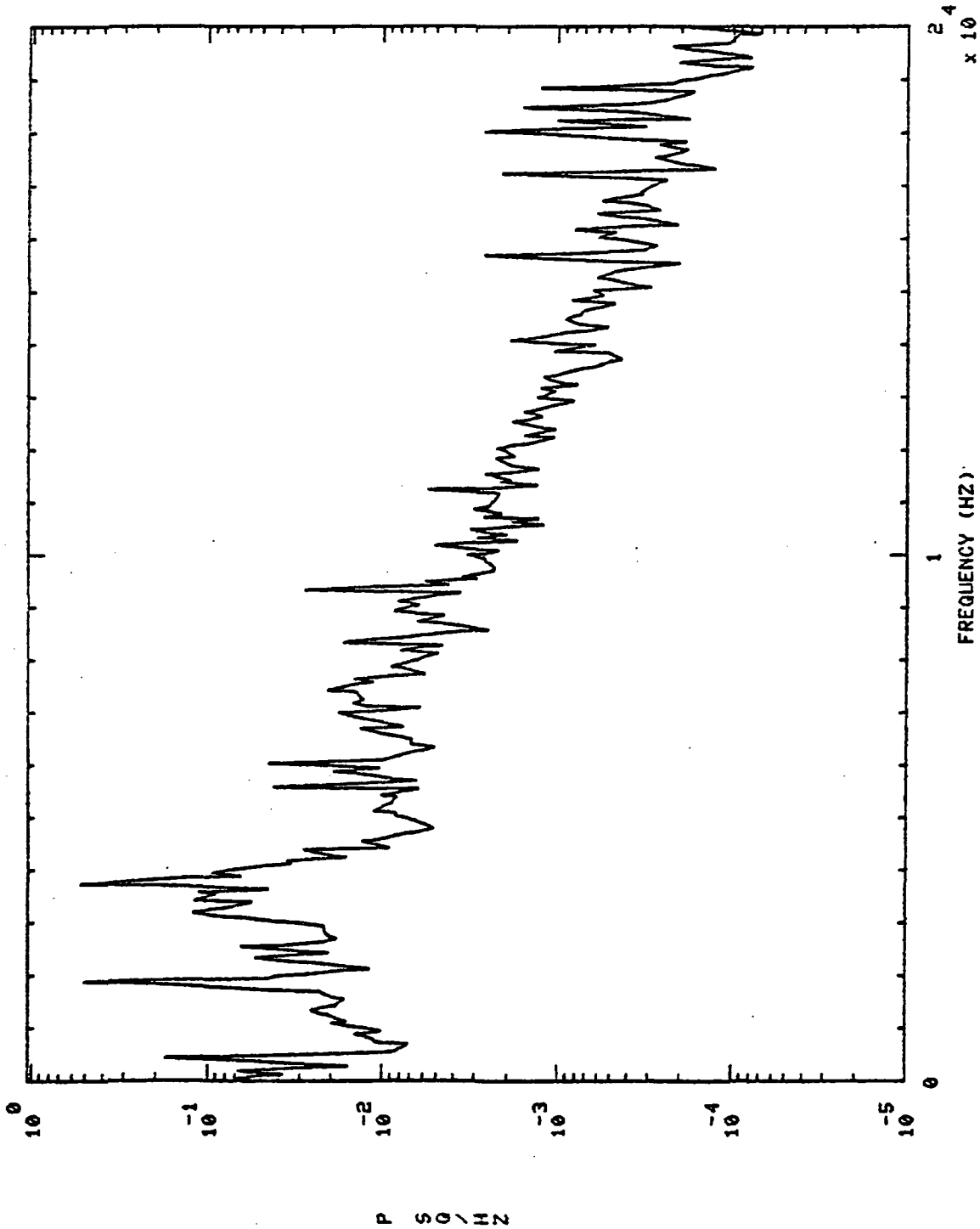


P S D / HZ

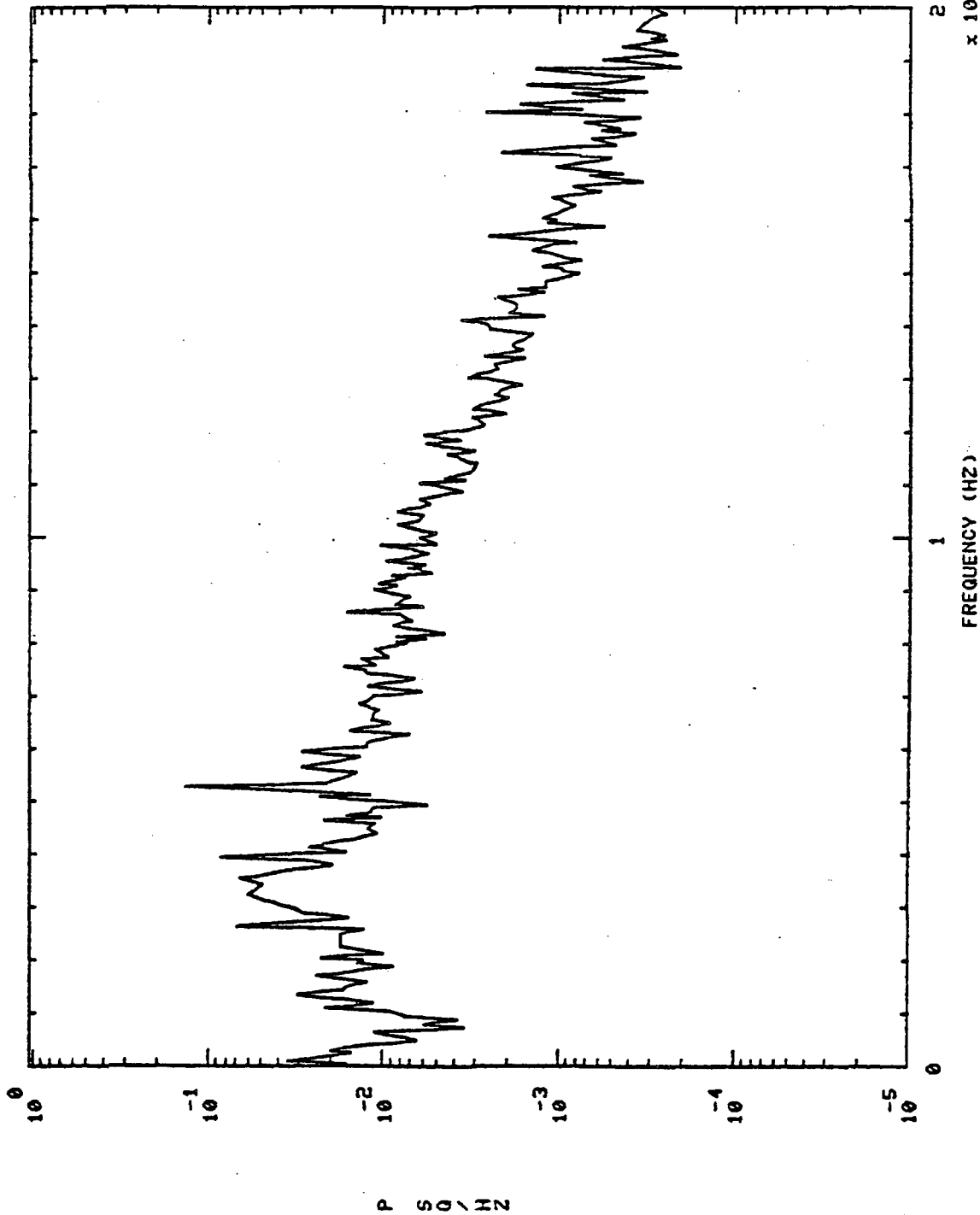
2.4
x 10

FREQUENCY (HZ)

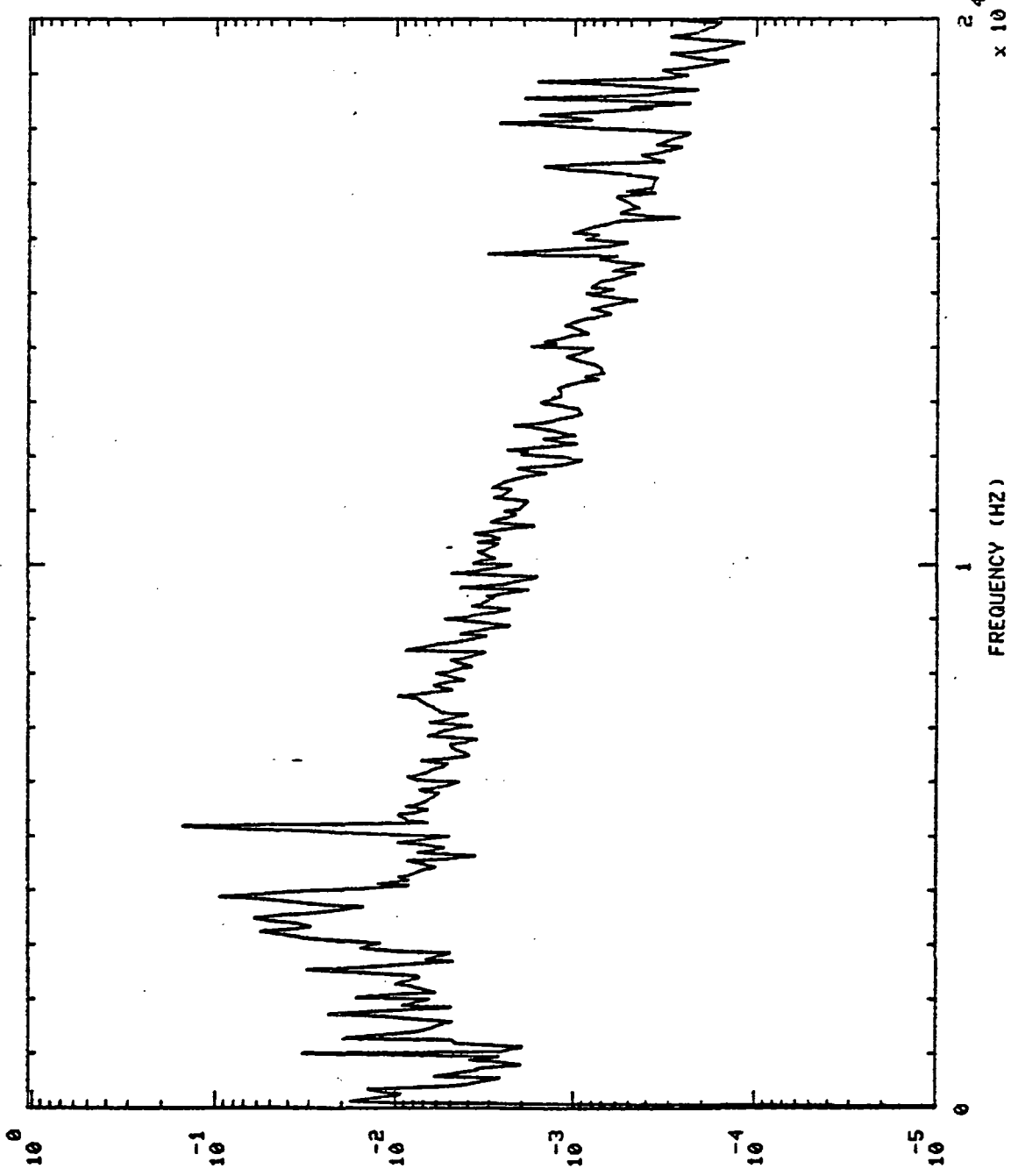
750102 MPOP BAL CRU PR2 S+ 15.050/HZ



750102 HPOP BAL CAU PR2 S+ 35.050/HZ

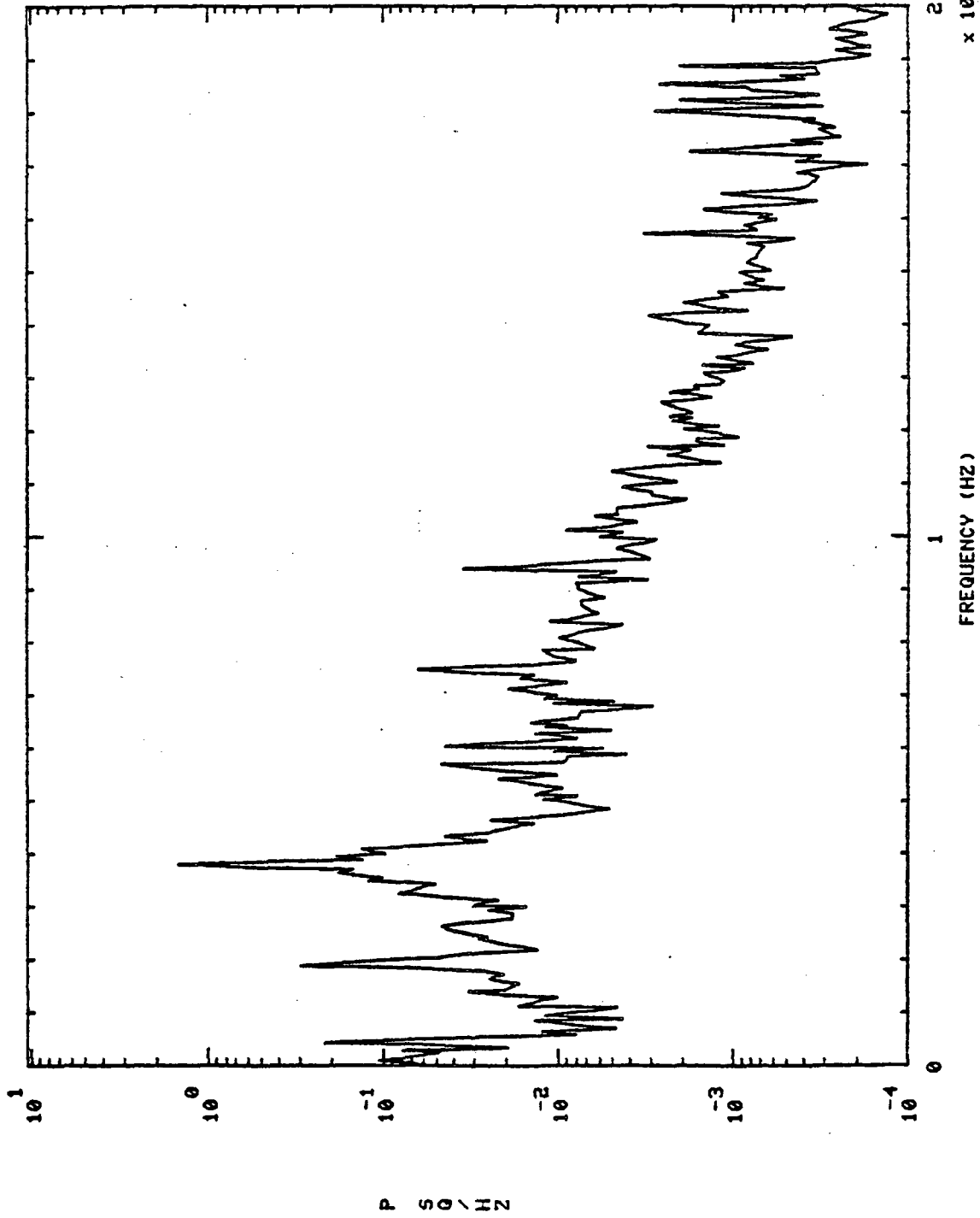


750102 HPOP BAL CAU PR2 S+ 60.050/HZ

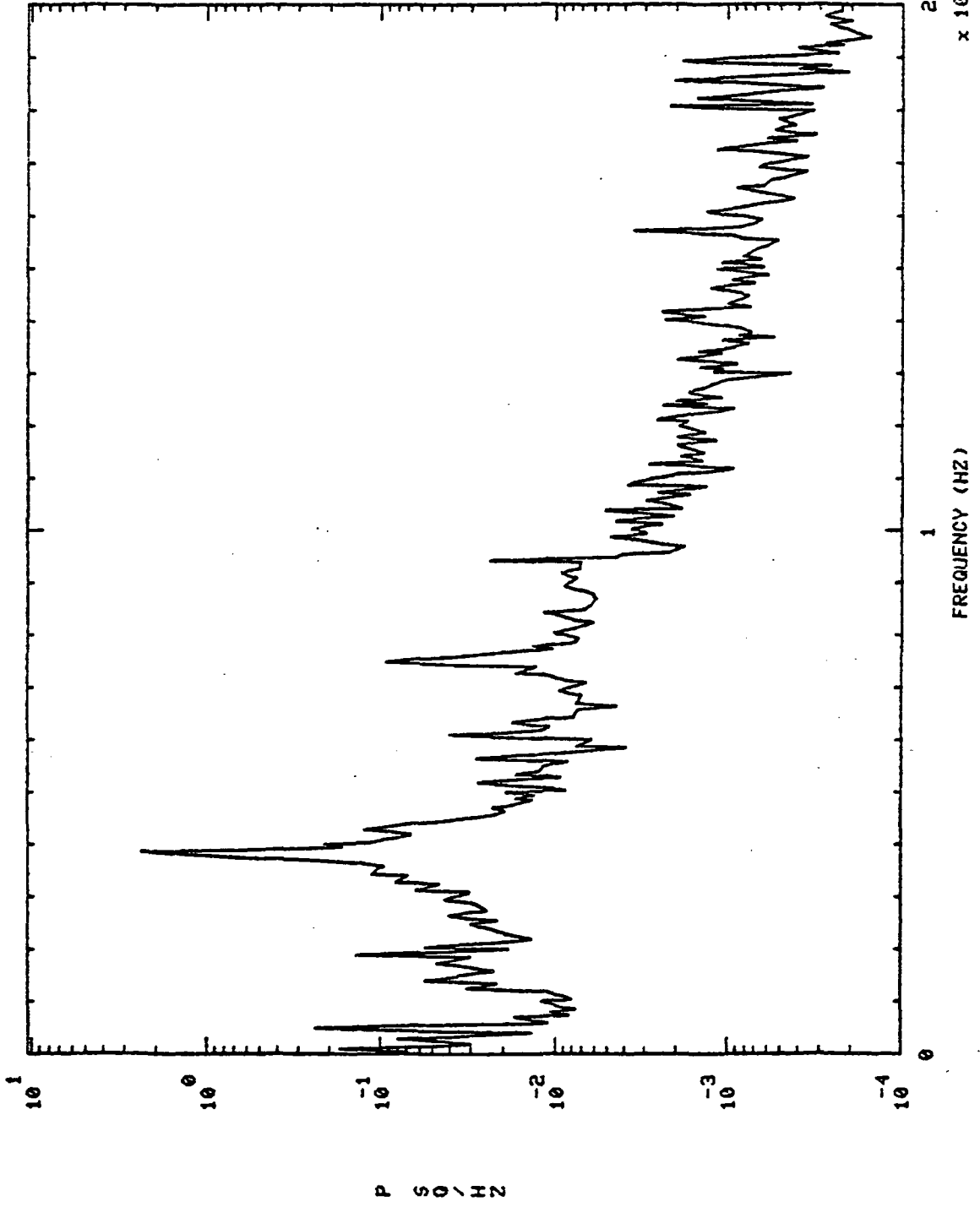


P S D / H Z

750102 HPOF BAL CAU PR2 S+ 80.050/HZ

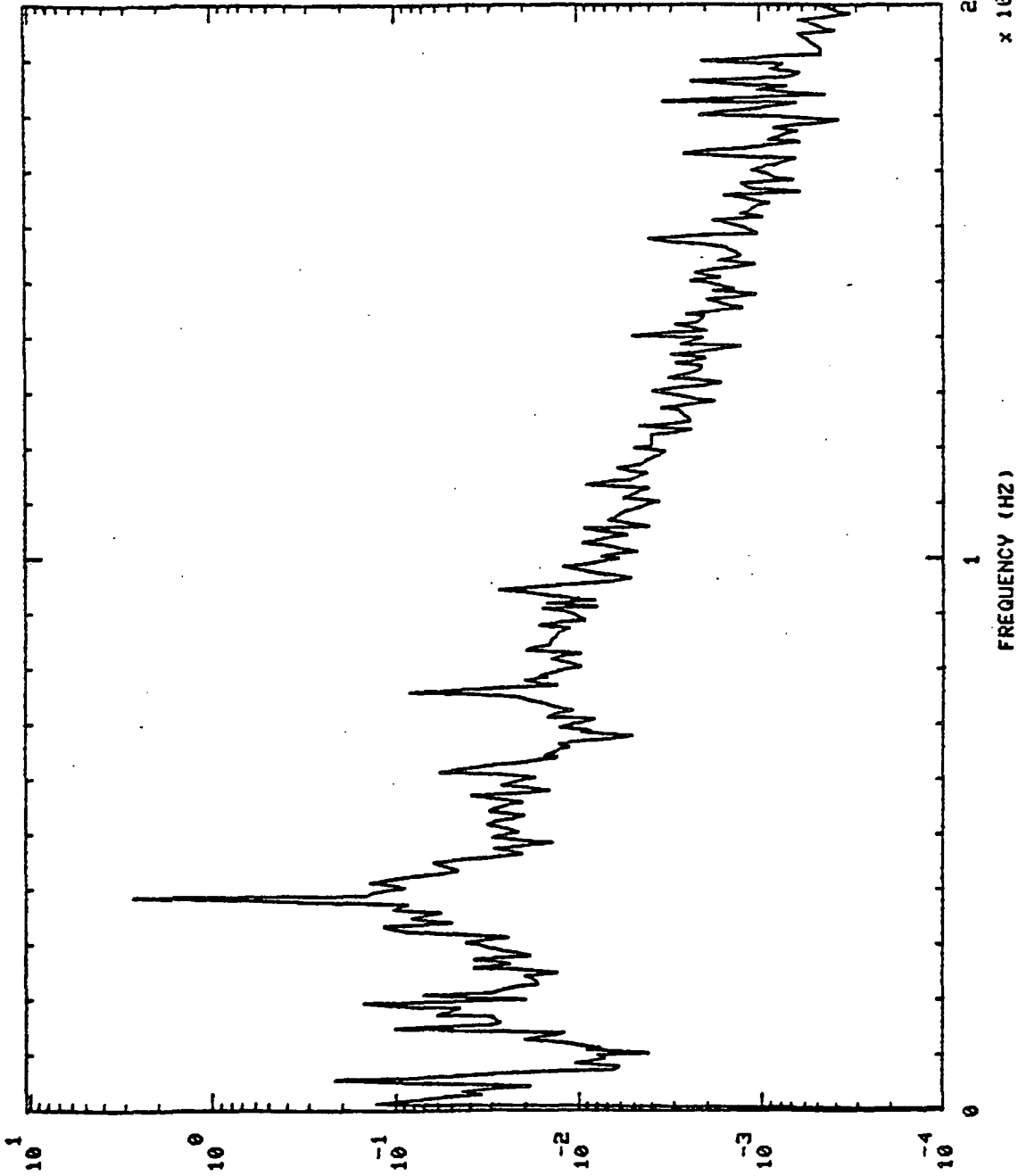


750102 HPOP BAL CAU PR2 S+ 100.05Q/HZ



S+ 150.050/HZ

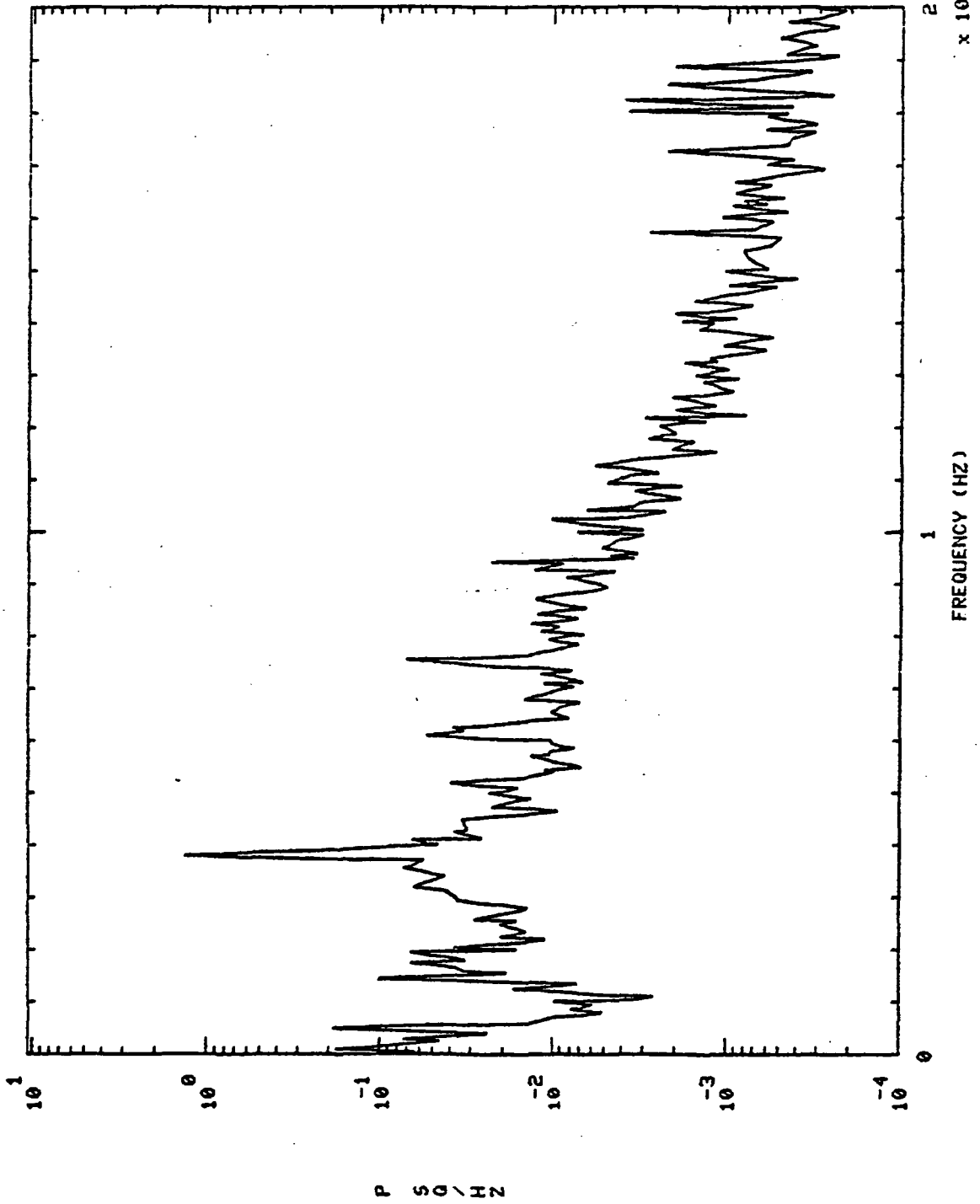
750102 HPOP BAL CAU PR2



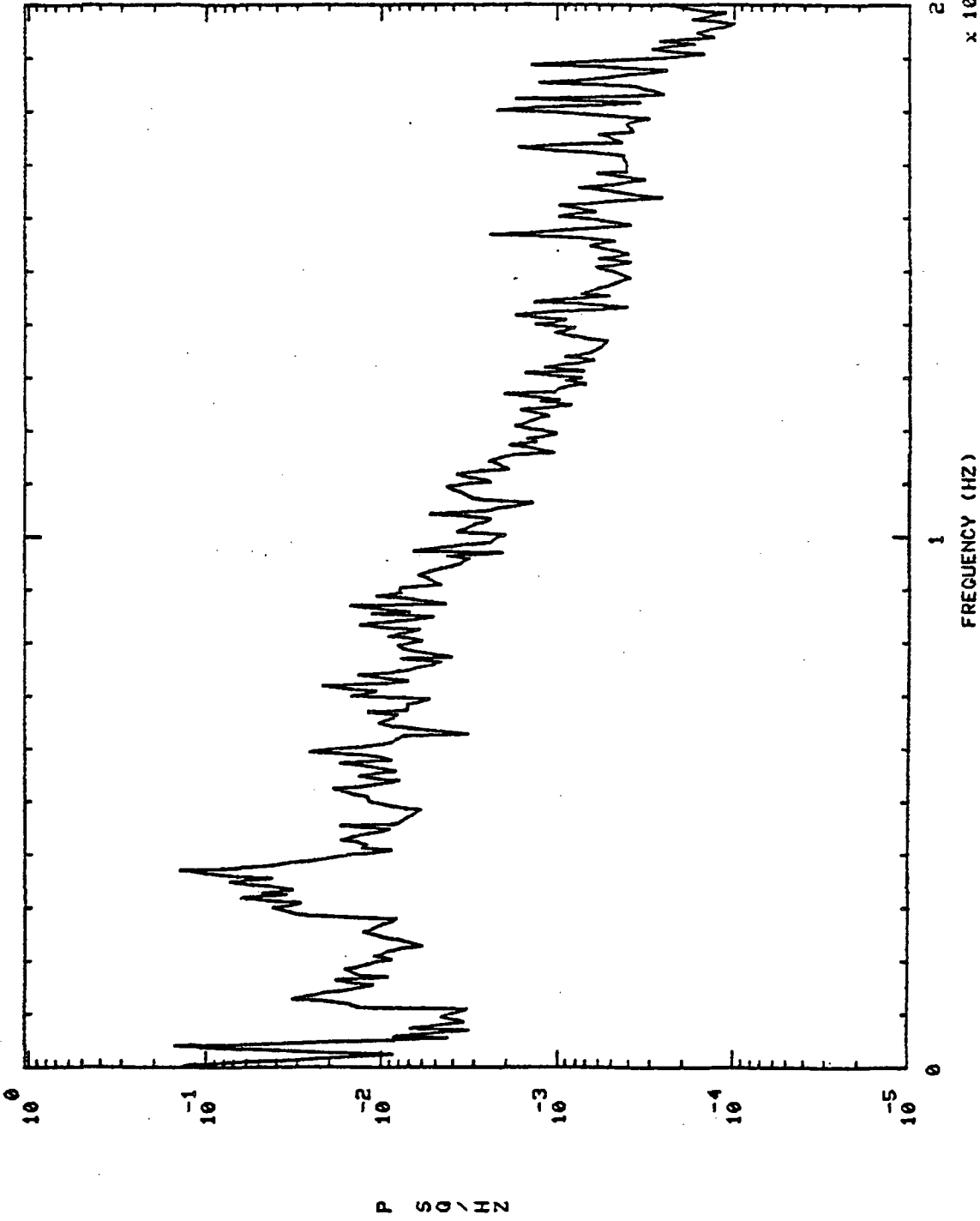
P SQ\HN

S+ 230.050/HZ

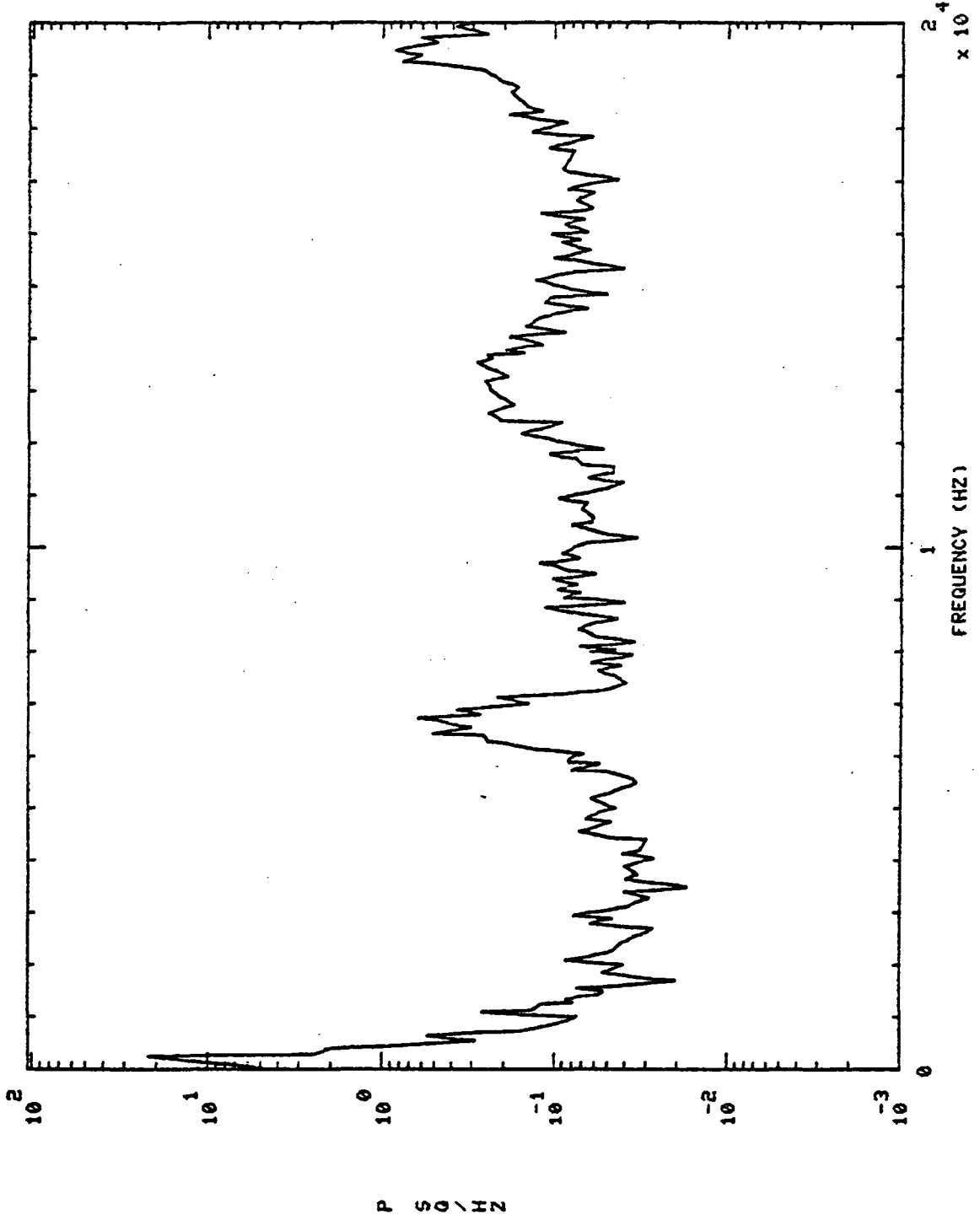
750102 HPOP BAL CAU PRE



750102 HPOP BAL CAU PR2 S+ 280.050/HZ

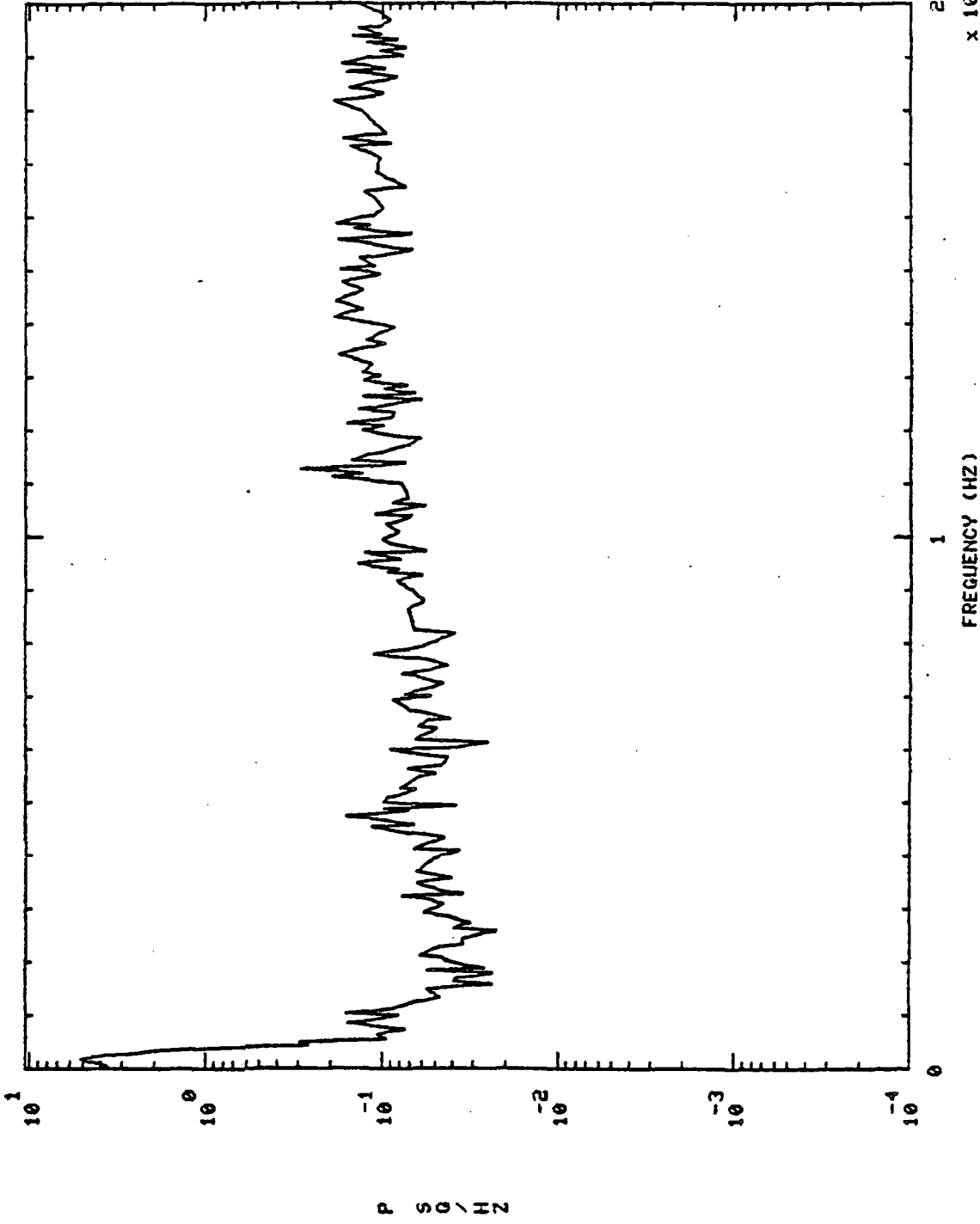


750102 HPOP DS PR S+ 15.050/HZ

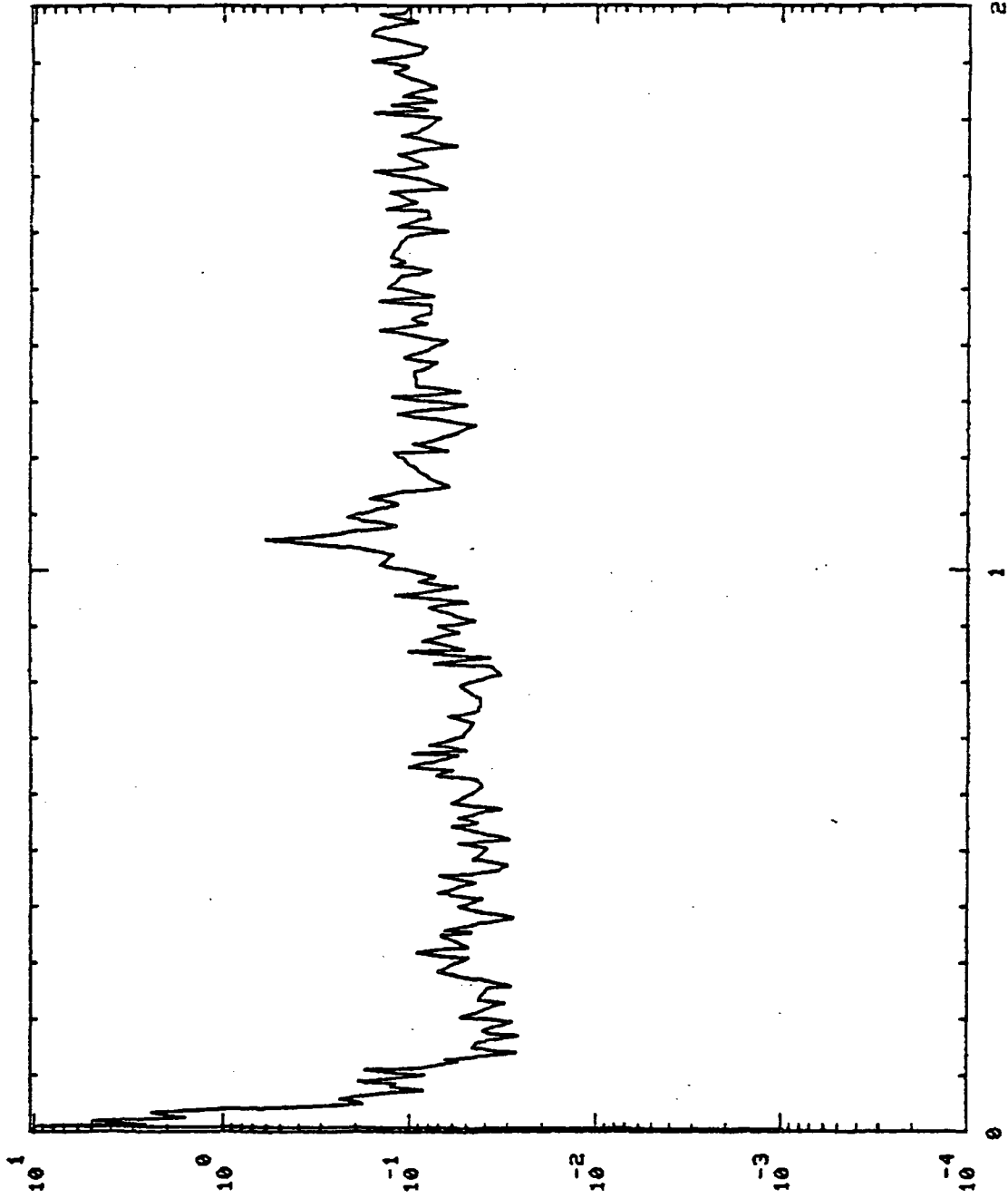


S+ 35.05Q/HZ

750102 HPOP DS PR



750102 MFOP DS PR S+ 60.050/HZ



P SQ / HZ

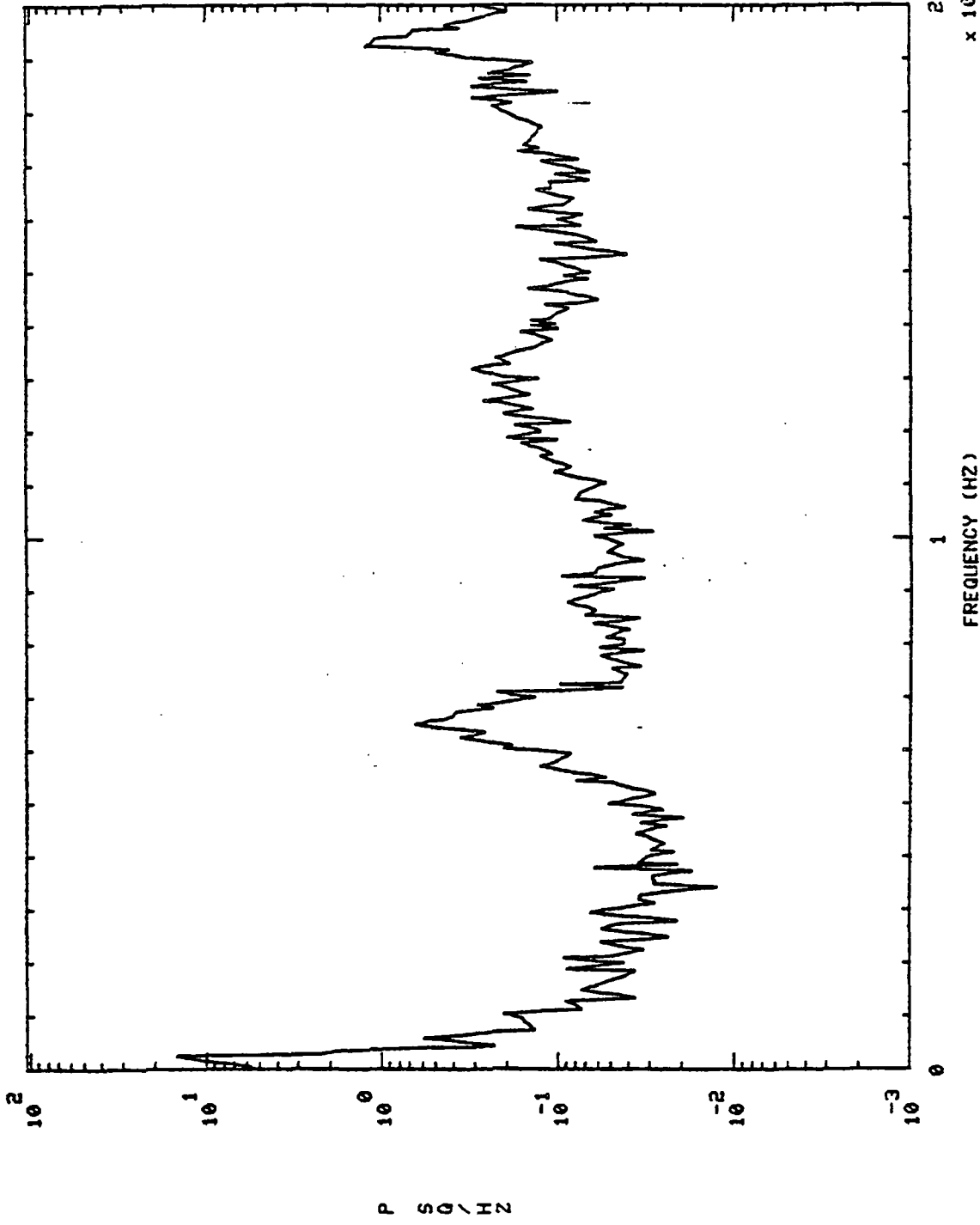
FREQUENCY (HZ)

$\times 10^4$

S+ 80.050/HZ

HP0P DS PR

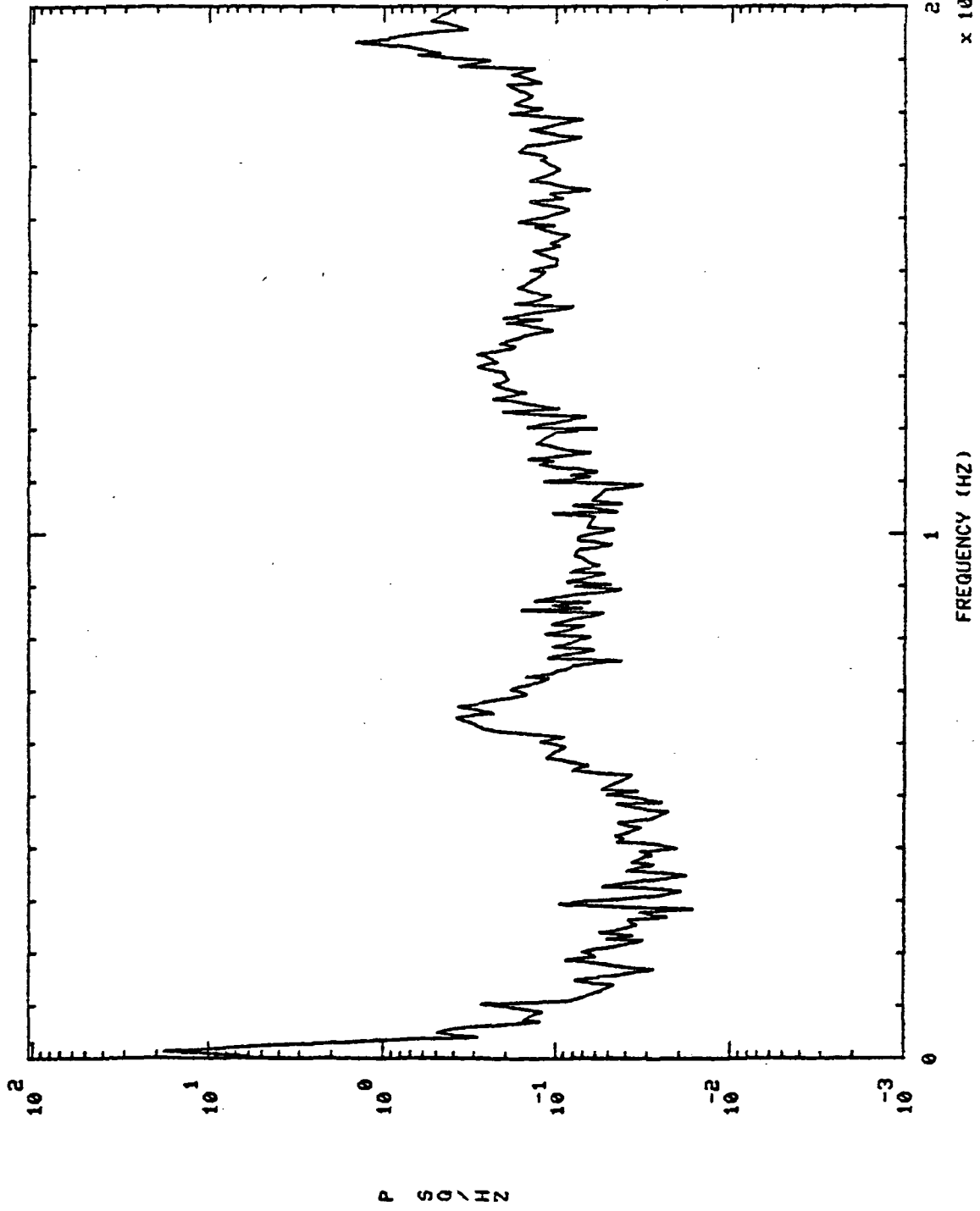
750102



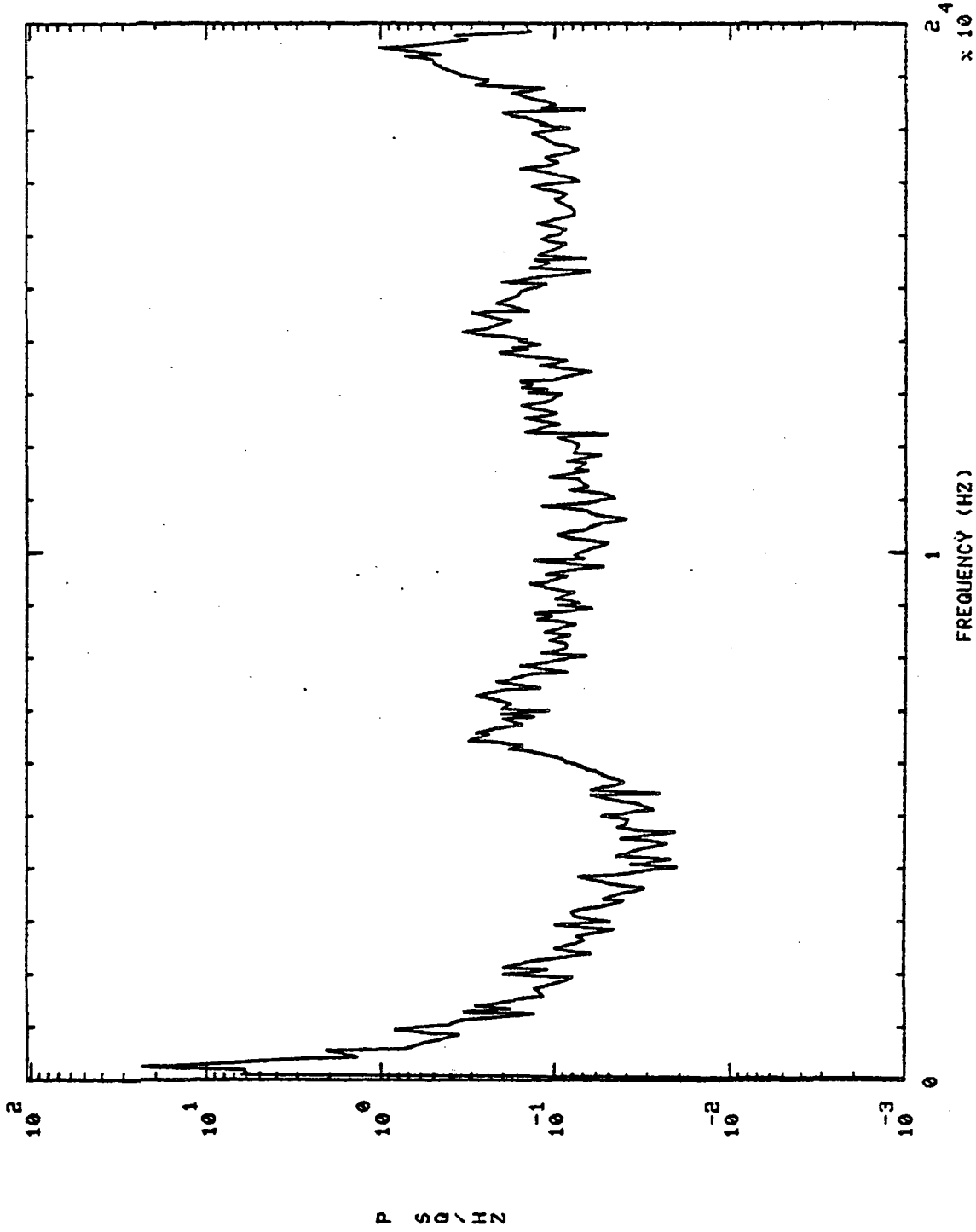
10^4
 $\times 10$

1
FREQUENCY (HZ)

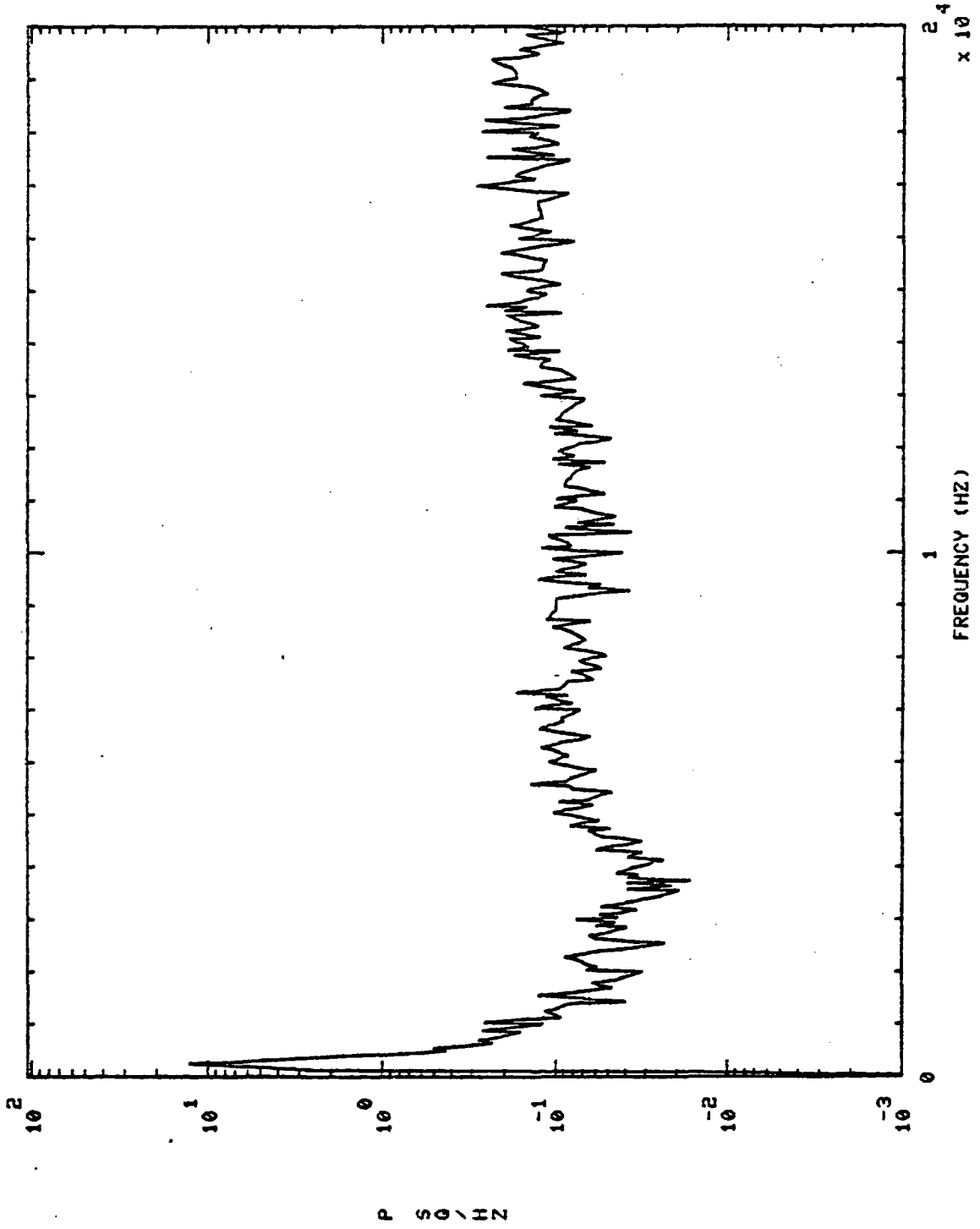
750102 HPOP DS PR S+ 100.050/HZ



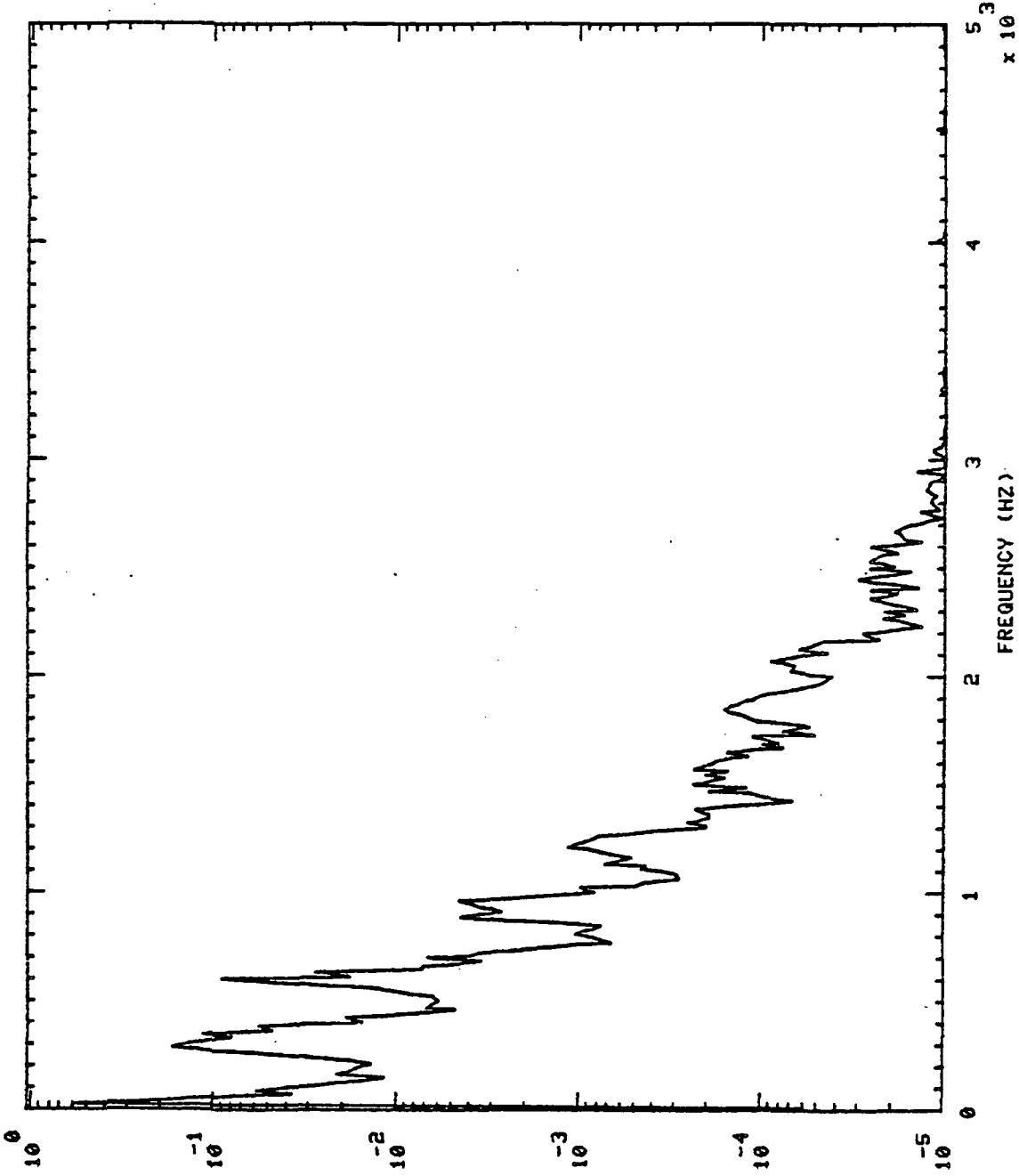
750102 HPOP DS PR S+ 200.050/HZ



750102 HPOP DS PR S+ 280.050/HZ

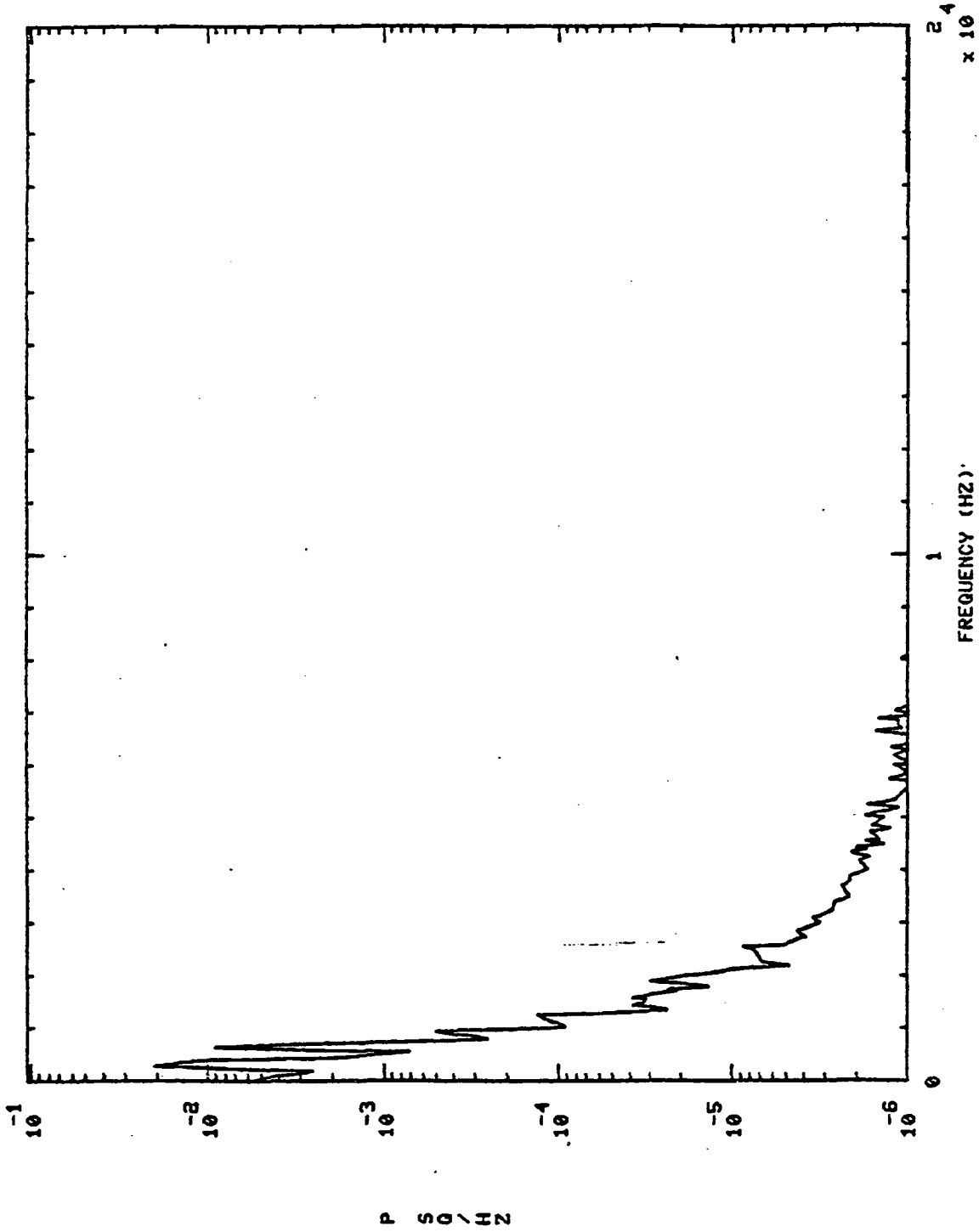


750102 LOX IN DUCT PR2 S+ 15.05Q/HZ

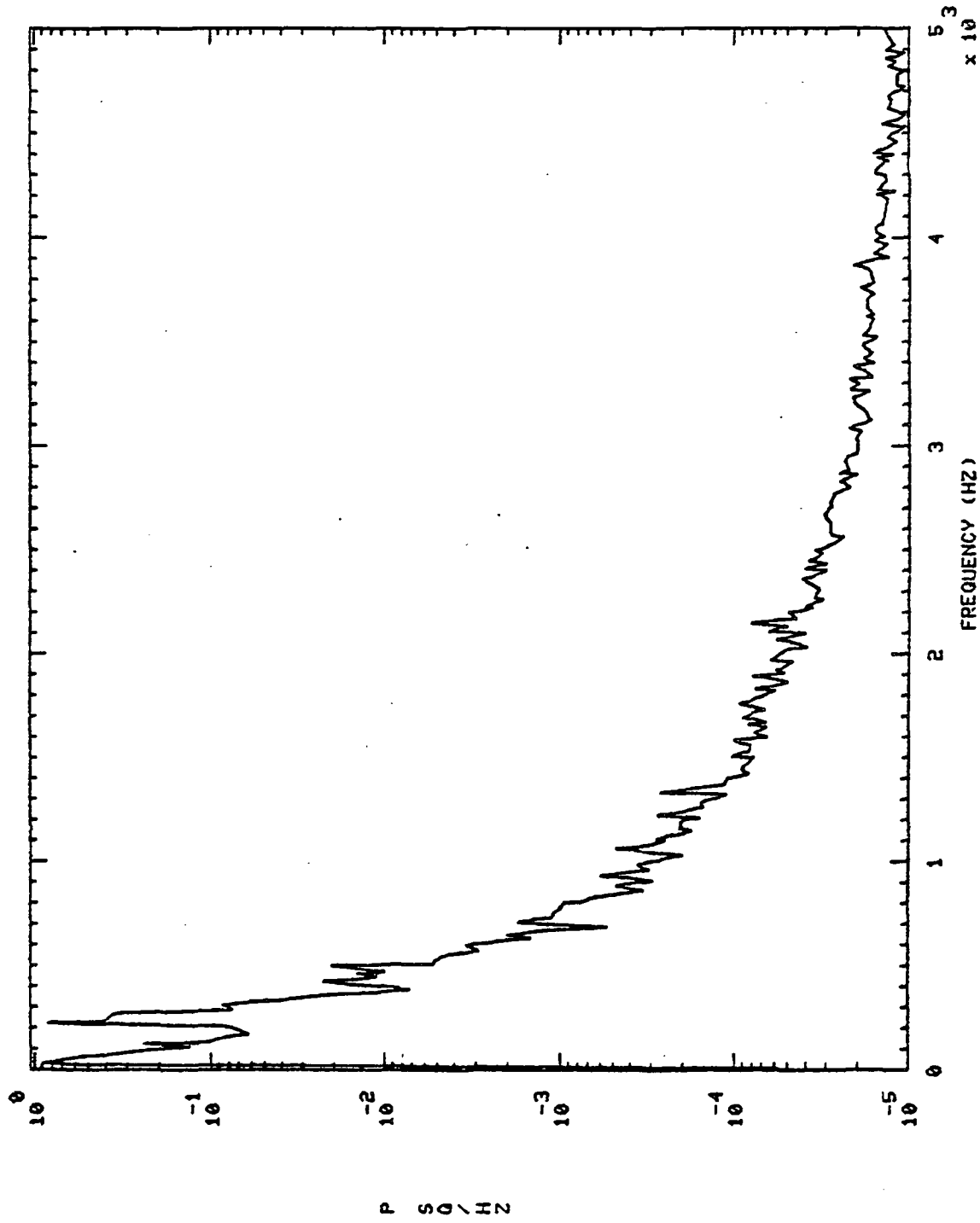


P SQ / HZ

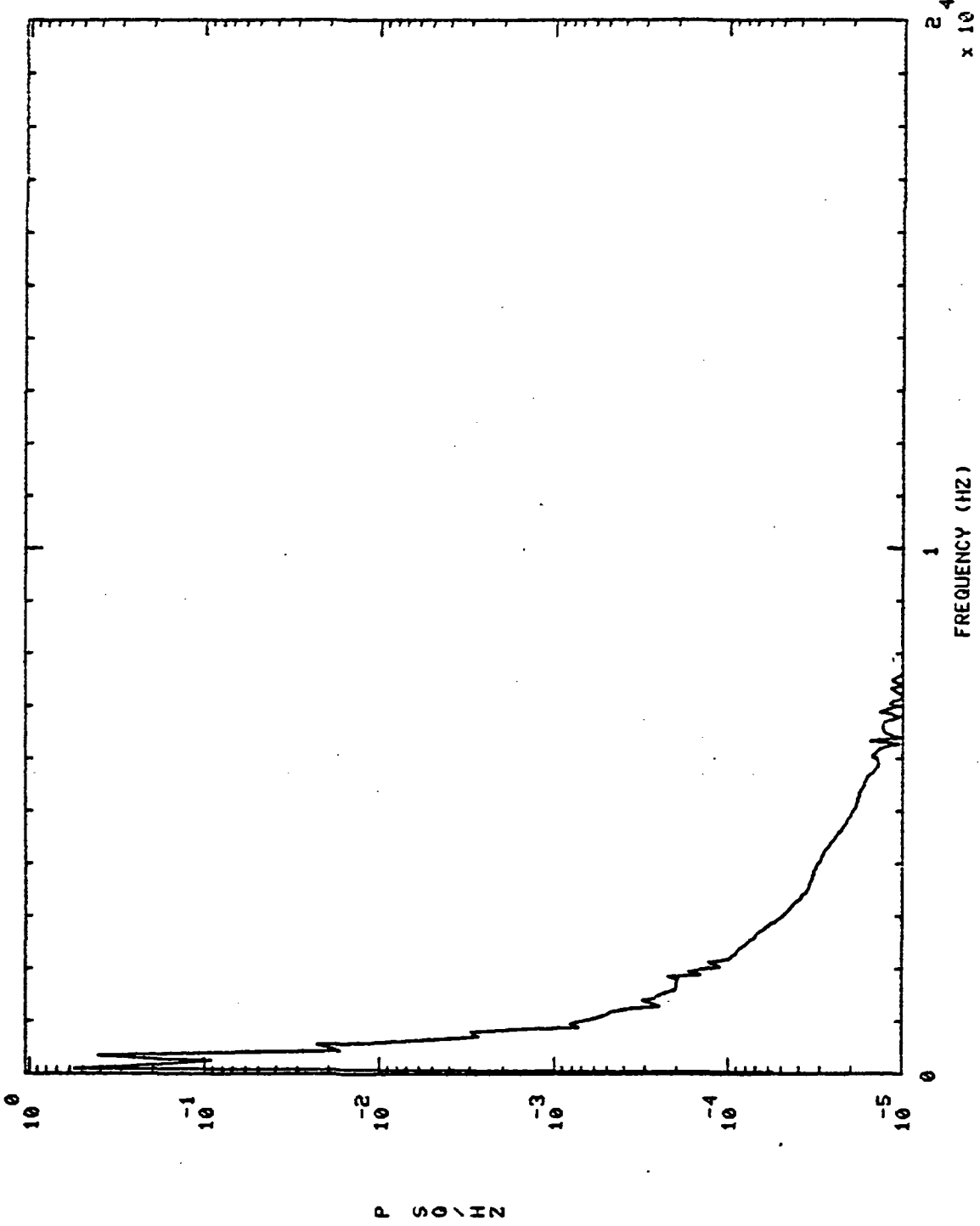
750102 LOX IN DUCT PR2 S+ 15.0140,'S



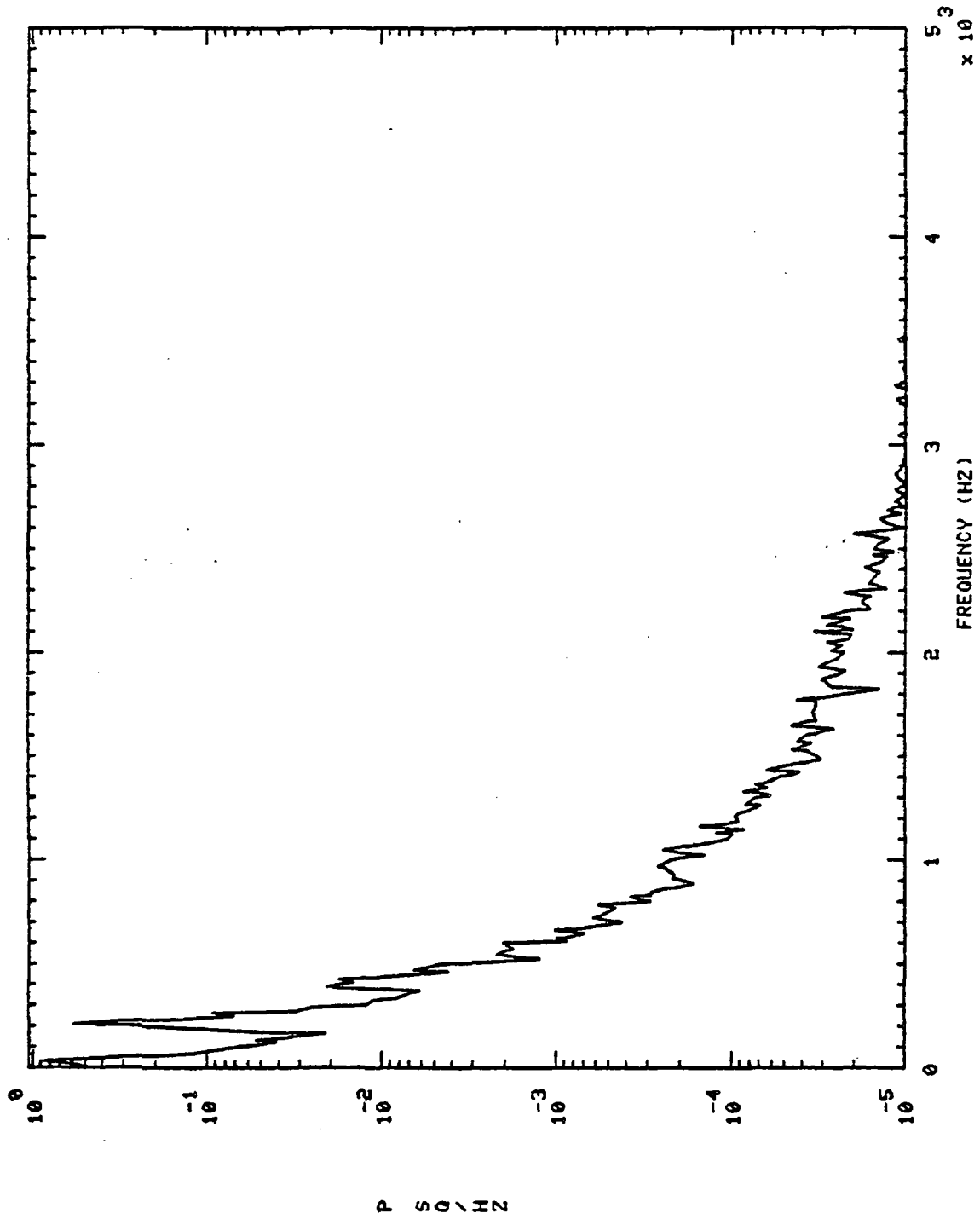
750102 LOX IN DUCT PR2 S+ 35.050/HZ



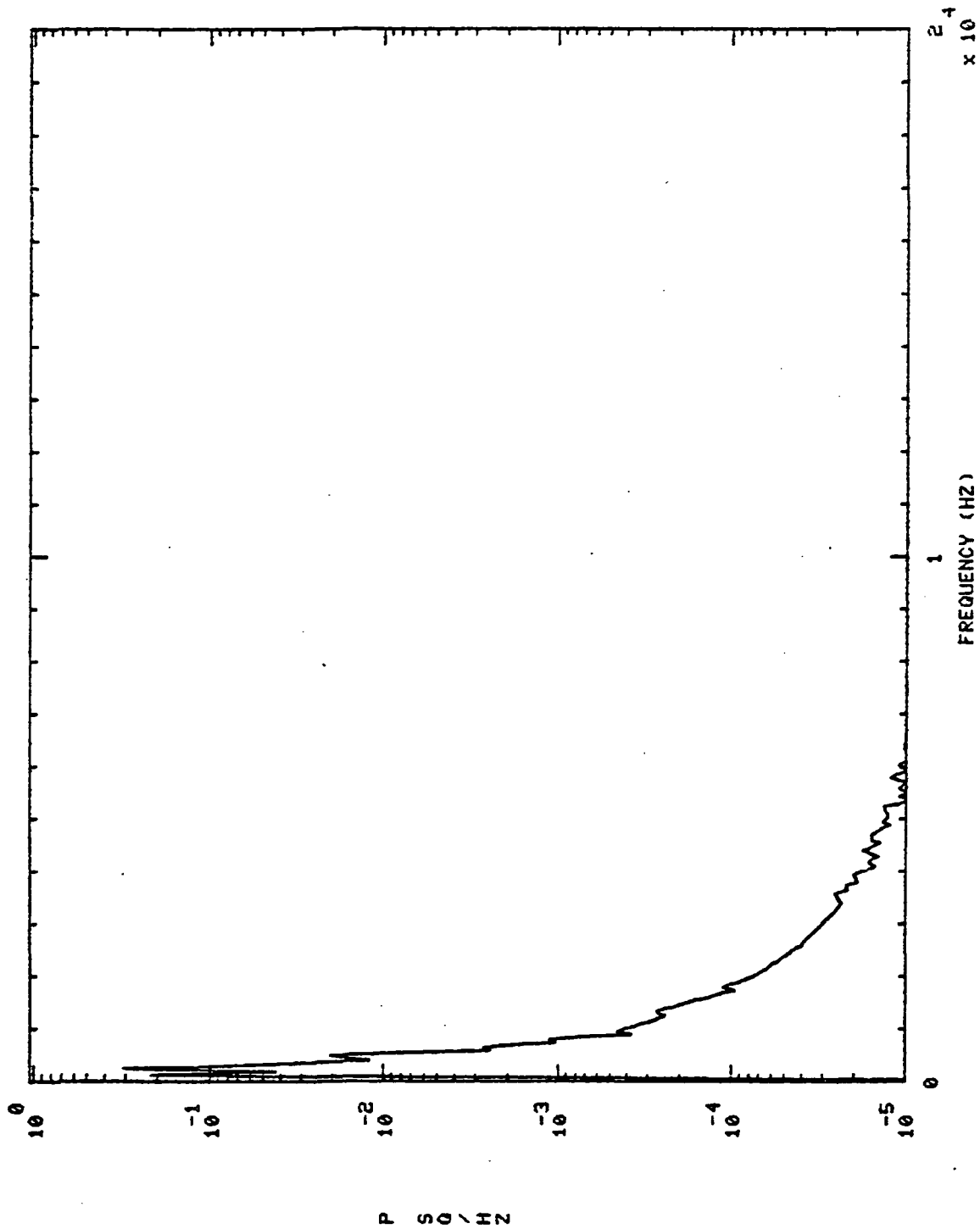
750102 LOX IN DUCT PR2 S+ 35.050/HZ



750102 LOX IN DUCT PR2 S+ 60.050/HZ



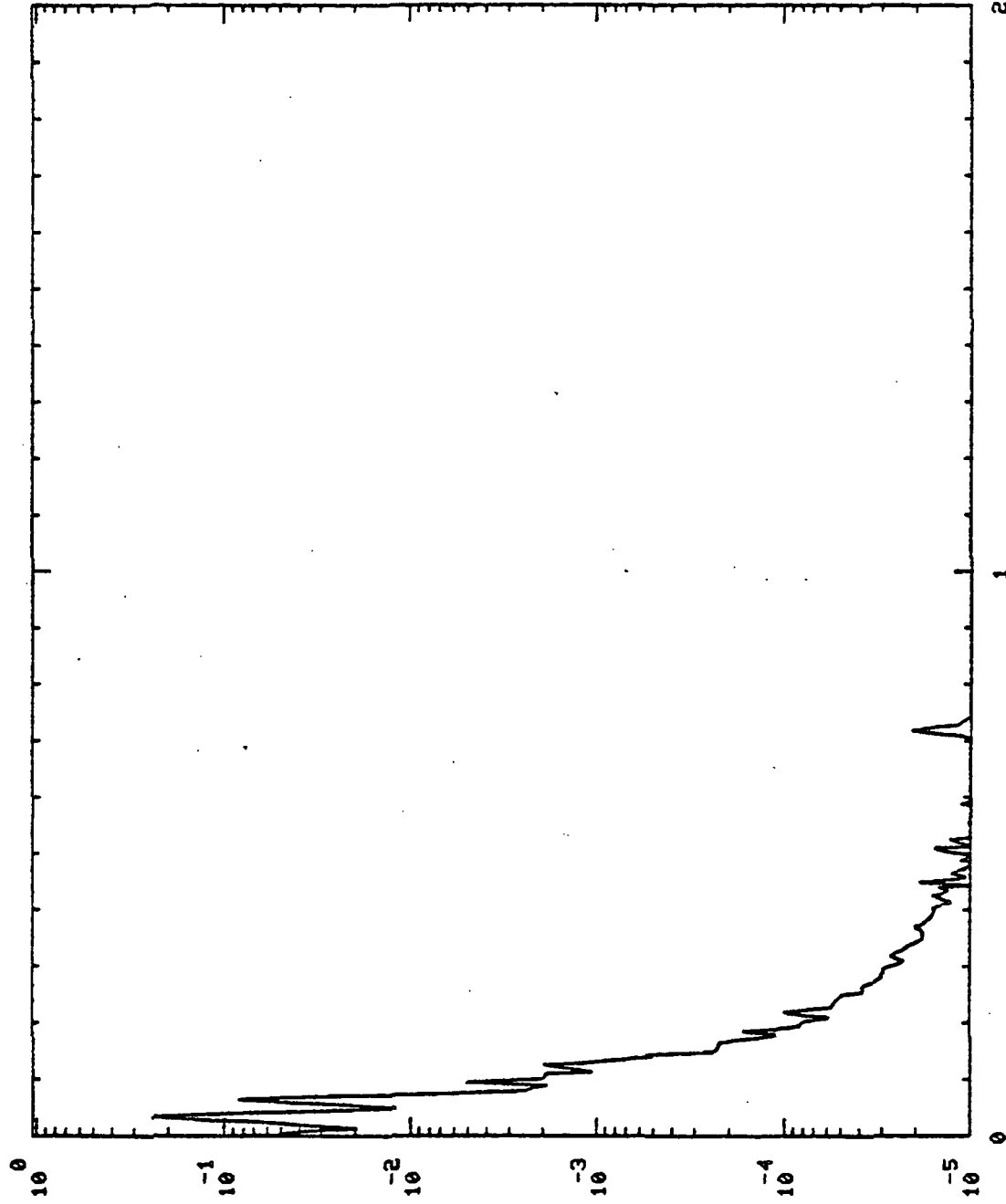
750102 LOX IN DUCT PR2 S+ 60.050/HZ



S+ 80.050/HZ

LOX IN DUCT PR2

750102

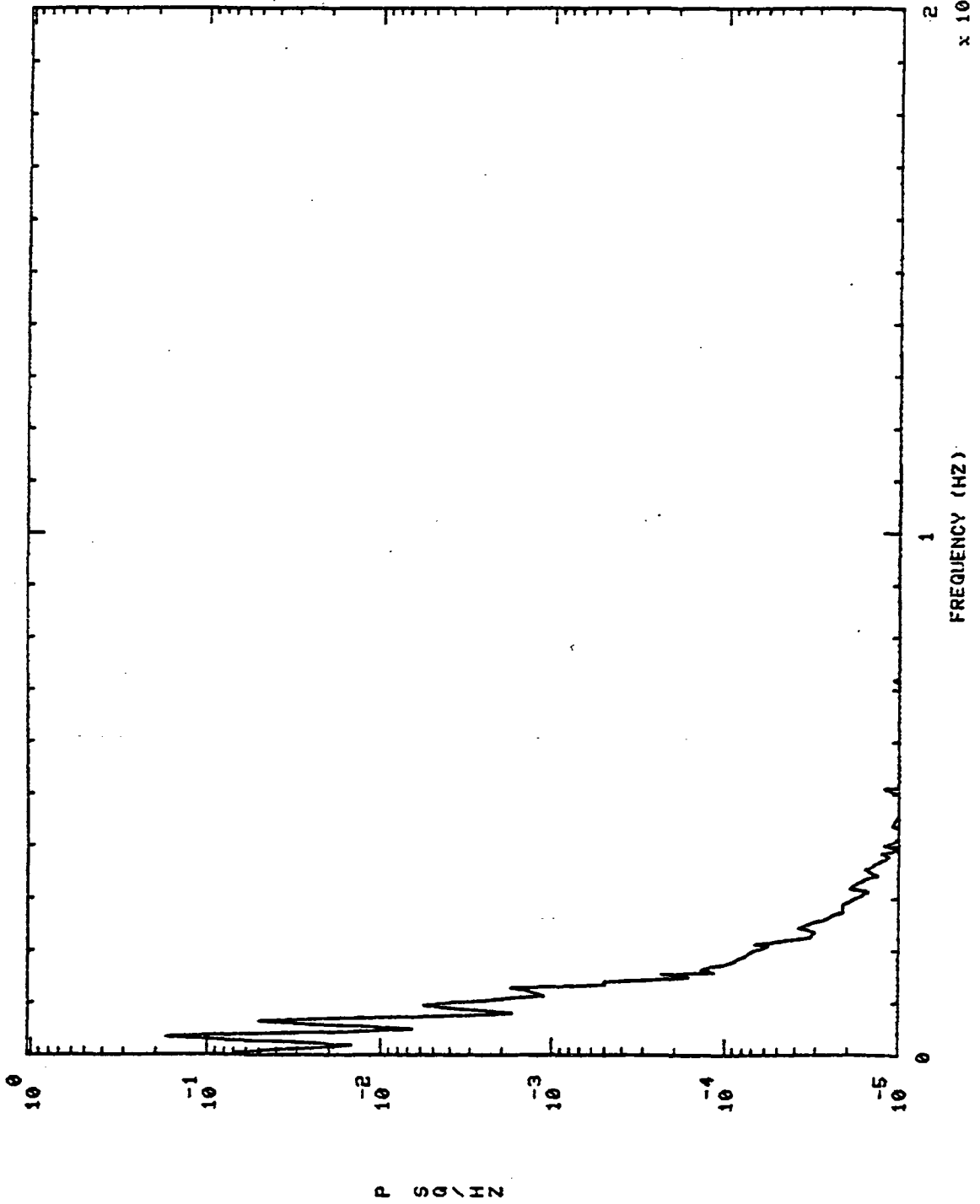


P S G ^ 2 / H Z

FREQUENCY (HZ)

10^{2.4}
x 10

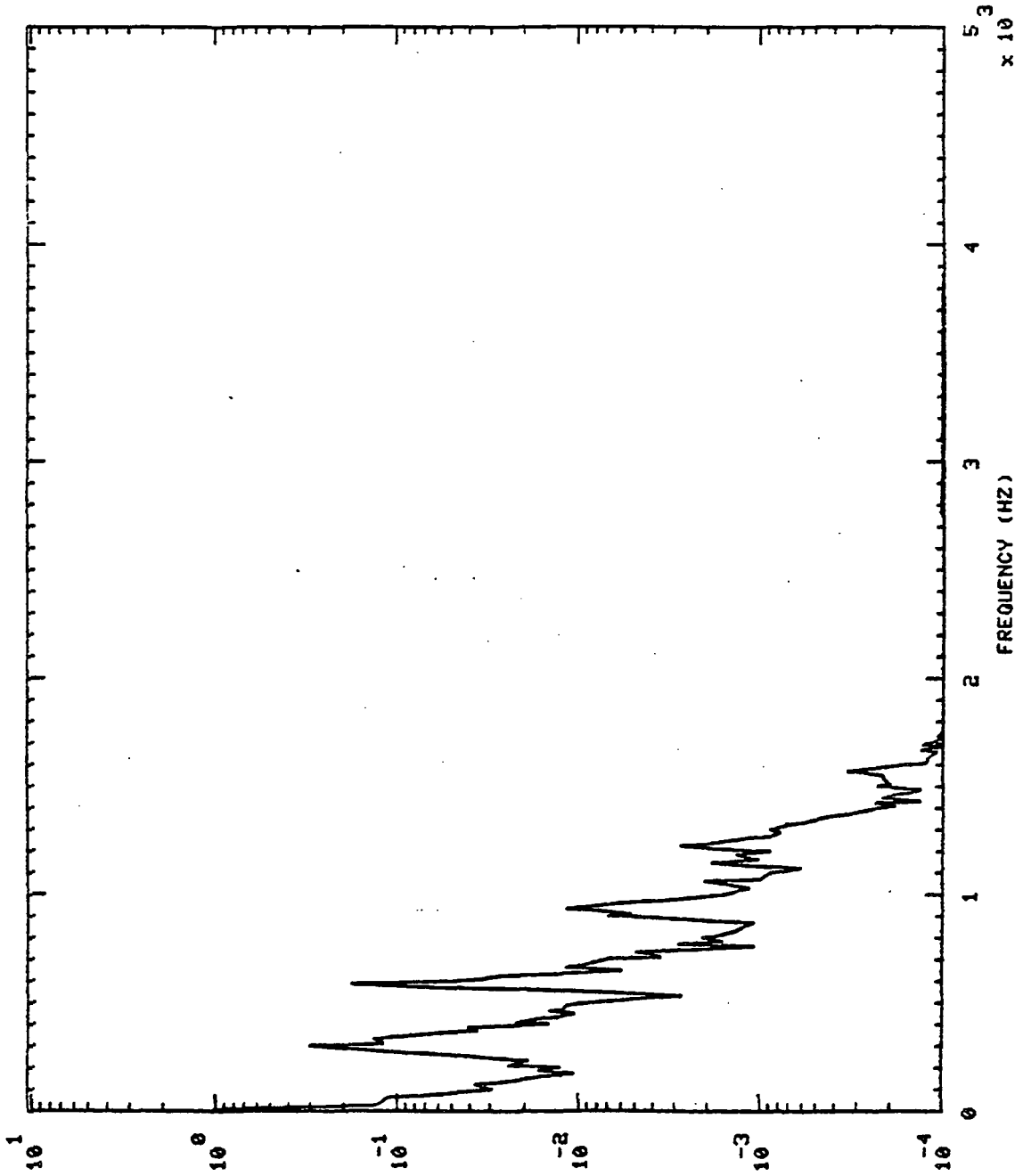
750102 LOX IN DUCT PR2 S+ 100.05Q/HZ



S+ 200.050/HZ

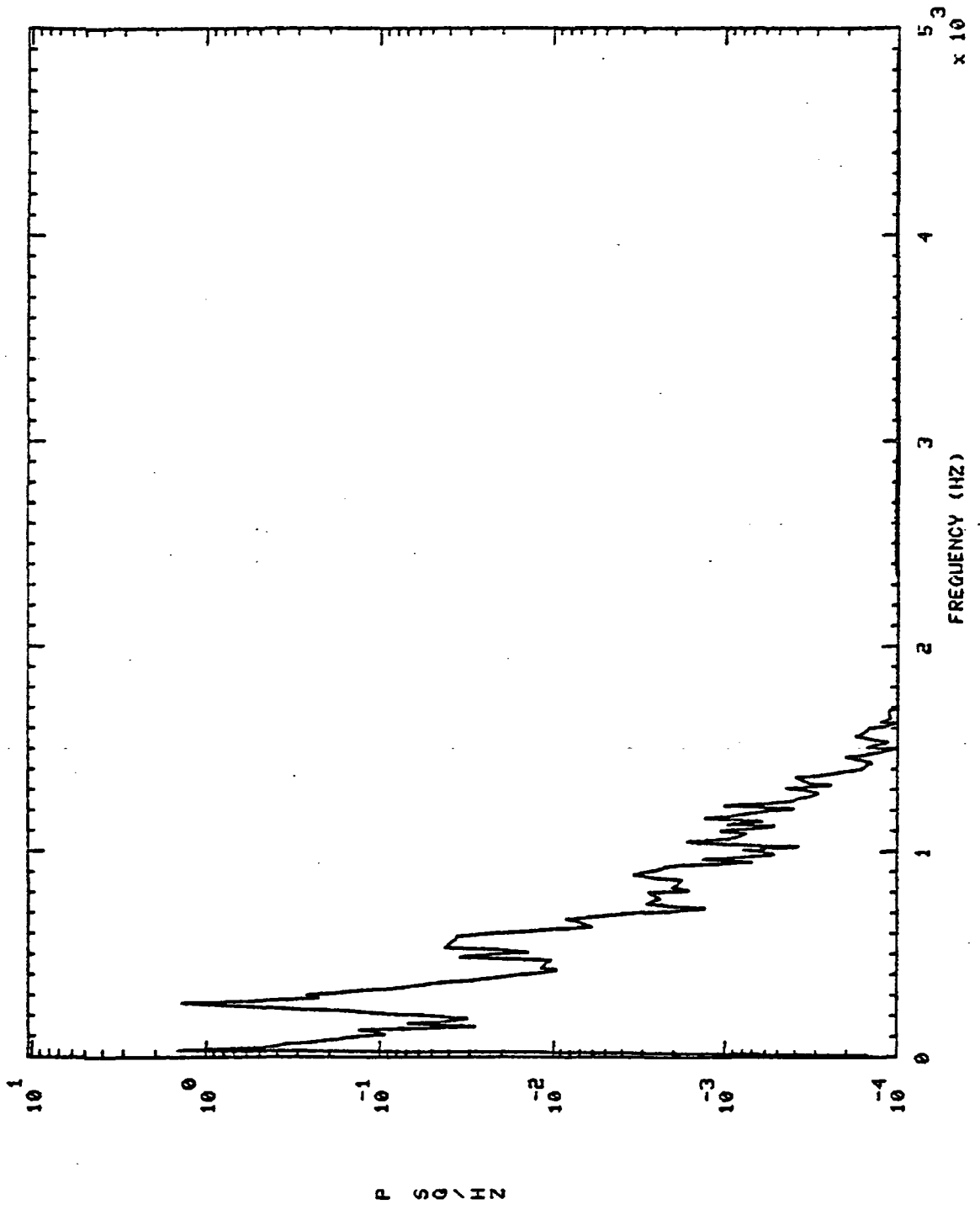
LOX IN DUCT PR2

750102



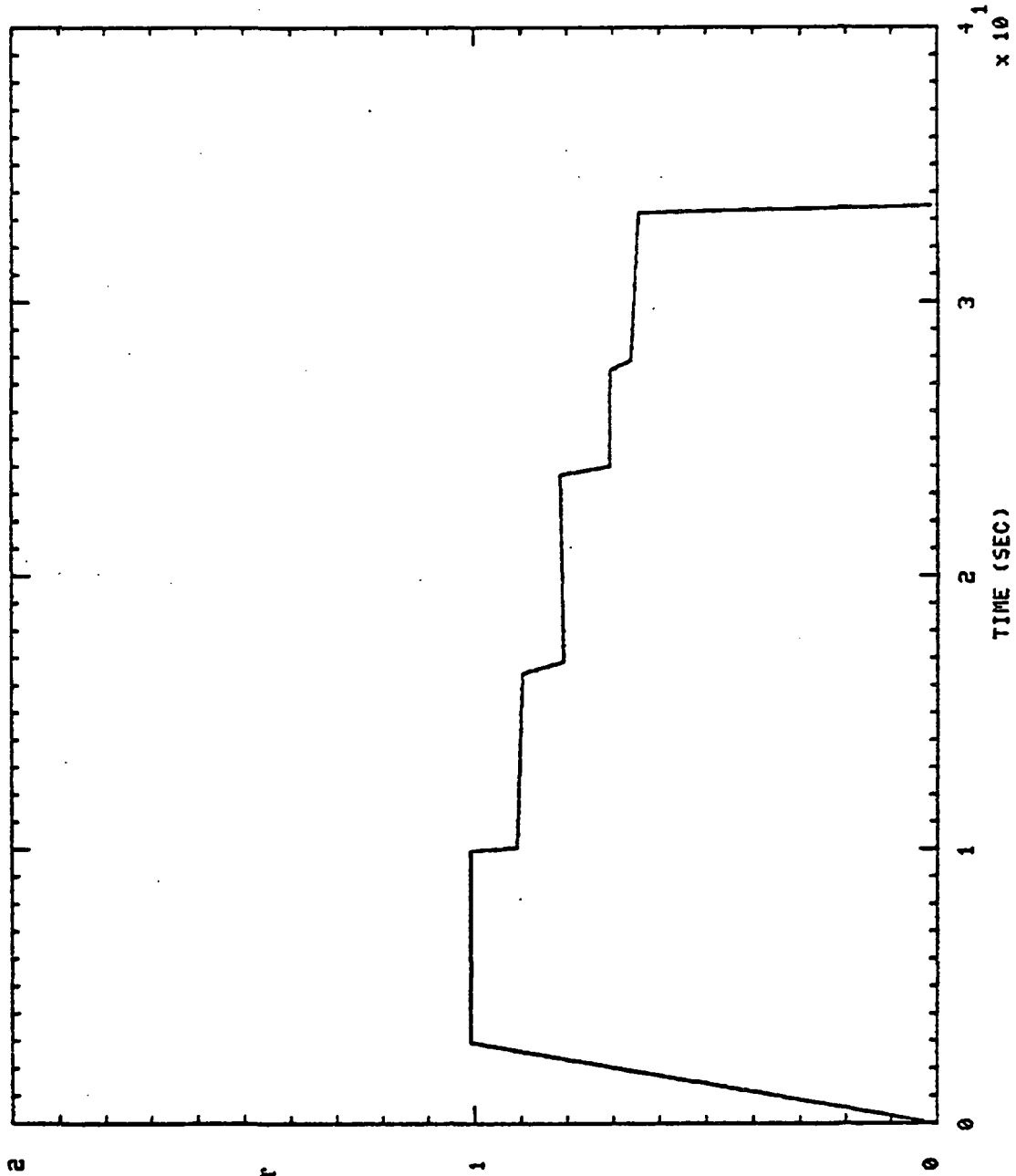
P S D / H Z

750102 LOX IN DUCT PR2 S+ 280.050/HZ



(UNFILTERED)

750103 THRUST

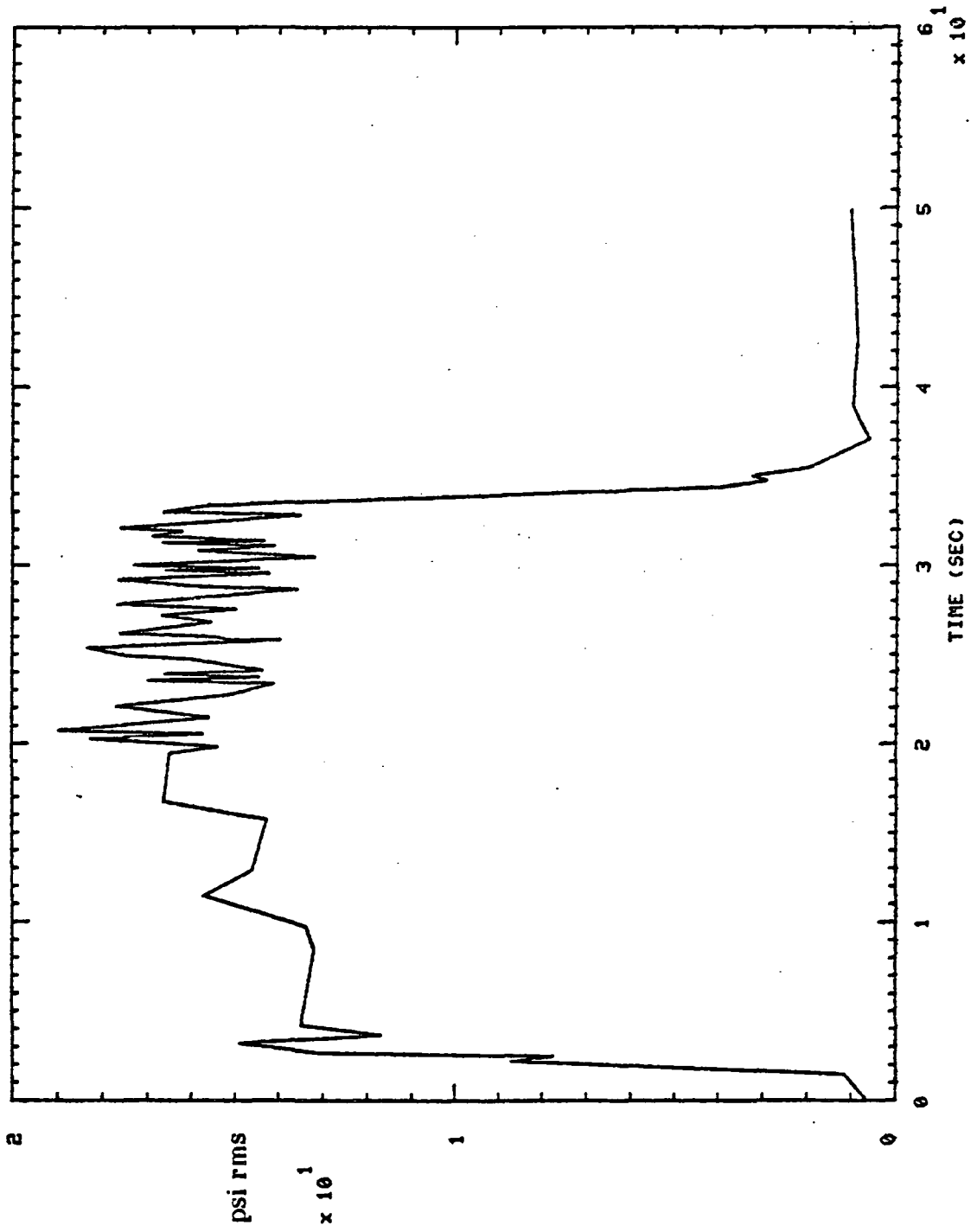


Percent of Rated Power
 $\times 10^2$

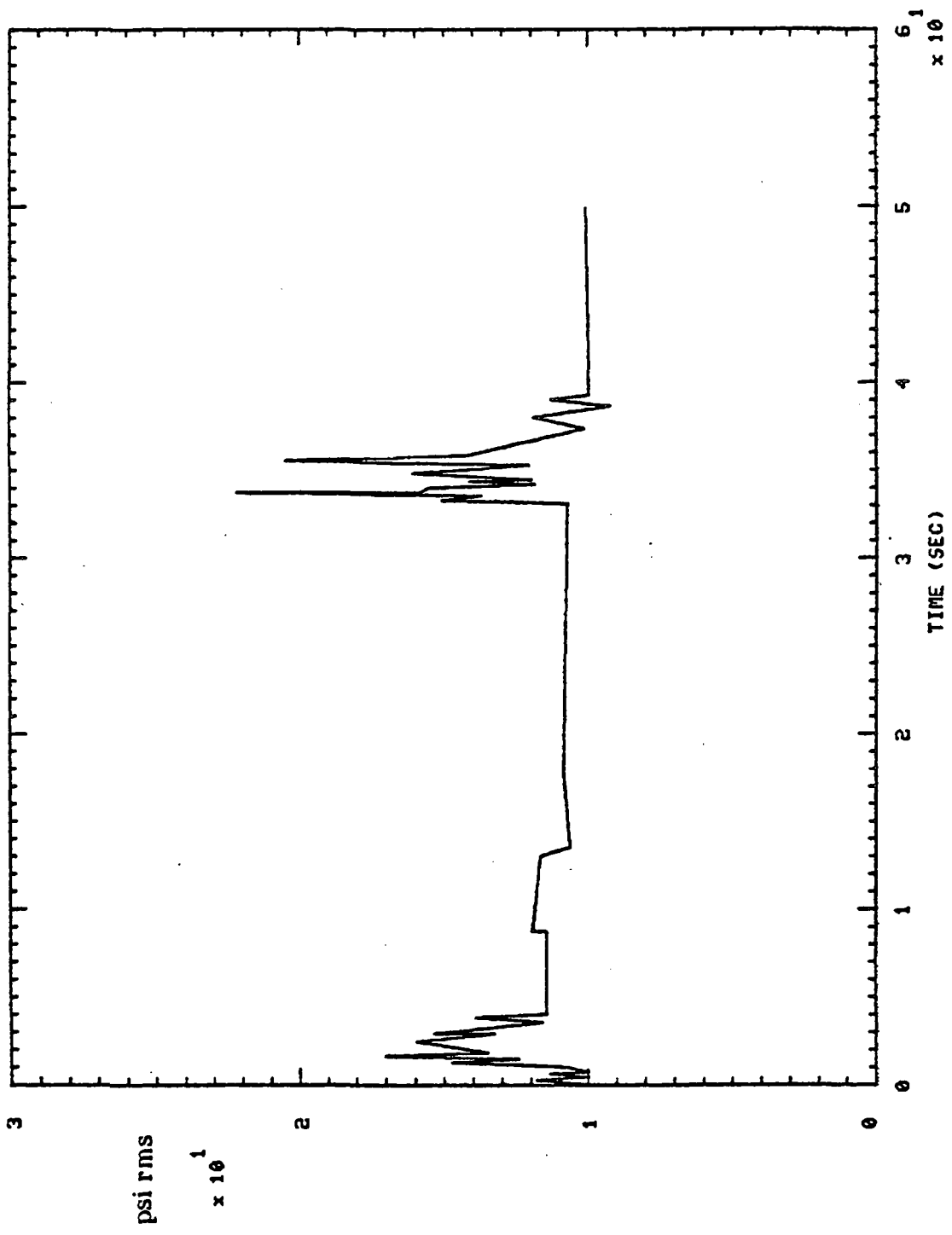
TIME (SEC)

$\times 10^1$

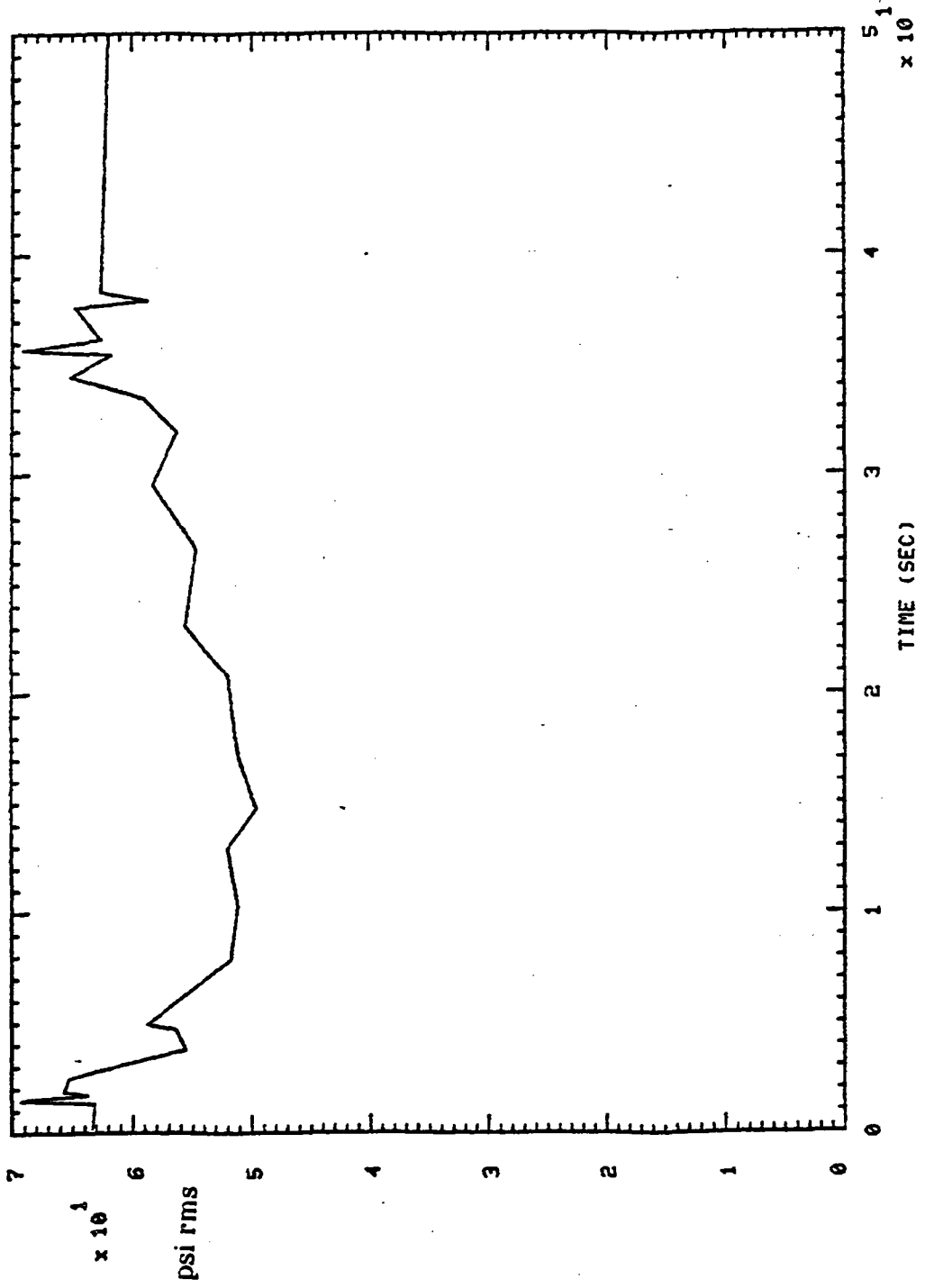
750103 LPFP IN PR (1 - 20K HZ)



750103 LPOP DS PR (1 - 20K HZ)



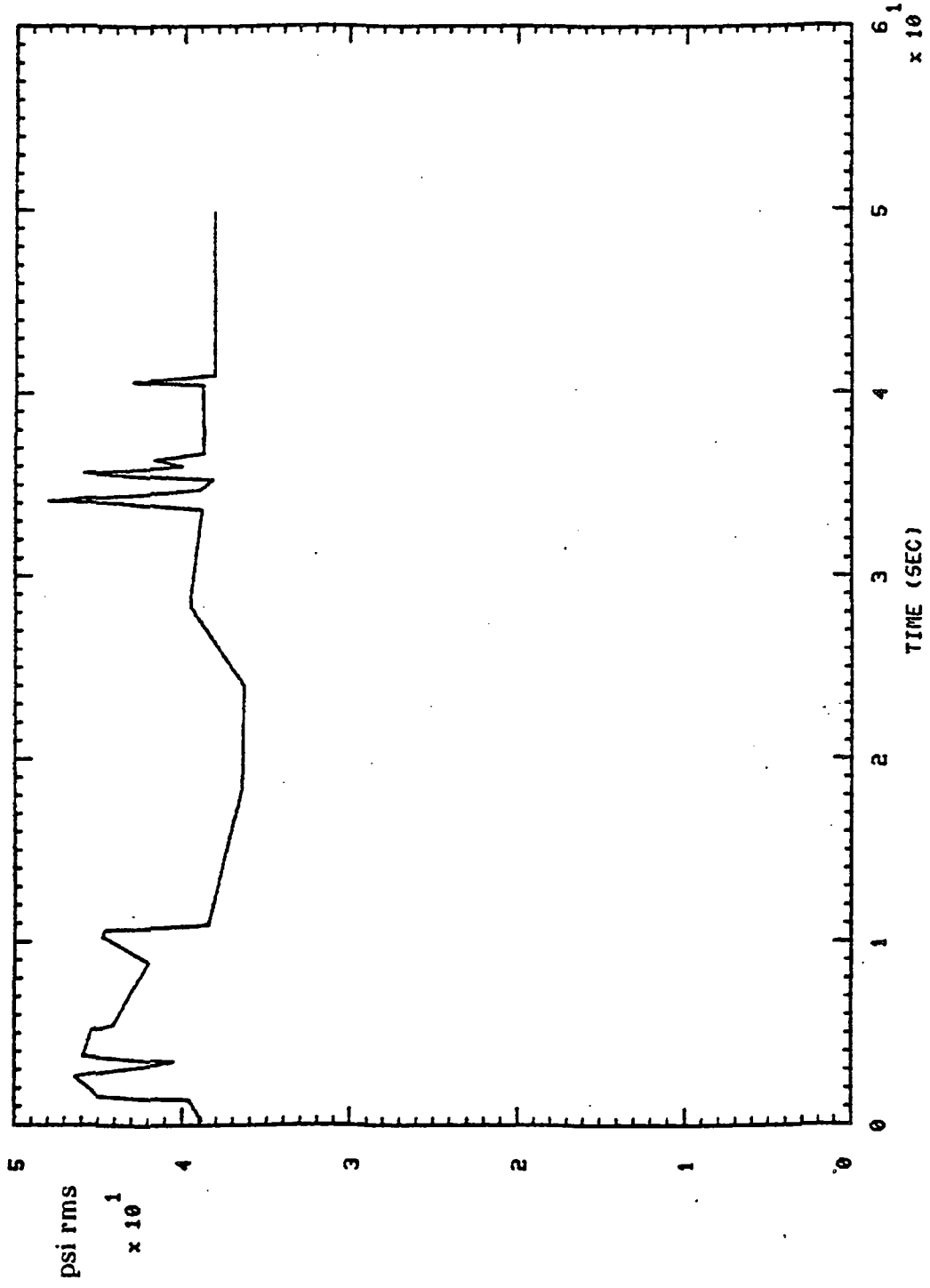
750103 HPOP BAL CAU PR2 (1 - 20K HZ)



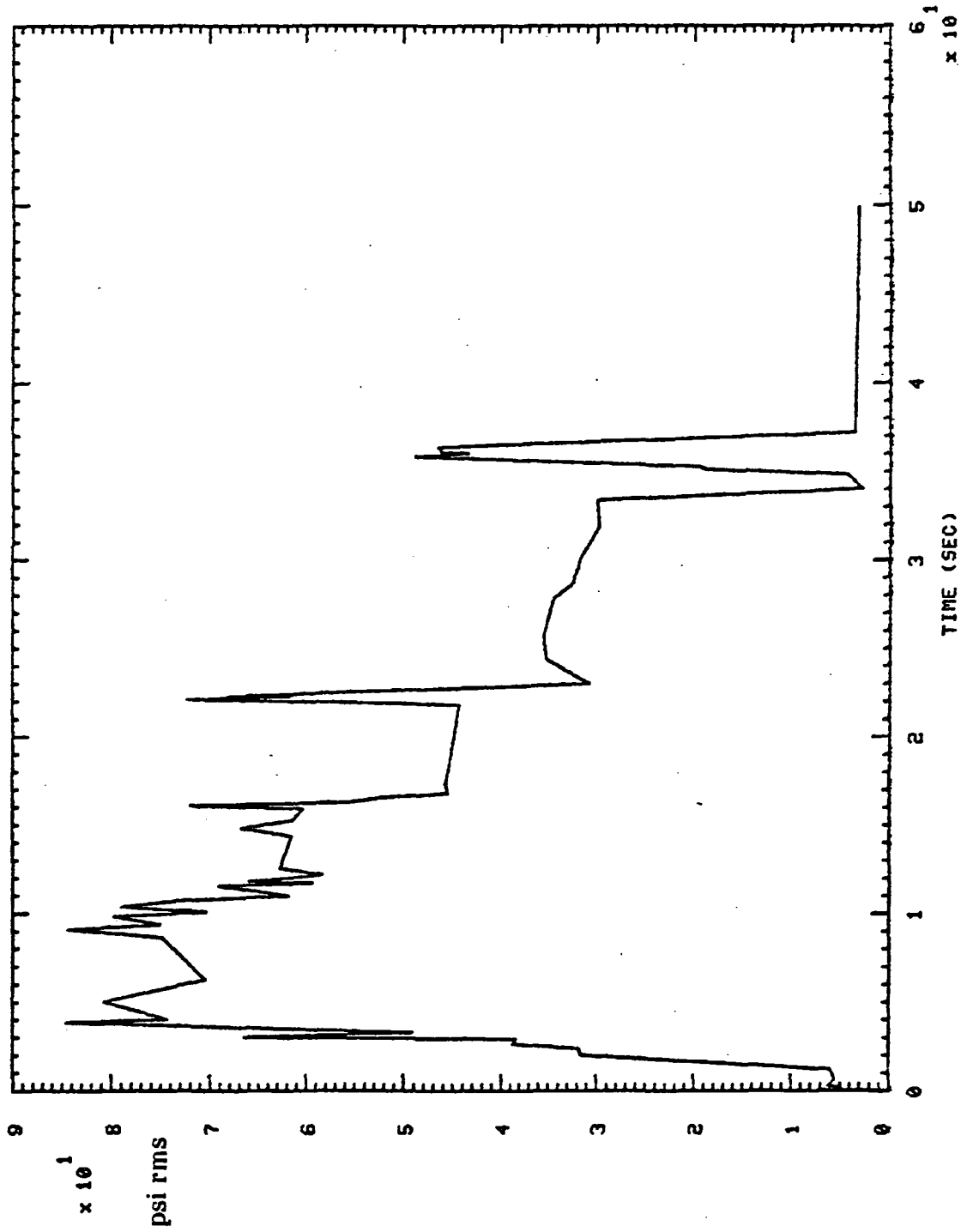
750103

HPOP BAL CAU PR1

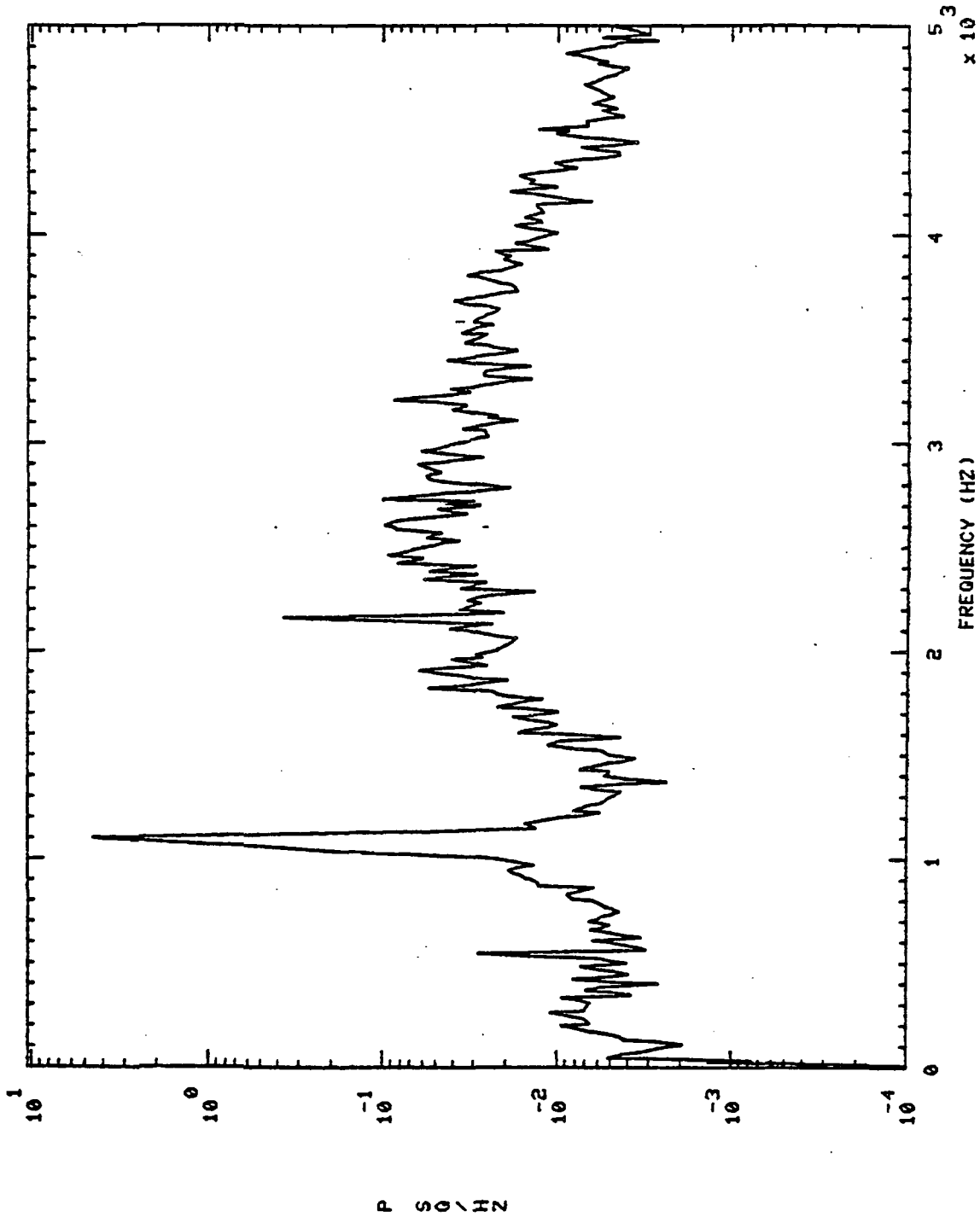
(1 - 20K HZ)



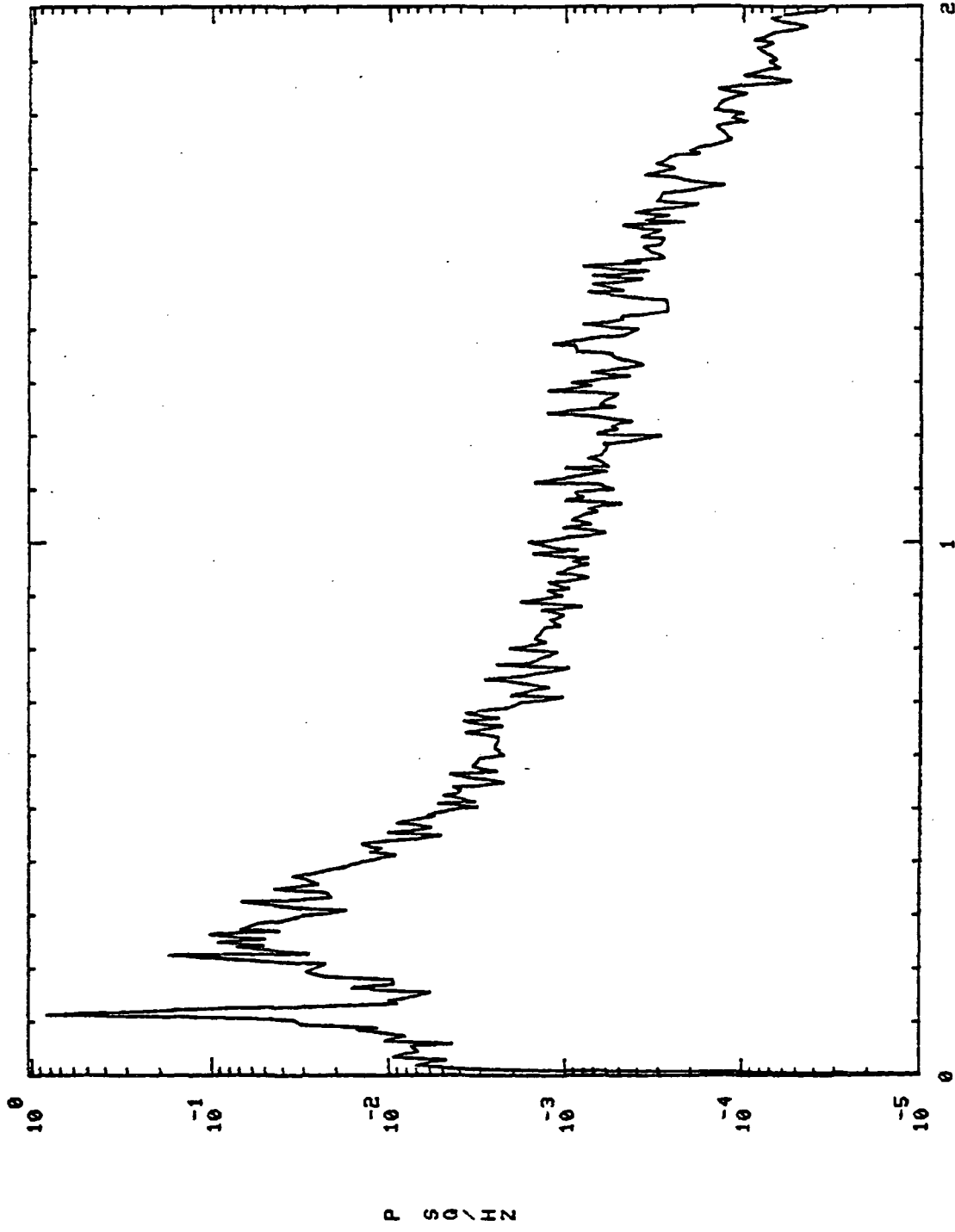
750103 HPOP DISC PR (1 - 20K HZ)



750103 LPPF IN PR S+ 5.050/HZ

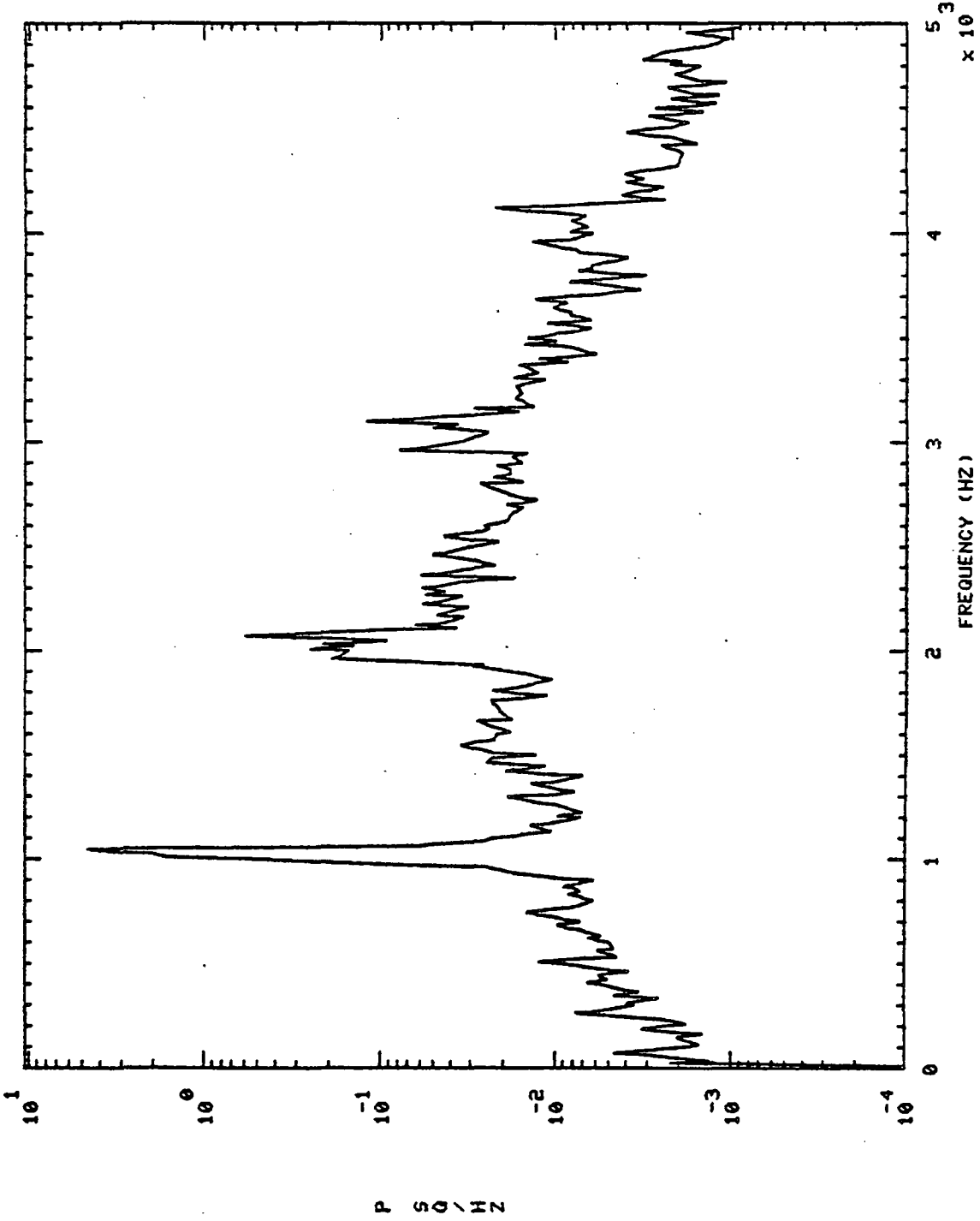


750103 LPFP IN PR S+ 5.0SQ/HZ

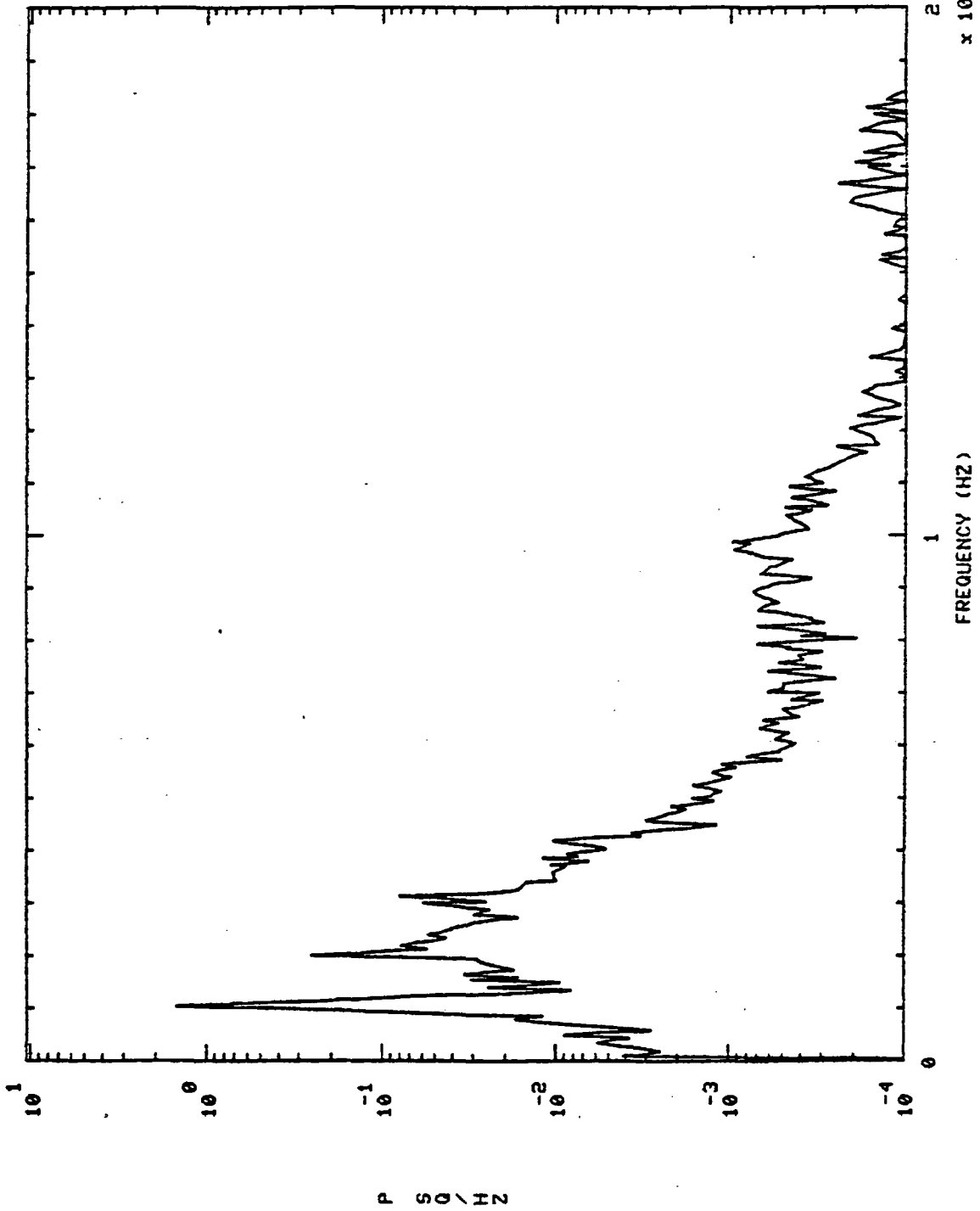


S+ 15.050/HZ

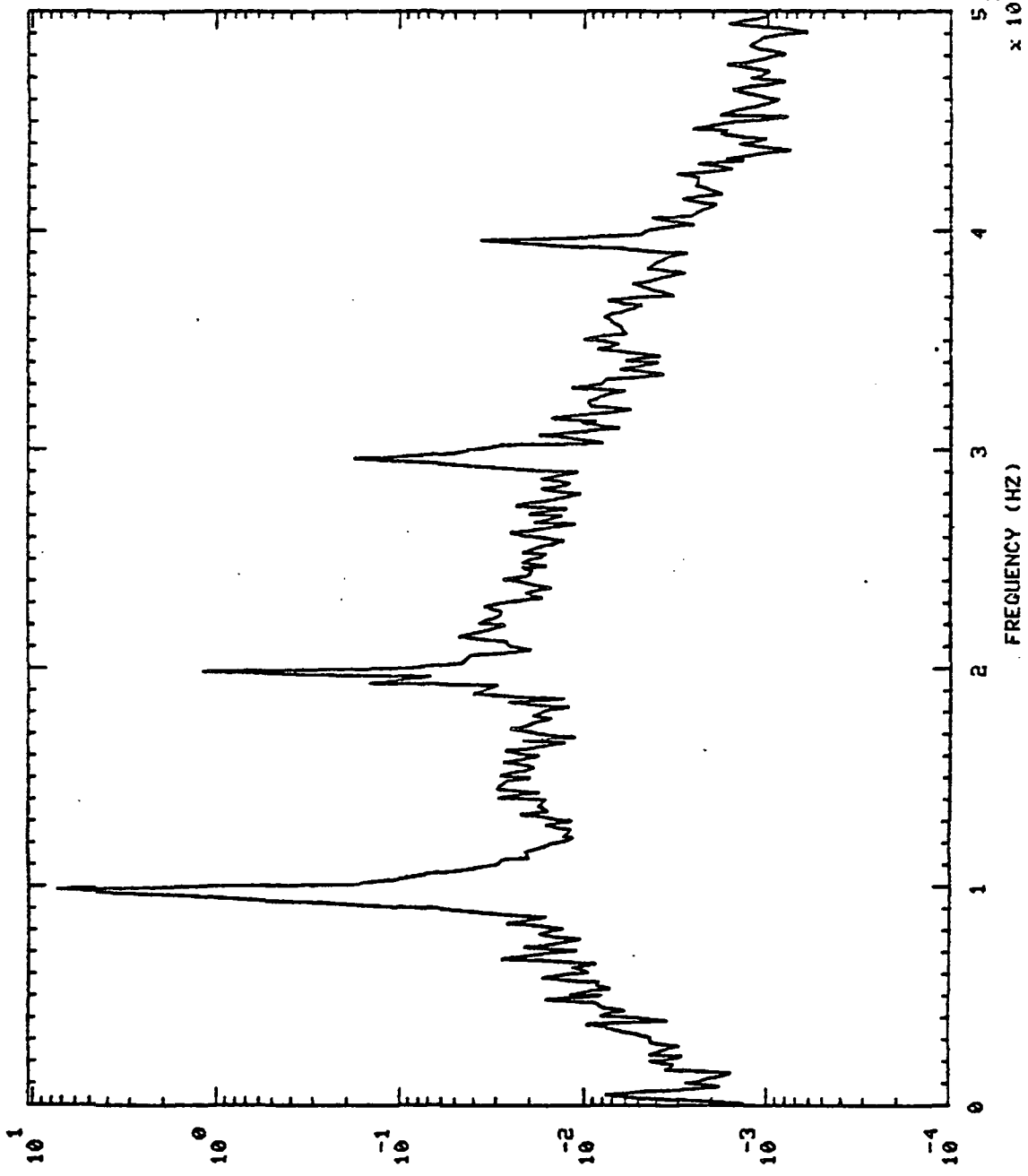
750103 LPFP IN PR



750103 LPFP IN PR S+ 15.050/HZ

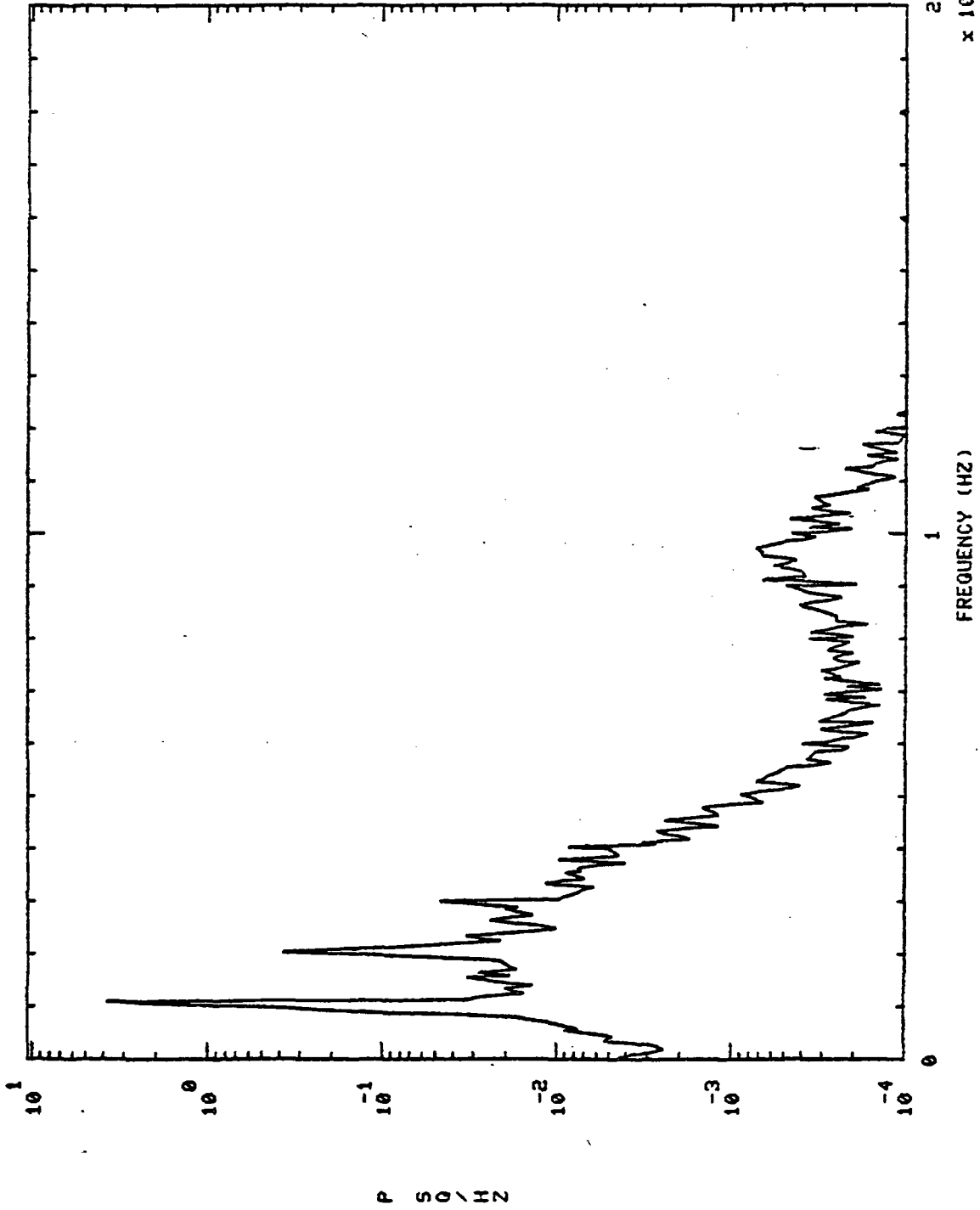


750103 LPFP IN PR S+ 20.050/HZ

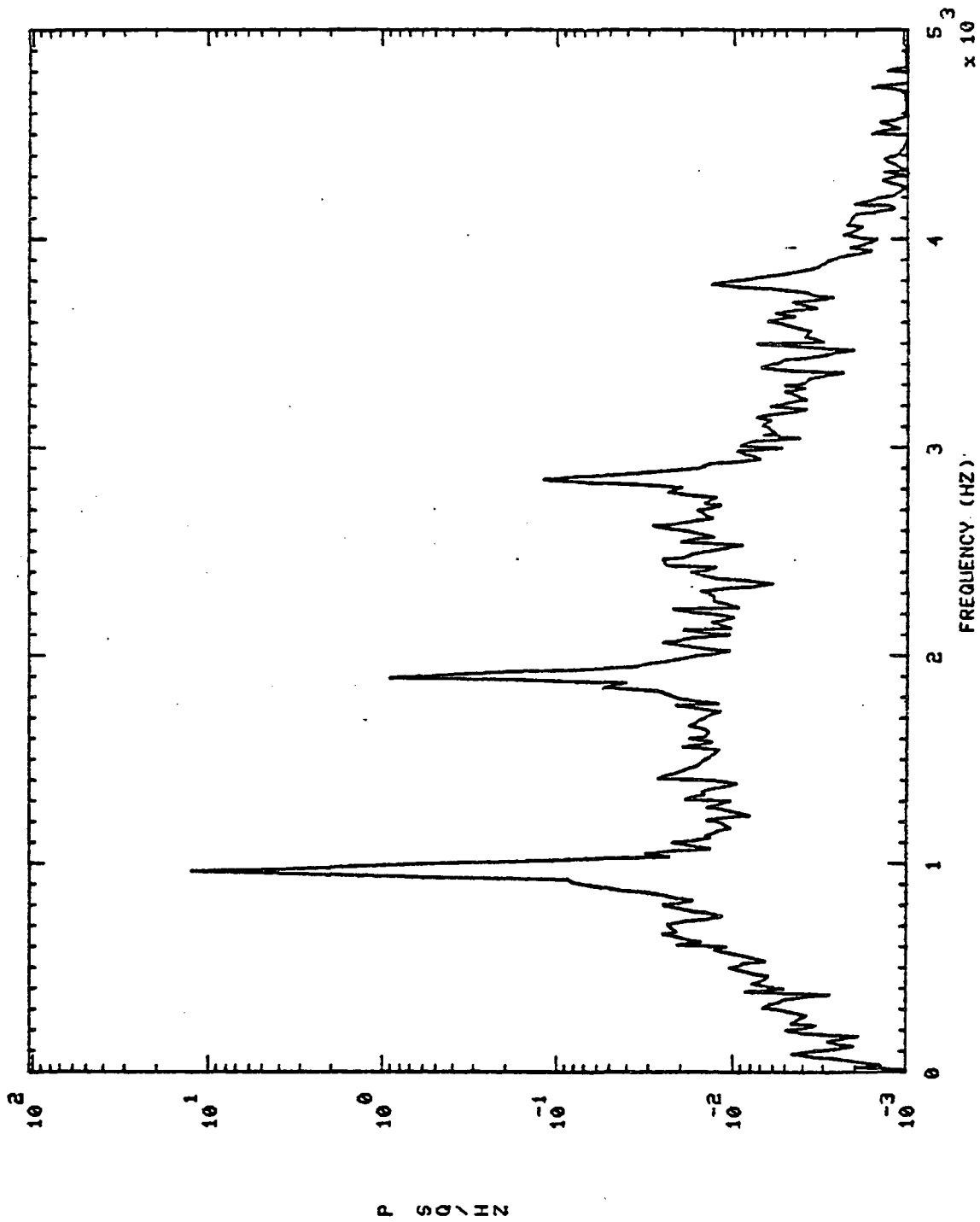


P S D / H Z

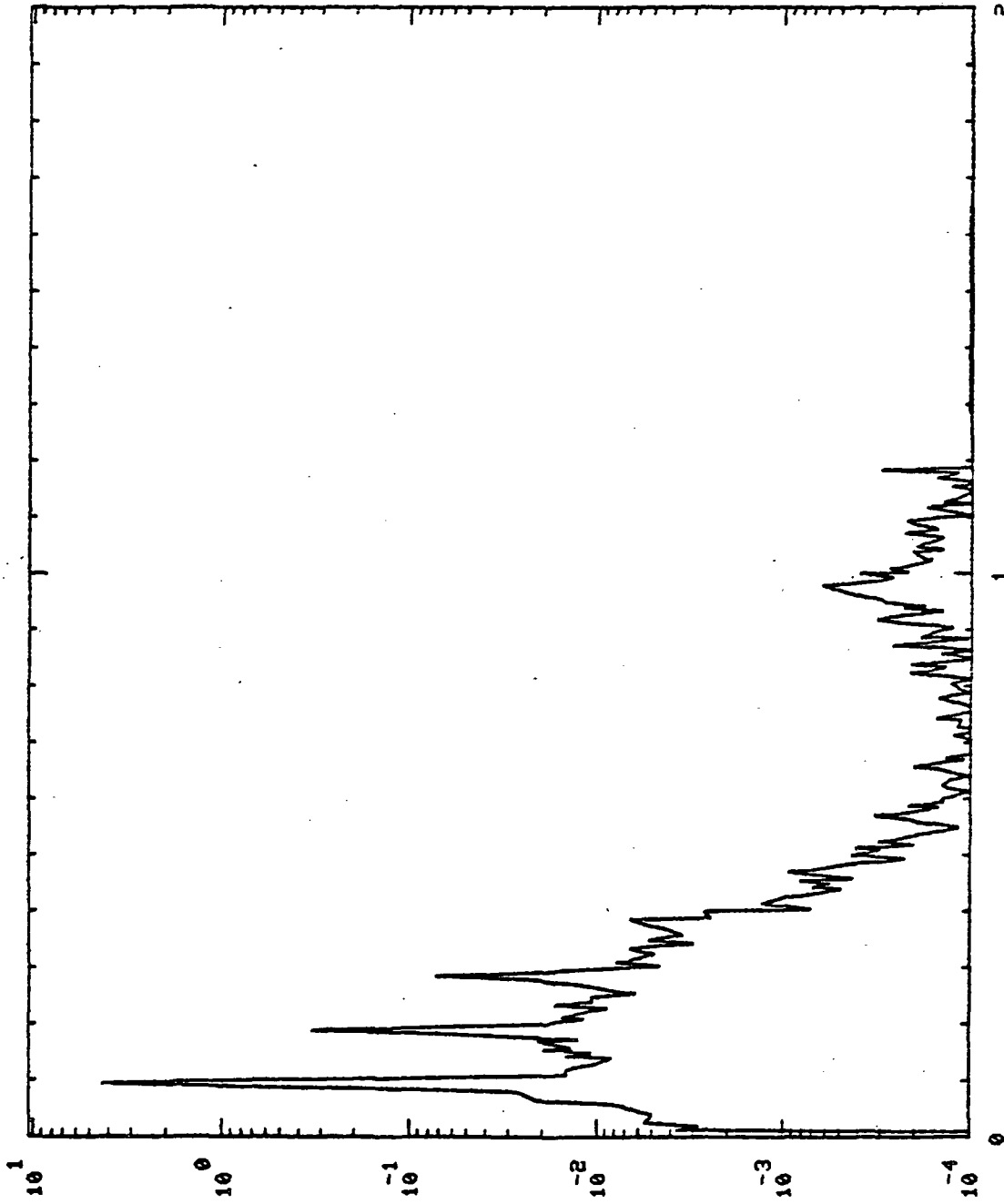
750103 LPFP IN PR S+ 20.050/HZ



750103 LPFP IN PR S+ 26.050/HZ



750103 LPFP IN PR S+ 26.0SQ/HZ



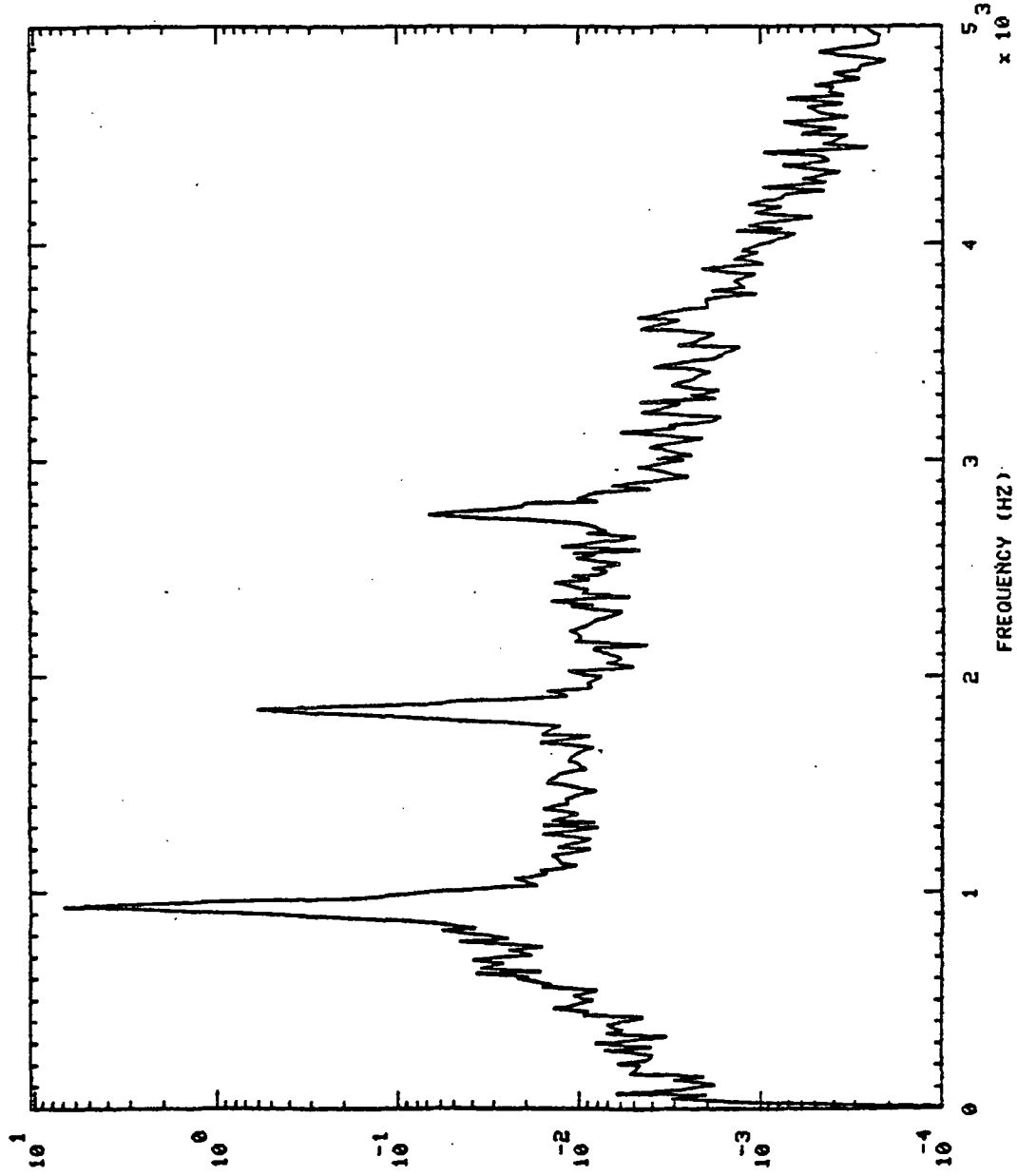
P SQ/HZ

2.4
 $\times 10^4$

FREQUENCY (HZ)

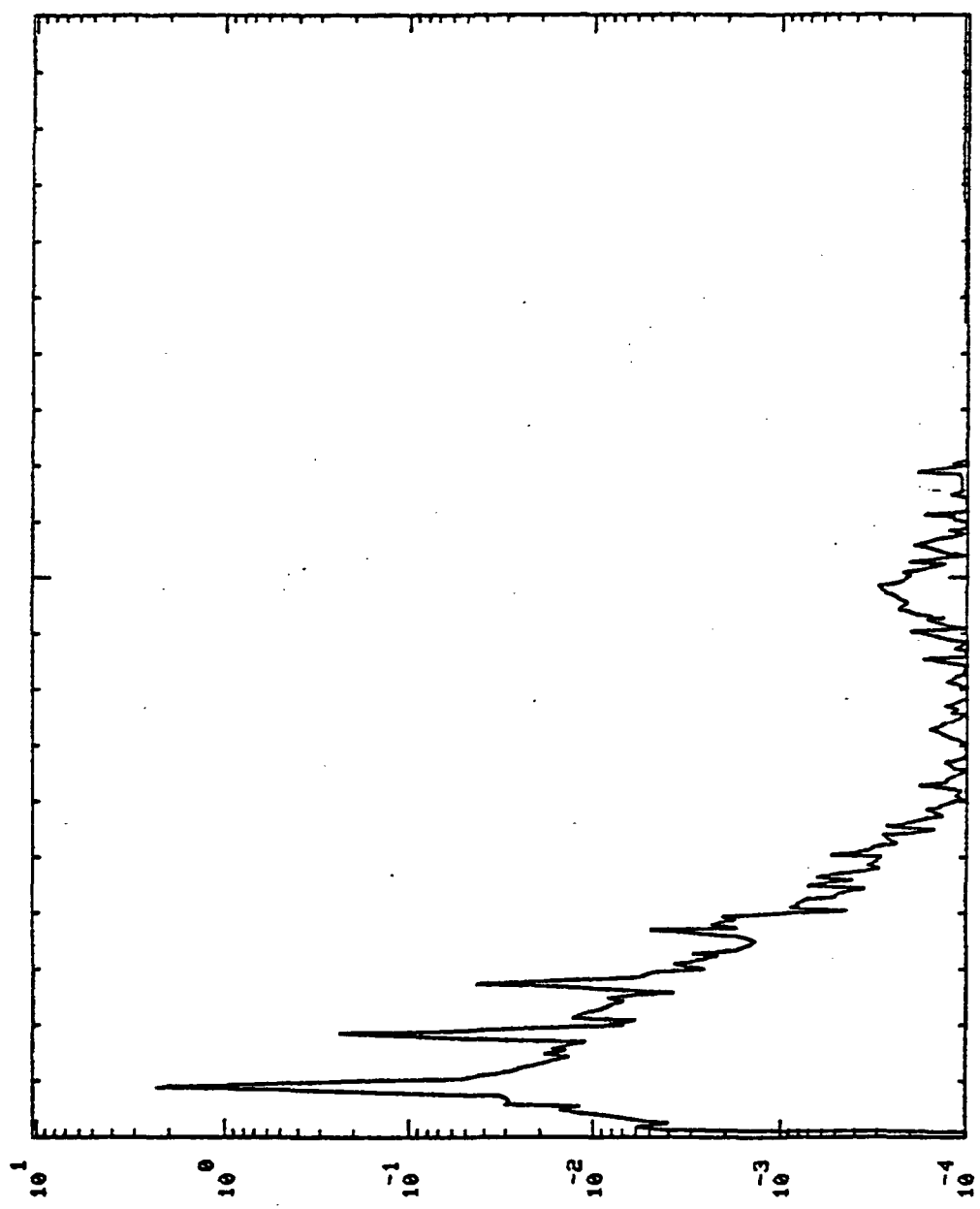
S+ 30.050/HZ

750103 LFPF IN PR



P SQ/HZ

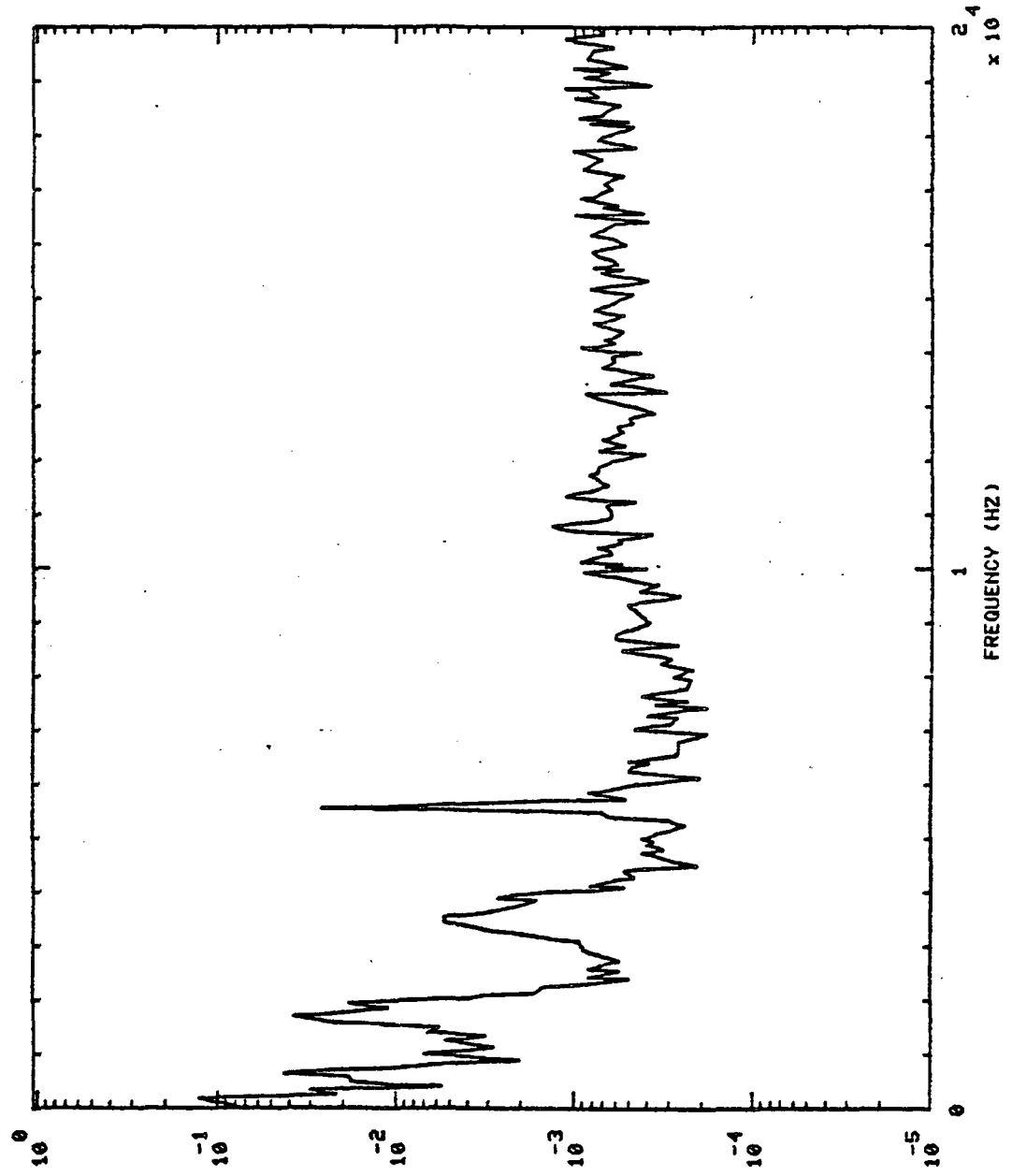
750103 LPFP IN PR S+ 30.950/HZ



P SQ/HZ

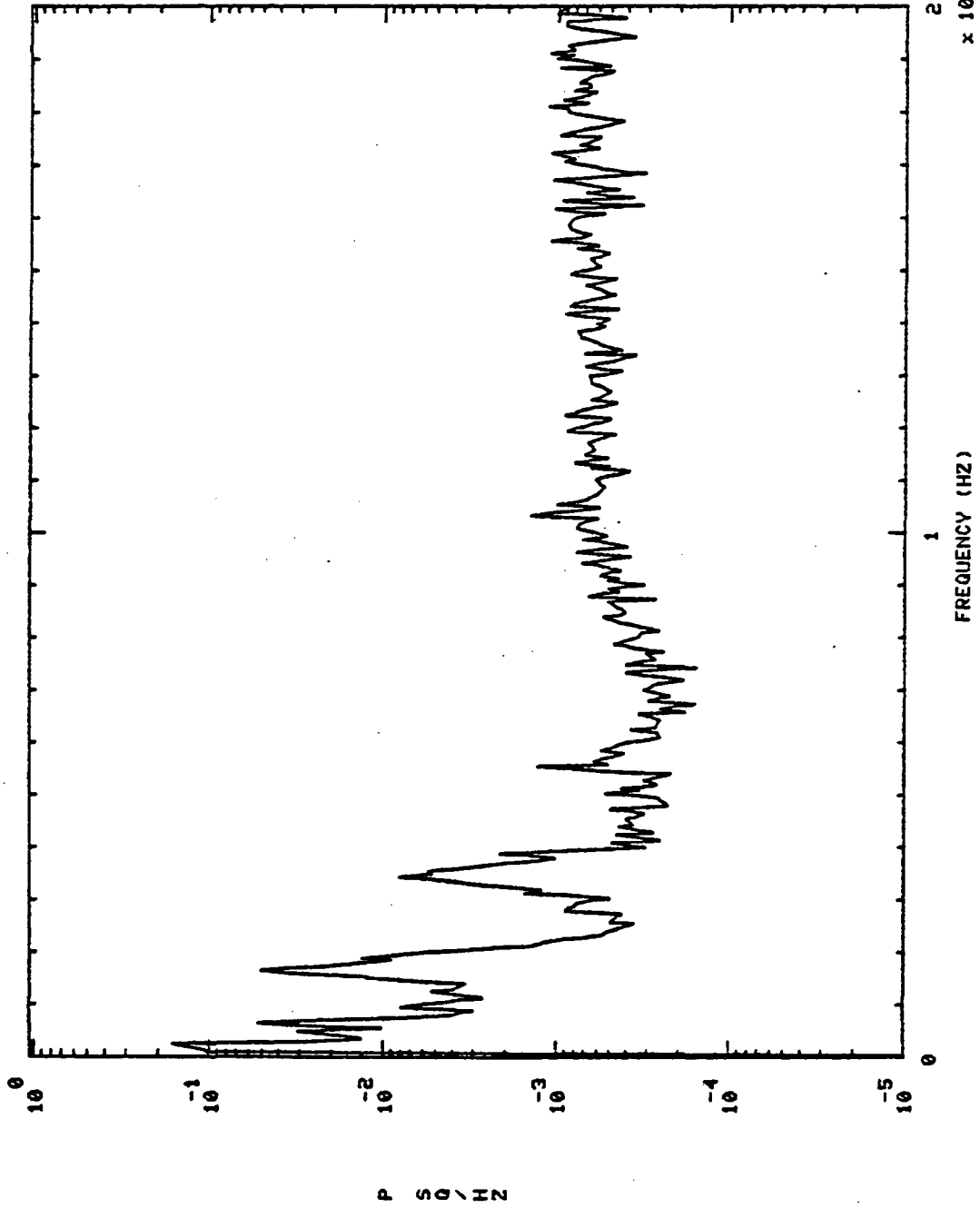
FREQUENCY (HZ) $\times 10^4$

750103 LPOP DS PR S+ 5.050/HZ

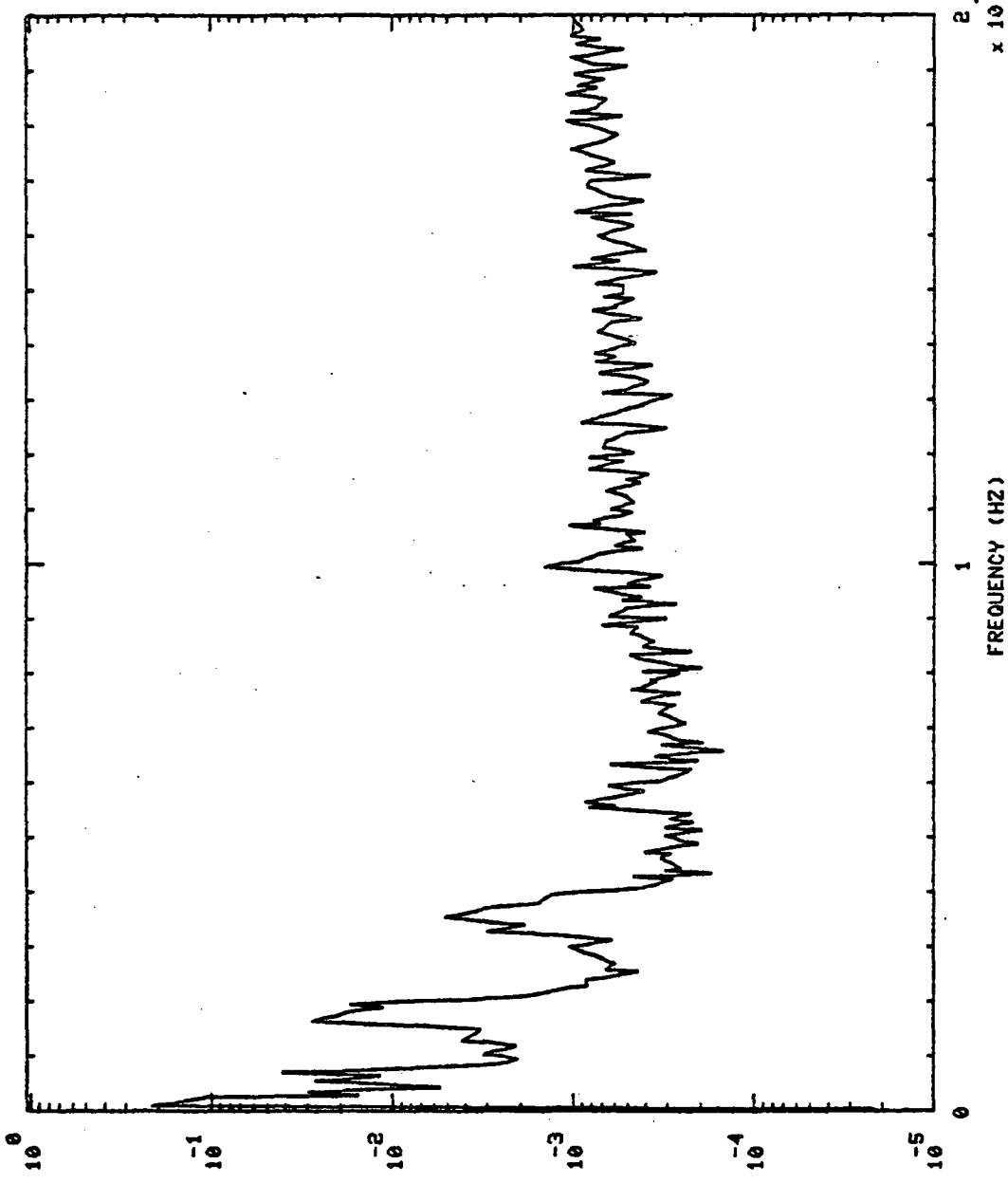


P SQ/HZ

750103 LPOP DS PR S+ 15.050/HZ



750103 LPOP D5 PR S+ 20.050/HZ



P S D N

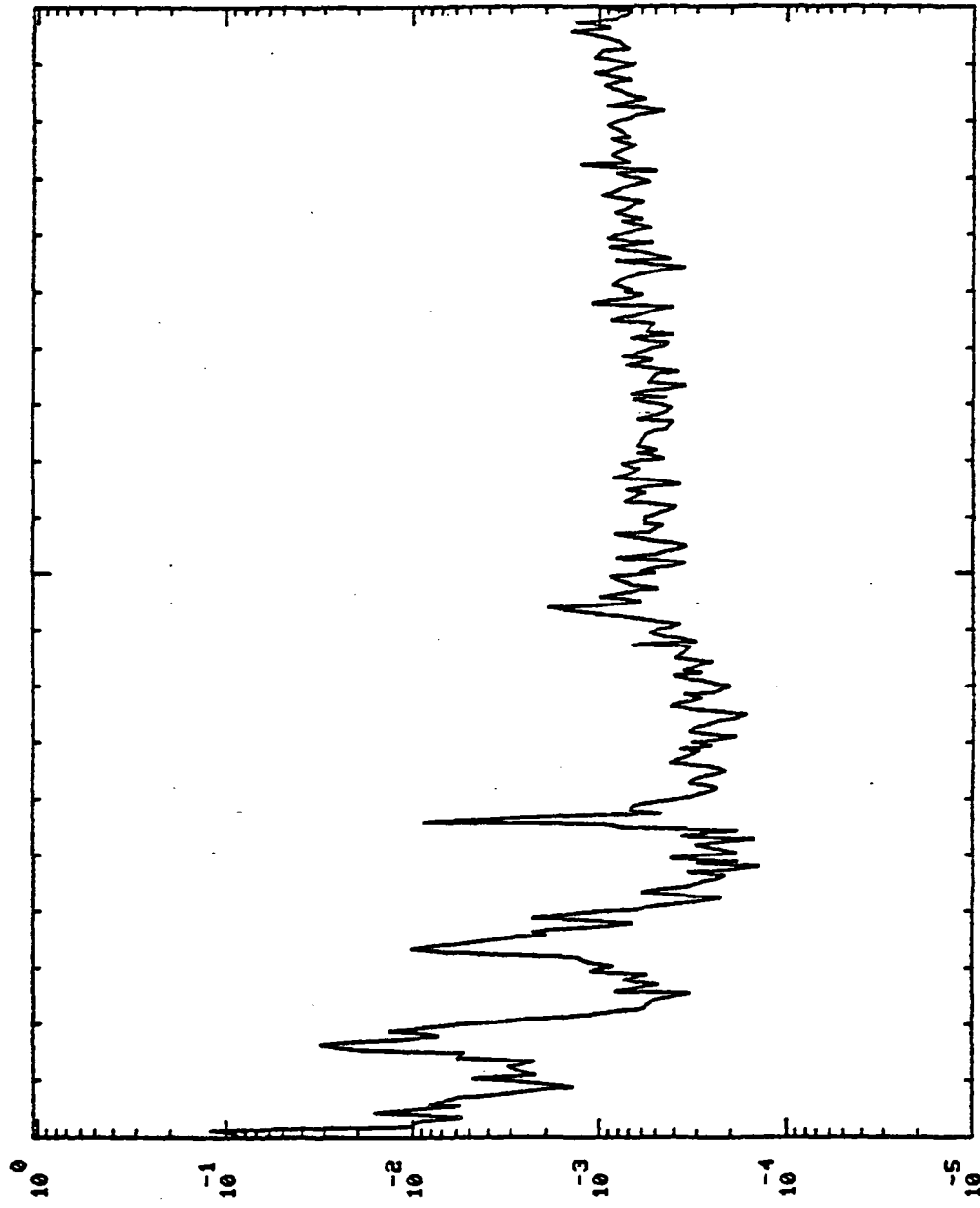
750103 LP0P D5 PR S+ 26.050/HZ

750103 LP0P D5 PR

750103

LP0P D5 PR

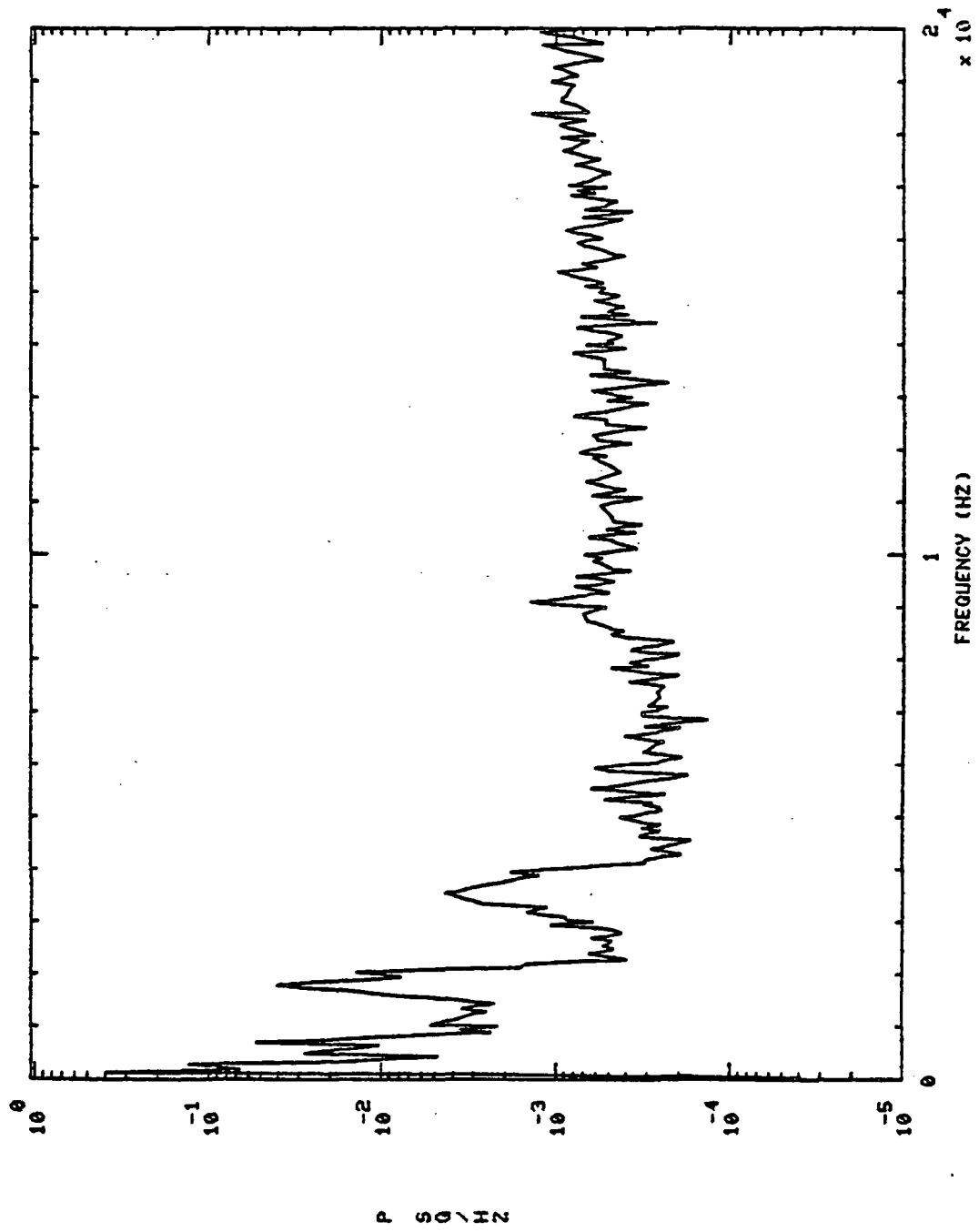
S+ 26.050/HZ



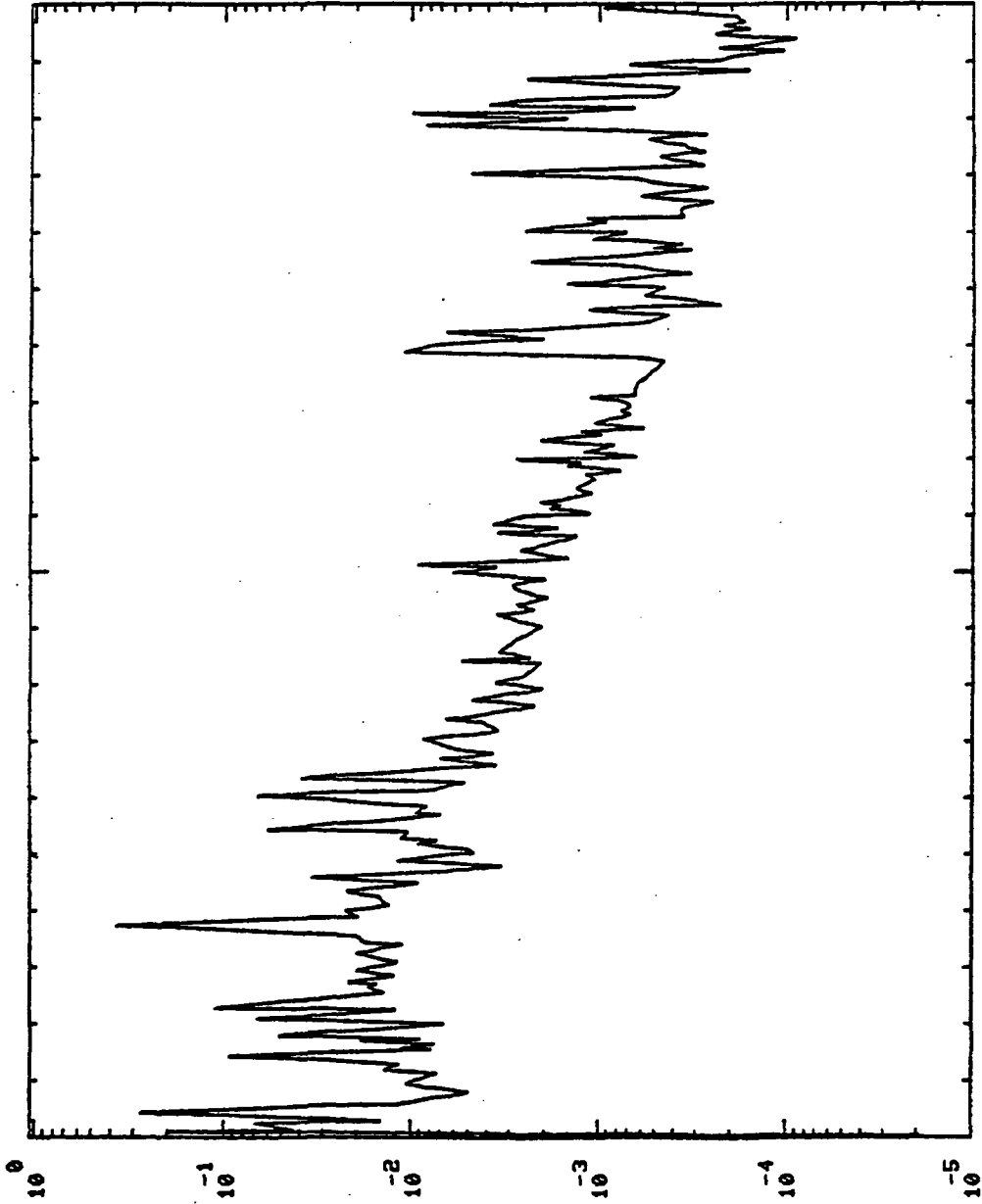
P SQ/HZ

FREQUENCY (HZ) x 10⁴

750103 LPOP DS PR S+ 30.050/HZ



750103 HPOP BAL CAU PR2 S+ 5.050/HZ

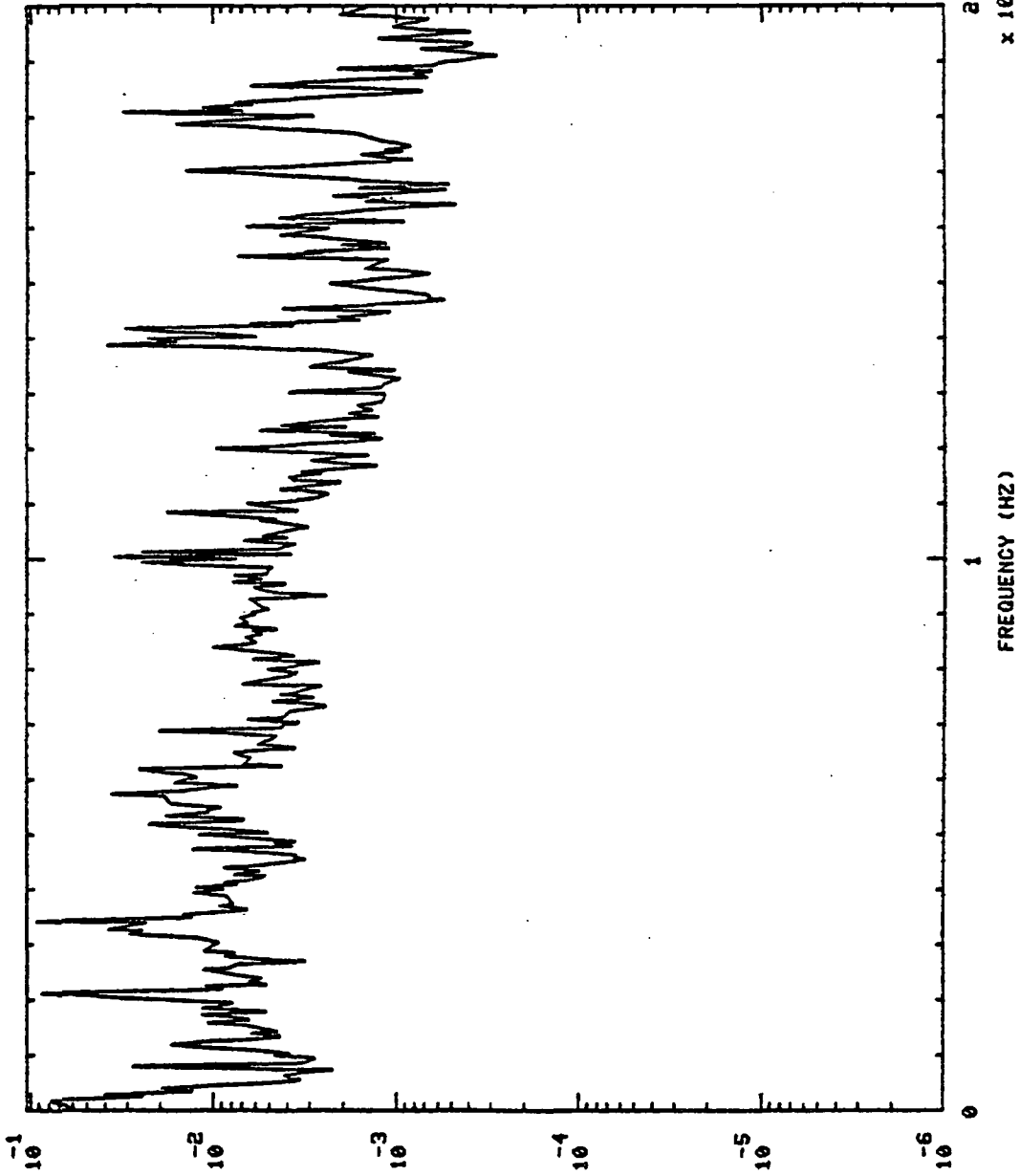


P S D / H Z

FREQUENCY (HZ)

x 10⁴

750103 MPOP BAL CAU PRZ S+ 15.01H0,'S

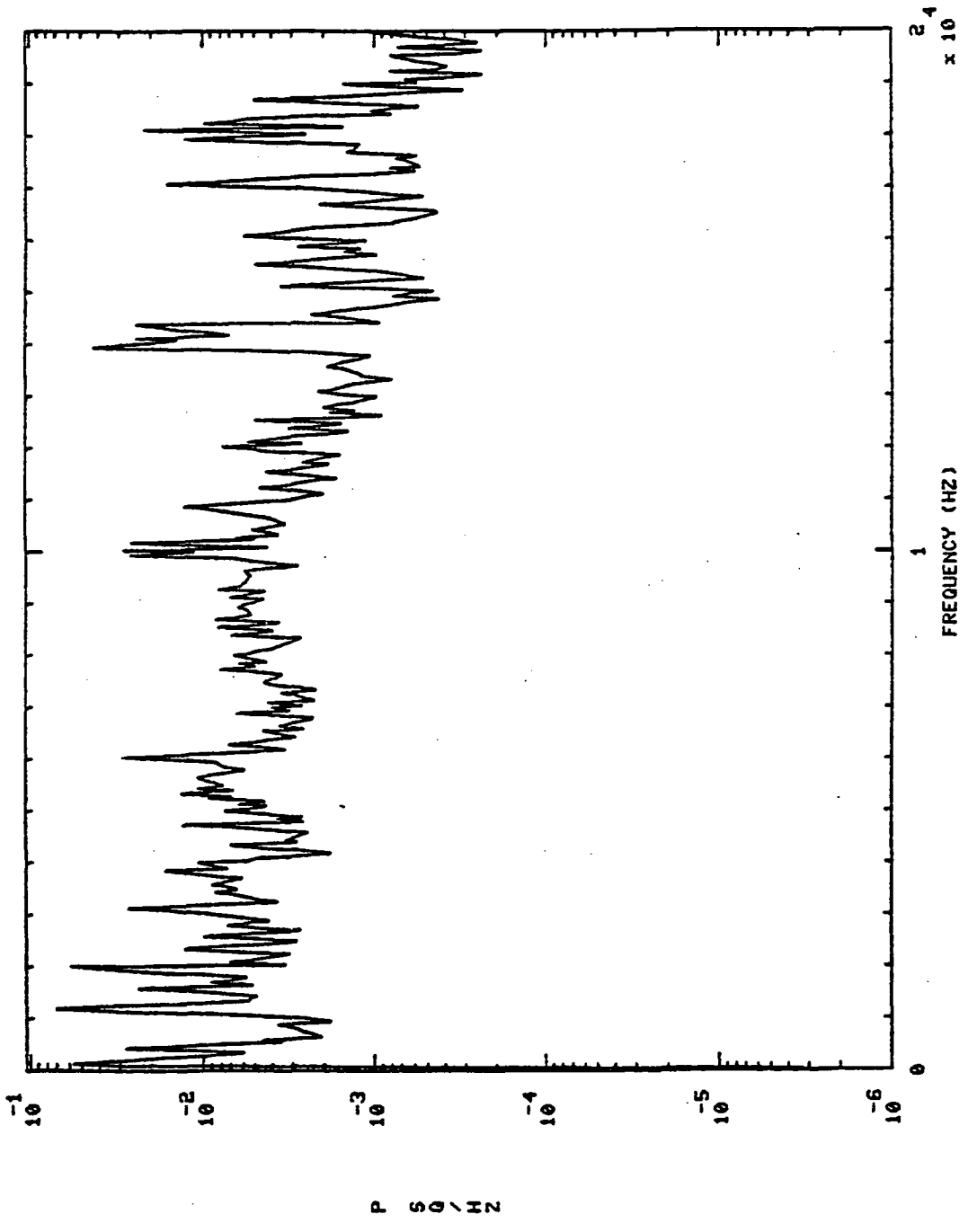


P S / HZ

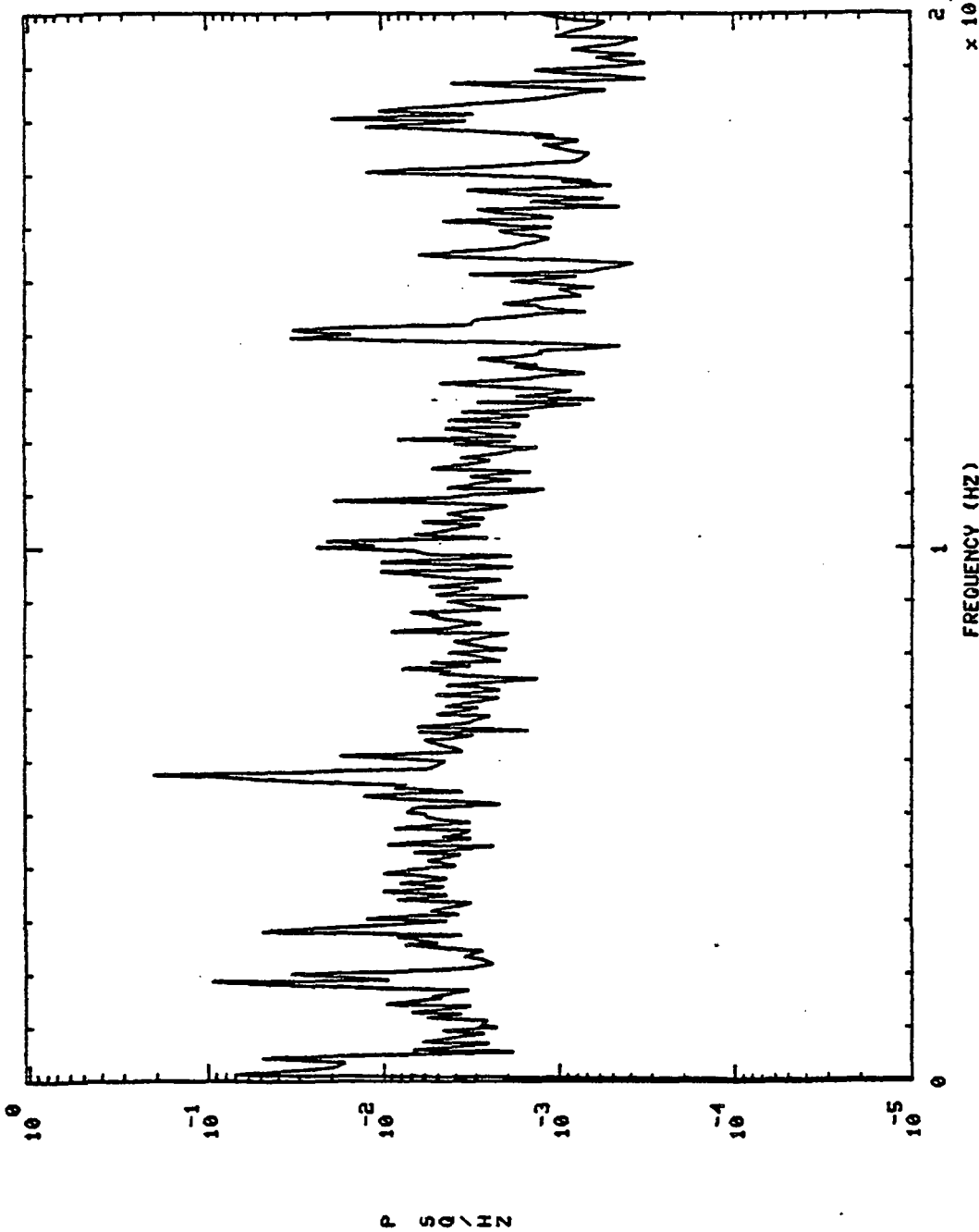
24
x 10⁴

1
FREQUENCY (HZ)

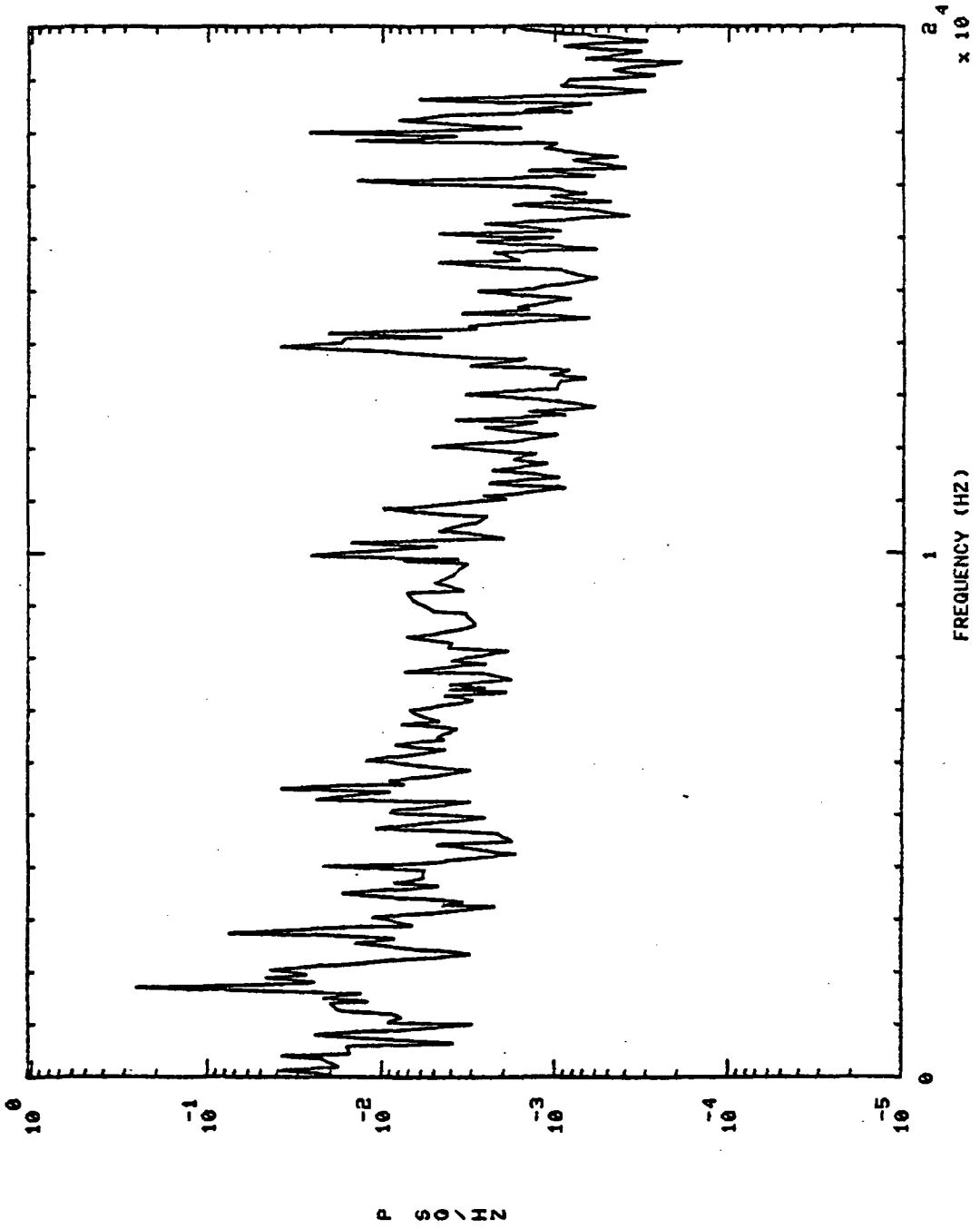
750103 HPOP BAL CAU PRE S+ 20.050/HZ



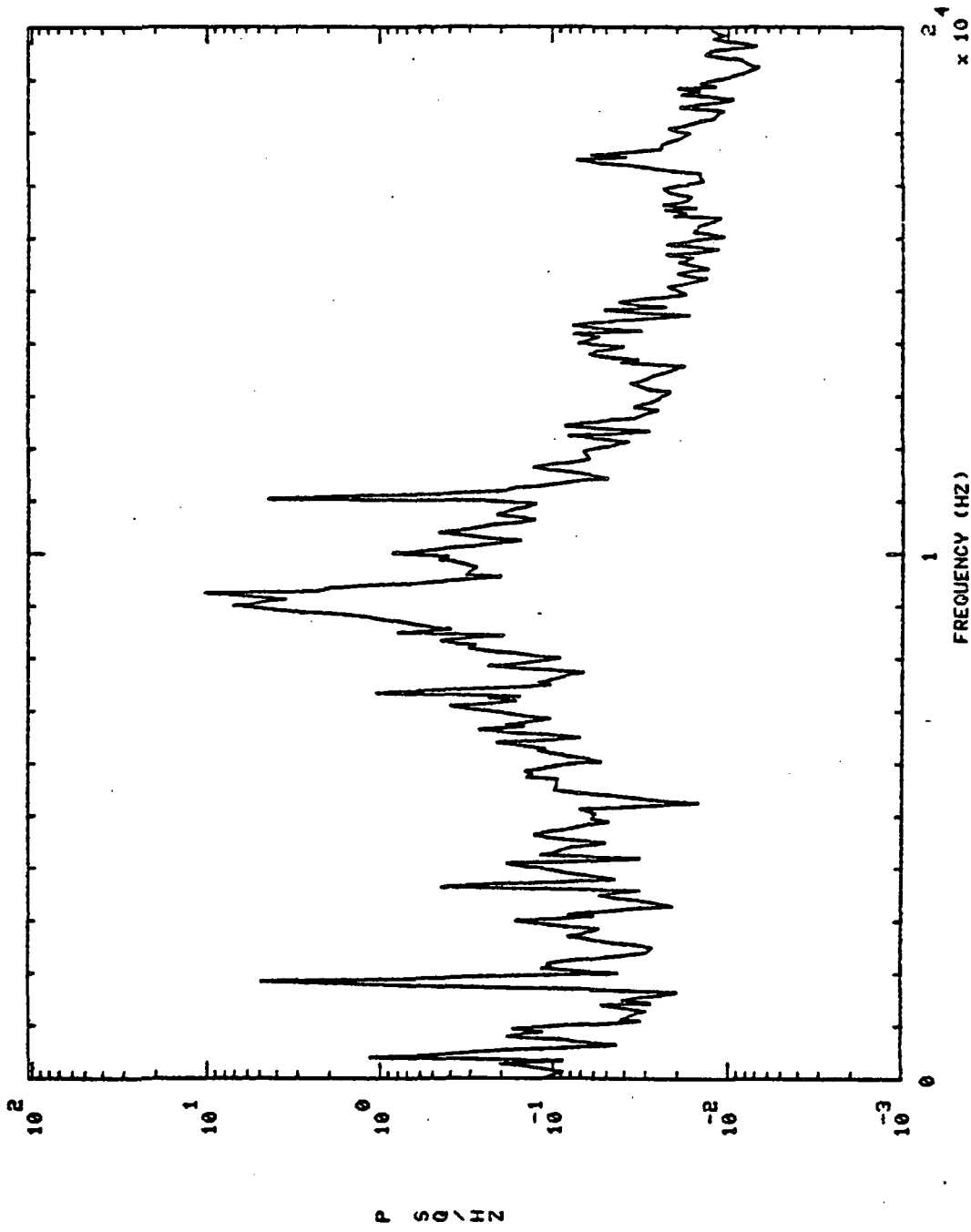
750103 HPOP BAL CAU PR2 S+ 26.050/HZ



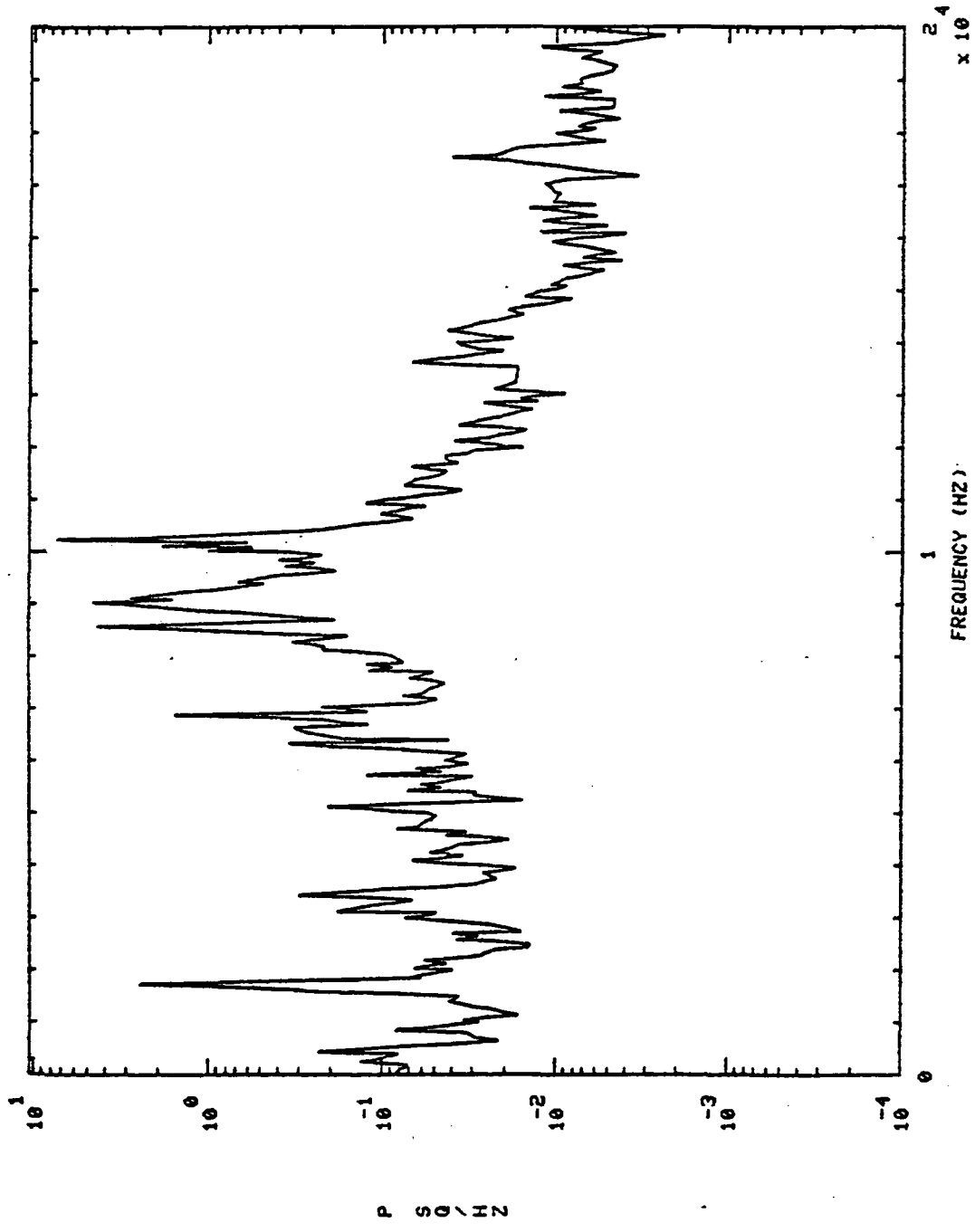
750103 HPOP BAL CAU PR2 S+ 30.050/HZ



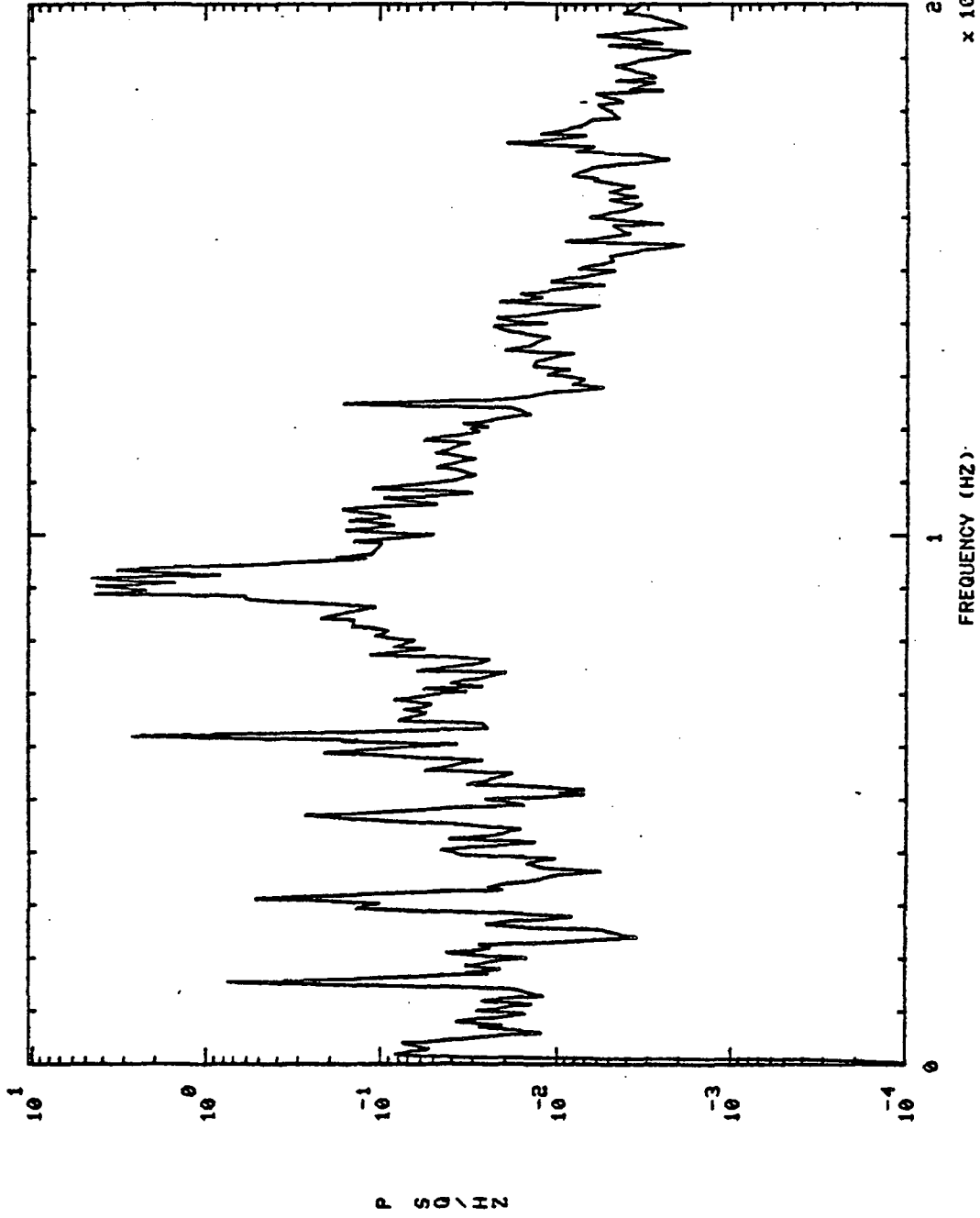
750103 HPOP DISC PR : S+ 5.050/HZ



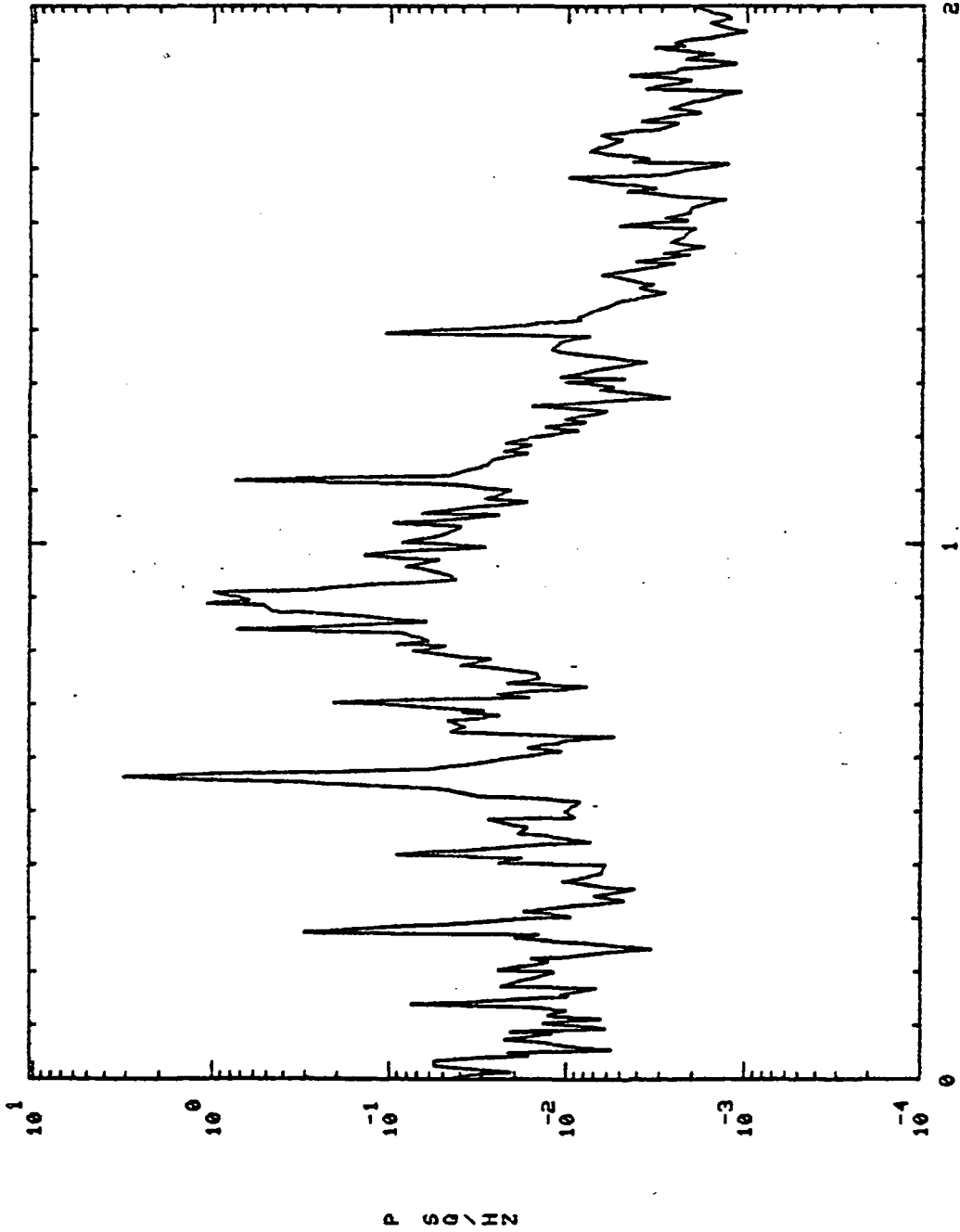
750103 HPOP DISC PR S+ 15.0SQ/HZ



750103 HPOP DISC PR S+ 20.050/HZ



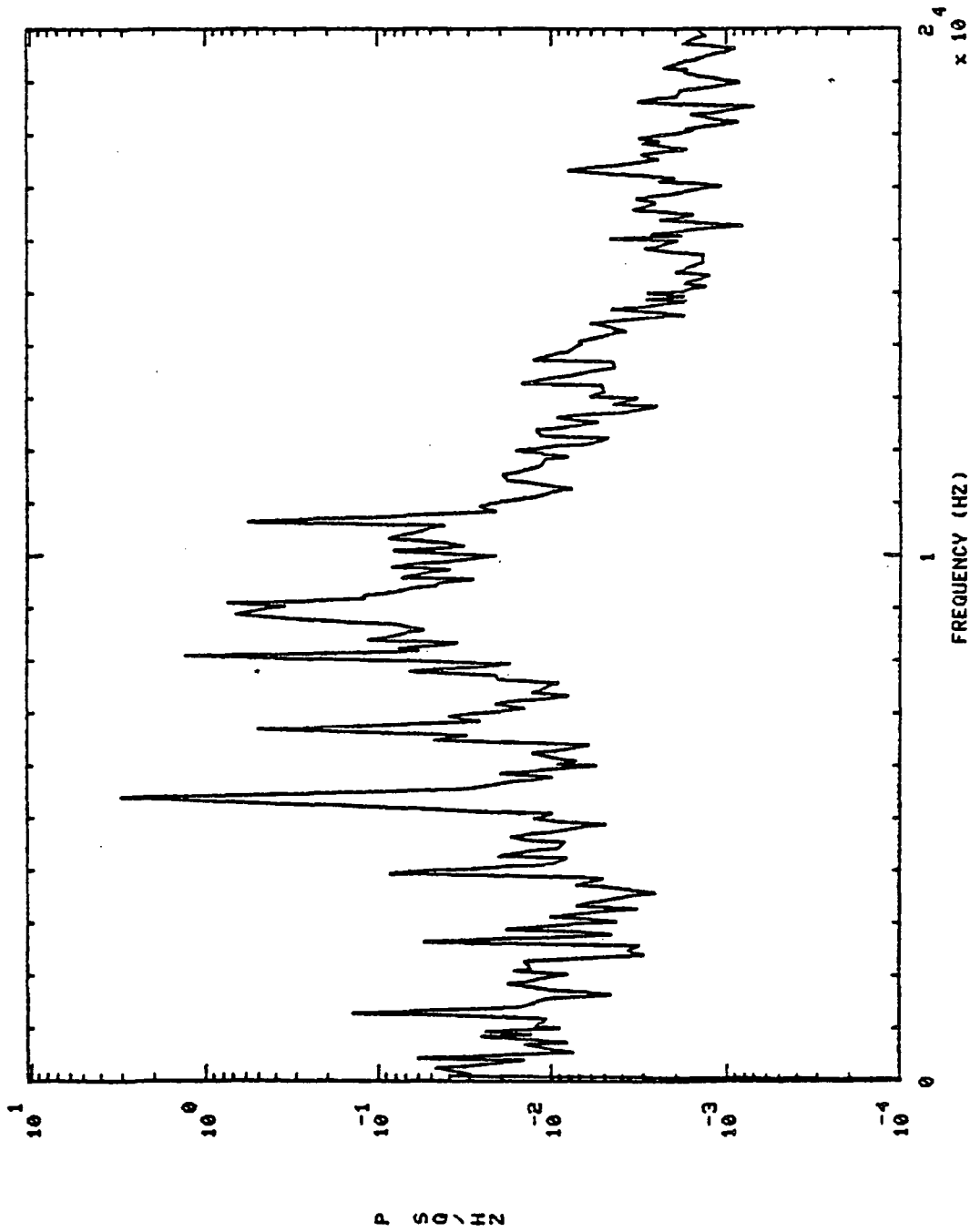
750103 HPOP DISC PR S+ 26.050/HZ



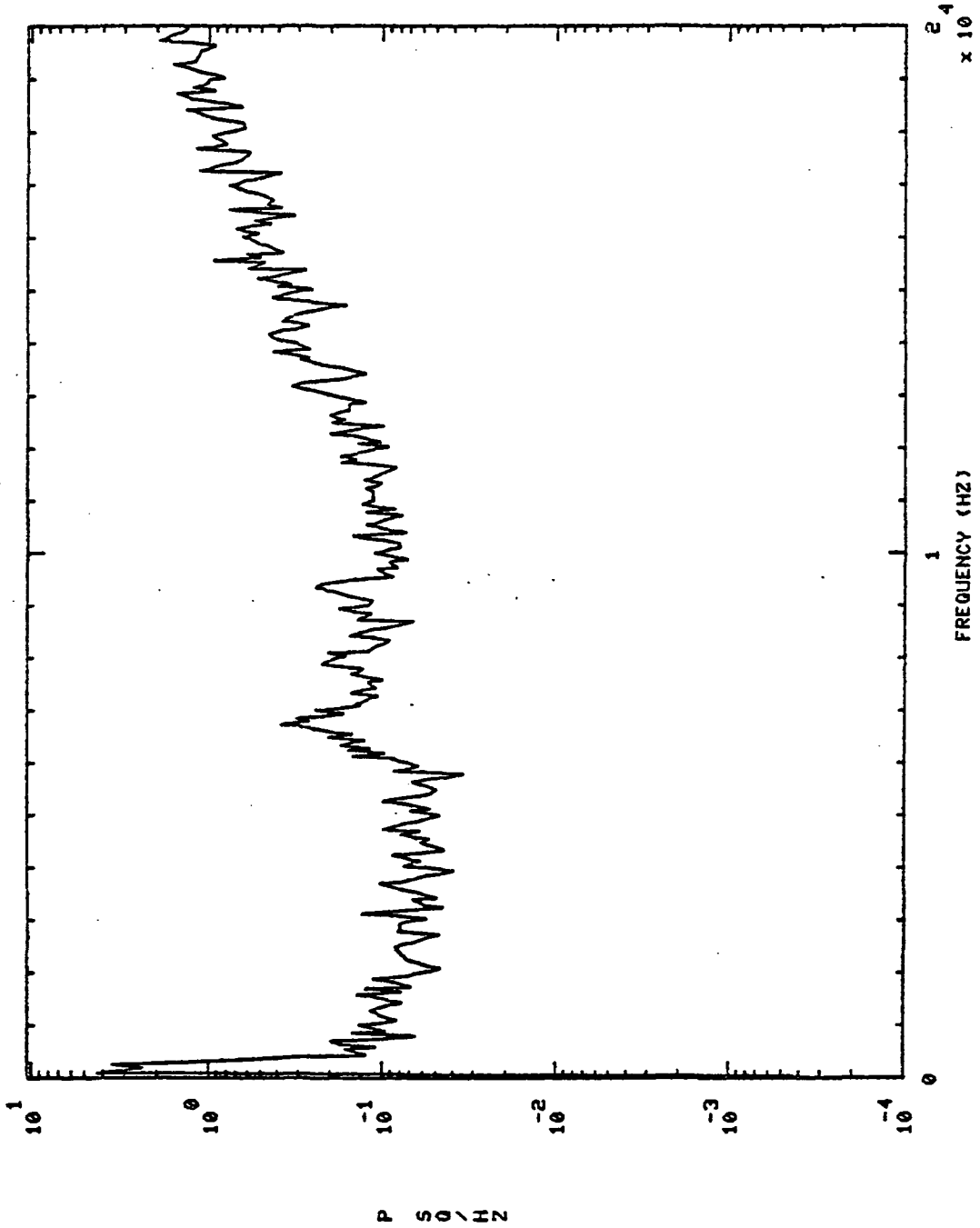
S+ 30.050/HZ

HPOP DISC PR

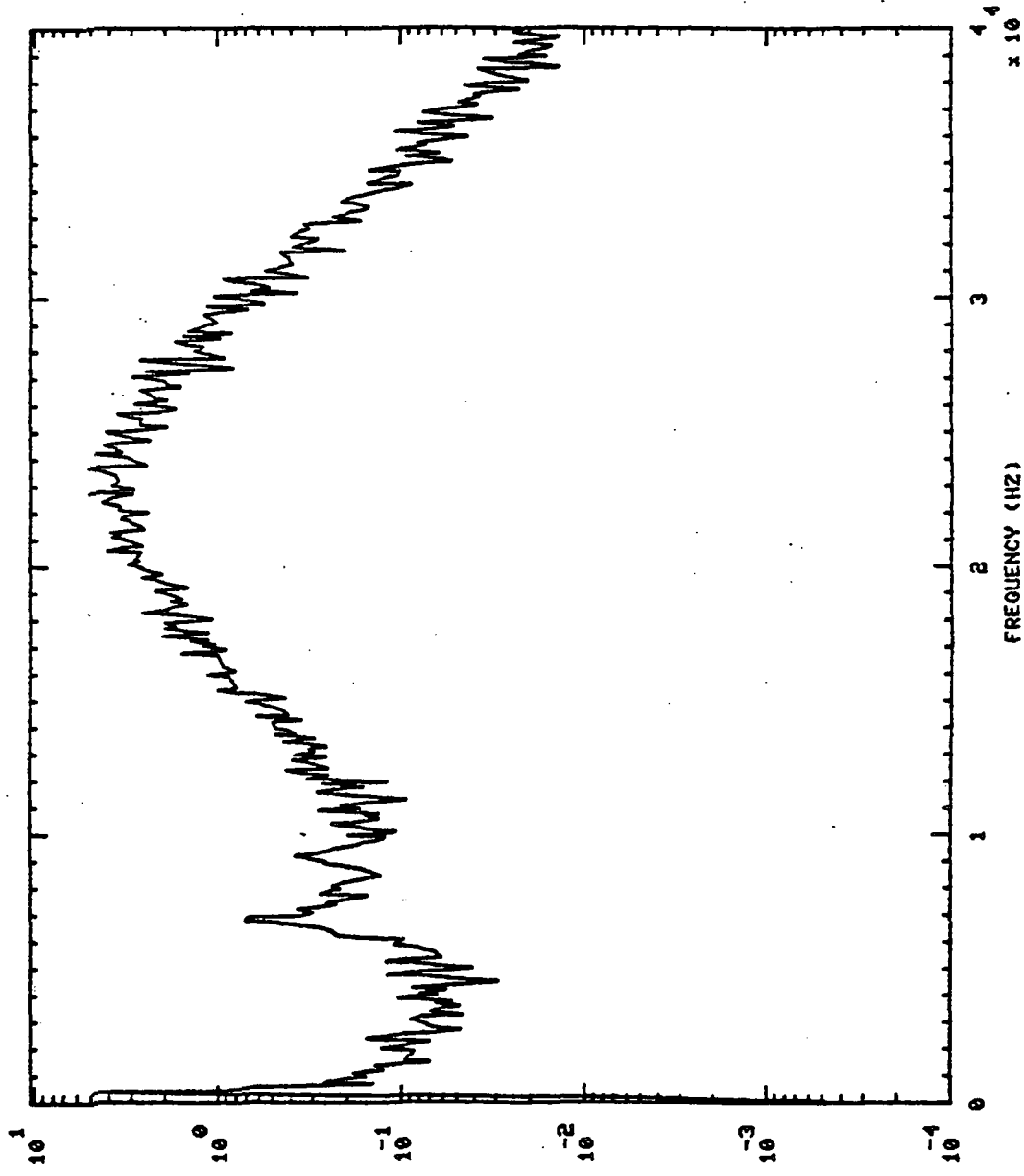
750103



750103 MCC HOT GAS IN PR S+ 5.050/HZ

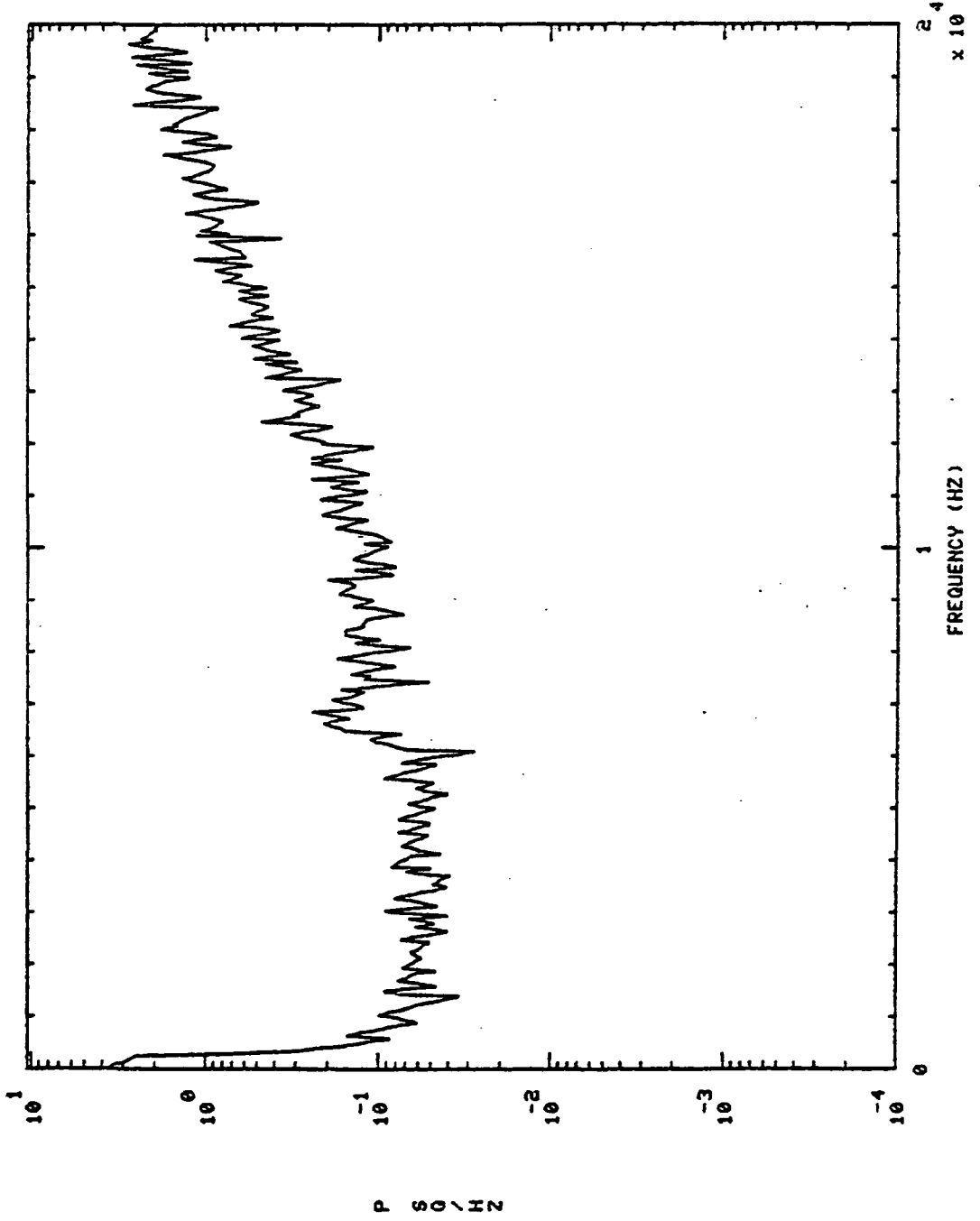


750103 MCC HOT GAS IN PR S+ 5.01H0.1S

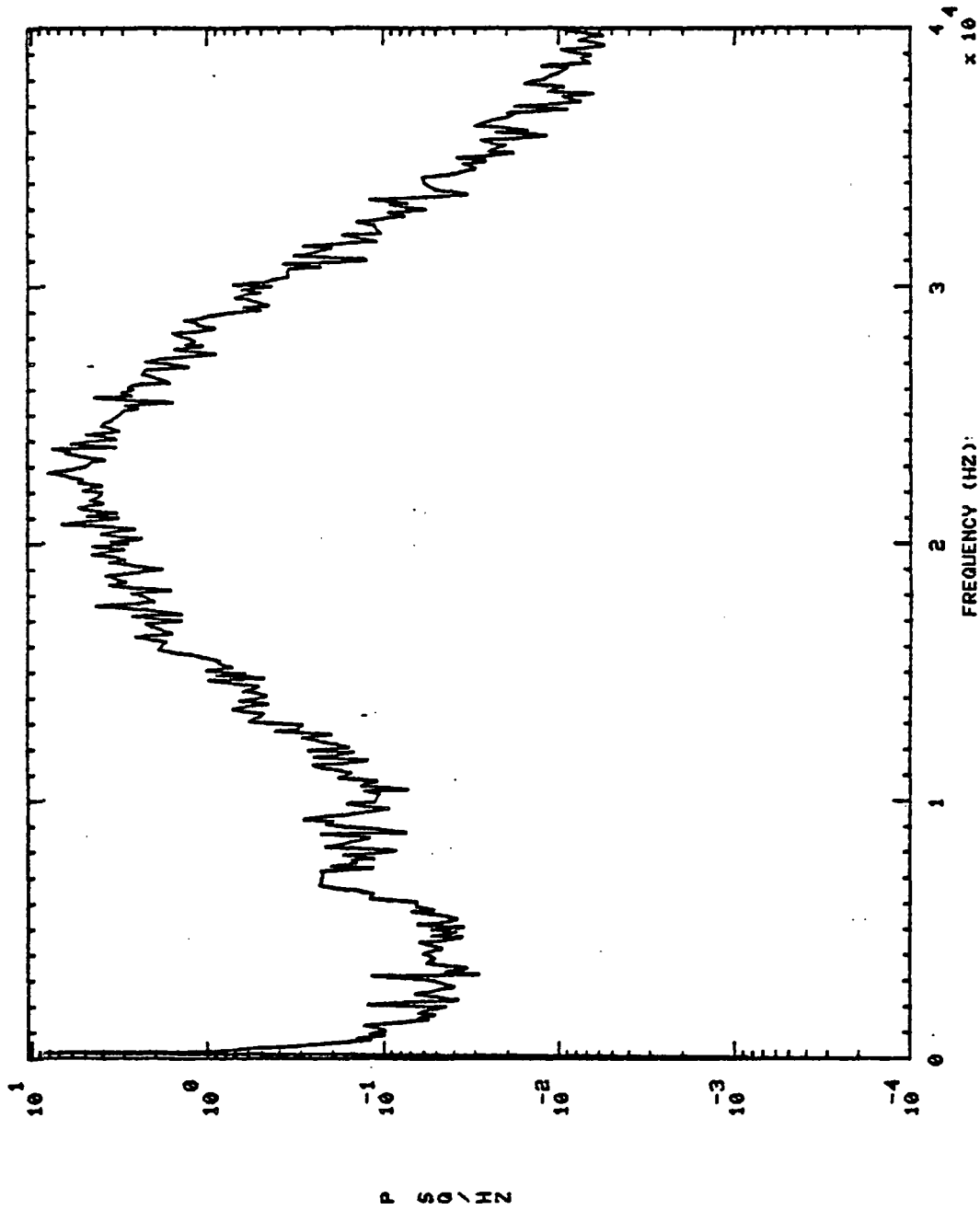


P SQ/IN

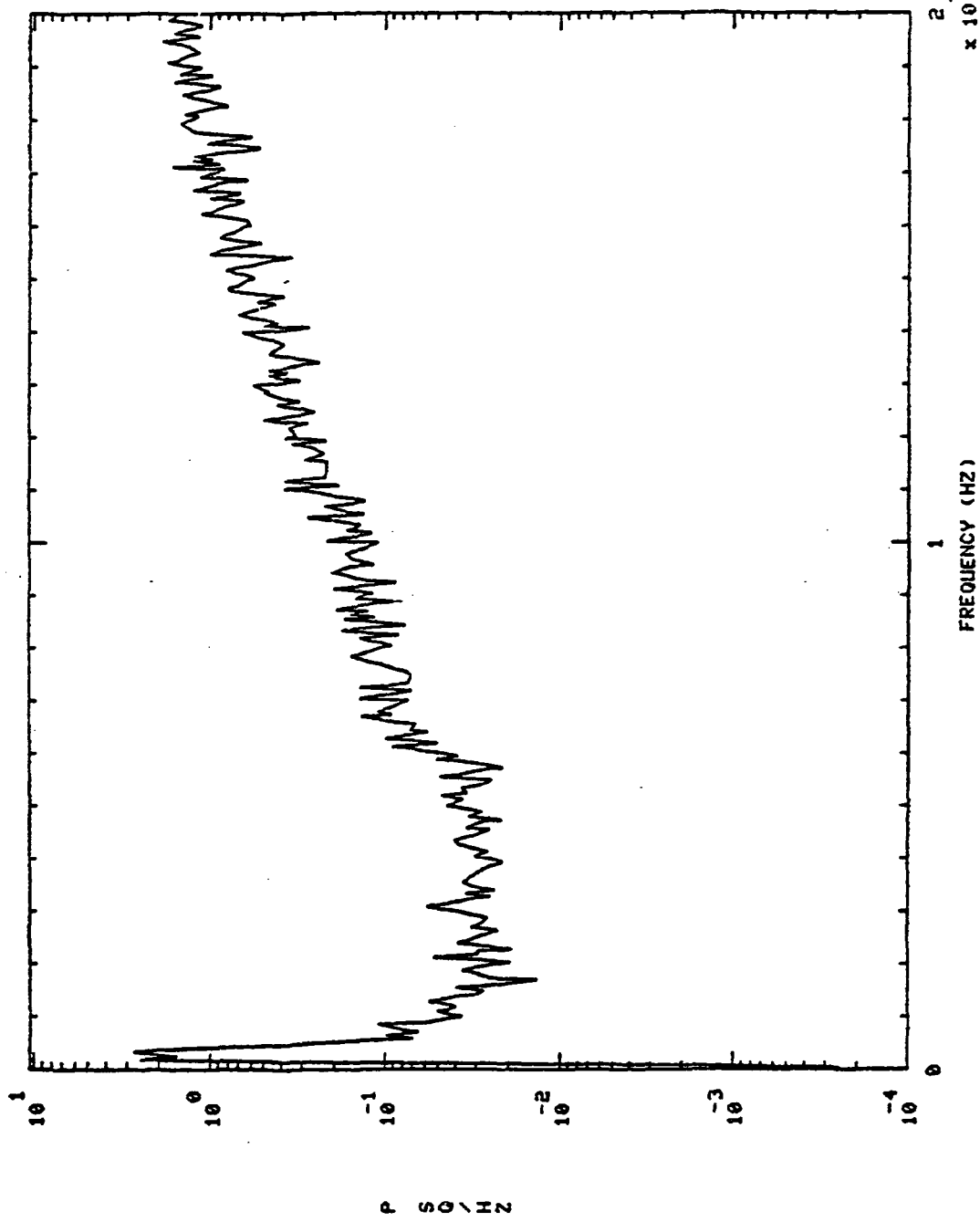
750103 MCC HOT GAS IN PR S+ 15.050/HZ



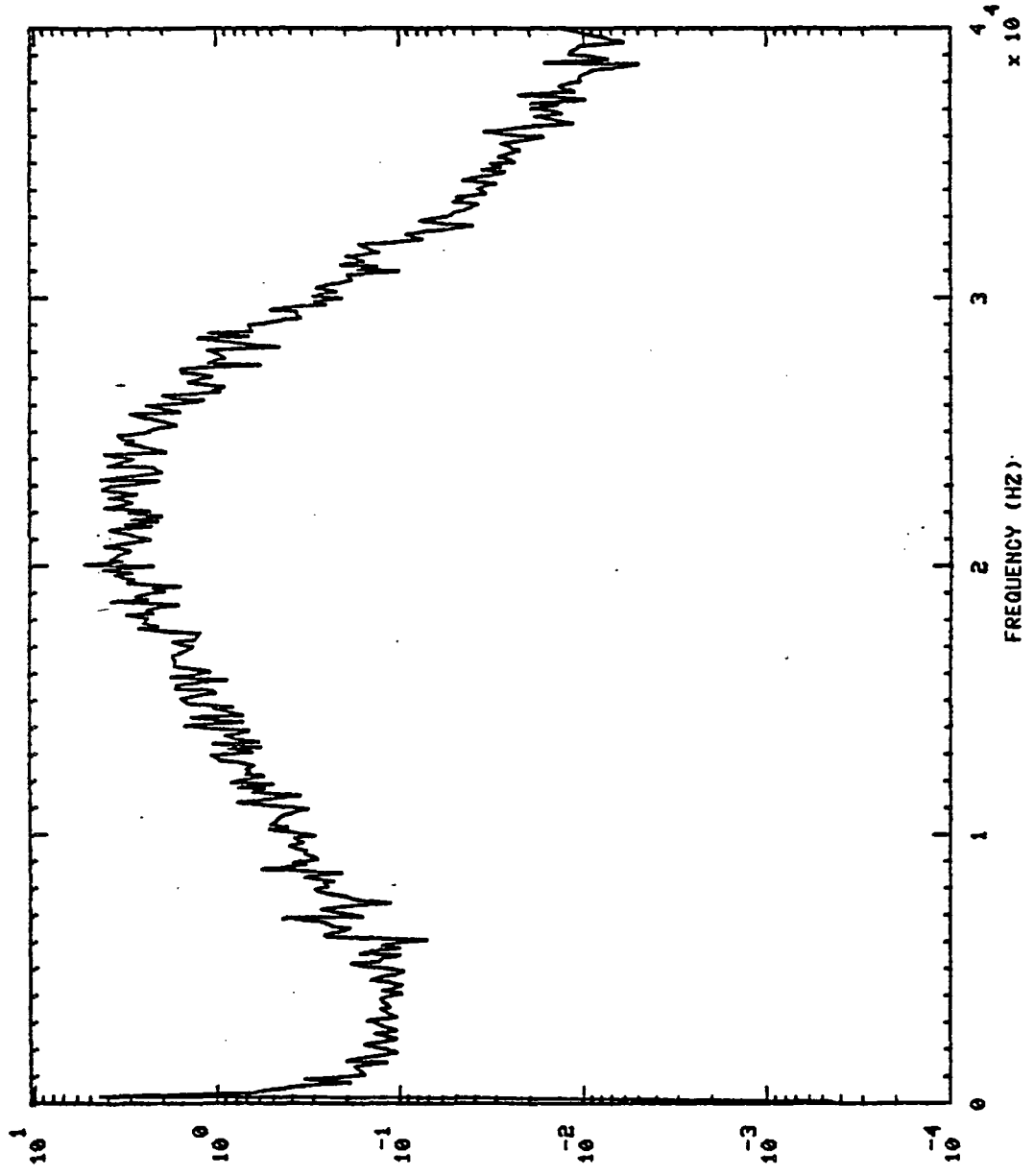
750103 MCC HOT GAS IN PR S+ 15.01H0,'S



750103 MCC HOT GAS IN PR S+ 20.050/HZ

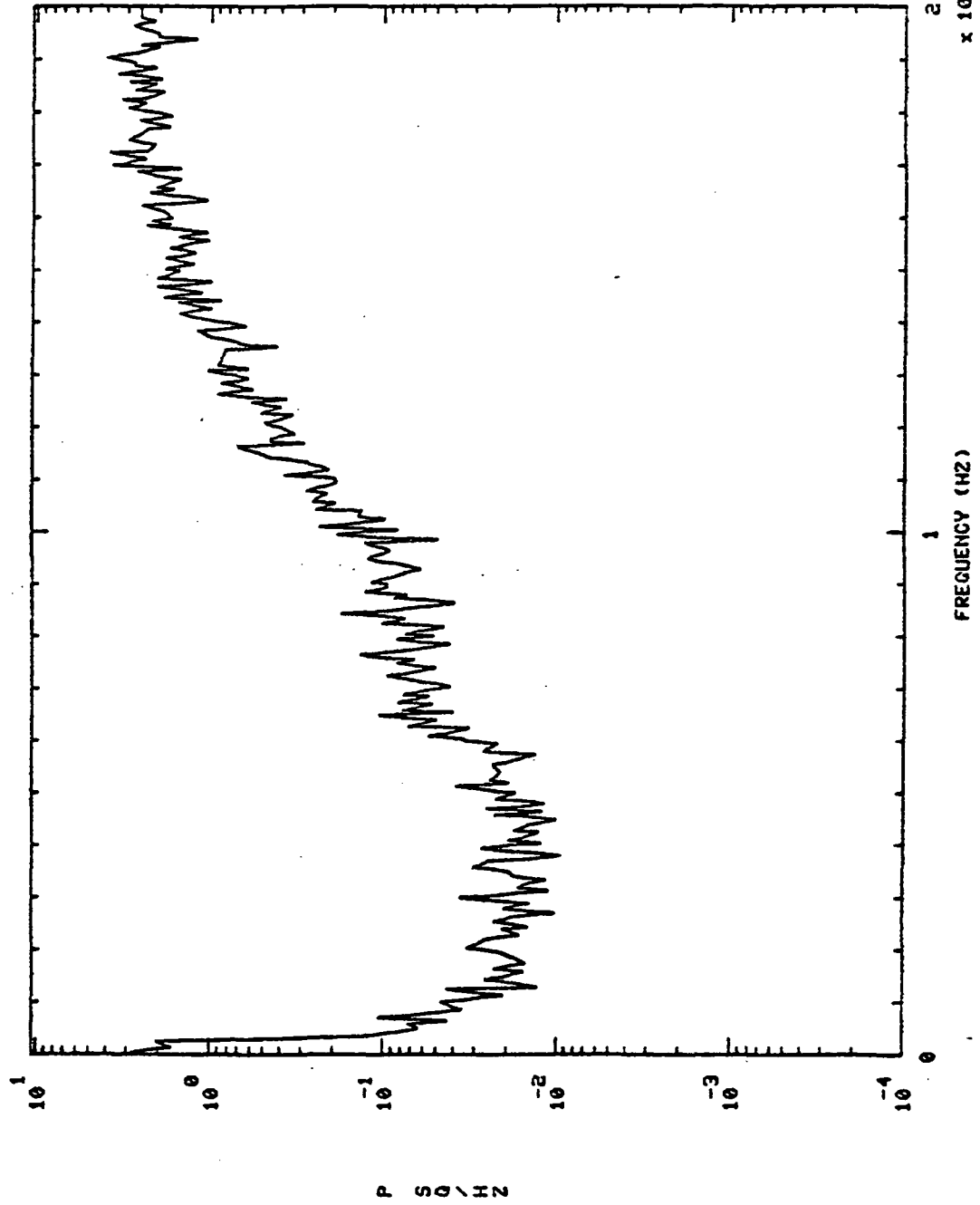


750103 MCC HOT GAS IN PR S+ 20.01H0,'S

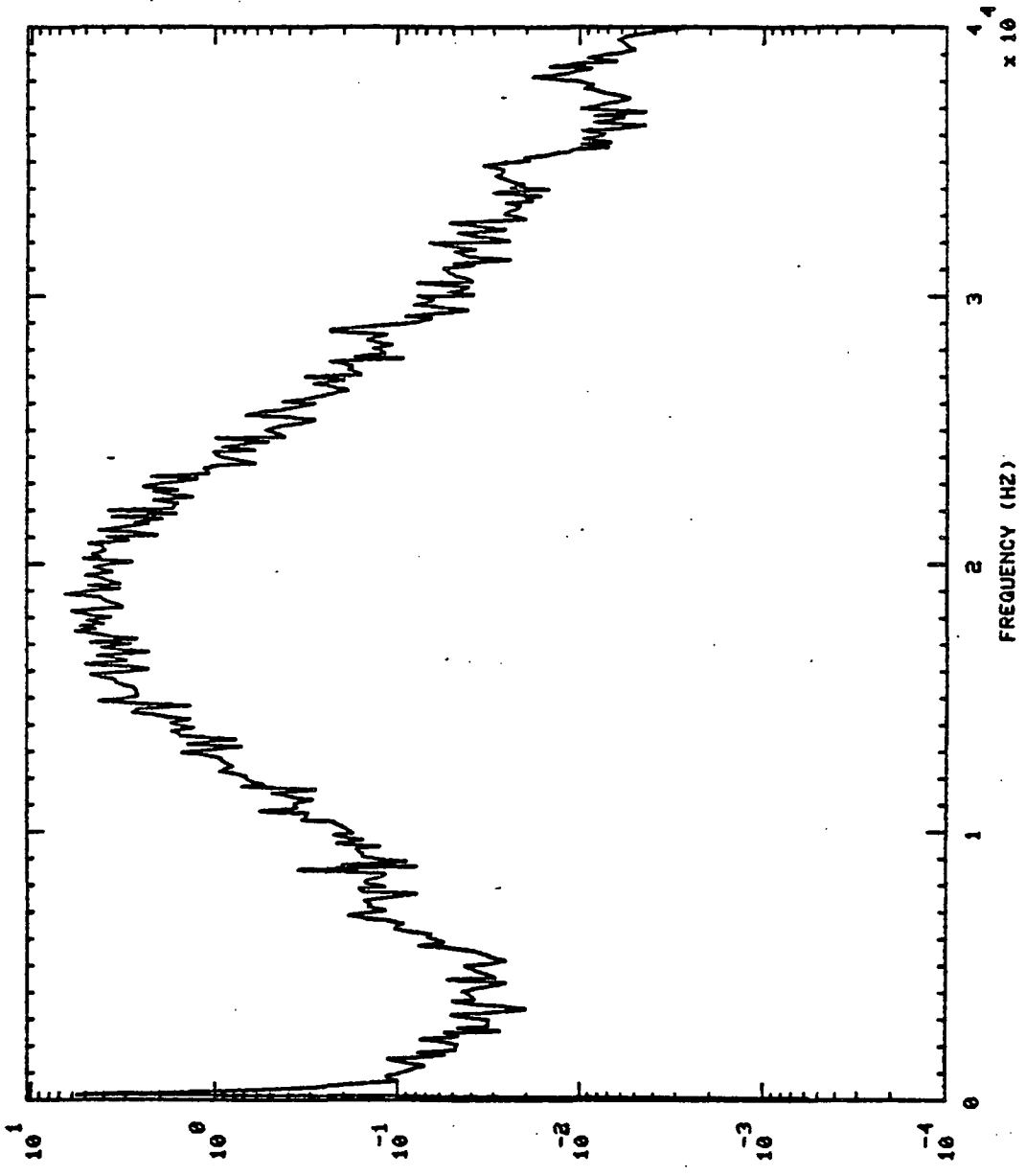


P SQ / HZ

750103 MCC HOT GAS IN PR S+ 26.050/HZ

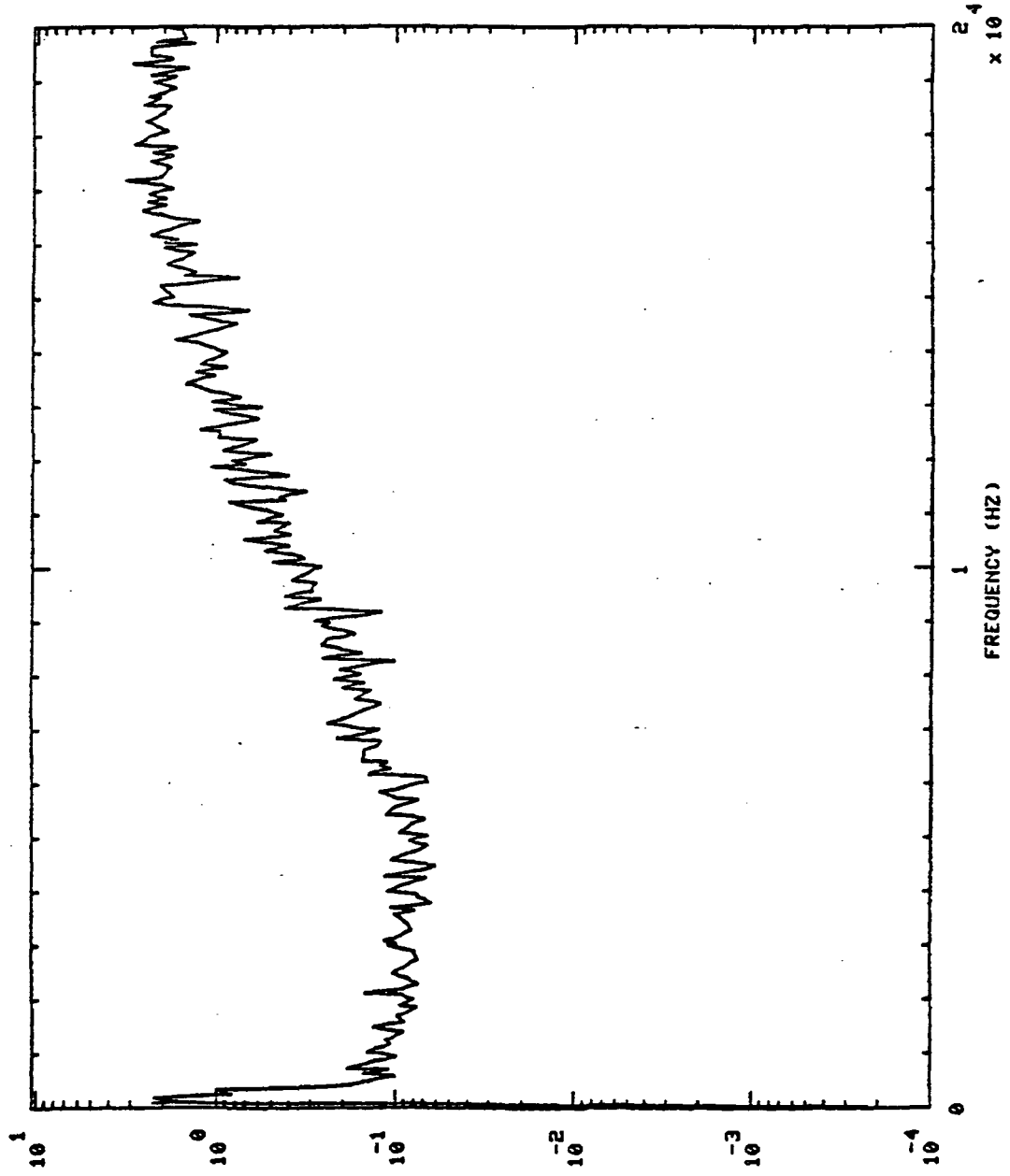


750103 MCC HOT GAS IN PR S+ 26.01H0,'S



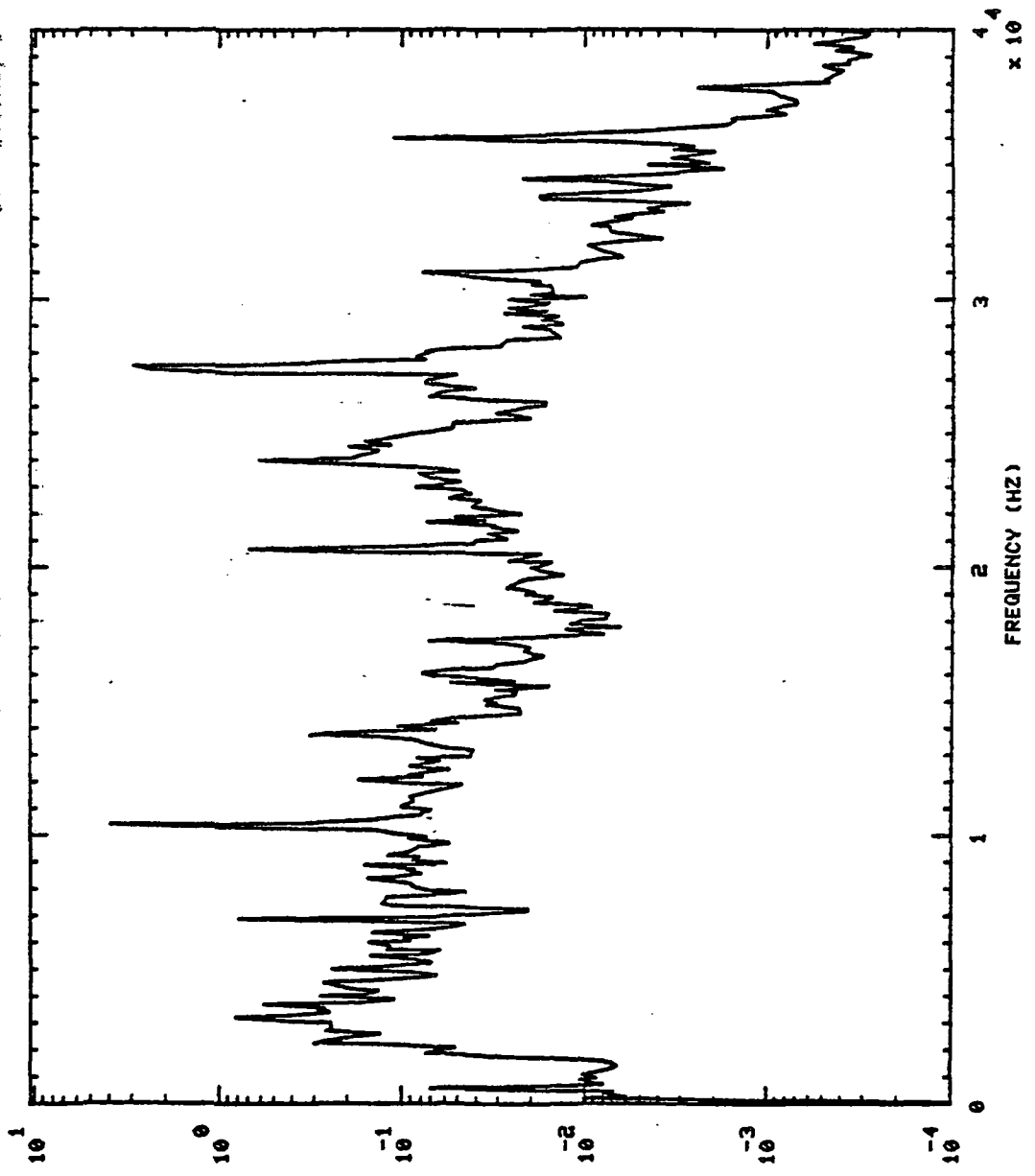
P S Q \ H Z

750103 MCC HOT GAS IN PR S+ 30.050/HZ



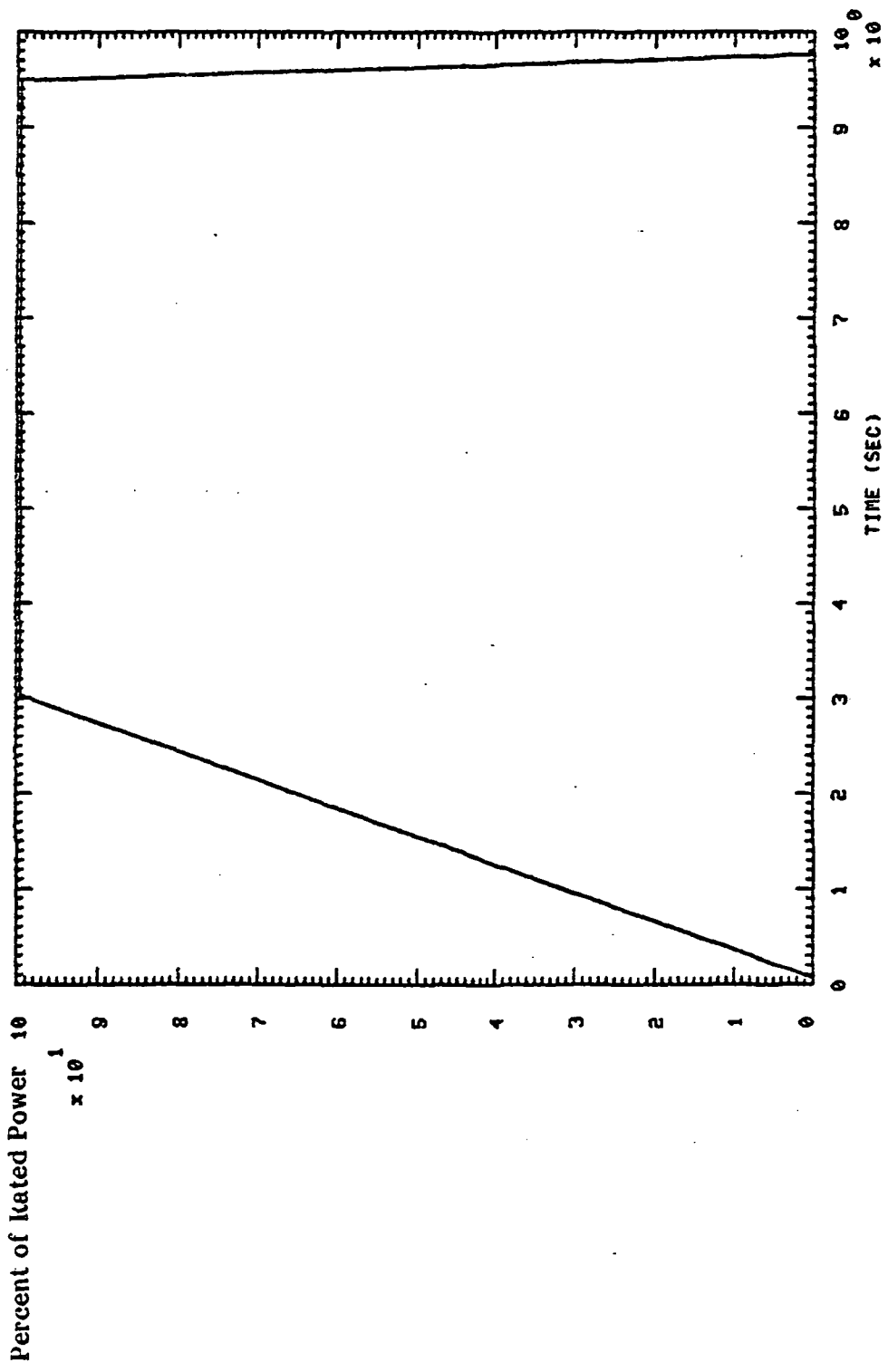
P S D / H Z

750100 MCC LONG ACCEL 1 ST 5:01H0.75



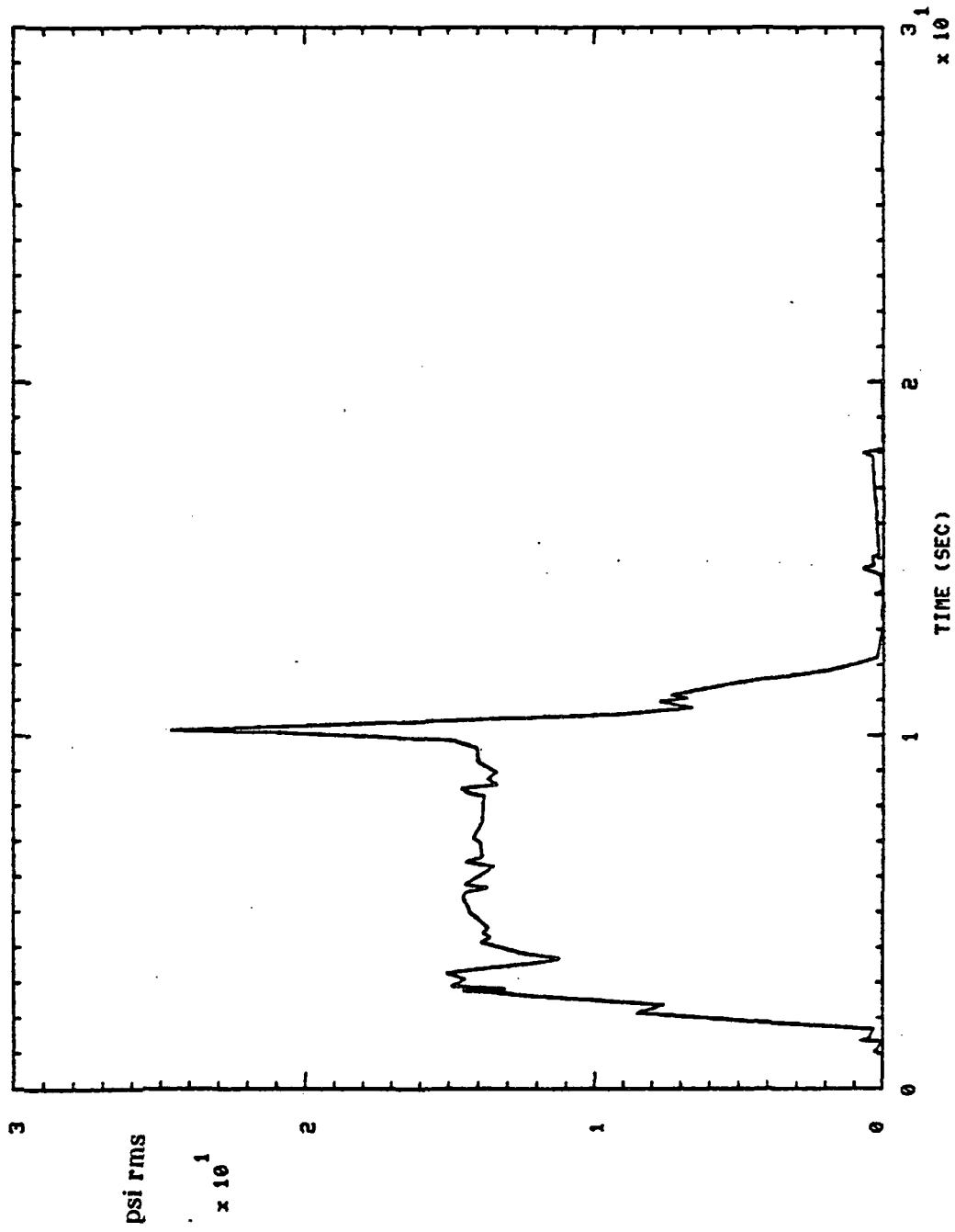
P S D / HZ

750104 THRUST (UNFILTERED)

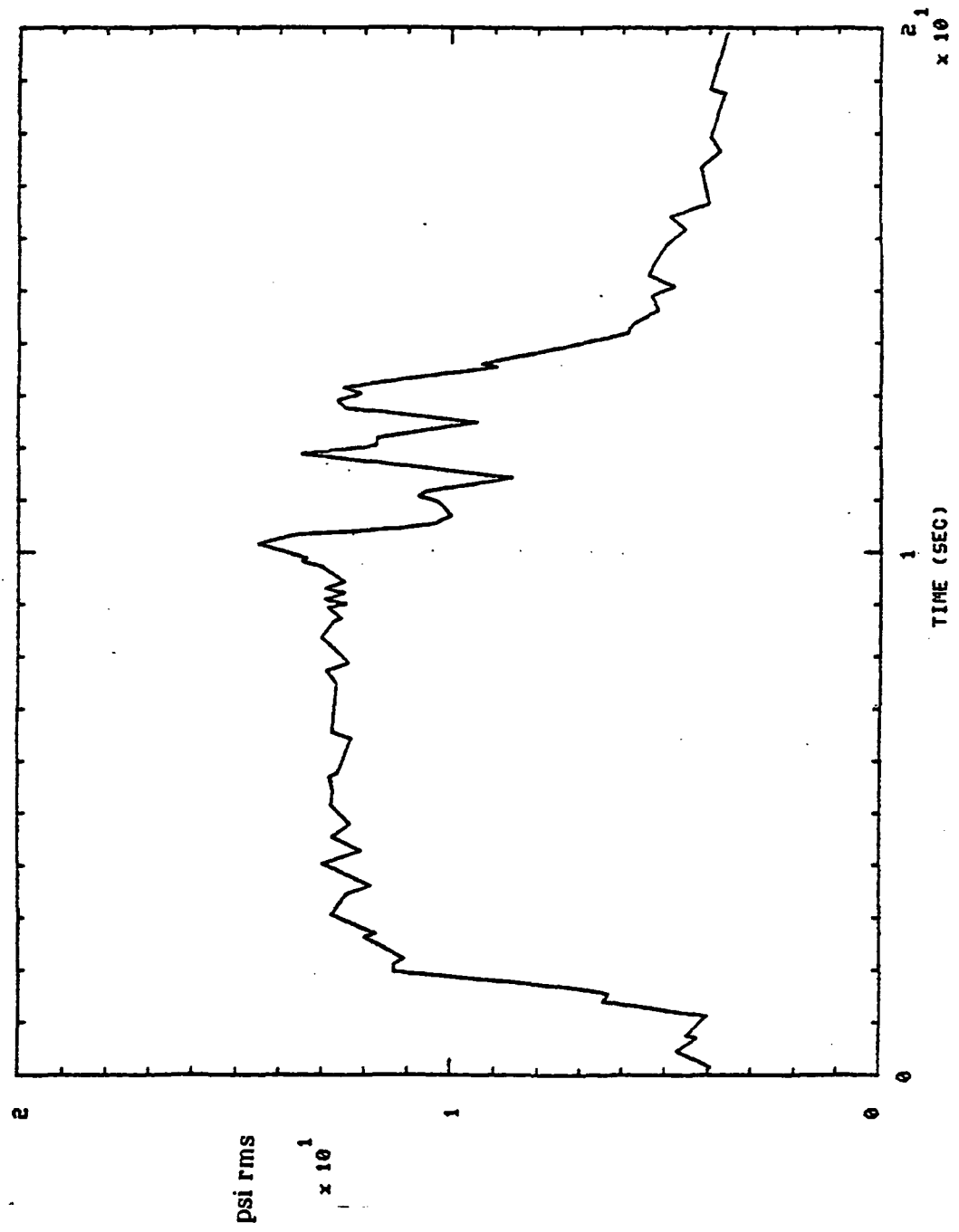


(1 - 20K HZ)

750104 LFPF IN PR



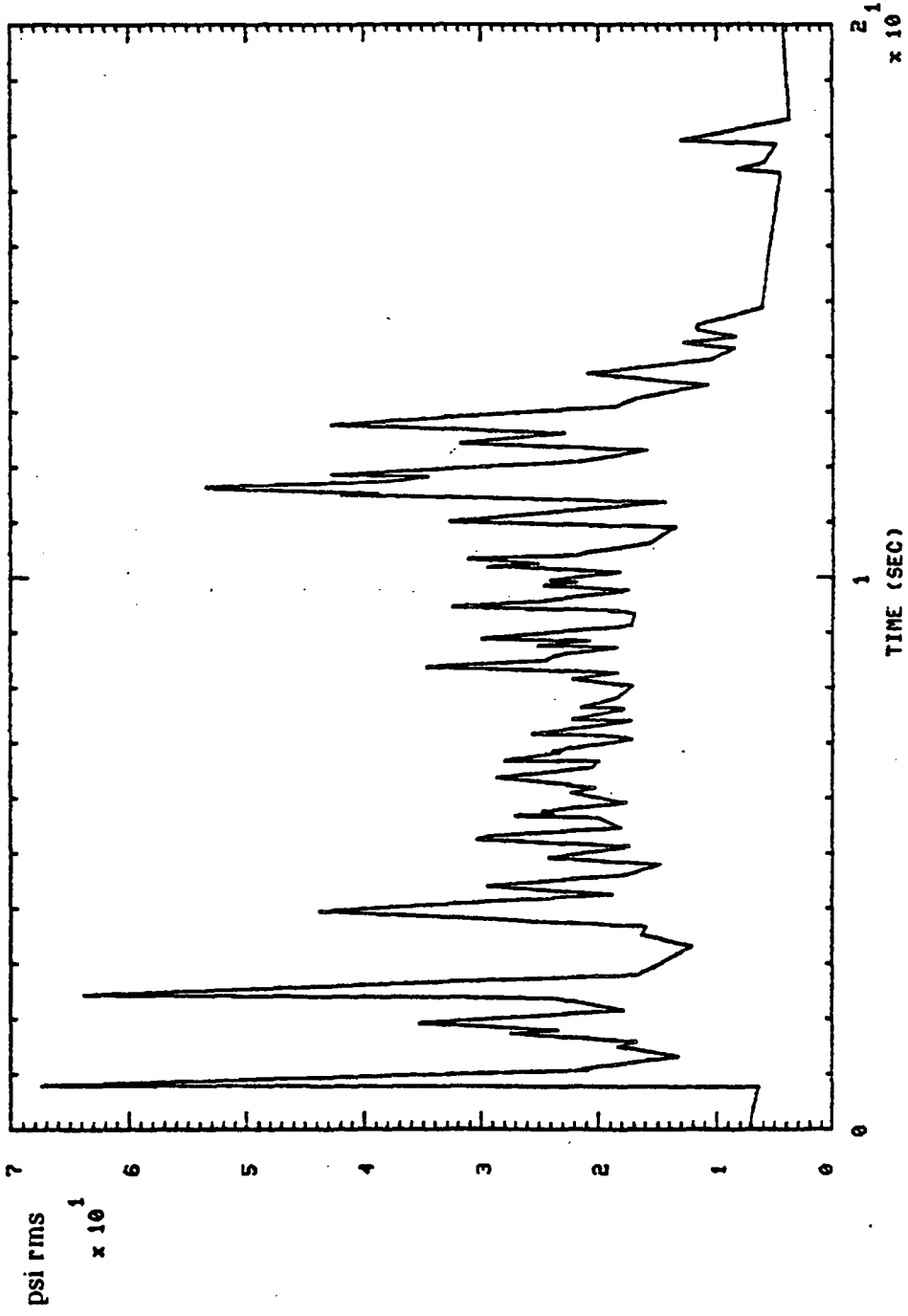
750104 LPOP DS PR (1 - 20K HZ)



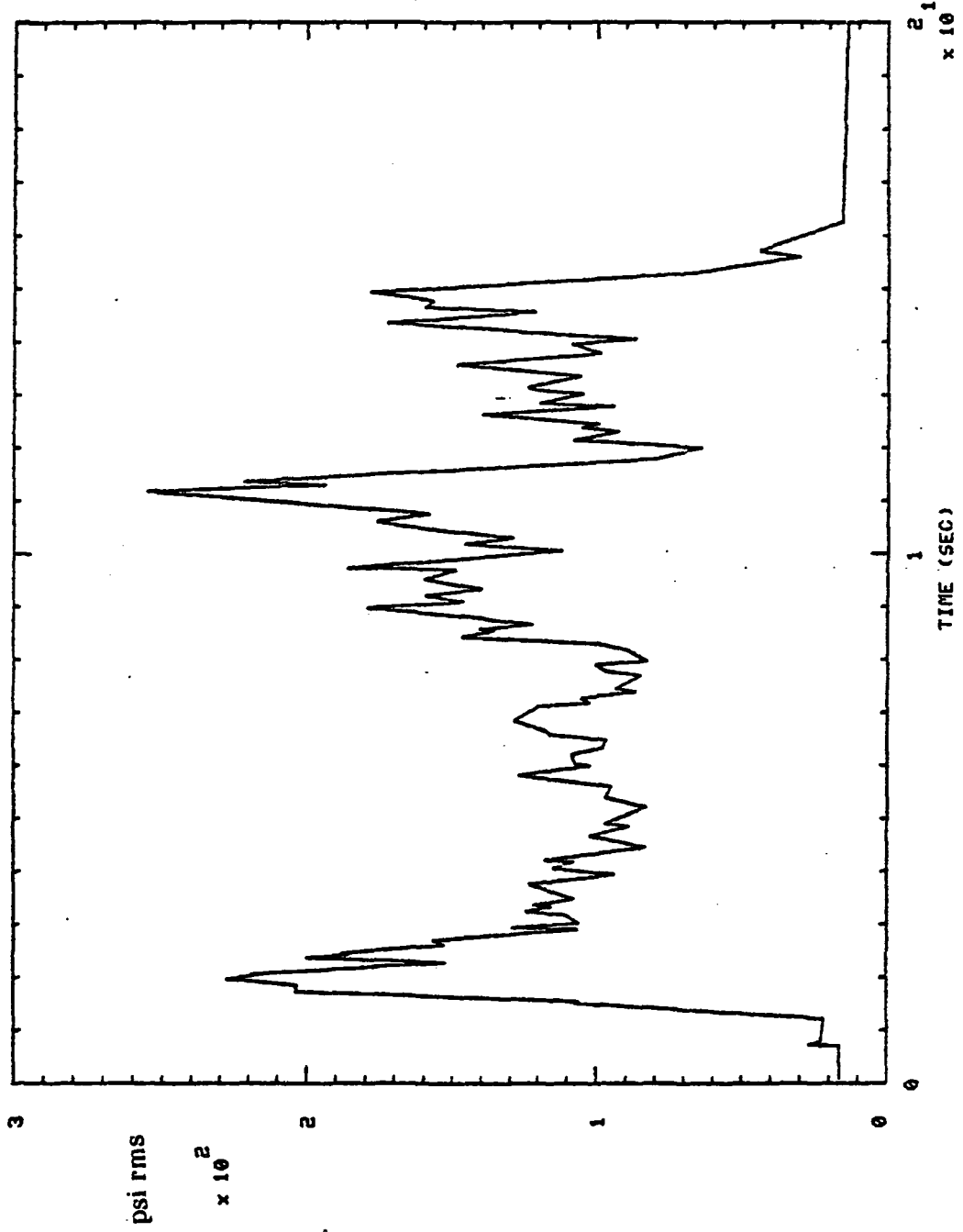
(1 - 20K HZ)

HPOP BAL CAU PR2

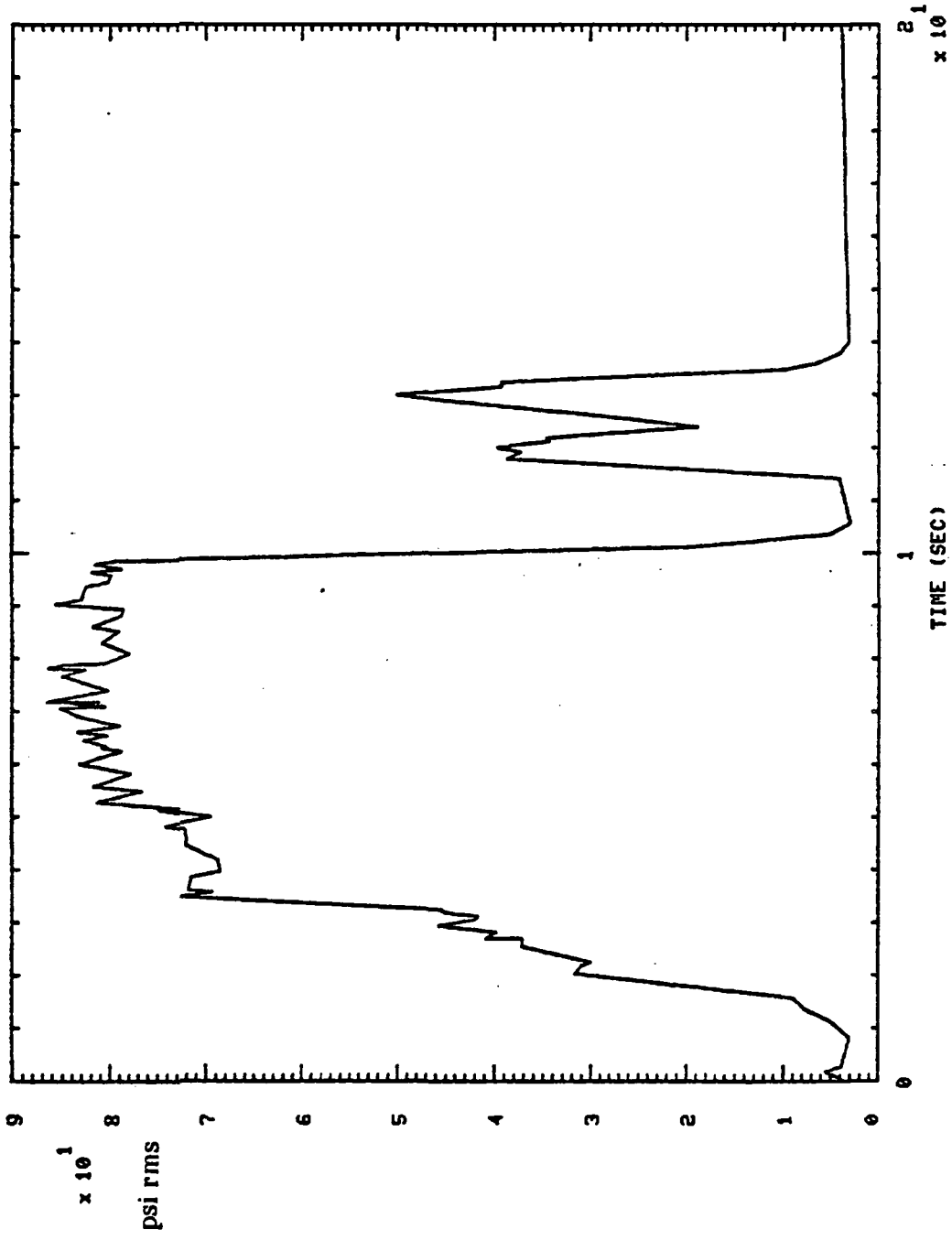
750104



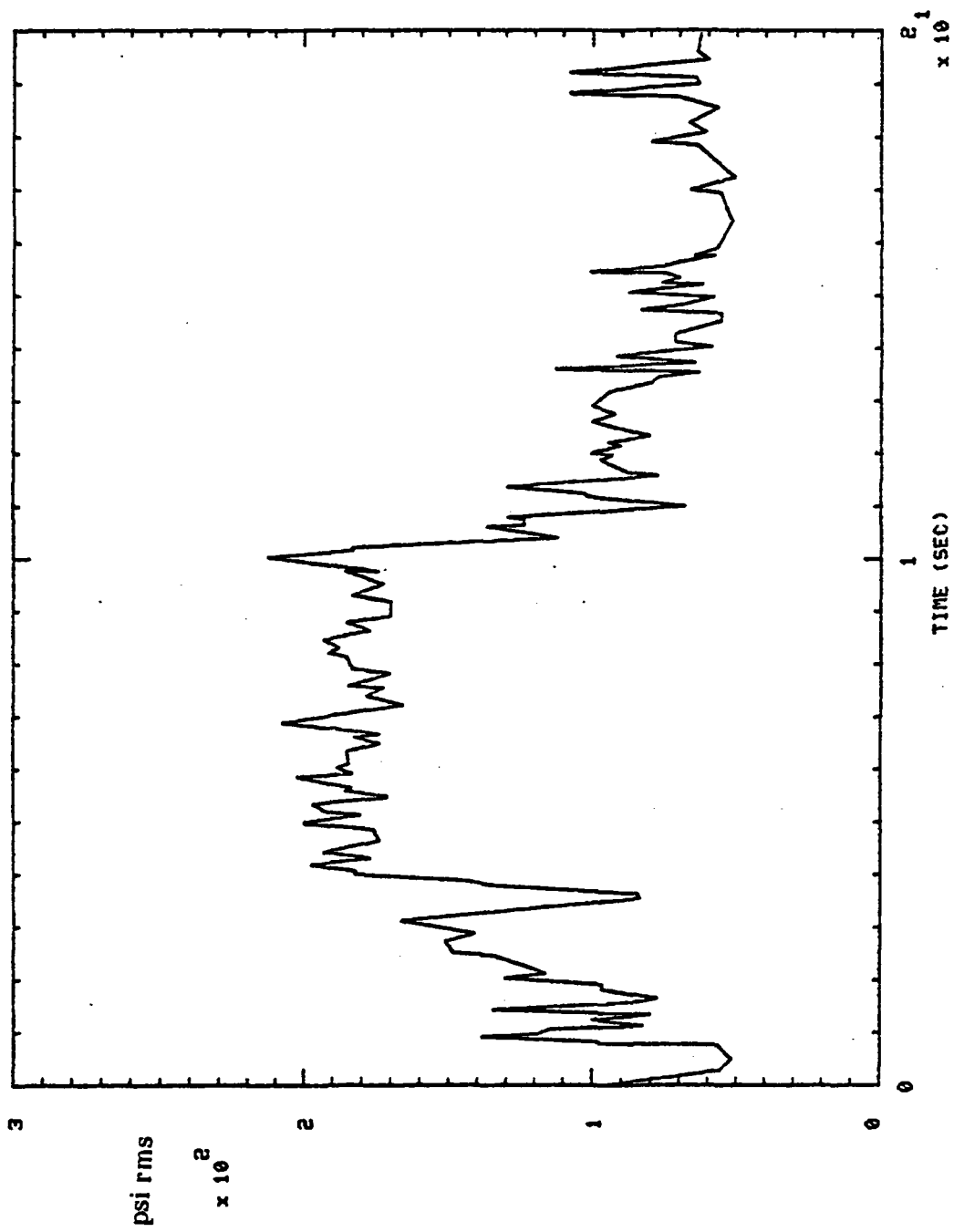
750104 HPOP BAL CAU PRI (1 - 20K HZ)



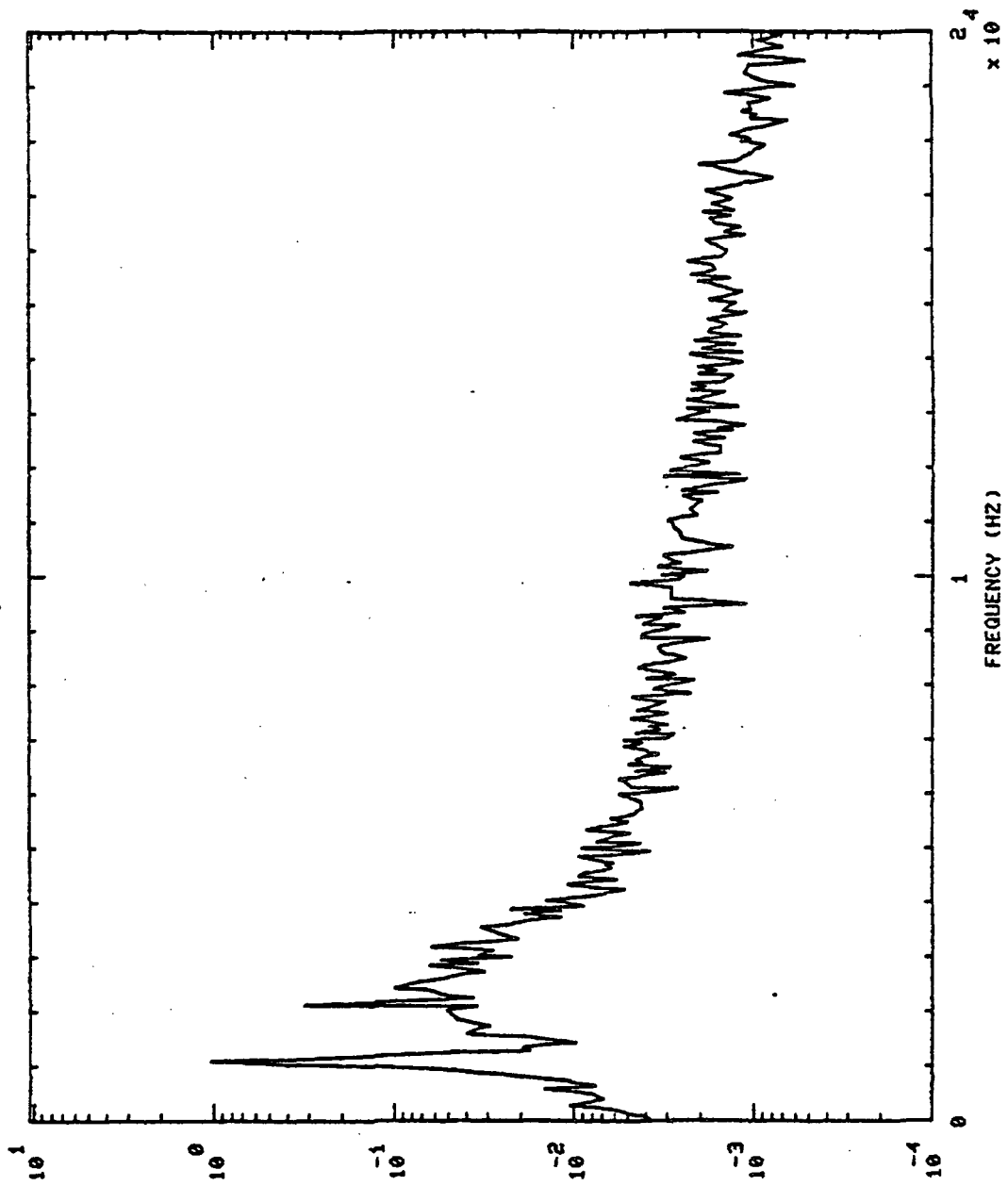
750104 HPOP DISC PR (1 - 20K HZ)



750104 MCC HOT GAS IN PR (1 - 20K HZ)

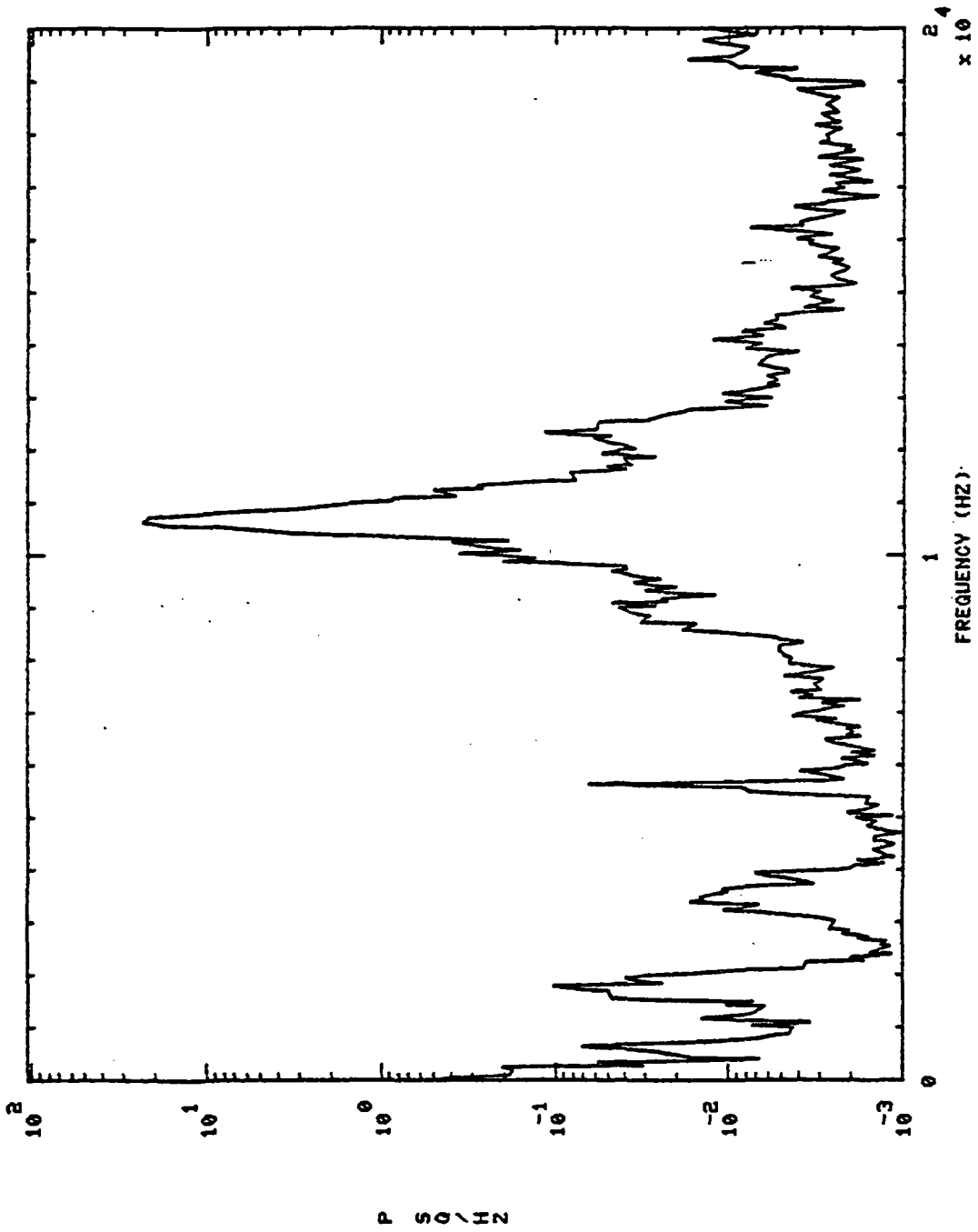


750104 LPFP IN PR S+ 6.050/HZ

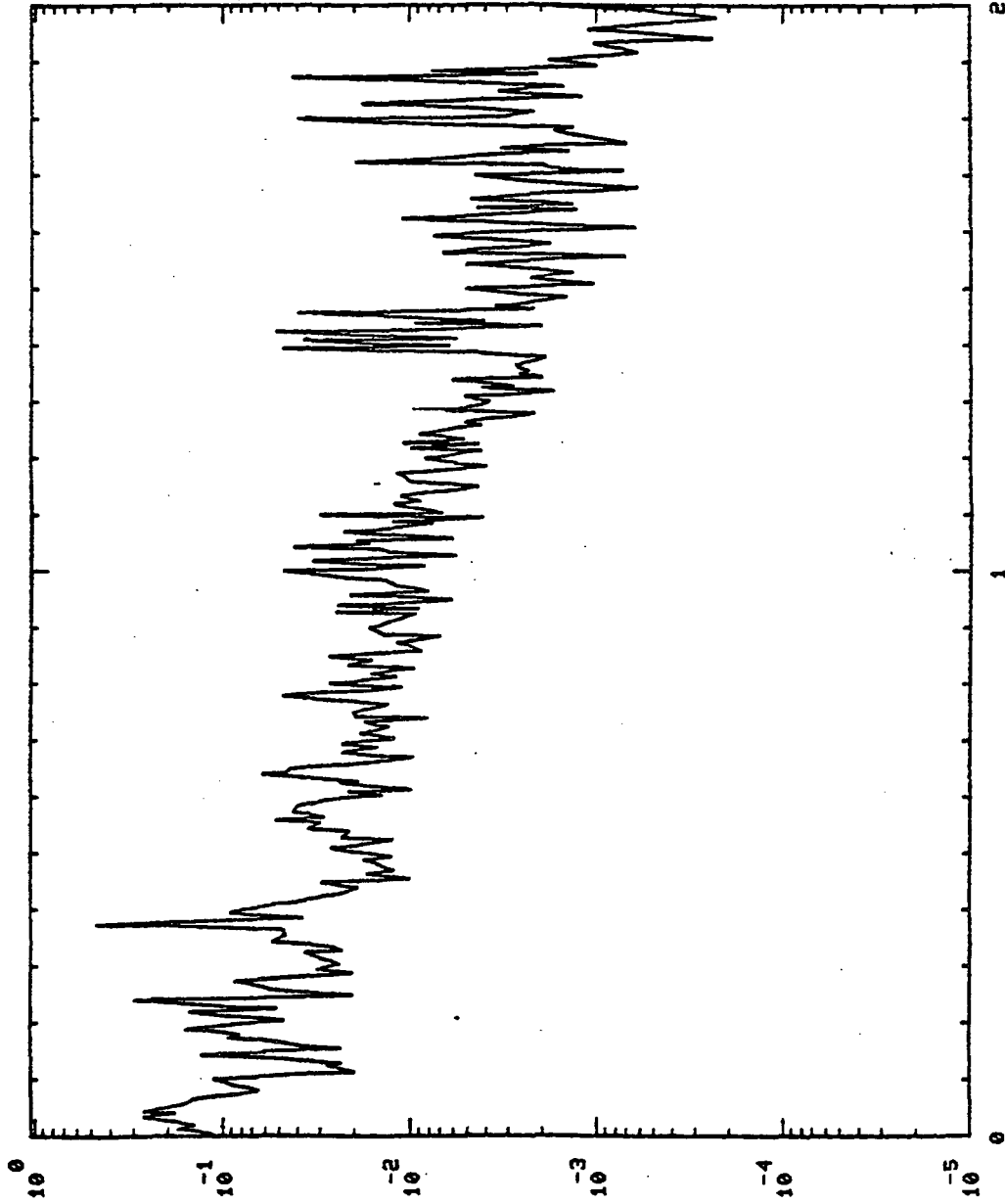


6+ 6.01H0,'S

750104 LPOP DS PR



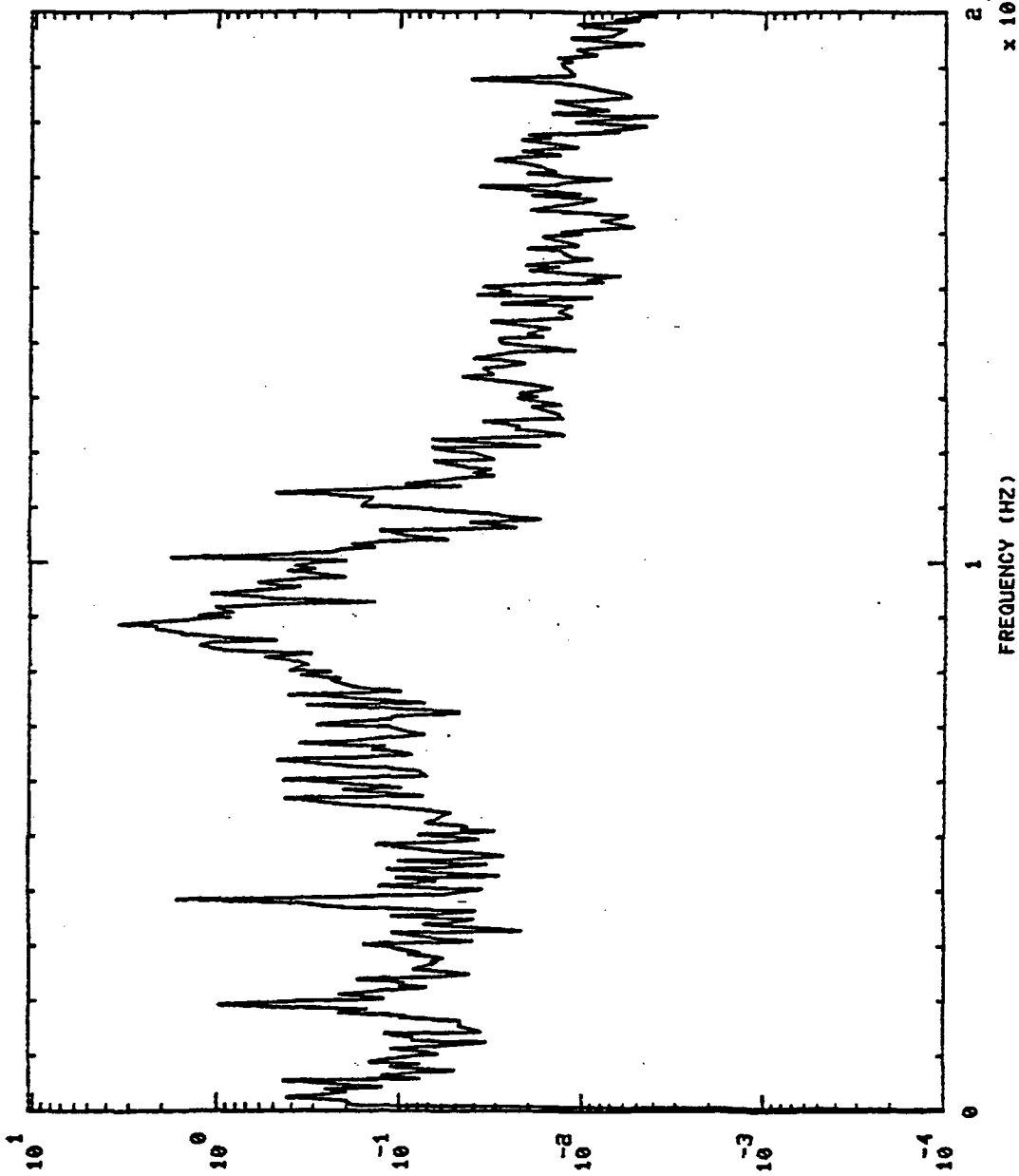
750104 HPOP BAL CAU PR2 S+ 6.050/HZ



P S D \ HZ

FREQUENCY (HZ) $\times 10^4$

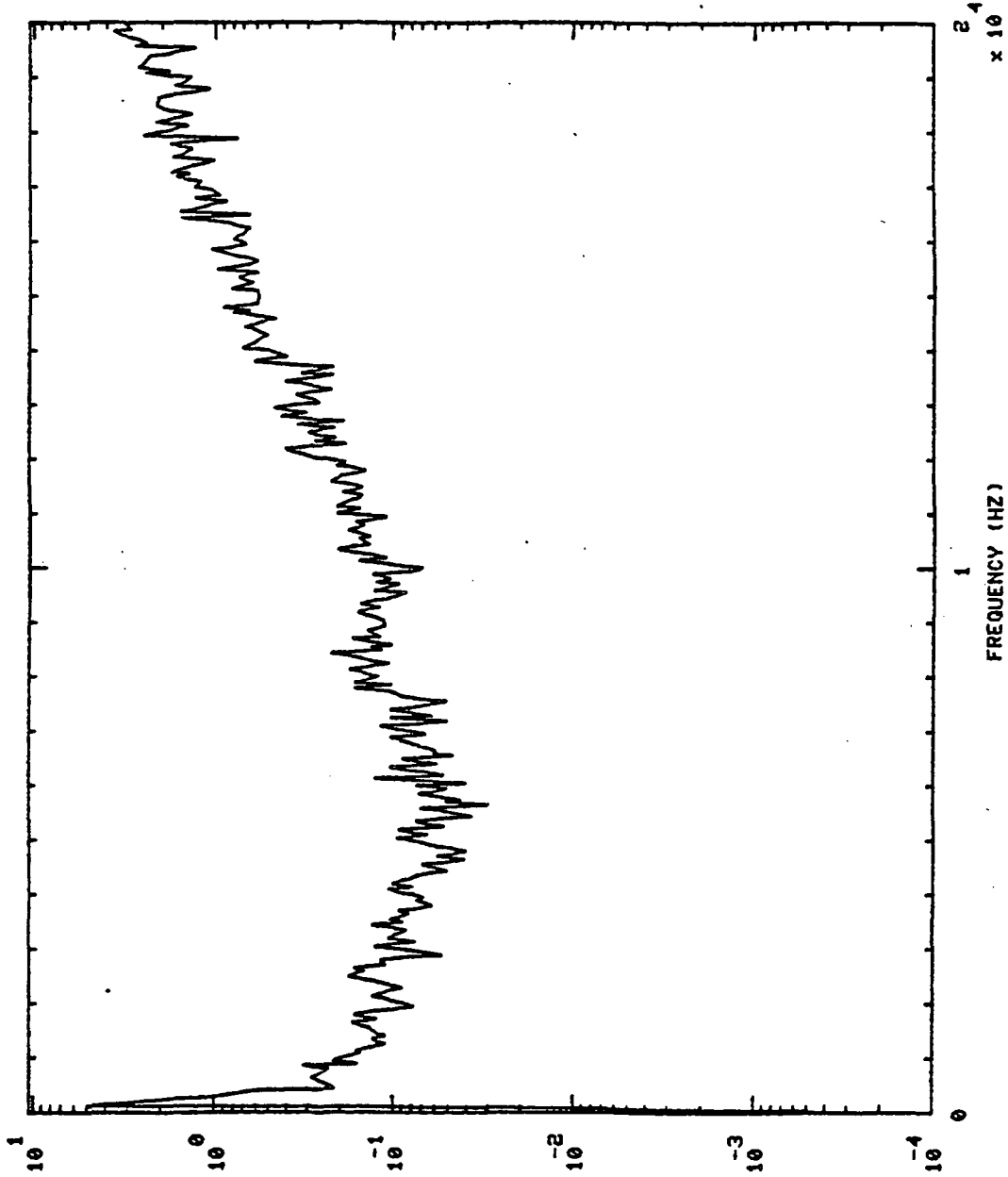
750104 NPOP DISC PR S+ 6.01H0.'S



P S D / HZ

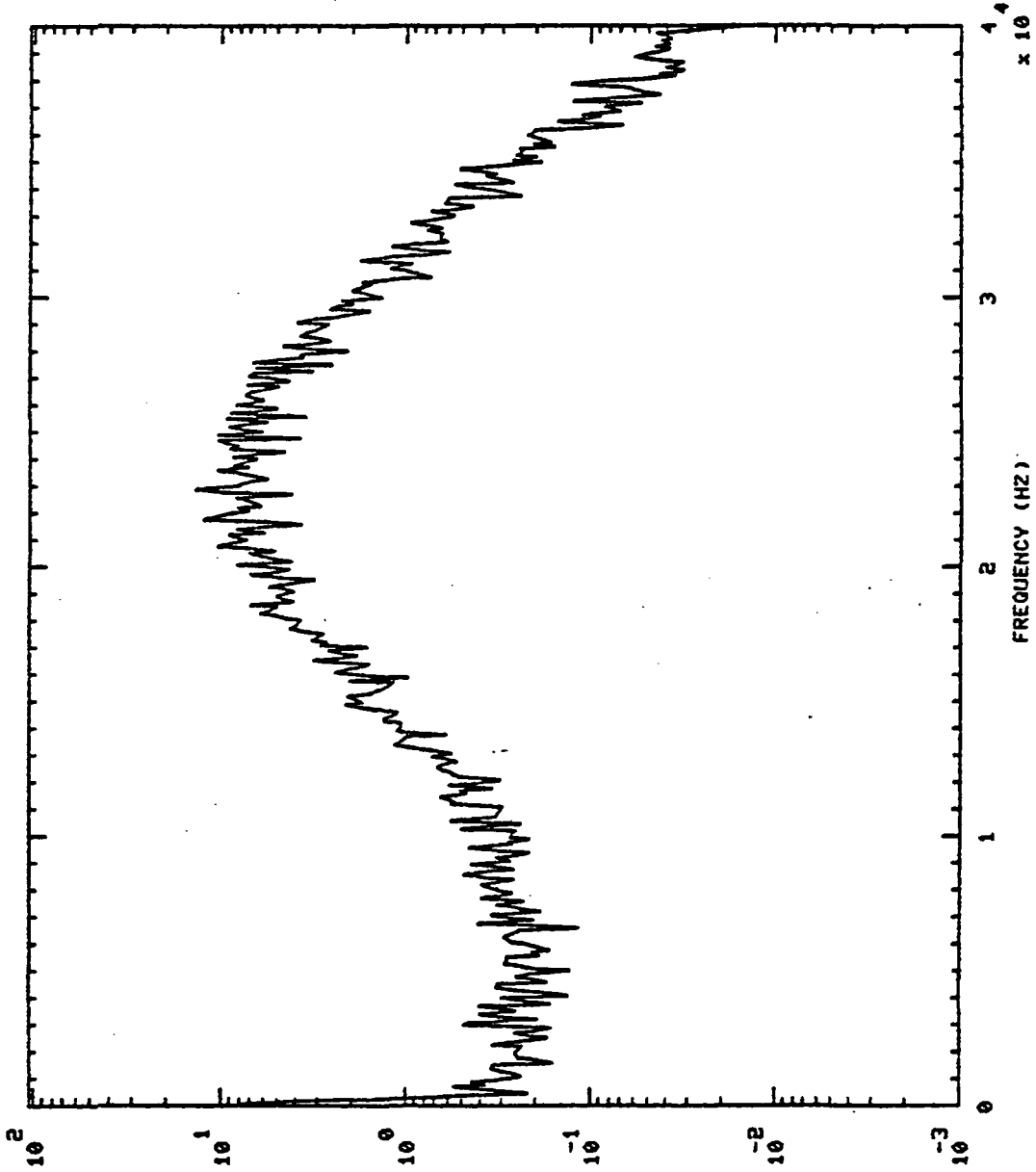
FREQUENCY (HZ)

750104 MCC HOT GAS IN PR S+ 6.050/HZ



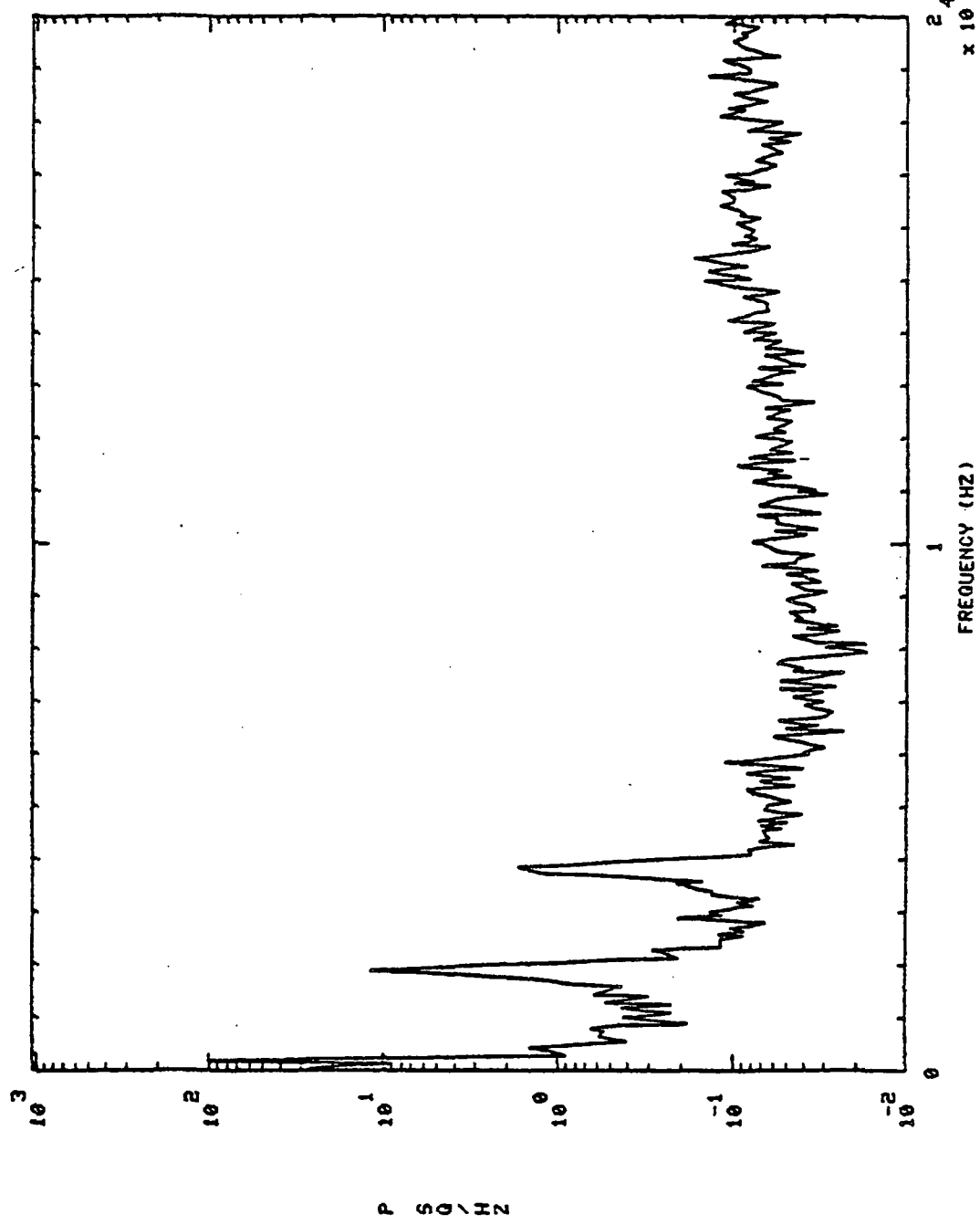
P S D / H Z

750104 MCC HOT GAS IN PR S+ 6.01H0,'S

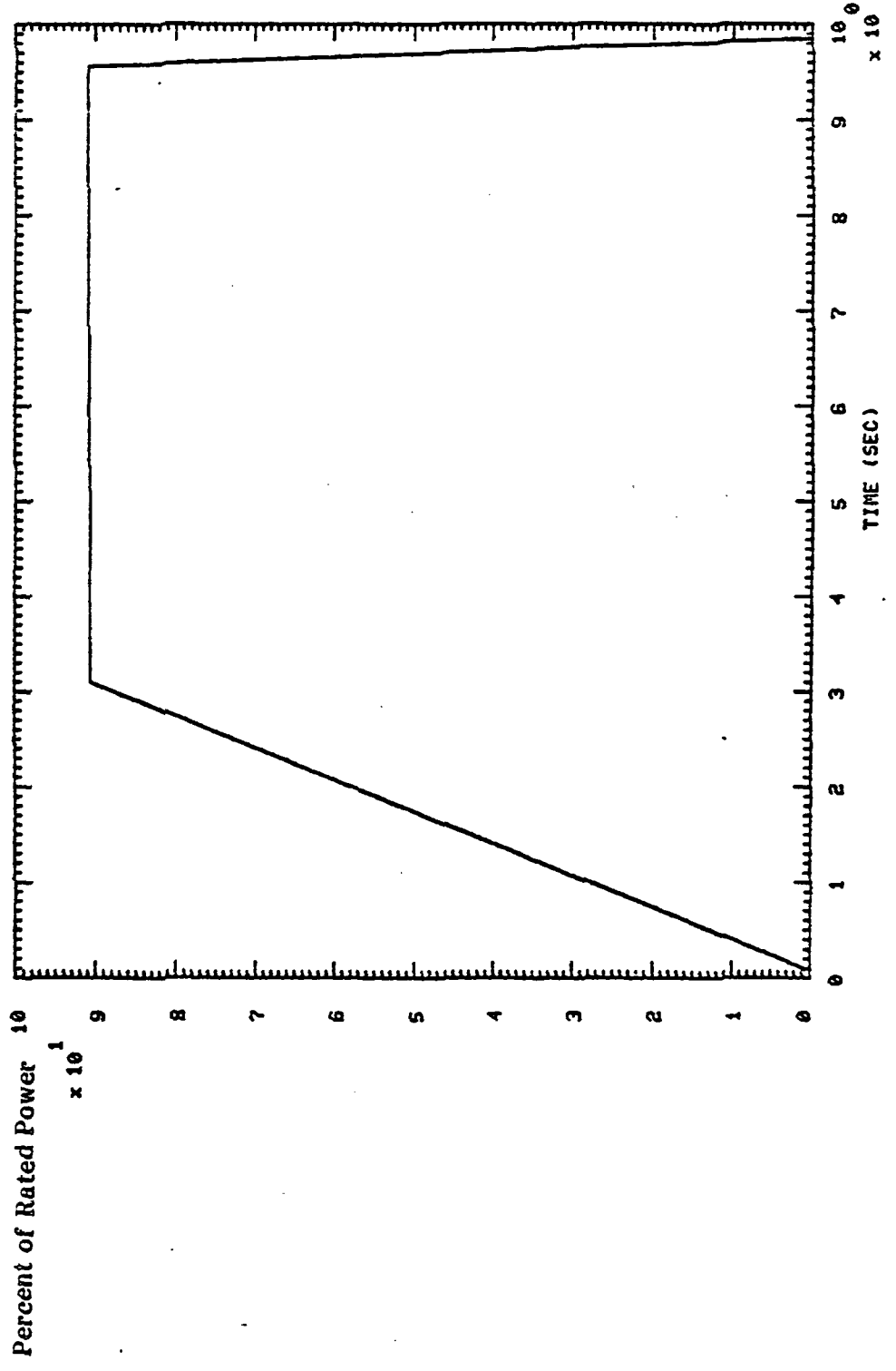


P S D \ H Z

750104 PBP DS PR S+ 6.050/HZ

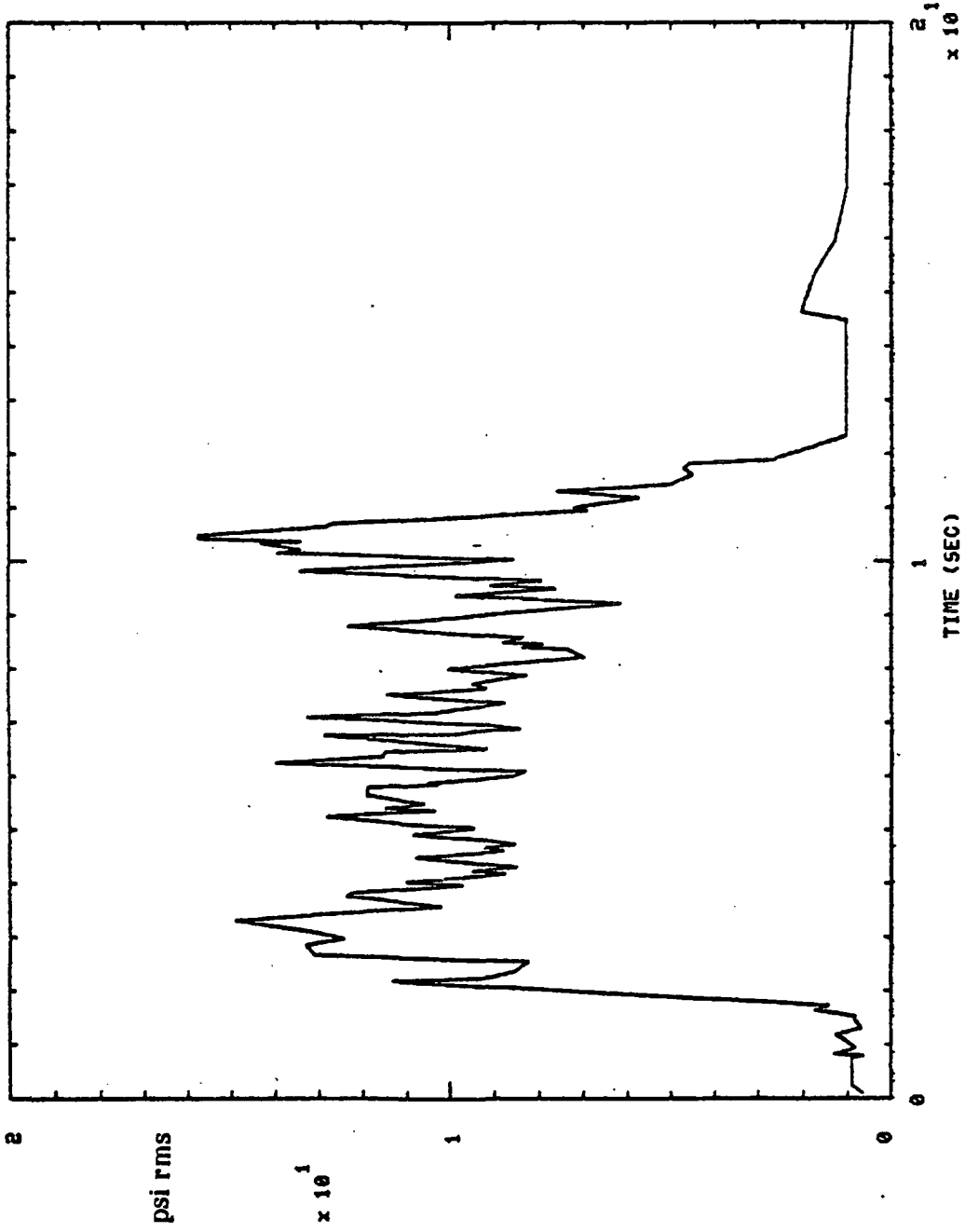


750105 THRUST (UNFILTERED)

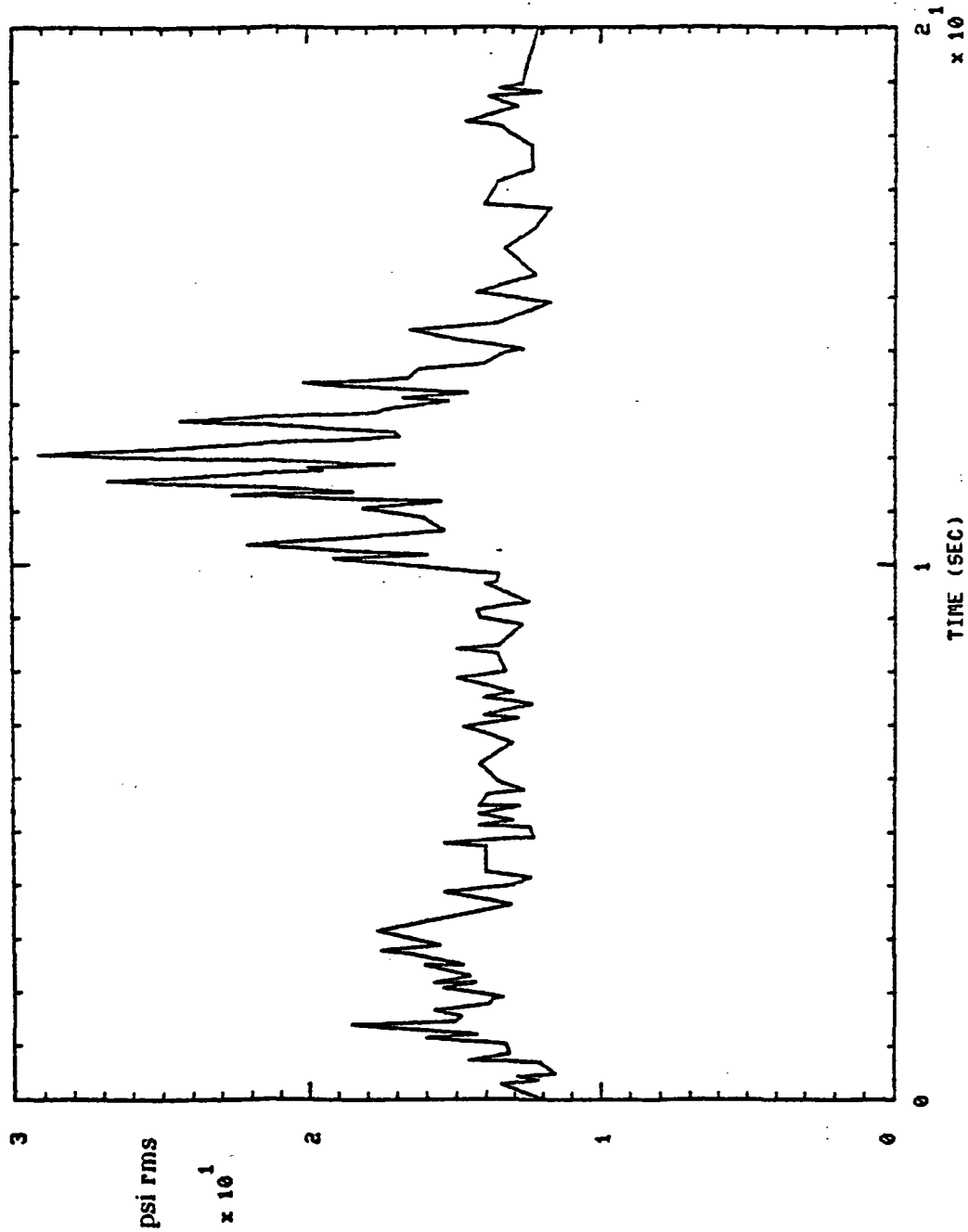


(1 - 20K HZ)

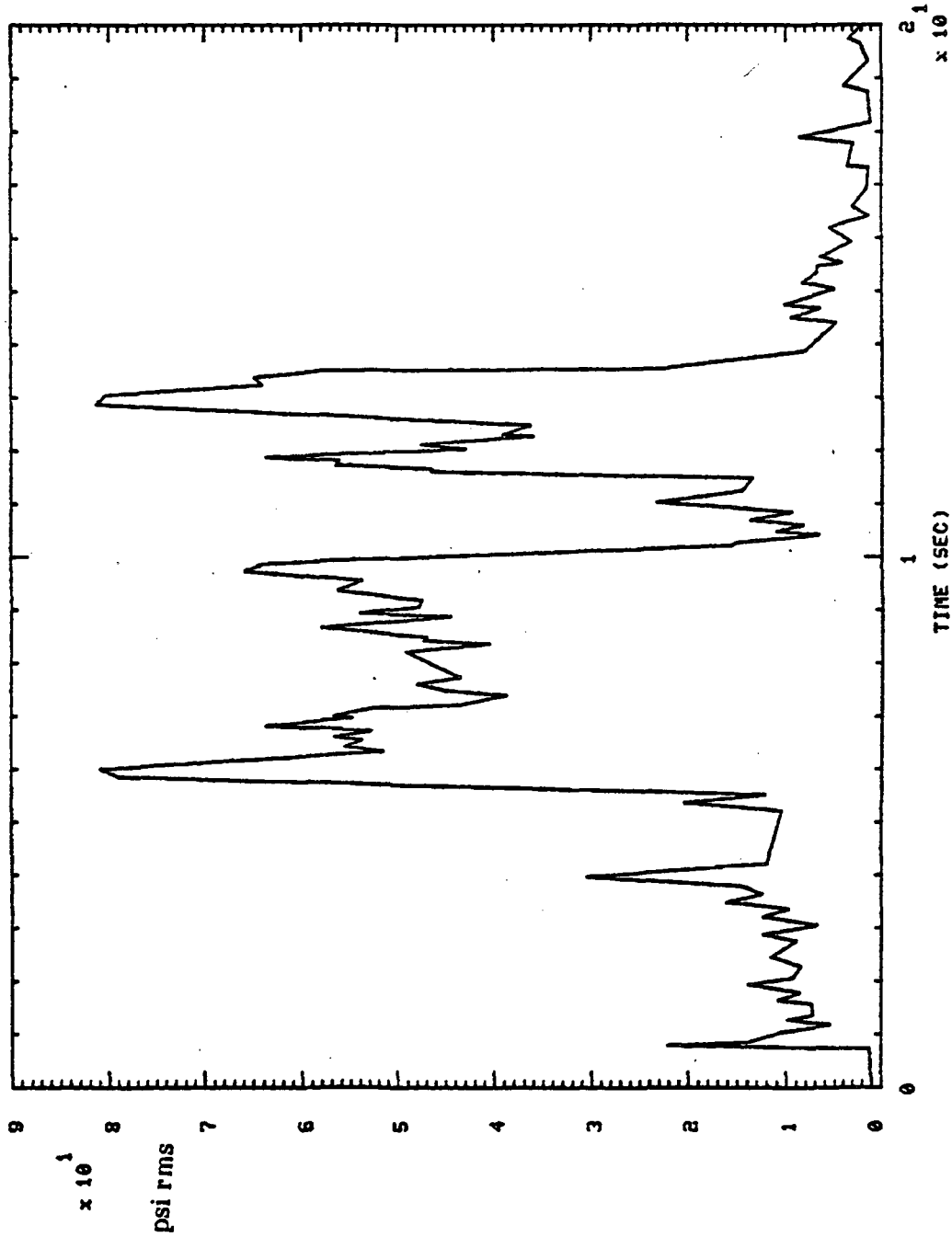
750105 LPFP IN PR



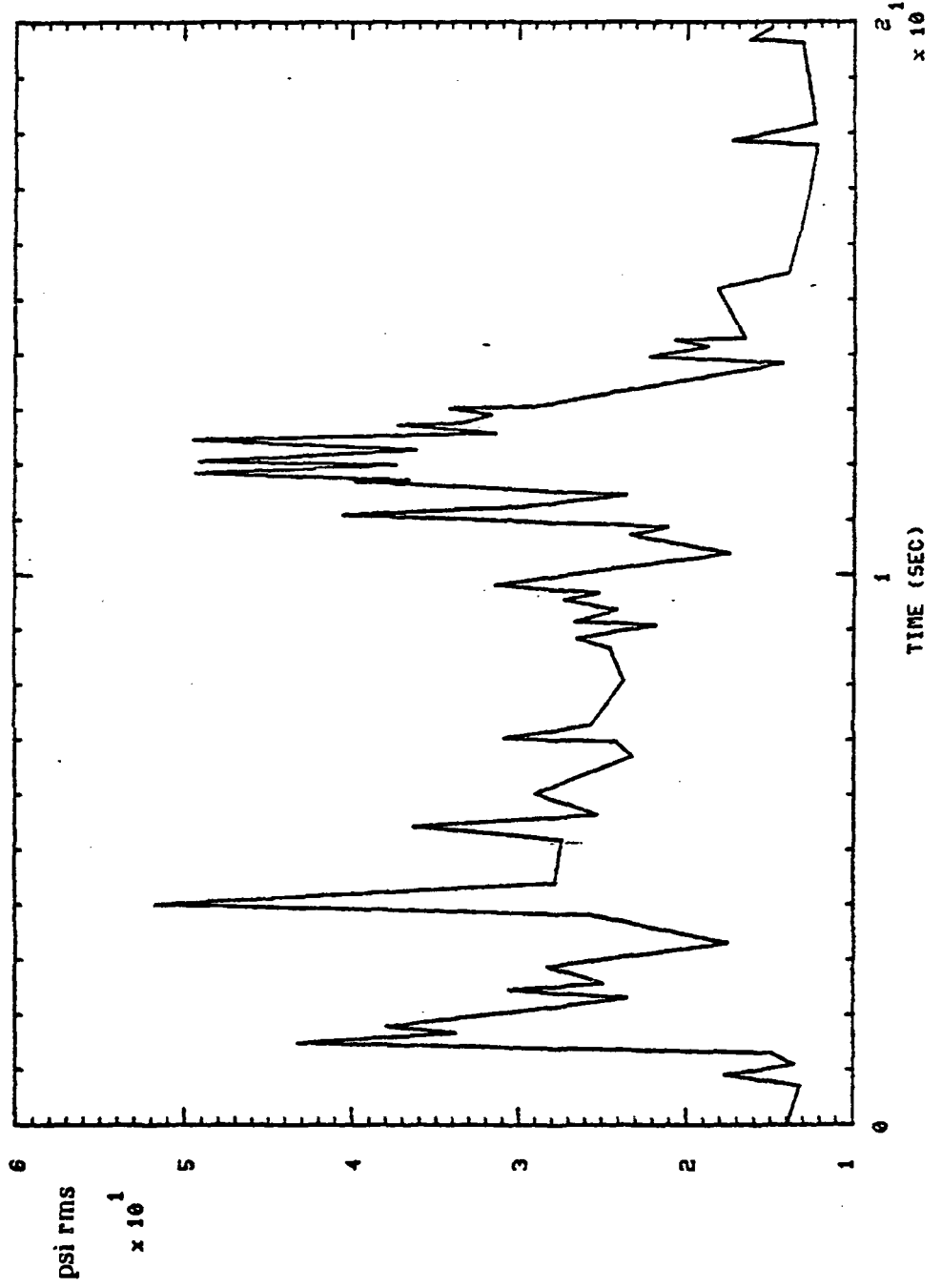
750105 LPOP DS PR (1 - 20K HZ)



750105 HPOP BAL CAU PR2 (1 - 20K HZ)

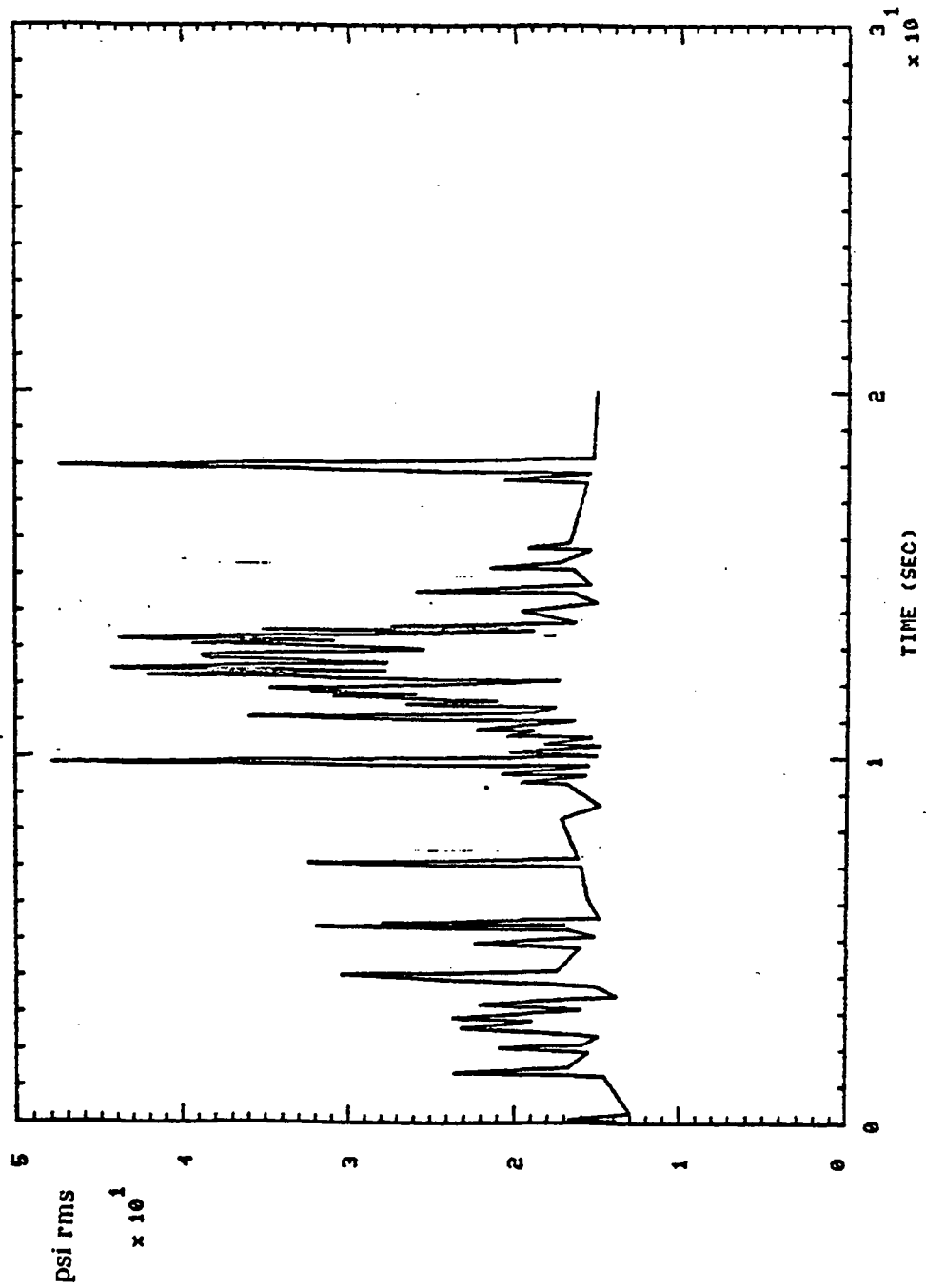


750105 HPOP BAL CAU PR1 (1 - 20K HZ)



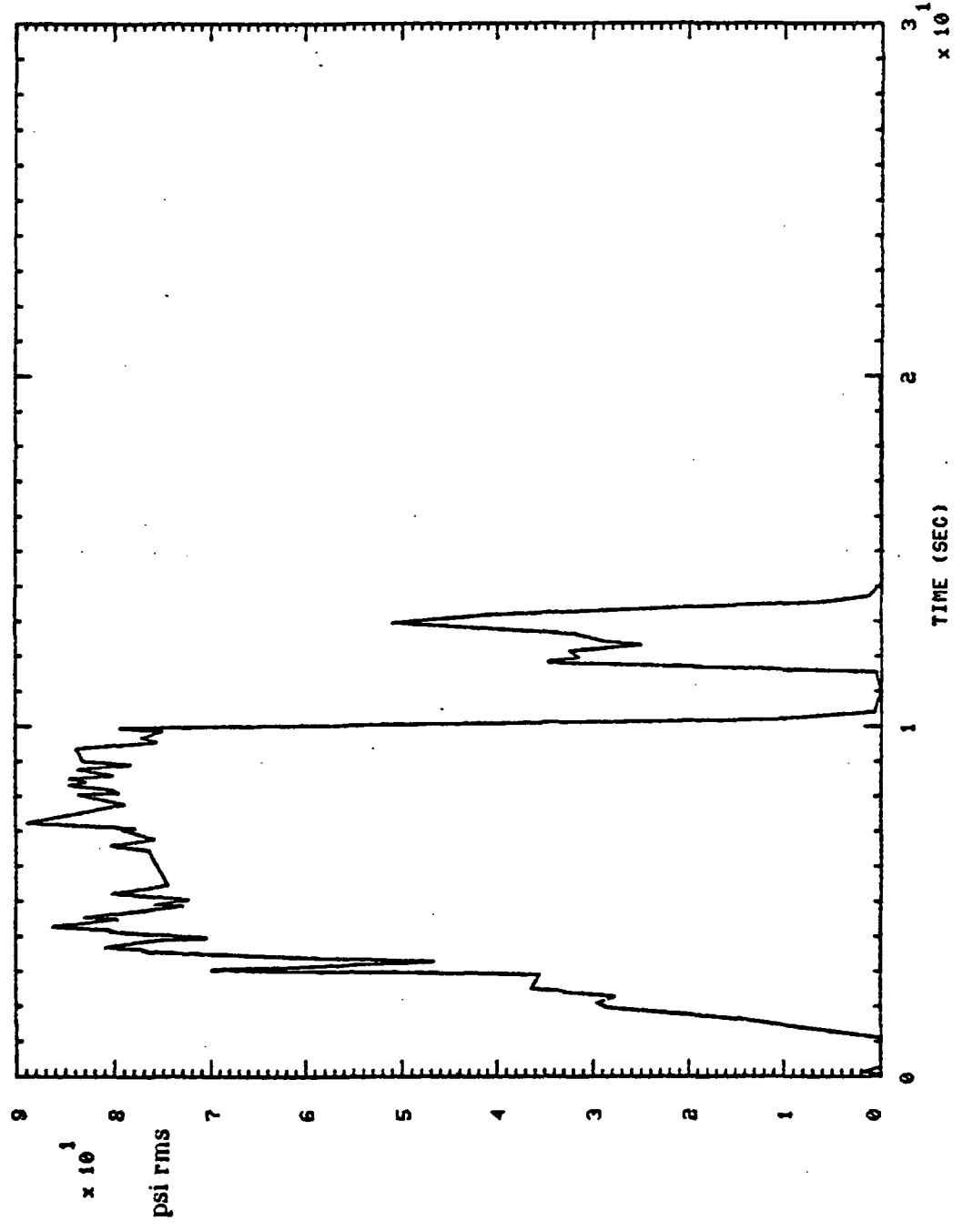
(1 - 20K HZ)

750105 HPOP DS PR

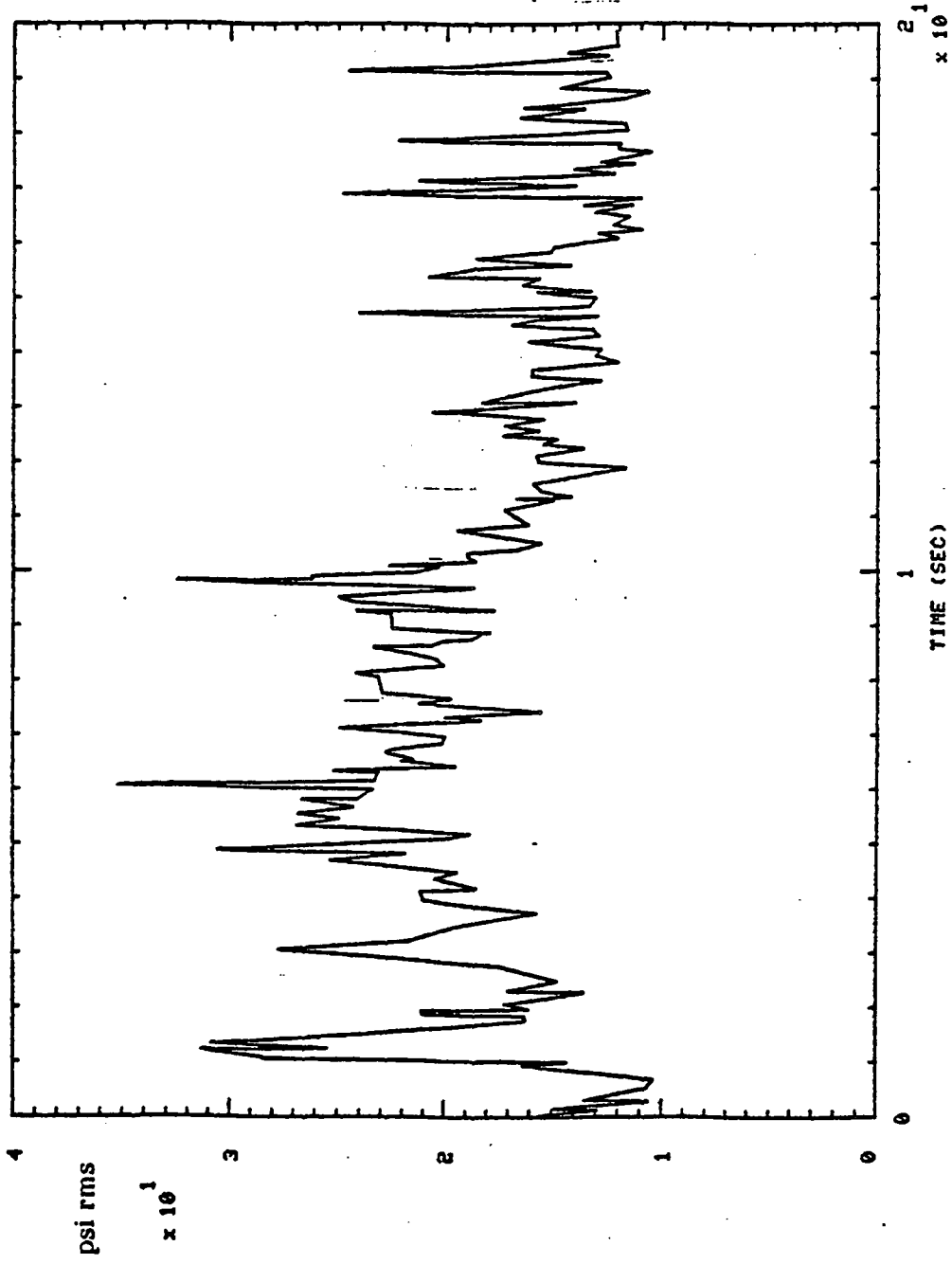


(1 - 20K HZ)

750105 HPOP DISC PR

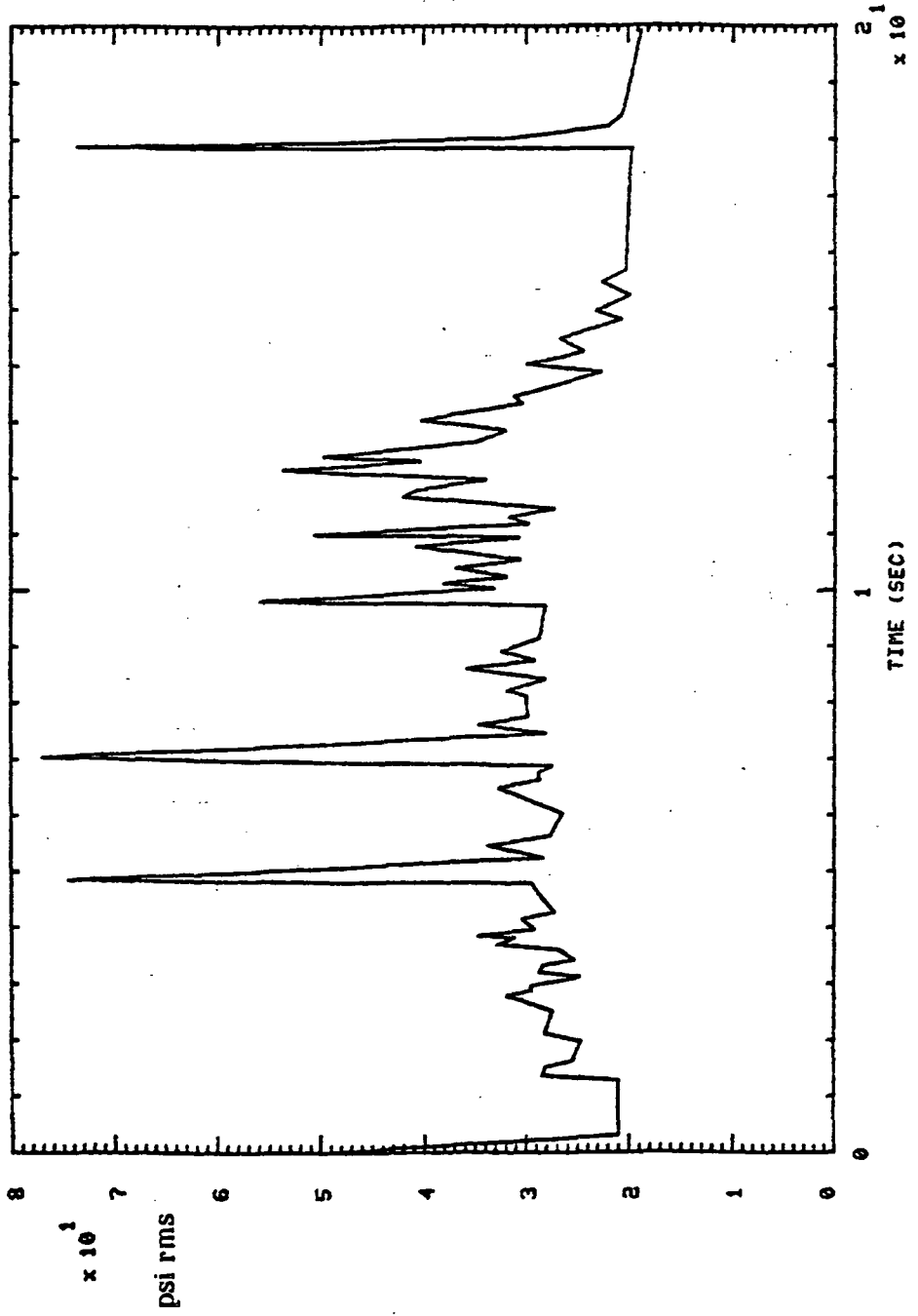


750105 MCC HOT GAS IN PR (1 - 20K HZ)



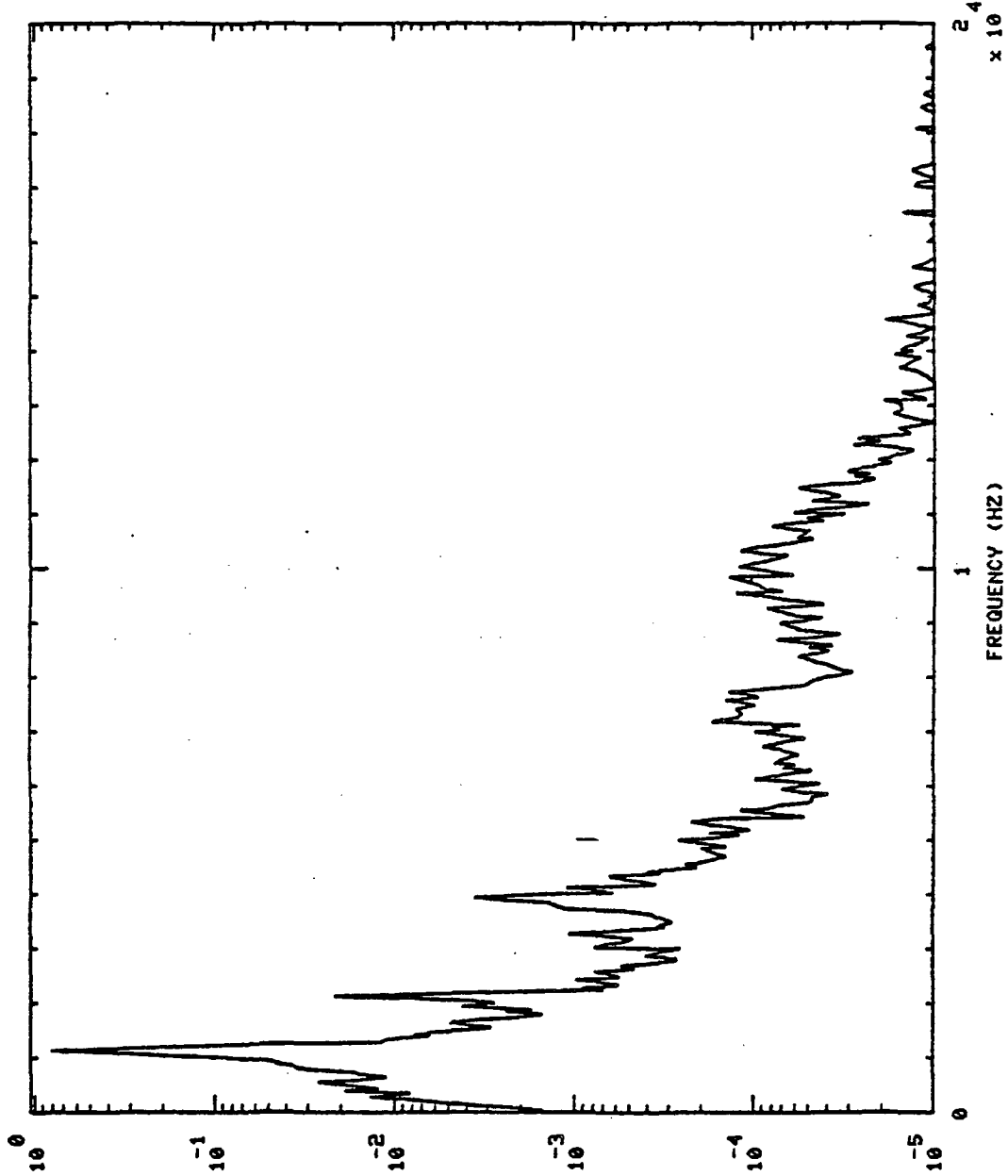
750105 PBP DS PR (1 - 20K HZ)

750105 PBP DS PR



S+ 6.050/HZ

750105 LPFP IN PR

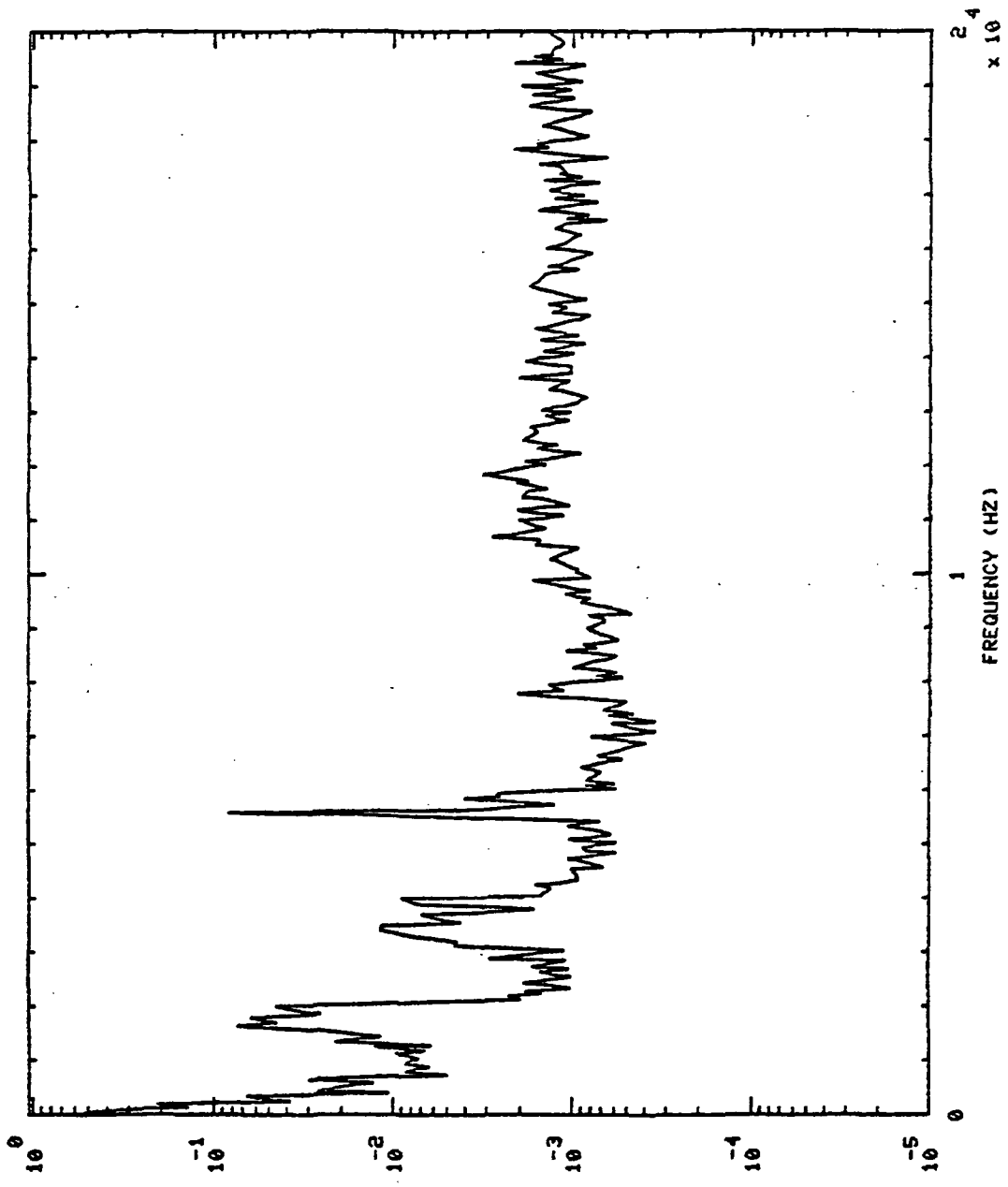


P SQ/HZ

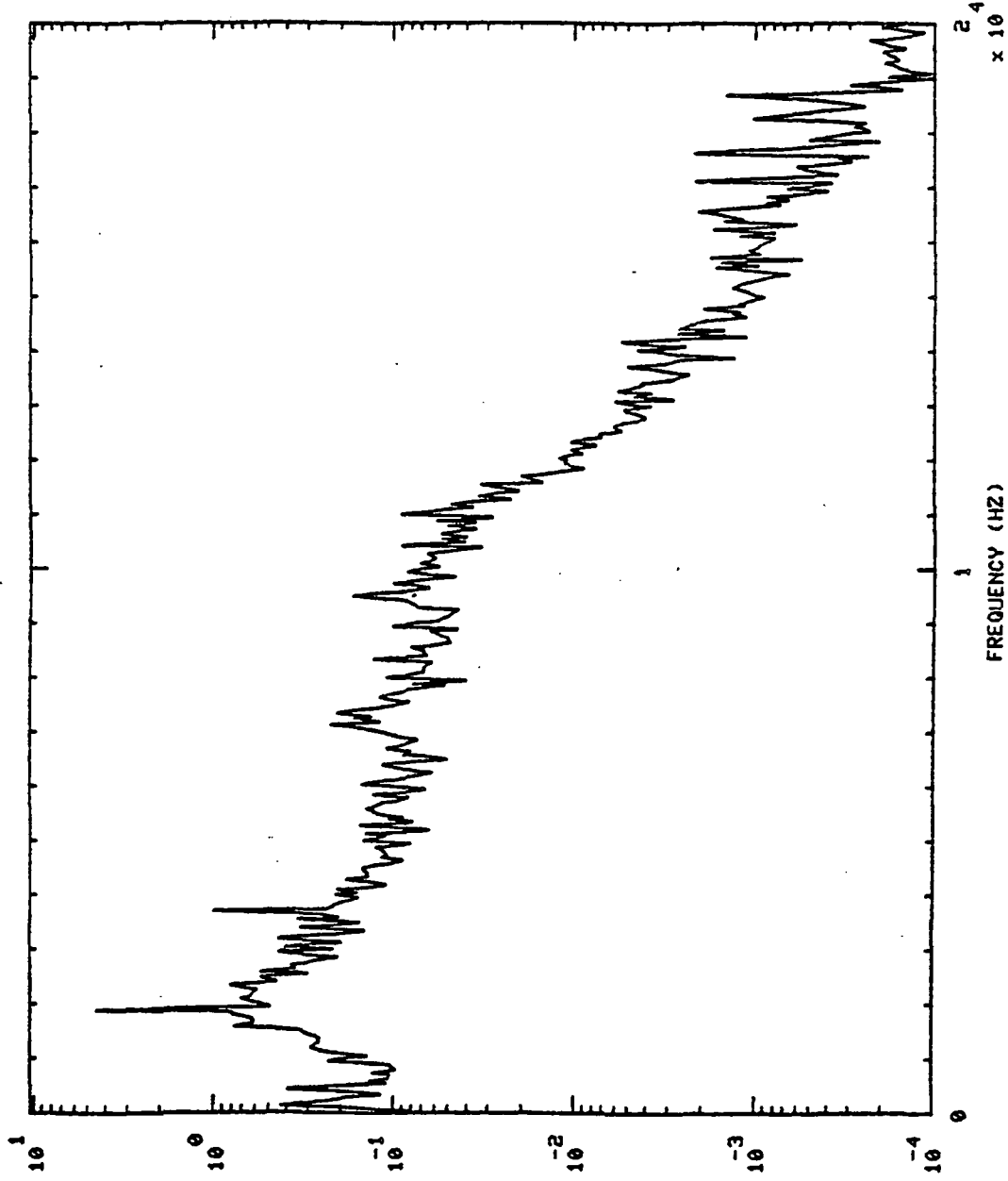
FREQUENCY (HZ)

2.4
x 10⁴

750105 LF0P DS PR S+ 6.050/HZ



750105 HPOP BAL CAU PR2 S+ 6.050/HZ

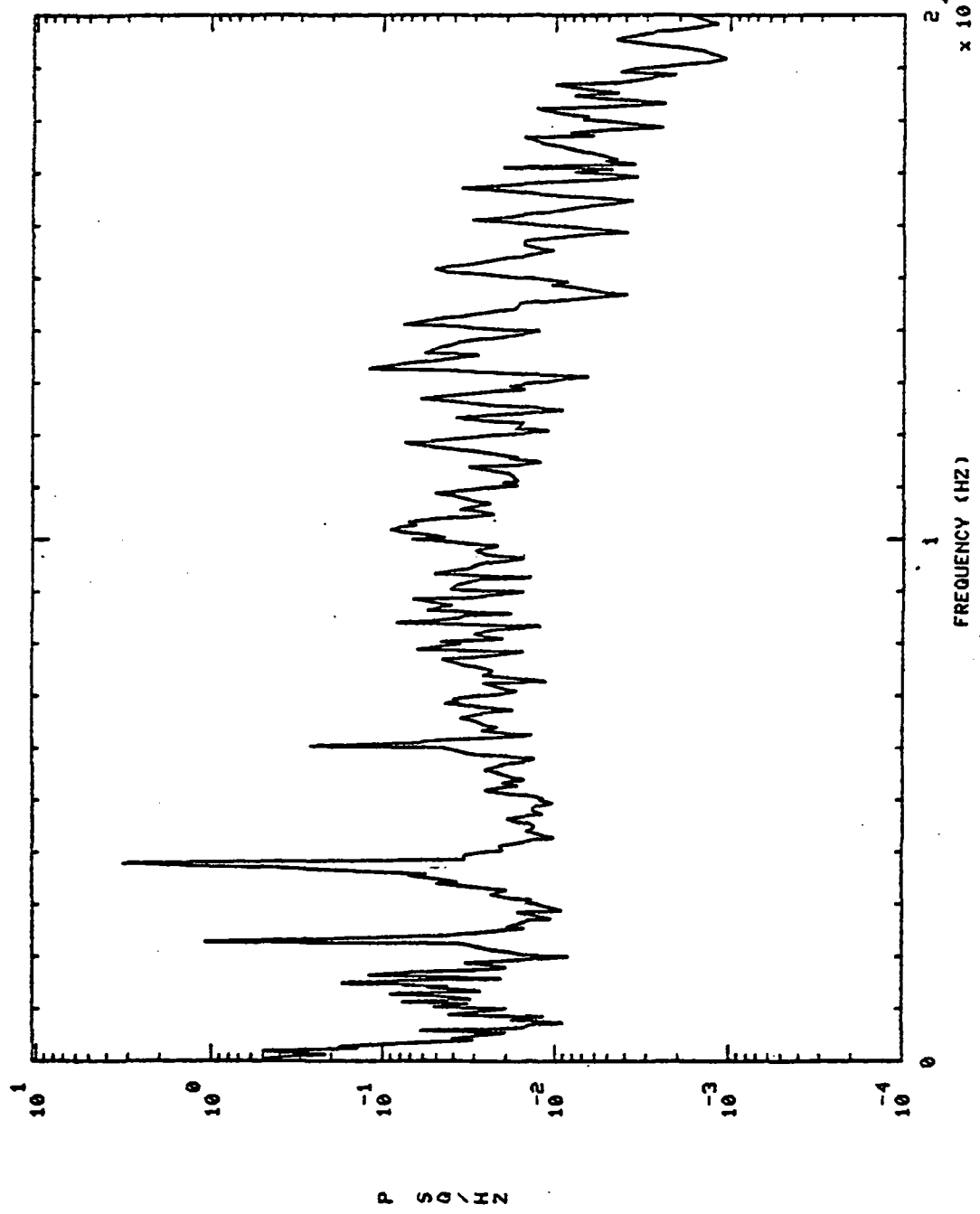


P S D / HZ

10^4
 $\times 10$

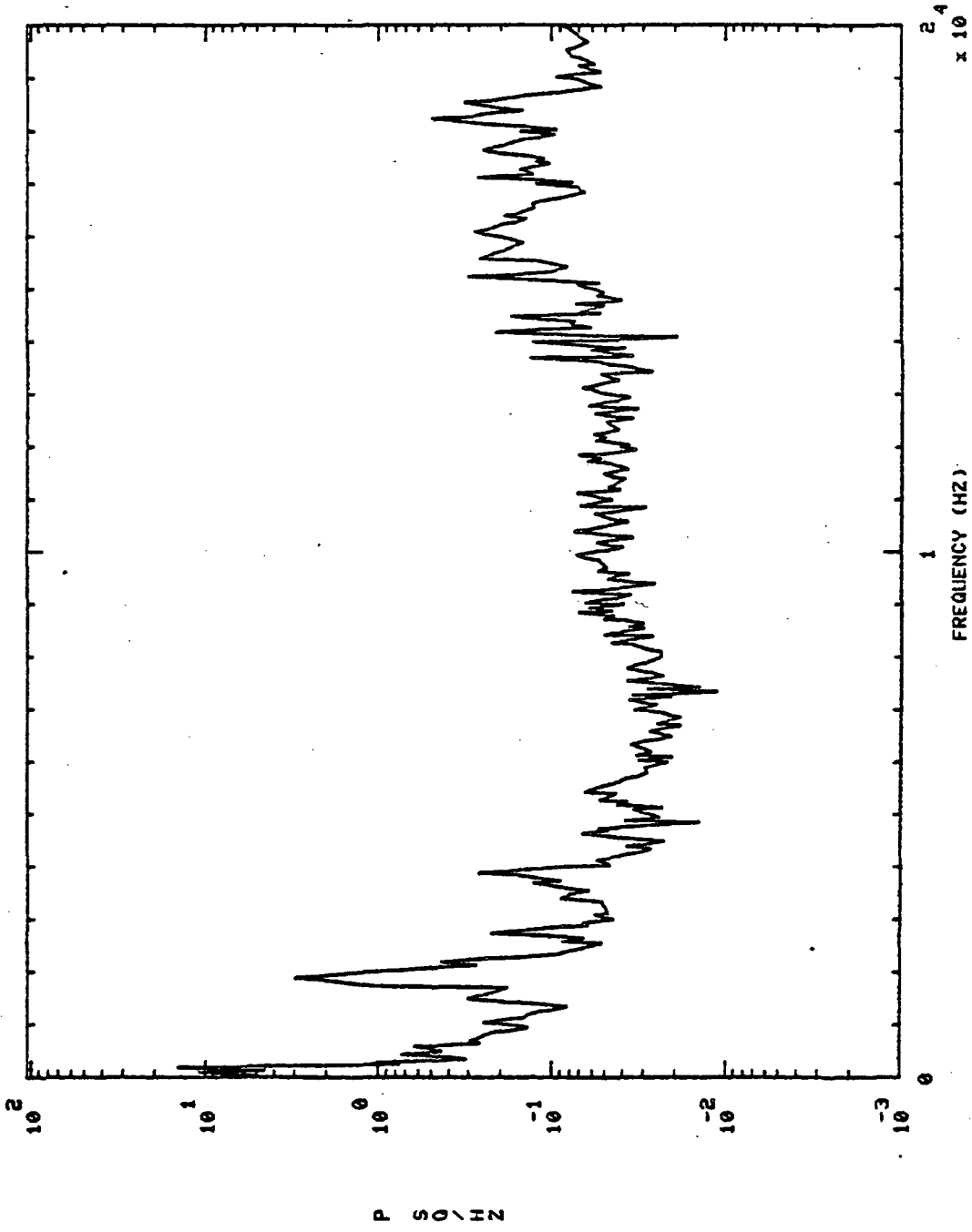
FREQUENCY (HZ)

750105 HPOP BAL CAU FRI S+ 6.050/HZ



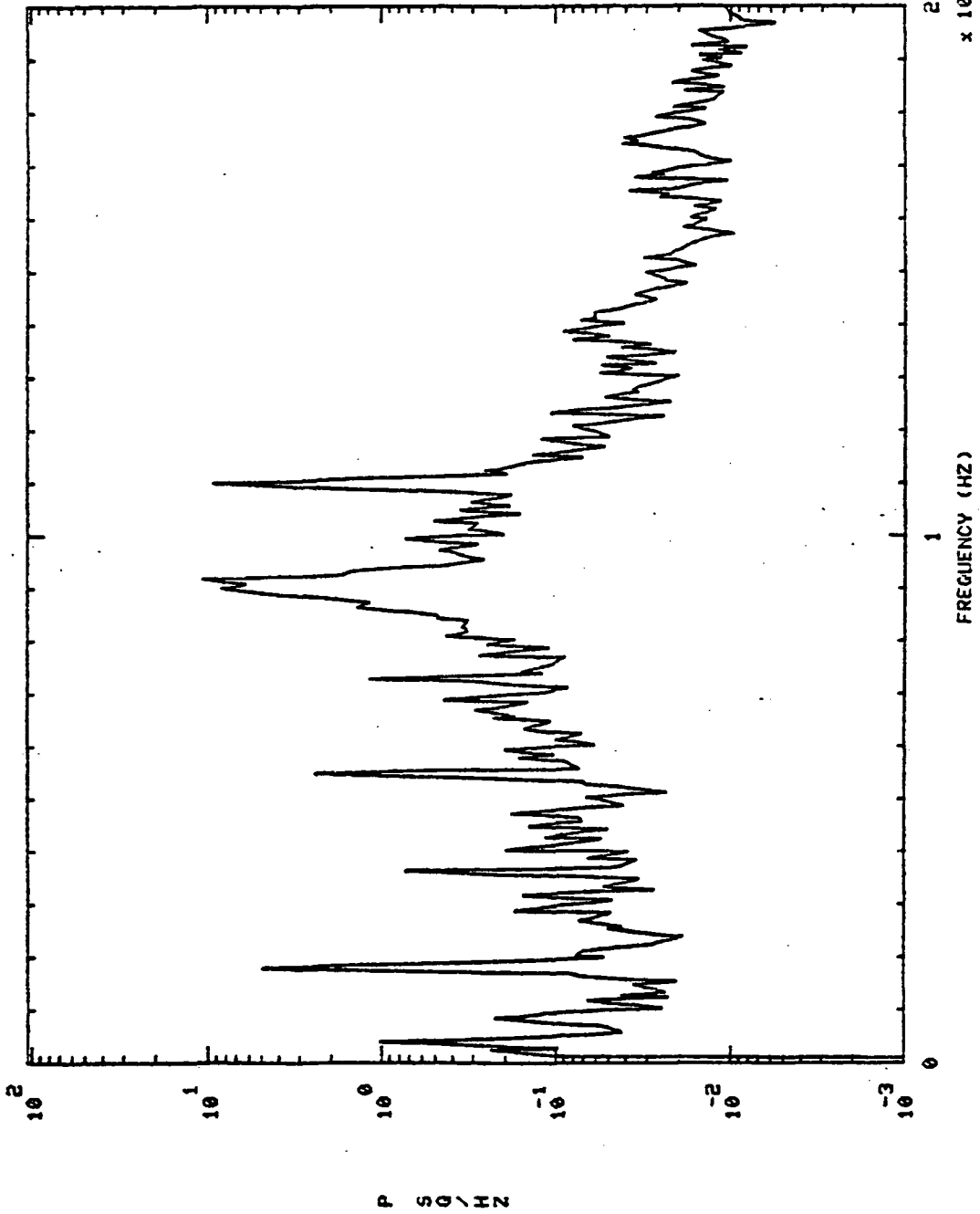
C-3

750105 HPOP DS PR S+ 6.050/HZ

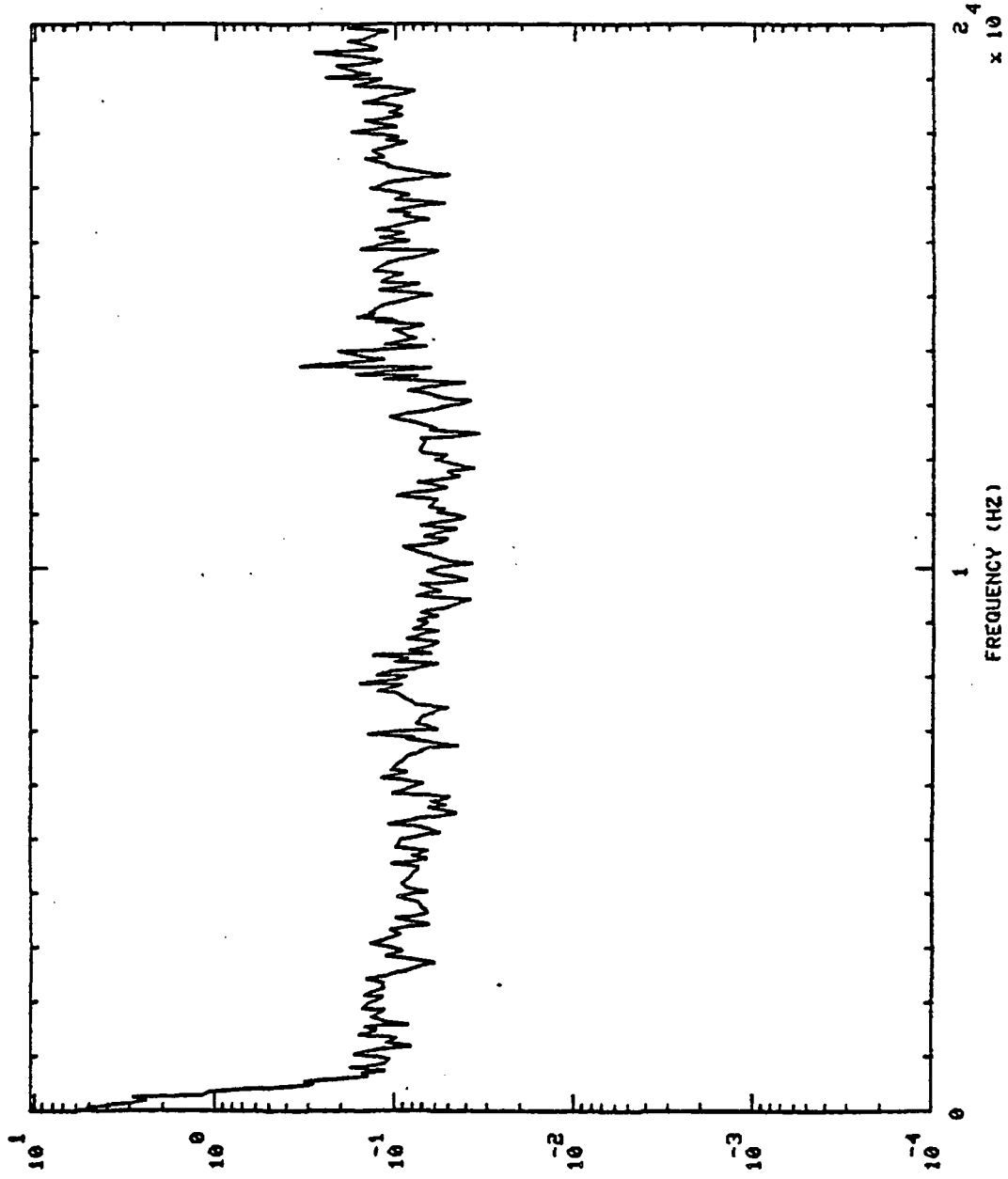


S+ 6.050/HZ

750105 HPOP DISC PR

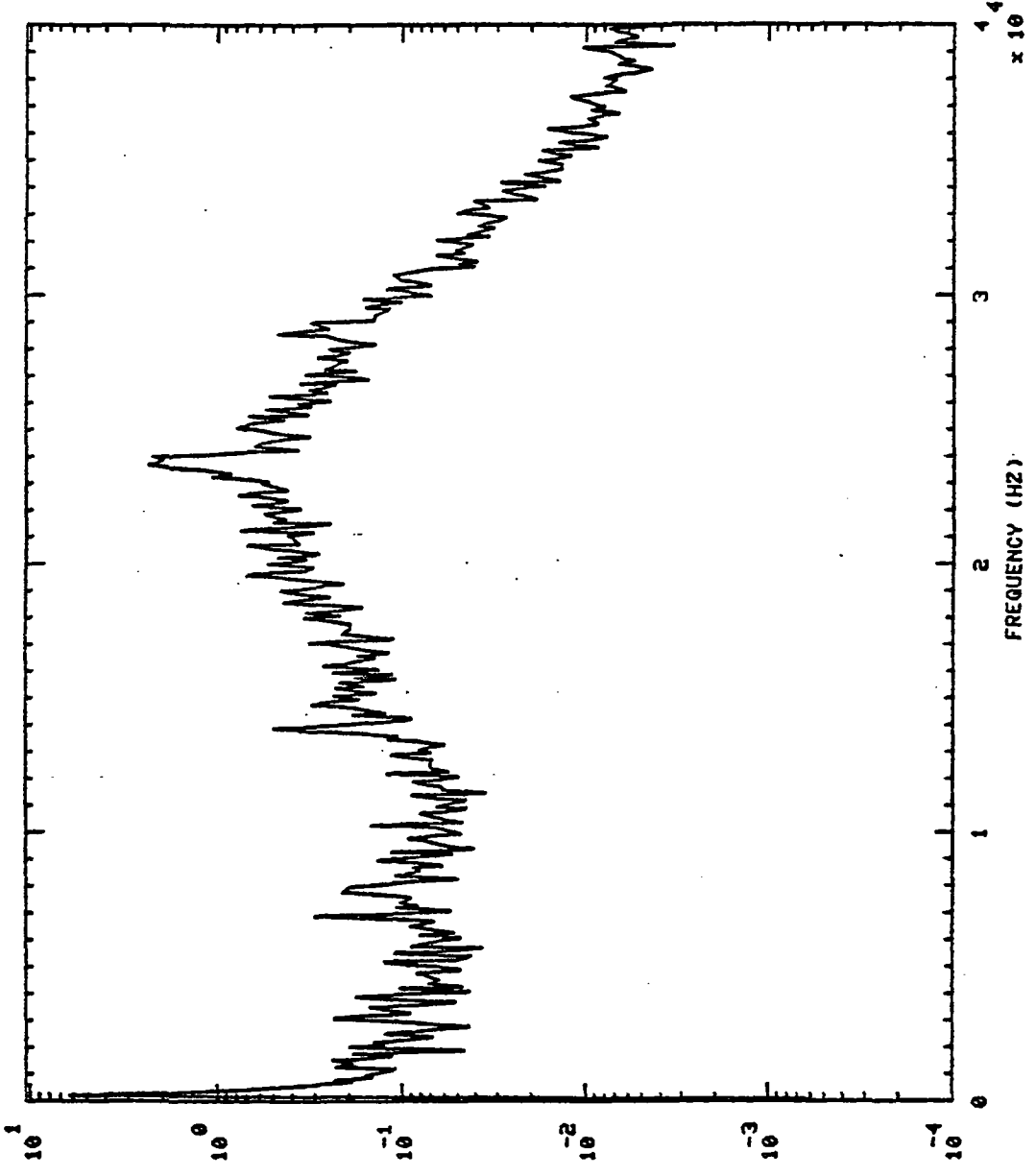


750105 MCC HOT GAS IN PR S+ 6.050/HZ



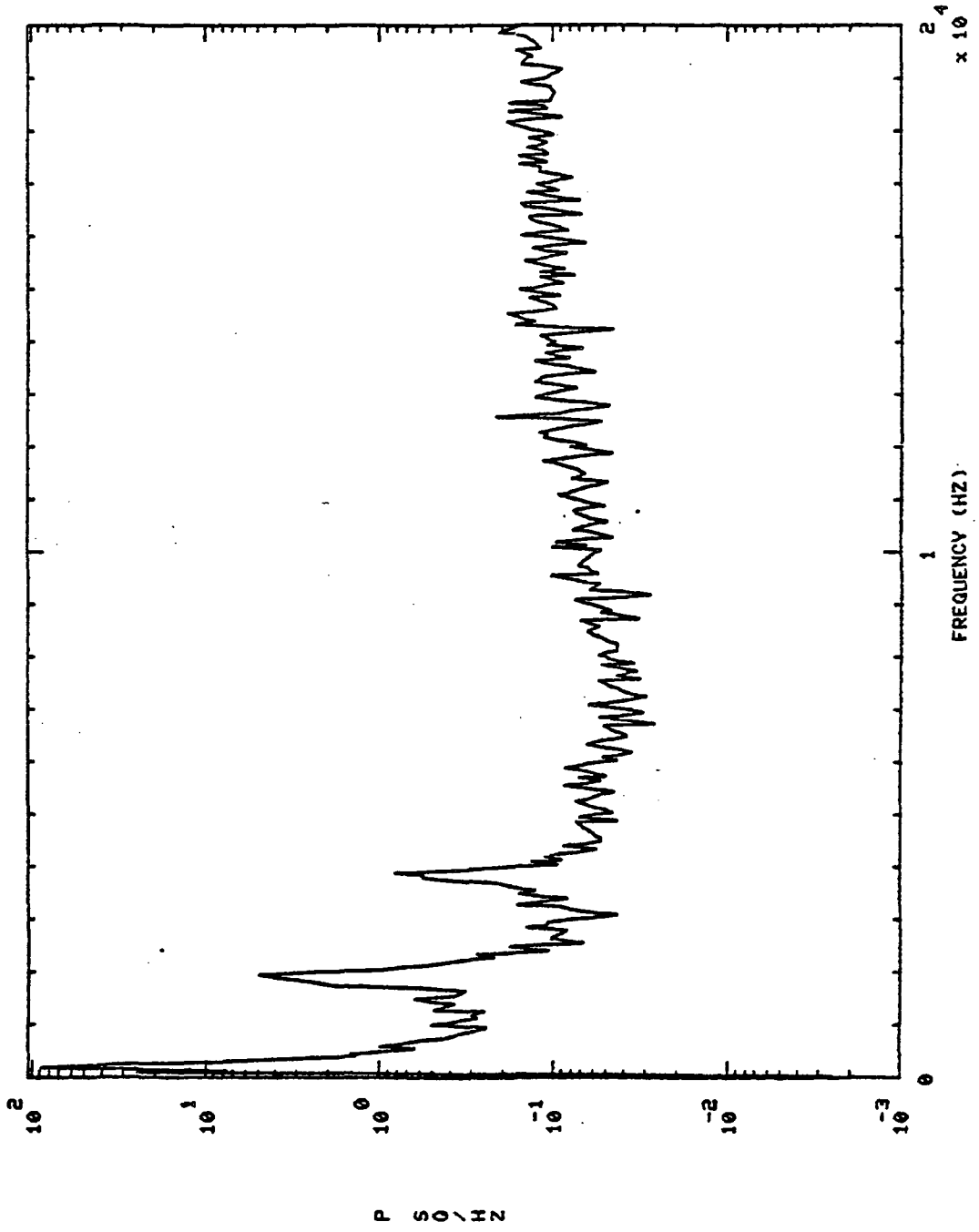
P S D / H Z

750105 MCC HOT GAS IN PR S+ 6.01H0,'S

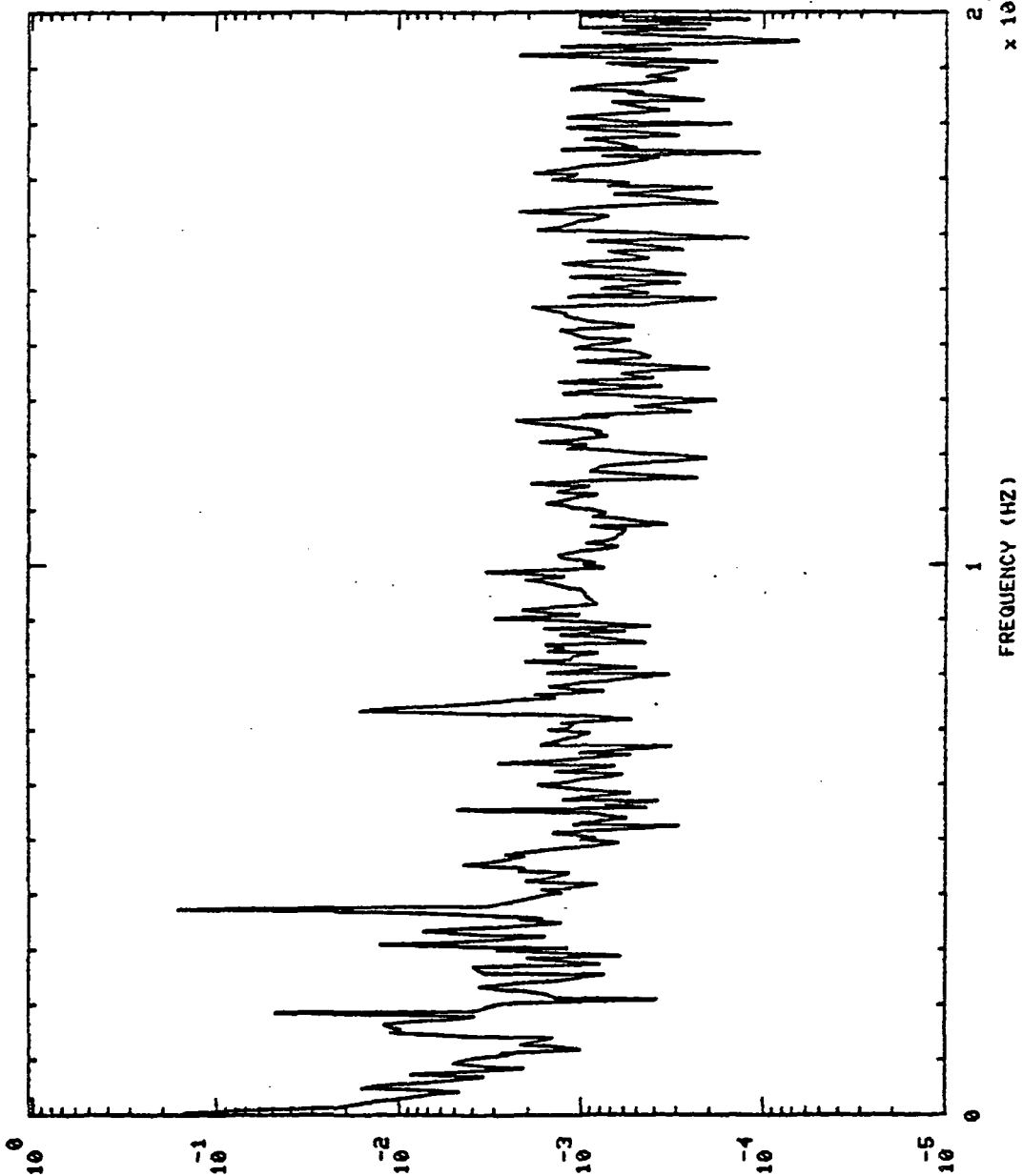


P S D / HZ

750105 PBP DS PR S+ 6.0SQ/HZ



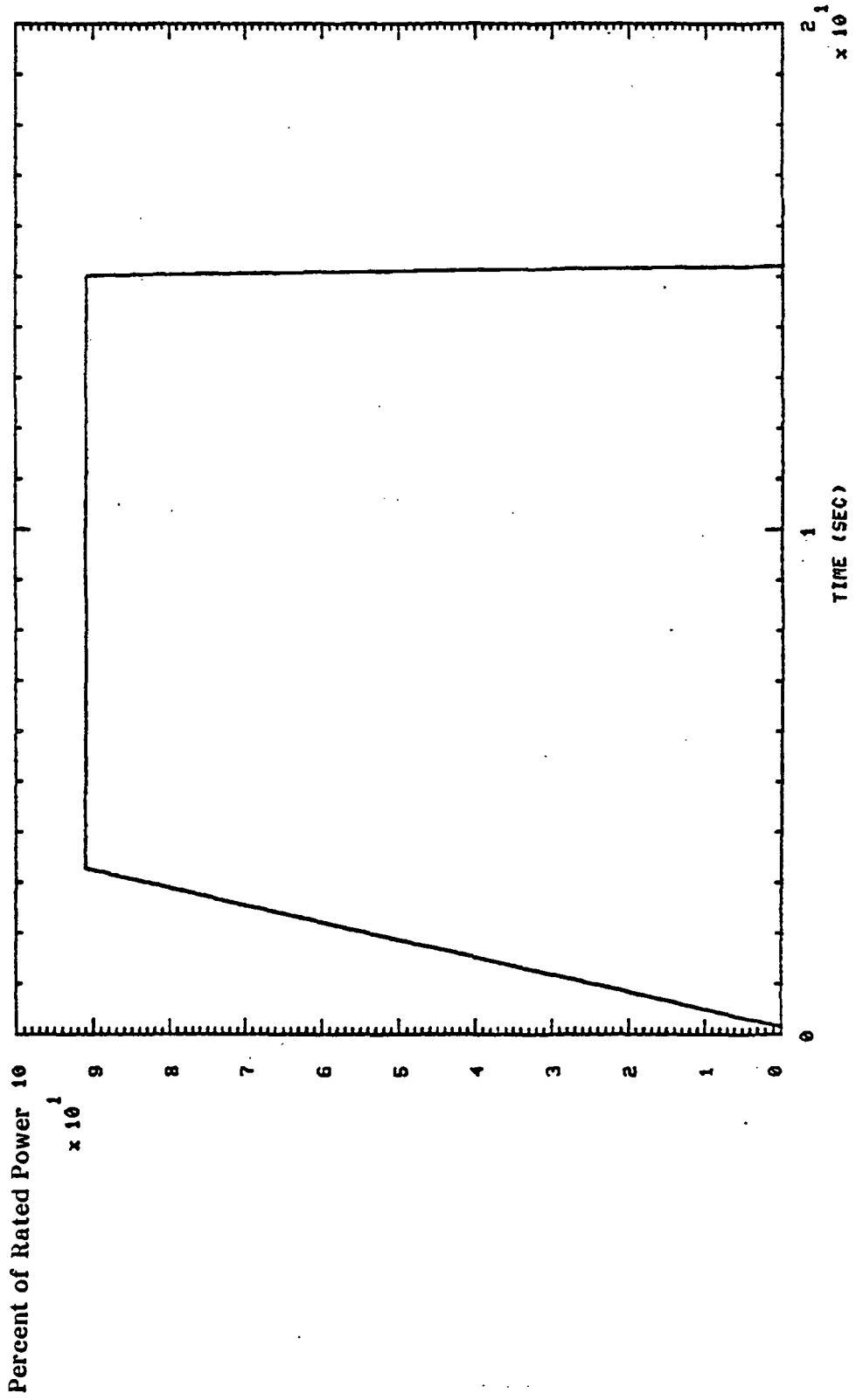
750105 CHAMBER PR S+ 6.050/HZ



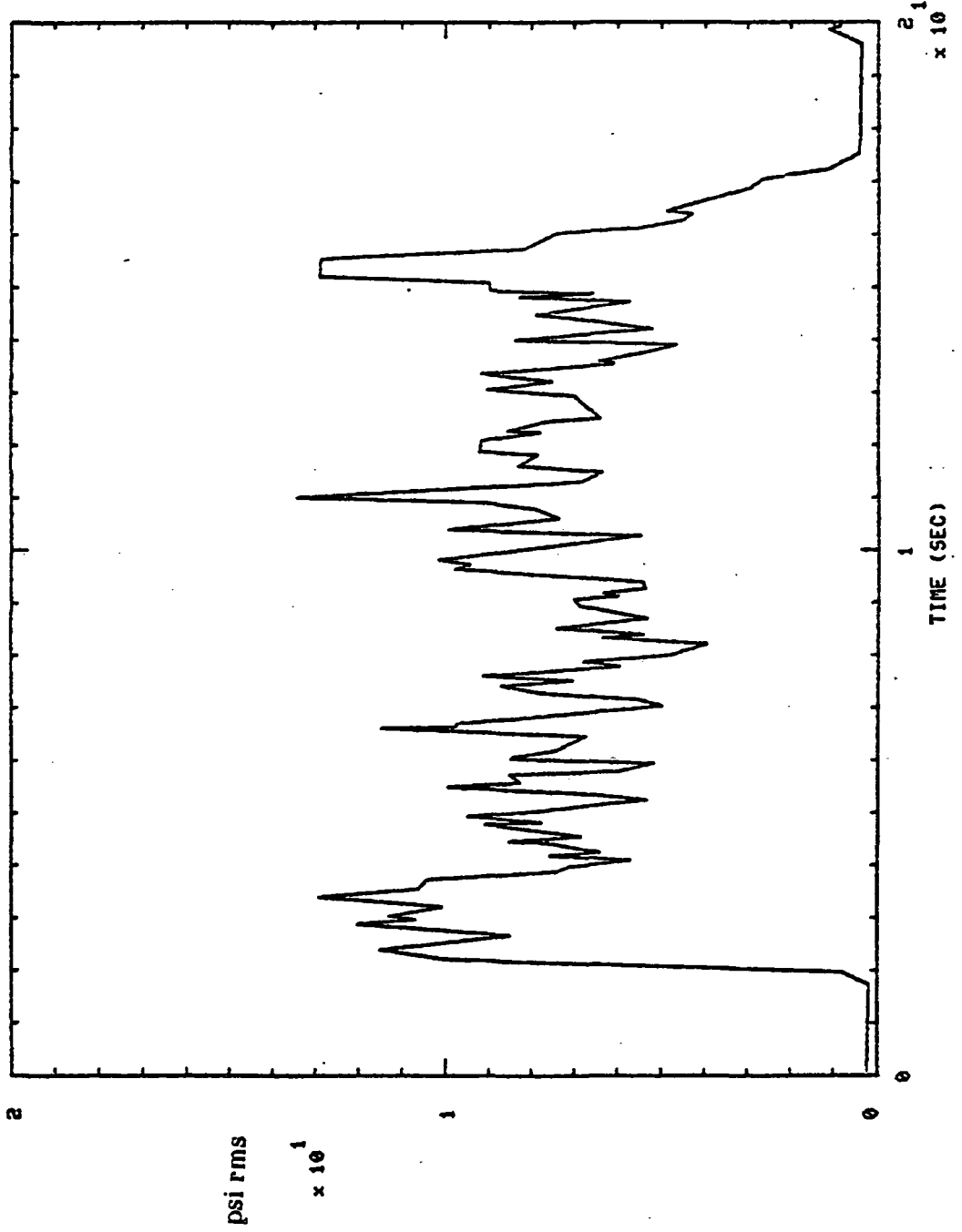
P SQ/HZ

750106 THRUST

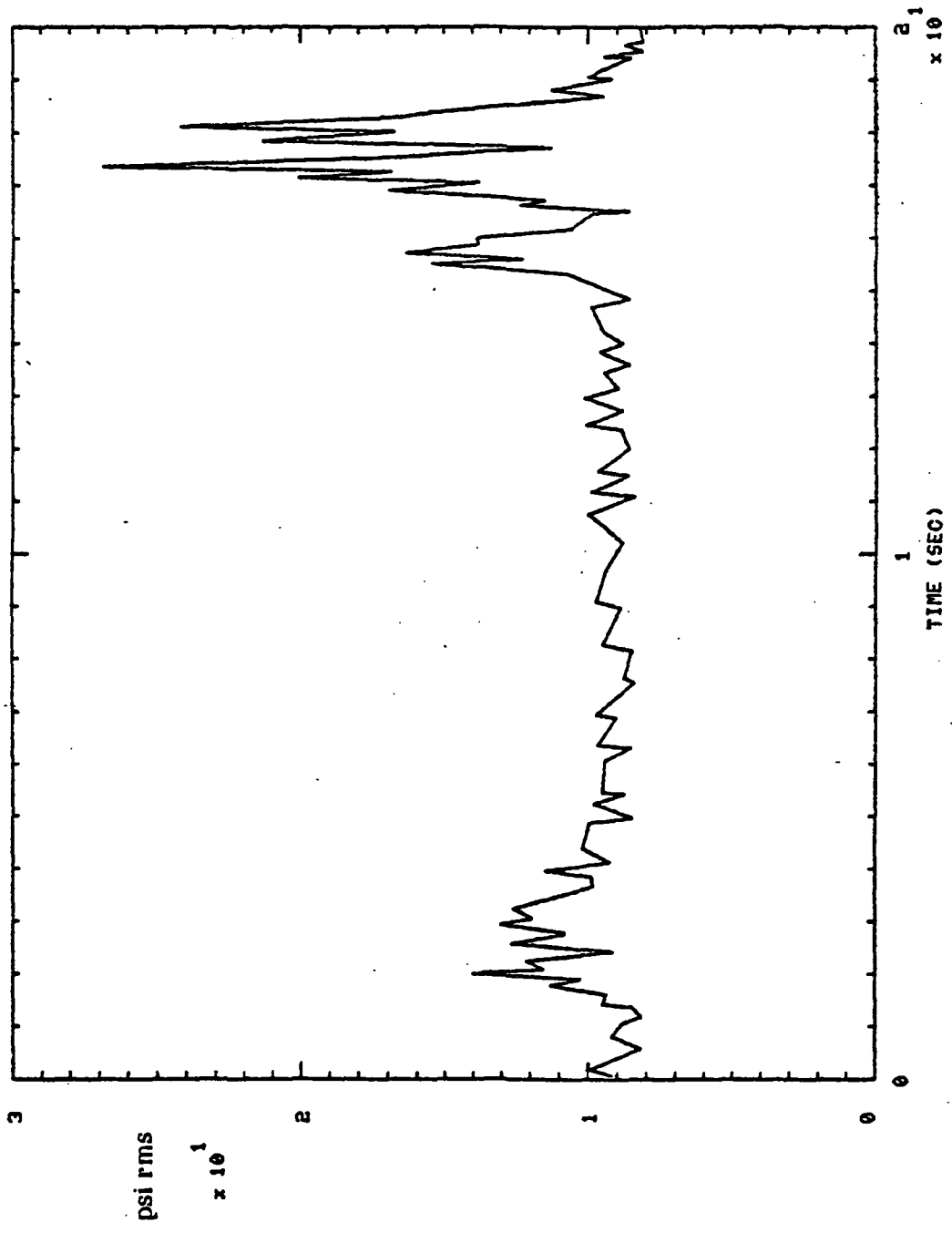
(UNFILTERED)



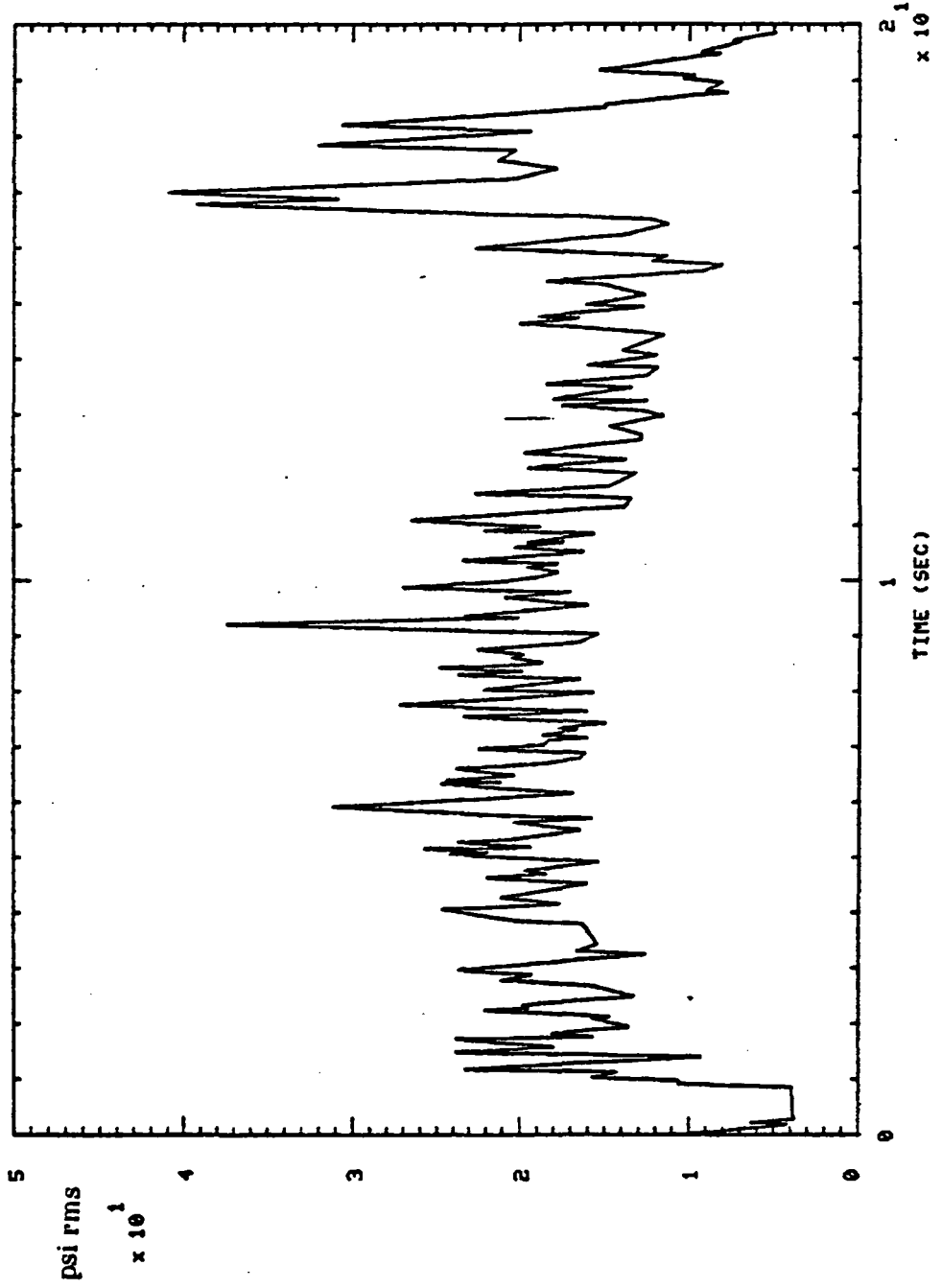
750106 LPFP IN PR (1 - 20K HZ)



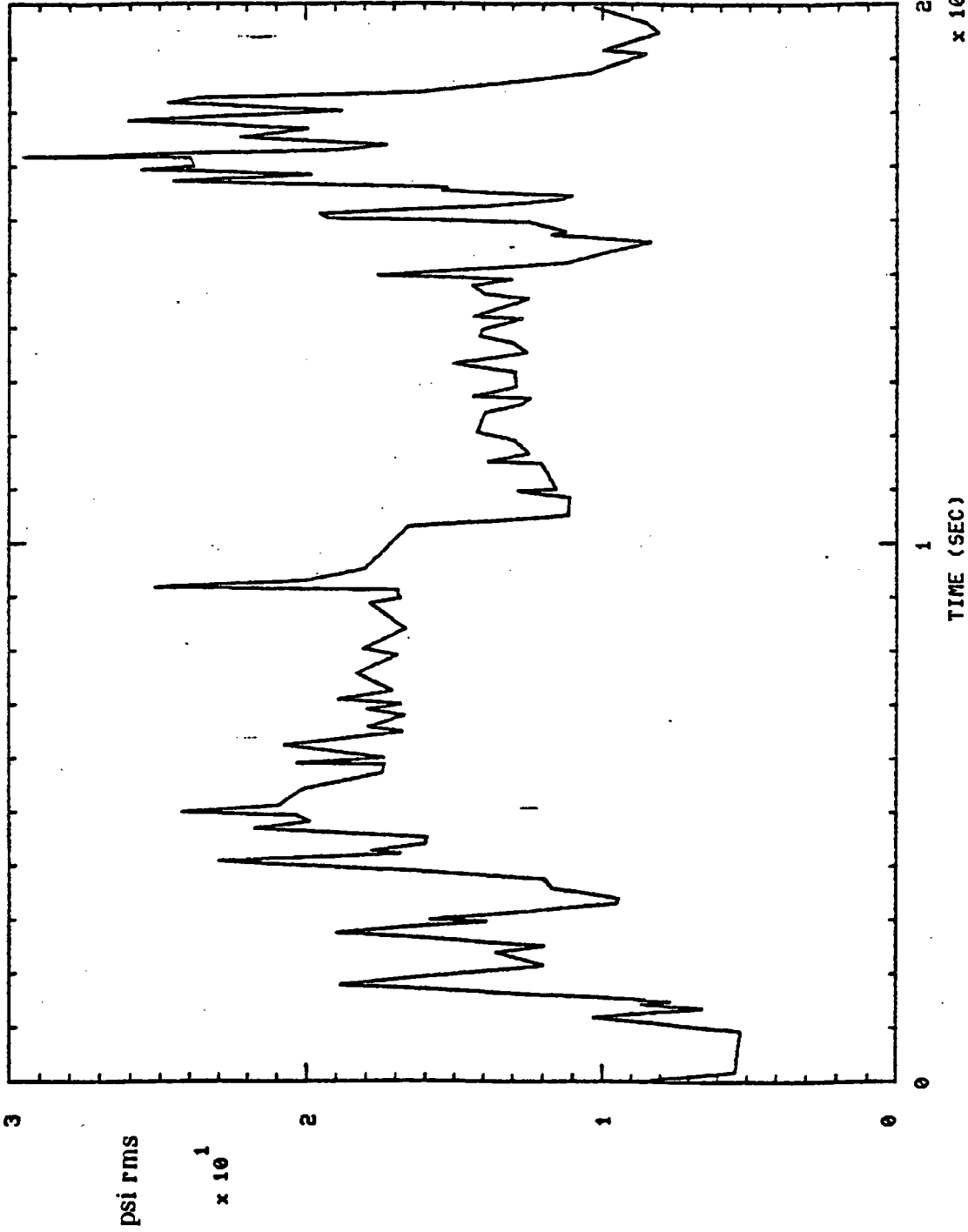
750106 LPOP DS PR (1 - 20K HZ)



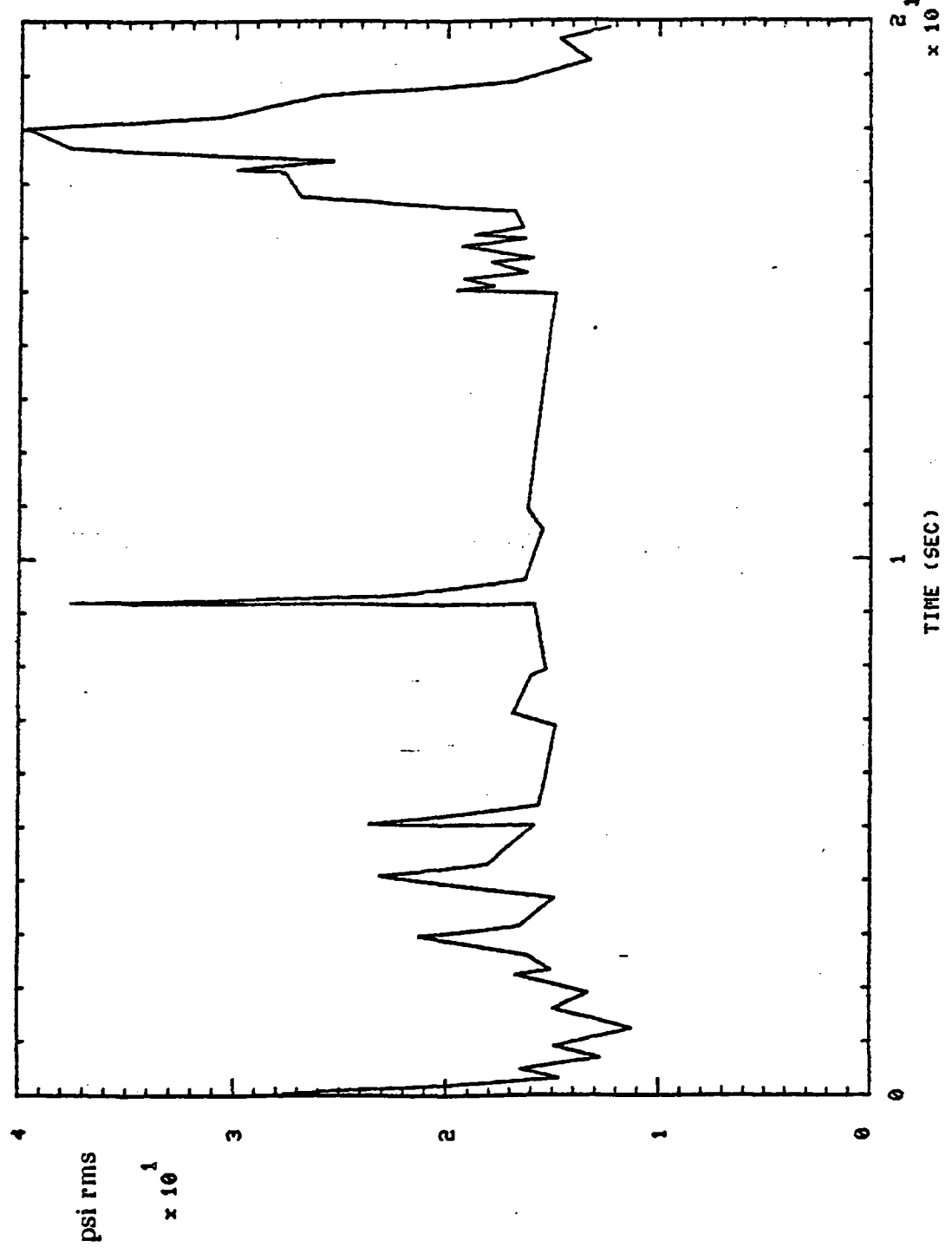
750106 HPOP BAL CAU PR2 (1 - 20K HZ)



750106 HPOP BAL CAU PR1 (1 - 20K HZ)



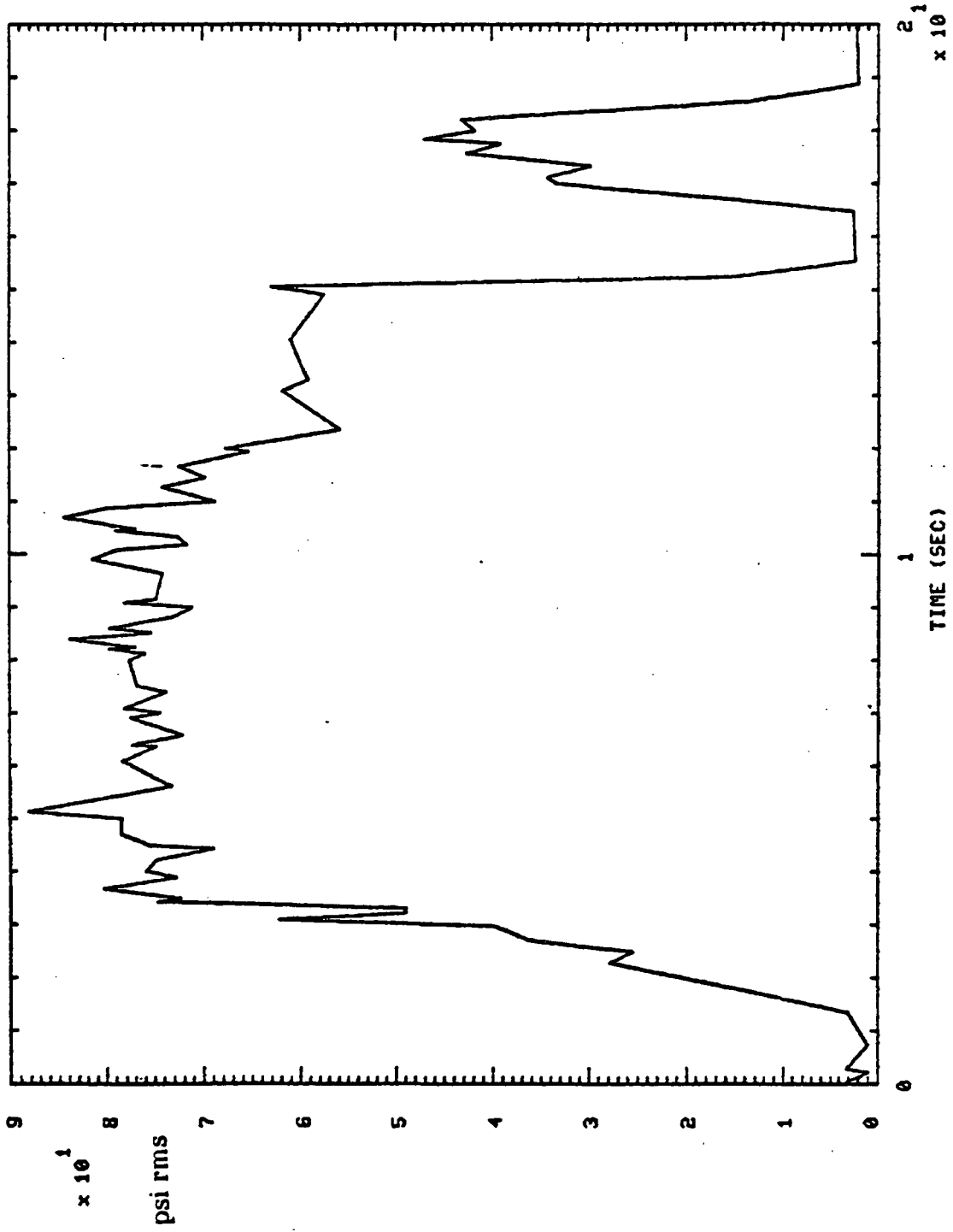
750106 HPOP DS PR (1 - 20K HZ)



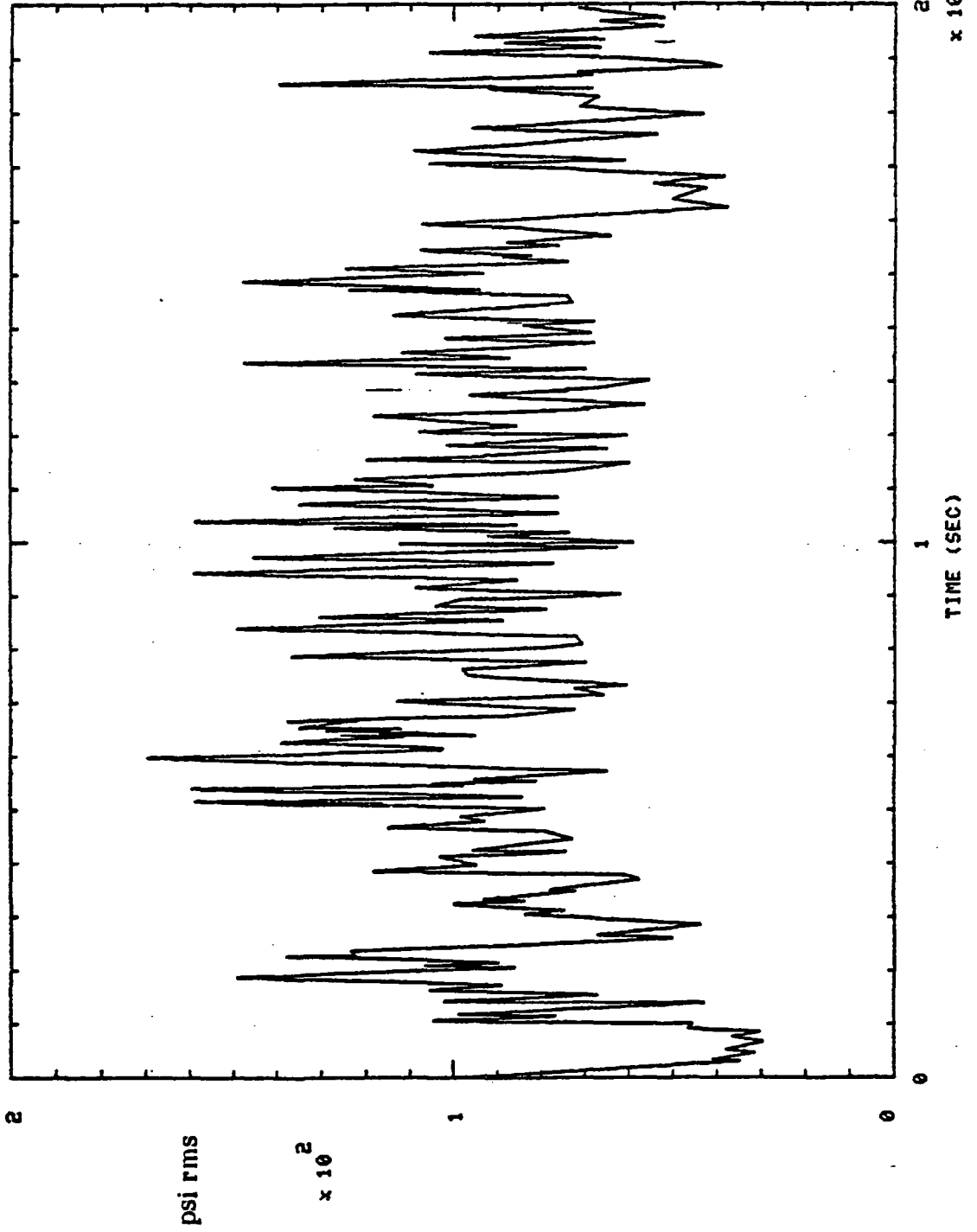
(1 - 20K HZ)

HPOP DISC PR

750106



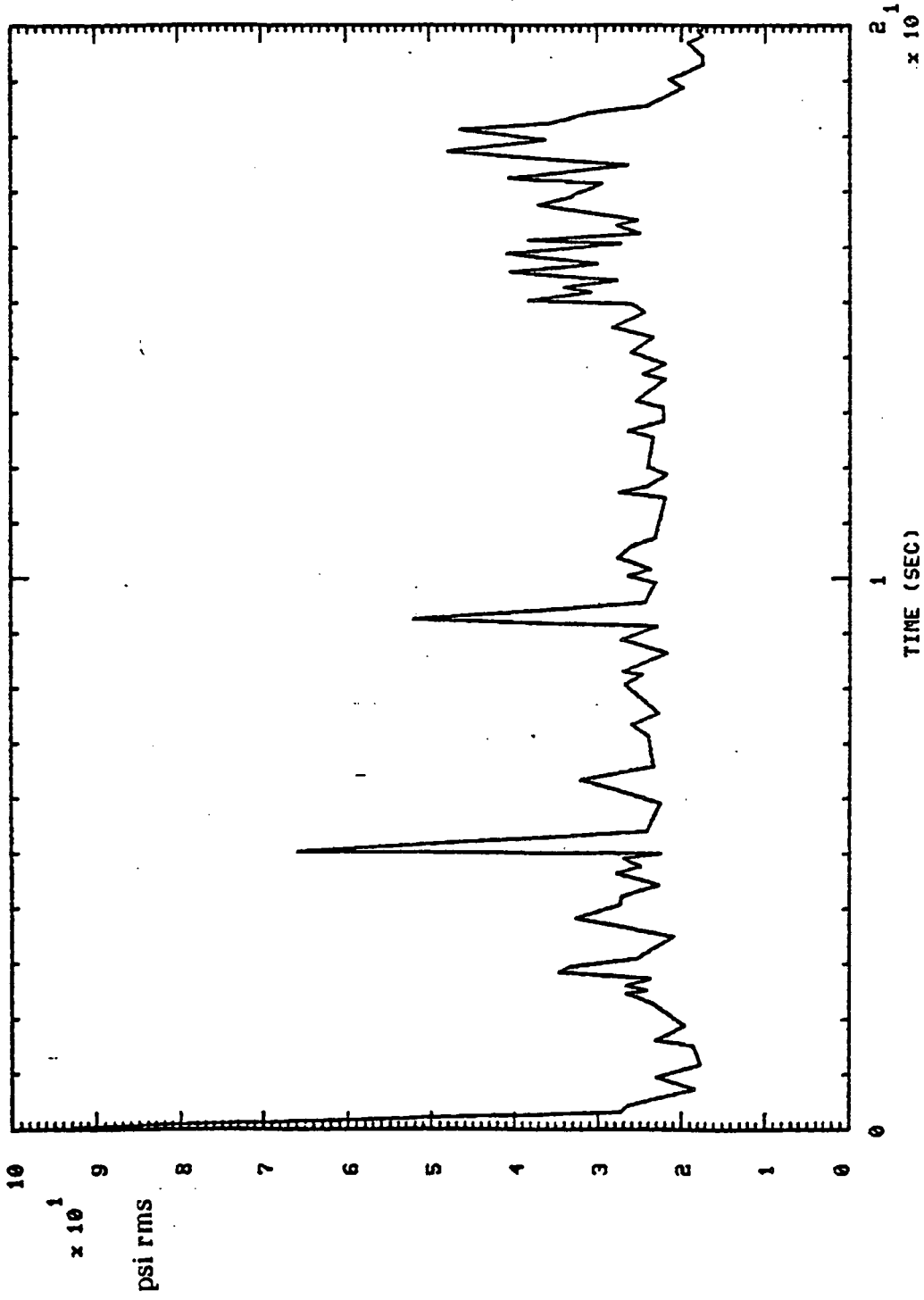
750106 MCC HOT GAS IN PR (1 - 20K HZ)



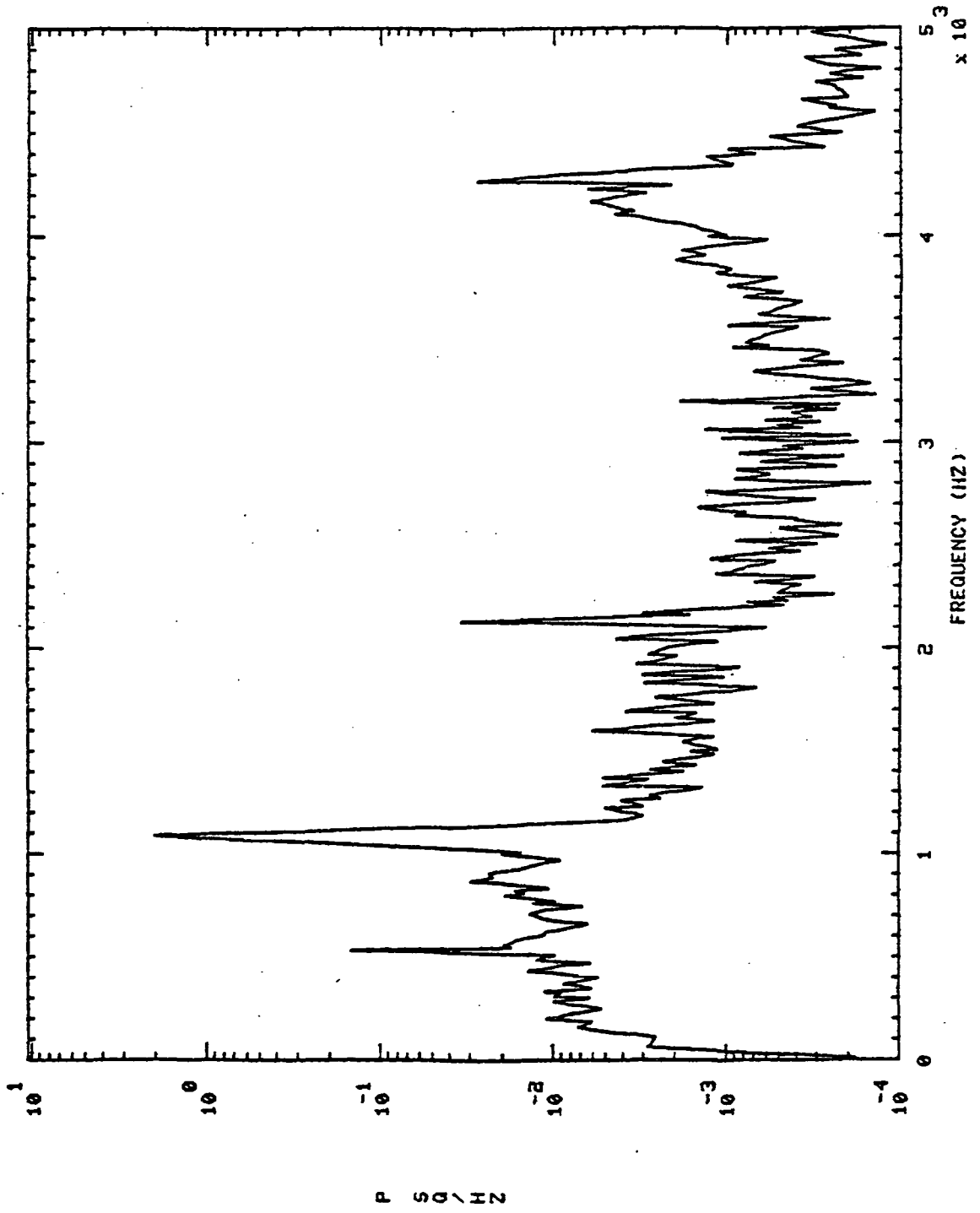
(1 - 20K HZ)

PBP DS PR

750106

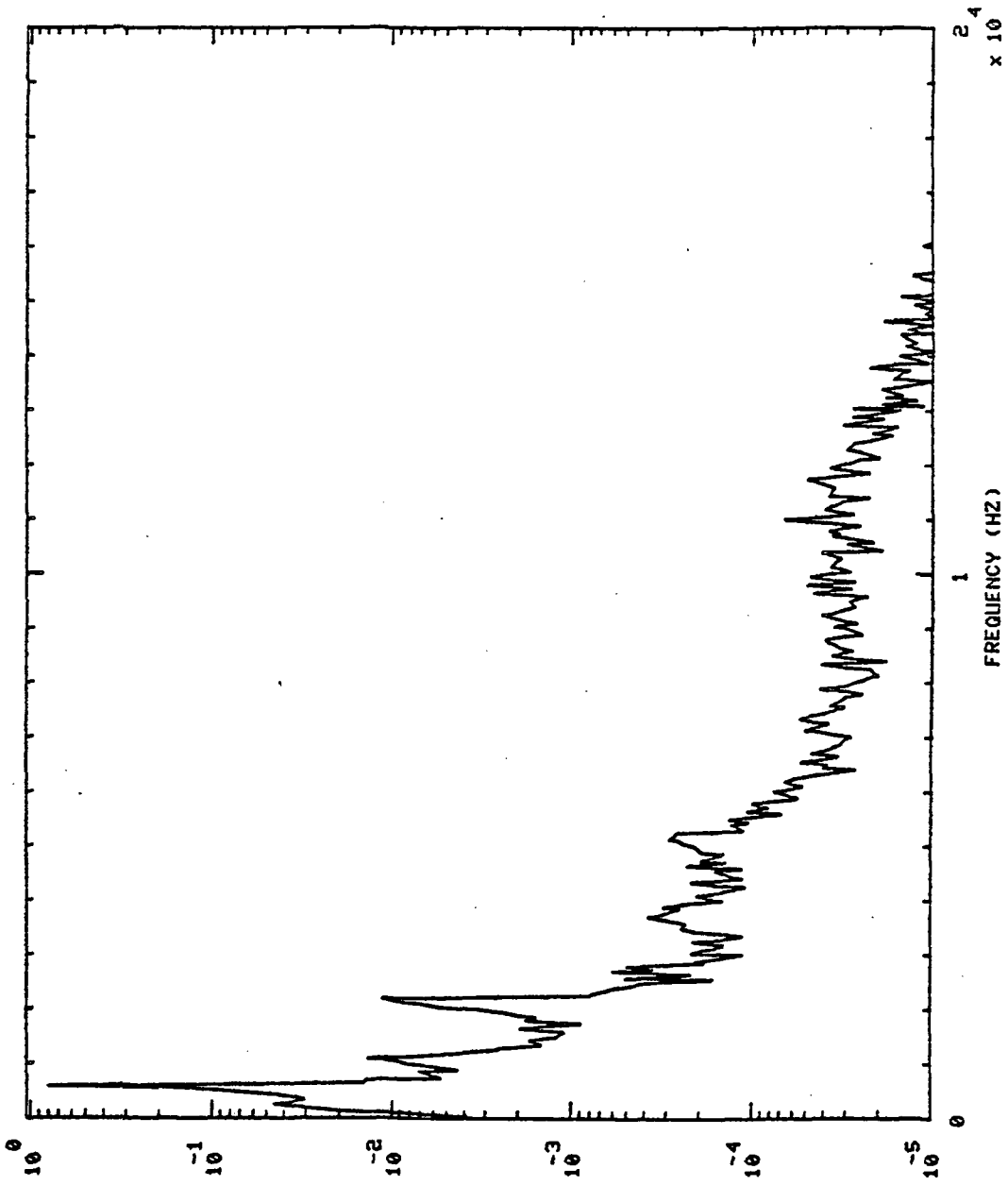


750106 LPFP IN PR S+ 6.050/HZ



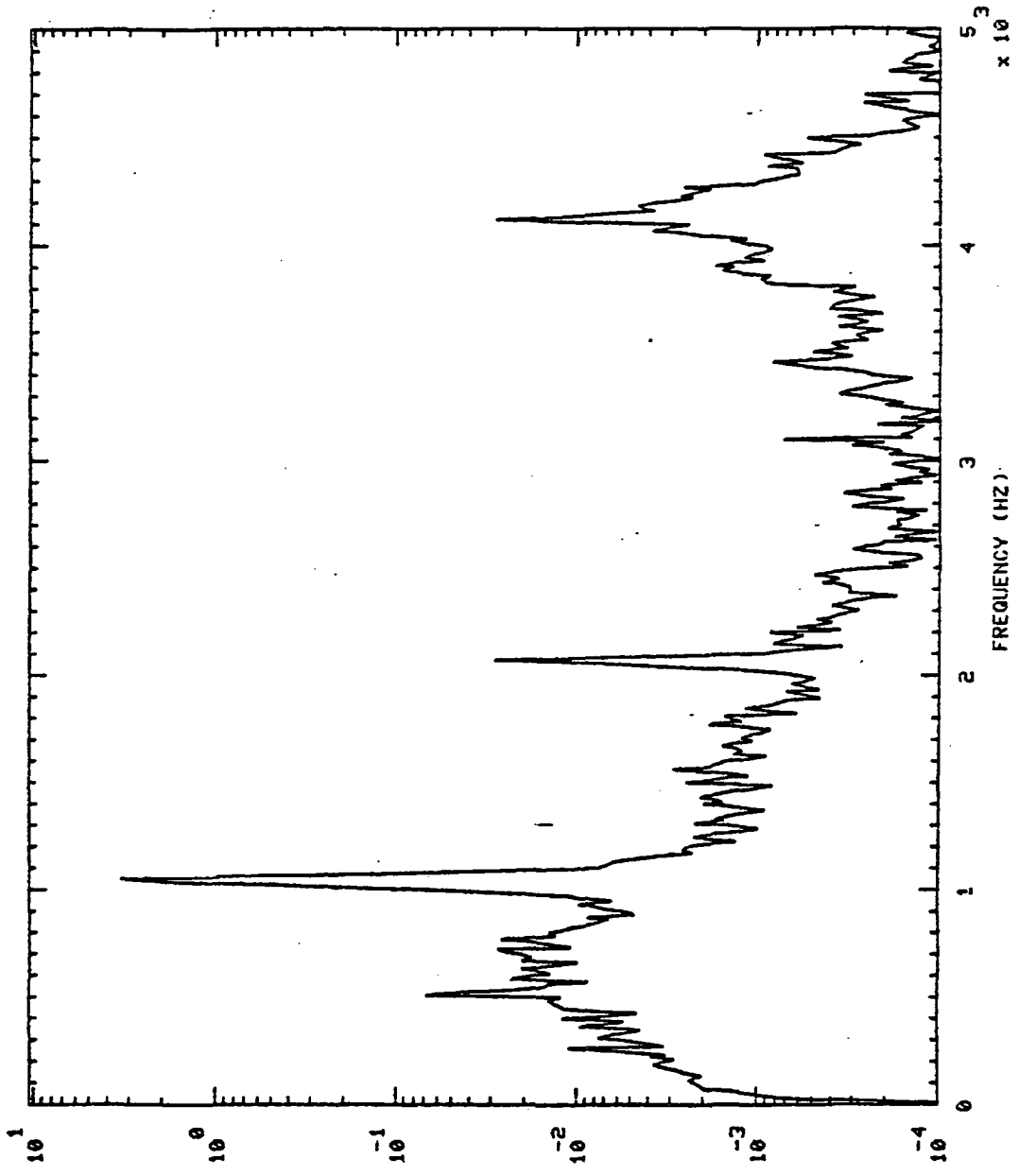
S+ 6.050/HZ

750106 LPFP IN PR



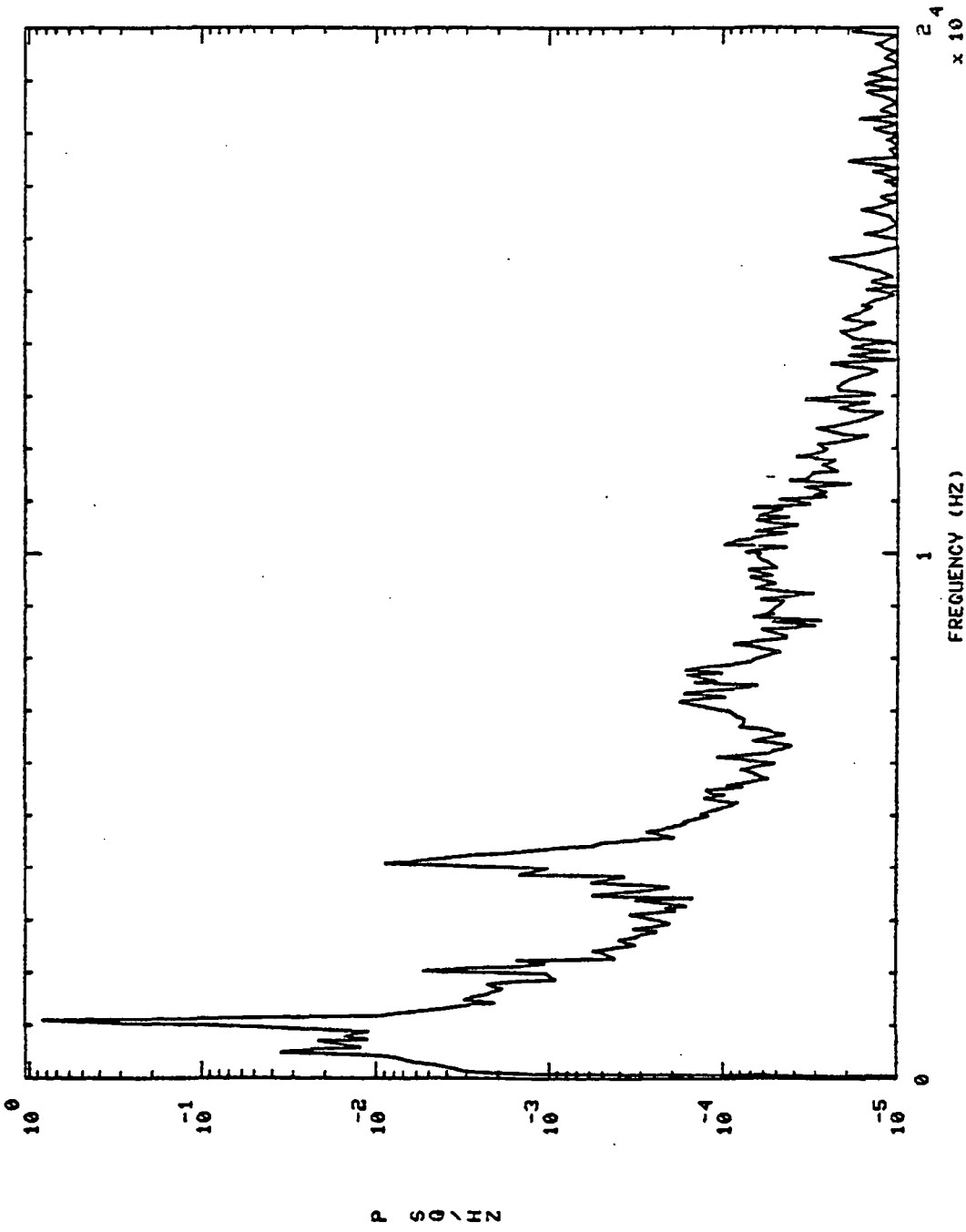
P S D / HZ

750106 LFPF IN PR S+ 11.050/HZ

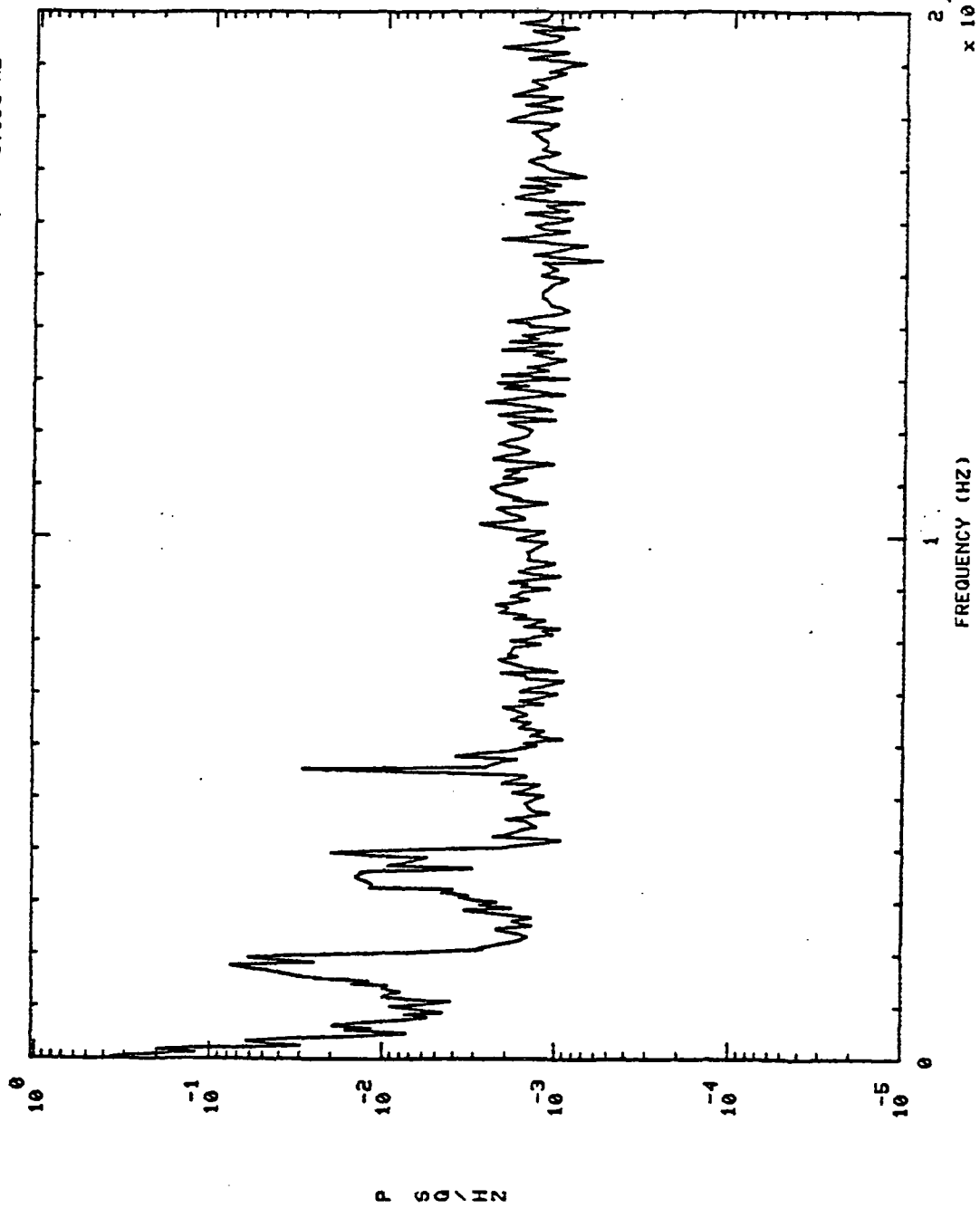


P S D / H Z

750106 LPFP IN PR S+ 11.050/HZ

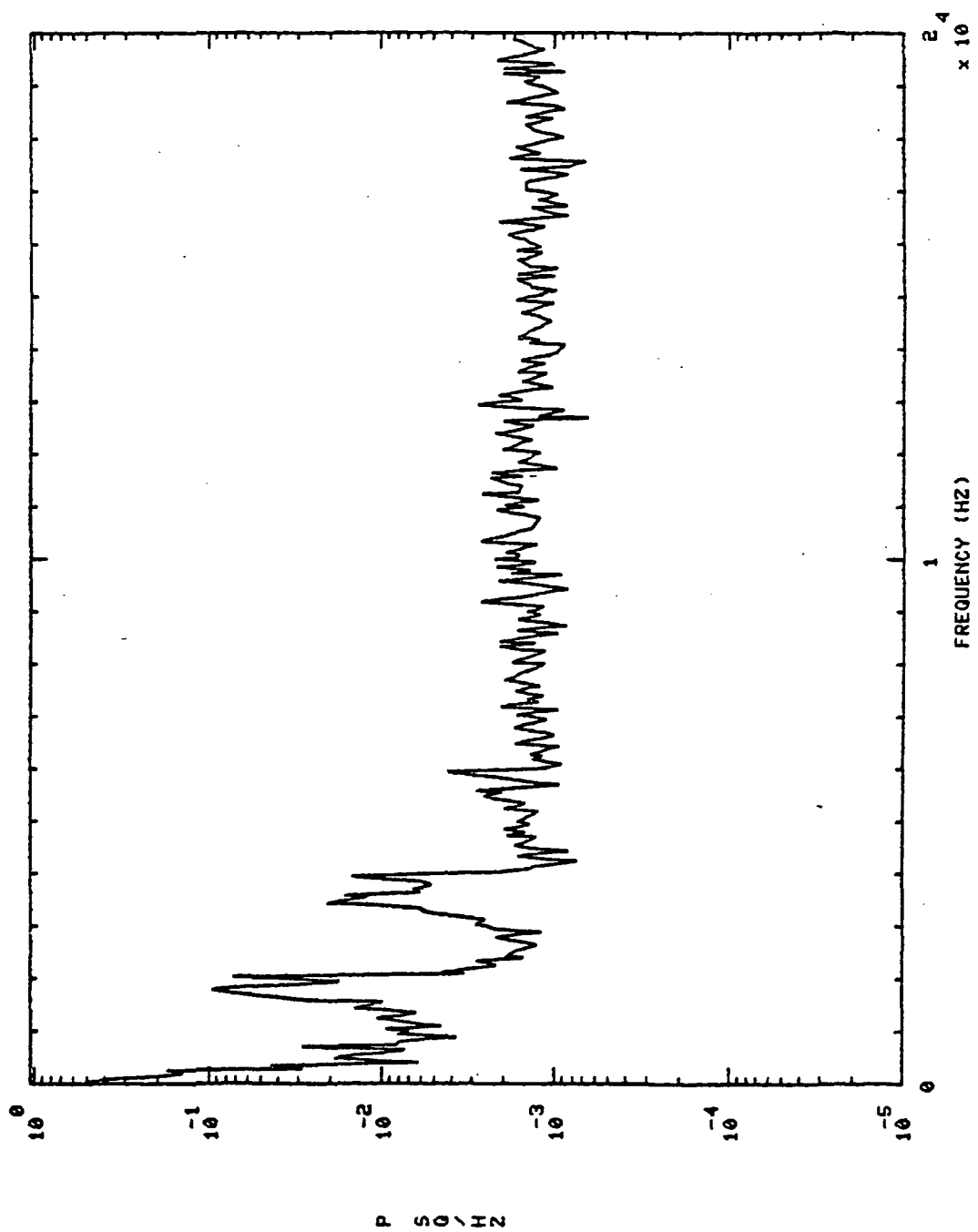


750106 LPOP DS PR S+ 6.050/HZ

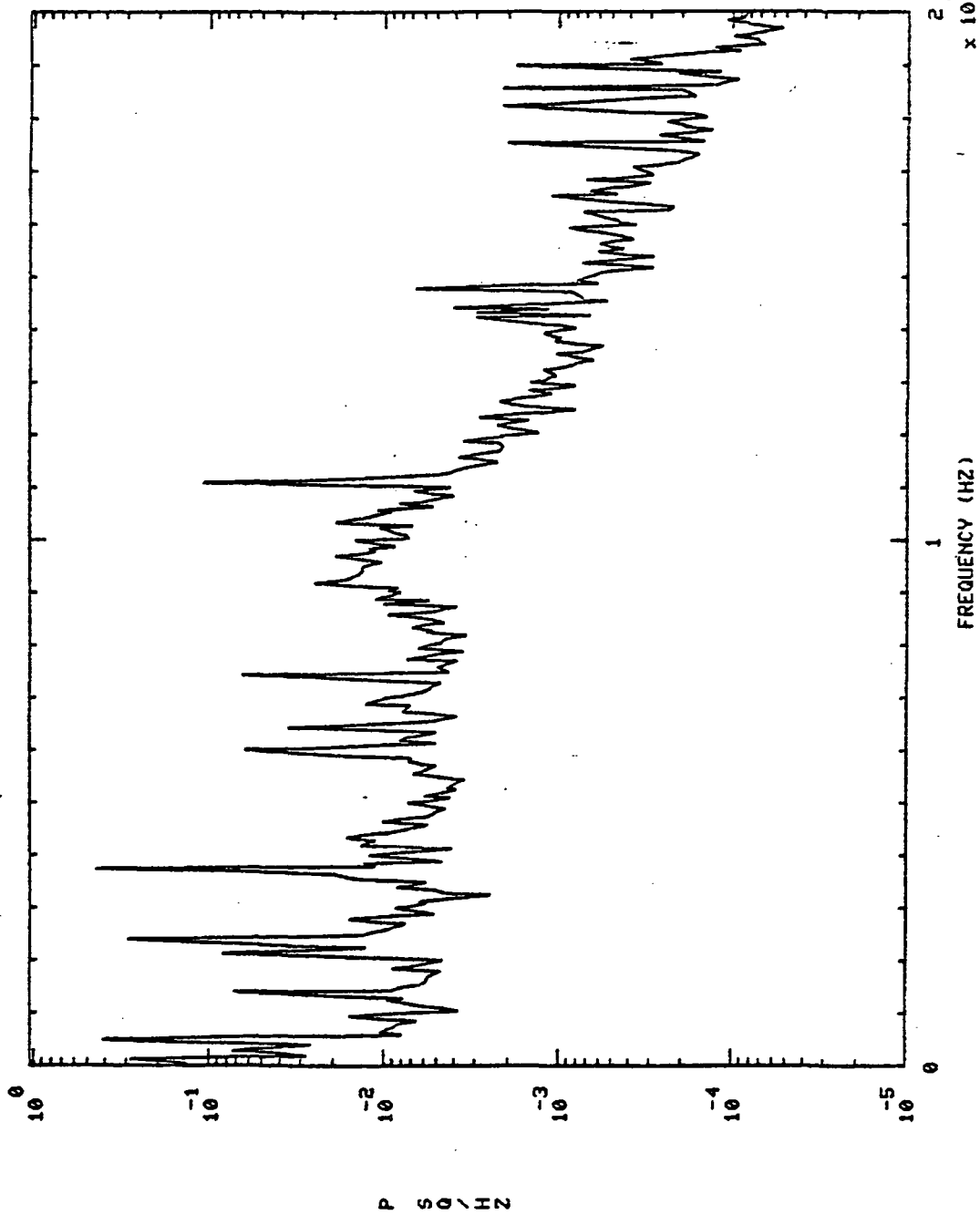


S+ 11.050/HZ

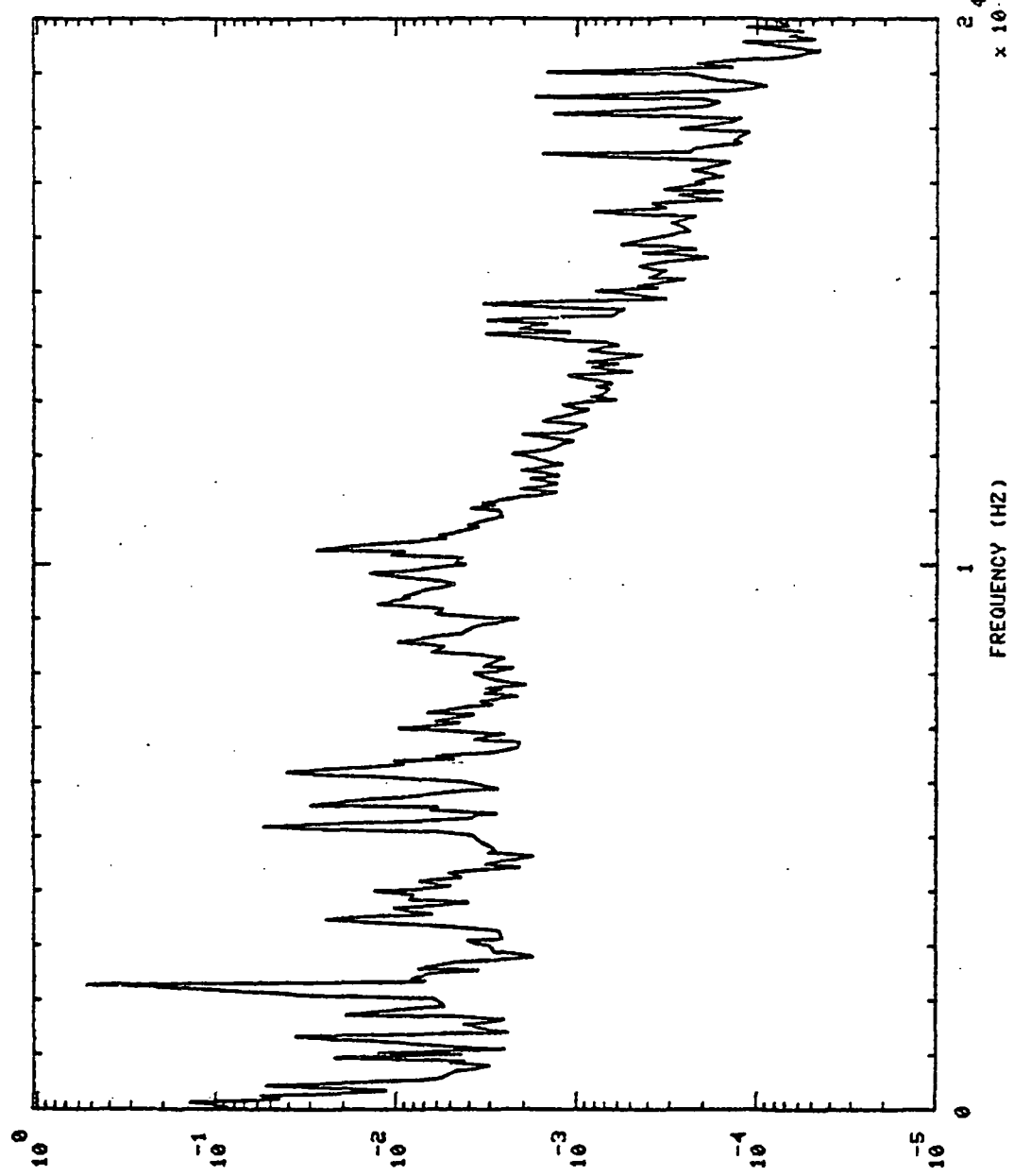
750106 LPOP DS PR



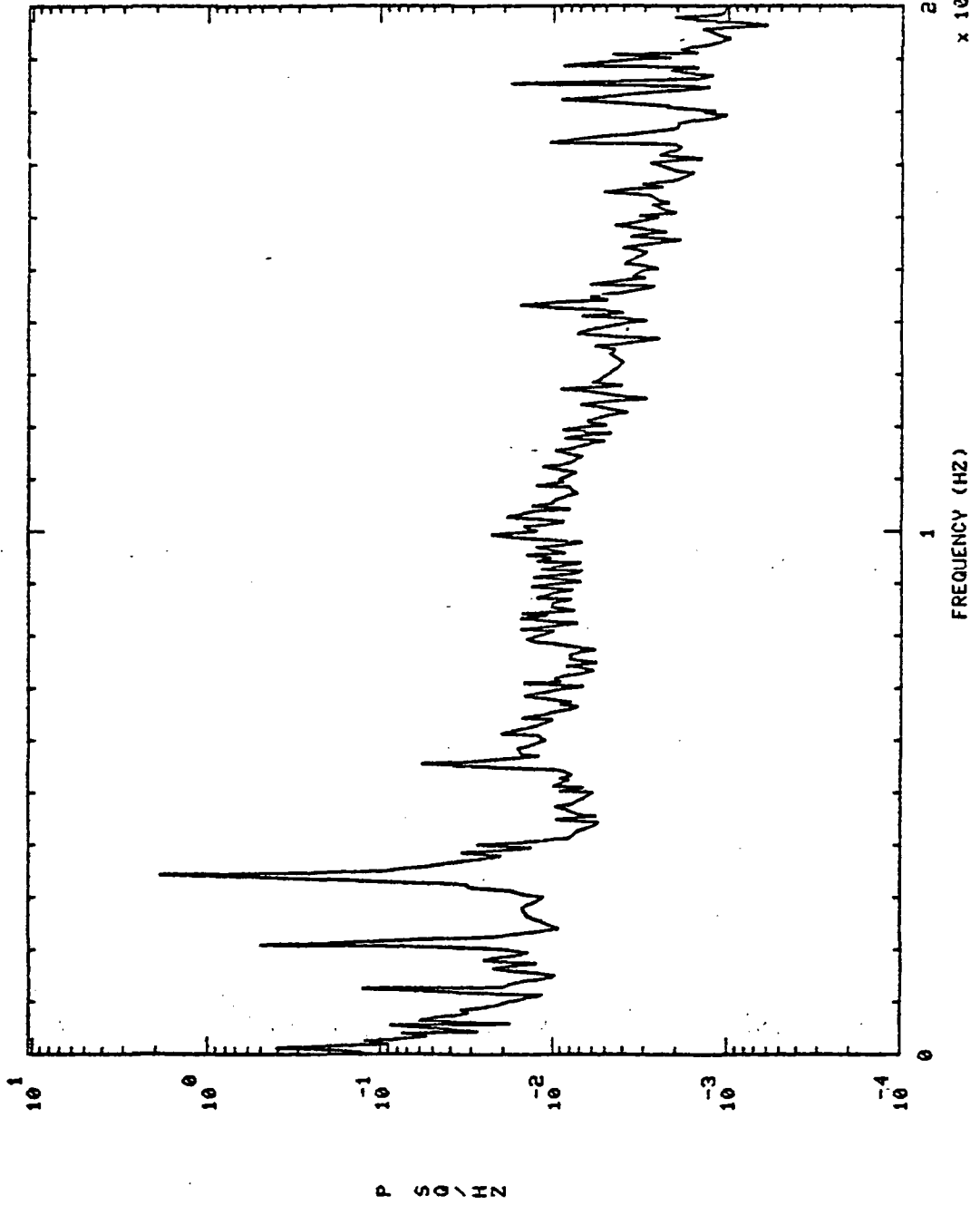
750106 HPOP BAL CAU PR2 S+ 6.05Q/HZ



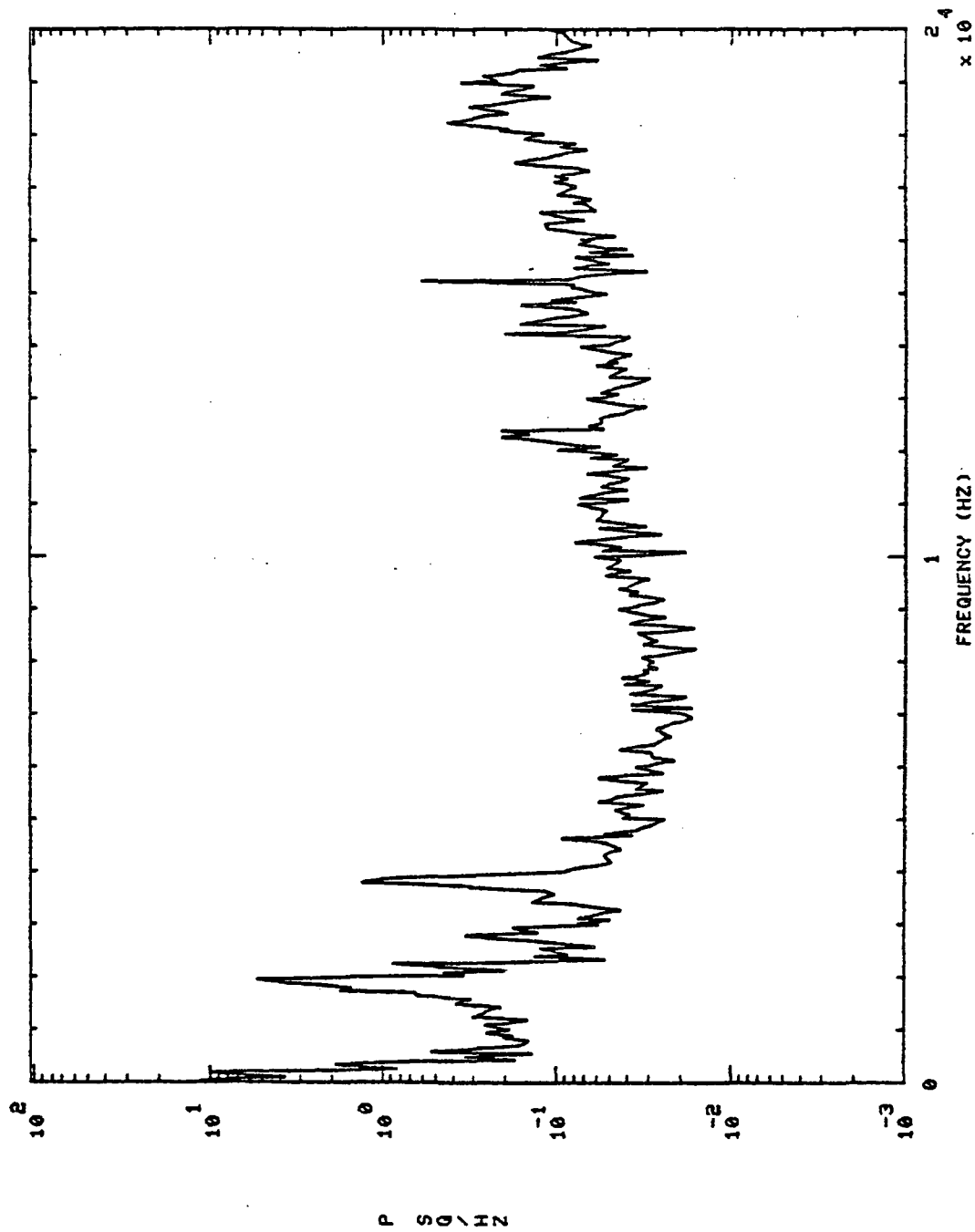
750106 MPOP BAL CAU PR2 S+ 11.050/HZ



750106 HPOP BAL CAU PR1 S+ 11.050/HZ

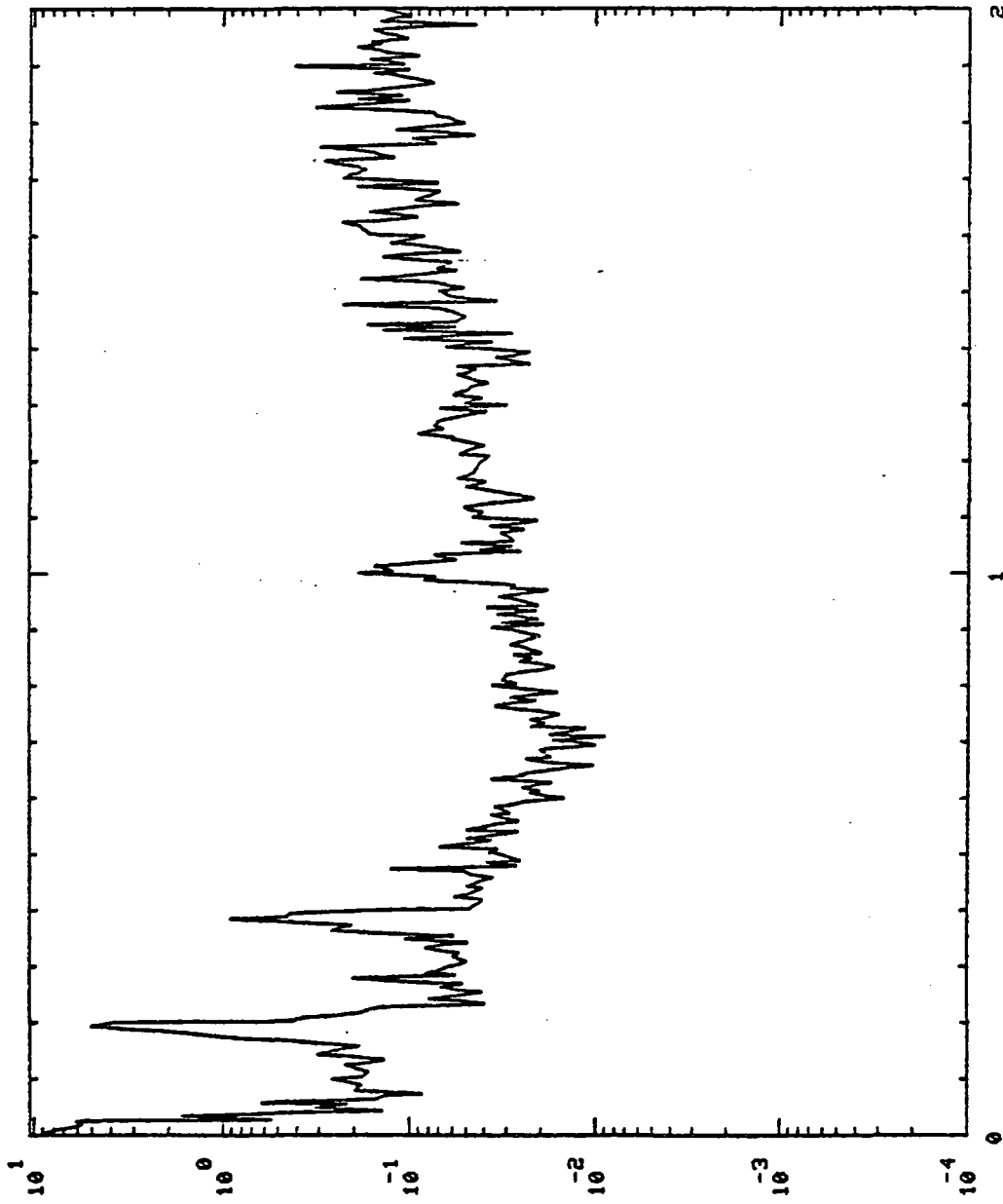


750106 HPOP DS PR S+ 6.050/HZ



S+ 11.05Q/HZ

750106 HPOP DS PR

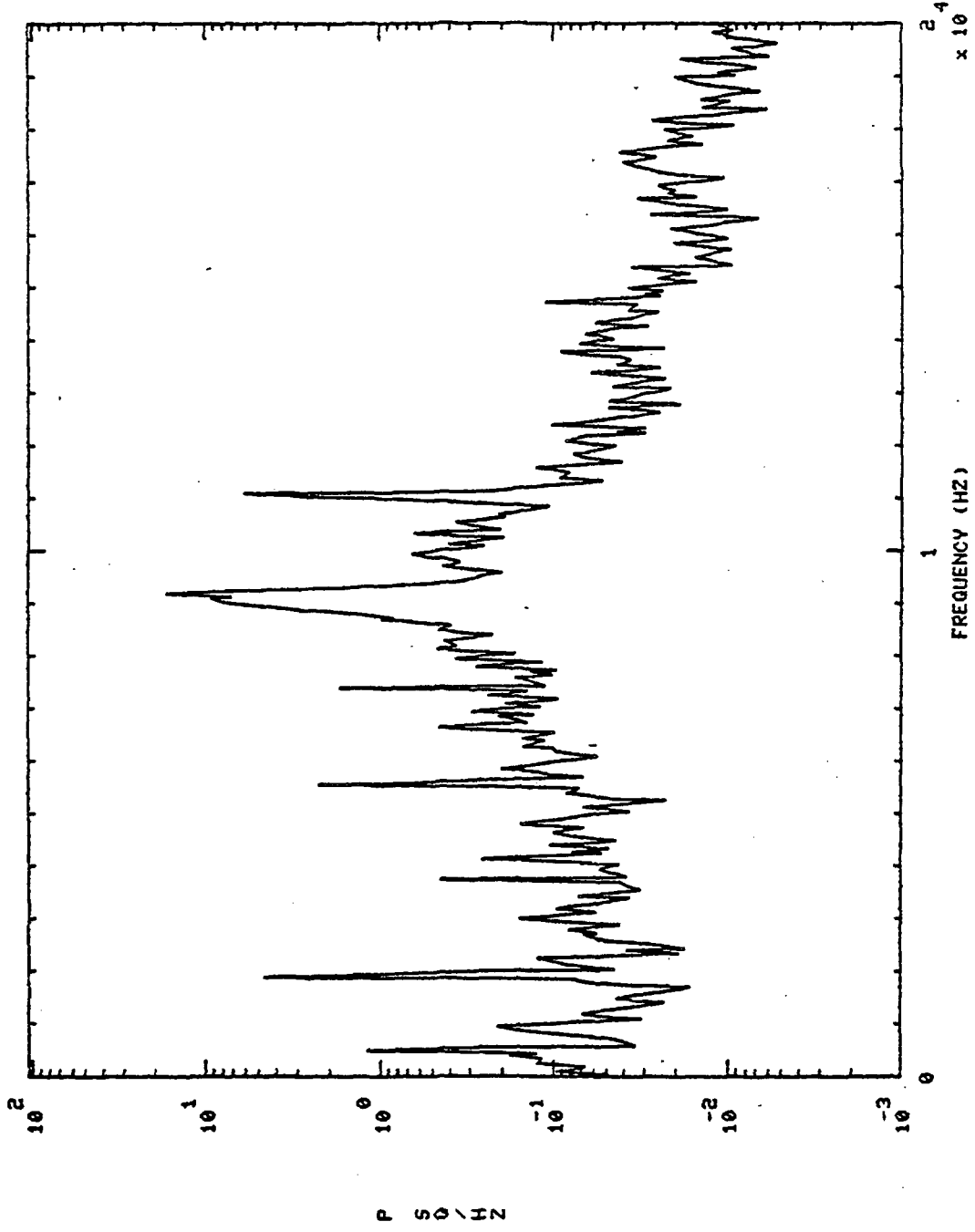


P SQ/HZ

FREQUENCY (HZ)

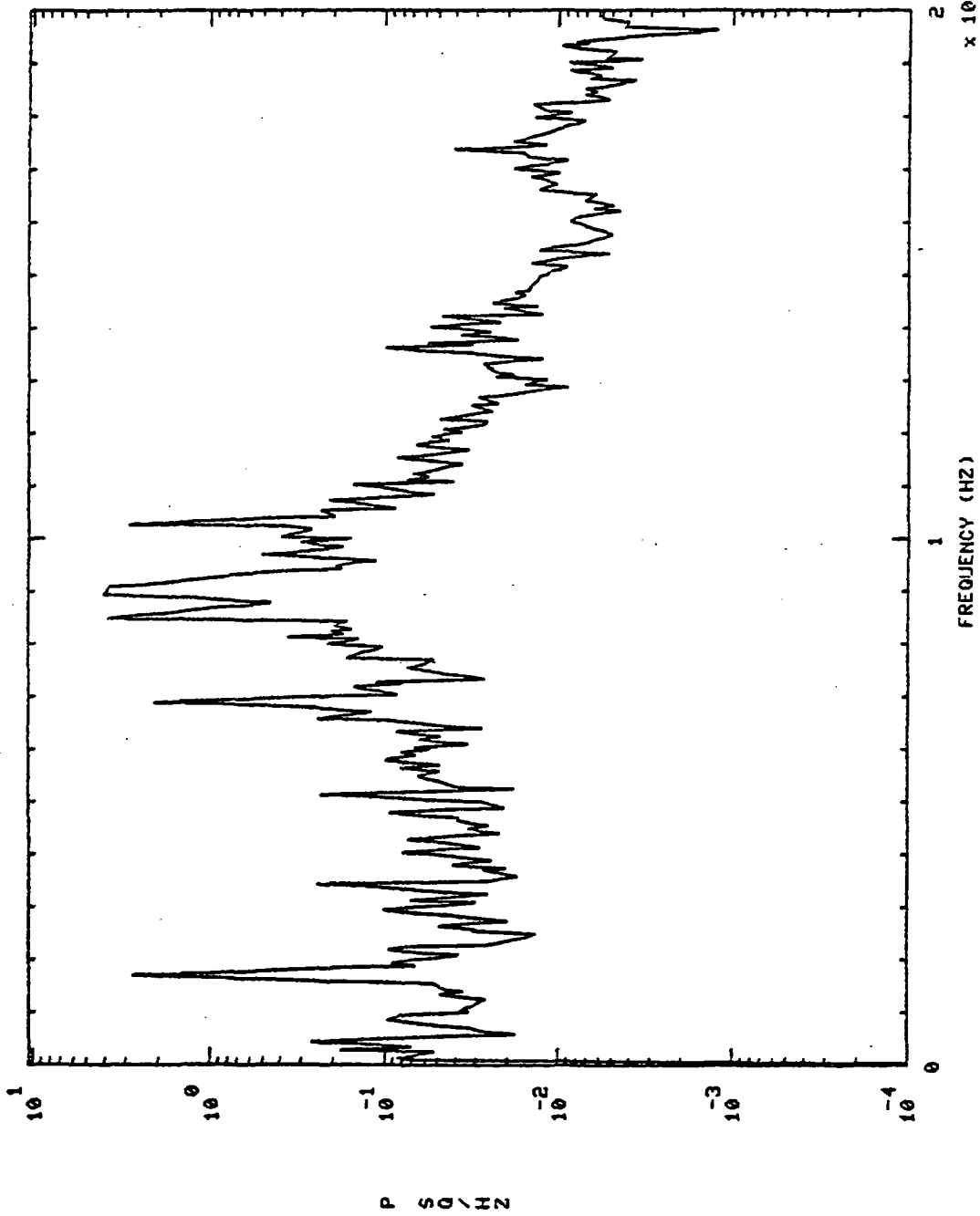
2.4
x 10

750106 HPOP DISC PR S+ 6.050/HZ

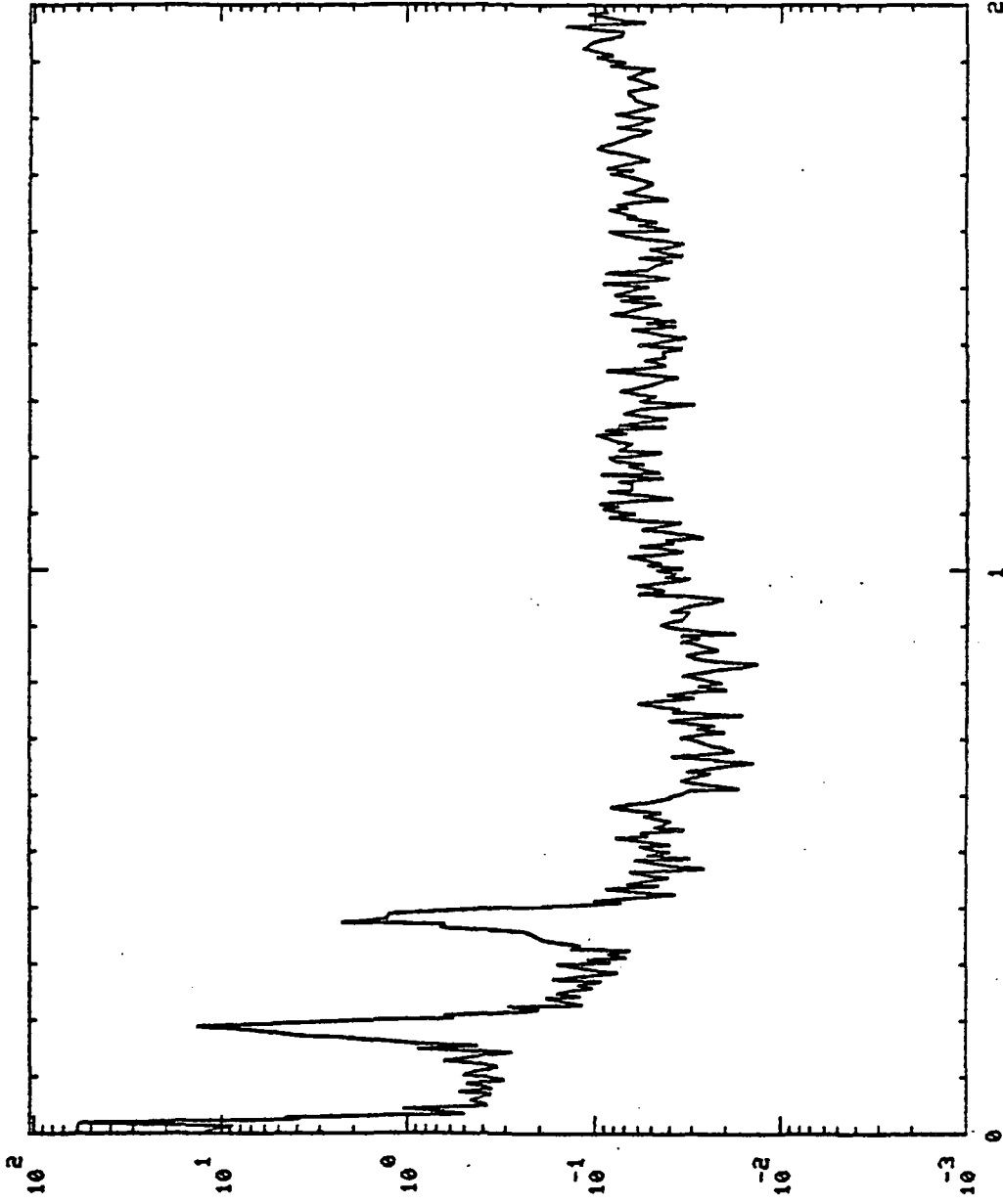


S+ 11.050/HZ

750106 HPOP DISC PR



750106 PBP D5 PR S+ 6.050/HZ

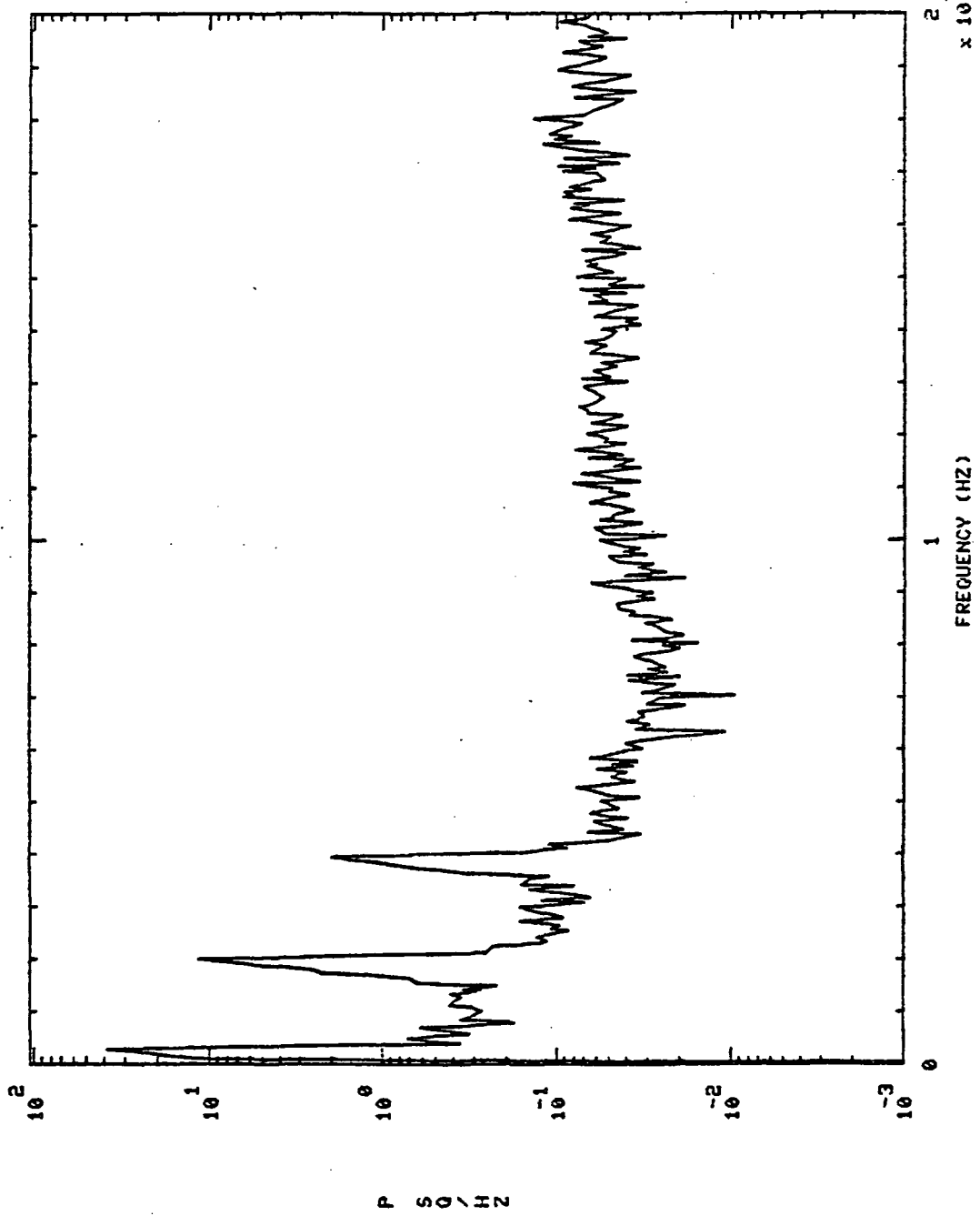


P SQ / HN

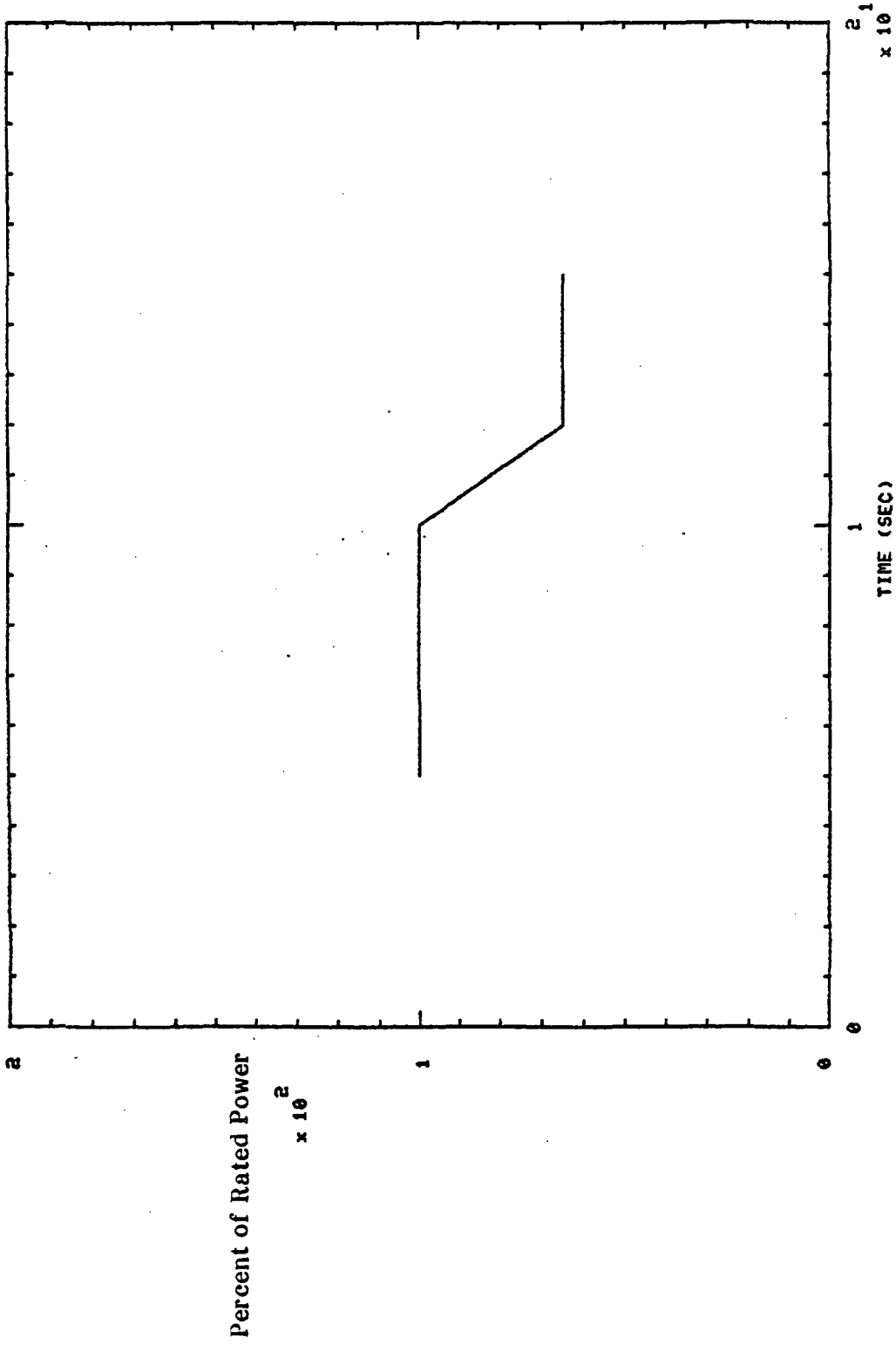
FREQUENCY (HZ) x 10⁴

5+ 11.050/HZ

750106 PBP DS PR

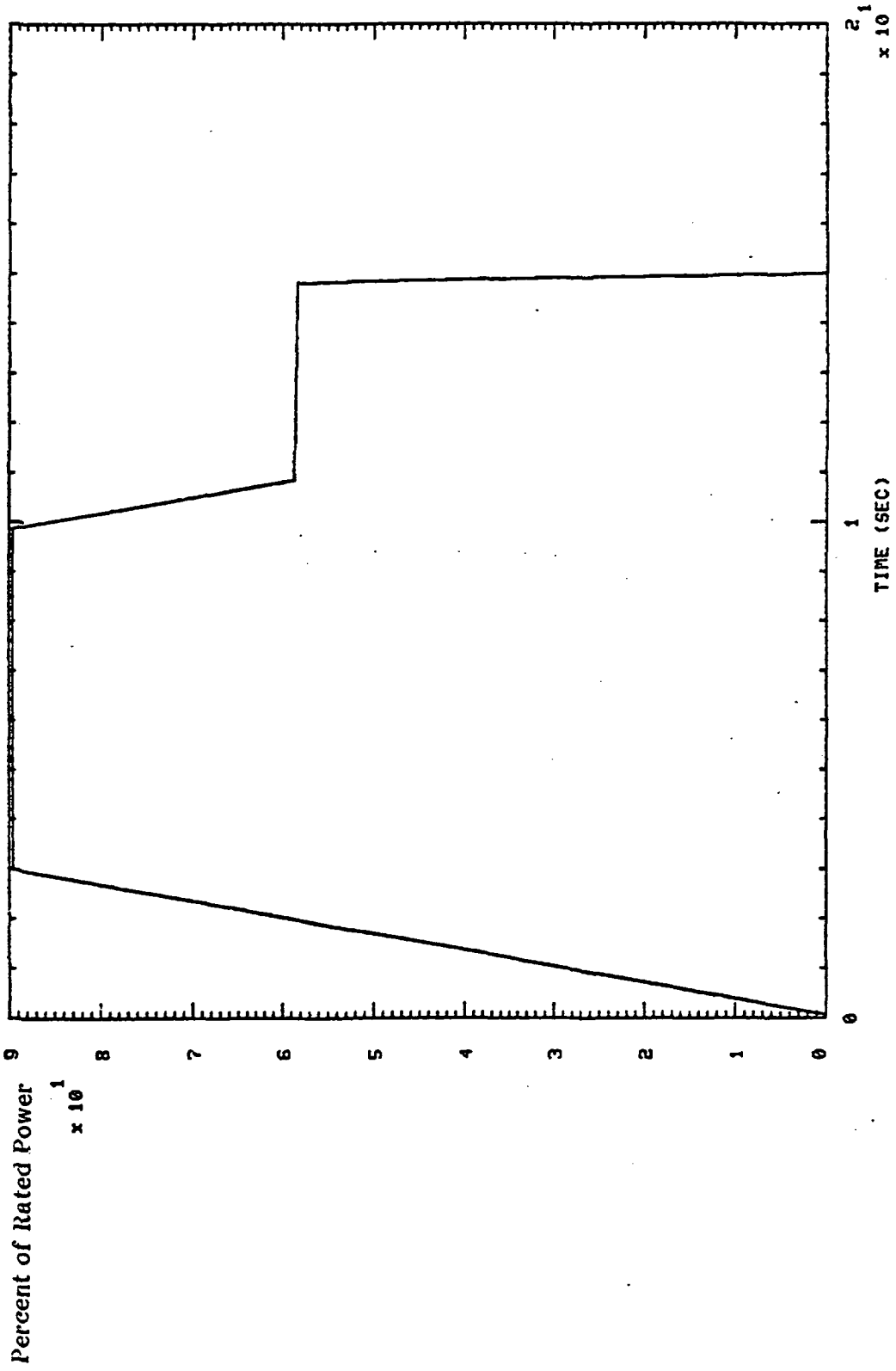


750107 THRUST (UNFILTERED)



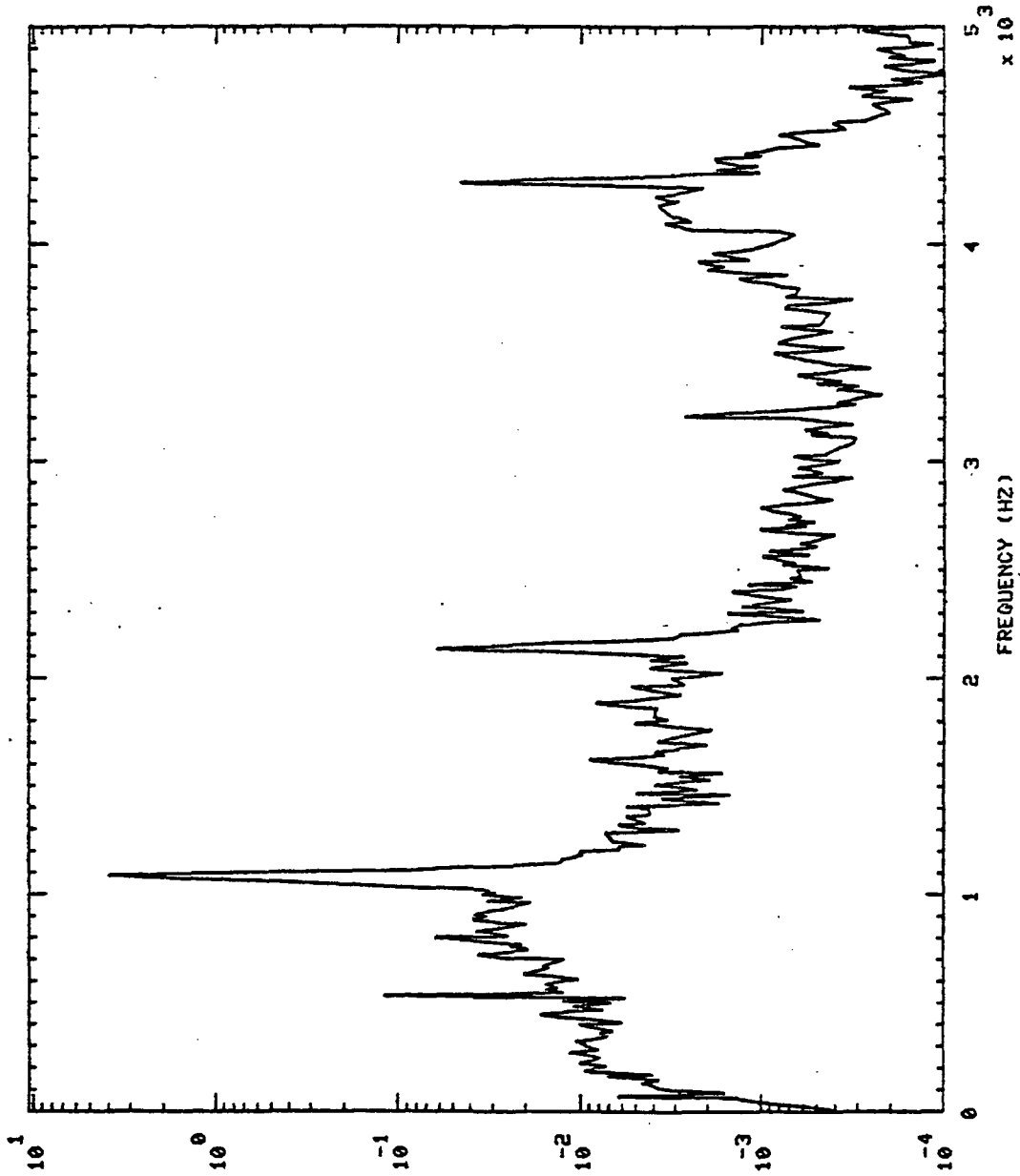
(UNFILTERED)

750108 THRUST



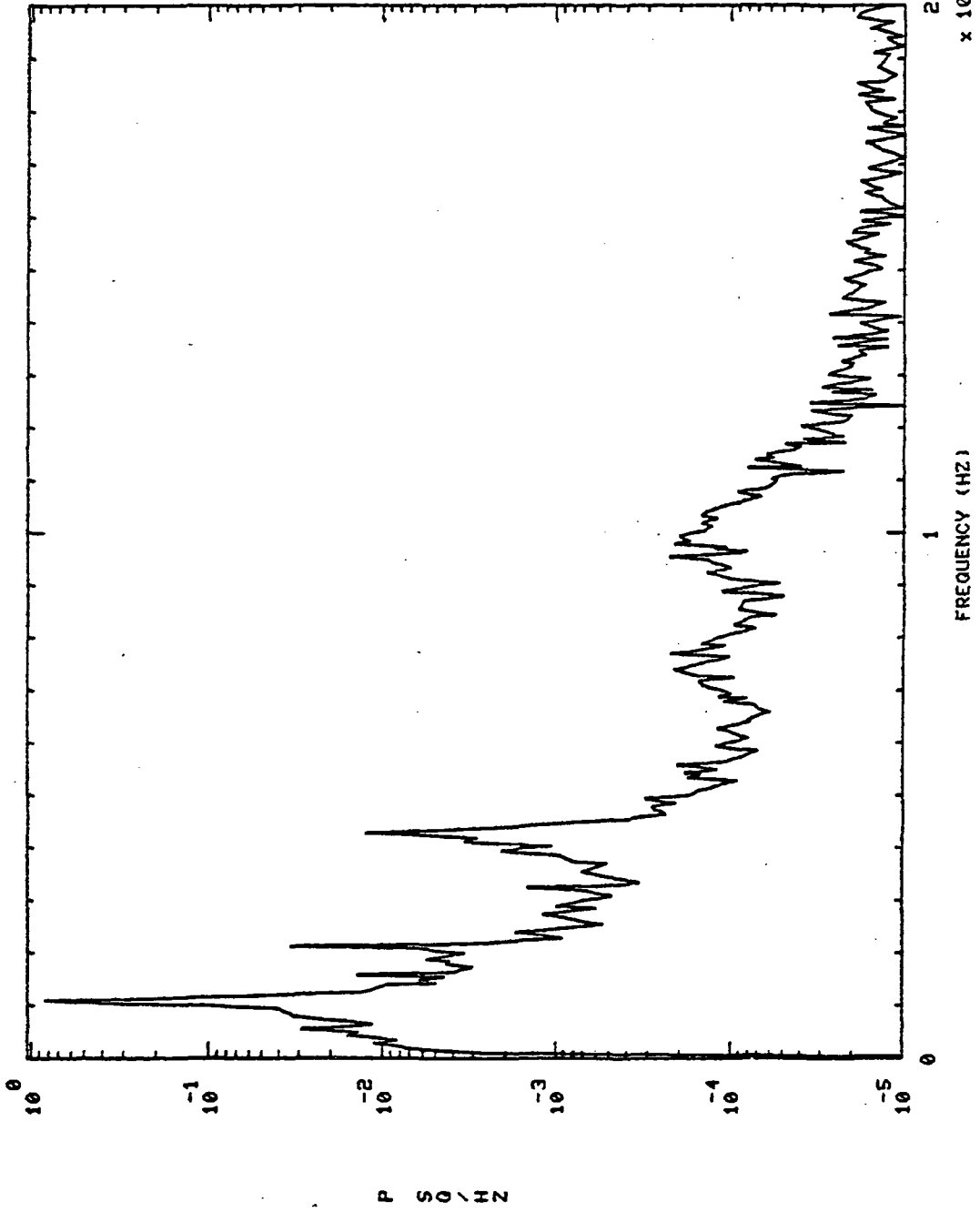
S+ 6.050/HZ

750108 LPFP IN PR



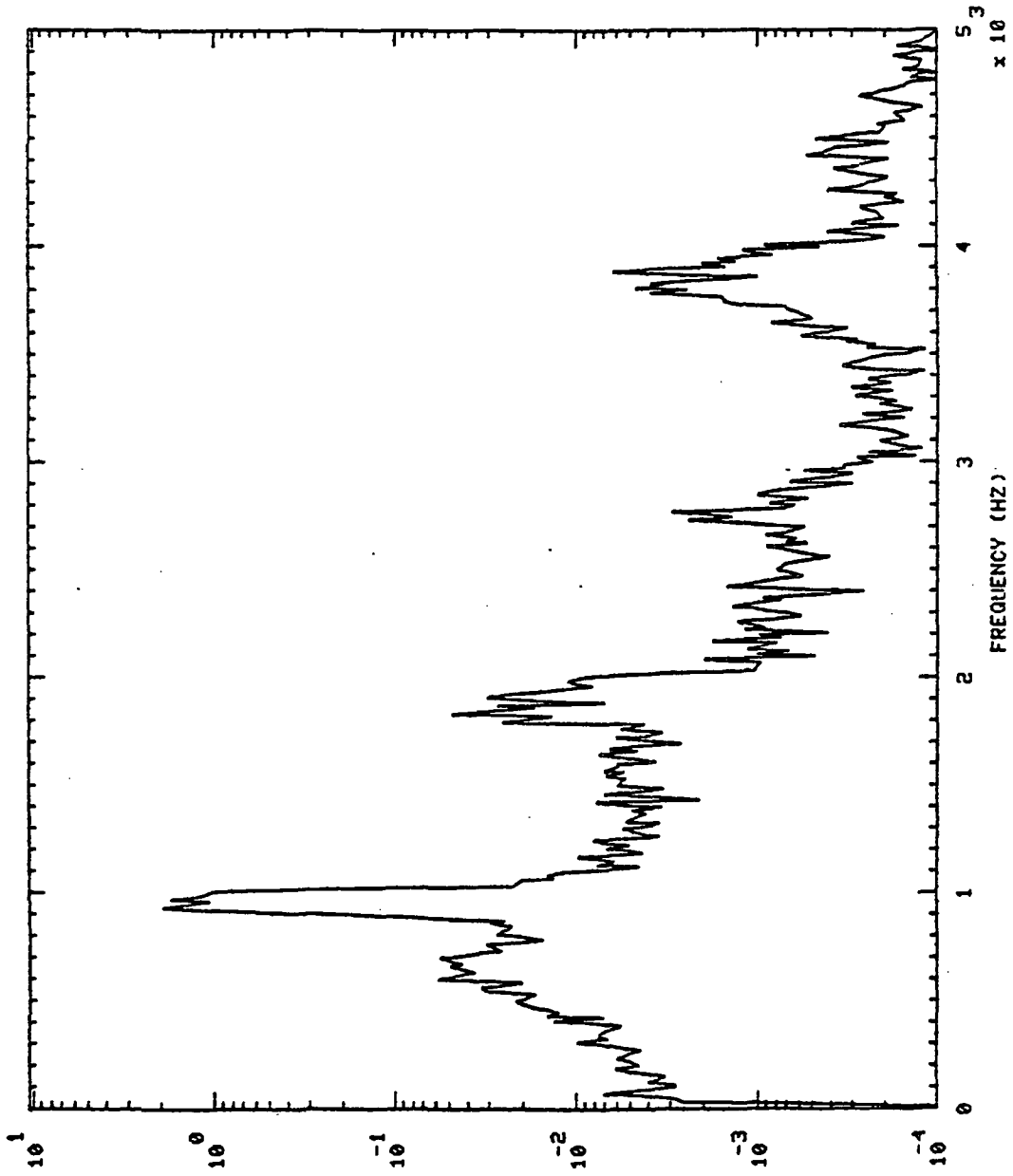
P S D \ HZ

750108 LPFP IN PR S+ 6.050/HZ



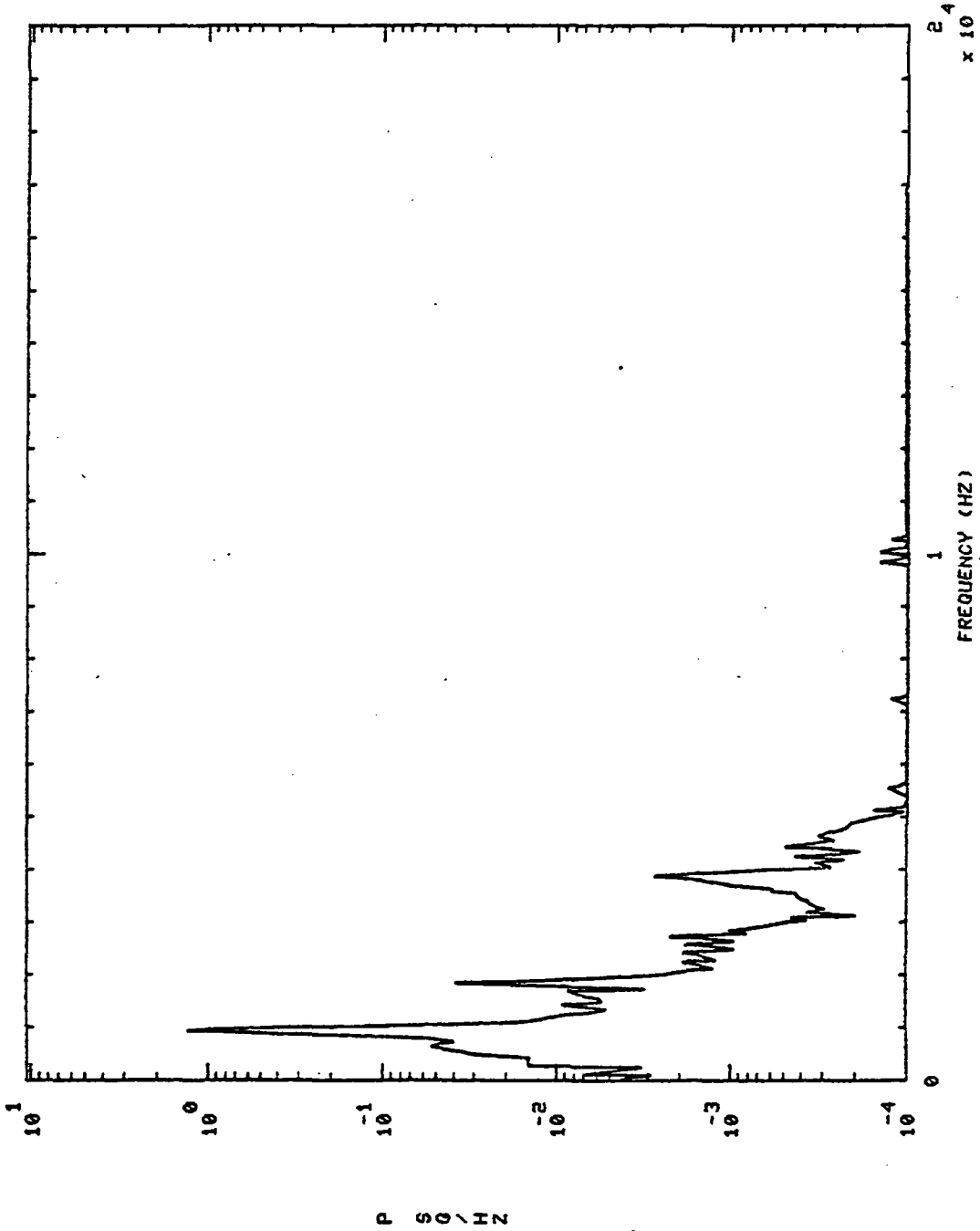
S+ 12.050/HZ

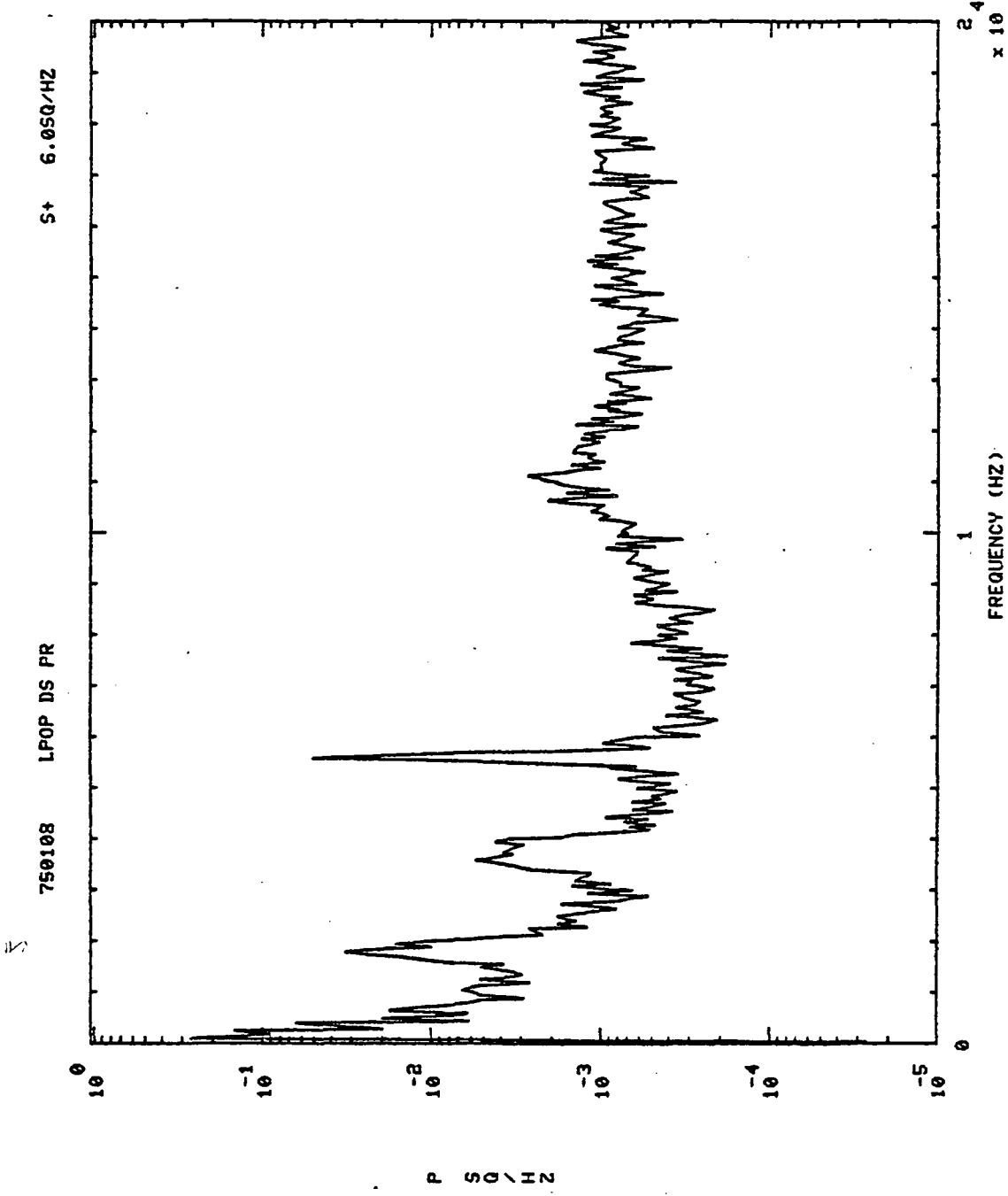
750108 LPFP IN PR



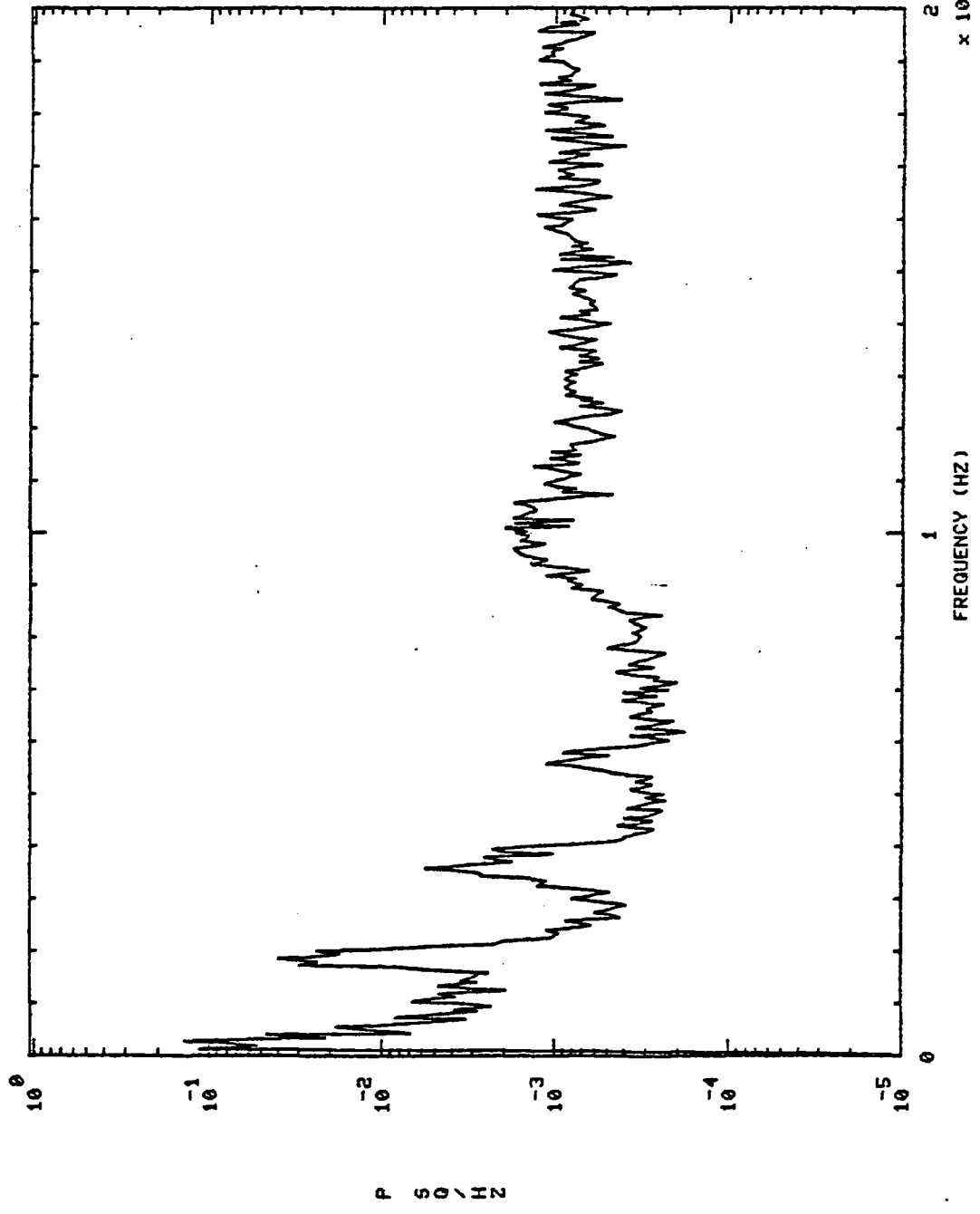
PSD / HZ

750108 LPFP IN PR S+ 12.050/HZ

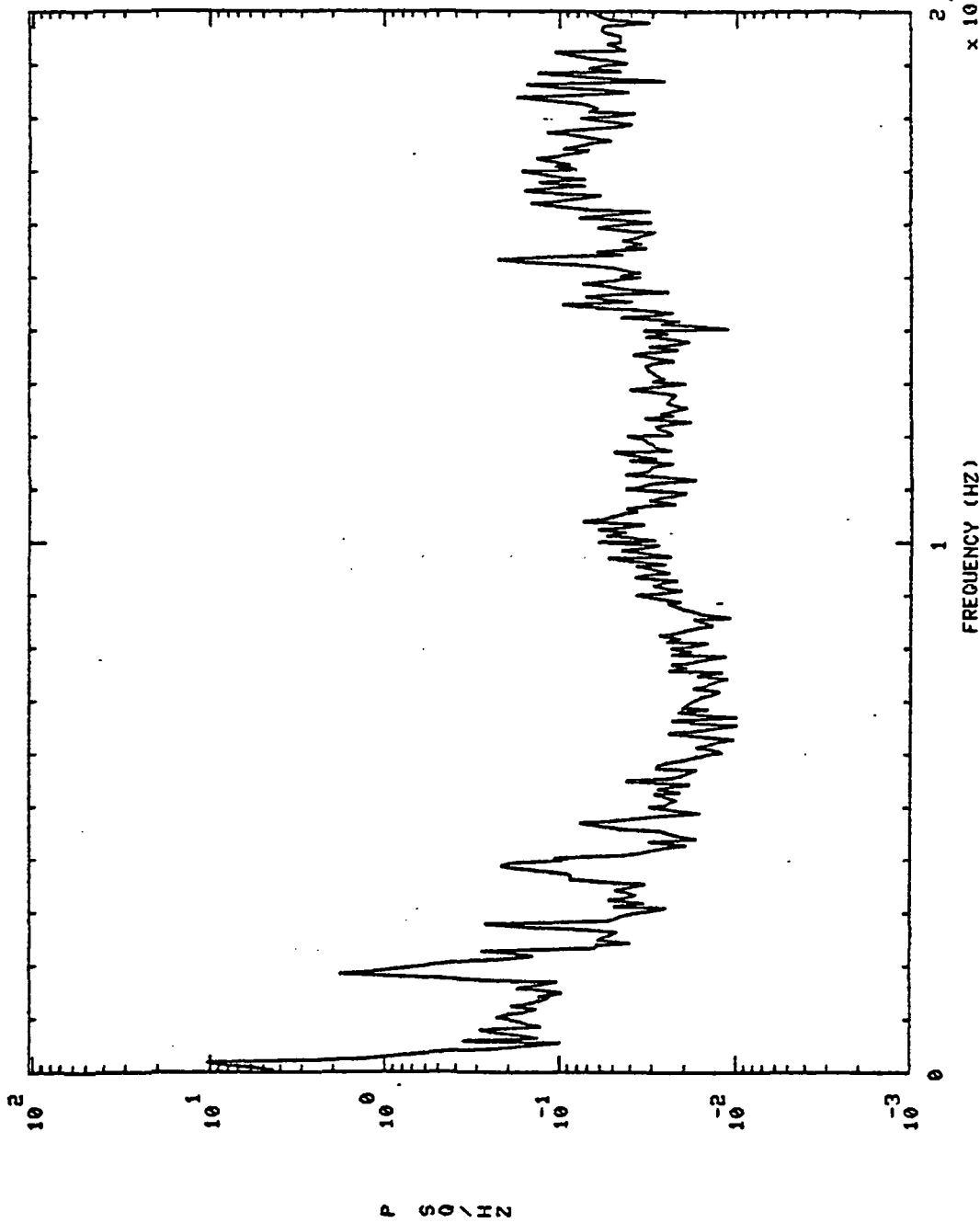




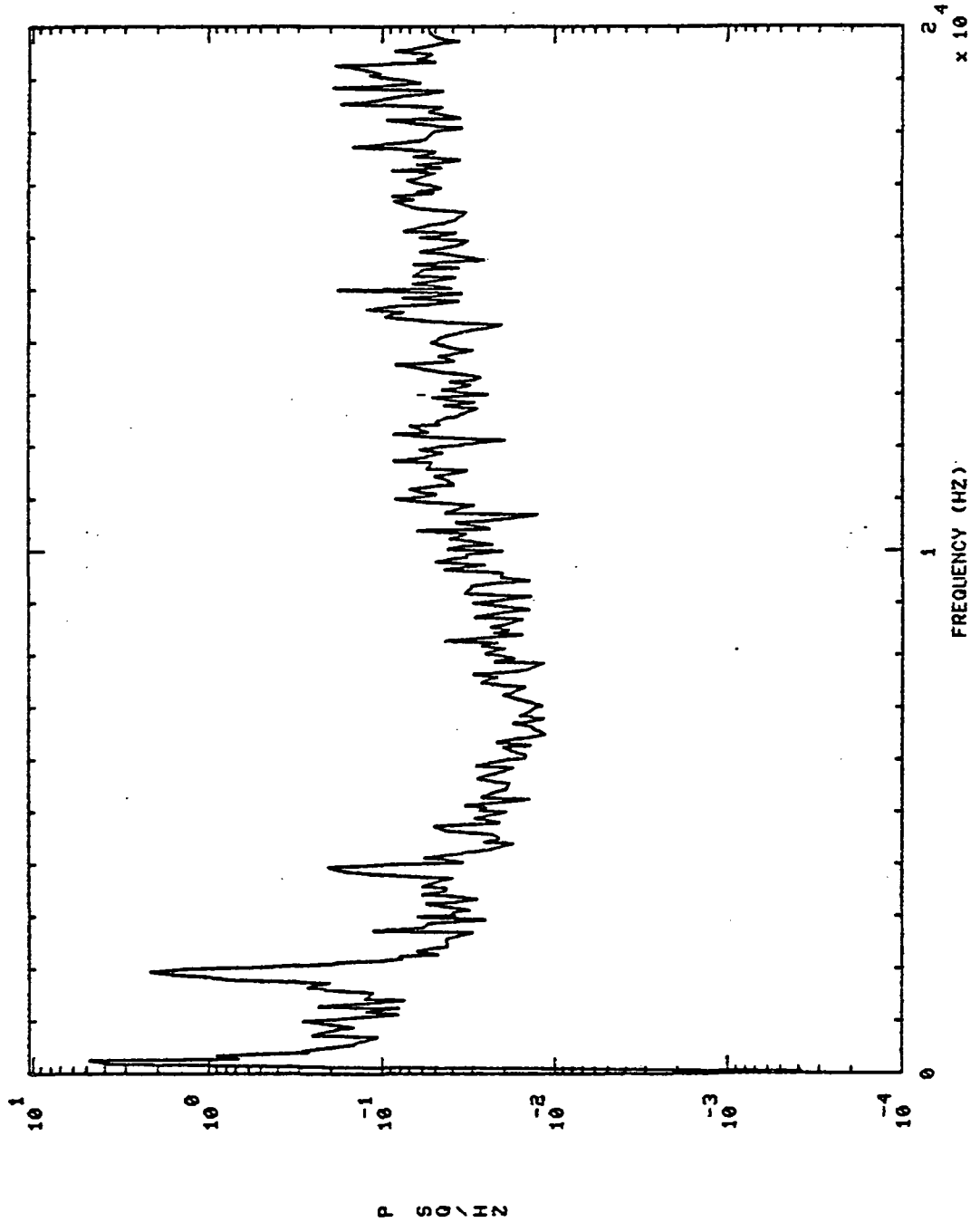
750108 LPOP D5 PR 5+ 12.050/HZ



750108 HPOP DS PR S+ 6.050/HZ

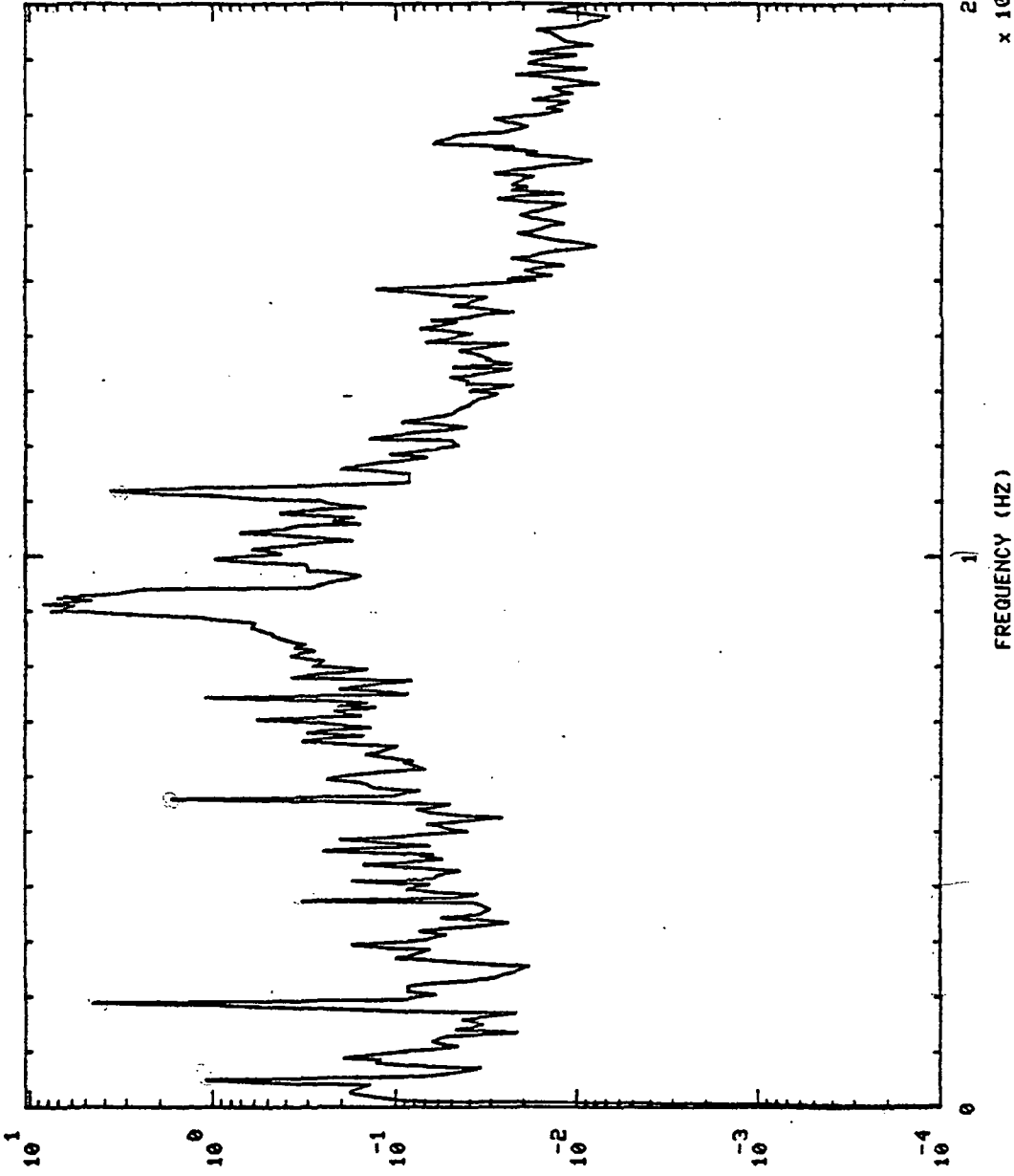


750108 HPOP DS PR S+ 12.050/HZ



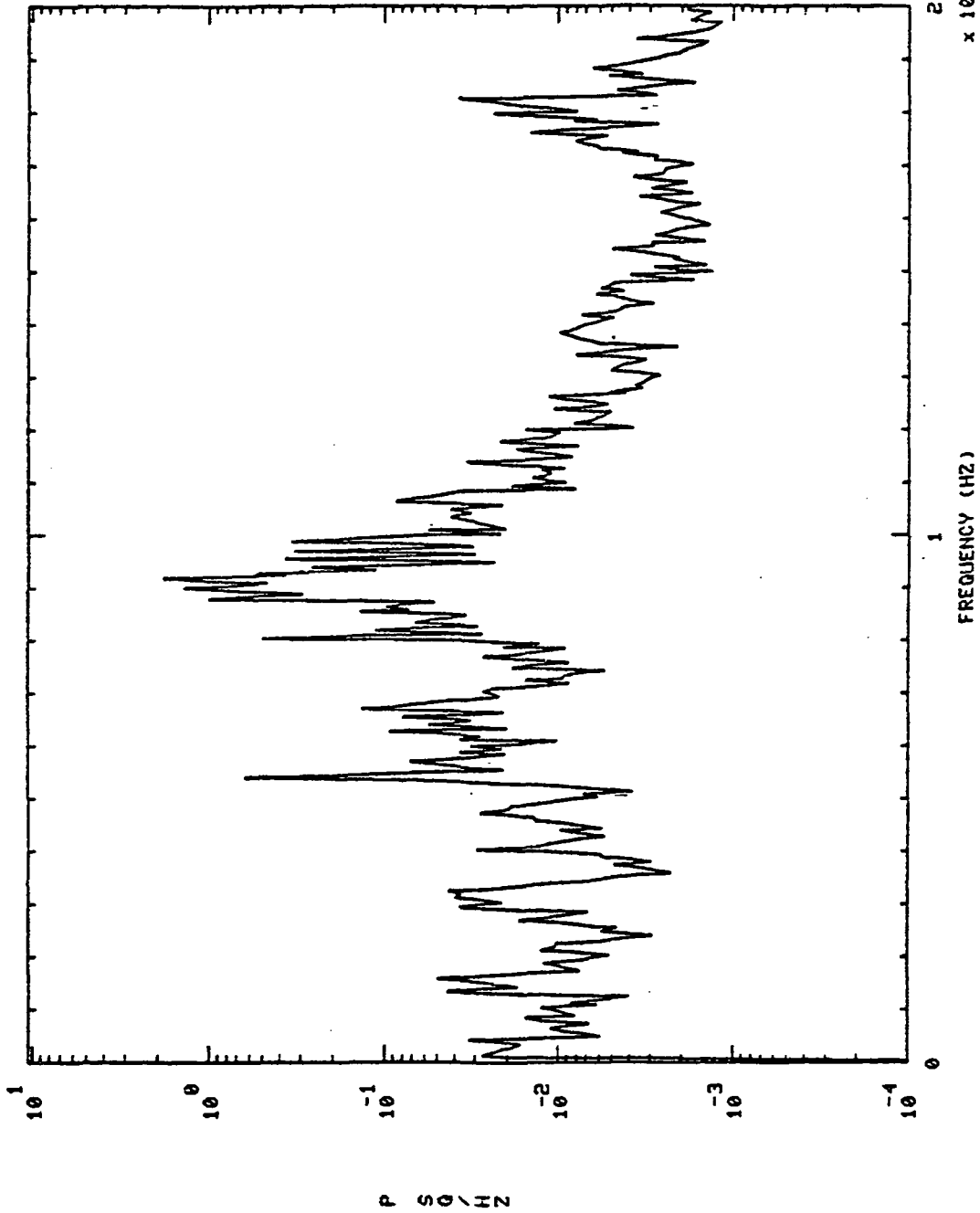
S+ 6.050/HZ

750108 HPOP DISC PR

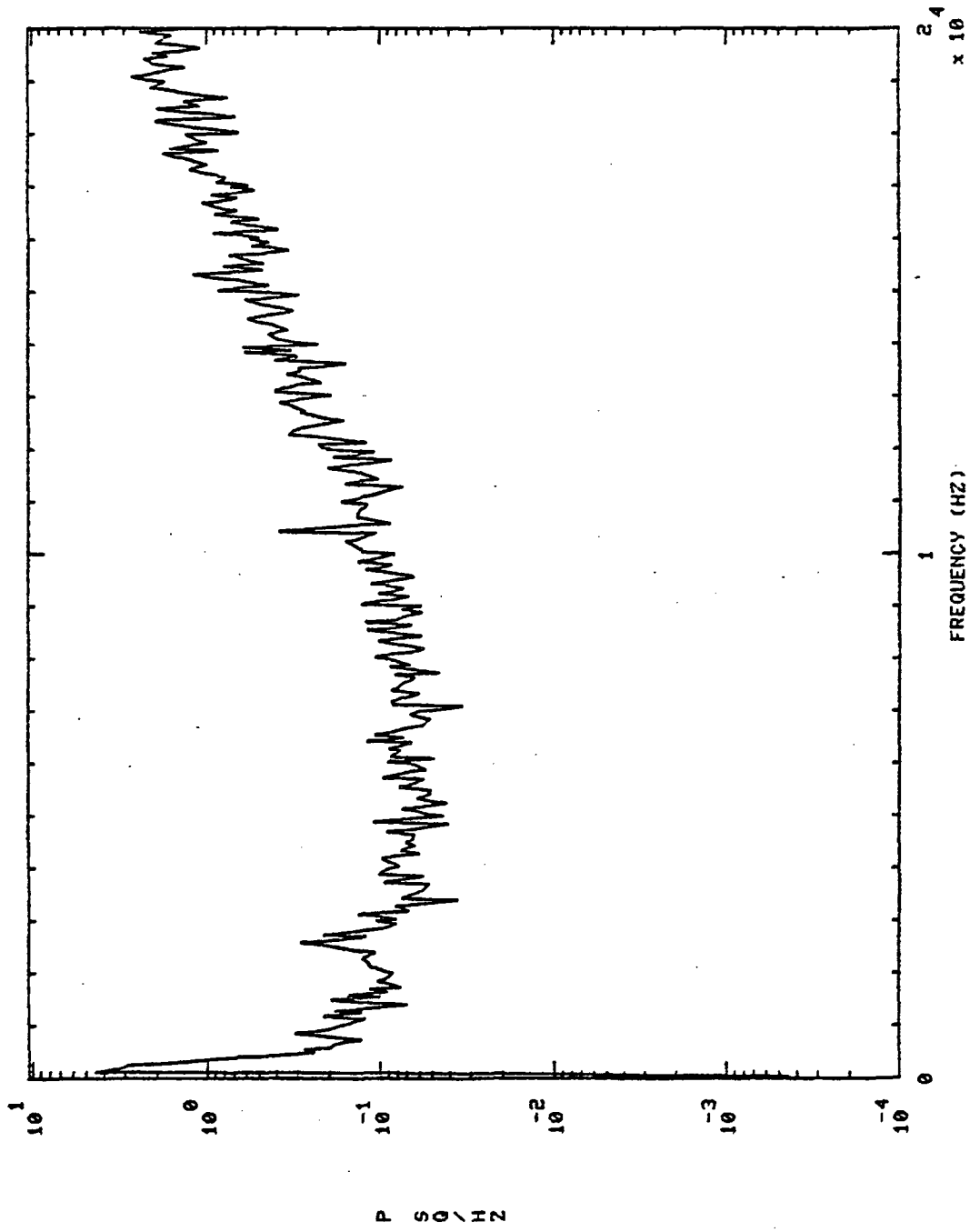


P S G / H Z

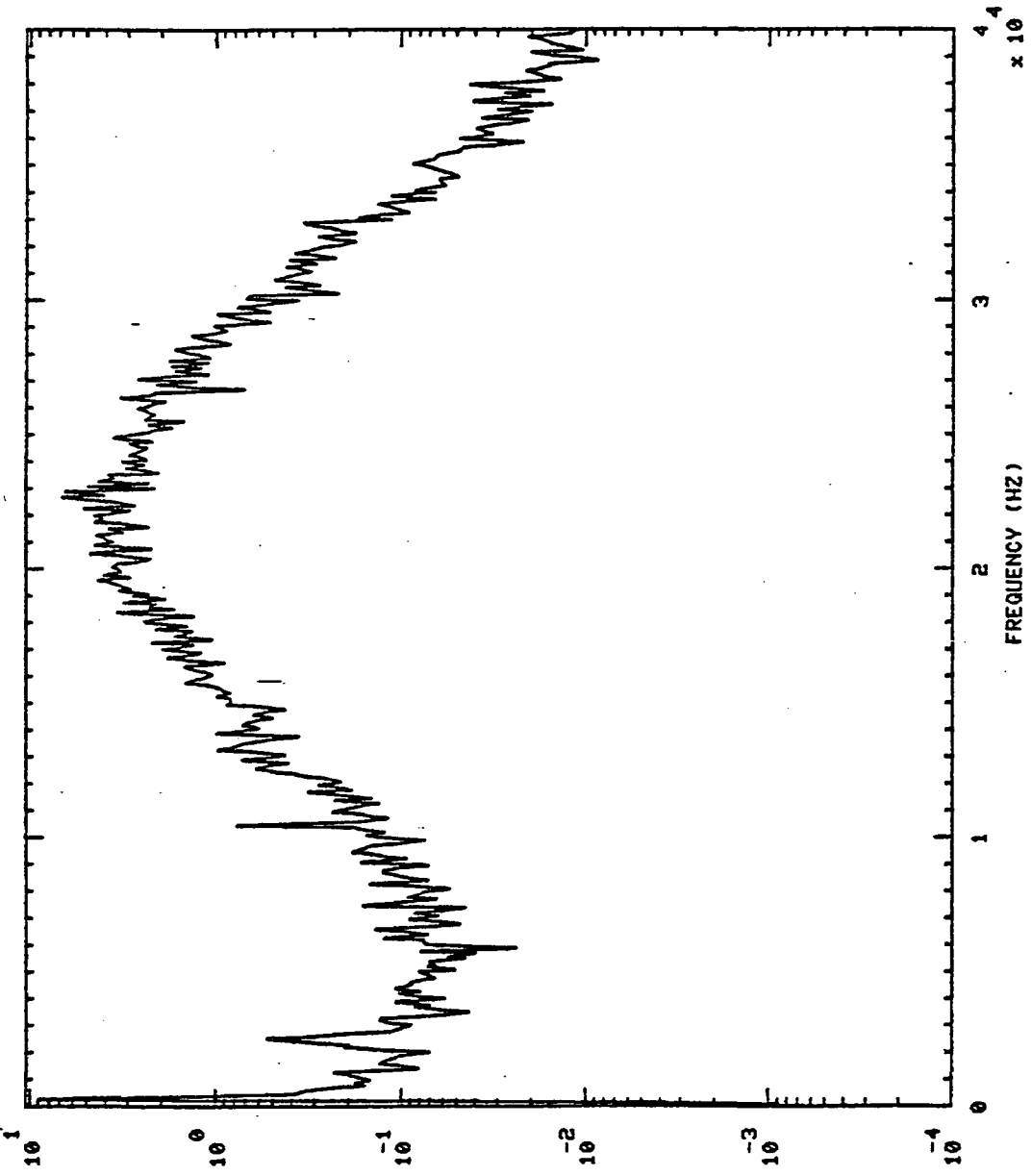
750108 HPOP DISC PR S+ 12.050/HZ



750108 MCC HOT GAS IN PR S+ 6.050/HZ



750108 MCC HOT GAS IN PR S+ 6.01H0,'S



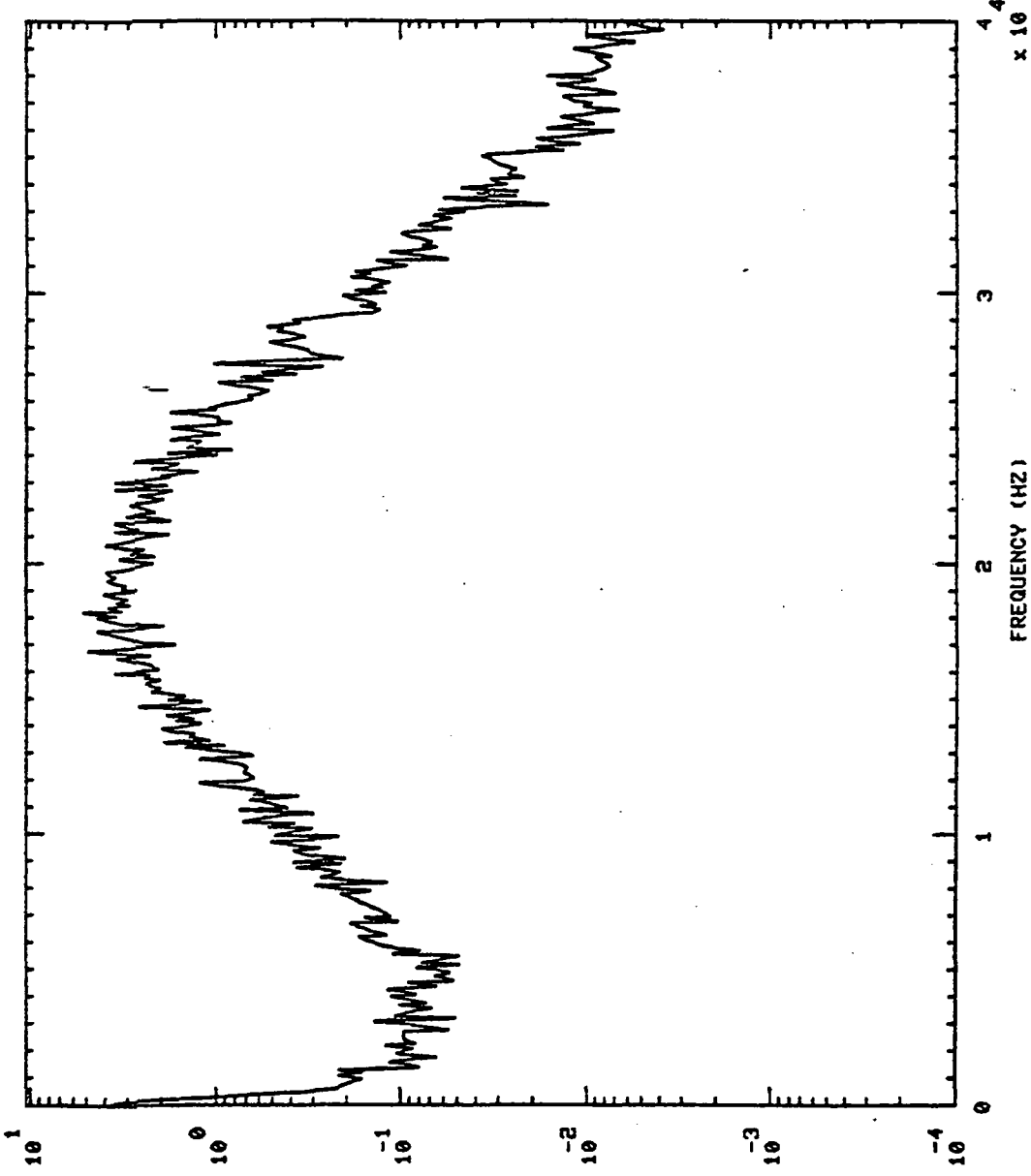
P SQ \ HN

ST 12.01H0,5

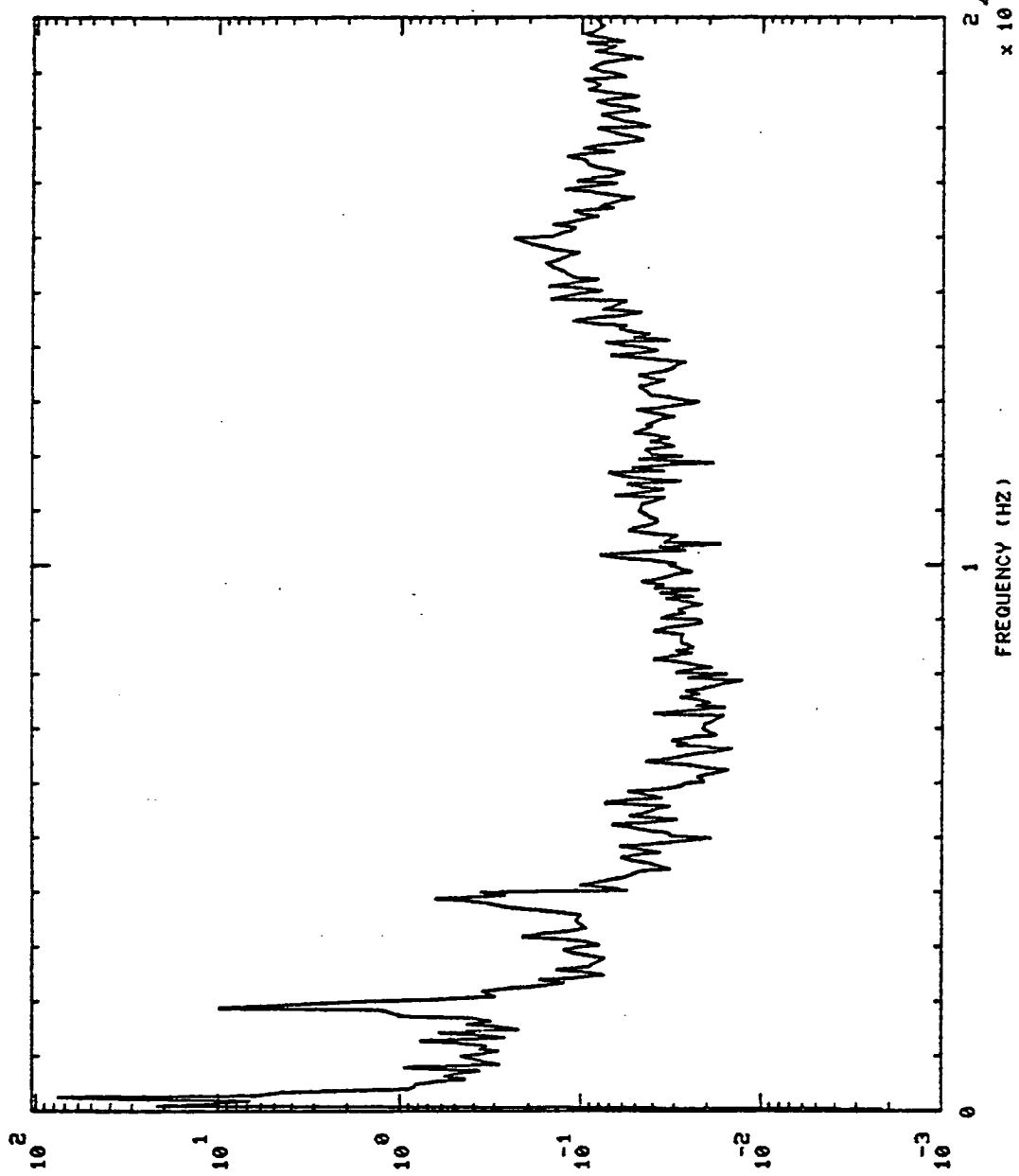
PLC 101 GNS IN PK

10/1/60

P S Q \ H Z



750108 PBP DS PR S+ 6.050/HZ



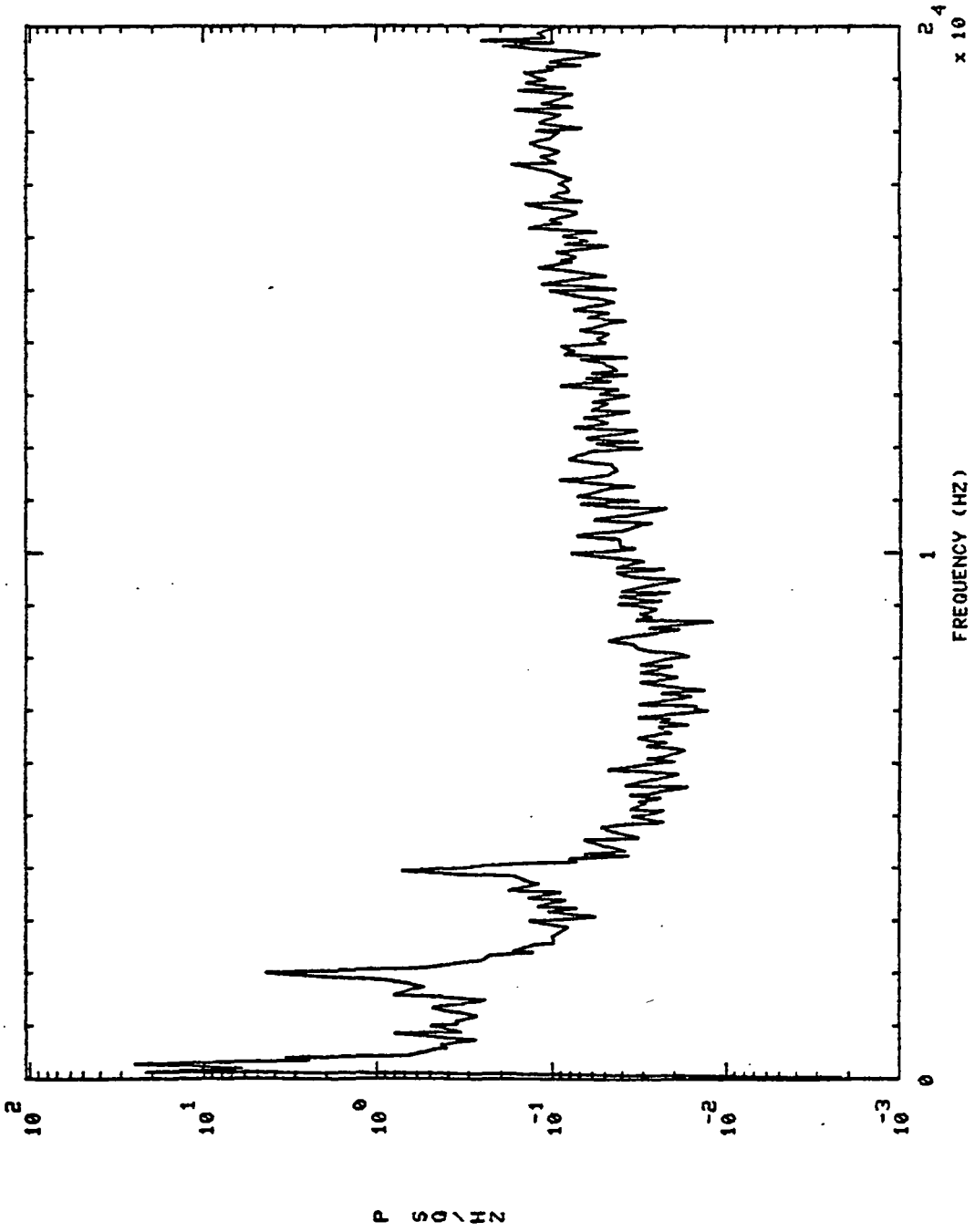
PSD / HZ

FREQUENCY (HZ)

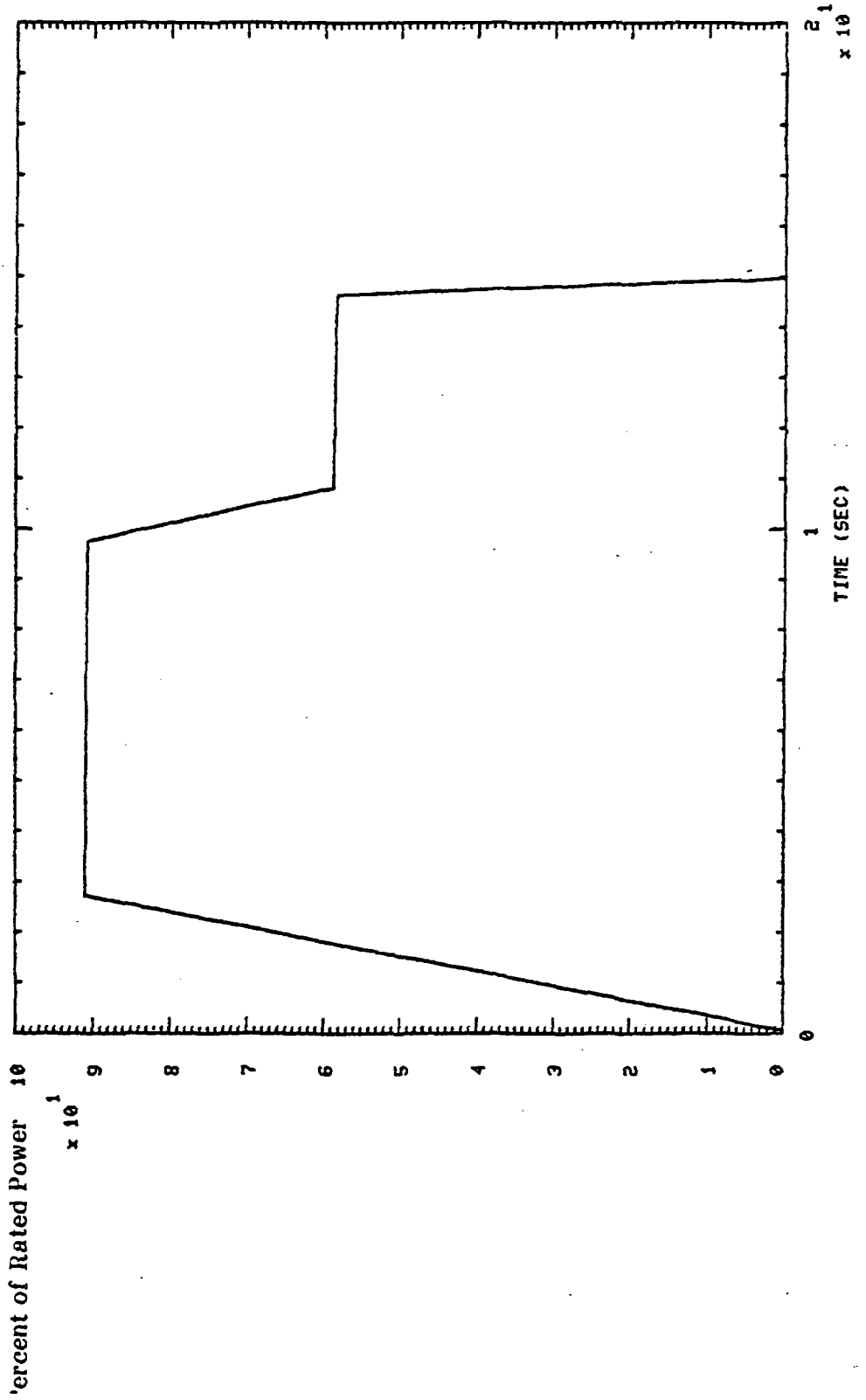
$\times 10^4$

S+ 12.050/HZ

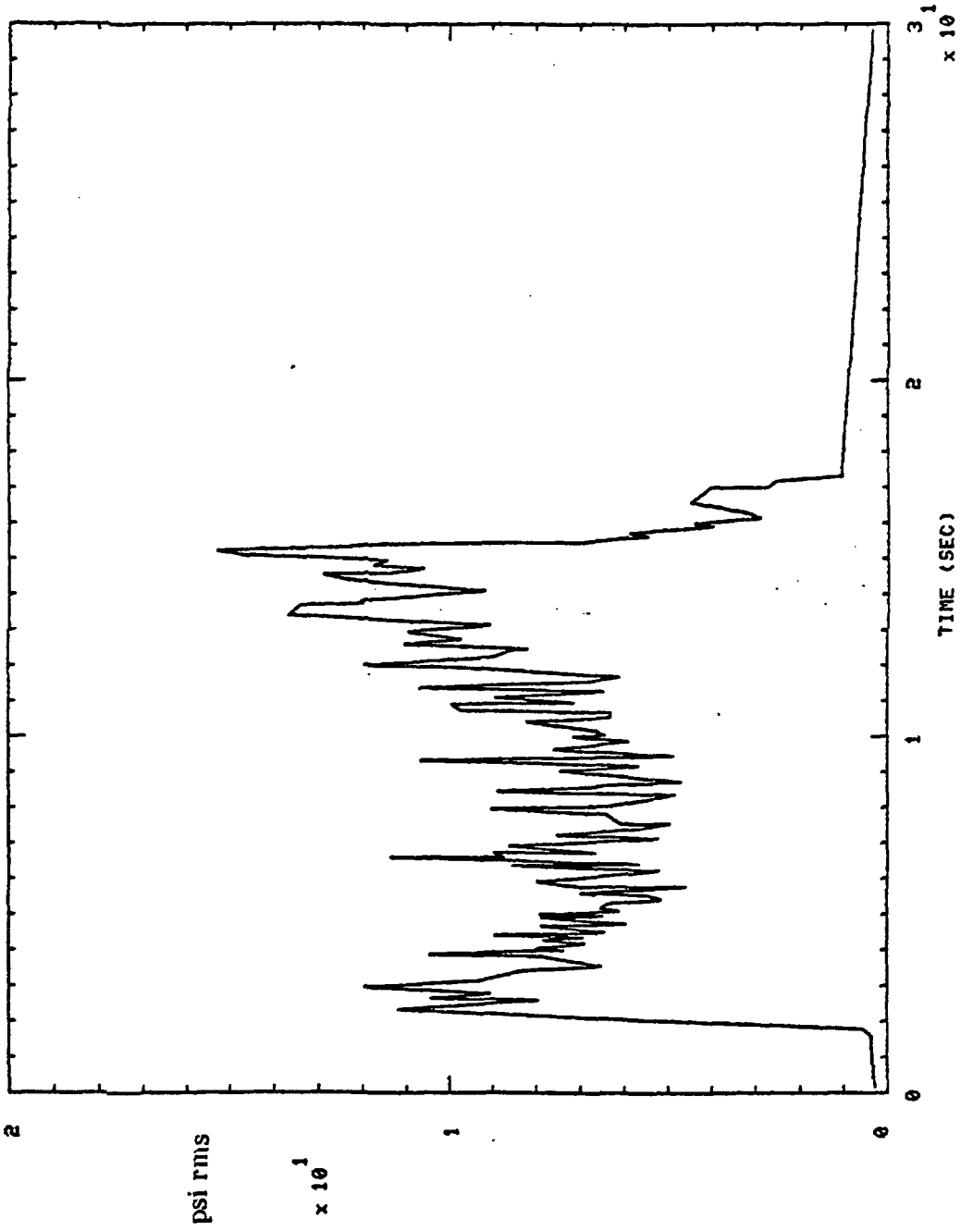
750108 PBP DS PR



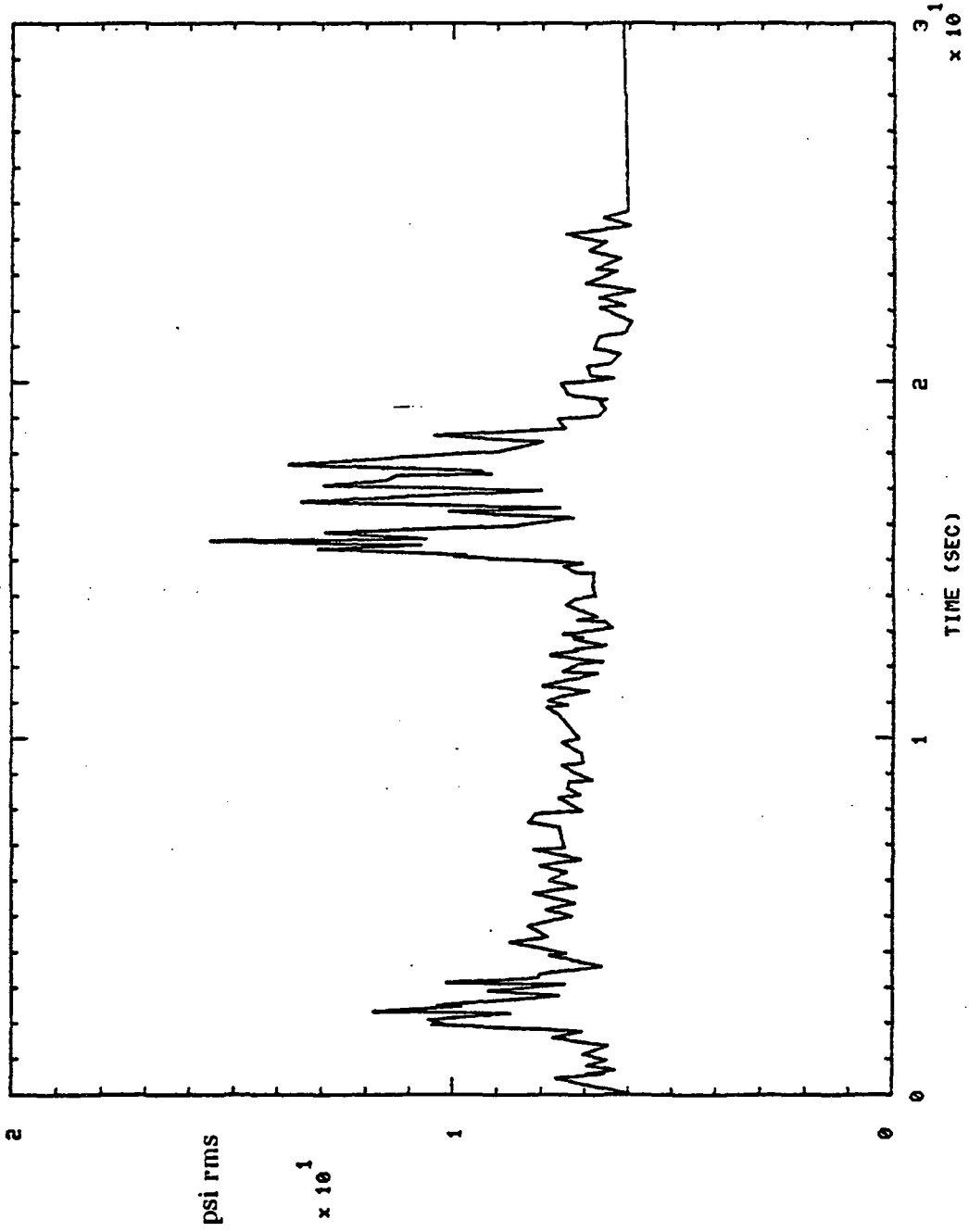
750109 THRUST (UNFILTERED)



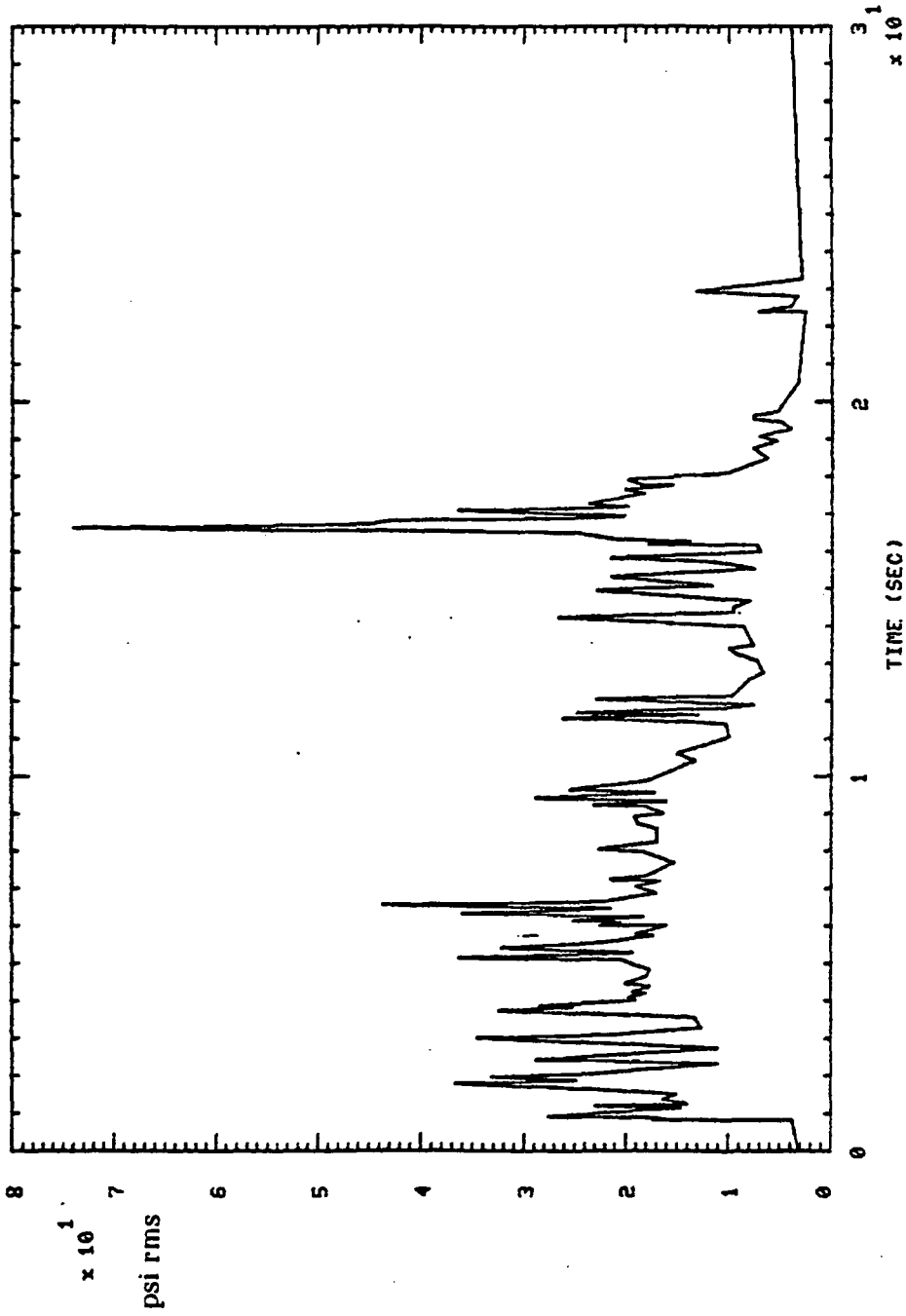
750109 LPFP IN PR (1 - 20K HZ)



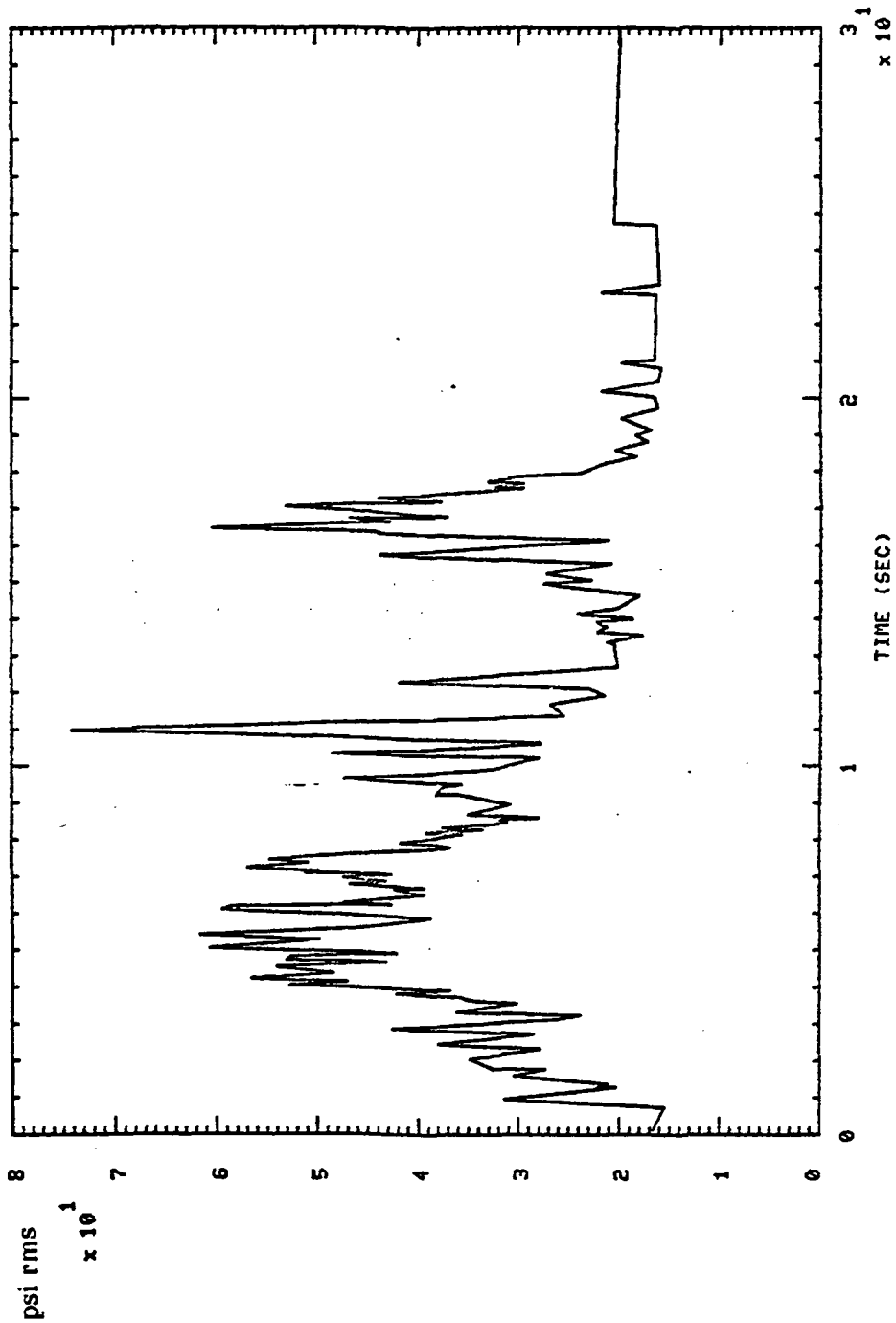
750109 LPOP D5 PR (1 - 20K HZ)



750109 HPOP BAL CAV PR2 (1 - 20K HZ)

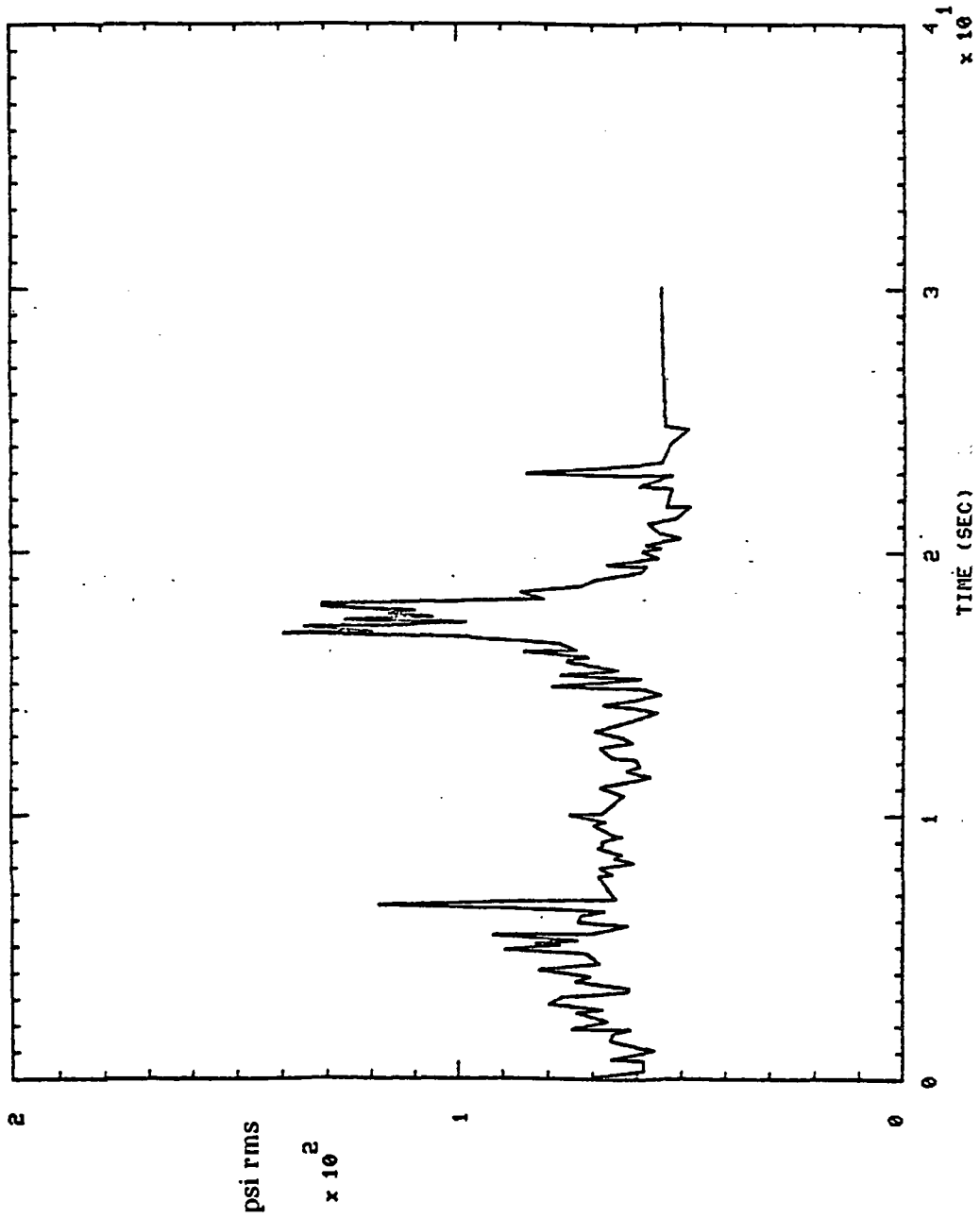


750109 HPOP BAL CAU PRI (1 - 20K HZ)



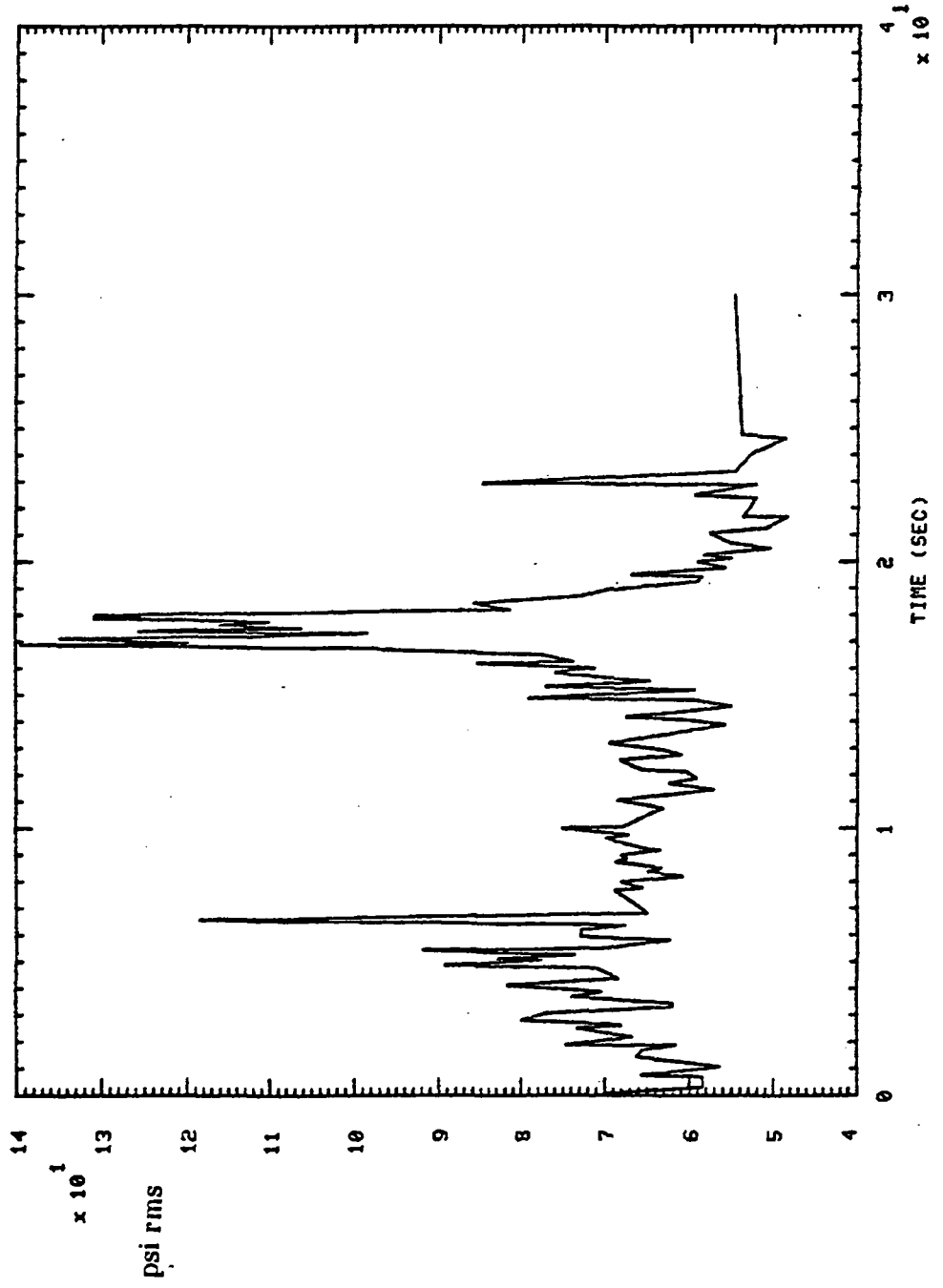
(1 - 20K HZ)

750109 HPOP DS PR

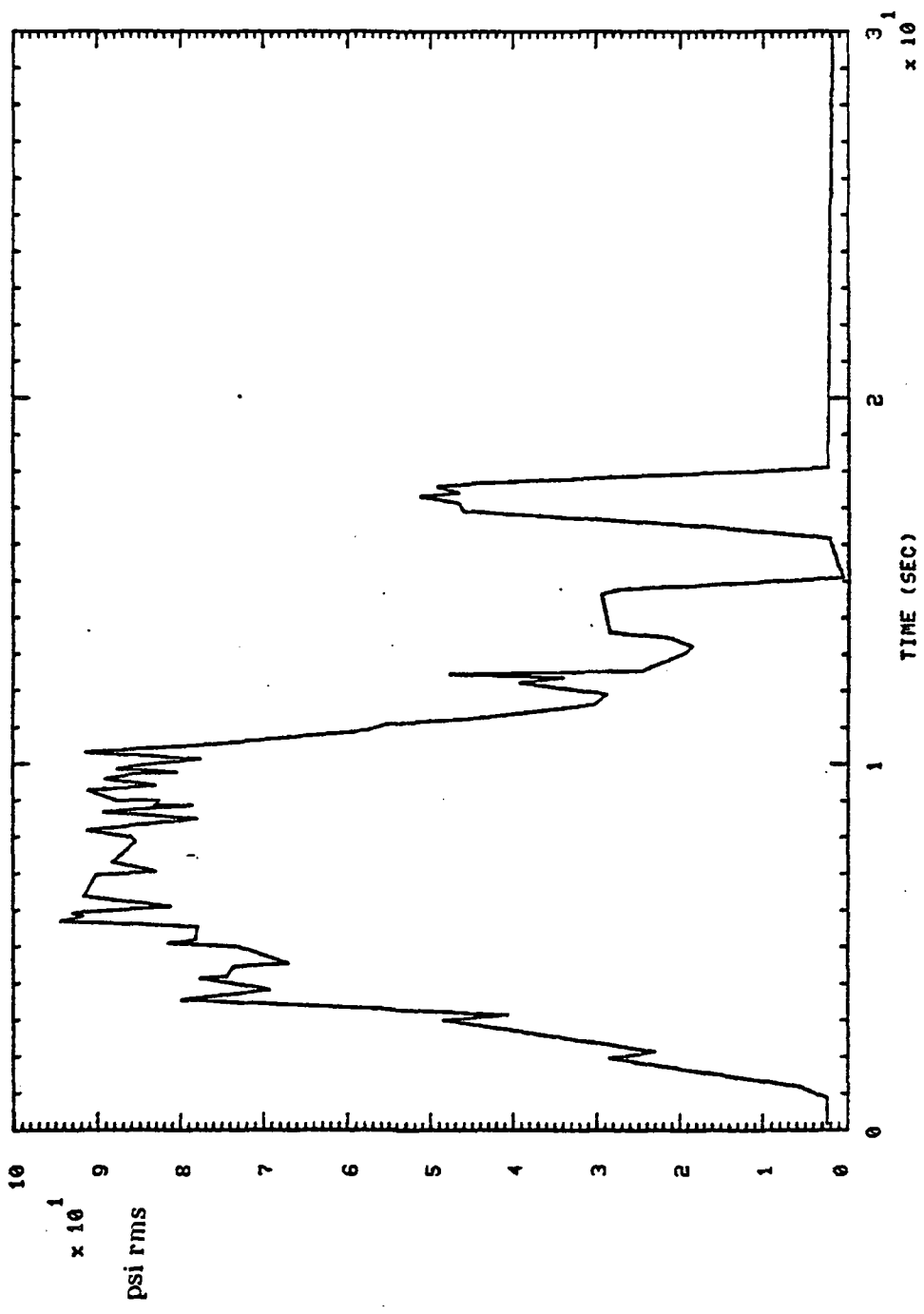


(1 - 20K HZ)

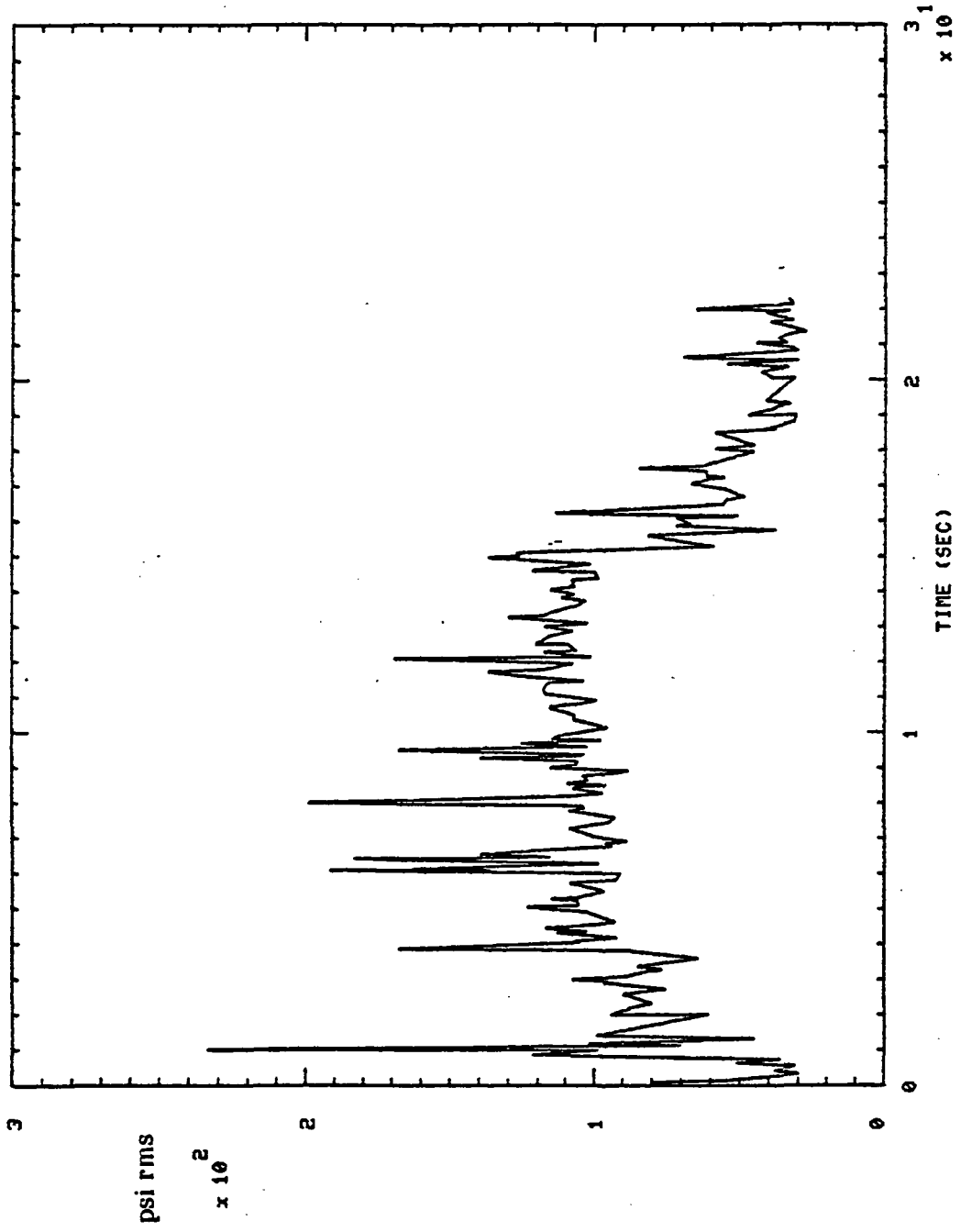
750109 HPOP DS PR



750109 HPOP DISC PR (1 - 20K HZ)

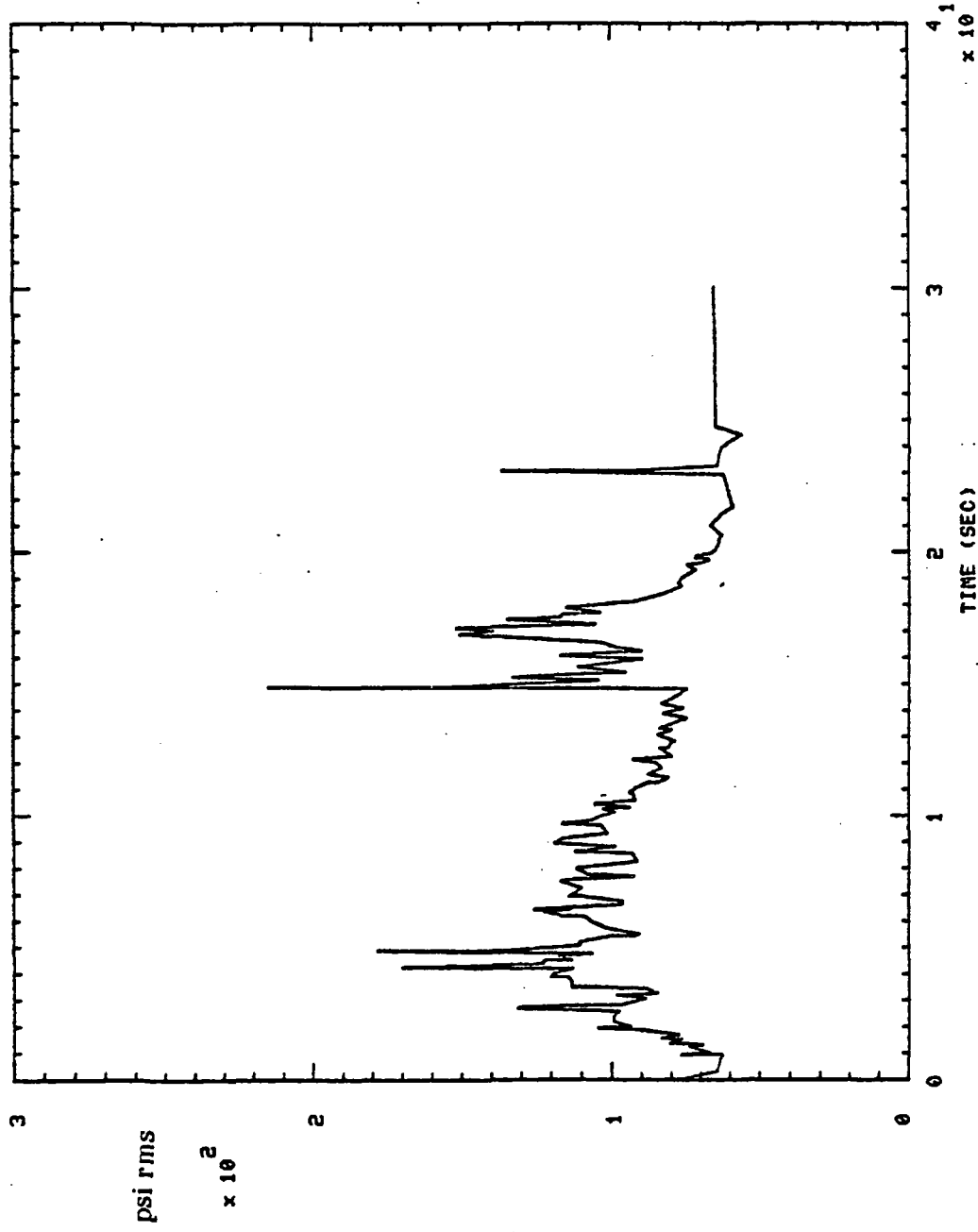


750109 MCC HOT GAS IN PR (1 - 20K HZ)

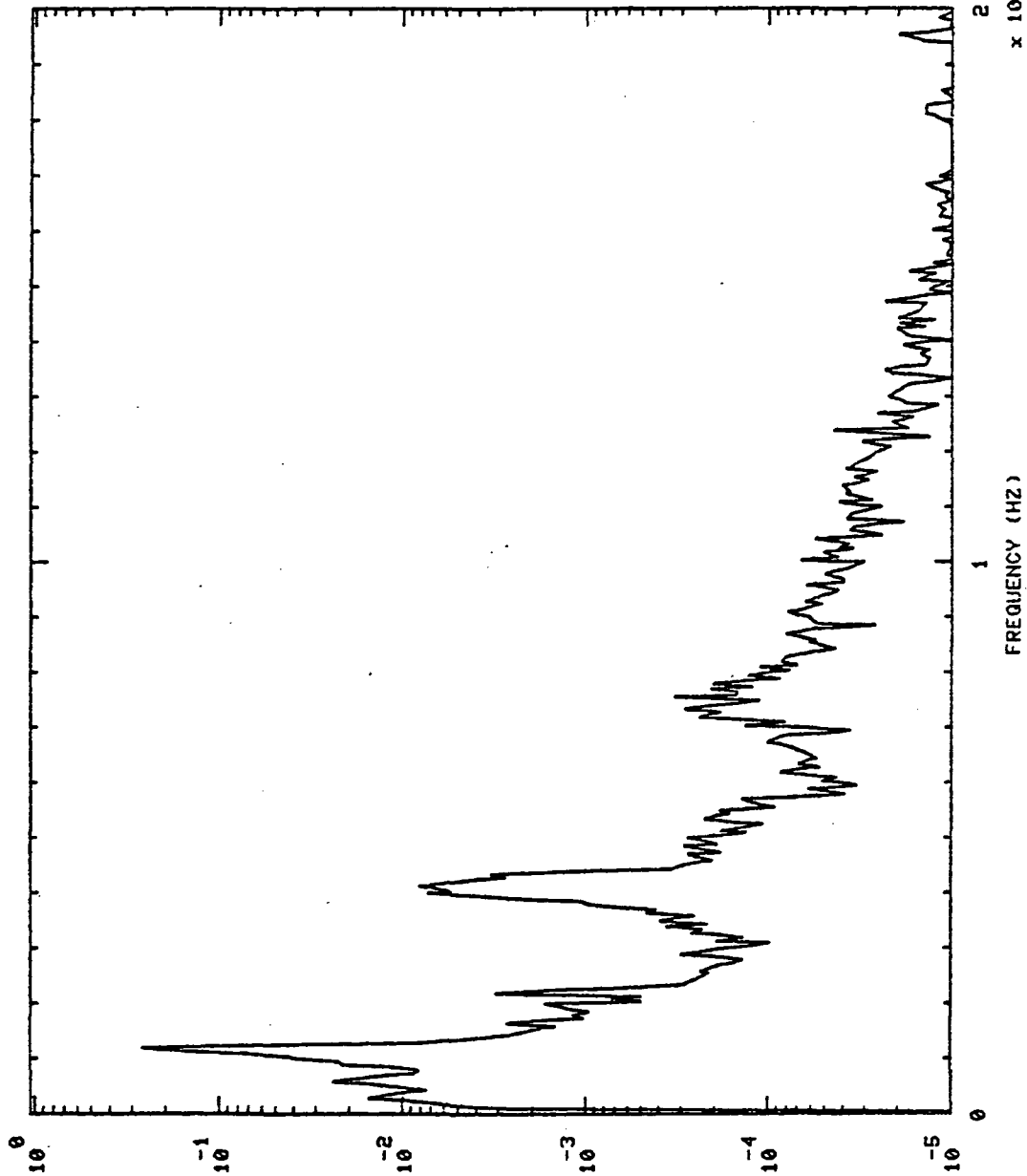


(1 - 20K HZ)

750109 PBP DS FR



750109 LPFP IN PR S+ 6.050/HZ



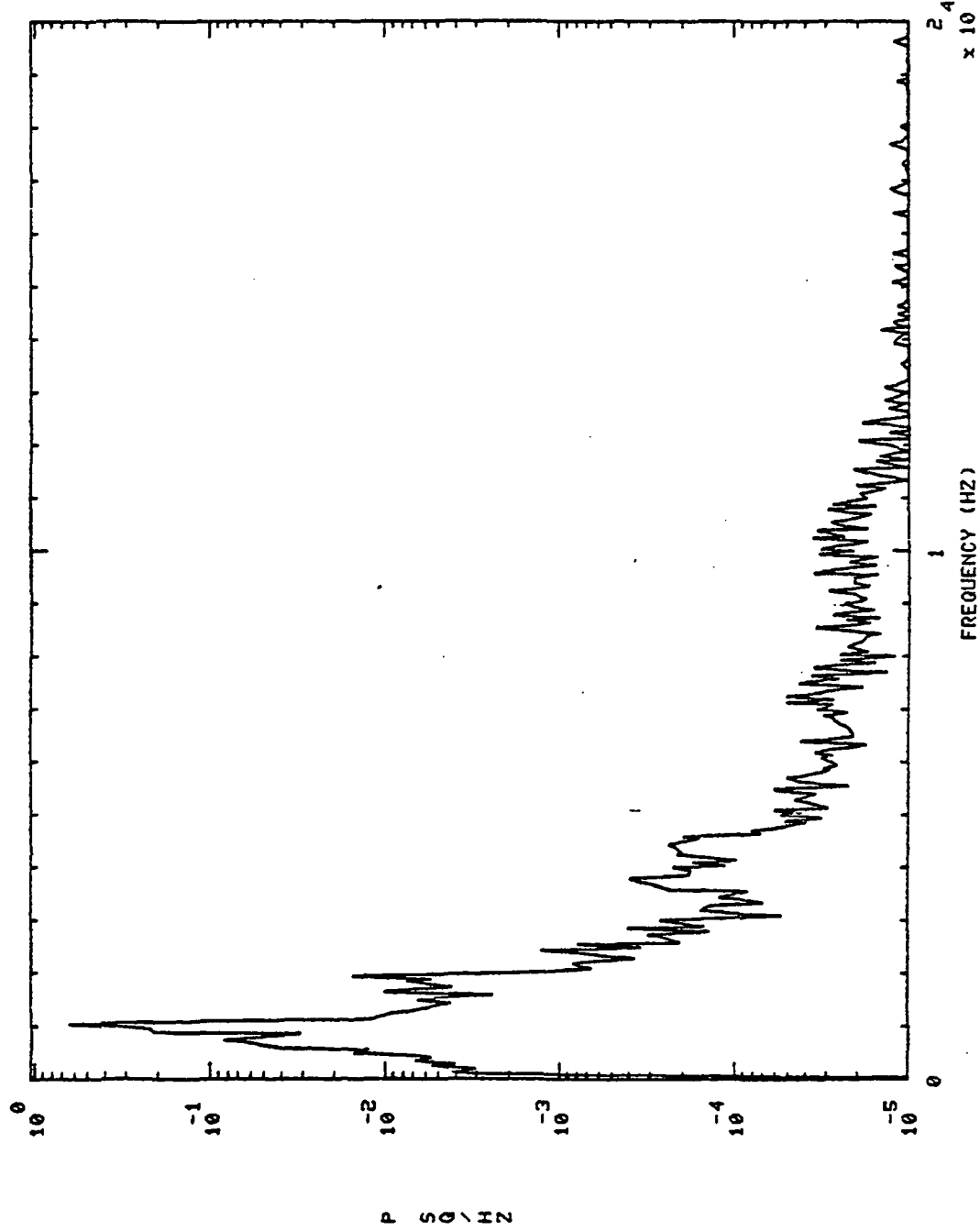
P SQ/HZ

10²
x 10⁴

1
FREQUENCY (HZ)

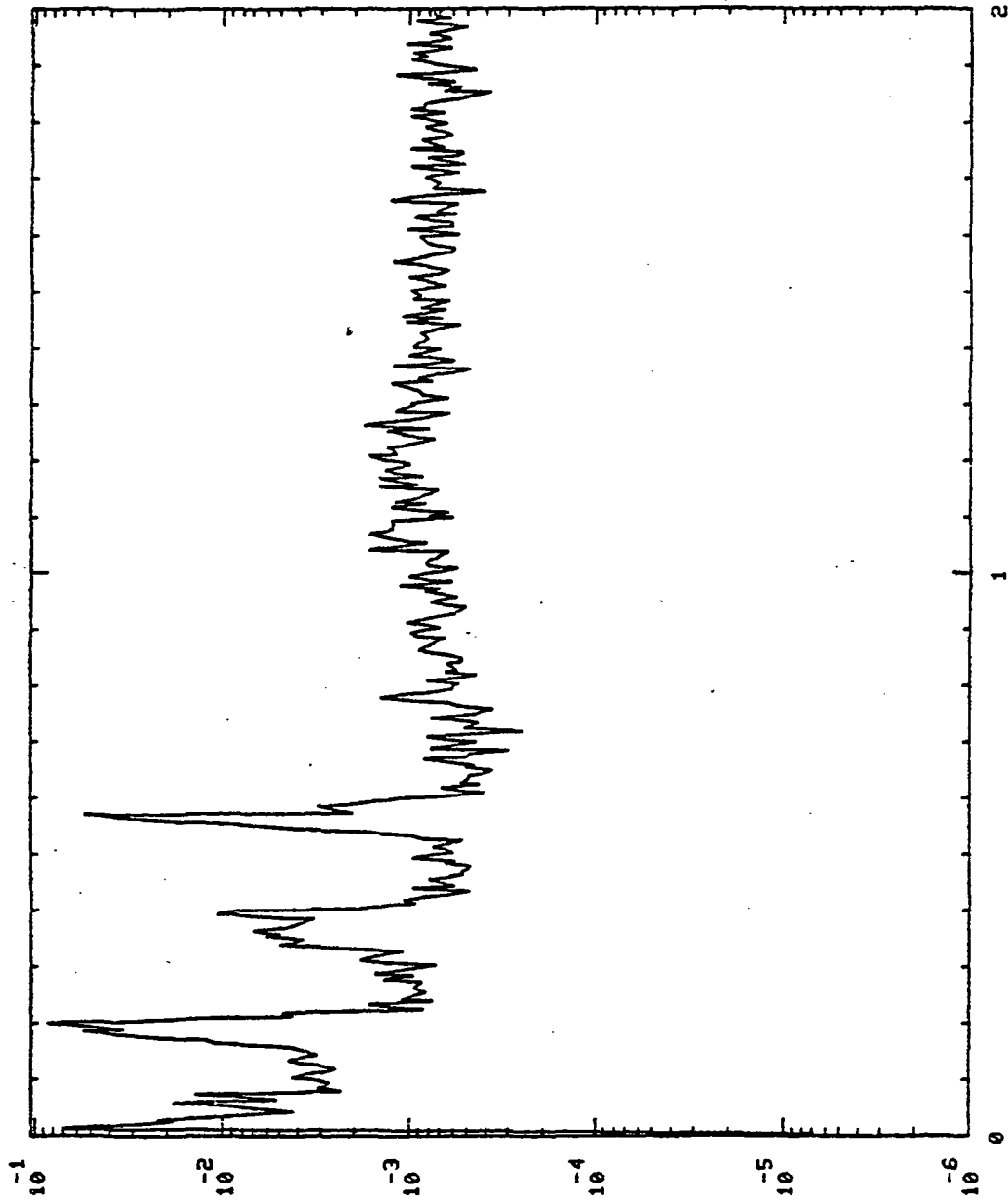
S+ 14.050/HZ

750109 LPFP IN PR



S+ 6.050/HZ

750109 LPOP D5 PR

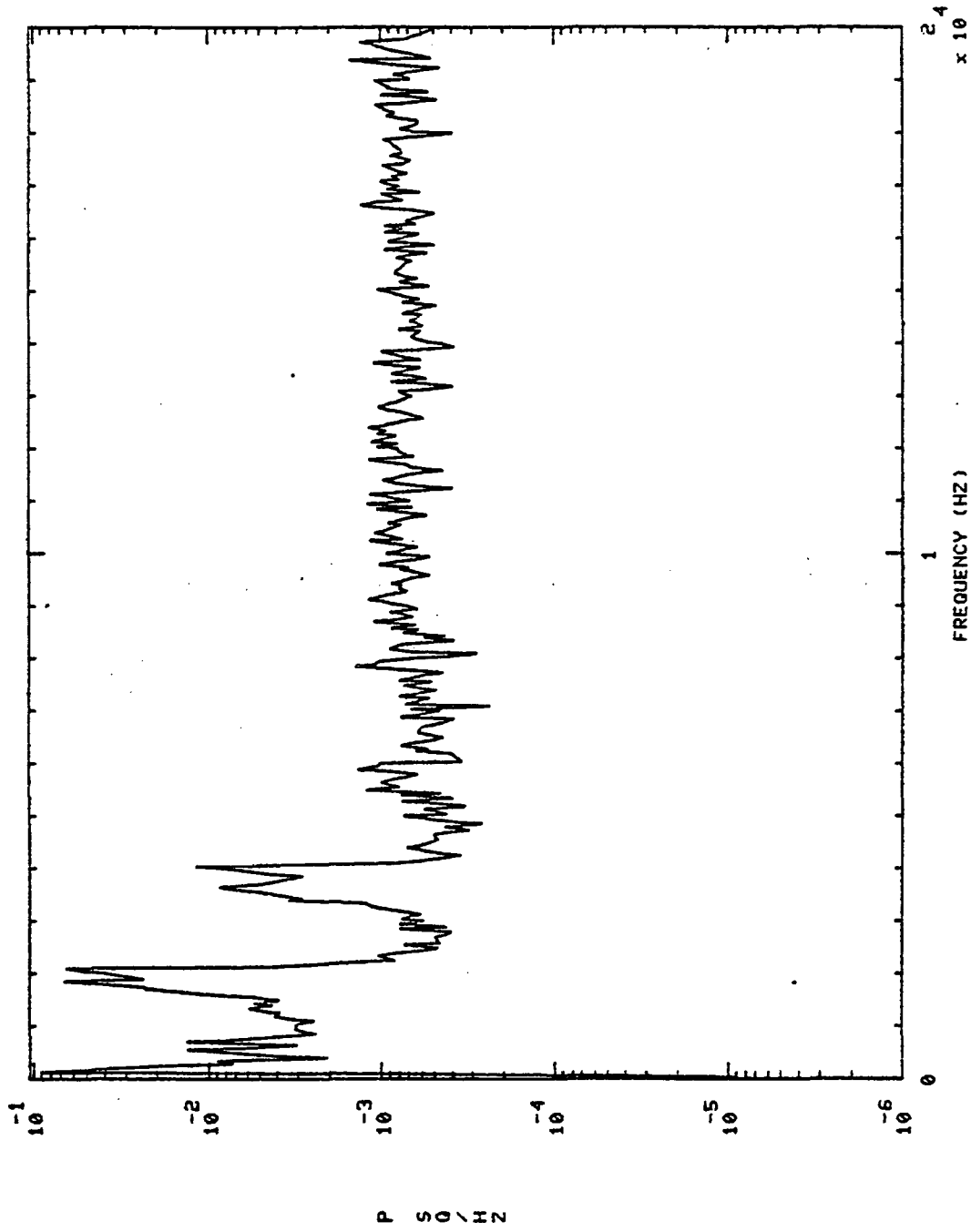


P S O / H Z

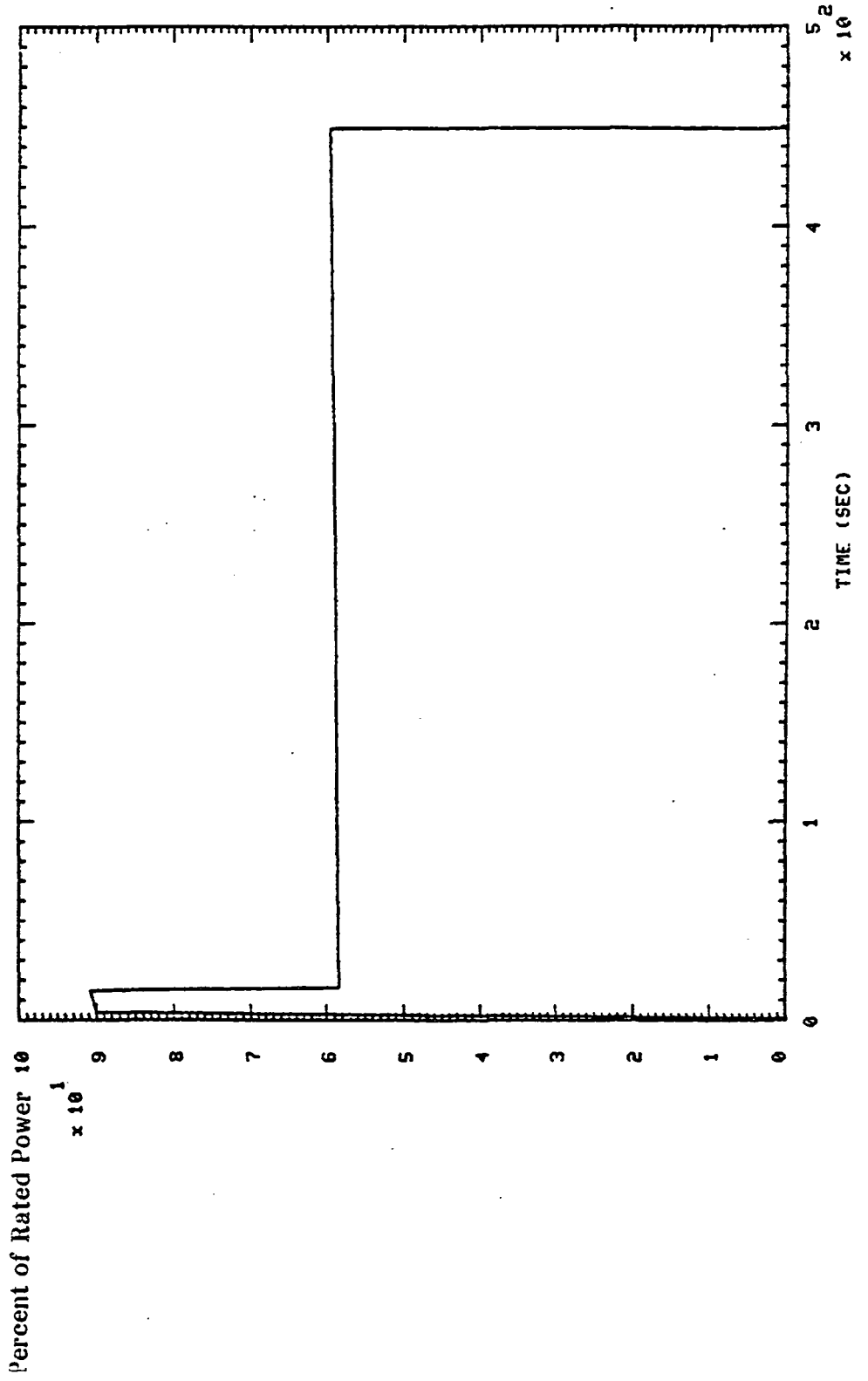
FREQUENCY (HZ)

2.4
x 10⁴

750109 LPOP DS PR St 14.050/HZ

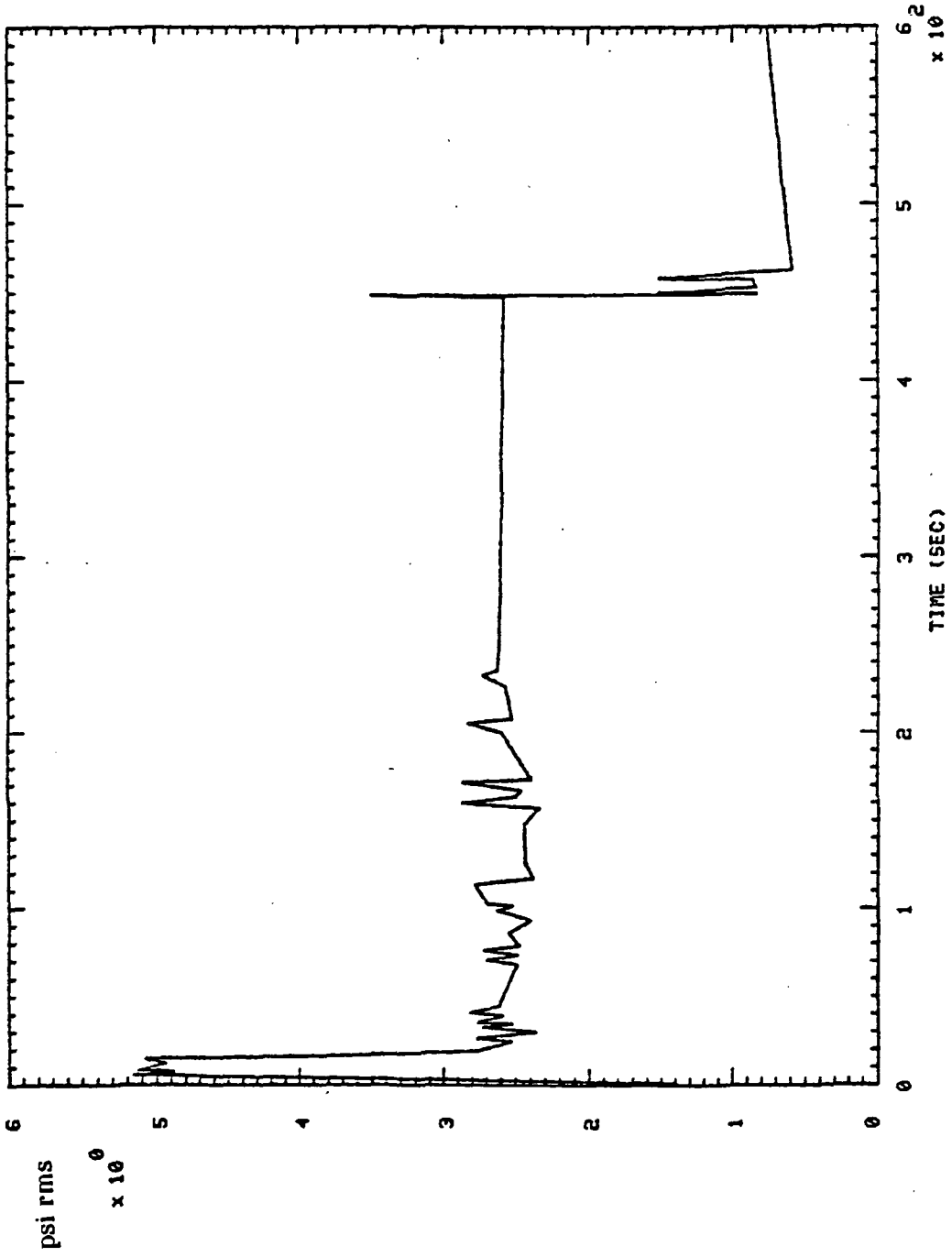


750110 THRUST (UNFILTERED)



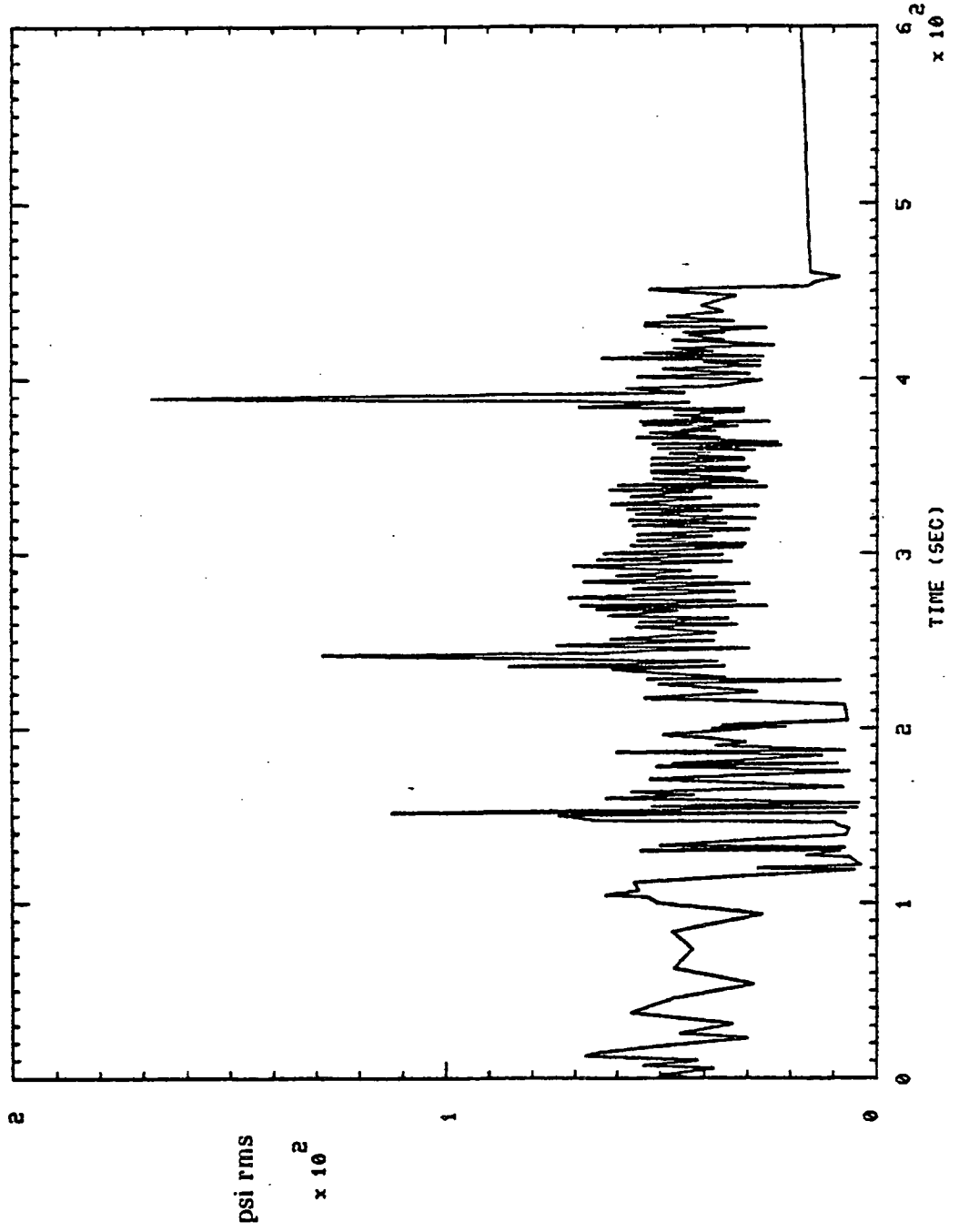
(1 - 20K HZ)

750110 LPFP DS PR

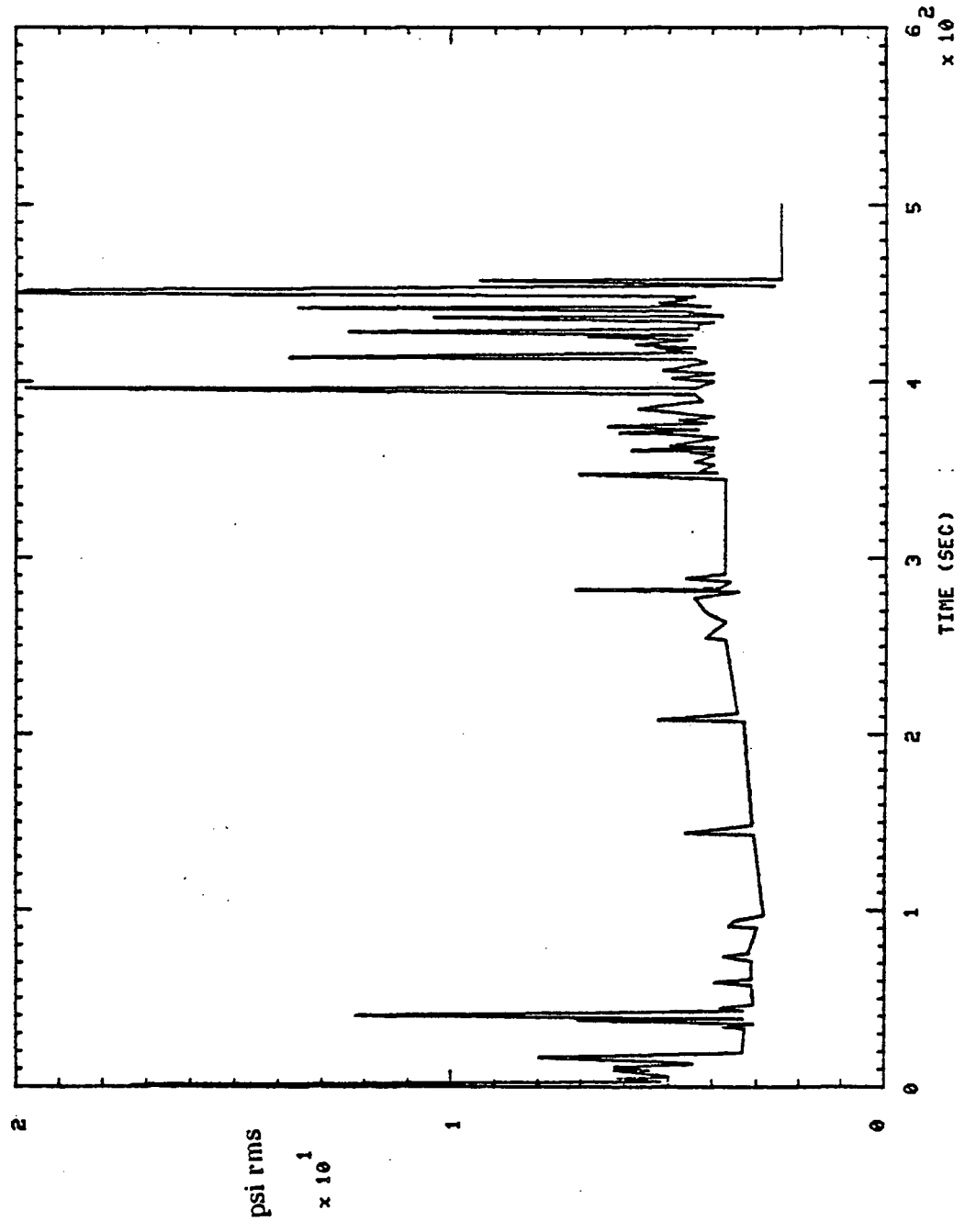


(1 - 20K HZ)

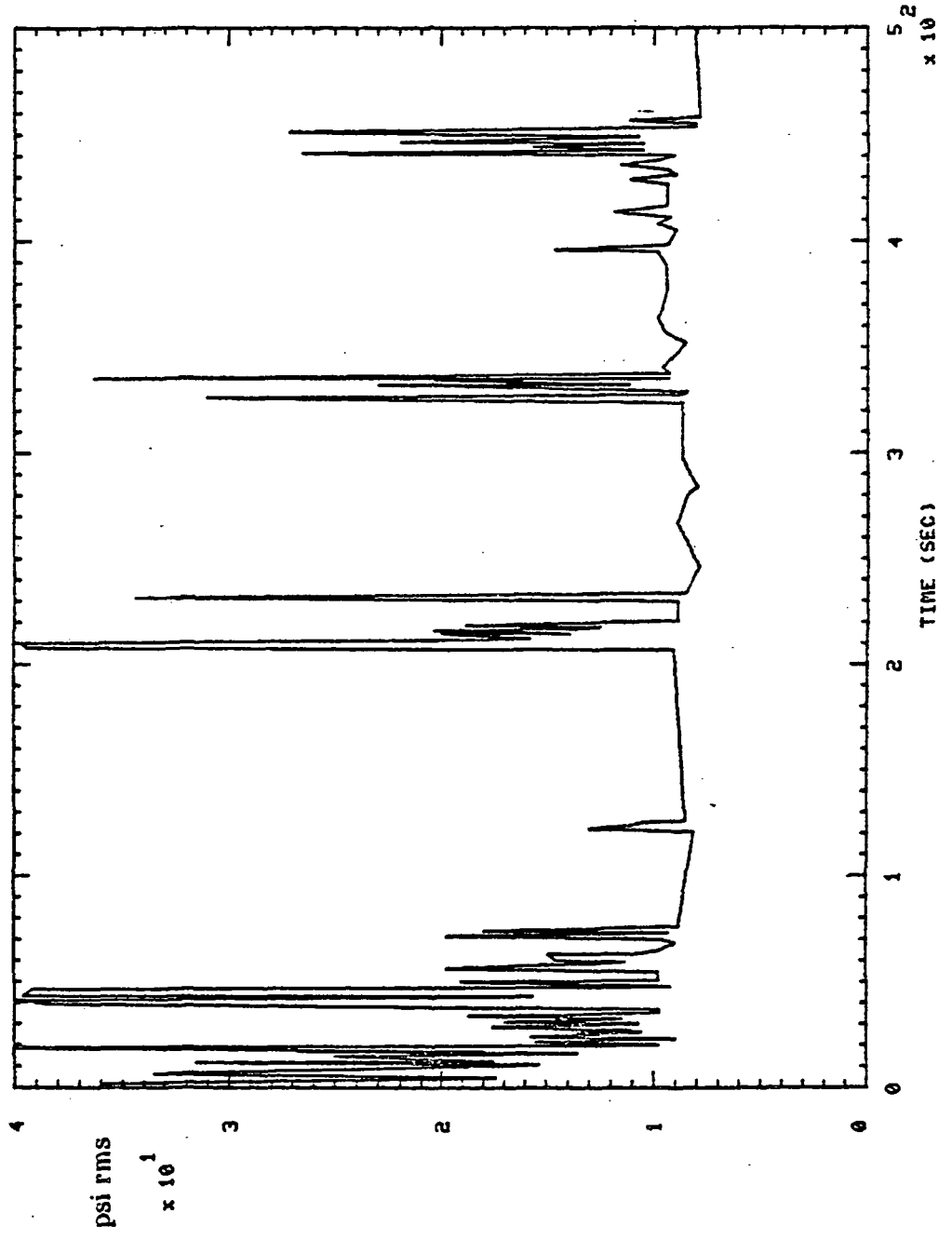
750110 LPOP DS PR



750110 HPOP BAL CAU PRE (1 - 20K HZ)

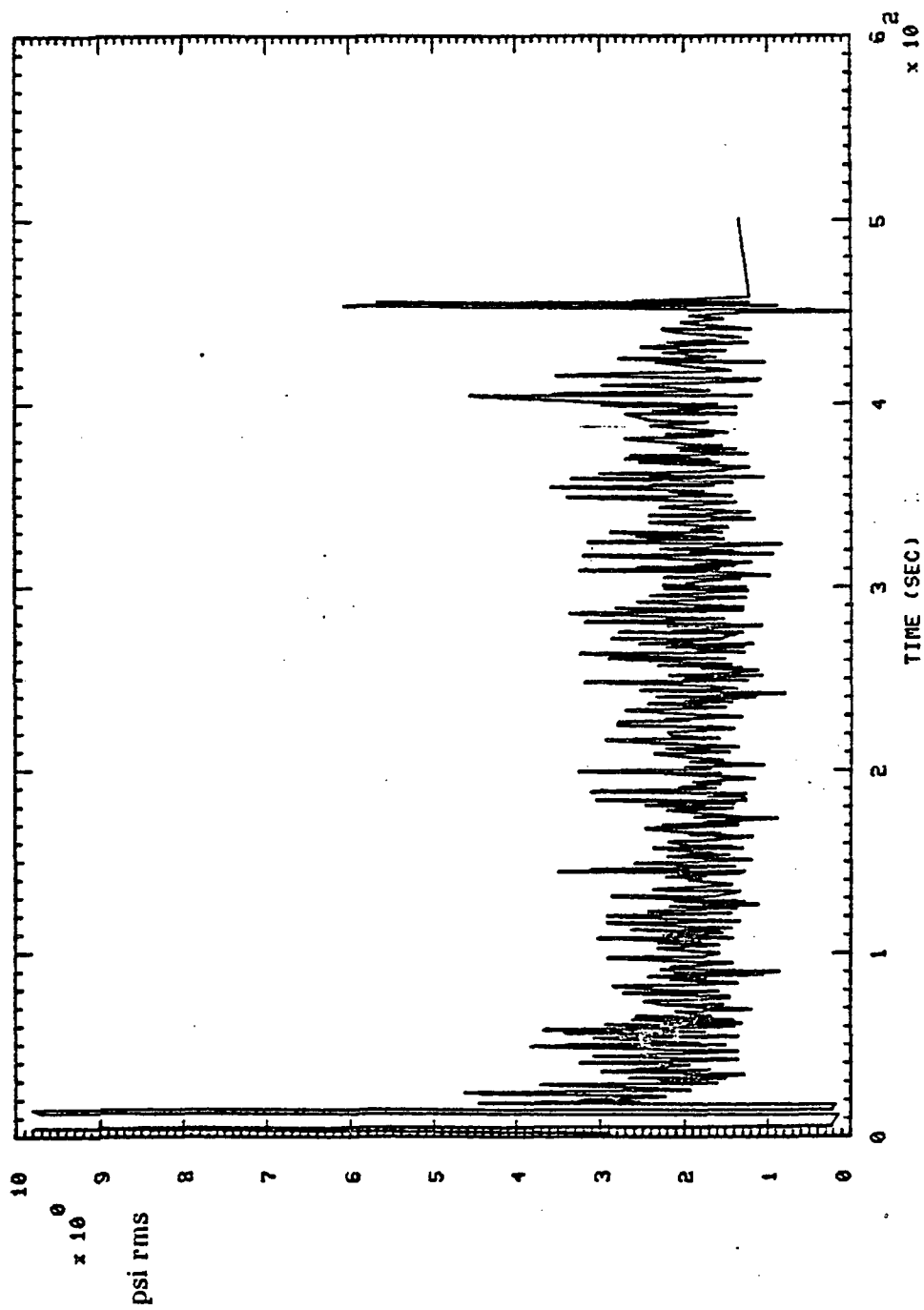


750110 NPOP BAL CAU PRI (1 - 20K HZ)

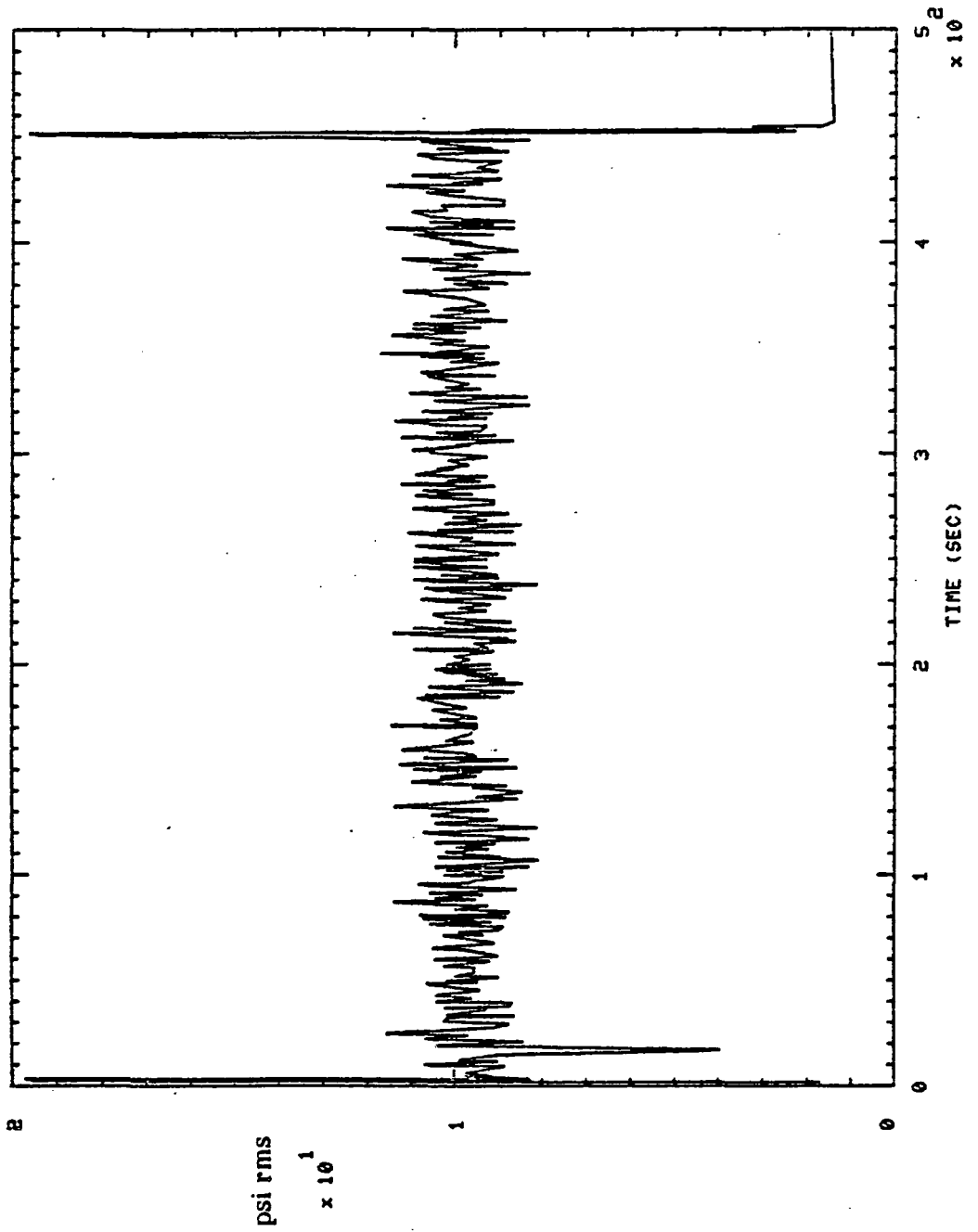


(1 - 20K HZ)

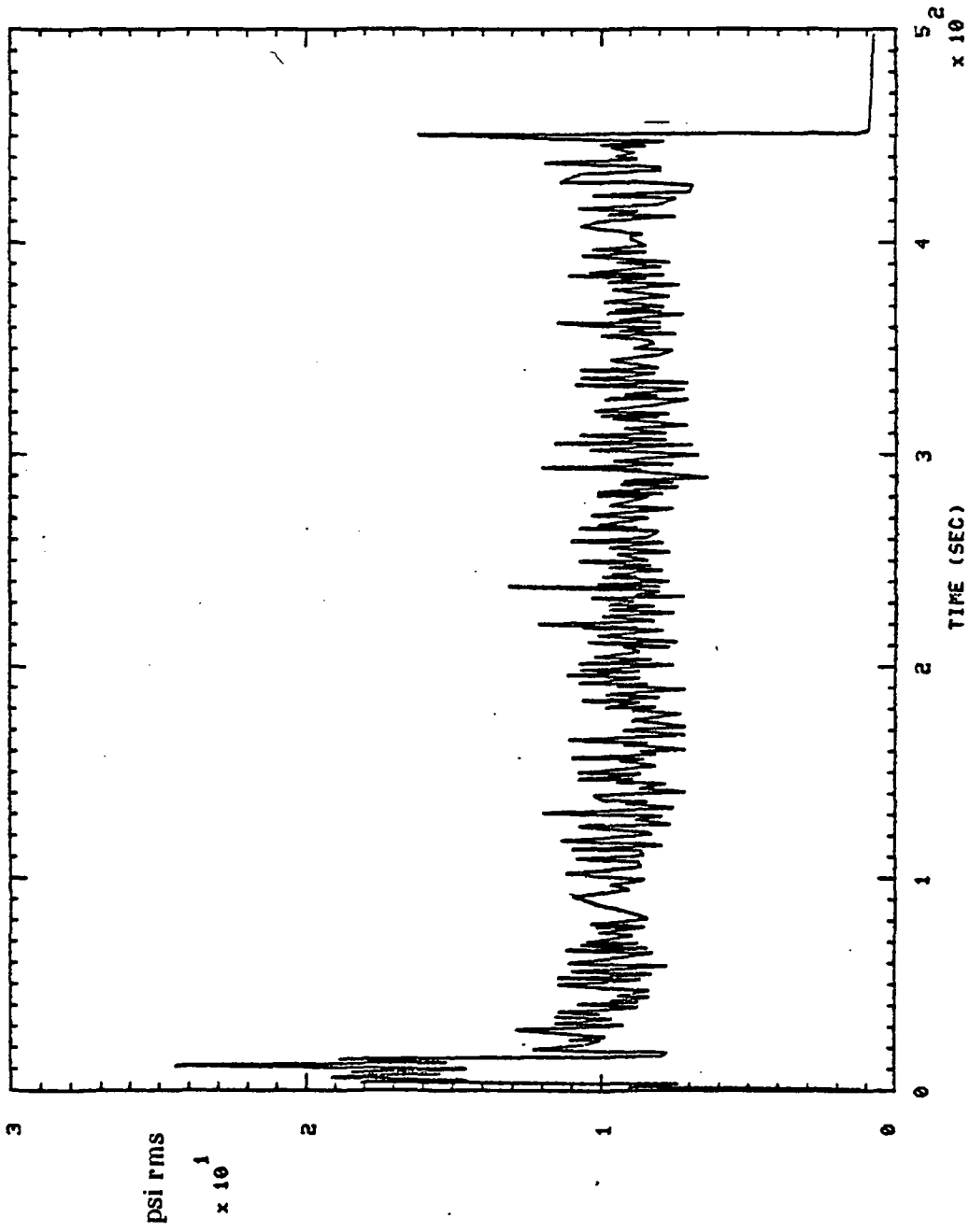
750110 CHAMBER PR



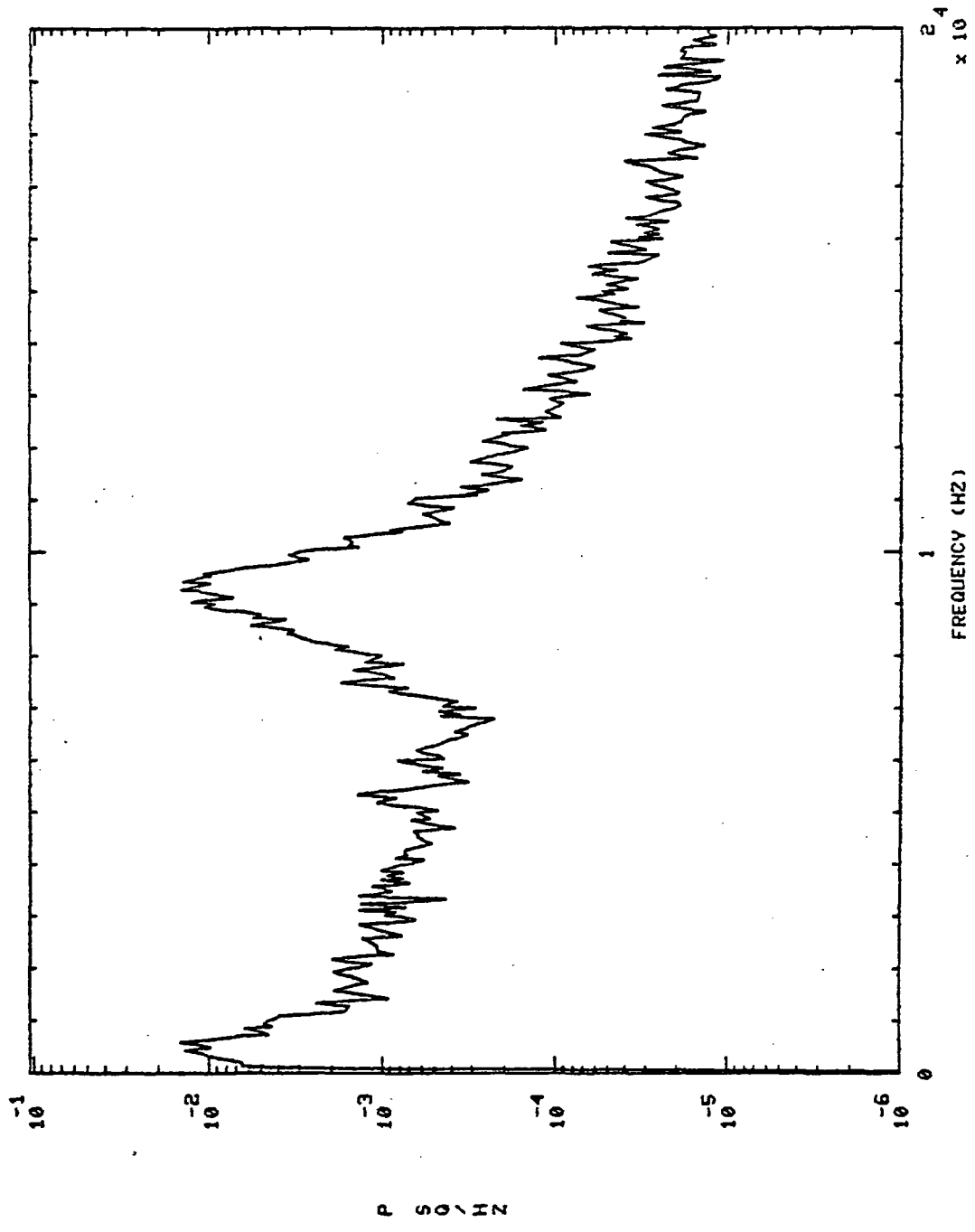
750110 PBP FUEL SUP PR (1 - 20K HZ)



750110 FPB FUEL MAN PR (1 - 20K HZ)

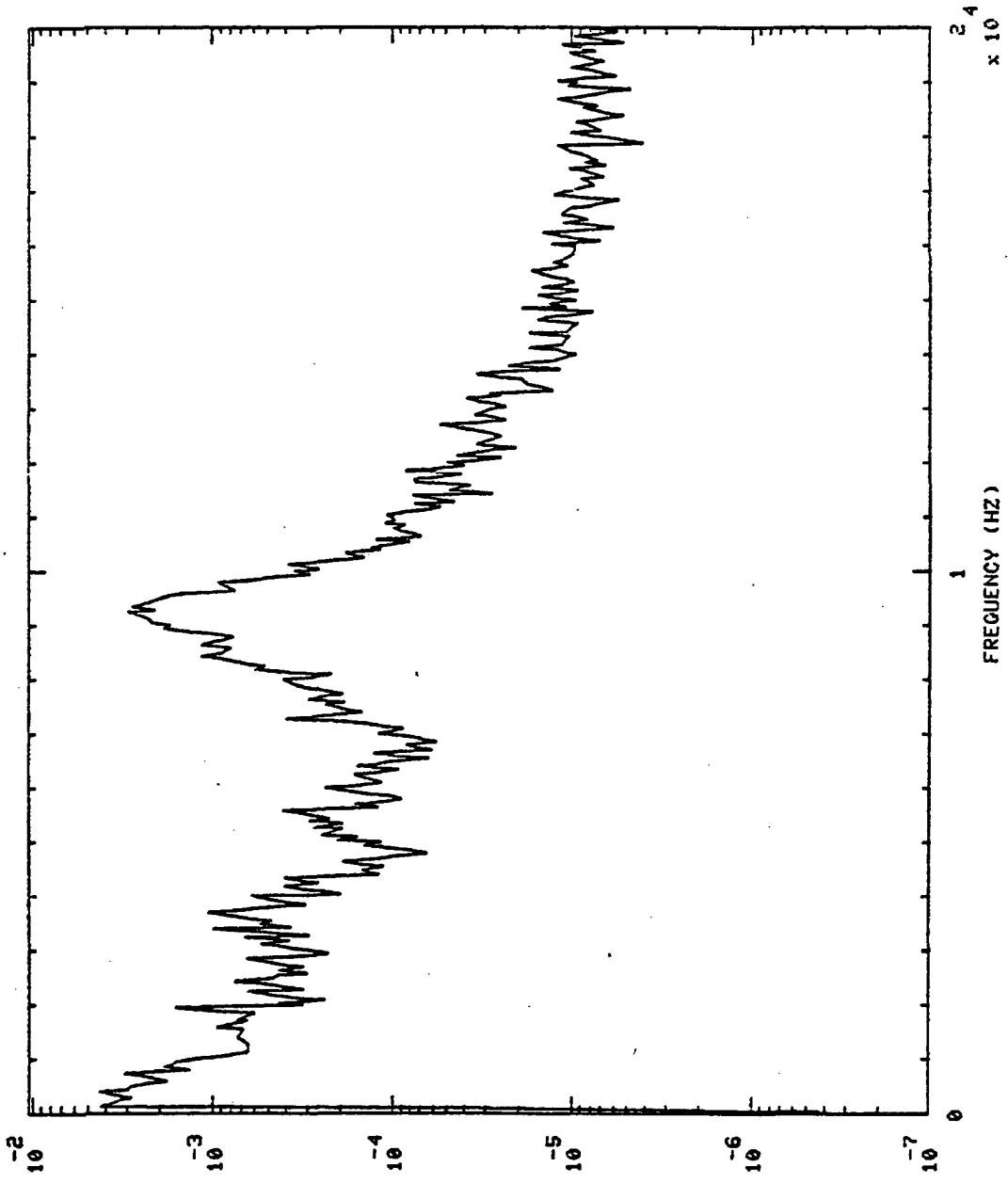


750110 LPPF DS PR S+ 10.050/HZ



S+ 30.050/HZ

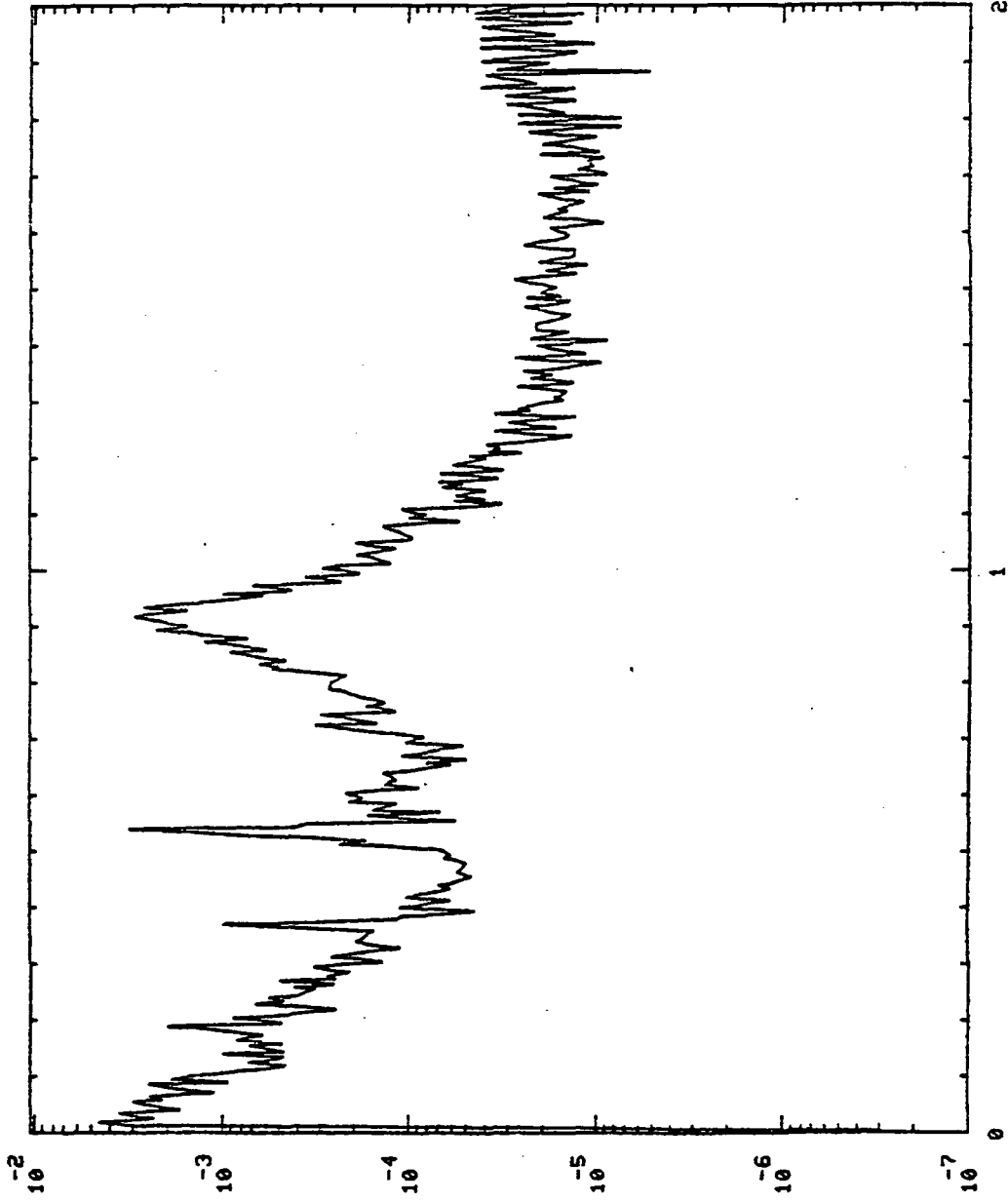
750110 LPFP DS PR



P S D \ H Z

FREQUENCY (HZ) 2.4×10^4

750110 LPFP D5 PR S+ 150.050/HZ



P S G \ H Z

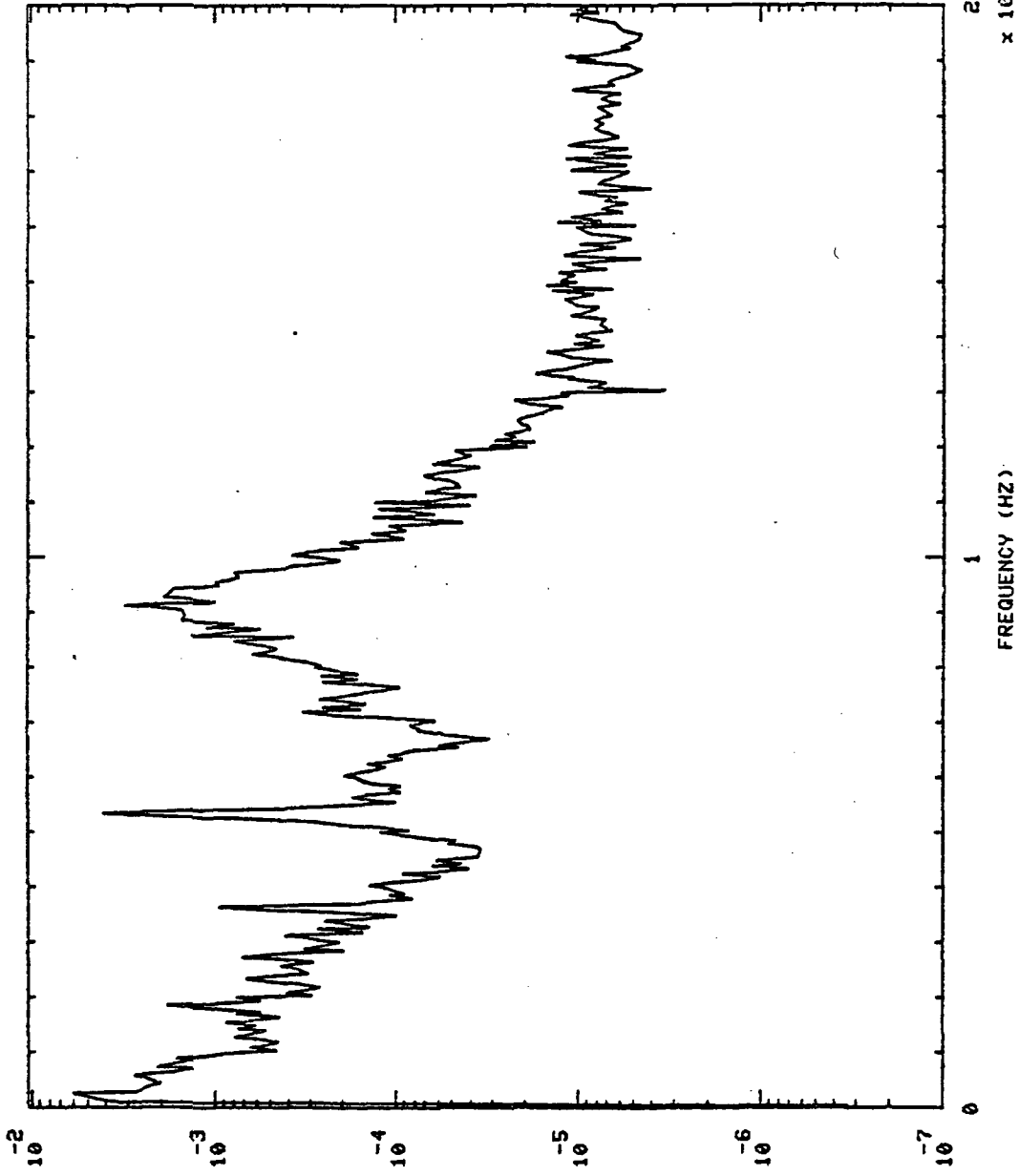
2.4×10^4

FREQUENCY (HZ)

0

S+ 300.050/HZ

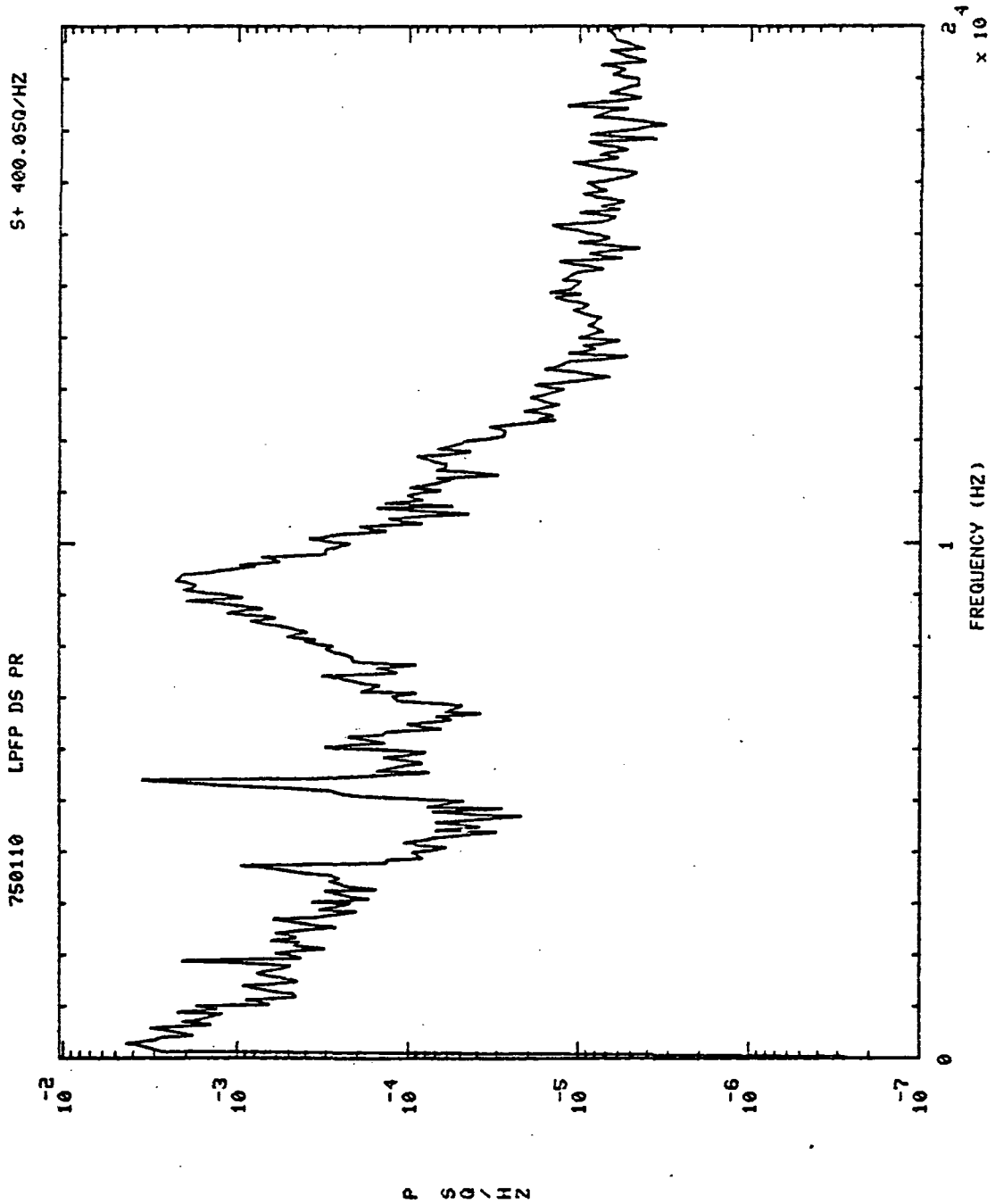
750110 LPFP DS PR



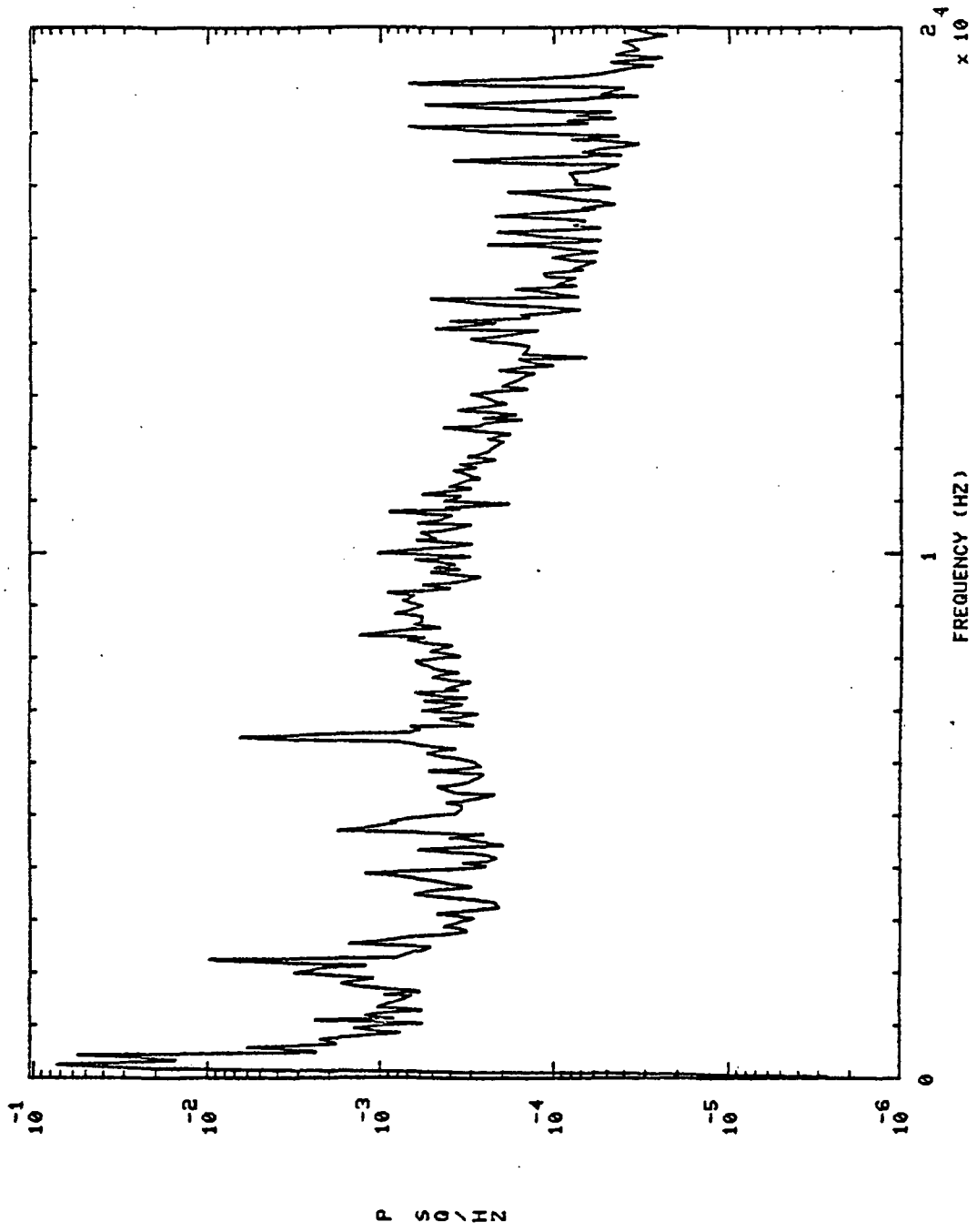
P SQ/HZ

10^4
x 10

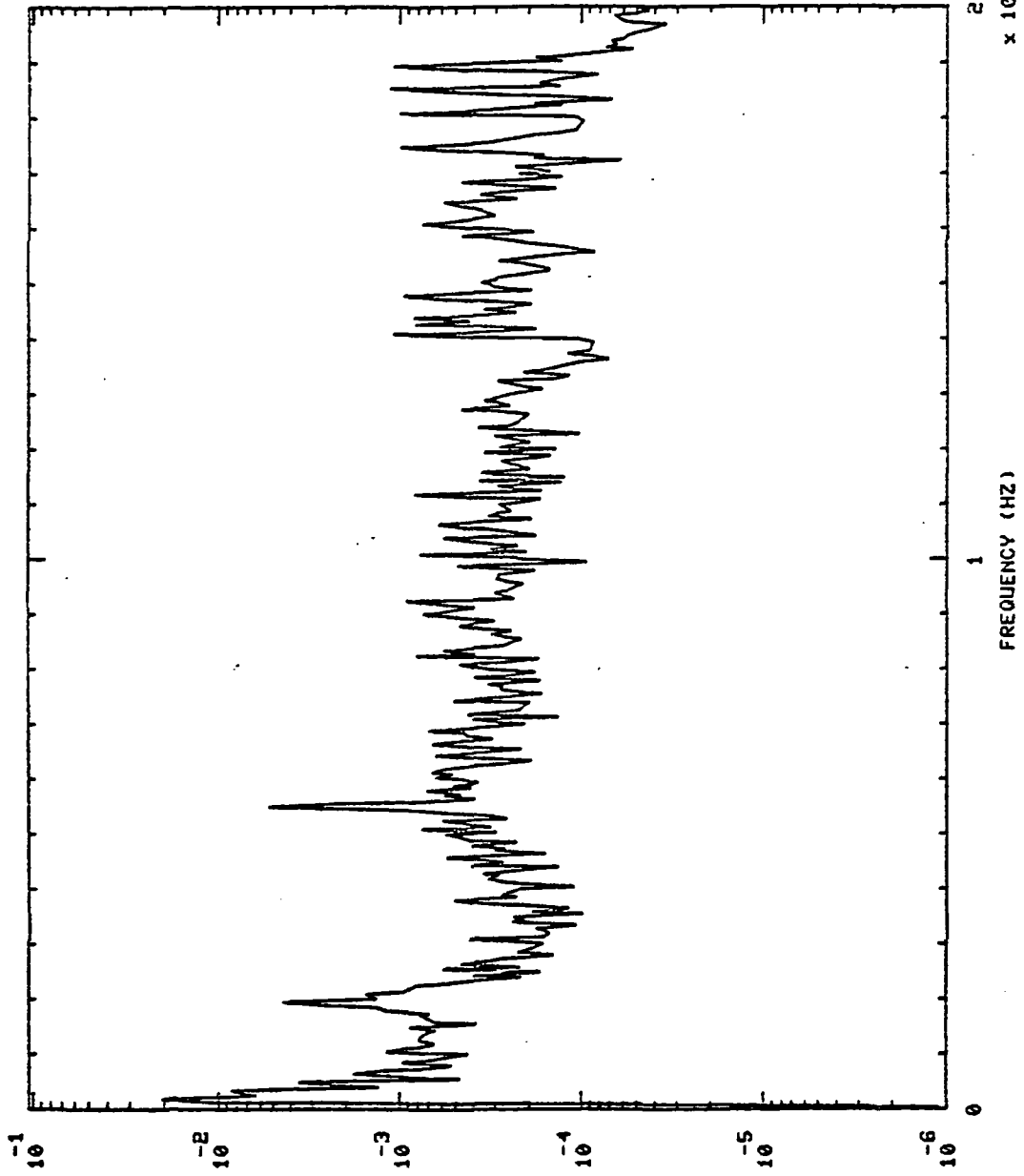
FREQUENCY (HZ)



750110 HPOP BAL CAU PR2 S+ 10.050/HZ

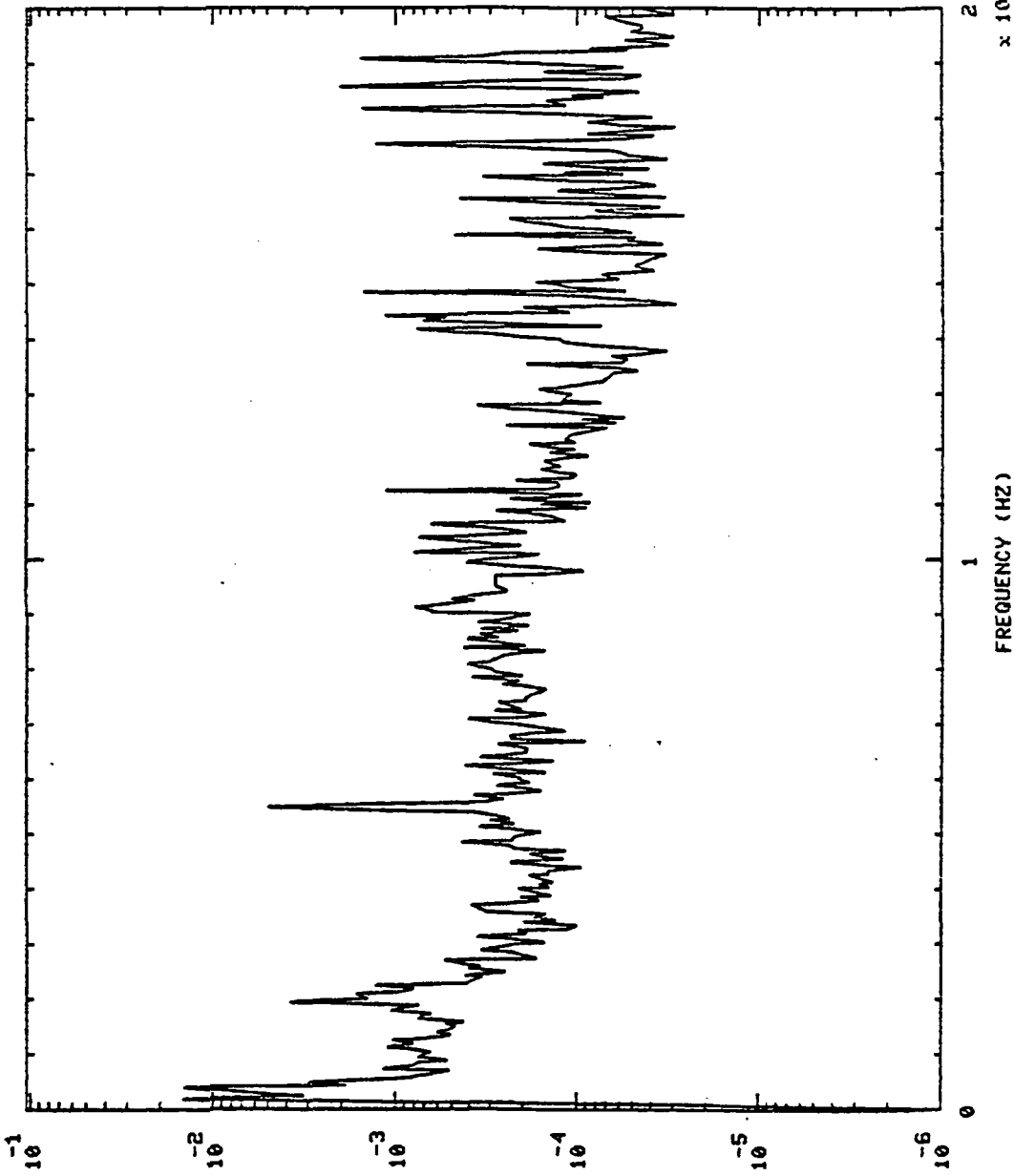


750110 HPOP BAL CAU PR2 S+ 30.050/HZ

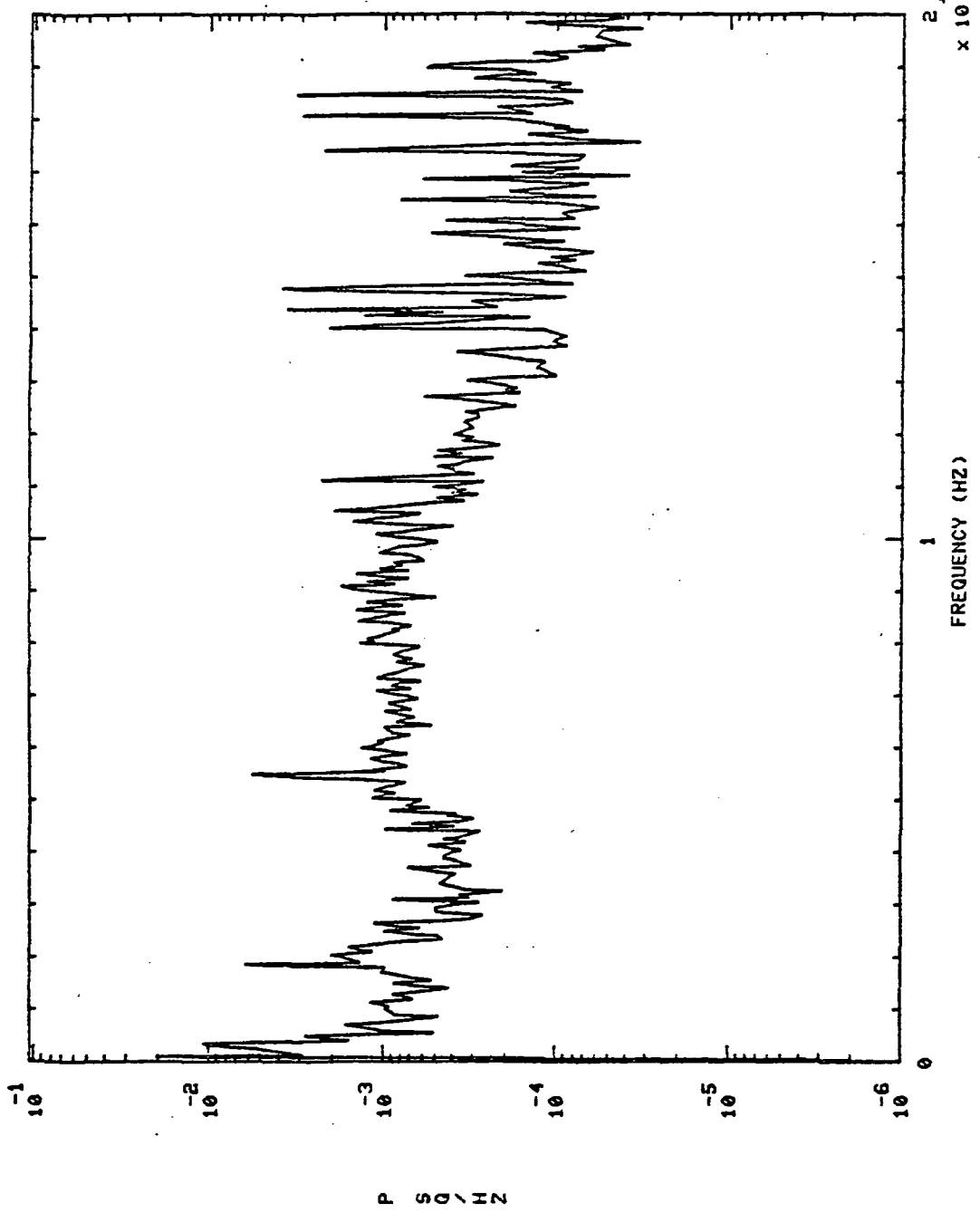


750110 HPOP BAL CAU PRE

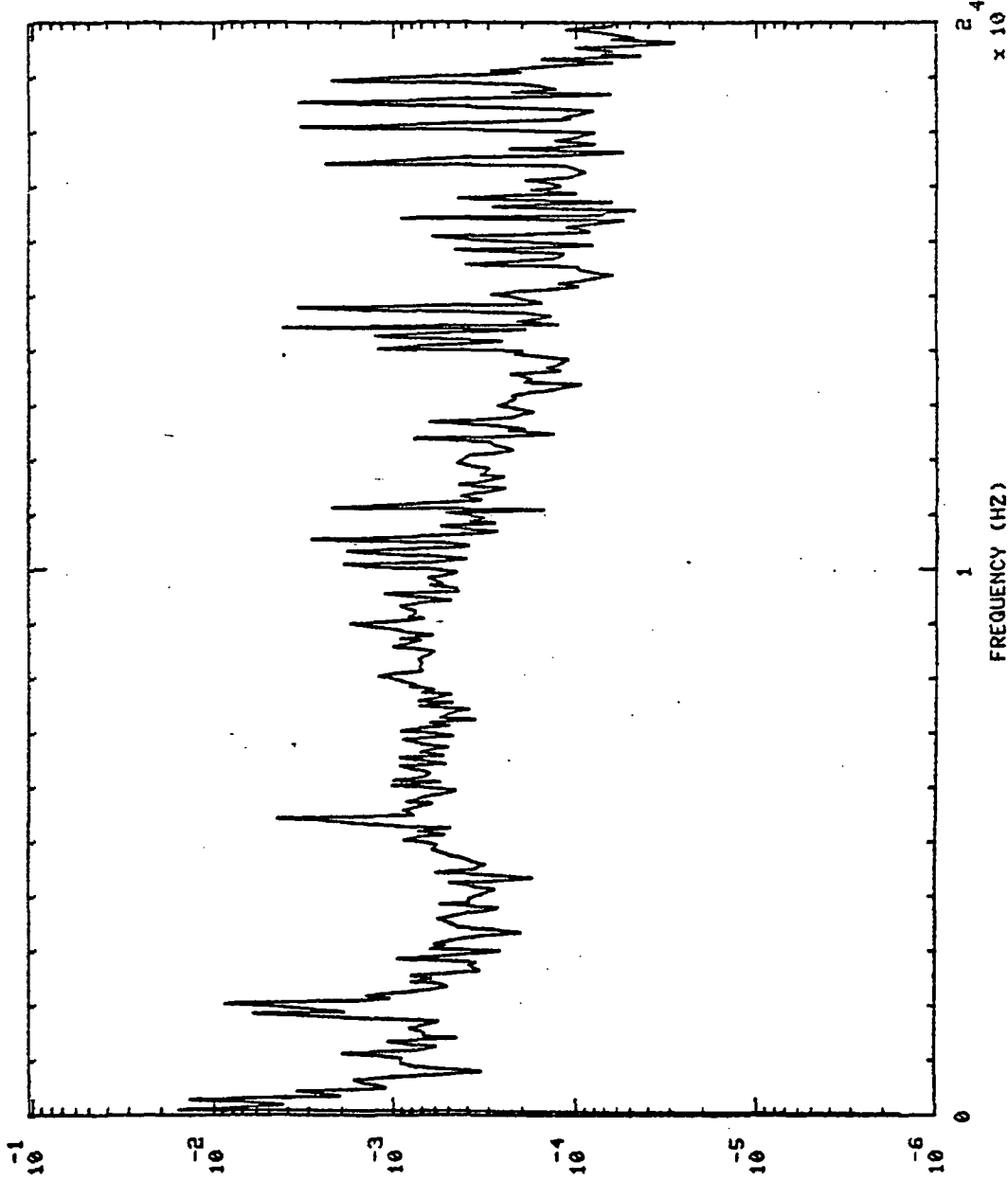
S+ 150.050/HZ



750110 HPOP BAL CAU PR2 S+ 300.050/HZ



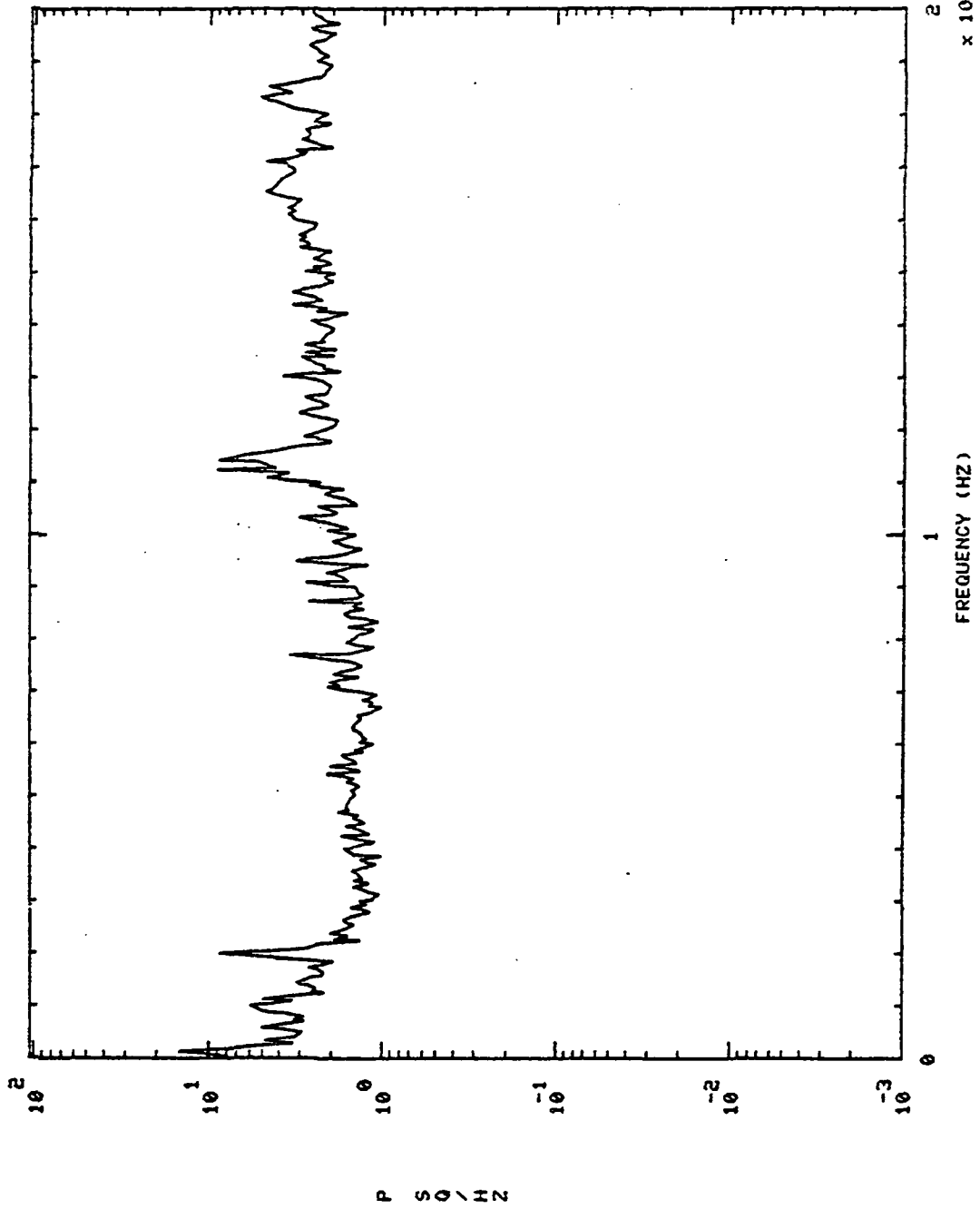
750110 HPOP BAL CAU PR2 S+ 400.050/HZ



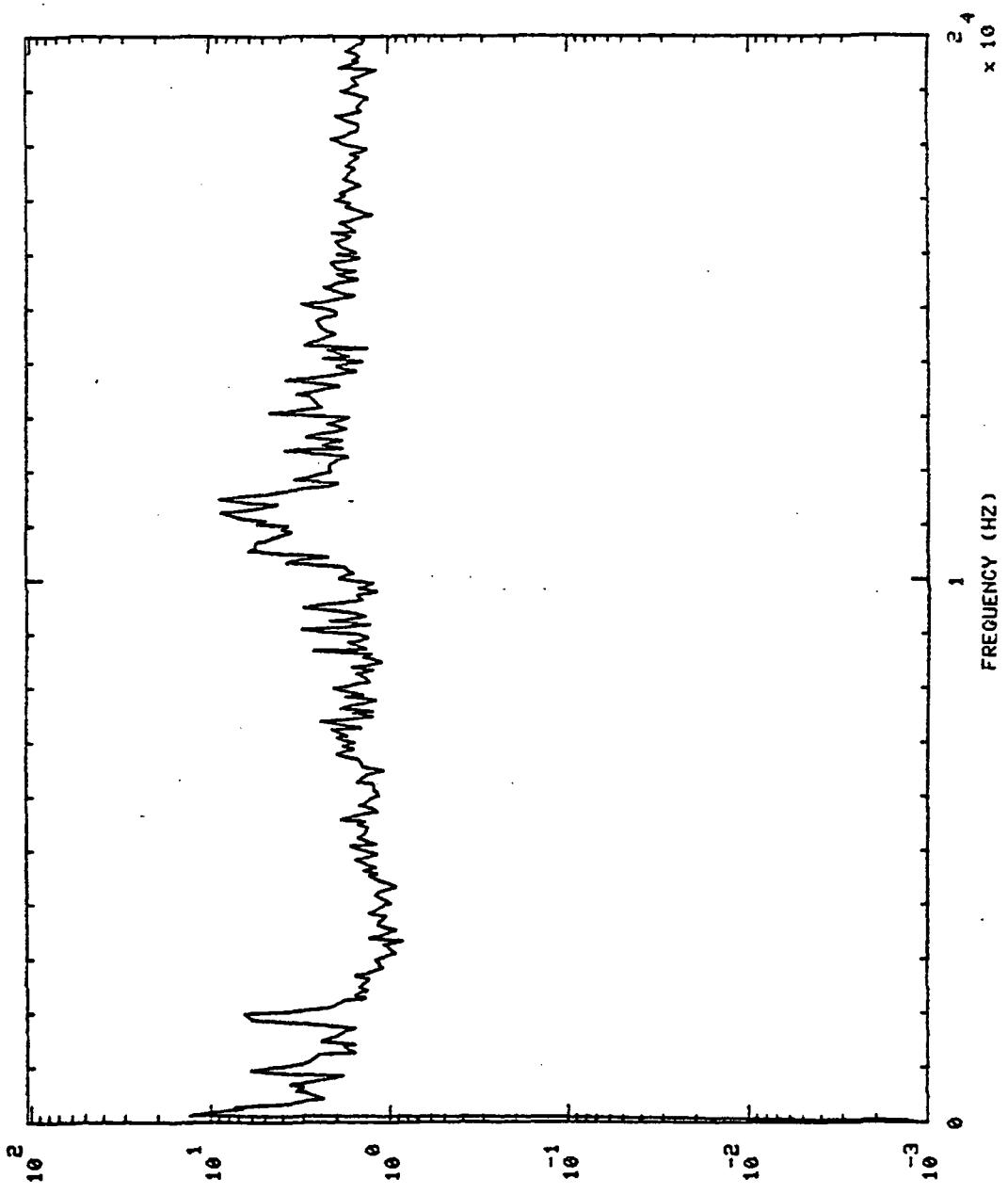
P SQ/HZ

FREQUENCY (HZ) 2×10^4

750110 HPOP DS PR S+ 10.050/HZ



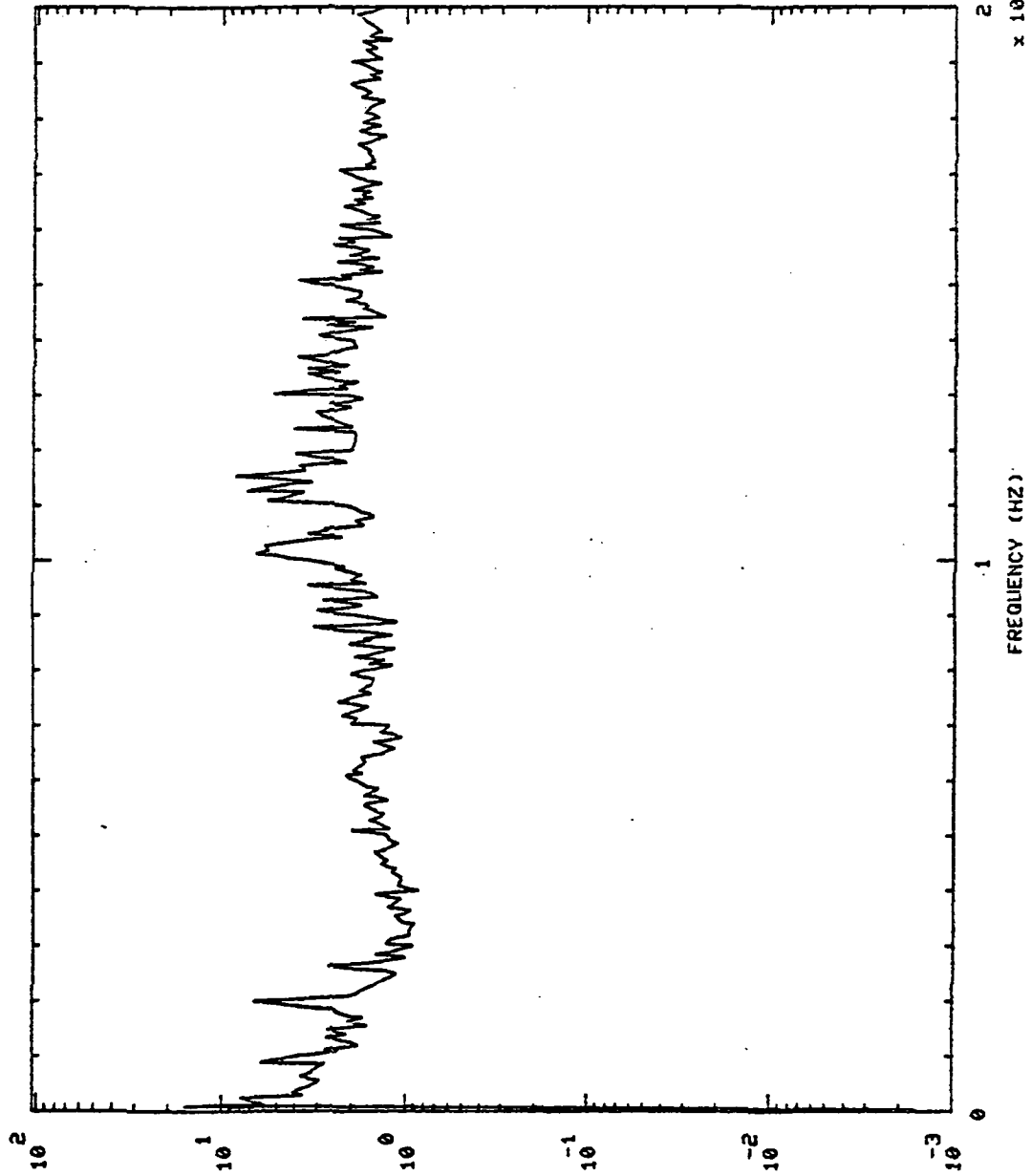
750110 HPOP DS PR S+ 30.050/HZ



P S D / H Z

FREQUENCY (HZ) x 10^4

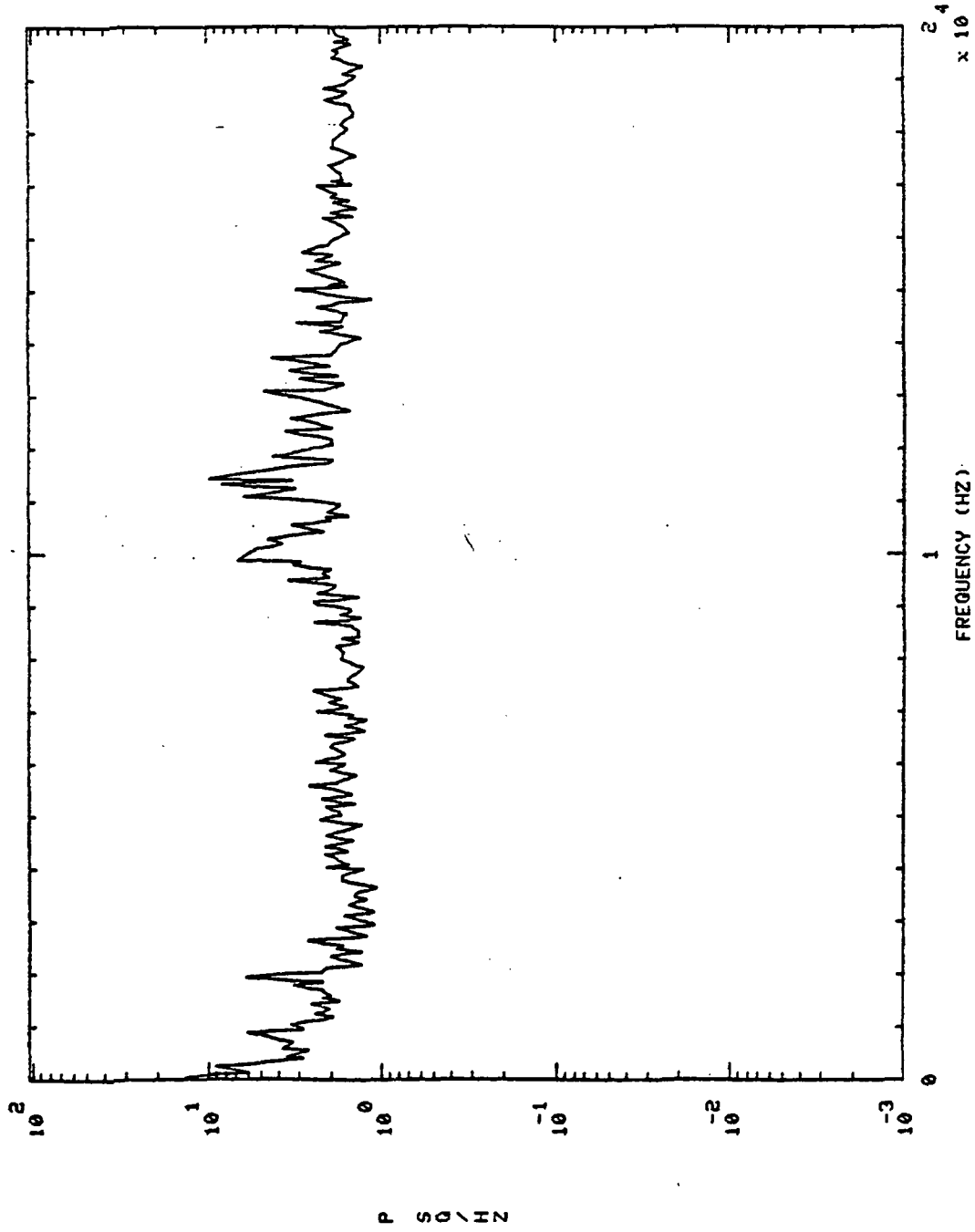
750110 HPOP DS PR S+ 150.050/HZ



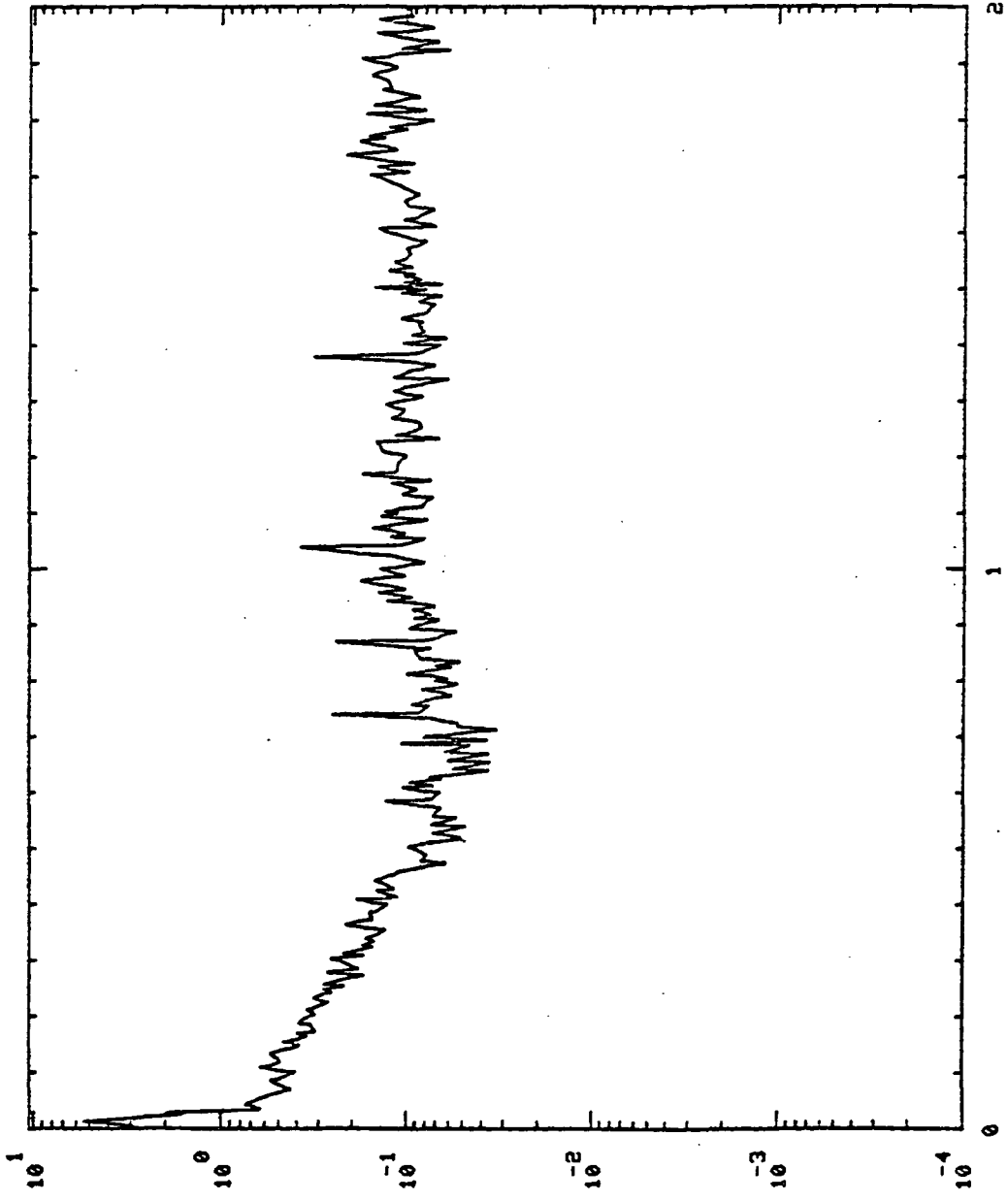
PSD / HZ

FREQUENCY (HZ)

750110 HPOP DS PR S+ 300.050/HZ



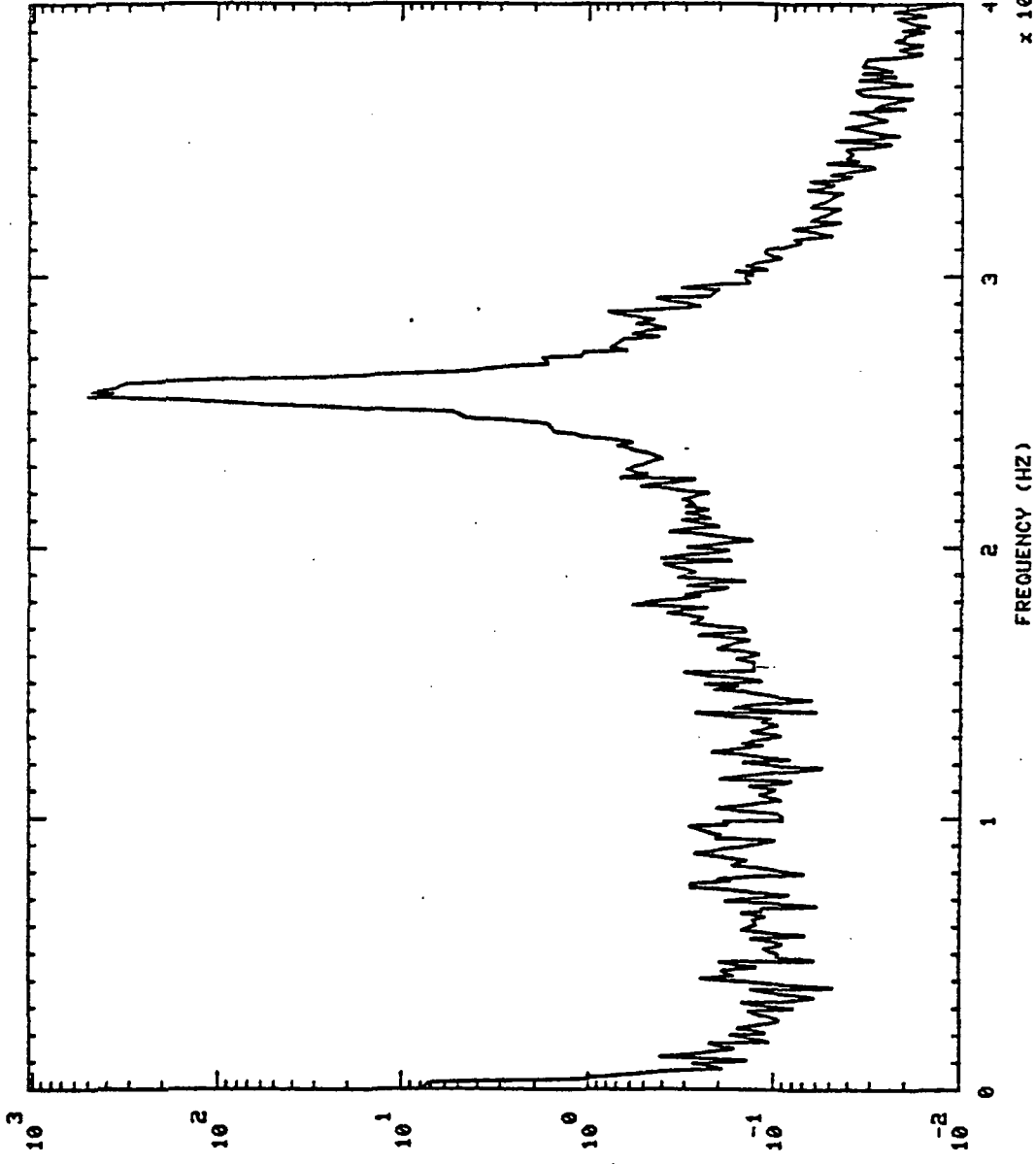
750110 MCC HOT GAS IN PR S+ 10.050/HZ



5+ 10.01H0,'S

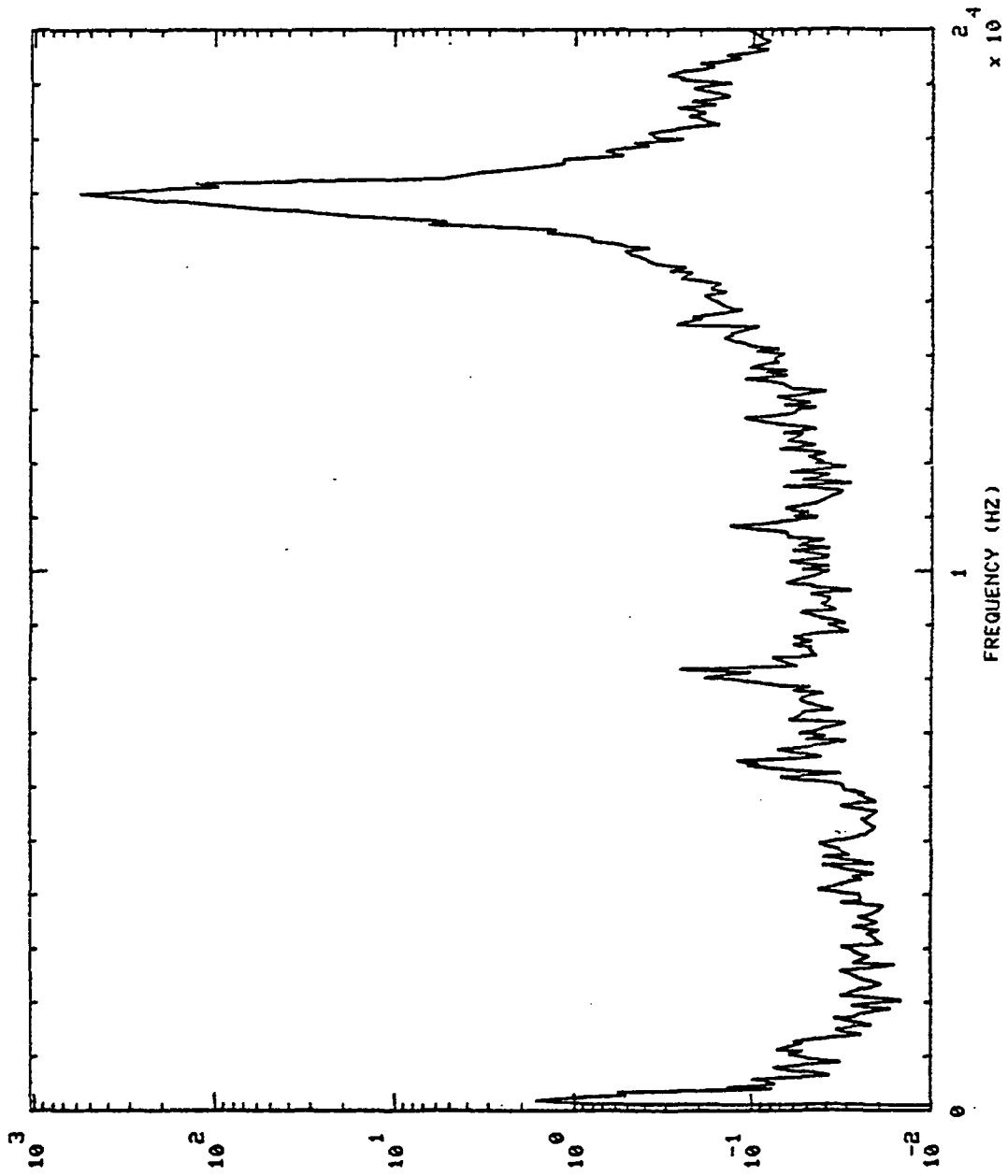
ACC MUT GMS IN PK

750110



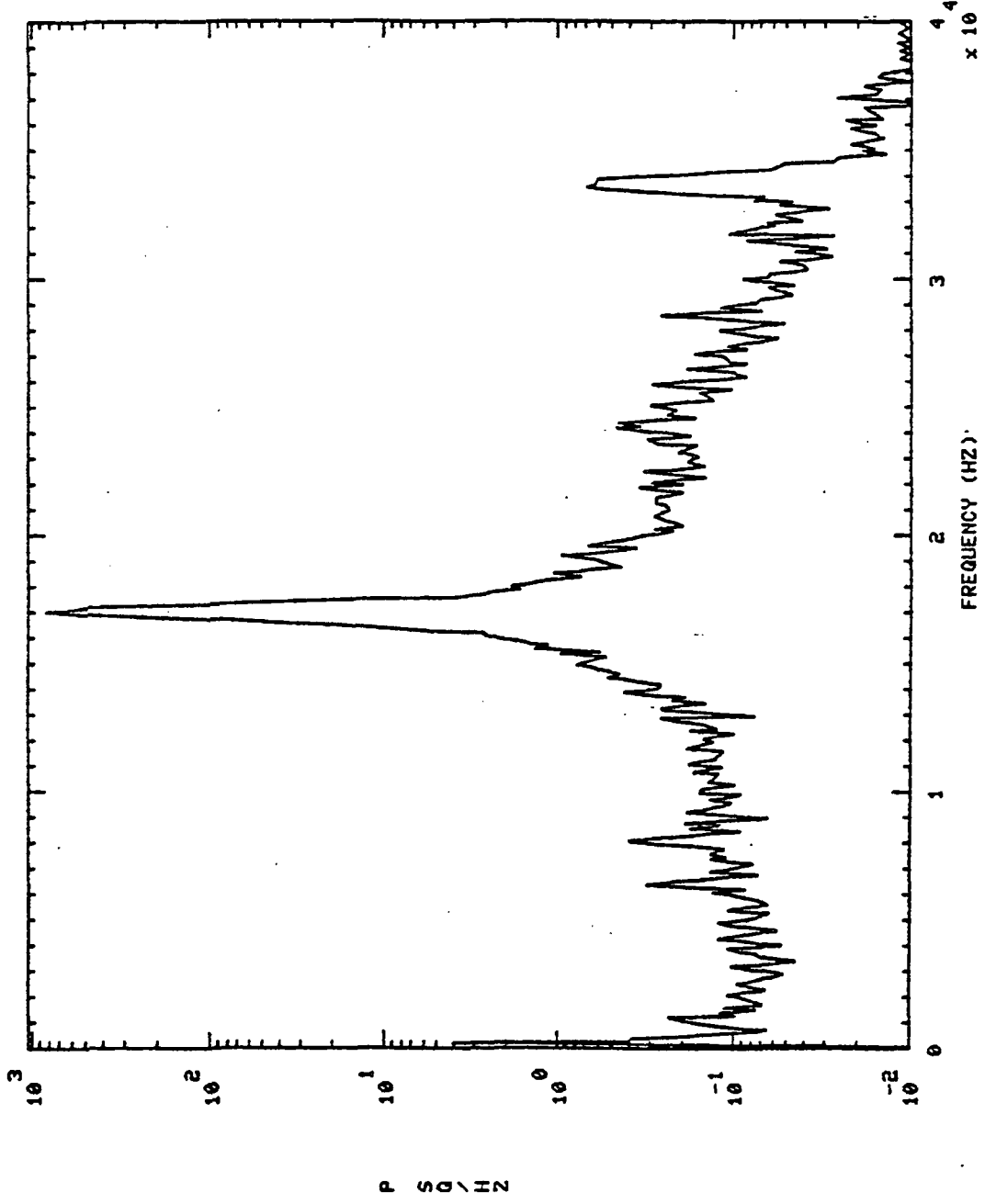
P SQ/M2

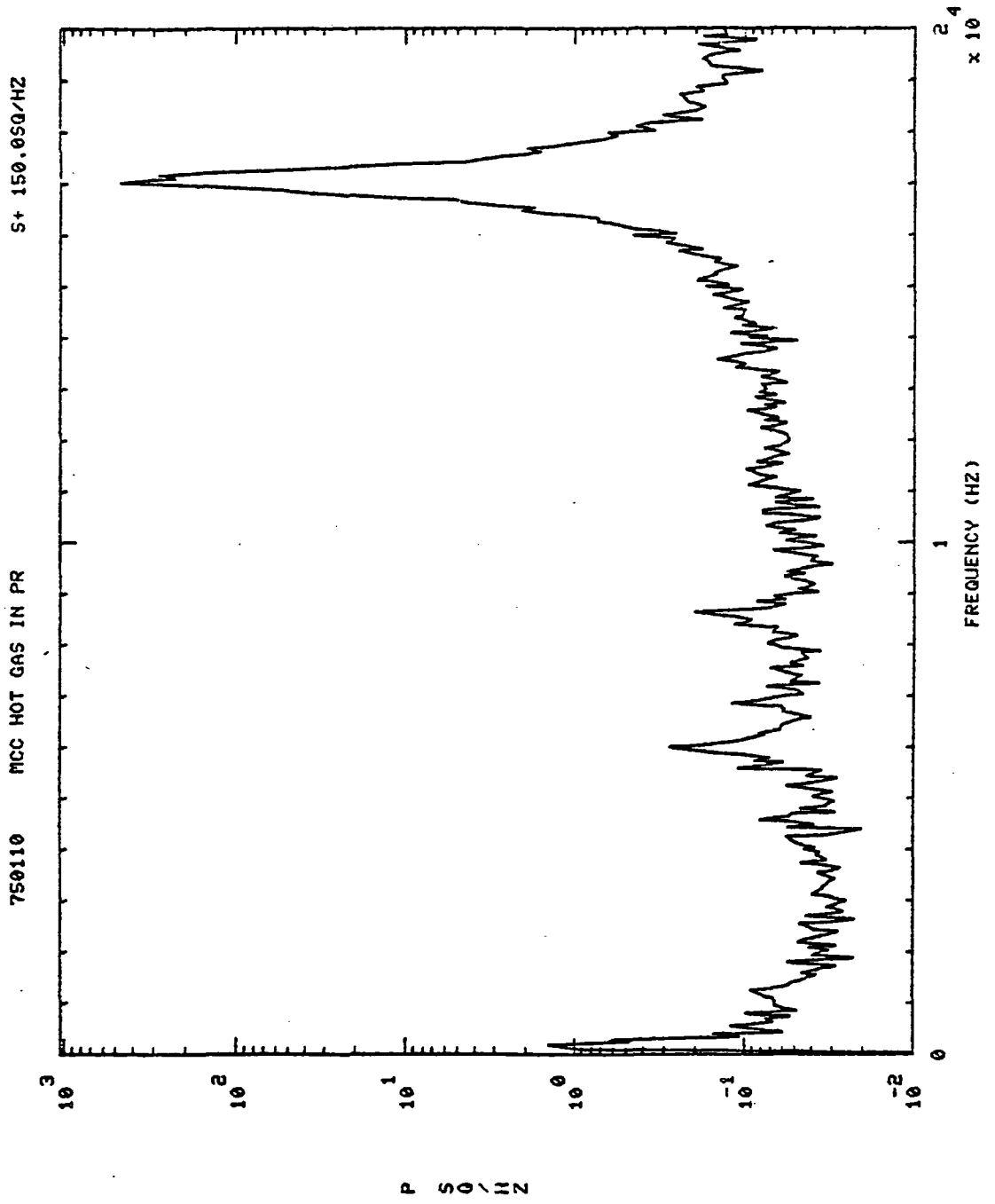
750110 MCC HOT GAS IN PR S+ 30.050/HZ



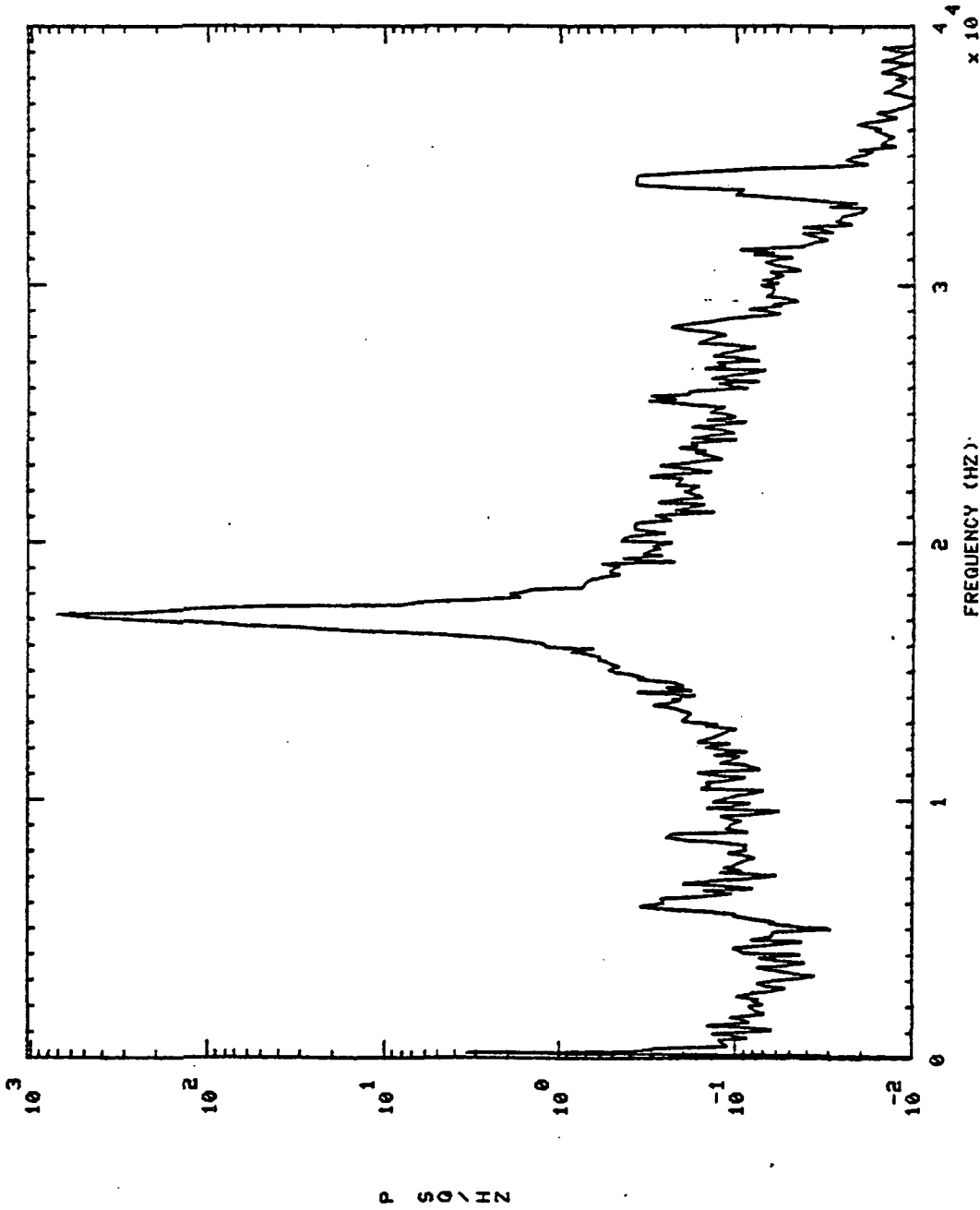
P S D / H Z

750110 MCC HOT GAS IN PR S+ 30.01H0,'S



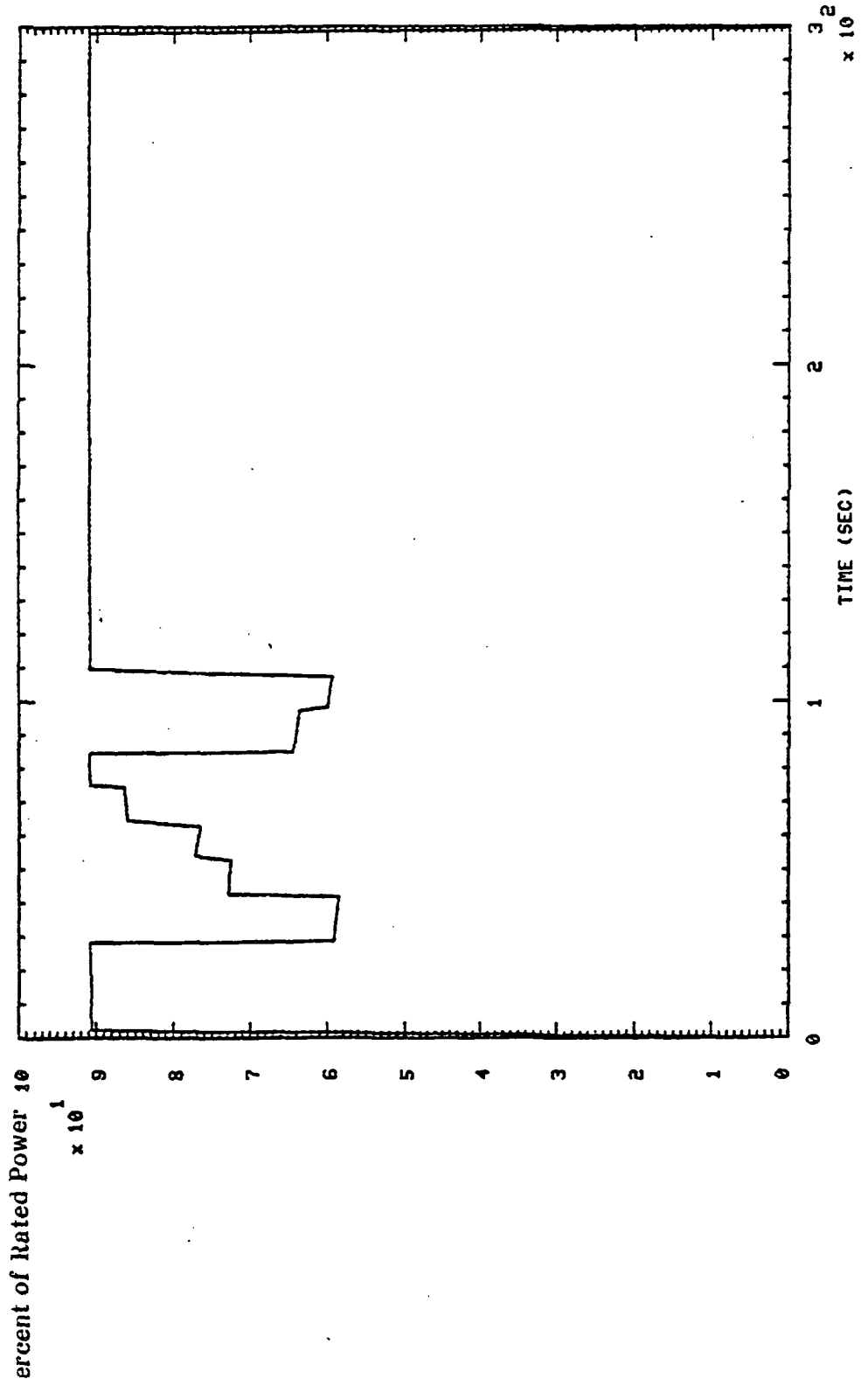


750110 MCC HOT GAS IN PR S+ 150.01H0,'S



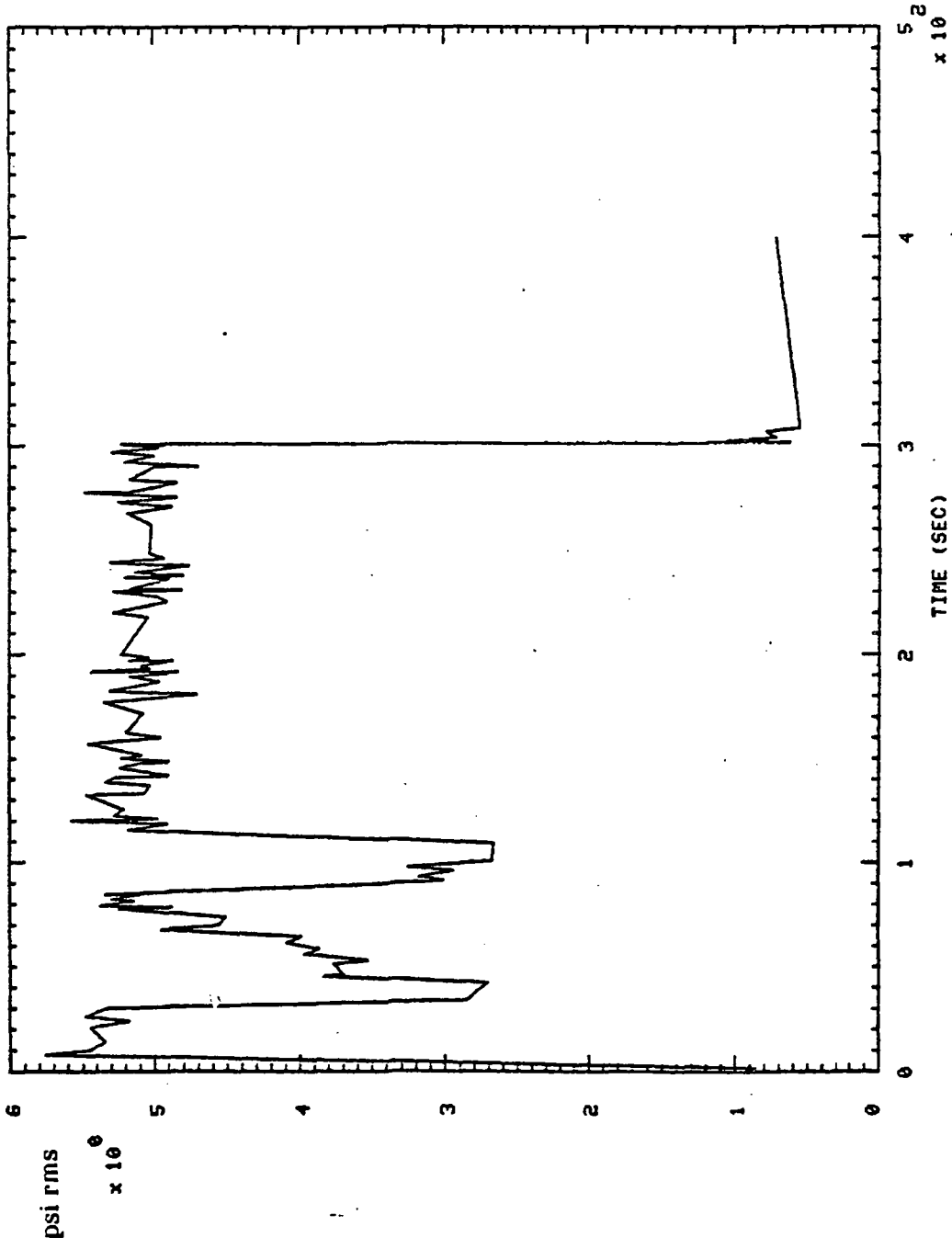
(UNFILTERED)

750111 THRUST

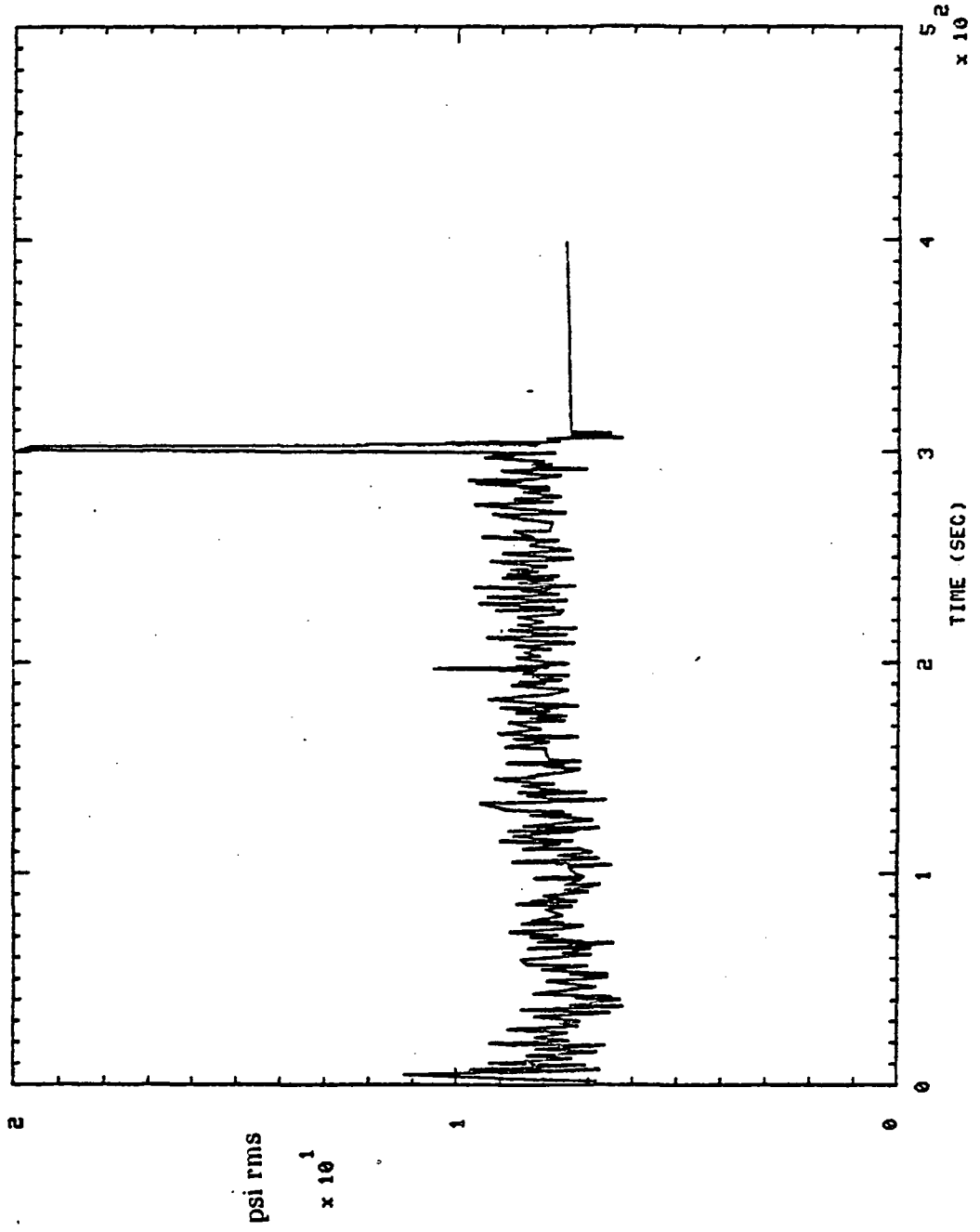


(1 - 20K HZ)

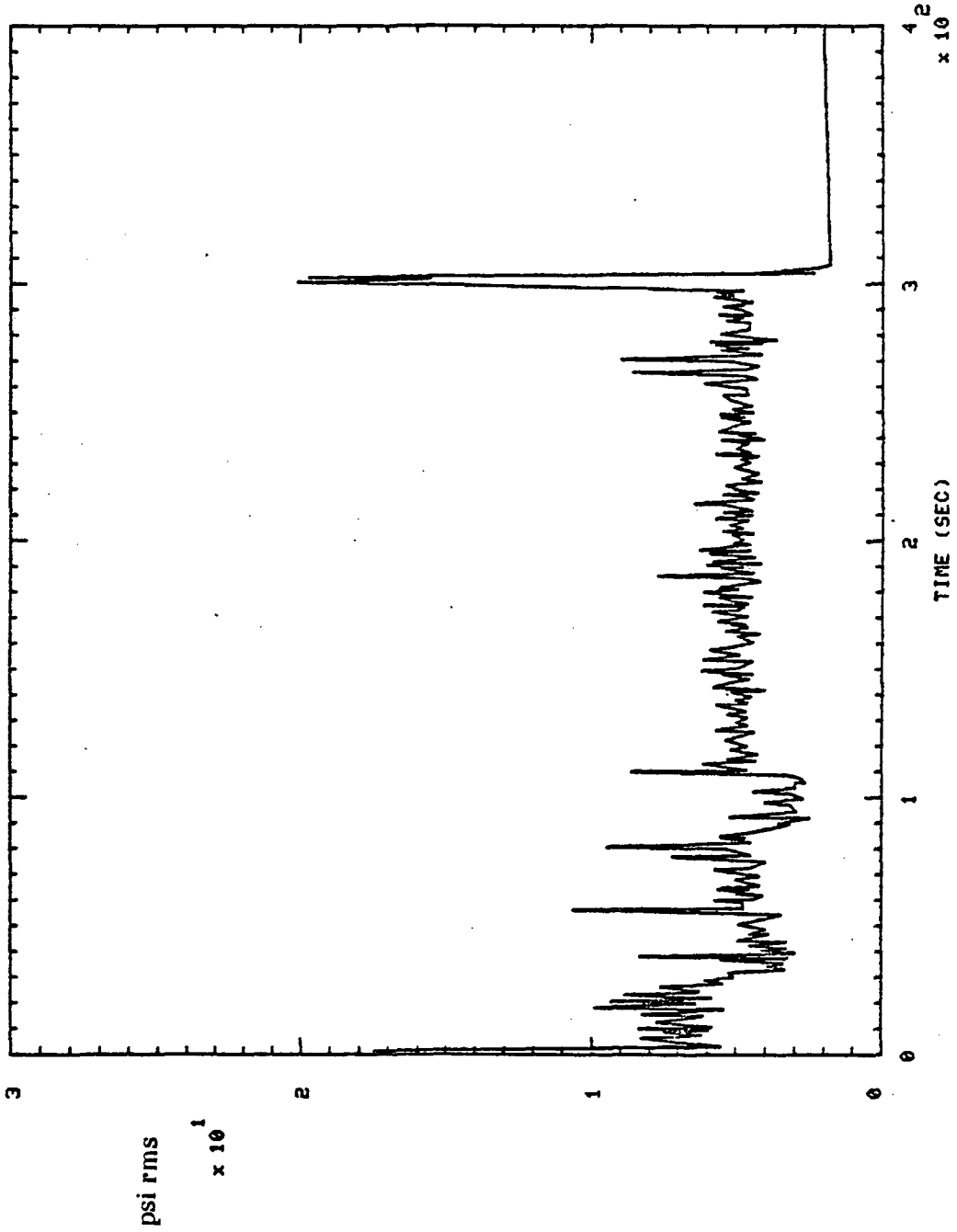
750111 LPFP DS PR



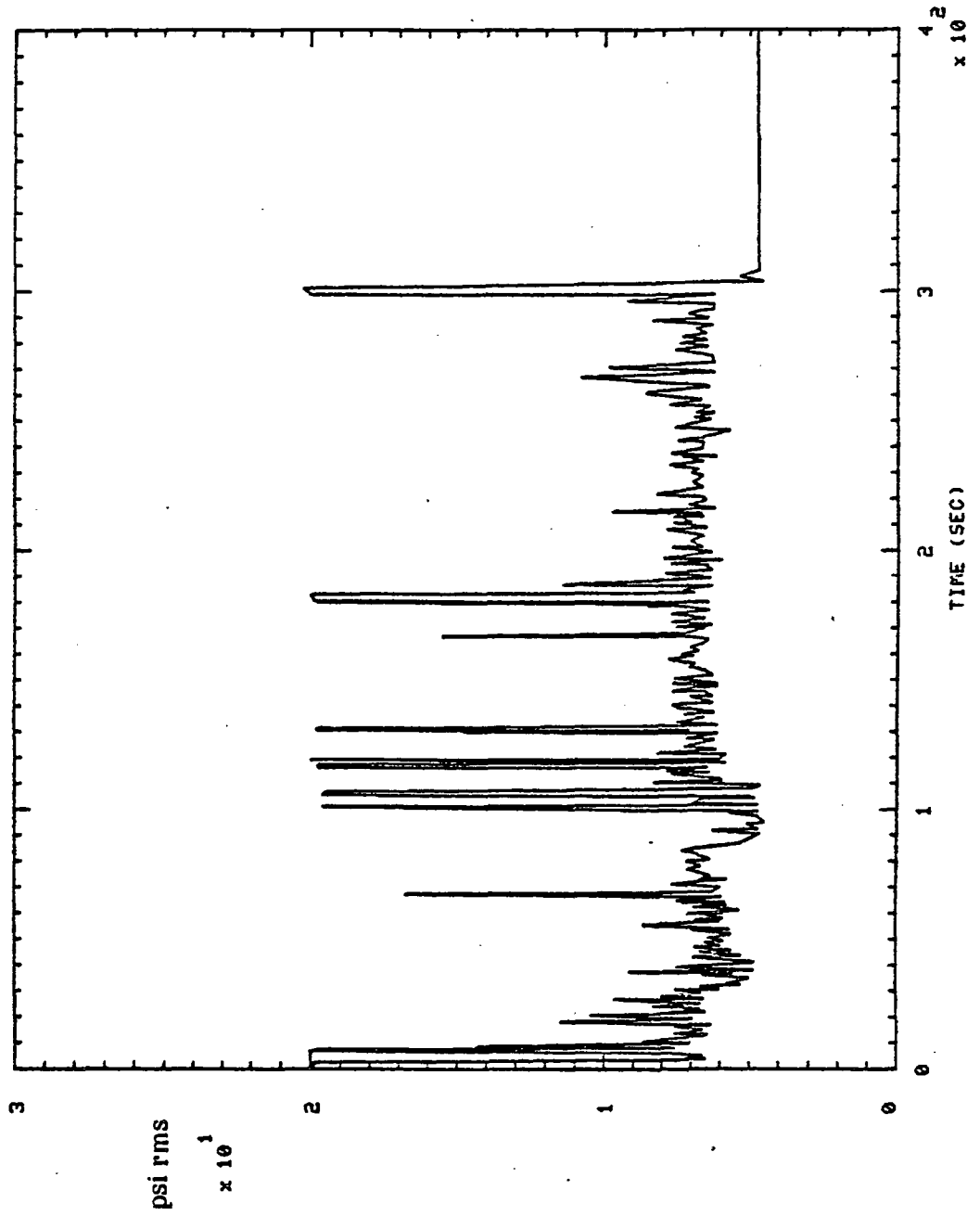
750111 LPOP DS PR (1 - 20K HZ)



750111 HPOP BAL CAU PR2 (1 - 20K HZ)

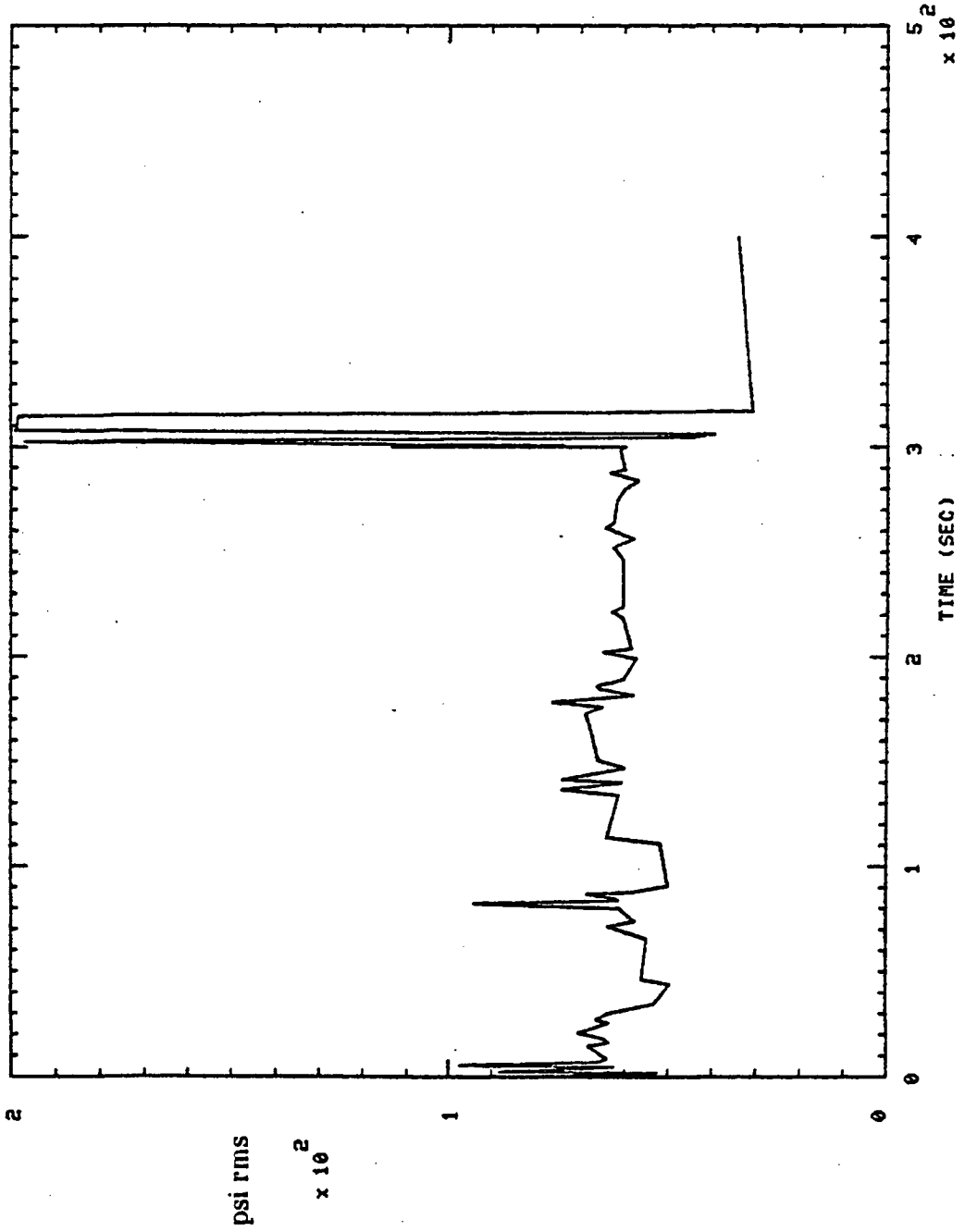


750111 HPOP BAL CAU PRI (1 - 20K HZ)

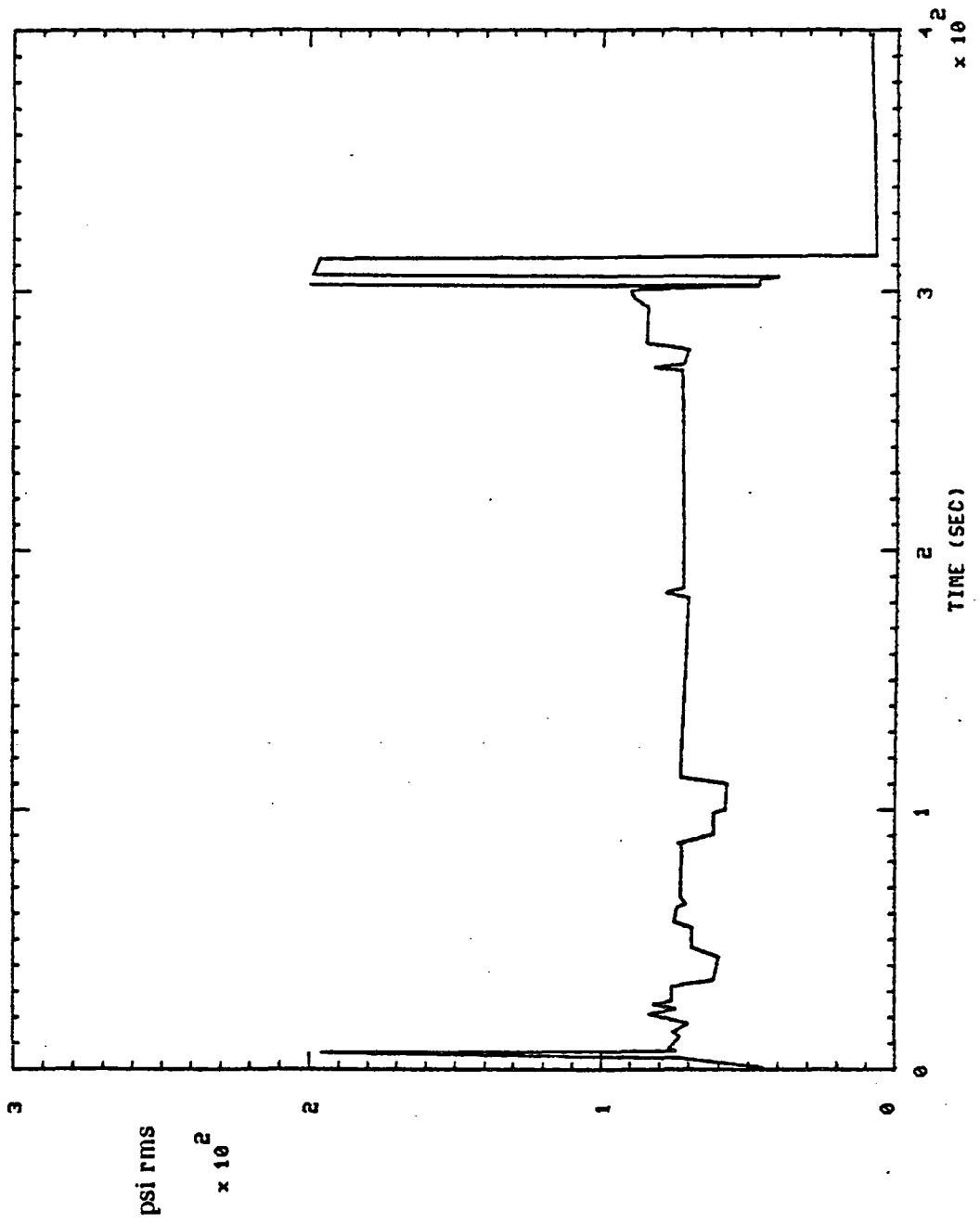


(1 - 20K HZ)

750111 HPOP DS PR

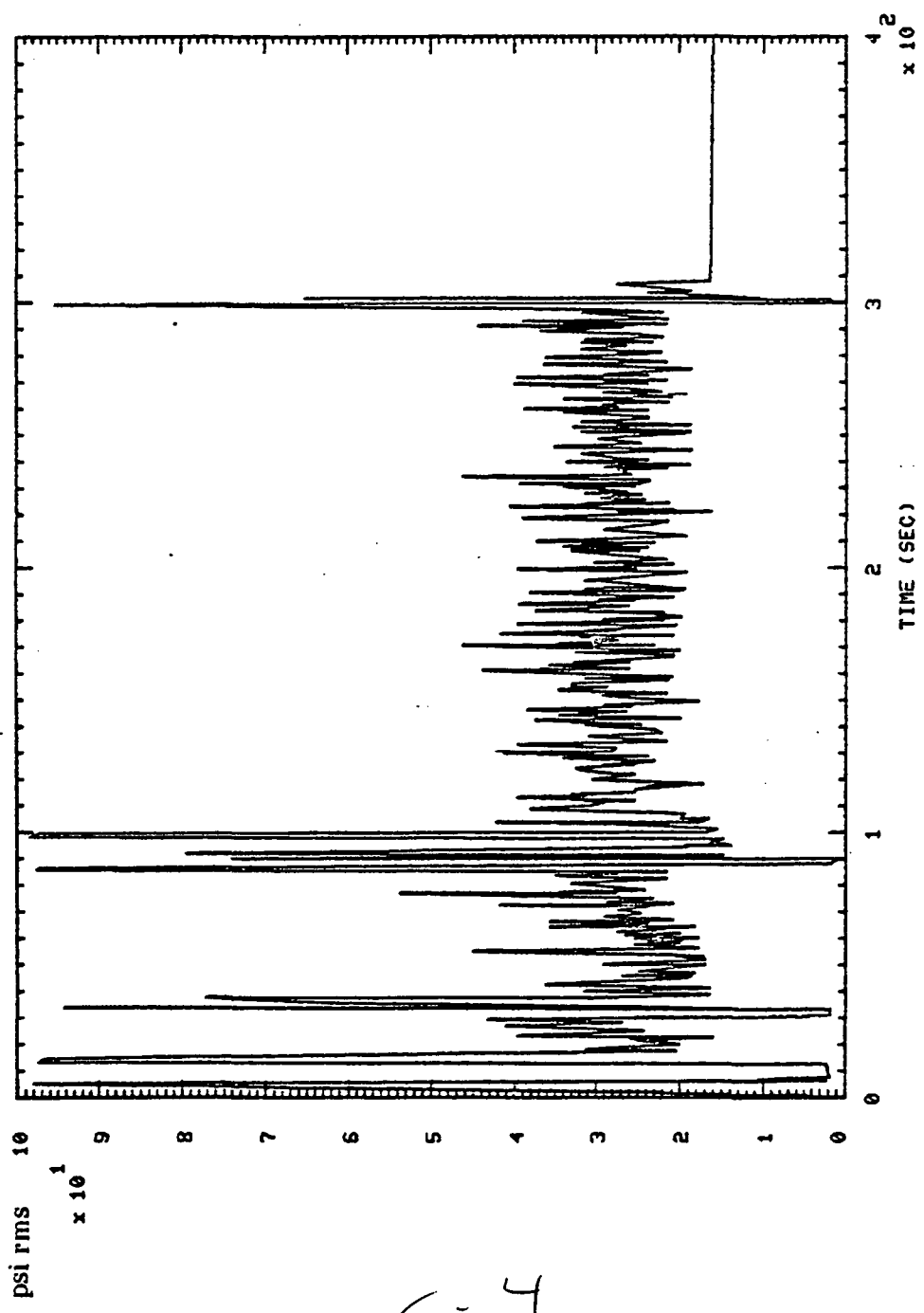


750111 PBP DS PR (1 - 20K HZ)



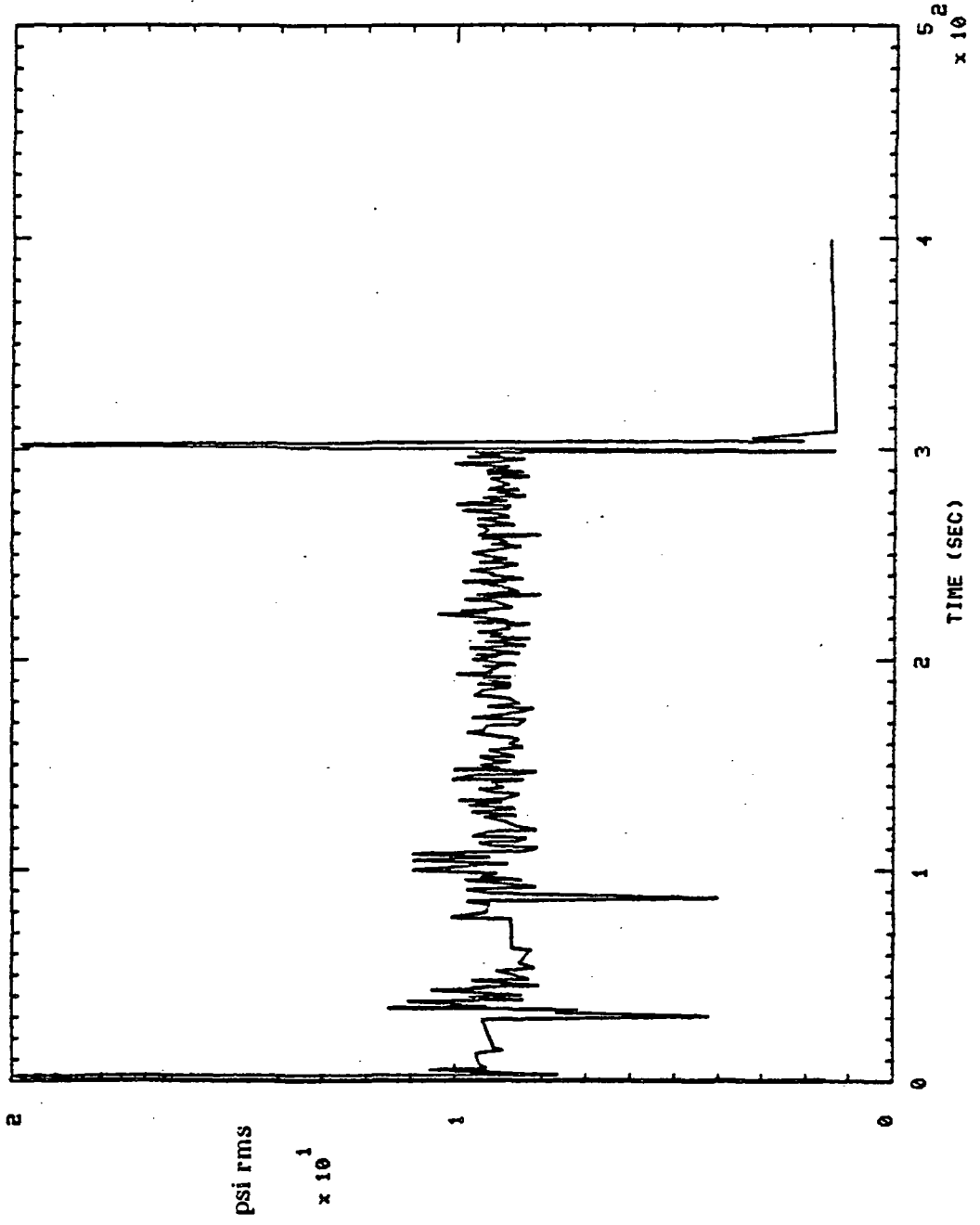
(1 - 20K HZ)

750111 CHAMBER PR



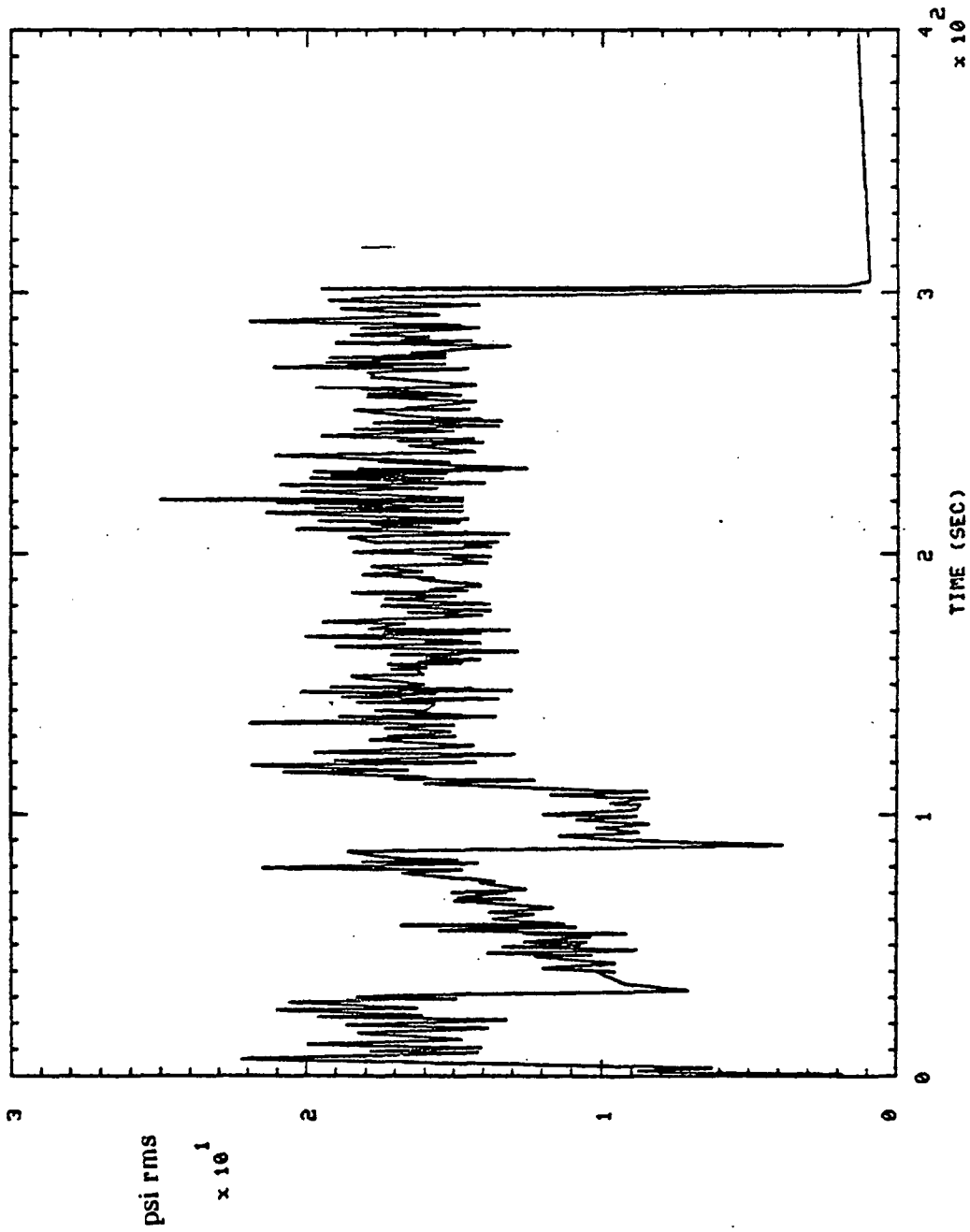
C-4

750111 PBP FUEL SUP PR (1 - 20K HZ)

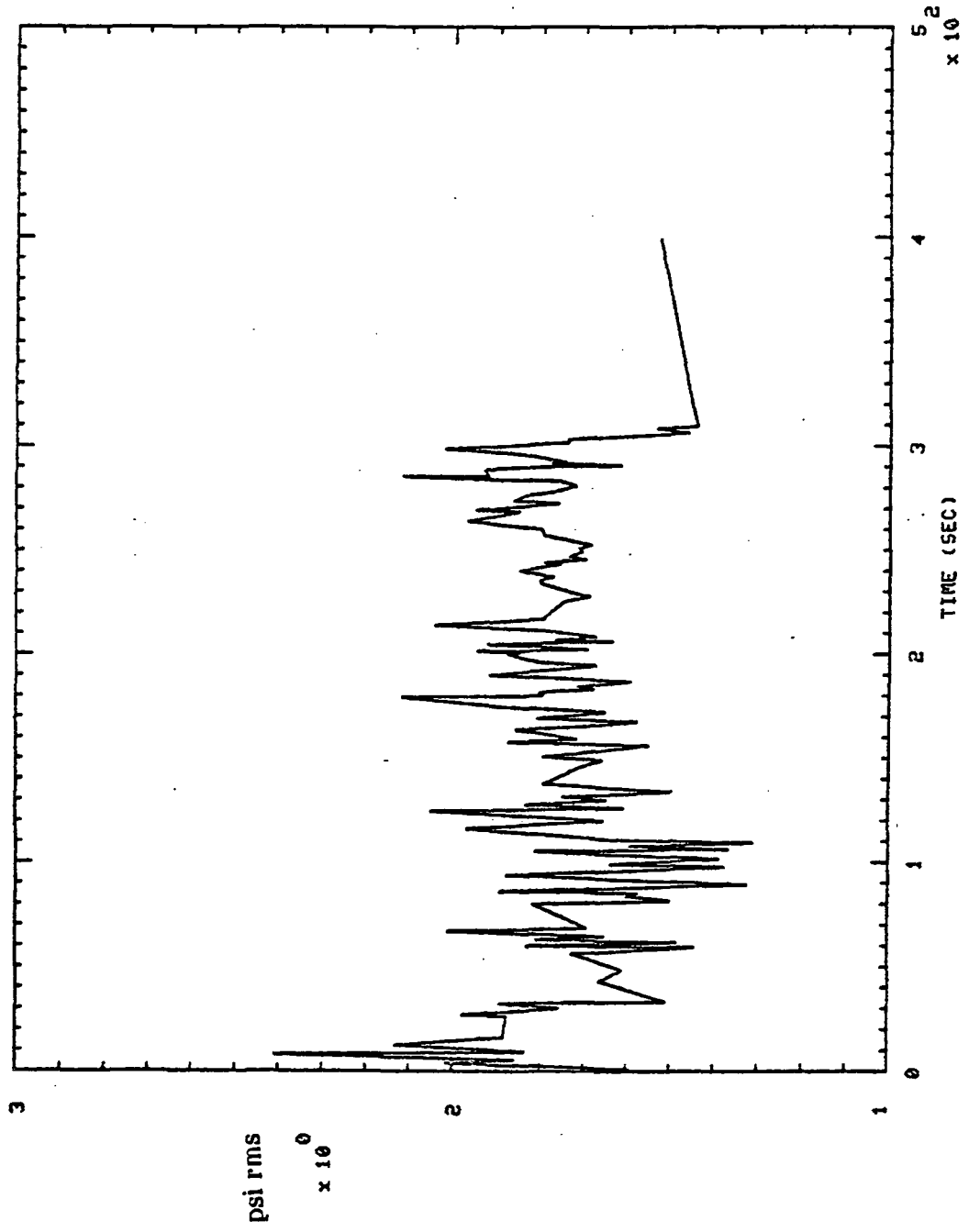


750111 (1 - 20K HZ)

FPB FUEL MAN PR

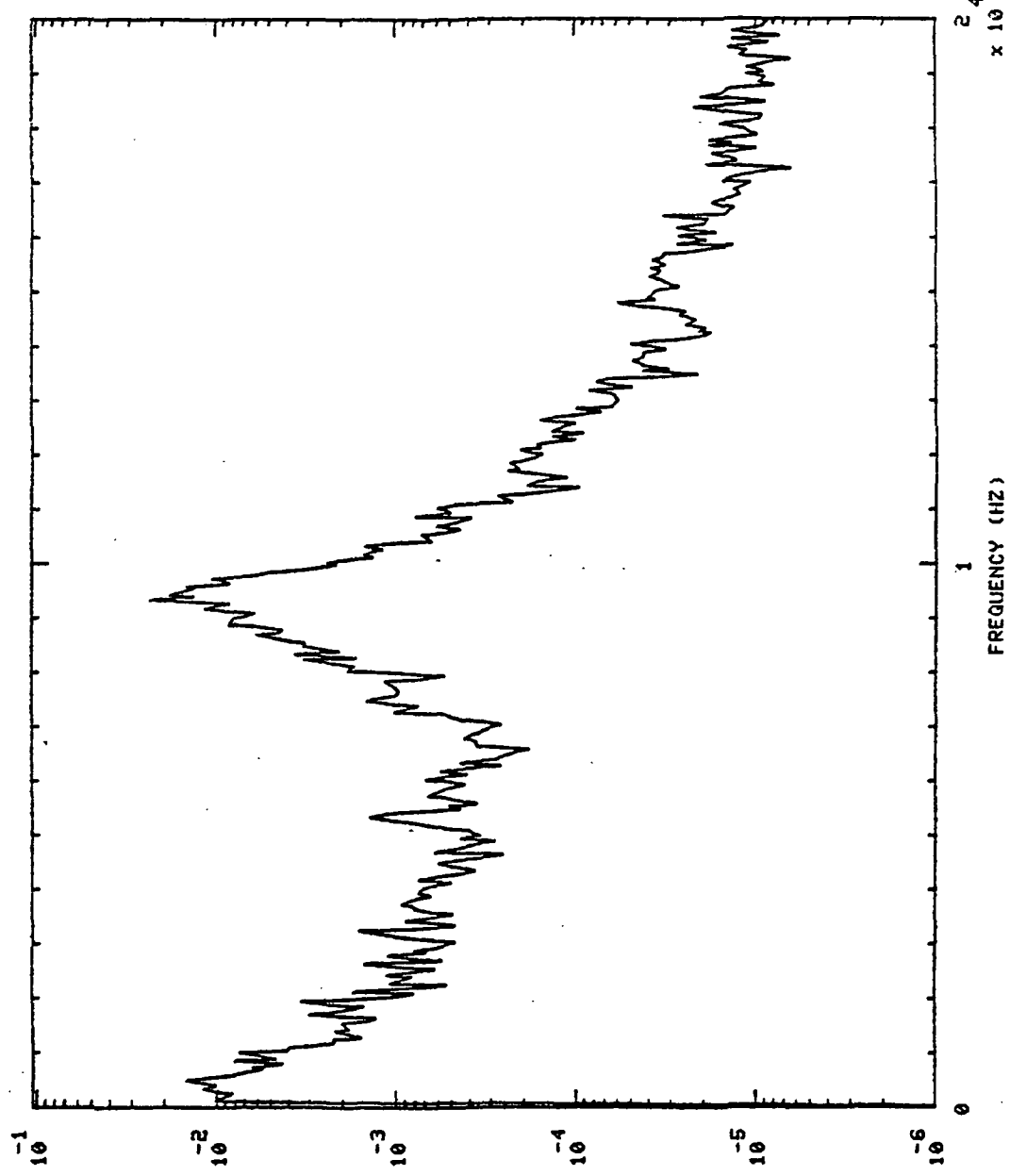


750111 LOX HX OUT PR (1 - 20K HZ)



S+ 15.050/HZ

750111 LFPF DS PR

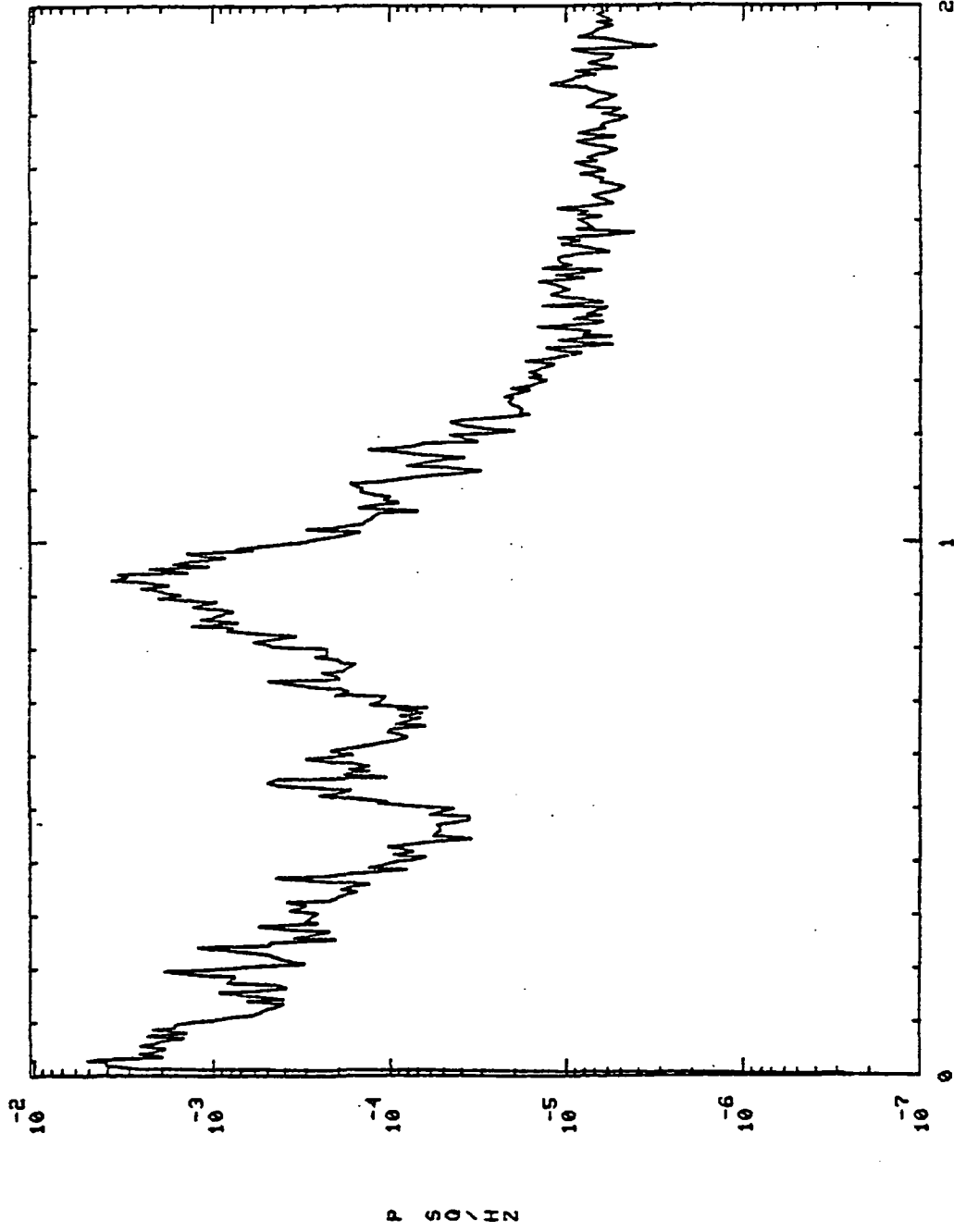


P S D / H Z

2.4
x 10⁴

FREQUENCY (HZ)

750111 LPFP DS PR S+ 40.050/HZ

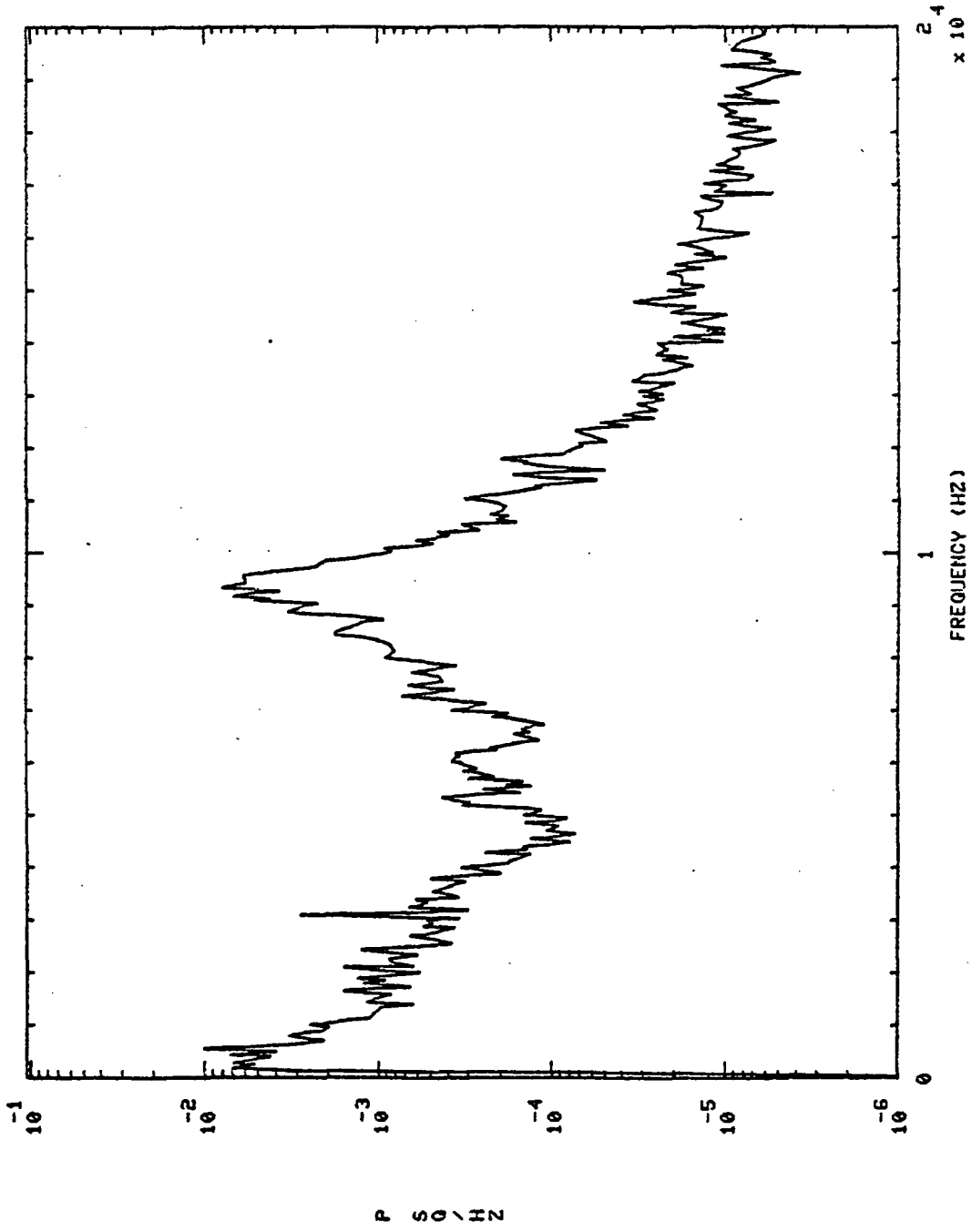


FREQUENCY (HZ)

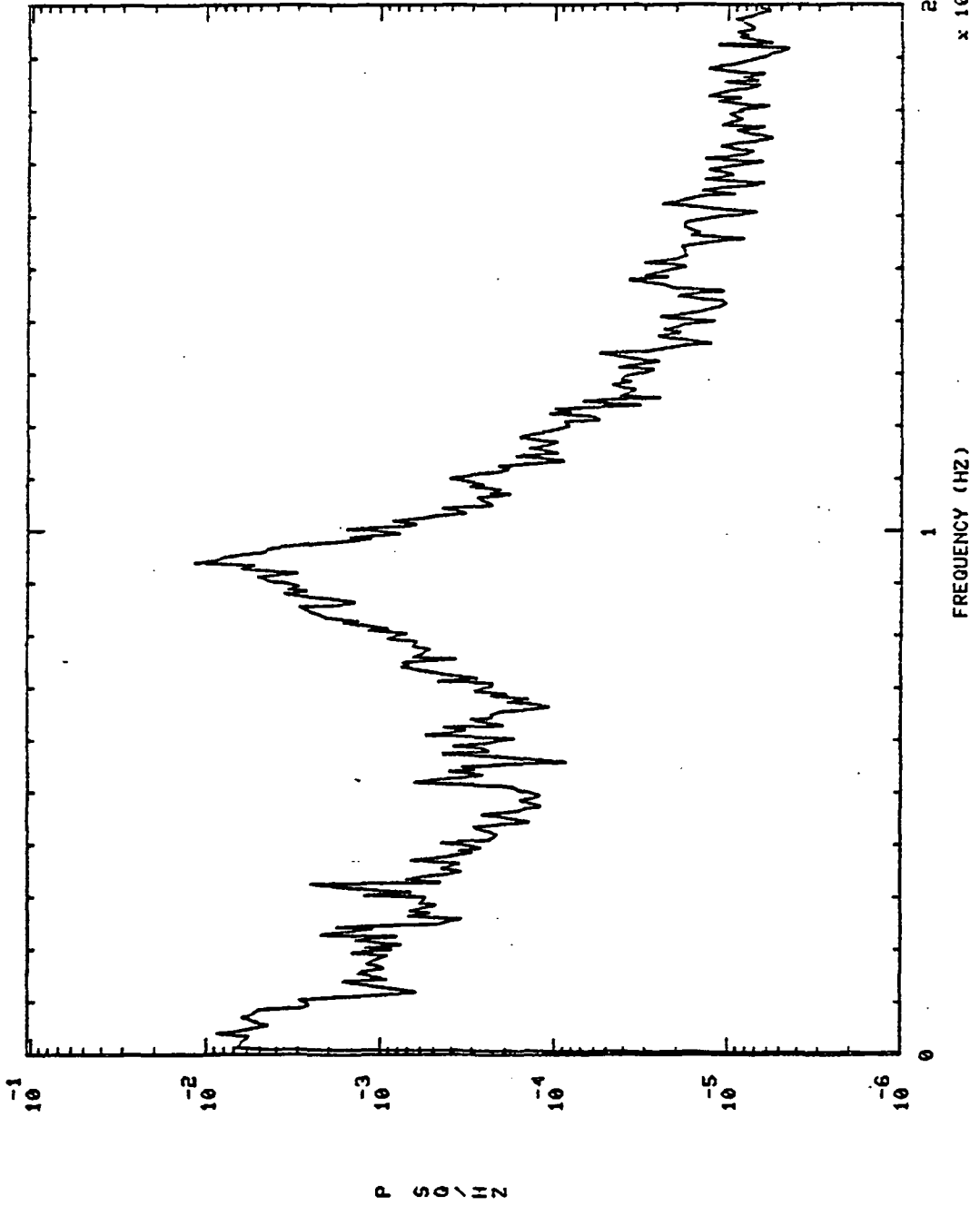
10^4
x 10^4

S+ 50.050/HZ

750111 LPFP DS PR

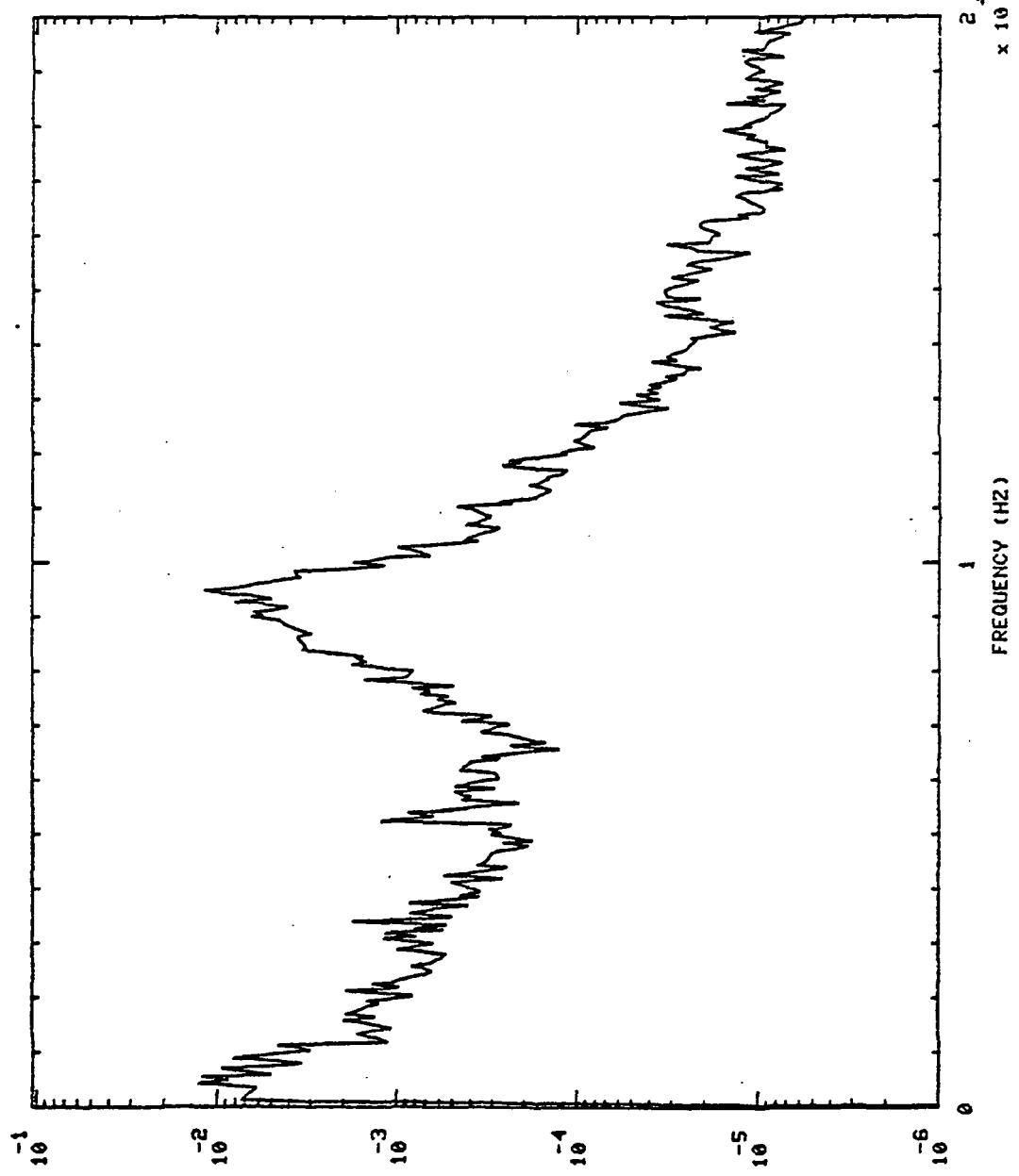


750111 LFPF DS PR S+ 60.050/HZ



S+ 70.050/HZ

750111 LPFP DS PR

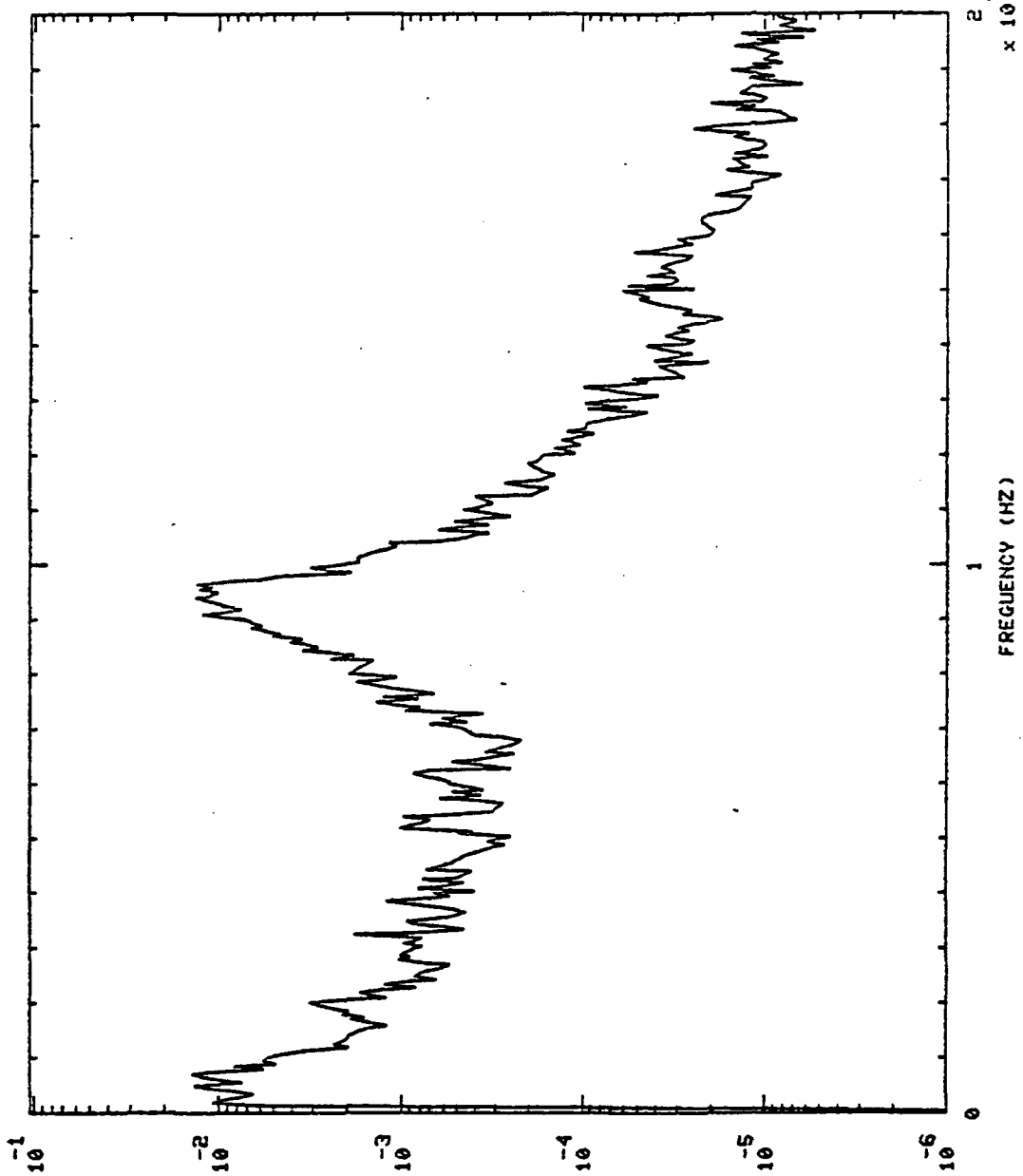


P S D / HZ

FREQUENCY (HZ)

2.4×10^4

750111 LPFP DS PR S+ 80.050/HZ



P SQ / HZ

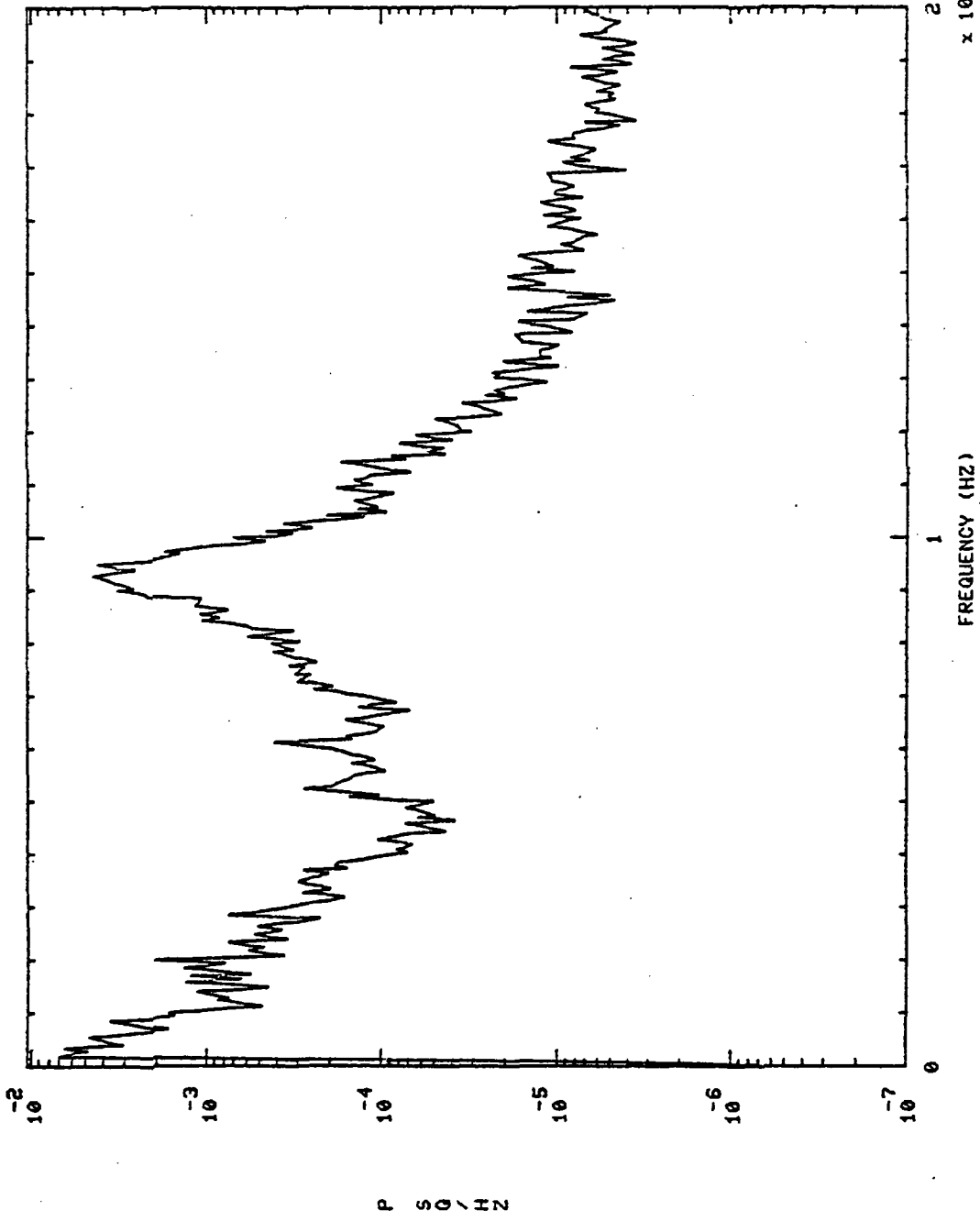
10^4
x 10^4

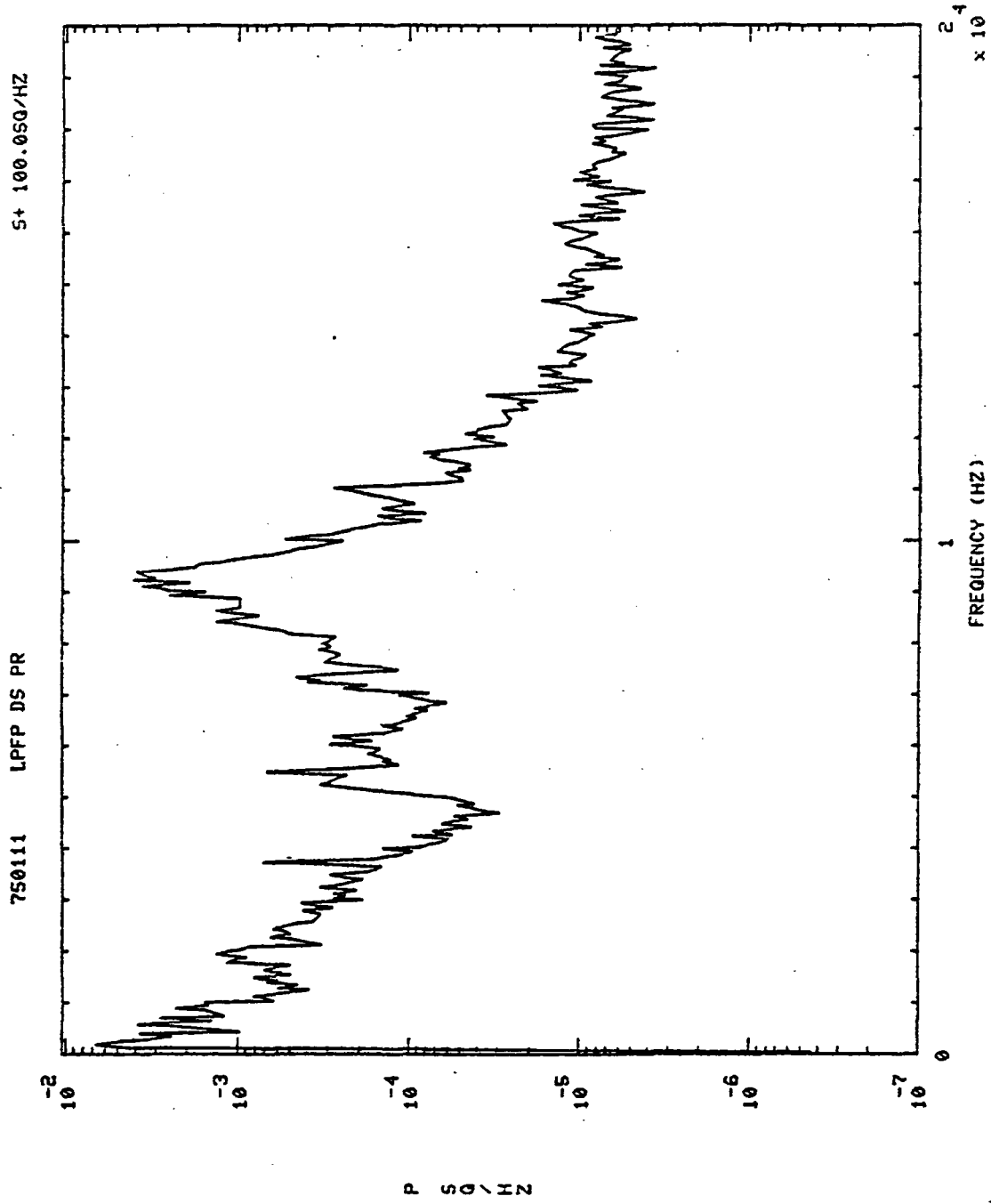
FREQUENCY (HZ)

S+ 90.050/HZ

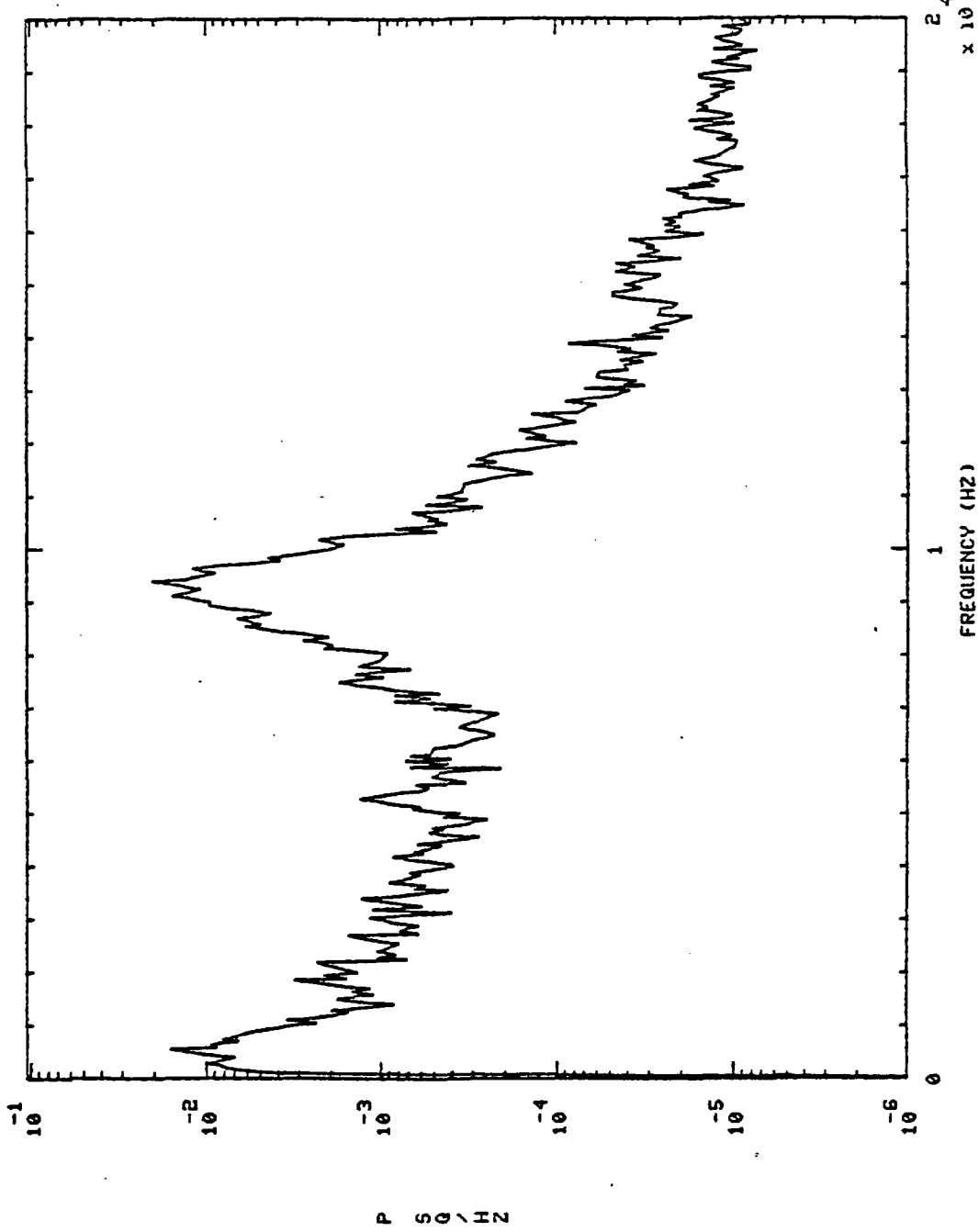
LPFP DS PR

750111



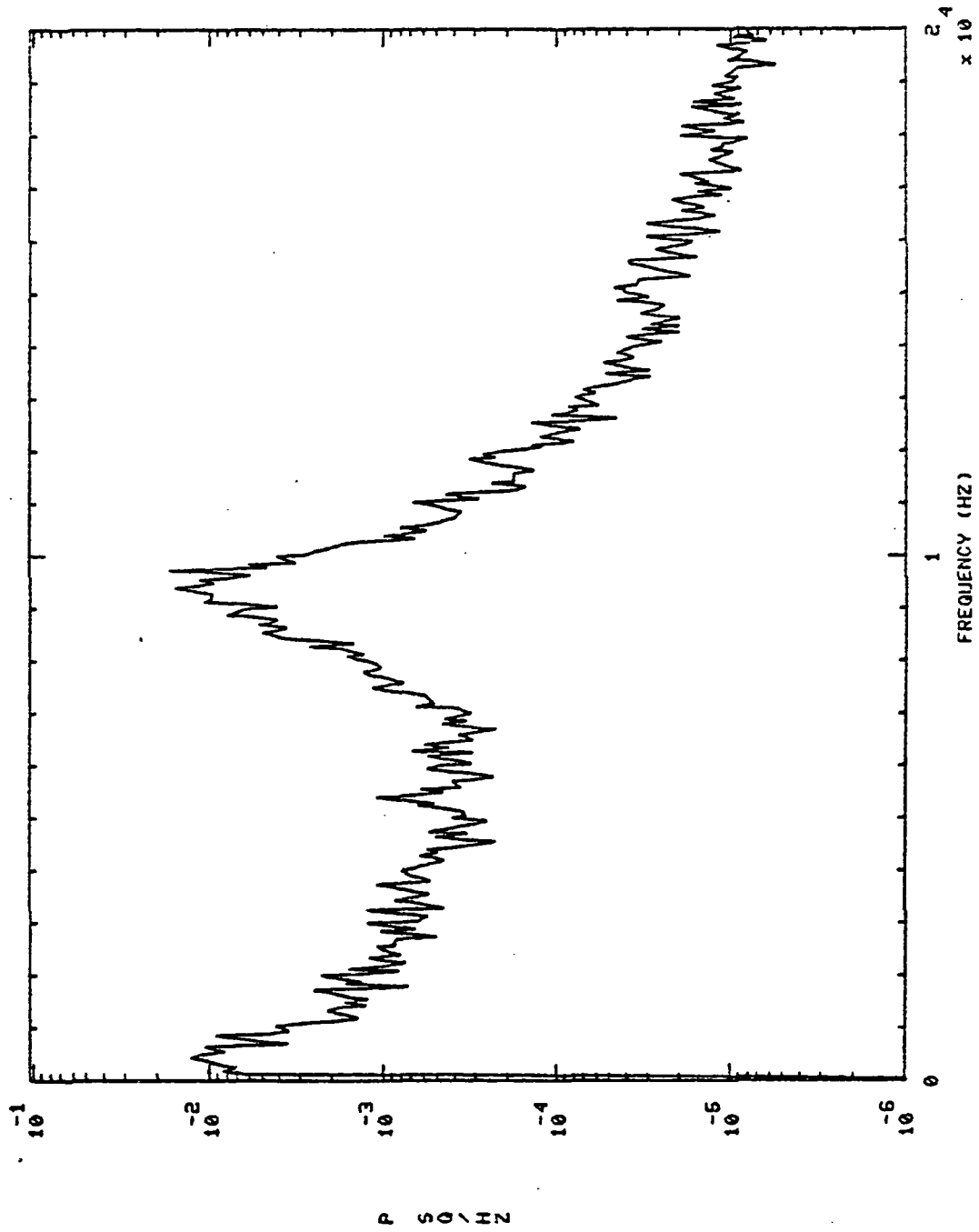


750111 LFPF DS PR S+ 120.050/HZ



S+ 200.050/HZ

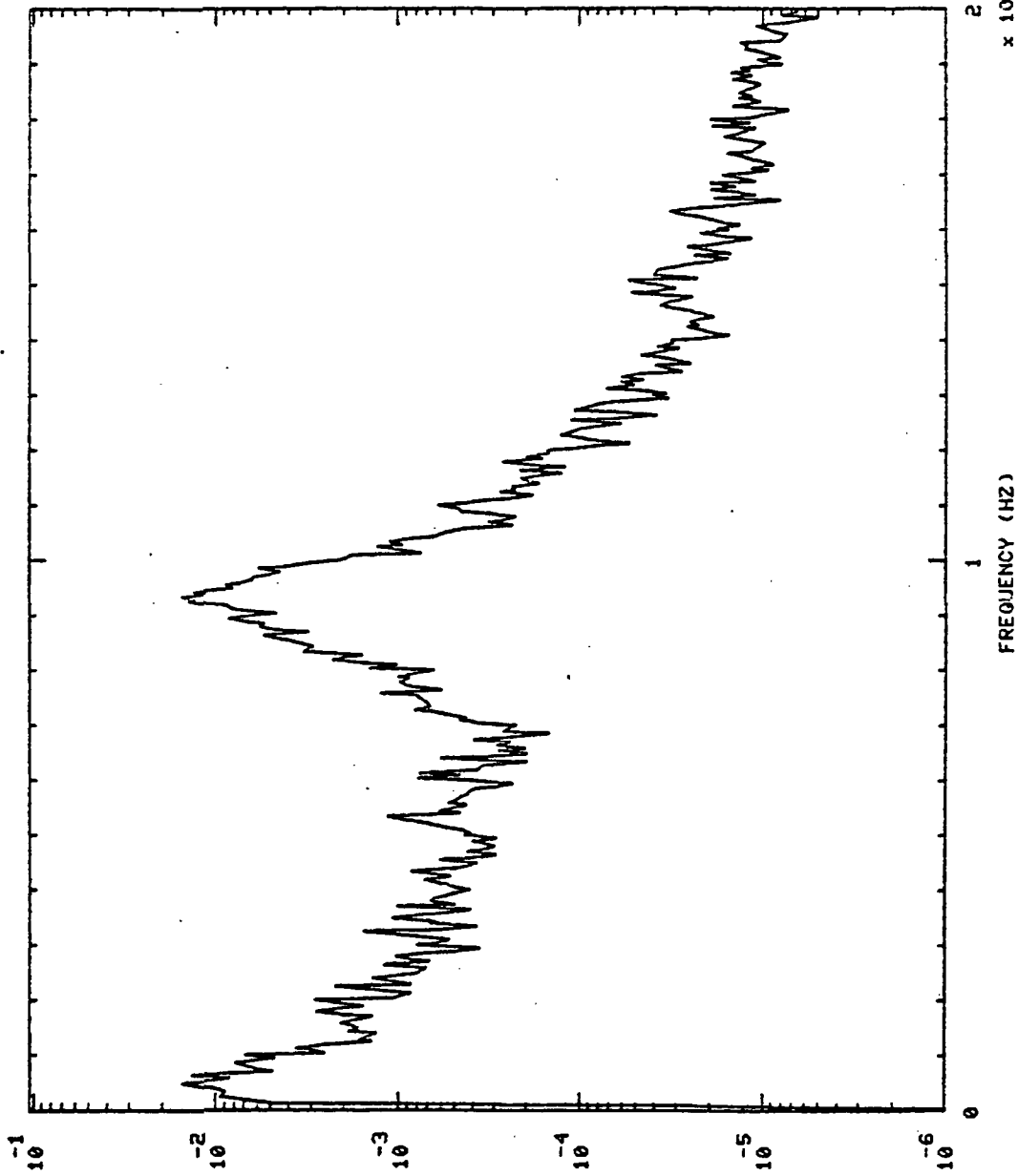
750111 LPPF DS PR



S+ 280.050/HZ

LPFP DS PR

750111

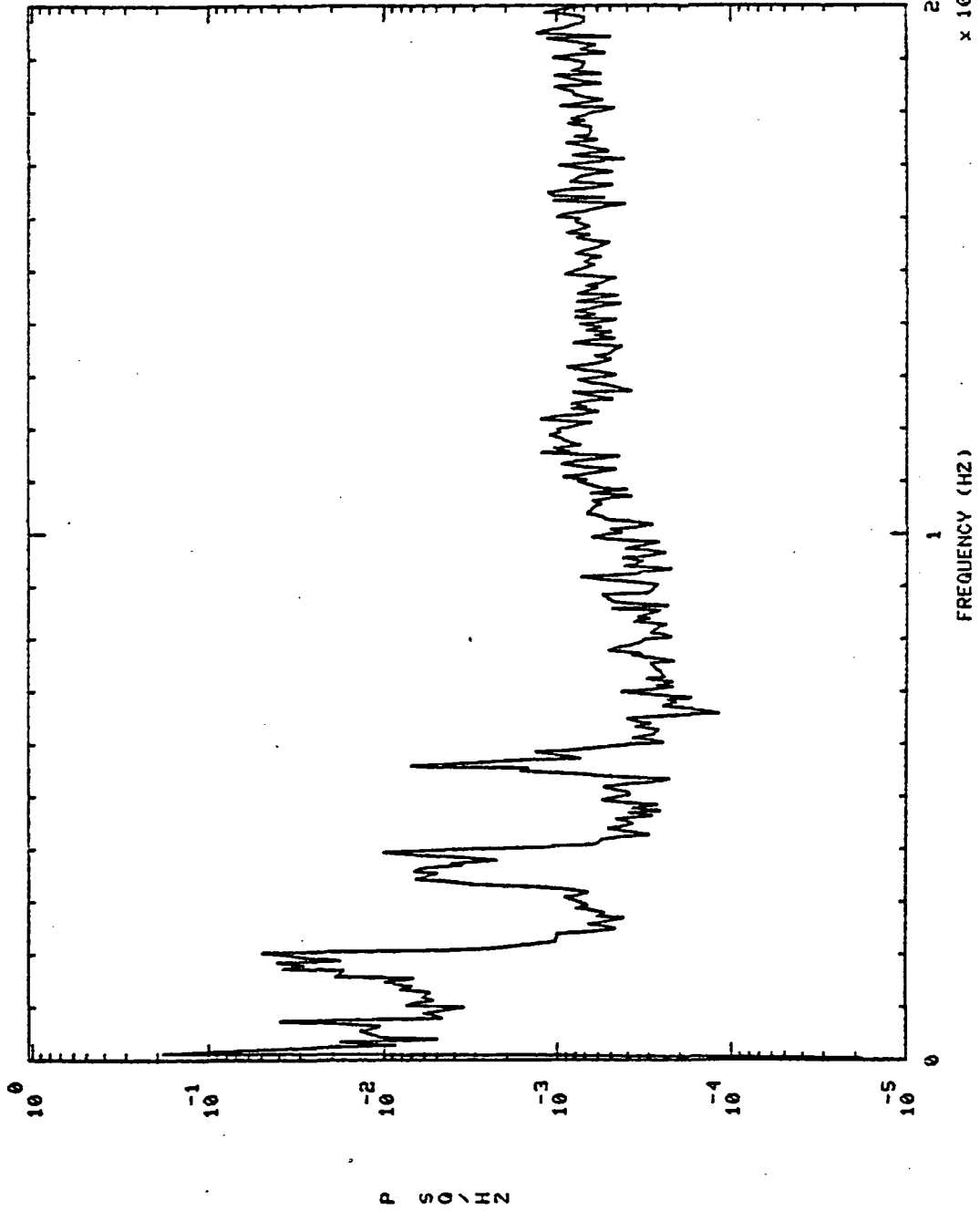


P S D / H Z

FREQUENCY (HZ)

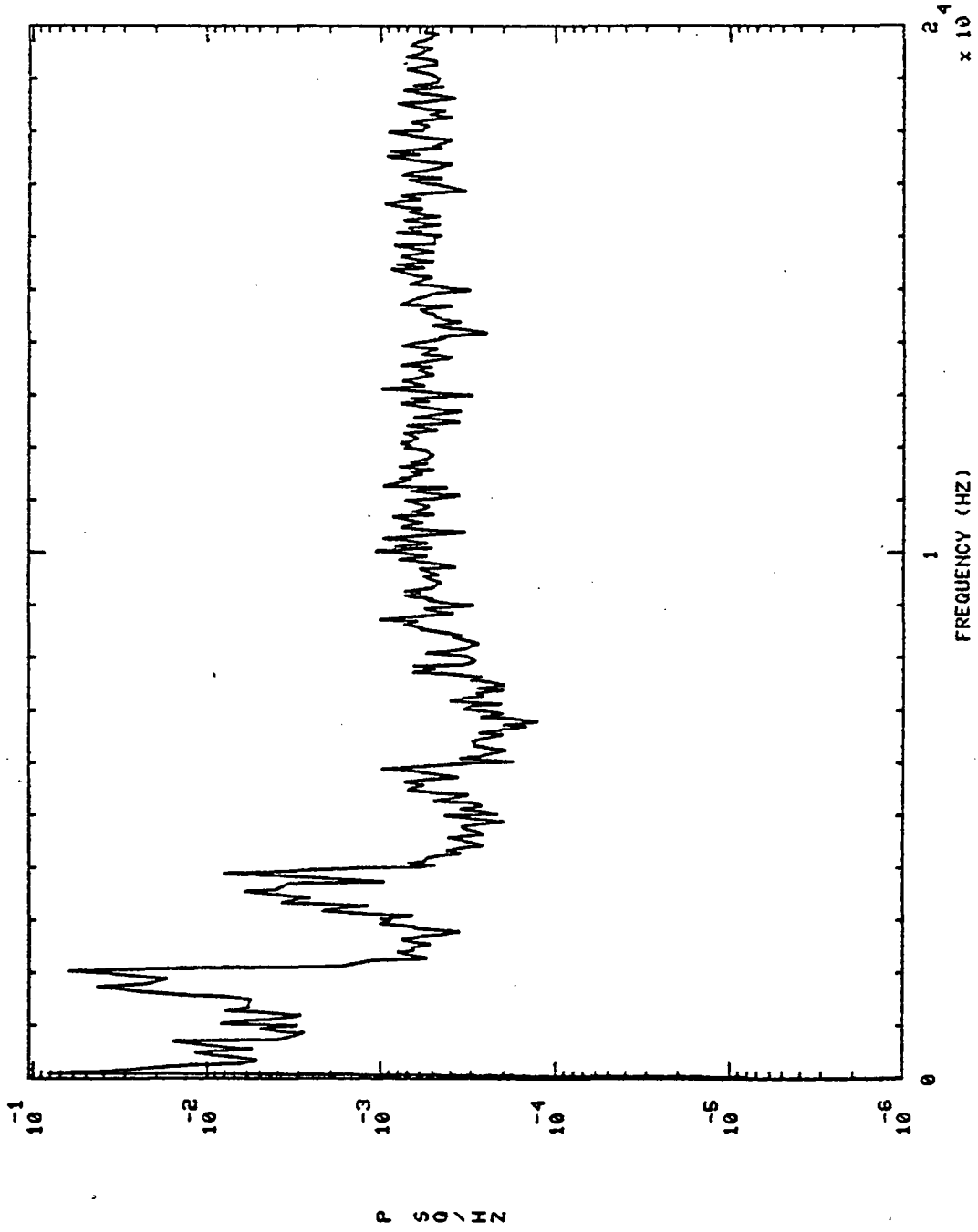
$\times 10^4$

750111 LPOP DS PR S+ 15.050/HZ

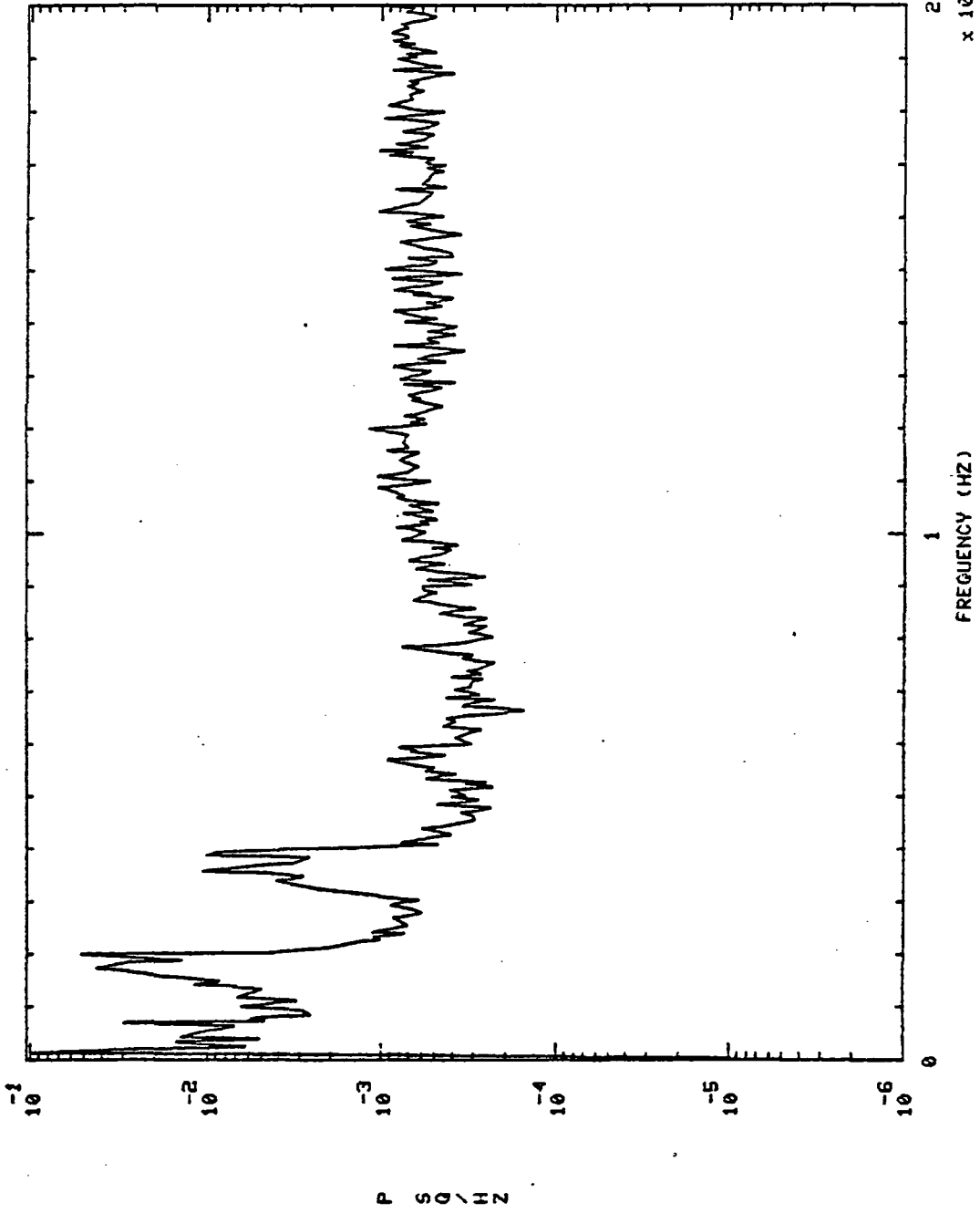


S+ 40.050/HZ

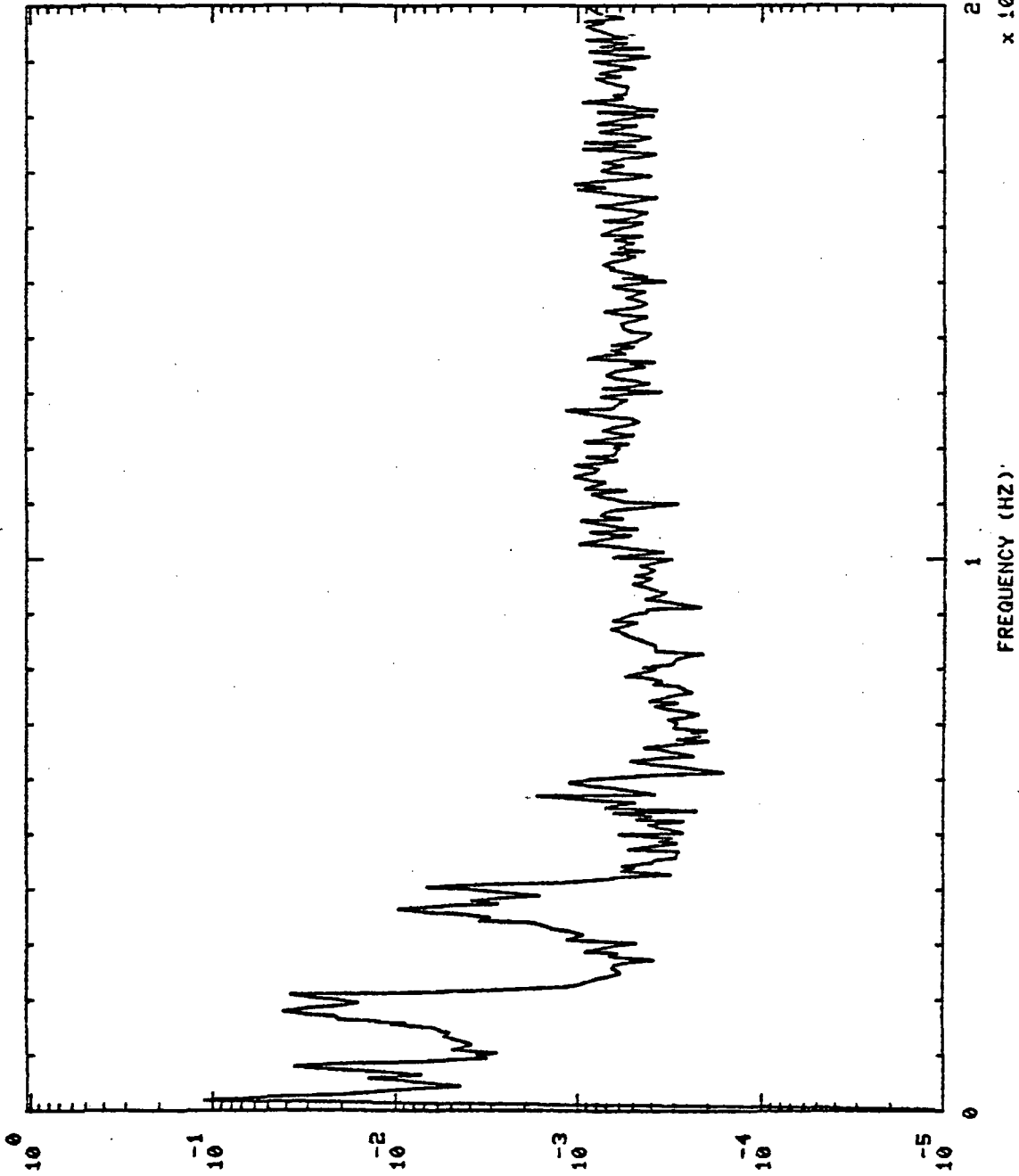
750111 LPOP DS PR



750111 LPOP DS PR S+ 50.050/HZ



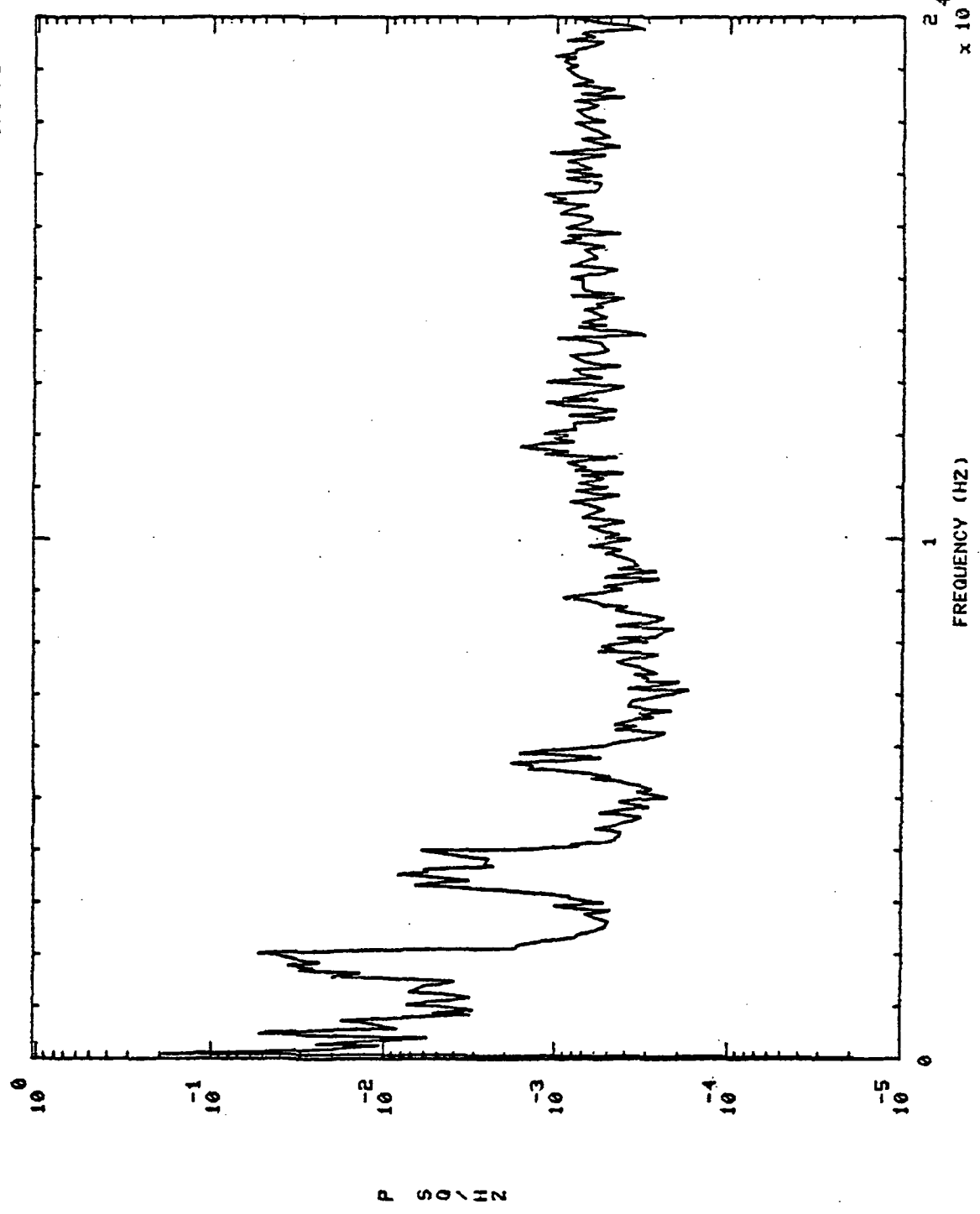
750111 LPOP DS PR S+ 60.050/HZ



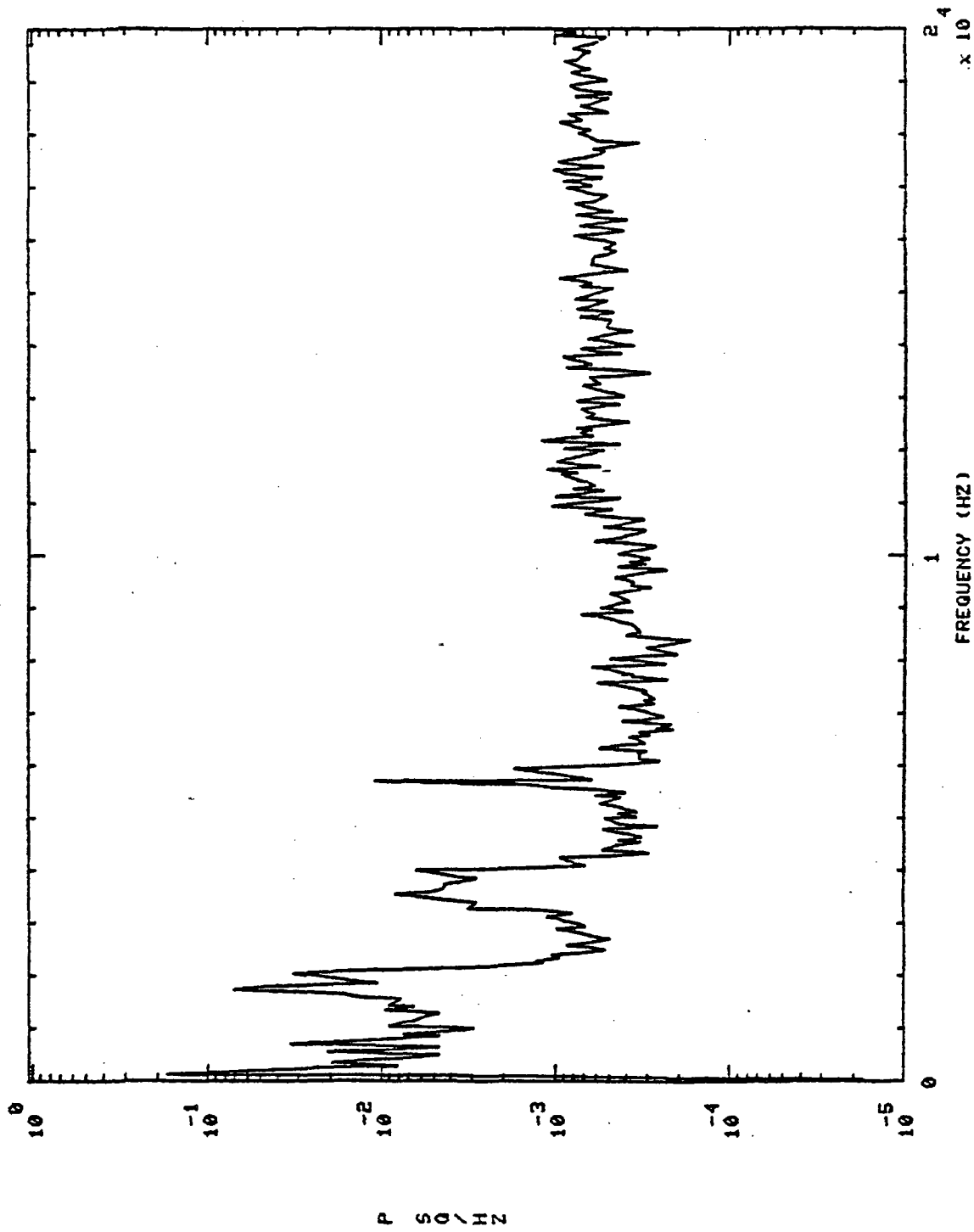
P S D \ IN

S+ 70.050/HZ

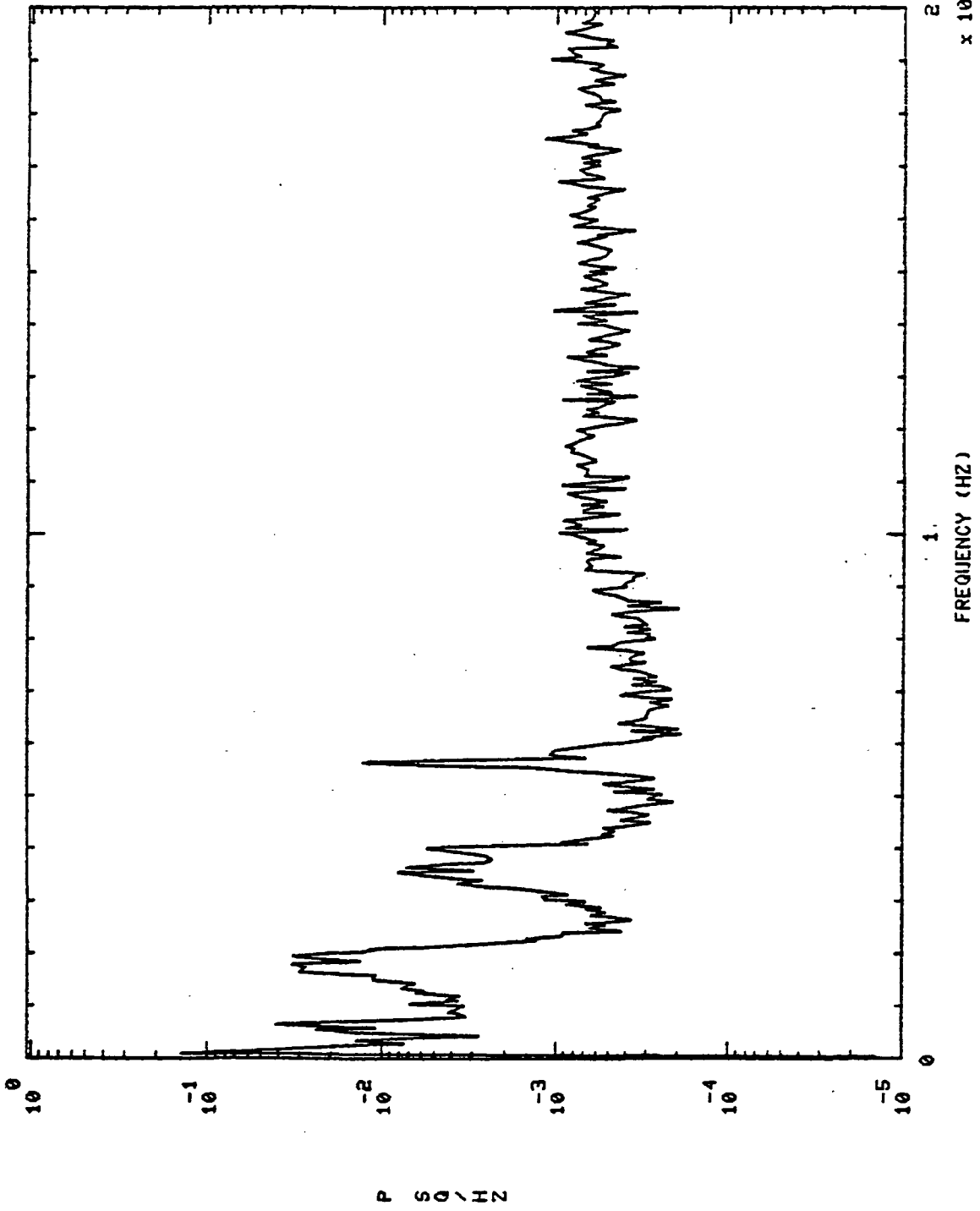
750111 LPOP DS PR



750111 LPOP DS PR S+ 80.050/HZ



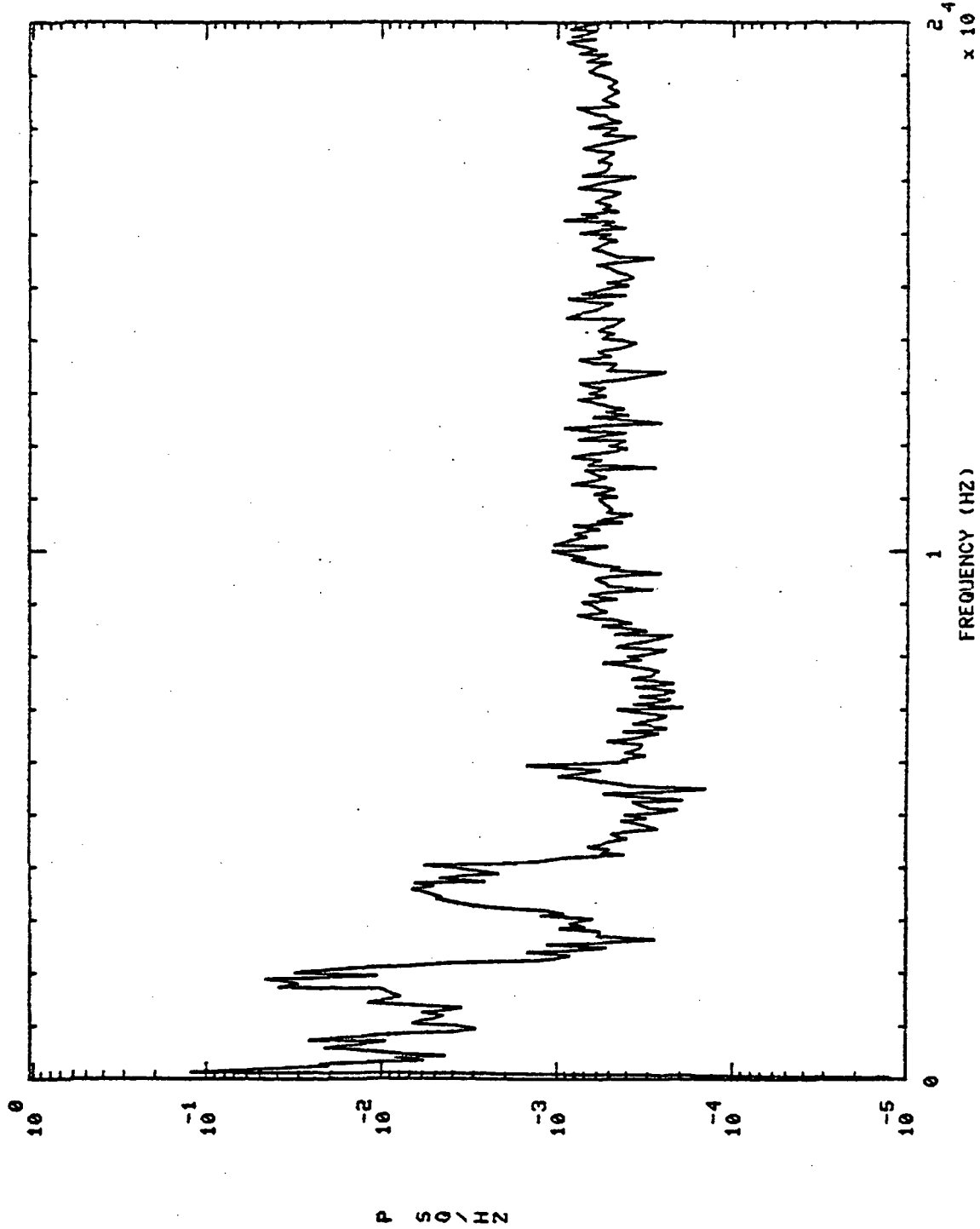
750111 LPOP DS PR S+ 90.050/HZ



S+ 100.050/HZ

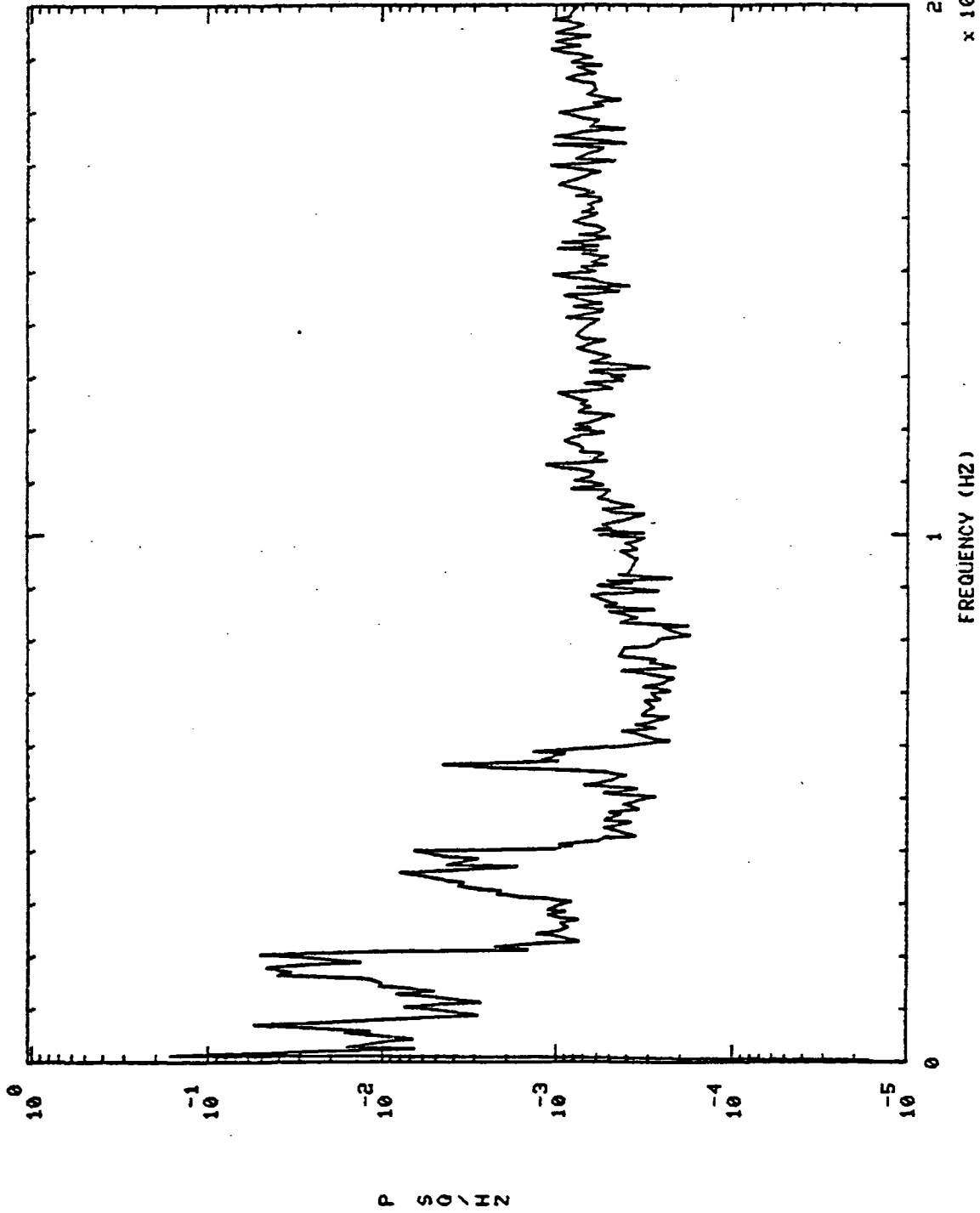
LPOP DS PR

750111



S+ 120.050/HZ

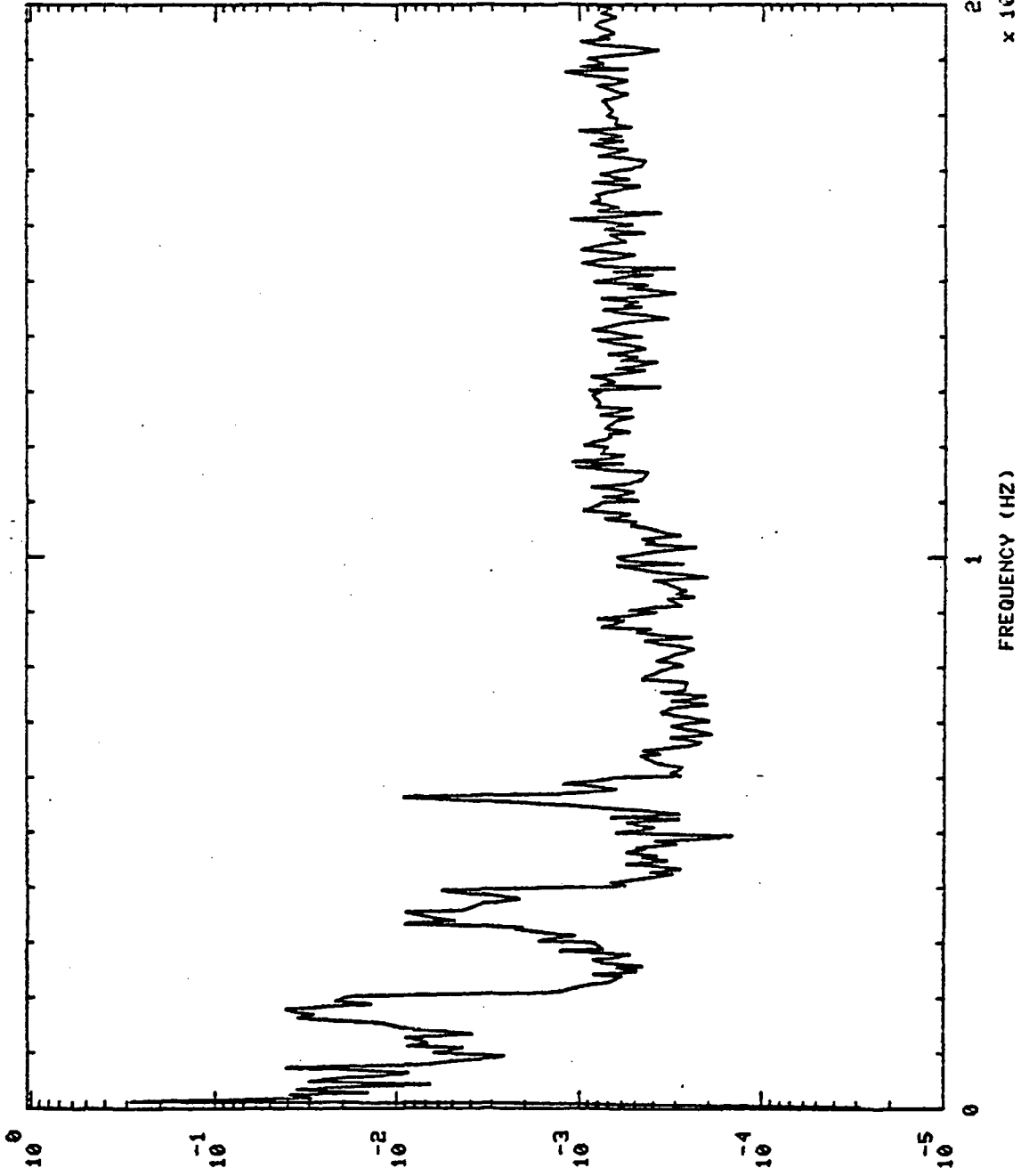
750111 LPOP DS PR



S+ 200.050/HZ

LPOP DS PR

750111



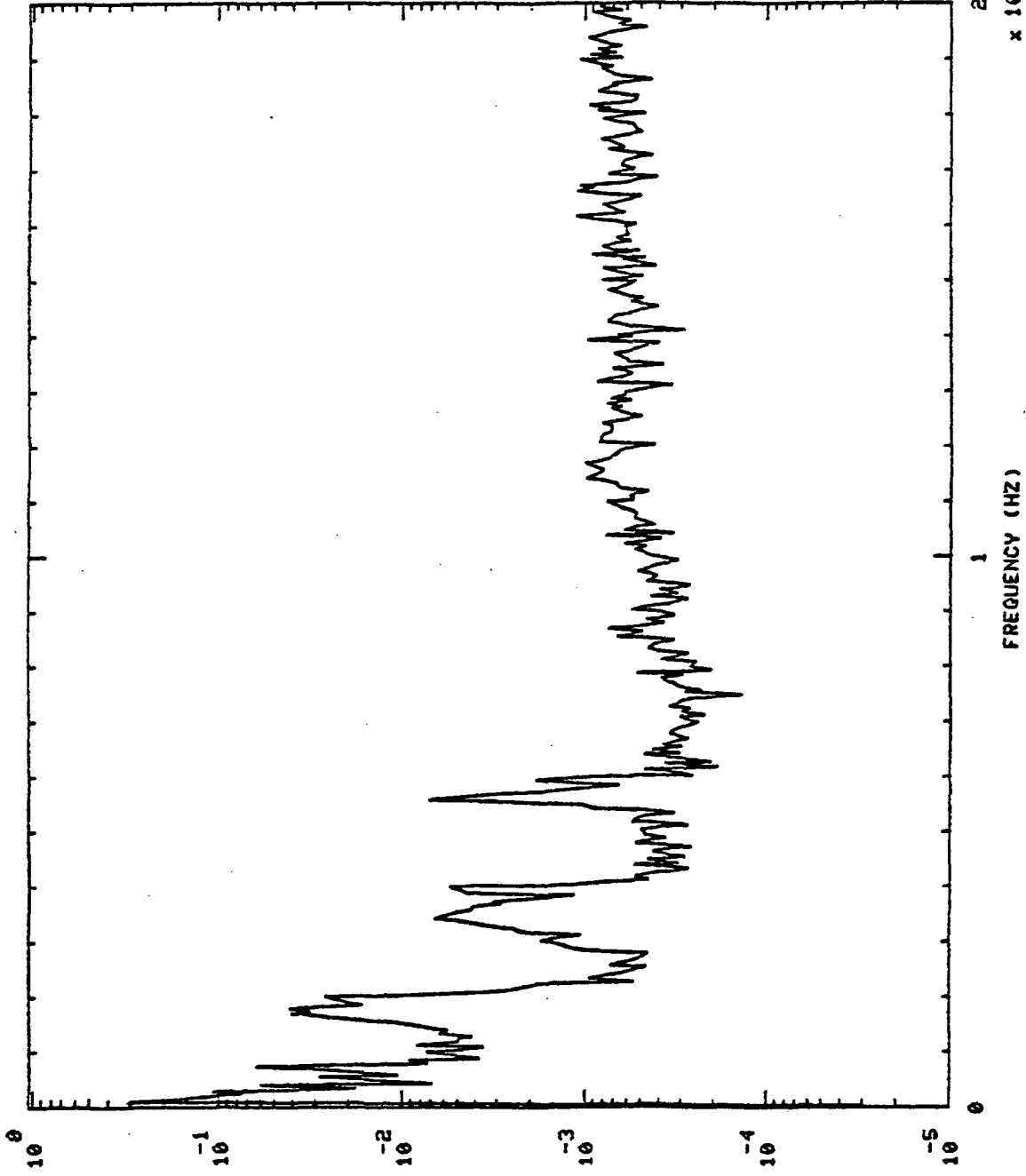
P S D \ H Z

FREQUENCY (HZ)

$\times 10^4$

S+ 280.050/HZ

750111 LPDP DS PR

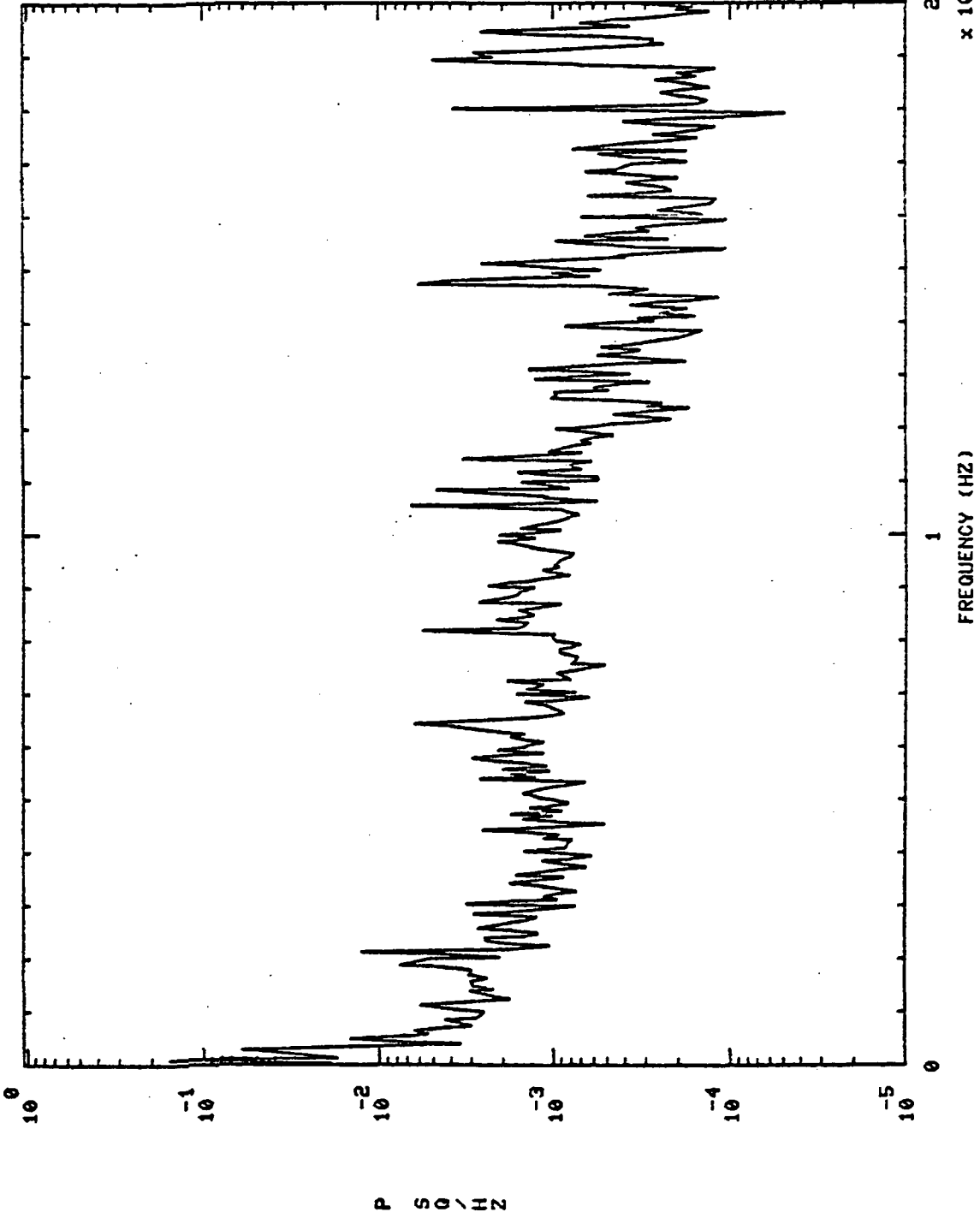


P DB/HZ

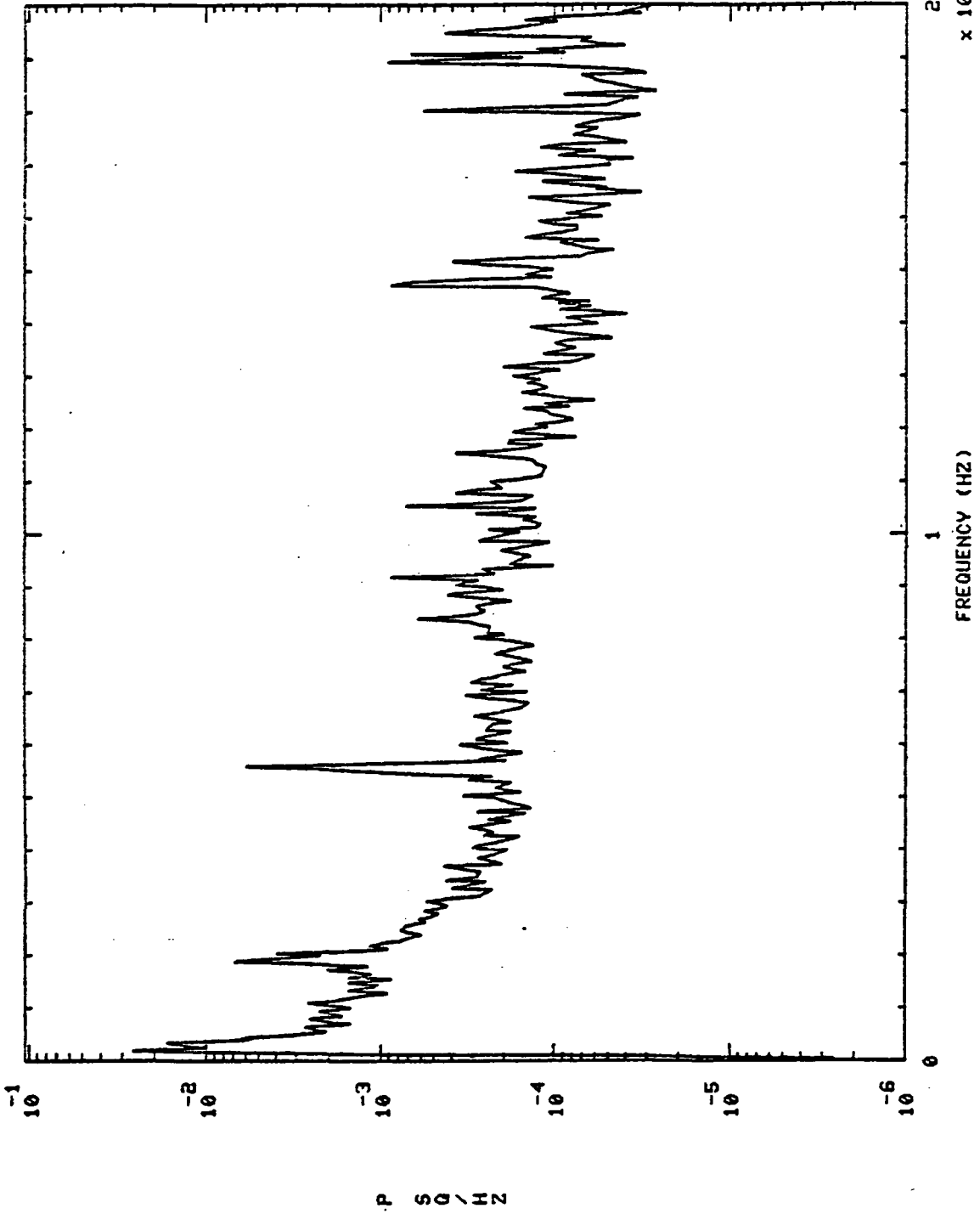
FREQUENCY (HZ)

$\times 10^4$

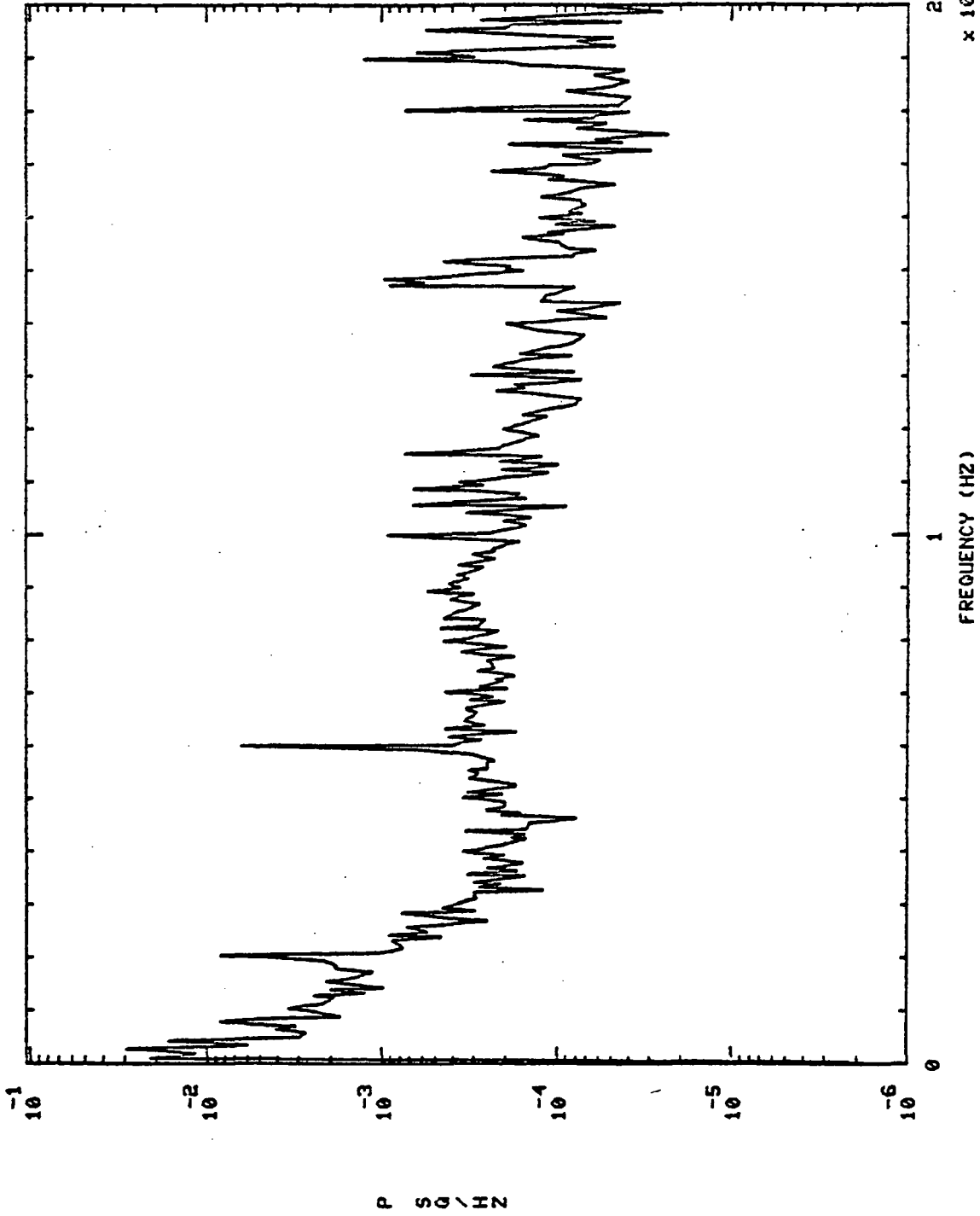
750111 HPOP BAL CAU PR2 S+ 15.01H0.'S



750111 HPOP BAL CAU PR2 S+ 40.01H0, 'S

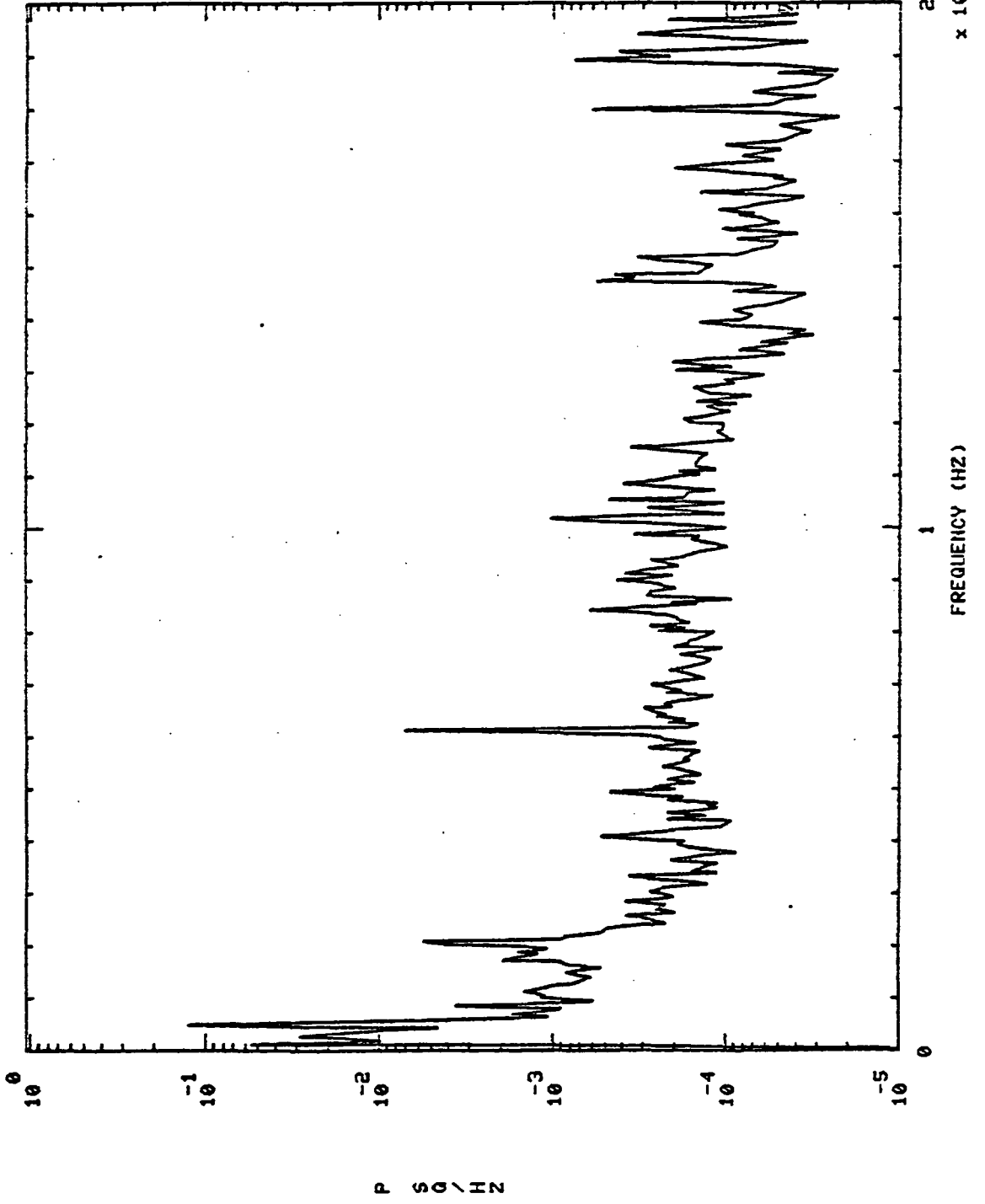


750111 HPOP BAL CAU PRE ST 50.01H0,'S

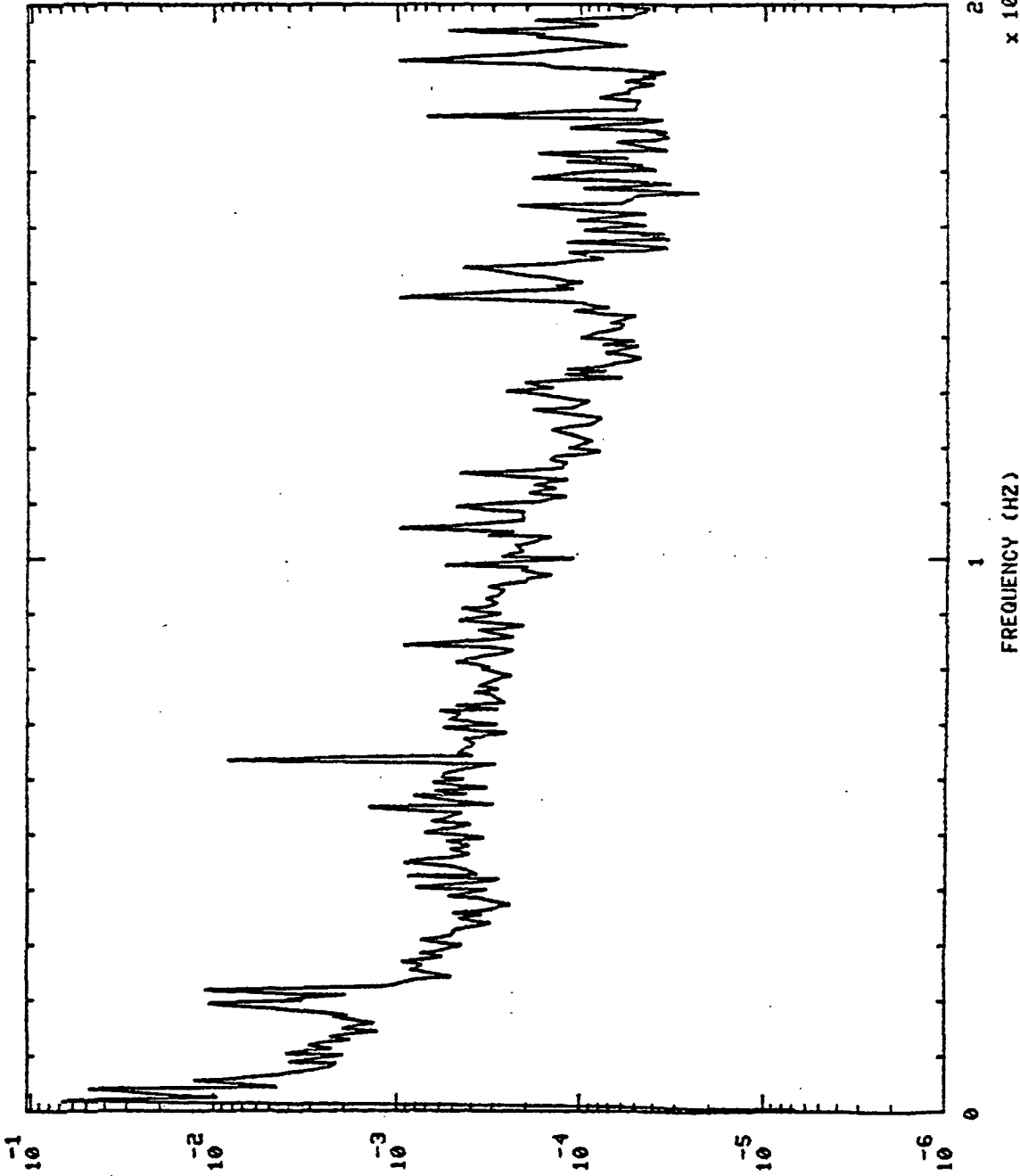


750111 HPOP BAL CAV PR2 S+ 60.01H0,'S

750111 HPOP BAL CAV PR2

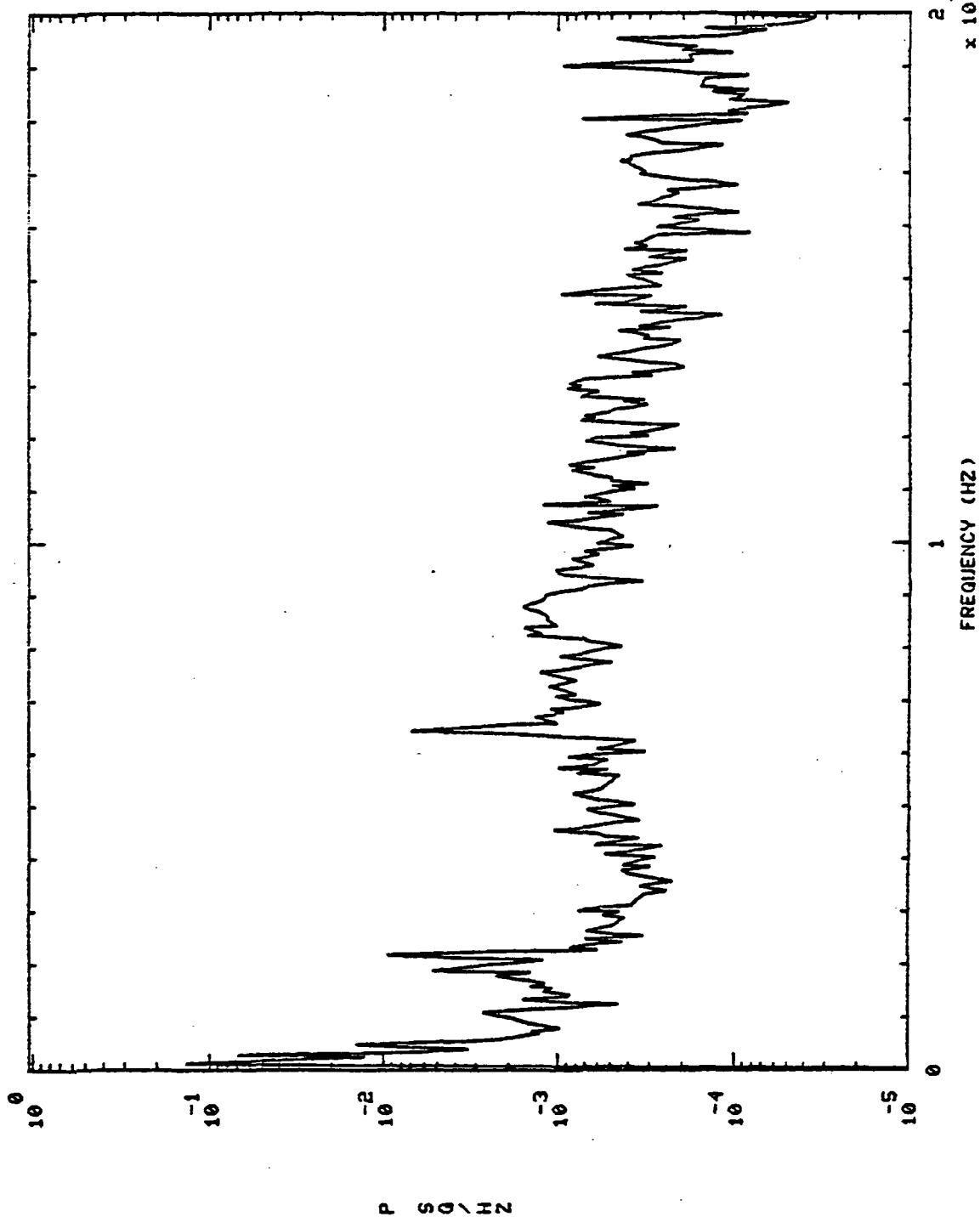


750111 HPOP BAL CAU PR2 S+ 70.01H0,'S



P S D IN

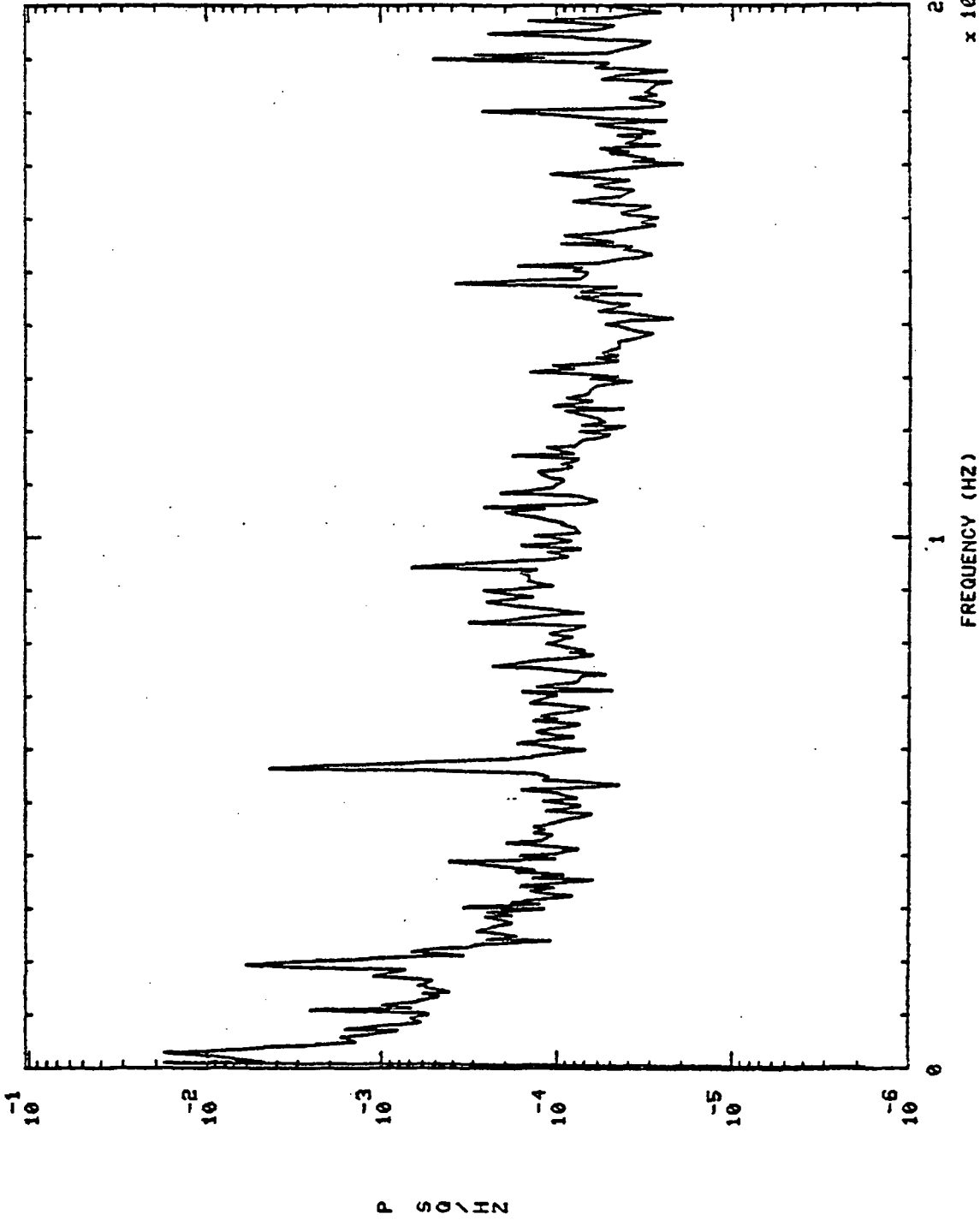
750111 HPOP BAL CAU PR2 S+ 80.01H0,'S



750111

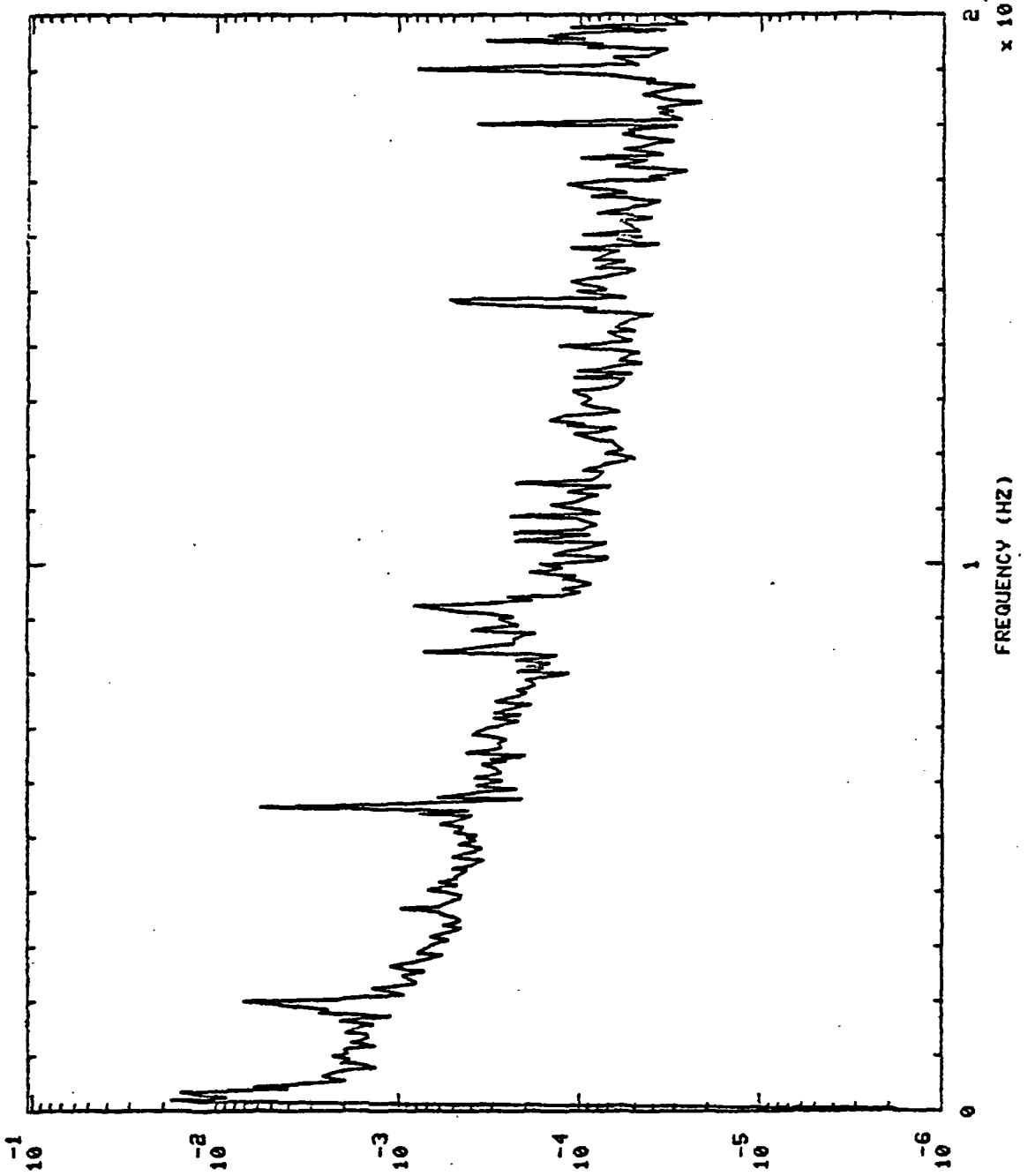
HPOP BAL CAU PR2

S+ 90.01H0,'S



750111 HPOP BAL CAU PR2 S+ 100.0110,'S

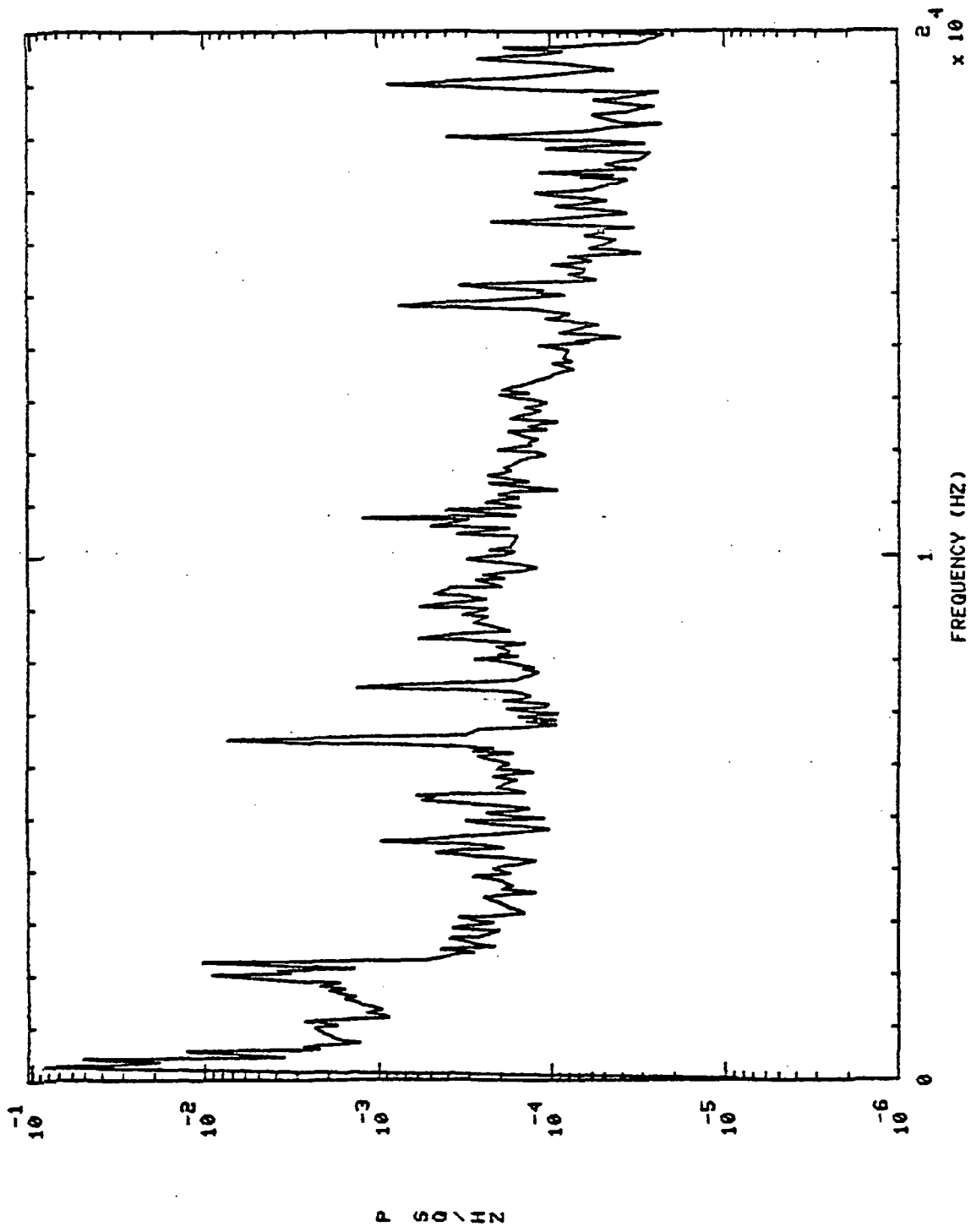
750111 HPOP BAL CAU PR2



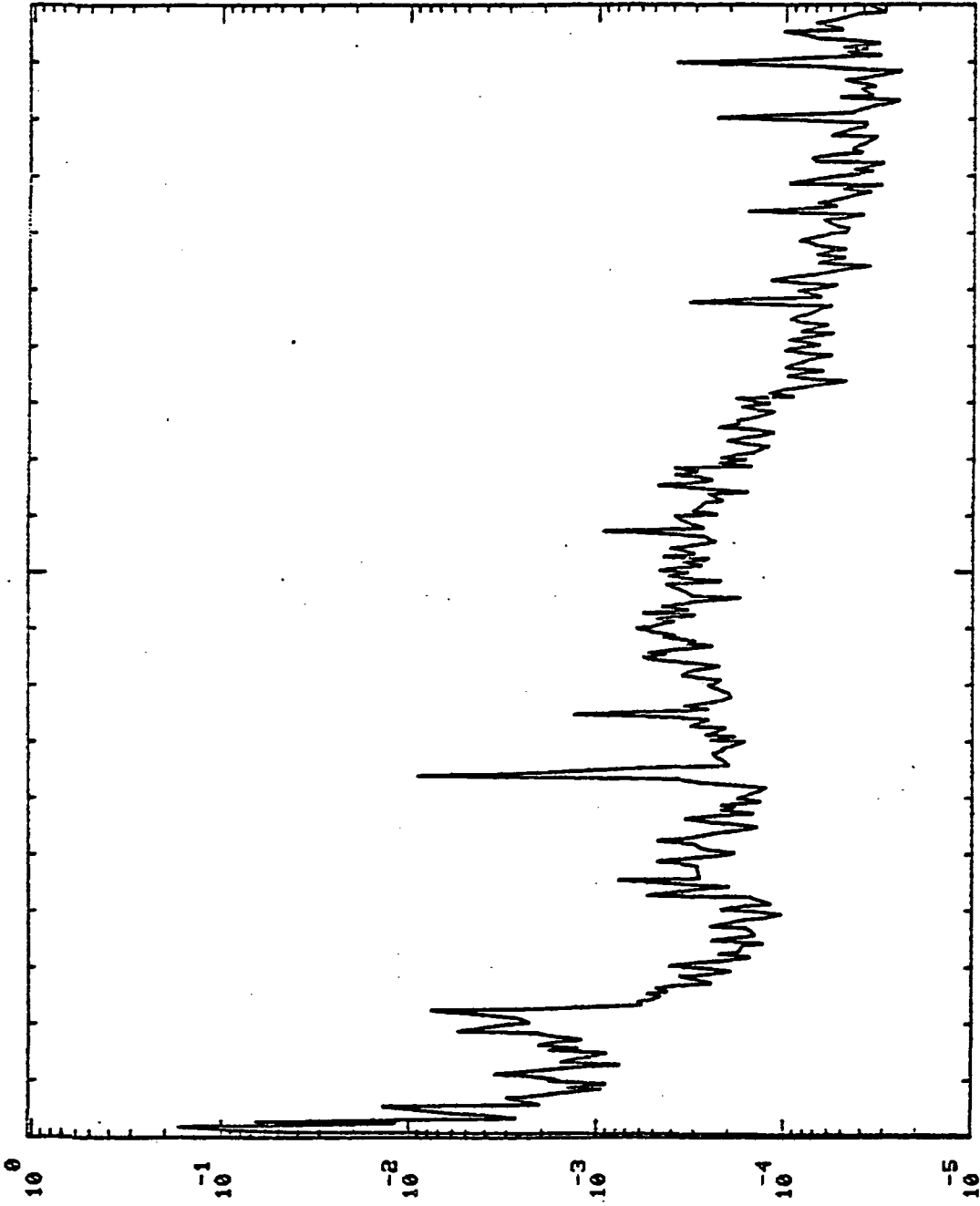
P S D / H Z

FREQUENCY (HZ)
x 10⁴

750111 HPOP BAL CAU PR2 S+ 120.01H0.'S



750111 HPOP BAL CAU PR2 S+ 200.01H0,'S



P S D \ HZ

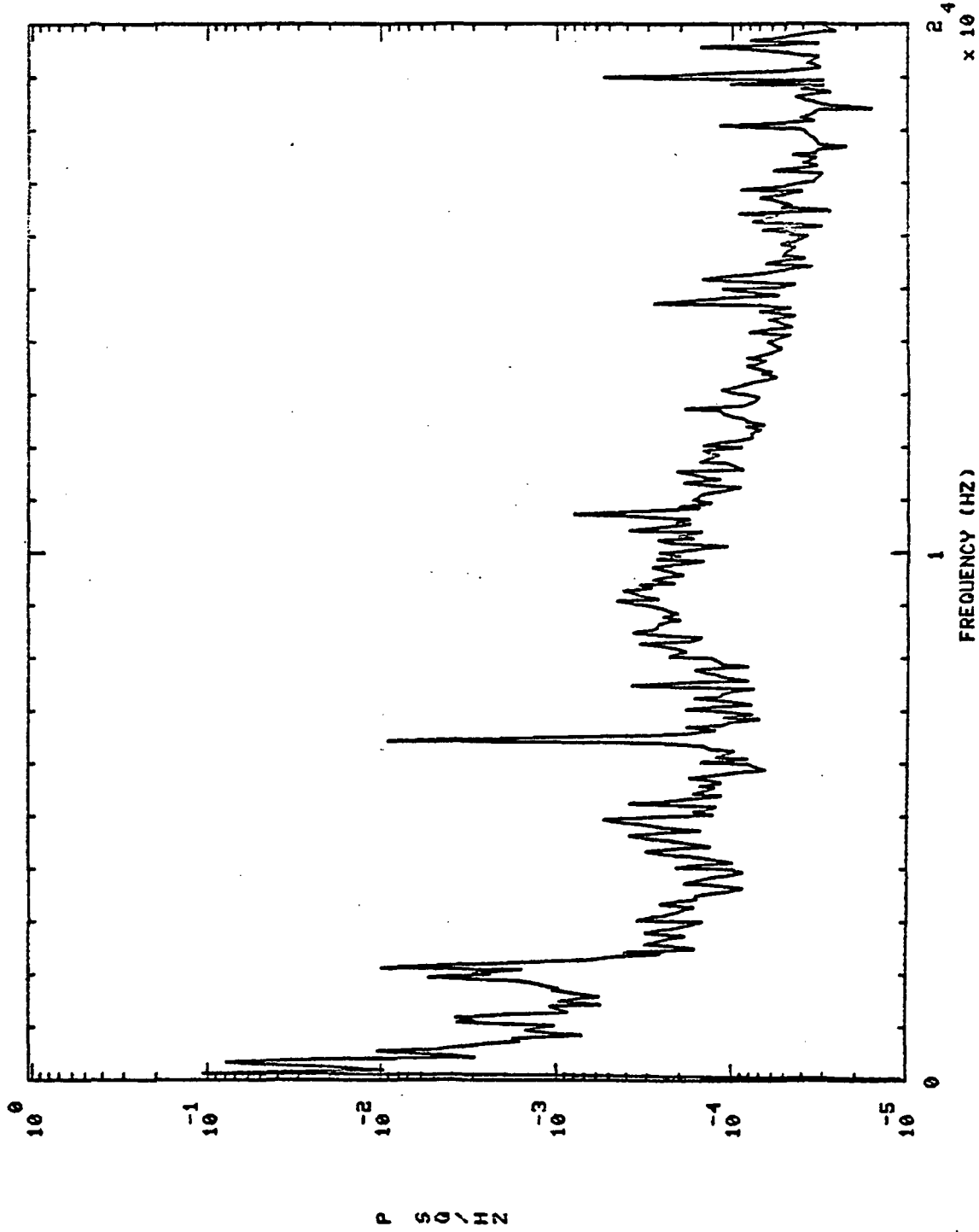
2 4
x 10

FREQUENCY (HZ)

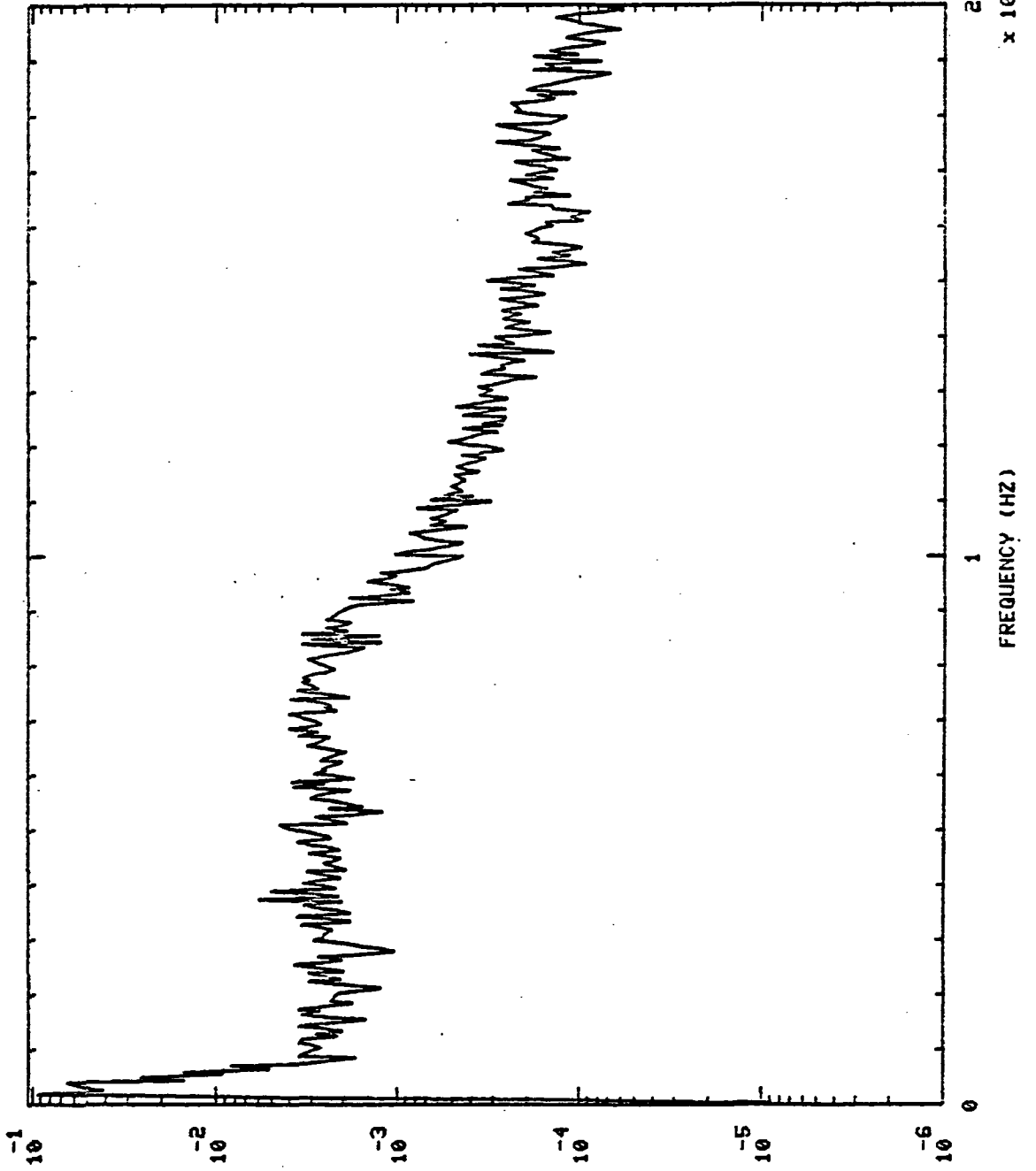
750111

HPOP BAL CAU PR2

S+ 280.0140,'S



750111 HPOP BAL CAU PR1 S+ 15.01H0,'S

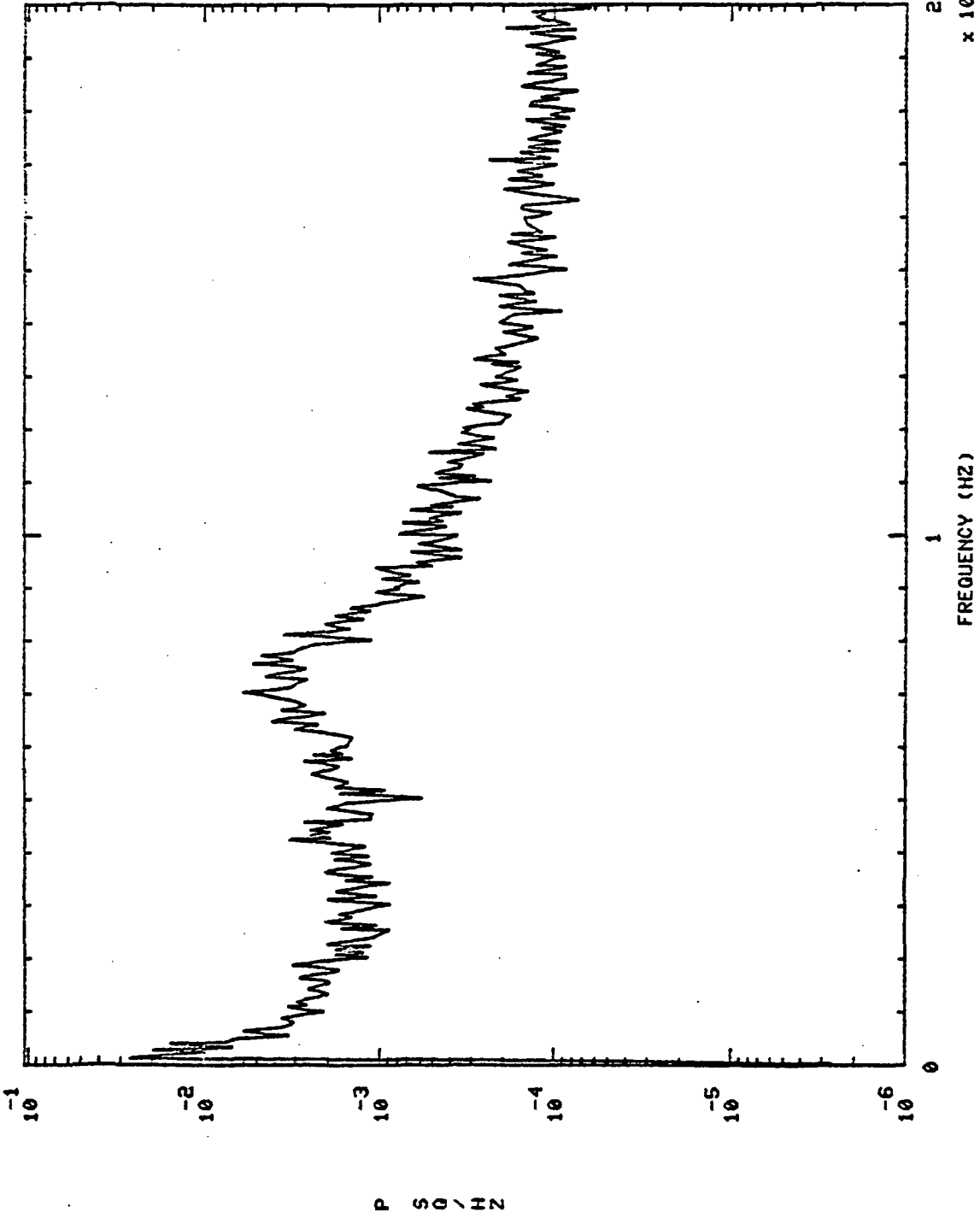


P S D / H Z

FREQUENCY (HZ)

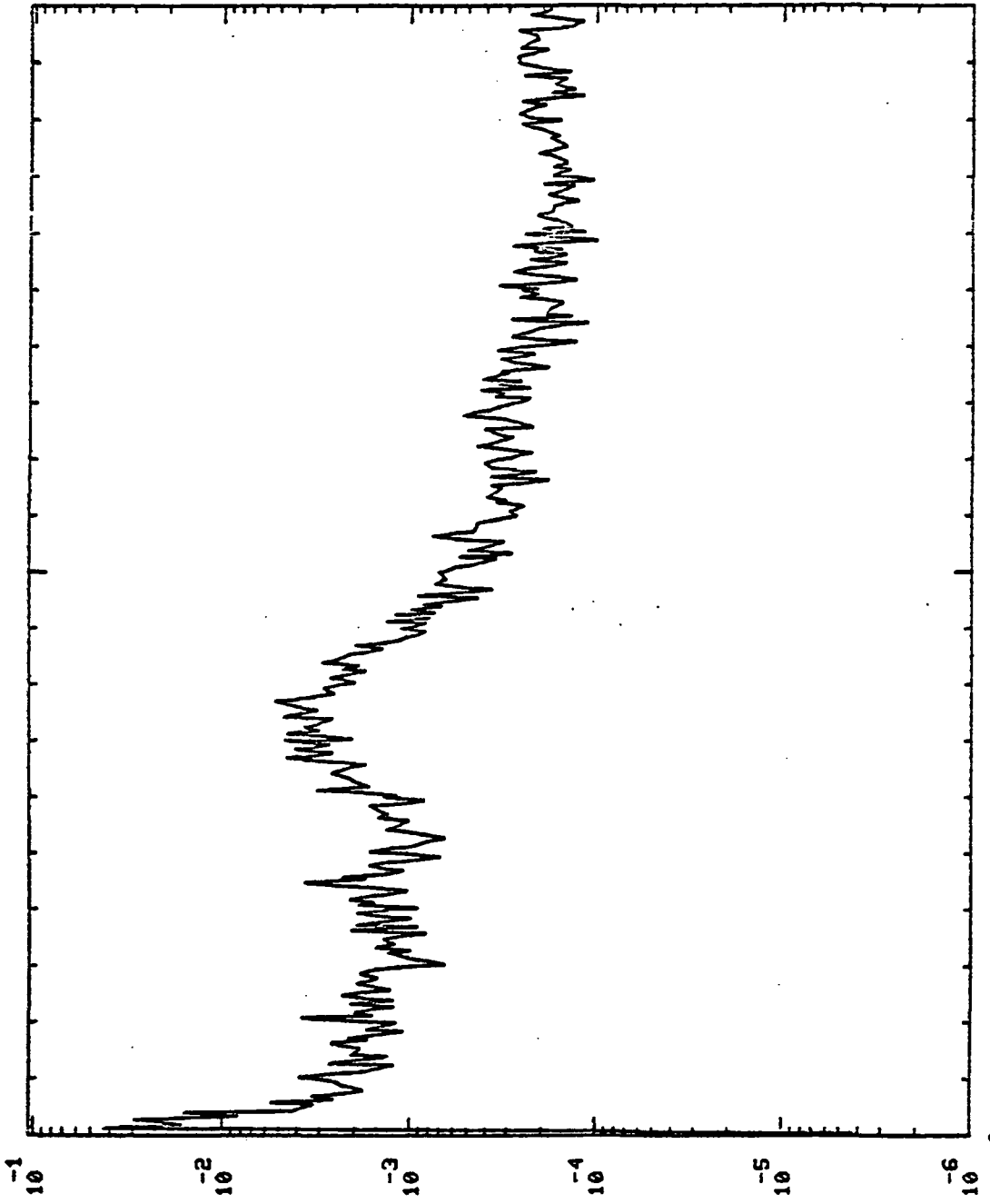
x 10⁴

750111 HPOP BAL CAU PRI S: 40.01H0,'S



750111 HPOP BAL CAU PRI S+ 50.01H0,'S

750111 HPOP BAL CAU PRI

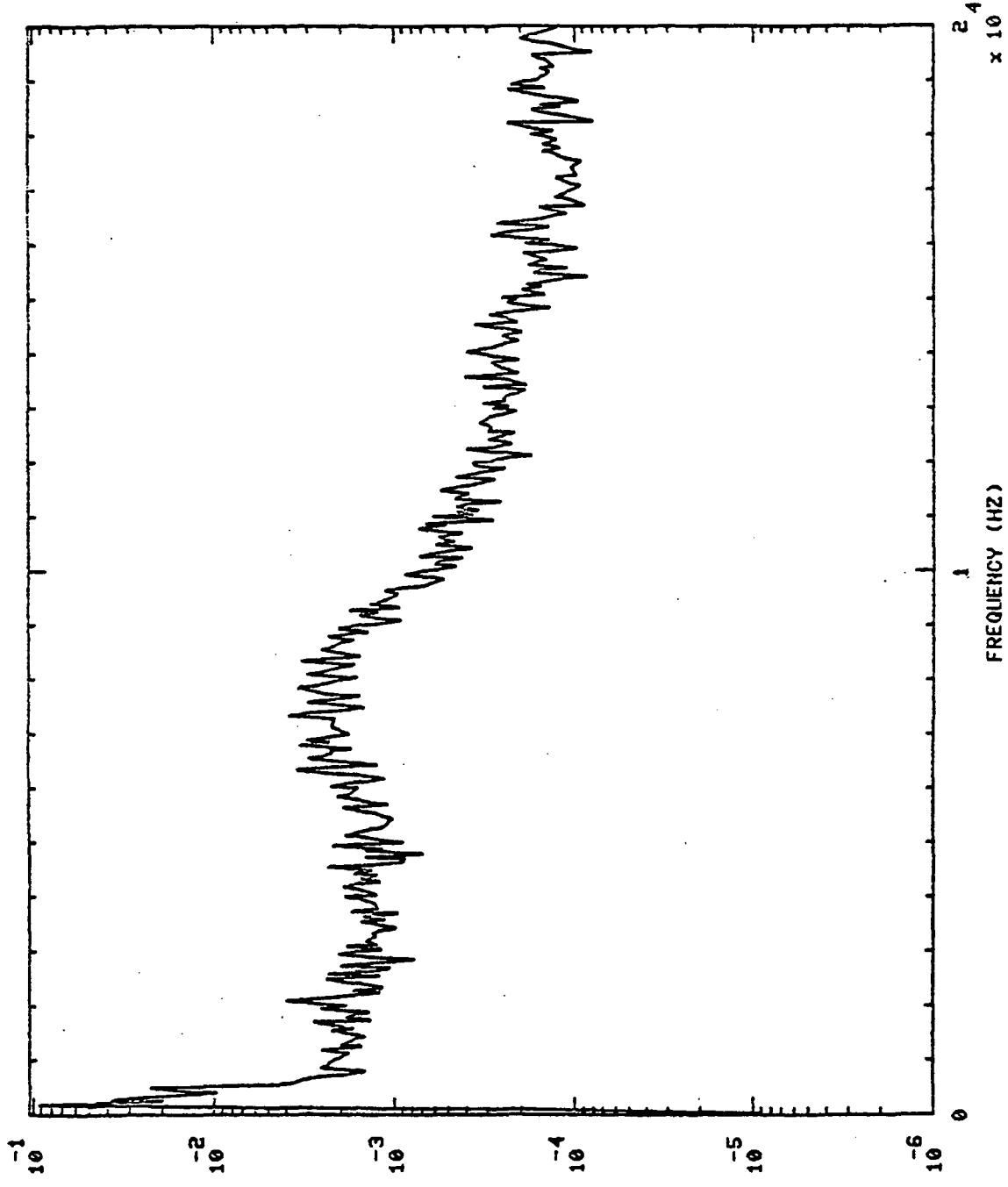


PSD / HZ

FREQUENCY (HZ)

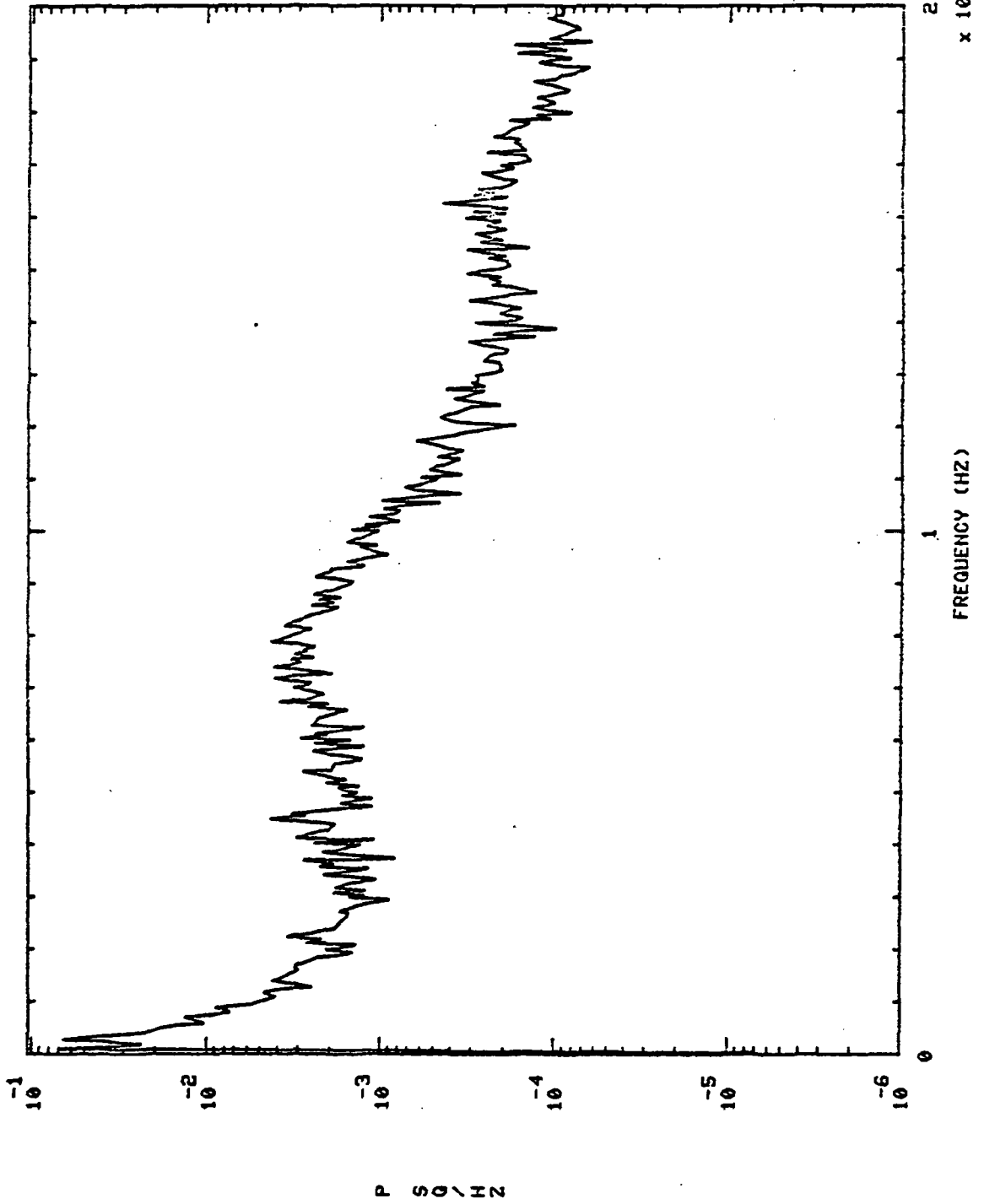
x 10⁴

750111 HPOP BAL CAU PR1 S+ 60.01H0,'S

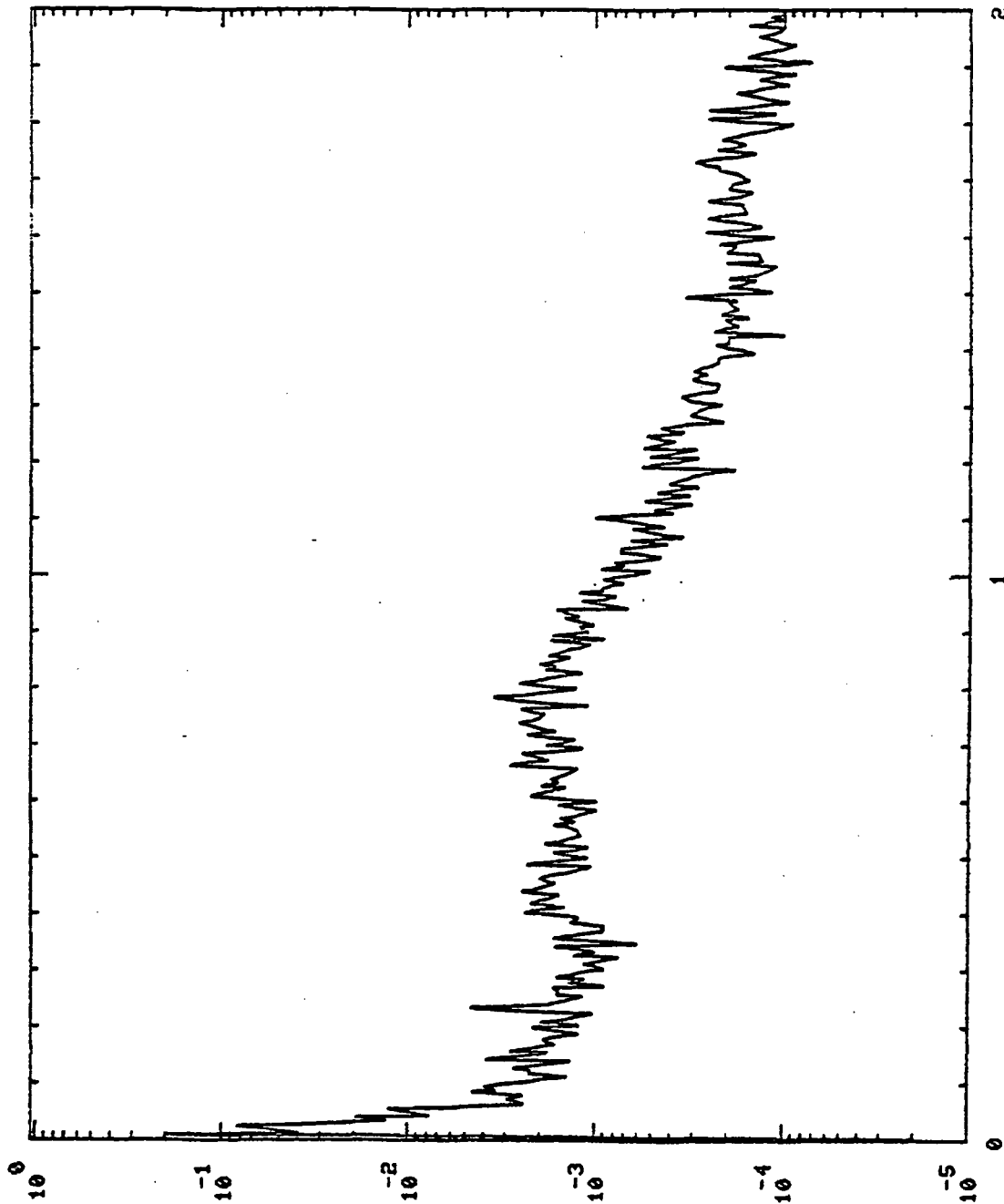


PSD / HZ

750111 HPOP BAL CAU PRI ST 70.01H0,'S



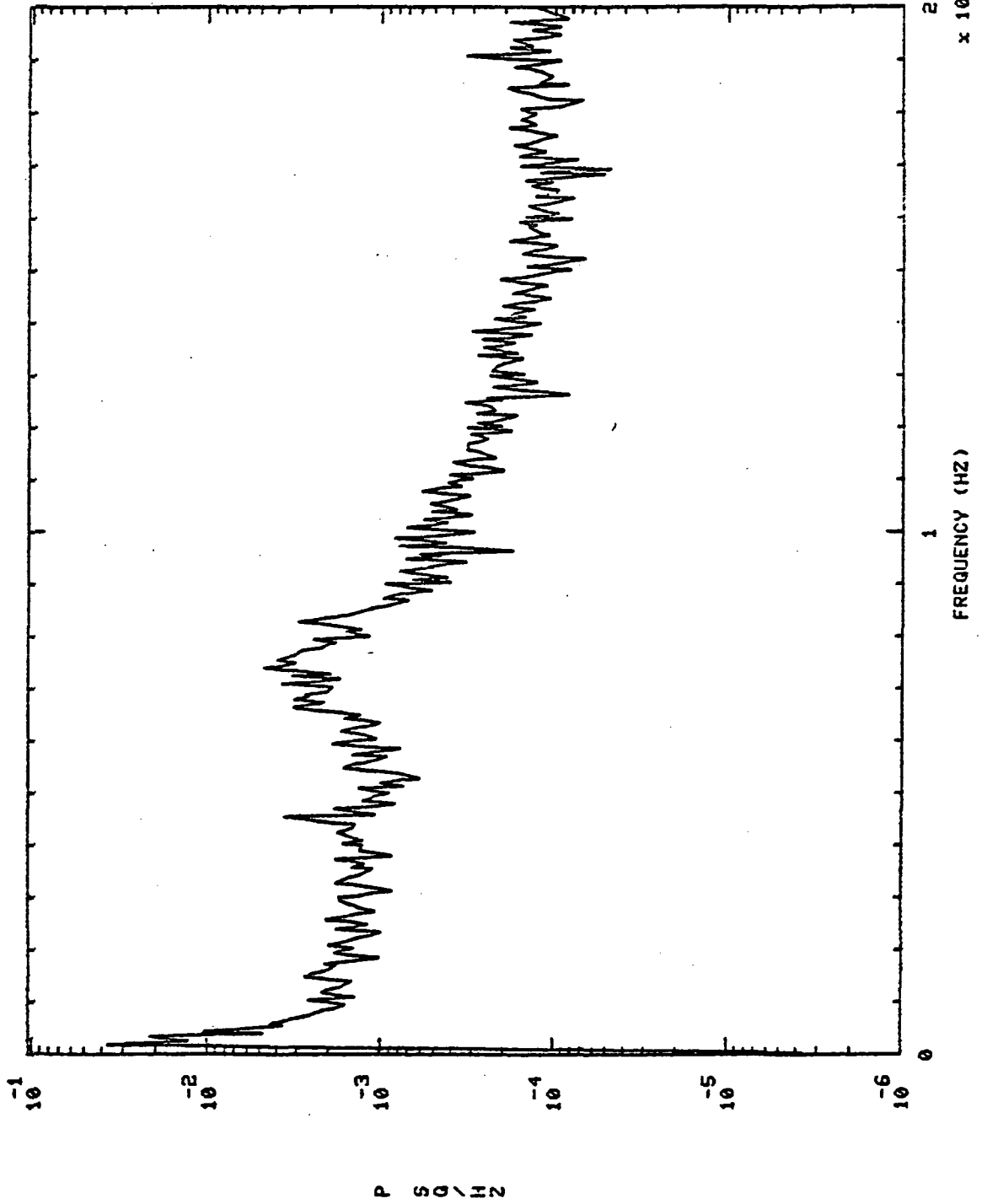
750111 HPOP BAL CAU PRI S+ 80.01H0,'S



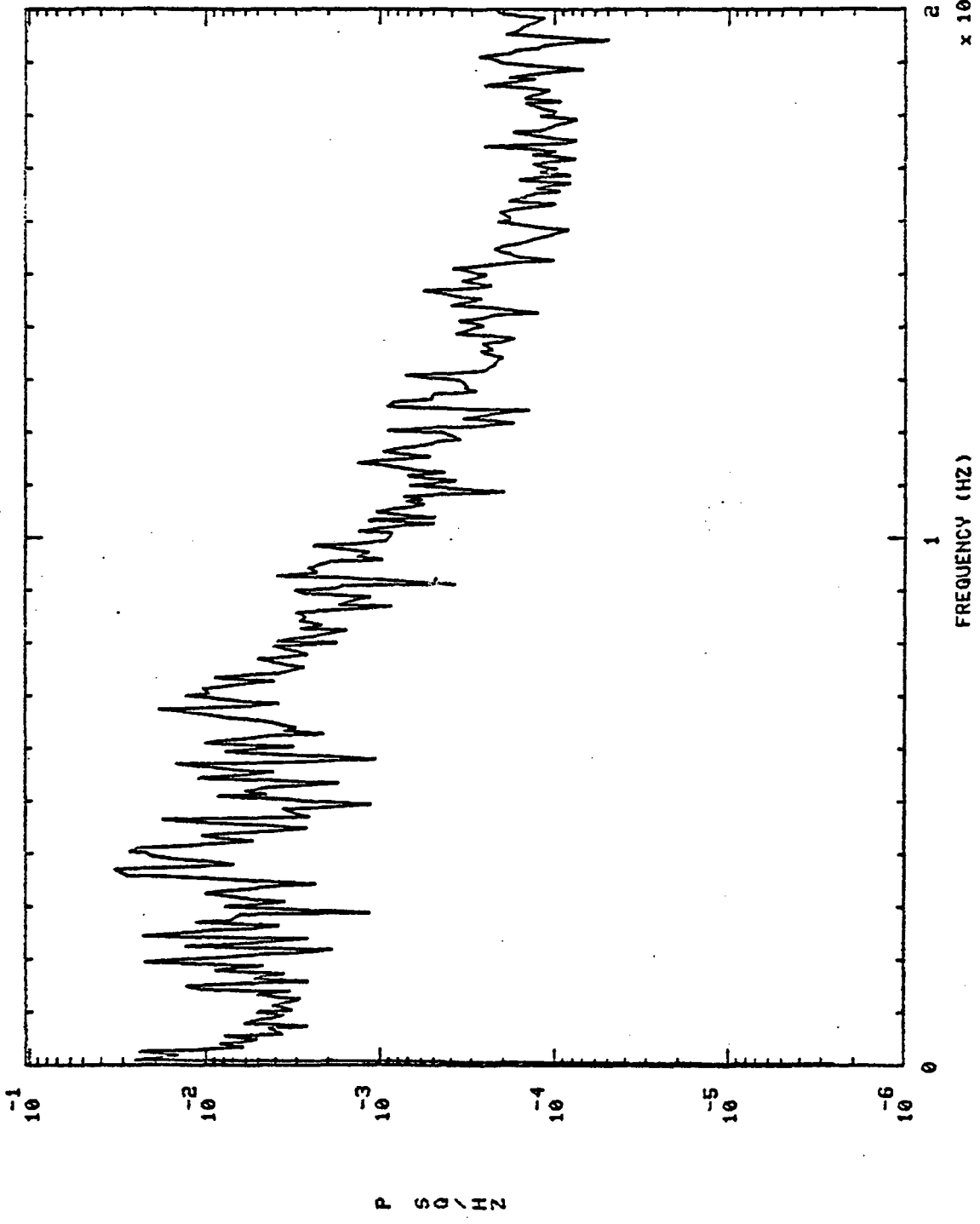
P S O \ H N

FREQUENCY (HZ) x 10⁴

750111 HPOP BAL CAU PR1 S+ 90.01H0,'S



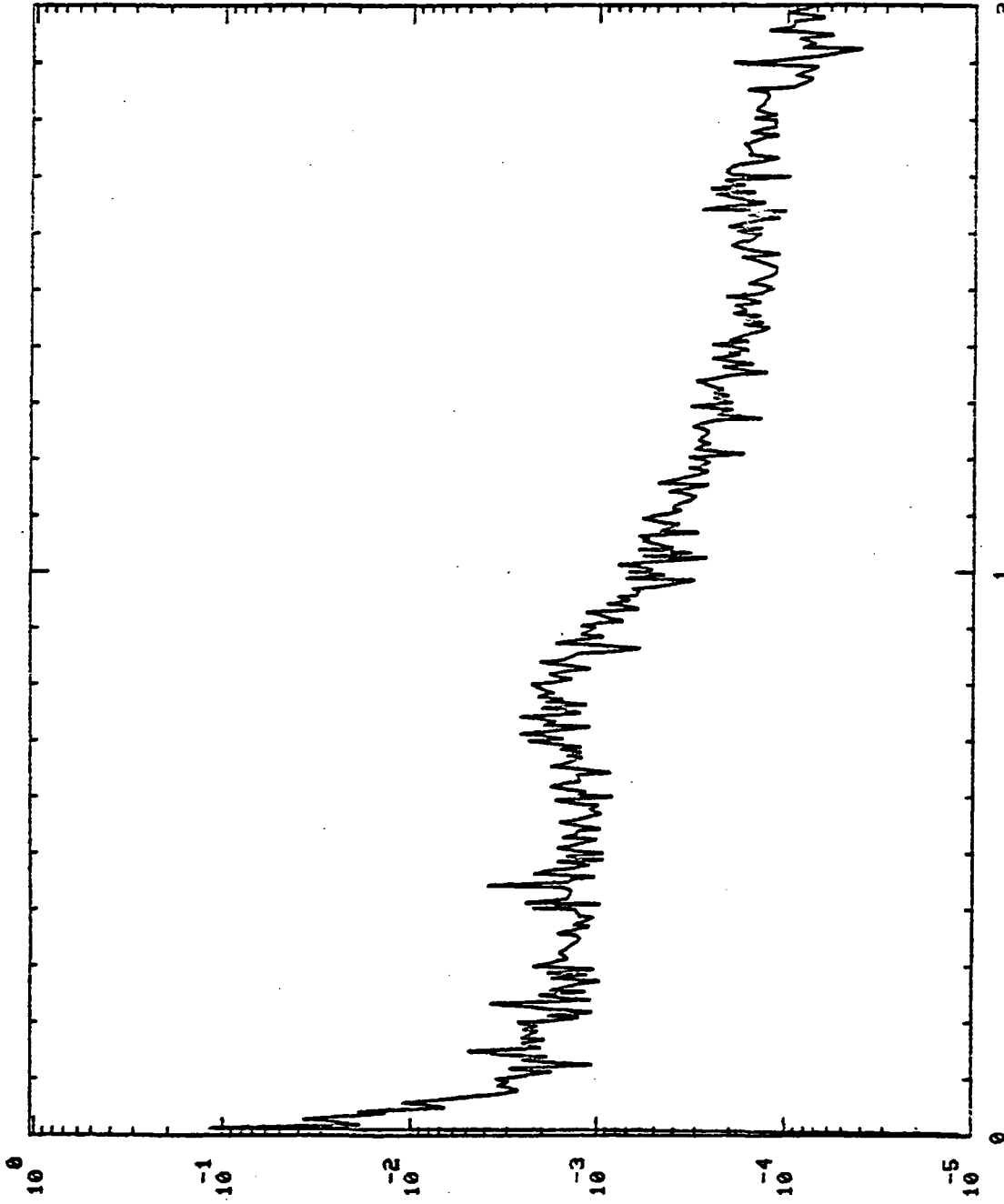
750111 NPOP BAL CAU PRI S+ 100.01H0,'S



S+ 120.01H0,'S

750111 HPOP BAL CAU PR1

750111

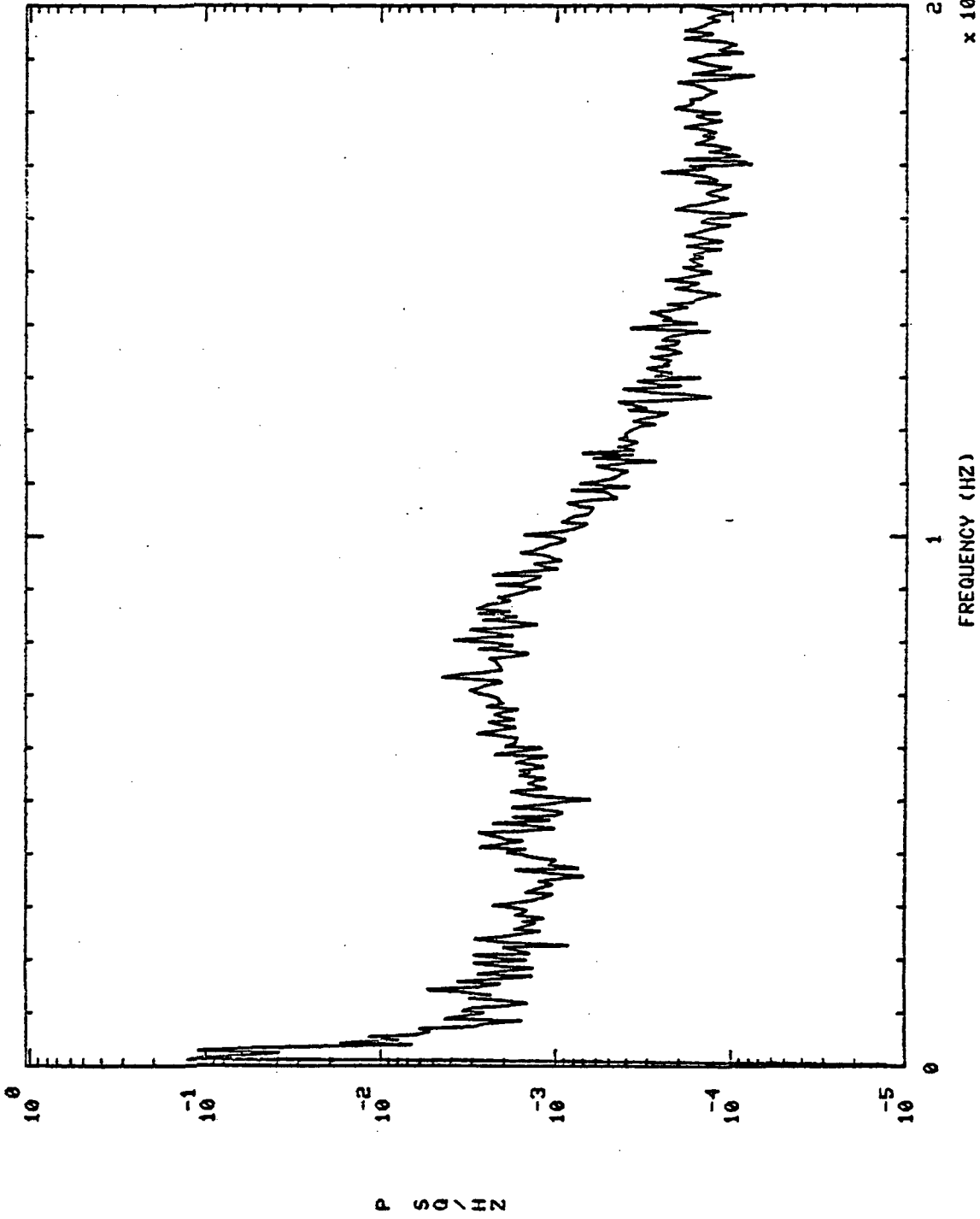


P S Q \ H Z

2.4
 $\times 10^4$

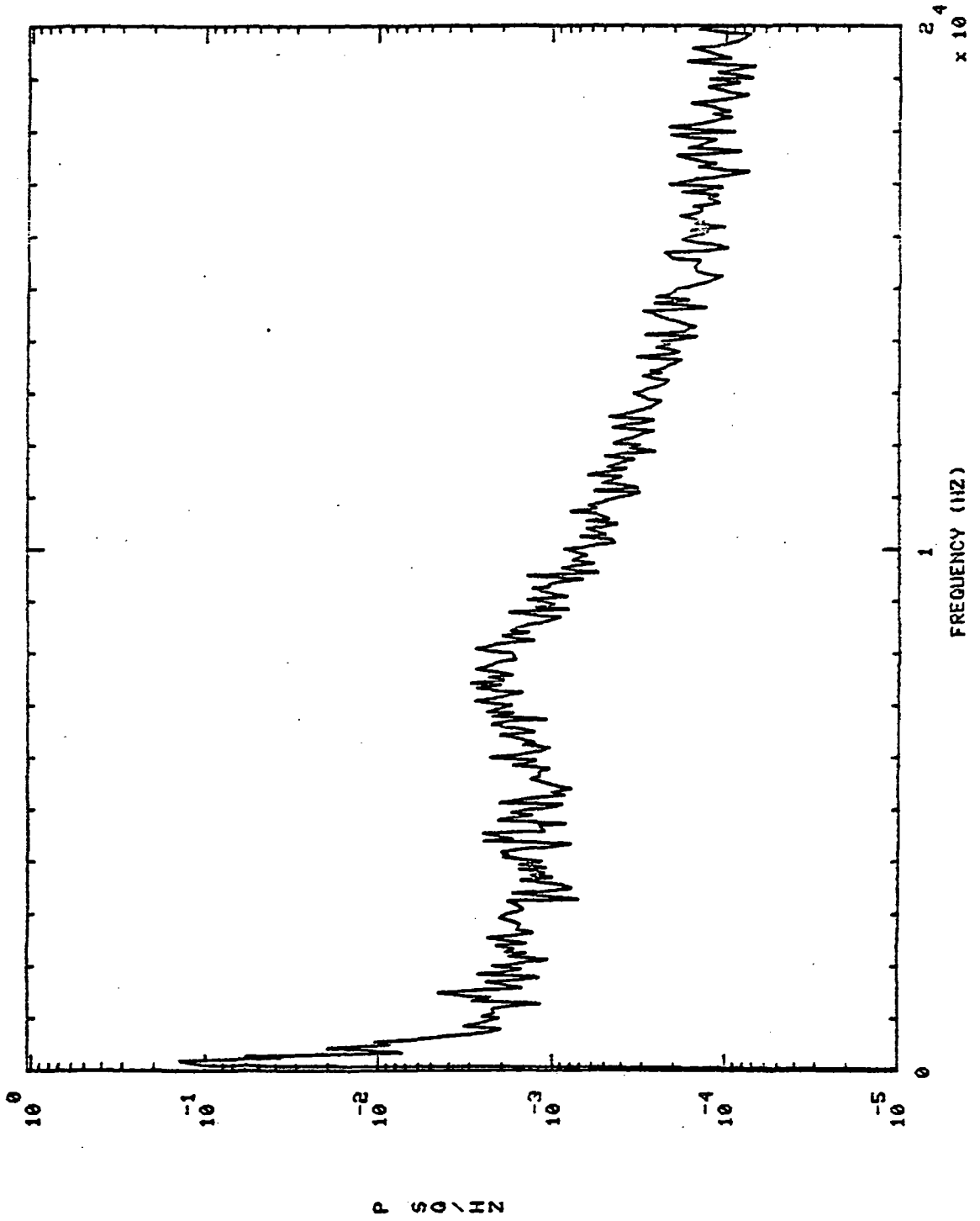
1
FREQUENCY (HZ)

750111 HPOP BAL CAU PR1 S+ 200.01H0.'S

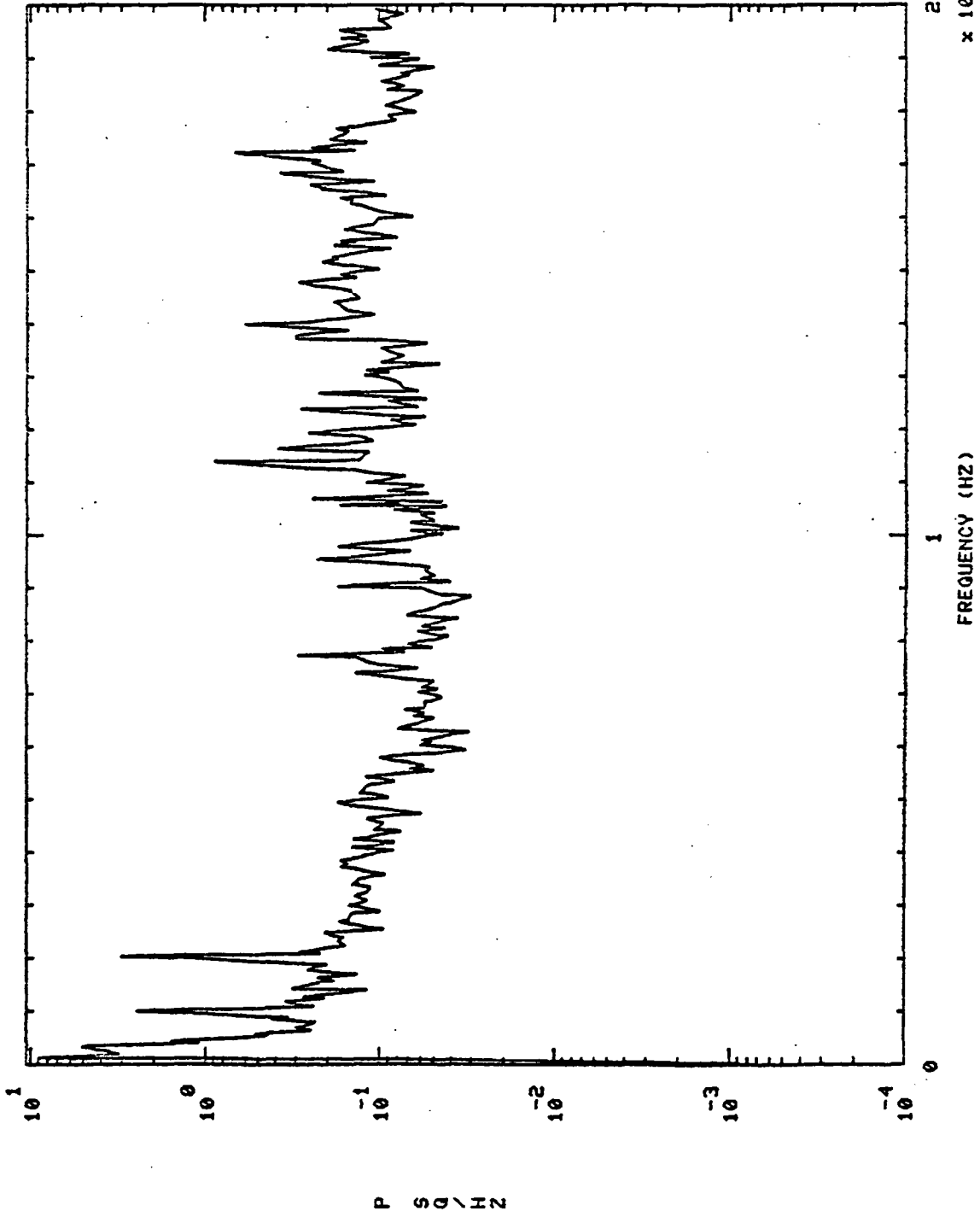


750111 HPOP BAL CAU PRI

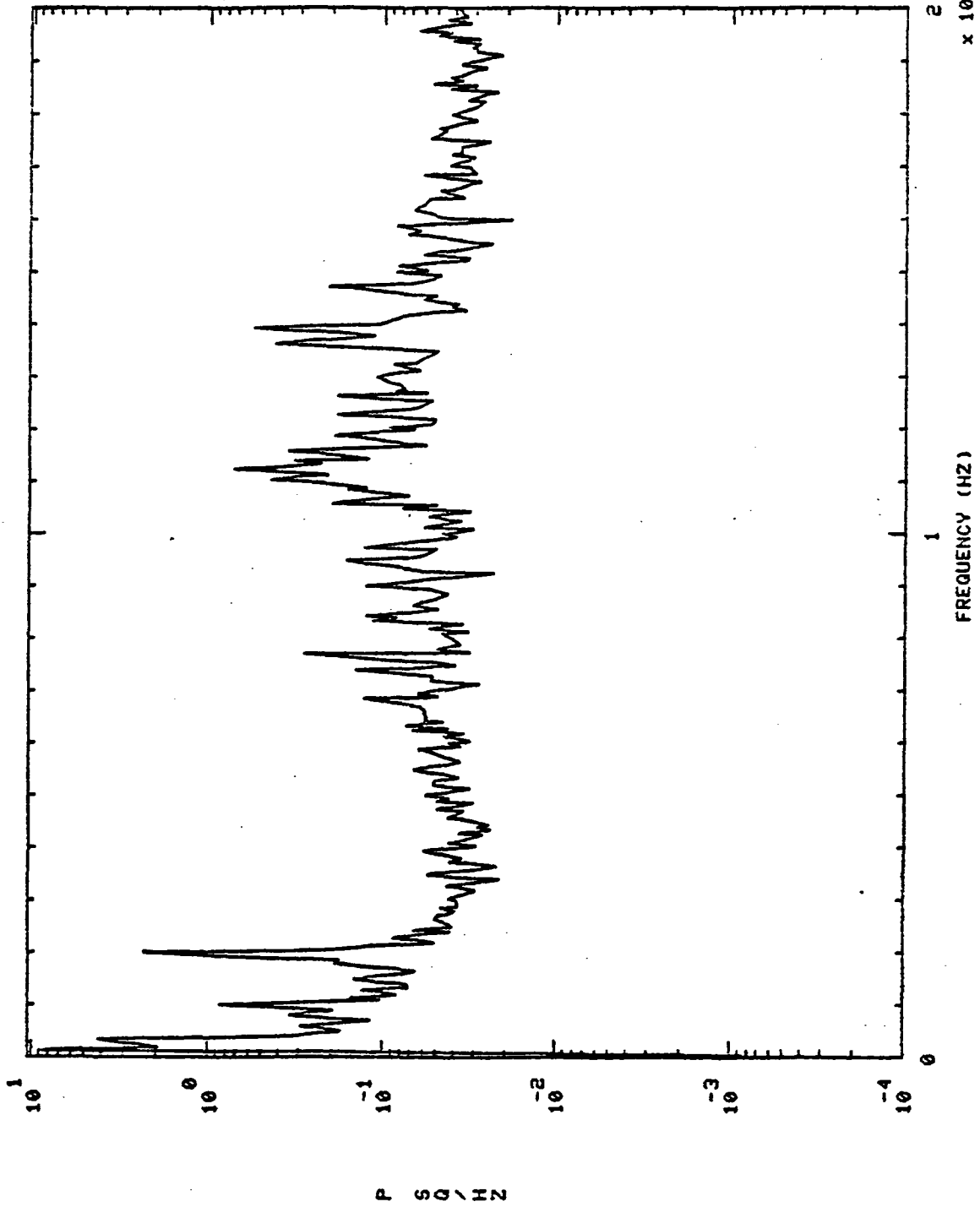
ST 280.01H0,'S



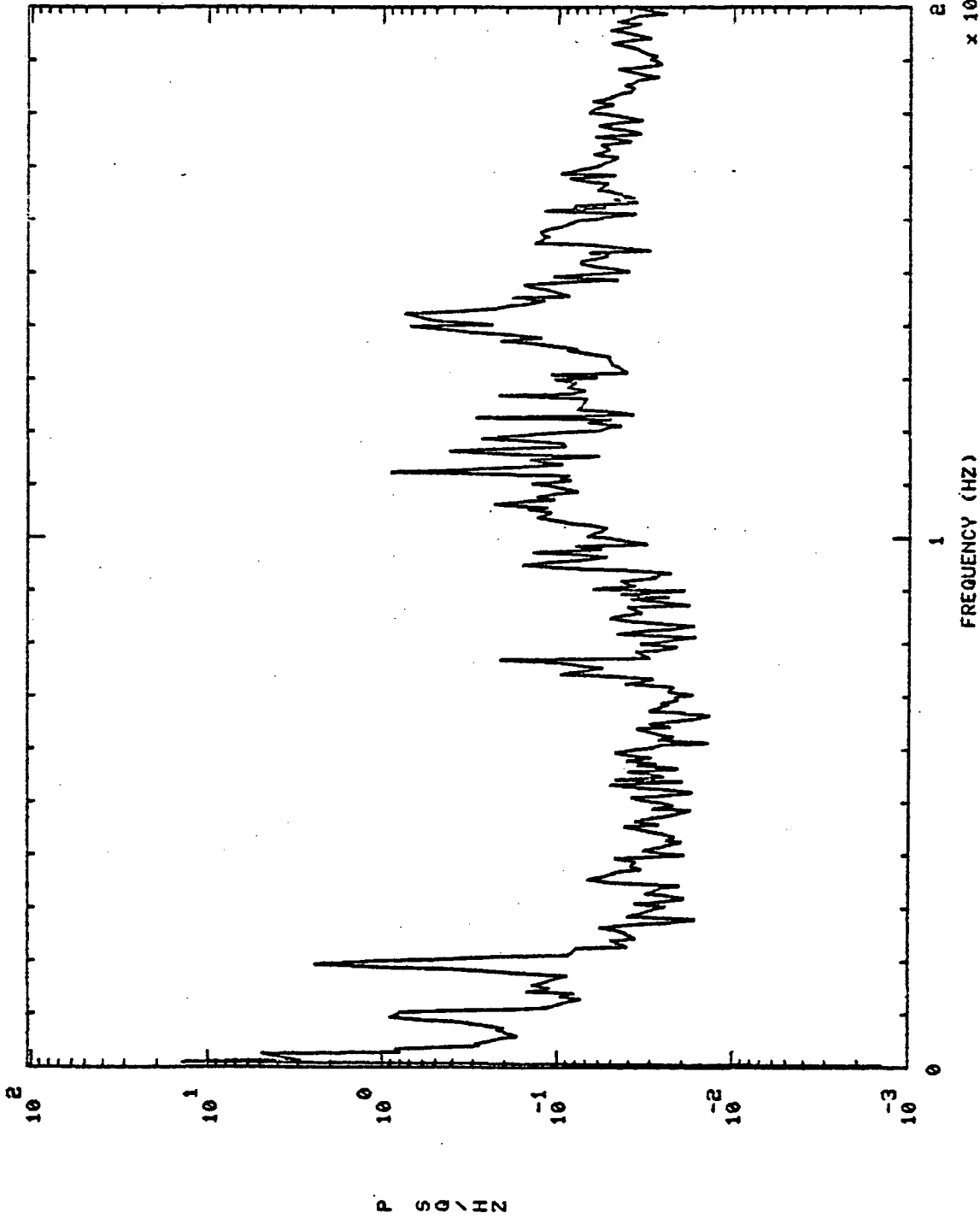
750111 HPOP DS PR S+ 15.01H0,'S



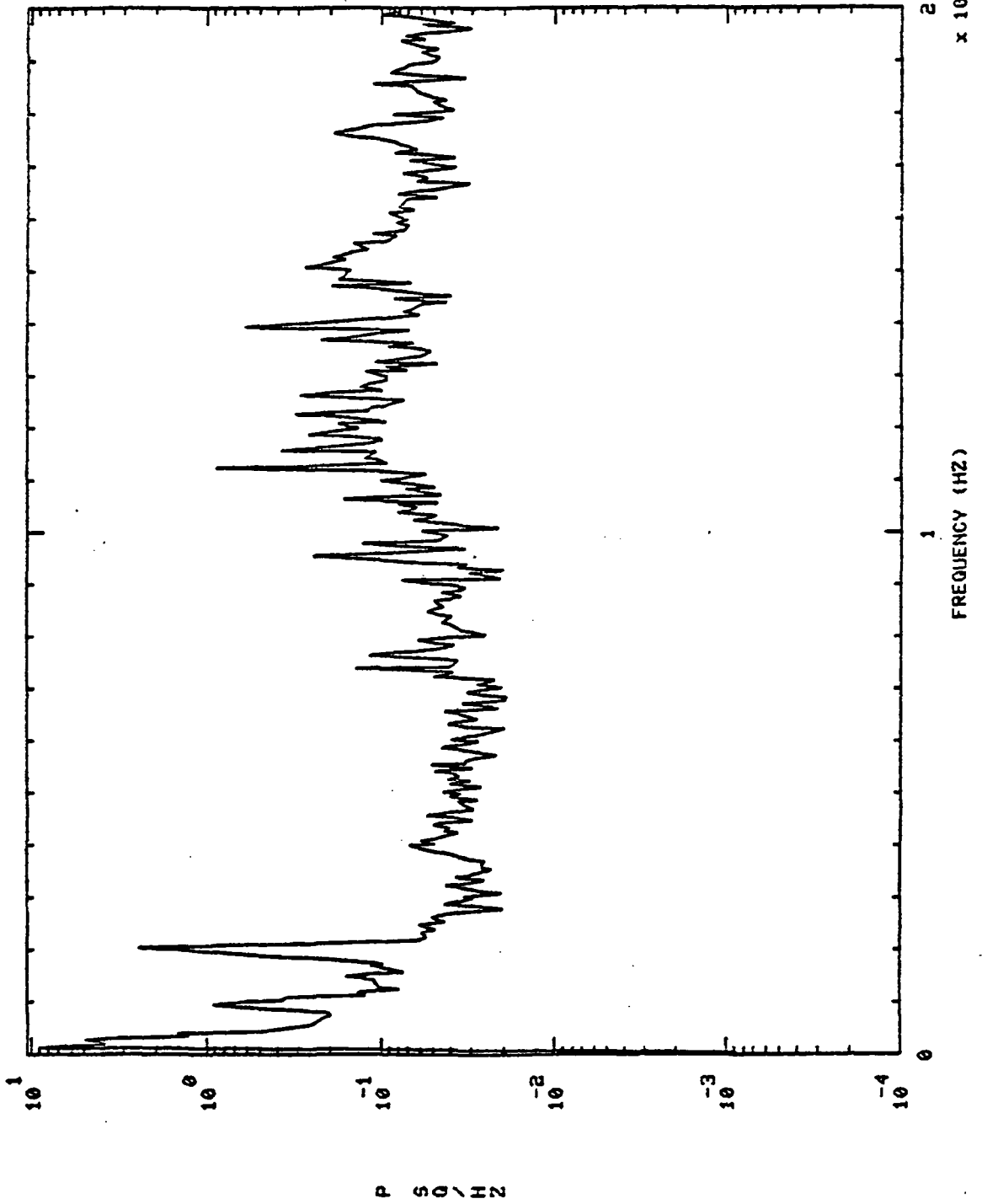
750111 HPOP DS PR S+ 40.01H0,'S



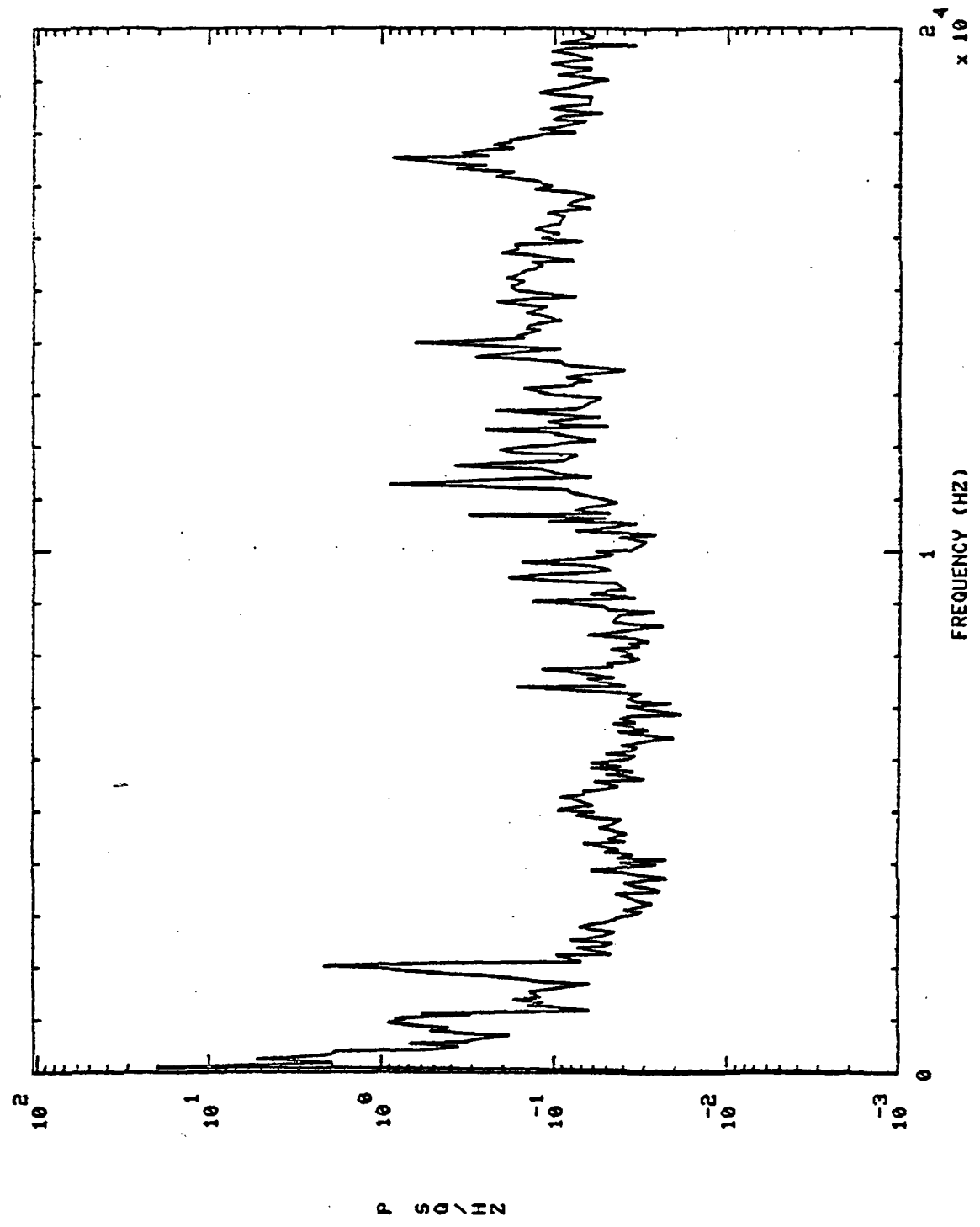
750111 HPOP D5 PR S+ 50.01H0,'S



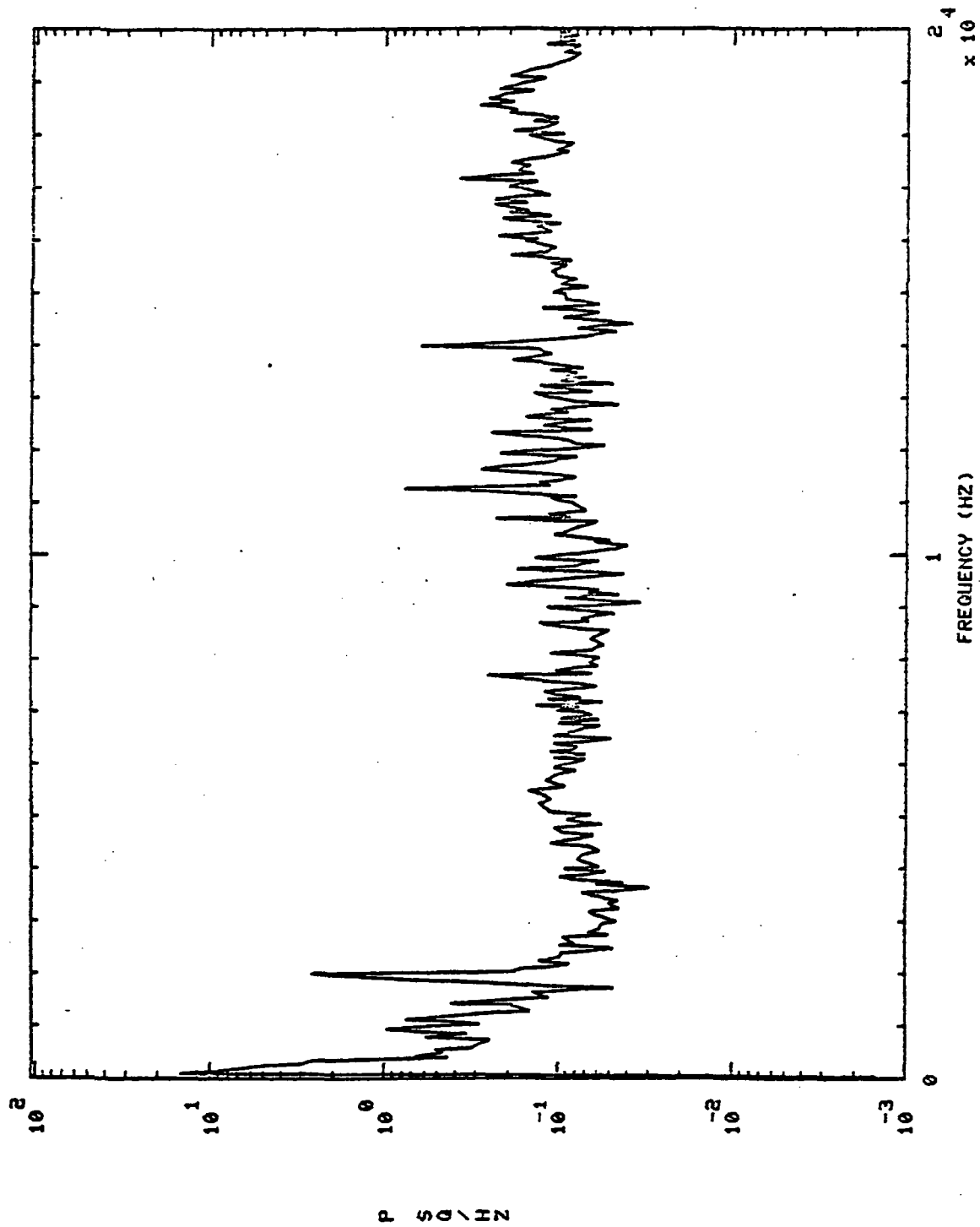
750111 HPOP DS PR S+ 60.01H0,'S



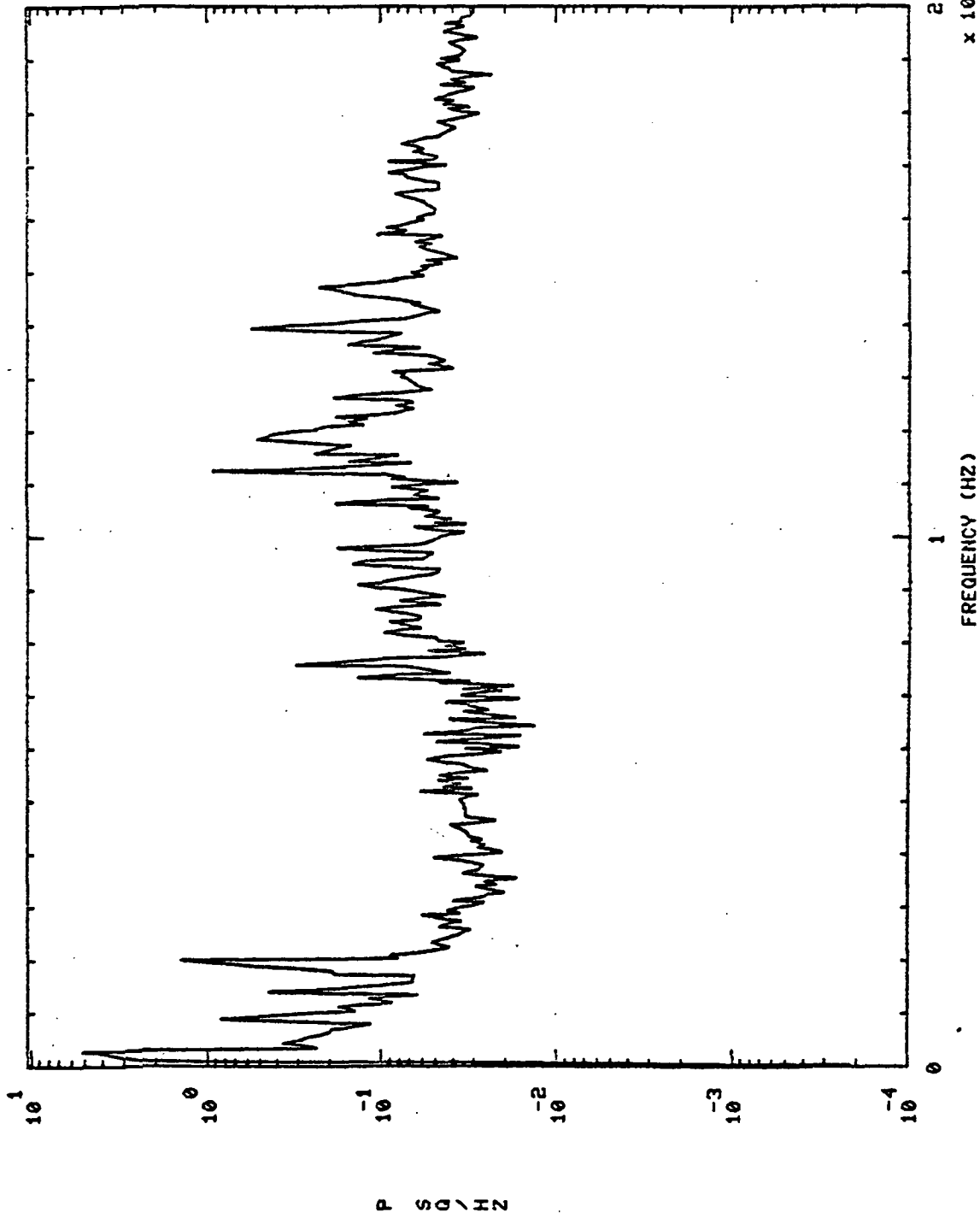
750111 HPOP DS PR S+ 70.01H0,'S



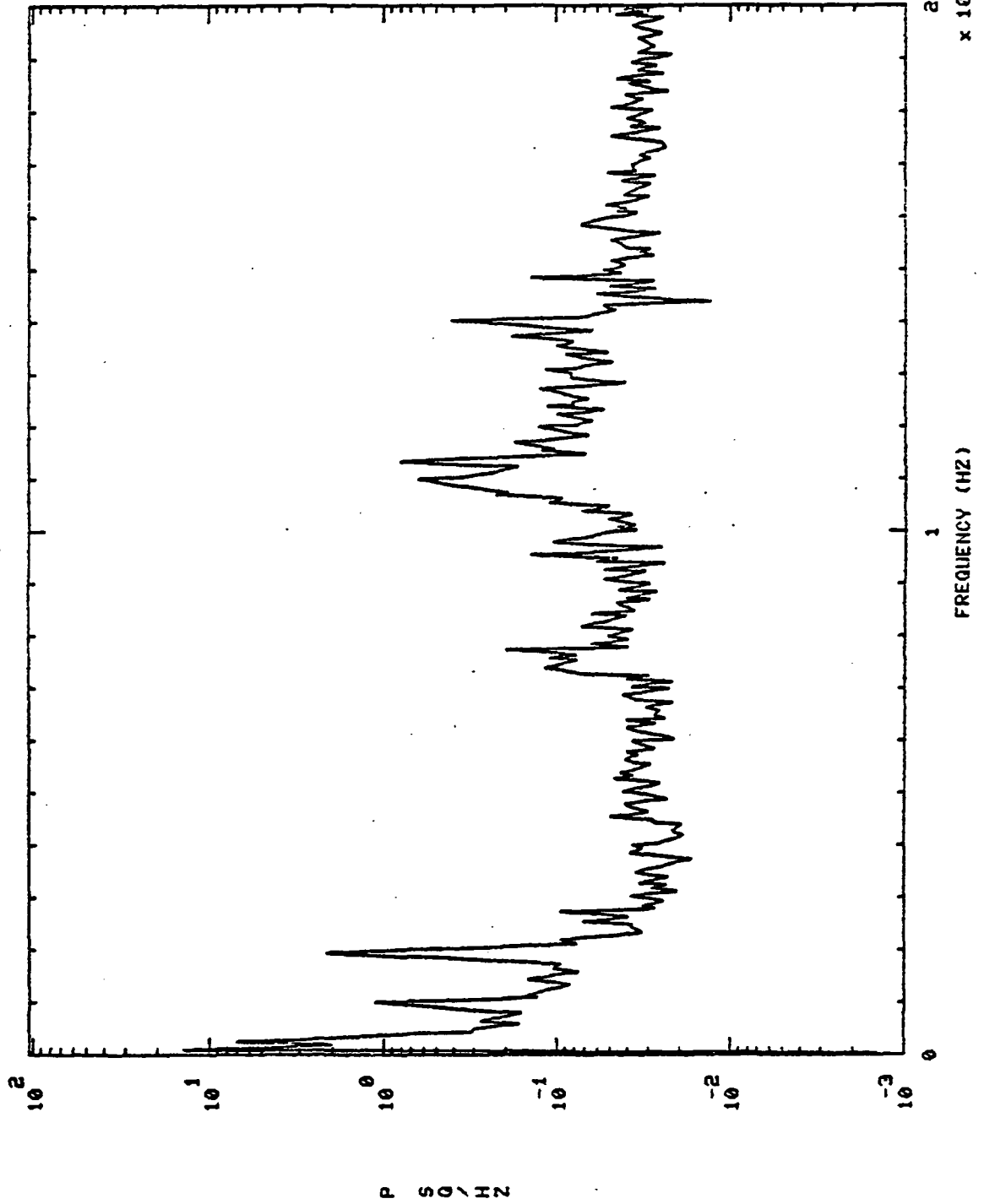
750111 HPOP DS PR S+ 80.01H0,'S



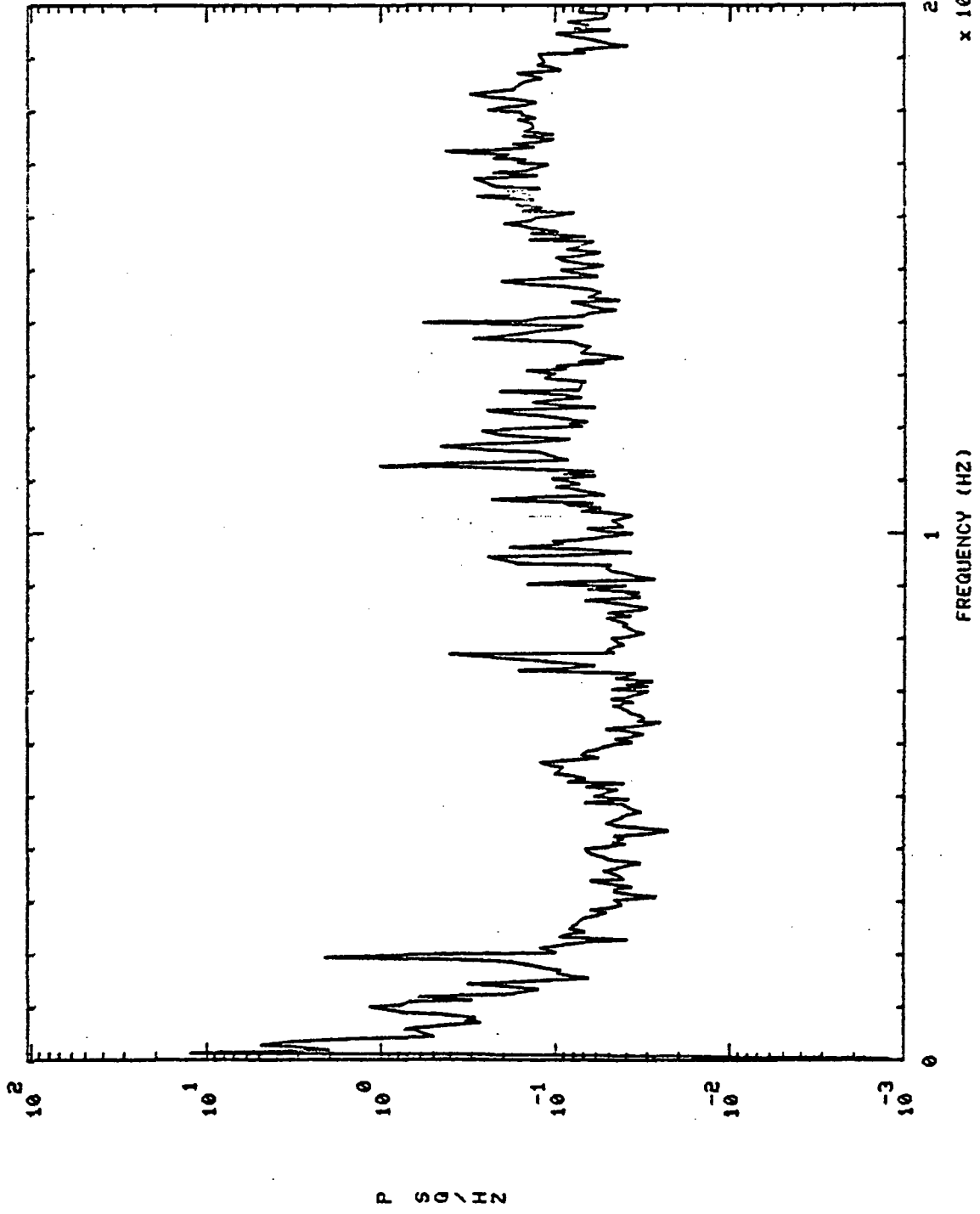
750111 HPOP DS PR S+ 90.01H0,'S



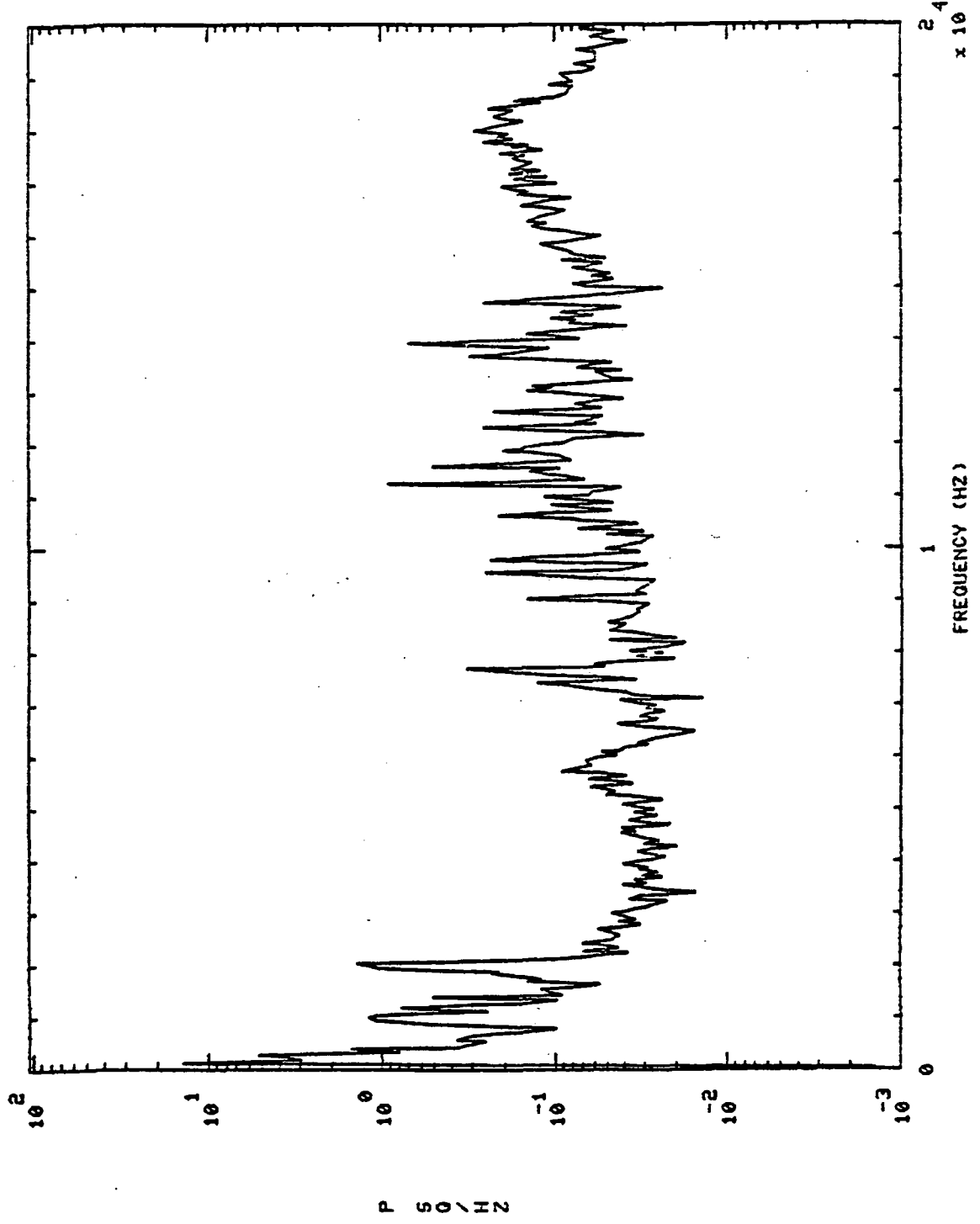
750111 HPOP DS PR S+ 100.01H0,'S



750111 HPOP DS PR S+ 120.01H0,'S



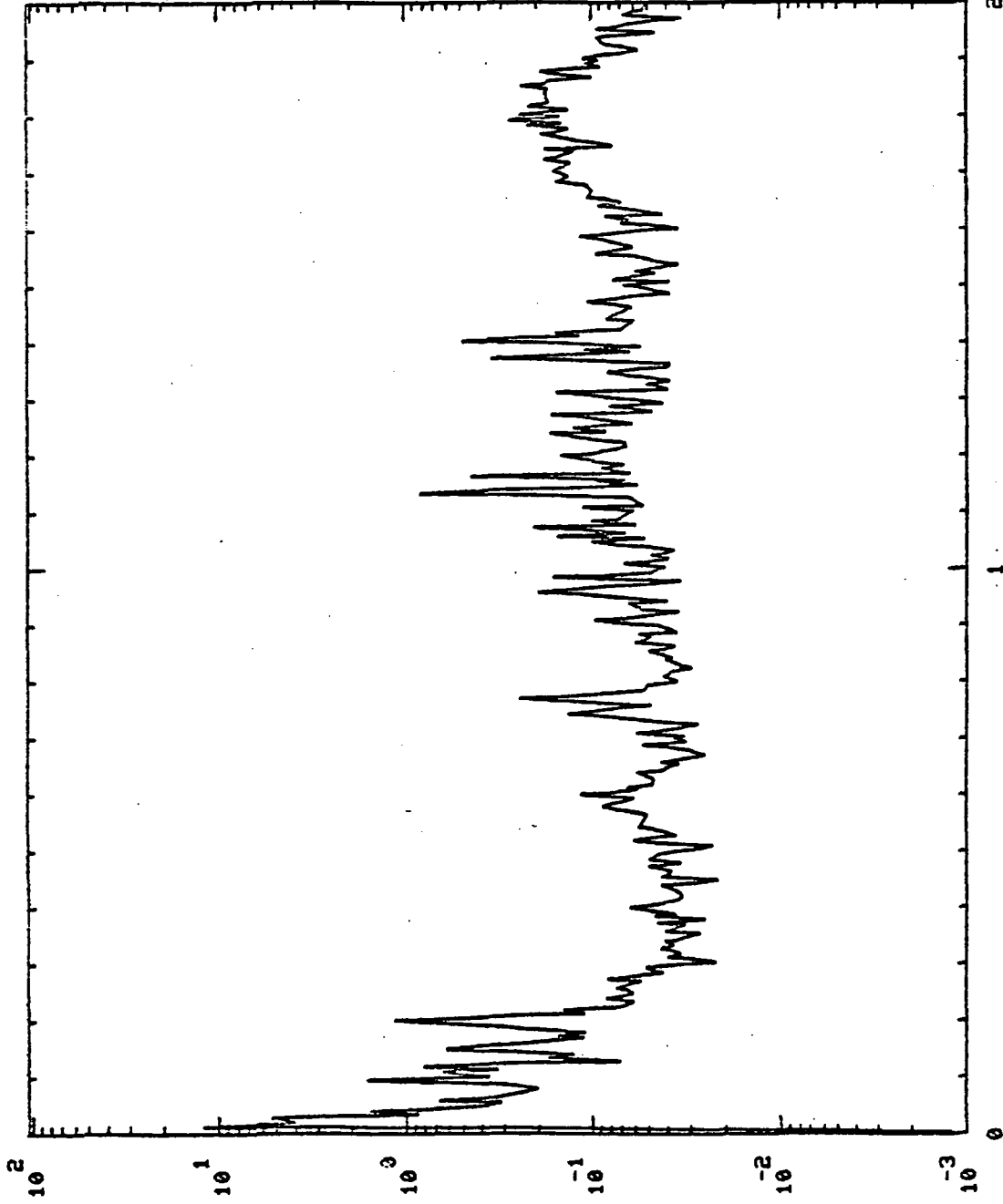
750111 HPOP DS PR S+ 200.01H0.'S



S+ 280.01H0.'S

HPOP DS PR

750111

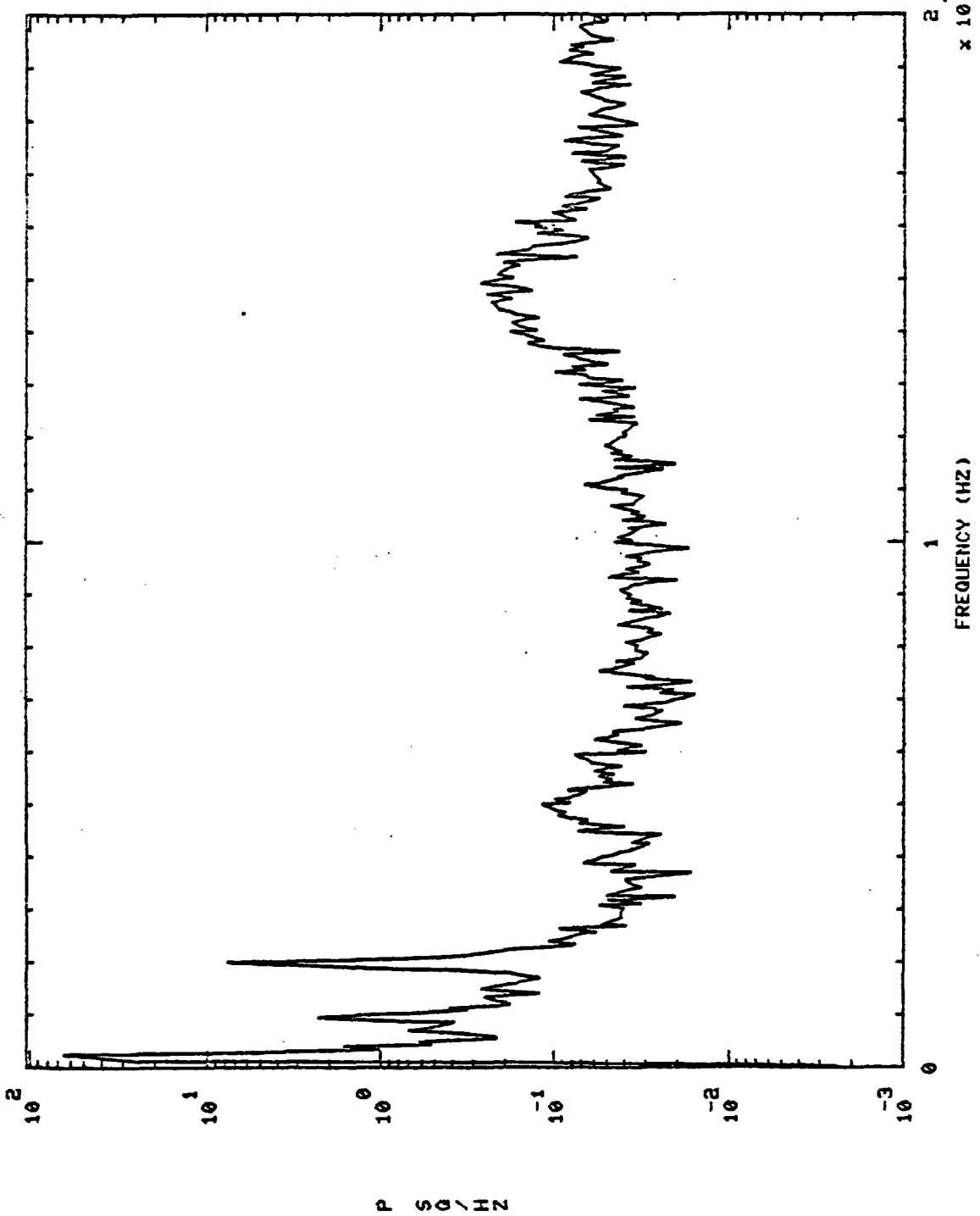


P SQ/HZ

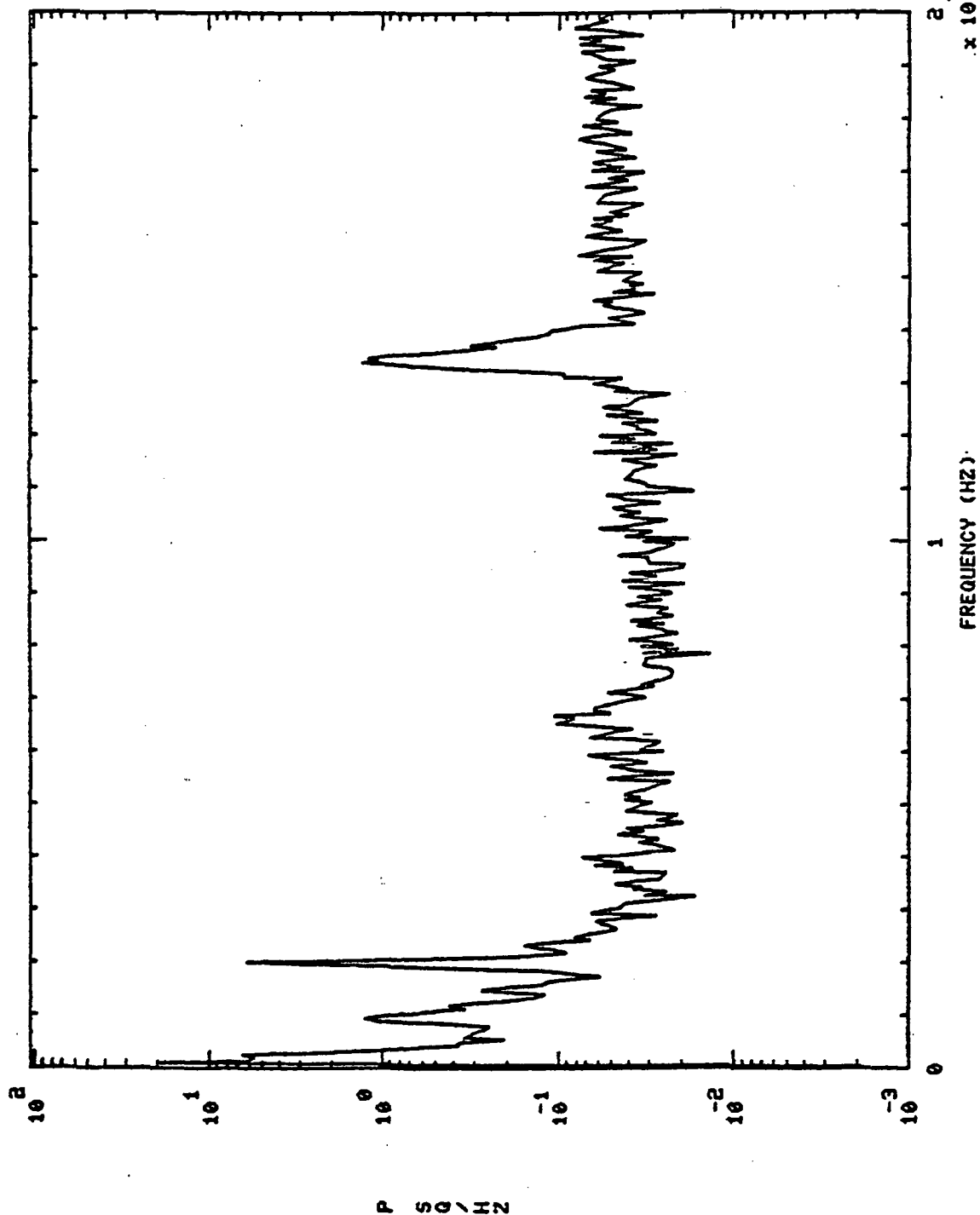
FREQUENCY (HZ)

$\times 10^4$

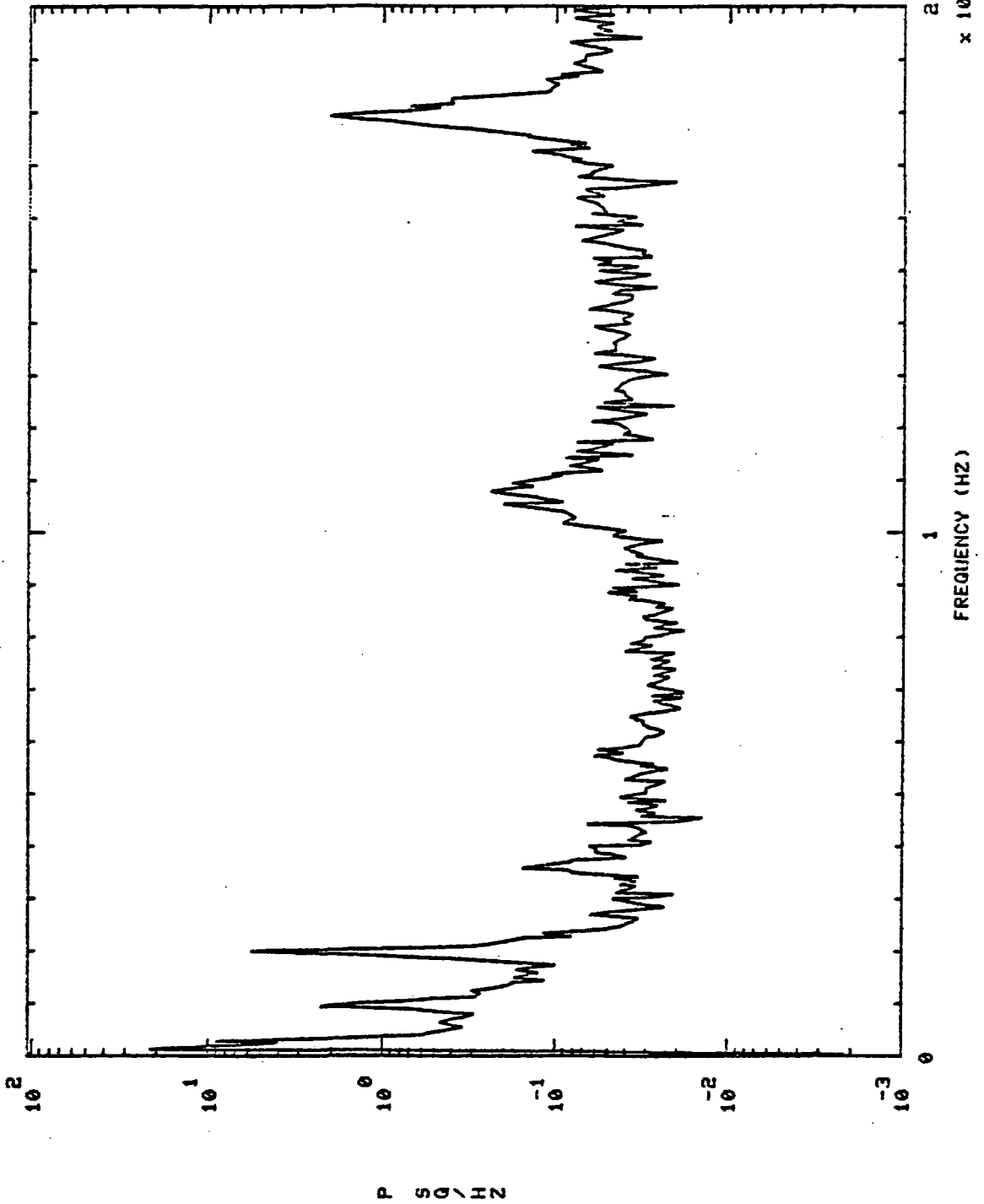
750111 PBP DS PR S+ 15.01H0,'S



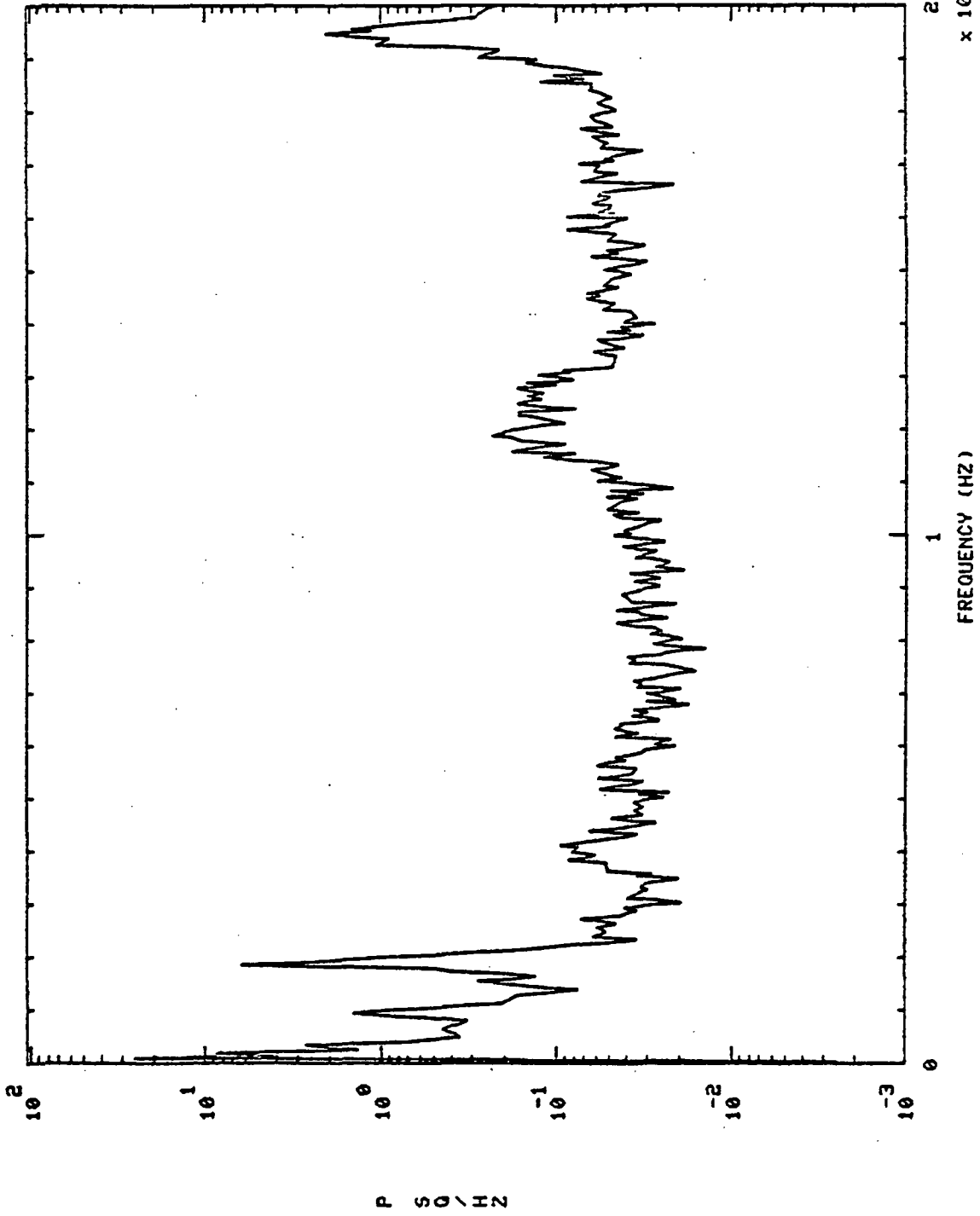
750111 PBP DS PR S+ 40.01H0,'S



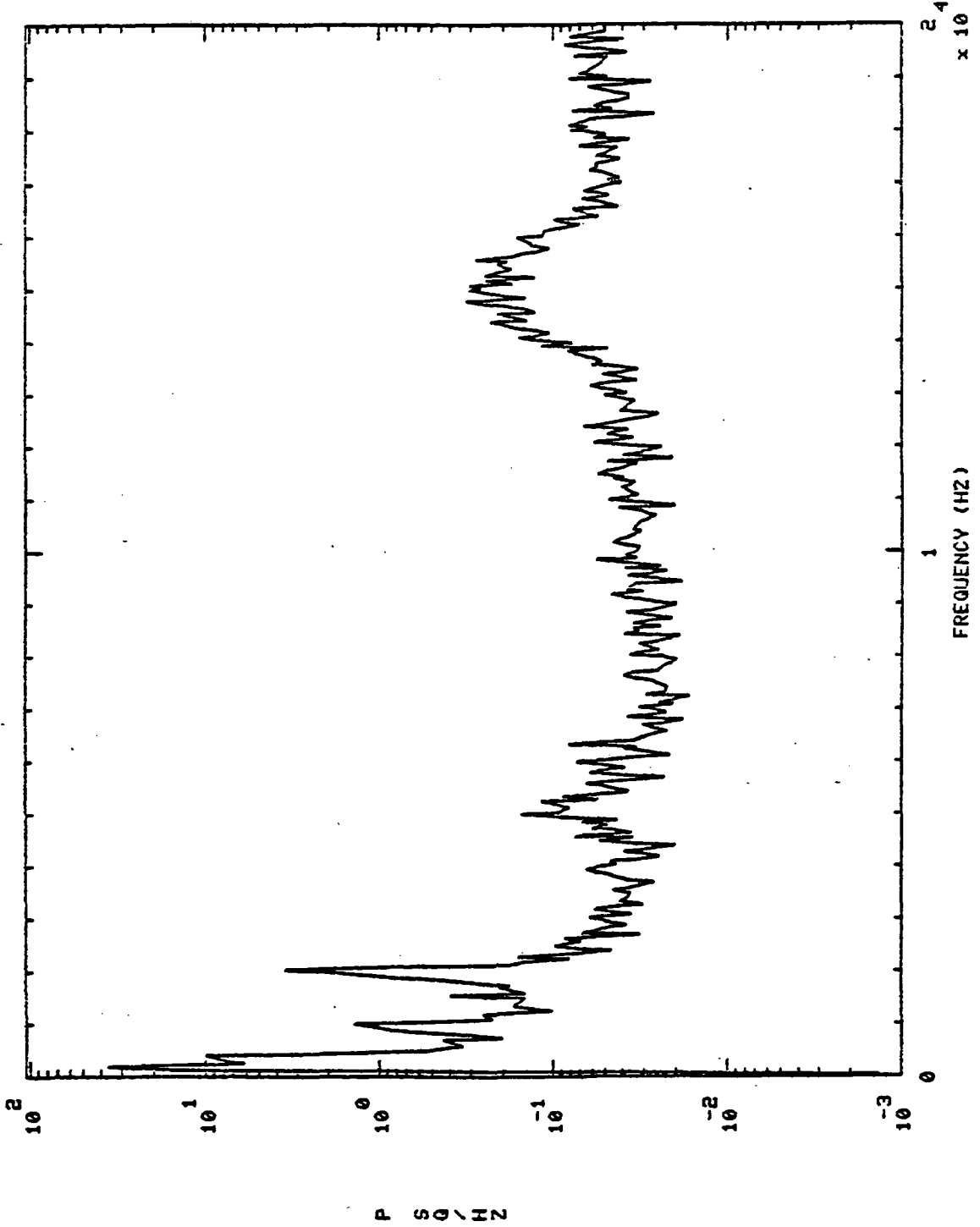
750111 PBP DS PR S-1 50.01H0,'S



750111 PBP DS PR S+ 60.01H0,'S

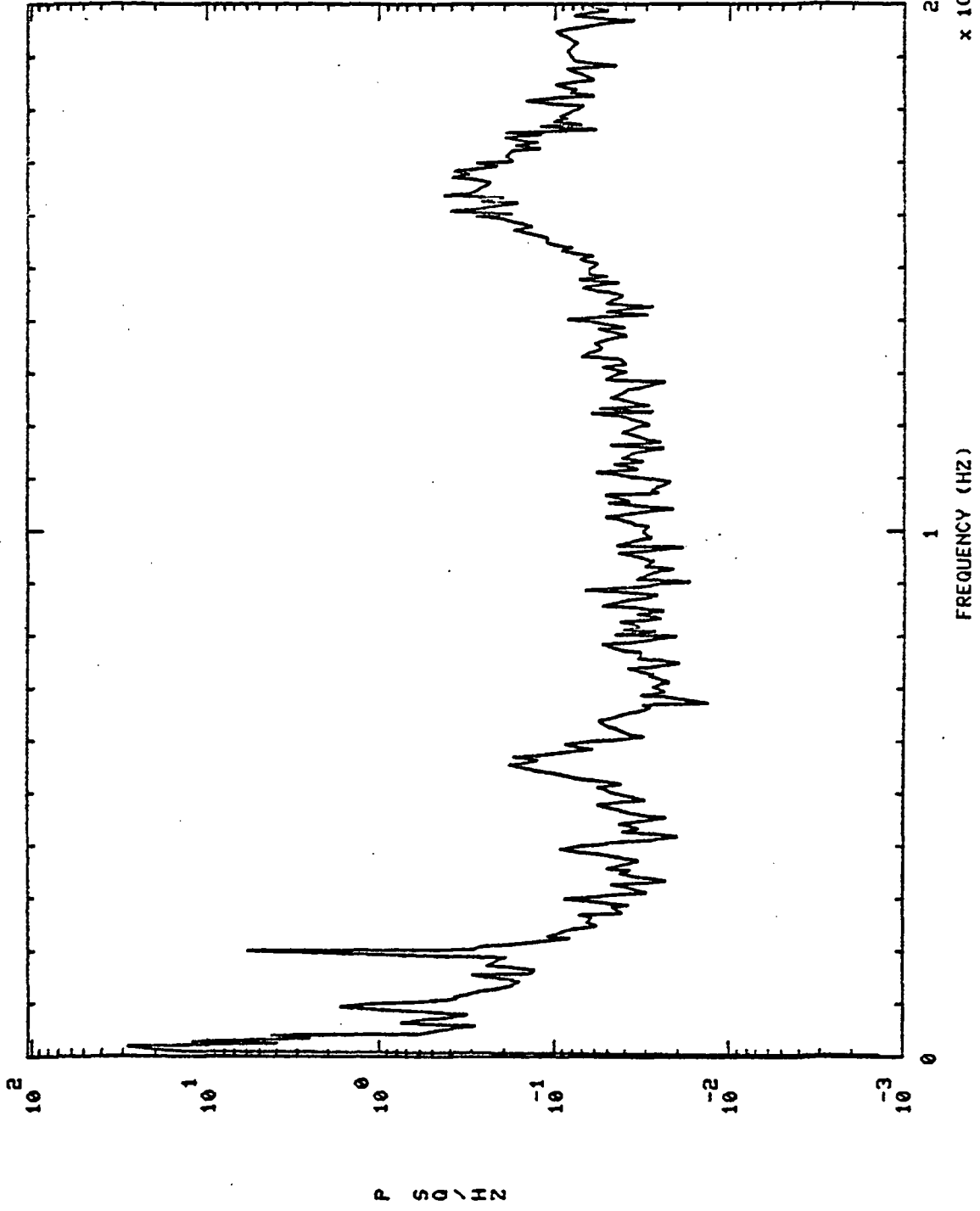


750111 PBP DS PR S+ 70.01H0,'S

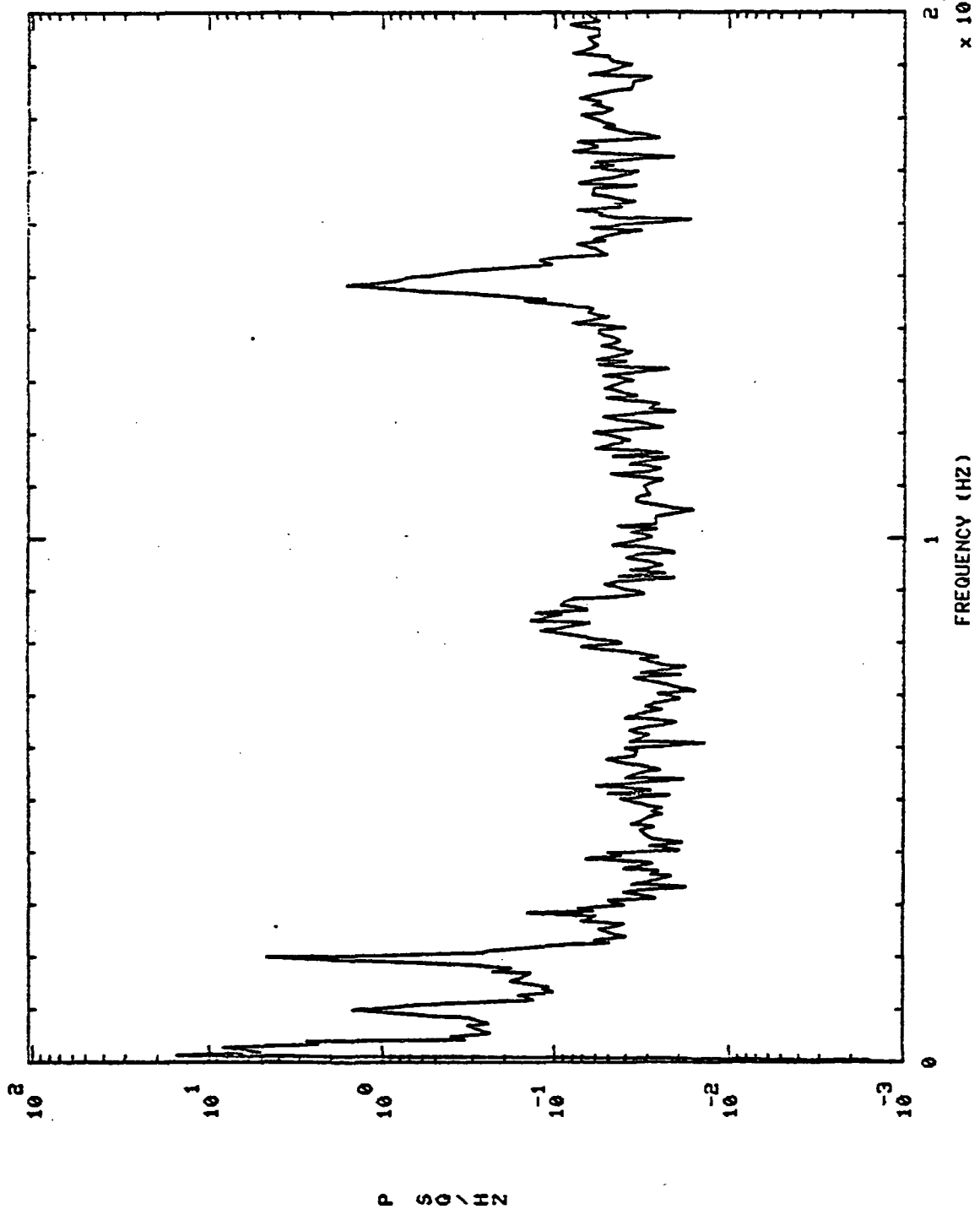


S+ 80.01H0,'S

750111 PBP DS PR



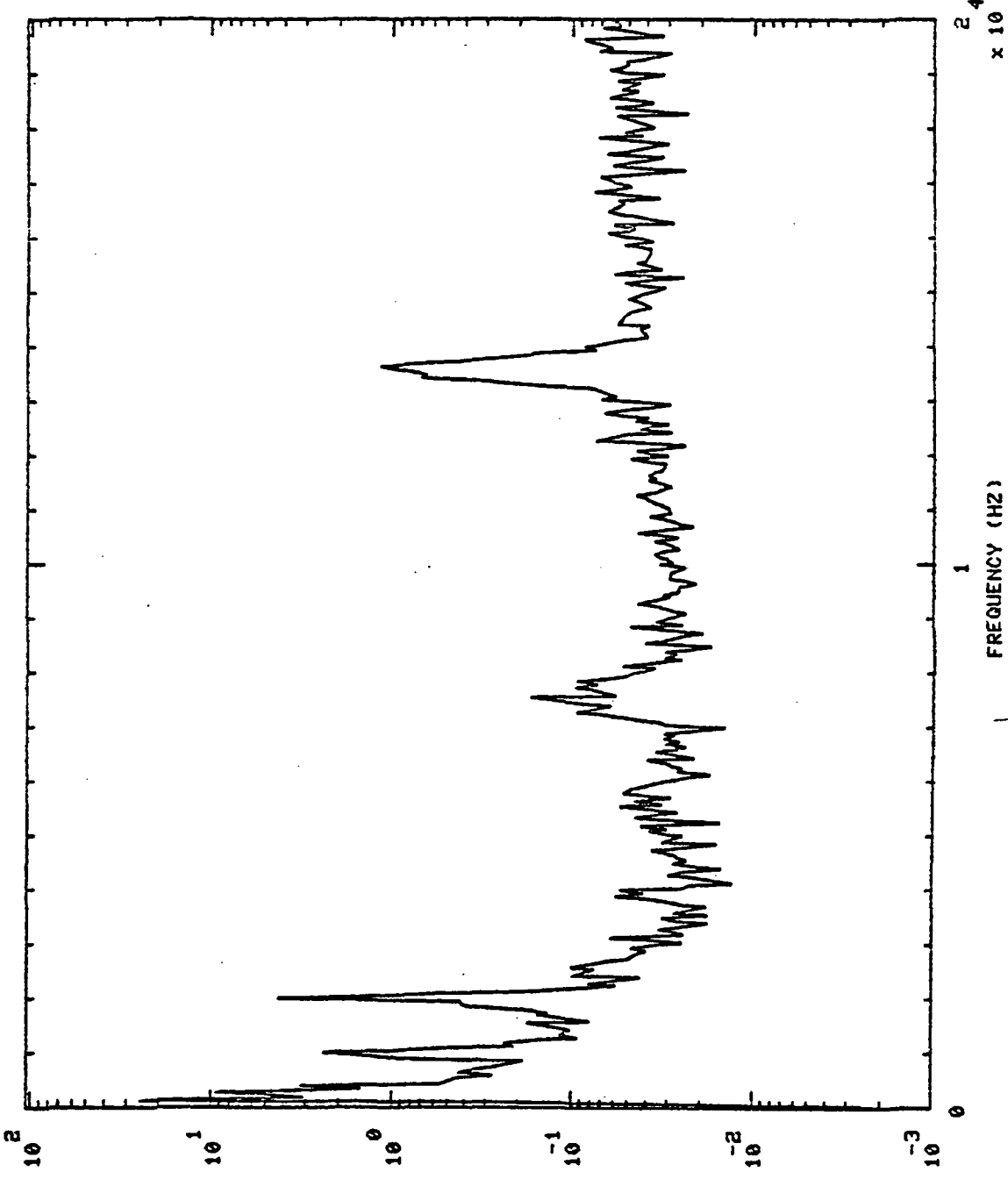
750111 PBP DS PR S+ 90.01H0,'S



S+ 100.01H0,'S

PBP DS PR

750111

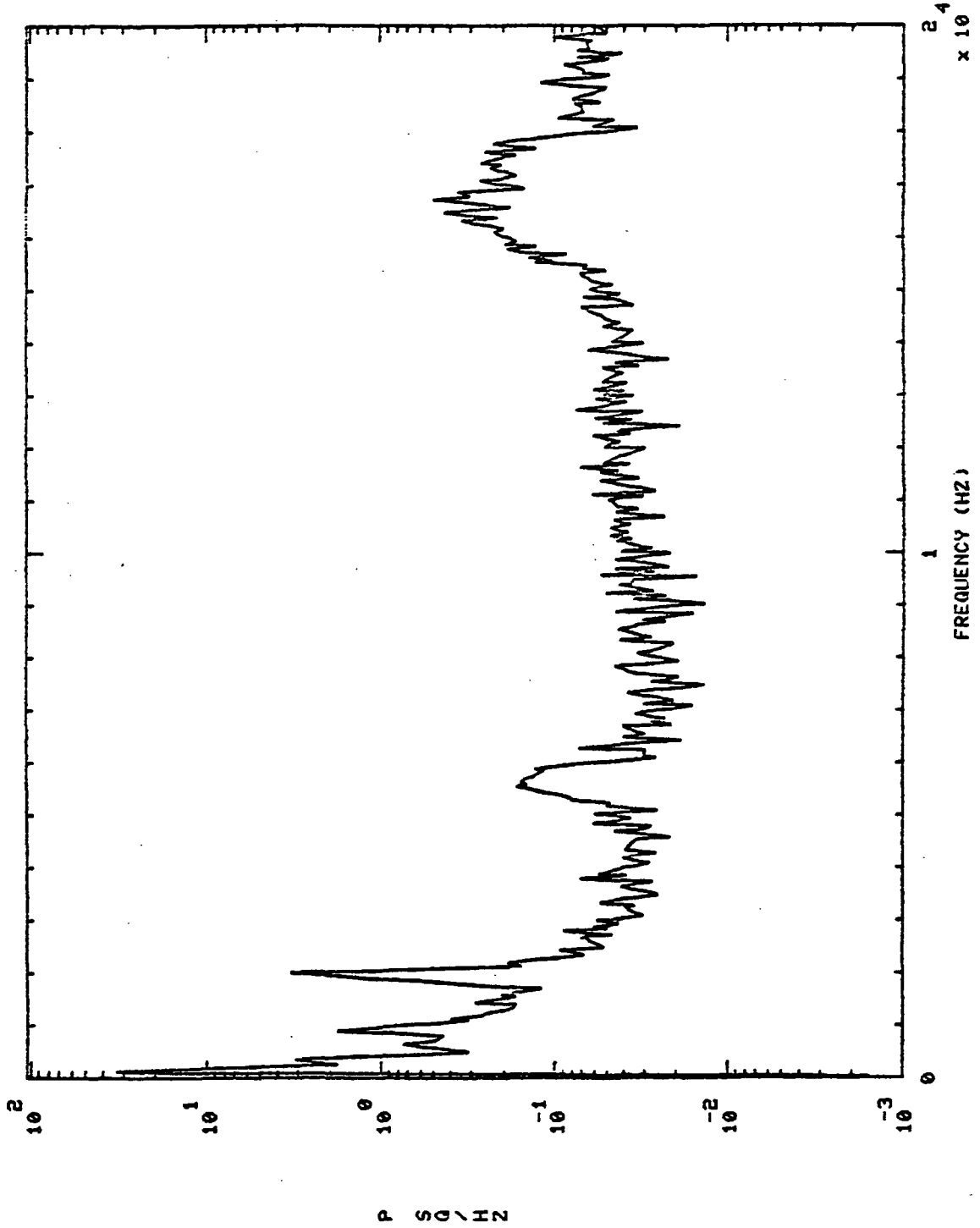


$10^{2.4}$
x 10

FREQUENCY (HZ)

P S G / H Z

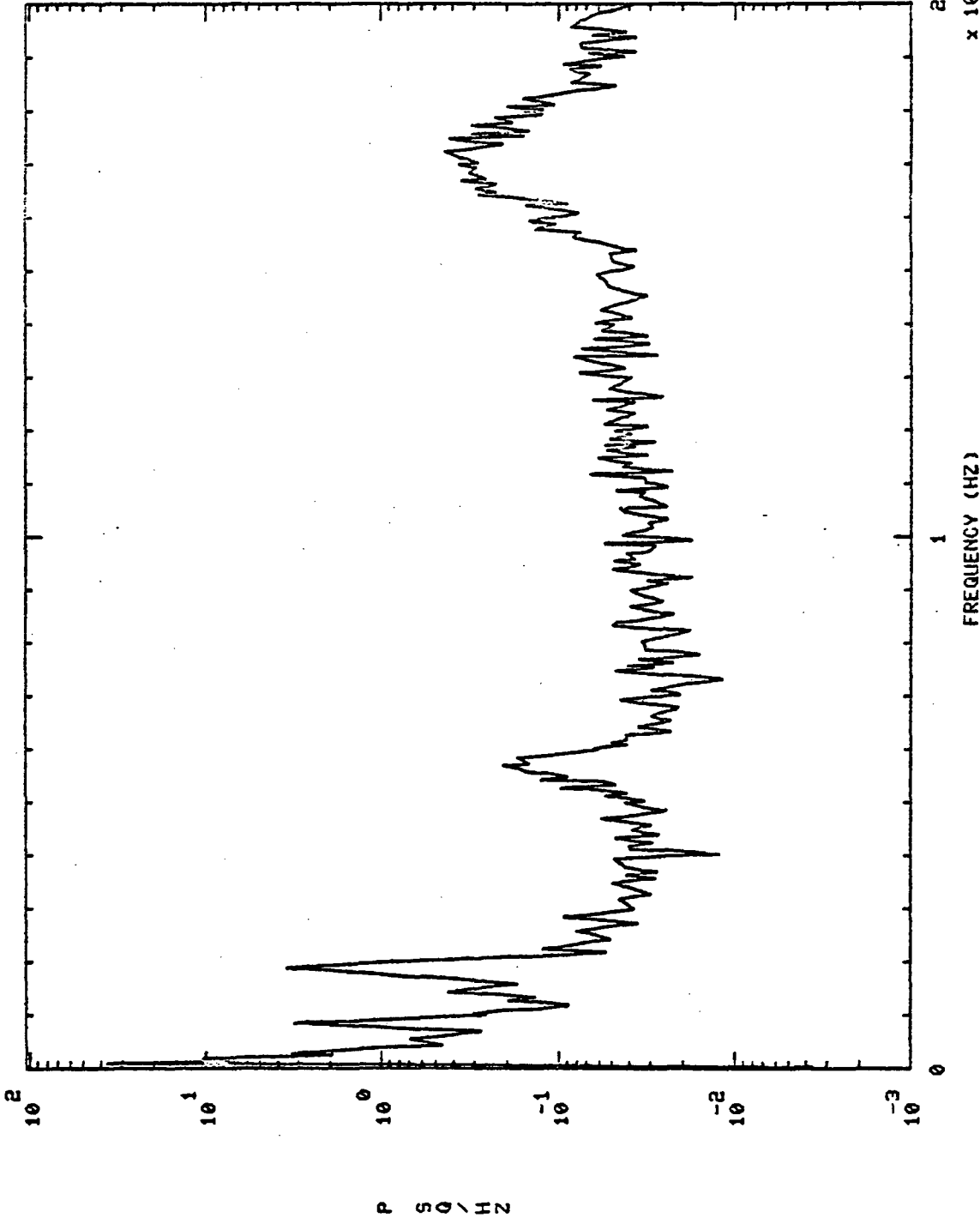
750111 PBP DS PR S+ 120.01H0,'S



St 200.01H0,'S

PBP DS PR

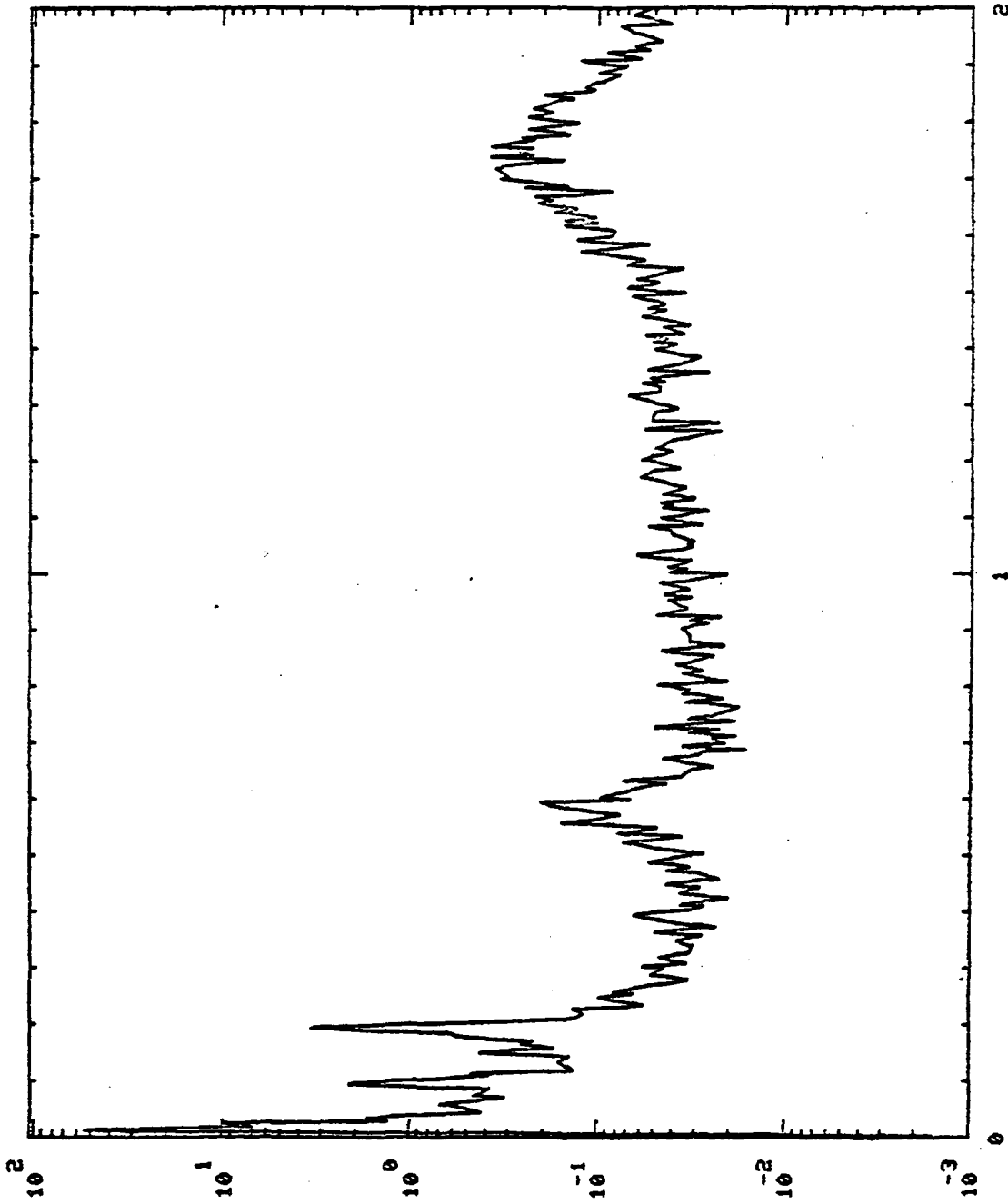
750111



S+ 280.01H0,'S

PBP DS PR

750111

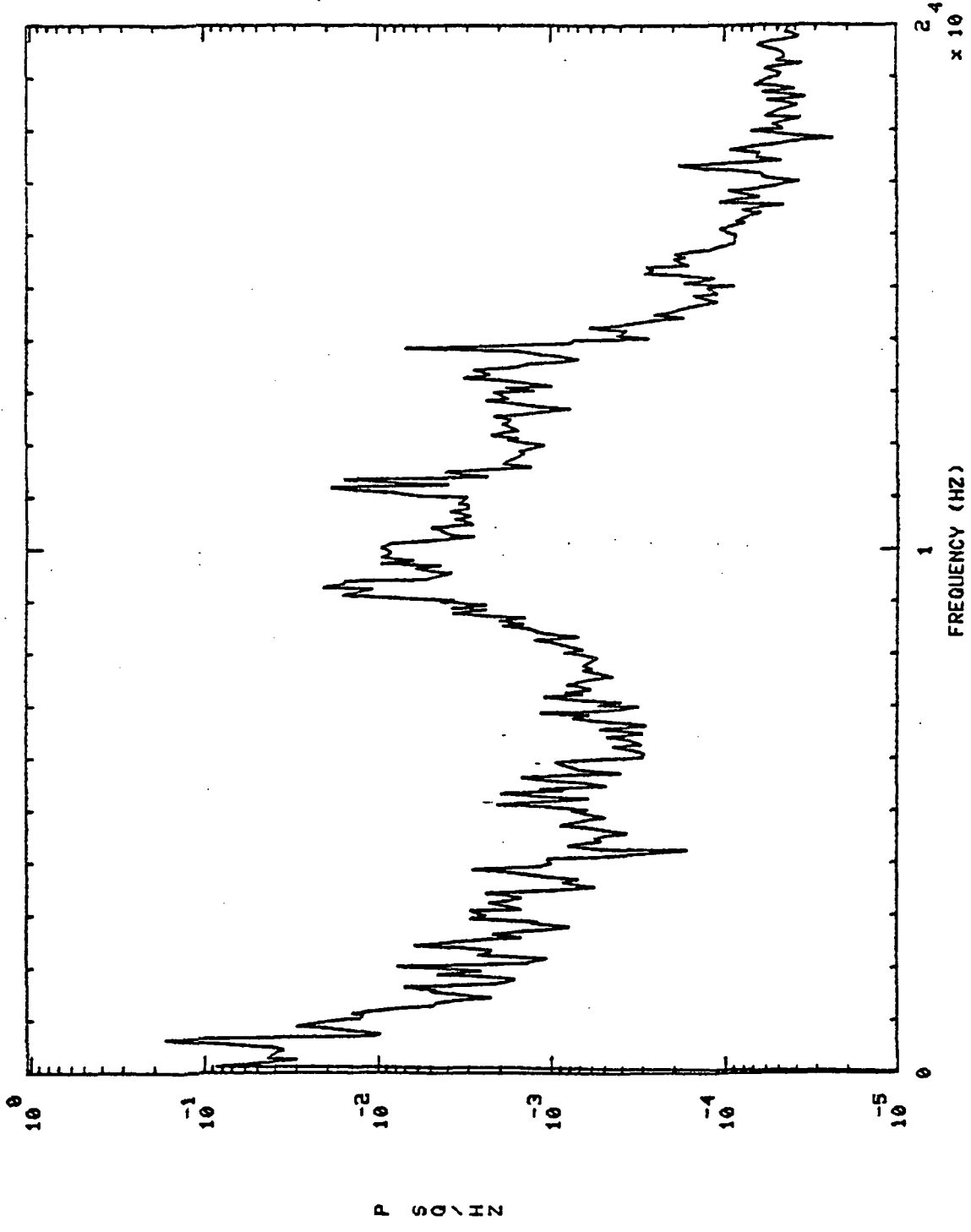


P S G / H Z

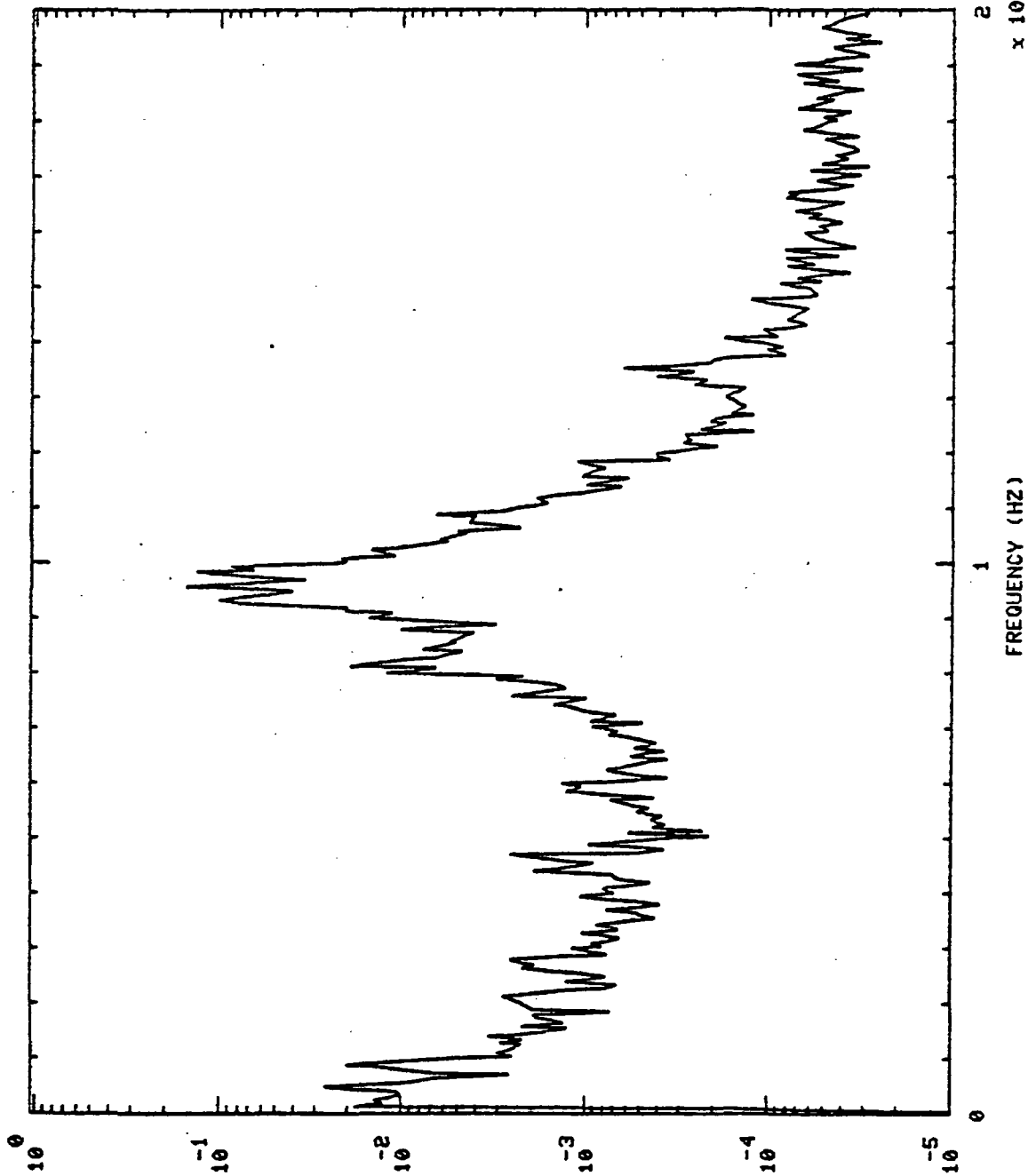
FREQUENCY (HZ)

$\times 10^4$

750111 PBP FUEL SUP PR S+ 15.050/HZ



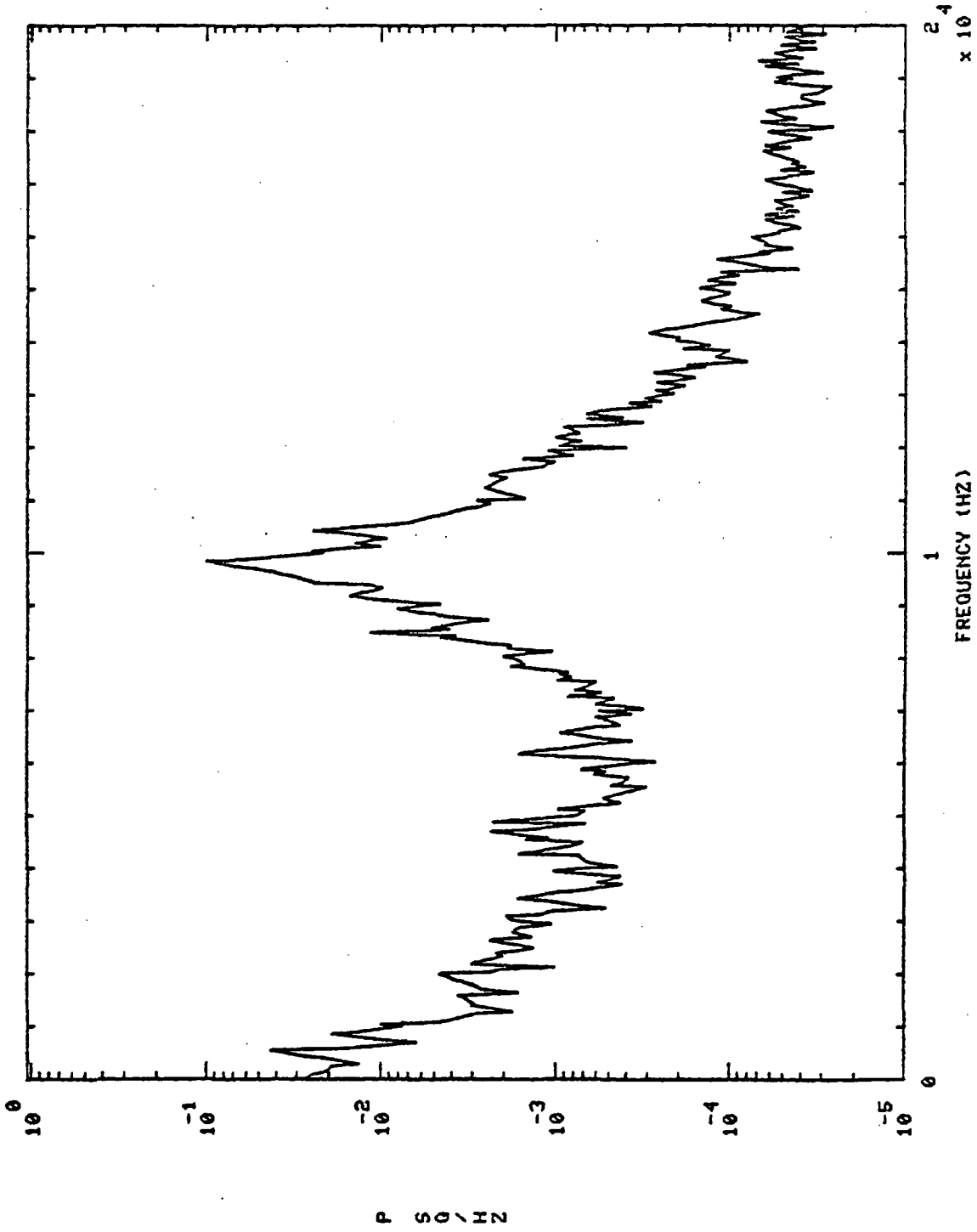
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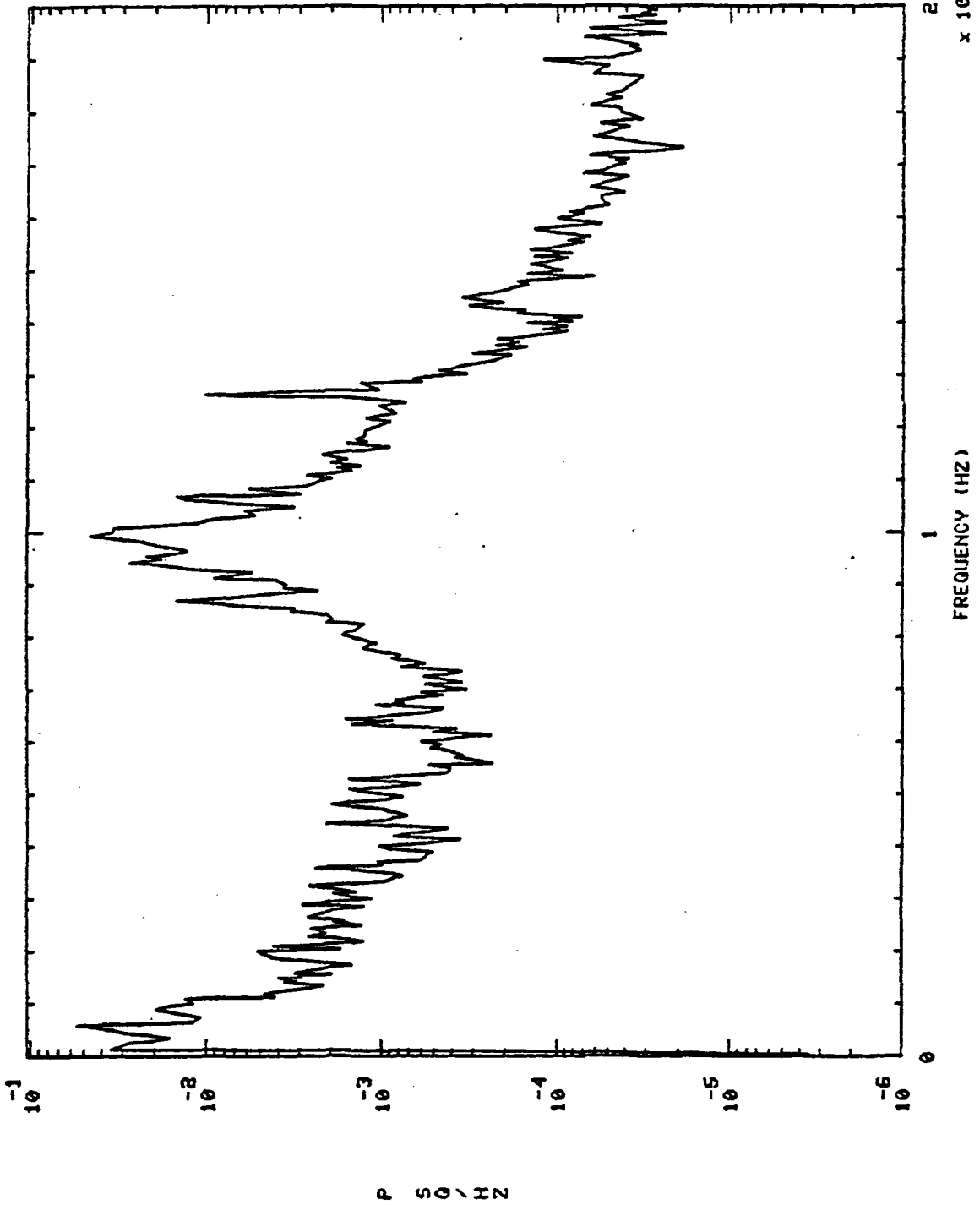
P S \ H N

750111 PBP FUEL SUP PR

S+ 50.01H0,'S



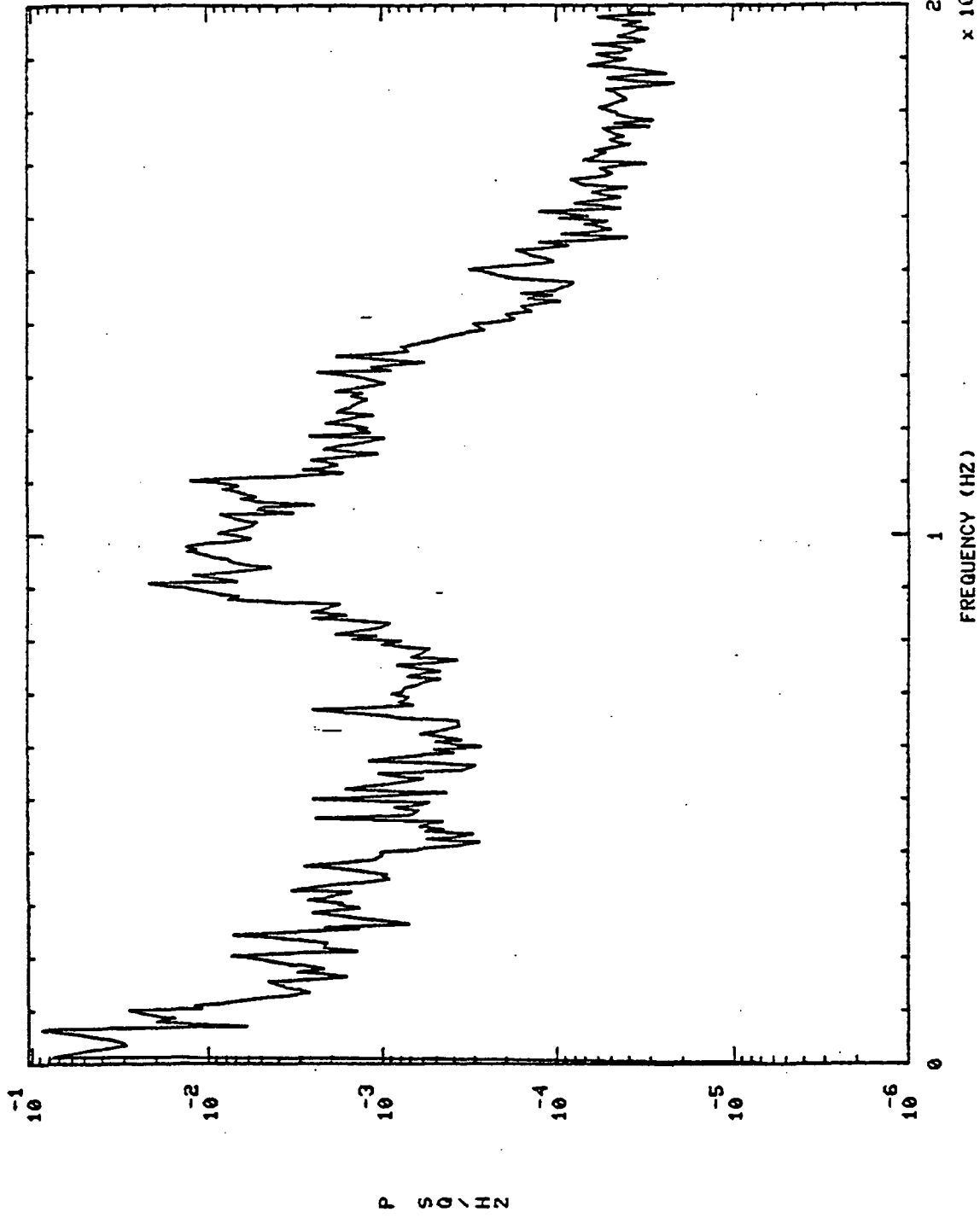
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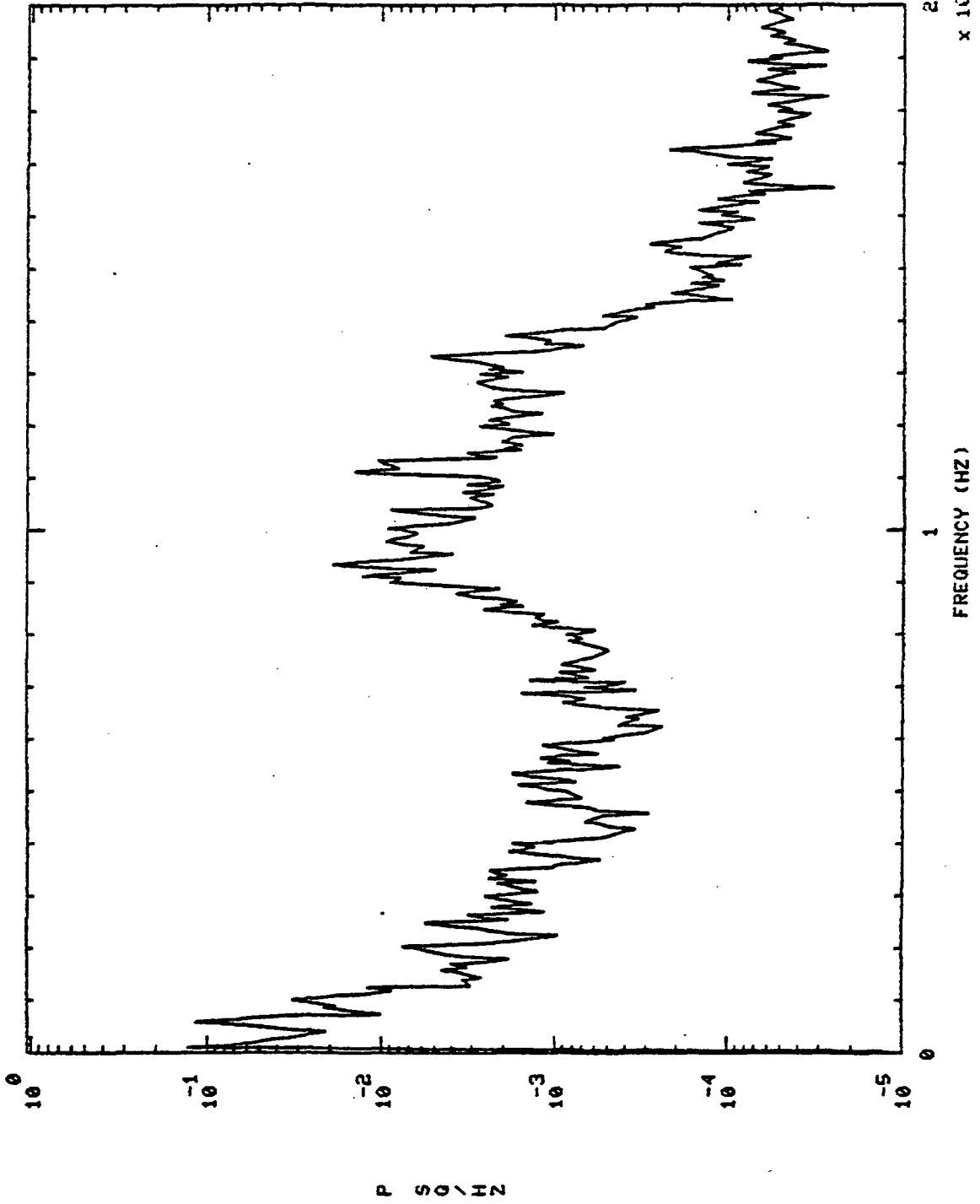
750111

PBP FUEL SUP PR

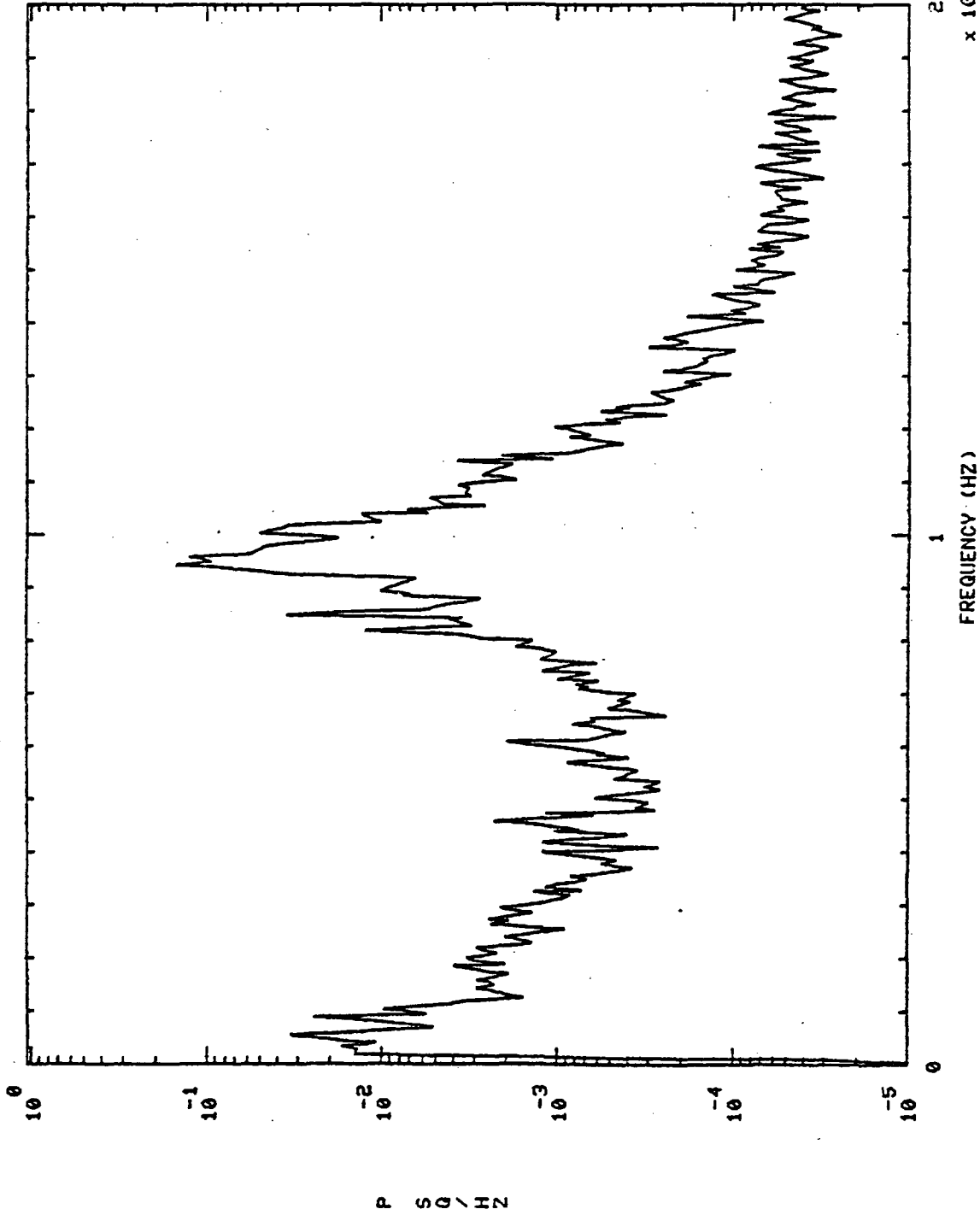
S+ 70.01H0,'S



750111 PBP FUEL SUP PR S+ 80.01H0,'S



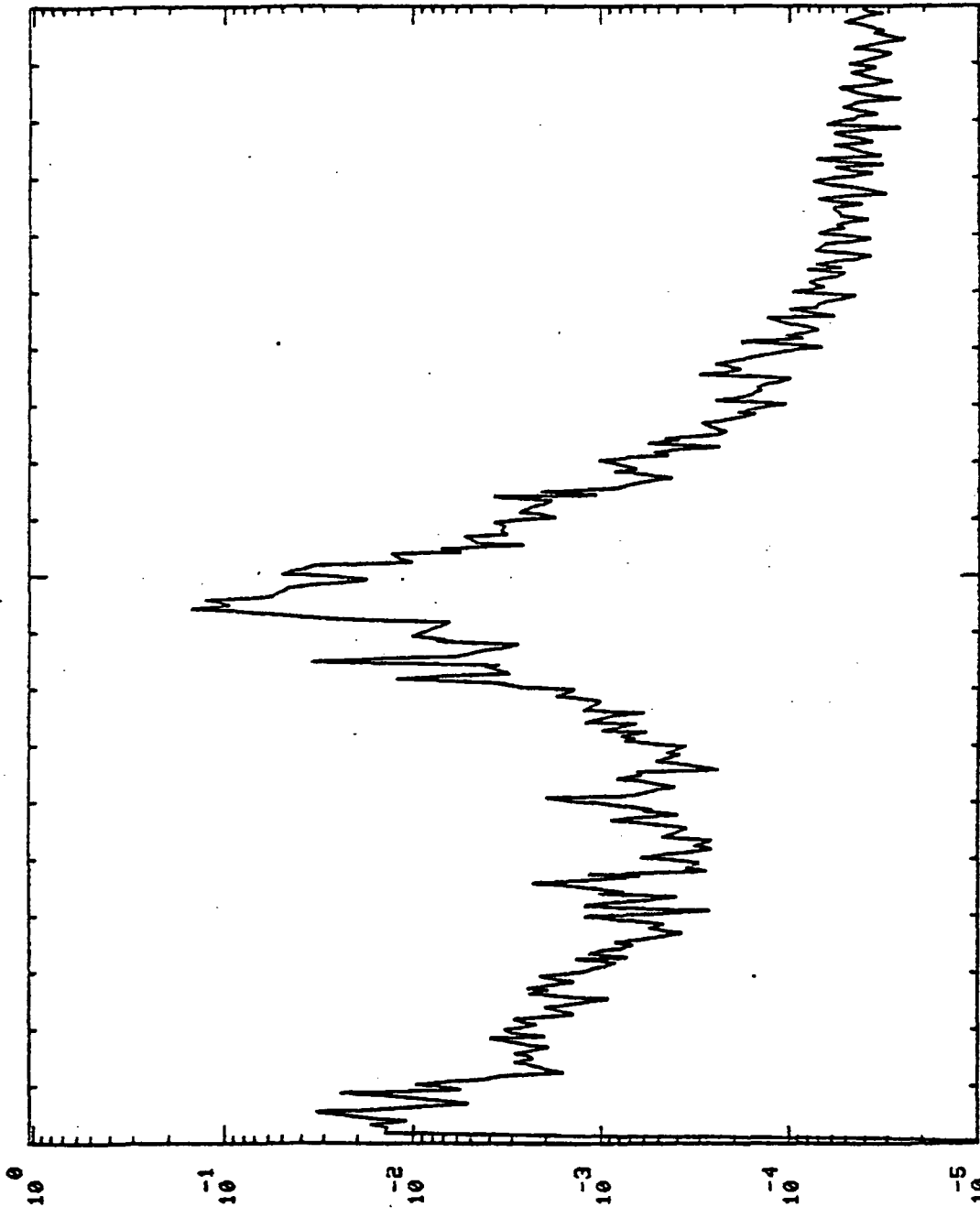
750111 PBP FUEL SUP PR S+ 90.01H0,'S



750111 PBP FUEL SUP PR S+ 90.01H0,'S

750111 PBP FUEL SUP PR

750111

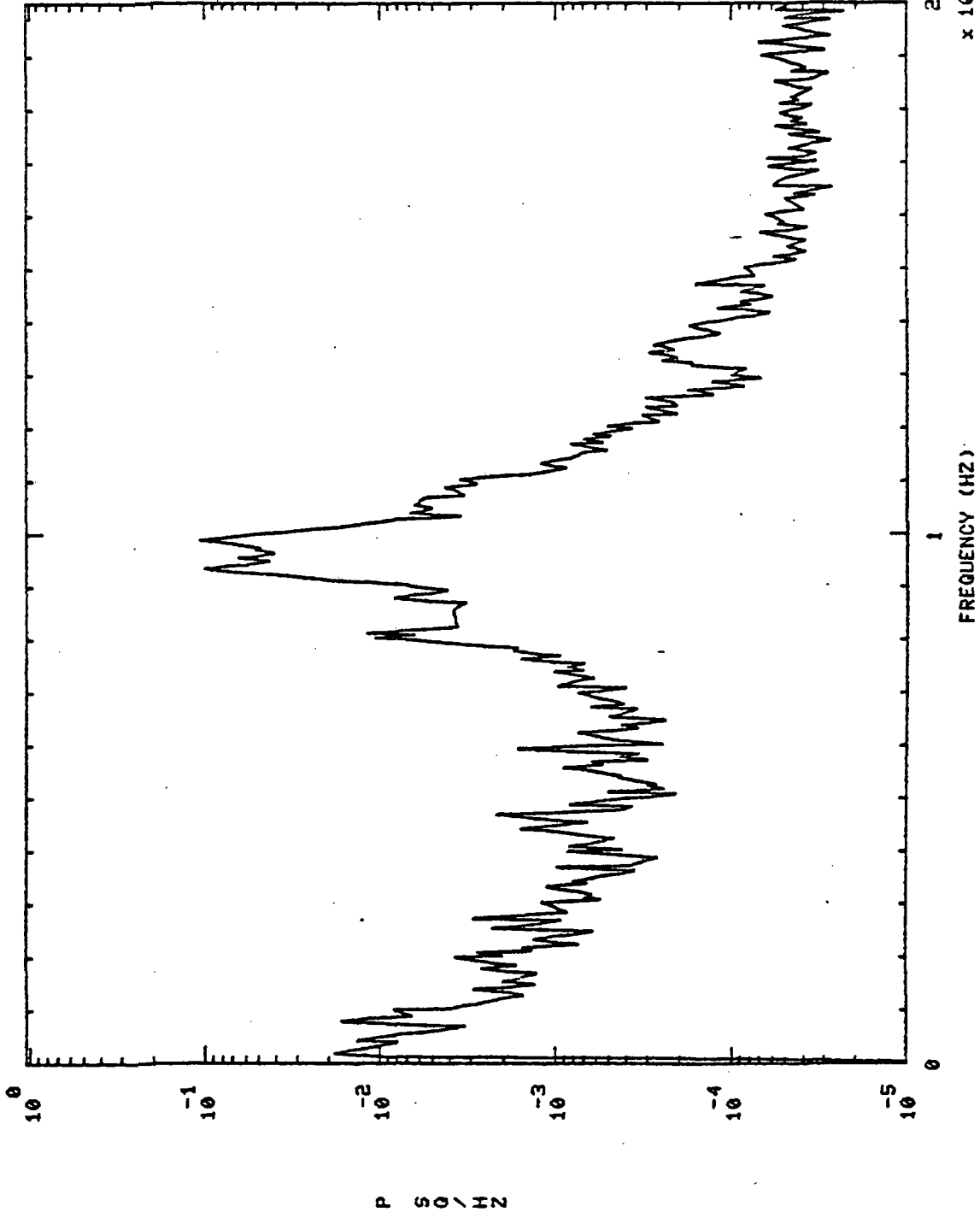


2.4
x 10⁴

FREQUENCY (HZ)

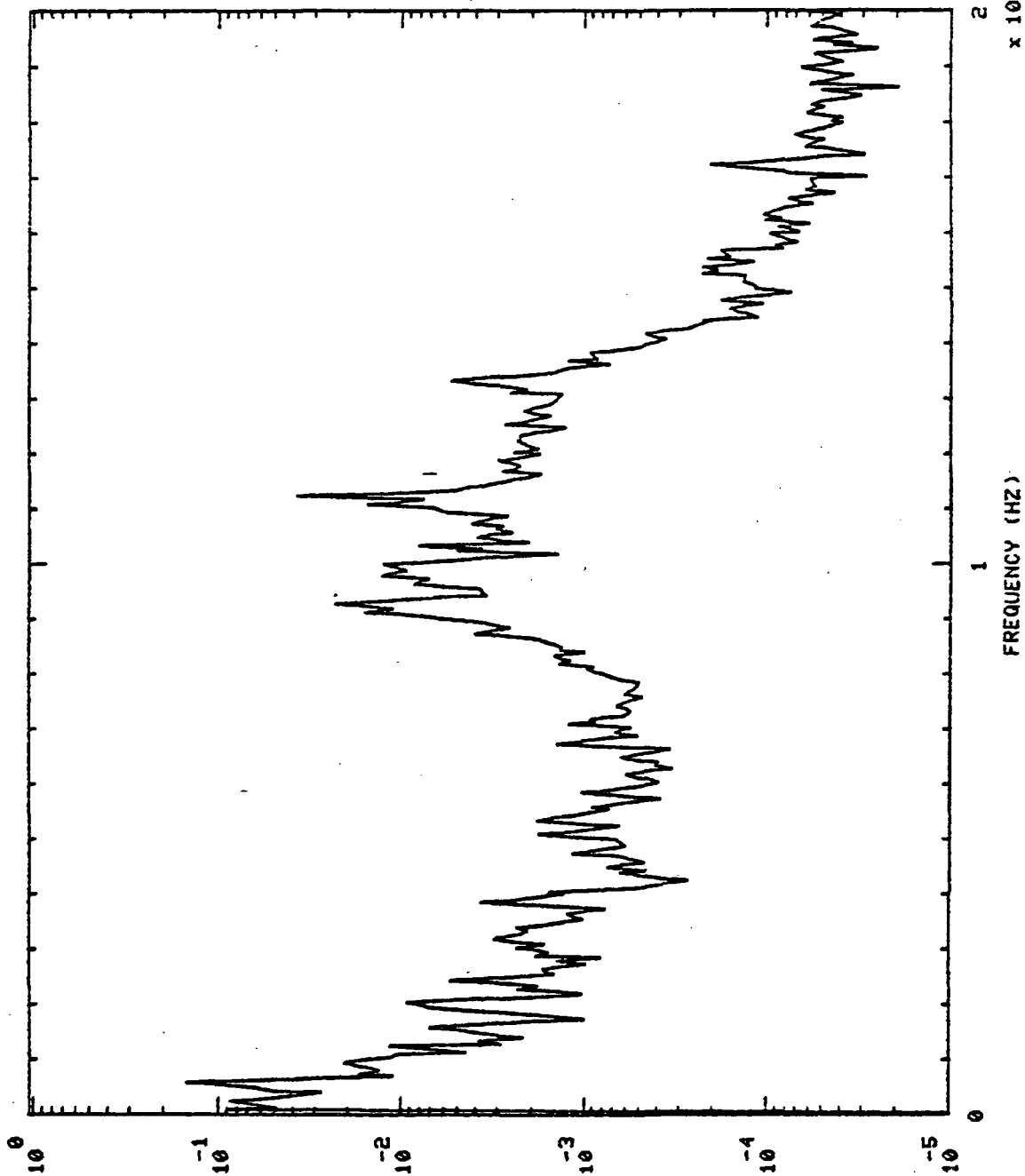
P SQ \ HZ

750111 PBP FUEL SUP PR S+ 100.01H0,'S



750111 PBP FUEL SUP PR S+ 120.01H0,'S

750111 PBP FUEL SUP PR



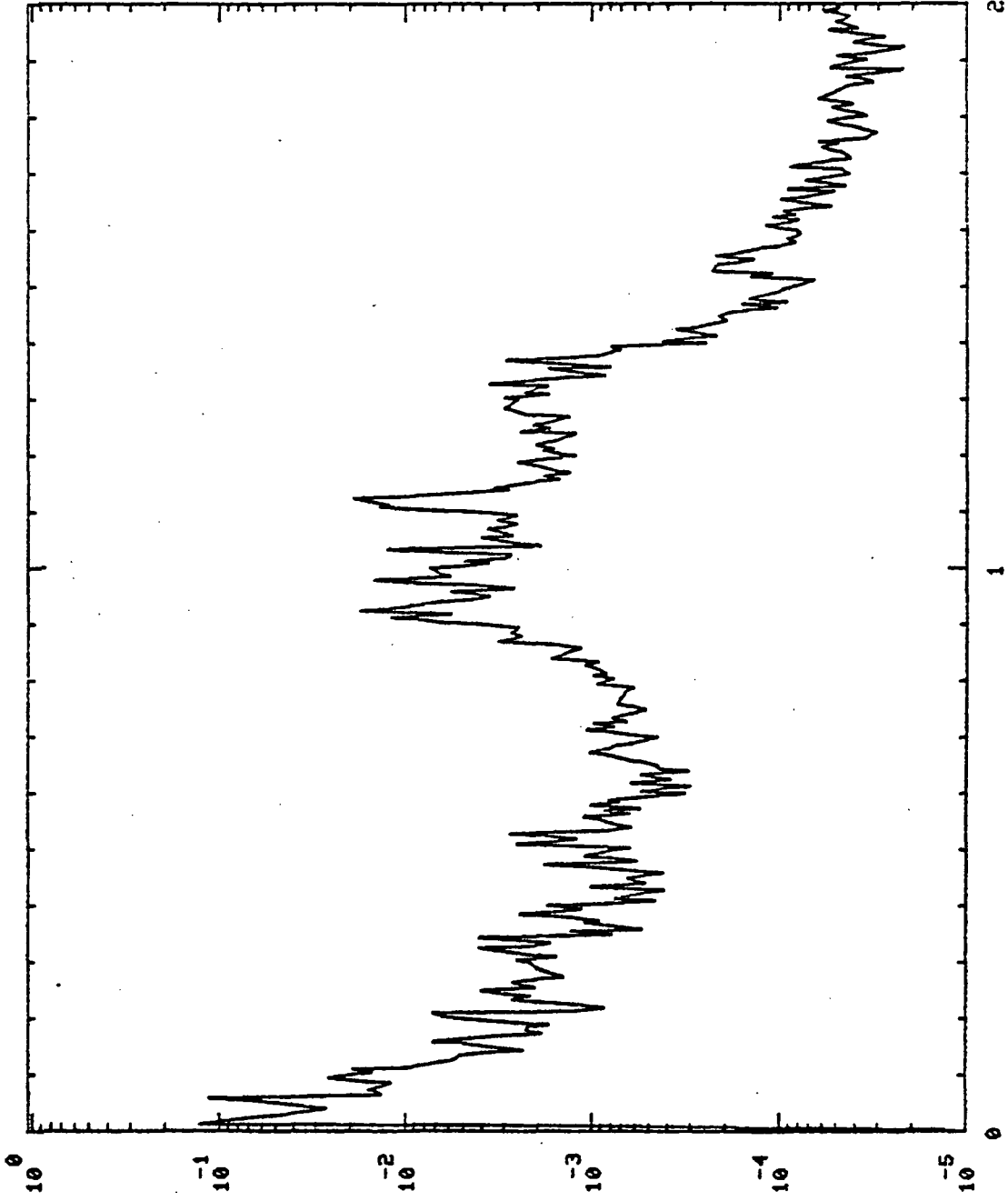
P S0 / HZ

10^{2.4}
x 10

FREQUENCY (HZ)

750111 PBP FUEL SUP PR

S+ 200.01H0,'S

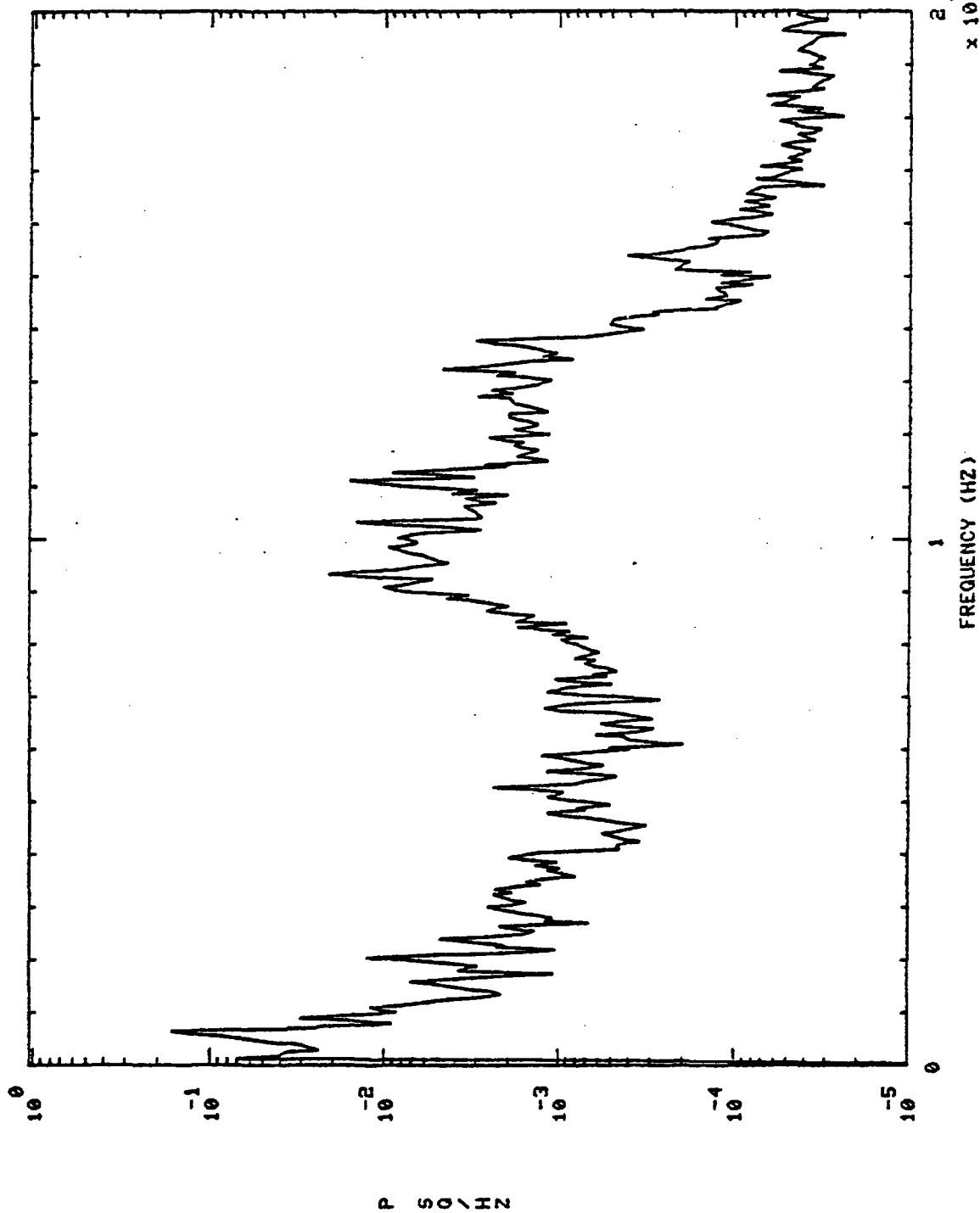


P SQ \ HZ

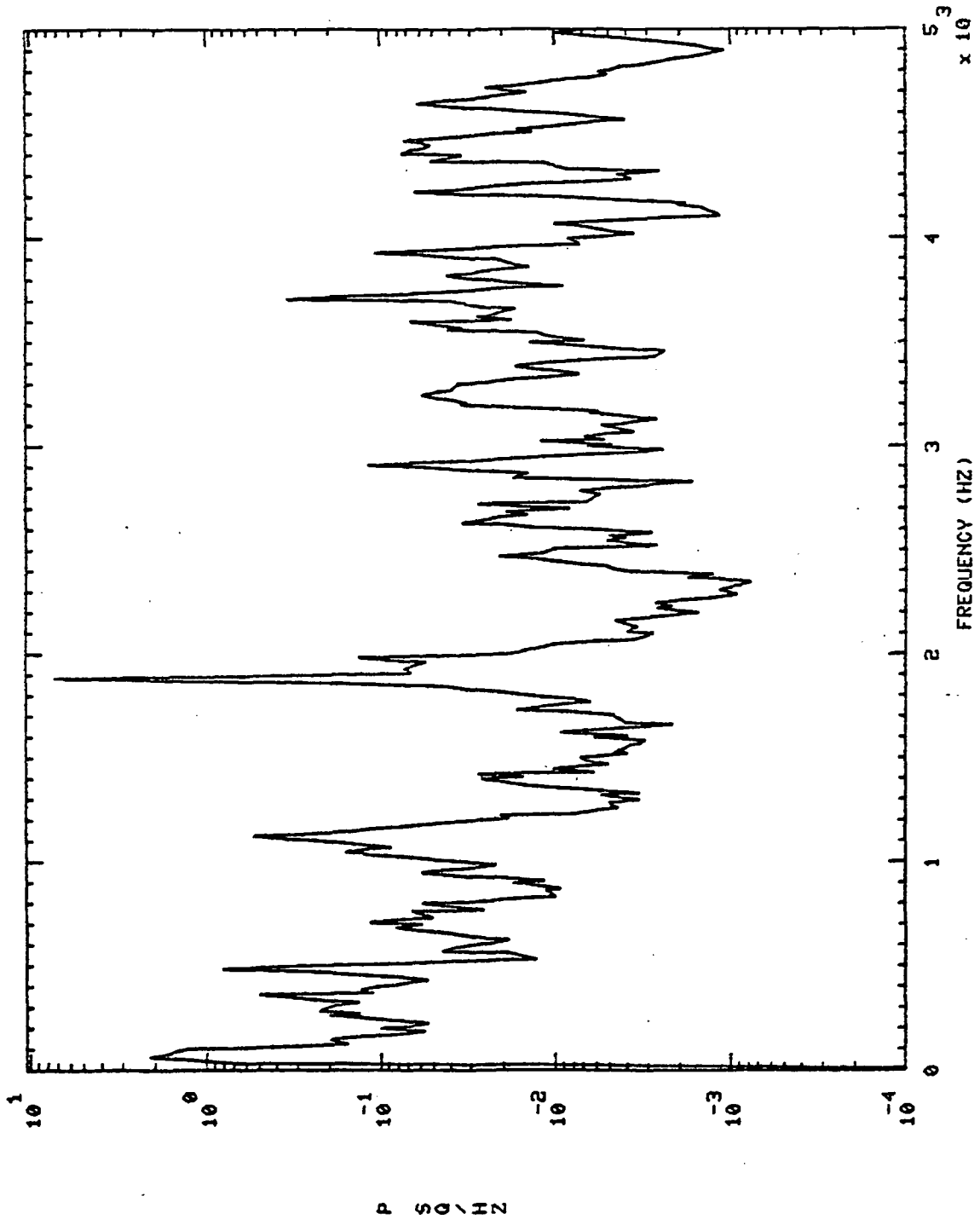
FREQUENCY (HZ)

2.4
x 10⁴

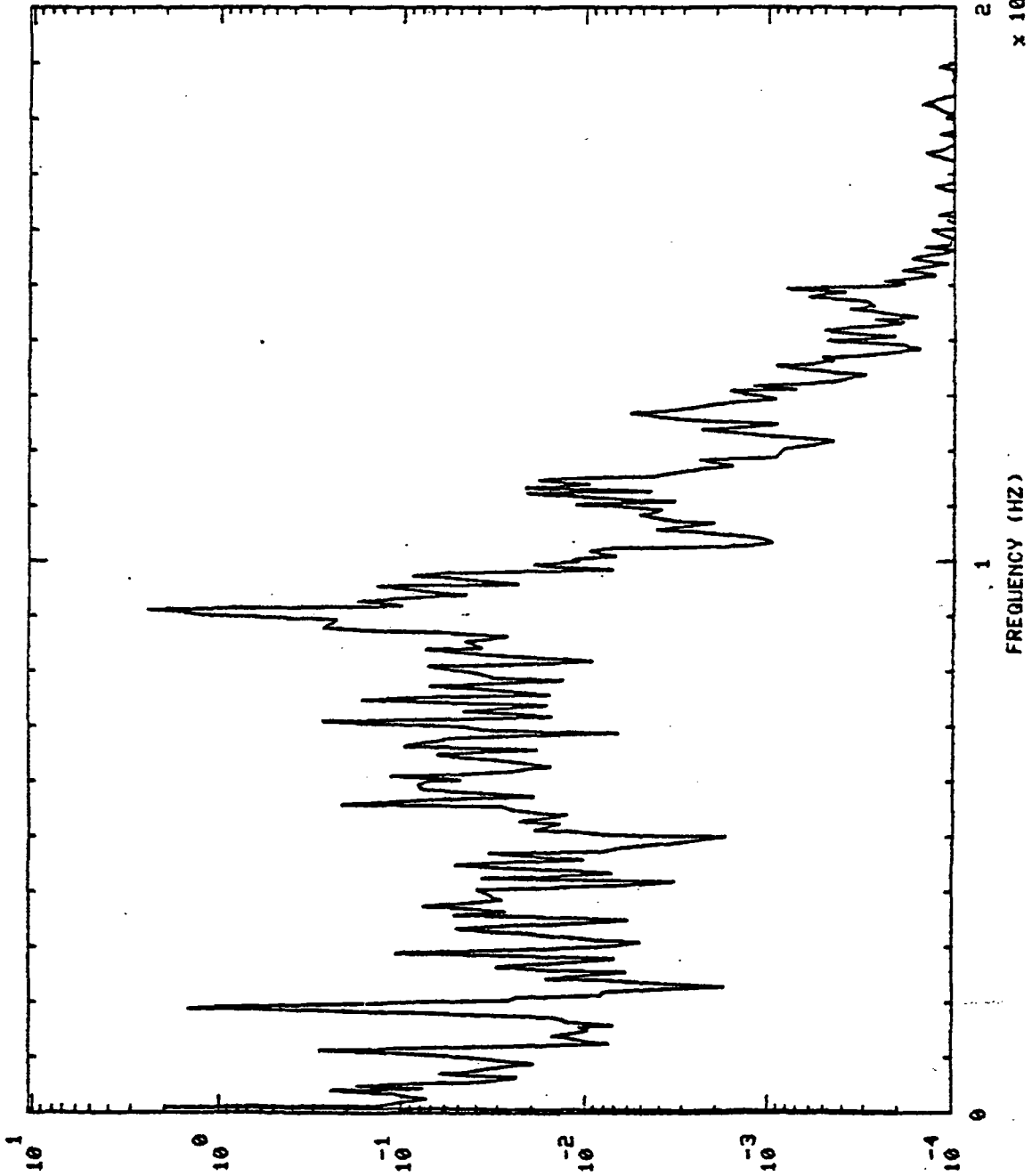
750111 PBP FUEL SUP PR S+ 280.01H0,'S



750111 LPOT TURB DR PR S+ 15.01H0,'S



750111 LPOT TURB DR PR S+ 15.0110,'S



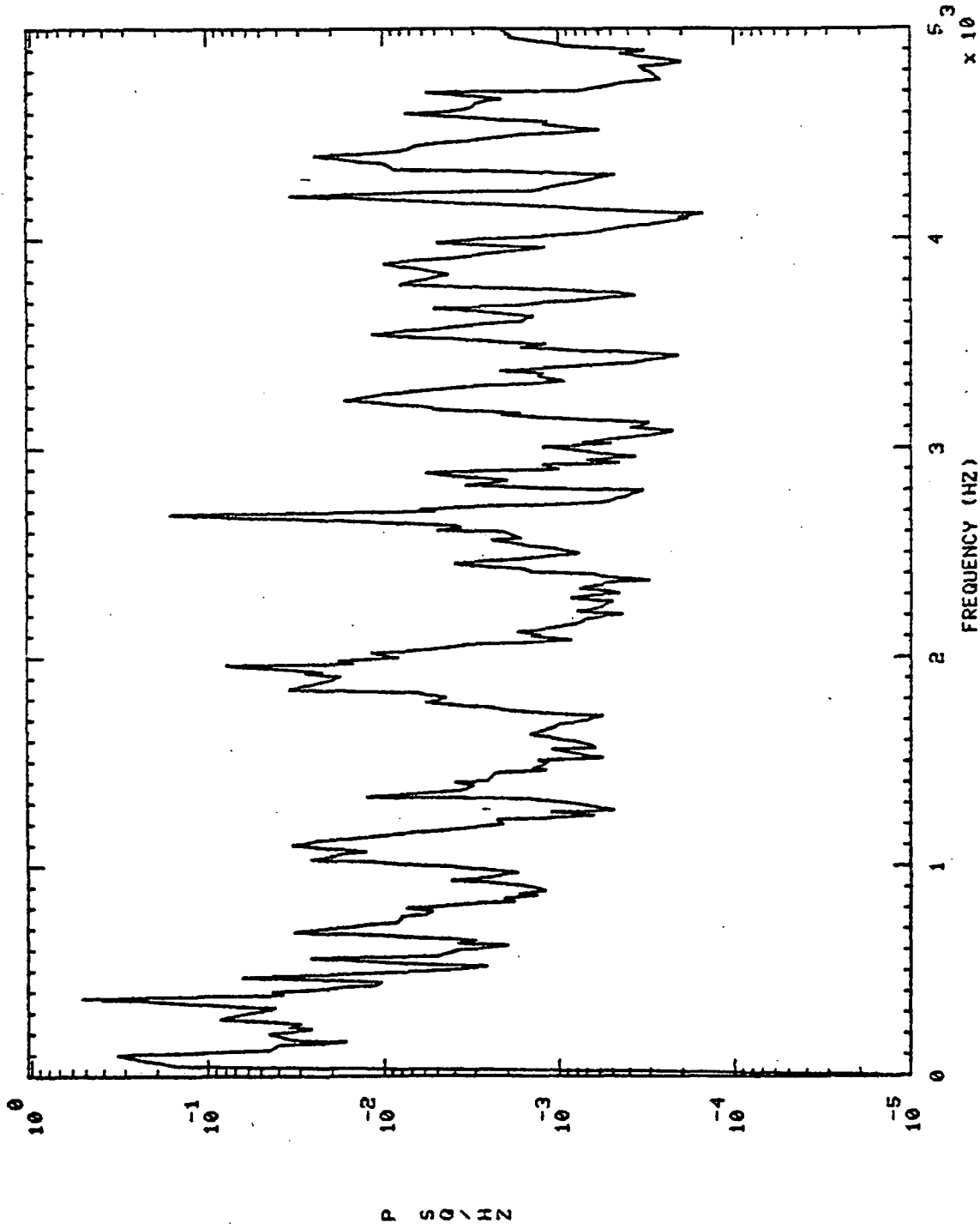
P S D / H Z

10⁴

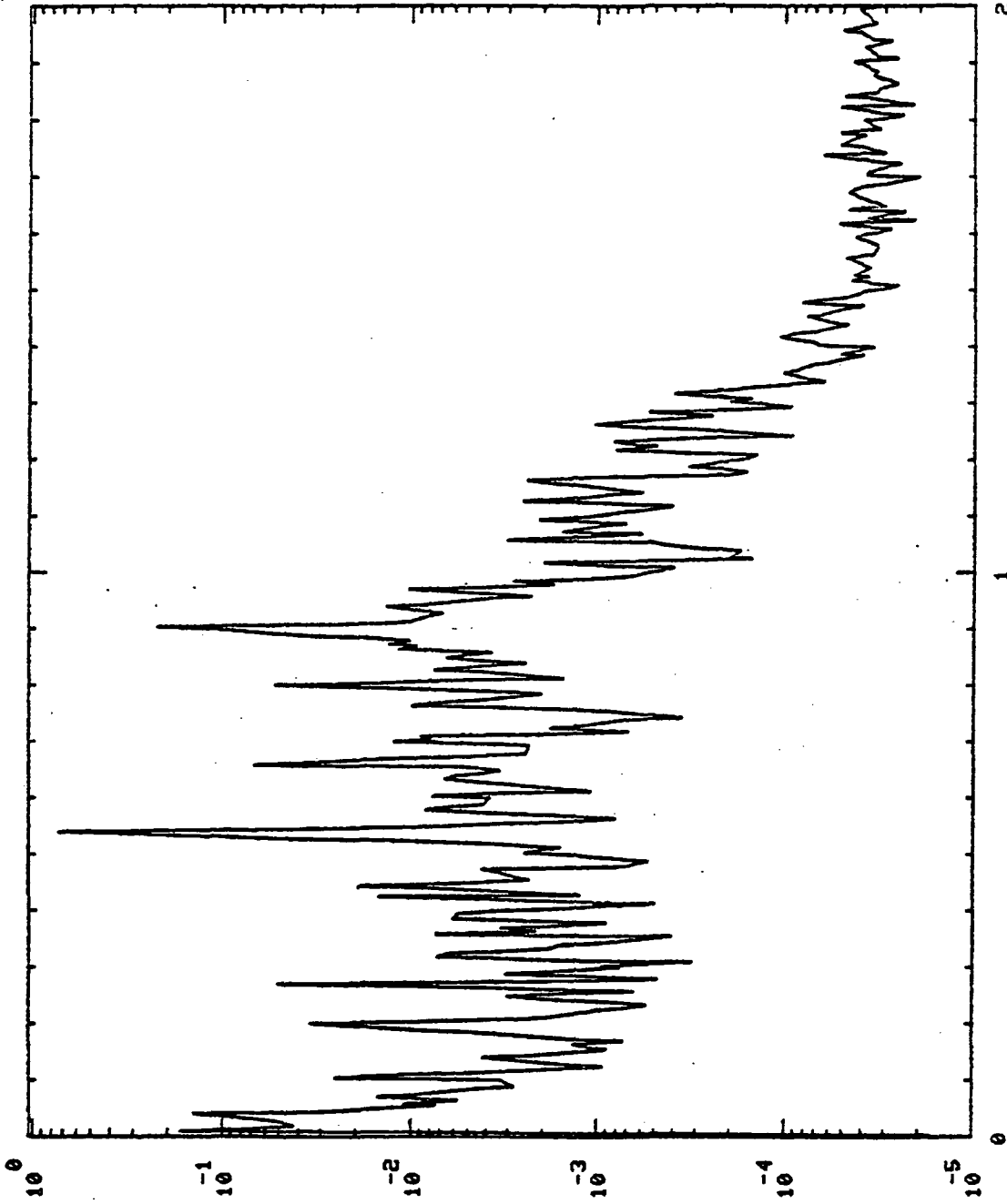
10¹ FREQUENCY (HZ)

750111 LPOT TURB DR PR

S+ 40.01HG, 'S



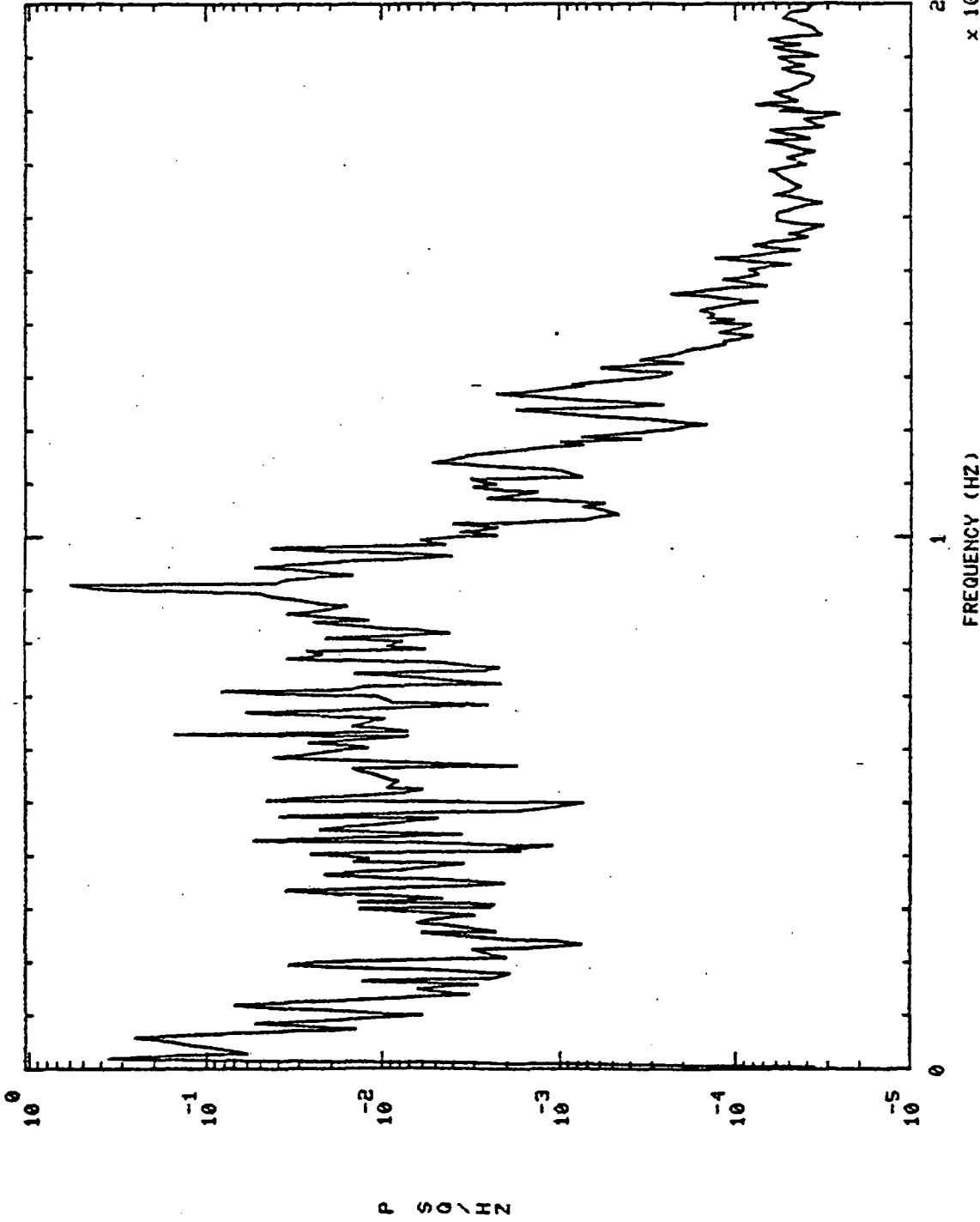
750111 LPOT TURB DR PR S+ 40.01H0,'S



2.4
x 10⁴

FREQUENCY (HZ)

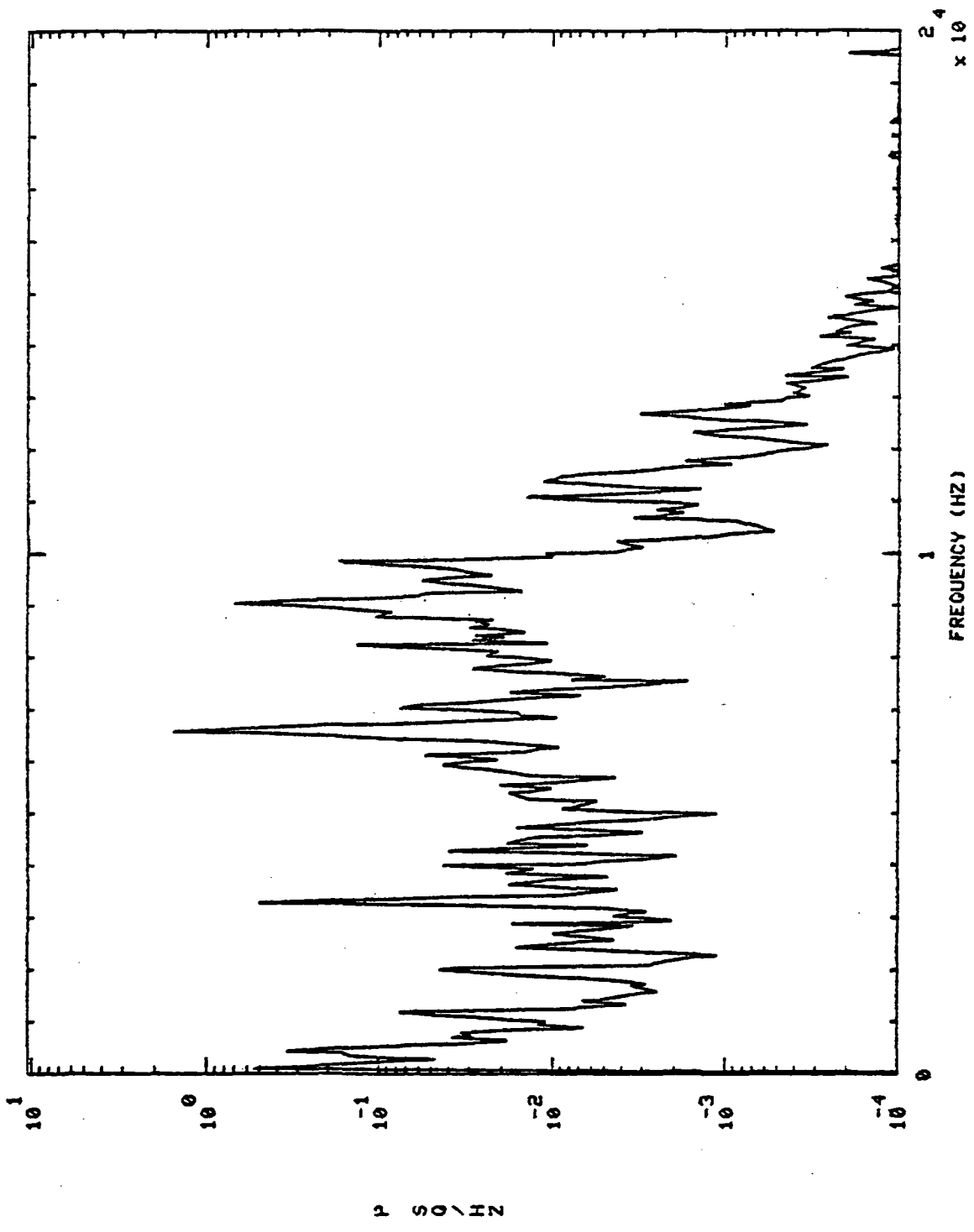
750111 LPOT TURB DR PR S+ 50.01H0,'S



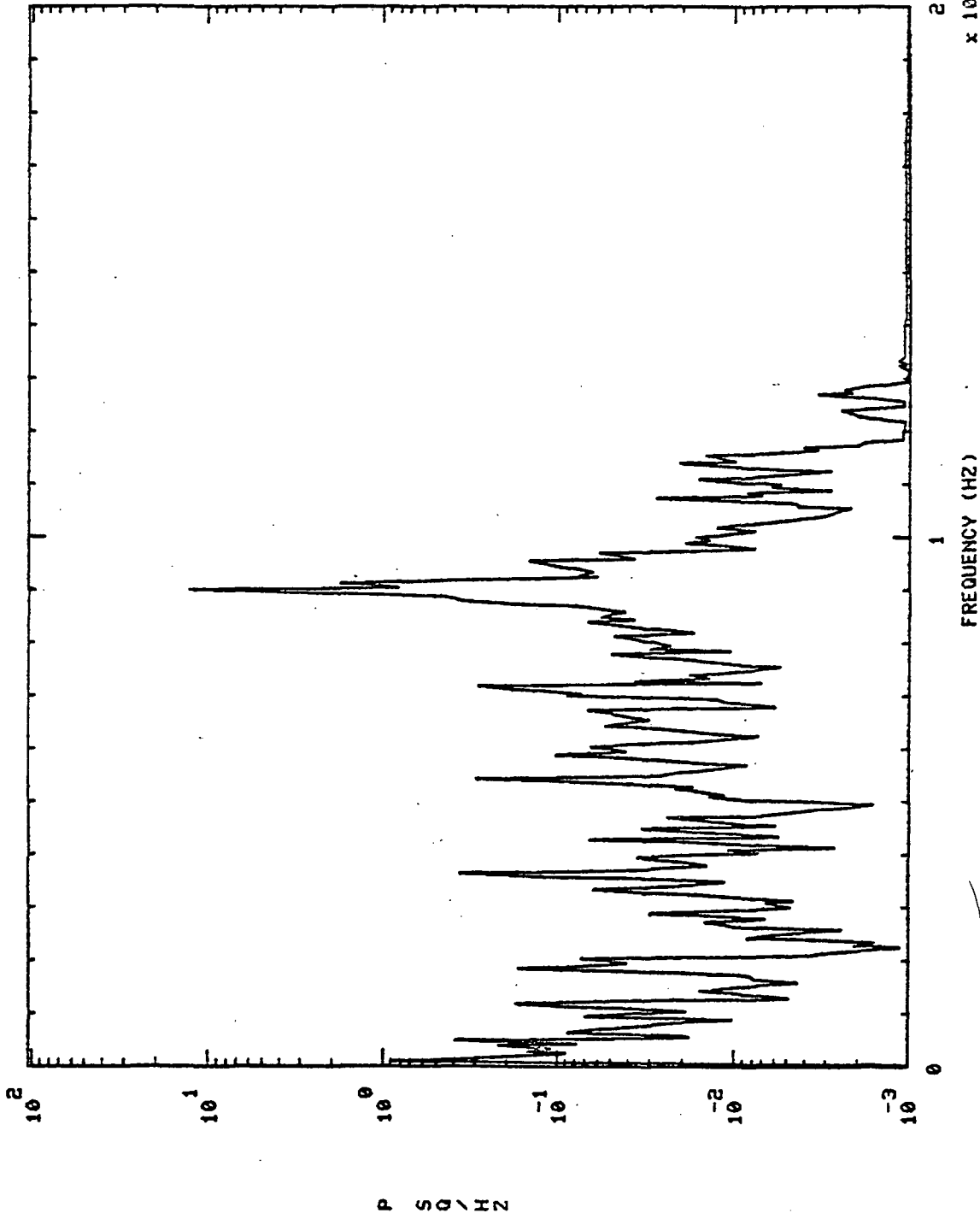
750111 LPOT TURB DR PR S+ 60.01H0,'S

750111 LPOT TURB DR PR

750111

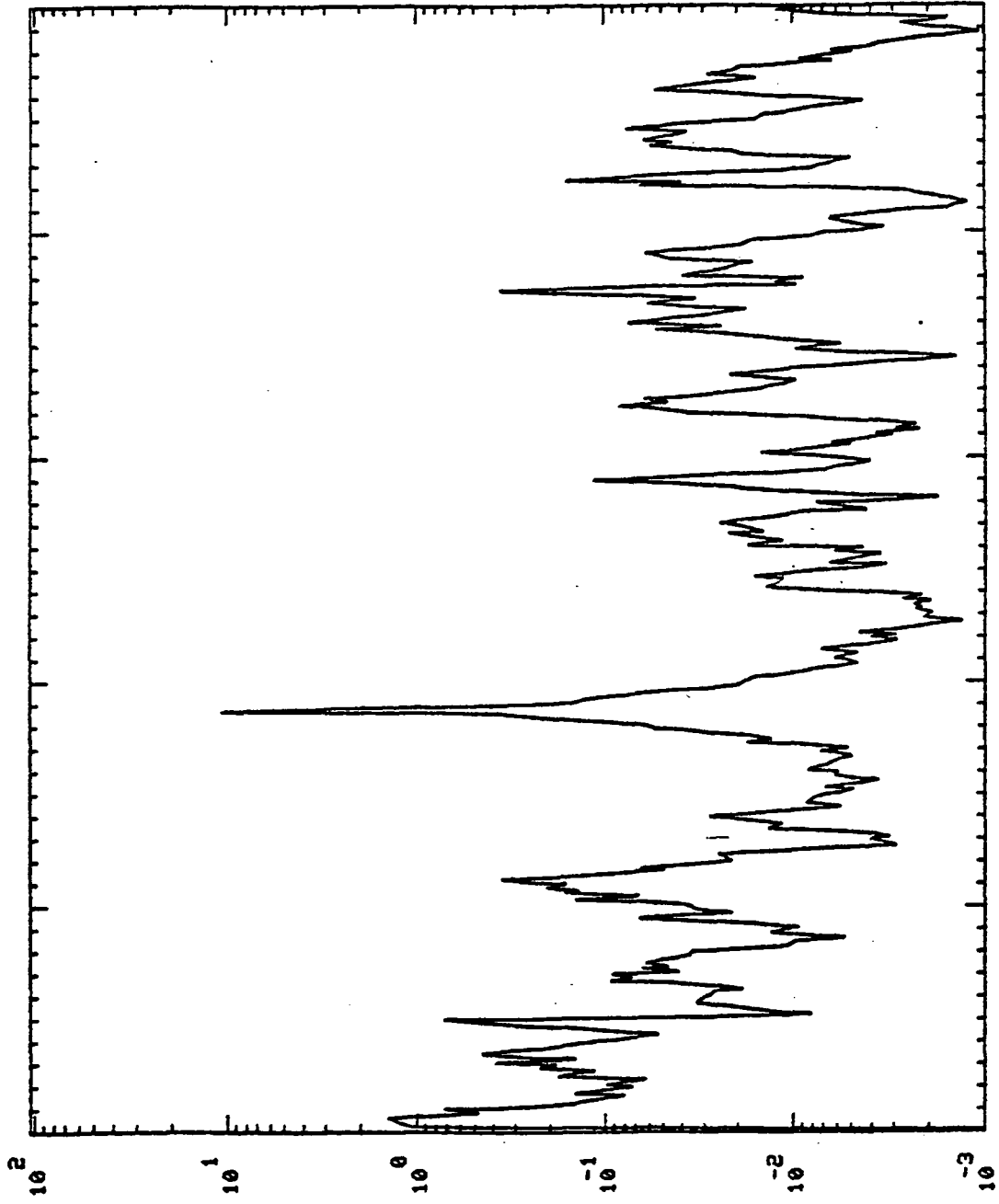


750111 LPOT TURB DR PR S+ 70.0110, '5



750111 LPOT TURB DR PR S+ 80.01H0,'5

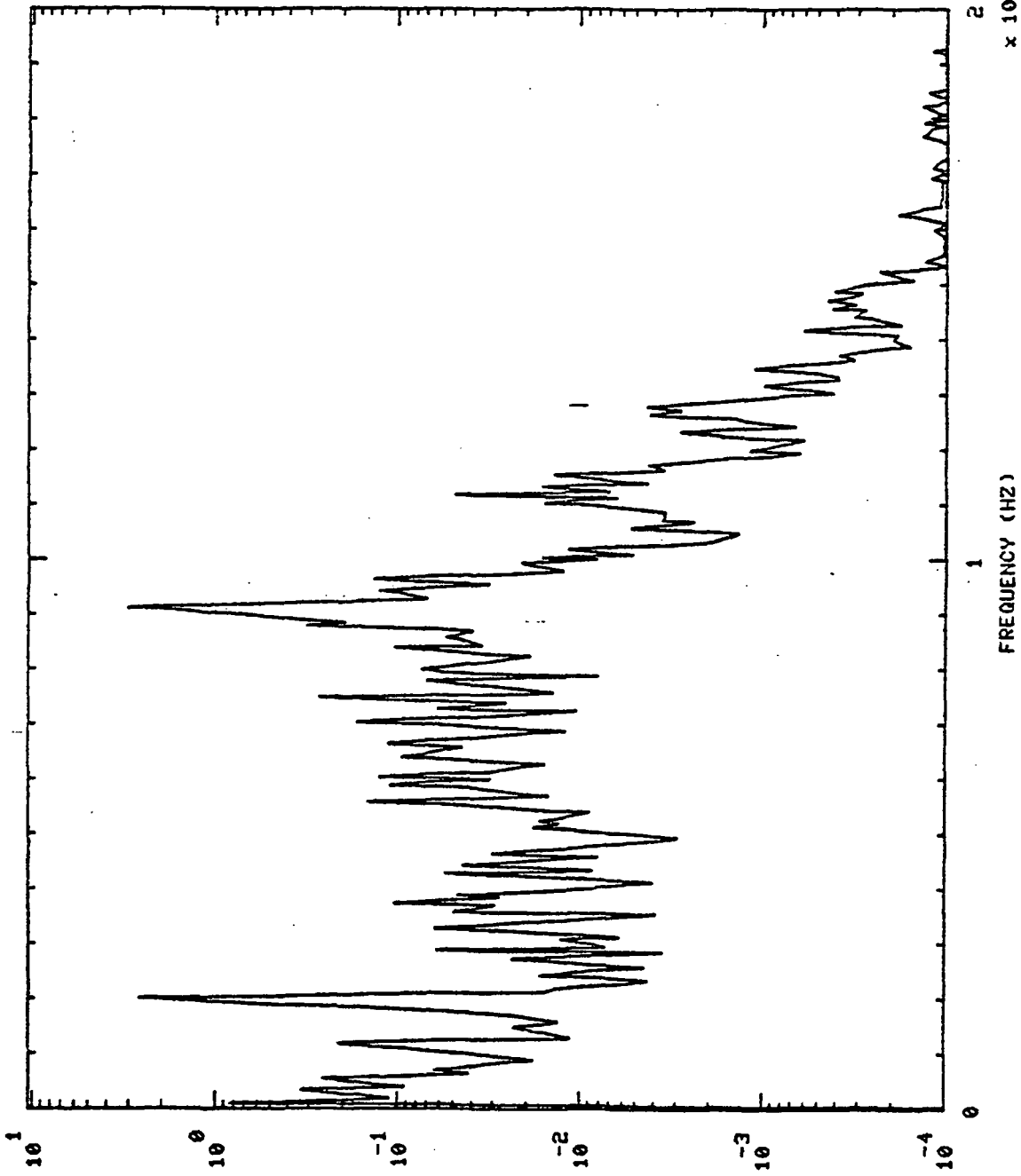
10²
10¹
10⁰
10⁻¹
10⁻²
10⁻³



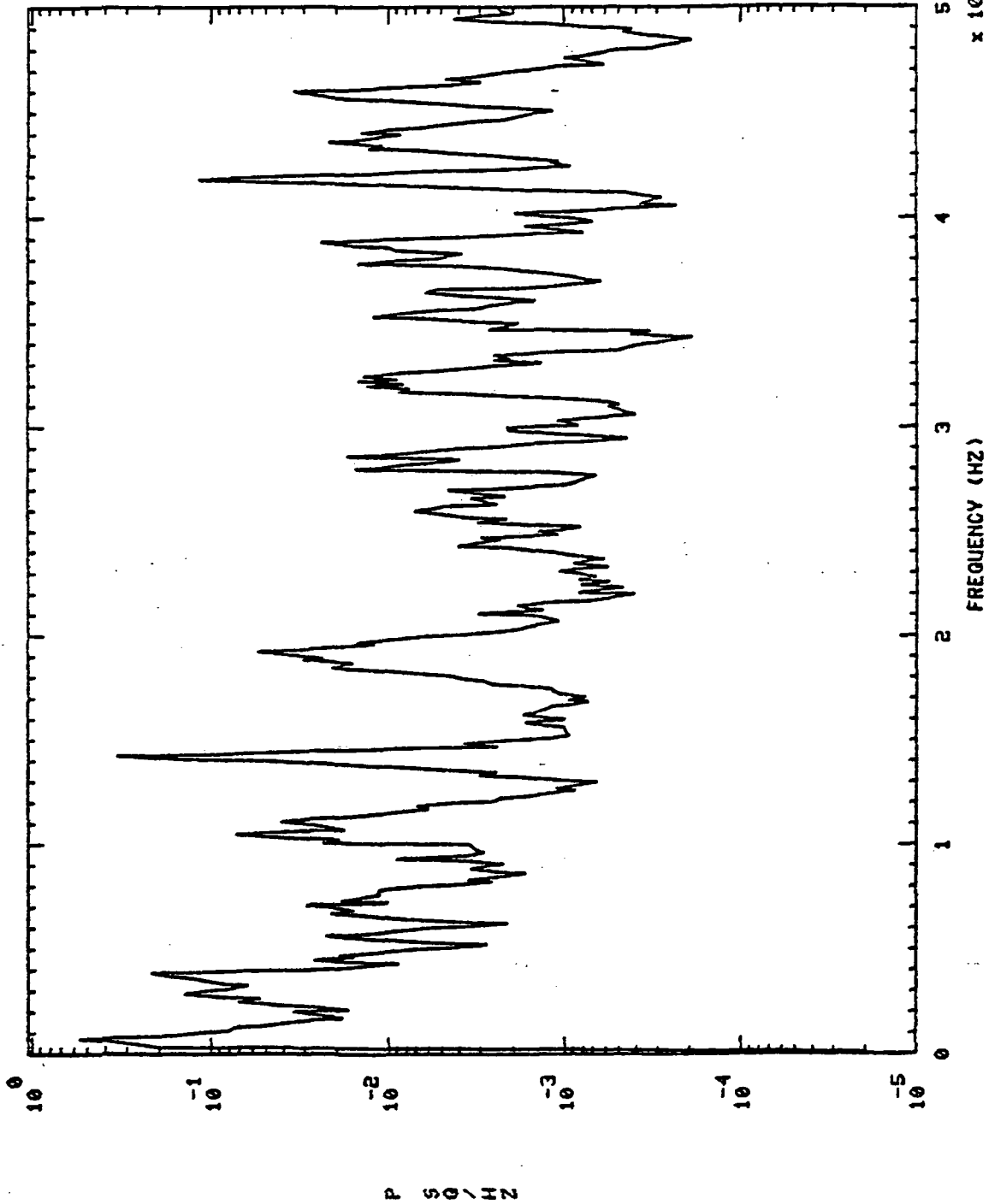
P S O \ H Z

S+ 80.01H0,'S

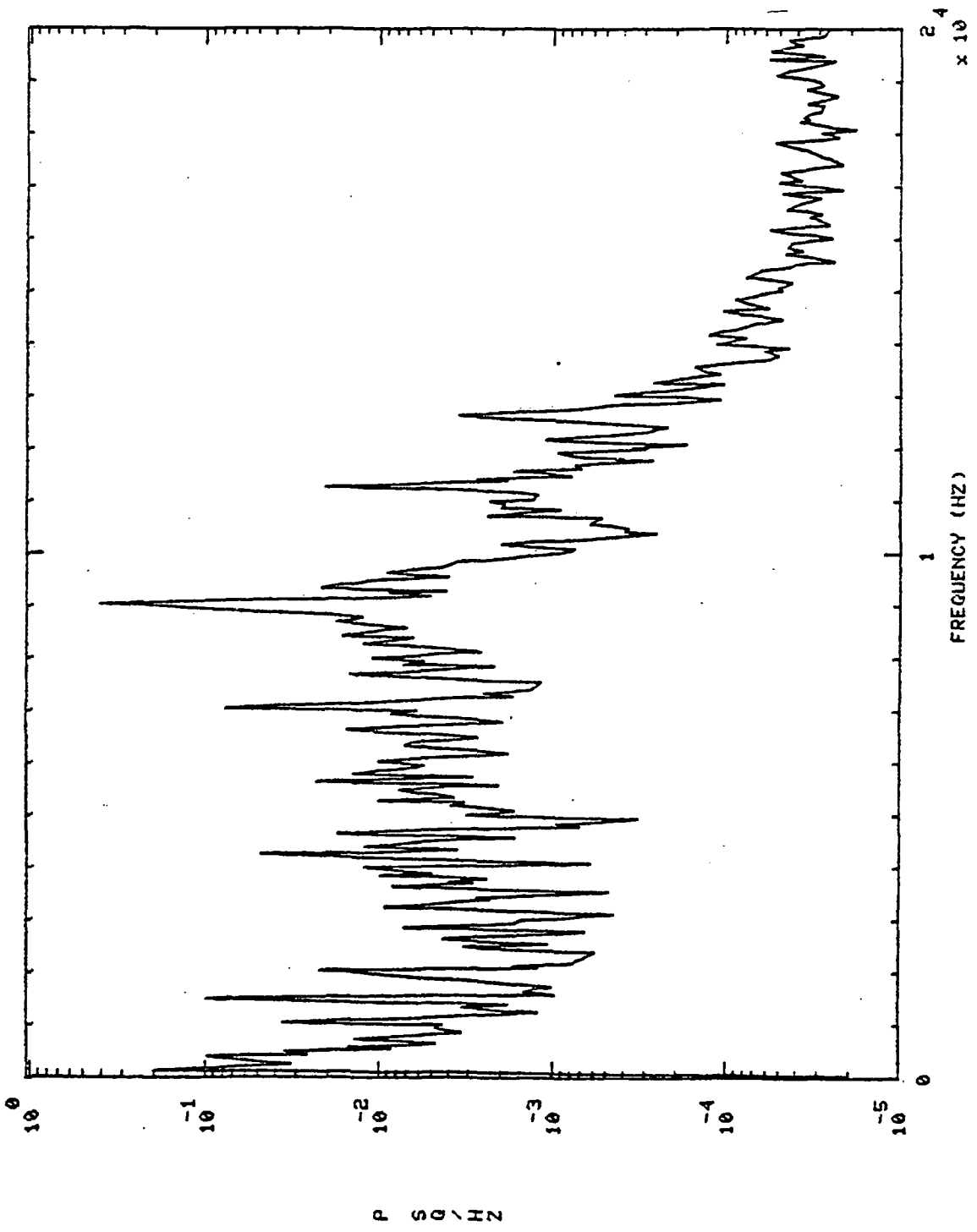
750111 LPOT TURB DR PR



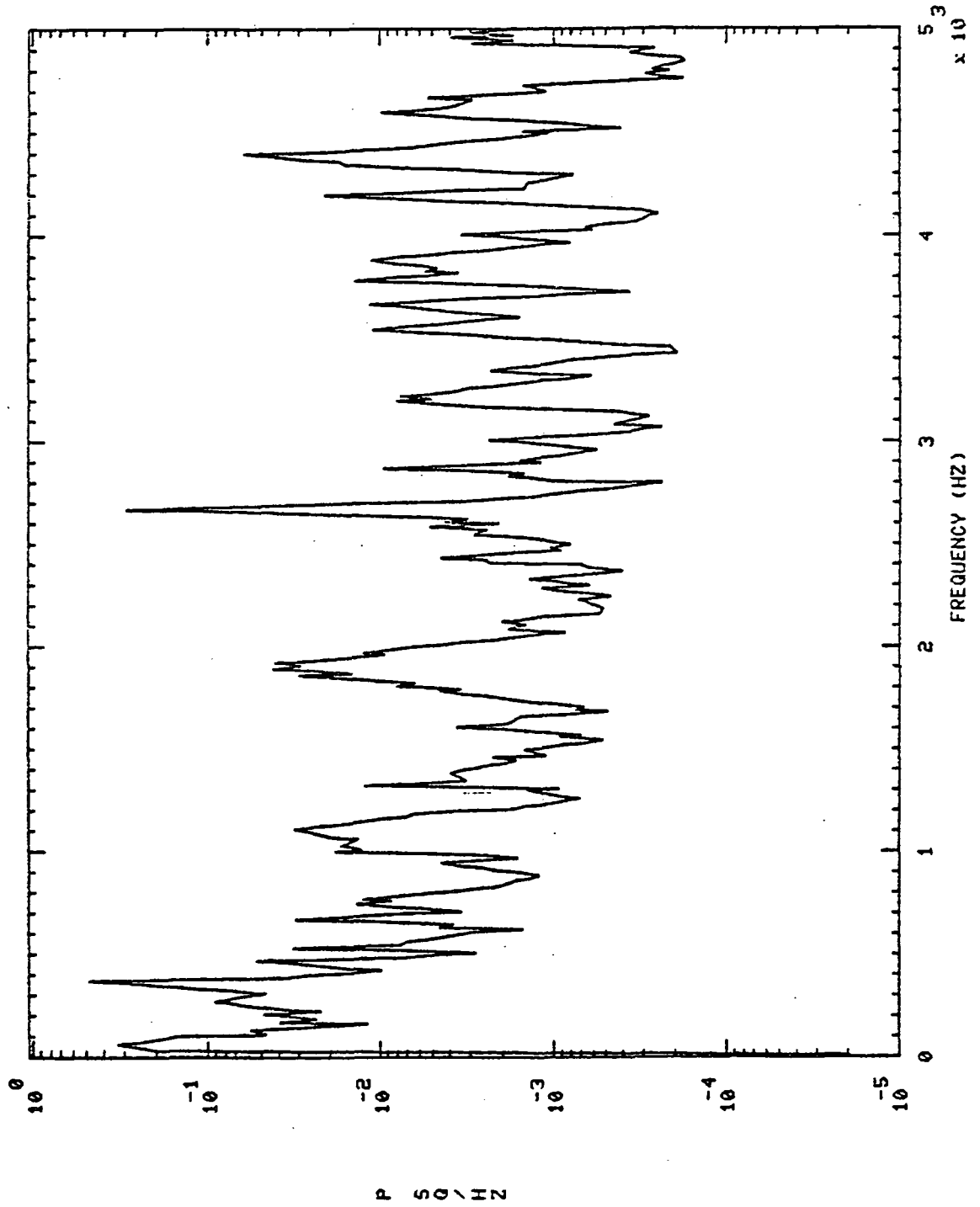
750111 LPOT TURB DR PR S+ 90.01H0,'S



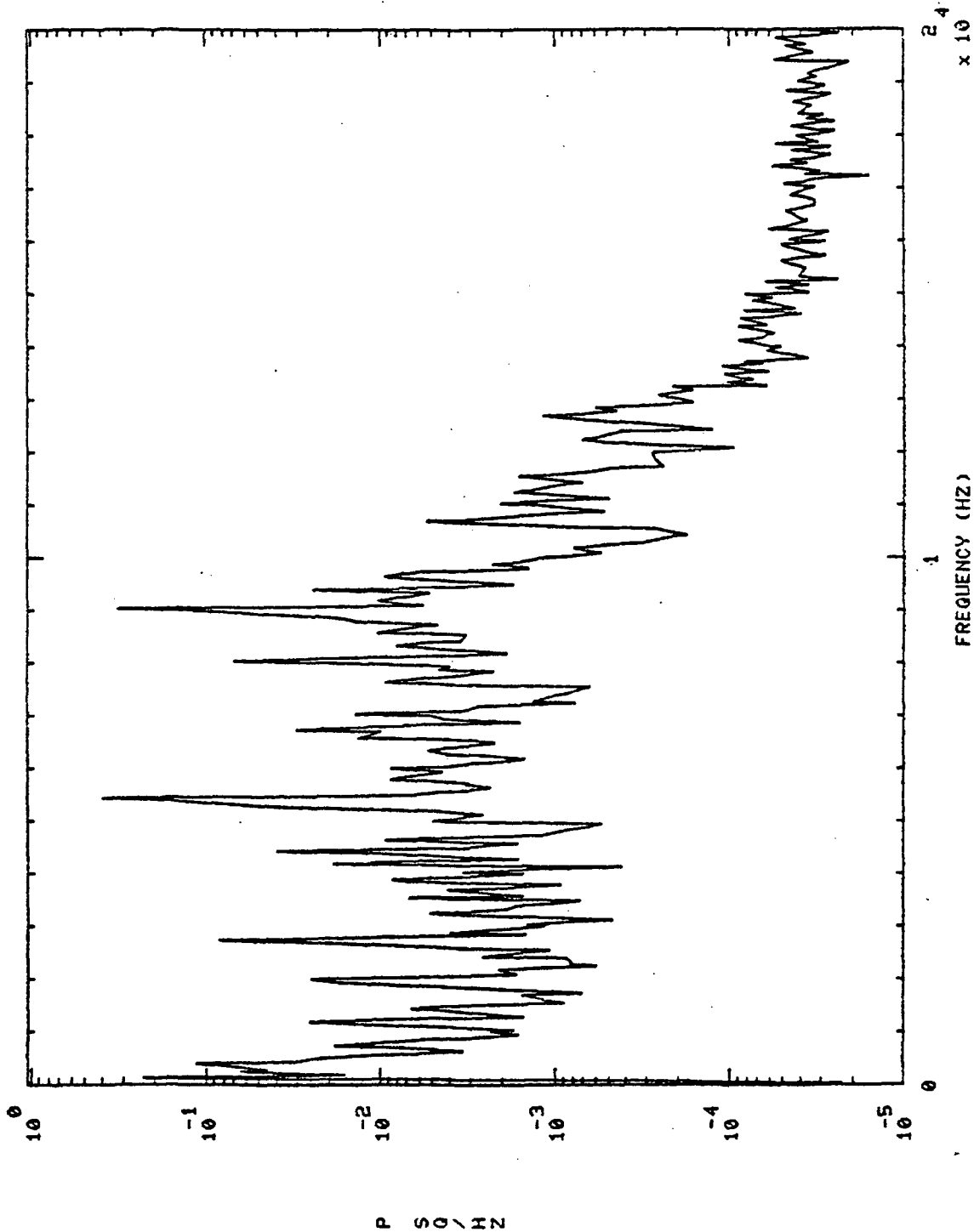
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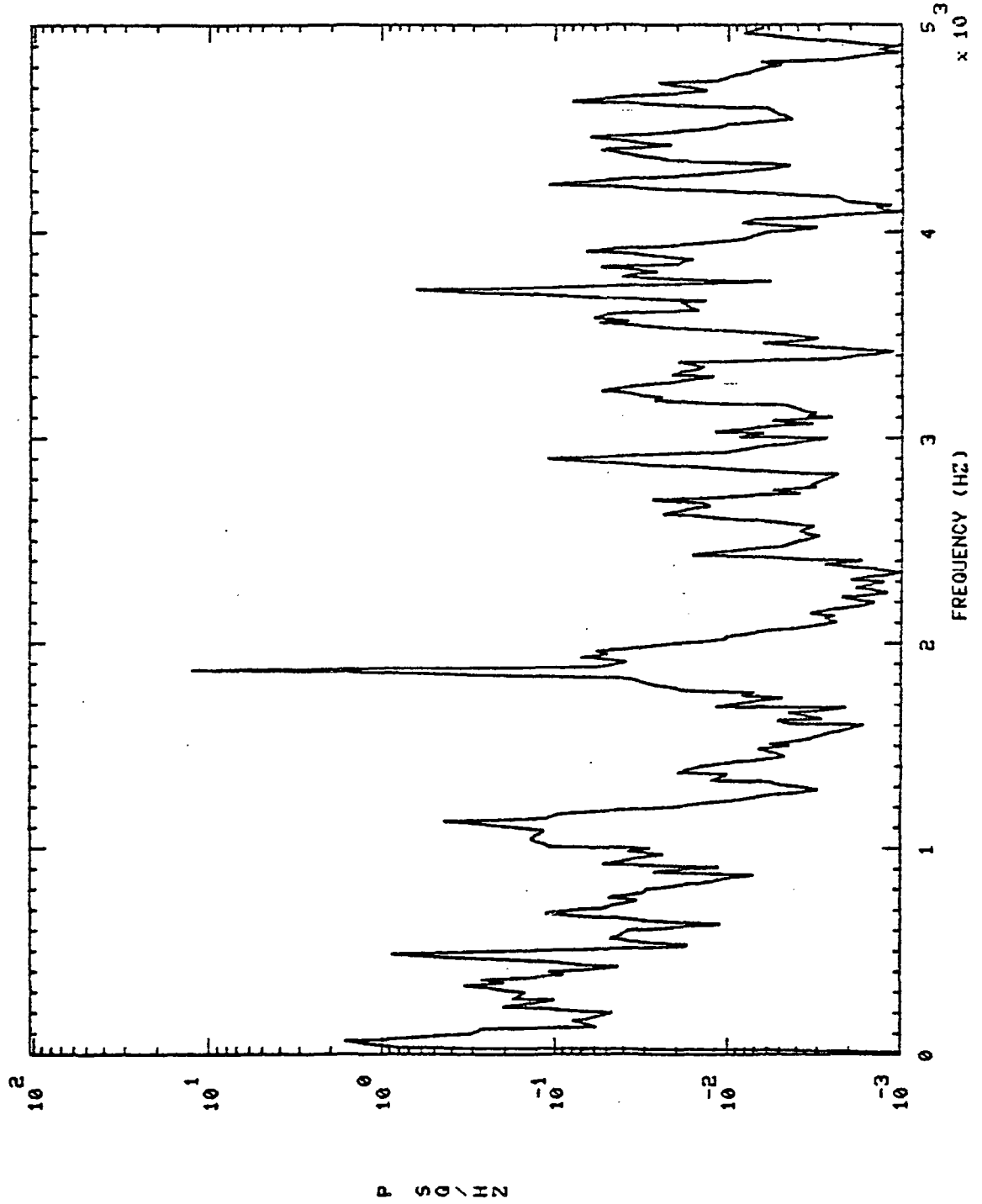
750111 LPOT TURB DR PR S+ 100.01H0,'S



750111 LPOT TURB DR PR S+ 100.01H0,'S



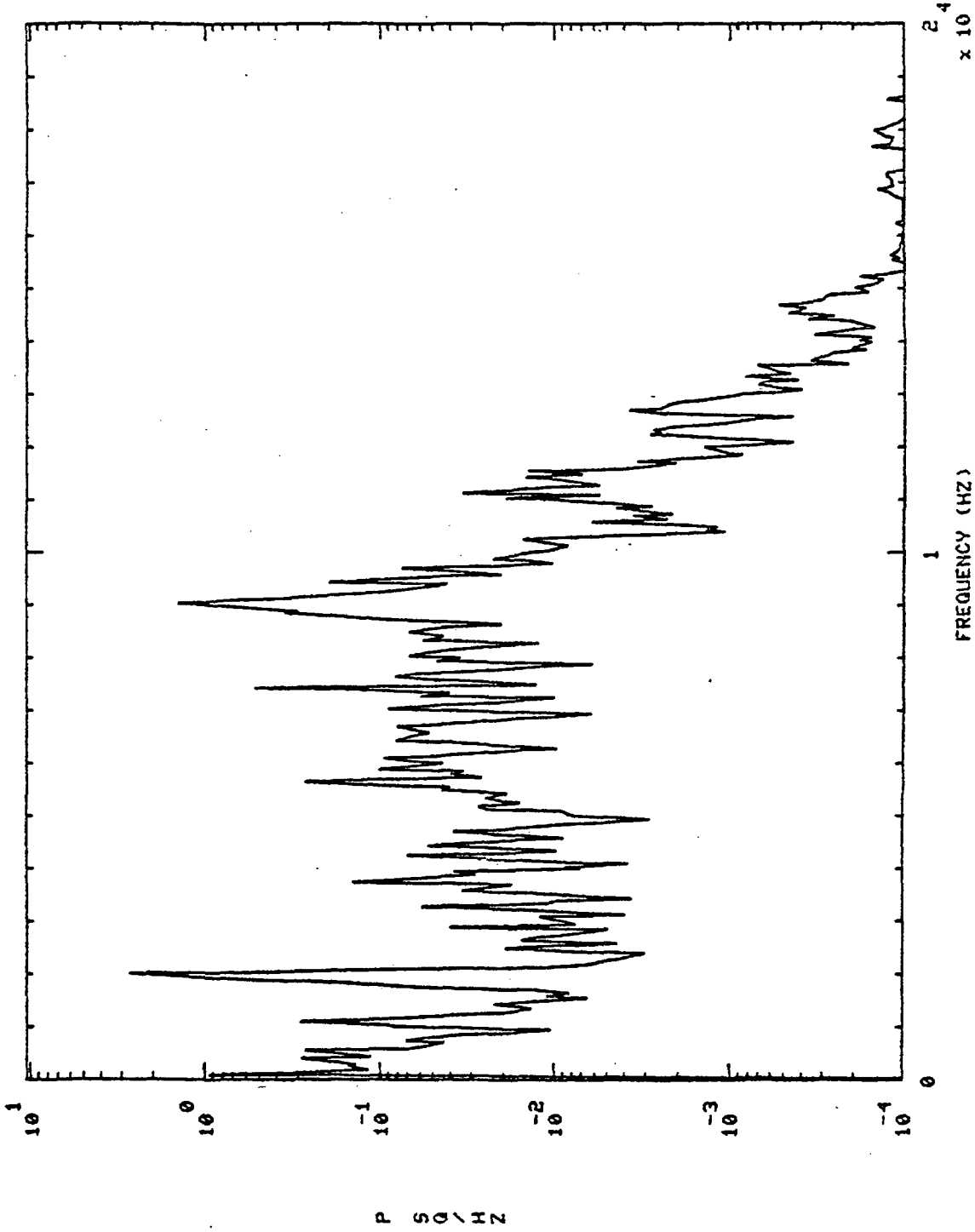
750111 LPOT TURB DR PR S+ 120.01H0,'S



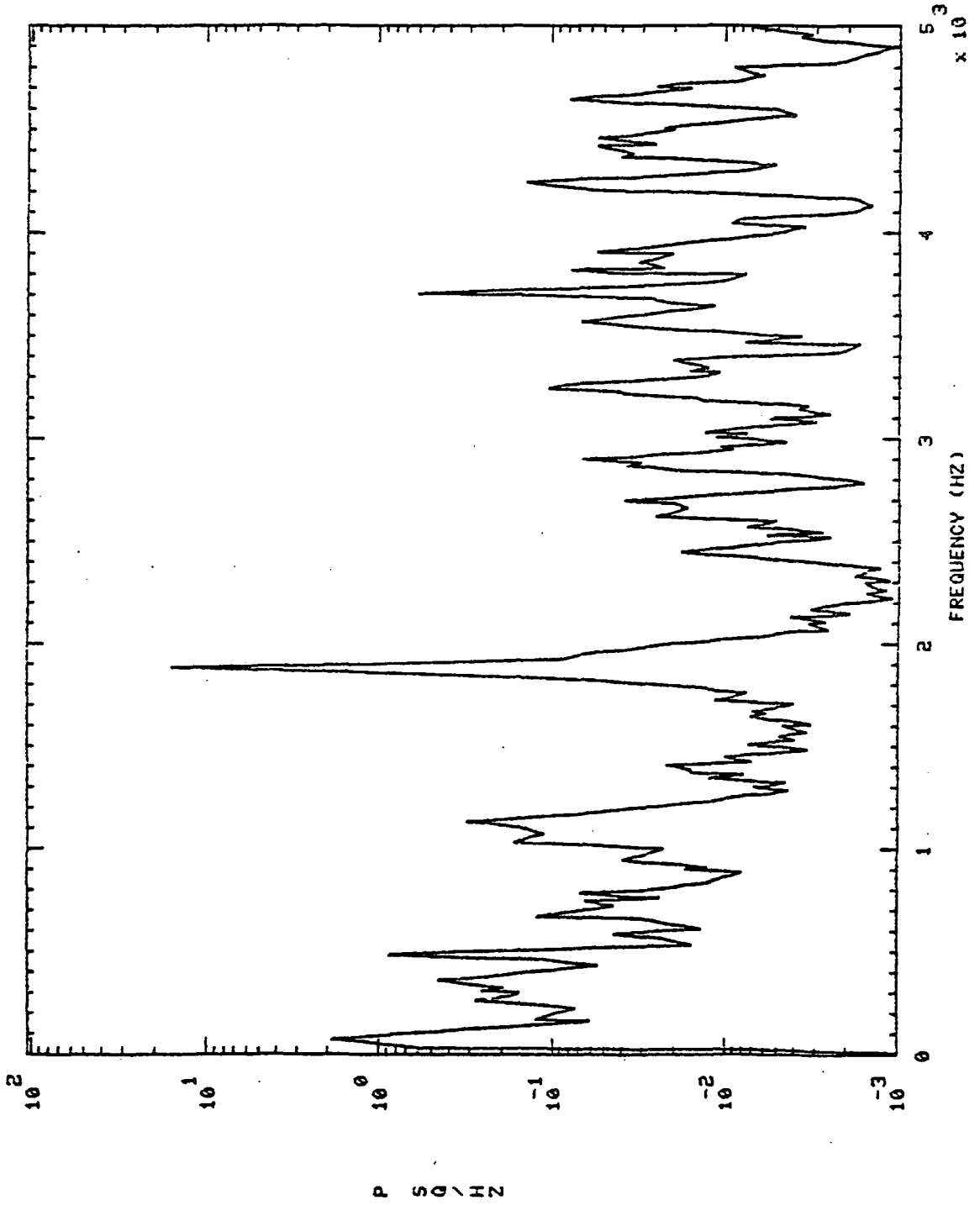
S+ 120.01H0,'S

LPOT TURB DR PR

750111



750111 LPOT TURB DR PR S+ 200.01H0,'S

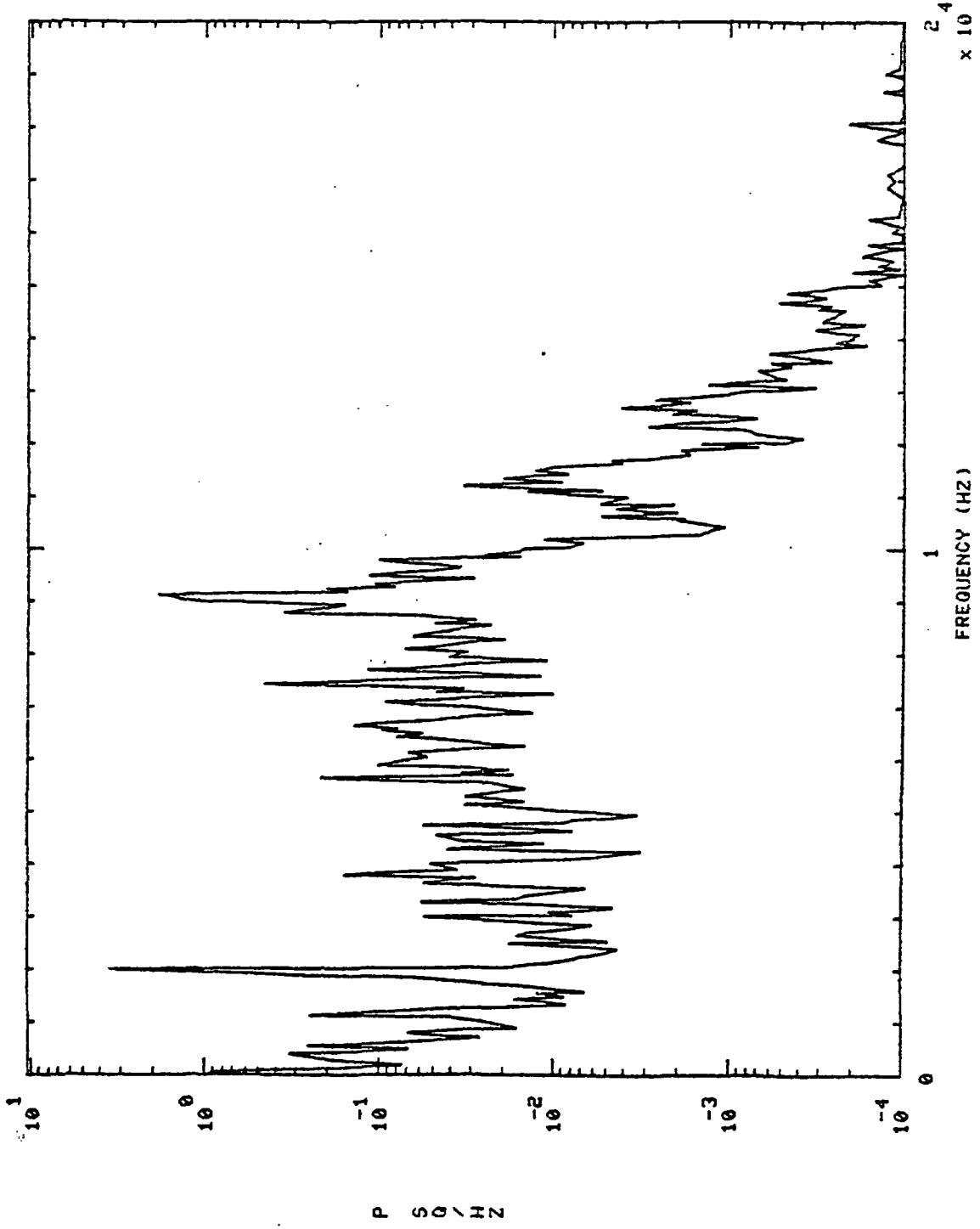


C-5

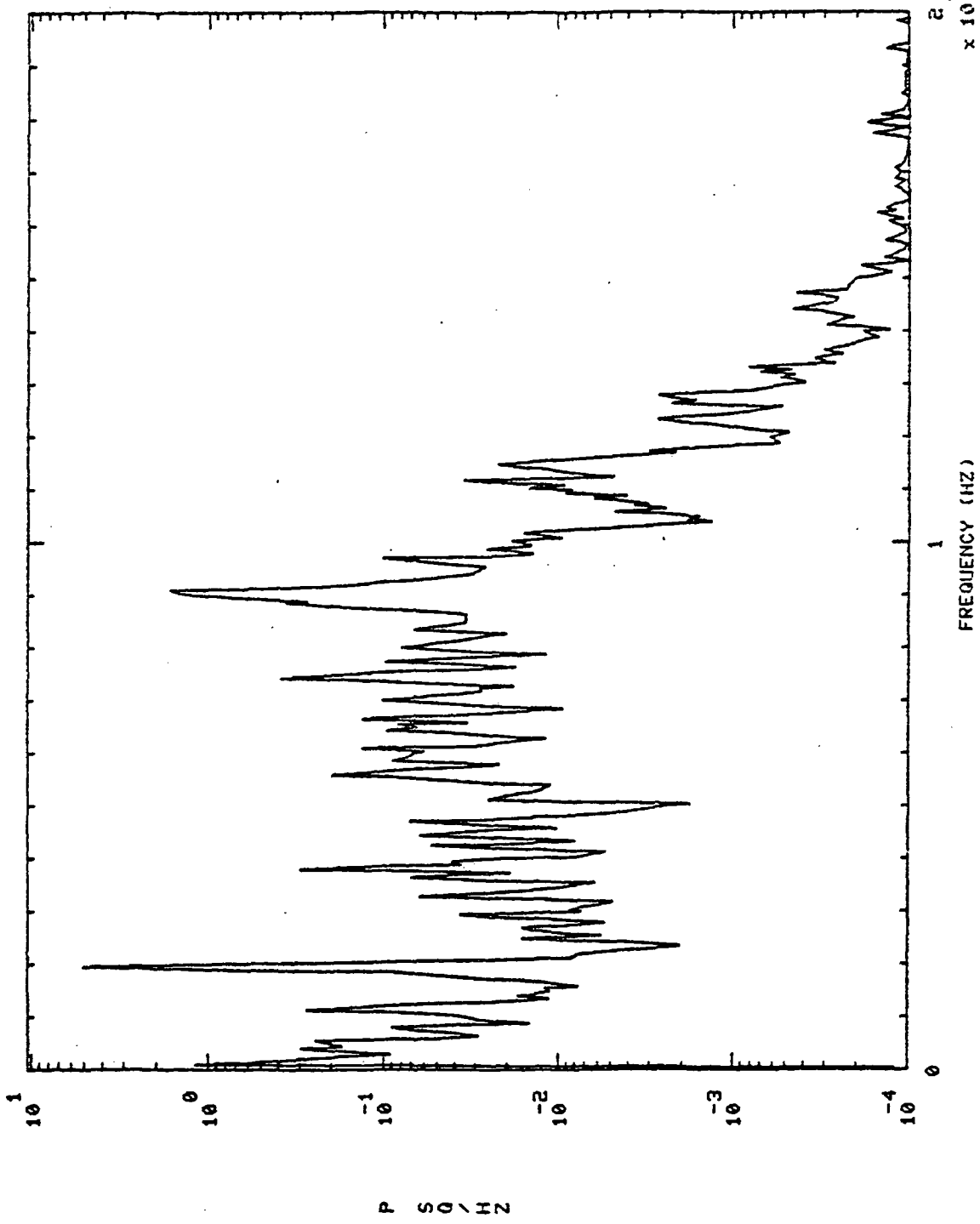
750111

LPOT TURB DR PR

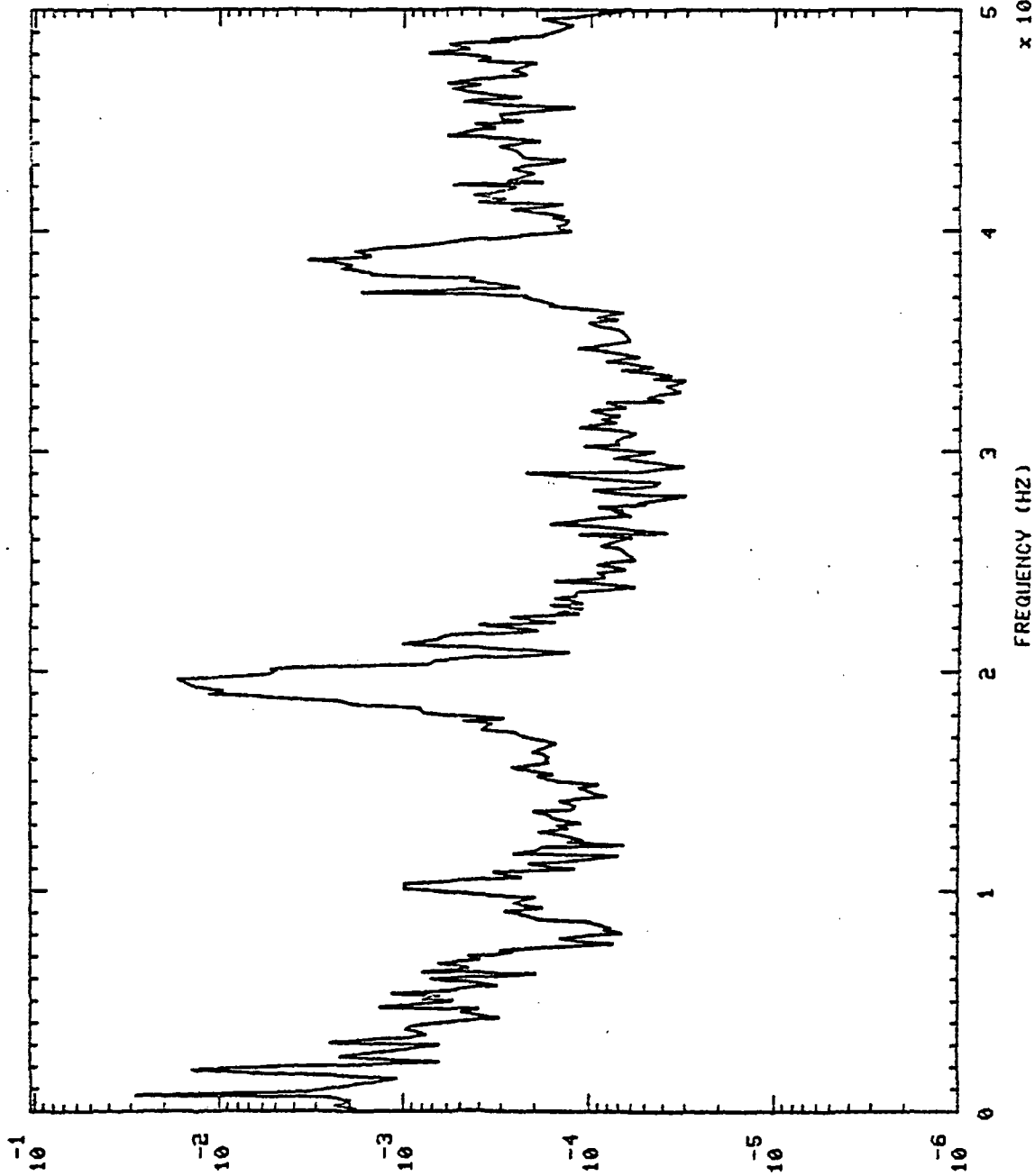
S+ 200.01H0,'S



750111 LPOT TURB DR PR S+ 280.01H0,'S

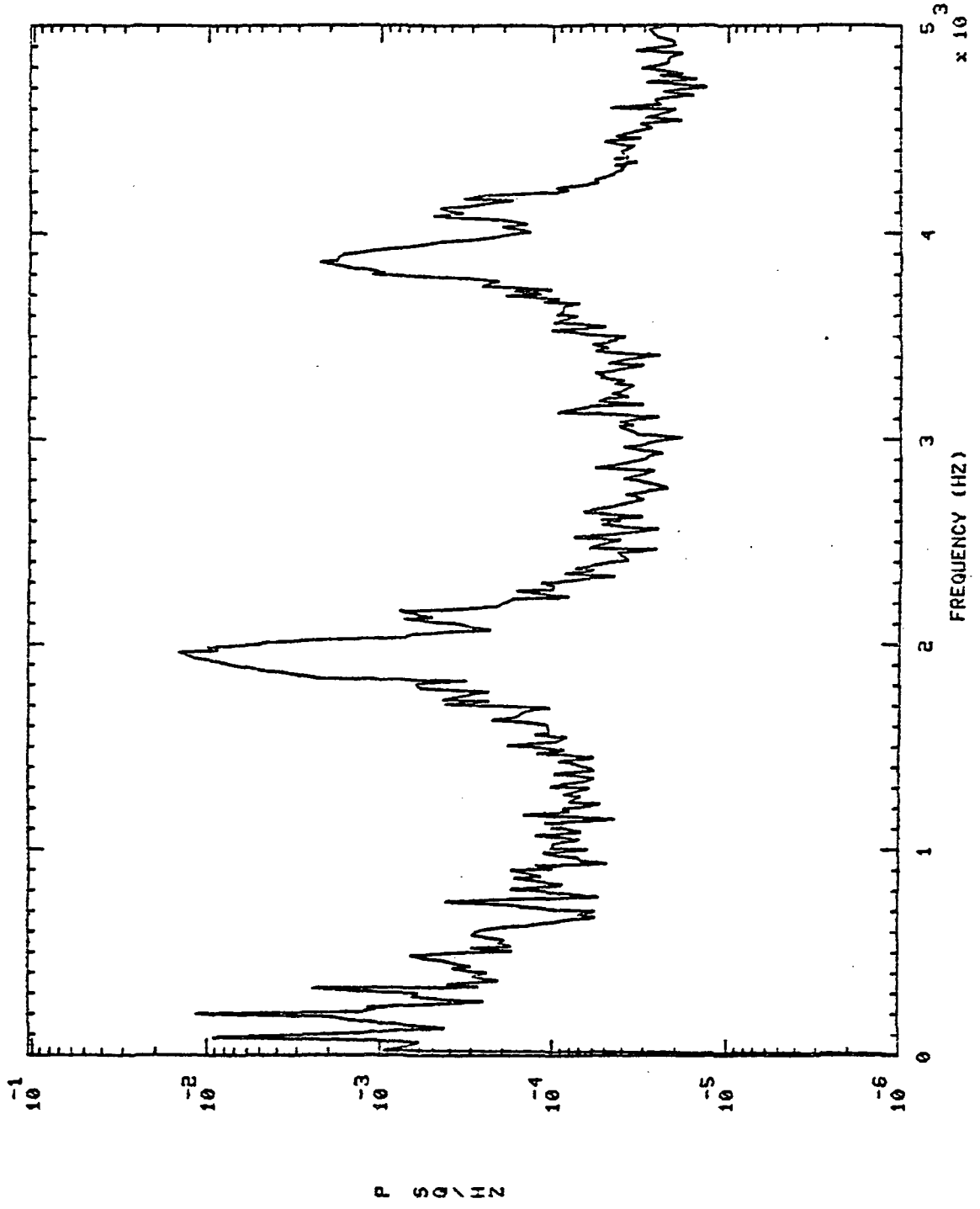


750111 LOX HX OUT PR S+ 15.01H0,'S



P S G / H Z

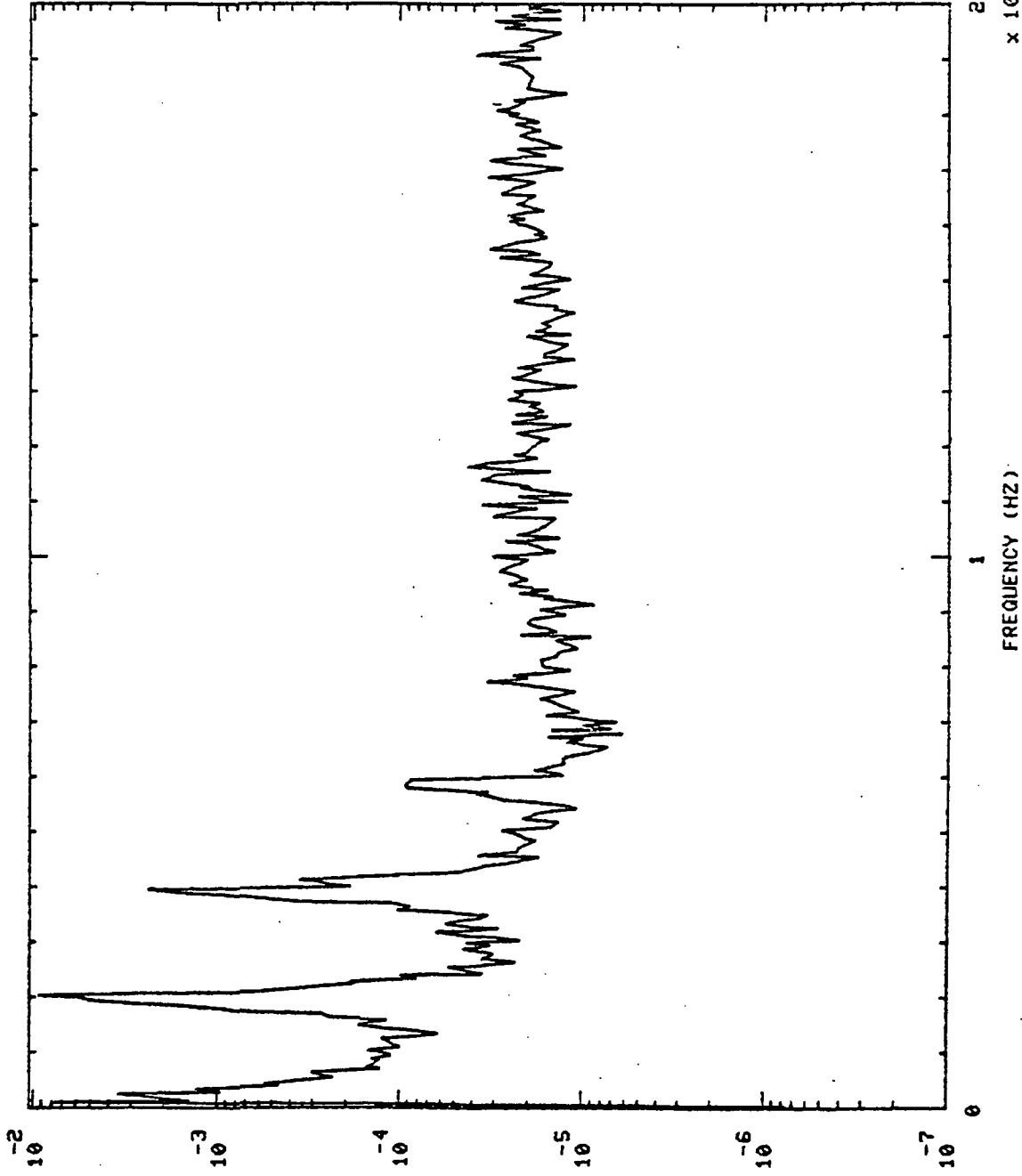
750111 LOX HX OUT PR St 40.01H0,'S



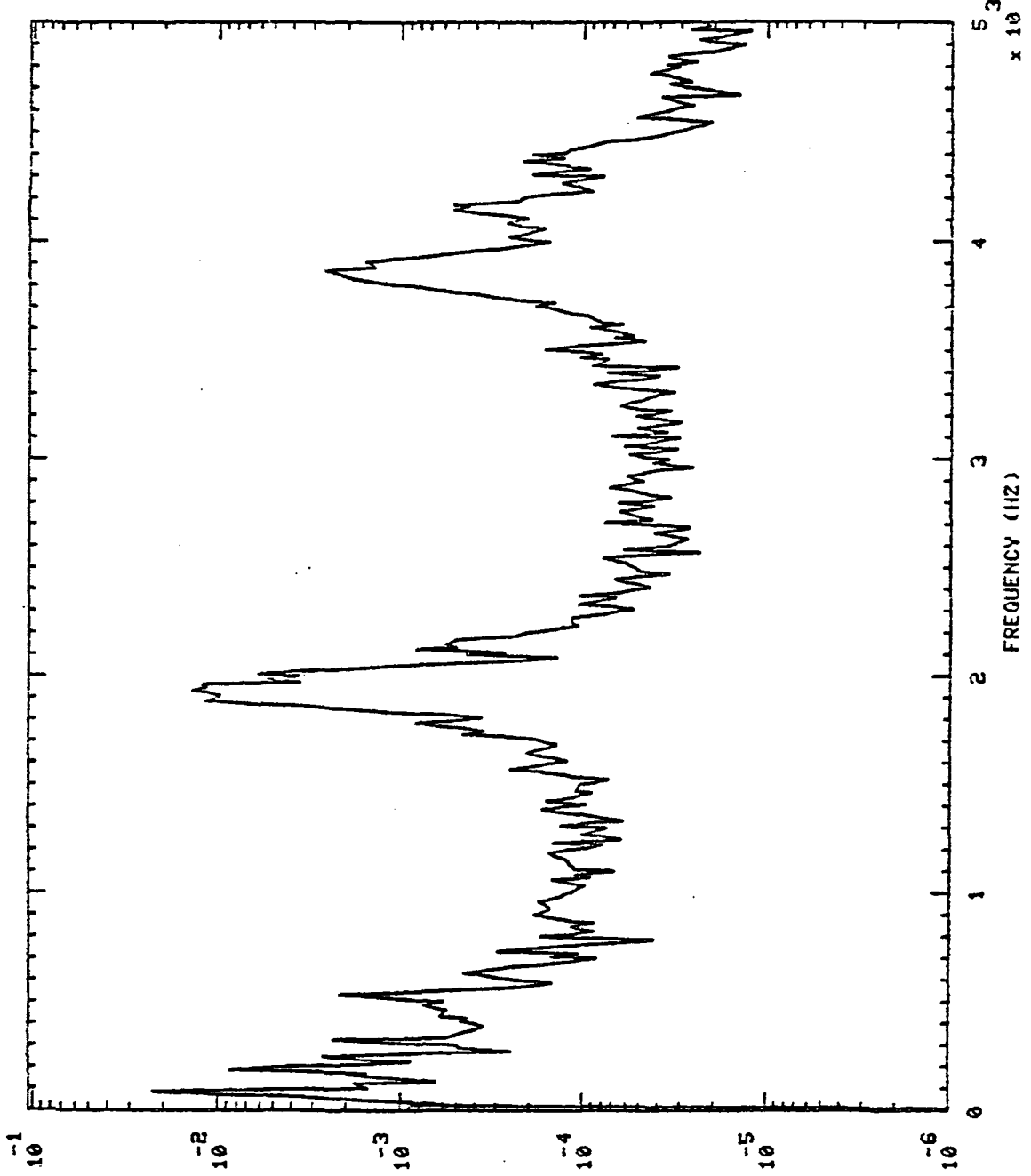
750111

LOX HX OUT PR

S+ 40.01H0,'S

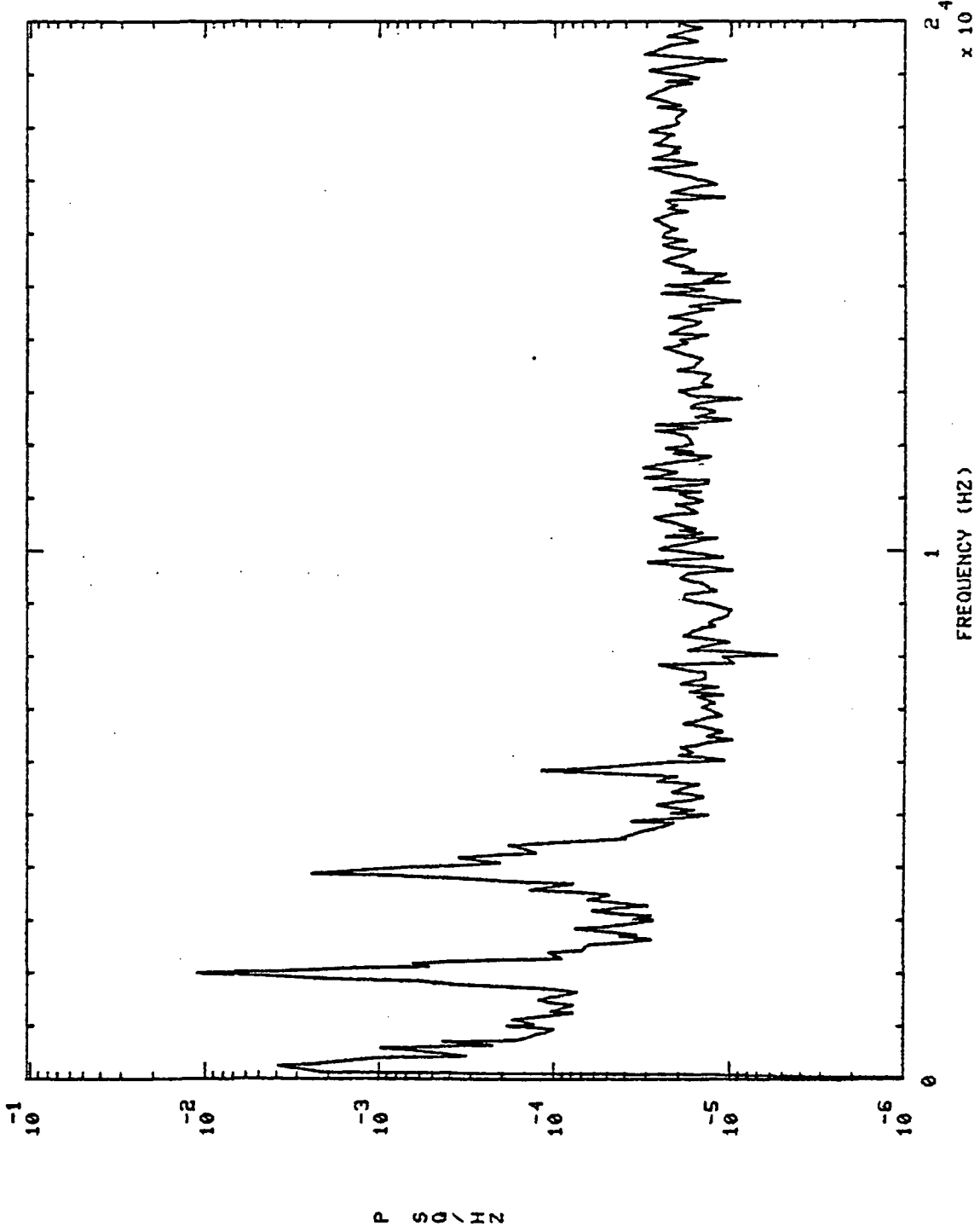


750111 LOX HX OUT PR S+ 50.01H0,'S



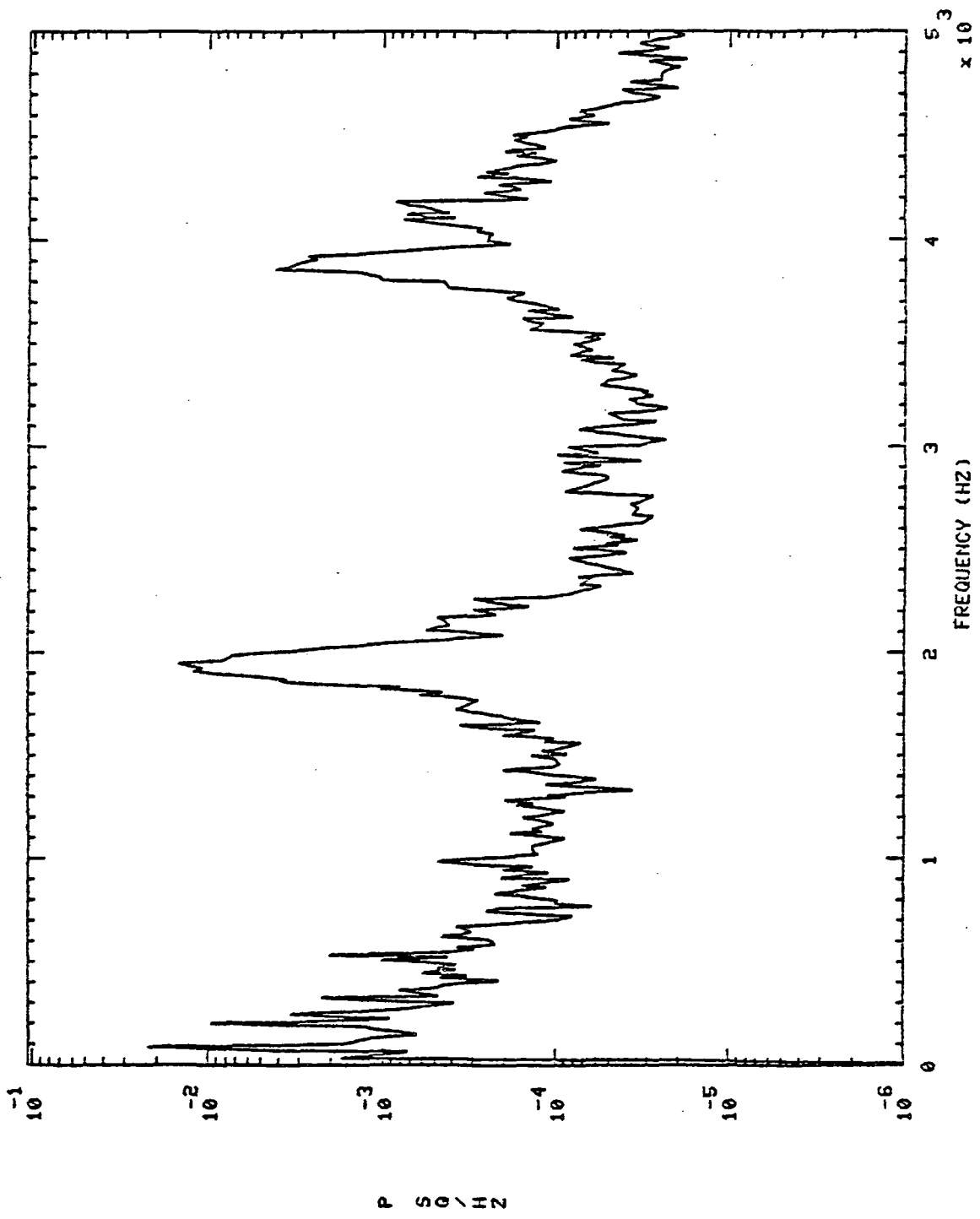
P S Q \ H Z

750111 LOX HX OUT PR S+ 50.01H0,'S

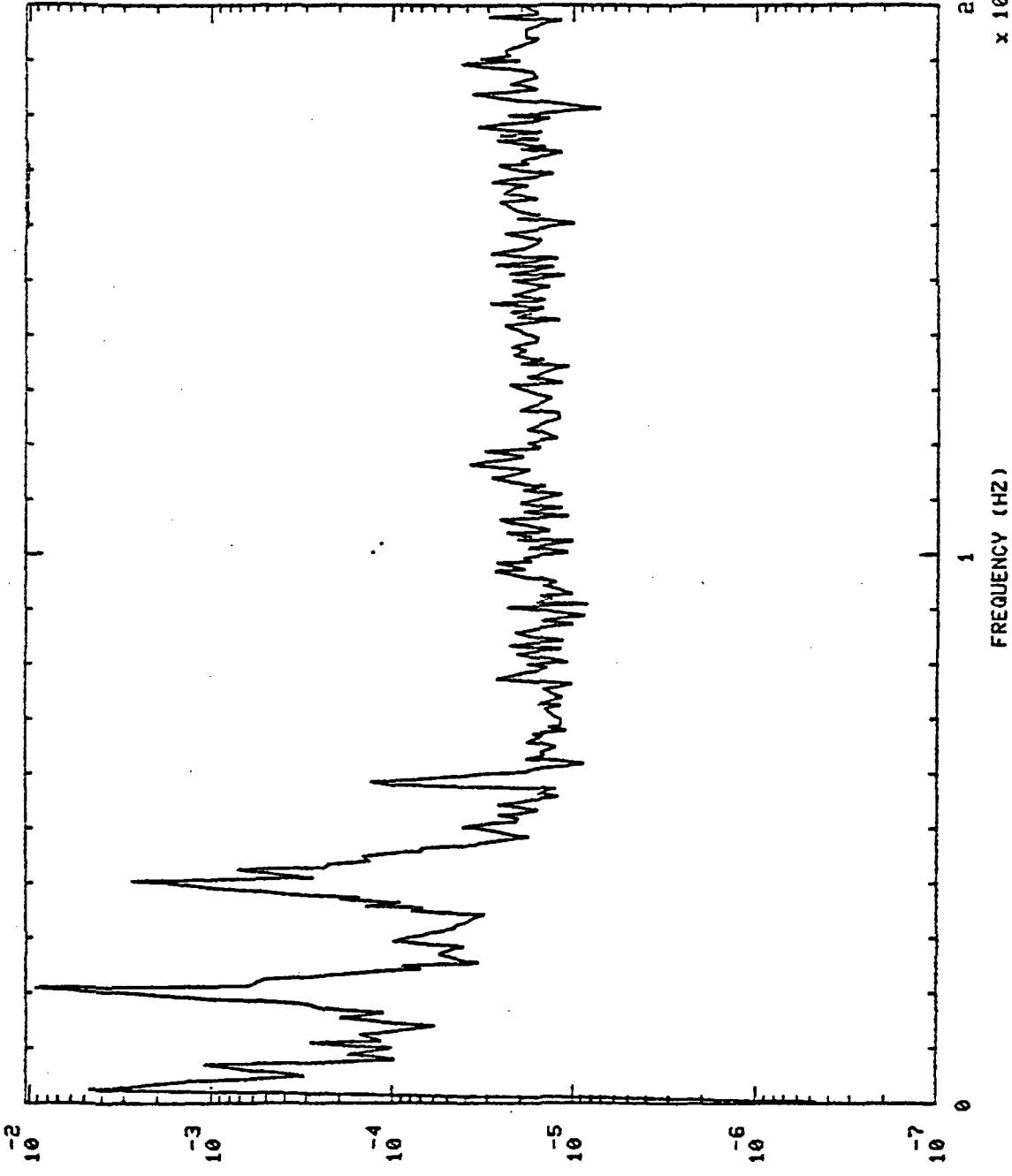


750111 LOX HX OUT PR S+ 60.01H0.'S

750111 LOX HX OUT PR



750111 LOX HX OUT PR S+ 60.01H0,'S



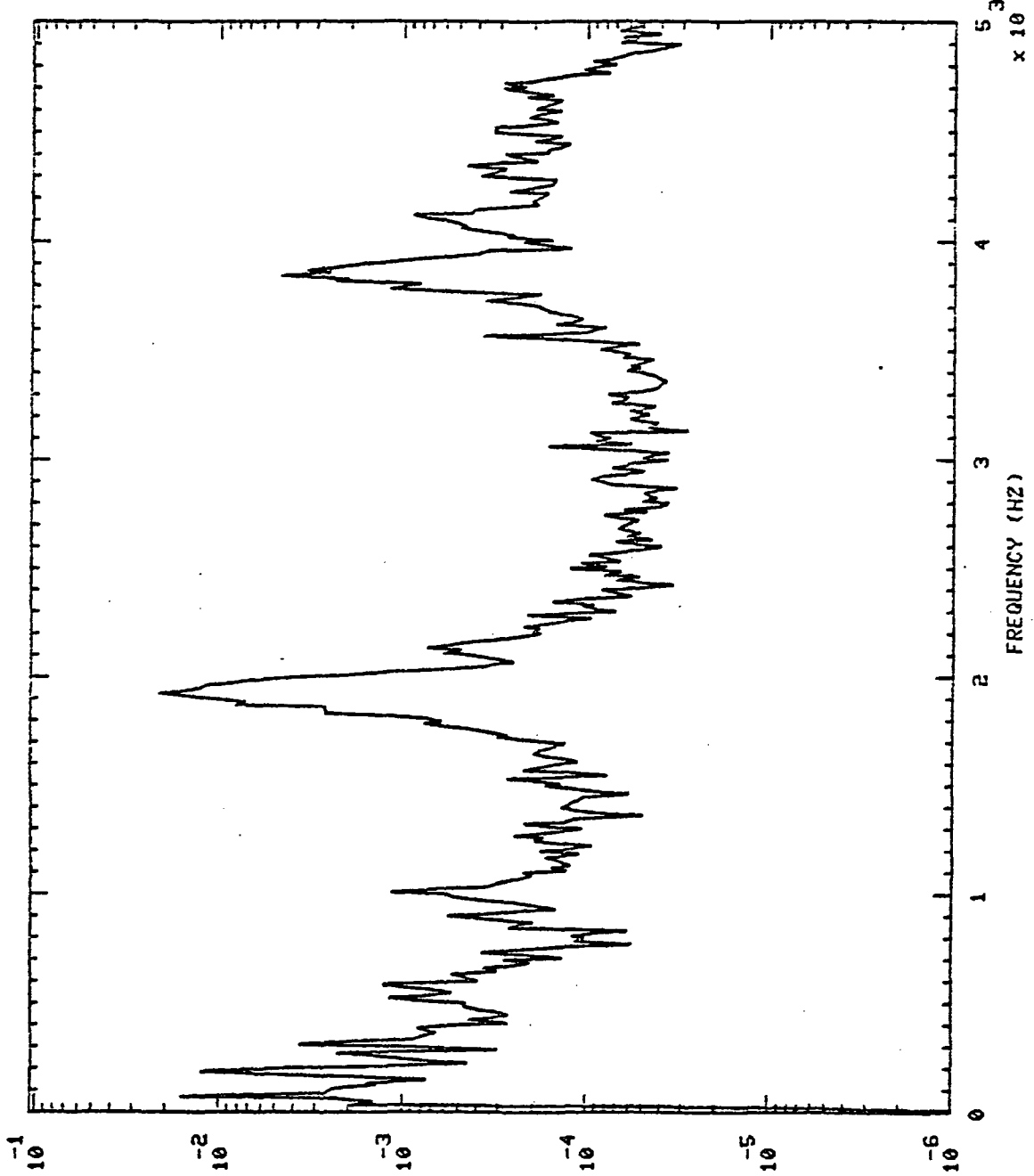
P SQ/HZ

2.4
x 10⁴

1
FREQUENCY (HZ)

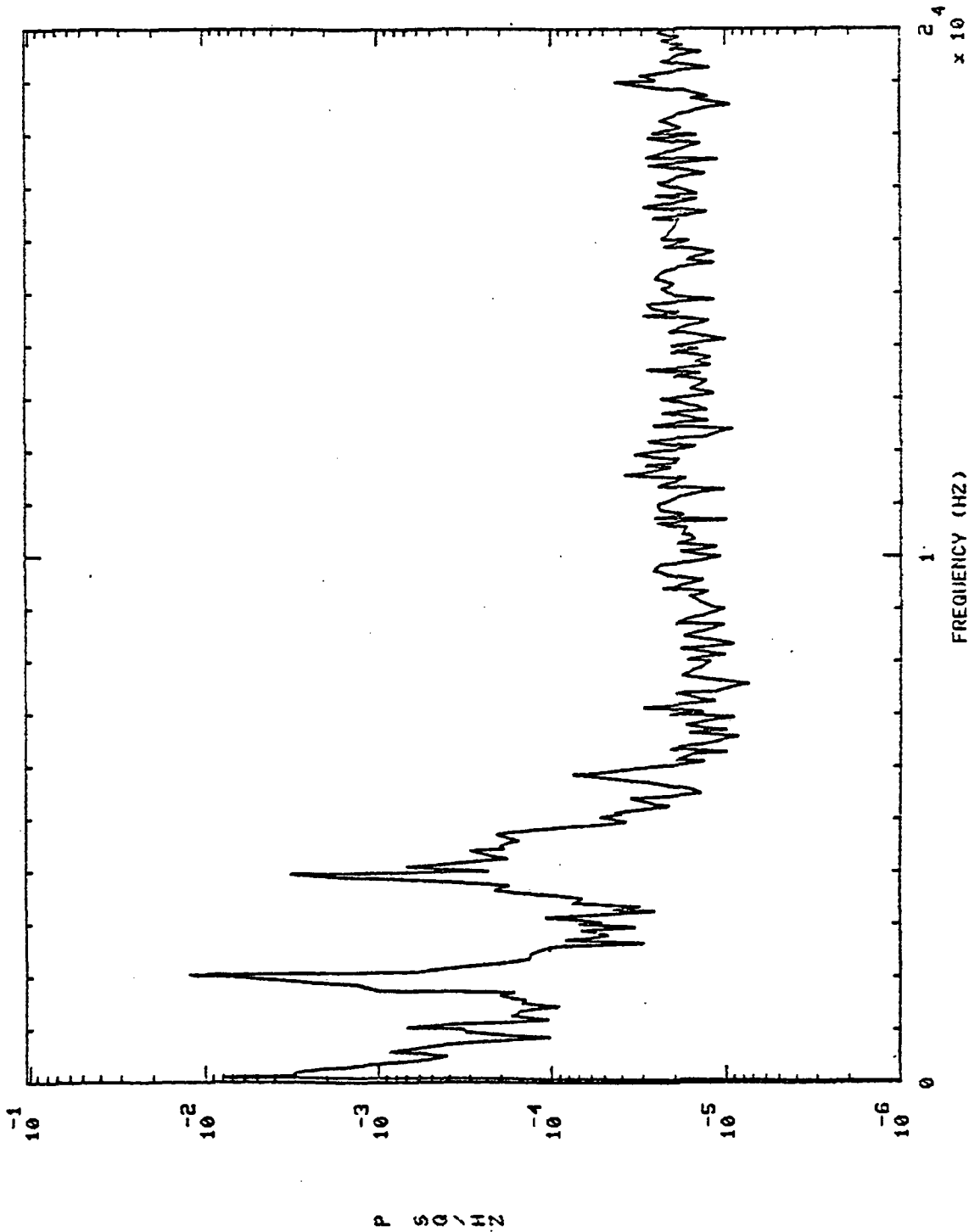
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750111 LOX HX OUT PR 5+ 70.0110,'S

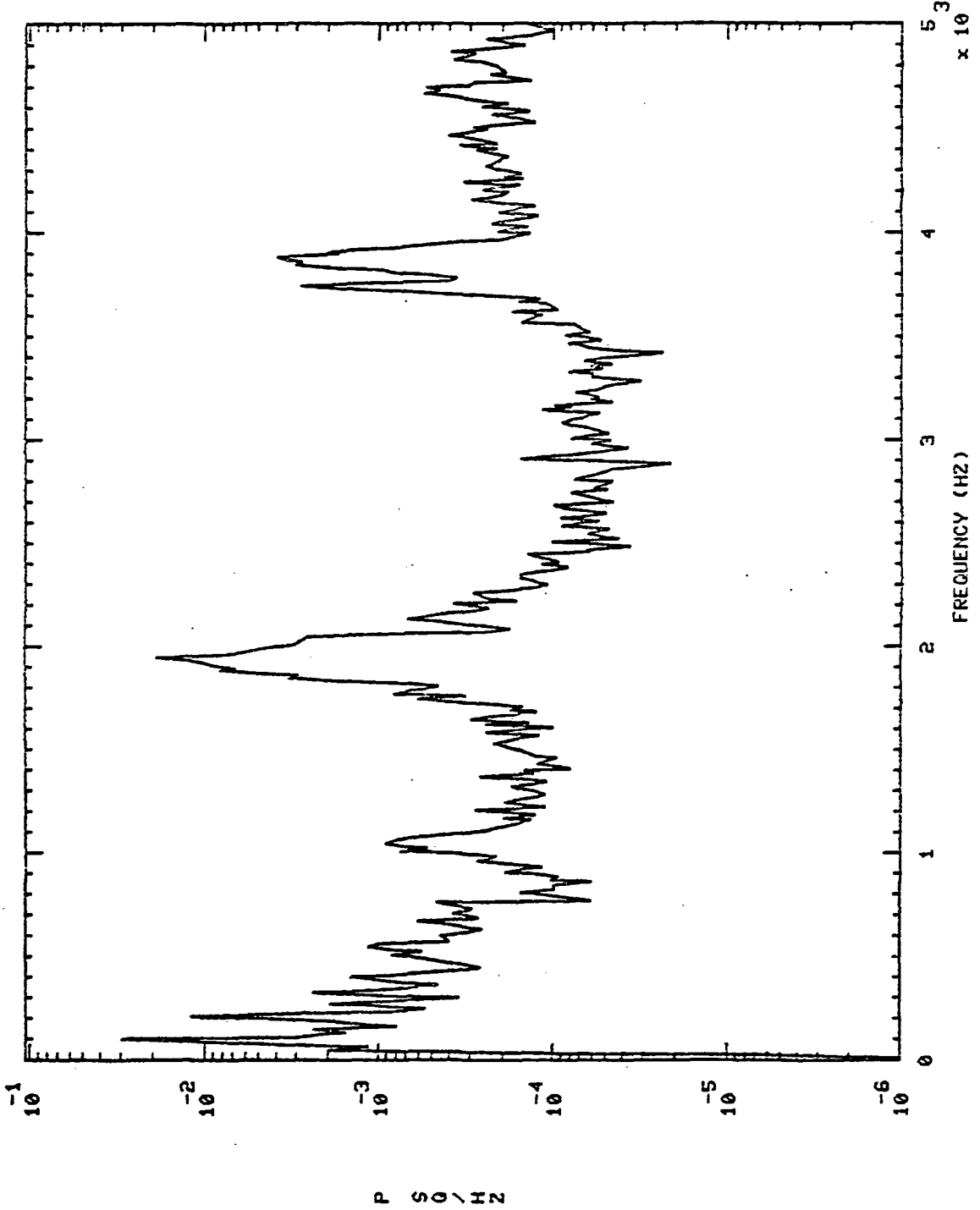


P S D (H Z)

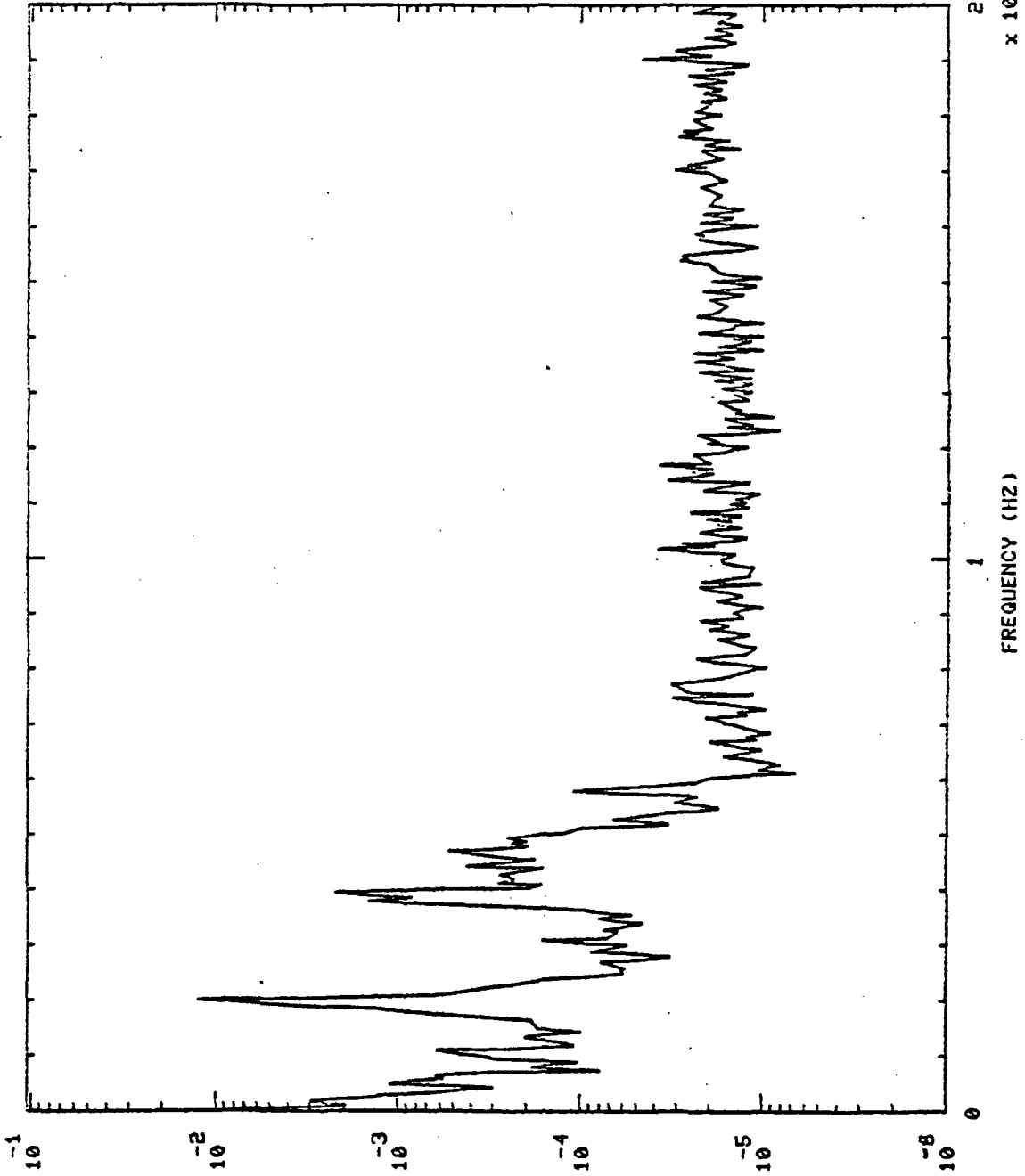
750111 LOX HX OUT PR ST 70.01H0,'S



750111 LOX HX OUT PR S+ 80.01H0,'S



750111 LOX HX OUT PR ST 80.01H0,'S

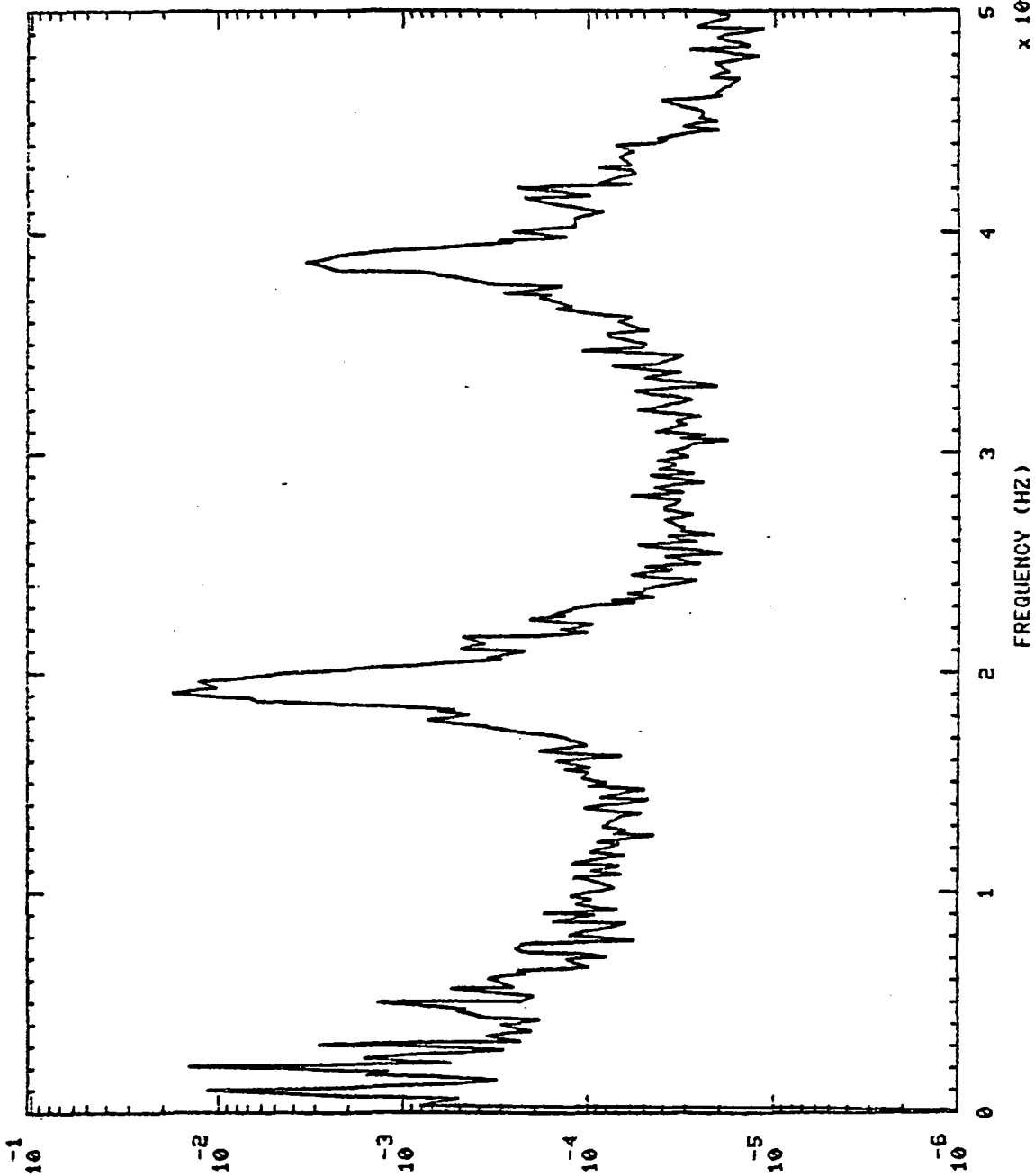


P SQ/HZ

FREQUENCY (HZ)

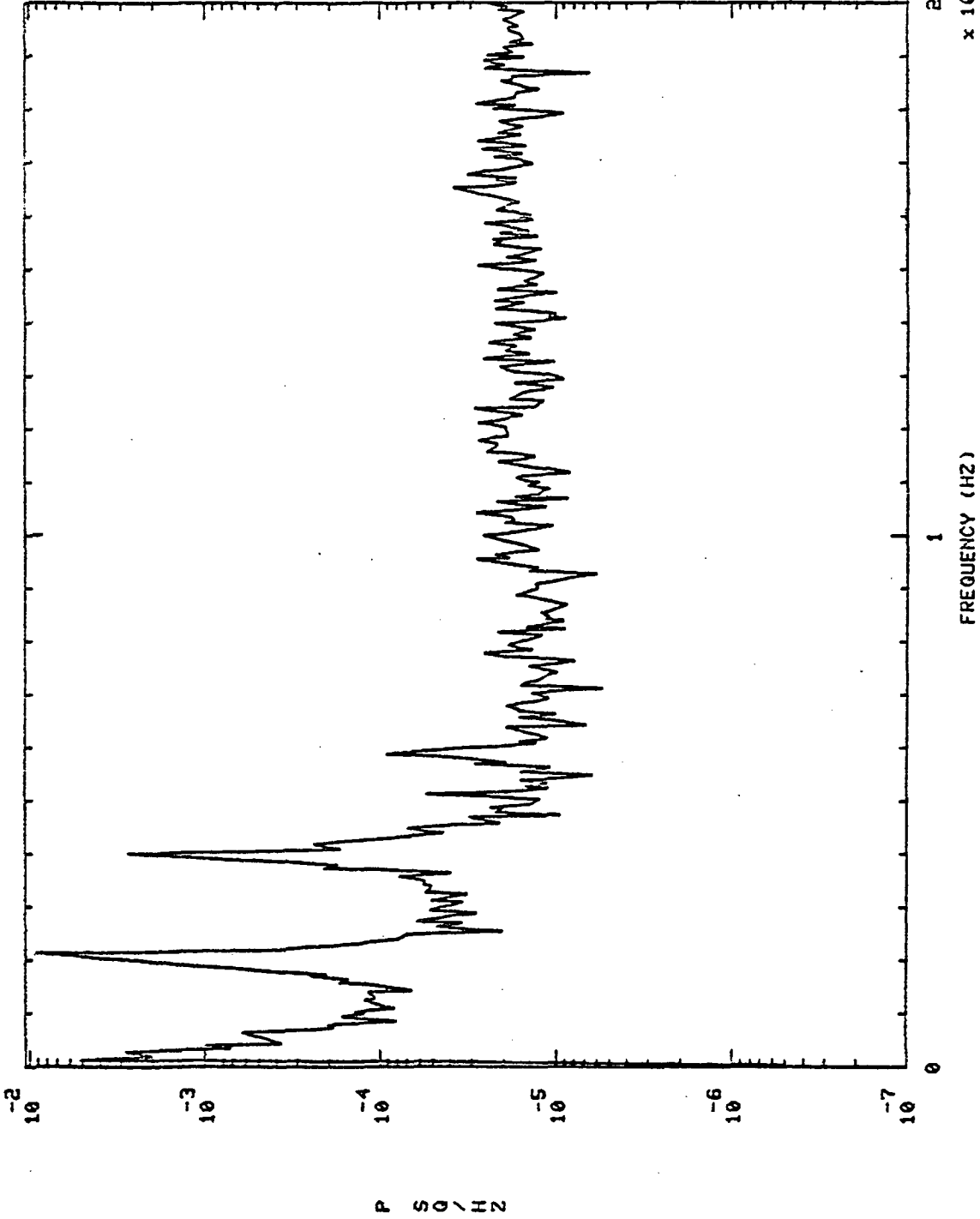
2.4×10^4

750111 LOX HX OUT PR S4 90.01H0,'S

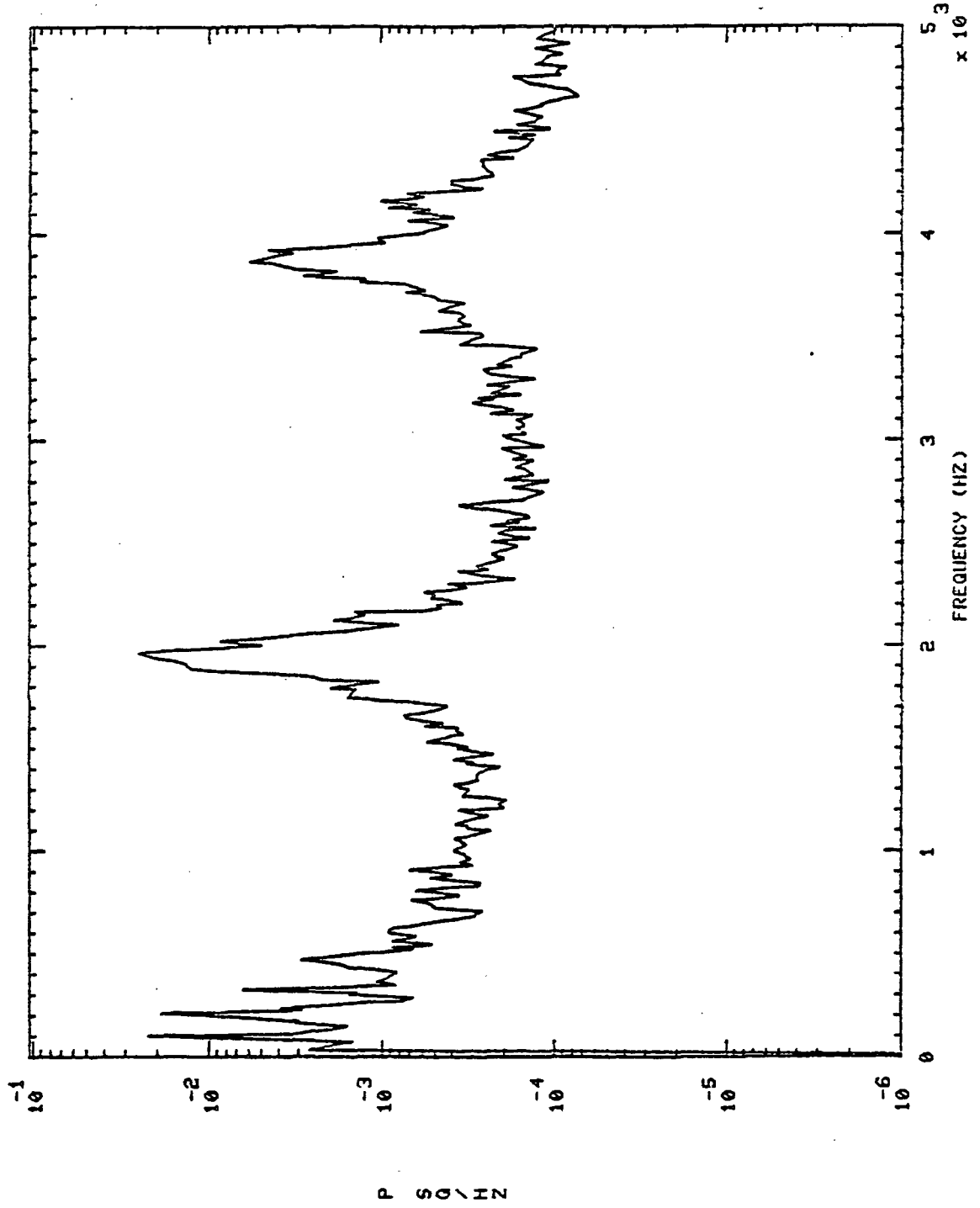


P S D \ H Z

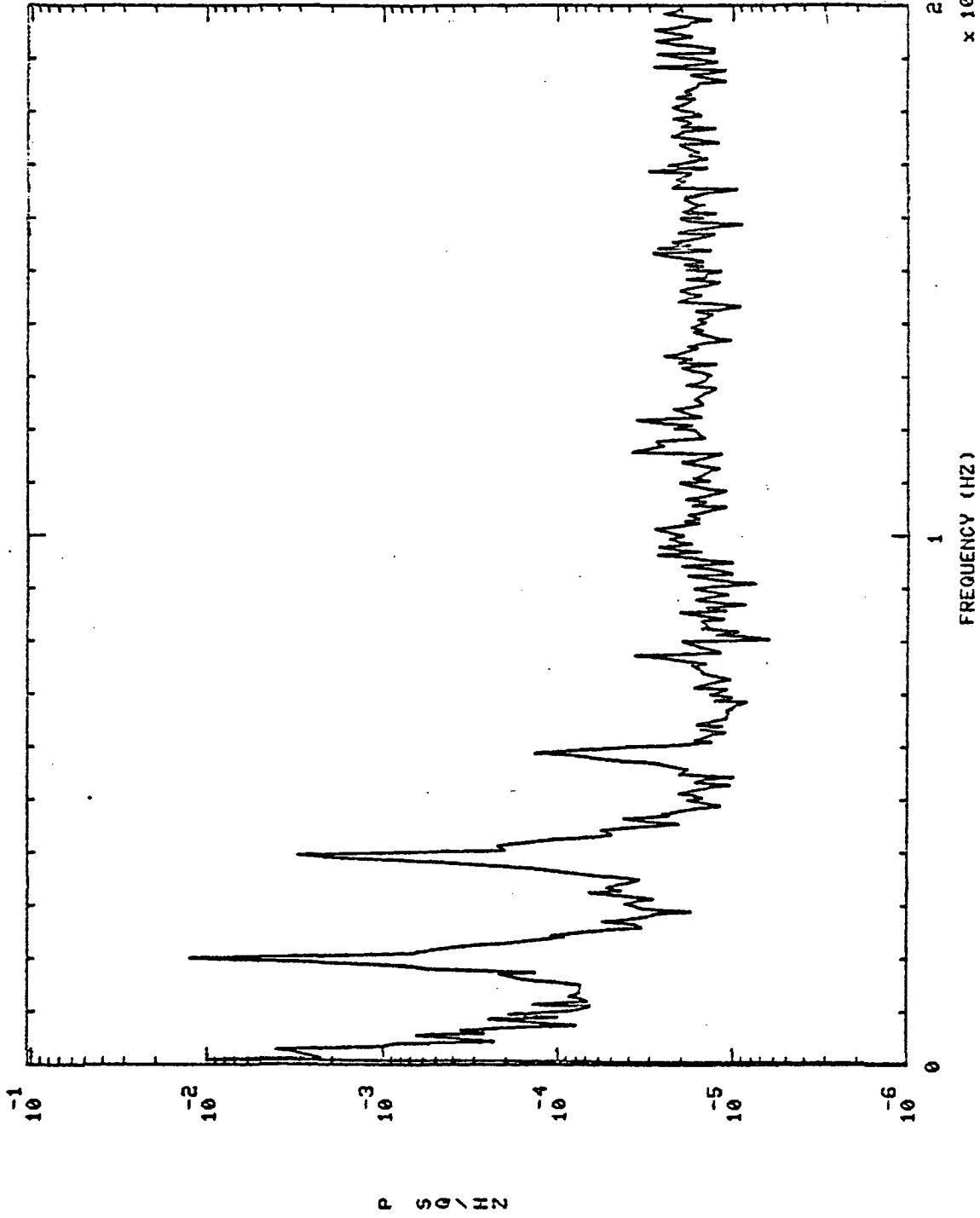
750111 LOX HX OUT PR S+ 90.01H0,'S



750111 LOX HX OUT PR S+ 100.01H0,'S



750111 LOX HX OUT PR S+ 100.01H0.'S



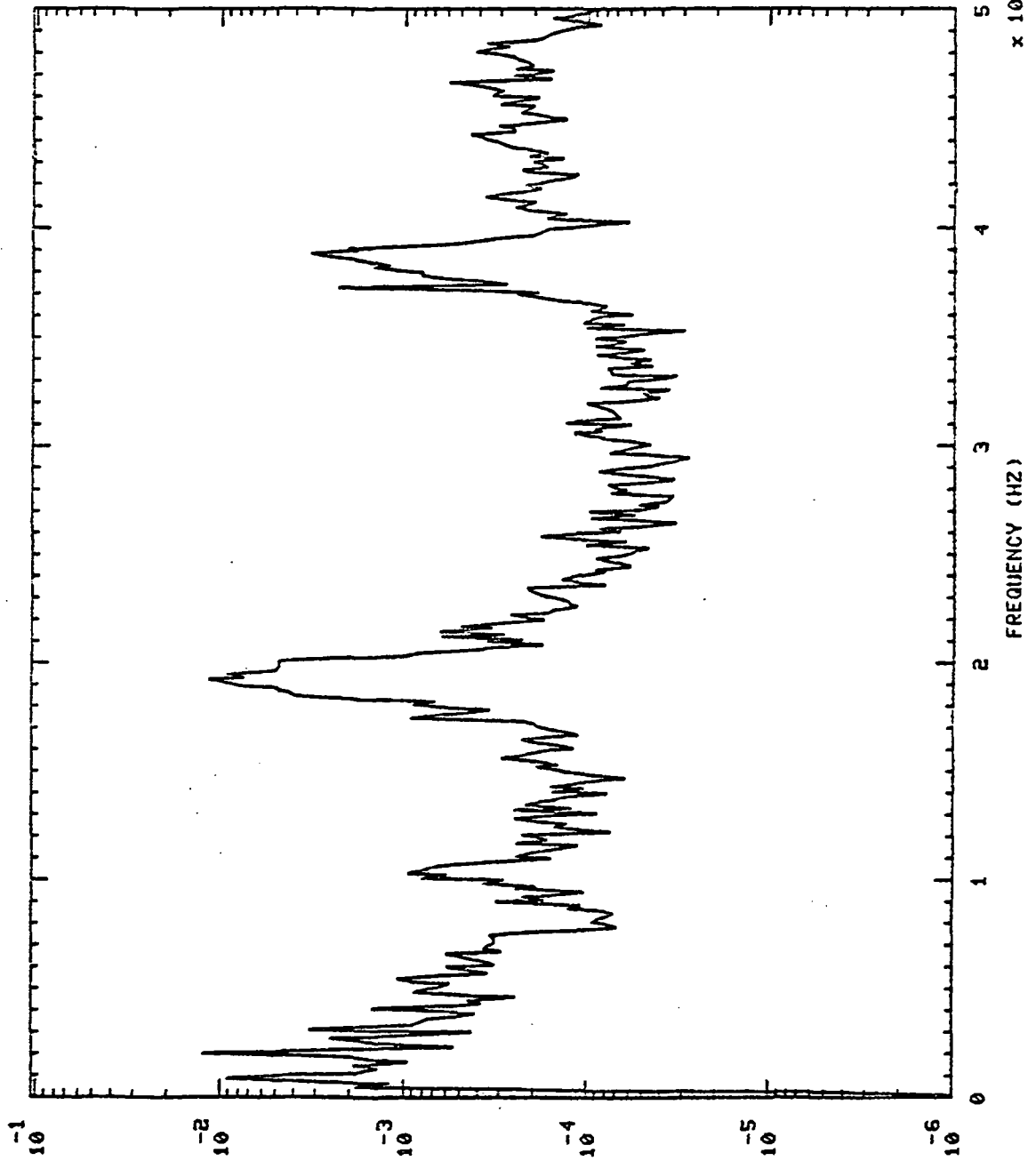
750111 LOX HX OUT PR S+ 120.01H0,'S

750111 LOX HX OUT PR

750111

LOX HX OUT PR

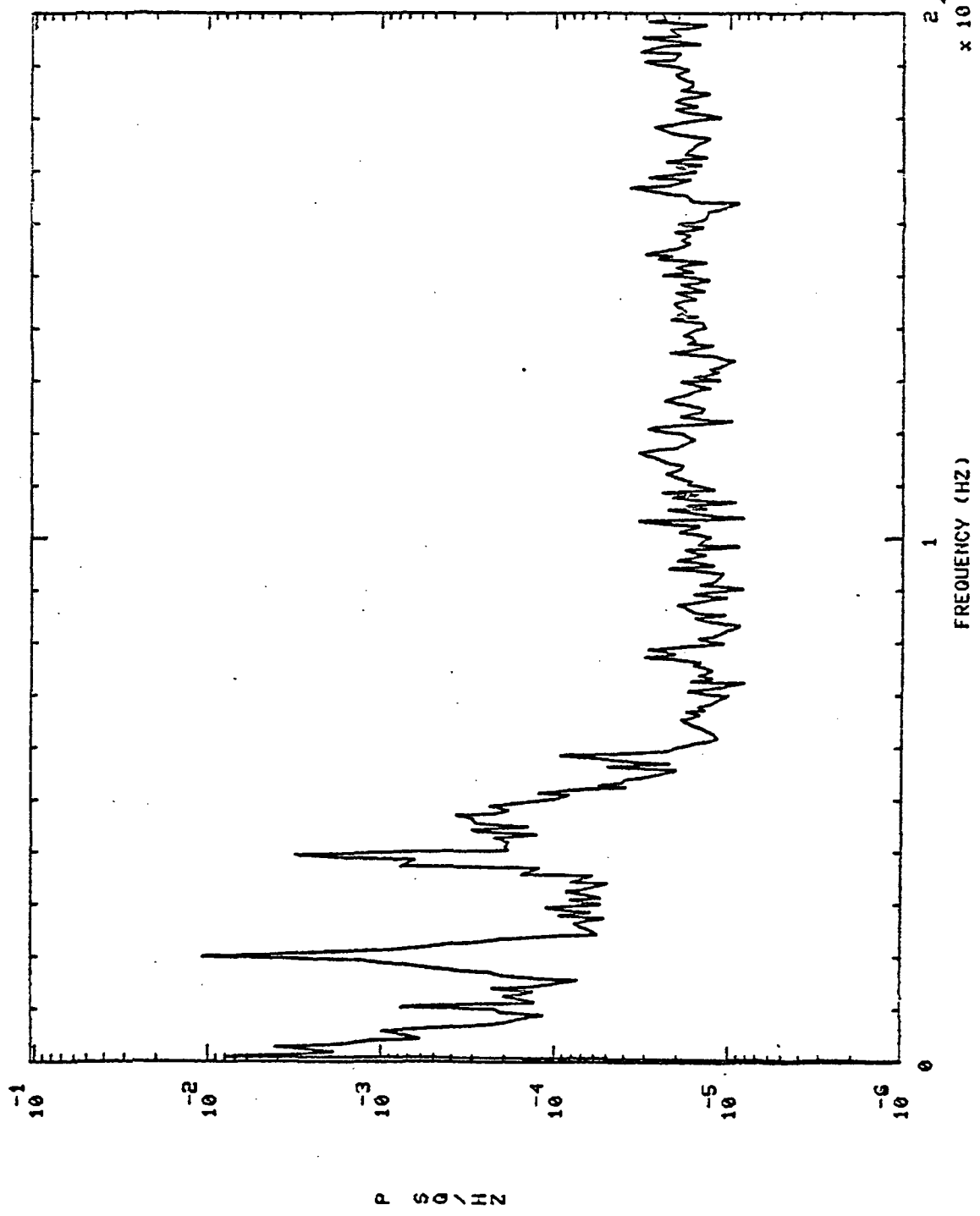
S+ 120.01H0,'S



P S D \ H Z

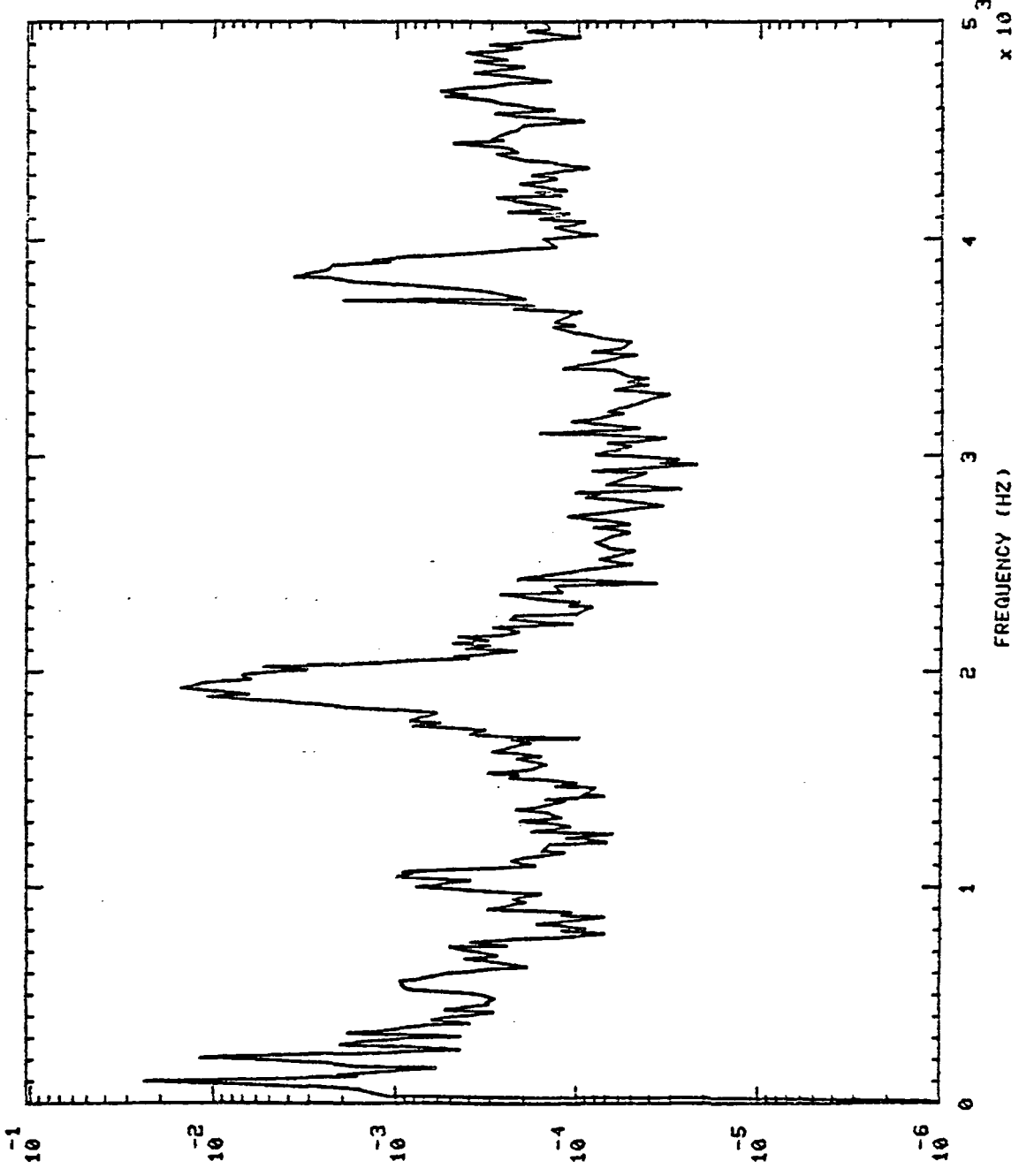
750111 LOX HX OUT PR

S+ 120.01H0, 'S



750111 LOX HX OUT PR S+ 200.01H0.'S

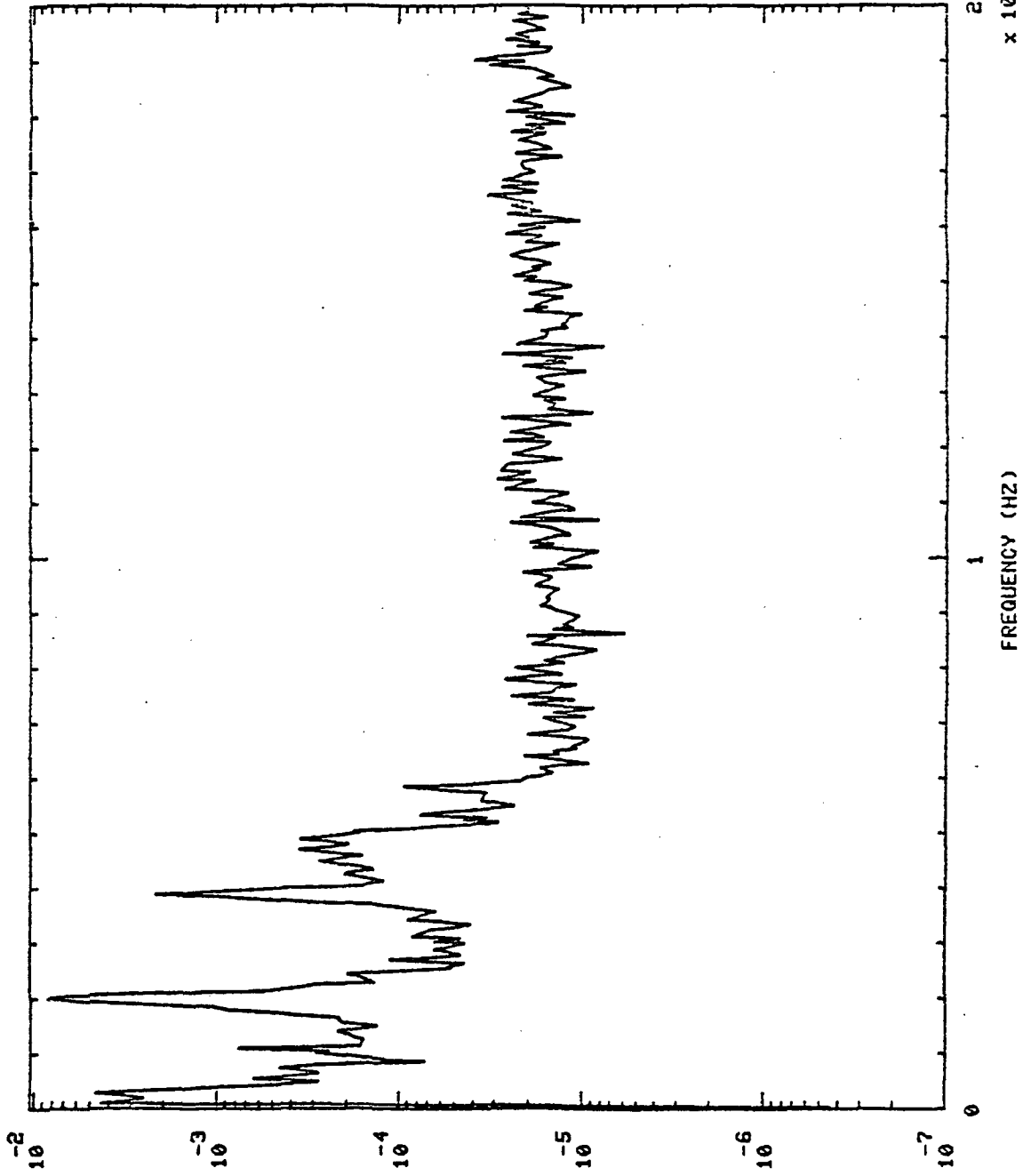
750111 LOX HX OUT PR



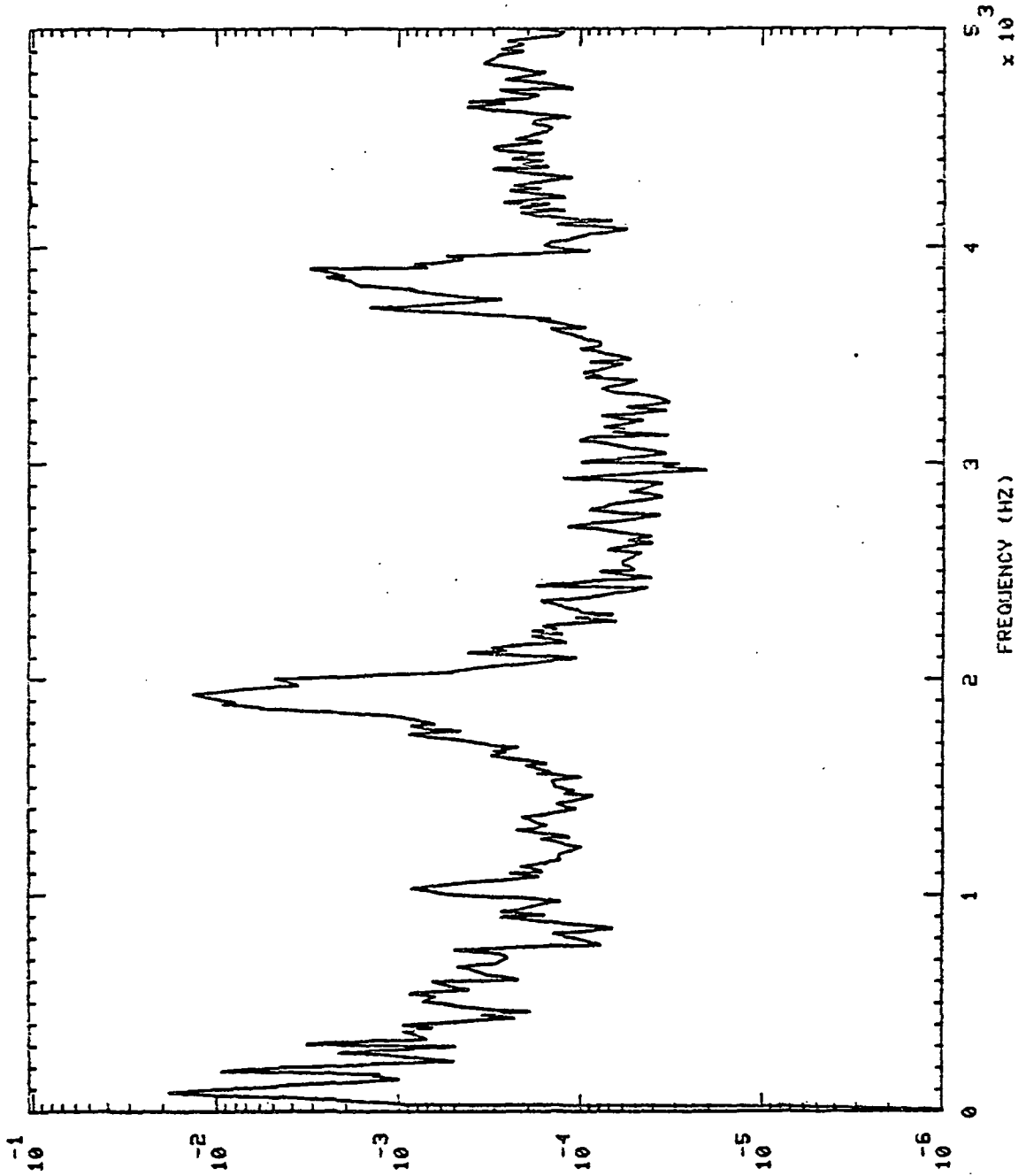
750111

LOX HX OUT PR

St 200.01H0, 'S



750111 LOX HX OUT PR S+ 280.01H0.'S



P SQ/MZ

750111 LOX HX OUT PR S+ 280.0110, 'S

